



LETTER OF INTENT

Date: July 8, 2019
Company: Wiss, Janney, Elstner Associates, Inc.
Project: Professional Services for Persigo Wastewater Treatment Plant Structural Assessment RFP-4653-19-DH

Based upon review of the proposals received for Professional Services for Persigo Wastewater Treatment Plant Structural Assessment RFP-4653-19-DH, your firm has been selected as the preferred proposer. It has been determined that next step negotiations must be made in order to move forward to a possible contract award for this project. Upon successful negotiations, it is the intent of the City of Grand Junction to award the aforementioned project to your firm as is listed in the RFP documents, your proposal response, and negotiated terms.

If negotiations are successful, the award for the project must be approved by City Council prior to an official award and contract issued.

The evaluation committee would like to discuss the following items for negotiation:

1. On page 22 of the RFP, there is a statement regarding additional NDE for structures and piping followed on page 23 with a list of possible NDE tests. Question(s): 1. What testing is included as part of the RFP before the assessment and what testing is additional? 2. Can we get a cost schedule for NDE testing that is not included in the RFP and where it might be applied.

At the completion of our assessments, outlined below, we will provide the memorandum requested by the City in the RFP outlining the findings of our assessments, and our recommendations, if any, for additional non-destructive or destructive testing that may be warranted, and why. This document will include costs for the proposed scope items to allow the City to weigh the potential benefits to this work, and determine if they would like to move forward with such work. We anticipate that after submission of this memorandum, we will have a virtual meeting to discuss with the City.

2. On page 22 of the RFP, there is a confusing discussion about safety. It states that, "The City will put in place sufficient safety measures to protect our staff while accessing different areas of the structures." The previous sentence also implies that the City will provide ladders and scaffolds for WJE to access the structures. Please clarify what WJE will be providing for safety, and what the City needs to provide.
3. Some of the piping inspection requested in the RFP was not included in the scope of WJE's proposal: Raw sewage pump station discharge piping and the aeration basin return and waste sludge pump piping. Please verify that this is included in the proposal.
4. The geotechnical services cost seems high - can we reduce the cost by using several existing holes on the site to monitor groundwater levels? These holes have been lined with PVC pipe for this purpose.

5. The travel (meals and hotel) costs are higher than the GSA costs used by the City - please revise to match the GSA costs for Grand Junction.
6. Can WJE expand upon the possible additional testing required at the end of Phase I of the Structure Assessment?
7. How does the destructive testing of the existing concrete proposed on page 23 affect the plant operations? Will WJE repair damage caused by the cores?
8. During the Document Review (Task 2A), we recommend that WJE talk with the staff at Persigo to gain additional insight on the plant and its operations.
9. Under Progress Meetings and Communication (page 17), WJE states that they will provide bi-weekly status update memorandums to the City summarizing progress on the project. The City would like to have phone meetings (less than an hour) to get this info, as requested in the RFP.

Please draft your responses to these items, and e-mail them to me directly, no later than 10:00am on July 19, 2019. We will discuss your responses at the conference call.

We would like to set up a conference call for negotiations on July 30, 2019 at 2:30pm, via conference call line 970-255-2233.

Feel free to contact me with any questions at 970-244-1545.

Thank you and Best Regards



Duane Hoff Jr., Senior Buyer



CITY OF GRAND JUNCTION, COLORADO

CONTRACT

This CONTRACT made and entered into this 14th day of August, 2019 by and between the City of Grand Junction, Colorado, a government entity in the County of Mesa, State of Colorado, hereinafter in the Contract Documents referred to as the "Owner" and Wiss, Janney, Elstner Associates, Inc. hereinafter in the Contract Documents referred to as the "Firm."

WITNESSETH:

WHEREAS, the Owner advertised that sealed Responses would be received for furnishing all labor, services, supplies, equipment, materials, and everything necessary and required for the Project described by the Contract Documents and known as Professional Services for Persigo Wastewater Treatment Plant Structural Assessment RFP-4653-19-DH.

WHEREAS, the Contract has been awarded to the above named Firm by the Owner, and said Firm is now ready, willing and able to perform the Services specified in the Notice of Award, in accordance with the Contract Documents;

NOW, THEREFORE, in consideration of the compensation to be paid the Firm, the mutual covenants hereinafter set forth and subject to the terms hereinafter stated, it is mutually covenanted and agreed as follows:

ARTICLE 1

Contract Documents: It is agreed by the parties hereto that the following list of instruments, drawings, and documents which are attached hereto, bound herewith, or incorporated herein by reference constitute and shall be referred to either as the "Contract Documents" or the "Contract", and all of said instruments, drawings, and documents taken together as a whole constitute the Contract between the parties hereto, and they are fully a part of this agreement as if they were set out verbatim and in full herein:

The order of contract document governance shall be as follows:

- a. The body of this contract agreement
- b. Negotiated Terms and Conditions/Scope of Services etc.
- c. Solicitation Documents for the Project; **Professional Services for Persigo Wastewater Treatment Plant Structural Assessment;**

- d. Firms Response to the Solicitation
- e. Services Change Requests (directing that changed Services be performed);
- f. Change Orders.

ARTICLE 2

Definitions: The clauses provided in the Solicitation apply to the terms used in the Contract and all the Contract Documents.

ARTICLE 3

Contract Services: The Firm agrees to furnish all labor, tools, supplies, equipment, materials, and all that is necessary and required to complete the tasks associated with the Services described, set forth, shown, and included in the Contract Documents as indicated in the Solicitation Document.

ARTICLE 4

Contract Price and Payment Procedures: The Firm shall accept as full and complete compensation for the performance and completion of all of the Services specified in the Contract Documents, the sum of **One Hundred Forty-Nine Thousand Eight Hundred Eighty-Two and 00/100 Dollars (\$149,882.00)**. If this Contract contains unit price pay items, the Contract Price shall be adjusted in accordance with the actual quantities of items completed and accepted by the Owner at the unit prices quoted in the Solicitation Response. The amount of the Contract Price is and has heretofore been appropriated by the Grand Junction City Council for the use and benefit of this Project. The Contract Price shall not be modified except by Change Order or other written directive of the Owner. The Owner shall not issue a Change Order or other written directive which requires additional Services to be performed, which Services causes the aggregate amount payable under this Contract to exceed the amount appropriated for this Project, unless and until the Owner provides Firm written assurance that lawful appropriations to cover the costs of the additional Services have been made.

Unless otherwise provided in the Solicitation, monthly partial payments shall be made as the Services progresses. Applications for partial and Final Payment shall be prepared by the Firm and approved by the Owner in accordance with the Solicitation.

ARTICLE 5

Contract Binding: The Owner and the Firm each binds itself, its partners, successors, assigns and legal representatives to the other party hereto in respect to all covenants, agreements and obligations contained in the Contract Documents. The Contract Documents constitute the entire agreement between the Owner and Firm and may only be altered, amended or repealed by a duly executed written instrument. Neither the Owner nor the Firm shall, without the prior written consent of the other, assign or sublet in whole or in part its interest under any of the Contract Documents and specifically, the Firm shall not assign any moneys due or to become due without the prior written consent of the Owner.

ARTICLE 6

Severability: If any part, portion or provision of the Contract shall be found or declared null, void or unenforceable for any reason whatsoever by any court of competent jurisdiction or any governmental agency having the authority thereover, only such part, portion or provision shall be effected thereby and all other parts, portions and provisions of the Contract shall remain in full force and effect.

IN WITNESS WHEREOF, City of Grand Junction, Colorado, has caused this Contract to be subscribed and sealed and attested in its behalf; and the Firm has signed this Contract the day and the year first mentioned herein.

The Contract is executed in two counterparts.

CITY OF GRAND JUNCTION, COLORADO

DocuSigned by:
By: Duane Hoff Jr., Senior Buyer - City of Grand Junction 8/15/2019 | 09:47 MDT
9F709E7D50F14BC...
Duane Hoff Jr., Senior Buyer - City of Grand Junction Date

Wiss, Janney, Elstner Associates, Inc.

DocuSigned by:
By: Terry McGovern - Wiss, Janney, Elstner Associates, Inc. 8/15/2019 | 09:14 MDT
42FB24748B8E476...
Terry McGovern - Wiss, Janney, Elstner Associates, Inc. Date



**Request for Proposal
RFP-4653-19-DH**

**Professional Services for Persigo Wastewater
Treatment Plant Structural Assessment**

RESPONSES DUE:

June 21, 2019 prior to 3:30 PM

Accepting Electronic Responses Only

***Responses Only Submitted Through the Rocky Mountain E-Purchasing System
(RMEPS)***

<https://www.rockymountainbidsystem.com/default.asp>

(Purchasing Representative does not have access or control of the vendor side of RMEPS. If website or other problems arise during response submission, vendor MUST contact RMEPS to resolve issue prior to the response deadline. 800-835-4603)

PURCHASING REPRESENTATIVE:

Duane Hoff Jr., Senior Buyer

duaneh@gjcity.org

970-244-1545

This solicitation has been developed specifically for a Request for Proposal intended to solicit competitive responses for this solicitation, and may not be the same as previous City of Grand Junction solicitations. All offerors are urged to thoroughly review this solicitation prior to submitting. Submittal by **FAX, EMAIL or HARD COPY IS NOT ACCEPTABLE** for this solicitation.

REQUEST FOR PROPOSAL

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REQUEST FOR PROPOSAL

SECTION 1.0: ADMINISTRATIVE INFORMATION & CONDITIONS FOR SUBMITTAL

- 1.1 Issuing Office:** This Request for Proposal (RFP) is issued by the City of Grand Junction. All contact regarding this RFP is directed to:

RFP QUESTIONS:

Duane Hoff Jr., Senior Buyer
duaneh@gjcity.org

- 1.2 Purpose:** The purpose of this RFP is to obtain proposals from qualified professional structural assessment firms to provide structural assessment services for the Persigo Wastewater Treatment .
- 1.3 The Owner:** The Owner is the City of Grand Junction, Colorado and is referred to throughout this Solicitation. The term Owner means the Owner or his authorized representative.
- 1.4 Non-Mandatory Site Visit Meeting:** **Prospective offerors are encouraged to attend a non-mandatory site visit meeting on June 4, 2019 at 10:00 am.** Meeting location shall be in the Persigo Wastewater Treatment Plant Conference Room, located at 2145 River Road, Grand Junction, CO. The purpose of this visit will be to inspect and to clarify the contents of this Invitation for Bids (IFB).
- 1.5 Compliance:** All participating Offerors, by their signature hereunder, shall agree to comply with all conditions, requirements, and instructions of this RFP as stated or implied herein. Should the Owner omit anything from this packet which is necessary to the clear understanding of the requirements, or should it appear that various instructions are in conflict, the Offeror(s) shall secure instructions from the Purchasing Division prior to the date and time of the submittal deadline shown in this RFP.
- 1.6 Submission:** Please refer to section 5.0 for what is to be included. ***Each proposal shall be submitted in electronic format only, and only through the Rocky Mountain E-Purchasing website (<https://www.rockymountainbidssystem.com/default.asp>). This site offers both "free" and "paying" registration options that allow for full access of the Owner's documents and for electronic submission of proposals. (Note: "free" registration may take up to 24 hours to process. Please Plan accordingly.)*** Please view our "Electronic Vendor Registration Guide" at <http://www.gjcity.org/business-and-economic-development/bids/> for details. For proper comparison and evaluation, the City requests that proposals be formatted as directed in Section 5.0 "Preparation and Submittal of Proposals." Submittals received that fail to follow this format may be ruled non-responsive. (Purchasing Representative does not have access or control of the vendor side of RMEPS. If website or other problems arise during response submission, vendor **MUST** contact RMEPS to resolve issue prior to the response deadline. **800-835-4603**).
- 1.7 Altering Proposals:** Any alterations made prior to opening date and time must be initialed by the signer of the proposal, guaranteeing authenticity. Proposals cannot be altered or amended after submission deadline.

- 1.8 Withdrawal of Proposal:** A proposal must be firm and valid for award and may not be withdrawn or canceled by the Offeror for sixty (60) days following the submittal deadline date, and only prior to award. The Offeror so agrees upon submittal of their proposal. After award this statement is not applicable.
- 1.9 Acceptance of Proposal Content:** The contents of the proposal of the successful Offeror shall become contractual obligations if acquisition action ensues. Failure of the successful Offeror to accept these obligations in a contract shall result in cancellation of the award and such vendor shall be removed from future solicitations.
- 1.10 Addenda:** All questions shall be submitted in writing to the appropriate person as shown in Section 1.1. Any interpretations, corrections and changes to this RFP or extensions to the opening/receipt date shall be made by a written Addendum to the RFP by the City Purchasing Division. Sole authority to authorize addenda shall be vested in the City of Grand Junction Purchasing Representative. Addenda will be issued electronically through the Rocky Mountain E-Purchasing website at www.rockymountainbidsystem.com. Offerors shall acknowledge receipt of all addenda in their proposal.
- 1.11 Exceptions and Substitutions:** All proposals meeting the intent of this RFP shall be considered for award. Offerors taking exception to the specifications shall do so at their own risk. The Owner reserves the right to accept or reject any or all substitutions or alternatives. When offering substitutions and/or alternatives, Offeror must state these exceptions in the section pertaining to that area. Exception/substitution, if accepted, must meet or exceed the stated intent and/or specifications. The absence of such a list shall indicate that the Offeror has not taken exceptions, and if awarded a contract, shall hold the Offeror responsible to perform in strict accordance with the specifications or scope of services contained herein.
- 1.12 Confidential Material:** All materials submitted in response to this RFP shall ultimately become public record and shall be subject to inspection after contract award. **“Proprietary or Confidential Information”** is defined as any information that is not generally known to competitors and which provides a competitive advantage. Unrestricted disclosure of proprietary information places it in the public domain. Only submittal information clearly identified with the words **“Confidential Disclosure”** and uploaded as a separate document shall establish a confidential, proprietary relationship. Any material to be treated as confidential or proprietary in nature must include a justification for the request. The request shall be reviewed and either approved or denied by the Owner. If denied, the proposer shall have the opportunity to withdraw its entire proposal, or to remove the confidential or proprietary restrictions. Neither cost nor pricing information nor the total proposal shall be considered confidential or proprietary.
- 1.13 Response Material Ownership:** All proposals become the property of the Owner upon receipt and shall only be returned to the proposer at the Owner’s option. Selection or rejection of the proposal shall not affect this right. The Owner shall have the right to use all ideas or adaptations of the ideas contained in any proposal received in response to this RFP, subject to limitations outlined in the entitled “Confidential Material”. Disqualification of a proposal does not eliminate this right.

- 1.14 Minimal Standards for Responsible Prospective Offerors:** A prospective Offeror must affirmably demonstrate their responsibility. A prospective Offeror must meet the following requirements.
- Have adequate financial resources, or the ability to obtain such resources as required.
 - Be able to comply with the required or proposed completion schedule.
 - Have a satisfactory record of performance.
 - Have a satisfactory record of integrity and ethics.
 - Be otherwise qualified and eligible to receive an award and enter into a contract with the Owner.
- 1.15 Open Records:** Proposals shall be received and publicly acknowledged at the location, date, and time stated herein. Offerors, their representatives and interested persons may be present. Proposals shall be received and acknowledged only so as to avoid disclosure of process. However, all proposals shall be open for public inspection after the contract is awarded. Trade secrets and confidential information contained in the proposal so identified by offer as such shall be treated as confidential by the Owner to the extent allowable in the Open Records Act.
- 1.16 Sales Tax:** The Owner is, by statute, exempt from the State Sales Tax and Federal Excise Tax; therefore, all fees shall not include taxes.
- 1.17 Public Opening:** Proposals shall be opened in the City Hall Auditorium, 250 North 5th Street, Grand Junction, CO, 81501, immediately following the proposal deadline. Offerors, their representatives and interested persons may be present. Only the names and locations on the proposing firms will be disclosed.

SECTION 2.0: GENERAL CONTRACT TERMS AND CONDITIONS

- 2.1. Acceptance of RFP Terms:** A proposal submitted in response to this RFP shall constitute a binding offer. Acknowledgment of this condition shall be indicated on the Letter of Interest or Cover Letter by the autographic signature of the Offeror or an officer of the Offeror legally authorized to execute contractual obligations. A submission in response to the RFP acknowledges acceptance by the Offeror of all terms and conditions including compensation, as set forth herein. An Offeror shall identify clearly and thoroughly any variations between its proposal and the Owner's RFP requirements. Failure to do so shall be deemed a waiver of any rights to subsequently modify the terms of performance, except as outlined or specified in the RFP.
- 2.2. Execution, Correlation, Intent, and Interpretations:** The Contract Documents shall be signed by the Owner and Firm. By executing the contract, the Firm represents that they have familiarized themselves with the local conditions under which the Services is to be performed, and correlated their observations with the requirements of the Contract Documents. The Contract Documents are complementary, and what is required by any one, shall be as binding as if required by all. The intention of the documents is to include all labor, materials, equipment, services and other items necessary for the proper execution and completion of the scope of services as defined in the technical specifications and drawings contained herein. All drawings, specifications and copies furnished by the Owner are, and shall remain, Owner property. They are not to be used on any other project.

- 2.3. Permits, Fees, & Notices:** The Firm shall secure and pay for all permits, governmental fees and licenses necessary for the proper execution and completion of the services. The Firm shall give all notices and comply with all laws, ordinances, rules, regulations and orders of any public authority bearing on the performance of the services. If the Firm observes that any of the Contract Documents are at variance in any respect, he shall promptly notify the Owner in writing, and any necessary changes shall be adjusted by approximate modification. If the Firm performs any services knowing it to be contrary to such laws, ordinances, rules and regulations, and without such notice to the Owner, he shall assume full responsibility and shall bear all costs attributable.
- 2.4. Responsibility for those Performing the Services:** The Firm shall be responsible to the Owner for the acts and omissions of all his employees and all other persons performing any of the services under a contract with the Firm.
- 2.5. Payment & Completion:** The Contract Sum is stated in the Contract and is the total amount payable by the Owner to the Firm for the performance of the services under the Contract Documents. Upon receipt of written notice that the services is ready for final inspection and acceptance and upon receipt of application for payment, the Owner's Project Manager will promptly make such inspection and, when they find the services acceptable under the Contract Documents and the Contract fully performed, the Owner shall make payment in the manner provided in the Contract Documents. Partial payments will be based upon estimates, prepared by the Firm, of the value of services performed and materials placed in accordance with the Contract Documents. The services performed by Firm shall be in accordance with generally accepted professional practices and the level of competency presently maintained by other practicing professional firms in the same or similar type of services in the applicable community. The services and services to be performed by Firm hereunder shall be done in compliance with applicable laws, ordinances, rules and regulations.
- 2.6. Protection of Persons & Property:** The Firm shall comply with all applicable laws, ordinances, rules, regulations and orders of any public authority having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss. Firm shall erect and maintain, as required by existing safeguards for safety and protection, and all reasonable precautions, including posting danger signs or other warnings against hazards promulgating safety regulations and notifying owners and users of adjacent utilities. When or where any direct or indirect damage or injury is done to public or private property by or on account of any act, omission, neglect, or misconduct by the Firm in the execution of the services, or in consequence of the non-execution thereof by the Firm, they shall restore, at their own expense, such property to a condition similar or equal to that existing before such damage or injury was done, by repairing, rebuilding, or otherwise restoring as may be directed, or it shall make good such damage or injury in an acceptable manner.
- 2.7. Changes in the Services:** The Owner, without invalidating the contract, may order changes in the services within the general scope of the contract consisting of additions, deletions or other revisions. All such changes in the services shall be authorized by Change Order/Amendment and shall be executed under the applicable conditions of the contract documents. A Change Order/Amendment is a written order to the Firm signed by

the Owner issued after the execution of the contract, authorizing a change in the services or an adjustment in the contract sum or the contract time.

- 2.8. Minor Changes in the Services:** The Owner shall have authority to order minor changes in the services not involving an adjustment in the contract sum or an extension of the contract time and not inconsistent with the intent of the contract documents.
- 2.9. Uncovering & Correction of Services:** The Firm shall promptly correct all services found by the Owner as defective or as failing to conform to the contract documents. The Firm shall bear all costs of correcting such rejected services, including the cost of the Owner's additional services thereby made necessary. The Owner shall give such notice promptly after discover of condition. All such defective or non-conforming services under the above paragraphs shall be removed from the site where necessary and the services shall be corrected to comply with the contract documents without cost to the Owner.
- 2.10. Acceptance Not Waiver:** The Owner's acceptance or approval of any services furnished hereunder shall not in any way relieve the proposer of their present responsibility to maintain the high quality, integrity and timeliness of his services. The Owner's approval or acceptance of, or payment for, any services shall not be construed as a future waiver of any rights under this Contract, or of any cause of action arising out of performance under this Contract.
- 2.11. Change Order/Amendment:** No oral statement of any person shall modify or otherwise change, or affect the terms, conditions or specifications stated in the resulting contract. All amendments to the contract shall be made in writing by the Owner.
- 2.12. Assignment:** The Offeror shall not sell, assign, transfer or convey any contract resulting from this RFP, in whole or in part, without the prior written approval from the Owner.
- 2.13. Compliance with Laws:** Proposals must comply with all Federal, State, County and local laws governing or covering this type of service and the fulfillment of all ADA (Americans with Disabilities Act) requirements. Firm hereby warrants that it is qualified to assume the responsibilities and render the services described herein and has all requisite corporate authority and professional licenses in good standing, required by law.
- 2.14. Debarment/Suspension:** The Firm hereby certifies that the Firm is not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Governmental department or agency.
- 2.15. Confidentiality:** All information disclosed by the Owner to the Offeror for the purpose of the services to be done or information that comes to the attention of the Offeror during the course of performing such services is to be kept strictly confidential.
- 2.16. Conflict of Interest:** No public official and/or Owner employee shall have interest in any contract resulting from this RFP.
- 2.17. Contract:** This Request for Proposal, submitted documents, and any negotiations, when properly accepted by the Owner, shall constitute a contract equally binding between the Owner and Offeror. The contract represents the entire and integrated agreement between

the parties hereto and supersedes all prior negotiations, representations, or agreements, either written or oral, including the Proposal documents. The contract may be amended or modified with Change Orders, Field Orders, or Amendment.

- 2.18. Project Manager/Administrator:** The Project Manager, on behalf of the Owner, shall render decisions in a timely manner pertaining to the services proposed or performed by the Offeror. The Project Manager shall be responsible for approval and/or acceptance of any related performance of the Scope of Services.
- 2.19. Contract Termination:** This contract shall remain in effect until any of the following occurs: (1) contract expires; (2) completion of services; (3) acceptance of services or, (4) for convenience terminated by either party with a written *Notice of Cancellation* stating therein the reasons for such cancellation and the effective date of cancellation at least thirty days past notification.
- 2.20. Employment Discrimination:** During the performance of any services per agreement with the Owner, the Offeror, by submitting a Proposal, agrees to the following conditions:
- 2.20.1. The Offeror shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, age, disability, citizenship status, marital status, veteran status, sexual orientation, national origin, or any legally protected status except when such condition is a legitimate occupational qualification reasonably necessary for the normal operations of the Offeror. The Offeror agrees to post in conspicuous places, visible to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.
- 2.20.2. The Offeror, in all solicitations or advertisements for employees placed by or on behalf of the Offeror, shall state that such Offeror is an Equal Opportunity Employer.
- 2.20.3. Notices, advertisements, and solicitations placed in accordance with federal law, rule, or regulation shall be deemed sufficient for the purpose of meeting the requirements of this section.
- 2.21. Immigration Reform and Control Act of 1986 and Immigration Compliance:** The Offeror certifies that it does not and will not during the performance of the contract employ illegal alien services or otherwise violate the provisions of the Federal Immigration Reform and Control Act of 1986 and/or the immigration compliance requirements of State of Colorado C.R.S. § 8-17.5-101, *et.seq.* (House Bill 06-1343).
- 2.22. Ethics:** The Offeror shall not accept or offer gifts or anything of value nor enter into any business arrangement with any employee, official, or agent of the Owner.
- 2.23. Failure to Deliver:** In the event of failure of the Offeror to deliver services in accordance with the contract terms and conditions, the Owner, after due oral or written notice, may procure the services from other sources and hold the Offeror responsible for any costs resulting in additional purchase and administrative services. This remedy shall be in addition to any other remedies that the Owner may have.

- 2.24. Failure to Enforce:** Failure by the Owner at any time to enforce the provisions of the contract shall not be construed as a waiver of any such provisions. Such failure to enforce shall not affect the validity of the contract or any part thereof or the right of the Owner to enforce any provision at any time in accordance with its terms.
- 2.25. Force Majeure:** The Offeror shall not be held responsible for failure to perform the duties and responsibilities imposed by the contract due to legal strikes, fires, riots, rebellions, and acts of God beyond the control of the Offeror, unless otherwise specified in the contract.
- 2.26. Indemnification:** Offeror shall defend, indemnify and save harmless the Owner and all its officers, employees, insurers, and self-insurance pool, from and against all liability, suits, actions, or other claims of any character, name and description brought for or on account of any injuries or damages received or sustained by any person, persons, or property on account of any negligent act or fault of the Offeror, or of any Offeror's agent, employee, sub-contractor or supplier in the execution of, or performance under, any contract which may result from proposal award. Offeror shall pay any judgment with cost which may be obtained against the Owner growing out of such injury or damages.
- 2.27. Independent Firm:** The Offeror shall be legally considered an Independent Firm and neither the Firm nor its employees shall, under any circumstances, be considered servants or agents of the Owner. The Owner shall be at no time legally responsible for any negligence or other wrongdoing by the Firm, its servants, or agents. The Owner shall not withhold from the contract payments to the Firm any federal or state unemployment taxes, federal or state income taxes, Social Security Tax or any other amounts for benefits to the Firm. Further, the Owner shall not provide to the Firm any insurance coverage or other benefits, including Workers' Compensation, normally provided by the Owner for its employees.
- 2.28. Nonconforming Terms and Conditions:** A proposal that includes terms and conditions that do not conform to the terms and conditions of this Request for Proposal is subject to rejection as non-responsive. The Owner reserves the right to permit the Offeror to withdraw nonconforming terms and conditions from its proposal prior to a determination by the Owner of non-responsiveness based on the submission of nonconforming terms and conditions.
- 2.29. Ownership:** All plans, prints, designs, concepts, etc., shall become the property of the Owner.
- 2.30. Oral Statements:** No oral statement of any person shall modify or otherwise affect the terms, conditions, or specifications stated in this document and/or resulting agreement. All modifications to this request and any agreement must be made in writing by the Owner.
- 2.31. Patents/Copyrights:** The Offeror agrees to protect the Owner from any claims involving infringements of patents and/or copyrights. In no event shall the Owner be liable to the Offeror for any/all suits arising on the grounds of patent(s)/copyright(s) infringement. Patent/copyright infringement shall null and void any agreement resulting from response to this RFP.

- 2.32. Venue:** Any agreement as a result of responding to this RFP shall be deemed to have been made in, and shall be construed and interpreted in accordance with, the laws of the City of Grand Junction, Mesa County, Colorado.
- 2.33. Expenses:** Expenses incurred in preparation, submission and presentation of this RFP are the responsibility of the company and can not be charged to the Owner.
- 2.34. Sovereign Immunity:** The Owner specifically reserves its right to sovereign immunity pursuant to Colorado State Law as a defense to any action arising in conjunction to this agreement.
- 2.35. Public Funds/Non-Appropriation of Funds:** Funds for payment have been provided through the Owner's budget approved by the City Council/Board of County Commissioners for the stated fiscal year only. State of Colorado statutes prohibit the obligation and expenditure of public funds beyond the fiscal year for which a budget has been approved. Therefore, anticipated orders or other obligations that may arise past the end of the stated Owner's fiscal year shall be subject to budget approval. Any contract will be subject to and must contain a governmental non-appropriation of funds clause.
- 2.36. Collusion Clause:** Each Offeror by submitting a proposal certifies that it is not party to any collusive action or any action that may be in violation of the Sherman Antitrust Act. Any and all proposals shall be rejected if there is evidence or reason for believing that collusion exists among the proposers. The Owner may or may not, at the discretion of the Owner Purchasing Representative, accept future proposals for the same service or commodities for participants in such collusion.
- 2.37. Gratuities:** The Firm certifies and agrees that no gratuities or kickbacks were paid in connection with this contract, nor were any fees, commissions, gifts or other considerations made contingent upon the award of this contract. If the Firm breaches or violates this warranty, the Owner may, at their discretion, terminate this contract without liability to the Owner.
- 2.38. Performance of the Contract:** The Owner reserves the right to enforce the performance of the contract in any manner prescribed by law or deemed to be in the best interest of the Owner in the event of breach or default of resulting contract award.
- 2.39. Benefit Claims:** The Owner shall not provide to the Offeror any insurance coverage or other benefits, including Worker's Compensation, normally provided by the Owner for its employees.
- 2.40. Default:** The Owner reserves the right to terminate the contract in the event the Firm fails to meet delivery or completion schedules, or otherwise perform in accordance with the accepted proposal. Breach of contract or default authorizes the Owner to purchase like services elsewhere and charge the full increase in cost to the defaulting Offeror.
- 2.41. Multiple Offers:** If said proposer chooses to submit more than one offer, THE ALTERNATE OFFER must be clearly marked "Alternate Proposal". The Owner reserves the right to make award in the best interest of the Owner.

2.42. Cooperative Purchasing: Purchases as a result of this solicitation are primarily for the Owner. Other governmental entities may be extended the opportunity to utilize the resultant contract award with the agreement of the successful provider and the participating agencies. All participating entities will be required to abide by the specifications, terms, conditions and pricings established in this Proposal. The quantities furnished in this proposal document are for only the Owner. It does not include quantities for any other jurisdiction. The Owner will be responsible only for the award for our jurisdiction. Other participating entities will place their own awards on their respective Purchase Orders through their purchasing office or use their purchasing card for purchase/payment as authorized or agreed upon between the provider and the individual entity. The Owner accepts no liability for payment of orders placed by other participating jurisdictions that choose to piggy-back on our solicitation. Orders placed by participating jurisdictions under the terms of this solicitation will indicate their specific delivery and invoicing instructions.

2.43. Definitions:

- 2.43.1. "Offeror" and/or "Proposer" refers to the person or persons legally authorized by the Consultant to make an offer and/or submit a response (fee) proposal in response to the Owner's RFP.
- 2.43.2. The term "Services" includes all labor, materials, equipment, and/or services necessary to produce the requirements of the Contract Documents.
- 2.43.3. "Firm" is the person, organization, firm or consultant identified as such in the Agreement and is referred to throughout the Contract Documents. The term Firm means the Firm or his authorized representative. The Firm shall carefully study and compare the General Contract Conditions of the Contract, Specification and Drawings, Scope of Services, Addenda and Modifications and shall at once report to the Owner any error, inconsistency or omission he may discover. Firm shall not be liable to the Owner for any damage resulting from such errors, inconsistencies or omissions. The Firm shall not commence services without clarifying Drawings, Specifications, or Interpretations.
- 2.43.4. "Sub-Contractor" is a person or organization who has a direct contract with the Firm to perform any of the services at the site. The term Sub-Contractor is referred to throughout the contract documents and means a Sub-Contractor or his authorized representative.

2.44. Public Disclosure Record: If the Proposer has knowledge of their employee(s) or sub-proposers having an immediate family relationship with an Owner employee or elected official, the proposer must provide the Purchasing Representative with the name(s) of these individuals. These individuals are required to file an acceptable "Public Disclosure Record", a statement of financial interest, before conducting business with the Owner.

SECTION 3.0: INSURANCE REQUIREMENTS

3.1 Insurance Requirements: The selected Firm agrees to procure and maintain, at its own cost, policy(s) of insurance sufficient to insure against all liability, claims, demands, and other obligations assumed by the Firm pursuant to this Section. Such insurance shall be in addition to any other insurance requirements imposed by this Contract or by law. The Firm shall not be relieved of any liability, claims, demands, or other obligations assumed pursuant

to this Section by reason of its failure to procure or maintain insurance in sufficient amounts, durations, or types.

Firm shall procure and maintain and, if applicable, shall cause any Sub-Contractor of the Firm to procure and maintain insurance coverage listed below. Such coverage shall be procured and maintained with forms and insurers acceptable to The Owner. All coverage shall be continuously maintained to cover all liability, claims, demands, and other obligations assumed by the Firm pursuant to this Section. In the case of any claims-made policy, the necessary retroactive dates and extended reporting periods shall be procured to maintain such continuous coverage. Minimum coverage limits shall be as indicated below unless specified otherwise in the Special Conditions:

(a) Worker Compensation: Firm shall comply with all State of Colorado Regulations concerning Workers' Compensation insurance coverage.

(b) General Liability insurance with minimum combined single limits of:

ONE MILLION DOLLARS (\$1,000,000) each occurrence and
ONE MILLION DOLLARS (\$1,000,000) per job aggregate.

The policy shall be applicable to all premises, products and completed operations. The policy shall include coverage for bodily injury, broad form property damage (including completed operations), personal injury (including coverage for contractual and employee acts), blanket contractual, products, and completed operations. The policy shall include coverage for explosion, collapse, and underground (XCU) hazards. The policy shall contain a severability of interests provision.

(c) Comprehensive Automobile Liability insurance with minimum combined single limits for bodily injury and property damage of not less than:

ONE MILLION DOLLARS (\$1,000,000) each occurrence and
ONE MILLION DOLLARS (\$1,000,000) aggregate

(d) Professional Liability & Errors and Omissions Insurance policy with a minimum of:

ONE MILLION DOLLARS (\$1,000,000) per claim

This policy shall provide coverage to protect the Firm against liability incurred as a result of the professional services performed as a result of responding to this Solicitation.

With respect to each of Consultant's owned, hired, or non-owned vehicles assigned to be used in performance of the Services. The policy shall contain a severability of interests provision.

3.2 Additional Insured Endorsement: The policies required by paragraphs (b), and (c) above shall be endorsed to include the Owner and the Owner's officers and employees as additional insureds. Every policy required above shall be primary insurance, and any insurance carried by the Owner, its officers, or its employees, or carried by or provided through any insurance pool of the Owner, shall be excess and not contributory insurance to

that provided by Firm. The Firm shall be solely responsible for any deductible losses under any policy required above.

SECTION 4.0: SPECIFICATIONS/SCOPE OF SERVICES

General/Background: The City of Grand Junction and Mesa County jointly own the Persigo Wash Wastewater Treatment Plant (WWTP). The Persigo WWTP is rated at 12.5 million gallons per day and is located at 2145 River Road in Grand Junction Colorado. The treatment process consists of step screens, grit removal, primary clarification, a primary effluent pump station, primary effluent flow equalization basins, secondary aeration basins, secondary clarification, and ultraviolet disinfection. The treated wastewater is then discharged to the Colorado River via an effluent diffuser. For solids handling, primary sludge is anaerobically digested in two anaerobic digesters and the waste-activated sludge is aerobically digested. Both sludge streams are comingled in a blending tank prior to dewatering with belt filter presses. Biogas produced from anaerobic digestion is captured and treated in a CNG skid so that it can be beneficially used as vehicle fuel. Reference attached separate flow description and diagram.

The plant was designed by Henningson, Durham & Richardson Consultants (1980) out of Denver, Colorado. Construction began in 1982 and the facility was put into service in January 1984. The facility design remains mostly unchanged with only minor modifications and standard equipment replaced due to deterioration and wear. The facility is now over 35 years old and although all mechanical equipment has been maintained and replaced as needed, the buildings are in need of structural evaluation due to deterioration of concrete and steel. Some of the deterioration is due to Hydrogen Sulfide (H₂S) corrosion which is an issue in most waste water facilities. In addition, the facility lies near the Colorado River in an area with a high ground water table. The result is concrete and steel degradation seen in several locations; mostly in flat concrete slabs for floors, but also in walls and a few cracks in the ceilings. In addition, several sections of pump piping continue to deteriorate by erosion from pumpage. There are several distresses observed as listed below (the list is not all-inclusive):

- Cracking of building slabs / foundation floors with possible upward movement of slabs
- Staining and deterioration of concrete walls supporting the Primary Clarifiers
- Hairline cracks in concrete walls with possible water pressure from the exterior of building
- Stress cracks in concrete beams and ceilings around roof openings
- Exterior deterioration of concrete walls
- Delamination of concrete wall at the top of the anaerobic digester
- Deterioration of the steel roof in the south anaerobic digester

There are various possible causes for these distresses, and the City is concerned with the stability of the structures at the present time. In-depth investigation should be conducted to reveal the source of the distresses, prevent future propagation of the distresses, and develop methods to repair or replace the structures. This project intends to improve the stability of the structures and reduce long-term maintenance of the buildings. The purpose of this study is to assess the status of the concrete and structural steel condition in key locations identified in the facility using the latest technologies and application of the latest engineering design standards to ensure continued integrity.

The structural evaluation of the facilities will need to consider:

- Staff safety and health.
- Asset Life Cycle, age of assets, present design and projected life
- Hydrogen Sulfide corrosion
- Ground soils and ground water levels
- Future plant modification plans including replacement of aeration blowers with more energy-efficient turbo blowers.

Project Objectives:

The objective of this project is to perform an engineering investigation that will quantify the condition of facility concrete & structural steel and then identify and evaluate alternatives for repair and replacement to provide continued reliable operation of the Persigo WWTP.

The objectives of this project are:

- Perform a Geotechnical Investigation to establish the existing soil conditions and base ground water levels at the Persigo Wastewater Treatment Plant.
- Inspect the current conditions of the concrete structures at the Persigo Wastewater Treatment Plant utilizing Non-Destructive Testing (NDT) and visual inspection to identify areas of concrete and steel distress;
 - Determine the cause(s) of the distress at each area.
 - Evaluate the need to repair or replace the concrete and reinforcing steel.
- Inspect the current condition of two pump systems; inlet and discharge piping utilizing Non-Destructive Testing (NDT) and visual inspection to identify areas of wear and thinning.
 - Evaluate the need to repair, replace or redesign pipe configuration or materials at each location.
- Develop a report based on these findings to deliver to the City for review.

Areas of Concern (but are not limited to):

4.2.1 Area 1: Raw Sewage Pump Station; concrete floor and pump piping

4.2.2 Area 2: Primary Clarifier; concrete floor

4.2.3 Area 3: Secondary Aeration Basin Gallery (blower room); concrete floor & ceiling, pump piping

4.2.4 Area 4: Aerobic Digester (& Sludge Presses); concrete floor

4.2.5 Area 5: Anaerobic Digester (tanks with concrete/steel covers); tanks walls and concrete & steel covers

4.2. Special Conditions/Provisions:

4.2.1 Price/Fees: Project pricing shall be all inclusive, to include, but not be limited to: labor, materials, equipment, travel, design, drawings, engineering work, shipping/freight, licenses, permits, fees, etc.

Provide a not to exceed cost using Solicitation Response Form found in Section 7, accompanied by a complete list of costs breakdown.

All fees will be considered by the Owner to be negotiable.

4.2.2 Proposed Schedule

1. May 24, 2019, City advertises a RFP for Consultant selection to perform a structural engineering investigation that will assess and quantify the condition of facility concrete & structural steel and then identify and evaluate alternatives for repair and replacement design (Phase 1). Final Report with Final basis of design repair or remediation report for preferred alternative with specifications, construction cost estimates & conceptual design drawings completed by the end of December 2019.
2. Winter of 2020, City advertises a RFP for Consultant selection to design and produce a construction package with plans and specifications that will address repair and replacement design alternatives within the Persigo WWTP (Phase 2). Construction plans and specifications completed by the end of June 2020. (Not Part of this current RFP)
 - a. June 2020, Task 2 of this RFP complete in preparation for 2021 budget setting process.
3. Spring of 2021, City advertises an IFB for Contractor selection to build and restore per construction package from consultant that will address concrete and structural steel deterioration within the Persigo WWTP (Phase 3). (Not Part of this current RFP)
4. Construction of improvements to Persigo Sewer System begins in Summer 2021. (Not Part of this current RFP)

Note: Based on the findings of the 2019 study (Phase 1) the City has additional budgeted funding for concrete repairs that can be used to address deficiencies if they are minor in scope. Major issues identified during the 2019 study that would require a significant capital and depending on the scope of needs would require reprioritizing or requesting additional budget amendments in FY2020 or placed in Project Phase 2/3 as needed.

4.3. Specifications/Scope of Services:

Consultant Responsibilities: The scope of services shall include the following:

Task 1: Project Management and Coordination

Project Initiation: Develop and prepare a project schedule to meet the proposed project time frame and complete assigned tasks. The schedule shall show individual tasks described in the scope of work for the project and identify key milestone dates. The Consultant Project Manager (Consultant PM) shall maintain and update the project schedule as the work proceeds. Consultant PM will be assigned to this project for the duration of the work.

Project Team Coordination: The City PM and the Consultant PM shall maintain ongoing communication about the project on a frequent and regular basis. Consultant PM shall provide:

- Copies of pertinent written communications, including electronic (email) correspondence
- Early identification of potential problems

Progress Meetings: The City and Consultant shall meet, either in person or by telephone conference calls, at regularly scheduled Project Working Group Meetings held at approximate two-week intervals throughout the project. Meetings shall include consultant PM, City PM, Wastewater Services Manager, and other stakeholders as necessary. The Project Working Group Meetings shall be used to coordinate the work effort and resolve any outstanding issues or problems. The meetings shall focus on the following topics:

- Activities completed since last meeting
- Problems encountered or anticipated
- Late activities/activities slipping behind schedule
- Solutions for unresolved or newly identified problems
- Schedule of upcoming activities
- Information on items required.

Communication and Documentation: The Consultant PM shall prepare a written summary report of the general discussions held including all action items assigned. This scope assumes six (6) Project Working Group Meetings via conference call.

Reporting Requirements:

- The Consultant PM shall provide Bi-weekly status reports emailed to project team

The City and consultant will meet to discuss the draft and final report results and recommended repairs and replacement, deliverables for Task 3.

Task 2: Collect, Review, and Organize Existing Information

Geotechnical Investigation. Perform a Geotechnical Investigation to establish soil conditions and water table elevation in the vicinity of the Persigo Wastewater Treatment Plant buildings of concern. The final report shall include soil borings with logs, piezometers for ground water levels, blow counts, and soil moistures for the locations decided upon during preliminary meetings.

Site Inspection. Collect, review, and organize data needed to understand, and to the extent possible quantify, where structural issues are located and determine corrective actions to remediate and repair. The consultant shall visit the site to visually inspect the existing buildings for distress following ACI 201.1R – Guide for Conducting a Visual Inspection of Concrete in Service. Any areas of concern for internal concrete and reinforcement distress shall be investigated using non-destructive testing following ACI 228.2R – Nondestructive Test Methods for Evaluation of Concrete in Structures.

Section 4 of ASCE 11-99 provides guidance and evaluation methods for steel structures. Electric Power Research Institute (EPRI) NP-5380, "Visual Weld Acceptance Criteria," provides additional guidance and evaluation methods for structural welds.

Review documents and information including but not limited to:

- Structural steel, concrete foundation and piping drawings. 1980 Original prints from design contractor.
- Interviews with Persigo staff.
- Operating data including hydrogen sulfide atmospheric measurements in headworks and primary clarifiers.

If the consultant identifies any data gaps, provide recommendations for additional data collection to support study and/or design phases of the project.

Deliverables:

1. Geotechnical Investigation Report with Boring Logs and other test results.
2. Technical memorandum summarizing nondestructive testing (NdT), drilling or boring samples requested, additional visual analysis, and laboratory testing to complete understanding of deterioration at the Persigo WWTP.
3. Tentative Schedule for efficient data gathering and testing to obtain technical data for analysis.

Task 3: Data Analysis and Remediation & Repair Strategies

Cause of Distress. During and after inspection, the consultant shall identify possible causes of the concrete and steel distress based on existing site conditions. It is also important to fully understand the original design intent of a distressed structure before attempting repair.

The extent and severity of the distress shall also be evaluated. The intent of this step is to determine how much concrete or steel has been distressed, and how this distress will affect serviceability of the structure (how long, how wide, how deep, and how much of the structure is involved). This activity can include predicting how quickly the distress may increase and how the distress may progress.

From the information in Task 2, the Consultant shall conduct an analysis that will develop a basis of design and repair, identify and evaluate alternatives, and recommend a preferred alternative or combination of alternatives including budgetary estimates for each area of repair identified. Task 3 shall include but not be limited to:

- ❖ The consultant shall create a report outlining the recommendations to repair the distressed concrete and reinforcement or structural steel in the existing buildings and structures at the Persigo Wastewater Treatment Plant based on the site investigation and the possible causes of distress. The consultant's recommendations shall be based on previous experience with similar structures, and shall distinguish between the following recommendations:
 - No repair needed (cosmetic damage only)
 - Proper maintenance
 - Repair of distressed area

- Replacement of a majority of structure
- ❖ Prepare a preliminary basis of design report for the alternative evaluation
- ❖ Identify and evaluate alternatives
- ❖ Develop conceptual designs of alternatives
- ❖ Develop life cycle cost estimates for each of the alternatives (capital and operating)
- ❖ Develop budgetary costs for each repair alternative and replacement based on local construction fees at the present time.
- ❖ Prepare and facilitate an evaluation workshop with City Staff
- ❖ Finalize basis of design report for the preferred alternatives

Deliverables:

1. Draft and final basis of design repair or remediation report for preferred alternative.
 1. Based on the findings of the 2019 study (Phase 1) the City has additional budgeted funding for concrete and structural repairs that can be used to address deficiencies if they are minor in scope. As communicated within the report recommendation or by addendum to this RFP, additional design work may be requested to facilitate immediate remediation.

4.4. Non-Mandatory Site Visit Meeting: Prospective offerors are encouraged to attend a non-mandatory site visit meeting on June 4, 2019 at 10:00 am. Meeting location shall be in the Persigo Wastewater Treatment Plant Conference Room, located at 2145 River Road, Grand Junction, CO. The purpose of this visit will be to inspect and to clarify the contents of this Invitation for Bids (IFB).

4.5. Attached Documents:

- Attach 1; Persigo Flow, Hydraulic & Plot Diagrams
- Attach 2; Persigo WWTP Flow Description
- Attach 3; Persigo Concrete Assessment Picture File
- Attach 4: Hydrogen sulfide H₂S atmospheric measurements (in headworks and primary clarifiers)
- Attach 5: 12 Hour H₂S Meter reading from the headworks for the last 30 days plotted against inflow rate

4.6. RFP Tentative Time Schedule:

- | | |
|---|-------------------|
| • Request for Proposal available: | May 24, 2019 |
| • Non-Mandatory Site Visit Meeting | June 5, 2019 |
| • Inquiry deadline, no questions after this date: | June 12, 2019 |
| • Addendum Posted: | June 14, 2019 |
| • Submittal deadline for proposals: | June 21, 2019 |
| • Owner evaluation of proposals: | June 24 -28, 2019 |
| • Interviews (if required) | July 9, 2019 |
| • Final selection: | July 12, 2019 |
| • Contract execution: | July 19, 2019 |
| • Work begins no later than: | July 25, 2019 |

4.7. Questions Regarding Scope of Services:

Duane Hoff Jr., Senior Buyer
duaneh@gjcity.org

SECTION 5.0: PREPARATION AND SUBMITTAL OF PROPOSALS

Submission: *Each proposal shall be submitted in electronic format only, and only through the Rocky Mountain E-Purchasing website (<https://www.rockymountainbidsystem.com/default.asp>). This site offers both “free” and “paying” registration options that allow for full access of the Owner’s documents and for electronic submission of proposals. (Note: “free” registration may take up to 24 hours to process. Please Plan accordingly.)* Please view our “**Electronic Vendor Registration Guide**” at <http://www.gjcity.org/BidOpenings.aspx> for details. (Purchasing Representative does not have access or control of the vendor side of RMEPS. If website or other problems arise during response submission, vendor **MUST** contact RMEPS to resolve issue prior to the response deadline **800-835-4603**). For proper comparison and evaluation, the City requests that proposals be formatted as directed in Section 5.0 “Preparation and Submittal of Proposals.” Offerors are required to indicate their interest in this Project, show their specific experience and address their capability to perform the Scope of Services in the Time Schedule as set forth herein. For proper comparison and evaluation, the Owner requires that proposals be formatted **A to F**:

- A. Cover Letter:** Cover letter shall be provided which explains the Firm's interest in the project. The letter shall contain the name/address/phone number/email of the person who will serve as the firm's principal contact person with Owner's Contract Administrator and shall identify individual(s) who will be authorized to make presentations on behalf of the firm. The statement shall bear the signature of the person having proper authority to make formal commitments on behalf of the firm. By submitting a response to this solicitation the Firm agrees to all requirements herein.
- B. Qualifications/Experience/Credentials:** Proposers shall provide their qualifications for consideration as a contract provider to the City of Grand Junction and include prior experience in similar projects.
- C. Strategy and Implementation Plan:** Describe your (the firm's) interpretation of the Owner's objectives with regard to this RFP. Describe the proposed strategy and/or plan for achieving the objectives of this RFP. The Firm may utilize a written narrative or any other printed technique to demonstrate their ability to satisfy the Scope of Services. The narrative should describe a logical progression of tasks and efforts starting with the initial steps or tasks to be accomplished and continuing until all proposed tasks are fully described and the RFP objectives are accomplished. Include a **time schedule** for completion of your firm's implementation plan and an estimate of time commitments from Owner staff.
- D. References:** A minimum of three (3) **references** with name, address, telephone number, and email address that can attest to your experience in projects of similar scope and size.
- E. Fee Proposal:** Provide a not to exceed cost using Solicitation Response Form found in Section 7, accompanied by a complete list of costs breakdown.
- F. Additional Data (optional):** Provide any additional information that will aid in evaluation of your qualifications with respect to this project.

SECTION 6.0: EVALUATION CRITERIA AND FACTORS

- 6.1 Evaluation:** An evaluation team shall review all responses and select the proposal or proposals that best demonstrate the capability in all aspects to perform the scope of services and possess the integrity and reliability that will ensure good faith performance.
- 6.2 Intent:** Only respondents who meet the qualification criteria will be considered. Therefore, it is imperative that the submitted proposal clearly indicate the firm's ability to provide the services described herein.

Submittal evaluations will be done in accordance with the criteria and procedure defined herein. The Owner reserves the right to reject any and all portions of proposals and take into consideration past performance. The following parameters will be used to evaluate the submittals (in no particular order of priority):

- Responsiveness of submittal to the RFP

- Understanding of the project and the objectives
- Experience/Demonstrated capability
- Strategy & Implementation Plan
- References
- Fees

Owner also reserves the right to take into consideration past performance of previous awards/contracts with the Owner of any vendor, Firm, supplier, or service provider in determining final award(s).

The Owner will undertake negotiations with the top rated firm and will not negotiate with lower rated firms unless negotiations with higher rated firms have been unsuccessful and terminated.

6.3 Oral Interviews (if required): The Owner reserves the right to invite the most qualified rated proposer(s) to participate in oral interviews, if needed.

6.4 Award: Firms shall be ranked or disqualified based on the criteria listed in Section 6.2. The Owner reserves the right to consider all of the information submitted and/or oral presentations, if required, in selecting the project Firm.

SECTION 7.0: SOLICITATION RESPONSE FORM

RFP-4653-19-DH Professional Services for Persigo Wastewater Treatment Plant Structural Assessment

Offeror must submit entire Form completed, dated and signed.

- 1) **Not to exceed cost to provide design services for the Professional Services for Persigo Treatment Plant Structural Assessment for labor, materials, equipment, travel, design, drawings, engineering work, shipping/freight, licenses, permits, fees, etc. per specifications:**

NOT TO EXCEED COST \$ _____

WRITTEN: _____ dollars.

The Owner reserves the right to accept any portion of the services to be performed at its discretion

The undersigned has thoroughly examined the entire Request for Proposals and therefore submits the proposal and schedule of fees and services attached hereto.

This offer is firm and irrevocable for sixty (60) days after the time and date set for receipt of proposals.

The undersigned Offeror agrees to provide services and products in accordance with the terms and conditions contained in this Request for Proposal and as described in the Offeror's proposal attached hereto; as accepted by the Owner.

Prices in the proposal have not knowingly been disclosed with another provider and will not be prior to award.

- Prices in this proposal have been arrived at independently, without consultation, communication or agreement for the purpose of restricting competition.
- No attempt has been made nor will be to induce any other person or firm to submit a proposal for the purpose of restricting competition.
- The individual signing this proposal certifies they are a legal agent of the offeror, authorized to represent the offeror and is legally responsible for the offer with regard to supporting documentation and prices provided.
- Direct purchases by the City of Grand Junction are tax exempt from Colorado Sales or Use Tax. Tax exempt No. 98-903544. The undersigned certifies that no Federal, State, County or Municipal tax will be added to the above quoted prices.
- City of Grand Junction payment terms shall be Net 30 days.
- Prompt payment discount of _____ percent of the net dollar will be offered to the Owner if the invoice is paid within _____ days after the receipt of the invoice.

RECEIPT OF ADDENDA: the undersigned Firm acknowledges receipt of Addenda to the Solicitation, Specifications, and other Contract Documents. State number of Addenda received: _____

It is the responsibility of the Proposer to ensure all Addenda have been received and acknowledged.

Company Name – (Typed or Printed)

Authorized Agent – (Typed or Printed)

Authorized Agent Signature

Phone Number

Address of Offeror

E-mail Address of Agent

City, State, and Zip Code

Date

FLOW EQUALIZATION BASINS
VOLUME - 11.0 MG
EIGHT - SURFACE AERATORS (20 HP EACH)

AERATION BASIN INFLUENT
DESIGN FLOW - 12.5 MGD
PEAK FLOW 16.0 MGD Δ
BOD₅ - 18,252 LB/DAY
TSS - 10,383 LB/DAY

AERATION BASINS
FOUR (4) UNITS
VOLUME - 3,125 MGD
DETENTION TIME - 6.2 HRS
SWD - 18' 0"
LOAD FACTOR 46³ BOD/1000 CF
AIR REQUIREMENTS - 18,252 LB/DAY
DESIGN
82 SUBMERGED TURBINE AERATORS

FINAL CLARIFIER Δ
SWD - 14' 0"
SOR (NET) 647 GPD/SF
WEIR OVERFLOW RATE
3550 GPD/LF
DETENTION TIME - 4.2 HRS

CHLORINE CONTACT
BASIN
TWO (2) BASINS
VOLUME 520,000 CF
SWD 12' 0"
DETENTION TIME
60 MIN @
DESIGN
CHLORINE DOSEAGE
5 MG/L (570 LB/DAY)
SULFUR DIOXIDE DOSEAGE
1 MG/L (100 LB/DAY)

FINAL EFFLUENT
BOD₅ - 30 MG/L (3120 LB/DAY)
TSS - 30 MG/L (3120 LB/DAY)

RAW SEWAGE INFLUENT
DESIGN FLOW - 12.5 MGD
MAX DAY FLOW - 21.25 MGD (DRY WEATHER)
MAX DAY FLOW - 40.0 MGD, (WET WEATHER)
BOD₅ 254 MG/L (26,400 LB/DAY)
TSS - 225 MG/L (23,400 LB/DAY)

PRIMARY CLARIFIER INFLUENT
BOD₅ 28,000 LB/DAY (TOTAL)
TSS - 25,900 LB/DAY (TOTAL)

PRIMARY CLARIFIER EFFLUENT
BOD₅ - 18,252 LB/DAY
TSS - 10,383 LB/DAY

PRIMARY CLARIFIER
TWO (2) 115' 0" DIA
SWD 8' 0"
SOR (NET) - 653 GPD/SF
WEIR OVER FLOW RATE
9600 GPD/LF
DETENTION TIME - 3.11 HRS

RAW SEWAGE PUMP STATION
ONE (1) - 17.5 MGD VARIABLE SPEED PUMP
ONE (1) - 10.0 MGD VARIABLE SPEED PUMP
TWO (2) - 10.0 MGD CONSTANT SPEED PUMP

RAW PRIMARY SLUDGE
97,345 GPD
TSS - 15,573 LB/DAY
8% SOLIDS

FLOW METERING
4'-0" PARSHALL FLUME
MIN FLOW - 0.82 MGD
MAX FLOW - 44.0 MGD

INFLUENT WASTE
FLOW - 150,000 GPD
BOD₅ - 1,600 LB/DAY
TSS - 2500 LB/DAY

SCREENING
TWO (2) 4'-0" MECHANICALLY
CLEANED BAR SCREENS

GRIT REMOVAL
TWO (2) CIRCULAR UNITS
20'-0" DIA
SGR - 4000 GPD/SF
65 MESH REMOVAL

N. PLANT
WASTE
PUMP STATION

SCUM TO TRUCK
LOADING
STATION

WASTE ACTIVATED SLUDGE
122,865 GPD
TSS - 10,247 LB/DAY @ 1% SOLIDS

FILTRATE & SUPERNATANT
144,740 GPD
TSS 2230 LB/DAY

SLUDGE PROCESSING UNIT
FOUR (4) - 7 METER BELT PRESSES
DEWATERED SLUDGE TO LANDFILL
17,300 LB/DAY @ 20% SOLIDS

DIGESTED SLUDGE
21,745 GPD @ 4% SOLIDS
TSS 9,890 LB/DAY

ANAEROBIC DIGESTERS
ONE (1) 60' DIA PRIMARY DIGESTER
VOLUME 79,150 CF
SWD - 20'
DETENTION TIME - 15 DAYS
ONE (1) - 60' DIAMETER SECONDARY DIGESTER
VOLUME - 79,150 CF
SWD - 20'
DETENTION TIME - 15 DAYS

SUPERNATANT
PUMP STATION

SUPERNATANT
BOD₅ - 267 LB/DAY
TSS - 700 LB/DAY
FLOW - 5000 GPD

No 1
No 2
AEROBIC DIGESTERS
FOUR (4) AEROBIC DIGESTERS
VOLUME = 251,100 CF
DETENTION TIME 13.5 DAYS
OXYGEN REQUIREMENTS = 6150 LB/DAY
No 3
No 4
AEROBIC DIGESTER SLUDGE
53,935 GPD @ 2% SOLIDS
9930 LB/DAY

GRAND JUNCTION / MESA COUNTY,
COLORADO
PERRIGO WASH
WASTEWATER TREATMENT
PLANT
SECTION I GENERAL

PLANT PROCESS
FLOW SCHEMATIC

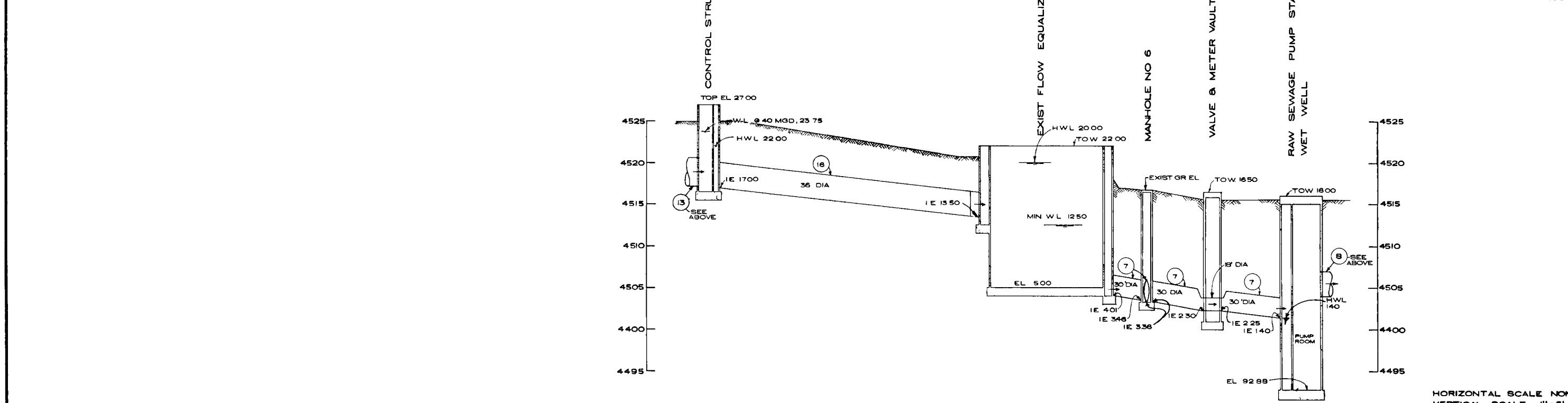
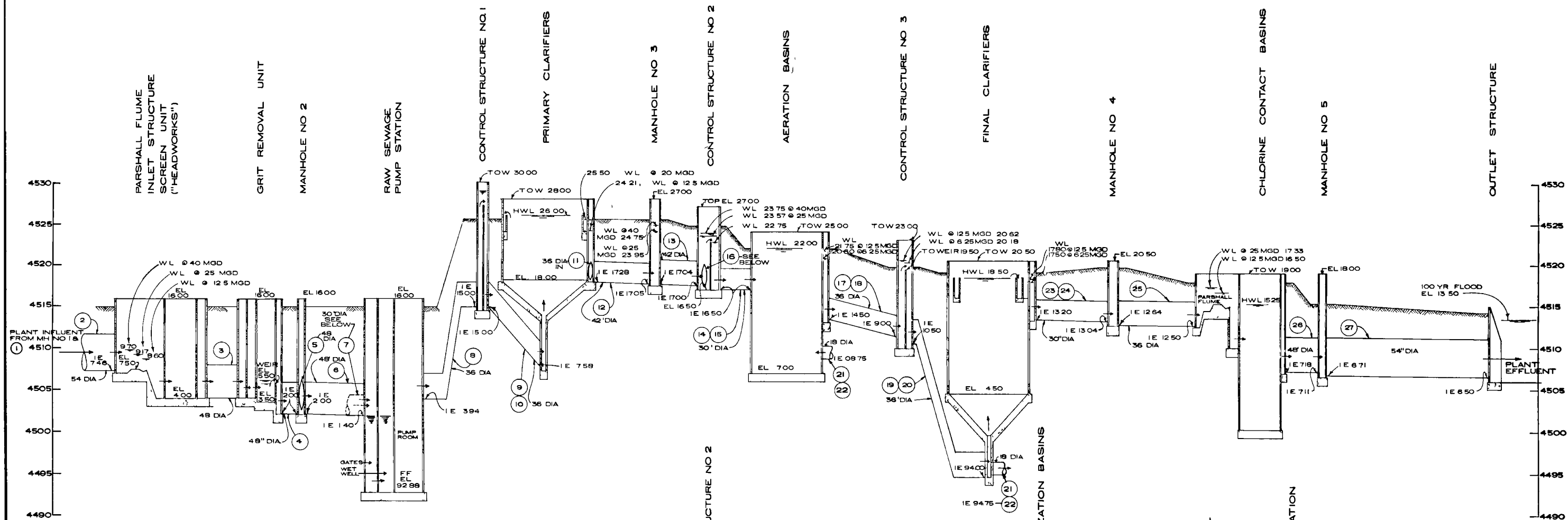
HENDERSON, DURHAM & RICHARDSON, INC.
ENGINEERS PLANNERS CONSULTANTS
DENVER COLORADO GRAND JUNCTION COLORADO



AS RECORDED
FROM INFORMATION
PROVIDED BY THE
CONTRACTORS
DATE - 11/1/80

DATE	BY	REVISION	MADE	APPROVED
11/1/80	AS	REVISED		
3/18/81		AEROBIC DIGESTER NO 4 ADDED & REVISIONS	DEC	PAH

734510
1-3



HORIZONTAL SCALE NONE
VERTICAL SCALE 1"=5'-0"

GRAND JUNCTION / MESA COUNTY,
COLORADO
**PERIGO WASH
WASTEWATER TREATMENT
PLANT**
SECTION I GENERAL
HYDRAULIC PROFILE

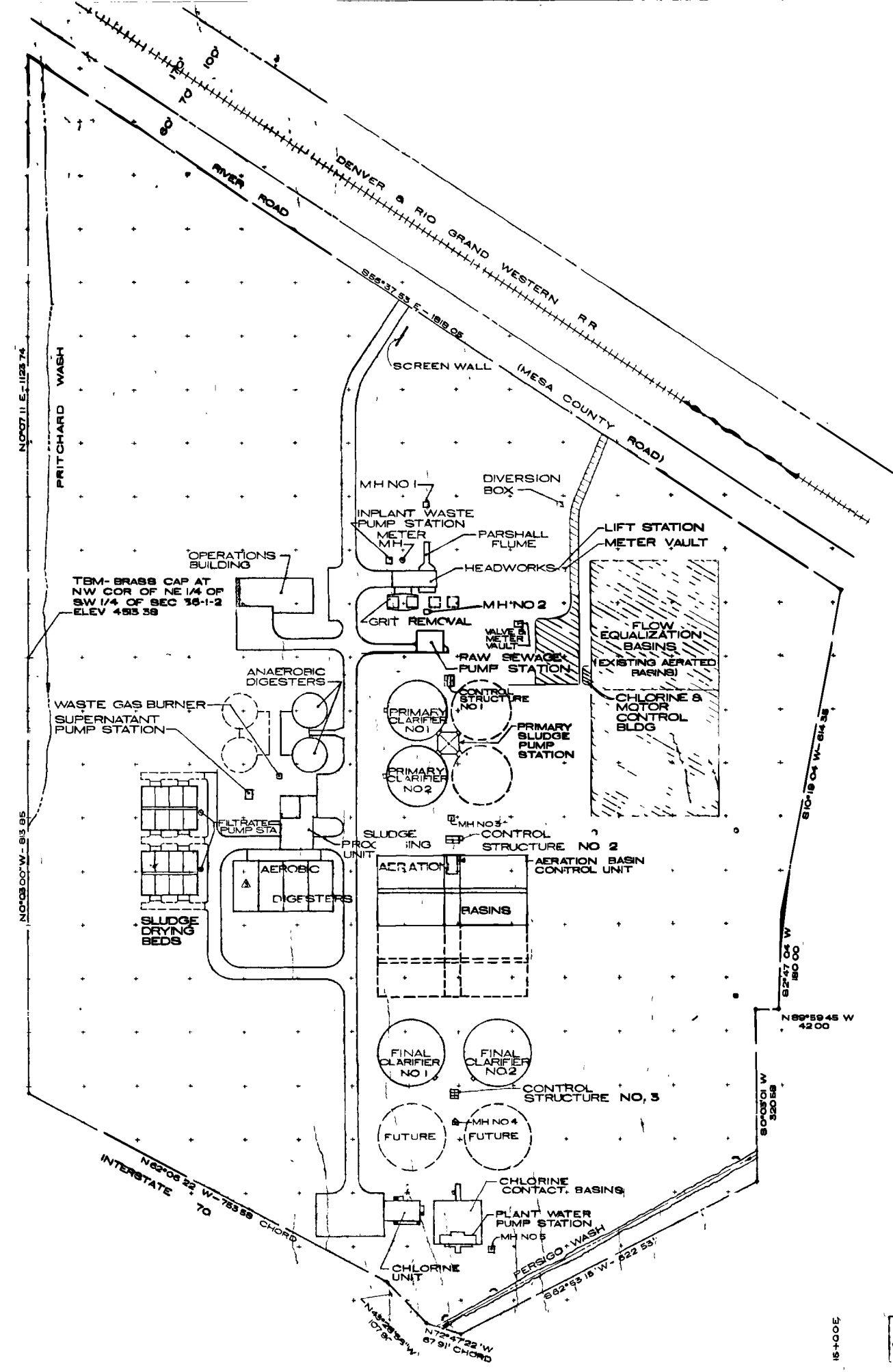


"AS RECORDED"
FROM INFORMATION
PROVIDED BY THE
CONTRACTOR
DATE 11/1/83

HINNINGSON, DURHAM & RICHARDSON, INC.
ENGINEERS PLANNERS CONSULTANTS
DENVER COLORADO GRAND JUNCTION COLORADO

NO.	DATE	DESCRIPTION	MADE	APPROVED	SHEET
1	11/1/83	As Built			1-4
2					
3					

11+00 N
10+00 N
9+00 N
8+00 N
7+00 N
6+00 N
5+00 N
4+00 N
3+00 N
2+00 N
1+00 N
0+00 N
1+00 S
2+00 S
3+00 S
4+00 S
5+00 S
6+00 S
7+00 S
8+00 S
9+00 S
10+00 S
11+00 S
12+00 S



100 0 100
SCALE IN FEET

- LEGEND**
- PROPOSED STRUCTURES & DRIVE
 - FUTURE STRUCTURES
 - EXISTING STRUCTURES & DRIVE
 - PROPERTY LINE
 - PROPOSED GRAVEL DRIVE (AT SLUDGE BEDS)
 - PROPOSED FENCE

6+00 E
1+00 E
2+00 E
3+00 E
4+00 E
5+00 E
6+00 E
7+00 E
8+00 E
9+00 E
10+00 E
11+00 E
12+00 E
13+00 E
14+00 E

AS RECORDED
FROM INFORMATION
PROVIDED BY THE
CONTRACTOR
DATE: 11/13/80



NO.	DATE	DESCRIPTION	BY	APPROVED
1	11-13-80	CHLORINE FACILITIES & SLUDGE BEDS		
2	11-13-80	RELOCATED PRIMARY & FINAL CLARIFIERS		
3	11-13-80	ADD AEROBIC DIGESTER & SLUDGE PROCESS ADD		

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**GRAND JUNCTION / MESA COUNTY,
COLORADO**

**PERSIGO WASH
WASTEWATER TREATMENT
PLANT**

SECTION II SITE WORK

OVERALL SITE PLAN

HEINERSON, DUBIAM & RICHARDSON, INC.
ENGINEERS PLANNERS CONSULTANTS
DENVER, COLORADO • GRAND JUNCTION, COLORADO

DESIGNED BY P. H. E. DRAWN BY J. H. E.
APPROVED BY HEINERSON, DUBIAM & RICHARDSON, INC. DATE 11/13/80

Persigo WasteWater Treatment Plant (WWTP) Flow Description

In the mid-1970s the City of Grand Junction and Mesa County recognized the need to upgrade the regions wastewater collection and treatment facilities to serve rapid population growth anticipated by the energy developments occurring at that time. The City and County joined forces to begin planning for a new wastewater treatment plant and interceptor sewers to convey wastewater to the new facilities which would ultimately replace the West Side plant and a number of small independent treatment plants. The phases of the wastewater program implemented by the City and County included:

- River Road Interceptor Sewer
- Independent Avenue Interceptor Sewer
- Paradise Hills Interceptor Sewer
- Tiara Rado and Goat Wash Interceptor Sewers
- Persigo Wastewater Treatment Plant

All phases of the program resulted in a cost of approximately \$28,000,000 of which 75% was paid for by Environmental Protection Agency grants. Additional phases of the wastewater program include a storm water separation study and reflect a continuing commitment by the City and County to enhance the quality of life in the Grand Valley.

The wastewater is transported through a 54-inch diameter interceptor sewer in River Road to the Persigo plant, a distance of approximately 5 miles.



In January of 1982 construction began on the Persigo Wastewater Treatment Plant and this facility was put into service in January of 1984.

Persigo WasteWater Treatment Plant (WWTP) Flow Description



Wastewater enters the Persigo plant at the Headworks through a parshall flume which meters the volume of wastes to be treated.



Persigo WasteWater Treatment Plant (WWTP) Flow Description



The wastewater then passes through mechanically cleaned bar screens which remove coarse solids such as rags and sticks. From the bar screens all flow passes through grit removal basins. From the grit removal basins all flow is pumped to two (2) primary clarifiers by the raw water pumps.



Persigo WasteWater Treatment Plant (WWTP) Flow Description



Each primary clarifier is 115 feet in diameter. Settleable wastewater solids are removed by these units by gravity settling. A scraper mechanism collects and moves the solids to the center of each clarifier where they are drawn off and pumped to anaerobic digesters for further processing.



Persigo WasteWater Treatment Plant (WWTP) Flow Description

From the primary clarifiers the wastewater flows to a diversion structure which normally diverts the flow to aeration basins. During storm flow periods the structure will also divert part of the flow to aerated flow equalization basins. The flow diverted to the flow equalization basins is returned and pumped through the treatment process during low flow periods. The main flow stream from the diversion structure enters the aeration basins which provide biological treatment of the wastewater under aerobic conditions. In this process biological microorganisms are produced and mixed with the wastewater. These microorganisms grow by using the organic as food and as the microorganisms grow they clump together to form an active mass of microbes called activated sludge. The wastewater flows continuously into the aeration basins where air is injected to supply oxygen needed for the microorganisms to grow and break down the organic matter.



From the aeration basins the wastewater flows to the final clarifiers.

Persigo WasteWater Treatment Plant (WWTP) Flow Description

The wastewater from the final clarifiers flows to ultraviolet (UV) disinfection where light is used for final treatment of the wastewater. The treated wastewater is then discharge to the Colorado River via an effluent diffuser.



Persigo WasteWater Treatment Plant (WWTP) Flow Description

The sludge processing systems for the plant include anaerobic digesters which provide biological treatment to decompose organic solids in an environment which is heated and operates in a state lacking oxygen. The process decomposes the organic solids and produces methane gas and carbon dioxide as byproducts along with a stable digested sludge product. The methane gas produced is used to heat the contents of the digesters and for building heat in the anaerobic digester complex. Excess biogas produced from anaerobic digestion is capture and treated in a CNG skid so that I can be beneficially used to fuel approximately 60 city vehicles.



Persigo WasteWater Treatment Plant (WWTP) Flow Description



The waste solids from the activated sludge system are pumped to aerobic digestion which is an extension or continuation of the activated sludge process. The waste solids are aerated for an extended period of time with similar micro organic activity as the activated sludge system. The process results in a stable microbial sludge mass relatively free of organic matter.



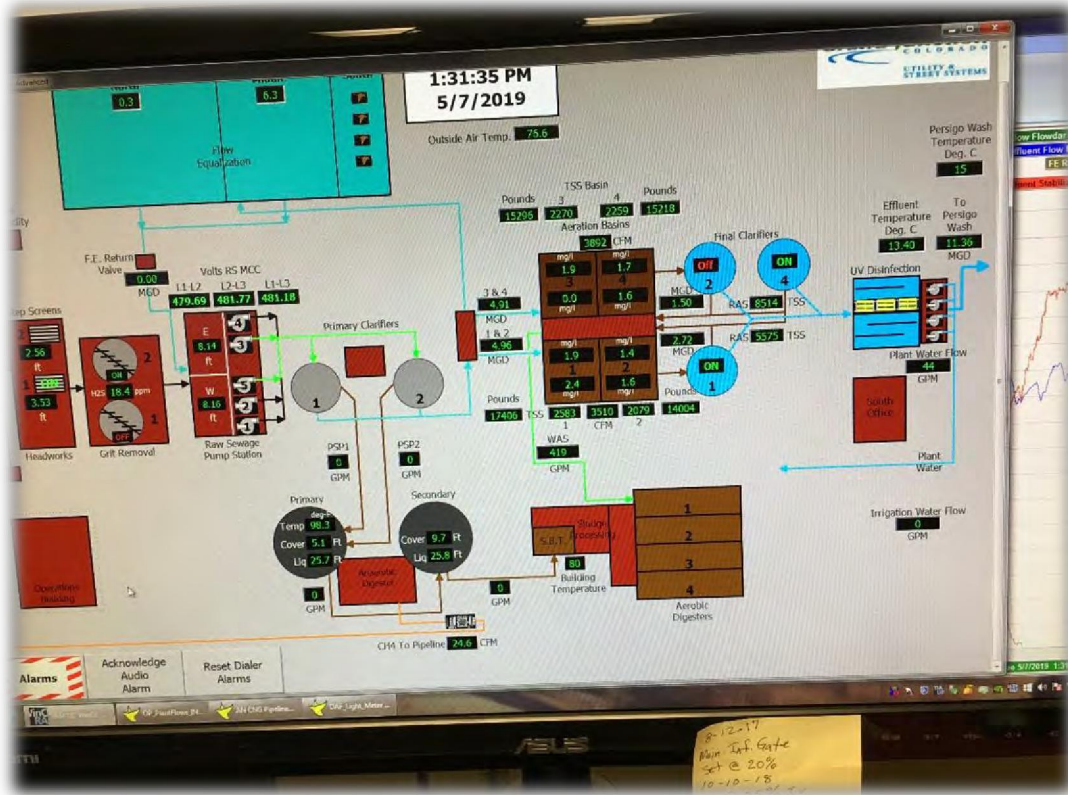
Persigo WasteWater Treatment Plant (WWTP) Flow Description

Disposal of digested sludge is accomplished by utilizing four belt presses for dewatering the sludge to dry cake using the pressure principal of "squeezing" the water out of the sludge. The dewatered sludge removed from the plant is hauled to the local landfill.



Persigo WasteWater Treatment Plant (WWTP) Flow Description

The plant control utilizes SCADA control from desktop computers in the main building control room with remote monitoring and alarm notification to operators via handhelds.



The plant is designed for an average flow of 12.5 MGD and a population of approximately 125,000. The plant was designed to be expanded to a 25 MGD plant. Other features of the plant include the use of solar panels on the Operations Building for building heating, the use of plant effluent for irrigation purposes, and odor control systems at selected areas in the plant.

Persigo WWTP Concrete Assessment Picture File



Picture 1, Grit Pump and Floor



Picture 2, Grit Pump Floor
May 8, 2019

Persigo WWTP Concrete Assessment Picture File



Picture 3, Raw Sewage Station Pump, Pipe and Floor



Picture 4, Raw Sewage Station Floor

Persigo WWTP Concrete Assessment Picture File



Picture 5, Raw Sewage Station Pump Inlet Pipe



Picture 6, Raw Sewage Station Pump Inlet Pipe

Persigo WWTP Concrete Assessment Picture File



Picture 7, Raw Sewage Station Pump Inlet Pipe Erosion on Elbow

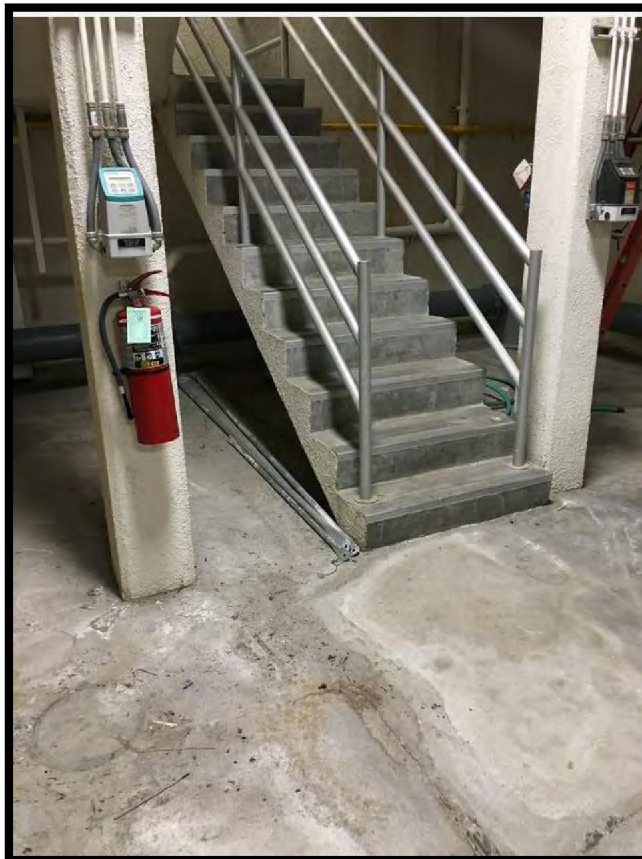


Picture 8, Primary Clarifier Wall and Roof

Persigo WWTP Concrete Assessment Picture File

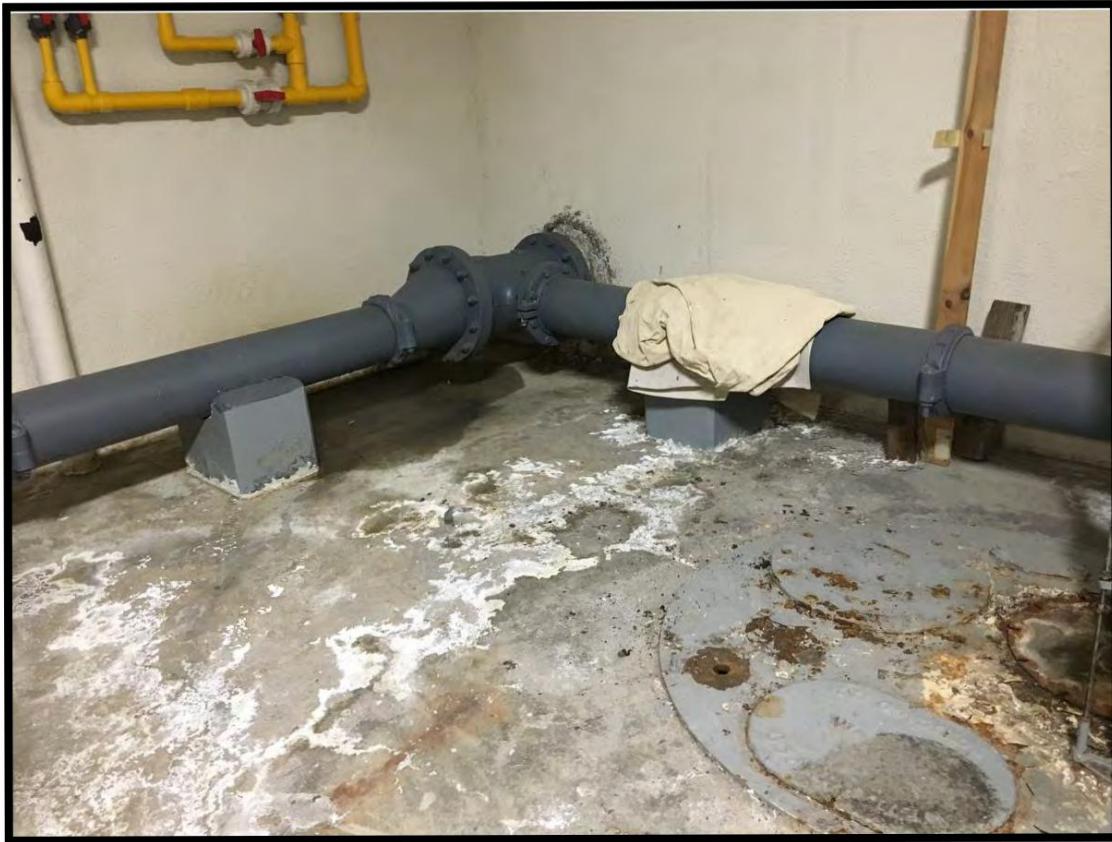


Picture 9, Aerobic Basin Basement Floor (Blowers)



Picture 10, Aerobic Basin Basement Stairs and Floor

Persigo WWTP Concrete Assessment Picture File

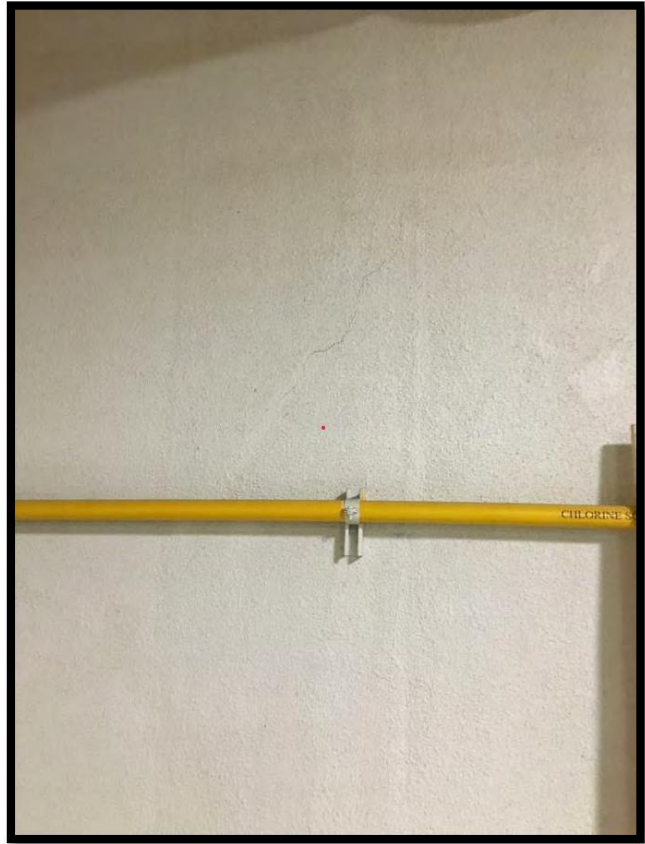
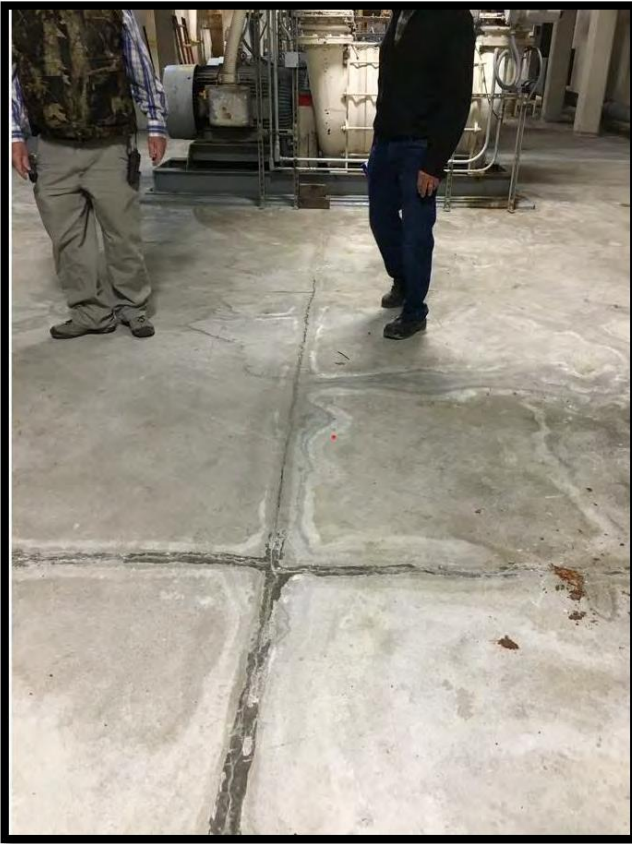


Picture 11, Aerobic Basin Floor and Piping



Picture 12, Aerobic Basin and Piping

Persigo WWTP Concrete Assessment Picture File

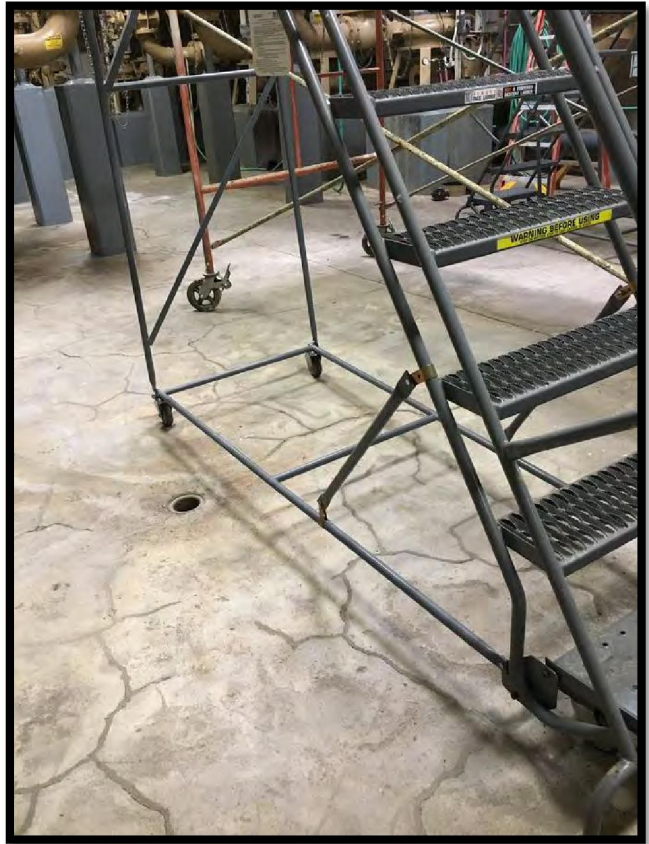


Picture 13 A&B, Aerobic Basin Basement Floor and Wall



Picture 14, Aerobic Basin Blowers

Persigo WWTP Concrete Assessment Picture File



Picture 15 A&B, Aerobic Basin Basement Floor

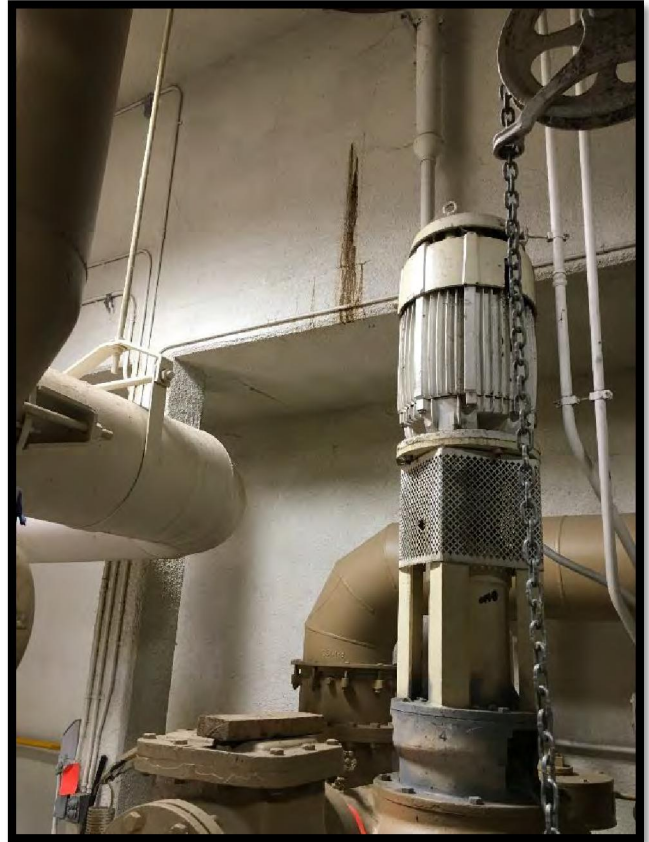
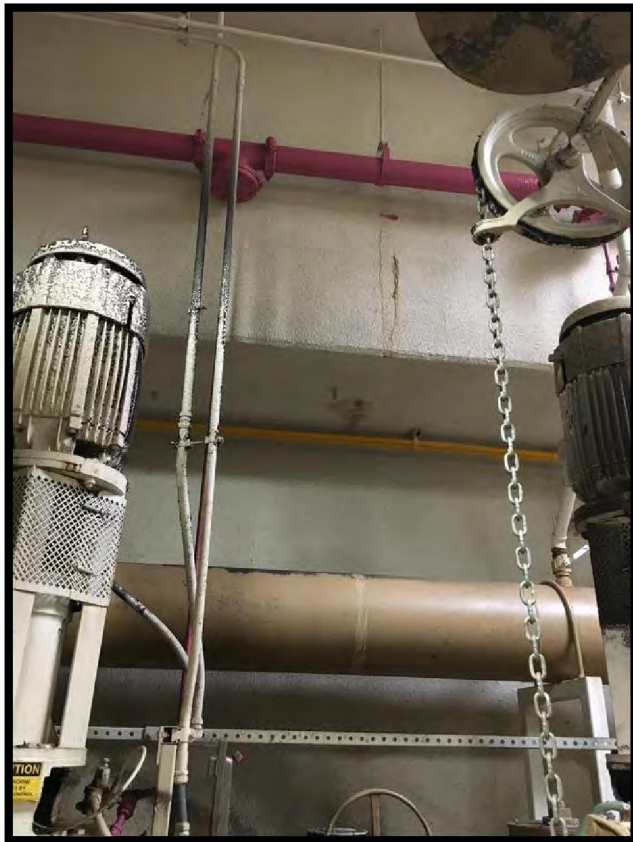


Picture 16, Aerobic Basin Basement Pump Pipe Erosion at Reducer Flange

Persigo WWTP Concrete Assessment Picture File

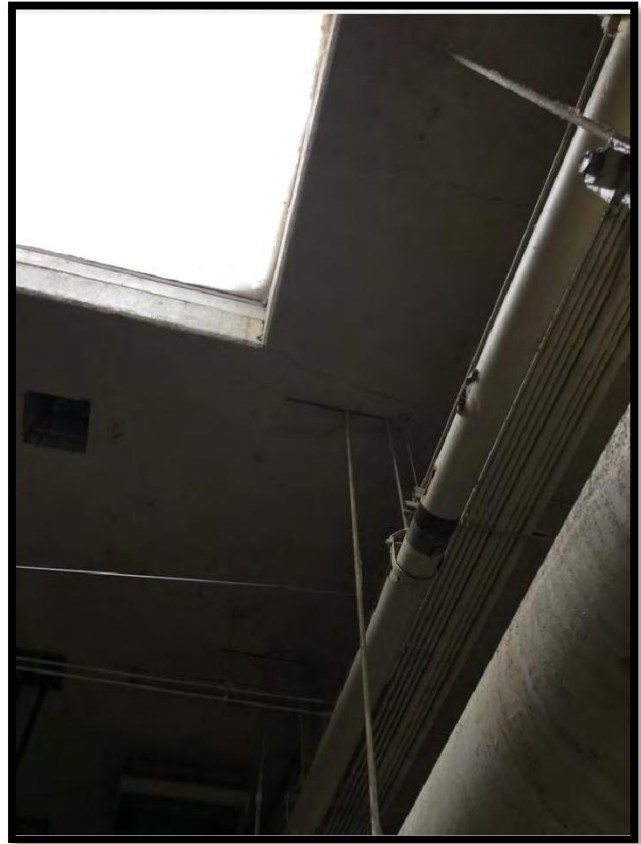


Picture 17, Aerobic Basin Basement Pump Pipe with spray from reducer leak



Picture 18 A & B, Aerobic Basin Basement Wall Crack

Persigo WWTP Concrete Assessment Picture File

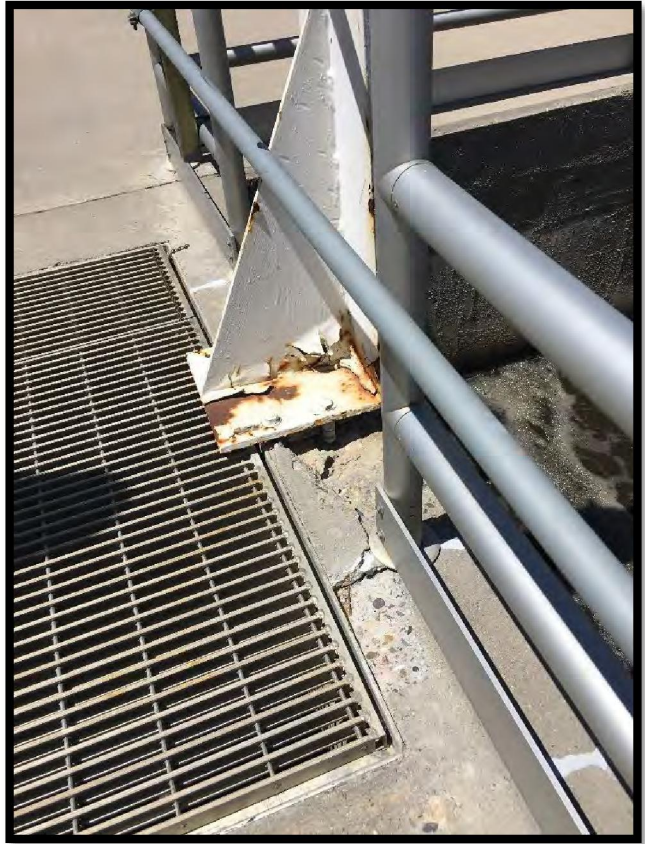


Picture 19 A&B, Aerobic Basement Ceiling Crack

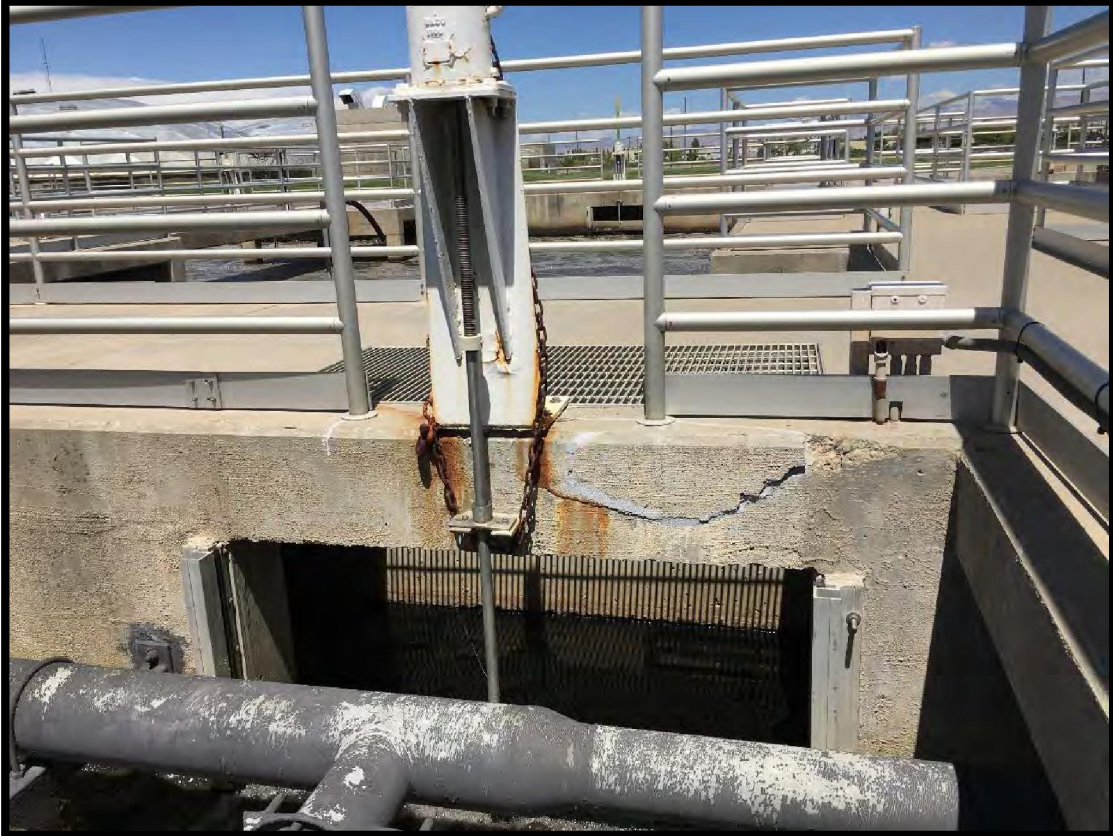


Picture 20, Aeration Basin

Persigo WWTP Concrete Assessment Picture File



Picture 21 A&B, Aeration Basin Concrete and Gate Support



Picture 22, Aeration Basin Concrete and Gate Support

Persigo WWTP Concrete Assessment Picture File



Picture 23, Aerobic Digester

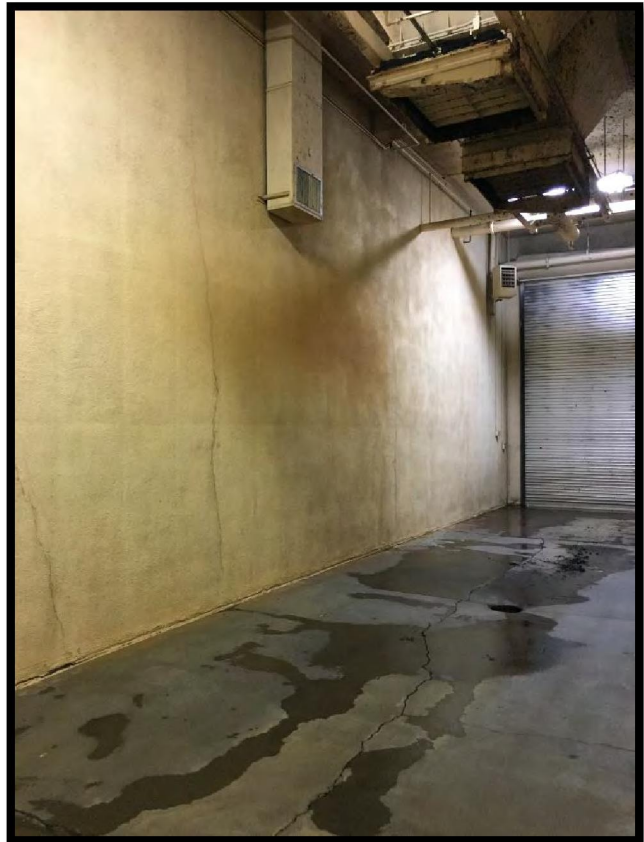
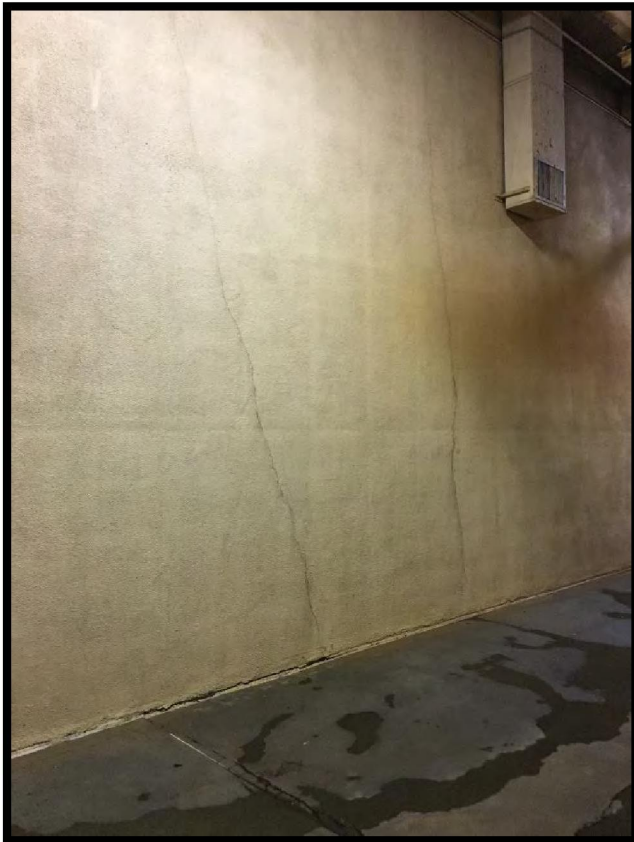


Picture 24, Aerobic Digester Stairway, Rebar erosion in concrete

Persigo WWTP Concrete Assessment Picture File



Picture 25, Aerobic Digester Concrete and Wall Cracks (Truck Sludge Loading)

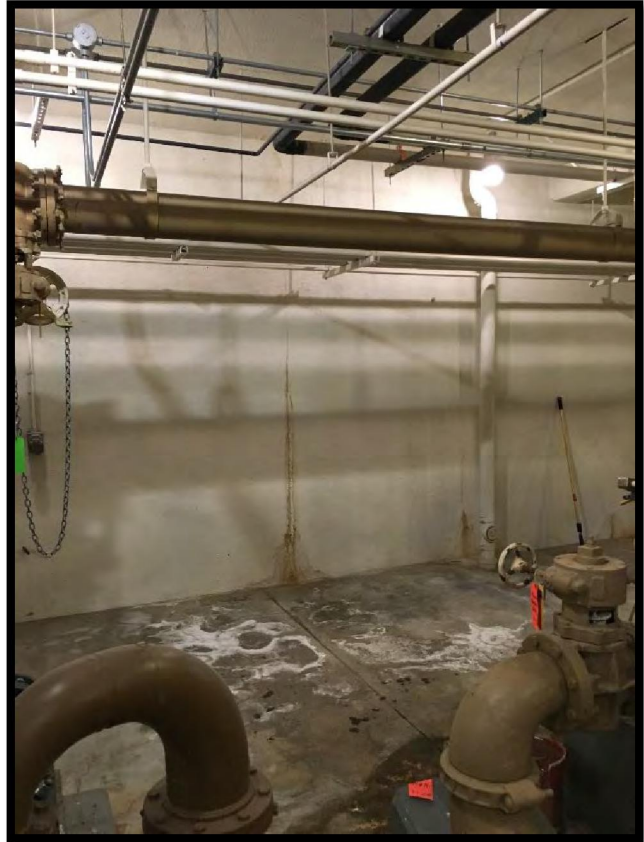
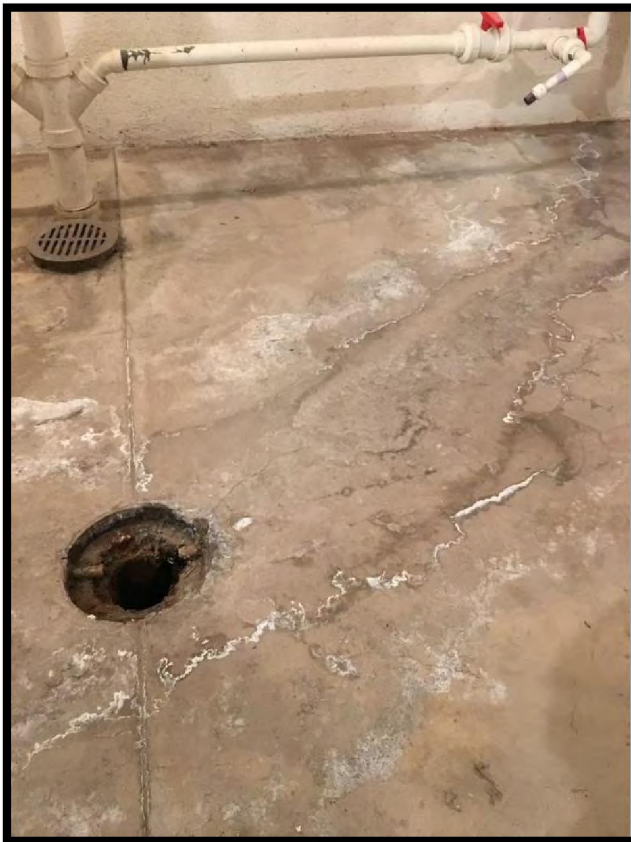


Picture 26 A&B, Aerobic Digester Concrete and Wall Cracks (Truck Sludge Loading)

Persigo WWTP Concrete Assessment Picture File

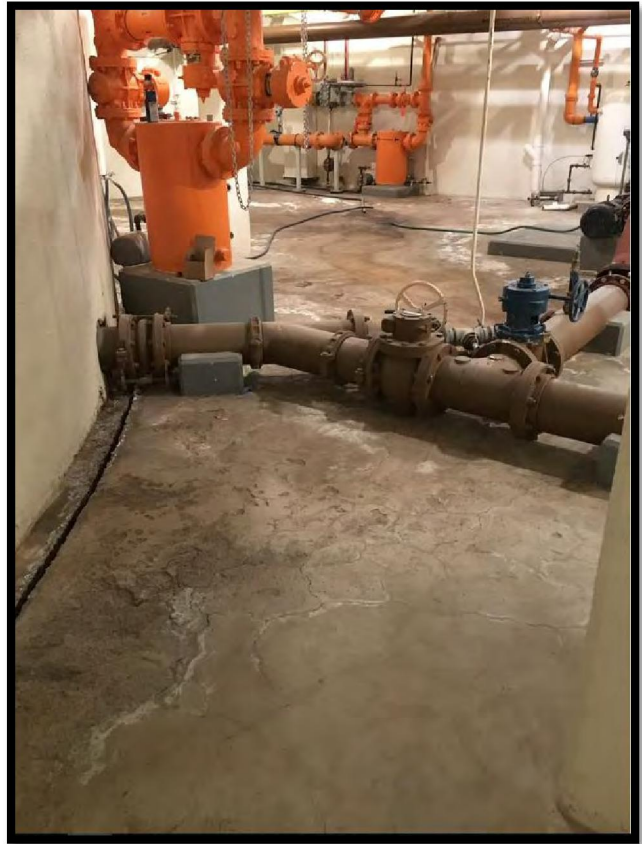
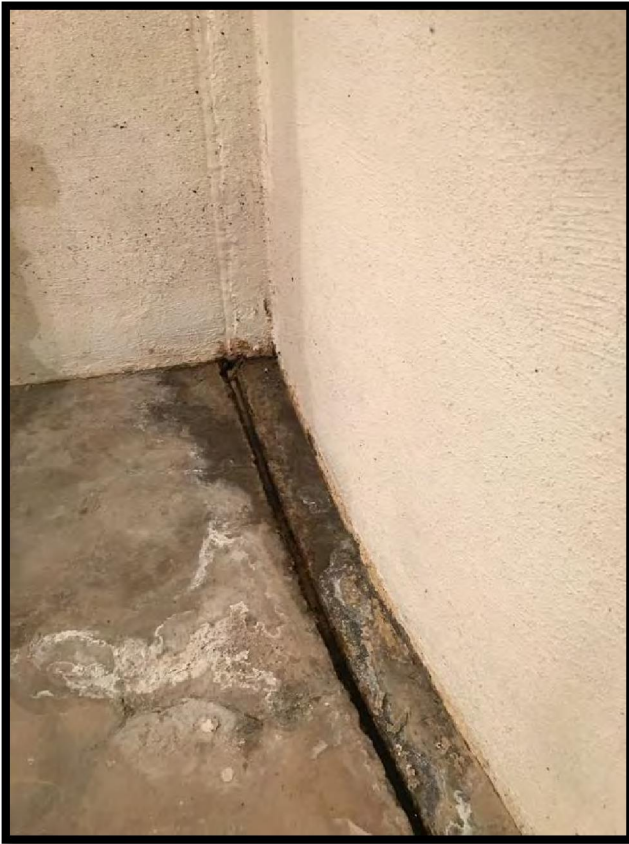


Picture 27, Aerobic Digester Basement Floor & Wall



Picture 28 A&B, Aerobic Digester Basement Floor and Wall

Persigo WWTP Concrete Assessment Picture File



Picture 29 A&B, Aerobic Digester Basement Floor & Wall

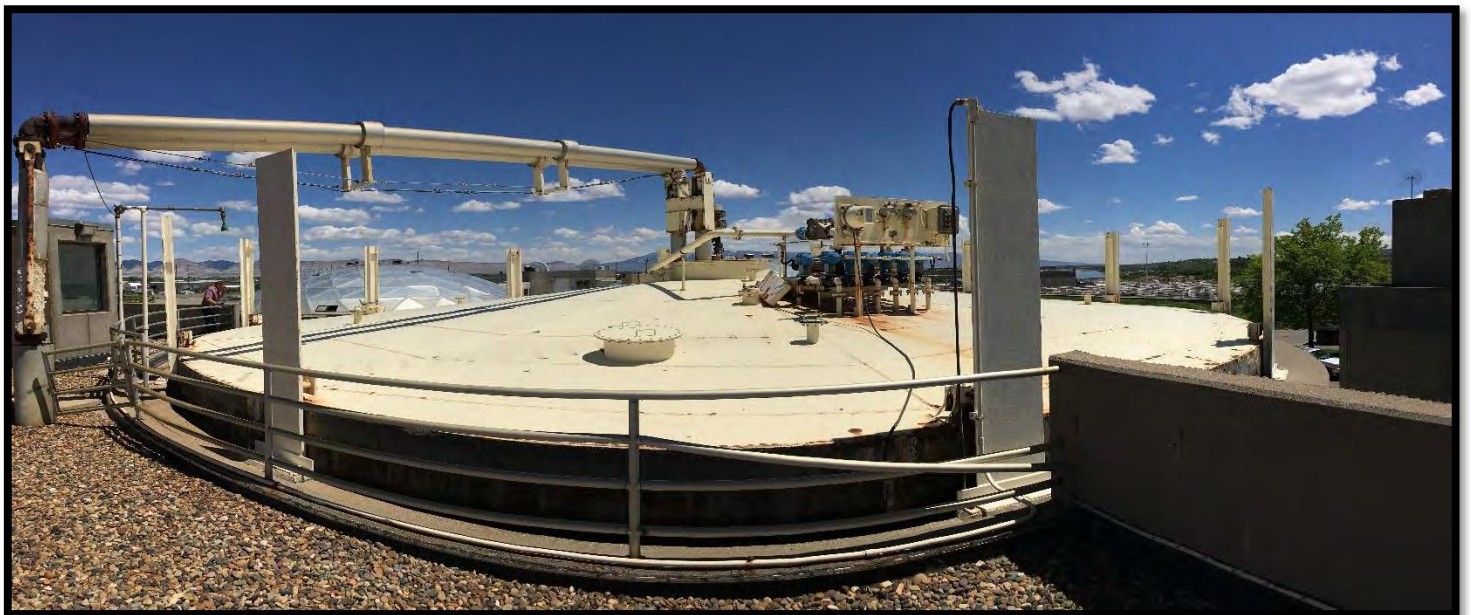


Picture 30, Anaerobic Digester Tank Wall

Persigo WWTP Concrete Assessment Picture File



Picture 31, Anaerobic Digester Tank Wall



Picture 32, Anaerobic Digester Tank

Persigo WWTP Concrete Assessment Picture File



Picture 33 Anaerobic Digester Tank Roof (floating lid)



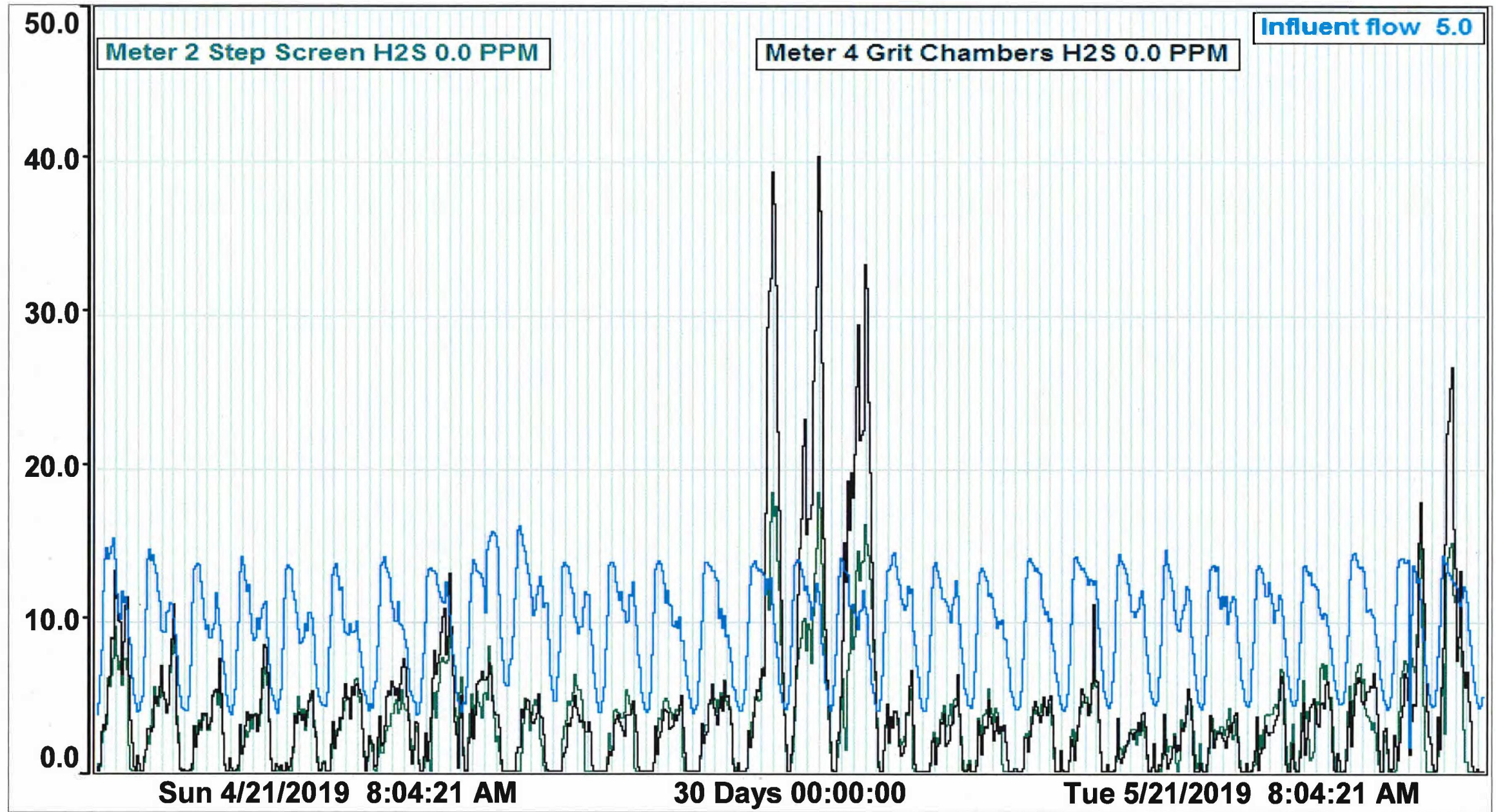
Picture 34, Top of Anaerobic Digester Digester Tank Wall

Attachment 4, Real Time H2S meter reading from the headworks for the last 30 days plotted against inflow rate

Meter 2 located at Step Screen

Meter 4 located at Grit Chamber

Note: Real Time graph shows a higher instantaneous H2S reading vs those averaged over a 12 hour data in the data table.



**Attachment 5, 12 hour H2S meter reading from the headworks for the last
30 days plotted against inflow rate
Meter 2 at Step Screen
Meter 4 at Grit Chamber**

	Meter 2 H2S Scaled	Meter 4 H2S Scaled	InflFlow Stabilize
Maximum Value	10.9	20.7	13
75th Percentile	3.5	3.8	11.325
Median Value	2.7	2.7	10.45
25th Percentile	2.075	2.075	7.875
Minimum Value	0.7	1.4	7.1
Average	3.227	4.088	9.613
Total Sum	193.6	245.3	576.8
Std. Deviation	2.087	4.128	1.816
4/21/2019 8:08:43 AM	4.6	5.9	11.4
4/21/2019 8:08:43 PM	2.8	4.7	7.7
4/22/2019 8:08:43 AM	3.5	3.6	11.3
4/22/2019 8:08:43 PM	3.6	3.8	7.5
4/23/2019 8:08:43 AM	2.4	2.4	10.6
4/23/2019 8:08:43 PM	2.6	2.9	7.4
4/24/2019 8:08:43 AM	2.1	2.4	10.5
4/24/2019 8:08:43 PM	2.8	3.3	7.6
4/25/2019 8:08:43 AM	1.7	1.7	10.5
4/25/2019 8:08:43 PM	2.4	2.4	7.4
4/26/2019 8:08:43 AM	2.7	2.9	10.4
4/26/2019 8:08:43 PM	3.4	3.4	7.1
4/27/2019 8:08:43 AM	2.2	3.4	10.8
4/27/2019 8:08:43 PM	3.4	4.1	7.3
4/28/2019 8:08:43 AM	2.6	4	10.7
4/28/2019 8:08:43 PM	5.8	6.1	7.8
4/29/2019 8:08:43 AM	3.8	4.1	11.5
4/29/2019 8:08:43 PM	2.3	2.5	11.1
4/30/2019 8:08:43 AM	2	2.6	13
4/30/2019 8:08:43 PM	1.4	1.8	9.3
5/1/2019 8:08:43 AM	3.6	2.5	11.1
5/1/2019 8:08:43 PM	0.7	1.4	7.9
5/2/2019 8:08:43 AM	2.7	2.1	11.3
5/2/2019 8:08:43 PM	1.5	1.8	7.9
5/3/2019 8:08:43 AM	3.1	2.4	11.4
5/3/2019 8:08:43 PM	1.7	1.9	7.2
5/4/2019 8:08:43 AM	3.1	2.9	11.3
5/4/2019 8:08:43 PM	2.7	2.7	7.2

**Attachment 5, 12 hour H2S meter reading from the headworks for the last
30 days plotted against inflow rate
Meter 2 at Step Screen
Meter 4 at Grit Chamber**

	Meter 2 H2S Scaled	Meter 4 H2S Scaled	InFlow Stabilize
5/5/2019 8:08:43 AM	3.5	3.5	11.2
5/5/2019 8:08:43 PM	10.9	20.7	8.2
5/6/2019 8:08:43 AM	6.3	11.4	11.6
5/6/2019 8:08:43 PM	8.9	18	8.1
5/7/2019 8:08:43 AM	5.5	12.3	11.5
5/7/2019 8:08:43 PM	10.5	17.5	7.8
5/8/2019 8:08:43 AM	2.4	2.4	11.8
5/8/2019 8:08:43 PM	1.5	1.9	8
5/9/2019 8:08:43 AM	2.3	1.8	11.2
5/9/2019 8:08:43 PM	2.3	2.1	8
5/10/2019 8:08:43 AM	3.1	2.3	11.2
5/10/2019 8:08:43 PM	0.8	1.4	7.2
5/11/2019 8:08:43 AM	2.7	2.5	11.5
5/11/2019 8:08:43 PM	2	2.3	7.6
5/12/2019 8:08:43 AM	2.9	2.7	11.4
5/12/2019 8:08:43 PM	2.6	3	8.5
5/13/2019 8:08:43 AM	1.7	1.5	11.7
5/13/2019 8:08:43 PM	1.5	1.8	8
5/14/2019 8:08:43 AM	1.3	1.4	11.1
5/14/2019 8:08:43 PM	2.5	2	8.1
5/15/2019 8:08:43 AM	2.3	2	11.4
5/15/2019 8:08:43 PM	1.6	1.6	7.9
5/16/2019 8:08:43 AM	2.4	1.8	11.4
5/16/2019 8:08:43 PM	3.3	2.5	8
5/17/2019 8:08:43 AM	2.8	2.9	11.5
5/17/2019 8:08:43 PM	3.4	2.8	7.6
5/18/2019 8:08:43 AM	4.6	3.8	11.8
5/18/2019 8:08:43 PM	2	3.5	7.7
5/19/2019 8:08:43 AM	3.6	2.7	10.9
5/19/2019 8:08:43 PM	5.3	6.8	8.6
5/20/2019 8:08:43 AM	8.3	12.9	11.9
5/20/2019 8:08:43 PM	1.6	3.8	8.2



Purchasing Division

ADDENDUM NO. 1

DATE: May 29, 2019
FROM: City of Grand Junction Purchasing Division
TO: All Offerors
RE: Professional Services for Persigo Wastewater Treatment Plant Structural Assessment RFP-4653-19-DH

Offerors responding to the above referenced solicitation are hereby instructed that the requirements have been clarified, modified, superseded and supplemented as to this date as hereinafter described.

Please make note of the following clarifications:

1. Q. The RFP lists two dates for the site visit: June 4 (on pages 3 & 18) and June 5 (on page 18, further down on the page.) Will you please clarify the date for this?

A. Non-Mandatory Site Visit Meeting: Prospective offerors are encouraged to attend a non-mandatory site visit meeting on June 4, 2019 at 10:00 am. Meeting location shall be in the Persigo Wastewater Treatment Plant Conference Room, located at 2145 River Road, Grand Junction, CO. The purpose of this visit will be to inspect and to clarify the contents of this Invitation for Bids (IFB).

The original solicitation for the project noted above is amended as noted.

All other conditions of subject remain the same.

Respectfully,

A handwritten signature in black ink, appearing to read "Duane Hoff Jr.", written over a white background.

Duane Hoff Jr., Senior Buyer
City of Grand Junction, Colorado



Purchasing Division

ADDENDUM NO. 2

DATE: June 5, 2019
FROM: City of Grand Junction Purchasing Division
TO: All Offerors
RE: Professional Services for Persigo Wastewater Treatment Plant Structural Assessment RFP-4653-19-DH

Offerors responding to the above referenced solicitation are hereby instructed that the requirements have been clarified, modified, superseded and supplemented as to this date as hereinafter described.

Please make note of the following clarifications:

1. Q. Will the City allow destructive testing on the structural concrete?

A. It depends on the location of the testing, and if the testing creates a hole in the concrete that allows ground water into the building. Destructive testing may be considered if all other testing methods are exhausted.

2. Q. Will the testing need to be phased, based on waste water treatment scheduling?

A. Yes, the consultant will need to coordinate any testing requirements with the waste water treatment staff.

3. Q. Doug mentioned that pressure relief valves were installed in the Flow Equalization (FE) basins soon after their construction. Why were these installed?

A. The FE basins were constructed on drilled piers to hold down the slab from ground water pressure when basins were empty. These piers failed to hold down the slab, and the slab heaved upward. Pressure relief valves were installed to stabilize the slab. Please note that the FE basins are not part of the structure assessment scope. They were mentioned to illustrate that there is a high ground water table on site.

4. See attached original as-build drawings for the Aeration Basin & Blower Room as well as the Raw Sewage basement. General notes are also included to show the type of materials that can be expected.

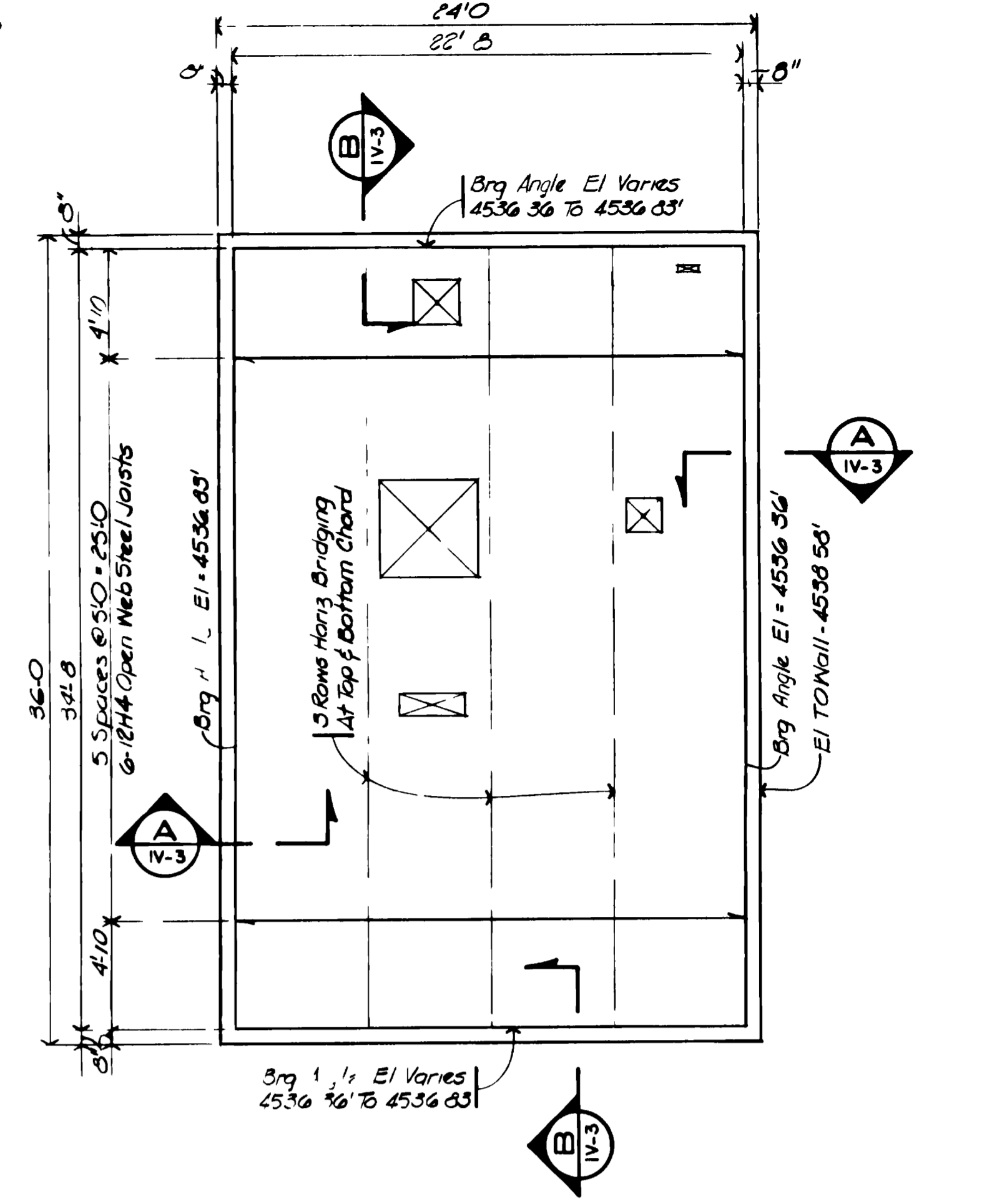
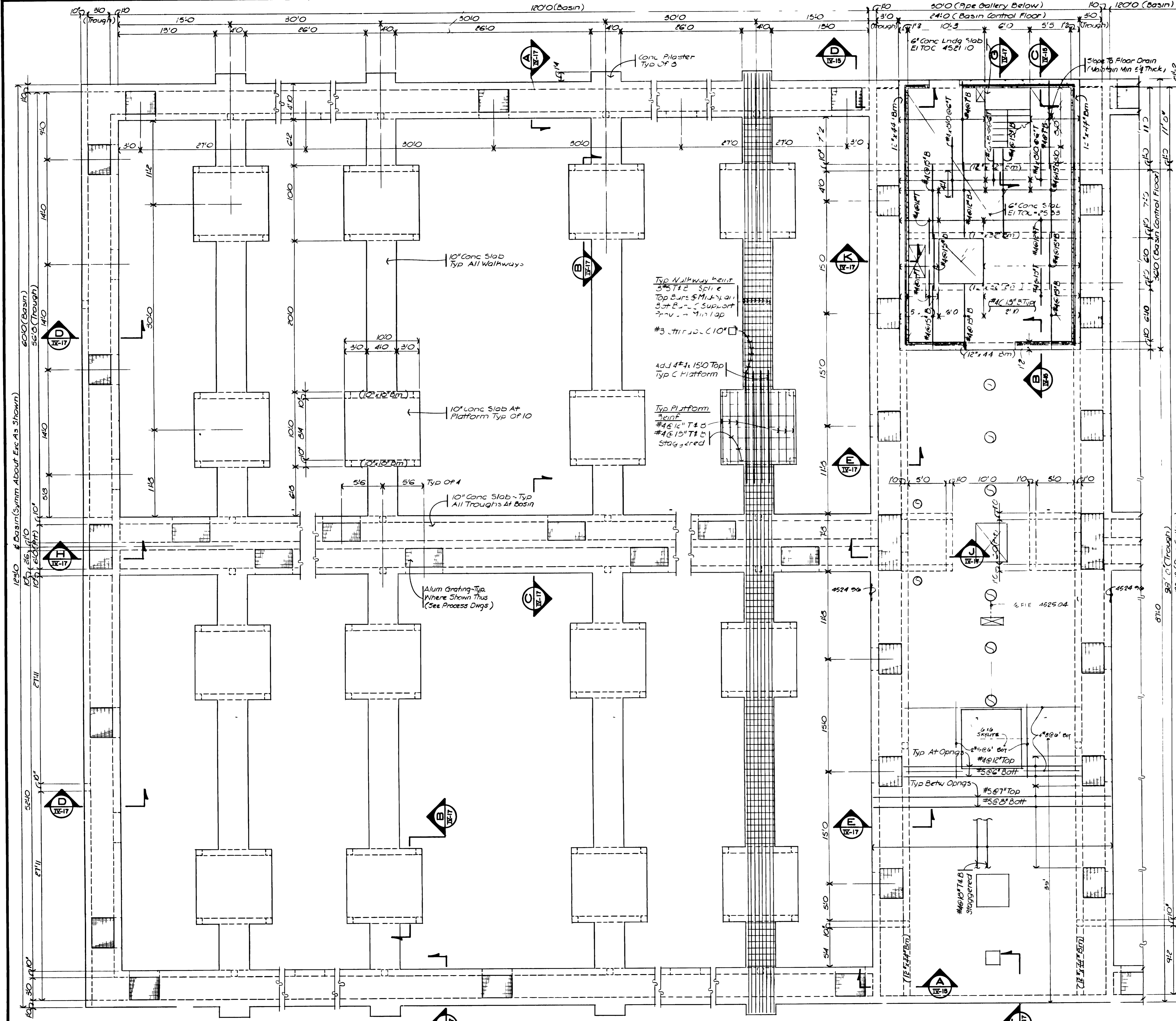
The original solicitation for the project noted above is amended as noted.

All other conditions of subject remain the same.

Respectfully,

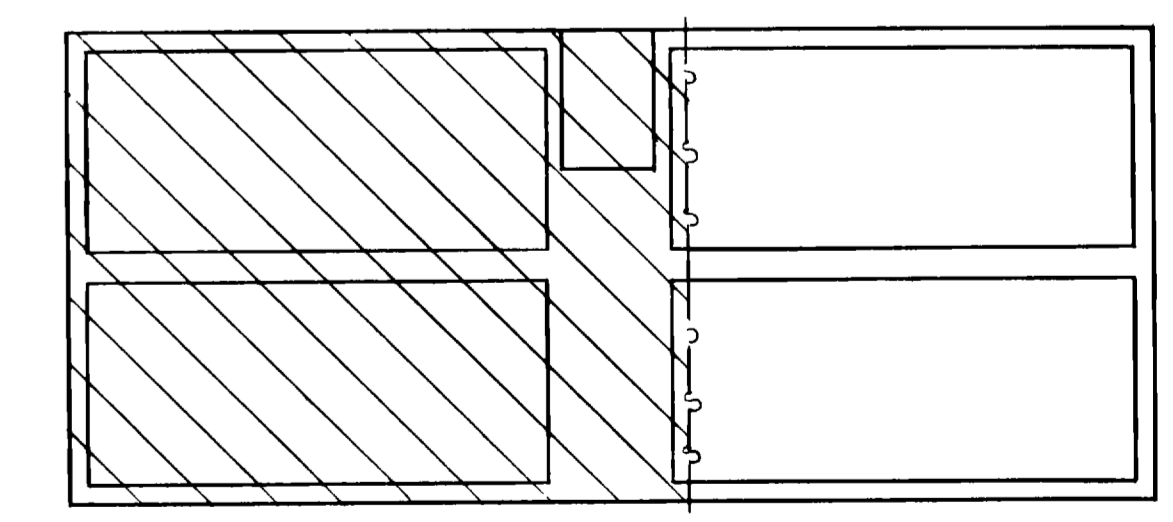
A handwritten signature in black ink, appearing to read "Duane Hoff Jr.", is written over a horizontal line.

Duane Hoff Jr., Senior Buyer
City of Grand Junction, Colorado



**ROOF FRAMING PLAN
(BASIN CONTROL)**
SCALE: 3/16" = 1'-0"

- Notes:
 1. Roof Deck Shall Be 1/2" 22 Gauge Wld Rib Steel Roof Deck - 2" Span Minimum (5min. 204 in²)
 2. Refer To Mech & Process Sheets For Pipe Sleeves & Block Outs

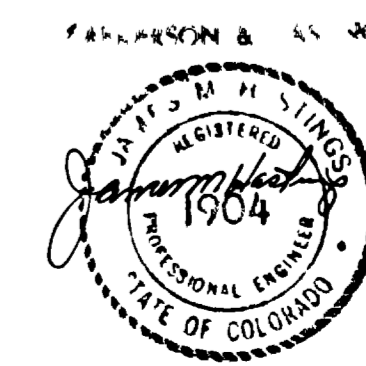


PLAN - WALKWAYS / TROUGHS / BASIN CONTROL FLOOR / PIPE GALLERY ROOF
SCALE: 3/16" = 1'-0"

- Notes:
 1. El Top of Conc Slabs (10" Typ.) = 4525.00
 2. Basin Control Floor Slab To Be 6" Conc Slab (El TOC = 4525.00)

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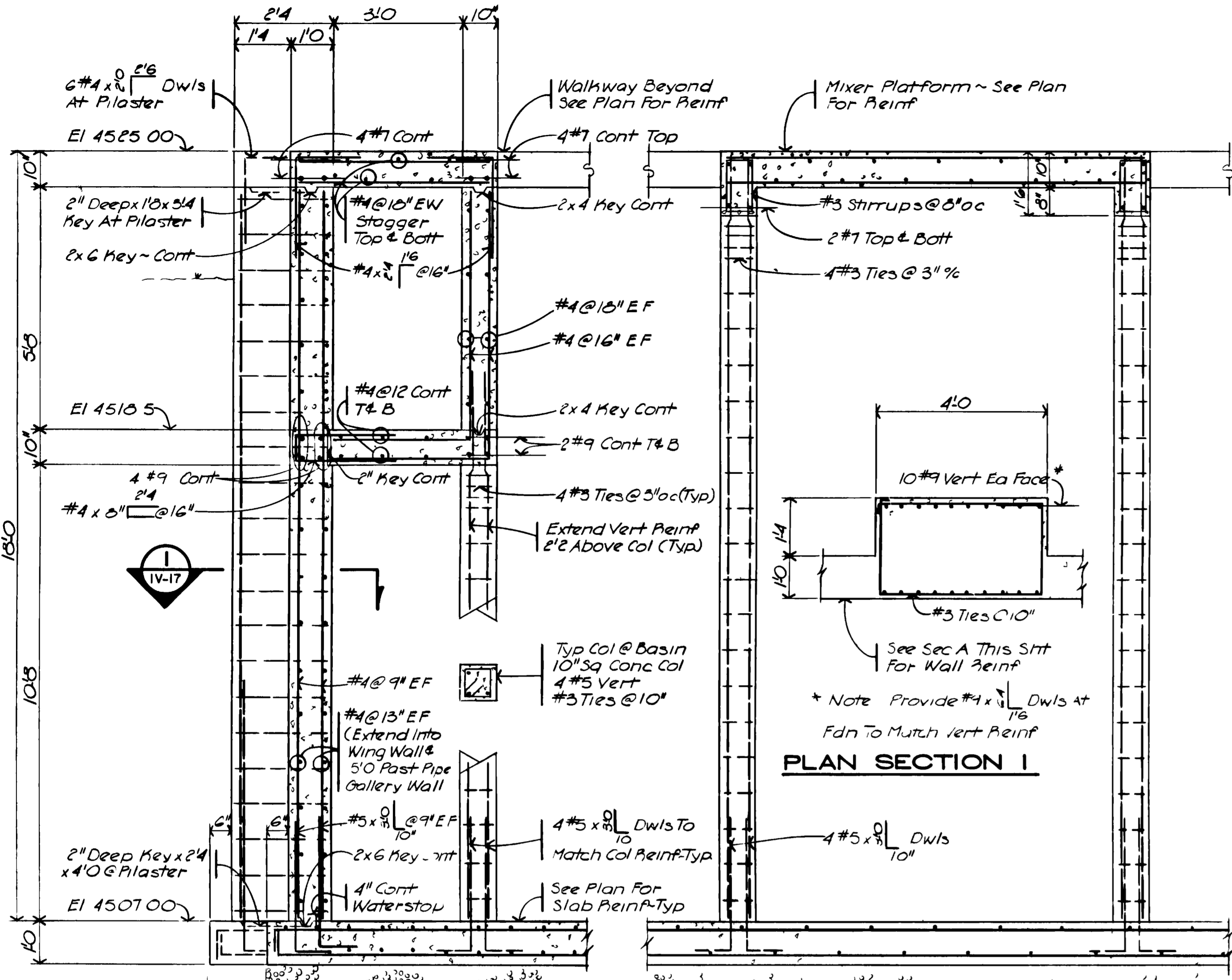
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DATE: MAY 1985



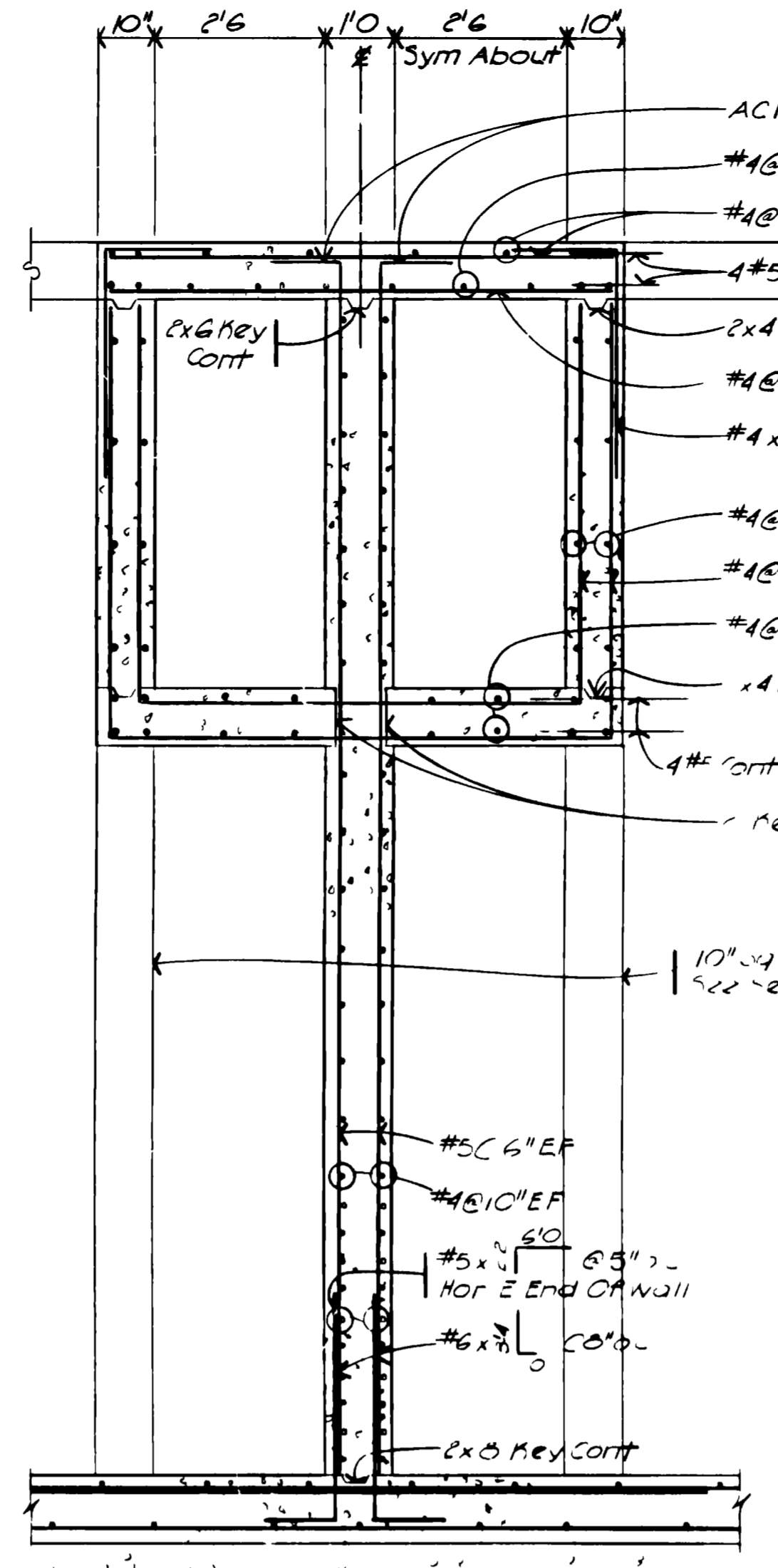
GRAND JUNCTION / MESA COUNTY, COLORADO
PERSIGO WASH WASTEWATER TREATMENT PLANT
 SECTION IV STRUCTURAL
AERATION BASINS
WALKWAY AND ROOF FRAMING PLANS
 HENNINGSON, DURHAM & RICHARDSON, INC.
 ENGINEERS PLANNERS CONSULTANTS
 DENVER COLORADO GRAND JUNCTION COLORADO

DATE	DESCRIPTION	BY	APPROV
4/7/84	AS BUILT		
	REVISIONS		

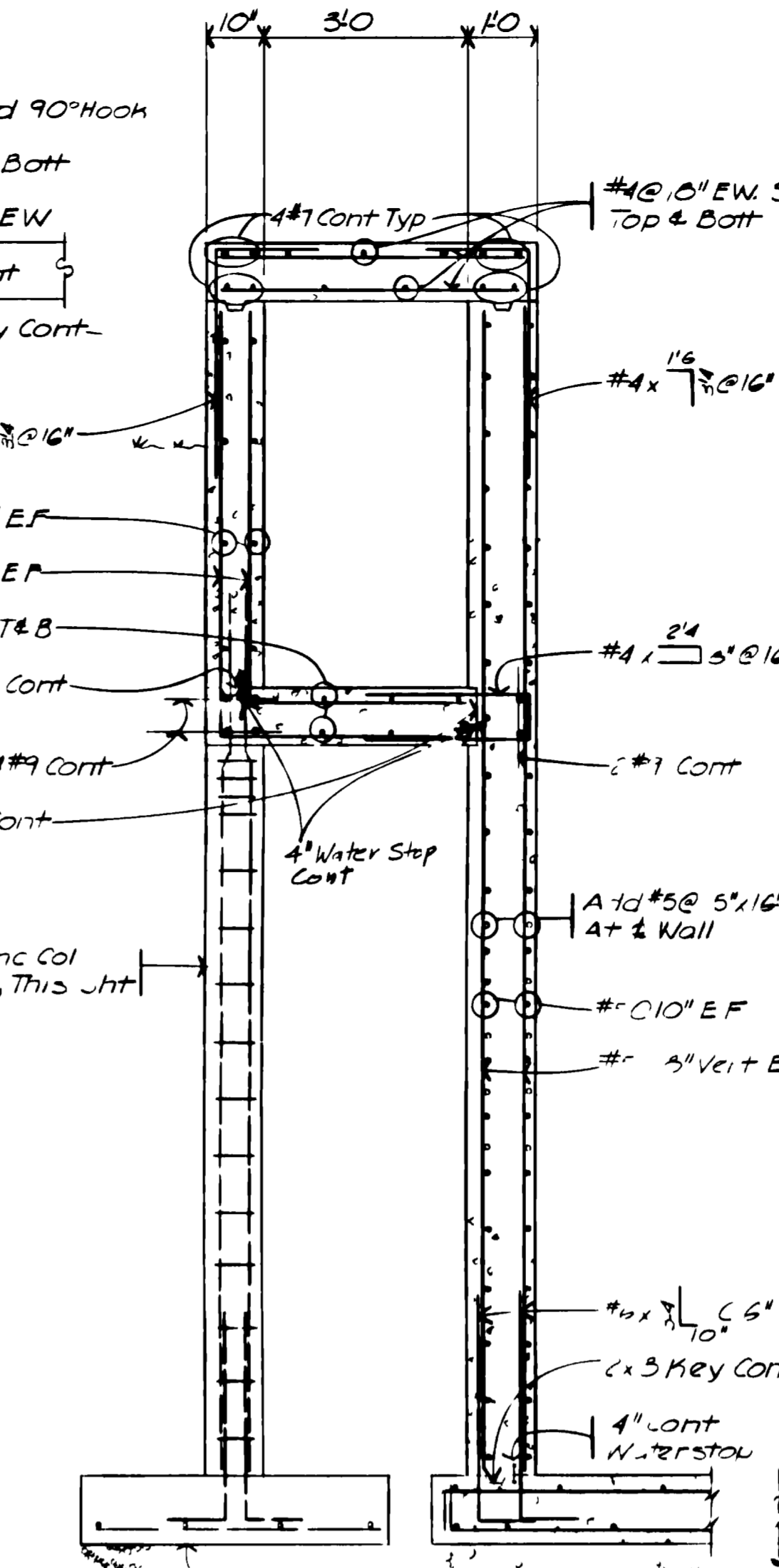
JOB NO. 734510
 DESIGNED: R.L.B.
 CHECKED: J.M.H.
 APPROVED: H. HENNINGSON
 DATE: MAY 1985



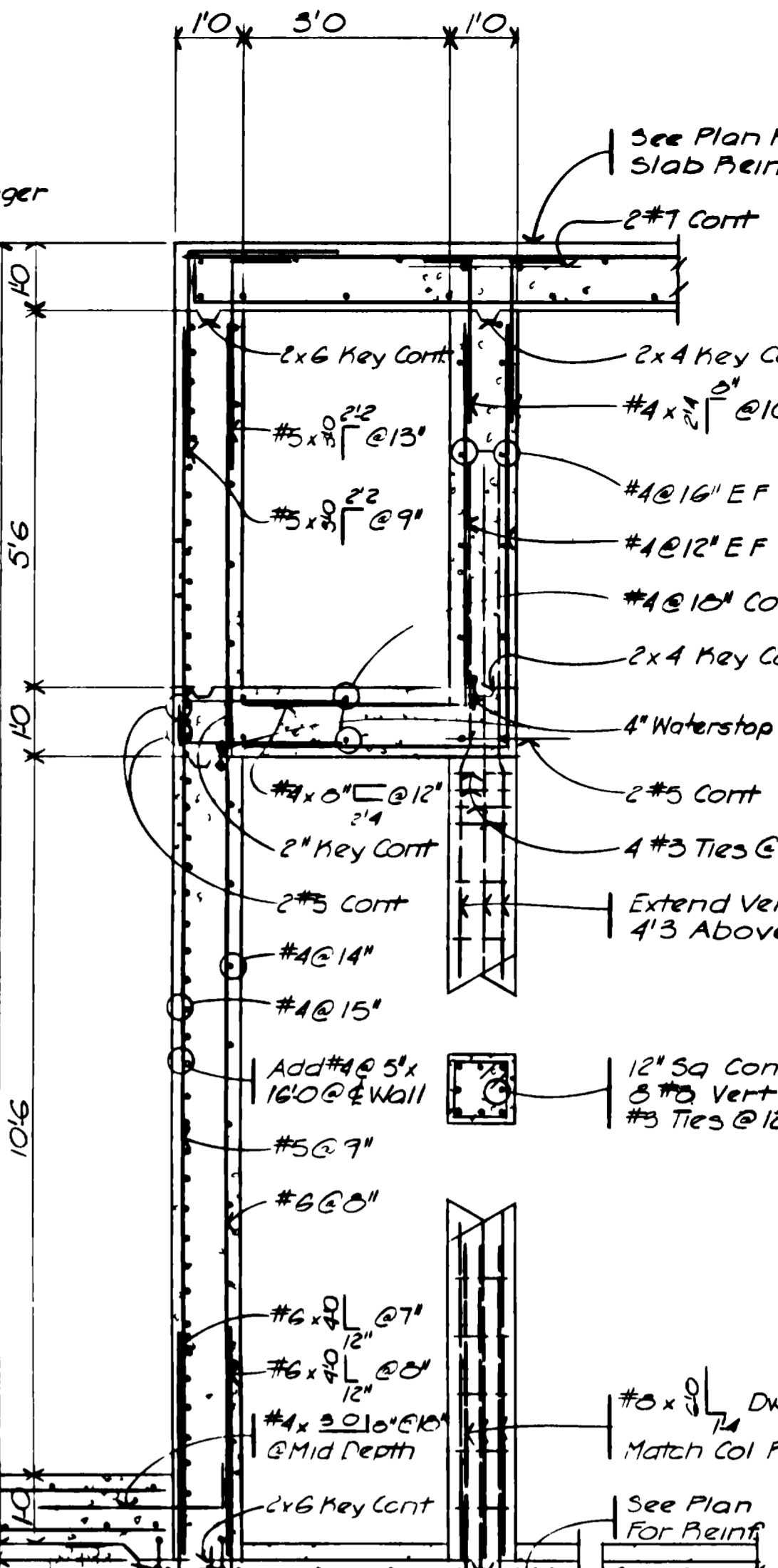
SECTION A
SCALE: 1/2" = 1'-0"
IV-17



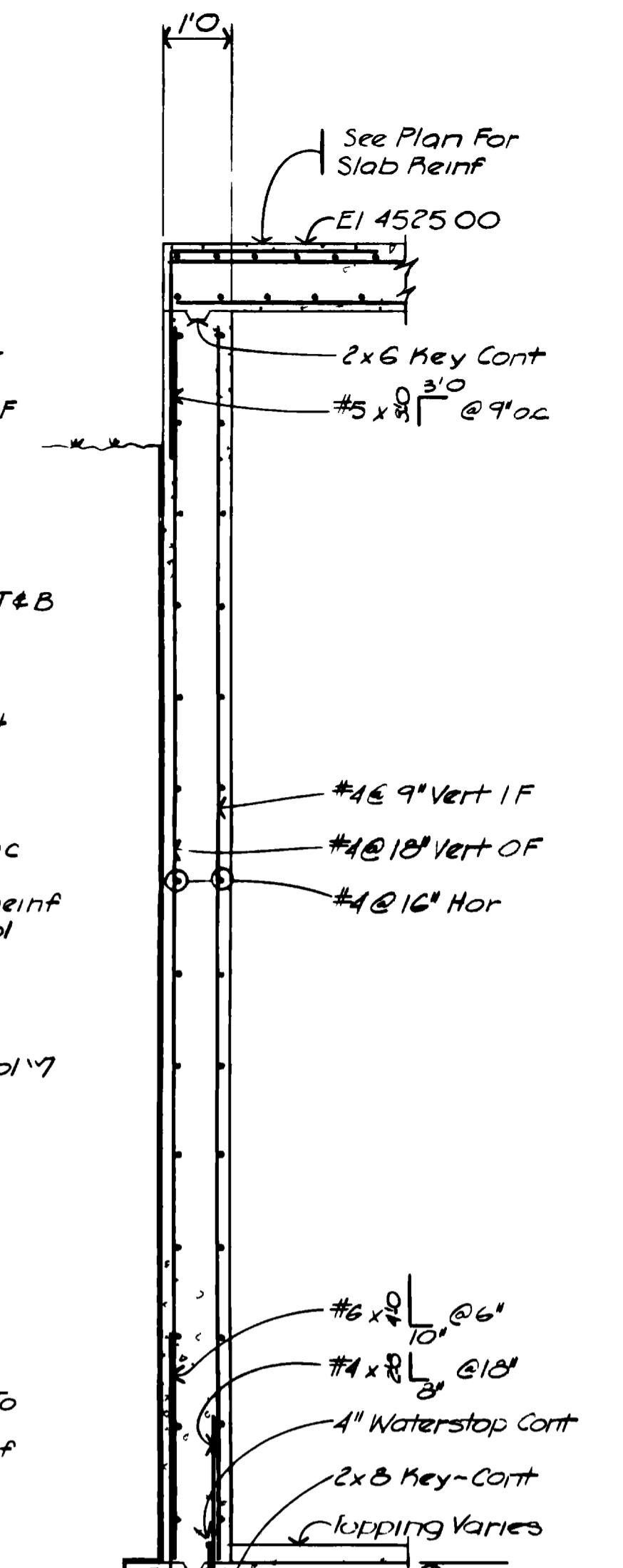
SECTION B
SCALE: 1/2" = 1'-0"
IV-17



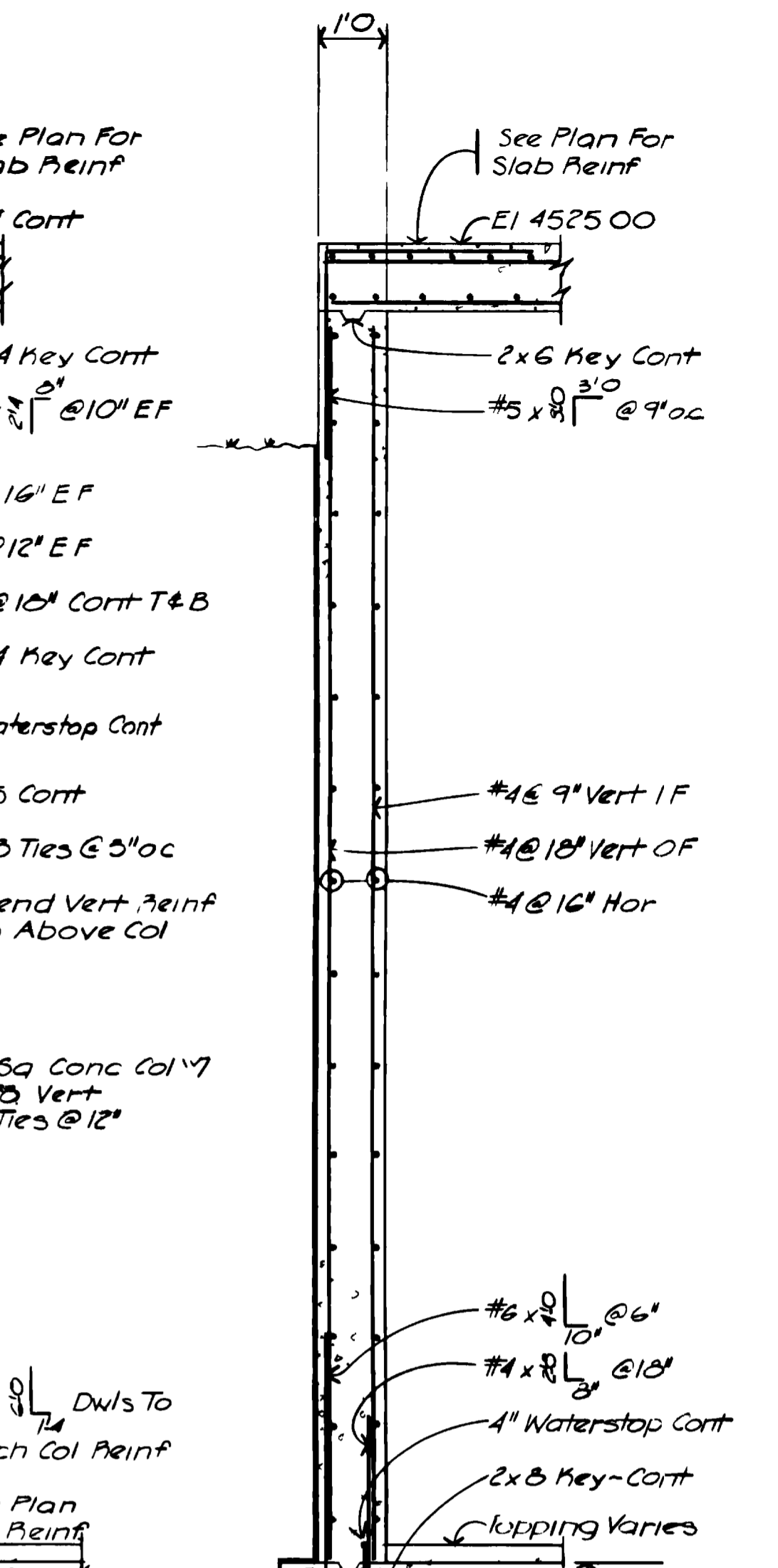
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SCALE: 1/2" = 1'-0"
IV-17



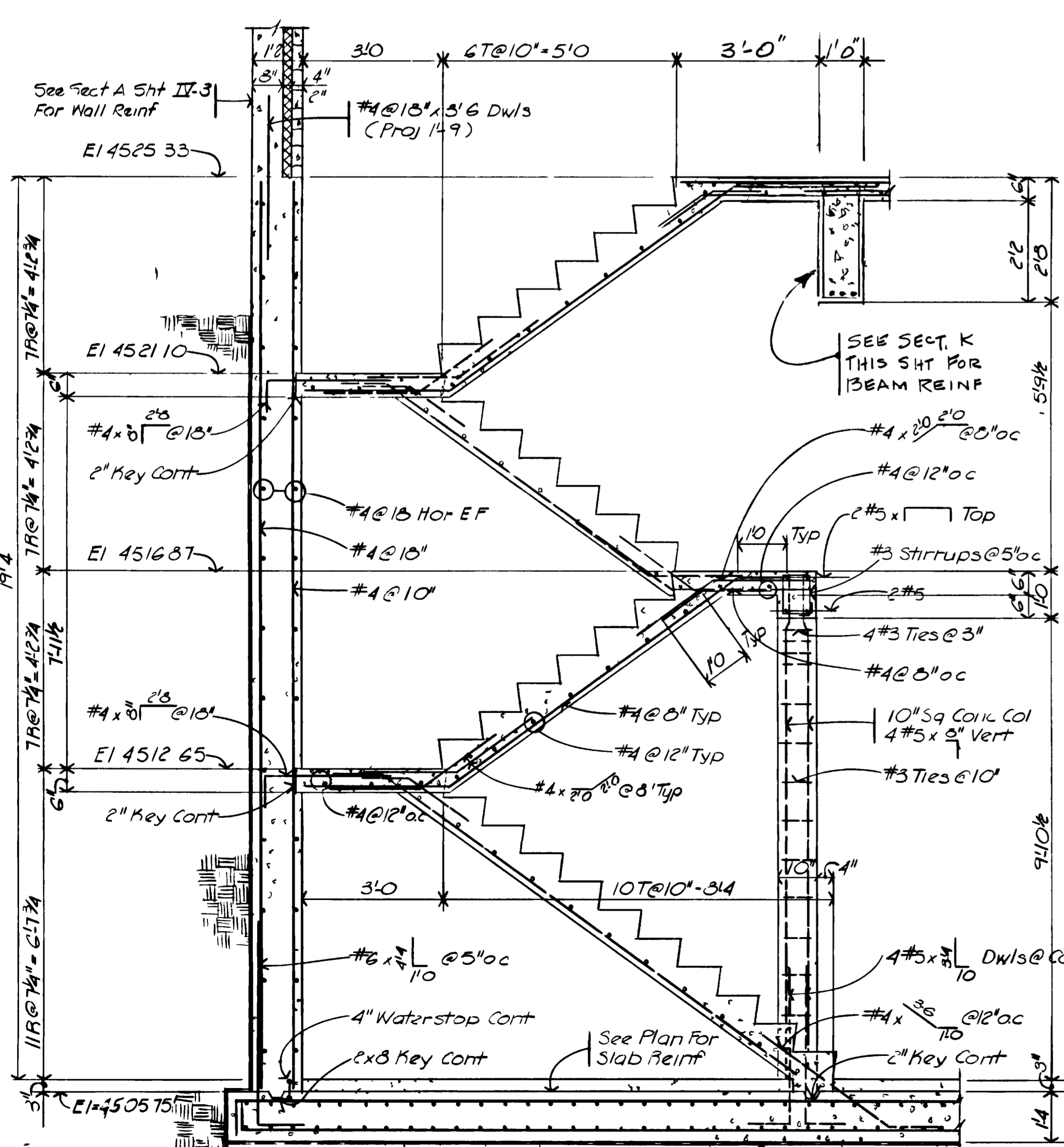
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IV-17



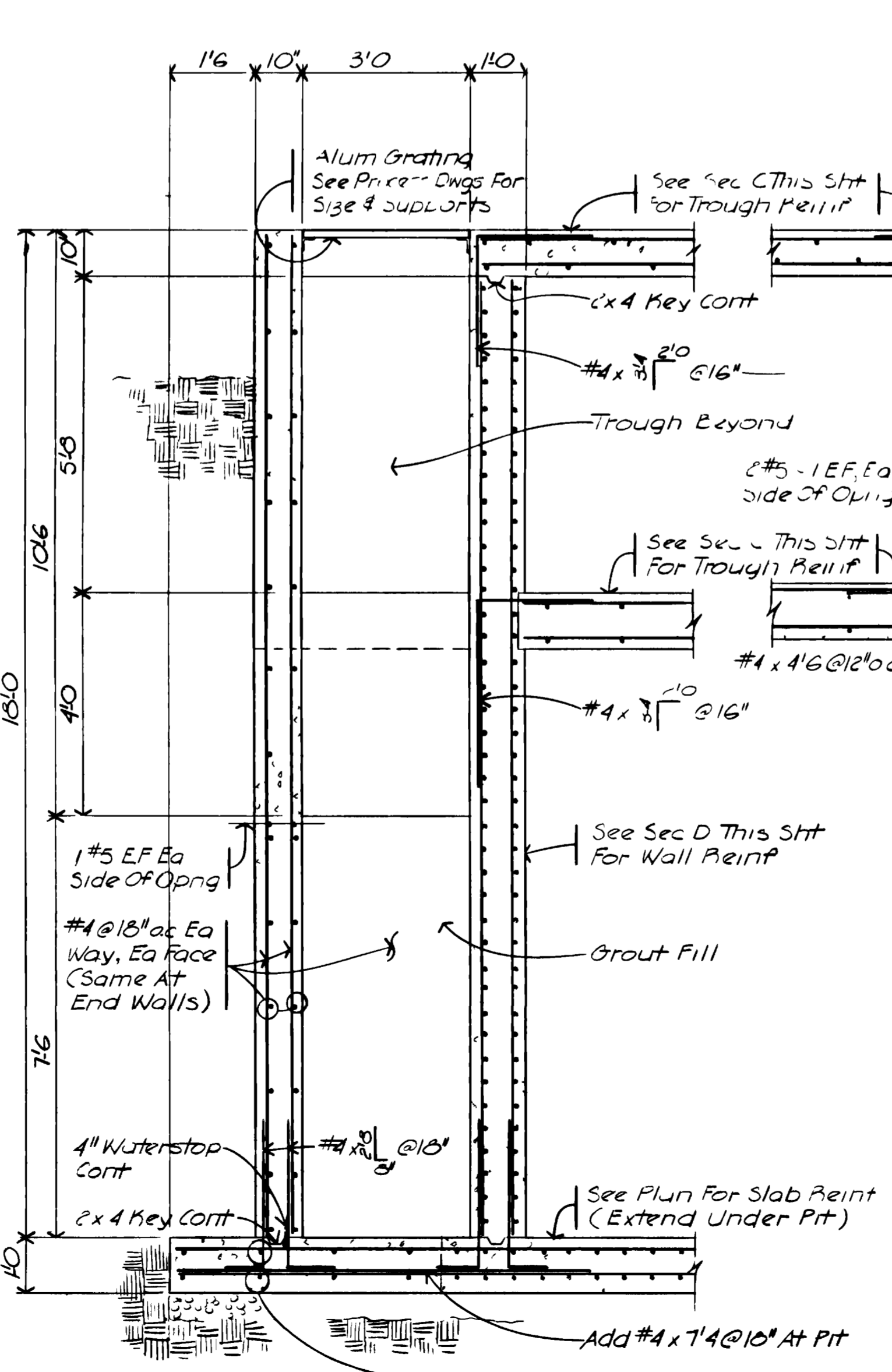
SECTION E
SCALE: 1/2" = 1'-0"
IV-17



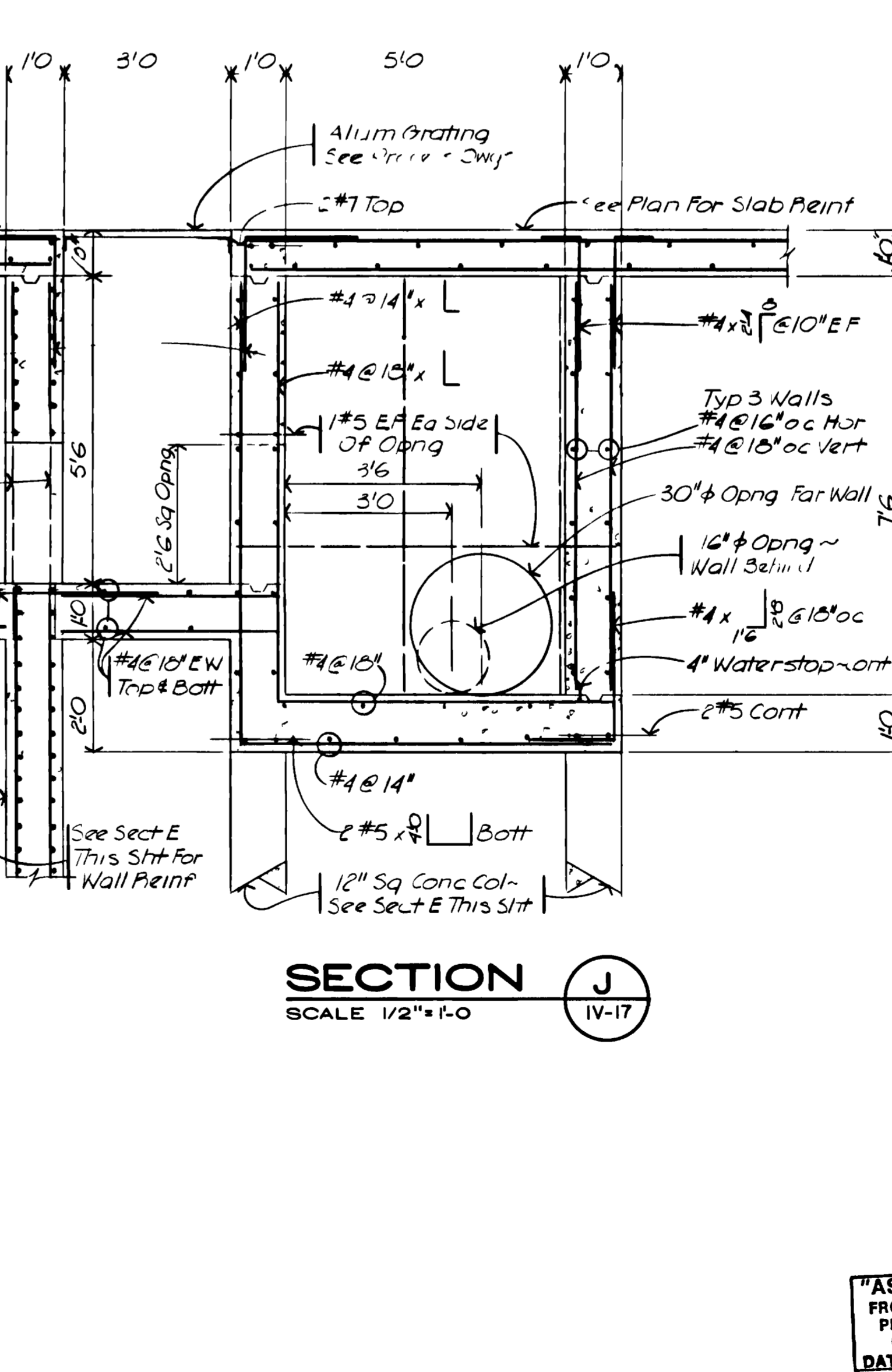
SECTION F
SCALE: 1/2" = 1'-0"
IV-17



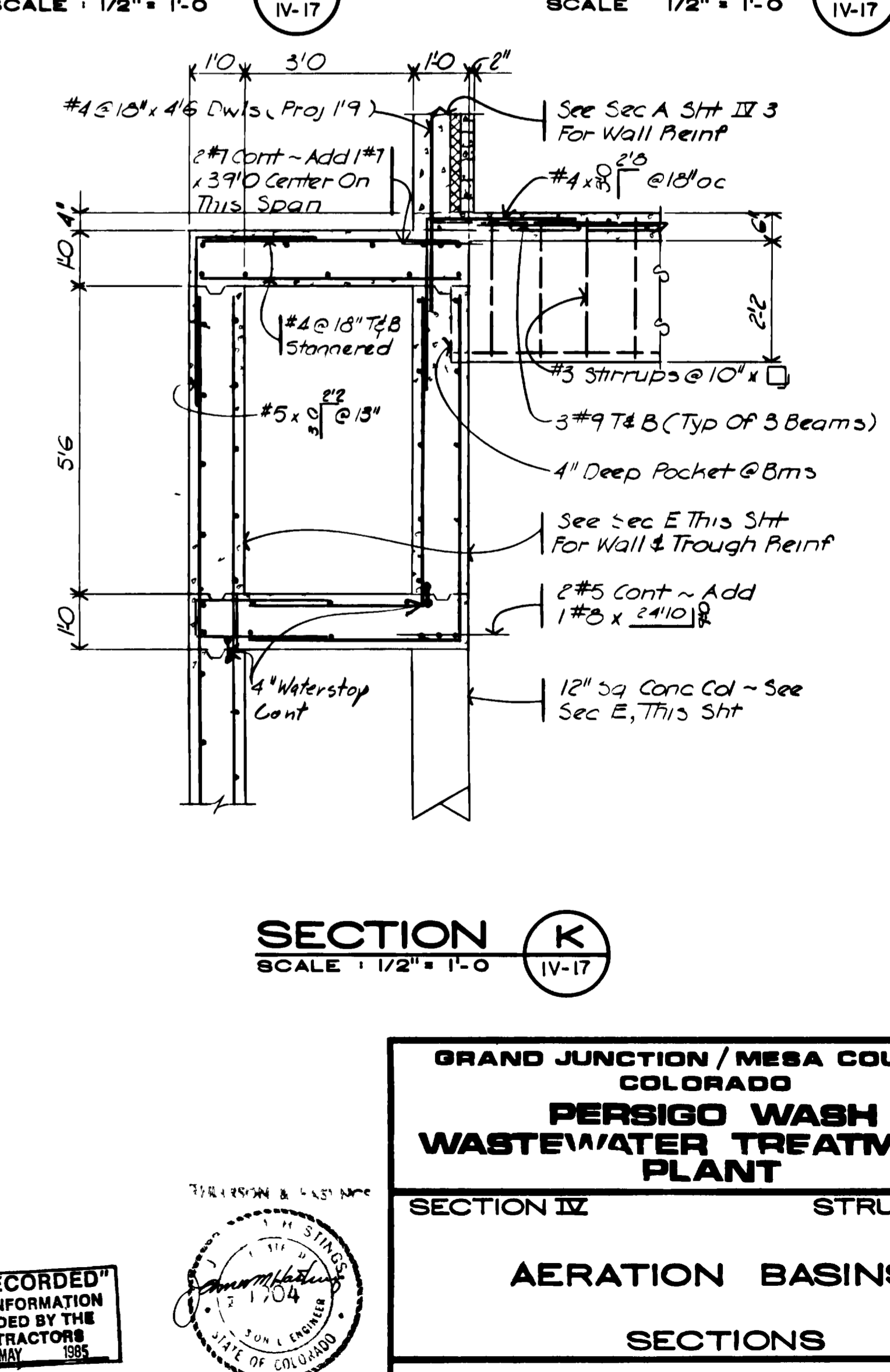
SECTION G
SCALE: 1/2" = 1'-0"
IV-17



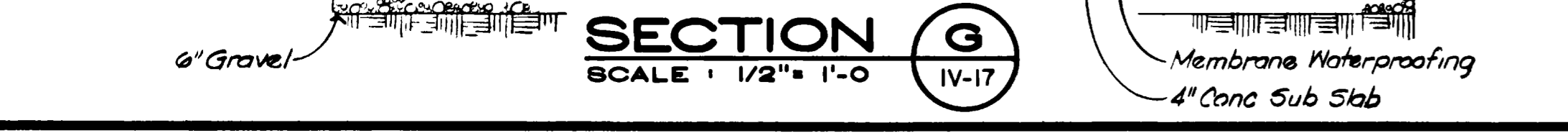
SECTION H
SCALE: 1/2" = 1'-0"
IV-17



SECTION I
SCALE: 1/2" = 1'-0"
IV-17



SECTION J
SCALE: 1/2" = 1'-0"
IV-17



SECTION K
SCALE: 1/2" = 1'-0"
IV-17

GRAND JUNCTION / MESA COUNTY, COLORADO
PERSIGO WASH WASTEWATER TREATMENT PLANT
SECTION IV STRUCTURAL
AERATION BASINS
SECTIONS

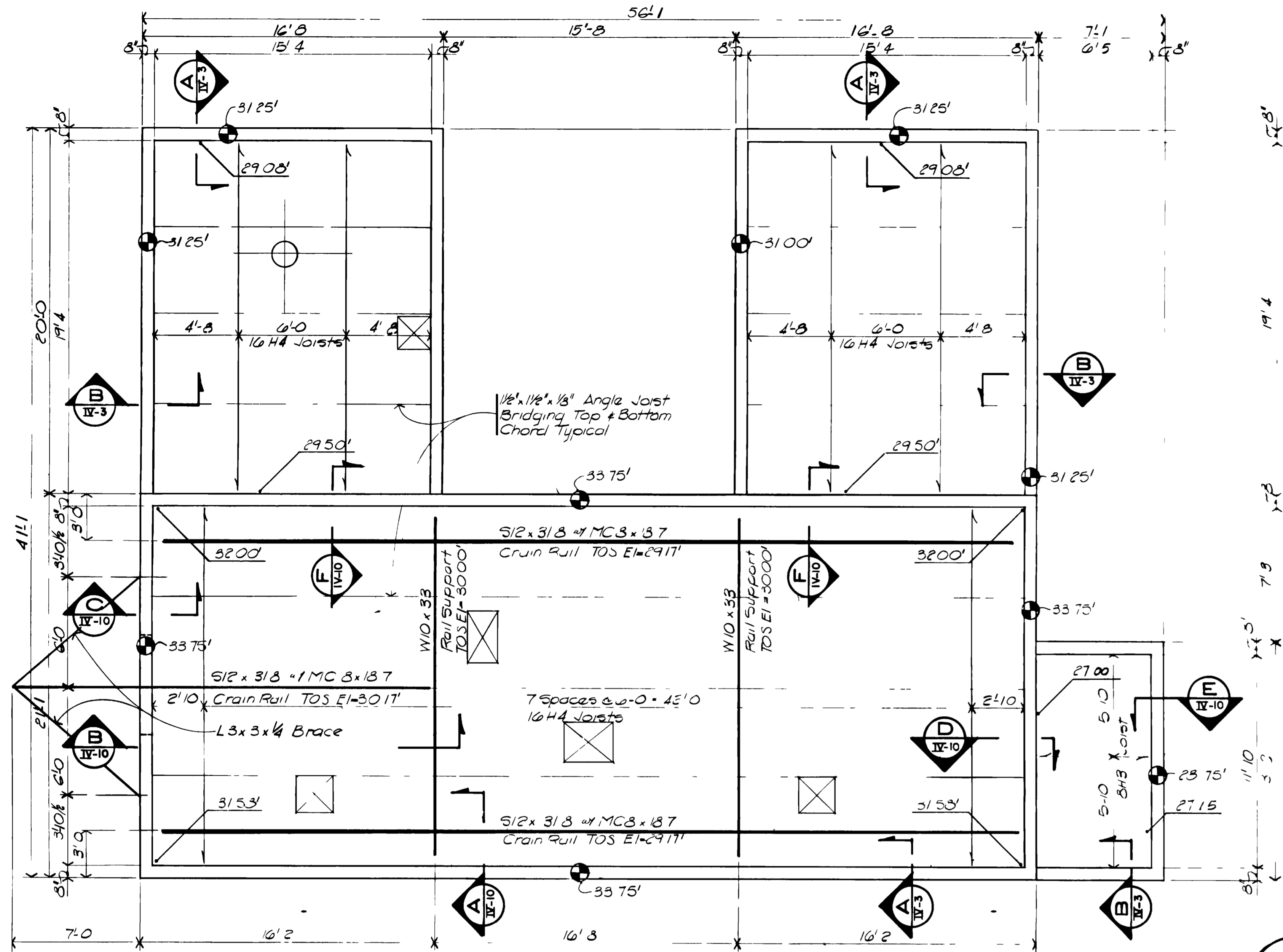
HENNINGSON, DURHAM & RICHARDSON, INC.
ENGINEERS PLANNERS CONSULTANTS
DENVER COLORADO GRAND JUNCTION COLORADO

DESIGNED: R.L.E. CHECKED: J.M.M. APPROVED: K. HENNINGSON
DATE: NOV-1980 DATE: NOV-1980

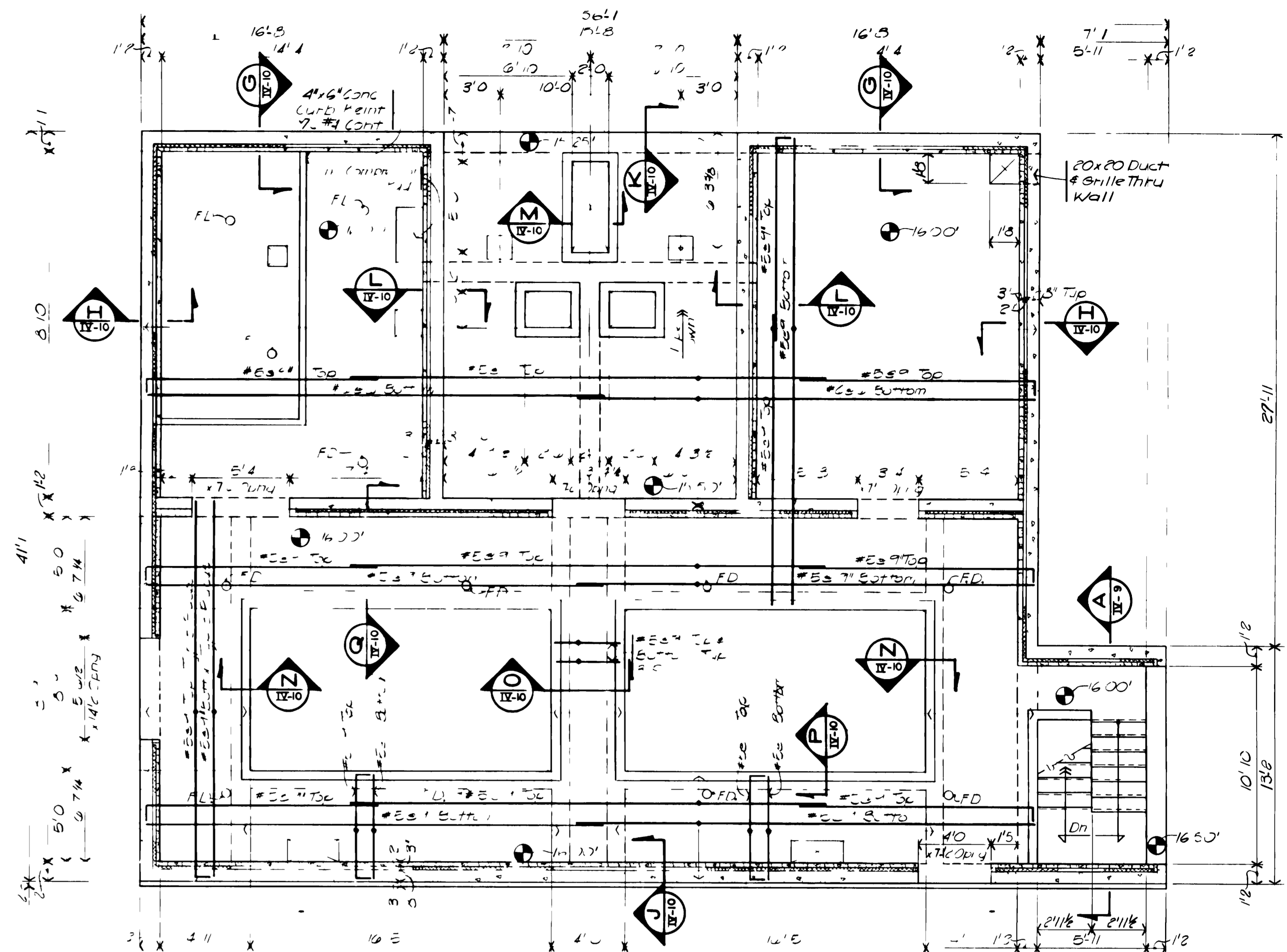
DATE: 11/17/80 AS BUILT DATE: 11/17/80

DESCRIPTION REVISIONS

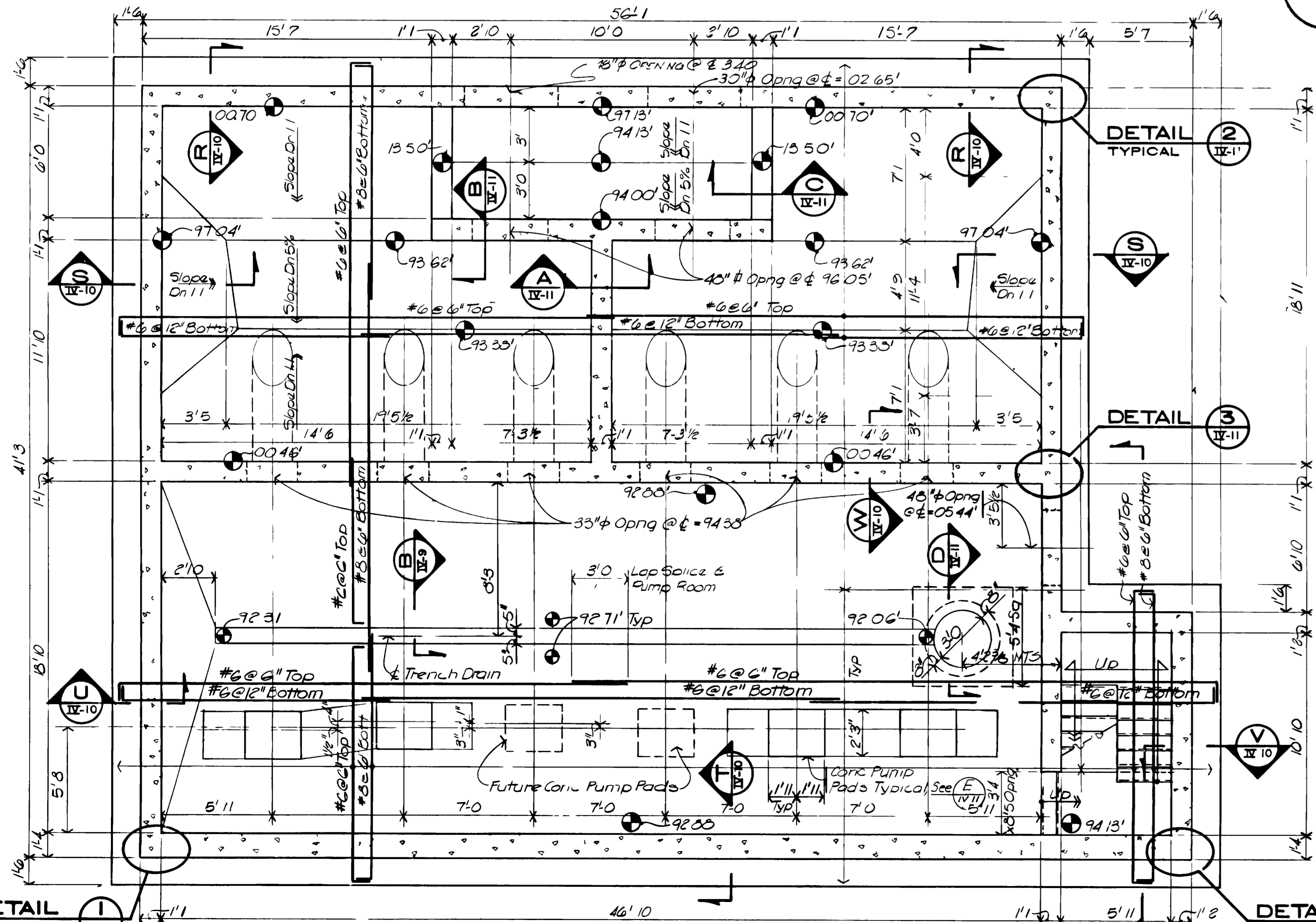
DATE: 11/17/80



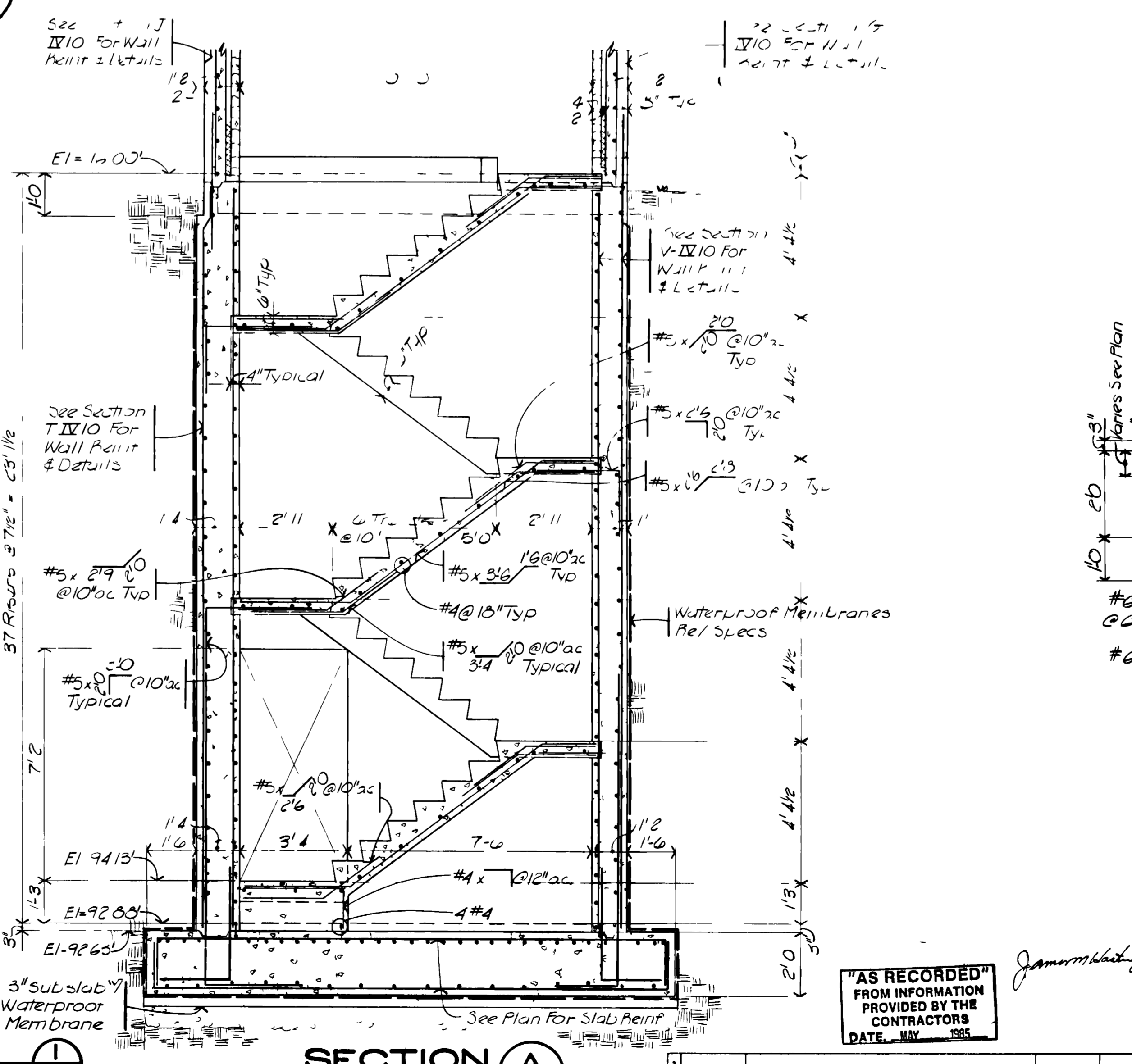
ROOF FRAMING PLAN
SCALE 1/4" = 1'-0"



GROUND FLOOR FRAMING PLAN
SCALE 1/4" = 1'-0"

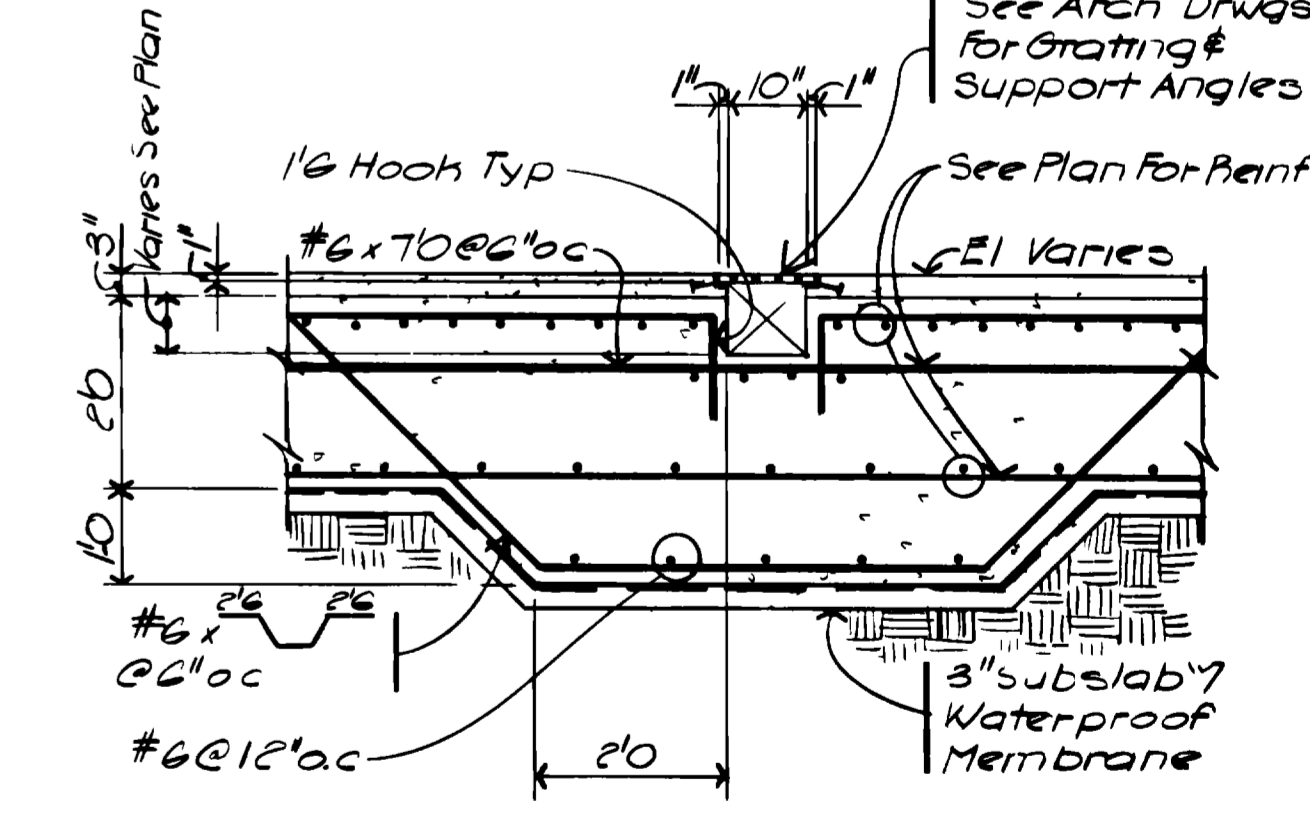


FOUNDATION & PIT LEVEL FRAMING PLAN
SCALE 1/4" = 1'-0"



SECTION A
SCALE 3/8" = 1'-0"

- 1. See Section IV-10 For Wall Height & Details
- 2. See Section IV-10 For Wall Height & Details
- 3. See Section IV-10 For Wall Height & Details
- 4. See Section IV-10 For Wall Height & Details
- 5. See Section IV-10 For Wall Height & Details
- 6. See Section IV-10 For Wall Height & Details
- 7. See Section IV-10 For Wall Height & Details
- 8. See Section IV-10 For Wall Height & Details



SECTION B
SCALE 1/2" = 1'-0"

GRAND JUNCTION / MESA COUNTY, COLORADO
PERSIGO WASH WASTE/WATER TREATMENT PLANT

SECTION IV STRUCTURAL

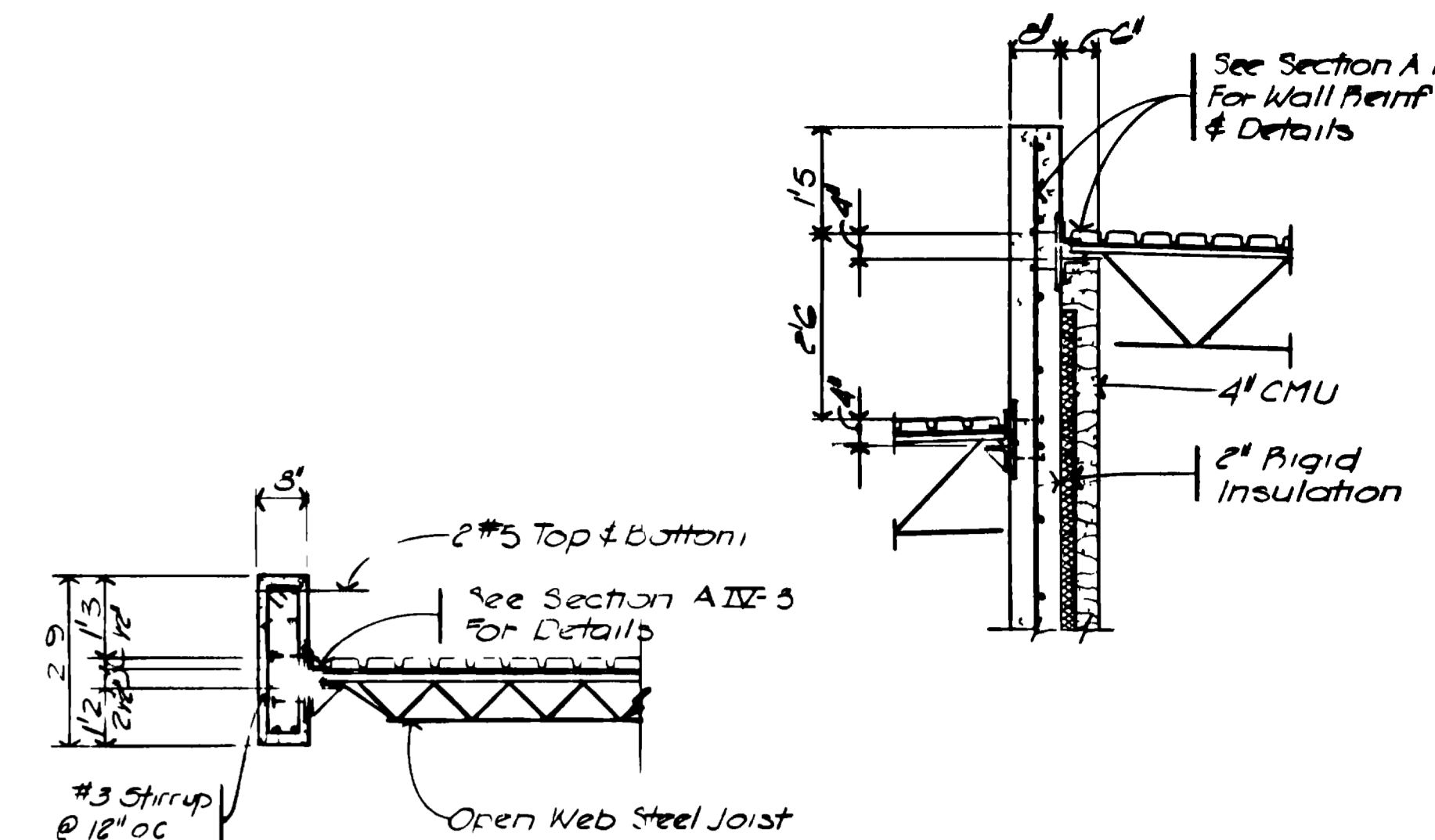
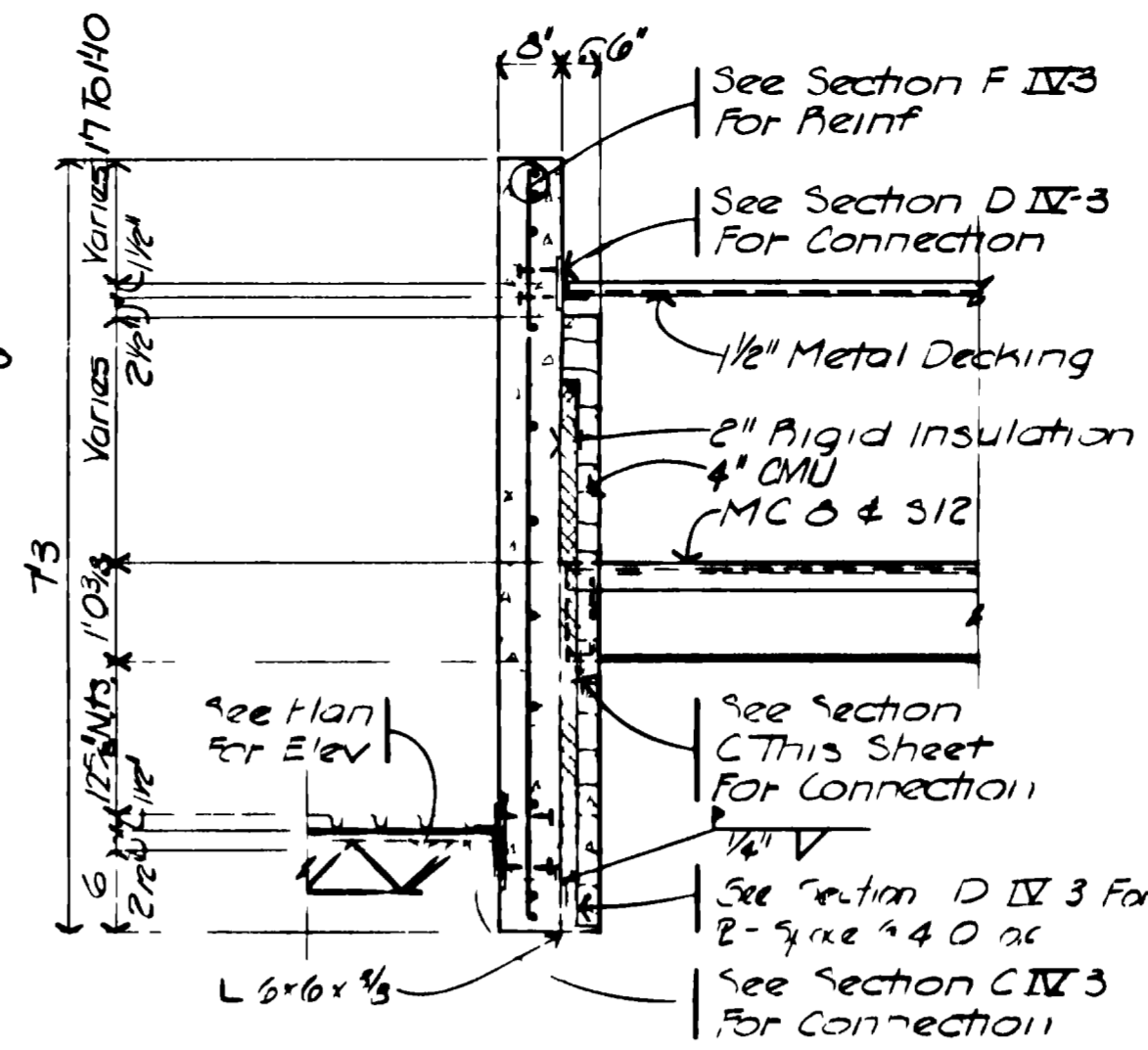
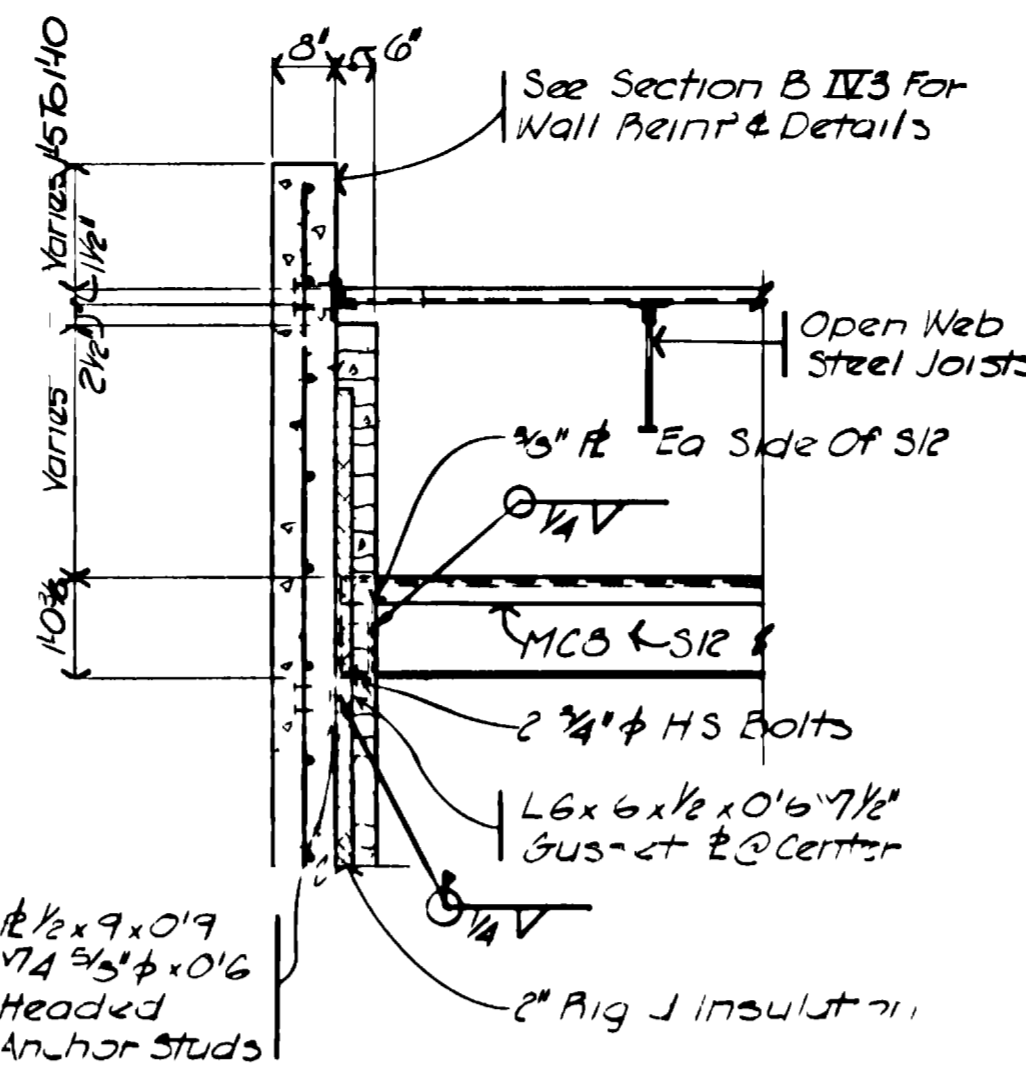
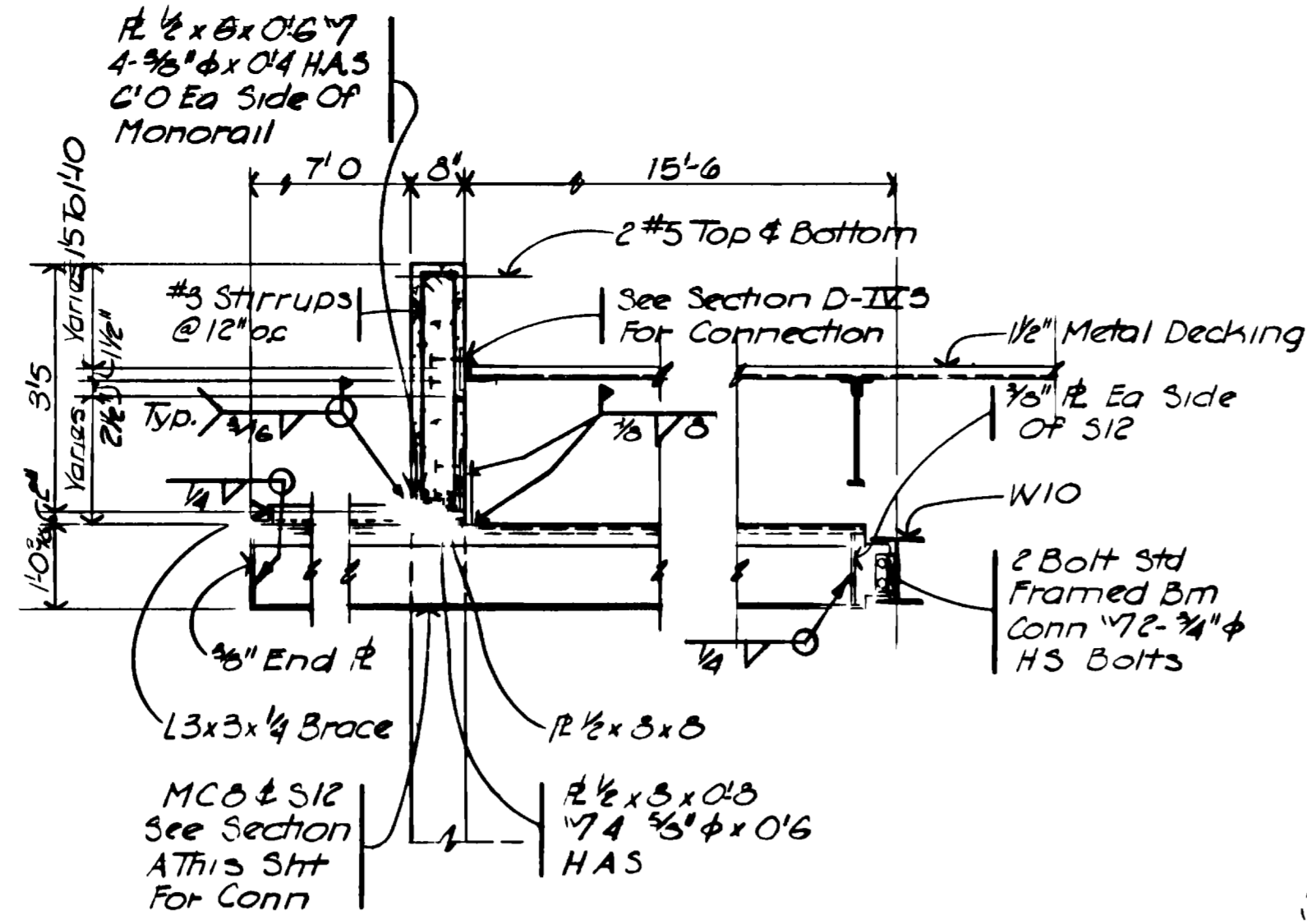
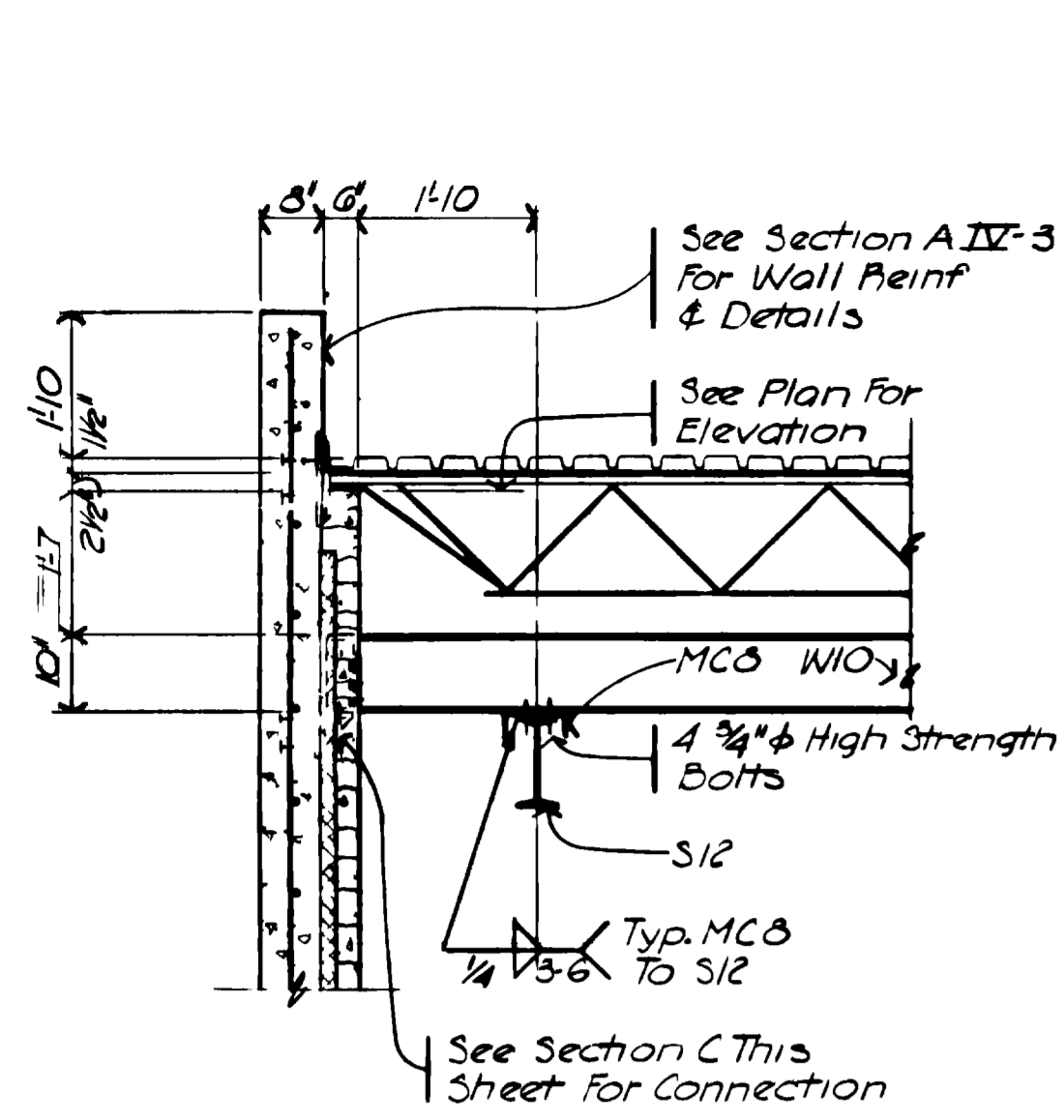
RAW SEWAGE PUMP STATION
PLANS & SECTIONS

HENNINGSON DURHAM & RICHARDSON, INC.
ENGINEERS PLANNERS CONSULTANTS
DENVER COLORADO GRAND JUNCTION COLORADO

JOB DESIGNED SEB CHECKED JMK SHEET
734510 DATED 11/11/11 APPROVED HENNINGSON DATE IV-9

"AS RECORDED FROM INFORMATION PROVIDED BY THE CONTRACTORS DATE MAY 1995"

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SECTION A
SCALE: 1/2" = 1'-0"
IV-10

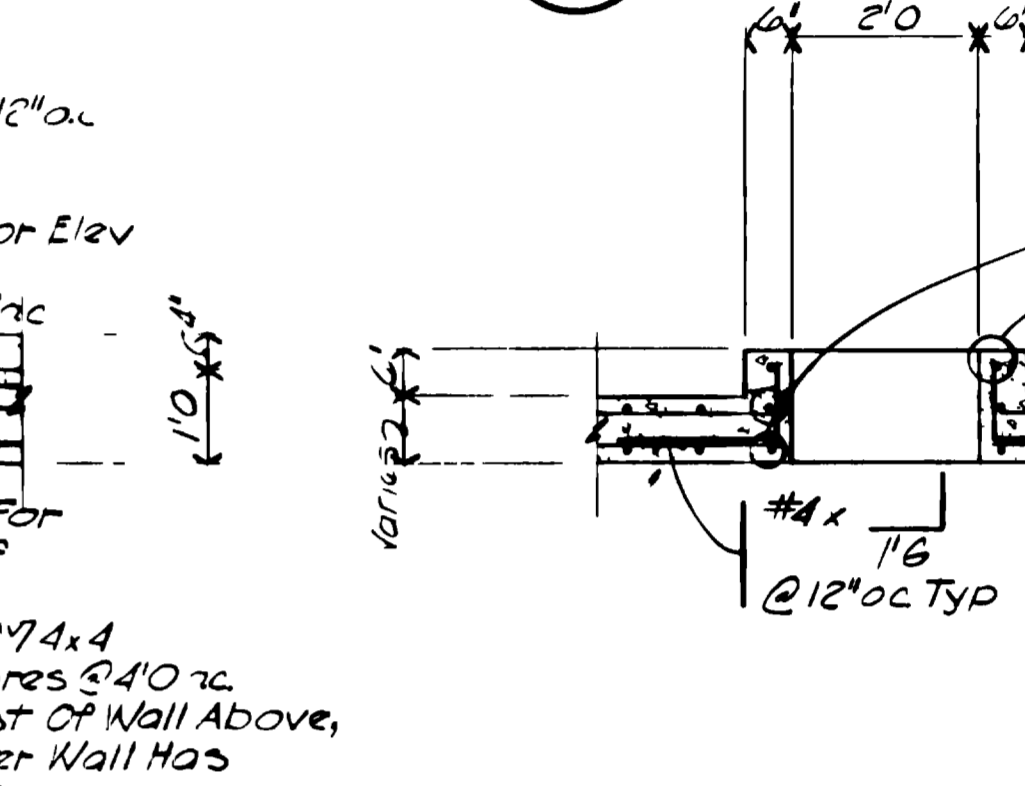
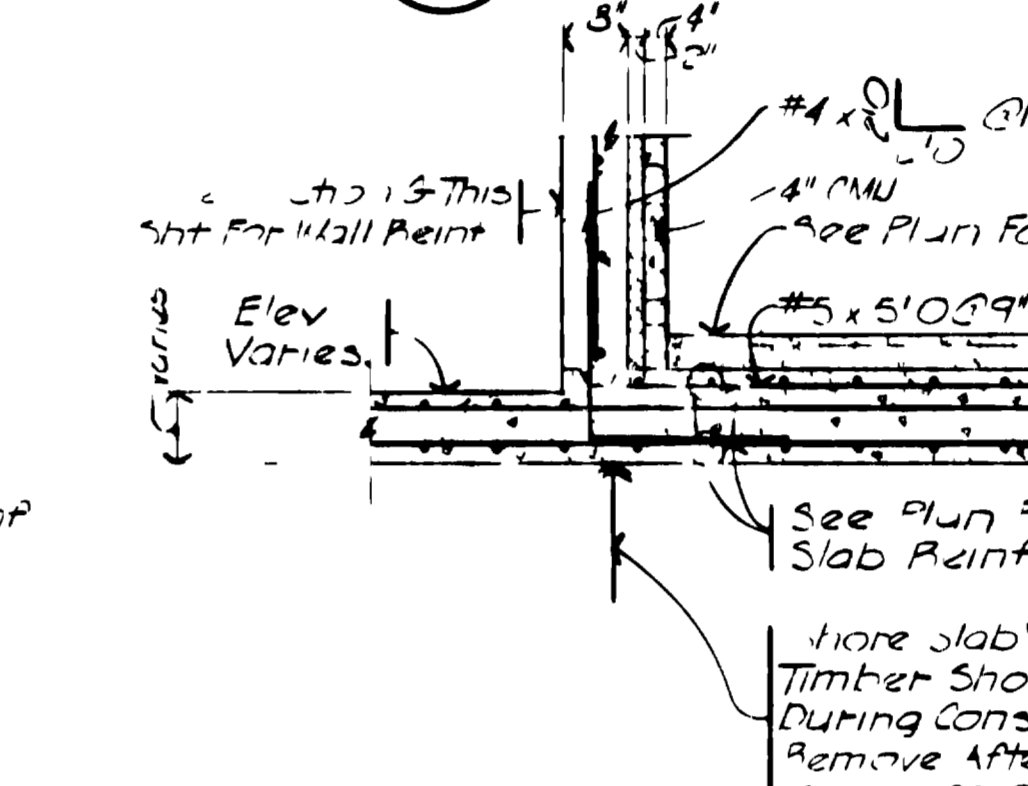
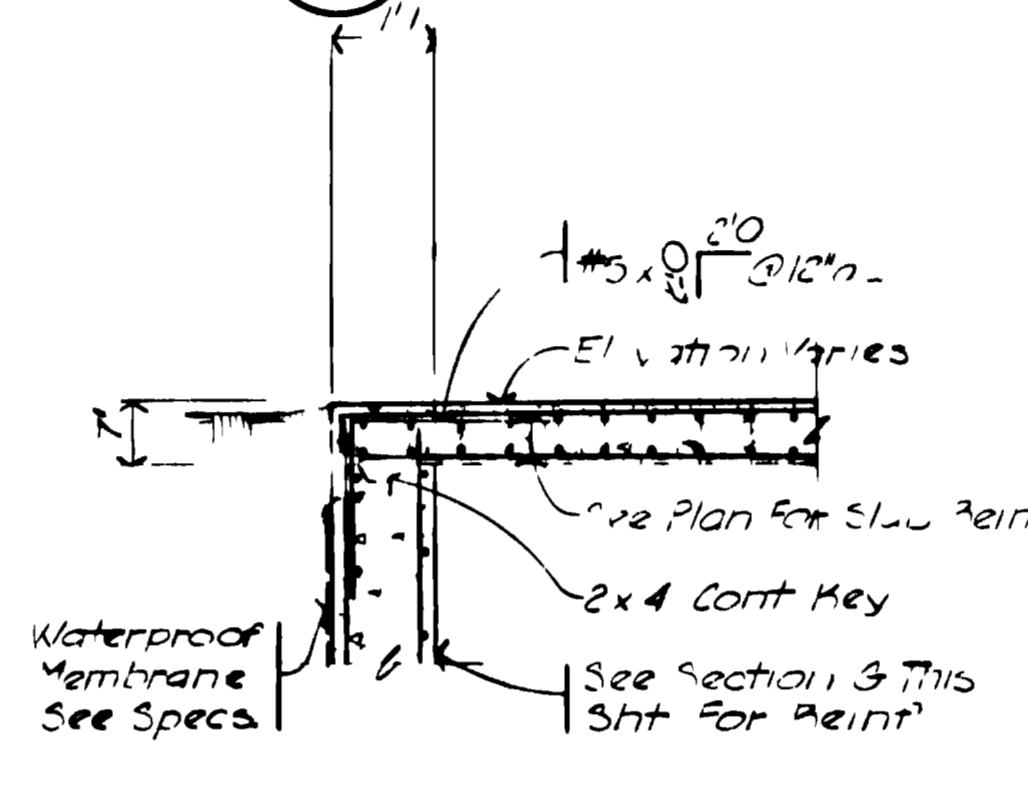
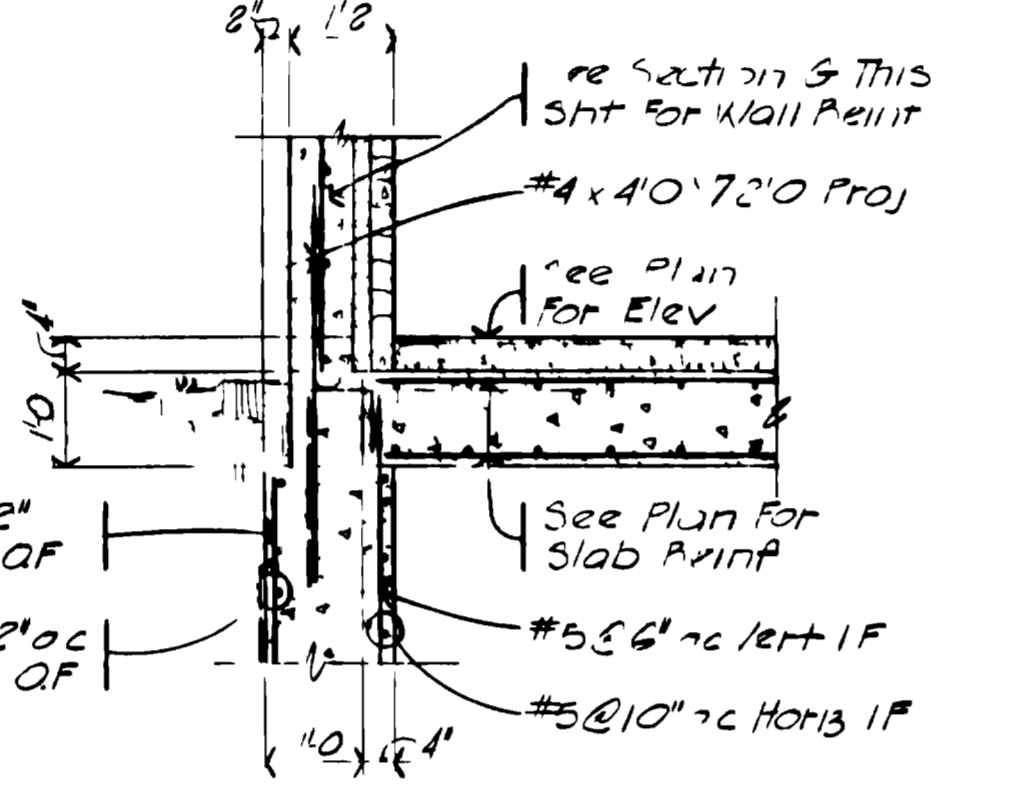
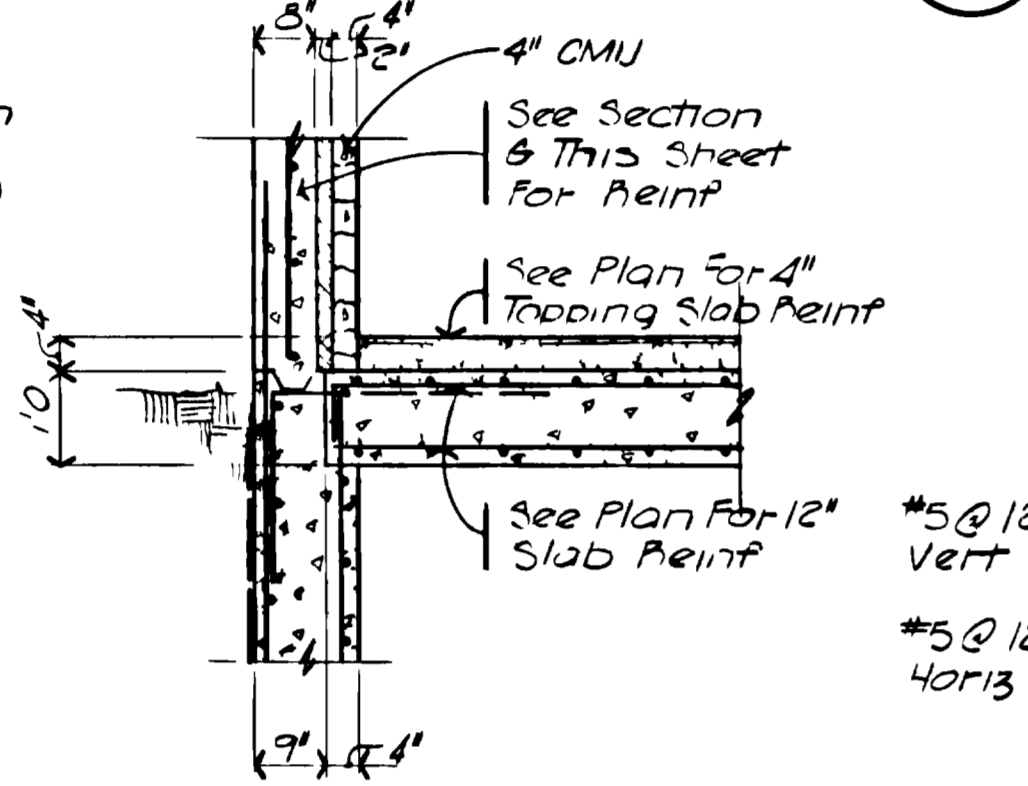
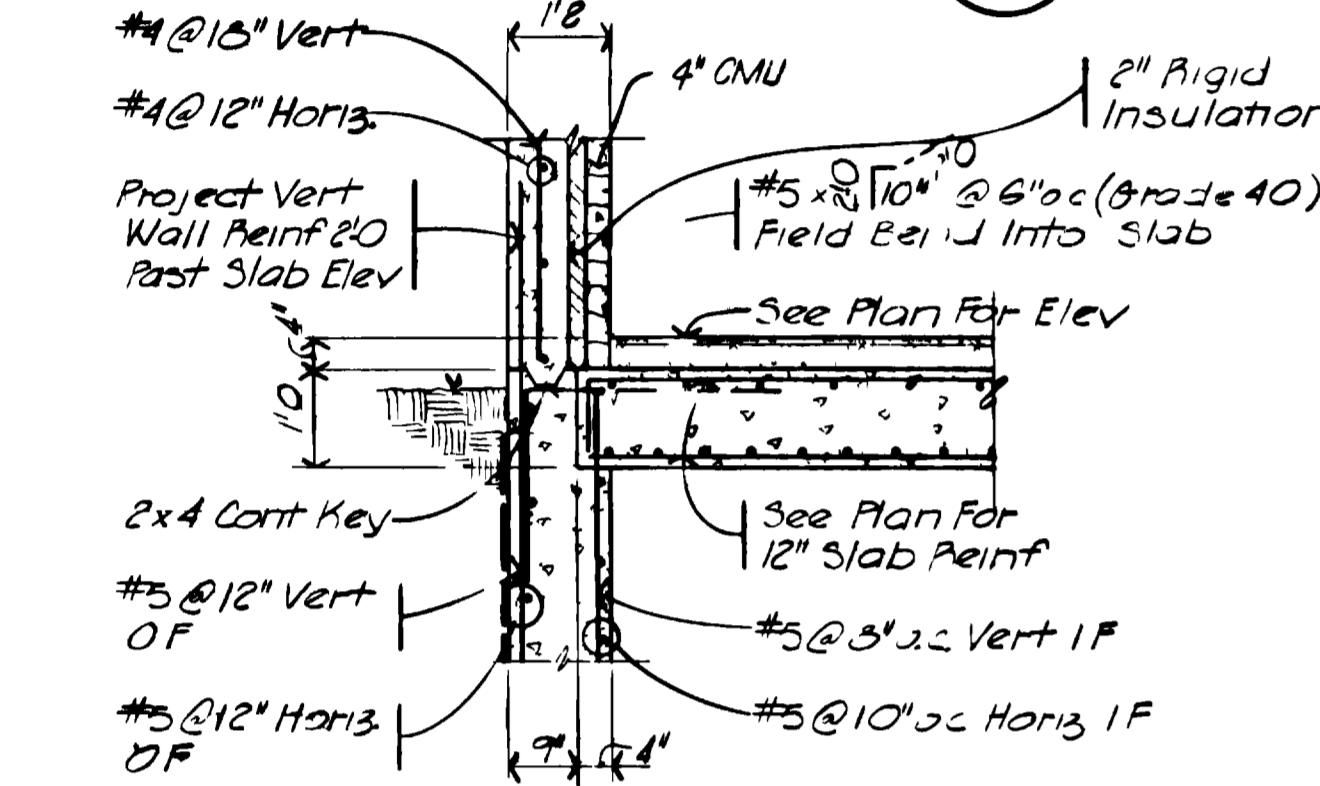
SECTION B
SCALE: 1/2" = 1'-0"
IV-10

SECTION C
SCALE: 1/2" = 1'-0"
IV-10

SECTION D
SCALE: 1/2" = 1'-0"
IV-10

SECTION E
SCALE: 1/2" = 1'-0"
IV-10

SECTION F
SCALE: 1/2" = 1'-0"
IV-10



Note: All Reinf Shown, Typical Unless Otherwise Noted

SECTION G
SCALE: 1/2" = 1'-0"
IV-10

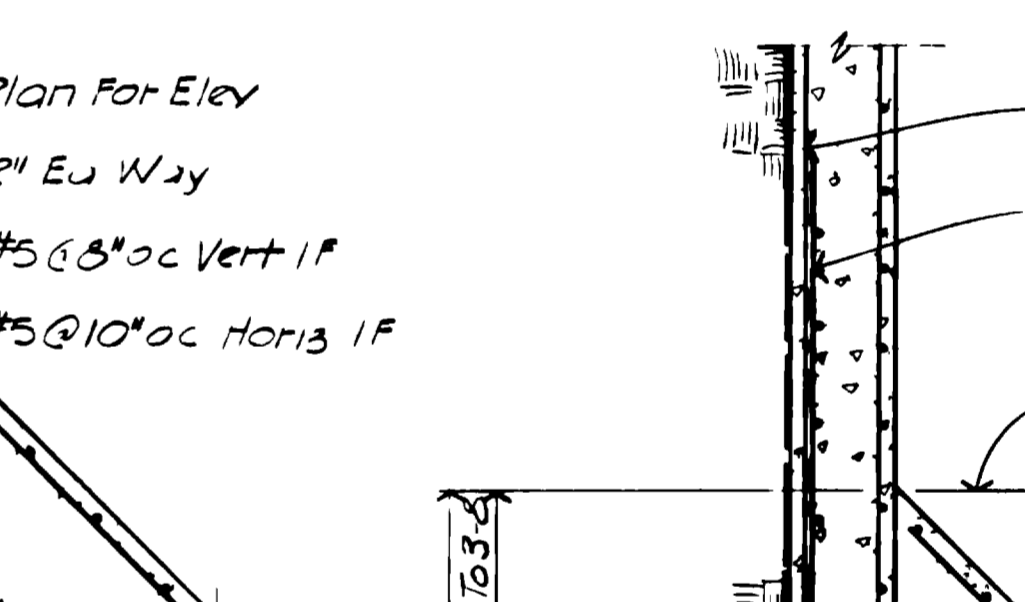
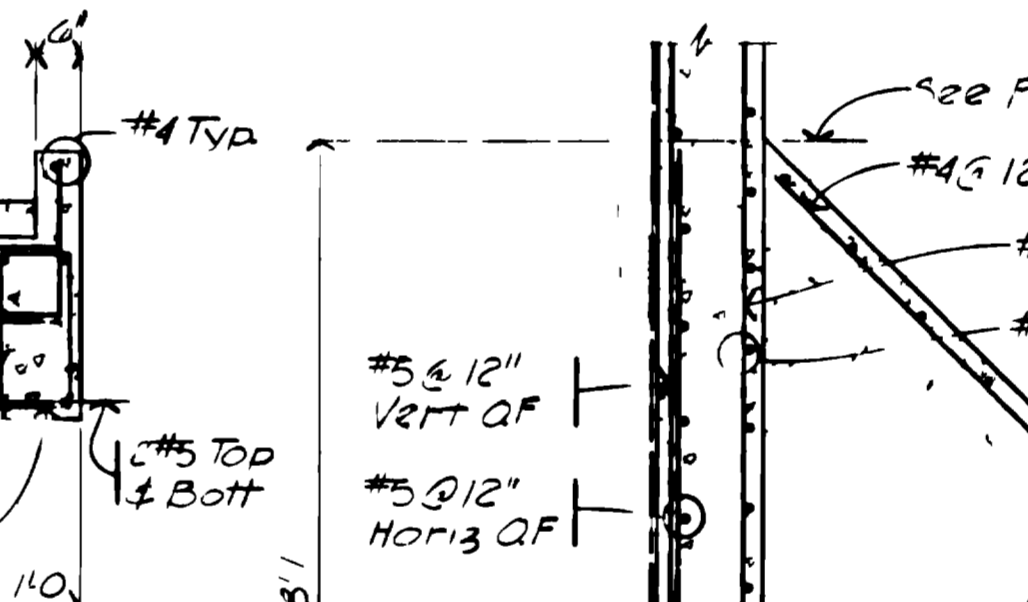
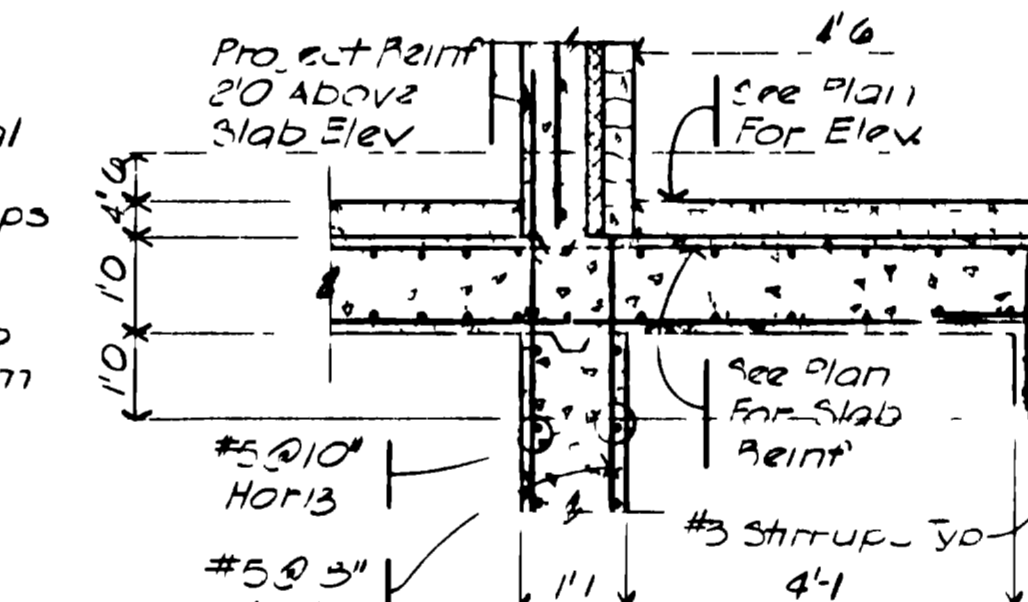
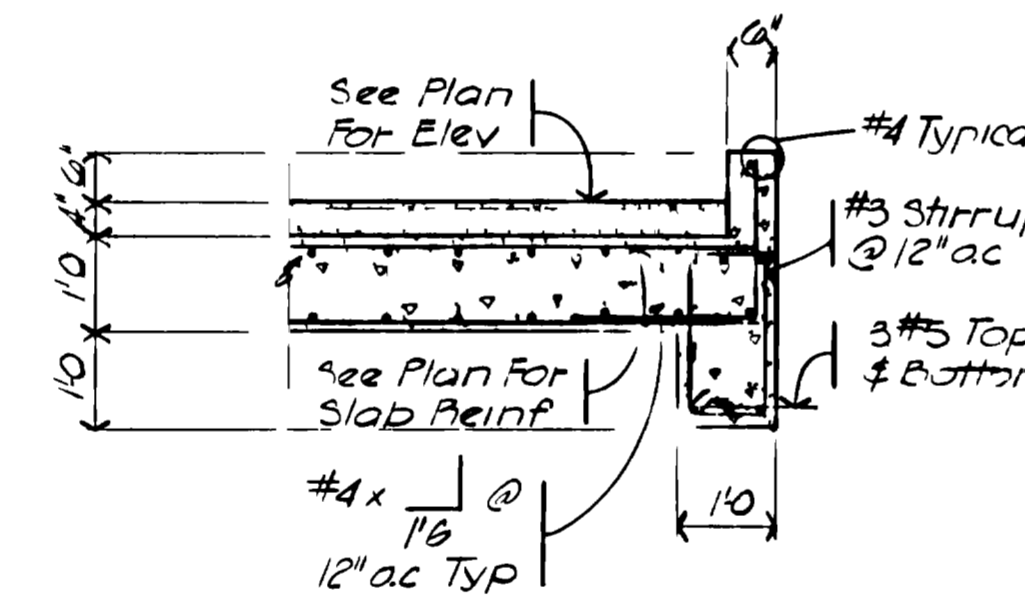
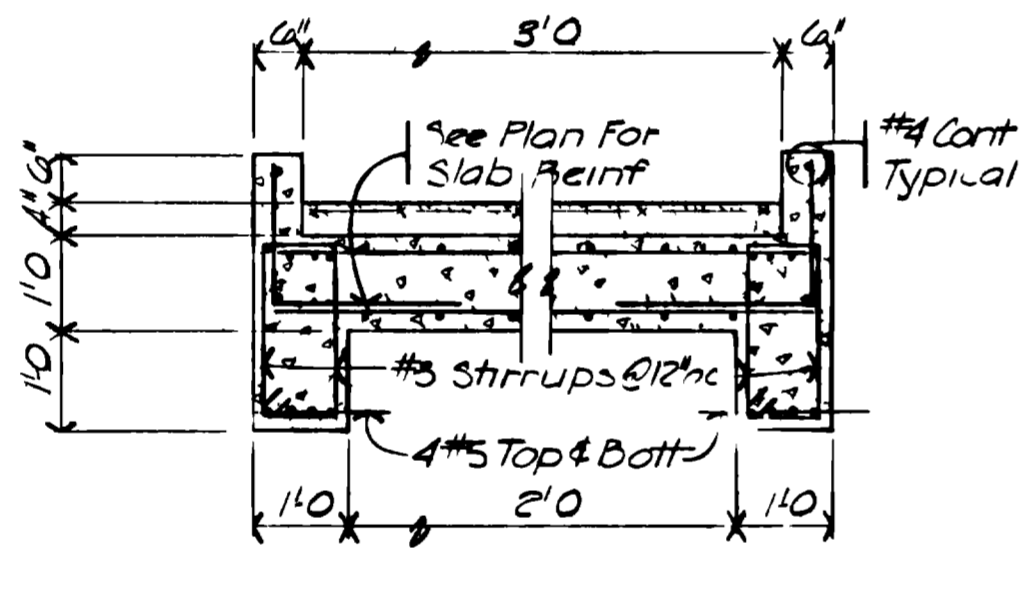
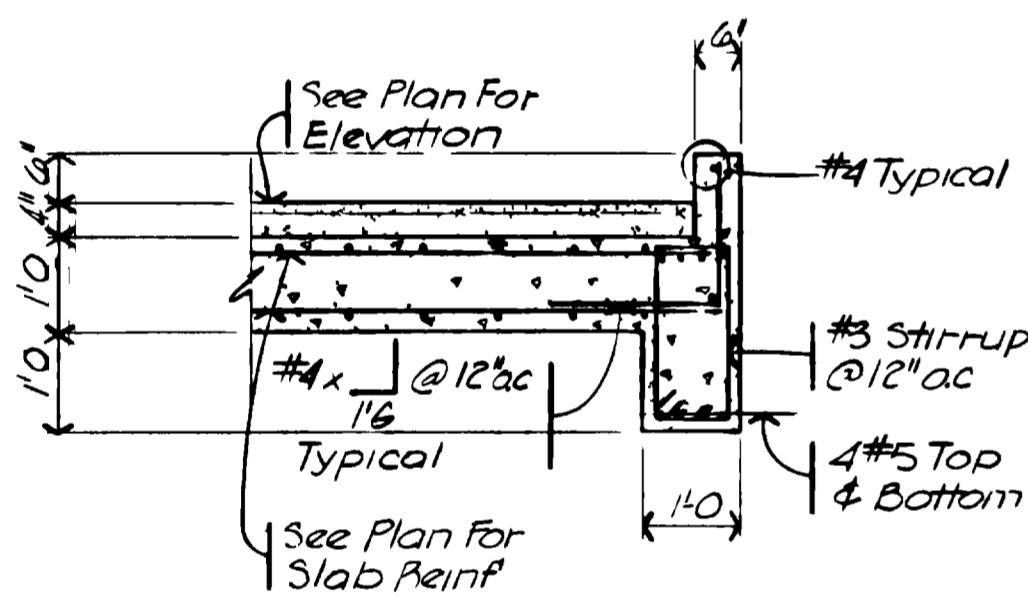
SECTION H
SCALE: 1/2" = 1'-0"
IV-10

SECTION J
SCALE: 1/2" = 1'-0"
IV-10

SECTION K
SCALE: 1/2" = 1'-0"
IV-10

SECTION L
SCALE: 1/2" = 1'-0"
IV-10

SECTION M
SCALE: 1/2" = 1'-0"
IV-10



SECTION N
SCALE: 1/2" = 1'-0"
IV-10

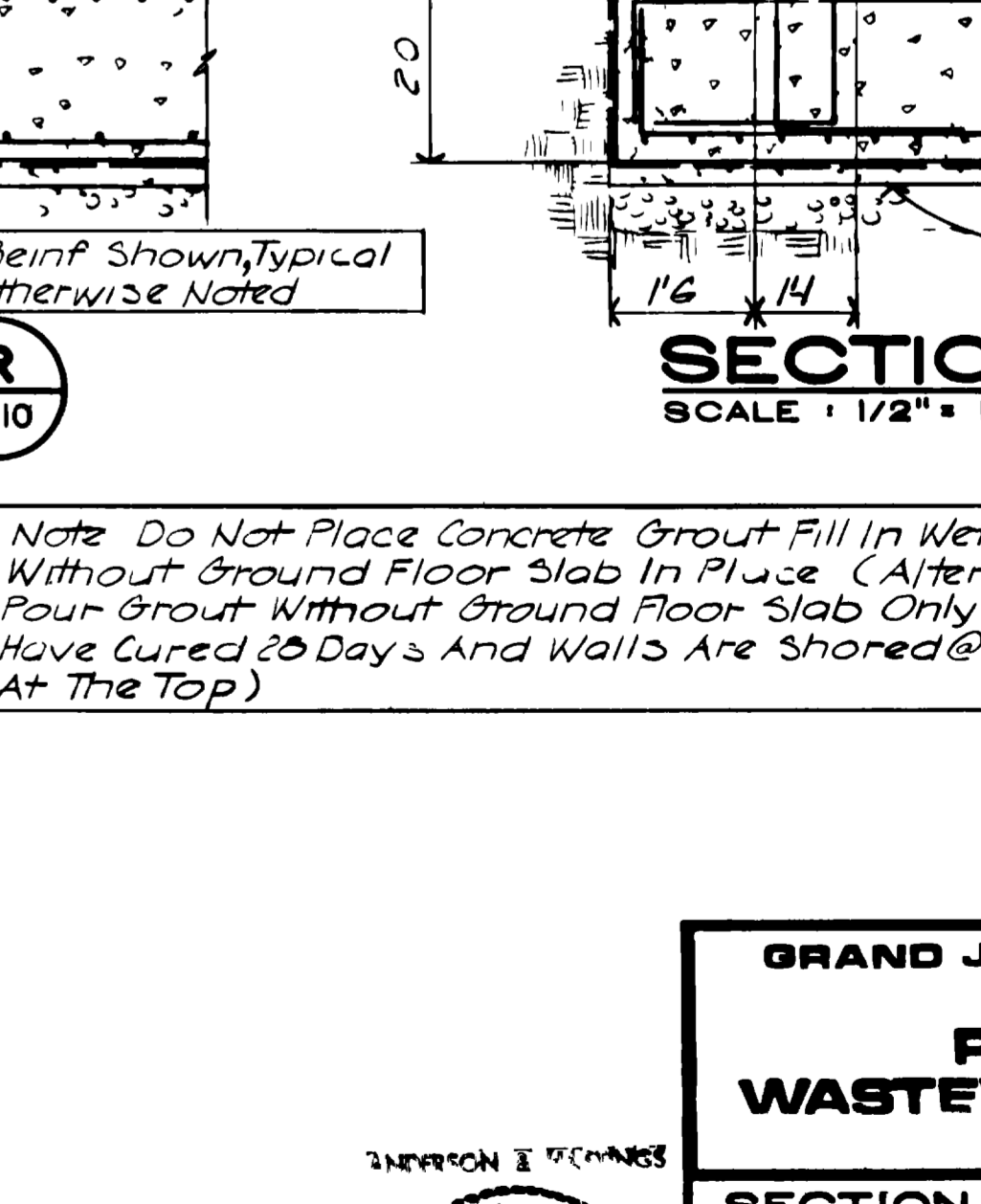
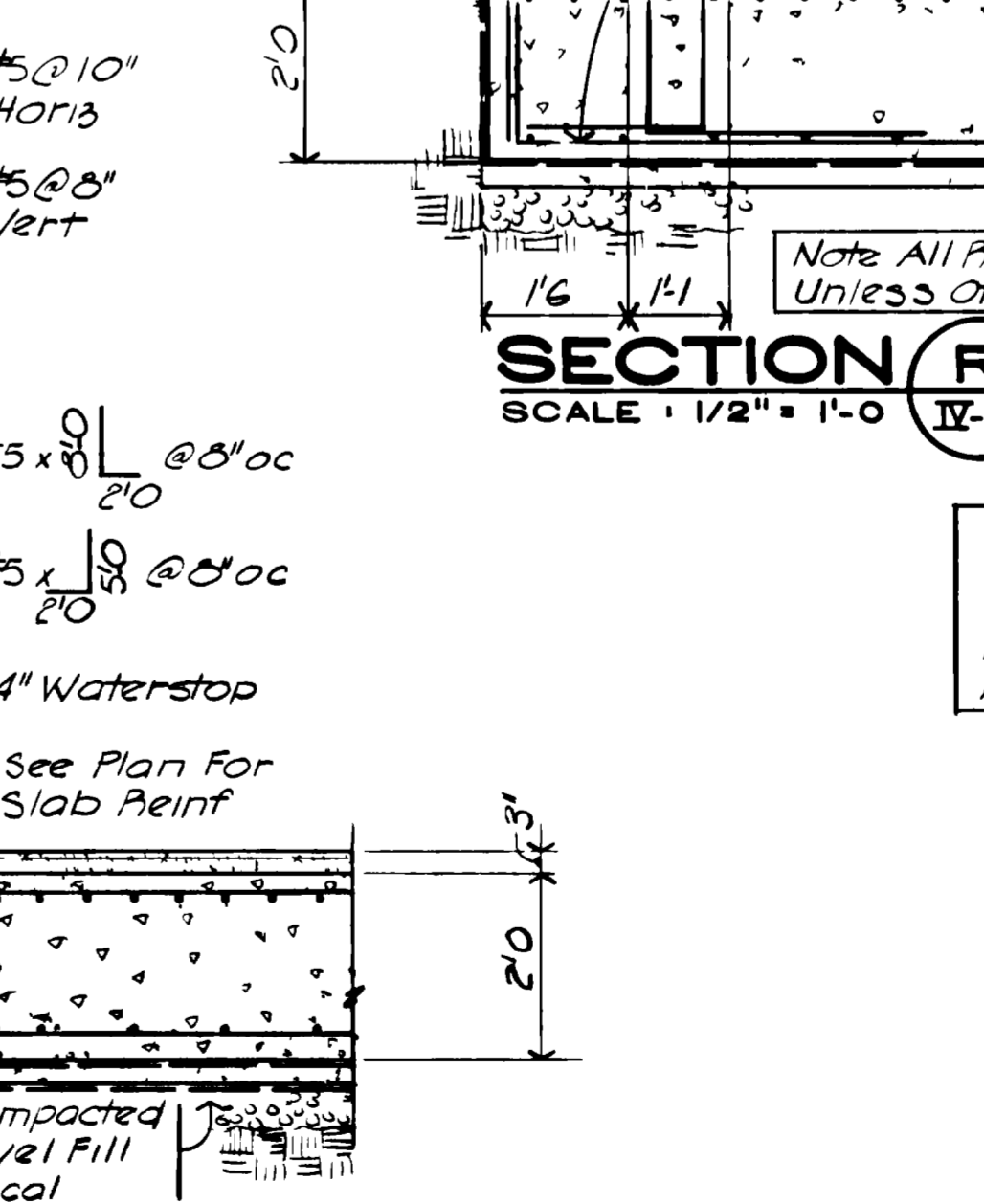
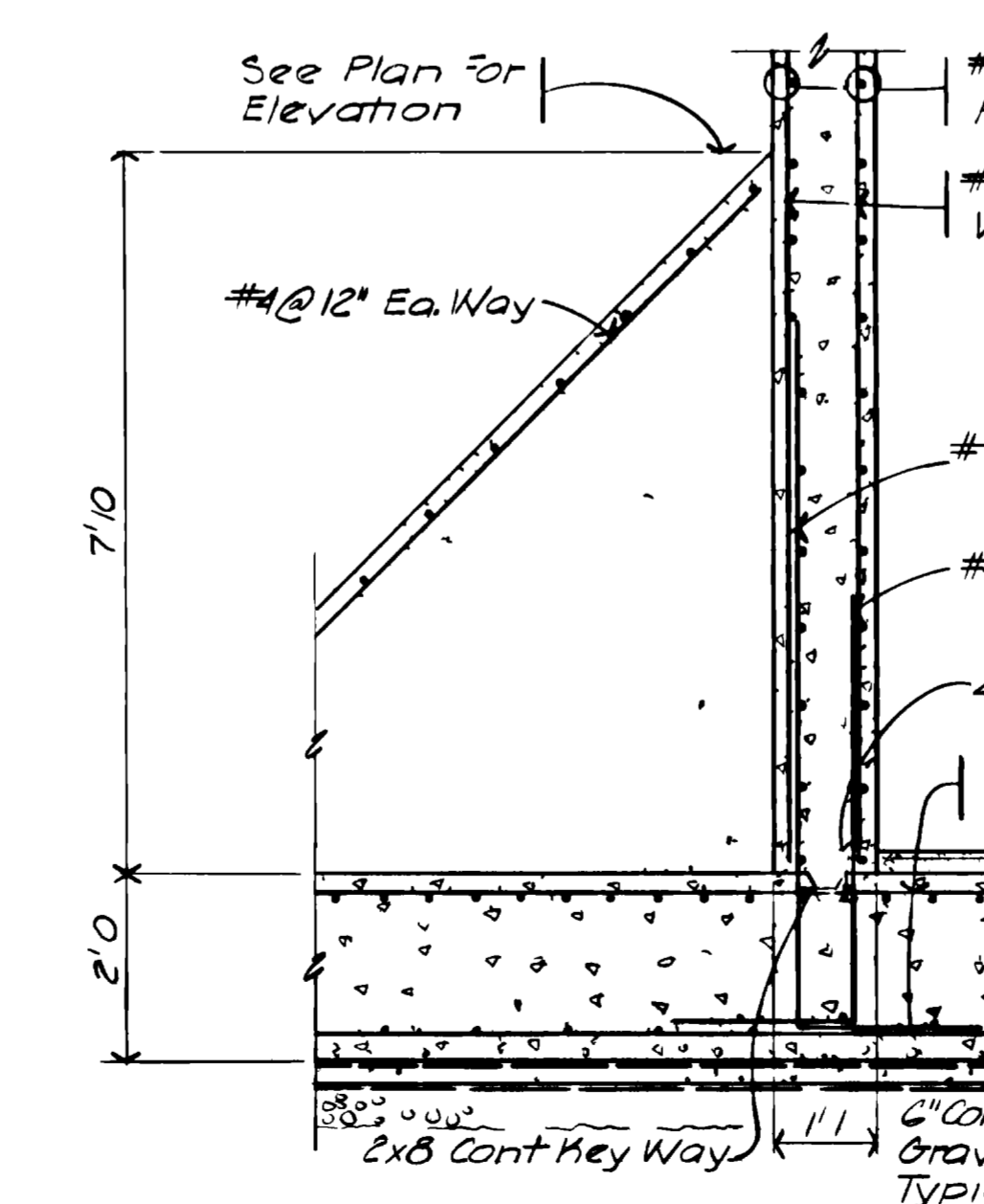
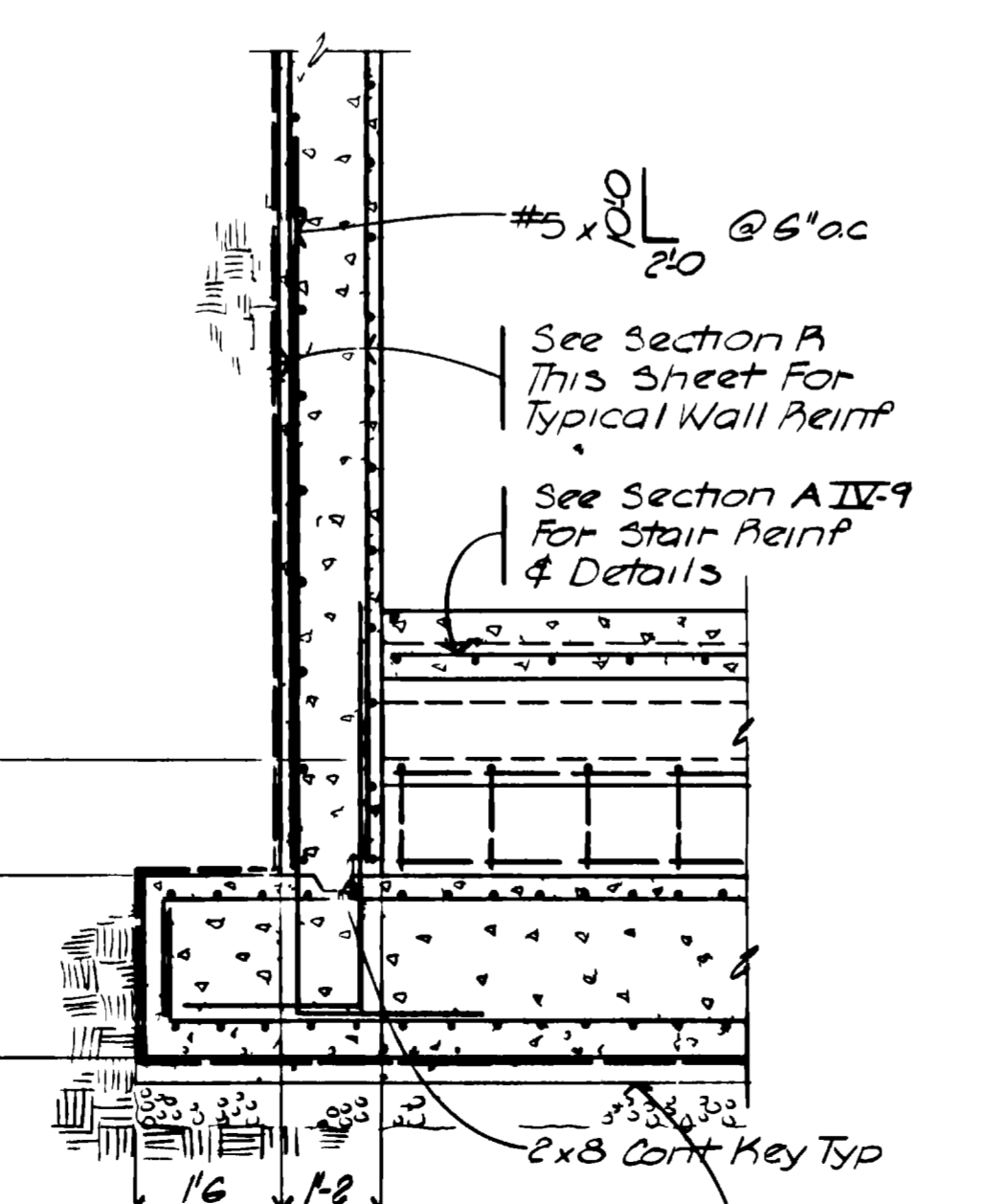
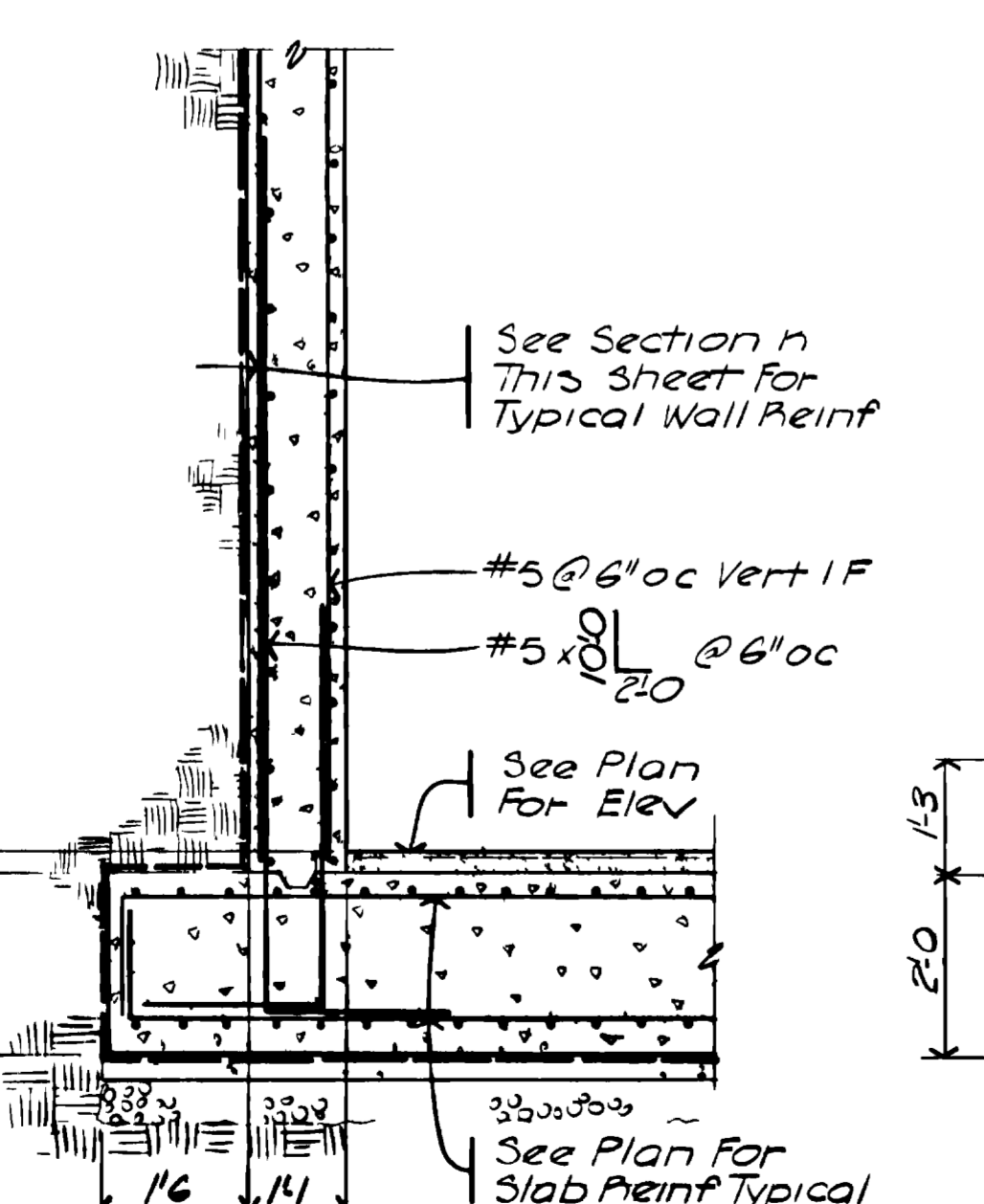
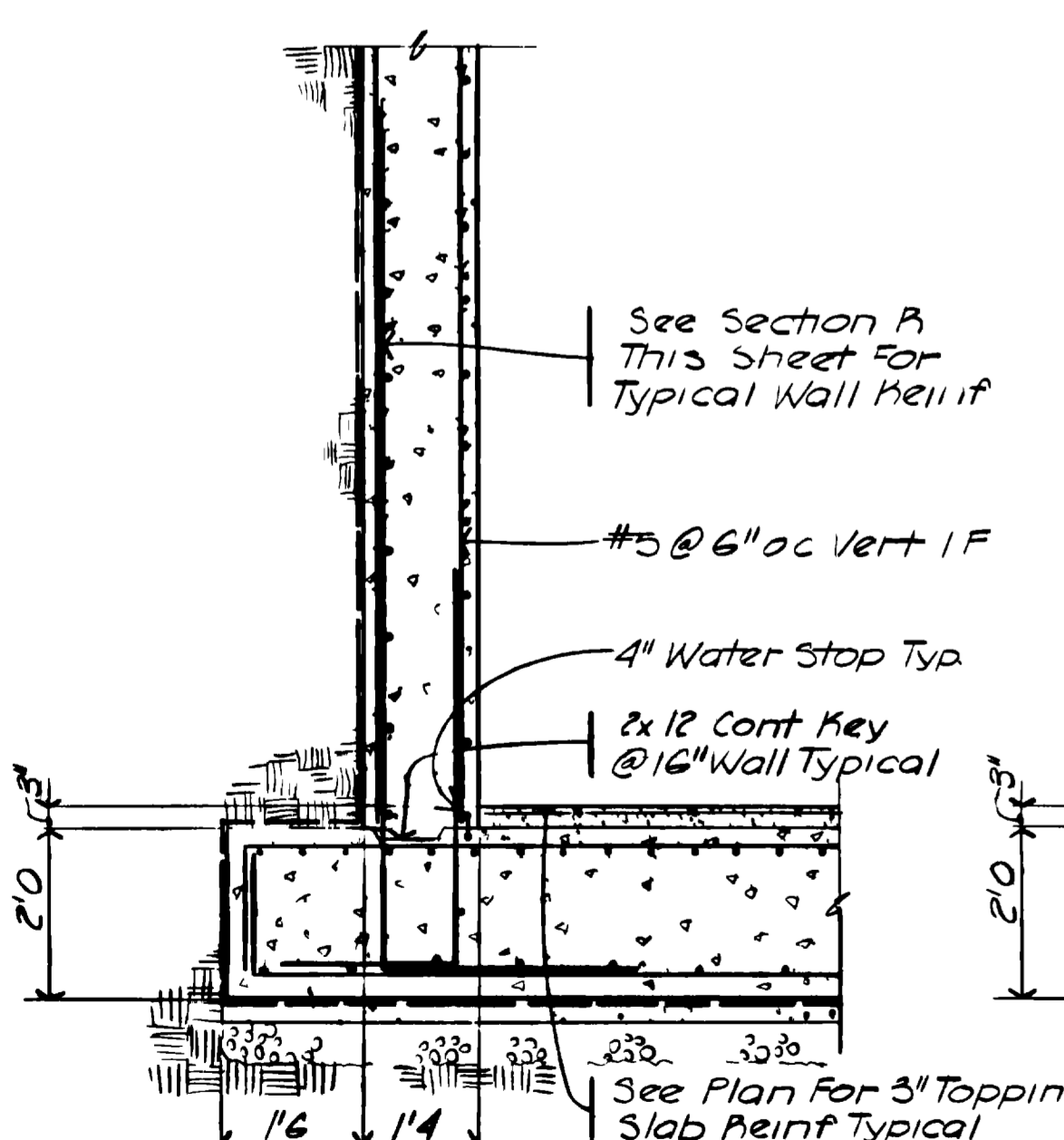
SECTION O
SCALE: 1/2" = 1'-0"
IV-10

SECTION P
SCALE: 1/2" = 1'-0"
IV-10

SECTION Q
SCALE: 1/2" = 1'-0"
IV-10

SECTION R
SCALE: 1/2" = 1'-0"
IV-10

SECTION S
SCALE: 1/2" = 1'-0"
IV-10



SECTION T
SCALE: 1/2" = 1'-0"
IV-10

SECTION U
SCALE: 1/2" = 1'-0"
IV-10

SECTION V
SCALE: 1/2" = 1'-0"
IV-10

SECTION W
SCALE: 1/2" = 1'-0"
IV-10

SECTION X
SCALE: 1/2" = 1'-0"
IV-10

SECTION Y
SCALE: 1/2" = 1'-0"
IV-10

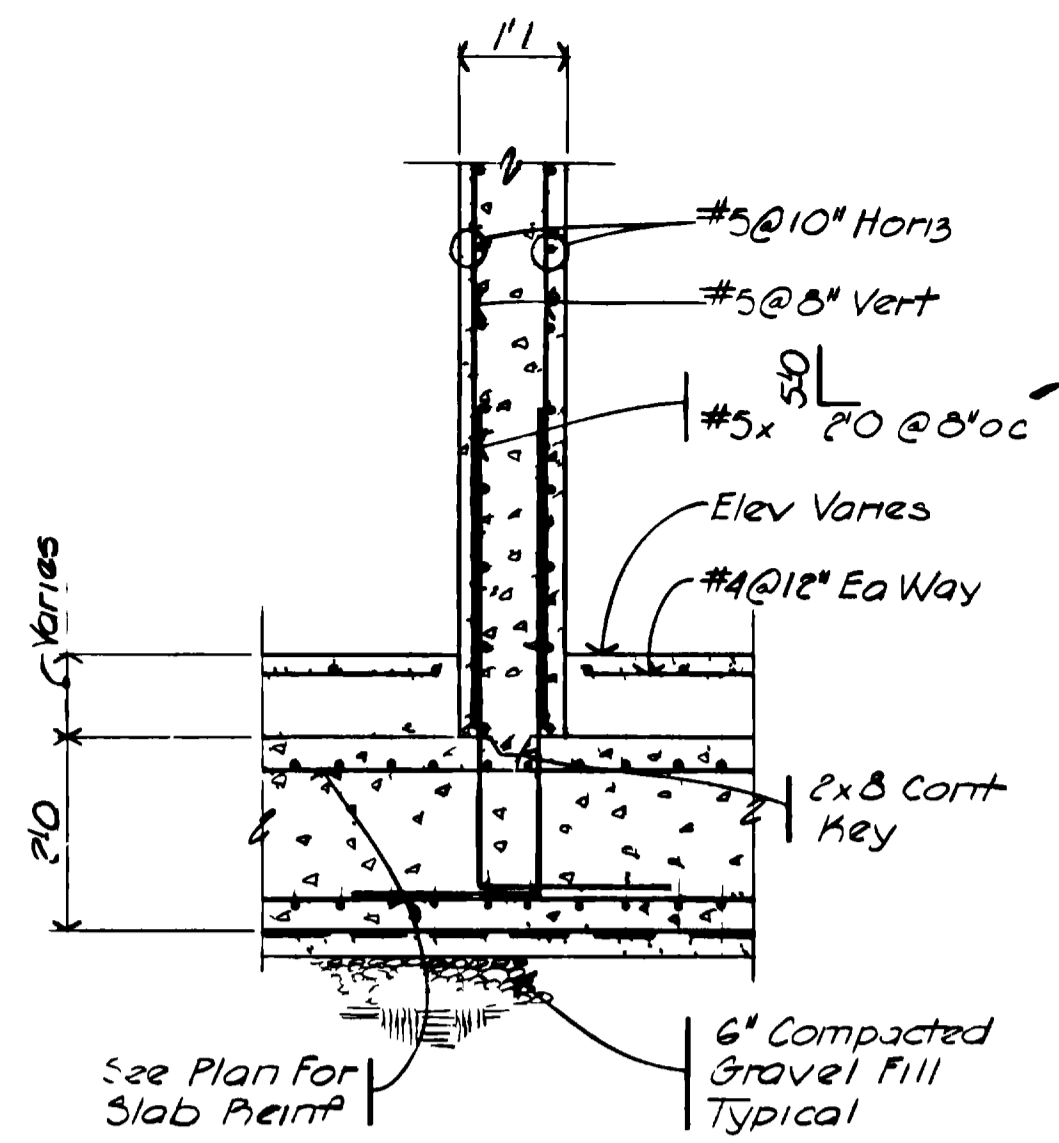
Note: Do Not Place Concrete Grout Fill In Wet Wells Without Ground Floor Slab In Place. (Alternate Can Pour Grout Without Ground Floor Slab Only If Walls Have Cured 28 Days And Walls Are Shored @ 4'0" At The Top)

GRAND JUNCTION / MESA COUNTY, COLORADO
PERRIGO WASH WASTE WATER TREATMENT PLANT
SECTION IV STRUCTURAL
RAW SEWAGE PUMP STATION
SECTIONS

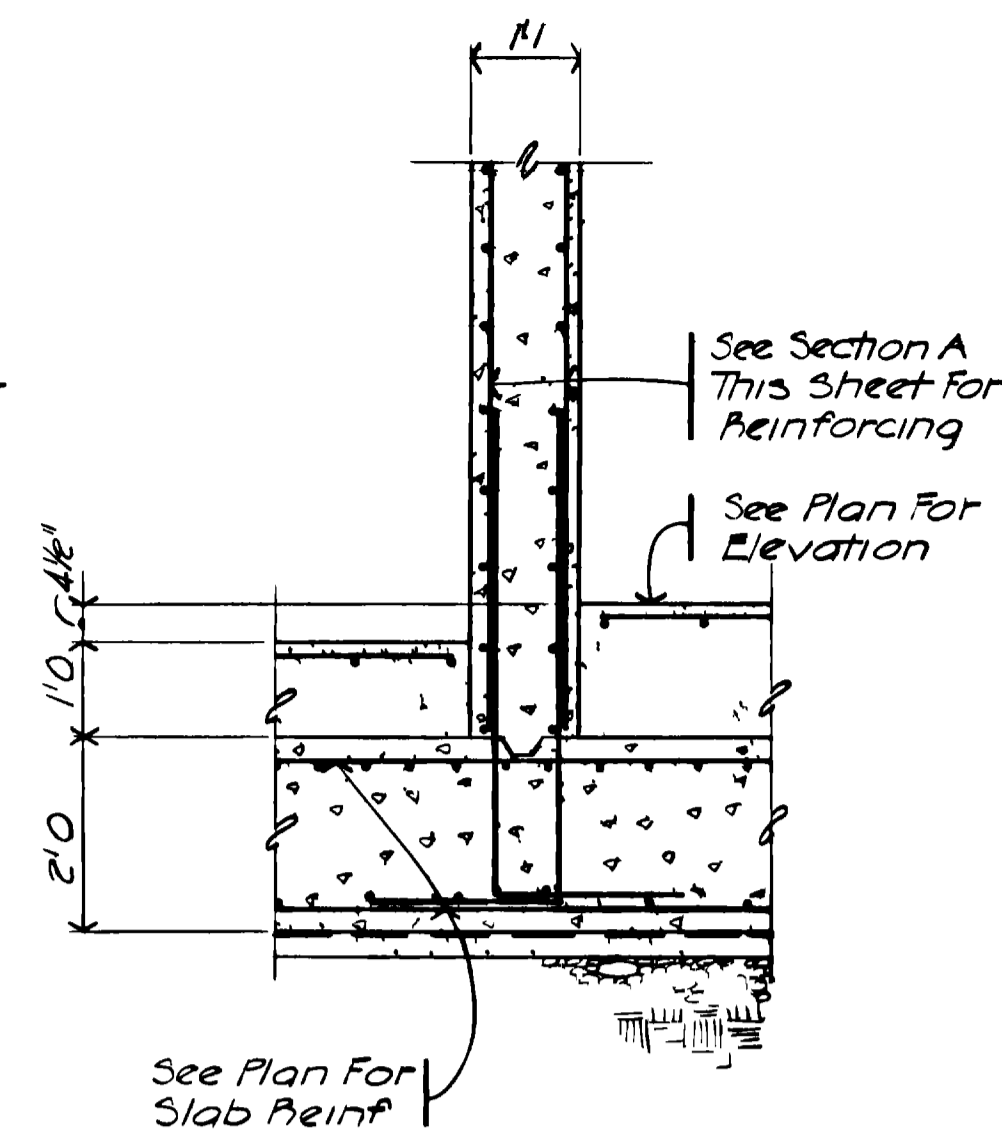
HENNINGSON, DURHAM & RICHARDSON, INC.		ENGINEERS PLANNERS CONSULTANTS	
DENVER COLORADO		GRAND JUNCTION COLORADO	
JOB NO. 734510	DESIGNED: SEA	CHECKED: J.M.H.	SHEET IV-10
DATE: MAY 1998	DRAWN: SEA/R.N.T.	APPROVED: HENNINGSON	DATE: MAY 1998

AS RECORDED FROM INFORMATION PROVIDED BY THE CONTRACTOR DATE: MAY 1998

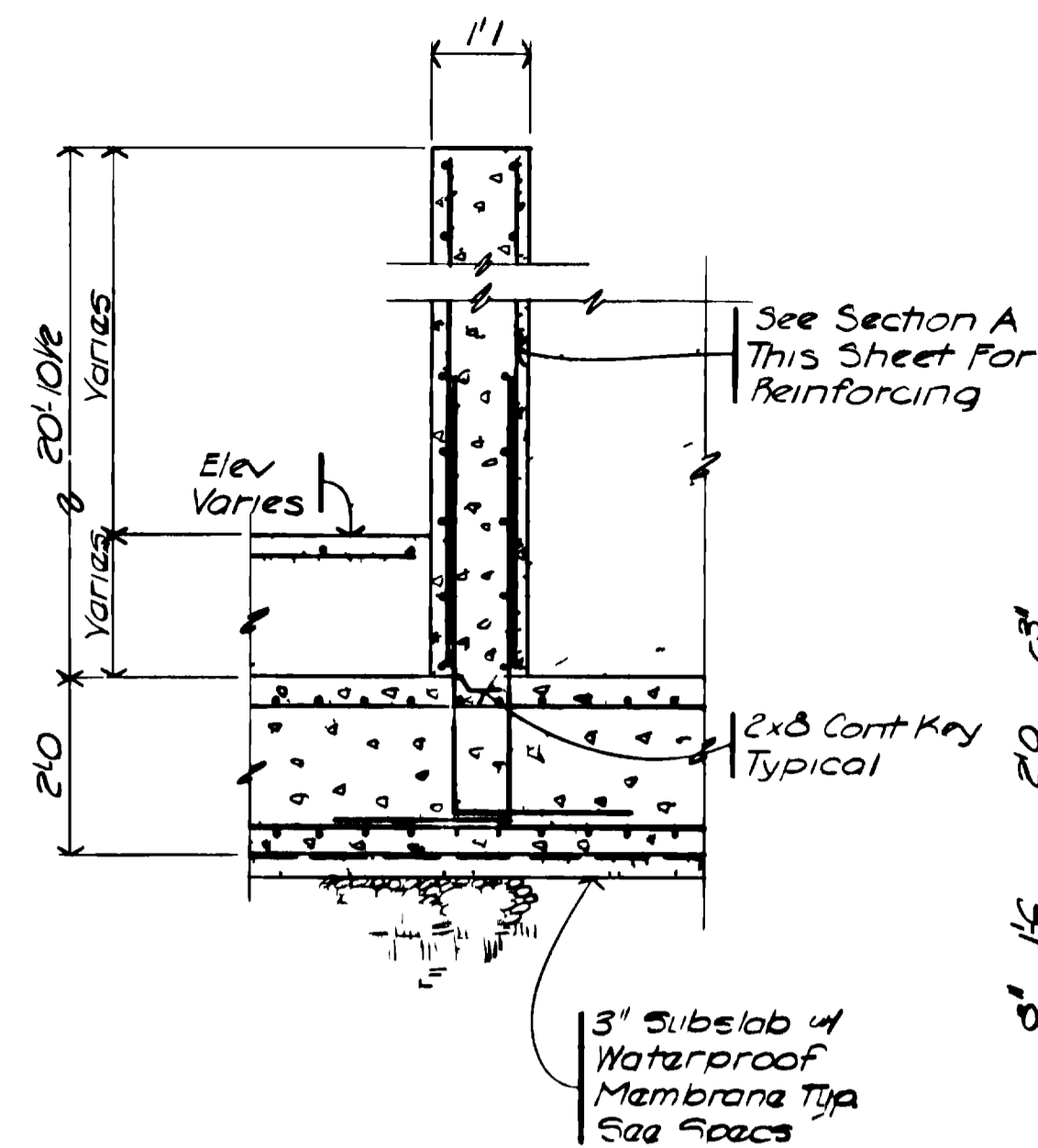
NO.	DATE	DESCRIPTION	BY	APPROV.
1		AS BUILT		



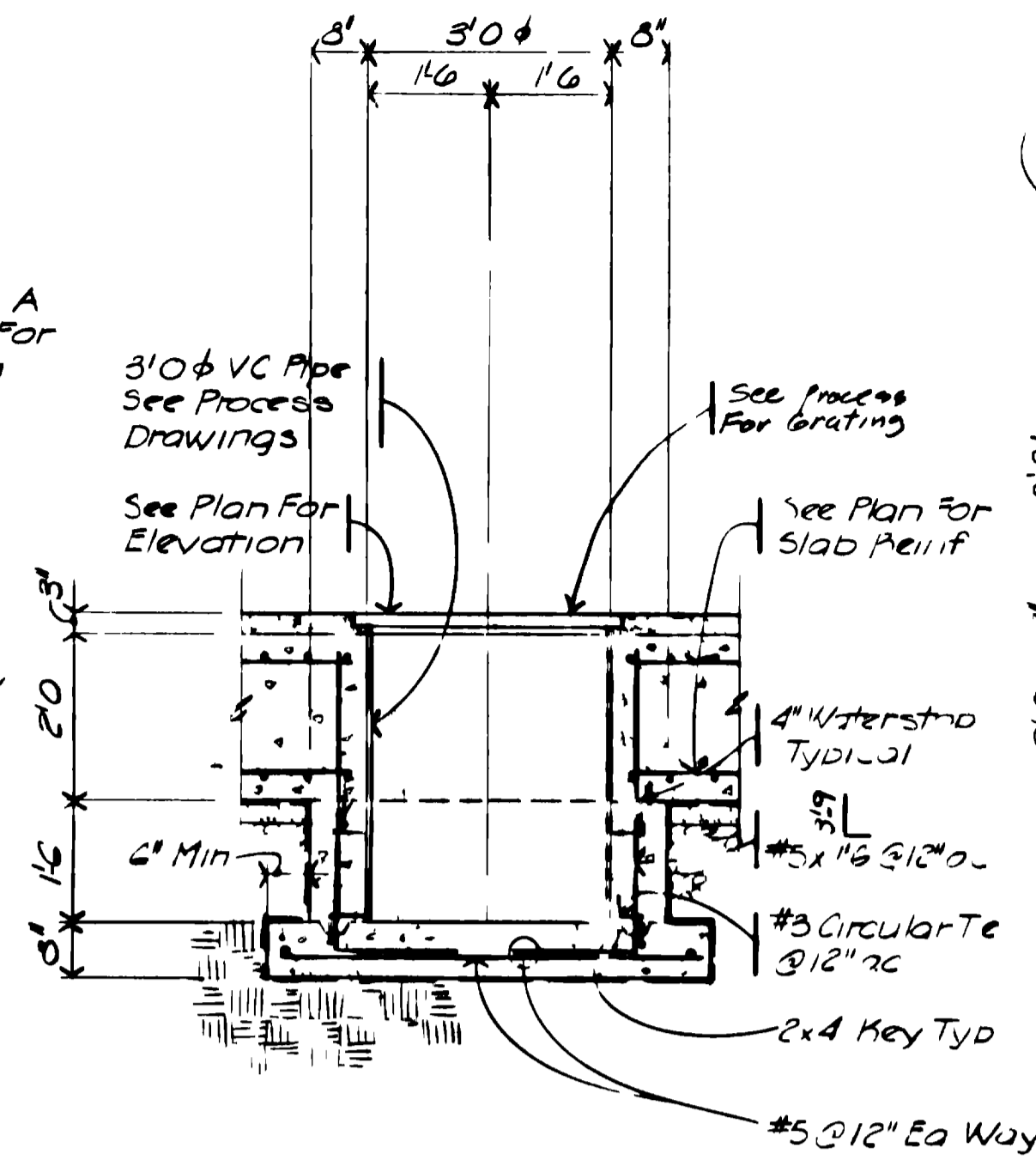
SECTION A
SCALE: 1/2" = 1'-0"
IV-11



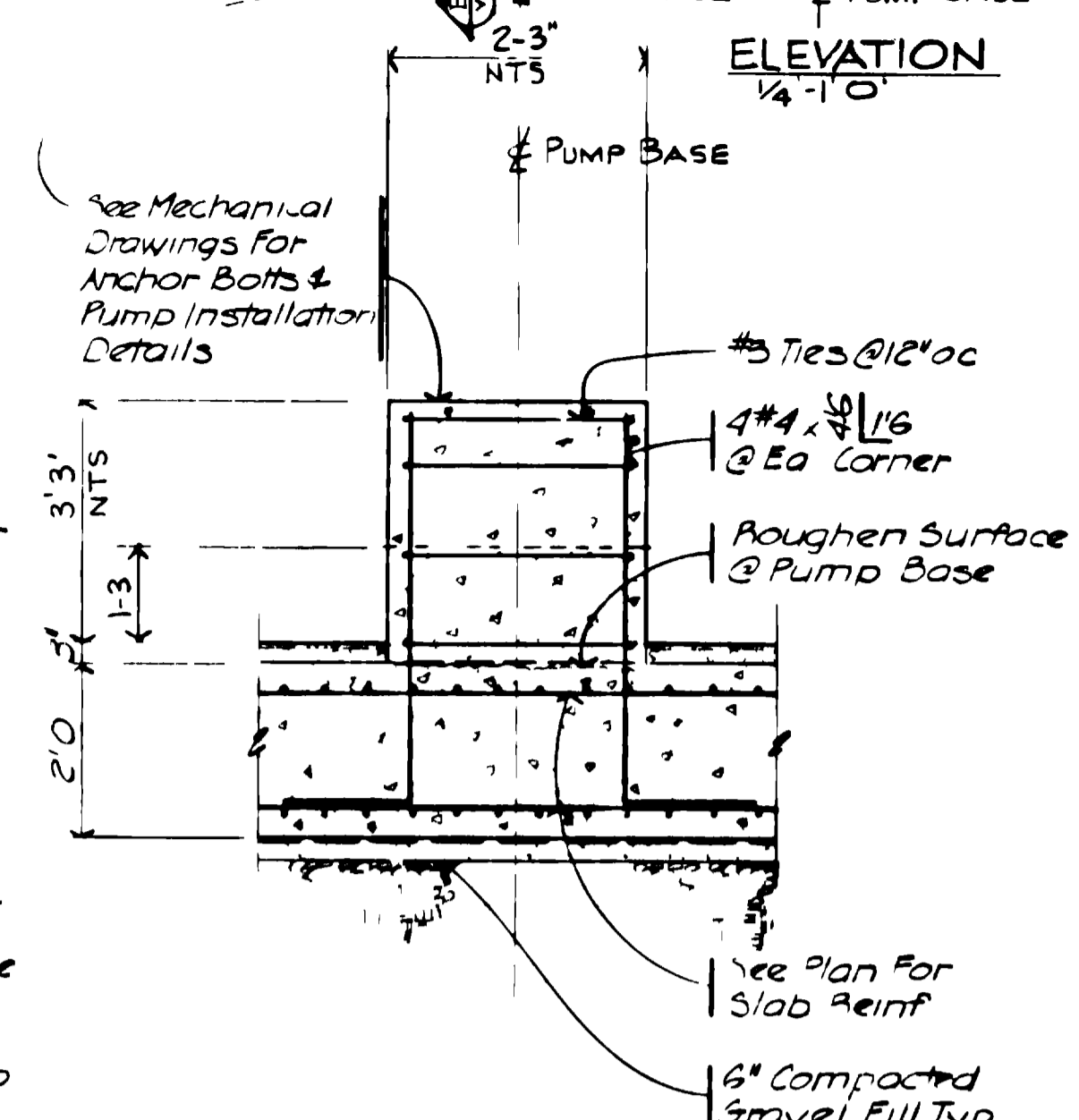
SECTION B
SCALE: 1/2" = 1'-0"
IV-11



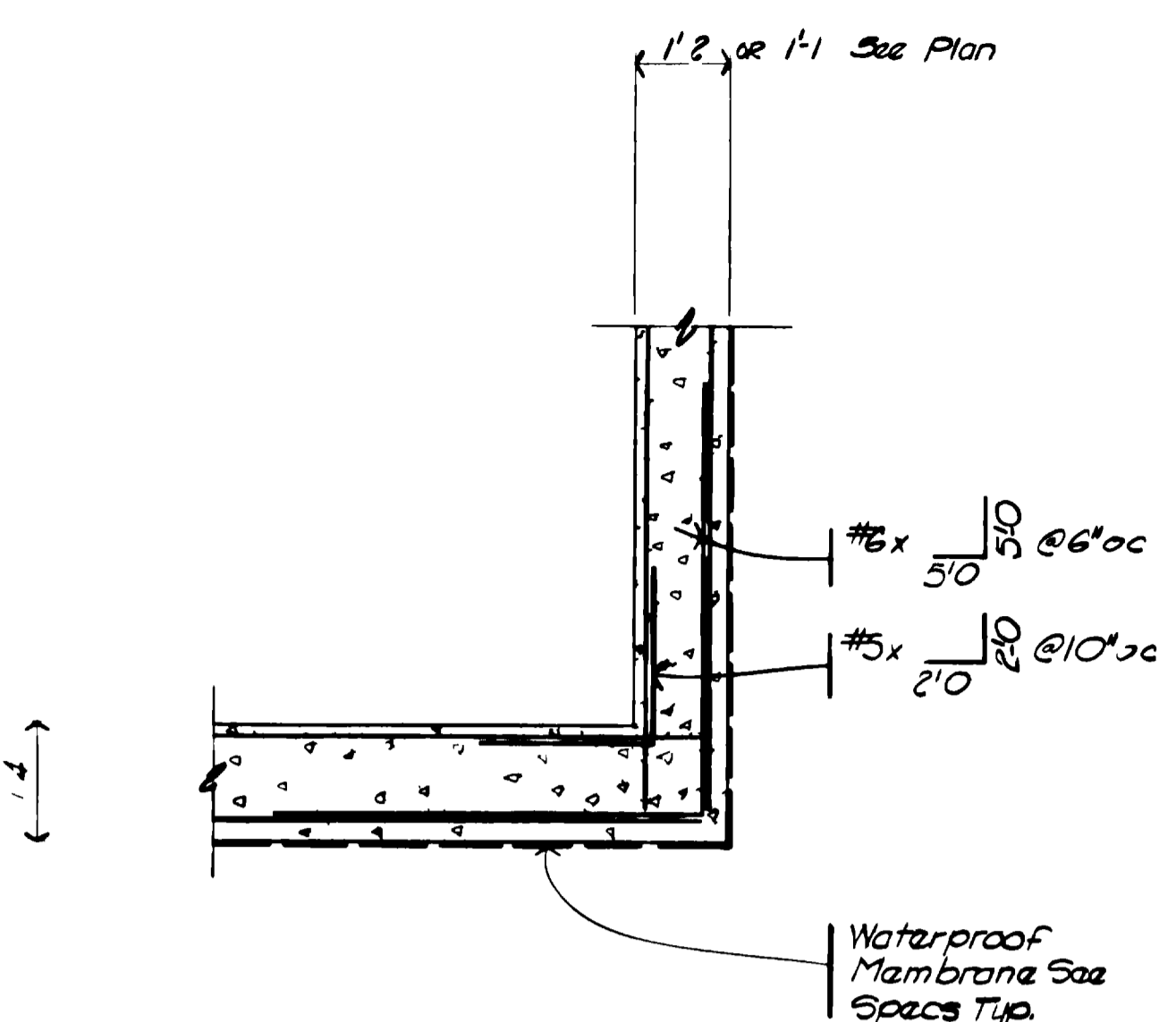
SECTION C
SCALE: 1/2" = 1'-0"
IV-11



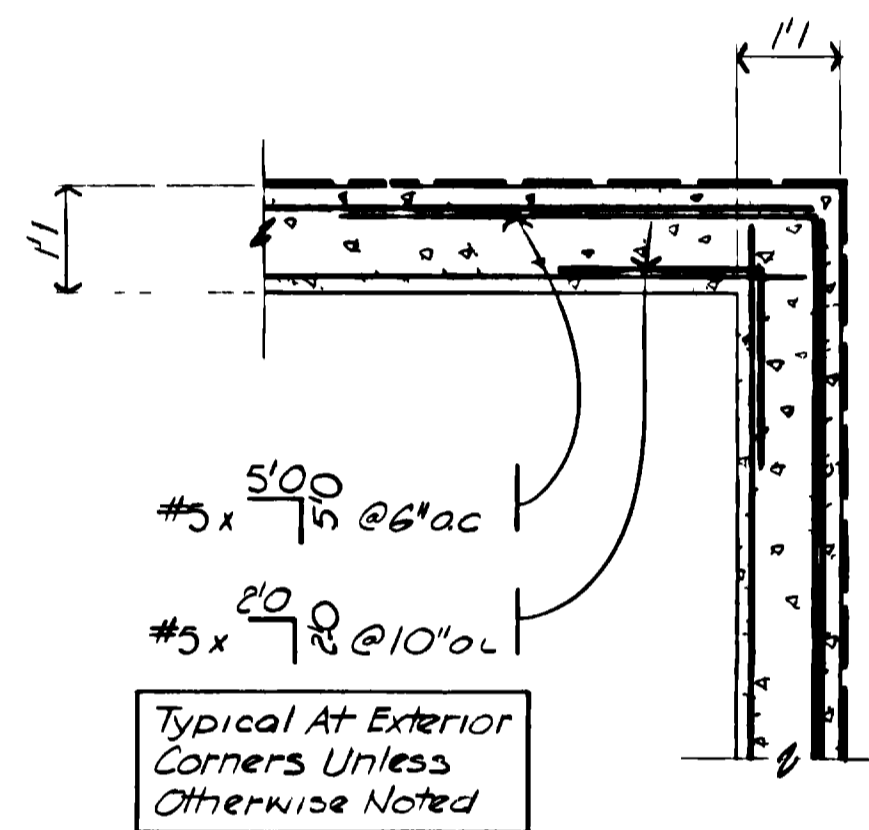
SECTION D
SCALE: 1/2" = 1'-0"
IV-11



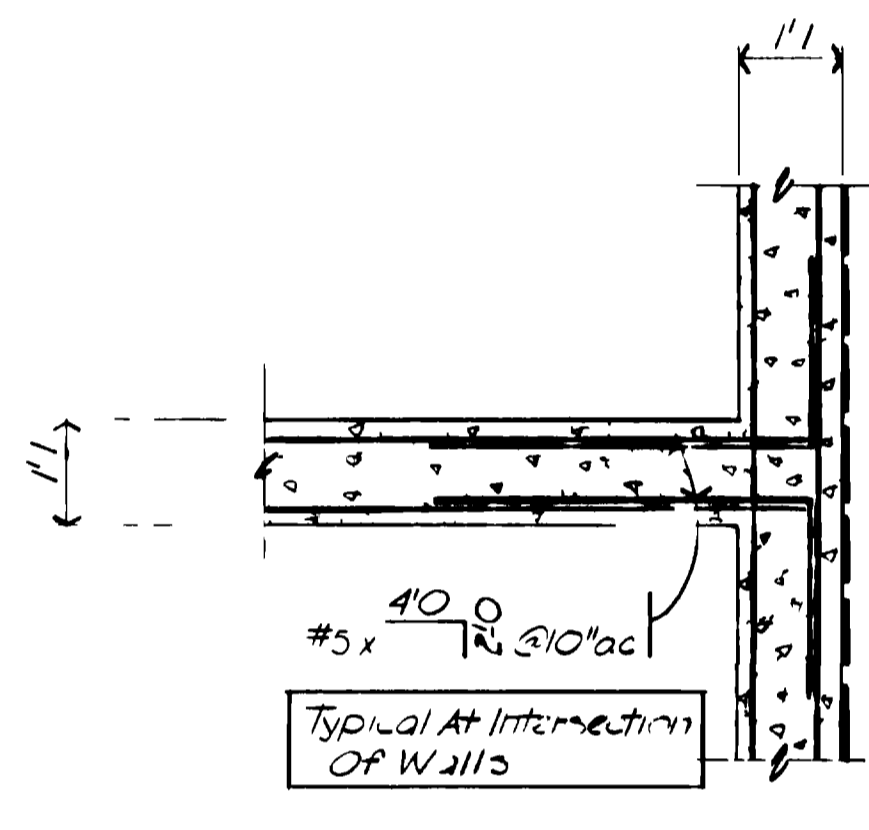
SECTION E
SCALE: 1/2" = 1'-0"
IV-11



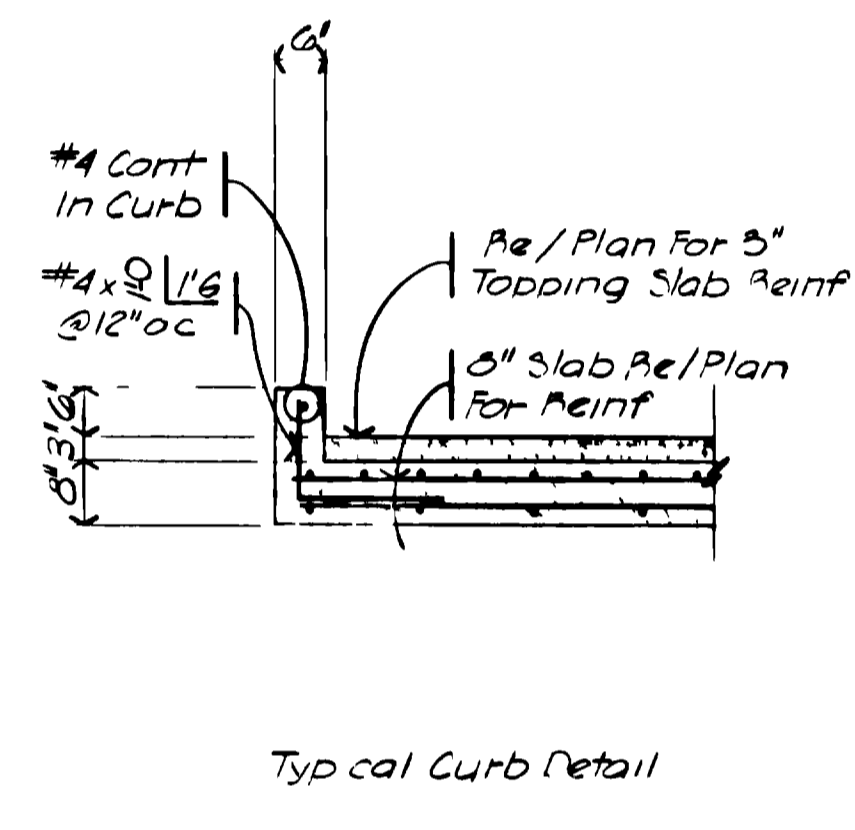
DETAIL I
SCALE: 1/2" = 1'-0"
IV-11



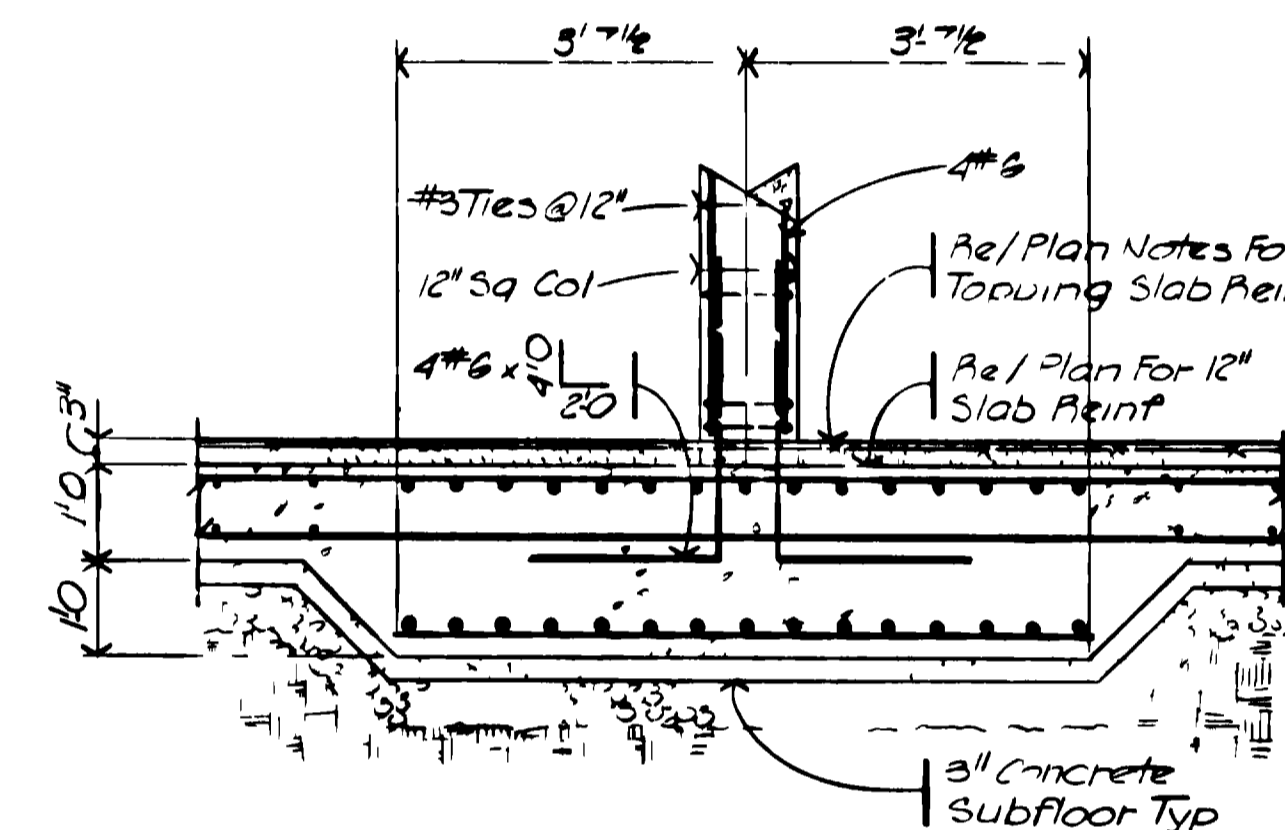
DETAIL 2
SCALE: 1/2" = 1'-0"
IV-11



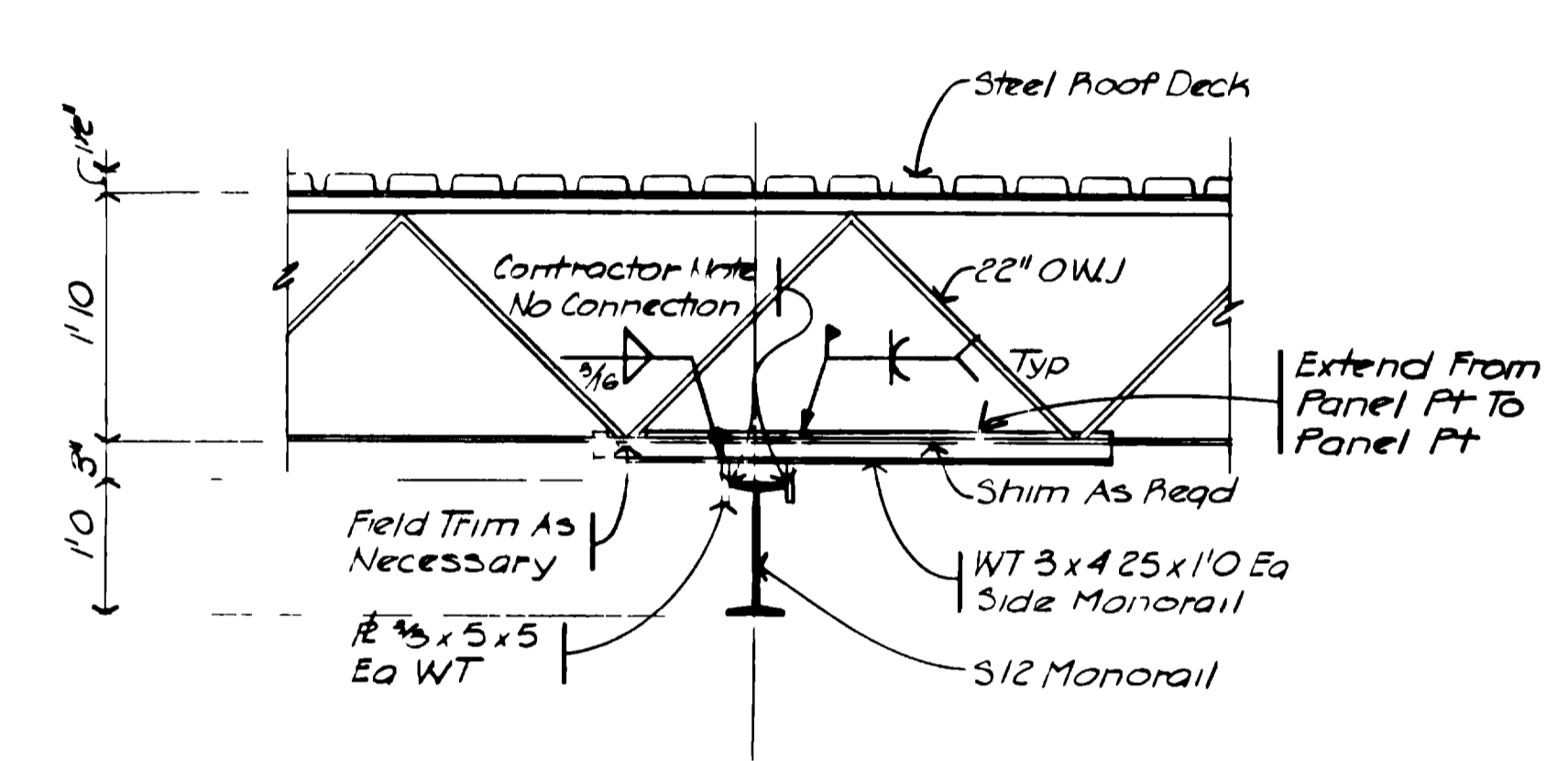
DETAIL 3
SCALE: 1/2" = 1'-0"
IV-11



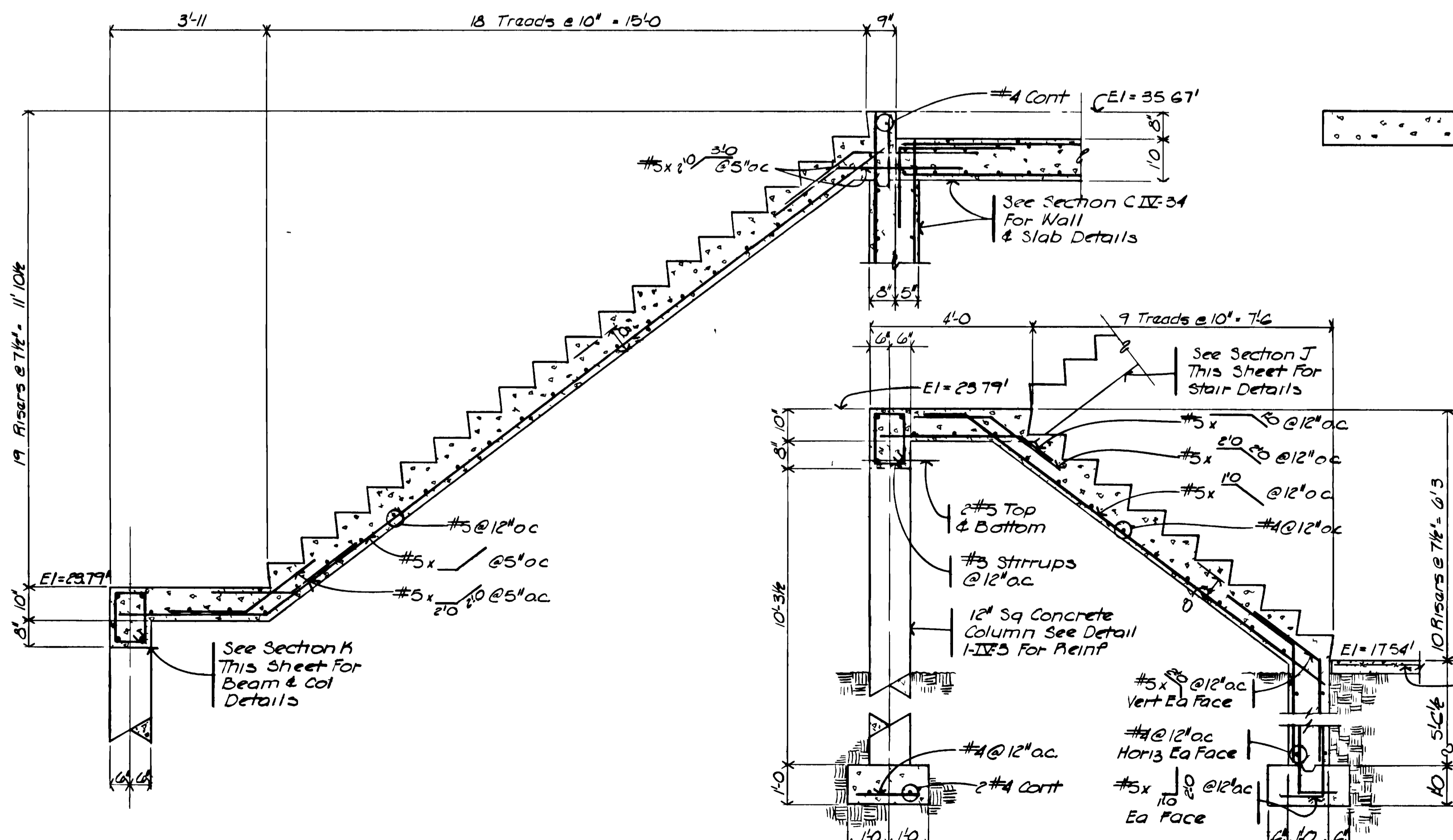
SECTION F
SCALE: 1/2" = 1'-0"
IV-11



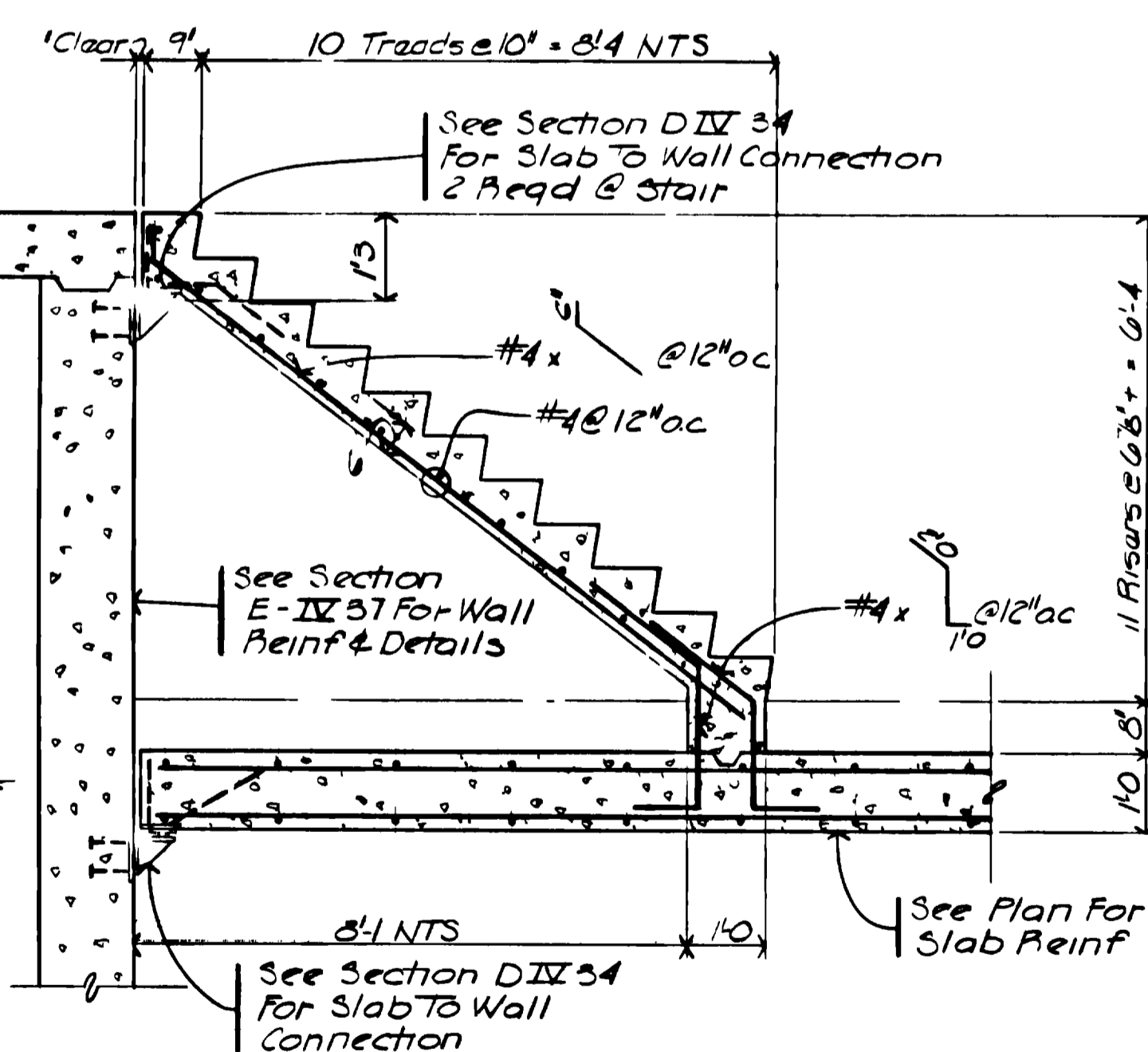
SECTION G
SCALE: 1/2" = 1'-0"
IV-11



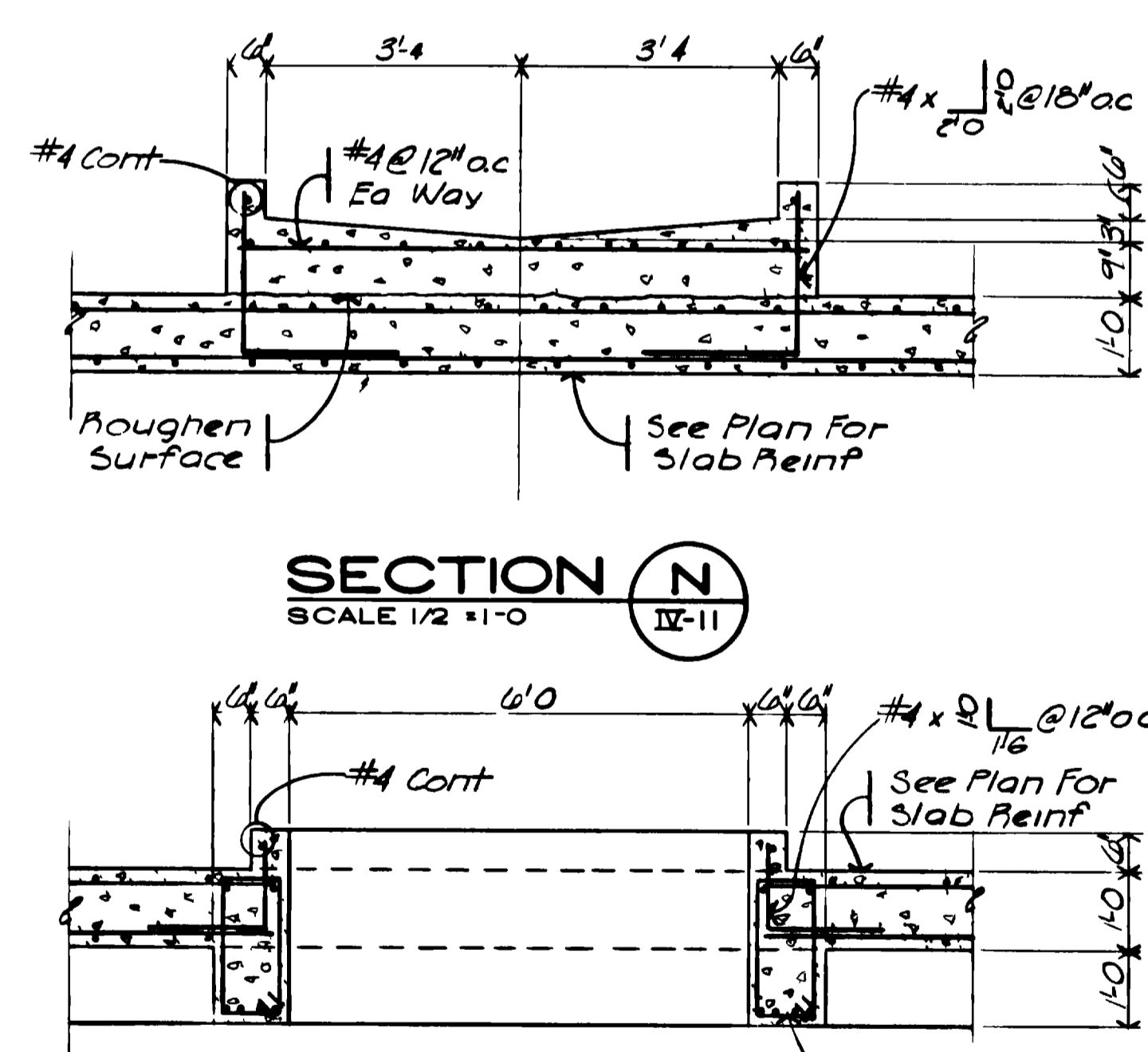
SECTION H
SCALE: 3/4" = 1'-0"
IV-11



SECTION J
SCALE: 1/2" = 1'-0"
IV-11

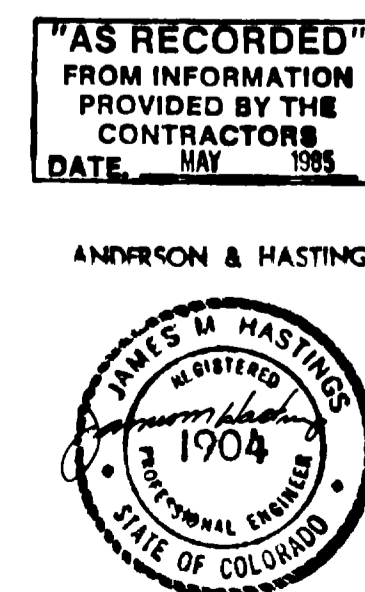


SECTION K
SCALE: 1/2" = 1'-0"
IV-11



SECTION L
SCALE: 1/2" = 1'-0"
IV-11

SECTION M
SCALE: 1/2" = 1'-0"
IV-11



AS RECORDED
FROM INFORMATION PROVIDED BY THE CONTRACTOR'S DATE: MAY 1988

ANDERSON & HASTINGS

GRAND JUNCTION / MESA COUNTY, COLORADO
PERRIGO WASH WASTE WATER TREATMENT PLANT

SECTION IV STRUCTURAL
RAW SEWAGE PUMP STATION
SECTIONS

HENNINGSON, DURHAM & RICHARDSON, INC.
ENGINEERS PLANNERS CONSULTANTS
DENVER COLORADO GRAND JUNCTION COLORADO

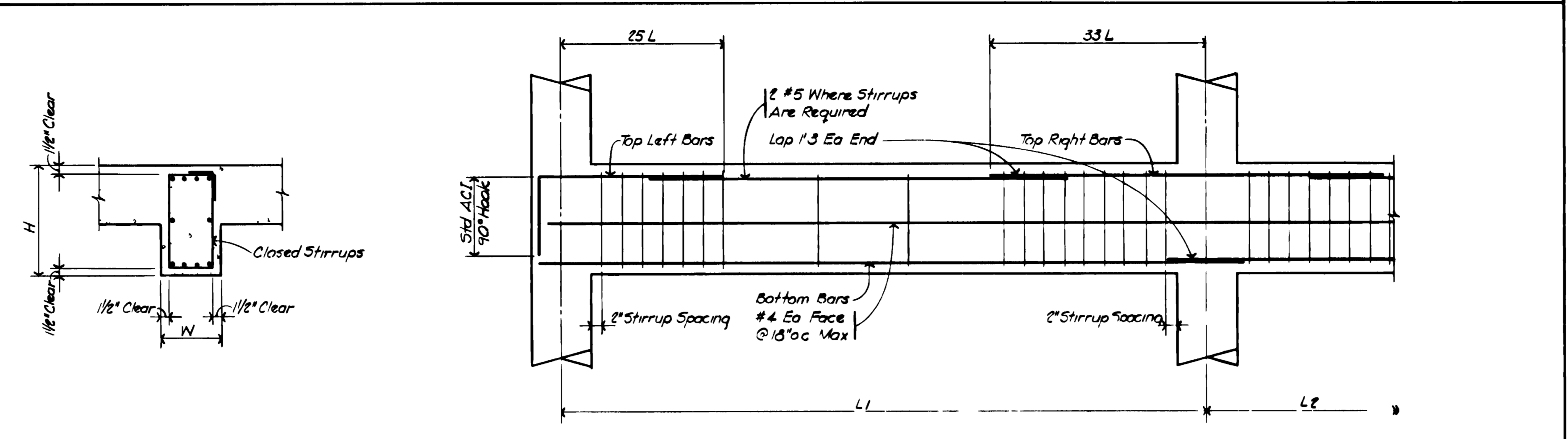
JOB: 734510
DESIGNED: S.E.B.
CHECKED: J.M.H.
APPROVED: S. HENNINGSON
DATE: 1988

NO.	DATE	DESCRIPTION	BY	APPROV.
1	11/28/88	AS BUILT		
2				
3				

GENERAL NOTES

- LIVE LOADS USED IN DESIGN
 - ROOF 30 psf (SNOW)
 - FLOORS - OFFICES 50 psf
 - CORRIDORS & WALKWAYS 100 psf
 - EQUIPMENT STAIRWAYS 200 psf (MIN)
 - FOUNDATION WALLS 60 psf WATER
 - 35 psf (BELOW WATER TABLE)
 - 85 psf (BELOW WATER TABLE)
 - WIND ZONE 25
 - SEISMIC ZONE 2
- CONCRETE
 - ALL CONCRETE SHALL BE MADE WITH STONE AGGREGATE AND SHALL DEVELOP 4000 PSI COMPRESSIVE STRENGTH IN 28 DAYS.
 - ALL REINFORCING SHALL BE HIGH STRENGTH DEFORMED BARS (GRADE 60 ASTM A615-76a) WITH 60 000 PSI MINIMUM YIELD POINT, (EXCEPT #3 COLUMN TIES AND BEAM STIRRUPS WHICH MAY BE GRADE 40)
 - REINFORCEMENT PROTECTION
 - CONCRETE POURED AGAINST EARTH 3"
 - CONCRETE POURED IN FORMS BUT EXPOSED TO WEATHER OR EARTH
 - IF BARS ARE LARGER THAN NO. 5 2"
 - IF BARS ARE NO. 5 OR SMALLER 1 1/2"
 - COLUMNS, GIRDERS AND BEAMS 1 1/2"
 - SLABS AND WALLS (INTERIOR EXPOSURE) 3/4"
 - SLABS AND WALLS (IN CONTACT WITH WATER) 2"
 - ALL BAR LENGTHS ARE DRAWN TO SCALE UNLESS NOTED. NO SPLICES OF REINFORCEMENT SHALL BE MADE EXCEPT AS DETAILED OR AS AUTHORIZED BY THE STRUCTURAL ENGINEERS. MAKE ALL BARS CONTINUOUS AROUND CORNERS.
 - DETAIL BARS IN ACCORDANCE WITH ACI DETAILING MANUAL AND ACI BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE, LATEST EDITIONS.
 - PROVIDE ALL ACCESSORIES NECESSARY TO SUPPORT REINFORCING AT POSITIONS SHOWN ON PLANS.
 - PLACE 2-No 5 (1 EACH FACE) WITH 2'-0" PROJECTION AROUND ALL OPENINGS IN CONCRETE.
 - SLABS AND BEAMS SHALL NOT HAVE JOINTS IN A HORIZONTAL PLANE. ANY STOP IN CONCRETE WORK MUST BE MADE AT CENTER OF SPAN WITH VERTICAL BULHEADS AND HORIZONTAL KEYS, UNLESS OTHERWISE SHOWN. ALL CONSTRUCTION JOINTS SHALL BE AS DETAILED OR AS APPROVED BY THE ARCHITECT.
 - CONTINUOUS TOP & BOTTOM BARS IN WALLS, BEAMS & GRADE WALLS SHALL BE SPLICED AS FOLLOWS:
 - TOP BARS - MIDSPAN
 - BOTTOM BARS - OVER SUPPORT
 - ALL STIRRUPS SHALL HAVE 2 No 3 SPACERS FOR LENGTH OF STIRRUP SPACING.
 - WIRE MESH REINFORCEMENT MUST LAP ONE FULL MESH AT SIDE AND END LAPS, AND SHALL BE WIRED TOGETHER.
- STEEL
 - ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM SPECIFICATION A36.
 - STRUCTURAL STEEL SHALL BE DETAILED AND FABRICATED IN ACCORDANCE WITH LATEST PROVISIONS OF AISC MANUAL OF STEEL CONSTRUCTION CODE OF STANDARD PRACTICE.
 - USE STANDARD FRAMED BEAM CONNECTIONS WITH 3/4" BOLTS (OR WELDED EQUIVALENT) UNLESS OTHERWISE NOTED. SELECT CONNECTIONS TO SUPPORT ONE HALF THE TOTAL LOAD CAPACITY FOR EACH GIVEN BEAM AND 50% OF THE EFFECT OF CONCENTRATED LOADS SHALL ALSO BE CONSIDERED.
 - STEEL JOISTS SHALL BE WELDED, FABRICATED AND ERECTED IN ACCORDANCE WITH STEEL JOIST INSTITUTE SPECIFICATIONS.
 - ALL STEEL DECK SHALL BE ERECTED IN ACCORDANCE WITH DECK MANUFACTURER'S JOISTED SPECIFICATIONS.
 - STEEL DECK BY OTHER MANUFACTURERS MAY BE SUPPLIED IN LIEU OF THAT SPECIFIED PROVIDED SECTION PROPERTIES ARE SIMILAR TO THOSE OF DECK SPECIFIED, AND IS APPROVED BY ARCHITECT.
 - DECK SUPPLIER SHALL PROVIDE ALL ADDITIONAL FRAMING AS REQUIRED FOR OPENINGS THROUGH DECK.
 - DECK WELDING SHALL BE AS FOLLOWS FOR 1/4" METAL DECK:
 - AT EXTERIOR SUPPORTS WELD EDGE OF DECK WITH 1/2" R Puddle Welds at 12" O.C. AND END OF DECK WITH 1/2" R Puddle Welds Spaced 4 PER PANEL.
 - AT INTERIOR SUPPORTS WELD WITH 1/2" R Puddle Welds Spaced 4 PER PANEL.
 - AT DECK JOINTS BUTT JOINT OF 1/4" SEAM WELD AT 24" O.C. AT ADJACENT DECK MEMBERS.
 - ALL WELDERS SHALL HAVE EVIDENCE OF PASSING THE AWS STANDARD QUALIFICATION TESTS.
 - CONNECTIONS MADE WITH HIGH STRENGTH STEEL BOLTS SHALL CONFORM IN ALL RESPECTS TO THE CURRENT SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 BOLTS AS ENDORSED BY AISC. NO PAINT ON CONTACT SURFACES.
 - SEE ARCHITECTURAL DRAWINGS FOR NAILER HOLES, ETC.
- MASONRY
 - ALL REINFORCING IN MASONRY WALLS SHALL BE FULLY GROUTED IN PLACE.
 - FILL ALL VOIDS AND BLOCK CELLS SOLIDLY WITH MORTAR FOR A DISTANCE OF 24" BENEATH AND 12" EACH SIDE OF ALL BEAM REACTIONS OR OTHER CONCENTRATED LOADS.
- FOUNDATIONS - SOIL BEARING PRESSURE USED IN DESIGN
 - 2000 psf SHALLOW FOOTINGS TO 10 ft BELOW EXISTING GRADE.
 - 3000 psf FOOTING BEARINGS AT 10 ft TO 15 ft BELOW EXISTING GRADE.
 - 4000 psf FOOTINGS BEARING BELOW 15 ft.
- BASED ON REPORT NO. 16,747 PREPARED BY CHEN & ASSOCIATES, INC., CONSULTING ENGINEERS, DATED AUGUST 31, 1978.
- ALL DIMENSIONS ON STRUCTURAL DRAWINGS SHALL BE CHECKED AGAINST ARCHITECTURAL.
- ARCHITECT'S APPROVAL MUST BE SECURED FOR ALL SUBSTITUTIONS.
- DO NOT PLACE BACKFILL AGAINST BASEMENT WALLS UNTIL BASEMENT AND FIRST FLOORS ARE IN PLACE.
- VERIFY ALL OPENINGS THROUGH FLOOR AND WALLS WITH MECHANICAL AND ELECTRICAL CONTRACTORS.

BEAM SCHEDULE



Mark	Size	Reinforcing			Stirrup Size	Spacing of Stirrups			W Or N	Sketch	E Or S	Remarks
		Top L	Bottom	Top R		Left End	Middle	Right End				
ADB 1	12"	2#8	4#8	2#8	#3							
ADB 2	12"	2#8	4#8	2#8	#3	10 @ 4"	@ 12"	10 @ 4"				Extend Top Bars into Curved Beams, Stirrups Ea Side Of Column
ADB 3	12"	3#5	3#5	3#5	#3		@ 7"					
ADB 4	12"	2#8	2#8	4#8	#3	10 @ 6"	@ 10"	10 @ 6"				90° Bend @ North & South Walls Only
ADB 5	12"	2#7	4#8	2#7	#3		@ 8"					Extend Top Right Bars into Curved Bms, *Stirrups Full Length Of Beam
ADB 6	12"	2#8	3#7	4#8	#3	10 @ 6"	@ 10"	10 @ 6"				
ADB 7	12"	2#8	2#8	2#8	#3	10 @ 6"	@ 10"	10 @ 6"				Splice Top Bars @ Center Span, Bottom Bars @ Supports
ADB 8	12"	2#8	2#8	2#8	#3		@ 12"					See Section A & 3 Sht IV For Placement Of Reinforcing
ADB 9	12"	2#8	2#8	2#8	#3		@ 12"					Extend Top Bars into Curved Bms, Stirrups Ea Side Of Support
ADB 10	12"	4#5	4#7	4#5	#3	25 @ 4 @ 8"	@ 12"	4 @ 25 @ 4"				Cap Hand @ South Beam
ADB 11	12"	4#6	2#5	4#7	#3	10 @ 7"	@ 12"	10 @ 7"				Cap Hand @ South Beam
ADB 12	12"	3#6			#3	10 @ 7"	@ 12"	10 @ 7"				
ADB 13	12"	4#7	3#6	4#7	#3	10 @ 8"	@ 12"	10 @ 8"				
ADB 14	12"	2#5	3#7	2#5	#3	6 @ 7"	@ 12"	20 @ 7"				Extend Top Bars into Curved Bms, Stirrups Ea Side Of Support
ADB 15	12"	3#8	3#8	3#8	#3	11 @ 8"	@ 12"	11 @ 8"				
ADB 16	12"	3#8	3#8	3#8	#3	7 @ 8"	@ 10"	7 @ 8"				
ADB 17	12"	3#8	3#8	3#8	#3	20 @ 4"	@ 8"	@ 8"				Extend Top Bars 3'-8" Dist Col &
ADB 18	12"	2#4	2#4		#3		@ 7"	@ 7"				
SPB 1	24"	3#9	6#9	6#9	#4	8 @ 6"	@ 12"	16 @ 6"				Cap Hand @ South Beam
SPB 2	30"	5#8	7#10	5#8	#4	4 @ 6"	@ 12"	4 @ 6"				
SPB 3	12"	2#5	3#6	2#5	#3		@ 12"					
SPB 4	24"	3#9	6#9	3#9	#4	7 @ 9"	@ 12"	7 @ 9"				Share Beam While Wall Above is Being Constructed
SPB 5	24"	3#9	6#9	3#9	#4	7 @ 9"	@ 12"	7 @ 9"				
SPB 6	12"	3#6	3#6	2#5	#3		@ 12"					
SPB 7	12"	3#6	3#6	2#5	#3		@ 12"					
SPB 8	12"	2#5	3#6	3#6	#3		@ 12"					
SPB 9	12"	2#5	2#6	2#5	#3		@ 12"					
SPB 10	12"	2#5	4#5	2#5	#3		@ 12"					

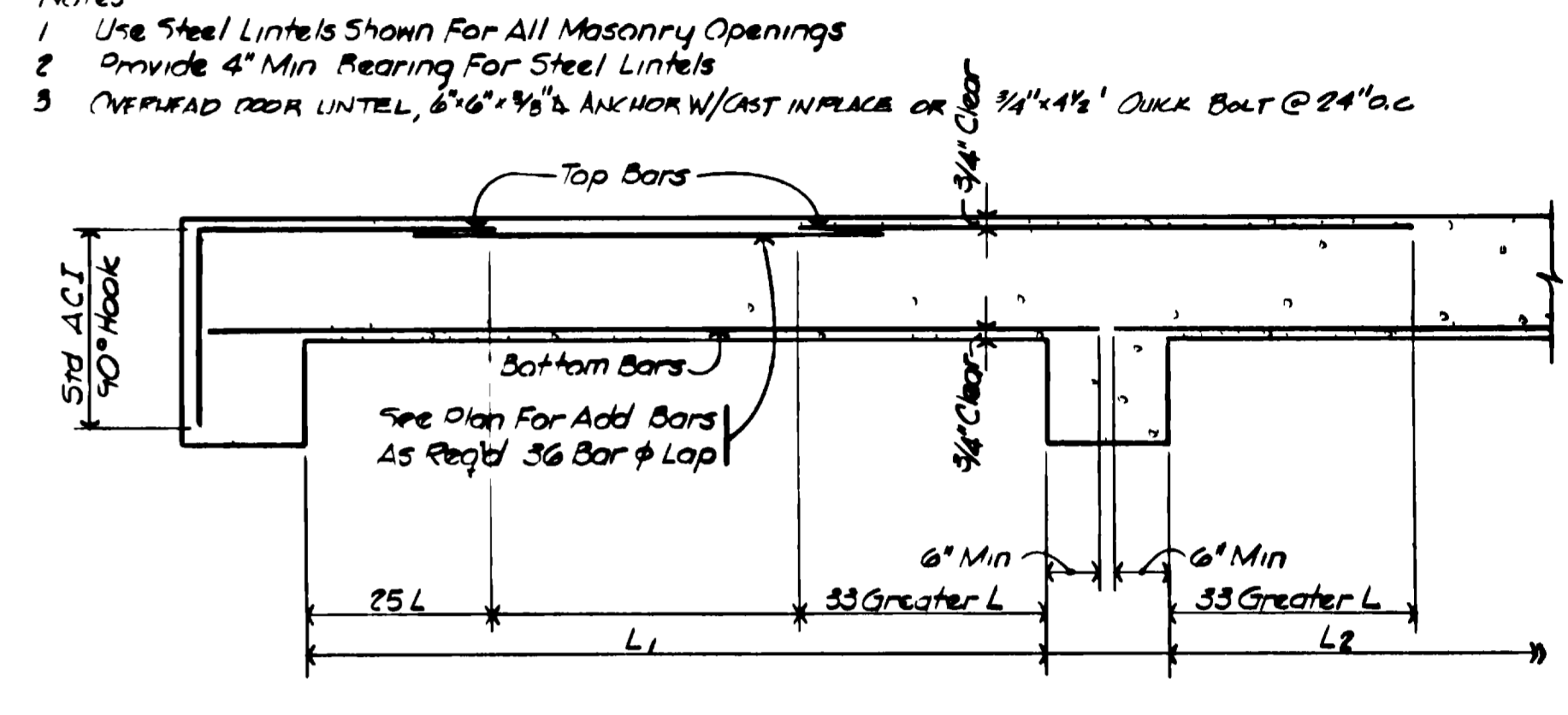
FOOTING SCHEDULE

Mark	Size	Reinforcing
(1)	4'-0" Sq x 1'-0"	4 #4 Ea Way Bottom
(2)	5'-0" Sq x 1'-0"	5 #4 Ea Way Bottom
(3)	6'-0" Sq x 1'-0"	6 #4 Ea Way Bottom
(4)	7'-0" Sq x 1'-0"	7 #5 Ea Way Bottom
(5)	8'-0" Sq x 1'-0"	8 #5 Ea Way Bottom
(6)	9'-0" Sq x 1'-0"	9 #6 Ea Way Bottom
(7)	10'-0" Sq x 1'-0"	10 #6 Ea Way Bottom
(8)	11'-0" Sq x 1'-0"	11 #6 Ea Way Bottom
(9)	12'-0" Sq x 1'-0"	12 #6 Ea Way Bottom

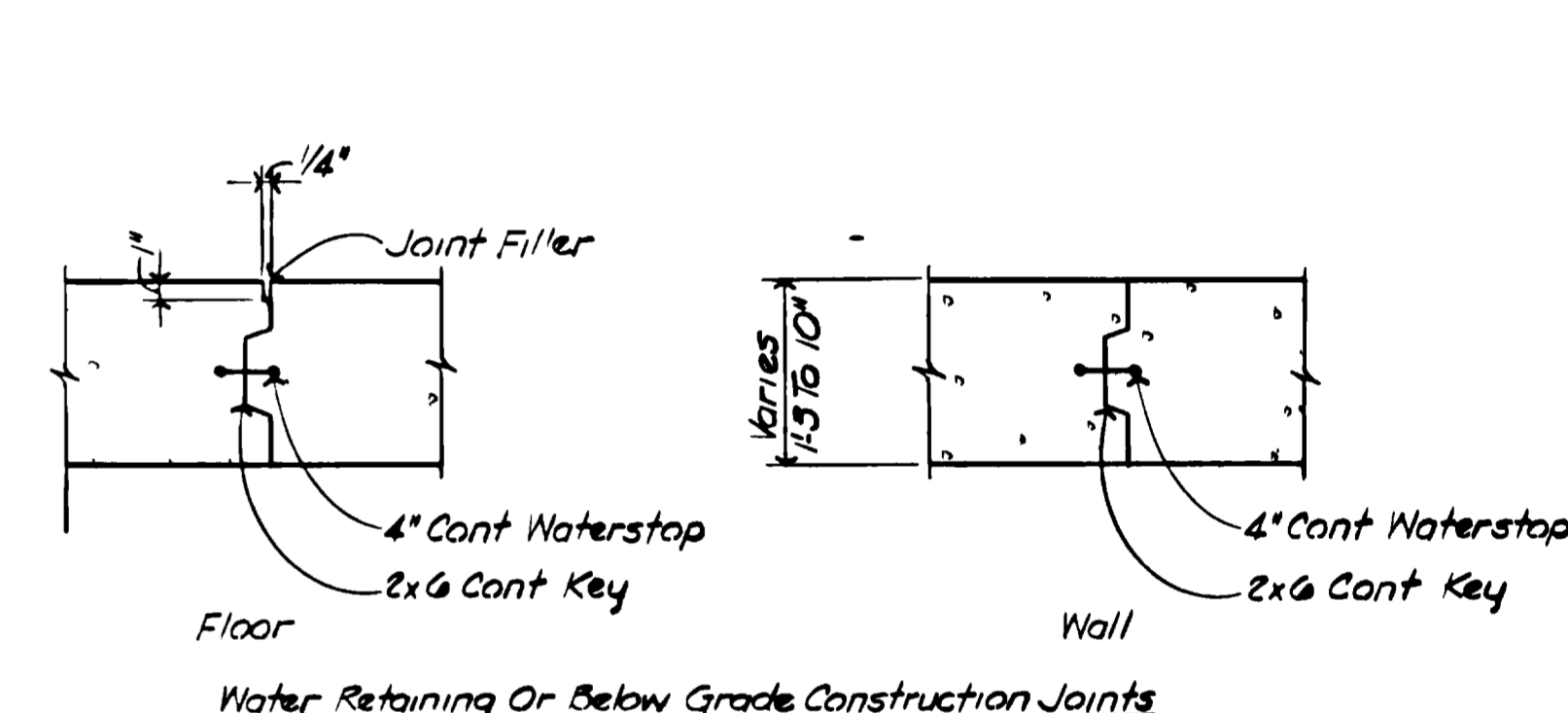
LOOSE LINTEL SCHEDULE

Maximum Opening	Size Of L Per 4" Masonry
3'-6"	L 3/2 x 3/2 x 1/4
5'-6"	L 4 x 3/2 x 1/4
7'-6"	L 6 x 3/2 x 1/4

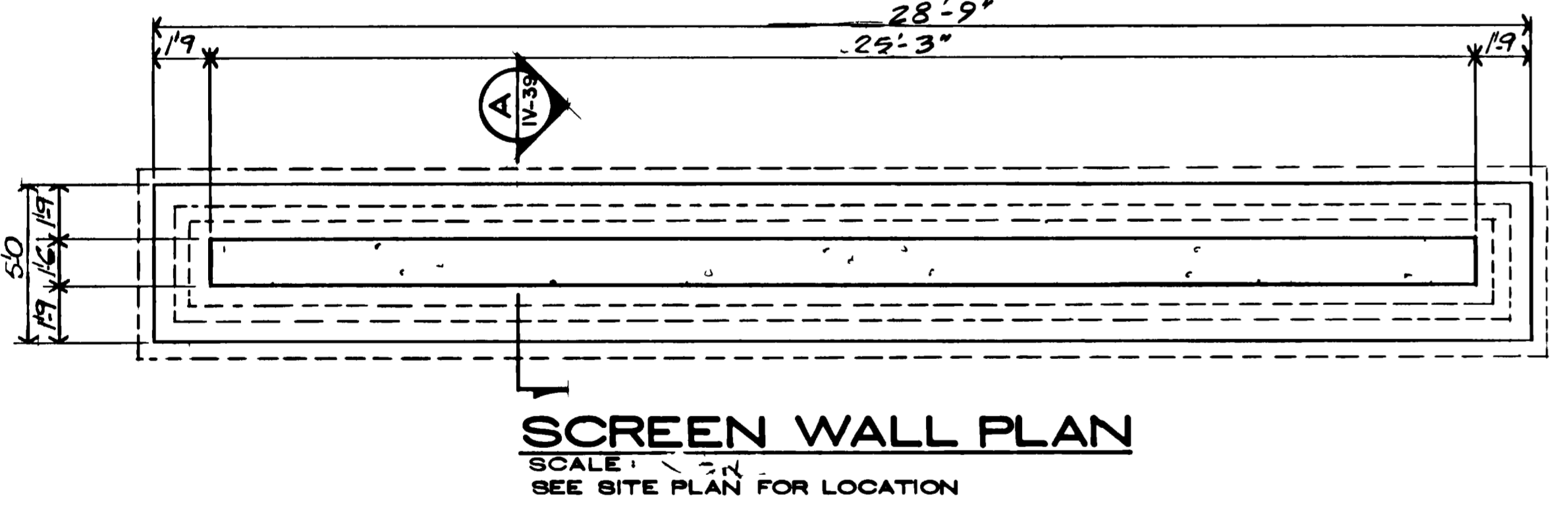
Notes: 1. Use Steel Lintels Shown For All Masonry Openings
2. Provide 4" Min Bearing For Steel Lintels
3. OVERHEAD DOOR LINTEL, 6" x 6" x 1/2" ANCHOR W/CAST IN PLACE OR 3/4" x 1/2" DUCK BOLT @ 24" OC



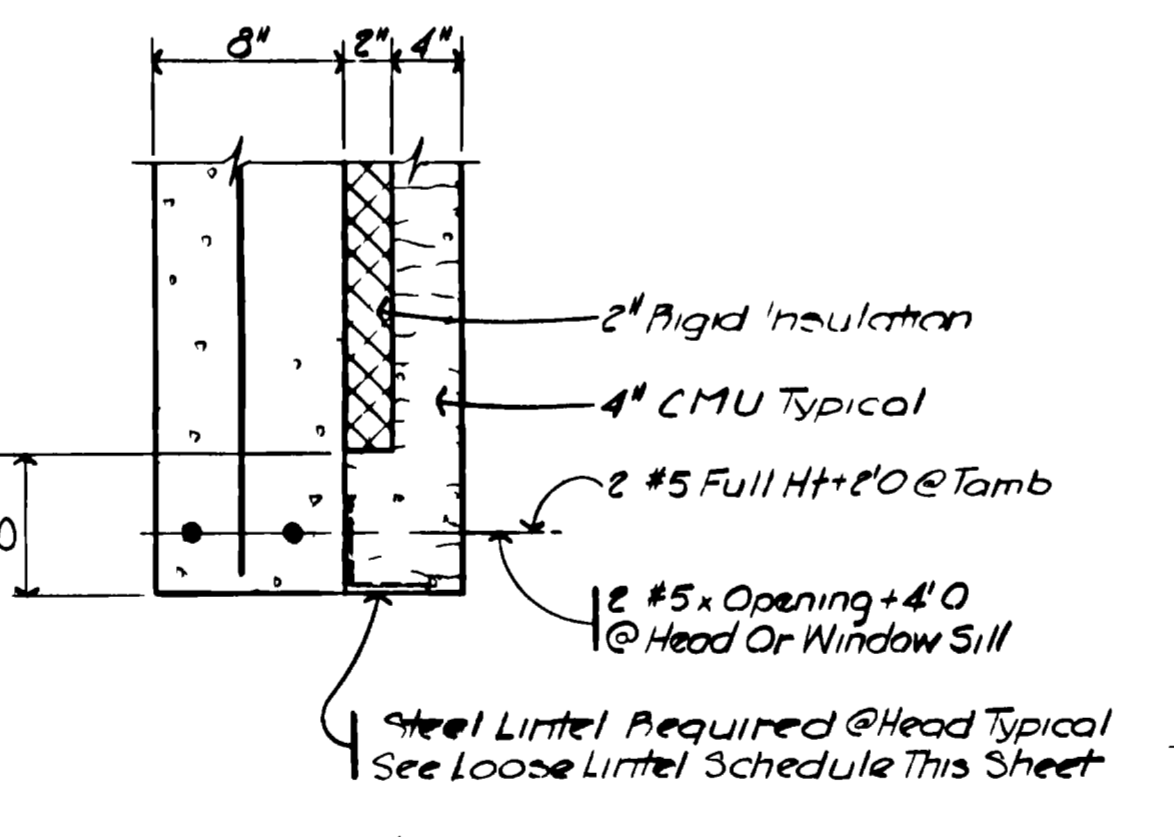
TYPICAL SLAB REINFORCING
NO SCALE



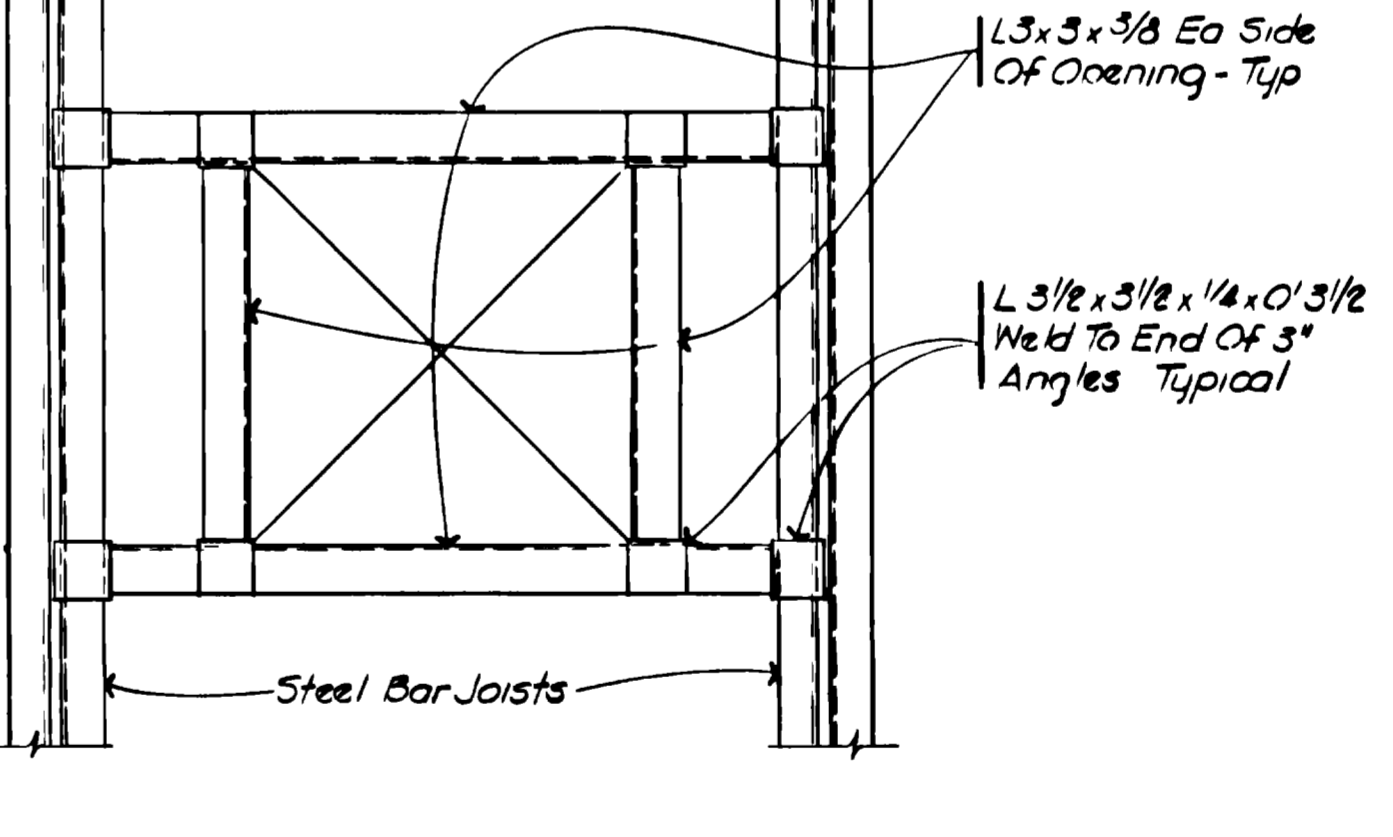
3. UNLESS OTHERWISE MENTIONED SPLICES SHALL BE MIN OF 40 BAR DIAMETERS
4. ALL SPLICES IN STRUCTURAL SLABS ON GRADE SHALL BE CLASS C TENSION SPLICES WITH A MIN LAP OF 17 1/2"



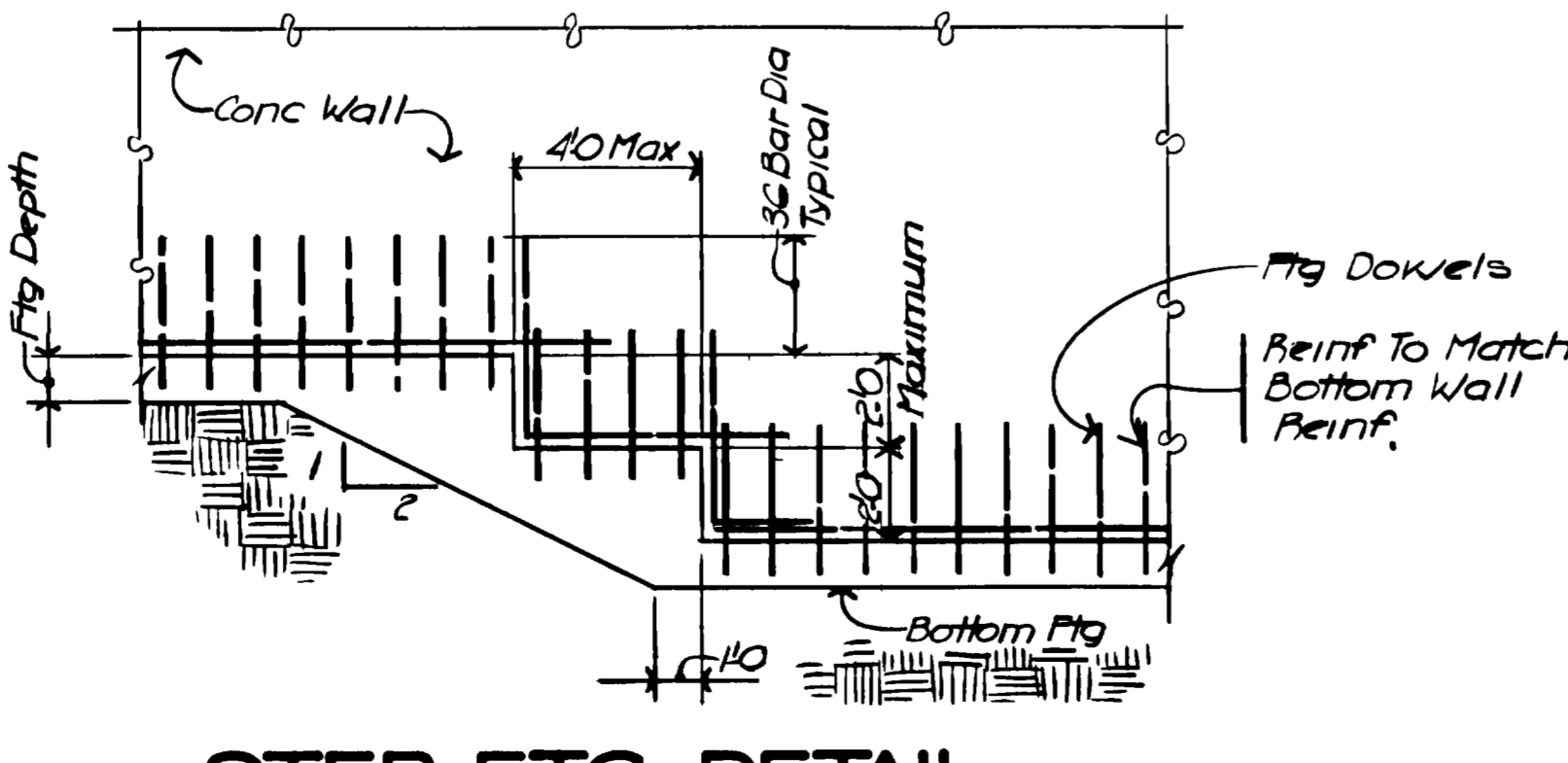
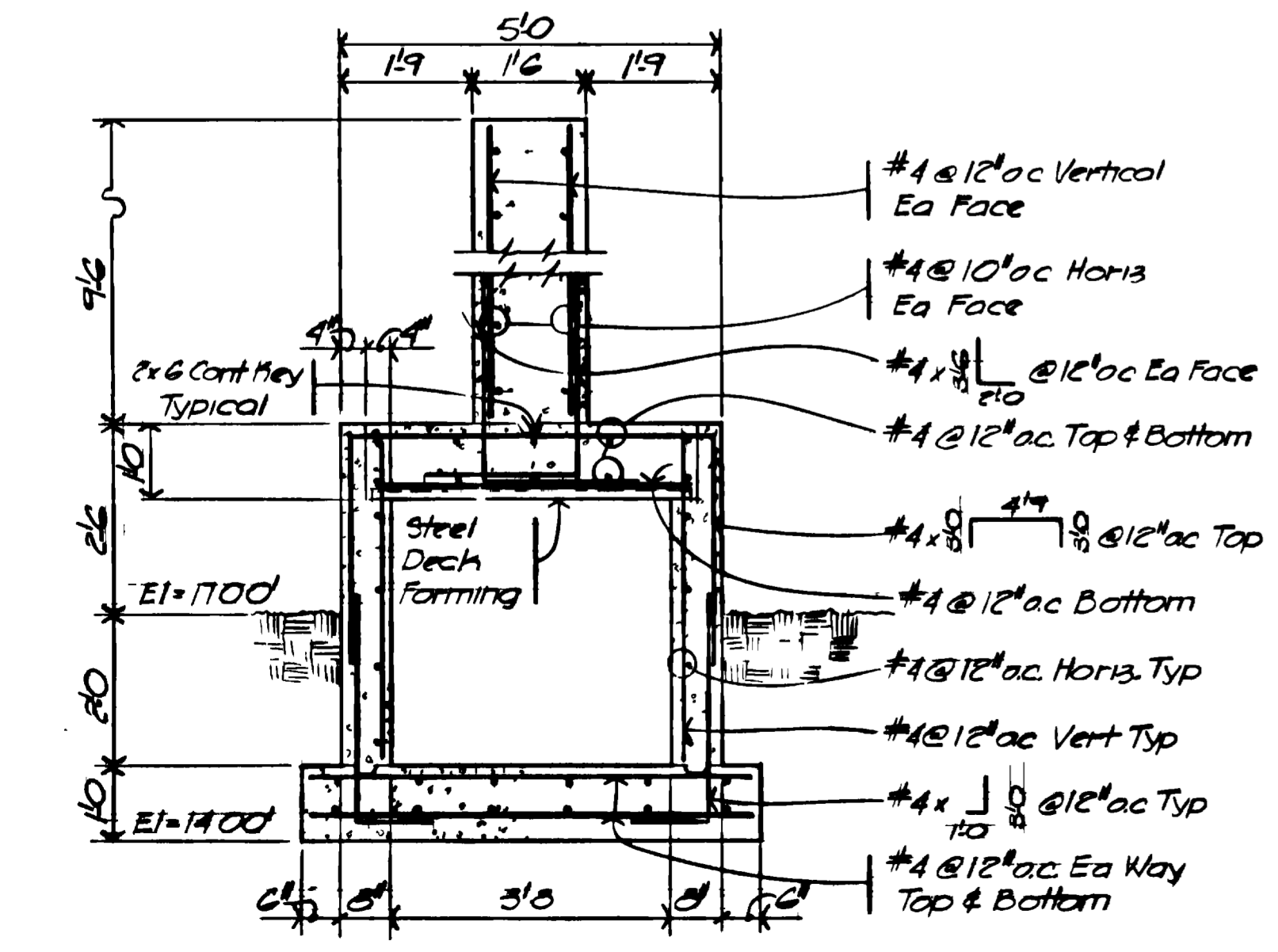
SCREEN WALL PLAN
SCALE: 1/2" = 1'-0"
SEE SITE PLAN FOR LOCATION



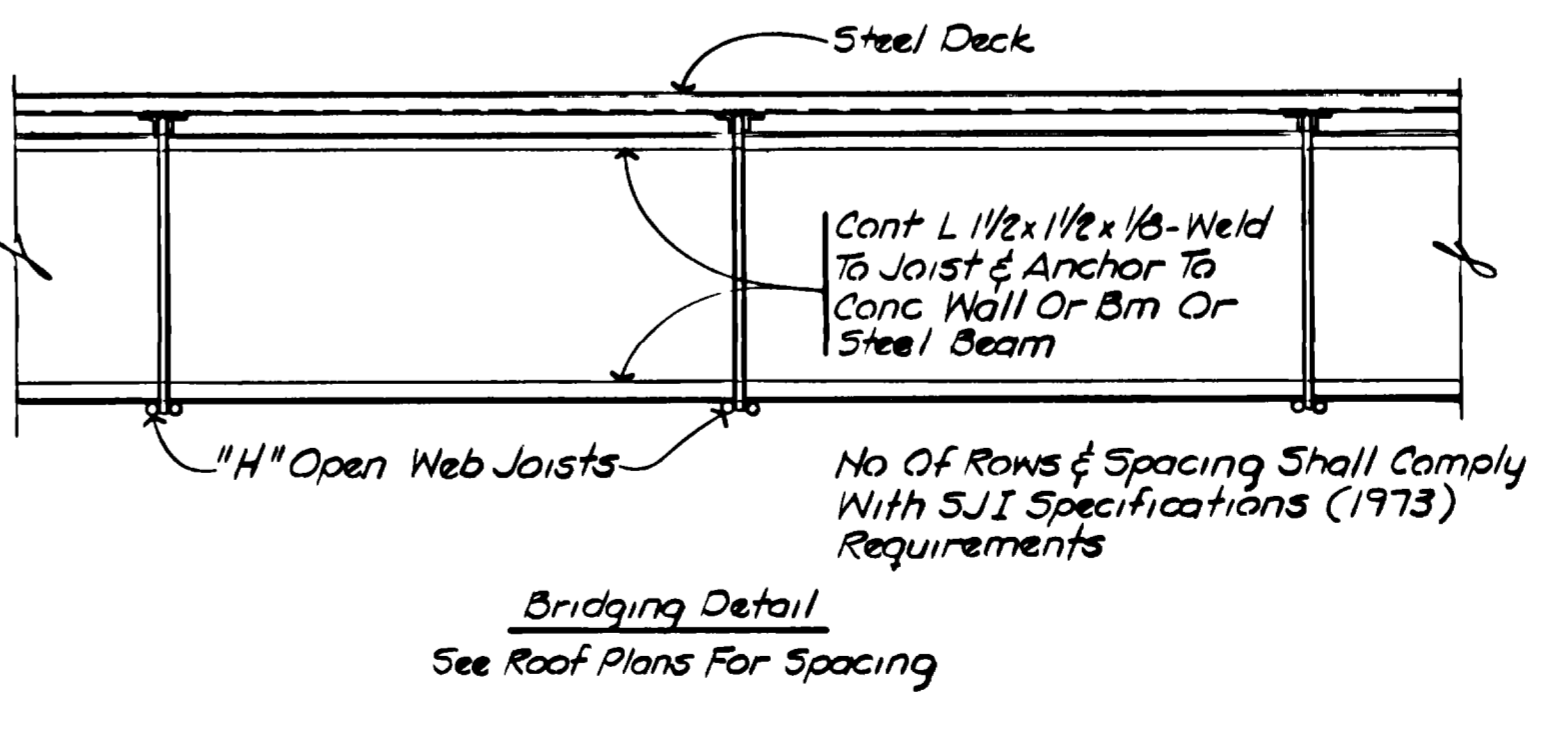
Typical Head, Sill & Jamb Detail



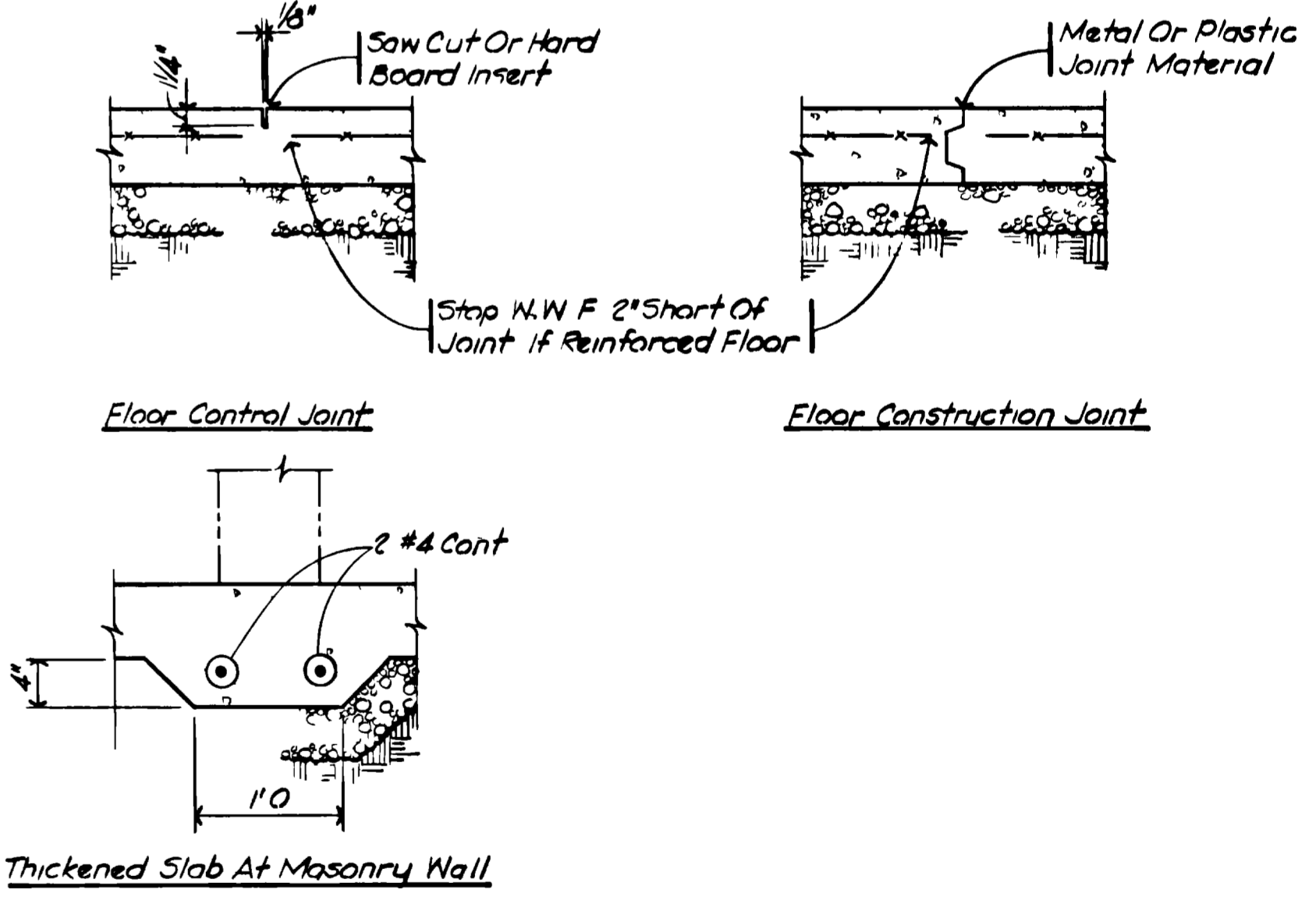
Typical Framing @ Mech Opening



STEP FTG. DETAIL
NO SCALE



TYPICAL DETAILS
NO SCALE



Thickened Slab At Masonry Wall

SECTION A-A
SCALE: 1/2" = 1'-0"
IV-39

AS RECORDED
FROM INFORMATION PROVIDED BY THE CONTRACTORS DATE: MAY 1998

GRAND JUNCTION / MESA COUNTY, COLORADO
PERSICOR WASH WASTE WATER TREATMENT PLANT
SECTION IV STRUCTURAL
GENERAL
GENERAL NOTES, SCHEDULES AND TYPICAL DETAILS

WINNINGSON, BURHAM & RICHARDSON, INC.
ENGINEERS - PLANNERS - ARCHITECTS
DENVER, COLORADO GRAND JUNCTION, COLORADO

DATE: 7/31/98
JOB NO: 734510
DRAWN BY: KEEL
CHECKED BY: KEEL
DATE: 7/31/98
JOB NO: 734510
DRAWN BY: KEEL
CHECKED BY: KEEL
DATE: 7/31/98



**PERSIGO WASTEWATER TREATMENT PLANT
STRUCTURAL ASSESSMENT
Request for Proposal - RFP-4653-19-DH**

City of Grand Junction, Colorado



June 21, 2019
WJE No. 2019.3776



Prepared for:
Duane Hoff, Jr.
Senior Buyer
City of Grand Junction
250 North 5th Street
Grand Junction, Colorado 81501

Prepared by:
Wiss, Janney, Elstner Associates, Inc.
3609 South Wadsworth Boulevard, Suite 400
Lakewood, Colorado 80235
303.914.4300 tel | 303.914.3000 fax

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A - COVER LETTER

June 21, 2019

Mr. Duane Hoff Jr., Senior Buyer
City of Grand Junction
250 North 5th Street
Grand Junction, Colorado 81501

Re: Response to RFP-4653-19-DH
Professional Services for Persigo Wastewater Treatment Plant Structural Assessment
WJE No. 2019.3776

Dear Mr. Hoff:

Thank you for the opportunity to submit our response to your Request for Proposal (RFP) to provide the City of Grand Junction (the City) with engineering services to assess the distress at the Persigo Wastewater Treatment Plant (PWWTTP).

Founded in 1956 on the principle that delivering better solutions requires a better understanding of the problem, WJE has established itself as the leading provider of practical, innovative, and technically sound solutions to structural, architectural, and materials problems. While many firms focus on new design, WJE's core business practice since our inception has been providing diagnostic solutions for completed structures, or those that have unique or challenging components. WJE enjoys a national reputation as a leading investigative and testing firm with vast technical competence. From the start, WJE has brought a hands-on technical approach, comprehensive testing capabilities, and an enthusiasm for problem-solving to each project. As you will see, our proposed project staff are skilled at conducting field investigations and assessments for water and wastewater facilities, as well as preparing clear and effective repair and rehabilitation designs based on a sound understanding of the client's budgetary and schedule restraints.

We acknowledge the terms and conditions of the RFP, and receipt of Addendum 1 and 2, dated May 29, 2019 and June 5, 2019 respectively. We noted one exception to the insurance requirements, which is described in the additional information section.

The undersigned, Terry McGovern, will be the Consultant Project Manager, main contact on the project, and is authorized to make presentations and formal commitments on behalf of WJE. Thank you for the opportunity to provide this proposal. If you have any questions or comments, please feel free to contact us at your convenience.

Sincerely,

WISS, JANNEY, ELSTNER ASSOCIATES, INC.



Terry McGovern, Senior Associate, Colorado PE
3609 S. Wadsworth Boulevard, Suite 400
Lakewood, Colorado 80235
303-914-4300 | tmcgovern@wje.com

B - QUALIFICATIONS/EXPERIENCE/CREDENTIALS

- ***Firm Profile***
 - ***Experience***
 - ***Concrete Field Assessment Capabilities***
 - ***Geotechnical Investigation Capabilities***
 - ***Steel Structure Capabilities***
 - ***Process Equipment and Piping Assessment Capabilities***
 - ***Structural Analysis and Evaluation***
 - ***Rehabilitation Recommendations and Repair Options***
 - ***Material Evaluations and Laboratory Services***
 - ***Service Life Analysis***
- ***Project Team***
- ***Select Related Project Experience***

Firm Profile

Wiss, Janney, Elstner Associates (WJE) is not a traditional architectural/engineering design firm; we are a sixty-three-year-old interdisciplinary firm of architects, structural engineers, and material scientists that specializes in investigation, analysis, design, and restoration services in most areas related to the construction industry while focusing on delivering practical, innovative, and technically sound design solutions for structures, both contemporary and historic. WJE was founded on the principle that delivering better solutions requires a better understanding of the problem. From the start, WJE has brought a hands-on technical approach, comprehensive testing capabilities, and an enthusiasm for problem solving to each new project, by combining state-of-the-art laboratory and testing facilities, global offices, and knowledge sharing systems to provide solutions for the built world.

WJE Services include:

- Geotechnical Investigation
- Corrosion Assessment
- Nondestructive Evaluation
- Metallurgy and Applied Mechanics
- Structural Analysis & Assessment

Experience

During the last half century, WJE has completed thousands of investigations of civil structures including studies of cracking, reinforcement corrosion, and concrete and steel deterioration for a variety of different clients, including private owners, condominium associations, institutional owners, hospitality, health care facilities, and government agencies. WJE is the industry leader in concrete and steel technology, having completed numerous research and training projects on concrete deterioration and corrosion protection for the American Concrete Institute (ACI), Federal Highway Administration (FHWA), National Highway Cooperative Research Project, Concrete Reinforcing Steel Institute (CSRI), many state and local transportation departments, and others.

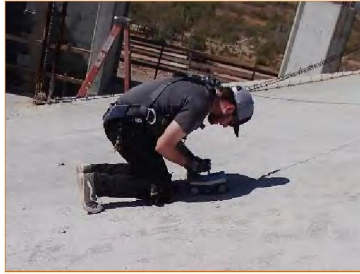
This work has positioned WJE at the forefront of concrete and steel repair and rehabilitation and has provided us with a thorough understanding of the causes of deterioration of these building materials. This has allowed us to develop an understanding for the effectiveness of repair and rehabilitation solutions that range from sealers and surface treatments that inhibit the ingress of corrosion chemicals such as chlorides; partial and full depth patching using specialized mortars that maximize the effectiveness of these materials to improve long term durability of the repairs; passive and active cathodic protection to counter the effects of corrosion; and structural rehabilitation options. WJE has also developed, installed, and maintained structural monitoring systems for unique, innovative structures. Our monitoring capabilities include wireless networks, interactive web and video feeds, database archival systems, and automated alarm systems. These techniques and tools allow us to help clients better evaluate structural behavior and measure the performance of repairs and retrofits.

WJE materials scientists offer a full range of services for petrographic, analytical chemistry, organic chemistry, mortar, paint, and coatings analyses. Specific capabilities include optical, infrared, and electron microscopy; X-ray diffractometry and emission spectroscopy; ultraviolet, infrared, and atomic absorption spectroscopy; and differential thermal analysis. Tools such as electron microscopy are needed to accurately diagnose expansive reactions in concrete.

WJE professionals are experienced in the use of a wide variety of nondestructive diagnostic tools to assess the condition of concrete and steel structures and components. Engineers use tools such as, but not limited to, impact-echo, ground penetrating radar, pulse-echo, copper-copper sulfate surveys, pacometers, and mechanical sounding, on a regular basis to evaluate concrete structures. Ultrasonic, magnetic particle, eddy

current, and dye penetrant test methods are also used to non-destructively evaluate steel structures and piping.

Concrete Field Assessment Capabilities



During the last half century, WJE has completed thousands of investigations of concrete structures, including studies of cracking, reinforcement corrosion, and deterioration for a variety of different clients in different environments, including marine, water, and waste water exposures.

WJE routinely applies hands-on diagnostic studies using the latest technologies to investigate distress and deterioration of concrete structures, and evaluate their effects on structural performance. WJE's engineers have an in-depth understanding of the fundamental principles of structural engineering, materials behavior, and varied exposure environments that allows them to determine appropriate solutions for each structure and client. WJE's general approach for such investigations includes the following:

- A comprehensive document review and verification of existing conditions
- Visual assessment of deterioration and crack mapping
- Delamination surveys using nondestructive techniques (NDT), such as hammer sounding and chain dragging, impact-echo techniques, impact response techniques, and infrared thermography
- Concrete cover measurements with ground-penetrating radar or electromagnetic equipment for measuring depth of cover, rebar location, and size
- Concrete quality and internal flaw surveys using ultrasonic pulse velocity, ultrasonic pulse echo, impact echo, and impact hammer testing
- Concrete core and reinforcing sample extraction for laboratory analysis and testing
- Inspection openings to review reinforcing conditions

Structural investigations and testing services are all performed using in-house experts from WJE team members, which allows the team to adapt to changing field conditions and better interpret the results from these investigations. The same engineers who participate in the field and laboratory investigations then analyze the findings to develop remedial approaches that meet the client's goals.

Corrosion of embedded reinforcement is the leading cause of deterioration in concrete structures. Corrosion is a chemical or electrochemical reaction occurring between the reinforcement and its environment that results in deterioration of the reinforcement and its properties. There are many factors that contribute to corrosion behavior, so there is not a universal corrosion test. WJE combines experience, technology, and lessons learned from thousands of corrosion investigations to address the root cause of corrosion and design the most effective and economical means to achieve optimal performance in concrete structures. WJE uses a wide variety of nondestructive diagnostic tools to assess the condition of concrete structures and diagnose corrosion problems and is at the forefront in developing nondestructive testing techniques and other diagnostic aids for use in the laboratory and field. In the fully equipped WJE structural laboratory, special mock-ups and custom-testing devices are designed to meet



special project requirements. For field testing, a full complement of equipment and testing methods is available. For concrete testing and corrosion studies, these methods typically include:

- Corrosion survey by copper-copper sulfate electrode half-cell potential measurements (ASTM C876)
- Corrosion-rate surveys by three electrode linear polarization techniques, including pioneering techniques developed by WJE
- Concrete powder or core sampling for various laboratory tests
- Electrical resistance of concrete
- Relative humidity within the concrete at various depths

Geotechnical Investigation Capabilities

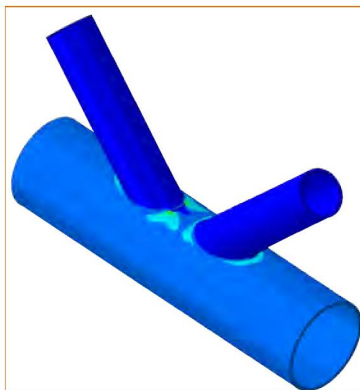


In 2017, WJE merged with Michael W. West & Associates, Inc. to form the WJE Geotechnical Engineering Group in Denver. WJE geotechnical and geological engineers have over three decades of global experience providing a broad range of technical consulting services for clients. Principal areas of practice include geotechnical engineering, engineering geology, environmental geology, ground water hydrology, geological hazard evaluations, and earthquake engineering. Project experience ranges from geological and

geotechnical studies for new water resource and industrial development projects to participation on consulting panels requiring expertise in geology, seismology and geotechnical engineering for a wide range of structures and developments.

The Geotechnical Engineering Group at WJE has worked on several water resource projects in Colorado, Arizona, and California. We have completed work including:

- Drilling and sampling
- Installation of piezometers
- Monitoring piezometer water levels
- Laboratory testing of selected samples from the test holes.
- Characterization of subsurface conditions



- Performed a preliminary deterministic seismic hazard assessment
- Conducted preliminary and final design geotechnical investigations
- Provided design recommendations



Steel Structure Capabilities

Having investigated and consulted on thousands of steel structures and industrial facilities, WJE professionals are experienced providers of specialty evaluation services. WJE professionals leverage the combination of forensic field investigation, laboratory testing, field instrumentation, metallurgy, NDT inspection, analytical tools and years

of experience to provide a rapid assessment and actionable solutions for the owner.

Corrosion is a common contributing element to steel degradation, fitness for service, and structural failure. Because there are many factors that contribute to corrosion, clients rely on WJE's experience, technology,

and knowledge to determine the cause(s) of corrosion, assess structural integrity, evaluate potential consequences for reliable performance, and identify and design effective and economical means to mitigate corrosion in existing structures.

Process Equipment and Piping Assessment Capabilities



WJE has conducted numerous investigations of pipe systems and failures, and leverages our extensive expertise in metallurgical engineering to understand the causes of piping deterioration and mitigate its future impacts. Over the years, these investigations have encompassed a wide variety of materials, systems, operating environments, and failure mechanisms. The laboratory facilities at the Janney Technical Center provide extensive capabilities for structural, physical, materials, and chemical testing of metallic and non-metallic components of all types, including piping.

Many failures can be traced back to either inadequate design or materials quality, but some degradation occurs naturally in piping systems. Understanding materials behavior—from welding, joining and brazing to corrosion and other degradation mechanisms—and a component’s response to complex loading is paramount to determining whether a pressurized system (or piping) is fit for its intended service. Clients rely on the extensive experience of WJE’s metallurgical and applied mechanics engineers to provide engineering solutions related to design optimization and evaluation of in-service failures.



Before working at WJE, members of our Metallurgy and Applied Mechanics unit have spent a combined 30+ years troubleshooting piping problems in almost every type of facility in the country.

Structural Analysis and Evaluation

WJE employs approximately 180 structural engineers who have broad experience in the design, assessment, analysis, and repair of many types of structures, including concrete and steel structures, as well as the steel piping. While all our staff are qualified to perform an analysis of an existing structure using new design standards, we take our work a step further and use our experience in the evaluation and testing of structures to better shape our understanding of the way structures react to different loads, allowing us to better evaluate existing structures for their actual performance.

Rehabilitation Recommendations and Repair Options

Simply put, successful design solutions are developed from a better understanding of the potential problems. WJE stands alone in our understanding of potential problems with existing civil and water-containing structures as well as corresponding challenges with designing durable structures in these environments. The following sections highlight some of our potential structural design approaches, based on our unique experience:

Structural Design and Detailing. Based on our understanding of the long-term performance of similar structures, WJE will include enhanced design details at areas with greater risk to long-term durability concerns. Examples include increased concrete cover at potential splash zones, enhanced coating systems, proper detailing of expansion joints, and proper reinforcement configuration at areas prone to increased

cracking or durability concerns. Crack width and crack control can be appropriately addressed through proper selection of the reinforcement size and spacing.

Corrosion Mitigation. To address long-term corrosion concerns, WJE's design approach may incorporate the appropriate corrosion mitigation strategies, if warranted. For example, passive or active cathodic protection systems may be used within the areas of high corrosion activity, or corrosion monitoring systems may be designed within the structure to monitor the ongoing rate of corrosion of the reinforcement. These systems could be installed such that upfront capital costs are reduced, with fully implementation at a later date if/when corrosion initiates.

Combining our history and understanding of the long-term performance issues related to civil structures of this nature with our team's nationwide experience and expertise in the field of structural design and rehabilitation, WJE is well positioned and qualified to deliver comprehensive design services that will maximize the service life of the PWWTP while minimizing the long-term costs for the City. Our team offers unmatched design and problem-solving experience in the field of civil structures.

WJE's extensive experience in preparing rehabilitation designs also includes cost evaluation of rehabilitation alternatives and services during construction. We routinely assist clients with developing long-range strategies for maintaining their structures in a way that meets their economic and continued operational needs. Services during construction include performance testing, mock-up reviews, quality assurance and quality control testing and monitoring, and troubleshooting.

Material Evaluations and Laboratory Services

While not included in the RFP or this proposal, sample extraction and laboratory services are key in developing a comprehensive understanding of the distress to concrete structures. One of the major capabilities that distinguishes WJE from our competition is our in-house testing and laboratory services. WJE's Jack R. Janney Technical Center (JTC), located in Northbrook, Illinois, has more than 25,000 square feet of laboratory space for testing and evaluation of structural components and construction materials. Our investment in a full spectrum of instruments and specialized equipment to examine, sample, and test all types of construction materials puts our capabilities at the forefront of the profession. The JTC can accommodate virtually any construction-related testing, from the performance evaluation of a new curtain wall or the fatigue and fracture testing of reinforcing bars, to accelerated weathering tests or specialized physical and chemical tests of materials. JTC is one of the largest privately owned construction-based testing laboratories in the country.

We anticipate that after our non-destructive condition assessment, we may recommend material sampling and evaluation of the concrete to provide the City with a more comprehensive evaluation capable of better answering the questions described in the RFP. Specifically, the following material evaluations could be very beneficial to the City when evaluating the remaining service life and the existing condition of the concrete structures at PWWTP:

Petrographic Analysis. Concrete cores taken from the structural elements would be evaluated using methods outlined in ASTM C856, *Petrographic Examination of Hardened Concrete*, to characterize composition and general quality of the concrete, as well as to identify and quantify the presence of potential distress mechanisms, such as paste erosion due to hydrogen sulfide exposure.

Chloride Testing. Cores from various exposure conditions for each structure can be tested for acid-soluble chloride content using a modified version of ASTM C1152, *Standard Test Method for Acid-Soluble Chloride in Mortar and Concrete*. The near-surface regions of each core can be divided into separate, equally spaced layers, spanning the nominal depth of the reinforcement as determined by a reinforcement cover survey. Deeper measurements will provide baseline chloride levels for the concrete at the time of original construction. By this approach, chloride concentration profiles will be determined. These results will support determination of the chloride concentrations at the depth of reinforcement, and supply essential information for predicting the onset of chloride-induced corrosion and assessing the durability potential of the structures.

Rapid Chloride Ion Penetration (RCP). Inner portions of concrete cores away from possible chloride contamination would be tested to determine the concrete's ability to resist penetration of chloride ions in accordance with ASTM C1202, *Standard Test Method for Electrical Indication of Concrete's Ability to Resist Chloride Ion Penetration*. This method provides an indication of the permeability of the concrete.

Service Life Analysis

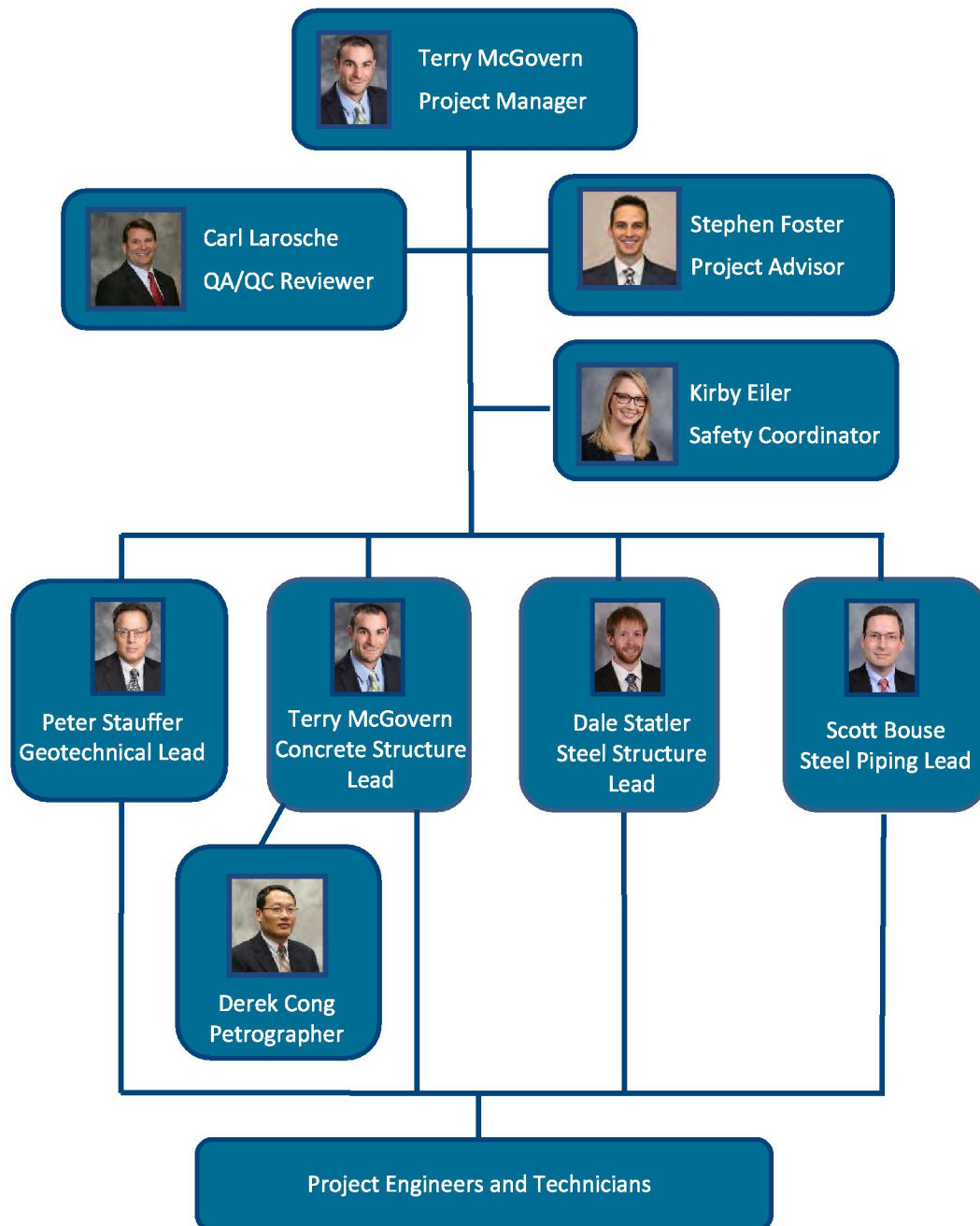
The in-depth field studies and laboratory testing described above can help provide a general description of the current condition of the concrete structures. While not included in this proposal or requested in the RFP, if desired by the City after the initial visual and non-destructive assessment, WJE can perform a service life analysis to determine the impact of future deterioration on future use of the structure. Service life is defined for a structure as the time it takes for the extent of deterioration to exceed a given level of acceptability. Usually, unacceptable deterioration is that which impacts the intended functionality, appearance, or capacity of the element. WJE will work with the City to establish an appropriate definition of service life based on an "acceptable" level of deterioration for the structure's future use.

WJE's approach to service life modeling of existing structures is based on two key ideas: 1) the inputs used for corrosion modeling are derived from condition survey findings measured directly on the modeled structure, and 2) predictions of future performance must consider the variability of key corrosion-controlling parameters in a given element (i.e., a probabilistic approach is superior to a deterministic approach). Because "off the shelf" modeling packages do not adequately consider these concepts for service life analyses of existing structures, a computer program and supporting routines have been developed at WJE for this purpose. WJE's model is well-suited to modeling chloride- or carbonation-induced corrosion-related damage of reinforced concrete. The results of this modeling can also be used to guide selection of appropriate repair and maintenance strategies.

The service life modeling should be thought of as a tool for an overall risk management package. Performing the analysis helps to answer the question, "what timeframe should I use to plan for repairs?" To the nature of the assumptions that must be made and the inherent variability in any structure, the service life analysis cannot predict a narrow window when a structure will fail or when it will fail to meet a service life criteria. However, it can provide a general timeline for anticipated deterioration and is dependent on the information used to develop the analysis. As such, to gain a refined input for the service life analysis, WJE would need to collect core samples to establish the in-situ characteristics of the concrete and the associated rates of deterioration through laboratory testing.

Project Team

The team members assembled for this project have been specifically selected to meet the technical needs of the project and the level of expertise and service expected by the City. Their extensive experience in structural assessment, rehabilitation and repair design, and geotechnical investigation makes WJE well qualified to perform the services required for this project. The most valuable asset we bring to every job is our past experience with similar structures and the cumulative knowledge gained from previous investigations.



Terry McGovern, PE, has participated in the investigation and rehabilitation of multiple concrete, steel, and wood structures. Mr. McGovern's focus lies in the area of existing structures, with an emphasis on concrete structures. He has participated and led the evaluation of many cast-in-place, precast, prestressed, and post-tensioned concrete structures. These evaluations have included assessment of structures to develop long-term maintenance plans as well as to address current failures or distress. He also serves on ACI Committee 546, *Repair of Concrete*, and ACI Committee 563, *Specifications for Repair of Structural Concrete*. Mr. McGovern will serve as the concrete area lead, and the WJE project manager. As such, he is responsible for all communications with the client team and will be authorized to present information and make commitments on behalf of WJE.

PROJECT MANAGER AND CONCRETE STRUCTURE LEAD

Stephen Foster, PE, has been involved in the evaluation, design, and rehabilitation of numerous engineering projects, including concrete, steel, wood, and masonry structures. Mr. Foster has performed assessments related to corrosion distress, design and construction deficiencies, foundation-related movement, and leakage distress at water and wastewater facilities across the country. Mr. Foster also has experience and specialized NACE training for assessment, specification, and quality assurance inspection of concrete and steel coatings and cathodic protection systems (NACE Coating Inspector Level 2, and Cathodic Protection Technician). Mr. Foster will be the Project Advisor for this project and will supplement and assist the project manager as necessary in an advisory capacity. The Project Advisor's contributions will be primarily through advice, guidance, and review of work product.

PROJECT ADVISOR

Carl J, "Chuck" Larosche, PE, has over thirty years of experience in consulting services in structural design, investigation and evaluation of existing structures and materials, and restoration of water and wastewater facilities across the country. Mr. Larosche has developed a national practice for WJE in concrete repair, rehabilitation, and restoration. His practice includes, for example, historic structures; high and low-rise buildings; and a broad range of civil structures, including dams, tunnels, and water treatment plants. Mr. Larosche is a leader in concrete repair technology and was elected as an ACI Fellow in 2015. Mr. Larosche's efforts with ACI include, but are not limited to, Sub-committee Chair of ACI 562, *Evaluation, Repair & Rehabilitation - Structural Analysis*, the current concrete repair code. He is also past Chair of ACI Committee 437, *Strength Evaluation of Existing Concrete Structures*, and Secretary of ACI Committee E702, *Designing Concrete Structures*. In this project, Mr. Larosche will serve as quality assurance and quality control (QA/QC) reviewer and will be responsible for completing reviews of work product, in accordance with company policy.

QA/QC REVIEWER

Kirby Eiler Kirby Eiler has more than seven years of experience as an occupational safety and health professional at WJE. As Safety Associate III, Ms. Eiler plays a key role in promoting safe work ethics, practices, and working conditions in WJE's office, laboratories, and fieldwork locations; responds to the administrative, equipment, and training safety needs of staff; and provides safety solutions to a wide array of hazards and conditions associated with forensic engineering and architectural investigations, condition assessments of buildings, and construction-related activities.

SAFETY COORDINATOR

Derek Cong has significant practical and theoretical experience with concrete and concrete materials. Since joining WJE in 2001, he has been involved in the petrographic examination of concrete, masonry, aggregate, and other building materials for a variety of structures. He has conducted thousands of investigations involving such material problems as alkali-silica reaction (ASR), low strength, retardation, cement-admixture interaction, efflorescence and other surface defects, fire-damaged concrete, cracking, sulfate attack, and delayed ettringite formation (DEF). Dr. Cong is often consulted on concrete mix designs to avoid concrete material problems.

PETROGRAPHER

Peter Stauffer, PE, has more than thirty-four years of experience in geotechnical engineering, including field and laboratory investigations, engineering analysis and design, preparation of construction documents, and construction phase services. Mr. Stauffer has worked on a wide range of projects including water treatment plants, investigation of damaged structures, and foundations.

PROJECT GEOTECHNICAL LEAD

Dale Statler, PE, has broad experience in structural systems with an emphasis on building structures. Mr. Statler has expertise in the analysis and design of steel, concrete, aluminum, and wood structures. He has a strong background in the stability of metal building systems and the evaluation of unique loading applications such as blast pressures, hydrostatic water, and grain storage. Mr. Statler has completed the NHI Course 130078 - Fracture Critical Inspection Techniques of Steel Bridges.

PROJECT STEEL STRUCTURE LEAD

Scott Bouse, PE, has diverse experience in finite element analysis, fracture mechanics analysis and failures, and fitness for service evaluations, as well as instrumentation and monitoring in laboratory and field applications. Mr. Bouse is highly proficient in API 579 (Fitness For Service), including Level 3 (FEA) analysis, Calculations per ASME B31, ASME VIII (Div. 1,2), TEMA, PCC-1, PCC-2, API 530 (Heater Tubes), API 620 (Low-Pressure Tanks), and API 650 (Atmospheric Tanks).

PROJECT STEEL PIPING LEAD

See the additional information section for more detailed personnel qualifications of the project team leads.

Select Related Project Experience

Wemlinger Water Treatment Plant | Aurora, Colorado

Client Reference: Mr. Vincent Hart, Carollo Engineers, Inc., (303)404-6324



WJE was retained to assist in the evaluation of potential concrete deterioration affecting the clearwell tank and the filter effluent structure at the Wemlinger Water Treatment Plant. WJE was also requested to obtain and perform petrographic examinations of core samples from those two structures.

Based on the results of WJE's petrographic studies, the observed deterioration in both the clearwell tank and the filter effluent structure were found to be the result of moderately weak concrete paste in prolonged contact with the aggressive, treated (soft) water. This treated soft water essentially reacts with or attacks the concrete paste structure in locations where the paste is not particularly dense and impermeable. WJE recommended several remedial options for the client to consider.



Black Canyon Lake Dam | Navajo County, Arizona

Client Reference: Mr. George Sabol, Water Resources, Stantec, (480) 687-6222



Provided geological and geotechnical design services associated with the modification of the Black Canyon Lake Dam and spillway to accommodate increased runoff due to watershed burn and pass the Probable Maximum Flood (PMF) as well as address all NEPA compliance issues. The Black Canyon Lake Dam is of earthen construction—420 feet long, with a crest width of 24 feet, and volume of 1,580 acre feet. The emergency spillway is a concrete-lined chute. The elevation is 7,075 feet (2.2 m).

A filter diaphragm to the outlet conduit was designed according to NRCS criteria. The embankment was raised, the spillway enlarged and replaced, and other dam safety improvements were made. Project geotechnical issues included the design of the raise section, identification and characterization of borrow materials for construction of the raise, and evaluation of the stability of the raised dam. Geotechnical challenges faced during the project included a lack of available information pertaining to the foundation, embankment construction, and the phreatic levels that had developed in the dam and foundation.

Englewood Clarkson Tanks | Englewood, Colorado

Client Reference: Mr. Thomas Brennan, City of Englewood, (303)762-2654



WJE was retained by the City of Englewood to perform a condition evaluation of the two 3 million gallon Clarkson water tanks located in Englewood, Colorado. The Clarkson water tank facility consists of three potable water storage tanks. The two rectangular tanks were constructed circa 1956 and are approximately 250 feet long in the north-south direction, and 140 feet in the east-west direction. The tanks exhibited various forms of on-going material distress conditions such as cracking, delaminations, joint failure and concrete scaling.

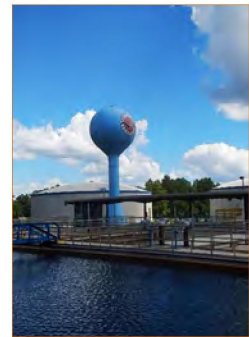
WJE completed a field investigation consisting of visual, delamination and elevation surveys, corrosion testing and retrieval of concrete samples. The objective was to identify and document areas of cracking, deterioration and distress, and to assess the overall general condition of the tanks. Corrosion field testing was performed to measure corrosion potential and current corrosion rates using Half-Cell and Gecor 6 equipment. Concrete cores were obtained from the two tank structures and sent to WJE's laboratories for materials evaluations. Core locations were selected to represent typical and representative conditions observed in the two tanks. The laboratory analyses of the concrete core samples included petrographic evaluation, chloride content, carbonation, and strength testing.

WJE issued a comprehensive report detailing the structure assessment and laboratory findings. WJE also recommended concrete repairs and options for protection of the roof slabs as well as provided an estimate of probable costs for the repairs and protection of roof slabs.

Bay County WTP Trains 1 and 2 Condition Assessment | Panama City, Florida

Client Reference: Mr. Trevor Noble, Bay County Utility Services Assistant Director, (850) 248-5010

The Bay County Water Treatment Plant (BCWTP) began operation in 1967 and was expanded in 1985 to a permitted capacity of 50 million gallons per day (MGD). The plant production was then increased to 60 MGD in 2007. The facility currently uses a combination of conventional and high-rate (Actiflo) surface water treatment processes.



Both trains (Train 1 and Train 2) of the conventional treatment unit had experienced ongoing leakage and various amounts of deterioration, particularly at exterior wall joints. Although previous repairs were attempted, WJE was retained to assess the existing condition of the concrete structures at the conventional treatment unit, including the splitter box, flocculators, clarifiers, settling basins (SBs), and filters, as it related to the long-term performance and service life of the BCWTP.



WJE personnel performed field assessments of Train 1 and Train 2, which included visual observations, testing, and laboratory analyses to identify deterioration, efflorescence, mechanical damage, or other distress conditions that would affect the performance and durability of the structure. Testing conducted by WJE encompassed both destructive and nondestructive evaluation methods, such as: coating system adhesion testing, reinforcement and cover depth surveys, in-situ half-cell potential testing, material sampling and carbonation testing, petrographic

examination, chloride ion content testing, and rapid chloride penetration (RCP) testing. Subsequent to the assessment and data analysis, WJE provided Bay County with a detailed report including the findings, repair considerations, and an Engineer’s Opinion of Probable Cost and a Prioritization of Repairs and Costs.

Sinclair Wyoming Refining Company (SWRC) | Sinclair, Wyoming

Client Reference: Mr. Trevor Kanode, Sinclair Wyoming Refining Company, (307) 328-8060

The Sinclair Wyoming Refining Company has a 90,000+ bpd refinery located in South-Central Wyoming. During a recent scheduled maintenance outage, a section of pipe from a process heater to a distillation tower was found to be corroded (thinned uniformly), and WJE performed a Fitness For Service (FFS) assessment on the line. After concluding that the piping had been thinned beyond ASME Code required thickness, WJE worked with SWRC to re-design the piping to prevent future damage, while limiting the overall pipe stresses and flange loadings in accordance with the applicable Codes and Standards. To date, engineers at WJE have performed several such assessments, including assessing damage from erosion, Flow-Assisted Corrosion (FAC), selective corrosion at weld seams, and others.



Palo Verde WRF Sump Assessment and Construction Services | Tonopah, Arizona

Client Reference: Mr. Louis Vetter, Palo Verde Water Reclamation Facility, (623) 393-6178

The Palo Verde Nuclear Generating Station is a nuclear power plant located approximately 45 miles west of Phoenix. It is currently the largest nuclear-generating facility in the United States. Palo Verde is also the only nuclear-generating facility in the world that is not adjacent to a large body of water. Instead, it uses water at a rate of 90 million gallons per day (MGD) from the Palo Verde Water Reclamation Facility (WRF) where effluent from the City of Phoenix is treated. After Palo Verde personnel observed various distress conditions at the WRF, the client retained WJE to perform a detailed condition assessment and to develop a comprehensive maintenance and repair plan.



During a regularly scheduled plant shutdown, WRF gave WJE seven days to perform the visual and materials assessment, which WJE completed by working two twelve-hour shifts each day. WJE performed a visual survey, cover depths, copper-copper sulfate half-cell potential testing, corrosion rate testing, and carbonation testing. Laboratory evaluations of core samples, which were necessary to assess the general quality and integrity of the concrete in the various structural elements, included rapid chloride ion permeability and petrographic analyses. In addition, WJE materials scientists evaluated the level of chloride concentrations at various depths relative to the

exposed concrete surface to predict the onset of chloride-induced corrosion of the reinforcement and to determine the remaining service life of the element.

Since this initial assignment, WJE has performed comprehensive structural assessments on over twenty other structures at the Palo Verde WRF and has developed repair documents on eighteen of those structures, including the TF/FC Sump. The TF/FC Sump project included various assessments over several years and multiple planned plant shutdown



periods. The assessments included destructive and non-destructive investigations, such as visual and delamination surveys, corrosion potential surveys, half-cell surveys, and laboratory petrographic studies. After completing the assessments, repairs were implemented in phases due to the amount of repair, limited access, and time constraints. The work scope entailed concrete repair of various vertical and overhead elements and implementation of various corrosion mitigation techniques, including state-of-the-art repair materials, coating systems, and galvanic protection in the form of discrete anodes and zinc metalizing over concrete. Access and shoring for the structure was a key element in the repair effort. Alternative shoring techniques were used to increase efficiency of repair work during planned shutdown periods.

Sacramento Regional WTP Primary Sedimentation Tank Corrosion Assessment and Remediation Services | Sacramento, California

Client Reference: Mr. Andrew Frankel, Regional San, (916) 875-9228

The Sacramento Regional Wastewater Treatment Plant (SRWTP) provides wastewater conveyance and treatment services to residential, industrial, and commercial customers throughout unincorporated Sacramento County and is located approximately 15 miles south of Sacramento. Approximately 150 million gallons per day (MGD) from the plant are treated and discharged into the Sacramento River. After plant personnel observed various distress conditions at the primary sedimentation tank deck, the client retained WJE to perform a detailed condition assessment and to develop conceptual repairs for the various distress conditions.



During a regularly scheduled shutdown for one battery of sedimentation tanks, WJE performed a visual and non-destructive materials assessment in three days, which WJE completed with a total of four staff. WJE performed a visual survey, cover depths, copper-copper sulfate half-cell potential testing, ultrasonic thickness measurements, and corrosion rate testing. Several distress conditions were observed including corrosion of various embedded steel elements, such as manhole embeds, hatch frames, and sluice gates. WJE also identified widespread paste erosion and localized spalling at select elements from within the sedimentation tanks. Material sampling and laboratory evaluations of core samples, which were necessary to assess the general quality and integrity of the concrete in the various structural elements, are currently being performed. WJE will provide the Owner with a report of findings, including conceptual strategies for repairing and mitigation future



corrosion-related distress.

C - STRATEGY AND IMPLEMENTATION PLAN

- ***Project Management and Coordination (Task 1)***
 - ***Project Team Coordination***
 - ***Progress Meetings and Communication***
 - ***Schedule***
 - ***Quality Assurance and Quality Control***
- ***Scope of Structures / Elements Included in Assessment***
- ***Document Review and Site Work (Task 2)***
 - ***Document Review (Task 2A)***
 - ***Geotechnical Investigation (Task 2B)***
 - ***Condition Assessment of Select Structures and Piping (Task 2C)***
- ***Analysis, Review, Repair Concept Development, and Reporting***

Based on our extensive experience with similar projects, and incorporating the specific requirements and requests of the City of Grand Junction, we have developed this strategy and implementation plan to provide the Scope of Services in Section 4.0 of the RFP.

Project Management and Coordination (Task 1)

Project Team Coordination

WJE has extensive experience working with and leading consultant teams to clearly define the project objective, delegate individual tasks, and oversee deliverables in a cost conscious, time-sensitive manner, particularly on municipality projects of similar scope. For this and every WJE project, the Project Manager has primary responsibility for organizing the project team and coordinating with the client. To that end, the WJE Project Manager will maintain regular contact with WJE team members to remain informed on project progress. He is also responsible for controlling the project costs and schedules.

Progress Meetings and Communication

Project progress meetings will be scheduled with The City throughout the work as required in Task 1 of the RFP (6 meetings assumed). Given the distance from Denver to Grand Junction, we propose to perform these meetings via virtual meetings (e.g. internet-based meetings and phone calls where audio and either video or computer screen sharing can be used to aid in the meeting). Following the meeting, meeting minutes will be distributed by WJE to all attendees summarizing items discussed and action items assigned to specific parties. As needed, the WJE Project Manager will provide copies of pertinent written

Key Task 1 Deliverables:

- **6 Virtual Progress Meetings**
- **Distribution of Meeting Minutes**
- **Bi-Weekly Status Memorandums**
- **2 In-Person Meetings/
Presentations to Review Draft
and Final report**
- **Up-to-date Schedule**

communications and highlight any early identification of potential problems to The City in a timely manner. Additionally, WJE will provide bi-weekly (every two-weeks) status update memorandums to update the City on progress.

For past projects, we have found the use of virtual meetings to be effective at summarizing our recommendations, explaining the ramifications of various decisions, and presenting key concepts. We have generally used these virtual meetings to present design concepts, engineer's opinions of probable costs, and/or recommendations. However, for this project, we understand that the City would prefer to have meetings in-person to review 1) our draft report, 2) our final report, with recommendations, cost estimates and conceptual repairs. As such, we have budgeted for two in-person meetings to present and review these deliverables with the City.

Schedule

From the initiation, we will work with the City to establish achievable project schedules and then we will commit the appropriate resources to ensure that the scheduling objectives are met. We will provide regular updates to our schedule based on progress, and any unforeseen conditions that are encountered. Our projected, staff availability will allow us to adequately accommodate the tentative time schedule proposed in the RFP, with work starting no later than July 25, 2019, assuming the contract is executed by July 19, 2019.

WJE is well positioned to meet the proposed schedule presented in the RFP

Below is an initial estimate of the proposed project schedule showing anticipated duration to complete and estimated start times along with an estimate of the time required from the City.

Table 1. Initial Proposed Schedule

Task	Duration	Start	City Time Commitment
Execution of Contract	NA	July 19, 2019	NA
Work Begins	NA	July 25, 2019	NA
Initial Coord. & Planning	2 Weeks	July 25, 2019	3 days
Document Review	2 Weeks	July 2019	2 days
Geotechnical Investigation	3 Weeks	August 2019	3 days
Field Assessment	1 Week	August 2019	1 Week
Analyses	3 Weeks	September 2019	None
Follow-up Field Assessment (if requested)	Unknown	September 2019	Unknown
Summarizing, Reporting & Meetings	8 Weeks	October 2019	1 Week
Issue Final Report	NA	November 2019	NA

Quality Assurance and Quality Control

Second only to the high caliber of people WJE employs, technically distinguished work product is what separates us from other firms in our business. In fact, the technical quality of our work is so fundamental to who we are that “Technical Excellence” is one of our five Core Values.

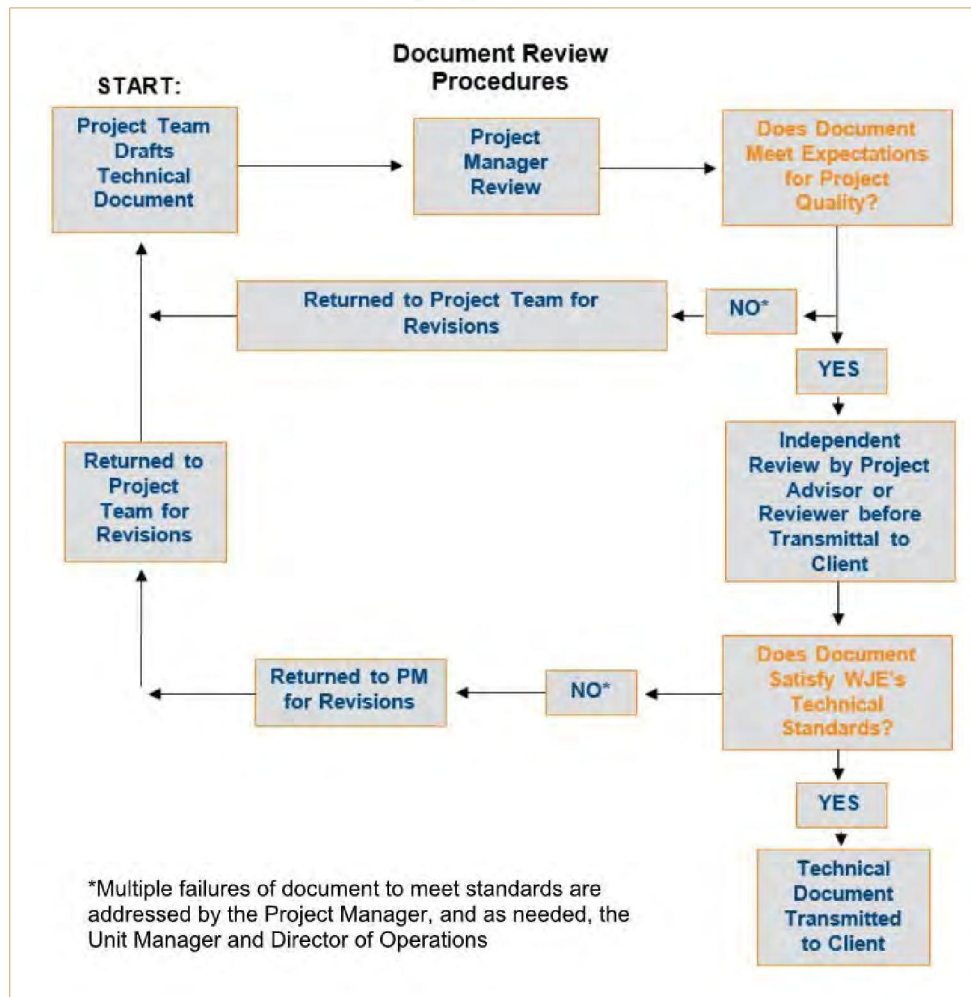
Consistent production of technically excellent work is a monumental and never-ending task that demands consistent, critical self-examination. Accordingly, we have always made it our practice to bring the right technical expertise to every project and to require appropriate technical review of our work product before it is finalized. We also perform a post-production review process, known as the Work Product Review Program (WPRP), by relevantly experienced staff so that we are constantly growing and improving.

Quality Control (QC) is assured through a consistent technical review and verification process applied to each project. We have an inherent responsibility for our recommendations and work product, and we take this responsibility very seriously. As part of the scope of projects under this contract, and all of our projects, WJE will conduct an internal peer review of all documents prior to issuance. The review and refinement process for WJE work product is illustrated by the flow chart on the following page.

This QC procedure is predicated on the concept that the quality of our opinions and recommendations are improved when they are reviewed by a qualified and nonbiased professional; this is standard practice on all

WJE projects. All work is reviewed and reported on a regular basis to avoid pitfalls and to make certain that the objectives of the given effort are met in a timely and cost-effective manner. Our review process is established as part of the project milestone schedule and is performed during each milestone delivery. QC reviews, both internal and external, are interactive so that feedback can be gathered and the goals and overall success of the project are sustained. Our QC and Quality Assurance (QA) Plan consists, in part, of the following:

- Committing to providing continuous training by internal and external means, as well as having significant participation in, and service to, professional technical organizations.
- Using company-wide expertise, as needed. WJE has established Technical Resource Groups (TRGs) using programs to allow us to exchange, amongst a select group experienced in a certain area, information and ideas quickly over our intranet. The TRGs are also a repository of technical information and resources.
- Adhering to the formal review process of our work (proposals, calculations, testing, reports, specifications, drawings, etc.) with our mandatory specified level of review, as described above.
- Using our Project Advisor Program, which assigns the best available expertise in the company in a specialized area to work on and review projects from the proposal stage to completion.
- Issuing Client Surveys to obtain feedback from our clients to provide continuing evaluation and improvement of our work from our clients' perspectives.



Scope of Structures / Elements Included in Assessment

Based on our understanding from the RFP, only a portion of the PWWTP structures will be assessed as a part of the work. In addition, for the piping review, only select piping lines are to be reviewed. Our understanding of what structures are included in the assessment are summarized in the table below. In addition, Figure 1 shows our understanding of the location of these structures.

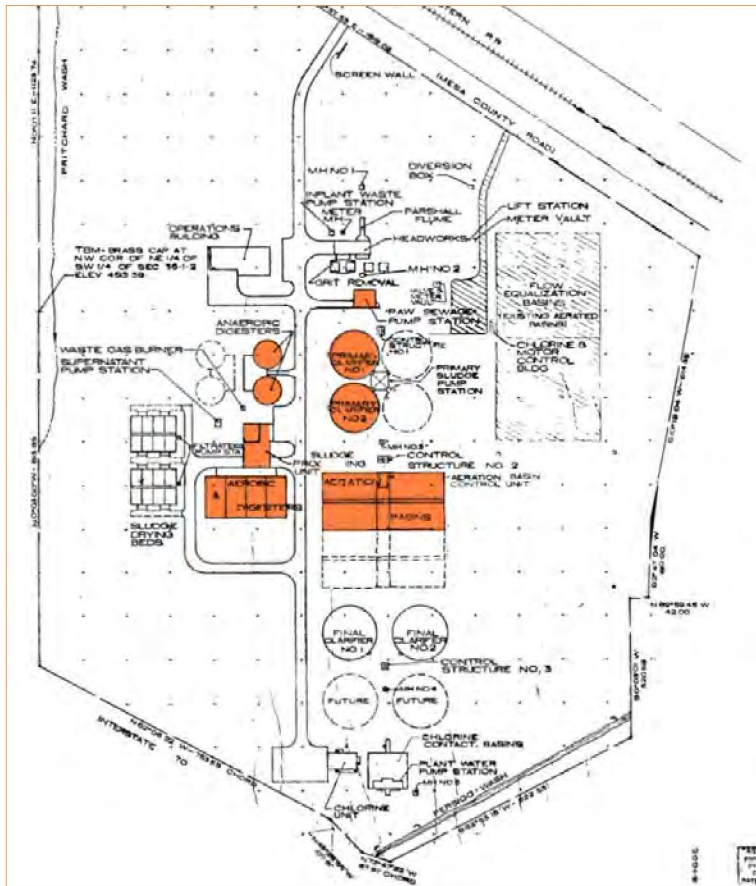


Figure 1. Structures to be assessed

Table 2. Assessment Summary

Structure	Concrete Structure	Steel Structure	Piping
Primary Clarifier 1	X	X	
Primary Clarifier 2	X	X	
Raw Sewage Pump Station	X	X	Inlet and Discharge
Anaerobic Digester 1	X	X	
Anaerobic Digester 2	X	X	
Sludge Pressing Unit	X	X	
Aerobic Digester	X	X	
Aeration Basins	X	X	

Document Review and Site Work (Task 2)

Document Review (Task 2A)

Concurrent with the Geotechnical Investigation, the project team will review available and relevant documents to understand the original construction of the structures to be assessed. To the extent they are available, we will also review service records and reports to determine the historical performance of the PWWTP. This information will be used to develop a field assessment evaluation plan and field data sheets, which will be instrumental in forming the basis of the eventual repair and rehabilitation program. If we identify any gaps or areas where additional information would be beneficial in developing assessment or repair strategies, we will notify the City during this phase. If additional information is not available, we may include a recommendation to perform additional assessment in our Condition Assessment Memorandum, discussed below.

WJE will review provided documents and inquire about additional information that would benefit our work

Geotechnical Investigation (Task 2B)

The objectives of the proposed geotechnical investigation are to characterize the subsurface conditions at the site including soils and bedrock materials and groundwater conditions, for use in the engineering evaluation of the existing facilities at the PWWTP. As such, the geotechnical investigation will be one of the first tasks that we complete so that our structural evaluations can use the information gained to provide more accurate analyses of the existing structures.

Key Geotechnical Items:

- Review of Site Conditions
- Exploratory Borings
- Monitoring Wells
- Laboratory Testing
- Site Characterization Report

Our investigation will start by determining the final boring locations, depths, and plans for boring completion, based on review of site conditions and completion of an initial site reconnaissance, and meetings with the City, that will include evaluation of access to proposed boring locations. Utilities will be cleared at each boring location, and access will be coordinated with City project representatives. Where permanent monitoring wells are to be installed, we will obtain the necessary permits from the Colorado Division of Water Resources.

Up to eight exploratory borings will be drilled at locations around the plant site to characterize the range of subsurface and groundwater conditions present. We currently envision that the borings would be drilled to depths ranging from 15 to 25 feet. Two of the exploratory borings will be drilled to greater depth, if needed, to determine the depth to and characteristics of bedrock at the site. We will attempt to drill the borings with hollow-stem auger. The drilling cost, however, assumes that several of the borings will be drilled with a higher cost ODEX casing advancement system. Use of this system is based on the drilling subcontractors experience at a nearby site where they encountered river gravels that require this drilling method. If hollow-stem auger can be used for all of the borings there will be some cost savings. Drive samples, either standard-split spoon or modified-California, will be obtained at 5-foot intervals in the borings. Shelby-tube samples may be taken where soft soils are encountered. Following completion of drilling and sampling, the holes will either be backfilled using a cement/bentonite grout mix, or will be completed as a monitoring well as described below. We plan to retain HRL Compliance Solutions, Grand Junction, Colorado, to provide subcontract drilling services.

As many as 3 of the exploratory borings will be completed as monitoring wells. The monitoring wells will consist of a one-inch diameter Schedule 80 PVC riser pipe with 0.01-inch wide machine cut slots. The

annular space will be backfilled with 10 - 20 Silica Sand placed approximately up to about two feet above the slotted section. The upper portion of the monitoring well boring will be backfilled with bentonite pellets. A locking protective cover will be installed at the ground surface.

Laboratory testing will be completed on samples obtained from the exploratory borings to characterize the engineering, physical and index properties of the soil and rock materials. Laboratory testing will include: in-situ moisture and density; grain size distribution; Atterberg limits; swell/consolidation; and unconfined compressive shear strength. We plan to have the laboratory testing work completed at Advanced Terra Testing, Lakewood, Colorado.

At the conclusion of our work, we will prepare a Geotechnical Site Characterization Report including the data collected, methodologies employed, conclusions, and recommendations, supported by maps, cross sections and other appropriate illustrations. The report will be signed by a professional engineer licensed in the State of Colorado.

Condition Assessment of Select Structures and Piping (Task 2C)

Using information gained from the document review, WJE will perform a field condition assessment of the areas/buildings noted in the RFP, and described above using our experience in evaluating existing structures.

WJE will provide:

- **Schedule/Plan for Assessments**
- **Condition Assessment Memorandum**

We will pay particular attention to the items of distress noted in the RFP including, but not limited to:

- Building slabs, foundation floors,
- Exterior, and where accessible, interior deterioration to concrete walls
- Cracks in concrete walls, beams and ceilings (or soffit)
- Delamination or spalling of concrete on walls
- Deterioration of steel roof structures
- Corrosion, erosion, or other thinning of select piping elements

For our initial assessments, outlined below, we assume that we will be given sufficient access to the areas of concern (not including ladders or scaffolds) during normal business hours, and that the City will put in place sufficient safety measures to protect our staff while accessing different areas of the structures. We will develop and provide a schedule/plan for our condition assessment work to the City for their review as requested in the RFP. We anticipate that we will discuss this schedule with the City through a virtual meeting, and make appropriate revisions as needed.

At the completion of our assessments, outlined below, we will provide the memorandum requested by the City in the RFP outlining the findings of our assessments, and our recommendations, if any, for additional non-destructive or destructive testing that may be warranted, and why. This document will include costs for the proposed scope items to allow the City to weigh the potential benefits to this work, and determine if they would like to move forward with such work. We anticipate that after submission of this memorandum, we will have a virtual meeting to discuss with the City.

Concrete Structure Assessment

The overall concrete assessment will include a visual survey of the structures to document the extent of observed distress. WJE will also perform a mechanical sounding of readily accessible portions of the structures using hand-held hammers, chains, or other pole mounted mechanical impactors to identify areas of deterioration. The approximate size and extent of identified deterioration, including delaminations,

spalls, staining, and cracking, will be documented on plan or elevation sheets. Select portions of the structures will be examined in further detail to support tasks associated with the requested structural analysis and projected life of the structures. We understand from the discussion at the pre-bid meeting, and per Addendum 2 that some limited destructive testing may be approved. As such, we anticipate requesting to perform this limited destructive testing as a part of our initial assessment.

Reinforcement Spacing and Cover Depth. Specifically reinforcement spacing and cover depth will be evaluated by nondestructive means using magnetic or eddy current reinforcement location equipment or ground-penetrating radar (GPR) at specific locations identified as being critical during our document review. This testing will estimate the existing concrete cover. However, nondestructive testing equipment should be calibrated by directly drilling into the concrete and physically measuring the concrete cover at select locations.

Half-cell Potential Surveys. Half-cell potential surveys will be performed on various elements to identify the propensity for corrosion of the reinforcing bars. The testing will be performed at a range of distress conditions using copper-copper sulfate half-cell potential testing in general accordance with ASTM C876, *Standard Test Method for Half-Cell Potentials of Uncoated Reinforcing Steel in Concrete*. Similar to GPR, this testing will require drilling into the concrete to make a connection to the reinforcing steel (1/2 to 1-inch diameter holes).

Corrosion Rate Testing. At all half-cell test locations suggesting likely corrosion, and at other selected locations, corrosion rate assessments will be performed in accordance with ASTM G59, *Standard Practice for Conducting Potentiodynamic Polarization Resistance Measurements*. This information will be useful in making relative comparisons between corrosion rates at different locations and exposure conditions within the structures.

Steel Structure Assessment

WJE will visually assess the condition of accessible portions of the steel structure from existing access surfaces to confirm that the construction is generally consistent with the original drawings provided to us, and to identify areas of distress such as section loss and damaged members or connections. We will document the severity and extent of distress with field notes and photographs. Representative and/or worst case conditions of distress will be investigated further through up-close arms-length visual assessment where accessible by ladder. Where necessary, WJE will employ ultrasonic NDT techniques to measure and evaluate section loss of the steel. In addition, we will perform spot measurements of any coatings applied to the steel structure as corrosion protection.

Locations of potentially concerning conditions, where possible through the use of a ladder, will be investigated further through up-close arms-length visual assessment, and where necessary the use of calipers and/or ultrasonic NDT measurement techniques to measure section loss. This review will allow us to perform our structural analyses of select conditions, as necessary. In addition, we will perform spot measurements of any coatings applied to the steel structure as corrosion protection.

Steel Piping Assessment

We will start our assessment of the inlet and discharge piping in the raw sewage pump station with a general visual review and limited-scope thickness measurements. This review will allow us to confirm general layout with original drawings, identify areas of previous repairs or obvious distress, and determine appropriate locations for our further study to evaluate the Cities concerns over wear and thinning noted in the RFP.

Based on our past experience with evaluation of steel piping, we understand that the areas around welds are potentially subject to water-based corrosion attack, but also that this service may expose the piping to erosion, general internal corrosion, turbulence-assisted corrosion, and external corrosion due to coatings failures. As such, we propose to perform spot thickness measurements at representative locations using ultrasonic thickness gauges, as well as along typical lengths of the pipe for comparison reasons. We will perform all of our testing and review from existing access surfaces, and at isolated areas, from a ladder.

Analysis, Review, Repair Concept Development, and Reporting (Task 3)

Analysis and Review

WJE will perform structural analyses as deemed appropriate on select elements to determine if remedial action or further review is warranted. In addition, our analyses will help us to develop effective and efficient strategies for rehabilitation. If required, structural analysis software will be used to perform modeling on elements for required loading conditions. We do not propose to perform a comprehensive evaluation of all structures, or elements; rather, we will use our knowledge and experience to review selected elements from the requested structures and components.

WJE will provide:

- **Draft Report**
- **Comprehensive Presentation**
- **Final Report**

Concrete Structures

The analysis for the concrete structures will be consistent with ACI 318, *Building Code Requirements for Structural Concrete*, and ACI 350, *Code Requirements for Environmental Engineering Concrete Structures*, including other local codes or provisions. In addition, our analysis techniques will consider the potential effect of deterioration, such as corrosion, on the safety and reliability of structural elements. Although not specific to these structure types, we anticipate the structural evaluation may benefit from increased strength reduction factors based in in situ concrete properties, if such additional studies are included as a part of a follow-up assessment.

As noted above, our analysis will include only select structural elements, which we will identify based on distress observed, or relevant representative items which warrant review based on the findings of the geotechnical investigation. These items will also be selected to capture the range of expected conditions or loading scenarios experienced for a given structure or element type. In this way, while not all elements will be reviewed, we will have bounded the existing conditions and can make recommendations based on these boundary conditions.

Steel Structures

Our analysis of the structural steel will be performed in a similar manner to that of the concrete structures. WJE will reference applicable contemporary and past standards and research as needed to evaluate the impacts of distress to steel members and/or connections. Where beneficial, advanced and/or non-traditional analysis methods may be employed to provide a more accurate evaluation of existing strength than would result from a standard design evaluation.

Piping

Based on the findings from earlier tasks, WJE will assess the piping systems using methods identified in API 579 / ASME FFS-1 (Fitness For Service), at conservative assessment levels. The intended conservatism will work together with our experience to establish whether any piping segments may require additional engineering analysis or repair planning. Systems that pass the assessments (as noted above) will be

confirmed as Fit for Service, and will not require additional action (aside from future condition assessments, if necessary). Components that do not pass the proposed conservative screening will be selected for follow-up inspection effort and/or replacement.

Repair Concept Development and Reporting

WJE will provide a written report that summarizes the results of our document review, field assessments, and analyses. Our report will also include drawings identifying locations of observed corrosion, deterioration, and various other conditions of distress. Observed distress will be categorized based on type and severity, and total quantities of the various distress will be given to provide a basis for budgeting preliminary repair costs. In addition, we will identify areas of distress which do not require repair, as a result of our assessment, and/or follow-up review.

We will develop conceptual repair strategies for each type of distress observed for which we recommend repair. These repair strategies will be based not only on observations made visually, but also on what we determine to be the root cause(s) based on our assessment. Our conceptual repair recommendations will be evaluated with respect to several factors to estimate their service life, including effectiveness of concept to satisfy project objectives, construction cost, ease of construction, duration of construction, and disruptions to the PWWTP. The design concepts will also address maintenance, operation, safety, and security concerns for the PWWTP. An Engineer's Opinion of Probable Cost (EOPC) will also be provided for each of the conceptual repair options. The EOPC will be based on the cost implications associated with repair or rehabilitation of the PWWTP, which WJE has developed from working on similar projects.

WJE will coordinate and deliver the reports to the City at two iterations, first as a Draft, then after review and discussion as a Final. All reports will be provided to the City in electronic and hard copy format. After submission of our Draft report, WJE will provide a comprehensive presentation to representatives of the City that highlights our observations, findings as to the need for repair or additional study, any structural or reliability concerns identified, conceptual repair approaches, anticipated service lives, and EOPC.

D - REFERENCES

References

References for included related projects:

- **Wemlinger Water Treatment Plant**
Mr. Vincent Hart, Carollo Engineers
390 Interlocken Crescent, Suite 800
Broomfield, Colorado 80021
303-404-6324 - vhart@carollo.com
- **Black Canyon Lake Dam**
Mr. George Sabol, Stantec
3133 West Frye Road, Suite 300
Chandler, AZ 85226
480-687-6222 - George.sabol@stantec.com
- **Englewood Clarkson Tanks**
Mr. Thomas Brennan, City of Englewood
1000 Englewood Parkway
Englewood, Colorado 80110
303-762-2654 - tbrennan@englewoodgov.org
- **Bay County WTP Trains 1 and 2**
Mr. Trevor Noble, Bay County Utility Services
840 West 11th Street, Suite 2500
Panama City, Florida 32401
850-248-5010 - tnoble@baycountyfl.gov
- **Sinclair Wyoming Refinery**
Mr. Trevor Kanode, Sinclair Wyoming
Refining Company
East Lincoln Highway
Sinclair, Wyoming 82334
307-328-8060
- **Palo Verde WRF Sump**
Mr. Louis Vetter, Arizona Public Service
Company
P.O. Box 52034, Mail Station 7990-LHT
Phoenix, Arizona 85072
623-393-6178
- **Sacramento Regional WTP**
Mr. Andrew Frankel, Sacramento Regional
County Sanitation District
8521 Laguna Station Road
Elk Grove, California 95758
916-875-9228 - frankela@sacsewer.com

Other local municipal references:

- **City of Thornton**
Paul Spacese
9500 Civic Center Drive
Thornton, Colorado 80229
303-538-7647,
paulspacese@cityofthornton.net
- **City of Boulder**
Melissa Yates
1500 Pearl Street, #302
Boulder, Colorado 80302
303-441-4440, yatesM@bouldercolorado.gov

E - FEE PROPOSAL DETAIL

- *Estimated Budget Summary*
- *Detailed Estimated Budget Breakdown*
- *Solicitation Response Form*

Error! Reference source not found. 3 below provides an estimated budget summary to complete all Phase 1 tasks included as a part of the RFP, per our understanding as described above. A detailed, line item breakdown of the budget is also provided on the following pages.

Table 3. Budget Summary for Each Task

Phase	Task	Description	Fees	Expenses	Total
I	1	Project Management and Coordination	\$17,340	\$750	\$18,090
I	2A	Document Review	\$11,298	\$0	\$11,298
I	2B	Geotechnical Investigation	\$12,235	\$17,440	\$29,675
I	2C	Condition Assessment	\$35,278	\$6,450	\$41,728
I	3	Analysis, Repair Concepts, Reporting	\$41,855	\$100	\$41,955
Sub-Total			\$118,005	\$24,740	\$142,745
Not-to-Exceed Contingency (5%)			\$5,900	\$1,237	\$7,137
Total			\$123,9770	\$25,977	\$149,882

Actual charges will be billed on a time and expense basis according to our hourly rates in effect at the time services are rendered. Other services, such as additional scope of investigation or assessment, structural analysis, and/or meetings that are not included in the scope described above will be considered additional services. Budgets for these services can be developed at your request. Our current hourly rates are listed below.

Schedule of Hourly Time Charges

Professional Staff		Professional Support Staff	
Senior Principal	\$350.00	Senior Specialist	\$150.00
Principal	290.00	Specialist	135.00
Associate Principal	235.00	Senior Technician	115.00
Senior Associate	205.00	Technician II	100.00
Associate III	185.00	Technician I	85.00
Associate II	160.00		
Associate I	130.00		

Please see the Solicitation Response Form at the end of this section for a copy of the City’s requested Not to Exceed fee proposal.

BUDGET ESTIMATE WORKSHEET - EXPENSES

Project No.: **2019.3776**
Client: **Persigo Wastewater Treatment Plant**
Description: **Structural Assessment**

Prepared By: **TMM**
Revision No.: **1.0**
Date: **6/21/19**

Expenses

Phase	Task No.	Expense Item	Quan.	Units	Unit Costs	Mark-Up	Expenses Subtotal
I	1	Vehicle Milage	2	each	\$300.00		\$600
		Meals	2	days	\$75.00		\$150
							\$750
I	2A	None					\$0
							\$0
I	2B	Utility Locates	1	each	\$700.00	10%	\$770
		Drilling, sampling, and piezometer installation	1	each	\$9,700.00	10%	\$10670
		Laboratory testing	1	each	\$4,500.00	10%	\$4950
		Meals	2	days	\$75.00		\$150
		Hotel	2	nights	\$200.00		\$400
		Vehicle Mileage	1	each	\$300.00		\$300
		Van/Truck Usage	2	days	\$100.00		\$200
I	2C	Vehicle Milage	2	each	\$300.00		\$600
		Van/Truck Usage	4	days	\$100.00		\$400
		Meals	12	days	\$75.00		\$900
		Hotel	12	days	\$200.00		\$2400
		GPR/Half Cell/CRT	3	days	\$500.00		\$1500
		Ultrasonic thickness gauge	3	days	\$50.00		\$150
		Shipping	1	each	\$500.00		\$500
I	3	Shipping	1	each	\$100.00		\$100

Expense Subtotals: \$24,740

SECTION 7.0: SOLICITATION RESPONSE FORM

RFP-4653-19-DH Professional Services for Persigo Wastewater Treatment Plant Structural Assessment

Offeror must submit entire Form completed, dated and signed.

- 1) **Not to exceed cost to provide design services for the Professional Services for Persigo Treatment Plant Structural Assessment for labor, materials, equipment, travel, design, drawings, engineering work, shipping/freight, licenses, permits, fees, etc. per specifications:**

NOT TO EXCEED COST \$ 149,882.00

WRITTEN: One hundred forty nine thousand eight hundred eighty two and 00/100 **dollars.**

The Owner reserves the right to accept any portion of the services to be performed at its discretion

The undersigned has thoroughly examined the entire Request for Proposals and therefore submits the proposal and schedule of fees and services attached hereto.

This offer is firm and irrevocable for sixty (60) days after the time and date set for receipt of proposals.

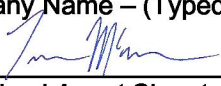
The undersigned Offeror agrees to provide services and products in accordance with the terms and conditions contained in this Request for Proposal and as described in the Offeror's proposal attached hereto; as accepted by the Owner.

Prices in the proposal have not knowingly been disclosed with another provider and will not be prior to award.

- Prices in this proposal have been arrived at independently, without consultation, communication or agreement for the purpose of restricting competition.
- No attempt has been made nor will be to induce any other person or firm to submit a proposal for the purpose of restricting competition.
- The individual signing this proposal certifies they are a legal agent of the offeror, authorized to represent the offeror and is legally responsible for the offer with regard to supporting documentation and prices provided.
- Direct purchases by the City of Grand Junction are tax exempt from Colorado Sales or Use Tax. Tax exempt No. 98-903544. The undersigned certifies that no Federal, State, County or Municipal tax will be added to the above quoted prices.
- City of Grand Junction payment terms shall be Net 30 days.
- Prompt payment discount of 0 percent of the net dollar will be offered to the Owner if the invoice is paid within NA days after the receipt of the invoice.

RECEIPT OF ADDENDA: the undersigned Firm acknowledges receipt of Addenda to the Solicitation, Specifications, and other Contract Documents. State number of Addenda received: 2

It is the responsibility of the Proposer to ensure all Addenda have been received and acknowledged.

Wiss, Janney, Elstner Associates, Inc.
 Company Name – (Typed or Printed)

 Authorized Agent Signature
3609 South Wadsworth Blvd, Suite 400
 Address of Offeror
Lakewood, CO 80235
 City, State, and Zip Code

Terry McGovern
 Authorized Agent – (Typed or Printed)
303-914-4300
 Phone Number
tmcgovern@wje.com
 E-mail Address of Agent
6/21/2019
 Date

F - ADDITIONAL DATA/INFORMATION

- *Insurance Exception*
- *Personal Qualifications*
- *Service Profiles*

Additional Information

Insurance Exception

Please note in section 3.0 Insurance Requirements of the Request for Proposal, 3.1(b), WJE can provide one million dollars (\$1,000,000) aggregate; **not** per job aggregate. We perform more than 5,000 projects a year. If we were to provide a dedicated per project aggregate (usually \$2M) to each project, we'd need insurance in the billions (5000 x \$2M). Our carriers will not provide that kind of insurance and we have no other option available at this time. Normally per project aggregates are required and provided by contractors, WJE is strictly a consulting firm that carries adequate insurance for all its projects.

Personal Qualifications

Personal Qualifications for our proposed project team can be found on the following pages.

Service Profiles

Please find profiles describing some of WJE's core technical capabilities following Personal Qualifications in this section.

- Structural Engineering
- Nondestructive Evaluation
- Corrosion and Service Life Modeling
- JTC Capabilities
- Geotechnical Engineering
- Petrographic Examination
- Metallurgical Engineering
- Ground-penetrating Radar
- Half-cell Potential Corrosion Surveying
- Pipe Investigation Services

Terrence McGovern | Senior Associate



EDUCATION

- University of Michigan
 - Bachelor of Science, Engineering, Civil Engineering, 2008
 - Master of Science, Engineering, Civil Engineering, 2009

PRACTICE AREAS

- Concrete Structures
- Condition Assessment
- Coatings
- Failure/Damage Investigations
- Facade Access and Fall Protection Requirements
- Structural Evaluation

REGISTRATIONS

- Professional Engineer in CO

PROFESSIONAL AFFILIATIONS

- American Concrete Institute (ACI)
- International Concrete Repair Institute (ICRI) - Rocky Mountain Chapter Executive Board of Directors
- Structural Engineers Association of Colorado (SEAC)

TECHNICAL COMMITTEES

- SEAC - Precast Concrete

CONTACT

tmcgovern@wje.com
303.914.4300
www.wje.com

EXPERIENCE

Terry McGovern has participated in the investigation and rehabilitation of multiple concrete, steel, and wood structures. Many of these projects have included in-depth analysis, repair design, production of construction documents, and observation services during construction.

Mr. McGovern's focus lies in the area of existing structures, with an emphasis on concrete structures. He has participated and led the evaluation of many cast-in-place, precast, prestressed, and post-tensioned concrete structures. These evaluations have included assessments of structures to develop long term maintenance plans as well as to address current failures or distress.

In addition, Mr. McGovern has also evaluated numerous concrete and coating material failures, identifying the causes of the failures and providing recommendations for repair.

REPRESENTATIVE PROJECTS

Condition Assessment

- Sports Authority Field at Mile High - Denver, CO: Observations and evaluation of various existing stadium structural and architectural components
- Denver, CO: Slab-on-ground distress review and recommendations for revised practices and specifications
- Drinking Water Storage Tanks - Englewood, CO: Condition assessment of two three-million gallon concrete water tanks
- Sheraton Hotel and Resort - Steamboat Springs, CO: Evaluation of and repair design for existing load-bearing brick masonry walls
- 1801 California - Denver, CO: Evaluation and repair design of precast concrete parking structure distress
- 1660 Lincoln - Denver, CO: Assessment and repair design of precast parking structure

Coatings

- Aircraft Hangar - Loveland, CO: Evaluation of coating and concrete slab-on-ground
- Thule Building - Boulder, CO: Assessment of floor coating and repair recommendations
- Millennium Bridge - Denver, CO: Review of traffic coating on pedestrian bridge

Structural Evaluation

- 1660 Lincoln - Denver, CO: Evaluation of precast concrete floor for file storage loads
- Legacy Cascades - Englewood, CO: Evaluation and repair design of deteriorated foundation wall elements
- Hampden East Condominium Association - Denver, CO: Investigation and evaluation of precast double tee elements to support revised roof loading
- 500 Quivas Street - Denver, CO: Evaluation of existing steel framing for increased loads due to a change in use
- Ft. Leavenworth - Leavenworth, KS: Evaluation, review, and design of shoring for remodel of historic structure
- Various Schools - CO: Analysis, structural repair design, and construction observation services
- Lee County Courthouse - Giddings, TX: Observations and evaluation of historic wood-framed balcony

Failure/Damage Investigations

- Erie Middle School - CO: Investigation of damage due to natural gas explosion
- Southlands Shopping Center - Aurora, CO: Tornado damage investigation of roof deck and supporting steel joists
- Ponderosa Villas - Denver, CO: Damage evaluation and repair recommendations for multistory wood-framed apartments
- Summit at Rock Creek - Superior, CO: Evaluation of damage and repair plans for wood and steel members as a result of fire

Facade Access and Fall Protection Requirements

- 1660 Lincoln - Denver, CO: Evaluation and testing of existing fall protection systems
- Colorado Department of Public Health Building - Denver: Roof anchor testing for conformance with OSHA regulations
- Hotel Monaco - Denver, CO: Testing and production of repair documents for fall protection anchors



PERSONNEL QUALIFICATIONS

Stephen Foster | Senior Associate and Associate Unit Manager



EDUCATION

- University of Texas at Austin
 - Bachelor of Science, Architectural Engineering, 2008
 - Master of Science, Architectural Engineering, 2010

PRACTICE AREAS

- Condition Assessment
- Repair and Rehabilitation Design
- Construction Documents and Specifications
- Construction Observation Services
- Corrosion Protection
- Failure Investigation
- Historic Preservation
- Litigation Consulting

REGISTRATIONS

- NACE Certified Cathodic Protection Technician
- NACE Certified Coating Inspector - Level 2
- NHI Course 130078 - Fracture Critical Inspection Techniques of Steel Bridges
- Professional Engineer in FL and TX

CONTACT

sfoster@wje.com
512.257.4800
www.wje.com

EXPERIENCE

Since joining WJE in 2010, Stephen Foster has been involved in the evaluation, design, and rehabilitation of numerous engineering projects, including concrete, steel, wood, and masonry structures. He has performed assessments related to corrosion distress, design and construction deficiencies, foundation-related movement, and leakage distress. Mr. Foster is experienced with preparing construction documents and has performed construction administration work on several repair projects, including experience with numerous field testing and ASTM procedures. He also has experience and specialized NACE training for assessment, specification, and quality assurance inspection of concrete and steel coating systems.

Prior to joining WJE, Mr. Foster worked as a graduate research assistant investigating the optimization of bridge deck reinforcement for a research project sponsored by the Texas Department of Transportation. While at the University of Texas, he worked as a field engineer with a general contractor and as a structural designer with an architectural engineering firm.

REPRESENTATIVE PROJECTS

Condition Assessment

- Cooling Tower Basin - Austin, TX: Condition assessment and nondestructive evaluation of corrosion-induced concrete distress
- Seabrook Station - Seabrook, NH: Condition assessment of cracking in equipment vault
- Turning Basin Terminal - Port of Houston, TX: Condition assessment and nondestructive evaluation of concrete docks
- IH 345 - Dallas, TX: Condition assessment of post-tensioned bridge deck

Repair and Rehabilitation Design

- Palo Verde Water Reclamation Facility - Tonopah, AZ: Design of repair and rebuild documents for comprehensive concrete repair and maintenance plan
- Regional Water Treatment Plant - Cedar Park, TX: Concrete and coating repairs for poor construction and water leakage
- Second Street Parking Garage - Austin, TX: Traffic coating repairs

Construction Observation Services

- County Administration Building - Houston, TX: Quality control inspections and testing of carbon fiber repairs
- Army Medical Hospital - Killeen, TX: Construction observations of concrete column repairs
- Navajo Generating Station - Page, AZ: Inspection of boiler system scaffold installation

Corrosion Protection

- Parking Garage - Houston, TX: Design and construction observation of thermal spray metalizing of chloride-induced corrosion
- Barbours Cut Terminal - La Porte, TX: Design and construction observation of cathodic protection jackets and thermal spray metalizing for piers

Failure Investigation

- Organic Dairy Barn - Paul, ID: Investigation of steel roof truss failure
- Fertilizer Plant Explosion - West, TX: Assessment of various structures subject to blast wave
- Precast Plant - San Marcos, TX: Investigation of prestressing assembly failure

Historic Preservation

- French Legation Museum (circa 1899) - Austin, TX: Structural evaluation and rehabilitation design of wood structural systems
- Lee County Courthouse (circa 1840) - Giddings, TX: Foundation stabilization and structural repairs
- Williamson County Courthouse (circa 1911) - Georgetown, TX: Condition assessment and rehabilitation design of historic masonry

PROFESSIONAL AFFILIATIONS

- American Concrete Institute
- International Concrete Repair Institute
- National Association of Corrosion Engineers



PERSONNEL QUALIFICATIONS

Carl J. Larosche | Principal



EDUCATION

- University of Texas at Austin
 - Bachelor of Science in Civil Engineering, 1993
 - Master of Science, Structural Engineering, 1999

PRACTICE AREAS

- Exterior Envelope Commissioning
- Historic Preservation/Rehabilitation
- Structural Evaluation
- Bridge Engineering
- Nuclear Facilities
- Litigation Consulting

REGISTRATIONS

- AWS Certified Welding Inspector
- Professional Engineer in AL, AR, AZ, CO, FL, ID, KS, LA, NM, OH, OK, and TX

PROFESSIONAL AFFILIATIONS

- American Concrete Institute, Fellow
- American Welding Society
- Association for Preservation Technology
- International Concrete Repair Institute

CONTACT

clarosche@wje.com
512.257.4800
www.wje.com

EXPERIENCE

Carl Larosche joined WJE in 2004 with more than twenty years of experience specializing in consulting services for the preservation and restoration of historic and existing structures. In addition to his preservation work, Mr. Larosche has extensive experience in building envelope, including traditional building materials as well as current state-of-the-art materials.

Prior to WJE, Mr. Larosche was a Principal of Sparks, Larosche & Associates and worked for The Texas Department of Transportation (TxDOT). Mr. Larosche's diverse background includes structural design, investigation, and evaluation of existing structures and materials. He has successfully combined his broad construction background with his knowledge of material behavior in existing structures to provide rare insight and knowledge in the area of masonry, concrete, and steel evaluation, including strengthening and repair of these materials.

REPRESENTATIVE PROJECTS

Exterior Envelope Commissioning

- University of Texas at Austin, Liberal Arts Building - TX: Building Envelope Commissioning services, including review of design drawings and specifications and functional performance testing in the form of air/water infiltration testing at windows and curtain walls

Historic Preservation/Rehabilitation

- Circa 1898 Lee County Courthouse - Giddings, TX: Comprehensive assessment and repair design to address settlement-related distress
- University of Texas at Austin, Lyndon Baines Johnson Presidential Library - TX: Comprehensive assessment, investigation, instrumentation, and restoration design for the building's tenth floor, terraces, and plaza

Structural Evaluation

- Port of Houston Authority - Houston, TX: Condition assessment and repair recommendations for wharf structures

- Palo Verde Nuclear Power Plant and Water Reclamation Facility - Tonopah, AZ: Condition assessment for large waste water treatment plant, including a comprehensive assessment and repair plan

Bridge Engineering

- Bridge Lift at SH 190 and Brand Road - Dallas, TX: Design and consultation with Dallas District Office of TxDOT in raising and sliding multispan bridge back to original location*
- National Highway Institute: Lead instructor and project manager for the bridge maintenance course taught to various state DOTs on behalf of the Federal Highway Administration

Nuclear Facilities

- Seabrook Station - Seabrook, NH: Condition assessment of concrete distress in the protected area of the reinforced concrete walls; distress included spalling and cracking in RHR equipment vaults; inspection was conducted in accordance with ACI 349.3R-02
- Calvert Cliffs Nuclear Plant - Lusby, MD: Assessment of conventionally cast concrete walls and pilasters; work included development of repair procedures to address voids and honeycombing and construction observations to ensure contract document compliance

**Indicates with previous firms*

TECHNICAL COMMITTEES

- ACI 437 - Strength Evaluation of Existing Concrete Structures
- ACI E702 - Designing Concrete Structures
- ACI 349/359 - Concrete Nuclear Structures, secretary
- ACI 562 - Evaluation, Repair, and Rehabilitation of Concrete Buildings, subcommittee chair
- ACI 563 - Specifications for Repair of Structural Concrete in Buildings
- AWS D1.7 - Strengthening and Repair of Existing Structures
- ACI Technical Activities Committee (TAC)

Kirby Eiler | Safety Associate III



EDUCATION

- Indiana University Bloomington
 - Bachelor of Science, Safety Science, 2012

PRACTICE AREAS

- Construction Safety
- Regulatory Compliance
- Fall Protection
- Scaffold Safety
- Confined Space Entry
- Safety Plan Development

REGISTRATIONS

- Certified Safety Professional (CSP)

PROFESSIONAL AFFILIATIONS

- American Society of Safety Engineers (ASSE)
- International Society for Fall Protection (ISFP)
- Scaffold & Access Industry Association (SAIA)

CONTACT

keiler@wje.com
847.272.7400
www.wje.com

EXPERIENCE

Kirby Eiler has more than seven years of experience as an occupational safety and health professional at WJE. As Safety Associate III, Ms. Eiler plays a key role in promoting safe work ethics, practices, and working conditions in WJE's office, laboratories, and fieldwork locations; responds to the administrative, equipment, and training safety needs of staff; and provides safety solutions to a wide array of hazards and conditions associated with forensic engineering and architectural investigations, condition assessments of buildings, and construction-related activities.

In addition to holding the CSP certification, Ms. Eiler's training includes OSHA 30-Hour Construction, Fall Protection Competent Person, Scaffolding Competent Person, Confined Space Entry, and First Aid/CPR/AED. Her areas of expertise include federal and state OSHA regulatory compliance, fall protection, scaffold safety, confined space entry, and written safety plan development.

REPRESENTATIVE PROJECTS

Construction Safety

- MGM City Center, Harmon Tower - Las Vegas, NV: Inspection and documentation of construction conditions
- Port of Houston Authority, Turning Basin Terminal and Barbours Cut Terminal - Houston, TX: Structural assessment of wharves
- CoBank Center - Greenwood Village, CO: Evaluation and repair of precast wall panel failure
- Prentice Women's Hospital - Chicago, IL: Documentation of as-built conditions during repairs
- Palo Verde Water Resources, WRSS Pipeline - Tonopah, AZ: Assessment of nozzle penetrations located within various manholes along pipeline

Safety Plan Development

- General Electric Boston Headquarters - Boston, MA: Investigation of structural components
- Walter Reed Medical Facility - Bethesda, MD: EM 385-compliant accident prevention plan for water infiltration study
- Alcatraz Prison Hospital - Alcatraz Island, San Francisco, CA: Engineering analysis, geotechnical investigations, field investigation, and preparation of schematic design alternatives and value-based decision making report for seismic upgrade and structural stabilization
- Magnolia Street Storm Trap Vaults - Glenview, IL: Permit-required confined space entry plan for investigation of concrete cracking in storm water retention structures
- Kennedy Space Center, Operations and Checkout Building - Titusville, FL: Site-specific fall protection plan for facade structural assessment/investigation



EDUCATION

- Central South University
 - Bachelor of Science, Geology, 1982
 - Master of Science, Petrology, 1985
- University of Illinois at Urbana-Champaign
 - Doctor of Philosophy, Geology/Materials Science, 1994

PRACTICE AREAS

- Aggregate Evaluation
- Petrographic Examination
- Distress Investigation
- Cement Hydration
- Mortar Evaluation
- Construction Materials Investigation
- Litigation Consulting
- Research and Testing

PROFESSIONAL AFFILIATIONS

- American Concrete Institute (ACI), Central Texas chapter
- International Cement ASTM International
- Microscopy Association (ICMA)
- Society of Concrete Petrographers (SCP)

CONTACT

dcong@wje.com
512.257.4800
www.wje.com

EXPERIENCE

Derek Cong has significant practical and theoretical experience with concrete and concrete materials. Since joining WJE in 2001, he has been involved in the petrographic examination of concrete, masonry, aggregate, and other building materials for a variety of structures. He has conducted thousands of investigations involving such material problems as alkali-silica reaction (ASR), low strength, retardation, cement-admixture interaction, efflorescence and other surface defects, fire-damaged concrete, cracking, sulfate attack, and delayed ettringite formation (DEF). Dr. Cong is often consulted on concrete mix designs to avoid concrete material problems.

During his doctoral studies at the University of Illinois at Urbana-Champaign, Dr. Cong conducted extensive research on cement hydration, structure of calcium silicate hydrate (C-S-H), and ASR using solid state Nuclear Magnetic Resonance (NMR) Spectroscopy. As a post-doctoral research associate for Lawrence Livermore National Laboratory, Dr. Cong performed hydrothermal synthesis of various model compounds for C-S-H for the Yucca Mountain nuclear waste repository project. Prior to joining WJE, Dr. Cong held positions with W. R. Grace and the Erlin Company. He also taught optical mineralogy and petrography at Central South University in China.

REPRESENTATIVE PROJECTS

Petrographic Examination

- MPR Associates - Alexandria, VA: Petrographic examination and Damage Rating Index (DRI) assessment of ASR in laboratory-prepared concrete anchors for investigation of structural effects of ASR for Seabrook Nuclear Power Plant
- Palo Verde Nuclear Power Plant and Water Reclamation Facility - Tonopah, AZ: Petrographic examination of concrete cores for general characterization and distress assessment, including ASR-related distress
- California Department of Transportation (Caltrans) - CA: Petrographic examination of concrete and aggregate samples for Caltrans' ASR Correlation Studies

- Sixth Street Bridge - Los Angeles, CA: Petrographic examination of ASR-deteriorated concrete cores
- I-5 Undercrossing - Santa Clarita, CA: Assessment of fire-damaged concrete
- Charlotte International Airport Taxiway - Charlotte, NC: Petrographic examination of concrete cores to determine the cause of pavement cracking
- Moreton Building - Austin, TX: Petrographic and laboratory evaluation of concrete cores to assess the cause of cracking and predict the potential for DEF

Materials Investigation

- LBJ Library - Austin, TX: Laboratory evaluations of granite panels
- Randolph Air Force Base - San Antonio, TX: Petrographic examination of aggregate samples for suitability of concrete aggregate
- Camp Mabry - Austin, TX: Historical mortar evaluation and mix proportions

Litigation Consulting

- GB Biosciences Corporation et al. vs. Occidental Chemical Corporation, et al - Houston, TX: Provided testimony on private arbitration regarding CFB ash samples
- Trinity Drywall Systems, LLC vs. TOKA General Contractors, Ltd., et al. - Fort Worth, TX: Provided testimony regarding stucco problems
- Maisel Brothers, Inc. vs. Holcim (US), Inc. et al. - Severna Park, MD: Provided technical and litigation support on the cause of CMU block staining and popout problems

Research and Testing

- Investigation of cementitious materials content in hardened concrete
- Investigation of mortar mix proportions
- Potential alkali-silica reactivity of aggregate

TECHNICAL COMMITTEES

- ASTM C09 - Concrete and Concrete Aggregates
- ASTM C09.20 - Normal Weight Aggregates
- ASTM C09.26 - Chemical Reactions
- ASTM C09.65 - Petrography, Task Group Chair on C856
- Society of Concrete Petrographers, founding member and past president



EDUCATION

- Texas A&M University
 - Bachelor of Science, Biomedical Engineering, 2006
 - Master of Science, Mechanical Engineering, 2009

PRACTICE AREAS

- Finite Element Analysis
- Fatigue Life Calculation and Assessment
- Fitness for Service
- Instrumentation/Monitoring/Load Testing
- Engineering Critical Analysis
- Pressure Vessel Design and Analysis
- Metallurgical Evaluations
- Nondestructive Examinations
- Turnaround Support

REGISTRATIONS

- Professional Engineer in IL, TX, and WY

PROFESSIONAL AFFILIATIONS

- American Society of Mechanical Engineers (ASME)

TECHNICAL COMMITTEES

- API 579/ASME FFS-1 Joint Committee

CONTACT

sbouse@wje.com
832.467.2177
www.wje.com

EXPERIENCE

Scott Bouse joined WJE in 2018 with diverse experience in finite element, fracture mechanic failure, and fitness for service analyses, as well as instrumentation and monitoring in laboratory and field applications. Mr. Bouse is highly proficient in API 579 (Fitness For Service), including Level 3 analysis, Calculations per ASME B31, ASME VIII (Div. 1,2), TEMA, PCC-1, PCC-2, API 530 (Heater Tubes), API 620 (Low-Pressure Tanks), and API 650 (Atmospheric Tanks). In the laboratory and in the field, he has applied high-temperature strain gages, standard resistive-foil gages, thermocouples, and other sensors to gather data needed to both feed analysis inputs and validate results.

Prior to joining WJE, Mr. Bouse spent ten years at Stress Engineering Services, where he performed detailed engineering calculations on a wide variety of equipment types, including vessel-to-structure interactions and damage assessments. He has authored and presented papers and presentations on assessment and analysis topics to the refining and petrochemical industries.

REPRESENTATIVE PROJECTS

Finite Element Analysis

- Assessment of corrosion on a large, open-topped storage bin for the power industry*
- Design of calculations for a high-temperature heat exchanger bolted joint to minimize leakage of fluid during thermal transient events*

Fatigue Life Calculation and Assessment

- Design of calculations for thermo-mechanical fatigue damage in cyclical process vessels*
- Crack propagation predictions for vessels undergoing cyclic loading*

Fitness for Service

- Detailed assessments of dented, cracked, or corroded pressure equipment*
- Creep, subcritical crack growth, and combined damage assessments (i.e., cracks within a locally thinned region)*

Instrumentation/Monitoring/ Load Testing

- Installation of thermocouples and strain gages to process equipment in order to establish factual basis for modeling simplifications*
- Fire-exposure testing of pressurized equipment*
- Design validation testing of Fiber Reinforced Polymer (FRP) components for power plant applications*

Pressure Vessel Design and Analysis

- Design of repair options for pressure vessels and/or piping*
- Performance of rerating calculations for pressure vessels to suit client process objectives*

Turnaround Support

- Performance of real-time (on-site) engineering assessments of damaged process equipment during unit turnarounds/outages*

**Indicates with previous firms*



PERSONNEL QUALIFICATIONS

Dale Statler | Senior Associate



EXPERIENCE

Dale Statler has broad experience in structural systems with an emphasis on building structures. Since joining WJE, Mr. Statler has worked on a wide range of projects involving design, investigation, analysis, evaluation, testing, strengthening, and repair.

Mr. Statler has expertise in the analysis and design of steel, concrete, aluminum, and wood structures. He has a strong background in the stability of metal building systems and the evaluation of unique loading applications such as blast pressures, hydrostatic water, and grain storage.

REPRESENTATIVE PROJECTS

Structural Analysis

- Dairy Building Collapse - Morris, MN: Finite-element analysis of built-up tapered-web girders to assess the as-built flexural buckling strength under snow loads
- Corn Storage Building - Union City, TN: Analysis and evaluation of metal building system for lateral pressures from stored grain
- Mixed-Use High-Rise - Las Vegas, NV: Development and review of analytical tools to assess axial force, biaxial moment, and shear in allegedly defective concrete construction

Structural Evaluation and Testing

- Multiple Buildings - City of Longmont, CO: Field investigation of metal building systems and analysis for new loads from re-roofing. Design and field observation of repairs
- National Historic Landmark Building - CO: Instrumentation and monitoring of strain, temperature, pressure, and acceleration to evaluate structural performance and inform rehabilitation design
- IH-345 Bridge Inspection - Dallas, TX: Fracture critical inspection of steel bridge
- Einstein Medical Center - East Norriton, PA: Floor vibration testing and evaluation
- Steinway Tunnel - New York, NY: Ultrasonic thickness testing of circa one hundred-year-old cast iron tunnel walls
- Port of Long Beach - Long Beach, CA: Instrumentation of precast concrete piling for strain and water pressure during driving operations

Repair and Rehabilitation

- YMCA of the Rockies - Estes Park, CO: Evaluation and repair design to strengthen structural steel, glulam, cold-formed steel, and masonry elements
- Colorado State University Fort Collins, Lory Student Center: Design and field observation of FRP strengthening to concrete gravity and lateral systems
- Retail and Warehouse Buildings - Nationwide: Field documentation and repair of damaged steel joist and joist girder roof framing systems

Failure Investigation

- First Baptist Church - Craig, CO: Investigation of damaged metal plate connected wood 4-piece scissor truss sanctuary roof
- Roof Collapse - Bethel, CT: Analysis of metal building for snow loads that led to a partial collapse
- EMM Realty Building - Vernal, UT: Investigation of metal building damaged by a propane gas explosion
- Sierra High School - Colorado Springs, CO: Collapse investigation of a 130-foot-long glass and aluminum skylight
- One Exchange Place - Jersey City, NJ: Investigation of plaster ceiling collapse

Structural Design

- Las Bambas Mine - Department of Apurimac, Peru: Design of structural steel connections for transfer station tower and four trusses as part of a new overland conveyor belt

Peer Review

- Peak 8 Complex - Breckenridge, CO: Peer review of structural design of two five-story steel-framed structures
- Comcast Tower - Philadelphia, PA: Structural peer review of curtain wall systems for fifty-nine-story high-rise
- 500 Biscayne - Miami, FL: Peer review of structural design of new steel and aluminum cladding support system and anchorages
- Bryant University - Indoor Practice Facility, RI: Peer review of metal building erection plan

EDUCATION

- Bucknell University
 - Bachelor of Science, Civil Engineering, 2010
 - Bachelor of Management, 2010
- Lehigh University
 - Master of Engineering, Structural Engineering, 2011

PRACTICE AREAS

- Structural Analysis
- Structural Evaluation and Testing
- Repair and Rehabilitation
- Failure Investigation
- Structural Design
- Peer Review

REGISTRATIONS

- NHI Course 130078 - Fracture Critical Inspection Techniques of Steel Bridges
- Professional Engineer in CO

PROFESSIONAL AFFILIATIONS

- American Society of Civil Engineers (ASCE)
- Structural Engineers Association of Colorado (SEAC)

CONTACT

dstatler@wje.com
303.914.4300
www.wje.com



EDUCATION

- University of Colorado
 - Bachelor of Science, Civil Engineering, 1978
- University of Texas at Austin
 - Master of Science, Geotechnical Engineering, 1986

PRACTICE AREAS

- Foundations and Retaining Walls
- Mine Development
- Water Resource Dams and Canals
- Earth Retention and Slope Stabilization
- Transportation

REGISTRATIONS

- Professional Engineer in CO and WY

PROFESSIONAL AFFILIATIONS

- American Society of Civil Engineers, co-chair, biennial continuing education seminars
- Colorado Association of Geotechnical Engineers, Board of Directors
- International Society of Soil Mechanics and Foundation Engineering
- United States Society on Dams

CONTACT

pstauffer@wje.com
303.914.4300
www.wje.com

EXPERIENCE

Peter Stauffer has more than thirty-four years of experience in geotechnical engineering, including field and laboratory investigations, engineering analysis and design, preparation of construction documents, and construction phase services. Mr. Stauffer has worked on a wide range of projects including foundations; transportation facilities; single-family subdivisions; commercial and industrial buildings; water treatment plants; investigation of damaged structures; static and seismic stability evaluations; landslide analysis and design of stabilization measures; earth and earth-rock dams; roller-compacted-concrete dams; and mine facilities and tailing impoundments. He has managed projects ranging from small geotechnical investigations to large multidiscipline design and construction projects overseas. Mr. Stauffer is skilled in the identification and implementation of innovative and cost-effective solutions to client problems.

REPRESENTATIVE PROJECTS

Foundation and Retaining Walls

- United States Postal Service - Rocky Mountain Region: Geotechnical engineering and foundation design*
- Commercial Buildings - Gillette, WY: Geotechnical and forensic engineering services for three buildings that experienced differential settlement*
- Signature Centre - Golden, CO: Geotechnical investigations, foundation remediation design, and forensic engineering*
- Residential/Commercial Properties - Front Range, CO: Foundation investigations, design and construction recommendations, and construction phase services*
- Construction Defects Litigation: Consultation and expert witness involving structures damaged by swelling and collapsing soils*

Mine Development

- Morenci, Chino, Tyrone, and Ajo Mines - AZ and NM: Design and construction of new tailing impoundment, stability and erosion control evaluations, and geotechnical studies*

- Mount Emmons Project - CO: Construction phase services for water storage ponds, water treatment plant, and tailing dams reclamation*
- Toquepala and Cuajone Mines - Peru: Management of development of new tailing disposal facility*
- Kennecott Utah Copper Mine - Salt Lake Valley, UT: Geotechnical, seismicity, and hydrology studies; design of new tailing impoundment*

Water Resource Dams and Canals

- Button Rock Dam - Longmont, CO: Direction of geologic and geotechnical studies*
- New Waddell Dam - Maricopa County, AZ: Deformation studies*
- Kansas Power & Light - Topeka, KS: Geotechnical investigation and resident engineer for repair of failed earth dam*
- Hog Park Dam - Carbon County, WY: Resident geotechnical engineer during construction*
- North Village Reservoir - Crested Butte, CO: Geotechnical investigations and landslide evaluation at right abutment*
- Upper Highline Dam - Mesa County, CO: Geotechnical investigations; instrumentation and monitoring

Earth Retention and Slope Stabilization

- Telluride Airport Landslide - Telluride, CO: Field investigation, laboratory testing and analysis, and expert witness services*
- Keystone Ski Area - CO: Geologic and geotechnical investigations and slope stability analyses to evaluate landslide area above Mountain House development*
- RidgeGate Subdivision - Lone Tree, CO: Engineering geological and slope stability assessment*
- 4th Street Bridge - Pueblo, CO: Geological engineering and slope stability analyses for southwest abutment*
- County Landfill Landslide - SD: Installation of inclinometers, review of monitoring data, and recommendations for modifications to landfill operations*

Transportation

- I-15 - Salt Lake City, UT: Technical assistance in evaluation of foundation treatment alternatives for new embankment sections*

*Projects prior to WJE



SERVICE PROFILE

Structural Engineering



- Construction support
- Engineering criticality and fitness-for-service assessment
- Failure investigation
- Instrumentation and load testing (laboratory and in situ)
- Load rating
- Nonlinear finite element analysis
- Peer review
- Repair and retrofit design
- Seismic evaluation
- Specialized structural design
- Structural condition assessment
- Temporary/emergency stabilization

When the integrity or condition of a structure is in question, clients rely on WJE for answers. WJE structural engineers have solved challenging problems involving thousands of structures, ranging from small buildings to large infrastructure projects. Whether the structure is sound or substantial repairs are needed, WJE's industry-leading experience, expertise, and creativity result in efficient use of client resources.

Successful solutions are developed from a better understanding of the problems. WJE routinely applies hands-on diagnostic studies using the latest technologies to investigate distress and deterioration and evaluate their effects on structural performance. With their in-depth understanding of the fundamental principles of structural engineering and materials behavior, WJE structural engineers develop creative and efficient options to accommodate each client's particular needs.



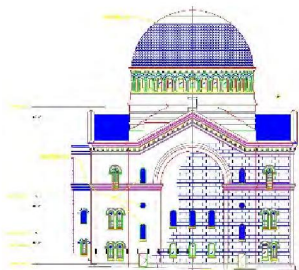
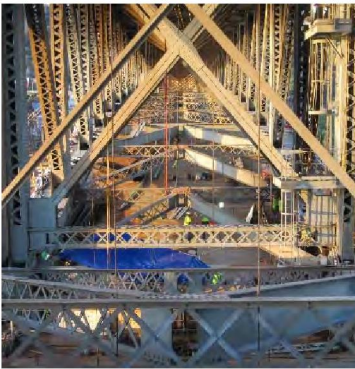


SERVICE PROFILE

Structural Engineering

REPRESENTATIVE PROJECTS

- Aloha Stadium - Honolulu, HI: Structural assessment and design of repairs
- Chicago Public Schools - Chicago, IL: Structural investigation, repair design, in situ load testing, and construction observation
- Hartford Times Building - Hartford, CT: Structural retention program
- Holy Name Cathedral - Chicago, IL: Structural repairs for roof trusses and ceiling structure after millwork fell from decorative wood ceiling; fire damage investigation and repairs to heavy timber wood roof trusses
- I-35W Mississippi River Bridge - Minneapolis, MN: Structural investigation and collapse investigation
- Lakefront Trail Bicycle Trail - Chicago, IL: Construction engineering and development of complex erection procedures for curved spine structure between Chicago River and Navy Pier
- Liberty Avenue Bridge - Pittsburgh, PA: Fire damage investigation and retrofit work
- Nuclear Generating Station - AZ: Structural analysis and repair design of cooling tower
- Port of Houston - Houston, TX: Structural condition assessment of seven wharves and design of new wharf structures



Nondestructive Evaluation



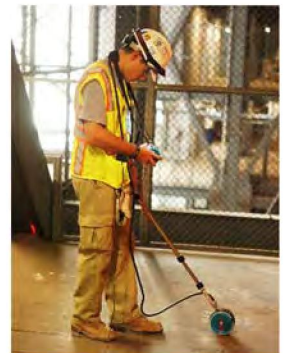
- Corrosion rate assessment
- Half-cell corrosion potential surveying
- Resistivity testing
- Reinforcement detection
- Ground penetrating radar
- Impact echo testing
- Ultrasonic pulse velocity testing
- Shear wave ultrasonic tomography
- Impulse response testing
- Infrared thermography
- Ultrasonic inspection of steel
- Eddy current flaw detection
- Magnetic particle testing
- Dye penetrant testing

When there are uncertainties surrounding a structural, architectural, or materials issue, testing is a crucial step toward understanding its scope and source. Traditional testing methods, though often effective, can be physically intrusive, time-intensive, and costly. Alternately, nondestructive evaluation methods allow for the assessment of as-built conditions, material properties, and distress in a component or system without altering or damaging its form. Used in lieu of or in tandem with traditional testing, these methods can provide valuable information.

WJE has pioneered the use of nondestructive evaluation methods—such as ground penetrating radar, impact echo testing, half-cell corrosion potential surveying, and infrared thermography—in civil, structural, and architectural investigations. WJE’s depth and breadth of experience evaluating thousands of structures and materials using nondestructive methods are unmatched.

From identifying complex reinforcement placement and internal flaws in nuclear power structures to detecting air leakage and moisture infiltration in historic building envelopes, WJE offers a wide range of nondestructive evaluation options to efficiently diagnose issues that otherwise may require expensive and disruptive exploratory openings and testing to detect and correct.

In addition to minimizing costs and time spent out of service, nondestructive evaluation techniques allow WJE engineers to gain a broader understanding of a structure’s condition and performance—information WJE uses to develop better targeted and more effective recommendations for clients.



Nondestructive Evaluation

REPRESENTATIVE PROJECTS

- Black Hawk Bridge - Lansing, IA: Ultrasonic testing of fracture critical steel pins and eyebars
- Federal Highway Administration - McLean, VA: Study of fiber-reinforced polymer strengthening methods using infrared thermography and establishment of Nondestructive Evaluation Validation Center
- International Ice Center - Romeoville, IL: Identification of deficiencies in the placement of reinforcement and cooling tubes in ice rink slabs-on-grade
- Iowa DOT/Illinois DOT Multi-Phase Research Study: Evaluation of nondestructive testing capabilities for assessment of internal flaws and corrosion in slip-formed concrete barriers
- Kennedy Space Center, Vehicle Assembly Building - Titusville, FL: Corrosion assessment of concrete elements using corrosion rate, half-cell potential, and resistivity test methods
- MacArthur Maze - Oakland, CA: Impact echo and ultrasonic pulse velocity testing of fire-damaged concrete deck, piers, and seismically retrofitted columns
- Nuclear Power Plant, Essential Natural Draft Cooling Tower - Midwest, United States: Impulse response testing to evaluate internal delaminations in reinforced concrete veil
- Safeco Field - Seattle, WA: Ultrasonic inspection of steel connections in roof bogie axles
- Washington Monument - Washington, D.C.: Detection of seismic damage to stone elements using impact echo and shearwave tomography and identification of unknown support and connection details using ground penetrating radar



Corrosion and Service Life Modeling



- Corrosion potential (half-cell) survey
- Corrosion rate testing with linear polarization
- Concrete resistivity
- Concrete core sampling for petrographic examination, strength tests, chloride-ion tests, and carbonation testing
- Corrosive environment simulation
- Electrochemical corrosion measurement, including electrochemical impedance spectroscopy and polarization resistance
- Optical microscopy and metallurgical examination
- Scanning electron microscopy/energy dispersive spectroscopy

Corrosion is a common contributing element to structural failure—an insidious process affecting both structural and aesthetic integrity. Because there are many factors that contribute to corrosion, clients rely on WJE’s experience, technology, and lessons learned from thousands of corrosion investigations to determine the cause(s) of corrosion, to evaluate the potential consequences for structural performance, and to identify and design the most effective and economical means to mitigate the problem.

WJE has significant experience assessing corrosion-related deterioration in a variety of materials, structure types, and environments—including reinforced concrete, structural metals, and piping. WJE uses extensive in-house field and laboratory testing and modeling capabilities to detect and assess corrosion. Whether evaluating corroded reinforcing bars in a concrete bridge deck, or section loss in a weathering steel beam, or premature failure of water supply system, WJE’s comprehensive chemical and physical testing capabilities provide clients with information to make sound design or repair decisions.

In addition to mitigating current corrosion issues, WJE can project the likely rate of corrosion over time using models developed from data collected through visual inspections, sampling, and laboratory testing. Service life modeling allows clients to adequately prepare for their structure’s future repair and maintenance needs.

With over thirty years of hands-on research experience for both private-sector and government clients, WJE is well-equipped to diagnose and counter the effects of corrosion.



Corrosion and Service Life Modeling

REPRESENTATIVE PROJECTS

- Alcatraz Cellhouse - San Francisco, CA: Corrosion and laboratory testing of reinforced concrete as part of structural stabilization and seismic upgrade
- Indiana Toll Road Commission - Various Locations Statewide: Evaluation of concrete bridge elements, corrosion service life modeling, and rehabilitation/repair design
- Iowa Department of Transportation - Various Locations Statewide: Evaluation of epoxy-coated reinforcement performance
- Pacific Financial Plaza - Newport Beach, CA: Condition evaluation and cathodic protection repair specification
- Palo Verde Waste Water Treatment Facility - Tonopah, AZ : Evaluation, corrosion service life modeling, and repair development and prioritization for thirty-year life extension of trickling filters, clarifiers, thickeners, and pumping station structures
- Reach Resort - Key West, FL: Structural assessment and repair design of concrete deterioration and corrosion of the embedded post-tensioned tendons
- Soldier Field - Chicago, IL: Evaluation of corrosion mitigation methods for historic concrete
- Queen Isabella Memorial Causeway Bridge - South Padre Island, TX: Assessment and corrosion service life modeling of 2.4-mile marine bridge substructure
- Vehicle Assembly Building, Kennedy Space Center - Cape Canaveral, FL: Corrosion evaluation of elevated concrete slabs, service life modeling, and repair development for thirty-year life extension

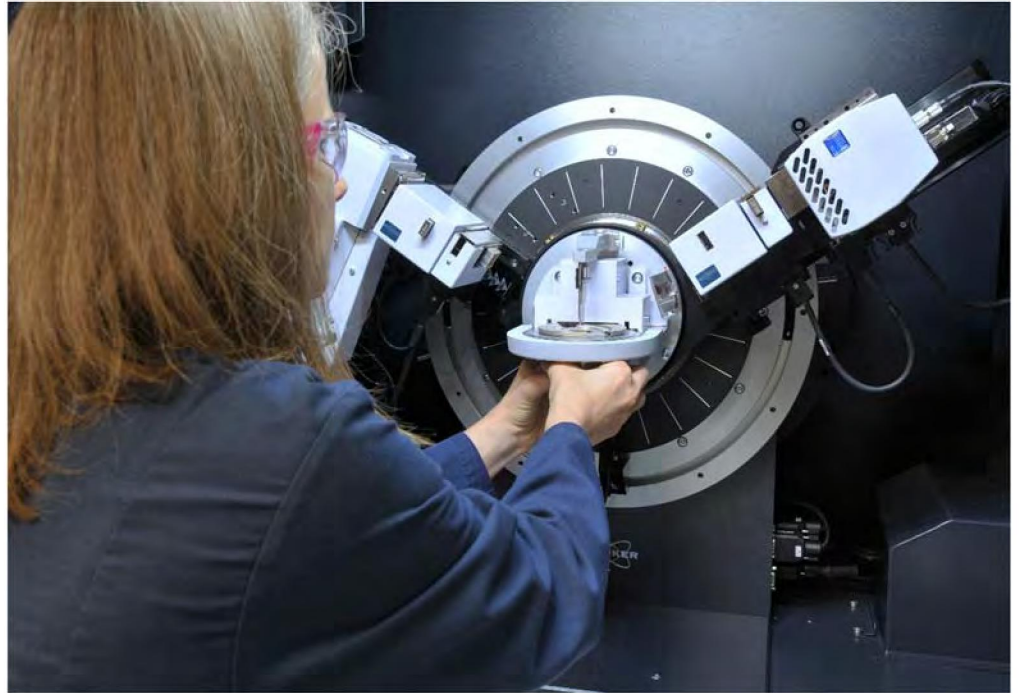




CAPABILITY PROFILE

Janney Technical Center

Materials and Structures Laboratory and Field Testing



- Materials Testing and Chemical Analysis
- Standardized (ASTM and other) and Specialty Testing
- Metallurgy
- Petrography
- Accelerated Weathering, Climate Control, and Freeze/Thaw Chambers
- Applied Research and Test Method Development
- Corrosion and Service Life Assessments
- Product Evaluation
- Cement, Concrete, Mortar, and Admixture Analysis
- Paints, Special Coatings, Waterproofing, Adhesives, and Sealants
- Glass Testing
- Structural Load and Fatigue Testing
- Field Instrumentation and Nondestructive Evaluation

WJE's Janney Technical Center (JTC) is named after WJE founder Jack Janney. Composed of both engineers and scientists, the JTC provides advanced testing and forensic capabilities to solve the most technically challenging problems in connection with structures, construction materials, and manufactured components. After half a century and more than 125,000 assignments, JTC engineers and materials scientists have successfully completed investigative, testing, and repair projects involving virtually every type of construction material, structural system, and architectural component.

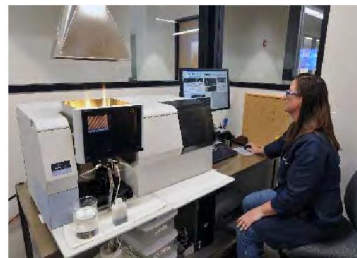
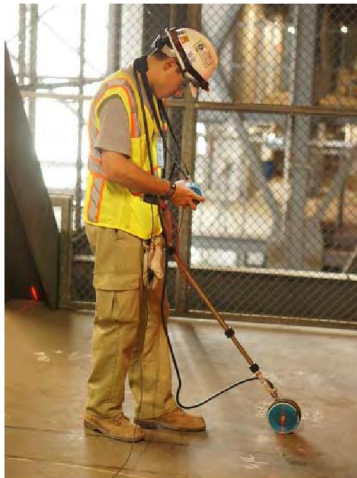
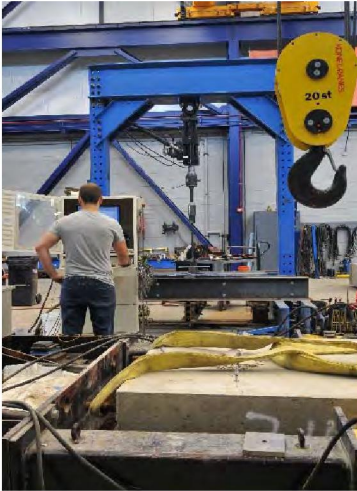
The JTC's 70,000-square-foot state-of-the-art testing and applied research facility includes a full array of chemistry, petrography, metallurgy, concrete and mortar, corrosion, and structural testing laboratories as well as environmental exposure chambers.

JTC personnel are recognized leaders in their fields and are active participants in standards development and industry organizations. The multi-disciplinary nature of our team of experienced scientists and engineers enables WJE to offer extensive testing and investigation capabilities to characterize materials, determine root causes of problems, and evaluate performance. The JTC performs tests to determine specification compliance, simulate performance under field conditions, understand failure mechanisms, generate fundamental engineering properties, and assess service life to meet the needs of various types of clients. Our services extend beyond our laboratories, and it is common for JTC personnel to take our expertise to the field and conduct specialized testing on site.

From the laboratory to the job site, from engineering to chemistry to physical sciences, JTC professionals develop and test new approaches and create innovative solutions for the built world.



Janney Technical Center



MATERIALS EVALUATION

- Physical Properties and Composition
- Durability Potential
- Corrosion Assessment
- Hygrothermal Properties

CHEMISTRY AND ANALYTICAL

- Atomic Absorption Spectroscopy (AA)
- Ion Chromatography (IC)
- Fourier Transform Infrared Spectroscopy (FTIR)
- Ultraviolet-Visible Spectroscopy (UV-VIS)
- X-Ray Fluorescence (XRF)
- X-Ray Diffraction (XRD)
- Gas Chromatography with Mass Spectrometry (GCMS)
- Differential Scanning Calorimetry (DSC)
- Thermogravimetric Analysis (TGA)
- Isothermal Conduction Calorimetry (ICC)

MICROSCOPY

- Petrography
- Metallography
- Fractography
- Scanning Electron Microscopy (SEM-EDS)

NONDESTRUCTIVE EVALUATION

- Acoustic Sounding
- Corrosion Potential and Rate Tests
- Ground Penetrating Radar (GPR)
- Ultrasonic Pulse Velocity
- Impact Echo, Impulse Response
- Ultrasonic Shear Wave
- Magnetic Particle Inspection
- Ultrasonic Flaw Detection
- Infrared Thermography (FLIR)
- Nuclear Gage Moisture Surveys
- High and Low Voltage Membrane
- Negative Pressure Uplift
- Air and Water Infiltration
- Unmanned Aerial Systems (Drones)

STRUCTURAL TESTING

- Load and Fatigue Testing
- Strain, Deflection, Rotation, and Movement Measurements
- Davit and Dedicated Anchorage Testing
- Strain Relief Method
- Bond and Adhesion Testing

MONITORING AND INSTRUMENTATION

- Vibrations and Acoustic Emission
- Temperature, Humidity, and Moisture Transmission

QUALITY PROGRAMS AND ACCREDITATIONS

- AASHTO Materials Reference Laboratory (AMRL)
- ASME NQA-1 Compliant Nuclear Quality Assurance Program
- California Authorized Laboratory for Testing Reinforcing Steel Splices
- Cast Stone Institute Testing Technician Certified Laboratory
- City of Los Angeles Approved Testing Agency
- Illinois DOT Approved Test Laboratory for Alkali-Silica Reactivity (ASR)
- ISO/IEC 17020:2012 *Conformity Assessment - Requirements for the Operation of Various Types of Bodies Performing Inspection* by the ANSI-ASQ National Accreditation Board (ANAB)
- ISO/IEC 17025:2017 *General Requirements for the Competence of Testing and Calibration Laboratories* by the ANSI-ASQ National Accreditation Board (ANAB)
- Massachusetts DOT Qualified Alkali-Silica Reactivity (ASR) Testing Laboratory
- Miami-Dade County Accredited Test Laboratory

STAFF CERTIFICATIONS

- American Concrete Institute (ACI)
 - Adhesive Anchor Installer
 - Aggregate Testing Technician - Level I
 - Cement Physical Tester
 - Concrete Field Testing Technician - Grade I
 - Concrete Flatwork Technician
 - Concrete Laboratory Testing Technician - Levels I and II
 - Concrete Strength Testing Technician
- American Society for Nondestructive Testing (ASNT)
 - Level I Thermographer
 - NDT Inspector - Levels II and III
 - NDT Magnetic Particle Testing - Level II
 - NDT Ultrasonic Technician - Levels I and II
- American Welding Society (AWS)
 - Certified Welder and Welding Operator
 - Certified Welding Engineer
 - Certified Welding Inspector
- Cast Stone Institute Quality Control Testing Technician
- International Concrete Repair Institute (ICRI) Concrete Slab Moisture Testing Technician
- Infrared Thermographer - Levels I and II
- National Association of Corrosion Engineers (NACE International)
 - Cathodic Protection - Levels CP 1, CP 2, and CP 3
 - Coating Inspector - CIP Levels 1 and 2
 - Corrosion Technician
- PTI Bonded Post-Tensioning Field Specialist - Level I
- Remote Pilot - Small Unmanned Aerial Systems (Drones)



SERVICE PROFILE

Geotechnical and Geological Engineering



- Geological hazard assessment
- Earth retention and slope stabilization
- Water resource dams and canals
- Geotechnical instrumentation
- Residential and commercial development
- Mine development
- Forensic engineering
- Litigation consulting

The built world resides in the natural world. Though much consideration is paid to the impact our structures have on the natural world, the connection runs both ways. The soil, groundwater, geology, and natural terrain of a structure's environment can significantly impact its performance. Understanding these factors is key to assessing field conditions, developing appropriate construction or repair details, and mitigating potential hazards.

WJE geotechnical and geological engineers have decades of experience providing a broad range of technical consulting services for clients globally. Principal areas of practice include geotechnical engineering, engineering geology, environmental geology, ground water hydrology, geological hazard evaluations, earthquake engineering, and forensic engineering.

Whether investigating a retaining wall failure or residential foundation movement, conducting field reconnaissance for a mining facility, or performing probabilistic seismic hazard evaluations for a high-risk dam, WJE experts have the hands-on knowledge, advanced testing, and analytical capabilities clients seek to maintain stable, durable buildings and infrastructure.





SERVICE PROFILE

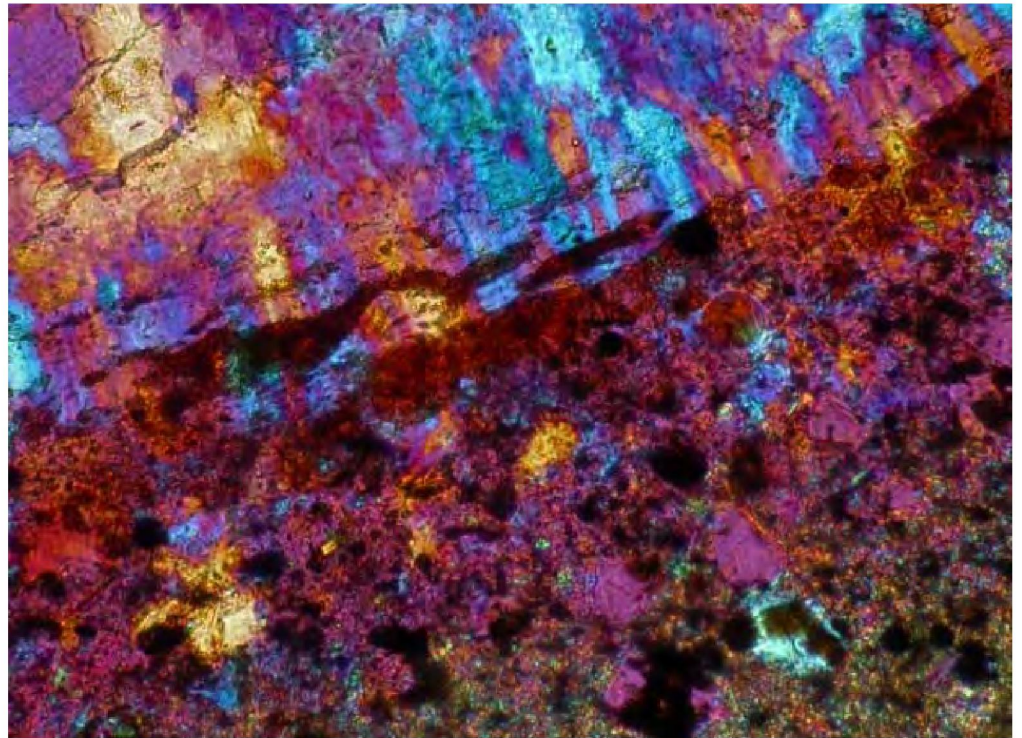
Geotechnical and Geological Engineering

REPRESENTATIVE PROJECTS

- FEMA Landslide Study - Colorado Springs, CO: Condition surveys and risk assessments of twenty-three homes built in landslide zones
- I-75 Northwest Corridor Project - Atlanta, GA: Failure investigation and design of repairs to address a compromised soil nail wall and precast fascia system
- Keren Water Supply Project - Eritrea: Geologic mapping, geophysical investigations, and laboratory testing for construction of a diversion dam and water treatment facilities
- Keystone Resort Mountain House - Summit County, CO: Geological hazard assessment, slope stability evaluation, instrumentation and monitoring, and construction recommendations
- La Colosa Mine - Tolima, Colombia: Pre-feasibility studies of high-altitude gold mine
- Lake Las Vegas Dam - Henderson, NV: Geological consultation and construction inspection of reservoir and dam development
- Swift No. 2 Dam - Cascade Range, WA: Investigation of dam failure and repair plan review
- Vista Ridge - Erie, CO: Geological engineering and expert witness services in connection with litigation over alleged vertical foundation movement at eighty-six homes
- Walgreens - Dillon, CO: Earth retention and slope stability analysis of failed retaining wall
- Wyoming State Penitentiary - Rawlins, WY: Investigation of foundation and slab movements; litigation support



Petrographic Examination



PROJECT APPLICATIONS

- Information obtained from a petrographic examination includes:
- Estimated and measured air content
- Aggregate types and mineralogy
- Paste constituents
- Estimated water-cementitious materials ratio
- Estimated cement content
- Condition and quality
- Causes of distress, failure, or poor performance

Petrography is a specialty branch of geology with a long history of use in the study of construction materials. WJE has petrographic capabilities in Northbrook, Austin, and Cleveland. Materials routinely studied using petrographic methods include concrete, dimension stone, mortar, terra cotta, brick, terrazzo, grout, coatings and membranes, aggregates, specialty concretes, plaster, and stucco and specialty finish systems. During a petrographic examination, a petrographer makes a series of observations in increasingly finer detail, ranging from visual inspection to examination with optical microscopes and, when needed, with a scanning electron microscope.

BENEFITS

- WJE petrographers have conducted thousands of petrographic examinations. Their experience and knowledge is vital to fully analyzing and understanding materials' qualitative properties.
- Petrographic examinations, which can often be conducted quickly, yield valuable information about the composition, cause or causes of problems, and potential performance of construction materials.
- WJE petrographers routinely augment their studies with a variety of physical tests and chemical analyses to help characterize the material and understand its behavior.
- By performing petrographic examinations, petrographers can determine deterioration mechanisms that help identify the genesis of a problem. The WJE project team uses this information to design suitable repairs to extend a structure's life.
- Clients rely on WJE petrographers and professionals to specify durable materials and mixtures for new construction that can help limit and avoid future deterioration.





- Metallurgical consulting and testing
- Materials characterization
- Failure analysis
- Forensic investigations
- Weld engineering
- Corrosion analysis
- Heat treating evaluations
- Fire damage assessment
- Litigation support
- Mechanical testing
- Fatigue and fracture analysis
- Engineering criticality assessment
- Fitness-for-service
- Nonlinear finite element analysis
- Third-party analysis
- Peer review

Most failures can be traced back to either inadequate design or materials quality. Understanding materials behavior—from welding and brazing to corrosion and other forms of degradation—and a component’s response to complex loading is paramount to determining why a part or component failed and to prevent failures in new designs. Clients rely on the extensive experience of WJE metallurgical and applied mechanics engineers to provide engineering solutions related to design optimization and evaluation of in-service failures.

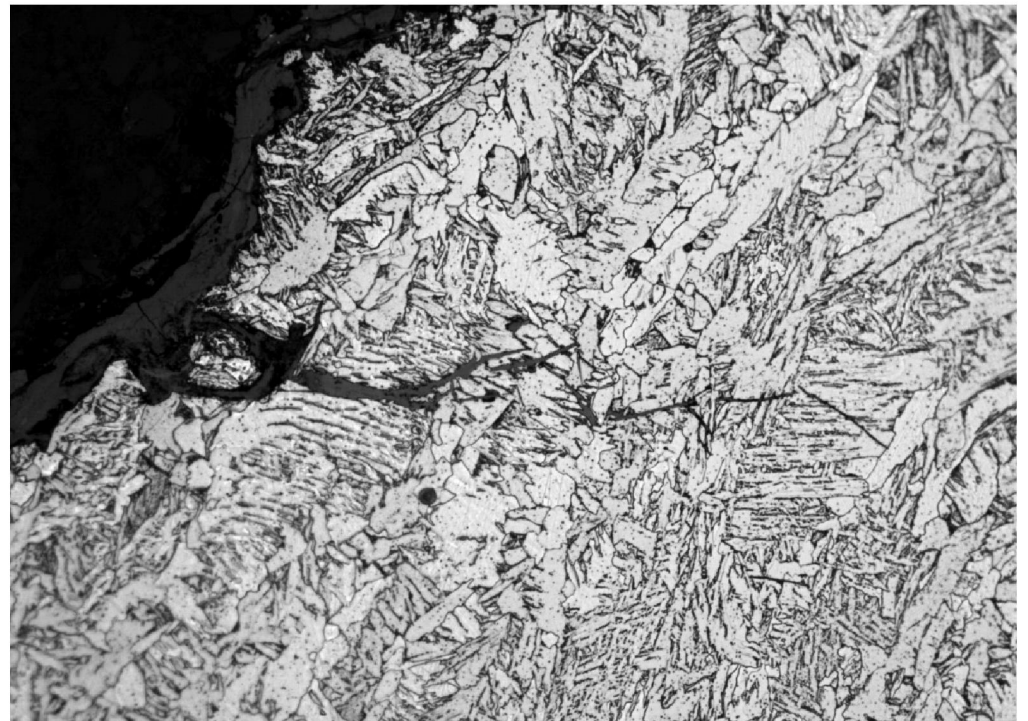
WJE metallurgical and applied mechanics engineers leverage extensive knowledge of material behavior and failure modes in conjunction with recognized industry analysis techniques to understand structural response to complex mechanical and thermal loading and to evaluate in-service damage mechanisms. WJE experts possess decades of experience in the evaluation of all types of materials, parts, and components and can provide cost-effective solutions for challenging designs, existing infrastructure, and mitigation of unexpected failures.

Our state-of-the-art Janney Technical Center laboratories are equipped to handle a wide variety of materials characterization and testing, including composition and microstructure. Among other advanced testing equipment, WJE’s scanning electron microscope is an invaluable tool in the investigation and analysis of part and component failures. But our capabilities are not confined to the laboratory. WJE routinely employs a diverse array of nondestructive evaluation capabilities in the field, including ultrasonic testing, magnetic particle testing, thermography, and field metallography and replication.



REPRESENTATIVE PROJECTS

- Apple Blossom Wind Farm - Bad Axe, MI: Forensic investigation
- A. Stucki Company - Moon Township, PA: AAR 2016 knuckle failure analysis
- Concrete Reinforcing Steel Institute: Development of durability model
- Condominium - Chicago, IL: Stainless steel pool liner corrosion investigation
- CountryMark Refining - Mount Vernon, IN: Inspection plan support, fitness-for-service assessments, failure analysis, and on-site metallurgical turnaround support
- Energy Plant - Columbus, NE: Investigation of structure and pressure vessel collapse
- Inter-Fluve - Hood River, OR: Investigation of failures of threaded log connectors
- Odfjell Terminals - Houston, TX: Assessment of chloride tank weld corrosion
- Pharmaceutical Plant - Chicago, IL: Post-incident investigation of dryer for fire damage
- Polyethylene Plant - Port Allen, LA: New ASTM A53 pipe assessment
- Port of Houston - Houston, TX: Corrosion assessment program development
- SCI Phoenix Prison - Schwenksville, PA: Corrosion analysis of stainless steel bathroom fixtures
- Sinclair Wyoming Refining Company - Sinclair, WY: On-site turnaround support



Ground-Penetrating Radar



METHODOLOGY

The GPR technique involves the transmission of electromagnetic waves along discrete longitudinal scans at the surface of a structural element or geological material.

Electromagnetic signals are optically reflected from material interfaces of varying dielectric constant along the propagation path of the wave. WJE utilizes a range of GPR antennas with different operating frequencies to provide efficient, cost-effective surveys at various penetration depths.

Ground-penetrating radar (GPR) is a geophysical, nondestructive testing technique that allows for the detection of embedded objects, material interfaces, and internal characteristics in structural and geological materials. Equipment specially developed for use on structural concrete and software that offers real-time assessment, sophisticated post-processing capabilities and 3D tomographic imaging of structural elements has made GPR an invaluable tool in WJE structural and architectural investigations.

COMMON APPLICATIONS

Structural Concrete

- Detection of steel reinforcement, prestressing/post-tensioning strand, metal and plastic conduit, and other embedded objects
- Approximate thickness measurement of members
- Assessment of as-built reinforcement and geometry to assist in structural analysis and load capacity evaluation
- Identification of internal conditions such as poor consolidation, voiding and material interfaces

Masonry Walls

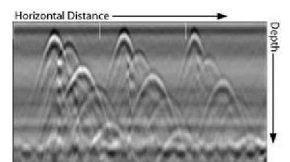
- Identification of vertical reinforcing bars, horizontal bond beam and joint reinforcement, and embedded roof anchorages
- Assessment of grouted and ungrouted conditions in concrete block cavities

Slab-on-grade and Pavements

- Detection of mild steel reinforcement and joint dowels
- Assessment of approximate slab thickness
- Identification of material interfaces in layered systems

Subsurface Investigation

- Assessment of the location and approximate depth of buried utility pipe and structures



Half-Cell Potential Corrosion Surveying



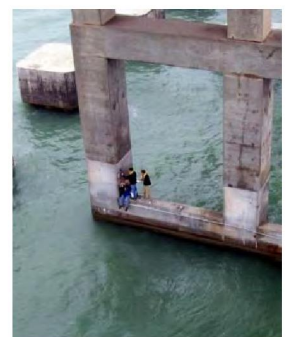
COMMON APPLICATIONS

- Assessment of corrosion potential of concrete structures such as walls, bridge elements, and utility structures
- Assessment of concrete structures in contact with soil, such as foundations, tunnels, and retaining walls
- Provide preliminary indication of corrosion in the absence of visible damage
- Development of corrosion potential contour maps
- Evaluation of the effectiveness of cathodic protection systems installed on concrete structures

The corrosion potential survey technique is used to investigate corrosion-related deterioration in structures and infrastructure at all stages of service life. Corrosion potentials, also known as half-cell potentials (HCP), assess the thermodynamic corrosion tendency of reinforcing steel in concrete. As part of structural condition assessment, HCP surveys of a structure may be used to identify the pattern and extent of corrosion. Survey data can be used to infer the cause and likely extent of future distress before the corrosion results in visible damage to the concrete structure.

METHODOLOGY

WJE performs half-cell potential surveys following the guidelines outlined in ASTM C 876 Standard Test methods for Half-Cell Potentials of Uncoated Reinforcing Steel in Concrete. Typically, a copper-copper sulfate half-cell electrode (CSE) is used, which consists of a copper rod immersed into a saturated copper sulfate solution. The base of the reference cell consists of a porous plug that provides ionic current path between the reinforcing steel and the copper rod when the electrode is placed on the surface of the concrete. By taking readings of half-cell potentials on the concrete surface over a uniformly-spaced grid, an evaluation of the corrosion risk of the embedded reinforcing steel (or other metals) over a large area can be made. More positive potentials (in the range -0.1 to -0.2 V vs. CSE) typically indicate a low risk of corrosion. More negative potentials (in the range -0.4 V vs. CSE or more) typically signify the risk of corrosion at the time of measurement is high. Advanced analysis and contour plotting can provide additional information. This technique is also integral in the evaluation of cathodic protection system performance.





CAPABILITY PROFILE

Pipe Investigation Services



TYPES

- Potable Water
- HVAC
- Fire Sprinkler
- Sewage
- Storm Water

CAPABILITIES

- Structural Testing
 - Field
 - Laboratory (Full-scale and Components)
- Material Testing
 - Microscopy
 - X-Ray Diffraction (XRD)
 - Ion Chromatography
 - Scanning Electron Microscope (SEM)
 - Fourier Transform Infrared Spectroscopy FTIR)
- Expert Testimony

Wiss, Janney, Elstner Associates, Inc. (WJE), has conducted numerous investigations of pipe systems and failures. These investigations have encompassed a wide variety of materials, systems, operating environments, and failure mechanisms. The laboratory facilities at the Janney Technical Center provide extensive capabilities for structural, physical, materials, and chemical testing of pipe systems.

MATERIALS

- Copper
- Steel (Stainless, Black, Galvanized, and Cast Iron)
- Fiberglass
- PVC/CPVC
- Prestressed Concrete Cylinder Pipe (PCCP)
- Brass
- Corrugated Metal
- High-Density Polyethylene (HDPE)

FAILURE MECHANISMS

- Corrosion
- Freezing
- Microbiologically Influenced Corrosion (MIC)
- Environmentally Assisted Cracking (EAC)
- Stress Corrosion Cracking (SCC)
- Fatigue
- Installation Practices
- Connections (Valves, Tees, and Unions)





4/1/2020

Re: Update for Wiss, Janney, Elstner Associates, Inc. Insurance Policies

Dear Certificate holder:

Please be advised that Wiss, Janney, Elstner Associates, Inc. has changed insurance brokers effective April 1, 2020. As a result of this transaction, the insurance program for Wiss, Janney, Elstner Associates, Inc. has also been updated. Please find attached an updated certificate of insurance for your file.

If you have questions, please feel free to contact us.

Sincerely,

A handwritten signature in black ink, appearing to be "Louis Reynaud", with a long horizontal line extending to the right.

Louis Reynaud

Broker



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

4/2/2020

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Greyling Insurance Brokerage 3780 Mansell Road, Suite370 Alpharetta, GA 30022	CONTACT NAME: Jerry Noyola	FAX (A/C, No):
	PHONE (A/C, No, Ext):	E-MAIL ADDRESS: jerry.noyola@greyling.com
INSURER(S) AFFORDING COVERAGE		NAIC #
INSURER A: Nat'l Union Fire Ins Co of Pittsburgh, PA		19445
INSURED Wiss, Janney, Elstner Associates, Inc Attn: Sam Barbera 330 Pfingsten Rd. Northbrook IL 60062	INSURER B:	
	INSURER C: New Hampshire Ins. Co.	
	INSURER D:	
	INSURER E:	
	INSURER F:	

COVERAGES

CERTIFICATE NUMBER: 54945578

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> Contractual Liability GEN'L AGGREGATE LIMIT APPLIES PER: <input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:			GL9566221	4/1/2020	4/1/2021	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 500,000 MED EXP (Any one person) \$ 25,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000 \$
A	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input checked="" type="checkbox"/> NON-OWNED AUTOS ONLY <input checked="" type="checkbox"/> Comp/Coll <input checked="" type="checkbox"/> 1,000 ded. UMBRELLA LIAB <input type="checkbox"/> OCCUR EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED RETENTION \$			CA5721463	4/1/2020	4/1/2021	COMBINED SINGLE LIMIT (Ea accident) \$ 2,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N	N/A	WC015853342 (AOS) WC015853341 (CA)	4/1/2020 4/1/2020	4/1/2021 4/1/2021	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

WJE No. 2019.3776 - Persigo Wastewater Treatment Plant

CERTIFICATE HOLDER**CANCELLATION**
 City of Grand Junction
 250 North 5th Street
 Grand Junction CO 81501

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Matias Ormaza

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AGENCY CUSTOMER ID: _____

LOC #: _____



ADDITIONAL REMARKS SCHEDULE

Page ____ of ____

AGENCY Greyling Insurance Brokerage		NAMED INSURED Wiss, Janney, Elstner Associates, Inc Attn: Sam Barbera 330 Pfingsten Rd. Northbrook IL 60062	
POLICY NUMBER		EFFECTIVE DATE:	
CARRIER	NAIC CODE		

ADDITIONAL REMARKS

THIS ADDITIONAL REMARKS FORM IS A SCHEDULE TO ACORD FORM,

FORM NUMBER: 25 FORM TITLE: Certificate of Liability (03/16)

HOLDER: City of Grand Junction

ADDRESS: 250 North 5th Street Grand Junction CO 81501

Additional Insured: The City of Grand Junction and Mesa County (CO), their officers and employees Subject to the terms, conditions, limitations and exclusions of the policies evidenced herein: The above are included as Additional Insureds when required by written contract with the Named Insured under the general liability including ongoing operations and products/completed operations and auto liability, but only with respect to services provided by Wiss, Janney, Elstner Associates, Inc., regarding the referenced project. When agreed in written contract, coverage is provided on a primary and non-contributory basis, subject to the terms and conditions of the policies.

POLICY NUMBER: GL9566221

COMMERCIAL GENERAL LIABILITY

CG 20 10 04 13

Wiss, Janney, Elstner Associates, Inc
 Attn: Sam Barbera

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

**ADDITIONAL INSURED - OWNERS, LESSEES OR
 CONTRACTORS - SCHEDULED PERSON OR
 ORGANIZATION**

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

Name Of Additional Insured Person(s) Or Organization(s)	Location(s) Of Covered Operations
"ANY PERSON OR ORGANIZATION WHOM YOU BECOME OBLIGATED TO INCLUDE AS AN ADDITIONAL INSURED AS A RESULT OF ANY CONTRACT OR AGREEMENT YOU HAVE ENTERED INTO."	"PER THE CONTRACT OR AGREEMENT."
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.	

A. Section II - Who Is An Insured is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury", property damage or "personal and advertising injury" caused, in whole or in part, by:

1. Your acts or omissions; or
2. The acts or omissions of those acting on your behalf; in the performance of your ongoing operations for the additional insured(s) at the location(s) designated above.

However:

1. The insurance afforded to such additional insured only applies to the extent permitted by law; and
2. If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than

that which you are required by the contract or agreement to provide for such additional insured.

B. With respect to the insurance afforded to these additional insureds, the following additional exclusions apply:

This insurance does not apply to "bodily injury" or "property damage" occurring after:

1. All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the location of the covered operations has been completed; or
2. That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.

C. With respect to the insurance afforded to these additional insureds, the following is added to **Section III - Limits Of Insurance:**

If coverage provided to the additional insured is required by a contract or agreement, the most we will pay on behalf of the additional insured is the amount of insurance:

1. Required by the contract or agreement; or

2. Available under the applicable Limits of Insurance shown in the Declarations; whichever is less.

This endorsement shall not increase the applicable Limits of Insurance shown in the Declarations.