

JORDAN VALLEY WATER CONSERVANCY DISTRICT

**REQUEST FOR STATEMENTS OF QUALIFICATIONS TO PROVIDE  
PROFESSIONAL ENGINEERING SERVICES FOR THE**

**2022-23 VAULT IMPROVEMENT PROJECT**

Project #4241

October 2021

Summary

Jordan Valley Water Conservancy District (JVWCD) invites you to submit a Statement of Qualifications (SOQ) as defined in this request. SOQs shall be submitted in a sealed envelope to JVWCD's project manager, Travis Christensen, at 8215 S.1300 W., West Jordan, UT 84088, no later than **3:00 p.m. on Wednesday, October 20, 2021**, for consideration.

Introduction

JVWCD was created under the Water Conservancy Act as a political subdivision of the State of Utah. JVWCD was organized as a regional water supply agency to develop a water supply for rapidly growing areas outside of the Salt Lake City service area. JVWCD currently serves as a wholesale supplier to 17 member agencies and also operates a retail distribution system in several parts of Salt Lake County. In 2020, JVWCD delivered approximately 100,000 acre-feet of municipal and industrial water to its wholesale and retail customers.

Project Background

JVWCD desires to replace piping and valves for seven existing vaults and abandon the piping and valves at two vault locations all located within Salt Lake County. The vault piping and valves are suffering from heavy corrosion and require replacement or abandonment.

Specific Project Information

The 1175 West 4460 South vault functions as a mainline valve vault for a 24-inch steel pipeline installed in 1959. This vault has an existing pipeline easement and is located on the property corner of a Rocky Mountain Power substation. JVWCD would like to replace the valve and piping at this facility.

The 4483 South Gordon Lane vault serves as a pressure reducing station and services JVWCD's retail customers located in Murray, Millcreek, and South Salt Lake City. The

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existing vault is equipped with a 6-inch pressure reducing valve. JWCD desires to increase the capacity of this pressure reducing station.

The 6200 South 3200 West flow control vault conveys water from Jordan Aqueduct Reach 2 to the 10-million-gallon reservoir site located at 6200 South 3200 West. The existing flow control vault is equipped with 30-inch piping and an 18-inch by-pass. JWCD would like to improve the functionality of this flow control vault by replacing the control valves with SCADA controlled flow control valves.

The 6200 South 3200 West valve vault functions as a mainline valve vault for the Creek Road pipeline which was installed in 1960. The pipeline serves as a transmission pipeline to connect wells located along Creek Road to the reservoir site at 6200 South 3200 West. This project will evaluate the possibility of removing the valve and abandoning the vault.

The 13400 South 5600 West vault was constructed in 1992 and functions as a mainline valve vault to connect the 5600 West pipeline to the 13400 South pipeline. These pipelines service several wholesale meter stations located within JWCD's pressure zone C. At a minimum JWCD would like to replace the air valve and bypass piping in this vault and may consider a full rehabilitation.

The 4500 South 700 East vault is located within the JWCD retail distribution system and was constructed in the 1960s. This valve vault may be abandoned and replaced with buried valves.

The 4600 South 700 East vault is in the JWCD retail distribution system and was constructed in the 1960s. The existing vault connects a 6-inch and a 4-inch pipelines in a parallel alignment. This project would abandon the 4-inch pipeline and transfer three existing service laterals and one hydrant, to the 6-inch pipeline. The valve vault may be abandoned and replaced with buried valves.

The 4900 South 900 East vault previously functioned as a pressure reducing station and is connected to a 12-inch pipeline which was installed in 1960. This vault is to be abandoned.

The 4445 South 1700 West vault previously functioned as wholesale meter station and is connected to a 24-inch pipeline installed in 1959. This vault is to be abandoned.

Images of the vault locations and JWCD's corresponding infrastructure is provided in Appendix A.

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#### Project Objectives

1. Provide engineering design and construction management services for construction for the refurbishment of piping and valves for the vaults listed above.
2. Prepare engineered drawings to include any elements needed for a fully functioning system. The engineer shall prepare drawings and specifications of sufficient detail to minimize uncertainties during bidding of the construction contract and to minimize claims for construction change orders.
3. Consult with JVVCD to determine the best time to bid the project to maximize bidders and obtain favorable bid prices and to minimize water service interruptions. Include considerations for construction length and schedule. Adjust schedule to meet the recommended bid and construction period.
4. Have drawings and specifications complete and available for bidding on or before June 1, 2022.

#### Scope of Work

The general scope of work for the 2022-23 Vault Improvement project includes providing expert design services for vault piping and valve replacement, including project management and coordination, quality control, identification of underground utilities, assistance with right-of-way identification, preliminary and final vault piping and valve design, corrosion assessment and recommendations, cost estimating, and construction management and inspection.

#### 1. Pre-Design Phase:

- A. Prepare base mapping utilizing an aerial photo background (minimum 1' resolution). This includes main roadway features, utilities, and other features, as necessary. Aerial photography should be no older than two years and be detailed enough to display road features.
- B. Perform a utility search of the project sites, including but not limited to, water lines, sanitary sewer, storm drain, irrigation lines, gas, electrical, cable, fiber optics, telephone, etc.
- C. Evaluate alternative coating and lining materials for steel pipe, high performance isolation valves, and associated corrosion prevention

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requirements considering initial cost, expected operation & maintenance costs, and expected service life.

- D. Evaluate the feasibility and cost of the following project options:
1. Abandon the existing vault at 4483 South 400 East and construct a new pressure reducing valve vault along the 4500 South 24-inch transmission line. Provide recommendations on the location and capacity of the new pressure reducing valve vault. This work would require a new turnout from an existing 24-inch transmission line and connection into the existing distribution system. A hydraulic model which was created in EPANET and updated in 2020 is available for the analysis.
  2. Electrical improvements for new vault at 4483 South 400 East. Improvements to include new 120/240V service pedestal, vault lighting, sump pump, flood switch, and fan.
  3. New flow control valves sized to meet minimum and maximum flows at the 3200 West 6200 South vault which controls flow entering the 3200 West 6200 South tank site.
- E. Perform geotechnical investigation of the site at 4483 South 400 East to collect soil data for the design and construction of a new vault.
- F. Evaluate piping connections from the existing piping to the new vault piping. Due to corrosion in these vaults, new piping may need to penetrate the vault wall and connect to the existing pipe, outside of the vault.
- G. Identify key features of the vaults including mainline valves, air valves, connection details, passive vault venting, and special construction considerations.
- H. Develop vault piping layouts based off record drawings and field verify their accuracy. Record drawings for the 1175 West 4460 South vault, 6200 South 3200 West flow control vault, and the 13400 South 5600 West vault are provided in Appendix B. Record drawings are not available for the 4483 South 400 East vault, 6200 South 3200 West valve vault, 4500 South 700 East vault, 4600 South 700 East vault, 4900 South 900 East vault, and the 4445 South 1700 West vault. The Engineer will need to collect field data to develop the vault piping layouts at these locations.
- I. Review JVWCD's design criteria applicable to this project.

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- J. Identify additional design criteria as applicable.
- K. Meet with applicable entities affected by the project (e.g. municipalities, property owners, utility owners, regulatory agencies, etc.) during the preliminary and design phase to coordinate all aspects of the project. The following list identifies some of the key affected entities but is not meant to be all inclusive:
  - 1. Herriman
  - 2. Holladay
  - 3. Millcreek
  - 4. Murray
  - 5. Taylorsville
  - 6. Rocky Mountain Power
  - 7. Utah Department of Transportation
- L. Project Manager and/or Project Engineer will meet with appropriate representatives of the entities affected by the project as needed.
- M. Provide for selected potholing of key utility crossings and conduct field measurements. The Engineer should identify utilities to be potholed and be on site during potholing to take field measurements. Assume 25 potholes will be performed.
- N. Prepare an estimated construction sequencing schedule for the vault projects. Identify potential conflicts and/or critical path items in the schedule.
- O. Prepare a preliminary design report summarizing the findings and recommendations of the preliminary design effort.

### 2. Design Phase:

- A. Using the findings of the preliminary design report, prepare drawings and specifications for construction of the 2022-23 Vault Improvement project.
- B. Prepare mechanical, civil, structural, electrical, and instrumentation drawings for the vault improvement project.

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- C. Prepare plan, profile, and detail drawings, technical specifications, and bid schedule(s) for the pipeline. Drawings shall be 11 x17 with a scale not to exceed 1" = 80'.
- D. Include corrosion protection design as needed for the pipelines and associated facilities which are modified for this work.
- E. Attend and conduct design workshops with JVVCD at Preliminary Design, 60%, 90%, and 100% completion.
- F. Provide an estimate of probable construction costs at the 60% and 100% submittal stage.
- G. The Senior Reviewer shall attend at least two (2) design review meetings with JVVCD in person.
- H. Review and become familiar with JVVCD's bidding documents, General Conditions and Supplemental General Conditions.
- I. Provide drawings and technical specifications to JVVCD for incorporation into the bidding documents. JVVCD will prepare the bidding documents using its standard front end documents, General Conditions, and Supplemental General Conditions.
- J. Meet with JVVCD personnel and Utah Division of Drinking Water (DDW) staff at the 90% design stage to verify compliance of the design with applicable water regulations. Respond as needed to comments from DDW staff and submit final drawings and specifications for plan approval.
- K. Provide assistance during the bidding period including conducting a pre-bid side visit, responding to bidders' questions, issuing Addenda, as required, etc.
- L. Assist in the bid opening, review the bids, and recommend an award of contract (within three working days).
- M. Prepare a conformed set of drawings and specifications which will incorporate all addenda material into a conformed drawing set for use during construction.

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#### 3. Construction Management Phase:

- A. Following an award of construction contract, fulfill the duties and responsibilities of the ENGINEER as defined in JWVCD's construction contract documents.
- B. Administer the construction contract:
  - 1) Conduct pre-construction meeting.
  - 2) Review and recommend contractor submittals to JWVCD.
  - 3) Review and recommend contractor progress payments to JWVCD.
  - 4) Review contractor's claims.
  - 5) Recommend change orders, if any, to JWVCD.
  - 6) Conduct project close-out at completion of the work.
  - 7) Conduct a comprehensive inspection with the contractor and JWVCD at substantial completion, final completion, and just prior to warranty expiration. Prepare and deliver to JWVCD a written list of observed deficiencies.
- C. Perform field services
  - 1) Coordinate all materials testing services to be completed by an independent testing firm.
  - 2) Designate a representative to attend weekly progress meetings which are conducted by the Contractor, and document content of progress meetings with minutes.
  - 3) Maintain a photograph history of the project and submit periodic photos to JWVCD during construction.
  - 4) The Engineer shall commit a Project Representative to provide on-site inspection of construction activities to verify compliance with the drawings and specifications for an **estimated** 12 weeks of full-time and 18 weeks of part-time inspection.
- D. Documentation and Project Close-out

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- 1) Prepare final record drawings using the contractor's record drawings. Record drawings should be prepared according to JWCD's Guidelines for Engineering Services (Attachment B).
- 2) Prepare a photographic history at the end of the project according to JWCD's Guidelines for Engineering Services.
- 3) Prepare an Operation and Maintenance manual according to JWCD's Guidelines for Engineering Services.

Sample Preliminary Schedule

Award of Consulting Contract: on or after November 10, 2021.

Contract Preparation: 30 calendar days

Preliminary Design Phase: 60 calendar days

Design Phase:

60% Design: 30 calendar days

90% Design: 30 calendar days

100% Design: 14 calendar days

DDW Approval: during bidding

Bidding through NTP: 60 calendar days

Construction Phase: 360 calendar days

Warranty Inspection: 11 months after final completion

Proposers may revise this schedule as necessary to match their work plan.



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### Statement of Qualification Evaluation

SOQs shall not exceed eight (8) pages in length (excluding resumes, sample drawings, and references). Provide four (4) hard-copies and one digital copy of the SOQ for review by the evaluation committee.

The SOQ should include the following information:

- **Qualifications:** Identify the key members of the team listed by name including role and availability to the project in the format of a Project Team Chart. Indicate the education, experience, expertise, and location of each team member (it is acceptable to provide this in resume format in the appendix). Sample drawing(s) from applicable previous projects may be included in the appendix. Include evidence demonstrating compliance with the Minimum Qualifications section of this Request for SOQ.
- **Work Plan:** Include a detailed work plan which addresses the scope of the work and identifies key issues. A final agreed upon work plan will be incorporated into Schedule A of the Agreement. Include a project schedule of the key tasks and note the availability of project team members with respect to current workload and project start and completion dates.

Include with the work plan a table showing the number of hours planned for the key positions for each major work task. Include subtotals of all labor hours for the preliminary design, design, and construction management phase. This information will be used to evaluate the work plan and the level of effort in each phase by the team and the key team members. **Do not include any billing rate or cost information in this work plan table.**

- **Past Performance:** Provide information about past completed projects which satisfy the Minimum Qualifications requirements. Information about additional completed projects which the Proposer feels would be relevant may also be submitted. The past project performance information shall include:
  1. Brief description of project and scope of services performed,
  2. Name of owner,
  3. Owner contact information (direct phone number preferred),
  4. Role which proposed Project Team member(s) fulfilled on past project,

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5. Original engineering fee amount,
6. Final engineering fee amount,
7. Original construction or equipment purchase contract amount,
8. Final construction or equipment purchase contract amount,
9. Completion date established in the original construction or equipment purchase contract and actual final completion date.

Incomplete projects (on-going work) may be used but may result in a lower grade for this section in the evaluation phase.

#### Professional Consulting Services Agreement

Comment on the acceptability of the enclosed Professional Consulting Services Agreement (Agreement) (Attachment A) with attached Schedule B-Requirements for Engineering Services (Attachment B). Any suggested changes to the Agreement must be identified with the proposal (as an attachment), although JVWCD reserves the right to reject any suggestions. No changes will be considered after the proposal due date.

#### Selection Method

Selection of a consultant will be done in accordance with the State of Utah's Procurement Code for Design Professional Services (Utah Code Title 63G, Chapter 6a, Part 15).

#### Minimum Qualifications

Proposers are required to meet the following minimum experience requirements to be considered responsive to the Request for SOQs:

- The Project Manager shall have successfully functioned as a Project Manager on at least:
  - Two (2) 16-inch or larger pressurized water pipeline projects which included a minimum of 2 vaults per project (new vault construction or refurbishment are acceptable).
  - JVWCD's definition of a Project Manager is one who coordinated multiple disciplines on a project, IE civil, mechanical, electrical, structural, and instrumentation; one who managed legal and accounting efforts; and one who performed a quality control review of the project personally. The Project Manager shall have served as the engineer of record for the project, including stamping applicable

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drawings and specifications, unless this is not the policy of the engineering firm completing the project.

- The Project Engineer(s) shall have successfully functioned as a Project Engineer on at least:
  - One (1) 16-inch or larger pressurized water pipeline project which included a minimum of 2 vaults (new vault construction or refurbishment are acceptable).
  - JWVCD's definition of a Project Engineer is one who was directly responsible for one or more disciplines on a project, served as the engineer of record for those disciplines, and stamped applicable drawings and specifications for the project, unless this is not the policy of the engineering firm completing the project.
- The Senior Review Engineer(s) shall have successfully functioned as a Senior Review Engineer, a Project Manager, or a Project Engineer on at least:
  - Three (3) 16-inch or larger pressurized water pipeline projects which included a minimum of 2 vaults per project (new vault construction or refurbishment are acceptable).
- The Project Manager, and Project Engineer(s) shall be licensed as professional engineers in Utah. The Senior Engineer shall be licensed as a professional engineer.
- The Project Representative shall have functioned in this role for at least:
  - Three (3) pressurized water pipeline projects which included vault construction or refurbishment.
  - The Project Representative is the representative of the Engineer who is assigned to observe and inspect the performance of the construction work. The Project Representative shall be the chief authorized representative of the Owner and the Engineer at the site of the work in all onsite relations with the Contractor.
- The project team and proposed work plan are responsive to the needs of the project and include all the disciplines required by the request for SOQ.

Any proposals not meeting the minimum qualifications may be deemed non-responsive and removed from further consideration.

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### Evaluation Criteria

An evaluation committee appointed by JWCD's Chief Engineer including representatives from JWCD will convene to consider all responsive SOQs submitted and to rank the SOQs based on each criterion stated in this section.

Evaluation criteria are assigned a maximum number of points for evaluation purposes with a cumulative total of 100 points. Each SOQ will be evaluated based on the following evaluation criteria:

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<u>Evaluation Criteria</u>	<u>Grade</u>	<u>Weight</u>	<u>Maximum Points</u>
1. Demonstrated Qualifications to meet the scope of work:			
a. Firm Resources that satisfy the defined minimum qualifications. Demonstrated availability of firm resources to the project team.	0-5	1	5
b. Project Manager and key team members with the education, expertise, and experience necessary as required for the project.	0-5	5	25
c. Availability of Project Manager and key team members to the project. Current workload with JVVCD may be considered.	0-5	2	10
2. Responsiveness of Work Plan:			
a. Clearly written work plan responding to the requirements of this request which indicates an understanding of the key issues and deliverables required for this project. Higher scores may be given to SOQs which show familiarity with District facilities related to this project or which note suggested revisions to the scope of work which would lead to an enhanced outcome.	0-5	5	25
b. Project schedule which identifies completion dates for key milestones and a final completion date.	0-5	1	5
3. Past Performance:			
a. Positive verified past references for the Proposing Firm indicating successful past performance on similar projects, including projects for JVVCD.	0-5	3	15
b. Positive verified past references for the Project Manager and other key team members indicating successful past performance on similar projects, including projects for JVVCD.	0-5	3	15
Total:			100

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Each criterion will be graded on a scale of 0-5 with 5 being the highest grade. The grades will be multiplied by the appropriate weight factor to determine the total score. SOQs shall have a level of effort appropriately matching the requirements, including efforts by key positions. SOQs falling short of an appropriate overall effort and/or effort by key positions may be considered non-responsive. JVVCD reserves the right to reject all SOQs.

#### Fee Proposal Instructions

A fee proposal will be requested from the firm receiving the highest score. The fee proposal will be due 2 days after it is requested by JVVCD. If JVVCD's procurement officer is unable to agree to a satisfactory contract with the highest scoring design professional, at a price the procurement officer determines to be fair and reasonable to the procurement unit, the procurement officer shall formally terminate discussions with that design professional, and undertake discussions with the second highest scoring, qualified design professional. For additional information, see Utah Code Title 63G, Chapter 6a, Part 15, Section 1505.

The fee proposal shall be provided in a spreadsheet format similar to the sample fee proposal template in Attachment C. If the required information is not present, the fee proposal may be considered non-responsive. The hourly billing rate for each position, number of hours per task by position, and any fees for reimbursable expenses and overhead factors shall be clearly indicated. Proposed hourly billing rate increases, if applicable for multi-year projects, should likewise be clearly indicated.

The total proposed fee for the preliminary design and design phases of the project will be considered a maximum not-to-exceed fee amount. The fees submitted for the construction management phase shall be subject to increase/decrease based upon the actual level of effort needed during construction. It has been JVVCD's experience that more detailed designs result in fewer change orders and issues during construction and thus fewer construction management hours.

Upon execution of the Agreement by both parties, the Engineer will receive authorization to proceed with only those services identified in the Agreement. The Engineer must receive prior written authorization before performing any services outside the scope and fee amount identified in the Agreement.

For purposes of preparing the fee proposal make the following assumptions:

1. Design Contingency Budget

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- a. Increase by 20% the number of hours to be spent on the Pre-design and Design Phases for the purpose of establishing a Design Contingency. The increase shall be proportional for each position.
- b. This 20% increase shall be included as a separate task and released only with written authorization of JWVCD's Engineering Department Manager in accordance with Schedule B – Requirements for Engineering Services.

#### 2. Construction Phase Level of Effort

- a. See Scope of Work, C. Construction Management Phase, Sections B & D. Please provide comments on the adequacy of the estimated inspection hours and suggest any modifications.

**CONFIDENTIALITY:** All information, documents, records and paperwork, including but not limited to SOQs, bids, exhibits, or brochures (collectively, the "Paperwork") submitted to JWVCD shall not be regarded by JWVCD as secret or submitted in confidence, except as otherwise provided in a writing signed by JWVCD. Please do not mark your Paperwork with legends such as "confidential," or "proprietary," or "not to be disclosed to third parties." JWVCD is a Utah local district and is subject to the provisions of the Utah Government Records and Management Act ("GRAMA," Utah Code Ann. (1953) §§63-2-101 et seq.). Paperwork submitted to JWVCD may be subject to disclosure to third parties under JWVCD's interpretation of the provisions of GRAMA.

#### Questions or Suggestions

Proposers may ask questions or make suggestions to JWVCD on any element of this Request for SOQs. Questions or suggestions should be submitted to JWVCD's Project Manager, Travis Christensen, at 565-4300 or [TravisC@jvwcd.org](mailto:TravisC@jvwcd.org)

ATTACHMENT A

PROFESSIONAL CONSULTING SERVICES AGREEMENT



PROFESSIONAL CONSULTING SERVICES AGREEMENT  
FOR \_\_\_\_\_  
(PROJECT NO. \_\_\_\_\_ )

This Agreement is made as of \_\_\_\_\_, \_\_\_\_\_ (“Effective Date”), by and between the Jordan Valley Water Conservancy District, a water conservancy district organized under the laws of the State of Utah (“District”), and \_\_\_\_\_ a Utah corporation **OPTIONAL WORDING: [a Utah \_\_\_\_\_ / a (State) \_\_\_\_\_ authorized to do business and doing business in the State of Utah]** (“Engineer”).

**RECITALS:**

- A. The District desires to obtain professional engineering services relating to the \_\_\_\_\_;
- B. Engineer represents it has the necessary expertise and experience to perform the services requested by the District and that it is properly qualified and licensed in the State of Utah for this work; and,
- C. Engineer has submitted a proposal outlining its proposed scope of activities for performance and completion of the services, and the Engineer is willing to perform the services requested by the District, consistent with the terms of this Agreement.

**TERMS:**

The parties agree as follows:

ARTICLE I  
DEFINITIONS

- 1.1 Unless the context requires otherwise, the terms defined in this Article shall for all purposes of this Agreement and all schedules, have the following meanings:
  - 1.1.1 **Agreement:** This Professional Consulting Services Agreement, including attachments.
  - 1.1.2 **Contract:** The agreement between the District and the Contractor for the provision of labor, materials and equipment for the construction of the Project.
  - 1.1.3 **Contract Documents:** All documents relating to construction of the Project, issued by or through the Engineer, on behalf of the District to

the Contractor, or by the District, including the Notice Inviting Bids, Instructions to Bidders, Bid, Information Required of Bidder, Bid Bond, Agreement Performance Bond, Payment Bond, General Conditions, Supplemental General Conditions, drawings, specifications, all addenda and change orders executed pursuant to the Contract.

- 1.1.4 Contractor: The party contracting with the District for the provision of labor, materials and equipment for the construction and quality control of the Project.
- 1.1.5 Contract Time: The projected date for substantial completion of the Contract.
- 1.1.6 Engineer's Fee: The Engineer's compensation for performing Services.
- 1.1.7 Phase: A logically separate aspect of the Engineer's Services on the Project which occurs in sequence or concurrently with other such aspects to allow for the orderly progress and management of the Engineer's Services for the Project.
- 1.1.8 Project: The Project is described on attached Schedule A.
- 1.1.9 Project Manager: The individual identified in Schedule D who will administer the performance of the Engineer's Services under this Agreement.
- 1.1.10 Project Representative: The individual identified in Schedule D who will provide observation and inspection of the construction of the Project. The Project Representative is the sole authorized representative of the District in all on-site relations with the Contractor, except as other properly authorized agents are designated by the Engineer and approved by the District.
- 1.1.11 Reimbursable Expenses: Non-salary expenditures made by the Engineer, its employees or its sub-consultants when performing services for the Project. Reimbursable Expenses include:
  - 1.1.11.1 Reasonable expenses of transportation, subsistence and lodging when traveling in connection with the performance of services for the Project.
  - 1.1.11.2 Reasonable expenses of long distance or toll telephone calls, telegrams, messenger service, field office expenses, and fees paid for securing approval of authorities having jurisdiction over the Project.

- 1.1.11.3 Reasonable expenses of all reproduction, postage and handling of drawings, specifications, reports or other Project-related instruments of service of the Engineer.
- 1.1.11.4 Reasonable expense of computer time as described on attached Schedule E.
- 1.1.11.5 Other reasonable reimbursable expenses to which the parties subsequently agree.
- 1.1.12 Hourly Billing Rate: The hourly fee which the Engineer charges for the time expended on the Project. The hourly billing rate shall be considered full compensation for time expended on the Project. Specific hourly billing rates for the Project are identified in Schedule E.
- 1.1.13 Services or Engineer's Services: The Engineer's duties and responsibilities to the District for professional consulting services as set forth in Article II.
- 1.1.14 Sub-Consultant: Any registered professional engineer, architect or other specialist engaged by the Engineer in connection with the Project.
- 1.1.15 Task: An independent and defined service or collection of services to be performed by the Engineer during a Phase(s) of the Project(s), such service or services being more particularly set forth in Schedule A.
- 1.2 Except where the context otherwise requires, words imparting the singular number shall include the plural and vice versa.

## ARTICLE II ENGINEER'S SERVICES

- 2.1 Basic Services: The Engineer shall provide the following Services on the Project, as more described and set out in Schedule A.
  - 2.1.1 Pre-design Phase: Complete applicable investigations, evaluations, analyses, surveys, and reports.
  - 2.1.2 Design Phase: Complete all necessary drawings and technical specifications for bidding the construction of the Project.
  - 2.1.3 Construction Phase:

2.1.3.1 The Engineer shall assist the District during bidding and contract execution, administer the Contract, provide field observation and inspection of the Project, and provide management and reporting during the construction phase of the Project.

2.1.3.2 The Engineer shall designate the individuals named in Article IV as Project Manager and Project Representative to be the representatives of the District in its relations with the Contractor, subject to the requirements and limitations set out in the Contract Documents and this Agreement. Other personnel of the Engineer shall be designated as needed to administer the Contract, as further set forth in Section 2.2 and this Agreement.

2.1.3.3 The Engineer shall provide Project representation at the site, as described in Schedule A, in order to provide experienced inspection and observation of the quality and progress of the Contract construction work to verify it complies with the requirements of the Contract Documents, and to advise the District of defects and deficiencies. The Engineer shall direct its efforts toward verifying that the means, methods, techniques or procedures that are specified in the Contract Documents are faithfully observed and followed by the Contractor during construction of the Project, and, except as hereafter provided, that the completed Project conforms to the Contract Documents. The Engineer shall not be responsible for any means, methods, techniques, or procedures of construction selected by the Contractor not specified in the Contract Documents, or for safety precautions and programs incident to the work of Contractor.

2.1.3.4 The Engineer shall have the following powers and is hereby directed to exercise them as in its professional judgment are required to accomplish the above tasks, objectives and responsibilities:

Examine, review and investigate all material, equipment, work and workmanship for compliance with the Contract Documents, including the examination and investigation of plant, mill and shop facilities; require that work done in the absence of observation and examination be removed and replaced under the proper

observation and examination; make such examination and tests, as in its professional judgment are required, to verify that the work is being accomplished in accordance with the Contract Documents; reject work which does not meet the specifications of the Contract Documents and require the Contractor remove and replace such work according to the Contract Documents.

2.1.3.5 If disputes between the Contractor and the District arise, and/or if the Contractor shall file a claim or protest against the District during construction of the Project, the Engineer shall investigate and analyze all such disputes, claims and protests, and attempt to resolve them to the mutual satisfaction of the parties, and failing such resolution, recommend a course of action for the District.

2.1.3.6 The Engineer's recommendation of any payment requested in an application for payment by the Contractor will constitute a representation by the Engineer to the District, based on the Engineer's on-site observations of the Contractor's work in progress as an experienced and qualified design professional and on the Engineer's review of the application for payment and the accompanying data and schedules, that the work has progressed to the point indicated, that to the best of the Engineer's knowledge, information and belief the performance and quality of the work is in accordance with the Contract Documents (subject to an evaluation of the work by the Engineer as a functioning Project upon Substantial Completion as defined in the Contract Documents, to the results of any subsequent tests called for in the Contract Documents, and to any qualifications stated in the recommendation), and that the Contractor is entitled to payment of the amount recommended. However, by recommending any such payment, the Engineer will not thereby be deemed to have represented that the Engineer acted or performed to a standard of care higher than that required of the Engineer under this Agreement and the Contract.

2.2 Guidelines for Basic Services: The Engineer shall perform the Services in conformance with the District's Guidelines for Engineering Services, as set forth in Schedule B, and in conformance with such other guidelines imposed by the District during the progress of the Services, so long as such guidelines are in conformance with standard professional consulting services.

2.3 Additional Services: The District and the Engineer recognize and agree that services not set forth in Schedule A are not covered by the Engineer's Fee and are considered to be additional services. No additional services may be provided by the Engineer, and no compensation shall be paid therefore by the District, except upon written confirmation by the District as an amendment to this Agreement.

Upon request by the District, the following additional services shall be provided by the Engineer:

2.3.1 Perform work resulting from changes in design criteria made in writing at the direction of the District, after acceptance of the criteria by the Engineer;

2.3.2 Prepare applications and supporting documents for government review or action, other than those which may be specified in Schedule A;

2.3.3 Provide additional services required as a result of delinquency or insolvency of one or more of the Contractors; or as a result of damage to the Project caused by fire, flood, earthquake, or other acts of God, wherein damage was not a direct or indirect result of Engineer's negligence or within Engineer's control;

2.3.4 Provide additional services required as a result of strikes, walkouts, or other acts of trade or labor unions;

2.3.5 Provide expert witness testimony or litigation support at depositions, trials, court appearances, and other similar judicial proceedings and cooperate in formulating and responding to interrogatories and other similar discovery methods; and,

2.3.6 Perform any other item of work not specifically mentioned above, and requested by the District in writing.

ARTICLE III  
TIME TO COMPLETE

The Engineer's Services, as defined in Article II, shall be completed within the timeframe set forth in Schedule C. Notwithstanding any term or provision of this Agreement to the contrary, all of the Services shall be completed within \_\_\_\_ calendar days after the Effective Date of this Agreement.

ARTICLE IV  
ENGINEER'S PERSONNEL

The key personnel identified in Schedule D shall perform the Engineer's Services in the assigned capacities, as shown. Any substitution of key personnel and/or changes in assignments from those shown must be approved by the District in writing before such substitution or change may be made by the Engineer.

ARTICLE V  
DISTRICT-FURNISHED SERVICES

- 5.1 Information: Upon the Engineer's request, the District shall provide to the Engineer or make available for review all information and data contained in record drawings, record documents and other records routinely kept by the District pertaining to the design, construction or operation of its facilities. The District does not warrant the accuracy or completeness of such data and information originating from entities or persons other than the District.
- 5.2 Review of Documents: The District shall review and consider all sketches, drawings, reports, studies, model results, specifications, bids, proposals, contracts, and other documents submitted by the Engineer relative to Engineer's Services. Whenever prompt action is necessary, the District shall within a reasonable time inform the Engineer of its decision regarding the same so as to not unduly delay the Engineer in its performance according to the schedule set forth in this Agreement.
- 5.3 Engineer Access: The District shall, at its expense, arrange and make provision for the Engineer's entry and access to such property (public and/or private) as may be necessary to enable the Engineer to perform the Services.
- 5.4 District Representative: The District shall designate in writing an individual who shall be authorized by the District to act as the District's Representative. The Representative shall have authority to receive reports from the Engineer and give instructions to the Engineer.

**OPTIONAL 5.4 District Representative: The District hereby designates and authorizes \_\_\_\_\_ to act as the District's Representative. The Representative shall have authority to receive reports from the Engineer and give instructions to the Engineer.**

- 5.5 Notifications of Defects: The District shall give written notice to the Engineer whenever the District or its Representative becomes aware of any defect or deficiency in the Engineer's Services.
- 5.6 Construction Right-of-Way: Where, based upon the Engineer's design work, rights-of-way are required for construction, the District will, at its expense, obtain such rights-of-way, including appraisals and title searches, utilizing descriptions and maps provided by the Engineer.
- 5.7 Consultation with District: Employees of the District shall be available for consultation with the Engineer at all reasonable times.
- 5.8 Permit Fees: The District shall pay any required permit fees, charges for plan checking, and any other fees charged by any public agency having jurisdiction over any part of the Project, if such charges are made.
- 5.9 Legal Opinions: The District shall, at its expense, furnish legal opinions on laws and the interpretation thereof which may affect the Project, if such opinions are judged by the District to be necessary.

ARTICLE VI  
COMPENSATION

- 6.1 Basic Services: The District shall pay to the Engineer as compensation for Services attributable to the Project, the hourly billing rates as set forth in Schedule E multiplied by the number of hours expended on the Project, together with reimbursable expenses attributable to the Project multiplied by \_\_\_\_.
- 6.1.1 Pre-design and Design Phases: In no event shall the total compensation due the Engineer for the Pre-design and Design Phases, including reimbursable expenses, exceed \_\_\_\_\_ and \_\_\_\_/100 Dollars (\$\_\_\_\_\_).
- 6.1.2 Construction Phase: The budget authorized for the Engineer's Services and for reimbursable expenses in the Construction Phase is \_\_\_\_\_ and \_\_\_\_/100 Dollars (\$\_\_\_\_\_). As work in this Phase reaches seventy-five percent (75%) of the authorized budget set forth in Schedule E, the Engineer shall notify the District, and the Engineer and the District shall thereafter mutually review the extent of work already accomplished, the extent of work remaining to be completed and the past and projected expenses related thereto. At that time, the scope of Services and corresponding compensation for Services for the Construction Phase may be adjusted by the District.



6.2 Additional Services: In the event this Agreement is amended to provide for additional services by the Engineer, the Engineer's compensation for additional services shall be the hourly billing rate multiplied by the hours expended for additional services, and reimbursable expenses attributable to the additional services multiplied by \_\_\_\_.

A summary showing estimated cost data for each additional service requested shall be submitted to the District for approval prior to commencement of work on that additional service. The District shall not be obligated to reimburse the Engineer for costs incurred in excess of the estimated cost set forth in that summary, and the Engineer shall not be obligated to continue work or to incur costs in excess of the estimated cost until the District notifies the Engineer in writing that the estimated cost therefore has been increased. Additional sets of Contract Documents and reduced scale drawings shall be charged at actual cost of printing and mailing.

6.3 Format for Invoices: Invoices for the Engineer's Services and expenses shall be reviewed and signed by the Engineer's Project Manager before being sent to the District. Each invoice shall include the following information:

- a. Project Name.
- b. Time period of Services (beginning of month to end of month).
- c. Current invoice charges, separated into Pre-design, Design and Construction Phases, with the following breakdown:
  - (i) Charges for Services, further described by:
    - (1) Employee name.
    - (2) Hours worked.
    - (3) Rate charged.
  - (ii) Reimbursable Expenses:
    - (1) Description.
    - (2) Cost.
- d. Account summary, including:
  - (i) Total amount authorized for the Pre-design and Design Phases under this Agreement.

- (ii) Total invoiced to date for the Pre-design and Design Phases.
  - (iii) Total amount authorized for the Construction Phase under this agreement.
  - (iv) Total invoiced to date for the Construction Phase.
- 6.4 Progress Payments: The Engineer's invoices for Services performed and for reimbursable expenses shall be delivered to the District after the end of the first calendar month following the Effective Date of this Agreement, and monthly thereafter so long as the Engineer's Services shall continue. The compensation requested on any such invoice shall be itemized to show hourly billing rate multiplied by time charged to the Project and reimbursable expenses which actually were incurred in the month identified in the invoice.
- 6.5 Payment of Invoice: The amount shown on each invoice for the Engineer's Fee and expenses shall be due and payable by the District after its review and acceptance of the Services itemized in the invoice. The Engineer may levy a simple interest charge of eight percent (8%) per annum on invoice amounts accepted for payment by the District and not paid within forty-five (45) days of the date of delivery of the invoice. Late payments made by the District shall be credited first to accrued interest and then to principal.
- 6.6 Suspension; Termination: In the event the District fails to submit payment on an invoice within sixty (60) days of the date of delivery to the District of such invoice, the Engineer may, at its discretion and upon ten (10) days written notice to the District, suspend its services or terminate this Agreement.

## ARTICLE VII SPECIAL TERMS AND CONDITIONS

- 7.1 Documents: All completed original reproducible tracings, survey notes, plans, specifications, reports, engineering calculations, and other original documents prepared by the Engineer in the performance of the Engineer's Services shall be the property of the District, and the Engineer shall, upon the request of the District, deliver such documents to the District. The Engineer may retain and use copies of the documents. The District agrees to hold harmless, indemnify and defend the Engineer against all third party damages, claims, expenses and losses arising out of any reuse by the District of the plans, specifications and documents if the District does not obtain the written authorization of the Engineer for their reuse.
- 7.2 Governmental Immunity: Except for the District's obligations of indemnification as set forth in paragraph 7.1, nothing in this Agreement shall adversely affect any immunity from suit, or any right, privilege, claim or defense, which the District or its employees, officers and trustees may assert under state or federal law, including but not limited to the Utah Governmental Immunity Act, Utah Code Ann. (1953)

§§ 63-30-1 et seq. (the "Act"). All claims against the District or its employees, officers and trustees are subject to the provisions of the Act, which Act controls all procedures and limitations in connection with any claim of liability.

- 7.3 Conflict of Interest: The Engineer shall not establish or otherwise continue any conflict of interest created by virtue of this Agreement, prohibited under state or local laws.
- 7.4 Termination Prior to Completion: This Agreement may be terminated at any time by the District prior to completion of the Engineer's Services upon written notice to the Engineer. Upon receipt of such notice, the Engineer shall immediately stop any further work in progress, and in such event, the Engineer shall be entitled to payment for all of its Services performed by the Engineer and accepted by the District, to the date of cancellation, and for all work required to organize and deliver to the District the materials developed in the course of the Engineer's Services. Payment shall be due to the Engineer within forty-five (45) days after delivery of such materials and receipt of a verified and itemized invoice therefore.
- 7.5 Construction Estimates: Estimates of contract time, construction costs and quantities prepared by the Engineer or its employees represent their best professional judgment as design professionals and are supplied for the general guidance of the District. The Engineer does not guarantee the accuracy of such estimates as the Engineer has no control over the cost of labor and material, competitive bidding, or market or other conditions.
- 7.6 Indemnity and Insurance: The Engineer shall indemnify, defend and hold the District harmless from any claims under the Workers' Compensation Act, and from any claims, demands, suits, causes of action, costs, fees, judgments, liability for bodily injury and death, and damages to property, real or personal, to the extent caused by or resulting from breach of contract, negligence, recklessness or intentional misconduct by the Engineer or by the negligence of the Engineer's subconsultants, in the performance of the Engineer's Services under this Agreement. During the course of this Agreement, and for a period of four (4) years following Substantial Completion of the Engineer's Services under this Agreement, the Engineer shall maintain both professional errors and omissions liability insurance and general commercial liability insurance providing coverage for all liability arising out of the performance of Services in connection with the Project and this Agreement. The liability insurance required shall include "prior acts" coverage for all services rendered for the Project and shall be written with a limit of liability of \$500,000.00 per claim and a Project aggregate of \$1,000,000.00.
- 7.7 Interpretation: Except as otherwise noted, releases from liability, indemnification against liability, limitations on liability, assumptions of liability and limitations on remedies which may be expressed in this Agreement, shall apply to all possible claims and/or causes of action, including but not limited to those arising under common law, equity, statute, contract, tort or otherwise.

ARTICLE VIII  
GENERAL TERMS AND CONDITIONS

- 8.1 Standards of Performance: The Engineer shall perform its Services in a manner consistent with the professional skill and care ordinarily provided by other design professionals with the same or similar professional license, providing the same or similar design professional service in the same or similar locality at the same or similar time under the same or similar circumstances.
- 8.2 Force Majeure: Neither party shall hold the other responsible for damages or delays in performance caused by acts of God, strikes, lockouts, accidents, acts of any governmental entity having jurisdiction over the parties and/or the subject matter of this Agreement (other than those governmental entities named as parties or beneficiaries to this Agreement), or other events beyond the reasonable control of the other or the other's employees and agents. In the event either party claims that performance of its obligation is prevented or delayed by such cause, that party shall promptly notify the other party of that fact and the circumstances preventing or delaying performance.
- 8.3 Assignment: Neither the District nor the Engineer shall delegate and/or assign their respective duties and/or rights under this Agreement without the prior written consent of the other. The Engineer may subcontract, however, portions of the Services as it deems necessary to efficiently accomplish the Basic Services. Nothing in this paragraph shall release the Engineer from full compliance with the terms and conditions of Article IV.
- 8.4 Severability; Waiver: In the event a court, governmental agency or regulatory agency with proper jurisdiction determines that any provision of this Agreement is unlawful, that provision shall terminate. If a provision is terminated, but the parties can legally, commercially and practicably continue to perform this Agreement without the terminated provision, the remainder of this Agreement shall continue in effect. One or more waivers by either party of any provision, term, condition or covenant shall not be construed by the other party as a waiver of any subsequent breach of the same by the other party.
- 8.5 Governing Law: This Agreement shall be governed by, construed and enforced according to the laws of the State of Utah.
- 8.6 Merger; Amendments: This Agreement and the Contract Documents, including all amendments, represents the entire and integrated agreement between the District and the Engineer, and supersedes all prior negotiations, representations or agreements, whether written or oral, regarding the subject matter contained in this Agreement. The Agreement may be amended only by written instrument executed by all parties.

- 8.7 Attorney's Fees: In the event of a default or breach of this Agreement, the defaulting party agrees to pay all costs incurred by the non-defaulting party in enforcing this Agreement or in obtaining damages, including reasonable attorney's fees, whether incurred through legal proceedings or otherwise.
- 8.8 Notice: Any formal notice required to be given under this Agreement shall be deemed given when hand-delivered or when sent by registered or certified mail, return receipt requested, to the parties at their respective addresses stated below or to any other address after notice of such change of address has been given to the parties.
- 8.9 Third Party Beneficiaries: Nothing contained in this Agreement shall create a contractual relationship with a cause of action in favor of a third party against either the District or the Engineer. The Engineer's Services under this Agreement are being performed solely for the District's benefit, and no other entity shall have any claim against the Engineer because of this Agreement or the performance or non-performance of Services hereunder. The District agrees to use reasonable efforts to include a provision in all contracts with other contractors and other entities involved in the Project to carry out the intent of this paragraph.

"District":

Jordan Valley Water Conservancy District  
 8215 South 1300 West  
 West Jordan, Utah 84088

"Engineer":

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

By: \_\_\_\_\_  
 Barton A. Forsyth  
 Its General Manager/CEO

By: \_\_\_\_\_  
 [Name]  
 Its \_\_\_\_\_

SCHEDULE B  
GUIDELINES FOR ENGINEERING SERVICES

ATTACHMENT B

SCHEDULE B - GUIDELINES FOR ENGINEERING SERVICES

SCHEDULE B  
REQUIREMENTS FOR ENGINEERING SERVICES

1. CONTINGENCY FUNDS

- A. Design Contingency funds shall not be utilized without prior authorization by the District. The use of Design Contingency funds shall be authorized in writing by District management on a task by task basis.

2. PRE-DESIGN/DESIGN PHASE

B. DRAWINGS

- 1.1 Computer-Aided Drafting (CAD) shall be used to prepare construction drawings. The drawings shall be delivered to the District in electronic form (AutoCAD 2016 or more recent) and hard copy on 11 x 17 paper.
- 1.2 Document Format:
- a. Electronic documents shall be prepared in the following versions:
- i. Spreadsheets in Excel version 2013
  - ii. Word processing in Word version 2013
  - iii. Presentations in PowerPoint version 2013
- 1.3 The cover sheet shall not include approval signatures from the District, although names of District officers may be printed.
- 1.4 The drawings shall be submitted to the District for its review and comment in accordance with paragraph E of this schedule, "Review of Contract Documents."
- 1.5 All drawings shall show the District's assigned Project number in the lower, right hand corner of the sheet.

OTHER CONTRACT DOCUMENTS



2.1 Bidding and Contractual Documents: The Engineer shall provide Project-specific information to the District for completion of the District's standard bidding and contractual documents identified below. The Engineer shall provide the bid schedule to the District in hard copy and electronic format (Microsoft Word). The District shall print the documents. The following paper colors and format shall be used by the District when printing these documents:

- 2.1.1 Title Page..... Single, Sided, White
- 2.1.2 Table of Contents..... Double-Sided, Yellow
- 2.1.3 Notice Inviting Bids..... Double-Sided, White
- 2.1.4 Instructions of Bidders..... Double-Sided, White
- 2.1.5 Bid..... Single-Sided, Blue
- 2.1.6 Bid Bond ..... Single-Sided, Blue
- 2.1.1 Information Required of Bidder ..... Single-Sided, Blue
- 2.1.2 Agreement ..... Double-Sided, White
- 2.1.3 Performance Bond ..... Single-Sided, White
- 2.1.4 Payment Bond ..... Single-Sided, White
- 2.1.5 Notice of Award..... Single-Sided, White
- 2.1.6 Notice to Proceed ..... Single-Sided, White
- 2.1.7 Payment Application ..... Single-Sided, White
- 2.1.8 Change Order ..... Single-Sided, White
- 2.1.9 Contractor's Certificate of  
Substantial Completion..... Single-Sided, Purple
- 2.1.10 Contractor's Certificate of  
Final Completion..... Single-Sided, Purple
- 2.1.11 Consent of Surety for  
Final Payment..... Single-Sided, Purple
- 2.1.12 Affidavit of Payment ..... Single-Sided, Purple

- 2.2 General and Supplemental Conditions: The District will provide General and Supplemental General Conditions; to be printed on green and yellow paper, respectively.
- 2.3 Technical Specifications:
- 2.3.1 The Engineer shall prepare technical specifications in electronic form (Microsoft Word). The technical specifications shall be delivered to the District prior to the bidding in electronic form and single-sided on 8 ½ x 11 white paper.
- 2.3.2 The draft sets of technical specifications shall be submitted to the District for its review and comment in accordance with paragraph E of this Schedule.
- 2.3.3 The technical specifications shall include, but not be limited to, the following General “Divisions.”
- 2.3.3.1 General Requirements of the Work.
- 2.3.3.2 Contract Submittals – Include Submittal procedures requirements for equipment shop-drawings, record drawings, and submission of technical O&M manuals, spare parts lists, etc., prior to final payment.
- 2.3.3.3 Quality Control, Inspection, Testing.
- 2.3.3.4 Protection and Restoration of Existing Facilities.
- 2.3.3.5 Equipment Testing and Startup – Include requirements for testing, startup, certification of installation, and training of District personnel by manufacturer’s representative for complex equipment.
- 2.3.3.6 Project Closeout Procedures and Requirements – These procedures and requirements must match the requirements, in the District’s General Conditions.
- 2.3.3.7 Measurement and Payment – This should be explained in a separate section, or in each work item section of the technical specification.

2.3.3.8 Field Staking and Surveying – Include defining whether the Engineer or Contractor shall be responsible for field surveying and staking.

2.4 Addenda: If addenda are to be issued, each addendum will be prepared by the Engineer. The addendum will be approved, signed, and delivered by the District.

#### C. DOCUMENT BINDING REQUIREMENTS

3.1 With the exception of 11x17 drawings, all documents produced by the Engineer shall be bound in a three ring binder. This shall include pre-design reports, final reports, operation and maintenance manuals, etc. Drawings may be comb-bound during bidding and construction. As-constructed drawings shall be (1) comb-bound and (2) folded and included in three ring bound operation and maintenance manuals.

#### D. DESIGN REQUIREMENTS

4.1 All engineering designs shall include the following elements.

4.1.1 Adequate seismic bracing/anchorage of piping and equipment.

4.1.2 Provision of flexibility for differential settlement where buried piping and/or electrical conduit penetrates concrete vaults or basements.

4.1.3 All other standard engineering design issues shall be addressed.

#### E. REVIEW OF DRAWINGS AND TECHNICAL SPECIFICATIONS

5.1 The Engineer shall prepare one electronic set (PDF) and one photo copy ready paper set of drawings and technical specifications for review by the District.

5.1.1 Review documents shall be provided at the following minimum progress landmarks: ten percent (10%), thirty percent (30%), fifty percent (50%), ninety percent (90%) and one hundred percent (100%). If specified in the Scope of Work (Exhibit A) more landmarks may be required. A two-week minimum review period shall be allowed for review of the drawings and technical specifications at each progress landmark. At each progress landmark the Engineer shall

meet with the District for two to four hours to receive its comments and direction.

5.1.2 The Engineer shall return to the District, with each subsequent specification to be reviewed, all documents reviewed by the District during the previous submittal.

#### F. RIGHT-OF-WAY DESCRIPTIONS

Unless otherwise specified by the District, the Engineer will prepare legal descriptions for right-of-way to be acquired by the District from ownership plats and deeds, rather than by the actual survey. The District will prepare easement and other documents, utilizing legal descriptions prepared by the Engineer. Legal descriptions shall be in a metes and bounds format acceptable to the local County Recorder, which may record the document(s).

### 3. CONSTRUCTION SERVICES PHASE

#### A. PROJECT PERSONNEL

1.1 Engineer: The Engineer shall represent and perform Engineering Services for the District within the scope of authority delegated to it by the District as described in this Schedule B.

1.2 The Engineer will appoint, subject to the District's approval, the following personnel:

1.2.1 Project Manager: The individual designated by the Engineer and approved by the District to oversee and manage the administration of the Contract. The Project Manager shall supervise the Project Representative; alternatively, the Project Representative may also serve as the Project Manager as provided in Article IV of the Agreement.

1.2.2 Project Representative: The individual of the Engineer's firm appointed as Project Representative will be the Engineer's chief representative in all construction site relations with the Contractor and will have all authority and responsibility as set forth in the District's General Conditions of the Contract.

1.2.3 Other Personnel: The Project Manager may assign, and will supervise, such portions of contract administration

duties as he deems necessary, such as reviewing submittals, performing design changes, and substituting for the Project Representative on the construction site during brief absences of the appointed Project Representative. During brief absences of the assigned Project Representative the Project Manager will first send written notice to the Contractor and will notify the District.

## B. CONTRACT EXECUTION ASSISTANCE

- 2.1 The District will issue the Notice of Award and Notice to Proceed to the Contractor.
- 2.2 Following Contract execution by the District, fully executed Contracts will be distributed by the District as follows:

District        One (1) Set  
Contractor:   One (1) Set  
Engineer:      One (1) Set

These three (3) sets will be bound in three-ring binders.

## C. PRE-CONSTRUCTION CONFERENCE

- 3.1 The Project Manager and Project Representative shall familiarize themselves with the District's General Conditions of the Contract.
- 3.2 The Project Manager will prepare a Pre-Construction Conference agenda, and conduct such a conference with the Contractor and applicable third parties at the District's office or on-site. The Project Representative and District Representative shall be present. The agenda should cover the key points of the Contract Documents, including the General Conditions of the Contract, as well as other Project administration matters.

## D. SUBMITTAL/SUBSTITUTIONS

- 4.1 The Project Manager shall review, process, and recommend approval/disapproval of Contractor submittals and substitution requests. Copies of each Contractor submittal and substitution request shall be sent to the District, together with the Project Manager's recommend action.

The District will direct the Engineer to approve/disapprove each submittal and substitution request.

## E. INSPECTION/TESTING

- 5.1 The Project Representative will make all on-site inspections, with the general frequency and duration as directed by the District.
- 5.2 The Project Representative is authorized to order such tests as he deems necessary for proper administration and inspection of the Project, however, with respect to any such test to be performed by independent firms presently contracting directly with the District, the firm so contracting will be designated by the District to perform the tests. Reports of all test results, or test summaries, shall be submitted to the District by the Project Representative.
- 5.3 The Project Representative shall keep a daily written log of construction activities at the site during each visit. Copies of the daily log shall be sent to the District on a monthly basis.
- 5.4 The Project Representative's daily log shall include a comment of whether or not any event or circumstance has developed in the Contract or Project, which in the Project Representative's professional judgment may lead to a claim or protest from the Contractor. The Project Representative shall notify the District immediately of such an event or circumstance, receipt of a written claim or protest, or his becoming aware of events which may lead to such a claim, from the Contractor.
- 5.5 The Project Representative shall send to the District copies of notes from telephone calls or meetings with the Contractor that, in the opinion of the Project Manager, are significant.
- 5.6 The Project Representative shall take digital photographs of the construction in progress during each phase of the work. The Project Manager shall prepare a photographic history of the work as described in paragraph 10.3. The format of the digital photographs shall be in accordance with paragraph 10.3. Photographs shall be submitted periodically to the District during the construction phase of the work.

#### F. CHANGES IN THE WORK

- 6.1 Field Order: The Project Representative is authorized to, and shall issue all field orders in writing, as described in Article 1.14 of the General Conditions of the Contract. The Project Representative shall submit a copy of each field order to the District.
- 6.2 Change Orders: The Project Representative and Project Manager are not authorized to approve Change Orders. Change orders may be initiated by the District, by recommendation from the Project

Manager, or by claim of changed conditions by the Contractor. Change orders will be initially reviewed by the Project Manager, then forwarded with a recommendation to the District. The District shall consider if the recommendation is consistent with the Contract Documents, and if acceptable, the District will prepare the change order form for approval by the authorized District staff.

- 6.3 Emergencies: The District acknowledges that in emergencies immediately affecting the safety or protection of persons or property affected by the construction activities, the Contractor, without special instruction or authorization from the Project Representative or the District, is obligated to act to prevent threatened damage, injury or loss. The Contractor shall give the Project Representative prompt written notice of any significant changes in the Contract construction or deviations from the Contract Documents caused thereby.

#### G. PROGRESS MEETINGS

- 7.1 The Project Representative and/or the Project Manager shall attend progress meetings conducted by the Contractor, and shall document the content of the meetings with minutes. Progress meetings will be scheduled at a location and frequency suitable to the project needs. A District Representative will normally attend these meetings.

#### H. PROGRESS PAYMENTS

- 8.1 The Project Representative shall receive applications for payment from the Contractor, review and recommend the applications by signature. The Project Representative's signature recommending a progress payment shall constitute the verification of the representations required by the Agreement and the Contract.
- 8.2 The Project Manager will review the applications, approve them by signature, and submit them to the District within five business days of receipt from the Contractor.
- 8.3 Each application for payment shall contain the Contractor's certification and signature substantially in conformance with the following:

#### CONTRACTOR'S CERTIFICATION

The undersigned Contractor certifies that: (1) all previous progress payments received from Owner on account of Work done under the

Contract referred to herein have been applied to discharge in full all obligations of Contractor incurred in connection with Work covered by prior Applications for Payment numbered 1 through \_\_\_\_ inclusive; and (2) title to all materials and equipment incorporated in said Work or otherwise listed in or covered by this Application for Payment will pass to Owner at time of payment free and clear of all liens, claims, security interests and encumbrances (except such as covered by bond acceptable to Owner).

---

Contractor (Name of Sole Ownership, Corporation or Partnership)

---

Signature of Authorized Representative

---

Title

---

Date

8.4 In accordance with State Law, the District will retain 5% of progress payments until the final payment and final completion of the Project.

#### 4. PROJECT CLOSEOUT

1.1 The Project Manager shall be responsible to see that closeout procedures and documents, as specified in the District's General Conditions, are carefully observed. The following standard District forms, or similar forms of the Engineer acceptable to the District, will be used.

1.1.1 Contractor's Certificate of Substantial Completion

1.1.2 Engineer's Notice of Substantial Completion

1.1.3 Contractor's Certificate of Final Completion

1.1.4 Engineer's Notice of Final Completion

1.1.5 Consent of Surety for Final Payment

1.1.6 Affidavit of Payment (from Contractor)

1.2 The Project Manager will submit original copies of the Contractor's Certificates of Substantial and Final Completion to the District.

1.3 The Project Manager shall prepare and sign the Engineer's Certificate of Substantial Completion, a copy of which is attached.



- 1.4 The Project Manager will prepare, sign and submit the Engineer's Notice of Final Completion, together with the Final Payment application and all submittals required from the Contractor, when he is satisfied the work is complete. A copy of the Engineer's Notice of Completion is attached. The District's acceptance, as Owner, of the Notice of Final Completion will be evidenced by its making final payment.

## 5. OPERATION AND MAINTENANCE MANUAL

- 1.1 The Project Manager shall prepare an Operation and Maintenance Manual ("O&M Manual") for the Project. The O&M Manual shall be completed within seven (7) calendar days of Substantial Completion of the work. The intent for the O&M Manual is to be a reference for unfamiliar users of the Project facilities to become familiar with the operation of the facilities, receive direction on how and when to maintain the facilities, and be able to locate technical support reference when necessary.

The District wishes to have the O&M Manual in electronic format as much as possible. Although certain formats of electronic documents are defined in this Agreement, the District recognizes that technology will change and improve over time and encourages the Project Manager to look for creative ways of providing O&M Manuals in electronic versions as much as possible. For example, the Project Manager could require the Contractor to submit O&M Manual information in HTML, PDF or another universal standard electronic format that could be easily accessed by the District in the future.

The format of the O&M Manual shall be as follows:

### Volume I (By Engineer):

- Section 1: Description of Facilities, Typical Operating Conditions, Standard Operating Procedures
- Section 2: Description of Proper Maintenance Activities
- Section 3: List of Equipment and Suppliers
- Section 4: Contract Documents and Specifications
- Section 5: Record Drawings (see 10.2)
- Section 6: Project Photo Log (see 10.3)
- Section 7: Other Pertinent Documents
- Section 8: Compact Disc

Volume II (By Contractor):

Section 7: Shop Drawings

Section 8: Manufacturer's Literature and Operations & Maintenance Manuals

All the information in Volume I shall be in an electronic format as well as in paper format.

Unless specifically identified in the request for proposal, the Project Manager shall supply four (4) copies of the O&M Manual complete with electronic versions of information contained in the O&M Manual and one (1) additional copy of the electronic information.

- 1.2 The Project Manager will revise the original drawings to reflect record conditions, from the Contractor's marked-up record drawings and the Project Representative's inspection notes, sign and stamp them as follows:

JVWCD RECORD DRAWINGS:

Revisions drawn by \_\_\_\_\_ Date: \_\_\_\_\_

This record drawing has been prepared to reflect conditions as actually constructed, from records compiled during construction by the Contractor and the Engineer.

\_\_\_\_\_  
Project Manager

\_\_\_\_\_  
Date

The record drawings are not intended to show in detail the exact location of minor/latent detail of construction. Instead, they are intended to represent as-built conditions in as much detail as practical and available, and to document substantial changes from the original design. The District recognizes that much of the information required to prepare the record drawings is compiled by the Contractor or others during construction, and therefore holds the Engineer harmless from any errors or omissions which may be incorporated into the drawings as a result.

The record drawings will be delivered to the District following Project completion. The record drawings shall be submitted in electronic ((a) AutoCAD 2016 or more recent and (b) PDF format) and (c) paper (11x17) format.

- 1.3 The Project Manager shall submit the complete photo history of the Project compiled during construction. The photo history shall be in electronic and paper formats. Both versions shall contain all photographs in chronological order with a date and caption below each photo.

The electronic version shall contain 4" x 6" photos in a JPEG format with a resolution of 150 dots per inch (DPI) or higher. If compressed the compression must be a high quality compression.

The paper version shall contain thumbnail-size photographs with no more than twelve (12) photos per 8-1/2" x 11" page.

ENGINEER'S NOTICE OF SUBSTANTIAL COMPLETION

OWNER

ENGINEER

TO: Jordan Valley Water  
Conservancy District  
8215 South 1300 West  
P. O. Box 70  
West Jordan, UT 84088-0070

PROJECT NAME: \_\_\_\_\_

Date of Notice to Proceed: \_\_\_\_\_ Contract Time: \_\_\_\_\_  
Calendar Days \_\_\_\_\_

In response to Contractor's Certificate of Substantial Completion dated: \_\_\_\_\_

This Certification of Substantial Completion applies to all work under the Contract Documents or to the following specified parts thereof:

The work to which this Certificate applies has been inspected by authorized representatives of Owner, Contractor and Engineer, and that work is hereby declared to be substantially complete in accordance with the Contract Documents on:

Date of Substantial Completion: \_\_\_\_\_, 20\_\_\_\_.

A list of items to be completed or corrected is attached hereto. This list may not be all-inclusive, and the failure to include an item in it does not alter the responsibility of the Contractor to complete all the work in accordance with the Contract Documents. In accordance with the General Conditions, the items in the list shall be completed or corrected by the Contractor within 45 days of the above date of Substantial Completion.

Marked-up record drawings and operation and Maintenance technical information has been received from the Contractor.

The recommended responsibilities between the Owner and the Contractor for security, operation, safety, maintenance, heat, utilities and insurance, if any, shall be as follows:

Owner: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Contractor: \_\_\_\_\_  
\_\_\_\_\_

ENGINEER'S NOTICE OF SUBSTANTIAL COMPLETION (Continued)

The following documents are attached to and made a part of this Certificate:

---

---

Execution of this Certificate by the Engineer extends the Contractor's release of claims against the Owner to the date of execution hereof, in accordance with Article 14.08 of the General Conditions, except for written claims filed prior to date of execution, of which the following, if any, are known to the Engineer:

---

---

Executed by the Engineer on \_\_\_\_\_, 20\_\_.

_____	_____
Project Representative	Signature

_____	_____
Project Manager	Signature

The Contractor hereby acknowledges receiving this Certificate of Substantial Completion.

\_\_\_\_\_  
Contractor (Name of Sole Ownership, Corporation or Partnership)

\_\_\_\_\_  
Signature of Authorized Representative

\_\_\_\_\_                      \_\_\_\_\_  
Title                                      Date

(Engineer shall submit to the Owner a copy with the Contractor's signature following the Contractor's receipt.)

JORDAN VALLEY WATER CONSERVANCY DISTRICT

ENGINEER'S NOTICE OF FINAL COMPLETION

OWNER

ENGINEER

TO: Jordan Valley Water  
Conservancy District  
8215 South 1300 West  
West Jordan, UT 84088

PROJECT NAME: \_\_\_\_\_

Date of Notice to Proceed: \_\_\_\_\_

In response to Contractor's Certificate of Final Completion dated: \_\_\_\_\_

On the basis of our observation of the work during construction and final inspection, and on our review of the Contractor's application for final payment and accompanying documentation, we are satisfied that the Contractor has fulfilled all his obligations under the Contract Documents requisite to final payment.

The following remaining minor deficiencies in the work are recommended to be exempt from final payment, in accordance with Article 14.09 of the General Conditions of the Contract. Recommended completion time limits, extended warranty requirements, and the value of these exempt deficiencies are listed below:

DEFICIENCY	COMPLETION TIME	VALUE

The Contractor's application for final payment together with the following contractor submittals, which comprise all final submittal requirements under the Contract Documents, are submitted herewith:

1. Affidavit of Payment from the Contractor.
2. Consent of Surety for final payment.

ENGINEER'S NOTICE OF COMPLETION (Continued)

The date of our satisfactory final inspection was \_\_\_\_\_, 20\_\_\_\_. This date marks the beginning of the one-year Maintenance and Guarantee period, in accordance with Article 13.01(B) of the General Conditions of the Contract.

Acceptance of final payment by the Contractor shall be a release of claims against the Owner in accordance with Article 14.12 of the General Conditions of the Contract. Acceptance of this Notice of Completion by the Owner makes the Contractor's release effective on the date of execution hereof by the Engineer, excepting written claims filed by the Contractor prior to said date of execution of which the following are known to the Engineer:

---

---

Is the Engineer aware of any unresolved liens against the Contractor from suppliers or subcontractors?

Yes

No

Unresolved Liens (If Applicable):

---

---

---

Executed by the Engineer on \_\_\_\_\_, 20\_\_\_\_.

---

Project Representative

---

Signature

---

Project Manager

---

Signature

ATTACHMENT C

SAMPLE FEE PROPOSAL



**Project Name**  
**Fee Proposal Template Example**

**Client: Jordan Valley Water Conservancy District**

**Firm Name:**

**Date:**

Tasks	Project Manager (Name)	Project Engineer (Name)	Project Rep. (Name)				Total Hours	Cost By Task	
Team Member	\$ ____/hr	\$ ____/hr	\$ ____ hr	\$ ____/hr	\$ ____/hr	\$ ____/hr			
Pre-Design Phase									
1.									
2.									
<b>Subtotal:</b>									
Design Phase									
1.									
2.									
<b>Subtotal:</b>									
Total Hours by Team Member									
TOTAL PRE-DESIGN/DESIGN COST								\$	
20% CONTINGENCY								\$	
Construction Phase									
1. Bidding Support									
2. Construction Management									
3. Documentation									
<b>Subtotal:</b>									
Total Hours by Team Member									
TOTAL CONSTRUCTION MANAGEMENT COST								\$	
Direct Charges:									
TOTAL DIRECT CHARGES								\$	
<b>TOTAL FEE</b>								<b>\$</b>	

\_\_\_\_\_  
Principal's Name

\_\_\_\_\_  
Principal's Signature

\_\_\_\_\_  
Date

## APPENDIX A

### VAULT LOCATIONS

4460 South 1175 West Vault

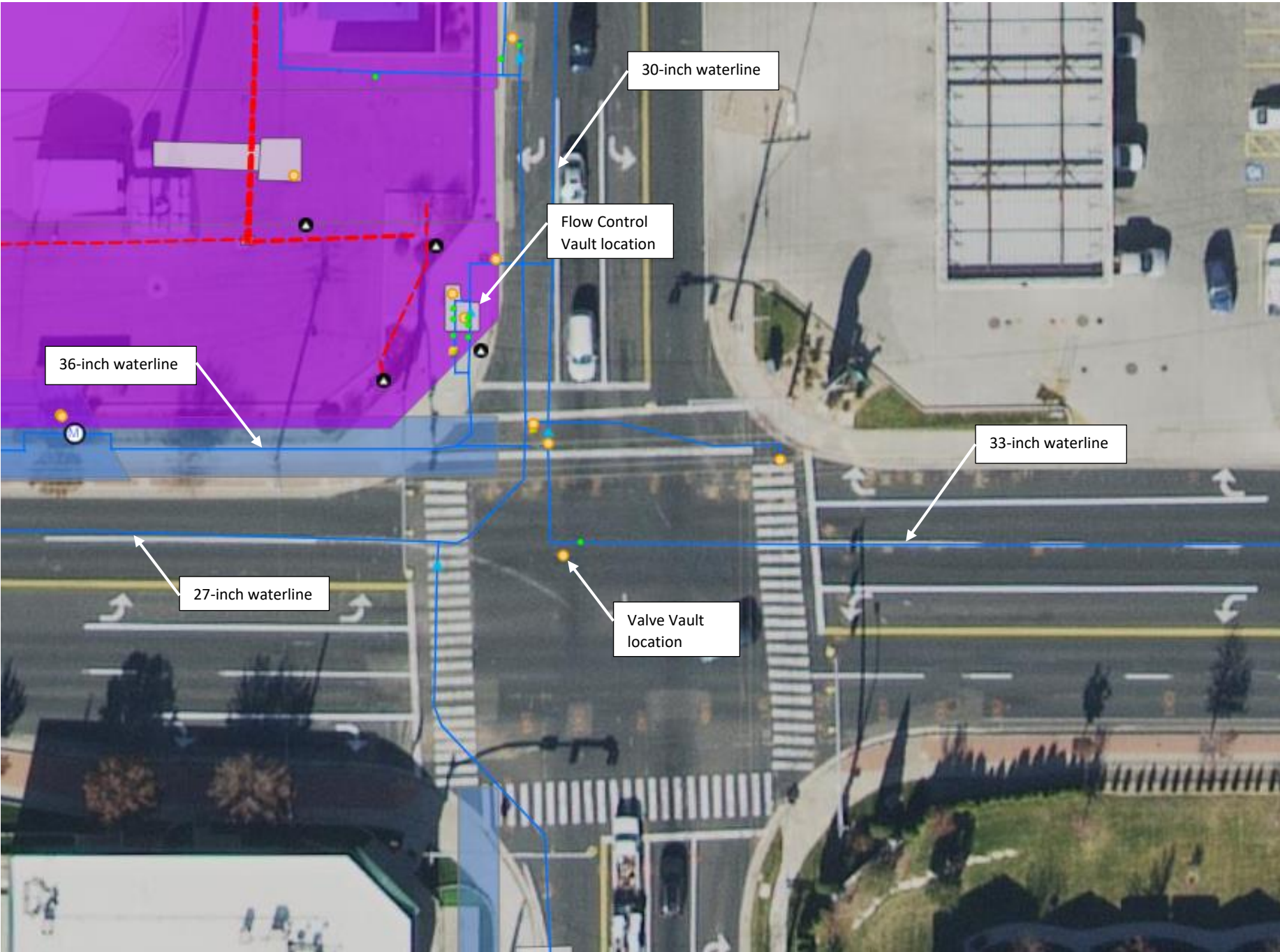




4483 South Gordon Lane Vault

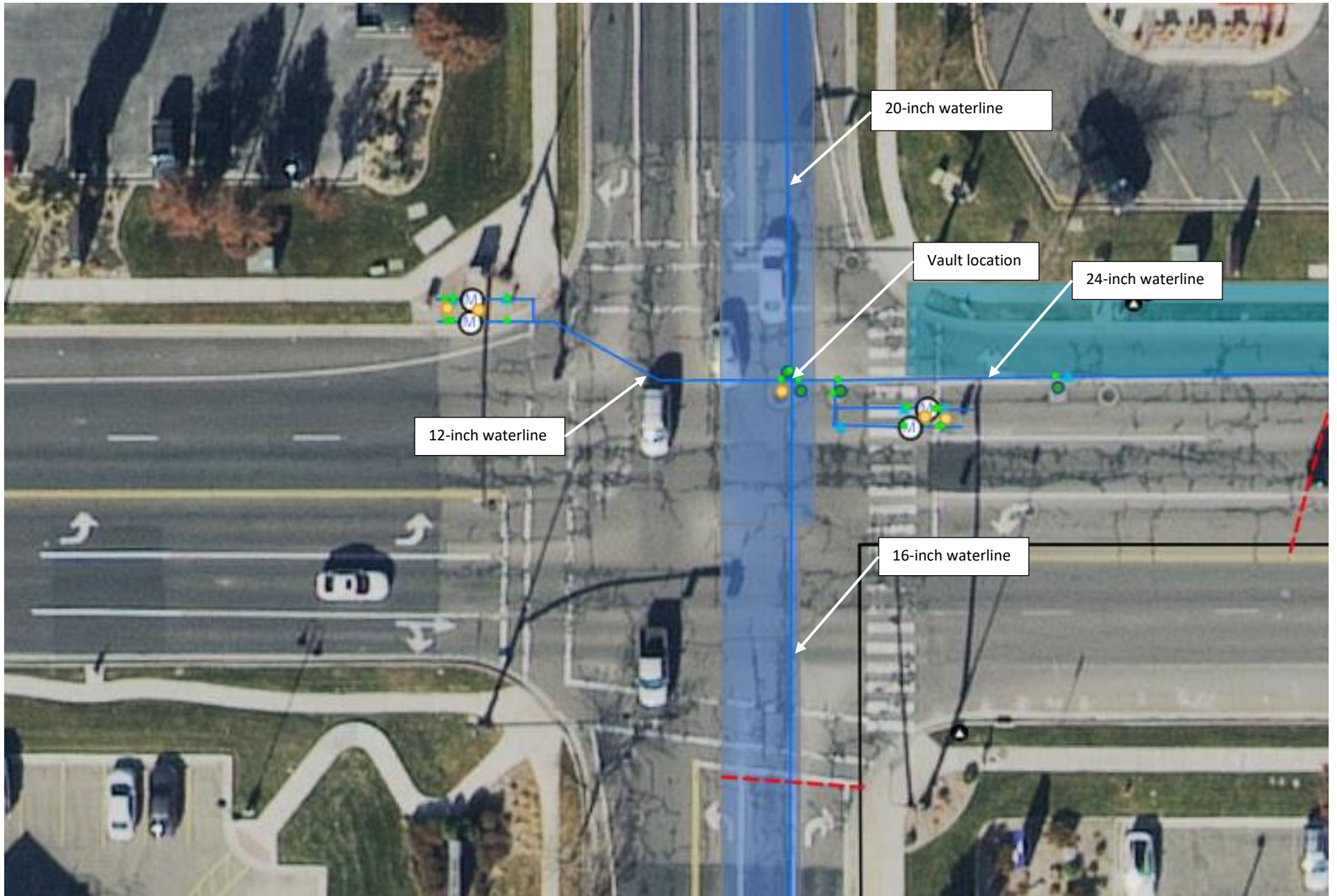


6200 South 3200 West Flow Control Vault and 6200 south 3200 West Vale Vault

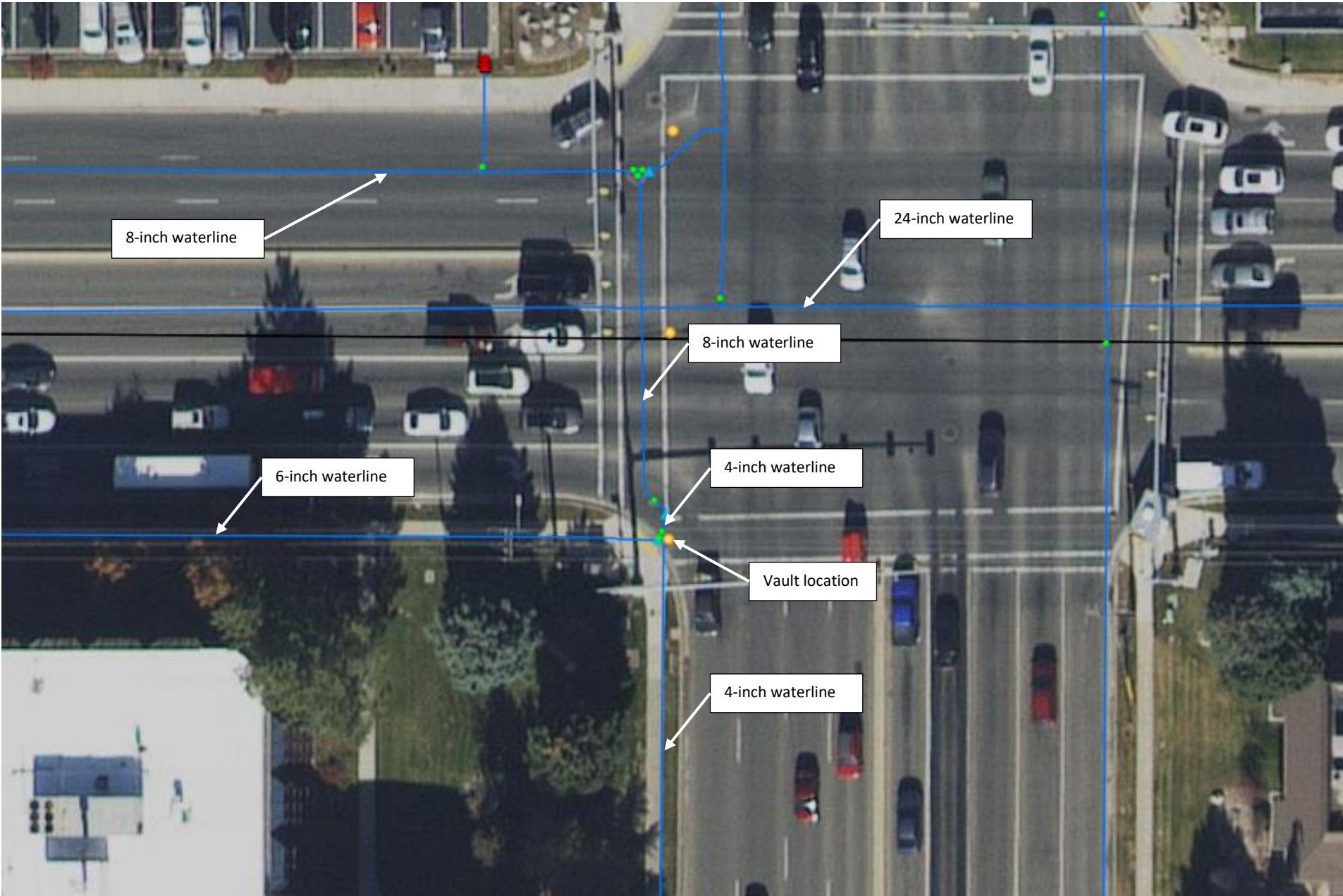




13400 South 5600 West Vault

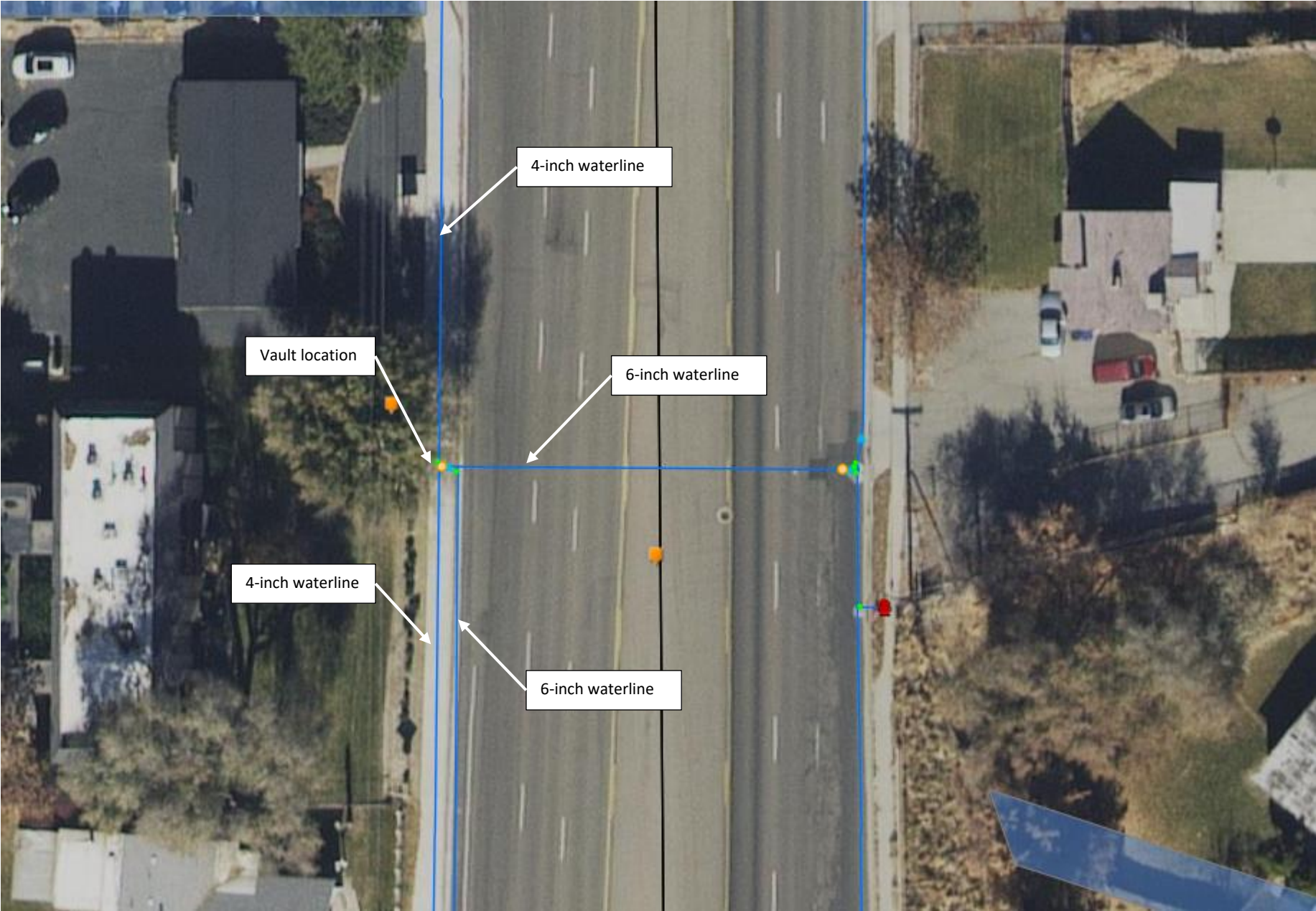


4500 South 700 East Vault





4600 South 700 East Vault





4900 South 900 East Vault

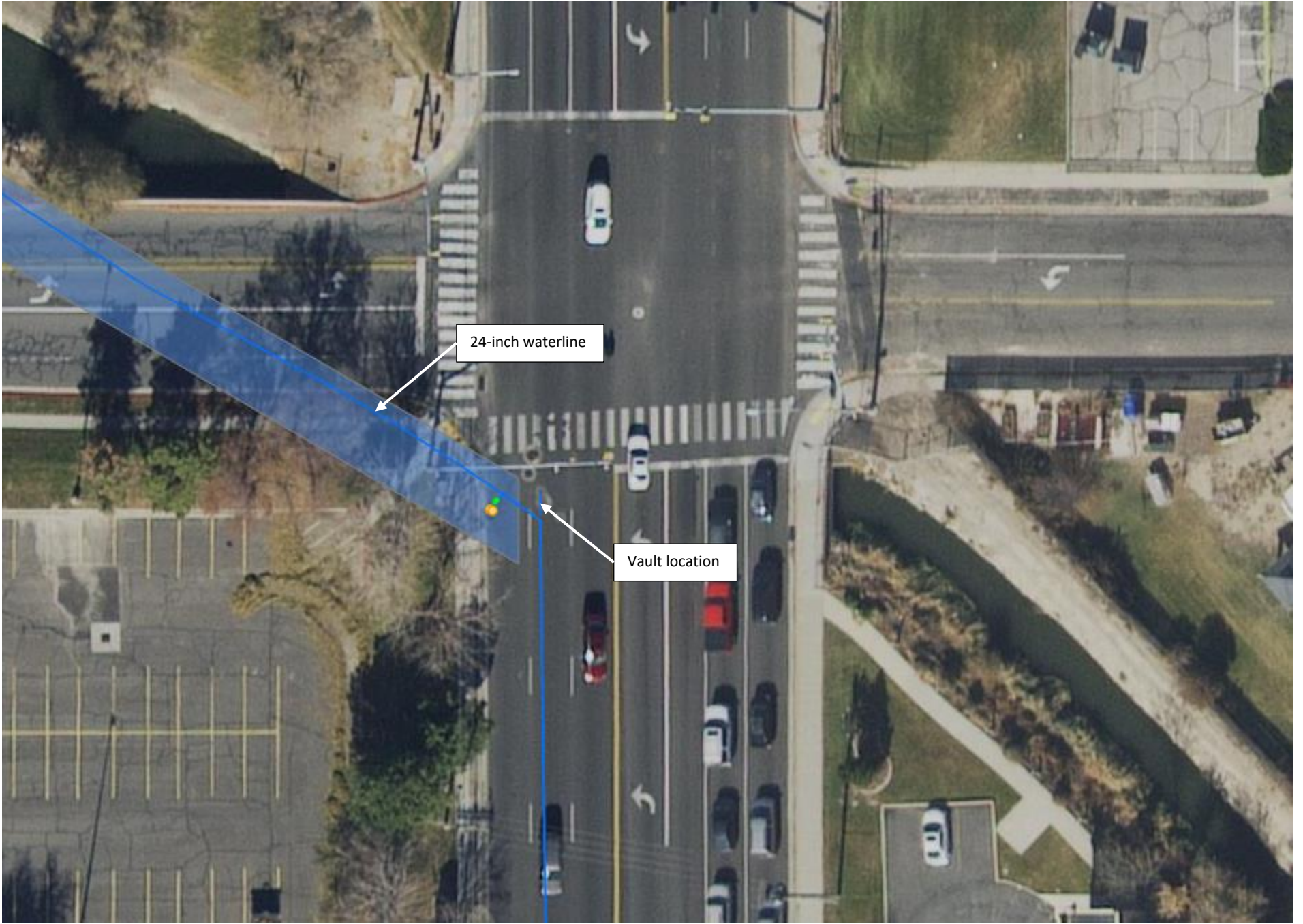


12-inch waterline

Vault location



4445 South 1700 West Vault

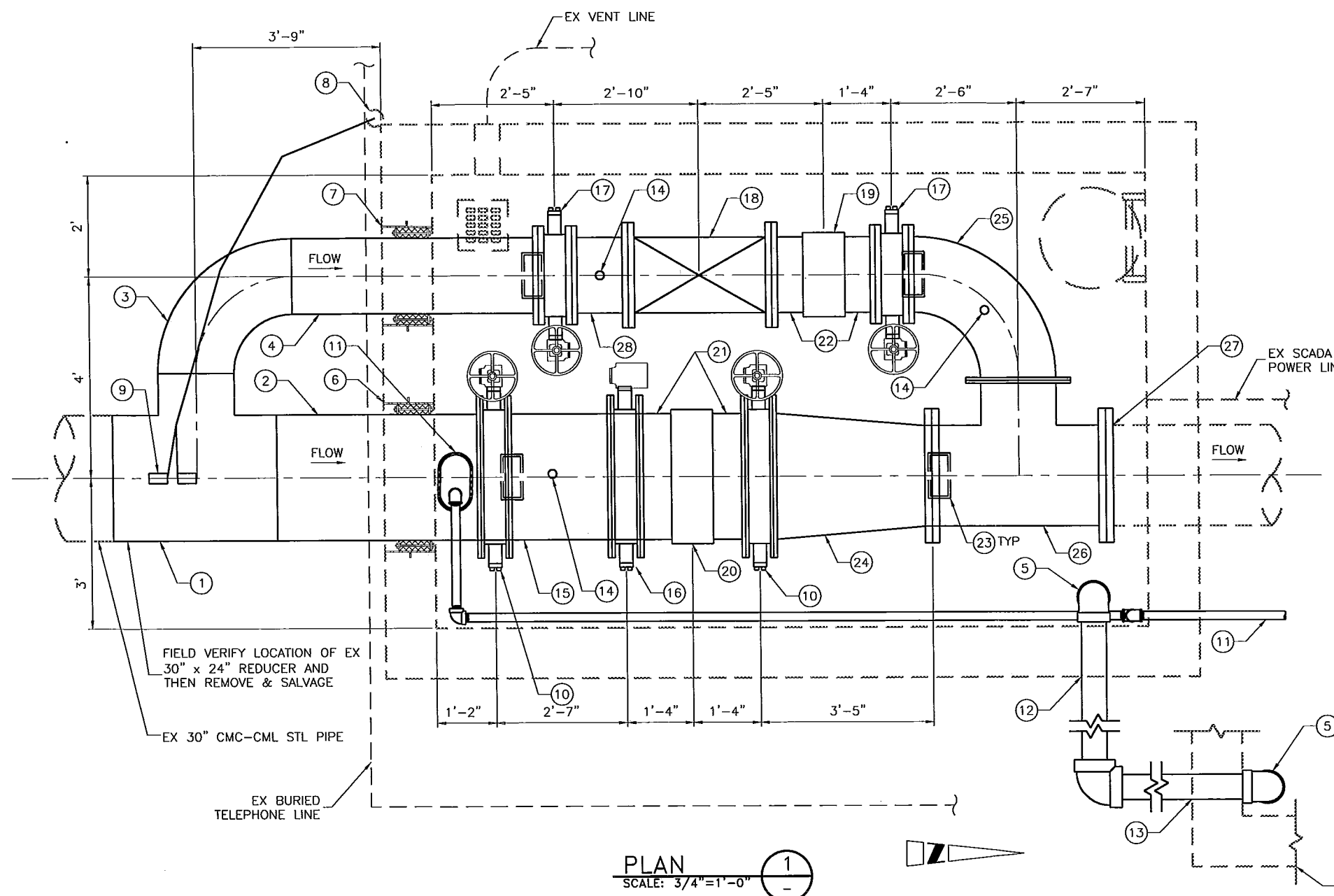


24-inch waterline

Vault location

## APPENDIX B

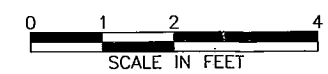
### AVAILABLE VAULT DRAWINGS



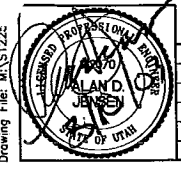
**MATERIAL SCHEDULE**

- ① 30"x30"x18" PE CMC-CML TEE, BUTT WELD TO EX CMC-CML STL PIPE
- ② 30" PE x FLG CMC-CML PIPE w/ 2" OUTLET, FIELD VERIFY LENGTH
- ③ 18" PE CMC-CML 90° BEND
- ④ 18" PE x FLG CMC-CML PIPE, FIELD VERIFY LENGTH
- ⑤ 6" PVC VENT PIPE TO BE EXTENDED TO 18" - 24" ABOVE VAULT FLOOR
- ⑥ 30" WALL PENETRATION, SEE DET 1 & 3 DWG D-3
- ⑦ 18" WALL PENETRATION, SEE DET 1 & 3 DWG D-3
- ⑧ EX TEST STATION, RE-WIRE, SEE DETAIL 4, DWG D-2, SIM
- ⑨ REMOVE, SALVAGE AND RE-CONNECT TEST STATION & INSTALL NEW REFERENCE ELECTRODE, SEE DETAIL 5, DWG D-2
- ⑩ 30" FLG'D BUTTERFLY VALVE, BRAY 36-110 OR AWWA EQUAL, w/ HAND WHEEL ACTUATOR (2)
- ⑪ REINSTALL EX AIR VALVE, SEE DETAIL 5 DWG D-1, EXTEND VENT PIPE NORTH OF VAULT TO INSIDE FENCELINE, SEE DET 5 DWG D-1
- ⑫ 6" PVC VENT WALL PENETRATION, SEE DET 2 DWG D-3, ELEVATION TO BE DETERMINED BY CEILING OF ISOLATION VAULT
- ⑬ 6" PVC VENT WALL PENETRATION, SEE DET 2 DWG D-3, IN UPPER SOUTHEAST CORNER OF ISOLATION VAULT
- ⑭ 3/4" PRESSURE GAUGE ASSEMBLY, SEE DETAIL 1, DWG D-1 (3)
- ⑮ 30" FLG STL PIPE
- ⑯ 30" FLG'D BUTTERFLY VALVE, BRAY 36-110 OR AWWA EQUAL, w/ AUTOMATED ACTUATOR, SEE ELECTRICAL DRAWINGS
- ⑰ 18" FLG'D BUTTERFLY VALVE, BRAY 31-110 OR AWWA EQUAL, w/ HAND WHEEL ACTUATOR (2)
- ⑱ 18" FLG'D SLEEVE VALVE, MOKVELD RZD-RMX OR AWWA EQUAL, w/ AUTOMATED ACTUATOR
- ⑲ 18" MECHANICAL COUPLING, VICTAULIC DEPEND-O-LOK (RESTRAINED)
- ⑳ 30" MECHANICAL COUPLING, VICTAULIC DEPEND-O-LOK (RESTRAINED)
- ㉑ 30" FLG x MJ STL PIPE (2)
- ㉒ 18" FLG x MJ STL PIPE (2)
- ㉓ PIPE SUPPORT, SEE DETAIL 3, DWG D-2 (4)
- ㉔ 30" x 24" FLG CONCENTRIC STL REDUCER
- ㉕ 18" FLG 90° BEND
- ㉖ 24" x 24" x 18" FLG TEE
- ㉗ 24" SLIP ON FLANGE OVER EXISTING STL PIPE
- ㉘ 18" FLG STL PIPE

PLAN  
SCALE: 3/4"=1'-0"



Date: Mon, Mar 10, 2003  
 Drawing File: M:\S12222  
 User: pflaser  
 WCD Valve Vault - Modification\temp drawing\draw\FP01.dwg



REV	DATE	DESCRIPTION	APP

DESIGN BY: ADJ	ALAN D. JENSEN	132070-2202	26 FEB '03
DRAWN BY: PSF	PROJECT ENGINEER	RE NO.	DATE
CHECKED BY:			
DATE: 3/03/03	ALAN D. JENSEN	132070-2202	26 FEB '03
	PROJECT MANAGER	RE NO.	DATE

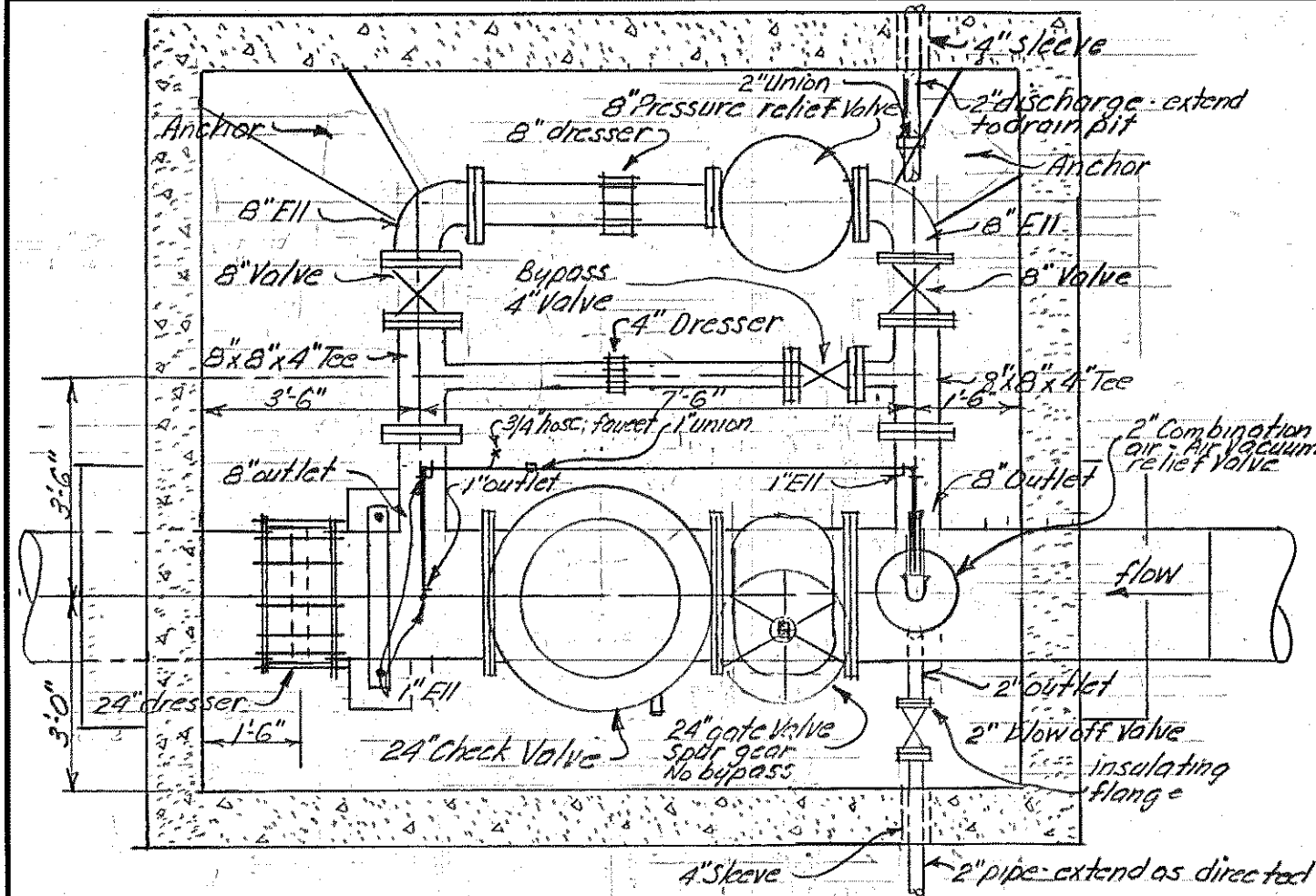
**BOYLE**  
ENGINEERS CORPORATION  
2028 East Fort Union Blvd  
Salt Lake City, Utah 84121  
801-942-2200

**JVWCD**  
Jordan Valley Water  
Conservancy District

**MODIFICATIONS TO FLOW CONTROL VAULTS**  
AT 6200 SOUTH 3200 WEST AND 1300 EAST 7800 SOUTH  
**PLAN AND SECTION**  
6200 SOUTH 3200 WEST FLOW CONTROL VAULT

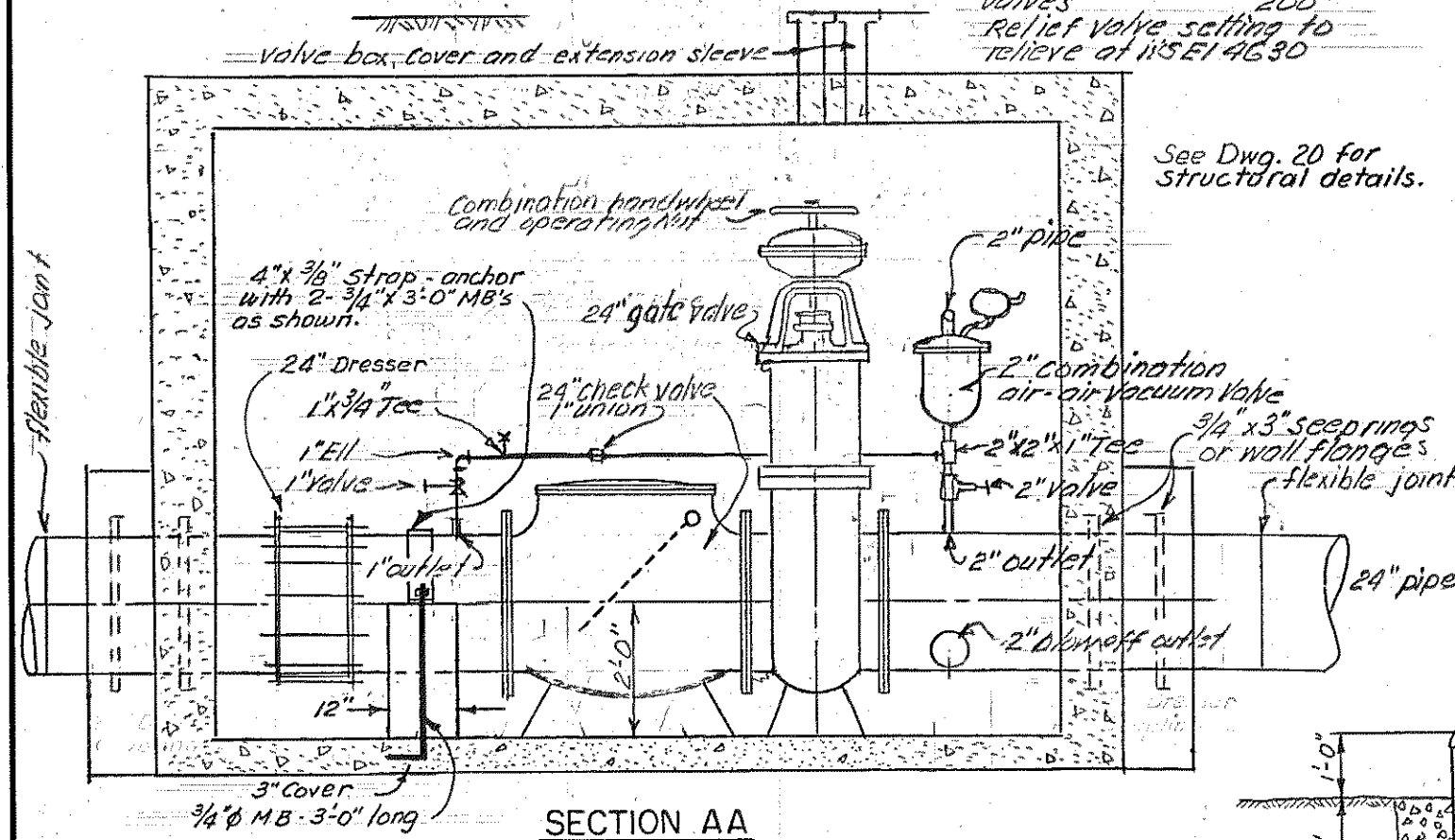
DRAWING NO. FP-1	SHEET 4
FILE NO. DN-S12-250-01	OF 21 SHEETS





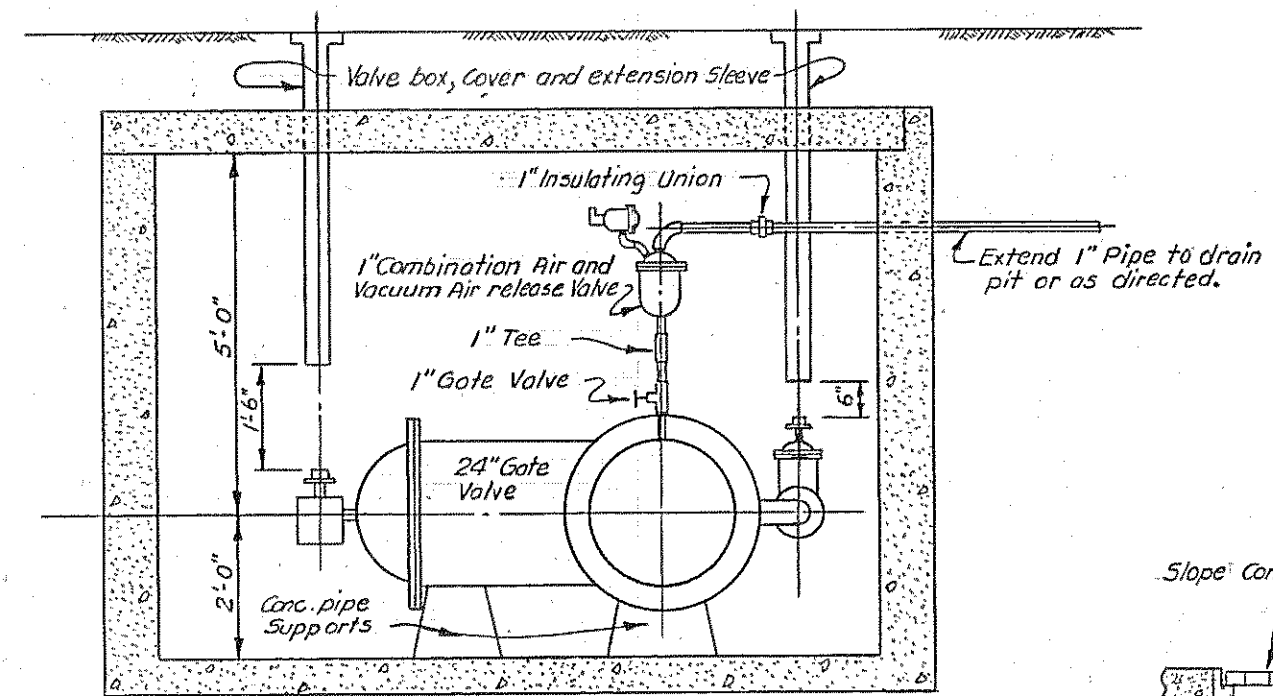
PLAN  
MAIN LINE VALVE AND CHECK VALVE STATION  
1200 WEST STREET

**1175 West 4460 South Vault**



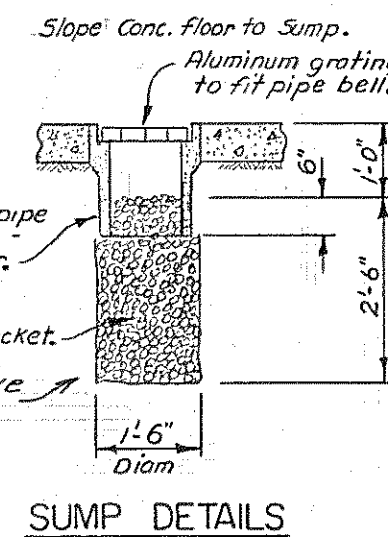
SECTION AA

SECTION BB  
MAIN LINE VALVE STATION  
3600 WEST STREET  
4800 WEST STREET

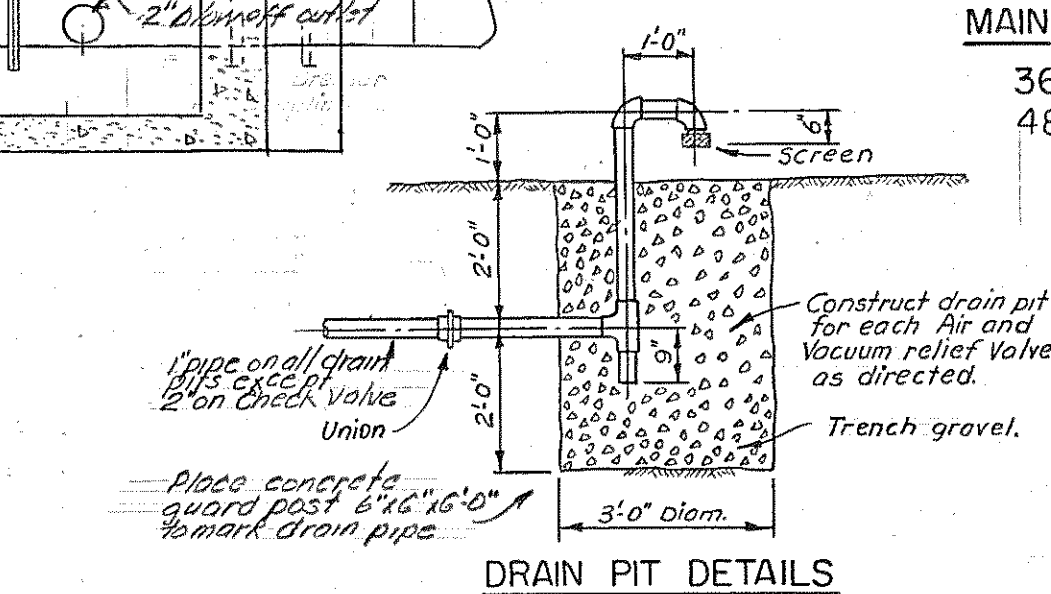


PLAN

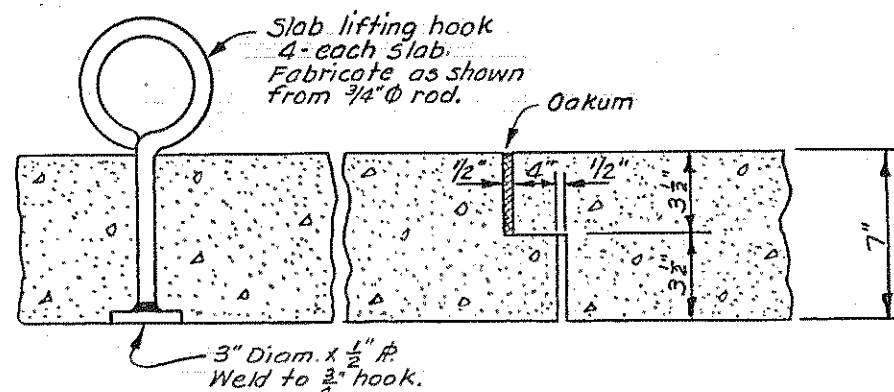
Pipe, valves and fittings to be 150# or 125#  
Plumbing inside box to be cast iron.



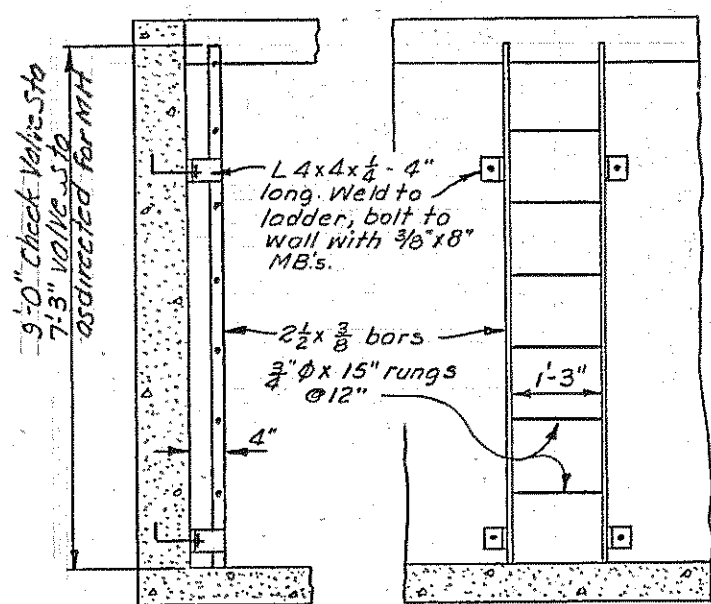
SUMP DETAILS



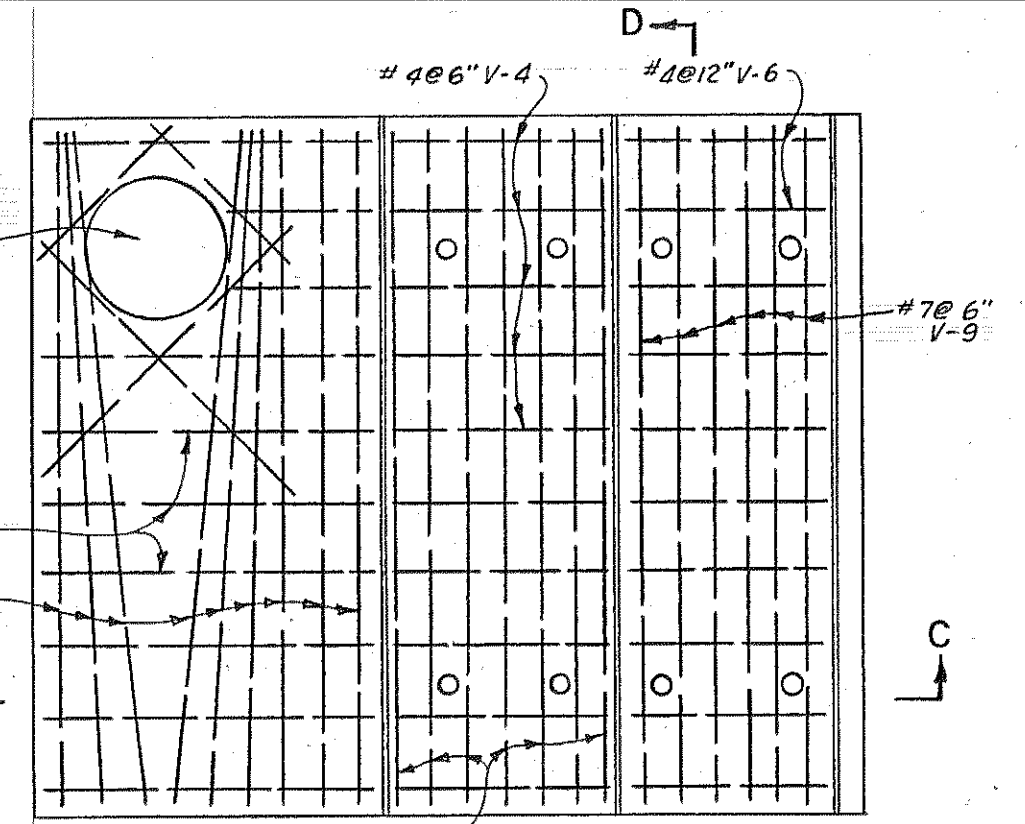
DRAIN PIT DETAILS



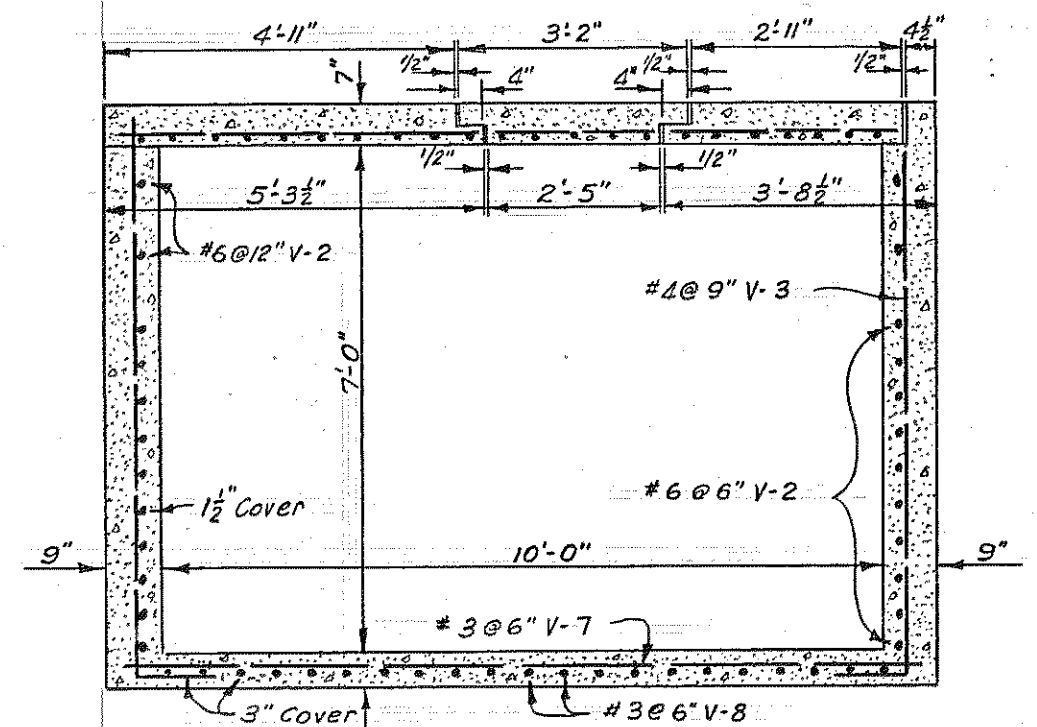
COVER JOINT AND LIFTING DETAIL



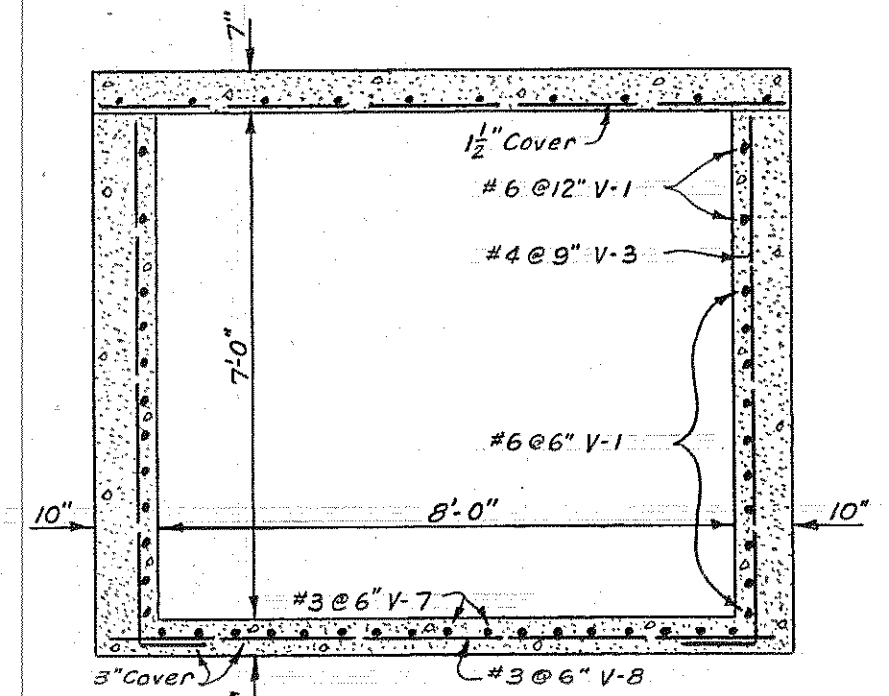
LADDER DETAIL



TOP PLAN



SECTION CC



SECTION DD

REINFORCING SCHEDULE\*

No.	Size	No Pcs.	Length	Total Length	Description
V-1	#6	24	13'-2"	316	1'-0" 11'-2" 1'-0"
V-2	#6	24	11'-4"	272	1'-0" 9'-4" 1'-0"
V-3	#4	52	8'-2"	425	7'-2" 1'-0"
V-4	#4	10	2'-3"	23	Straight
V-5	#4	10	5'-0"	50	Straight
V-6	#4	10	3'-0"	30	Straight
V-7	#3	17	11'-2"	190	Straight
V-8	#3	21	9'-4"	196	Straight
V-9	#7	22	9'-4"	206	Straight

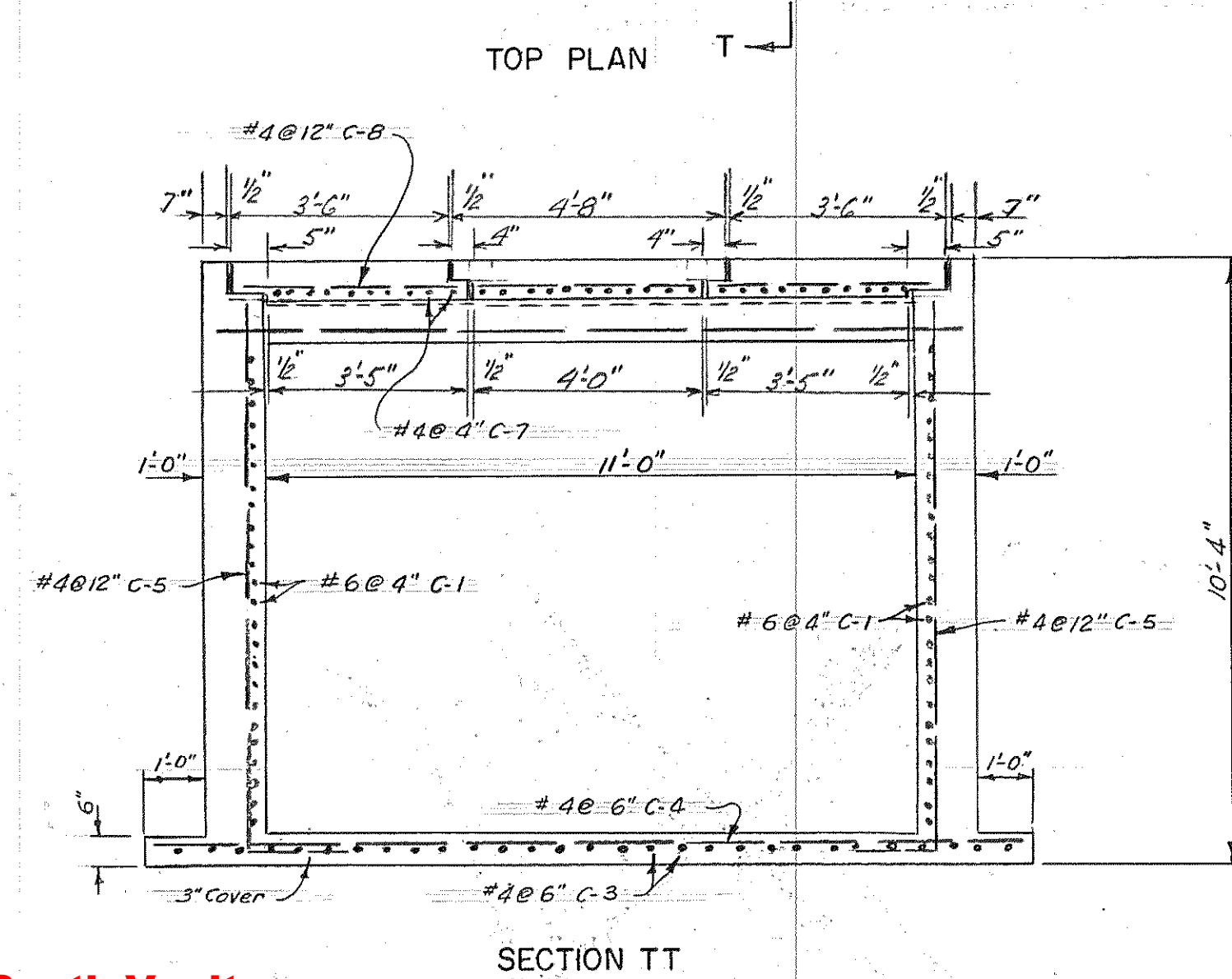
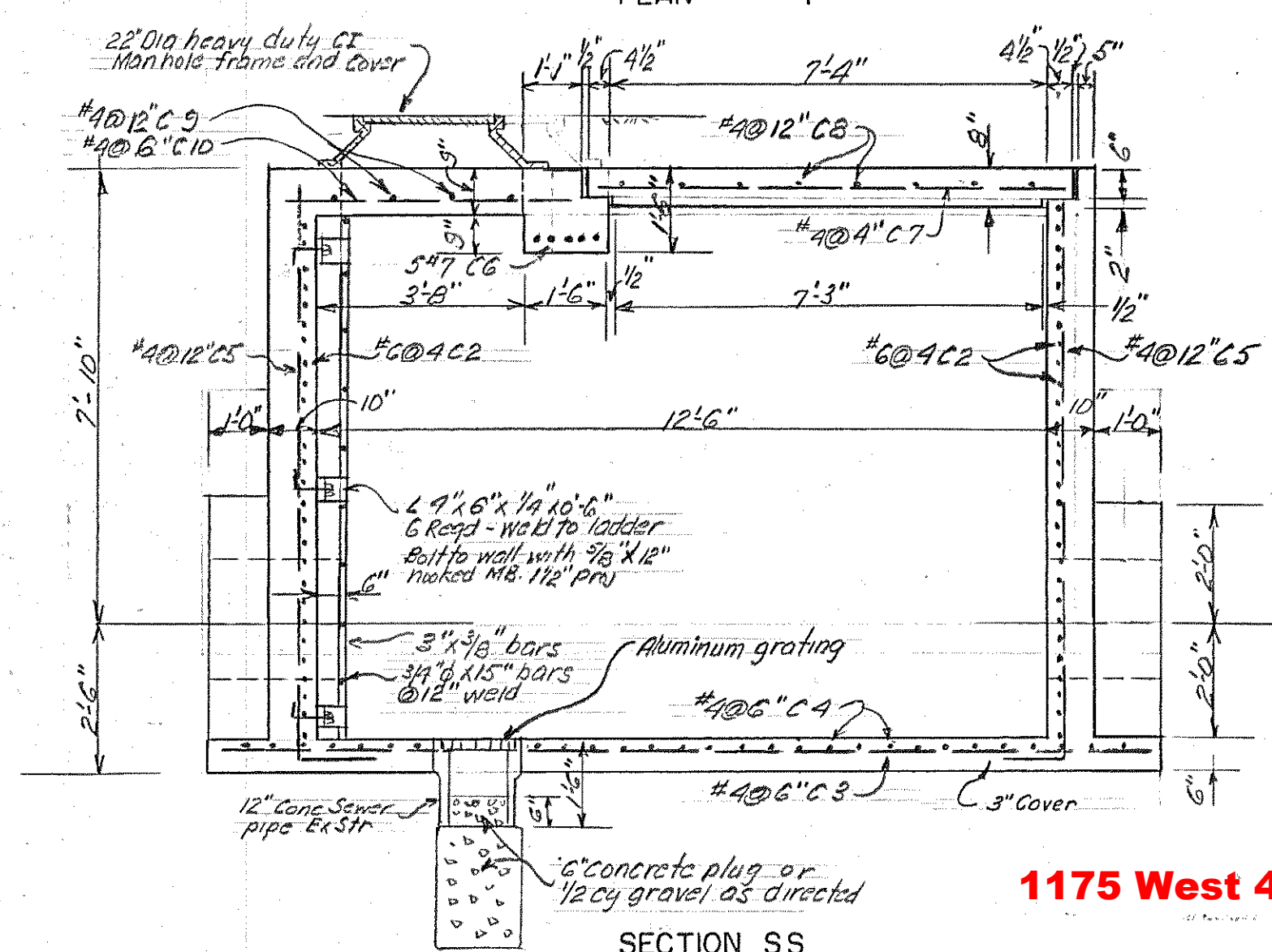
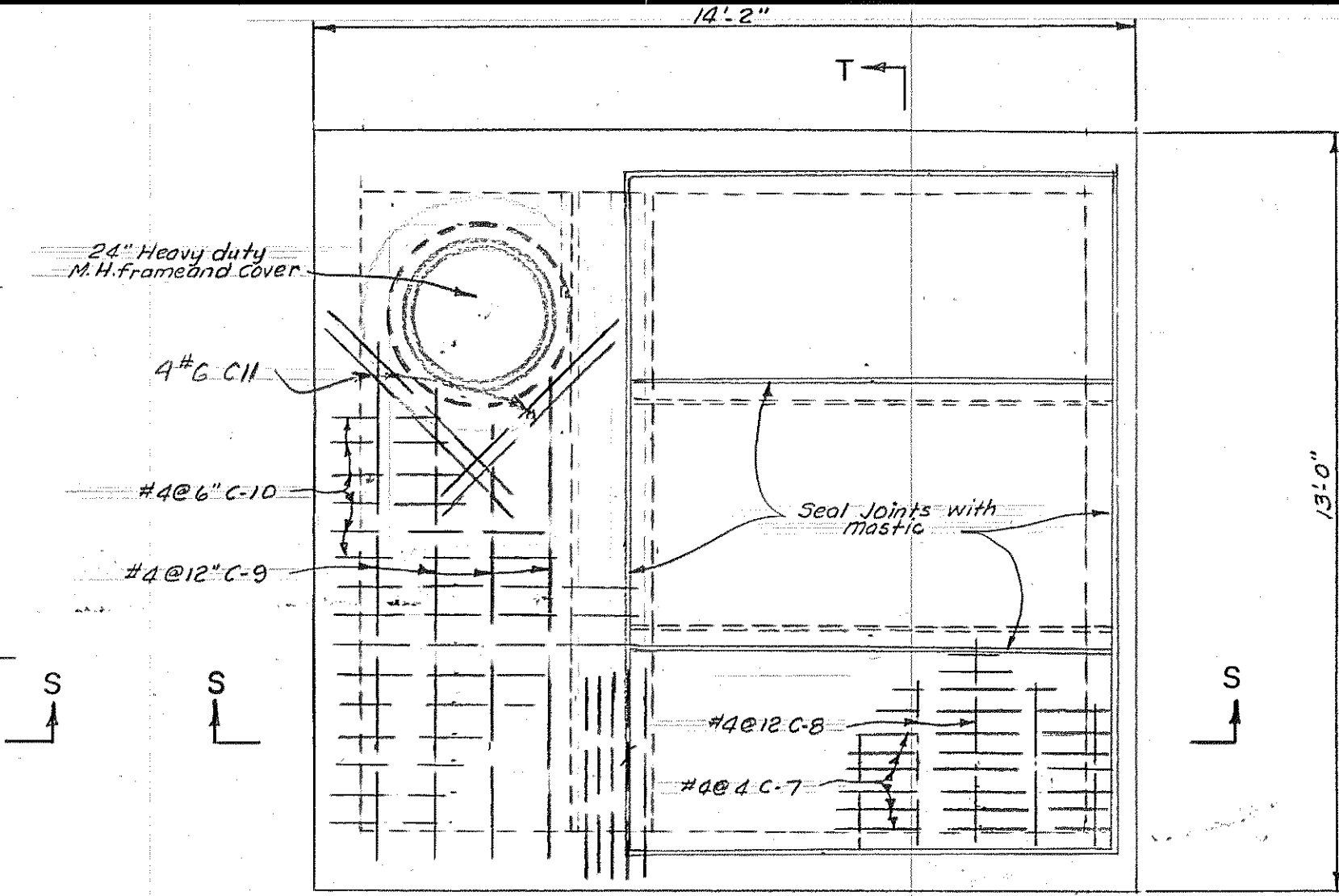
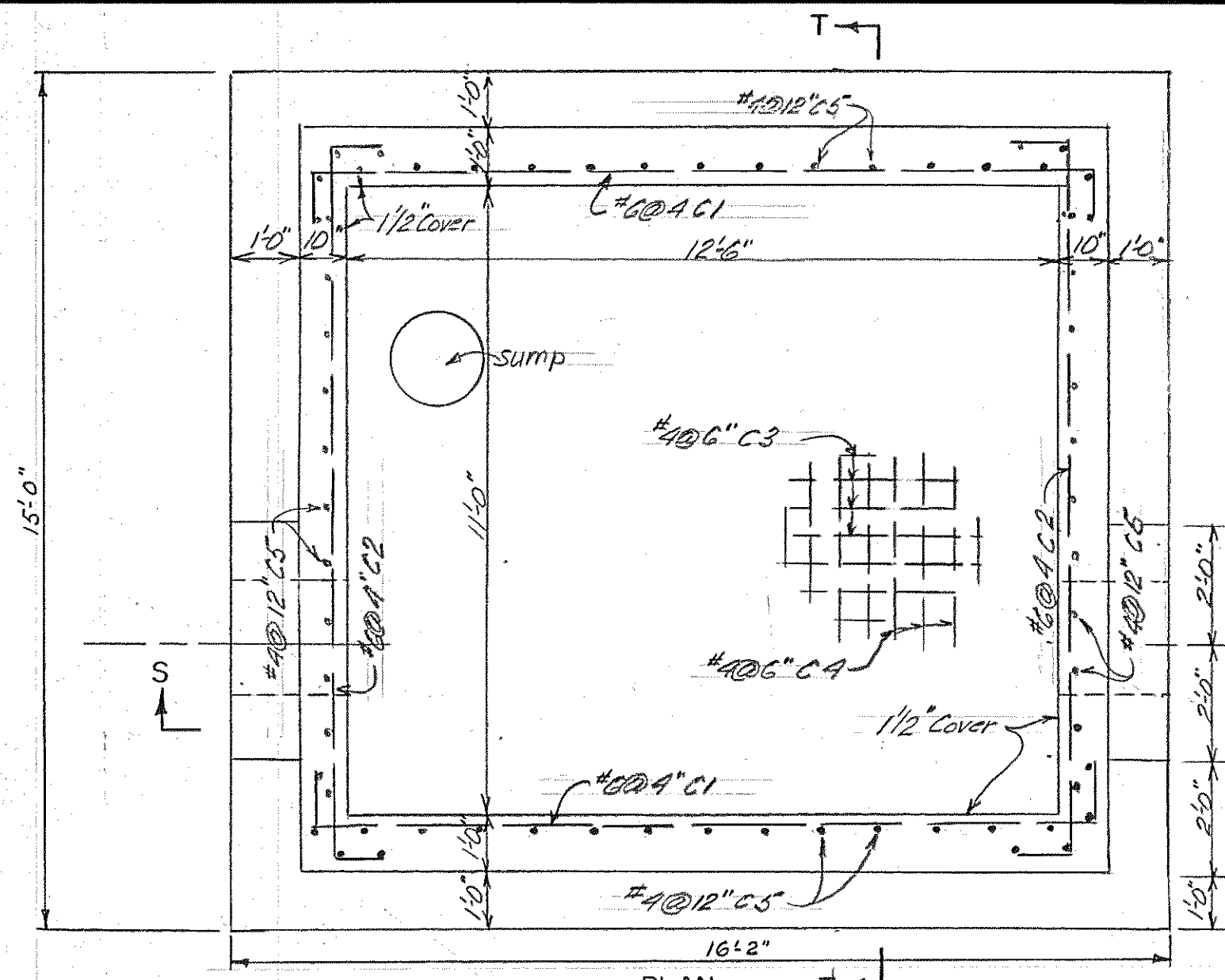
\* Reinforcing Schedule for one Valve Box only.

TEMPLETON AND LINKE - CONSULTING ENGINEERS  
500 DOOLY BUILDING, SALT LAKE CITY, UTAH

SALT LAKE COUNTY WATER CONSERVANCY DISTRICT  
WATERWORKS PROJECT  
MAIN LINE VALVE STATIONS  
BOX DETAILS

DRAWN R.E.	SCALE 3/8" = 1'-0"	DWG. NO. 19
CHECKED J.P.	DATE	FILE NO.
TRACED	OCT. 1958	35-263-19
TRACING CHECKED		
APPROVED		





**1175 West 4460 South Vault**

REINFORCING SCHEDULE

NO	SIZE	NO PCS	LENGTH	TOTAL LENGTH	DESCRIPTION
C-1	#6	54	15'-10"	855	1'-0" 13'-10" 1'-0"
C-2	#6	54	14'-8"	792	1'-0" 12'-8" 1'-0"
C-3	#4	29	15'-10"	459	Straight
C-4	#4	31	14'-8"	455	Straight
C-5	#4	64	10'-6"	672	9'-6" 1'-0"
C-6	#7	5	12'-8"	64	Straight

REINFORCING SCHEDULE

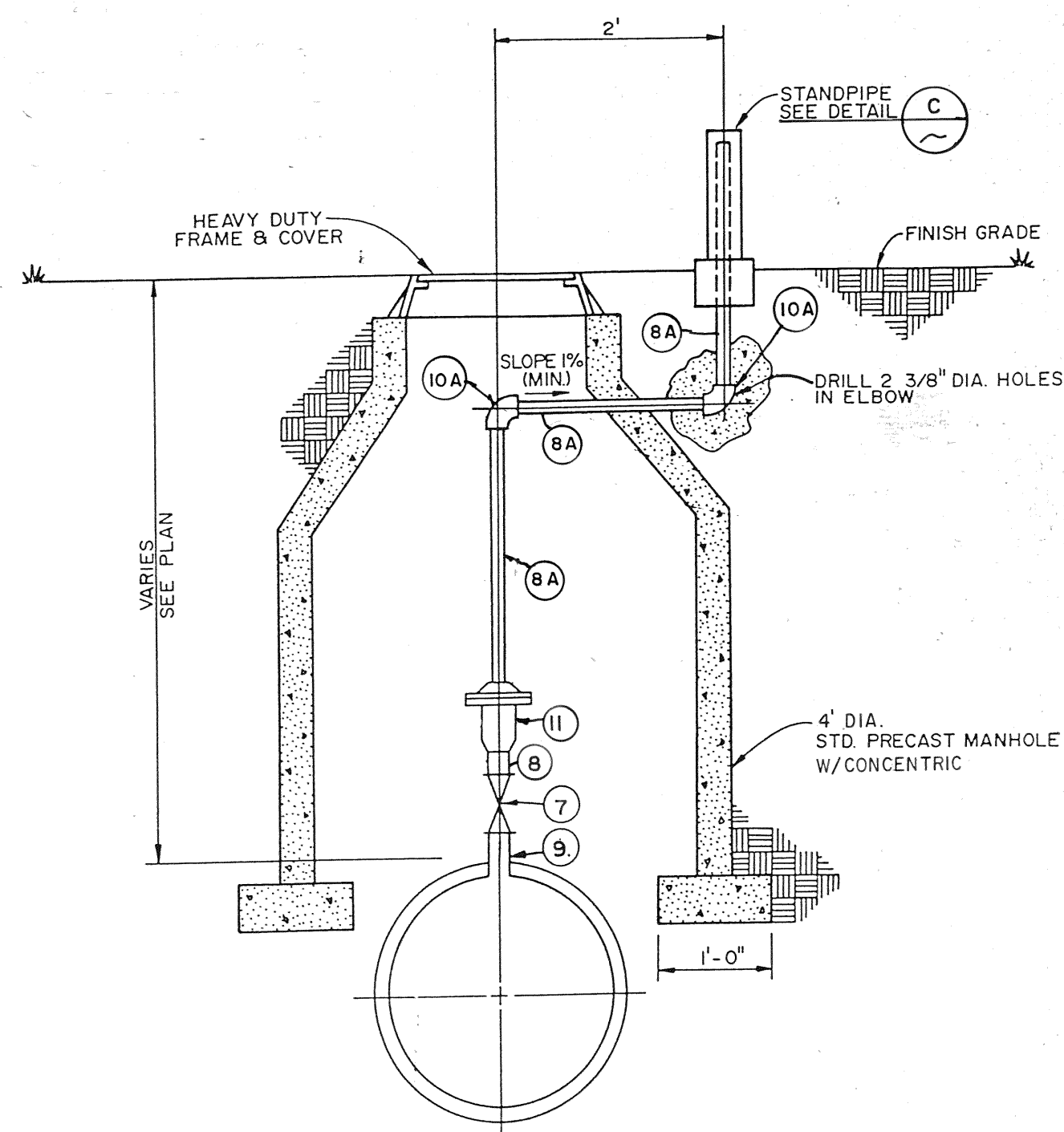
NO	SIZE	NO PCS	LENGTH	TOTAL LENGTH	DESCRIPTION
C-7	#4	31	7'-10"	243	Straight
C-8	#4	24	3'-9"	90	Straight
C-9	#4	4	12'-8"	51	Straight
C-10	#4	15	5'-0"	75	Straight
C-11	#6	4	5'-0"	20	Straight

TEMPLETON AND LINKE - CONSULTING ENGINEERS  
500 DOOLY BUILDING, SALT LAKE CITY, UTAH

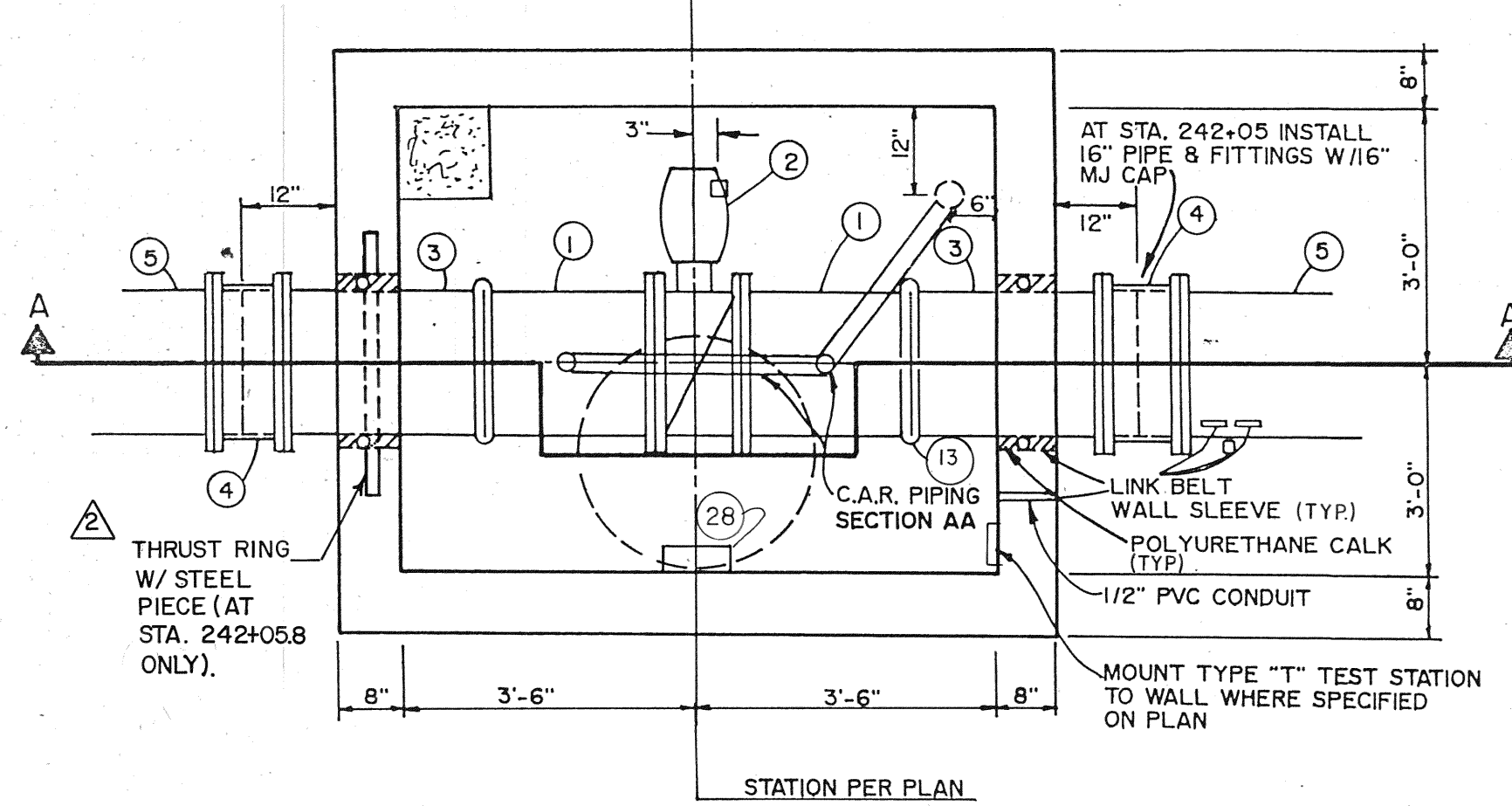
SALT LAKE COUNTY WATER CONSERVANCY DISTRICT  
WATERWORKS PROJECT  
MAIN LINE VALVE AND CHECK VALVE STATION  
BOX DETAILS

DRAWN H.A.L. Jr. R.E.	SCALE 3/8"=1'-0"	DWG. NO. 20
CHECKED <i>SLA</i>	DATE OCT. 1958	FILE NO. 35W-264-20
TRACED		
TRACING CHECKED		
APPROVED <i>[Signature]</i>		

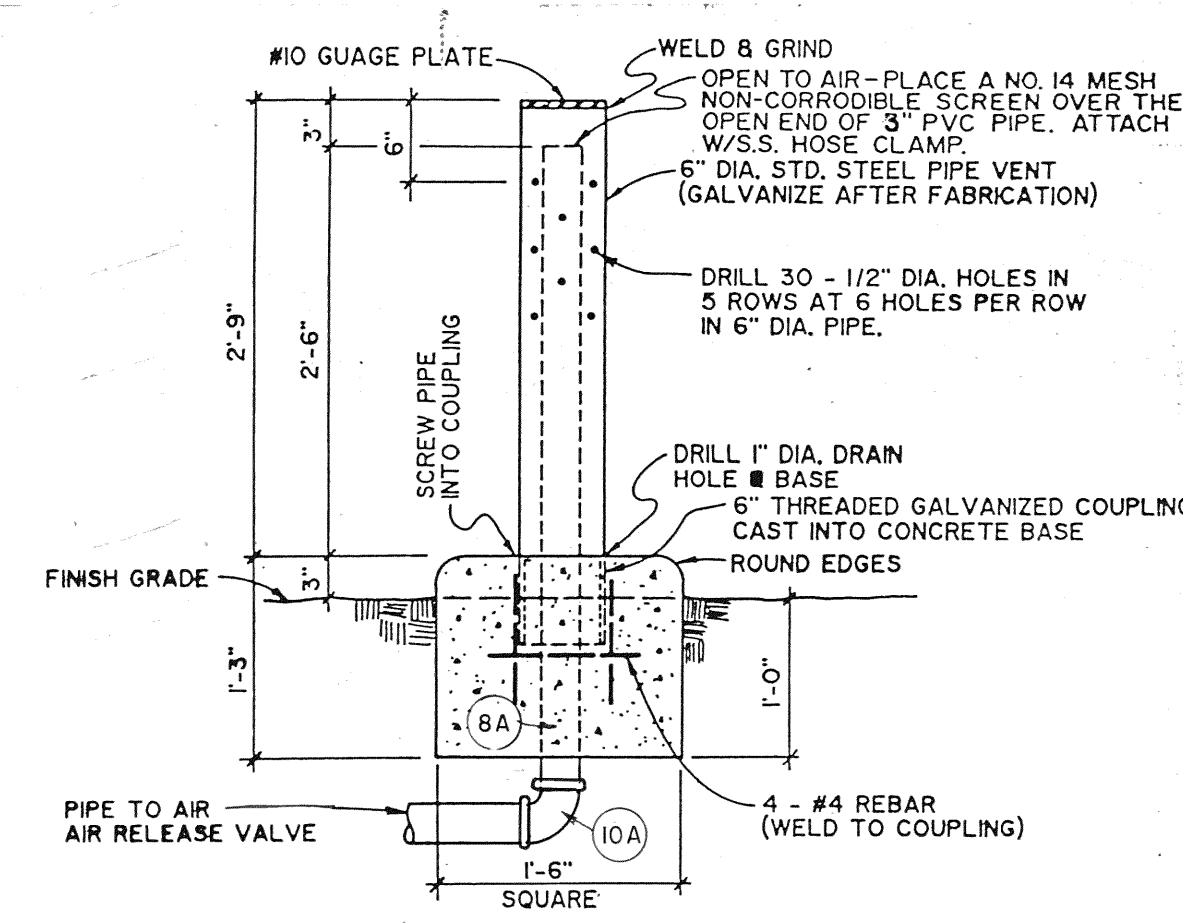




COMBINATION AIR RELIEF-(C.A.R.) VALVE (A)

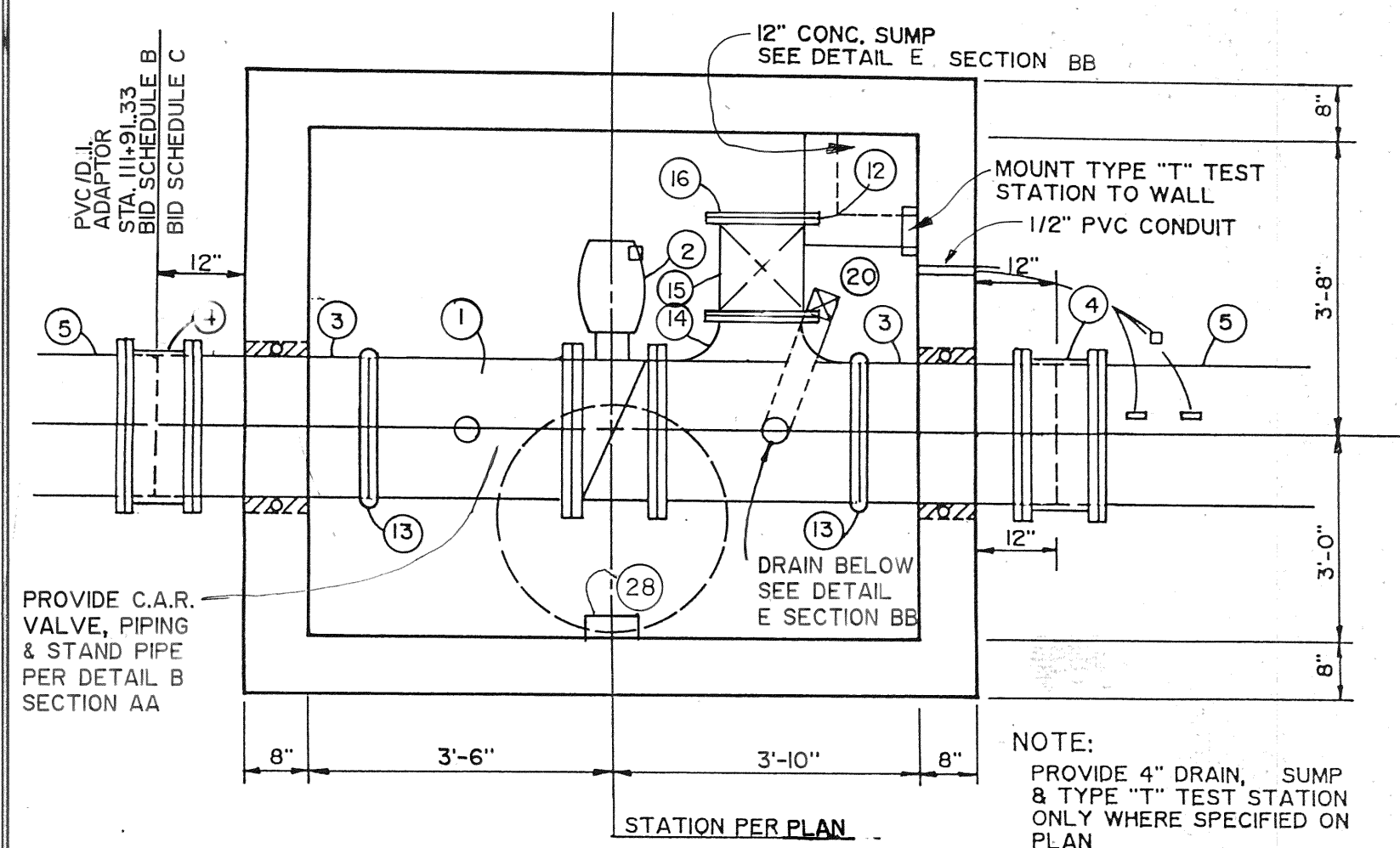


C.A.R. VALVE / ISOLATION VALVE (B) PLAN

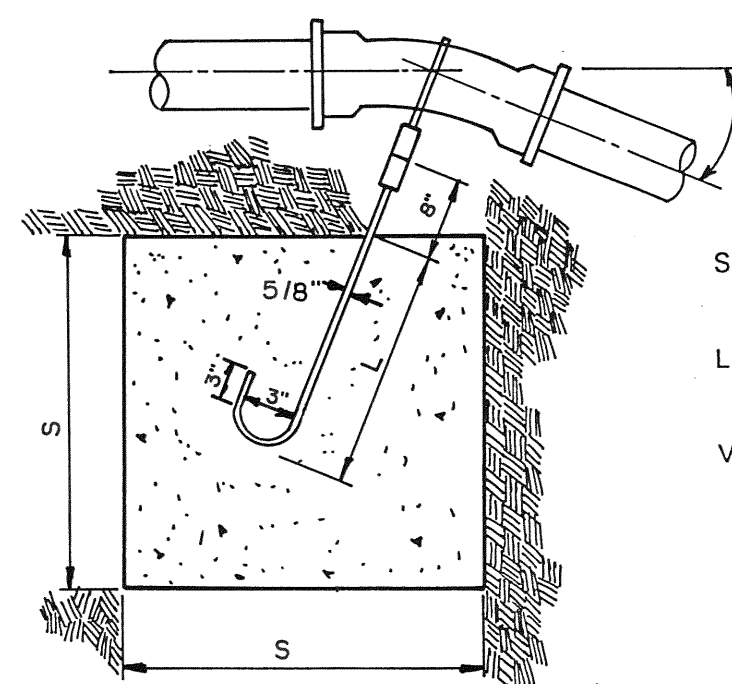


STANDPIPE DETAIL (C) N.T.S.

1. 20" PIPE SPOOL FLG. x G.E.
2. 20" BUTTERFLY VALVE WITH NUT OPERATOR FLG. x FLG.
3. 20" PIPE SPOOL G.E. x P.E.
4. 20" MJ SLEEVE
5. 20" D.I. OR PVC PIPE PER PLAN
6. 3" TEE SCH 80 PVC
7. 3" BALL VALVE G.E. - VICTAULIC STYLE 721 OR EQUAL
8. 3" PIPE G.E. - COMPATIBLE WITH VICTAULIC STYLE 77 CPLG.
9. 3" SCH 80 PVC PIPE
10. 3" PIPE G.E. x THRD. IN WELD-O-LET (STL PIPE) OR TAP (D.I. PIPE)
11. 3" 90° ELBOW G.E. - COMPATIBLE WITH VICTAULIC STYLE 77 CPLG.
- 10A. 3" 90° ELBOW SCH 80 PVC
12. COMBINATION AIR RELEASE VALVE - APCO 145C OR EQUAL
13. ADJUSTABLE STEEL PIPE SUPPORT
14. GROOVED END CPLG. VICTAULIC STYLE 77 OR EQUAL
15. 20 x 72 x 20 TEE FLG. x FLG. x G.E.
16. 12" GATE VALVE FLG. x FLG.
17. 12" BLIND FLANGE
18. 4" PIPE G.E. x THRD. IN WELD-O-LET (SR PIPE) ON TAP (D.I. PIPE)
19. 4" PIPE G.E. COMPATIBLE WITH VICTAULIC STYLE 77 CPLG.
20. 4" 90° ELBOW G.E. COMPATIBLE WITH VICTAULIC STYLE 77 CPLG.
21. 4" BALL VALVE G.E. VICTAULIC STYLE 721 OR EQUAL
22. 16" G.E. CPLG. VICTAULIC STYLE 77 OR EQUAL
23. 3" G.E. CPLG. VICTAULIC STYLE 77 OR EQUAL
24. 4" G.E. CPLG. VICTAULIC STYLE 77 OR EQUAL
25. 16" PIPE G.E. x P.E.
26. 16" MJ SLEEVE
27. 20" BLIND FLANGE
28. 20" MJ PLUG OR CAP
29. STEPS AT 12" O.C., M.A. INDUSTRIES INC., PSI-PF 3" x 3" x 3/4" OUTLET

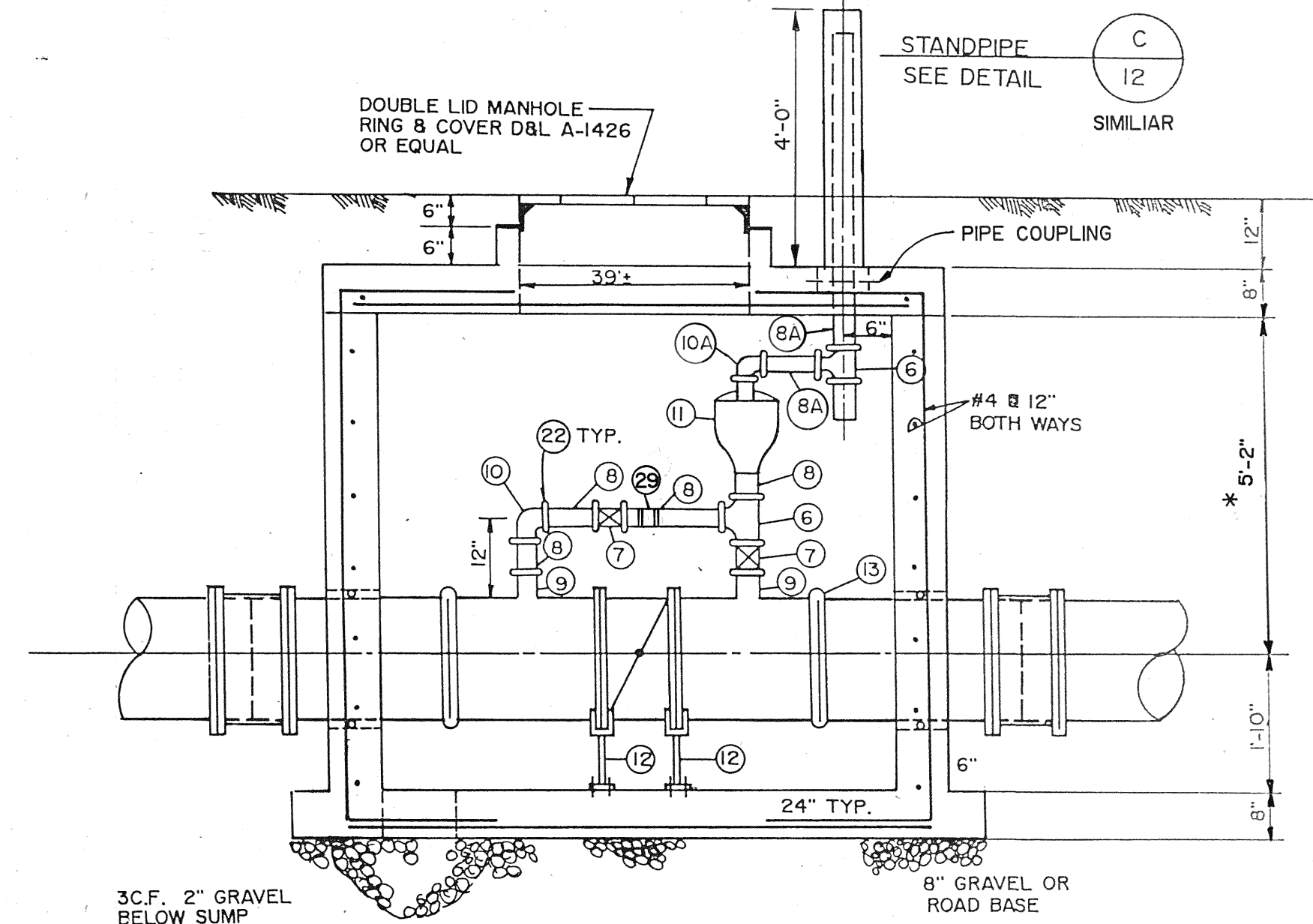


TURNOUT/ISOLATION VALVE/C.A.R. VALVE (D) REINFORCING SIMILAR TO (B)

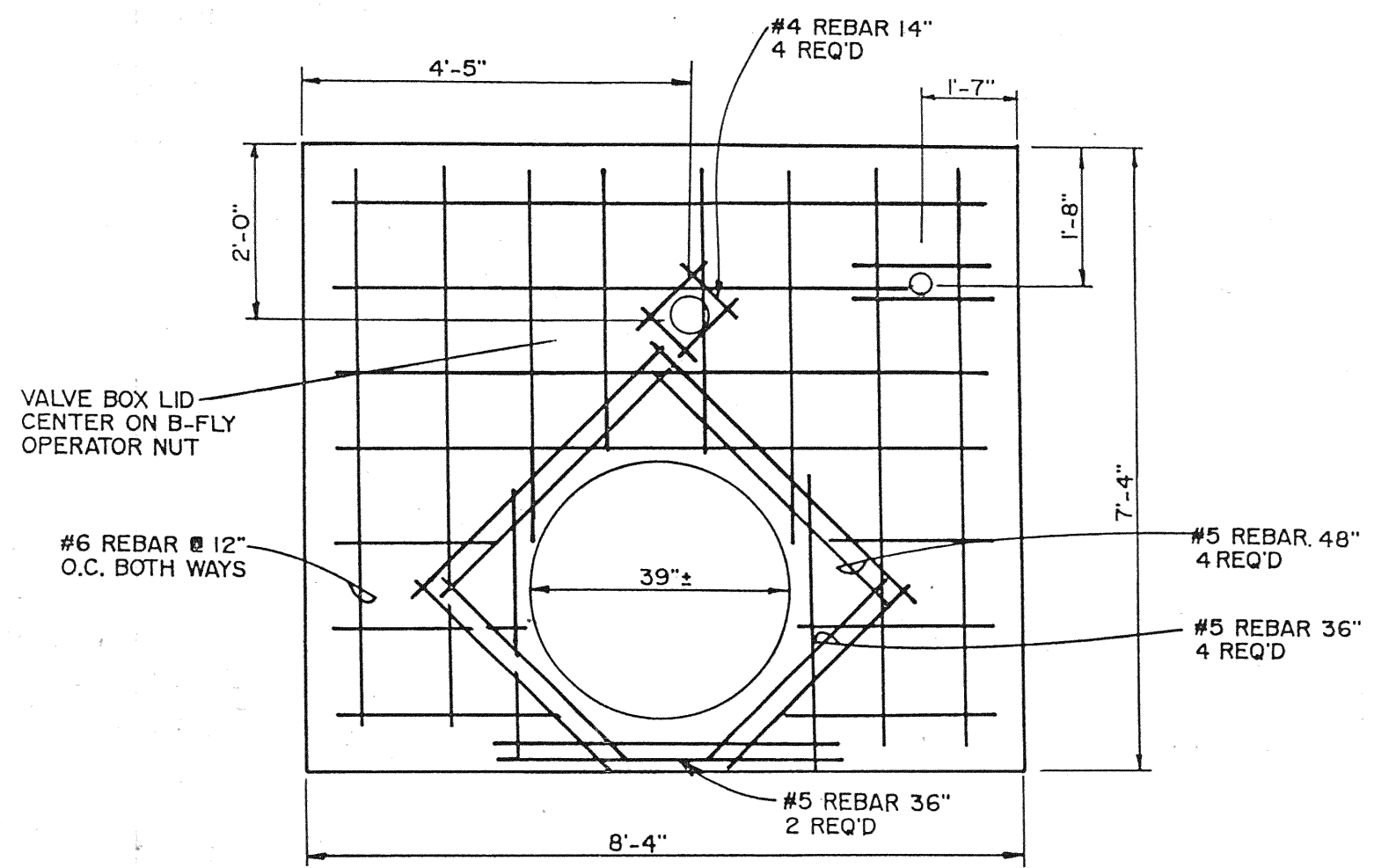


S = 4.25' - 11 1/4° ELBOWS  
 5.5' - 22 1/2° ELBOWS  
 L = 3' - 11 1/4° ELBOWS  
 4' - 22 1/2° ELBOWS  
 VOLUME OF CONCRETE = 82 CF - 11 1/4° ELBOWS  
 163 CF - 22 1/2° ELBOWS

TYPICAL UPTHRUST RESTRAINT

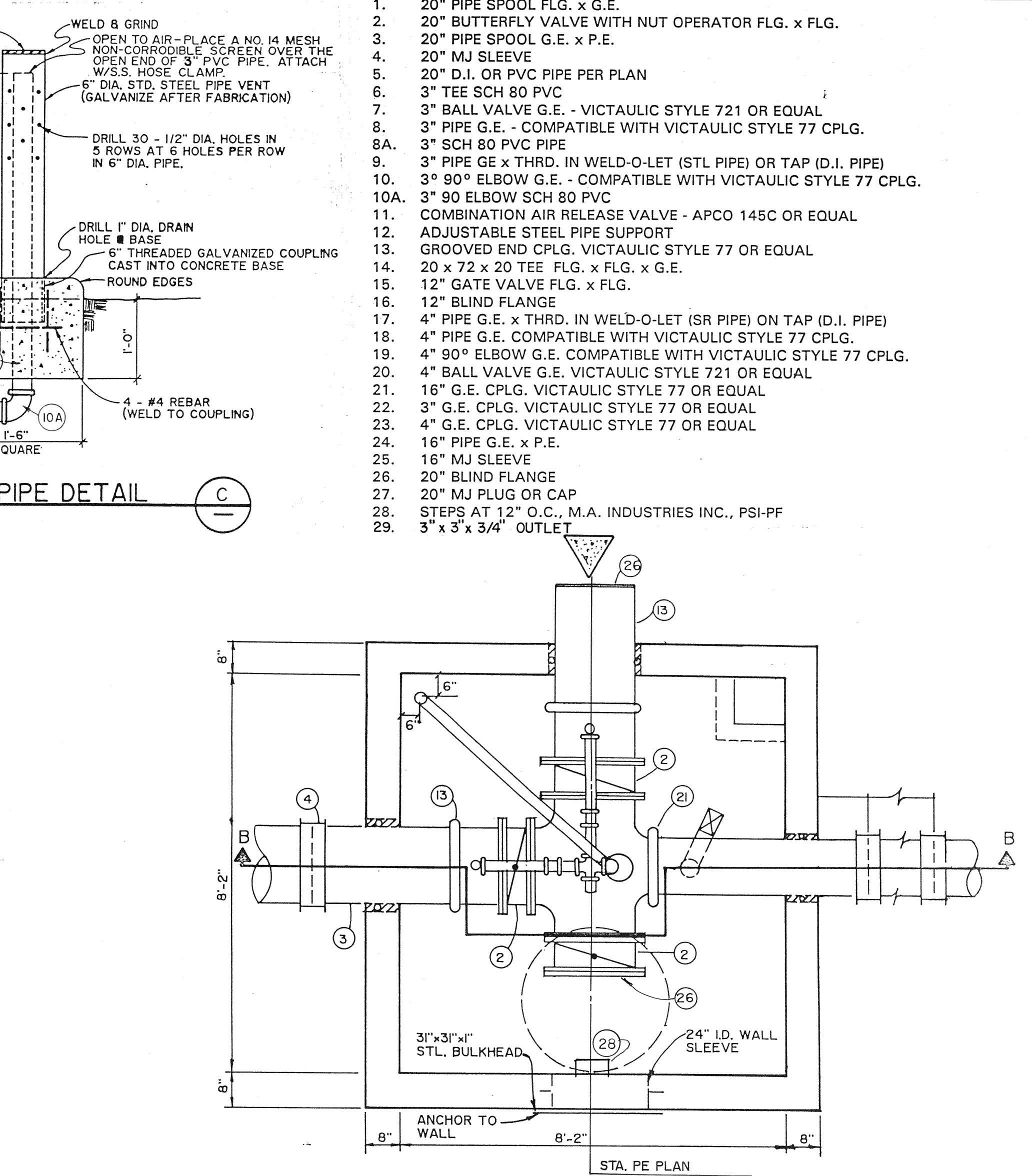


C.A.R. VALVE / ISOLATION VALVE (A) SECTION AA

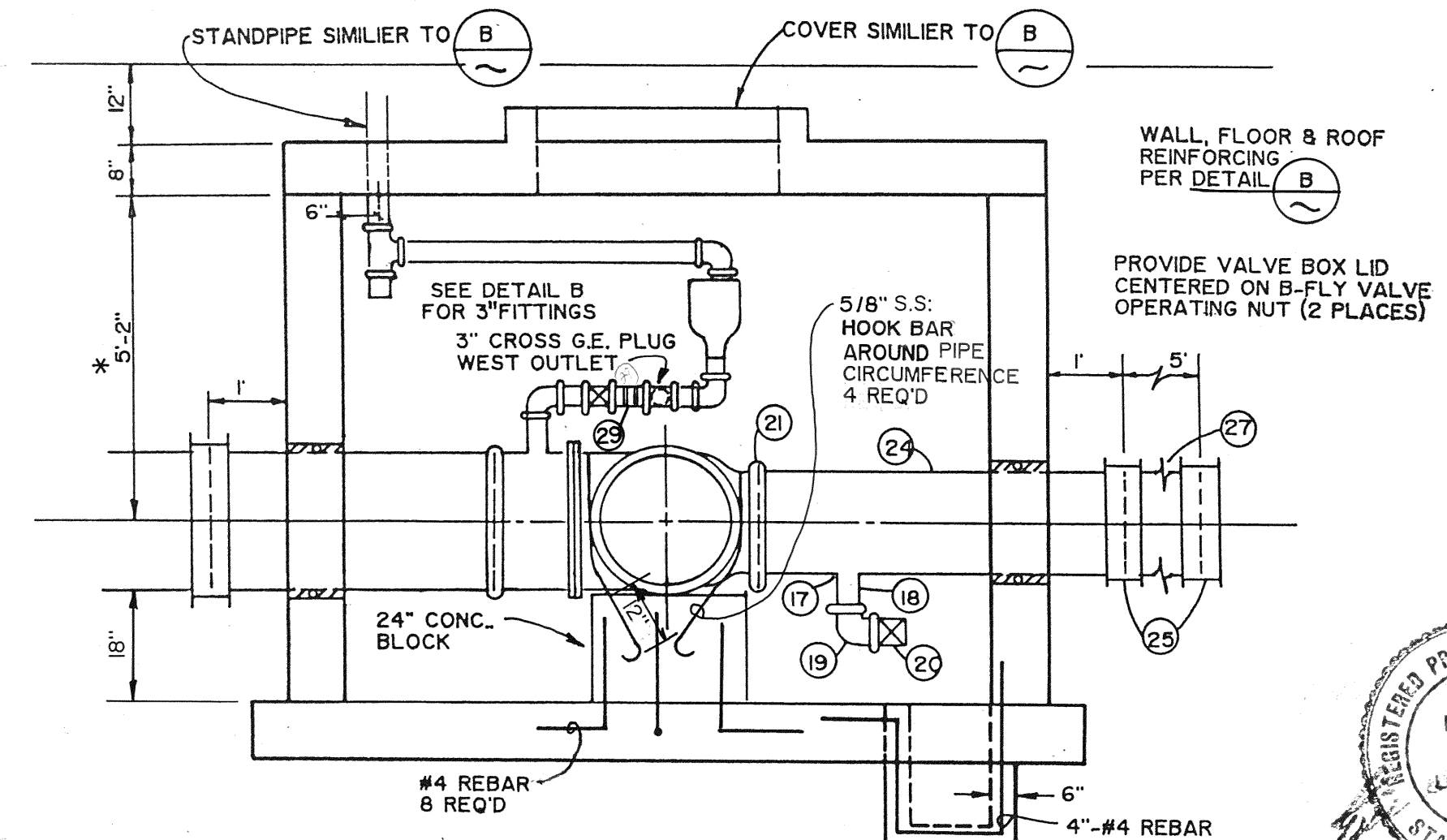


VAULT LID & OPENING REINFORCING

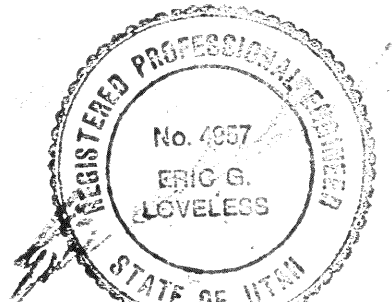
\* LOWER PIPE ADDITIONAL 1' BELOW DEPTH SHOWN ON PLAN AT EACH STRUCTURE, BEGINNING 100' BEFORE AND ENDING 100' AFTER MAX. DEFLECTION PER PIPE LENGTH TO BE NOT GREATER THAN 8"



20" TURNOUT DETAIL (E) 13400 S 5600 W Vault



SECTION BB (A) AS BUILT



REV	BY	DATE	DESCRIPTION
△	SLO	3-94	THRUST RING
△	SLO	1-17-94	3" x 3" x 3/4" OUTLET - SEE SECT. AA & BB

DESIGN	SCALE
△	ACCT. NO.
△	F.B. NO.
REV	DATE

**CRS**  
 CONSULTING ENGINEERS, INC.

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SALT LAKE COUNTY  
 WATER CONSERVANCY DISTRICT  
 8215 SOUTH 1300 WEST  
 WEST JORDAN, UTAH

5600 WEST PIPELINE  
 'DETAILS

SHEET 12  
 DRWG. NO. 8255  
 PROJECT NO. 92CI026