

DOCUMENT 00 91 13

Addendum Number Two

DATE: March 17, 2023

PROJECT: ITD D5 Maintenance Building Addition and
Renovation and New Brine Facility
Blackfoot, Idaho

PROJECT NO.: 22569

OWNER: Idaho Transportation Department
11331 West Chinden Boulevard, Building 8
Boise, Idaho 83714

CONSTRUCTION
MANAGER: Bateman Hall, Inc.
1405 Foote Drive
Idaho Falls, Idaho 83402

ARCHITECT: Myers Anderson Architects, PLLC
122 South Main Street, Suite 1
Pocatello, Idaho 83204

TO: Prospective Bidders

This Addendum forms a part of the Contract Documents and modifies the Bidding Documents dated February 2023.

Acknowledge receipt of this Addendum in the space provided in the Bid Form. Failure to do so may disqualify the Bidder.

This Addendum consists of four (4) pages plus attachments. **Total sixty-seven (67) pages.**

Reminders and Clarifications

1. The Bid Date is Tuesday, March 21, 2023.
2. The Bid Submission Deadlines (and immediate openings) will be staggered as noted in specification section 00 00 30 – Advertisement for Bids.
3. Review the specification requirements for labeling sealed bids envelopes as described in specification section 00 00 30 – Advertisement for Bids.
4. As a clarification to how the bids can be received, per specification Section 00 00 30 – Advertisement for Bids, sealed bids
 - a. MAY be hand delivered or mailed to the location in the specification; and
 - b. MAY NOT be faxed or emailed.
5. This project is not financed in whole or in part by federal funds, Davis-Bacon wages do not apply.
6. Fire Alarm work (BP19) will only be applicable if Alternate #1 is accepted.

7. Note that all work associated with new fire rated W6C wall (demising wall extension) between Bays B & C (see sheet A102) is to be included as part of the base bid, but CREDITED as part of Alternate #1. Similarly, new doors/frames and sawcutting for such shall be part of the base bid, and that work shall be a CREDIT in Alternate #1.

Specifications

1. Replace Table of Contents in the specification with attached Table of Contents.
2. Replace Section 00 00 31 – Bid Package Index with attached Section 00 00 31 – Bid Package Index. Revisions are as follows.
 - a. Revised footer to reflect addendum revision.
 - b. BP-02: Added “Windows” to scope.
 - c. BP-03: Added DIVISION 31 - EARTHWORK to scope.
 - d. BP-07: Added “Demolition of existing roofing framing members (fascia, soffit, sheathing, etc.) as necessary for tie-in of new roofing framing as per notes on 1/A104” to scope.
 - e. BP-07: Added “(including note 2 on A400)” to window prep line to bring attention to it.
 - f. BP-17: Added DIVISION 31- EARTHWORK to scope.
 - g. BP-18: Added DIVISION 31- EARTHWORK to scope.
 - h. BP-19: Added DIVISION 31- EARTHWORK to scope.
 - i. BP-19: Added “(Alternate #1)” to clarify Division 28 applicability.
 - j. BP-19: Added “Power & Lighting associated with PEMB (Alternate #3)” to scope.
3. Replace Section 00 03 00 – Contractor Bid Form with attached Section 00 03 00 – Contractor Bid Form. Revisions are as follows.
 - a. Revised footer to reflect addendum revision.
 - b. Removed “Domestic Procurement Preferences” requirements paragraph.
4. Specification section 08 13 14 Standard Steel Doors, Part 2, Subsection 2.2 Components, Paragraph D. Minimum R value for hollow metal doors shall be 2.4.
5. Replace Section 10 14 00 Signage with the attached specification Section 10 14 00 Signage.
6. Specification Section 13 34 19 Metal Building Systems: SSPC Paint 15 is acceptable on building main frame components.
7. Replace Section 22 01 00 – Plumbing with attached Section 22 01 00 – Plumbing. Revisions are as follows.
 - a. Part 2, Subsection 2.2 Piping and Fittings, Paragraph H: Updated specification for the brine system runout piping.
 - b. Part 2, Subsection 2.2 Piping and Fittings, Paragraph I: Added specification for the brine system main piping. Piping shall be CPVC.
8. Add attached Section 31 10 00 – Site Clearing in its entirety to the specification.
9. Add attached Section 31 20 00 – Earthwork in its entirety to the specification.
10. Add attached Section 31 20 15 – Trenching and Backfill in its entirety to the specification.

Substitutions

1. Section 08 71 00 Door Hardware: Part 2, Subsection 2.1 Door Hardware, Paragraph B.
 - a. Stanley is an approved manufacturer.
 - b. Yale is an approved manufacturer.
2. Section 07 41 13.13 Formed Metal Roof Panels:
 - a. Behlen ADP-1 is an approved metal roof panel.
3. Section 13 34 19 Metal Building Systems: Behlen ADP-1 is an approved metal roof panel.

Architectural Drawings

1. Replace Sheet SP100 – Architectural Site Plan with attached Sheet SP100 – Architectural Site Plan. Revisions are as follows.
 - a. Provided detail for and clarification for 4” water meter requested by the City of Blackfoot.
 - b. Provided clarification on fire suppression main.
 - c. Provided information and clarification on 2” water line to Brine Production Facility.
2. Sheet D100 – Demolition Plan: Add Alt#1. Fire suppression main to tie to existing 4” water line on west side of building, coordinate with revised sheet SP100.
3. Replace Sheet A104 – Maint. Bldg. Roof Plan and Roof Details with attached Sheet A104 – Maint. Bldg. Roof Plan and Roof Details. Revisions are as follows.
 - a. Revised details 1, 2, and 3 on drawing sheet
 - b. Provided notes on plan for clarification of single-ply membrane and ballast removal.
4. Add Sheet A104.1 – Typical Roof Details.
 - a. Provided typical roof details.
5. Sheet A400 – Door & Window Schedules, Elevations, and Notes.
 - a. On doors 114A and 114B add closer “C1” to each door.
 - b. Door BO2A change lock type from “L6” to “L3”.

Plumbing Clarifications

1. CPVC pipe will be used for salt brine system mains as indicated on the updated plans.
2. Flexible EPDM hose will be used for brine tank and pump connections.
3. Kanaflex 390SD is an acceptable manufacturer/model of EPDM hose.

Plumbing Drawings

1. Replace Sheet PD100 – Plumbing Demolition Plan with attached Sheet PD100 – Plumbing Demolition Plan. Revisions are as follows.
 - a. Updated Keynote 10: “REMOVE NPCW LINE AND BACKFLOW DEVICE BACK TO MAIN. CAP AT MAIN.”
2. Replace Sheet P100 – Plumbing New Work Plan – Waste And Vent with attached Sheet P100 – Plumbing New Work Plan – Waste And Vent. Revisions are as follows.
 - a. Added floor sink & trap primer in Bay F (FS-2 & TP-1).
 - b. Added 4” waste and 2” vent connections.
 - c. Updated Keynote #6: “NOT USED”.
 - d. Added Keynote #9.
 - e. Updated sheet title.
3. Replace Sheet P101 – Plumbing New Work Plan with attached Sheet P101 – Plumbing New Work Plan – Water and Gas. Revisions are as follows.
 - a. Added new 3” non-potable cold-water line and reduced pressure backflow preventer (RPBP-1) to Bay F.
 - b. Revised routing of 1” non-potable cold-water line from this new 3” non-potable water connection after the backflow device.
 - c. Added Keynotes 8, 9, 10, & 11.
 - d. Removed
 - e. Updated sheet title.
4. Replace Sheet P102 – Brine Plumbing New Work Plan with attached Sheet P102 – Brine Plumbing New Work Plan. Revisions are as follows.
 - a. Removed 4” waste, floor sink (FS-2), trap primer (TP-1), vent, and grade cleanout (GCO).

- b. Upsize the non-potable cold water service line from 2" to 3".
 - c. Removed/relocated the reduced pressure backflow preventer to the main building.
 - d. Updated Keyed Note #2: ROUTE 3" NPCW UP FROM BELOW GRADE.
 - e. Updated Keynote #3: "PROVIDE TRANSITION AND REDUCER FROM 3" CPVC PIPE TO REINFORCED EPDM HOSE AT TRANSFER STATION PUMP (BASIS OF DESIGN: KANAFLEX 390SD).
 - f. Updated Keynote #5: "NOT USED".
 - g. Updated Keynote #6: "NOT USED".
 - h. Updated Keynote #8: "ROUTE AND SUPPORT 3" CPVC PIPE PER DETAIL #3 ON SHEET P201.
 - i. Updated Keynote #12: "NOT USED".
5. Replace Sheet P201 – Plumbing Details and Schedules with attached Sheet P201 – Plumbing Details. Revisions are as follows.
- a. Relocated schedules to Sheet P300.
 - b. Added Detail #3: Exterior Pipe Support Detail.
 - i. This detail applies to all PVC mains on brine system.
 - c. Updated sheet title.
6. Add Sheet P300 – Plumbing Schedules.
- a. Relocated schedules to this sheet.

Attachments

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Section 22 01 00 - Plumbing

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Sheet SP100 - Architectural Site Plan

Sheet A104 - Maint. Bldg. Roof Plan and Details

Sheet A104.1 - Typical Roof Details

Sheet PD100 - Plumbing Demolition Plan

Sheet P100 - Plumbing New Work Plan - Waste and Vent

Sheet P101 - Plumbing New Work Plan - Water and Gas

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BP-01 Not Used

BP-02 Demolition (FM52322)

Contract Documents including all drawings and the following specifications:

- Division 00 – Procurement and Contracting Requirements
- Division 01 – General Requirements
- Division 02 – Existing Conditions
- Division 29 – Appendices

Work to Include, but not limited to the supply and installation of:

Removal of the following items as identified on the drawings:

- Windows
- Interior wall (including Gypsum)
- CMU Walls
- Concrete (footings, walls and aprons)
- Asphalt, as necessary for new construction
- Bond Beam
- Concrete Slab demo for new fire riser location

Cut opening for new access hatch;

Shoring & Bracing as necessary to maintain integrity of existing structure during new construction (including design calculations);

Demo at mezzanine for temporary shoring;

Filing of Notification of Demolition and Renovation with State of Idaho;

Clean-up and Waste Disposal of own work.

BP-03 Concrete (FM52323)

Contract Documents including all drawings and the following specifications:

- Division 00 – Procurement and Contracting Requirements
- Division 01 – General Requirements
- Division 02 – Existing Conditions (as applicable to this scope package)
- Division 03 – Concrete
- 07 90 00 – Joint Protection (as applicable to this scope package)
- Division 29 – Appendices
- Division 31 – Earthwork

Work to Include, but not limited to the supply and installation of:

- All concrete associated with both buildings (interior & exterior) and the containment structure;
- Excavation and backfill, including structural fill and compaction as necessary;
- Aggregate base course for slabs and Associated Site Concrete;
- Concrete pumping (as required);
- Exposed concrete sack finishes (as required);
- Finish grading away from buildings and structure;
- Placement of structural steel embeds;
- Grout column base plates (including at the tank structure);
- Clean-Up and Waste Disposal of Own Work;
- Coordinate with plumber on installation of plumber's trench drains;
- Supply and installation of:

- Bollards
- Reinforcement
- Anchor bolts
- Rigid Insulation at foundation walls and slab
- Expansion materials
- Concrete sealants
- Concrete sealer (including power wash and prep prior to)
- Weather protection, if needed
- Concrete washout for SWPPP
- Floor slab pour-back at new fire riser

BP-04 Masonry (FM52324)

Contract Documents including all drawings and the following specifications:

- Division 00 – Procurement and Contracting Requirements
- Division 01 – General Requirements
- Division 04 – Masonry
- 07 90 00 – Joint Protection (as applicable to this scope package)
- Division 29 – Appendices

Work to Include, but not limited to the supply and installation of:

- CMU Walls;
- Layout and Placement of embeds;
- Drill and epoxy masonry rebar in concrete;
- Installation of hollow metal frames in masonry walls (coordinate with supplier);
- Shoring and bracing (as required);
- Cell Fill;
- Protection of Masonry;
- Protection of adjacent work during construction;
- Point, Patch and Cleaning of all Masonry;
- Dust Control;
- Concrete washouts for own work;
- SWPPP Maintenance and repairs for Own Work;
- Clean-Up and Waste Disposal of Own Work;
- Supply and Installation of:
 - Reinforcement
 - Lintels
 - Weather protection, if needed

BP-05 Structural/Misc. Steel (FM52325)

Contract Documents including all drawings and the following specifications:

- Division 00 – Procurement and Contracting Requirements
- Division 01 – General Requirements
- 05 12 00 – Structural Steel Framing
- 05 50 00 – Metal Fabrications
- Division 29 – Appendices

Work to Include, but not limited to the supply and installation of:

- Structural Steel;
- Anchor Bolts and Anchor bolt templates;
- Gas Meter Cover;
- All Steel Embeds;
- All Misc. Steel except for masonry lintels (masonry lintels will be supplied by BP-04 Masonry);
- Includes steel for door jambs and overhead doors;
- Connection Clips and Plates;
- Field Verify Dimensions;
- Equipment Required to Perform Work (including crane if needed);
- Chipping and Touch Up Painting of own welds;
- All Bearing Pads, Shim Packs, and Bolts;
- Clean-up and Waste Disposal of own work;
- Protection of own work.

BP-06 Metal Canopy (FM52326)

Contract Documents including all drawings and the following specifications:

- Division 00 – Procurement and Contracting Requirements
- Division 01 – General Requirements
- Division 13 – Special Construction
- 05 12 00 – Structural Steel Framing (as applicable to this scope package)
- 05 50 00 – Metal Fabrications (as applicable to this scope package)
- 07 90 00 – Joint Protection (as applicable to this scope package)
- Division 29 – Appendices

Work to Include, but not limited to the supply and installation of:

- Metal canopy structure;
- Engineered Drawings;
- Anchor bolts;
- Flashing to Brine Facility;
- Equipment Required to Perform Work (including crane if needed);
- Clean-up and Waste Disposal of own work;

BP-07 Wood Framing (FM52327)

Contract Documents including all drawings and the following specifications:

- Division 00 – Procurement and Contracting Requirements
- Division 01 – General Requirements
- Division 06 – Wood, Plastics and Composites
- 07 26 00 – Vapor Retarders (as applicable to this scope package)
- 08 12 14 – Standard Steel Frames (as applicable to this scope package)
- Division 29 – Appendices

Work to Include, but not limited to the supply and installation of:

Walls;

Joists;

Rough hardware, hangers, and ledger;

Window prep (including note 2 on A400);

Blocking;

Set door jambs;

Weather Barrier where shown on drawings;

Layout of own work;

Repair mezzanine floor at temporary shoring locations;

Equipment Required to Perform Work (including crane if needed);

Demolition of existing roofing framing members (fascia, soffit, sheathing, etc) as necessary for tie-in of new roofing framing as per notes on 1/A104;

Clean-up and Waste Disposal of own work.

BP-08 Roofing (FM52328)

Contract Documents including all drawings and the following specifications:

- Division 00 – Procurement and Contracting Requirements
- Division 01 – General Requirements
- 07 01 40 – Selective Demolition of Roofing Materials
- 07 41 13.13 – Formed Metal Roof Panels
- 07 42 13 – Metal Wall Panels
- 07 53 03 – Elastomeric Membrane Roofing (TPO) Fully Adhered
- 07 53 03 – Elastomeric Membrane Roofing (PVC) (Alternative Option to TPO)
- 07 61 00 – Sheet Metal Roofing
- 07 62 00 – Sheet Metal Flashing and Trim
- 07 71 00 – Roof Specialties
- 07 71 23 – Manufactured Gutters and Downspouts
- 07 90 00 – Joint Protection (as applicable to this scope package)
- 07 99 00 – Roofing Workmanship 5 Yr. Warranty (DPW Form)
- 07 99 01 – Single Ply Roofing 30 Yr. Guaranty (DPW Form)
- Division 29 – Appendices

Work to Include, but not limited to the supply and installation of:

- Removal of existing roofing, gutters, downspout, fascia and trim on the maintenance building;
- New roofing, gutters, downspouts, fascia, trim, soffits and insulation for the maintenance building;
- Metal roof, soffit, fascia and trim for the brine building;
- Provide Unit Price to repair damaged cover board and insulation that was to remain;
- Splashblocks;
- Caulking of own work;
- Clean-Up and Waste Disposal of Own Work.

BP-09 Windows (FM52329)

Contract Documents including all drawings and the following specifications:

- Division 00 – Procurement and Contracting Requirements
- Division 01 – General Requirements
- 07 90 00 – Joint Protection (as applicable to this scope package)
- 08 53 13 – Vinyl Windows
- 08 80 00 - Glazing
- Division 29 – Appendices

Work to Include, but not limited to the supply and installation of:

- New windows for both buildings;
- Pre-Finished metal drip edge at windows;
- All caulking, sealants and material for the continuous weather and moisture barrier requirements;
- Finish sealants to the adjacent finish surfaces such as masonry, drywall, EIFS, etc.;
- Removal of all stickers;
- Clean-Up and Waste Disposal of Own Work.

BP-10 Doors (FM52330)

Contract Documents including all drawings and the following specifications:

- Division 00 – Procurement and Contracting Requirements
- Division 01 – General Requirements
- 07 90 00 – Joint Protection (as applicable to this scope package)
- 08 12 14 – Standard Steel Frames
- 08 13 14 – Standard Steel Doors
- 08 14 16 – Flush Wood Doors
- 08 71 00 – Door Hardware
- Division 29 – Appendices

Work to Include, but not limited to the supply and installation of:

- Doors, frames and hardware;
- Include additional adjustment of hardware after three months of use;
- Prep and Installation of all Door Frames (Masonry Wall Frame Installation will be by Mason – Coordinate and Special Instruction with Mason including foaming of the door frames for hardware prep.);
- Prep all doors and frames for paint (including bondo as needed);
- Clean-Up and Waste Disposal of Own Work.

BP-11 Overhead Doors (FM52331)

Contract Documents including all drawings and the following specifications:

- Division 00 – Procurement and Contracting Requirements
- Division 01 – General Requirements
- 08 36 13 – Sectional Doors
- Division 29 – Appendices

Work to Include, but not limited to the supply and installation of:

- Overhead doors with motors;
- Windows/glass @ OH Doors;
- Layout and Field Measurement of own work;
- Clean-Up and Waste Disposal of Own Work.

BP-12 Drywall & Insulation (FM52332)

Contract Documents including all drawings and the following specifications:

- Division 00 – Procurement and Contracting Requirements
- Division 01 – General Requirements
- 07 21 13 – Board Insulation
- 07 21 16 – Blanket Insulation
- 07 26 00 – Vapor Retarders (as applicable to this scope package)
- 07 90 00 – Joint Protection (as applicable to this scope package)
- 08 12 14 – Standard Steel Frames (as applicable to this scope package)
- 09 21 16 – Gypsum Board Assemblies
- 09 22 16 – Non-Structural Metal Framing
- 09 51 13 – Acoustical Panel Ceilings
- Division 29 – Appendices

Work to Include, but not limited to the supply and installation of:

- Drywall, tape and texture;
- Ceilings (gypsum and suspended);
- Fire Rated materials where required;
- Wall and Ceiling Insulation (including rigid with Z-clips);
- Vapor barrier;
- Sealant at wall to slab;
- FRP panels;
- Clean-Up and Waste Disposal of Own Work.

BP-13 Painting (FM52333)

Contract Documents including all drawings and the following specifications:

- Division 00 – Procurement and Contracting Requirements
- Division 01 – General Requirements
- 09 90 00 – Painting and Coatings
- Division 29 – Appendices

Work to Include, but not limited to the supply and installation of:

- Painting complete including walls, floors, doors, ceilings and bollards;
- Indicator striping as per A500 & A501;
- Caulking of anything that paints, prior to painting;
- Clean, sand and prep all items prior to painting;
- Block sealer;
- Painting of gas piping;
- Any necessary touch up painting required for steel;
- Protection of adjacent work;
- Protection of other work as necessary;
- Clean-Up and Waste Disposal of Own Work (including any over-spray).

BP-14 Not Used

BP-15 LVP Flooring (FM52335)

Contract Documents including all drawings and the following specifications:

- Division 00 – Procurement and Contracting Requirements
- Division 01 – General Requirements
- 09 65 00 – Resilient Flooring
- Division 29 – Appendices

Work to Include, but not limited to the supply and installation of:

- Rubber base;
- Transitions to adjacent surfaces;
- Floor preparation;
- Moisture Mitigation for Own Work;
- Protection of work after installation;
- Clean-Up and Waste Disposal of Own Work.

BP-16 Specialty Items (FM52336)

Contract Documents including all drawings and the following specifications:

- Division 00 – Procurement and Contracting Requirements
- Division 01 – General Requirements
- Division 10 – Specialties
- Division 29 – Appendices

Work to Include, but not limited to the supply and installation of:

- Toilet Partitions;
- Toilet Accessories;
- Fire Extinguishers;
- Signage;
- Robe Hooks;
- Layout of own work;
- Corner Guards;
- Clean-Up and Waste Disposal of Own Work.

BP-17 Fire Suppression (Alternate Bid Item) (FM52337)

Contract Documents including all drawings and the following specifications:

- Division 00 – Procurement and Contracting Requirements
- Division 01 – General Requirements
- Division 21 – Fire Suppression
- Division 29 – Appendices
- Division 31 – Earthwork

Work to Include, but not limited to the supply and installation of:

- Design;
- Permit Approval and Fees;
- Fire Water Connection and Line into Building (includes excavation, backfill and thrust blocks);
- Structural Supports as needed for fire pump equipment;
- Core drilling, saw cutting, grouting, caulking and fire stopping for own penetrations;
- Protection of heads after install and removal of protection at substantial completion;
- Fire Caulking of own work where required by code;
- Commissioning and Start Up Reports;
- Clean-Up and Waste Disposal of Own Work.

BP-18 Plumbing & HVAC (FM52338)

Contract Documents including all drawings and the following specifications:

- Division 00 – Procurement and Contracting Requirements
- Division 01 – General Requirements
- Division 22 – Plumbing
- Division 23 – Heating, Ventilating, and Air Conditioning
- Division 29 – Appendices
- Division 31 – Earthwork

Work to Include, but not limited to the supply and installation of:

- Plumbing and Mechanical demolition (including concrete cutting, removal, & patch back as necessary);
- Plumbing & Mechanical Permits and Fees;
- Utilities to 5' Outside of Building;
- Excavation and backfill of own work;
- Spoil pile remove of own work;
- Trench Drains;
- Gas piping;
- Compressed air;
- Blocking for plumbing and mechanical items;
- Seismic bracing per code requirements;
- Core drilling, saw cutting, grouting, caulking and fire Stopping for own penetrations;
- Roof curbs for mechanical equipment;
- HVAC controls;
- All Plumbing and Mechanical Fixtures;
- Brine Maker;
- Brine Tanks;
- Brine Containment/Tank Piping System
- Fire Caulking of own work where required by code;
- Commissioning and Start-Up Reports;
- Test and Balancing, Provide Reports;
- Vehicle Exhaust Control System (in coordination with Electrical);
- Clean-Up of Own Work.

BP-19 Electrical (FM52339)

Contract Documents including all drawings and the following specifications:

- Division 00 – Procurement and Contracting Requirements
- Division 01 – General Requirements
- Division 26 – Electrical
- Division 27 – Communications
- Division 28 – Electronic Safety & Security (Fire Alarm) (Alternate #1)
- Division 29 – Appendices
- Division 31 – Earthwork

Work to Include, but not limited to the supply and installation of:

- Electrical Demolition (including concrete cutting, removal, & patch back as necessary);
- Electrical Permits and Fees;
- CM Trailer Hook-up;
- Power for Temp Construction needs;
- Coordination with Power Company for services needed;
- All trenching, backfill conduits and concrete associated with new service;
- Excavation and backfill of own work;
- Removal of own spoil piles;
- Core drilling, saw cutting, grouting, caulking and fire caulking for own penetrations;
- Underground electrical conduits are to be placed under the slab gravel;
- Brine Containment System Electrical including Brine Pumps, Control Stations, Control Panels, and VFDs;
- Blocking for electrical items;
- Seismic bracing per code requirements;
- Fire Caulking of own work where required by code;
- Low voltage wiring;
- Commissioning of systems per Drawing Sheet E001 (or as otherwise noted);
- Vehicle Exhaust Control System (in coordination with Mechanical);
- Power & Lighting associated with PEMB (Alternate #3);
- Clean-Up of Own Work.

END OF SECTION 00 00 31

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SECTION 000300 – CONTRACTOR BID FORM

Bid Proposal for:

D225080 - D5 MAINTENANCE BUILDING EXTENSION/RENOVATION

Idaho Transportation Department (ITD)

Blackfoot, Idaho

The Bidder, in compliance with the advertisement for bids for the above project, having examined the bidding and contract documents and the site of the proposed work, and being familiar with all of the conditions surrounding the construction of the proposed project including the availability of materials and labor, hereby proposes all labor, equipment, materials and supplies, and to provide the service and insurance in accordance with the Contract Documents, within the time set forth, and at the prices stated below. These prices are to cover all expenses incurred in performing the work required under the Contract Documents.

TIME SCHEDULE:

Bidder agrees to complete the work within the time schedule as established by the CM. Basic principles of the project schedule are as follows:

Milestone “Completed By” Dates:

Construction Start - 05/15/23.

Maintenance Building

- a. Footings/Foundations – 06/16/23.
- b. CMU Walls – 07/21/23.
- c. Wood Framing – 07/28/23.
- d. Roofing – 08/18/23.
- e. Drywall – 09/08/23.
- f. Contractors Complete – 10/20/23.
- g. Punchlist/Training Complete – 10/20/23.
- h. Substantial Completion/Turn-Over – 11/10/23.

Brine Building & Tank Containment Structure

- i. Footings/Foundations – 07/07/23.
- j. CMU Walls – 08/04/23.
- k. Roofing – 08/18/23.
- l. Contractors Complete – 09/22/23.
- m. Punchlist/Training Complete – 09/29/23.
- n. Substantial Completion/Turn-Over – 09/29/23.
- o. Metal Canopy @ Tank Structure – 10/20/23.

By signing this bid form, bidder acknowledges the above milestone dates and agrees to accomplish their work on or before their respective milestone(s) and within the overall schedule in concert with other trades as directed by the CM.

Bidding Company Name: _____

This bid form applies to bid package number & title:
(a separate bid form for each bid package must be provided)

<i>Bid Package No.</i>	<i>Bid Package Title</i>

Bidder acknowledges receipt of the **Addenda No:** _____
(List by Add. Number)

BASE PROPOSAL – Maintenance Facility: The complete Scope of Work for the Bid Package noted above (Idaho State sales tax is included), for the sum of:

(\$ _____) _____
_____ *Dollars*

(Amount shall be shown in both figures and words. In case of discrepancy, the amount in words will govern.)

- If a **Performance and Payment Bond** is requested for the above scope, please list the **Bonding Rate Percentage and dollars**, that would be applied to the base bid amount:

Rate % _____ \$ _____

ALTERNATE No. 01 PROPOSAL – Add the Fire Suppression System, Fire Water Line & Riser, and Bay Wall Demolition: (Idaho State sales tax is included), for the sum of:

(\$ _____) _____
_____ *Dollars*

Amount shall be shown in both figures and words. In case of discrepancy, the amount in words will govern.)

ALTERNATE No. 02 – PROPOSAL – Addition of Brine Production Facility, Site Work, and Components: (Idaho State sales tax is included), for the sum of:

(\$ _____) _____
_____ *Dollars*

Amount shall be shown in both figures and words. In case of discrepancy, the amount in words will govern.)

ALTERNATE No. 03 – PROPOSAL – Addition Brine Tank Area Roofing and PEMB Structure: (Idaho State sales tax is included), for the sum of:

(\$ _____) _____ Dollars

Amount shall be shown in both figures and words. In case of discrepancy, the amount in words will govern.)

For contractors bidding on more than one Bid Package a discount may be offered by your firm if both (or more) packages are accepted. Note the discount amount, as applicable, below. The Owner reserves the right to select the combination of separate bids, or a combination of bids with the discount, whichever results in the lowest bid.

List of Bid Packages to combine: _____

Discount, in dollars, if accepted in combination: \$ _____

Bidder understands that the Owner and/or the CM reserves the right to accept or reject any and all bids with or without cause, for any reason determined in its sole subjective determination to be in its best interest and to waive any informality in bidding.

The bidder agrees that this bid shall be good and may not be withdrawn for a period of forty-five (45) calendar days after the scheduled closing time for receiving bids (including alternate items).

The scope of each bid package must be bid in its entirety as a lump sum. Segregated bids will not be accepted. Any qualifications, exceptions, clarifications, or exclusions to one's bid may disqualify their proposal with exception of the Bid Form Attachment (VE Options items) identified in the Instructions to Bidders Spec Section and as below.

Bid Form Attachment - Bidders are encouraged to provide "Value Engineering Options or Cost Saving Options (VE Options)" in addition to their base bid, on their own form as an attachment to this bid form. ITD will take into consideration the attached VE items in evaluating subcontractor proposals for award. VE Options shall not be included in the Bid Form Base Proposal or Alternate/Optional Numbers and will only be included and identified as an attachment to this Bid Form.

Upon receipt of written notice of the acceptance of this bid, Bidder will execute the formal contract referenced within seven (7) days and deliver Insurance Certificates, P&P Bonds, and Special Condition Forms as required by the Bid Documents.

Additional Bidder Provisions

By submitting a bid for this Project, the undersigned bidder agrees that, if awarded, the Contractor will conform to all conditions and requirements of the Contract, Contract Documents and the following additional provisions:

95% Bona Fide Idaho Residents. Contractor agrees to comply with conditions pertaining to Sections 44-1001 and 44-1002, Idaho Code, requiring the employment of ninety-five percent (95%) bona fide Idaho residents and providing for a preference in the employment of bona fide Idaho residents and regarding the employment of persons not authorized to work in the United States.

Certification Concerning Boycott of Israel. Pursuant to Idaho Code section 67-2346, if payments under the Contract exceed one hundred thousand dollars (\$100,000) and Contractor employs ten or more persons, Contractor certifies that it is not currently engaged in, and will not for the duration of the Contract engage in, a boycott of goods or services from Israel or territories under its control. The terms in this section defined in Idaho Code section 67-2346 shall have the meaning defined therein.

Debarment and Suspension. In submitting this bid proposal, we hereby certify that we have not been suspended or in any way excluded from procurement actions by any State Agency. We fully understand that if information contrary to this certification subsequently becomes available, such evidence may be grounds for non-award or nullification of a bid contract.

Anti-Collusion. In submitting this bid proposal, we hereby certify this proposal was developed and prepared without any collusion with any competing bidder or State employee. The content of this proposal has not been disclosed to any competing or potentially competing bidder prior to the proposal due date and time. Furthermore, no action to persuade any person, partnership or corporation to submit or withhold a bid has been made.

Equal Employment Opportunity. In submitting this bid proposal, you certify to the State that your company and the subcontractors you hire will comply with the requirements of 41 CFR §§ 60-1.4(a), 60-300.5(a), and 60-741.5(a). These regulations prohibit discrimination against qualified individuals based on their status as protected veterans or individuals with disabilities and prohibit discrimination against all individuals based on their race, color, religion, sex, sexual orientations, gender identity or national origin. Moreover, these regulations required that covered prime contractors and subcontractors take affirmative action to employ and advance in employment individuals without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, protected veteran status or disability.

Domestic Procurement Preferences Section Deleted via Addendum #2.

The names and addresses of the entities that will perform the work identified below, subject to approval of ITD, if Undersigned is awarded the Contract, are as follows:

Plumbing

(Name) _____

(Address) _____

Idaho Public Works Contractors License No. _____

Idaho Plumbing Contractors License No. _____

HVAC

(Name) _____

(Address) _____

Idaho Public Works Contractors License No. _____

Idaho HVAC Contractors License No. _____

Electrical

(Name) _____

(Address) _____

Idaho Public Works Contractors License No. _____

Idaho Electrical Contractors License No. _____

Failure to name a properly licensed contractor in each of the above categories may render the bid unresponsive and void. ***Please note that if the above trades do not apply to this bid package, empty lines should be noted as “Not Applicable” or “N/A”.***

The State of Idaho policy prohibits purchase of asbestos products and asbestos containing materials for use in or on any facility, including personal and real property, where acceptable alternatives are available. The contractor certifies by submission of this bid proposal that the products or materials to be furnished as a result of this bid are free of asbestos and hazardous materials.

Execute as part of this bid form:

**CONTRACTOR'S AFFIDAVIT
CONCERNING ALCOHOL AND DRUG-FREE WORKPLACE**

STATE OF _____

COUNTY OF _____

Pursuant to the Section 72-1717, Idaho Code, I, the undersigned, being duly sworn, depose and certify that _____ is in compliance with the provisions of Section 72-1717, Idaho Code; that _____ provides a drug-free workplace program that complies with the provisions of Title 72, Chapter 17, Idaho Code, and will maintain such program throughout the life of a state construction contract; and that _____ shall subcontract Work only to subcontractors meeting the requirements of Section 72-1717(1)(a), Idaho Code.

Name of Contractor

Address

City and State

By: _____
(Signature)

Subscribed and sworn to before me this _____ day of _____, _____.

NOTARY PUBLIC
Residing at: _____

Commission expires: _____

FAILURE TO EXECUTE THIS AFFIDAVIT AND SUBMIT IT ALONG WITH YOUR BID SHALL MAKE YOUR BID NON-RESPONSIVE.

This Executed Bid Form shall be an attachment to the Contract. The Undersigned notifies that he is of this date duly licensed as an Idaho Public Works Contractor and further that he possesses the following as applicable:

ITD D5 Maintenance Building Extension/Renovation
Blackfoot, Idaho

Idaho **Public Works** License: _____ Exp. Date: _____

Idaho **Contractor Registration**: _____ Exp. Date: _____

Dated this _____ day of _____, _____.
(date) (month) (year)

Respectfully Submitted,

By: _____
(Company)

(Business Address)

(Authorized Signature)

(Printed Name & Title)

(Email Address)

_____ (Telephone) _____ (Fax Number)

PLEASE NOTE:

- All bids are to be submitted in a sealed properly labeled envelope
- No lines are to be left blank (NA or "Not Applicable" may be used to complete empty lines)
- Bid Bond included at a rate of 5% of the total bid

END OF SECTION 000300

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DIVISION 10 SPECIALTIES

SECTION 10 14 00

SIGNAGE

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes exterior signs.

1.2 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Submittal procedures.
- B. Shop Drawings: Indicate sign styles, lettering font, foreground and background colors, locations, overall dimensions of each sign.
- C. Samples: Submit two signs, large enough in size illustrating type, style, letter font, and colors specified; method of attachment.
- D. Manufacturer's Installation Instructions: Submit installation template and attachment devices.

1.3 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing Products specified in this section with minimum three years documented experience.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 60 00 - Product Requirements: Product storage and handling requirements.
- B. Package signs, labeled in name groups.
- C. Store adhesive attachment tape at ambient room temperatures.

1.5 ENVIRONMENTAL REQUIREMENTS

- A. Section 01 60 00 - Product Requirements: Environmental conditions affecting products on site.
- D. Do not install signs when ambient temperature is lower than recommended by manufacturer.
- E. Maintain this minimum temperature during and after installation of signs.

PART 2 PRODUCTS

2.1 INTERIOR SIGNS

2.2 INTERIOR SIGNS

- A. Engraved Signs: Laminated colored plastic; lettering engraved through face to expose core color:
 - 1. Face Color: Color as selected by Architect.
 - 2. Core Color: White
 - 1. Total Thickness: 1/8 inch.
 - 2. Sign Height: 3 inches.

3. Edges: Square
 4. Character Font: Helvetica.
 5. Character Case: Upper case.
 6. Text Height. .625" Minimum
 7. Provide Braille on each sign
- C. Graphic Style: Handicapped type.

2.3 ACCESSORIES

- A. Tape Adhesive: Double sided tape, permanent adhesive.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01 30 00 - Administrative Requirements: Verification of existing conditions before starting work.

3.2 INSTALLATION

- A. The baseline of the tactile copy shall be mounted between 48" at the lowest point to 60" at the highest point.
- B. Signs shall be mounted to the wall on the latch side of the door. If there is no room on that wall, the sign may be mounted on the nearest adjacent wall.

3.3 SCHEDULES

- A. Provide room signs for the following rooms: Brine Control, Brine Maker, ISP Office 102, IT Closet 103, Office 104, Meeting Room 105, Parts Room 106 (Provide 2 signs), Tool Room 106,
- B. Individual Helvetica letters, 3 inch high sign plaque, face color selected from manufacturers standard colors, white core color, identifying room name indicated on drawing schedule.
- C. Service Room Signs: Plaque signs, 3 inches high, face color selected from manufacturers standard colors, white core color, "UTILITY ROOM", "SERVICE ROOM", and "ELECTRICAL ROOM"; at each respective room location.
- D. Rest Room Graphic: 8 inches high, "male" and "female" graphic image; located on wall adjacent to room door.

END OF SECTION

SECTION 220100 - PLUMBING

PART 1 - GENERAL

1.1 SCOPE:

- A. This section covers the work necessary for the plumbing system, complete. The Plumbing General Requirements, Section 220000, are to be included as a part of this section of the specifications.

1.2 CODES:

- A. The plumbing system shall be installed in accordance with the requirements of local adopted plumbing code, latest edition, International Fuel Gas Code, latest edition; and all local and State Codes.

1.3 FIXTURES & EQUIPMENT:

A. General:

1. Plumbing fixtures and equipment shall be as listed on the drawings. In addition to those specifically listed, the following manufacturers are approved for bidding only. All other manufacturers require prior approval. Final approval for installation is based on submittal data furnished:
 - a. Tank Type Water Closets: American Standard, Kohler, Mansfield, Sloan, Toto, & Zurn.
 - b. Urinals: American Standard, Briggs, Gerber, Kohler, Mansfield, Sloan, Toto & Zurn.
 - c. Vitreous China Sinks: American Standard, Crane, Kohler, Mansfield, Sloan, Toto, & Zurn.
 - d. Stainless Steel Sinks: Elkay, Just.
 - e. Faucets: American Standard, AMTC, Aquaspec, CHG Encore Saniguard, Chicago Faucets, Delta, Elkay, Gerber, Geberit, Kohler, Moen, T&S Brass, Symmons, Speakman, Sloan & Zurn.
 - f. Sensor Faucets: Chicago Faucets, Elkay, Mac Faucets, Symmons, Speakman, Sloan, & T & S Brass.
 - g. Valves and Trim: Brasscraft, Dearborn Brass, ProFlo, Sloan & T&S Brass.
 - h. Flush Valves: American Standard Selectronic, AMTC, Delta, Kohler, Moen (sensor-operated only) Sloan, & Zurn.
 - i. Carriers and Drainage Products: Jay R. Smith, Josam, MIFAB, Neenah Foundry, NDS, Sun Drainage, Wade, Watts, & Zurn.
 - j. Toilet Seats: American Standard, Beneke, Church, Kohler, Plumb Tech & Zurn.
 - k. Mixing Valves: Acorn Controls, Lawler, Leonard, Powers, Stingray, Symmons, Watts, & Wilkins.
 - l. Fiberglass/ Acrylic Fixtures: Aquatic, Aquaglass, Best Bath, Fiat, Intersan, MAXX, Mustee Praxis-Comfort Designs, & Swan.
 - m. Drinking Fountains/ Electric Water Coolers: Elkay, Halsey Taylor, Haws, Murdock Stern Williams, & Sunroc.
 - n. Safety Fixtures & Safety Mixing Valves: Acorn, Bradley, Chicago Faucets, Encon, Guardian, Haws, Lawler, Speakman, Speakman, Stingray.
 - o. Service Sinks: Acorn, Fiat, Mustee, Proflo, Stern Williams, & Zurn.
 - p. System Valves: Apollo, Nebco & Red-White Valve Corp.
 - q. Backflow Preventers: Conbraco/Apollo, Watts, & Wilkins.
 - r. Hose Bibbs: Josam, J.R. Smith, Prier, Woodford, & Zurn.

- s. Trench Drains: ABT, ACO, Dura Trench, J.R. Smith, NDS, Strongwell Polycast, Rapid, Wade, & Zurn.
 - t. Utility Sinks: Fiat, Mustee, & Proflo.
2. Plumbing Fixture Standards:
- a. All plumbing fixtures shall meet or exceed the following standards:
 - b. ANSI A112.6.1 - Supports for Off-the Floor Plumbing Fixtures for Public Use.
 - c. ANSI A112.18.1 - Finished and Rough Brass Plumbing Fixture Fittings.
 - d. ANSI A112.19.1 - Enameled Cast Iron Plumbing Fixtures.
 - e. ANSI A112.19.2 - Vitreous China Plumbing Fixtures.
 - f. ANSI A112.19.3 - Stainless Steel Plumbing Fixtures (Designed for Residential Use).
 - g. ANSI A112.19.4 - Porcelain Enameled Formed Steel Plumbing Fixtures.
 - h. ANSI A112.19.5 - Trim for Water-Closet Bowls, Tanks, and Urinals.
 - i. ANSI Z358.1 - Emergency Eye Wash and Shower Equipment.
 - j. ARI 1010 - Drinking Fountains and Self-Contained Mechanically Refrigerated Drinking Water Coolers.
 - k. AWSI/ASSE 1001 – Atmospheric Vacuum Breaker
 - l. ANSI/ASSE 1012 - Backflow Preventers with Immediate Atmospheric Vent.
 - m. ANSI/ASSE 1011 - Hose Connection Vacuum Breakers.
 - n. ANSI/ASSE 1013 - Backflow Preventers, Reduced Pressure Principle.
 - o. ANSI/ASSE 1015 – Backflow Preventers, Double Check Principle
 - p. ANSI/ASSE 1019 - Wall Hydrants, Frost Proof Automatic Draining Anti-Backflow Types.
 - q. AWSI/ASSE 1020 – Pressure Vacuum Breaker
 - r. AWSI/ASSE – 1-52 – Hose Connection, Double Check
 - s. ANSI A112.21.1 - Floor Drains.
 - t. ANSI A112.26.1 - Water Hammer Arresters.
 - u. PDI WH-201 - Water Hammer Arresters.
 - v. ANSI/AWWA C606 – Grooved and Shouldered Joints
 - w. NSF/ANSI Standard 61 – Drinking Water System Components – Health Effects

PART 2 - PRODUCTS

2.1 PLUMBING FIXTURES & TRIM:

- A. All plumbing fixtures shall be provided complete with all required trim for a complete and operational system. All piping penetrations through finished walls shall be provided with chrome escutcheons. All plumbing fixtures shall be caulked and sealed to surrounding surfaces. All sink traps shall be provided with a cleanout plug in the bottom of the trap. All interior exposed pipe, valves, and fixture trim shall be chrome plated, including kitchen compartment sinks. Braided stainless steel pipe risers are approved for concealed locations only, such as behind casework doors or lav shields. Each fixture shall be provided with stop valves and the stop valves shall be quarter-turn brass ball type. All fixtures and trim must be lead free. All floor drains and floor sinks shall be provided with trap primers (PPP, Zurn or Wade as needed for appropriate use. Provide ball valve type shut-off valve upstream of all trap primer valves).

2.2 PIPING AND FITTINGS:

A. General:

- 1. Underground sanitary sewer and storm drain lines shall be installed at 1/4" per foot slope, unless otherwise indicated. If such slope is not possible due to existing

inverts, approval shall be obtained from the Architect/Engineer and the authority having jurisdiction before any piping is installed at a lesser slope.

2. Connections between piping of dissimilar materials shall be made with dielectric waterway fittings or unions.
3. Provide standard manufactured water hammer arresters at all flush valves. Size and locate per manufacturers recommendations. Provide access panels for access to all water hammer arresters.

B. Domestic & Non-Potable Hot and Cold Water:

1. Piping inside building above slab or above grade in crawl space shall be ASTM B88, Type "L", hard drawn copper. Fittings shall be ANSI/ASME B16.22 cast brass, or ANSI/ASME B16.29 wrought copper. Joints shall be ANSI/ASTM B32 solder, Grade 95-5, lead free.
 - a. Cold Water Only Option- ANSI/ASME B16.18 cast bronze, or ANSI/ASME B16.22 wrought copper. Joints shall be copper-tube dimensioned grooved joint couplings, and Flush Seal style gasket. (Gasket shall be UL classified in accordance with ANSI/NSF-61 for potable water service.) Victaulic Style 606, Gruvlok style 6400, Grinnell Universal Tongue and Groove 672, Shurjoint C305, or equal.
 - b. Piping Option – Mechanically Formed Extruded Outlets:
 - 1) Mechanically formed extruded outlets shall be perpendicular to the axis of the run tube (header). They shall be formed by drilling a pilot hole and drawing out the tube surface to form a collar having a height of not less than three times the thickness of the branch wall and shall conform to ASME B31.9 and NFPA 99. T-Drill or approved equal.
 - 2) Branch tubes shall not restrict the flow in the run tube. To ensure this by conforming the branch tube to the shape of the inner curve of the run tube, a dimple / depth stop shall be formed in the branch tube to ensure that penetration into the collar is of the correct depth. For inspection purposes, a second dimple shall be placed 0.25 inch above the first dimple. Dimples shall be aligned with the tube run.
 - 3) Branches can be formed up to the run tube size as shown in ASTM F 2014. Forming procedures shall be in accordance with the tool manufacturer's recommendations.
 - 4) Joints shall be made with the use of approved brazing alloys BCup2 thru BCup5 (0-15% silver content). Brazed with a filler that has a melting point above 540 deg. Centigrade (1000 deg. F). **Soft soldered joints are not allowed.**
 - 5) K and L copper types allowed.
 - 6) Soft and Hard copper allowed.
 - 7) Each model used for making branch connections shall be permanently marked with manufacturer's name and appropriate model number.
 - 8) Mechanically formed extruded outlets can (but not limited to) be used on commercial and residential buildings.
 - 9) Fitter / Plumber shall be trained and certified to operate the equipment.
2. Piping underground within 5 feet of the building line, smaller than 4 inches, shall be ASTM B88, Type "K", hard drawn copper. Piping below floor slab, smaller than 4 inches, shall be type "K", soft annealed copper. Fittings shall be ANSI/ASME B16.29 wrought copper. Joints shall be ANSI/ASTM B32 solder, Grade 95-5, lead free. No joints shall be installed beneath concrete floor slabs, unless approved by the Engineer. Underground or underslab copper piping shall be provided with a

polyethylene jacket, ANSI/AWWA C105, or shall be wrapped with double layer, half-lapped, 10 mil polyethylene tape.

- a. Underground (below slab) Piping Option- ½” to 4”, High Density Polyethylene (HDPE) pressure pipe. ASTM D3350, ASTM D3035 & ASTM F714. AWWA C901 & AWWAC906, NSF. Fittings shall be HDPE, solvent weld. Piping shall be rated for not less than 150 psig.
 - b. Trap Primer Piping (below floor or concealed only)
3. Piping underground beyond 5 feet from building line shall be Schedule 40 PVC, ASTM D1785 or D2241. Fittings shall be PVC, ANSI/ASTM D2466. Joints shall be solvent weld, ASTM D2855, or gasketed, ASTM F477. Piping shall be rated for not less than 150 psig pressure.

C. Sanitary Sewer and Vent:

1. Piping and fittings shall be Schedule 40 PVC-DWV (cellular core), per ASTM F1488 and ASTM F891, solvent welded per solvent manufacturer's instructions, or ABS Schedule 40 piping and fittings per either ASTM D2661 or ASTM F628 with solvent cement conforming to ASTM D2235. All sewer risers (2 story or more) shall be service weight cast iron, no-hub or single-hub, ASTM A74. All piping penetrations through fire rated walls, floors, or ceilings, and all piping located above ceilings used as return air plenums shall also be cast iron or galvanized steel, ASTM A53. Underground PVC-DWV piping shall be installed per ASTM D-2321.
2. Piping and fittings beyond 5 feet from the building line shall be PVC, ASTM D3033 or D3034, SDR 35. Joints shall be ASTM F477 with elastomeric gaskets. Underground piping shall be installed per ASTM D-2321.
3. All 90 degree waste line elbows shall be formed per the latest issue of the adopted plumbing code, latest edition.
4. All exposed vent piping located in occupied areas or rooms, is to be cast iron with cast iron fittings.
5. All flush valve fixtures that are installed back to back shall have offset waste outlet fittings.
6. Cleanouts shall be provided at each horizontal drainage pipe, at its upper terminal, and each run of piping which is more than 100 feet and shall be provided for each 100 feet developed length, or fraction thereof of such piping. An additional cleanout shall be provided for each aggregate horizontal change of direction exceeding one hundred and thirty-five degrees, per applicable plumbing code. This shall be provided regardless of what is shown on the drawings.
7. All floor drains, floor sinks, and hub drains shall be installed with a trap primer.
 - a. Flush Valve Primer: Trap primer shall be Precision plumbing products model FVP-1VB with vacuum breaker.
 - b. Pressure Activated Primer: Trap primer shall be Precision Plumbing products Model CPO-500 with DU distribution unit if required.
 - c. Tail Piece Primer: Trap primer shall be Precision Plumbing Products Model LTP-1500 with ½” clear poly flexible priming make up water line and chrome plated escutcheons plates.
8. All vent's through roof (VTR'S) shall be extended at least 1 foot above the roof surface, or to the top of the closest adjacent parapet wall, whichever is greater.

D. Compressed Air:

1. Piping shall be Schedule 40 black steel pipe, ASTM A53, with black banded 200 pound malleable iron fittings and couplings.
2. Piping 2" and below may be ASTM A-312, Type 304/304L, Schedule 5S stainless steel in lieu of soldered copper.
 - a. Fittings shall be precision, cold drawn austenitic stainless steel with elastomer O-ring seals. (O-ring shall be grade "E" EPDM for oil free compressed air, or grade "T" Nitrile for air with oil vapors) Vic-Press 304 or equal.
3. Alternate material - Piping inside building above slab or above grade shall be ASTM B88, Type "L", hard drawn copper. Fittings shall be ANSI/ASME B16.23 cast brass or ANSI/ASME B16.29 wrought copper. Joints shall be ANSI/ASME B32 solder, Grade 95-5, lead free.

E. Propane Gas:

1. Piping shall be Schedule 40 black steel pipe, ASTM A53. Exposed fittings 2 inches and smaller shall be ANSI/ASME B16.3, screwed, black malleable iron.
2. Fittings larger than 2 inches and all underground fittings shall be Schedule 40 steel butt-welded type. Underground piping shall be provided with a polyethylene jacket, ANSI/AWWA C105, or shall be wrapped with double layer, half-lapped, 10 mil polyethylene tape.
 - a. Contractors Option for Underground Pipe:
 - 1) Gastite Type PE flexible corrugated gas piping. NFPA-54 & 56. ASTM D2513 Category 1. ASME D-B31.8-1995.
 - 2) Piping and fittings underground and outside the building line may be JM Eagle UAC 2000 MDPE, medium-density polyethylene yellow gas pipe or an approved equal. Piping shall be installed in accordance with JM Eagle Publication JME-12B, "Polyethylene Yellow Gas Distribution Installation Guide." JM Eagle's UAC 2000 system can be joined by butt heat fusion, socket fusion, or saddle fusion. Installing contractor shall be licensed for fusion pipe installation of polyethylene pipe. ASTM D2513.
3. All exterior piping exposed to the weather shall be coated with a rust inhibitor – Rustoleum #866 Pro-Guard Primer – yellow or gray color – or approved equal.

F. Condensate Drain Piping:

1. Exterior to building or located within a plenum: Piping shall be Type L hard drawn copper, ASTM B88, with solder joints. Copper piping shall not be used on 90% condensing type equipment.
1. Interior: Piping shall be Type L hard drawn copper, ASTM B88, with solder joints, grade 95TA, or may be Schedule 40 PVC. Copper piping shall not be used on 90% condensing type equipment. Provide a neoprene or rubber gasket at all copper piping support hangers to inhibit corrosion.
 - a. Inside Mechanical Rooms: Piping shall be Type L hard drawn copper, ASTM B88, with solder joints, grade 95TA, for durability reasons.

G. Hanger and Supports:

1. Pipe hangers shall be provided to adequately support all piping systems. Hangers shall be vertically adjustable to provide for proper pitch and drainage. Hangers shall

allow for expansion and contraction of the piping system. Reference “General Regulations” of the latest edition of the adopted plumbing code, latest edition.

2. Hangers for pipe sizes 1/2 to 6 inches shall be adjustable clevis type, or unistrut saddles with all-thread hanger rod.
3. Hangers for hot pipe, sizes 6 inches and over shall be adjustable steel yoke, cast iron roll, double hanger type.
4. Vertical pipes shall be supported with steel riser clamps. Spacing interval requirements per “General Regulations” of the latest edition of the adopted plumbing code, latest edition.
5. All insulated piping shall be provided with minimum 18 gauge galvanized insulation shields, 12 inches long, and oversized hangers. Pipe sizes 2 inches and over shall also be provided with 12 inch long calcium silicate insulating blocks between the piping and the galvanized insulation shield.
 - a. Alternate: Insulated pipe support inserts may be provided at hanger, support, and guide locations on piping requiring insulation. The insert should consist of either Hydrous Calcium Silicate or Polyisocyanurate Foam insulation (Urethane) encircling the entire circumference of the pipe with a 360 deg. PVC (1.524 mm thick) or galvanized steel jacket and installed during the installation of the piping system. These insulated pipe support inserts shall be provided by the Mechanical Contractor and installed by the same during pipe support installation.
6. Hanger rod sizing and spacing for pipe shall be as follows:

Pipe Size	Minimum Rod Diameter	Maximum Spacing
To 1-1/4 inches	3/8 inch	6.5 feet
To 2 inches	3/8 inch	10 feet
To 3 inches	1/2 inch	10 feet
To 6 inches	5/8 inch	10 feet
8 to 12 inches	7/8 inch	12 feet
PVC & ABS (all sizes)	3/8 inch	4 feet
Cast Iron No-Hub	5/8 inch at joints	5 feet and

7. Provide hangers within 12 inches of each horizontal elbow.
8. Provide hangers with minimum 1-1/2 inches vertical adjustment.

H. Salt Brine System Runout Piping: Ethylene-Propylene (EPDM)

1. Brine facility runout piping to tanks and pumps shall be Ethylene-Propylene (EPDM) piping with a reinforced polyethylene helix. EPDM piping shall include the following ratings:
 - a. Working Pressure at 72°F: 90-psi
 - b. Vacuum Rating at 72°F: 29.8-In Hg
 - c. Minimum Bending Radius at 68°F: 7-inches
 - d. Weight: 1.25 lbs/ft
 - e. Temperature Range: -40°F to 140°F
 - f. Type: Suction and Discharge
 - g. Application: Brine chemicals

I. Salt Brine System Main Run Piping: Chlorinated Polyvinyl Chloride (CPVC)

1. Brine facility runout piping to tanks and pumps shall be CPVC Type IV, ASTM Cell Classification 23447. All pipes shall be schedule 80 CPVC manufactured to dimensional requirements of ASTM F441. All fittings shall be CPVC drainage patterns meeting the requirements of ASTM F 2618 and ASTM D3311 and specialty patterns according to the manufacturer's specifications. CPVC system shall be available in sizes 1/1/2 through 24-inch iron pipe size (IPS) dimensions. All pipe, fittings, and cement shall be supplied together as a complete system certified by the NSF International for use in corrosive waste drainage systems as a Special Engineered (SE) Product. Installation shall be in accordance with the manufacturer's instructions and all applicable codes.

2.3 INSULATION:

A. General:

1. Installer Qualifications: Skilled mechanics who have successfully completed an apprenticeship program or another craft training program certified by the Department of Labor, Bureau of Apprenticeship and Training.
2. Fire-Test-Response Characteristics: Insulation and related materials NFPA 255, UL Classified per UL 723 or meeting ASTM E 84, by a testing and inspecting agency acceptable to authorities having jurisdiction. Factory label insulation and jacket materials and adhesive, mastic, tapes, and cement containers, with appropriate markings of applicable testing and inspecting agency.
 - a. Insulation Installed Indoors: Flame-spread index of 25 or less, and smoke-developed index of 50 or less.
 - b. Insulation Installed Outdoors: Flame-spread index of 75 or less, and smoke-developed index of 150 or less.

B. Piping:

1. All domestic, potable & non-potable, hot and cold water lines and rain drains shall be insulated with preformed insulation.
 - a. Fiberglass insulation with a vapor barrier jacket. Insulation shall have a conductivity not exceeding 0.28 Btu-inch/hour-sq. ft.-degrees F. Laps and butt joints shall be sealed with pressure sensitive joint sealing tape of the same finish as the insulation jacket to provide a continuous vapor seal. Fittings and valves shall be insulated with PVC fitting covers and fiberglass insulation inserts, or with hydraulic setting insulating cement and four ounce canvass jacket with vapor barrier adhesive.
 - b. Alternate material for Cross-Linked Polyethylene Tubing (PEX): One piece preformed flexible elastomeric closed cell foam with built-in vapor barrier. Seal laps and butt joints with moisture resistant adhesive to provide a continuous vapor seal. Insulation shall have a conductivity rating not exceeding 0.27 Btu-inch/hour-sq. ft.-°F.

Insulation thicknesses shall be as follows:

<u>System</u>	<u>Pipe Sizes</u>	<u>1/2" and above</u>
Domestic Cold Water (pot. & non-pot.)		1/2"
Domestic Hot Water & Recirc. (pot. & non-pot.)		1"

2. Insulation shall be installed in strict accordance with manufacturer's instructions.
3. Insulation shall be continuous through penetrations.
4. All insulation shall be installed in a neat and workmanlike manner.

2.4 VALVES & STRAINERS:

A. Gate Valves:

1. Valves 2-inches and smaller shall be cast bronze body, ASTM B-62, rising stem, 200 psi WOG. Stems shall be dezincification-resistant silicon bronze, ASTM B-371, or low-zinc alloy, ASTM B-99, NSF/ANSI 61-8 Annex F&G, NSF 372 Lead Free. If unable to use a rising stem valve due to inadequate clearance, use non-rising stem gate valve. Valves shall comply with MSS SP-80. Valves over 2-inches shall be iron body, bronze trim, rising stem and hand wheel, flanged ends. Valves shall comply with MSS SP-70. Valves mounted higher than 7'-0" A.F.F. shall be provided with chain, wheel, and guides. Basis of design: Apollo # 101T-LF/101S-LF Lead Free Bronze, Apollo #611F-LF Lead Free Cast Iron, or equal.

B. Globe Valves:

1. Valves 2-inches and smaller shall be cast bronze body, ASTM B-62, renewable composition disc, 200 psi WOG, ASTM B-62, rising stem and hand wheel. Stems shall be of dezincification-resistant silicon bronze, ASTM B-371, or low-zinc alloy, ASTM B-99, NSF/ANSI 61-8 Annex F&G, NSF 372 Lead Free. Valves over 2-inches shall be iron body, bronze trim, rising stem and hand wheel, plug type disc, flanged ends. Valves shall comply with MSS SP-85. Valves mounted higher than 7'-0" A.F.F. shall be provided with chain, wheel and guides. Basis of design: Apollo #120T-LF/120S-LF Lead Free Bronze, Apollo #711F-LF Lead Free Cast Iron, or equal.

C. Ball Valves:

1. Valves 2-inches and smaller shall be lead free cast bronze body, chrome-plated brass ball, teflon seats, and lever handle, 600 psi CWP. Valves shall comply with MSS SP-110, NSF/ANSI 61, NSF/ANSI 372 Lead Free. Valves over 2-inches shall be cast steel body, chrome plated steel ball, teflon seats, and lever handle. Victaulic, Anvil Gruvlok, Grinnell, or Shurjoint ball valves are acceptable if grooved piping is used. Valves mounted higher than 7'-0" A.F.F. shall be provided with chain, wheel, and guides. Basis of design: Apollo #77CLF-A Series or equal.

D. Butterfly Valve:

1. Valves 12-inches and smaller shall be ductile iron lug body, ASTM A-536, 316 stainless steel disc, EPDM Liner, 316 stainless steel stem, and safety twist-lock multi-position lever handle with open-closed lockout capabilities. Valve shall be rated at 175 psig WOG. Valves mounted higher than 7'-0" A.F.F. shall be provided with chain wheel and guides. Valves shall comply with MSS SP-67. Victaulic, Anvil Gruvlok, Grinnell, or Shurjoint butterfly valves are acceptable if grooved piping is used.

E. Check Valves:

1. Valves 2-inches and smaller shall be bronze body Y-pattern, ASTM B-62, swing check, bronze disc, 200 psi WOG. Valves shall comply with MSS SP-80, NSF/ANSI 61-8 F&G, NSF/ANSI 372 Lead Free. Valves, over 2-inches shall be iron body, ASTM A-126, bronze trim, swing check, renewable disc and seat. Valves shall comply with MSS SP-71. Victaulic, Anvil Gruvlok, Grinnell, or Shurlock check

valves are acceptable if grooved piping is used. Basis of design: Apollo # 161T-LF/161S-LF Lead Free Bronze, Apollo # 920F-LF Lead Free Cast Iron, or equal.

2. Swing check valves with outside lever and spring (not center guided) is to be used on sewage ejector or storm-water sump pumps. Basis of design: Apollo # 910FLW-LF Lead Free Cast Iron or equal.

F. Pressure Reducing Valves:

1. Valves 2-inches and smaller shall be bronze body, stainless steel and thermoplastic internal parts, fabric reinforced diaphragm, strainer, and single union end. Basis of design: Apollo # 36ELF Series Lead Free Bronze or equal.

G. Balance Valve:

1. Valve shall have a twin tube 316 S.S. design with blowout proof attachment to station body. Ports shall include $\frac{3}{4}$ " port for thermometer, $\frac{1}{4}$ " port for pressure gauge, air vent, and $\frac{1}{2}$ " drain port.
2. The instrument station shall be 120/150-flanged construction.
3. The butterfly valve shall be lug pattern with a rating of 200 WP, 250 deg. F. The valve shall have an infinite. Position operator with memory stop (6" and smaller), worm gear with memory stop (8" and larger).

H. Y-Pattern Strainers:

1. Body: ASTM A 126, Class B, cast iron with bolted cover and bottom drain connection.
2. End Connections: Threaded ends for NPS 2 (DN 50) and smaller; flanged ends for NPS 2-1/2 (DN 65) and larger.
3. Strainer Screen: 40-mesh startup strainer and perforated stainless-steel basket with 50 percent free area.
4. CWP Rating: 125 psig (862 kPa).

- I. Install strainers on inlet side of each control valve, pressure-reducing valve, solenoid valve, inline pump, and elsewhere as indicated. Install NPS $\frac{3}{4}$ (DN 20) nipple and ball valve in blowdown connection of strainers NPS 2 (DN 50) and larger. Match size of strainer blow-off connection for strainers smaller than NPS (DN50).

2.5 EQUIPMENT

A. Brine Transfer System

1. Pump:
 - a. The pump shall be a 2" inlet x 1 $\frac{1}{2}$ " outlet Stainless Steel centrifugal pump with a stainless steel shaft and mechanical seal. The pump shall be close coupled to a 3 HP, 230 volt, single phase, 3450 RPM, TEFC motor. Based on water, this pump shall be capable of pumping 165 GPM at 15 PSI. The pump assembly shall be mounted on a galvanized steel frame and enclosed in a UV stabilized polyethylene enclosure. The frame shall incorporate a 5' vertical post, which will include a hose rack to store the fill and unload hoses in the off season, as well as, provide a place to mount the pump control and run light. The run light shall be red in color and will illuminate with the pump when the pump is turned on.
2. Piping Connections:
 - a. Each side of the pump shall be equipped with a 3-way poly ball valve that is

accessible from the outside of the pump enclosure. The connection between the pump and this ball valve must be made with a brass or stainless steel nipple – **no exceptions**. The 3-way ball valves shall allow for the filling and unloading of truck mounted tanks, and shall also allow for the recirculation of the storage tank. The valve on the suction side of the pump shall be a side load 2" poly valve, while the valve on the discharge side of the pump shall be a bottom load 1 ½" poly valve.

3. Hoses:

- a. The 3" x 25' hose on the suction side of the pump for connection to storage tank shall be constructed of black thermoplastic rubber with a rigid polyethylene helix. The hoses on the discharge side of the pump shall be constructed of heavy-duty EPDM rubber and shall consist of the following lengths and sizes: 1 ½" x 25' to connect truck mounted tanks to the pump for filling. Each hose end that connects to the storage tank shall include female camlock fittings to connect to the mating male camlock fittings. Each hose end that connects to the truck mounted tanks shall include a hose barb, ball valve, and proper camlock fitting to mate to the fitting on the truck mounted tanks. The discharge hose for filling truck mounted tank shall also be capable of being connected to the suction side of the pump for offloading of the truck mounted tank.

PART 3 - EXECUTION

3.1 WORKMANSHIP:

A. General:

1. Install all piping, fixtures, equipment, and accessories as shown, and in strict accordance with the plumbing laws, rules, and regulations of the State and/or City. All work shall be done in a neat and orderly fashion and left in a condition satisfactory to the Architect/Engineer.

B. Piping:

1. All piping shall be run parallel or perpendicular to established building lines. Install piping so as to allow for expansion. Waste and vent piping occurring above floor slab shall be installed true and plumb. Extend vents at least 1 foot above roof, or to the top of the closest adjacent parapet wall, whichever is greater, and provide watertight flashing sleeves. Excavation and backfill shall be in accordance with Section 220000 of these specifications.

C. Fixtures:

1. Install fixtures true and plumb with building walls. Caulk all plumbing fixtures at joints along walls, countertops, and other intersecting surfaces. Locate fixtures as shown and per manufacturer's instructions. Furnish all required trim for fixtures to provide a complete and workable installation.

3.2 TESTS:

A. General:

1. All piping, fixtures, and equipment shall be inspected and approved before concealing or covering. All work shall be tested as required by Section 220000 of

these specifications and shall be leak proof before inspection is requested. All tests shall be repeated if required by those making the inspection.

2. All potable water systems shall be flushed and disinfected in accordance with Section 220000 of these specifications. Following disinfection, system shall be flushed and water sampled to show compliance with requirements of public health authority having jurisdiction. If tested water does not meet requirements, disinfecting shall be repeated until water quality meets requirements.
3. Grooved ends shall be clean and free from indentations, projections, and roll marks in the area from pipe end to groove. Gasket shall be molded and produced by Victaulic Company, Gruvlok, or Grinnell Mechanical Products, or equal. Verify gasket grade is suitable for the intended service. The grooved coupling manufacturer's factory trained representative shall provide on-site training for contractor's field personnel the use of grooving tools, application of groove, and installation of grooved end products.
 - a. All grooved joint couplings, fittings, valves and specialties shall be the products of Victaulic Company, Gruvlok, Grinnell Mechanical Products, or equal.
4. Install the grooved piping in accordance with the latest recommendations as published by the manufacturer. Pipe shall be square cut, +/-0.30", properly deburred and cleaned. Mark pipe ends at the required location using a gauge supplied by the manufacturer to ensure full insertion into the coupling or fitting during assembly. Use a manufacturer's tool with the proper sized jaw for pressing.

B. Fixtures and Equipment:

1. Fill all plumbing fixtures with water and check for leaks or retarded flow. Repair as required. Adjust each piece of plumbing equipment as required to ensure proper functioning. Leave all fixtures and equipment in first class operating condition.
2. The Plumbing Contractor is responsible for all backflow devices to be inspected by a certified backflow technician before use of the building potable water system.

C. Smoke Test:

1. A smoke test shall be performed on the entire waste and vent system before building occupancy. After all fixtures are permanently connected and traps are filled with water, fill entire drainage systems with smoke under pressure of 1.3 pKa (1 inch of water) with a smoke machine. If leaks are detected, they shall be repaired and the smoke test shall be performed again until no leaks are found.

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PIPING SYSTEM TEST REPORT

STRUCTURE/BUILDING: _____

TEST NUMBER: _____

LOCATION: _____

CONTRACT NO. _____

DESCRIPTION OF SYSTEM/PIPING BEING TESTED:

Description of Test Performed	Test Pressure	Test Duration	Pass/Fail
Hydrostatic: _____	P.S.I.	_____	_____
Inert Gas: _____	P.S.I.	_____	_____
Compressed Air: _____	P.S.I.	_____	_____
Waste & Vent Smoke Test: _____	1" Water Column	_____	_____

NAME AND TITLE OF PERSON IN CHARGE OF PERFORMING TEST'S FOR CONTRACTOR:

Name: _____ Title: _____

Signature: _____

I hereby certify that the above described system has been tested as indicated above and found to be entirely satisfactory as required in the contract specifications.

Signature of Inspector: _____ Date: _____

REMARKS: _____

END OF SECTION 220100

SECTION 31 1000

CLEARING AND GRUBBING

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Provide removal of trees, stumps, shrubs, grass and other vegetation within the construction limits to permit construction of the new facilities.
- B. Protect the adjoining properties from damage during clearing and grubbing operations.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

3.1 CLEARING AND GRUBBING

- A. Clearing and grubbing shall extend to no more than 3 feet outside of the construction limits. The clearing and grubbing operation shall be conducted in a manner which will not damage any vegetation outside of the clearing and grubbing limits. All brush, roots, and other debris within the grubbing limits shall be removed to a depth of 6". Completely remove stumps and other debris protruding through the subgrade surface. The Contractor shall chop all brush and debris resulting from the Clearing and Grubbing operation and haul to a disposal site located by the Contractor off-site. Burning of debris on-site will not be allowed.

3.2 STRIPPING

- A. Areas within the limits of the project shall be stripped to remove topsoil containing organic material before construction begins over such areas. The topsoil shall not be used in construction of onsite fills or trench backfills. The topsoil shall be hauled to a disposal site located by the Contractor off-site.

END OF SECTION 31 1000

SECTION 31 2000

EARTHWORK

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Provide all labor, materials, and equipment as required for all excavation, grading, providing borrow materials, hauling, placing and compacting earthwork materials to construct the site to the grades shown on the plans. This only includes earthwork for the site/civil portion of the project, not construction of the building.
- B. Prior to commencement of any earthwork, the Contractor shall review the geotechnical reports. The geotechnical report is on file at the office of the Engineer for information only and the Contractor is responsible for making any interpretations there from.
- C. Submit to the Engineer's Field Representative load tickets on all materials delivered to the site.

1.2 REFERENCE STANDARDS

- A. ASTM D 136 Sieve Analysis of Fine and Coarse Aggregates
- B. ASTM D 422 Method for Particle - Size Analysis of Soils
- C. ASTM D 698 Test Methods for Moisture-Density Relations of Soils and Soil-Aggregated Mixtures, Using 5.5-lb Rammer and 12 inch Drop
- D. ASTM D 1556 Density of Soil by the Sand-Cone Method
- E. ASTM D 1557 Test Methods for Moisture-Density Relations of Soils and Soil Aggregate Mixtures, Using 10 lb. Rammer and 10 inch Drop
- F. ASTM D 1633 Test Method for Compressive Strength of Molded Soil-Cement Cylinders
- G. ASTM D 2419 Test Method for Sand Equivalent Value of Soils and Fine Aggregate
- H. ASTM D 2487 Classification of Soils for Engineering Purposes
- I. ASTM D 2901 Test Method for Cement Control of Freshly-Mixed Soil Cement
- J. ASTM D 2922 Density of Soil and Soil Aggregate in Place by Nuclear Methods (Shallow Depth).

- K. ASTM D 4254 Test Methods for Minimum Index Density of Soils and Calculative of Relative Density
- L. OSHA - 1926.650-651 and other applicable sections.
- M. Geotechnical Engineering Report dated April 25, 2019 prepared by Materials Testing and Inspection titled "ISU Alumni and Visitors Center, East Corner of 15th Avenue and Bonneville St, Pocatello, ID."

1.3 SUBMITTALS

- A. The Contractor shall submit test results of all materials proposed to be used in work in accordance with the requirements of Section 01 3300 – Submittals.
- B. Submit sieve analysis, moisture density relationship test for both ASTM D698 and D1557, and sand equivalency. The sieve analysis and moisture density relationship tests must have been completed within 12 calendar months from the date of submittal.

1.4 DEFINITIONS

- A. Backfill or Fill: (a) Material used to replace material removed during construction or (b) The act of replacing or placing material during construction.
- B. Backfill Operation or Fill Operation: The method and the activity required to fill surface depressions and excavations, or to construct fills to required grades.
- C. Common Fill: Fill or borrow materials which are naturally occurring and not meeting a specific gradation or classification.
- D. Structural Fill: The act of placing common or imported fill material under controlled operation to a certain density.

PART 2 - PRODUCTS

2.1 SUITABLE FILL AND BACKFILL MATERIAL REQUIREMENTS

- A. The following types of suitable materials are defined (see Execution for the location where the materials are approved for use or where identified in other specifications and drawings):
 - 1. Common Fill: Fill or borrow materials which are naturally occurring, not meeting a specific gradation or classification, are not Unsuitable Materials, and can be placed in a controlled operation to a certain density.
 - 2. Sand Backfill (Bedding Sand): Sand with 100 percent passing a 3/8 inch sieve, at least 90 percent passing a Number 4 sieve and less than 3% passing the No. 200 sieve.
 - 3. Crushed Stone Backfill (Bedding Chips): Manufactured angular, crushed stone, crushed rock, or crushed slag with the following gradation requirements:

Sieve Size	Percent Passing By Weight
1"	100
3/4"	80 - 100
3/8"	20 - 70
No. 4	5 - 20
No. 200	0 - 3

4. Foundation Stabilization Backfill: Uncrushed gravel, and sand with the gradation requirements below. The material shall have a minimum sand equivalent value of 28, sand equivalent not required if less than 5% passing the No. 200 sieve.

Sieve Size	Percent Passing By Weight
3"	100
No. 4	25 - 60
No. 200	0 - 12

5. Fine Gravel Drain Rock: Clean crushed rock or gravel which is free of shale, clay, friable materials, and or debris that conforms to the gradation below.

Sieve Size	Percent Passing By Weight
1 1/2"	100
1"	25 - 70
3/4"	5 - 15
3/8"	0 - 4
200	0 - 2

6. Coarse Gravel Drain Rock: Crushed rock or gravel which is free of shale, clay, friable materials, and or debris that conforms to the gradation below. Drain Rock shall have a minimum of 35% Air Voids as determined by ASTM C 29 Standard Test Method for Unit Weight and Voids in aggregate, Jigging Procedure.

Sieve Size	Percent Passing By Weight
3"	100
1"	25 - 60
3/8"	0 - 4

Sieve Size	Percent Passing By Weight
200	0 - 2

7. Aggregate Base (3/4" Road Mix): Crushed aggregate base material of such nature that it can be compacted readily by watering and rolling to form a firm, stable base. The material shall meet the following gradation requirements:

Sieve Size	Percent Passing By Weight
1"	100
3/4"	90 - 100
No. 4	40 - 65
No. 8	30 - 50
No. 200	3 - 9

- a. The sand equivalent value shall be not less than 30, sand equivalent not required if less than 5% passing the No. 200 sieve
- b. The material shall have a Los Angeles Abrasion of 35% or less.

8. Aggregate Subbase (Pit Run): Uncrushed rock aggregate subbase material that can be compacted readily by watering and rolling to form a firm stable subbase. The material shall meet the following requirements:

Sieve Size	Percent Passing By Weight
4"	100
3"	90-100
No. 4	30-75
No. 200	0 – 15.0

- a. The sand equivalent value shall be not less than 30, sand equivalent not required if less than 5% passing the No. 200 sieve.
- b. The material shall have a Los Angeles Abrasion of 40% or less.

9. Imported Trench Backfill (8" Pit Run): Uncrushed rock aggregate material that can be compacted readily by watering and rolling to form a firm stable trench. The sand equivalent value shall be not less than 25, sand equivalent not required if less than 5% passing the No. 200 sieve, and the material shall meet the following requirements:

Sieve Size	Percent Passing By Weight
8"	100
No. 4	15 - 60
No. 200	0 - 12

10. Granular Borrow: Provide sand, sand and gravel, or sand and rock mixtures with a sand equivalent greater than 30. Sand equivalent is not required if the material has less than 5 percent passing the No. 200 sieve.
11. Trench Plug Material: Low permeable fill material, a non-dispersible clay material having a minimum plasticity index of 10.
12. Top Soil: Excavated material, up to 18 inches below stripped surface, free of rocks larger than 3 inches, organics, roots, refuse, brush or other debris.
13. Rip Rap: Riprap material shall be hard, durable, angular in shape and free from overburden and organic material. The breadth or thickness of any stone shall not be less than one-third of its length. The minimum unit weight of the stone shall be 165 pounds per cubic foot. Riprap material shall have less than 10 percent loss after five cycles in the sulfate soundness tests and shall conform to the following gradation:

Weight of Stones	Percent of Total Weight Less than the Stone Weight
200 lbs	100
130 lbs	80
90 lbs	50
25 lbs	10 max.

14. Gravel Surfacing: Meet the following requirements for gravel surfacing, including added binder or blending material:

Sieve Size	Percent Passing By Weight
3/4"	100
No. 4	40-80
No. 10	25-60
No. 200	8-20

- a. Dust Ratio: the portion passing the No. 200 (0.075 mm) sieve cannot exceed two-thirds of the portion passing the No. 40 (0.425 mm) sieve.
 - b. For material passing the No. 40 (0.425 mm) sieve, the liquid limit must not exceed 35 and the plasticity index must not be below 6 or above 12.
 - c. A wear factor not exceeding 40% at 500 revolutions.
 - d. At least 35% by weight of the aggregate retained on the No. 4 (4.75 mm) sieve must have one fractured face.
15. RAP Surfacing: Unprocessed Recycled Asphalt Pavement (RAP) that has not been processed for gradation and binder content uniformity. RAP stockpile may be from different sources of unprocessed RAP together provided it is generally free of contamination from dirt, debris, clean

stone, concrete, etc. Provide unprocessed RAP that has 100 percent passing the 5/8-inch sieve.

16. Filter Sand: Aggregate of natural sand or other approved inert materials composed of hard, strong, and durable particles conforming to the requirements of ASTM C-33 except as modified herein.

a. Use only aggregates that include deleterious substances not exceeding the following:

Type	Percent Passing By Weight
Clay Lumps	0.50
Coal and Lignite	0.30
Other Deleterious Substances	2.00
Deleterious Material passing No. 200	1.75

b. Moisture content of fine aggregate shall not exceed 8 percent.

c. Aggregate that is uniformly graded from coarse to fine within the following gradation as follows:

Sieve Size	Percent Passing By Weight
3/8"	100
No. 4	95 - 100
No. 16	45 - 80
No. 50	10 - 30
No. 100	2 - 10
No. 200	0 - 4

2.2 UNSUITABLE MATERIALS

A. Unsuitable material include the materials listed below:

1. Soils which, when classified under ASTM D 2487 – Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System), fall in the classification of Pt, OH, CH, MH, or OL.
2. Soils which cannot be compacted sufficiently to achieve the density specified for the intended use.
3. Materials that contain hazardous or designated waste materials including petroleum hydrocarbons, pesticides, heavy metals, and any material which may be classified as hazardous or toxic according to applicable regulations.

4. Soils that contain greater concentrations of chloride or sulfate ions, or have a soil resistivity or pH less than the existing on-site soils.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Notify Engineer prior to starting any grading operations.
- B. Identify required lines, levels, contours and datum.
- C. Identify and flag surface and aerial utilities, known underground utilities locations.
- D. Maintain and protect existing utilities which pass through the work area.

3.2 SITE CONTROL

- A. Unfavorable Weather: Do not place, spread, or roll any fill material during unfavorable weather conditions. Do not resume operations until moisture content of material is satisfactory.
- B. Flooding: Provide berms or channels to prevent flooding or saturation of subgrade. Promptly remove all water collecting in depressions.
- C. Softened Subgrade: Where soil has been softened or eroded by flooding or placement during unfavorable weather, remove all damaged areas and recompact as specified for fill.
- D. Dust Control: Use all means necessary to control dust on and near the work and on and near all off-site borrow areas. Thoroughly moisten all surfaces as required to prevent dust from being a nuisance to the public, neighbors, residents, properties, and concurrent performance of other work on the site.
- E. Noise Control: Use equipment that is equipped with adequate noise attenuation devices.

3.3 OFF-SITE IMPACTS

- A. Comply with all traffic and hauling requirements of the State and County.
- B. Provide all signing, flagmen, or other special traffic control required to provide for the safety of the public.
- C. Use only vehicles approved for highway use and comply with all load requirements.
- D. Provide wheel cleaning as required to minimize the tracking of materials onto public roadways.

3.4 PROTECTION

- A. Protect trees and other features to remain as a portion of the final landscaping or project.

- B. Protect bench marks, existing structures, fences, sidewalks, paving, and curbs from equipment and vehicular traffic.
- C. Protect above and below grade utilities which are to remain.
- D. Notify Engineer of unexpected subsurface conditions and discontinue affected work in the area until notified to resume work.
- E. Protect bottom of excavations and soil adjacent to and beneath foundation from frost.
- F. Grade excavation top perimeter to prevent surface water runoff into excavation.

3.5 EXCAVATION

- A. Excavate all cut areas to the grades shown on the plans.
- B. Excavate all areas that have excessive moisture content and cannot be compacted to the required densities.
- C. Correct unauthorized excavation at no cost to the Owner.
- D. Excavate or scarify and aerate soils with excessive moisture content, and allow to dry.

3.6 SUBGRADE PREPARATION

- A. Pavement & Concrete
 - 1. Per Geotechnical Report. Excavate to expose competent native soils or to a minimum of 2 ft below finished subgrade. If fill materials remain after over-excavation, the exposed subgrade must be compacted.

3.7 PREPARATION OF FOUNDATIONS

- A. Retaining Wall Footings:
 - 1. Per Geotechnical Report.

3.8 CONSTRUCTION OF EMBANKMENTS

- A. Fill areas to contours and elevations as shown on the plans. Do not use frozen materials.
- B. Place and compact fill materials in continuous lifts not exceeding six (6) inches in depth for silty soils or twelve (12) inches for granular structural fill materials, unless specifically allowed.
- C. Employ a placement method so as not to disturb or damage utilities in trenches.
- D. Maintain optimum moisture content of materials to attain required compaction density.
- E. Make smooth changes in grade. Blend slopes into level areas.

3.9 IMPORTED STRUCTURAL FILL

- A. Aggregate Subbase and Base, granular borrow, and common fill material under parking areas, drive lanes, and vehicle traffic areas, shall be compacted to at least 95% of the maximum dry density as determined in accordance with ASTM D698. Maximum loose lift thickness for aggregate base shall not exceed 8 inches. Maximum loose lift thickness for aggregate subbase, granular borrow, and common fill shall not exceed 10 inches.
- B. Granular material with more than 30% by weight retained on the 3/4-inch sieve shall be compacted to a minimum 75% of maximum index density as determined by ASTM D4253 and D4254. Drain rock and crushed stone backfill material does not require compaction.

3.10 DISPOSAL OF WASTE SOIL

- A. Contractor shall dispose of waste material at an off-site location determined by the Contractor.

3.11 QUALITY CONTROL

- A. Material & Compaction Testing: All soils testing of samples will be done by an independent testing laboratory mutually agreed upon by Contractor and Owner at the Owner's expense. If tests indicate work does not meet specific compaction requirements, remove work, replace, and retest at the Contractor's expense.
 - 1. Qualifications of testing company
 - a. Basic requirements of ASTM E 329, "Standard Specification for Agencies Engaged in the Testing and/or Inspection of Materials as Used in Construction" and ASTM D 3666, "Standard Specification for Minimum Requirements for Agency Testing and Inspecting Bituminous Paving Materials", as applicable.
 - b. Calibrate testing equipment at reasonable intervals by devices of accuracy traceable to either the National Bureau of Standards or accepted values of natural physical constants.
 - 2. Frequency of Compaction Tests
 - a. Curbs and sidewalks: In horizontal plane, test at start with subsequent tests a maximum of every 250 feet. At landscape islands test each island at one location. At every horizontal location, obtain one test at subgrade. Perform subsequent tests every 12 inches of compacted depth and at top of backfill or when materials or procedures change. Perform a minimum of two (2) tests at finished grade.
 - b. Parking and vehicle areas, roadways: In horizontal plane, test each backfill area with subsequent test for every 2,500 square feet of backfill surface area. At every horizontal location, obtain one test at subgrade. Perform subsequent tests every 12 inches of compacted depth and at top of backfill or when materials or procedures change.

- c. Concrete slabs for patios, concrete plaza, and entry slabs: In horizontal plane, test each backfill area with subsequent test for every 1,000 square feet of backfill surface area. At every horizontal location, obtain one test at subgrade. Perform subsequent tests every 12 inches of compacted depth and at top of backfill or when materials or procedures change.
- d. Linear foundations and footings for retaining walls: In horizontal plane, test at start with subsequent tests a maximum of every 100 feet, and where elevation changes between adjacent footings. At every horizontal location, obtain one test at subgrade. Perform subsequent tests every 12 inches of compacted depth and at top of backfill or when materials or procedures change. Perform a minimum of two (2) tests at finished grade.
- e. Along retaining walls: In horizontal plane, test each backfill area with subsequent test for every 100 lineal feet of wall, a minimum of two test per exterior wall side. At every horizontal location, obtain one test at subgrade. Perform subsequent tests every 12 inches of compacted depth and at top of backfill or when materials or procedures change.

3.12 TOLERANCES

- A. Finished grade of graded areas shall meet the following requirements:
 - 1. In paved areas including roadways, sidewalks, parking lots, etc., plus or minus 0.10 feet from the grade shown on the plans.
 - 2. Concrete pads, plus or minus 0.05 feet from the grade shown on the plans.
 - 3. In landscaped areas or similar areas, plus or minus two (2) inches.
 - 4. Differential grades between walking surfaces shall not exceed 1/4-inch.
 - 5. Landscape finish grade adjacent to concrete walks shall be minus 1-inch from walking surface elevation.

END OF SECTION 31 2000

SECTION 31 2015

TRENCHING AND BACKFILL

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Provide all excavation of trenches, bedding, and backfilling work for construction of piping.
- B. Excavation of trenches shall include all material excavated or removed regardless of type, character, composition or condition of the material.

1.2 SUBMITTALS

- A. The Contractor shall submit samples of all materials proposed to be used in work. Sample sizes shall be determined by the testing laboratory.

1.3 DEFINITIONS

- A. Pipe Zone: That portion of the vertical trench cross-section lying between a plane below the bottom surface of the pipe and a plane 6 inches above the top of the pipe.
- B. Trench Zone: The portion of the vertical trench cross-section lying between the Pipe Zone and a point 18 inches below the finished grade.
- C. Final Backfill: The portion of the vertical trench cross-section within 18 inches of finished grade.
- D. Pipe Bedding: Material placed below the pipe and in the Pipe Zone.
- E. Springline: The center axis of the pipe.
- F. Trench Backfill: Material placed from the top of the Pipe Zone to finished grade.
- G. Trench Foundation Material: Material placed below the Pipe Bedding.

PART 2 - PRODUCTS

2.1 PIPE BEDDING MATERIAL

- A. Pipe bedding shall consist of crushed stone backfill (bedding chips) material per Section 31 2300 – Earthwork.

2.2 TRENCH BACKFILL MATERIAL

- A. Excavated trench material may be used as follows:

1. Excavated trench material shall be free from cinders, ashes, refuse, organic and frozen material, boulders with any dimension exceeding 8 inches, or other unsuitable material per Section 31 2300 – Earthwork.
2. Material with excessive or deficient moisture content will not be considered as unsuitable if the moisture content can be adjusted to a level that allows obtaining compaction.
3. Imported backfill material shall conform to imported trench backfill (8" Pit Run) per Section 31 2000 – Earthwork.

2.3 FOUNDATION STABILIZATION

- A. Trench foundation material shall consist of foundation stabilization backfill material per Section 31 2000 – Earthwork.

2.4 IDENTIFICATION TAPE AND LOCATING WIRE

- A. Locating wire shall be No. 12 AWG insulated cooper locating wire with 1/64" PVC insulation.
- B. Identification tape shall be 3-inches wide, 4 mil polyethylene vinyl. Tape text and color shall meet the following requirements

Pipe Contents	Text	Color
Potable Water	"CAUTION – WATER LINE BURIED BELOW"	Blue
Pressure Sewer	"CAUTION – SEWER LINE BURIED BELOW"	Green
Reclaimed Water	"CAUTION – RECLAIMED WATER LINE BURIED BELOW"	Purple
Pressure Irrigation	"CAUTION – IRRIGATION LINE BURIED BELOW"	Purple
Gas	"CAUTION – GAS LINE BURIED BELOW"	Yellow
Telephone	"CAUTION – PIPE LINE BURIED BELOW"	Yellow
Cable TV	"CAUTION – PIPE LINE BURIED BELOW"	Yellow
Electric	"CAUTION – ELECTRICAL LINE BURIED BELOW"	Red

PART 3 - EXECUTION

3.1 EXISTING UTILITIES:

- A. The Contractor shall be fully responsible for any and all damage to existing or constructed utilities, and shall repair damages in accordance with utility owner's requirements at no additional cost to the Owner. It shall be the Contractor's responsibility to coordinate and notify all affected utility owners. Call 811 Dig-Line before commencing construction.

1. Parallel Utility Support: Work associated with parallel utility support and utility crossings shall be incidental to the work unless a specific bid items is provided for parallel utility support.
2. Utility Crossing Support: All utilities that interfere with the construction of the trenching and pipe installation shall be temporarily supported in accordance with the utility owner's requirements. Work associated with utility crossings support shall be incidental to the work unless a specific bid items is provided for utility crossing support.
3. All crossing utilities shown on the plans and marked by Dig-Line shall be vertical and horizontally located, in a non-destructive manner, prior to construction to verify pipe elevation, materials, and diameter. This information shall be provided to the Engineer for evaluation of conflicts prior to construction. All potholes shall be backfilled immediately after obtaining information.

3.2 TRENCH EXCAVATION

- A. Trenches shall be excavated to lines and grades shown on the drawings, with a minimum width at the top or crown of the pipe not to exceed the outside diameter of the pipe plus 2'. In the event the Contractor should over excavate in width or depth without the Engineer's approval, he shall provide pipe bedding for the full length of the over excavation. No special payment will be made for work caused by over excavation.
- B. Trench shall be kept free from water at all times to facilitate fine grading, proper laying and joining of pipe, and prevention of damage to completed joints.
- C. If the trench bottom is disturbed during excavation, compact trench bottom to 95% maximum density of the standard proctor, ASTM D698.
- D. The Contractor shall conduct trench operations in such a manner as to provide adequate safety precautions for workmen, adjacent property, or the public at all times by use of adequate sheeting, shoring, or bracing to sustain stability of the trench floor and walls. The Contractor shall furnish, place, and maintain such shoring as may be required to support sides of the trench. Costs of shoring and bracing shall be considered incidental to trench excavation and backfill.
- E. The Contractor shall conduct trench operations in such a manner as to provide adequate safety precautions for workmen, adjacent property, or the public at all times by use of adequate sheeting, shoring, or bracing to sustain stability of the trench floor and walls. The Contractor shall furnish, place, and maintain such shoring as may be required to support sides of the trench.

3.3 PIPE BEDDING

- A. Place bedding in layers no thicker than 6 inches. Allow for bedding depth around pipe bells. Place bedding at least 4 inches below the pipe and 6 inches above the pipe.
- B. Shovel slice and tamp to ensure that the bedding material is firmly placed.

- C. Following placement of pipe, place additional bedding material up to the springline of the pipe. Shovel slice and tamp to ensure that the bedding material fills in and supports the pipe haunch area.
- D. In 6 inch lifts, place additional bedding layers from the pipe springline to 6 inches above the pipe.

3.4 TRENCH BACKFILL

- A. All backfill material shall be placed in layers not to exceed 6-inch maximum loose lift thickness for native silty material and 12-inch maximum loose lift thickness for imported aggregate backfill.
- B. The entire trench shall be compacted to 95% maximum density of the standard proctor as determined by ASTM D-698.
- C. Trenches under buildings and structures shall be compacted, the entire depth, to 95% maximum density of the modified proctor determined by ASTM D1557.

3.5 IDENTIFICATION TAPE AND LOCATING WIRE PLACEMENT

- A. Unless indicated otherwise, attach locating wire to the crown of all buried pipelines using electrical tape, except gravity irrigation, sanitary sewer, or storm sewer mains having visible manholes or clean-out structures at all angle points. Provide 12" of slack wire above ground at each location of valve or wire box.
- B. Unless indicated otherwise, identification tape shall be placed above all buried pipelines, 18" - 24" above the crown of the pipe, except gravity irrigation, sanitary sewer, or storm sewer mains having visible manholes or clean-out structures at all angle points.
- C. Unless indicated otherwise, identification tape shall be placed above all buried pipelines that are installed with locating wire. Identification tape shall be placed 18" - 24" above the crown of the pipe.

3.6 QUALITY CONTROL

- A. Material & Compaction Testing: All soils testing of samples will be done by a testing laboratory mutually agreed upon by Contractor and Owner at the Owner's expense. If tests indicate work does not meet specific compaction requirements, remove work, replace, and retest at the Contractor's expense.
 - 1. Qualifications of testing company
 - a. Basic requirements of ASTM E 329, "Standard Specification for Agencies Engaged in the Testing and/or Inspection of Materials as Used in Construction" and ASTM D 3666, "Standard Specification for Minimum Requirements for Agency Testing and Inspecting Bituminous Paving Materials", as applicable.
 - b. Calibrate testing equipment at reasonable intervals by devices of accuracy traceable to either the National Bureau of Standards or accepted values of natural physical constants.

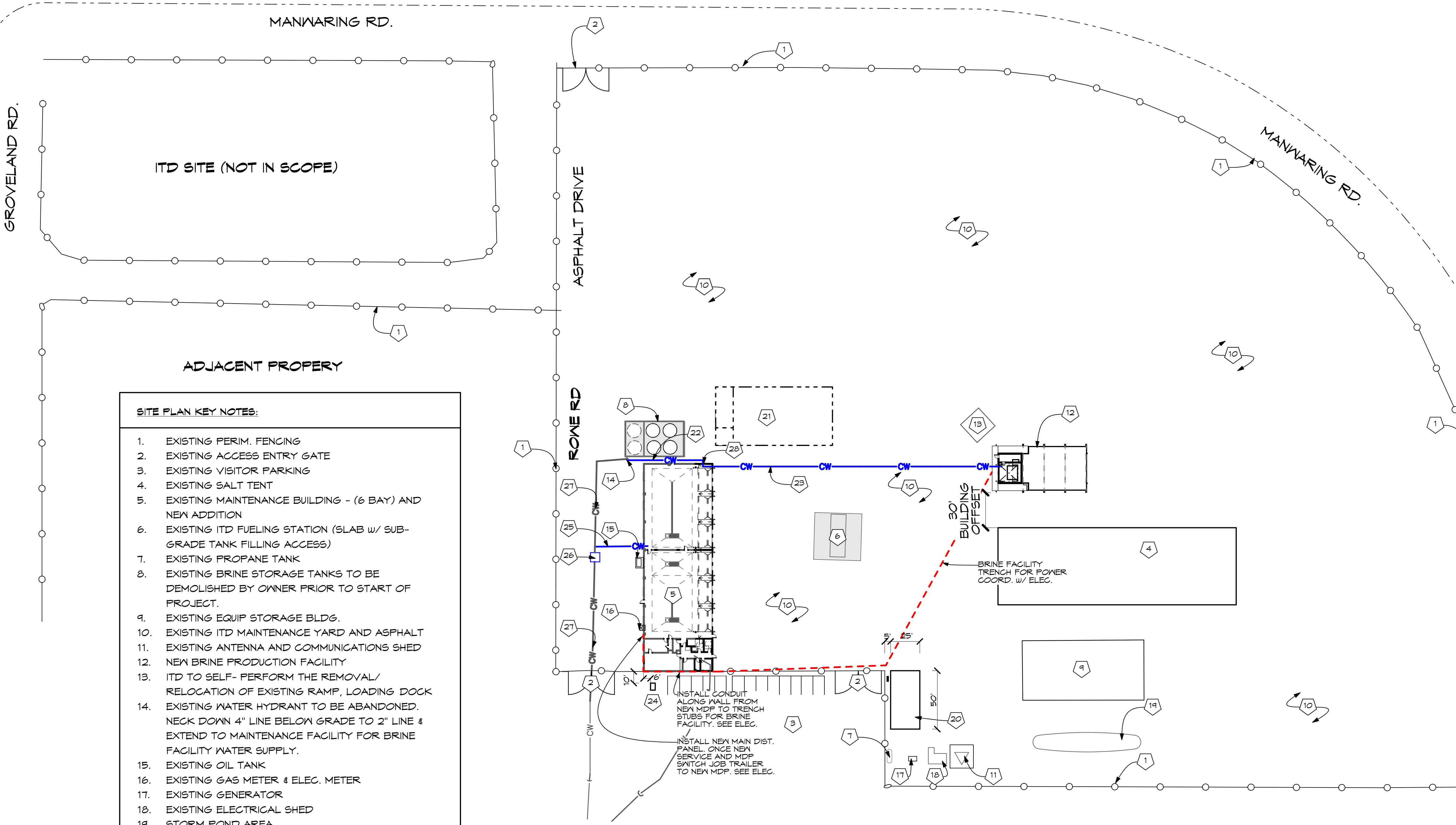
2. Frequency of Compaction Tests

- a. Test Section shall be a test at 2-feet above top of pipe and every 1-foot lift thereafter and at the top of the trench backfill.
- b. Two (2) test sections, at different locations for every trench less than 300 feet in length, but not less than once per day.
- c. One (1) test section per every 300 feet of additional trench and at locations where materials or construction procedures change, but not less than once per day.

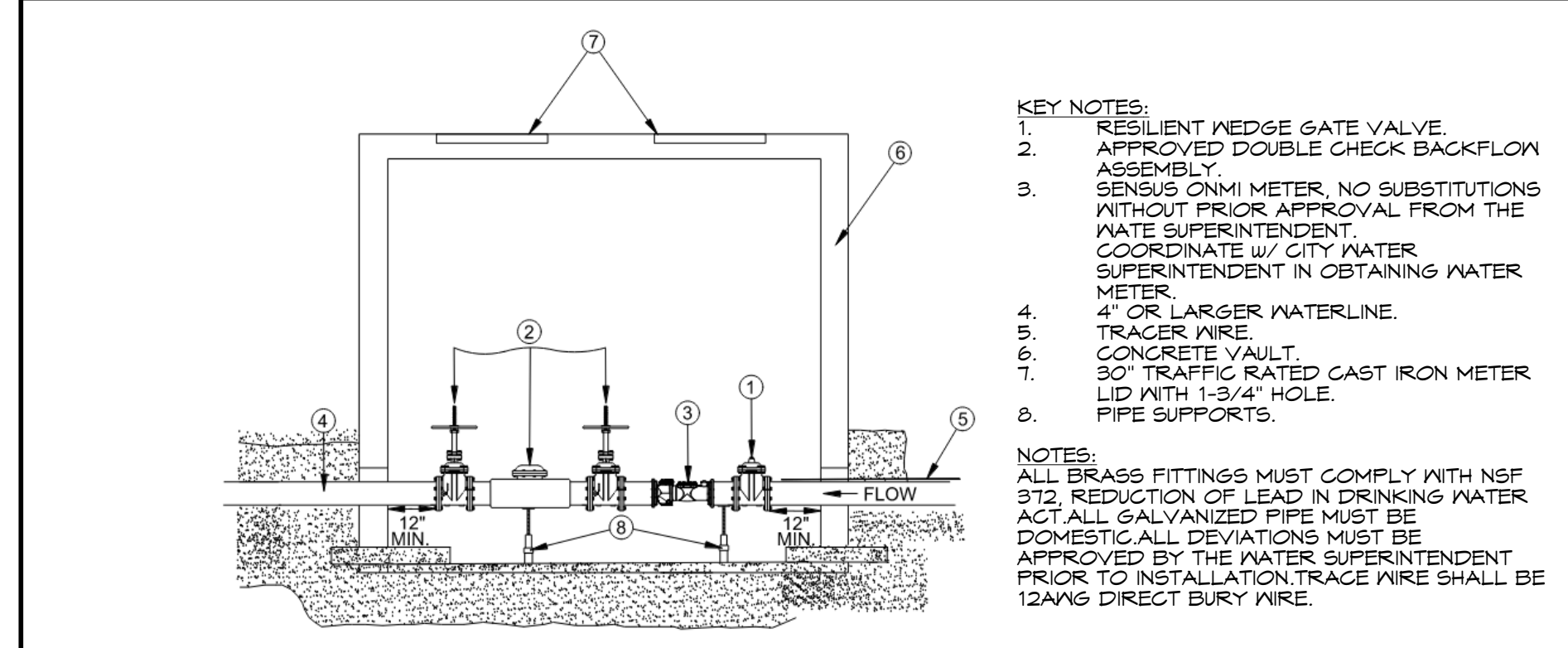
3.7 CLEANUP

- A. Surplus excavated material or stripped material not salvaged as topsoil and excavated material not meeting the requirements for backfill shall become waste. All waste material shall be disposed of by the Contractor.

END OF SECTION 31 2015



- SITE PLAN KEY NOTES:**
- EXISTING PERIM. FENCING
 - EXISTING ACCESS ENTRY GATE
 - EXISTING VISITOR PARKING
 - EXISTING SALT TENT
 - EXISTING MAINTENANCE BUILDING - (6 BAY) AND NEW ADDITION
 - EXISTING ITD FUELING STATION (SLAB W/ SUB-GRADE TANK FILLING ACCESS)
 - EXISTING PROPANE TANK
 - EXISTING BRINE STORAGE TANKS TO BE DEMOLISHED BY OWNER PRIOR TO START OF PROJECT.
 - EXISTING EQUIP STORAGE BLDG.
 - EXISTING ITD MAINTENANCE YARD AND ASPHALT
 - EXISTING ANTENNA AND COMMUNICATIONS SHED
 - NEW BRINE PRODUCTION FACILITY
 - ITD TO SELF-PERFORM THE REMOVAL/RELOCATION OF EXISTING RAMP, LOADING DOCK
 - EXISTING WATER HYDRANT TO BE ABANDONED. NECK DOWN 4" LINE BELOW GRADE TO 2" LINE & EXTEND TO MAINTENANCE FACILITY FOR BRINE FACILITY WATER SUPPLY.
 - EXISTING OIL TANK
 - EXISTING GAS METER & ELEC. METER
 - EXISTING GENERATOR
 - EXISTING ELECTRICAL SHED
 - STORM POND AREA
 - NEW JOB TRAILER
 - FUTURE EQUIP, BLDG. (NOT IN SCOPE)
 - NEW 2" WATER LINE BELOW GRADE TO MAINTENANCE BUILDING FOR BRINE PRODUCTION, COORDINATE W/ PLUMBING DRAWINGS
 - EXTEND 2" NON POTABLE WATER LINE FROM MAINTENANCE BUILDING TO NEW BRINE FACILITY BELOW GRADE. COORDINATE W/ PLUMBING DRAWINGS
 - GENERAL LOCATION OF NEW TRANSFORMER
 - NEW 4" FIRE MAIN LINE CONNECTED TO EXISTING 4" WATER LINE. (ADD ALTERNATE #1)
 - NEW 4" WATER METER & BOX. SEE DETAIL #1 ON SP100
 - EXISTING 4" WATER LINE TO REMAIN
 - NEW 2" WATER LINE BELOW NEW FOOTING UP INTO MAINTENANCE BUILDING. COORDINATE W/ PLUMBING DRINGS.
- ** VERIFY IN FIELD ALL EXISTING SITE COMPONENTS **** SITE NOTES:



SHEET NOTES

- ITD TO PERFORM ALL ASPHALT PATCH BACK. CONTRACTOR RESPONSIBLE FOR BRINGING ALL TRENCHING WORK BACK UP TO GRADE FLUSH W/ ADJACENT ASPHALT SURFACES
- TRENCHING & BACKFILLING FOR NEW WATERLINES SHALL BE BY CONTRACTOR
- COORDINATE FINISH FLOOR ELEVATION W/ ARCHITECT FOR BRINE FACILITY W/ ARCHITECT PRIOR TO DIGGING FOOTINGS & FOUNDATIONS.

Myers Anderson
 Architecture • Interior Design • Historic Preservation
 122 South Main Street • Pocatello, Idaho 83204 • Tel: (208) 232-3741 • Fax: (208) 232-3792



ITD D5 MAINTENANCE BLDG. ADDITION & RENOVATION W/ BRINE PRODUCTION FACILITY
 BLACKFOOT, IDAHO

ADD. ALTERNATES

- FIRE SUPPRESSION SYSTEM, FIRE RISER, AND DEMO EXISTING CMU DIVIDER WALL BTWN BAY-C & BAY-D. (MAINT. BLDG. ONLY)
- BRINE PRODUCTION FACILITY AND ALL ASSOCIATED ITEMS, TO INCLUDE: BLDG. LOCATION SITE WORK, UTILITIES, BRINE PRODUCTION UNITS & COMPONENTS AND BRINE TANK AREA SLAB, STEM WALLS, CONC. PIERS, SIX BRINE TANKS AND TANK PIPING.
- BRINE TANK AREA ROOFING AND PEMB STRUCTURE TO INCLUDE: PEMB BLDG. PACKAGE W/ ALL ROOFING AND ACCESSORIES, PEMB COLUMN CONC. PIERS AND ASSOC. FOOTINGS FOR PEMB COLUMNS ARE WITHIN ADD ALT #2.

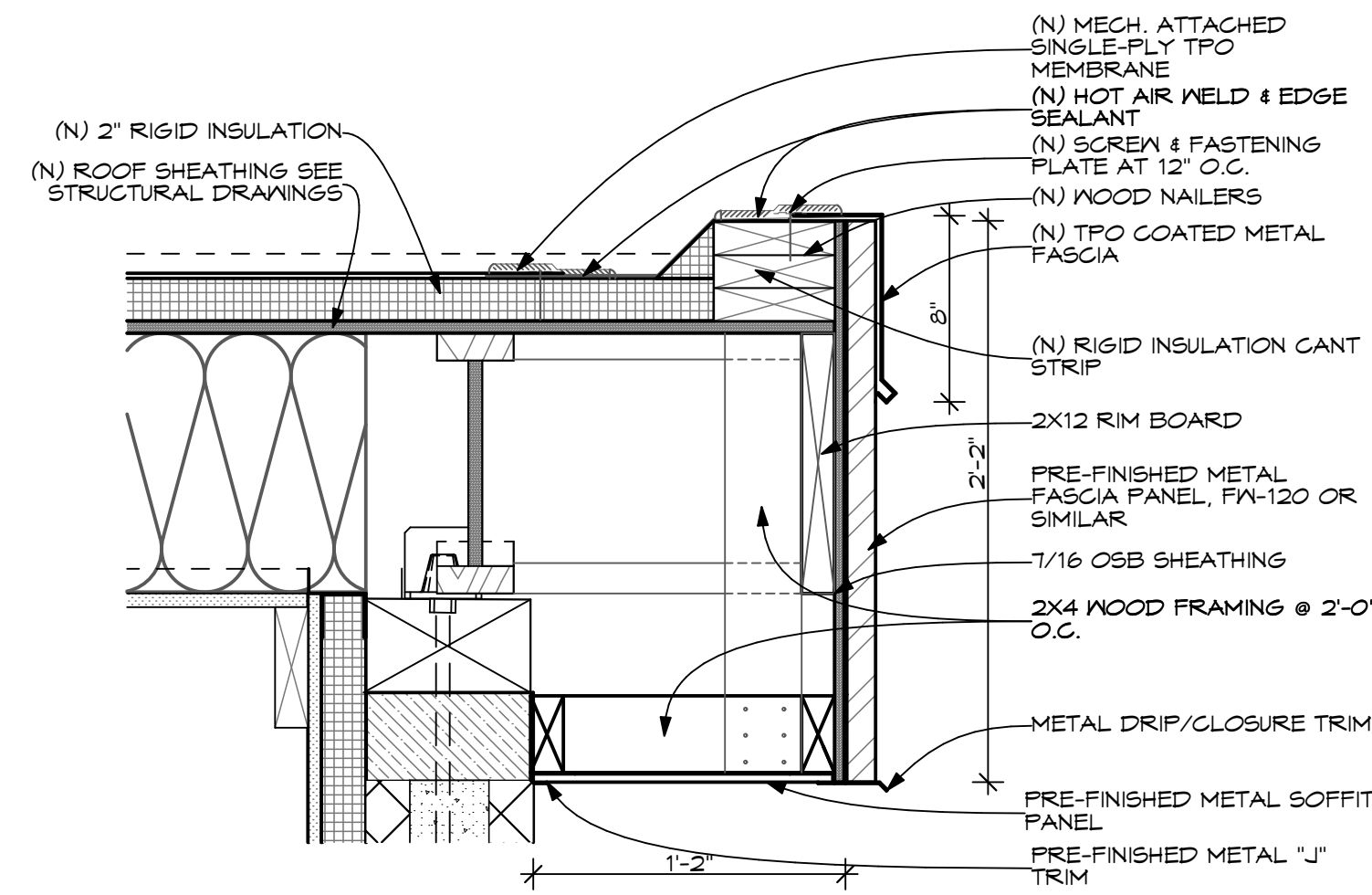
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- = DEMOLITION
- = EXISTING
- = NEW CONSTRUCTION
- = ADD ALT (SCOPE)

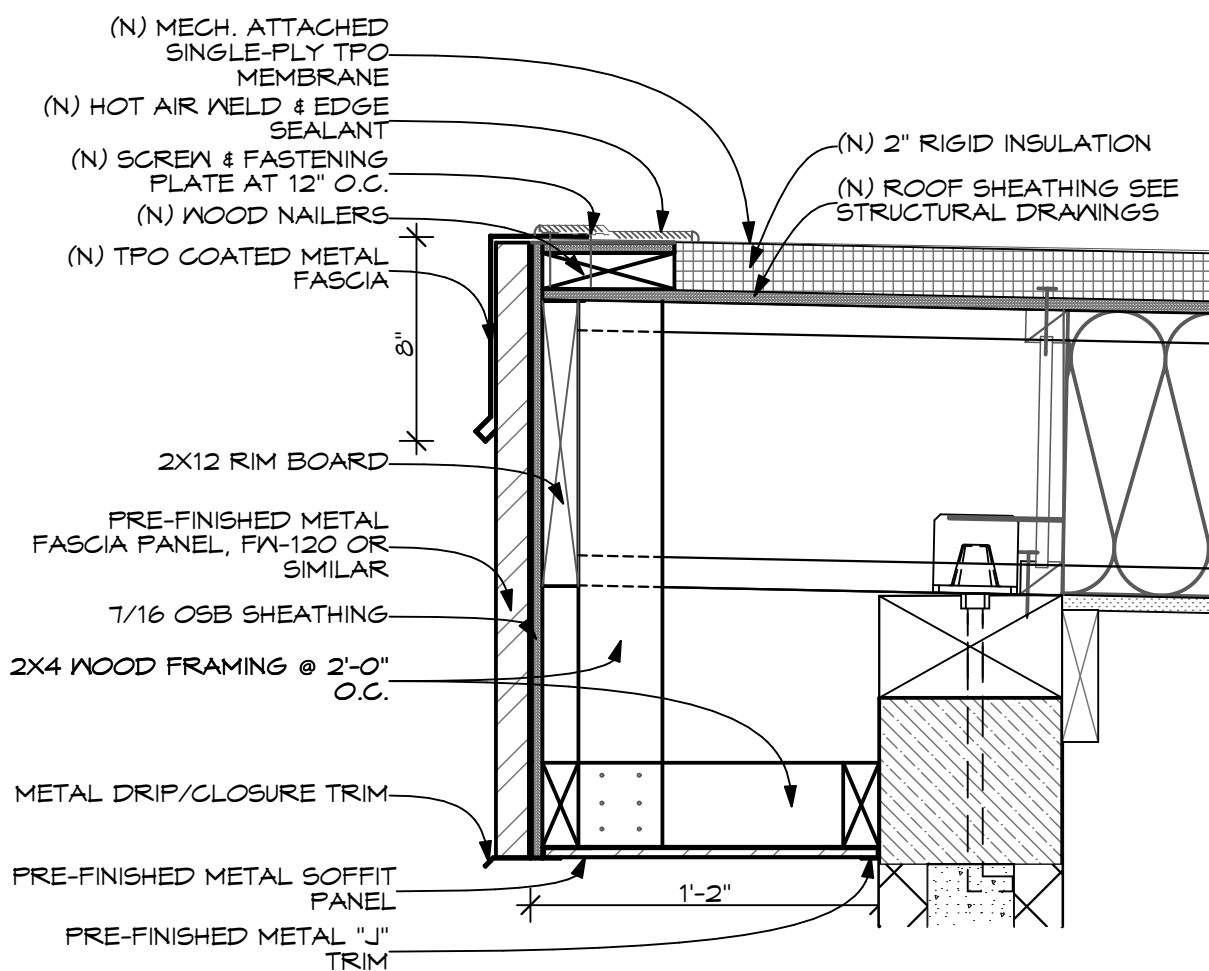
PROJECT NORTH

TRUE NORTH

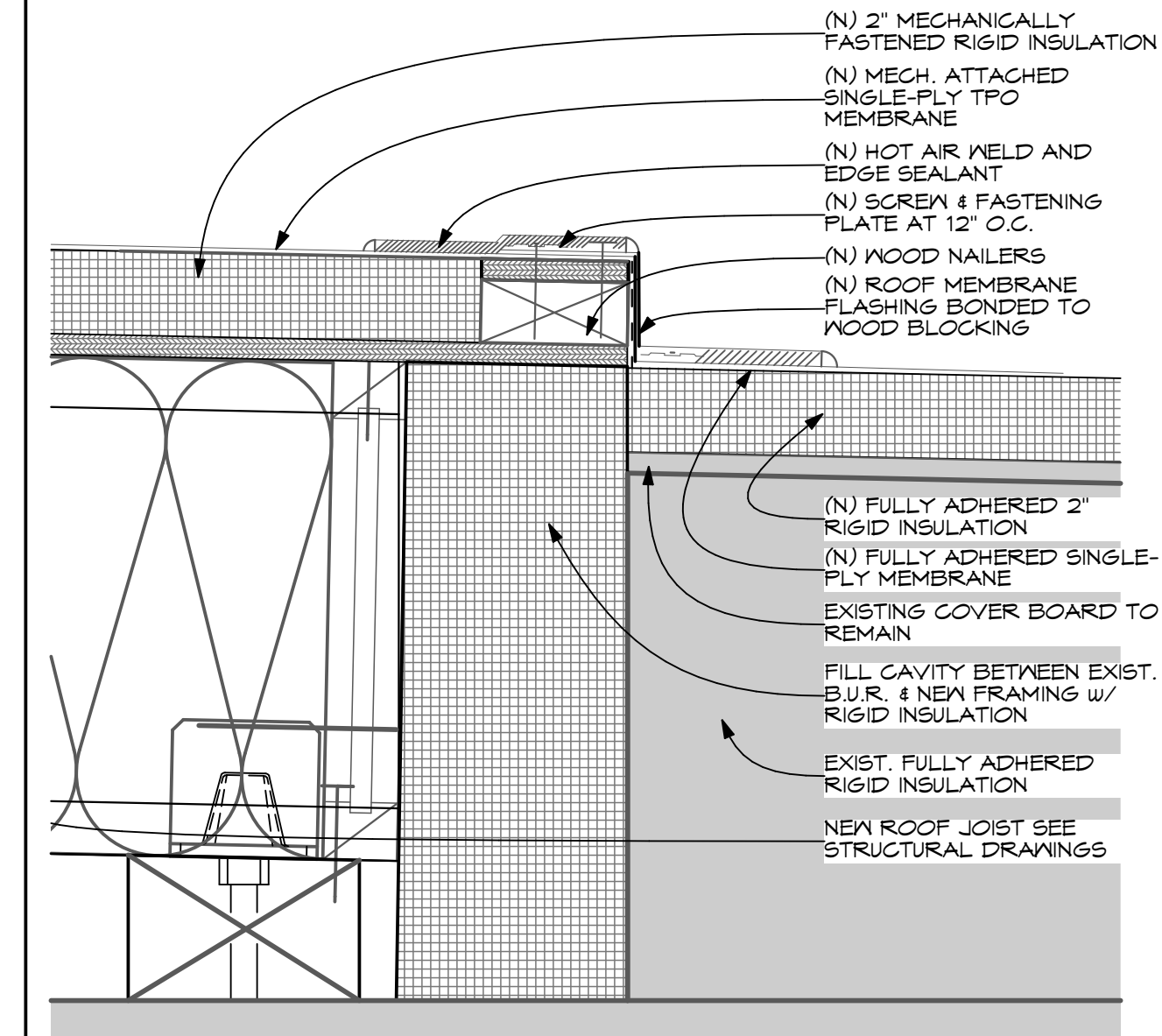
ARCH. JOB NUMBER: 22569
 CLIENT PROJ. NUMBER: --
 SHEET ISSUED DATE: FEB 2023
 SHEET: **SP100**



4
A104 MAINT. ROOF END WALL EAVE DETAIL
SCALE: 1 1/2" = 1'-0"



3
A104 MAINT. EAVE DETAIL
SCALE: 1 1/2" = 1'-0"



2
A104 MAINT. ROOF DETAIL
SCALE: 3" = 1'-0"

SHEET NOTES

- COORD. W/ OWNER FOR EXIST. ROOF BALLAST TO BE REMOVED FROM ROOF AND STORED AT ITD BLACKFOOT SITE. COORD. TO PILE BALLAST 50'-0 MIN. FROM BLDG.
- SEE TYPICAL ROOF DETAILS ON SHEET A104.1



ITD D5 MAINTENANCE BLDG. ADDITION & RENOVATION W/ BRINE PRODUCTION FACILITY
BLACKFOOT, IDAHO

PROJECT NAME:

SHEET TITLE:

MAINT. BLDG. ROOF PLAN AND ROOF DETAILS

DRAWING SCALE APPLIES TO 22" X 34" SHEET SIZE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS & CONDITIONS SHOWN OR IMPLIED

DO NOT DISTRIBUTE PARTIAL SETS OF DRAWINGS OR SPECIFICATIONS

REVISION DATE

REVISION DATE

REVISION DATE

REVISION DATE

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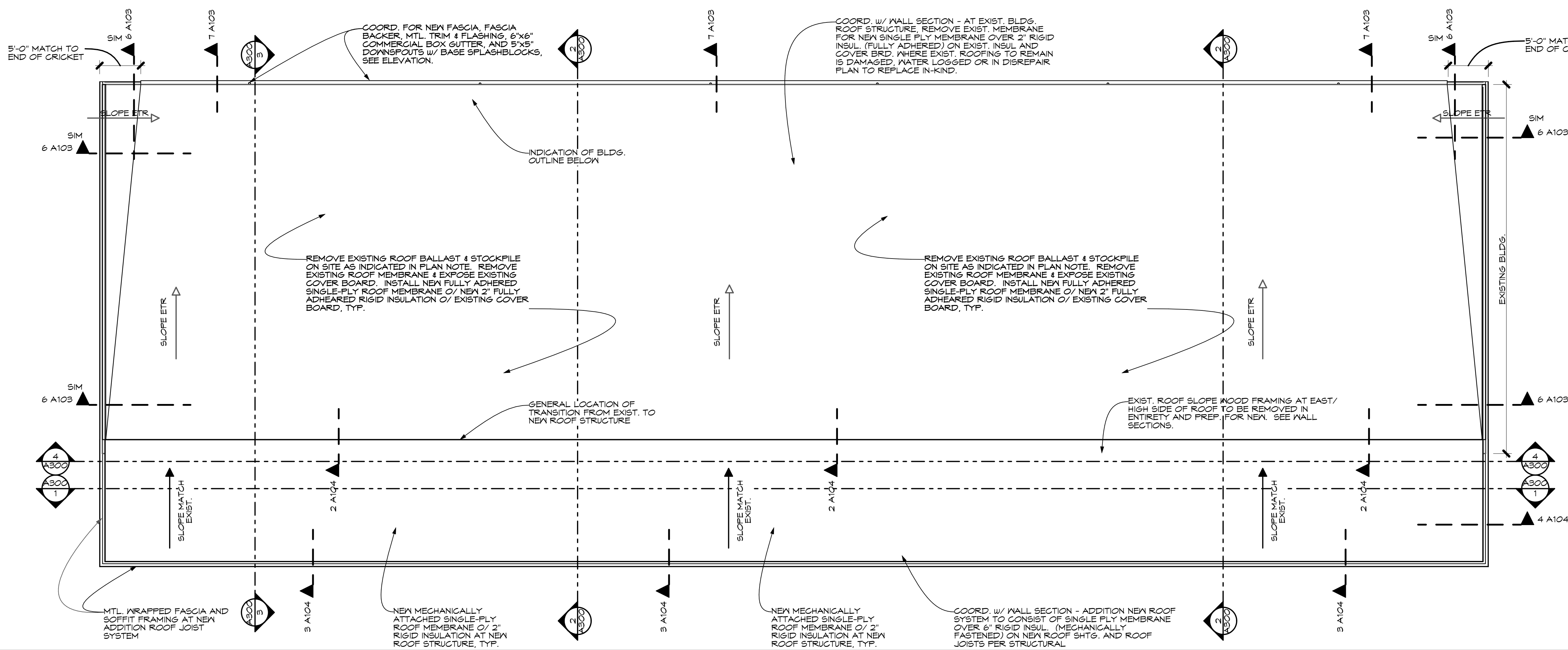
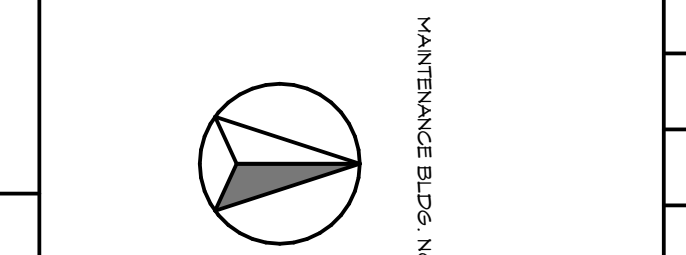
ADD. ALTERNATES

- FIRE SUPPRESSION SYSTEM, FIRE RISER, AND DEMO EXISTING CMU DIVIDER WALL BTWN BAY-C & BAY-D. (MAINT. BLDG. ONLY)
- BRINE PRODUCTION FACILITY AND ALL ASSOCIATED ITEMS, TO INCLUDE: BLDG. LOCATION SITE WORK, UTILITIES, BRINE PRODUCTION UNITS & COMPONENTS AND BRINE TANK AREA SLAB, STEM WALLS, CONC. PIERS, SIX BRINE TANKS AND TANK PIPING.
- BRINE TANK AREA ROOFING AND PEMB STRUCTURE. TO INCLUDE: PEMB BLDG. PACKAGE W/ ALL ROOFING AND ACCESSORIES. PEMB COLUMN CONC. PIERS AND ASSOC. FOOTINGS FOR PEMB COLUMNS ARE WITHIN ADD ALT #2.

GRAPHIC REPRESENTATION

- [- - -] = DEMOLITION
- [Solid Grey] = EXISTING
- [Solid White] = NEW CONSTRUCTION
- [Dashed Grey] = ADD ALT (SCOPE)

PROJECT NORTH



1
A104 MAINT. BLDG. ROOF PLAN
SCALE: 1/8" = 1'-0"

A104

SHEET

SHEET NOTES

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**ITD D5 MAINTENANCE BLDG.
 ADDITION & RENOVATION
 W/ BRINE PRODUCTION
 FACILITY**
 BLACKFOOT, IDAHO

ADD. ALTERNATES

- ① FIRE SUPPRESSION SYSTEM, FIRE RISER, AND DEMO EXISTING CMU DIVIDER WALL BTWN BAY-C & BAY-D. (MAINT. BLDG. ONLY)
- ② BRINE PRODUCTION FACILITY AND ALL ASSOCIATED ITEMS, TO INCLUDE: BLDG. LOCATION SITE WORK, UTILITIES, BLDG. MATERIALS, BRINE PRODUCTION UNITS & COMPONENTS AND BRINE TANK AREA SLAB, STEM WALLS, CONC. PIERS, SIX BRINE TANKS AND TANK PIPING.
- ③ BRINE TANK AREA ROOFING AND PEMB STRUCTURE TO INCLUDE: PEMB BLDG. PACKAGE W/ ALL ROOFING AND ACCESSORIES, PEMB COLUMN CONC. PIERS AND ASSOC. FOOTINGS FOR PEMB COLUMNS ARE WITHIN ADD ALT #2.

PROJECT NAME:

SHEET TITLE:

TYPICAL ROOF DETAILS

DRAWING SCALE APPLIES TO 22" X 34" SHEET SIZE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS & CONDITIONS SHOWN OR IMPLIED

DO NOT DISTRIBUTE PARTIAL SETS OF DRAWINGS OR SPECIFICATIONS

REVISION DATE

ARCH. JOB NUMBER: 22569

CLIENT PROJ. NUMBER: --

SHEET ISSUED DATE: FEB 2023

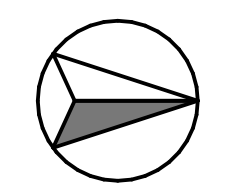
SHEET

A104.1

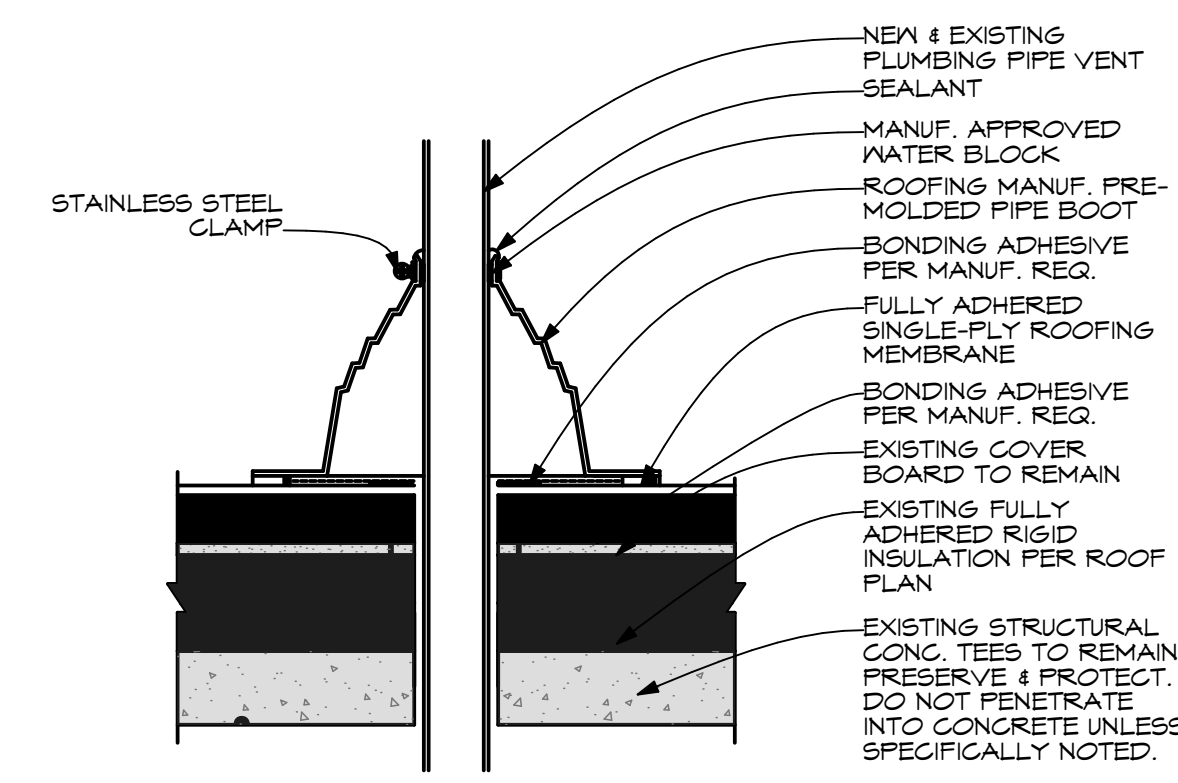
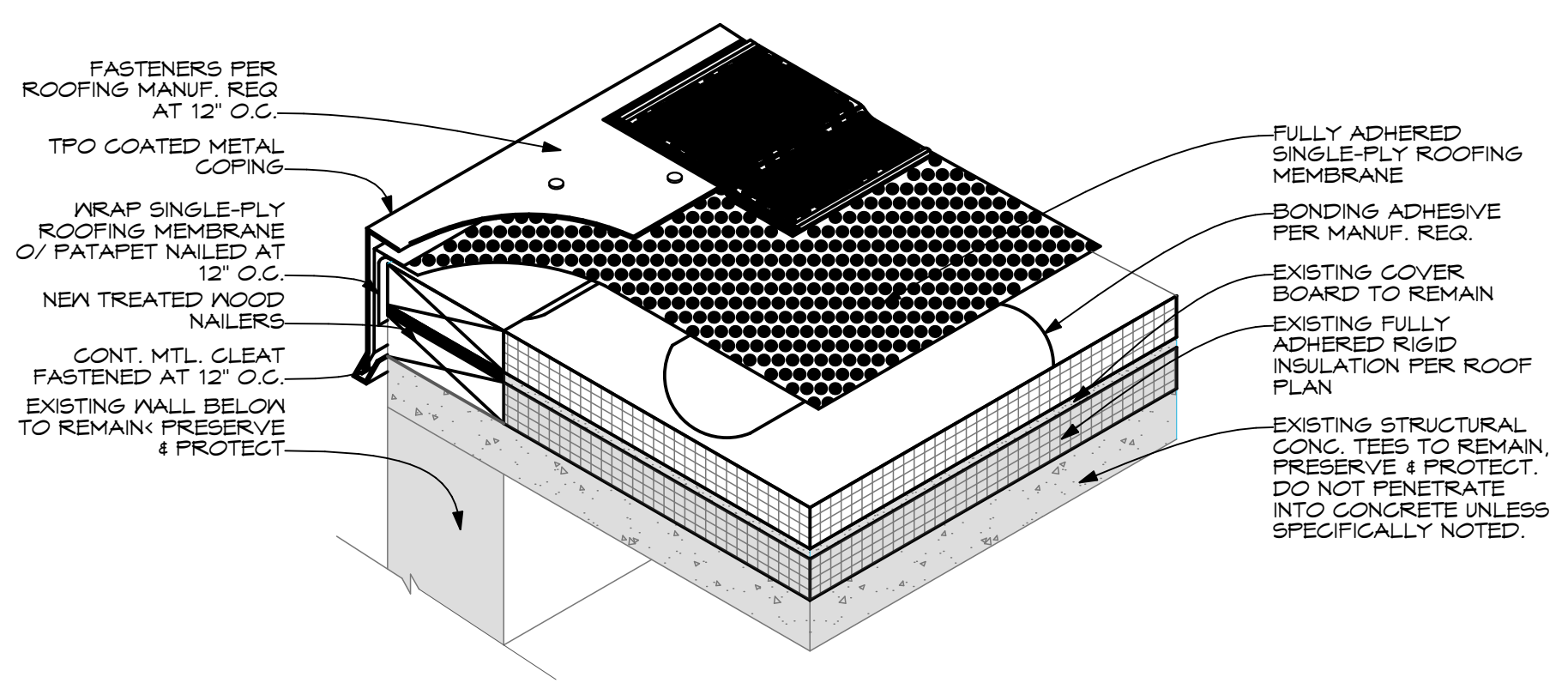
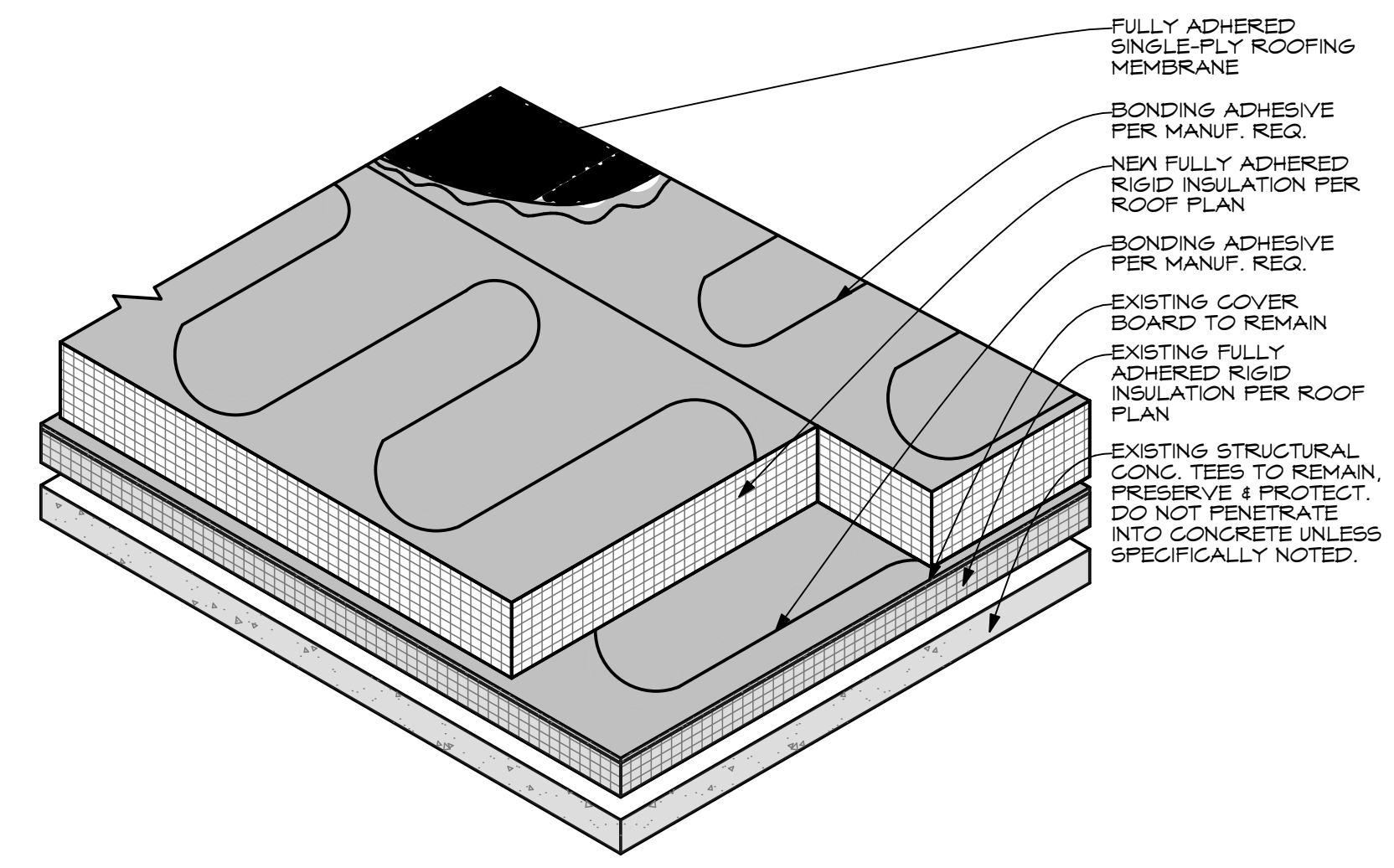
GRAPHIC REPRESENTATION

- [- - -] = DEMOLITION
- [Solid Grey] = EXISTING
- [White] = NEW CONSTRUCTION
- [- - - -] = ADD ALT (SCOPE)

PROJECT NORTH



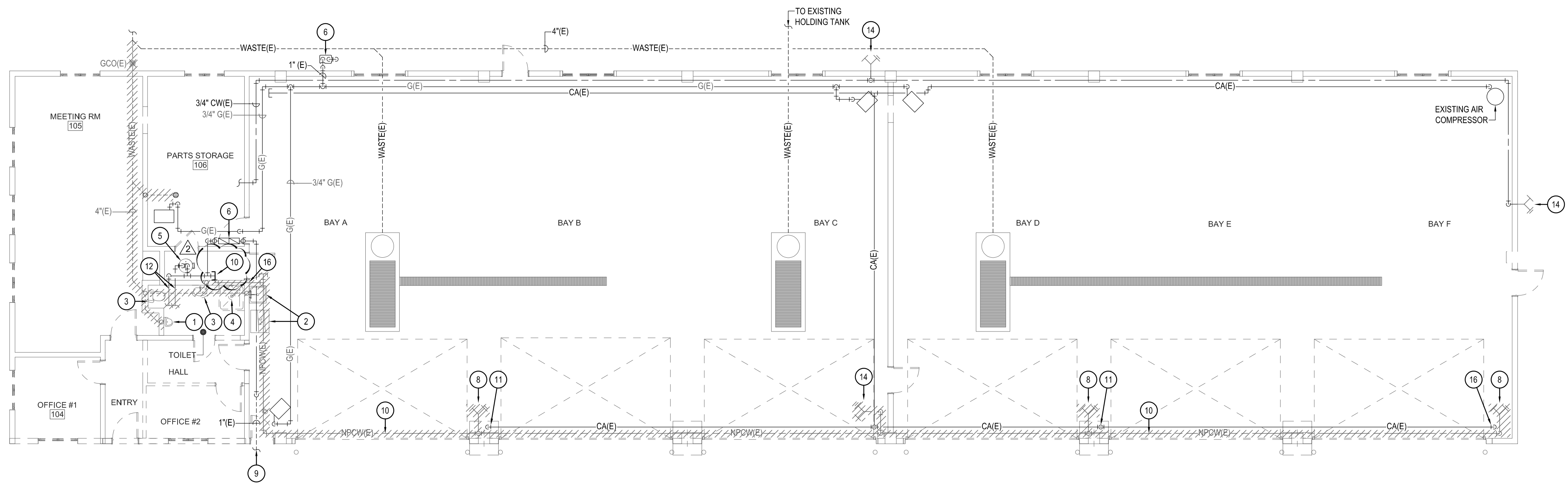
MAINTENANCE BLDG. NORTH



① TYPICAL ROOF DETAIL
 SCALE: 1 1/2" = 1'-0"

② TYPICAL ROOF DETAIL
 SCALE: 1 1/2" = 1'-0"

③ TYPICAL ROOF DETAIL
 SCALE: 1 1/2" = 1'-0"

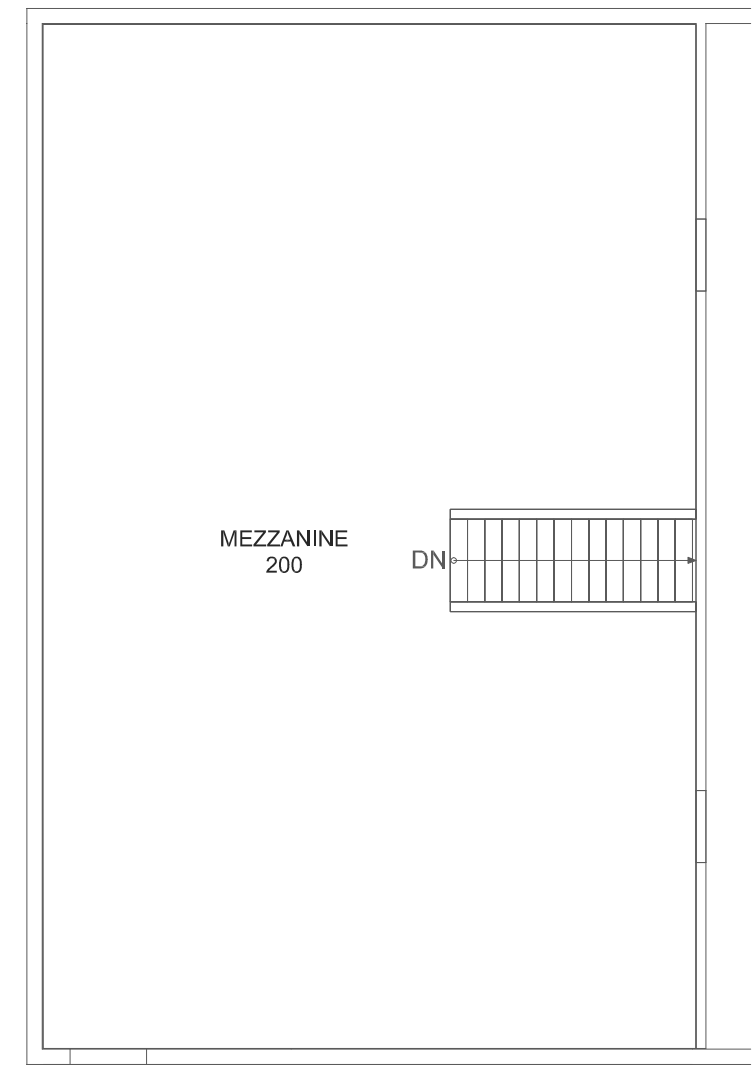


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 www.musgrovepa.com
 Project No. 22-397

NOTES

- # SYMBOL USED FOR NOTE CALLOUT.
- DISCONNECT AND REMOVE URINAL AND ALL RELATED WATER, WASTE, AND VENT PIPING.
 - DISCONNECT AND REMOVE UTILITY SINK. DISCONNECT DRAINAGE AND WATER CONNECTION ON EXISTING ICE MACHINE. EXISTING ICE MACHINE TO REMAIN.
 - DISCONNECT AND REMOVE LAVATORY AND ALL RELATED WATER, WASTE, AND VENT PIPING.
 - DISCONNECT AND REMOVE SHOWER AND ALL RELATED WATER, WASTE, AND VENT PIPING.
 - WATER HEATER TO REMAIN.
 - EXISTING CW MAIN BACKFLOW DEVICE TO REMAIN.
 - REMOVE EXISTING WASTE LINE AND ALL CONNECTIONS BACK TO MAIN.
 - REMOVE HOSE BIBB AND WATER CONNECTION.
 - EXISTING 1" CW LINE TO REMAIN.
 - REMOVE NPCW LINE AND BACKFLOW DEVICE BACK TO MAIN. CAP LINE AT MAIN.
 - COMPRESSED AIR LINE AND CONNECTION TO REMAIN.
 - REMOVE CW & HW LINE BACK TO INDICATED POINT.
 - EXISTING GAS METER TO REMAIN.
 - DISCONNECT AND REMOVE EXISTING HOSE BIBB. SEE NEW WORK ON SHEET P101 FOR REPLACEMENT.
 - REMOVE COMPRESSED AIR LINES BACK TO MAIN. SEE NEW WORK FOR EXTENSION OF EXISTING CONNECTIONS.
 - DISCONNECT CW LINE TO EXISTING HOSE BIBB. HOSE BIBB TO REMAIN AND BE REUSED.

1 PLUMBING DEMOLITION FLOOR PLAN
 PD100 SCALE: 1/8" = 1'-0"



2 PLUMBING DEMOLITION SECOND FLOOR PLAN
 PD100 SCALE: 1/8" = 1'-0"

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**ITD D5 MAINTENANCE BLDG.
 ADDITION & RENOVATION w/
 BRINE PRODUCTION FACILITY**
 BLACKFOOT, IDAHO

PROJECT NAME:

SHEET TITLE:

PLUMBING DEMOLITION PLAN

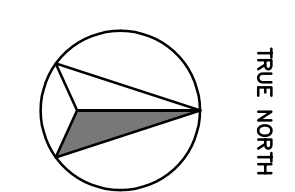
DRAWING SCALE APPLIES TO 22" X 34" SHEET SIZE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS & CONDITIONS SHOWN or IMPLIED

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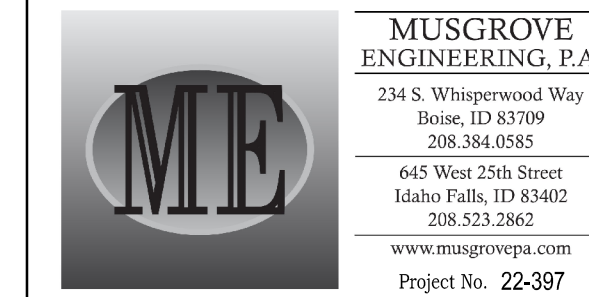
REVISION	DATE
ADDENDUM #1	3/9/2023
ADDENDUM #2	3/16/2023

PROJECT NORTH



ARCH. JOB NUMBER:	22569
CLIENT PROJ. NUMBER:	--
SHEET ISSUED DATE:	Feb 2023

SHEET **PD100**



NOTES

- # SYMBOL USED FOR NOTE CALLOUT.
- GAS SHUTOFF SWITCH.
 - ROUTE 3/4" CD LINE FROM FAN COIL UNITS TO LAVATORY TAILPIECE. SEE DETAIL #8 ON SHEET P200 FOR INSTALLATION REQUIREMENTS.
 - INVERT AT THIS LOCATION IS 26" B.F.F. AT A SLOPE OF 1/8" PER FOOT. SEE CIVIL DRAWINGS FOR CONTINUATION OF 4" WASTE LINE.
 - ROUTE NEW 4" WASTE LINE BELOW GRADE.
 - PROVIDE UNIT WITH LOW PRESSURE GAS REGULATOR WITH SHUTOFF VALVES. SEE DETAIL FOR ADDITIONAL REQUIREMENTS.
 - NOT USED.
 - ROUTE NEW 4" WASTE LINE FROM TRENCH DRAIN (TD-1) AND CONNECT INTO EXISTING CATCH BASIN.
 - ROUTE NEW DRAIN FROM EXISTING ICE MACHINE TO NEW FLOOR SINK AND TERMINATE INDIRECTLY.
 - ROUTE NEW 2" VTR UP EXPOSED TIGHT TO THE EXTERIOR WALL. SEAL ROOF PENETRATION.

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**ITD D5 MAINTENANCE BLDG.
 ADDITION & RENOVATION w/
 BRINE PRODUCTION FACILITY**
 BLACKFOOT, IDAHO

PROJECT NAME:

SHEET TITLE:

PLUMBING NEW WORK PLAN - WASTE AND VENT



DRAWING SCALE APPLIES TO 22" X 34" SHEET SIZE

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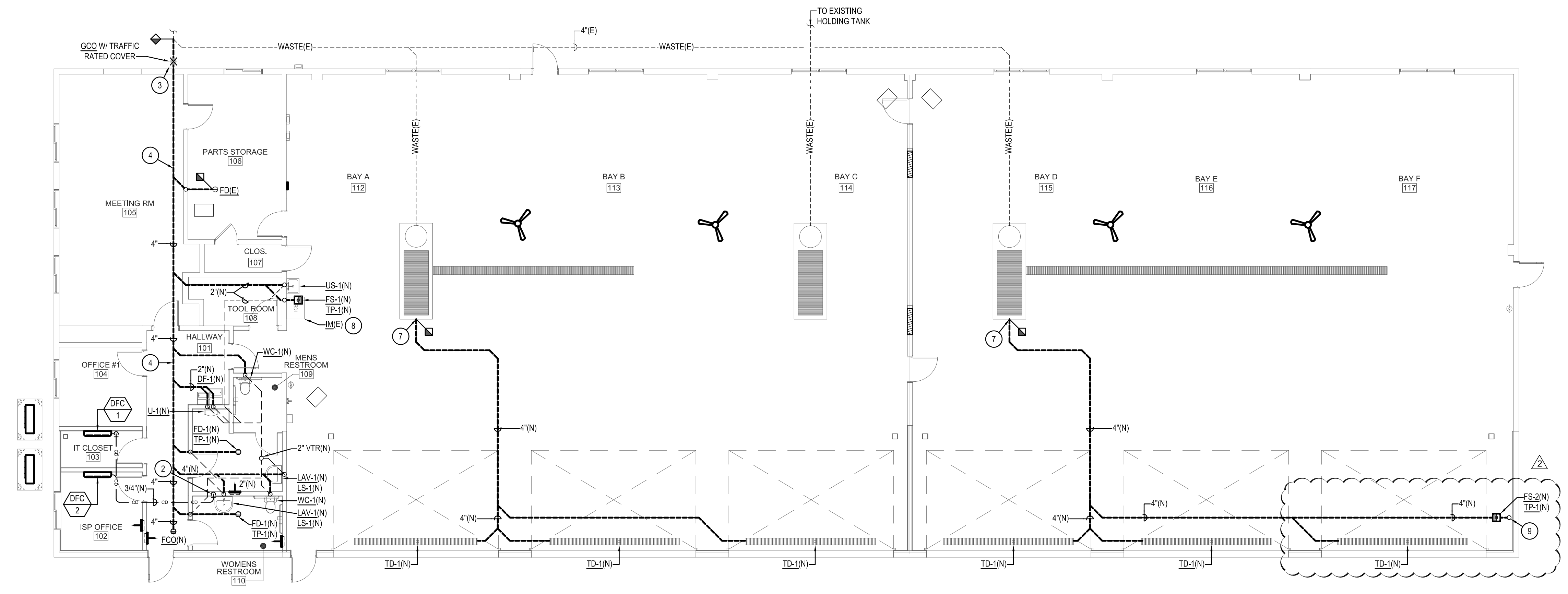
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ADDENDUM #1	3/9/2023
ADDENDUM #2	3/16/2023

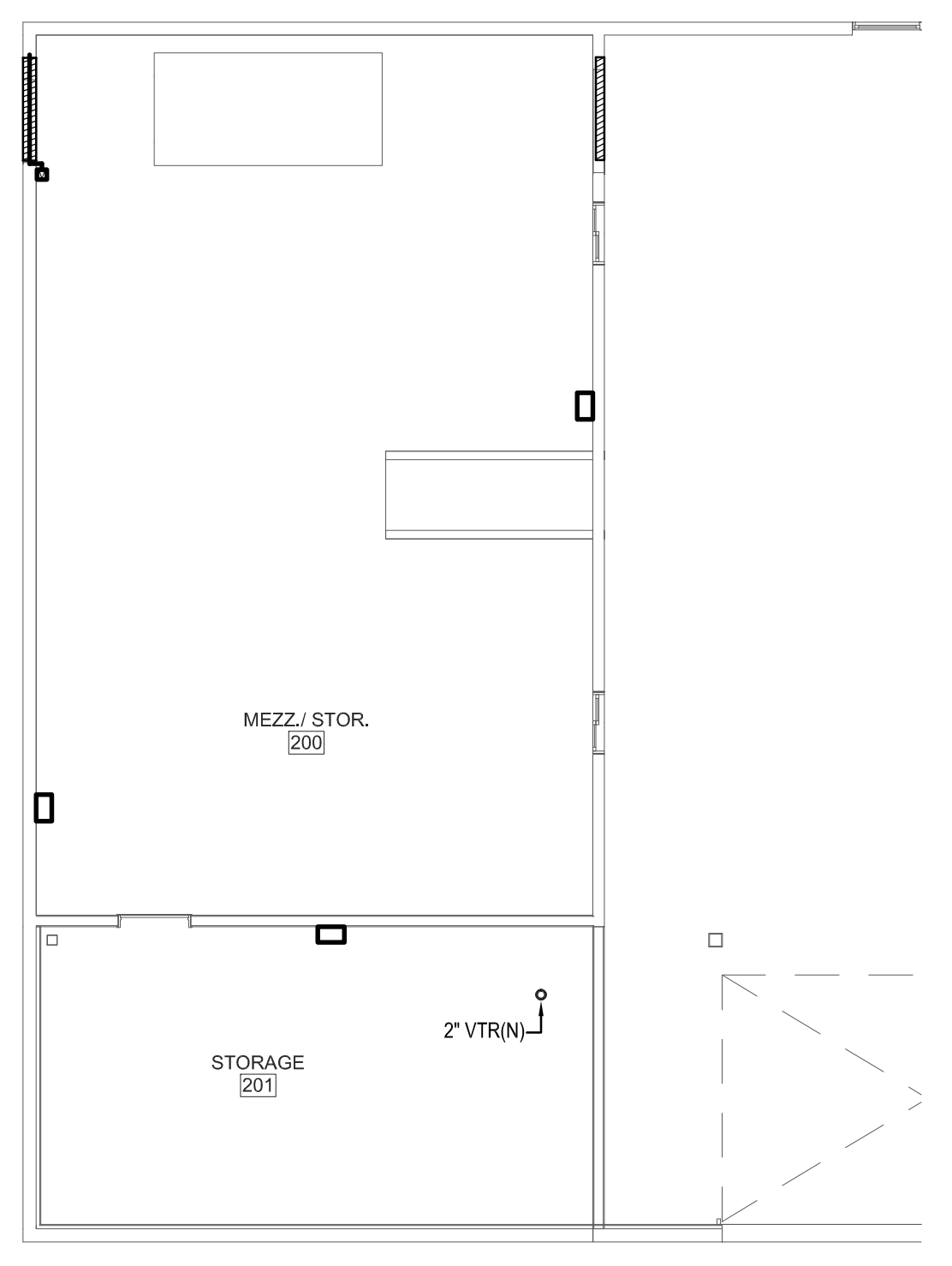
PROJECT NORTH

ARCH. JOB NUMBER:	22569
CLIENT PROJ. NUMBER:	--
SHEET ISSUED DATE:	Feb 2023

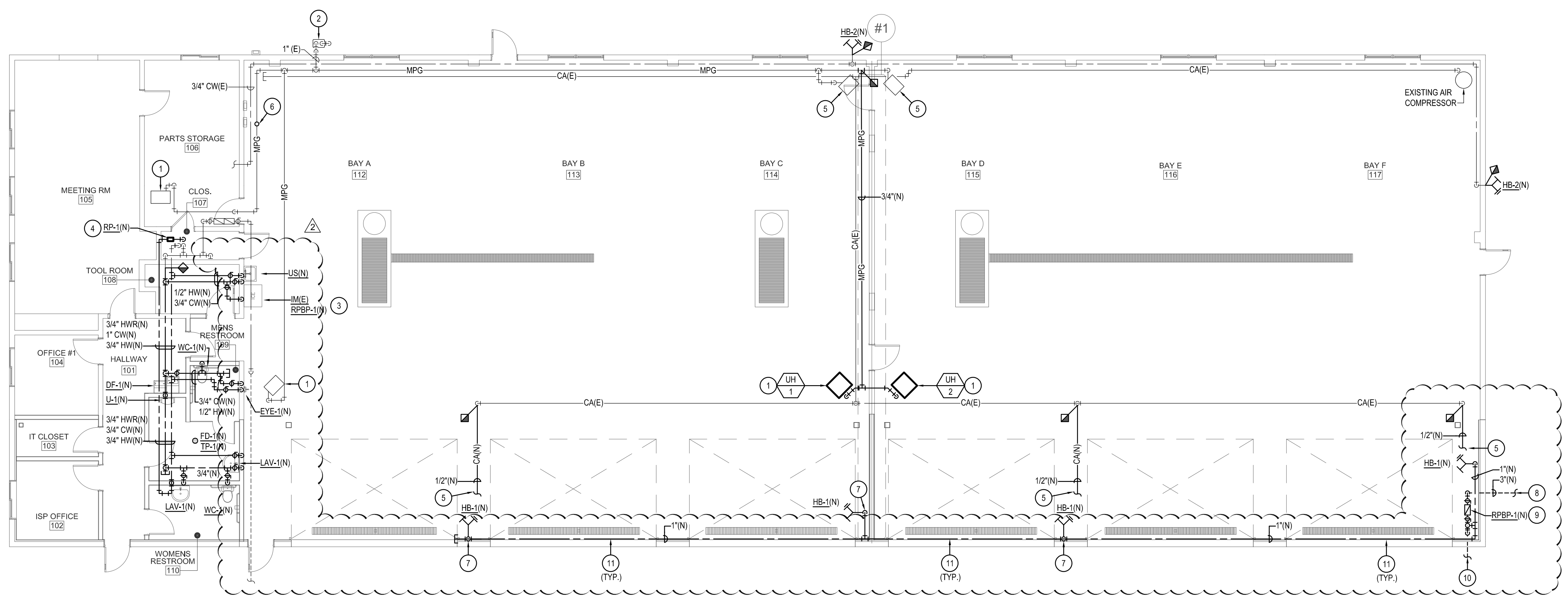
SHEET **P100**



1 PLUMBING NEW WORK FLOOR PLAN – WASTE AND VENT
 SCALE: 1/8" = 1'-0"



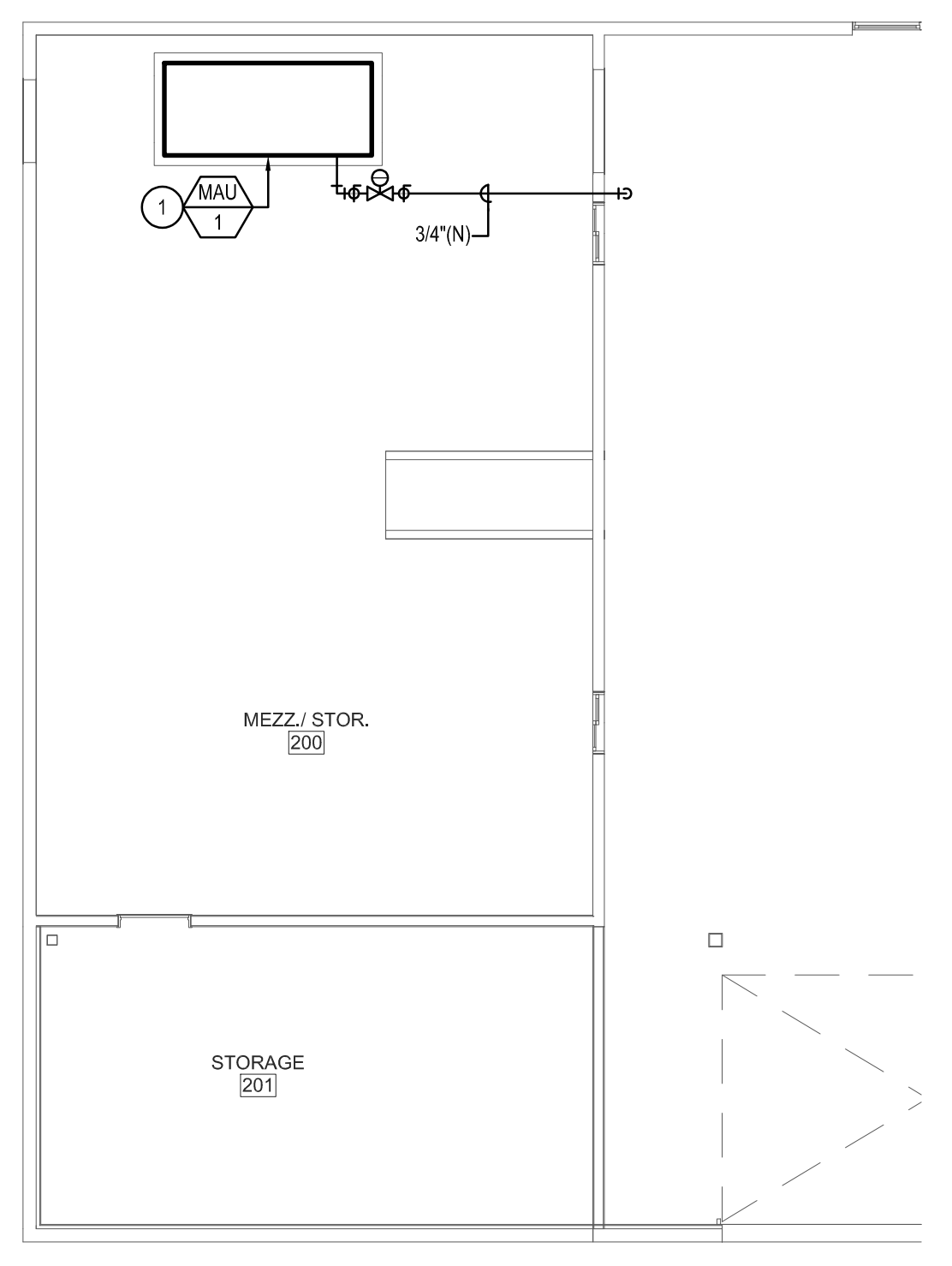
2 PLUMBING NEW WORK SECOND FLOOR PLAN – WASTE AND VENT
 SCALE: 1/8" = 1'-0"



NOTES

- # SYMBOL USED FOR NOTE CALLOUT.
- 1. PROVIDE UNIT WITH LOW PRESSURE GAS REGULATOR AND SHUTOFF VALVES. SEE DETAIL FOR ADDITIONAL REQUIREMENTS.
- 2. CONTRACTOR TO VERIFY WITH THE GAS UTILITY THAT THE EXISTING GAS METER CAN ACCOMMODATE NEW GAS LOAD OF 1.153-MBH AT 2-PSI. CONTRACTOR SHALL WORK WITH THE UTILITY TO MODIFY THE METER AS REQUIRED.
- 3. INSTALL NEW RPBP-1 AT EXISTING ICE MACHINE. ROUTE DRAIN TO EXISTING UTILITY SINK AND DRAIN INDIRECTLY.
- 4. ROUTE 3/4" HWR FROM NEW RECIRCULATION PUMP (RP-1) AND TIE INTO EXISTING CW LINE.
- 5. EXTEND EXISTING 1/2" CA LINE TO WALL AND ROUTE DOWN TO NEW FITTING. SEE DETAIL FOR MORE REQUIREMENTS.
- 6. ROUTE NEW 3/4" MPG LINE UP.
- 7. ROUTE 1" NPCW LINE DOWN TO HOSE BIBB. SEE DETAIL #2 ON SHEET P2.1 FOR INSTALLATION REQUIREMENTS.
- 8. SEE ARCHITECTURAL DRAWINGS FOR CONTINUATION OF 3" CW LINE AND LOCATION OF NEW 4" WATER METER.
- 9. SEE DETAIL #4 ON SHEET P200 FOR INSTALLATION REQUIREMENTS.
- 10. ROUTE 3" NPCW LINE UNDERGROUND. KEEP PIPING AS TIGHT TO WALL AS POSSIBLE. SEE ARCHITECTURAL DRAWINGS FOR CONTINUATION.
- 11. KEEP PIPING TIGHT TO CEILING, (TYPICAL)

1 PT01 PLUMBING NEW WORK FLOOR PLAN – WATER AND GAS
 SCALE: 1/8" = 1'-0"



2 PT01 PLUMBING NEW WORK SECOND FLOOR PLAN – WATER AND GAS
 SCALE: 1/8" = 1'-0"



**ITD D5 MAINTENANCE BLDG.
 ADDITION & RENOVATION w/
 BRINE PRODUCTION FACILITY**
 BLACKFOOT, IDAHO

PROJECT NAME:

SHEET TITLE:

PLUMBING NEW WORK PLAN - WATER AND GAS

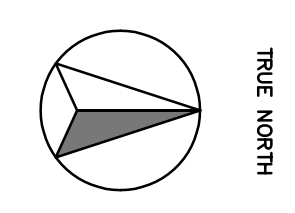
DRAWING SCALE APPLIES TO 22' X 34' SHEET SIZE

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REVISION	DATE
ADDENDUM #1	3/9/2023
ADDENDUM #2	3/16/2023

PROJECT NORTH



ARCH. JOB NUMBER: 22569

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SHEET ISSUED DATE: Feb 2023

SHEET **P101**



**ITD D5 MAINTENANCE BLDG.
 ADDITION & RENOVATION W/
 BRINE PRODUCTION FACILITY**
 BLACKFOOT, IDAHO

PROJECT NAME:

SHEET TITLE:
**BRINE BUILDING
 PLUMBING PLAN**

DRAWING SCALE APPLIES TO 22" X 34" SHEET SIZE

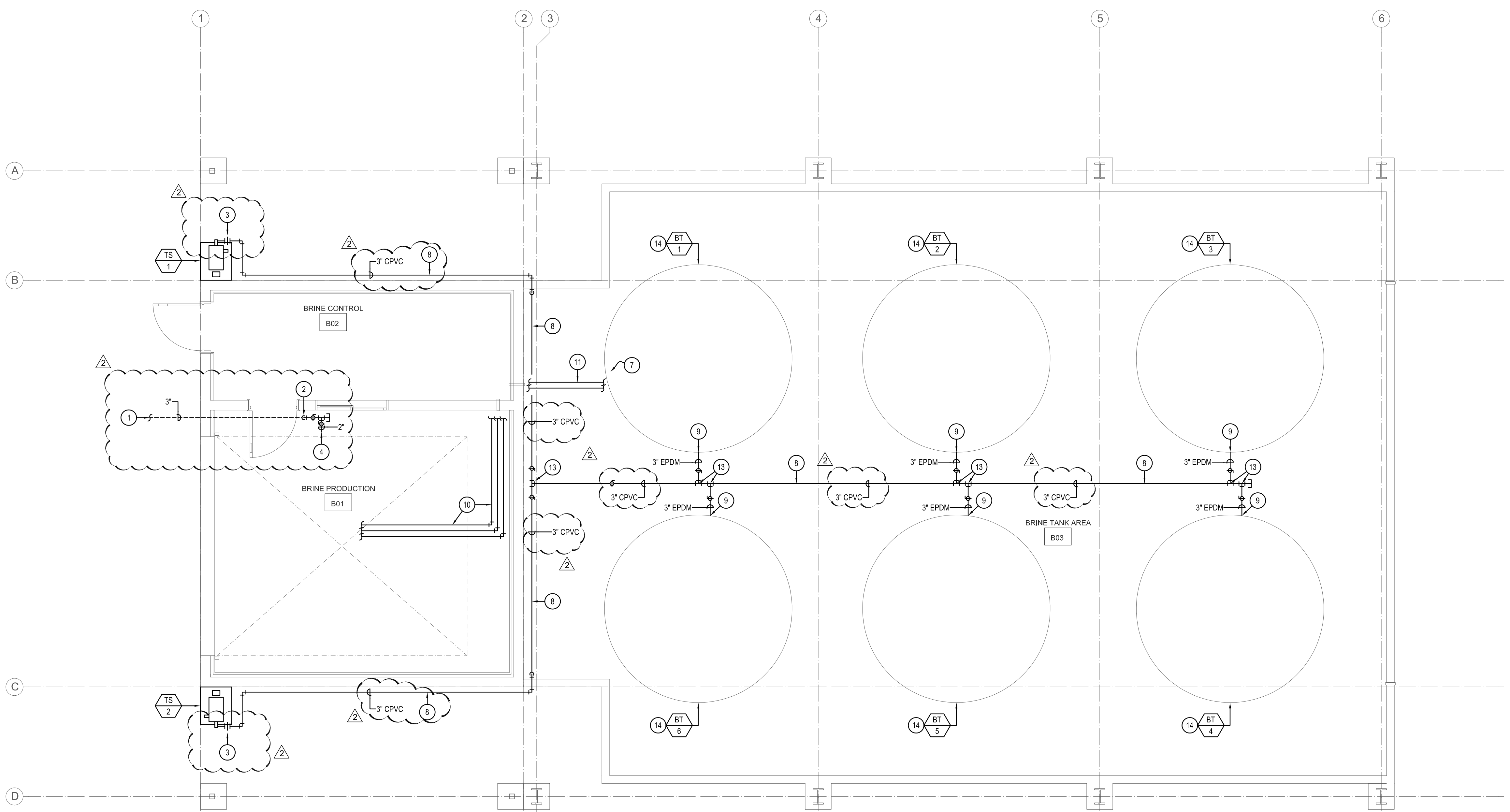
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REVISION	DATE
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ADDENDUM #2	3/16/2023

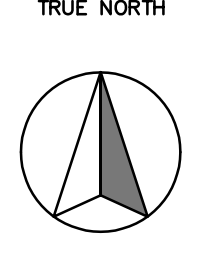
NOTES

- # SYMBOL USED FOR NOTE CALLOUT.
- 1. SEE ARCHITECTURAL DRAWINGS FOR CONTINUATION OF 3"Ø CW LINE.
- 2. ROUTE 3"Ø CW UP FROM BELOW GRADE.
- 3. PROVIDE TRANSITION AND REDUCER FROM 3"Ø CPVC PIPE TO REINFORCED EPDM HOSE AT TRANSFER STATION PUMP (BASIS OF DESIGN: KANAFLEX 390SD).
- 4. PROVIDE 2"Ø NPT THREADED FITTING FOR BRINE PRODUCTION SYSTEM CONNECTION.
- 5. NOT USED.
- 6. NOT USED.
- 7. PROVIDE (2) 2"Ø FTH BULKHEAD CONNECTIONS ATTACHED TO NEW BRINE TANK NEAR BASE (BASIS OF DESIGN: BANJO TF200), AND (2) 2"Ø FTH BULKHEAD CONNECTIONS ATTACHED TO NEW TANK NEAR TOP (BASIS OF DESIGN: BANJO TF200). PLUMBER SHALL PROVIDE ALL MODIFICATIONS TO NEW TANK AS REQUIRED PER THE BRINE SYSTEM MANUFACTURER REQUIREMENTS. COORDINATE WITH BRINE SYSTEM MANUFACTURER PRIOR TO INSTALLATION.
- 8. ROUTE AND SUPPORT 3"Ø CPVC PIPE PER DETAIL #3 ON SHEET P201.
- 9. CONNECT REINFORCED 3"Ø EPDM HOSE (BASIS OF DESIGN: KANAFLEX 390SD) TO BULKHEAD NEAR BASE OF NEW BRINE TANK. PROVIDE WITH EPDM SHUTOFF VALVE (BASIS OF DESIGN: BANJO V300FP).
- 10. PIPING FROM BRINE MAKER TO CONTROL CABINET TO BE PROVIDED BY BRINE SYSTEM MANUFACTURER, SHOWN FOR COORDINATION ONLY.
- 11. PIPING FROM BRINE CONTROL CABINET TO TANK IN CONTAINMENT AREA TO BE PROVIDED BY BRINE SYSTEM MANUFACTURER, SHOWN FOR COORDINATION ONLY.
- 12. NOT USED.
- 13. PROVIDE FULL PORT FLANGED TEE (BASIS OF DESIGN: BANJO M300TEE) WITH SCREW CLAMP AND EPDM GASKET.
- 14. PROVIDE AND INSTALL NEW BRINE TANK.



1
P102 BRINE BUILDING PLUMBING PLAN
 SCALE: 1/4" = 1'-0"

PROJECT NORTH



ARCH. JOB NUMBER: 22569

CLIENT PROJ. NUMBER: --

SHEET ISSUED DATE: Feb 2023

SHEET **P102**



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Project No. 22-397

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ITD D5 MAINTENANCE BLDG.
ADDITION & RENOVATION w/
BRINE PRODUCTION FACILITY
BLACKFOOT, IDAHO

PROJECT NAME:

SHEET TITLE:

PLUMBING DETAILS

2

DRAWING SCALE APPLIES TO 22" X 34" SHEET SIZE

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REVISION	DATE
ADDENDUM #1	3/9/2023
ADDENDUM #2	3/16/2023

ARCH. JOB NUMBER: 22569

CLIENT PROJ. NUMBER: --

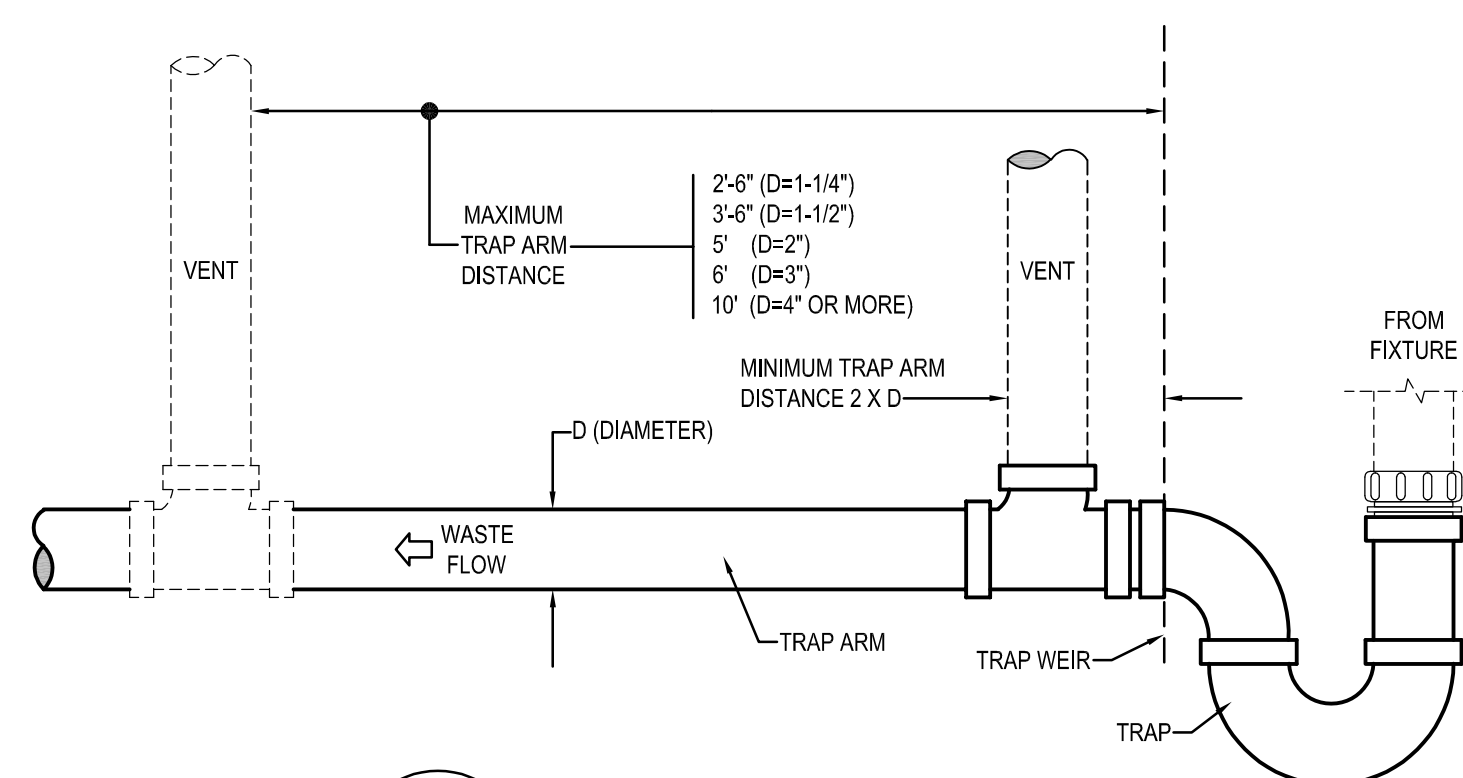
SHEET ISSUED DATE: Feb 2023

SHEET

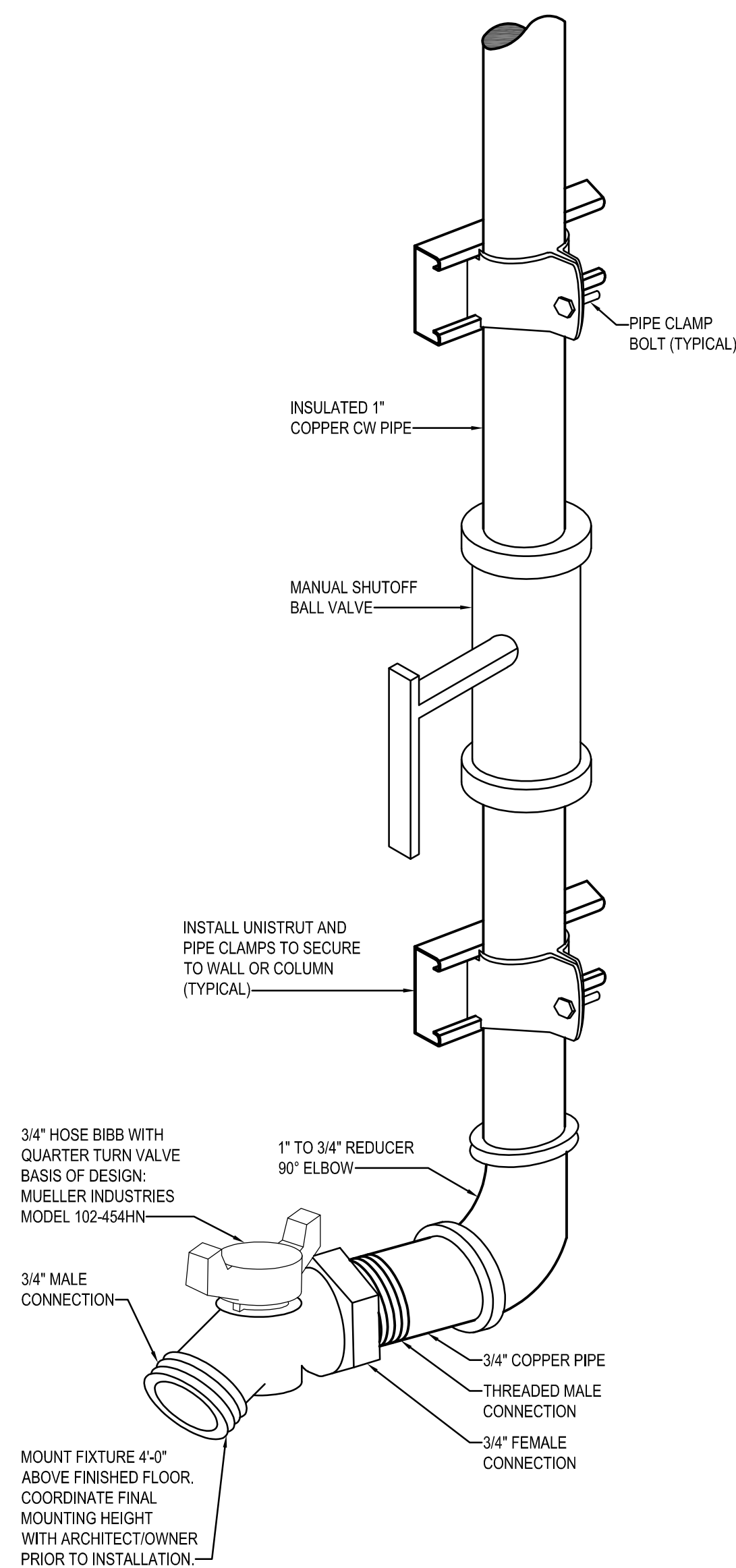
P201

NOTES:

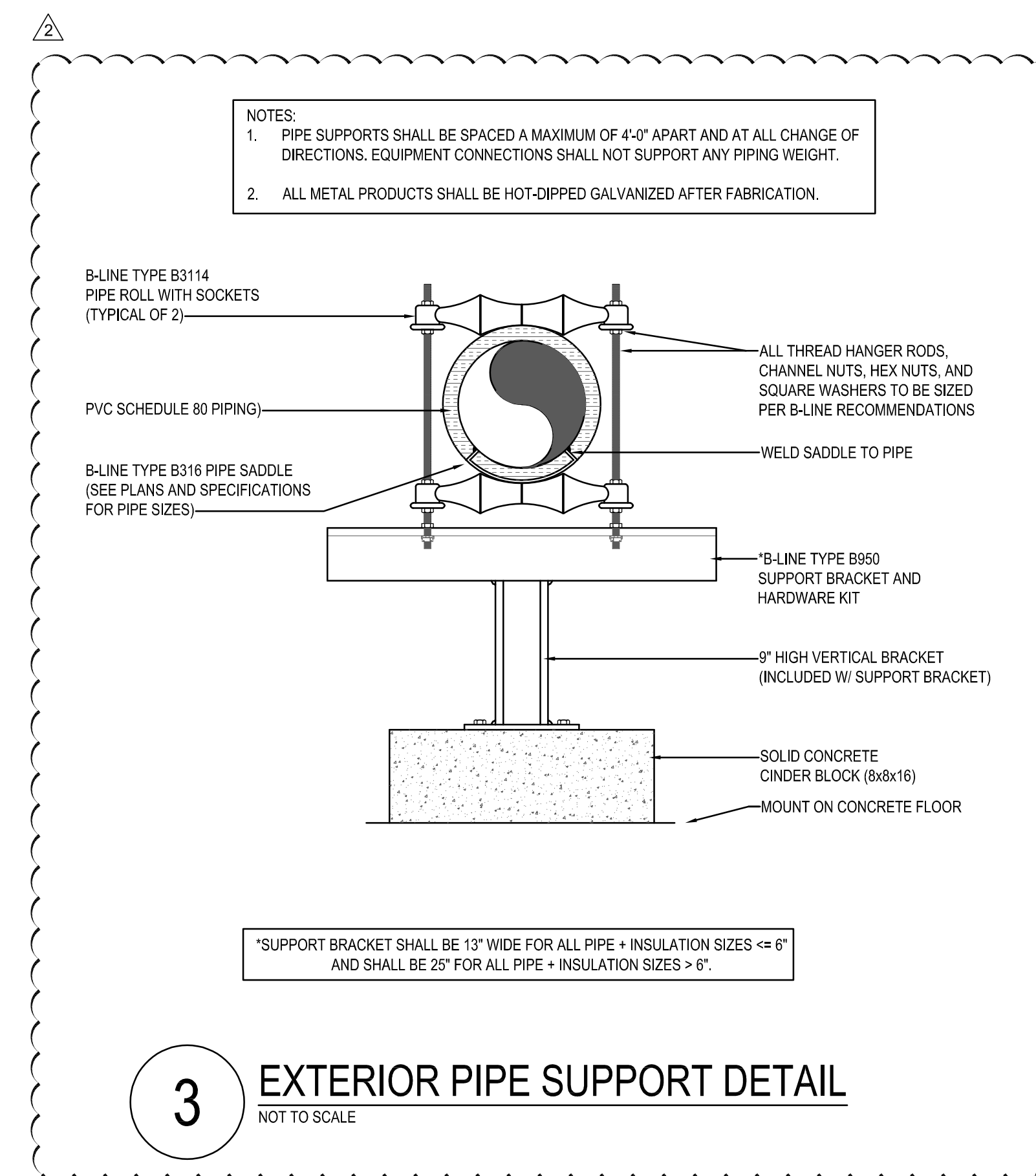
1. MAINTAIN ONE-FOURTH (1/4) INCH PER FOOT SLOPE.
2. THE DEVELOPED LENGTH BETWEEN THE TRAP OF A WATER CLOSET OR SIMILAR FIXTURE (MEASURED FROM THE TOP OF THE CLOSET FLANGE TO THE INNER EDGE OF THE VENT) AND ITS VENT SHALL NOT EXCEED SIX (6) FEET.
3. ALL PLUMBING EQUIPMENT AND SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST ADOPTED PLUMBING CODE, AND ALL LOCAL AND STATE CODES.



1 TRAP ARM DETAIL
NOT TO SCALE



2 BAY HOSE BIBB PIPING DETAIL
NOT TO SCALE



3 EXTERIOR PIPE SUPPORT DETAIL
NOT TO SCALE



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**ITD D5 MAINTENANCE BLDG.
 ADDITION & RENOVATION w/
 BRINE PRODUCTION FACILITY**
 BLACKFOOT, IDAHO

PROJECT NAME:

SHEET TITLE:

PLUMBING SCHEDULES

DRAWING SCALE APPLIES TO 22" X 34" SHEET SIZE

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REVISION	DATE
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ADDENDUM #2	3/16/2023

ARCH. JOB NUMBER: 22569

CLIENT PROJ. NUMBER: --

SHEET ISSUED DATE: Feb 2023

SHEET **P300**

PLUMBING FIXTURE SCHEDULE

SYMBOL	FIXTURE DESCRIPTION	CONNECTION SIZE					MANUFACTURER / MODEL NUMBER / DESCRIPTION / ADDITIONAL COMMENTS
		WASTE	VENT	TRAP	CW	HW	
<u>DF-1</u>	DRINKING FOUNTAIN WITH BOTTLE FILLING STATION (INTERIOR DUAL BUBBLERS) (ELECTRIC WATER COOLER) (ADA COMPLIANT) (HIGHFLOW)	1 1/2	1 1/2	1 1/2	1/2	--	ELKAY MODEL LZSTL8WSLP (FILTERED) MODEL EZSTL8WSVRSK (NON-FILTERED) BI-LEVEL ADA COOLER WITH BOTTLE FILLING STATION FURNISHED WITH FLEXI-GUARD SAFETY BUBBLER. BUBBLER ACTIVATED BY PUSHBAR. BOTTLE FILLER ACTIVATED BY ELECTRONIC SENSOR WITH AUTOMATIC 30-SECOND SHUT-OFF TIMER. 115 VOLT, 5.0 AMPS, 60 HERTZ. PROVIDE WITH JAY R. SMITH 0834 FLOOR MOUNTED SUPPORT CARRIER. CANE APRON TO BE INSTALLED ON HIGH COOLER.
<u>EYE-1</u>	EMERGENCY EYE WASH (WALL MOUNTED w/ RECOIL HOSE)	--	--	--	1/2	1/2	ACORN SAFETY MODEL S0408-CH12-BFP. WALL MOUNTED WITH DUAL 45° ANGLED HEADS AND RECOIL HOSE. PROVIDE WITH FLIP TOP DUST COVERS, UNIVERSAL EMERGENCY SIGN, DOUBLE CHECK VALVE, STAINLESS STEEL 90° WITH SHEET NIPPLE, AND ACORN MODEL ET71-1-BVS-OTG LEAD-FREE EMERGENCY THERMOSTATIC MIXING VALVE WITH 1/2" NPT INLETS & OUTLET, 4 GPM @ 5 PSID. PROVIDE WITH LOCKABLE INLET BALL VALVES, STANDARD OUTLET TEMPERATURE GAUGE, AND SELECTABLE TEMPERATURE RANGE FROM 80°F TO 95°F.
<u>FCO</u>	FLOOR CLEANOUT	SEE PLANS	--	--	--	--	JAY R. SMITH 4020 SERIES WITH ADJUSTABLE, ROUND NICKEL BRONZE TOP AND ABS PLUG.
<u>FD-1</u>	FLOOR DRAIN (PVC BODY) (CONCRETE FLOOR)	2	2	2	--	--	SIOUX CHIEF SERIES NUMBER 832-2PNR, POST- CONSTRUCTION LEVELING FLOOR DRAIN, NO-HUB OUTLET, 6-1/2" ROUND, ADJUSTABLE NICKEL BRONZE STRAINER AND TRAP PRIMER PORT. INSTALL TOP OF DRAIN 1/8" BELOW FINISH FLOOR AND CAULK EDGE.
<u>FS-1</u>	FLOOR SINK (6" DEEP) (HALF GRATE, FOOT TRAFFIC RATED)	2	2	2	--	--	JAY R. SMITH FIGURE NUMBER 3100Y-12, CAST IRON RECEPTOR, ALUMINUM DOME STRAINER, NICKEL BRONZE GRATE, AND TRAP PRIMER. INSTALL TOP OF SINK 1/8" BELOW FINISH FLOOR AND CAULK EDGE.
<u>FS-2</u>	FLOOR SINK (10" DEEP) (HALF GRATE, FOOT TRAFFIC RATED)	4	2	4	--	--	JAY R. SMITH FIGURE NUMBER 3160Y-12, CAST IRON RECEPTOR, ALUMINUM DOME STRAINER, NICKEL BRONZE GRATE, AND TRAP PRIMER. INSTALL TOP OF SINK 1/8" BELOW FINISH FLOOR AND CAULK EDGE.
<u>GCO</u>	GRADE CLEANOUT (PAVED AREAS) (VEHICULAR TRAFFIC)	SEE PLANS	--	--	--	--	JAY R. SMITH 4250 SERIES, ROUND FLANGED HOUSING WITH HEAVY DUTY CAST IRON COVER. FURNISH WITH ABS PLUG. COVER TO BE INSCRIBED "SAN".
<u>HB-1</u>	HOSE BIBB (INTERIOR)	--	--	--	3/4	--	MUELLER INDUSTRIES 102-454HN HOSE BIBB, 3/4" FEMALE INLET, 3/4" MALE OUTLET.
<u>HB-2</u>	HOSE BIBB (EXTERIOR) (NON-FREEZE)	--	--	--	3/4	--	WOODFORD MODEL 67 - EXPOSED STYLE WITH MODEL 50HA BACKFLOW PREVENTER, 3/4" INLET, AND CHROME PLATED. PROVIDE WITH TEE KEY AND INSTALL AT 18" ABOVE FINISH GRADE.
<u>LAV-1</u>	LAVATORY (WALL MOUNTED) (ADA COMPLIANT)	1 1/2	1 1/2	1 1/4	1/2	1/2	KOHLER KINGSTON MODEL K-2005: VITREOUS CHINA, WALL MOUNTED, HOLES ON 4" CENTERS, AND GRID STRAINER. KOHLER CORALIS MODEL K-15198: 4-1/2" LONG, SINGLE LEVER FAUCET WITH 0.5 GPM AERATOR. PROVIDE WITH JAY R. SMITH FIGURE NUMBER 0700-Z SUPPORT WITH CONCEALED ARMS AND WATTS SERIES LFUSG-B LEAD-FREE, THERMOSTATIC MIXING VALVE, ASSE STANDARD 1070 LISTED, BRONZE BODY, INTEGRAL CHECK VALVES, AND SELECTABLE TEMPERATURE RANGE FROM 80°F TO 120°F. PROVIDE WITH LS-1 LAV SHIELD.
<u>LS-1</u>	LAVATORY SHIELD (WALL MOUNTED SHIELD FOR CONCEALING PIPING, VALVES, AND INSTANTANEOUS WATER HEATERS)	--	--	--	--	--	TRUEBRO "LAV SHIELD" ADA COMPLIANT, TOTAL ENCLOSURE. SINGLE-PIECE CONSTRUCTION, SLOAN OPTISHIELD ETF-529, OR APPROVED EQUAL.
<u>RP-1</u>	RECIRCULATION PUMP (HOT WATER RETURN SYSTEM) (SMALL SYSTEM)	--	--	--	--	3/4	BELL AND GOSSETT BRONZE MODEL NBF-10S/LW, 115 VOLT, 0.46 AMPS, 55 WATTS, AND SHALL PROVIDE 4 GPM AT 7 FEET HEAD. INCLUDE 7-DAY PROGRAMMABLE ELECTRONIC TIME CLOCK WITH BATTERY BACKUP. INTERMATIC MODEL GM40AVE-RD89, APPROVED ALTERNATE: ARMSTRONG, TACO, GRUNDFOS.
<u>RPBP-1</u>	REDUCED PRESSURE BACKFLOW PREVENTER	INDIRECT			--	--	WATTS SERIES LF009 LEAD-FREE REDUCED PRESSURE ZONE ASSEMBLY WITH QUARTER-TURN BALL VALVES, STRAINER, AND AIR GAP. CAST COPPER BODY CONSTRUCTION - 1/2" THRU 2". PROVIDE SERIES 957 FOR SIZES 2 1/2" THRU 10".
<u>SA-1</u>	SHOCK ABSORBER (WATER HAMMER ARRESTOR)	--	--	--	--	--	JAY R. SMITH FIGURE NUMBER 5005 TO 5050, SIZED PER FIXTURES SERVED. PROVIDE AN ACCESS PANEL AND A BALL TYPE SHUT-OFF VALVE UPSTREAM OF SHOCK ABSORBER.
<u>TD-1</u>	TRENCH DRAIN (10" WIDE) (HEAVY TRAFFIC RATED)	4	2	4	--	--	JAY R. SMITH FIGURE NUMBER 9812 10" WIDE TRENCH DRAIN SYSTEM. SLOPE DRAIN SYSTEM WITH INTEGRAL METAL RAIL. PROVIDE WITH END CAPS, OUTLETS, CATCH BASIN (9812G-880-CB24-BP), AND HEAVY DUTY (CLASS C) GALVANIZED STEEL BAR GRATE (MODEL 9812-G). REFER TO ARCHITECTURAL PLAN FOR EXACT LENGTH REQUIREMENTS.
<u>TP-1</u>	TRAP PRIMER (PRESSURE ACTIVATED) (1 TO 4 TRAPS)	--	--	--	1/2"	--	PRECISION PLUMBING PRODUCTS MODEL CPO-500 WITH DU DISTRIBUTION UNIT IF REQUIRED FOR SERVING MORE THAN ONE TRAP.
<u>U-1</u>	URINAL (FLUSH VALVE) (SEE ARCH. FOR MOUNTING HEIGHT)	2	1 1/2	INT.	3/4	--	KOHLER BARDON MODEL K-4991-ET WALL MOUNTED URINAL WITH 3/4" TOP SPUD. SLOAN REGAL MODEL 186-0.5 FLUSHOMETER, 0.5 GPF. INCLUDE BEEHIVE STRAINER AND JAY R. SMITH FIGURE NUMBER 0637 ADJUSTABLE FIXTURE SUPPORT.
<u>US-1</u>	UTILITY SINK (23" X 21" X 13") (FLOOR MOUNTED)	2	1 1/2	1 1/2	1/2	1/2	FIAT MOLDED STONE MODEL FL-1 FLOOR MOUNTED SINK WITH EASY LEVELING LEGS, DRAIN ASSEMBLY AND STOPPER WITH FIAT A1 CHROME FAUCET, DECK MOUNTED, 4" O.C. WITH 4" WRISTBLADES, 6-3/4" SWING SPOUT, AND WATTS SERIES LFUSG-B LF, THERMOSTATIC MIXING VALVE, ASSE STANDARD 1070 LISTED, BRONZE BODY, INTEGRAL CHECK VALVES, AND SELECTABLE TEMPERATURE RANGE FROM 80°F TO 120°F.
<u>WC-1</u>	WATER CLOSET (17-12" SEAT HEIGHT) (FLUSH TANK) (FLOOR MOUNTED) (COMFORT HEIGHT / ADA)	4	2	INT.	1/2	--	KOHLER CIMARRON MODEL K-6310 (LEFT LEVER) / K-6310-RA (RIGHT LEVER), FLOOR MOUNTED, GRAVITY FLUSH TANK WITH ELONGATED BOWL, 1.28 GPF. KOHLER LUSTRA MODEL K-4650 ELONGATED, OPEN FRONT SEAT WITH CHECK HINGE AND NO COVER.

NOTES:

- ALL ADA COMPLIANT FIXTURES MUST COMPLY WITH ICC/ANSI A117.1. SEE ARCHITECTURAL PLANS FOR HANDICAPPED FIXTURE DESIGNATIONS, LOCATIONS, CLEARANCES, AND MOUNTING HEIGHTS.
- ALL EXPOSED HW PIPING, CW PIPING, AND DRAIN LINES BENEATH ALL LAVATORIES AND ALL ADA COMPLIANT SINKS MUST BE INSULATED TO PREVENT INJURY. REFER TO ARCHITECTURAL PLANS. INSULATE WITH MOLDED CLOSED CELL VINYL INSULATION - TRUEBRO, PLUMBEX, OR EQUAL.
- PROVIDE P-TRAP PRIMERS FOR ALL FLOOR DRAINS AND FLOOR SINKS (NOT ALL TRAP PRIMERS ARE INDICATED ON PLANS - REFERENCE DETAILS FOR ADDITIONAL INFORMATION). PROVIDE A BALL TYPE SHUT-OFF VALVE UPSTREAM OF PRIMER VALVE. SEE SPECIFICATIONS.
- SEE SPECIFICATIONS FOR ALTERNATE APPROVED MANUFACTURERS.

TRANSFER STATION SCHEDULE

SYMBOL	AREA SERVED	TYPE	FLOW (GPM)	MOTOR		MANUFACTURER AND MODEL	REMARKS
				HP	V/Ø		
<u>TS-1</u>	BRINE FACILITY FILLING	PACKAGED PUMP SKID PACKAGE	165.0	3.0	208/1	VARITECH TS-350	1, 2, 3
<u>TS-1</u>	BRINE FACILITY FILLING	PACKAGED PUMP SKID PACKAGE	165.0	3.0	208/1	VARITECH TS-350	1, 2, 3

REMARKS:

- SUBMIT FOR PRIOR APPROVAL.
- PROVIDE UNIT WITH PREMIUM EFFICIENCY MOTOR.
- PROVIDE UNIT WITH 316 SS PUMP SHAFT, SS PUMP HEAD, PROTECTIVE PUMP COVER, PRE-WIRED ON/OFF CONTROL, AND EPDM WIRE REINFORCED HOSE AND VALVE CONNECTIONS.

BRINE TANK SCHEDULE

SYMBOL	PURPOSE	TYPE	MATERIAL	CAPACITY (GALLONS)	MANUFACTURER AND MODEL	REMARKS
<u>BT-1</u>	BRINE STORAGE	VERTICAL DOME TOP TANK	HIGH DENSITY POLYETHYLENE	10,500	DEN HARTOG VT10500-142	1, 2, 3, 4
<u>BT-2</u>	BRINE STORAGE	VERTICAL DOME TOP TANK	HIGH DENSITY POLYETHYLENE	10,500	DEN HARTOG VT10500-142	1, 2, 3, 5
<u>BT-3</u>	BRINE STORAGE	VERTICAL DOME TOP TANK	HIGH DENSITY POLYETHYLENE	10,500	DEN HARTOG VT10500-142	1, 2, 3, 5
<u>BT-4</u>	BRINE STORAGE	VERTICAL DOME TOP TANK	HIGH DENSITY POLYETHYLENE	10,500	DEN HARTOG VT10500-142	1, 2, 3, 5
<u>BT-5</u>	BRINE STORAGE	VERTICAL DOME TOP TANK	HIGH DENSITY POLYETHYLENE	10,500	DEN HARTOG VT10500-142	1, 2, 3, 5
<u>BT-6</u>	BRINE STORAGE	VERTICAL DOME TOP TANK	HIGH DENSITY POLYETHYLENE	10,500	DEN HARTOG VT10500-142	1, 2, 3, 5

REMARKS:

- ALTERNATE MANUFACTURER'S SHALL SUBMIT FOR PRIOR APPROVAL.
- ARCHITECT TO SELECT COLOR PRIOR TO ORDERING.
- PROVIDE WITH 3"Ø STANDARD CONNECTION FITTINGS.
- BRINE PRODUCTION SYSTEM SMART TANK.
- STANDARD BRINE STORAGE TANK.

GAS SIZING CHART

SYMBOL	INPUT (MBH)	RUNOUT SIZE (2PSI) (INCHES)	EQUIPMENT CONNECTION SIZES (7" WC) (INCHES)
EXISTING FURNACE	80	3/4"	3/4"
EXISTING UNIT HEATER	120	3/4"	3/4"
EXISTING UNIT HEATER	120	3/4"	3/4"
EXISTING UNIT HEATER	120	3/4"	3/4"
NEW UNIT HEATER (UH-1)	100	3/4"	3/4"
NEW UNIT HEATER (UH-2)	100	3/4"	3/4"
NEW MAKEUP AIR UNIT (MAU-1)	513	3/4"	3/4"
TOTAL	1,153	EQUIVALENT LENGTH = 130 FT PRESSURE = 2 PSI MAIN SIZE = 1"Ø	

NOTE: GAS SIZES TO EQUIPMENT ARE AS NOTED IN SCHEDULE ABOVE. ROUTE NOTED (2-PSI) GAS LINE TO GAS EQUIPMENT. PROVIDE GAS COCK AND PRESSURE REGULATOR (2 PSI-7" WC) SIZED FOR GAS LOAD AT EACH PIECE OF EQUIPMENT. VENT TO ATMOSPHERE PER MANUFACTURERS RECOMMENDATIONS. ROUTE NOTED (7" WC) GAS LINE TO GAS FIRED EQUIPMENT WITH GAS COCK AND FLEX CONNECTOR AT UNIT. SEE GAS CONNECTION DETAILS ON SHEET P200.