ADDENDUM NO. 1

DATE: December 27, 2022

PROJECT: Palmer 3A and Juniper Well House Designs, DWSRF Project #7491-01

OWNER: City of Owosso

BID DATE: January 17, 2023 @ 3:00 PM

This Addendum forms a part of the Contract Documents and modifies the original Bidding Documents dated December 1, 2022, as noted below. Bidders shall acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to disqualification.

This Addendum consists of 3 pages (including Contractor's Questions).

The following Project Manual Documents are included consisting of 28 pages:

SECTION 00 25 13 – PREBID MEETINGS consisting of 6 pages

SECTION 00 31 43 – PERMITS consisting of 4 Pages

SECTION 02 41 16 – DEMOLITION consisting of 18 Pages

The following Contract Drawings are being reissued:

Palmer 3A Well House Design – 1 sheet
Sheet P-2

Juniper Well House Design – 2 sheets
Sheet P-1
Sheet P-2

Total Number of Reissued Sheets: 3 pages

Total Pages for Addendum No. 1: 34 pages

CHANGES TO TABLE OF CONTENTS

1. Delete LOCAL PREFERENCE POLICY noted under BIDDING REQUIREMENTS SECTION 00 11 13.
2. Change page numbers for 00 25 13 – PREBID MEETINGS from 1-2 to 1-6
3. Change page numbers for 00 31 43 – PERMITS from 1-1 to **1-4**
4. Change page numbers for 02 41 16 – DEMOLITION from 1-7 to **1-18**

CHANGES TO BIDDING REQUIREMENTS and GENERAL REQUIREMENTS

5. SECTION 00 11 13 – INSTRUCTIONS TO BIDDERS. Delete Item 9 referring to local preference policy.

6. SECTION 00 11 13 – INSTRUCTION TO BIDDERS. Delete Item 12.b. naming Local Preference Affidavit as a bid requirement.

7. SECTION 00 11 13 – CITY OF OWOSSO CONTRACT CONDITIONS. Delete Item 1. LOCAL PREFERENCE POLICY.

8. SECTION 00 52 13 – AGREEMENT. Delete Article 8.1.A.2. referring to local preference policy.

9. SECTION 00 25 13 – PREBID MEETINGS Remove and replace entire section

10. SECTION 00 31 43 – PERMITS. Remove and replace entire section

11. SECTION 01 21 00 – ALLOWANCES. Paragraph 3.3.A.4. Inspector Days, last paragraph on page 3, correct the written numbers as noted below.

    The Contractor shall insert the number of inspector days, multiply by ~~Two Hundred~~ **Six Hundred, Eighty** Dollars ($680.00) per day and insert the total in the space provided.

CHANGES TO TECHNICAL SPECIFICATIONS

12. SECTION 02 41 16 DEMOLITION. Remove and replace entire section.

13. SECTION 07 41 13.16 – STANDING-SEAM METAL ROOF PANELS, Part 2, Paragraph 2.1 A, add line

    "**6. Substitutions as approved by Engineer/Architect"**

14. SECTION 08 71 00 – DOOR HARDWARE, Part 3, Paragraph 3.6 DOOR HARDWARE SCHEDULE, add

SET 1

EA		**HINGES**	**AS REQUIRED**	**652**	**MCKINNEY**
1	**EA**	**STOREROOM LOCK**	**11G04**	**626**	**SARGENT**
1	**EA**	**OVERHEAD STOP**	**690S**	**EN**	**SARGENT**
1	**EA**	**THRESHOLD**	**171**	**MIL**	**PEMKO**
1	**EA**	**SWEEP**	**315CN**	**CLR**	**PEMKO**
1	**SET**	**SEALS**	**316APK**	**MIL**	**PEMKO**
1	**EA**	**LATCH GUARD**	**325**	**626**	**ROCKWOOD**

15. SECTION 26 29 23 – VARIABLE-FREQUENCY MOTOR CONTROLLERS, Part 2, Paragraph 2.1.A. Delete

    ~~2. Schneider Electric USA, Inc.~~

    ~~a. Altivar Process 600 Series~~

Add

2. **ABB Ltd.**
   a. **ACQ580 Drives**
3. **Eaton Corporation**
   a. **PowerXL DG1 General Purpose Drives**

16. SECTION 40 05 06 - COUPLINGS, ADAPTERS, AND SPECIALS FOR PROCESS PIPING paragraph 2.2 D. Flange Bolts and Nuts: Type 304 stainless steel **or Zinc Coated**.

CHANGES TO DRAWINGS

17. See reissued sheets for changes.

QUESTIONS FROM BIDDERS

1. **Q: Could you add Snap Clad Panels to the Standing Seam Metal Roof specification?**

   A: We can't evaluate product alternates during the bidding process, but we will open up the roof specification to substitutions . Note that this does not guarantee approval of your product – only that it will be evaluated during the submittal process if you are awarded the contract. See changes above.

2. **Q: What coatings should be on the pipe supports?**
   A: Hot Dip Galvanized. See updated sheets.

3. **Q: What should cover the end of the exterior 6" pipe at each wellhouse?**
   A: Blind flanges. See updated sheets.

4. **Q: Please clarify the number of pipe taps at the Juniper Wellhouse. There is a disagreement between the elevation and plan view.**
   A: Only one (1) 1" corp for pressure transducer and sample tap. See updated sheets.

End of Addendum No. 1

SECTION 00 25 13 - PREBID MEETINGS

1.1 PREBID MEETING

A. Engineer will conduct a Prebid meeting as indicated below:
   1. Meeting Date: December 15, 2022
   2. Meeting Time: 3:00 PM
   3. Location: Zoom Meeting.

B. Attendance:
   1. Prime Bidders: Not Required
   2. Subcontractors: Not Required

C. Agenda:
   1. See Minutes

D. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes to attendees. Minutes of meeting are issued as Available Information and do not constitute a modification to the Procurement and Contracting Documents. Modifications to the Procurement and Contracting Documents are issued by written Addendum only.
   1. Sign-in Sheet: Minutes will include list of meeting attendees.
   2. List of Plan holders: Minutes will include list of plan holders from Bid Net at the time of issue of Addenda 1 .

END OF SECTION 00 25 13

Pre-Bid Meeting Minutes

Palmer 3A and Juniper Well House Designs
For the City of Owosso, Michigan
OHM Project No.: 0020-22-0070 & 0020-22-0080
DWSRF #7491-01
Date: Thursday, December 15, 2022 @ 3:00 pm

1. Introductions / Sign In Sheet

Andrew VanWormer - OHM Advisors
Matt Kennedy - OHM Advisors
Ryan Suchanek - City of Owosso
Clayton Wehner - City of Owosso
Dave Haut - City of Owosso
Sue Bazen - Underground Solutions
Peter Kropf - J Ranck
Justin Jones - Newkirk Electric
Rocky Kanyo - John E Green Company
JcJones
Adam Case - RCL Construction
Ryan Sly - E&L Construction

2. Purpose of Meeting – Review scope of project and DWSRF Requirements.

3. Administrative Procedures

A. Bidders are **not** required to attend Pre-Bid Meeting in order to submit a bid.

B. Oral statements made at this meeting or any time during the bidding process may not be relied upon or binding. All questions about the meaning or the intent of the Bidding Documents are to be submitted in writing to the Engineers below. Interpretations or clarifications considered necessary by the Engineer in response to questions will be issued by Addenda delivered to all parties recorded as having received Bidding Documents.

1) Final Day for Contractor's Written Questions is Tuesday, January 10, 2023 at 5:00 pm.
2) Questions to be sent via email to both of the following:
    i. Matt.Kennedy@OHM-Advisors.com
    ii. Andrew.VanWormer@OHM-Advisors.com
3) Responses to Contractor's Written Questions will be addressed in an addendum by Friday, January 13, 2023 at 5:00 pm.

C. Bidding Documents are available at no charge on the City of Owosso website or on the MITN website. Hard copies may be obtained for a fee in accordance the City's FOIA Policy at the office of the Bid Coordinator, City Hall, 301 West Main Street, Owosso, Michigan 48867. Additionally, Bidding Documents are available for viewing at the following locations:

- The office of the Engineer, 34000 Plymouth Road, Livonia, Michigan 48150.

D. Sealed Bids will be received by the City of Owosso Bid Coordinator, City of Owosso, 301 W Main Street, Owosso, Michigan 48867 until 3:00 p.m. Tuesday, January 17, 2023 for the Palmer 3A and Juniper Well House Designs, DWSRF #7491-01 at which time bids will be publicly opened and read aloud.

E. The following documents must be included with the bid response:

1) Bid Proposal
2) W-9 Request for Taxpayer ID No. and Certification
3) Signature Page & Legal Status/ Acknowledgement of Addendum(s)
4) Insurance Endorsement
5) Section 00 43 13 Bid Bond
6) Section 00 44 36 Subcontractor, Supplier Listing (provided within 24hrs of award)
7) Section 00 45 10 Qualifications Statement
8) DWSRF Requirements
    i. Section 00 45 14 Iran Linked Business Certification
    ii. Debarment/Suspension Certification
    iii. Davis-Bacon/Prevailing Wages
    iv. American Iron and Steel Requirements Section 00 45 10 - Qualifications Statement.

F. Bid must be accompanied by bid security made payable to Owner in an amount of 5% of Bidder's maximum bid price (determined by adding the base bid and all alternates) in the form of a certified check, bank money order, or a Bid Bond.

G. Details about DWSRF Requirements listed above

ii. Bids shall include a completed Certification Regarding Debarment, Suspension, and Other Responsibility Matters Form.

iv. Bids must meet the American Iron and Steel (AIS) Requirements for incorporating iron and steel products used in the project to be produced in the United States.

H. Section 00 44 36 - Subcontractors and Suppliers Listing shall be provided by three (3) lowest bidders within 24 hours of Bid Opening. Form shall be completely filled out by Bidders. To simplify this process, all bidders are encouraged (but not required) to include this listing with their bid package.

I. Bidders to review the insurance and bonding requirements of this project as explained in the Sections 00 70 00 and 00 73 00 – General and Supplementary Conditions. The successful bidder must comply with the limits provided in this section.

J. Liquidated Damages. Assessed at $1,000.00 per day beyond Substantial and Final Completion.

K. The Bid Proposal requires the contractor to estimate "Inspector Days" which is separate from the total project duration. Bidders should carefully review the description of this unit price in SECTION 01 21 00 ALLOWANCES.

L. Schedule:

Activity	Date
Pre-Bid Meeting	Thursday, December 15, 2022 @ 3:00 p.m.
Final day for Contractor written questions	Tuesday, January 10, 2023 @ 5:00 p.m.
Last Addendum #Posted (if needed)	Friday, January 13, 2023 @ 5:00 p.m.
Bids due	Tuesday, January 17, 2023 @ 3:00 p.m.
Owosso City Council Meeting Preliminary Bid Approval	Monday, February 6, 2023
EGLE Order of Approval	Friday, March 3, 2023
DWRF Loan Closing	Friday, March 31, 2023
Notice of Award Issued	Tuesday, April 4, 2023
Contract Execution	April 4 – May 1, 2023
Anticipated Notice to Proceed Issued	Friday, May 1, 2023
Notice to Proceed Issued (120 day bid hold)	Friday, May 15, 2023
Tentative date of Pre-Construction Meeting	Tuesday, May 19, 2023
On site potential start	September 1, 2023
Substantial Completion	45 weeks after Notice to Proceed
Final Completion	4 weeks after Substantial Completion

4. Summary of Project

A. Scope of work for Palmer 3A project:
1) Demolition of existing Palmer 3 well house
2) Abandonment of Palmer 3 well and 150 feet of water main
3) Installation of one well house, one vertical line-shaft turbine pump, and 71 feet of water main
4) Installation of a gas-powered generator and two automatic transfer switches

B. Scope of work for Juniper project:
1) Installation of one well house, one vertical line-shaft turbine pump, and 1,544 feet of water main (1,460 feet of 12-inch water main directionally drilled and 84 feet of 12-inch water main open cut)
2) Installation of a gas-powered generator

C. Permits

- EGLE Part 399 Permit for Construction of Water Supply Systems: Issued 12/7/2022 (permitting both project sites) and is available upon request.
- City of Owosso Building Department: Contract documents for both project sites have been submitted for review. Contractor is responsible for obtaining building permits for both project sites.
- Shiawassee County Health Department for Soil Erosion and Sedimentation Control: Contractor is responsible for obtaining SESC permits for both project sites.

- EGLE/USACE Joint Permit for Juniper project: Expected to be issued in December 2022 and will be available upon request.
- Shiawassee County Drain Commissioner for Utility Crossing under Osburn Drain for Juniper project: Issued 11/3/2022 and is available upon request.

D. Site requirements

- Contractor shall provide onsite sanitary facilities at both project sites during the construction period for own personnel.
- Eastern massasauga rattlesnake precautions. Refer to Threatened and Endangered Species Memo.
- Palmer 3A site working hours: 7 am to 7 pm, Monday through Saturday; no City holidays
- Juniper site working hours: 8 am to 7 pm, Monday through Friday; no City holidays

5. Questions and Answers

None.

Document Request List

Plan Holders List

Organization Name	Main Contact	Download Date	City	Province/State
Underground Solutions	Applications Engineering	12/13/2022 04:50 PM EST	Poway	California
TUREK PRE-CONSTRUCTION VIDEO	CARL TUREK	12/13/2022 10:56 AM EST	GRAND RAPIDS	Michigan
RCL Construction Co.	Rodney Bauer	12/12/2022 02:25 PM EST	Sanford	Michigan
Insituform Technologies,	Chrissy Koller	12/12/2022 08:56 AM EST	Chesterfield	Missouri
Action Traffic Maintenance	Mike Derrick	12/08/2022 02:17 PM EST	Flint	Michigan
Strata Underground	John Iafrate	12/08/2022 11:42 AM EST	Clinton Township	Michigan
Builders Exchange of the Kalamazoo Area Inc	Pam Carey	12/06/2022 08:36 AM EST	Kalamazoo	Michigan
J. Ranck Electric, Inc.	Adam Ranck	12/06/2022 07:07 AM EST	Mt. Pleasant	Michigan
North America Procurement Council, Inc. PBC	Tim Loncarich	12/05/2022 07:04 PM EST	Grand Junction	Colorado
Commerce Controls, Inc.	Eric Hine	12/05/2022 03:49 PM EST	Novi	Michigan
Kerr Pump and Supply	Joe Ash	12/05/2022 03:35 PM EST	Oak Park	Michigan
Lang Constructors, Inc.	Jeffrey Lang	12/05/2022 12:15 PM EST	Flint	Michigan
D.F. BEST COMPANY, INC.	David Best	12/05/2022 11:38 AM EST	Howell	Michigan
425-523-5632	sdfsfff sdfg	12/05/2022 11:22 AM EST	SD	Alabama
Sorensen Gross Company	Nicola Taylor	12/05/2022 10:54 AM EST	Flint	Michigan
E & L Construction Group	David Johnston	12/05/2022 10:26 AM EST	FLINT	Michigan
Shaw Electric Company	Kevin Bielski	12/05/2022 10:23 AM EST	Southfield	Michigan

DOCUMENT 00 31 43 - PERMITS

1.1 PERMIT APPLICATION INFORMATION

A. This Document with its referenced attachments is part of the Procurement and Contracting Requirements for Project. They provide Owner's information for Bidders' convenience and are intended to supplement rather than serve in lieu of the Bidders' own investigations. This Document and its attachments are not part of the Contract Documents.

B. Palmer 3A Project:
1. ~~EGLE Part 399 Permit for Construction of Water Supply Systems. The construction permit for Project is expected to be issued by EGLE in DECEMBER 2022. A copy of the Permit will be available upon request.~~
2. City of Owosso Building Department. The contract documents have been submitted for review. The Contractor to apply for the permit for the Project.
3. Shiawassee County Health Department for Soil Erosion and Sediment Control permit. Permit application number unknown at time of bidding. The Contractor is responsible for obtaining a soil erosion and sedimentation control permit as part of the proposed work.

C. Juniper Project:
1. ~~EGLE Part 399 Permit for Construction of Water Supply Systems. The construction permit for Project is expected to be issued by EGLE in DECEMBER 2022. A copy of the Permit will be available upon request.~~
2. EGLE/USACE Joint Permit. The construction permit for Project is expected to be issued by EGLE in DECEMBER 2022. A copy of the Permit will be available upon request.
3. Shiawassee County Drain Commissioner for Utility Crossing under Osburn Drain. The construction permit for Project has been issued by the Shiawassee County Drain Commissioner [11/03/2022]. A copy of the Permit is available upon request.
4. City of Owosso Building Department. The contract documents have been submitted for review. The Contractor to apply for the permit for the Project.
5. Shiawassee County Health Department for Soil Erosion and Sediment Control permit. Permit application number unknown at time of bidding. The Contractor is responsible for obtaining a soil erosion and sedimentation control permit as part of the proposed work.

D. EGLE Part 399 Permit for Construction of Water Supply Systems
1. **Permit number ACT-224019 was issued December 7, 2022. The permit includes both the Palmer Project and the Juniper Project.**
2. **The Permit was issued with the following condition:**
   a. **The plugging of the original Palmer production well, PW3, should proceed in accordance with the well code (re: Part 127 of Act 368 and Administrative Rules: Section R325.1662, Rule 162 (2)). Extra precautions should be considered to prevent the potential migration of bacterial contamination and neat cement migration.**
   b. **The above condition requires the well drilling contractor to remove debris from the well prior to plugging. A procedure for plugging the well shall be submitted to the engineer for review prior to proceeding. If neat cement is used, it shall be poured in multiple lifts until the cement is above the wellscreen to prevent migration of the cement into the formation.**

END OF DOCUMENT 00 31 43

PERMIT FOR WATER SUPPLY SYSTEMS

(Construction – Alteration – Addition or Improvement) as Described Herein

*Required under the Authority of 1976 PA 399, as amended (Act 399)**

Water System Project:

Water Supply Name: OWOSSO, CITY OF

Public Water Supply ID: MI0005120

Project Name: DWSRF Well Permit Juniper and Palmer 3A

Project Purpose:

Project Location:

Project County:

Permit Number: **ACT-224019**

Issued Date: 12/7/2022

Expiration Date: 12/7/2024

This permit only authorizes the construction and/or alteration of the waterworks system as described below and detailed in the approved drawings and specifications in accordance with Part 13 of the Administrative Rules of Act 399.

ISSUED UNDER THE AUTHORITY OF THE DIRECTOR OF THE MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

Reviewed by: Kurt Swendsen

Issued by: Joseph Reinke

This permit expires if construction or alteration has not commenced by the expiration date, 12/7/2024, in accordance with R 325.11306.

Requests for extension of this permit may be made in MiEHDWIS Construction Permit Activity ACT-224019 or by contacting your EGLE representative.

Facilities Description:

One new well (Juniper) and a replacement well (Palmer 3A).

Conditions:

CONDITIONS:

This permit is issued with the following conditions:

The plugging of the original Palmer production well, PW3, should proceed in accordance with the well code (re: Part 127 of Act 368 and Adminstrative Rules: Section R325.1662, Rule 162 (2)). Extra precautions should be considered to prevent the potential migration of bacterial contamination and neat cement migration.

DWSRF Well Permit Juniper and Palmer 3A Facilities

Mains

Length (ft)	Size (in)	Material	Construction Type	Comments

Tanks

Volume (GL)	Tank Type	Construction Type	Comments

Wells

Diameter (in)	Depth (ft)	Capacity (GPM)	Pump Type	Construction Type	Comments
12	136	800	Vertical Turbine	New Well(s)	This contract has two wells. This well, which is locally referred to as Palmer 3A, is a replacement well for Palmer 3.
12	100	1000	Vertical Turbine	New Well(s)	This contract includes two wells. This well is a new well and is referred to as the Juniper well. Once running, an older well will be taken out of service so they are not exceeding the baseline capacity.

Pumps

Total Dynamic Head (TDH)	Capacity at TDH (GPM)	Pump Type	Number of Pumps	Construction Type	Comments

Treatment Processes

Construction Type	Treatment	Comments

Other Facilities

Type of Facility	Description

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* *This Act 399 Permit is issued under the authority of the Director of the Michigan Department of Environment, Great Lakes, and Energy (EGLE) and allows the construction and/or alteration of the water system as described herein in accordance with Part 13 of the Administrative Rules of Act 399.*

The issuance of this permit does not authorize violation of any federal, state, or local laws or regulations, nor does it obviate the necessity of obtaining such permits, including any other EGLE permits, or approvals from other units of government as may be required by law.

This permit expires if construction or alteration has not commenced by the expiration date indicated above in accordance with R 325.11306. Requests for extension of this permit can be made through MiEHDWIS or by contacting your EGLE representative.

Revisions of the approved plans and specifications must be done in accordance R325.11309.

Noncompliance with the conditions of this permit and the requirements of Act 399 constitutes a violation of the Act.

Intentionally providing false information in this application constitutes fraud which is punishable by fine and/or imprisonment.

Where applicable for water withdrawals, the issuance of this permit indicates compliance with the requirements of Part 327 of Act 451, Great Lakes Preservation Act.

END OF DOCUMENT 00 31 43

SECTION 02 41 16 - DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Demolition and removal of buildings, utilities and/or site features.
   2. Abandoning in-place and/or removing below-grade features.
   3. Disconnecting, capping or sealing, and abandoning in-place site utilities.

B. Related Requirements:
   1. Section 01 10 00 SUMMARY for use of the premises and phasing requirements.
   2. Section 01 73 00 EXECUTION for disposal and hauling requirements.
   3. Section 31 23 00 EXCAVATION AND FILL for subgrade preparation requirements.

1.2 DEFINITIONS

A. Remove: Detach items from existing construction and dispose of them off-site unless indicated to be salvaged.

B. Remove and Salvage: Items of salvable value to Contractor may be removed from the structure as work progresses.

1.3 MATERIALS OWNERSHIP

A. Demolition waste becomes property of Contractor.

1.4 INFORMATIONAL SUBMITTALS

A. Site Health and Safety Plan
   ~~1. See Section 01 3 5 .29 – Health, Safety, and Emergency Response Procedures~~
   2. See Section 00 70 00 General Conditions, paragraph 7.12 Safety and Protection.

B. Work Plan: The Contractor shall submit a detailed account of the Contractor's approach to achieve all the goals of this work. The plan shall have a logical order of work items and specify projected time frames for each work item, at a minimum, the Work Plan shall include:
   1. Proposed methods of demolishing the structure.
   2. Methods proposed for general material removal and handling and waste handling.
   3. Certification of approved scales for measurement and payment processes.
   4. Proposed methods of abandoning and cutting and capping utilities.
   5. Manifesting procedures.
   6. Letter of Intent from the recycling/re-use facilities.
   7. Copies of solid Waste Disposal permits
   8. Transportation routes.
   9. List of Equipment/rental equipment to be used during the Scope of Work.
   10. Methods used to secure the site from vehicular and pedestrian traffic.
   11. Spill Control and contingency plans.
   12. Erosion Prevention and Sediment Control plans, including dust control operations.
   13. Fire Control.
   14. A site plan with marked locations of storage areas (including soil storage), barricades, and existing haul roads, as required to perform work.
   15. A list of names and telephones numbers of people who are on 24-hour call for the project duration. At a minimum, the list shall contain the names and telephone numbers of the

local police, local hospitals and ambulance, local fire department, other firms working with the Contractor and emergency response services.

16. A plan to protect the structures, public utilities, and pavements from construction activities by shoring, bracing, sheet piling, underpinning, or other methods required to prevent their failure for review. Any damage to pathway, sidewalk, curb and gutter, or other pavement due to Contractors construction activities shall be repaired at Contractors expense at no additional cost to the project. Reference the City of Ann Arbor Standard Specifications for local regulations.
17. A plan for the type and source of fill material proposed to fill in the excavation. The plan shall include the MDOT soil classification parameters of grain size, sieve analysis and organic content.
18. Methods for conducting other work under this contact

C. Schedule of Building Demolition Activities: Indicate the following:
   1. Detailed sequence of demolition work, with starting and ending dates for each activity.
   2. Temporary interruption of utility services.
   3. Shutoff and capping or re-routing of utility services.

D. Obtain all applicable permits, notifications and approvals and provide a copy of the approved permits to the Owner or Designee prior to commencing field work.

1.5 CLOSEOUT SUBMITTALS

A. Landfill records including, at a minimum, Disposal Records and Landfill permits may be required by Owner or Designee when discharging demolished materials that may or may not contain hazardous wastes.

B. Disposal Records: provide documentation of the receipt and acceptance of the waste by disposal facility licensed to accept each waste. Identify the quantity of waste received, description of each waste stream, and date received.

C. Statement of Refrigerant Recovery (if required): Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

1.6 FIELD CONDITIONS

A. Buildings to be demolished will be vacated and their use discontinued before start of the Work.

B. Conditions of Structures: Owner assumes no responsibility for actual condition of structures to be demolished including removal of salvageable items through theft. Conditions existing at time of inspection for bidding purposes will be maintained by the Owner in so far as practicable. However, variations within structure may occur due to theft, vandalism, and weather-related stresses on the structures prior to start of demolition work.

C. Hazardous Materials or Other Items of Environmental Interest: May be present in buildings and structures to be demolished based on the age of the structures. To the extent required by law, the Contractor shall be responsible for identifying, quantifying, handling, and disposing of items of environmental interest that may be present. The Contractor is responsible for performing work in accordance with applicable regulations.

D. On-site storage or sale of removed items or materials is not permitted.

1.7 COORDINATION

A. Arrange demolition schedule with Owner and Engineer prior to start of work.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Contractor shall be an experienced firm that has successfully completed demolition Work similar to that indicated for this Project.

B. Regulatory Requirements: Comply with governing EPA notification regulations before beginning demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

C. Standards: Comply with ASSE A10.6 and NFPA 241.

2.2 SOIL MATERIALS

A. Comply with requirements in Section 31 2 0 .00 "Earth Moving."

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped before starting demolition operations.

B. Perform an engineering survey of condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during building demolition operations.

C. Asbestos Survey
1. An asbestos survey was commissioned by OHM-Advisors and was completed on November 30, 2022. ~~Results are pending and will be released to bidders in an addendum~~. **The testing report is attached to the end of this specification section for reference by Bidders/Contractors.**

D. Lead Survey
1. No suspected lead containing materials.

E. Universal Waste
1. No suspected universal waste.

F. Preparatory Removal (If Required)
1. To prepare for demolition, the Contractor will first remove all ACMs and other "packages" containing potentially hazardous materials, hazardous waste or/and universal waste. Those materials will be segregated and placed in appropriate containers for disposal/recycling.
2. Ensure that all utilities have been shut off and/or disconnected, as required by Contract Drawings.
3. Complete any other required pre-demolition preparation activities required by permit and/or regulations.

3.2 PREPARATION

A. Facility Remediation: If items of environmental interest are present at the site, the Contractor shall perform the following:
   1. The Contractor shall utilize personnel that are adequate training, certified, and equipped with the handling of the items of environmental interest.
   2. The Contractor shall properly dispose of or recycle these items of environmental interest in such a way that protects against water and air pollution and preserves natural resources during the execution of work included in this Contractor.
   3. The Contractor will control operations to provide environmental protection in conformance with local, state, and federal regulations, permit and licenses.

3.3 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Utilities to be Disconnected: Locate, identify, disconnect, and seal or cap off utilities serving buildings and structures to be demolished.
   1. Owner will arrange to shut off water utilities when requested by Contractor. Water shut off by Owner will be at nearest upstream and downstream feed points of the wellhouse. All other utility shut offs shall be coordinated by the Contractor.
   2. Arrange to shut off utilities with utility companies.
      a. If the Contractor wishes to use existing utilities during execution of work, this shall be coordinated with the Owner. Contractor shall be required to pay for any utility permits and use of utilities, if necessary, during execution of work for this contract. Otherwise, the Contractor shall provide new temporary utilities.
      b. Contractor shall pay for disconnection fees.
      c. The Contractor shall be responsible for contacting each respective utility service. The Contractor shall be responsible to work with the utility companies to disconnect, abandon, or cut/cap utilities feeding the property. See Drawings for a listing of utility companies servicing the site.
      d. Contractor shall reference the Drawings for utility disconnect, abandonment, or cut/cap locations. These locations shall be field verified.
      e. Contractor to coordinate with power and gas utilities to relocate services to new structure.
   3. Unless otherwise directed, cut off pipe or conduit a minimum of 48inches below grade.
      a. Disconnect, cut and cap, and/or abandon-in-place specified utilities in accordance with regulating standards, utility owner's requirements, and standard construction practices.
         1) Contractor shall cut and cap at main supply line at property line or as otherwise directed in contract documents.
      b. Drain, purge, or otherwise remove, collect, and dispose of waters, wastewaters, chemicals, gases, explosives, acids, flammables, or other dangerous materials before proceeding with demolition operations.
      c. Cap, valve, or plug and seal (with compatible piping material) remaining portion of pipe or conduit according to requirements of authorities having jurisdiction.
   4. Do not start demolition work until utility disconnecting and sealing have been completed and verified in writing.

3.4 WELL ABANDONMENT

A. Qualified personnel: Palmer 3 well to be abandoned by licensed well driller per Michigan Groundwater Quality Control Rules R 325.1601 et. seq. adopted under Part 127, Water Supply and Sewer Systems, of the Public Health Code, 1978 PA 368, as amended (well code.)

B. Palmer 3 (wellogic well id 780 0000 07973.) is a 16-inch diameter well with a 12-inch diameter casing liner. The original depth of well is 146 feet prior to well collapse. The lower 20 feet to 30

feet is currently filled with loose sand, gravel, and clay debris. There is a hole in the casing approximately 5 feet above the well screen.

C. If the casing cannot be pulled, casing shall be cut off a minimum of 48-inches below grade or at a depth specified by above referenced rules and health code, whichever is deeper.

3.5 PROTECTION

A. Existing Facilities: Protect adjacent driveway and walkways during demolition operations.

B. Temporary Shoring: Provide and maintain interior and exterior shoring, bracing, or structural support to preserve stability and prevent unexpected movement or collapse of construction being demolished.
   1. Strengthen or add new supports when required during progress of demolition.

C. Existing Utilities to Remain: Maintain utility services to remain and protect from damage during demolition operations.
   1. Do not interrupt existing utilities serving adjacent occupied or operating facilities unless authorized in writing by Owner and authorities having jurisdiction.

D. Temporary Protection: Erect temporary protection, such as walks, where required by authorities having jurisdiction and as indicated. Comply with requirements in Section 01 5 0 .00 "Temporary Facilities and Controls."
   1. Protect adjacent buildings and facilities from damage due to demolition activities.
   2. Protect existing site improvements, appurtenances, and landscaping to remain.
   3. Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent facilities to remain.

E. Remove temporary barriers and protections where hazards no longer exist. Where open excavations or other hazardous conditions remain, leave temporary barriers and protections in place.

3.6 DEMOLITION, GENERAL

A. General: Demolish indicated buildings and site improvements completely. Use methods required to complete the Work within limitations of governing regulations and as follows:
   1. Do not use cutting torches until work area is cleared of flammable materials. Maintain portable fire-suppression devices during flame-cutting operations.
   2. Maintain fire watch during and for at least 24 hours after flame-cutting operations.
   3. Maintain adequate ventilation when using cutting torches.
   4. Locate building demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
   5. Walls and other parts of any building or structure shall not be left unguarded in such condition that such parts may fall, collapse or be weakened by wind pressure or vibration.
   6. Strictly segregate each type of debris (e.g., demolition debris, hazardous waste, solid waste, or other wastes).

B. Site Access and Temporary Controls: Conduct building demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
   1. Do not close or obstruct streets, walks, walkways, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic-ways if required by authorities having jurisdiction.
   2. Use water mist and other suitable methods to limit spread of dust and dirt. Comply with governing environmental-protection regulations. Do not use water when it may damage

adjacent construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.

C. Explosives: Use of explosives is not permitted.

3.7 DEMOLITION BY MECHANICAL MEANS

A. Structure Demolition: Demolish all structures and foundations to extents shown on Drawings consistent with all applicable standards and regulations. Proceed with demolition of structural framing members systematically, from higher to lower level. Complete building demolition operations above each floor or tier before disturbing supporting members on the next lower level.

B. Below-Grade Demolition: Demolish foundation walls and other below-grade construction as indicated.
   1. Remove below-grade construction, including basements, foundation walls, and footings, to depths indicated.
   2. Fill in excavations, pits, trenches and depressions with acceptable materials per specifications.

C. Existing Utilities: Remove utilities as required by Drawings and Specifications.

3.8 SITE RESTORATION

A. Below-Grade Areas: Completely fill below-grade areas and voids resulting from building demolition operations with satisfactory soil materials, recycled pulverized concrete, recycled pulverized masonry according to backfill requirements in Section 31 2 0 .00 "Earth Moving."

B. Site Grading: Uniformly rough grade area of demolished construction to a smooth surface, free from irregular surface changes. Provide a smooth transition between adjacent existing grades and new grades.

3.9 REPAIRS

A. Promptly repair damage to adjacent facilities caused by demolition operations.

3.10 DISPOSAL OF DEMOLISHED MATERIALS

A. Remove demolition waste materials from Project site and dispose of them in an EPA-approved waste landfill acceptable to authorities having jurisdiction.
   1. Do not allow demolished materials to accumulate on-site.
   2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
   3. Debris shall be sized in accordance with the approved disposal facility requirements and placed into appropriate containers for off-site disposal at the approved disposal facility.
   4. The Contractor shall be responsible for:
      a. Debris and material characterization to determine regulatory-based disposal requirements.
      b. Selection and acceptance of the specified waste at an approved treatment or disposal facility.
      c. That the disposal facility is in compliance with its permit(s) at the time of waste disposal.
      d. That each type of debris and material is sufficiently characterized for disposal, as required by each disposal facility, to enable the Owner or his Designee, to sign disposal manifests, as required.

5. Disposal of demolition debris:
    a. Demolition debris that will not be salvaged for recycle or reuse shall be disposed at a landfill permitted to accept demolition debris.
6. Disposal of hazardous waste:
    a. If encountered, handling and disposing of hazardous waste material, including sampling and testing, shall be in strict accordance with 40 CFR 160. Hazardous wastes shall be removed prior to commencing demolition. The Contractor is responsible for surveying the work area for hazardous wastes, including asbestos, prior to commencing demolition work.
7. Disposal of non-hazardous waste:
    a. Contaminated material not classified as hazardous shall be disposed of in accordance with RCRA Subtitle D.
8. Disposal of universal wastes:
    a. Universal wastes shall be disposed of/reclaimed in accordance with Universal Waste Regulations.

B. Do not burn demolished materials.

3.11 MANIFEST RECORDS

A. The Contractor shall originate, and provide transporter with copies of waste shipment manifests and/or bills of lading records for all wastes; verify wastes and quantities of each load shipped. The Contractor shall also provide the Owner or Designee with the original manifests to be retained for a 3-year period.

B. The manifest forms and records shall be consistent with the State of Michigan, US EPA, and U.S. DOT requirements.

C. The Owner or Designee will sign any required manifests. The Owner or Designee will review the manifest for completeness and accuracy prior to final release.

3.12 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by building demolition operations. Return adjacent areas to condition existing before building demolition operations began.
    1. Clean roadways of debris caused by debris transport.

3.13 ATTACHMENT

A. *Results of Asbestos Sampling* letter from AKT Peerless dated December 5, 2022 consisting of 10 pages.

December 5, 2022

Vincent Verna
OHM Advisors
201 East Ellsworth St #100
Midland, MI 48640

Subject: Results of Asbestos Sampling
1590 Palmer Avenue
Owosso, Michigan 48867
AKT Peerless Project No.: 17756f-1-190

Mr. Verna:

AKT PEERLESS was retained by OHM Advisors to perform asbestos sampling at 1590 Palmer Avenue, Owosso, Michigan. AKT Peerless' scope of work is based on its proposal PF-31581, dated November 28, 2022.

The purpose of AKT Peerless' survey was to identify asbestos-containing materials (ACMs) present at the property prior to demolition activities. The methods used to complete the survey are based on the procedures outlined in part of the Asbestos Hazard Emergency Response Act (AHERA) in 40 CFR 763.

DESCRIPTION OF STRUCTURE SURVEY

AKT Peerless conducted field sampling of suspect asbestos containing materials on November 30, 2022.

During the asbestos survey, AKT Peerless identified Homogeneous Areas (HA) based on appearances and type of materials observed. As defined under AHERA, a homogeneous is an area that appears similar throughout in terms of its color, texture, and date of material application.

BULK SAMPLE MATERIAL INVENTORY

Based on the homogeneous and functional areas identified during the survey, AKT Peerless collected a total of 4 bulk samples for analysis. Samples were collected in polyethylene containers and labeled with an identification number. In general, AKT Peerless' sampling

protocol consisted of (a) extracting a sample with a clean knife, chisel, or coring tool and (b) placing the sample into its properly labeled sample container.

The samples were collected by a Michigan Occupational Safety and Health Administration (MIOSHA), Construction Safety and Health Division (CSHD) accredited Asbestos Inspector.

LABORATORY ANALYTICAL PROCEDURES

All samples collected were submitted to and analyzed by APEX Research Laboratory (APEX). APEX is accredited by the American Industrial Hygiene Association (AIHA) and participates in the National Voluntary Laboratory Accreditation Program (NVLAP). Chain-of-custody guidelines were followed to ensure proper handling and delivery of the samples. The samples were analyzed using Polarized Light Microscopy (PLM) with dispersion staining in accordance with the following USEPA guidance document titled: Determination of Asbestos in Bulk Building Materials: EPA/600/R-93/116, and dated July, 1993.

Percentages and types of fibrous components in these samples were determined by visual estimation of the amount of fibrous materials versus the total amount of material present. The Occupational Safety and Health Administration (OSHA) definition of ACM is any material containing more than one (1) percent asbestos. Materials containing one (1) percent of asbestos or less than are considered non-asbestos containing. (Optional: Point counting was performed to confirm samples that returned a result of between trace and 2% asbestos content by PLM.)

AKT Peerless utilized the "first positive-stop" method of sample analysis. In this method, analysis is stopped on a group of samples once the first positive (e.g., greater than 1% asbestos) sample is analyzed. According to the USEPA, if one sample of a homogenous material is identified to be asbestos containing, the entire material must be considered asbestos containing.

SUMMARY OF IDENTIFIED ASBESTOS CONTAINING MATERIAL

HA No.	Material Description	Material Location	Approx. Quantity	Friability
01	Black Adhesive Glue Pods	Interior	100 SF	Non-Friable

HA=Homogeneous Area FS=Functional Space SF=Square Feet *Previously Sampled ACM **Assumed ACM

PAINT SAMPLING

Paint Chip samples were collected for analysis of lead and cadmium in representative painted surface coatings. AKT Peerless did not attempt to sample or inventory all painted surfaces and components but rather sampled paint from the main systems of paint based on surface coverage area.

Paint chip samples were submitted under chain-of-custody control to an accredited laboratory for analysis by the SW846 Analytical Method. Results are presented in the following table:

Sample No.	Location	Paint Color	Lead	Cadmium	Substrate
PC-1	Interior	Silver	0.02%	<0.01%	Wall

Laboratory analytical data and chain-of-custody documentation associated with paint sampling is included in Appendix A. Paint coatings above the analytical level of detection are regulated by the MIOSHA Lead in Construction Standard.

LIMITATIONS

Locating and identifying materials containing asbestos in buildings is a difficult and time-consuming task. All structures have hidden spaces that may not be immediately obvious to a surveyor who is not intimately familiar with the structure and who has only a limited time on site. Complicating this task is the fact that asbestos was used in many forms and in many types of materials in the construction of structures. In some of these materials, asbestos is present, not as an intentional ingredient, but as a contaminant.

Although AKT Peerless uses trained and licensed inspectors in attempting to locate and identify materials potentially containing asbestos, AKT Peerless cannot verify that all materials containing asbestos have been identified. It is possible that there are materials containing asbestos that were not found because they were not visible or accessible to the inspector or for various other reasons were not sampled.

CLOSING

AKT Peerless appreciates the opportunity to be of service. Should you have any questions or require additional information, please contact me at 248.615.1333 or via email at holsingerc@aktpeerless.com.

Sincerely,

AKT Peerless Environmental Services

Colin Holsinger
Project Coordinator
Southeast Michigan Region
Phone: 248.615.1333
MIOSHA LARA CSHD Asbestos Inspector Accreditation No. A45988

Appendix A

Asbestos PLM Laboratory Datasheets
Paint Chip Sampling Datasheets

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project : 1590 Pulmer Ave
Project # : 17756f-1-190

Report To:
Mr. Collin Holsinger
AKT Peerless
22725 Orchard Lake Rd.
Farmington, MI 48336

ARI Report # 22-102194
Date Collected: 11/30/22
Date Received: 11/30/22
Date Analyzed: 11/30/22
Date Reported: 11/30/22

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 102194 - 01 Cust. #: 1.1 Material: Blue Foam Location: Appearance: blue,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 102194 - 01a Cust. #: 1.1 Material: Black Adhesive Location: Appearance: black,fibrous,homogenous Layer: 2 of 2	Asbestos Present: **YES** Chrysotile - 5%	Other - 95%
Lab ID #: 102194 - 02 Cust. #: 1.2 Material: Blue Foam Location: Appearance: blue,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 40 CFR - Part 763 and/or EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples as submitted and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project : 1590 Pulmer Ave
Project # : 17756f-1-190

Report To:
Mr. Collin Holsinger
AKT Peerless
22725 Orchard Lake Rd.
Farmington, MI 48336

ARI Report # 22-102194
Date Collected: 11/30/22
Date Received: 11/30/22
Date Analyzed: 11/30/22
Date Reported: 11/30/22

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 102194 - 02a Cust. #: 1.2 Material: Black Adhesive Location: Appearance: black,fibrous,homogenous Layer: 2 of 2	Asbestos Present: Chrysotile - 5%	Other - 95%
Lab ID #: Cust. #: Material: Location: Appearance: Layer: of	Asbestos Present:	
Lab ID #: Cust. #: Material: Location: Appearance: Layer: of	Asbestos Present:	

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 40 CFR - Part 763 and/or EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples as submitted and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.

Apex # **102194**

APEX Research, Inc.

11054 Hi Tech Drive, Whitmore Lake, MI 48189. Phone: (734) 449 - 9990, Fax (734) 449 - 9991 www.ApexMI.com

Customer Name: AKT Peerless
Address: 22725 Orchard Lake Rd
City, St., Zip: Farmington Hills, MI 48336
Phone: (248)615-1333 Fax: (248)615-1334
Turn Around Time: (*circle one*) ***Terms and conditions on the other side.

Same Day (24 Hour)
48 Hour 3-5 Day
Other: _____ TTP (yes) / no (Test Till Positive)
Samples received after 3pm logged in next morning

Date of Survey: 11-30-22
Project: 1590 Palmer Rd
Project # 17756F-1-190
Contact Person: Colin Holsinger
Email: holsingerc@aktpeerless.com
Circle analyses required, indicate type and quantity

Lab Use Only
Log-In: ____
Report: ____
Fax: ____
Verbal: ____
Email: ____

Asbestos: Bulk X Wipe ____ Point Count <5% PCM ____
Lead / Cad / Chrome: Wipe **ASTM E1792?** circle YES or NO ____ Air ____ Paint ____ Bulk ____
Mold: Bulk ____ Air/Zefon/AlergencoD ____ BioSIS ____ Tape ____
TEM: Bulk/NOB ____ NIOSH 7402 ____ EPA Level II ____ Other ____
Smoke/Soot/Char: Bulk ____ Tape ____ Swab ____ Other ____

Lab ID	Customer ID #	Material/Location	Volume	Area	Results
	1.1 S1.2	Blue Foam w/ Black Adhesive			

RECEIVED
NOV 30 2022
APEX RESEARCH

Relinquished By: _____ Received By: AJP Relinquished By: _____ Received By: _____
Date: 11-30-22 Time/Date: 1120 Date: _____ Time/Date: _____

Revision R6 Date: Jan/2022

Certificate of Analysis - Metals in Paint

Method: EPA SW846-7130M, EPA SW846-7420M

Project: 1590 Palmer Ave.

Project #: 17756f-1-190

Report to:

Mr. Colin Holsinger

AKT Peerless

22725 Orchard Lake Rd.

Farmington Hills, MI 48336

ARL Report #: 22-L22127

Date Sampled: 11/30/22

Date Received: 11/30/22

Date Analyzed: 12/01/22

Date Reported: 12/01/22

Laboratory ID:	Client ID:	Reporting Limit:	Cadmium:	Lead:
L22127-01	PC-1 Silver / Wall	0.01%	**Cd -** < 0.01%	**Pb -** 0.02%

Reporting Limit of 0.01% is based on minimum sample weight of 100mg per our SOP, and may vary based on smaller sample size. APEX Research is not responsible for sample collection activities, and results apply to samples as received. Methods have been slightly modified. Samples received in acceptable condition unless otherwise noted. This certificate of analysis relates only to the samples tested and to ensure the integrity of the results, may only be reproduced in full. Liability limited to cost of analysis. APEX Research, Inc. (Laboratory ID# 227441) is accredited by the AIHA Laboratory Accreditation Programs, LLC (AIHA LAP,LLC) in the Environmental Lead Laboratory Accreditation Program for Lead in Paint as documented by the Scope of Accreditation Certificate and associated Scope. Accreditation extends to lead analyses only.

Robert T. Letarte Jr., Laboratory Director

Apex # **L22127**

APEX Research, Inc.

11054 Hi Tech Drive, Whitmore Lake, MI 48189. Phone: (734) 449 - 9990, Fax (734) 449 - 9991 www.ApexMI.com

Customer Name: AKT Peerless
Address: 22725 Orchard Lake Rd
City, St., Zip: Farmington Hills, MI 48336
Phone: (248)615-1333 Fax: (248)615-1334
Turn Around Time: (*circle one*) ***Terms and conditions on the other side.

Date of Survey: 11-30-22
Project: 1590 Palmer Ave.
Project # 177568-1-190
Contact Person: Colin Holsinger
Email: holsingerc@aktpeerless.com
Circle analyses required, indicate type and quantity

Lab Use Only
Log-In:
Report:
Fax:
Verbal:
Email:

Same Day | 24 Hour | 48 Hour | 3-5 Day | Other: | TTP (yes) / no (Test Till Positive)

Samples received after 3pm logged in next morning

Asbestos: Bulk ____ Wipe ____ Point Count <5% PCM ____
Lead / Cad / Chrome: Wipe **ASTM E1792?** circle YES or NO ____ Air ____ Paint X Bulk ____
Mold: Bulk ____ Air/Zefon/AlergencoD ____ BioSIS ____ Tape ____
TEM: Bulk/NOB ____ NIOSH 7402 ____ EPA Level II ____ Other ____
Smoke/Soot/Char: Bulk ____ Tape ____ Swab ____ Other ____

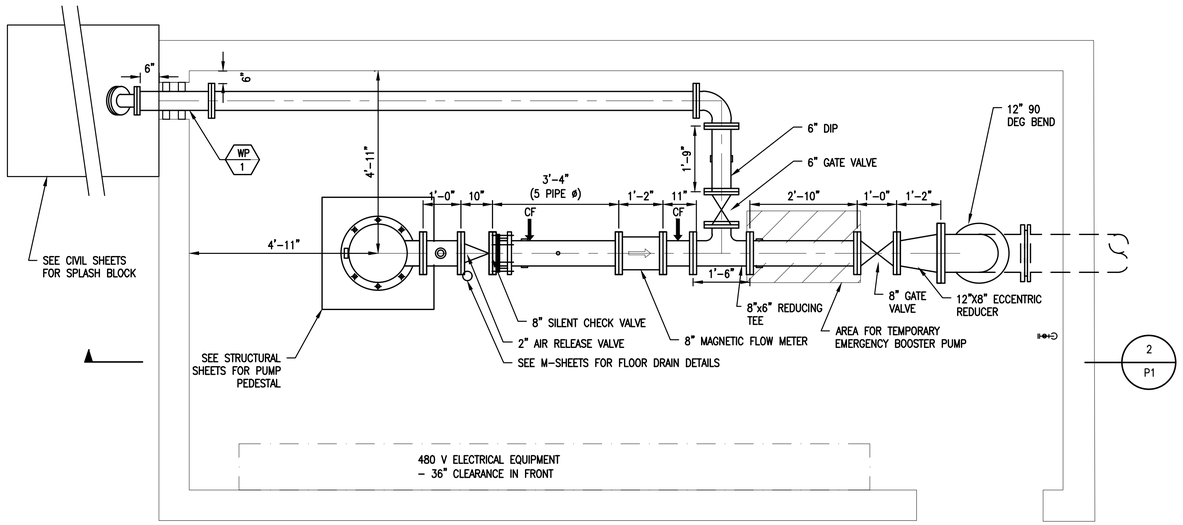
Lab ID	Customer ID #	Material/Location	Volume	Area	Results
	PC-1	Silver/Wall			
		RECEIVED			

Relinquished By: [signature] Received By: AJP
Date: 11-30-22 Time/Date: 1120 NOV 30 2022
Relinquished By: ____ Received By: ____
Date: ____ Time/Date: ____

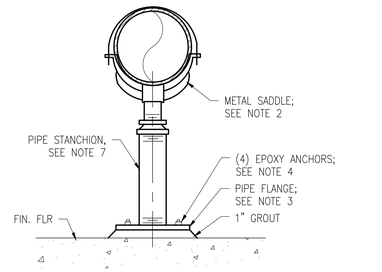
Revision R6 Date: Jan/2022

APEX RESEARCH

END OF SECTION 02 41 16



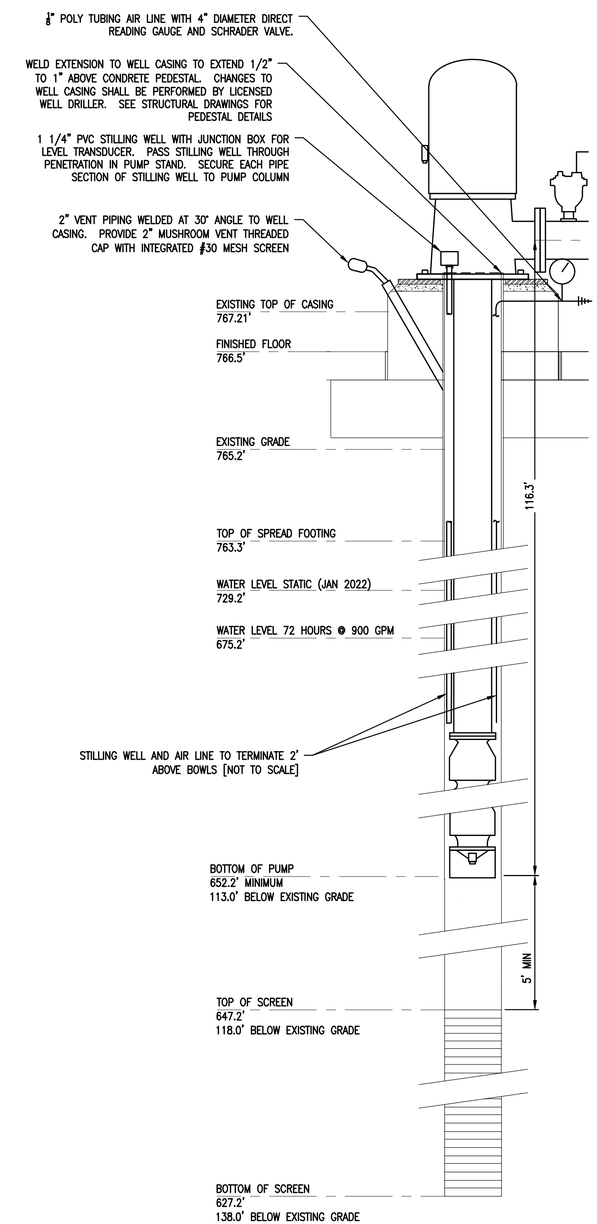
1 PROCESS PLAN VIEW - PROPOSED WELL HOUSE
1/2" = 1'-0"



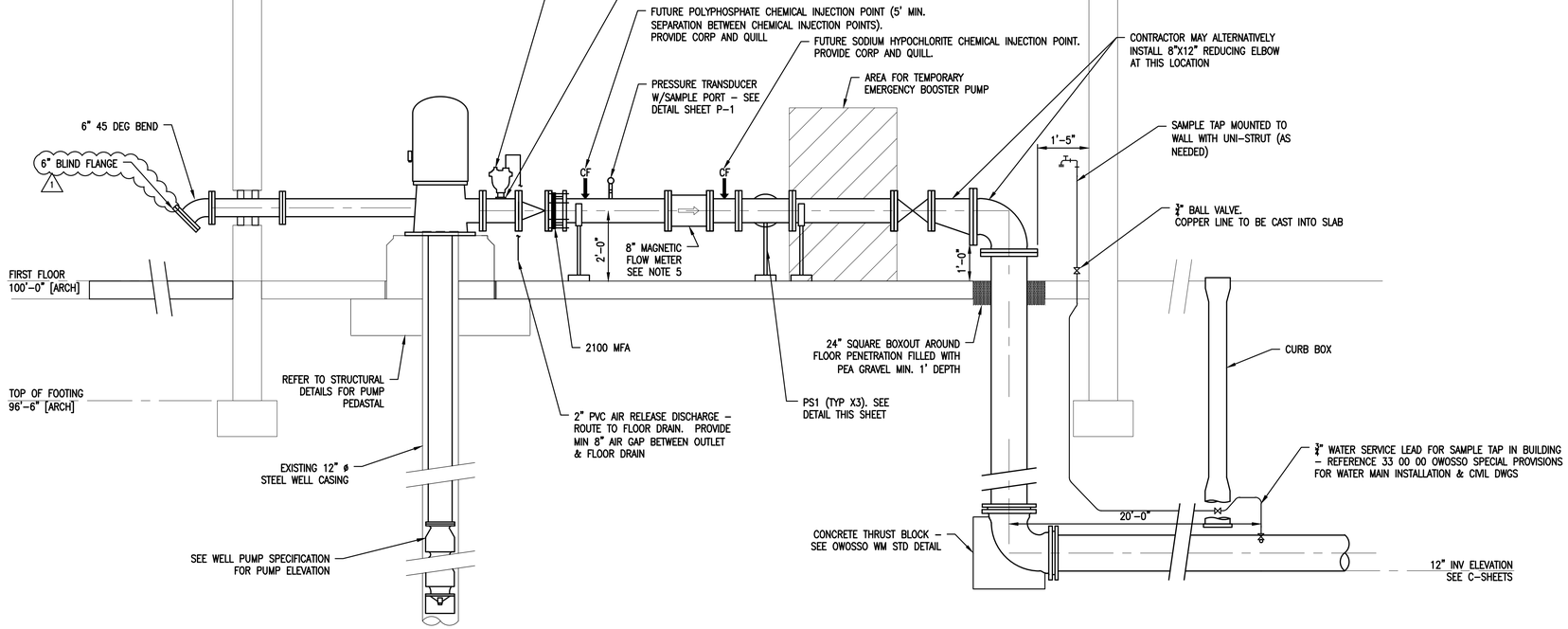
NOTES:
1. FOR PIPE DIAMETERS 4" TO 12"
2. METAL SADDLE SHALL BE GRINNELL FIGURE 259 OR EQUAL.
3. PIPE FLANGE SHALL BE CLASS 150 STEEL SLIP-ON FLANGE, FLAT FACED. SIZED TO MATCH STANCHION PIPE.
4. ANCHORS SHALL BE EMBEDDED MIN. OF 4". SIZE ANCHOR PER PIPE SUPPORT DIAMETER AND SADDLE MANUFACTURER RECOMMENDATIONS.
5. MAX SPACING BETWEEN SUPPORTS IS 20'.
6. PROVIDE ⅜" DIAM. WEEP HOLE THRU ONE WALL ONLY OF PIPE STANCHION.
7. INSTALL ANVIL FIGURE 63, TYPE C OR EQUAL. SELECT STANCHION SIZE APPROPRIATE FOR PIPE SIZE AND HEIGHT REQUIREMENTS.
8. PIPE STANCHIONS SHALL BE HOT-DIP GALVANIZED

1

PS 1 PIPE STANCHION SADDLE
NO SCALE



3 WELL PUMP ARRANGEMENT
3/4" = 1'-0"



2 PROPOSED SECTION VIEW - PROPOSED WELL HOUSE
1/2" = 1'-0"

NOTES:
1. A MINIMUM 2" AIR AND VACUUM VALVE WITH THROTTLE AS MANUFACTURED BY APCO #144DAT OR VAL-MATIC #102W'S SHALL BE PROVIDED ON DISCHARGE LINE BETWEEN CHECK VALVE AND PUMP. MINIMUM 2" AIR RELIEF PIPING SHALL BE SLOPED TO A THE FLOOR DRAIN.
2. SEE STRUCTURAL DRAWING FOR PUMP PEDESTAL DETAILS
3. ALIGN ROOF HATCH WITH CENTERLINE OF WELL
4. WELL PUMP SHALL BE INSTALLED BY PREAPPROVED WELL DRILLER/INSTALLER – NORTHERN PUMP AND WELL, PEERLESS MIDWEST, OR RAYMER WATER WELLS.
5. MAGNETIC FLOW METER SHALL REQUIRE ZERO LENGTHS OF STRAIGHT PIPE UP AND DOWNSTREAM.
6. ALL UNDERGROUND DIP JOINTS SHALL BE RESTRAINED

OHM
ARCHITECTS ENGINEERS PLANNERS
201 E Ellsworth St, Unit 100
Midland, MI 48640
P (989) 956-2020
OHM-ADVISORS.COM

ISSUE	REVISIONS	DATE
ISSUED FOR BID		12/01/2022
ADDENDUM 1		12/27/2022

DATE	PROJ NUMBER	ENG/ARCH	PROJ MGR	CADD	COUNTY	MUNICIPALITY
####	0220220070	MK	AV	FH	SHIAWASSEE	OWOSSO

CITY OF OWOSSO
PALMER 3A WELL HOUSE DESIGN
PROCESS PLAN & SECTION

SHEET P-2

DRAWING PATH: P:\0000_0100\0220220070_palmer_3a_wellhouse_design_bid\Drawings\Facilities\220070_P_CON_1.dwg Dec 27, 2022 - 4:46pm

GENERAL PROCESS NOTES

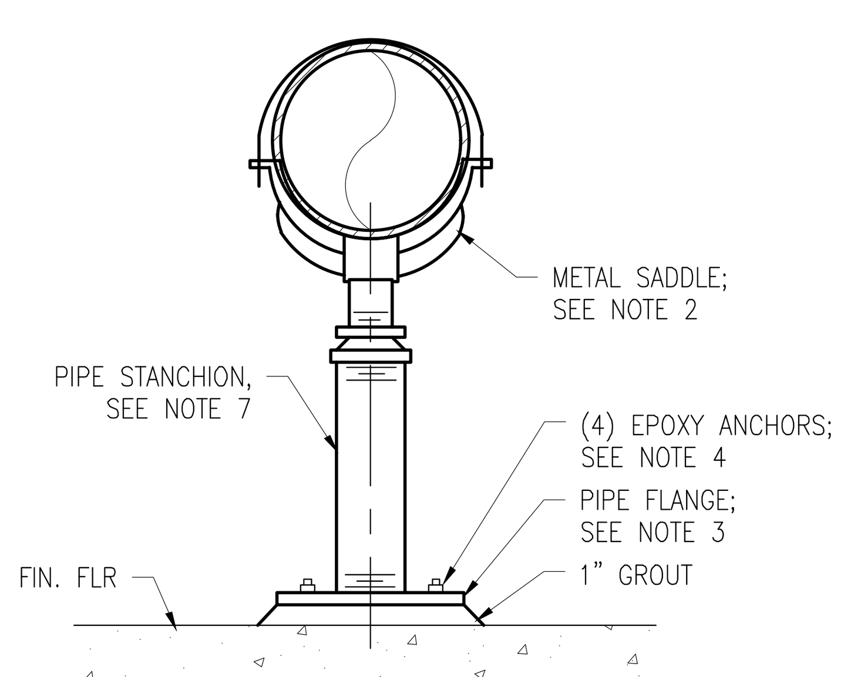
1. PROCESS EQUIPMENT DIMENSIONS, LOCATIONS AND PIPING SYSTEM LAYOUTS ARE BASED ON EQUIPMENT SELECTED AND SPECIFIED AND BY THE DESIGN ENGINEER. IF THE CONTRACTOR PROPOSES TO FURNISH EQUIPMENT THAT REQUIRES AN ARRANGEMENT OR SPACE DIFFERING FROM THAT INDICATED ON THE DRAWINGS OR SPECIFIED, THE CONTRACTOR SHALL PREPARE AND SUBMIT TO THE ENGINEER FOR APPROVAL DETAILS ARCHITECTURAL, STRUCTURAL, MECHANICAL, AND PLUMBING, INSTRUMENTATION, HVAC AND ELECTRICAL DRAWINGS AND EQUIPMENT LISTS SHOWING ALL NECESSARY CHANGES AND EMBODYING ALL FEATURES OF THE EQUIPMENT AND/OR PROCESS SYSTEM PROPOSED. THIS INFORMATION SHALL INCLUDE BUT NOT LIMITED TO PLANS, SECTIONS, DETAILS AND SCHEMATICS OF ALL APPURTENANCES REQUIRED.
2. EXTERIOR PIPING IS SHOWN ON THE CIVIL DRAWINGS.
3. DIELECTRIC COUPLINGS, FLANGES OR UNIONS SHALL BE INSTALLED AT ALL CONNECTIONS OF COPPER PIPE TO OTHER TYPES OF METALLIC PIPING.
4. MECHANICAL PLANS AND SECTIONS DO NOT SHOW ALL VALVES, GAUGES, SWITCHES, OPERATORS, DRAWINGS, VENTS, ETC. REQUIRED FOR THE COMPLETE SYSTEM. CERTAIN SMALL DIAMETER PROCESS PIPING RUNS MAY NOT BE SHOWN IN THEIR ENTIRETY. GENERALLY, SMALL PIPING (3" DIAM. OR LESS) IS SHOWN DIAGRAMMATICALLY IN THE PROCESS SCHEMATICS. FIELD ROUTE TO AVOID INTERFERENCES, SUBJECT TO THE APPROVAL OF THE ENGINEER. THE CONTRACTOR SHALL FURNISH, INSTALL, AND TEST ALL PIPING SYSTEMS AS INDICATED ON THE PROCESS FLOW SCHEMATICS AND/OR AS DEFINED PROCESS PIPING SCHEDULES TO PROVIDE THE COMPLETE SYSTEM.
5. ALL EQUIPMENT BASES AND PIPING HAVING DRAIN OUTLETS SHALL BE PIPED TO NEAREST OPEN END DRAIN OR TRENCH DRAIN USING GALVANIZED STEEL PIPE AND APPROPRIATE DIAMETER AS INDICATED ON THE DRAWINGS OR AS RECOMMENDED BY THE EQUIPMENT MANUFACTURER.
6. UNLESS OTHERWISE SHOWN, ALL PIPES UNDER CONCRETE SLABS SHALL BE ENCASED IN CONCRETE.
7. NOT ALL VALVE AND GATE OPERATORS ARE SHOWN (I.E. HANDWHEELS, CRANKS, CHAINWHEELS, MOTORS, LEVERS). OPERATORS SHALL BE LOCATED TO ALLOW CONVENIENT OPENING AND CLOSING OF VALVE OR GATES. ORIENTATION OF OPERATORS SHALL BE BY THE APPROVAL OF THE ENGINEER. NO VALVES SHALL BE INSTALLED WITH THE OPERATING STEM IN THE VERTICAL DOWNWARD POSITION.
8. PIPING SHALL BE INSTALLED SO THAT ANY PIPE, LAYER OF PIPING OR EQUIPMENT CAN BE REMOVED WITHOUT DISTURBING REMAINING PIPES AND SUPPORTS.
9. THE NUMBER OF UNIONS OR OTHER TYPES OF DISMANTLING COUPLES SHOWN IS APPROXIMATE. THE CONTRACTOR SHALL PROVIDE UNIONS OR DISMANTLING COUPLINGS WHETHER THEY ARE SHOWN ON THE DRAWING OR NOT ON ALL PIPELINES WITH WELDED, THREADED OR SOLVENT CEMENTED JOINTS AT ALL EQUIPMENT CONDITIONS. AT A MINIMUM, EVERY 50 FEET AND IN BRANCH LINES TO ALLOW CONVENIENT REMOVAL OF PIPING, EQUIPMENT AND APPURTENANCES.
10. INSTALL ALL PIPING SUPPORTS AND PIPING IN ACCORDANCE WITH THE LATEST EDITION OF THE ASME ANSI POWER PIPING CODE B 31.1.
11. LOCATE PRESSURE TAPS ON THE TOP OF PROCESS PIPES.
12. LOCATE SAMPLE TAPS ON THE SIDE OF PROCESS PIPES.
13. UNLESS OTHERWISE NOTED, PIPE ELEVATIONS SHOWN ON PROCESS DRAWING REFER TO CENTERLINE OF THE PIPE.
14. ALL GROUND BURIED PIPING TO HAVE A MINIMUM OF 60" OF EARTH COVER, UNLESS OTHERWISE DETAILED ON DRAWINGS. MAINTAIN MINIMUM CLEARANCE BETWEEN PIPES OF 6".
15. INSTALL ALL PLUG, BUTTERFLY AND BALL VALVES WITH THE SHAFT IN THE HORIZONTAL POSITION, UNLESS OTHERWISE DIRECTED.
16. ALL MATERIALS SHALL BE LEAD FREE AS DEFINED BY THE USEPA SAFE DRINKING WATER ACT, IN THAT, "ALL PIPES, PIPE FITTINGS, PLUMBING FITTINGS, AND FIXTURES THAT ARE USED FOR POTABLE WATER MUST COMPLY WITH THE LEAD FREE REQUIREMENT AND MUST BEAR THE MARK NSF/ANSI STANDARD 61, ANNEX G OR NSF 61-G.

PROCESS PIPE & FITTINGS SYMBOL NOTES

1. GENERIC JOINT SYMBOL IS USED FOR ALL SINGLE LINE PIPING SHOWN ON THE INTERIOR AND EXTERIOR PIPING DRAWINGS.
2. BOTH DETAILED AND SIMPLIFIED FLANGE REPRESENTATION SYMBOLS MAY BE SHOWN ON THE DRAWINGS.
3. UNLESS MODIFIED BY THE GENERAL PROJECT NOTES OR DETAILED ON THE LAYOUT AND SCHEMATIC DRAWINGS, PIPE AND FITTING JOINT REQUIREMENTS FOR THE VARIOUS PIPE MATERIALS ARE DEFINED IN THE SPECIFICATIONS AND ARE INDICATED ON THE PROCESS PIPE SCHEDULES.
4. WHERE DISSIMILAR METALS MAY COME IN CONTACT, CONTRACTOR SHALL PROVIDE ISOLATION FITTING, GASKETS, OR OTHER SUITABLE ISOLATION.

PIPE PENETRATION NOTES

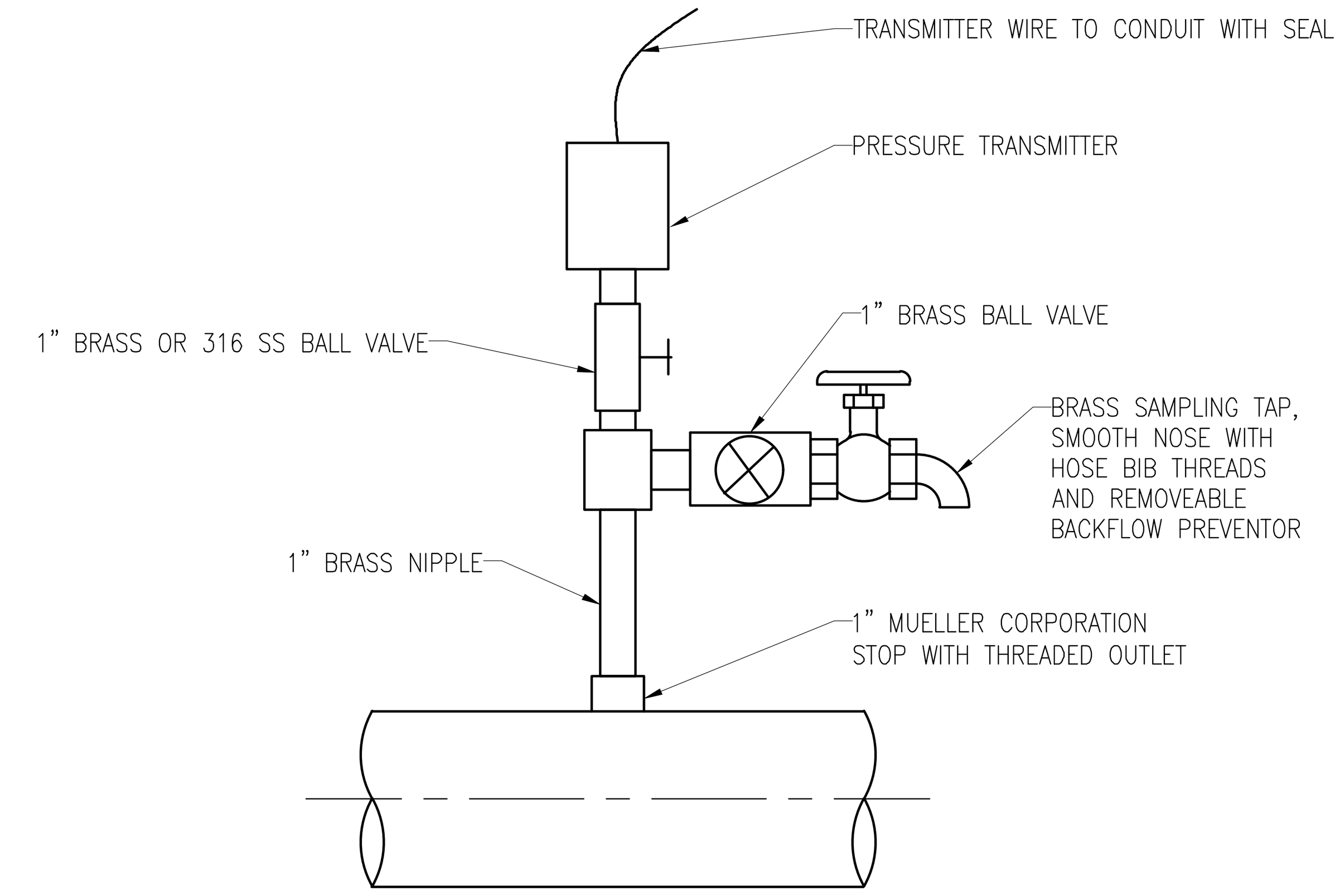
1. PIPE PENETRATIONS ARE SHOWN IN TRUE SECTIONS FOR ILLUSTRATION PURPOSES ONLY.
2. WALL PENETRATIONS SHALL BE LOCATED WITHIN A RISER SECTION AND NOT A WALL JOINT.



NOTES:
1. FOR PIPE DIAMETERS 4" TO 12"
2. METAL SADDLE SHALL BE GRINNELL FIGURE 259 OR EQUAL.
3. PIPE FLANGE SHALL BE CLASS 150 STEEL SLIP-ON FLANGE, FLAT FACED. SIZED TO MATCH STANCHION PIPE.
4. ANCHORS SHALL BE EMBEDDED MIN. OF 4". SIZE ANCHOR PER PIPE SUPPORT DIAMETER AND SADDLE MANUFACTURER RECOMMENDATIONS.
5. MAX SPACING BETWEEN SUPPORTS IS 20'.
6. PROVIDE 1/8" DIAM. WEEP HOLE THRU ONE WALL ONLY OF PIPE STANCHION.
7. INSTALL ANVIL FIGURE 63, TYPE C OR EQUAL. SELECT STANCHION SIZE APPROPRIATE FOR PIPE SIZE AND HEIGHT REQUIREMENTS.
8. PIPE STANCHIONS SHALL BE HOT-DIP GALVANIZED

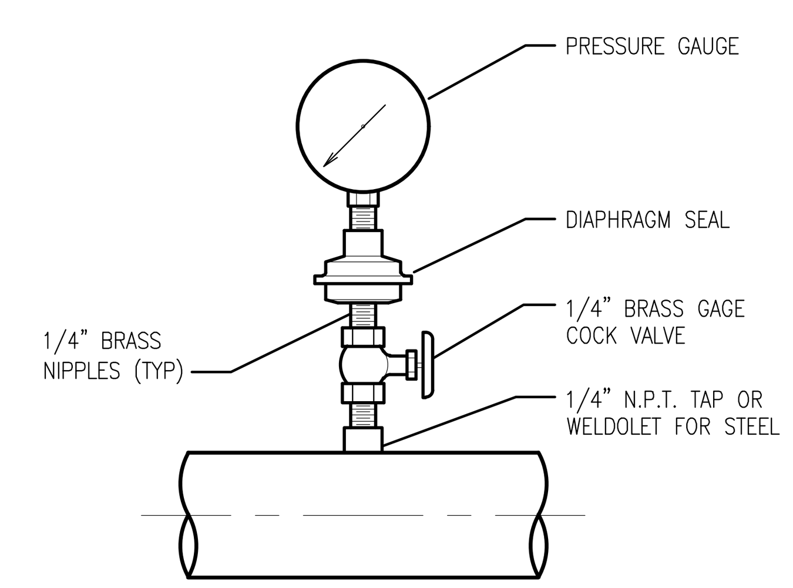
1

PS/1 PIPE STANCHION SADDLE
NO SCALE



PRESSURE TRANSDUCER AND SAMPLE TAP

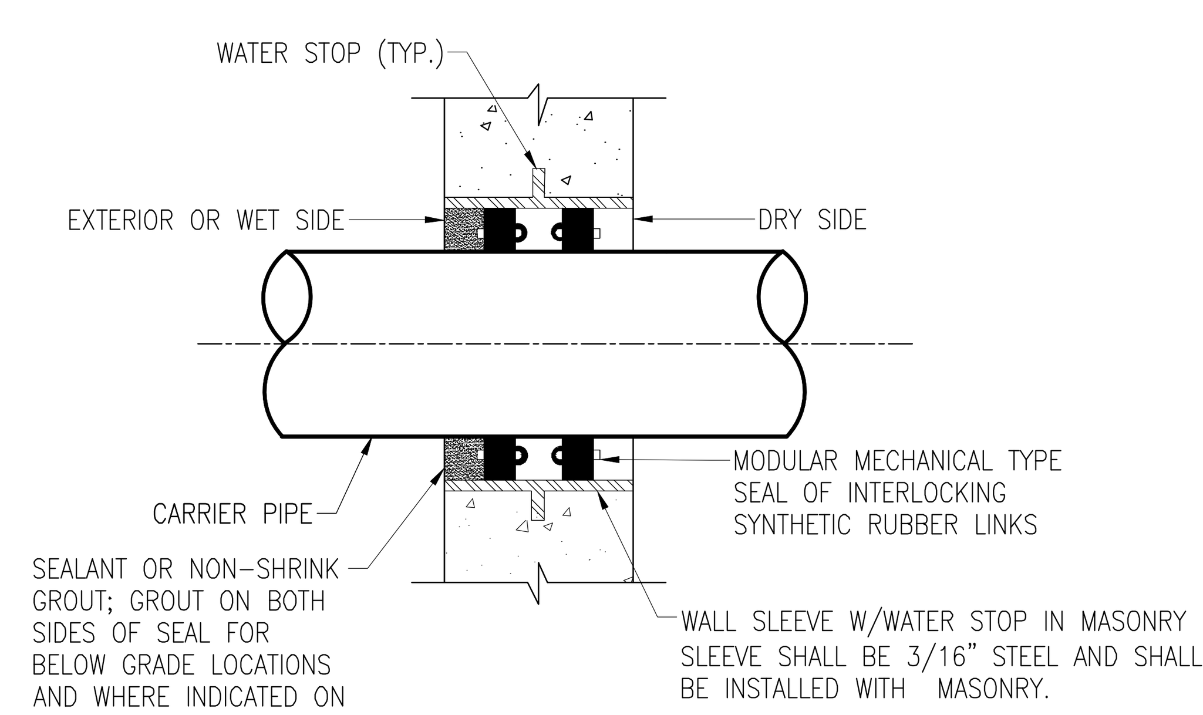
NO SCALE



1. PROVIDE SNUBBER FOR ALL INSTALLATIONS.
2. PROVIDE DIAPHRAGM SEALS FOR ALL WASTEWATER SERVICES OTHER THAN SLUDGE.
3. LOCATE PRESSURE TAPS ON TOP OF PROCESS PIPING.
4. FOR STEEL, VAL. STEEL, AND PVC 2.5" AND SMALLER USE A BUSHING IN A TEE.
5. FOR DI AND FRP PIPE, ALL SIEZES, USE PIPE SADDLE WITH BUSHING.
6. FOR STEEL AND SS PIPES 3" AND LARGER, AND PRESSURE VESSELS, USE THRED-O-LET.

PRESSURE GAUGE TAP

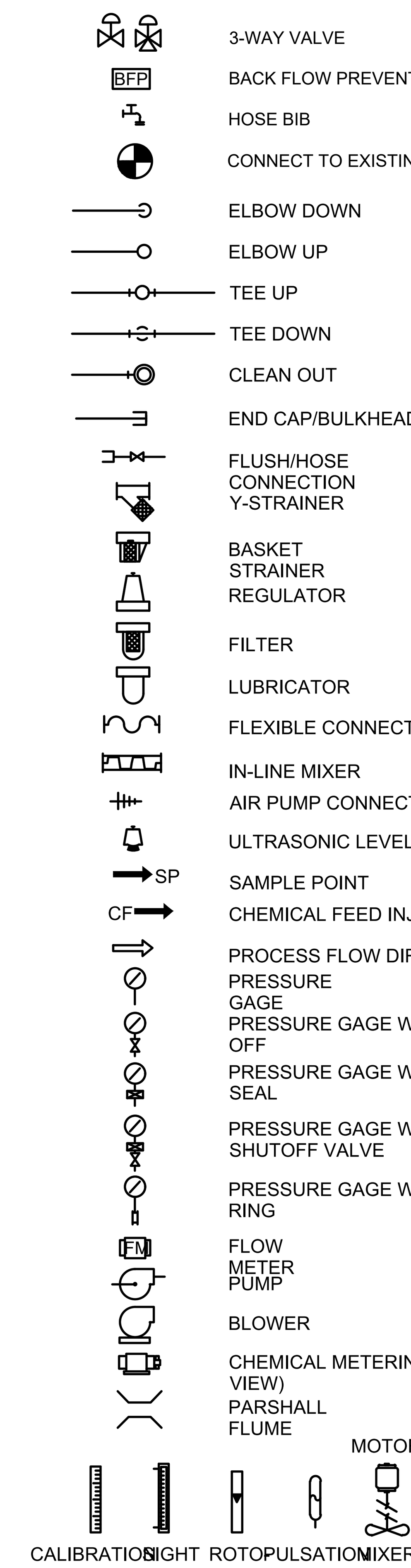
NO SCALE



NOTES:
1. CONCRETE SHALL BE WORKED IN AND VIBRATED TO ELIMINATE ALL VOIDS IN CONCRETE. IF VOIDS DO REMAIN, FILL WITH GROUT BEFORE INSTALLING PIPE AND SEALS.
2. NUTS TO FACE DRY SIDE (INTERIOR) TO ALLOW FUTURE ADJUSTMENTS.
3. PROVIDE ONE SEAL FOR WALLS LESS THAN 12" THICK AND TWO SEALS FOR WALLS 12" THICK AND GREATER
4. IF BOTH SIDES ARE WET, GROUT OR SEALANT IS NOT REQUIRED, UNLESS OTHERWISE NOTED.
5. IF CONCRETE WALL IS EXISTING, THEN CORE DRILL WALL SMOOTH AND PROVIDE EPOXY BONDING AGENT AT CORE PERIMETER. CORE DRILL A 2" MIN. (TYP.) OFFSET FROM PIPE OD. WALL SLEEVE NOT REQUIRED UNLESS OTHERWISE NOTED.

WP/1 WALL PENETRATION - MECHANICAL SEAL
NO SCALE

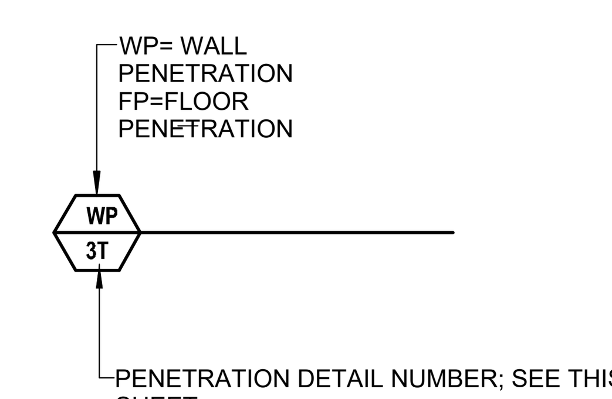
MISCELLANEOUS SYMBOLS



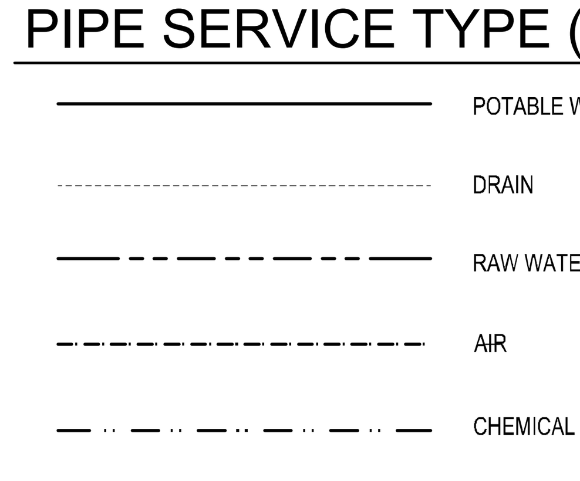
- 3-WAY VALVE
- BACK FLOW PREVENTER
- HOSE BIB
- CONNECT TO EXISTING
- ELBOW DOWN
- ELBOW UP
- TEE UP
- TEE DOWN
- CLEAN OUT
- END CAP/BULKHEAD
- FLUSH/HOSE CONNECTION
- Y-STRAINER
- BASKET STRAINER
- REGULATOR
- FILTER
- LUBRICATOR
- FLEXIBLE CONNECTION
- IN-LINE MIXER
- AIR PUMP CONNECTION FITTING
- ULTRASONIC LEVEL INDICATOR
- SAMPLE POINT
- CHEMICAL FEED INJECTION POINT
- PROCESS FLOW DIRECTION
- PRESSURE GAGE
- PRESSURE GAGE W/ SHUT OFF
- PRESSURE GAGE W/ DIAPHRAGM SEAL
- PRESSURE GAGE W/ DIAPHRAGM SEAL & SHUTOFF VALVE
- PRESSURE GAGE W/ ISOLATION RING
- FLOW METER
- PUMP
- BLOWER
- CHEMICAL METERING PUMP (SIDE VIEW)
- PARSHALL FLUME

CALIBRATION COLUMN · SIGHT GLASS · ROTO METER · PULSATION DAMPENER · MIXER

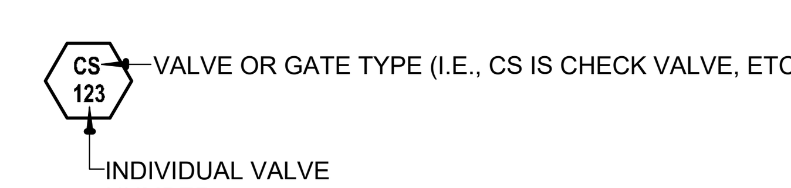
PIPE PENETRATION TAG



PIPE SERVICE TYPE (SCHEMATIC ONLY)

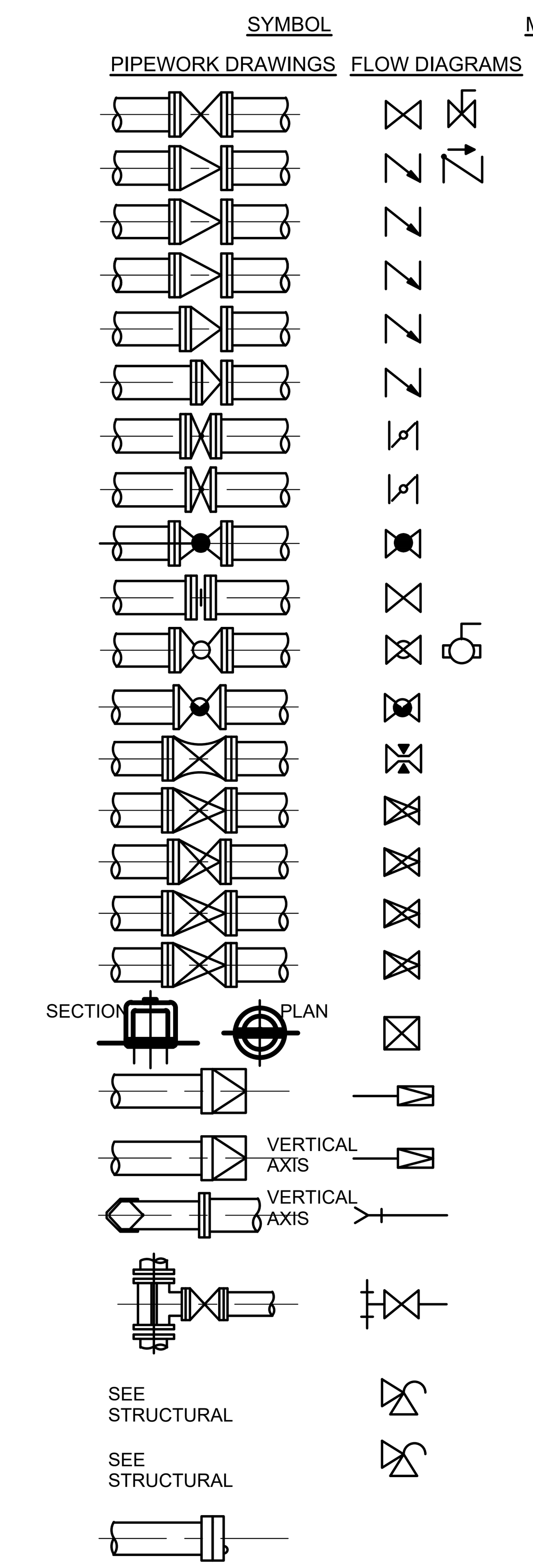


VALVE AND GATE TAG



VALVE DESIGNATIONS

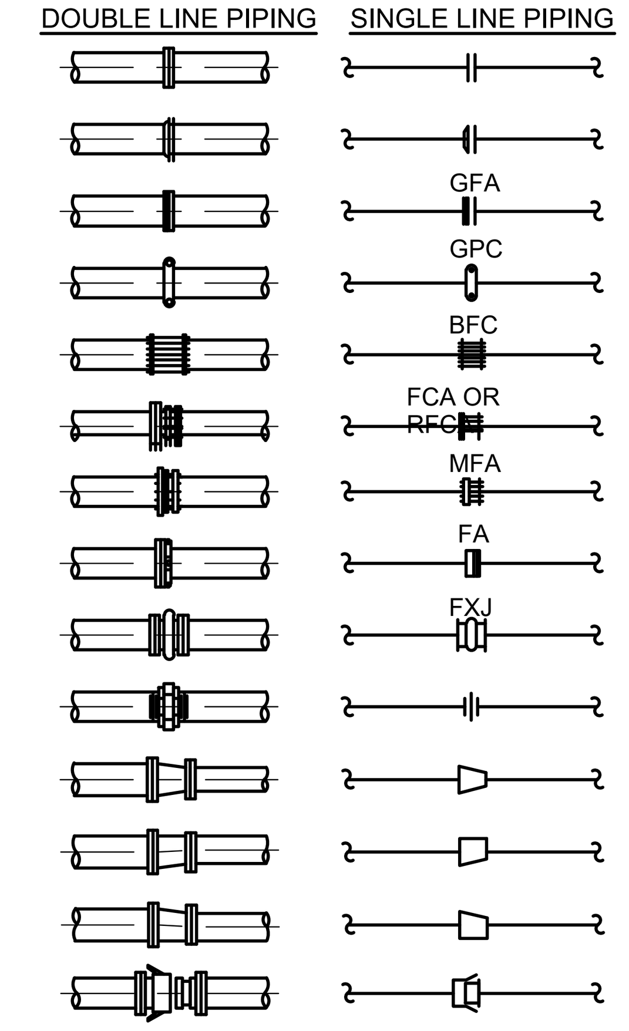
SYMBOL: PIPEWORK DRAWINGS, FLOW DIAGRAMS



MARK	VALVE TYPE
GA	GATE VALVE
CS	STANDARD CHECK VALVE
CC	CUSHION CHECK VALVE
SC	SILENT CHECK VALVE
RC	RADIAL CHECK VALVE
DC	DOUBLE VANE CHECK VALVE
B	BUTTERFLY VALVE
WB	BUTTERFLY VALVE (WAFER)
PV	PLUG VALVE
K	GATE VALVE - KNIFE
BV	BALL VALVE
BCV	BALL CONTROL VALVE
RP	RUBBER PINCH VALVE
CV	CONE VALVE
PRV	PRESSURE CONTROL & REGULATING VALVE
SV	SURGE OR PRESSURE RELIEF VALVE
AV	ALTITUDE VALVE
PD	PLUG DRAIN OR MUD VALVE
BW	BACKWATER (FLAP) VALVE
FTV	FOOT VALVE
TSV	TELESCOPIC VALVE
TPSV	TAPPING SLEEVE & VALVE
PRW	PRESSURE RELIEF VALVE (WALL TYPE)
PRS	PRESSURE RELIEF VALVE (SLAB TYPE)
FV	FLAP VALVE

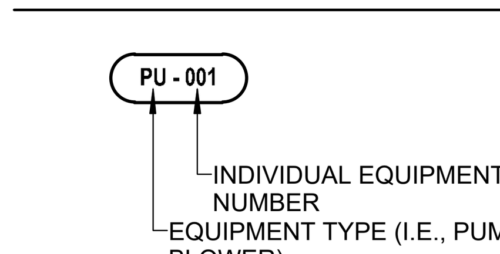
PIPE JOINT DESIGNATIONS

DOUBLE LINE PIPING · SINGLE LINE PIPING



TYPE
FLANGED JOINT
MECHANICAL JOINT
GROOVED FLANGE ADAPTER
GROOVED PIPE COUPLING
BOLTED FLEXIBLE COUPLING
FCA=FLANGED COUPLING ADAPTER RFCA=RESTRAINED FLANGED COUPLING ADAPTER
MEGAFLANGE ADAPTER
FLANGE ADAPTER
FLANGED EXPANSION JOINT
UNION
CONCENTRIC REDUCER
ECCENTRIC REDUCER - FLUSH TOP
ECCENTRIC REDUCER - FLUSH BOTTOM
QUICK DISCONNECT COUPLING

EQUIPMENT TAG



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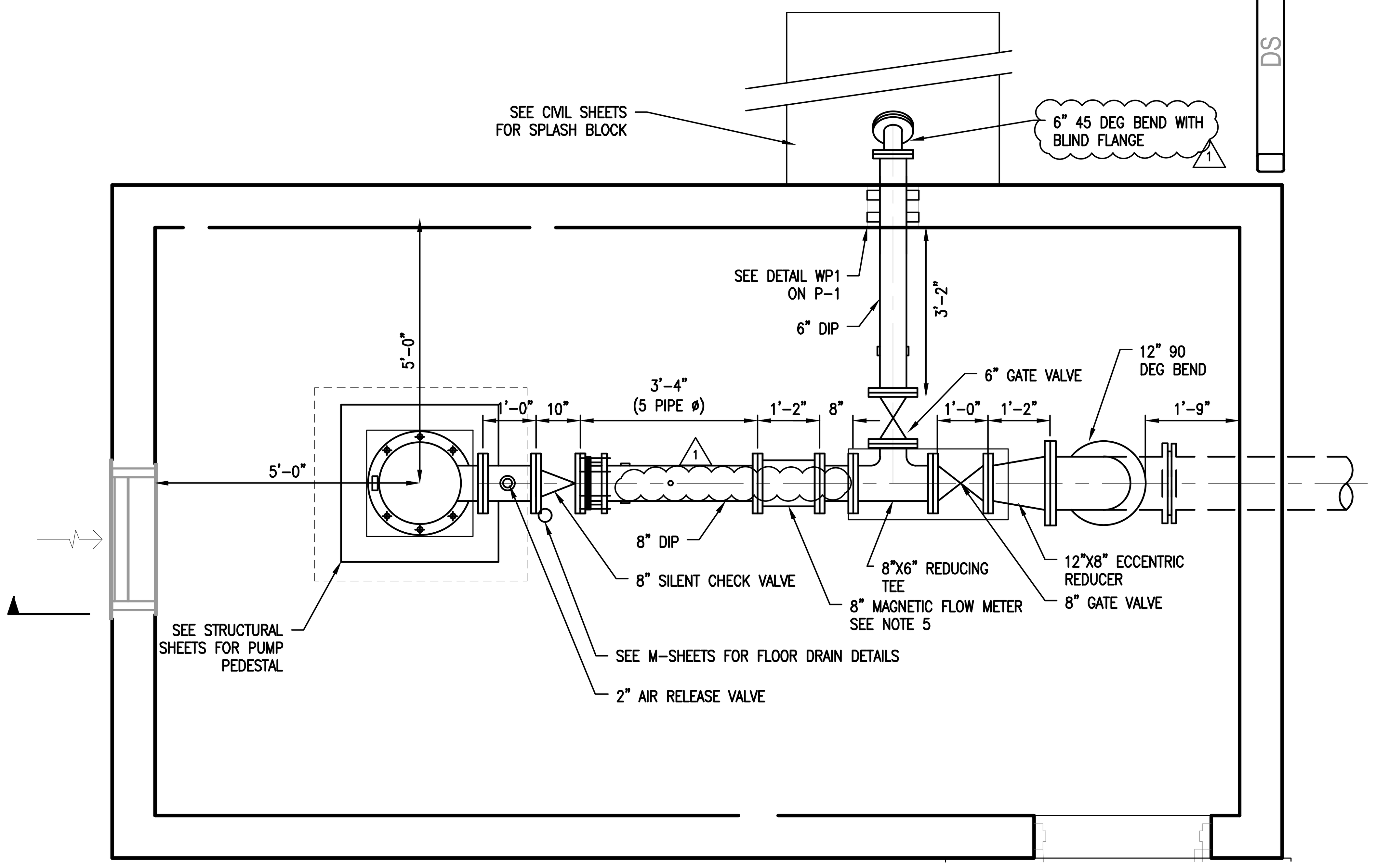
ISSUE:	ISSUED FOR BID	12/01/2022
REVISIONS:		
	ADDENDUM 1	12/27/2022

DATE	PROJ NUMBER	ENG/ARCH	PROJ MGR	CADD	COUNTY	MUNICIPALITY
####	0020220080	MK	AV	FH	SHIAWASSEE	OWOSSO

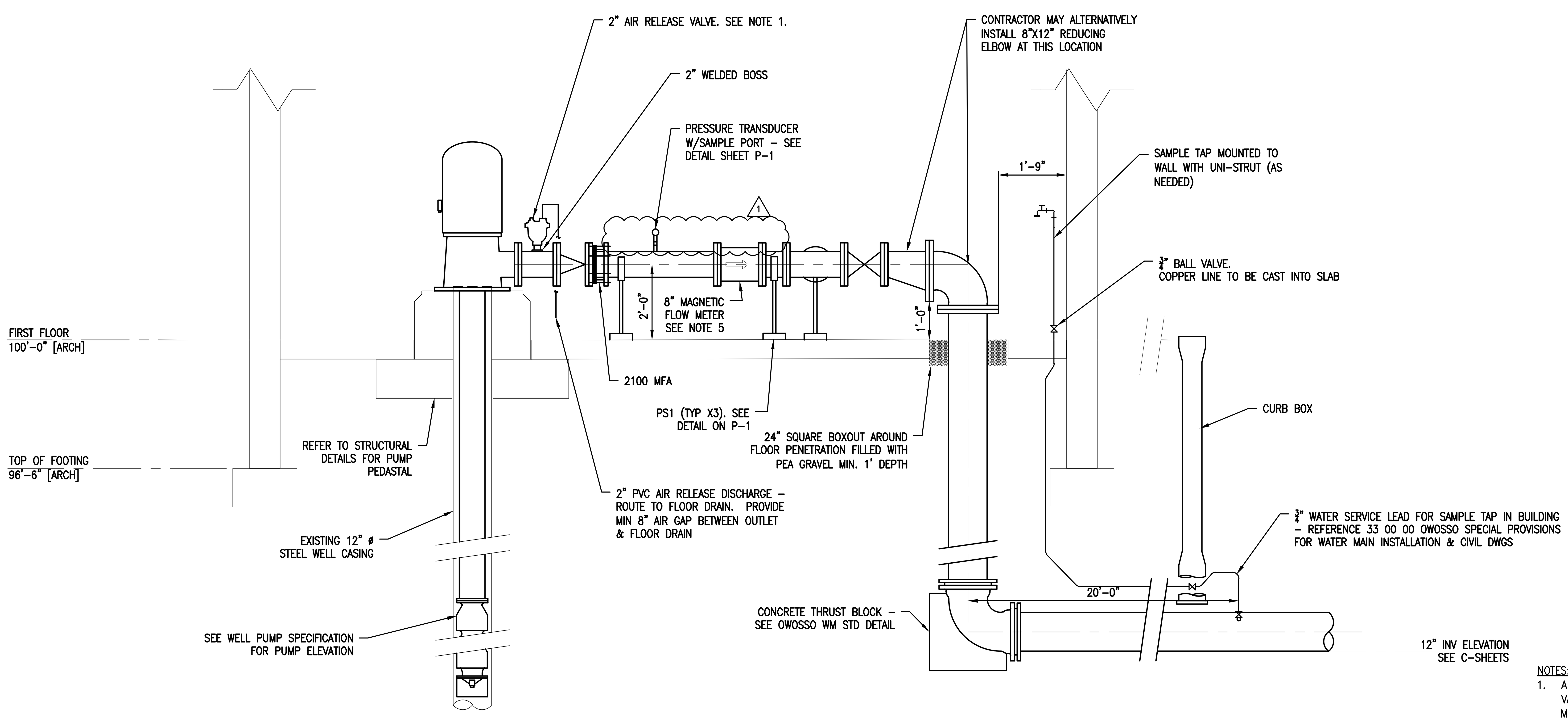
CITY OF OWOSSO
JUNIPER WELL HOUSE DESIGN
PROCESS LEGEND, NOTES, & DETAILS

SHEET P-1

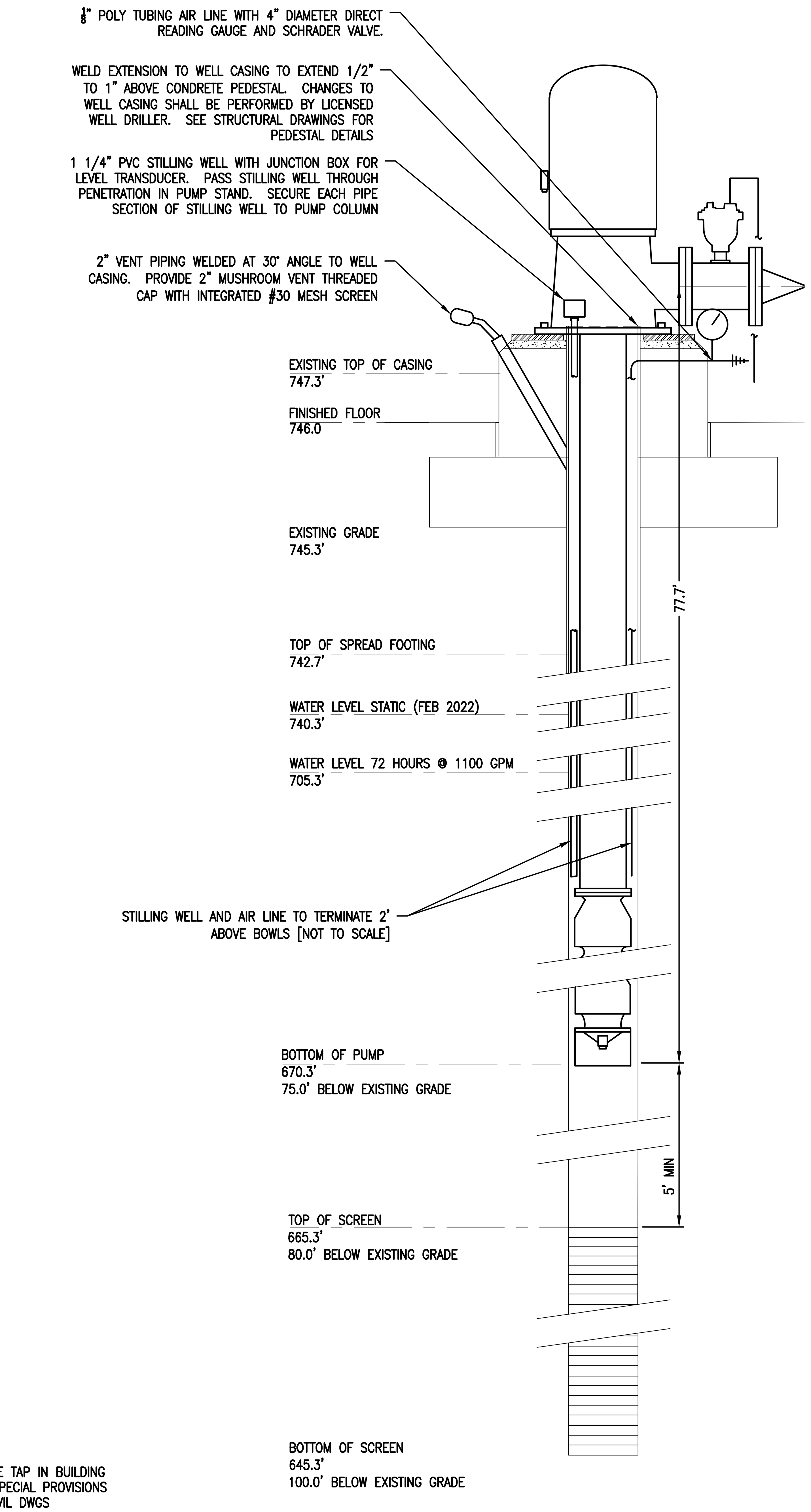
DRAWING PATH: P:\0000_0100\0020220080_juniper_1_wellhouse_design_bid\Drawings\Facilities\0220080_P_CON_1.dwg Dec 27, 2022 - 4:51pm



1 **PROCESS PLAN VIEW - PROPOSED WELL HOUSE**
1/2" = 1'-0"



2 **PROPOSED SECTION VIEW - PROPOSED WELL HOUSE**
1/2" = 1'-0"



3 **WELL PUMP ARRANGEMENT**
3/4" = 1'-0"

NOTES:

1. A MINIMUM 2" AIR AND VACUUM VALVE WITH THROTTLE AS MANUFACTURED BY APCO #144DAT OR VAL-MATIC #102WS SHALL BE PROVIDED ON DISCHARGE LINE BETWEEN CHECK VALVE AND PUMP. MINIMUM 2" AIR RELIEF PIPING SHALL BE SLOPED TO A THE FLOOR DRAIN.
2. SEE STRUCTURAL DRAWING FOR PUMP PEDESTAL DETAILS
3. ALIGN ROOF HATCH WITH CENTERLINE OF WELL
4. WELL PUMP SHALL BE INSTALLED BY PREAPPROVED WELL DRILLER/INSTALLER - NORTHERN PUMP AND WELL, PEERLESS MIDWEST, OR RAYMER WATER WELLS.
5. MAGNETIC FLOW METER SHALL REQUIRE ZERO LENGTHS OF STRAIGHT PIPE UP AND DOWNSTREAM.
6. ALL UNDERGROUND DIP JOINTS SHALL BE RESTRAINED

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DATE | PROJ.NUMBER 0020220080 | ENG/ARCH MK | PROJ.MGR AV | CADD FH | COUNTY SHIAWASSEE | MUNICIPALITY OWOSSO

CITY OF OWOSSO
JUNIPER WELL HOUSE DESIGN
PROCESS LEGEND, NOTES, & DETAILS

SHEET P-2

DRAWING PATH: P:\0000_0100\0020220080_juniper_1_wellhouse_design_bid\Drawings\Facilities\220080_P_CON_1.dwg Dec 27, 2022 - 5:00pm