

**CITY OF CALDWELL
CALDWELL MUNICIPAL
IRRIGATION DISTRICT**

**SUPPLEMENTAL SPECIFICATIONS
TO THE 2015 IDAHO STANDARDS FOR
PUBLIC WORKS CONSTRUCTION (ISPWC)**



Sixth Edition – June 2023

FOREWORD

The standard specifications and details contained herein shall apply in their entirety to all City of Caldwell Department of Public Works irrigation construction contracts and permits.

These supplements to the Idaho Standards for Public Works Construction (ISPWC) are intended to accompany the full edition of the ISPWC-2015 and are not a stand-alone document. They are compiled here to guide, inform and assist engineering firms, developers, contractors and all other interested parties of the construction requirements to be used on irrigation public works types of projects for the City of Caldwell

These specifications and standard details shall periodically be revised, updated and adopted by Caldwell City Council. Each such revision made will be identified by a replacement title page indicating the effective date of the revision.

It shall be the responsibility of each holder or user of this document to incorporate all such revisions into his project contract and/or to verify that he has the latest revisions prior to performing any work covered by these specifications and standard drawings. Information concerning the latest revision may be obtained from the City of Caldwell Engineering Department. . Any errors or omissions by a City of Caldwell plans examiner or inspector shall not negate the full force or effect of the specifications contained herein.

Copies of this document are available at the office of the City of Caldwell Engineering Department, 621 Cleveland Blvd., Caldwell, Idaho, 83605.

Per Idaho Code 54-1218, a licensed professional engineer must prepare the plans and specifications for public works projects as well as supervise or conduct construction observation. It is the sole responsibility of the Registered Professional Engineer who is utilizing the Caldwell Municipal Irrigation District Standard Specifications for irrigation water distribution systems for a specific project to ensure that the standards and drawings are appropriate for the specific use and are used appropriately under all circumstances in order to prepare final specifications, drawings, or plans.

TABLE OF CONTENTS

1100	PRESSURE IRRIGATION INSTALLATION
1101	SYSTEM DESIGN CAPACITY
1101.1	WELL CONSTRUCTION
1101.2	WELL ABANDONMENT SPECIFICATION
1101.3	EXISTING IRRIGATION WELLS
1101.4	BACK-UP SOURCE & DESIGN REQUIREMENT
1102	PRESSURE IRRIGATION MATERIALS
1103	PIPE INSTALLATION
1103.01	GENERAL
1103.02	LOCATOR WIRE
1103.03	FINDER TAPE
1103.04	JOINT RESTRAINT
1103.05	OPEN PIPE ENDS
1103.06	PIPE INSTALLION OUTSIDE STREET RIGHTS-OF-WAY
1103.06.01	EXCAVATION
1103.06.02	PIPE BASE AND PIPE ZONE BEDDING MATERIAL
1103.06.03	TRENCH BACKFILL ABOVE PIPE ZONE
1103.07	PIPE INSTALLATION INSIDE STREET RIGHTS-OF-WAY
1103.07.01	PIPE BASE AND PIPE ZONE BEDDING MATERIALS
1103.07.02	FOUNDATION STABILIZATION
1103.07.03	BACKFILL ABOVE PIPE ZONE
1103.08	LOT SERVICE REQUIREMENTS
1103.09	SYSTEM FLUSHING
1103.10	STEEL CASING
1103.11	STREET CROSSINGS, CANAL & DRAIN CROSSINGS
1104	ISOLATION VALVES
1104.01	VALVE SIZE
1104.02	INSTALLATION
1105	VALVE BOXES
1105.01	CONCRETE VALVE BOX COLLARS
1106	FLANGES
1106.01	STEEL & DUCTILE FLANGES
1107	IRRIGATION DRAINS AND BLOW OFFS
1108	AIR AND VACUUM VALVES
1109	HYDROSTATIC TESTING
1200	PUMP STATIONS
1201	PUMP HOUSES
1201.01	GROUND WATER WELL HOUSE
1201.02	LANDSCAPE REQUIREMENTS FOR PUMP STATION & WELL HOUSE
1202	PUMPS AND VARIABLE FREQUENCY DRIVES
1203	FILTERS
1204	INTAKE SCREENS

1205	FLOW METER
1206	PRESSURE SUSTAINING VALVE
1207	CHECK VALVE
1208	PUMP STATION GRAVITY OVERFLOW
1209	O&M MANUAL
1210	IDAHO POWER PI STATION REQUIREMENT
1211	MOTOR
1212	SCADA SYSTEM
1213	SURGE PROTECTION
1300	GRAVITY FLOW IRRIGATION
1301	GENERAL
1302	CONSTRUCTION DEADLINE
1400	ADDITIONAL REQUIREMENTS
1401	GENERAL
1402	CONTRACTOR LICENSING
1403	PLAN SUBMITTAL AND REVIEW
1404	DELIVERY POINT
1405	CONSTRUCTION OBSERVATION
1406	FINAL ACCEPTANCE
1406.01	PUNCH LIST REQUESTS
1406.02	DEDICATION REQUESTS
1407	PAVEMENT REMOVAL AND RESTORATION
1407.01	REMOVAL OF PAVEMENT
1407.02	RESTORATION OF PAVEMENT
1407.02.1	ALSPHALTIC CONCRETE
1407.02.1	PAVEMENT RECONSTRUCTION REPAIR/RESTORATION
1408	EASEMENT REQUIREMENTS
1409	DISCHARGE
1410	RECORD DRAWINGS
1411	FINAL GUARANTEE
1412	INDIVIDUAL LOT SYSTEM DESIGN
1413	LARGE LOT SYSTEM DESIGN
1414	UTILIZATION OF EXISTING PI PUMP STATIONS
1415	SHOULDER WATER
1416	ANNEXATION DEADLINE
1500	PRIVATE SPRINKLER SYSTEMS
1501	FILTERS
1502	TYPICAL PRESSURE IRRIGATION SERVICE LAYOUT
1503	IRRIGATION WELL STATION ENCLOSURE
1504 A	IRRIGATION WELL STATION PROFILE PLAN
1504 B	IRRIGATION WELL STATION PLAN
1504 C	IRRIGATION WELL HOUSE MECHANICAL PROFILE

1504 D IRRIGATION WELL HOUSE MECHANICAL PLAN

CALDWELL MUNICIPAL IRRIGATION DISTRICT SUPPLEMENTAL SPECIFICATIONS

The provisions of the Idaho Standards for Public Works Construction ISPWC-2021 fifth edition the City of Caldwell Supplemental Specifications to the ISPWC, and the following modifications constitute the Caldwell Municipal Irrigation District Standard Specifications for work performed under the administration of the Caldwell Municipal Irrigation District, referred to as CMID.

1100 PRESSURE IRRIGATION INSTALLATION

1101 SYSTEM DESIGN CAPACITY

Design flow rates for pipe sizing shall be approved by CMID based on number of lots and/or parcel size. A hydraulic analysis shall be performed to ensure adequate water supply and pressure to the development. Calculations and data are to be given to CMID by the engineering firm designing the PI system. The required delivery rate for a system shall be calculated at 9 GPM (one miner's inch) per development acre or per total acre for all land served by the system. The system shall be designed to provide water 24 hours per day, seven days per week. Acreage used in calculation of the delivery rate shall be approved by CMID. The pump station shall maintain, under all conditions, a system pressure not greater than 90 PSI and not less than 55 PSI at any point in the system. The velocity in the pressure irrigation system cannot exceed 5 (FPS) at any point in the system.

1101.1 WELL CONSTRUCTION

Wells for irrigation purposes that exceed 18.5 feet in depth shall be drilled using a direct mud rotary drilling method with a high specific gravity greater than 1 drilling fluid.

Record of Lithology

A test bore shall be required to validate well lithology and aid in final water bearing zone determinations. Lithology samples shall be collected with no more than 20 feet between samples. Samples shall be bagged in 1 gal zipping bags, labeled with well name and sample depth in dark, legible permanent marker, and retained for delivery to the City for the City's well

lithology library for analysis and future groundwater model data points. The City may collect these samples during drilling, but the driller or developer's engineer are responsible to ensure that such samples are taken and labeled properly.

Construction Materials

The developer's engineer shall work with the City's resident engineer or hydrogeologist to confirm production intervals to be used for the well once test borehole lithology has been taken. Once production intervals are approved, the test borehole may be over bored to achieve design size. The borehole shall remain full of drilling mud until displaced with filter pack and seal material: cementitious bentonite grout.

DR17 polyvinyl chloride PVC locking bell pipe or approved equivalent shall be used for the casing.

Casings and screens shall be permitted to be attached to the casing, single set well or screens may be placed and with a step-down seal within the casing.

An appropriately fit PVC endcap is required at the bottom of screen sections at the bottom of the well borehole.

In the event that the borehole is drilled beyond the ultimate design depth, it shall be backfilled with cementitious bentonite grout from the bottom of the cut via tremie pipe up to the design depth/ bottom of the lowest screens.

Drilling methodology

Drilling procedures and methods are subject to inspection and review by the City resident engineer/hydrogeologist at all times, and are subject to pauses, stop work, or redirection by the city to ensure that the well will be acceptable to the City for dedication and perpetual maintenance.

Seal grout shall be tremied in place from the top of the filter pack until surface eruption. A sand filler tube shall be placed outside the casing into the top of the filter pack *prior* to placement of the full depth seal for each water bearing zone completed to allow refill after sand settlement and/or loss. Wells shall be equipped with an approved municipal pitless adapter.

Pumping Infrastructure

Pumping plants shall be three phase Tesla Submersible pumping plants or approved equivalent. Electrical leads shall be insulated conductors sized for maximum surge load or in accordance with pumping plant specifications.

Wells shall be supplied with a three phase power drop. No Y or Delta converters shall be permitted unless unusual circumstances exist and a converter is specially permitted by the City Engineering Department.

1101.2 WELL ABANDONMENT SPECIFICATIONS

Any water well, or suspected well, observed or discovered on any property during site inspection, grading, and/or excavation shall immediately be secured and capped with a welded steel cap, marked with flagging, and protected by barricades, boulders, or bollards until such time the well can be assessed and properly abandoned; which is required by Idaho State Law. Old wells constitute a significant threat to the City's drinking water supply by allowing manmade and naturally-occurring contaminants to migrate deeper into and between aquifers.

An individual who finds an unknown well must contact both the City of Caldwell and the Idaho Department of Water Resources immediately with location information. He or she should not attempt to measure or put anything down the well; doing so complicates and slows the abandonment process.

No unused well shall be left remaining on development property, bladed over, covered, concealed, or otherwise left unabated as required by this section.

City of Caldwell shall hereby forbid a developer to leave an unused well remaining on a property under development. The owner or developer may not blade over, cover, conceal or otherwise leave unabated wells, per this section. Abandonment of wells shall be performed in accordance with this specification, and such work is subject to review, inspection, stop work, pause of work, consultation, and redirection by the City of Caldwell by its City Engineer, Public Works Director, or designated resident engineer/hydrogeologist/inspector.

Wells must be camera surveyed to allow proper abandonment design. Well scraping and bailing shall be required if necessary to obtain a correct understanding of the well condition and guide or validate abandonment approach. The abandonment plan must be approved by the city of Caldwell and the Idaho Department of Water Resources (IDWR) who will search for relevant well construction information specific to the well in question or nearby wells if no records are available for the found well. If no records can be located for a specific well, a natural gamma-ray geophysical log will be used to detect low-permeability clay layers, to seal into outside of the steel casing. Well abandonments, must be performed

by a Licensed Well Driller in the State of Idaho, after written approval from the IDWR.

Abandonment of plastic cased wells for which evidence proves have “full depth” or “full-length” seals shall be abandoned within the casing using cementitious bentonite grout installed by tremie pipe from the bottom of the well until overtopping the casing. Abandonment of steel-cased wells of any variety must be abandoned as follows: Perforations or holes imparted through the steel casing must be made with a tracking perforator, Mills Knife, or camming-type cable tool perforator, or other approved perforating tool. It shall be installed at 20-foot intervals or less. Perforation spacing can be complicated and will be subject to adjustment by the City Engineer, Public Works Director or designated resident engineer/hydrogeologist as the appropriate interval may be influenced by the well construction, depth, drilling method, borehole geophysics, camera inspection, borehole aggregate and diameter. Perforations through the casing are a requirement in order to allow grout slurry seal material to be forced outside the casing to create a full and effective seal. Cementitious bentonite grout shall be delivered to the bottom of the well via tremie pipe and shall be pumped through tremie to the bottom of the well until reaching the top of the casing.

The casing must then be immediately fitted with a pre-prepared and fitted continuously welded cap. The pressure fitting and grout delivery shall continue under pressure through the pressure fitting until grout is forced out through the perforations or fills the annular space between the borehole and casing and erupts the ground surface around the casing or until no additional grout can be injected at a pressure of up to 200 psi. The City of Caldwell requires its designated inspector to be on site during perforation and grouting processes. The developer, owner, or site operator shall supply the City with no less than 48 hours notice to the abandonment, in order to facilitate observation.

Records of depths, perforated intervals, grout mixture ratios, grout volumes, pressures, shall be documented and included with the required abandonment report. Chipped bentonite, concrete, drilling-grade bentonite, and/or “puddling clay” are not acceptable sealing materials. Well abandonments often require 3-to-4 times the volume of grout calculated from well casing diameter owing to voids and cavities outside the casing. The extra volume must be planned for and available so the grout does not harden before the well is sealed. An abandonment report shall be filed with both the City of Caldwell and the IDWR reporting on the success of the abandonment design approach and elucidating any problems or deviations therefrom. In instances where an abandonment fails, the owner or his drilling contractor shall coordinate with the City of

Caldwell resident engineer/hydrogeologist to develop any appropriate alternative method to reattempt proper abandonment. Failure to properly abandon wells is a violation of state law and shall be grounds for the City to withhold final plat, certificates of occupancy, or other development related milestones. The City intends to ensure that wells are not left abandoned, abandoned inadequately, or concealed as conduits for contaminant transport in perpetuity.

1101.3 EXISTING IRRIGATION WELLS

Groundwater wells existing in excess of potable water needs within the development, shall be tied into the PI System as a primary or back up source, and the water rights deeded or transferred to CMID provided such wells are not found to present a risk of cross-aquifer or surface contamination. If existing wells are found to be such a threat, the City's resident engineer/hydrogeologist/inspector may require one or more wells to be abandoned in accordance with these specifications

1101.4 BACK-UP SOURCE AND DESIGN REQUIREMENT:

Boise Project Board of Control irrigation districts, as well as all other irrigation districts with a water right providing less than one continuous miner's inch per acre shall provide a back-up source of irrigation water. CMID prefers the back-up source be a ground water well. Other options may be considered and on a case-by-case basis by CMID. The capacity of the back-up source shall be a minimum of 7.8 gpm and at least as great as the surface irrigation source so its use does not require a change in operation.

1. A supplemental groundwater well may be used to provide supply where surface water is not sufficient.
2. The use of domestic water systems as a back-up source is not allowed in the opinion of CMID, if a reasonable alternative exists.
3. Ground water well design plans must be approved by public works director or city engineer and must include the following:
 - a. Protection of drinking water sources and preservation of the potable water supplies, to include an air gap.
 - b. Use of approved well development techniques.
 - c. Use of a non-corrosive well casing and screen assemblies.
 - d. Use of direct mud rotary drilling methods unless otherwise approved by the public works director or city engineer

1102 PRESSURE IRRIGATION MATERIALS

All distribution pipe shall be polyvinyl chloride (PVC) class 200, SDR 21 or better. All main line distribution pipes shall be 6" diameter minimum. Distribution pipe size to be determined by CMID. All service pipes shall be Polyethylene, (PE), 1" SRR 9 IPS size diameter minimum, 200 PSI, black or purple in color with brass barb by thread fittings or compression fittings (see SD 902A). Any line serving, or with the potential to serve, more than one (1) lot is considered a main line distribution pipe. All piping within pump house to be a minimum of 6' steel or ductile iron with flange fittings only. The Owner, Developer or Contractor shall furnish certification by the manufacturer that the pipe and fittings furnished on a project comply with the applicable specifications. As a condition for acceptance by CMID, or dedication to CMID, all pipe material shall be clearly marked with type, class and/or thickness as applicable. Lettering shall be legible and permanent under normal conditions of handling and storage.

1103 PIPE INSTALLATION

1103.01 GENERAL

This section applies to PVC pipe. All PVC piping shall be assembled and installed in accordance with the pipe manufacturer's recommendations and as shown on the approved drawings. Pipe joints, pipe bells, spigots and other fittings shall be inspected and wiped clean of all dirt, grease, and foreign matter. For gasketed pipe and fittings, use only lubricant furnished or specified by the pipe manufacturer and apply as specified by the manufacturer. When work is halted, all open ends of the installed pipe shall be sealed to prevent undesirable material from entering the pipe. Field cut pipe ends shall be beveled to match factory-finished beveled pipe ends.

All trench excavation, backfill and pipe installation shall meet the same standards set forth in ISPWC Division 900 for Pressure Irrigation with the following exceptions:

- a. All pipes outside of roadways shall be free draining to irrigation drains and blow offs, including PI station overflow lines.
- b. Pipe must have a minimum of 30 inches of cover except within road right-of-way where it shall have a minimum 36 inches of cover measured from finish grade.

1103.02 LOCATOR WIRE

Locator wire shall be installed with the mains as follows:

- a. Wire shall be extended to the surface within all valve boxes, irrigation drains and blow offs, air vacuum valves, and service valve boxes.
- b. The maximum distance between surface connections shall be 500 feet. In cases where this distance would otherwise be exceeded, the wire shall be brought to the surface using a dummy valve box.
- c. Dummy valve box to be located behind the sidewalk.
- d. Wire shall be 12 gauge for direct bury. All connections shall be 16-6 weather proof wire connectors or approved equal.
- e. Wire shall be fastened to the top of the pipe at a maximum interval of 10 feet.
- f. Locator wire to be purple in color.
- g. Continuity test to be completed by the contractor and submitted to inspector prior to CMID approval.

1103.03 FINDER TAPE

Finder tape shall be installed with all irrigation mains as follows:

- a. Tape shall be 2-inch wide purple colored plastic tape, with the words **CAUTION - DANGER UNSAFE WATER** or **CAUTION - NON-POTABLE WATER** with 1-1/2-inch letters along the length of the tape.
- b. Tape shall be placed between 12-inches below the surface and 18-inches above the top of the pipe.

1103.04 JOINT RESTRAINT

Thrust blocks shall be placed at locations described in ISPWC Section 400 Installation shall be as described in ISPWC Divisions 400 and 700. Thrust blocks shall be placed such that accessibility to the pipe and fittings is not impaired, unless otherwise specifically shown on the plans or called for by CMID. Place 6 mil polyethylene sheets between thrust block and fittings. Mechanical Restraints can be used in place of thrust blocks. Exception: Dead end lines must have mega lug restraint plus a dead man anchor with an irrigation drain with blow off and air relief.

1103.05 OPEN PIPE ENDS

Where the system is installed in phases or will not immediately be connected to the CMID delivery point, the open end(s) of the system shall be plugged, capped, and staked with a 2" x 4" marker prior to backfill. The marker shall extend 24" inches above finish grade and be painted purple. Phase line gate valves shall be installed at the end of each stub and at all phase lines. (Caldwell Standard Drawing SD 911-Standard Marker)

1103.06 PIPE INSTALLATION OUTSIDE STREET RIGHT-OF-WAY

All work outside street rights-of-way shall meet both these specifications and the current ISPWC specifications.

1103.06.01 EXCAVATION

1103.06.02

A: Pre-existing utilities encountered in the pipe zone shall be crossed below. Water utility crossings shall cross below existing CMID facilities. A minimum of 12 inches of clearance (18 inches for water lines) between crossing utilities shall be maintained.

B: Outside the right of way topsoil shall be stockpiled and used for the top layer during backfill and surface restoration.

1103.06.02 PIPE BASE AND PIPE ZONE BEDDING MATERIAL

The pipe base shall consist of consolidated and undisturbed native material or replacement material placed and compacted sufficiently to preclude future settlement. Above the pipe base, pipe bedding material shall be used in the zone from 4 inches below the bottom of the pipe (including pipe bell holes) to 6 inches above the pipe for the full width of the trench. Bedding materials may be excavated, native material containing no organic matter, and without rock or other materials larger than 1/2 inch. Where the volume or quality of native excavated materials is inadequate, type III bedding per ISPWC division 300, section 305 shall be used for pipe bedding in both the upper and lower pipe zone. All services shall be bedded in sand if native material is not suitable. Compaction of pipe zone and trench backfill material shall begin when there is sufficient cover to protect the pipe from damage.

1103.06.03 TRENCH BACKFILL ABOVE PIPE ZONE

A: Suitable native material may be used. Trench backfill above that required to protect the pipe shall be placed in lifts not exceeding 12 inches

and compacted sufficiently to preclude settlement. Mechanical compaction shall be used to compact backfill.

B: Outside the right of way topsoil shall be replaced as the top backfill layer outside of right of way. Topsoil shall then be placed, compacted and graded.

1103.07 PIPE INSTALLATION: INSIDE STREET RIGHTS-OF-WAY

All work inside street rights-of-way shall meet both the specifications of the governing agency and the ISPWC specifications. If specifications differ or conflict, the more stringent specification shall govern.

1103.07.01 PIPE BASE AND PIPE ZONE BEDDING MATERIALS

Pipe bedding zone shall include the full width of the trench from 4 inches below the bottom of the pipe to 6 inches above the top of the pipe. Pipe bedding zone shall be backfilled with suitable native material (free of humus, organic matter, suitable native frozen material, aggregate larger than ½", debris, etc.) Or type III bedding per ISPWC division 300, section 305 Bedding shall be placed in lifts, not to exceed 6 inches, except for the initial lift, which shall be 4 inches. Pipe bedding material shall be placed and compacted. Compaction of the upper pipe zone and trench backfill material shall begin when there is sufficient cover to protect the pipe from damage. Pipe base and zone materials shall be compacted to 95% of maximum density as outlined in ISPWC Section 202, Subsection 3.8C by means of mechanical compaction. Where the pipe is located within the street right-of-way, but outside areas to be overlaid with asphalt, Type III bedding in accordance with Division 300, Section 305, Part 2 of the ISPWC within the pipe zone shall be utilized.

1103.07.02 FOUNDATION STABILIZATION

If unsuitable soil material is encountered in the floor of the trench, the floor shall be over-excavated until suitable material is encountered and backfilled with 3 inch minus or less granular material up to the pipe bedding zone. Trench floor soil shall be inspected by CMID inspector. Backfill shall be compacted to 95% of maximum density as outlined in ISPWC Section 202, Subsection 3.8C.

1103.07.03 BACKFILL ABOVE PIPE ZONE

All pipe in right-of-way shall be backfilled with suitable native material, type III bedding as per ISPWC Division 300, section 305, or 3/4 inch minus crushed aggregate from the pipe zone to the lowest section of the

future/proposed road section. Backfill shall be placed in lifts suitable to the equipment used for compaction and compacted to 95% of maximum density as outlined in ISPWC Section 202, Subsection 3.8C. Compaction shall be done using mechanical compactors.

1103.08 LOT SERVICE REQUIREMENTS

Lot services shall be placed in front yards on opposite property lines from domestic water services and shall meet the requirements of CMID Standard Drawings No. SD-902. Maintenance of the service downstream of the curb stop is the responsibility of the property owner. CMID will maintain the system from the service curb stop valve to the main. Service stubs shall be marked with an eight foot 2"x4" driven 5 feet into the ground (see CMID SD 901 & SD 911). The top 24 inches of the 2"x4" shall be painted purple. An "I" shall be stamped into the concrete at the back of the sidewalk in line with each pressure irrigation service riser. All street side corp stop valves shall have a 5¼ cast iron valve box with extension sleeve and lid that reads "IRR" or "IRRIGATION" per SD-902A. Backyard services shall have a 4" PVC valve box and lid per SD-901, with a durable tag carrying the warning "NON-POTABLE WATER" or equivalent.

1103.09 SYSTEM FLUSHING

The completed system shall be flushed of all dirt and foreign material. Flushing shall be done in a manner to insure that all main, branch lines and flow routes produce flushing velocities of not less than 2.5 feet per second, (refer to ISPWC, Section 400, Table 1). A site for Discharge of flush water is not acceptable unless it has been determined that drainage is adequate at that site. All air shall be vented from any high points prior to placing the system into operation.

1103.10 STEEL CASING

All PI Irrigation lines crossing an existing irrigation canal shall be placed in a steel casing having, at a minimum, 3/8 inch wall thickness. Casing shall be placed at least three feet below the bottom of any canal and extend a minimum of 5 feet past the extent of the canal easement. Crossing plans must be reviewed and approved by each irrigation district with ownership and/or operation authority over such facilities.

1103.11 STREET CROSSINGS, CANAL AND DRAIN CROSSINGS

All street crossings shall be marked on each side of road with purple fiber glass stakes warning that pressure irrigation is present.

1104 ISOLATION VALVES

1104.01 VALVE SIZES

Valve size, unless otherwise noted on the drawings, shall be equal in diameter to that of the pipe on which it is installed. All valves shall be non-rising stem gate valves with "O" ring seals and double disc gate. The operator shall be a two (2) inch raised square cast iron nut. The working pressure shall be 150 psi or greater. All valves shall have flanged or mechanical joint connections and must meet or exceed current *AWWA Standards*.

1104.02 INSTALLATION

Isolation valves shall be installed where shown on approved plans. Isolation valves shall be installed on all dead-end laterals serving more than four (4) parcels or lots, at all tees and crosses and street crossings and at other locations identified by CMID. At a minimum, valves shall be placed at every street crossing. At street crossings, isolation valves shall be located generally 1 foot behind sidewalks (see SD-905-A). No valves shall be located within sidewalks, curbs, or gutters without specific approval by CMID.

1105 VALVE BOXES

Valve boxes shall be installed on all buried valves. Valve boxes shall also be installed to provide for locator wire access at a maximum distance of 500 feet center-to-center when no surface wire access is otherwise available. Valve boxes shall be installed flush with final grade. Reference SD 905B Valve boxes shall be cast iron, two-piece slip type standard design with a base corresponding to the total size of the valve. The valve box shall be protected with coal tar or other approved coatings, applied by the manufacturer. Valve box lids shall read "IRRIGATION" or "IRR" or have no labeling. (Example: Tyler 6855)

Valve boxes shall be marked with an 8 foot 2"x4" driven 5 feet into the ground. The top 24 inches of the 2"x4" shall be painted purple

1105.01 CONCRETE VALVE BOX COLLARS

All valve boxes shall have concrete collars.

Collars shall be installed flush with finish ground surface, per CMID Standard Drawing SD 905-B. Concrete for valve box collars shall conform to ISPWC, CL-3000, and shall have a minimum 28-day compressive strength of 3,000 PSI. Collars shall be per SD-905A when attached to the back of sidewalks, per SD-905B when in roadways, and concrete collar shall not be poured monolithic with a concrete sidewalk.

1106 FLANGES

1106.01 STEEL AND DUCTILE FLANGES

Steel companion flanges shall be AWWA Class D steel ring flanges.

Use threaded or slip on, socket weld type as required. All joints to be steel or ductile flange inside a pump station.

1107 IRRIGATION DRAINS AND BLOW OFFS

Irrigation drains and blow offs are to be constructed and installed in conformance with the CMID Standard Drawing SD-903. Irrigation drains and blow offs shall be constructed and installed at all low points that are not free draining and on all dead end lines. Irrigation drain lids shall read "IRRIGATION", "IRR", or have no labeling. All irrigation drains will have a 2 inch curb stop valve to be located in the road. All drains to be located behind the sidewalk. Box to be located 18" from back of sidewalk to edge of lid.

1108 AIR AND VACUUM VALVES

Two (2) air and vacuum valves are required at the pump station. See SD 909A & 909B. Air and vacuum valve to be Nelson Irrigation Corp ACV200. Location of air and vacuum valve to be one upstream and one downstream of the filter, each with a brass ball valve for isolation purposes. Additional Air and vacuum valves shall be Nelson Irrigation Corp ACV200 and are required at all high points of the irrigation distribution piping and on all dead end lines. All air and vacuum valves will have a 2 inch curb stop valve to be located in the road. All air and vacuum valves to be located behind the sidewalk. Box to be located 18" from back of sidewalk to edge of lid. Valves shall be in accordance with ANSI/AWWA C 512. Irrigation air and vacuum valves are to be constructed and installed in conformance with CMID Standard Drawing SD-904. Air and vacuum valve lids shall read "IRRIGATION", "IRR", or have no labeling.

1109 HYDROSTATIC TESTING

Installed PVC pressure pipe shall be tested and accepted in accordance with ISPWC Division 900 Section Part 3.6, Pressure Testing. Pressure gauges shall be capable of measurement in 1psi increments. Pressure testing shall be at 150 psi for two hours. Final hydrostatic or pressure testing will be conducted by the contractor only after all adjacent and crossing utility installations by others are completed. CMID or Engineering Inspector shall witness all testing and shall be notified at least 48 hours in advance. Final acceptance shall be by the city

1200 PUMP STATIONS

Note: Developer to supply SCADA hardware and CMID will install. Refer to SD-913 and SD-913A

1201 PUMP HOUSES

A pump house is required for all pressure irrigation pump stations. Piping in the station must be a minimum of 6' in diameter with flange fittings only. Building and electrical permits are required. The pumps and controls shall be housed within the pump house building. Must have a 3ft minimum clear and accessible space around the skid. Plans and specifications shall be submitted to CMID for approval. (Refer to CMID SD-906). Different style pump houses may be used with prior approval by CMID. The building shall be of adequate size to allow for operations, maintenance and repair on equipment within the building, with a minimum of 3 feet clearance from any obstruction i.e. skid, cabinet, piping etc. The building shall be equipped with a roof hatch, 5 x 7 minimum or CMID approved roll up door centered on the wet well hatch or equivalent to allow future removal and installation of the pumps and a second man door of 4' 2" x 6' 8" and shall swing outward. The building shall be adequately ventilated for proper operation of the pump controls. Special consideration shall be made for heat generated by variable frequency drives. Control panel boxes to be Hoffman Weatherflow enclosure, white with thermostat controlled fans. The building shall be equipped with adequate lighting, outlets and fire extinguishers. Must have a minimum to (2) LED water proof lights 4 foot long. The building shall be locking and be keyed to a CMID master key. The building shall have a 6' concrete stem wall poured with cut out where doors go and shall include a floor drain with concrete sloped to drain or slope floor to wet well 1% – 2%. No external outlets or common lot sprinkler control mounted inside or outside of CMID pump house. Common lot sprinkler control box to be mounted on a pedestal. The building to be on a common lot and hardscaped when possible.

Reference 1201.02. Address signs must be provided upon pump house completion. The sign must be 36" x 18" HIP reflective, gloss cast laminate on .063 aluminum. Wording must be green in color with number address in red with white background.

VFD Enclosure:

Hoffman Weatherflow enclosure white with cooling fans and filters. Reference SD 913 & SD 913A. Must be a WF40LP minimum of 47 x 24 x 14 with a back plate A42P24 Installed on north or east side of building. Attach enclosure to wall. ABB drive touchpad mounted to the outside of Hoffman door with panel extension. Must provide cable kit ACS/H-CP-EXT 68294673. The enclosure must have a 3ft minimum clearance from skid or obstructions i.e. cabinets and piping.

1201.01 GROUND WATER WELL HOUSE

Well must be designed for total build out acreage and be approved by CMID, public works director or city engineer. Must include 3 phase power to building. Reference 1210 for Idaho Power requirements. For building and layout reference SD-1503, SD-1504A and SD-1504B.

1201.02 LANDSCAPE REQUIREMENTS FOR PUMP STATION & WELL HOUSE

The ground around the pump house shall be hardscaped or finished with 4" thickness of landscape rock laid over a layer of fabric to prevent weed growth. No shrubs or trees to be planted in the hardscaped area around pump house. The pump house shall have a 10' minimum width of paved driveway to the building and around the building. Refer to 1408 on service access/for VAC truck.

1202 PUMPS AND VARIABLE FREQUENCY DRIVES

All pressure irrigation pump stations shall have a minimum of 2 vertical turbine pumps, one of which shall be a minimum of 7.5 hp jockey pump for charging and maintaining system pressure. Additional pumps shall be required to meet section 1101 System Design Capacity. Jockey pumps shall be oil lubricated close-coupled vertical turbine pumps. Pumps shall be manufactured by Cornell, Crown, Goulds, or Verti-Line. Submersible Pumps will be allowed only at the sole discretion of CMID in certain limited circumstances and locations. Jockey pump to be vertical turbine. The contractor shall furnish and install oil lubricated vertical turbine pump

including: oil pot, dripper, fittings, oil line, tension bearing/with plate, oil tube, line shaft, tube adapter, seals and top discharge case. Work also includes conversion of pump from water lubrication to oil lubrication. The contractor shall provide all labor, materials and hardware to convert existing water-lubricated water pump to an oil-lubricated pump, when utilization or upgrading existing P.I. station.

All pumps in stations shall be controlled by their own variable frequency drive ABB 580 set to operate the system at constant pressure. All vertical turbine pumps shall use semi-open pump bowls. No PLC or smart relay or programmable relays will be allowed.

1203 FILTERS

Filters shall be installed on all pump stations. Preferred filters are Amiad Filtration Systems SAF models only: with spring loaded nozzles and scanner shaft, if available with what is required, or CMID approved equal. Installation shall be done in accordance with manufacturers' requirements. All filters shall have ability to be back flushed. Back flush piping may be discharged into the source canal or ditch downstream of inlet structure, or may discharge into overflow piping. All control panels shall have settings for manual and automatic flushing. Filter to be sized to flow 30% more than pump station water right. Back flush piping when installed to ditch, canal or irrigation box will be installed above high water mark. All filter controls to have flush counter. One check valve for each Amiad downstream of filter.

1204 INTAKE SCREENS

Intake screens to be Clemons self-cleaning suction screen with sealed bearing, with 18 mesh screen. See SD 908 for typical installation and SD-909-A for plumbing installation.

1205 FLOW METER

One (1) water flow meter (reading in Gallons per Minute, GPM) is required as part of the pump station. The meter shall be installed in accordance with manufacturer's requirements including straight run pipe distances upstream and downstream of the flow meter. Meters shall meet the requirements of AWWA. Siemens Sitrans mag flow meter or approved equal. Must be installed upstream of the downstream butterfly valve.

1206 PRESSURE SUSTAINING VALVE

One 2 inch Bermad or Dorot model 44 NPT 230 PSI rated pressure sustaining valve IR-430 or CMID approved equal. Reference SD-909-B. Valve and piping to minimum of 2" or sized to fit. A brass ball valve must be installed to isolate PRV. Must install a brass 3 way union downstream of PRV.

1207 CHECK VALVE

One (1) check valve is required for each pump installed in the pump station. Valve placement is to be downstream of the pump and upstream of the manifold. Check valves shall be rated for 150 psi. Check valves shall be Waterman Split Disk Check Valve Model PC-150 or approved equal.

1208 PUMP STATION GRAVITY OVERFLOW

Gravity overflow piping is required on all pump stations. The overflow must be designed to waste the full amount of the pump station delivery supply. The overflow must be positioned a minimum of 0.5 feet lower than the weir crest, and divert the water to an acceptable drain, pond or waste way. Twenty (20) lineal feet of corrugated aluminized pipe or ductile iron pipe shall be installed on all day lighted pipe end sections. All overflows must be piped from the station to the irrigation district controlling such facilities. The pipe shall meet the requirements of ISPWC Section 1300 Gravity Flow Irrigation, if required by the City or the irrigation district controlling the delivery facilities.

1209 O&M MANUAL

Three (3) copies of the operation and maintenance manual for the pump station shall be supplied to CMID before acceptance of the pump station

1210 IDAHO POWER REQUIREMENT

All PI Pump Stations must meet Idaho Powers Standard IEEE 519 LFD Harmonics. A letter from Idaho Power stating this requirement has been met and must be received prior to requesting annexation or must accompany the request for annexation.

1211 MOTORS

All motors are to be GE or US motors

1212 SCADA SYSTEMS

All P.I. Stations shall have SCADA systems provided. Refer to standard drawing SD913 and SD913A for list of component parts. CMID will have the SCADA parts installed and programmed. It will be the developer's responsibility if a repeater is required.

1213 SURGE PROTECTION

All stations shall have a surge protector (Strikesorb 40 mm 480V) on the incoming power to the whole station.

1300 GRAVITY FLOW IRRIGATION

1301 GENERAL

Piping for gravity flow irrigation system must be kept separate from piping for the pressurized irrigation system within a subdivision. Any construction to gravity flow systems shall be approved by the irrigation district controlling such facilities. **CMID does not assume ownership or responsibility for maintenance or repairs of gravity irrigation lines or systems. Gravity flow supply irrigation systems are generally NOT approved, by CMID.**

1302 CONSTRUCTION DEADLINES

Construction deadlines may need approval by the Irrigation District with jurisdiction over such facilities.

1400 ADDITIONAL REQUIREMENTS

1401 GENERAL

If construction is not complete prior to development completion or final subdivision plat, the Developer agrees to furnish CMID with security either as a cash deposit or a one-year irrevocable letter of credit, with a one-year automatic renewal clause prior to any acceptance or approval of the system. The amount of the Security shall be 110% of the estimated cost

to CMID to provide the irrigation improvements (as determined by CMID) not yet completed. The security shall ensure the performance of the Developer's obligation(s) as designated on the approved plans. A letter of credit will only be accepted from a financial institution authorized to do business in the State of Idaho and with an office in the Treasure Valley.

When it is necessary or desired to connect into an existing CMID system the contractor must make a deposit equal to 110%, plus an additional 25% for liquidated damages, of the estimated cost for CMID to make the connection and any associated upgrades to CMID. The deposit must be paid prior to any connection of the new system to existing CMID facilities and is provided to ensure that proposed modifications are completed in a timely fashion and without inconvenience to existing users. The Developer shall provide a written schedule to be approved by CMID. Failure to meet the approved schedule shall result in forfeiture of the total deposit.

1402 CONTRACTOR LICENSING

All contractors working on or installing irrigation facilities shall be Idaho licensed Public Works Contractors. Contractors shall be licensed to perform the type of construction involved for pressure and gravity irrigation systems.

1403 PLAN SUBMITTAL AND REVIEW

Any and all proposed modifications, changes, removal or addition to any structure equipment, piping, component, facility, canal, ditch, lateral, or any other conveyance owned, operated, or maintained by the CMID shall be designed by an engineer licensed in the State of Idaho. Plans and specifications shall be submitted to CMID for review by the City Engineering Department. Review and approval by CMID does not constitute an engineering review of project plans, specifications, or calculations. The sole purpose of the review is to ensure general conformance with CMID policies, standards and requirements. The submitting design engineer is solely responsible for the design including, all project plans, specifications, calculations and to ensure that said design meets the requirements of CMID and the City of Caldwell. All submittals shall be stamped and signed by a Professional Engineer registered in the State of Idaho. All subdivision projects shall include any applicable preliminary plat and a complete set of infrastructure plans.

1404 DELIVERY POINT

Pump station delivery point(s) must be approved by the Irrigation District controlling such facilities, and CMID. CMID will not share privately owned ditches with other users. Install weirs with approval from the irrigation district controlling such facilities and CMID. Drawing of weir system must be submitted to the irrigation district controlling such facilities. Weir boxes will be separate from clear water screen boxes. Weir requirements are determined by the irrigation controlling the facilities. All delivery ditches to be piped. Required piping will be 125 psi PVC pipe minimum. Open ditch deliveries will not be allowed. Inlet structure, head gates designs must be approved by the Irrigation District controlling the facilities.

1405 CONSTRUCTION OBSERVATION

The Contractor installing the facilities shall notify the CMID observer two (2) working days prior to beginning any work. All trenches shall be left open for observation until approved for back filling. Compaction testing shall be in accordance with ISPWC Division 500 Section 501 Part 3.4. Testing is required for all piping that is to be maintained by CMID or is planned to be put under private parking lots or private access roads. CMID's engineer is required to observe all compaction testing, pressure testing, structures and trenches and a minimum of 48-hours advance notice to CMID's inspector is required.

1406 FINAL ACCEPTANCE

1406.01 PUNCH LIST REQUESTS

Prior to final acceptance of any CMID facilities by CMID, the owner shall request, in writing, a walkthrough with the CMID superintendent or representative. Upon completion of said walkthrough, CMID will forward a copy of a punch list documenting outstanding items to the owner. Upon owner completion of punch list items, the owner shall request, in writing, a final walkthrough with the CMID superintendent or Engineering Inspector.

1406.02 DEDICATION REQUESTS

Upon completion of the final walkthrough with CMID, CMID shall notify the owner regarding the status of the punch list. If all punch list items are completed to CMID's satisfaction, the owner shall request, in writing, that CMID accept said system. Upon acceptance by CMID, the CMID shall give written notification to the owner. The date of said written acceptance

shall become the effective commencement date of all warranty periods. The warranty period is two years.

1407 PAVEMENT REMOVAL AND RESTORATION

1407.01 REMOVAL OF PAVEMENT

Neatly cut all bituminous and concrete pavement, regardless of the thickness, prior to excavation of the trenches, with an approved pavement saw. Pavement cuts shall be made a minimum of 12 inches away from any disturbed sub base.

1407.02 RESORATION OF PAVEMENT

1407.02.1 ASPHALTIC CONCRETE

Asphaltic concrete used in conjunction with the project shall be furnished and placed in accordance with ISPWC Division 800.

1407.02.2 PAVEMENT CONSTRUCTION REPAIR & RESTORATION

The pavement shall be cut to provide clean, solid, vertical joints. Whenever possible, cut lines shall be parallel to or at right angles to the street centerline.

Immediately before applying the tack coat, the surface to be treated shall be swept clean of all loose material, dirt, excess dust or other objectionable material. No application will be authorized when the surface is appreciably damp or when weather conditions are unsuitable. Following preparation of the base course and abutting edges, the contractor shall apply CSS-1 emulsified asphalt (tack coat) to all joined surfaces. Asphaltic concrete shall be placed to a minimum compacted depth of 2 inches, or be placed in accordance with governing agency requirements whichever is most stringent. The Contractor shall provide a smooth, even surfaces conforming to adjacent surfaces.

1408 EASEMENT REQUIREMENTS

Easement access to the pump station shall be provided by the developer, providing 10 feet of clearance on all sides of pump station. Slabs shall be granted to CMID for pump station maintenance. An area of 10 feet around pump station slabs shall be asphaltic concrete. Common lots for pump stations shall be hardscaped. This access shall be 15 feet wide and shall be improved with 4" thick asphaltic concrete. Paved roads must allow access to pump station wet well door, and weir and clemons boxes for

vac-sump truck services. All PI mains shall be within a ten (10) foot easement along side and rear lot lines. These easements are not to be subdivided by a property line.

1409 DISCHARGE

Plans for direct discharge, blow off or run-off into federally owned canals or drains may require the approval by the Bureau of Reclamation or by the irrigation district controlling such facilities. Similarly, direct discharge, blow off or run off into canals or drains owned by an irrigation or drainage district may require approval by the district. CMID does not assume any responsibility for such approval. The developer is to submit copy of the approval to CMID.

1410 RECORD DRAWINGS

One (1) set of record drawings detailing the entire irrigation system including but not limited to pump stations, piping, irrigation service risers, valves, pump-outs, air and vacuum valves, and gravity irrigation structure inverts, shall be prepared and provided by the Engineer of Record to CMID. Record drawings shall be submitted in digital form using DWG drawing file format and shall be spatially referenced to the Idaho State Plane Coordinate System-West Zone, North American Datum (NAD) 83. Vertical control shall be referenced to North American Vertical Datum (NAVD) 88. The unit of measurement shall be US survey feet. Must provide information regarding whether it is an upgrade, buy in or tie in to an existing pump station.

Upon completion of pump station construction or upgrade, the design engineer shall provide three (3) operation and maintenance manuals to CMID. The operation and maintenance manuals shall include pump curves, equipment lists and instructions for periodic and annual maintenance.

1411 FINAL GUARANTEE

The owner or developer shall guarantee all work for a warranty period of two years from the date CMID's Dedication Resolution is issued. If, within the said guarantee period, repairs or changes are required in connection with any guaranteed work, which in the opinion of CMID, is rendered necessary as the result of the use of material, equipment, or workmanship, which is inferior, defective, or not in accordance with the specifications, the Owner or developer shall promptly, upon receipt of verbal or written notice from CMID and without expense to CMID:

1. Place in satisfactory condition all such guaranteed work and correct all defects therein.
2. Make good all damage to the building, structure, site, equipment or contents thereof, which in the opinion of CMID is a result of the material, equipment or workmanship which is inferior, defective, or not in accordance with the terms or the contract.
3. Make good any work, material, equipment or the contents of the building, structure, or site disturbed in fulfilling any such guarantee.

If the Owner or developer, after such notice fails within 10 days to proceed to comply with the terms of this guarantee, CMID may have the defects corrected and the Owner or developer shall be liable for all costs and expenses incurred. provided, however, that in case of emergency where, in the opinion of CMID, delay would cause serious loss or damage, repairs may be made without notice being given to the Owner or developer and the Owner or developer shall pay the cost thereof.

1412 INDIVIDUAL LOT SYSTEM DESIGN

Sprinkler system on individual lots one (1) acre or less shall be designed at a maximum of 9 GPM or less per sprinkler set. Property owners or their contractors shall verify system pressure at each location for the purpose of verifying water demand relative to system design. Service size will be 1" only. CMID recommends systems be designated for 9 GPM at 55 psi.

1413 LARGE LOT SYSTEM DESIGN

For individual parcels one (1) acre and larger, the maximum design flow rate shall be 9 GPM per development acre. Property owners, or their contractors, shall verify system pressure at each location for the purpose of verifying water demand relative to system design. Development acreage shall be subject to approval by CMID. Services larger than 1" must be approved by CMID.

1414 UTILIZATION OF EXISTING PUMP STATIONS

Developers or their engineering firms, requesting to connect to an existing pressurized irrigation pump station serving subdivisions that are not at full build-out, must have a written agreement with the developer of the original

pump station. A copy of that agreement along with construction plans and pressure and flow calculations must be reviewed and approved by CMID. When a property owner or developer requests to connect to a pump station constructed by another, and the pressurized irrigation pump station has adequate capacity, CMID may require for purposes of equity, any of the following:

- a. The later connection to pay a council approved connection fee as a capital buy-in to the pre-existing costs.
- b. The later connection to enter into a cost-sharing agreement with the original constructor.
- c. The later connection to pay its designated portion of a late-comer agreement as approved by Council.
- d. Cost of all upgrades required to bring existing pump station up to capacity.

When a property owner or developer requests to connect to a pump station constructed by another, and the pressurized irrigation pump station does not have adequate capacity, CMID may require the later connection to upgrade the station as well as any of the above. Plans, schedules and any other relevant issues to an upgrade must be approved by CMID and security provided as outlined in Section 1401.

1415 SHOULDER WATER

Shoulder water supply as shown in SD-912. All pump stations supplying water to 30 lots or larger will have a second water source connected to domestic side with RP backflow. A minimum 2" service is required with all parts in brass. Fittings must be compression with stainless steel stiffeners, if using poly. Service must be SDR 7 poly or copper. Must meet CMID specs and ISPWC approval. CMID will pick location.

1416 ANNEXATION DEADLINE

All annexations into CMID are required to be approved prior to Jan. 1st of each year to be included in that year's annual assessment role. This deadline is necessary to allow CMID to meet its annual statutory irrigation assessment obligations. If this deadline is not met, it is the Developers responsibility to pay the full annual irrigation assessment, prior to delivery of irrigation water. This fee is calculated by CMID and is based on Council approved irrigation fees and assessments for that year. Note: Irrigation water will not be provided off existing PI stations to a new subdivision or phase of a subdivision until fees are paid and annexation has taken place.

1500 PRIVATE SPRINKLER SYSTEMS

1501 FILTERS

A 1" or 2" Banjo or Amiad filter with 30 mesh is recommended. Mesh size varies with type of sprinkler heads used within the system refer to D-1501.

1502 PRESSURE IRRIGATION SERVICE LAYOUT

Refer to SD-1502.

STANDARD DRAWINGS
Standard Drawings approved by CMID are included herein
and referenced by Standard Drawing number:

SD-901	Back of Lot Pressure Irrigation Service
SD-902	Front lot Pressure Irrigation Riser Location
SD-902-A	Front of Lot Pressure Irrigation Service
SD-903	Pressure Irrigation Drain with Blow off
SD-904	Pressure Irrigation Air and Vacuum Valve
SD-905	Pressure irrigation Box Typical Lid Detail
SD-905-A	Pressure Irrigation Concrete Collar Detail
SD-905-B	Pressure Irrigation Valve Box and Lid Concrete Collar Detail
SD-906	Pressure Irrigation Pump Station Enclosure
SD-908	Pressure Irrigation Screen Box
SD-908-A	Pressure Irrigation Weir Box
SD-909	Pressure Irrigation Pump Station Notes
SD-909-A	Pressure Irrigation Pump Station Plan

- SD-909-B **Pressure Irrigation Pump Station Plan**
- SD-910 **Pressure Irrigation Supply Well**
- SD-911 **Pressure irrigation Standard Marker**
- SD-912 **Pressure Irrigation Shoulder water assembly**
- SD-913 **SCADA System Parts list**
- SD-913 A **SCADA System Parts List**
- SD-1501 **Polypropylene “T” Line Filters and Specs.**
- SD-1502 **Typical Pressure Irrigation Layout**
- SD 1503 **Irrigation Well Station Enclosure**
- SD-1504 A **Irrigation Well Station Profile Plan**
- SD-1504 B **Irrigation Well Station Profile Plan**
- SD-1504 C **Irrigation Well Station & Building Plan**
- SD-1504 D **Irrigation Well Station & Building Plan**

STANDARDS FOR MAINS & SERVICES

1. **Main Line Pipe:** PVC, 200 PSI, SDR 21, conforming to *ASTM D224*.
2. **Joints:** Rubber gasketed for all pipe.
3. **Fittings:** Cast iron, ductile iron, PVC, brass or stainless steel, and shall have a minimum 200 PSI pressure rating. All fittings on 4" and larger mains shall be ductile or cast iron with flanged or mechanical joints.
4. **Flow Meters:** Required on all Pump Stations, shall be Siemens Sitrans magflo meter.
5. **Valves 4" or Larger:** Only resilient seated valves are approved (*AWWA C509-87*) and shall be Mueller, *Waterous*, *Clow*, *Kennedy* or *Tyler DRS-250* with 2" square operating nuts with either flanged or mechanical joints.
6. **Valve Boxes:** 5-1/4" cast iron, extension sleeve type of such length to reach finish grade at least 6" less than full extension. Covers shall be cast iron. All valve boxes shall have a concrete collar as required by the governing jurisdiction. All lids shall read "IRRIGATION", "IRR", or have no labeling.
7. **Tapping Saddles:** *Romac 101BS or 202BS or 101B or 202B*, 2" tapping saddles shall be utilized on all service taps on Main Line Pipe larger than 4 inches in diameter or approved equal.
8. **Service Pipe:** All service pipe to be 1" diameter minimum, 200 psi poly. SDR 7 IPS size.
9. **Ball Valve Curb Stops:** *Ford B11-444* for 1" services. *Ford B11-444* for 1-1/2" services. *Ford B11-777* for 2" services. Also acceptable: *Mueller B-20283* for 2" and 1-1/2" services, and *Mueller B-20283* for 1" services without locking wing nuts.
10. **Service Valve Boxes:** 5 ¼ cast iron extension sleeve, lid to read irrigation.
11. **Drain Valves:** *Ford B11-777*, *Mueller B-20283* or approved equal, 2 inch only, brass. See drawing SD903 and SD904.

STANDARDS FOR MAINS & SERVICES

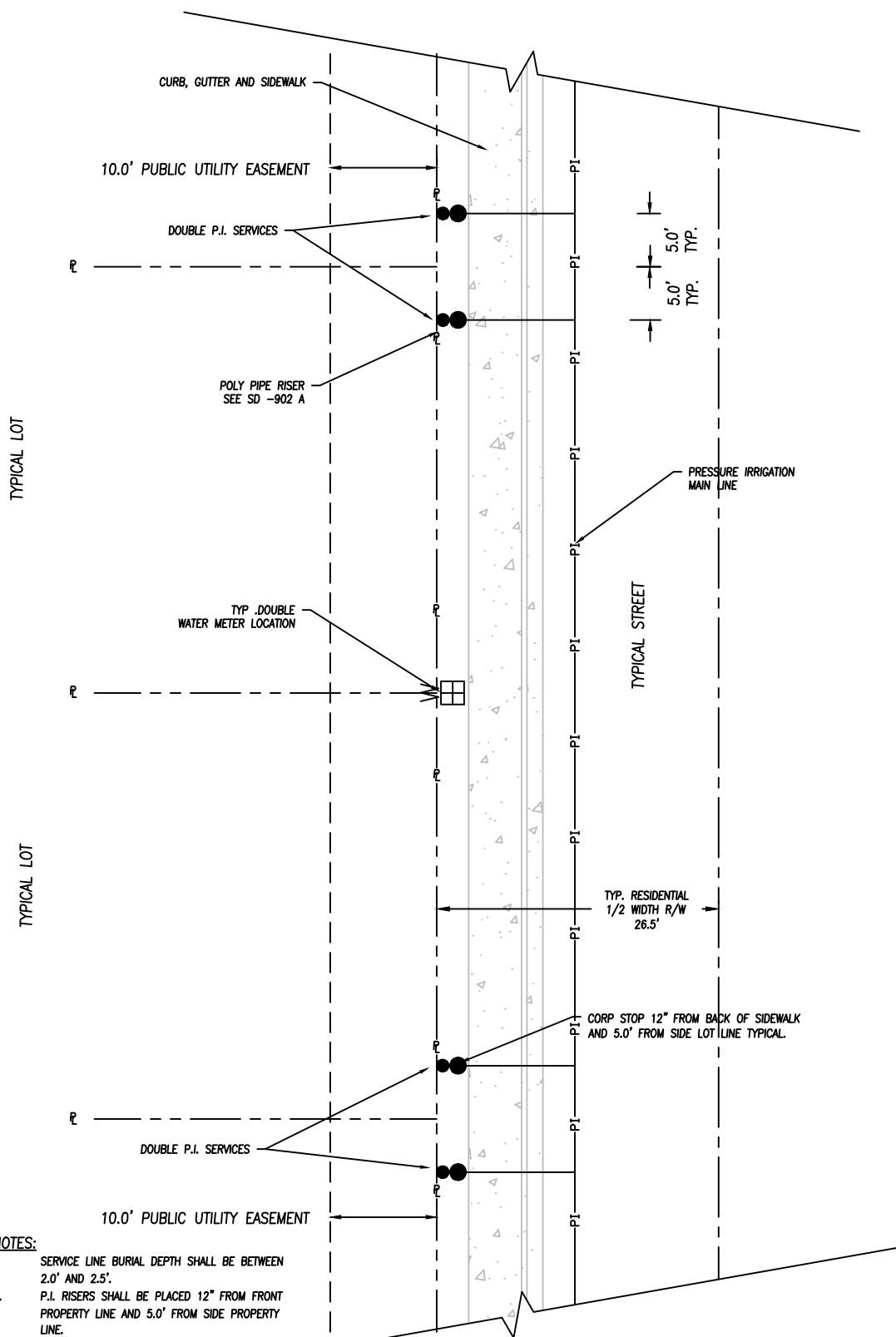
12. **Pumps:** All Pressure Irrigation Pump Stations shall use Close Coupled Vertical Turbine Pumps with semi open bowl. Must maintain minimum of 18" space separation between motors. To control and maintain constant discharge pressure, Variable Frequency Drive Motor Controllers are required on all pump stations with ABB 580 controllers on all pumps.
13. **Filters:** Filters shall be Amiad SAF series or CMID approved equal.
14. **Clear Water Screen:** To be Clemons self-cleaning suction screen with sealed bearing. Galvanized coated and utilizes a heavy 18 mesh stainless steel screen, all pipe fittings from station to screen must be brass with polyethylene feed line. Feed line to the clear water screen must include a 2" Banjo filter inside PI Station with 2" ball valve and pressure gauge downstream of the filter.

Caldwell Municipal
Irrigation District

**STANDARDS FOR
MAINS & SERVICES**

Sheet 2 of 2

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- NOTES:**
1. SERVICE LINE BURIAL DEPTH SHALL BE BETWEEN 2.0' AND 2.5'.
 2. P.I. RISERS SHALL BE PLACED 12" FROM FRONT PROPERTY LINE AND 5.0' FROM SIDE PROPERTY LINE.
 3. NO FITTINGS PAST CORP STOP VALVES.

-DRAWING NOT TO SCALE-



DATE: 10/24/2022
SCALE: AS SHOWN

FRONT LOT PRESSURE IRRIGATION RISER LOCATION

STANDARD DRAWING NO.
SD-902



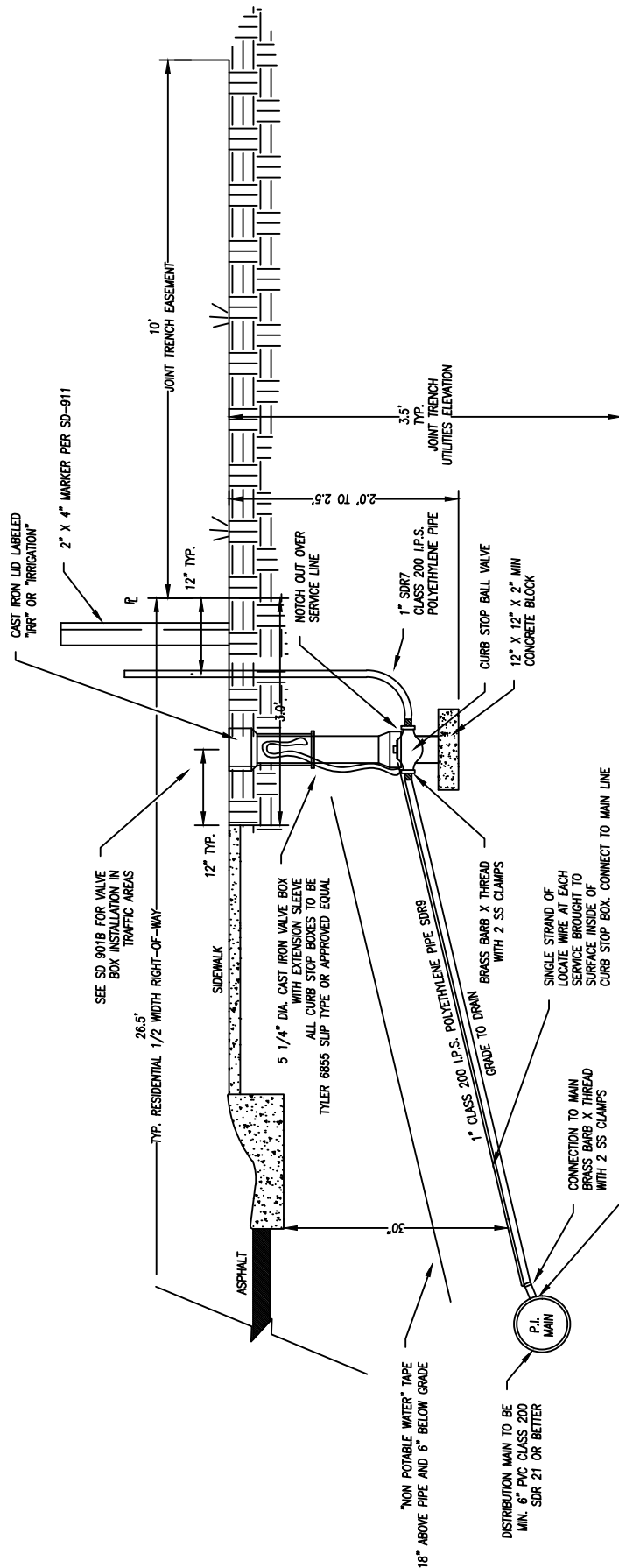
DATE: 6/2/2023

SCALE: AS SHOWN

FRONT OF LOT TYP. PRESSURE IRRIGATION SERVICE

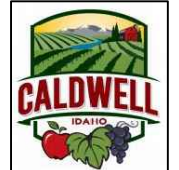
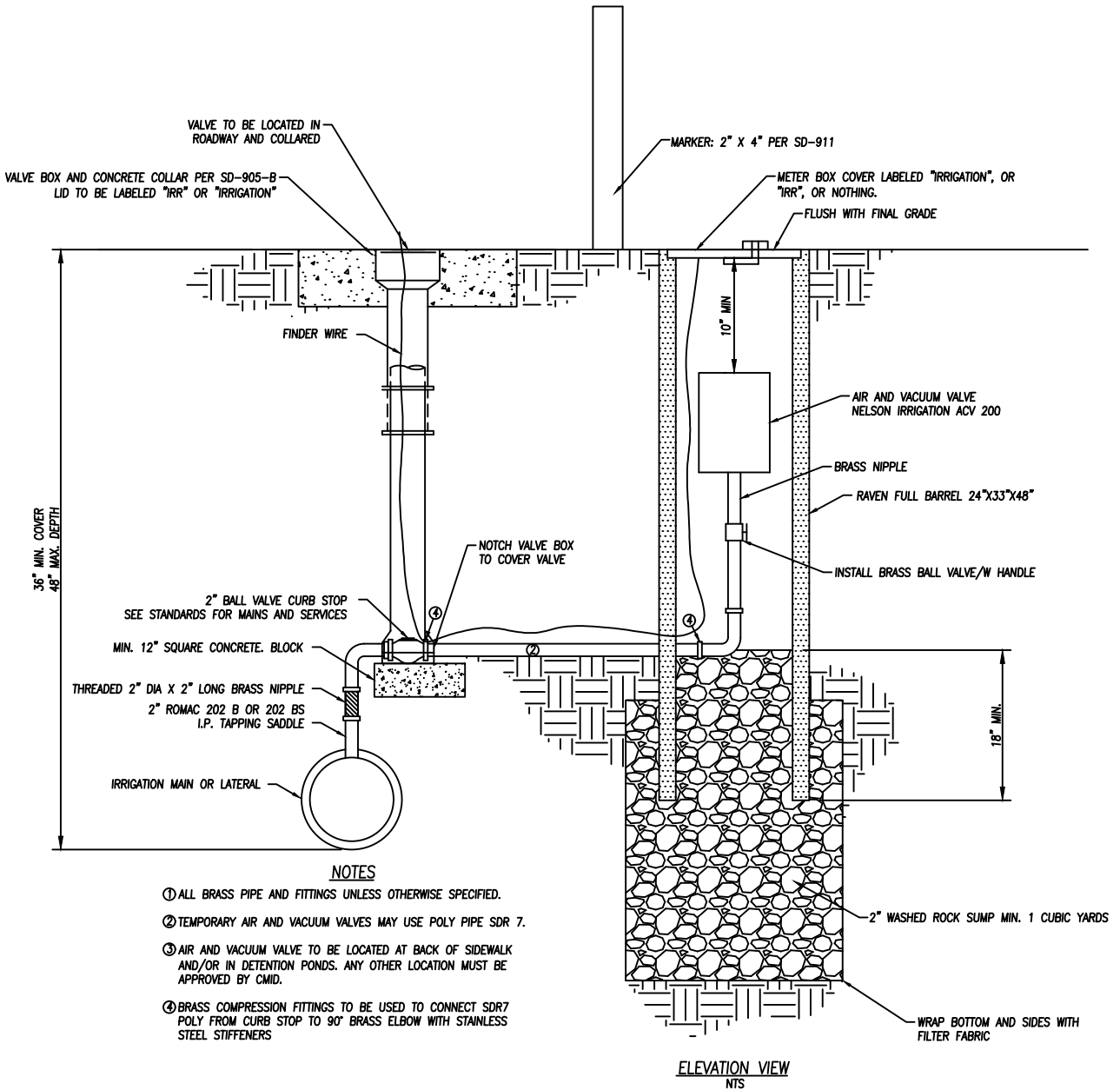
STANDARD DRAWING NO.

SD-902A



NOTE: IRRIGATION SERVICES REQUIRING GREATER THAN 1" MUST BE SPECIFICALLY DESIGNED FOR THE APPLICATION AND APPROVED BY THE CITY ENGINEER
ALL FITTINGS TO BE BRASS

-DRAWING NOT TO SCALE-

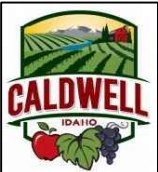
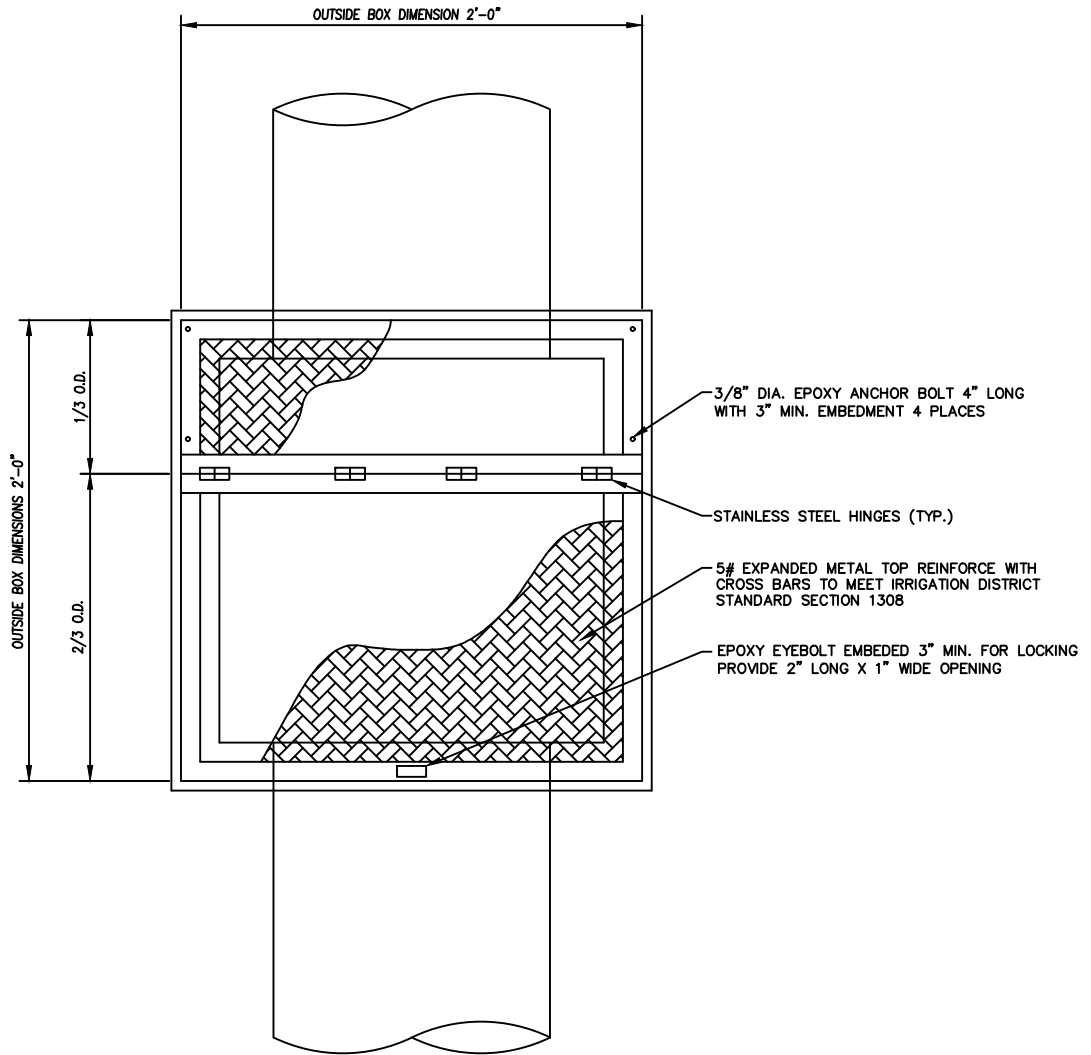


DATE: 6/2/2023

SCALE: AS SHOWN

PRESSURE IRRIGATION AIR AND VACUUM VALVE

STANDARD DRAWING NO.
SD-904



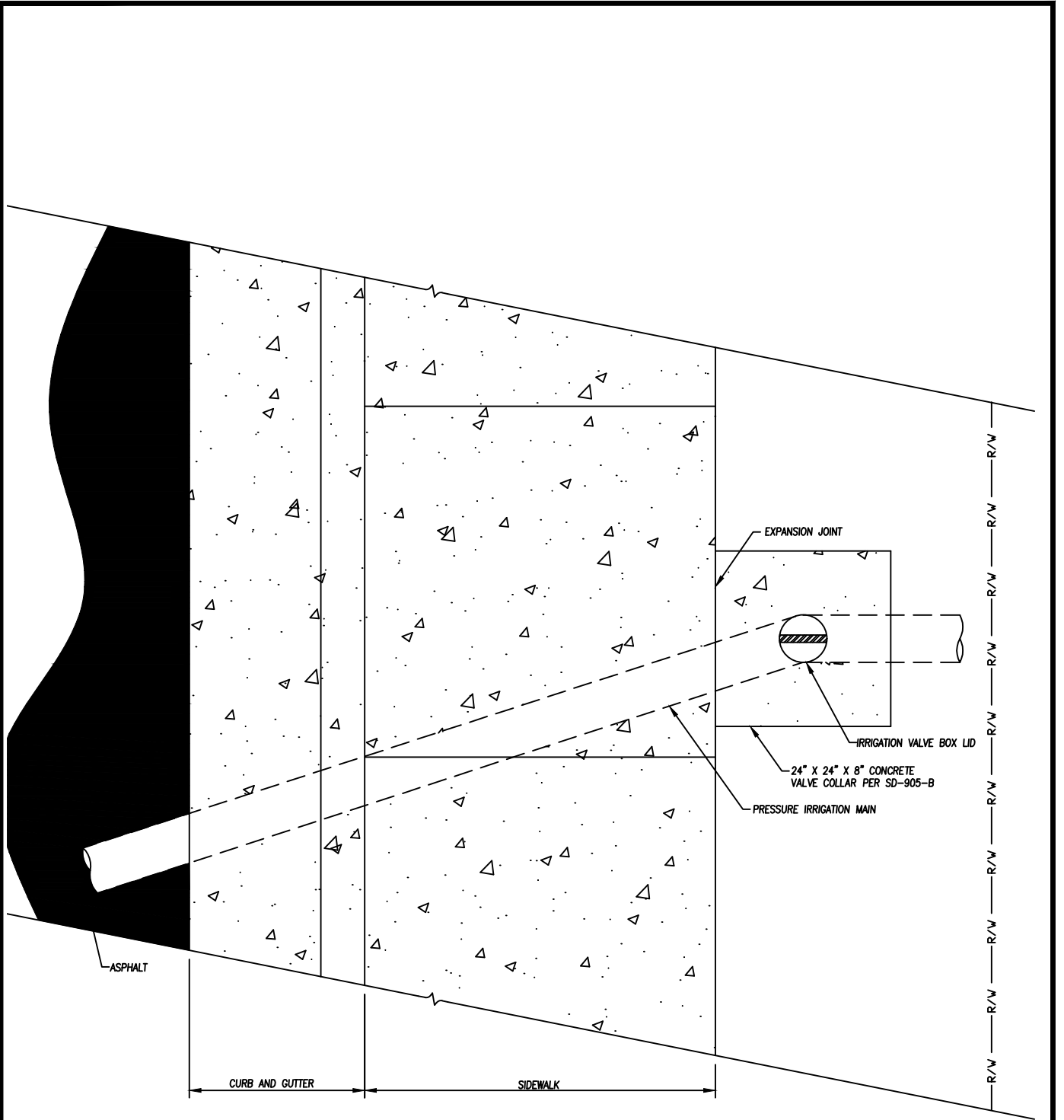
DATE: 10/24/2022

SCALE: AS SHOWN

IRRIGATION BOX TYPICAL LID DETAIL

STANDARD DRAWING NO.

SD-905

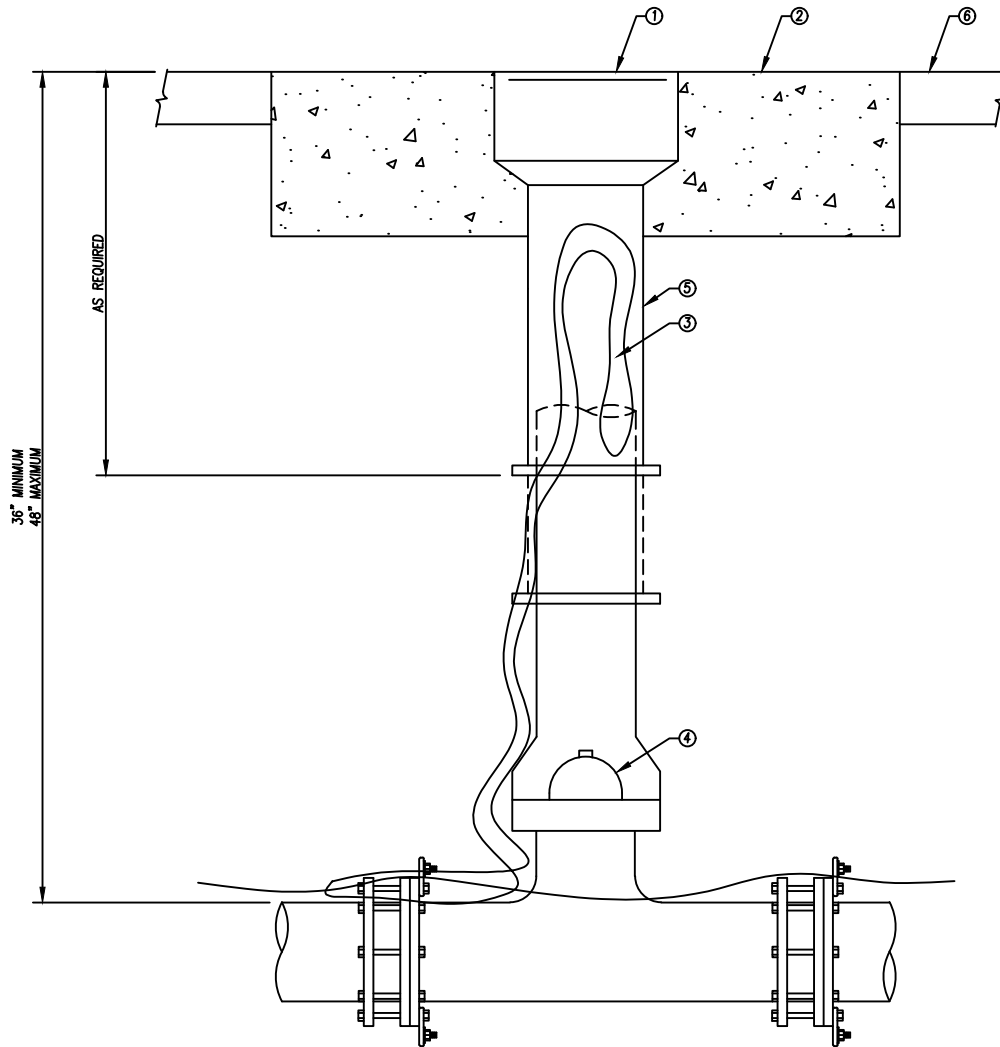


DATE: 10/24/2022

SCALE: AS SHOWN

**PRESSURE IRRIGATION
CONCRETE COLLAR DETAIL**

STANDARD DRAWING NO.
SD-905-A



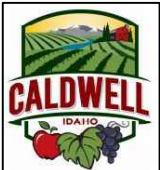
VALVE BOX
NTS

LEGEND

- ① 5 1/4" LID (IF LOCKING REQUIRED, TYLER NO. 6855)
VALVE BOX LID TO BE LABELED "IRRIGATION" OR "IRR".
- ② 24" DIA. X 8" CONCRETE COLLAR
- ③ NO. 12 AWG. COPPER WIRE FINDER
- ④ VALVE
- ⑤ VALVE BOXES SHOULD BE CAST IRON TWO PIECE SLIP TYPE:
STANDARD DESIGN WITH A BASE CORRESPONDING TO THE
TOTAL SIZE OF THE VALVE
- ⑥ FINISHED GRADE

NOTE

- 1. ALL PRODUCTS SHALL BE AS INDICATED OR APPROVED EQUAL.
- 2. VALVE BOX TO BE CENTERED OVER VALVE.
- 3. ALL VALVE BOXES SHALL HAVE CONCRETE COLLARS.



DATE: 10/24/2022

SCALE: AS SHOWN

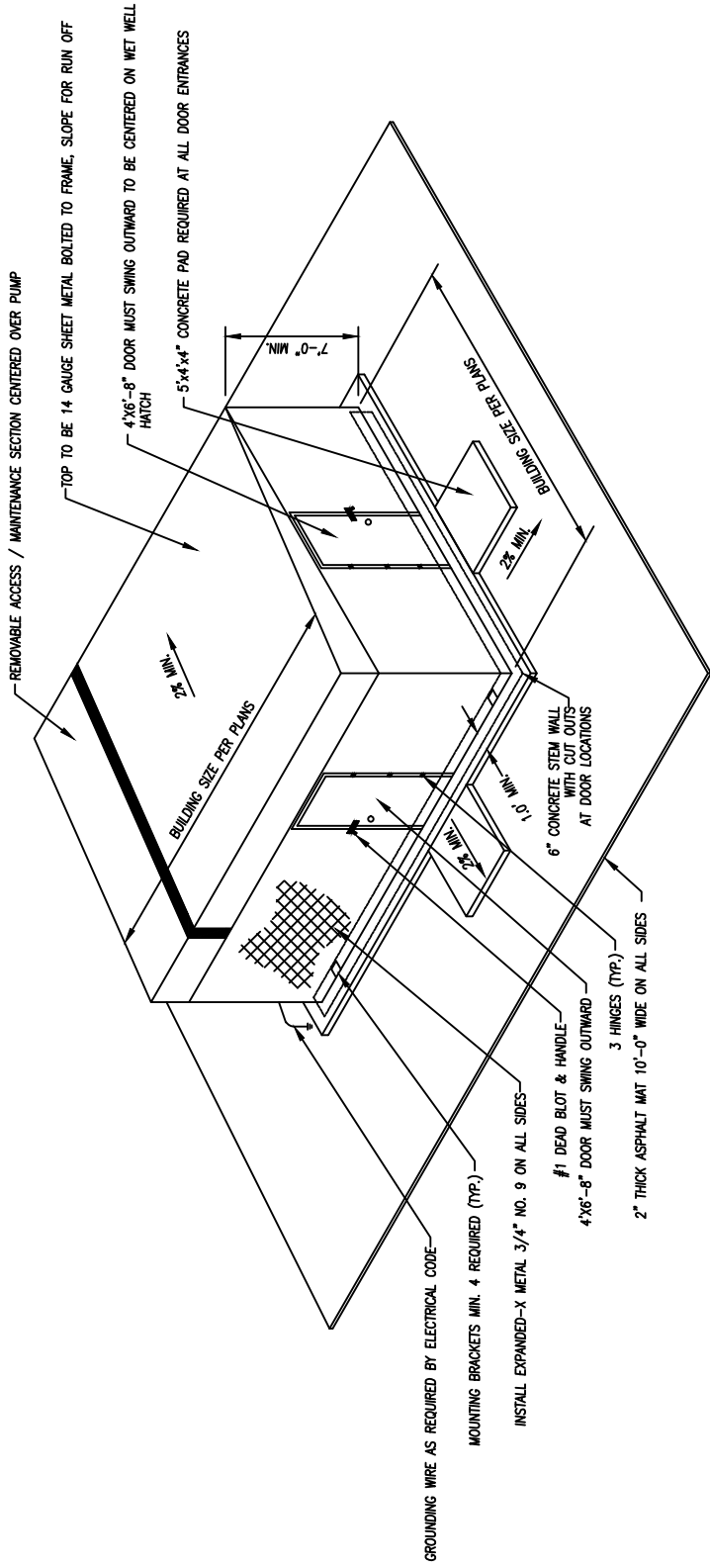
VALVE BOX AND LID
CONCRETE COLLAR DETAIL

STANDARD DRAWING NO.

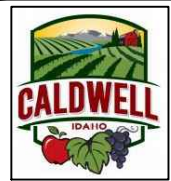
SD-905-B

NOTES:

1. VFD ENCLOSURE: HOFFMAN WHITE WF401P HOFFMAN ENCLOSURE/W BACK PLATEWF401P VFD ENCLOSURE WITH COOLING FAN AND FILTERS INSTALLED ON NORTH OR EAST SIDE OF BUILDING. ABB DRIVES MOUNTED TO OUTSIDE OF HOFFMAN DOOR PANEL FROM SKID.
2. DOOR IS TO HAVE DEAD BOLT, KEYS TO CMD ACCESS.
3. WALLS TO HAVE 3/8" MIN. CLEARANCE TO ALL INSIDE WALLS WITHOUT OBSTRUCTIONS I.E. CABINETS, PIPING, ECT. FOR WORK ACCESS.
4. CONCRETE FLOOR TO EXTEND A MIN. 1.0' BEYOND OUTSIDE EDGE OF ENCLOSURE. EXPANSION JOINT MATERIAL REQUIRED AROUND ALL CASINGS AND PIPING THROUGH THE FLOOR.
5. ALL SURFACES TO BE PRIMERED AND PAINTED. COLOR TO BE APPROVED BY CMD.
6. BUILDING DRAWINGS SHALL BE APPROVED BY CMD.
7. THIS ENCLOSURE IS PROVIDED FOR ILLUSTRATION PURPOSES ONLY. OTHER ENCLOSURE DESIGNS MAY BE SUBMITTED, CONSIDERED BY CMD, AND APPROVED AS APPROPRIATE.
8. LIGHTS AND ELECTRICAL OUTLET REQUIRED.
9. ALL ELECTRICAL CONDUITS TO BE OVERHEAD TO AVOID TRIPPING HAZARDS
10. IF BUILDING SHED/WOOD STRUCTURE, SEE SD-1503
11. NO EXTERNAL OUTLETS ON BUILDING



PUMP STATION ENCLOSURE (CAGE OPTION)
NTS



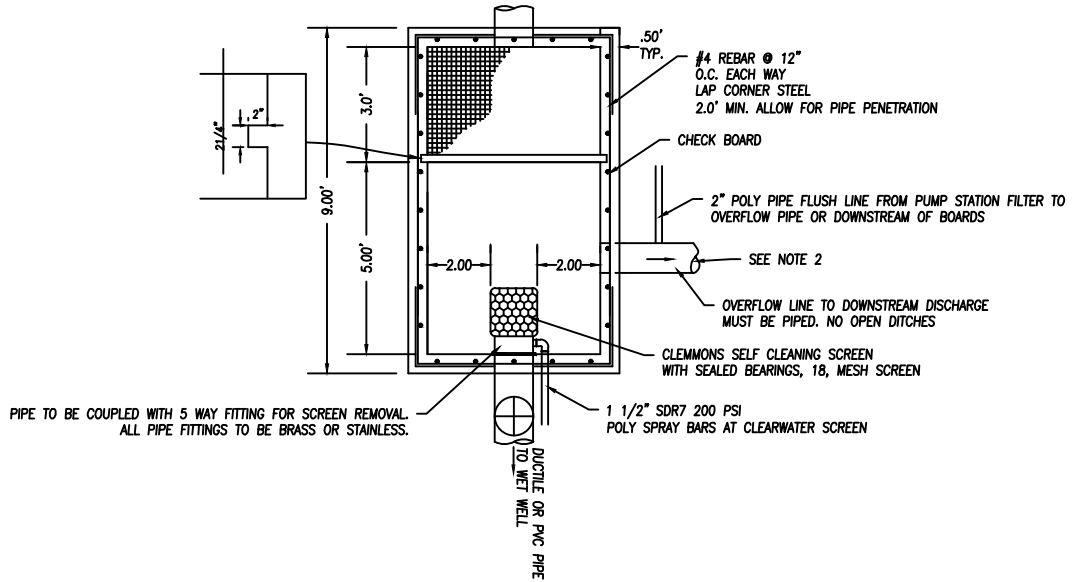
DATE: 6/2/2023
SCALE: AS SHOWN

PRESSURE IRRIGATION
PUMP STATION ENCLOSURE

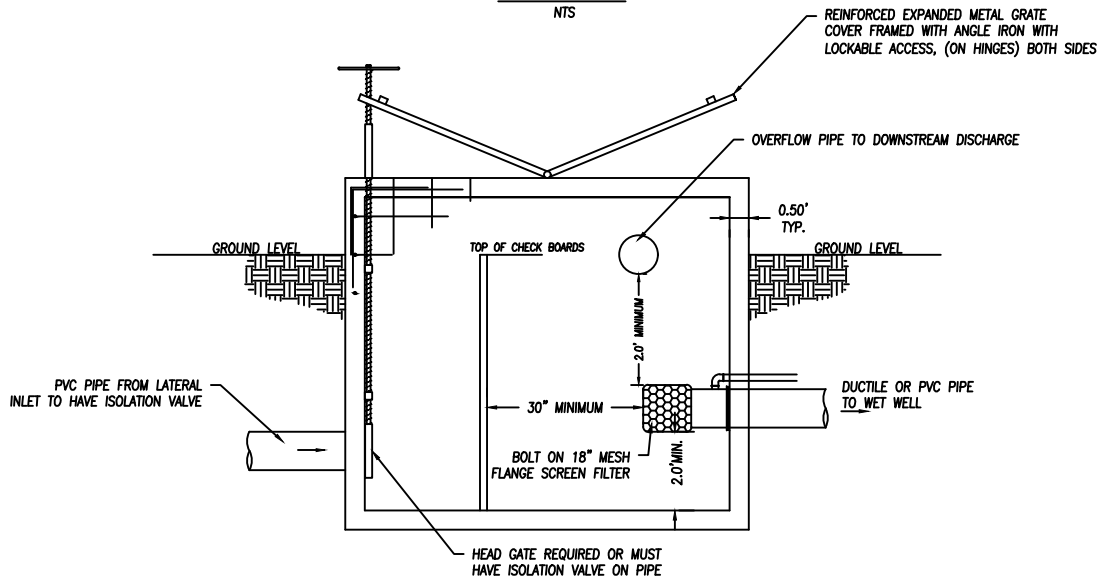
STANDARD DRAWING NO.
SD-906

NOTES

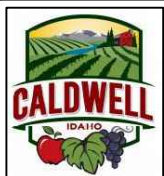
1. THIS INTAKE STRUCTURE IS PROVIDED FOR ILLUSTRATION PURPOSES. OTHER DESIGNS MAY BE SUBMITTED, CONSIDERED BY CMID, AND APPROVED AS APPROPRIATE.
2. PIPING SIZE TO VARY DEPENDING ON IRRIGATION SYSTEM REQUIREMENTS WITH CMID APPROVAL MUST BE A MINIMUM OF 6" PIPE OR SIZED TO TOTAL BUILD OUT ACREAGE/MINERS INCH .



ELEVATION VIEW
NTS



PROFILE VIEW
NTS



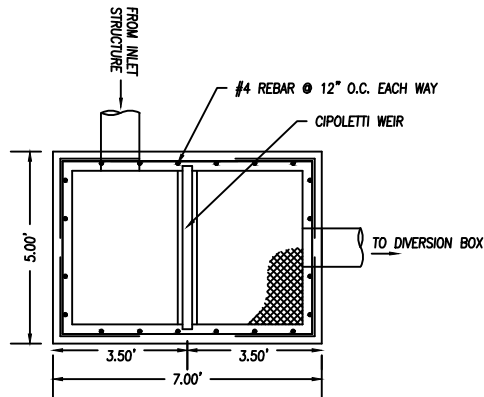
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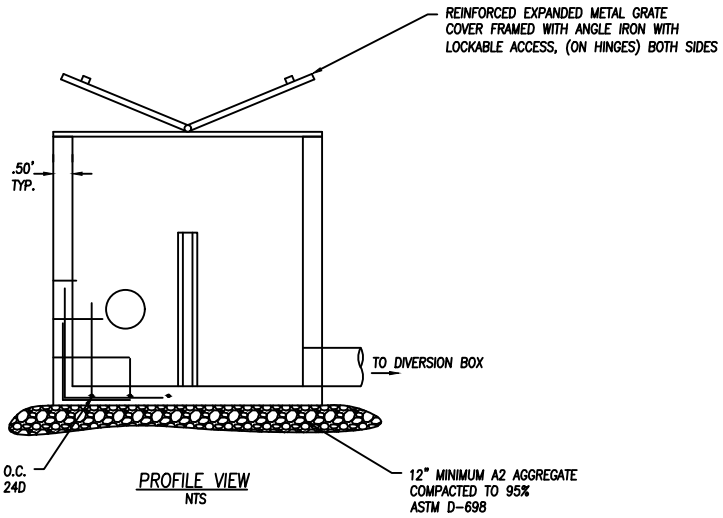
**PRESSURE IRRIGATION
SCREEN BOX**

STANDARD DRAWING NO.

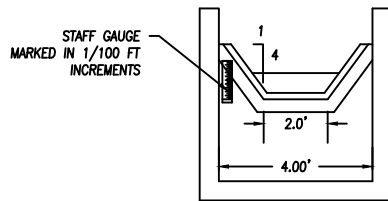
SD-908



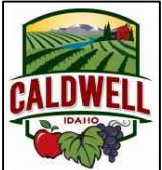
PLAN VIEW
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PROFILE VIEW
NTS



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NTS



DATE: 10/24/2022

SCALE: AS SHOWN

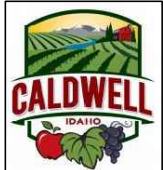
PRESSURE IRRIGATION
WEIR BOX

STANDARD DRAWING NO.

SD-908A

PUMP STATION NOTES

1. ALL CONSTRUCTION SHALL BE COMPLETED IN ACCORDANCE WITH THE 2020 ADDITION OF IDAHO STANDARDS FOR PUBLIC WORKS CONSTRUCTION (ISPCW); THE IRRIGATION DISTRICT CONTROLLING THE FACILITIES; CITY OF CALDWELL; AND ANY OTHER PLUMBING OR ELECTRICAL CODES THAT MAY BE APPLICABLE.
2. THE PUMP STATION WILL BE OWNED, OPERATED & MAINTAINED BY THE CITY OF CALDWELL UPON FINAL APPROVAL.
3. THE PUMP CONTROL PANEL SHALL BE INSTALLED IN A WF40LP HOFFMAN ENCLOSURE WITH BACK PLATE A42P24, COMPONENTS SHALL INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING FEATURES:
 - LOW/HIGH VOLTAGE PROTECTION
 - MAINLINE FAILURE WITH MANUAL RESET
 - PHASE FAILURE AND PHASE REVERSAL PROTECTION
 - MOTOR RATED CIRCUIT PROTECTION
 - LINE SIDE POWER MONITORING
 - LOW WATER/PRESSURE EMERGENCY SHUTDOWN
 - DISCONNECT SWITCH THE COMPLETED ELECTRICAL SYSTEM SHALL BE A COMPLETE AND OPERATIONAL COMPONENT OF THE PLUMBING SYSTEM. THE ELECTRICAL SYSTEM SHALL ALSO INCLUDE A 110 V, 30 AMP CONVENIENCE OUTLET AND NECESSARY TRANSFORMER, AND AN OVERHEAD LIGHT WITH SWITCH LOCATED BY DOOR.
 - ABB DRIVE CONTROLLER MOUNTED ON OUTSIDE HOFFMAN DOOR ENCLOSURE.
 - MINIMUM OF 2 WATER PROOF 4 FOOT LONG LED OVERHEAD LIGHTING
4. THIS PUMP STATION WILL BE SIZED TO ALLOW FOR FUTURE EXPANSION TO THE SYSTEM IF NEEDED. THE INITIAL PUMP STATION SUPPLIED SHALL BE FOR WATER ALLOTMENT FOR THE DEVELOPMENT (THIS INCLUDES 40 GPM FOR CLEARWATER SCREEN) AND OPERATE WITH A VFD (VARIABLE FREQUENCY DRIVE). A SMALLER TURBINE PUMP SHALL BE SIZED TO PROVIDE FLOWS BELOW THE OPERATING RANGE OF THE VFD PUMP. ALL PUMPS TO BE ON THEIR OWN VFD DRIVE. THE VFD SHALL BE AN ABB580. THE POWER SOURCE SHALL BE THREE-PHASE 277/480 VOLT. ALL PUMPS TO BE CONTROLLED BY THEIR OWN VFD DRIVE.
5. PUMP CONTRACTOR SHALL PROVIDE THE CITY OF CALDWELL AND ENGINEER AN OPERATION AND MAINTENANCE MANUAL FOR THE PUMPS, CONTROL PANEL, AND ALL PUMP STATION APPURTENANCES. THE OPERATION AND MAINTENANCE MANUAL SHALL INCLUDE SERIAL NUMBERS OF ALL PUMP STATION COMPONENTS.
6. PUMP CONTRACTOR SHALL START UP, SHUT DOWN, AND WARRANTY PUMP STATION THROUGH THE FIRST FULL IRRIGATION SEASON. START UP AND SHUT DOWN PROCEDURES SHALL ALSO BE INCLUDED IN THE OPERATIONS AND MAINTENANCE MANUAL.
7. PUMP CONTRACTOR TO PROVIDE SHOP DRAWINGS OF PUMP CONFIGURATION AND PLUMBING TO BE USED IN RECORD DRAWINGS.
8. CONTRACTOR TO PROVIDE AN ENCLOSURE OVER PUMP STATION HARDWARE AND CONTROLS. ENCLOSURE TYPE AND MATERIALS TO BE APPROVED BY CITY OF CALDWELL.
9. CONTRACTOR TO VERIFY ALL ELEVATIONS PRIOR TO CONSTRUCTION.
10. PI PUMP STATION MUST MEET IDAHO POWER STANDARDS IEEE 519 LFD HARMONICS



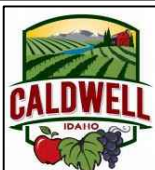
DATE: 6/2/2023

SCALE: AS SHOWN

PRESSURE IRRIGATION PUMP STATION NOTES

STANDARD DRAWING NO.

SD-909

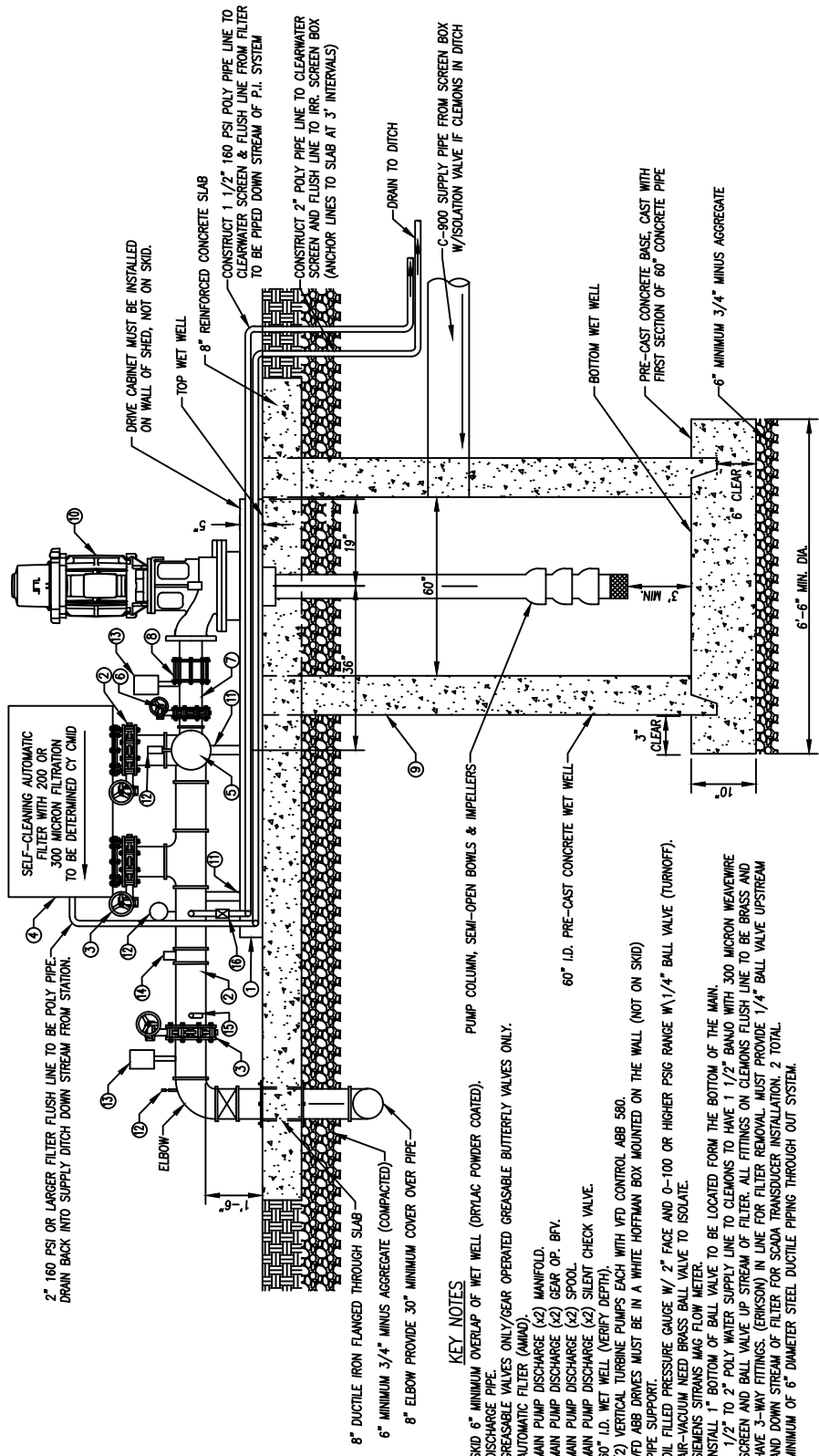


DATE: 1/3/2023
SCALE: AS SHOWN

PRESSURE IRRIGATION PUMP STATION PLAN

STANDARD DRAWING NO.
SD-909A

*ALL MANIFOLD JOINTS MUST BE FLANGE FITTINGS.
NO MECHANICAL JOINTS



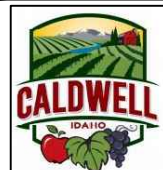
KEY NOTES

- 1 SKID 6" MINIMUM OVERLAP OF WET WELL (DRYLAC POWDER COATED).
- 2 DISCHARGE PIPE.
- 3 GREASABLE VALVES ONLY/GEAR OPERATED GREASABLE BUTTERFLY VALVES ONLY.
- 4 AUTOMATIC FILTER (AMAD).
- 5 MAIN PUMP DISCHARGE (2) MANIFOLD.
- 6 MAIN PUMP DISCHARGE (2) GEAR OP. BRY.
- 7 MAIN PUMP DISCHARGE (2) SPOOL.
- 8 MAIN PUMP DISCHARGE (2) SILENT CHECK VALVE.
- 9 60" I.D. WET WELL (VERIFY DEPTH).
- 10 VFD ABB DRIVES MUST BE IN A WHITE HOFFMAN BOX MOUNTED ON THE WALL (NOT ON SKID).
- 11 PIPE SUPPORT.
- 12 OIL FILLED PRESSURE GAUGE 1/2" FACE AND 0-100 OR HIGHER PSIG RANGE W/1/4" BALL VALVE (TURNOFF).
- 13 AIR-VACUUM NEED BRASS BALL VALVE TO ISOLATE.
- 14 SIEMENS SITRANS MAG FLOW METER.
- 15 INSTALL 1" BOTTOM OF BALL VALVE TO BE LOCATED FROM THE BOTTOM OF THE MAIN SCREEN AND BALL VALVE UP STREAM OF FILTER. ALL FITTINGS ON CLEMONS FLUSH LINE TO BE BRASS AND HAVE 3-WAY FITTINGS. (ERIKSON) IN LINE FOR FILTER REMOVAL MUST PROVIDE 1/4" BALL VALVE UPSTREAM AND DOWN STREAM OF FILTER FOR SODA TRANSDUCER INSTALLATION. 2 TOTAL.
- 16 MINIMUM OF 6" DIAMETER STEEL DUCTILE PIPING THROUGH OUT SYSTEM.

NOTES

1. ALL PUMP STATION PIPING SIZES MAY VARY DEPENDING ON IRRIGATION DISTRIBUTION SYSTEM REQUIREMENTS WITH CMD.
2. APPROVAL PUMP SUPPLIER SHALL VERIFY WET WELL DEPTH IS ADEQUATE FOR PUMP OPERATION.
3. IRRIGATION DRAIN WITH BLOW OFF (SD 903) MAY BE EXCUSED, DEPENDING ON ELEVATION, BY CMD.
4. TWO AUTOMATIC FILTERS AND SPRING LOADED NOZZLES WITH SCANNER SHIRT MAY BE REQUIRED AT THE SOLE DISCRETION OF CMD BASED ON SUBDIVISION SIZE AND DITCH WATER QUALITY.
5. ALL ELECTRICAL CONDUIT TO BE OVERHEAD TO AVOID TRIPPING HAZARD.

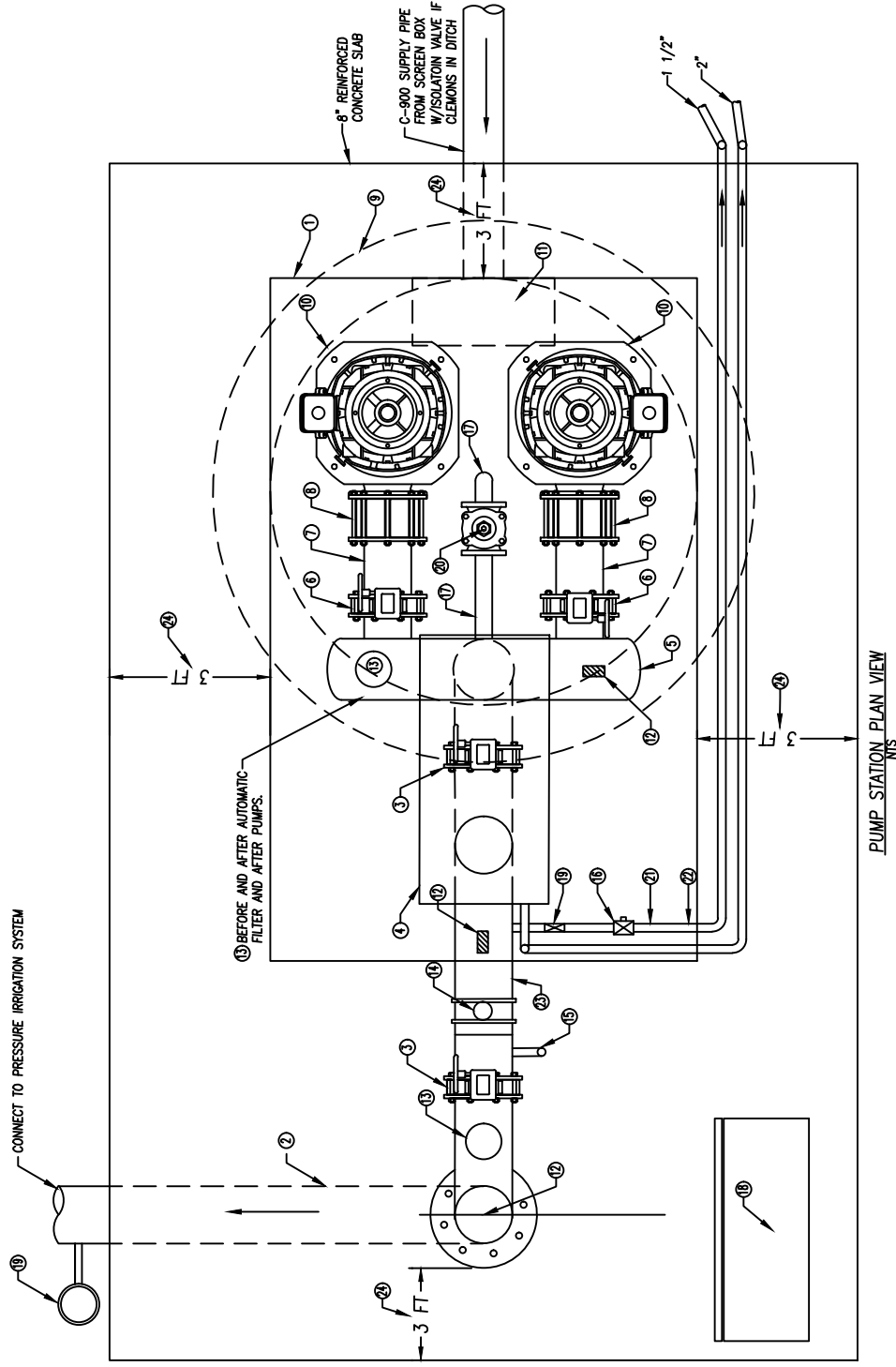
PUMP STATION PROFILE VIEW
NTS



DATE: 6/2/2023
SCALE: AS SHOWN

PRESSURE IRRIGATION PUMP STATION PLAN

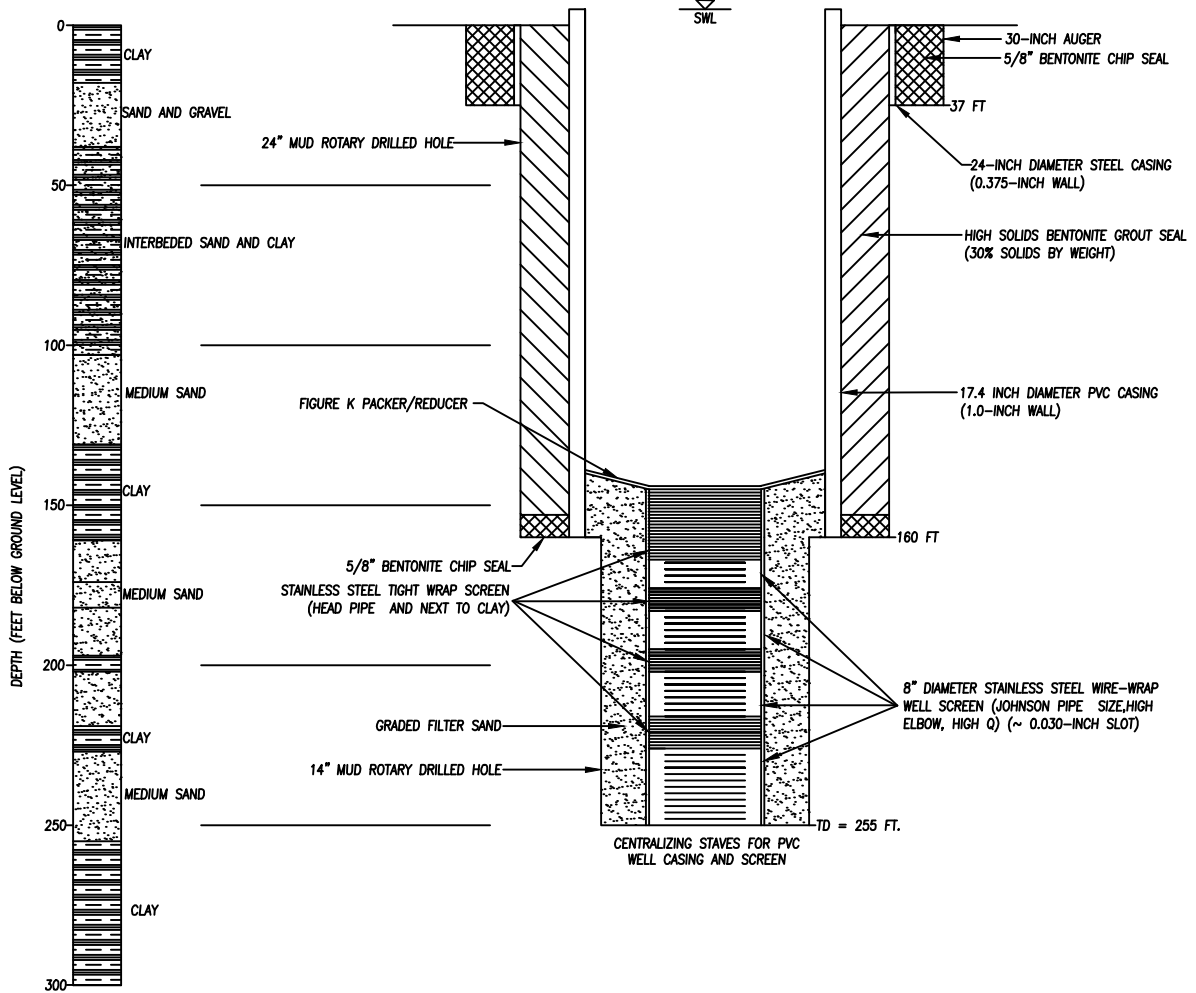
STANDARD DRAWING NO.
SD-909-B



- KEY NOTES**
- ① 6" MINIMUM OVERLAP OF WET WELL SKID (DRYLAC POWDER COATED).
 - ② DISCHARGE PIPE.
 - ③ GEAR OPERATED GREASABLE BUTTERFLY VALVES ONLY. AUTOMATIC FILTER (AMFID-FILTRATION SYSTEM) X1 OR X2.
 - ④ SAF SERIES FILTERS ONLY.
 - ⑤ MAIN PUMP DISCHARGE (X2) MANIFOLD.
 - ⑥ MAIN PUMP DISCHARGE (X2) GEAR OP. GREASABLE BFLY.
 - ⑦ MAIN PUMP DISCHARGE (X2) SPOOL.
 - ⑧ MAIN PUMP DISCHARGE (X2) SILENT CHECK VALVE.
 - ⑨ 60" WET WELL (VERIFY DEPTH).
 - ⑩ (2) VERTICAL TURBINE PUMPS WITH VFD CONTROL. ABB 580 IN HOFFMAN ENCLOSURE.
 - ⑪ ACCESS HATCH TO BE 36"x36" AND NOT TO OVERLAP CONCRETE.
 - ⑫ ALL GAUGES AND TRANSDUCERS TO BE INSTALLED W/1/4" BALL VALVE QTY 2-2" GAUGES 0-160 PSI (NOT 4" FACES).
 - ⑬ AIR-VACUUM VALVE TO BE NELSON IRRIGATION CORP ACV200 W/BRASS BALL VALVE TO BE INSTALLED UPSTREAM AND DOWNSTREAM OF AMFID FILTER AND AFTER AUTOMATIC FILTER.
 - ⑭ SIEMENS SITRANS MAG FLOW METER.
 - ⑮ INSTALL 1" BALL VALVE.
 - ⑯ 2" POLY WATER SUPPLY LINE TO CLEMONS TO HAVE 2" BANJO FILTER AND BALL VALVE UP STREAM OF FILTER. ALL FITTINGS ON FEED LINE TO BE BRASS AND HAVE 3-WAY FITTINGS. (ERIKSON) IN LINE FOR FILTER REMOVAL.
 - ⑰ ADD 2" BRASS BALL VALVE (OR SIZE TO FIT) INSTALLED UPSTREAM OF PRV FOR ISOLATION. MUST INCLUDE BRASS 3-WAY UNION UPSTREAM OF PRV. SIZE TO FIT.
 - ⑱ VFD CONTROL ABB DRIVES MUST BE IN A WHITE HOFFMAN WEATHER FLOW ENCLOSURE AND MUST BE MOUNTED TO THE NORTH OR EAST SIDE OF THE BUILDING AND NOT TO THE SKID.
 - ⑲ 1-1/2" - 2" BALL VALVE.
 - ⑳ BERARD OR DOROT MODEL 44 PRESSURE RELIEF SUSTAINING VALVE. SIZE TO FIT PIPE W/2" BRASS BALL VALVE UPSTREAM OF PRV FOR ISOLATION.
 - ㉑ INSTALL 3-WAY UNION DOWNSTREAM OF VALVE (IN BRASS).
 - ㉒ 1-1/2" OR 2" BRASS TEE WITH PRESSURE GAUGE. MINIMUM OF 6" DIAMETER STEEL OR DUCTILE IRON THROUGHOUT PUMP HOUSE.
 - ㉓ 3" MINIMUM CLEARANCE FROM SKID TO ANY OBSTRUCTION, CABINET, PIPE, ECT. REFER TO 1201

- NOTES**
1. ALL PUMP STATION PIPING SIZES MAY VARY DEPENDING ON IRRIGATION DISTRIBUTION SYSTEM REQUIREMENTS WITH CMD.
 2. APPROVAL PUMP SUPPLIER SHALL VERIFY WET WELL DEPTH IS ADEQUATE FOR PUMP OPERATION.
 3. IRRIGATION DRAIN WITH BLOW OFF (SD 903) MAY BE EXCUSED, DEPENDING ON ELEVATION, BY CMD.
 4. TWO AUTOMATIC FILTERS MAY BE REQUIRED AT THE SOLE DISCRETION OF CMD BASED ON SUBDIVISION SIZE AND DITCH WATER QUALITY.

LITHOLOGY
 RECONSTRUCTED FROM ONSITE TEST WELL
 DRILL CUTTINGS AND BOREHOLE GEOPHYSICS



PROPOSED WELL CONSTRUCTION
 NTS



DATE: 10/25/2022

SCALE: AS SHOWN

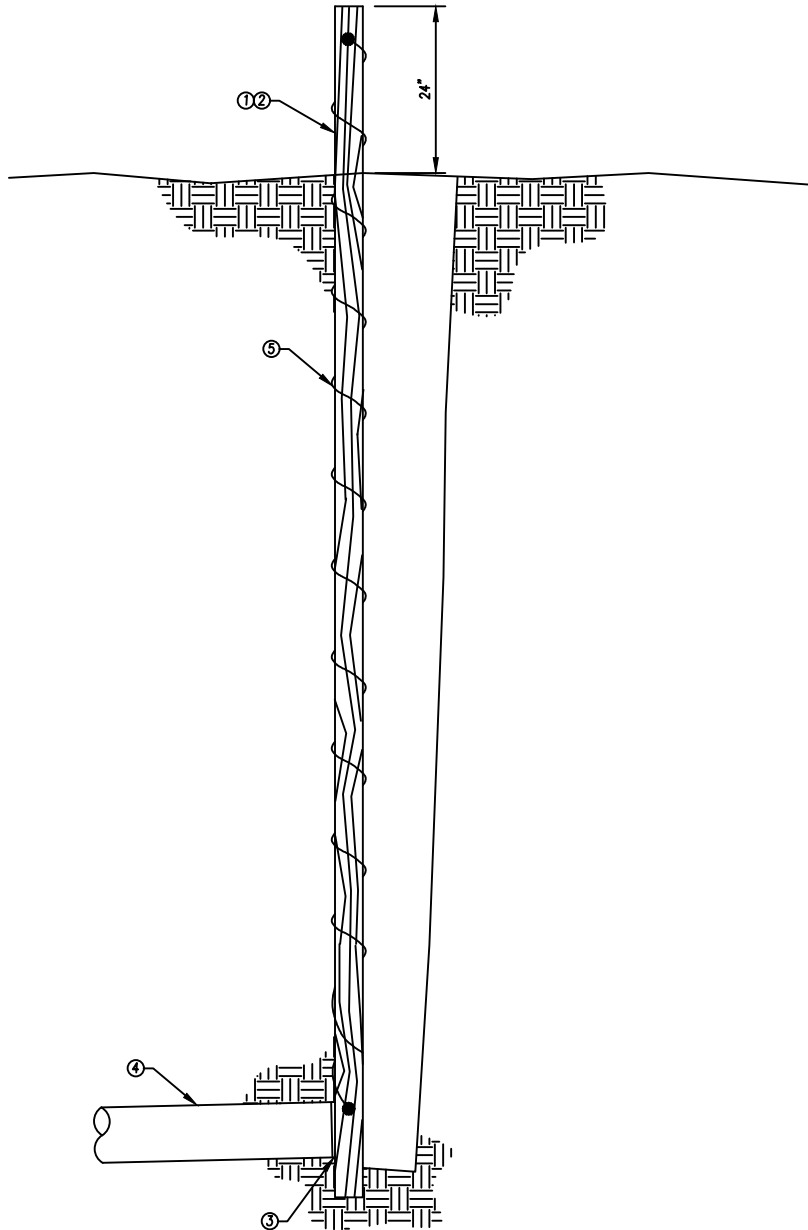
PRESSURE IRRIGATION
 SUPPLY WELL

STANDARD DRAWING NO.

SD-910

KEY NOTES:

- ① PAINT PURPLE
- ② 2" X 4" MARKER OR 4"-5" DIAMETER PEELER CORE POST
- ③ PLUG, CAP, OR VALVE
- ④ IRRIGATION MAIN OR VALVE ON PHASE LINE
- ⑤ NO. 12 AWG. GALVANIZED FINDER WIRE. (FASTEN TO BOTTOM AND TOP OF WOODEN MARKER AND WRAP AROUND ENTIRE LENGTH)



DATE: 10/25/2022

SCALE: AS SHOWN

PRESSURE IRRIGATION
STANDARD MARKER

STANDARD DRAWING NO.

SD-911



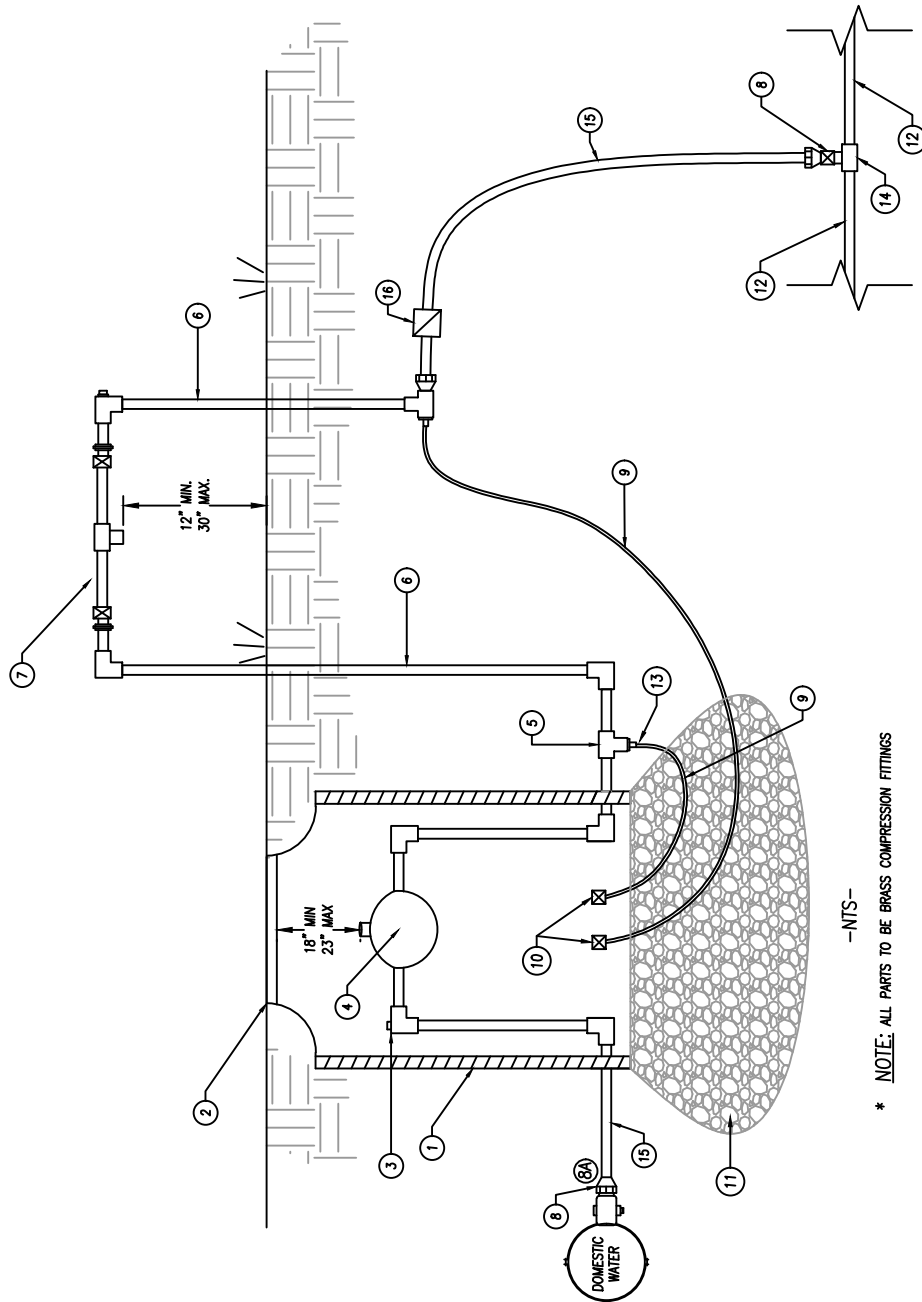
DATE: 6/5/2023

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PRESSURE IRRIGATION SHOULDER WATER

STANDARD DRAWING NO.

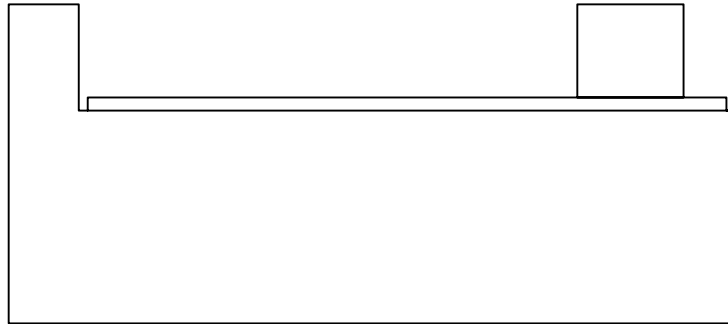
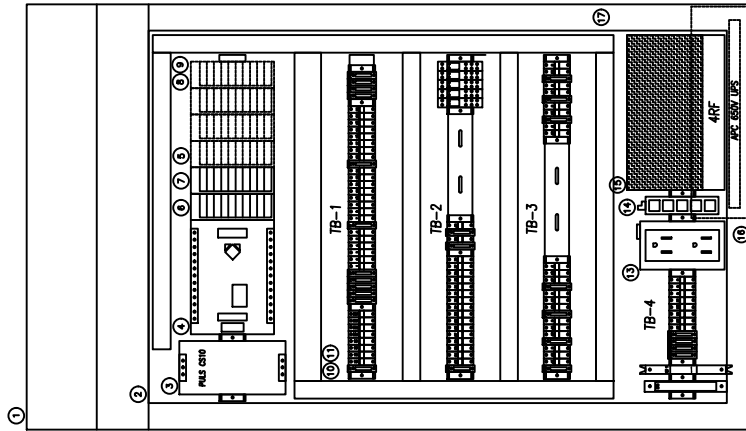
SD-912



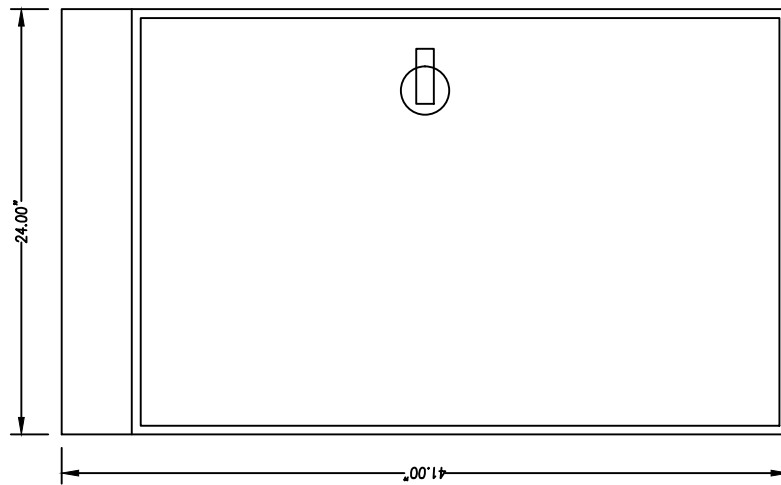
KEYNOTE LEGEND

- ① 24" X 36" RMB-IB METER BOX
- ② 24" METER LID LABELED "WATER"
- ③ 2" SETTER
- ④ SPANNER BY CMD
- ⑤ 2" X 1" BRASS TEE
- ⑥ 2" BRASS
- ⑦ RP BACKFLOW
- ⑧ 2" IP X CTS CORP
- ⑧A 2" PEP BY MIP ADAPTER W/ SS STIFFENER
- ⑨ 1" COPPER
- ⑩ 1" IP CURB DRAIN
- ⑪ 18" DRAIN ROCK
- ⑫ CMD OR PRIVATE PRESSURE IRRIGATION LINE
- ⑬ MIP CTS ADAPTER
- ⑭ TAPPED OFF CMD IRRIGATION LINE ON THE SIDE OF THE MAIN OR AT A 45° ANGLE.
- ⑮ 2" SDR7 POLY IPS
- ⑯ 2" BRASS IP BALL CURB STOP. SET VALVE BOX TO FINISHED GRADE.

—NTS—
* NOTE: ALL PARTS TO BE BRASS COMPRESSION FITTINGS



NOT TO SCALE



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DATE: 10/25/2022

SCALE: AS SHOWN

CoC CMI SCADA SPECIFICATIONS

STANDARD DRAWING NO.

SD-913

DESCRIPTION OF MATERIALS

ITEM	QTY	CATALOG	DESCRIPTION	MFG
1	1	WF40LP	HOFFAMAN WEATHERFLOW CABINET 47"X24"X14"	HOFFMAN
2	1	A42P24	HOFFMAN BACK PLAT 39"X21"	HOFFMAN
3	1	CS10.241	24VDC POWER SUPPLY	PULS
4	1	1766-L3BXB	MICROLOGIX 1400 24VDC PLC	AB
5	0	FUTURE EXPANSION	ROOM FOR FUTURE EXPANSION CARD AS REQUIRED	AB
6	1	1762-IF4	4 CHANNEL INPUT CARD	AB
7	1	1762-OF4	4 CHANNEL ANALOG OUTPUT CARD	AB
8	2	F1X2WH6	WIRING DUCT, NARROW SLOT 1"X2"X6', WHITE	PANDUIT
9	2	C1WH6	WIRING DUCT COVER 1"X6', WHITE	PANDUIT
10	1	F1.5WH6	WIRING DUCT, NARROW SLOT 1"X2"X6', WHITE	PANDUIT
11	1	C1.5WH6	WIRING DUCT COVER 1.5"X6', WHITE	PANDUIT
12	2	210-112	STEEL CARRIER RAIL, 35X7.5MM (DIN RAIL)	WAGO
13	1	1492-REC15G	DIN RAIL MOUNTGFCI	AB
14	1	124084000	WEIDMULLER, 1240840000, IE-SW-BL05-5TX, NETWORK SWITCH, UNMANAGED, FAST ETHERNET, 5X RJ45 PORTS	WIEDMULLER
15	1	APRISA SR+	SERIAL COMMUNICATION RADIO UHF 928-960 MHZ RADIO	4RF
16	1	BE650G1	BACK-UP UPS 650VA & SURGE PROTECTOR	APC
17	1	TSX-NFF	698MHZ-2/GHZ IN-LINE EMP SURGE FILTER	POLYPHASER
18	24	1SNK 900 001 R0000	ENTRELEC 1SNK 900 001 R0000 TERMINAL END BLOCK, 9.9MM, TYPE: BAM4, GRAY	ENT
19	27	011565725	TERMINAL BLOCK, FUSE HOLDER, GREY, TYPE M4/8.SF, 8MM	ENT
20	2	217010P	217010P 10A, 250V, 217 SERIES, FAST-ACTING FUSE	LITTLEFUSE
21	5	235005P	235005P 5A, 250V, 235 SERIES, FAST-ACTING FUSE	LITTLEFUSE
22	5	235004P	235004P 4A, 125V, 235 SERIES, FAST-ACTING FUSE	2LITTLEFUES
23	5	235002P	235002P 2A, 250V, 235 SERIES, FAST-ACTING FUSE	LITTLEFUSE
24	10	235001P	235001P 1A, 250V, 235 SERIES, FAST-ACTING FUSE	LITTLEFUSE
25	15	23500P	23500P5A, 250V, 235 SERIES, FAST-ACTING FUSE	LITTLEFUSE
26	64	0115 116.07	TERMINAL BLOCK, FEED THROUGH, M 4/6, 6MM, SCREW CLAMP	ENT
27	11	0165-113.16	TERMINAL BLOCK, GROUND, 6MM, TYP 4/6P, GREEN/YELLOW	ENT
28	5	016897307	TERMINAL BLOCK, JUMPER BAR, 10P, 6MM SPACING, TYPE BJM6	ENT
29	5	0173 523.11	TERMINAL BLOCK, JUMPER BAR, COMB-TYPE, 10P,35A, TYPEPC81	ENT
30	1	023300001	TERMINAL BLOCK, MARKER CARDS, BLANK, SIDE MOUNT, 6MM	ENT
31	5	1SVR 405 650 R0000	1SVR 405 650 R0000 RELAY, SOCKET, 8 PIN, CR-P SERIES	ABB
32	1	1SRV 405 601 R2000	1SRV 405 601 R2000 RELAY, PLUG-IN, 8A, SPDT, 250VAC RATED, 120VAC	ABB
33	1	1SRV 405 654 R0100	PLUGGABLE MODULE CR-P/M 92C	ABB
34	4	1SVR 405 601 R1000	1SVR 405 601 R1000 INTERFACE RELAY, PLUG-IN, 8A, SPDT, 250VAC RATED, 24VDC	ABB
35	4	1SVR 405 654 R4000	1SVR 405 654 R4000 PLUGGABLE MODULE CR-P/M 62E	ABB
36	1	BSPMA1240S2GR	SPD SURGE PROTECTION DEVICE	EATON
37	1	1489-M1C200	20A DINRAIL MOUNT CIRCUIT BREAKER	AB
38	5	1SVR 405 658 R0000	CR-PM MARKER FOR CR SOCKET	ABB
39	2	WIKA A-10	0-100 PSI 4-20MA TRANSDUCERS	



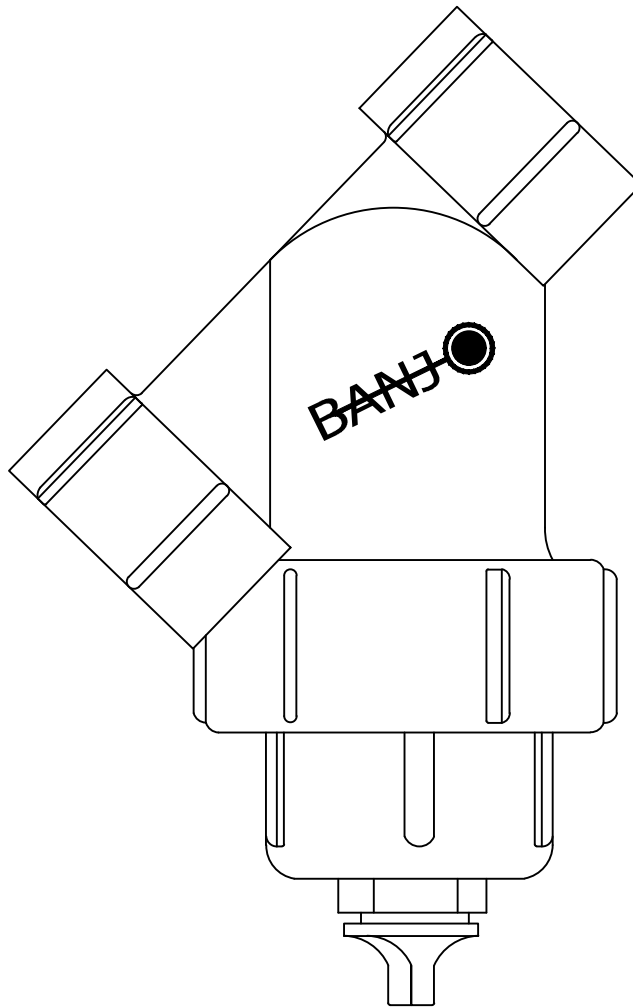
DATE: 10/25/2022

SCALE: AS SHOWN

COC CMI SCADA
SPECIFICATIONS

STANDARD DRAWING NO.

SD-913-A



PART# LS 100-40

DESCRIPTION: 1"X1" Y STRAINER WITH 40 MESH STAINLESS STEEL SCREEN

FAMILY: LINE STRAINERS **STYLE:** POLY RIBBED WITH STAINLESS STEEL SCREEN

SIZE: 1" **TYPE:** Y STRAINER

PART# LS 200-30

DESCRIPTION: 2"X2" Y STRAINER WITH 30 MESH POLY RIBBED STAINLESS STEEL SCREEN

FAMILY: LINE STRAINERS **STYLE:** POLY RIBBED WITH STAINLESS STEEL SCREEN

SIZE: 2" **TYPE:** Y STRAINER



DATE: 1/4/2023

SCALE: AS SHOWN

BANJO STRAINER
Y TYPE STRAINER

STANDARD DRAWING NO.

SD-1501



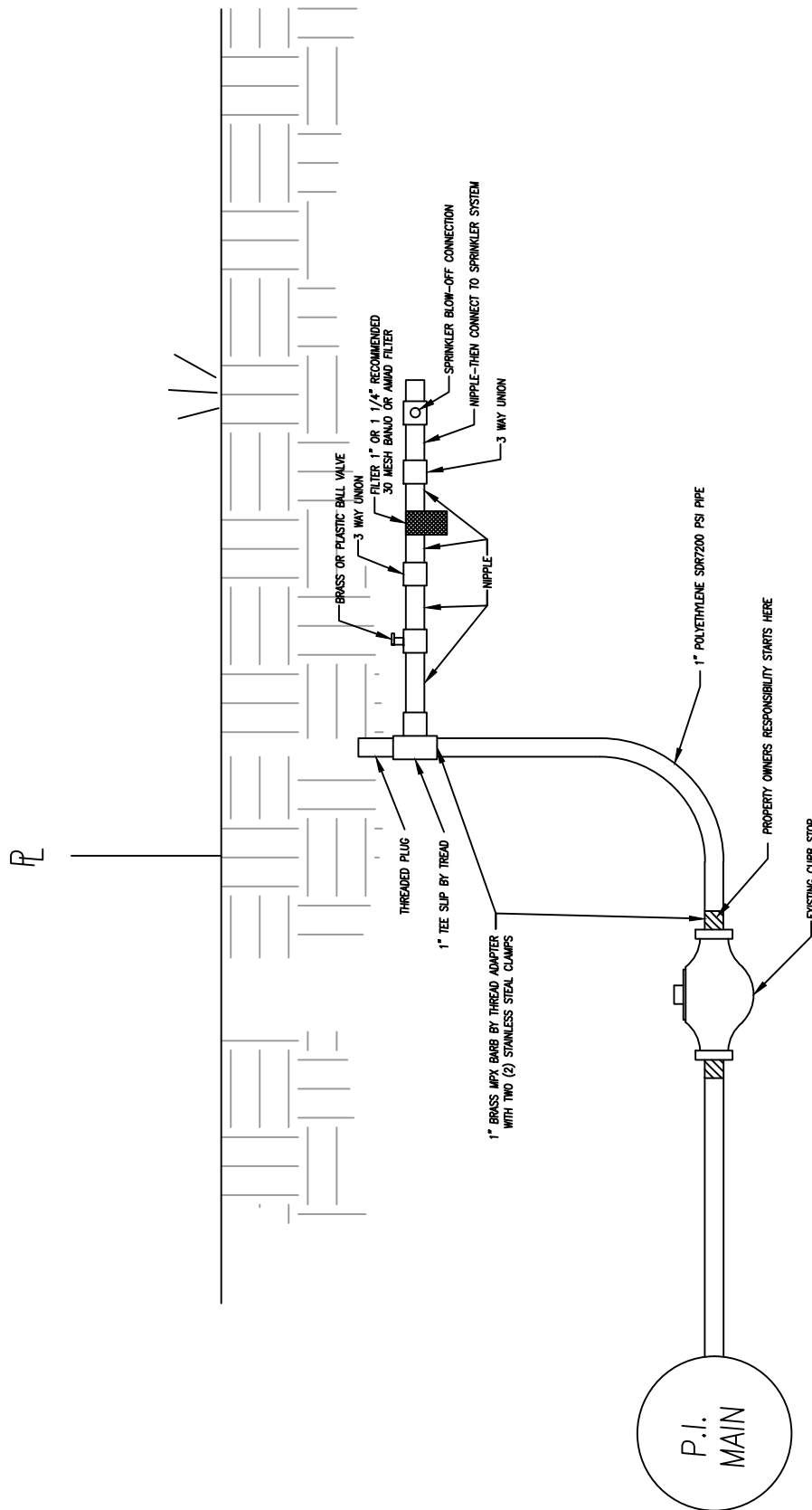
DATE: 10/25/2022

SCALE: AS SHOWN

TYPICAL PRESSURE IRRIGATION LAYOUT

STANDARD DRAWING NO.

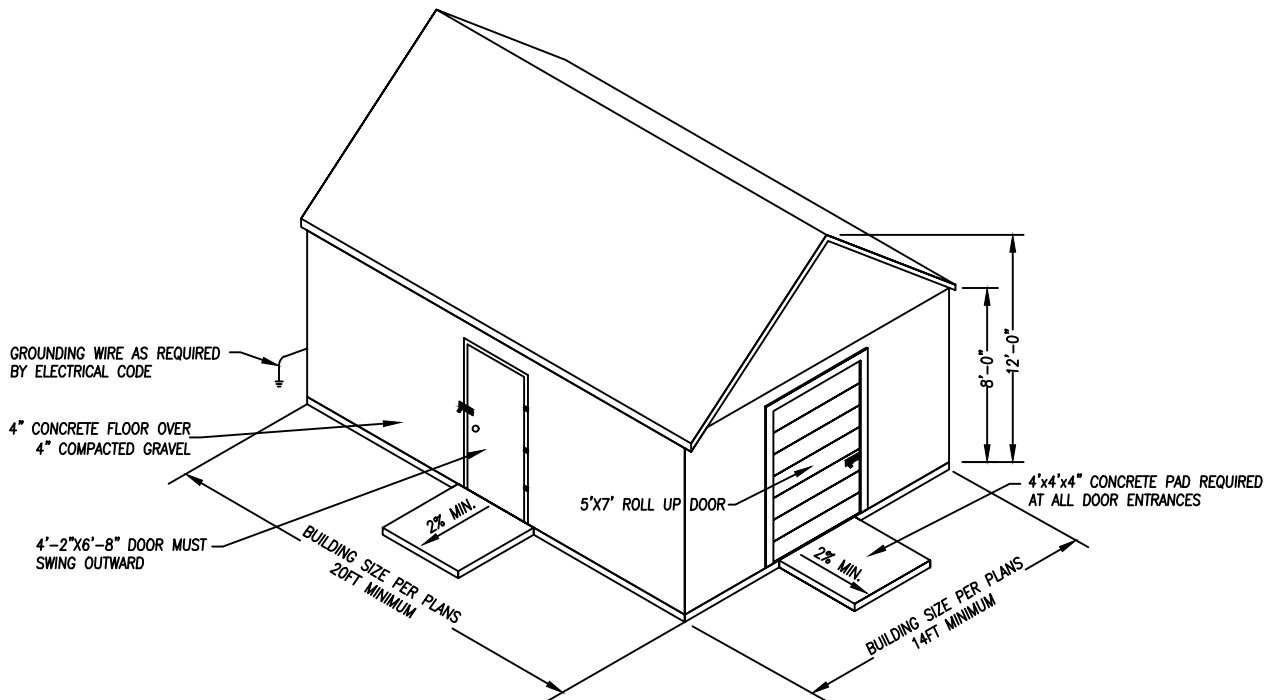
SD-1502



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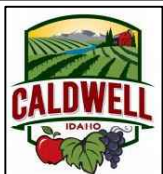
NOTES:

1. VFD ENCLOSURE: HOFFMAN WHITE WF40LP HOFFMAN ENCLOSURE/W BACK PLATE WF40LP VFD ENCLOSURE WITH COOLING FAN AND FILTERS INSTALLED ON NORTH OR EAST SIDE OF BUILDING WITH KEY PAD MOUNTED ON HOFFMAN DOOR.
2. DOOR IS TO HAVE DEAD BOLT. KEYED TO CMID ACCESS.
3. PIPING TO HAVE 3'0" MIN. CLEARANCE TO ALL INSIDE WALLS WITHOUT OBSTRUCTIONS I.E. CABINETS, PIPING, ECT. FOR WORK ACCESS.
4. 4" CONCRETE FLOOR OVER 4" COMPACTED GRAVEL. EXPANSION JOINT MATERIAL REQUIRED AROUND ALL CASINGS AND PIPING THROUGH THE FLOOR.
5. ALL SURFACES TO BE PRIMERED AND PAINTED. COLOR TO BE APPROVED BY CMID.
6. 14'X20' STOREMORE SHED BUILDING OR EQUIVALENT. IF PREFAB SHED BUILDING NOT TO BE USED, BUILDING DRAWINGS MUST BE APPROVED BY CMID.
7. THIS ENCLOSURE IS PROVIDED FOR ILLUSTRATION PURPOSES ONLY. OTHER ENCLOSURE DESIGNS MAY BE SUBMITTED, CONSIDERED BY CMID, AND APPROVED AS APPROPRIATE.
8. LIGHTS AND ELECTRICAL OUTLET REQUIRED.
9. ALL ELECTRICAL CONDUITS TO BE OVERHEAD TO AVOID TRIPPING HAZARDS
10. MUST HAVE 6" STEM WALL FOR BUILDING TO SIT ON.
11. 10FT ASPHALT PAD AROUND BUILDING PER CMID SPECIFICATION 1402.02.2



IRRIGATION STATION ENCLOSURE (WOOD BUILDING)

NTS



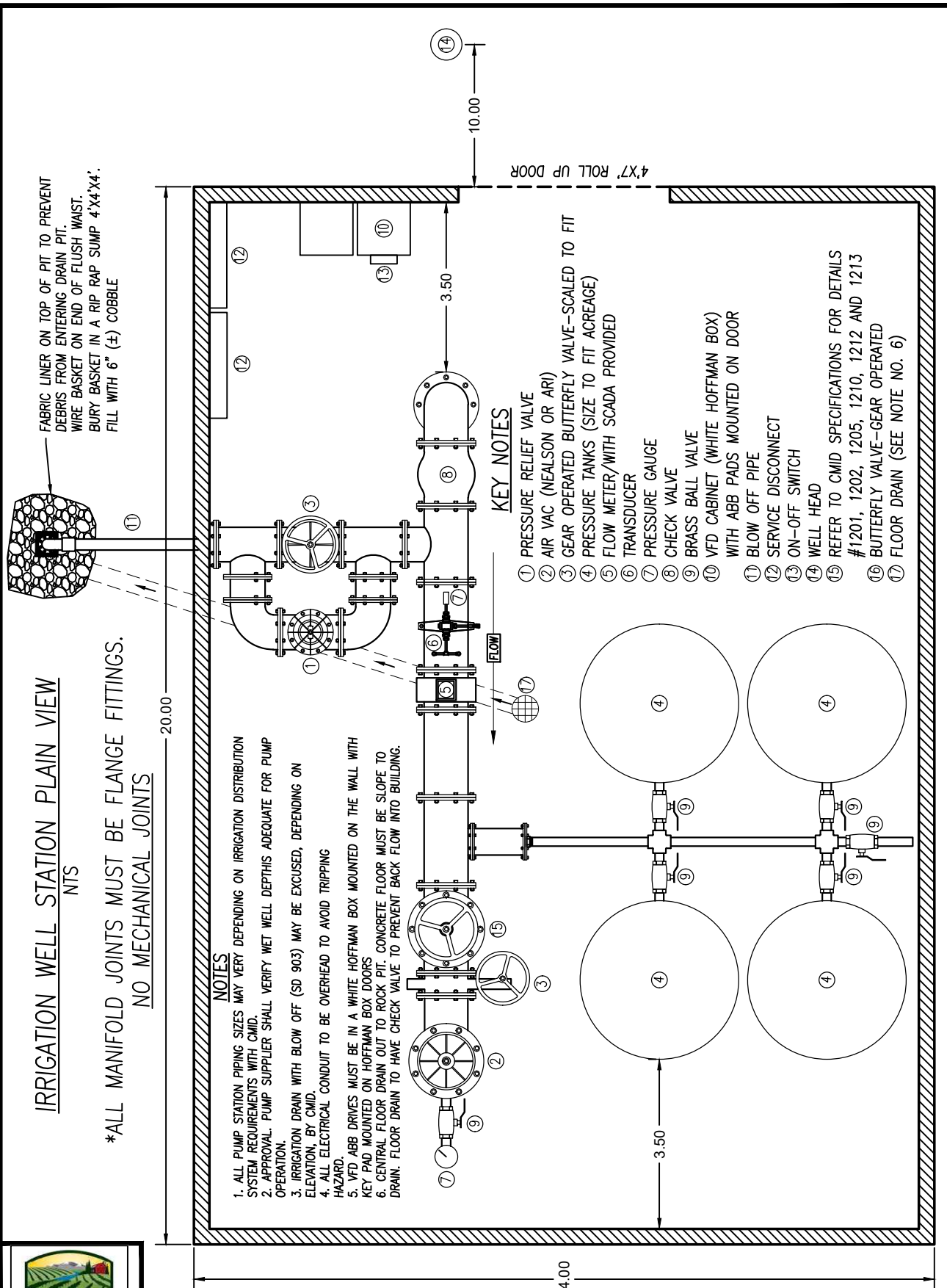
DATE: 3/2/2023

SCALE: AS SHOWN

IRRIGATION WELL
STATION ENCLOSURE

STANDARD DRAWING NO.

SD-1503

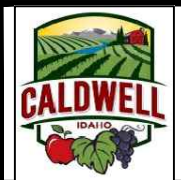


IRRIGATION WELL STATION PLAN VIEW
NTS

*ALL MANIFOLD JOINTS MUST BE FLANGE FITTINGS.
NO MECHANICAL JOINTS

- NOTES**
1. ALL PUMP STATION PIPING SIZES MAY VARY DEPENDING ON IRRIGATION DISTRIBUTION SYSTEM REQUIREMENTS WITH CMID.
 2. APPROVAL PUMP SUPPLIER SHALL VERIFY WET WELL DEPTHS ADEQUATE FOR PUMP OPERATION.
 3. IRRIGATION DRAIN WITH BLOW OFF (SD 903) MAY BE EXCLUDED, DEPENDING ON ELEVATION, BY CMID.
 4. ALL ELECTRICAL CONDUIT TO BE OVERHEAD TO AVOID TRIPPING HAZARD.
 5. VFD ABB DRIVES MUST BE IN A WHITE HOFFMAN BOX MOUNTED ON THE WALL WITH KEY PAD MOUNTED ON HOFFMAN BOX DOORS
 6. CENTRAL FLOOR DRAIN OUT TO ROCK PIT. CONCRETE FLOOR MUST BE SLOPE TO DRAIN. FLOOR DRAIN TO HAVE CHECK VALVE TO PREVENT BACK FLOW INTO BUILDING.

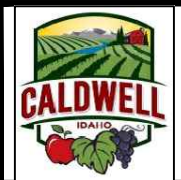
- KEY NOTES**
- 1 PRESSURE RELIEF VALVE
 - 2 AIR VAC (NEALSON OR ARI)
 - 3 GEAR OPERATED BUTTERFLY VALVE--SCALED TO FIT
 - 4 PRESSURE TANKS (SIZE TO FIT ACREAGE)
 - 5 FLOW METER/WITH SCADA PROVIDED
 - 6 TRANSDUCER
 - 7 PRESSURE GAUGE
 - 8 CHECK VALVE
 - 9 BRASS BALL VALVE
 - 10 VFD CABINET (WHITE HOFFMAN BOX) WITH ABB PADS MOUNTED ON DOOR
 - 11 BLOW OFF PIPE
 - 12 SERVICE DISCONNECT
 - 13 ON-OFF SWITCH
 - 14 WELL HEAD
 - 15 REFER TO CMID SPECIFICATIONS FOR DETAILS #1201, 1202, 1205, 1210, 1212 AND 1213
 - 16 BUTTERFLY VALVE--GEAR OPERATED
 - 17 FLOOR DRAIN (SEE NOTE NO. 6)



DATE: 6/2/2023
SCALE: AS SHOWN

IRRIGATION WELL STATION PLAN

STANDARD DRAWING NO.
SD-1504-A

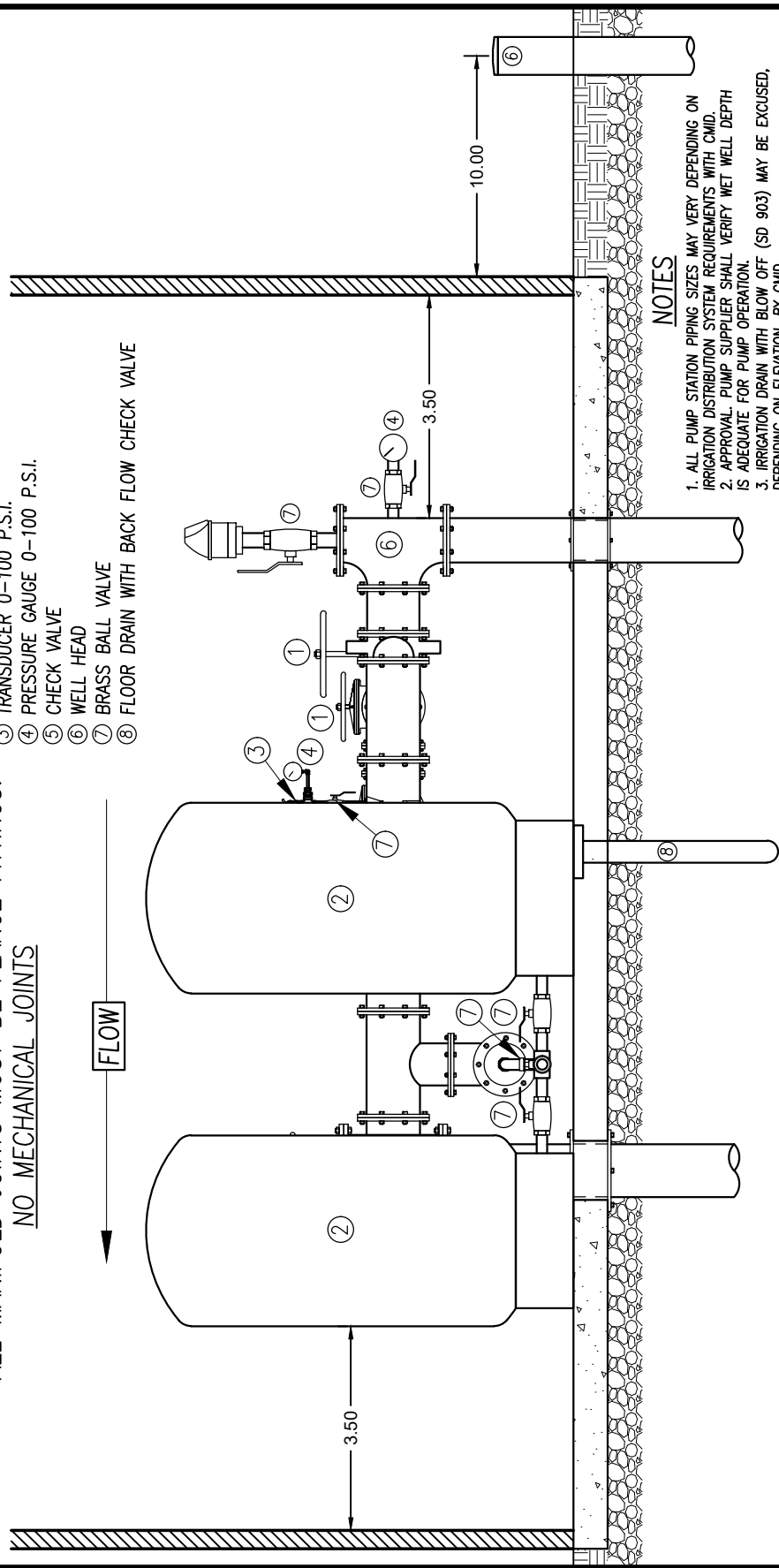


IRRIGATION WELL STATION PROFILE VIEW

NTS

*ALL MANIFOLD JOINTS MUST BE FLANGE FITTINGS.
NO MECHANICAL JOINTS

- KEY NOTES**
- ① GEAR OPERATED BUTTERFLY VALVE-SIZED TO FIT
 - ② PRESSURE TANKS (SIZE TO FIT ACREAGE)
 - ③ TRANSDUCER 0-100 P.S.I.
 - ④ PRESSURE GAUGE 0-100 P.S.I.
 - ⑤ CHECK VALVE
 - ⑥ WELL HEAD
 - ⑦ BRASS BALL VALVE
 - ⑧ FLOOR DRAIN WITH BACK FLOW CHECK VALVE



NOTES

- 1. ALL PUMP STATION PIPING SIZES MAY VARY DEPENDING ON IRRIGATION DISTRIBUTION SYSTEM REQUIREMENTS WITH C.M.I.D.
- 2. APPROVAL PUMP SUPPLIER SHALL VERIFY WET WELL DEPTH IS ADEQUATE FOR PUMP OPERATION.
- 3. IRRIGATION DRAIN WITH BLOW OFF (SD 903) MAY BE EXCUSED, DEPENDING ON ELEVATION, BY C.M.I.D.
- 4. ALL ELECTRICAL CONDUIT TO BE OVERHEAD TO AVOID TRIPPING HAZARD.
- 5. VFD ABB DRIVES MUST BE IN A WHITE HOFFMAN BOX MOUNTED ON THE WALL.
- 6. CONCRETE SLAB MUST BE SLOPED TO A CENTRAL FLOOR DRAIN

DATE: 6/2/2023
SCALE: AS SHOWN

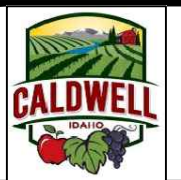
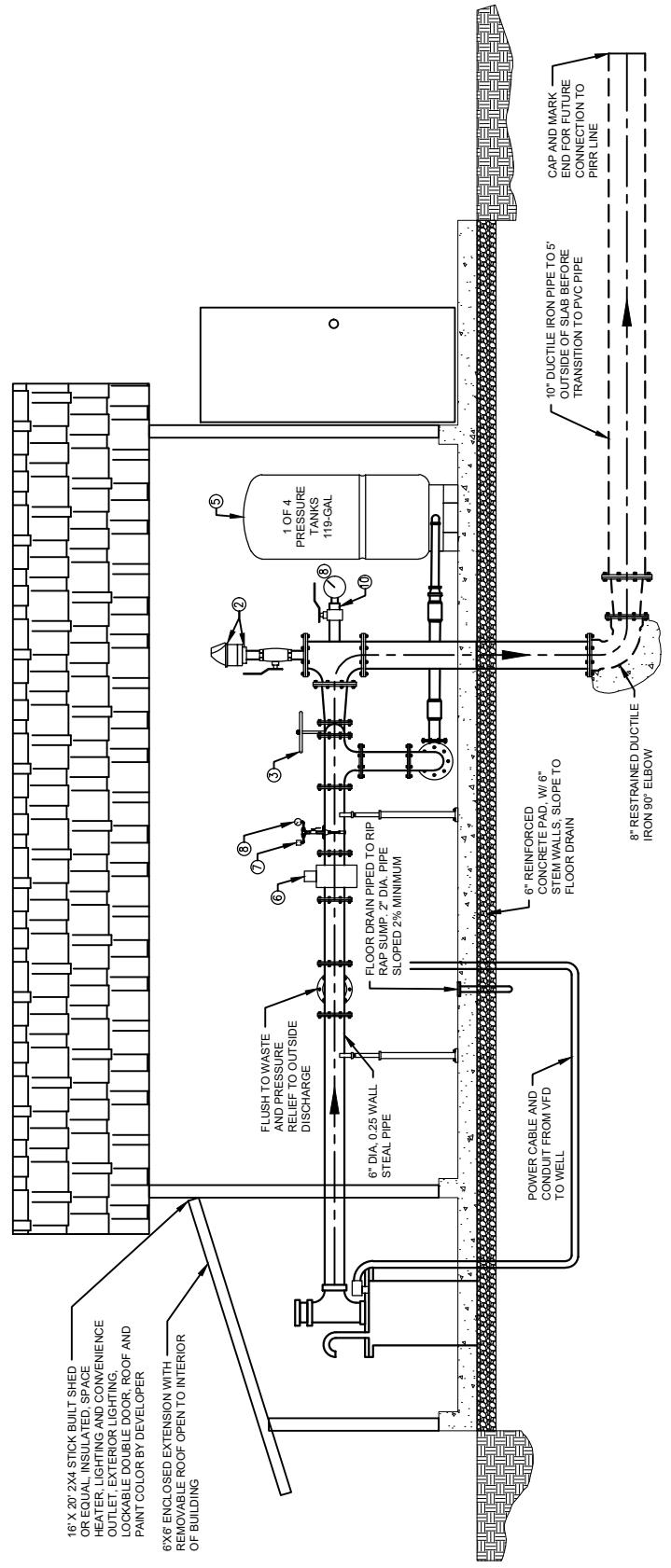
IRRIGATION WELL STATION PLAN

STANDARD DRAWING NO.
SD-1504-B

EQUIPMENT SCHEDULE

ITEM NO.	DESCRIPTION	SIZE	QTY.
1	4" PRESSURE SUSTAINING VALVE, NETAFM OR EQUAL	4"	1
2	AIR RELEASE VALVE, NELSON ACV200 W/ 2" BRASS BALL VALVE FOR ISOLATION	2"	1
3	6" BUTTERFLY VALVE, GEAR OPERATED, ENBEE OR EQUAL	6"	1
4	4" BUTTERFLY VALVE, GEAR OPERATED, ENBEE OR EQUAL	4"	1
5	119 GALLON TANK W/ 2" GDP AND BRASS VALVES	119 GAL	4
6	6" ELECTROMAGNETIC METER, SIEMENS SITRANS 5100 W OR EQUAL	6"	1
7	TRANSFORMER TO BE WIKA BRAND, 0-100 PSIG, 4-20 MA, 630V PH 50/2475		1
8	MECHANICAL PRESSURE GAGE, OIL FILLED, 0-160 PSF WITH ISOLATION VALVE AND COMMON SADDLE WITH PRESSURE TRANSDUCER		1
9	2" THREADED BRASS BALL VALVE ON SADDLE FOR DRAIN AND HOSE CONNECTION	2"	1
10	2" WELDED NIPPLE AND 2" BRASS BALL VALVE	2"	1
11	6X8 REDUCING FLANGE		1
12	HOFFMAN MOUNTED, NEMA 3 R ENCLOSURE		1
13	ON OFF SWITCH		1
14	SERVICE DISCONNECT		1
15	ALL PUMP STATION PIPING SIZE MAY VARY DEPENDING ON MANUFACTURER'S DISTRIBUTION SYSTEM REQUIREMENTS WITH C.M.D.		

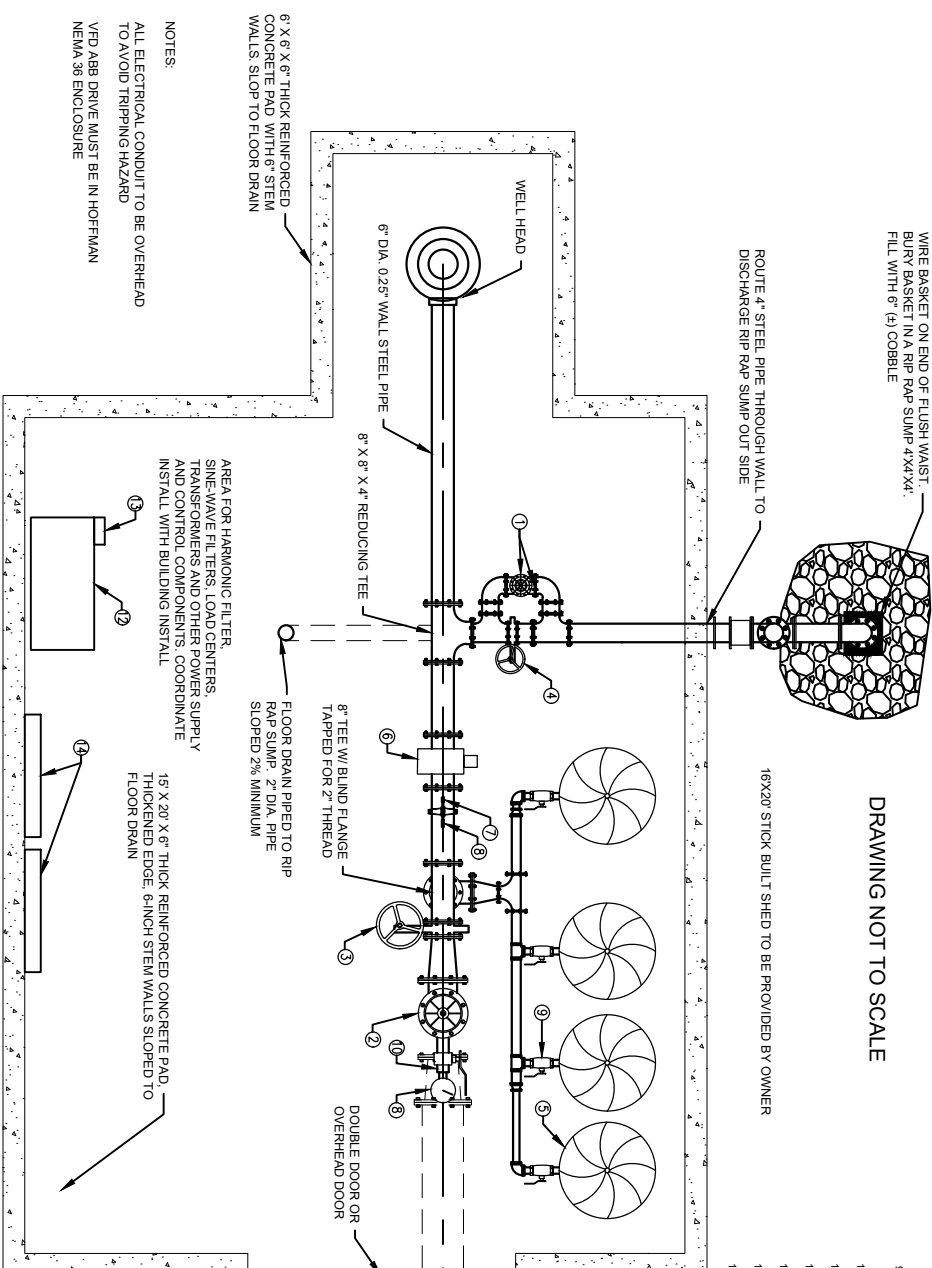
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DATE: 6/2/2023
SCALE: AS SHOWN

IRRIGATION WELL HOUSE MECHANICAL PROFILE

STANDARD DRAWING NO.
SD-1504-C



DRAWING NOT TO SCALE

ROUTE 4" STEEL PIPE THROUGH WALL TO DISCHARGE RIP RAP SUMP OUT SIDE

16X20 STICK BUILT SHED TO BE PROVIDED BY OWNER

6" X 6" X 6" THICK REINFORCED CONCRETE PAD WITH 6" STEM WALLS SLOP TO FLOOR DRAIN

NOTES:
ALL ELECTRICAL CONDUIT TO BE OVERHEAD TO AVOID TRIPPING HAZARD
VFD ABB DRIVE MUST BE IN HOFFMAN NEMA 36 ENCLOSURE

AREA FOR HARMONIC FILTER, SHUNTS, FILTERS, LOAD CHUTTERS, FAN CONTROLS, VFD, AND OTHER SUPPLY AND CONTROL COMPONENTS. COORDINATE INSTALL WITH BUILDING INSTALL.

15' X 20' X 6" THICK REINFORCED CONCRETE PAD THICKENED EDGE 6 INCH STEM WALLS SLOPED TO FLOOR DRAIN

EQUIPMENT SCHEDULE	ITEM NO.	DESCRIPTION	SIZE	QTY.
	1	4" PRESSURE SUSTAINING VALVE, NETAHM OR EQUAL	4"	1
	2	AIR RELEASE VALVE, NELSON AC200 W/ 2" BRASS BALL VALVE FOR ISOLATION	2"	1
	3	6" BUTTERFLY VALVE, GEAR OPERATED, ENBE OR EQUAL	6"	1
	4	4" BUTTERFLY VALVE, GEAR OPERATED, ENBE OR EQUAL	4"	1
	5	119 BLADDER TANK W/ 2" GDP AND BRASS VALVES	119 GAL	4
	6	6" ELECTROMAGNETIC METER, SIEMENS SITRANS 5100 W OR EQUAL	6"	1
	7	TRANSDUCER TO BE WIKA BRAND, 0-100 PSIG, 4-20 MA, 8-30V P# 809727/5		1
	8	MECHANICAL PRESSURE GAGE, OIL FILLED, 0-160 PSI WITH ISOLATION VALVE AND COMMON SADDLE WITH PRESSURE TRANSDUCER		1
	9	2" TAPPED BRASS BALL VALVE ON SADDLE FOR DRAIN AND HOSE CONNECTION	2"	1
	10	2" WELDED NIPPLE AND 2" BRASS BALL VALVE	2"	1
	11	6X8 REDUCING FLANGE		1
	12	HOFFMAN MOUNTED, NEMA 3R ENCLOSURE		1
	13	ON/OFF SWITCH		1
	14	SERVICE DISCONNECT		1
	15	ALL PUMP STATION PIPING SIZE MAY VARY DEPENDING IRRIGATION DISTRIBUTION SYSTEM REQUIREMENTS WITH CADD.		1

10" DUCTILE IRON PIPE 5' FROM EDGE OF SLAB

DOUBLE DOOR OR OVERHEAD DOOR

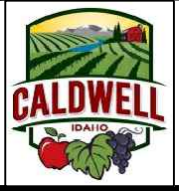
8" TEE W/ BLIND FLANGE TAPPED FOR 2" THREAD

FLOOR DRAIN PIPED TO RIP RAP SUMP, 2" DIA. PIPE SLOPED 2% MINIMUM

8" X 8" X 4" REDUCING TEE

6" DIA. 0.25" WALL STEEL PIPE

WELL HEAD



DATE: 5/23/2023
SCALE: AS SHOWN

IRRIGATION WELL HOUSE MECHANICAL PLAN

STANDARD DRAWING NO.
SD-1504-D