

CONTRACT AND BOND DOCUMENTS

**PUBLIC WORKS DEPARTMENT
CITY OF WOODBURN, OREGON**



**NEW PRODUCTION WELL FOR THE PARR ROAD TREATMENT
PLANT PROJECT**

BID NUMBER:	2022-09
PROJECT NUMBER:	2018-011-28
BID OPENING DATE:	June 8, 2022
BID OPENING TIME:	2:00 PM
SUBSTANTIALLY COMPLETION DATE:	360 Days After NTP
COMPLETION DATE	390 Days After NTP

**CONTRACT AND BONDS
FOR**

**NEW PRODUCTION WELL FOR THE PARR ROAD TREATMENT
PLANT PROJECT**

**PROJECT No. 2022-011-28
BID NO. 2022-09**

**CITY OF WOODBURN
PUBLIC WORKS DEPARTMENT
WOODBURN, OREGON**

ERIC SWENSON	MAYOR
DEBBIE CABRALES	COUNCIL WARD 1
ALI SWANSON	COUNCIL WARD 2
ROBERT CARNEY	COUNCIL WARD 3
SHARON SCHAUB	COUNCIL WARD 4
MARY BETH CORNWELL	COUNCIL WARD 5
BEN PUENTE JR.	COUNCIL WARD 6

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BID No. 2022-09

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TECHNICAL SPECIFICATIONS

See Technical Specifications Table of Contents

DRAWINGS

See Sheet G-1 for Drawing Index

SUPPLEMENTARY INFORMATION

- Well Log, Well ID Label #138849.
- "Geotechnical Engineering Report, Parr Road WTP – Wellhouse for New Production Well," McMillen Jacobs Associates, November 2021.

END OF SECTION

FRONT END SPECIFICATIONS

SECTION 02
INVITATION TO BID
BID No. 2022-09

Sealed bids for the construction of **“Parr Road Municipal Water Supply Well”** will be received by the City of Woodburn, OR at City Hall Annex, 190 Garfield St. until **2:00 PM, Wednesday, June 8, 2022** and will thereafter be publicly opened and read.

Proposals shall be addressed to the Public Works Director, City of Woodburn, and 190 Garfield St., Woodburn, OR 97071. Bids shall be submitted in a plain sealed envelope bearing the Bidder's name, the name of the project and the date and time of the Bid opening, and shall be marked **“Bid No. 2022-09”** and bidders shall indicate on the Form of Proposal that **“Bidder will comply with the provisions of Chapter 279C.800 through 279C.870, Oregon Revised Statutes”**.

The major items of work are estimated (approximate) quantities as follows:

1. 432 SF CMU well house and associated civil site work.
2. 125 HP vertical turbine well pump
3. 1,814 LF or 10-inch diameter ductile iron raw water line.
4. 948 LF of 12-inch diameter ductile iron distribution main.
5. 1,220 LF of 4-inch diameter ductile iron stormwater force main.
6. 595 tons of new asphalt paving.
7. Stormwater and pump-to-waste pond and pump station.
8. Landscaping.
9. All other items of work listed in the Bid Form and shown and specified in the Contract Documents.

Plans and specifications may be examined at the City Engineer's Office, City Hall Woodburn, OR on or after **Wednesday, June 8, 2022.** Copies of the Bid Documents may be obtained from the City Engineer's Office upon deposit of a non-refundable fee of fifty dollars (\$50.00) for each set. Additionally, electronic plan sets are available for viewing and downloading on the Engineering Division's website at <https://www.woodburn-or.gov/publicworks/page/bids-and-rfps> and/or have been downloaded by the following plan centers.

DJC Plan Center – Portland, OR
Contractor's Plan Center – Clackamas, OR
Salem Contractor's Exchange – Salem, OR

Site visits by prospective bidders during the pre-bid period can be arranged by contacting Dago Garcia:

Dago Garcia, City Engineer
190 Garfield St.
Woodburn, OR 97071
Phone: 503.982.5248
Email: dago.garcia@ci.woodburn.or.us

Bidders must be pre-qualified in accordance with the laws of the State of Oregon. Completed pre-qualification forms or proof of pre-qualification shall conform to the Special Provisions and the
New Production Well for the Parr Road Treatment Plant
May 2022

Invitation to Bid
2-1

other requirements of these Contract Documents. Only bids from pre-qualified Bidders will be opened.

No bid for a construction contract shall be received or considered unless the bidder is registered with the Construction Contractors Board. The Contractor and every Subcontractor must have a Public Works Bond filed with the CCB before starting work on the project.

Bidders on this project need not be licensed for asbestos handling pursuant to ORS 468A.720. Each bidder must indicate on the bid form whether they are a resident or nonresident bidder as defined in ORS 279A.120 (b).

All proposals shall be made on the proposal forms. All proposals shall be accompanied by a Bid Bond, equal to ten percent (10%) of the total bid. Bid Bond shall be forfeited to the City if the Contractor fails to execute the contract within time allotted under the specifications.

Pursuant to ORS 279C.370, bidders on public works projects with a contract value of \$100,000 or more are required to disclose, 2-hours after bid opening, the bidders first-tier subcontractors. The bidder shall provide the information as required on City of Woodburn first-tier disclosure form, provided in the contract documents.

At the discretion of the Project Manager, Addenda and Contract clarifications shall either be posted on the City, Engineering Division website or delivered to Plan Holders via email. Potential Bidders should check the website daily until the Bid Opening date. The website can be found at <https://www.woodburn-or.gov/publicworks/page/bids-and-rfps>. Addenda must be signed and submitted with the Bid Proposal to be considered a responsive offer.

Although contract award is expected to be made by the City Council on **June 27, 2022**, the City of Woodburn reserves the right to reject any and all bids not in compliance with prescribed bidding procedures and requirements, and may reject for good cause any and all bids upon a finding of the Agency if it is in the public interest to do so. The three (3) lowest bidders may not withdraw or modify his bid prior to the lapse of 35-days after the bid opening.

This project must be substantially completed within **three hundred and sixty (360) calendar days** after the date of “Notice to Proceed”.

Heather Pierson
City Recorder
City of Woodburn, OR 97071

SECTION 03
INSTRUCTIONS TO BIDDERS
BID No, 2022-09

1. GENERAL:

- A. SPECIFICATIONS – The Specifications that is applicable to the Work on this Project is the 2021 edition of the “Oregon Standard Specifications for Construction” as modified by Special Provisions, and the “Technical Specifications” specific to this Project.
- B. This is a formal procure. Faxed bids will not be accepted.
- C. Bidding requirements and obligations shall comply and conform to Part 00100 of the General Conditions of the Standard Specifications or as modified by the Special Provisions or herein.

2. SECURING CONTRACT DOCUMENTS:

- A. Copies of the Contract Documents are on file with the Public Works Department - Engineering Division, located at:

City Hall Annex
190 Garfield Street
Woodburn, OR 97071.

- B. Questions regarding bidding, materials or technical requirements should be directed to the Project Manager at:

Dago Garcia, City Engineer
190 Garfield St.
Woodburn, OR 97071
Phone: 503.982.5248
Email: dago.garcia@ci.woodburn.or.us

Or

Cole Grube, PE, Project Engineer
190 Garfield St.
Woodburn, OR 97071
Phone: 503.982.5241
Email: cole.grube@ci.woodburn.or.us

- C. Bidder is responsible for completing and returning all page(s), attachment(s) which require a response.
- D. Plan Holder’s List – An electronic copy of the “Plan Holders List” is provided on the Agency website and will be periodically updated. Contractors, suppliers and others wishing to be added to this list should contact the Project Manager as identified in 2.B.

- E. Project Notifications – Addenda, clarifications, etc. shall be posted on the Agency website and are the responsibility of the Contractor to download before submission of bids. Contractor shall acknowledge by signature and submit with offer all Addenda associated (posted on website) with the project.

3. PROJECT FINANCING:

- A. This project is financed and paid for by the City of Woodburn.
- B. The Engineer's cost estimated range for the construction of this project is between: \$2,700,000 and \$3,100,000.
- C. This project is subject to the prevailing wages rates under the Oregon Prevailing Wages Law (BOLI).
- D. The applicable BOLI prevailing wage rates are included with the Special Provisions.

Applicable link is as follows :

<https://www.oregon.gov/boli/employers/Pages/prevailing-wage-rates.aspx>

and listed as "Prevailing Wage Rates for Public Works Contracts in Oregon effective January 1, 2022" and "April 1, 2022 Prevailing Wage Rate Amendments".

4. CONSTRUCTION AGREEMENT

- A. The construction contract between Owner and Contractor shall be provided by The City of Woodburn. A sample Agreement is included in these documents.

5. PREBID CONFERENCE:

- A. Site visits by prospective bidders are not required, but may be arranged by contacting Dago Garcia during the pre-bid period (see Paragraph 2 for Mr. Garcia's contact info).

6. AWARD OF THE CONTRACT:

- A. Award of the Contract, by the Contract Review Board (City Council), will be by recommendation of the Public Works Department, based on the lowest cost offer of the responsive and responsible Bidder in accordance with Section 00130 of the Oregon Standard Construction Specifications and all modifications by Special Provisions.
- B. Notice to Proceed will be provided by the City to the Contractor within 90 days of Contract Award.

7. TIME OF COMPLETION:

- A. The project shall be substantially completed within three hundred and sixty (360) calendar days after the dated "Notice to Proceed". Substantial completion is defined as the completion of well house including well pump installation, various water main

installations, connection to existing water treatment facility, asphalt paving, and stormwater improvements, as shown and specified in the Contract Documents. Final completion shall be three hundred and ninety (390) days after the dated “Notice to Proceed”.

SECTION 04
CERTIFICATION PAGE
BID No. 2022-09

Each Bidder (offeror) must read and comply with the following Sections. Failure to do so may result in bid/proposal (offer) rejection.

RESIDENCY INFORMATION

ORS 279A.120 (2) states "For the purposes of awarding a public contract, a contracting agency shall: (a) Give preference to goods or services that have been manufactured or produced in this state if price, fitness, availability and quality are otherwise equal; and (b) Add a percent increase to the bid of a nonresident bidder equal to the percent, if any, of the preference given to the bidder in the state in which the bidder resides."

"Resident bidder" means a bidder that has paid unemployment taxes or income taxes in this state during the 12 calendar months immediately preceding submission of the bid, has a business address in this state and has stated in the bid whether the bidder is a "resident bidder" [ORS 279A.120(1)(b)].

"Non-resident bidder" means a bidder who is not a "resident bidder" as defined above [ORS 279A.120 (1)(b)].

Check one: Bidder is a RESIDENT bidder NON-RESIDENT bidder.

CERTIFICATION OF COMPLIANCE WITH DISCRIMINATION LAWS

By my signature in Form of Proposal, I hereby attest or affirm under penalty of perjury that I am authorized to act on behalf of Contractor in this matter, and to the best of my knowledge the Contractor has not discriminated against minority, women or emerging small business enterprises certified under ORS 200.055, in obtaining any required subcontract or against a business enterprise that is owned or controlled by or that employs a disable veteran as defined in ORS 408.225.

CERTIFICATION OF COMPLIANCE WITH OREGON TAX LAWS

By my signature in Form of Proposal, I hereby attest or affirm under penalty of perjury that I am authorized to act on behalf of Contractor in this matter that I have authority and knowledge regarding the payment of taxes, and that Contractor is, to the best of my knowledge, not in violation of any Oregon Tax Laws.

For purposes of this certificate, 'Oregon Tax Laws' means those programs listed in ORS 305.380(4) which is incorporated herein by this reference. Examples include the state inheritance tax, personal income tax, withholding tax, corporation income and excise taxes, amusement device tax, timber taxes, cigarette tax, other tobacco tax, 9-1-1 emergency communications tax, the homeowners and renters property tax relief program and local taxes administered by the Department of Revenue.

VERIFICATION OF RESPONSIBILITY

The City reserves the right, pursuant to ORS 279C.375 and OAR 137-049-0390, to investigate and evaluate, at any time prior to award and execution of the contract, the lowest bidder's (apparent successful offeror's) ability to perform the contract. Submission of a signed offer shall constitute approval for the City to obtain any information the City deems necessary to conduct the evaluation. The City shall notify the apparent successful offeror, in writing, of any other documentation required. Being a responsible bidder may include having the appropriate financial, material, equipment, facility and personnel resources and expertise, or ability to obtain the resources and expertise to perform the contract. Contractor shall have a satisfactory record of contract performance. The Contractor shall also have a satisfactory record of integrity. An unsatisfactory record of integrity may include previous violations of state environmental laws or false certifications made to any Public Agency. The Contractor is to be qualified legally to contract with the City of Woodburn. Failure to promptly provide any requested information may result in bid/proposal rejection.

The City may postpone the award of the contract after announcement of the apparent successful offeror in order to complete its investigation and evaluation. Failure of the apparent successful offeror to demonstrate responsibility, as required under ORS 279C.375 and OAR 137-049-0390, may render the offeror non-responsible and shall constitute grounds for offer rejection.

DRUG TESTING POLICY CERTIFICATION

DRUG-TESTING POLICY CERTIFICATION:

By my signature in Form of Proposal, I hereby attest or affirm under penalty of perjury that I am authorized to act on behalf of Contractor in the matter, and to the best of my knowledge the Contractor has a drug-testing program in place which applies to all employees. Contractor shall maintain a drug-testing program at all times during the performance of the Contract awarded. Failure to maintain such a program shall constitute a material breach of contract. [ORS 279C.505J]

SECTION 05
FORM OF PROPOSAL
Bid No. 2022-09

Honorable Mayor and City Council
City Hall
Woodburn, Oregon 97071

The undersigned, hereinafter called the Bidder, declares that the only persons or parties interested in this Proposal are those named herein, that the Proposal is in all respects fair and without fraud, which it is made without any connection or collusion with any person making another Proposal on this Contract.

The Bidder further declares that he has carefully examined the Contract Documents for the construction of the proposed improvements; that he has personally inspected the site; that he has satisfied himself as to the quantities of materials, items of equipment, and conditions or work involved, including the fact that the description of work and materials as included herein, is brief and is intended only to indicate the general nature of such items and to identify the said quantities with the detailed requirements of the Contract Documents; and that this Proposal is made according to the provisions and the terms of the Contract Documents, which Documents are herein attached and are hereby made a part of this Proposal.

The Bidder further agrees to complete construction of all work in all respects in accordance with the Special Provisions incorporated herein.

In the event the Bidder is awarded the Contract and shall fail to complete the work within the time limit set under Specifications of this document or extended time limit agreed upon, as more particularly set forth in the Contract Documents, liquidated damages shall be paid to the City of Woodburn, Oregon, using the rate formula outlined in the Special Provisions, and not less than \$150.00 per day, until the work shall have been finished, as provided by the Contract Documents.

The Bidder further proposes to accept as full payment for the work proposed herein the amount computed under the provisions of the Contract Documents and based on the following unit price amounts, it being expressly understood that the unit prices are independent of the exact quantities involved, that they represent a true measure of the labor and material required to perform the work, including all allowance for overhead and profit for each type and unit of work called for in these Contract Documents.

The amounts shall be shown in both words and figures. In case of discrepancy, the amount shown in words shall govern.

It is declared that the Bidder will comply with all provisions of ORS 279C.840. The workmen on the project will be paid Oregon Prevailing Wage Rates (also called "PWR").

It is agreed that if the Bidder is awarded the Contract for the work herein proposed and shall fail

or refuse to execute the Contract and furnish the specified Performance Bond within ten (10) calendar days after receipt of notification of acceptance of his Proposal, then, in that event, the bid security in the sum of:

(In Words): _____

(In Numbers): \$ _____

deposited herewith according to the conditions of the Advertisement for Bids and Information to Bidders, shall be retained by the City of Woodburn, Oregon, as liquidated damages; and it is agreed that the said sum is a fair measure of the amount of damage the City of Woodburn will sustain in case the Bidder shall fail or refuse to enter into the contract for the said work and to furnish the Performance Bond as specified in the Contract Documents. Bid security in the form of a certified check shall be subject to the same requirements as a bid bond.

If the Bidder is awarded a construction contract on this proposal, the surety who will provide the Performance Bond will be:

_____ Whose address is:

_____, _____, _____
Street City State Zip

Agents Name: _____
Phone _____

The address for all communications concerned with this Proposal and where the Contract shall be sent is:

Contractor: _____ doing business at:

_____, _____, _____
Street City State Zip

Bid Form

City of Woodburn, OR
 New Production Well for the Parr
 Road Treatment Plant

Item No.	Items of Work and Materials	Units	Unit Price	Approx. Quantity	Extended Price
1	Mobilization, bonds, insurance, and demobilization	Lump Sum		1	\$
2	Erosion and sediment control plan and maintenance	Lump Sum		1	\$
3	Construction survey and staking	Lump Sum		1	\$
4	All work required to construct wellhouse building, complete, other than as provided for under separate unit prices, will be made on a single lump sum basis.	Lump Sum		1	\$
5	All work required for civil site improvements, complete, other than as provided for under separate unit prices, will be made on a single lump sum basis. General work categories are described in the breakdown below, with the sum of items (a) through (h) below equaling the total lump sum for bit item 5				
	a. Clearing & grubbing, tree protection, site restoration	Lump Sum		1	\$
	b. Site preparation, excavation, backfill, and grading	Lump Sum		1	\$
	c. Furnish and install site fencing and gates	Lump Sum		1	\$
	d. Access road concrete pull off	Lump Sum		1	\$
	e. Relocate walkway	Lump Sum		1	\$
	f. Parking spots	Lump Sum		1	\$
	g. Furnish and install bollards	Lump Sum		1	\$
	h. Landscaping	Lump Sum		1	\$

Item No.	Items of Work and Materials	Units	Unit Price	Approx. Quantity	Extended Price
6	Asphalt concrete (AC) paving				
	a. HMAC pavement, 5-inch depth	TONS		595	\$
	b. Aggregate base, 3/4-inch minus 0, 9 inches depth	CY		242	\$
7	Saw-cutting existing AC pavement and concrete surfacing	Linear Ft		1110	\$
8	Asphalt concrete pavement repair	Sq. Ft.		2212	\$
9	Concrete curb	Linear Ft		380	\$
10	Concrete sidewalk	Sq. Ft.		530	\$
11	Furnish and install restrained , Class 52, zinc-coated, ductile iron pipe, wrapped in two layers of polyethylene, with Class B (imported granular material) trench backfill				
	a. 12-inch diameter	Linear Ft		948	\$
	b. 10-inch diameter	Linear Ft		1814	\$
	c. 6-inch diameter	Linear Ft		190	\$
	d. 4-inch diameter	Linear Ft		1220	\$
12	Furnish and install zinc coated ductile Iron Fittings	Pounds		2444	\$
13	Furnish and install 10" flexible expansion joint	Each		1	\$
14	Connection to existing 14-inch water line at STA A19+14	Lump Sum		1	\$
15	Furnish and install 60" Precast MH	Lump Sum		1	\$
16	Hot tap connection	Lump Sum		1	\$
17	Furnish and install fire hydrant assembly	Lump Sum		1	\$
18	Furnish and Install water Service	Lump Sum		1	\$
19	Furnish and install PVC drain piping with Class B (imported granular material) trench backfill				
	a. 8-inch diameter	Linear Ft		85	\$

Item No.	Items of Work and Materials	Units	Unit Price	Approx. Quantity	Extended Price
20	All work required for stormwater improvements, complete, other than as provided for under separate unit prices, will be made on a single lump sum basis. General work categories are described in the breakdown below, with the sum of items (a) through (e) below equaling the total lump sum for bit item 20				
	a. Stormwater detention pond	Lump Sum		1	\$
	b. Furnish and install curb inlet	Lump Sum		1	\$
	c. Outlet control structures	Lump Sum		1	\$
	d. Outlet to existing pond	Lump Sum		1	\$
	e. Start-up and testing	Lump Sum		1	\$
21	All work required for infiltration trench, complete	Lump Sum		1	\$
22	System integration	Lump Sum		1	\$
23	Water supply well disinfection	Lump Sum		1	\$
<i>TOTAL BID = \$</i>					

The names of the principal officers of the corporation submitting this Proposal, or of the partnership, or of all persons interested in this Proposal as principals are as follows:

(If Sole Proprietor or Partnership)

In witness hereto the undersigned has set his (its) hand this _____ day of _____, 20__.

Signature of Bidder

Title (If Corporation)

In witness whereof the undersigned corporation has caused this instrument to be executed and its seal affixed by its duly authorized officer this _____ day of _____, 20__.

Name of Corp: _____

Oregon Corp. No: _____

By: _____

Title: _____

CCB No: _____

Attest: _____
Secretary

Initial "Bidder will comply with the provisions of Oregon Revised Statutes (ORS) 279C.840".

Attest: _____
Bidder

SECTION 06
BID BOND
BID No. 2022-09

KNOW ALL PEOPLE BY THESE PRESENTS:

That we, _____, hereinafter called
(Name of Contractor)

the PRINCIPAL, as Principal, and _____,
(Name of Surety)

a corporation and existing under and by virtue of the laws of the State of _____
and authorized to transact a surety business in the State of Oregon, hereinafter called the
SURETY, as Surety, are held and firmly bound unto the City of Woodburn,
a Municipal Corporation of the State of Oregon, hereinafter called the OBLIGEE, in the

penal sum of _____ Dollars

(\$ _____) for the payment of which sum well and truly to be made, the said
PRINCIPAL and the said SURETY bind ourselves, our heirs, executors, administrators,
successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH THAT:

WHEREAS the PRINCIPAL has submitted a Bid Proposal for Parr Road Municipal Water
Supply Well, City of Woodburn, Oregon.

NOW, THEREFORE, if the Bid Proposal submitted by the PRINCIPAL is accepted, and the
Contract awarded to the PRINCIPAL, and if the PRINCIPAL shall execute the proposed
Agreement and shall furnish such Performance and Payment Bonds as required by the Contract
Documents within the time fixed by the Documents, then this obligation shall be void; if the
PRINCIPAL shall fail to execute the proposed Agreement and furnish the bonds, the SURETY
hereby agrees to pay to the OBLIGEE the penal sum as liquidated damages, within ten (10) days
of such failure.

Signed and sealed this _____ day of _____, 2022.

CONTRACTOR AS PRINCIPAL:

SURETY:

(Corp. Seal)

(Corp. Seal)

Company: _____

Company: _____

Signature: _____

Signature: _____

Name: _____

Name: _____

Title: _____

Title: _____

(Attach Power of Attorney)

SECTION 07
STATEMENT OF BIDDER'S QUALIFICATIONS
BID No. 2022-09

All questions must be answered and the data given must be clear and comprehensive. Questions may be answered on separate attached sheets. The Bidder may submit additional information beyond that requested below to document the Bidder's Qualifications. Any information the Bidder desires to keep confidential must be clearly marked.

The statement of Bidder's qualifications must be submitted to the City of Woodburn at the SAME time the bids are due on June 8, 2022 at the City of Woodburn, City Hall Annex at 190 Garfield Street, Woodburn, OR 97071.

Failure to meet the following criteria will result in the submitted bid being designated as non-responsive. All answers must be "Yes" on questions #5 and all information must be provided for all questions presented in this section.

1. Company Name: _____
2. Company Address: _____
3. Company Email: _____ Company Phone: _____
4. Date Organized and Any Prior Company Names: _____
5. Has your company performed construction work on at least two (2) water supply production well buildings projects in the last seven (7) years, with each contract value totaling \$500,000 or more – and of those, one involved a vertical turbine well pump of 50 HP or greater? (Circle One and Complete)

YES

Name of Project : _____
Client Name and Phone: _____

Name of Project: _____
Client Name and Phone: _____

NO

6. Bidder attests that:
 - a. The person submitting this offer has the authority to submit the offer and to represent Bidder in all phases of this procurement process;
 - b. The information provided herein is true and accurate;
 - c. Bidder is a “resident bidder”, as described in ORS 279A.120 in the State of Oregon, or is a “non-resident bidder” of _____ (insert state) and has not discriminated against any minority, women, or emerging small business enterprises in obtaining any required subcontracts in accordance with ORS 279A.110. Non-resident bidder also agrees to report their participation in this contract, if awarded, to the Oregon Department of Revenue as required by ORS 279A.120 (3).
 - d. Any false statement may disqualify this offer from further consideration or be the cause of contract termination;

- e. Bidder has the appropriate financial, material, equipment, facility, personnel resources, and expertise or the ability to obtain the resources and expertise necessary to meet all contractual responsibilities;
- f. Bidder has an employee drug testing program in place as required by ORS 279C.505 (2);
- g. If awarded a contract, Bidder will notify the City of Woodburn within 30 days of any change in information provided on this form.

The undersigned hereby authorizes and requests any person, firm, or corporation to furnish any information requested by the City of Woodburn in verification if recitals comprising this statement of Bidder's Qualification.

I hereby certify that the answers to the foregoing statements attached hereto including any supplemental data, are true and correct to the best of my knowledge.

BY: _____

Signature

Company Name

Title

Date

SECTION 08
FIRST-TIER SUBCONTRACTOR DISCLOSURE FORM
BID No. 2022-09

PROJECT NAME:	New Production Well for the Parr Road Treatment Plant		
PROJECT No:	2018-011-28	BID No:	2022-09
BID CLOSING DATE:	June 8, 2022	TIME:	2:00 PM
DISCLOSURE DEADLINE DATE:	June 8, 2022	TIME:	4:00 PM

This form must be submitted at the location specified in the Invitation to Bid on the advertised bid closing date with in two working hours after the advertised bid closing.

List below the name of each subcontractor that will be furnishing labor or materials and that is required to be disclosed, the category of work that the subcontractor will be performing and the dollar value of the subcontract. Enter "None" if there are no subcontractors that need to be disclosed. (IF NEEDED, ATTACH ADDITIONAL SHEETS.)

	<u>NAME</u>	<u>DOLLAR VALUE</u>	<u>CATEGORY OF WORK</u>
1		\$	
2		\$	
3		\$	
4		\$	
5		\$	

The above listed first-tier subcontractor(s) are providing labor and/or materials with a Dollar Value equal to or greater than:

- a. 5% of the total contract price or \$15,000 (including all alternates), whichever is greater; or
- b. \$350,000.00 regardless of the percentage of the total Contract Price.

FAILURE TO SUBMIT THIS FORM FILLED OUT BY THE DISCLOSURE DEADLINE WILL RESULT IN A NON-RESPONSIVE BID. A NON-RESPONSIVE BID WILL NOT BE CONSIDERED FOR AWARD.

Form Submitted by (Bidder Name): _____

Contact Name: _____ **Phone No:** _____

Deliver Form to Agency: _____ **CITY OF WOODBURN** _____

Person Designated to Receive Form: _____ **CITY ENGINEER** _____

Agency's Address: _____ **190 Garfield Street, Woodburn, OR 97071** _____

**UNLESS OTHERWISE STATED IN THE ORIGINAL SOLICITATION,
THIS DOCUMENT SHALL NOT BE FAXED.**

SECTION 09
BID SUBMITTAL CHECKLIST
BID No. 2022-09

The following is a checklist of the items that shall be submitted with the Bidder's Bid Proposal

- Form of Proposal
- Bid Bond
- First Tier Subcontractor Disclosure Form (Submit within two hours after bid opening time)
- Certification Page
- Statement of Bidder's Qualifications

SECTION 10
CONSTRUCTION AGREEMENT
BID No. 2022-09

THIS AGREEMENT, made this _____ day of _____, 2022, by and between _____, hereinafter called "CONTRACTOR" and the CITY OF WOODBURN, an Oregon Municipal Corporation, hereinafter called "City" or "Owner".

The Contractor, for the consideration hereinafter named, does hereby agree to furnish all materials, equipment, labor and necessary implements for the construction of the **New Production Well for the Parr Road Treatment Plant** and doing such other work as is necessary to make an appropriate and complete improvement.

All of said work shall be done according to the terms, conditions, and requirements of the Contract Documents including the: Advertisement of Bids, Contractor's signed Proposal, information to bidders, special specifications, general conditions, standard specifications, general specifications, and plans and Addendum Nos. () for said improvement, which Contract Documents by this reference are made a part of this agreement.

Said improvement shall be completed by the date specified in said Contract Documents and if not so completed, unless said time for completion is extended, as provided in the Contract Documents, or if extended, if the same is not completed within time extended, the City will suffer liquidated damages as specified in the Contract Documents, which liquidated damages shall be retained out of any monies due or to become due under this agreement.

Payments shall be made as provided in the Contract Documents. The contract amount, as approved by the Council on **June 27, 2022**, and agreed by the Contractor, is **\$ xxx,xxx.xx**.

The City will pay the required fee to the Bureau of Labor and Industries equal to one-tenth of one percent (0.1 percent) of the price of this contract, minimum fee in the amount of \$250.00 and maximum fee of \$7,500.00.

The Contractor will pay the prevailing wage rates in accordance with ORS279C.830.

NOW, THEREFORE, in consideration of the faithful performance of the covenants and agreements hereinbefore made by the Contractor, the City hereby covenants and agrees to pay the Contractor as in said Contract Documents provided.

IN WITNESS WHEREOF, the respective parties hereto have each caused these presents to be executed in duplicate the day and year first above written.

CITY OF WOODBURN, OREGON

ATTESTED: _____
Heather Pierson, *CITY RECORDER* Eric Swenson, *MAYOR*

CONTRACTOR: _____
Organization

By: _____ . Title: _____

SECTION 11
PERFORMANCE BOND
BID No. 2022-09

KNOW ALL MEN BY THESE PRESENTS that, _____, as the Principal, and _____, a corporation organized and existing under the laws of the State of Oregon, and duly authorized to transact a surety business in the State of Oregon, as Surety, are held and firmly bound unto the City of Woodburn, a municipal corporation of the State of Oregon, in the penal sum of \$_____ Dollars \$_____, lawful money of the United States of America, for the payment whereof well and truly to be made, we and each of us, jointly and severally, bind ourselves, our and each of our heirs, executors, administrators successors and assign, firmly by these presents.

WHEREAS, the Principal has entered into a contract with the City of Woodburn, the plans, specifications, terms and conditions of which are contained in the above-referenced Solicitation;

WHEREAS, the terms and conditions of the contract, together with applicable plans, standard specifications, special provisions, schedule of performance, and schedule of contract prices, are made a part of this Performance Bond by reference, whether or not attached to the contract (all hereafter called the “Contract”); and

WHEREAS, the Principal has agreed to perform the Contract in accordance with the terms, conditions, requirements, plans and specifications, and all authorized modifications of the Contract which increase the amount of the work, the amount of the Contract, or constitute an authorized extension of the time for performance, notice of any such modifications hereby being waived by the Surety,

NOW, THEREFORE, THE CONDITION OF THIS BOND IS SUCH:

That if the Principal herein shall faithfully and truly observe and comply with the terms, conditions and provisions of the Contract, in all respects, and shall well and truly and fully do and perform all matters and things undertaken by Contractor to be performed under the Contract, upon the terms set forth therein, and within the time prescribed therein, or as extended as provided in the Contract, with or without notice to the Sureties, and shall indemnify and save harmless the City of Woodburn, the, its officers, employees and agents, against any direct or indirect damages or claim of every kind and description that shall be suffered or claimed to be suffered in connection with or arising out of the performance of the Contract by the Principal or its subcontractors, and shall in all respects perform said contract according to law, then this obligation is to be void; otherwise, it shall remain in full force and effect.

Nonpayment of the bond premium will not invalidate this bond nor shall the City of Woodburn, be obligated for the payment of any premiums.

This bond is given and received under authority of ORS Chapter 279C, the provisions of which hereby are incorporated into this bond and made a part hereof.

Contractor

BY: _____

TITLE: _____

Surety

By: _____

Attorney-In-Fact

SECTION 12
PAYMENT BOND
BID No. 2022-09

KNOW ALL MEN BY THESE PRESENTS that, _____, as the Principal, and _____, a corporation organized and existing under the laws of the State of Oregon, and duly authorized to transact a surety business in the State of Oregon, as Surety, are held and firmly bound unto the City of Woodburn, a municipal corporation of the State of Oregon, in the penal sum of \$_____ Dollars \$_____, lawful money of the United States of America, for the payment whereof well and truly to be made, we and each of us, jointly and severally, bind ourselves, our and each of our heirs, executors, administrators successors and assign, firmly by these presents.

WHEREAS, the Principal has entered into a contract with the City of Woodburn, the plans, specifications, terms and conditions of which are contained in the above-referenced Solicitation;

WHEREAS, the terms and conditions of the contract, together with applicable plans, standard specifications, special provisions, schedule of performance, and schedule of contract prices, are made a part of this Payment Bond by reference, whether or not attached to the contract (all hereafter called the "Contract"); and

WHEREAS, the Principal has agreed to perform the Contract in accordance with the terms, conditions, requirements, plans and specifications, and all authorized modifications of the Contract which increase the amount of the work, the amount of the Contract, or constitute an authorized extension of the time for performance, notice of any such modifications hereby being waived by the Surety,

NOW, THEREFORE, THE CONDITION OF THIS BOND IS SUCH:

That if the Principal shall faithfully and truly observe and comply with the terms, conditions and provisions of the Contract, in all respects, and shall well and truly and fully do and perform all matters and things by it undertaken to be performed under said Contract and any duly authorized modifications that are made, upon the terms set forth therein, and within the time prescribed therein, or as extended therein as provided in the Contract, with or without notice to the sureties, including the conditions listed in ORS 279.310 to 279.320, and shall indemnify and save harmless the City of Woodburn, its officers, employees and agents, against any claim for direct or indirect damages of every kind and description that shall be suffered or claimed to be suffered in connection with or arising out of the performance of the Contract by the Contractor or its Subcontractors, and shall promptly pay all persons supplying labor, materials or both to the Principal or its Subcontractors for prosecution of the work provided in the Contract; and shall promptly pay all contributions due the State Industrial Accident Fund and the State Unemployment Compensation Fund from the Principal or its Subcontractor in connection with the performance of the Contract; and shall pay over to the Oregon Department of Revenue all sums required to be deducted and retained from the wages of employees of the Principal and its

Subcontractors pursuant to ORS 316.167, and shall permit no lien nor claim to be filed or prosecuted against the City of Woodburn on account of any labor or materials furnished; and shall do all things required of the Principal by the laws of this State, then this obligation shall be void; otherwise, it shall remain in full force and effect.

Nonpayment of the bond premium will not invalidate this bond nor shall the City of Woodburn, be obligated for the payment of any premiums.

This bond is given and received under authority of ORS Chapter 279C, the provisions of which hereby are incorporated into this bond and made a part hereof.

Contractor

BY: _____

TITLE: _____

Surety

By: _____
Attorney-In-Fact

SECTION 13
MAINTENANCE/WARRANTY BOND
BID No. 2022-09

KNOW ALL MEN BY THESE PRESENTS that, _____, as the Principal, and _____, a corporation organized and existing under the laws of the State of Oregon, and duly authorized to transact a surety business in the State of Oregon, as Surety, are held and firmly bound unto the City of Woodburn, a municipal corporation of the State of Oregon, in the penal sum of \$ _____ Dollars \$ _____, lawful money of the United States of America, for the payment whereof well and truly to be made, we and each of us, jointly and severally, bind ourselves, our and each of our heirs, executors, administrators successors and assign, firmly by these presents.

WHEREAS, the Principal has entered into a contract with the City of Woodburn, the plans, specifications, terms and conditions of which are contained in the above-referenced Solicitation;

WHEREAS, the terms and conditions of the contract, together with applicable plans, standard specifications, special provisions, schedule of performance, and schedule of contract prices, are made a part of this Maintenance/Warranty Bond by reference, whether or not attached to the contract (all hereafter called the "Contract"); and

WHEREAS, the Principal has agreed to perform the Contract in accordance with the terms, conditions, requirements, plans and specifications, and all authorized modifications of the Contract which increase the amount of the work, the amount of the Contract, or constitute an authorized extension of the time for performance, notice of any such modifications hereby being waived by the Surety,

NOW, THEREFORE, THE CONDITION OF THIS BOND IS SUCH:

That the Principal agrees to warrant to the City of Woodburn that the construction is, and will remain for a period of one (1) year from the date of acceptance, free from defects in materials and workmanship.

That if the Principal herein shall faithfully and truly observe the terms, provisions, conditions, stipulations, directions, and requirements of the Contract and shall in all respects, whether the same be enumerated herein or not, faithfully comply with the same and shall assume the defense of indemnify and save harmless the City of Woodburn, its officers, agents, and employees from all claims, liabilities, loss, damage or injury which may have been suffered or claimed to have been suffered to persons or property directly or indirectly resulting from or arising out of the operations or conduct of the Principal or any subcontractor in the performance of the work under the Contract and shall indemnify and make whole the City for any injury or damage to any street, highway, avenue, private driveway, paved pathway, or road or any part thereof, resulting from the operations or conduct of the Principal or any subcontractor in connection with performance or conduct of the work under the Contract, and shall in all respects faithfully keep and observe all of

said terms, provision, conditions, stipulations, directions, and requirements, then this obligation is void, otherwise, it shall remain in full force and effect.

WITNESS our hand and seals this ___ day of _____, 2022.

Name:

BY:

TITLE: _____

Surety

By: _____

Attorney-In-Fact

SECTION 14
NOTICE TO PROCEED

PUBLIC WORKS DEPT.
ENGINEERING DIV.



PROJECT NAME:	New Production Well for the Parr Road Treatment Plant		
BID #:	2022-09	PROJECT No #:	2018-011-28
AMOUNT:	\$	BEGIN DATE:	
CONTRACTOR:		CCB #:	
ADDRESS:			

You are hereby notified to commence work on the referenced contract, and shall substantially complete all of the work of said contract within three hundred and sixty calendar days of the Notice to Proceed.

The substantial completion date is therefore: **three hundred and sixty calendar days from issuance of Notice to Proceed.**

The completion date is therefore: _____, **2022.**

The contract provides for the assessment of liquidated damages for each consecutive calendar day after the above-established contract completion date that the work remains incomplete in the amount established by the Special Provisions, which is equivalent to \$ _____ per day.

PM for THE CITY OF WOODBURN: Dago Garcia

DATE: _____

Contractor: *Complete items below this line and return Document to Owner within seven (7) days:*

CONTRACTOR'S ACCEPTANCE OF THIS NOTICE

Receipt of the foregoing Notice to Proceed is hereby acknowledged:

SIGNED: _____

TITLE: _____

DATE: _____

SECTION 15
SPECIAL PROVISIONS
BID No. 2022-09

WORK TO BE DONE

The Work to be done under this Contract consists of the following on the City of Woodburn, OR in Marion County:

1. 432 SF CMU well house and associated civil site work.
2. 125 HP vertical turbine well pump
3. 1,814 LF or 10-inch diameter ductile iron raw water line.
4. 948 LF of 12-inch diameter ductile iron distribution main.
5. 1,220 LF of 4-inch diameter ductile iron stormwater force main.
6. 59 5tons of new asphalt paving.
7. Stormwater and pump-to-waste pond and pump station.
8. Landscaping.
9. All other items of work listed in the Bid Form and shown and specified in the Contract Documents.

Perform additional and incidental Work as called for by the Specifications and Plans.

CONTRACT TIME AND PROJECT SCHEDULE

- A. The work to be completed under this contract and described by these specifications shall adhere to the following project schedule:

Project Phase / Event	Date
Bids Due	June 8, 2022
Notice of Intent to Award	June 13, 2022
Issuance of Notice to Proceed	Within 90 calendar days of Contract Award
Substantial Completion	360 days after Notice to Proceed
Final Completion	390 days after Notice to Proceed

NOTICE TO PROCEED

- A. The City intends to provide written Notice to Proceed within 90 calendar days after the City has issued a Notice of Intent to Award, provided the Selected Bidder submits all required bonds and insurance information within 60 days after the City has issued a Notice of Intent to Award.
- B. The City retains the right to delay the Notice to Proceed. The City shall provide the Contractor with notification that the Notice to Proceed will be delayed and an estimate of when Notice to Proceed will be issued as soon as a delay is anticipated. The Contractor shall not commence work under the contract until such written notice has been given.

EXPERIENCE AND QUALIFICATIONS

1. The Contractor shall demonstrate the following minimum qualification criteria:
 - a. Licensed and bonded in the State of Oregon and must comply with all Oregon Administrative Rules (OAR) for Well Construction and Maintenance and Well Construction Standards including OAR 690-200-005 through OAR 690-210-420.
 - b. Assigned lead driller with at least ten years of experience constructing deep, large-diameter municipal supply wells.
 - c. At least five large-diameter well installation projects each totaling \$250,000 or more, for which the Contractor performed the work within the past five years. At least two of the projects listed shall involve the installation of wells that are 300-feet deep or more, with well casing diameters of 16-inches or greater in alluvial formations.
 - d. Documentation of experience and qualifications shall be provided as part of the Contractor's Bid for the project.

PRE-BID CONFERENCE

Site visits by prospective bidders during the pre-bid period may be arranged by contacting Dago Garcia at the City. Mr. Garcia's contact info is in the Invitation to Bid.

PRE-CONSTRUCTION CONFERENCE

1. A mandatory pre-construction conference shall be scheduled no less than two weeks prior to the start of work. At this conference, the Contractor shall provide the following pre-construction submittals in addition to those outlined elsewhere in these Contract Documents:
 - a. Construction Schedule: A detailed construction schedule, which shall be followed by the Contractor throughout the duration of the contract, and updated as needed.
 - b. Weekend/Emergency Contacts: The names, addresses, and telephone numbers of two or more persons employed by the Contractor who can be reached during evening and weekend hours to handle emergency matters.

STANDBY/DELAY TIME, INCIDENTAL, AUTHORIZED HOURLY WORK

- A. Time lost to the project schedule can be expected during the course of project execution due to unavoidable and unforeseen events. Time lost to the project due to such circumstances may be originated by the City or the Contractor. Time lost from stoppage of work at the request of the City shall be defined as "standby time." Time lost due to the

inability of the Contractor to proceed shall be defined as “delay time.” These terms are further defined as follows:

1. **Standby Time:** Standby time is the duration of idle time greater than one (1) hour accrued at the request of the City. The Contractor’s workers and equipment shall remain onsite while standby time is in effect. In the event of standby time, the City shall pay the Contractor for equipment and crew per hour, not to exceed eight (8) hours per working day. No standby time will be paid during screen design, fabrication, and shipment to site, or for the recovery period following the step-rate or constant-rate aquifer tests.
2. **Delay Time:** Delay time is defined as avoidable delays greater than one (1) hour caused by neglect in planning, improper scheduling or sequencing of work by the Contractor. These items shall include, but are not limited to, the Contractor’s tardiness and inability to provide the trained staff and adequate equipment in a reasonable manner. Delay time shall not include time lost to the project as a result of conditions beyond the Contractor’s control. These unavoidable delays shall include, but are not limited to, inclement weather and unexpected or unusual conditions. The Contractor may give a 12-hour notice to City that there will be a delay without being assessed delay time in the event of equipment breakdown and parts not easily attainable and must be ordered. Shorter notice may suffice at the City’s discretion. Except in the case of emergency or unless otherwise approved by the City, a working day shall be defined for this purpose as any consecutive 12-hour period between 7:00 a.m. and 7:00 p.m. of a working day with a maximum 1-hour lunch break and a 5-day work week Monday through Friday, excluding holidays. Any additional hours (weekends) will be negotiated between the City and the Contractor.
3. **Authorized Hourly Work:** Authorized hourly work shall include furnishing all equipment, labor, tools, and miscellaneous materials necessary to conduct activities not covered under other bid items, and as approved by the City in writing. The City and the Contractor shall maintain records for this work. The City’s record will be binding. No hourly payment will be made to the Contractor for work being performed to condition or ream the borehole, or to repair, clean, or replace equipment that is not in working condition.

NOISE LIMITS

- A. The Contractor shall use all reasonable and available means to reduce noise to minimum levels during working hours. The Contractor shall review the site and understand the relationship of the site to surrounding facilities. The Contractor’s attention is directed to City of Woodburn Ordinance No. 2312, which describes noise control regulations.

WORK LIMITS AND HOURS

- A. The Contractor shall limit work to the following daily schedule; Monday through Friday, 7:00 AM to 7:00 PM.

- B. The Contractor shall obtain approval from the City prior to conducting work on weekends.

WORK COVERED / NOT COVERED BY THE CONTRACT

- A. The general work to be completed under this contract consists of installing one new municipal water supply wellhouse with well pump and associated site and piping improvements.
- B. The City reserves the right to limit (reduce) any aspect of the project for any reason.
- C. The work to be completed under this contract does not include drilling the well.

APPLICABLE SPECIFICATIONS

The Specifications that are applicable to the Work on this Project is the 2021 edition of the "Oregon Standard Specifications for Construction" and the "Technical Specifications" which are part of the Contract Bid Documents.

All number references in these Special Provisions shall be understood to refer to the Sections and subsections of the Standard Specifications bearing like numbers and to Sections and subsections contained in these Special Provisions in their entirety.

PART 00100 – GENERAL CONDITIONS

SECTION 00110 - ORGANIZATION, CONVENTIONS, ABBREVIATIONS AND DEFINITIONS

Comply with Section 00110 of the Standard Specifications modified as follows:

00110.05(e) Reference to Websites - Add the following bullet list to the end of this subsection:

- City of Woodburn Public Works Department:
https://www.woodburn-or.gov/?q=public_works

City of Woodburn Public Works Department Bids and RFPs:

<http://www.ci.woodburn.or.us/?q=blog-categories/bids-and-rfps>

- American Traffic Safety Services Association (ATSSA)
www.atssa.com
- ODOT Construction Section
www.oregon.gov/odot/construction/pages/index.aspx
- ODOT Construction Section - Qualified Products List (QPL)
www.oregon.gov/ODOT/Construction/Pages/Qualified-Products.aspx
- ODOT Estimating
www.oregon.gov/ODOT/Business/Pages/Steel.aspx
- Oregon Legislative Counsel
www.oregonlegislature.gov/lc
- ODOT Procurement Office - Conflict of Interest Guidelines and Disclosure Forms
www.oregon.gov/ODOT/Business/Procurement/Pages/PSK.aspx
- ODOT Procurement Office - Construction Contracts Unit Notice of Intent
www.oregon.gov/ODOT/Business/Procurement/Pages/NOI.aspx
- ODOT Procurement Office - Construction Contracts Unit prequalification forms
www.oregon.gov/odot/business/procurement/pages/bid_award.aspx
- Oregon Secretary of State: State Archives
sos.oregon.gov/archives/Pages/default.aspx
- ODOT Traffic Control Plans Unit
www.oregon.gov/ODOT/Engineering/Pages/Work-Zone.aspx
- ODOT Traffic Standards
www.oregon.gov/ODOT/Engineering/Pages/Signals.aspx

00110.20 Definitions

Replace the “Agency” definition with the following definition:

Agency – The City of Woodburn Public Works Department – Engineering Division.

Add the following definition:

Agency Website – This is the website of the Public Works Department, Engineering Division as owned, controlled and administrated by the City of Woodburn, OR. The URL being referenced when this term is used shall be the following:

<http://www.ci.woodburn.or.us/?q=blog-categories/bids-and-rfps>

Replace the "Bid Booklet" definition with the following definition:

Bid Booklet - The version that can be accessed and printed from the Agency website.

SECTION 00120 - BIDDING REQUIREMENTS AND PROCEDURES

Comply with Section 00120 of the Standard Specifications modified as follows:

00120.00 Prequalification of Bidders - Replace this subsection, except for the subsection number and title, with the following:

The Agency will prequalify Bidders according to ODOT’s Oregon Administrative Rules and prequalification procedures. A Bidder must file for prequalification; there is **NO** fee. Prequalification must be renewed biennially. Bidders shall make application for prequalification and for required renewals on standard forms available from the ODOT Procurement Office - Construction Contracts Unit website. Bidders shall return the completed application to Dago Garcia at 190 Garfield St. Woodburn, OR 97071 or via e-mail at dago.garcia@ci.woodburn.or.us. No facsimile of Prequalification will be accepted.

Contracts will only be awarded to Bidders who, at the time of Bid Opening, are prequalified in the Class or Classes of Work specified in the Special Provisions, except that a Bidder whose prequalification has been revoked or revised as provided in ORS 279C.430(4) may also be eligible for Award under that statute if the Project was advertised prior to the revocation or revision. The Agency will consider a Bid from a Bidder whose complete application for prequalification has been received by the Public Works Department – Engineering Division Office at least 3 Calendar Days before the opening of Bids. Bidders shall submit Bids in the same company name used on the prequalification application; provided however, if Bidder’s legal name has changed since the submittal of its application for prequalification, it shall submit its Bid under its current legal name with the former name referenced by "formerly known as".

The Agency will regularly evaluate the performance of Contractors on its projects for purposes of responding to reference checks, future prequalification and determinations of responsibility.

00120.01 General Bidding Requirements - In the paragraph that begins "Bidders may submit ...", replace the paragraph with the following sentence:

Bidders may submit Bids by paper only. No electronic (e-mail or facsimile) Bids will be accepted.

00120.05 Request for Plans, Special Provisions, and Bid Booklets - Replace this subsection, with the following subsection:

00120.05 Request for Plans, Special Provisions, and Bid Booklets:

(a) Informational Plans and Special Provisions - Informational Project Plans and Special Provisions are available, free of charge, on the Agency's website.

(b) Bidding Plans, Special Provisions, and Bid Booklets - Bidders must submit paper Bids.

(1) Paper Bids - Bidders submitting bids shall access and print Plans, Special Provisions, and Bid Booklets from the Agency's website. Bidders obtaining Plans, Special Provisions, and Bid Booklets must register on Agency's list of "Holders of Bidding Plans". Bids will be considered responsive only if Bidders are registered as "Holders of Bidding Plans".

Delete the paragraph that begins with the following;

"(2) Electronic Bids - Bidders ..."

The Plans, which are applicable to the Work to be performed under the Contract, are included in these Special Provisions.

00120.10 Bid Booklet - In the paragraph that begins "The Bid Section includes all pages after...", add the following bullet to the bullet list:

- Certificate of nondiscrimination regarding ORS 279A.110 and certificate regarding policy and practice against sexual harassment, sexual assault and discrimination against employees who are members of a protected class as required by Chapter 212, Oregon Laws 2017 (House Bill 3060)

00120.30 Changes to Plans, Specifications, or Quantities before Opening of Bids - Replace all "ODOT eBids website" wording in this section with "Agency's website".

Delete "(see 00110.05(e))" wording in this section.

00120.40(a)(1) Paper Bids - Replace this subsection, except for the subsection number and title, with the following:

Bidders shall not alter, in any manner, the (paper) documents within the Bid Section that are accessed and printed from the Agency's website. Bidders shall complete the certifications and statements included in the Bid Section of the Bid Booklet according to the instructions.

Signature of the Bidder's authorized representative thereon constitutes the Bidder's confirmation of an agreement to all certifications and statements contained in the Bid Booklet. Entries on paper documents in the Bid Section shall be in ink or typed.

The Bidder shall properly complete and bind all the paper documents in the Bid Section, as specified in 00120.10, together with all other required documents that are part of the Bid Booklet, between the front and back covers of the Bid Booklet, except that the Bid Bond is not required if another permissible type of Bid guaranty is provided. (see 00120.40(e))

00120.40(a)(2) Electronic Bids – Delete this subsection in its entirety.

00120.40(c)(2) Electronic Bid Schedule Entries – Delete this subsection in its entirety.

00120.40(e)(2) Bid Guaranty with Electronic Bids - Delete this subsection in its entirety.

00120.40(f) Disclosure of First-Tier Subcontractors - Replace this subsection, except for the subsection number and title, with the following:

Without regard to the amount of a Bidder's Bid, if the Agency's cost range for a public improvement Project in the "Invitation to Bid", or in other advertisement or solicitation documents, exceeds \$100,000, the Bidder shall, within 2 working hours of the time Bids are due to be submitted, submit to the Agency, on a form provided by the Agency, a disclosure identifying any first-tier Subcontractors that will furnish labor or labor and Materials, and whose contract value is equal to or greater than:

- 5% of the total Project Bid, but at least \$15,000; or
- \$350,000, regardless of the percentage of the total Project Bid.

For each Subcontractor listed, Bidders shall state:

- The name of the Subcontractor;
- The dollar amount of the subcontract; and
- The category of Work that the Subcontractor would be performing.

If no subcontracts subject to the above disclosure requirements are anticipated, a Bidder shall so indicate by entering "NONE" or by filling in the appropriate check box. For each Subcontractor listed, Bidders shall provide all requested information. An incomplete form will be cause for rejection of the Bid. The first-tier disclosures shall be indicated on the Subcontractor Disclosure Form provided in the Bid Booklet.

Subcontractor Disclosure Forms will be considered late if not received by the Agency within 2 working hours of the time designated for receiving Bids.

The Agency is not responsible for partial, failed, illegible or partially legible facsimile transmissions or submittals, and such forms may be rejected as incomplete.

In the event that multiple Subcontractor Disclosure Forms are submitted, the last version received prior to the deadline will be considered to be the intended version.

Bids not in compliance with the requirements of this Subsection will be considered non-responsive.

00120.45 Submittal of Bids – Replace this subsection, except for the subsection number and title, with the following:

00120.45(a) Paper Bids – Bids may be submitted by mail, parcel delivery service, or hand delivery to the office and address and at the time given in the Bid Booklet. Submit Bids in a sealed envelope and marked on the outside of the envelope as required by the Invitation to Bid. Closing time for acceptance of Bids is 2:00:00 p.m. local time on the day of Bid Opening. Bids submitted after the time set for receiving Bids will not be opened or considered. The Agency assumes no responsibility for the receipt and return of late Bids.

00120.45(b) Electronic Bids - Delete this subsection in its entirety.

00120.60 Revisions or Withdrawals of Bids - Replace this entire subsection, except for name and title, with the following:

(a) Paper Bids - Information entered into the paper Bid Booklet by the Bidder may be changed after the paper Bid has been delivered to the Agency, provided that:

- Changes are prepared according to the instructions identified in the Bid Booklet; and
- Changes are received at the same office, address-, and times identified in the paper Bid Booklet for submitting Bids; and
- The changes are submitted in writing or by electronic facsimile (FAX) transmission to the FAX number given in the paper Bid booklet, signed by an individual authorized to sign the Bid.

A Bidder may withdraw its paper Bid after it has been delivered to the Agency, provided that:

- The written withdrawal request is submitted on the Bidder's letterhead, either by hand delivery or by FAX to the FAX number given in the paper Bid Booklet; and
- The request is signed by an individual who is authorized to sign the Bid, and proof of authorization to sign the Bid accompanies the withdrawal request; and
- The request is received at the same office, address, and times identified in the paper Bid Booklet for submitting Bids.

SECTION 00130 - AWARD AND EXECUTION OF CONTRACT

Comply with Section 00130 of the Standard Specifications modified as follows:

00130.10 Award of Contract - Replace the paragraph that begins "The Agency will provide Notice of Intent to Award..." with the following bullet:

The Agency will provide Notice of Intent to Award on the Agency's website.

00130.15 Right to Protest Award - Replace this subsection number, except for the number and title, with the following:

Adversely affected or aggrieved Bidders, limited to the here apparent lowest Bidders and any other Bidder directly in for Contract Award, may submit to the Agency a written protest of the Agency's intent to Award within 3 working days following posting of the Notice of Intent to Award on the Agency's website. The protest shall specify the grounds upon which it is based.

The Agency is not obligated to consider late protests.

00130.50(a) By the Bidder - In the paragraph that begins "The successful Bidder...", replace the words "ODOT Procurement Office – Construction Contract Unit" with the words "Agency's Project Manager".

SECTION 00150 - CONTROL OF WORK

Comply with Section 00150 of the Standard Specifications modified as follows:

00150.15(a) General – Replace this subsection, except for the subsection number and title, with the following:

The Contractor shall perform no work until the Contractor establishes field controls. Work performed without field controls will be subject to removal at the Contractor's expense.

00150.15(b) Agency Responsibilities - Replace this subsection, except for the subsection number and title, with the following:

The Engineer will provide survey points in a DWG file or text file to the Contractor. The contractor will use survey points to provide the Construction Surveying and perform earthwork slope staking, including grade, cross sections, intersections and matchlines, and set stakes defining limits for clearing which approximate Right-of-Way and easements.

00150.15(c) Contractor Responsibilities - Replace this subsection, except for the subsection number and title, with the following:

The Contractor shall perform the Contractor responsibilities described in the Construction Surveying Manual for Contractors, Chapter 1.6 (see Section 00305) and the following:

Perform earthwork slope staking including intersections and matchlines, and set stakes defining limits for clearing which approximate right-of-way and easements.

00150.30 Delivery of Notices - Add the following to the end of this subsection:

For purposes of this subsection, the time zone is Pacific Standard Time (PST) to determine time of receipt of notices and other documents. For purposes of this subsection, non-business days are Saturdays, Sundays and legal holidays as defined by ORS 187.010 and 187.020.

Following Notice to Proceed, all notices and other documents submitted to the Contractor by the Engineer, or to the Engineer by the Contractor, electronically under 00170.08:

- If recorded in Doc Express® as received before 5:00 p.m. PST on a business day it shall be considered as received on the business day on which it was actually received in Doc Express®.

If recorded in Doc Express® as received on a non-business day, or after 5:00 p.m. PST on a business day, it shall be considered as received at 8:00 a.m. PST on the next business day.

Claims must be submitted on paper documents according to Section 00199.

00150.50(c) Contractor Responsibilities - Add the following subsection:

00150.50(f) Utility Information:

Contact those Utilities having buried facilities and request that they locate and mark them for their protection prior to construction.

Utility	Contact Person's Name, Address, Email, and Phone Number
NW Natural	Darrell Hammond NW Natural – Field Engineering Technician T: 503.585.6611 x8035 C: 541.981.0164 d5h@nwnatural.com
PGE	Alison Baziak Design Project Manager Lighting Services T: 503-463-4381 C: 503-367-8505 Alison.Baziak@pgn.com
Datavision	Jason Riggs Construction Coordinator T: 503-792-3611 C: 503-932-2727 jriggs@datavision.coop
Wavebroadband	Jerry Benson Technical Operations Construction Coordinator 1 2500 National Way Suite 1 Woodburn, OR 97071 C: (503) 307-0350 Jbenson@wavebroadband.com
Lumen Technologies	Josh Fallin Engineer 2 Salem, Keizer & Woodburn 740 State St., Room 407 Salem, OR 97301 T: 503-399-4931 C: 503-798-1009 josh.fallin@lumen.com
Comcast Cable	Phillip Curtis C: 971-777-0933 Phillip_Curtis@comcast.com

This Project is located within the Oregon Utility Notification Center area which is a Utilities notification system for notifying owners of Utilities about Work being performed in the vicinity of their facilities. The Utilities notification system telephone number is 811 (or use the old number which is 1-800-332-2344).

SECTION 00170 - LEGAL RELATIONS AND RESPONSIBILITIES

Comply with Section 00170 of the Standard Specifications modified as follows:

00170.60 Safety, Health and Sanitation Provisions – Add the following paragraph to the end of this subsection:

The Contractor is responsible to require each subcontractor at every tier to comply with the requirements of OAR 437-002-0146, Oregon OSHA’s Confined Space Rule including a copy of all closed permit entry forms to the Agency Project Manager within 24 hours of closing the permit.

00170.70(a) Insurance Coverages - The following insurance coverages and dollar amounts are required pursuant to this subsection:

Coverages	per Occurrence	Limit
Commercial General Liability	\$1,000,000.00	\$2,000,000.00
Commercial Automobile Liability	\$1,000,000.00	(aggregate limit not required)

00170.70(c) Additional Insured - Add the following paragraph and bullet(s) to the end of this subsection:

Add the following as Additional Insureds under the Contract:

- The City of Woodburn, OR and its officers, agents, representatives, volunteers and employees

Murraysmith, Inc., Portland, OR

GSI Water Solutions, Portland, OR

Peterson Structural Engineers, Inc., Portland, OR

McMillen Jacobs Associates, Portland, OR

AKS Engineering & Forestry, LLC, Tualatin, OR

Portland Engineering, Inc, Portland, OR

00170.72 Indemnity/Hold Harmless - Add the following paragraph and bullets to the end of this subsection:

Extend indemnity, defense and hold harmless to the Agency and the following:

- The City of Woodburn, OR and its officers, agents, representatives, volunteers and employees

Murraysmith, Inc., Portland, OR

GSI Water Solutions, Portland, OR

Peterson Structural Engineers, Inc., Portland, OR

McMillen Jacobs Associates, Portland, OR

AKS Engineering & Forestry, LLC, Tualatin, OR

Portland Engineering, Inc, Portland, OR

SECTION 00180 - PROSECUTION AND PROGRESS

Comply with Section 00180 of the Standard Specifications modified as follows:

00180.40(a) In General – Add the following bullets to this subsection:

- Street Closures are not allowed in this project.
- Provided and maintain access to all homes, School and Business at all times.
- All work shall be accomplished between 7:00 AM and 7:00 PM every day from Monday through Friday, excluding Legal Holidays.

Add the following subsection:

00180.40(c) Specific Limitations - Limitations of operations specified in these Special Provisions include, but are not limited to, the following:

Limitations	Subsection
Cooperation with Utilities	00150.50
Cooperation with Other Contractors	00150.55
On-Site Work	00180.40(b)
Contract Time	00180.50(h)
Right-of-Way and Access Delays	00180.65
Special Events	00220.40(e)(2)(b)
Regulated Work Areas	00290.34(a)
Noise Control	00290.32

00180.41 Project Work Schedules - After the paragraph that begins "One of the following Type..." add the following paragraph:

In addition to the "look ahead" Project Work schedule, a Type A schedule as detailed in the Standard Specifications is required on this Contract.

00180.42 Preconstruction Conference - Add the following paragraph to the end of this subsection:

A mandatory pre-construction conference shall be scheduled no less than two weeks prior to the start of work. At this conference, the Contractor shall provide the following pre-construction submittals in addition to submittals mentioned elsewhere in the Contract Documents:

Construction Schedule: A detailed construction schedule, which shall be followed by the Contractor throughout the duration of the contract, and updated as needed.

Weekend/Emergency Contacts: The names, addresses, and telephone numbers of two or more persons employed by the Contractor who can be reached during evening and weekend hours to handle emergency matters.

00180.50(c) Beginning of Contract Time - Replace this subsection, except for the subsection number and title, with the following:

When the Contract Time is stated in Calendar Days, counting of Contract Calendar Days will begin on the day the Contractor begins On-Site Work as defined in 00110.20.

Add the following subsection:

00180.50(h) Contract Time - There is one Contract Time on this Project as follows:

Complete all Work to be done under the Contract within 360 days of the Notice to Proceed, to a level of Substantial Completion, which is defined as the completion of well house including well pump installation, various water main installations, connection to existing water treatment facility, asphalt paving, and stormwater improvements

00180.85(b)(1) Single Contract Time - Replace this subsection, except for the subsection number and title, with the following:

The Liquidated Damages per Calendar Day* are 15.0 percent of C divided by T as defined in this Section.

C = The Contractor's Bid amount for the Contract.

T = The total Calendar Days between the latest completion date or time listed under 00180.50(h) in the Solicitation Documents and the Bid Opening that will result in the greatest value for T.

* Calendar Day amounts are applicable when the Contract time is expressed on the Calendar Day or fixed date basis.

Liquidated damage amount per day shall be determined by the above formula, but shall be no less than \$150 per day.

SECTION 00195 - PAYMENT

Comply with Section 00195 of the Standard Specifications modified as follows:

00195.10 Payment for Changes in Materials Costs - Replace this subsection with the following subsection:

00195.10 Payment for Changes in Materials Costs – There are no changes in payments for escalation/De-Escalation of materials in this Contract.

Additional work required by the Agency will be negotiated on a case by case basis for all changes in materials costs and shall be agreed upon, in writing, before the work is accomplished.

All materials are subject to change in costs and conditions, as specified in subsection 00195.20 Changes in Plans or Character of Work, including but not limited to:

- Steel Materials Price Adjustment
- Asphalt Cement Price Adjustment
- Fuel Price Adjustment

The Agency reserves all of its rights under the Contract, including, but not limited to, its rights for suspension of the Work under 00180.70 and its rights for termination of the Contract under 00180.90, and this escalation/de-escalation provision shall not limit those rights.

00195.12 Steel Material Price Escalation/De-Escalation – Remove this subsection in its entirety.

00195.50 (a)(1) Progress Payments - Replace the paragraph that begins with “At the same time each month...” of this subsection with the following:

At the same time each month, the Contractor will make an estimate of the amount and value of the Pay Item Work completed. The Contractor will submit this estimation of quantities to the Engineer for agreement on the number of estimated units completed for unit price Pay Items plus the estimated percentage completed of lump sum Pay Items.

00195.50 (a)(2) Value of Materials on Hand – Replace the paragraph that begins with “The Engineer will...” of this subsection with the following:

The Contractor will also make an estimate of the amount and value of acceptable Materials on hand, i.e., already delivered and stored according to 00195.60(a), to be incorporated into the Work and submit this estimation to the Engineer for agreement for Pay Items for this progress payment.

00195.50(b) Retainage - Replace the paragraph that begins "The Agency reserves the right to in its sole discretion..." with the following paragraph:

The amount to be retained from progress payments will be 5% of the value of Work accomplished, and will be retained by the Agency until completion of the Work as specified in (c) below.

00195.50 (c) Forms of Retainage - Replace this entire subsection, except for the number and title, with the following:

The Agency will withhold payment of 5% of all progress payments until completion of the project as is described in 00195.50(c).

00195.50 (d) Release of Retainage – Replace this entire subsection, except for the number and title, with the following:

The Agency will make payment to the Contractor after the Contractor has made application for payment to the Engineer upon issuance of the Third Notification.

PART 00200 – TEMPORARY FEATURES and APPURTENANCES

SECTION 00220 - ACCOMMODATIONS FOR PUBLIC TRAFFIC

Comply with Section 00220 of the Standard Specifications modified as follows:

00220.40(e)(2)(a) Holidays – Replace the section that begins “For the Purposes of this Section...” with the following:

For the purposes of this Section, legal holidays are as follows:

- New Year’s Day on January 1
- Martin Luther King Jr Day on the third Monday in January
- Presidents Day on the third Monday in February
- Memorial Day on the last Monday in May
- Independence Day on July 4
- Labor Day on the first Monday in September
- Veterans Day on November 11
- Thanksgiving Day on the fourth Thursday in November
- Day After Thanksgiving Day on the Friday after the fourth Thursday in November
- Christmas Eve on December 24
- Christmas Day on December 25

When a holiday falls on Sunday, the following Monday shall be recognized as a legal holiday.
When a holiday falls on Saturday, the preceding Friday shall be recognized as a legal holiday.

SECTION 16
OREGON PREVAILING WAGE RATES
BID No. 2022-09

The applicable Oregon prevailing wage rates are contained in the publications *Prevailing Wage Rates for Public Works Contracts in Oregon, Effective January 1, 2022 and April 1, 2022 Prevailing Wage Rate Amendments*, and are incorporated herein as though fully set forth as of the date the Bidding Documents are first advertised.

See Oregon Bureau of Labor and Industries website links at:

<https://www.oregon.gov/boli/employers/Pages/prevailing-wage-rates.aspx>

NOTE: THIS FORM TO BE COMPLETED BY OWNER. IT IS INCLUDED IN THE CONTRACT DOCUMENTS FOR BIDDERS' INFORMATION ONLY.

- Determined the Bidder to be (check only one of the following):
- Responsible under ORS 279C.375 (3)(a) and (b).
 - Not responsible under ORS 279C.375 (3)(a) and (b).
(Attach documentation if OWNER finds the bidder not to be responsible)
-

This form and any attachments must be submitted within 30 days after the date of Contract Award to the Oregon Construction Contractors Board, PO Box 14140, Salem, OR 97309-5052, Phone (503) 378-4621, Fax (503) 373-2007.

DRAWINGS



CITY OF WOODBURN NEW PRODUCTION WELL FOR THE PARR ROAD TREATMENT PLANT

MARCH 2022 VOLUME 2 OF 2

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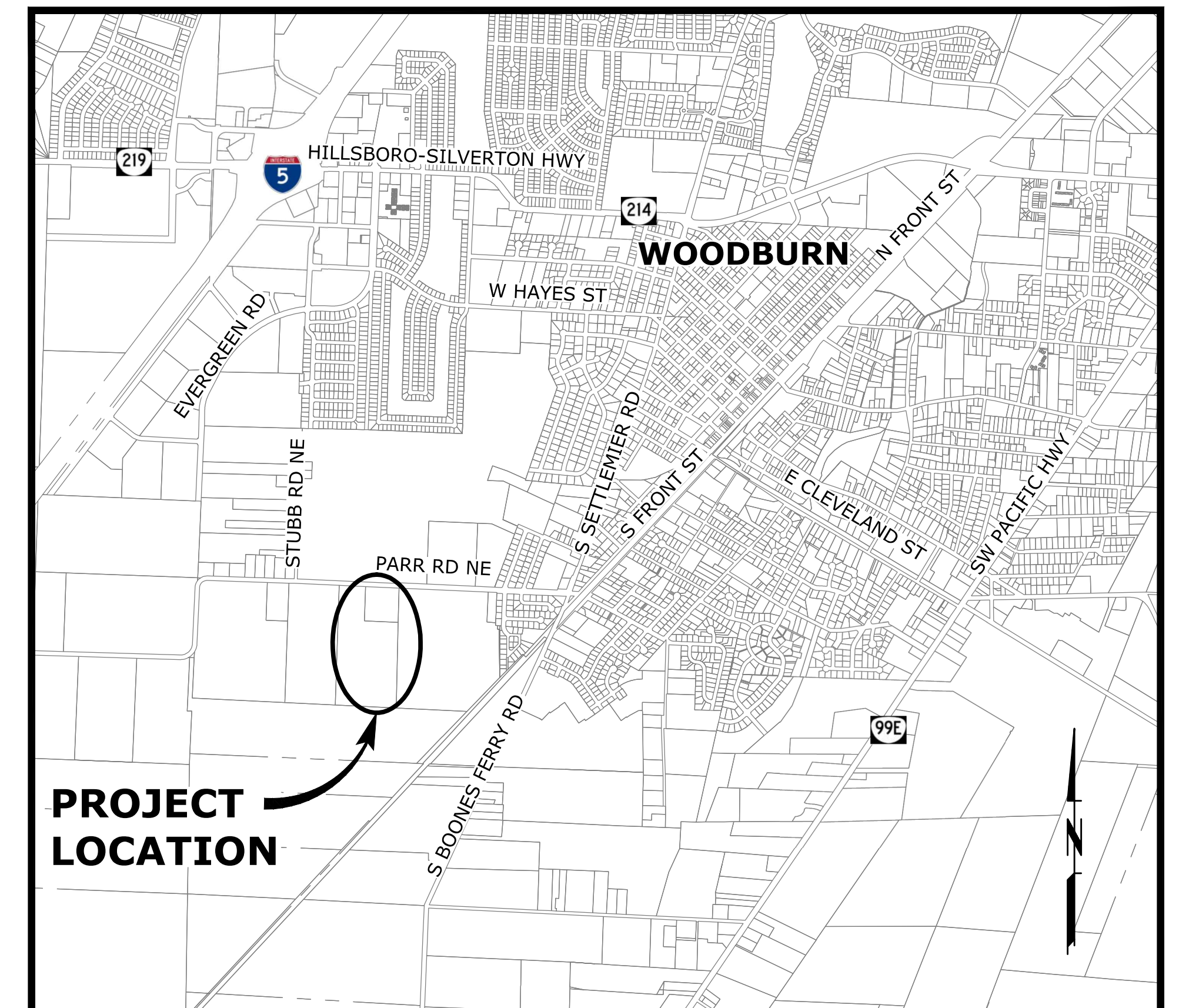
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PROJECT LOCATION

VICINITY MAP

SCALE: 1"=1500'

SITE ADDRESS: 900 PARR RD,
NE WOODBURN OR 97071
TAX LOT: 052W130000700

ATTENTION: OREGON LAW REQUIRES THE CONTRACTOR TO FOLLOW THE RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH OAR 952-001-0090. THE CONTRACTOR MAY OBTAIN COPIES OF THE RULES BY CALLING THE UTILITY NOTIFICATION CENTER. (NOTE: THE TELEPHONE NUMBER FOR THE OREGON UTILITY NOTIFICATION CENTER IS 800-332-2344.)

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888 SW 5TH AVENUE, SUITE 1170
PORTLAND, OREGON 97204
P 503.225.9010



Know what's below.
Call before you dig.

PIPE & FITTING SYMBOLS

PLANT	SCHEMATIC	DESCRIPTION
		WELDED JOINT
		FLANGED JOINT
		GROOVED END JOINT
		MECHANICAL JOINT
		PUSH-ON JOINT (RUBBER GASKET)
		FLANGED COUPLING ADAPTER
		DOUBLE BALL FLEXIBLE EXTENSION COUPLING
		FLEXIBLE COUPLING W/ THRUST RING
		90° BEND UP
		90° BEND DOWN
		TEE UP
		TEE DOWN
		LATERAL UP
		LATERAL DOWN
		CONCENTRIC REDUCER
		ECCENTRIC REDUCER
		UNION
		BLIND FLANGE
		CAP
		LONG SLEEVE
		FLEXIBLE COUPLING
		FITTING (45°)

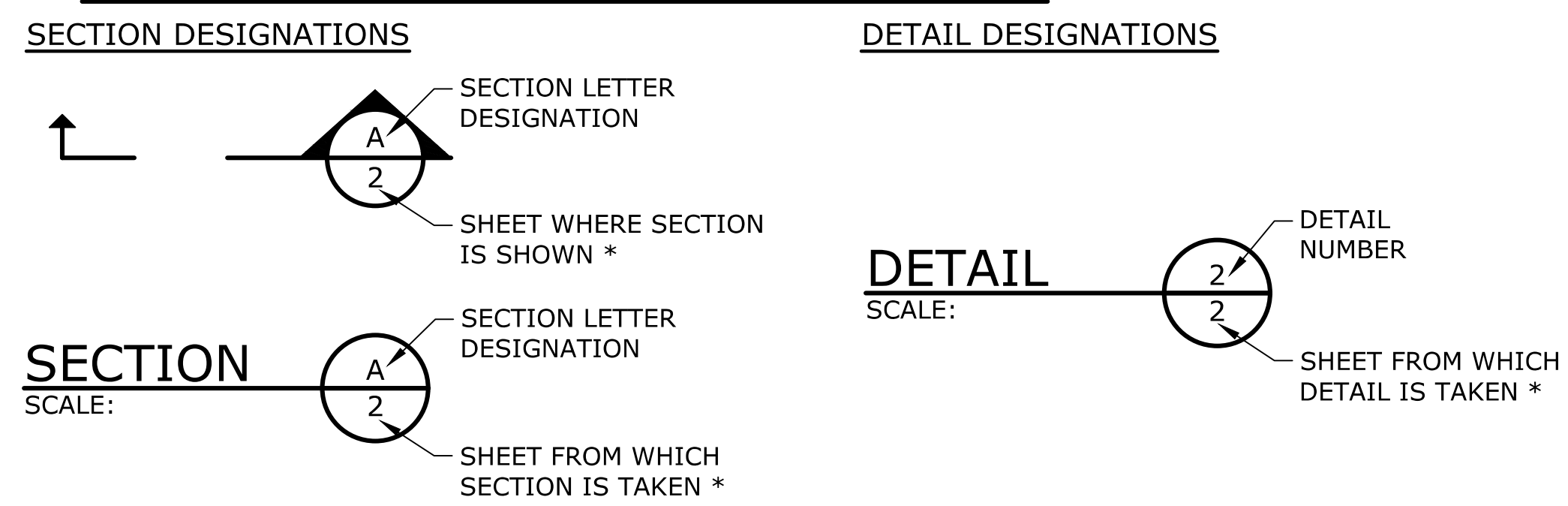
TOPOGRAPHIC LEGEND

	EXISTING	PROPOSED
WATERLINE	--- 10"W ---	— 12"DI W —
ELECTRICITY	--- E ---	— E —
GAS	--- 4"G ---	— 4"G —
TELEPHONE/TELEMETRY	--- T ---	— T —
CABLE TELEVISION	--- CATV ---	— CATV —
SANITARY SEWER LINE	--- 8"SS ---	— 8"SS —
SANITARY SEWER FORCE MAIN	--- 6"FM ---	— 6"FM —
STORM DRAIN	--- 8"SD ---	— 8"SD —
CULVERT	===	> 18"D <
ABANDON PIPE		+++++
DRAINAGE DITCH	-----	-----
BARBWIRE FENCE	- x - x - x -	- x - x - x -
CHAIN LINK FENCE	- o - o - o - o -	- o - o - o - o -
TEMPORARY SILT FENCE		□ □
GUARDRAIL	o o o o o o o o	
ROCK WALL	
TREE/BUSH LINE	~~~~~	
CENTERLINE	-----	-----
EASEMENT/PROPERTY LINE	-----	-----
RIGHT-OF-WAY	-----	-----
EDGE OF PAVEMENT/AC
EDGE OF GRAVEL	-----	-----
CURB	=====	=====
SIDEWALK	S/W	S/W
STRUCTURE OR FACILITY	=====	=====
CONTOUR MINOR	-----	-----
CONTOUR MAJOR	200	200
MANHOLE	○	○
CLEAN-OUT	○	○
CATCH BASIN/FIELD INLET	□	□
THRUST BLOCK	△	▲
VALVE	⊗	⊗
AIR INJECTION ASSEMBLY	⊥	⊥
BLOW-OFF ASSEMBLY	⊥	⊥
AIR RELEASE ASSEMBLY	⊥	⊥
FIRE HYDRANT ASSEMBLY	⊥	⊥
WATER METER	⊥	⊥
PULL BOX/JUNCTION BOX	⊥	⊥
UTILITY POLE	○	○
GUY WIRE	↖	↖
LIGHT POST	○	○
MAILBOX	□	□
SIGN	⊥	⊥
BENCHMARK	⊕	⊕
TREE DECIDUOUS	☁	☁
TREE CONIFEROUS	☀	☀
TREE TO BE REMOVED	☀	☀
SURFACE ELEVATION	+ 176.63	+ 176.63

VALVE SYMBOLS

PLANT	SCHEMATIC	DESCRIPTION
		BUTTERFLY VALVE
		GATE VALVE
		GLOBE VALVE
		BALL VALVE
		BALANCING VALVE
		PLUG VALVE (TOP)
		PLUG VALVE (SIDE)
		3-WAY PLUG VALVE
		CHECK VALVE
		SWING CHECK VALVE
		DOUBLE CHECK ASSEMBLY
		BALL SWING CHECK
		SILENT CHECK VALVE
		PRESSURE REDUCING VALVE
		ALTITUDE CONTROL VALVE
		SOLENOID VALVE
		RELIEF VALVE
		NEEDLE VALVE
		HOSE VALVE
		REDUCED PRESSURE BACKFLOW PREVENTER W/ GATE VALVES
		HOSE BIBB

SECTION AND DETAIL DESIGNATIONS



MISCELLANEOUS PIPING SYMBOLS

	STRAINER
	SIGHT GLASS
	PRESSURE GAUGE W/ COCK
	PRESSURE SWITCH W/ COCK
	METER
	SLIP-ON JOINT PIPE
	RESTRAINED JOINT PIPE

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NO.	DATE	BY	REVISION

NOTICE

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

LBC DESIGNED
JSD DRAWN
MLM CHECKED

RENEWS 12-31-22

CITY OF WOODBURN
NEW PRODUCTION WELL FOR
THE PARR ROAD TREATMENT PLANT

SYMBOLS AND LEGEND

PROJECT NO.: 19-2697 SCALE: AS SHOWN DATE: MARCH 2022

SHEET

G-2

2 of 67

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@ AASHTO	AT AMERICAN ASSOCIATION OF STATE HIGHWAY & TRANSPORTATION OFFICIALS	CO COLUMN	CLEANOUT	FTG FOOTING	LS LONG SLEEVE / LUMP SUM	RDCR REDUCER	VCP VITRIFIED CLAY PIPE
AB ANCHOR BOLT	CONC CONCRETE	COL COMBINATION	COLUMN	FUT FUTURE	LT LEFT	REF REFERENCE	VTR VENT THROUGH ROOF
ABAN(D)	CONN CONNECTION	COMB COMBINATION	COMBINATION	FXTR FIXTURE	LVL LEVEL	REINF REINFORCE(D)(ING)(MENT)	W/ WITHOUT
ABS ACRYLONITRILE BUTADIENE STYRENE	CONC CONCRETE	CONC CONCRETE	CONCRETE	G GAS	LWL LOW WATER LINE	REQ'D REQUIRED	W/O WITHOUT
ABV ABOVE	CONSTR CONSTRUCTION	CONC CONCRETE	CONCRETE	GA GAUGE	MAN MANUAL	RESTR RESTRAINED	W/W WALL TO WALL
AC ASPHALTIC CONCRETE	CONTR CONTRACT(OR)	CONC CONCRETE	CONCRETE	GAL GALLON	MATL MATERIAL	RFA RESTRAINED FLANGE COUPLING	WD WOOD
ACP ASPHALTIC CONCRETE PAVING	COORD COORDINATE	CONC CONCRETE	CONCRETE	GALV GALVANIZED	MAX MAXIMUM	RM ROOM	WF WIDE FLANGE
ADJ ADJUSTABLE	COP COPPER	CONC CONCRETE	CONCRETE	GC GROOVED COUPLING	MCC MOTOR CONTROL CENTER	RND ROUND	WH WATER HEATER
ADJC ADJACENT	CORP CORPORATION	CONC CONCRETE	CONCRETE	GFA GROOVED FLANGE ADAPTER	MCP MASTER CONTROL PANEL	RO ROUGH OPENING	WI WROUGHT IRON
AFF ABOVE FINISHED FLOOR	CORR CORRUGATED	CONC CONCRETE	CONCRETE	GI GALVANIZED IRON	MECH MECHANICAL	ROW OR RIGHT-OF-WAY	WM WATER METER
AFG ABOVE FINISHED GRADE	CP CONTROL POINT	CONC CONCRETE	CONCRETE	GIP GALVANIZED IRON PIPE	MET METAL	R/W WORKING POINT / WATERPROOFING	WP WORKING POINT / WATERPROOFING
AHR ANCHOR	CPLG COUPLING	CONC CONCRETE	CONCRETE	GJ GRIP JOINT	MFR MANUFACTURER	RPBPD REDUCED PRESSURE BACKFLOW PREVENTION DEVICE	WT WEIGHT
AL ALUMINUM	CPVC CHLORINATED POLYVINYL CHLORIDE	CONC CONCRETE	CONCRETE	GL GLASS	MGD MILLION GALLONS PER DAY	RPM REVOLUTIONS PER MINUTE	WTRT WATER TREATMENT PLANT
ALT ALTERNATE	CR CRUSHED ROCK	CONC CONCRETE	CONCRETE	GLV GLOBE VALVE	MH MANHOLE	RR RAILROAD	WWF WELDED WIRE FABRIC
AMP AMPERE	CS COMBINED SEWER	CONC CONCRETE	CONCRETE	GND GROUND	MIPT MALE IRON PIPE THREAD	RST REINFORCED STEEL	WWTF WASTEWATER TREATMENT FACILITY
ANSI AMERICAN NATIONAL STANDARDS INSTITUTE	CSP CONCRETE SEWER PIPE	CONC CONCRETE	CONCRETE	GPD GALLONS PER DAY	MISC MISCELLANEOUS	RT RIGHT	WWTP WASTEWATER TREATMENT PLANT
APPROX APPROXIMATE	CT COURT	CONC CONCRETE	CONCRETE	GPM GALLONS PER MINUTE	MJ MECHANICAL JOINT	SALV SALVAGE	X SECT CROSS SECTION
APPVD APPROVED	CTR CENTER	CONC CONCRETE	CONCRETE	GPS GALLONS PER SECOND	MON MONUMENT / MONOLITHIC	SAN SANITARY	XFMR TRANSFORMER
APWA AMERICAN PUBLIC WORKS ASSOCIATION	CU CUBIC	CONC CONCRETE	CONCRETE	GR GRADE	MOT MOTOR	SC SOLID CORE	YD YARD DRAIN / YARD
ARCH ARCHITECTURAL	CULV CULVERT	CONC CONCRETE	CONCRETE	GR LN GRADE LINE	MP MILEPOST	SCHED SCHEDULE	YH YARD HYDRANT
ARV AIR RELEASE VALVE	CV CONTROL VALVE	CONC CONCRETE	CONCRETE	GRTG GRATING	MSL MEAN SEAL LEVEL	SDL SADDLE	YR YEAR
ASCE AMERICAN SOCIETY OF CIVIL ENGINEERS	CW CLOCKWISE / COLD WATER	CONC CONCRETE	CONCRETE	GV GATE VALVE	MTD MOUNTED	SDR STANDARD DIMENSION RATIO	
ASSN ASSOCIATION	CY CUBIC YARDS	CONC CONCRETE	CONCRETE	GRVL GRAVEL	NA NOT APPLICABLE	SECT SECTION	
ASSY ASSEMBLY	CYL CYLINDER LOCK	CONC CONCRETE	CONCRETE	GYP GYPSUM	NC NORMALLY CLOSED	SHLDR SHOULDER	
ASTM AMERICAN SOCIETY FOR TESTING & MATERIALS	D DRAIN	CONC CONCRETE	CONCRETE	HB HOSE BIBB	NF NEAR FACE	SHT SHEET	
ATM ATMOSPHERE	DC DIRECT CURRENT	CONC CONCRETE	CONCRETE	HC HOLLOW CORE	NO NOT IN CONTRACT	SIM SIMILAR	
AUTO AUTOMATIC	DEFL DEFLECTION	CONC CONCRETE	CONCRETE	HDPE HIGH DENSITY POLYETHYLENE	NO /NO. NORMALLY OPEN / NUMBER	SLP SLOPE	
AUX AUXILIARY	DET DETAIL	CONC CONCRETE	CONCRETE	HDR HEADER	NOM NOMINAL	SLV SLEEVE	
AVE AVENUE	DI DUCTILE IRON	CONC CONCRETE	CONCRETE	HDWE HARDWARE	NORM NORMAL	SOLN SOLUTION	
AVG AVERAGE	DIA DIAMETER	CONC CONCRETE	CONCRETE	HGR HANGER	NRS NON-RISING STEM	SP SOIL PIPE / SEWER PIPE	
AWWA AMERICAN WATER WORKS ASSOCIATION	DIM DIMENSION	CONC CONCRETE	CONCRETE	HGT HEIGHT	NTS NOT TO SCALE	SPCL SPECIAL	
	DIR DIRECTION	CONC CONCRETE	CONCRETE	HH HANDHOLD	O TO O OUT TO OUT	SPEC(S) SPECIFICATION(S)	
	DIST DISTANCE	CONC CONCRETE	CONCRETE	HM HOLLOW METAL	OC ON CENTER	SPG SPACING	
	DN DOWN	CONC CONCRETE	CONCRETE	HNDRL HAND RAIL	OD OUTSIDE DIAMETER	SPL SPOOL	
	DR DRIVE	CONC CONCRETE	CONCRETE	HOA HAND-OFF-AUTO	ODOT OREGON DEPARTMENT OF TRANSPORTATION	SPRT SUPPORT	
	DS DOWNSPOUT	CONC CONCRETE	CONCRETE	HOR HAND-OFF-REMOTE	OF OVERFLOW / OUTSIDE FACE	SQ SQUARE	
	DWG DRAWING	CONC CONCRETE	CONCRETE	HORIZ HORIZONTAL	OPNG OPENING	SQ FT SQUARE FOOT	
	DWL DOWEL	CONC CONCRETE	CONCRETE	HP HIGH PRESSURE / HORSEPOWER	OPP OPPOSITE	SQ IN SQUARE INCH	
	DWV DRAIN WASTE AND VENT	CONC CONCRETE	CONCRETE	HPG HIGH PRESSURE GAS	ORIG ORIGINAL	SQ YD SQUARE YARD	
	DWY DRIVEWAY	CONC CONCRETE	CONCRETE	HPT HIGH POINT	OVHD OVERHEAD	SST STAINLESS STEEL	
		CONC CONCRETE	CONCRETE	HR HOUR	P&ID PROCESS & INSTRUMENTATION DIAGRAM	ST STREET	
		CONC CONCRETE	CONCRETE	HSB HIGH STRENGTH BOLT	PC POINT OF CURVE	STA STATION	
		CONC CONCRETE	CONCRETE	HV HOSE VALVE	PCC POINT OF COMPOUND CURVE	STD STANDARD	
		CONC CONCRETE	CONCRETE	HVAC HEATING, VENTILATION, AIR CONDITIONING	PCVC POINT OF CURVATURE ON VERTICAL CURVE	STL STEEL	
		CONC CONCRETE	CONCRETE		PE PLAIN END	STOR STORAGE	
		CONC CONCRETE	CONCRETE		PERF PERFORATED	STR STRAIGHT	
		CONC CONCRETE	CONCRETE		PERM PERMANENT	STRUCT STRUCTURE / STRUCTURAL	
		CONC CONCRETE	CONCRETE		PERP PERPENDICULAR	SUBMG SUBMERGED	
		CONC CONCRETE	CONCRETE		PG PRESSURE GAUGE	SUCT SUCTION	
		CONC CONCRETE	CONCRETE		PH PIPE HANGER	SV SOLENOID VALVE	
		CONC CONCRETE	CONCRETE		PI POINT OF INTERSECTION	S/W SIDEWALK	
		CONC CONCRETE	CONCRETE		PIVC POINT OF INTERSECTION ON VERTICAL CURVE	SWD SIDEWATER DEPTH	
		CONC CONCRETE	CONCRETE		PL PROPERTY LINE / PLATE / PLASTIC	SWGR SWITCH GEAR	
		CONC CONCRETE	CONCRETE		PLBG PLUMBING	SYMM SYMMETRICAL	
		CONC CONCRETE	CONCRETE		PNL PANEL	SYS SYSTEM	
		CONC CONCRETE	CONCRETE		POC POINT OF CURVATURE	T OR TEL TELEPHONE	
		CONC CONCRETE	CONCRETE		POLY POLYETHYLENE	T&B TOP & BOTTOM	
		CONC CONCRETE	CONCRETE		POT POINT OF TANGENCY	TAN TANGENCY	
		CONC CONCRETE	CONCRETE		PP POWER POLE	TB THRUST BLOCK	
		CONC CONCRETE	CONCRETE		PRC POINT OF REVERSE CURVATURE	TBM TEMPORARY BENCHMARK	
		CONC CONCRETE	CONCRETE		PRCST PRECAST	TC TOP OF CONCRETE / TOP OF CURB	
		CONC CONCRETE	CONCRETE		PREP PREPARATION	TDH TOTAL DYNAMIC HEAD	
		CONC CONCRETE	CONCRETE		PRESS PRESSURE	TEMP TEMPERATURE / TEMPORARY	
		CONC CONCRETE	CONCRETE		PRKG PARKING	T&G TONGUE & GROOVE	
		CONC CONCRETE	CONCRETE		PROP PROPERTY / PROPOSED	THK THICKNESS	
		CONC CONCRETE	CONCRETE		PRV PRESSURE REDUCING VALVE	THRD THREAD(ED)	
		CONC CONCRETE	CONCRETE		PS PUMP STATION	THRU THROUGH	
		CONC CONCRETE	CONCRETE		PSIG POUNDS PER SQUARE INCH GAGE	TP TEST PIT / TOP OF PAVEMENT / TURNING POINT	
		CONC CONCRETE	CONCRETE		PSL PIPE SLEEVE	TRANS TRANSITION / TRANSMISSION	
		CONC CONCRETE	CONCRETE		PSPT PIPE SUPPORT	TSP TRI-SODIUM PHOSPHATE	
		CONC CONCRETE	CONCRETE		PT POINT OF TANGENCY	TST TOP OF STEEL	
		CONC CONCRETE	CONCRETE		PTVC POINT OF TANGENCY ON VERTICAL CURVE	TW TOP OF WALL	
		CONC CONCRETE	CONCRETE		PV PLUG VALVE	TYP TYPICAL	
		CONC CONCRETE	CONCRETE		PVC POLYVINYL CHLORIDE	UG UNDERGROUND	
		CONC CONCRETE	CONCRETE		PVMT PAVEMENT	UH UNIT HEATER	
		CONC CONCRETE	CONCRETE		PWR POWER	UN UNION	
		CONC CONCRETE	CONCRETE		QTY QUANTITY	UON UNLESS OTHERWISE NOTED	
		CONC CONCRETE	CONCRETE		RAD RADIUS	USGS UNITED STATES GEOLOGIC SURVEY	
		CONC CONCRETE	CONCRETE		RC REINFORCED CONCRETE	V VENT / VOLT	
		CONC CONCRETE	CONCRETE		RCP REINFORCED CONCRETE PIPE	VAC VACUUM	
		CONC CONCRETE	CONCRETE		RD ROAD / ROOF DRAIN	VB VALVE BOX	
		CONC CONCRETE	CONCRETE			VC VERTICAL CURVE	
		CONC CONCRETE	CONCRETE			VERT VERTICAL	
		CONC CONCRETE	CONCRETE			VFD VARIABLE FREQUENCY DRIVE	
		CONC CONCRETE	CONCRETE			VOL VOLUME	

PIPING SERVICE ABBREVIATIONS

FW	FINISH WATER
PTW	PUMP TO WASTE
RW	RAW WATER
SD	STORM DRAIN
SS	SANITARY SEWER
W	WATER
WS	WATER SERVICE

NO.	DATE	BY	REVISION

NOTICE

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

LBC
DESIGNED

JSD
DRAWN

MLM
CHECKED



CITY OF WOODBURN
NEW PRODUCTION WELL FOR
THE PARR ROAD TREATMENT PLANT

ABBREVIATIONS			
PROJECT NO.:	19-2697	SCALE:	AS SHOWN
DATE:	MARCH 2022		

GENERAL NOTES

1. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE 2020 EDITION OF THE OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION AND ALL APPLICABLE LOCAL, STATE, AND FEDERAL CODES AND REGULATION.

2. CONTRACTOR SHALL HAVE A COPY OF THESE APPROVED PLANS AND DETAILS ON-SITE AT ALL TIMES DURING CONSTRUCTION.

3. ANY REVISIONS MADE TO THESE PLANS MUST BE REVIEWED AND APPROVED BY THE AGENCY PRIOR TO ANY IMPLEMENTATION IN THE FIELD.

4. THE CONTRACTOR SHALL HAVE ALL UTILITIES VERIFIED ON THE GROUND PRIOR TO ANY CONSTRUCTION. CALL ONE CALL LOCATE AT LEAST 48 HOURS IN ADVANCE. THE PUBLIC WORKS DEPARTMENT AND ENGINEERING DIVISION SHALL BE CONTACTED IMMEDIATELY IF A CONFLICT EXISTS (503-982-5240).

5. THE CONTRACTOR SHALL AT ALL TIMES ABIDE BY APPLICABLE SAFETY RULES OF OR-OSHA AND IN PARTICULAR THOSE PERTAINING TO ADEQUATE SHORING AND TRENCH PROTECTION.

6. EXISTING UTILITY LOCATIONS ARE APPROXIMATE ONLY, EXACT LOCATIONS TO BE DETERMINED IN THE FIELD BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL COORDINATE WORK WITH ALL UTILITY COMPANIES AS REQUIRED TO COMPLETE THE PROJECT.

7. ALL DAMAGE(S) CAUSED BY THE CONTRACTOR SHALL BE RESTORED TO AN "AS GOOD OR BETTER" CONDITION.

8. PROPERTY OWNERS/RESIDENTS SHALL HAVE ACCESS TO THEIR PROPERTIES AT ALL TIMES DURING CONSTRUCTION ACTIVITIES. CONTRACTOR TO MAKE ALLOWANCES FOR ANY LOCAL DELIVERIES AND/OR GARBAGE PICK-UP. PROVIDE WRITTEN NOTICE TO ALL PROPERTY OWNERS AT LEAST 2 WORK DAYS IN ADVANCE OF WORK IN AND OR CROSSING DRIVEWAYS.

9. CONTRACTOR MAY PROCURE WATER FROM A CITY FIRE HYDRANT ONLY AFTER APPROVAL OF THE ENGINEER AND INSTALLATION OF BACKFLOW PREVENTER BY CITY DRINKING WATER SECTION CREW.

10. ONLY CITY STAFF CAN OPERATE LIVE WATER VALVES AND FIRE HYDRANTS. NOTIFY THE CITY OF WOODBURN PRIOR TO THE NEED FOR THE OPERATION OF LIVE WATER LINES.

11. CONTRACTOR SHALL REMOVE ALL EXISTING SIGNS, MAILBOXES, FENCES, LANDSCAPING, AND ETC. AS REQUIRED TO AVOID DAMAGE DURING CONSTRUCTION AND REPLACE THEM TO EXISTING OR BETTER CONDITION WHEN WORK IS COMPLETED. MAILBOXES SHALL BE TEMPORARILY RELOCATED. MEANS, METHODS AND LOCATIONS AS APPROVED BY THE ENGINEER.

12. THE CONTRACTOR SHALL LOCATE AND MARK ALL EXISTING PROPERTY AND STREET MONUMENTS PRIOR TO CONSTRUCTION. ANY MONUMENTS DISTURBED DURING CONSTRUCTION OF THE PROJECT SHALL BE REPLACED AND RECORDED BY A REGISTERED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

13. THE CONTRACTOR SHALL INSTALL AND MAINTAIN ALL THE REQUIRED EROSION CONTROL MEASURES IN ACCORDANCE WITH THE NOTES AND PLANS.

GRADING AND PAVING NOTES

1. IMMEDIATELY FOLLOWING FINE GRADING OPERATIONS, COMPACT AND PROOF ROLL SUBGRADE AREAS TO ACHIEVE AT LEAST 95% OF MAXIMUM DENSITY FOR A 9" DEPTH PER AASHTO T-99. EMBANKMENTS OR FILLS ARE TO BE CONSTRUCTED IN 6" MAXIMUM LIFTS, WITH EACH LIFT BEING COMPACTED TO 95% MAXIMUM OF DENSITY PRIOR TO PROCEEDING WITH THE NEXT LIFT. AREAS RECEIVING STRUCTURAL FILL ARE TO BE TESTED BY A QUALIFIED TESTING LAB.

2. AGGREGATE BASE ROCK SHALL BE ¾"-0 CRUSHED ROCK. AGGREGATE BASE IS TO BE COMPACTED IN 6" MAXIMUM LIFTS TO 95% OF MAXIMUM DRY DENSITY PER AASHTO T-99.

3. THE LIFTS OF ASPHALT CONCRETE ARE TO BE CLASS AS CALLED OUT ON PLANS AND MATERIAL TO BE PER ODOT SPECIFICATIONS. CONTRACTOR TO PROVIDE THE OWNER WITH A PAVING MIX CERTIFICATE OF COMPLIANCE FROM THE ASPHALT PAVEMENT PLANT. PAVE ONLY DURING DRY WEATHER AND WHEN THE SURFACE TEMPERATURE IS 40 DEGREES OR WARMER.

4. INSPECTION OF SUBGRADE, BASE ROCK, AND ASPHALT CONCRETE WILL BE MADE BY A QUALIFIED INDEPENDENT TESTING LAB EMPLOYED BY THE AGENCY.

5. ALL MATERIALS, INSTALLATION, TEST, AND INSPECTIONS ARE TO BE IN STRICT ACCORDANCE WITH THE AGENCY STANDARDS.

6. SAWCUT STRAIGHT MATCHLINES TO CREATE A BUTT JOINT BETWEEN THE EXISTING PAVEMENT AND NEW PAVEMENT. APPLY PRIME COAT AT JOINT SURFACES AND SAND SEAL ALL NEW PAVEMENT JOINTS.

WATER SYSTEM NOTES

1. OPERATION OF SYSTEM: OPERATION OF VALVES AND ANY OTHER COMPONENTS OF THE PUBLIC WATER SYSTEM SHALL ONLY BE PERFORMED BY THE WATER SYSTEM OWNER (CITY OF WOODBURN, OR OTHERS AS APPLICABLE).

2. EXISTING WATER SERVICE: EXISTING WATER MAINS AND SERVICES SHALL BE KEPT IN OPERATION UNTIL NEW MAINS ARE CONNECTED AND IN SERVICE.

3. WATERLINE MINIMUM BURY DEPTH: ALL PIPING SHALL HAVE A MINIMUM OF 3 FEET OF COVER FROM TOP OF PIPE TO STREET GRADE OR OTHER FINISHED GRADE, UNLESS OTHERWISE SHOWN ON THE DRAWINGS.

4. SEWER CROSSINGS: CONTRACTOR SHALL COMPLY WITH OAR CHAPTER 333-061-0050(9) FOR REQUIRED WATERLINE-SEWERLINE SEPARATION AND CROSSING REQUIREMENTS. EACH CROSSING SHALL BE MADE SUCH THAT A FULL 20' LENGTH OF NEW SEWER PIPE AS SPECIFIED IS CENTERED ACROSS A FULL LENGTH (18'-20') OF WATERLINE PIPING UNLESS OTHERWISE APPROVED BY THE ENGINEER.

5. GAS CROSSINGS: CONTRACTOR SHALL PROVIDE TWO 8 MIL SHEETS OF POLYETHYLENE (PE) FILM OR ALL PIPING WITHIN 10 FEET OF EXISTING GAS MAIN IN ACCORDANCE WITH AWWA/ANSI C102/A21.5.

6. PIPE AND FITTINGS: ALL PIPE SHALL BE CLASS 52 CEMENT-LINED DUCTILE IRON PIPE PER AWWA C151, OF NEW MANUFACTURE AND APPROVED BY THE CITY. PROVIDE DUCTILE IRON PIPE OF THICKER PIPE CLASS WHERE MAY BE INDICATED IN THE DRAWINGS. ALL PIPE SHALL BE "TYTON" STYLE JOINT UNLESS OTHERWISE INDICATED. FITTINGS SHALL BE CEMENT LINED DUCTILE IRON, MECHANICAL JOINT FITTINGS PER AWWA C110 OR C153 UNLESS OTHERWISE INDICATED.

7. ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE ENCASED IN 2 - 8 MIL POLYETHYLENE FILM SHEETS PER SPECIFICATIONS.

8. JOINT RESTRAINTS: ALL JOINTS AT VALVES AND FITTINGS, AND ON STRAIGHT RUNS OF PIPING WHERE SPECIFIED, SHALL BE RESTRAINED; SEE SPECIFICATIONS FOR ALLOWABLE TYPES OF RESTRAINT SYSTEMS.

9. FLANGED CONNECTIONS: ALL FLANGED CONNECTIONS SHALL BE PROVIDED WITH FULL FACE GASKETS, AS SPECIFIED.

10. THRUST BLOCKS: THE USE OF CONCRETE THRUST BLOCKS IS ALLOWED ONLY WHERE SHOWN ON PLANS OR AS OTHERWISE APPROVED BY ENGINEER. AS DETERMINED BY THE CITY, CONTRACTOR MAY BE REQUIRED TO PROVIDE TEMPORARY THRUST/COLLAR BLOCKS FOR FITTINGS/PIPING WHICH WILL RECEIVE SERVICE PRESSURES BEFORE PERMANENT CONCRETE THRUST BLOCK DEVELOPS FULL STRENGTH.

11. THRUST BLOCK PLASTIC SHEETING: CONTRACTOR SHALL PLACE 5-MIL PLASTIC SHEETING BETWEEN THRUST BLOCK AND PIPE FITTINGS.

12. CONCRETE STRENGTH: ALL CONCRETE FOR WATERLINE WORK SHALL POSSESS A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI UNLESS OTHERWISE SPECIFIED.

13. MATERIALS AND WORKMANSHIP: ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH CITY STANDARDS AS WELL AS OTHER GENERALLY ACCEPTED INDUSTRY STANDARDS- INCLUDING AWWA STANDARDS, THE UNIFORM PLUMBING CODE, AND OTHERS AS APPLICABLE. ALL MATERIALS SHALL BE OF NEW MANUFACTURE. NO REBUILT OR USED MATERIALS WILL BE ALLOWED.

14. BACKFILL: ALL BACKFILL IN THE RIGHT OF WAY OR OTHER TRAFFIC AREAS SHALL BE ¾"-0" CRUSHED ROCK, COMPACTED TO 95 PERCENT OF MAXIMUM DENSITY AS OBTAINED BY AASHTO T-99 COMPACTION TEST, UNLESS OTHERWISE SPECIFIED.

15. PRESSURE TESTING AND DISINFECTION PREPARATION: THE CONTRACTOR SHALL INSTALL TEMPORARY BLOW-OFF ASSEMBLIES FOR PRESSURE TESTING AND CHLORINATION. ALL NEW WATER MAINS SHALL BE PRESSURE TESTED AND DISINFECTED BEFORE CONNECTION TO THE EXISTING SYSTEM AND BEFORE ANY SERVICE CONNECTIONS ARE MADE. PROVIDE 1" TEMPORARY TAPS FOR THE CHLORINATION INJECTION AS REQUIRED. PLUG TEMPORARY TAPS WITH BRASS PLUG UPON ACCEPTANCE OF NEW WATERLINE.

16. PRESSURE TESTING AND DISINFECTION PROCEDURE: UPON COMPLETION OF INSTALLATION OF THE WATER SYSTEM, ALL LINES AND APPURTENANCES SHALL BE FLUSHED AND DISINFECTED IN CONFORMANCE WITH CITY OF WOODBURN REQUIREMENTS, AWWA C651, OREGON HEALTH AUTHORITY GUIDELINES AND THE REQUIREMENTS OF THE OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY. WATERLINES SHALL BE PRESSURE TESTED IMMEDIATELY FOLLOWING COMPLETION OF ASSEMBLY. THE MINIMUM TEST PRESSURE SHALL BE 150 PSI OR 1.5 TIMES THE DESIGN OPERATING PRESSURE. ALLOWABLE LEAKAGE SHALL BE WITHIN ODOT/APWA STANDARDS- NO VISIBLE LEAKAGE WILL BE ACCEPTED. BACTERIOLOGICAL SAMPLING AND TESTING WILL BE CONDUCTED BY THE CONTRACTOR. CONTRACTOR TO SCHEDULE AND TRANSPORT SAMPLE FOR TESTING.

17. PRESSURE TESTING AND DISINFECTION- CHLORINATED WATER DISPOSAL: THE CONTRACTOR SHALL DISPOSE OF THE SUPERCHLORINATED WATER IN AN APPROVED MANNER. DO NOT ALLOW DISINFECTION WATER TO FLOW INTO A WATERWAY WITHOUT ADEQUATE DILUTION OR OTHER SATISFACTORY METHODS OF REDUCING CHLORINE RESIDUALS TO A SAFE LEVEL AS MANDATED BY DEQ. CONTRACTOR SHALL NOTIFY LOCAL JURISDICTIONS AS NECESSARY.

18. PRESSURE TESTING AND DISINFECTION OF SHORT PIPING SECTIONS: THERE MAY BE SHORT SECTIONS OF PIPE THAT CONNECT TO THE EXISTING SYSTEM THAT ARE DIFFICULT TO CHLORINATE. THE CITY AND THE CONTRACTOR SHALL IDENTIFY THESE SHORT SECTIONS OF PIPE AND AN ALTERNATIVE METHOD OF DISINFECTION. APPLICATION OF 300 PPM CHLORINE SOLUTION SHALL BE APPLIED BY SPRAYING AND BRUSHING TO THE INTERIOR OF ALL PIPE, VALVES, AND FITTINGS AS DIRECTED BY THE CITY. THE CHLORINE SOLUTION SHALL REMAIN FOR 15 MINUTES MINIMUM BEFORE FLUSHING, UNLESS OTHERWISE DIRECTED BY THE CITY.

WATER SYSTEM NOTES (CONT)

19. PROTECTION OF POTABLE WATER PIPING: CONTRACTOR SHALL PROTECT POTABLE WATER PIPE ENDS FROM CONTAMINATED WATER AND DEBRIS AT ALL TIMES. CONTRACTOR SHALL PROVIDE WATERTIGHT CAP OR PLUG ON PIPE ENDS AT THE END OF EACH WORK DAY.

20. AT THE END OF EACH WORK DAY ALL OPEN TRENCHES SHALL BE BACKFILLED AND ALL TRENCHES WITHIN STREETS SHALL BE COVERED TO THE SATISFACTION OF THE OWNER.

21. THE CONTRACTOR SHALL COMPLY WITH ALL CITY OF WOODBURN PERMIT REQUIREMENTS FOR WORK IN AND RESTORATION OF CITY STREETS AND RIGHT-OF-WAYS. SEE SPECIAL PROVISIONS SECTION IN THE TECHNICAL SPECIFICATIONS FOR DETAILS.

22. NO UNDERGROUND WORK SHALL BE "BURIED" UNTIL OBSERVED BY THE ENGINEER TO MEET REQUIREMENTS OF CONTRACT DOCUMENT.

23. PIPE DEFLECTION IS LIMITED TO THE ONE-HALF OF THE MANUFACTURER'S RECOMMENDATIONS.

24. FINAL LOCATIONS OF ALL VALVE BOXES, HYDRANTS, WATER SERVICES, AIR RELEASE VALVES AND BLOWOFFS SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION BY OWNER.

SURVEY CONTROL NOTES

HORIZONTAL DATUM:

A LOCAL DATUM PLANE DERIVED FROM STATE PLANE OREGON NORTH 3601 NAD83(2011)EPOCH:2010.0000 BY MULTIPLYING BY A PROJECT MEAN GROUND COMBINED SCALE FACTOR OF 1.000105617 AT A CENTRAL PROJECT POINT WITH INTERNATIONAL FOOT STATE PLANE GRID COORDINATES N543928.634 E589332.811 AND A MEDIAN COVERAGE ANGLE OF -1°41'3".

VERTICAL DATUM:

ELEVATIONS ARE BASED ON A VERTICAL SHIFT OF -3.33' PERFORMED ON NGS BENCHMARK RD 1528. LOCATED WASHINGTON COUNTY BENCHMARK NO. 191, LOCATED AT 1777 EAST LINCOLN STREET, 94.8 FEET SOUTHWEST OF THE SOUTHWEST CORNER OF WASHINGTON SCHOOL. ELEVATION=184.38 FEET (NGVD 29).

UTILITY CONTACT INFORMATION

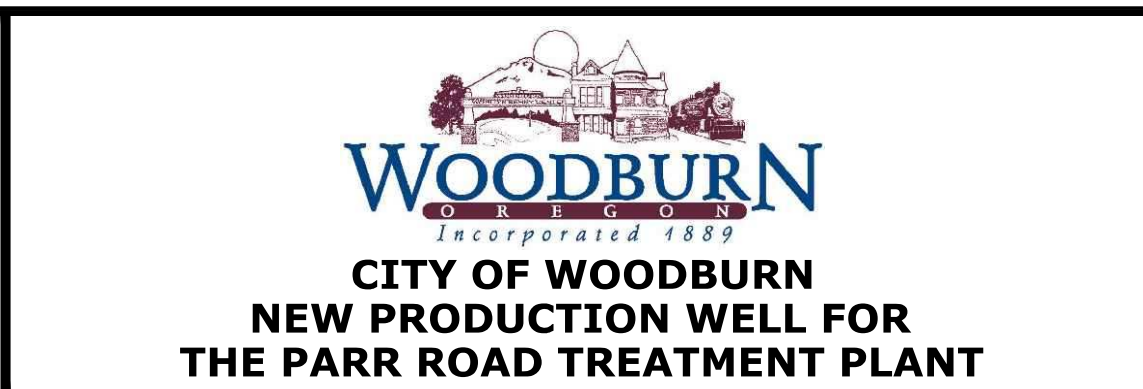
UTILITY	CONTACT PERSON	PHONE NUMBER
CENTURY LINK	JOSH FALLIN	(503) 399-4931
AT&T	TOM NORMOYLE	(503) 588-1899
NWN GAS	DANIEL KIZER	(503) 226-4211 EXT 8166
PGE (POWER)	DARRIN PERKINS	(503) 463-4325
PGE (ILLUMINATION)	JEFF STEIGLEDER ALISON BAZIAK	(503) 672-5462 (503) 463-4381
DATAVISION	JASON RIGGS	(503) 792-3611
WAVE BROADBAND	DEREK ANDERSON JERRY BENSON	(503) 798-6651 (503) 307-0350
CITY WATER	CUTIS STULTZ	(503) 982-5268
CITY SEWER COLLECTIONS AND STREETS	CURTIS STULTZ	(503) 982-5268

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GENERAL NOTES			
PROJECT NO.:	19-2697	SCALE:	AS SHOWN
DATE:	MARCH 2022		

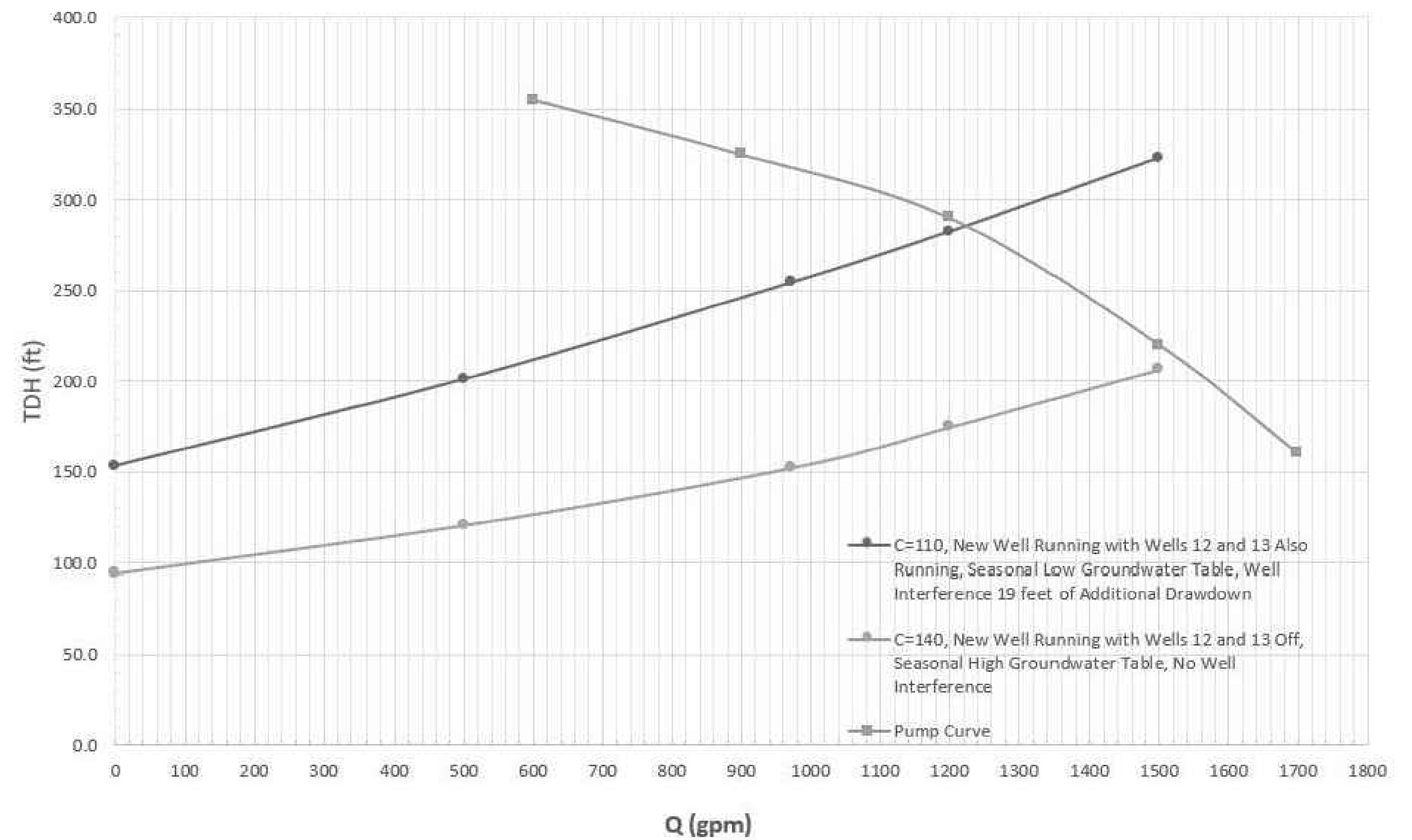
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G-4
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DESIGN DATA TABLE

WELL PUMP STATION	
LOCATION	PARR ROAD, WOODBURN, OR 97071
TYPE	OPEN LINE SHAFT VERTICAL TURBINE CONSTANT SPEED PUMP
FIRM CAPACITY OF PUMP STATION	1,200 GPM AT 283 FEET TDH
MOTOR HORSEPOWER, HP	125 HP
ALARM TELEMETRY TYPE	FIBER OPTIC LINK TO EXISTING WELL 12 AND EXISTING WATER TREATMENT PLANT
STANDBY POWER TYPE	250 KW PERMANENT DIESEL STANDBY GENERATOR CONNECTED TO AN AUTOMATIC TRANSFER SWITCH
FUEL TANK CAPACITY	530 GAL TANK SIZED FOR 24 HOURS OF CONTINUOUS OPERATION AT FULL LOAD
STORMWATER FORCE MAIN	
TYPE AND LENGTH (INITIAL INSTALLATION)	1,215 FT OF 4-INCH DI
DISCHARGE LOCATION	EXISTING STORMWATER DETENTION POND AT TREATMENT PLANT SITE, SEE SHT C-6
RAW WATER TRANSMISSION MAIN	
TYPE AND LENGTH	1,815 FT OF 10-INCH DI

SYSTEM HEAD AND PUMP CURVES

Preliminary Well Pump Selection -- Parr Road, Woodburn, OR
 SIMFLO Model No: 11SP11M, 1770 rpm, Nominal Motor Hp: 125 Hp,
 Impeller Diameter 9.175 Inches,
 10-inch dia. column
 5-Stage, Bowl Outer Dia. 11."

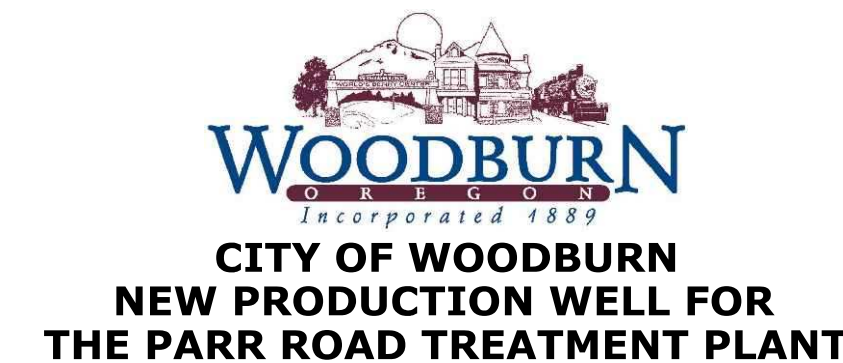


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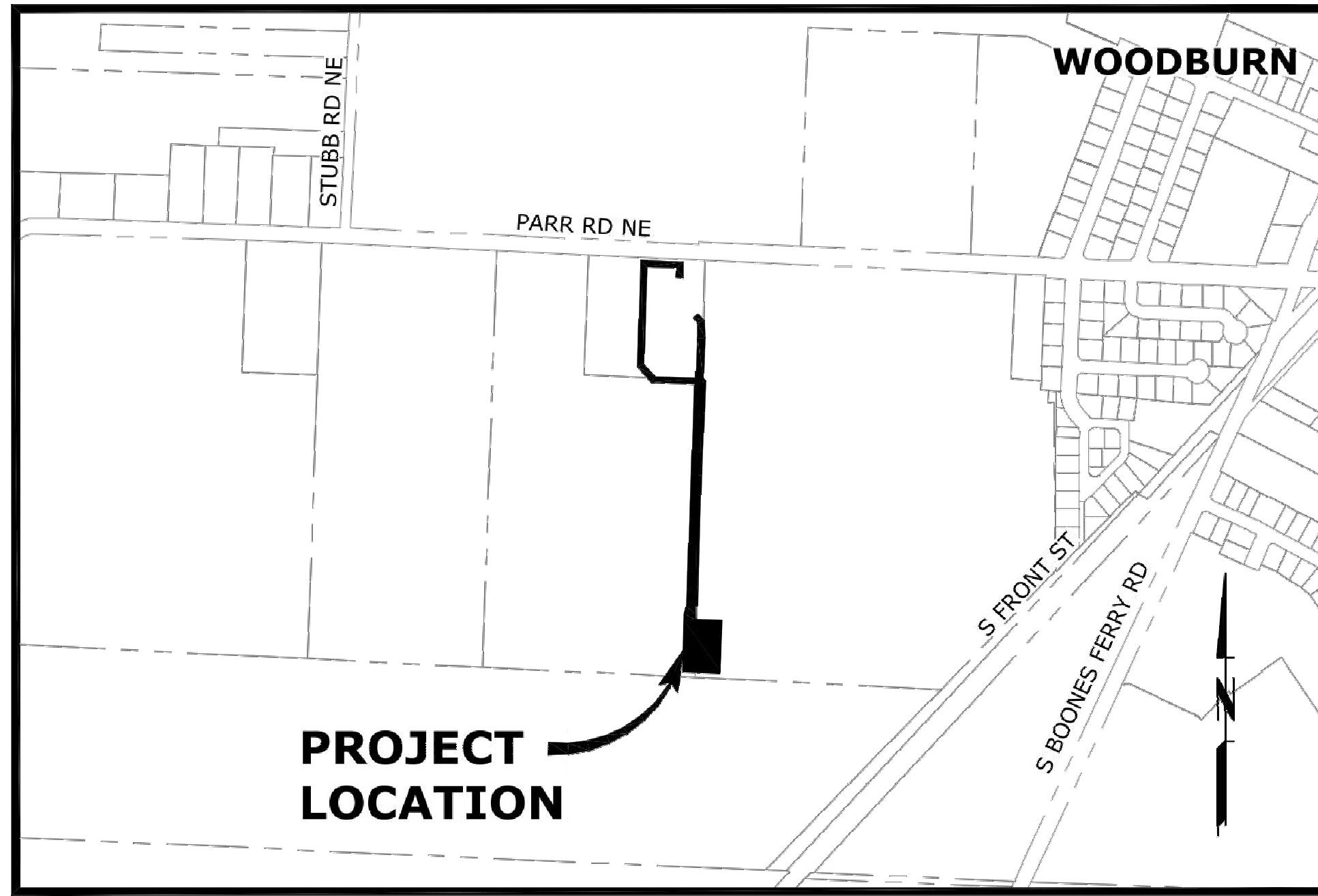


DESIGN DATA SUMMARY TABLE AND SYSTEM HEAD- CAPACITY CURVES

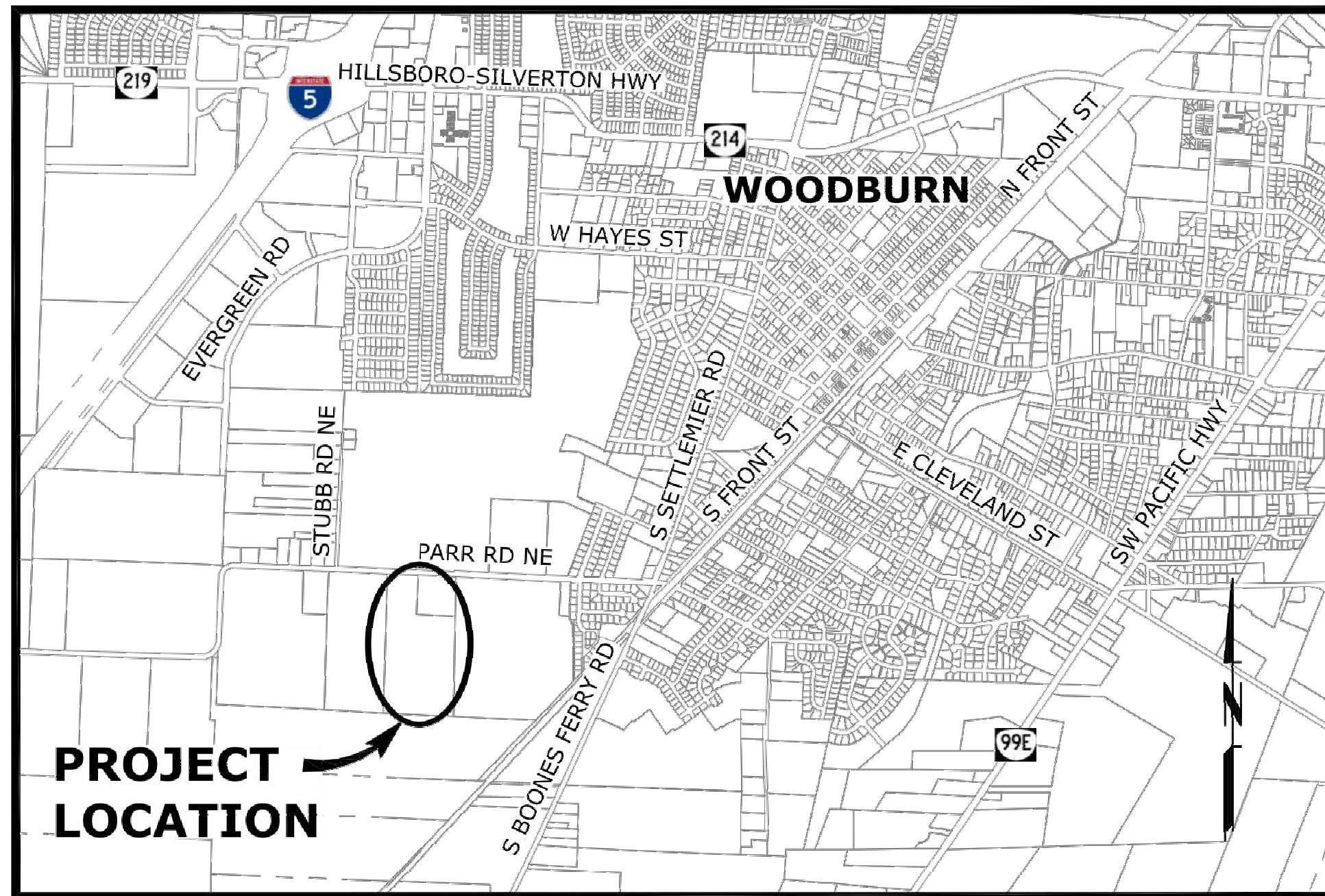
PROJECT NO.: 19-2697 SCALE: AS SHOWN DATE: MARCH 2022

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EROSION AND SEDIMENT CONTROL PLANS



SITE MAP
SCALE: 1"=500'



VICINITY MAP
SCALE: 1"=2500'

PROJECT LOCATION:
WELL ADDRESS: 900 PARR RD NE
WOODBURN, OR 97071

PROPERTY DESCRIPTION:
TAX LOT NUMBER: 052W130000700
TAX ZONING CODE: P/SP

RATIONALE STATEMENT

A COMPREHENSIVE LIST OF AVAILABLE BEST MANAGEMENT PRACTICES (BMP) OPTIONS BASED ON DEQ'S GUIDANCE MANUAL HAS BEEN REVIEWED TO COMPLETE THIS EROSION AND SEDIMENT CONTROL PLAN. SOME OF THE ABOVE LISTED BMP'S WERE NOT CHOSEN BECAUSE THEY WERE DETERMINED TO NOT EFFECTIVELY MANAGE EROSION PREVENTION AND SEDIMENT CONTROL FOR THIS PROJECT BASED ON SPECIFIC SITE CONDITIONS, INCLUDING SOIL CONDITIONS TOPOGRAPHIC CONSTRAINTS, ACCESSIBILITY TO THE SITE, AND OTHER RELATED CONDITIONS, AS THE PROJECT PROGRESSES AND THERE IS A NEED TO REVISE THE ESC PLAN, AN ACTION PLAN WILL BE SUBMITTED.

INITIAL _____

DEVELOPER NAME

CITY OF WOODBURN
CONTACT: CURTIS STULTZ
202 YOUNG STREET
WOODBURN, OR 97071
PHONE: (503) 982-5268

PLANNING / ENGINEERING / SURVEYING FIRM

MURRAYSMITH
CONTACT: MICHAEL MCKILLIP, PH.D, P.E.
888 SW 5TH AVE (SUITE 1170)
PORTLAND, OR 97204
PHONE: (503) 225-9010
FAX: (503) 225-9022

NARRATIVE DESCRIPTIONS

EXISTING SITE CONDITIONS

UNDEVELOPED GRASS FIELD. EXISTING GRAVEL ACCESS ROAD.

DEVELOPED CONDITIONS

* FULLY DEVELOPED AND ENCLOSED WELL SITE WITH STORM WATER DETENTION.

NATURE OF CONSTRUCTION ACTIVITY AND ESTIMATED TIME TABLE

* CONSTRUCTION OF WELL AND ASSOCIATED PIPING IMPROVEMENTS (XX/2021 TO XX/2021)

TOTAL SITE AREA = 0.69 ACRES

TOTAL DISTURBED AREA = 1.46 ACRES

SITE SOIL CLASSIFICATION:

WOODBURN SILT - ON SITE SOILS HAVE MODERATE TO HIGH EROSION POTENTIAL.

SOIL VARIES FROM RELATIVE SOFT SILTS TO VERY STIFF SILT WITH TRACES OF SAND.

ATTENTION EXCAVATORS:

OREGON LAW REQUIRES YOU TO FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH OAR 952-001-0090. YOU MAY OBTAIN COPIES OF THESE RULES FROM THE CENTER BY CALLING 503-232-1987. IF YOU HAVE ANY QUESTIONS ABOUT THE RULES, YOU MAY CONTACT THE CENTER. YOU MUST NOTIFY THE CENTER AT LEAST TWO BUSINESS DAYS, BEFORE COMMENCING AN EXCAVATION. CALL 503-246-6699.

STANDARD EROSION AND SEDIMENT CONTROL PLAN DRAWING NOTES:

- HOLD A PRE-CONSTRUCTION MEETING OF PROJECT CONSTRUCTION PERSONNEL THAT INCLUDES THE INSPECTOR TO DISCUSS EROSION AND SEDIMENT CONTROL MEASURES AND CONSTRUCTION LIMITS. (SCHEDULE A.8.C.I.(3))
- ALL INSPECTIONS MUST BE MADE IN ACCORDANCE WITH DEQ 1200-C PERMIT REQUIREMENTS. (SCHEDULE A.12.B AND SCHEDULE B.1)
- INSPECTION LOGS MUST BE KEPT IN ACCORDANCE WITH DEQ'S 1200-C PERMIT REQUIREMENTS. (SCHEDULE A.1.C AND B.2)
- RETAIN A COPY OF THE ESCP AND ALL REVISIONS ON SITE AND MAKE IT AVAILABLE ON REQUEST TO DEQ, AGENT, OR THE LOCAL MUNICIPALITY. DURING INACTIVE PERIODS OF GREATER THAN SEVEN (7) CONSECUTIVE CALENDAR DAYS, THE ABOVE RECORDS MUST BE RETAINED BY THE PERMIT REGISTRANT BUT DO NOT NEED TO BE AT THE CONSTRUCTION SITE. (SCHEDULE B.2.C)
- ALL PERMIT REGISTRANTS MUST IMPLEMENT THE ESCP. FAILURE TO IMPLEMENT ANY OF THE CONTROL MEASURES OR PRACTICES DESCRIBED IN THE ESCP IS A VIOLATION OF THE PERMIT. (SCHEDULE A.8.A)
- THE ESCP MUST BE ACCURATE AND REFLECT SITE CONDITIONS. (SCHEDULE A.12.C.I)
- SUBMISSION OF ALL ESCP REVISIONS IS NOT REQUIRED. SUBMITTAL OF THE ESCP REVISIONS IS ONLY UNDER SPECIFIC CONDITIONS. SUBMIT ALL NECESSARY REVISION TO DEQ OR AGENT WITHIN 10 DAYS. (SCHEDULE A.12.C.IV. AND V)
- PHASE CLEARING AND GRADING TO THE MAXIMUM EXTENT PRACTICAL TO PREVENT EXPOSED INACTIVE AREAS FROM BECOMING A SOURCE OR EROSION. (SCHEDULE A.7.A.III)
- IDENTIFY, MARK, AND PROTECT (BY CONSTRUCTION FENCING OR OTHER MEANS) CRITICAL RIPARIAN AREAS AND VEGETATION INCLUDING IMPORTANT TREES AND ASSOCIATED ROOTING ZONES, AND VEGETATION AREAS TO BE PRESERVED. IDENTIFY VEGETATIVE BUFFER ZONES BETWEEN THE SITE AND SENSITIVE AREAS (E.G., WETLANDS), AND OTHER AREAS TO BE PRESERVED, ESPECIALLY IN PERIMETER AREAS. (SCHEDULE A.8.C.I.(1) AND (2))
- PRESERVE EXISTING VEGETATION WHEN PRACTICAL AND RE-VEGETATE OPEN AREAS. RE-VEGETATE OPEN AREAS WHEN PRACTICABLE BEFORE AND AFTER GRADING OR CONSTRUCTION. IDENTIFY THE TYPE OF VEGETATIVE SEED MIX USED. (SCHEDULE A.7.A.V)
- MAINTAIN AND DELINEATE ANY EXISTING NATURAL BUFFER WITHIN THE 50-FOOT OF WATERS OF THE STATE. (SCHEDULE A.7.B.I. AND (2)(A)(B))
- INSTALL PERIMETER SEDIMENT CONTROL, INCLUDING STORM DRAIN INLET PROTECTION AS WELL AS ALL SEDIMENT BASINS, TRAPS, AND BARRIERS PRIOR TO LAND DISTURBANCE. (SCHEDULE A.8.C.I.(5))
- CONTROL BOTH PEAK FLOW RATES AND TOTAL STORMWATER VOLUME, TO MINIMIZE EROSION AT OUTLETS AND DOWNSTREAM CHANNELS AND STREAMBANKS. (SCHEDULE A.7.C)
- CONTROL SEDIMENT AS NEEDED ALONG THE SITE PERIMETER AND AT ALL OPERATIONAL INTERNAL STORM DRAIN INLETS AT ALL TIMES DURING CONSTRUCTION, BOTH INTERNALLY AND AT THE SITE BOUNDARY. (SCHEDULE A.7.D.I)
- ESTABLISH CONCRETE TRUCK AND OTHER CONCRETE EQUIPMENT WASHOUT AREAS BEFORE BEGINNING CONCRETE WORK. (SCHEDULE A.8.C.I.(6))
- APPLY TEMPORARY AND/OR PERMANENT SOIL STABILIZATION MEASURES IMMEDIATELY ON ALL DISTURBED AREAS AS GRADING PROGRESSES. TEMPORARY OR PERMANENT STABILIZATION MEASURES ARE NOT REQUIRED FOR AREAS THAT ARE INTENDED TO BE LEFT UNVEGETATED, SUCH AS DIRT ACCESS ROADS OR UTILITY POLE PADS. (SCHEDULE A.8.C.II.(3))
- ESTABLISH MATERIAL AND WASTE STORAGE AREAS, AND OTHER NON-STORMWATER CONTROLS. (SCHEDULE A.8.C.I.(7))
- PREVENT TRACKING OF SEDIMENT ONTO PUBLIC OR PRIVATE ROADS USING BMPS SUCH AS: CONSTRUCTION ENTRANCE, GRAVELED (OR PAVED) EXITS AND PARKING AREAS, GRAVEL ALL UNPAVED ROADS LOCATED ONSITE, OR USE AN EXIT TIRE WASH. THESE BMPS MUST BE IN PLACE PRIOR TO LAND-DISTURBING ACTIVITIES. (SCHEDULE A.7.D.II AND A.8.C.II.(4))
- WHEN TRUCKING SATURATED SOILS FROM THE SITE, EITHER USE WATER-TIGHT TRUCKS OR DRAIN LOADS ON SITE. (SCHEDULE A.7.D.II.(5))
- CONTROL PROHIBITED DISCHARGES FROM LEAVING THE CONSTRUCTION SITE, I.E., CONCRETE WASH-OUT, WASTEWATER FROM CLEAN OUT OF STUCCO, PAINT AND CURING COMPOUNDS. (SCHEDULE A.6)
- USE BMPS TO PREVENT OR MINIMIZE STORMWATER EXPOSURE TO POLLUTANTS FROM SPILLS; VEHICLE AND EQUIPMENT FUELING, MAINTENANCE, AND STORAGE; OTHER CLEANING AND MAINTENANCE ACTIVITIES; AND WASTE HANDLING ACTIVITIES. THESE POLLUTANTS INCLUDE FUEL, HYDRAULIC FLUID, AND OTHER OILS FROM VEHICLES AND MACHINERY, AS WELL AS DEBRIS, FERTILIZER, PESTICIDES AND HERBICIDES, PAINTS, SOLVENTS, CURING COMPOUNDS AND ADHESIVES FROM CONSTRUCTION OPERATIONS. (SCHEDULE A.7.E.I.(2))
- IMPLEMENT THE FOLLOWING BMP'S WHEN APPLICABLE: WRITTEN SPILL PREVENTION AND RESPONSE PROCEDURES, EMPLOYEE TRAINING ON SPILL PREVENTION AND PROPER DISPOSAL PROCEDURES, SPILL KITS IN ALL VEHICLES, REGULAR MAINTENANCE SCHEDULE FOR VEHICLES AND MACHINERY, MATERIAL DELIVERY AND STORAGE CONTROLS, TRAINING AND SIGNAGE, AND COVERED STORAGE AREAS FOR WASTE AND SUPPLIES. (SCHEDULE A.7.E.II.)
- USE WATER, SOIL-BINDING AGENT OR OTHER DUST CONTROL TECHNIQUE AS NEEDED TO AVOID WIND-BLOWN SOIL. (SCHEDULE A.7.A.IV)
- THE APPLICATION RATE OF FERTILIZERS USED TO REESTABLISH VEGETATION MUST FOLLOW MANUFACTURER'S RECOMMENDATIONS TO MINIMIZE NUTRIENT RELEASES TO SURFACE WATERS. EXERCISE CAUTION WHEN USING TIME-RELEASE FERTILIZERS WITHIN ANY WATERWAY RIPARIAN ZONE. (SCHEDULE A.9.B.III)
- IF AN ACTIVE TREATMENT SYSTEM (FOR EXAMPLE, ELECTRO-COAGULATION, FLOCCULATION, FILTRATION, ETC.) FOR SEDIMENT OR OTHER POLLUTANT REMOVAL IS EMPLOYED, SUBMIT AN OPERATION AND MAINTENANCE PLAN (INCLUDING SYSTEM SCHEMATIC, LOCATION OF SYSTEM, LOCATION OF INLET, LOCATION OF DISCHARGE, DISCHARGE DISPERSION DEVICE DESIGN, AND A SAMPLING PLAN AND FREQUENCY) BEFORE OPERATING THE TREATMENT SYSTEM. OBTAIN PLAN APPROVAL BEFORE OPERATING THE SYSTEM. OPERATE AND MAINTAIN THE TREATMENT SYSTEM ACCORDING TO MANUFACTURER'S SPECIFICATIONS. (SCHEDULE A.9.D)
- TEMPORARILY STABILIZE SOILS AT THE END OF THE SHIFT BEFORE HOLIDAYS AND WEEKENDS, IF NEEDED. THE REGISTRANT IS RESPONSIBLE FOR ENSURING THAT SOILS ARE STABLE DURING RAIN EVENTS AT ALL TIMES OF THE YEAR. (SCHEDULE A.7.B)
- AS NEEDED BASED ON WEATHER CONDITIONS, AT THE END OF EACH WORKDAY SOIL STOCKPILES MUST BE STABILIZED OR COVERED, OR OTHER BMPS MUST BE IMPLEMENTED TO PREVENT DISCHARGES TO SURFACE WATERS OR CONVEYANCE SYSTEMS LEADING TO SURFACE WATERS. (SCHEDULE A.7.E.II.(2))
- CONSTRUCTION ACTIVITIES MUST AVOID OR MINIMIZE EXCAVATION AND BARE GROUND ACTIVITIES DURING WET WEATHER. (SCHEDULE A.7.A.I)
- SEDIMENT FENCE: REMOVE TRAPPED SEDIMENT BEFORE IT REACHES ON THIRD OF THE ABOVE GROUND FENCE HEIGHT AND BEFORE FENCE REMOVAL. (SCHEDULE A.9.C.I)
- OTHER SEDIMENT BARRIERS (SUCH AS BIOBAGS): REMOVE SEDIMENT BEFORE IT REACHES TWO INCHES DEPTH ABOVE GROUND HEIGHT AND BEFORE BMP REMOVAL. (SCHEDULE A.9.C.I)
- CATCH BASINS: CLEAN BEFORE RETENTION CAPACITY HAS BEEN REDUCED BY FIFTY PERCENT. SEDIMENT BASINS AND SEDIMENT TRAPS: REMOVE TRAPPED SEDIMENTS BEFORE DESIGN CAPACITY HAS BEEN REDUCED BY FIFTY PERCENT AND AT COMPLETION OF PROJECT. (SCHEDULE A.8.C.II.B)(V)
- WITHIN 24 HOURS, SIGNIFICANT SEDIMENT THAT HAS LEFT THE CONSTRUCTION SITE, MUST BE REMEDIATED. INVESTIGATE THE CAUSE OF THE SEDIMENT RELEASE AND IMPLEMENT STEPS TO PREVENT A RECURRENCE OF THE DISCHARGE WITHIN THE SAME 24 HOURS. ANY IN-STREAM CLEAN-UP OF SEDIMENT SHALL BE PERFORMED ACCORDING TO THE OREGON DIVISION OF STATE LANDS REQUIRED TIMFRAME. (SCHEDULE A.9.B.I)
- THE INTENTIONAL WASHING OF SEDIMENT INTO STORM SEWERS OR DRAINAGE WAYS MUST NOT OCCUR. VACUUMING OR DRY SWEEPING AND MATERIAL PICKUP MUST BE USED TO CLEANUP RELEASED SEDIMENTS (SCHEDULE A.9.B.II)
- THE ENTIRE SITE MUST BE TEMPORARILY STABILIZED USING VEGETATION OR A HEAVY MULCH LAYER, TEMPORARY SEEDING, OR OTHER METHOD SHOULD ALL CONSTRUCTION ACTIVITIES CEASE FOR 30 DAYS OR MORE. (SCHEDULE A.7.F.I)
- PROVIDE TEMPORARY STABILIZATION FOR THAT PORTION OF THE SITE WHERE CONSTRUCTION ACTIVITIES CEASE FOR 14 DAYS OR MORE WITH A COVERING OF BLOWN STRAW AND A TACKIFIER, LOOSE STRAW, OR AN ADEQUATE COVERING OF COMPOST MULCH UNTIL WORK RESUMES ON THAT PORTION OF THE SITE. (SCHEDULE A.7.F.II)
- DO NOT REMOVE TEMPORARY SEDIMENT CONTROL PRACTICES UNTIL PERMANENT VEGETATION OR OTHER COVER OF EXPOSED AREAS IS ESTABLISHED. ONCE CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED, ALL TEMPORARY EROSION CONTROLS AND RETAINED SOILS MUST BE REMOVED AND DISPOSED PROPERLY, UNLESS DOING SO CONFLICTS WITH LOCAL REQUIREMENTS. (SCHEDULE A.8.C.III.(1) AND D.3.C.II AND III)

THE PERMITTEE IS REQUIRED TO MEET ALL THE CONDITIONS OF THE 1200-C PERMIT. THIS ESCP AND GENERAL CONDITIONS HAVE BEEN DEVELOPED TO FACILITATE COMPLIANCE WITH THE 1200-C PERMIT REQUIREMENTS. IN CASES OF DISCREPANCIES OR OMISSIONS, THE 1200-C PERMIT REQUIREMENTS SUPERCEDE REQUIREMENTS OF THIS PLAN.

BMP MATRIX FOR CONSTRUCTION PHASES

REFER TO DEQ GUIDANCE MANUAL FOR A COMPREHENSIVE LIST OF AVAILABLE BMP'S.

	CLEARING	MASS GRADING	UTILITY INSTALLATION	STREET CONSTRUCTION	FINAL STABILIZATION	WET WEATHER (OCT. 1 - MAY 31ST)
EROSION PREVENTION						
PRESERVE NATURAL VEGETATION	** X	X	X	X	X	X
GROUND COVER			X		X	X
HYDRAULIC APPLICATIONS					X	
PLASTIC SHEETING						
MATTING						
DUST CONTROL	X	X	X	X	X	X
TEMPORARY/PERMANENT SEEDING					X	X
BUFFER ZONE	** X	X	X	X	X	X
OTHER:						
SEDIMENT CONTROL						
SEDIMENT FENCE (PERIMETER)	** X	** X	X	X	X	X
SEDIMENT FENCE (INTERIOR)	** X	** X	X	X	X	X
STRAW WATTLES			X		X	X
FILTER BERM						
INLET PROTECTION	** X	** X	X	X	X	X
DEWATERING			X	X		X
SEDIMENT TRAP						
NATURAL BUFFER ENCROACHMENT						
COMPOST SOCK						
OTHER:						
RUN OFF CONTROL						
CONSTRUCTION ENTRANCE	X	X	X	X	X	X
PIPE SLOPE DRAIN						
OUTLET PROTECTION						
SURFACE ROUGHENING						
CHECK DAMS						
OTHER:						
POLLUTION PREVENTION						
PROPER SIGNAGE	X	X	X	X	X	X
HAZ WASTE MGMT	X	X	X	X	X	X
SPILL KIT ON-SITE	X	X	X	X	X	X
CONCRETE WASHOUT AREA						
OTHER:						

* SIGNIFIES ADDITIONAL BMP'S REQUIRED FOR WORK WITHIN 50' OF WATER OF THE STATE.
** SIGNIFIES BMP THAT WILL BE INSTALLED PRIOR TO ANY GROUND DISTURBING ACTIVITY.

INSPECTION FREQUENCY:

SITE CONDITION	MINIMUM FREQUENCY
1. ACTIVE PERIOD	DAILY WHEN STORMWATER RUNOFF, INCLUDING RUNOFF FROM SNOW MELT, IS OCCURRING. AT LEAST ONCE EVERY FOURTEEN (14) DAYS, REGARDLESS OF WHETHER STORMWATER RUNOFF IS OCCURRING.
2. PRIOR TO THE SITE BECOMING INACTIVE OR IN ANTICIPATION OF SITE INACCESSIBILITY.	ONCE TO ENSURE THAT EROSION AND SEDIMENT CONTROL MEASURES ARE IN WORKING ORDER. ANY NECESSARY MAINTENANCE AND REPAIR MUST BE MADE PRIOR TO LEAVING THE SITE.
3. INACTIVE PERIODS GREATER THAN FOURTEEN (14) CONSECUTIVE CALENDAR DAYS.	ONCE EVERY MONTH.
4. PERIODS DURING WHICH THE SITE IS INACCESSIBLE DUE TO INCLEMENT WEATHER.	IF PRACTICAL, INSPECTIONS MUST OCCUR DAILY AT A RELEVANT AND ACCESSIBLE DISCHARGE POINT OR DOWNSTREAM LOCATION.
5. PERIODS DURING WHICH DISCHARGE IS UNLIKELY DUE TO FROZEN CONDITIONS.	MONTHLY. RESUME MONITORING IMMEDIATELY UPON MELT, OR WHEN WEATHER CONDITIONS MAKE DISCHARGES LIKELY.

- HOLD A PRE-CONSTRUCTION MEETING OF PROJECT CONSTRUCTION PERSONNEL THAT INCLUDES THE INSPECTOR TO DISCUSS EROSION AND SEDIMENT CONTROL MEASURES AND CONSTRUCTION LIMITS.
- ALL INSPECTIONS MUST BE MADE IN ACCORDANCE WITH DEQ 1200-C PERMIT REQUIREMENTS.
- INSPECTION LOGS MUST BE KEPT IN ACCORDANCE WITH DEQ'S 1200-C PERMIT REQUIREMENTS.
- RETAIN A COPY OF THE ESCP AND ALL REVISIONS ON SITE AND MAKE IT AVAILABLE ON REQUEST TO DEQ, AGENT, OR THE LOCAL MUNICIPALITY. DURING INACTIVE PERIODS OF GREATER THAN SEVEN (7) CONSECUTIVE CALENDAR DAYS, RETAIN THE ESCP AT THE CONSTRUCTION SITE OR AT ANOTHER LOCATION.

SHEET INDEX

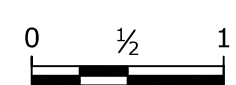
EROSION AND SEDIMENT CONTROL PLANS

- | | |
|-------|---|
| ESC-1 | EROSION AND SEDIMENT CONTROL COVER SHEET |
| ESC-2 | EROSION AND SEDIMENT CONTROL NOTES |
| ESC-3 | EROSION AND SEDIMENT CONTROL DETAILS |
| ESC-4 | WELL HOUSE EROSION AND SEDIMENT CONTROL |
| ESC-5 | STORMWATER AND WATER LINE EROSION AND SEDIMENT CONTROL STA A1+00 TO STA A10+40 |
| ESC-6 | STORMWATER AND WATER LINE EROSION AND SEDIMENT CONTROL STA A10+40 TO STA A19+14 |

PERMITTEE'S SITE INSPECTOR: DAVID CRAIG

COMPANY/AGENCY: MURRAYSMITH
PHONE: (541) 741-2975
FAX: N/A
E-MAIL: DAVID.CRAIG@MURRAYSMITH.US
DESCRIPTION OF EXPERIENCE: CERTIFIED CESCL-102 BY NWTCC

NOTICE

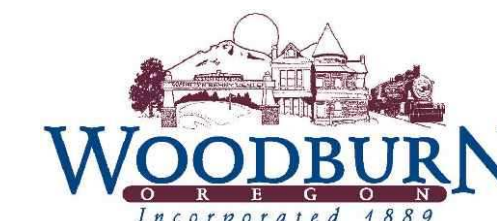
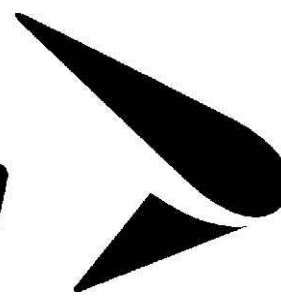


IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

LRC
DESIGNED
MBE
DRAWN
MLM
CHECKED



murraysmith



CITY OF WOODBURN
NEW PRODUCTION WELL FOR
THE PARR ROAD TREATMENT PLANT

EROSION AND SEDIMENT CONTROL COVER SHEET

SHEET

ESC-1

6 of 67

PROJECT NO.: 19-2697 SCALE: AS SHOWN DATE: MARCH 2022

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CITY OF WOODBURN EROSION AND SEDIMENT CONTROL NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL MEASURES, IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.
2. THE IMPLEMENTATION OF THESE ESC PLANS AND CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED BY THE LOCAL JURISDICTION, AND VEGETATION/LANDSCAPING IS ESTABLISHED.
3. THE ESC FACILITIES DESCRIBED ON THIS PLAN MUST BE CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO INSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DOES NOT ENTER DRAINAGE SYSTEM, ROADWAYS, OR VIOLATE APPLICABLE WATER STANDARDS.
4. THE ESC FACILITIES SHOWN ON THIS PLAN ARE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING CONSTRUCTION PERIOD, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DOES NOT LEAVE THE SITE.
5. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE APPLICANT/CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING.
6. AT NO TIME SHALL SEDIMENT BE ALLOWED TO ACCUMULATE MORE THAN $\frac{1}{3}$ THE BARRIER HEIGHT. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATIONS SHALL NOT FLUSH SEDIMENT-LADEN WATER INTO THE DOWNSTREAM SYSTEM.
7. STORM DRAIN INLETS, BASINS, AND AREA DRAINS SHALL BE PROTECTED UNTIL PAVEMENT SURFACES ARE COMPLETED AND/OR VEGETATION IS REESTABLISHED.
8. PAVEMENT SURFACES AND VEGETATION ARE TO BE PLACED AS RAPIDLY AS POSSIBLE.
9. SEEDING SHALL BE PERFORMED NO LATER THAN SEPTEMBER 1 FOR EACH PHASE OF CONSTRUCTION.
10. IF THERE ARE EXPOSED SOILS OR SOILS NOT FULLY ESTABLISHED FROM OCTOBER 1ST THROUGH APRIL 30TH, THE WET WEATHER EROSION PREVENTION MEASURES WILL BE IN EFFECT.
11. THE DEVELOPER SHALL REMOVE ESC MEASURE WHEN VEGETATION IS FULLY ESTABLISHED.
12. ANY SOIL OR DEBRIS TRANSPORTED ONTO ROADWAYS AND SIDEWALKS SHALL BE REMOVED. DEPOSITS SHALL BE COMPLETELY REMOVED BY SHOVELING AND/OR SWEEPING. WASHING SHALL NOT BE UTILIZED UNLESS SPECIFICALLY APPROVED IN WRITING BY THE CITY OF WOODBURN.
13. IF BMPS (BEST MANAGEMENT PRACTICES) SHOWN ARE UTILIZED BUT ARE INSUFFICIENT TO PREVENT SEDIMENT FROM REACHING WATER BODIES, ADJACENT PROPERTIES, OR PUBLIC RIGHT-OF-WAYS, ADDITIONAL BMPS SHALL BE IMPLEMENTED IMMEDIATELY TO PREVENT FURTHER ENCROACHMENT OF SEDIMENT.
14. STABILIZED AREAS SHALL BE PROVIDED FOR EMPLOYEE PARKING AND STORAGE OF CONSTRUCTION MATERIALS. ERODABLE STOCKPILES OF EARTHEN MATERIALS, SUCH AS TOPSOIL, SILTY AND CLAYEY SOILS, AND LANDSCAPE MATERIALS SHALL BE COVERED WHEN NOT BEING INCORPORATED IN THE WORK. EROSION CONTROL BMPS SHALL BE UTILIZED AS NECESSARY TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING OR SEDIMENT BEING TRANSPORTED FROM THESE AREAS FROM VEHICLE ACTIVITY.
15. ALL TRUCKS LEAVING THE SITE WITH EXCAVATION SPOILS MUST BE INSPECTED FOR WATER SEEPAGE. IF SATURATED SOILS ARE A PROBLEM, WATERTIGHT TRUCKS MUST BE USED OR LOADS SHALL BE DRAINED, ON-SITE, SO THAT WATER SEEPING FROM THE SOIL CANNOT DRAIN FROM THE VEHICLE.
16. CONSTRUCTION SHALL NOT BE CONSIDERED COMPLETE AND ACCEPTABLE UNTIL ALL DISTURBED SOIL SURFACES HAVE BEEN PROTECTED FROM EROSION AND WITH PERMANENT LANDSCAPING, COVERING WITH IMPERVIOUS SURFACES, RESTORED TO ORIGINAL UNDISTURBED CONDITION OR PERMANENTLY STABILIZED.
17. VEGETATED STABILIZATION AND LANDSCAPING SHALL BE FERTILIZED, WATERED AND MAINTAINED TO INSURE THAT GROWTH OF VEGETATION IS ESTABLISHED AND SUSTAINED.
18. PLACE GRASS SEED OVER BARREN SOIL; $\frac{80}{20}$ BLEND OF DWARF PERENNIAL RYE AND CREEPING RED FESCUE, MIN. 100#/ACRE. APPLY 20-10-10 FERTILIZER IN ACCORDANCE WITH SUPPLIER'S RECOMMENDATIONS.

WET WEATHER MEASURES

1. THE MEASURES FOR WET WEATHER CONDITIONS ARE ONE OF THE FOLLOWING OR COMBINATION TO PREVENT SOIL EROSION: ESTABLISHED GRASS, 2" MIN. STRAW MULCH COVER, EROSION CONTROL BLANKETS WITH ANCHORS, 6-MIL PLASTIC SHEET COVER OR SEDIMENT TRAP OR POND.
2. AS THE WET WEATHER APPROACHES MORE EROSION CONTROL MEASURES (AS REQUIRED BY CONSTRUCTION INSPECTOR) MAY BE NECESSARY TO REDUCE EROSION.

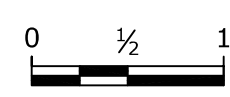
DEWATERING NOTES

1. THE CONTROL OF THE GROUND WATER SHALL BE SUCH THAT SOFTENING OF THE BOTTOM OF THE EXCAVATIONS OR FORMATIONS OF "QUICK" CONDITIONS OR BOILS DURING EXCAVATION SHALL BE PREVENTED. DEWATERING SYSTEMS SHALL BE DESIGNED AND OPERATED SO AS TO PREVENT REMOVAL OF THE NATURAL SOILS.

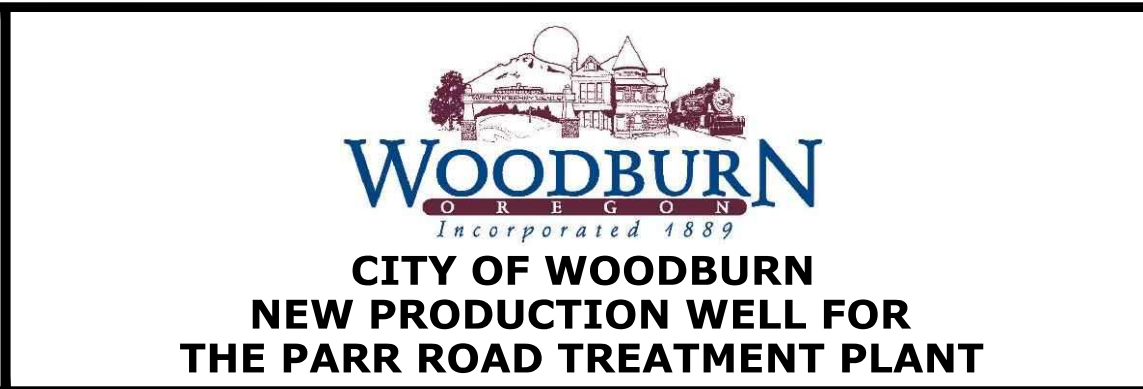
TREE PROTECTION NOTES

1. THE CONTRACTOR SHALL COORDINATE WITH THE PROJECT ARBORIST IN A TIMELY MANNER TO REVIEW TREE PROTECTION MEASURES AND ADDRESS QUESTIONS ON-SITE PRIOR TO THE START OF CONSTRUCTION ACTIVITY.
2. TREES TO REMAIN ON SITE SHALL BE PROTECTED BY INSTALLATION OF TREE PROTECTION FENCING AS DEPICTED ON THE TREE PRESERVATION PLAN IN ORDER TO PREVENT INJURY TO TREE TRUNKS OR ROOTS, OR SOIL COMPACTION WITHIN THE ROOT PROTECTION ZONE. FENCES SHALL BE A MINIMUM 6-FOOT HIGH 2-INCH CHAIN LINK MESH SECURED TO A MINIMUM 1.5-INCH STEEL OR ALUMINUM POSTS STEEL ON CONCRETE BLOCKS OR DRIVEN INTO THE GROUND EXCEPT WHERE MINIMUM 4-FOOT HIGH ORANGE PLASTIC MESH FENCING ON METAL STAKES IS SPECIFIED ON THE PLAN. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE PROJECT ARBORIST PRIOR TO OPENING, ADJUSTING OR REMOVING TREE PROTECTION FENCING.
3. WITHOUT AUTHORIZATION FROM THE PROJECT ARBORIST, NONE OF THE FOLLOWING SHALL OCCUR BENEATH THE DRIPLINE OF ANY PROTECTED TREE:
 - A. GRADE CHANGE OR CUT AND FILL;
 - B. NEW IMPERVIOUS SURFACES;
 - C. UTILITY OR DRAINAGE FIELD PLACEMENT;
 - D. STAGING OR STORAGE OF MATERIALS AND EQUIPMENT; OR
 - E. VEHICLE MANEUVERING.
 ROOT PROTECTION ZONES MAY BE ENTERED FOR TASKS LIKE SURVEYING, MEASURING, AND, SAMPLING. FENCES MUST BE CLOSED UPON COMPLETION OF THESE TASKS.
4. SILT FENCING REQUIRED TO BE INSTALLED BENEATH THE DRIPLINE OF PROTECTED TREES SHALL NOT BE TRENCHED IN PER MANUFACTURER SPECIFICATIONS TO AVOID ROOT DAMAGE. INSTEAD, USE A STRAW WATTLE OR ROLL THE BASE OF THE SILT FENCE AROUND A STRAW WATTLE AND STAKE THE WATTLE SECURELY INTO THE GROUND.
5. TREES TO BE REMOVED SHALL BE CLEARLY IDENTIFIED WITH TREE-MARKING PAINT OR OTHER METHODS APPROVED IN ADVANCED BY THE PROJECT ARBORIST. STUMPS FROM REMOVED TREES LOCATED WITHIN TREE PROTECTION ZONES SHALL REMAIN IN THE GROUND WHERE FEASIBLE. OTHERWISE, STUMPS MAY BE REMOVED BY STUMP GRINDING OR EXTRACTED FROM THE GROUND UNDER ARBORIST SUPERVISION.
6. PRUNING WILL BE NEEDED TO PROVIDE FOR OVERHEAD CLEARANCE AND TO REMOVE DEAD AND DEFECTIVE BRANCHES FOR SAFETY. THE CITY'S PARKS MAINTENANCE CREW SHALL BE RESPONSIBLE FOR ALL PRUNING. THE CITY'S PROJECT MANAGER SHALL COORDINATOR WITH THE PARK'S DEPARTMENT IN A TIMELY MANNER TO ARRANGE THE NECESSARY PRUNING PRIOR TO CONSTRUCTION.
7. THE PROJECT ARBORIST SHALL PROVIDE ON-SITE CONSULTATION DURING ALL EXCAVATION ACTIVITIES BENEATH THE DRIPLINE OF PROTECTED TREES. EXCAVATION IMMEDIATELY ADJACENT TO ROOTS LARGER THAN 2-INCHES IN DIAMETER WITHIN THE ROOT PROTECTION ZONE OF RETAINED TREES SHALL BE BY HAND OR OTHER NON-INVASIVE TECHNIQUES TO ENSURE THAT ROOTS ARE NOT DAMAGED. WHERE FEASIBLE, MAJOR ROOTS SHALL BE PROTECTED BY TUNNELING OR OTHER MEANS TO AVOID DESTRUCTION OR DAMAGE. EXCEPTIONS CAN BE MADE IF, IN THE OPINION OF THE PROJECT ARBORIST, UNACCEPTABLE DAMAGE WILL NOT OCCUR TO THE TREE.
8. FOLLOWING CONSTRUCTION AND WHERE LANDSCAPING IS DESIRED, APPLY APPROXIMATELY 3-INCHES OF MULCH BENEATH THE DRIPLINE OF PROTECTED TREES, BUT NOT DIRECTLY AGAINST TREE TRUNKS. SHRUBS AND GROUND COVERS MAY BE PLANTED WITHIN TREE PROTECTION AREAS. IF IRRIGATION IS USED, USE DRIP IRRIGATION OR LOW FLOW EMITTERS INSTALLED AT NATIVE GRADE (NO TRENCHING) ONLY BENEATH THE DRIPLINES OF PROTECTED TREES. LANDSCAPING SHALL BE PERFORMED BY HAND AND WITH HAND TOOLS ONLY BENEATH PROTECTED TREE DRIPLINES; ADJUST THE LOCATION OF PLANTS TO AVOID TREE ROOT IMPACTS.
9. THE PROJECT ARBORIST SHOULD SUPERVISE PROPER EXECUTION OF THIS PLAN DURING CONSTRUCTION ACTIVITIES THAT COULD ENCROACH ON RETAINED TREES. TREE PROTECTION SITE INSPECTION MONITORING REPORTS SHOULD BE PROVIDED TO THE CLIENT AND CITY ON A REGULAR BASIS THROUGHOUT CONSTRUCTION.

NO.	DATE	BY	REVISION

NOTICE

 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

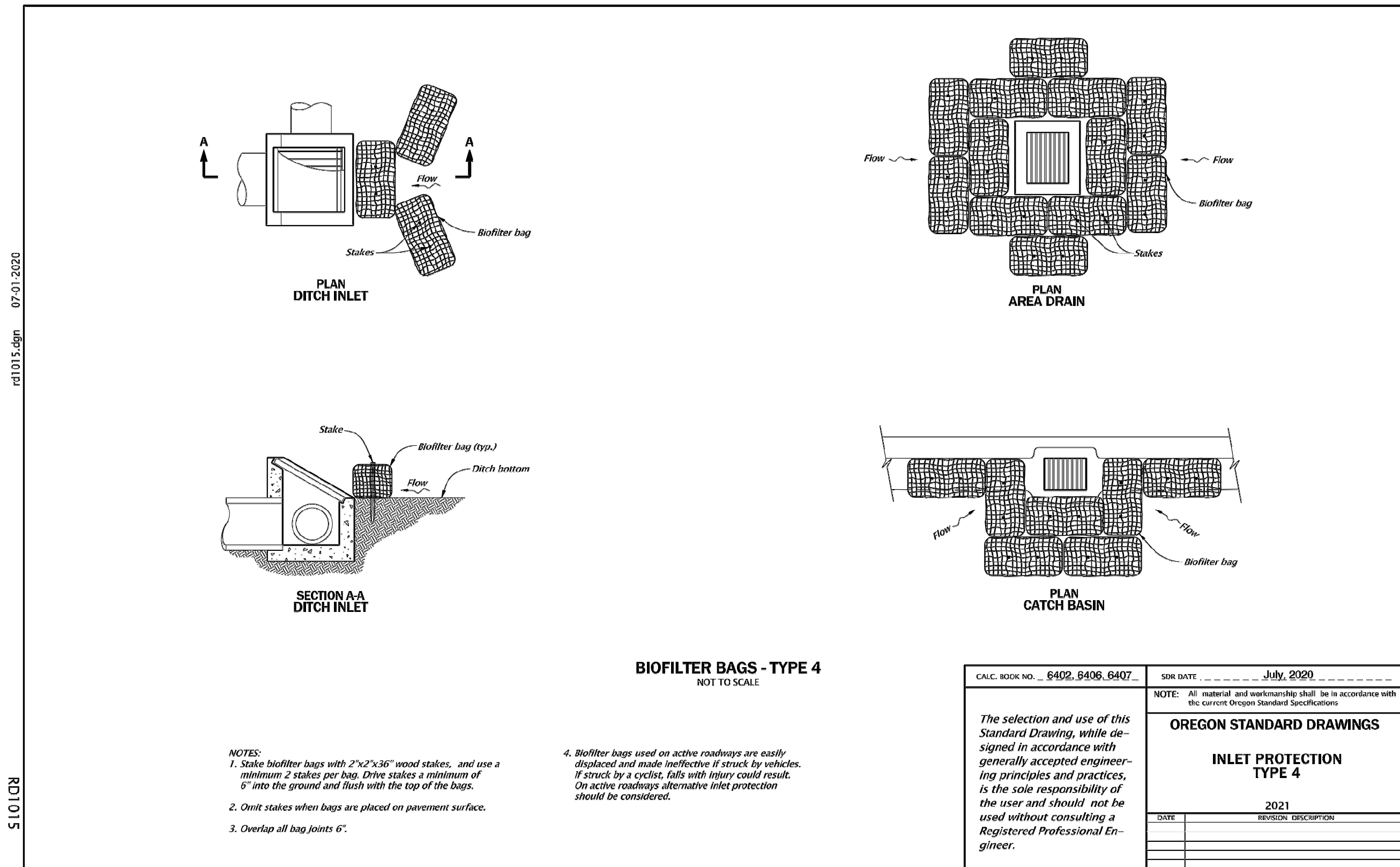
LRC
DESIGNED
 MBE
DRAWN
 MLM
CHECKED



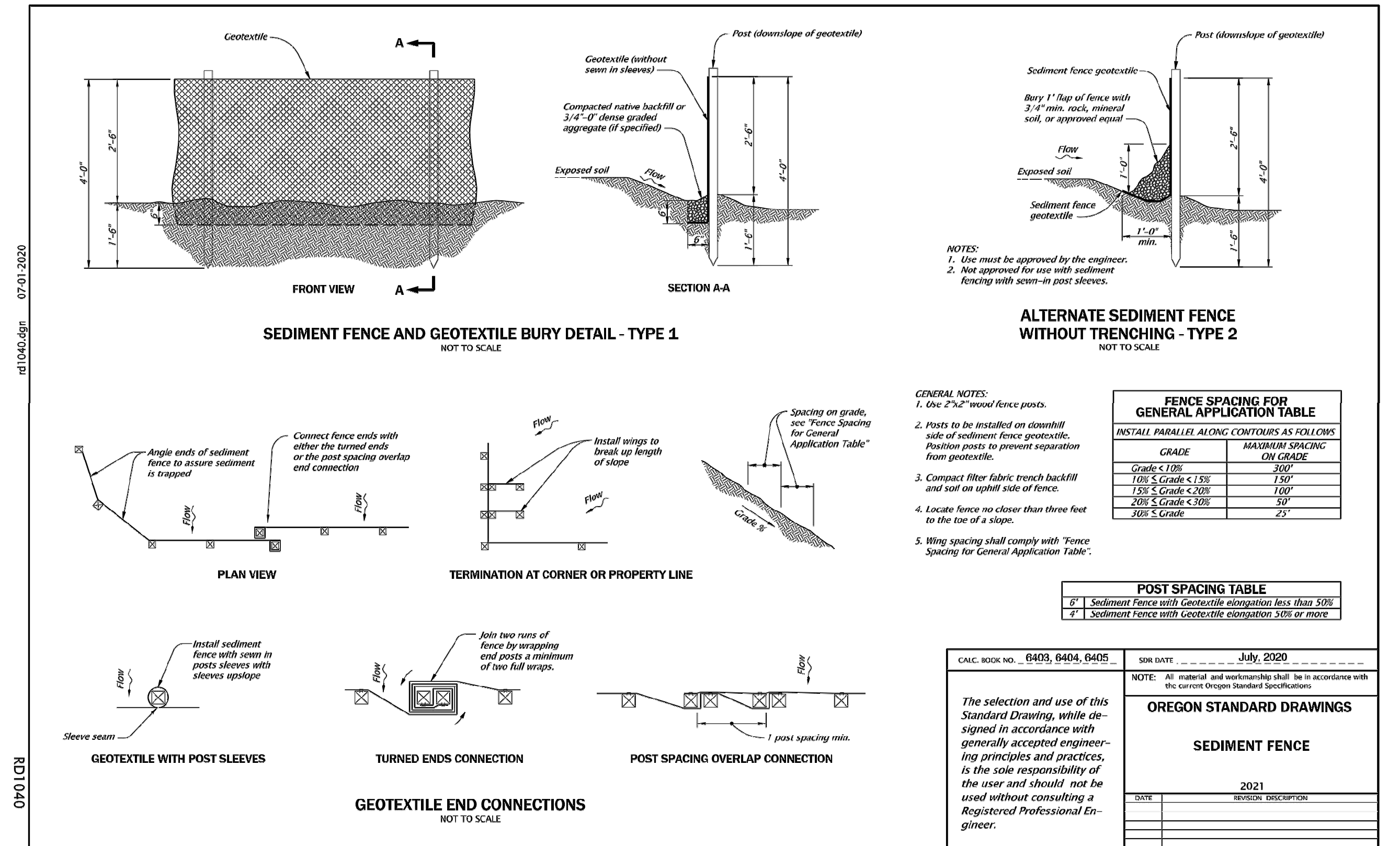
EROSION AND SEDIMENT CONTROL NOTES			
PROJECT NO.:	19-2697	SCALE:	AS SHOWN
DATE:	MARCH 2022		

SHEET
 ESC-2
 7 of 67

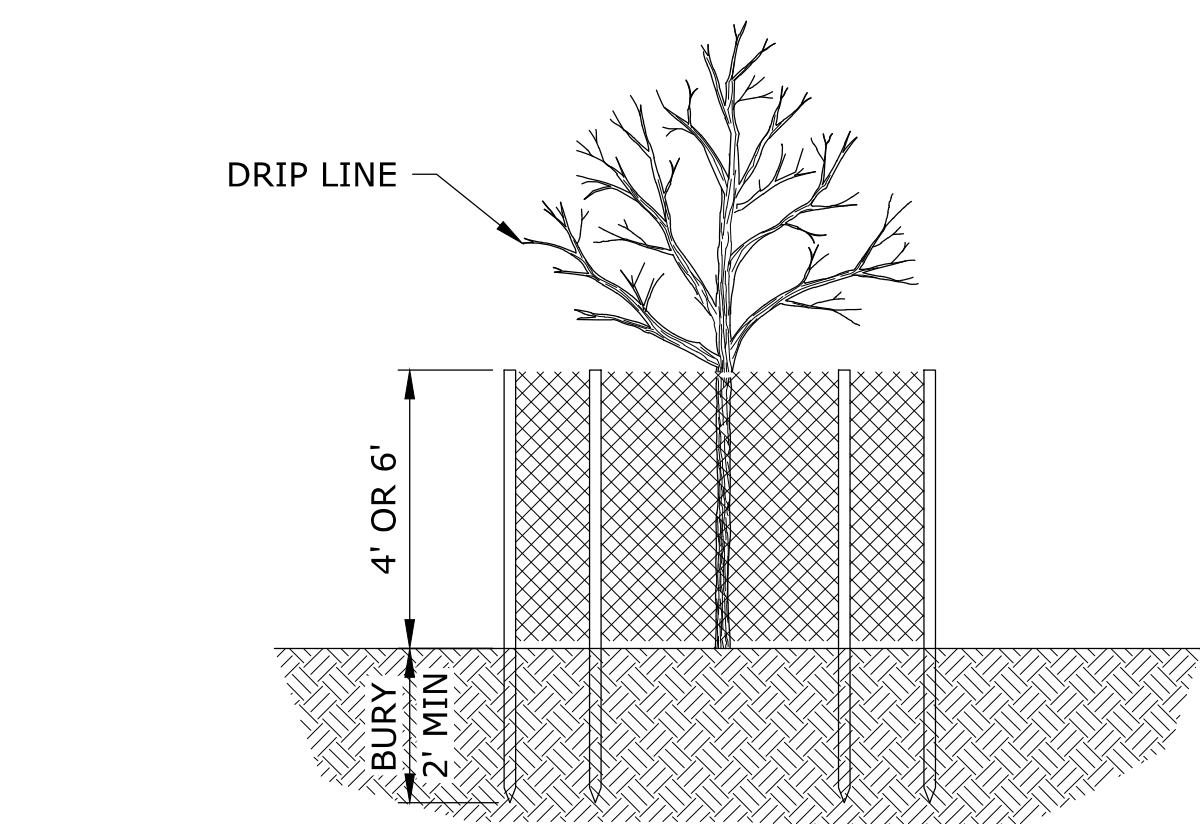
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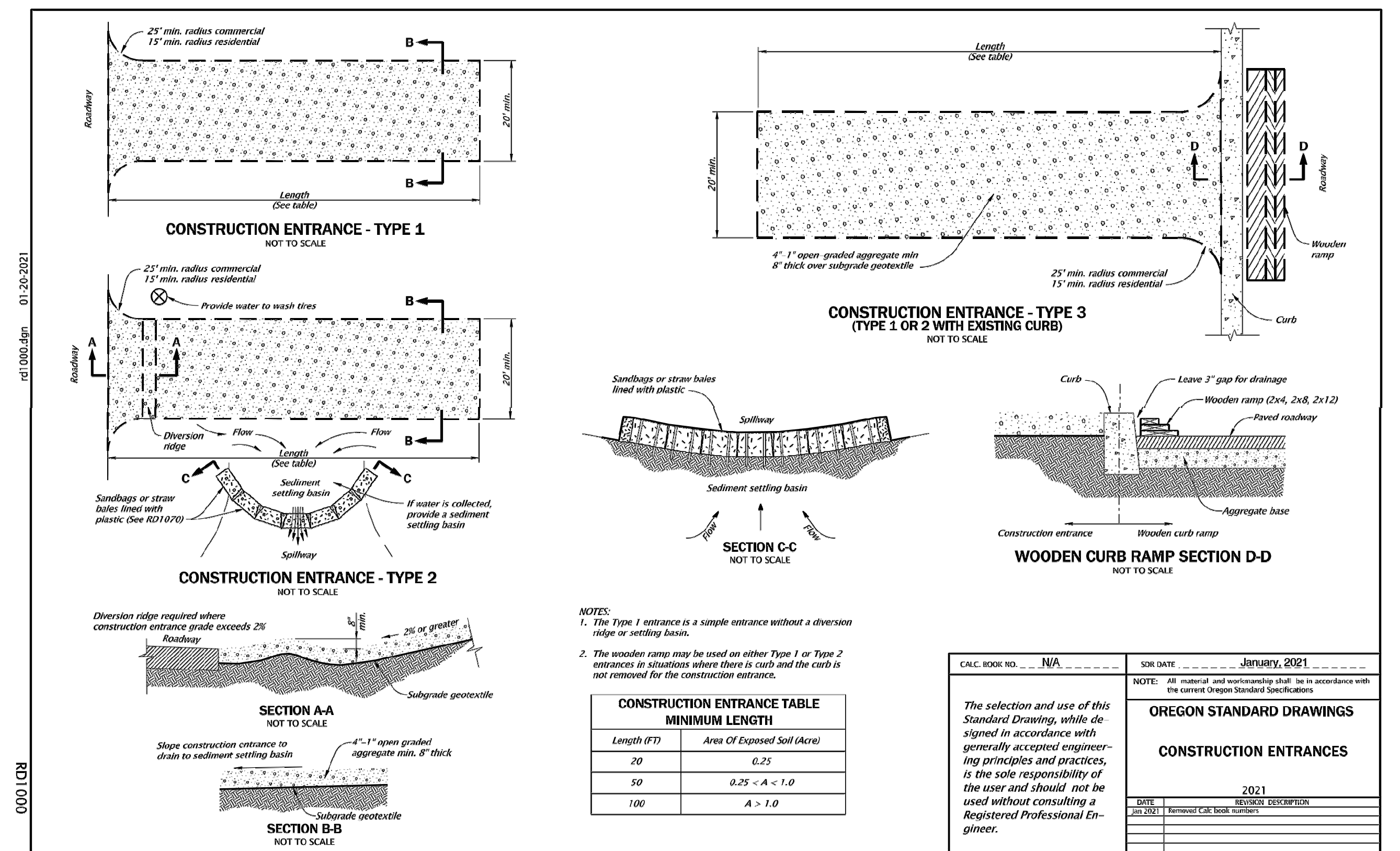
CALC. BOOK NO. 6402, 6406, 6407	SRM DATE July, 2020
NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications.	
OREGON STANDARD DRAWINGS	
INLET PROTECTION TYPE 4	
DATE 2021	REVISION DESCRIPTION



CALC. BOOK NO. 6403, 6404, 6405	SRM DATE July, 2020
NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications.	
OREGON STANDARD DRAWINGS	
SEDIMENT FENCE	
DATE 2021	REVISION DESCRIPTION



- NOTES:**
- ORANGE FENCING SHALL BE 4' IN HEIGHT, MESH CHAIN LINK FENCE SHALL BE 6' IN HEIGHT. FENCE SHALL BE SET AS SHOWN ON THE PLANS.
 - FENCE MATERIALS SHALL CONSIST OF ORANGE CONSTRUCTION FENCING OR MESH CHAIN LINK AS SHOWN ON THE PLANS, SECURED TO A MINIMUM 1 1/2" DIAMETER STEEL OR ALUMINUM LINE POSTS.
 - POSTS SHALL BE SET TO A DEPTH OF NO LESS THAN 2 FEET IN NATIVE SOIL.
 - FENCE SHALL REMAIN IN PLACE UNTIL CONSTRUCTION ACTIVITIES, MOVEMENT OR REMOVAL OF FENCE REQUIRES APPROVAL BY CITY'S AUTHORIZED REPRESENTATIVE.



CALC. BOOK NO. N/A	SRM DATE February, 2021
NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications.	
OREGON STANDARD DRAWINGS	
CONSTRUCTION ENTRANCES	
DATE 2021	REVISION DESCRIPTION
Jun 2021	Removed Calc book numbers

NO.	DATE	BY	REVISION

NOTICE

0 1/2 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

LRC DESIGNED
MBE DRAWN
MLM CHECKED

REGISTERED PROFESSIONAL ENGINEER
65640
OREGON
DECEMBER 29, 2009
MICHAEL L. MCKELLER
RENEWS 12-31-22

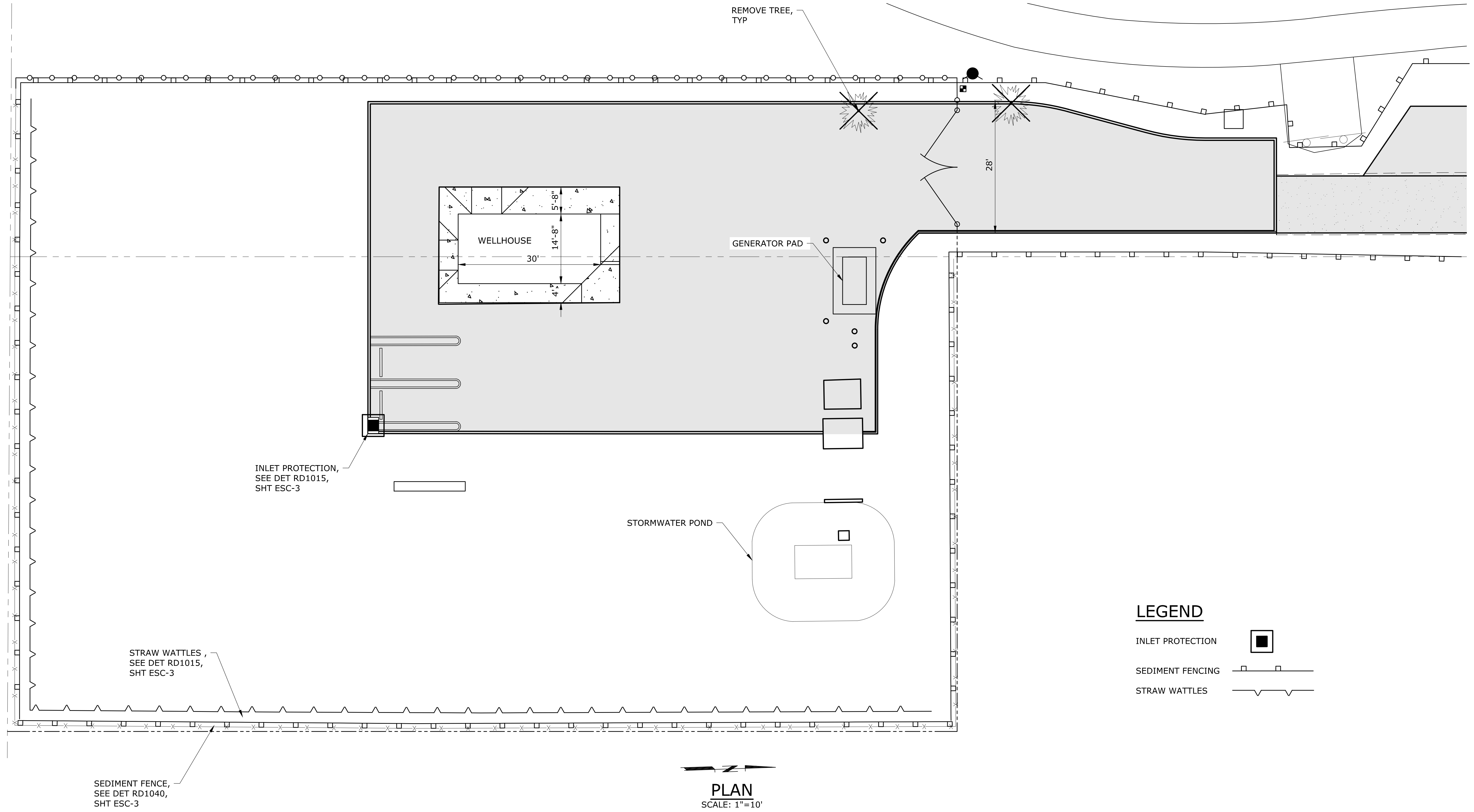
murraysmith

WOODBURN
INCORPORATED 1889
CITY OF WOODBURN
NEW PRODUCTION WELL FOR THE PARR ROAD TREATMENT PLANT


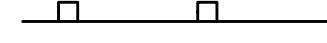
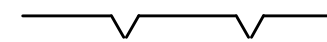
EROSION AND SEDIMENT CONTROL DETAILS

PROJECT NO.: 19-2697 SCALE: AS SHOWN DATE: MARCH 2022

G:\pdx_projects\19\2697 - Woodburn - Parr Road Tp Eng. Design And Cm Services\CAD\Sheets\19-2697-OR-ESC1-4.dwg ESC-4 3/1/2022 8:57 AM LEA.CONNORS 23.0s (LMS Tech)



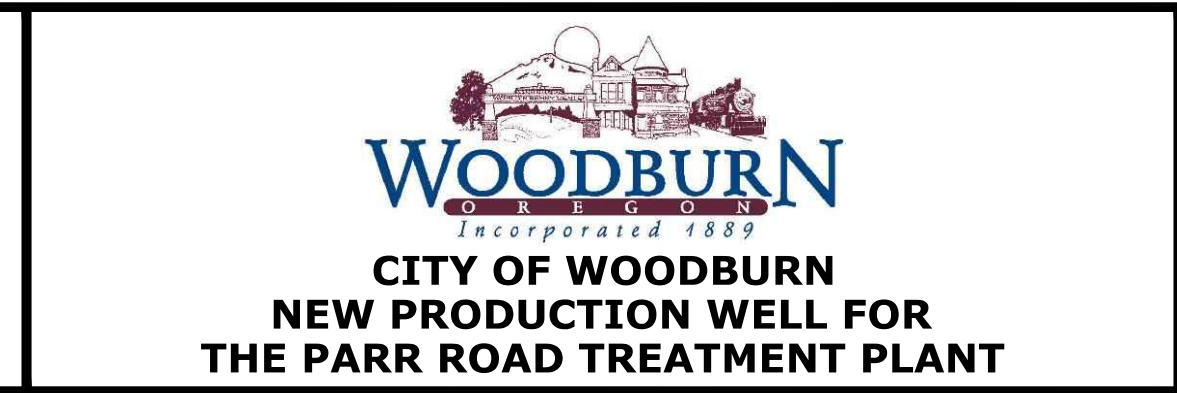
LEGEND

- INLET PROTECTION 
- SEDIMENT FENCING 
- STRAW WATTLES 

NO.	DATE	BY	REVISION

NOTICE
0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DSN DESIGNED
CAD DRAWN
CHK CHECKED



WELL HOUSE EROSION AND SEDIMENT CONTROL

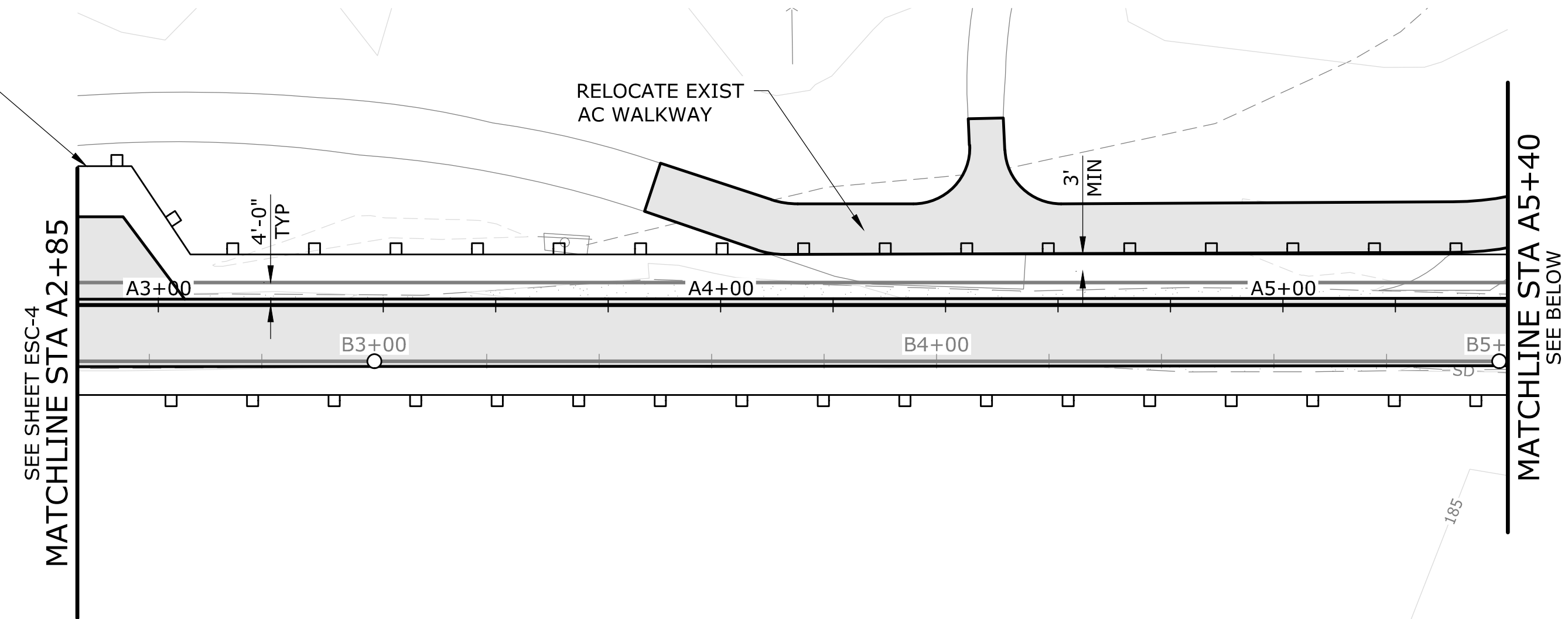
PROJECT NO.: 19-2697 SCALE: AS SHOWN DATE: MARCH 2022

SHEET
ESC-4
9 of 67

G:\pdx_projects\19\2697 - Woodburn - Parr Road Tp Eng. Design And Cm Services\CAD\Sheets\19-2697-OR-ESC5-6.dwg ESC-5 3/1/2022 8:47 AM LEA.CONNORS 23.0s (LMS Tech)

SEDIMENT FENCE,
SEE DET RD1040,
SHT ESC-3

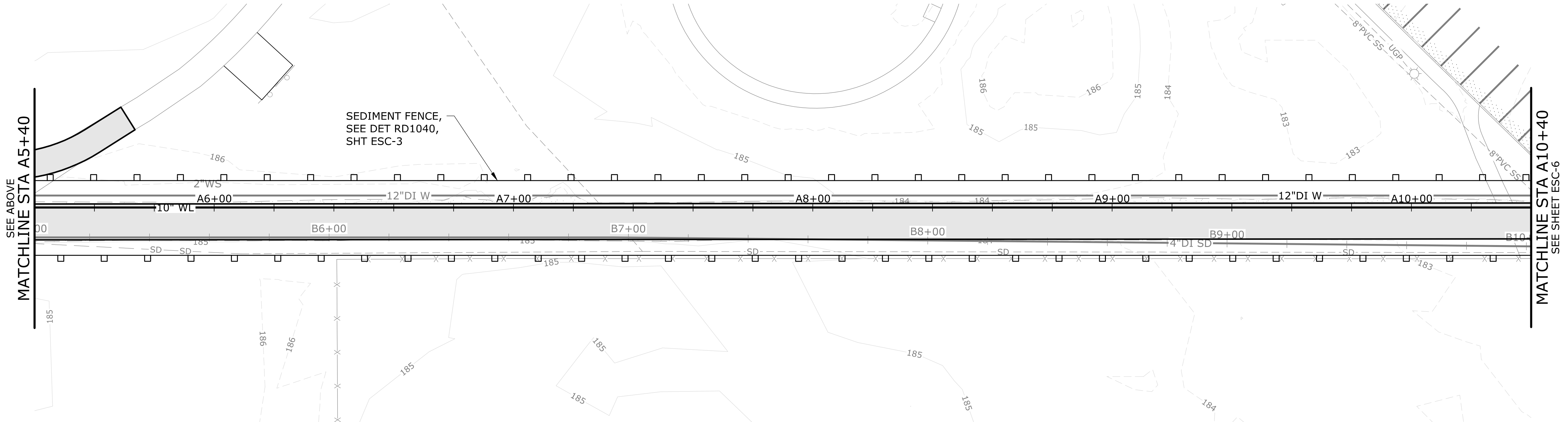
RELOCATE EXIST
AC WALKWAY



PLAN
SCALE: 1"=20'

LEGEND
SEDIMENT FENCING

SEDIMENT FENCE,
SEE DET RD1040,
SHT ESC-3

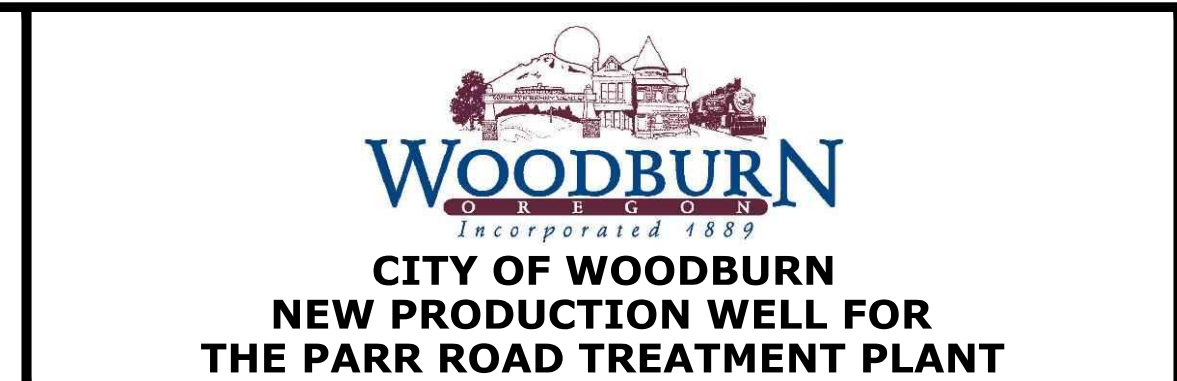


PLAN
SCALE: 1"=20'

NO.	DATE	BY	REVISION

NOTICE
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IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

LRC DESIGNED
EJJ DRAWN
MLM CHECKED

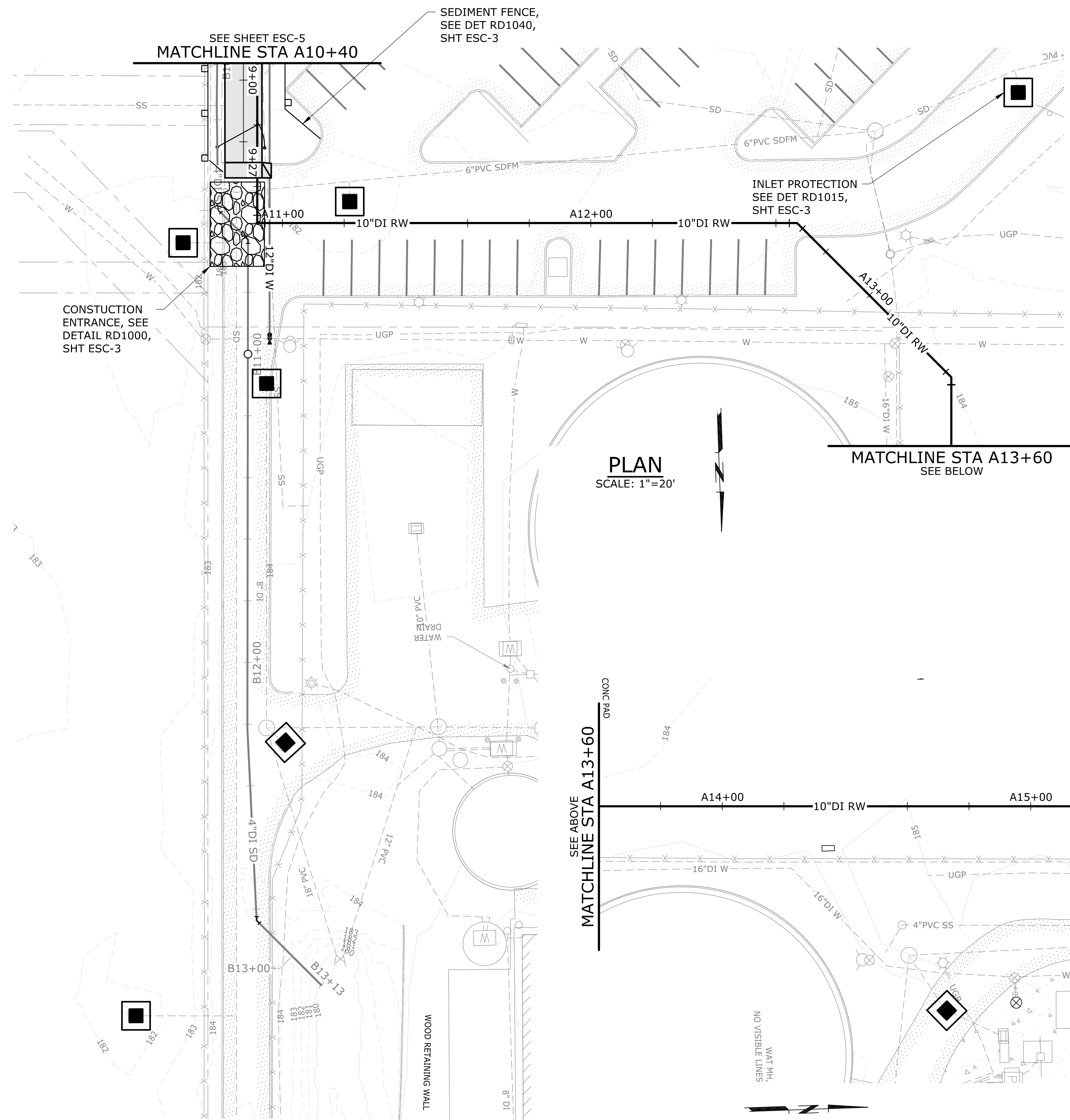


**STORMWATER AND WATER LINE
EROSION AND SEDIMENT CONTROL
STA A2+85 TO STA A10+40**

PROJECT NO.: 19-2697 SCALE: AS SHOWN DATE: MARCH 2022

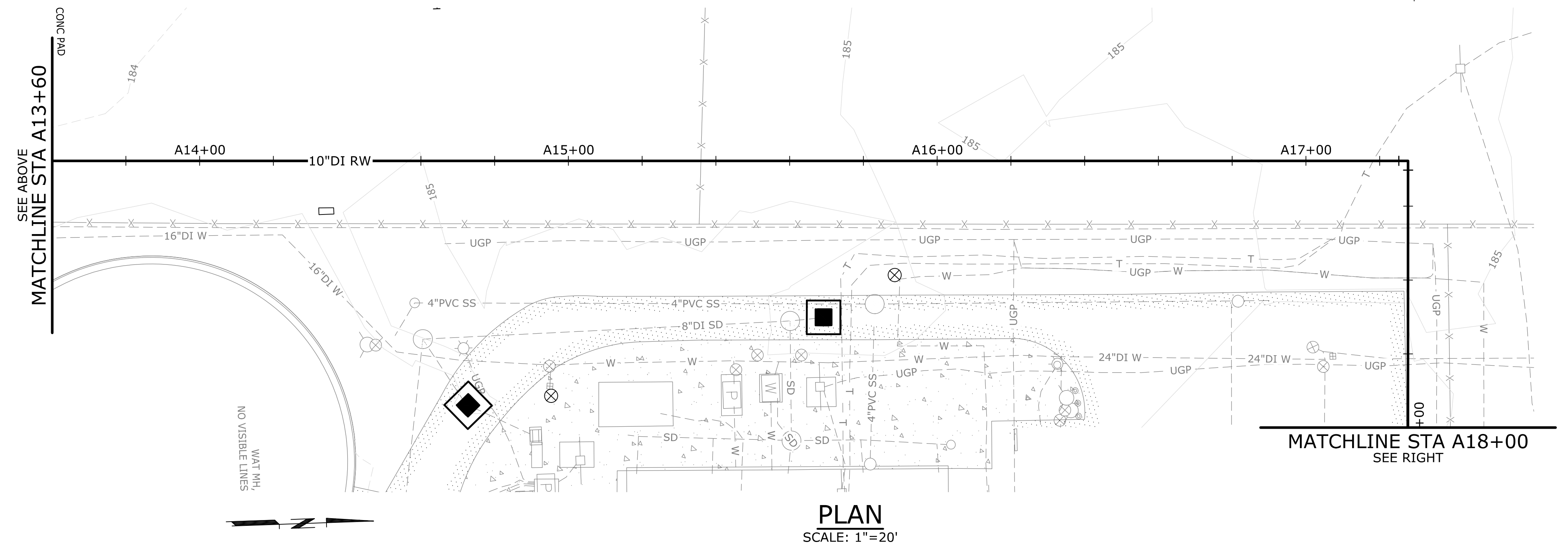
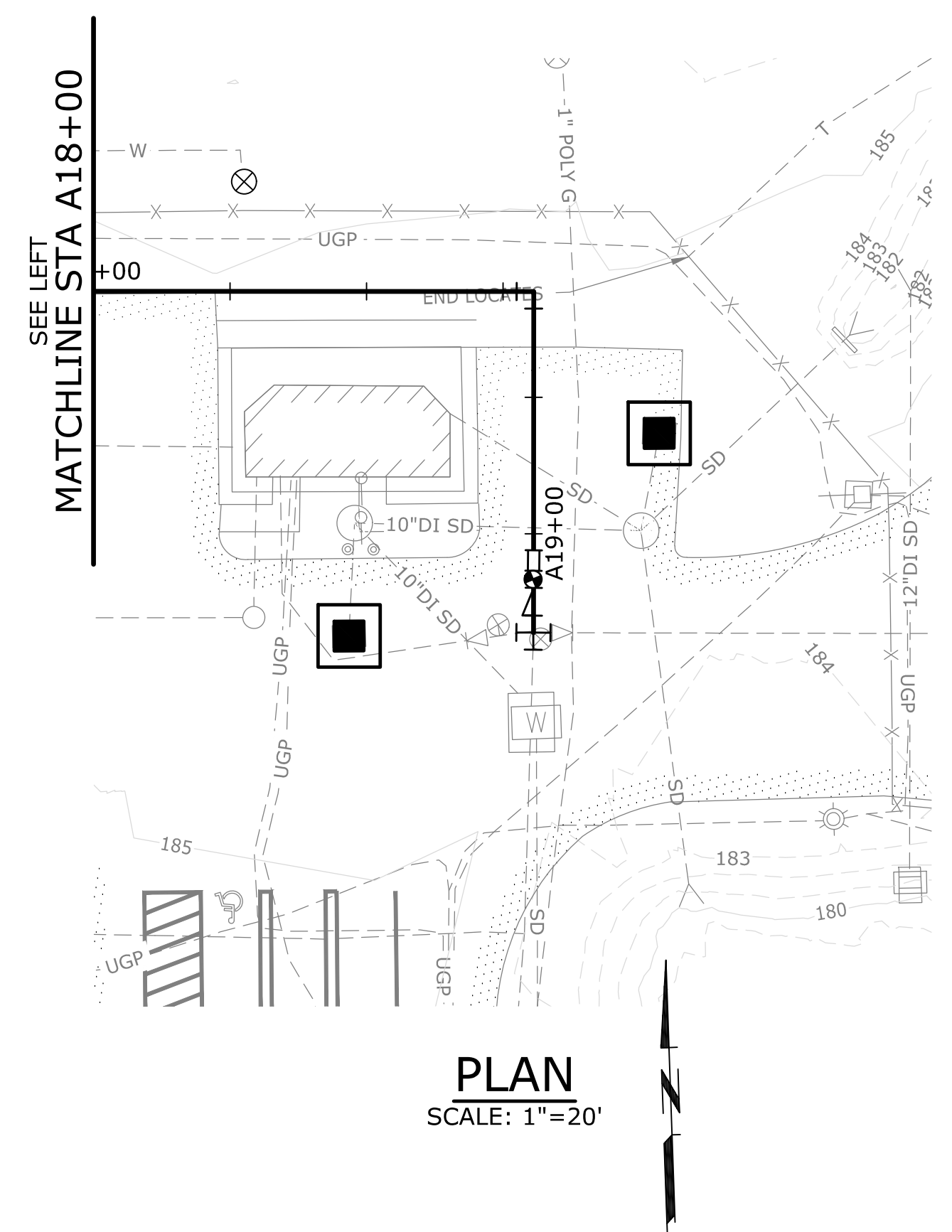
SHEET
ESC-5
10 of 67

G:\pdx_projects\19\2697 - Woodburn - Parr Road Tp Eng. Design And Cm Services\CAD\Sheets\19-2697-OR-ESC5-6.dwg ESC-6 3/1/2022 8:47 AM LEA.CONNORS 23.0s (LMS Tech)



LEGEND

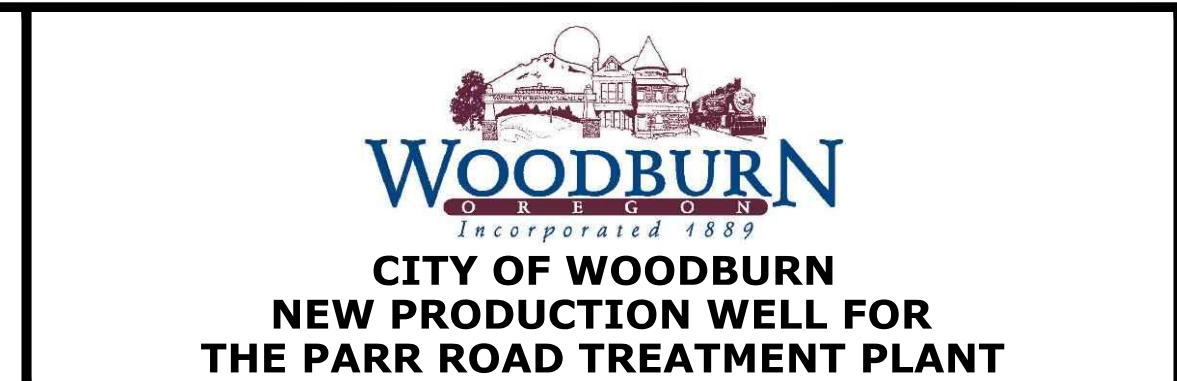
- INLET PROTECTION
- SEDIMENT FENCING
- CONSTRUCTION ENTRANCE



NO.	DATE	BY	REVISION

NOTICE
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IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DSN DESIGNED
EJJ DRAWN
MLM CHECKED

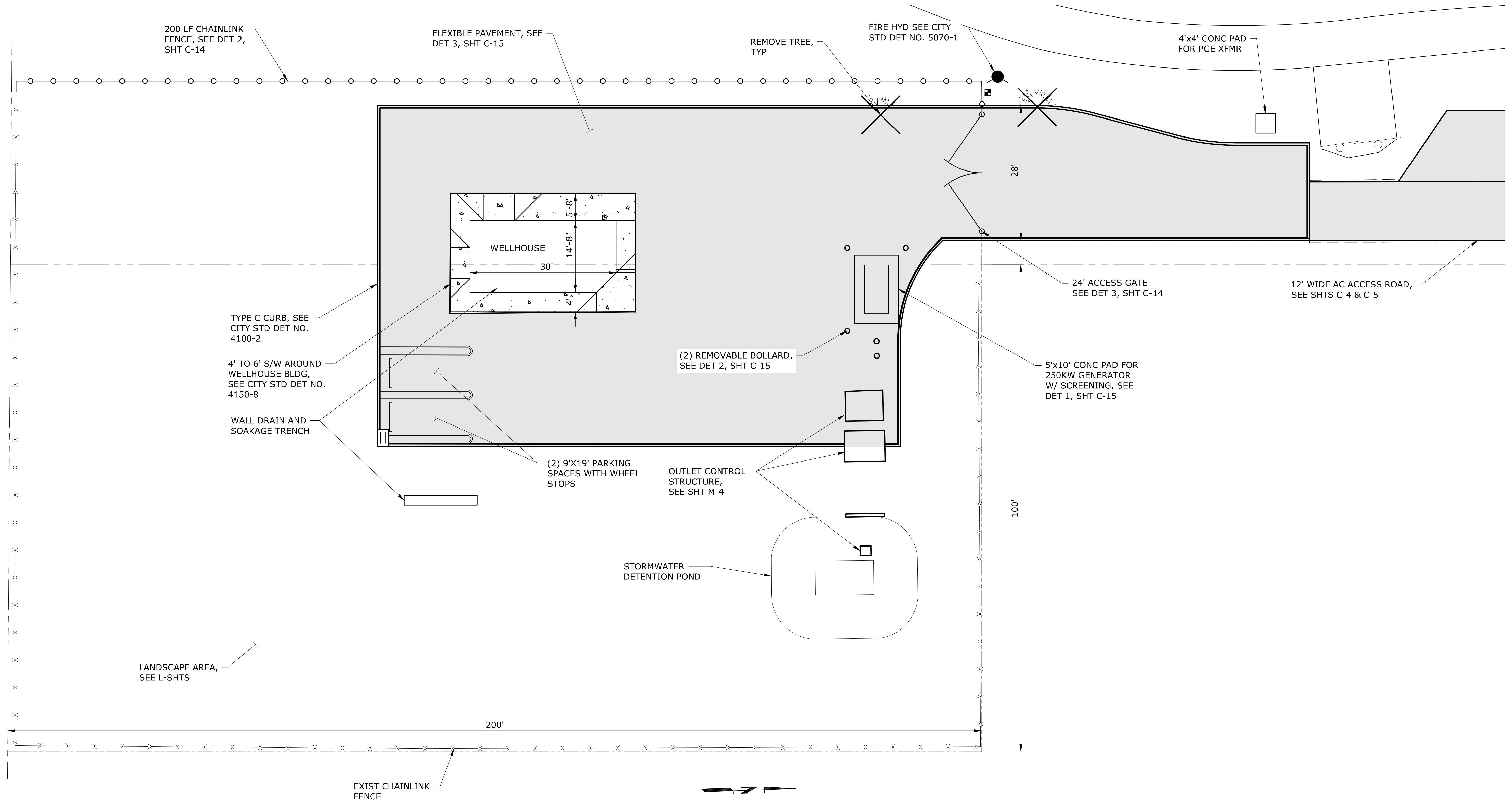


**STORMWATER AND WATER LINE
EROSION AND SEDIMENT CONTROL
STA A10+40 TO STA A19+14**

PROJECT NO.: 19-2697 SCALE: AS SHOWN DATE: MARCH 2022

SHEET
ESC-6
11 of 67

G:\pdx_projects\19\2697 - Woodburn - Parr Road Tp Eng. Design And Cm Services\CAD\Sheets\19-2697-OR-C.dwg C-1 3/3/2022 11:30 AM LEA.CONNORS 23.0s (LMS Tech)



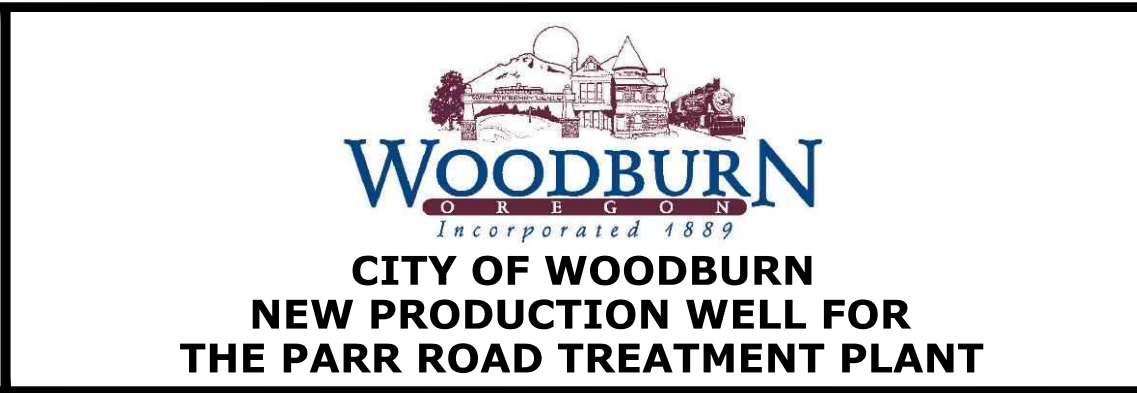
NOTES:
 1. SEE SITE GRADING PLAN FOR FACILITY CONTROL POINTS.

PLAN
 SCALE: 1"=10'

NO.	DATE	BY	REVISION

NOTICE
 0 1/2 1
 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

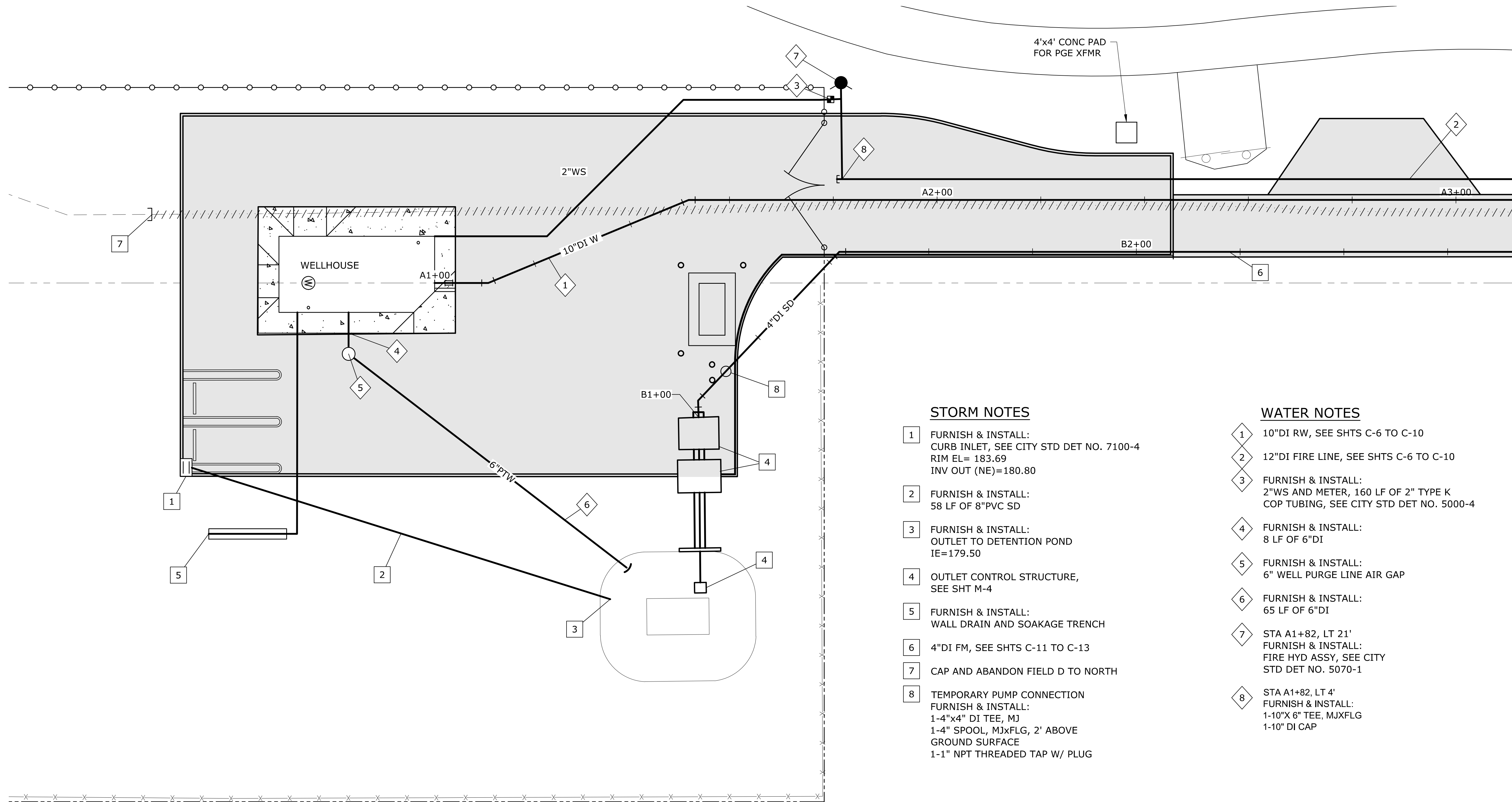
LRC
 DESIGNED
 MBE
 DRAWN
 MLM
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SITE LAYOUT PLAN			
PROJECT NO.:	19-2697	SCALE:	AS SHOWN
DATE:	MARCH 2022		

SHEET
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G:\pdx_projects\19\2697 - Woodburn - Parr Road Tp Eng. Design And Cm Services\CAD\Sheets\19-2697-OR-C.dwg C-2 3/3/2022 11:30 AM LEA.CONNORS 23.0s (LMS Tech)



STORM NOTES

- 1 FURNISH & INSTALL:
CURB INLET, SEE CITY STD DET NO. 7100-4
RIM EL= 183.69
INV OUT (NE)=180.80
- 2 FURNISH & INSTALL:
58 LF OF 8\"/>PVC SD
- 3 FURNISH & INSTALL:
OUTLET TO DETENTION POND
IE=179.50
- 4 OUTLET CONTROL STRUCTURE,
SEE SHT M-4
- 5 FURNISH & INSTALL:
WALL DRAIN AND SOAKAGE TRENCH
- 6 4\"/>DI FM, SEE SHTS C-11 TO C-13
- 7 CAP AND ABANDON FIELD D TO NORTH
- 8 TEMPORARY PUMP CONNECTION
FURNISH & INSTALL:
1-4\"/>x4\"/> DI TEE, MJ
1-4\"/> SPOOL, MJxFLG, 2' ABOVE
GROUND SURFACE
1-1\"/> NPT THREADED TAP W/ PLUG

WATER NOTES

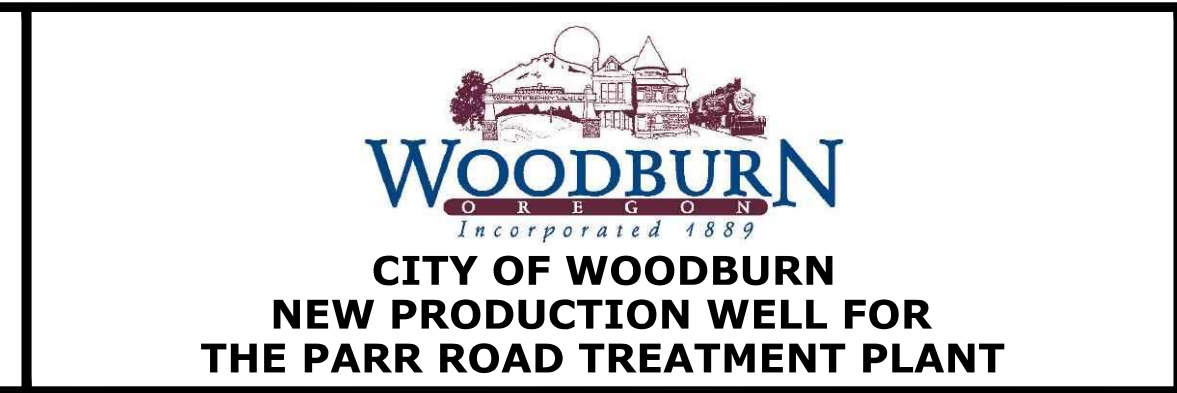
- 1 10\"/>DI RW, SEE SHTS C-6 TO C-10
- 2 12\"/>DI FIRE LINE, SEE SHTS C-6 TO C-10
- 3 FURNISH & INSTALL:
2\"/>WS AND METER, 160 LF OF 2\"/> TYPE K
COP TUBING, SEE CITY STD DET NO. 5000-4
- 4 FURNISH & INSTALL:
8 LF OF 6\"/>DI
- 5 FURNISH & INSTALL:
6\"/> WELL PURGE LINE AIR GAP
- 6 FURNISH & INSTALL:
65 LF OF 6\"/>DI
- 7 STA A1+82, LT 21'
FURNISH & INSTALL:
FIRE HYD ASSY, SEE CITY
STD DET NO. 5070-1
- 8 STA A1+82, LT 4'
FURNISH & INSTALL:
1-10\"/>x 6\"/> TEE, MJxFLG
1-10\"/> DI CAP

PLAN
SCALE: 1"=10'

NO.	DATE	BY	REVISION

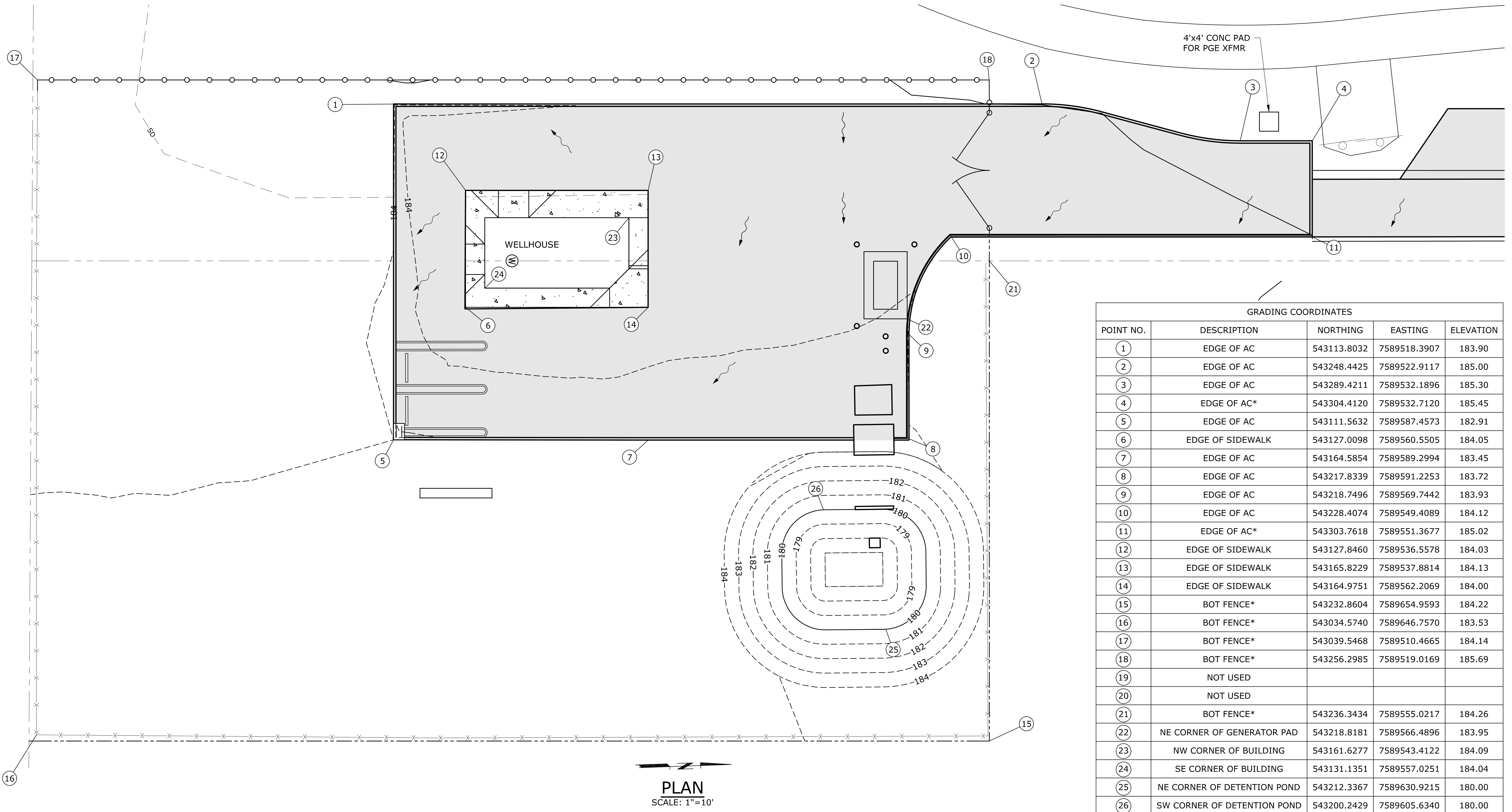
NOTICE
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IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

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DESIGNED
MBE
DRAWN
MLM
CHECKED



YARD PIPING PLAN			
PROJECT NO.:	19-2697	SCALE:	AS SHOWN
DATE:	MARCH 2022		

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GRADING COORDINATES				
POINT NO.	DESCRIPTION	NORTHING	EASTING	ELEVATION
①	EDGE OF AC	543113.8032	7589518.3907	183.90
②	EDGE OF AC	543248.4425	7589522.9117	185.00
③	EDGE OF AC	543289.4211	7589532.1896	185.30
④	EDGE OF AC*	543304.4120	7589532.7120	185.45
⑤	EDGE OF AC	543111.5632	7589587.4573	182.91
⑥	EDGE OF SIDEWALK	543127.0098	7589560.5505	184.05
⑦	EDGE OF AC	543164.5854	7589589.2994	183.45
⑧	EDGE OF AC	543217.8339	7589591.2253	183.72
⑨	EDGE OF AC	543218.7496	7589569.7442	183.93
⑩	EDGE OF AC	543228.4074	7589549.4089	184.12
⑪	EDGE OF AC*	543303.7618	7589551.3677	185.02
⑫	EDGE OF SIDEWALK	543127.8460	7589536.5578	184.03
⑬	EDGE OF SIDEWALK	543165.8229	7589537.8814	184.13
⑭	EDGE OF SIDEWALK	543164.9751	7589562.2069	184.00
⑮	BOT FENCE*	543232.8604	7589654.9593	184.22
⑯	BOT FENCE*	543034.5740	7589646.7570	183.53
⑰	BOT FENCE*	543039.5468	7589510.4665	184.14
⑱	BOT FENCE*	543256.2985	7589519.0169	185.69
⑲	NOT USED			
⑳	NOT USED			
㉑	BOT FENCE*	543236.3434	7589555.0217	184.26
㉒	NE CORNER OF GENERATOR PAD	543218.8181	7589566.4896	183.95
㉓	NW CORNER OF BUILDING	543161.6277	7589543.4122	184.09
㉔	SE CORNER OF BUILDING	543131.1351	7589557.0251	184.04
㉕	NE CORNER OF DETENTION POND	543212.3367	7589630.9215	180.00
㉖	SW CORNER OF DETENTION POND	543200.2429	7589605.6340	180.00

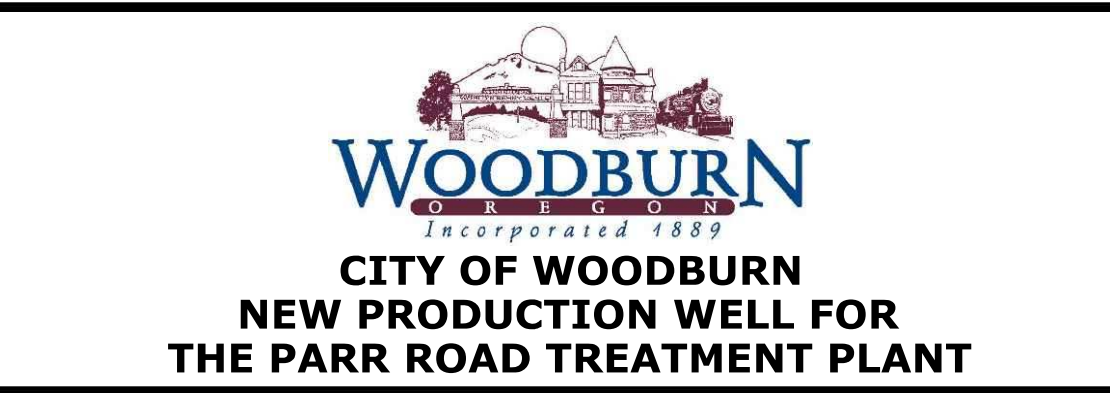
*CONTRACTORS TO CONFIRM GRADES AND MATCH EXISTING

NO.	DATE	BY	REVISION

NOTICE

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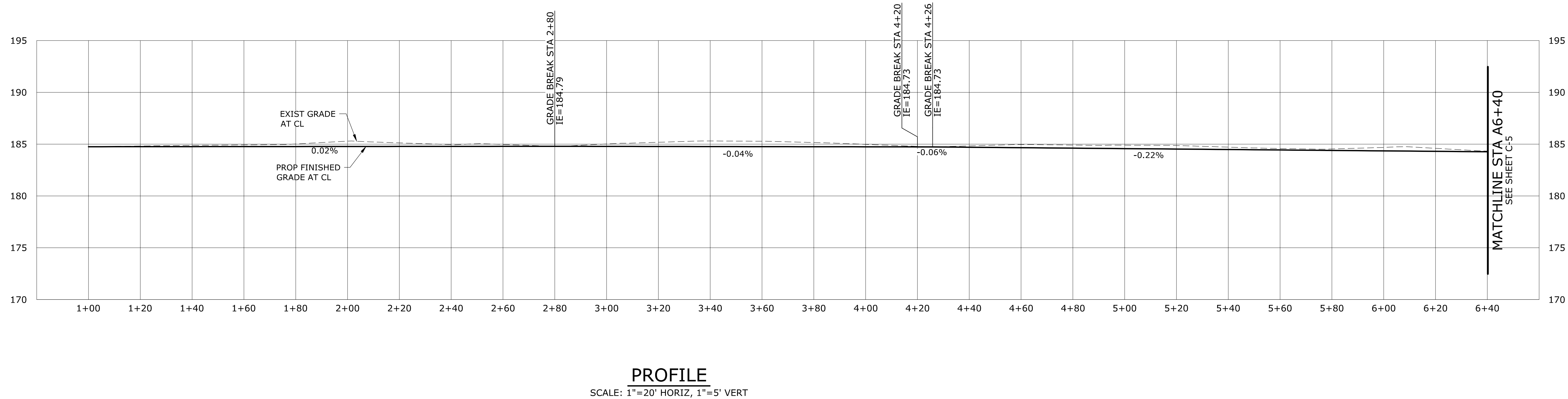
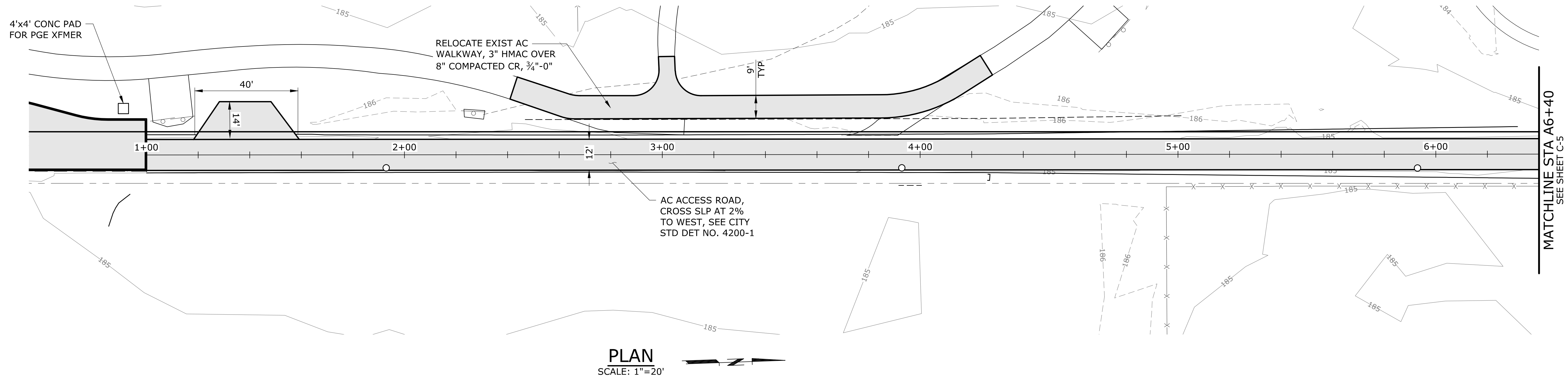
LRC DESIGNED
 MBE DRAWN
 MLM CHECKED



SITE GRADING PLAN			
PROJECT NO.:	19-2697	SCALE:	AS SHOWN
DATE:	MARCH 2022		

SHEET
C-3
 14 of 67

G:\pdx_projects\19\2697 - Woodburn - Parr Road Tp Eng. Design And Cm Services\CAD\Sheets\19-2697-OR-C-DW.dwg C-4 3/3/2022 11:30 AM LEA.CONNORS 23.0s (LMS Tech)



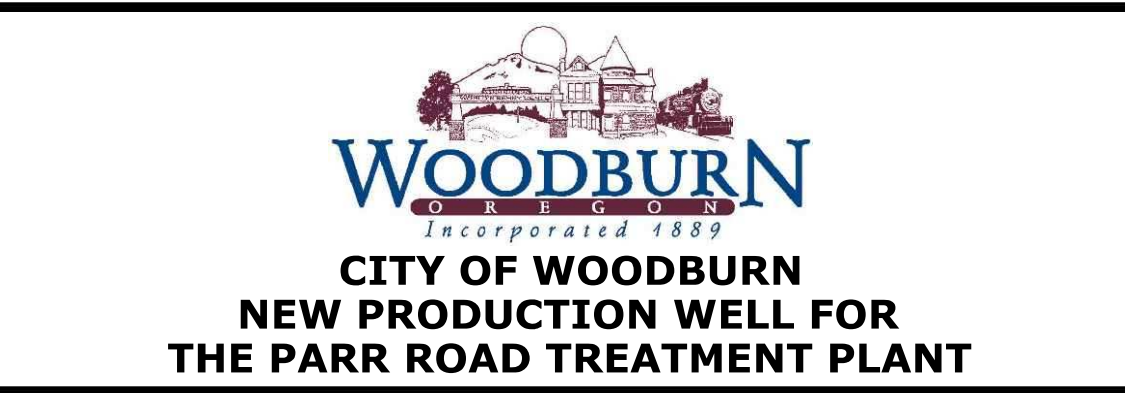
NO.	DATE	BY	REVISION

NOTICE

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IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

LRC
DESIGNED
EJJ
DRAWN
MLM
CHECKED

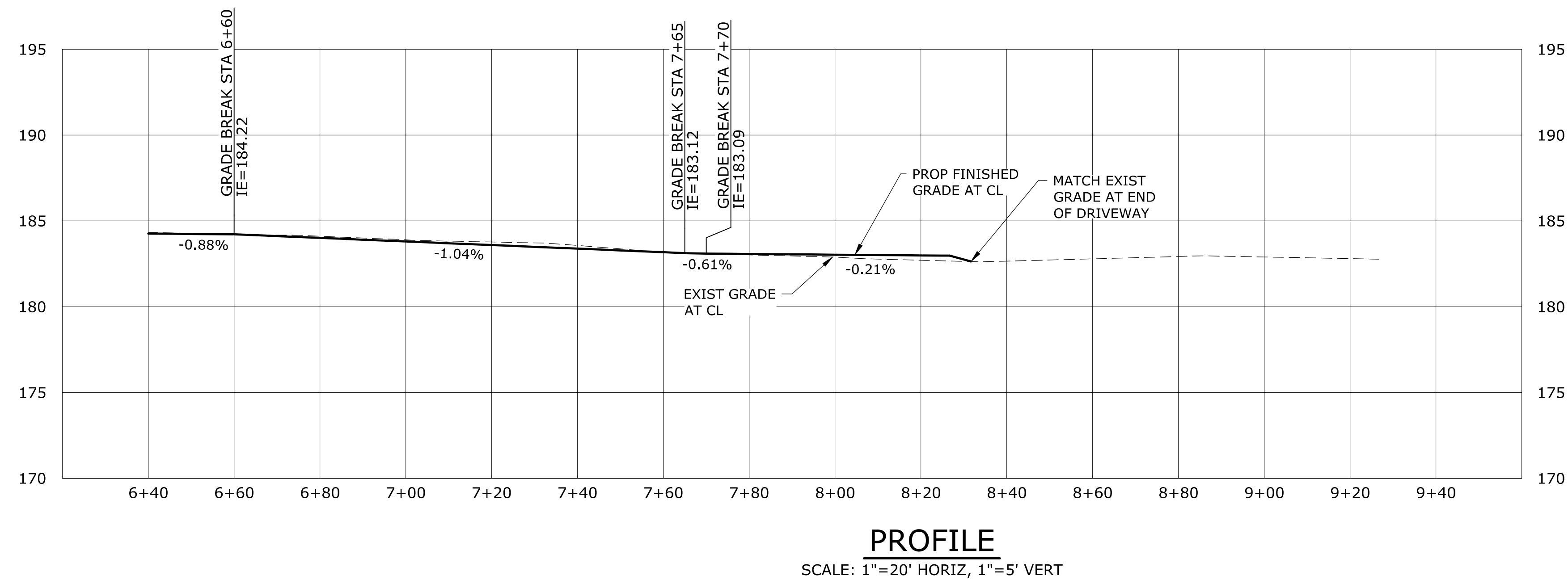
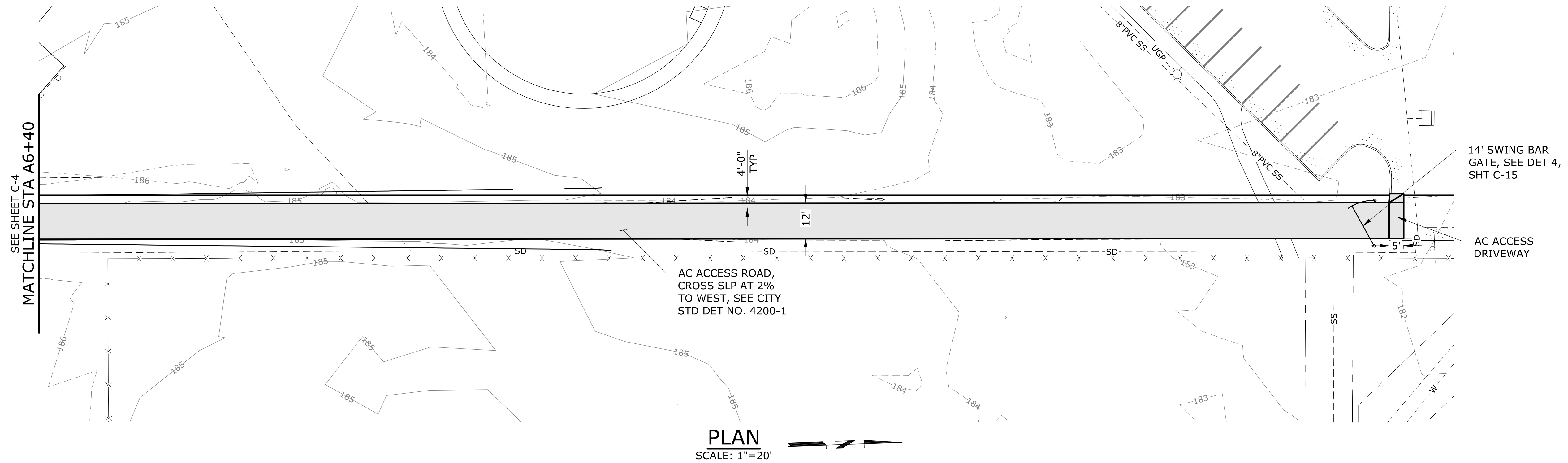


**SITE ACCESS DRIVEWAY
PLAN AND PROFILE
STA 1+00 TO STA 6+40**

PROJECT NO.: 19-2697 SCALE: AS SHOWN DATE: MARCH 2022

SHEET
C-4
15 of 67

G:\pdx_projects\19\2697 - Woodburn - Parr Road Tp Eng. Design And Cm Services\CAD\Sheets\19-2697-OR-C-DW.dwg C-5 3/3/2022 11:30 AM LEA.CONNORS 23.0s (LMS Tech)



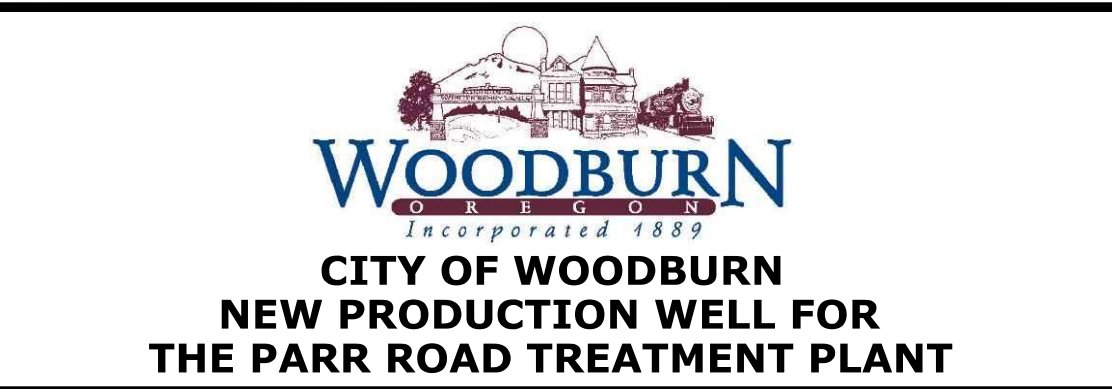
NO.	DATE	BY	REVISION

NOTICE

0 1/2 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

LRC
DESIGNED
EJJ
DRAWN
MLM
CHECKED

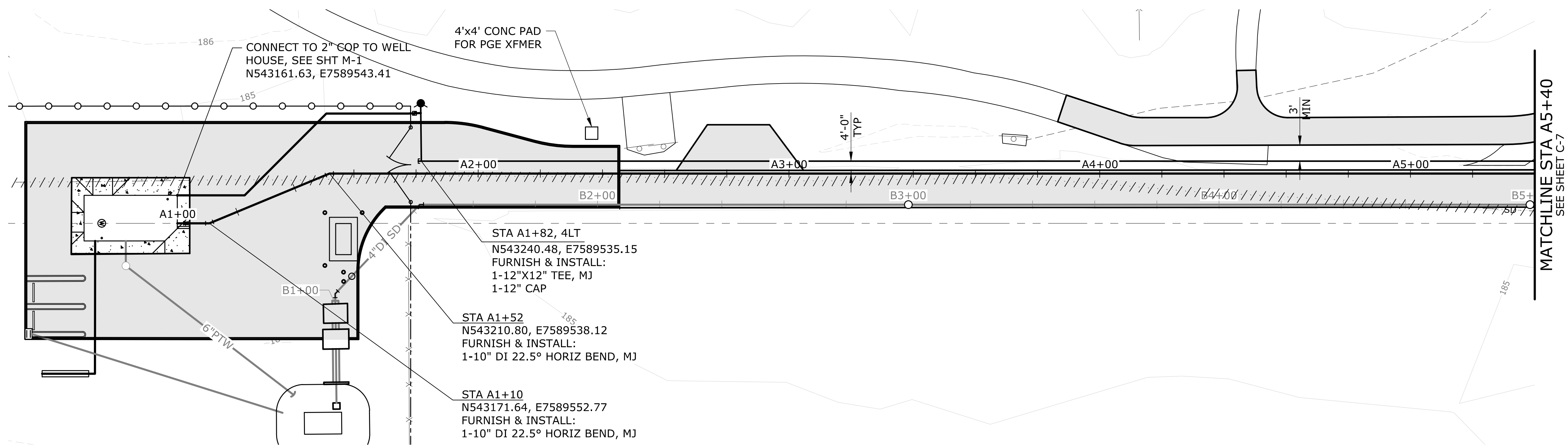


**SITE ACCESS DRIVEWAY
PLAN AND PROFILE
STA 6+40 TO STA 10+80**

PROJECT NO.: 19-2697 SCALE: AS SHOWN DATE: MARCH 2022

SHEET
C-5
16 of 67

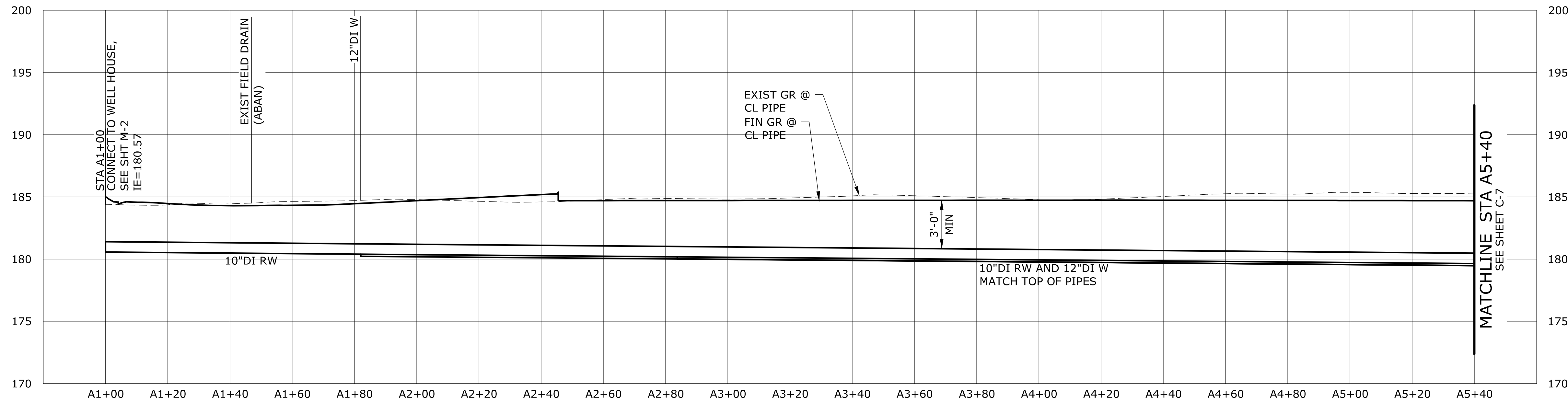
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PLAN
SCALE: 1"=20'

NOTES:

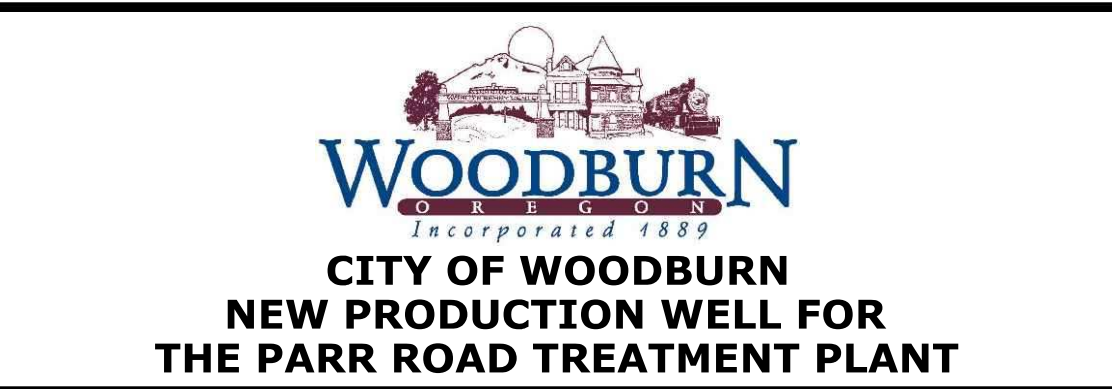
1. EXIST UTILITY LOCATIONS AND ELEVATIONS SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL POTHOLE AND VERIFY LOCATIONS, ELEVATIONS, TYPES, AND SIZES OF ALL EXIST UTILITIES PRIOR TO CONSTRUCTING NEW PIPING FAR ENOUGH IN ADVANCE TO ALLOW NECESSARY ADJUSTMENTS IN GRADE, AND SHALL NOTIFY ENGINEER OF NEED TO ADJUST PIPING INSTALLATION ACCORDINGLY. POTHOLING ELEVATION ADJUSTMENTS TO BE ACCOMPLISHED WITHOUT REWORK. ELEVATION ADJUSTMENTS SHALL BE EXPECTED AND ARE INCIDENTAL TO THE WORK.
2. CONTRACTOR TO PROVIDE ALL NECESSARY BLOCKING, FITTINGS, AND SUPPORTS TO FACILITATE FORCE MAIN TESTING.
3. PIPE CURVATURE RESULTS FROM JOINT DEFLECTION OF 3 DEGREES PER JOINT.
4. CONTRACTOR TO PROTECT, RESTRAIN, AND SUPPORT EXIST UTILITIES AS NECESSARY TO SAFELY INSTALL FORCE MAIN.
5. ALL PIPE AND FITTINGS TO BE CLASS 52 DUCTILE IRON WITH RESTRAINED MECHANICAL JOINTS UNLESS OTHERWISE SPECIFIED.
6. ALL FITTINGS TO BE INSTALLED WITH MARKER BALLS AS SPECIFIED.



PROFILE
SCALE: 1"=20' HORIZ, 1"=5' VERT

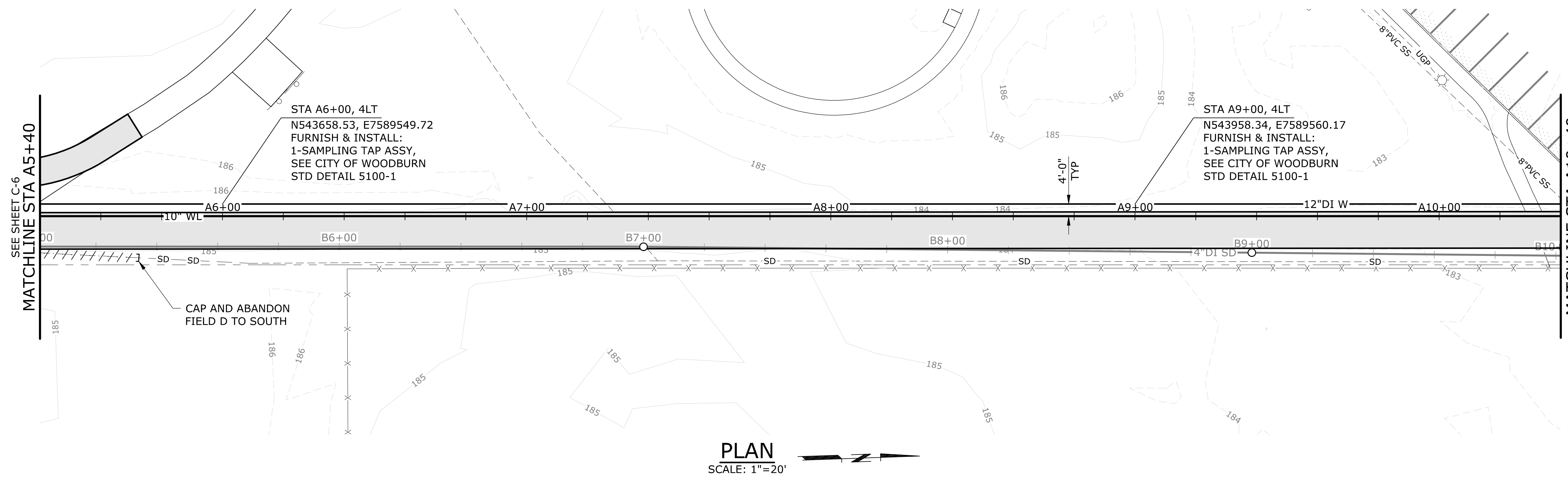
NO.	DATE	BY	REVISION

NOTICE	LRC
0 1/2 1	DESIGNED
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE	EJJ
	DRAWN
	MLM
	CHECKED



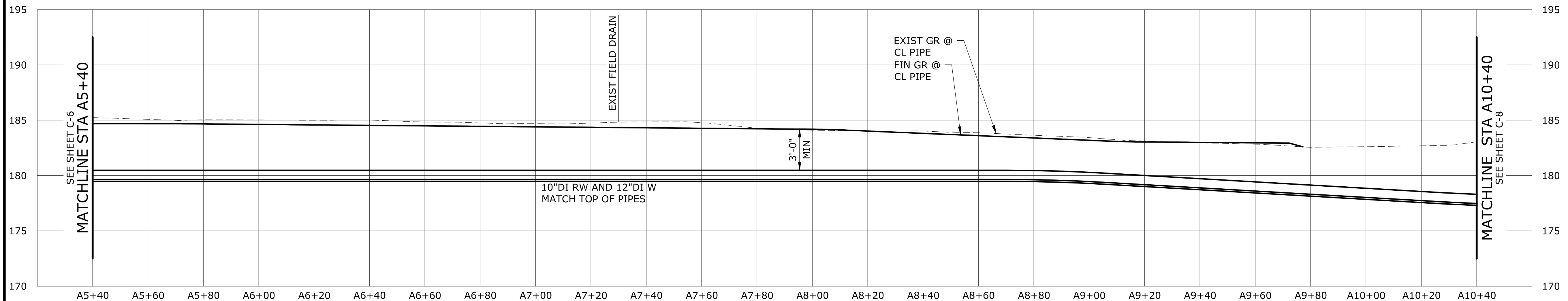
RAW WATER AND FIRE PLAN AND PROFILE STA A1+00 TO STA A5+40			
PROJECT NO.:	19-2697	SCALE:	AS SHOWN
DATE:	MARCH 2022		

G:\pdx_projects\19\2697 - Woodburn - Parr Road Tp Eng. Design And Cm Services\CAD\Sheets\19-2697-OR-C-RW-PP.dwg C-7 3/1/2022 2:39 PM LEA.CONNORS 23.0s (LMS Tech)



- NOTES:**
- EXIST UTILITY LOCATIONS AND ELEVATIONS SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL POTHOLE AND VERIFY LOCATIONS, ELEVATIONS, TYPES, AND SIZES OF ALL EXIST UTILITIES PRIOR TO CONSTRUCTING NEW PIPING FAR ENOUGH IN ADVANCE TO ALLOW NECESSARY ADJUSTMENTS IN GRADE, AND SHALL NOTIFY ENGINEER OF NEED TO ADJUST PIPING INSTALLATION ACCORDINGLY. POTHOLING ELEVATION ADJUSTMENTS TO BE ACCOMPLISHED WITHOUT REWORK. ELEVATION ADJUSTMENTS SHALL BE EXPECTED AND ARE INCIDENTAL TO THE WORK.
 - CONTRACTOR TO PROVIDE ALL NECESSARY BLOCKING, FITTINGS, AND SUPPORTS TO FACILITATE FORCE MAIN TESTING.
 - PIPE CURVATURE RESULTS FROM JOINT DEFLECTION OF 3 DEGREES PER JOINT.
 - CONTRACTOR TO PROTECT, RESTRAIN, AND SUPPORT EXIST UTILITIES AS NECESSARY TO SAFELY INSTALL FORCE MAIN.
 - ALL PIPE AND FITTINGS TO BE CLASS 52 DUCTILE IRON WITH RESTRAINED MECHANICAL JOINTS UNLESS OTHERWISE SPECIFIED.
 - ALL FITTINGS TO BE INSTALLED WITH MARKER BALLS AS SPECIFIED.

PLAN
SCALE: 1"=20'

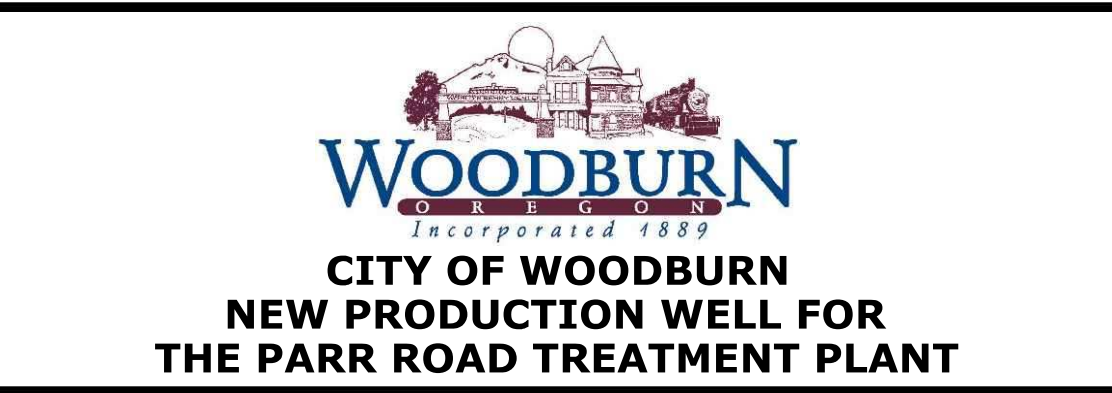


PROFILE
SCALE: 1"=20' HORIZ, 1"=5' VERT

NO.	DATE	BY	REVISION

NOTICE
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IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

LRC DESIGNED
EJJ DRAWN
MLM CHECKED

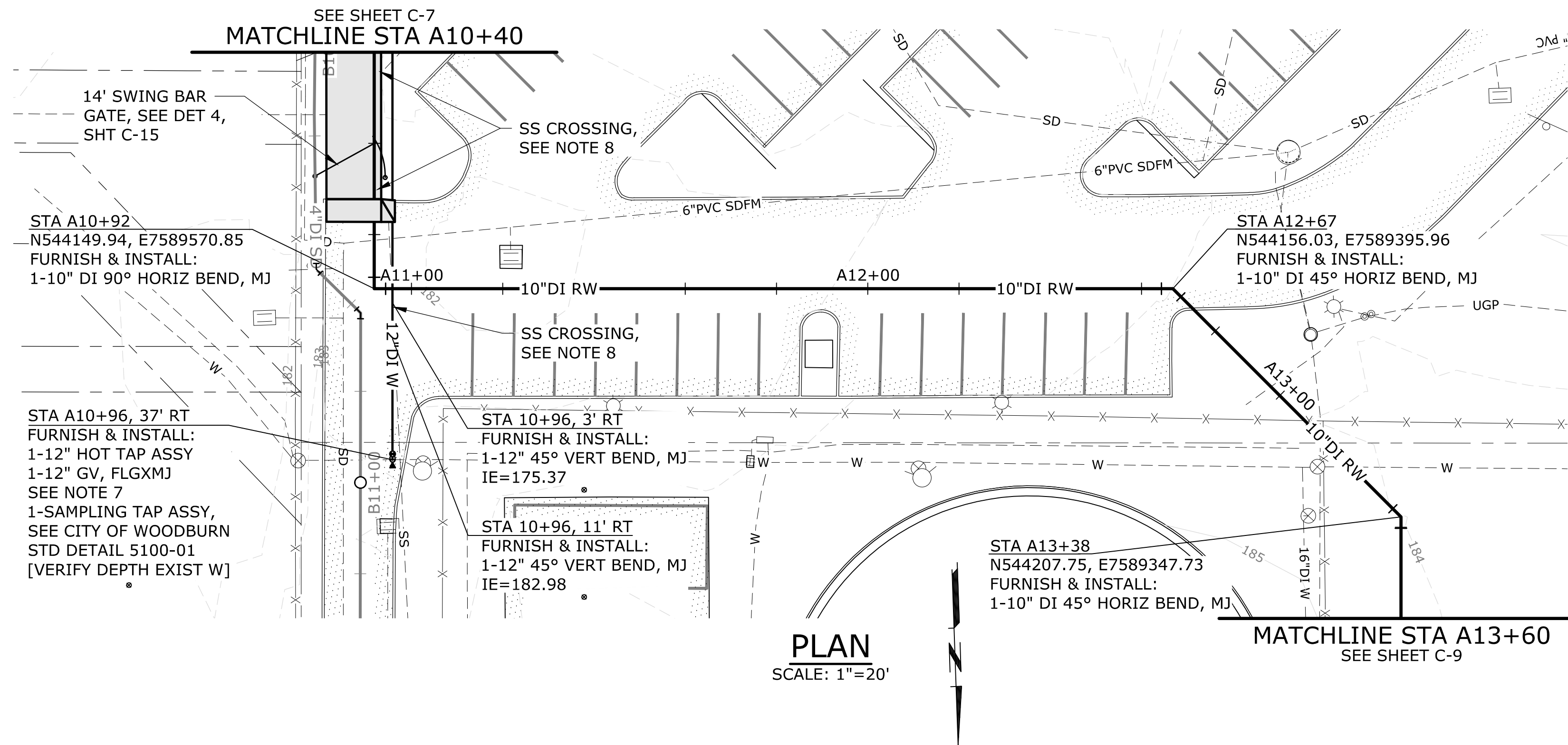


**RAW WATER AND FIRE
PLAN AND PROFILE
STA A5+40 TO STA A10+40**

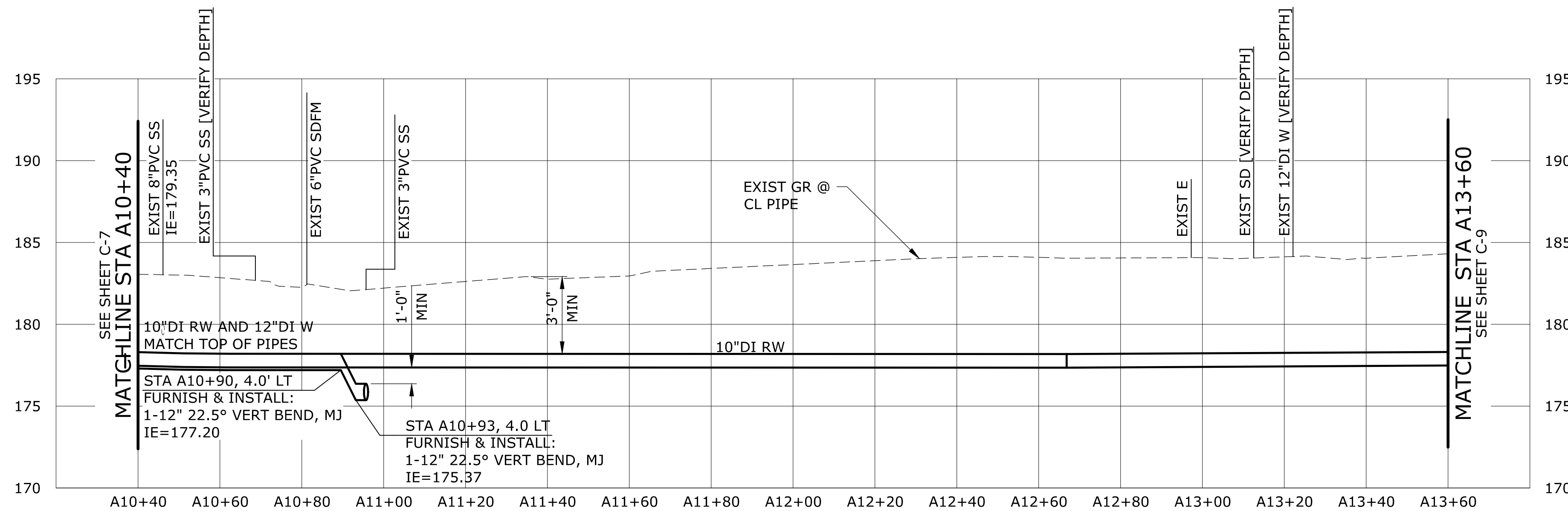
PROJECT NO.: 19-2697 SCALE: AS SHOWN DATE: MARCH 2022

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PLAN
SCALE: 1"=20'



PROFILE
SCALE: 1"=20' HORIZ, 1"=5' VERT

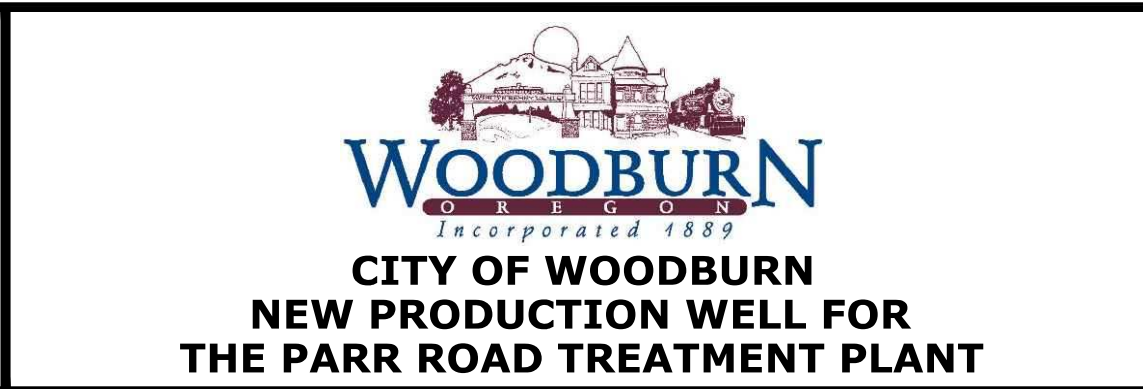
NOTES:

- EXIST UTILITY LOCATIONS AND ELEVATIONS SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL POTHOLE AND VERIFY LOCATIONS, ELEVATIONS, TYPES, AND SIZES OF ALL EXIST UTILITIES PRIOR TO CONSTRUCTING NEW PIPING FAR ENOUGH IN ADVANCE TO ALLOW NECESSARY ADJUSTMENTS IN GRADE, AND SHALL NOTIFY ENGINEER OF NEED TO ADJUST PIPING INSTALLATION ACCORDINGLY. POTHOLING ELEVATION ADJUSTMENTS TO BE ACCOMPLISHED WITHOUT REWORK. ELEVATION ADJUSTMENTS SHALL BE EXPECTED AND ARE INCIDENTAL TO THE WORK.
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- CONTRACTOR TO PROTECT, RESTRAIN, AND SUPPORT EXIST UTILITIES AS NECESSARY TO SAFELY INSTALL FORCE MAIN.
- ALL PIPE AND FITTINGS TO BE CLASS 52 DUCTILE IRON WITH RESTRAINED MECHANICAL JOINTS UNLESS OTHERWISE SPECIFIED.
- ALL FITTINGS TO BE INSTALLED WITH MARKER BALLS AS SPECIFIED.
- CONTRACTOR TO POTHOLE EXISTING 12-INCH WATER TO VERIFY ALIGNMENT, TIE IN LOCATION, CONFIGURATION AND CONDITION OF EXISTING PIPE PRIOR TO WORK.
- FOR ALL CROSSINGS CONTRACTOR SHALL COMPLY WITH OAR CHAPTER 33-061-0050(9) FOR REQUIRED WATERLINE-SEWERLINE SEPARATION AND CROSSING REQUIREMENTS.

NO.	DATE	BY	REVISION

NOTICE
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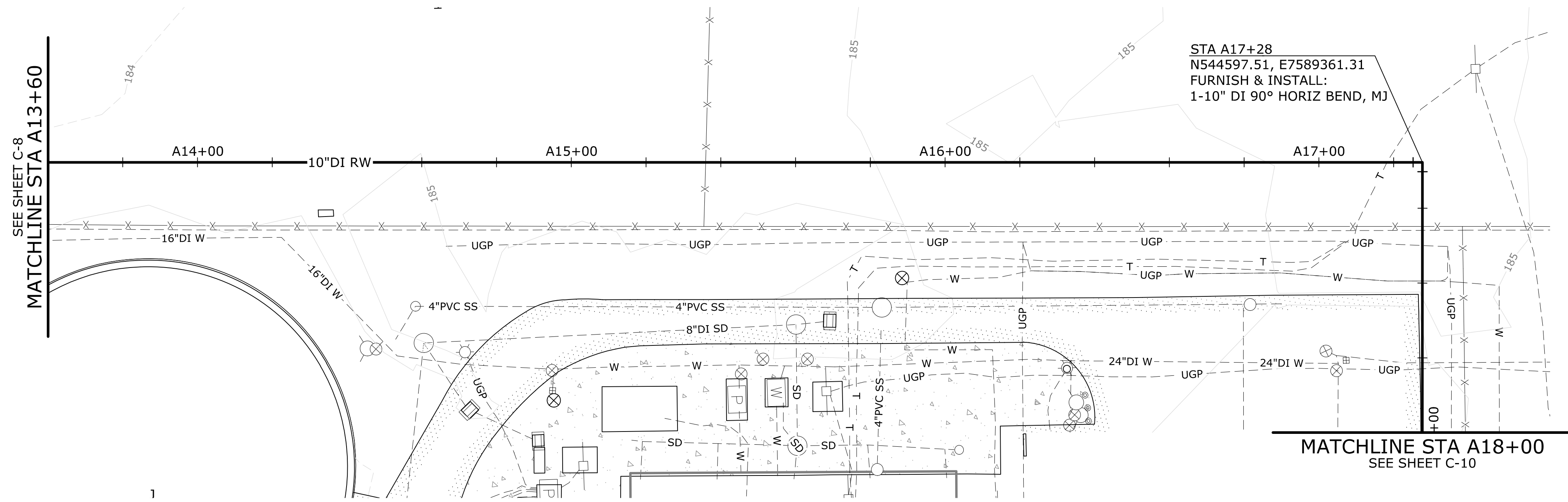


**RAW WATER AND FIRE
PLAN AND PROFILE
STA A10+40 TO STA A13+60**

PROJECT NO.: 19-2697 SCALE: AS SHOWN DATE: MARCH 2022

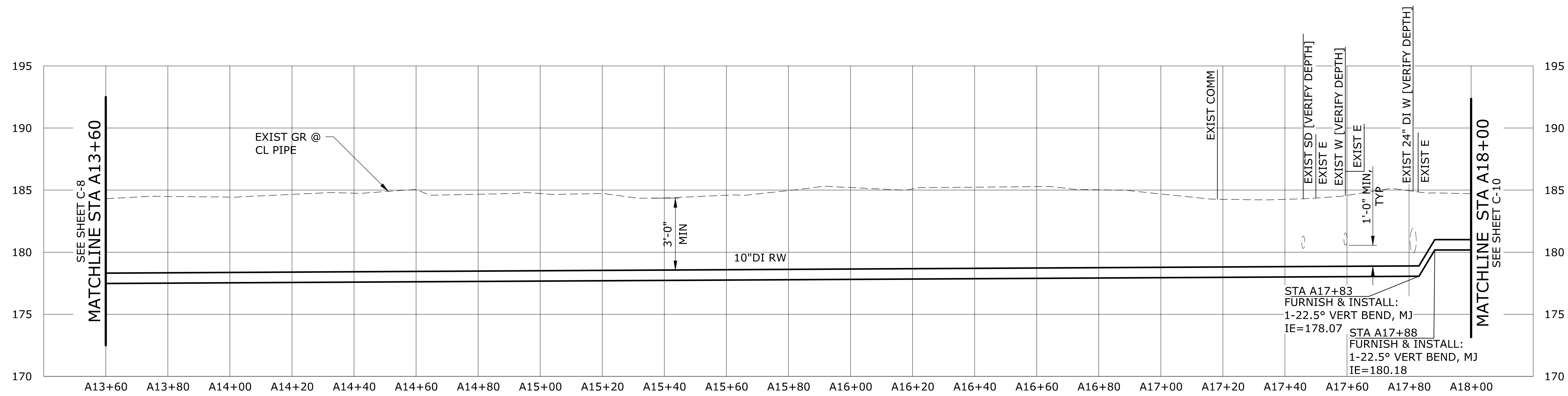
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C-8
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PLAN
SCALE: 1"=20'

- NOTES:**
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 - CONTRACTOR TO POTHOLE EXISTING 12-INCH WATER TO VERIFY ALIGNMENT, TIE IN LOCATION, CONFIGURATION AND CONDITION OF EXISTING PIPE PRIOR TO WORK.

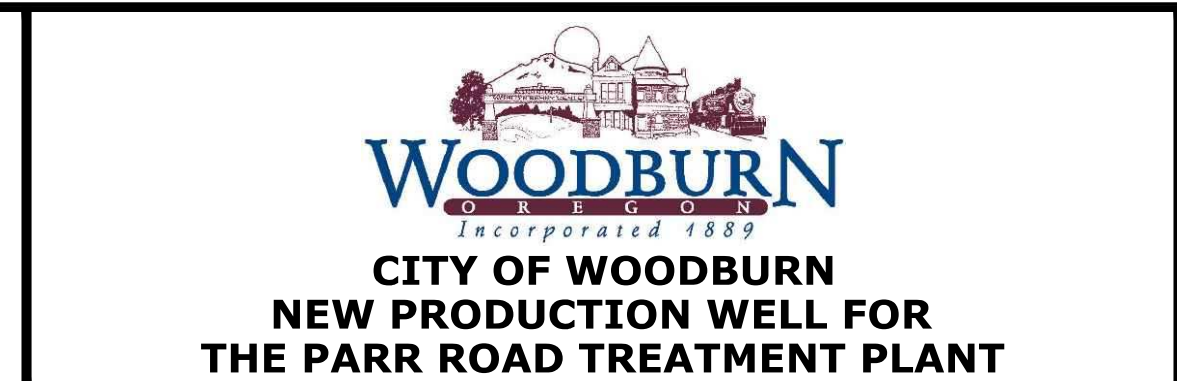


PROFILE
SCALE: 1"=20' HORIZ, 1"=5' VERT

NO.	DATE	BY	REVISION

NOTICE
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EJJ DRAWN
MLM CHECKED

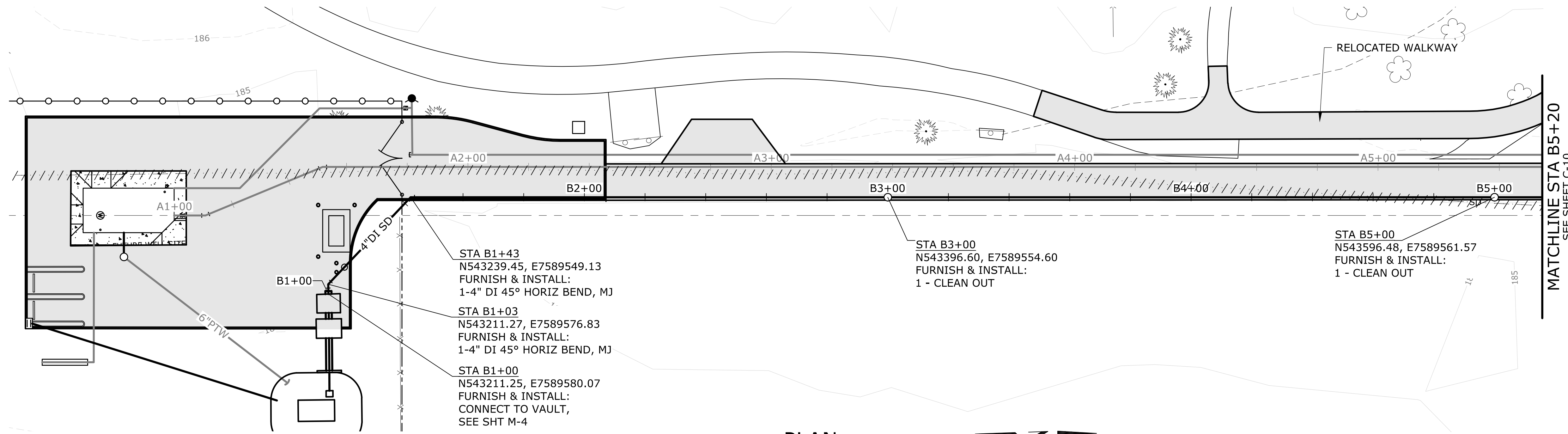


**RAW WATER AND FIRE
PLAN AND PROFILE
STA A13+60 TO STA A18+00**

PROJECT NO.: 19-2697 SCALE: AS SHOWN DATE: MARCH 2022

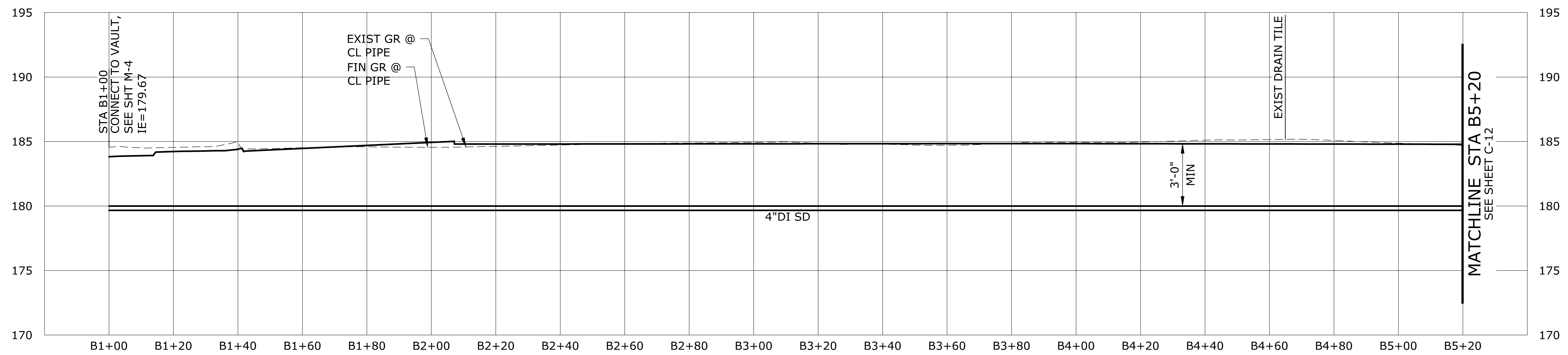
SHEET
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PLAN
SCALE: 1"=20'

- NOTES:**
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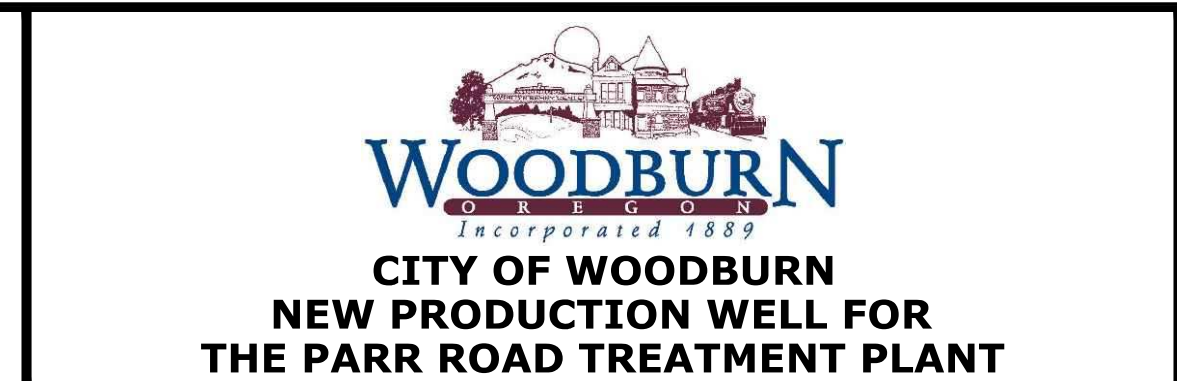


PROFILE
SCALE: 1"=20' HORIZ, 1"=5' VERT

NO.	DATE	BY	REVISION

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IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

LRC DESIGNED
EJJ DRAWN
MBE CHECKED

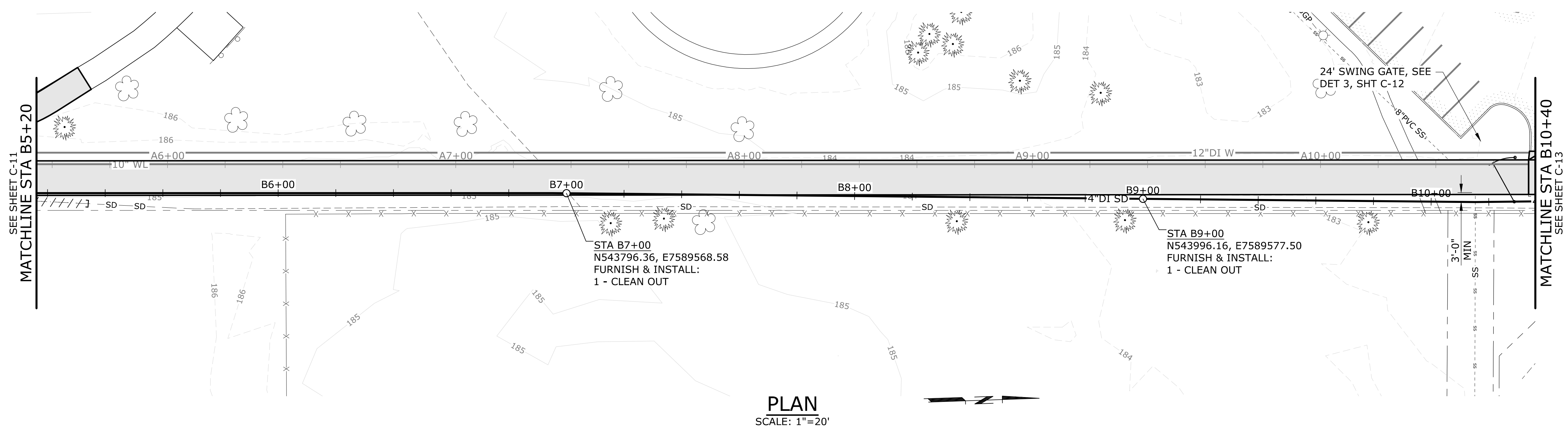


**STORMWATER LINES
PLAN AND PROFILE
STA B1+00 TO STA B5+20**

PROJECT NO.: 19-2697 SCALE: AS SHOWN DATE: MARCH 2022

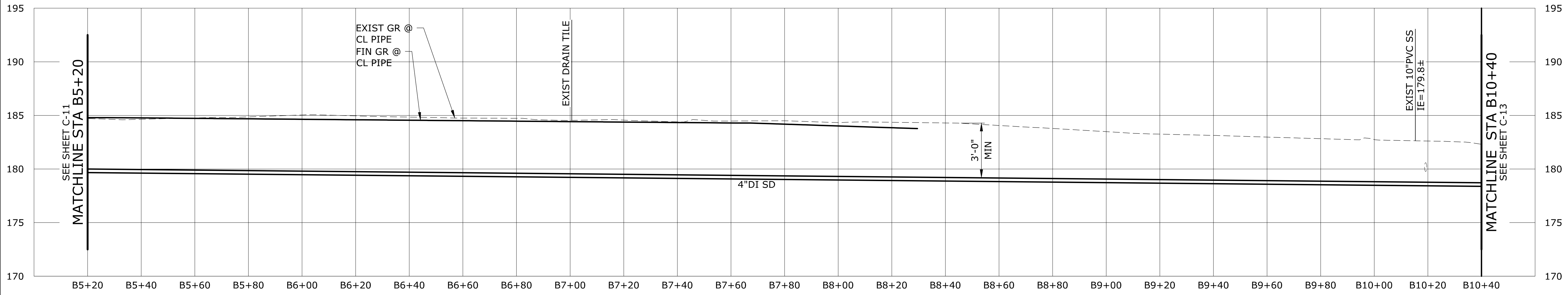
SHEET
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PLAN
SCALE: 1"=20'

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 - CONTRACTOR TO POTHOLE EXISTING 14-INCH WATER TO VERIFY ALIGNMENT, TIE IN LOCATION, CONFIGURATION AND CONDITION OF EXISTING PIPE PRIOR TO WORK.

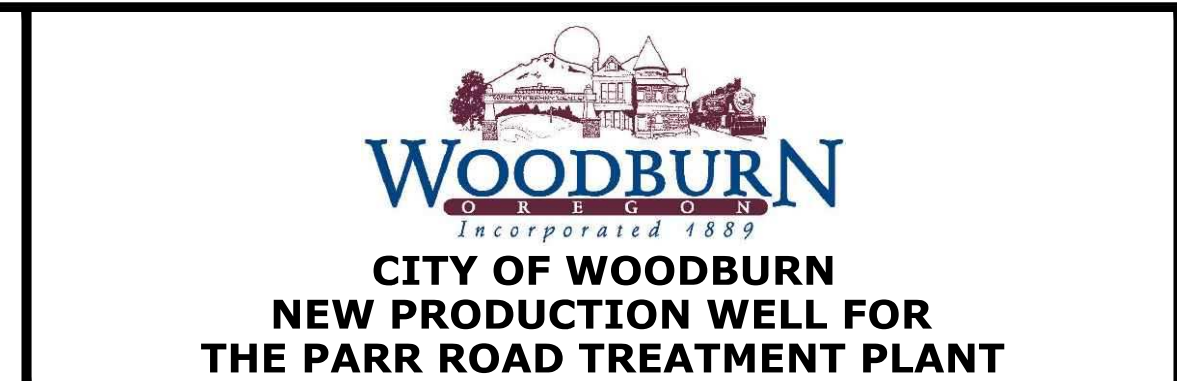


PROFILE
SCALE: 1"=20' HORIZ, 1"=5' VERT

NO.	DATE	BY	REVISION

NOTICE
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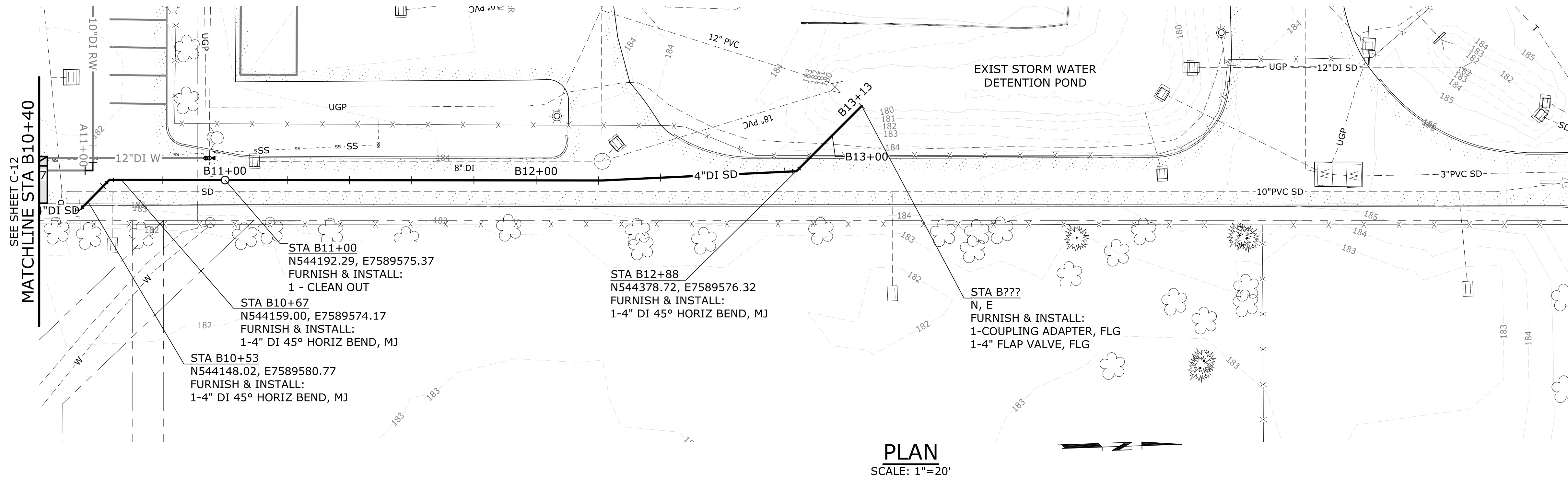
LRC
DESIGNED
EJJ
DRAWN
MLM
CHECKED



STORMWATER LINES
PLAN AND PROFILE
STA B5+20 TO STA B10+40

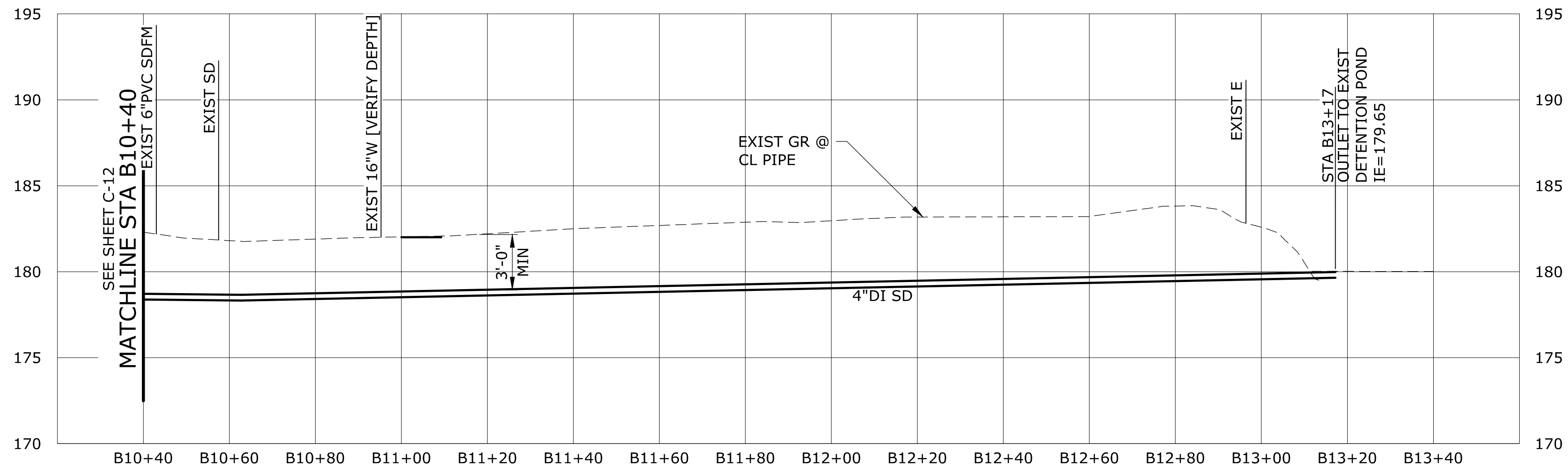
PROJECT NO.: 19-2697 SCALE: AS SHOWN DATE: MARCH 2022

SHEET
C-12
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- NOTES:**
- EXIST UTILITY LOCATIONS AND ELEVATIONS SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL POTHOLE AND VERIFY LOCATIONS, ELEVATIONS, TYPES, AND SIZES OF ALL EXIST UTILITIES PRIOR TO CONSTRUCTING NEW PIPING FAR ENOUGH IN ADVANCE TO ALLOW NECESSARY ADJUSTMENTS IN GRADE, AND SHALL NOTIFY ENGINEER OF NEED TO ADJUST PIPING INSTALLATION ACCORDINGLY. POTHOLING ELEVATION ADJUSTMENTS TO BE ACCOMPLISHED WITHOUT REWORK. ELEVATION ADJUSTMENTS SHALL BE EXPECTED AND ARE INCIDENTAL TO THE WORK.
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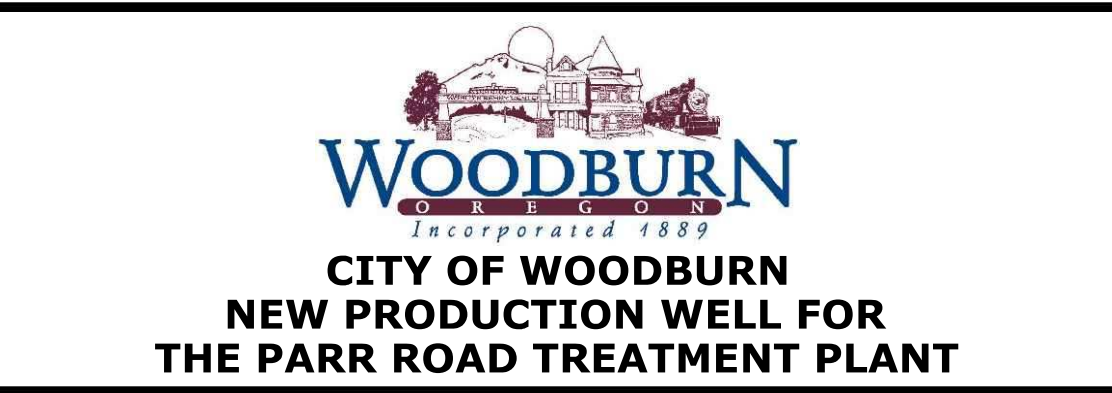
PLAN
SCALE: 1"=20'



PROFILE
SCALE: 1"=20' HORIZ, 1"=5' VERT

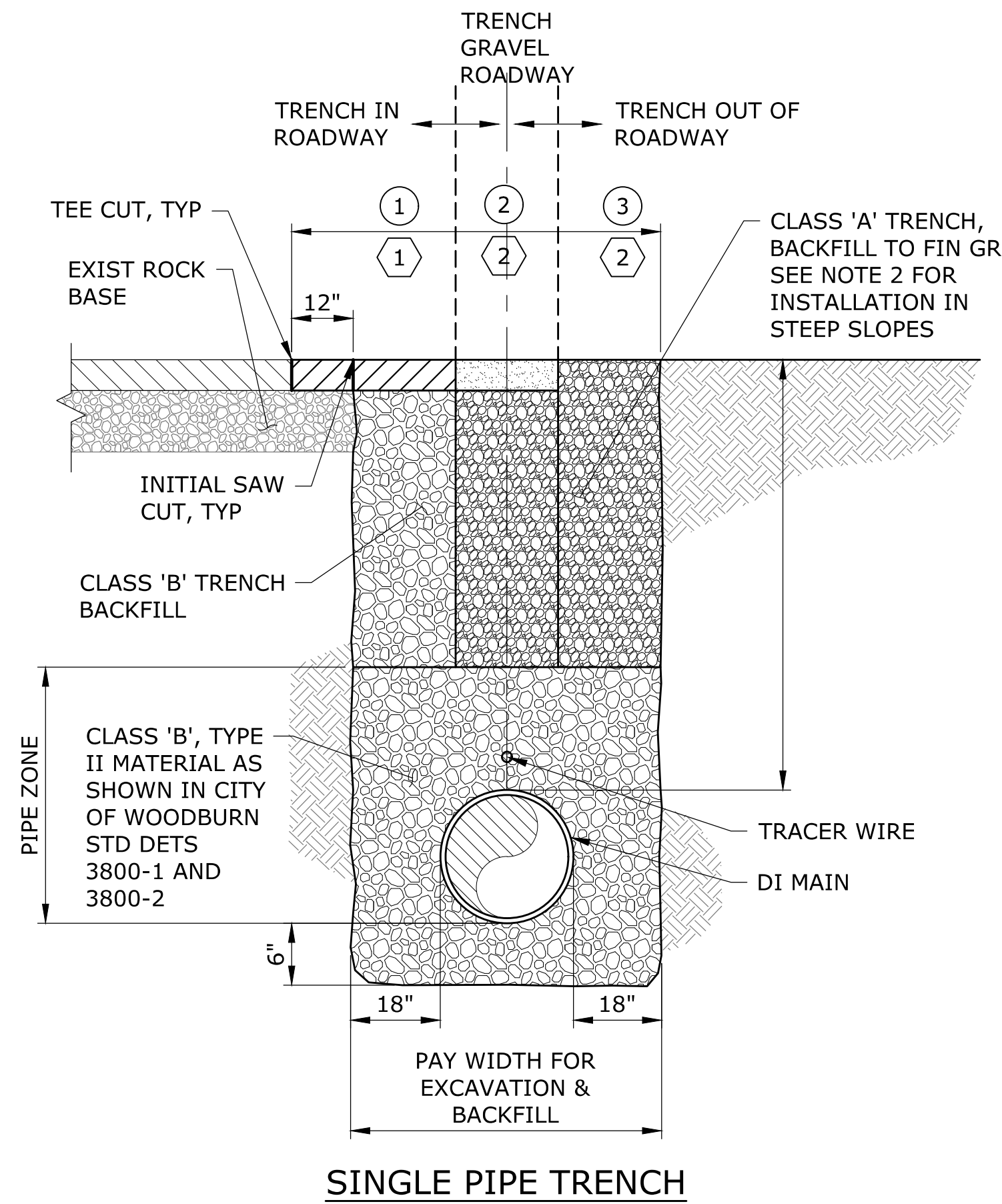
NO.	DATE	BY	REVISION

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STORMWATER LINES			
PLAN AND PROFILE			
STA B10+40 TO STA B13+18			
PROJECT NO.:	19-2697	SCALE:	AS SHOWN
DATE:	MARCH 2022		

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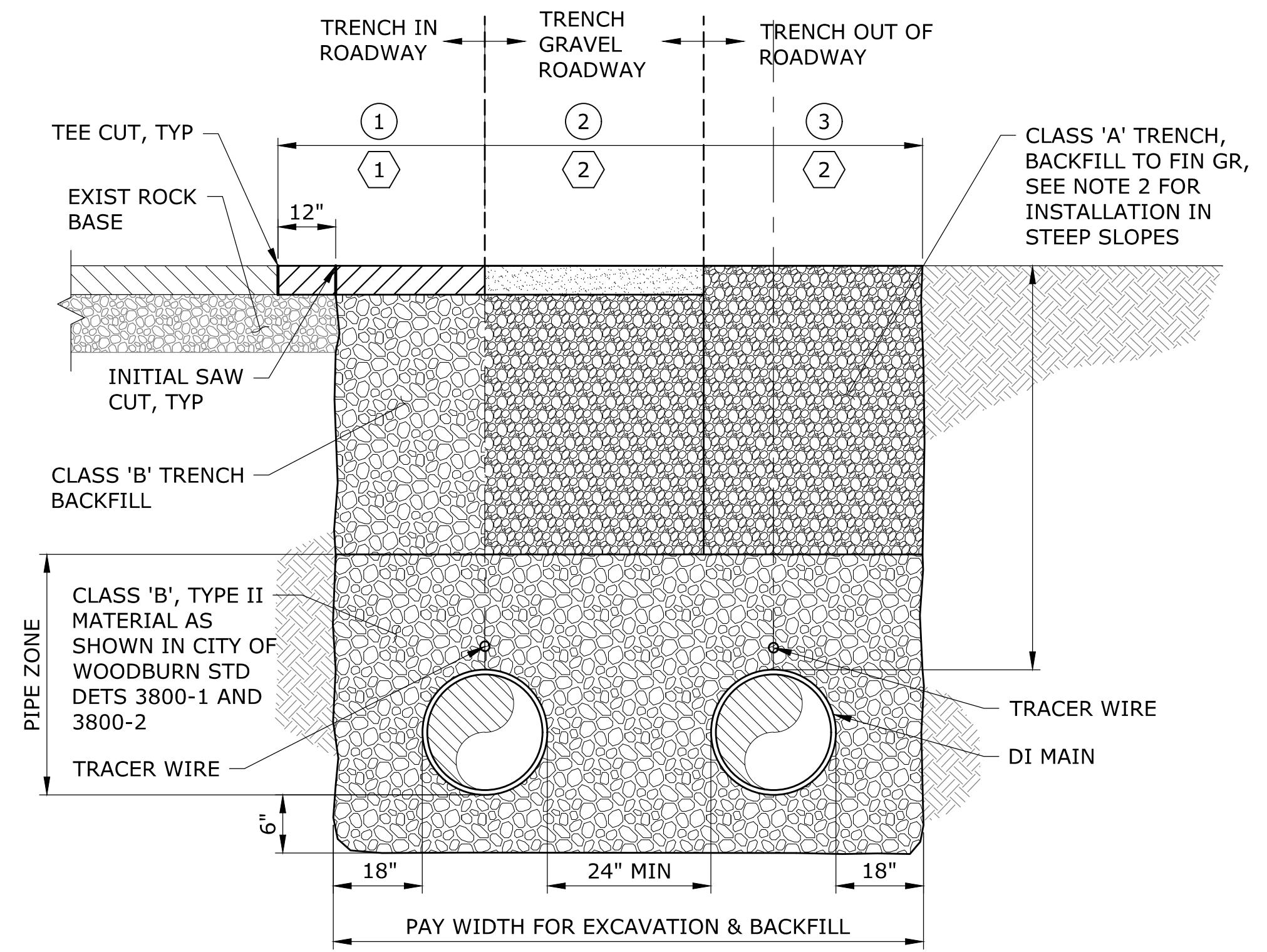
SINGLE PIPE TRENCH

SYMBOL SURFACE RESTORATION REQUIREMENTS

- ① REPLACE REMOVED ASPHALT WITH A MINIMUM DEPTH OF 3", LEVEL 3 AC OR MATCH EXIST PAVEMENT DEPTH, WHICHEVER IS GREATER, TO A MAXIMUM DEPTH OF 6". SEE SPECIFICATIONS.
- ② REPLACE REMOVED GRAVEL WITH A MINIMUM DEPTH OF 3", GRAVEL OR MATCH EXIST PAVEMENT DEPTH, WHICHEVER IS GREATER, TO A MAXIMUM DEPTH OF 6".
- ③ REPLACE TOPSOIL AND BACKFILL WITH CLASS 'A' NATIVE MATERIAL. FINISH TRENCH SURFACE TO MATCH ORIGINAL CONTOURS WITH FINAL 6" LIFT OF TOPSOIL, RESEED AS REQUIRED.

BACKFILL REQUIREMENTS

- ① FURNISH AND INSTALL CLASS 'B' ¾"-0" IMPORTED GRANULAR BEDDING, PIPE ZONE AND TRENCH BACKFILL MATERIAL TO PAVEMENT BASE. COMPACT MATERIAL IN LIFTS TO ACHIEVE 95% OF MAXIMUM DENSITY IN ACCORDANCE WITH AASHTO T-99.
- ② FURNISH AND INSTALL CLASS 'B' ¾"-0" IMPORTED GRANULAR BEDDING AND PIPE ZONE BACKFILL MATERIAL COMPACTED TO 95% OF MAXIMUM DENSITY PER ASTM D1557. FURNISH AND INSTALL CLASS 'A' NATIVE TRENCH BACKFILL TO FINISH GRADE COMPACTED TO 90% MAXIMUM DENSITY PER ASTM D1557.

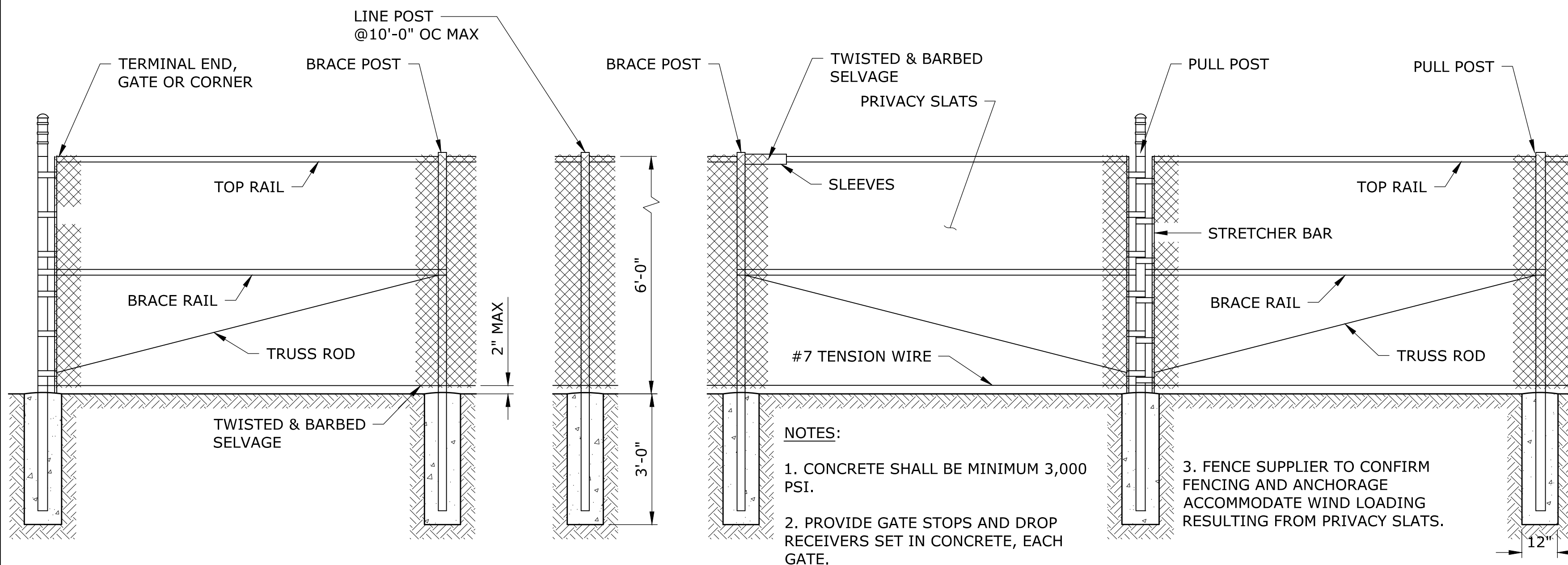


DOUBLE PIPE TRENCH

TYPICAL PIPE TRENCH DETAILS

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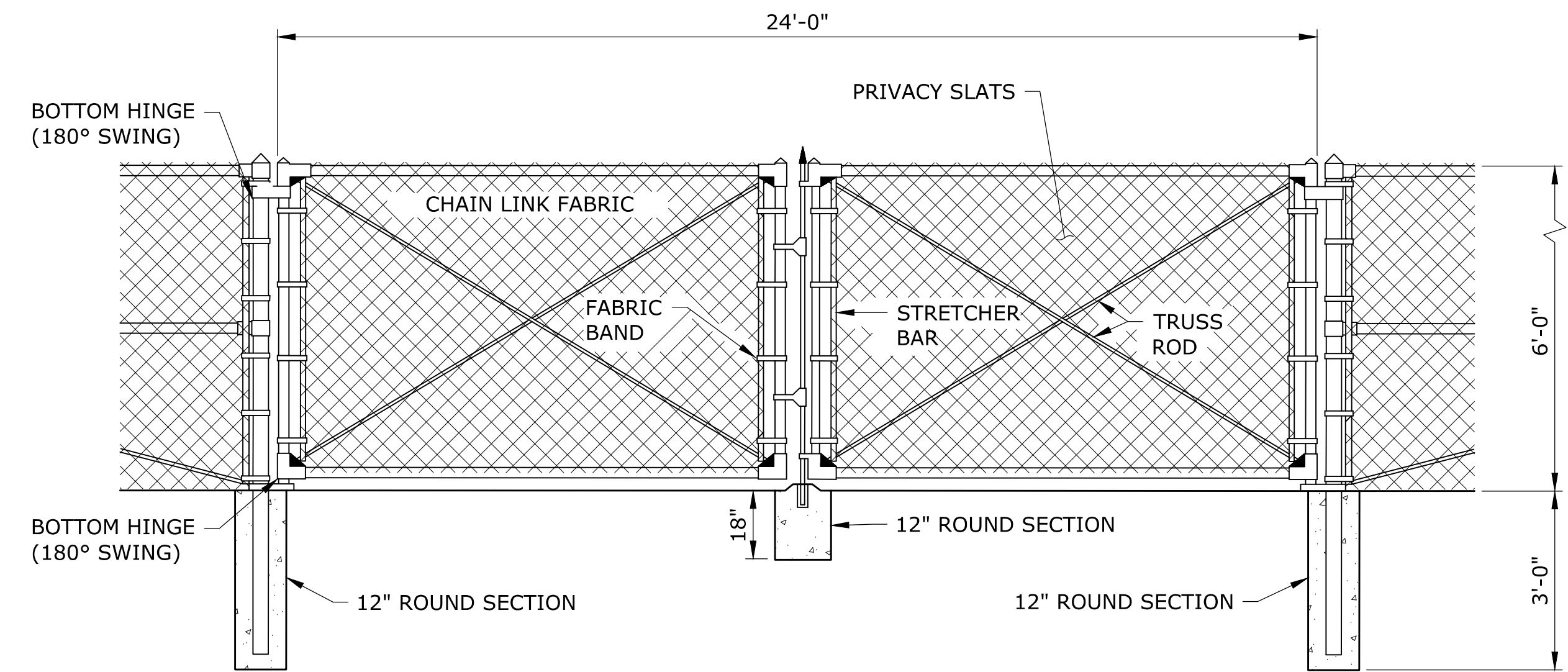
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CHAIN LINK FENCE

SCALE: NTS

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C-1



CHAIN LINK GATE

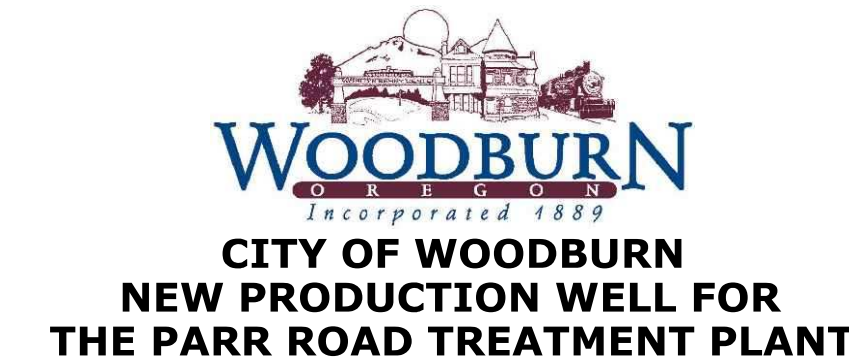
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NO.	DATE	BY	REVISION

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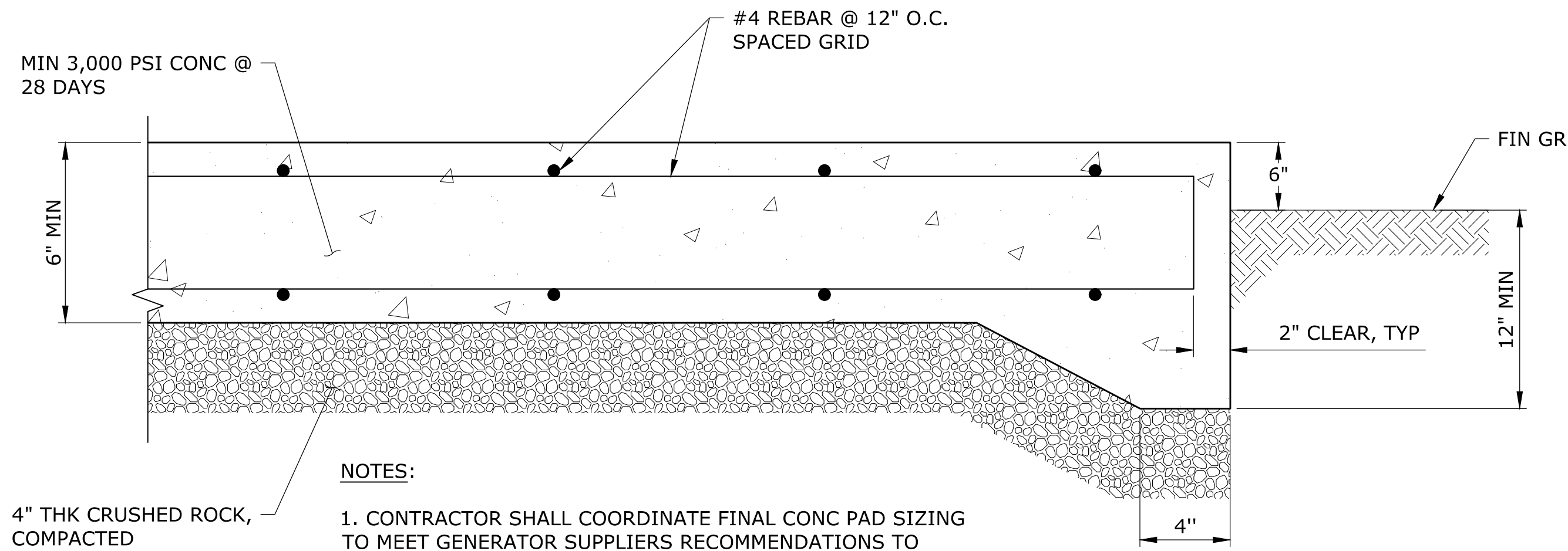
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CAD DRAWN
CHK CHECKED



CIVIL DETAILS - 1			
PROJECT NO.:	19-2697	SCALE:	AS SHOWN
DATE:	MARCH 2022		

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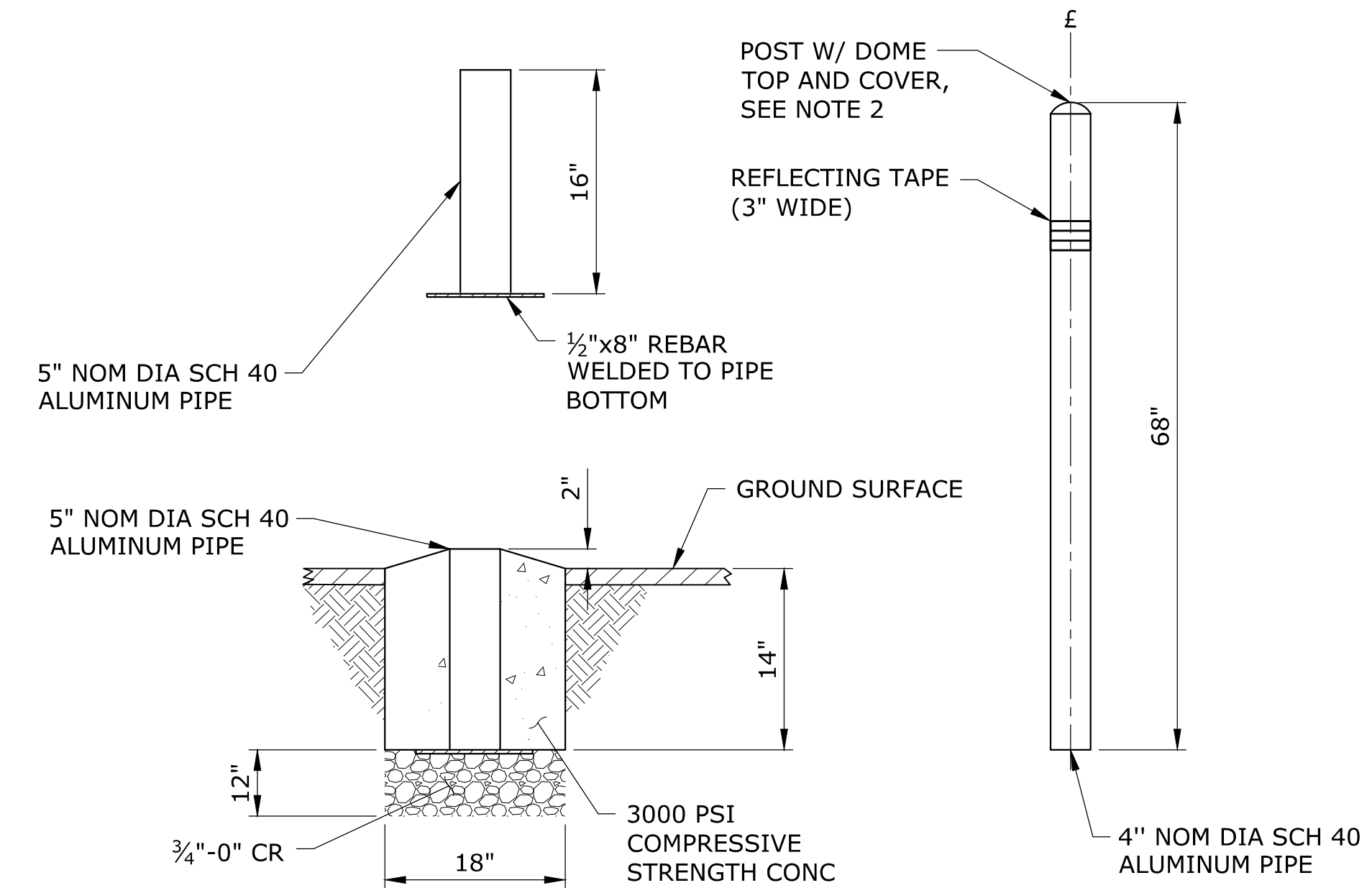
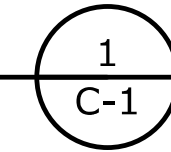


NOTES:

1. CONTRACTOR SHALL COORDINATE FINAL CONC PAD SIZING TO MEET GENERATOR SUPPLIERS RECOMMENDATIONS TO ADDRESS FROST HEAVE AND VIBRATION ISOLATION REQUIREMENTS. THE SHOWN DIMENSIONS ARE A MINIMUM.
2. MAT SLAB OR SPREAD FOOTING ARE ACCEPTABLE.

GENERATOR PAD SECTION

SCALE: NTS

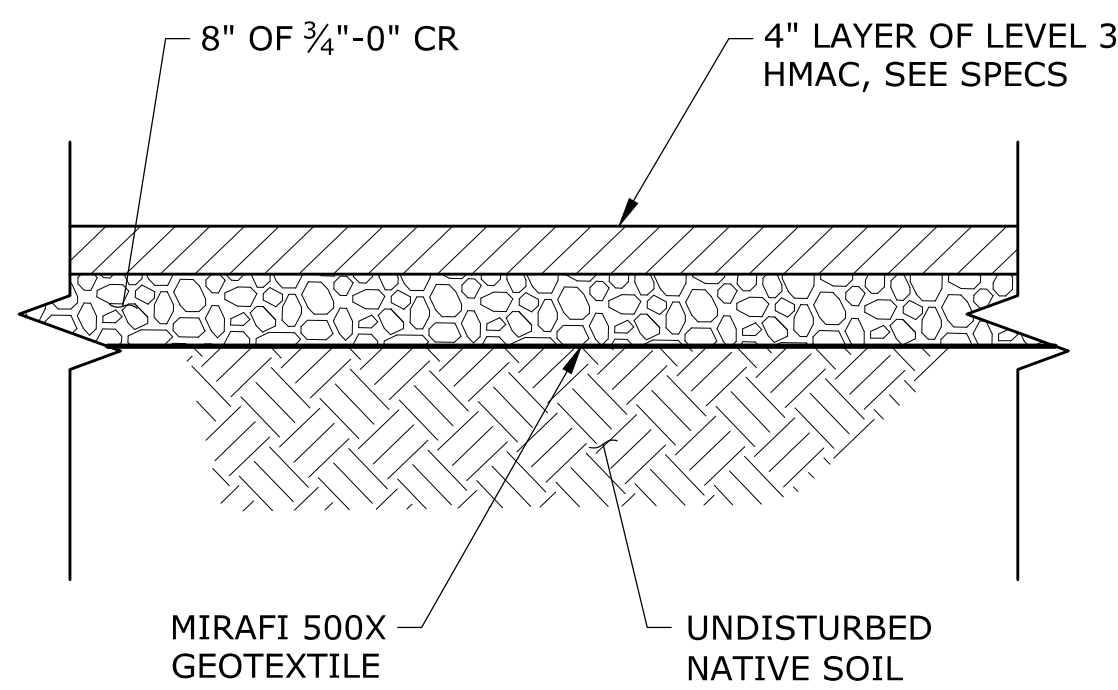
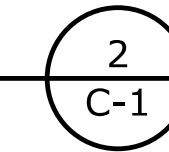


NOTES:

1. GENERAL LOCATION OF BOLLARDS SHOWN ON PLANS. LOCATE BOLLARDS WITH A MINIMUM 3' CLEARANCE FROM ALL UNDERGROUND PIPING AND APPURTENANCES AND A MINIMUM 2' CLEARANCE FROM ALL STRUCTURES. BOLLARD LOCATIONS SHALL BE AS DIRECTED BY THE OWNER'S REPRESENTATIVE.
2. COVER ALUMINUM PIPE WITH YELLOW 1/8" THICK HIGH DENSITY POLYETHYLENE DOME TOP BOLLARD COVER BY POST GUARD OR APPROVED EQUAL.

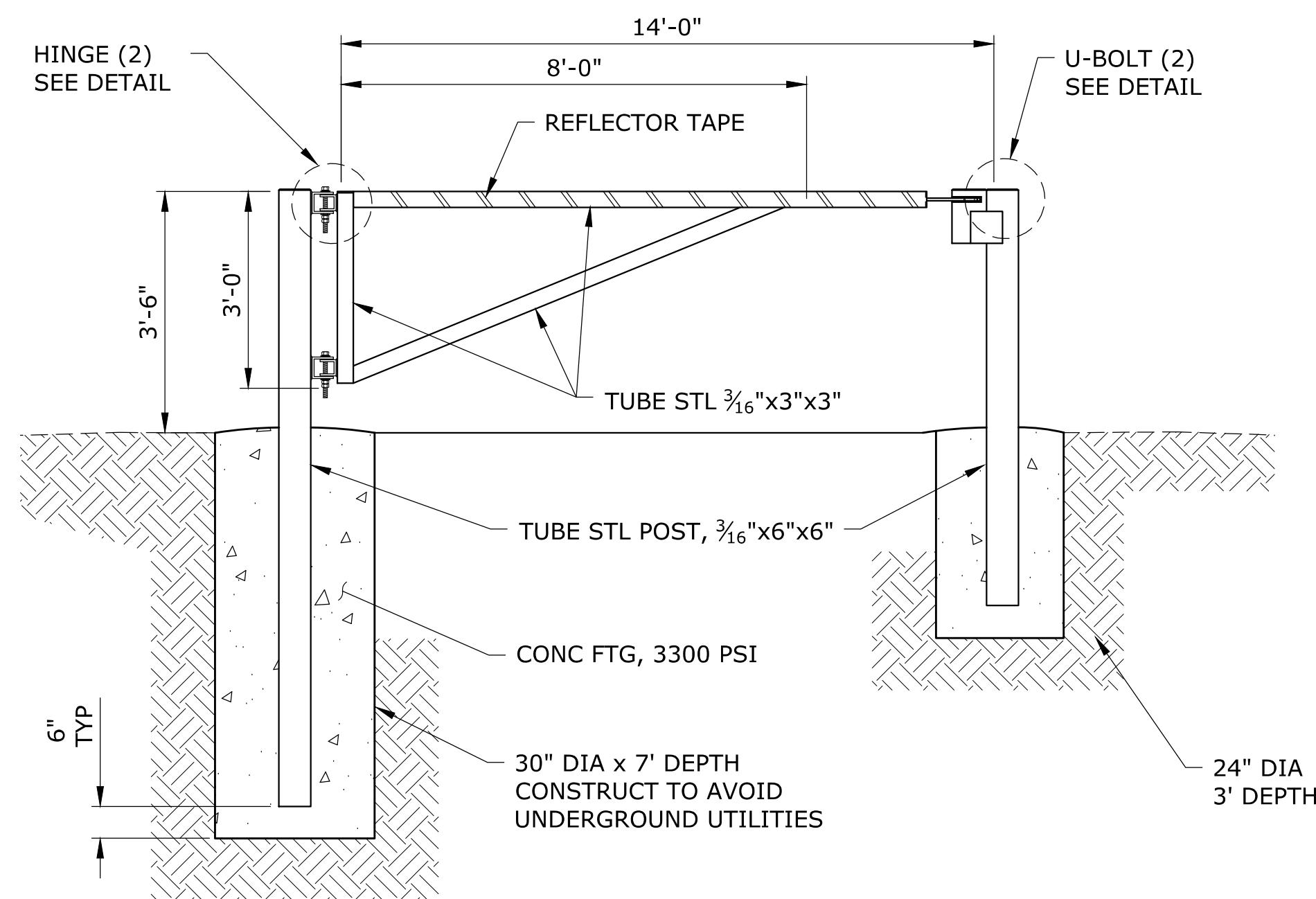
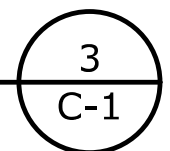
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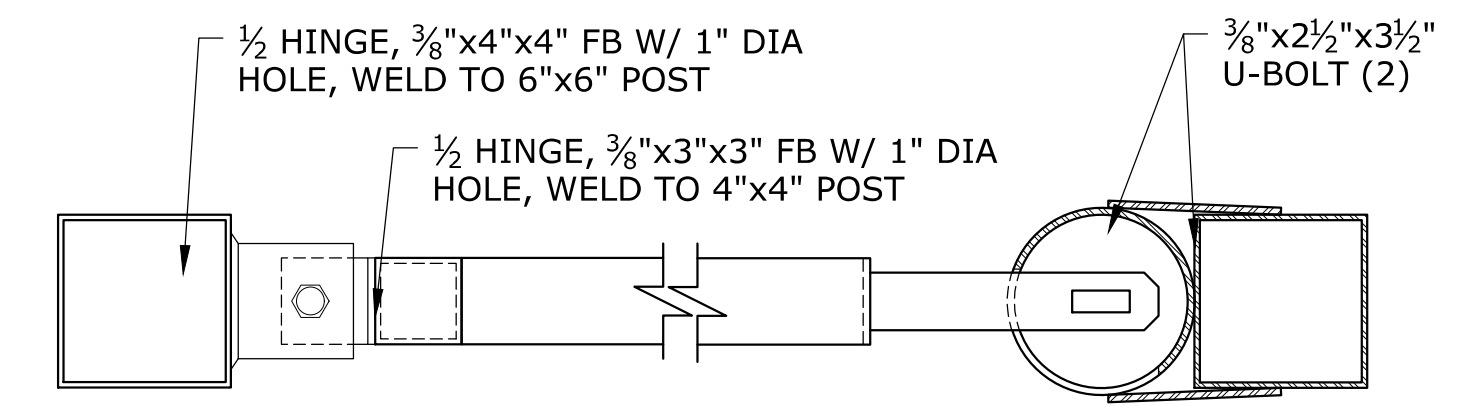


TYPICAL AC PAVEMENT SECTION

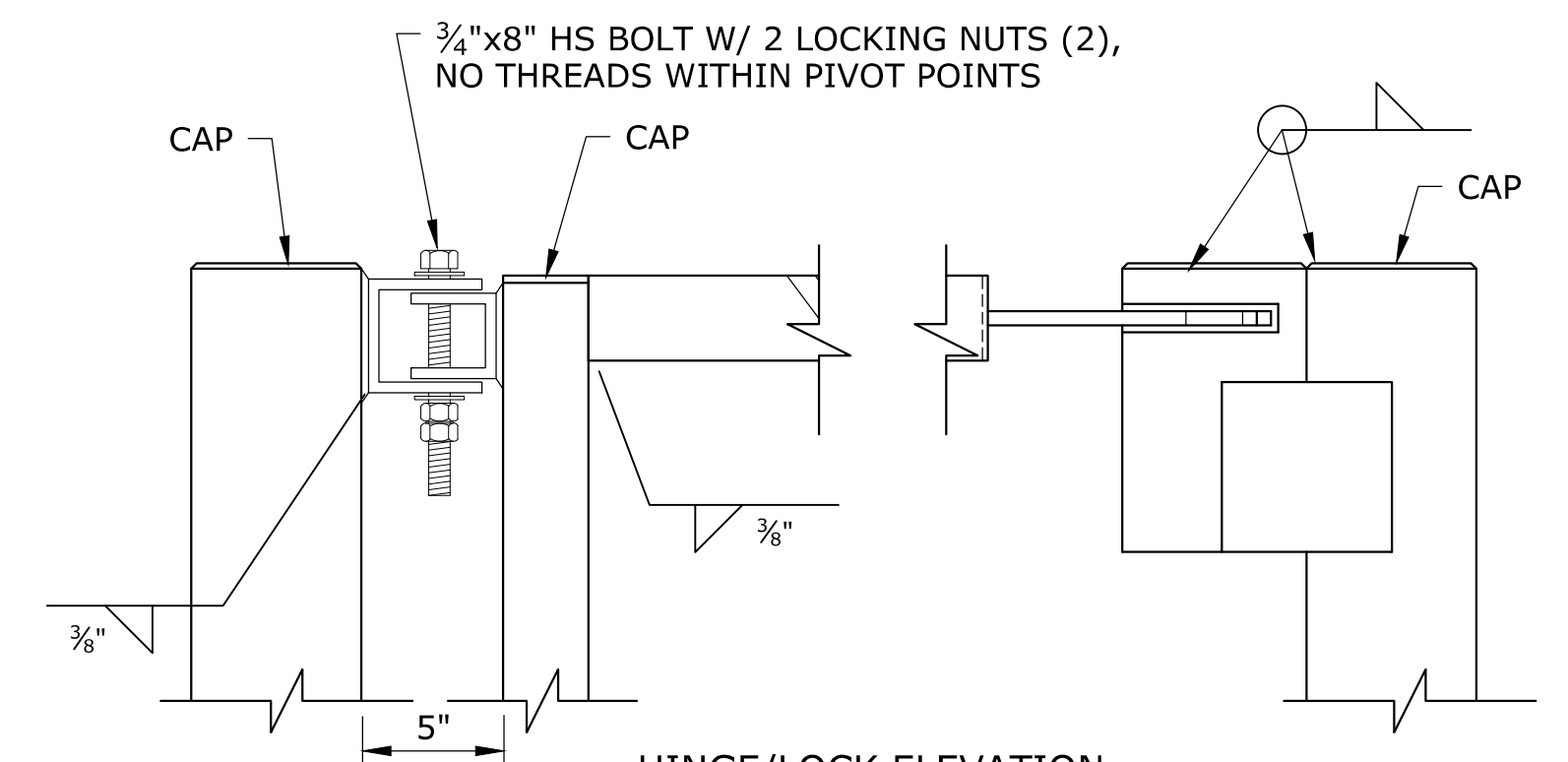
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ELEVATION



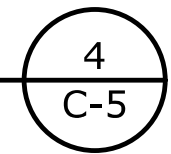
HINGE/LOCK PLAN



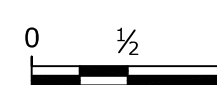
HINGE/LOCK ELEVATION

SWING BAR GATE

SCALE: NTS

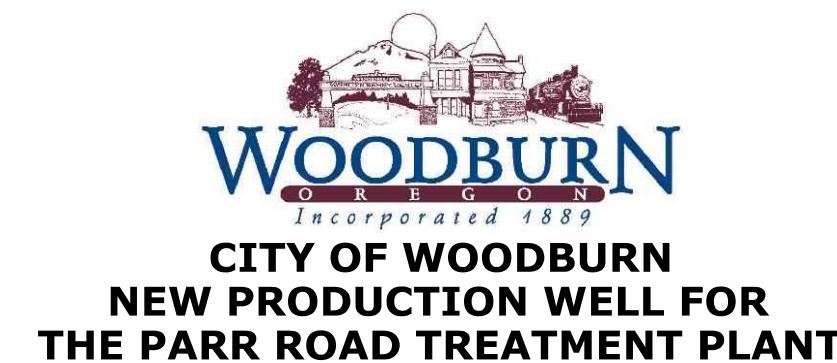


NOTICE



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DRAWN
CHK
CHECKED



CIVIL DETAILS - 2

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PROJECT NO.: 19-2697 SCALE: AS SHOWN DATE: MARCH 2022

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CLASS 1 & 2

EXST. GRADE

MINIMUM SHALL BE O.D. + 24" (1-FT EA SIDE)

BACKFILL (CLASS AS SPEC.)

WATER, SEWER, OR STORM PIPE MATERIAL AS SPECIFIED.

BEDDING AND PIPE ZONE SHALL BE TYPE A, B, C, OR D AS SPECIFIED, SEE STANDARD DETAIL 3800-2.

CLASS 1 BACKFILL: NATIVE OR COMMON MATERIAL WITH A 2" MIN. CROWN, COMPACTED TO 95% T-99.

CLASS 2 BACKFILL: NATIVE OR COMMON MATERIAL COMPACTED IN 8" LIFTS, TO 95% T-180 W/ 2" MIN. CROWN.

CLASS 3 BACKFILL: 1"-MINUS CRUSHED AGGREGATE, COMPACTED IN 8" LIFTS TO 95% AASHTO T-180.

CLASS 4 BACKFILL: CONTROLLED DENSITY FILL (CDF).

NOTES:

- ENGINEER WILL CONSIDER ADJUSTING USUAL TRENCH WIDTH TO ACCOMMODATE CONDITION ENCOUNTERED.
- REFERENCE TECHNICAL SPEC. SECTION 3800.
- FOR HMA TRENCH CAP SURFACE REPLACEMENT SEE DETAIL 3800-5.

WOODBURN
Incorporated 1889
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

PIPE TRENCH BACKFILL

REV: DEC. 2007
SCALE: NTS
DET No. 3800-1

BACKFILL AS SPECIFIED, SEE STANDARD DETAIL 3800-1, TYP.

TYPE A

TYPE B

TYPE C

TYPE D

LEGEND

UNDISTURBED NATIVE SOIL

1"-MINUS CRUSHED AGGREGATE, COMPACTED 95 PCT. OF AASHTO T-99

NOTES:

- REFERENCE TECHNICAL SPEC. SECTION 3800.

WOODBURN
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PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

PIPE TRENCH BEDDING AND ZONE

REV: DEC. 2007
SCALE: NTS
DET No. 3800-2

GRADE POINT

SEE NOTE 1

6"

3/4" R

6" MIN. OR AS SPECIFIED

STREET SURFACE

16"

COMPACTED NATIVE BACKFILL

9"

4" OF 1"-MINUS CRUSHED AGGREGATE

NOTES:

- SLOPE CURB 0.02 FT/FT TO CURB FACE.
- MATERIAL - 3500 PSI CONCRETE AT 28 DAYS.
- REFERENCE TECHNICAL SPEC. SECTIONS 2000, 2300 AND 4100.
- PLACE CONTRACTION JOINTS AT 15' MAX. INTERVALS AND SHALL EXTEND AT LEAST 50% THROUGH CURB.

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Incorporated 1889
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

TYPE 'C' CURB

REV: DEC. 2007
SCALE: NTS
DET No. 4100-2

SIDEWALK WIDTH AS SPECIFIED 5' MIN.

1.5% MAX

STREET CURB

FINISH GRADE

1"-MINUS CRUSHED AGGREGATE BASE.

EXST. SUBGRADE

CURLINE SIDEWALK

EXPANSION JOINT

SEE NOTE 2

3-1/2"

ROUNDED EDGES

PROPERTY LINE SIDEWALK

1" MIN

SIDEWALK WIDTH AS SPECIFIED 5' MIN.

1.5% MAX

SETBACK AS SPECIFIED

STREET CURB

FINISH GRADE

1"-MINUS CRUSHED AGGREGATE BASE.

EXST. SUBGRADE

NOTES:

- MATERIAL - 3500 PSI CONCRETE AT 28 DAYS. BROOM FINISH SURFACE & PROVIDE 3" EDGE SHINE. REFERENCE TECHNICAL SPEC. SECTION 4150.
- EXPANSION JOINTS (EJ) SHALL BE 1/2" AC IMPREGNATED JOINT FILLER AT ALL DISSIMILAR VERTICAL SURFACES.
- TRANSVERSE CONSTRUCTION JOINTS (CJ) 1-1/2" DEEP OR 1/3 OF THE THICKNESS (T) @ 5' INTERVALS.
- FOR SIDEWALK AT DRIVEWAYS SEE DETAILS 4150-3 AND 4150-4.

WOODBURN
Incorporated 1889
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

SIDEWALKS

REV: JULY 2018
SCALE: NTS
DET No. 4150-8

SEE WOODBURN TRANSPORTATION SYSTEM PLAN (W.T.S.P.)

HMA, CLASS PER DESIGN

2%

6" CURB EXPOSURE

1" MINUS CRUSHED AGGREGATE BASE COURSE

COMPACTED APPROVED SUBGRADE

	MINIMUM STREET CLASSIFICATION (PER W.T.S.P.)			
	LOCAL RESIDENTIAL STREET	SERVICE COLLECTOR, ACCESS & INDUSTRIAL STREET	ARTERIAL	
			MINOR	MAJOR
1"-MINUS CRUSHED AGGREGATE BASE COURSE	8"	10"	12"	18"
HOT-MIX ASPHALT PAVEMENT (HMA)	4"	5"	6"	8"

NOTES:

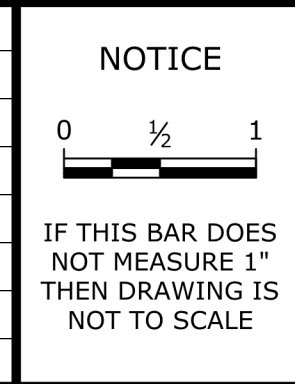
- FLEXIBLE PAVEMENT STRUCTURE SHALL BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER USING SUBGRADE REACTION APPROPRIATE FOR THE SITE, TRAFFIC INDEX, AND A 20-YEAR DESIGN LIFE FOR PAVEMENT SYSTEM.
- STRUCTURE THICKNESSES SHALL NOT BE LESS THAN VALUES FROM TABLE ABOVE.
- SEE THE WOODBURN TRANSPORTATION SYSTEM PLAN (W.T.S.P.) FOR STREET CLASSIFICATION.
- DESIGN ENGINEER SHALL PROVIDE STRUCTURAL DESIGN CALCS. FOR APPROVAL.

WOODBURN
Incorporated 1889
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

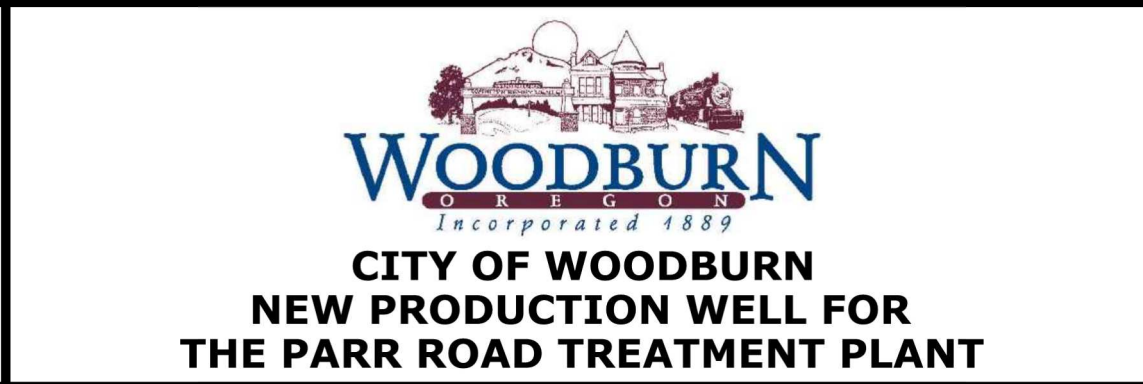
TYPICAL FLEXIBLE PAVEMENT STRUCTURE

REV: JAN. 2009
SCALE: NTS
DET No. 4200-1

NO.	DATE	BY	REVISION



DSN
DESIGNED
CAD
DRAWN
MLM
CHECKED

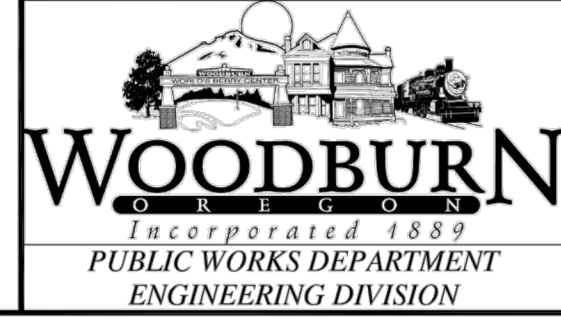
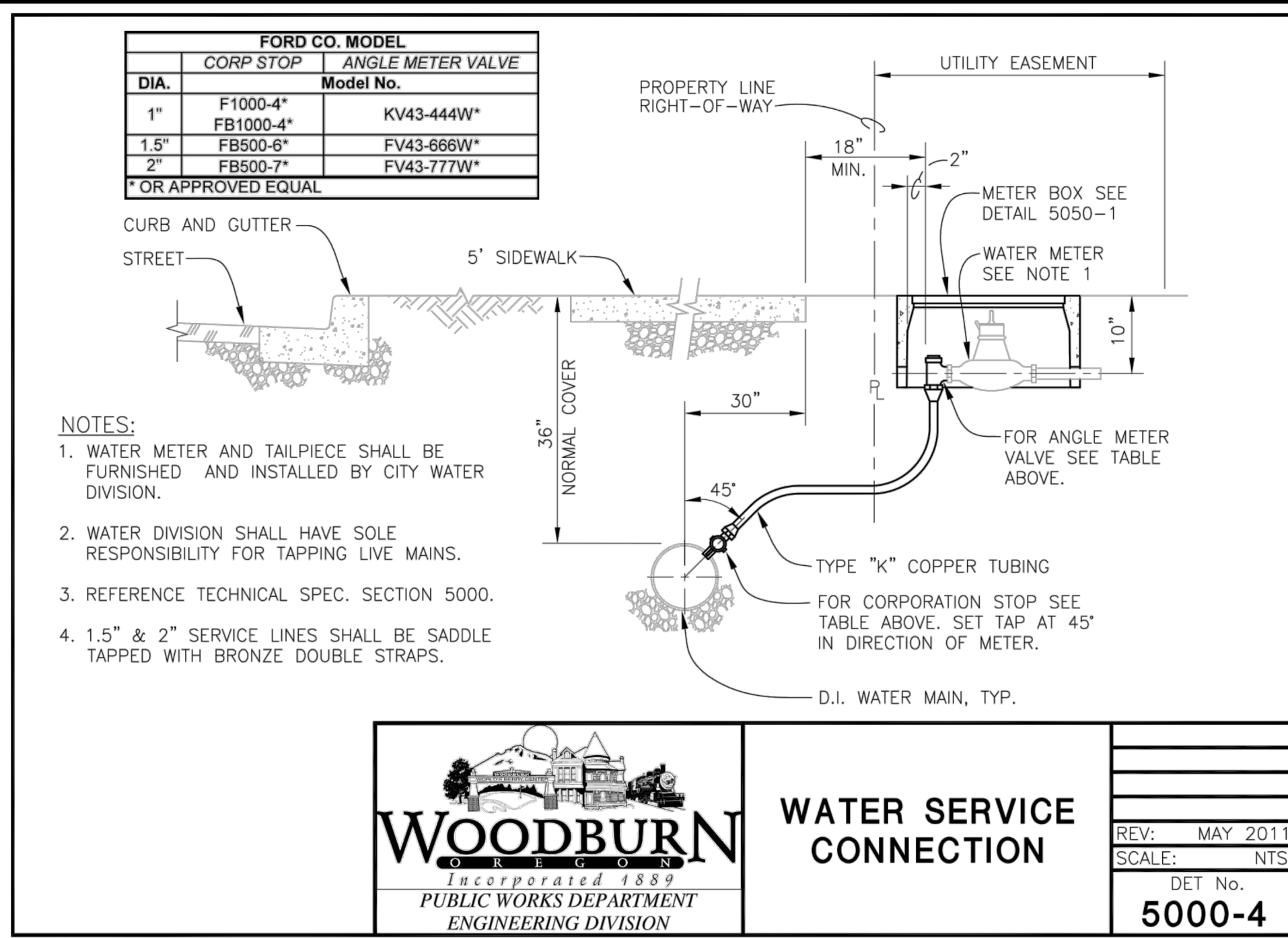


CITY OF WOODBURN STANDARD DETAILS

PROJECT NO.: 19-2697 SCALE: AS SHOWN DATE: MARCH 2022

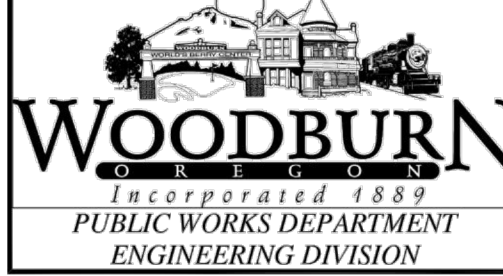
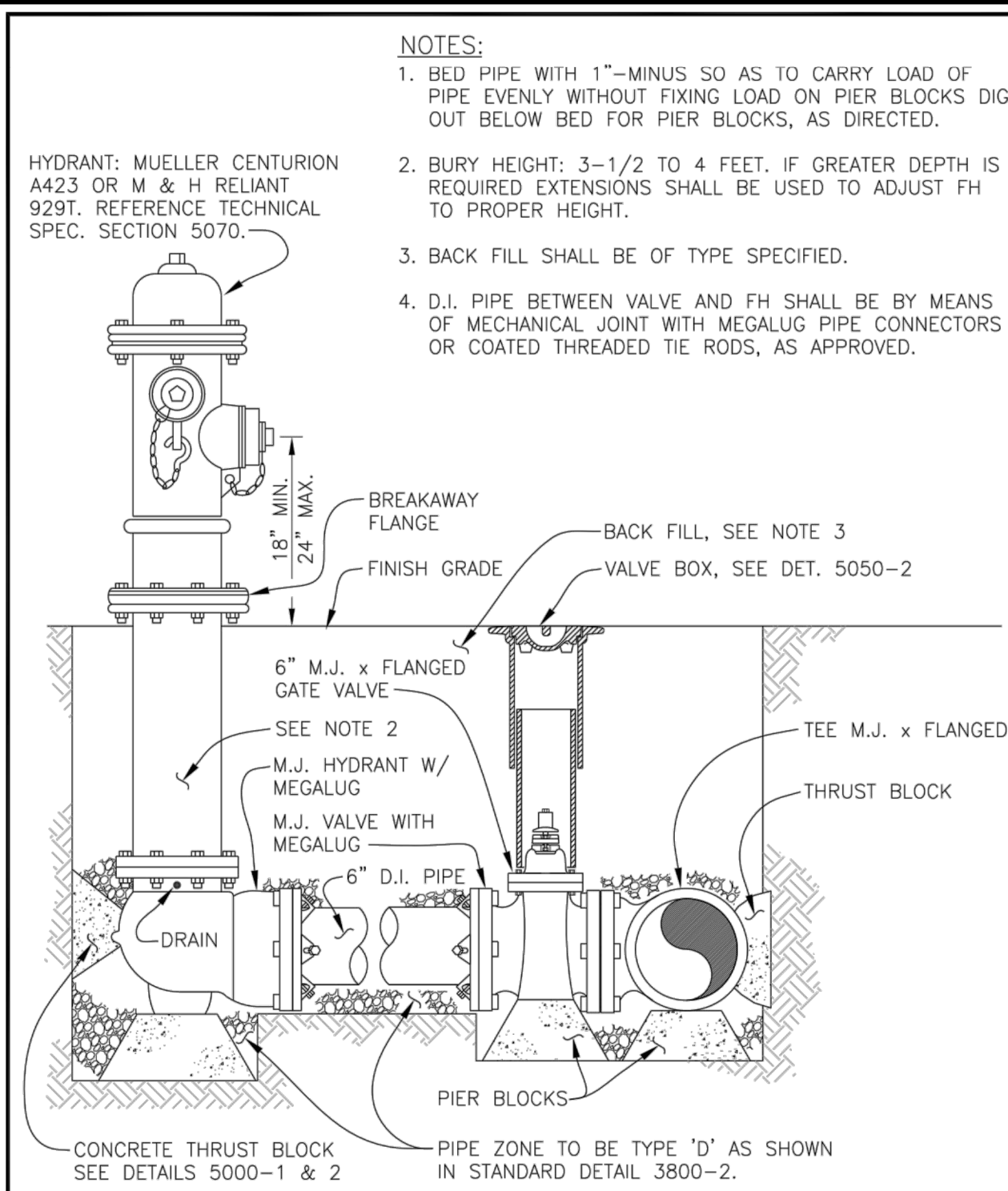
SHEET
C-16
27 of 67

G:\pdx_projects\19\2697 - Woodburn - Parr Road Tp Eng. Design And Cm Services\CAD\Sheets\19-2697-OR-C-DET.dwg C-17 3/11/2022 3:03 PM LEA.CONNORS 23.0s (LMS Tech)



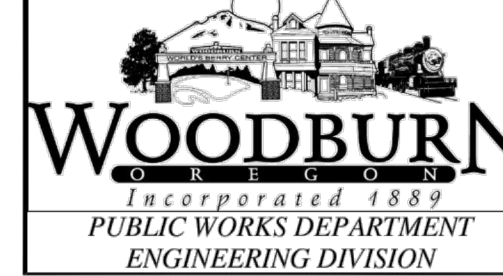
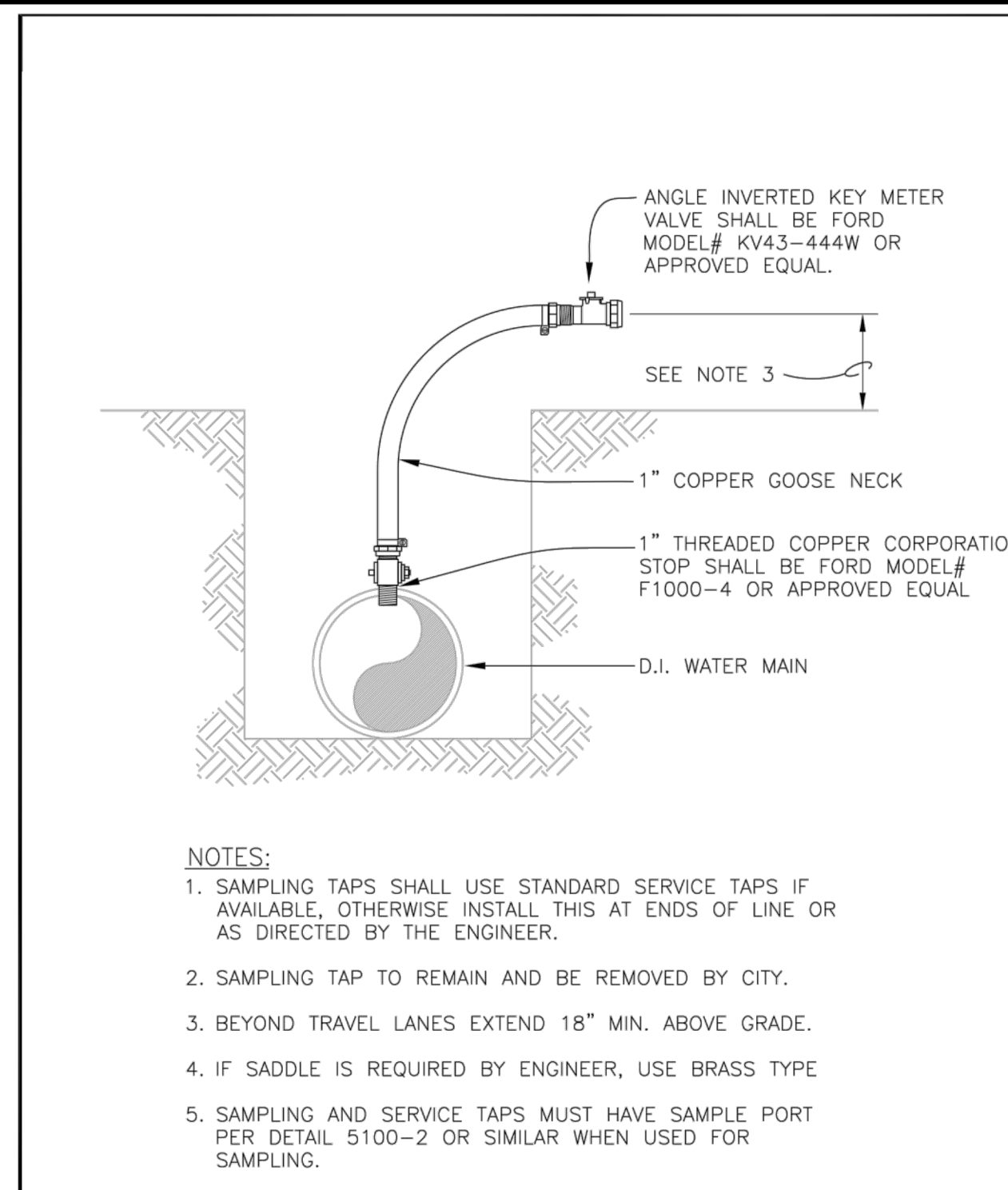
WATER SERVICE CONNECTION

REV: MAY 2011
SCALE: NTS
DET No. 5000-4



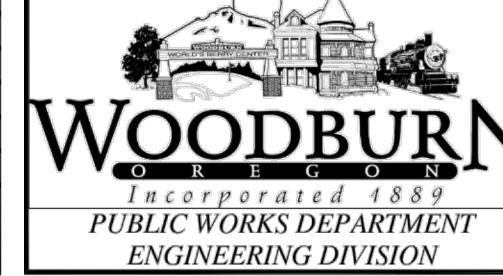
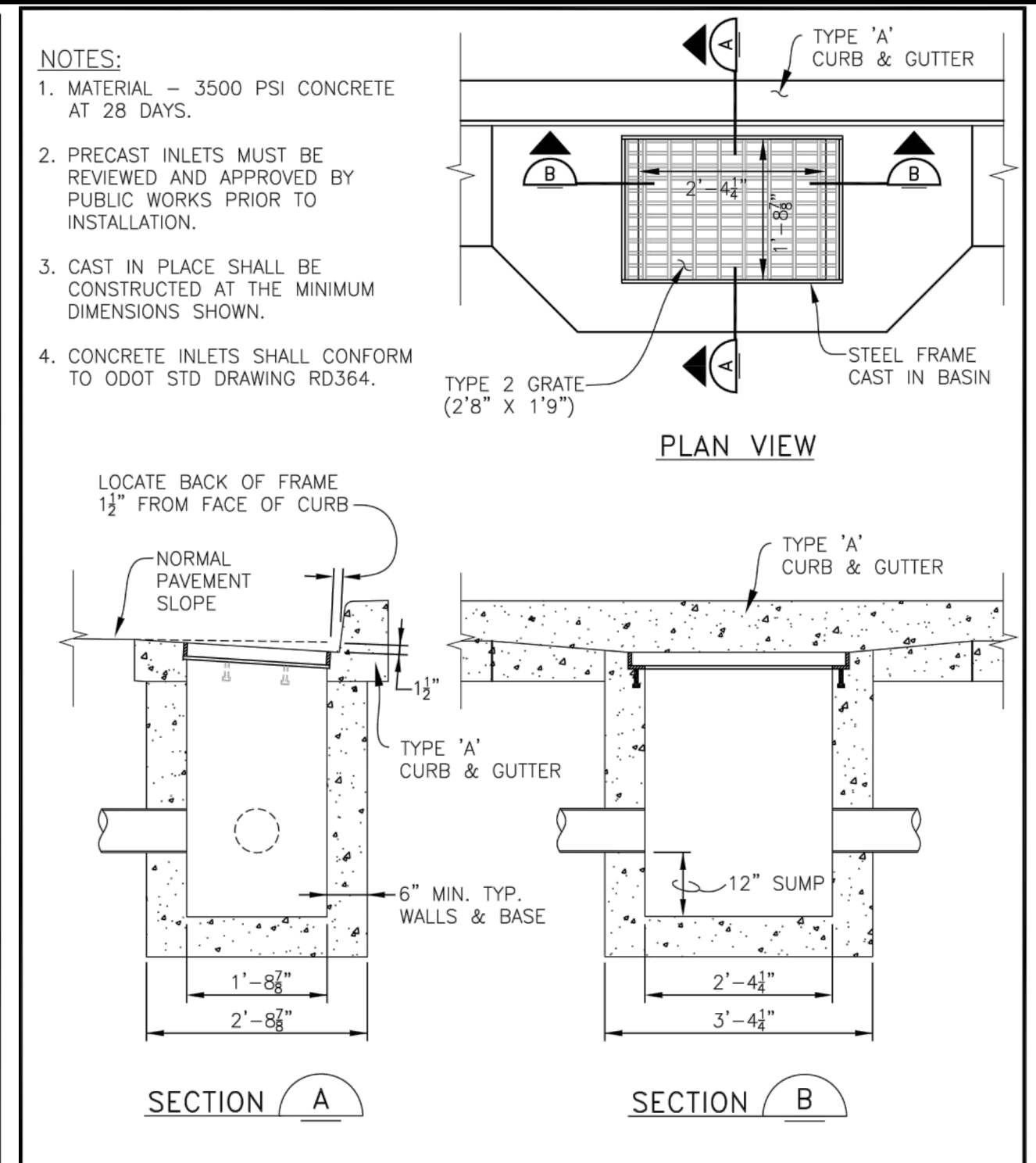
FIRE HYDRANT ASSEMBLY

REV: FEB. 2020
SCALE: NTS
DET No. 5070-1



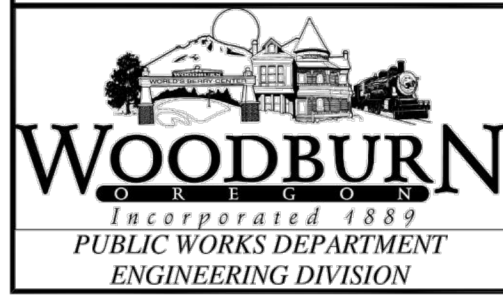
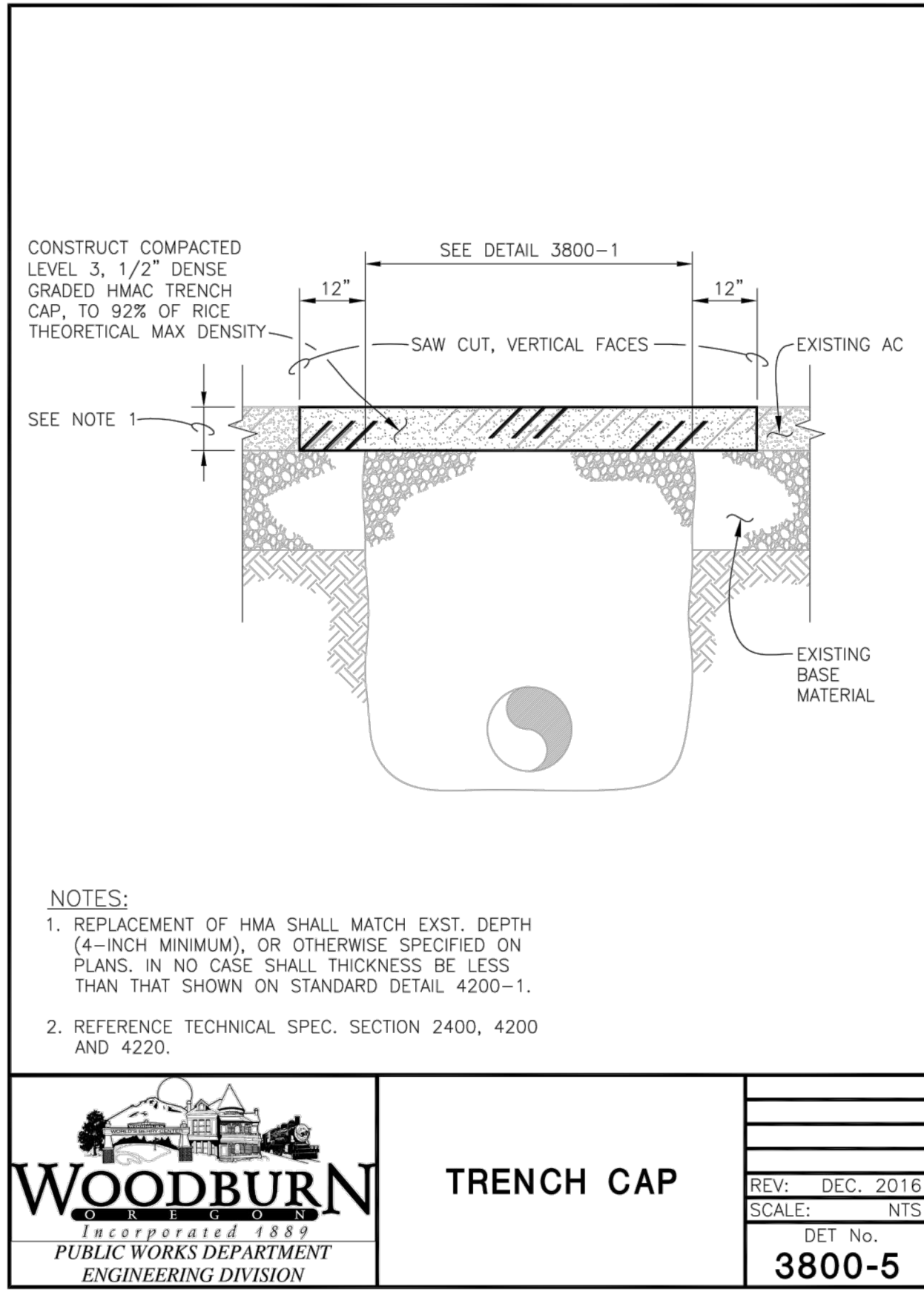
SAMPLING TAP ASSEMBLY

REV: SEPT. 2020
SCALE: NTS
DET No. 5100-1



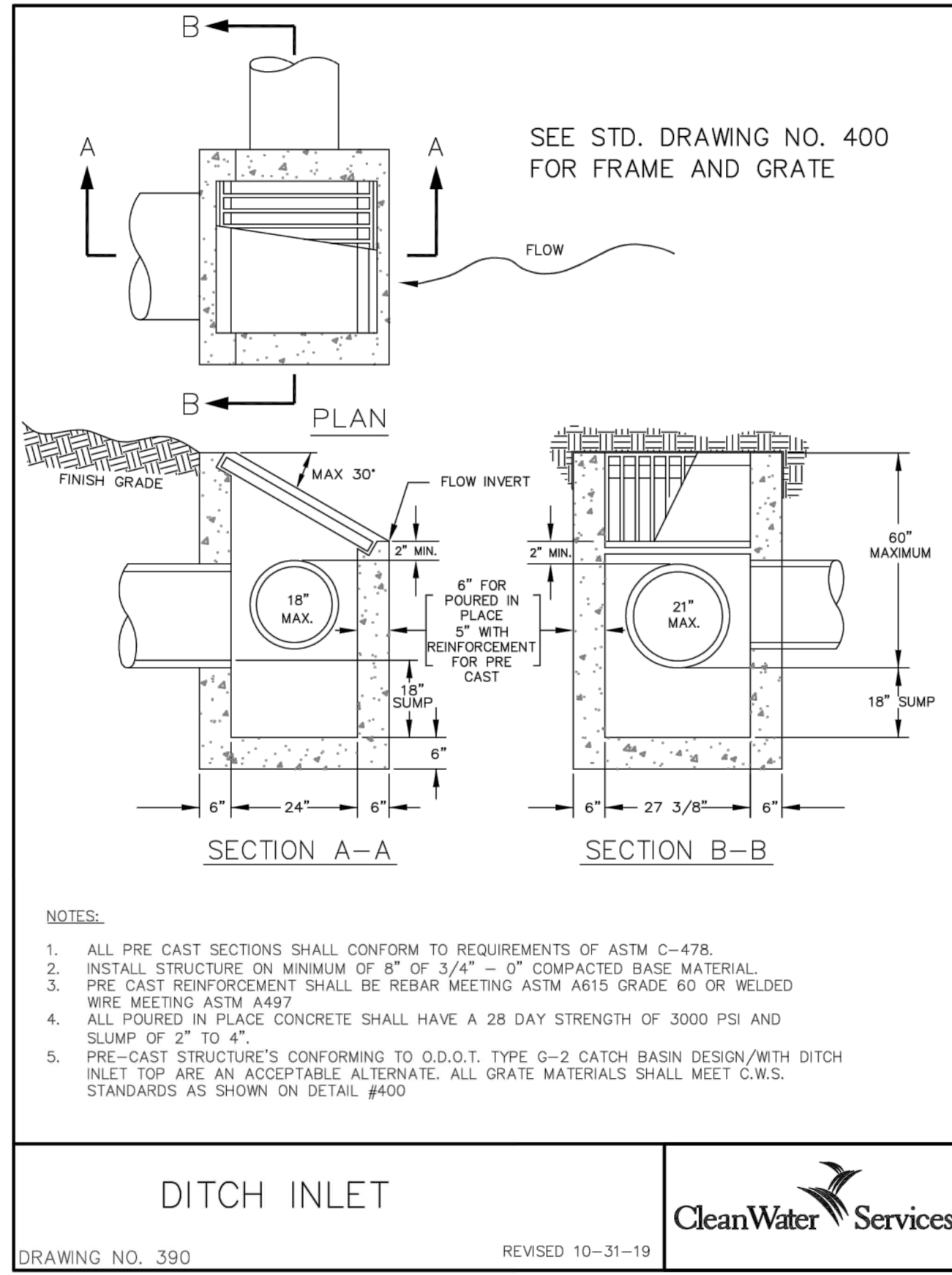
INLET

REV: AUG. 2009
SCALE: NTS
DET No. 7100-4

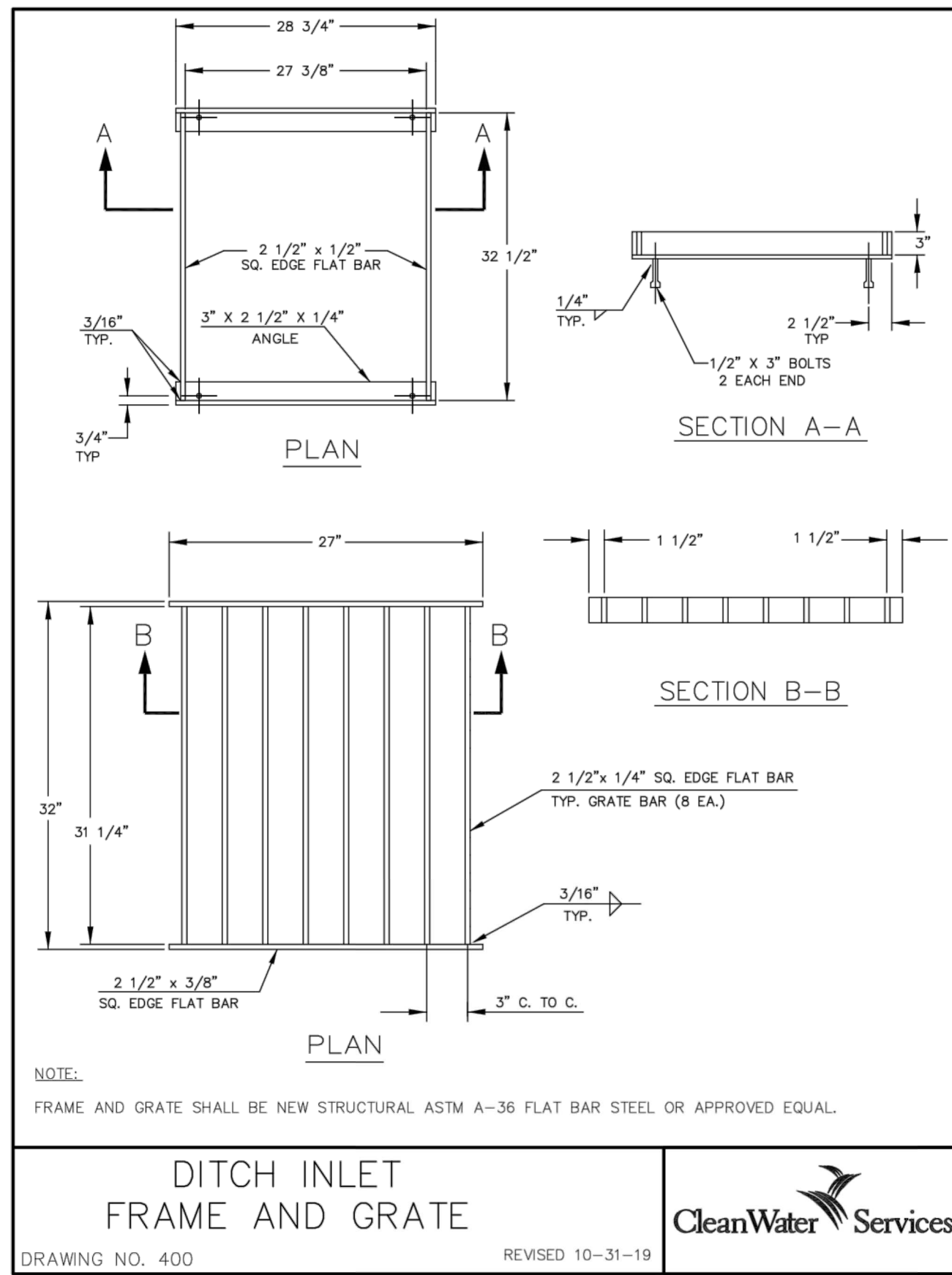


TRENCH CAP

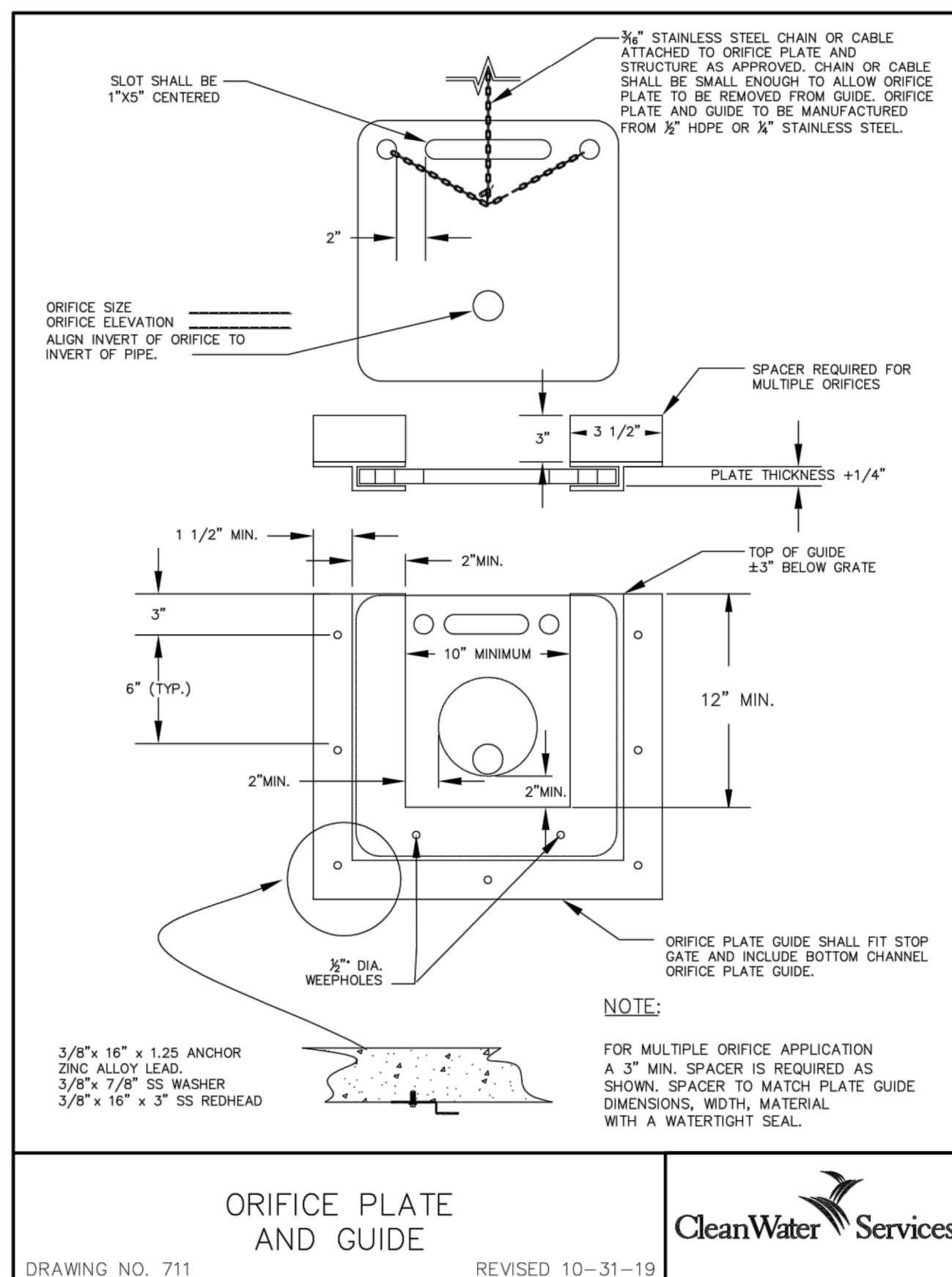
REV: DEC. 2016
SCALE: NTS
DET No. 3800-5



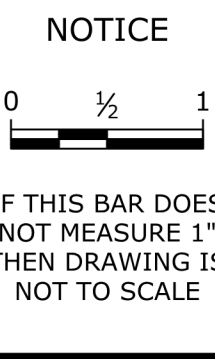
DITCH INLET



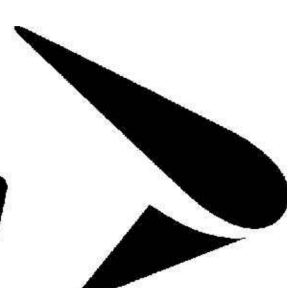
DITCH INLET FRAME AND GRATE



ORIFICE PLATE AND GUIDE



DSN DESIGNED
CAD DRAWN
CHK CHECKED



CITY OF WOODBURN
NEW PRODUCTION WELL FOR
THE PARR ROAD TREATMENT PLANT

CITY OF WOODBURN STANDARD DETAIL AND CWS STANDARD DETAILS

PROJECT NO.: 19-2697 SCALE: AS SHOWN DATE: MARCH 2022

SHEET C-17
28 of 67

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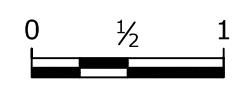
Section I - Governing Codes	
2014 OFC, 2017 ORSC, 2019 OSSC, 2021 OZERCC	
Section II - Building "Construction" Data	
Type of Construction	Type VB - CMU & Wood
Maximum Building Height	15 feet
Maximum Allowable Height	35 feet
Number of Stories	1 story
Allowable Number of Stories	2 stories
Basement	No
Total Floor Area Provided	Electrical/Control Building=533 square feet
	Electrical/Control Room=450 square feet
Minimum Required Property Setbacks	
Front Setback	5 Feet
Rear Setback	0-5 Feet
Section III - Building "Occupancy" Data	
Building Occupancy Classification Group(s)	U
Occupancy Classification Group by Floor	U
Occupancy Classification Group by Room	Main Room = U
Accessory or Incidental Use Areas	None
Total Occupant Load by Floor	1
Total Occupant Load for Each Room	1
Total Occupant Load for Each Occupancy Group	N/A
Section IV - Building Area Data "Actual" and "Allowable"	
Actual Building Area	432 square feet
Allowable Base Area	8,500 square feet (Type VB, Group U)
Building Frontage	See Sheet L-1, (Non-Sprinklered)
Section V - "Fire Resistive" Building Elements	
Separation of Occupancies	0 hours (U, Non-Sprinklered)
Section VI - Building "Exiting"	
Maximum Floor Area Allowance Per Occupant	N/A - Not customarily occupied
Exits Required in Each Room or Area	1
Exits Provided in Each Room or Area	3
Exits Required per Floor	1
Exits Provided per Floor	3
Exit Width Required per Exit	32 inches
Minimum Corridor Exit Width Required	30 inches
Emergency Exit Illumination	N/A
Exit Sign Layout Plan	N/A

Section VII - Building "Fire Detection and Suppression"	
Smoke Detection/Fire Alarm System Req'd	No
Smoke Detection/Fire Alarm System Provided	No
Type of System	N/A
Areas Protected	N/A
Sprinkler System Req'd	No, per OSSC 903.2.11 Exemptions
Standpipe System Req'd	No
Number of Fire Dept Vehicle Accesses	1
Fire Extinguisher Locations	See Sheet M-1
Section VIII - Occupancy Ventilation Requirements	
Not required for control room environment. Six air changes per hour are being provided in the valve vault to declassify the environment for electrical code purposes.	
Section IX - Energy Code Requirements	
Building is enclosed space, U occupancies. Comply with 2021 OEESC.	
Building Unit Insulation Values (Energy Code Analysis Method: 2021 OEESC.)	
Feature	Value: Code Required/Provided
Doors: Swinging, opaque	U-0.61 (Max.) / 0.2
Roof: Insulation entirely above deck	U-0.039 (Max.) / 0.026
Walls: Above ground - CMU	U-0.123 (Max.) / 0.1
Slab on-Grade Floors: Unheated slab	NR
Lighting Layout	See Sheet E-5
OEESC 2021	

Section X - Hazardous Materials	
Hazardous Materials Present	No
Section XI - Accessibility	
Exterior Route of Travel - See Sheet A-2	
Facility is for equipment access only and does not require accessibility	
Section XII - Plumbing Fixture Count Requirements	
Not Applicable - this remotely monitored station is "not customarily occupied"	
Section XIII - Underground and Padmounted Transformers	
See Electrical Drawings	
Section XIV - Special Inspection, Structural Observation	
-Required Structural Inspection requirements are indicated on 'S' sheets and Specifications	
-Structural Observation requirements are indicated on 'S' sheets and Specifications	
Section XV - Room Specific Requirements	
Not Applicable -This remotely monitored station is "not customarily occupied"	

NOTE: SEE SHEET A-2 FOR CODE PLAN INFORMATION.

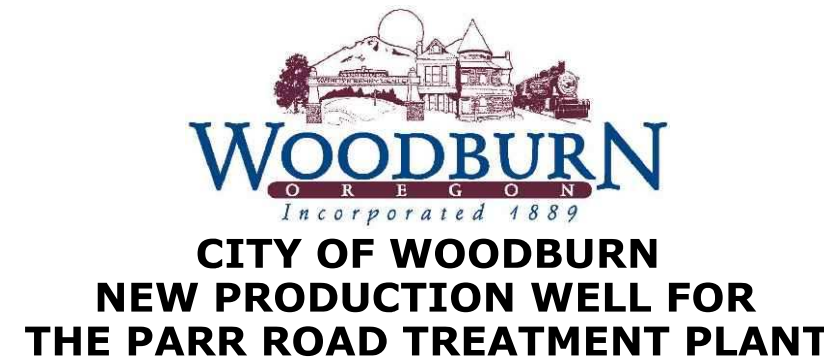
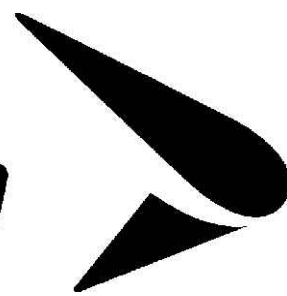
NO.	DATE	BY	REVISION

NOTICE

 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

LRC
DESIGNED
 MBE
DRAWN
 MLM
CHECKED



murraysmith



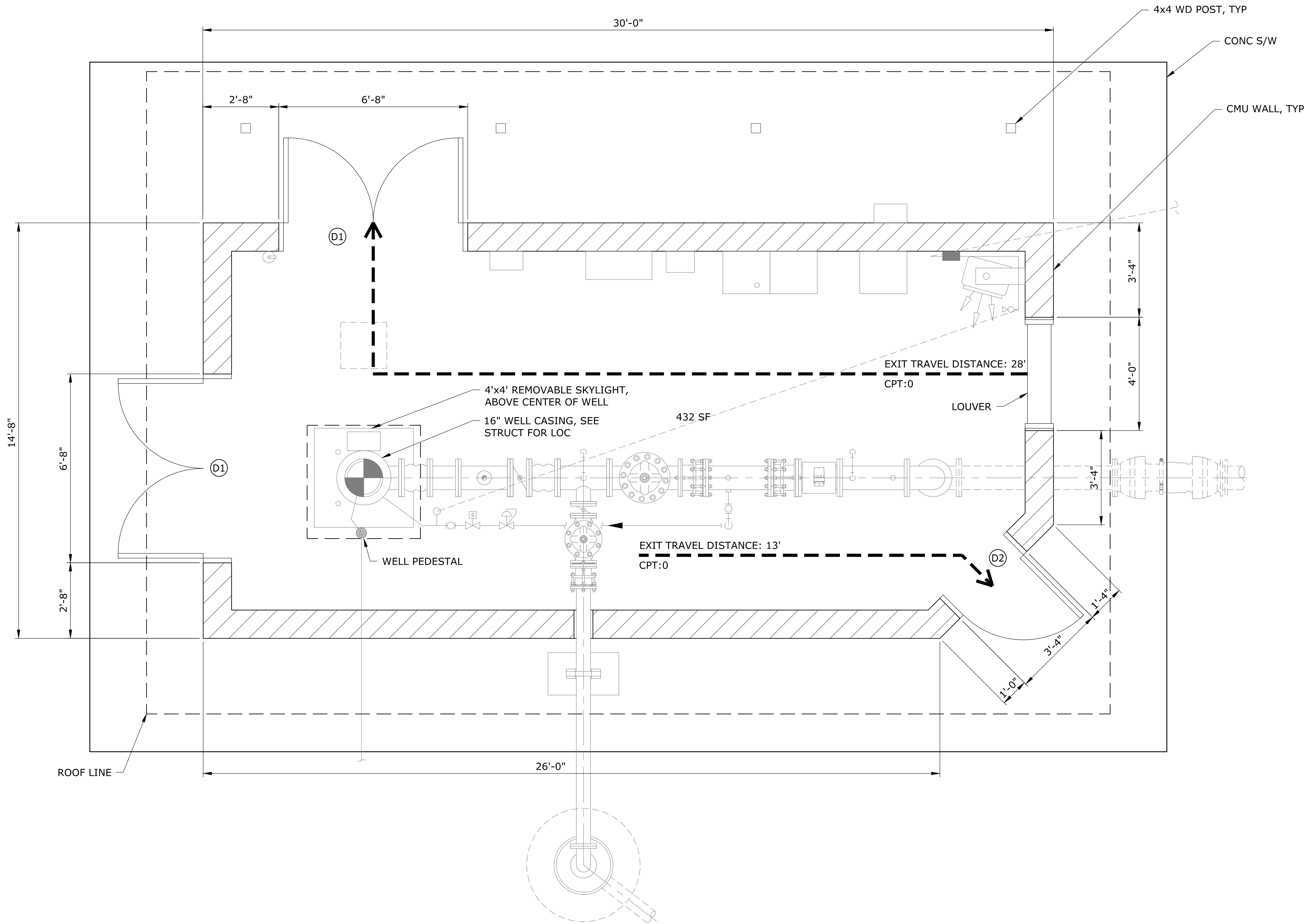
CODE SUMMARY			
PROJECT NO.:	19-2697	SCALE:	AS SHOWN
DATE:	MARCH 2022		

SHEET

A-1

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DOOR SCHEDULE		
DOOR	GROUP 1	GROUP 2
LOCATION	EXTERIOR	EXTERIOR
WIDTH	DOUBLE, 3'-0"	SINGLE, 3'-0"
HEIGHT	6'-8"	6'-8"
ROUGH OPENING	6'-4" x 7'-0"	3'-4" x 7'-0"

GENERAL NOTES:

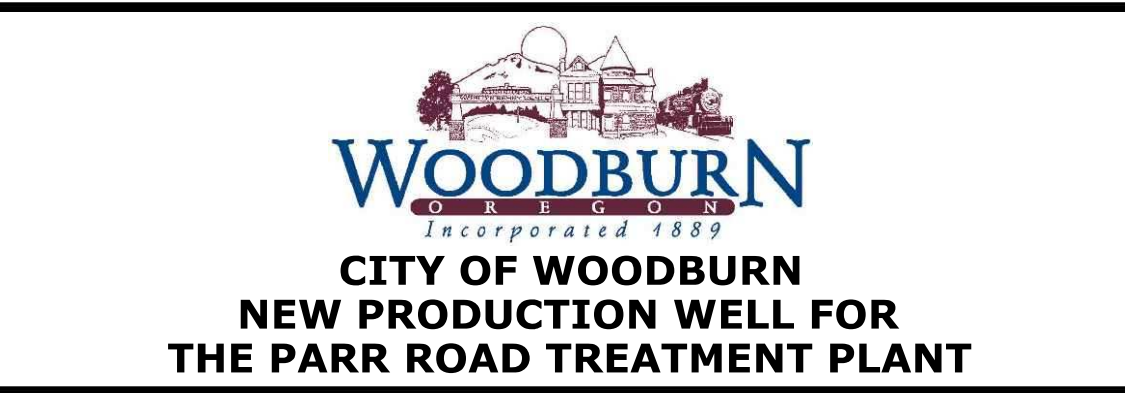
1. ALL SCREENED LINEWORK IS FOR VISUAL REFERENCE. FOR EQUIPMENT INFORMATION, SEE MECHANICAL AND ELECTRICAL DRAWINGS.
2. ALL DIMENSIONS GIVEN TO FACE OF SLUMP STONE.
3. SEE STRUCTURAL DRAWINGS FOR ADDITIONAL DIMENSIONAL INFORMATION.
4. LOUVERS ARE SHOWN FOR LOCATIONS, SEE MECHANICAL DRAWINGS FOR LOUVER DIMENSIONS AND SCHEDULES.

FLOOR PLAN
SCALE: 1/2"=1'-0"

NO.	DATE	BY	REVISION

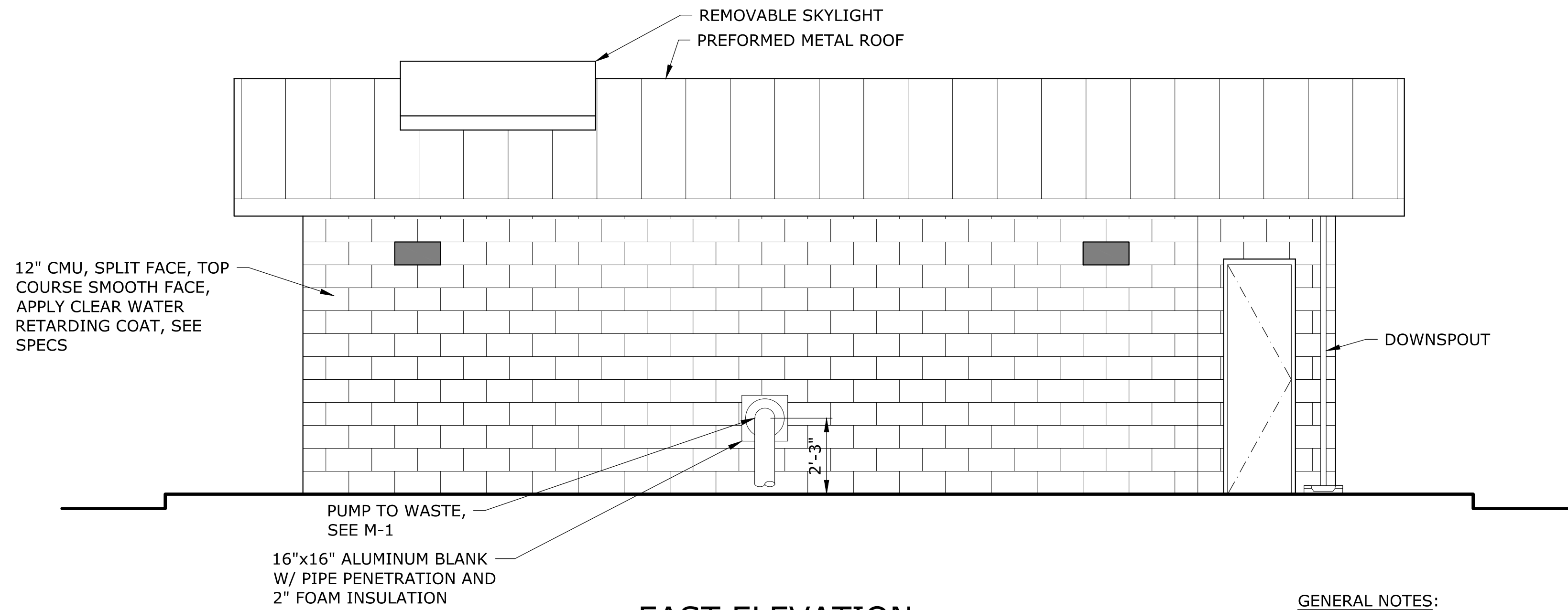
NOTICE
0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

LRC
DESIGNED
MBE
DRAWN
MLM
CHECKED

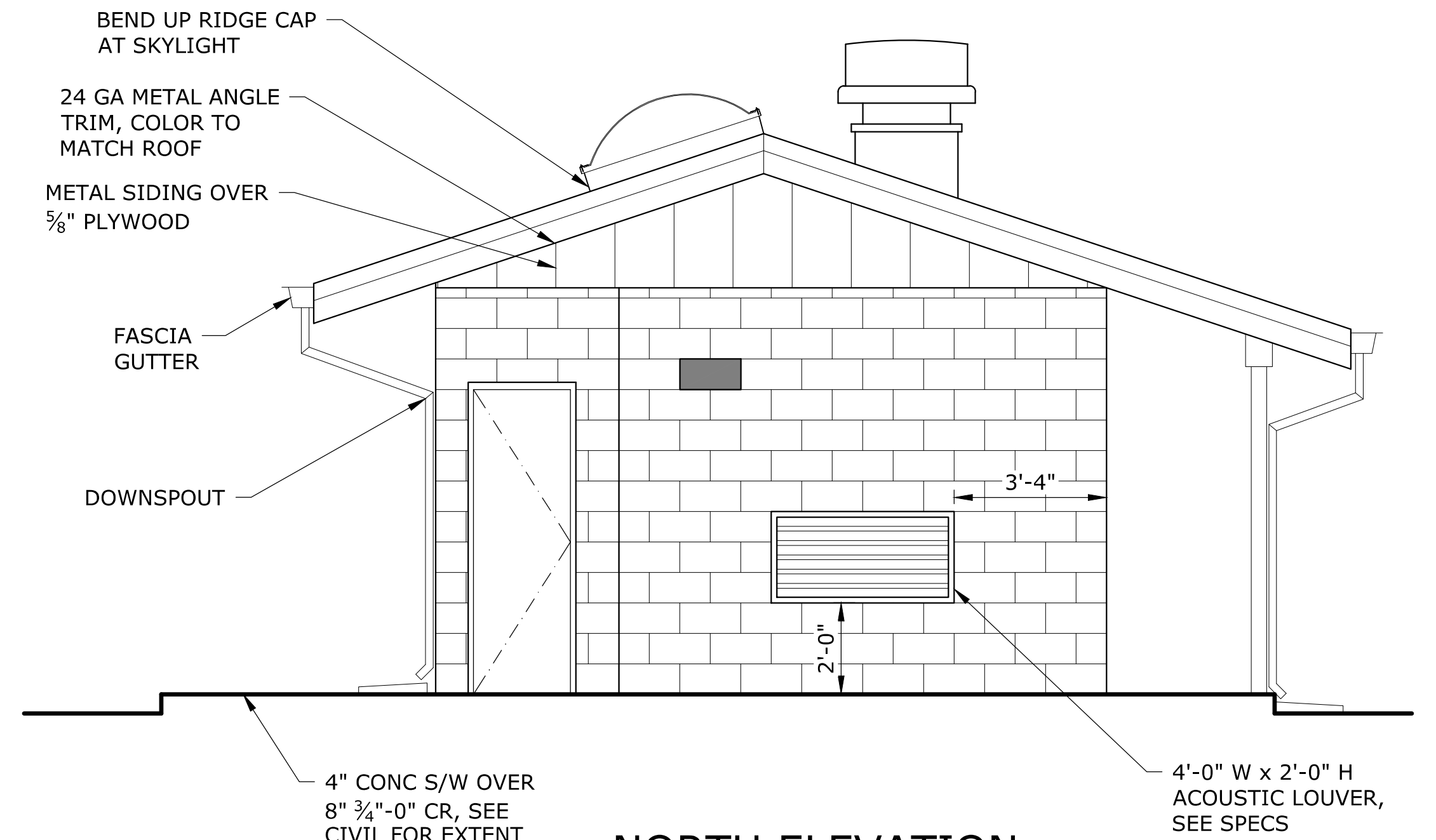


ARCHITECTURAL FLOOR PLAN			
PROJECT NO.:	19-2697	SCALE:	AS SHOWN
DATE:	MARCH 2022		

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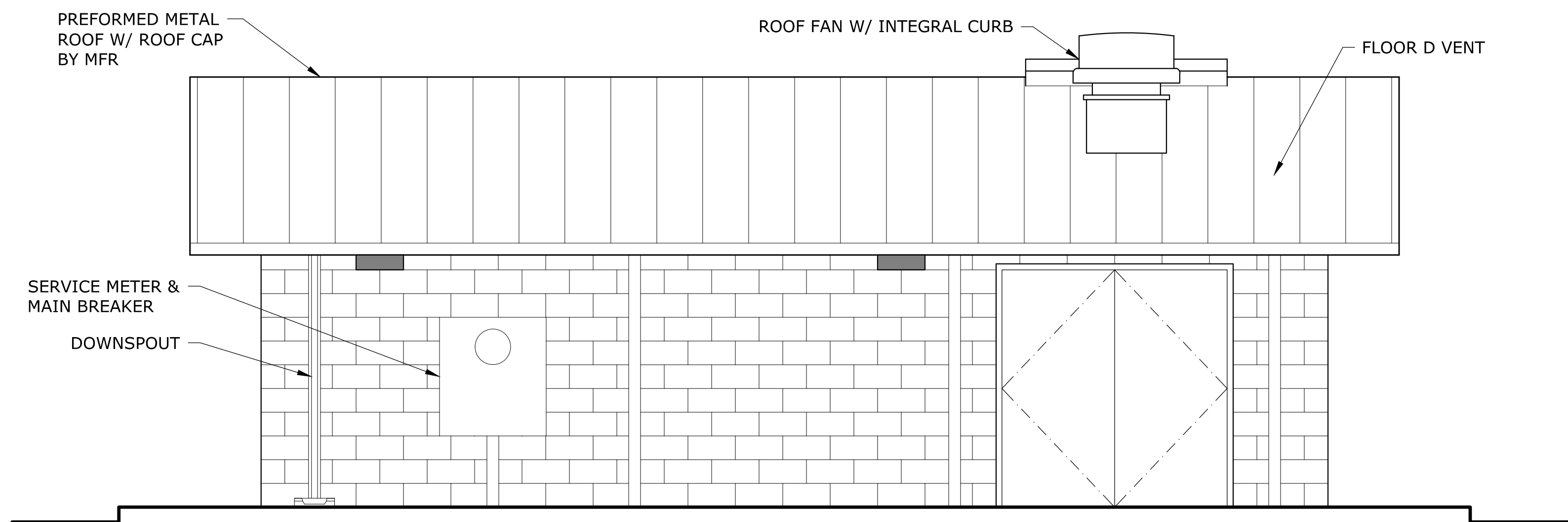
EAST ELEVATION
SCALE: 3/8"=1'-0"



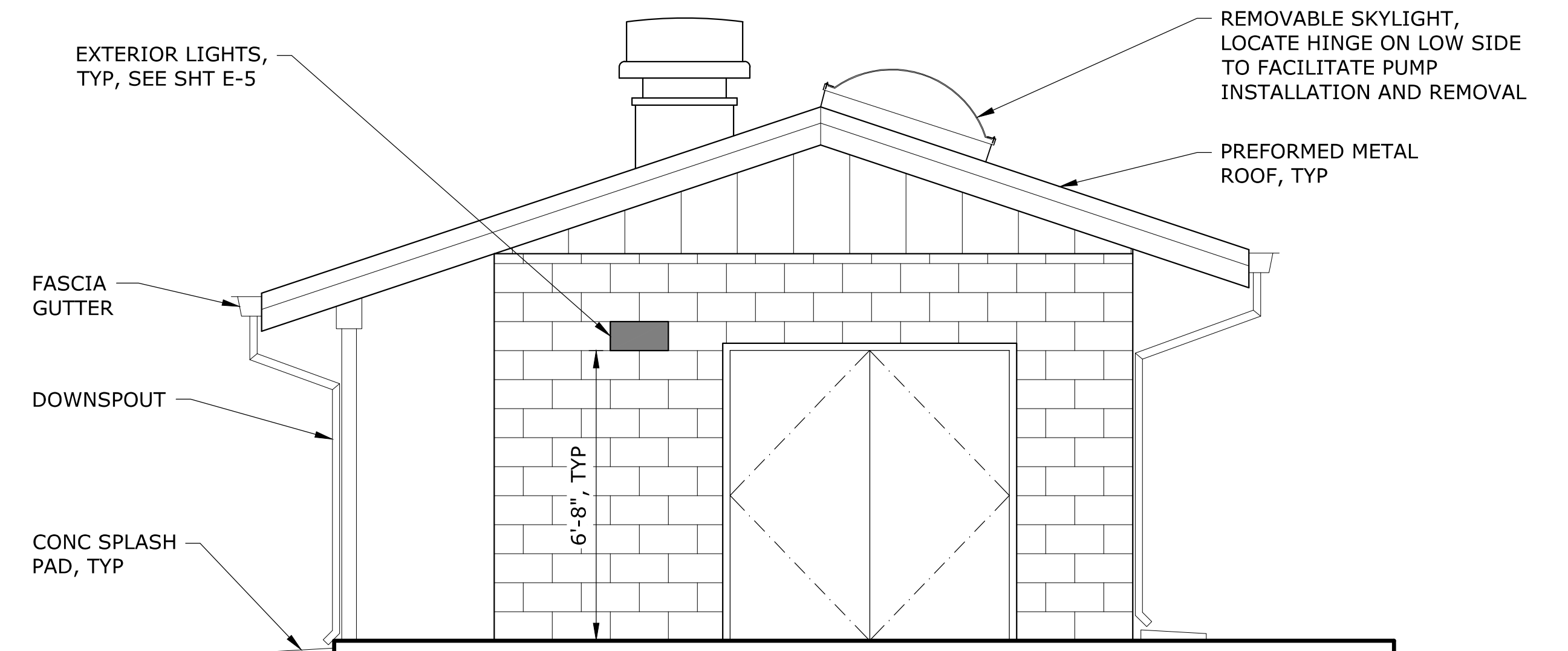
NORTH ELEVATION
SCALE: 3/8"=1'-0"

GENERAL NOTES:

1. ALL SCREENED LINEWORK IS FOR VISUAL REFERENCE. FOR EQUIPMENT INFORMATION, SEE MECHANICAL AND ELECTRICAL DRAWINGS.
2. ALL DIMENSIONS GIVEN TO FACE OF SLUMP STONE.
3. SEE STRUCTURAL DRAWINGS FOR ADDITIONAL DIMENSIONAL INFORMATION.
4. LOUVERS ARE SHOWN FOR LOCATIONS, SEE MECHANICAL DRAWINGS FOR LOUVER DIMENSIONS AND SCHEDULES.



WEST ELEVATION
SCALE: 3/8"=1'-0"

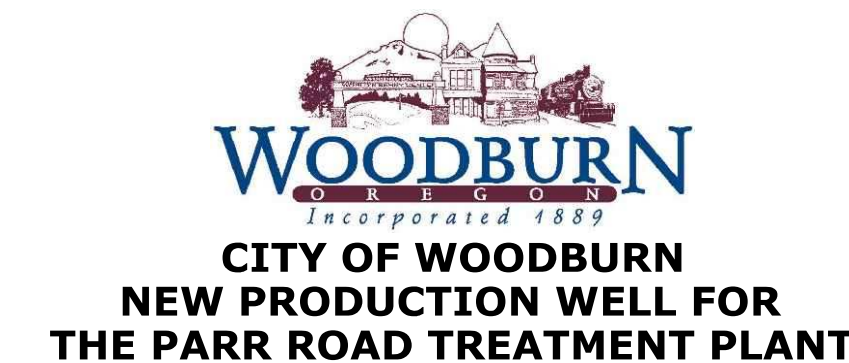


SOUTH ELEVATION
SCALE: 3/8"=1'-0"

NO.	DATE	BY	REVISION

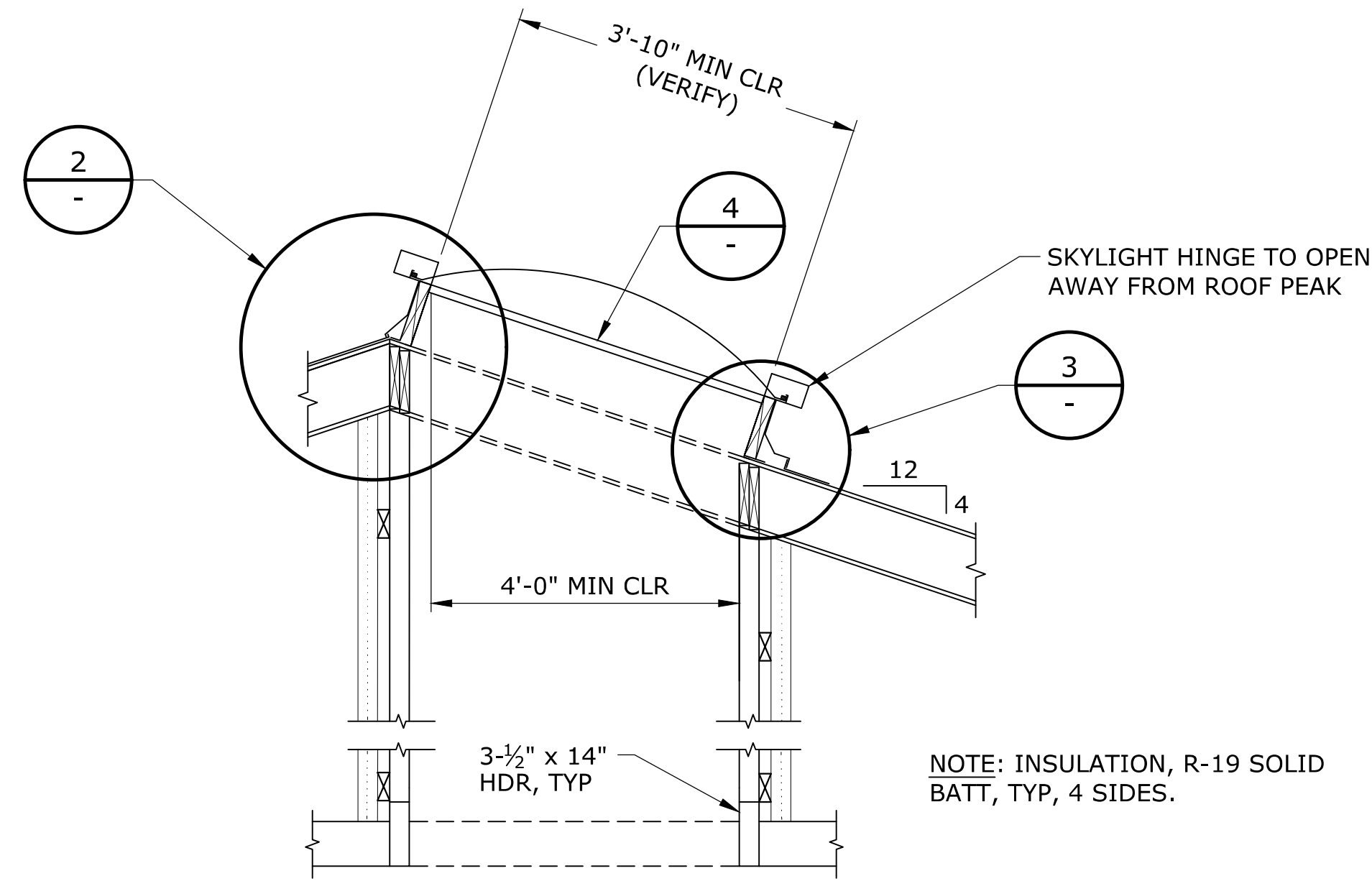
NOTICE
0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

LRC
DESIGNED
MBE
DRAWN
MLM
CHECKED

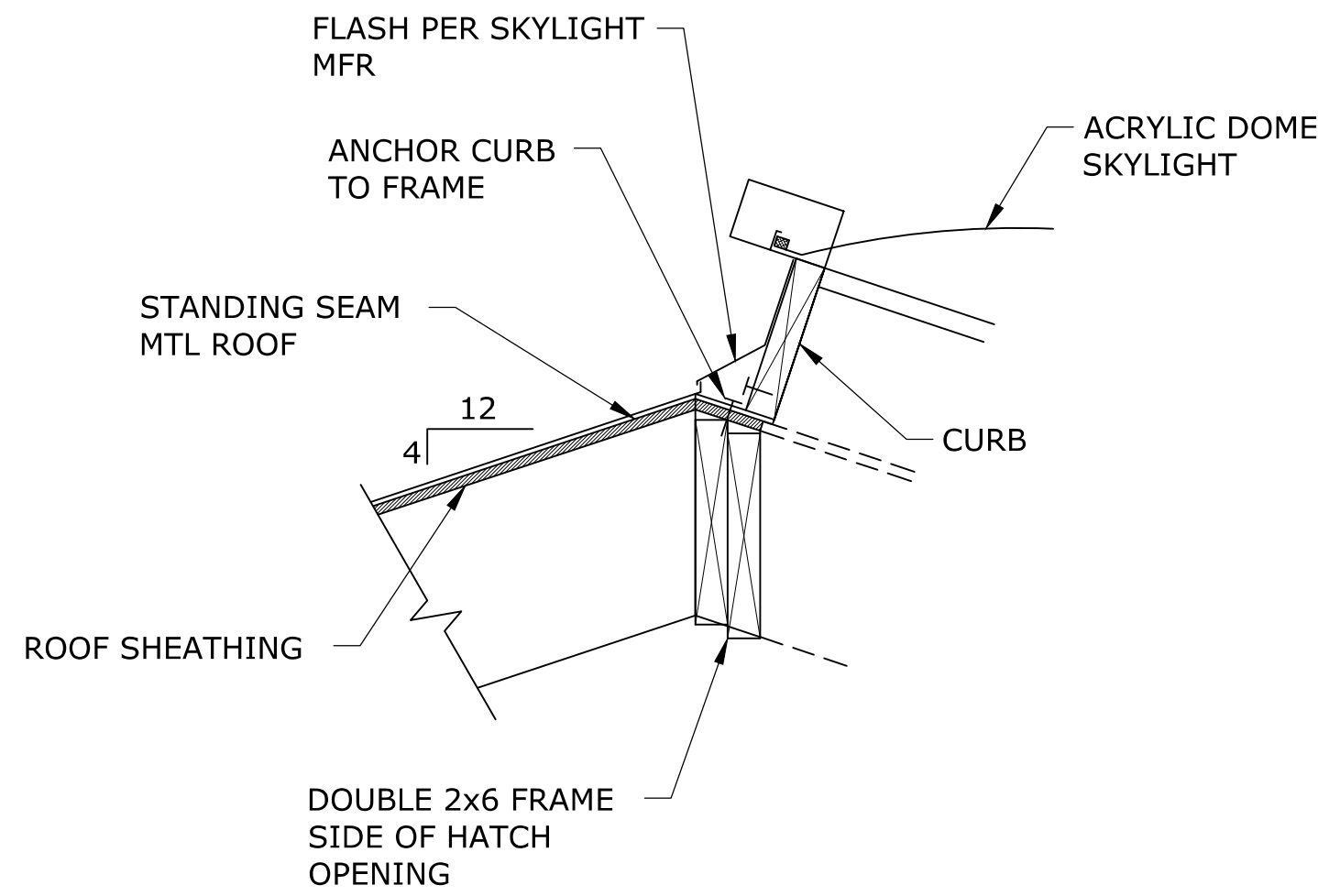


ARCHITECTURAL ELEVATIONS			
PROJECT NO.:	19-2697	SCALE:	AS SHOWN
DATE:	MARCH 2022		

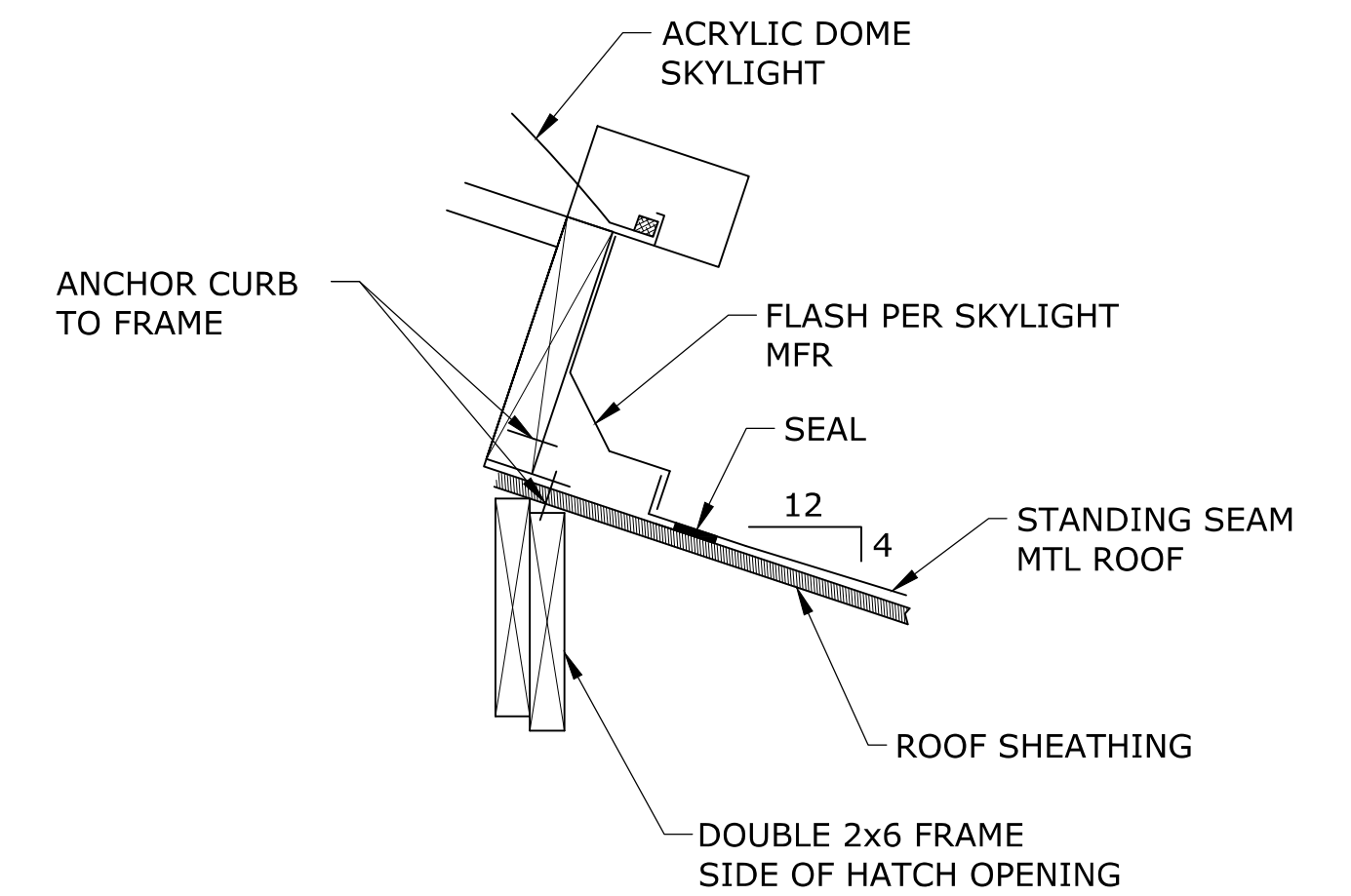
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SKYLIGHT DETAIL
SCALE: NTS



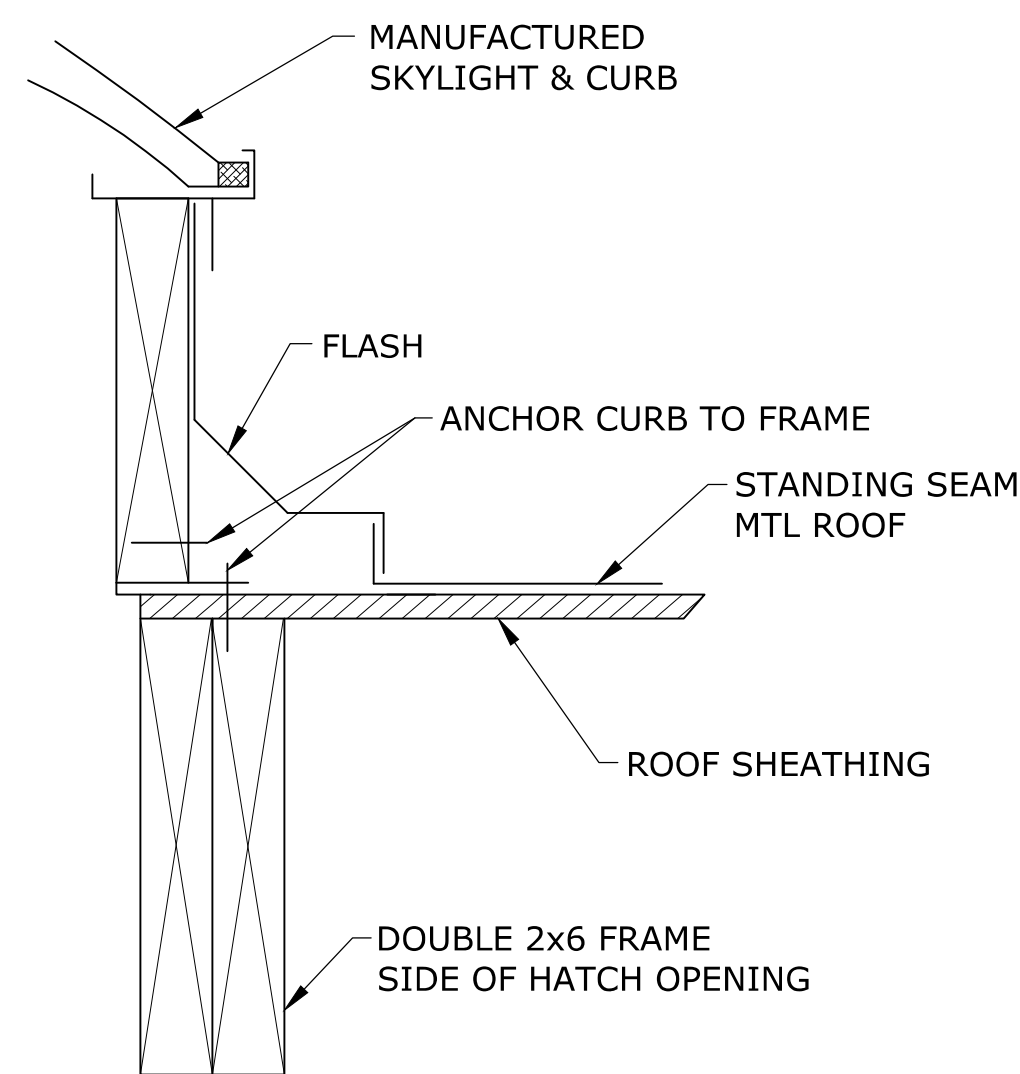
SKYLIGHT CURB AND FLASHING AT HEAD
SCALE: NTS



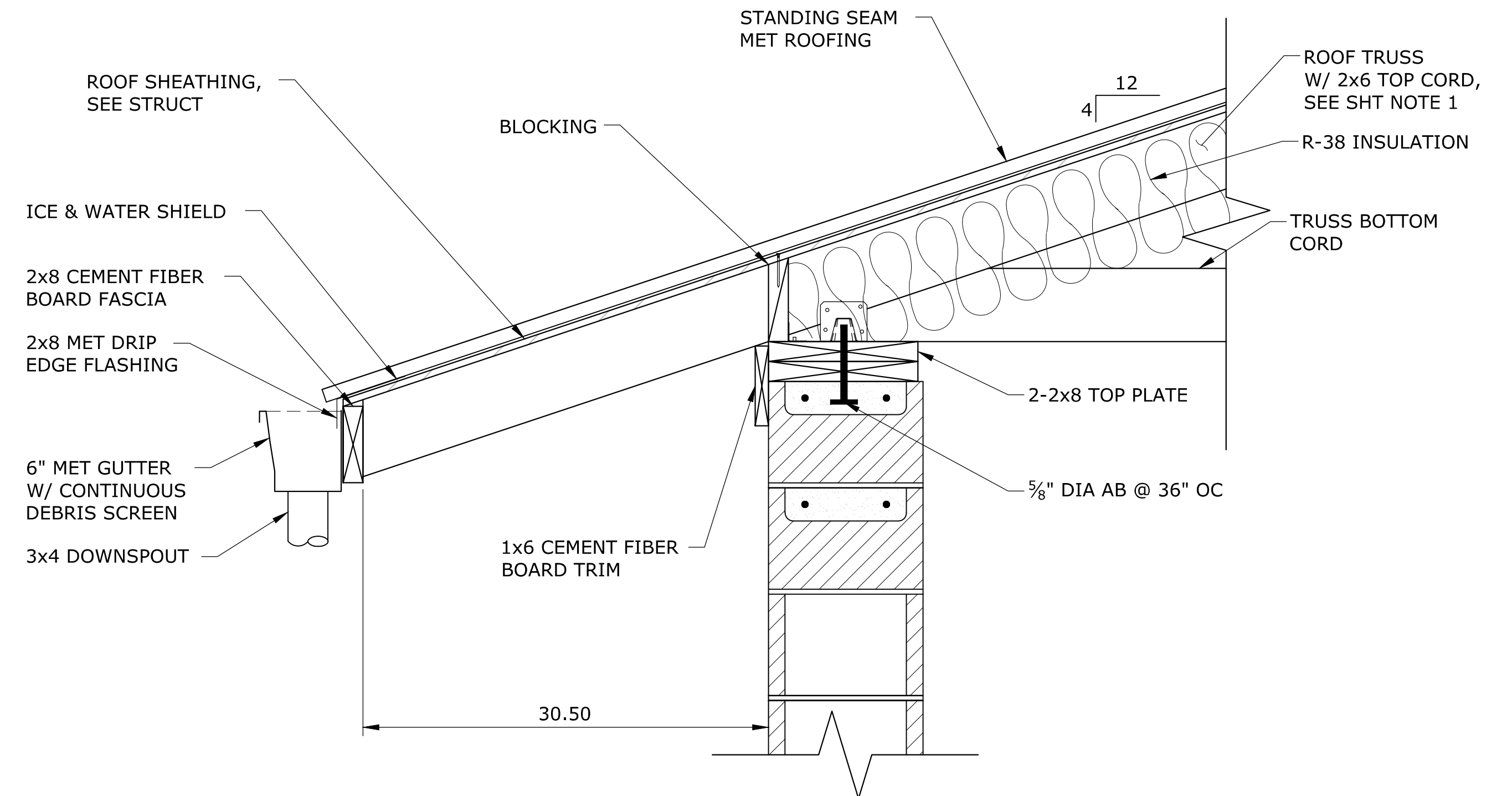
SKYLIGHT CURB AND FLASHING AT BASE
SCALE: NTS

SHEET NOTES:

1. SELECTED STRUCTURAL COMPONENTS ARE OMITTED FOR CLARITY THIS SHEET. SEE STRUCTURAL DRAWINGS FOR COMPLETE STRUCTURAL DETAILS.
2. METAL ROOFING SHALL BE INSTALLED PER MANUFACTURER'S INSTRUCTION AND AS SPECIFIED.



SKYLIGHT CURB AND FLASHING AT END
SCALE: NTS

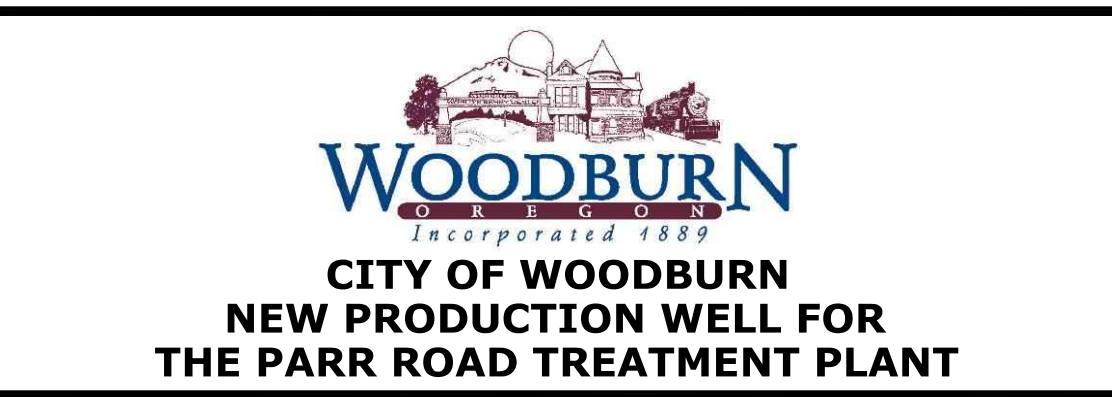


SOFFIT DETAIL
SCALE: 1" = 1'-0"

NO.	DATE	BY	REVISION

NOTICE
0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

LRC
DESIGNED
MBE
DRAWN
MLM
CHECKED



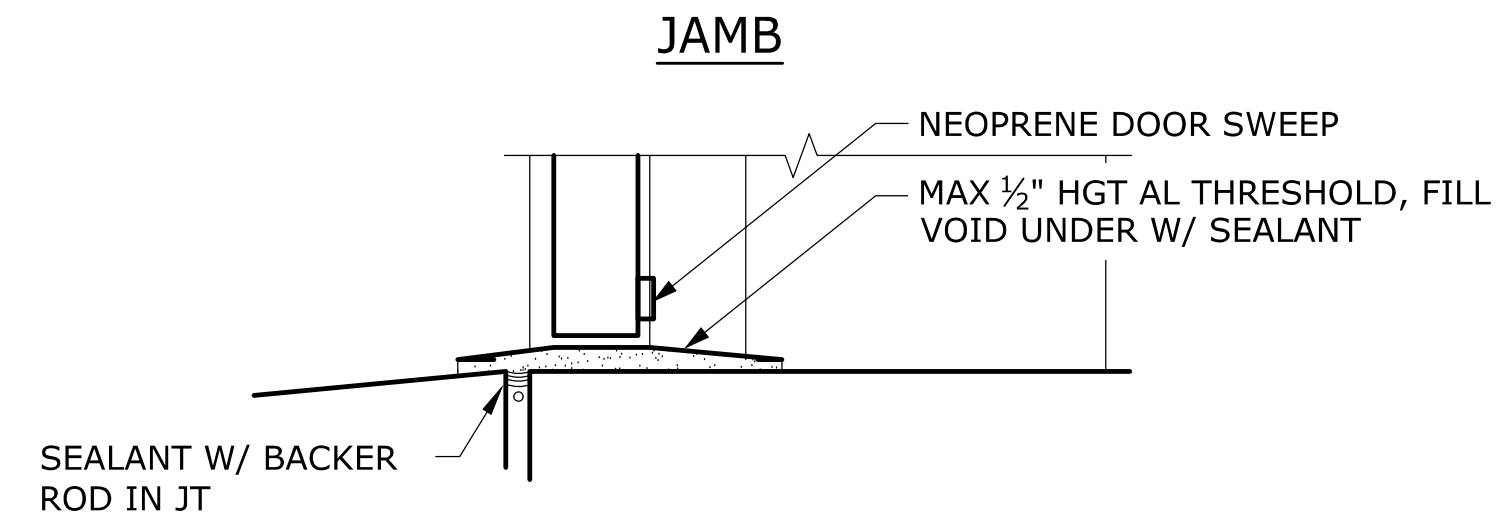
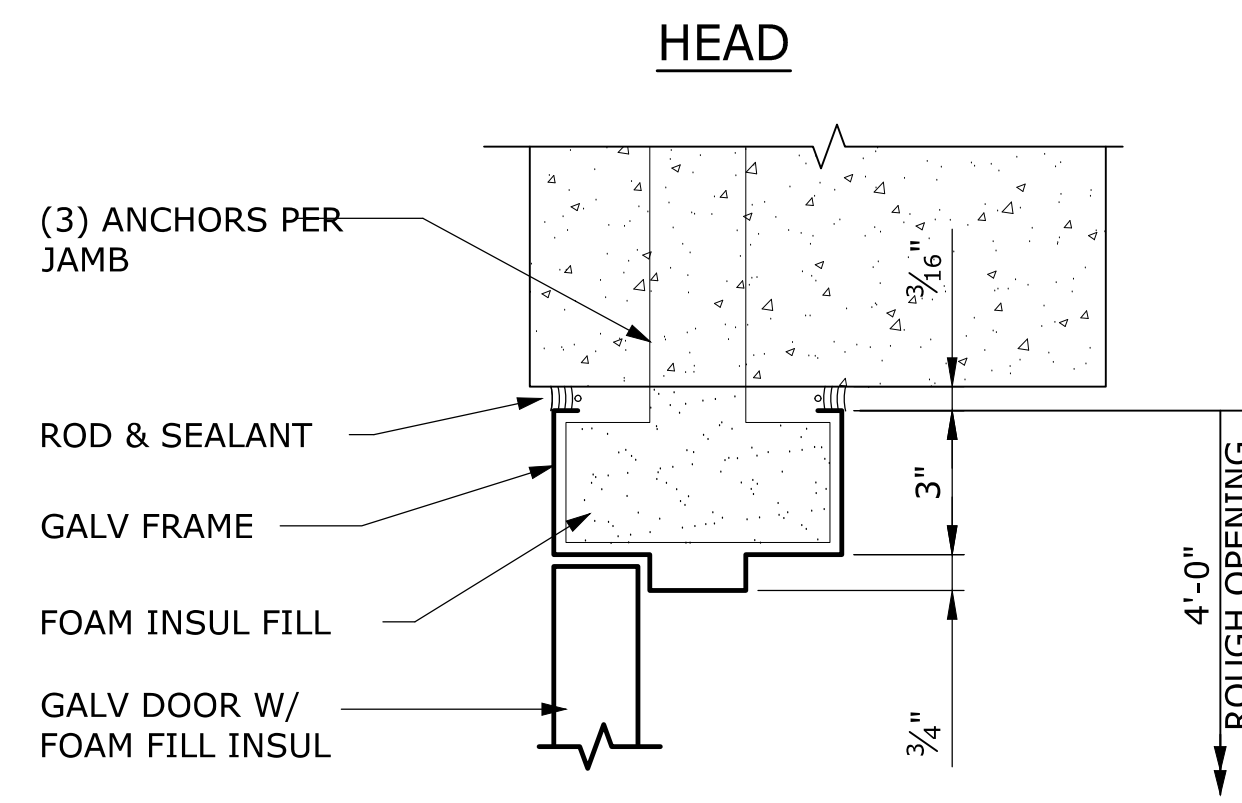
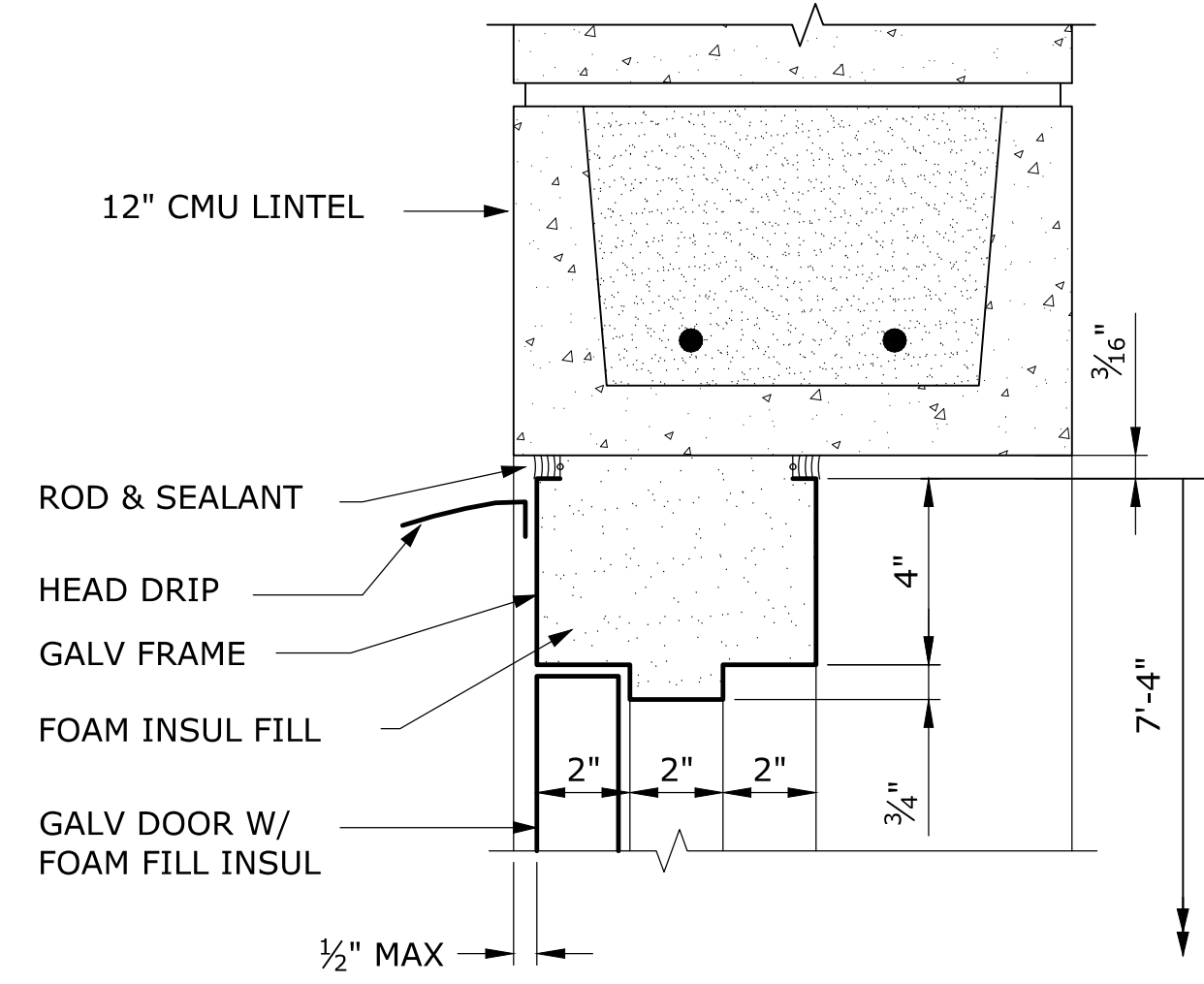
ARCHITECTURAL DETAILS - 1
PROJECT NO.: 19-2697 SCALE: AS SHOWN DATE: MARCH 2022

SHEET
A-4
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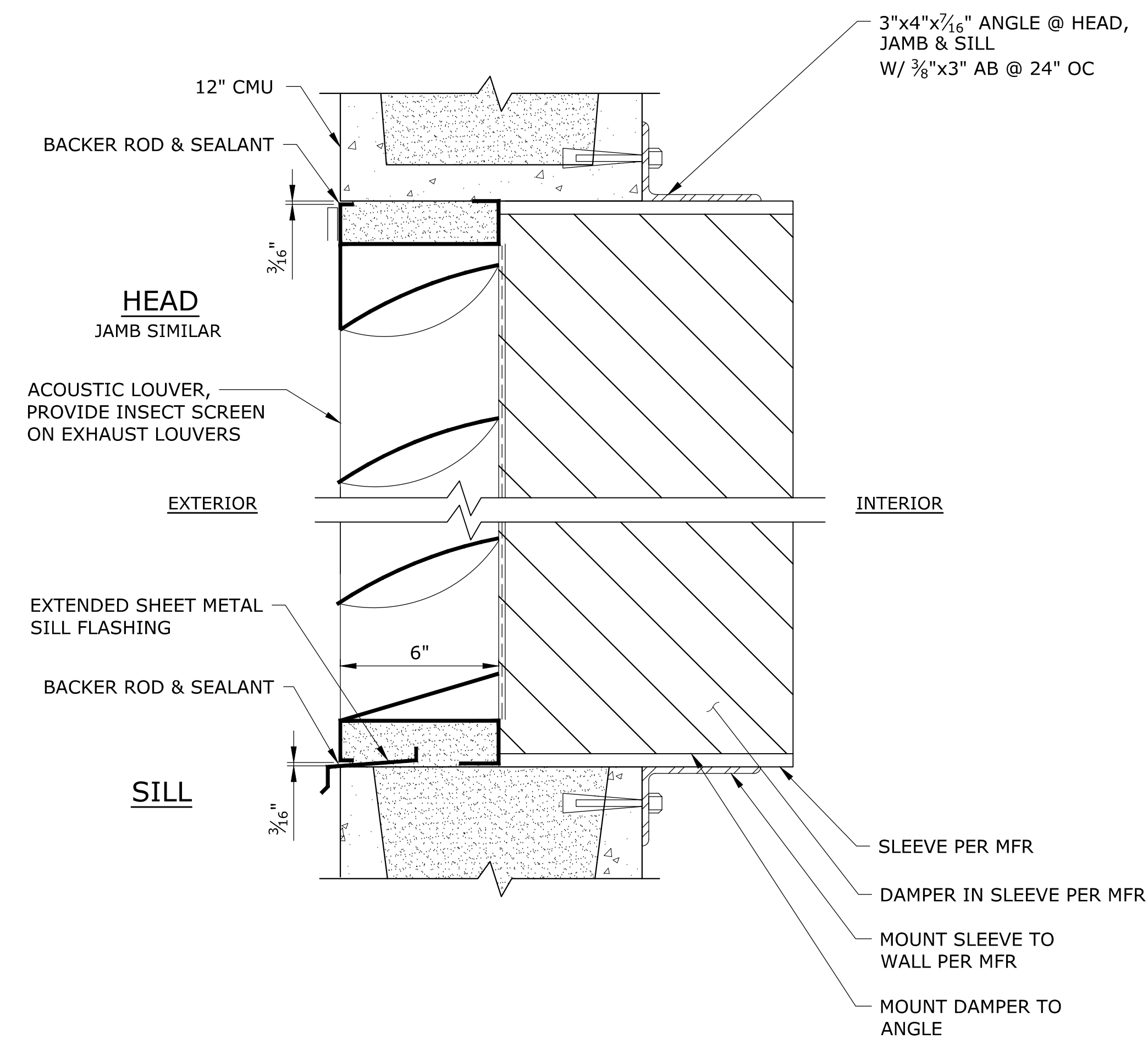
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SHEET NOTES:

1. SELECTED STRUCTURAL COMPONENTS ARE OMITTED FOR CLARITY THIS SHEET. SEE STRUCTURAL DRAWINGS FOR COMPLETE STRUCTURAL DETAILS.
2. METAL ROOFING SHALL BE INSTALLED PER MANUFACTURER'S INSTRUCTION AND AS SPECIFIED.



EXTERIOR DOOR AT BLOCK WALL
SCALE: 3"=1'-0" 1

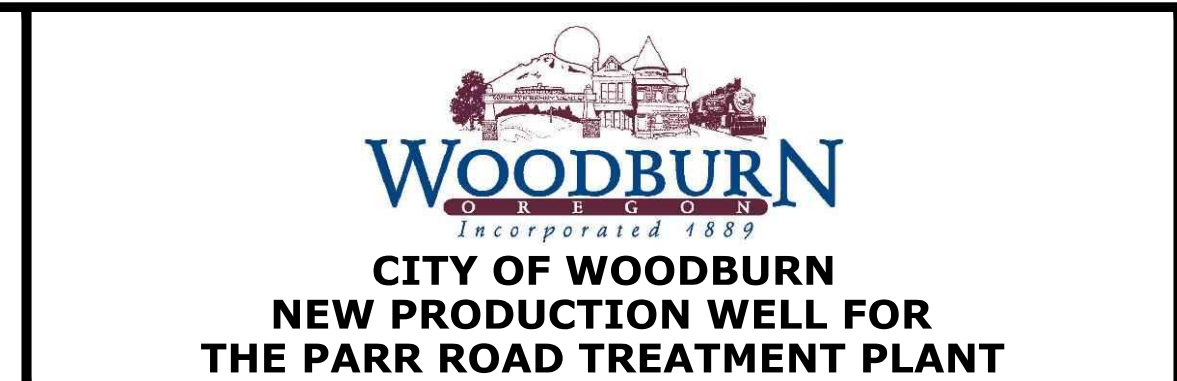


LOUVER DETAIL
SCALE: 3"=1'-0" 2

NO.	DATE	BY	REVISION

NOTICE
0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

LRC
DESIGNED
MBE
DRAWN
MLM
CHECKED



ARCHITECTURAL DETAILS - 2			
PROJECT NO.:	19-2697	SCALE:	AS SHOWN
DATE:	MARCH 2022		

SHEET
A-5
33 of 67

QUALITY ASSURANCE PLAN:

SHOP DRAWINGS & SUBMITTALS:

SHOP DRAWINGS, SUBMITTALS AND/OR MILL CERTIFICATES FOR THE FOLLOWING ITEMS SHALL BE SUBMITTED TO THE OWNER AND ENGINEER OF RECORD FOR REVIEW A MINIMUM OF 21 DAYS PRIOR TO FABRICATION:

1. CONCRETE MIX DESIGN AND PROPOSED ADD MIXTURES
2. CONCRETE REINFORCING SHOP DRAWINGS
3. CMU REINFORCING SHOP DRAWINGS
4. MANUFACTURED ROOF TRUSSES SHOP DRAWINGS AND CALCULATIONS SIGNED BY AN OREGON LICENSED PROFESSIONAL ENGINEER
5. CMU/MORTAR/GROUT MATERIAL SUBMITTALS FOR UNIT STRENGTH COMPLIANCE WITH f'm REQUIREMENTS

QUALITY ASSURANCE FOR SEISMIC RESISTANCE:

QUALITY ASSURANCE FOR THE STRUCTURE'S MAIN LATERAL FORCE RESISTING SYSTEM SHALL BE PROVIDED BY SPECIAL INSPECTION AND MATERIAL TESTING OF THE FOLLOWING:

SPECIAL INSPECTIONS:

1. AN INDEPENDENT TESTING LABORATORY CHOSEN BY THE OWNER SHALL PROVIDE SPECIAL INSPECTIONS IN ACCORDANCE WITH CHAPTER 17 OF THE INTERNATIONAL BUILDING CODE AND OF THE TYPE AND FREQUENCY OUTLINED IN THE QUALITY CONTROL SECTION OF THESE GENERAL STRUCTURAL NOTES
2. EACH SPECIAL INSPECTION AND MATERIAL TESTING REPORT SHALL BE DISTRIBUTED TO THE OWNER, CONTRACTOR, BUILDING OFFICIAL, AND ENGINEER OF RECORD IN A TIMELY FASHION.
3. THE CONTRACTOR SHALL MAKE AVAILABLE ALL MEANS AND METHODS NECESSARY FOR THE SPECIAL INSPECTOR TO PERFORM THE REQUIRED INSPECTIONS. IN ADDITION, THE CONTRACTOR SHALL NOTIFY THE OWNER AND SPECIAL INSPECTOR A MINIMUM OF 48 HOURS BEFORE THE TIME AT WHICH THE SPECIFIED SPECIAL INSPECTION MAY BE PERFORMED.

STRUCTURAL OBSERVATION REQUIREMENTS:

1. THE OWNER SHALL EMPLOY THE ENGINEER OF RECORD OR AN ALTERNATE OREGON LICENSED PROFESSIONAL ENGINEER, APPROVED BY THE ENGINEER OF RECORD, TO PERFORM STRUCTURAL OBSERVATIONS IN ACCORDANCE WITH SECTION 1704.6 OF THE INTERNATIONAL BUILDING CODE.
2. STRUCTURAL OBSERVATION IS THE VISUAL OBSERVATION OF THE STRUCTURAL SYSTEM BY A REGISTERED DESIGN PROFESSIONAL FOR GENERAL CONFORMANCE TO THE APPROVED CONSTRUCTION DOCUMENTS AT SIGNIFICANT CONSTRUCTION STAGES AND AT COMPLETION OF THE STRUCTURAL SYSTEM. STRUCTURAL OBSERVATION DOES NOT INCLUDE OR WAIVE THE RESPONSIBILITY FOR ANY OTHER INSPECTION CRITERIA, INCLUDING SPECIAL INSPECTION, AS REQUIRED BY THE BUILDING OFFICIAL OR AS INDICATED WITHIN THE INTERNATIONAL BUILDING CODE.
3. DEFICIENCIES SHALL BE REPORTED IN WRITING TO THE OWNER AND THE BUILDING OFFICIAL (AND THE ENGINEER OF RECORD IF AN ALTERNATE ENGINEER IS USED FOR STRUCTURAL OBSERVATION). AT THE CONCLUSION OF THE STRUCTURAL WORK INCLUDED WITHIN THE PERMIT, THE STRUCTURAL OBSERVER SHALL SUBMIT TO THE BUILDING OFFICIAL AND THE OWNER (AND THE ENGINEER OF RECORD IF AN ALTERNATE ENGINEER IS USED FOR STRUCTURAL OBSERVATION) A WRITTEN STATEMENT THAT THE SITE VISITS HAVE BEEN MADE AND IDENTIFY ANY REPORTED DEFICIENCIES WHICH, TO THE BEST OF THE STRUCTURAL OBSERVER'S KNOWLEDGE, HAVE NOT BEEN RESOLVED.
4. THE CONTRACTOR SHALL MAKE AVAILABLE ALL MEANS AND METHODS NECESSARY FOR THE STRUCTURAL OBSERVER TO PERFORM THE REQUIRED STRUCTURAL OBSERVATIONS. IN ADDITION, THE CONTRACTOR SHALL NOTIFY THE OWNER AND STRUCTURAL OBSERVER A MINIMUM OF 48 HOURS BEFORE THE TIME AT WHICH THE SPECIFIED STRUCTURAL OBSERVATIONS MAY BE PERFORMED. IN ADDITION THE CONTRACTOR SHALL UPDATE THE STRUCTURAL OBSERVER OF THE CONSTRUCTION PROGRESS.
5. STRUCTURAL OBSERVATIONS SHALL BE PERFORMED FOR THE FOLLOWING AREAS OF WORK FOR EACH BUILDING STRUCTURE AS NOTED:

FORMING AND REINFORCING OF THE FOUNDATION AND SLAB ON GRADE
 CMU WALL CONSTRUCTION AND REINFORCING PRIOR TO THE FIRST GROUT POUR
 CONSTRUCTION OF CMU LINTEL, PRIOR TO GROUT POUR
 FOLLOWING THE INSTALLATION OF ROOF FRAMING/SHEATHING, PRIOR TO THE INSTALLATION OF FINISHES
 FOLLOWING THE COMPLETION OF ALL STRUCTURAL ELEMENTS CONTAINED HEREIN

JOB SITE CONDITIONS AND SAFETY:

1. CONTRACTOR AGREES THAT THEY SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE ENGINEER AND IT'S REPRESENTATIVE HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE ENGINEER.

TABLE 1 REQUIRED GEOTECHNICAL SPECIAL INSPECTIONS					
SYSTEM OR MATERIAL	IBC CODE REFERENCE	CODE OR STANDARD REFERENCE	INSPECTION		REMARKS
			FREQUENCY		
			CONTINUOUS	PERIODIC	
SOILS					
GEOTECHNICAL INVESTIGATIONS	TABLE 1705.6, 1803				GEOTECHNICAL INVESTIGATION SHALL INCLUDE ITEMS OF SPECIAL INSPECTION AND TESTING AS NOTED IN TABLE 5 OF THE GUIDELINES
VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY	TABLE 1705.6			X (A)	BY THE GEOTECHNICAL ENGINEER
VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL	TABLE 1705.6			X	
PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS	TABLE 1705.6, 1803.5.1			X	TESTING OF COMPACTED FILL MATERIALS (SEE TABLE 5)
VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL	TABLE 1705.6		X		BY THE GEOTECHNICAL ENGINEER
PRIOR TO PLACEMENT OF COMPACTED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.	TABLE 1705.6			X	

TABLE 5 REQUIRED TESTING FOR SPECIAL INSPECTIONS					
SYSTEM OR MATERIAL	IBC CODE REFERENCE	CODE OR STANDARD REFERENCE	TESTING		REMARKS
			FREQUENCY		
			CONTINUOUS	PERIODIC	
GEOTECHNICAL					
GEOTECHNICAL ENGINEER TO PERFORM TESTING OF COMPACTED FILL MATERIALS	1803				TESTING PER GEOTECHNICAL REPORT
FILL IN-PLACE DENSITY OR PREPARED SUBGRADE DENSITY				X (A)	BY THE GEOTECHNICAL ENGINEER
MATERIAL VERIFICATION	1705.6	VARIABLES; CLASSIFICATION AND TESTING OF CONTROLLED FILL MATERIALS		X (A)	BY THE GEOTECHNICAL ENGINEER
CONCRETE					
PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	TABLE 1705.3	ASTM C172, ASTM C31, ACI 318: 26.5, 26.12	X		ONCE EACH DAY FOR A GIVEN CLASS OF CONCRETE, OR NOT LESS THAN ONCE FOR EACH 150 YDS OF CONCRETE, OR NOT LESS THAN ONCE FOR EACH 5,000 FT ² OF SURFACE AREA FOR SLABS/WALLS. ONCE EACH SHIFT FROM IN-PLACE WORK OR FROM TEST PANEL AND MINIMUM ONE SPECIMEN FOR EACH 50 CUBIC YARDS. PRECONSTRUCTION TESTS AS REQUIRED PER THE BUILDING OFFICIAL.
CONCRETE STRENGTH	TABLE 1705.3	ASTM C39	X		
CONCRETE SLUMP		ASTM C143	X		
CONCRETE AIR CONTENT	TABLE 1705.3	ASTM C231	X		
CONCRETE TEMPERATURE		ASTM C1064	X		
MASONRY					
UNIT STRENGTH METHOD		TMS 602: ART. 1.4 B.2, TABLE 1, TABLE 2 ASTM: C62, C216, C652, 1019, C55, C90, C1386			TESTING EVERY 5,000 SQ. FT. AT LEVEL C QUALITY ASSURANCE

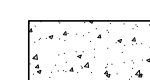

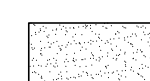
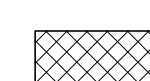
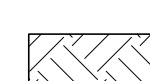
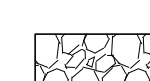
TABLE 6 REQUIRED SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE (SEISMIC CATEGORIES C, D, E, F)					
SYSTEM OR MATERIAL	IBC CODE REFERENCE	CODE OR STANDARD REFERENCE	INSPECTION		REMARKS
			FREQUENCY		
			CONTINUOUS	PERIODIC	
MASONRY					
MASONRY CONSTRUCTION	1705.4			X	
STRUCTURAL WOOD					
FIELD GLUING OF DIAPHRAGM AND SHEAR WALL ELEMENTS FOR SEISMIC FORCE-RESISTING-SYSTEMS				X	
CONNECTIONS FOR DIAPHRAGM CHORDS, COLLECTORS, BRACING, AND SHEAR WALL ANCHORAGE AND HOLD-DOWNS	1705.11.1			X	ALL CONNECTIONS VISUALLY INSPECTED
FASTENING OF DIAPHRAGM AND SHEAR WALL SHEATHING WITH EDGE NAILING < 4"				X	SPECIAL INSPECTION IS NOT REQUIRED WHEN FASTENER SPACING IS GREATER THAN 4" ON CENTER FOR WOOD SHEAR WALLS, DIAPHRAGMS, NAILING, BUILDING AND OTHER COMPONENTS IN THE SEISMIC FORCE-RESISTING SYSTEM.

TABLE 7 REQUIRED TESTING FOR SEISMIC RESISTANCE SPECIAL INSPECTIONS					
SYSTEM OR MATERIAL	IBC CODE REFERENCE	CODE OR STANDARD REFERENCE	TESTING		REMARKS
			FREQUENCY		
			CONTINUOUS	PERIODIC	
TEST A615 REINFORCEMENT USED TO RESIST EARTHQUAKE INDUCED LOAD IN SPECIAL MOMENT FRAMES, SPECIAL STRUCTURAL WALLS, AND END COUPLING BEAMS CONNECTING STRUCTURAL WALLS IN STRUCTURE ASSIGNED TO SEISMIC DESIGN CATEGORY B, C, D, E, AND F	1705.12.1		X	X (A)	NOT REQUIRED WHEN CERTIFIED MILL TEST REPORTS ARE PROVIDED
TEST A615 REINFORCEMENT FOR WELD ABILITY WHEN SUCH REINFORCEMENT IS TO BE WELDED	1705.12.1			X (A)	

TABLE 8 REQUIRED SPECIAL INSPECTIONS FOR WIND RESISTANCE					
SYSTEM OR MATERIAL	IBC CODE REFERENCE	CODE OR STANDARD REFERENCE	INSPECTION		REMARKS
			FREQUENCY		
			CONTINUOUS	PERIODIC	
NAILING, BOLTING, ANCHORING AND OTHER FASTENING OF COMPONENTS WITHIN THE MAIN WINDFORCE-RESISTING SYSTEM, INCLUDING WOOD SHEAR WALLS, WOOD DIAPHRAGMS, DRAG STRUTS, BRACES AND HOLD-DOWNS	1705.10.1			X (A)	SPECIAL INSPECTIONS ARE NOT REQUIRED FOR WOOD SHEAR WALLS AND DIAPHRAGMS WHERE THE FASTENER SPACING IS MORE THAN 4 INCHES ON CENTER OR FOR COLD-FORMED CONSTRUCTION WHERE THE SHEATHING IS GYPSUM BOARD, FIBERBOARD, OR WOOD STRUCTURAL PANEL OR STEEL SHEET ON ONE SIDE ONLY AND FASTENER SPACING IS MORE THAN 4" O.C.
FIELD GLUING OPERATIONS OF ELEMENTS OF THE MAIN WIND-FORCE-RESISTING SYSTEM.	1705.10.1		X		
ROOF COVERING, ROOF DECK, AND ROOF FRAMING CONNECTIONS	1705.11.3			X (A)	
EXTERIOR WALL COVERING AND WALL CONNECTIONS TO ROOF AND FLOOR DIAPHRAGMS AND FRAMING.	1705.11.3			X (A)	

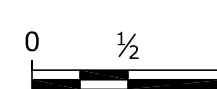
(A) = PERIODIC SPECIAL INSPECTION DEFINED IN CONTRACT SPECIFICATIONS.

LEGEND:

-  CONCRETE
-  STEEL IN SECTION
-  SHOTCRETE
-  BEARING PAD
-  NATIVE/BACKFILL MATERIAL
-  COMPACTED CRUSHED SURFACING BASE COURSE

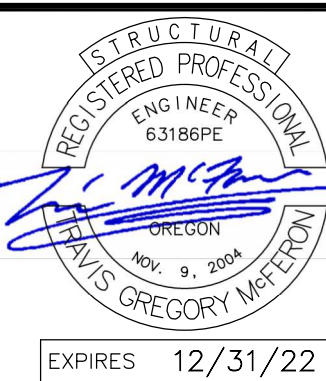
PSE
 PETERSON STRUCTURAL ENGINEERS
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 Portland, Oregon 97225
 (503) 292-1635
 PSE Project #: 1901-0197
 Date: 03/09/2022

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WOODBURN
 OREGON
 Incorporated 1889
CITY OF WOODBURN
 NEW PRODUCTION WELL FOR
 THE PARR ROAD TREATMENT PLANT

WELLHOUSE
QA/QC PLAN 1

SHEET

S-2

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PROJECT NO.: 19-2697 SCALE: AS SHOWN DATE: MARCH 2022

TABLE 2 REQUIRED STRUCTURAL SPECIAL INSPECTIONS					
SYSTEM OR MATERIAL	INSPECTION			REMARKS	
	IBC CODE REFERENCE	CODE OR STANDARD REFERENCE	FREQUENCY		
			CONTINUOUS		PERIODIC
FABRICATORS					
FABRICATORS	1704.2.5			X	SPECIAL INSPECTION IS REQUIRED FOR STRUCTURAL LOAD-BEARING MEMBERS AND ASSEMBLIES FABRICATED ON THE PREMISES OF A FABRICATOR'S SHOP.
	1704.2.5.1				THE SPECIAL INSPECTOR SHALL VERIFY THAT THE FABRICATOR MAINTAINS DETAILED FABRICATION AND QUALITY CONTROL PROCEDURES AND SHALL REVIEW FOR COMPLETENESS AND ADEQUACY RELATIVE TO THE CODE REQUIREMENT.
	1704.2.5.2				SPECIAL INSPECTIONS REQUIRED BY SECTION 1705 ARE NOT REQUIRED WHERE THE WORK IS DONE ON THE PREMISES OF A FABRICATOR REGISTERED AND APPROVED TO PERFORM SUCH WORK WITHOUT SPECIAL INSPECTION. APPROVAL SHALL BE BASED UPON REVIEW OF THE FABRICATOR'S WRITTEN PROCEDURAL AND QUALITY CONTROL MANUALS AND PERIODIC AUDITING OF FABRICATION PRACTICES BY A NATIONALLY RECOGNIZED ACCREDITING AUTHORITY. AT COMPLETION OF FABRICATION, THE APPROVED FABRICATOR SHALL SUBMIT A CERTIFICATE OF COMPLIANCE TO THE BUILDING OFFICIAL STATING THAT THE WORK WAS PERFORMED IN ACCORDANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS.
CONCRETE					
INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT	TABLE 1705.3, 1908.4	ACI 318: CH. 20, 25.2, 25.3, 26.5.1-25.6.3		X	TOLERANCES AND REINFORCING PLACEMENT PER ACI 318 26.6; SPACING LIMITS FOR REINFORCING ACI 318 25.2 PROTECTION OF REINFORCEMENT PER ACI 318 20.6
INSPECT ANCHORS CAST IN CONCRETE	TABLE 1705.3, 1908.5, 1909.1	ACI 318: 17.8.2		X	ALL BOLTS VISUALLY INSPECTED
INSPECT ANCHORS INSTALLED IN HARDENED CONCRETE	TABLE 1705.3	ACI 318: 17.8.2.4		X	SPECIAL INSPECTIONS APPLY TO ANCHOR PRODUCT NAME, TYPE, AND DIMENSIONS, HOLE DIMENSIONS, COMPLIANCE WITH DRILL BIT REQUIREMENTS, CLEANLINESS OF THE HOLE AND ANCHOR, ADHESIVE EXPIRATION DATE, ANCHOR/ADHESIVE INSTALLATION, ANCHOR EMBEDMENT, AND TIGHTENING TORQUE
		ACI 318: 17.8.2		X	
VERIFY USE OF REQUIRED MIX DESIGN(S)	TABLE 1705.3, 1904.1, 1904.2, 1908.2, 1908.3	ACI 318:CH. 19, 26.4.3, 26.4.4		X	
INSPECT CONCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	TABLE 1705.3	ACI 318: 26.5		X	
VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES	TABLE 1705.3, 1908.10	ACI 318: 26.5.3 - 26.5.5		X (A)	
VERIFY IN-SITU CONCRETE STRENGTH PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE	TABLE 1705.3	ACI 318: 26.11.2		X (A)	
VERIFY IN-SITU CONCRETE PRIOR TO REMOVAL OF FORMS AND SHORES FROM ELEVATED BEAMS AND STRUCTURAL SLABS	TABLE 1705.3	ACI 318: 26.11.2		X (A)	
INSPECT FORMWORK FOR SHAPE, LOCATION, AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED	TABLE 1705.3	ACI 318: 26.11.1.2		X (A)	

TABLE 2 REQUIRED STRUCTURAL SPECIAL INSPECTIONS						
SYSTEM OR MATERIAL	INSPECTION			REMARKS		
	IBC CODE REFERENCE	CODE OR STANDARD REFERENCE	FREQUENCY			
			CONTINUOUS		PERIODIC	
MASONRY						
MASONRY LEVEL 3						
TMS 602 TABLE 4 - LEVEL 3 QUALITY ASSURANCE						
TESTS						
PRIOR TO CONSTRUCTION, VERIFY COMPLIANCE OF SUBMITTALS PER TMS 602 ART. 1.5						
PRIOR TO CONSTRUCTION, VERIFY F'M AND F'AC PER TMS 602 ART. 1.4 B						
DURING CONSTRUCTION, VERIFY SLUMP LOW AND VISUAL STABILITY INDEX WHEN SELF-CONSOLIDATING GROUT IS DELIVERED TO THE PROJECT SITE PER TMS 602 ART. 1.5 & 1.6.3						
DURING CONSTRUCTION, VERIFY F'M AND F'AC FOR EVERY 5000 SQ. FT PER TMS 602 ART. 1.4 B						
DURING CONSTRUCTION, VERIFY PORTIONS OF MATERIALS AS DELIVERED TO THE PROJECT SITE FOR PREMIXED OR PREBLENDED MORTAR, PRESTRESSING GROUT, AND GROUT OTHER THAN SELF CONSOLIDATING GROUT PER TMS 602 ART. 1.4 B						
INSPECTION						
INSPECTION TASK	REFERENCE CODE OR STANDARD FOR CRITERIA	TMS 402	TMS 602	FREQUENCY (A)		REMARKS
				CONTINUOUS	PERIODIC	
AS MASONRY CONSTRUCTION BEGINS, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE						
PROPORTIONS OF SITE-PREPARED MORTAR	ART. 2.1, 2.6 A, 2.6 C				X	
PROPERTIES OF THIN-BED MORTAR FOR AAC MASONRY	ART. 2.1, C.1			X		
SAMPLE PANEL CONSTRUCTION	ART. 1.6 D			X		
PRIOR TO GROUTING, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE						
GROUT SPACE	ART. 3.2 D, 3.2 F			X		
PLACEMENT OF PRESTRESSING TENDONS AND ANCHORAGES	SEC. 10.8, 10.9	ART. 2.4, 3.6			X	
PLACEMENT OF REINFORCEMENT, CONNECTORS, AND ANCHOR BOLTS	SEC. 6.1, 6.3.1, 6.3.6, 6.3.7	ART. 3.2 E, 3.4			X	
VERIFY COMPLIANCE OF THE FOLLOWING DURING CONSTRUCTION: MATERIALS AND PROCEDURES WITH THE APPROVED SUBMITTAL		ART. 1.5			X	
PLACEMENT OF MASONRY UNITS AND MORTAR JOINT CONSTRUCTION		ART. 3.3 B			X	
SIZE AND LOCATION OF STRUCTURAL MEMBERS		ART. 3.3 F			X	
TYPE, SIZE, AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES, OR OTHER CONSTRUCTION.	SEC. 1.2.1 E, 6.2.1, 6.3.1				X	
WELDING OF REINFORCEMENT	SEC. 6.1.6.1.2				X	
PREPARATION, CONSTRUCTION, AND PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40F) OR HOT WEATHER (TEMPERATURE ABOVE 90F)		ART. 1.8 C, 1.8 D			X	
APPLICATION AND MEASUREMENT OF PRESTRESSING FORCE		ART. 3.6 B			X	
PLACEMENT OF GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS IS IN COMPLIANCE		ART. 3.5, 3.6 C			X	
PLACEMENT OF AAC MASONRY UNITS AND CONSTRUCTION OF THIN BED MORTAR JOINTS		ART. 3.6 B			X	
OBSERVE PREPARATION OF GROUT SPECIMENS, MORTAR SPECIMENS, AND/OR PRISMS		ART. 1.4 B.2.A.3, 1.4 B.2.B.3, 1.4 B.2.C.3, 1.4 B.3, 1.4 B.4			X	

TABLE 2 REQUIRED STRUCTURAL SPECIAL INSPECTIONS					
SYSTEM OR MATERIAL	INSPECTION			REMARKS	
	IBC CODE REFERENCE	CODE OR STANDARD REFERENCE	FREQUENCY		
			CONTINUOUS		PERIODIC
STEEL					
FABRICATION OF STRUCTURAL ELEMENTS	1704.2.5.1	AISC 360 N2		X	REFER TO INSPECTION OF FABRICATOR REQUIREMENTS APPROVAL BASED ON NATIONALLY RECOGNIZED ACCREDITING AUTHORITY
MATERIAL VERIFICATION OF HIGH-STRENGTH BOLTS, NUTS, AND WASHERS		AISC 360 A3.3 AISC 360 N 3.2 ASTM STANDARDS SPECIFIED IN CONSTRUCTION DOCUMENTS RCSC 2.1		X	MANUFACTURER'S CERTIFIED TEST REPORTS
SNUG-TIGHT JOINT HIGH-STRENGTH BOLT INSTALLATION	1705.2.1.1	RCSC SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS SECTION 9 AISC 360, SECTION M2.5		X	ALL CONNECTIONS INSPECTED AND VERIFIED SNUG
MATERIAL VERIFICATION OF STRUCTURAL STEEL	1705.2.1 2203.1 TABLE 1705.2	ASTM A6 ASTM STANDARDS SPECIFIED IN CONSTRUCTION DOCUMENTS AISC 360 N3.2 AISC 360 A3.1 AISC 360 M5.5		X	CERTIFIED MILL TEST REPORTS
FOR OTHER STEEL, IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS	TABLE 1705.2	APPLICABLE ASTM MATERIAL STANDARDS		X	MANUFACTURER'S CERTIFIED TEST REPORTS
MATERIAL VERIFICATION OF WELD FILLER METALS	TABLE 1705.2	AISC 360 N3.2 AISC 360 A3.5 APPLICABLE AWS A5 DOCUMENTS		X	MANUFACTURER'S CERTIFICATE OF COMPLIANCE
COMPLETE AND PARTIAL JOINT PENETRATION GROOVE WELDS	TABLE 1705.2	AWS D1.1 SECTION 6	X		ALL WELDS VISUALLY INSPECTED PER AWS D1.1 6.9
MATERIAL VERIFICATION OF REINFORCING STEEL FOR WELDING	TABLE 1705.2, 1705.2.2.1.2	ACI 318: 3.5.2 AWS D1.4		X	CERTIFIED MILL TEST REPORTS
MATERIAL VERIFICATION OF ANCHOR BOLTS AND THREADED RODS		AISC 360 N3.2 AISC 360 A3.4 ASTM STANDARDS SPECIFIED IN CONSTRUCTION DOCUMENTS		X	MANUFACTURER'S CERTIFIED TEST REPORTS
VERIFYING USE OF PROPER WPS'S		AISC 360 N3.2			COPY OF WELDING PROCEDURE SPECIFICATIONS
VERIFYING WELDER AND WELDING INSPECTOR QUALIFICATIONS	1705.2.2.1			X	COPY OF QUALIFICATION CARDS
WELDING STAIR AND RAILING SYSTEMS	1705.2 (2.5)	AWS D1.1 SECTION 6		X	ALL WELDS VISUALLY INSPECTED PER AWS D1.1 6.9

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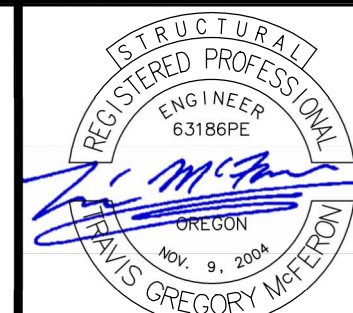
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NOTICE

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RAH
DESIGNED
RAH
DRAWN
TGM
CHECKED



murraysmith



WOODBURN
INCORPORATED 1889
CITY OF WOODBURN
NEW PRODUCTION WELL FOR
THE PARR ROAD TREATMENT PLANT

**WELLHOUSE
QA/QC PLAN 2**

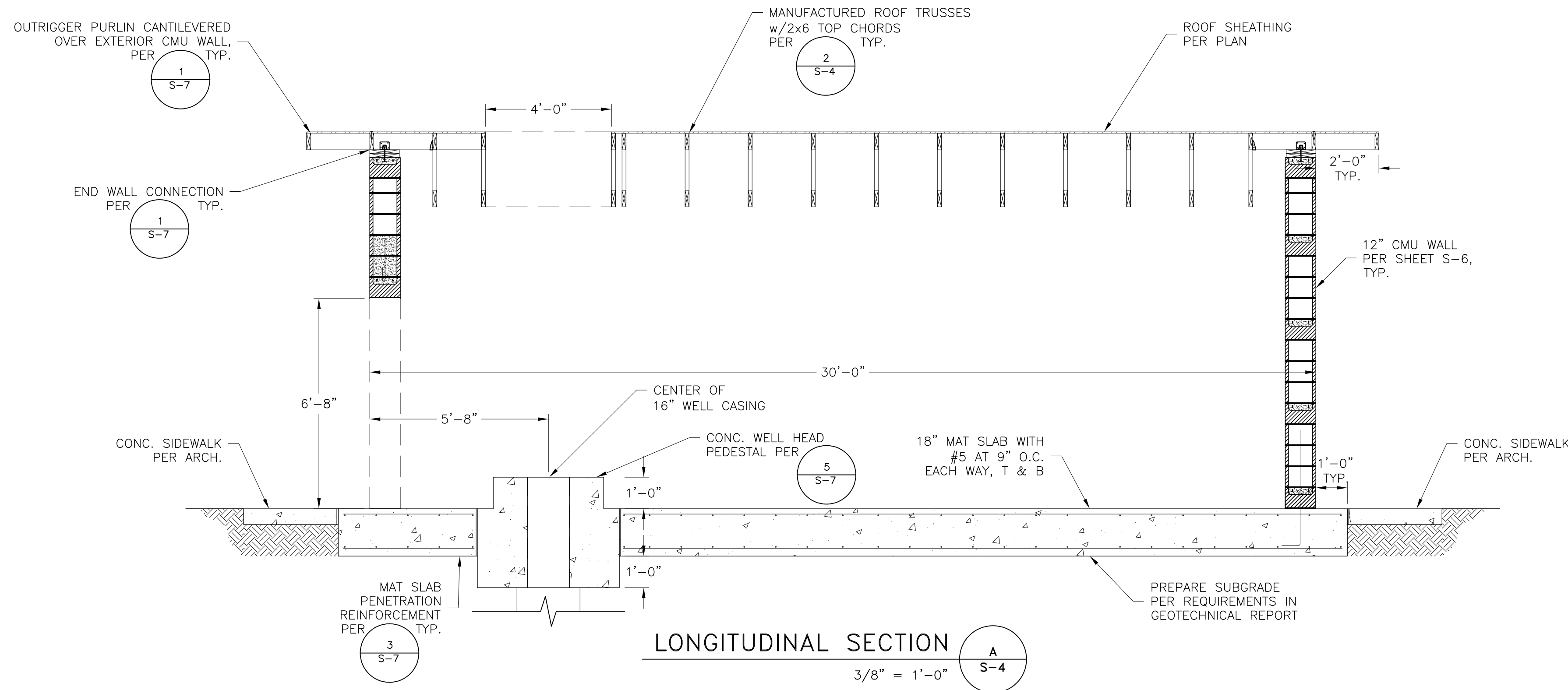
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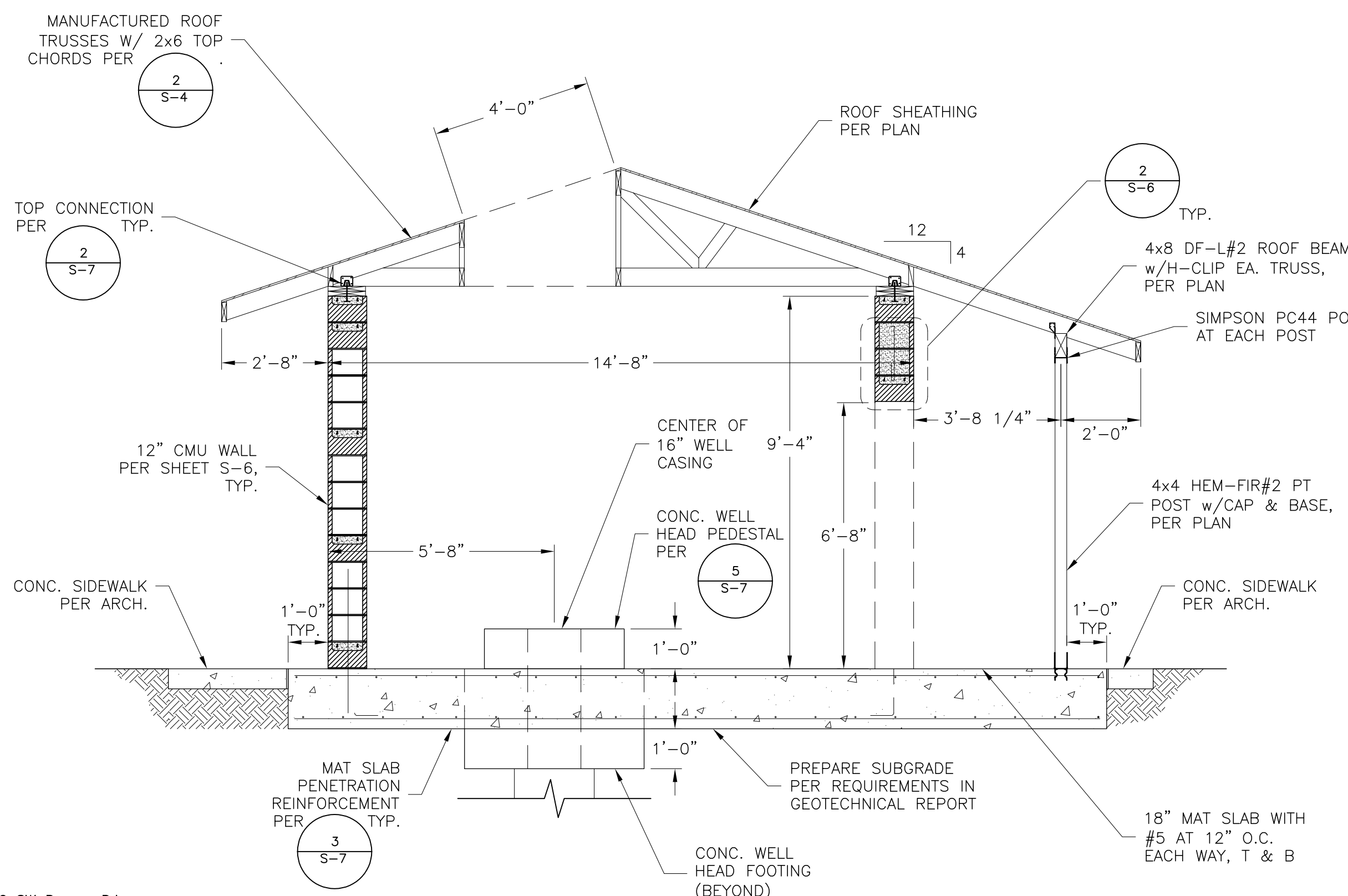
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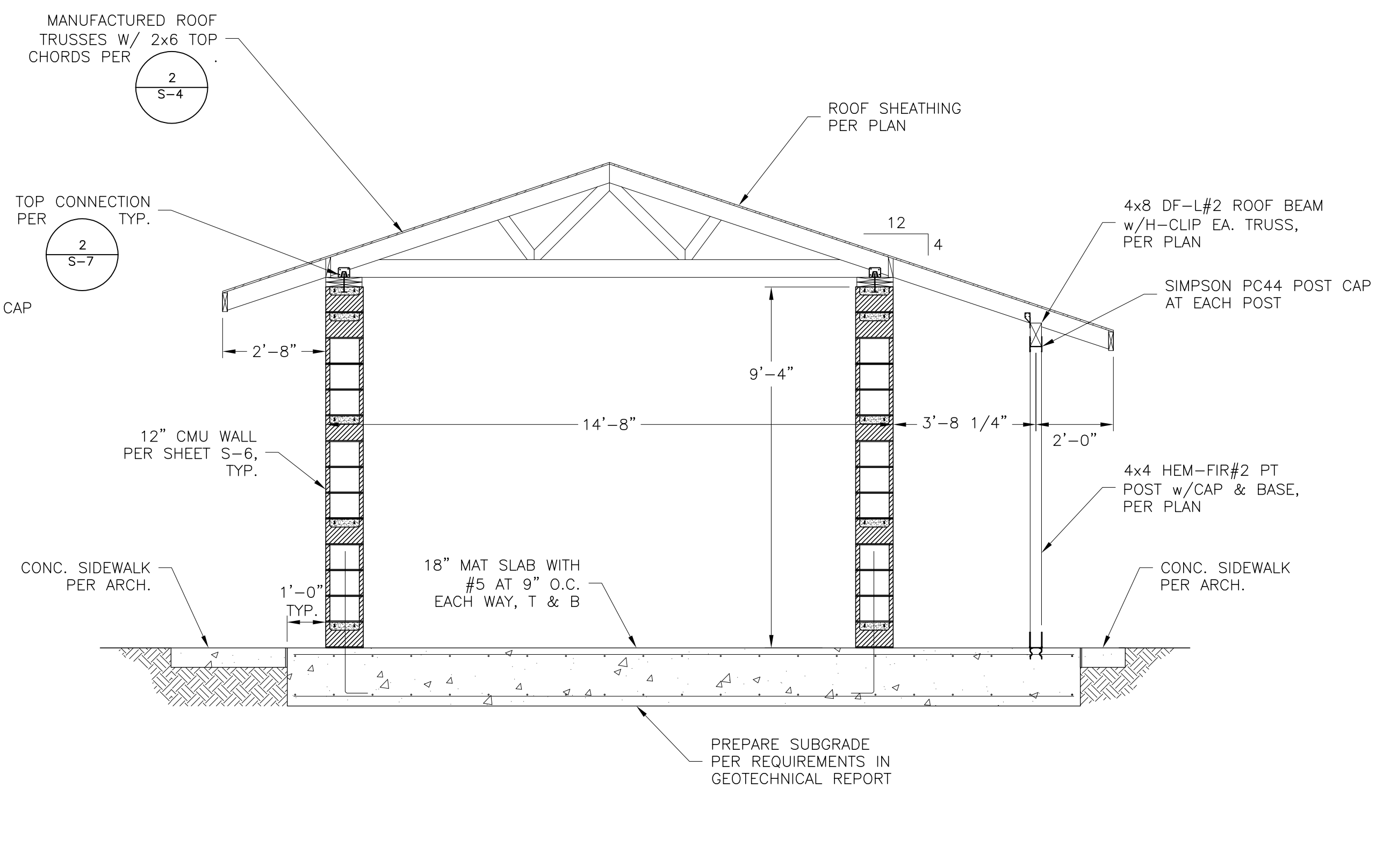
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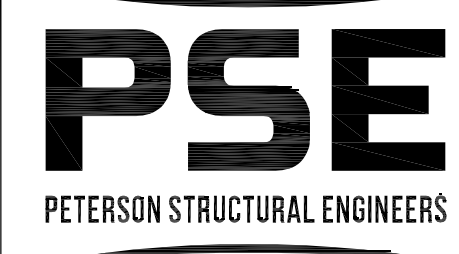
LONGITUDINAL SECTION A
3/8" = 1'-0"



TRANSVERSE SECTION B
3/8" = 1'-0"



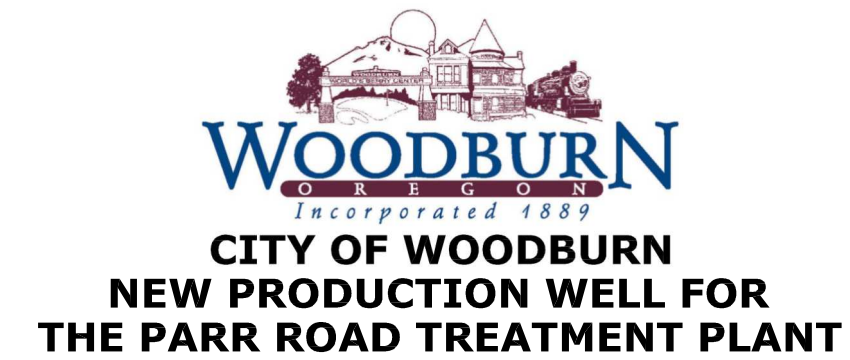
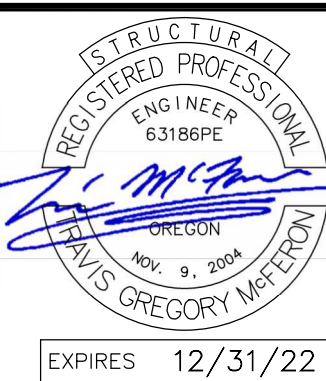
LONGITUDINAL SECTION C
3/8" = 1'-0"



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RAH DRAWN
TGM CHECKED

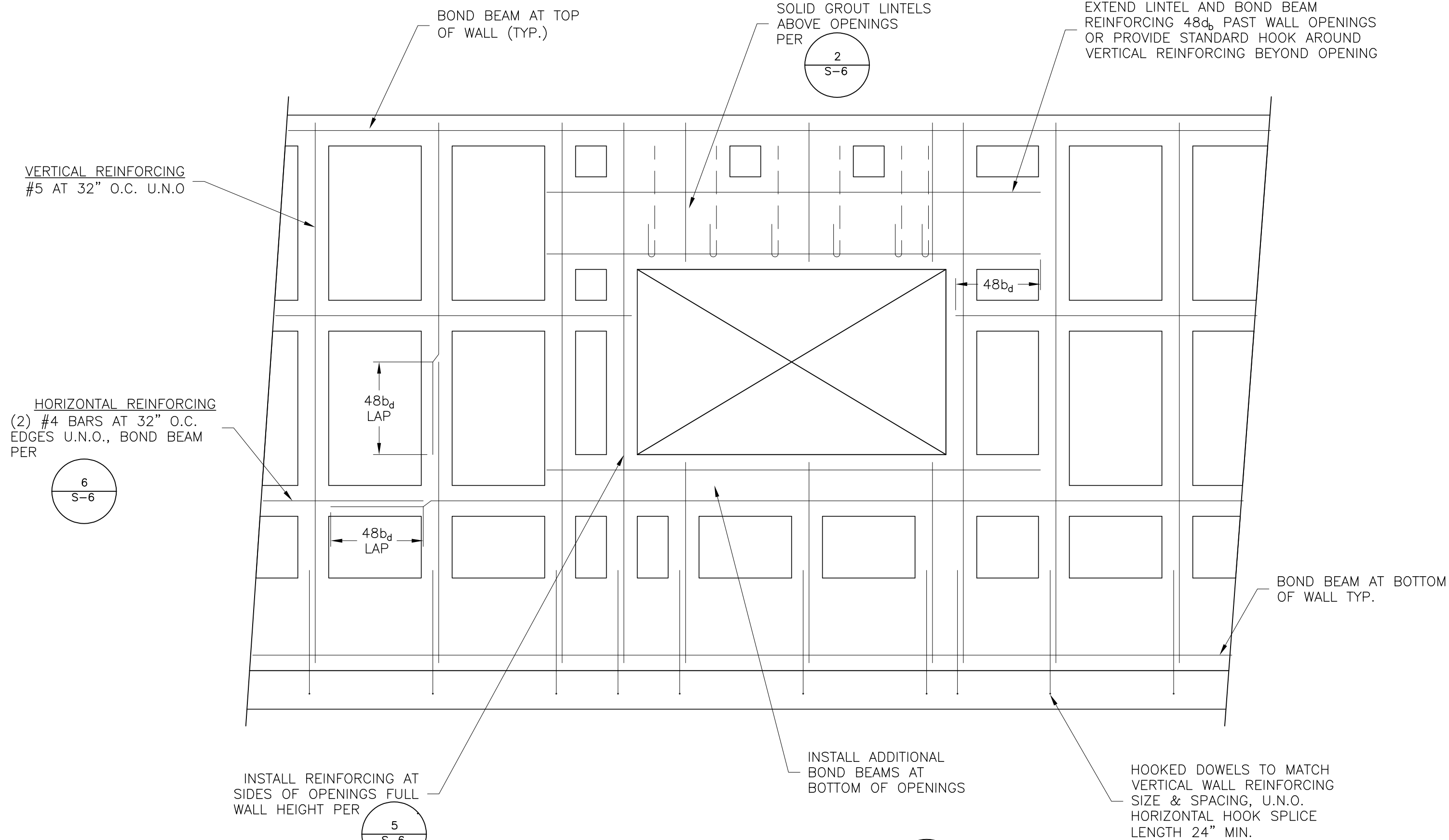


WELLHOUSE STRUCTURAL SECTIONS

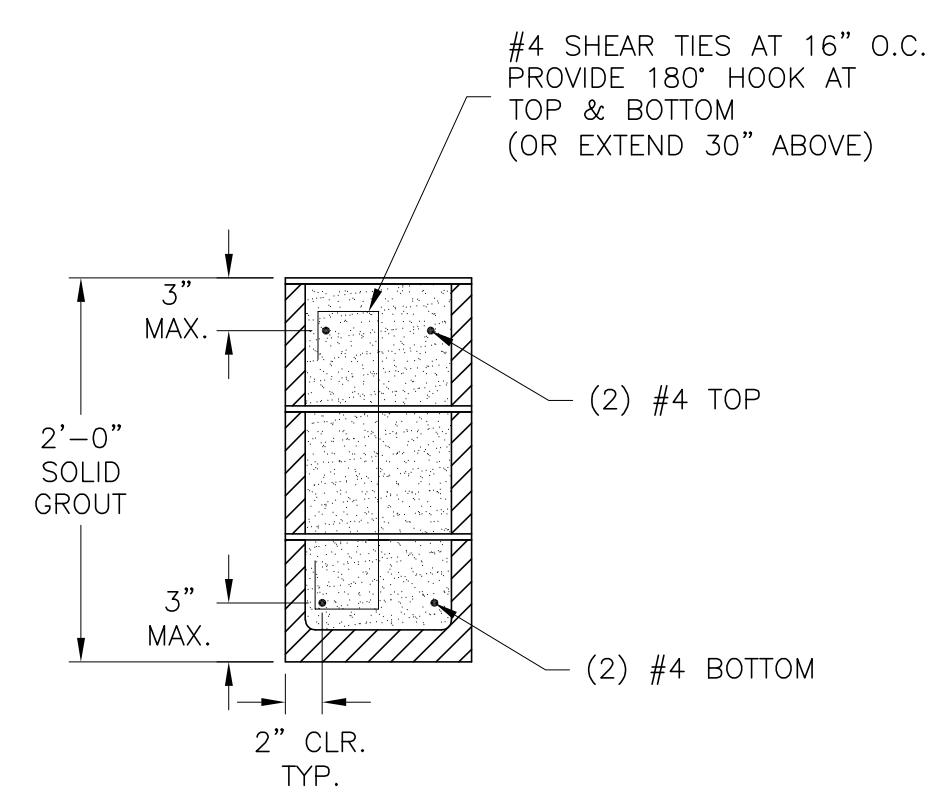
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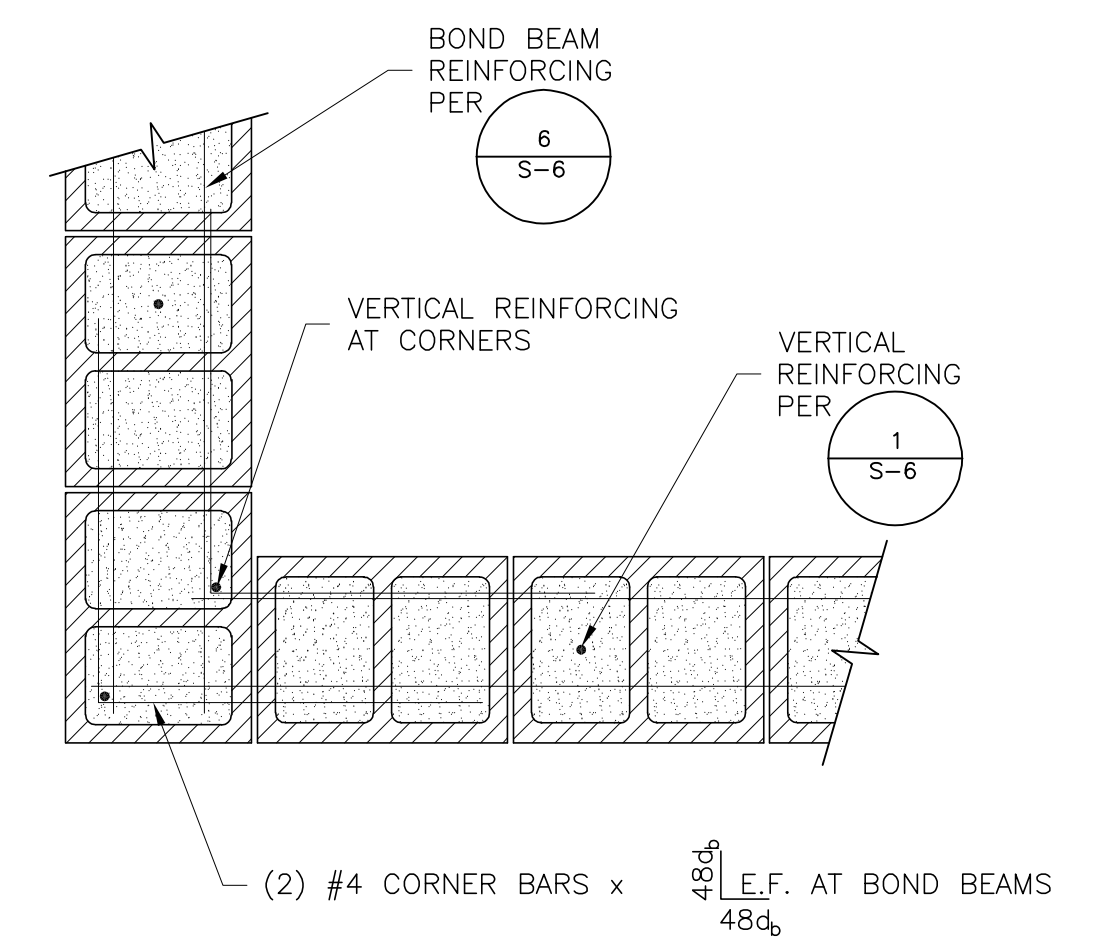
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TYPICAL CMU WALL SECTION 1
NOT TO SCALE S-6



CMU LINTEL DETAIL 2
1" = 1'-0" S-5



CMU WALL CORNER DETAIL 3
1" = 1'-0" S-6

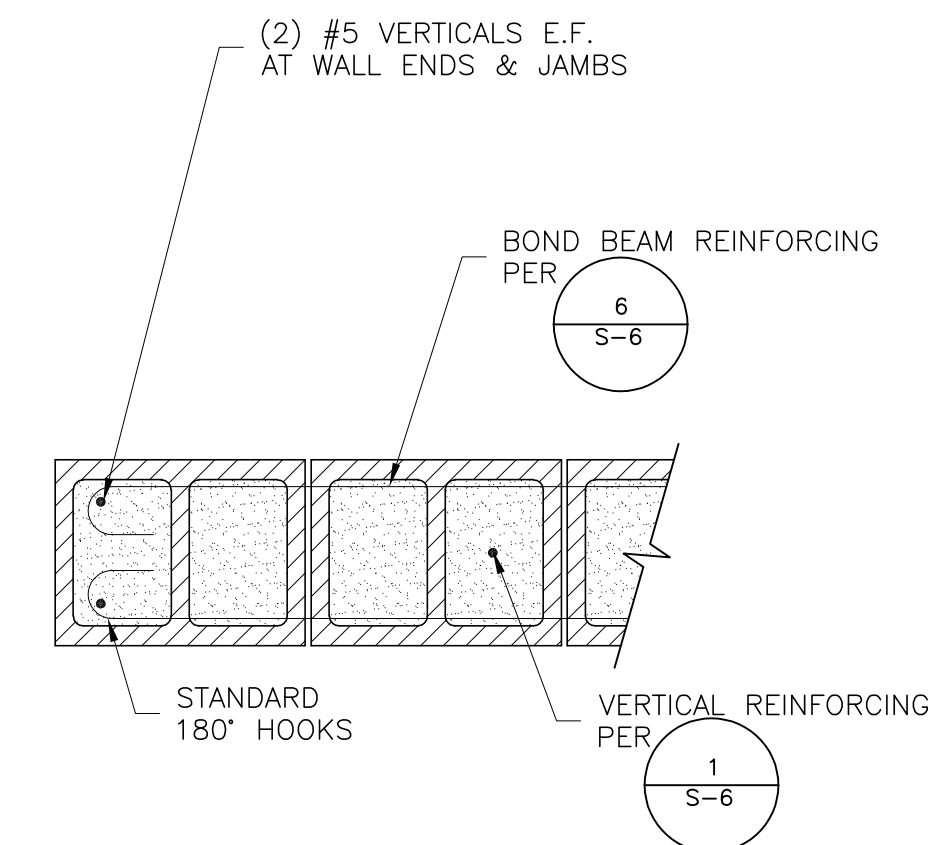
- CMU NOTES:**
1. ALL CELLS SHALL BE SOLID GROUTED
 2. HOOK ALL REINFORCING THAT CANNOT BE EXTENDED
 3. TYPICAL REINFORCING IS SHOWN. REFER TO DETAILS FOR SPECIFIC OR ADDITIONAL REINFORCING
 4. LAP ALL REINFORCING A MINIMUM OF 48 BAR DIAMETERS

INSTALL REINFORCING AT SIDES OF OPENINGS FULL WALL HEIGHT PER 5 S-6

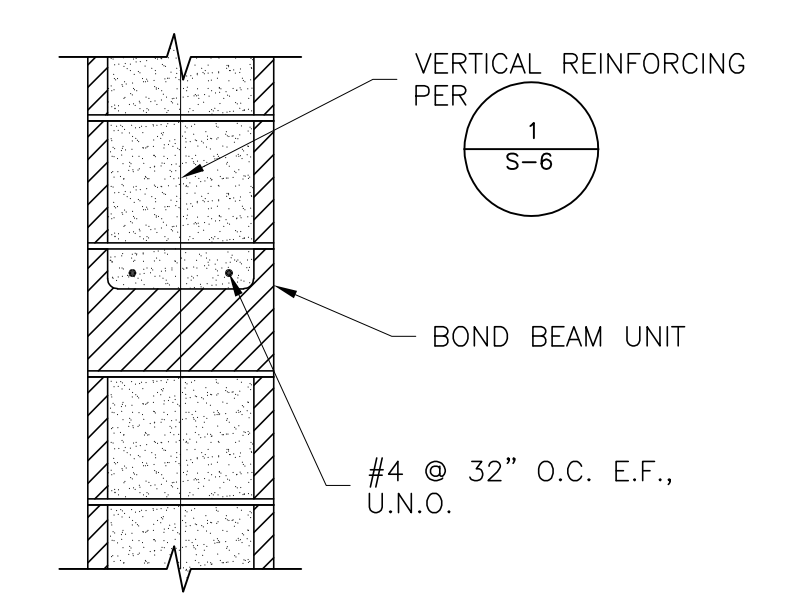
INSTALL ADDITIONAL BOND BEAMS AT BOTTOM OF OPENINGS

HOOKED DOWELS TO MATCH VERTICAL WALL REINFORCING SIZE & SPACING, U.N.O. HORIZONTAL HOOK SPLICE LENGTH 24" MIN.

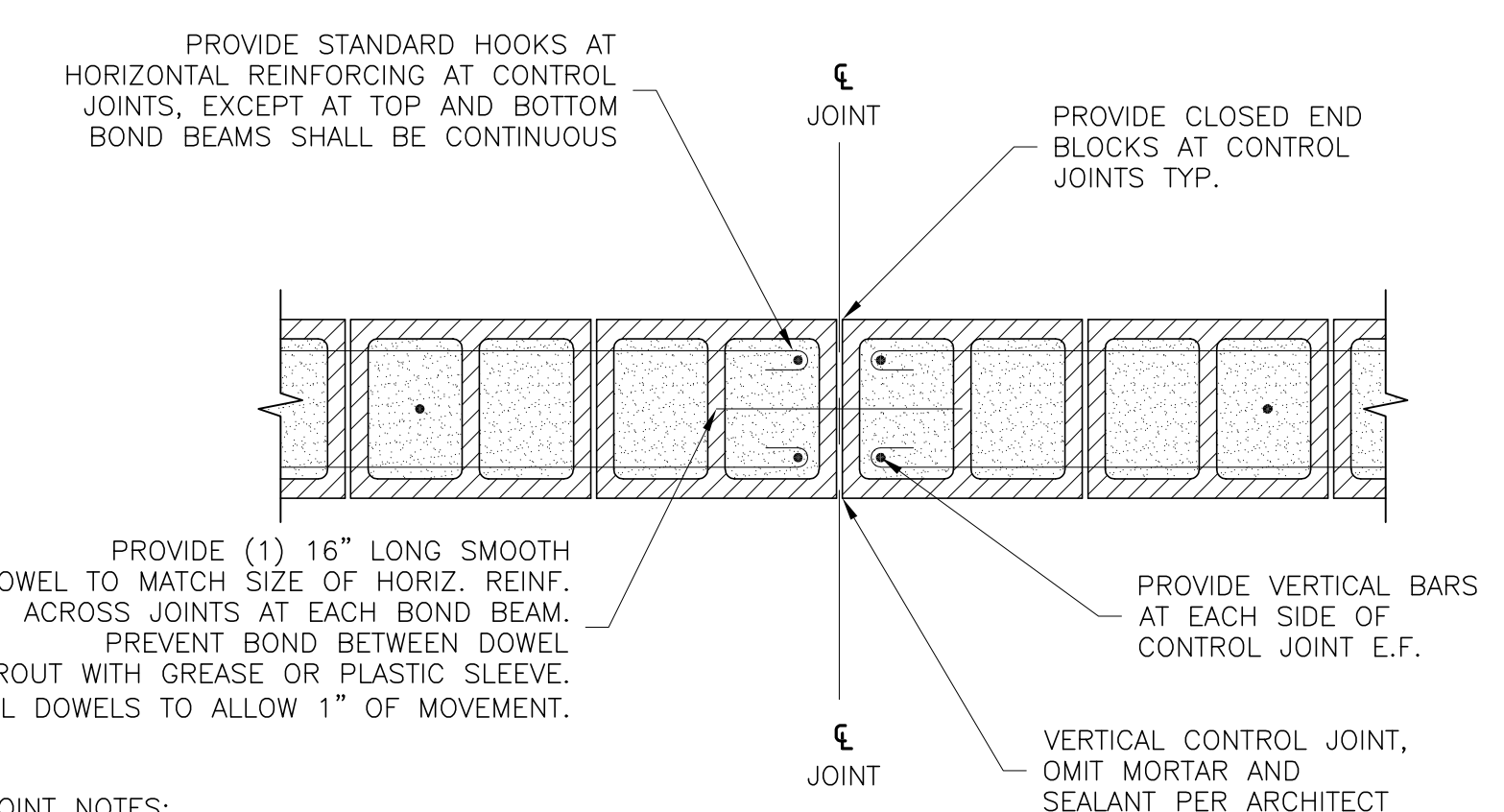
DETAIL NOT USED



JAMB OR END OF WALL DETAIL 5
1" = 1'-0" S-6



BOND BEAM DETAIL 6
1" = 1'-0" S-6



- CONTROL JOINT NOTES:**
- PROVIDE CONTINUOUS REINFORCING AT THE TOP AND BOTTOM BOND BEAMS.
 - PROVIDE VERTICAL CONTROL JOINTS AT INTERVALS NOT TO EXCEED 20'-0" OR (2) TIMES THE WALL HEIGHT UNLESS SPECIFICALLY NOTED OTHERWISE.
 - CONTRACTOR SHALL COORDINATE LOCATION OF JOINT WITH ARCHITECT AND STRUCTURAL ENGINEER

CMU VERTICAL CONTROL JOINT 7
1" = 1'-0" S-6

UNUSED 4
1" = 1'-0" S-6

PSE
PETERSON STRUCTURAL ENGINEERS

9400 SW Barnes Rd.,
Suite 100
Portland, Oregon 97225
(503) 292-1635

PSE Project #: 1901-0197
Date: 03/09/2022

NOTICE

0 1/2 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

RAH
DESIGNED
RAH
DRAWN
TGM
CHECKED

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER 63186PE OREGON NOV. 9, 2004

Gregory Peterson

EXPIRES 12/31/22

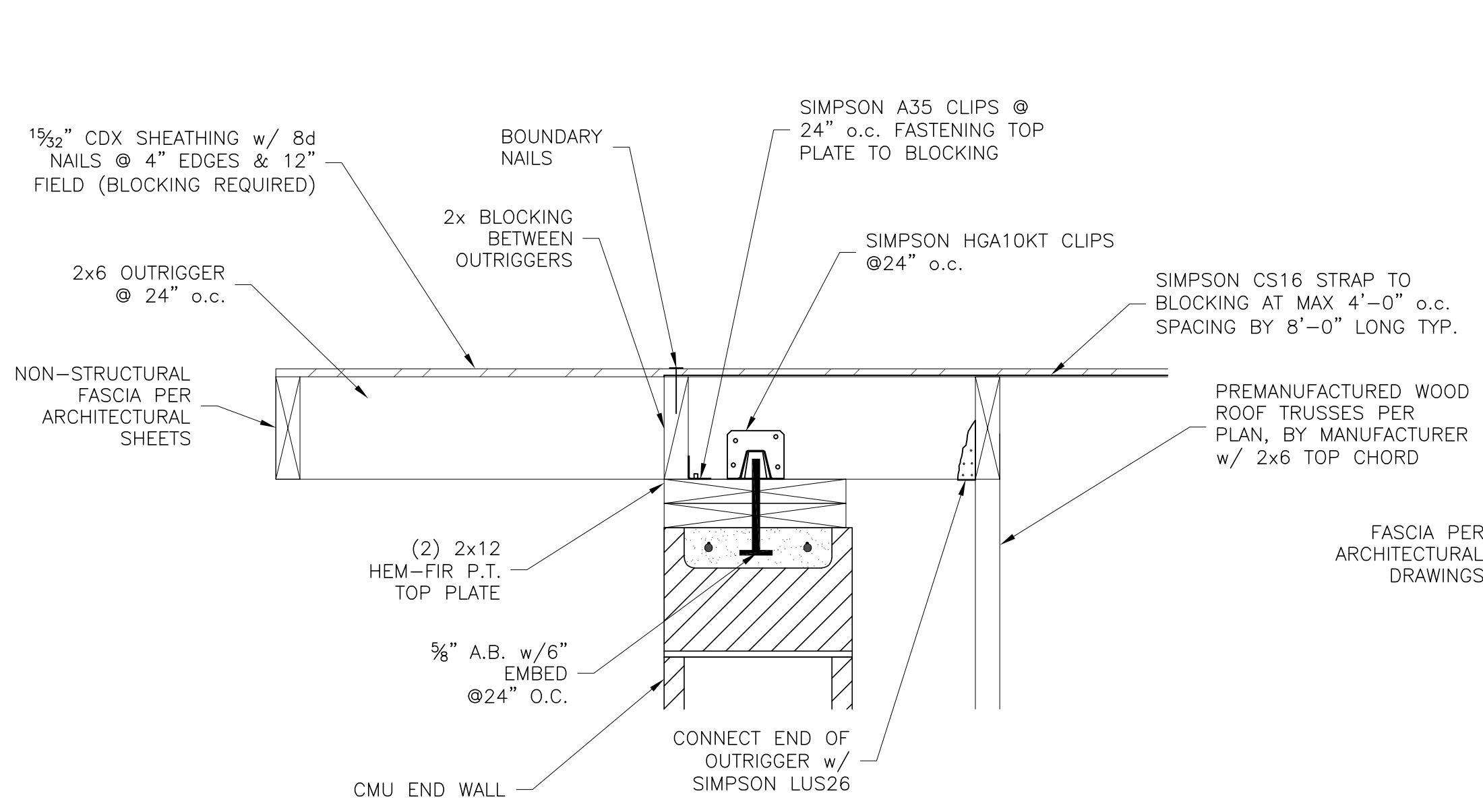
murraysmith

WOODBURN
CITY OF WOODBURN
NEW PRODUCTION WELL FOR THE PARR ROAD TREATMENT PLANT

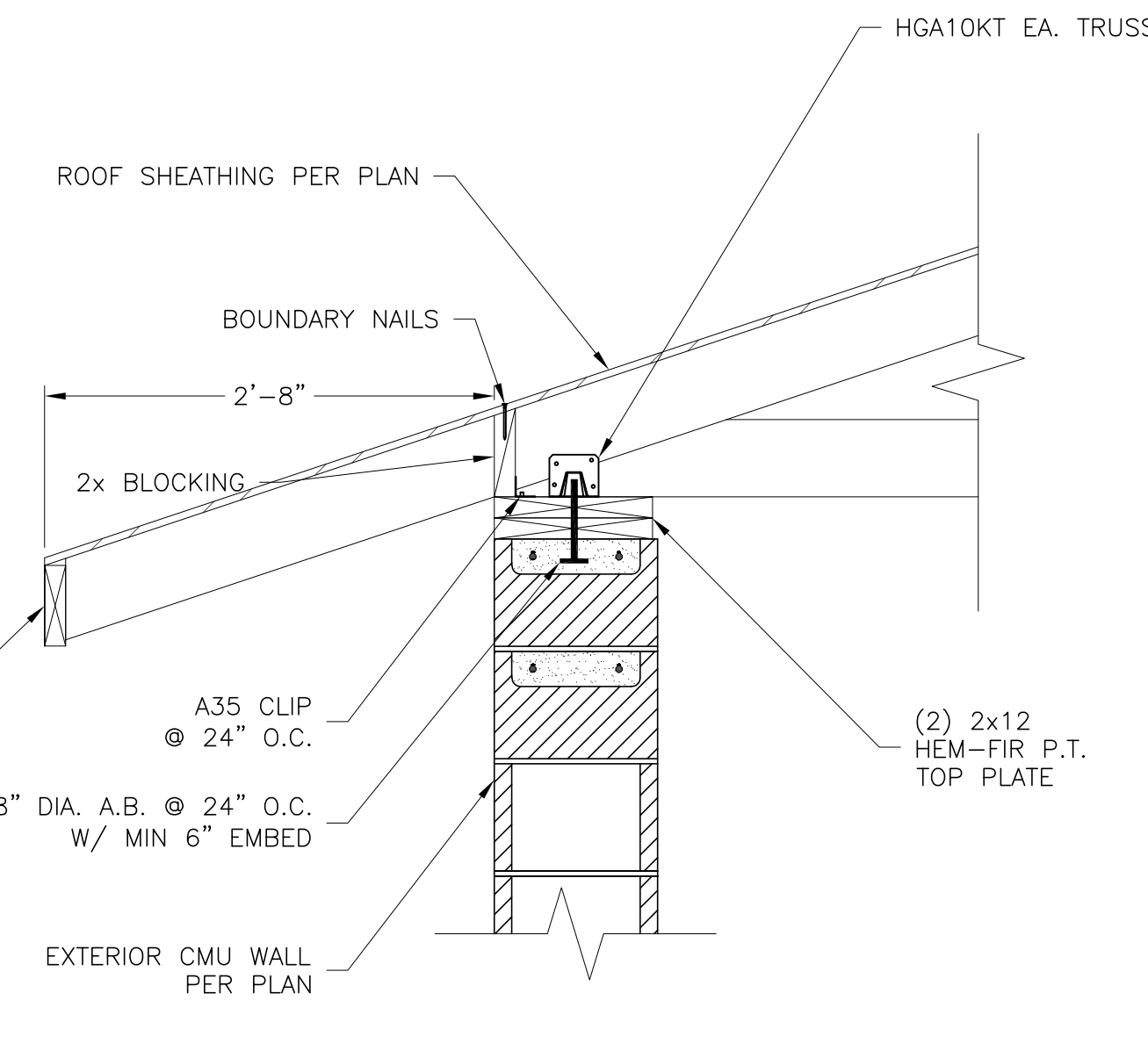
WELLHOUSE
CMU WALL TYPICAL DETAILS

PROJECT NO.: 19-2697 SCALE: AS SHOWN DATE: MARCH 2022

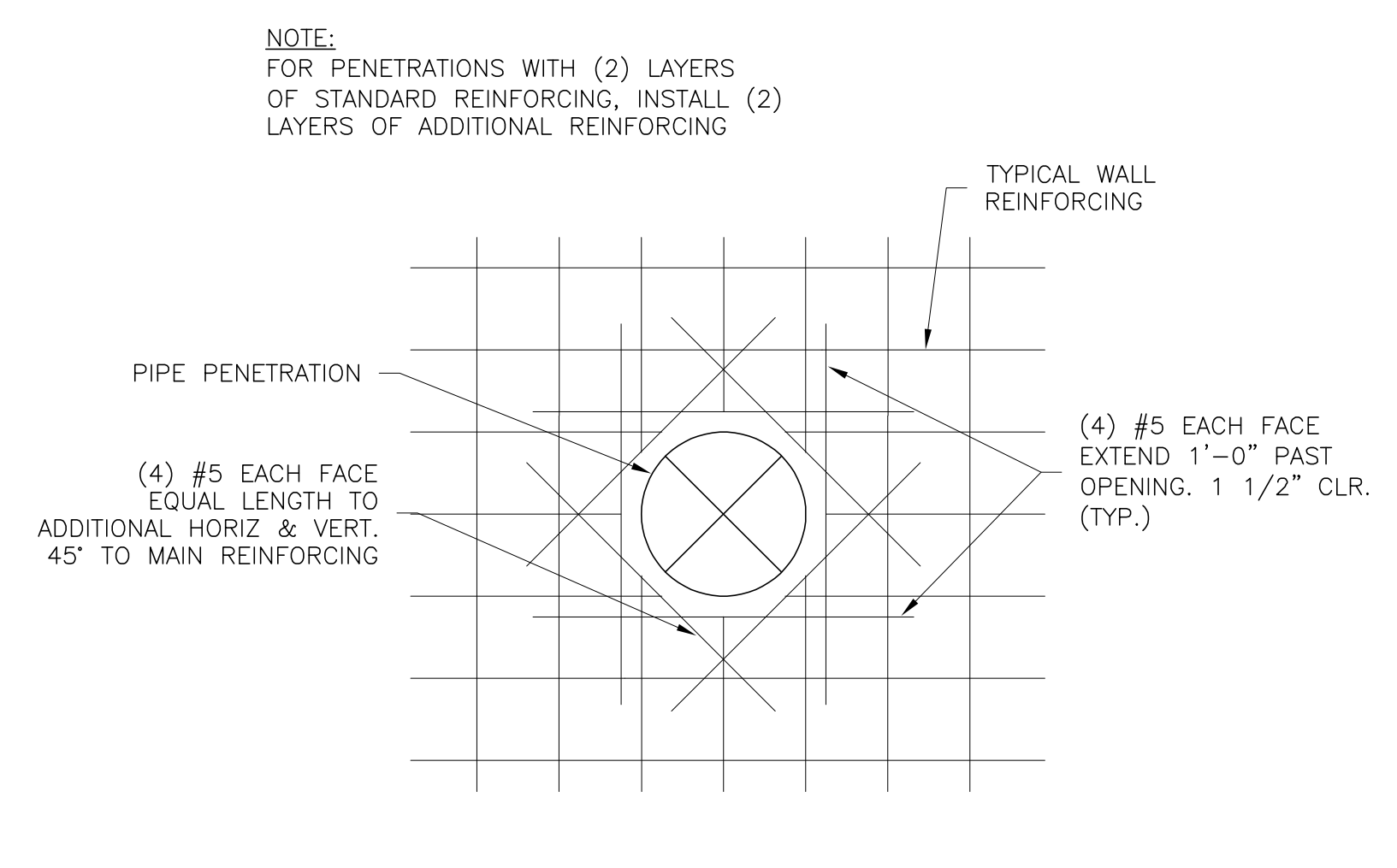
SHEET
S-6
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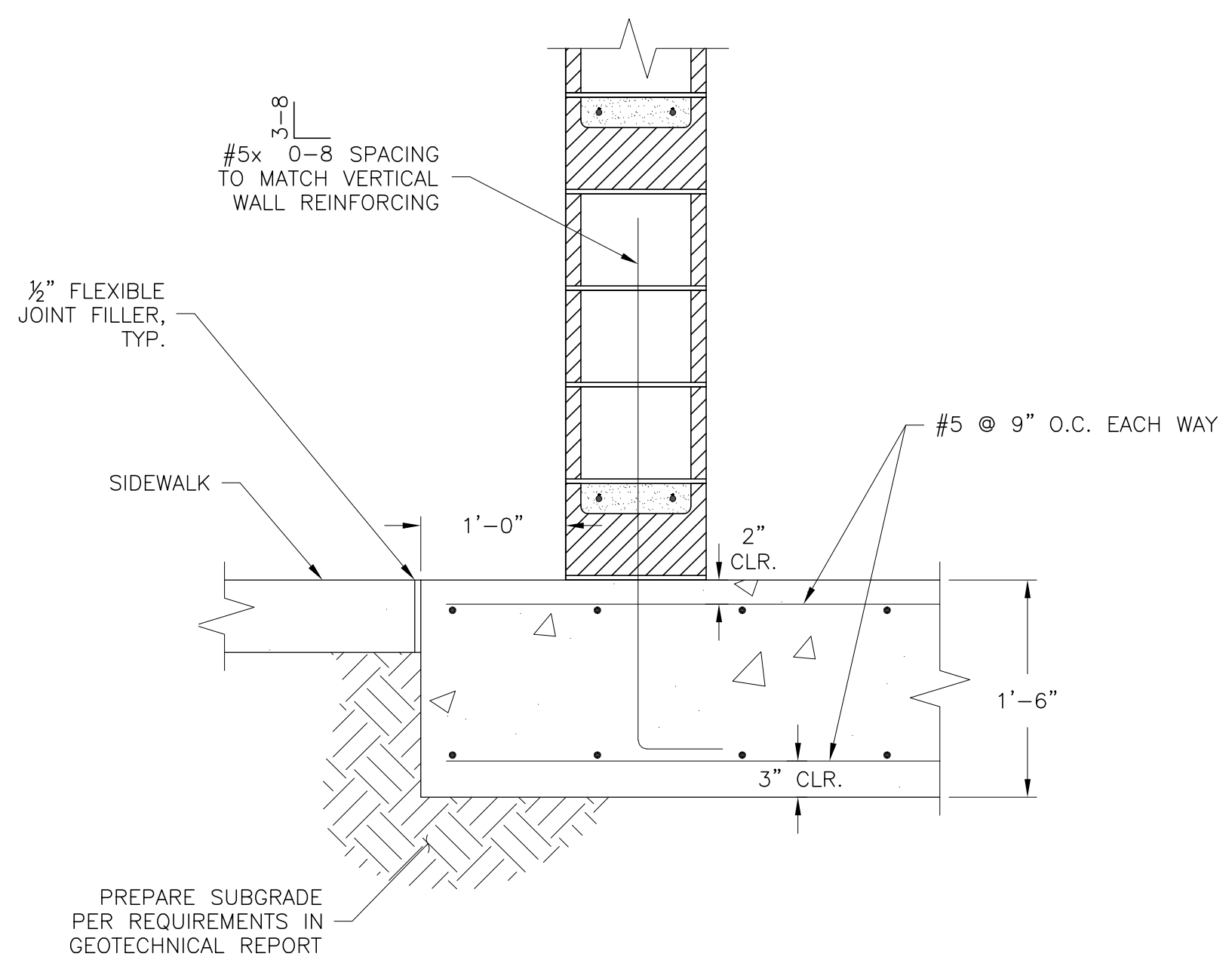
END WALL CONNECTION DETAIL 1
1-1/2" = 1'-0" S-5



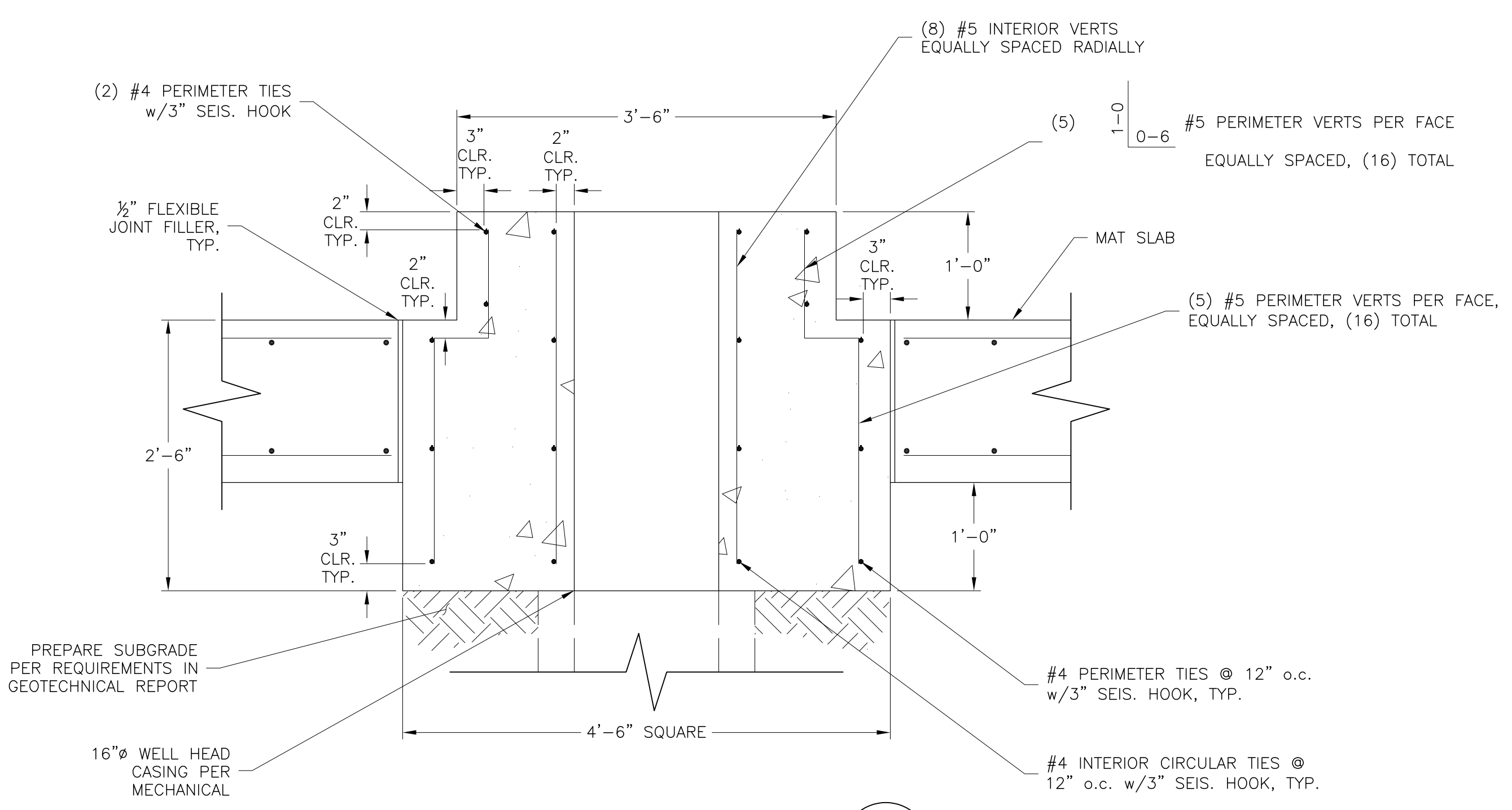
EXTERIOR WALL TOP DETAIL 2
1" = 1'-0" S-5



PIPE PENETRATION SLAB REINFORCEMENT 3
NTS S-5



TYPICAL FOOTING DETAIL 4
1" = 1'-0" S-7



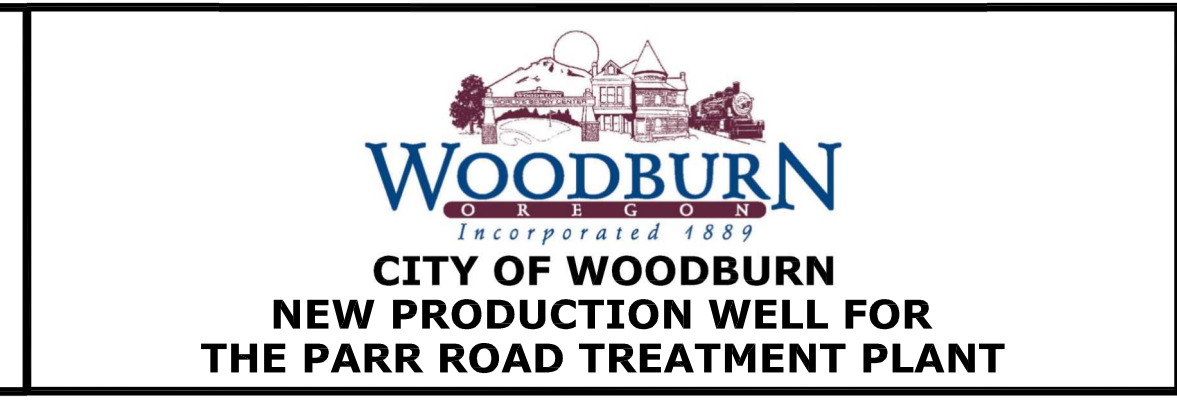
WELL HEAD PEDESTAL DETAIL 5
1" = 1'-0" S-4

PSE
PETERSON STRUCTURAL ENGINEERS
9400 SW Barnes Rd., Suite 100
Portland, Oregon 97225
(503) 292-1635
PSE Project #: 1901-0197
Date: 03/09/2022

NO.	DATE	BY	REVISION

NOTICE
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RAH DESIGNED
RAH DRAWN
TGM CHECKED

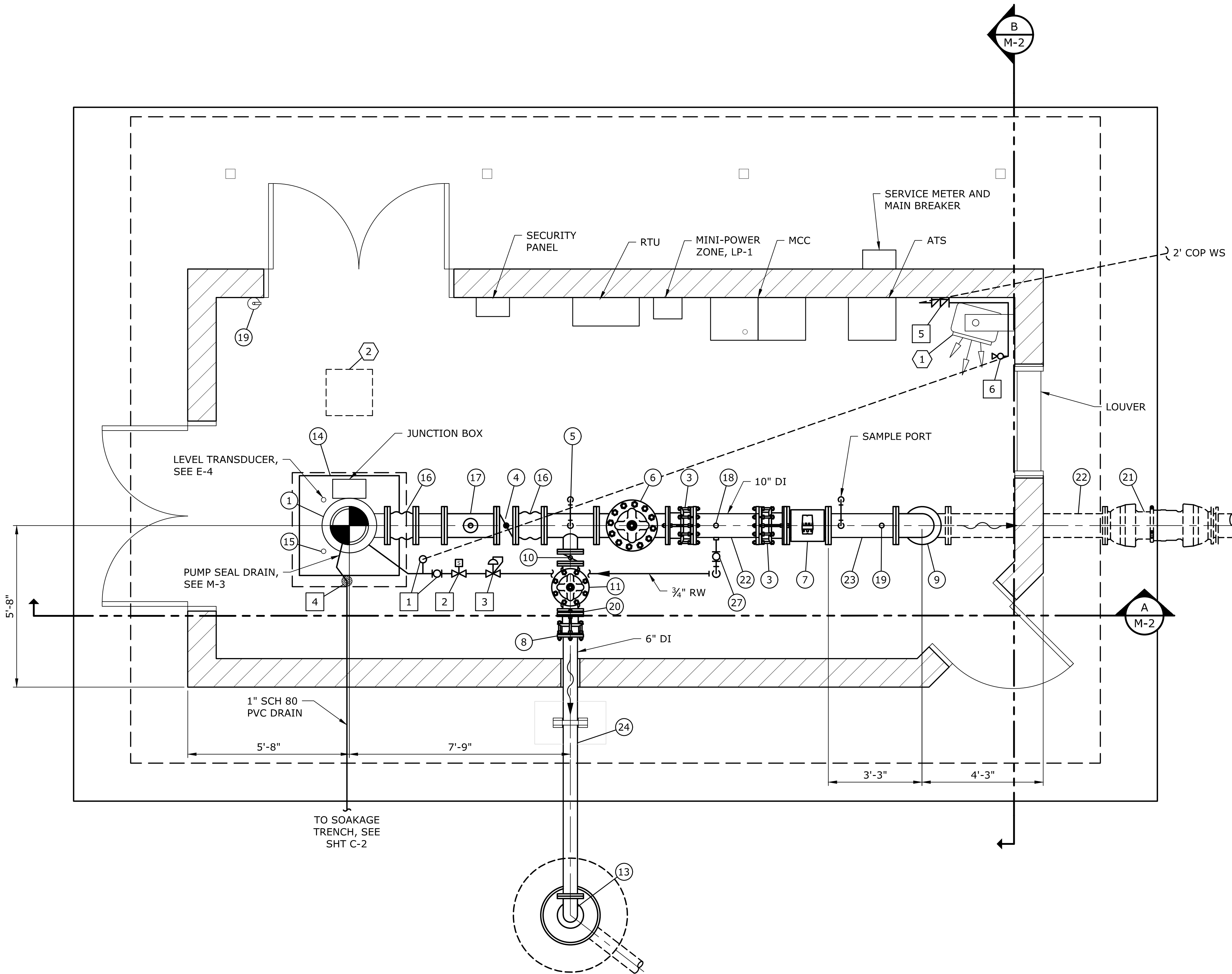


WELLHOUSE STRUCTURAL DETAILS

PROJECT NO.: 19-2697 SCALE: AS SHOWN DATE: MARCH 2022

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FLOOR PLAN
SCALE: 1/2"=1'-0"

NOTES:

1. ALL POTABLE WATER PIPING AND FITTINGS ARE TO BE SOLDERED COPPER, TYPE K, UNLESS OTHERWISE INDICATED.
2. NIPPLES, ELBOWS, AND MISCELLANEOUS FITTINGS REQUIRED MAY NOT BE SHOWN FOR CLARITY. FURNISH AND INSTALL UNIONS AS SHOWN AND AS NEEDED TO FACILITATE DISASSEMBLY OF PIPE FOR SYSTEM MAINTENANCE.
3. ALL WORK AND EQUIPMENT SHALL BE IN ACCORDANCE WITH STATE OF OREGON MECHANICAL SPECIALTY CODE AND PLUMBING SPECIALTY CODE.
4. ALL PIPING, JOINTS, AND FLANGES TO BE RATED FOR 250 PSI TEST PRESSURE.
5. PIPE SUPPORTS ARE SHOWN IN SOME LOCATIONS. CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE LOCATION AND NUMBER OF ALL ADDITIONAL SUPPORTS TO PROPERLY SUPPORT PIPING, VALVES, AND EQUIPMENT CONNECTS TO PREVENT DEFLECTION AND STRESSES.

PIPING MATERIAL LIST

- | | |
|--|--|
| <ul style="list-style-type: none"> ① DEEP WELL VERTICAL TURBINE PUMP, PREMIUM EFFICIENCY VERTICAL TURBINE MOTOR W/ CAST IRON FLG DISCHARGE HEAD ② STANDON S89 PIPE SUPPORT, SEE NOTE 5 ③ 10" DISMANTLING JT, FLG ④ 10" BFV, FLG ⑤ 10"x6" TEE, FLG ⑥ 10" AUTOMATIC FLOW CONTROL VALVE, GLOBE-STYLE, FLG ⑦ 10" MAG METER, FLG ⑧ 6" DISMANTLING JT, FLG ⑨ 10" 90° BEND, FLG ⑩ 6" BFV, FLG ⑪ 6" WELL PURGE VALVE, FLG ⑫ STANDON S92 PIPE SUPPORT, SEE NOTE 5 ⑬ 6" 90° BEND, FLG ⑭ CONC PUMP BASE ⑮ WELL ACCESS PORTS, SEE DET X, SHT X - PROVIDE 1" SCHED 40 PVC CONDUIT THROUGH CONC PUMP BASE FROM ACCESS PORT TO RTU PER ELEC SHTS ⑯ 10" FLEX RUBBER CPLG, FLG ⑰ 10"x2" FAB STL TEE, FLG | <ul style="list-style-type: none"> ⑱ 1/2" THREADOLET AND PRESS GAUGE ASSY ⑲ 10LB FIRE EXTINGUISHER, SEE SPECS ⑳ ORIFICE PLATE ㉑ 10" FLEX EXP JT, FLGXMJ ㉒ 10" SPL, FLGXPE, LENGTH AS REQ'D ㉓ 10" SPL, FLGXFLG, LENGTH AS REQ'D ㉔ 6" SPL, FGLXPE, LENGTH AS REQ'D ㉕ 2" DUAL PORT WELL SERVICE AIR VALVE, CLASS 250 - PROVIDE 2" SCHED 40 STL AIR VALVE VENT PIPING, ROUTE TO FLR DR - PROVIDE 1/4" COP DR LINE AT BASE OF VENT PIPING, ROUTE TO FLR DR ㉖ 2" SCHED 40 STL AIR VALVE VENT PIPING W/ INSECT SCREEN, PROVIDE BRACING AS REQ'D ㉗ PROVIDE 1" FOAM PADDING BETWEEN PIPE AND CONC PAD, CAULK TOP OF PENETRATION |
|--|--|

PLUMBING MATERIAL LIST

- ① 3/4" BALL VALVE, TYP
- ② 3/4" SOLENOID VALVE AND FLOW SWITCH
- ③ 3/4" PRESS REDUCING REGULATING VALVE
- ④ 4" ABS RDCR W/ BUSHING ANCHORED TO PUMP PEDESTAL W/ SST EXPANSION ANCHORS & SST METAL CLAMPS
- ⑤ 1" REDUCED PRESSURE BACKFLOW PREVENTOR, SEE SPECS. PROVIDE ASSY WITH 2x1" BV, 2"x1" RDCR, 1"x3/4" RDCR
- ⑥ 3/4" HOSE BIBB, LOCATE PER ENGINEER

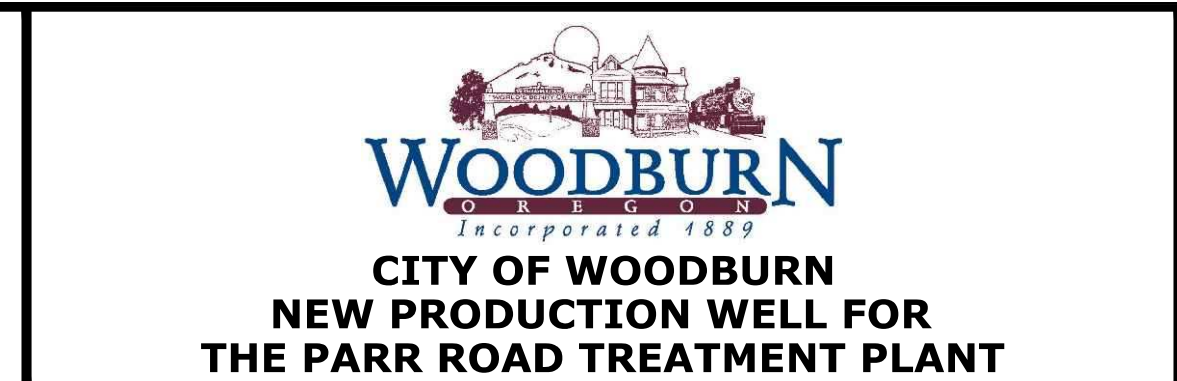
HVAC MATERIAL LIST

- ① WALL-MOUNTED UNIT HEATER WITH INTEGRAL THERMOSTAT, 3.0 KW, QMARK MUH, OR EQUAL, SEE SPECS
- ② ROOF-MOUNTED EXHAUST FAN, 2,300 CFM, 10 SONES MAX, MFR CURB EXTENTION WITH HINGED BASE, GREENHECK G-160, OR EQUAL, SEE SPECS

NO.	DATE	BY	REVISION

NOTICE
0 1/2 1
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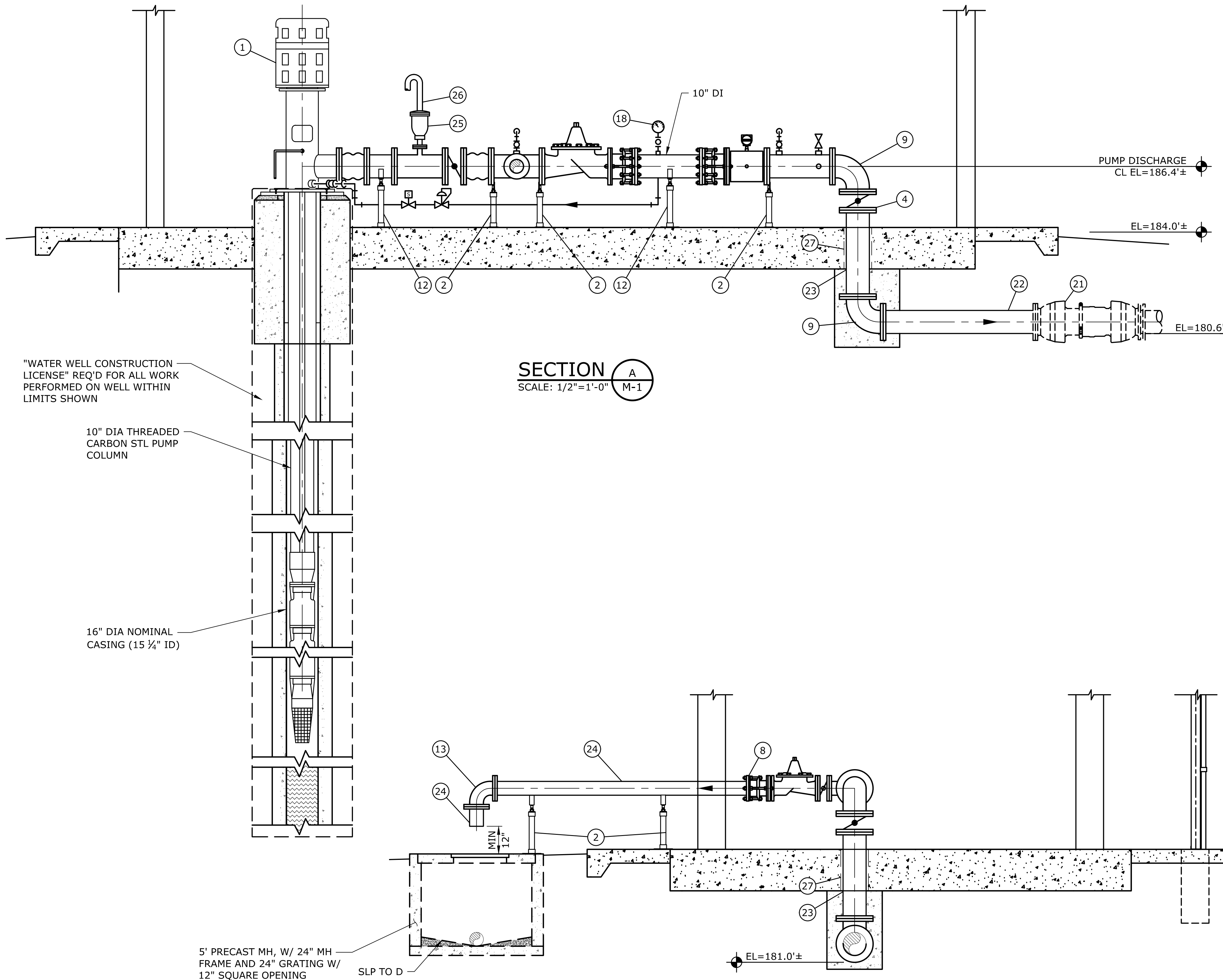
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MBE DRAWN
MLM CHECKED



MECHANICAL PLAN			
PROJECT NO.:	19-2697	SCALE:	AS SHOWN
DATE:	MARCH 2022		

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- NOTES:**
1. ALL POTABLE WATER PIPING AND FITTINGS ARE TO BE SOLDERED COPPER, TYPE K, UNLESS OTHERWISE INDICATED.
 2. NIPPLES, ELBOWS, AND MISCELLANEOUS FITTINGS REQUIRED MAY NOT BE SHOWN FOR CLARITY. FURNISH AND INSTALL UNIONS AS SHOWN AND AS NEEDED TO FACILITATE DISASSEMBLY OF PIPE FOR SYSTEM MAINTENANCE.
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 5. PIPE SUPPORTS ARE SHOWN IN SOME LOCATIONS. CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE LOCATION AND NUMBER OF ALL ADDITIONAL SUPPORTS TO PROPERLY SUPPORT PIPING, VALVES, AND EQUIPMENT CONNECTS TO PREVENT DEFLECTION AND STRESSES.

- PIPING MATERIAL LIST**
- | | |
|--|--|
| ① DEEP WELL VERTICAL TURBINE PUMP, PREMIUM EFFICIENCY VERTICAL TURBINE MOTOR W/ CAST IRON FLG DISCHARGE HEAD | ⑱ 1/2" THREADOLET AND PRESS GAUGE ASSY |
| ② STANDON S89 PIPE SUPPORT, SEE NOTE 5 | ⑲ 10LB FIRE EXTINGUISHER, SEE SPECS |
| ③ 10" DISMANTLING JT, FLG | ⑳ ORIFICE PLATE |
| ④ 10" BFV, FLG | ㉑ 10" FLEX EXP JT, FLGxMJ |
| ⑤ 10"x6" TEE, FLG | ㉒ 10" SPL, FLGxPE, LENGTH AS REQ'D |
| ⑥ 10" AUTOMATIC FLOW CONTROL VALVE, GLOBE-STYLE, FLG | ㉓ 10" SPL, FLGxFLG, LENGTH AS REQ'D |
| ⑦ 10" MAG METER, FLG | ㉔ 6" SPL, FGLxPE, LENGTH AS REQ'D |
| ⑧ 6" DISMANTLING JT, FLG | ㉕ 2" DUAL PORT WELL SERVICE AIR VALVE, CLASS 250 - PROVIDE 2" SCHED 40 STL AIR VALVE VENT PIPING, ROUTE TO FLR DR - PROVIDE 1/4" COP DR LINE AT BASE OF VENT PIPING, ROUTE TO FLR DR |
| ⑨ 10" 90° BEND, FLG | ㉖ 2" SCHED 40 STL AIR VALVE VENT PIPING W/ INSECT SCREEN, PROVIDE BRACING AS REQ'D |
| ⑩ 6" BFV, FLG | ㉗ PROVIDE 1" FOAM PADDING BETWEEN PIPE AND CONC PAD, CAULK TOP OF PENETRATION |
| ⑪ 6" WELL PURGE VALVE, FLG | |
| ⑫ STANDON S92 PIPE SUPPORT, SEE NOTE 5 | |
| ⑬ 6" 90° BEND, FLG | |
| ⑭ CONC PUMP BASE | |
| ⑮ WELL ACCESS PORTS, SEE DET X, SHT X - PROVIDE 1" SCHED 40 PVC CONDUIT THROUGH CONC PUMP BASE FROM ACCESS PORT TO RTU PER ELEC SHTS | |
| ⑯ 10" FLEX RUBBER CPLG, FLG | |
| ⑰ 10"x2" FAB STL TEE, FLG | |

"WATER WELL CONSTRUCTION LICENSE" REQ'D FOR ALL WORK PERFORMED ON WELL WITHIN LIMITS SHOWN

10" DIA THREADED CARBON STL PUMP COLUMN

16" DIA NOMINAL CASING (15 1/4" ID)

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

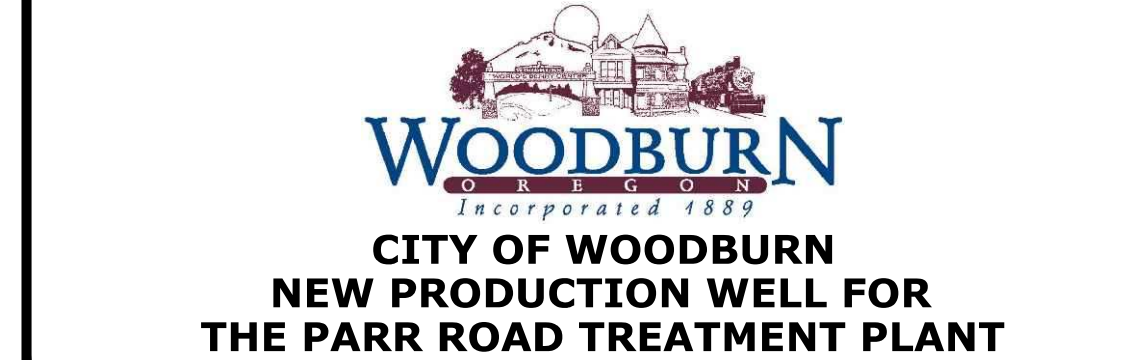
SECTION B
SCALE: 1/2"=1'-0" M-1

NOTICE

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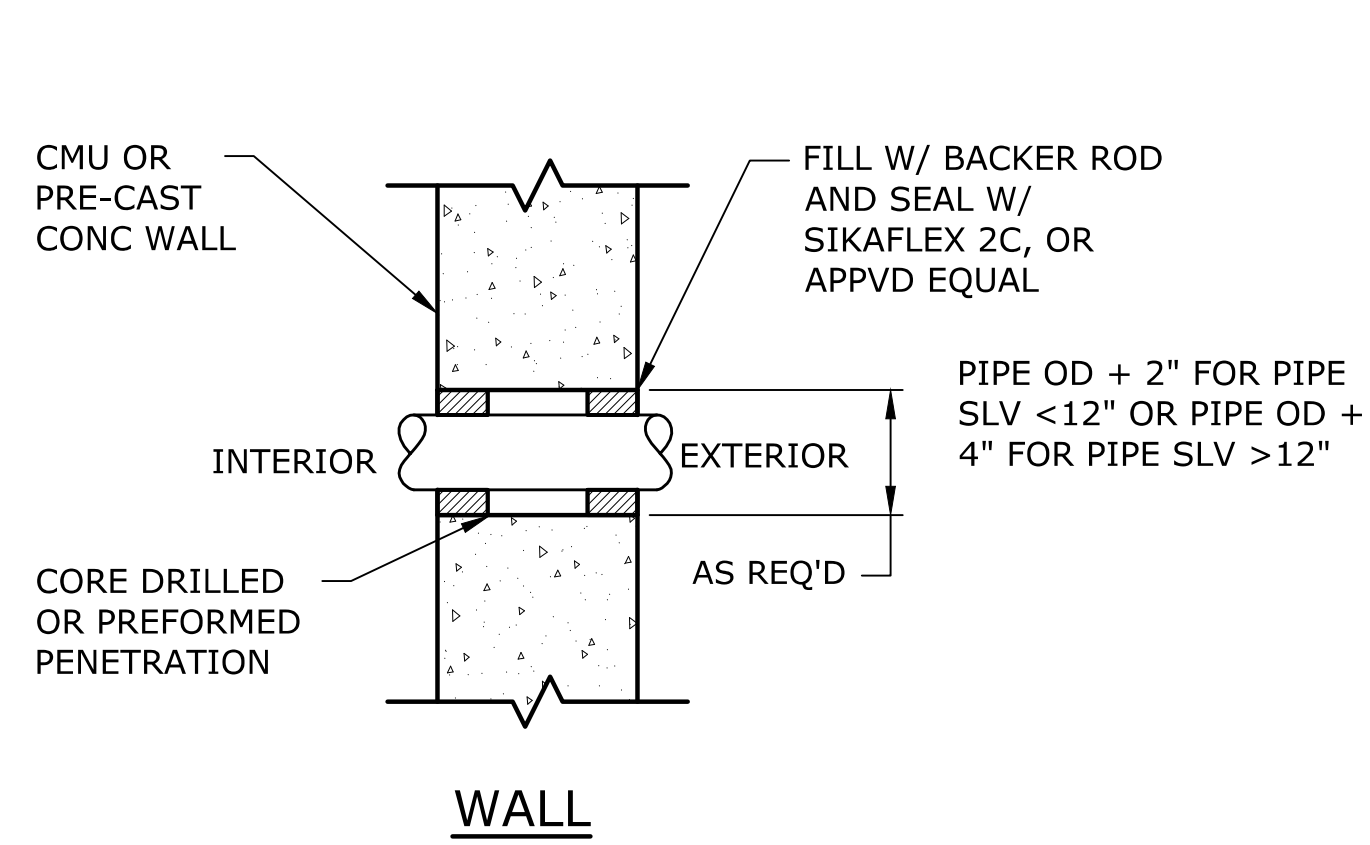
MECHANICAL SECTIONS

PROJECT NO.: 19-2697 SCALE: AS SHOWN DATE: MARCH 2022

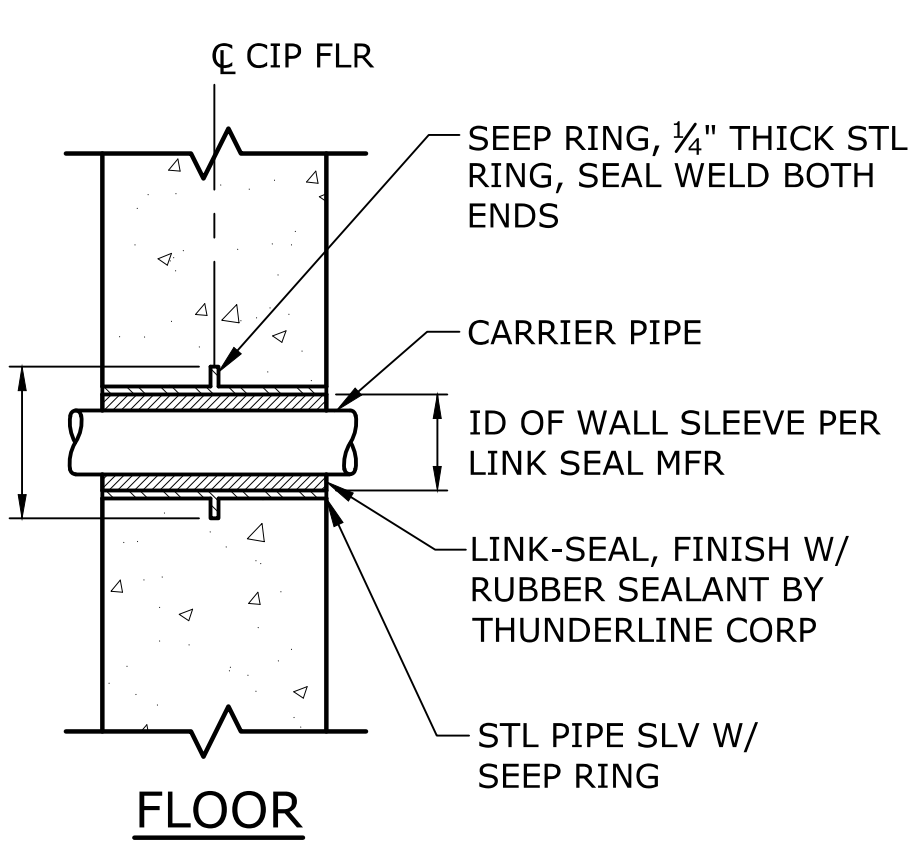
SHEET
M-2
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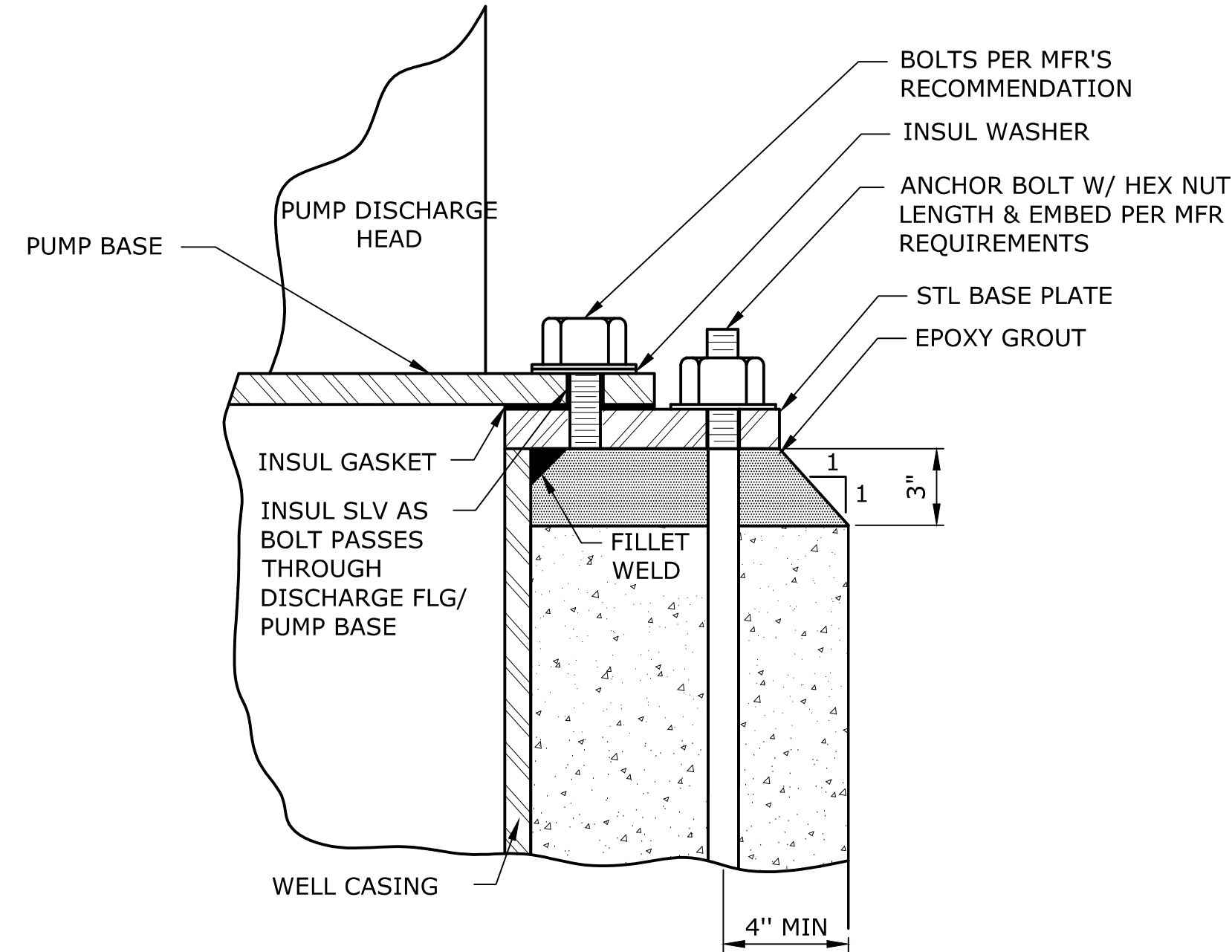
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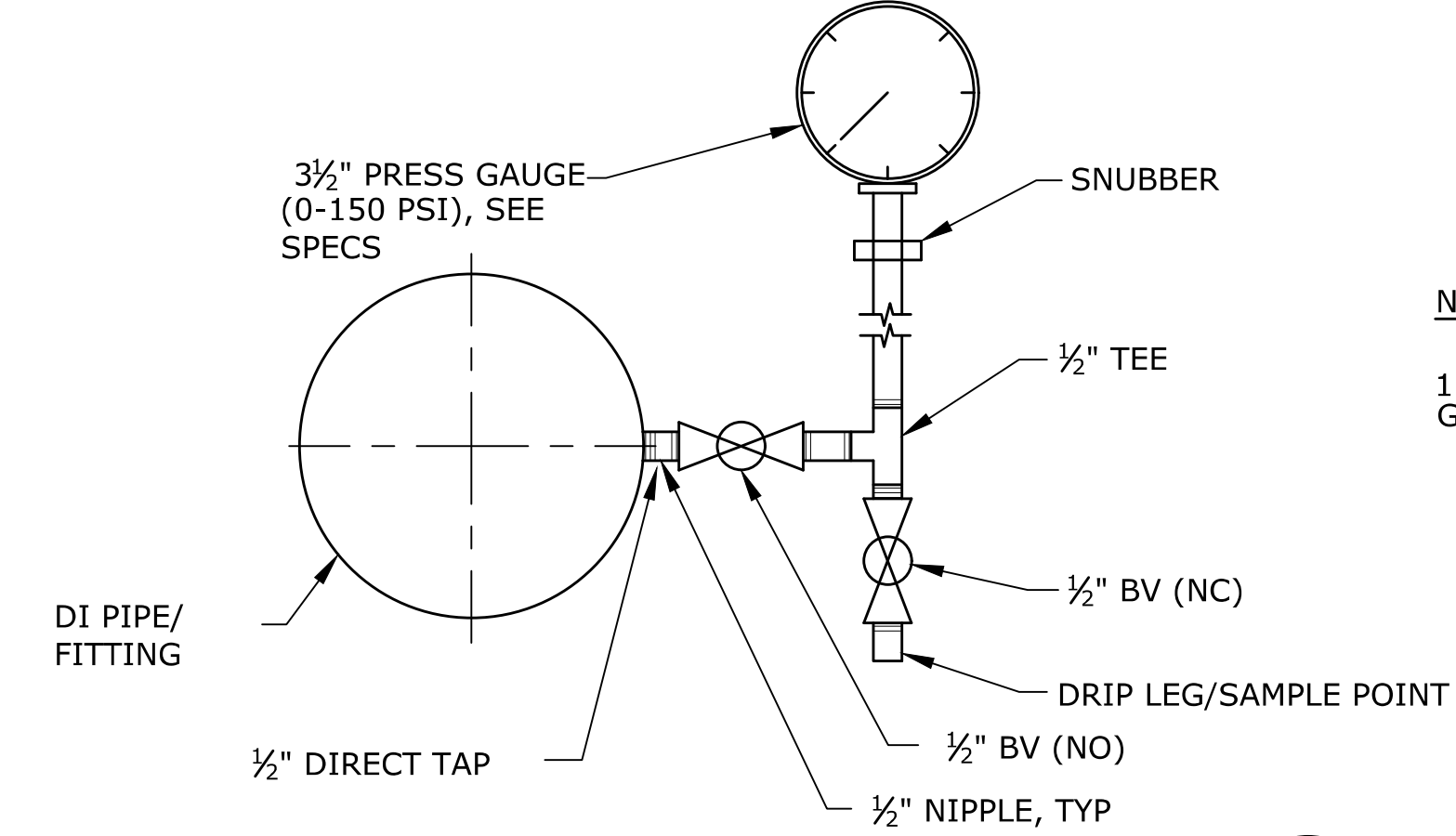
PIPE PENETRATIONS
SCALE: NTS



NOTE:
1. FLOOR SLEEVE WITH SEEP RING TO BE HOT DIP GALVANIZED.

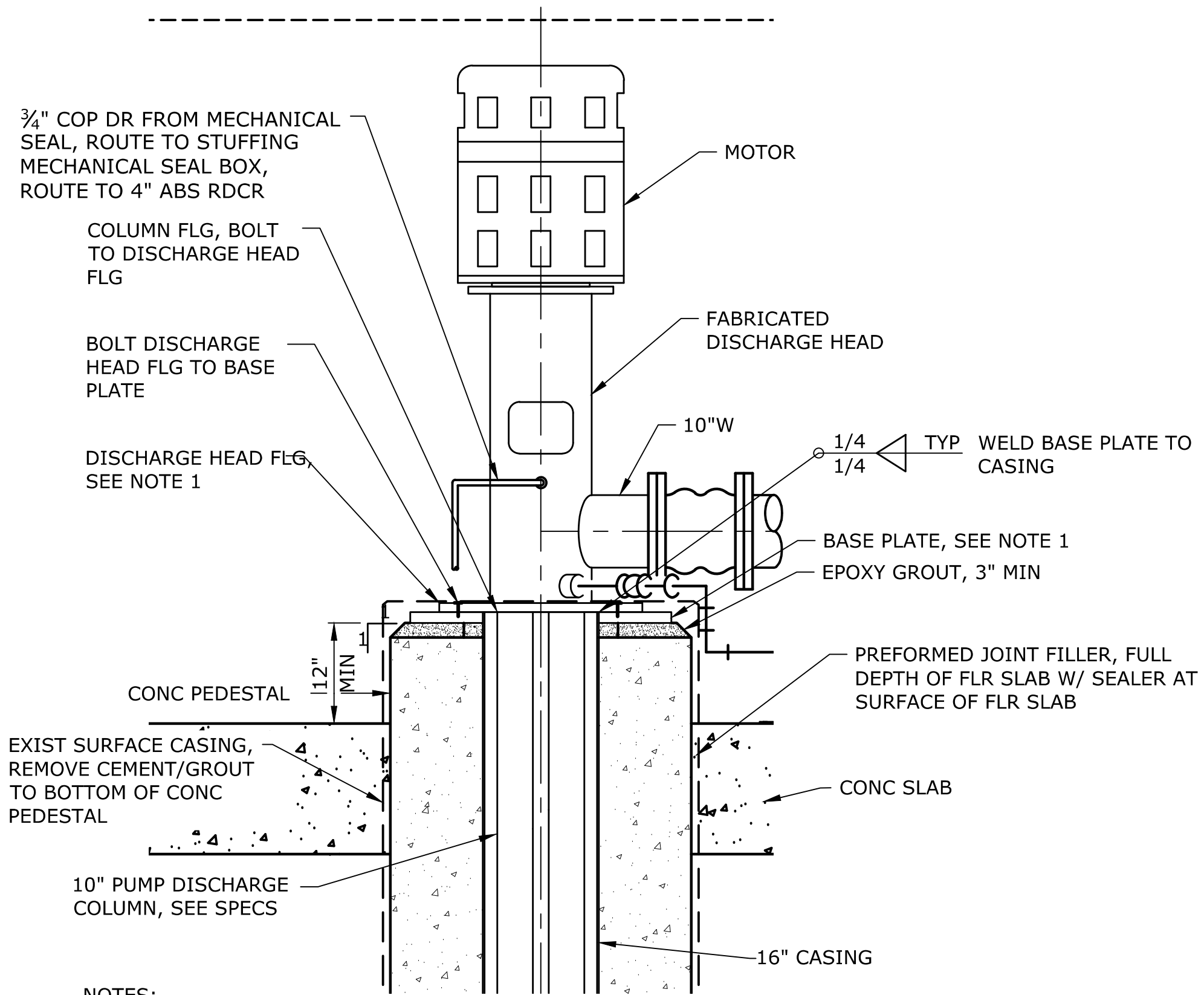


PUMP BASE EDGE DETAIL
SCALE: NTS



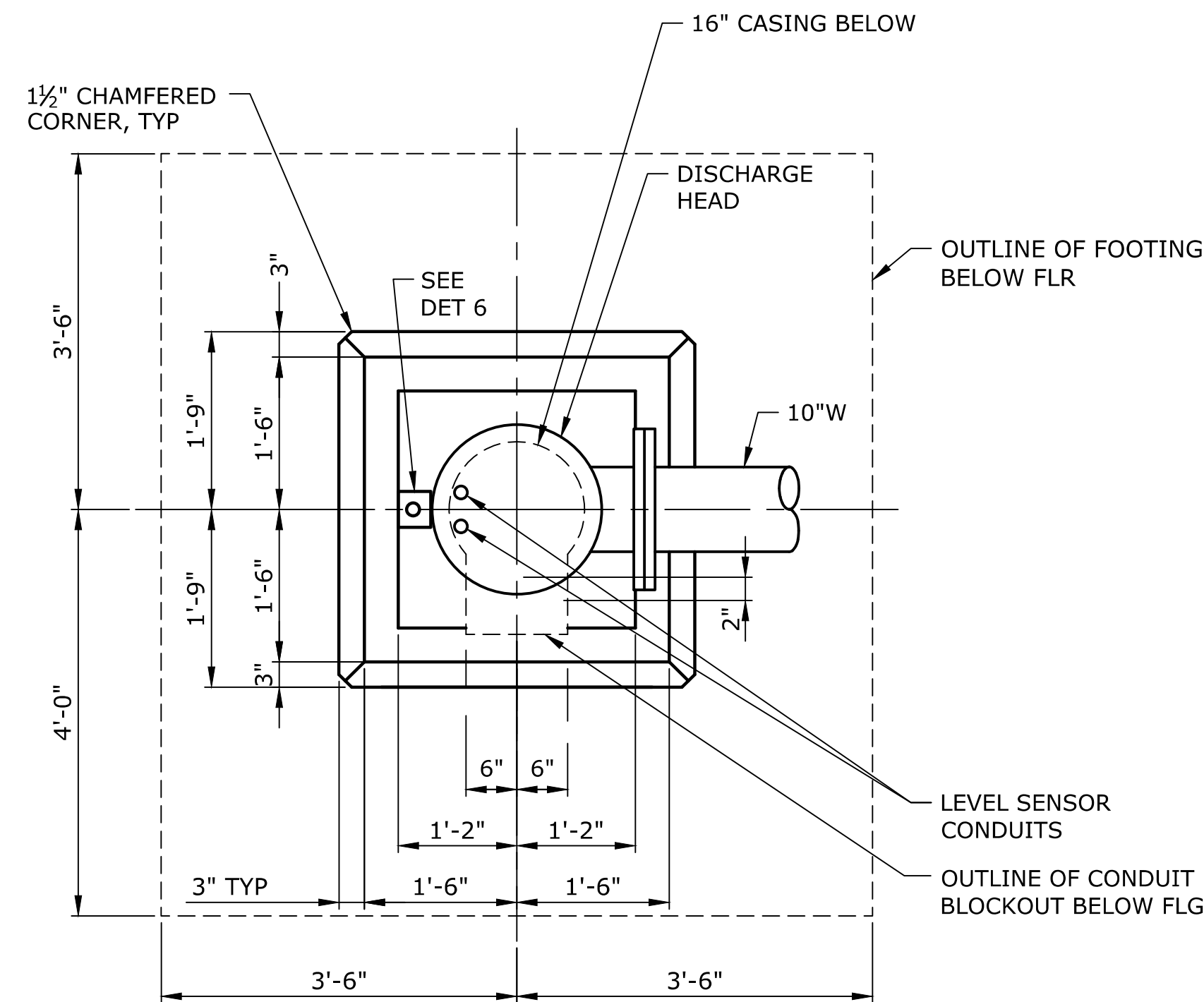
PRESSURE GAUGE DETAIL
SCALE: NTS

NOTES:
1. ALL 1/2\"/>

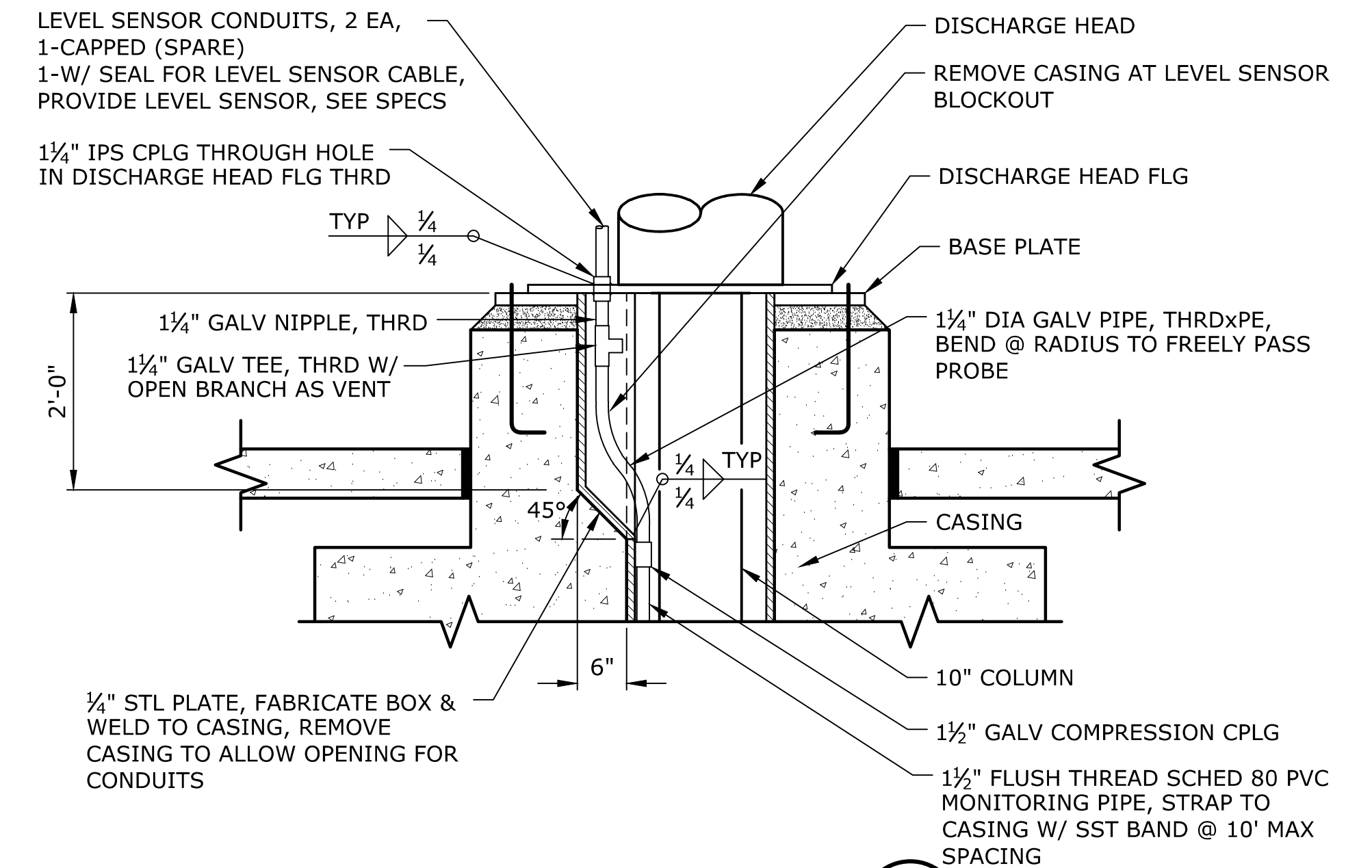


NOTES:
1. DISCHARGE HEAD FLANGE AND BASE PLATE SHALL BE THE RESPONSIBILITY OF THE PUMP MANUFACTURER. APPROXIMATE SIZE SHOWN ON DETAIL 1, THIS SHEET.
2. LOCATION AND SIZE OF ANCHOR BOLTS PER PUMP MANUFACTURER.

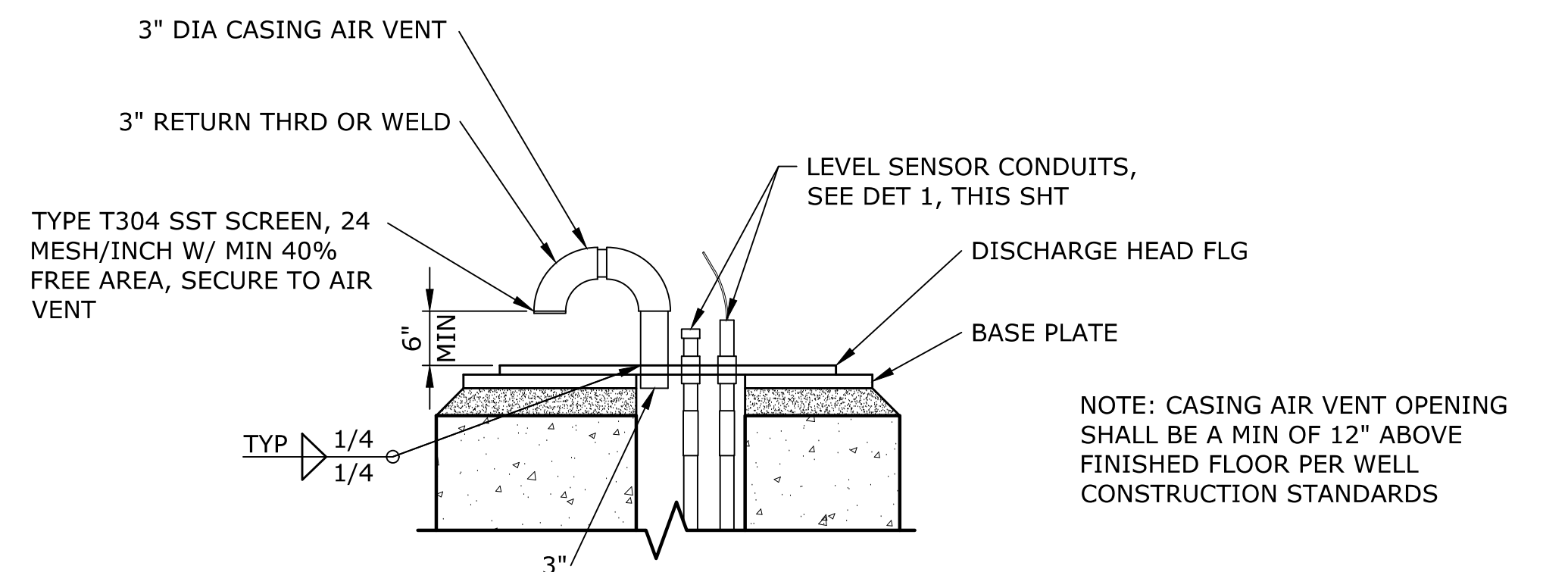
WELL HEAD DETAIL - ELEVATION
SCALE: 3/4"=1'-0"



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



LEVEL SENSOR CONDUIT DETAIL
SCALE: 3/4"=1'-0"



CASING AIR VENT DETAIL
SCALE: 3/4"=1'-0"

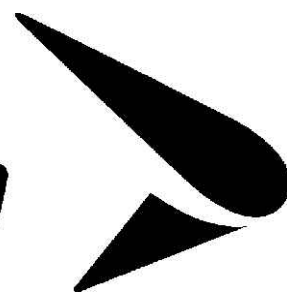
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murraysmith



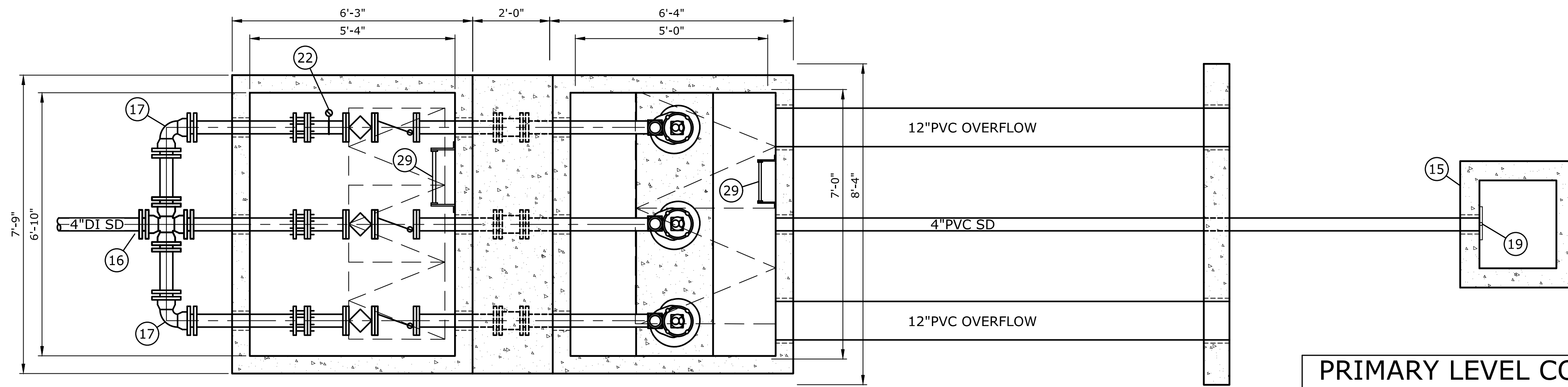
WOODBURN
INCORPORATED 1889
CITY OF WOODBURN
NEW PRODUCTION WELL FOR
THE PARR ROAD TREATMENT PLANT

MECHANICAL BUILDING DETAILS

PROJECT NO.: 19-2697 SCALE: AS SHOWN DATE: MARCH 2022

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OUTLET STRUCTURE PLAN
SCALE: 1/2" = 1'-0"

**PRIMARY LEVEL CONTROL
(PRESSURE TRANSDUCER)**

CONTROL LOGIC	ELEVATION
ALL PUMPS ON	180.00
LAG PUMP ON	179.50
LEAD PUMP ON	178.50
PUMPS OFF	177.00
LOW WATER ALARM	176.00

NOTES:

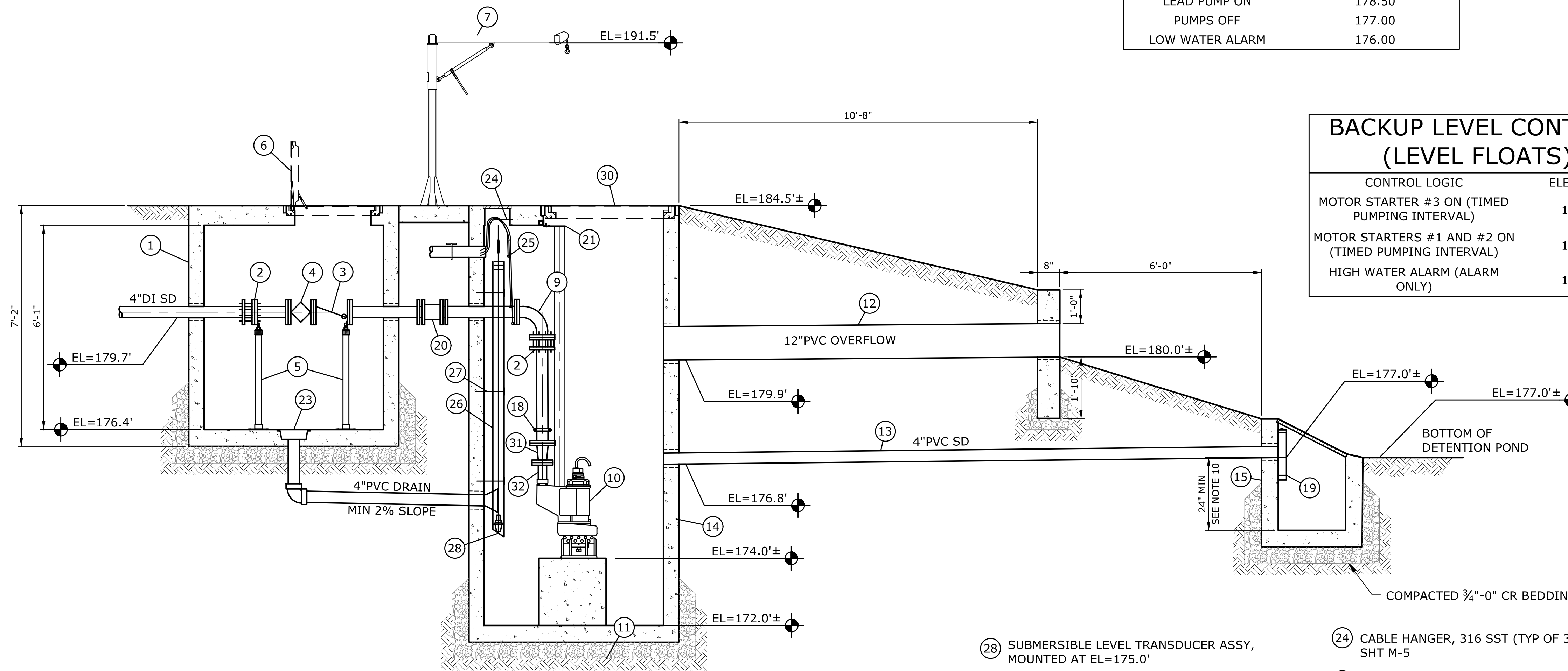
- FRAME AND GRATE SHALL CONFORM TO CWS STD DRAWING NO. 400, DITCH INLET FRAME AND GRATE.
- PLATE AND GUIDE SHALL BE FLUSH AGAINST WALL OF STRUCTURE AS APPROVED.
- PIPE SUPPORTS ARE SHOWN IN SOME LOCATIONS. CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE LOCATION AND NUMBER OF ALL ADDITIONAL SUPPORTS TO PROPERLY SUPPORT PIPING, VALVES, AND EQUIPMENT CONNECTS TO PREVENT DEFLECTIONS AND STRESSES.
- LADDER TO BE SECURED TO VAULT FLOOR AND WALL OR RISER. BOLT PIPE SUPPORTS TO FLOOR. USE CINCH ANCHORS ON LADDER AND PIPE STANDS.
- FLANGED FITTINGS SHALL CONFORM TO ANSI AWWA 151 OR 153 AND SHALL BE FACED AND DRILLED 150 POUND ANSI B16.5 AND SHALL BE CEMENT-MORTAR LINED.
- SEE SPECIFICATIONS FOR FLANGED JOINT GASKETS.
- PIPE WALL PENETRATION SIZES AND LOCATIONS TO BE SPECIFIED BY THE CONTRACTOR TO THE VAULT MANUFACTURER FOR PREFABRICATION. CONDUITS SHALL BE CORE DRILLED IN THE FIELD.
- ALL PIPING, FITTINGS AND VALVES SHALL BE RATED AND TESTED FOR 150 PSI MINIMUM WORKING PRESSURE.
- ALL PIPE INSIDE OF VAULT SHALL BE PAINTED IN BLUE COLOR WITH TWO COATS OF EPOXY. SURFACE PREPARATION SHALL BE AS RECOMMENDED BY COATING MANUFACTURER.
- COORDINATE BOX DEPTH WITH ORIFICE PLATE.

MATERIAL LIST

- CONC VAULT, OLDCASTLE, PRECAST, 676-LA
- 4" RFCA, FLG, TP OF 4
- 4" DI SWING CHKV, FLG, TYP OF 3
- 4" DI RESILIENT WEDGE GV, FLG, TYP OF 3
- STANDON MODEL S-89 PIPE SUPPORT, SEE NOTE 3
- 3'x2 1/2' TRIPLE LEAVE ACCESS HATCH W/ OSHA APPVD WALL MOUNT LADDER
- DAVIT CRANE, COMMANDER 1000 MODEL 5PT10, OR APPROVED EQUAL
- 3'x3 3/8' TRIPLE LEAF ACCESS HATCH W/ OSHA APPVD WALL MOUNT LADDER
- 4" DI 90° BEND, FLG
- FLYGT N-3000 SERIES SLURRY AND SOLIDS HANDLING SUBMERSIBLE PUMP, OR APPVD EQ
- 2' HIGH CONCRETE PEDESTAL RUNNING THE LENGTH OF THE VAULT
- 12" PVC SCH 80 OVERFLOW, TYP OF 2
- 4" C-900 OR SCH 80 PVC
- 7'x5' CAST IN PLACE CONC VAULT
- DITCH INLET, SEE CWS STD DET NO. 390
- 4"x4" DI CROSS, MJ
- 4" DI 90° BEND, MJ
- VICTAULIC COUPLING
- ORIFICE PLATE AND GUIDE, SEE CWS STD DET 711, SHT M-5
- 4" DI LS, MJ
- 316 SST UPPER GUIDE RAIL BRACKET
- PRESSURE GAUGE
- 12" FLOOR DRAIN

**BACKUP LEVEL CONTROL
(LEVEL FLOATS)**

CONTROL LOGIC	ELEVATION
MOTOR STARTER #3 ON (TIMED PUMPING INTERVAL)	183.00
MOTOR STARTERS #1 AND #2 ON (TIMED PUMPING INTERVAL)	181.50
HIGH WATER ALARM (ALARM ONLY)	181.00



OUTLET STRUCTURE PROFILE
SCALE: 1/2" = 1'-0"

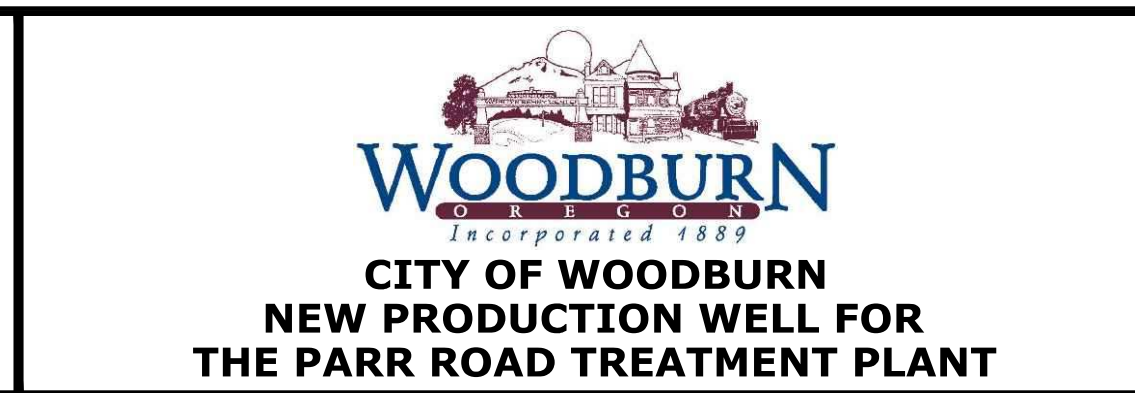
- SUBMERSIBLE LEVEL TRANSDUCER ASSY, MOUNTED AT EL=175.0'
- LADDER W/ OSHA EXTENSION, SEE NOTE 4
- 3'-8"X7' DOUBLE ACCESS HATCH
- 4"X3" RDCR, FLG
- 3" SPL, THRD X FLG

- CABLE HANGER, 316 SST (TYP OF 3), SEE DET 1 SHT M-5
- FLOAT FOR ALARM (TYP), SEE BACKUP LEVEL CONTROL TABLE THIS SHEET FOR ELEVATIONS
- STILLING WELL 4" SCHED 40 PVC PIPE, DRILL 1/2" HOLES ON EACH SIDE OF STILLING WELL AT 6" OC FROM TOP TO BOTTOM OF STILLING WELL, BOTTOM OF STILLING WELL AT EL=175.0'
- STILLING WELL PIPE SUPPORT, SEE DET 2 ON SHT M-5 (TYP OF 3), EVENLY SPACED

NO.	DATE	BY	REVISION

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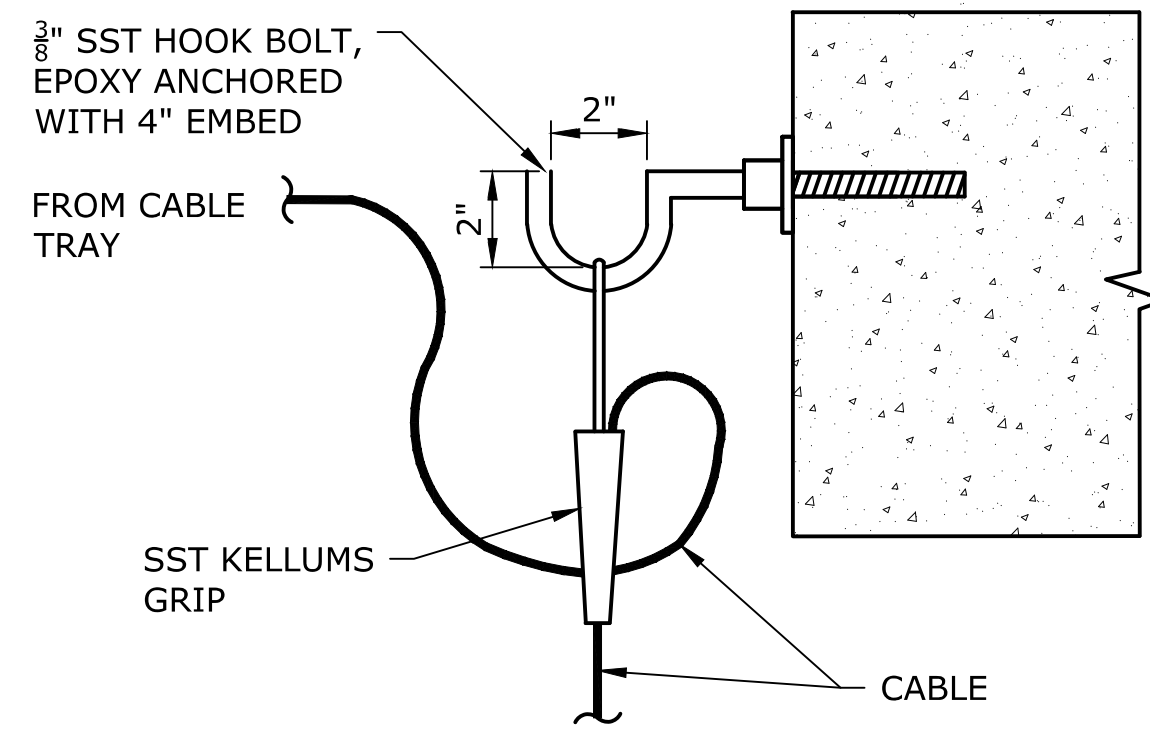
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MLM
CHECKED



STORMWATER OUTLET DETAILS - 1			
PROJECT NO.:	19-2697	SCALE:	AS SHOWN
DATE:	MARCH 2022		

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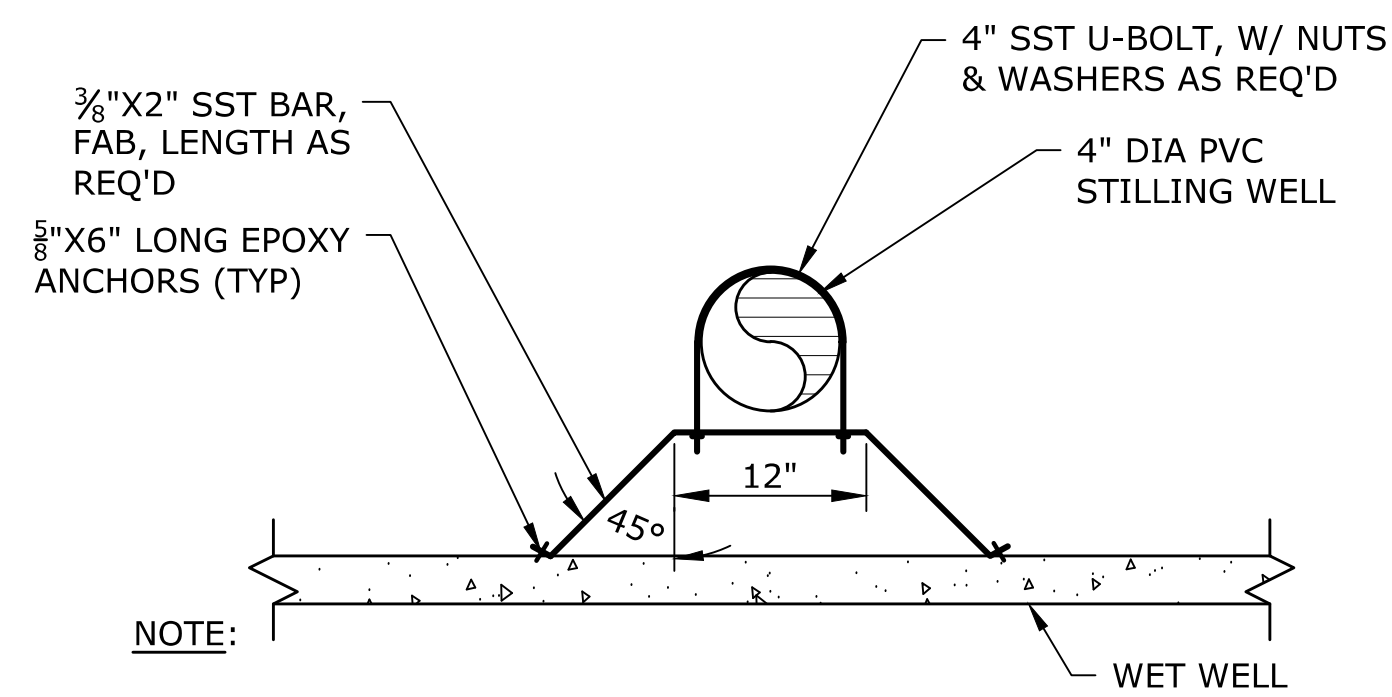
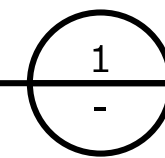


NOTES:

1. ALL HARDWARE GRADE 316 STAINLESS STEEL.
2. CABLE HANGER SHALL BE PROVIDED FOR FLOATS AND LEVEL SENSORS. PROVIDE A TOTAL OF 6 HANGERS.
3. INSTALL CABLE HANGER AS HIGH AS POSSIBLE WITHOUT CONFLICTING WITH ACCESS HATCH.

CABLE HANGER

SCALE: NTS

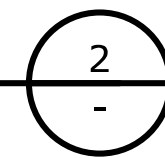


NOTE:

1. ALL FASTENERS, FITTINGS, ANCHORS AND SUPPORTS SHALL BE TYPE 316 STAINLESS STEEL.

STILLING WELL PIPE SUPPORT

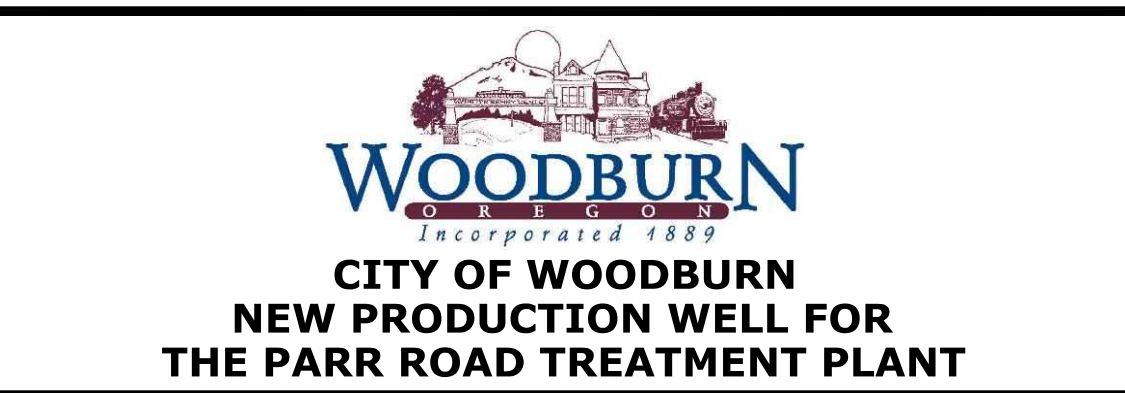
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NOTICE
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LRC
 DESIGNED
 MBE
 DRAWN
 MLM
 CHECKED



STORMWATER OUTLET DETAILS -2			
PROJECT NO.:	19-2697	SCALE:	AS SHOWN
DATE:	MARCH 2022		

SHEET
 M-5
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GENERAL NOTES

1. ALL MATERIALS AND INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE LATEST NATIONAL ELECTRICAL CODE. INSTALLATION DRAWINGS, CONSTRUCTION SPECIFICATIONS AND LOCAL CODES. ALL MATERIALS SHALL BE NEW AND LISTED BY THE UNDERWRITERS' LABORATORY INC. (UL). ALL ELECTRICAL WORK SHALL BE INSTALLED IN A GOOD AND WORKMANLIKE MANNER.
2. REFER TO THE ELECTRICAL CIRCUIT SCHEDULE FOR CIRCUIT IDENTIFICATIONS, ROUTING, CONDUCTOR SIZES, ETC.
3. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH OTHER DISCIPLINES AS REQUIRED TO MITIGATE INTERFERENCES.
4. CONDUIT MATERIAL TO BE PVC BELOW GRADE AND RIGID METAL CONDUIT ABOVE GRADE. TRANSITION FROM BELOW GRADE TO ABOVE GRADE AS SHOWN ON DETAIL 3/E-002.

SYMBOLS

	NEW ELECTRICAL EQUIPMENT		GROUND ROD
	EXISTING ELECTRICAL EQUIPMENT		GROUND ROD TEST WELL
	EXISTING ELECTRICAL EQUIPMENT TO BE DEMO'D		AUTOMATIC TRANSFER SWITCH
	METERBASE W/UTILITY METER		GROUND CONNECTION PER NEC ARTICLE 250
	DISCONNECT RECEPTACLE AND PLUG		120V CONTROL RELAY, DPDT MINIMUM
	SPECIAL EQUIPMENT CONNECTION AS SHOWN		24VDC CONTROL RELAY, DPDT MINIMUM
	MOTOR CONNECTION, HORSEPOWER INDICATED		RELAY CONTACT - NO, NC
	JUNCTION BOX		PUSHBUTTON OR SWITCH CONTACT BLOCK - NO, NC
	DISCONNECT SWITCH, AMPERAGE RATING SHOWN		SELECTOR SWITCH - (3) POS, (2) POS.
	FUSED DISCONNECT SWITCH, SWITCH AND FUSE RATING SHOWN 60/40 = 60A SWITCH WITH 40A FUSE		PUSH-TO-TEST LED PILOT LIGHT
	FUSE, SIZE SHOWN 5A		FLOAT SWITCH - NO, NC
	THERMAL MAGNETIC CIRCUIT BREAKER		TEMPERATURE SWITCH - NO, NC
	MAGNETIC ONLY CIRCUIT BREAKER (MOTOR CIRCUITS ONLY) CONTINUOUS CURRENT RATING AND TRIP SETTINGS SHOWN 30AC 150AT		PRESSURE SWITCH - NO, NC
	MOTOR STARTER, SIZE SHOWN 2		LIMIT SWITCH - NO, NC
	VARIABLE FREQUENCY DRIVE		TIME DELAY CONTACTS, NORMALLY OPEN TIMED CLOSED NORMALLY CLOSED TIMED OPEN
	LINE OR LOAD REACTOR, IMPEDENCE SHOWN		SPEED POTENTIOMETER
	TRANSFORMER		ELAPSED TIME METER
	CURRENT TRANSFORMER		COUNTER
			RECEPTACLE

	FUSED TERMINAL, SIZE SHOWN		FIELD TERMINAL
	LOCAL TERMINAL OR LUG CONNECTION		CONDUIT SEAL-OFF
	SMOKE/HEAT DETECTOR		CONDUIT CONCEALED UNDERFLOOR OR UNDERGROUND
	INTRUSION SWITCH		CONDUIT CONCEALED IN WALL OR ABOVE CEILING IN FINISHED AREAS, EXPOSED IN PROCESS AND EQUIPMENT AREAS.
	THERMOSTAT/TEMPERATURE TRANSMITTER		CONDUIT UP
	CONDUIT UP FROM UNDERGROUND RACEWAY		CONDUIT DOWN
	CONDUIT STUB		FLEXIBLE CONDUIT OR MFR CABLE
	ELECTRICAL CIRCUIT IDENTIFICATION		MULTIPLE ELECTRICAL CIRCUITS, SEPARATE CONDUITS
	MULTIPLE ELECTRICAL CIRCUITS, COMMON CONDUIT (SIZE SHOWN)		PHOTOCELL
	EXIT LIGHT		LIGHT FIXTURE - RECESSED
	LIGHT FIXTURE - RECESSED		CEILING/WALL MOUNTED FIXTURE
	LIGHT FIXTURE - POLE MOUNTED		LIGHT FIXTURE - LINEAR
	LIGHT FIXTURE - ON EMERGENCY CIRCUIT		SWITCH DESIGNATOR
	SWITCH - SINGLE-POLE, MOUNT 48" AFF, UON		SWITCH - THREE-WAY, MOUNT 48" AFF UON.
	SWITCH - FOUR-WAY		SWITCH - WITH PILOT LIGHT, MOUNT 48" AFF, UON
	SWITCH - DIMMER, MOUNT 48" AFF, UON		MOTION DETECTOR/OCCUPANCY SENSOR

a	CIRCUIT BREAKER AUX. CONTACT, CLOSED WHEN BREAKER IS CLOSED
A	AMMETER, AMPERES
AC	ALTERNATING CURRENT
A/D	ANALOG TO DIGITAL
AF	AMPERE FRAME
AIC	AMPERES INTERRUPTING CAPACITY
ALT	ALTERNATOR
A/M	AUTO/MANUAL CONTROLLER
ANN	ANNUNCIATOR
AS	AMMETER SWITCH
ASD	ADJUSTABLE SPEED DRIVE
AT	AMPERE TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AWG	AMERICAN WIRE GAGE
b	CIRCUIT BREAKER AUX. CONTACT, CLOSED WHEN BREAKER IS OPEN
BCG	BARE COPPER GROUND
C	CONDUIT, CONTACTOR
CAP	CAPACITOR
CB	CIRCUIT BREAKER
CC	CONTROL CABLE, CLOSING COIL
CHH	COMMUNICATION HANDHOLE
CL	CHLORINE
CKT	CIRCUIT
CMH	COMMUNICATION MANHOLE
CO	CONDUIT ONLY
COMM	COMMUNICATION
CON	CONTACTOR
COND	CONDUCTOR
CONT	CONTINUED, CONTINUATION
CPT	CONTROL POWER TRANSFORMER
CP	CONTROL PANEL
CR	CONTROL RELAY
CS	CONTROL SWITCH
CT	CURRENT TRANSFORMER
CWP	COLD WATER PIPE
DC	DIRECT CURRENT
DIAG	DIAGRAM
DISC	DISCONNECT
DISTR	DISTRIBUTION
DP	DISTRIBUTION PANEL
DPDT	DOUBLE POLE, DOUBLE THROW
DPST	DOUBLE POLE, SINGLE THROW
EXST	EXISTING
EF	EXHAUST FAN
EHH	ELECTRICAL HANDHOLE
ELEM	ELEMENTARY
EMERG	EMERGENCY
EFFL	EFFLUENT
EQ	EQUAL
EQUIP	EQUIPMENT
ETM	ELAPSED TIME METER
FACP	FIRE ALARM CONTROL PANEL
FIN FL	FINISHED FLOOR
FLEX	FLEXIBLE
FLUOR	FLUORESCENT
FO	FIBER OPTIC
FREQ	FREQUENCY
FU	FUSE
FUT	FUTURE
FVNR	FULL VOLTAGE, NON REVERSING
FVR	FULL VOLTAGE, REVERSING
FWD	FORWARD
GA	GAUGE
GEN	GENERATOR
GFI	GROUND FAULT INTERRUPTER
GRS	GALVANIZED RIGID STEEL

ABBREVIATIONS

H ₂ O ₂	HYDROGEN PEROXIDE	SF	SUPPLY FAN
HMI	HUMAN MACHINE INTERFACE	SHH	SIGNAL HANDHOLE
HOA	HAND-OFF-AUTOMATIC	SIG	SIGNAL
HOR	HAND-OFF-REMOTE	SN	SOLID NEUTRAL
HORZ	HORIZONTAL	SPEC	SPECIFICATIONS
HPS	HIGH PRESSURE SODIUM	SPD	SURGE PROTECTIVE DEVICE
HTR	HEATER	SPDT	SINGLE POLE, DOUBLE THROW SWITCH
HV	HIGH VOLTAGE	SS	STAINLESS STEEL, SOLID STATE SWITCH
HZ	HERTZ (CYCLES PER SECOND)	SW	SWITCH
IND LT	INDICATING LIGHT	SWBD	SWITCHBOARD
INCAND	INCANDESCENT	SWGR	SWITCHGEAR
I/O	INPUT/OUTPUT	SYNC	SYNCHRONIZING
JB	JUNCTION BOX	TB	TERMINAL BOX, TERMINAL BOARD
KA	KILOAMPERES	TC	TELEPHONE CABINET
KCMIL	THOUSANDS OF CIRCULAR MILS	TEMP	TEMPERATURE
KV	KILOVOLTS	TP	TWISTED PAIR
KVA	KILOVOLT AMPERES	TSP	SHIELDED TWISTED PAIR
KVAR	KILOVOLT AMPERES REACTIVE	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
KVARH	KILOVOLT AMPERES REACTIVE HOURS	UH	UNIT HEATER
KW	KILOWATTS	UV	ULTRA VIOLET
KWH	KILOWATT HOURS	V	VOLTS
LCP	LIGHTING CONTROL PANEL	VA	VOLT-AMPERES
LP	LIGHTING PANEL	VFD	VARIABLE FREQUENCY DRIVE
LPS	LOW PRESSURE SODIUM	VAR	VOLT AMPERES REACTIVE
LTG	LIGHTING	VERT	VERTICAL
LIGHT(S)	LIGHT(S)	VH	VAR-HOUR
(M)	MODIFIED	VS	VOLTMETER SWITCH
Ma	MILLIAMPERES	W	WIRE, WATTS
MCC	MOTOR CONTROL CENTER	WHM	WATTHOUR METER
MCP	MOTOR CIRCUIT PROTECTOR	WHDM	WATTHOUR DEMAND METER
MOV	MOTOR OPERATED VALVE	WP	WEATHERPROOF
MS	MOTOR STARTER	WTRT	WATERTIGHT
MTD	MOUNTED	WWTP	WASTE WATER TREATMENT PLANT
MTG	MOUNTING		
MTS	MANUAL TRANSFER SWITCH		
(N)	NEW		
NEC	NATIONAL ELECTRICAL CODE		
NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOC.		
NEUT	NEUTRAL		
NO	NORMALLY OPEN, NUMBER		
NTS	NOT TO SCALE		
OVHD	OVERHEAD THERMAL		
OL	OVERLOAD RELAY		
OT	OVER TEMPERATURE		
PB	PULLBOX, PUSHBUTTON		
PD	POSITIVE DISPLACEMENT		
PE	PHOTOELECTRIC		
PEC	PHOTOELECTRIC CELL		
PF	POWER FACTOR		
pH	MEASURE OF ACIDITY OR ALKALINITY		
PH	PHASE		
PLC	PROGRAMMABLE LOGIC CONTROLLER		
PM	POWER MONITOR		
PNL	PANEL		
PNLBD	PANELBOARD		
PRI	PRIMARY		
PS	PRESSURE SWITCH		
PSI	POUNDS PER SQUARE INCH		
PWR	POWER		
(RL)	RELOCATE		
(RLD)	RELOCATED		
RCPT	RECEPTACLE		
RCT	REPEAT CYCLE TIMER		
RPM	REVOLUTIONS PER MINUTE		
RT	RESET TIMER		
SCR	SILICON CONTROLLED RECTIFIER		
SD	SMOKE DETECTOR		
SDBC	SOFT-DRAWN BARE COPPER		
SEC	SECONDS, SECONDARY SECTION		

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NO.	DATE	BY	REVISION

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MEW DESIGNED	AAB DRAWN
MEW CHECKED	

REGISTERED PROFESSIONAL
ENGINEER
88305PE
OREGON
MAY 14, 2019
MICHAEL E. WALLIS

EXPIRES: 6/30/22

CITY OF WOODBURN
NEW PRODUCTION WELL FOR
THE PARR ROAD TREATMENT PLANT

**ELECTRICAL NOTES, ABBREVIATIONS,
AND SYMBOLS**

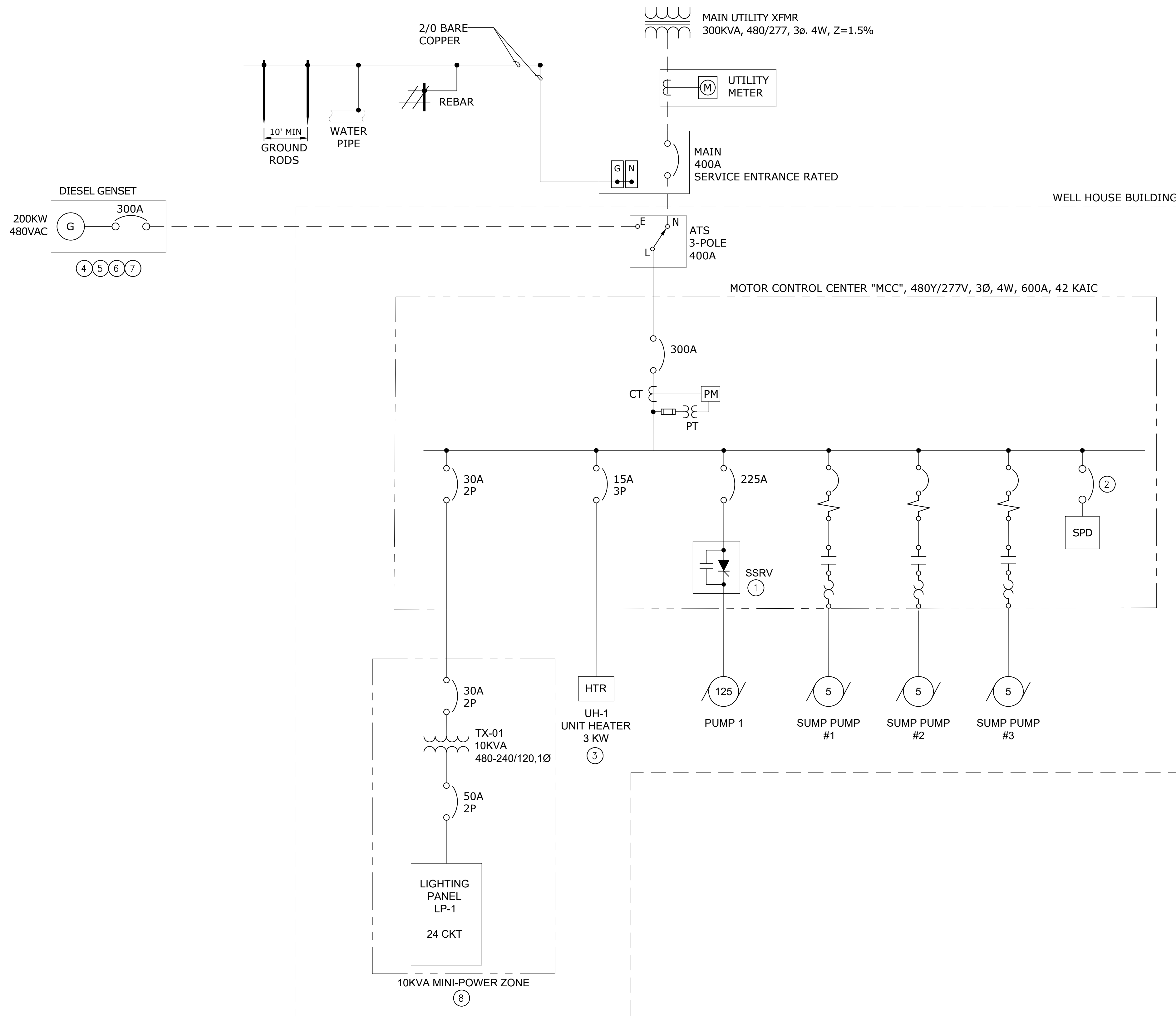
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SHEET

E-1

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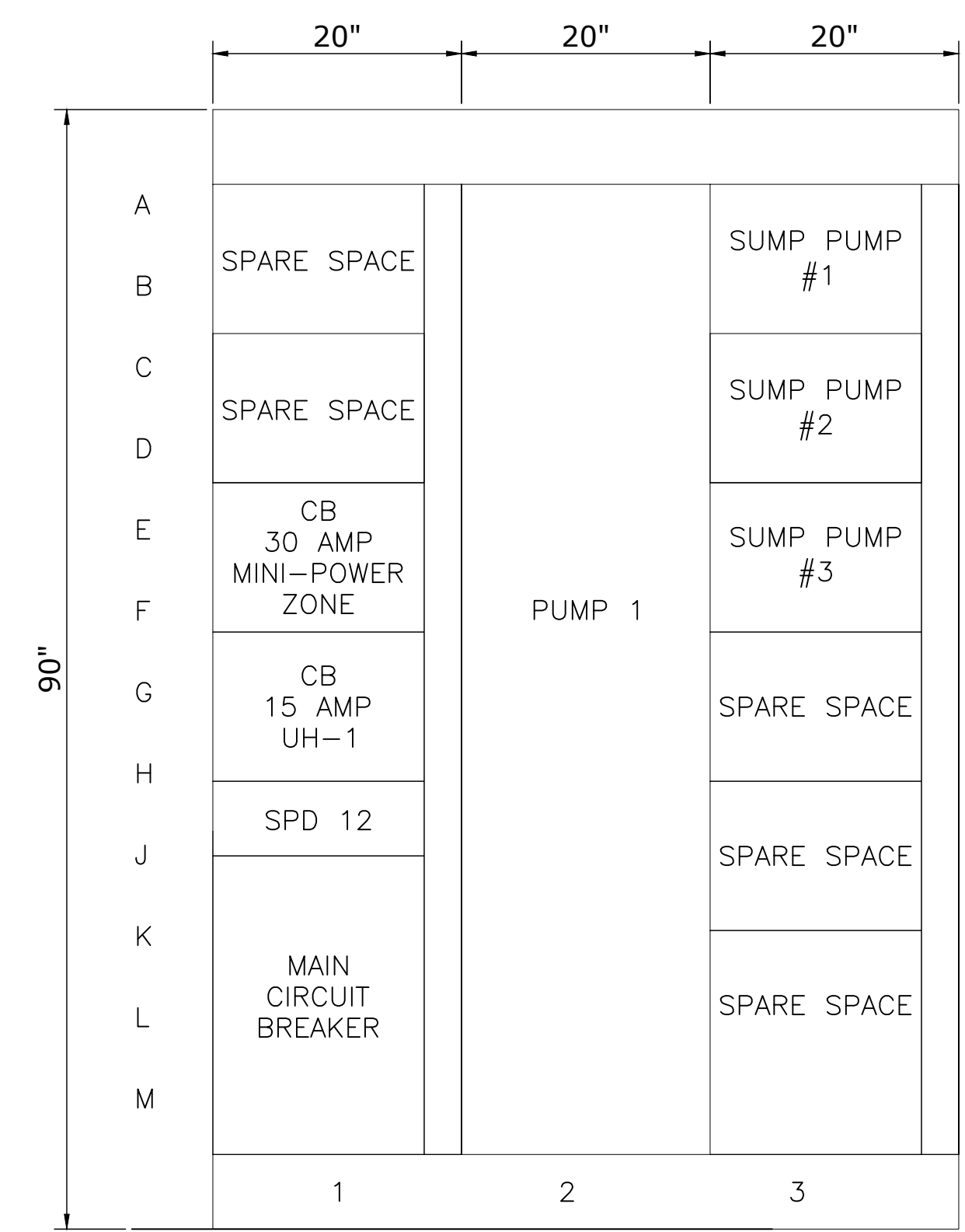


1 ONE-LINE DIAGRAM

KEY NOTES:

- 1 SOFTSTART TO BE EQUIPPED WITH ETHERNET IP COMMUNICATIONS MODULE.
- 2 MOTOR CONTROL CENTER MANUFACTURER SHALL PROVIDE SIZING OF SURGE PROTECTIVE DEVICE (SPD) AND OVERCURRENT PROTECTION SIZING FOR SPD.
- 3 UNIT HEATER TO HAVE INTEGRAL THERMOSTAT INCLUDED.
- 4 PROVIDE CIRCUIT BREAKER WITH SOLID-STATE ELECTRONIC TRIP. ELECTRONIC TRIP SHALL HAVE L, S, AND I ADJUSTMENTS.
- 5 CONTRACTOR TO COORDINATE GENERATOR CIRCUIT BREAKER WITH ALL CIRCUIT BREAKERS IN SYSTEM, PER NEC ARTICLE 701.
- 6 REMOVE NEUTRAL/GROUND BOND FROM GENSET. SYSTEM IS SOLIDLY GROUND THROUGH ATS AND IS NOT A SEPARATELY DERIVED SYSTEM.
- 7 GENERATOR SHALL HAVE A FUEL TANK CAPACITY CAPABLE OF 24 HOURS RUNTIME UNDER FULL LOAD. GENERATOR SHALL BE ENCLOSED IN SOUND ATTENUATING WEATHERPROOF ENCLOSURE.
- 8 PROVIDE A MINI-POWER ZONE AND BOND NEUTRAL, GROUND, AND GROUNDING ELECTRODE CONDUCTOR (GEC) AT PANEL LP-1. TREAT TRANSFORMER AS A SEPARATELY DERIVED SYSTEM.

SYSTEM LOAD SUMMARY			
Voltage: 480VAC, 3 PHASE, 4 WIRE	HP	KVA	AMPS @ 480 VAC
WELL PUMP	125	129.5 KVA	156.0 AMPS
SUMP PUMP #1	5	6.3 KVA	7.6 AMPS
SUMP PUMP #2	5	6.3 KVA	7.6 AMPS
SUMP PUMP #3	5	6.3 KVA	7.6 AMPS
MISC (XFMR/LIGHTING)		10.0 KVA	12.0 AMPS
HEAT		3.0 KVA	3.6 AMPS
25% OF LARGEST MOTOR			39.0 AMPS
25% OF NON-MOTOR			3.9 AMPS
TOTAL AMPS			237.3 AMPS
SERVICE			400.0 AMPS



2 MCC ELEVATION
SCALE: 1" = 1'-0"

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MEW CHECKED

REGISTERED PROFESSIONAL ENGINEER
88305PE
OREGON
MAY 14, 2019
MICHAEL E. WALLIS
EXPIRES: 6 / 30 / 22

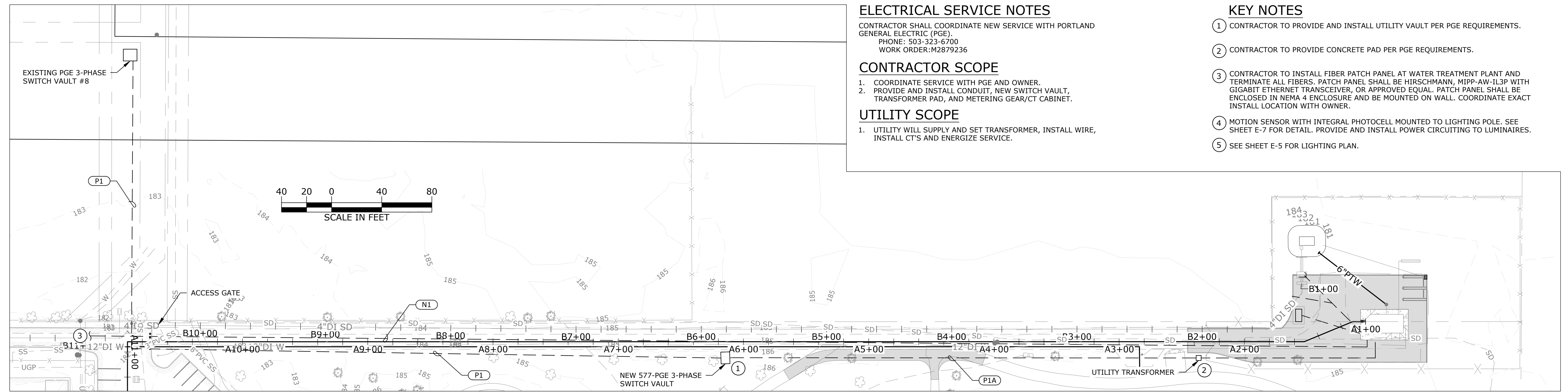
murraysmith

WOODBURN
Incorporated 1889
CITY OF WOODBURN
NEW PRODUCTION WELL FOR
THE PARR ROAD TREATMENT PLANT

ONE-LINE DIAGRAM

PROJECT NO.: 19-2697 SCALE: AS SHOWN DATE: MARCH 2022

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ELECTRICAL SERVICE NOTES

CONTRACTOR SHALL COORDINATE NEW SERVICE WITH PORTLAND GENERAL ELECTRIC (PGE).
 PHONE: 503-323-6700
 WORK ORDER: M2879236

CONTRACTOR SCOPE

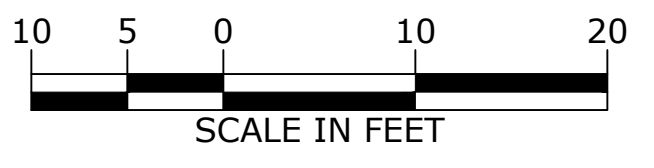
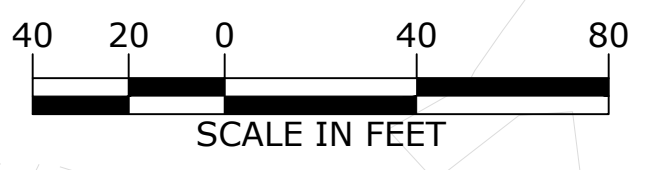
1. COORDINATE SERVICE WITH PGE AND OWNER.
2. PROVIDE AND INSTALL CONDUIT, NEW SWITCH VAULT, TRANSFORMER PAD, AND METERING GEAR/CT CABINET.

UTILITY SCOPE

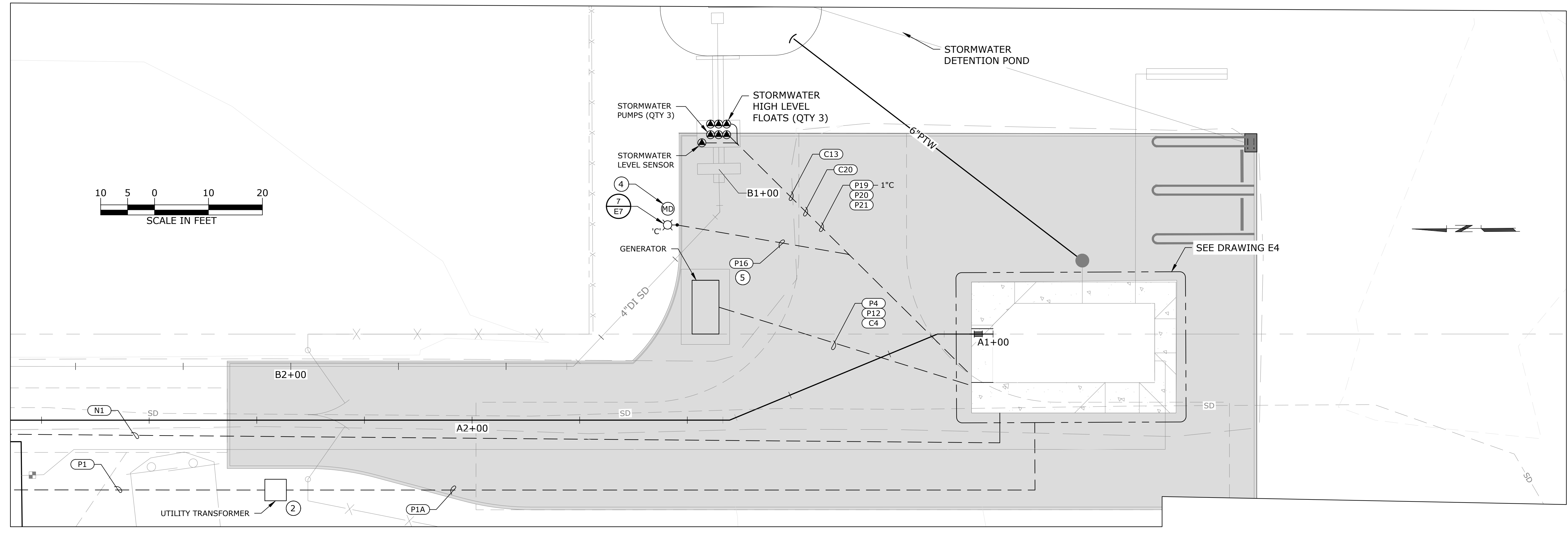
1. UTILITY WILL SUPPLY AND SET TRANSFORMER, INSTALL WIRE, INSTALL CT'S AND ENERGIZE SERVICE.

KEY NOTES

1. CONTRACTOR TO PROVIDE AND INSTALL UTILITY VAULT PER PGE REQUIREMENTS.
2. CONTRACTOR TO PROVIDE CONCRETE PAD PER PGE REQUIREMENTS.
3. CONTRACTOR TO INSTALL FIBER PATCH PANEL AT WATER TREATMENT PLANT AND TERMINATE ALL FIBERS. PATCH PANEL SHALL BE HIRSCHMANN, MIPP-AW-IL3P WITH GIGABIT ETHERNET TRANSCEIVER, OR APPROVED EQUAL. PATCH PANEL SHALL BE ENCLOSED IN NEMA 4 ENCLOSURE AND BE MOUNTED ON WALL. COORDINATE EXACT INSTALL LOCATION WITH OWNER.
4. MOTION SENSOR WITH INTEGRAL PHOTOCCELL MOUNTED TO LIGHTING POLE. SEE SHEET E-7 FOR DETAIL. PROVIDE AND INSTALL POWER CIRCUITING TO LUMINAIRES.
5. SEE SHEET E-5 FOR LIGHTING PLAN.



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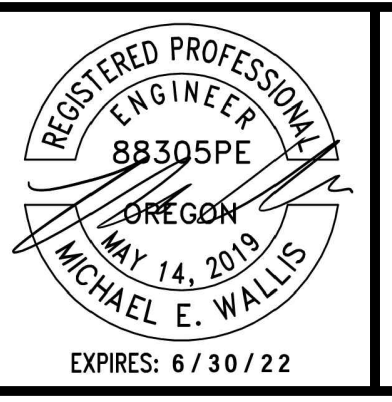


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 NEW PRODUCTION WELL FOR
 THE PARR ROAD TREATMENT PLANT

ELECTRICAL SITE PLAN

PROJECT NO.: 19-2697 SCALE: AS SHOWN DATE: MARCH 2022

CONDUCTOR SIZES ARE BASED ON COPPER CONDUCTORS.
 MULTIPLE CIRCUITS RUN IN COMMON CONDUITS ARE SHOWN ON PLANS AND SUPERSEDE THE BASIC CONDUIT SIZE SHOWN.
 RACEWAY SIZES ARE IN INCHES WITH QUANTITIES IN EXCESS OF (1) SHOWN IN ADJACENT PARENTHESIS.
 P = POWER CONDUCTORS; G = GROUND CONDUCTORS; N = FOR NEUTRAL CONDUCTORS; C = CONTROL CONDUCTORS;
 SP = SPARE CONDUCTORS.

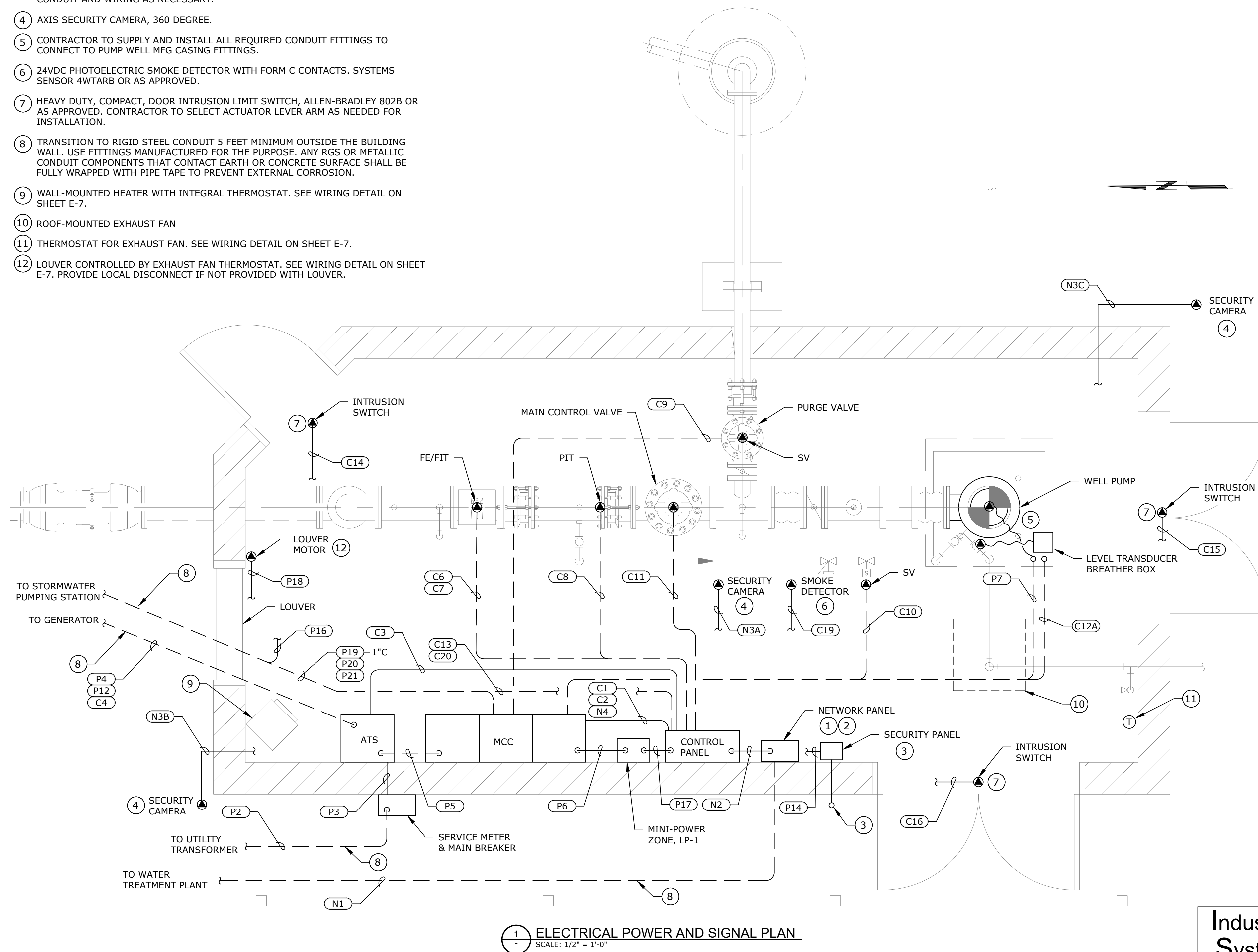
CIRCUIT NUMBER	FROM	TO	CONDUCTORS	RACEWAY	NOTES
P1	UTILITY VAULT #8	UTILITY VAULT #577		4"	UNDERGROUND PRIMARY CABLE
P1A	UTILITY VAULT #577	UTILITY TRANSFORMER		4"	UNDERGROUND PRIMARY CABLE
P2	UTILITY TRANSFORMER	UTILITY METER & MAIN BREAKER	(6) #3/0 AWG, P (2) #6 AWG, G	(2) 2"	
P3	MAIN BREAKER	ATS	(6) #3/0 AWG, P (2) #6 AWG, G	(2) 2"	
P4	ATS	GENERATOR	(3) 350 KCMIL, P (1) #4 AWG, P	3"	
P5	ATS	MCC	(6) #3/0 AWG, P (2) #6 AWG, G	(2) 2"	
P6	MCC	MINI-POWER ZONE / LIGHTING PANEL	(3) #10 AWG, P (1) #4 AWG, G	2"	
P7	MCC	PUMP 1	(3) #2/0 AWG, P (1) #6 AWG, G (1) #12 AWG, P (1) #12 AWG, N (1) #12 AWG, G	2"	POWER WINDING HEATER
P8	LIGHTING PANEL LP-1	INTERIOR RECEPTACLES	(1) #12 AWG, P (1) #12 AWG, N (1) #12 AWG, G	3/4"	
P9	LIGHTING PANEL LP-1	EXTERIOR RECEPTACLES	(1) #12 AWG, P (1) #12 AWG, N (1) #12 AWG, G	1"	
P10	LIGHTING PANEL LP-1	INTERIOR LIGHTS	(1) #12 AWG, P (1) #12 AWG, N (1) #12 AWG, G	3/4"	
P11	LIGHTING PANEL LP-1	EXTERIOR LIGHTS	(1) #12 AWG, P (1) #12 AWG, N (1) #12 AWG, G	1"	
P12	LIGHTING PANEL LP-1	GENERATOR	(2) #12 AWG, P (2) #12 AWG, N (2) #12 AWG, G	1"	BLOCK HEATER, BATTERY CHARGER
P13	LIGHTING PANEL LP-1	EXHAUST FAN	(1) #12 AWG, P (1) #12 AWG, N (1) #12 AWG, G	3/4"	
P14	LIGHTING PANEL LP-1	SECURITY PANEL	(1) #12 AWG, P (1) #12 AWG, N (1) #12 AWG, G	3/4"	
P15	MCC	UNIT HEATER	(3) #12 AWG, P (1) #12 AWG, G	3/4"	
P16	LIGHTING CONTROL SWITCH PANEL	LIGHTING POLE	(3) #12 AWG, P (1) #12 AWG, G	3/4"	
P17	LIGHTING PANEL LP-1	CONTROL PANEL	(1) #12 AWG, P (1) #12 AWG, N (1) #12 AWG, G	3/4"	
P18	LIGHTING PANEL LP-1	LOUVER	(1) #12 AWG, P (1) #12 AWG, N (1) #12 AWG, G	3/4"	
P19	MCC	STORMWATER SUMP PUMP #1	(3) #12 AWG, P (1) #12 AWG, G	SINGLE 1" CONDUIT	
P20	MCC	STORMWATER SUMP PUMP #2	(3) #12 AWG, P (1) #12 AWG, G	SINGLE 1" CONDUIT	
P21	MCC	STORMWATER SUMP PUMP #3	(3) #12 AWG, P (1) #12 AWG, G	SINGLE 1" CONDUIT	
C1	MCC (WELL PUMP STARTER)	CONTROL PANEL	(2) #14 AWG, C (6) #14 AWG, SP (1) #14 AWG, G	SINGLE 2" CONDUIT	WELL PUMP CONTROL SIGNALS
C2	MCC (SUMP PUMP STARTERS)	CONTROL PANEL	(18) #14 AWG, C (6) #14 AWG, SP (1) #14 AWG, G	SINGLE 2" CONDUIT	SUMP PUMP CONTROL SIGNALS: RUN, FAULT, RUNNING, OVERLOAD
C3	ATS	CONTROL PANEL	(2) #14 AWG, C (4) #14 AWG, SP (1) #14 AWG, G	1"	ON UTILITY POWER
C4	ATS	GENERATOR	(6) #14 AWG, C (1) #14 AWG, G	1"	
C5	GENERATOR	CONTROL PANEL	(8) #14 AWG, C (2) #14 AWG, SP (1) #16 AWG, TSP, SP (1) #14 AWG, G	1"	GENERATOR RUNNING, GENERATOR FAULT, FUEL LEVEL LOW, BATT LEVEL LOW
C6	CONTROL PANEL	FLOWMETER	(2) #14 AWG, C (1) #14 AWG, G	3/4"	24 VDC POWER
C7	CONTROL PANEL	FLOWMETER	(1) #16 AWG, TSP (2) #14 AWG, C	3/4"	SIGNAL & TOTALIZER
C8	CONTROL PANEL	PRESSURE TRANSDUCER	(1) #16 AWG, TSP	1"	
C9	MCC	PURGE VALVE	(4) #14 AWG, C (1) #14 AWG, G	1"	SV ZSC
C10	MCC	PRELUBE VALVE	(2) #14 AWG, C (1) #14 AWG, G	1"	
C11	CONTROL PANEL	MAIN CONTROL VALVE	(1) #16 AWG, TSP (2) #14 AWG, C (1) #14 AWG, G	1"	POSITION SETPOINT
C12A	CONTROL PANEL	LEVEL TRANSDUCER BREATHER BOX	(1) #16 AWG, TSP	3/4"	BELDEN #8760 OR EQUAL
C12B	LEVEL TRANSDUCER BREATHER BOX	LEVEL TRANSDUCER	MFG CABLE		
C13	CONTROL PANEL	STORMWATER LEVEL SENSOR	(1) #16 AWG, TSP	1"	BELDEN #8760 OR EQUAL
C14	SECURITY PANEL	BUILDING INTRUSION SWITCH (NORTH)	(2) #14 AWG, C	3/4"	
C15	SECURITY PANEL	BUILDING INTRUSION SWITCH (SOUTH)	(2) #14 AWG, C	3/4"	
C16	SECURITY PANEL	BUILDING INTRUSION SWITCH (WEST)	(2) #14 AWG, C	3/4"	
C17	ELECTRIC UNIT HEATER	THERMOSTAT	(1) #12 AWG, P (1) #12 AWG, N (1) #12 AWG, G	3/4"	
C18	EXHAUST FAN	THERMOSTAT	(1) #12 AWG, P (1) #12 AWG, N (1) #12 AWG, G	3/4"	
C19	CONTROL PANEL	SMOKE DETECTOR	(4) #14 AWG, C (1) #14 AWG, G	3/4"	24VDC POWER & ALARM SIGNAL
C20	CONTROL PANEL	LEVEL FLOAT SWITCHES	(6) #14 AWG, C (3) #14 AWG, G	3/4"	STORMWATER LSH, LSHH, LSHH
N1	NETWORK PANEL	WATER TREATMENT PLANT	6 PAIR FIBER	2"	
N2	NETWORK PANEL	CONTROL PANEL	1 PAIR FIBER	1"	
N3A	NETWORK PANEL	SECURITY CAMERA #1	(1) CAT 6	1"	
N3B	NETWORK PANEL	SECURITY CAMERA #2	(1) CAT 6	1"	
N3C	NETWORK PANEL	SECURITY CAMERA #3	(1) CAT 6	1"	
N4	CONTROL PANEL	MCC (SOFT STARTER)	(1) CAT 6	1"	
N5	SECURITY PANEL	CELLULAR ANTENNA	MFG CABLE	1"	

KEY NOTES

- NETWORK PANEL IS NEMA 4 ENCLOSURE WITH FIBER PATCH PANEL, 24VDC POWER SUPPLY AND INDUSTRIAL ETHERNET SWITCH. PATCH PANEL SHALL BE HIRSCHMANN, MIPP-AW-IL3P WITH GIGABIT ETHERNET TRANSCEIVER, OR APPROVED EQUAL.
- TERMINATE ALL FIBER STANDS IN FIBER PATCH PANEL. TEST FIBER CONNECTIONS PER MANUFACTURER'S RECOMMENDATION AND SPECIFICATION 26 05 19.
- SECURITY PANEL AND CELLULAR ANTENNA BY OTHERS. CONTRACTOR TO PROVIDE CONDUIT AND WIRING AS NECESSARY.
- AXIS SECURITY CAMERA, 360 DEGREE.
- CONTRACTOR TO SUPPLY AND INSTALL ALL REQUIRED CONDUIT FITTINGS TO CONNECT TO PUMP WELL MFG CASING FITTINGS.
- 24VDC PHOTOELECTRIC SMOKE DETECTOR WITH FORM C CONTACTS. SYSTEMS SENSOR 4WTARB OR AS APPROVED.
- HEAVY DUTY, COMPACT, DOOR INTRUSION LIMIT SWITCH, ALLEN-BRADLEY 802B OR AS APPROVED. CONTRACTOR TO SELECT ACTUATOR LEVER ARM AS NEEDED FOR INSTALLATION.
- TRANSITION TO RIGID STEEL CONDUIT 5 FEET MINIMUM OUTSIDE THE BUILDING WALL. USE FITTINGS MANUFACTURED FOR THE PURPOSE. ANY RGS OR METALLIC CONDUIT COMPONENTS THAT CONTACT EARTH OR CONCRETE SURFACE SHALL BE FULLY WRAPPED WITH PIPE TAPE TO PREVENT EXTERNAL CORROSION.
- WALL-MOUNTED HEATER WITH INTEGRAL THERMOSTAT. SEE WIRING DETAIL ON SHEET E-7.
- ROOF-MOUNTED EXHAUST FAN
- THERMOSTAT FOR EXHAUST FAN. SEE WIRING DETAIL ON SHEET E-7.
- LOUVER CONTROLLED BY EXHAUST FAN THERMOSTAT. SEE WIRING DETAIL ON SHEET E-7. PROVIDE LOCAL DISCONNECT IF NOT PROVIDED WITH LOUVER.

GENERAL NOTES

- SECURITY SYSTEM FOR INTRUSION IS SEPARATE FROM SECURITY CAMERA SYSTEM.
- LIGHTING AND RECEPTACLE CONDUIT RUNS NOT SHOWN ON PLAN, FOR CLARITY, SEE SHEET E-5 FOR ADDITIONAL CIRCUITS AND CONDUITS RUNS.



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REGISTERED PROFESSIONAL ENGINEER
 88305PE
 OREGON
 MAY 14, 2019
 MICHAEL E. WALLIS
 EXPIRES: 6 / 30 / 22

murraysmith

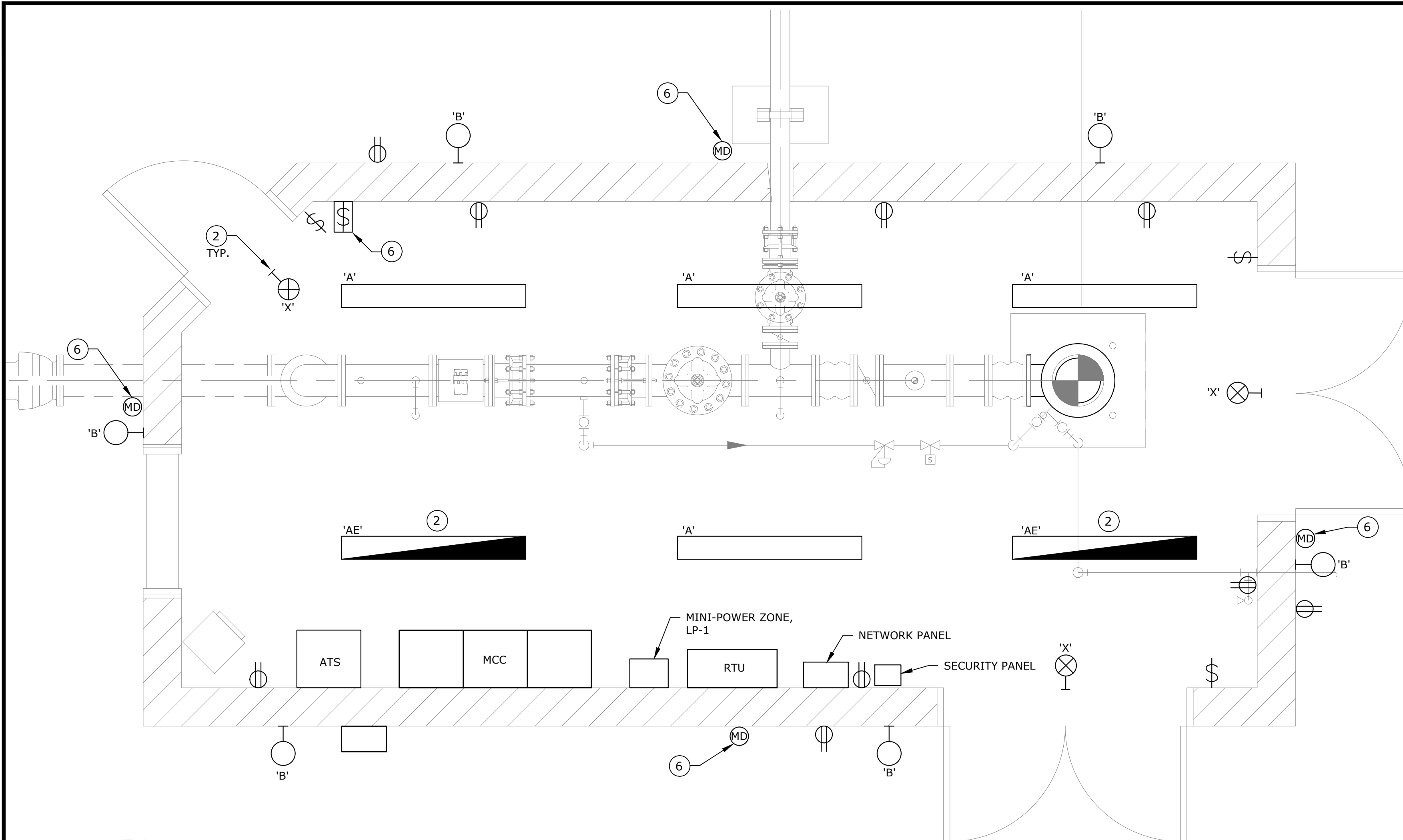
WOODBURN
 Incorporated 1889
CITY OF WOODBURN
 NEW PRODUCTION WELL FOR THE PARR ROAD TREATMENT PLANT

BUILDING ELECTRICAL PLAN & CIRCUIT SCHEDULE

PROJECT NO.: 19-2697 SCALE: AS SHOWN DATE: MARCH 2022

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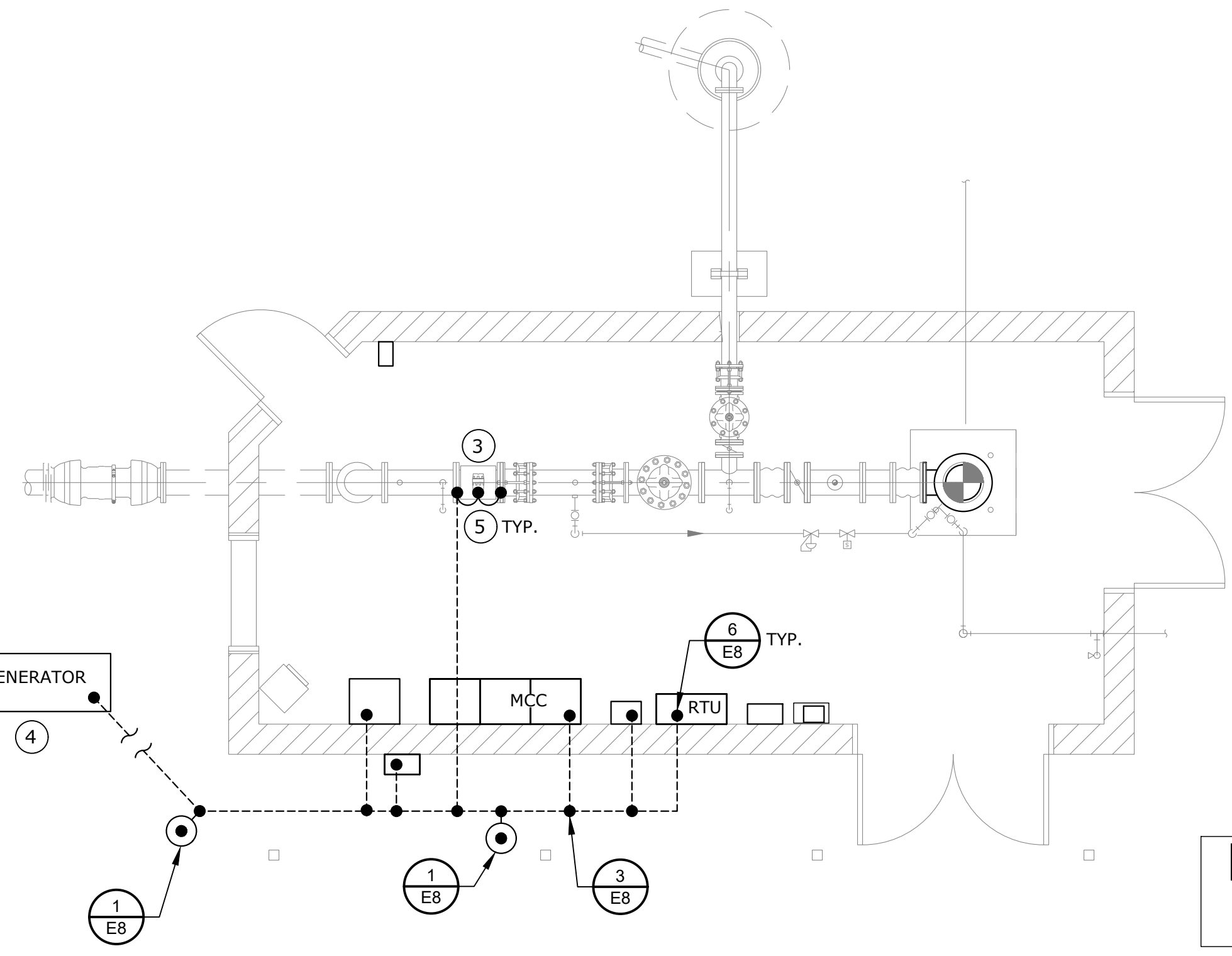


2 ELECTRICAL LIGHTING AND RECEPTACLE PLAN
SCALE: 1/2" = 1'-0"

KEY NOTES:

- 1 NOT USED
- 2 PROVIDE UN-SWITCHED BRANCH CIRCUIT TO EXIT SIGN AND EMERGENCY LIGHTING FOR CONTINUOUS BATTERY CHARGING. EXIT SIGN TO OPERATE AT ALL TIMES.
- 3 CONNECT SENSOR FLANGES, PIPE FLANGES AND TRANSMITTER GROUND ACCORDING TO FLOWMETER MANUFACTURER RECOMMENDATIONS.
- 4 GENERATOR IS NOT A SEPARATELY DERIVED SYSTEM. THEREFORE REMOVE ANY JUMPER (SYSTEM BONDING JUMPER) BETWEEN GENERATOR NEUTRAL AND GENERATOR ENCLOSURE IN ACCORDANCE WITH NEC 250.30.
- 5 NOT USED
- 6 EXTERIOR LIGHTING CONTROL SWITCH PANEL AND MOTION SENSORS WITH INTEGRAL PHOTOCELL. SEE SHEET E-7 FOR DETAIL. PROVIDE AND INSTALL POWER CIRCUITING TO LUMINAIRES.

LUMINAIRE TYPE	DESCRIPTION	LAMP TYPE	INPUT WATTS	DRIVER/BALLAST	COLOR TEMP	MANUFACTURER AND MODEL SERIES
'A'	4-FOOT LOW PROFILE LED. FIBERGLASS HOUSING, 80CRI, POLYCARBONATE DIFFUSER, MVOLT, MEDIUM DISTRIBUTION, 0-10V DIMMING, STAINLESS MOUNTING HARDWARE, WET LOCATION RATED.	LED 8,000 LUMENS	69	STANDARD	4000k	LITHONIA LIGHTING, FEM LED SERIES OR APPROVED EQUAL.
'AE'	SAME AS TYPE "A" EXCEPT WITH 90 MINUTE EMERGENCY BACKUP BATTERY WITH INTEGRAL LED AND TEST SWITCH.	LED 8,000 LUMENS	69	STANDARD	4000k	LITHONIA LIGHTING, FEM LED SERIES OR APPROVED EQUAL.
'B'	16.25" WIDE, 8" DEEP LED WALL LUMINAIRE. ALUMINUM HOUSING, 70CRI, TYPE 3 MEDIUM DISTRIBUTION, ADJUSTABLE LIGHT OUTPUT, DARK BRONZE FINISH, VANDAL GUARD. ADJUST OUTPUT TO HALF. CONFIRM DESIRED OUTPUT WITH OWNER PRIOR TO FINALIZING INSTALLATION.	LED 8,477 LUMENS	78	STANDARD	4000k	LITHONIA LIGHTING, TWH LED SERIES OR APPROVED EQUAL.
'C'	POLE MOUNT EXTERIOR LIGHT LED TYP. 1,771 LUMEN LED TYPE R4 DISTRIBUTION TENON SLIPFITTER FOR POLE MOUNTING.	LED 19771 LUMENS	106	STANDARD	4000k	LITHONIA KAD LED 40C 100D 40K R4 MVOLT OR EQUAL.
'X'	LED, SURFACE MOUNTED EXIT SIGN, ALUMINUM HOUSING, MVOLT, SINGLE FACE, RED LETTERING, MATTE BLACK WITH ALUMINUM WITH BRUSHED ALUMINUM FACE AND NICKEL CADMIUM BATTERY, UNIVERSAL MOUNT, SELF DIAGNOSTICS.	LED	3.8	STANDARD	4000k	LITHONIA LQM SERIES OR APPROVED EQUAL.



1 ELECTRICAL GROUNDING PLAN
SCALE: 1/4" = 1'-0"

PANEL: LP-1		VOLTAGE: 120/240, 1PH, 3 WIRE		MOUNTING: SURFACE						
MAIN: 200A		BUS: 200A COPPER		FEED: TOP						
CKT NO	CIRCUIT DESCRIPTION	BREAKER POLES	LOAD AMPS	LOAD VA	PHASE	LOAD VA	BREAKER POLES	LOAD AMPS	CIRCUIT DESCRIPTION	CKT NO
1	RECEPTACLES, BUILDING INTERIOR	1	20	1080	A	500	1	20	CONTROL PANEL	2
3	RECEPTACLES, BUILDING EXTERIOR	1	20	540	B	1000	1	20	GENERATOR CONTROL/BLOCK HEATER	4
5	SECURITY PANEL	1	20	100	A	760	1	20	EXHAUST FAN AND LOUVER	6
7	LIGHTS, BUILDING INTERIOR	1	20	500	B		1	20		8
9	LIGHTS, BUILDING EXTERIOR	1	20	600	A		1	20		10
11		1	20		B		1	20		12
13		1	20		A		1	20		14
15					B					16
17					A					18
19					B					20
21					A					22
23					B					24

LOAD PER PHASE		
PHASE A	3040	VA
PHASE B	2040	VA
TOTAL LOAD		
	5080	VA
TOTAL AMPS		
	42	AMPS

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 EXPIRES: 6/30/22

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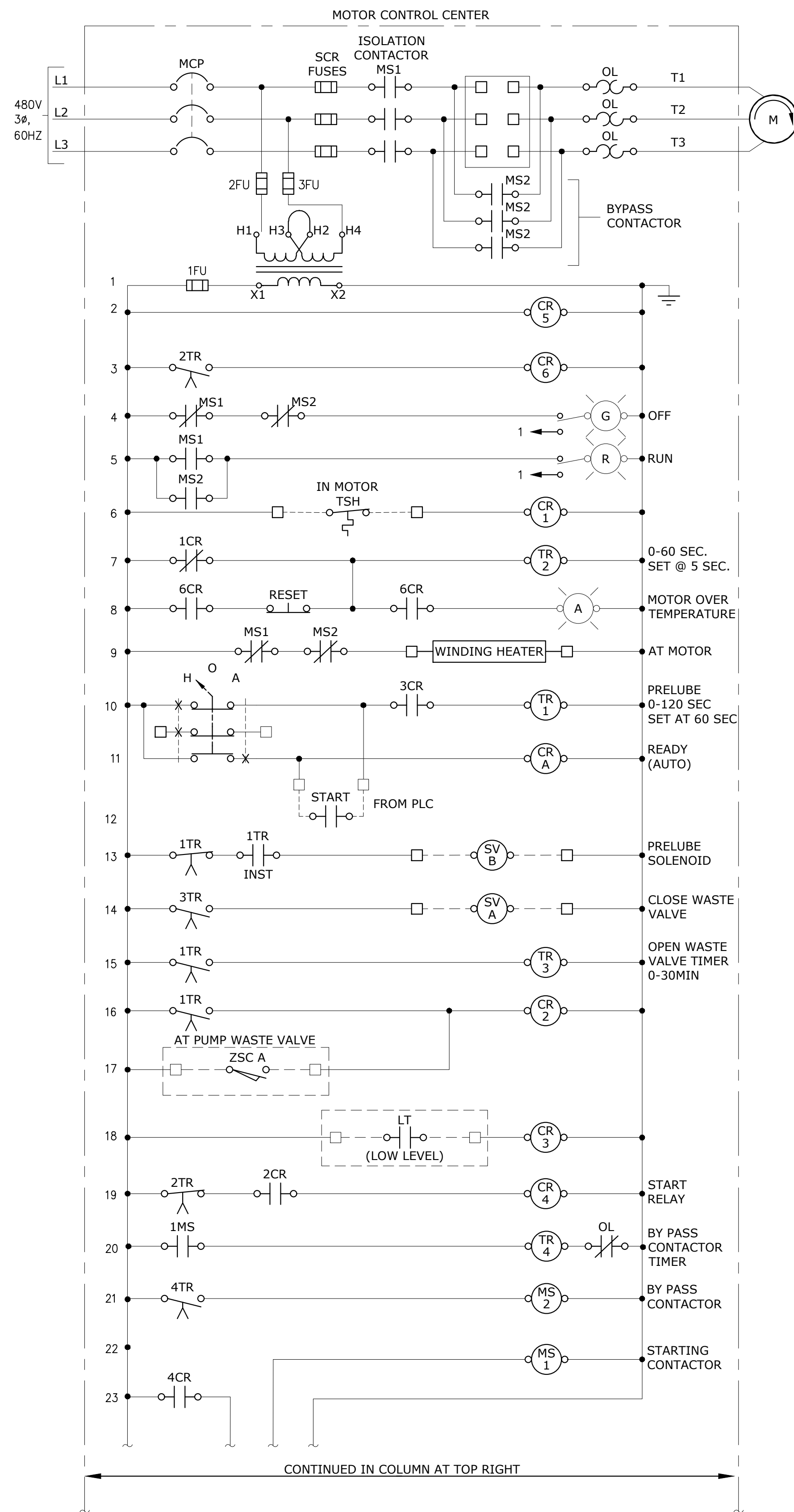
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BUILDING LIGHTING & RECEPTACLE PLAN & GROUNDING PLANS

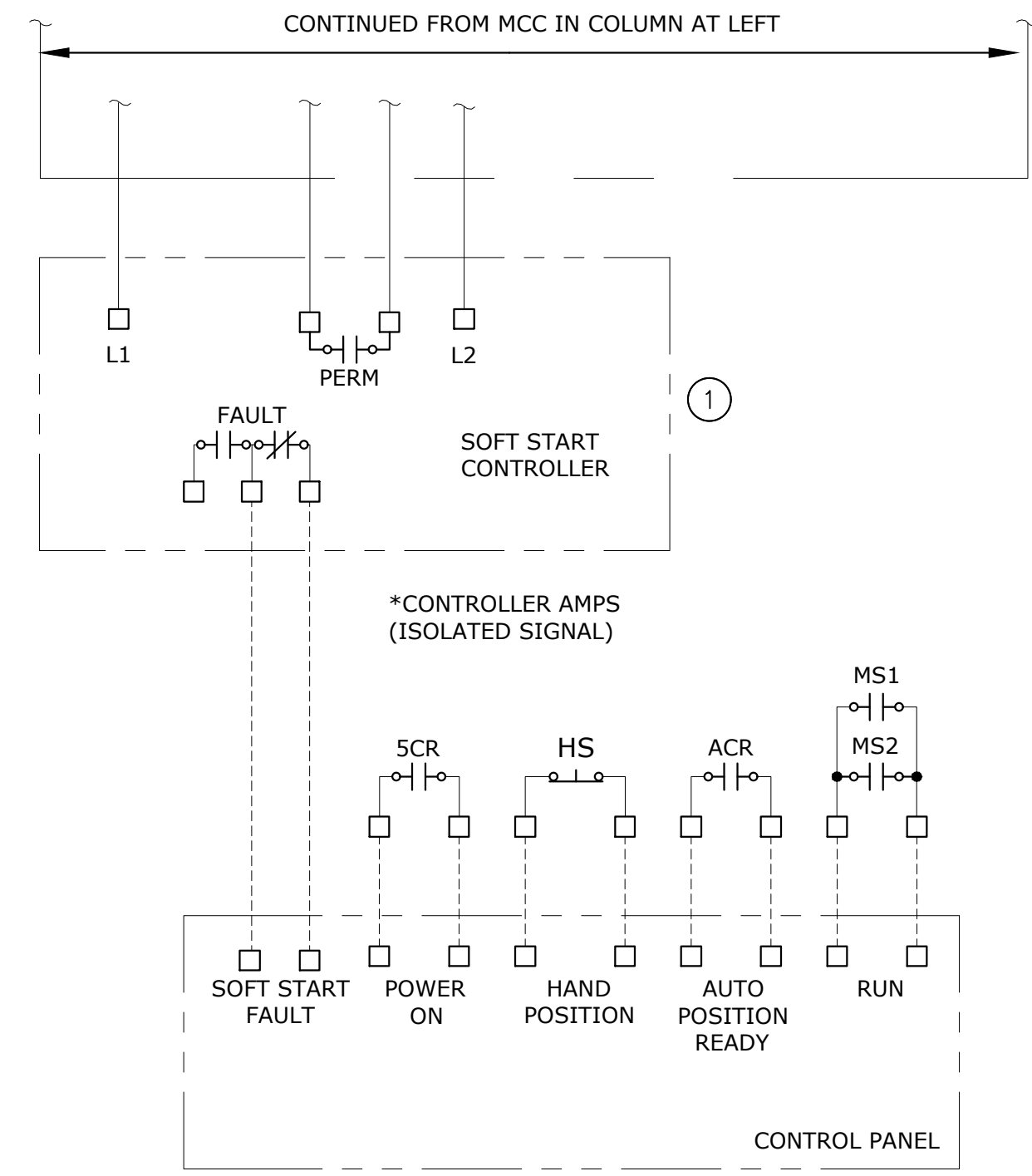
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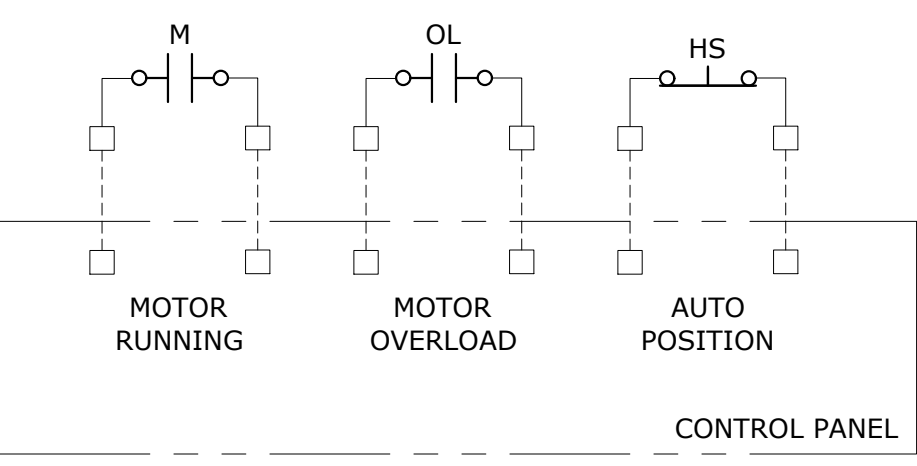
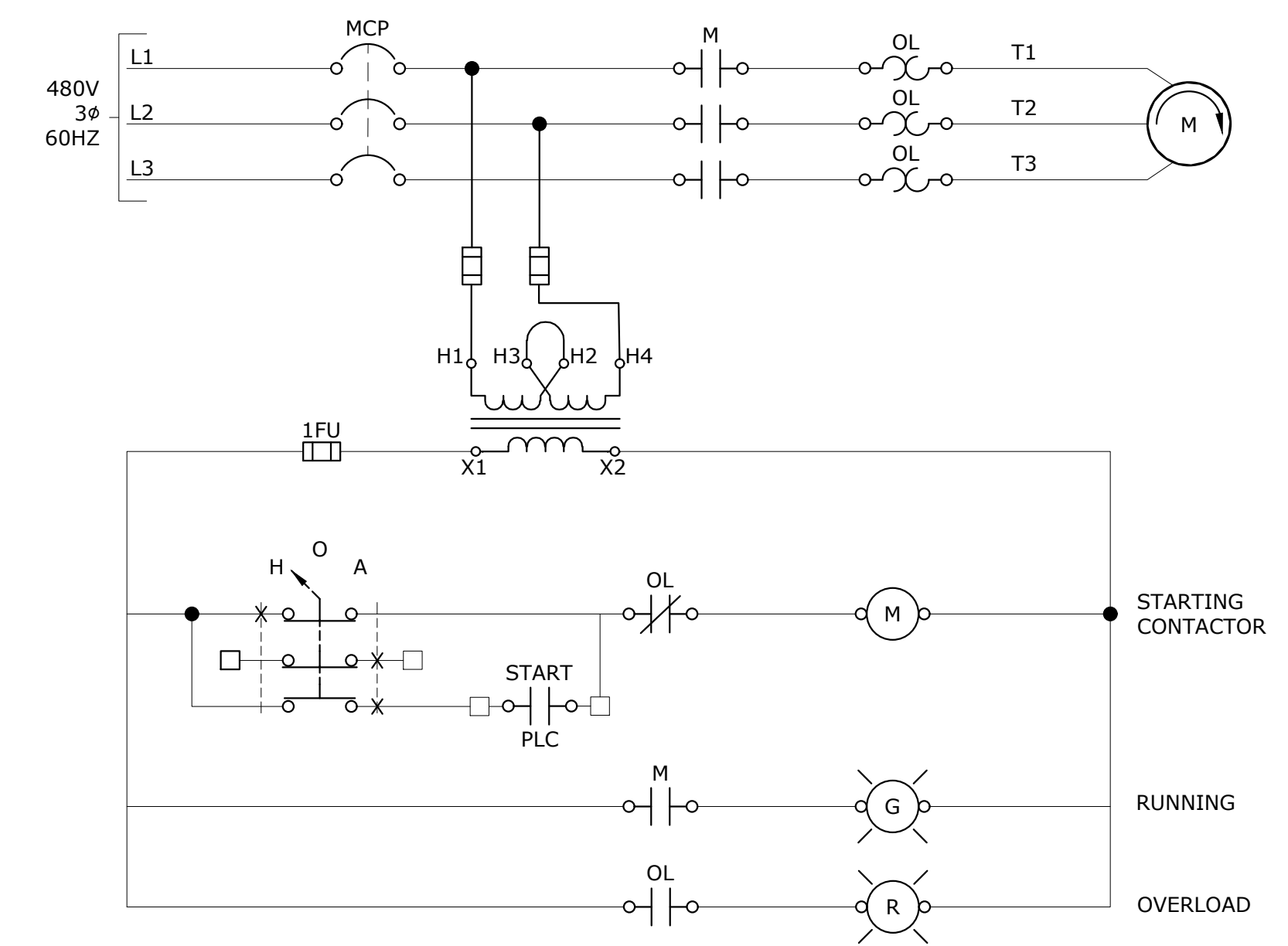
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1 - WELL PUMP STARTER WIRING



KEY NOTES:
 1 DIAGRAM DEPICTS THE GENERAL REQUIREMENTS FOR REQUIRED CONTROL FUNCTIONS. SOME DETAILS MAY VARY ACCORDING TO MANUFACTURERS. PROVIDE REQUIRED CONTROLS TO ACHIEVE FUNCTIONS SHOWN.



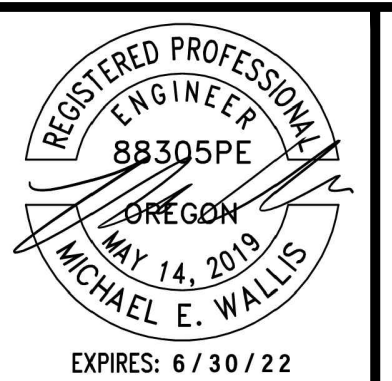
2 - SUMP PUMP STARTER WIRING

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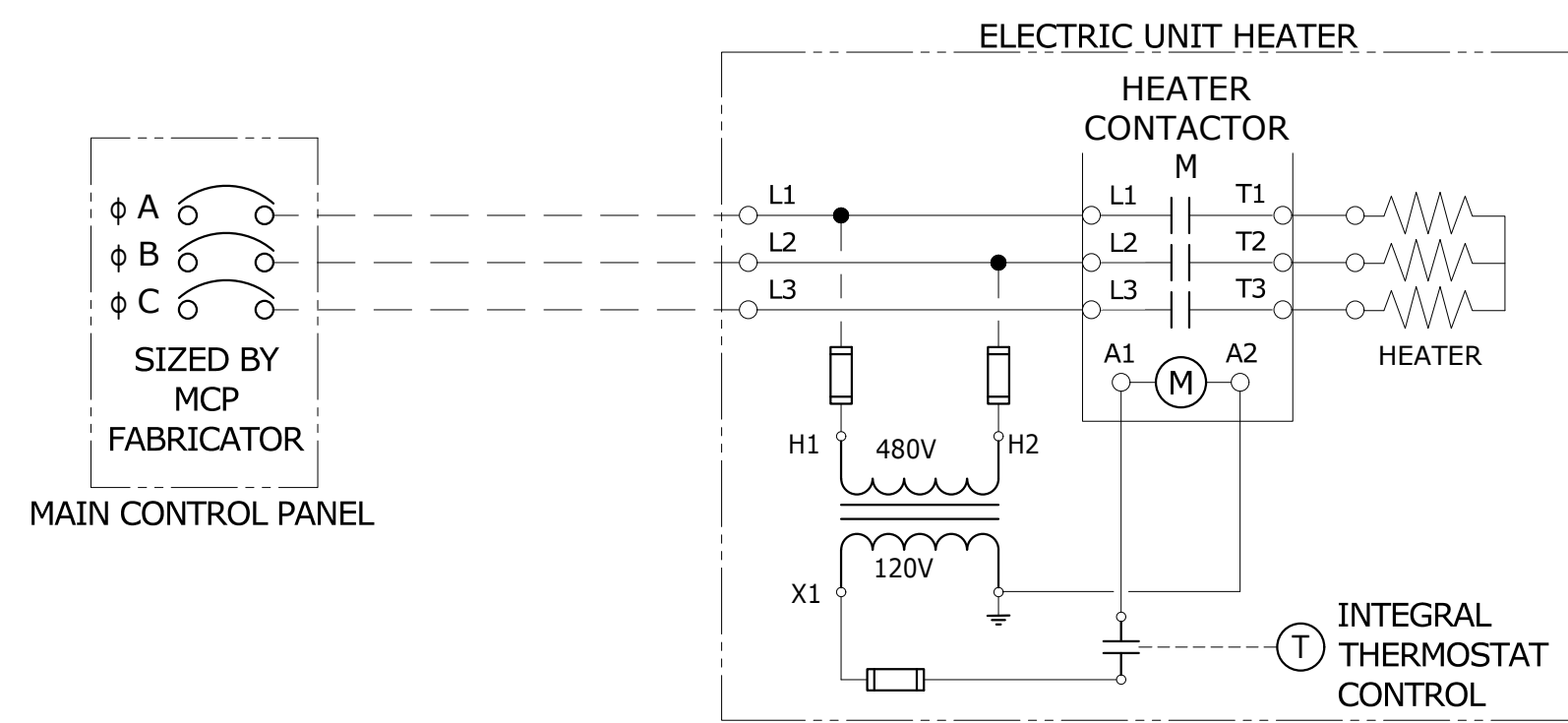


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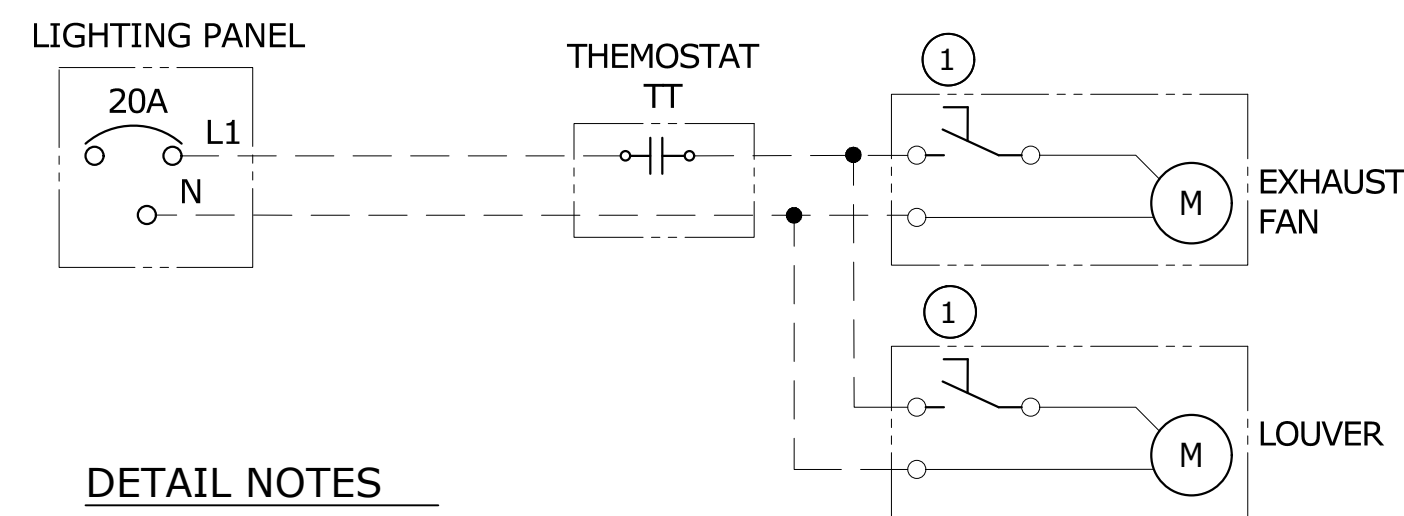
STARTER WIRING DIAGRAM

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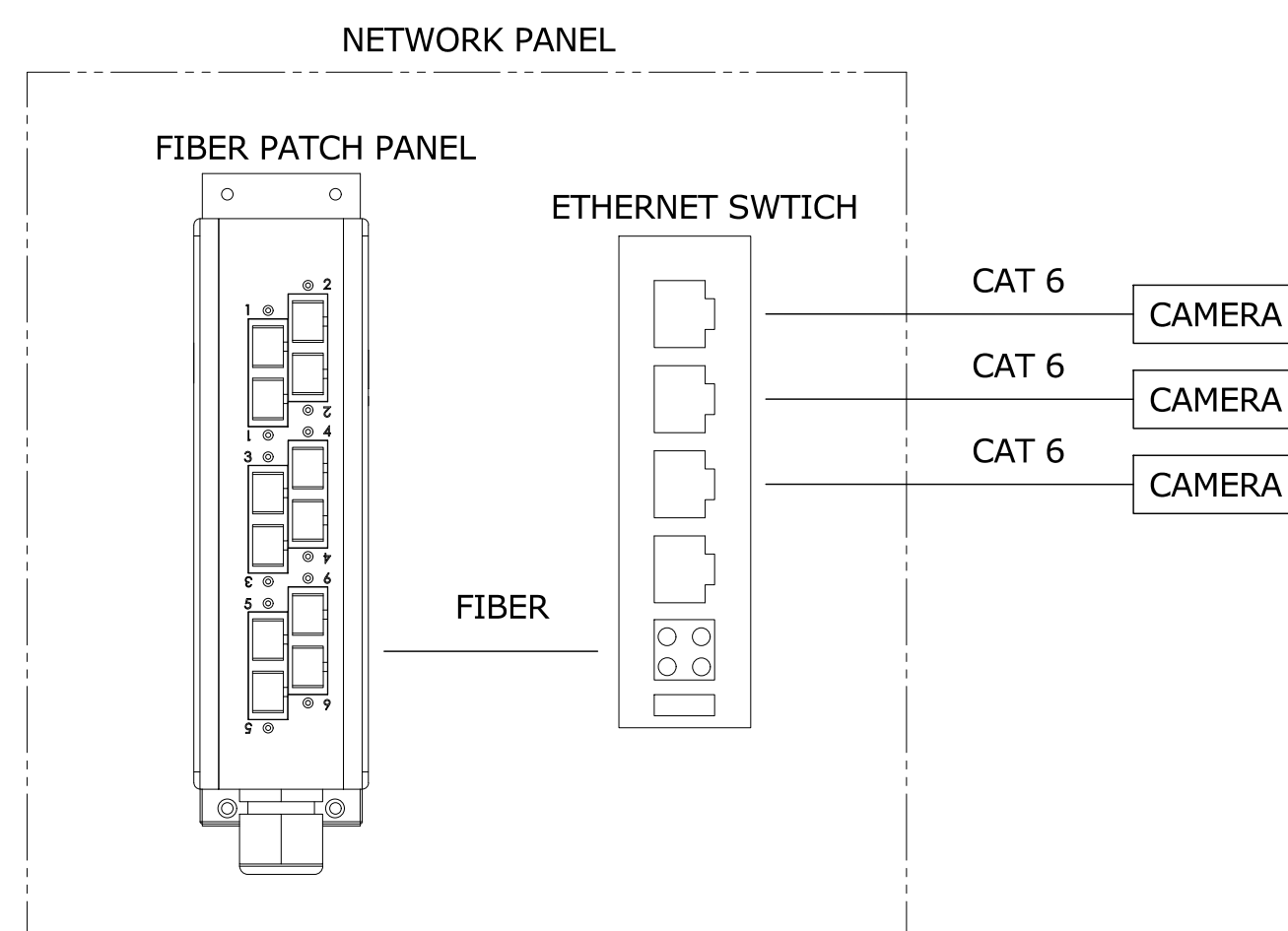


1 3φ ELECTRIC UNIT HEATER TYPICAL CONTACTOR WIRING

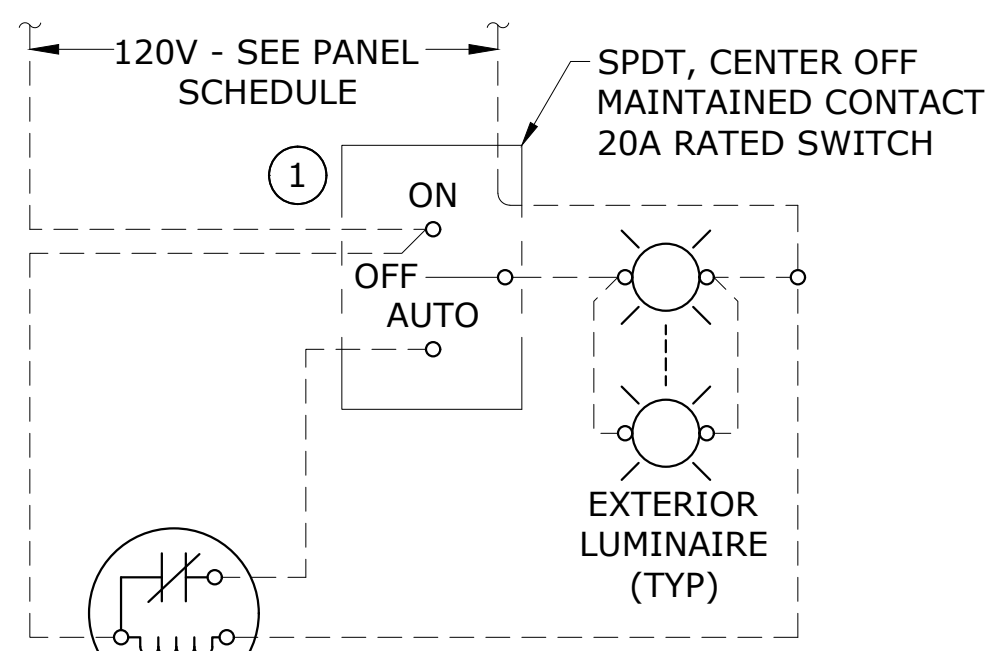


DETAIL NOTES
 1 PROVIDE LOCAL DISCONNECT IF NOT PROVIDED AS PART OF ASSEMBLY. COORDINATE WITH MECHANICAL CONTRACTOR.

2 PUMP BUILDING 1φ EXHAUST FAN EF-XXX WIRING

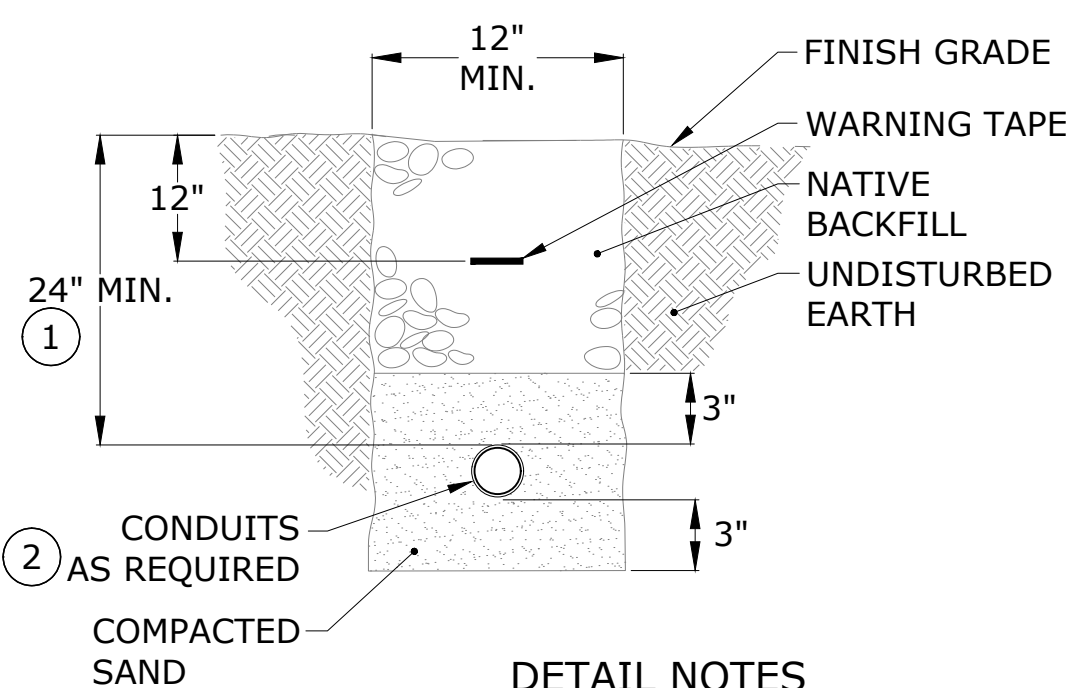


3 SECURITY CAMERA CONNECTION DIAGRAM



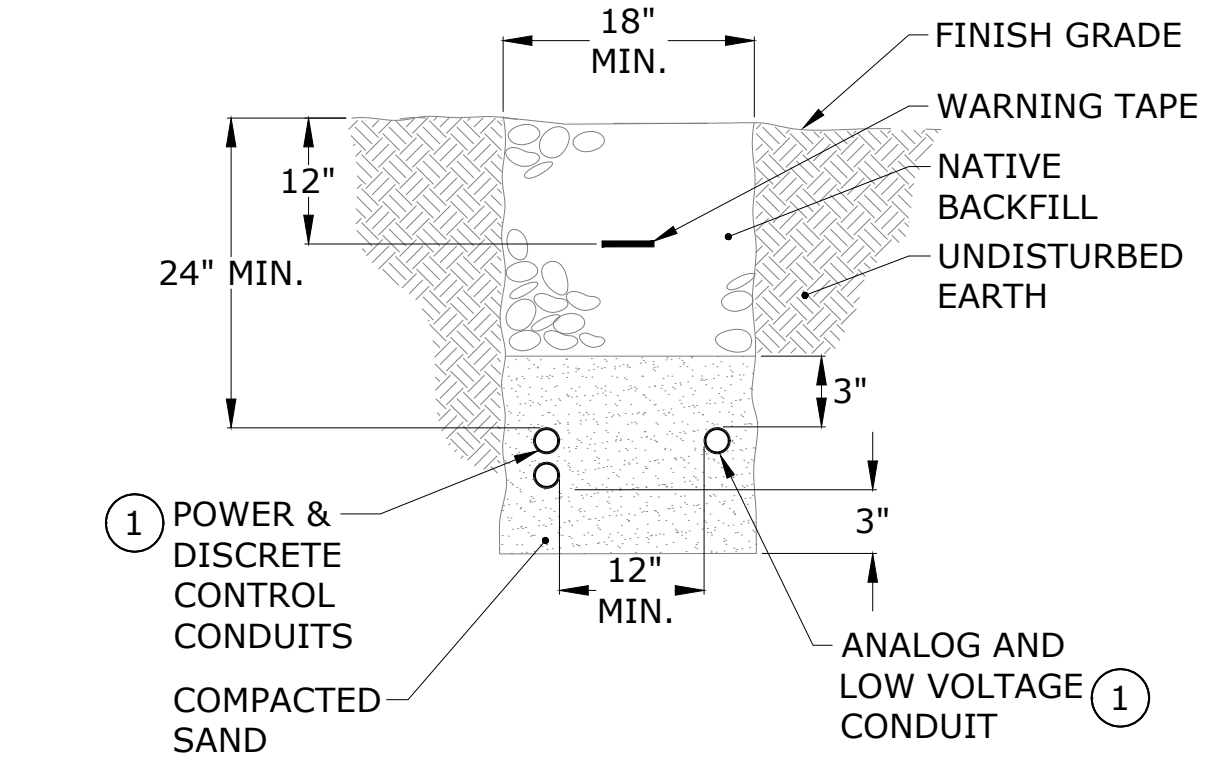
DETAIL NOTES
 1 PROVIDE LABEL AT SWITCH "EXTERIOR LIGHTS".
 2 120V, U.L. LISTED FOR USE IN WET LOCATION. HUBBELL MS-DB OR AS APPROVED.
 3 WIRE ADDITIONAL SENSOR CONTACTS IN PARALLEL. ONE MOTION SENSOR SHOULD TURN ON ALL EXTERIOR LIGHTS.

4 EXTERIOR LIGHTING CONTROL



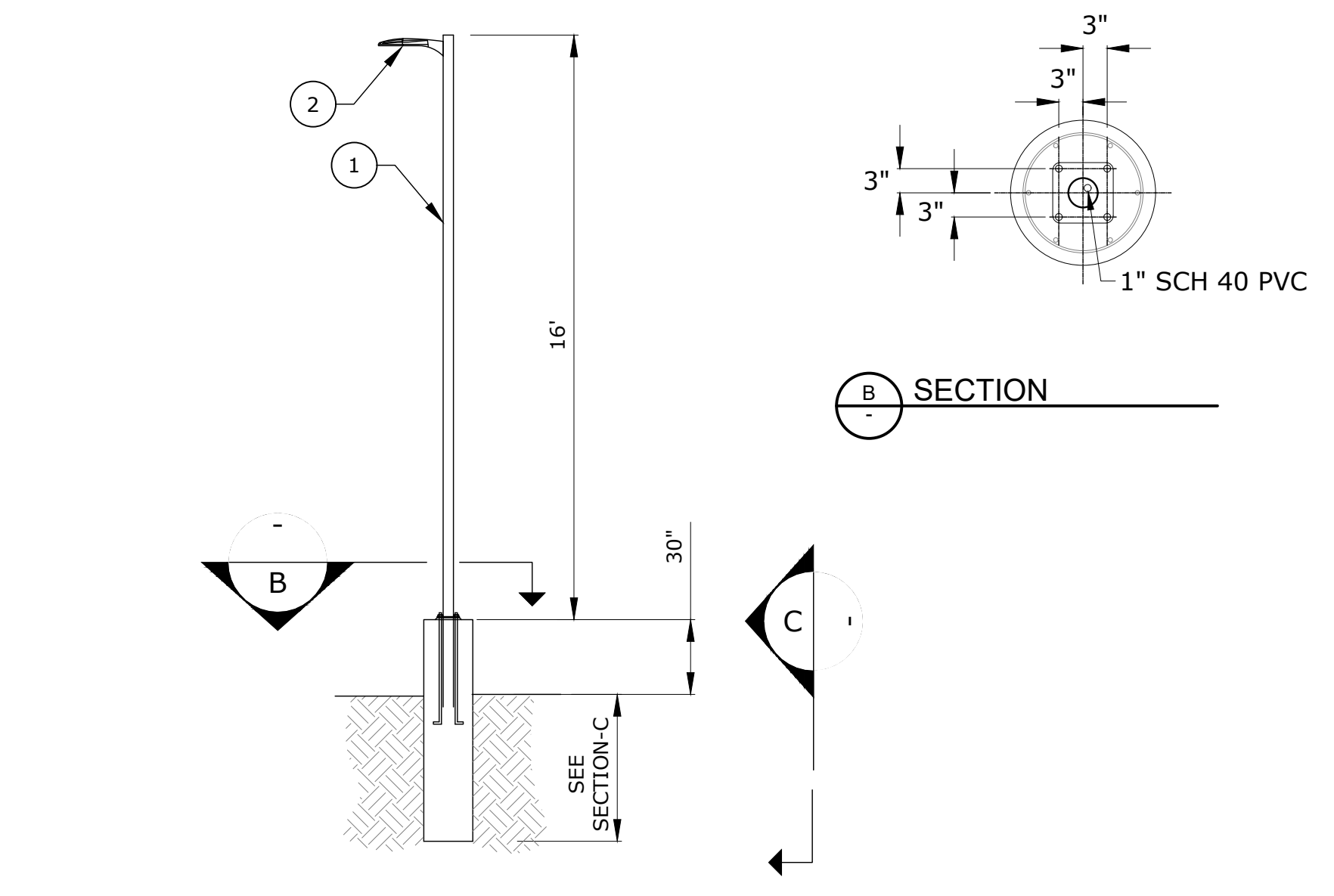
DETAIL NOTES
 1 VERIFY TRENCH DEPTH AND COVERING FOR INCOMING SERVICE CONDUIT WITH LOCAL UTILITY.
 2 COORDINATE WITH CIVIL DISCIPLINE FOR INTERSECTING PIPES.

5 TYP. CONDUIT TRENCH



DETAIL NOTES
 1 COORDINATE WITH CIVIL DISCIPLINE FOR INTERSECTING PIPES.

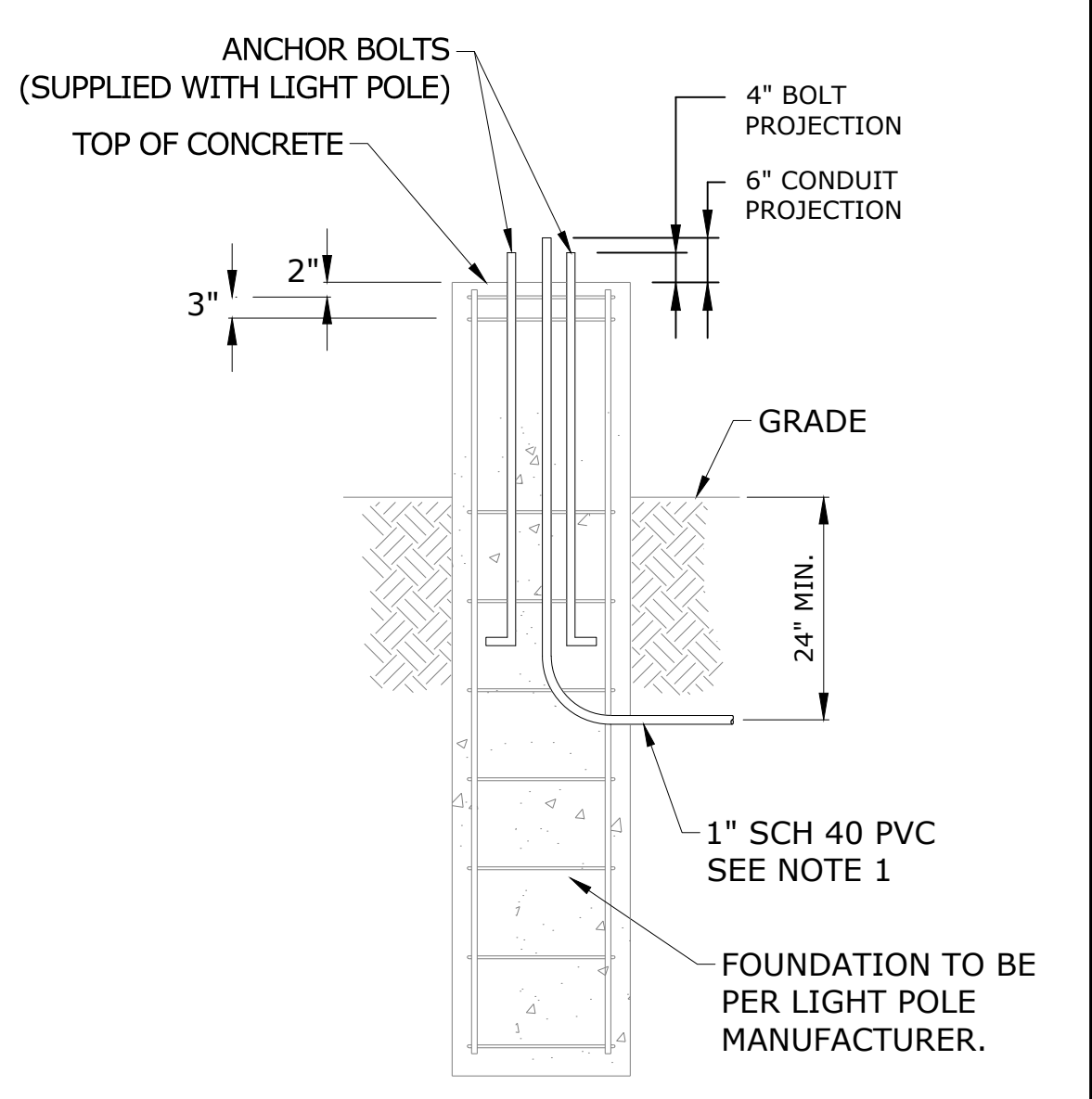
6 MIXED CONDUIT TRENCHES



ITEM	QTY	DESCRIPTION
1	1	4" ROUND LIGHT POLE LITHONIA # RSA 16 4C DM19AS UL DDBXD OR EQUAL
2	1	SEE FIXTURE SCHEDULE FOR LUMINAIRE

NOTES:
 1. INSTALL 1" SCH 40 PVC CONDUIT IN CENTER OF CONCRETE BASE OF THE LIGHT POLE FOR WIRING. CONDUIT TO BE A MINIMUM OF 24" BELOW GRADE.

7 SITE LIGHTING POLE DETAIL



SECTION C

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 EXPIRES: 6/30/22

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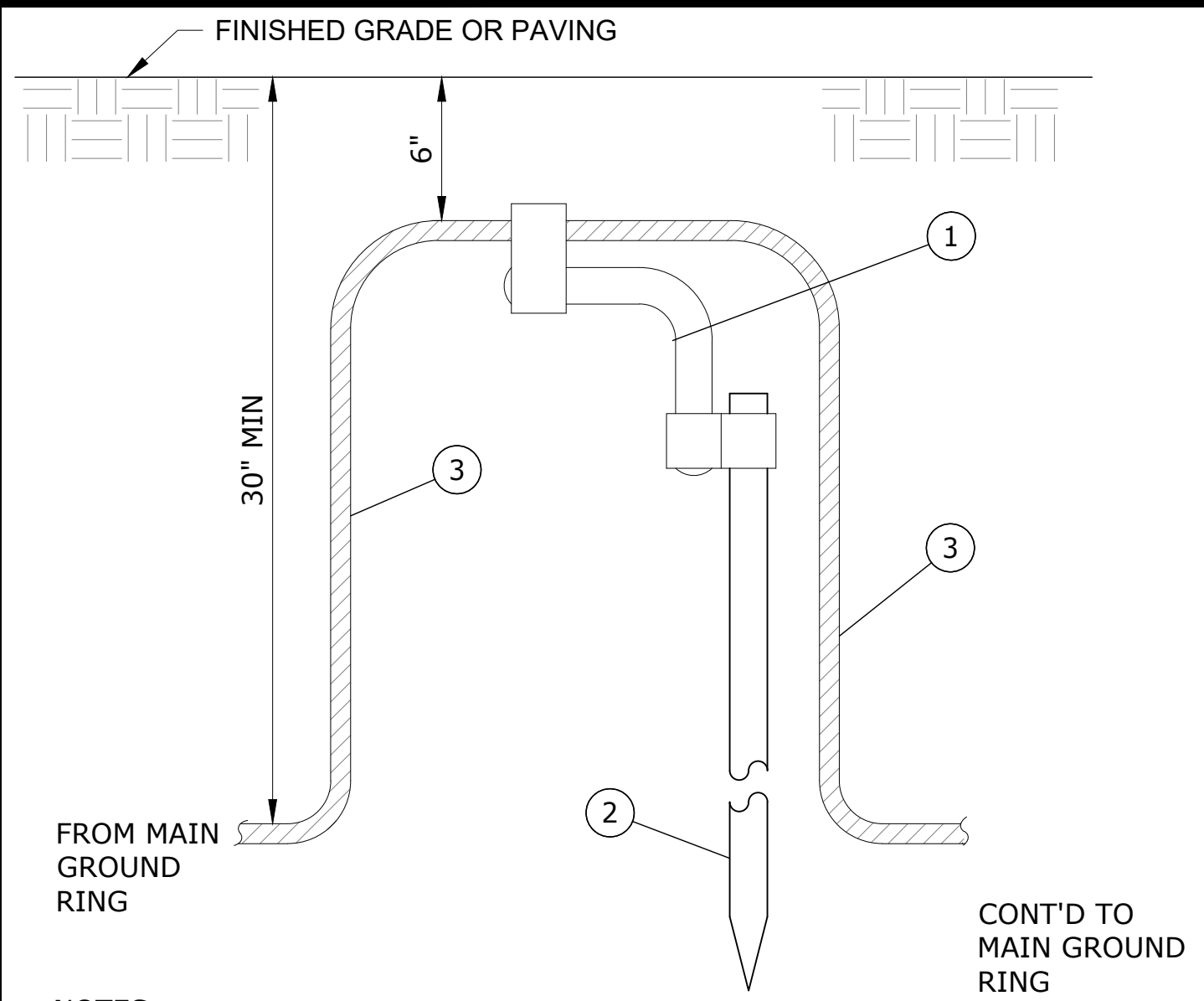
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ELECTRICAL DETAILS

PROJECT NO.: 19-2697 SCALE: AS SHOWN DATE: MARCH 2022

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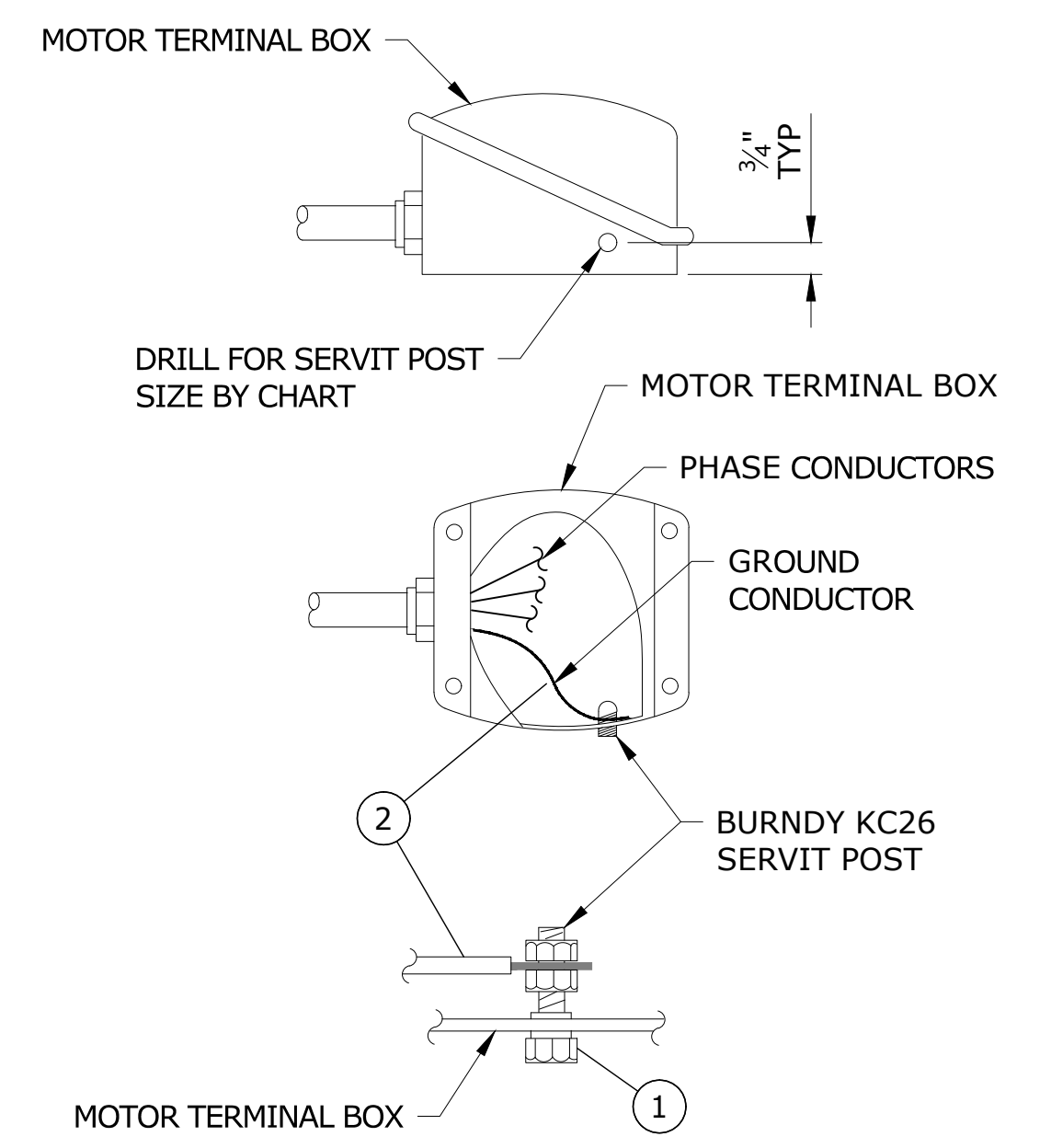
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NOTES:
1. SEE SITE GROUNDING PLAN FOR GROUND ROD LOCATIONS.

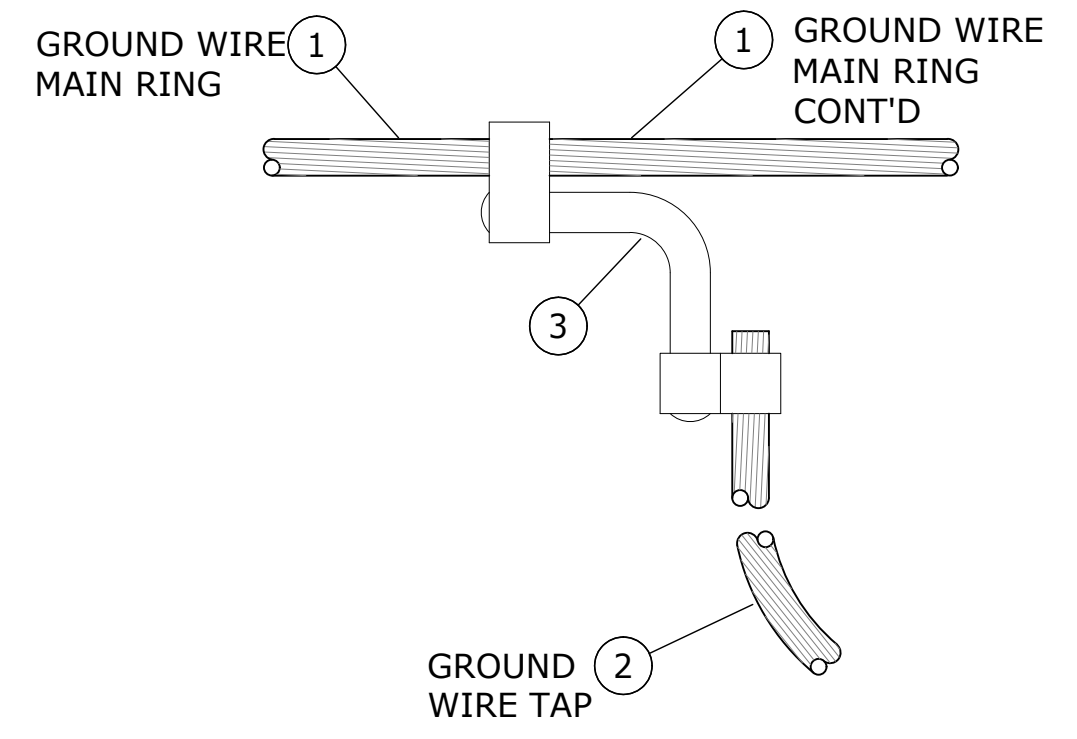
ITEM	QTY.	DESCRIPTION
1	A/R	CONNECTOR, COMPRESSION TYPE, (SEE DETAIL 4)
2	A/R	ROD, GND. COPPER CLAD, 3/4" x 10'
3	A/R	GROUND WIRE, SOFT DRAWN BARE COPPER (SDBC) #4/0 AWG

GROUND ROD ASSEMBLY 1
SCALE: NTS



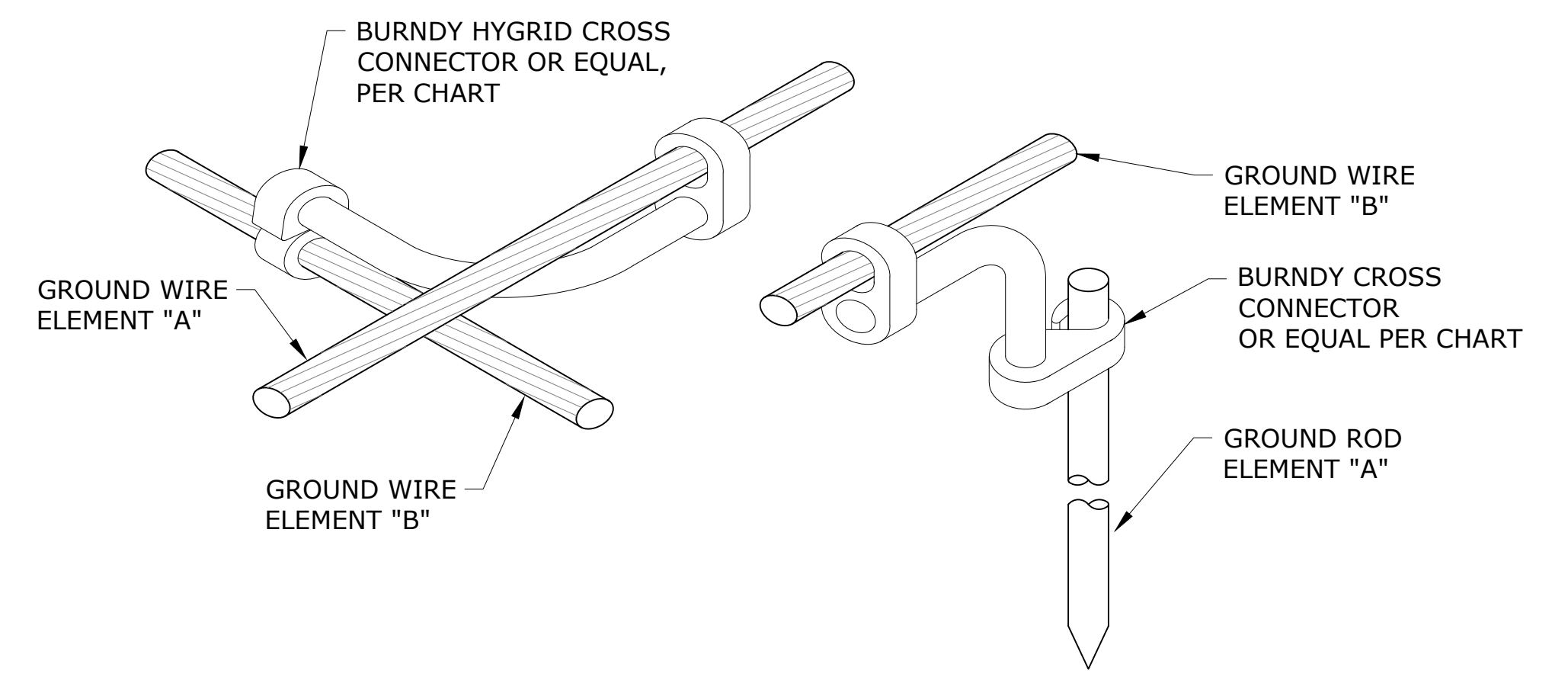
ITEM	QTY.	DESCRIPTION
1	A/R	CONNECTOR, BURNDY #KC26 OR EQUAL WITH #2/0 AWG TAP
2	A/R	WIRE, GND. BARE STRANDED COPPER, #2/0 AWG

SERVIT POST GROUNDING 2
SCALE: NTS



ITEM	QTY.	DESCRIPTION
1	A/R	WIRE, GND. BARE STRANDED COPPER, #4/0 AWG
2	A/R	WIRE, GND. BARE STRANDED COPPER, #2/0 AWG
3	A/R	CONNECTOR, BURNDY YGL29C29 (SEE DETAIL 4)

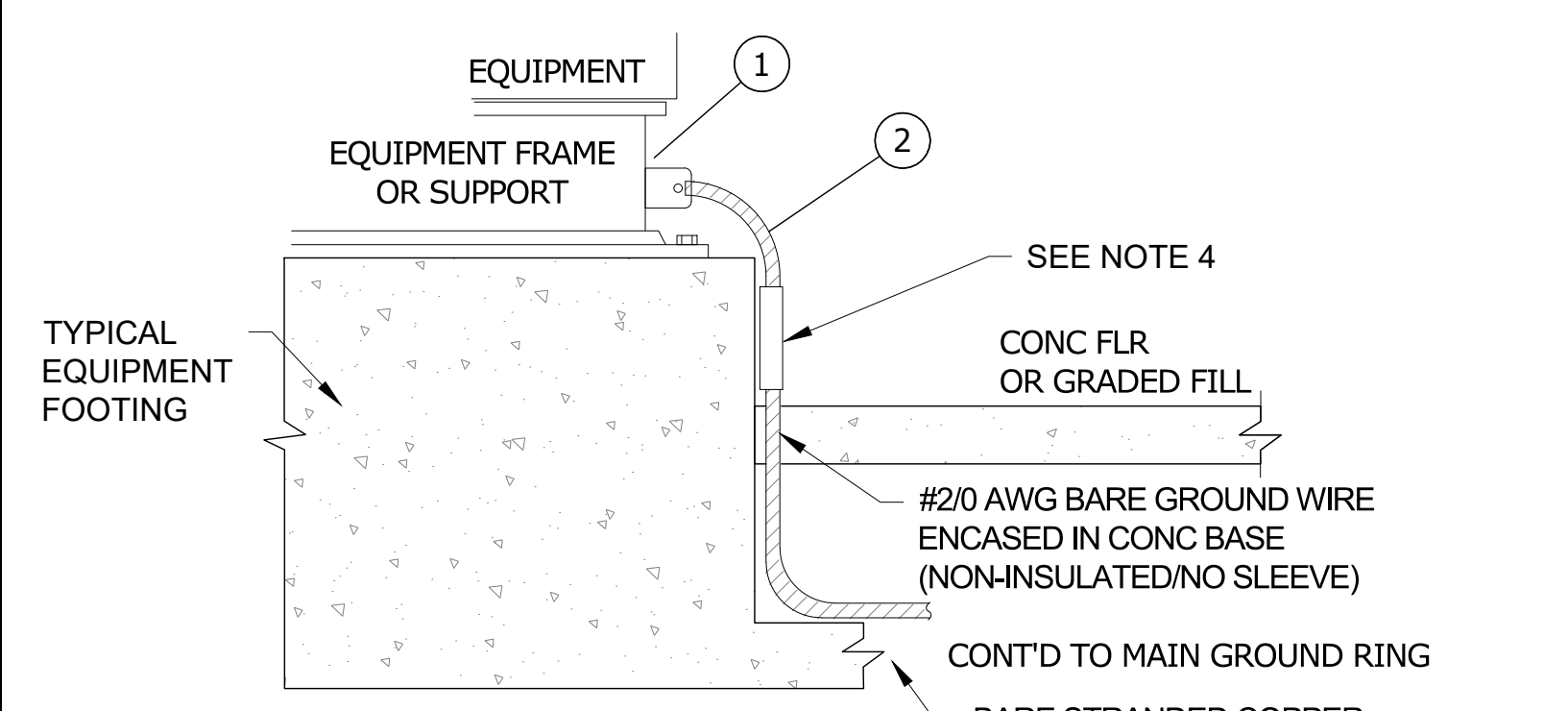
GROUND TAP CONNECTOR 3
SCALE: NTS



BURNDY CAT. NUMBER OR EQUAL	CABLE TO CABLE		CABLE TO GROUND ROD	
	ELEMENT "A"	ELEMENT "B"	ELEMENT "A"	ELEMENT "B"
YGL34C29	250 kcmil - 500 kcmil	#2 AWG - 250 kcmil	5/8" - 3/4" Rod	#2 AWG - 250 kcmil
YGL29C29	#2 AWG - 250 kcmil	#2 AWG - 250 kcmil	1/2" - 5/8" Rod	#2 AWG - 250 kcmil

BURNDY CAT. NUMBER OR EQUAL	INSTALLATION TOOLS, DIE SET CAT. NO. (NUMBER OF CRIMPS)							
	Y750/735/Y39 HYPRESS		PAT750-18V		Y45 HYPRESS		Y46 HYPRESS	
	ELEMENT "A"	ELEMENT "B"	ELEMENT "A"	ELEMENT "B"	ELEMENT "A"	ELEMENT "B"	ELEMENT "A"	ELEMENT "B"
YGL34C2	PU998 (1)	U-0 (1)	PU998 (1)	U-0 (1)	S998 or PU998 (1)	U-0 (1)	P998 or PU998 (1)	U-0 (1)
YGL34C29	PU998 (1)	U997 (1)	PU998 (1)	U997P (1)	S998 or PU998 (1)	U997 (1)	PU998 or PU998 (1)	U997 (1)
YGL34C34	U1011 (3)	U1011 (3)	U1011 (3)	U1011 (3)	S1011 (3)	S1011 (3)	P1011 (3)	P1011 (3)
YGL29C29	U997 (1)	U997 (1)	U997P (1)	U997P (1)	U997 (1)	U997 (1)	U997 (1)	U997 (1)

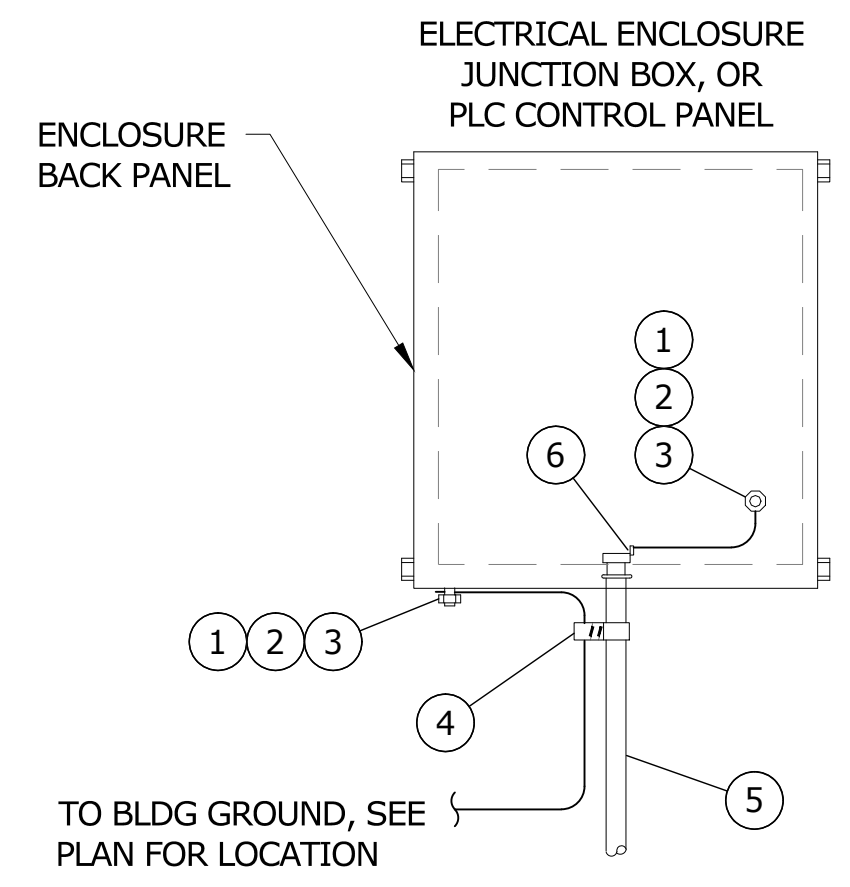
CROSS/ROD CONNECTOR 4
SCALE: NTS



NOTES:
1. ALL CONNECTIONS SHALL BE MADE UP WRENCH TIGHT.
2. PAINT, INSULATION OR OTHER NON-CONDUCTIVE COATING SHALL BE REMOVED AT THE POINT OF CONTACT, OR A FASTENER THAT WILL PENETRATE THE COATING SHALL BE USED.
3. TO PREVENT CORROSION ALL EXPOSED COPPER GROUND CABLES SHALL BE COATED WITH AN EPOXY PAINT SUCH AS CHEMLINE 784/32 FROM ADVANCED POLYMER COATINGS OR APPROVED EQUAL.
4. PROTECT GROUND WIRE WITH PVC SLEEVE IF CONCRETE SUPPORT HEIGHT IS MORE THAN 6" ANCHOR PVC SLEEVE TO CONCRETE PEDESTAL.

ITEM	QTY.	DESCRIPTION
1	A/R	GROUNDING PLATE BY EQUIPMENT MANUFACTURER OR CONTRACTOR TO DRILL AND TAP SERVIT POST CONNECTION
2	A/R	WIRE, GND. BARE STRANDED COPPER, #2/0 (SEE NOTE 3)

MECHANICAL EQUIPMENT GROUNDING 5
SCALE: NTS



ITEM	QTY	DESCRIPTION
1	AS REQ	SERVIT POST, #8 TO #2, BURNDY #KC23
2	1	3/8"-16 HEX HEAD NUT SILICON BRONZE
3	1	3/8" LOCKWASHER SILICON BRONZE
4	AS REQ	CONDUIT CLAMP, ONE HOLE, 1/2" IRON MAL. GALV.
5	AS REQ	RGS CONDUIT
6	AS REQ	BURNDY TYPE GC-A CONDUIT GROUND BUSHING

ELECTRICAL ENCLOSURE GROUNDING 6
SCALE: NTS

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MEW CHECKED

REGISTERED PROFESSIONAL ENGINEER
88305PE
OREGON
MAY 14, 2019
MICHAEL E. WALLIS
EXPIRES: 6/30/22

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WOODBURN
Incorporated 1889
CITY OF WOODBURN
NEW PRODUCTION WELL FOR
THE PARR ROAD TREATMENT PLANT

GROUNDING DETAILS

PROJECT NO.: 19-2697 SCALE: AS SHOWN DATE: MARCH 2022

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E-8
53 of 67

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GENERAL INSTRUMENT SYMBOLS

LOCATION/ACCESSIBILITY	DISCRETE INSTRUMENTS	SHARED DISPLAY AND CONTROL (DCS)	PLC	DISCRETE HARDWARE INTERLOCK
FIELD MOUNTED 1. FIELD OR LOCALLY MOUNTED. 2. ACCESSIBLE TO AN OPERATOR AT DEVICE.				
PRIMARY LOCATION NORMALLY ACCESSIBLE TO AN OPERATOR 1. CENTRAL OR MAIN CONTROL ROOM. 2. FRONT OF MAIN PANEL OR CONSOLE MOUNTED. 3. VISIBLE ON VIDEO DISPLAY. 4. ACCESSIBLE TO AN OPERATOR AT DEVICE OR CONSOLE.				
PRIMARY LOCATION NORMALLY INACCESSIBLE TO AN OPERATOR 1. CENTRAL OR MAIN CONTROL ROOM. 2. REAR OF PANEL OR CABINET MOUNTED. 3. NOT VISIBLE ON VIDEO DISPLAY. 4. NOT NORMALLY ACCESSIBLE TO AN OPERATOR AT DEVICE OR CONSOLE.				
AUXILIARY LOCATION NORMALLY ACCESSIBLE TO AN OPERATOR 1. SECONDARY OR LOCAL CONTROL ROOM. 2. FIELD OR LOCAL CONTROL PANEL. 3. FRONT OF SECONDARY OR LOCAL PANEL MOUNTED. 4. VISIBLE ON VIDEO DISPLAY. 5. ACCESSIBLE TO AN OPERATOR AT DEVICE OR CONSOLE.				
AUXILIARY LOCATION NORMALLY INACCESSIBLE TO AN OPERATOR 1. SECONDARY OR LOCAL CONTROL ROOM. 2. FIELD OR LOCAL CONTROL PANEL. 3. REAR OF SECONDARY OR LOCAL PANEL OR CABINET MOUNTED. 4. NOT VISIBLE ON VIDEO DISPLAY. 5. NOT NORMALLY ACCESSIBLE TO AN OPERATOR AT DEVICE OR CONSOLE.				

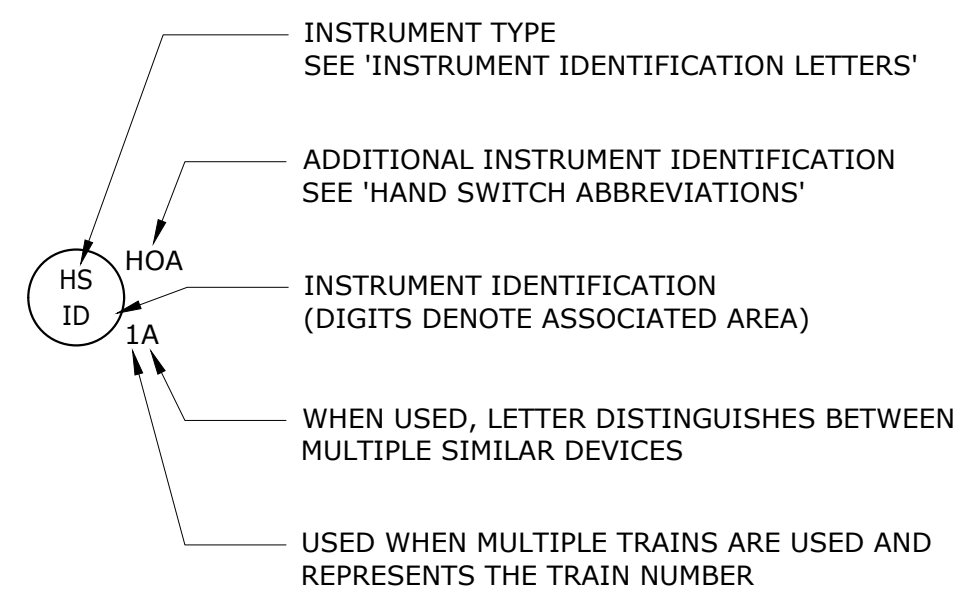
ABBREVIATIONS

AG ABOVE GROUND	LO LOCKED OPEN
ATM ATMOSPHERE	LP LOW PRESSURE
BYP BYPASS	LPT LOW POINT
CC CHEMICAL CLEANOUT	MTL MATERIAL
CL CENTERLINE	MAX MAXIMUM
CO CLEANOUT	MCC MOTOR CONTROL CENTER
CONN CONNECTION	MCP MAIN CONTROL PANEL
CSC CAR SEAL CLOSED	MIN MINIMUM
CSO CAR SEAL OPEN	MOV MOTOR OPERATED VALVE
CTR CENTER	MW MANWAY
DCS DISTRIBUTED CONTROL SYSTEM	NC NORMALLY CLOSED
DES DESIGN	NNF NORMALLY NO FLOW
DIA DIAMETER	NO NORMALLY OPEN
DP DESIGN PRESSURE	NOZ NOZZLE
D/P DIFFERENTIAL PRESSURE	O/C OPEN/CLOSE
DRN DRAIN	O/O ON/OFF
DT DESIGN TEMPERATURE	OIT OPERATOR INTERFACE TERMINAL
DWG DRAWING	OP OUTPUT
(E) EXISTING	OVHD OVERHEAD
EL ELEVATION	PLC PROGRAMMABLE LOGIC CONTROLLER
ESD EMERGENCY SHUTDOWN	PRESS PRESSURE
FOF FACE OF FLANGE	PV PROCESS VARIABLE
(F) FURNISHED	(R) RELOCATED
FC FAIL CLOSED	REQD REQUIRED
FI FAIL INDETERMINATE	RIO REMOTE I/O PANEL
FL FAIL LOCKED (LAST POSITION)	RTD RESISTANCE TEMPERATURE DETECTOR
FLG FLANGE	SC SAMPLE CONNECTION
FO FAIL OPEN	SCADA SUPERVISORY CONTROL AND DATA ACQUISITION
FP FULL PORT	SCH SCHEDULE
FV FULL VACUUM	SD SHUTDOWN
GO GEAR OPERATED	SG SPECIFIC GRAVITY
GR GRADE	SIS SAFETY INSTRUMENTED SYSTEM
HC HOSE CONNECTION	SO STEAM OUT
HDR HEADER	SP SET POINT
HH HAND HOLE	SS STAINLESS STEEL S/S or START/STOP
HOA HAND/OFF/AUTOMATIC	STD STANDARD
HP HIGH PRESSURE	T/C THERMOCOUPLE
HPT HIGH POINT	TDH TOTAL DIFFERENTIAL HEAD
IAS INSTRUMENT AIR SUPPLY	TEMP TEMPERATURE
LC LOCKED CLOSED	THRD THREADED
LCP LOCAL CONTROL PANEL	TSO TIGHT SHUT-OFF
	TYP TYPICAL
	UG UNDERGROUND
	VNT VENT
	VAC VACUUM
	VB VORTEX BREAKER
	VFD VARIABLE FREQUENCY DRIVE
	W/ WITH
	W/O WITHOUT

INSTRUMENT IDENTIFICATION LETTERS

	FIRST LETTER		SUCCEEDING LETTERS		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, FLAME, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	USER'S CHOICE (TYPICALLY CONDUCTIVITY - ELECTRICAL)			CONTROL, COMMAND	CLOSED
D	USER'S CHOICE (TYPICALLY DENSITY OR SPECIFIC GRAVITY)	DIFFERENTIAL			DIVERT
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)		
F	FLOW RATE	RATIO (FRACTION)			
G	USER'S CHOICE OR GAUGING (DIMENSIONAL)		GLASS, VIEWING DEVICE		
H	HAND				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	USER'S CHOICE (TYPICALLY MOISTURE OR HUMIDITY)	MOMENTARY			MIDDLE, INTERMEDIATE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE, RESTRICTION		OPEN
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY OR HEAT DUTY	INTEGRATE, TOTALIZE			
R	RADIATION		RECORD		
S	SPEED, FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	THROUGH
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECHANICAL ANALYSIS			VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE, TORQUE		WELL		
X	UNCLASSIFIED	X AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OR PRESENCE	Y AXIS		RELAY, COMPUTE, CONVERT	
Z	POSITION, DIMENSION	Z AXIS		DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

TYPICAL INSTRUMENT TAG NUMBERS & DESIGNATION



HAND SWITCH ABBREVIATIONS

AO = AUTO/OFF	OC = OPEN/CLOSE
AM = AUTO/MANUAL	OCA = OPEN/CLOSE/AUTO
CM = COMPUTER/MANUAL	OO = ON/OFF
CL = COMPUTER LOCAL	OOA = ON/OFF/AUTO
ES = EMERGENCY STOP	OSC = OPEN/STOP/CLOSE
FR = FORWARD/REVERSE	RES = RESET
FOR = FORWARD/OFF/REVERSE	RF = RUN/FAULT
FS = FAST/SLOW	RSL = RAISE/STOP/LOWER
FOS = FAST/OFF/SLOW	SS = START/STOP
HA = HAND/AUTO	SOR = START/OFF/RESET
HIM = HUMAN INTERFACE MODULE	V/B = VFD/BYPASS
HOA = HAND/OFF/AUTOMATIC	
LLS = LEAD/LAG/STANDBY	
LOC = LOCAL/OFF/COMPUTER	
LOR = LOCAL/OFF/REMOTE	
LOS = LOCKOUT/STOP	
LA = LOCAL/AUTO	
LR = LOCAL/REMOTE	

PIPING LINE SYMBOLS

PRIMARY (AG & UG)	
SECONDARY / UTILITY (AG & UG)	
FUTURE OR EXISTING ON NEW P&IDs	
JACKETED OR DOUBLE CONTAINMENT	

INSTRUMENT LINE SYMBOLS

INSTRUMENT SUPPLY OR CONNECTION TO PROCESS	
PNEUMATIC SIGNAL	
ELECTRIC SIGNAL (ANALOG)	
ELECTRIC SIGNAL (DISCRETE)	
HYDRAULIC SIGNAL	
CAPILLARY TUBE	
ELECTROMAGNETIC, SONIC, OPTICAL, OR NUCLEAR SIGNAL	
SOFTWARE OR DATA LINK	
MECHANICAL LINK	

OFF-PAGE CONNECTORS AND TIE-IN SYMBOL

A. OFF-PLOT CONNECTOR	
B. PRIMARY/SECONDARY LINES AND INSTRUMENT SIGNAL CONNECTOR	

CONNECTOR NUMBER		SERVICE DESCRIPTION	
		ORIGIN/DESTINATION	

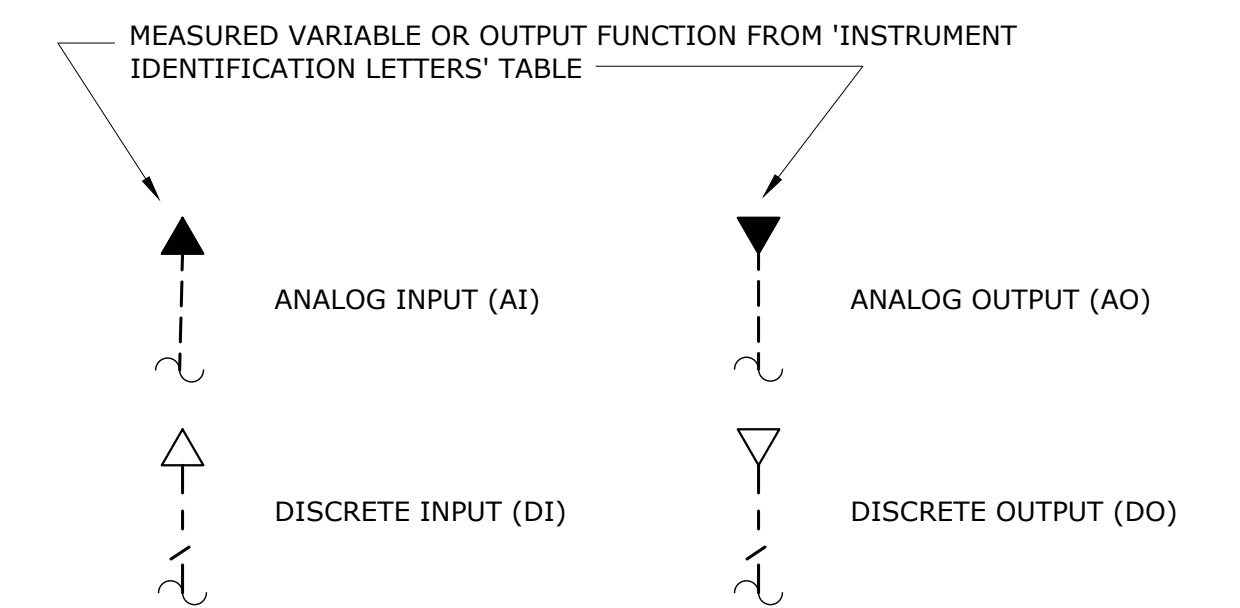
C. UTILITY CONNECTOR	
----------------------	--

CONNECTOR NUMBER	
	P&ID No

D. TIE-IN SYMBOL	
------------------	--

TIE-IN NUMBER	
	XXX

INPUT / OUTPUT SIGNALS



DRAIN CONNECTORS

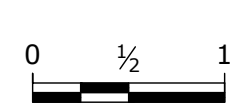
CLOSED DRAIN		OPEN DRAIN	
CONNECTOR NUMBER		CONNECTOR NUMBER	
DESTINATION LINE		DESTINATION LINE	
SERVICE CODE		SERVICE CODE	
CLOSED DRAIN (NO P&ID)		OPEN DRAIN (NO P&ID)	
DESTINATION LINE		DESTINATION LINE	
SERVICE CODE		SERVICE CODE	

PUSHBUTTON OR SWITCH CONTACT BLOCK - NO, NC

Industrial Systems INC

12119 NE 99th Street
Suite #2090
Vancouver, Washington 98682
Phone: (360) 718-7267
Fax: (360) 952-8958
e-mail: is@industrialsystems-inc.com
OR CCB #196597 WA #INDUSSI880K9
AK #1018436
PROJECT#: 20.37.01

NOTICE

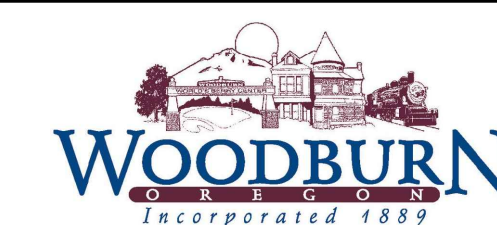


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DESIGNED
AAB
DRAWN
MEW
CHECKED



murraysmith



CITY OF WOODBURN
NEW PRODUCTION WELL FOR
THE PARR ROAD TREATMENT PLANT

P&ID LEGEND

PROJECT NO.: 19-2697 SCALE: AS SHOWN DATE: MARCH 2022

SHEET

I-1

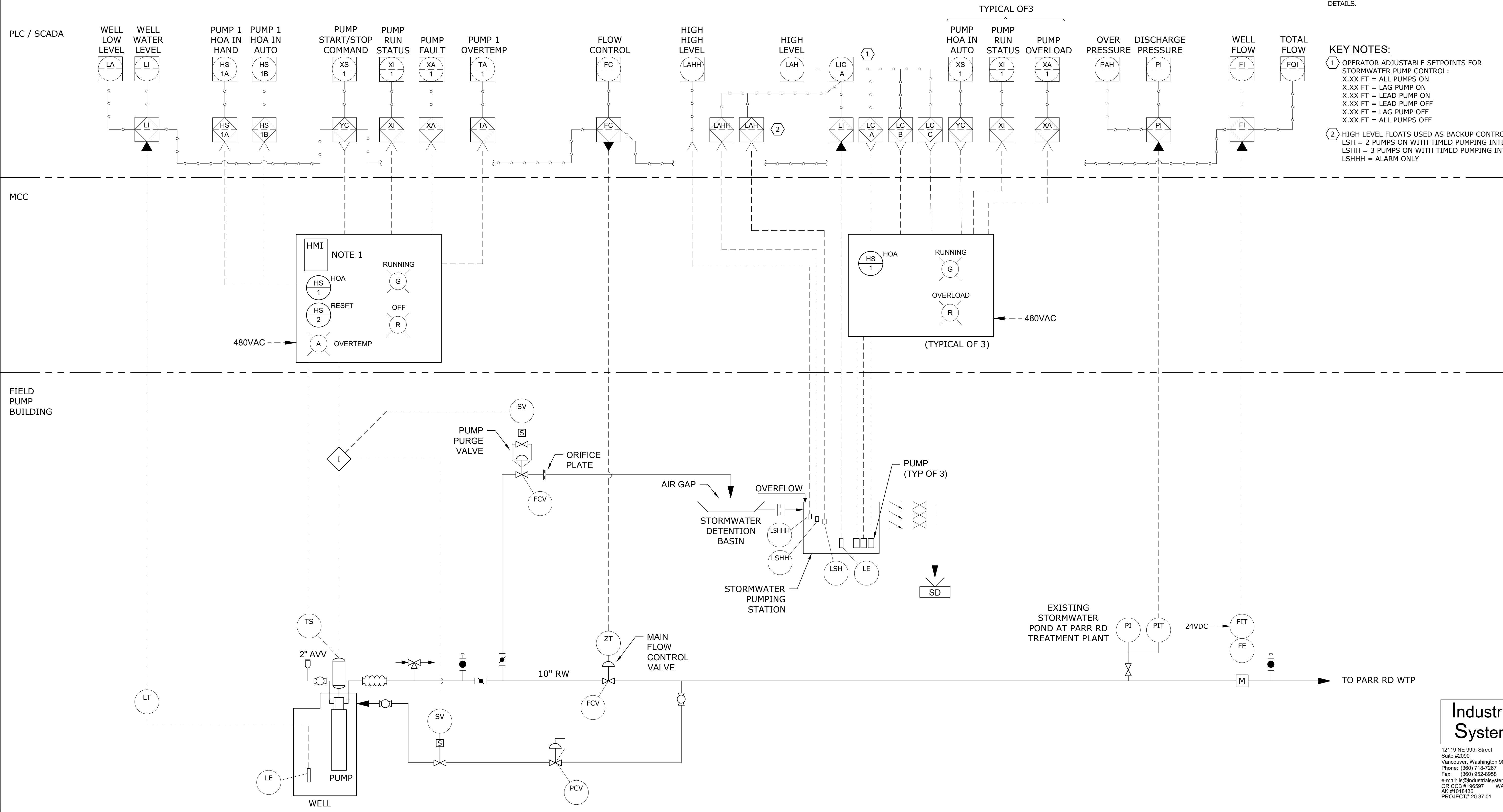
54 of 67

GENERAL NOTES

- SOFTSTART TO BE EQUIPPED WITH ETHERNET IP COMMUNICATIONS MODULE. SEE ELECTRICAL SHEETS FOR SOFTSTART CONTROL DETAILS.

KEY NOTES:

- OPERATOR ADJUSTABLE SETPOINTS FOR STORMWATER PUMP CONTROL:
 X.XX FT = ALL PUMPS ON
 X.XX FT = LAG PUMP ON
 X.XX FT = LEAD PUMP ON
 X.XX FT = LEAD PUMP OFF
 X.XX FT = LAG PUMP OFF
 X.XX FT = ALL PUMPS OFF
- HIGH LEVEL FLOATS USED AS BACKUP CONTROL:
 LSH = 2 PUMPS ON WITH TIMED PUMPING INTERVAL
 LSHH = 3 PUMPS ON WITH TIMED PUMPING INTERVAL
 LSHHH = ALARM ONLY



P:\Projects\20_37_01_MSA_Woodburn_Parr_Rd_New_Well\DWG\19-2697-OR-1-F-2.dwg I-2 3/11/2022 8:03 AM AVIB 23.1s (LMS Tech)

Industrial Systems INC
 12119 NE 99th Street
 Suite #2090
 Vancouver, Washington 98682
 Phone: (360) 718-7267
 Fax: (360) 952-9598
 e-mail: is@industrialsystems-inc.com
 OR CCB #196597 WA #INDUSSI880K9
 AK #1018436
 PROJECT#: 20.37.01

NO.	DATE	BY	REVISION

NOTICE
 0 1/2 1
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MEW DESIGNED
 AAB DRAWN
 MEW CHECKED

REGISTERED PROFESSIONAL ENGINEER
 88305PE
 OREGON
 MAY 14, 2019
 MICHAEL E. WALLIS
 EXPIRES: 6/30/22

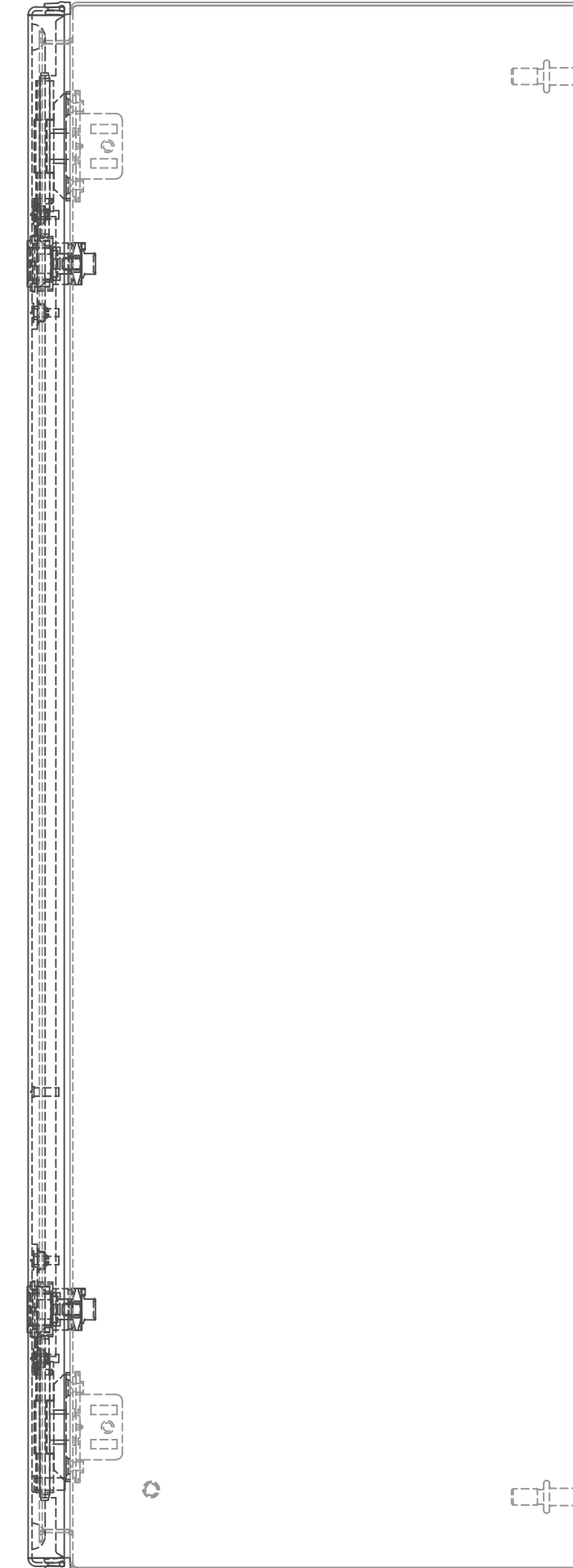
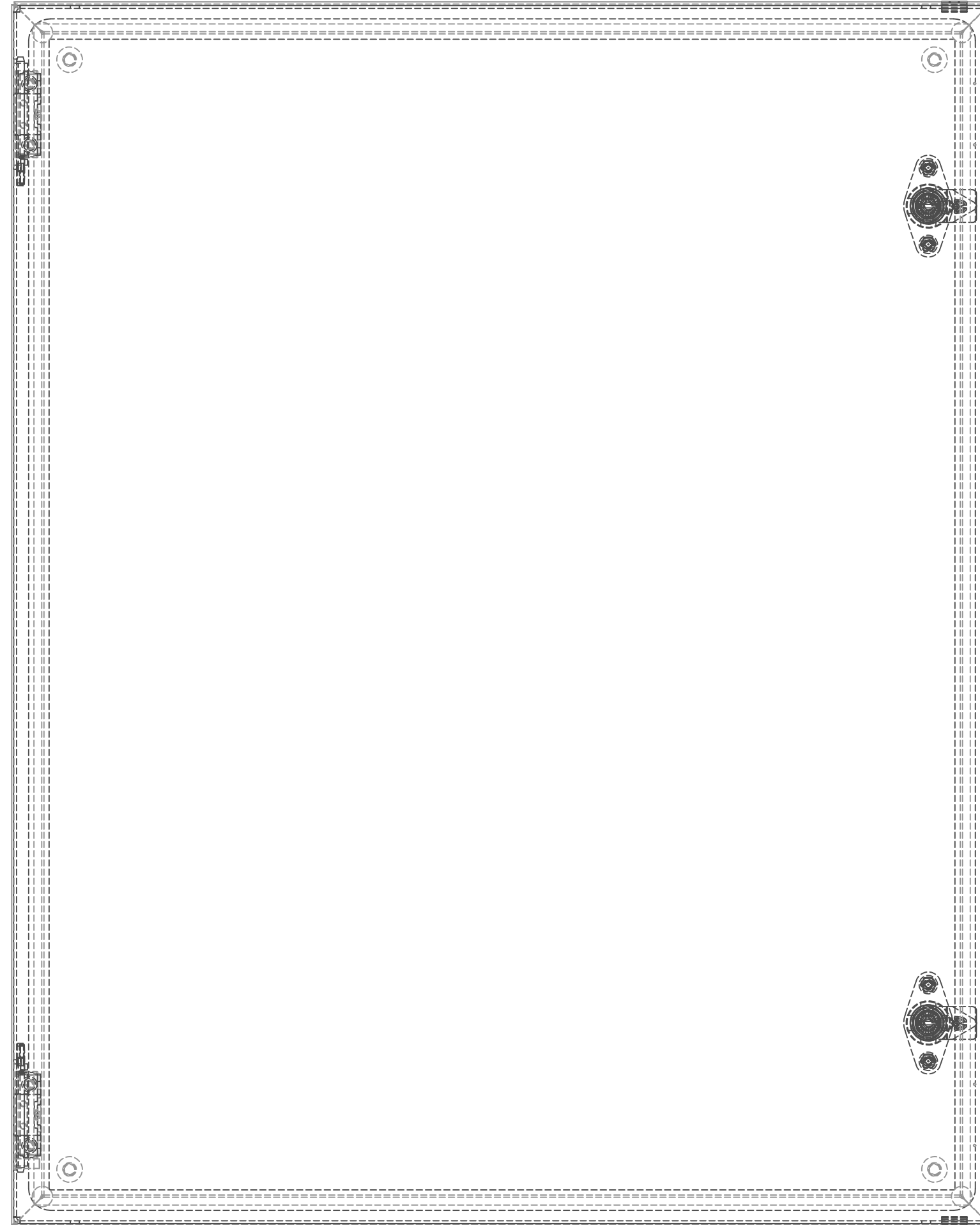
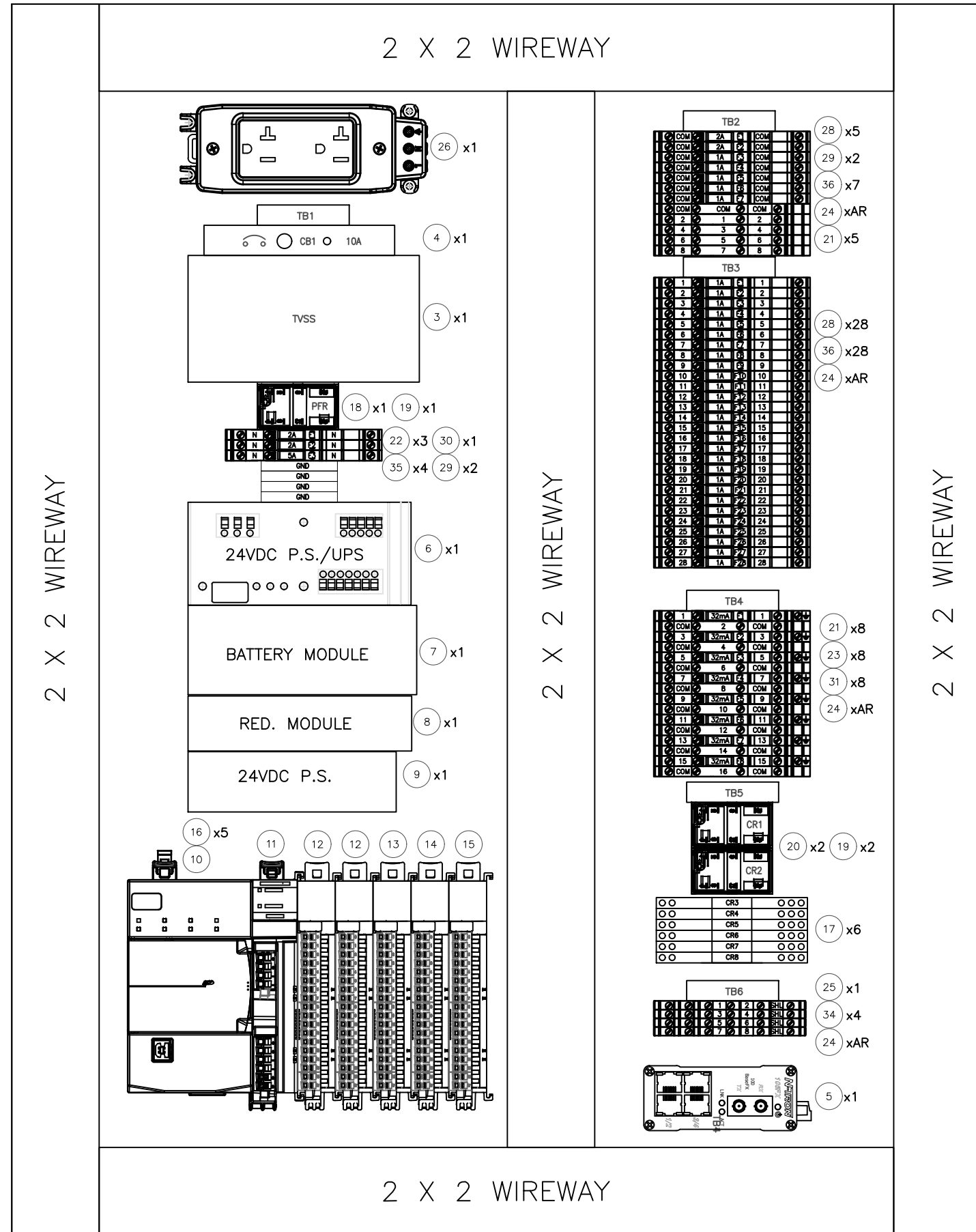


WOODBURN OREGON
 CITY OF WOODBURN
 NEW PRODUCTION WELL FOR THE PARR ROAD TREATMENT PLANT

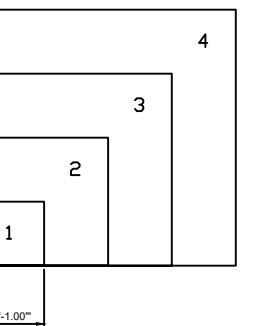
P&ID WELL FACILITIES

PROJECT NO.: 19-2697 SCALE: AS SHOWN DATE: MARCH 2022

SHEET
I-2
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ITEM	QTY	MANUFACTURER	PART NUMBER	DESCRIPTION
1	1	HOFFMAN	CSD302410	NEMA 4 STEEL ENCLOSURE, 32"x24x10" GREY
2	1	HOFFMAN	CP3024	STEEL BACK PANEL FOR ABOVE ENCLOSURE
3	1	ASCO	MODEL 252	SURGE ARRESTOR
4	1	ALLEN BRADLEY	1489-M1C100	10A CIRCUIT BREAKER
5	1	N-TRON	105FX	UNMANAGED ETHERNET SWITCH, SC 2KM
6	1	PHOENIX	2866611	5A UPS TRIO-UPS/1AC/24VDC/5
7	1	PHOENIX	2866417	MINI-BAT/24DC/1.3AH BATTERY
8	1	PHOENIX	2866514	24VDC REDUNDANCY MODULE
9	1	PHOENIX	2903148	24VDC POWER SUPPLY, 5A
10	1	ALLEN BRADLEY	5069-L306ER	COMPACTLOGIX 5380 SERIES PLC
11	1	ALLEN BRADLEY	5069-RTB64-SCREW	POWER TERMINAL RTB KIT
12	2	ALLEN BRADLEY	5069-IB16	16PT, 24VDC, DIGITAL INPUT MODULE
13	1	ALLEN BRADLEY	5069-IF8	8PT, ANALOG INPUT MODULE, 4-20mA
14	1	ALLEN BRADLEY	5069-OB16	16PT, DIGITAL OUTPUT MODULE, 24VDC
15	1	ALLEN BRADLEY	5069-OF4	4PT, ANALOG OUTPUT MODULE, 4-20mA
16	5	ALLEN BRADLEY	5069-RTB18-SCREW	5069 COMPACT I/O 18 PINS TERMINAL KIT
17	6	ALLEN BRADLEY	700HLT1Z24	TERMINAL BLOCK RELAY, 24VDC COIL
18	1	AUTOMATION DIRECT	782-2C-120A	RELAY, 120VAC COIL, DPDT
19	2	AUTOMATION DIRECT	782-2C-SKT	RELAY SOCKET
20	1	AUTOMATION DIRECT	782-2C-24D	RELAY, 24VDC COIL, DPDT
21	13	PHOENIX	3214362	500V 2-TIER FEED THROUGH TERMINAL BLOCK, GRAY
22	3	PHOENIX	3214368	250VAC 2-TIER 5x20mm FUSE MODULAR TERMINAL BLOCK, LED BLACK
23	8	PHOENIX	3214321	24VDC 3-TIER 5x20mm FUSE MODULAR TERMINAL BLOCK, LED BLACK
24	AR	PHOENIX	1201413	END CLAMP FOR 2 AND 3 TIER BLOCKS GRAY
25	1	PHOENIX	3214314	3-TIER FEED THROUGH TERMINAL BLOCK END PLATE
26	1	EZ AUTOMATION	FA-REC2	DUPLEX RECPT DIN MT PLASTIC
27		SHOP SUPPLY		DIN RAIL (RAISED DIN RAIL IF IT MAKES TERMINALS MORE ACCESSIBLE)
28	33	BUSSMAN	GMA-1R	1AMP FUSE
29	4	BUSSMAN	GMA-2R	2AMP FUSE
30	1	BUSSMAN	GMA-5R	5AMP FUSE
31	8	BUSSMAN	BK/S506-100-R	32mA FUSE
32	AR	SHOP SUPPLY		WIRE DUCT AND COVER
33	1	STANDARD 508	UL LABEL	INDUSTRIAL CONTROL PANEL
34	4	PHOENIX	3214259	500V 3-TIER FEED THROUGH TERMINAL BLOCK, GRAY
35	4	PHOENIX	441119	GROUND MODULAR TERMINAL BLOCK
36	35	PHOENIX	3214366	24VDC 2-TIER 5x20mm FUSE MODULAR TERMINAL BLOCK, LED BLACK

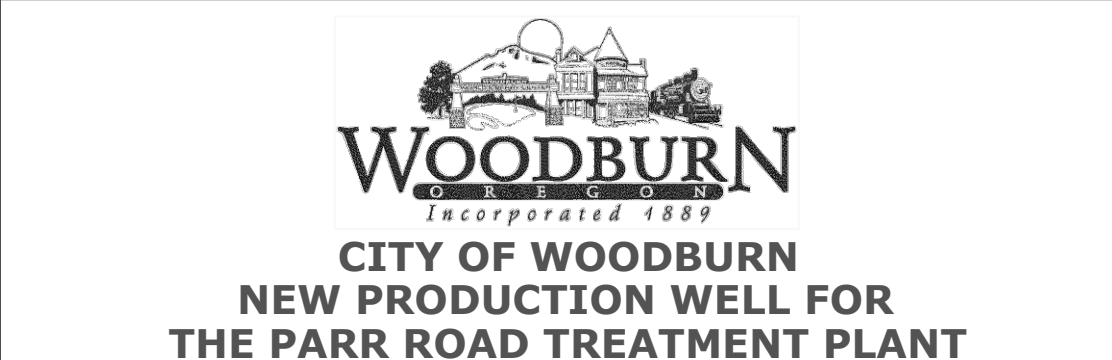
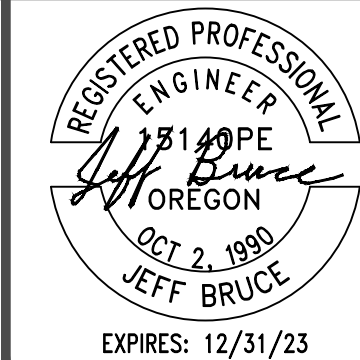


NO.	DATE	BY	REVISION
E	3/10/22	JPH	100%

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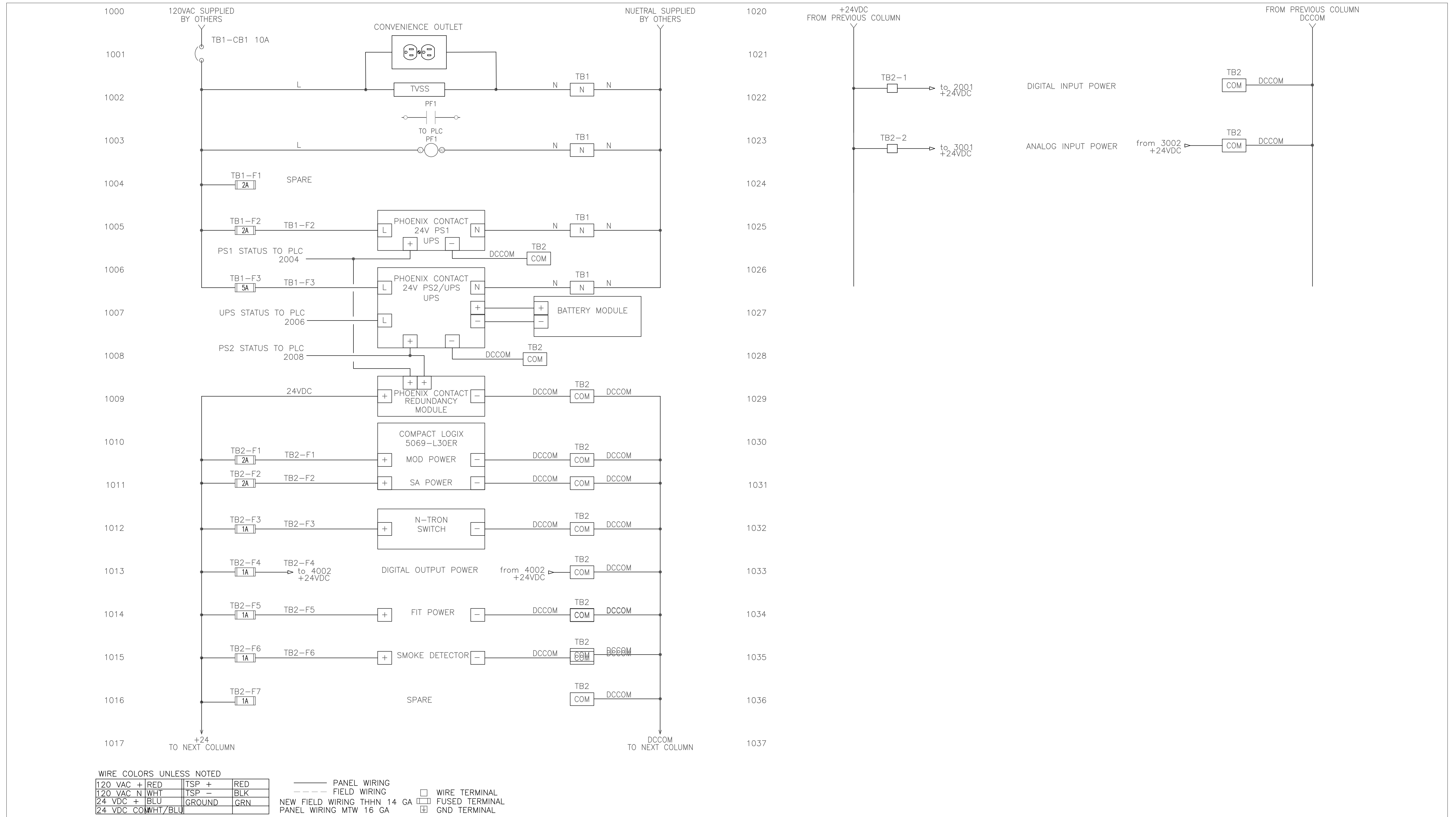


WOODBURN PARR RD TREATMENT PLANT
NEW WELL
PANEL LAYOUT

PROJECT NO.: 19-2697 SCALE: AS SHOWN DATE: MARCH 2022

SHEET
I-3
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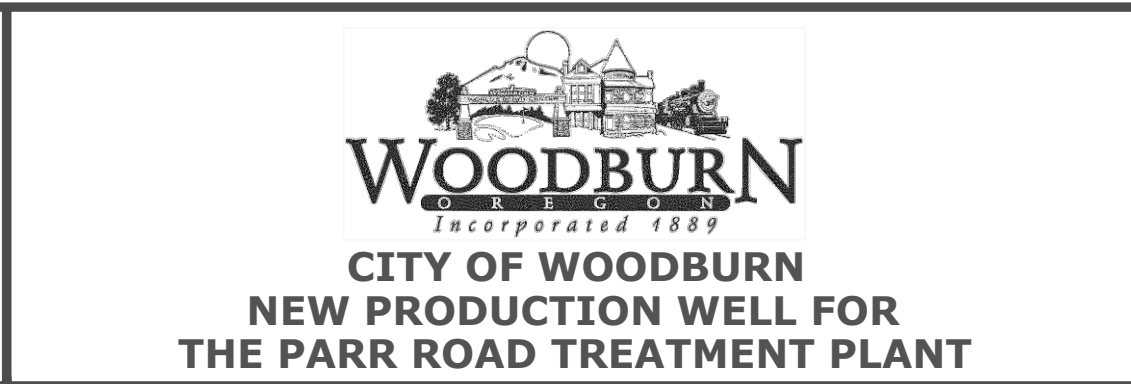
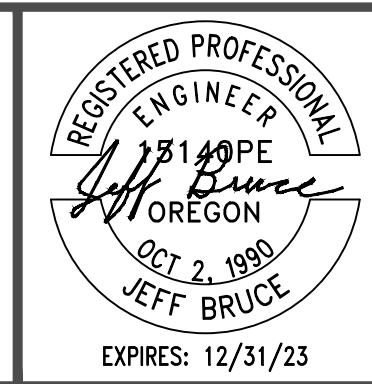
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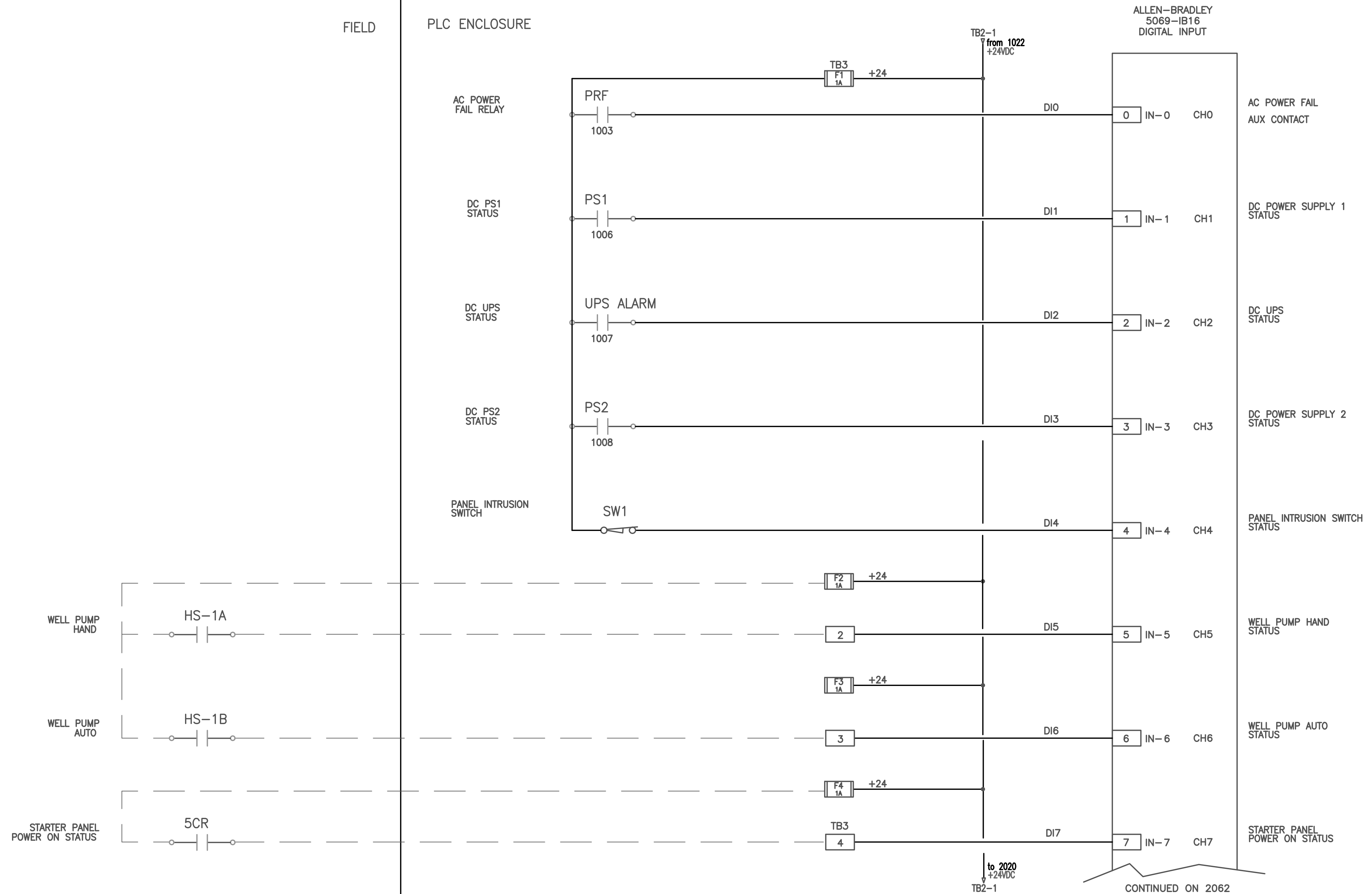
WOODBURN PARR RD TREATMENT PLANT
 NEW WELL
 POWER DISTRIBUTION

PROJECT NO.: 19-2697 SCALE: AS SHOWN DATE: MARCH 2022

SHEET
 I-4
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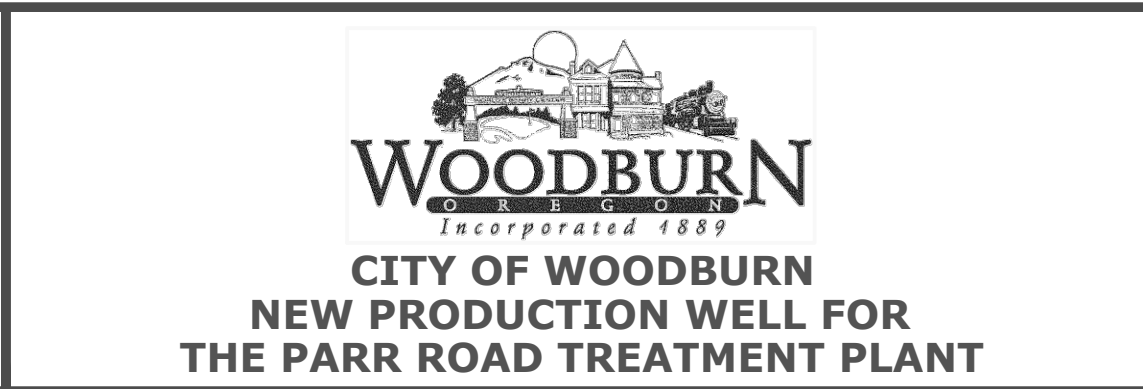
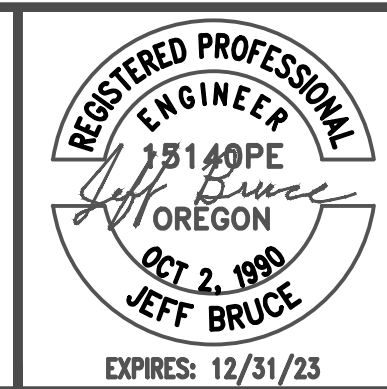
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WOODBURN PARR RD TREATMENT PLANT
NEW WELL
DIGITAL INPUTS

PROJECT NO.: 19-2697 SCALE: AS SHOWN DATE: MARCH 2022

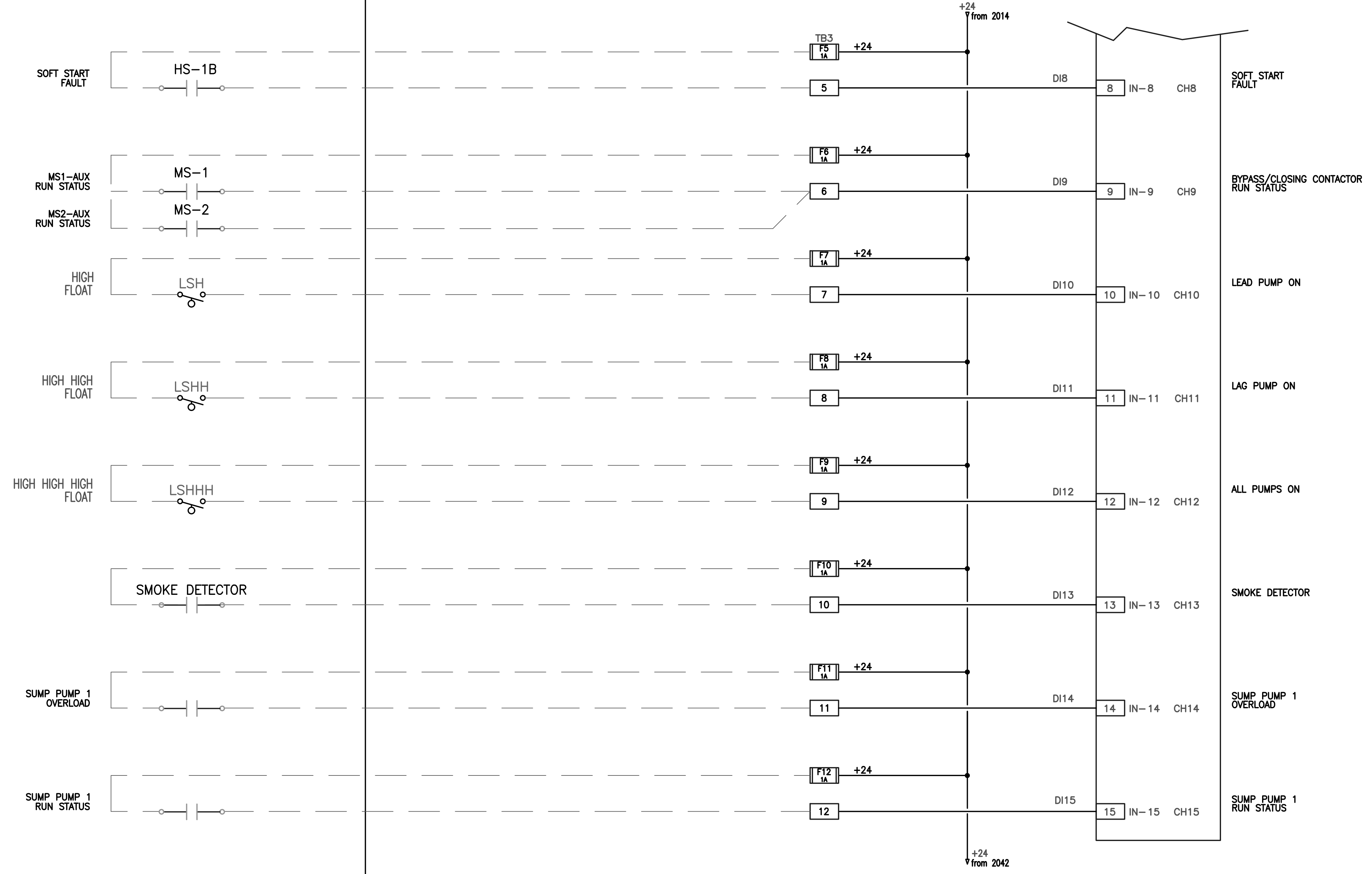
SHEET
I-5
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2020
2021
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FIELD

PLC ENCLOSURE

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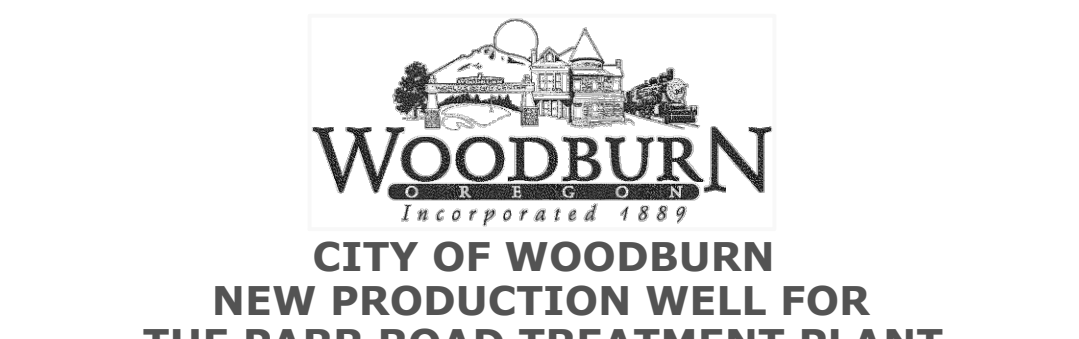
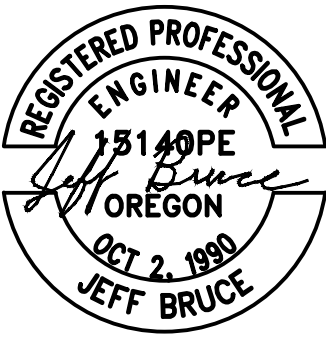


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CAD
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CHECKED



WOODBURN PARR RD TREATMENT PLANT
NEW WELL
DIGITAL INPUTS

PROJECT NO.: 19-2697 SCALE: AS SHOWN DATE: MARCH 2022

SHEET
I-6
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2056

SUMP PUMP 1
AUTO STATUS

SUMP PUMP 2
OVERLOAD

SUMP PUMP 2
RUN STATUS

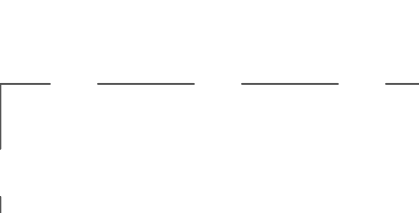
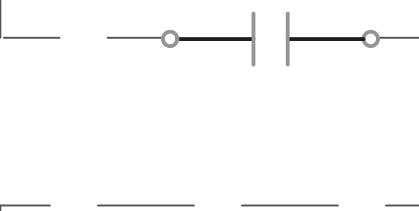
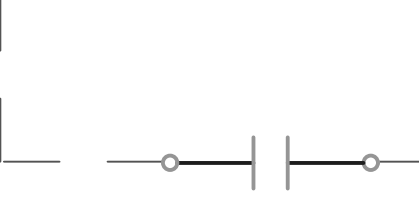
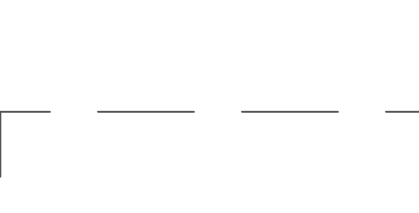
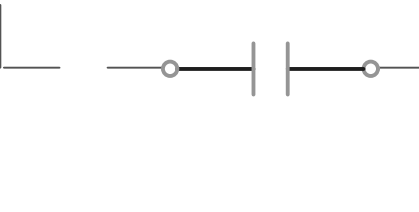
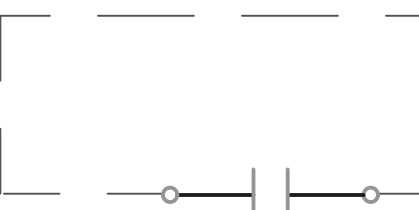
SUMP PUMP 2
AUTO STATUS

SUMP PUMP 3
OVERLOAD

SUMP PUMP 3
RUN STATUS

SUMP PUMP 3
AUTO STATUS

GENERATOR
RUNNING STATUS



TB3
F13
1A

+24

13

TB2-1
from 2035
+24VDC

DI16

ALLEN-BRADLEY
5069-IB16
DIGITAL INPUT

0

IN-0

CH0

SUMP PUMP 1
AUTO STATUS

F14
1A

+24

14

DI17

1

IN-1

CH1

SUMP PUMP 2
OVERLOAD

F15
1A

+24

15

DI18

2

IN-2

CH2

SUMP PUMP 2
AUTO STATUS

F16
1A

+24

16

DI19

3

IN-3

CH3

SUMP PUMP 2
AUTO STATUS

F17
1A

+24

17

DI20

4

IN-4

CH4

SUMP PUMP 3
OVERLOAD

F18
1A

+24

18

DI21

5

IN-5

CH5

SUMP PUMP 3
RUN STATUS

F19
1A

+24

19

DI22

6

IN-6

CH6

SUMP PUMP 3
AUTO STATUS

F20
1A

+24

20

DI23

7

IN-7

CH7

GENERATOR
RUNNING STATUS

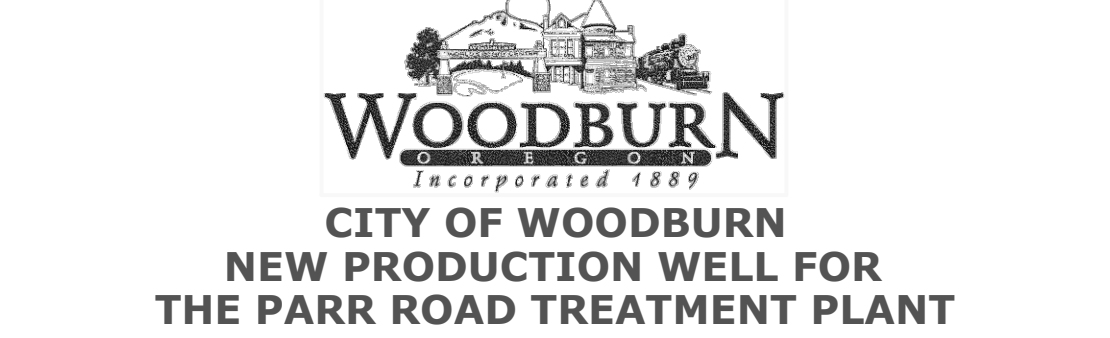
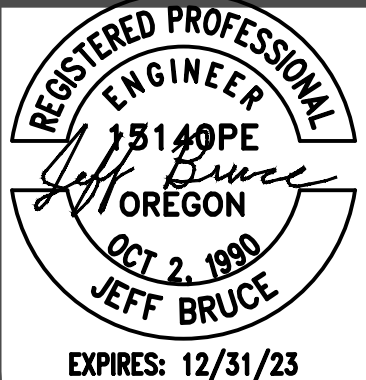
+24
from 2060

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NO.	DATE	BY	REVISION

NOTICE
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DESIGNED
CAD
DRAWN
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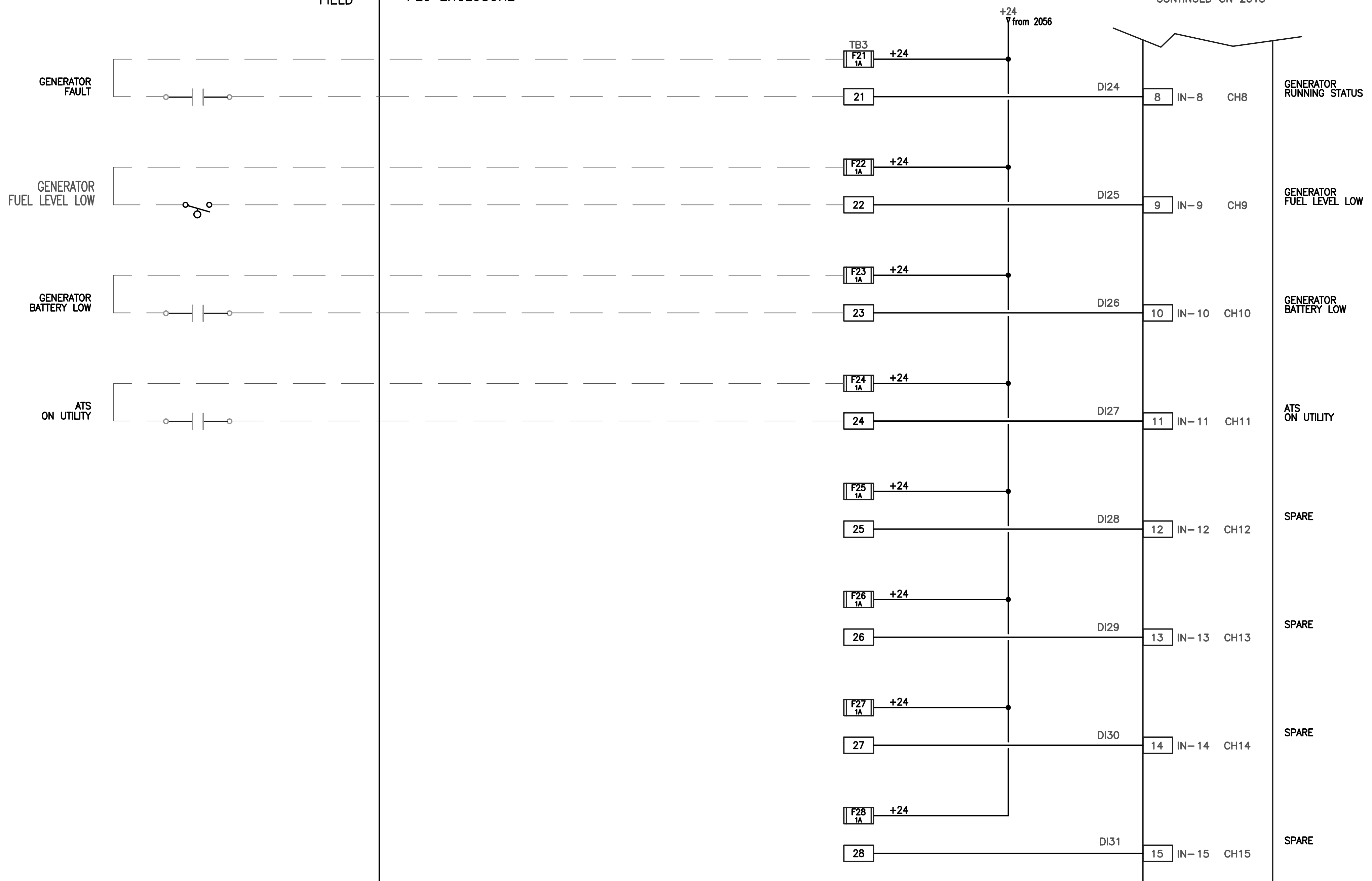
WOODBURN PARR RD TREATMENT PLANT
NEW WELL
DIGITAL INPUTS
PROJECT NO.: 19-2697 SCALE: AS SHOWN DATE: MARCH 2022

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FIELD PLC ENCLOSURE

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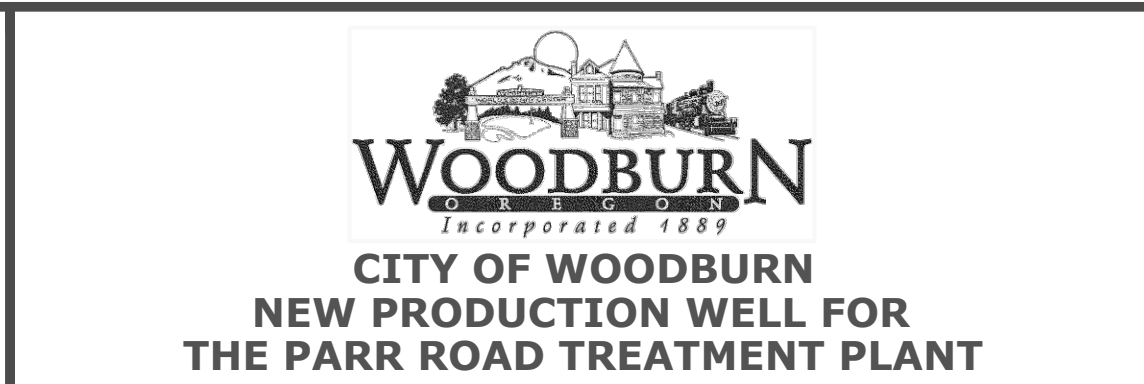
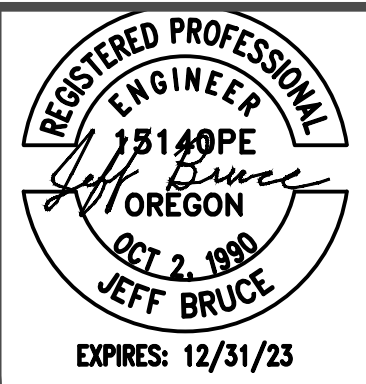


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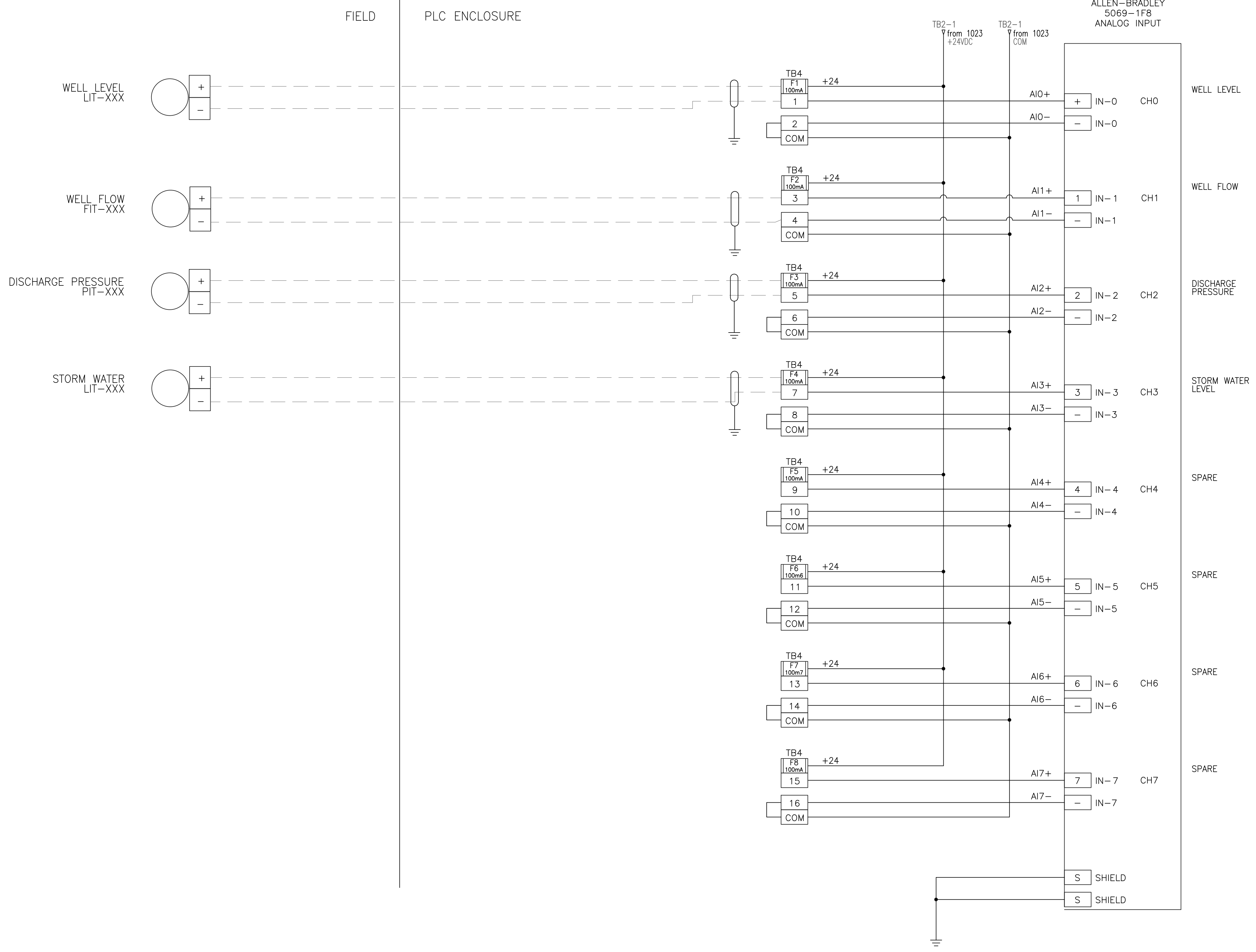


WOODBURN PARR RD TREATMENT PLANT
NEW WELL
DIGITAL INPUTS

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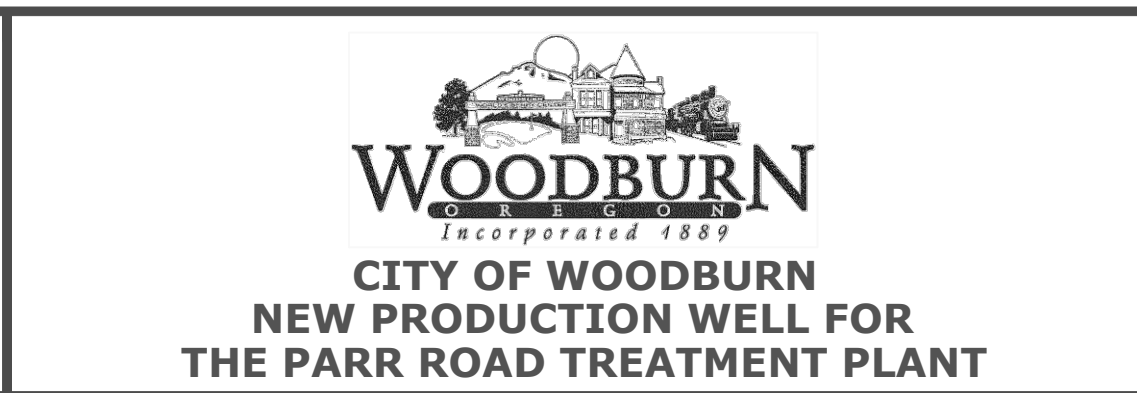
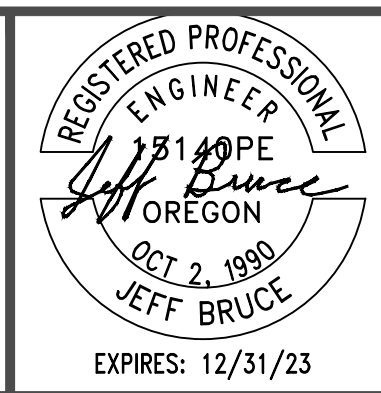


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WOODBURN PARR RD TREATMENT PLANT
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PLC ENCLOSURE

FIELD

ALLEN-BRADLEY
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DIGITAL OUTPUT

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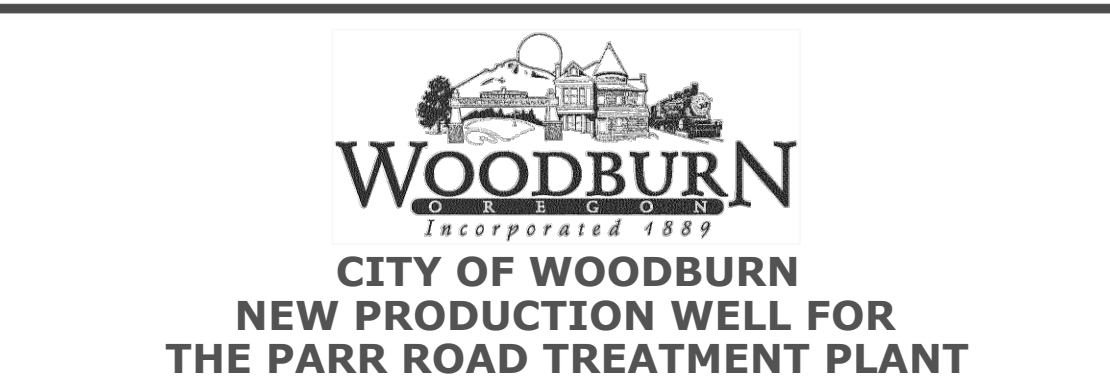
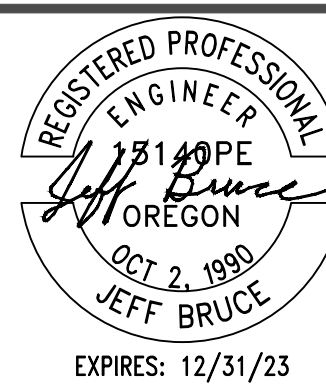
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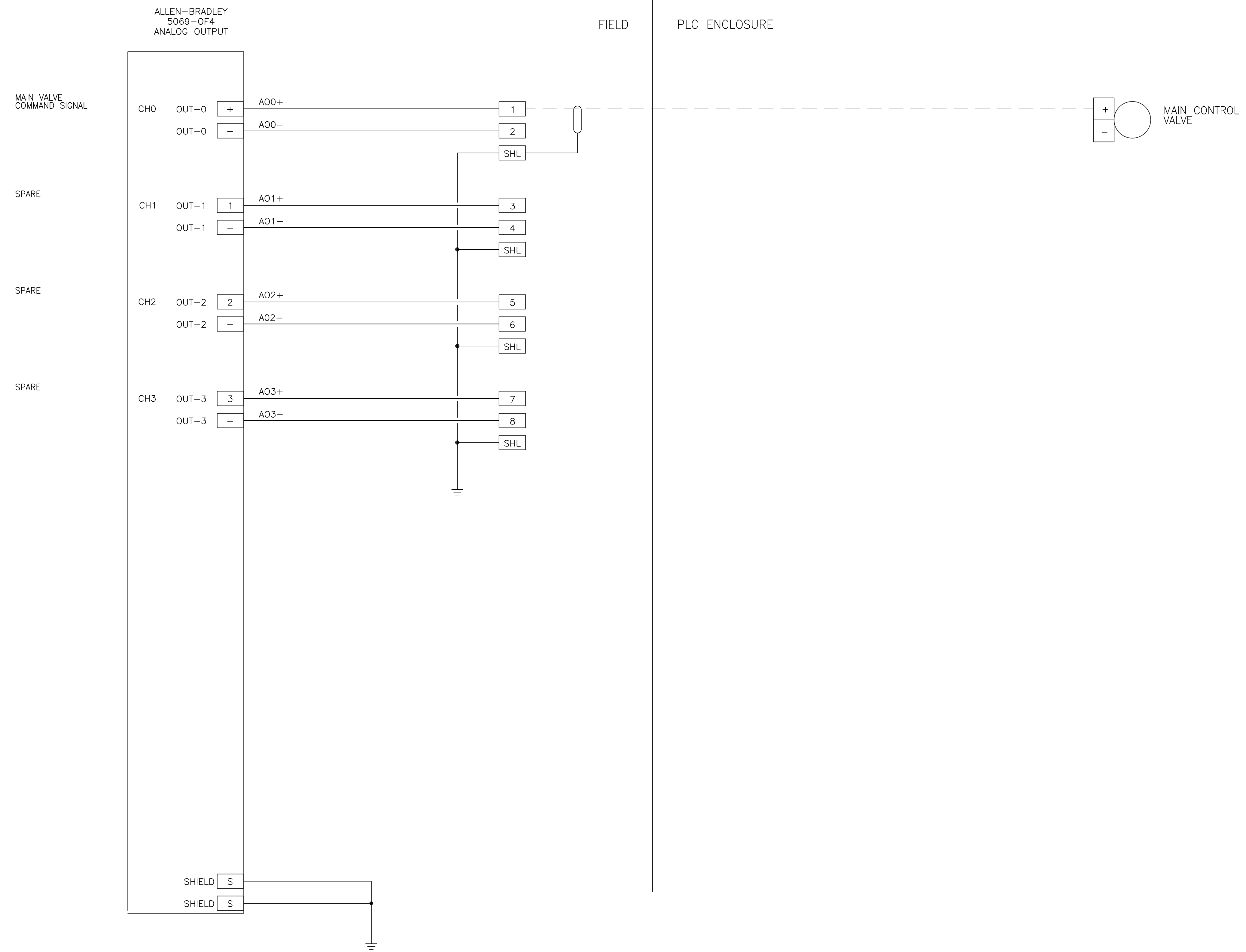


WOODBURN PARR RD TREATMENT PLANT
NEW WELL
DIGITAL OUTPUTS

PROJECT NO.: 19-2697 SCALE: AS SHOWN DATE: MARCH 2022

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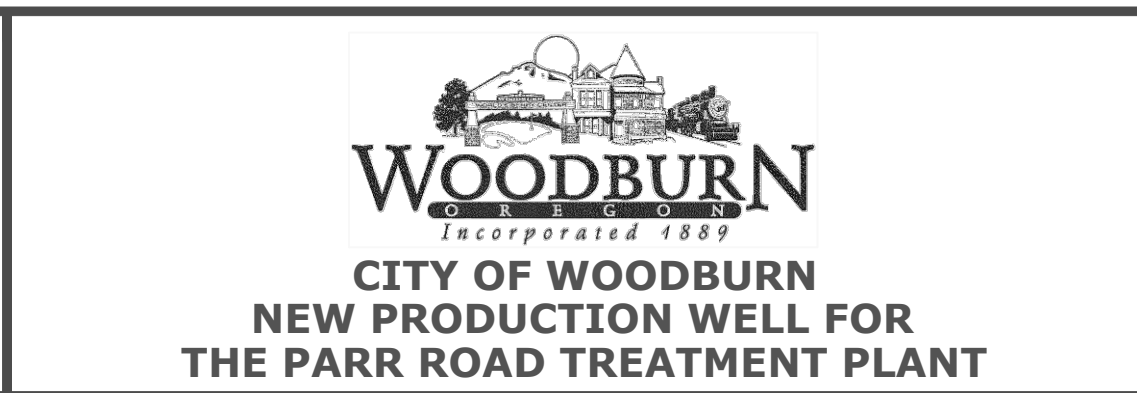
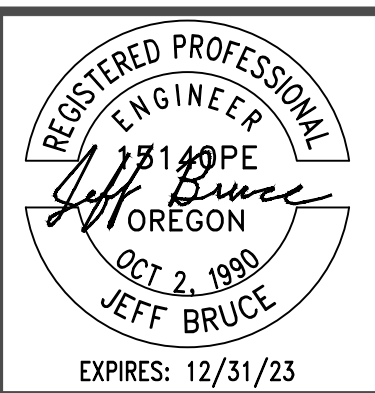


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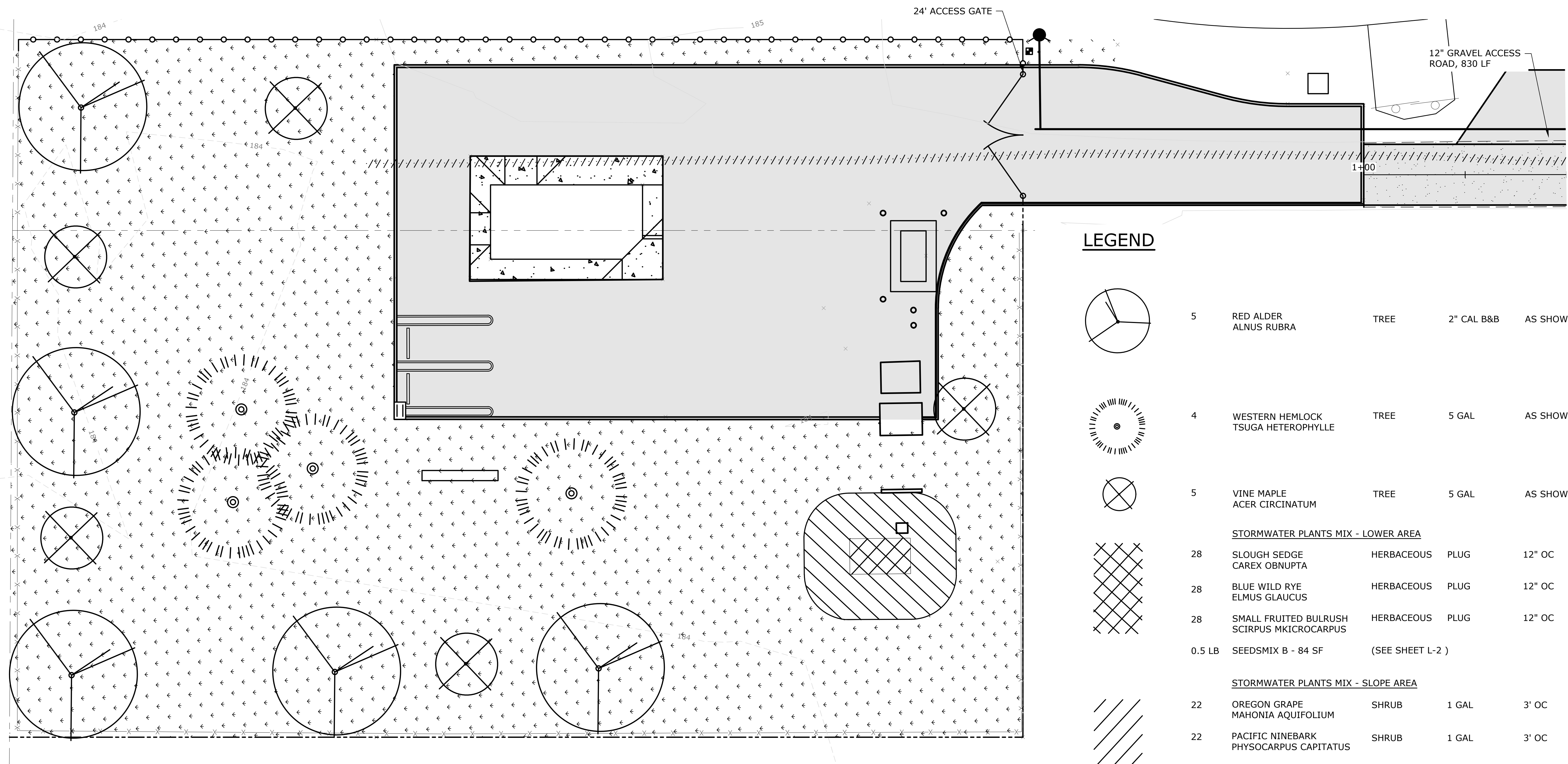


WOODBURN PARR RD TREATMENT PLANT
NEW WELL
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PLAN
SCALE: 1"=10'

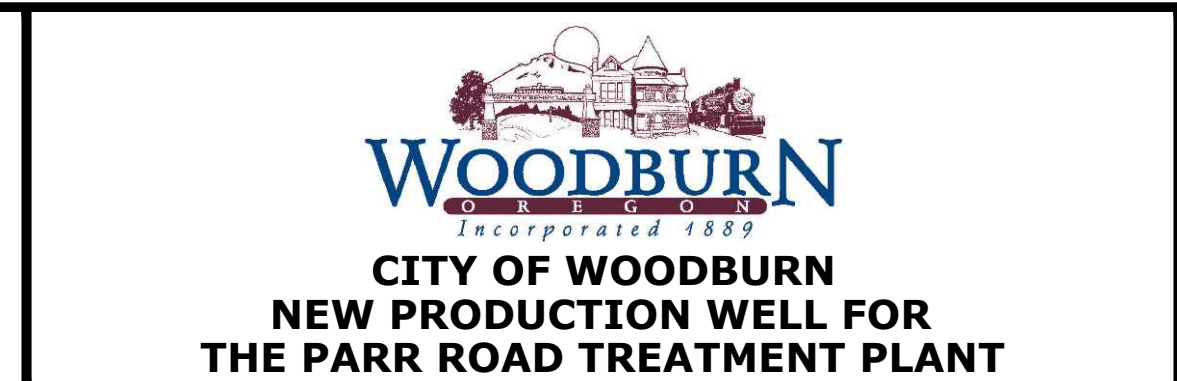
LEGEND

	5	RED ALDER ALNUS RUBRA	TREE	2" CAL B&B	AS SHOWN
	4	WESTERN HEMLOCK TSUGA HETEROPHYLLE	TREE	5 GAL	AS SHOWN
	5	VINE MAPLE ACER CIRCINATUM	TREE	5 GAL	AS SHOWN
STORMWATER PLANTS MIX - LOWER AREA					
	28	SLOUGH SEDGE CAREX OBNUPTA	HERBACEOUS	PLUG	12" OC
	28	BLUE WILD RYE ELMUS GLAUCUS	HERBACEOUS	PLUG	12" OC
	28	SMALL FRUITED BULRUSH SCIRPUS MKICROCARPUS	HERBACEOUS	PLUG	12" OC
	0.5 LB	SEEDSMIX B - 84 SF	(SEE SHEET L-2)		
STORMWATER PLANTS MIX - SLOPE AREA					
	22	OREGON GRAPE MAHONIA AQUIFOLIUM	SHRUB	1 GAL	3' OC
	22	PACIFIC NINEBARK PHYSOCARPUS CAPITATUS	SHRUB	1 GAL	3' OC
	22	SNOWBERRY SYMPHORICARPUS ALBA	SHRUB	1 GAL	3' OC
	1.0 LB	SEEDMIX B - 596 SF	(SEE SHEET L-2)		
	21.0 LB	SEEDSMIX A - 20580 SF	(SEE SHEET L-2)		
		EXISTING TREES			

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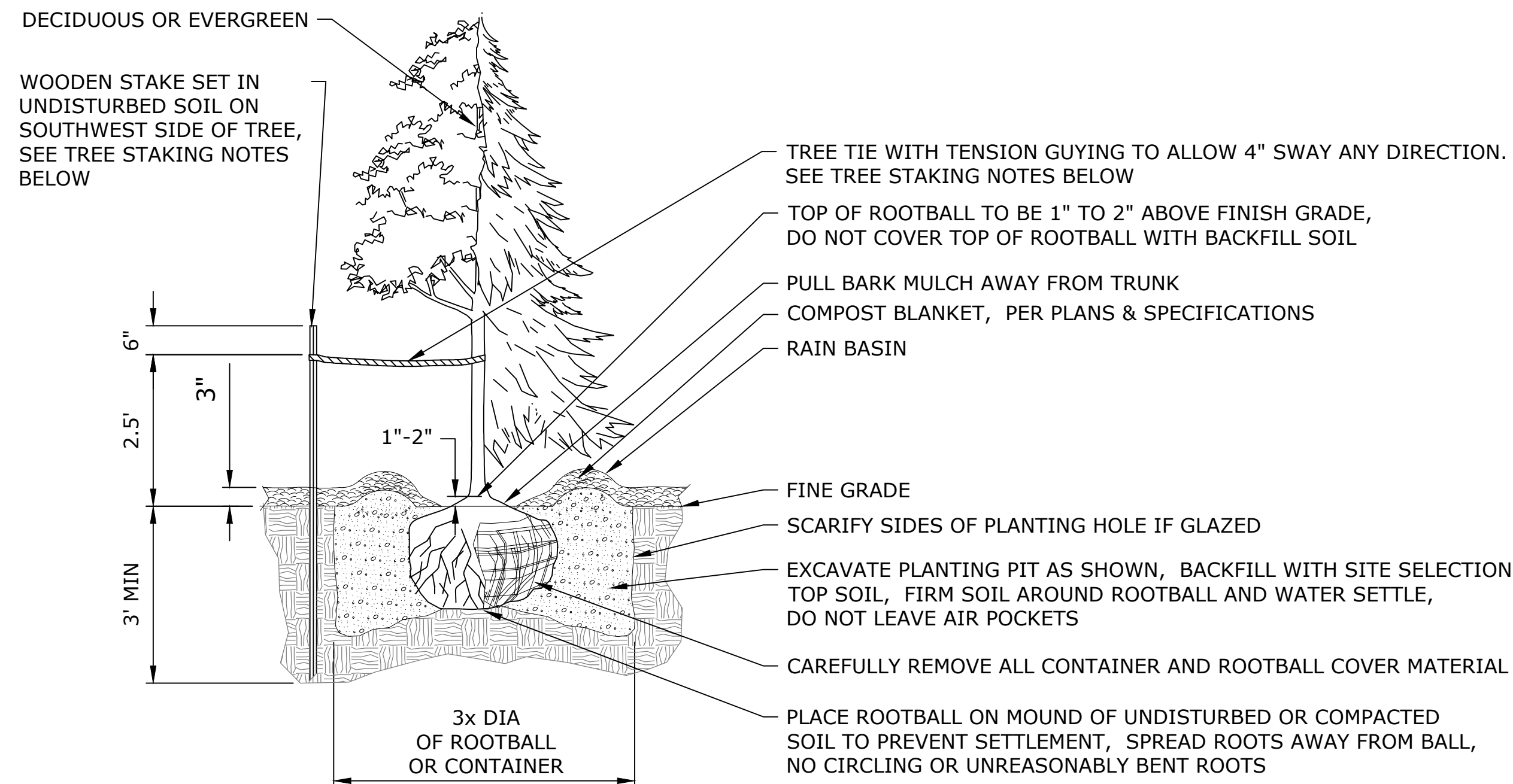
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LANDSCAPING PLAN
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NOTES:

1. TREE TIES TO BE EITHER:

RIGID GUY SYSTEM WITH GALVANIZED WIRE TO BE APPROXIMATELY 1/8" THICKNESS AND 24" LENGTH. THERE IS A PLASTIC SLEEVE OVER PORTION THAT GOES AROUND TREE. THE WIRE TIE IS TO GO THRU THE WOOD STAKE AND BE SECURELY FASTENED.

PLASTIC CHAIN TYPE, APPROXIMATELY 1" WIDTH BY 1/8" DEPTH WHERE TWO STAKES ARE REQUIRED. CROSS TIES BETWEEN STAKES AND WRAP TIE AROUND TREE. FASTEN SECURELY TO STAKE.

2. EXCAVATE ALL PLANT WELLS PER DETAIL AT 3X DIAMETER OF ROOTBALL OR CONTAINER AND BACKFILL WITH SITE SELECT TOPSOIL FREE OF NOXIOUS WEEDS PLANT MATERIAL INCLUDING ROOTS AND SPRIGS.

3. FURNISH TREE STAKES ON ALL TREE PLANTINGS. STAKES TO BE CONSTRUCTION GRADE, ROUGH SAWN OR FINISHED DOUGLAS FIR OR PINE. STAIN WITH APPROVED GREEN PENETRATING OIL. STAKE SIZE IS TO BE 1 1/2"x1-1/2" BY FOLLOWING LENGTHS:

TREES 36" AND SHORTER - USE ONE - 6' (APPROXIMATELY) STAKE

TREES TALLER THAN 36" - USE ONE - 8' (APPROXIMATELY) STAKE

DRIVE STAKES VERTICALLY AND AT LEAST 24" INTO UNDISTURBED SOIL. DO NOT DRIVE STAKES THRU ROOT BALL. LOCATE STAKES TO BEST RESIST PREVAILING WINDS.

TREE PLANTING DETAIL 1
SCALE: NTS

PLANTING METHODS:

1. SOIL PREPARATION: TILL THE SUB-GRADE IN THESE AREAS TO A DEPTH OF AT LEAST FOUR INCHES AND ADD AT LEAST 12 INCHES OF CLEAN COMPOST-AMENDED TOPSOIL. THE COMPOST-AMENDED TOPSOIL SHALL HAVE A GOOD GROWING MEDIUM WITH TEXTURE MATERIAL THAT PASSES THROUGH ONE-INCH AND 35% ORGANIC MATTER FERTILITY.

2. PLANTING TIME: CONTAINERIZED STOCK SHALL BE INSTALLED ONLY FROM FEBRUARY 1 THROUGH MAY 1 AND OCTOBER 1 THROUGH NOVEMBER 15. PLANTINGS OUTSIDE THESE TIMES MAY REQUIRE ADDITIONAL MEASURES TO ENSURE SURVIVAL WHICH SHALL BE SPECIFIED ON THE PLANS.

3. INSTALLED PLANTS SHALL TAGGED FOR DORMANT SEASON IDENTIFICATION AND SHALL REMAIN ON PLANT MATERIALS AFTER PLANTING FOR MONITORING PURPOSES.

4. EROSION CONTROL: GRADING, SOIL PREPARATION, AND SEEDING SHALL BE PERFORMED DURING OPTIMAL WEATHER CONDITIONS AND AT LOW FLOW LEVELS TO MINIMIZE SEDIMENT IMPACTS.

5. MULCHING: TREES, SHRUBS, AND GROUNDCOVERS PLANTED IN UPLAND AREAS SHALL BE MULCHED A MINIMUM OF THREE INCHES IN DEPTH AND 18 INCHES IN DIAMETER, TO RETAIN MOISTURE AND DISCOURAGE WEED GROWTH AROUND NEWLY INSTALLED PLANT MATERIAL. APPROPRIATE MULCHES ARE MADE FROM COMPOSTED BARK OR LEAVES THAT HAVE NOT BEEN CHEMICALLY TREATED.

6. ACCESS: MAINTENANCE ACCESS FOR PLANT MAINTENANCE SHALL BE PROVIDED FOR SENSITIVE AREAS AND VEGETATED CORRIDORS VIA A FIVE-FOOT EASEMENT OR SHARED BOUNDARY WITH STORMWATER FACILITIES. STORMWATER FACILITIES ACCESS REQUIREMENTS ARE PROVIDED IN CHAPTER 4.

7. WEED CONTROL: THE REMOVAL OF NON-NATIVE, INVASIVE WEEDS SHALL BE NECESSARY THROUGHOUT THE MAINTENANCE PERIOD, OR UNTIL A HEALTHY STAND OF DESIRABLE VEGETATION IS ESTABLISHED.

8. PLANT REPLACEMENT AND PRESERVATION: INSTALLED PLANTS THAT ARE UNHEALTHY OR DAMAGED SHALL BE REPLACED DURING THE MAINTENANCE PERIOD. PRIOR TO REPLACEMENT, THE CAUSE OF LOSS (WILDLIFE DAMAGE, POOR PLANT STOCK, ETC.) SHALL BE DOCUMENTED WITH A DESCRIPTION OF THE CORRECTIVE ACTIONS TAKEN.

9. IF PLANTING OCCURRED OUT OF PLANTING PERIODS INDICATED AT NOTE 2 ABOVE, THE FOLLOWING MEASURES SHOULD BE APPLIED:

- A. HAVE PLANTS INSPECTED FOR EARLY SYMPTOMS OF POOR HEALTH. TREES AFFECTED BY EARLY STAGES OF STRESS COULD DISPLAY PREMATURE FALL COLOR IN LATE SUMMER, PARTIAL DEFOLIATION AND SYMPTOMS OF MOISTURE STRESS.
- B. PROVIDE SUPPLEMENTAL IRRIGATION EACH WEEK OR MORE OFTEN ON NEWLY PLANTED TREES, SHRUBS AND OLDER PLANTS STRESSED WITH INSECT OR DISEASE PROBLEMS WHEN RAINFALL IS LACKING IN SUMMER.
- C. PRUNE FLOWERING TREES AND SHRUBS SUCH AS DOGWOOD, AZALEAS, RHODODENDRON AND FORSYTHIA. ONCE FLOWER BUDS BEGIN TO FORM IN LATE SUMMER, JUDICIOUS PRUNING REDUCES THE BLOOM SOMEWHAT BUT SHOULD NOT IMPACT THE DISPLAY SIGNIFICANTLY.
- D. INSPECT FOR PESTS THAT COMMONLY ARRIVE DURING HOT, DRY WEATHER AND APPLY TREATMENTS AS NEEDED.
- E. ASSESS CANOPIES FOR DEAD BRANCHES AND STRUCTURAL WEAKNESSES THAT CAN BE PRUNED LATER IN WINTER.

PLANTS MAINTENANCE NOTES:

1. WATER-EFFICIENT IRRIGATION SHOULD BE APPLIED AFTER CONSTRUCTION OF THE FACILITY, PARTICULARLY DURING THE DRY SUMMER MONTHS, WHILE PLANTINGS BECOME ESTABLISHED.

2. CONTRACTOR SHALL PROVIDE 3 YEARS PLANT ESTABLISHMENT PERIOD TO MAINTAIN PLANTS IN A VIGOROUS GROWING CONDITION THROUGH PERIODIC INSPECTIONS. DURING PLANT ESTABLISHMENT PERIOD, THE CONTRACTOR SHALL ENSURE PLANTING AREAS ARE FREE OF INVASIVE WEEDS AND PLANTS SHALL BE FREE OF INSECTS AND DISEASES WHILE SHOWING SIGNS OF CONTINUING HEALTH. THE CONTRACTOR SHALL REPLACE ALL PLANTS THAT SHOW UNHEALTHY SIGNS OR ARE DEAD.

3. THE MAINTENANCE PERIOD BEGINS IMMEDIATELY AFTER THE COMPLETION OF ALL PLANTING OPERATION AND WRITTEN NOTIFICATION TO THE ENGINEER.

4. OTHER MAINTENANCE OPERATIONS DURING THE THREE-YEAR GUARANTEE PERIOD:

- RESET PLANTS TO FINISH GRADE AND RESTORATION OF PLANT SAUCERS, AS NECESSARY
- REPAIR DAMAGED OR WASHED OUT EROSION CONTROL SEEDING.
- PRUNING, INCLUDING REMOVAL OF DEAD OR BROKEN BRANCHES.
- DISEASE CONTROL.
- MAINTAINING WRAPPING, GUYS, [TURNBUCKLES,] AND STAKES. [ADJUST TURNBUCKLES TO KEEP GUY WIRES TIGHT.] REPAIR OR REPLACE ACCESSORIES WHEN REQUIRED.
- REPORT ANY PROBLEMS THAT MAY BE A HINDRANCE TO COMPLETING AND FULFILLING THE CONDITIONS OF THE PLANT GUARANTEE WITHIN 7 DAYS TO THE OWNER.

SEED MIX A:

BOTANICAL NAME	COMMON NAME	PLS LBS. PER ACRE
ELYMUS GLAUCUS	BLUE WILDRYE	21.74
FESTUCA RUBRA RUBRA	NATIVE RED FESCUE	6.52
HORDEUM BRACHYANTHERUM	MEADOW BARLEY	4.35
GLYCERIA OCCIDENTALLIS	WESTERN MANNAGRASS	4.35
BECKMANIA SYZIGACHNE	AMERICAN SLOUGHGRASS	4.35
DESCHAMPسيا CAESPITOSA	TUFTED HAIRGRASS	2.17
TOTAL		43.38

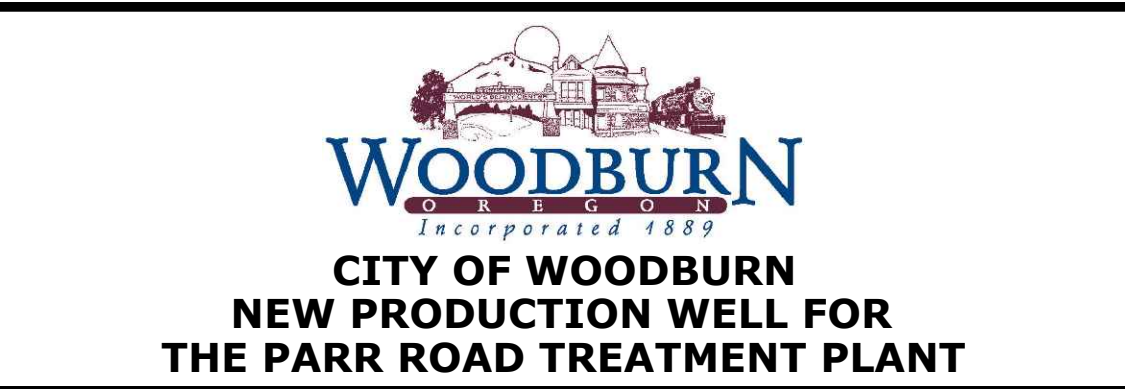
SEED MIX B:

BOTANICAL NAME	COMMON NAME	PLS LBS. PER ACRE
ELYMUS GLAUCUS	BLUE WILDRYE	20
FESTUCA RUBRA RUBRA	NATIVE RED FESCUE	16.5
DESCHAMPسيا CAESPITOSA	TUFTED HAIRGRASS	5.2
GLYCERIA OCCIDENTALLIS	WESTERN MANNAGRASS	0.9
BECKMANIA SYZIGACHNE	AMERICAN SLOUGHGRASS	0.9
TOTAL		43.38

NO.	DATE	BY	REVISION

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LANDSCAPING DETAILS			
PROJECT NO.:	19-2697	SCALE:	AS SHOWN
DATE:	MARCH 2022		

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SUPPLEMENTARY INFORMATION

(1) LAND OWNER Owner Well I.D. Parr Rd Well
 First Name _____ Last Name _____
 Company City of Woodburn
 Address 190 Garfield St.
 City Woodburn State OR Zip 97071

(2) TYPE OF WORK New Well Deepening Conversion
 Alteration (complete 2a & 10) Abandonment (complete 5a)

(2a) PRE-ALTERATION
 Dia + From To Gauge Stl Plstc Wld Thrd
 Casing:
 Material From To Amt sacks/lbs
 Seal: _____

(3) DRILL METHOD
 Rotary Air Rotary Mud Cable Auger Cable Mud
 Reverse Rotary Other Dual Rotary Reverse

(4) PROPOSED USE Domestic Irrigation Community
 Industrial/ Commercial Livestock Dewatering
 Thermal Injection Other _____

(5) BORE HOLE CONSTRUCTION Special Standard (Attach copy)
 Depth of Completed Well 310 ft.
BORE HOLE
 Dia From To Material SEAL To Amt sacks/lbs

20	0	319	Cement	0	224	262	S
						Calculated	133
						Calculated	

How was seal placed: Method A B C D E
 Other _____
 Backfill placed from 310 ft. to 319 ft. Material 1/4 x 1/8 Gravel
 Filter pack from 224 ft. to 310 ft. Material Gravel Size 1/4x1/8
 Explosives used: Yes Type _____ Amount _____

(5a) ABANDONMENT USING UNHYDRATED BENTONITE
 Proposed Amount Pounds Actual Amount Pounds

(6) CASING/LINER
 Casing Liner Dia + From To Gauge Stl Plstc Wld Thrd

<input checked="" type="checkbox"/>	<input type="checkbox"/>	16	<input checked="" type="checkbox"/>	3	275	.375	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	16	<input type="checkbox"/>	305	310	.375	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
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 Shoe Inside Outside Other Location of shoe(s) 319
 Temp casing Yes Dia 20 From 0 To 319

(7) PERFORATIONS/SCREENS
 Perforations Method _____
 Screens Type V-Wire Material 304 SS

Perf/S	Casing/Screen	Screen/Slot	Slot	# of	Tele/			
Screen	Liner	Dia	From	To	width	length	slots	pipe size
	Casing	16	275	305	.15			16

(8) WELL TESTS: Minimum testing time is 1 hour
 Pump Bailer Air Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)
1,000	45	200	36

 Temperature 63 °F Lab analysis Yes By GSI Water Solutions
 Water quality concerns? Yes (describe below) TDS amount 90 mg/L

From	To	Description	TDS Amount	Units

(9) LOCATION OF WELL (legal description)
 County MARION Twp 5 S N/S Range 2 W E/W WM
 Sec 13 SW 1/4 of the SE 1/4 Tax Lot 00700
 Tax Map Number _____ Lot _____
 Lat _____ " or _____ DMS or DD
 Long _____ " or _____ DMS or DD
 Street address of well Nearest address

900 Parr Rd Woodburn OR 97071 Well is located in SE Corner of Centennial Pk

(10) STATIC WATER LEVEL

Existing Well / Pre-Alteration	Date	SWL(psi)	+ SWL(ft)
Completed Well	04-19-2021		44.3

 Flowing Artesian? Dry Hole?
 WATER BEARING ZONES Depth water was first found 70

SWL Date	From	To	Est Flow	SWL(psi)	+ SWL(ft)
04-19-2021	180	315	1,500		44.3

(11) WELL LOG Ground Elevation _____

Material	From	To
Sandy silt with gravel, wet, brown	0	20
Sandy clay, medium plasticity, gray olive	20	70
Fine-medium sand with silt, black	70	90
Sandy clay, medium plasticity, gray olive	90	100
Gravel with medium-coarse sand, olive gray	100	170
Clay, medium plasticity, wet, gray olive	170	180
Fine-coarse sand with clay, gray olive	180	230
Well graded gravel with medium-coarse sand	230	255
Sandy/gravelly clay, high plasticity, gray	255	270
Well graded gravel with medium-coarse sand	270	305
Fine-medium sand with silt, brown	305	315
Sandy clay, high plasticity, brown	315	319

 Date Started 02-18-2021 Completed 05-07-2021

(unbonded) Water Well Constructor Certification
 I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.
 License Number 2040 Date 05-13-2021
 Signed *[Signature]*

(bonded) Water Well Constructor Certification
 I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.
 License Number 1523 Date 05-13-2021
 Signed *[Signature]*
 Contact Info (optional) _____

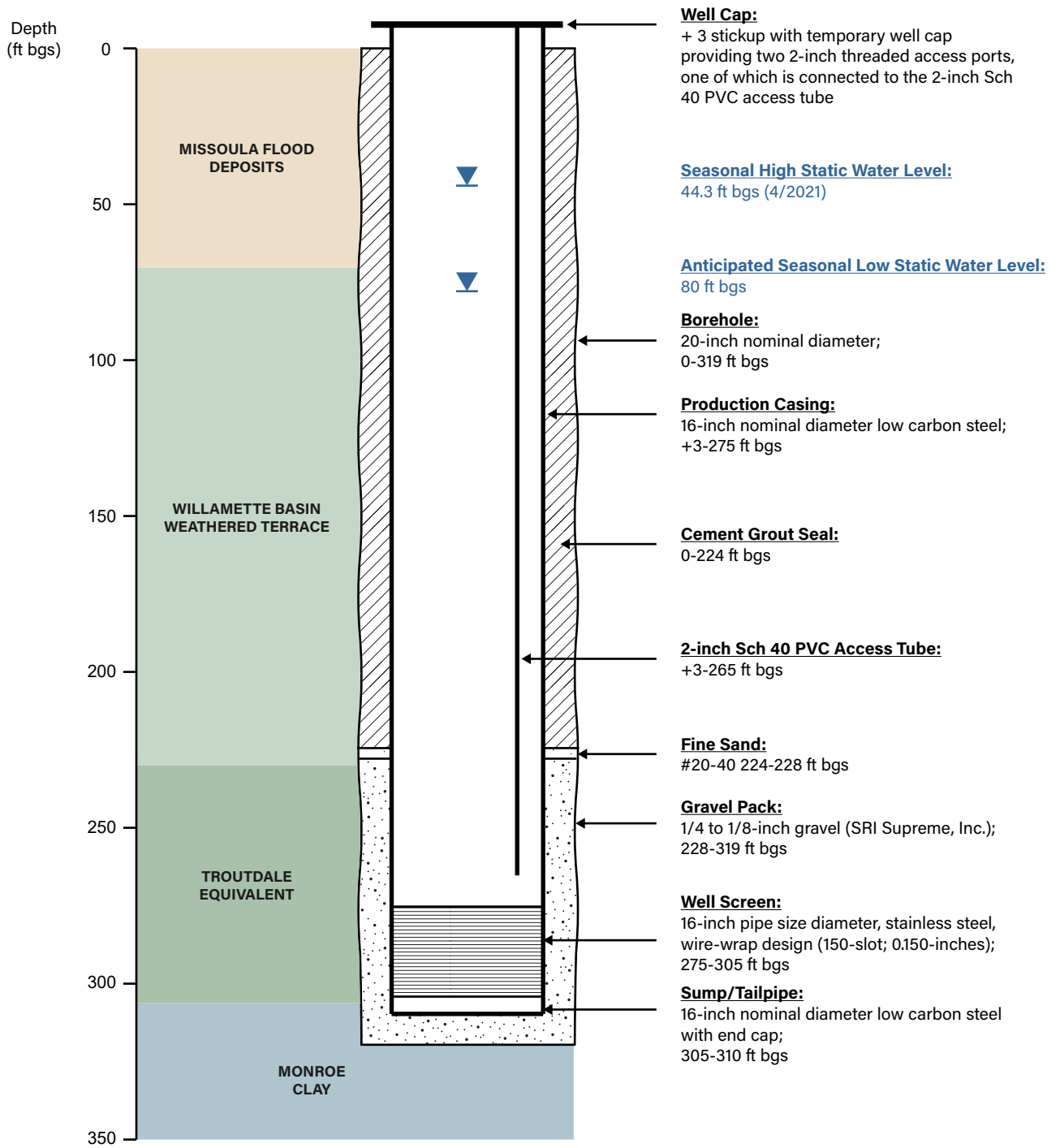


FIGURE 1
As-Built Diagram
Parr Road Well (MARI-69844)
City of Woodburn

NOTE
bgs: below ground surface





City of Woodburn Parr Road WTP – Wellhouse For New Production Well

Geotechnical Engineering Report

Final Submittal



November 2021

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Appendix B	Results of Laboratory Testing

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1.0 Introduction

1.1 General

McMillen Jacobs Associates (McMillen Jacobs) has been retained by Murraysmith to provide geotechnical engineering services for the Wellhouse for the City of Woodburn Parr Road Water Treatment Plant (WTP) - New Production Well Project (Project). The Project is in Centennial Park in Woodburn, Oregon, and the City of Woodburn (City) is the project Owner. This Geotechnical Engineering Report (GER) summarizes the geotechnical analyses and recommendations for the Project. The Project location is shown on the attached Figure 1, Vicinity Map.

1.2 Project Description

The City will be installing a new raw water production well near the existing Parr Road Water Treatment, in the southeast corner of Centennial Park. The Parr Road WTP is a critical facility of the City's backbone water system. Accordingly, the Project will be designed to be seismically-resilient per The Oregon Resilience Plan (ORP) (OSSPAC, 2013). The intent of the ORP guidelines is that a seismically-resilient backbone water system should be able to convey water from resilient storage and treatment plants to key distribution points as soon as possible following a Cascadia subduction zone (CSZ) earthquake.

The main elements of the Project are shown in Figure 2 (Site Plan) and include the following:

- An approximately 30- by 15-foot wellhouse building that will house the pumping equipment associated with the new raw water production well. We anticipate the new wellhouse building will be supported on a mat foundation;
- A stormwater detention facility to the east of the new wellhouse building;
- A 200-kW generator that will be installed on a 5- by 10-foot concrete slab/pad;
- An asphalt-paved access road and turnaround providing access, including firetruck access, to the new facilities;
- Piping associated with the Project includes: 4- to 6-inch storm drain; 6-inch sanitary sewer main; 10-inch raw water main to the WTP; 12-inch fire line; and 2-inch water service line. Pipe materials and invert depths have not been provided to-date;
- Other appurtenances include: a manhole with submersible pump adjacent to the stormwater detention facility; a 200-kW generator installed on a 5- by 10-foot concrete slab/pad; and a transformer installed on a 4- by 4-foot concrete slab/pad.

1.3 Purpose and Scope of Work

The purpose of our work is to evaluate the subsurface conditions and to provide geotechnical engineering design and construction recommendations for subsequent use by the design team in support of the Project. Specifically, the scope of our work included the following:

- Subsurface investigation at the Project site including one drilled boring advanced to an approximate depth of up to 85 feet below ground surface (bgs);
- Laboratory testing on soil samples obtained from the drilled boring, including moisture content and particle size analysis;
- Characterization of subsurface conditions at the proposed wellhouse building based on the geotechnical exploration and laboratory testing;
- Geotechnical engineering assessments and design recommendations for the proposed wellhouse building, as well as pipeline subgrade properties and settlement potential;
- Seismic hazard evaluation results and seismic geotechnical recommendations for the design of the proposed wellhouse building, pipelines, and appurtenant structures;
- Foundation design recommendations for the proposed wellhouse building;
- Recommendations for lateral earth pressures on embedded structures (e.g., manholes and vaults);
- Recommendations for structural fill, bedding, backfill, and compaction criteria for foundations, pipelines, and buried structures;
- Recommendations for subgrade stabilization, if required; and
- Preparation of this Geotechnical Engineering Report.

2.0 Geotechnical Exploration

2.1 Exploratory Boring

We completed the geotechnical exploration on August 21, 2020, consisting of one exploratory boring (B-1) advanced to an approximate depth of 85 feet bgs. Western States Soil Conservation, Inc. of Hubbard, Oregon, completed the boring using a track-mounted CME-850 drill rig, using hollow-stem auger and mud-rotary drilling techniques. The approximate location of boring B-1 is shown in Figure 2.

The exploration was completed under the supervision of a McMillen Jacobs engineer who maintained continuous observation, collected soil samples, and maintained a full-depth descriptive log of the soil materials penetrated in the exploratory boring.

2.2 Soil Classification & Sampling

The soil samples were classified in accordance with the Visual-Manual Procedure (ASTM D2488). Sample depths, stratigraphy, groundwater observations, and soil engineering characteristics were also noted. The stratigraphic contacts, indicated on the exploration log in Appendix A, represent the approximate boundaries between soil types; actual transitions between soil units might be more gradational than shown.

Disturbed soil samples were collected at 2.5- and 5-foot intervals using a standard 2-inch diameter split-barrel sampler and automatic safety hammer system. The sampler was advanced 18 inches by dropping a 140-pound hammer 30-inches for each strike in accordance with ASTM D1586; referred to as the Standard Penetration Test (SPT). The number of hammer-blows for each 6 inches of penetration was recorded. The SPT resistance (designated as the “N-value”) is calculated as the sum of the blows for the final 12 inches of sampler penetration. SPT N-values of 50 or more blows per 6 inches or less of penetration is defined as “refusal.” The N-value is an indication of the relative density of granular soils and the relative consistency of cohesive soils. Western States provided an automatic hammer calibration Report of SPT Hammer Energies (GeoDesign, 2018), showing that the drill rig used (Rig #7, CME-850) has an energy transfer ratio of 84.3 (correction factor = 1.405). N-values reported on our boring logs are, however, uncorrected field-recorded values (i.e., no corrections have been applied).

2.3 Laboratory Testing

Soil samples were delivered to the McMillen Jacobs Portland office for further examination and storage. Each of the samples was re-examined and compared to the field boring log description to confirm the field classifications and maintain consistency. Representative samples were then selected for the following laboratory testing:

- Water (Moisture) Content of Soil and Rock by Mass (ASTM D2216); and
- Amount of Material Finer than a No. 200 Sieve (i.e., ‘Fines Content’) (ASTM D1140).

Moisture contents and Percent fines are indicated on the boring log in Appendix A and the individual laboratory test reports are included in Appendix B.

3.0 Site Conditions

3.1 Surface Conditions

The Project site is in the southeast corner of Centennial Park, an approximately 25-acre City park located on the south side of Parr Road NE and about 1 mile southwest of downtown Woodburn. The Project site is bordered by Parr Road NE to the north, Heritage Elementary School and agricultural land to the East, and agricultural land to the south and west. The existing City of Woodburn Parr Road WTP occupies an approximately 2-acre area within the northeast corner of Centennial Park. The existing Parr Road WTP has a 2.9-million gallons per day (MGD) capacity, consisting of the following components: an above-ground, 2.9-MG steel reservoir; one raw water production well (No. 12); and an 1,800-gpm booster pump station. Existing features within Centennial Park include four baseball fields, two soccer fields, a children's playground, restroom facilities, a splash pad, a picnic shelter, and a dog park.

The new wellhouse building will be constructed in a flat field that is currently being used for agricultural purposes (e.g., growing corn). The surrounding topography is also flat, with an overall vertical relief on the order of one foot and is generally surfaced with short grasses and deciduous trees that line the eastern park property line.

3.2 Site Geology

Woodburn, Oregon is located east of the Interstate 5, and west of Highway 99E between Hubbard and Gervais, Oregon. Woodburn is approximately 5 square miles in size, and relatively flat. Mill Creek, a tributary of the Pudding River, flows from the south to the northeast through the city.

Woodburn lies in the Willamette Basin, a 12,000-square mile drainage for the surrounding elevated terrains. Geologic mapping (O'Connor, et al., 2001) indicates the Woodburn is generally underlain by Pleistocene-age, fine-grained glacial outburst flood sediments referred to as the Missoula Flood Deposits (MFD). The fine-grained MFD soils consist of stratified silt and clay with variable amounts of fine sands. The fine-grained MFD unit overlies an older Pleistocene fluvial clay, sand and gravel unit (Madin and Wang, 1999).

3.3 Subsurface Conditions

Based on our findings in boring B-1, we grouped the subsurface materials at the Project site into two geotechnical units based on their engineering properties, geologic origins, and their distribution in the subsurface. These units are Fine-grained Missoula Flood Deposits and Early Pleistocene Deposits and are described in more detail in the following sections. Variations in subsurface conditions may exist across the Project site. Contacts between the geotechnical units are approximate and may be more gradational than shown on the boring log in Appendix A.

3.3.1 Missoula Flood Deposits

Missoula Flood Deposits (MFD) were encountered below the topsoil zone (e.g., at about 8 inches bgs) and extended to an approximate depth of 73 feet bgs. The MFD soils typically consist of predominately fine-grained silt (ML) with varying amounts of fine sand. In the upper, approximately 51 feet, MFD soils

consist of medium stiff to stiff silt (ML) and sandy silt (ML), and loose to medium dense silty sand (SM). In general, the fine sand content increases with depth and grades to medium dense, poorly graded sand with silt (SP-SM) from approximately 51 to 70 feet bgs. MFD soils are typically non-plastic to low plasticity and contain an obvious component of muscovite mica.

The MFD soils are in a moist to wet condition and is often interstratified/interbedded silt (ML) with sandy beds ranging from less than 1 inch to several feet thick. The stratification was best observed in the split-barrel samples collected, in which the water content alternated visibly between moist and wet several times within one 18-inch-long sample (i.e., soils with higher sand content exhibit more free water than those with less sand content).

Seventeen SPT N-values were recorded in the MFD unit, ranging from 7 to 22 blows per foot (bpf) and averaging 12 bpf; indicating medium stiff to very stiff consistency for the predominately fine-grained soils and loose to medium dense relative density for the predominately sand soils. Eight laboratory moisture content tests were performed on MFD soil samples. Results ranged from 25 to 41 percent and averaged 37 percent moisture. Fines content testing was performed on one sample and resulted in a fines content of 20 percent (e.g., soil classification of silty sand).

3.3.2 Early Pleistocene Deposits

Early Pleistocene Deposits (EPD) were encountered below the MFD unit and an approximate depth of 73 feet bgs. This transition depth was inferred from drilling observations made; an apparent decrease in drilling advancement rates and generally more difficult drilling conditions than those observed in MFD soils. The EPD soils consist of dense, poorly graded sand with silt (SP-SM) and dense, poorly graded sand (SP). The EPD soils consisted of fine to medium sand and contained occasional, thin silt interbeds (e.g., approximately ½ inch thick). Trace fine, rounded gravel was observed at approximately 85 feet bgs.

Three SPT N-values were recorded in the EPD unit, ranging from 37 to 48 bpf and averaging 41 bpf; indicating dense relative density conditions. Two laboratory moisture content tests were performed on EPD soil samples; ranging from 25 to 30 percent and averaged 27 percent moisture.

3.4 Groundwater

We selected to advance the upper 15 feet of Boring B-1 using hollow-stem auger drilling methods for the purpose of measuring a groundwater level. Upon observing saturated soil at 15 feet bgs in sample No. 6, we directed the drillers to stop drilling for approximately 45 minutes. This allowed for the groundwater level inside the hollow-stem augers to equilibrate with that in the surrounding subsurface. After taking multiple groundwater level measurements during this period using an electronic water level indicator, we recorded a stabilized groundwater level of 13.9 feet bgs.

The City of Woodburn provided us two geotechnical boring logs (GeoEngineers, 2002) advanced in March 2002 at the existing Parr Road WTP at the northeast corner of Centennial Park, about 1,400 feet north of the Project site. These boring logs indicate a groundwater level of approximately 11 feet bgs at the Parr Road WTP, which is consistent with our findings at the Project site.

Groundwater levels may vary with precipitation, the time of year, site utilization, and/or other factors. Generally, groundwater highs occur near the end of the wet season in late spring or early summer and groundwater lows occur near the end of the dry season in the early fall. Groundwater levels measured during our August 2020 investigation are likely close to the seasonal minimum, while those reported on the provided March 2002 boring logs (GeoEngineers, 2002) are likely close to the seasonal maximum.

4.0 Seismic and Geologic Hazard Evaluation

We performed a seismic hazards evaluation in general accordance with the 2019 Oregon Structural Specialty Code (OSSC, 2019) and ASCE’s Minimum Design Loads for Buildings and Other Structures, 2016 Edition (ASCE/SEI 7-16). The OSSC requires evaluating the seismic hazards for the Maximum Credible Earthquake (MCE) having a 2-percent probability of exceedance in a 50-year period (2,475-year return period).

4.1 Regional Seismicity

The Pacific Northwest is a seismically active region that has three principle seismic sources: (1) the Cascadia Subduction Zone (CSZ) megathrust, which represents the interface between the subducting Juan de Fuca plate and the overriding North American plate; (2) faults located within the Juan de Fuca plate (referred to as CSZ intraplate or intraslab sources); and (3) crustal faults principally within the North American plate (Wong and Silva, 1998). Faulting and seismicity associated with Cascade volcanoes are also potential sources of seismicity, though they generally do not impact sites in the Willamette Valley.

4.1.1 Crustal Sources

Crustal sources typically occur at depths ranging from approximately 14 to 40 kilometers bgs (Geomatrix Consultants, 1995). A search was performed on the U.S. Geological Survey (USGS) website (USGS, 2020) to identify known crustal seismic sources within 20 kilometers (about 12.5 miles) of the project alignment. Only one fault is located within 20 kilometers of the Project site, as presented in Table 4-1.

Table 4-1. Known Faults Within 20 km of the Project Site

USGS Fault ID.	Fault Name	Char. Mag	Type of Fault	USGS Fault Class ¹	Approx. Earthquake Depth (km)	Distance (km) & Direction from Site	Notes
873	Mount Angel fault	6.80	Thrust	A	15 to 40 km	1.7 km Southeast	2

Notes:

1. USGS Fault Classes from USGS Earthquake Hazards Program, 2014 National Seismic Hazard Maps defines a Class A fault as having convincing evidence of Quaternary activity (Active).
2. Characteristic earthquake magnitude from USGS Earthquake Hazards Program, 2014 National Seismic Hazard Maps – Fault Parameters.

4.1.2 Cascadia Subduction Zone Seismic Sources

The Cascadia Subduction Zone (CSZ) is an approximate 1,000-kilometer-long zone of active tectonic convergence where oceanic crust of the Juan de Fuca Plate is subducting beneath the North American continental plate at a rate of about 3 to 4 centimeters per year (DeMets, et al., 1990). The fault trace is located off the coast of southern British Columbia, Washington, Oregon, and northern California; approximately 325 kilometers west of the site.

There are two primary seismicity sources associated with the CSZ: 1) relatively shallow earthquakes that occur on the interface between the Juan de Fuca and North American plates (i.e., Subduction Zone

earthquakes); and 2) deep earthquakes that occur along faults within the subducting Juan de Fuca plate (i.e., intraplate earthquakes). These two types of earthquakes are discussed in the following sections.

4.1.2.1 Subduction Zone Earthquakes

Large subduction zone (megathrust) earthquakes occur within the upper approximate 30 kilometers of the contact between the two plates (Pacific Northwest Seismic Network (PNSN), 2020). As the Juan de Fuca Plate subducts beneath the North American Plate through this zone, the plates are locked together by friction (PNSN, 2020). Stress slowly builds as the plates converge until the frictional resistance is exceeded, and the plates rapidly slip past each other resulting in a megathrust earthquake. The USGS estimates megathrust earthquakes on the CSZ may have magnitudes up to M9.2. Geologic evidence indicates a recurrence interval for major subduction zone earthquakes of 250 to 650 years, with the last major event occurring in 1700 (Atwater, B.F., 1992).

4.1.2.2 Intraplate Earthquakes

Below depths of approximately 30 kilometers, the plate interface does not appear to be locked by friction, and the plates slowly slide past each other. The curvature of the subducted plate increases as the advancing edge moves east, creating extensional forces within the plate. Normal faulting occurs in response to these extensional forces. This region of maximum curvature and faulting of the subducting plate is where large intraplate earthquakes are expected and is located at approximate depths ranging from 30 to 60 kilometers (Geomatrix Consultants, 1993, 1995 and Kirby, S.H. et al., 2002). Intraplate earthquakes within the Juan de Fuca plate generally have magnitudes less than M7.5 (Cascadia Region Earthquake Workshop, 2008). The 2001 M6.8 Nisqually earthquake near Olympia, Washington, occurred within this seismogenic zone at a depth of 52 kilometers.

4.2 Site Classification

We assigned a seismic site class for the Project site following code-based procedures in Section 1613.2.2 of the 2019 OSSC, which references the ASCE/SEI 7-16, Chapter 20 (2016). Site class is used to categorize common subsurface conditions into broad classes to which ground motion attenuation and amplification effects are assigned. Site classification is based on the weighted average of the shear wave velocity or Standard Penetration Test (SPT) blow counts (N-value) in the upper 100 feet of subsurface profile.

Due to the presence of liquefiable soils, a Site Class F was initially assigned, per Section 20.3 of ASCE/SEI 7-16. A Site Class F designation typically requires a site-specific ground response analysis. However, ASCE/SEI 7-16 includes an exception to this requirement in Section 20.3.1, which states that structures having a fundamental period of vibration less than or equal to 0.5 second do not require a site-specific ground response analysis. For this case, site class is permitted to be determined based on SPT blow counts, undrained shear strength, or shear wave velocity, in accordance with Table 20.3-1. Based on the SPT blow counts from our recent geotechnical exploration, a Site Class E is appropriate for design purposes.

4.3 Seismic Design Parameters

The 2019 OSSC requires that spectral response accelerations be developed based on the 2016 ASCE 7-16. We developed spectral response accelerations using the online ASCE 7 Hazard Tool, which references ground motion procedures in accordance with ASCE 7-16 and is based on the USGS 2014 National Seismic Hazard Mapping Project (NSHMP) developed for the Maximum Considered Earthquake (MCE) (Peterson et. al., 2014). The MCE consists of ground motions (accelerations) with a 2-percent probability of exceedance in 50 years (return period of 2,475 years). The mean earthquake magnitude and the mean site-to-source distance for the zero-second period of vibration (e.g., PGA) are 8.25 and 71.36 km, respectively, for the MCE. The recommended spectral acceleration parameters for use in structural design are provided in Table 4-2.

Table 4-2. 2019 OSSC MCE Spectral Acceleration Parameters for Site Class E

Parameter	0.2-Second Period	1-Second Period
Mapped MCE _R (Rock site)	S _S = 0.835g	S ₁ = 0.399g
Site Coefficients	F _a = 1.300	F _v = 2.4
Site-Adjusted MCE _R	S _{MS} = 1.086g	S _{M1} = 0.958g
Design MCE _R	S _{DS} = 0.724g	S _{D1} = 0.639g
Mapped MCE PGA (Rock Site)	0.384g	
Site Coefficient F _{PGA}	1.433	
Site-adjusted MCE PGA	0.550g	

It is important to note that Section 11.4.8 of ASCE 7-16 requires a site-specific ground motion hazard analysis be performed on structures on Site Class E sites with a 1-second spectral response acceleration parameter (S₁) greater than 0.2g. However, exception No. 3 in Section 11.4.8 states that a site-specific ground motion hazard analysis is not required for Site Class E if the structure's fundamental period of vibration T is less than T_s . When this condition is met, the seismic response coefficient C_s shall be calculated using equation 12.8-2 in ASCE 7-16. The following provides a summary of these parameters:

- The new wellhouse will be single-story, reinforced concrete structure; therefore, we anticipate T will be less than or equal to 0.5 second;
- T_s equals the design 0.2-second spectral response parameter SDS divided by the design 1-second spectral response parameter SD1. Using this equation and the SDS and SD1 values in Table 4-2, T_s equals 1.133; and
- T is less than T_s and therefore, a site-specific ground motion hazard analysis is not required, and the seismic response coefficient C_s shall be calculated using equation 12.8-2 in ASCE 7-16.

4.4 Seismic Sources and Hazard Deaggregation

The probabilistic seismic hazard assessment (PSHA) produces a mean source event (e.g., the MCE) that generates the spectral accelerations reported in Table 4-2. The deaggregation data identify the earthquake sources, magnitudes, and site-to-source distances that contribute to the mean source event. Table 4-3 summarizes the results of the mean source event hazard deaggregation for the zero-second period of vibration (e.g., PGA).

Table 4-3: Deaggregation Results for 2,475-year Mean Source Event (MCE), PGA Period

Source	Moment Magnitude, M_w^1	Site-to-Source Distance ² (km)	% Contribution to Hazard
CSZ Interface	8.97	86.94	69.43
CSZ Intraslab	6.98	62.75	15.21
Crustal Faults ³	6.08 to 6.69	4.19 to 12.55	15.36

Notes:

1. M_w values represent the mean value from each type of earthquake source.
2. Site-to-Source distances represent the mean value from each type of earthquake source.
3. Crustal faults source includes gridded seismic sources that represent earthquakes that do not occur on known, mapped faults.

4.5 Liquefaction

4.5.1 Overview

Liquefaction is a phenomenon affecting saturated, cohesionless soils in which cyclic, rapid shearing from an earthquake results in a drastic loss of shear strength and a transformation from a solid mass to a viscous, heavy fluid mass. Consequences of soil liquefaction include loss of shear strength, loss of soil materials through sand boils, flotation of buried chambers/pipes, and post-liquefaction settlement.

4.5.2 Liquefaction Analyses

For our liquefaction analyses, we used a mean earthquake magnitude (M) of 8.25 and a mean PGA of 0.55g, obtained from the deaggregation data for the design-level MCE. Groundwater was modeled at a depth of 11 feet bgs, based on the anticipated seasonal high groundwater level measurements and observations discussed in Section 3.4.

We evaluated liquefaction susceptibility using SPT-based methods presented by Idriss and Boulanger (2008) and data collected from boring B-1. Our analysis indicated liquefiable soils extend to an approximate depth of 73 feet bgs (e.g., to the bottom of the MFD unit), with total liquefaction-induced settlement during the design-level/aggregate earthquake on the order of 11 inches. However, we recommend the approach presented in a published method that considers a cutoff depth of 60 feet to account for liquefaction settlement occurring below this depth not expressing itself to the ground surface

(Cetin et al., 2009). Under this scenario, we anticipate total liquefaction-induced settlement will be on the order of 8 inches. For design purposes, we recommend assuming differential settlement across the long axis of the wellhouse structure to be 50 percent of total settlement (e.g., about 4 inches).

4.6 Lateral Spreading

Lateral spreading is a liquefaction-related phenomenon that results in ground displacement during an earthquake and occurs in sloping ground or flat ground with free face (i.e., a creek bank or channel). Surface rupture due to lateral spreading can occur on sites underlain by liquefiable soils that are located immediately adjacent to slopes steeper than about 3 degrees (20H:1V), and/or adjacent to a free face, such as a stream bank or the shore of an open body of water. During lateral spreading, the materials overlying the liquefied soils are subject to lateral movement downslope or toward the free face. Due to the overall flat topography at the Project site and the lack of a free face, we conclude that the risk of lateral spreading is negligible.

4.7 Fault Rupture

There are no known active faults that are mapped on or immediately adjacent to the Project site. The nearest fault considered to be active is the Mount Angel fault located 1.7 km southeast of the Project site. Therefore, we conclude the risk of surface rupture due to faulting is negligible.

4.8 Slope Stability

Due to the flat topography on and surrounding the Project site, we conclude that the risk of slope instability, for both static and seismic conditions, is negligible. This conclusion is supported by our review of available online landslide susceptibility mapping on the Oregon Department of Geology and Mineral Industries (DOGAMI) Statewide Geohazards Viewer (HazVu), which indicates a “Low – Landsliding Unlikely” hazard level at the Project site (Oregon DOGAMI, 2020).

4.9 Flood Hazard

The Oregon DOGAMI HazVu mapping utilizes FEMA Flood Insurance Rate Maps (FIRM) to assess flood hazard. HazVu mapping indicates the project alignment is outside of any mapped flood hazards (DOGAMI, 2020).

4.10 Other Hazards

Other geologic and seismic hazards, including debris flows, and tsunamis/seiches are not considered hazards to the Project.

5.0 Conclusions and Key Geotechnical Considerations

Based on the results of our field explorations and analyses, the site can be developed as described in Section 1.2 of this report, provided the recommendations presented in this report are incorporated into the design and development. The primary geotechnical consideration for the Project is the potential for differential settlement of the proposed wellhouse structure due to seismic-induced liquefaction, as well as the potential for differential settlement between the wellhouse floor slab, the concrete pump pedestal, and discharge header piping. We estimate about 4 inches of differential settlement could occur over the long axis of the wellhouse structure (e.g., 30 feet).

Mitigation of liquefaction-induced settlement typically consists of either ground improvement methods (e.g., deep soil mixing, compaction grouting, etc.) or supporting the structure on a deep foundation system extending to a non-liquefiable, competent bearing stratum (e.g., micropiles, auger-cast piles, etc.). In this case, deep foundations would need to extend into the Early Pleistocene Deposits, to depths on the order of 80 feet bgs. Although effective, ground improvement and deep foundation mitigation alternatives are expensive.

Alternatively, foundation support of the wellhouse structure could be provided by a mat foundation. Mat foundations are semi-rigid structures that can tolerate differential settlement better than spread footing foundations but are generally less expensive than ground improvement or deep foundations. Because of a mat foundation's larger size compared to a spread footing, it can tolerate larger differential settlement by "spanning" over the differential settlement zone. However, a mat foundation-supported structure will still experience some degree of ground settlement, and some structural repairs may be necessary after an earthquake. In addition, minor tilting of the building and voids beneath the mat foundation may occur and would need to be addressed to maintain the functionality of the building.

Based on the lower anticipated costs in comparison to deep foundations, the ability to accommodate expected differential settlement, and post-earthquake egress safety, we understand the City has selected a mat foundation to provide foundation support for the proposed wellhouse structure. Murraysmith reviewed the above-referenced information with the City and the City understands the associated post-earthquake risks and impacts to serviceability (e.g., building settlement, tilting, and rotation); even with a mat foundation supporting the structure.

A significant concern for this project is the potential for differential settlement between the wellhouse floor slab, the concrete pump pedestal/base, and discharge header piping. The Project structural engineer (Peterson Structural Engineers [PSE]) proposed a concept that would isolate the discharge header piping (above-grade in the wellhouse), allowing it to move independently of the surrounding floor slab. This approach includes a locally thickened slab directly beneath the discharge header piping that would potentially be supported on deep foundation elements. The other approach to mitigate differential movement between the wellhouse floor slab, the concrete pump pedestal/base, and discharge header piping is to incorporate double-ball, flexible seismic expansion joints into the piping system. McMillen Jacobs should be contacted to provide further recommendations for these mitigation options if warranted.

6.0 Design Recommendations

6.1 Wellhouse Building Mat Foundation

We understand the new wellhouse building will be a 30-foot by 15-foot, single-story structure. Although grading plans have not yet been provided, we anticipate the new building will have a finished floor elevation at or near the existing ground surface elevation of approximately 184 feet. In addition, although no structural loads have been provided to-date, we anticipate the new building will be lightly loaded. For the purposes of this report, we have assumed an applied bearing pressure of 1,000 psf, corresponding to the dead load (DL) plus live load (LL) combination. If the structural loading varies from what has been anticipated, McMillen Jacobs should be contacted to provide revised recommendations, if warranted.

6.1.1 Subgrade Preparation

Soil should be excavated to a firm subgrade condition. The mat foundation should be supported on a minimum 12-inch thick layer of compacted structural fill consisting of $\frac{3}{4}$ -inch minus Dense-Graded Aggregate per OSSC Section 02630.10 (ODOT, 2018). The structural fill should extend a minimum of 12 inches horizontally from the edges of the mat foundation and compacted to 92 percent of the dry density as determined by the Modified Proctor test (ASTM D1557). The exposed subgrade conditions should be evaluated by a representative of the geotechnical engineer before placing the structural fill. Any soft, excessively disturbed, or otherwise unsuitable materials should be overexcavated to firm subgrade conditions and replaced with compacted structural fill.

6.1.2 Mat Foundation Settlement Analysis

Static settlement analyses were performed assuming the following: applied bearing pressure of 1,000 psf (DL + LL combination); 15- by 30-foot by 1.5-foot thick mat foundation dimensions; and a bottom-of-foundation depth of 2.5 feet bgs. We estimate the total static settlement will be less than 1 inch and static differential settlement to be less than $\frac{1}{2}$ inch across the long axis (e.g., 30 feet) of the mat foundation.

As discussed in Section 4.5.2, we anticipate total liquefaction-induced settlement will be on the order of 8 inches. For design purposes, we recommend assuming differential settlement across the long axis of the wellhouse structure to be 50 percent of total settlement (e.g., about 4 inches).

6.1.3 Mat Foundation Design Parameters

We recommend an allowable bearing pressure of 1,000 psf for the design of the mat foundation. This bearing pressure is a net bearing pressure (e.g., mat foundation weight and overburden weight are neglected), applies to DL + LL, and may be increased by one-third for transient loading conditions such as seismic and wind forces.

We recommend a Young's modulus of 2,000 psi, a Poisson's ratio of 0.3, and an allowable subgrade modulus of 200 pounds per cubic inch (pci). The subgrade modulus represents the anticipated value which would be obtained in a standard in-situ plate test with a 1-foot square plate. Use of this subgrade modulus for design or other on-grade structural elements should include appropriate modifications based

on dimensions as necessary. These recommendations assume properly prepared subgrade as recommended in Section 6.1.1 and overlain with a minimum 12 inches of compacted structural fill.

The wellhouse building mat foundation should be designed to accommodate the anticipated liquefaction-induced differential settlement of 4 inches over the long axis of the wellhouse building (e.g., 30 feet).

6.1.4 Lateral Resistance

Lateral resistance can be provided by frictional resistance between the subgrade and the base of the mat foundation, and by passive resistance acting against the side of the mat foundation. For base frictional resistance, we recommend using a friction coefficient of 0.6 for cast-in-place concrete on crushed aggregate. An appropriate FOS based on anticipated lateral forces should be used.

The design value for passive pressure should not exceed the value of $100D$ (in units of psf, where D is the depth of the embedment) due to the large amounts of movement necessary to mobilize full passive resistance. This value incorporates a factor of safety (FOS) of 3 from the ultimate value. Unless in paved areas, the upper 12 inches should not be used in calculating passive resistance because construction and post-construction activities often disturb this region.

6.2 Pipelines

As discussed in Section 1.2, piping associated with the Project includes: 4 to 6-inch storm drains; a 6-inch sanitary sewer main; a 10-inch raw water main to the WTP; a 12-inch fire line; and a 2-inch water service line. Pipe materials and invert depths have not been provided to-date. The recommendations provided herein are for flexible (e.g., DIP and PVC) with a minimum depth of cover of 2 feet.

6.2.1 Pipeline Subgrade Support

We anticipate pipeline subgrade soils will consist of medium stiff to stiff, non-plastic to low plasticity MFD silts with minor amounts of fine sand and should provide adequate subgrade support of the proposed pipelines. Occasional zones of soft soil may be encountered along the pipeline alignments which may require subgrade stabilization. Details of subgrade stabilization are provided in Section 7.3.6.

The new pipeline construction will not result in a net increase in pressure at the base of the pipeline, and therefore pipe settlement under static conditions is expected to be negligible.

6.2.2 Soil Design Parameters

Flexible pipes derive their load-carrying capacity from their interaction with the pipe zone backfill as the pipe deflects under load and pushes laterally against the soil. Load-carrying capacity depends on the depth of the pipe, the surrounding soil conditions, the type and density of the backfill, and the thickness of compacted pipe zone backfill between the pipe and the native soil in the trench wall. Based on the anticipated subsurface soil types and relative densities, the geotechnical design parameters in Table 6-1 are recommended for pipeline design.

Table 6-1. Pipeline Geotechnical Design Parameters

Property	Depth of Cover (feet) ³	MFD Soils	Granular Backfill	CLSM ¹
Moist Unit Weight, γ_m (pcf)	--	115	130	125
Saturated Unit Weight, γ_{sat} (pcf)	--	120	135	125
Friction Angle, ϕ (degrees)	--	28	36	34
Modulus of Soil Reaction, E' (psi) ²	$2 \leq D \leq 5$	500	1,500	3,000
Soil-Pipe Friction Coefficient, μ	--	0.2	0.4	0.4

Notes:

1. CLSM: Controlled Low Strength Material, Unit weight of CLSM may be specified by the designer; 125 pcf is typical value.
2. Modulus of soil reaction values are unfactored.
3. D: Depth of cover above top (e.g., crown) of pipe.

The design parameters presented in Table 6-1 are appropriate for use in the Iowa deflection formula (Spangler, 1941) and are consistent with American Water Works Association Manual M11 (2004). Note that the Modulus of soil reaction, E' , is approximately equivalent to the constrained soil modulus, M_s .

The pipes should be designed considering traffic loads, where appropriate. These loads will be variable, depending on the final depth of the pipeline. Traffic loads on surfaces greater than 10 vertical feet above the subsurface structure are generally insignificant.

6.2.3 Pipeline Buoyancy and Flotation

When pipes are installed under the groundwater table, they can be susceptible to buoyancy if the upward buoyant forces on the pipe exceed the downward gravitational forces from the soil cover and the weight of the pipe. Taking the worst-case scenario of a 2-foot depth of cover, the largest diameter pipe (e.g., the 12-inch fire line) and unlikely scenario of groundwater at the ground surface, we calculated a Factor of Safety (FOS) against flotation of greater than 2.0. The calculated FOS for the worst-case scenario exceeds the typical minimum FOS of 1.5. Therefore, we recommend a minimum 2-foot depth of cover for all piping associated with the Project.

6.3 Below Grade Structures, Vaults, and Manholes

We anticipate there will be several ancillary below-grade structures, including buried vaults and manholes. The below grade structures will consist of either precast and/or cast-in-place reinforced concrete construction. Vault and manhole depths have not been provided as of the date of issuance of this report.

6.3.1 Foundations

The typical preferred foundation type for vault structures is a strip foundation. A maximum net allowable bearing pressure of 1,500 pounds per square foot (psf) should be used for the design of the vaults and manholes founded on subgrade prepared following the recommendations provided in Section 6.3.2. A

total static settlement of the vaults is estimated to be less than 1 inch. Differential static settlement across the vault and manhole structures is estimated to be less than one half of the total settlement.

Since the pipeline and the vault and manhole structures are integral and have similar foundation preparation systems and subsurface conditions, the pipeline and the structures should experience similar magnitudes of seismically induced settlement. However, more significant differential settlement may occur between the pipeline and the vault structure, depending on the difference of their respective base depths. This differential settlement will mainly affect the connection pipes and should be addressed in pipeline design. Once pipeline invert depths and bottom depths of the vault and manhole structures are known, McMillen Jacobs should be contacted to evaluate potential differential settlements.

6.3.2 Subgrade Preparation

Satisfactory subgrade support for the vault and manhole foundations can be obtained from the native, medium stiff to stiff MFD soils. To provide a stable working surface and consistent subgrade, it is recommended that the vault and manhole foundation subgrade be over-excavated a minimum of 12 inches and replaced with structural fill consisting of $\frac{3}{4}$ -inch minus Dense-Graded Aggregate per OSSC Section 02630.10 (ODOT, 2018). The structural fill should be compacted small static compaction equipment.

6.3.3 Lateral Earth Pressures

Backfill material placed behind the below-grade structures should consist of free-draining crushed aggregate, as described in Section 7.3.2. The following table summarizes our recommended lateral earth pressure values, expressed as the equivalent fluid pressures.

Table 6-2. Recommended Lateral Earth Pressures

Design Condition	Groundwater Condition ¹	Static At-rest Pressure (psf)	Static & Live Load Surcharge Pressure (psf)	Additional Seismic Pressure (psf)	Hydrostatic Pressure (psf)
At-Rest Earth Pressure	Above Groundwater	50(H-H _w)	0.40q	34H	--
	Below Groundwater	50(H-H _w)+27H _w	0.40q	34H	62.4H _w
Active Earth Pressure	Above Groundwater	30(H-H _w)	0.26q	17H	--
	Below Groundwater	30(H-H _w)+18H _w	0.26q	17H	62.4H _w

Notes:

1. We recommend a groundwater level of 5 feet bgs for the calculation of hydrostatic pressure.

H is the total height of the buried portion of the wall and H_w is the submerged portion of the buried wall (i.e., from the bottom of the buried wall up to the groundwater level). The above recommendations are valid only for imported, free-draining crushed aggregate and finished backfill slopes of flatter than 4H:1V (horizontal:vertical). The above earth pressures can be assumed to act horizontally on the embedded walls. The equivalent fluid earth pressures and seismic earth pressures increase with depth in a hydrostatic, triangular pressure distribution with the resultant force acting at approximately 0.3H above

the base of the wall. The pressure distribution of the surcharge loads is a constant value of lateral pressure resulting from the vertical, surface surcharge loads (q) with the resultant lateral surcharge force acting approximately at a height above the base of the wall equal to one-half the total wall height. The distribution and resultant of the wall backfill, groundwater, and seismic earth pressures are shown in Figure 3.

6.3.4 Lateral Resistance

Lateral resistance for below-grade structures can be provided by frictional resistance between the subgrade and the bottom of the foundations and by passive resistance around the structures. For the base frictional resistance, we recommend using an ultimate friction coefficient of 0.60 for cast-in-place concrete on prepared subgrade or structural fill. A coefficient of 0.45 may be used for pre-cast concrete foundations (i.e., vaults and manholes). Typically, a FOS of 1.5 is used to convert to allowable friction coefficients.

Lateral resistance can also be provided by passive resistance around the buried structures. We recommend using an ultimate equivalent fluid pressure of 450 pounds per cubic foot (pcf) in the design of foundations. This resistance should be applied across the face of the foundation element. To develop full passive resistance, slight movement may first need to occur. Because of this, we recommend (1) neglecting using passive resistance in the upper 12 inches of the structure and (2) applying a FOS of 3 to the ultimate value (e.g., use a recommended passive earth pressure of 150 pcf).

6.3.5 Buoyancy

Below-grade, water-tight structures should be designed to resist uplift forces due to the buoyancy of the structure during periods of high groundwater. Uplift forces are resisted by the weight of the structure itself and either the frictional shear resistance between backfill and structure wall. Figure 4 presents diagrams of the uplift resistance and uplift pressures.

We recommend using a design groundwater level equal to the ground surface. This is due, in part, to the potential for water to collect in the wall backfill and subgrade. Although water will likely dissipate into the formation, the dissipation rate may be slower than the collection rate leading to temporary hydrostatic and uplift pressures below structure foundations.

Below-grade structures should be designed to resist buoyant uplift and lateral hydrostatic forces. Buoyant uplift is resisted by the dead weight of the structure and by frictional resistance between the structure and the backfill. The friction coefficients from Section 6.3.4 can be used for vertical frictional resistance along the earth/structure interface.

7.0 Construction Recommendations

Construction recommendations for the Project are presented in the following sections. All material specifications referenced in this section refer to the 2018 Oregon Standard Specifications for Construction (OSSC) (ODOT, 2018). McMillen Jacobs should review the design as it is advanced to confirm recommendations are applicable in the event facility layout and details change.

7.1 Site Preparation

7.1.1 Demolition

If applicable, demolition of any existing structures should include complete removal of all structural elements, including asphalt parking areas, foundations, and concrete slabs. Abandoned buried utilities should similarly be removed or fully grouted.

7.1.2 Site Stripping

Vegetation, topsoil, and any undocumented fill encountered should be removed from the proposed building and pavement areas, and for a 5-foot-margin around such locations. Based on the results of our field exploration, stripping depths at the site are anticipated to extend up to approximately 2.5 feet bgs for the four proposed structures at the Project site (e.g., overexcavation depth for the mat foundation). We anticipate stripping depths in pavement areas will generally be on the order of 8 inches to 1 foot, although this may increase in localized zones due to tree removal. These materials may be deeper or shallower at locations away from our explorations. The geotechnical engineer or his representative should provide recommendations for actual stripping depths based on observations during the construction phase of the Project. Stripped topsoil and rooted soils should be transported off-site for disposal or stockpiled for later use in landscaped areas.

7.1.3 Existing Utilities & Below-Grade Structures

All existing utilities should be identified prior to excavation. Abandoned utility lines beneath the new buildings, pavements, and hardscaping features should be completely removed or fully grouted. Soft, loose, or otherwise unsuitable soils encountered in the bottom of utility trench excavations should be removed and replaced with structural fill in conformance with Section 7.3.2 this report. Buried structures (e.g., footings, foundation walls, slabs-on-grade, tanks, etc.), if encountered during site development, should be completely removed and replaced with structural fill in conformance with Section 7.3.2.

7.1.4 Erosion Control

Erosion and sedimentation control measures should be employed in accordance with applicable City, County, and State regulations.

7.1.5 Subgrade Preparation

Subgrade preparation for mat foundations and below-grade structures are provided in Sections 6.1.1 and 6.3.2, respectively. To minimize the disturbance of the fine-grained subgrade, we recommend the excavation equipment be equipped with smooth-edged digging buckets. McMillen Jacobs should observe

the final subgrade surface, inspect the condition of the subgrade, and identify additional overexcavation as necessary. This subgrade observation should occur prior to the subgrade being covered with crushed rock or formwork.

7.2 Pipeline Trench Excavation

We anticipate the maximum pipeline trench depths will be on the order of 5 feet. The final trench excavation should be performed with a straight-edged excavator bucket to minimize disturbance to the base of the trench. Following excavation, the trench base should be thoroughly cleaned of loosened or disturbed soils, by hand if necessary.

For pipe sizes up to 24 inches in diameter, the trench width should extend a minimum of 12 inches beyond each side of the pipe (i.e., OD + 24 inches + trench protection). Where trench shielding or shoring is used, the 12 inches should be measured between the pipe and inside face of the shielding or shoring. This will allow for the use of mechanical compaction equipment on the sides of the pipe.

7.3 Fill Materials and Compaction Criteria

7.3.1 On-Site Materials

7.3.1.1 Missoula Flood Deposits Soils

We anticipate the native MFD soils can be very difficult to properly moisture condition and compact during construction; especially during the wet winter months. Therefore, we do *not* recommend the re-use of the native MFD soils as structural fill.

7.3.2 Structural Fill

Structural fill materials should be placed after subgrade preparation and approval. Structural fill below the new wellhouse structure footprint, below-grade structures, pavements, and other appurtenant structures should consist of either 1½-inch or ¾-inch minus Dense-Graded Aggregate conforming to OSSC Section 02630.10 (ODOT, 2018). Unless otherwise noted, structural fill should be compacted to a minimum 92 percent of ASTM D1557. The structural fill should be placed in maximum lifts of 8 inches of loose material. Each lift of compacted engineered fill should be tested by a qualified testing agency prior to placement of subsequent lifts. Structural fill should extend laterally beyond the exterior perimeter of the building foundation a distance equal to the thickness of the fill or 3 feet; whichever is less.

7.3.3 Embedded Walls and Below-Grade Structure Backfill

Backfill for embedded walls and below-grade structures should consist of Open-Graded Aggregate conforming to OSSC Section 02630.11 (ODOT, 2018). This material should be compacted to a minimum of 90 percent of the maximum dry density, as determined by ASTM D1557. Backfill placed within 3 lateral feet of the below-grade structures should be compacted in lifts less than 6-inches thick using hand-operated tamping equipment (e.g., jumping jack or vibratory plate compactors). If flat work (e.g., concrete slabs or pavements) will be placed atop the wall backfill, we recommend that the upper 2 feet of material be compacted to 92 percent of the maximum dry density, as determined by ASTM D1557.

7.3.4 Pipe Bedding and Pipe Zone Backfill

Pipe bedding and pipe zone backfill should consist of imported crushed rock, such as ¾-inch minus crushed aggregate per OSSC Section 02630.10 (ODOT, 2018), Dense-Graded Aggregate with the following modifications: 10 – 25 percent passing Sieve No. 4 and 2 – 7 percent passing Sieve No. 200. The material must be suitable for compaction and able to be worked under the curvature of the pipe. We recommend a minimum bedding thickness of 6 inches below the bottom of the pipe, or as determined by Murraysmith. In areas where weak subgrade is encountered, a foundation stabilization layer should be placed below the bedding. Foundation stabilization is discussed in Section 7.3.6.

The pipe zone should extend a minimum of 12 inches above the top of the pipe, or as determined by Murraysmith.

Bedding and pipe zone backfill materials should be compacted to at least 90 percent of the Modified Proctor maximum dry density (ASTM D1557), except the portion directly below the pipe. The portion directly below the pipe should be leveled without compaction to allow for uniform pressure distribution under the pipe. Material below the pipe haunches should be hand placed and compacted before backfilling along the sides of the pipe.

7.3.5 CLSM Backfill

Controlled Low Strength Material (CLSM) is commonly used as an alternative to granular fill bedding in portions of pipelines. CLSM fill mixtures are typically composed of a combination of cement, water, fine aggregate, and fly ash. The material is flowable and self-leveling, which greatly simplifies placement around pipelines. The material typically is specified to have unconfined compressive strength of 50 to 200 psi.

However, fully-cured CLSM effectively forms a “block” around pipelines, which tends to reduce pipeline flexibility and consequently attracts loads if differential settlement occurs. As discussed in Section 4.5, we anticipate total liquefaction-induced settlement will be on the order of 8 inches and differential settlement will be on the order of 4 inches or less over a horizontal distance of 100 feet. Therefore, we do not recommend CLSM backfill be used for any piping associated with the Project.

7.3.6 Foundation Stabilization

Based on the subsurface explorations across the alignment, we anticipate competent subgrade conditions at the bottom of pipeline trenches. However, the subgrade soils can be disturbed if left exposed to water or general construction activities. If the subgrade becomes weakened or if soft/wet subgrade is encountered in localized areas, such as due to perched groundwater, a foundation stabilization layer may be required.

To construct the foundation stabilization layer, the trench should be overexcavated a minimum 12 inches below the bottom of the bedding and replaced with the foundation stabilization layer. The foundation stabilization layer should consist of compacted, free-draining aggregate consisting of 1-½ to ¾-inch conforming with the requirements of OSSC Section 00430.11 (ODOT, 2018). Vibratory compaction equipment is not recommended due to risk of additional disturbance to the subgrade. A reinforcement

geotextile should be used below the aggregate as described in Section 7.3.7. The foundation stabilization backfill may also be used as the drainage layer for in-trench dewatering, as described in Section 7.5.

7.3.7 Geotextiles

7.3.7.1 Separation Geotextiles

In general, the widespread use of separation geotextiles is not anticipated for the Project. However, they may be required in localized areas of trench seepage or for protection of subgrade, or in other areas identified during construction. They are not required for typical trench construction, however if used, separation geotextiles should consist of a “needle-punched”, non-woven separation fabric meeting the requirements for Type 1, nonwoven drainage geotextiles, as shown in Table 02320-1 in OSSC Section 02320 (ODOT, 2018).

7.3.7.2 Reinforcement Geotextiles

A reinforcement geotextile system should be installed beneath foundation stabilization backfill. We recommend a single-layer system consisting of a strong geotextile, such as Mirafi RS380i, that provides both separation/filtration and reinforcement. The reinforcement/separation geotextile should be installed on the base of the trench and extend up to the top of the foundation stabilization zone (below bedding) at a minimum. Reinforcement geotextiles should meet the requirements for Type 2, woven riprap geotextiles, as shown in Table 02320-2 in OSSC Section 02320 (ODOT, 2018).

7.3.8 Trench Backfill

Trench backfill refers to the fill placed above the pipe zone. Trench backfill should consist of pipe zone material, per Section 7.3.4. Trench backfill beneath paved areas or structures should be placed in 12-inch maximum loose lifts and compacted to at least 92 percent of the maximum dry density, as determined by ASTM D1557. The trench backfill should be placed up to the design top-of-subgrade elevation associated with the final pavement section.

For areas outside of the roadways, trench backfill should be compacted to 90 percent of maximum dry density, as determined by ASTM D1557. The upper 18 inches of the trench should be backfilled with topsoil to allow for vegetation regrowth.

7.4 Temporary Excavations

All excavations should be in accordance with applicable OSHA and state regulations. It is the contractor's responsibility to select the excavation methods, to monitor site excavations for safety, and to provide any shoring required to protect personnel and nearby, existing structures. A competent person, as defined by Oregon OSHA, is an individual that can identify existing and predictable excavation-related hazards and has the authority to take prompt corrective measures to eliminate such hazards. McMillen Jacobs' Project role does not include review or oversight of excavation safety.

We anticipate the pipeline trenches will be on the order of 5 feet deep and excavated using a vertical shoring system. No information has been provided to date regarding the depth of other ancillary structures, such as vaults/manholes and pump stations. For the purposes of this report, we assume a

maximum excavation depth of 10 feet. In the case that cut slopes are utilized for any excavations, the maximum slope inclinations must be in accordance with OSHA regulations. For use in the planning and construction of temporary excavations up to 10 feet in depth, an OSHA soil type of “C” can be used for the predominately fine-grained, near-surface MFD soils encountered.

Temporary slope recommendations do not consider site constraints such as groundwater, surcharge, or nearby structures. Temporary slopes should be evaluated on a case-by-case basis and incorporate groundwater conditions, soil classification, and site constraints. Slopes should be inspected and maintained as required by OSHA.

With time and the presence of seepage and precipitation, the stability of temporary unsupported cut slopes can be significantly reduced. Therefore, temporary slopes kept open for construction activities should be protected from erosion by installing a surface water diversion ditch or berm at the top of the slope and covering the cut face with well-anchored plastic sheets. In addition, the contractor should monitor the stability of the temporary cut slopes and adjust the construction schedule and slope inclination accordingly. Maintenance of safe working conditions, including temporary excavation stability, is the responsibility of the contractor and all excavations must comply with current federal, state, and local requirements.

7.5 Groundwater Control

Based on our groundwater measurements, we anticipate groundwater will be encountered at depths on the order of 10 feet bgs. Therefore, we do not anticipate significant groundwater will be encountered during construction. However, during the typically wet winter months, the formation of perched groundwater can develop. Based on their low hydraulic conductivity, the predominately fine-grained soils are not anticipated to produce large volumes of groundwater. Therefore, we anticipate that groundwater inflow can be controlled with a well-constructed, sump pumping dewatering system. Sump pumps should be installed with close spacing to maintain water levels below the subgrade surface. Should large volumes of water seepage be encountered, perforated drainpipes installed in drainage layers (i.e., crushed rock) may be necessary to convey water to the sump pump systems.

7.6 Wet Weather Earthwork

The predominately fine-grained, near-surface MFD soils encountered are moisture sensitive and will degrade after being traversed by construction equipment during periods of wet weather or wet conditions. Therefore, during or after wet weather, it will likely be necessary to import granular materials for structural fill or to protect exposed subgrade materials. Delays in site earthwork activities should be anticipated during periods of heavy rainfall. If earthwork is performed during extended periods of wet weather or in wet conditions, we recommend the following:

- Cover the base of structure excavations and pipeline trenches within soil with trench stabilization material.
- Haul roads subjected to repeated, heavy, tire-mounted construction traffic (e.g., dump trucks, concrete trucks, etc.) will typically require a minimum of 18 inches of imported granular material

to facilitate traffic. Additional granular material or geo-grid reinforcement may also be recommended based on site conditions at the time of construction.

- Excavations should be protected from surface water runoff by placing sandbags or by other means to direct runoff of precipitation away from work areas and to prevent ponding of water in excavations.
- Plastic covers, sloping, ditching, sumps, dewatering, and other measures should be employed in work areas as necessary to permit timely completion of work. Bales of straw and/or geotextile silt fences should be used to control surface soil movement and erosion.
- Excavations (specifically trench excavations) should be completed in small sections and backfilled at the end of each day to reduce exposure to wet conditions.
- Excavation or the removal of unsuitable soil should be followed promptly by placement and compaction of trench or foundation stabilization fill.
- The size and type of construction equipment used may have to be limited to minimize soil disturbance.

8.0 Closure

This report has been prepared for the exclusive use of the City of Woodburn and Murraysmith, in connection with the City of Woodburn – Wellhouse for New Production Well project. The data presented in this report is based on the subsurface conditions encountered during our site explorations and previous geotechnical exploration conducted nearby. The data presented herein is intended to support the design of the proposed improvements. McMillen Jacobs Associates is not responsible for the interpretation of the data contained in this report by anyone; as such interpretations are dependent on each person's subjectivity.

In the performance of geotechnical work, specific information is obtained at specific locations at specific times, and geologic conditions can change over time. It should be acknowledged that variations in soil conditions may exist between exploration and exposed locations and this report does not necessarily reflect variations between different explorations. The nature and extent of variation may not become evident until construction. If, during construction, conditions observed or encountered differ from those disclosed by this report, McMillen Jacobs Associates should be advised at once so we can observe and review these conditions and reconsider our recommendations where necessary.

The geotechnical engineering evaluations and interpretations included in this report are completed within the limitations of McMillen Jacobs Associates approved scope of work, schedule and budget. The services rendered by McMillen Jacobs Associates have been performed in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions in the same area. The construction recommendations are considered preliminary and provided for planning purposes only. McMillen Jacobs Associates is not responsible for the use of this report in connection with anything other than the project at the location described above.

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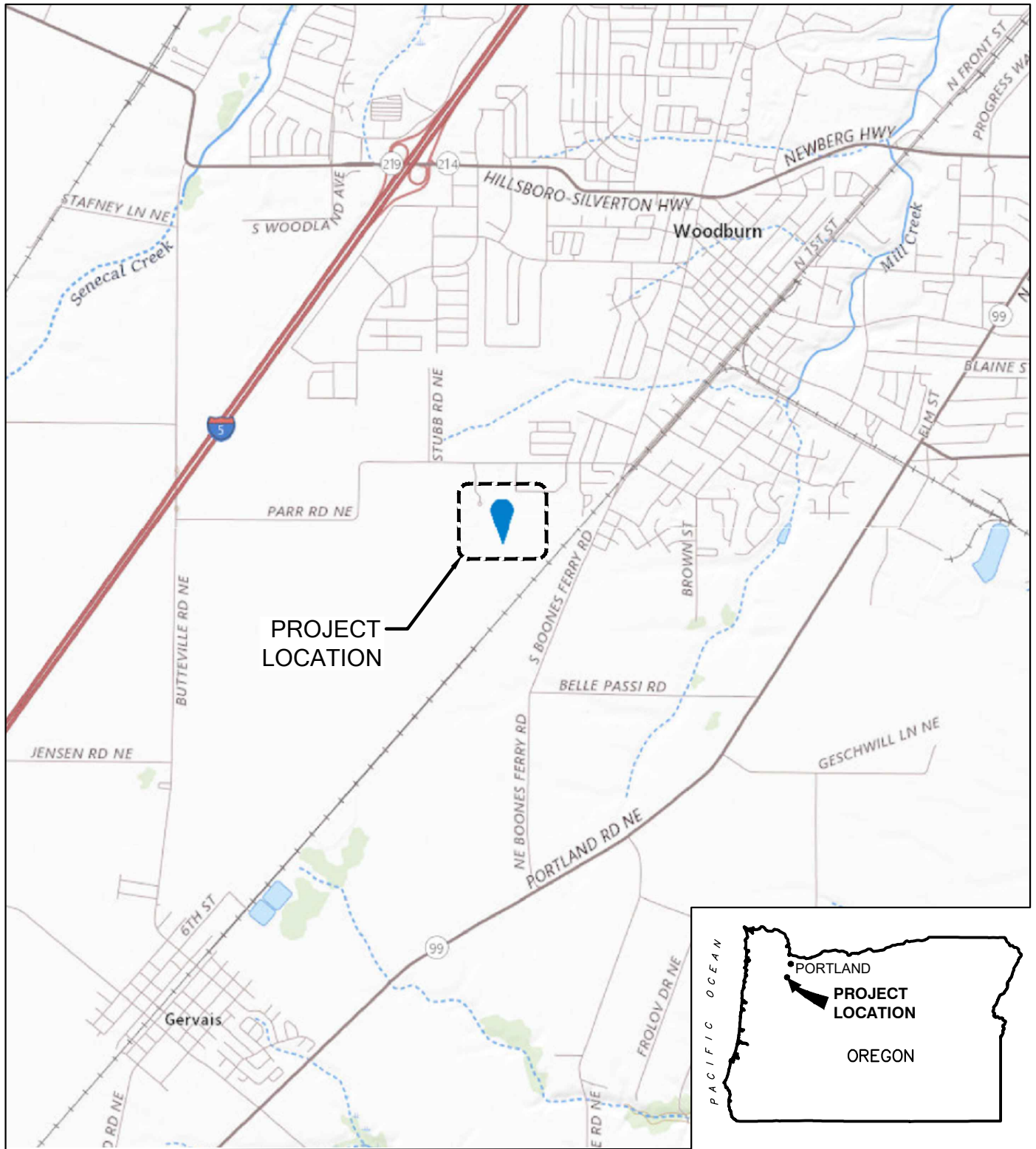
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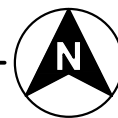
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Figures



PROJECT VICINITY MAP

SCALE: NTS

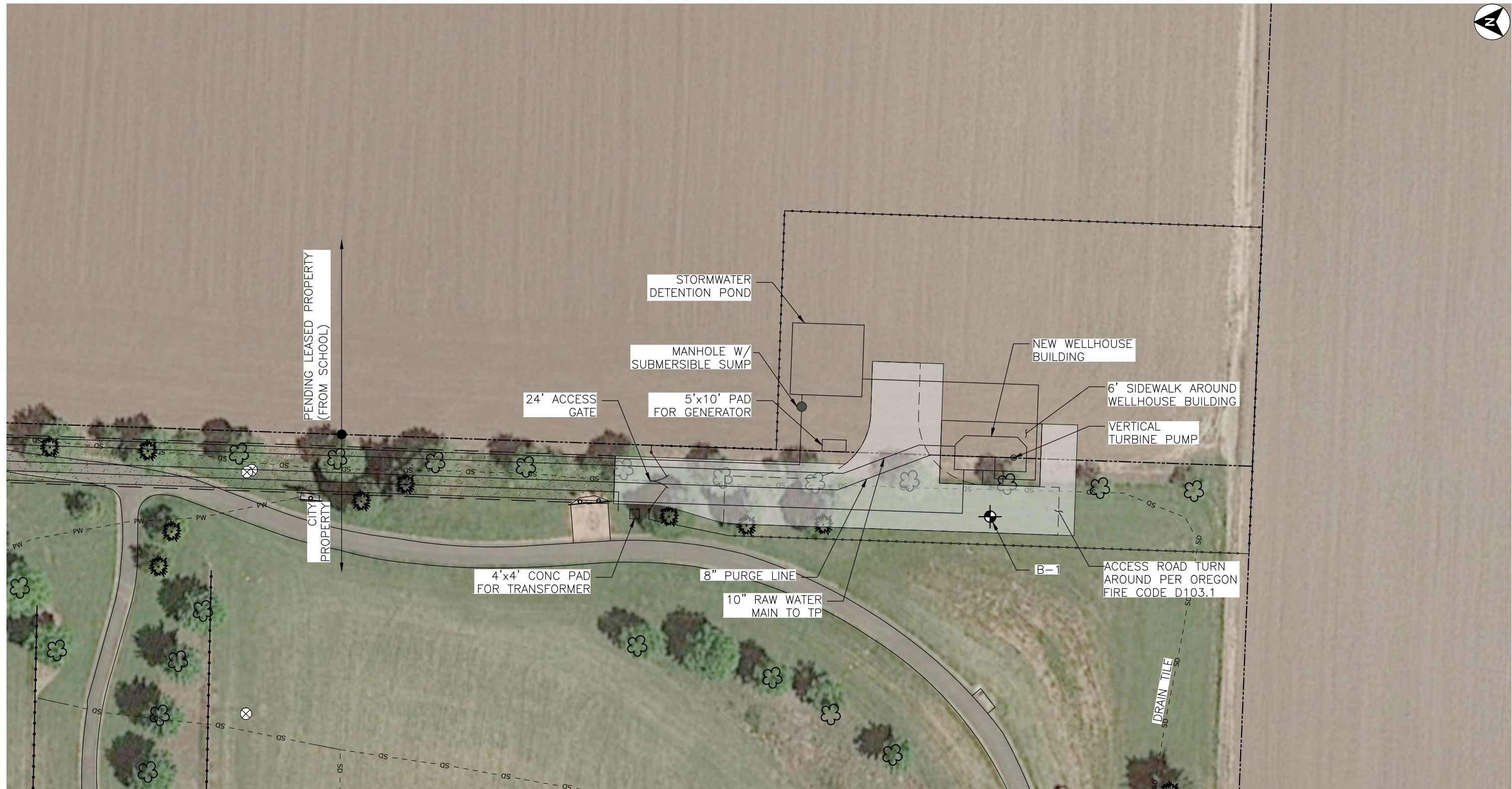


CITY OF WOODBURN
 PARR ROAD WATER TREATMENT PLANT WELLHOUSE

PROJECT VICINITY MAP

FIG. 1

NOVEMBER 2021



SITE PLAN

SCALE: 1"=40' 0' 40' 80'

LEGEND:

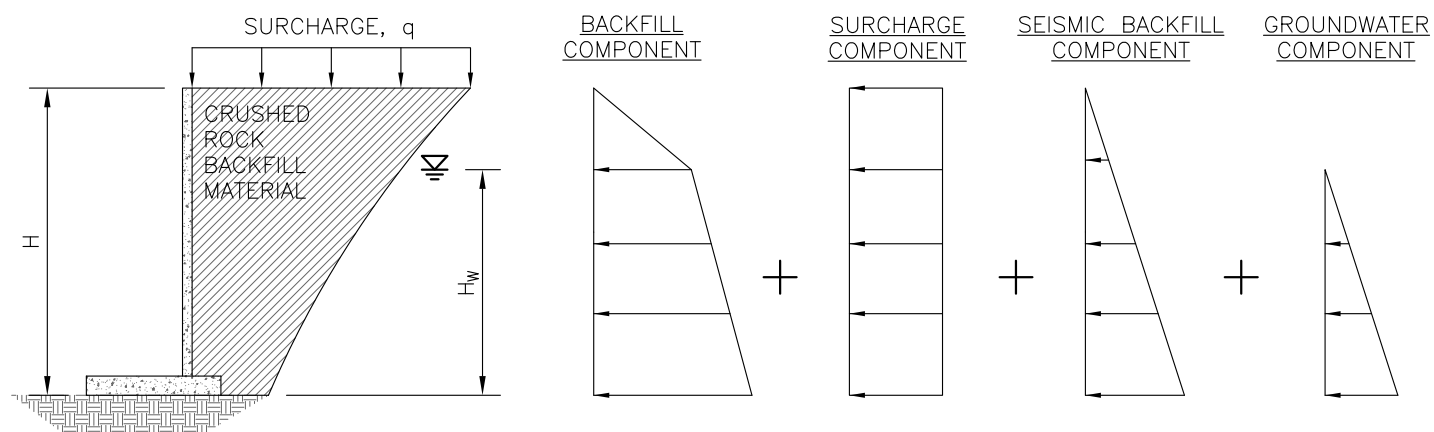
- B-1 BOREHOLE LOCATION
- PROPERTY LINE
- NEW FENCE

NOTES:

1. BASE MAP PROVIDED BY MURRAYSMITH IN AUGUST 2020.
2. EXPLORATION LOCATION IS APPROXIMATE.

	CITY OF WOODBURN PARR ROAD WATER TREATMENT PLANT WELLHOUSE	FIG.2 NOVEMBER 2021
	SITE PLAN	

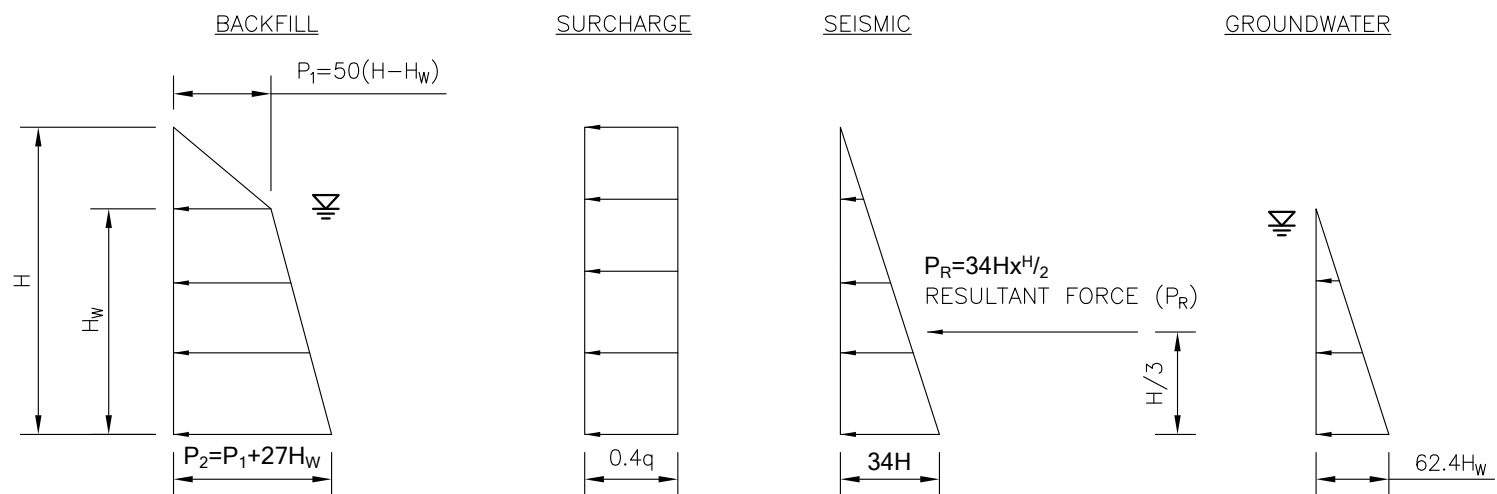
LATERAL EARTH PRESSURES ON EMBEDDED WALLS & STRUCTURES



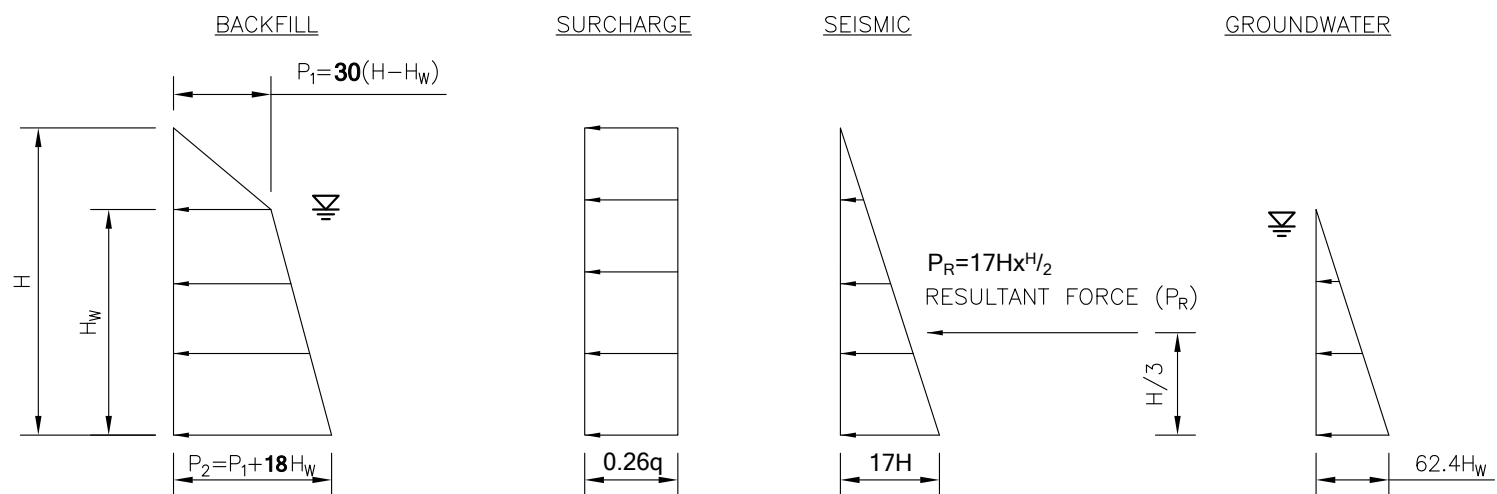
NOTES:

1. UNITS ARE POUNDS PER SQUARE FOOT (PSF).
2. BACKFILL PRESSURES BASED ON IMPORTED CRUSHED ROCK.

RESTRAINED (NON-YIELDING) EMBEDDED WALLS & STRUCTURES

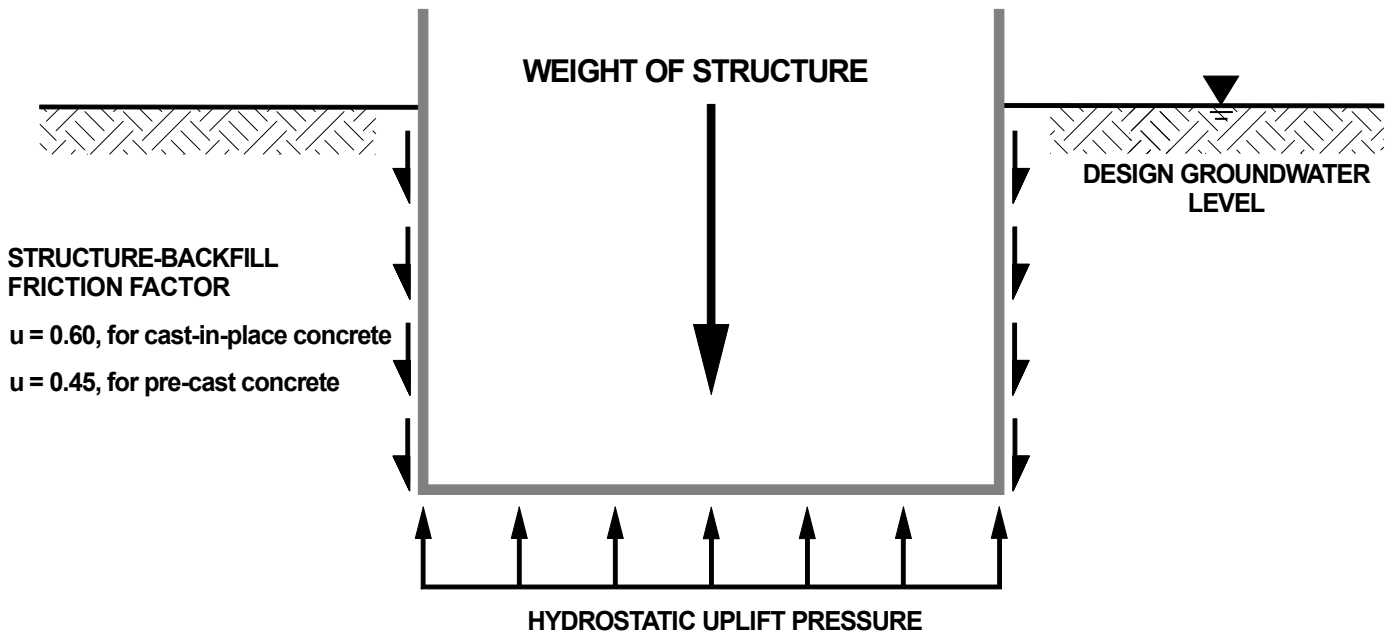


NON-RESTRAINED (YIELDING) EMBEDDED WALLS & STRUCTURES



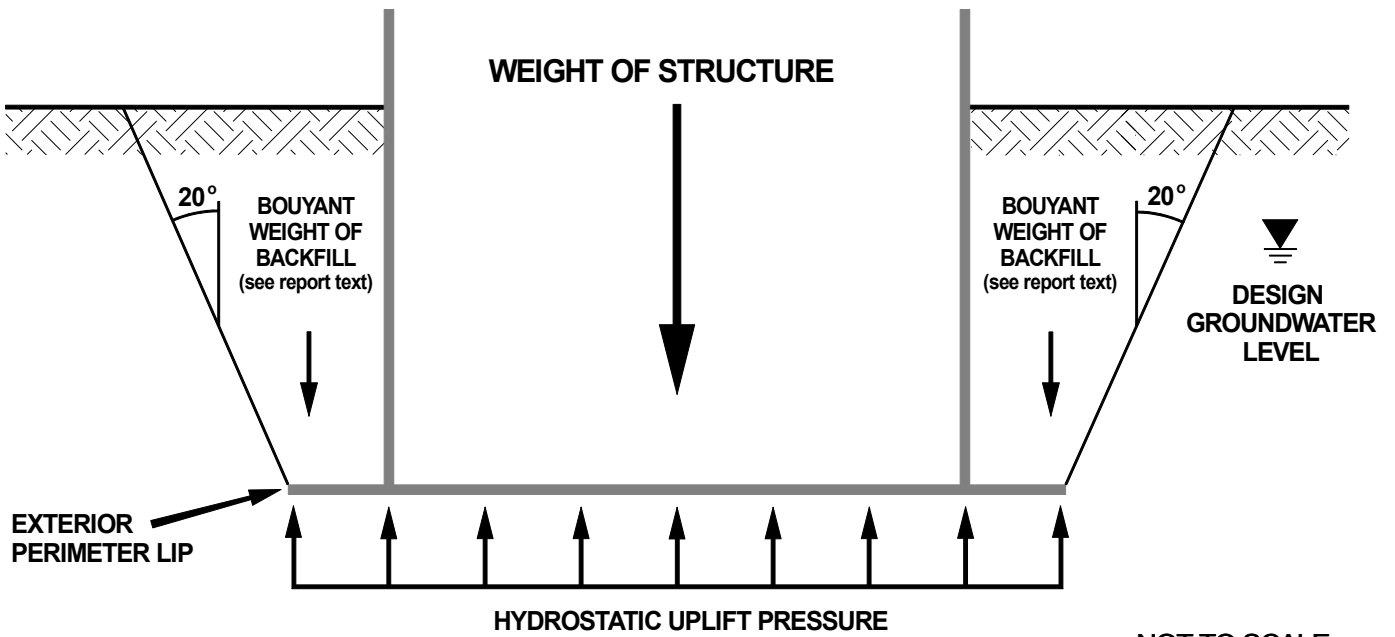
	<p>CITY OF WOODBURN</p> <p>PARR ROAD WTP - WELLHOUSE FOR NEW PRODUCTION WELL</p>	<p>FIG.3</p> <p>NOVEMBER 2021</p>
	<p>GEOTECHNICAL ENGINEERING REPORT</p> <p>LATERAL EARTH PRESSURES FOR EMBEDDED WALLS</p>	

STRUCTURE WITHOUT EXTERIOR PERIMETER LIP



NOT TO SCALE

STRUCTURE WITH EXTERIOR PERIMETER LIP



NOT TO SCALE



City of Woodburn
Parr Road WTP - Wellhouse for New Production Well
Woodburn, Oregon
Hydrostatic Uplift

Figure

4

Appendix A
Boring Logs

Project: City of Woodburn - Parr Road WTP Wellhouse
Project Location: Woodburn, OR
Project Number: 6123.0

Log of Boring B-1

Date(s) Drilled 08/21/2020	Geotechnical Consultant McMillen Jacobs Associates	Logged By JQ	Checked By JQ
Drilling Method/ Rig Type 4.25" HSA/CME 850 Track Mounted	Drilling Contractor Western States Soil Conservation, Inc.	Total Depth of Borehole 86.5 ft	
Hole Diameter 3.88 in	Hammer Weight/Drop (lb/in.)/Type 140 lb / 30 in / Automatic	Ground Surface Elevation/Datum 189.0 ft / NAVD83	
Location Approx 100' north and 20' west of SE corner of the park.	Coordinates 7589502.93E,543145.33N	Elevation Source WorldElevation3D/Terrain3D	

ELEV. (FT)	WATER LEVEL	DEPTH (FT)	SAMPLE TYPE	RECOVERY (%)	SAMPLE NUMBER	BLOW COUNTS	PENETRATION RESISTANCE BLOWS/FT		USCS GRAPHIC	USCS	MATERIAL DESCRIPTION	REMARKS AND TESTS	BACKFILL/INSTALL.
							10	20					
										ML	Medium stiff, dry, dark brown, SILT (ML); low plasticity, trace fine sand, frequent fine root fibers.		
											Topsoil		
184		5		100	SPT_1	3-3-6 (N=9)					Stiff, dry, gray and brown mottled, interbedded, SILT (ML) and Sandy SILT (ML) interbeds; non-plastic, fine sand, micaceous, interbed thickness is typically ½ to 4 inches.		
											Fine Grained Missoula Flood Deposits		
											Becomes moist at 3.5 feet.		
											Becomes medium stiff at 5 feet.		
											Becomes stiff and gray-brown with orange mottling at 7.5 feet.		
179		10		89	SPT_4	1-4-5 (N=9)							
										ML			
											6-inch thick Lean CLAY (CL) interbed at 13.25 feet.		
											Becomes wet at 14.0 feet.		
174		15		100	SPT_6	3-5-6 (N=11)							
												Groundwater measured at 13.9 feet bgs at 9:40 am, 08/21/2020. Switched to mud-rotary drilling methods.	
169		20		83	SPT_7	5-5-9 (N=14)							
164		25		100	SPT_8	8-7-6 (N=13)				SM	Medium dense/stiff, wet, gray, interbedded, Silty SAND (SM) and SILT (ML); fine sand, non-plastic, micaceous, interbed thickness is typically ½ to 6 inches.		
											Fine Grained Missoula Flood Deposits		



Boring B-1

Project: City of Woodburn - Parr Road WTP Wellhouse
Project Location: Woodburn, OR
Project Number: 6123.0

Log of Boring B-1

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ELEV. (FT)	WATER LEVEL	DEPTH (FT)	SAMPLE TYPE	RECOVERY (%)	SAMPLE NUMBER	BLOW COUNTS	PENETRATION RESISTANCE BLOWS/FT		USCS GRAPHIC	USCS	MATERIAL DESCRIPTION	REMARKS AND TESTS	BACKFILL/INSTALL.
							10	20					
						5-7-7 (N=14)					Medium dense/stiff, wet, gray, interbedded, Silty SAND (SM) and SILT (ML); fine sand, non-plastic, micaceous, interbed thickness is typically ½ to 6 inches.		
						8-3-4 (N=7)					Fine Grained Missoula Flood Deposits		
154		35									<i>Becomes loose/medium stiff at 35 feet.</i>		
						4-4-3 (N=7)				SM			
149		40											
						6-4-3 (N=7)					<i>9-inch thick interbed of Poorly Graded Sand with Silt (SP-SM) encountered at 45 feet.</i>		
144		45											
						10-7-6 (N=13)							
139		50											
						7-11-11 (N=22)				SP-SM	Medium dense, wet, gray, Poorly Graded Sand with Silt (SP-SM), fine sand, micaceous.		
134		55									Fine Grained Missoula Flood Deposits		



Boring B-1

Sheet 2

Project: City of Woodburn - Parr Road WTP Wellhouse
Project Location: Woodburn, OR
Project Number: 6123.0

Log of Boring B-1

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Drilling Method/ Rig Type 4.25" HSA/CME 850 Track Mounted	Drilling Contractor Western States Soil Conservation, Inc.	Total Depth of Borehole 86.5 ft	
Hole Diameter 3.88 in	Hammer Weight/Drop (lb/in.)/Type 140 lb / 30 in / Automatic	Ground Surface Elevation/Datum 189.0 ft / NAVD83	
Location Approx 100' north and 20' west of SE corner of the park.	Coordinates 7589502.93E,543145.33N	Elevation Source WorldElevation3D/Terrain3D	

ELEV. (FT)	WATER LEVEL	DEPTH (FT)	SAMPLE TYPE	RECOVERY (%)	SAMPLE NUMBER	BLOW COUNTS	PENETRATION RESISTANCE BLOWS/FT		USCS GRAPHIC	USCS	MATERIAL DESCRIPTION	REMARKS AND TESTS	BACKFILL/INSTALL.
							10	20					
						5-9-8 (N=17)				SM	Medium dense/very stiff, wet, gray, interbedded, Poorly Graded SAND with Silt (SP-SM) and SILT (ML); fine sand, non-plastic, micaceous, interbed thickness is typically 2 to 3 inches. Fine Grained Missoula Flood Deposits	More difficult and slower drilling at 73 feet bgs.	
-124		65				5-6-11 (N=17)				SM			
-119		70				3-4-5 (N=9)				ML	Stiff, wet, gray, Silt (ML); non-plastic to low plasticity, trace fine sand, micaceous. Fine Grained Missoula Flood Deposits		
-114		75				15-26-22 (N=48)				SP-SM	Dense, wet, dark gray, Poorly Graded SAND with SILT (SP-SM); fine to medium sand, occasional 1/2-inch thick Silty SAND (SM) interbeds. Early Pleistocene Deposits		
-109		80				17-21-18 (N=39)				SP	Dense, wet, dark gray with occasional white specks, Poorly Graded SAND (SP); fine to medium sand, trace silt. Early Pleistocene Deposits		
-104		85				12-18-19 (N=37)					<i>Interbed of Sandy SILT (ML) with trace fine rounded gravel, fine sand.</i>		
												Borehole completed at 86.5 feet below ground surface (bgs).	



Boring B-1

Appendix B

Laboratory Test Results

Breccia Geotechnical Testing, LLC.		Natural Moisture Content (ASTM D2216)	
Client:	<u>McMillen Jacobs Associates</u>	By:	<u>JF</u>
Project Name:	<u>City of Woodburn WTP</u>	Date:	<u>8/25/2020</u>
Project Number:	6123.0		

Exploration ID	B-01	B-01	B-01	B-01	B-01	B-01
Samples ID	S-2	S-4	S-6	S-7	S-11	S-13
Samples Depth (ft.)	5-6.5	10-10.7	15-16.5	20-21.5	40-41.5	50-51.5
Moisture Content (%)	34.5	40.6	41.9	34.5	38.8	35.1

Exploration ID	B-01	B-01	B-01	B-01		
Samples ID	S-15	S-17	S-18	S-19		
Samples Depth (ft.)	60-61.5	70-71.5	75-76.5	80-81.5		
Moisture Content (%)	35.0	35.9	30.3	24.5		

Breccia Geotechnical Testing, LLC.		Percent Fines (ASTM D1140)	
Client:	<u>McMillen Jacobs Associates</u>	By:	<u>JF</u>
Project Name:	<u>City of Woodburn WTP</u>	Date:	<u>8/26/2020</u>
Project Number:	6123.0		

Exploration ID	B-01					
Samples ID	S-9					
Samples Depth (ft.)	30-31.5					
Moisture Content (%)	35.4					
Percent Fines (%)	19.8					