
EXPIRES: 12/31/22

Julie Lynn Leland

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**ADDENDUM NO. 2**

**City of Harrisburg, Oregon**
**Contract Documents and Construction Specifications**
**North and South Treatment Plant**

All bidders are hereby notified of the following modification to the contract documents, construction specifications and construction plans. This modification is to become a part of said contract documents, construction specifications and construction plans.

Each proposal shall include specific acknowledgment of receipt of this Addendum in the space provided below. Failure to acknowledge may result in the proposal being rejected as not responsive.

Contractor _____

By _____

Date _____

This Addendum shall supersede all previously issued specifications and drawings wherein it contradicts same. All other conditions remain unchanged. The following changes, modifications, corrections, clarifications, and/or additions as set forth herein shall apply to the above documents and shall be made a part thereof and shall be subject to all of the requirements thereof as though originally specified and/or shown.

| Item No. | Reference | Description of Change |
|---|---|---|
| **Contract Documents** | | |
| 1. | Volume 1 – Bid Closing Date | The Bid Closing Date will be extended out to **August 11th, 2021 at 2PM**. Bids will be received at the City Hall of the City of Harrisburg, Oregon 120 Smith Street, Harrisburg, OR 97446. Acceptance of bids will officially close at **2:00 pm Pacific Time, August 11th, 2021**, and immediately after the bids will be publicly opened and read in the City Hall Council Chambers, 354 Smith Street, Harrisburg, Oregon 97446. |
| 2. | Volume 1 – General Conditions Page 400-4 | **Replace**:<br>*PREQUALIFICATION – OF BIDDERS The City of Harrisburg will prequalify bidders prior to award of the Contract. Bidders must submit the ODOT prequalification form to City, bidders must be registered with the Construction Contractor's Board (CCB) for the work as set forth for this Project and must have the registration with the CCB under the name the bid is submitted under for not less than three (3) years. Bidders must not be on a State or Federal debarred listing.*<br>**In Entirety With:**<br>*QUALIFICATION – OF BIDDERS Bidders must be registered with the Construction Contractor's Board (CCB) for the work as set forth for this Project and must have the registration with the CCB under the name the bid is submitted under for not less than three (3) years. Bidders must not be on a State or Federal debarred listing.* |
| 3. | Volume 2 – Cathodic Process Corrosion Protection | Replace Section in its entirety with attached Section 40 46 42, see attached. |
| 4. | Volume 2 – Pumps, General and Vertical Turbine Pump Sections Added | Add Section 43 21 00 & Section 43 21 52, see attached. |
| **Drawings** | | |
| 5. | Volume 3- Sheets G004N & G004S | Updated design criteria tables to remove erroneous values, see attached. |
| 6. | Volume 3 - Civil & Electrical Plans – Sheets C101N, C101S, C104N, C105N, C105N, C105S, E101N, E101S, & E504 | Additional conduit added for security system, see attached. |
| **Permitting** | | |

| | | |
|---|---|---|
| 7. | North Site 1200-C Plan Set | 1200-C permit is required for the north site and will be submitted to DEQ for approval once the Conditional Use Permit is approved by Linn County, see attached. |
| 8. | North Site 1200-C Contractor Requirements | 1. General Contractor must supply Certified Erosion Sediment Control Lead (CESCL) for inspections and monitoring.<br>2. General Contractor must keep a updated and redlined plan set onsite at all times.<br>3. General Contractor must update the pollutant list on plans as they become known.<br>4. General Contractor must update the list of subcontractors as they become known.<br>5. Any erosion and sediment control BMP deviation from plans must be approved by BEI and noted on plans. |

**Bidders' Questions**

**1. Is this project buy America (any requirements for domestic vs foreign materials)?**
Not federally funded or state funded, city bond only, so can be domestic or foreign materials

**2. Does the engineer's estimate include pre-purchased materials?**
No. The original estimate from master plan did, but not the latest estimate (the one provided) does not.

**3. What is the timeline? Phasing?**
The North site will be completed first - Fall 2022 online. Substantial completion of both sites by end of October 2022, final completion of both sites by November 2022.

**4. Target NTP/start date?**
Bids due August 4th, August 12th awarded, to council on 24th of August. NTP could therefore be given sometime in September.

**5. Do water softeners come with the chlorine generators?**
Yes.

**6. Timeline for delivery of pre-purchased equipment?**
By December or later of this year. Back-up generators and filters pre-purchase has been signed, Chlorine generator pre-purchase under way. All pre-purchased equipment anticipated and planned to be stored on site before needed.

**7. Booster Pump Station owner-furnished or not?**
No, the booster pump station (BPS) is not owner furnished, it is part of the project scope, and an addenda will be sent out with the pump specs

**8. Well 9 by others?**
Yes, Well 9 is by others, and is in the process of getting a water rights transfer permitted. This well will hopefully be drilled before or shortly after construction on the WTPs begins.

**9. Well 9 wellhouse by others?**
No, the well house for the new Well 9 is part of this project and is within the project scope (see sheet S701N).

**10. Are Degassers pre-purchased?**

No, the degassers were not pre-purchased but are part of the scope (see Spec 22 40 00 2.6)

**11. Spoils disposal?**
An excavation spoils disposal site is available on the wastewater treatment plant site adjacent to the north WTP site.

**12. Booster pump station notes:**
Keep the existing BPS online until the north site is done. The City will retain the existing pumps from the BPS to use in another location.

**13. Will the City remove the shelves, tables, etc. from the BPS prior to pump removal?**
Yes, City will remove shelves, tables, maps, etc. prior to the decommissioning of the existing BPS. City will also put these things back once the BPS has been decommissioned and turned into a “dry room”

**14. Any additional electrical clearance is needed for electrical in the BPS?**
Clearances for equipment will be required to meet electrical code.

**15. In Section 00420, supplemental general conditions, 108.2.01 Testing and Quality control, it’s stated for the contractor to provide all testing and laboratory services. On past projects, this had to be a 3rd party hired by the owner per the Uniform Building Code. Is the Contractor required to hire the 3rd party testing firm for special inspections?**
Contractor to pay and coordinate with 3rd party inspection and supply inspection reports to Engineer and City.

**16. Is there a design for the foundations of the owner furnished generators? If so, where is it located?**
Generator Foundation for Bidding Purposes - 14” thick concrete slab-on-grade with #4 bar at 12”o.c. ea. way, typ. Top & bottom. 6” min. compacted crushed rock base under slab. The slab would be roughly the same size as the generator or slightly larger, depending on Owner preference. Slab should be 3” min above finished grade.

**17. Is there submittal information, or additional information, that can be provided for the owner furnished process equipment, for bidding purposes?**
No, these items have not been fully approved yet. The process equipment submittal information will be supplied to the successful bidder.

**18. For additional clarity, could the P&ID’s be marked up to reflect what exactly is owner furnished?**
See attached P&ID markup.

**19. Specification 22 40 00, 2.7 calls for a wall hung water closet with a concealed wall hanger. This usually involves a chase behind the wall the water closet is mounted on, drawings do not have this chase, please advise.**
See 13/A501 on A501N and 13/A501 on A501S for furring wall details.

**20. Will a specification for the Vertical Turbine Pumps, and GDT Degasser’s be provided in an addendum?**
Yes, the Vertical Turbine Pumps are covered in the newly added specifications 43 21 00 and 43 21 52 that are part of addendum 2. Degassers are covered in the existing specification 22 40 00 section 2.6.

**21. I'm looking through the Harrisburg job and noticed you have 3-tab asphalt shingles specified. I was wondering if we could get approval for a 30-year laminated architectural shingle? There tends to be more availability on architectural shingles, and they are often cheaper.**
30-year laminated architectural shingles will be accepted.

**22. Spec section 33 05 00, 2.2, A calls for gaskets to be neoprene and section 33 05 00, 2.9, G calls for flange gaskets to be chloroprene. I am not aware of any flange gasket material that is either of these materials and NSF approved for potable water. Would EPDM or SBR gaskets be acceptable for the flange gaskets or do you have another one that would work better?**
Chloroprene is a neoprene gasket material. Alternatives will be reviewed after a contractor is selected.

**23. The tapping sleeve is called out as an MJ sleeve on the plan sheet C104S but the specs call for a stainless steel tapping sleeve on pages 33 11 10-11 & 12. Which will be required?**
Mueller mechanical joint tapping sleeve shall be used, per the plan set.

**24. I didn't see a pipe schedule that would tell what type of pipe you wanted used where. I see the water, storm and sewer yard piping called out as C900 and D3034 on the civil plans but what are you looking for at the WTP buildings and at the storage tanks?**
Raw Water, Finished Water, and Backwash piping shall be ductile iron pipe per spec section 33 05 00 and as shown on the P&ID drawings.

**25. The coal tar epoxy coating for the flexible expansion joints called out on page 33 11 10-12 is no longer furnished. It is now FBE lined and coated. Will that be acceptable?**
Fusion Bonded Epoxy is acceptable.

**26. The pressure sustaining valves at the filter systems. Spec page 33 05 00-10 calls these out as angle valves. The plans show them as straight. Should we use the plan configuration? Also, that same specs calls for 250# flanges. Is this supposed to be a 125# flange of where does this higher pressure flange connection start and stop?**
Please use the layout shown in the drawings. 125# flanges are acceptable throughout the plant installation.

**27. I didn't see a specification for the check valves at the booster pumps. Can you let me know what you are looking for and if the need any limit switches or the like?**
Please install Flomatic Flapper Style check valves or equal. No Limit switches are required.

**28. This item form 22 400 00 2.7 i 1 on the Harrisburg WTP north south has me stumped. I cannot find this in any catalog or on line. I. Floor Sink 1. Bases of design, Manufacturer Model, Gamut #968Z178**
Remove Specification Section, no floor sinks are required.

**29. Correct Equipment Inc. and Lutz-Jesco American would like to be considered as an alternate for this project in regards to Division 46 (46 20 00). We have attached an example setup of our equipment which should fit the needs described in the plans and specifications.**
Alternative equipment will be reviewed after a contractor is selected.

**30. Looking at the water piping sizing and fixtures it does not appear to meet code. Will this be revised or should we bid per plans?**
Bid per plans. Plans will be updated prior to permit approval.

**31. Drawing G007 Note #7 What is the floor drain tying into? Existing drain outlet of trench drain? What material is the tie-in?**
The 4” floor drain will be installed into the existing as the trench drain is filled.

**32. Drawings C103N/C103S: Are there dimensions available for the 7" thick sidewalk widths that surround both the north and South treatment buildings? The dimensions shown on C101N are unclear for sidewalk widths.**
Sidewalk dimensions are 5' & 10' and on updated civil plans, see attached.

**33. Drawing C104N: Note 208 states the municipal well house is by others, but there are sections 1 thru 4 shown on S701N are for the well house. Who is to build the north well house?**
The Wellhouse is part of this project; however, the water rights transfer approval is required prior to constructing the new Well. Therefore, the Wellhouse may be one of the later part of the project to be constructed.

**34. Drawing S501S: What depth of structural fill should be under the slab for the CMU buildings?**
The structural fill for the treatment building shall be the same as the reservoirs. See Reservoir Geotech Report.

**35. S701N & R101N: Oiled sand layer is called out as 4" on sheet R101N and 6" on S701N (This is mirrored on the South sheets, as well). What depth of oiled sand is required?**
Oiled sand layer under reservoirs shall be 6" per S701N.

**36. Drawing M301N/M301S: Are the plumbing pipe and Chemical carrier underslab pipe to be concrete encased?**
Concrete encasement is not required.

**37. Drawing A102N: Is there a specific model you'd like for this attach access as elmdoor doesn't make a hatch in the RAH-W series of this size (20x30 roof hatch)?**
The note specifies “20”x30” attic access”, not a roof hatch.

**38. Drawing E102N, E102S, & E103N: E02N Note 5 says the generator has been pre-purchased by the City. E103N note 5 states to coordinate the exact size with the generator footprint. Can the exact generator pad size requirements for both Generators be provided?**
See answers to questions #16 & 17.

**39. Spec 22: Will domestic/city water require insulation with buildings?**
No insulation will be required for water pipes and/or within the buildings.

**40. Drawing C105N Note 505: Will contractor be responsible for the cost to connect to the Pacific Power pole?**
Cost for electrical connection to power pole shall be paid by Owner

**41. Drawing C501N (shared utility trench): Are we required to maintain the 12" of spacing between the water line and the electrical conduit in the bore under the wetlands?**
12" minimum separation between the new water line and electrical conduit is required.

**42. Drawing M502 Detail 6 (concrete pipe encasements): Please confirm that the only pipe that is encased is under slab.**
Pipe encasements only required under buildings and tanks.

**43. Drawing E503 Detail 3: Please confirm that there are no new light poles on either the north and south site.**
No new light poles will be required on either the north and/or south sites.

**44. Please provide specifications for water softeners. Are these to be provided by owner?**
The water softeners are part of the pre-purchase for the hypochlorite generation system, so they will be provided.

**45. Drawing P501 detail 2: Are hose racks to be provided for exterior hose bibs? Not seeing any called for on plan views, only detail 2/P501.**
No.

**46. Is there a specification for the vertical turbine can pumps?**
Yes, the Vertical Turbine Pumps are covered in the newly added specifications 43 21 00 and 43 21 52, see attached.

**47. Drawing E503 Detail 6&7: Please confirm if there are any bollards needed for this project?**
Bollards are only required if shown on the plans.

**48. Can you please provide a specification on the oiled sand that is required to be placed under the tanks?**
Oiled sands will be per the tank manufacturers recommendations.

**49. Can you post the sign in sheet from the pre-bid meeting?**
Yes, it has been posted on the City's website under the project Bids and RFPs section.

**50. (Mazzei representative:) I wanted to get clarification on the requirements to make sure I give the correct quote. Will you need degas relief valves for each of the DS400 and DS600? Do you know what the gas flow rate and pressure will be to properly size the valve?**
A degas valve or an air relief valve are needed on each degasser unit: Mazzi DRV49FHAAF00 or approved equal.

**51. Clarification for the North Landscaping Plan, sheet C106N - construction notes for that page, Note 804, which is the 6' double swinging gate, there are two locations called out for it. Where are those two locations at? The one gate seems to be located where the new asphalt is at but do not follow where the other one is located.**
There is only one 6' double swinging gate, located at the new asphalt.

**52. Addendum 1 states in section 2.1 "all tanks shall be anchored to the ring wall"; however, in the plans on sheet R100 under anchorage it states "By Contractor (If Required)". Please confirm that a welded steel tank design that does not require ring wall anchoring is acceptable.**
The anchorage for the steel tank shall be according to the manufacturers structural design.

**53. Specification section 40 46 42 on cathodic corrosion protection does not explicitly state the scope of cathodic protection required. Please confirm what is specifically to be protected (reservoir and or piping) and advise the specific system design. It is currently assumed this is referencing the tank interiors only and will be based upon AWWA D106 "Sacrificial Anode Cathodic Protection System for the Interior Submerged Surfaces of Steel Water Storage Tanks" with materials conforming to the requirements of NSF-61, including design engineering by an Oregon PE.**

The cathodic protection is only required for the reservoirs. See the attached Volume 2 - Section 40 46 42.

**54. On plan sheet C104N regarding the proposed well site #9, on note 207 it states "12" Municipal Water Well by Others" and note 208 states "Municipal Water Wellhouse by Others". However, on plan sheet S701N it details the well house including a foundation plan. Please advise on the scope of work that is to be completed by the contractor with respect to the prior mentioned well house.**
See answers to questions 8, 9, & 33. Well 9 is by others and Wellhouse 9 is within project scope but may be delayed by water rights transfer delays.

**55.There is a 24" gate valve called out near the tank and then a 24" butterfly near the pump building. I am used to seeing 24" butterflies in general. Do you want a 24" Gate valve? If you do want a gate valve, spec section 33 05 00, 2.10, D, 3 (page 10) calls for a position indicator and bypass. Do you want these on the 24" valve?**
Install gate valves at both locations. No position indicator is required. See detail 3/503N and 3/503S.

**No further questions will be answered from this point until after Bid Closing. Please bid the project as you interpret it.**

# SECTION 40 46 42 - CATHODIC PROCESS CORROSION PROTECTION

## PART 1 GENERAL

### 1.1 SUMMARY

A. This Section specifies a galvanic-anode type cathodic protection system to protect water reservoirs. The cathodic protection system consists of magnesium anodes, test stations, and all associated wiring and hardware as required for a complete and operable system.

B. The Tank supplier shall provide Drawings that show all fittings, wiring or wiring devices required by code. Contractor shall include in its bid these and related items and the work associated with their installation.

### 1.2 QUALITY ASSURANCE

A. Referenced Standards: This Section incorporates by reference the latest revision of the following documents. These references are a part of this Section as specified and modified. In case of conflict between the requirements of this Section and those of the listed documents, the requirements of this Section shall prevail.

| Reference | Title |
|---|---|
| ASTM B843 | Magnesium Alloy Anodes for Cathodic Protection |
| ASTM G97 | Test Method for Laboratory Evaluation of Magnesium Sacrificial Anode Test Specimens for Underground Applications |
| UL 44 | Rubber Insulated Wires and Cables |
| UL 467 | Grounding and Bonding Equipment |
| UL 486 | Wire Connectors and Soldering Lugs |
| UL 510 | Insulating Tape |

B. Qualifications:

1. Performed work of this Section with a firm regularly engaged in the design, repair, and maintenance of cathodic protection systems. Have a traceable, verifiable record of continuous, relevant work and performance for a minimum of three years.

2. All work shall be accomplished by qualified and experienced personnel working under continuous competent supervision.

3. A galvanic cathodic protection system for inside of the reservoirs shall designed by Oregon Licensed PE with NACE CP Specialist certification. The new system will be

designed to be in reasonable conformance to the existing system that the City has for their other reservoirs. The systems are to be installed by cathodic protection company with a minimum of five years of experience in water reservoir applications. Once the system is installed, it is to be inspected and commissioned by a NACE CP Specialist. A detailed written report is to be provided upon completion

1.3 SUBMITTALS

A. Procedures: Section 01 30 00.

B. Manufacturer's product data showing conformance to the specifications for anodes, test station, splice materials, wire, wire connectors and coating materials of:

1. Anodes.
2. Reference cells.
3. Stations.
4. Wires.
5. Thermite weld materials (if applicable).
6. Coating.

C. Provide Operation and Maintenance manual for Owner use.

PART 2 EXECUTION

2.1 GENERAL

A. Materials shall be a standard product of a manufacturer regularly engaged in their production.

B. All components of the following materials shall be products of the same manufacturer to ensure compatibility and continuity.

1. Prepackaged anodes.

C. No splices shall be permitted in wires other than at locations specified on the Drawings.

2.2 MATERIALS

A. Prepackaged Anodes:

1. As determined by the designer

B. Wire:

1. Type RHW, No. 10 AWG, single conductor, stranded copper.

2. Lead wire colors:

    a. Anode header: Black.
    b. Primary containment: Blue.
    c. Secondary containment: Red.

3. UL 44. Rome Cable, Spec 2150.

C. Wire-to-Wire Connectors:

1. Copper alloy split bolt connectors of the proper size to accommodate the wires being connected together.

2. UL 467. Thomas & Betts Co., Type 9H

D. Wire-to-Pipe Connectors:

1. Brass or bronze grounding clamp specifically designed for connecting ground wires to piping of the size and type of materials being connected.

2. UL 467. Thomas & Betts Co., Type J.

E. Wire-to-Terminal Board Connectors:

1. Non-insulated, ring type crimp connector properly sized for the appropriate wire and stud where indicated.

2. UL 486. Thomas & Betts Co., Type C10-14.

F. Insulated Splice Materials:

1. Mastic:

    a. Soft, tacky, moldable, un-backed elastomeric tape.
    b. The mastic shall not have a backing tape.
    c. Royston Laboratories, "Tac-Tape".

2. Rubber Tape:

    a. Self-fusing 25 mil minimum thickness, water resistant, highly conformable rubber tape.

    b. 3M, "Scotch 23 Tape”.

3. Vinyl Tape:

a. 7 mil vinyl electrical tape that is conformable and adhesive-backed.
b. UL 510. 3M, "Scotch 33+ Tape".

4. Electrical Coating:

a. Moisture proof coating designed for electrical splices.
b. 3M, "Scotchkote" (Part No. 14853).

G. Cable Warning Tape

1. Polyethylene tape, minimum 6 inches wide, red or yellow in color, and labeled "CAUTION - CATHODIC PROTECTION".

2. Reef Industries, "Terra Tape”.

2.3 TEST STATIONS

A. Junction Box:

1. Fiberglass.
2. Used as the termination point of the anode and test wires.
3. Provide with quick release latches and lockable hasp.

2.4 WIRE

A. Underground Wiring: Unless otherwise indicated, single conductor, stranded, copper per ASTM Specification B-3 and B-8.

B. Color-coded and/or labeled as shown on the drawings.

C. Wire Connectors: UL listed ring type crimp connectors properly sized for the appropriate wire and terminal where indicated per UL 486.

2.5 CONDUIT AND FITTINGS

A. 1-1/4-inch schedule 40 PVC.

2.6 ANODE METERING SHUNTS

A. 0.1 ohm, 2 ampere capacity, with 1 percent accuracy.

PART 3 EXECUTION

3.1 GENERAL

A. The exact locations and routing of cables and conduits shall be governed by structural conditions and physical interference. The final placement of the anodes and test station shall be at the locations approved by Engineer.

B. All materials, workmanship and installation shall conform with all requirements of the legally constituted authority having jurisdiction. These authorities include, but are not limited to, the National Electric Code, General Construction Safety Orders of the Industrial Accident Commission, and all other applicable State, County, or City codes and regulations.

C. Unless otherwise indicated, install all materials in accordance with the manufacturer's recommendations, safety procedures and as shown.

D. Where requirements of this section conflict with the manufacturer's recommendations, the manufacturer's recommendations shall take precedence.

E. Store all materials and equipment to be used in construction in such a manner as to be protected from detrimental effects from the elements. If actual storage is not available, stack materials and equipment well above ground level and protect from the elements as appropriate.

3.2 INSTALLATION

A. Inspection:

1. Inspect the anodes and materials to ensure that damage has not been incurred through shipping or through mishandling.

2. Handle anodes carefully at all times and do not drop or drag.

3. Do not handle, lift or lower anodes by means of the anode's lead wires.

4. Replace anodes that have been damaged to the extent that the permeable cloth bag has been torn and backfill material has been lost.

    a. Horizontal Installation: Place anodes in a ditch as indicated on the Drawings. Make the bottom of the ditch level before installing the anode.

5. Each anode wire shall terminate in the corresponding test station and shall be connected to the appropriate terminal as designated on the drawings.

B. Backfill:

1. Comply with Section 31 20 20.

C. Anode Header Cable:

1. Route to the test station in a trench at least 24 inches deep.

2. Terminate in the test station as detailed on the Drawings.

3. Connect the prepackaged anode lead wires to the header cable with a copper split bolt at the locations designated.

4. Splice lead wire connections as detailed on the Drawings.

D. Wire Connections:

1. Leave at least 12 inches of slack in wires at splices and anodes to accommodate settling forces.

2. Remove only enough insulation from the cables to allow sufficient copper wire contact inside the split bolt connector.

3. Do not cut through the header cable.

4. Take care to ensure that the copper cables/wires are not cut or damaged.

5. Make the connection using the proper torque on the split bolt connector to ensure a tight connection between the wires.

## 3.3 TEST STATIONS

A. Route test leads and anode header cable to the designated test station location.

B. Set flush to grade.

C. Cut wires to provide 18 to 24 inches of slack wire extending above grade.

D. Connect wires to the test board using ring style crimp connectors.

E. Install the test stations at the locations indicated on the drawings. Field locate the test stations on grade to avoid other structures and to allow for easy future access. Each test station is comprised of a fiberglass junction box and a vault to house the junction box.

F. Install the test station vault flush to finish grade with a concrete collar poured for support. Fill below the vault with Granular Drain Backfill Material as described in Oregon Department of Transportation Standard Specification Section 00430.11 for adequate drainage.

G. Place the fiberglass junction box in the vault where the test wires terminate. Provide approximately 18 inches of slack in the wires between the conduit and the junction box. Provide the entrance into the junction box for the wiring with a sealed watertight connection.

H. Route the test wires from the pipe, reference cells, and anodes to the test vault through schedule 40 PVC conduit.

I. Connect one #10 test wire and one #6 test wire to the piping at each test station. Route the structure wires into the junction box, but do not connect to their corresponding terminals. Connection of the structure wires will be completed by the Engineer during testing of the system after native potentials have been measured.

J. Install one reference cell for each test station.

## 3.4 COMPLETION

A. Upon completion of the cathodic protection system, notify the Project Representative that the system is ready for final checkout and testing.

## 3.5 TESTING

A. Test and adjust the cathodic protection system upon completion of work to ensure that the system is installed and functions properly.

END OF SECTION

# 43 21 00 - PUMPS, GENERAL

## PART 1 GENERAL

### 1.1 DESCRIPTION

A. The provisions of this Section shall apply to all pumps and pumping equipment except where otherwise indicated.

B. Where two or more pump systems of the same type or size are required, the pumps shall all be produced by the same manufacturer.

C. Provide all labor, equipment and materials and perform all operations in connection with the installation and testing of pumps selected by the OWNER.

D. Coordinate and utilize all factory testing, installation, start-up and field-testing services supplied in conjunction with the pumping equipment.

E. All work performed under this Section shall be in accordance with all approved trade practices and manufacturer's recommendations.

### 1.2 SUBMITTALS

A. Submittals shall be furnished in accordance with Section 103.9.00 Shop Drawings and Sample Submittals.

B. Shop Drawings shall contain the following information

1. Pump name, identification number and specification Section number.

2. Performance data curves showing head, capacity, horsepower demand, NPSH required and pump efficiency over the entire operating range of the pump. The pump manufacturer shall indicate separately the head, capacity, horsepower demand, overall efficiency and minimum submergence required at the design flow conditions and the maximum and minimum flow conditions. A family of performance curves at intervals of 100 rpm from minimum speed to maximum speed shall be provided for each centrifugal pump equipped with a variable speed drive, and a curve for each speed on two-speed pumps.

3. The limits on the performance curves recommended for stable operation without surge, cavitation or excessive vibration.

4. Assembly and installation drawings including shaft size, seal, coupling, bearings, anchor bolt plan, part nomenclature, material list, outline dimensions, and shipping weights.

C. Complete motor nameplate data as defined by NEMA, motor manufacturer and any motor modifications.

D. Operation and Maintenance Manual containing the required information for each pump section.

E. A spare parts list containing the required information for each pump section.

F. Signed, dated and certified factory test data for each pump system which requires factory testing submitted before shipment of equipment.

G. Certifications

1. Manufacturer's certification of proper installation
2. CONTRACTOR's certification of satisfactory field testing

## PART 2 PRODUCTS

### 2.1 GENERAL

A. Materials and equipment shall be standard products of a manufacturer and distributor regularly engaged in the manufacture and distribution of such products for at least 2 (two) years and shall be suitable for the service intended. All materials and equipment shall be new and unused except for the testing specified herein.

B. Compliance with the requirements of the individual pump sections may necessitate modifications to the manufacturer's standard equipment.

C. All centrifugal pumps shall have a continuously rising performance curve. In no case shall the required horsepower at any point on the performance curve exceed the rated horsepower of the motor or engine or encroach on the service factor.

D. All components of each pump system provided under the pump sections shall be entirely compatible. Each unit of pumping equipment shall incorporate all basic mechanisms, couplings, electric motors or engine drives, variable speed controls, necessary mountings and appurtenances.

E. The pumps shall be supplied by a distributor authorized to service them throughout the warranty period and beyond. The distributor shall be located within a 100-mile radius of the site.

F. The pumps shall be warranted by the manufacturer for a minimum of one (1) year from the date of installation.

G. All materials and coatings coming in contact with potable water shall be ANSI/NSF Standard 61 approved.

2.2 MATERIALS

A. All materials shall be suitable for the intended application; materials not specified shall be high-grade, standard commercial quality, free from all defects and imperfection that might affect the serviceability of the product for the purpose for which it is intended, and shall conform to the following requirements:

1. Cast iron pump casings and bowls shall be of close-grained gray cast iron, conforming to ASTM A48 - Gray Iron Casings, Class 30, or equal.

2. Stainless steel pump shafts shall be Type 416 or 316. Miscellaneous stainless steel shall be of Type 316, except in a septic environment.

3. Anchor bolts, washers, and nuts in non-corrosive applications shall be galvanized steel in accordance with the requirements of Section 05500 - Metal Fabrications. Anchor bolts, washers and nuts in corrosive service applications shall be stainless steel in accordance with that Section.

2.3 PUMP COMPONENTS, GENERAL

A. Flanges -- Suction and discharge flanges shall conform to the dimensions of ANSI/ASME B16.1 - Cast Iron Pipe Flanges and Flanged Fittings, Class 12, 125, 250, and 800 or B16.5 - Flanges and Flanged Fittings dimensions.

B. Handholes -- Handholes on pump casings shall be shaped to follow the contours of the casing to avoid any obstructions in the water passage.

2.4 PUMP APPURTENANCES

A. Nameplates -- Each pump shall be equipped with a stainless steel nameplate indicating serial numbers, rated head and flow, impeller size, pump speed and Manufacturer's name and model number.

B. Gauges -- Provide and install pressure gauges as shown on the drawings.

1. All pumps (except sample pumps, sump pumps, hot water circulating pumps and chemical metering pumps) shall be equipped with pressure gauges on the pump discharge. Pump suction lines shall be provided with compound gauges. Gauges shall be located in a representative location, where not subject to shock or vibrations, in order to achieve true and accurate readings. Isolation diaphragms shall be provided for all gauges except where pumping potable water.

2. Where subject to shock or vibrations, the gauges shall be wall-mounted or attached to galvanized channel floor stands and connected by means of flexible connectors.

2.5 FACTORY TESTING

A. The following tests shall be conducted on each indicated pump system

1. Pump Systems -- All centrifugal pump systems 100 hp and larger shall be tested at the pump factory in accordance with the American National Standard for Centrifugal Pump Tests (ANSI/HI 1.6) or the American National Standard for Vertical Pump Tests (ANSI/HI 2.6) as approved by ANSI and published by the Hydraulic Institute. Tests shall be performed using the complete pump system to be furnished, including the motor. For motors smaller than 100 hp, the manufacturer's certified test motor shall be acceptable. The following minimum test data shall be submitted:

a. Hydrostatic test data

b. A minimum of five hydraulic test readings between shutoff head and 25 percent beyond the maximum indicated capacity, recorded on data sheets as defined by the Hydraulic Institute.

c. Pump curves showing head, flow, bhp, efficiency and NPSH requirements.

d. Certification that the pump horsepower demand did not exceed the rated motor hp beyond the 1.0 service rating at any point on the curve.

e. Pump test data curves showing head, flowrate, bhp, and efficiency. Acceptance level shall be Grade 1E as defined by ANSI/HI 14.6.

2. Factory Witnessed Tests: Factory witnessed testing for this project not required.

3. Acceptance -- In the event of failure of any pump to meet any of the requirements, the CONTRACTOR shall make all necessary modifications, repairs or replacements to conform to the requirements of the Contract Documents and the pump shall be retested at no additional cost to the OWNER until found satisfactory.

## PART 3 EXECUTION

### 3.1. SERVICES OF MANUFACTURER

A. An authorized service representative of the manufacturer shall visit the project site to witness the following and to certify in writing that the equipment and controls have been properly installed, aligned, lubricated, adjusted and readied for operation:

1. Installation of the equipment
2. Inspection, checking and adjusting the equipment
3. Startup and field testing for proper operation
4. Performing field adjustments to ensure that the equipment installation and operation comply with requirements

B. Instruction of the OWNER's Personnel

1. An authorized training representative of the manufacturer shall visit the project site to instruct the OWNER's personnel in the operation and maintenance of the equipment, including step-by-step troubleshooting with necessary test equipment. Instruction shall be specific to the models of equipment provided.

2. The representative shall have at least two year's experience in training.

3. Training shall be scheduled a minimum of three weeks in advance of the first session.

4. Proposed training material and a detailed outline of each lesson shall be submitted for review. Comments shall be incorporated into the material.

5. The training materials shall remain with the trainees.

6. The OWNER may videotape the training for later use with the OWNER's personnel.

3.2 INSTALLATION

A. General -- Pumping equipment shall be installed in accordance with the manufacturer's written recommendations.

B. Alignment -- All equipment shall be field tested to verify proper alignment, operation as specified and freedom from binding, scraping, vibration, shaft runout or other defects. Pump drive shafts shall be measured just prior to assembly to ensure correct alignment without forcing. Equipment shall be secure in position and neat in appearance.

C. Lubricants -- The CONTRACTOR shall provide the necessary oil and grease for initial operation.

3.3 FIELD TESTS

A. Each pump system shall be field tested after installation to demonstrate satisfactory operation without excessive noise, vibration, cavitation or overheating of bearings.

B. Field testing methods and allowable tolerances shall comply with current version of the Hydraulics Institute standards for the type of pumps installed.

C. The following field testing shall be conducted

1. Startup, check and operate the pump system over its entire speed range. Where vibration analysis and measurement is required, it shall be within the amplitude limits specified and recommended by the Hydraulic Institute Standards at a minimum of four pumping conditions defined by the ENGINEER.

2. Obtain concurrent readings of motor voltage, amperage, pump suction head and pump discharge head for at least four pumping conditions at each pump rotational speed. Check each power lead to the motor for proper current balance.

3. Determine bearing temperatures by contact type thermometer. A run time of at least 20 minutes shall precede this test, unless insufficient liquid volume is available.

4. Electrical and instrumentation tests shall conform to the requirements of the Section under which that equipment is specified.

5. Field vibration readings for pumps over 30 hp shall be conducted by an OWNER-selected certified testing agency, paid for by the CONTRACTOR, with

readings taken at the following positions with the average not exceeding the current Hydraulic Institutes standards for the type of pump installed.

a. Measurements shall be taken at the locations as specified in the current Hydraulic Institute standards for the type of pump installed.

6. Provide written proof of vibration readings and provide test data.

C. Field testing will be witnessed by the ENGINEER. The CONTRACTOR shall furnish three days advance notice of field testing.

D. In the event any pumping system fails to meet the test requirements, it shall be modified and retested as above until it satisfies the requirements.

E. After each pumping system has satisfied the requirements, the CONTRACTOR shall certify in writing that it has been satisfactorily tested and that all final adjustments have been made. Certification shall include the date of the field tests, a listing of all persons present during the tests and the test data.

F. The CONTRACTOR shall bear all costs of field tests, including related services of the manufacturer's representative. If available, the OWNER's operating personnel will provide assistance in field testing.

END OF SECTION

# 43 21 52 - VERTICAL TURBINE PUMPS

## PART 1 GENERAL

### 1.1 DESCRIPTION

Work covered in this Section includes furnishing, installing, start-up and operation training for barrel or can (lineshaft) vertical turbine pumps. Vertical turbine pumps shall be of the open line shaft and fresh water lubricated type. Like items of equipment specified herein shall be the end product of one manufacturer. Electrical controls and motor design requirements are specified in this section and the electrical section of these specifications. The contractor shall provide all equipment labor and materials to furnish and install the 480-Volt, 3-Phase, 60-Hertz Vertical Turbine Pumps, Motors, Column Pipes, and Accessories, as shown on the drawings and required by these specifications. The pump supplier shall be responsible for coordinating the pump requirements with the pump drive manufacturer and shall be responsible for the overall pump and drive requirements.

### 1.2 SUBMITTALS DURING CONSTRUCTION

A. Submittals during construction shall be made in accordance with Section 103.9.00 Shop Drawings and Sample Submittals and 43 21 00 Pumps, General.

B. Name of nearest location of permanent parts supply from which parts may be obtained in sufficient quantity on a 24-hour basis.

C. Four copies of operating and maintenance manuals shall be supplied.

D. Manufacturer's warranty.

### 1.3 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

Pumps shall meet the requirements of the latest version of ANSI/AWWA E-101, Vertical Turbine Pumps – Line Shaft and Submersible Types and the Hydraulic Institute Standards, except where modified herein.

PART 2 PRODUCTS

2.1 DESCRIPTION

A. Identification:

| | | |
|---|---|---|
| Pump Label(s) | WTR14PMP01, WTR14PMP02, WTR24PMP01, WTR24PMP02 | WTR14FP03, WTR24FP03 |

B. Performance Requirements at Full Pump Speed:

| | | |
|---|---|---|
| Maximum Shutoff Head (ft) | As required | As required |
| Minimum Shutoff Head (ft) | Per manufacturer | Per manufacturer |

| | | |
|---|---|---|
| Duty Pt. 1 | 400 gpm @ 180 ft TDH | 1,750 gpm @ 75 ft TDH |
| Minimum Efficiency @ Duty Pt. 1 | 70% | 70% |
| Maximum Pump Speed (rpm) | 1800 | 1800 |
| Maximum NPSH Required (ft) | 10 | 10 |
| Maximum Motor Size (hp) | 25 | 50 |

C. Performance Requirements at Variable Speed:

| | | |
|---|---|---|
| Minimum Flow Capacity | Per manufacturer | Per manufacturer |
| Minimum Pump Speed (rpm) | Per manufacturer | Per manufacturer |

D. Operating Conditions:

| Duty | Continuous | Emergency |
|---|---|---|
| Drive | Variable Speed | Variable Speed |
| Ambient Environment | Indoor | Indoor |
| Ambient Temperature | 33° to 104° F | 33° to 104° F |
| Fluid Service | Potable Water | Potable Water |
| Fluid Temperature | 33° to 65° F | 33° to 65° F |
| Fluid pH Range | 6.0 to 8.0 | 6.0 to 8.0 |
| Fluid Specific Gravity | 1.0 | 1.0 |
| Fluid Viscosity (absolute) (centipoises at 60° F) | 1.12 | 1.12 |
| Pump Station Floor Elevation | See drawings | See drawings |
| Pump Suction Header Centerline Elevation | See drawings | See drawings |

E. Pump Dimensions:

Dimensions per pump manufacturer, pumps must connect with specified pipe diameters per drawings. Motor and pump must be sized to fit through maintenance hatches, see architectural and structural sheets

F. Other Requirements:

The head-capacity curve shall exhibit a uniformly rising characteristic from free discharge to shutoff. The pump motor shall be non-overloading throughout the entire pump curve.

## 2.2 PUMP CONSTRUCTION

A. The bowls shall be cast-iron, porcelain enamel lined and coated on the outside with a two component, self priming coating applied in a two coat process, over a sandblasted surface, to an 8 to 10 mil dry film thickness. Coating shall be Tnemec Series 140 Pota-Pox Plus. Bowl bolting shall be stainless steel.

B. The impellers shall be ASTM B62 or B584 bronze and shall be statically and dynamically balanced at the factory to grade G6.3 of ISO 1940 at minimum. They shall be fastened securely to the bowl shaft.

C. The bowl and impeller wear rings shall be bronze and replaceable.

D. The bowl shaft shall be stainless steel, Type 410, 416, or 316.

E. The suction bell shall be cast-iron with a bottom bearing and streamlined ribs. Lining and coating shall be the same as bowls.

F. The column pipe shall be not less than Schedule 40 steel pipe. Pipe sections shall not exceed 10 feet in length. The column pipe shall be epoxy lined and coated.

G. The line shaft and couplings shall be Type 416 stainless and sized such that the natural frequency of the shaft is avoided by a minimum 25 percent throughout the entire operating range. Line shaft sections shall not exceed 10 feet in length.

H. Line shaft lubrication shall be by water.

I. The shaft seal shall be a mechanical type seal and equipped with non-clogging, single coil springs and non-sliding, internal, secondary elasteners. Metal parts shall be Type 316 stainless steel alloy 20, or Hastelloy B or C. Sealing materials shall be carbon and ceramic.

J. The line shaft bearings shall be rubber with bronze retainers at each joint for open line shaft.

K. The discharge head shall be the manufacturer's standard fabricated steel. Fabricated steel discharge head shall be reinforced to withstand pipe thrust, lined and coated with approved epoxy and shall include flange and base plate. Forged steel half-couplings for air valve, pressure switch and drain connections shall be a minimum of 1 1/4-inch and 3000 lbs.

L. The motor shaft coupling shall be a 4-piece, heavy-duty adjustable spacer coupling, with registered fit, to allow for mechanical seal removal.

M. The bottom bearing shall be a close tolerance sleeve type with a length minimum of 2 1/2 times shaft diameter. Suction case shall be permanently grease lubricated with non-soluble grease.

N. The bowl and suction case bearings shall be of the bronze sleeve type.

## 2.3 SUCTION BARREL FOR CAN TYPE PUMPS

### A. General

The suction barrels (cans) shall be of fabricated steel, 5/16-inch thick and lined with fusion bonded epoxy, with an extra-heavy carbon steel mounting plate, drilled and tapped to match the discharge head, suction inlet and flange as shown. Suction barrel shall come equipped with flow vanes.

### B. Suction Barrel Sizing

The required minimum free area between pump and suction barrel listed above shall determine the required diameter of the fabricated suction barrels. The length of the barrel shall be determined by minimum measurements as shown on the drawings or the minimum pump setting specified under pump dimensions herein.

## 2.4 MOTORS

Each pump shall be provided with a vertically mounted electric motor that conforms to the following requirements and the specifications in Division 26. In the event of conflicts, the more restrictive specification shall apply. The brake horsepower required by the driven equipment anywhere on the pump curve shall not exceed the rated nameplate horsepower of the motor. The ratings indicated are minimums. Motors shall be designed to accept the total, unbalanced thrusts imposed by the pump.

The motor shall be a heavy-duty squirrel cage induction type, NEMA Class B or Class F insulation with WP-1 enclosure, Premium Efficient, Inverter Duty, 1800 RPM vertical hollow shaft motor, with a non-reverse ratchet (or self-release coupling) to prevent reverse rotation of the rotating elements. A thrust bearing of ample capacity to carry the weight of all rotating parts plus the maximum hydraulic thrust load under all conditions of operation calculated L10 life shall be no less than 8800 hours. Provision shall be made for momentary up thrust equal to 30 percent of the rated down thrust. The motor shall be standard (or premium) efficiency, 1.15 service factor, and suitable for use on 480-Volt, 3-phase, 60-Hertz electric service. A solid coupling shall be provided at the discharge head for setting the impeller to bowl running clearance.

## 2.4 PUMP CONTROLS

For control see Specification Division 26.

## 2.5 SPARE PARTS

The pumps shall be provided with the following spare parts for each pump:

One mechanical seal

Packing gland materials and tools

## 2.6 MANUFACTURERS

A. The CONTRACTOR shall use Fairbanks Morse, Peerless, Vertiline, Floway, Goulds, Flygt, American Marsh or approved equal.

# PART 3 EXECUTION

## 3.1 SERVICES OF MANUFACTURER

A. Installation -- The service representative of the manufacturer shall be continuously present at the site to supervise the assembly and installation of the pumps.

B. Inspection, Startup and Field Adjustment -- The service representative of the manufacturer shall be present at the site for three (3) consecutive work days, following requirements per Section 110.16.00 – Performance Testing, to furnish the services required by Section 43 21 00 - Pumps, General. Coordinate with OWNER.

C. Instruction of OWNER's Personnel -- The training representative of the manufacturer shall be present for one (1) work day, to furnish services required by Section 43 21 00 Pumps, General. Coordinate with OWNER.

D. For the purposes of this paragraph, a work day is defined as an eight hour period at the site, excluding travel time.

E. The ENGINEER may require that the inspection, startup, and field adjustment services above be furnished in three separate trips.

END OF SECTION

SCADA

PLC

FIELD

FILTER SYSTEM ALARM UAI 01 — DI
FILTER SYSTEM IN BW ZSI 01 — DI
MANUAL BW START HSI 01 — DO
LOW AIR PRESS PAL 01 — DI
BACKWASH FLOW RATE — AI
LEVEL SWITCH LS 111 — DI(2)
LEVEL LIT 01 — AI

PACAKED FILTER EQUIPMENT. SUPPLIED BY FILTER MANUFACTUURE.

LOCAL CONTROL PANEL
FILTER SYSTEM ALARM UA 01
FILTER SYSTEM IN BW ZS 01
MANUAL BW START HS 01
LOW AIR PRESS PAL 01

KMnO4 — 2 — I502N — 3/8"-$KMnO_4$-BRAIDED PVC TUBING
FROM POTASSIUM PERMANGANATE DOSING PUMP

NaOCl — 1 — I502N — 3/8"-NaOCl-BRAIDED PVC TUBING
FROM SODIUM HYPOCHLORITE DOSING PUMP

RW
FROM WELL
8"-RW-DI
8"x6"
GDT DEGASSER
WTR21DG01

3/8" BV
3/8" BV
6" WTR21BFV01

FV 01
FV 02
FV 03
FV 04
FV 05
FV 06
FV 07
FV 08

ARV-01
ARV-02
ARV-03
ARV-04
ARV-05
ARV-06
ARV-07
ARV-08

FILTER NO. 1 WTR21FLT01
FILTER NO. 2 WTR21FLT02
FILTER NO. 3 WTR21FLT03
FILTER NO. 4 WTR21FLT04
FILTER NO. 5 WTR21FLT05
FILTER NO. 6 WTR21FLT06
FILTER NO. 7 WTR21FLT07
FILTER NO. 8 WTR21FLT08

FILTER SYSTEM PACKAGE BOUNDARY

120V
FIT 01
FI 01
M
4"-BW-DI
BW — TO SANITARY SEWER

120V
LSH 111
LSL 111
120V
LIT 01
LE 01

FINISHED WATER STORAGE TANK. SUPPLIED BY TANK MANUFACTURE.

FINISHED WATER STORAGE TANK #1 TK-101

8" WTR21BFV02
8"-FW-DI WTR21PSV01
8" WTR23GV01
24" WTR23GV02
24"-FW-DI — FW — 1 — I502N — TO BOOSTER PUMPS

NOTES:

1. FILTER SYSTEM PACKAGE EQUIPMENT WILL VARY DEPENDING ON SELECTED FILTER VENDOR

| NO. | DATE | BY | REVISION |
|---|---|---|---|

NOTICE
0 ½ 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DSN DESIGNED
CAD DRAWN
CHK CHECKED

REGISTERED PROFESSIONAL ENGINEER 16528PE LEE H. ODELL OREGON MAY. 18, 1993 — MAY 2021

murraysmith

Branch ENGINEERING INC Since 1977
310 5th Street
Springfield, OR 97477
p: 541.746.0637
www.BranchEngineering.com

CITY OF HARRISBURG Established 1866

**WTP DESIGN NORTH & SOUTH**

**INSTRUMENTATION**
**NORTH WTP**
**FILTER SYSTEM P&ID**

PROJECT NO.: 20-0028.300 | SCALE: AS SHOWN | DATE: JUNE 2021

SHEET
I501N

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SCADA

PLC

FIELD

TSH 102A | VIB 102 | RUN HS 102 | FAIL YA 102 | SPEED SI 102 | ON YS 102 | REM HS 102 | AMPS JI 102 | TSH 102 | TEMP TIT 102 | PRESS PIT 102

TSH 101A | VIB VT 101 | RUN HS 101 | FAIL YA 101 | SPEED SI 101 | ON YS 101 | REM HS 101 | AMPS JI 101 | TSH 101 | TEMP TIT 101 | PRESS PIT 101

TSH 103A | VIB VT 103 | RUN HS 103 | FAIL YA 103 | SPEED SI 103 | ON YS 103 | REM HS 103 | AMPS JI 103 | TSH 103 | TEMP TIT 103 | PRESS PIT 103

FLOW FIT 01

DI | AI | DO | AO | ETHERNET

TJB02 480V — TSH, VIB

AFD02 480V — TEMP TIT 02 — ON, AUTO — HOA — HS 02

TJB01 480V — TSH, VIB

AFD01 480V — TEMP TIT 01 — ON, AUTO — HOA — HS 01

TJB03 480V — TSH, VIB

AFD03 480V — TEMP TIT 03 — ON, AUTO — HOA — HS 03

VT 03 — TSH 03A — M

ARV 03 — PI 03 — BV

120V — FIT 01 — FI 01

FW 1 I501N FROM RESERVOIR

24"x12" RED TEE — 12"-FW-DI — 24"-FW-DI

24" WTR24BFV03 — MECH COUPLING

ABOVE GRADE / BELOW GRADE

VERTICAL TURBINE FIRE WATER PUMP WTR24FP03

12"-FW-DI — 12" WTR24CV03 — 12" WTR24BFV13 — 12"x8" RED TEE — 12" WTR30GV01 — 12"-FW-DI — FW - - TO DISTRIBUTION

VT 01 — TSH 01A — M — PI 01 — ARV 01 — BV

6"-FW-DI — 12" WTR24CV01 — 12" WTR24BFV11 — 8"x6" RED TEE — 8"-FW-DI

12" WTR24BFV01 — MECH COUPLING

VERTICAL TURBINE BOOSTER WATER PUMP WTR24PMP01

VT 02 — TSH 02A — M — PI 02 — ARV 02 — BV

6"-FW-DI — 12" WTR24CV02 — 12" WTR24BFV12 — 8"x6" RED TEE

12" WTR24BFV02 — MECH COUPLING

VERTICAL TURBINE BOOSTER WATER PUMP WTR24PMP02

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NOTICE

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

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CAD DRAWN

CHK CHECKED

REGISTERED PROFESSIONAL ENGINEER 16528PE MAY 2021 OREGON MAY 18, 1993 LEE H. ODELL

murraysmith

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CITY OF HARRISBURG Established 1866

**WTP DESIGN NORTH & SOUTH**

# INSTRUMENTATION NORTH WTP FINISHED WATER PUMPING P&ID

PROJECT NO.: 20-0028.300 | SCALE: AS SHOWN | DATE: JUNE 2021

SHEET I502N

SCADA

(PER MANUFACTURES I/O STRUCTURE)

CHLORINE GENERATOR COMMUNICATION

PLC

FIELD

PLC CONTROL START STOP SPEED ADJUSTMENT

RUN FAIL SPEED ON — HS 01 YA 01 SI 01 YS 01

RUN FAIL SPEED ON — HS 02 YA 02 SI 02 YS 02

DO DI AO DI DO DI AO DI

PLC CONTROL START STOP SPEED ADJUSTMENT

RUN FAIL SPEED ON — HS 01 YA 01 SI 01 YS 01

DO DI AO DI

FEEDER 1

FEEDER 2

CHLORINE GENERATOR LCP

CHLORINE FEED

WATER FROM WATER SOURCE

WATER SOFTENER

BRINE TANK

CHLORINE GENERATOR

BLOWER

SODIUM HYPOCHLORITE TANK

PG

PG

SODIUM HYPOCHLORITE DOSING PUMPS

CHEMICAL FEED SKID

3/8"-NaOCl-BRAIDED PVC TUBING

NaOCl 1 I501N TO INJECTION POINT

SODIUM HYPOCHLORITE GENERATOR AND EQUIPMENT. SUPPLIED BY MANUFACTURE.

PERMANGANATE FEED

POTASSIUM PERMANGANATE SOLUTION TANK

PG

POTASSIUM PERMANGANATE DOSING PUMPS

3/8"-$KMnO_4$-BRAIDED PVC TUBING

KMnO4 2 I501N TO INJECTION POINT

CHEMICAL FEED SKID

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CHK CHECKED

REGISTERED PROFESSIONAL ENGINEER 16528PE MAY 2021 OREGON MAY 18, 1993 LEE H. ODELL

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**WTP DESIGN NORTH & SOUTH**

# INSTRUMENTATION NORTH HYPOCHLORITE FEED SYSTEM P&ID

PROJECT NO.: 20-0028.300 | SCALE: AS SHOWN | DATE: JUNE 2021

SHEET

I503N

SCADA

PLC

FIELD

FILTER SYSTEM ALARM UA 01 — DI
FILTER SYSTEM IN BW ZSI 01 — DI
MANUAL BW START HSI 01 — DO
LOW AIR PRESS PAL 01 — DI
BACKWASH FLOW RATE — AI
LEVEL SWITCH LS 111 — DI(2)
LEVEL LIT 111 — AI

PACAKED FILTER EQUIPMENT. SUPPLIED BY FILTER MANUFACTUURE.

LOCAL CONTROL PANEL
FILTER SYSTEM ALARM UA 01
FILTER SYSTEM IN BW ZS 01
MANUAL BW START HS 01
LOW AIR PRESS PAL 01

KMnO4 — 2 | I513S — 3/8"-$KMnO_4$-BRAIDED PVC TUBING — FROM POTASSIUM PERMANGANATE DOSING PUMP

NaOCl — 1 | I513S — 3/8"-NaOCl-BRAIDED PVC TUBING — FROM SODIUM HYPOCHLORITE DOSING PUMP

RW — 8"-RW-DI — 8"x6" — FROM WELL

GDT DEGASSER WTR11DG01

3/8" BV
3/8" BV

6" WTR11BFV01

FV 01
FV 02
FV 03
FV 04

ARV-01
ARV-02
ARV-03
ARV-04

FILTER NO. 1 WTR11FLT01
FILTER NO. 2 WTR11FLT02
FILTER NO. 3 WTR11FLT03
FILTER NO. 4 WTR11FLT04

S

FV 05
FV 06
FV 07
FV 08

ARV-05
ARV-06
ARV-07
ARV-08

FILTER NO. 5 WTR11FLT05
FILTER NO. 6 WTR11FLT06
FILTER NO. 7 WTR11FLT07
FILTER NO. 8 WTR11FLT08

FILTER SYSTEM PACKAGE BOUNDARY

120V
FIT 01
FI 01
M

4"-BW-DI — BW — TO SANITARY SEWER

120V
LSH 111
LSL 111

120V
LIT 111
LE 111

FINISHED WATER STORAGE TANK. SUPPLIED BY TANK MANUFACTURE.

FINISHED WATER STORAGE TANK #2 TK-111

8" WTR11BFV02
WTR11PSV01
8"-FW-DI
8" WTR13GV01
24" WTR13GV02
24"-FW-DI
FW — 1 | I512S — TO BOOSTER PUMPS

| NO. | DATE | BY | REVISION |
|---|---|---|---|

NOTICE
0 ½ 1
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REGISTERED PROFESSIONAL ENGINEER 16528PE MAY 2021 OREGON MAY 18, 1993 LEE H. ODELL

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**WTP DESIGN NORTH & SOUTH**

# INSTRUMENTATION SOUTH WTP FILTER SYSTEM P&ID

PROJECT NO.: 20-0028.300 | SCALE: AS SHOWN | DATE: JUNE 2021

SHEET I501S

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SCADA

PLC

FIELD

TSH 102A | VIB 102 | RUN HS 102 | FAIL YA 102 | SPEED SI 102 | ON YS 102 | REM HS 102 | AMPS JI 102 | TSH 102 | TEMP TIT 102 | PRESS PIT 102

TSH 101A | VIB VT 101 | RUN HS 101 | FAIL YA 101 | SPEED SI 101 | ON YS 101 | REM HS 101 | AMPS JI 101 | TSH 101 | TEMP TIT 101 | PRESS PIT 101

TSH 103A | VIB VT 103 | RUN HS 103 | FAIL YA 103 | SPEED SI 103 | ON YS 103 | REM HS 103 | AMPS JI 103 | TSH 103 | TEMP TIT 103 | PRESS PIT 103

FLOW FIT 01

DI | AI | DO | AO | ETHERNET

AFD02 480V — TEMP TIT 02 — ON / AUTO — HOA — HS 02

AFD01 480V — TEMP TIT 01 — ON / AUTO — HOA — HS 01

AFD03 480V — TEMP TIT 03 — ON / AUTO — HOA — HS 03

TJB02 480V — TSH | VIB

TJB01 480V — TSH | VIB

TJB03 480V — TSH | VIB

120V

FW
1 | I511S
FROM RESERVOIR

24"x12" RED TEE

24"-FW-DI

12"-FW-DI

24" WTR14BFV03 — MECH COUPLING

VERTICAL TURBINE FIRE WATER PUMP WTR14FP03

VT 03 | TSH 03A | M | ABOVE GRADE | BELOW GRADE

PI 03 | ARV 03 | BV

12"-FW-DI — 12" WTR14CV03 — 12" WTR14BFV13 — 12"x8" RED TEE — FW TO DISTRIBUTION

VT 01 | TSH 01A | PI 01 | ARV 01

6"-FW-DI — 12" WTR14CV01 — 12" WTR14BFV11

12" WTR14BFV01 — MECH COUPLING

VERTICAL TURBINE BOOSTER WATER PUMP WTR14PMP01

8"x6" RED TEE

8"-FW-DI

VT 02 | TSH 02A | PI 02 | ARV 02

6"-FW-DI — 12" WTR14CV02 — 12" WTR14BFV12

12" WTR14BFV02 — MECH COUPLING

VERTICAL TURBINE BOOSTER WATER PUMP WTR14PMP02

| NO. | DATE | BY | REVISION |
|---|---|---|---|

NOTICE

0 ½ 1

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

DSN DESIGNED

CAD DRAWN

CHK CHECKED

REGISTERED PROFESSIONAL ENGINEER 16528PE MAY 2021 OREGON MAY 18, 1993 LEE H. ODELL

murraysmith

Branch ENGINEERING INC Since 1977
310 5th Street
Springfield, OR 97477
p: 541.746.0637
www.BranchEngineering.com

CITY OF HARRISBURG Established 1866

**WTP DESIGN NORTH & SOUTH**

# INSTRUMENTATION SOUTH WTP FINISHED WATER PUMPING P&ID

PROJECT NO.: 20-0028.300 | SCALE: AS SHOWN | DATE: JUNE 2021

SHEET I502S

G:\pdx_projects\odell Projects\Projects\harrisburg, City Of\harrisburg Wtp Design\CAD\Sheets\20-0028-OR-I501S-03S.dwg I502S 6/18/2021 9:42 AM JARED.CLOUD 23.0s (LMS Tech)

SCADA

(PER MANUFACTURES I/O STRUCTURE)

CHLORINE GENERATOR COMMUNICATION

PLC

FIELD

PLC CONTROL START STOP SPEED ADJUSTMENT

PLC CONTROL START STOP SPEED ADJUSTMENT

RUN FAIL SPEED ON — HS 01 — YA 01 — SI 01 — YS 01

RUN FAIL SPEED ON — HS 02 — YA 02 — SI 02 — YS 02

RUN FAIL SPEED ON — HS 01 — YA 01 — SI 01 — YS 01

DO DI AO DI — DO DI AO DI — DO DI AO DI

FEEDER 1

FEEDER 2

SODIUM HYPOCHLORITE GENERATOR AND EQUIPMENT. SUPPLIED BY MANUFACTURE.

CHLORINE GENERATOR LCP

CHLORINE FEED

WATER FROM WATER SOURCE

WATER SOFTENER

BRINE TANK

CHLORINE GENERATOR

BLOWER

SODIUM HYPOCHLORITE TANK

PG

PG

SODIUM HYPOCHLORITE DOSING PUMPS

CHEMICAL FEED SKID

3/8"-NaOCl-BRAIDED PVC TUBING

NaOCl 1 I511S TO INJECTION POINT

PERMANGANATE FEED

POTASSIUM PERMANGANATE SOLUTION TANK

PG

POTASSIUM PERMANGANATE DOSING PUMPS

3/8"-$KMnO_4$-BRAIDED PVC TUBING

$KMnO_4$ 2 I511S TO INJECTION POINT

CHEMICAL FEED SKID

G:\pdx_projects\odell Projects\Projects\harrisburg, City Of\harrisburg Wtp Design\CAD\Sheets\20-0028-OR-I501S-03S.dwg I503S 6/18/2021 9:42 AM JARED.CLOUD 23.0s (LMS Tech)

| NO. | DATE | BY | REVISION |
|---|---|---|---|

NOTICE

0 ½ 1

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DSN DESIGNED

CAD DRAWN

CHK CHECKED

REGISTERED PROFESSIONAL ENGINEER 16528PE MAY 2021 OREGON MAY 18, 1993 LEE H. ODELL

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**WTP DESIGN NORTH & SOUTH**

# INSTRUMENTATION SOUTH HYPCHLORITE FEED SYSTEM P&ID

PROJECT NO.: 20-0028.300 | SCALE: AS SHOWN | DATE: JUNE 2021

SHEET

I503S

| DESIGN CRITERIA (NORTH) | VALUE | UNITS |
|---|---|---|
| ***PLANT CAPACITY*** | | |
| MINIMUM CAPACITY | 400 | GPM |
| DESIGN CAPACITY | 800 | GPM |
| MAXMUM WORKING PRESSURE | 85 | PSI |
| | | |
| ***FILTER EQUIPMENT*** | | |
| FILTER DIAMETER | 48 | IN |
| SURFACE AREA | 12.3 | SF |
| NUMBER OF VESSELS | 8 | # |
| LOADING RATE | 8 | GPM/SF |
| MEDIA DEPTH | 42 | IN |
| MEDIA WEIGHT (PER VESSEL) | 5,250 | LBS |
| BACKWASH LOADING RATE | 25 | GPM/SF |
| | | |
| ***DEGAS SEPERATOR*** | | |
| Qmax | 800 | GPM |
| | | |
| ***CHHEMICAL FEED EQUIPMENT*** | | |
| *NaOCl* | | |
| SOLUTION STRENGTH | 0.8 | % |
| GENERATOR | 50 | PPD |
| BRINE TANK | 150 | GAL |
| BULK STORAGE TANK | 850 | GAL |
| MAX. METERING PUMP CAPACITY | 18 | GPH |
| | | |
| *NaKMNO4* | | |
| SOLUTION STRENGTH | 4.0 | % |
| BULK STORAGE TANK | 35-55 | GAL |
| MAX. METERING PUMP CAPACITY | 0.6 | GPH |
| | | |
| ***STORAGE TANK*** | | |
| RESERVOIR CAPACITY (MAX) | 1.7 | MG |
| | | |
| **FINISHED WATER PUMPING** | | |
| *BOOSTER PUMP* | | |
| NUMBER OF PUMPS | 2 | # |
| PUMP TYPE | VERTICAL TURBINE | |
| VARIABLE FREQUENCY DRIVE | YES | - |
| RATED CAPACITY, EA | 400 | GPM |
| TOTAL DYNAMIC HEAD | 180 | FT |
| | | |
| *FIRE PUMP* | | |
| NUMBER OF PUMPS | 1 | # |
| PUMP TYPE | VERTICAL TURBINE | |
| VARIABLE FREQUENCY DRIVE | YES | - |
| RATED CAPACITY, EA | 1750 | GPM |
| TOTAL DYNAMIC HEAD | 75 | FT |

| PROCESS AREA CODES | | |
|---|---|---|
| CODE | SYSTEM DESCRIPTION | NOTES |
| WTR00-09 | SCADA EQUIPMENT | |
| WEL04 | WELL #4 EQUIPMENT | |
| WEL06 | WELL #6 EQUIPMENT | |
| WEL07 | WELL #7 EQUIPMENT | |
| WEL08 | WELL #8 EQUIPMENT | |
| WEL09 | WELL #9 EQUIPMENT | |
| WEL10 – 99 | FUTURE WELLS | |
| WTR10 | SOUTH FACILITIES EQUIPMENT | NOT NECESSARILY PROCESS RELATED |
| WTR11 | SOUTH FILTER SYSTEMS | |
| WTR12 | SOUTH CHEMICAL FEED SYSTEMS | |
| WTR13 | SOUTH STORAGE TANK | |
| WTR14 | SOUTH BOOSTER AND FIRE PUMPS | |
| WTR15 | SOUTH MISC. PROCESS | |
| WTR16 - 19 | (RESERVED FOR FUTURE SOUTH) | |
| WTR20 | NORTH FACILITIES EQUIPMENT | NOT NECESSARILY PROCESS RELATED |
| WTR21 | NORTH FILTER SYSTEMS | |
| WTR22 | NORTH CHEMICAL FEED SYSTEMS | |
| WTR23 | NORTH STORAGE TANK | |
| WTR24 | NORTH BOOSTER AND FIRE PUMPS | |
| WTR25 | NORTH MISC. PROCESSES | |
| WTR26 - 29 | (RESERVED FOR FUTURE NORTH) | |
| WTR30 - 39 | WATER DISTRIBUTION SYSTEMS | |
| WTR40 - 99 | FUTURE WATER FACILITIES AND EQUIPMENT | |
| WWT00 - 99 | WASTEWATER TREATMENT AND COLLECTIONS SYSTEMS (RESERVED) | |
| SWT00-99 | STORM WATER TREATMENT (RESERVED) | |
| FAC00 - 99 | GENERAL FACILITIES EQUIPMENT | THIS COULD BE VEHICLES, SUPPORT EQUIPMENT, DESKS, CHAIRS, ETC. |
| X00 | EXAMPLE ADD PROCESS | |

| SCHEDULES | | | | | | |
|---|---|---|---|---|---|---|
| TAG NO. | VALVE/EQUIPMENT DESCRIPTION | SIZE (INCHES) | STREAM (RW/FW/ SS/CHEM) | VALVE/EQUIPMENT TYPE | NEW/EXISTING | SHEET |
| WEL09FI_01 | WATER METER (WELL 9) | 8 | RW | FLOW METER | NEW | C104N |
| WEL08FI_01 | WATER METER (WELL 8) | 8 | RW | FLOW METER | EXISTING | C105N |
| WTR23G__01 | WEDGE GATE VALVE TO TANK | 8 | FW | GATE | NEW | C105N |
| WTR23G__02 | WEDGE GATE VALVE FROM TANK | 24 | FW | GATE | NEW | C105N |
| WTR30G__01 | WEDGE GATE VALVE FINISHED WATER | 12 | FW | GATE | NEW | C105N |
| | | | | | | |
| WTR21BFV01 | BFV RAW WATER ISOLATION | 6 | RW | BUTTERFLY | NEW | M201N/M301N |
| WTR21BFV02 | BFV FINISHED WATER ISOLOATION | 6 | FW | BUTTERFLY | NEW | M201N/M301N |
| WTR21PSV01 | PRESSURE SUSTAINING VALVE | 8 | FW | PRESSURE SUSTAINING | NEW | M201N/M301N |
| WTR21DG_01 | DEGASSER | - | RW | DEGASSER | NEW | M201N/M301N |
| WTR21G__01 | OSE - 4" BACKWASH GATE VALVE | 4 | BW/SS | GATE | NEW | M201N/M301N |
| WTR21FLT01 | OSE - FILTER 1 | - | FW | FILTER | NEW | M201N/M301N |
| WTR21FLT02 | OSE - FILTER 2 | - | FW | FILTER | NEW | M201N/M301N |
| WTR21FLT03 | OSE - FILTER 3 | - | FW | FILTER | NEW | M201N/M301N |
| WTR21FLT04 | OSE - FILTER 4 | - | FW | FILTER | NEW | M201N/M301N |
| WTR21FLT05 | OSE - FILTER 5 | - | FW | FILTER | NEW | M201N/M301N |
| WTR21FLT06 | OSE - FILTER 6 | - | FW | FILTER | NEW | M201N/M301N |
| WTR21FLT07 | OSE - FILTER 7 | - | FW | FILTER | NEW | M201N/M301N |
| WTR21FLT08 | OSE - FILTER 8 | - | FW | FILTER | NEW | M201N/M301N |
| | | | | | | |
| WTR22HG_01 | OSE - HYPOCHLORITE GENERATOR | - | CHEM | EQUIPMENT | NEW | M203N/M303N |
| WTR22MP_01 | HYPOCHLORITE METERING PUMP 1 | - | CHEM | METERING PUMP | NEW | M203N/M303N |
| WTR22MP_02 | HYPOCHLORITE METERING PUMP 2 | - | CHEM | METERING PUMP | NEW | M203N/M303N |
| WTR22MP_03 | SODIUM PERMANGANATE METERING PUMP | - | CHEM | METERING PUMP | NEW | M203N/M303N |
| | | | | | | |
| WTR24FI_01 | INSERTION FLOW METER | 12 | FW | FLOW METER | NEW | M202N/M302N |
| WTR24BFV13 | BFV POST-FIRE PUMP | 12 | FW | BUTTERFLY | NEW | M202N/M302N |
| WTR24CV_03 | CHECK VALVE FIRE PUMP | 12 | FW | CHECK | NEW | M202N/M302N |
| WTR24ARV03 | AIR/VAC VALVE FIRE PUMP | 1 | FW | AIR/VACUUM RELEASE | NEW | M202N/M302N |
| WTR24PI_03 | TYPE 3 PRESSURE GAUGE/SWITCH FIRE PUMP | 12 | FW | PRESSURE INDICATOR | NEW | M202N/M302N |
| WTR24BFV03 | BFV PRE-FIRE PUMP | 24 | FW | BUTTERFLY | NEW | M202N/M302N |
| WTR24BFV11 | BFV POST-BP1 | 6 | FW | BUTTERFLY | NEW | M202N/M302N |
| WTR24CV_01 | CHECK VALVE BP1 | 6 | FW | CHECK | NEW | M202N/M302N |
| WTR24ARV01 | AIR/VAC VALVE BP1 | 1 | FW | AIR/VACUUM RELEASE | NEW | M202N/M302N |
| WTR24PI_01 | TYPE 3 PRESSURE GAUGE/SWITCH BP1 | 6 | FW | PRESSURE INDICATOR | NEW | M202N/M302N |
| WTR24BFV01 | BFV PRE-BP1 | 12 | FW | BUTTERFLY | NEW | M202N/M302N |
| WTR24BFV12 | BFV POST-BP2 | 6 | FW | BUTTERFLY | NEW | M202N/M302N |
| WTR24CV_02 | CHECK VALVE BP2 | 6 | FW | CHECK | NEW | M202N/M302N |
| WTR24ARV02 | AIR/VAC VALVE BP2 | 1 | FW | AIR/VACUUM RELEASE | NEW | M202N/M302N |
| WTR24BFV02 | BFV PRE-PS2 | 12 | FW | BUTTERFLY | NEW | M202N/M302N |
| WTR24PI_02 | TYPE 3 PRESSURE GAUGE/SWITCH BP2 | 6 | FW | PRESSURE INDICATOR | NEW | M202N/M302N |
| WTR24FP_01 | FIRE PUMP | - | FW | PUMP | NEW | M202N/M302N |
| WTR24PMP01 | BOOSTER PUMP 1 | - | FW | PUMP | NEW | M202N/M302N |
| WTR24PMP02 | BOOSTER PUMP 2 | - | FW | PUMP | NEW | M202N/M302N |

| NO. | DATE | BY | REVISION |
|---|---|---|---|
| 1 | 07/26/2021 | SGM | ADDENDUM 02 |

NOTICE
0 ½ 1
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DSN DESIGNED
CAD DRAWN
CHK CHECKED

REGISTERED PROFESSIONAL ENGINEER 16528PE MAY 18, 1993 OREGON LEE H. ODELL
MAY 2021

murraysmith

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CITY OF HARRISBURG Established 1866

**WTP DESIGN NORTH & SOUTH**

**NORTH SCHEDULES & DESIGN CRITERIA**

PROJECT NO.: 20-0028.300 | SCALE: AS SHOWN | DATE: JUNE 2021

SHEET
G004N

| DESIGN CRITERIA (SOUTH) | VALUE | UNITS |
|---|---|---|
| ***PLANT CAPACITY*** | | |
| MINIMUM CAPACITY | 100 | GPM |
| DESIGN CAPACITY | 400 | GPM |
| MAXMUM WORKING PRESSURE | 85 | PSI |
| | | |
| ***FILTER EQUIPMENT*** | | |
| FILTER DIAMETER | 48 | IN |
| SURFACE AREA | 12.3 | SF |
| NUMBER OF VESSELS | 4 | # |
| LOADING RATE | 8 | GPM/SF |
| MEDIA DEPTH | 42 | IN |
| MEDIA WEIGHT (PER VESSEL) | 5,250 | LBS |
| BACKWASH LOADING RATE | 25 | GPM/SF |
| | | |
| ***DEGAS SEPERATOR*** | | |
| Qmax | 400 | GPM |
| | | |
| ***CHHEMICAL FEED EQUIPMENT*** | | |
| *NaOCl* | | |
| SOLUTION STRENGTH | 0.8 | % |
| GENERATOR | 50 | PPD |
| BRINE TANK | 150 | GAL |
| BULK STORAGE TANK | 850 | GAL |
| MAX. METERING PUMP CAPACITY | 9 | GPH |
| | | |
| *NaKMNO4* | | |
| SOLUTION STRENGTH | 4.0 | % |
| BULK STORAGE TANK | 35-55 | GAL |
| MAX. METERING PUMP CAPACITY | 0.3 | GPH |
| | | |
| ***STORAGE TANK*** | | |
| RESERVOIR CAPACITY (MAX) | 0.54 | MG |
| | | |
| **FINISHED WATER PUMPING** | | |
| *BOOSTER PUMP* | | |
| NUMBER OF PUMPS | 2 | # |
| PUMP TYPE | VERTICAL TURBINE | |
| VARIABLE FREQUENCY DRIVE | YES | - |
| RATED CAPACITY, EA | 400 | GPM |
| TOTAL DYNAMIC HEAD | 180 | FT |
| | | |
| *FIRE PUMP* | | |
| NUMBER OF PUMPS | 1 | # |
| PUMP TYPE | VERTICAL TURBINE | |
| VARIABLE FREQUENCY DRIVE | YES | - |
| RATED CAPACITY, EA | 1750 | GPM |
| TOTAL DYNAMIC HEAD | 75 | FT |

| PROCESS AREA CODES | | |
|---|---|---|
| **CODE** | **SYSTEM DESCRIPTION** | **NOTES** |
| WTR00-09 | SCADA EQUIPMENT | |
| WEL04 | WELL #4 EQUIPMENT | |
| WEL06 | WELL #6 EQUIPMENT | |
| WEL07 | WELL #7 EQUIPMENT | |
| WEL08 | WELL #8 EQUIPMENT | |
| WEL09 | WELL #9 EQUIPMENT | |
| WEL10 – 99 | FUTURE WELLS | |
| WTR10 | SOUTH FACILITIES EQUIPMENT | NOT NECESSARILY PROCESS RELATED |
| WTR11 | SOUTH FILTER SYSTEMS | |
| WTR12 | SOUTH CHEMICAL FEED SYSTEMS | |
| WTR13 | SOUTH STORAGE TANK | |
| WTR14 | SOUTH BOOSTER AND FIRE PUMPS | |
| WTR15 | SOUTH MISC. PROCESS | |
| WTR16 - 19 | (RESERVED FOR FUTURE SOUTH) | |
| WTR20 | NORTH FACILITIES EQUIPMENT | NOT NECESSARILY PROCESS RELATED |
| WTR21 | NORTH FILTER SYSTEMS | |
| WTR22 | NORTH CHEMICAL FEED SYSTEMS | |
| WTR23 | NORTH STORAGE TANK | |
| WTR24 | NORTH BOOSTER AND FIRE PUMPS | |
| WTR25 | NORTH MISC. PROCESSES | |
| WTR26 - 29 | (RESERVED FOR FUTURE NORTH) | |
| WTR30 - 39 | WATER DISTRIBUTION SYSTEMS | |
| WTR40 - 99 | FUTURE WATER FACILITIES AND EQUIPMENT | |
| WWT00 - 99 | WASTEWATER TREATMENT AND COLLECTIONS SYSTEMS (RESERVED) | |
| SWT00-99 | STORM WATER TREATMENT (RESERVED) | |
| FAC00 - 99 | GENERAL FACILITIES EQUIPMENT | THIS COULD BE VEHICLES, SUPPORT EQUIPMENT, DESKS, CHAIRS, ETC. |
| X00 | EXAMPLE ADD PROCESS | |

| SCHEDULES | | | | | | |
|---|---|---|---|---|---|---|
| **TAG NO.** | **VALVE/EQUIPMENT DESCRIPTION** | **SIZE (INCHES)** | **STREAM (RW/FW/ SS/CHEM)** | **VALVE/EQUIPMENT TYPE** | **NEW/EXISTING** | **SHEET** |
| WEL04FI_01 | WATER METER (WELL 4) | - | RW | FLOW METER | EXISTING | C104S/C105S |
| WEL06FI_01 | WATER METER (WELL 6) | - | RW | FLOW METER | EXISTING | C104S/C105S |
| WEL07FI_01 | WATER METER (WELL 7) | - | RW | FLOW METER | EXISTING | C104S/C105S |
| WTR13GV_01 | WEDGE GATE VALVE TO NEW TANK | 6 | FW | GATE | NEW | C104S/C105S |
| WTR13GV_02 | WEDGE GATE VALVE FROM NEW TANK | 24 | FW | GATE | NEW | C104S/C105S |
| WTR13GV_11 | WEDGE GATE VALVE TO EXIST TANK | - | FW | GATE | EXISTING | C104S/C105S |
| WTR13GV_12 | WEDGE GATE VALVE FROM EXIST TANK | - | FW | GATE | EXISTING | C104S/C105S |
| | | | | | | |
| WTR11BFV01 | BFV RAW WATER ISOLATION | 6 | RW | BUTTERFLY | NEW | M201S/M301S |
| WTR11BFV02 | BFV FINISHED WATER ISOLOATION | 6 | FW | BUTTERFLY | NEW | M201S/M301S |
| WTR11PSV01 | PRESSURE SUSTAINING VALVE | 8 | FW | PRESSURE SUSTAINING | NEW | M201S/M301S |
| WTR11DG_01 | DEGASSER | - | RW | DEGASSER | NEW | M201S/M301S |
| WTR11G__01 | OSE - 4" BACKWASH GATE VALVE | 4 | BW/SS | GATE | NEW | M201S/M301S |
| WTR11FLT01 | OSE - FILTER 1 | - | FW | FILTER | NEW | M201S/M301S |
| WTR11FLT02 | OSE - FILTER 2 | - | FW | FILTER | NEW | M201S/M301S |
| WTR11FLT03 | OSE - FILTER 3 | - | FW | FILTER | NEW | M201S/M301S |
| WTR11FLT04 | OSE - FILTER 4 | - | FW | FILTER | NEW | M201S/M301S |
| | | | | | | |
| WTR12HG_01 | OSE - HYPOCHLORITE GENERATOR | - | CHEM | EQUIPMENT | NEW | M203S/M303S |
| WTR12MP_01 | HYPOCHLORITE METERING PUMP 1 | - | CHEM | SKID | NEW | M203S/M303S |
| WTR12MP_02 | HYPOCHLORITE METERING PUMP 2 | - | CHEM | SKID | NEW | M203S/M303S |
| WTR12MP_03 | SODIUM PERMANGANATE METERING PUMP | - | CHEM | SKID | NEW | M203S/M303S |
| | | | | | | |
| WTR14FI_01 | INSERTION FLOW METER | 12 | FW | FLOW METER | NEW | M202S/M302S |
| WTR14BFV13 | BFV POST-FIRE PUMP | 12 | FW | BUTTERFLY | NEW | M202S/M302S |
| WTR14CV_03 | CHECK VALVE FIRE PUMP | 12 | FW | CHECK | NEW | M202S/M302S |
| WTR14ARV03 | ARV FIRE PUMP | 1 | FW | AIR/VACUUM RELEASE | NEW | M202S/M302S |
| WTR14PI_03 | TYPE 3 PRESSURE GAUGE/SWITCH FIRE PUMP | 12 | FW | PRESSURE INDICATOR | NEW | M202S/M302S |
| WTR14BFV03 | BFV PRE-FIRE PUMP | 24 | FW | BUTTERFLY | NEW | M202S/M302S |
| WTR14BFV11 | BFV POST-BP1 | 6 | FW | BUTTERFLY | NEW | M202S/M302S |
| WTR14CV_01 | CHECK VALVE BP1 | 6 | FW | CHECK | NEW | M202S/M302S |
| WTR14ARV01 | ARV BP1 | 1 | FW | AIR/VACUUM RELEASE | NEW | M202S/M302S |
| WTR14PI_01 | TYPE 3 PRESSURE GAUGE/SWITCH BP1 | 6 | FW | PRESSURE INDICATOR | NEW | M202S/M302S |
| WTR14BFV01 | BFV PRE-BP1 | 12 | FW | BUTTERFLY | NEW | M202S/M302S |
| WTR14BFV12 | BFV POST-BP2 | 6 | FW | BUTTERFLY | NEW | M202S/M302S |
| WTR14CV_02 | CHECK VALVE BP2 | 6 | FW | CHECK | NEW | M202S/M302S |
| WTR14ARV02 | ARV BP2 | 1 | FW | AIR/VACUUM RELEASE | NEW | M202S/M302S |
| WTR14BFV02 | BFV PRE-BP2 | 12 | FW | BUTTERFLY | NEW | M202S/M302S |
| WTR14PI_02 | TYPE 3 PRESSURE GAUGE/SWITCH BP2 | 6 | FW | PRESSURE INDICATOR | NEW | M202S/M302S |
| WTR14FP_01 | FIRE PUMP | - | FW | PUMP | NEW | M202S/M302S |
| WTR14PMP01 | BOOSTER PUMP 1 | - | FW | PUMP | NEW | M202S/M302S |
| WTR14PMP02 | BOOSTER PUMP 2 | - | FW | PUMP | NEW | M202S/M302S |



| NO. | DATE | BY | REVISION |
|---|---|---|---|
| 1 | 07/26/2021 | SGM | ADDENDUM 02 |

NOTICE
0 ½ 1
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DSN DESIGNED
CAD DRAWN
CHK CHECKED

REGISTERED PROFESSIONAL ENGINEER 16528PE MAY 18, 1993 LEE H. ODELL OREGON MAY 2021

murraysmith

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CITY OF HARRISBURG Established 1866

**WTP DESIGN NORTH & SOUTH**

**SOUTH SCHEDULES & DESIGN CRITERIA**

PROJECT NO.: 20-0028.300 | SCALE: AS SHOWN | DATE: JUNE 2021

SHEET
G004S

## LEGEND

| EXISTING | | PROPOSED | |
|---|---|---|---|
| | PROPERTY LINE | | EDGE OF ASPHALT |
| | EDGE OF ASPHALT | 303 | CONTOUR LINE |
| | FENCE | | FENCE |
| | BOTTOM OF DITCH<br>TOP OF BANK | | CONCRETE |
| | BUILDING OR STRUCTURE | | WATER VAULT<br>WATER METER<br>WATER VALVE |
| WM | WATER METER | | STORM DRAIN MANHOLE |
| | FIRE HYDRANT | | WASTE WATER MANHOLE |
| | WATER VALVE | | |
| | POWER POLE | | |
| WW | WASTE WATER MANHOLE | | |
| | TELEPHONE RISER | | |
| | GRAVEL | | |

PRORIA RD.

WW PUMP STATION

6" WIRE FENCE

10" CULVERT

6" CHAIN LINK FENCE

WIRE FENCE

PROPOSED TANK
F.F.E.
307.50

PROPOSED WTP BUILDING
F.F.E.
307.25

WELL PROPOSED SITE #9

PROPOSED WELL GRAVEL PAD

PROPOSED ASPHALT PAVING

12" POLE

ECO BLOCKS

WW MH
RIM=308.60

TL 600

TL 700


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Since 1977
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p: 541.746.0637
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GRAPHIC SCALE
50 0 25 50 100
( IN FEET )

| NO. | DATE | BY | REVISION |
|---|---|---|---|
| 1 | 7/27/2021 | CM | SIDEWALK DIMENSIONS |

NOTICE
0 ½ 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

CM DESIGNED
CM DRAWN
DG CHECKED

REGISTERED PROFESSIONAL ENGINEER
#62780PE
DIGITALLY SIGNED
OREGON
JULY 13, 2021
DAMIEN GILBERT
EXPIRES: JUNE 30, 2023

murraysmith

CITY OF HARRISBURG Established 1866

**WTP DESIGN NORTH & SOUTH**

TAX MAP: 15S04W04 TAX LOT: 600
TAX MAP: 15S04W09 TAX LOT: 700

**NORTH SITE PLAN**

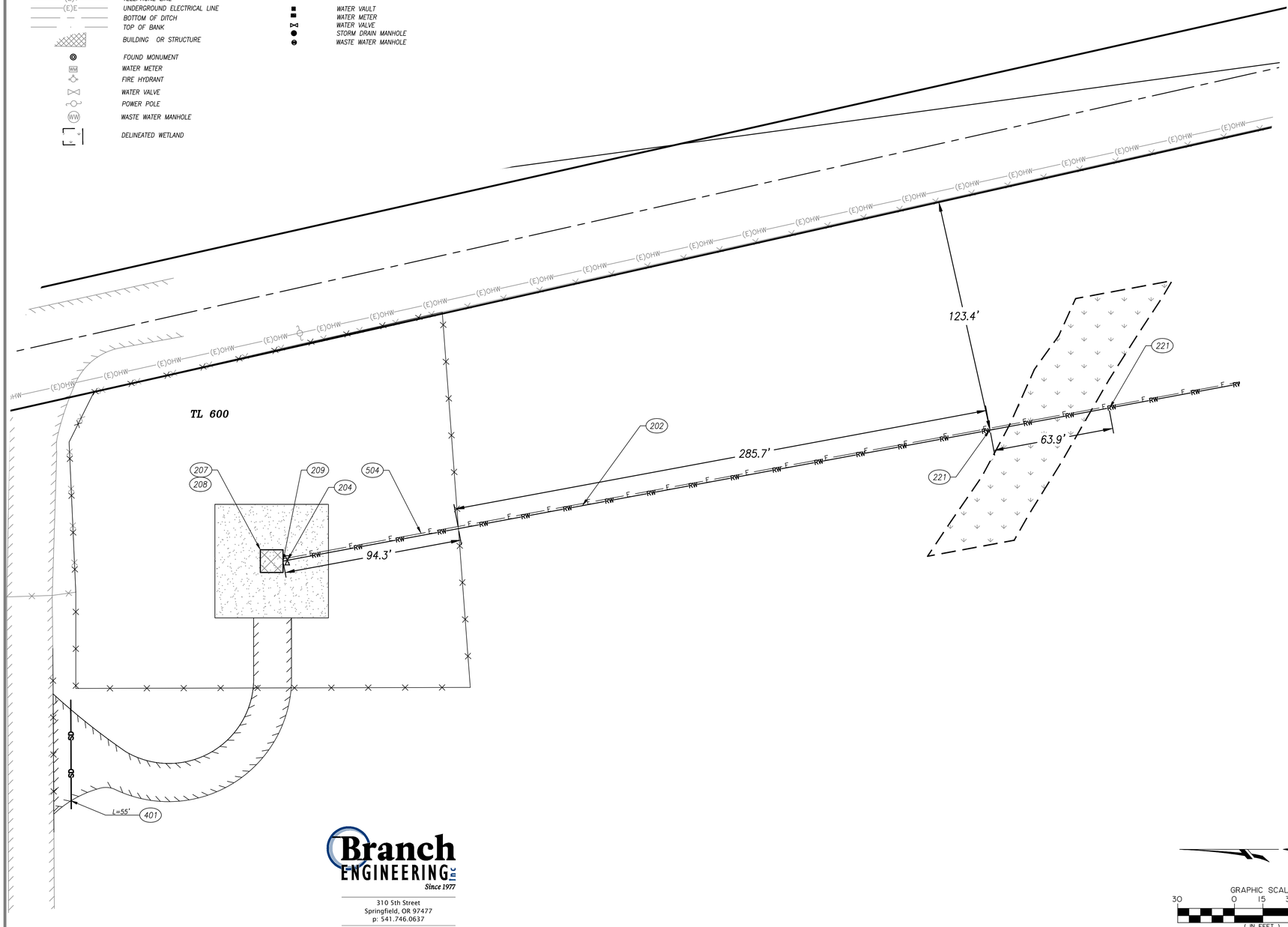
PROJECT NO.: 20-0028.300 | SCALE: AS SHOWN | DATE: JULY 2021

SHEET C101N

Z:\2020\20-0028 Harrisburg WTP Sites\Civil Design\NORTH\20-0028 CIVIL PLAN NORTH.dwg 7/28/2021 9:52 AM CHRISM

## LEGEND

| EXISTING | | PROPOSED | |
|---|---|---|---|
| | PROPERTY LINE | SD SD | STORM DRAIN LINE |
| | EDGE OF ASPHALT | WW | WASTE WATER LINE |
| 303 | CONTOUR LINE | RW | RAW WATER LINE |
| | FENCE | FW | FINISHED WATER LINE |
| | EAVE LINE | E | UNDERGROUND ELECTRICAL LINE |
| (E)SD | STORM DRAIN LINE | | EDGE OF ASPHALT |
| (E)WW | WASTE WATER LINE | 303 | CONTOUR LINE |
| (E)W | WATER LINE | | FENCE |
| (E)OHW | OVER HEAD POWER | | CONCRETE |
| (E)T | TELEPHONE LINE | | WATER VAULT |
| (E)E | UNDERGROUND ELECTRICAL LINE | | WATER METER |
| | BOTTOM OF DITCH | | WATER VALVE |
| | TOP OF BANK | | STORM DRAIN MANHOLE |
| | BUILDING OR STRUCTURE | | WASTE WATER MANHOLE |
| | FOUND MONUMENT | | |
| WM | WATER METER | | |
| | FIRE HYDRANT | | |
| | WATER VALVE | | |
| | POWER POLE | | |
| WW | WASTE WATER MANHOLE | | |
| | DELINEATED WETLAND | | |




## UTILITY CONSTRUCTION NOTES

(202) FURNISH AND INSTALL 8" PVC C-900 (DR-18) WATERLINE W/ TRACER WIRE PER TRENCH DETAILS 5 & 7, SHEET C501N.

(204) FURNISH AND INSTALL NEW 8" MUELLER RESILIANT WEDGE GATE VALVE (OR APPROVED EQUAL) AND VALVE BOX PER DETAIL 3, SHEET C503N.

(207) 12" MUNICIPAL WATER WELL BY OTHERS.

(208) MUNICIPAL WATER WELLHOUSE. SEE STRUCTURAL PLANS.

(209) WATER CONNECTION POINT. SEE MECHANICAL PLANS AND DETAILS.

(221) BORE AND INSTALL 8" PVC C-900 (DR-18) WATERLINE WITH NECESSARY COUPLINGS UNDER DELINEATED WETLAND DRAINAGE. CONTRACTOR SHALL NOT DISTURB ANY AREA WITHIN 10' OF DELINEATED WETLAND BOUNDARY.

(401) FURNISH AND INSTALL 18" CORRUGATED HDPE PIPE.

(504) APPROXIMATE LOCATION OF UTILITY TRENCH. TRENCH PER DETAILS 4, 5 & 7, SHEET C501N. FURNISH AND INSTALL ELECTRICAL CONDUIT. SEE ELECTRICAL PLANS FOR SIZE AND QUANTITY.

## NOTE:

1. A LINN COUNTY CONDITIONAL USE PERMIT IS REQUIRED PRIOR TO ANY SITE CONSTRUCTION AS WELL AS A LINN COUNTY FACILITY PERMIT PRIOR TO ALL WORK WITHIN THE PEORIA ROAD RIGHT-OF-WAY.

## UTILITY NOTES

1. CONTRACTOR TO POTHOLE EXISTING UTILITIES TO VERIFY DEPTH AND SIZE. NOTIFY ENGINEER OF ANY DISCREPANCIES OR CONFLICTS AT LEAST 48 HOURS BEFORE EXCAVATION/CONSTRUCTION.
2. CONTRACTOR TO COORDINATE WITH PACIFIC POWER FOR ALL ELECTRIC UTILITY CONNECTIONS AND DEVICES.
3. CONTRACTOR TO COORDINATE WITH CITY OF HARRISBURG PUBLIC WORKS FOR ALL WATER UTILITY CONNECTIONS AND DEVICES.

## WATER LINE NOTES

1. ALL WATER LINE JOINTS SHALL BE RESTRAINED BY MECHANICAL JOINT RESTRAINTS AS REQUIRED.

## SPECIFICATIONS NOTES

1. WATERLINE AND SANITARY LINE BORINGS ON PRIVATE PROPERTY SHALL BE PER ODOT STANDARD SPECIFICATIONS.

GRAPHIC SCALE
30 0 15 30 60
( IN FEET )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Since 1977
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Springfield, OR 97477
p: 541.746.0637
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|---|---|---|---|
| 1 | 7/27/2021 | CM | WELLHOUSE NOTE |

NOTICE
0 ½ 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

CM DESIGNED
C107 DRAWN
DG CHECKED

REGISTERED PROFESSIONAL ENGINEER
#62780PE
DIGITALLY SIGNED
OREGON
JULY 13, 2006
DAMIEN GILBERT
EXPIRES: JUNE 30, 2023

murraysmith

CITY OF HARRISBURG Established 1866

**WTP DESIGN NORTH & SOUTH**
TAX MAP: 15S04W04 TAX LOT: 600
TAX MAP: 15S04W09 TAX LOT: 700

**NORTH UTILITY PLAN**

PROJECT NO.: 20-0028.300 | SCALE: AS SHOWN | DATE: JULY 2021

SHEET C104N

Z:\2020\20-0096 Harrisburg WTP Sites\Civil Design\NORTH\20-0096 CIVIL PLAN NORTH.dwg 7/28/2021 8:52 AM CHRISM

## LEGEND

| EXISTING | | PROPOSED | |
|---|---|---|---|
| | PROPERTY LINE | SD SD | STORM DRAIN LINE |
| | EDGE OF ASPHALT | WW | WASTE WATER LINE |
| 303 | CONTOUR LINE | RW | RAW WATER LINE |
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| (E)SD | STORM DRAIN LINE | | EDGE OF ASPHALT |
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| (E)OHW | OVER HEAD POWER | | CONCRETE |
| (E)T | TELEPHONE LINE | | WATER VAULT |
| (E)E | UNDERGROUND ELECTRICAL LINE | | WATER METER |
| | BOTTOM OF DITCH | | WATER VALVE |
| | TOP OF BANK | | STORM DRAIN MANHOLE |
| | BUILDING OR STRUCTURE | | WASTE WATER MANHOLE |
| | FOUND MONUMENT | | |
| WM | WATER METER | | |
| | FIRE HYDRANT | | |
| | WATER VALVE | | |
| | POWER POLE | | |
| WW | WASTE WATER MANHOLE | | |
| | DELINEATED WETLAND | | |

GRAPHIC SCALE
30 0 15 30 60
( IN FEET )

## NOTE:

1. A LINN COUNTY CONDITIONAL USE PERMIT IS REQUIRED PRIOR TO ANY SITE CONSTRUCTION AS WELL AS A LINN COUNTY FACILITY PERMIT PRIOR TO ALL WORK WITHIN THE PEORIA ROAD RIGHT-OF-WAY.

## UTILITY NOTES

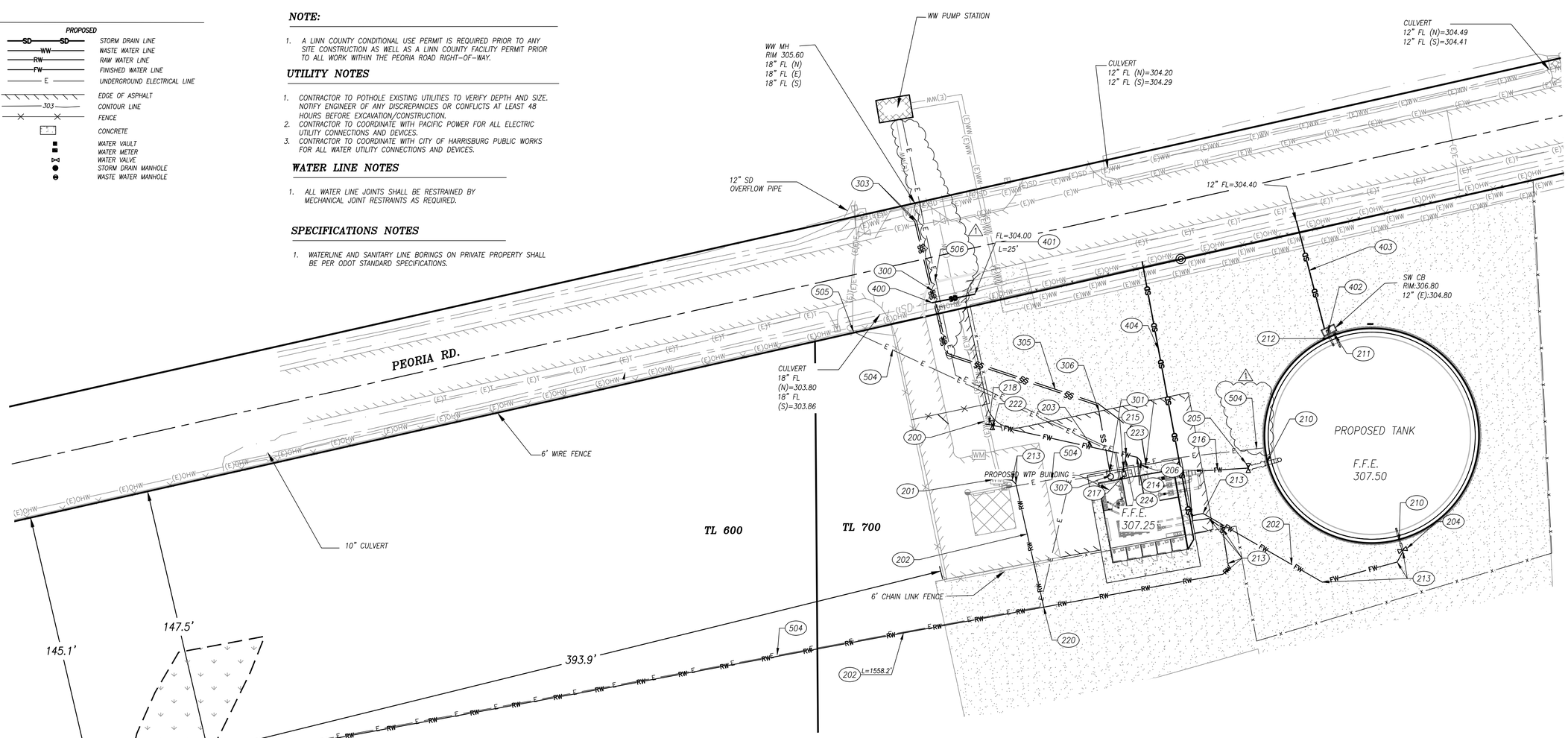
1. CONTRACTOR TO POTHOLE EXISTING UTILITIES TO VERIFY DEPTH AND SIZE. NOTIFY ENGINEER OF ANY DISCREPANCIES OR CONFLICTS AT LEAST 48 HOURS BEFORE EXCAVATION/CONSTRUCTION.
2. CONTRACTOR TO COORDINATE WITH PACIFIC POWER FOR ALL ELECTRIC UTILITY CONNECTIONS AND DEVICES.
3. CONTRACTOR TO COORDINATE WITH CITY OF HARRISBURG PUBLIC WORKS FOR ALL WATER UTILITY CONNECTIONS AND DEVICES.

## WATER LINE NOTES

1. ALL WATER LINE JOINTS SHALL BE RESTRAINED BY MECHANICAL JOINT RESTRAINTS AS REQUIRED.

## SPECIFICATIONS NOTES

1. WATERLINE AND SANITARY LINE BORINGS ON PRIVATE PROPERTY SHALL BE PER ODOT STANDARD SPECIFICATIONS.




## UTILITY CONSTRUCTION NOTES

(200) CONNECTION TO WATER MAIN. FURNISH AND INSTALL 12"x12" FLANGED TEE. CONNECT 12" PVC C-900 (DR-18) WATERLINE TO EXISTING 12" WATERLINE MAIN USING APPROPRIATE COUPLINGS. RESTRAIN ALL JOINTS WITHIN 7' OF ALL CONNECTIONS AND/OR FITTINGS. COORDINATE WITH CITY OF HARRISBURG PUBLIC WORKS.

(201) CONNECT TO EXISTING WATER METER. COORDINATE WITH CITY OF HARRISBURG PUBLIC WORKS.

(202) FURNISH AND INSTALL 8" PVC C-900 (DR-18) WATERLINE W/ TRACER WIRE PER TRENCH DETAILS 5 & 7 SHEET C501N.

(203) FURNISH AND INSTALL 12" PVC C-900 (DR-18) WATERLINE W/ TRACER WIRE PER TRENCH DETAILS 4 & 5, SHEET C501N.

(204) FURNISH AND INSTALL NEW 8" MUELLER RESILIANT WEDGE GATE VALVE (OR APPROVED EQUAL) AND VALVE BOX PER DETAIL 3, SHEET 503N.

(205) FURNISH AND INSTALL NEW 24" MUELLER RESILIANT WEDGE GATE VALVE (OR APPROVED EQUAL) AND VALVE BOX PER DETAIL 3, SHEET 503N.

(206) WATER CONNECTION POINT TO BUILDING. SEE TREATMENT PLUMBING PLANS.

(210) WATER CONNECTION POINT TO STORAGE TANK. SEE MECHANICAL AND TANK CONSTRUCTION PLANS.

(211) WATER STORAGE TANK OVERFLOW 8" CONNECTION POINT. SEE MECHANICAL AND TANK CONSTRUCTION PLANS.

(212) WATER STORAGE TANK DRAIN 6" CONNECTION POINT. SEE MECHANICAL AND TANK CONSTRUCTION PLANS.

(213) FURNISH AND INSTALL 8" 45 DEGREE ELBOW AND NECESSARY COUPLINGS. RESTRAIN ALL JOINTS WITHIN 5' OF ELBOW.

(214) FURNISH AND INSTALL 12" 45 DEGREE ELBOW AND NECESSARY COUPLINGS. RESTRAIN ALL JOINTS WITHIN 7' OF ELBOW.

(215) FURNISH AND INSTALL NEW 1" WATER SERVICE PER DETAIL 3, SHEET C501N WITH CITY OF HARRISBURG PRE-APPROVED MATERIALS: SERVICE PIPE (1" POLYETHYLENE SDR 7) AND CORPORATION STOP (1" MUELLER) SERVICE SADDLES, BEDDING AND BACKFILL TO BE CRUSHED QUARRY ROCK, METER BOX (ARMORCAST PRODUCTS 12"x20"x12" A6000485) METER LID (ARMORCAST PRODUCTS 12"X20"X1 1/2" COVER A6000484-H2), METER (SENSUS 1" iPEARL), METER VALVE (1"X1" MUELLER 300 BALL ANGLE METER).

(216) FURNISH AND INSTALL 24" PVC C-900 (DR-18) WATERLINE W/ TRACER WIRE PER TRENCH DETAILS 3 & 4, SHEET C501N.

(217) FURNISH AND INSTALL 1" ZURN 350XL DOUBLE CHECK BACKFLOW PREVENTER FOR DOMESTIC WATER LINE IN ARMORCAST PRODUCTS BOX/LID ASSEMBLY (17"X30"X22" A600164TAPCX22/A600164HDAPCX22).

(218) FURNISH AND INSTALL 12" 22.5 DEGREE ELBOW AND NECESSARY COUPLINGS. RESTRAIN ALL JOINTS WITHIN 4' OF ELBOW.

(220) FURNISH AND INSTALL 8"x8" TEE AND NECESSARY COUPLINGS. RESTRAIN ALL JOINTS WITHIN 2' OF TEE.

(221) BORE AND INSTALL 8" PVC C-900 (DR-18) WATERLINE WITH NECESSARY COUPLINGS UNDER DELINEATED WETLAND DRAINAGE. CONTRACTOR SHALL NOT DISTURB ANY AREA WITHIN 10' OF DELINEATED WETLAND BOUNDARY.

(222) FURNISH AND INSTALL NEW 12" MUELLER RESILIANT WEDGE GATE VALVE (OR APPROVED EQUAL) AND VALVE BOX PER DETAIL 3, SHEET 503N.

(223) TAP 12" WATER LINE WITH TAPPING SLEEVE AND CORPORATION STOP (1" MUELLER OR APPROVED EQUAL).

(224) FURNISH AND INSTALL 1" POLYETHYLENE SDR 7 WATERLINE W/ TRACER WIRE PER TRENCH DETAILS 4 & 5, SHEET C501S.

(300) BORE 2" AND 4" SANITARY PRESSURE LINES BENEATH PEORIA RD. FOR CONNECTION TO EXISTING SANITARY MANHOLE.

(301) WASTEWATER CONNECTION POINT TO BUILDING. SEE PLUMBING PLANS.

(303) CUT 2" AND 4" SANITARY PRESSURE LINES HOLES INTO EXISTING MANHOLE. CONSTRUCT INSIDE DROP PIPING PER ODOT STANDARD DRAWING RD350. GROUT AROUND NEW PIPE CONNECTIONS.

(305) FURNISH AND INSTALL 4" PVC SCHEDULE 40 D-1785 WASTEWATER PRESSURE PIPE WITH TRACER WIRE. TRENCH PER DETAILS 4 & 5, SHEET C501N.

(306) FURNISH AND INSTALL 2" PVC SCHEDULE 40 D-1785 WASTEWATER PRESSURE PIPE WITH TRACER WIRE. TRENCH PER DETAILS 4 & 5, SHEET C501N.

(307) FURNISH AND INSTALL MODEL #D3648LSG202 LIBERTY PUMPS GRINDER PUMP SYSTEM (OR APPROVED EQUAL).

(400) CONNECT 18" CORRUGATED HDPE PIPE TO EXISTING 18" PIPE USING MARMAC OR APPROVED ALTERNATIVE COUPLER.

(401) FURNISH AND INSTALL 18" CORRUGATED HDPE PIPE.

(402) FURNISH AND INSTALL 2-36"x36" OLD CASTLE CATCH BASINS PER DETAIL 2, SHEET C502N. CUTOUT 18" CONNECTION AT SUMP INVERT ON ADJOINING KNOCK OUT WALLS TO ALLOW HYDRAULIC CONNECTIVITY. USE NON-SHRINK GROUT TO SEAL WALLS AND PIPE WATER TIGHT.

(403) FURNISH AND INSTALL 12" PVC D-3034 STORM DRAIN PIPE WITH TRACER WIRE. TRENCH PER DETAILS 4 & 5, SHEET C501N.

(404) FURNISH AND INSTALL 4" PVC D-3034 STORM DRAIN PIPE WITH TRACER WIRE. TRENCH PER DETAILS 5 & 7, SHEET C501N.

(504) APPROXIMATE LOCATION OF UTILITY TRENCH. TRENCH PER DETAILS 4 & 5, SHEET C501N. FURNISH AND INSTALL ELECTRICAL CONDUIT. SEE ELECTRICAL PLANS FOR SIZE AND QUANTITY.

(505) CONTRACTOR TO COORDINATE WITH PACIFIC POWER FOR CONNECTION TO OVERHEAD POWER AT POWER POLE.

(506) BORE 1" ELECTRICAL CONDUIT LINE BENEATH PEORIA RD. FOR CONNECTION TO EXISTING SANITARY LIFT STATION.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| NO. | DATE | BY | REVISION |
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| 1 | 7/27/2021 | CM | ELECTRICAL CONDUIT |

NOTICE
0 ½ 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

CM DESIGNED
CM DRAWN
DG CHECKED

REGISTERED PROFESSIONAL ENGINEER #62780PE DIGITALLY SIGNED OREGON JULY 13, 2007 DAMIEN GILBERT
EXPIRES: JUNE 30, 2023

murraysmith

CITY OF HARRISBURG Established 1866

**WTP DESIGN NORTH & SOUTH**
TAX MAP: 15S04W04 TAX LOT: 600
TAX MAP: 15S04W09 TAX LOT: 700

**NORTH UTILITY PLAN**

PROJECT NO.: 20-0028.300 | SCALE: AS SHOWN | DATE: JULY 2021

SHEET C105N

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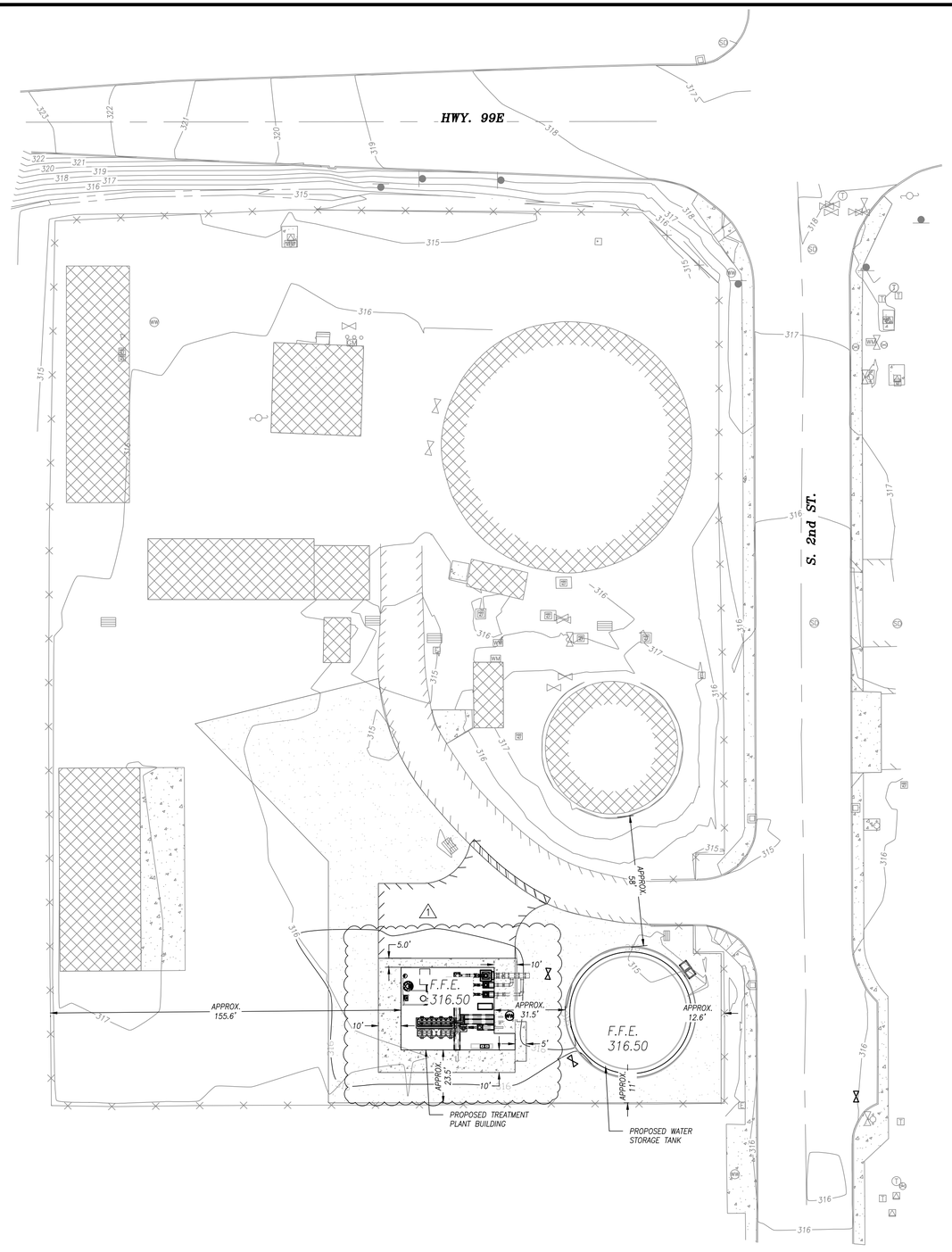


## LEGEND

| EXISTING | PROPOSED |
|---|---|
| EDGE OF ASPHALT | EDGE OF ASPHALT |
| CONTOUR LINE | CONTOUR LINE |
| FENCE | CONCRETE |
| BOTTOM OF DITCH | FINISHED WATER LINE |
| BUILDING | WATER METER |
| CONCRETE | WATER VALVE |
| WATER VAULT | WASTE WATER MANHOLE |
| WATER METER | |
| FIRE HYDRANT | |
| WATER VALVE | |
| POWER POLE | |
| STORM DRAIN MANHOLE | |
| WASTE WATER MANHOLE | |
| TRANSFORMER | |
| ELECTRICAL VAULT | |
| GAS METER | |
| GAS VALVE | |
| BOLLARD | |
| TELEPHONE MANHOLE | |
| TELEPHONE RISER | |
| SIGN | |

GRAPHIC SCALE
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( IN FEET )

| NO. | DATE | BY | REVISION |
|---|---|---|---|
| 1 | 7/27/2021 | CM | SIDEWALK DIMENSIONS |

NOTICE
0 ½ 1
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CM DESIGNED
CM DRAWN
DG CHECKED

REGISTERED PROFESSIONAL ENGINEER
#62780PE
DIGITALLY SIGNED
OREGON
JULY 13, 2007
DAMIEN GILBERT
EXPIRES: JUNE 30, 2023

murraysmith

CITY OF HARRISBURG Established 1866

**WTP DESIGN**
**NORTH & SOUTH**
*TAX MAP: 15S04W16D TAX LOT: 203 & 5600*

# SOUTH SITE PLAN

PROJECT NO.: 20-0028.300 | SCALE: AS SHOWN | DATE: JULY 2021

SHEET
C101S

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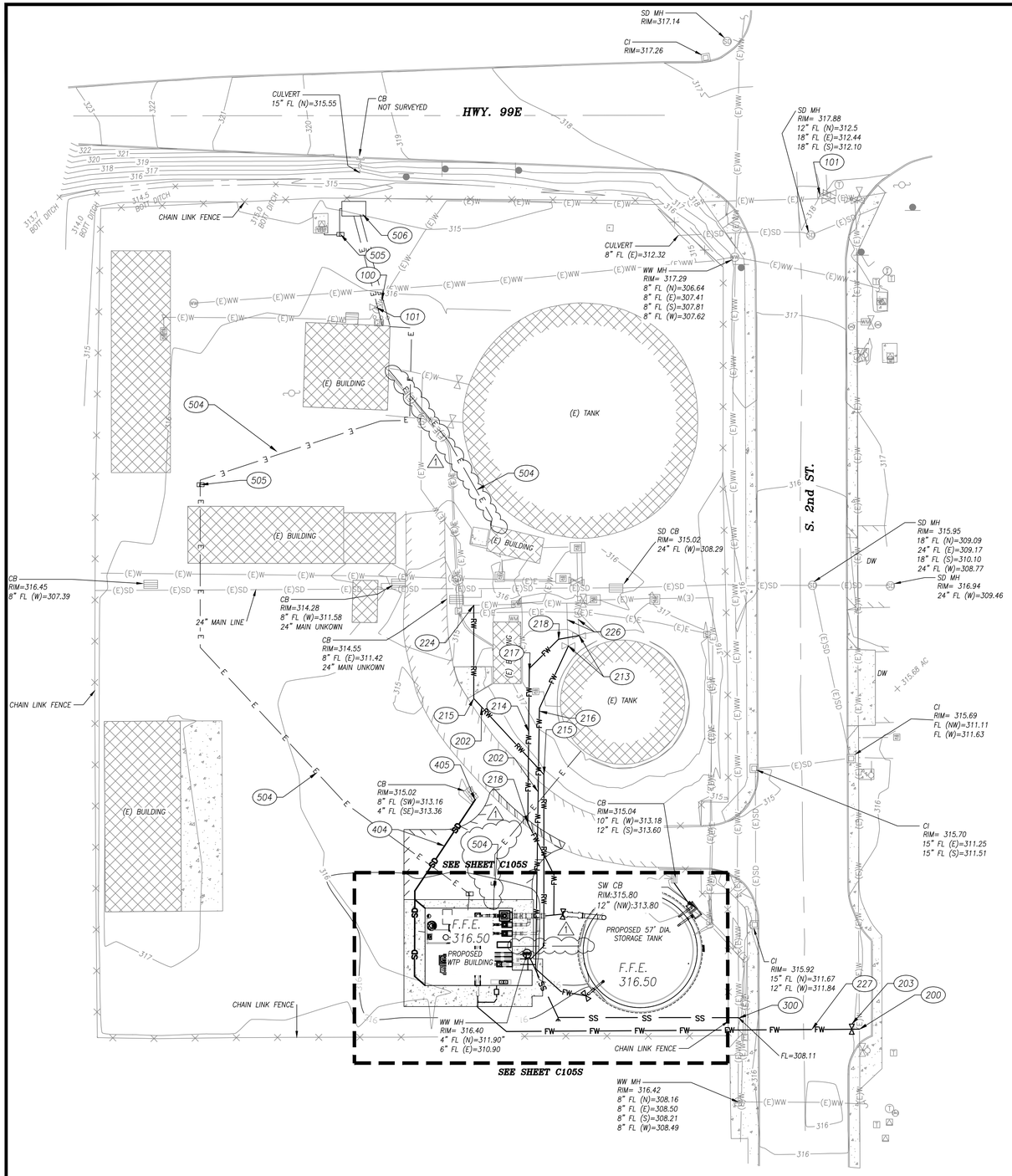


## UTILITY NOTES

1. CONTRACTOR TO POTHOLE EXISTING UTILITIES TO VERIFY DEPTH AND SIZE. NOTIFY ENGINEER OF ANY DISCREPANCIES OR CONFLICTS AT LEAST 48 HOURS BEFORE EXCAVATION/CONSTRUCTION.
2. CONTRACTOR TO COORDINATE WITH PACIFIC POWER FOR ALL ELECTRIC UTILITY CONNECTIONS AND DEVICES.
3. CONTRACTOR TO COORDINATE WITH CITY OF HARRISBURG PUBLIC WORKS FOR ALL WATER UTILITY CONNECTIONS AND DEVICES.

## NOTE:

1. ANY WORK WITHIN THE PEORIA ROAD RIGHT-OF-WAY IS SUBJECT TO ODOT STANDARD SPECIFICATIONS.

## WATER LINE NOTES

1. ALL WATER LINE JOINTS SHALL BE RESTRAINED BY MECHANICAL JOINT RESTRAINTS AS REQUIRED.
2. ALL ABANDONED LINES ABANDONED IN PLACE SHALL HAVE ALL OPENINGS CLOSED WITH CONCRETE PLUGS WITH A MINIMUM LENGTH OF 2 TIMES THE DIAMETER OF THE PIPE.

## LEGEND

| EXISTING | | PROPOSED | |
|---|---|---|---|
| | EDGE OF ASPHALT | SD SD | STORM DRAIN LINE |
| 303 | CONTOUR LINE | SS | WASTE WATER LINE |
| X X | FENCE | RW | RAW WATER LINE |
| (E)SD | STORM DRAIN LINE | FW | FINISHED WATER LINE |
| (E)WW | WASTE WATER LINE | (E)E | UNDERGROUND ELECTRICAL LINE |
| (E)W | WATER LINE | | EDGE OF ASPHALT |
| (E)OHW | OVER HEAD POWER | 303 | CONTOUR LINE |
| (E)T | TELEPHONE LINE | X X | FENCE |
| (E)E | UNDERGROUND ELECTRICAL LINE | | CONCRETE |
| | BOTTOM OF DITCH | WV | WATER VAULT |
| | BUILDING | WM | WATER METER |
| | CONCRETE | | WATER VALVE |
| WV | WATER VAULT | SD | STORM DRAIN MANHOLE |
| WM | WATER METER | WW | WASTE WATER MANHOLE |
| | FIRE HYDRANT | | |
| | WATER VALVE | | |
| | POWER POLE | | |
| SD | STORM DRAIN MANHOLE | | |
| WW | WASTE WATER MANHOLE | | |
| | TRANSFORMER | | |
| E | ELECTRICAL VAULT | | |
| GM | GAS METER | | |
| | GAS VALVE | | |
| | BOLLARD | | |
| T | TELEPHONE MANHOLE | | |
| T | TELEPHONE RISER | | |
| | SIGN | | |

## UTILITY CONSTRUCTION NOTES

(100) CUT EXISTING WATER LINE. REMOVE PIPE SECTION LARGE ENOUGH TO PLUG WATER LINE WITH CONCRETE. FILL DEPTH TO BE 2X THE PIPE DIAMETER.

(101) REMOVE VALVE LID AND SHUT VALVE OFF. PLUG EXISTING GATE VALVE BOX WITH CONCRETE. GRADE CONCRETE TO MATCH ADJACENT EXISTING GRADE.

(200) HOT TAP EXISTING WATER MAIN WITH TAPPING SLEEVE (12" MUELLER W/MECHANICAL JOINT TAPPING SLEEVE OR APPROVED EQUAL) AND 12" TAPPING VALVE (MUELLER RESILIANT WEDGE TAPPING VALVE OR APPROVED EQUAL). RESTRAIN ALL JOINTS WITHIN 16' OF HOT TAP. COORDINATE WITH CITY OF HARRISBURG PUBLIC WORKS.

(202) FURNISH AND INSTALL 8" PVC C-900 (DR-18) WATERLINE W/ TRACER WIRE PER TRENCH DETAILS 4 & 5, SHEET C501S.

(203) FURNISH AND INSTALL VALVE BOX PER DETAIL 3, SHEET C503S.

(213) CONNECTION TO EXISTING WATER TANK WEDGE GATE VALVE.

(214) FURNISH AND INSTALL 24" PVC C-900 (DR-18) WATERLINE W/ TRACER WIRE PER TRENCH DETAILS 4 & 5, SHEET C501S.

(215) FURNISH AND INSTALL 8" 45 DEGREE ELBOW AND NECESSARY COUPLINGS. RESTRAIN ALL JOINTS WITHIN 5' OF ELBOW.

(216) FURNISH AND INSTALL 8" 22.5 DEGREE ELBOW AND NECESSARY COUPLINGS. RESTRAIN ALL JOINTS WITHIN 3' OF ELBOW.

(217) FURNISH AND INSTALL 24" 45 DEGREE ELBOW AND NECESSARY COUPLINGS. RESTRAIN ALL JOINTS WITHIN 13' OF ELBOW.

(218) FURNISH AND INSTALL 24" 22.5 DEGREE ELBOW AND NECESSARY COUPLINGS. RESTRAIN ALL JOINTS WITHIN 6' OF ELBOW.

(224) FURNISH AND INSTALL 8"X8" TEE AND NECESSARY COUPLINGS. RESTRAIN ALL JOINTS WITHIN 2' OF TEE.

(226) ABANDON EXISTING WATER LINE IN PLACE

(227) FURNISH AND INSTALL 12" PVC C-900 (DR-18) WATERLINE W/ TRACER WIRE PER TRENCH DETAIL 1, SHEET C504S.

(300) CONNECT TO EXISTING 8" WASTEWATER PIPE. PROVIDE 8" X 6" TEE. CONNECT 6" PVC D-3034 WASTEWATER PIPE WITH 45 DEGREE ELBOW, REDUCER AND NECESSARY COUPLINGS.

(404) FURNISH AND INSTALL 4" PVC D-3034 STORM DRAIN PIPE WITH TRACER WIRE. TRENCH PER DETAILS 4 & 5, SHEET C501S.

(405) CUT 4" STORM DRAIN HOLE INTO EXISTING CATCH BASIN. NON SHRINK-GROUT AROUND NEW PIPE CONNECTION.

(504) APPROXIMATE LOCATION OF JOINT-UTILITY TRENCH. TRENCH PER DETAILS 4 & 5, SHEET C501S. FURNISH AND INSTALL ELECTRICAL CONDUIT. SEE ELECTRICAL PLANS FOR SIZE AND QUANTITY.

(505) APPROXIMATE LOCATION OF ELECTRICAL HANDHOLE BOX. SEE ELECTRICAL PLANS AND COORDINATE WITH ELECTRICAL ENGINEER FOR INSTALLATION.

(506) APPROXIMATE LOCATION OF NEW GENERATOR AND TRANSFER SWITCH. SEE ELECTRICAL PLANS FOR DETAILS AND INSTALLATION.

GRAPHIC SCALE
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( IN FEET )

| NO. | DATE | BY | REVISION |
|---|---|---|---|
| 1 | 7/27/2021 | CM | ELECTRICAL CONDUIT |

NOTICE
0 ½ 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

CM DESIGNED
CM DRAWN
DG CHECKED

REGISTERED PROFESSIONAL ENGINEER #62780PE DIGITALLY SIGNED OREGON JULY 13, 2010 DAMIEN GILBERT
EXPIRES: JUNE 30, 2023

murraysmith

CITY OF HARRISBURG Established 1866

**WTP DESIGN NORTH & SOUTH**
*TAX MAP: 15S04W16D TAX LOT: 203 & 5600*

**SOUTH UTILITY PLAN**

PROJECT NO.: 20-0028.300 | SCALE: AS SHOWN | DATE: JULY 2021

SHEET C104S

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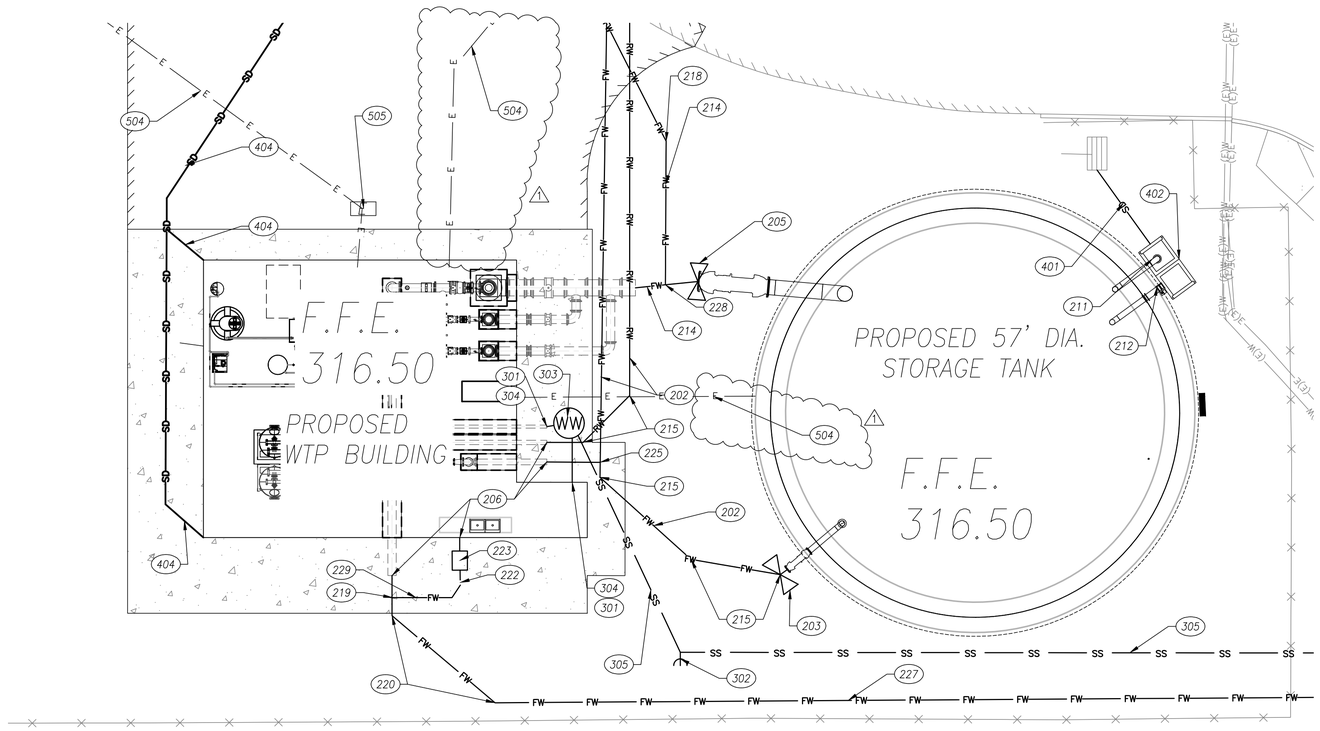


## UTILITY NOTES

1. CONTRACTOR TO POTHOLE EXISTING UTILITIES TO VERIFY DEPTH AND SIZE. NOTIFY ENGINEER OF ANY DISCREPANCIES OR CONFLICTS AT LEAST 48 HOURS BEFORE EXCAVATION/CONSTRUCTION.
2. CONTRACTOR TO COORDINATE WITH PACIFIC POWER FOR ALL ELECTRIC UTILITY CONNECTIONS AND DEVICES.
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## NOTE:

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## WATER LINE NOTES

1. ALL WATER LINE JOINTS SHALL BE RESTRAINED BY MECHANICAL JOINT RESTRAINTS AS REQUIRED.

## LEGEND

| EXISTING | | PROPOSED | |
|---|---|---|---|
| | EDGE OF ASPHALT | SD SD | STORM DRAIN LINE |
| 303 | CONTOUR LINE | SS | WASTE WATER LINE |
| X X | FENCE | RW | RAW WATER LINE |
| (E)SD | STORM DRAIN LINE | FW | FINISHED WATER LINE |
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| (E)W | WATER LINE | | EDGE OF ASPHALT |
| (E)OHW | OVER HEAD POWER | 303 | CONTOUR LINE |
| (E)T | TELEPHONE LINE | X X | FENCE |
| (E)E | UNDERGROUND ELECTRICAL LINE | | CONCRETE |
| | BOTTOM OF DITCH | WV | WATER VAULT |
| | BUILDING | WM | WATER METER |
| | CONCRETE | | WATER VALVE |
| WV | WATER VAULT | SD | STORM DRAIN MANHOLE |
| WM | WATER METER | WW | WASTE WATER MANHOLE |
| | FIRE HYDRANT | | |
| | WATER VALVE | | |
| | POWER POLE | | |
| SD | STORM DRAIN MANHOLE | | |
| WW | WASTE WATER MANHOLE | | |
| | TRANSFORMER | | |
| EV | ELECTRICAL VAULT | | |
| GM | GAS METER | | |
| | GAS VALVE | | |
| | BOLLARD | | |
| T | TELEPHONE MANHOLE | | |
| T | TELEPHONE RISER | | |
| | SIGN | | |

## UTILITY CONSTRUCTION NOTES

(202) FURNISH AND INSTALL 8" PVC C-900 (DR-18) WATERLINE W/ TRACER WIRE PER TRENCH DETAILS 4 & 5, SHEET C501S.

(203) FURNISH AND INSTALL 8" MUELLER RESILIANT WEDGE GATE VALVE (OR APPROVED EQUAL) AND VALVE BOX PER DETAIL 3, SHEET 503S.

(205) FURNISH AND INSTALL 24" MUELLER RESILIANT WEDGE GATE VALVE (OR APPROVED EQUAL) AND VALVE BOX PER DETAIL 3, SHEET 503S.

(206) WATER CONNECTION POINT. SEE MECHANICAL PLANS AND DETAILS.

(211) WATER STORAGE TANK OVERFLOW 8" CONNECTION POINT. SEE MECHANICAL AND TANK CONSTRUCTION PLANS.

(212) WATER STORAGE TANK DRAIN 6" CONNECTION POINT. SEE MECHANICAL AND TANK CONSTRUCTION PLANS.

(214) FURNISH AND INSTALL 24" PVC C-900 (DR-18) WATERLINE W/ TRACER WIRE PER TRENCH DETAILS 4 & 5, SHEET C501S.

(215) FURNISH AND INSTALL 8" 45 DEGREE ELBOW AND NECESSARY COUPLINGS. RESTRAIN ALL JOINTS WITHIN 5' OF ELBOW.

(218) FURNISH AND INSTALL 24" 22.5 DEGREE ELBOW AND NECESSARY COUPLINGS. RESTRAIN ALL JOINTS WITHIN 6' OF ELBOW.

(219) TAP 12" WATER LINE WITH TAPPING SLEEVE AND CORPORATION STOP (1" MUELLER OR APPROVED EQUAL).

(220) FURNISH AND INSTALL 12" 45 DEGREE ELBOW AND NECESSARY COUPLINGS. RESTRAIN ALL JOINTS WITHIN 7' OF ELBOW.

(222) FURNISH AND INSTALL NEW ¾" WATER SERVICE PER DETAIL 3, SHEET C501N WITH CITY OF HARRISBURG PRE-APPROVED MATERIALS: SERVICE PIPE (1" POLYETHYLENE SDR 7) AND CORPORATION STOP (1" MUELLER) SERVICE SADDLES, BEDDING AND BACKFILL TO BE CRUSHED QUARRY ROCK, METER BOX (ARMORCAST PRODUCTS 12"x20"x12" A6000485) METER LID (ARMORCAST PRODUCTS 12"X20"X1 ½" COVER A6000484-H2), METER (SENSUS ¾" iPEARL), METER VALVE (1"X¾" MUELLER 300 BALL ANGLE METER).

(223) FURNISH AND INSTALL 1" ZURN 350XL DOUBLE CHECK BACKFLOW PREVENTER FOR DOMESTIC WATER LINE IN ARMORCAST PRODUCTS BOX/LID ASSEMBLY (17"X30"X22" A600164TAPCX22/A600164HDAPCX22).

(225) FURNISH AND INSTALL 8"x8" TEE AND NECESSARY COUPLINGS. RESTRAIN ALL JOINTS WITHIN 3' OF TEE.

(227) FURNISH AND INSTALL 12" PVC C-900 (DR-18) WATERLINE W/ TRACER WIRE PER TRENCH DETAILS 4 & 5, SHEET C501S.

(228) FURNISH AND INSTALL 24"x24" TEE AND NECESSARY COUPLINGS. RESTRAIN ALL JOINTS WITHIN 25' OF TEE.

(229) FURNISH AND INSTALL 1" POLYETHYLENE SDR 7 WATERLINE W/ TRACER WIRE PER TRENCH DETAILS 4 & 5, SHEET C501S.

(301) WASTEWATER CONNECTION POINT TO BUILDING. SEE PLUMBING PLANS.

(302) FURNISH AND INSTALL WASTEWATER CLEANOUT PER DETAIL 6, SHEET C501S.

(303) FURNISH AND INSTALL WASTEWATER MANHOLE PER DETAIL 4, SHEET 503S.

(304) FURNISH AND INSTALL 4" PVC D-3034 WASTEWATER PIPE WITH TRACER WIRE. TRENCH PER DETAILS 4 & 5, SHEET C501S.

(305) FURNISH AND INSTALL 6" PVC D-3034 WASTEWATER PIPE WITH TRACER WIRE AT MINIMUM 1% SLOPE. TRENCH PER DETAILS 4 & 5, SHEET C501S.

(401) FURNISH AND INSTALL 12" PVC D-3034 STORM DRAIN PIPE WITH TRACER WIRE AT 1% MINIMUM SLOPE. TRENCH PER DETAILS 4 & 5, SHEET C501S.

(402) FURNISH AND INSTALL 2-36"x36" OLD CASTLE CATCH BASINS PER DETAIL 2, SHEET C502N. CUTOUT 18" CONNECTION AT SUMP INVERT ON ADJOINING KNOCK OUT WALLS TO ALLOW HYDRAULIC CONNECTIVITY. USE NON-SHRINK GROUT TO SEAL WALLS AND PIPE WATER TIGHT.

(404) FURNISH AND INSTALL 4" PVC D-3034 STORM DRAIN PIPE WITH TRACER WIRE AT 1% MINIMUM SLOPE. TRENCH PER DETAILS 4 & 5, SHEET C501S.

(504) APPROXIMATE LOCATION OF JOINT-UTILITY TRENCH. TRENCH PER DETAILS 4 & 5, SHEET C501S. FURNISH AND INSTALL ELECTRICAL CONDUIT. SEE ELECTRICAL PLANS FOR SIZE AND QUANTITY.

(505) APPROXIMATE LOCATION OF ELECTRICAL HANDHOLE BOX. SEE ELECTRICAL PLANS AND COORDINATE WITH ELECTRICAL ENGINEER FOR INSTALLATION.

| NO. | DATE | BY | REVISION |
|---|---|---|---|
| 1 | 7/27/2021 | CM | ELECTRICAL CONDUIT |

NOTICE

0 ½ 1

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

CM DESIGNED
CM DRAWN
DG CHECKED

REGISTERED PROFESSIONAL ENGINEER
#62780PE
DIGITALLY SIGNED
OREGON
JULY 13, 2010
DAMIEN GILBERT
EXPIRES: JUNE 30, 2023

murraysmith

CITY OF HARRISBURG Established 1866

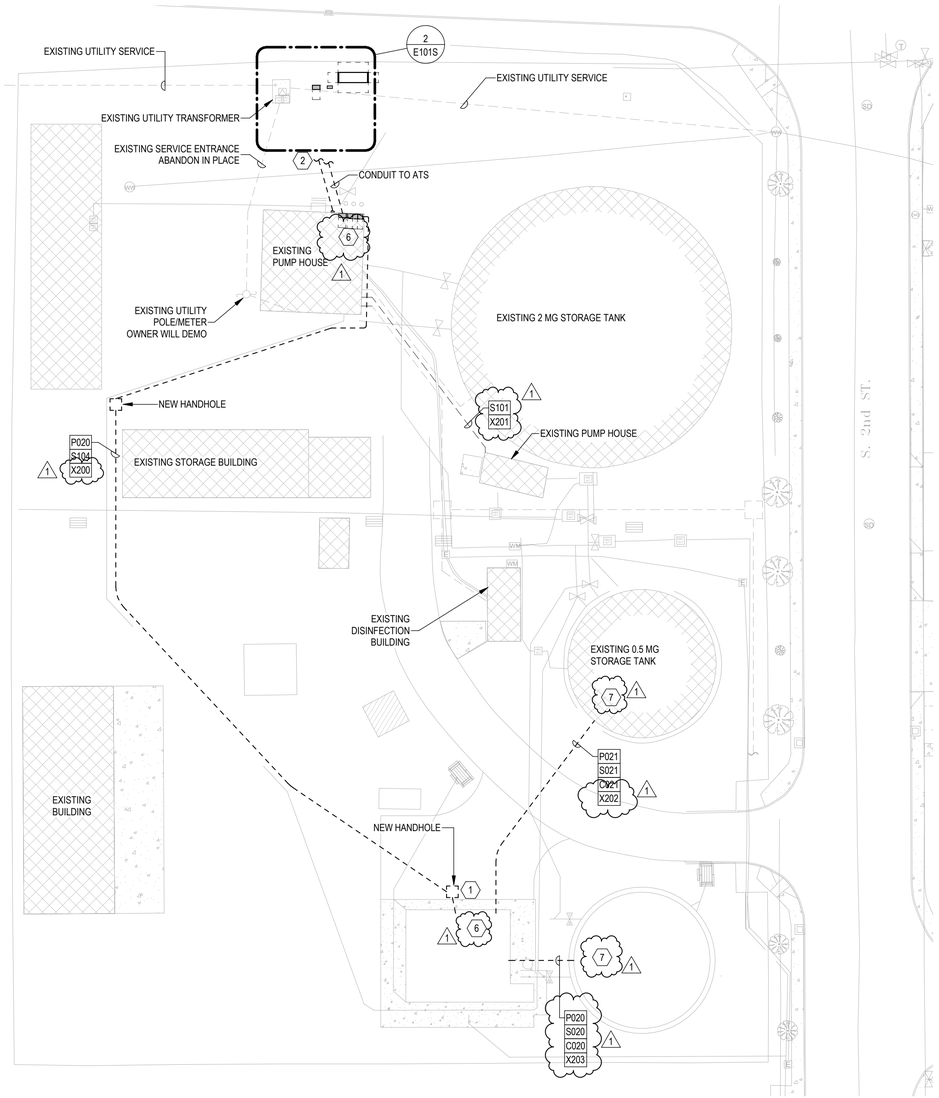
**WTP DESIGN NORTH & SOUTH**
TAX MAP: 15S04W16D TAX LOT: 203 & 5600

**SOUTH UTILITY PLAN**

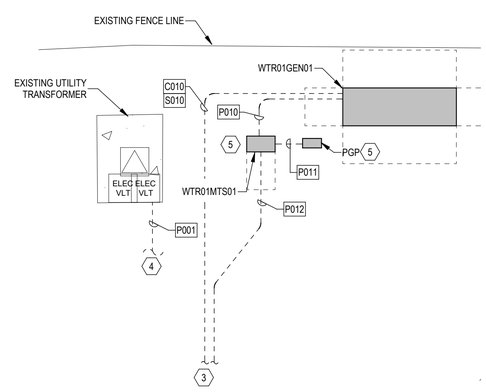
PROJECT NO.: 20-0028.300 | SCALE: AS SHOWN | DATE: JULY 2021

SHEET C105S

Z:\2020\20-009C Harrisburg WTP Sites\Civil Design\South\20-009c CIVIL PLAN SOUTH.dwg 7/29/2021 10:13 AM CHRISM




1 SOUTH SITE PLAN - ELECTRICAL
SCALE: 1" = 30'-0"




2 SOUTH SITE PLAN - ENLARGED GENERATOR VIEW
SCALE: 1/8" = 1'-0"

## GENERAL SHEET NOTES

A. CONTRACTORS RESPONSIBLE FOR GATHERING CORRECT DISTANCES FOR BIDDING PURPOSES.
B. REFER TO DUCT BANK DETAILS FOR UNDERGROUND CONDUIT AND CABLE RUNS. KEEP POWER AND CONTROL/SIGNAL WIRES SEPARATED AS IDENTIFIED IN THE SPECIFICATIONS AND THESE DRAWINGS.
C. REFER TO ELECTRICAL SPECIFICATIONS 26 05 00 FOR NARRATIVE OF PROJECT WORK INCLUDED FOR THIS PROJECT.
D. PROVIDE PULL STRINGS IN ALL SPARE (X) CONDUITS.
E. ALL SECURITY SYSTEM FINISH OUT, DEVICES AND WIRE ARE SUPPLIED BY SEPARATE CONTRACT.

1

## KEYNOTES

1 SEE E103S FOR CONTINUATION
2 SEE DETAIL 2/E101S FOR CONTINUATION
3 SEE DETAIL 1/E101S FOR CONTINUATION
4 PROVIDE NEW UNDERGROUND SERVICE ENTRANCE CONDUCTORS, SEE ONE-LINE. COORDINATE PHASING OF NEW SERVICE CONNECTION WITH SWITCH-OVER SEQUENCING.
5 PROVIDE GALVANIZED UNISTRUT RACK FOR MOUNTING.
6 STUB SPARE SECURITY SYSTEM CONDUIT TO CEILING AREA.
7 RUN SPARE SECURITY SYSTEM CONDUIT TO RESERVIOR HATCH AT TOP OF TANK.

1

Windsor Engineers
Vancouver, WA
Duluth + Minneapolis, MN
www.windsorengineers.com


N

| NO. | DATE | BY | REVISION |
|---|---|---|---|
| 1 | 07/14/2021 | BLA | ADDENDUM 02 |

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

DESIGNED
DRAWN
CHECKED

REGISTERED PROFESSIONAL ENGINEER
90778PE
OREGON
JUNE 30, 2017
THAYER J. HENDRICKSON
Expire: 6/30/2023

murraysmith

Branch ENGINEERING Since 1977
310 5th Street
Springfield, OR 97477
p: 541.746.0637
www.BranchEngineering.com

CITY OF HARRISBURG Established 1866

**WTP DESIGN NORTH & SOUTH**
*TAX MAP: 15S04W04 TAX LOT: 600*
*TAX MAP: 15S04W09 TAX LOT: 700*

# SOUTH PLANT - SITE PLAN

PROJECT NO.: 20064 | SCALE: AS SHOWN | DATE: JUNE 2021

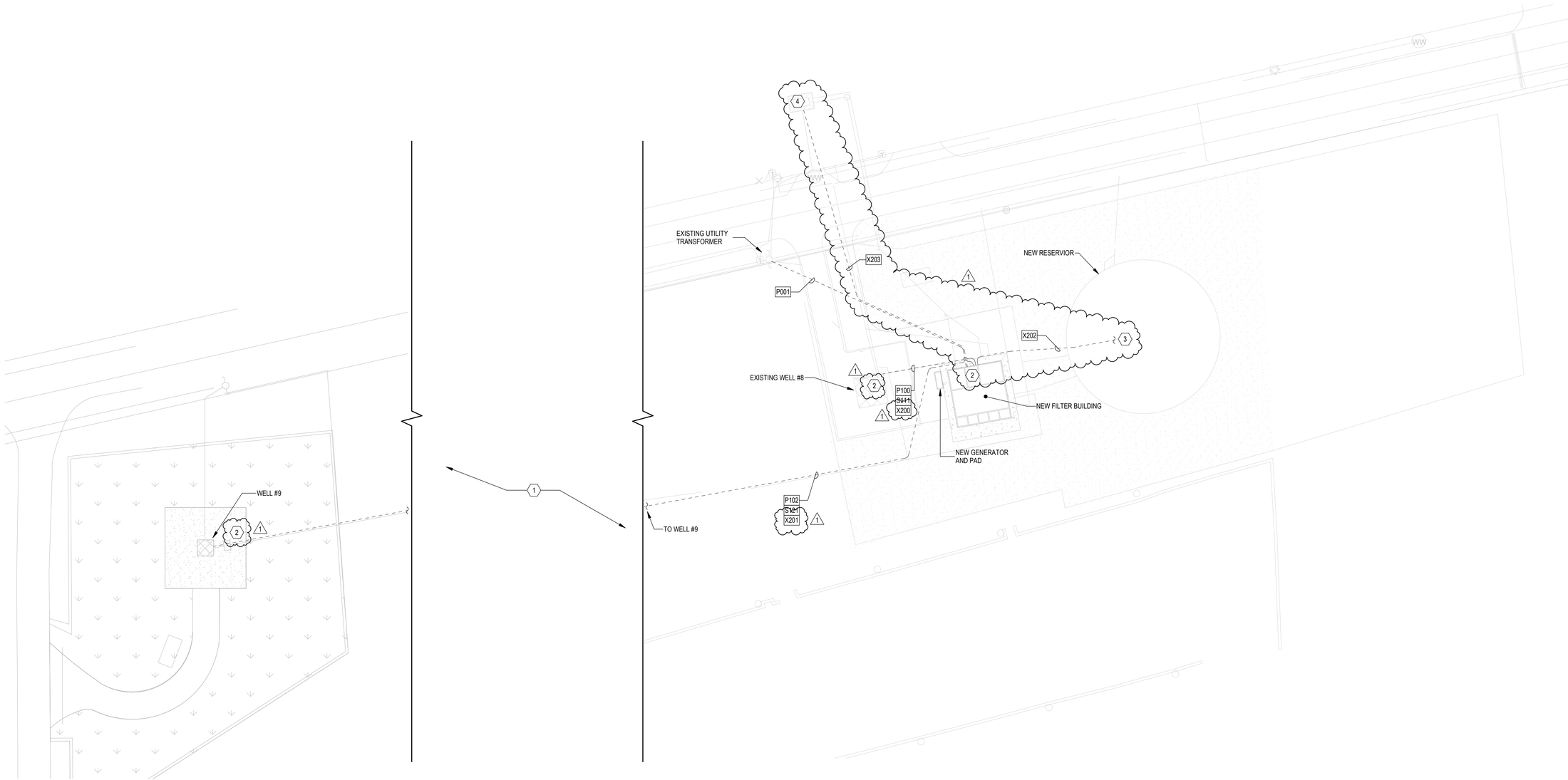
SHEET
E101S

## GENERAL SHEET NOTES

A. CONTRACTORS RESPONSIBLE FOR GATHERING CORRECT DISTANCES FOR BIDDING PURPOSES.
B. REFER TO DUCT BANK DETAILS FOR UNDERGROUND CONDUIT AND CABLE RUNS. KEEP POWER AND CONTROL/SIGNAL WIRES SEPARATED AS IDENTIFIED IN THE SPECIFICATIONS AND THESE DRAWINGS.
C. REFER TO ELECTRICAL SPECIFICATIONS 26 05 00 FOR NARRATIVE OF PROJECT WORK INCLUDED FOR THIS PROJECT.
D. PROVIDE PULL STRINGS IN ALL SPARE (X) CONDUITS.
E. ALL SECURITY SYSTEM FINISH OUT, DEVICES AND WIRE ARE SUPPLIED BY SEPARATE CONTRACT.

## KEYNOTES

1 PORTION OF SITE PLAN REMOVED FOR CLARITY, CONTRACTOR TO VERIFY EXACT DISTANCES. REFER TO CIVIL DRAWINGS FOR MORE DETAIL.
2 STUB SPARE SECURITY SYSTEM CONDUIT TO CEILING AREA.
3 RUN SPARE SECURITY SYSTEM CONDUIT TO RESERVIOR HATCH AT TOP OF TANK.
4 COORDINATE LOCATION OF CONDUIT STUB UP WITH CLIENT FOR THE WASTE WATER LIFT STATION.




1 NORTH SITE PLAN - ELECTRICAL MAIN WTP
SCALE: 1" = 40'-0"

N

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Vancouver, WA
Duluth + Minneapolis, MN
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| NO. | DATE | BY | REVISION |
|---|---|---|---|
| 1 | 07/14/2021 | BLA | ADDENDUM 02 |

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

DESIGNED
DRAWN
CHECKED

REGISTERED PROFESSIONAL ENGINEER 90718PE OREGON JUNE 30, 2017 THAYER J. HENDRICKSON
Expires: 6/30/2023

murraysmith

Branch ENGINEERING INC Since 1977
310 5th Street
Springfield, OR 97477
p: 541.746.0637
www.BranchEngineering.com

CITY OF HARRISBURG Established 1866

**WTP DESIGN NORTH & SOUTH**
TAX MAP: 15S04W04 TAX LOT: 600
TAX MAP: 15S04W09 TAX LOT: 700

# NORTH PLANT - SITE PLAN

| PROJECT NO.: | 20064 | SCALE: | AS SHOWN | DATE: | JUNE 2021 |
|---|---|---|---|---|---|

SHEET
E101N

# 480V POWER CONDUIT AND CABLE SCHEDULE (COPPER)

| CONDUIT NUMBER | | CONDUIT # & SIZE | CONDUIT TYPE | WIRE FILL | WIRE TYPE | FROM | TO | VIA | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| PREFIX | ID | | | | | | | | REFER TO SPECIFCATIONS FOR CONDUIT, CABLING AND WIRE REQUIREMENTS |
| WTR01 | P001 | 3 - 4" | PCV/GRMC | 12-300MCM | XHHW | UTILITY TRANSFORMER | CT/METER | UNDERGROUND (UG) | POWER FOR NEW 800A, 480V, 3PH, 4-WIRE MCC. COORDINATE ALL REQUIREMENTS... |
| WTR01 | P002 | 3 - 4" | GRMC | 12-300MCM | XHHW | CT/METER | WTR01SWG01 | | CT/METER TO SWITCH GEAR CIRCUIT BREAKER |
| WTR01 | P003 | 3 - 4" | GRMC | 12-300MCM | XHHW | WTR01SWG01 | WTR01ATS01 | | SWITCH GEAR CIRCUIT BREAKER TO ATS |
| WTR01 | P010 | 1 - 4" | PVC/GRMC | 4-350MCM | XHHW | WTR01GEN01 | WTR01MTS01 | | STATIONARY BACKUP GEN TO MTS |
| WTR01 | P011 | 1 - 4" | GRMC | 4-350MCM | XHHW | WTR01GEN02 | WTR01MTS01 | | PORTABLE GENERATOR PLUG TO MTS |
| WTR01 | P012 | 1 - 4" | PVC/GRMC | 4-350MCM | XHHW | WTR01MTS01 | WTR01ATS01 | UNDERGROUND (UG) | BU GEN FOR NEW 800A, 480V, 3PH, 4-WIRE MCC |
| WTR01 | P013 | 3 - 4" | GRMC | 12-300MCM | XHHW | WTR01ATS01 | WTR01MCC01 | | ATS TO MCC |
| WTR01 | P020 | 3 - 3" | PVC/GRMC | 8-#4/0, 2-#2GND | XHHW | WTR01MCC01 | WTR01MCC02 | UNDERGROUND (UG) | NEW MMC 1 TO NEW 600A MCC 2 (PROVIDE (1) SPARE CONDUIT) |
| WTR01 | P101 | 1 - 2" | GRMC | 3-#6, #10GND | XHHW | WTR01MCC01 | WTR01_JB01 | | WELL 4 FROM NEW MCC 1 TO SPLICE JNCT BOX |
| WTR01 | P102 | 1 - 2" | GRMC | 3-#6, #10GND | XHHW | WTR01MCC01 | WTR01_JB02 | | WELL 6 FROM NEW MCC 1 TO SPLICE JNCT BOX |
| WTR01 | P103 | 1 - 2" | GRMC | 3-#6, #10GND | XHHW | WTR01MCC01 | WTR01_JB03 | | WELL 7 FROM NEW MCC 1 TO SPLICE JNCT BOX |
| WTR01 | P104 | 1 - 1" | GRMC | 3-#12, #12GND | THWN | WTR01MCC01 | WTR01EUH | | NEW MCC 1 TO ELEC UNIT HEATER |
| WTR01 | P105 | 1 - 1" | GRMC | 4-#8, #10GND | THWN | WTR01MCC01 | WTR01MPC01 | | NEW MCC1 TO NEW MINI POWER CENTER |
| WTR01 | P106 | 1-1" | GRMC | 4-#1/0, #2GND | THWN | WTR01MCC01 | WTR01_JB04 | | MAINTENANCE BLDG BRANCH CIRCUIT FROM MCC TO EXIST JB |
| WTR01 | P200 | 1 - 1" | GRMC | 3-#8, #10GND | THWN | WTR01MCC02 | WTR01PMP01 | | NEW MCC 2 TO BOOSTER PUMP 1 |
| WTR01 | P201 | 1 - 1" | GRMC | 3-#8, #10GND | THWN | WTR01MCC02 | WTR01PMP02 | | NEW MCC 2 TO BOOSTER PUMP 2 |
| WTR01 | P202 | 1 - 1 1/2" | GRMC | 3-#4, #6GND | THWN | WTR01MCC02 | WTR01_FP01 | | NEW MCC 2 TO FIRE PUMP 1 |
| WTR01 | | | | | | | | | |
| | | | | | | | | | |
| WTR02 | P001 | 3 - 4" | PCV/GRMC | 12-300MCM | XHHW | UTILITY TRANSFORMER | CT/METER | UNDERGROUND/MANHOLE | POWER FOR NEW 800A, 480V, 3PH, 4-WIRE MCC. COORDINATE ALL REQUIREMENTS... |
| WTR02 | P002 | 3 - 4" | GRMC | 12-300MCM | XHHW | CT/METER | WTR02SWG01 | | POWER FOR NEW 800A, 480V, 3PH, 4-WIRE MCC |
| WTR02 | P003 | 3 - 4" | GRMC | 12-300MCM | XHHW | WTR02SWG01 | WTR02ATS01 | | |
| WTR02 | P010 | 1 - 4" | PVC/GRMC | 4-350MCM | XHHW | WTR02GEN01 | WTR02MTS01 | | STATIONARY BACKUP GENERATOR TO MTS |
| WTR02 | P011 | 1 - 4" | GRMC | 4-350MCM | XHHW | WTR02GEN02 | WTR02MTS01 | | PORTABLE GENERATOR PLUG TO MTS |
| WTR02 | P012 | 1 - 4" | PVC/GRMC | 4-350MCM | XHHW | WTR02MTS01 | WTR02ATS01 | UNDERGROUND/MANHOLE | BU GEN FOR NEW 800A, 480V, 3PH, 4-WIRE MCC |
| WTR02 | P013 | 3 - 4" | GRMC | 12-300MCM | XHHW | WTR02ATS01 | WTR02MCC01 | | BU GEN FOR NEW 800A, 480V, 3PH, 4-WIRE MCC |
| WTR02 | P100 | 3 - 4" | PVC/GRMC | 12-300MCM | XHHW | WTR02MCC01 | WTR02DSC01 | UNDERGROUND/HANDHOLE | NEW MCC TO NEW WELL 8 DISCONNECT |
| WTR02 | P101 | 1 - 2" | GRMC | 3-#6, #10GND | XHHW | WTR02DCS01 | WTR02MDP01 | | WELL 8 DISCONNECT TO MAIN DISTRIBUTION PANEL |
| WTR02 | P102 | 1 - 3" | PVC/GRMC | 4-#350, #2GND | XHHW | WTR02MCC01 | WELOPMDP01 | FIELD ROUTE | MCC01 TO WELL 9 MCC, INCREASED FOR V-DROP |
| WTR02 | P103 | 1 - 2" | GRMC | 3-#6, #10GND | XHHW | WTR02MCC01 | WTR02_JB02 | UNDERGROUND/HANDNOLE AR | WELL 9 DISCONNECT TO MAIN DISTRIBUTION PANEL |
| WTR02 | P104 | 1 - 1" | GRMC | 3-#12, #12GND | THWN | WTR02MCC01 | WTR02EHP | | NEW MCC 1 TO ELEC HEAT PUMP |
| WTR02 | P105 | 1 - 1" | GRMC | 3-#8, #10GND | THWN | WTR02MCC01 | WTR02PMP01 | | NEW MCC 1 TO BOOSTER PUMP 1 |
| WTR02 | P106 | 1 - 1" | GRMC | 3-#8, #10GND | THWN | WTR02MCC01 | WTR02PMP02 | | NEW MCC 1 TO BOOSTER PUMP 2 |
| WTR02 | P107 | 1 - 1 1/2" | GRMC | 3-#4, #6GND | THWN | WTR02MCC01 | WTR02_FP01 | | NEW MCC 1 TO FIRE PUMP 1 |
| WTR02 | P121 | 1 - 1" | GRMC | | | WEL09MDP01 | WEL09PMP01 | | WELL 9 MAIN DISTRIBUTION PANEL TO PUMP |
| WTR02 | P122 | 1 - 1" | GRMC | | | WEL09MDP01 | WEL09EXF01 | | WELL 9 MAIN DISTRIBUTION PANEL TO EXHAUST FAN |
| WTR02 | P123 | 1 - 1" | GRMC | | | WEL09MDP01 | WEL09MPC01 | | WELL 9 MAIN DISTRIBUTION PANEL TO MINI POWER CENTER |
| WTR02 | P124 | 1 - 2" | PVC/GRMC | 4-#1, #8GND | XHHW | WTR02MCC01 | X1 | FIELD ROUTE | MCC01 TO TRANSFORMER |
| WTR02 | P125 | 1 - 2" | PVC/GRMC | 2-#1, #8GND | XHHW | WTR02MCC01 | X2 | FIELD ROUTE | MCC01 TO TRANSFORMER |

# 120V POWER, CONTROL AND SIGNAL CONDUIT AND CABLE SCHEDULE

| CONDUIT NUMBER | | CONDUIT # & SIZE | CONDUIT TYPE | WIRE FILL | WIRE TYPE | VIA | REMARKS |
|---|---|---|---|---|---|---|---|
| PREFIX | ID | | | | | | |
| | | | | | **SOUTH PLANT (WTR01)** | | |
| WTR01 | C010 | 1 - 1" | PVC/GRMC | 12-#14, #14GND | XHHW | UNDERGROUND (UG) | BU GEN FOR ATS CONTROLS AND MONITORING |
| WTR01 | S010 | 1 - 1" | PVC/GRMC | 2-TSP, 1-CAT6E | TSP/8P8C | UNDERGROUND (UG) | BU GEN FOR ATS COMMUNICATIONS |
| WTR01 | P020 | 1 - 1" | PVC/GRMC | 2#12, #12GND | XHHW | UNDERGROUND (UG) | 120V POWER TO SOUTH RESERVOIR 1 LIT |
| WTR01 | S020 | 1 - 1" | PVC/GRMC | 1-TSP | TSP | UNDERGROUND (UG) | LEVEL SIGNAL SOUTH RESERVOIR 1 TO CONTROL PANEL |
| WTR01 | C020 | 1 - 1" | PVC/GRMC | 6#12 | XHHW | UNDERGROUND (UG) | LEVEL SWITCHES SOUTH RESERVOIR 1 TO CONTROL PANEL |
| WTR01 | P021 | 1 - 1" | PVC/GRMC | 2#12, #12GND | XHHW | UNDERGROUND (UG) | 120V POWER TO SOUTH RESERVOIR 2 LIT |
| WTR01 | S021 | 1 - 1" | PVC/GRMC | 1-TSP | TSP | UNDERGROUND (UG) | LEVEL SIGNAL SOUTH RESERVOIR 2 TO CONTROL PANEL |
| WTR01 | C021 | 1 - 1" | PVC/GRMC | 6#12 | XHHW | UNDERGROUND (UG) | LEVEL SWITCHES SOUTH RESERVOIR 2 TO CONTROL PANEL |
| WTR01 | S101 | 1 - 1" | EXISTING | 6 PAIR FO | FO | UNDERGROUND (UG) | FIBER OPTIC FROM SOUTH WTP CP TO WELL #4 CP |
| WTR01 | S104 | 1 - 1" | PVC/GRMC | 6 PAIR FO | FO | UNDERGROUND (UG) | FIBER OPTIC FROM SOUTH WTP CP TO WTP CONTROL PANEL |
| WTR01 | P025 | 1 - 3/4" | GRMC | 2#12, #12GND | THWN | FIELD ROUTE | DEDICATED CIRCUIT TO CHEMICAL FEED PUMP - CHEMICAL ROOM |
| WTR01 | P026 | 1 - 3/4" | GRMC | 2#12, #12GND | THWN | FIELD ROUTE | DEDICATED CIRCUIT TO CHEMICAL FEED PUMP - FILTER ROOM |
| WTR01 | P027 | 1 - 3/4" | GRMC | 2#12, #12GND | THWN | FIELD ROUTE | LIGHTING CIRCUIT |
| WTR01 | P028 | 1 - 1-1/2" | GRMC | 12#12,3#12GND | THWN | FIELD ROUTE | SPLICE EXISTING WIRING TO NEW PANELBOARD |
| | | | | | | | |
| | | | | | **NORTH PLANT (WTR02)** | | |
| WTR02 | C010 | 1 - 1" | PVC/GRMC | 12-#14, #14GND | XHHW | UNDERGROUND (UG) | BU GEN FOR ATS CONTROLS AND MONITORING |
| WTR02 | S010 | 1 - 1" | PVC/GRMC | 2-TSP, 1-CAT6E | TSP/8P8C | UNDERGROUND (UG) | BU GEN FOR ATS COMMUNICATIONS |
| WTR02 | P020 | 1 - 1" | PVC/GRMC | 2#12, #12GND | XHHW | UNDERGROUND (UG) | 120V POWER TO NORTH RESERVOIR 1 LIT |
| WTR02 | S020 | 1 - 1" | PVC/GRMC | 1-TSP | TSP | UNDERGROUND (UG) | LEVEL SIGNAL NORTH RESERVOIR TO CONTROL PANEL |
| WTR02 | C020 | 1 - 1" | PVC/GRMC | 6#12 | XHHW | UNDERGROUND (UG) | LEVEL SWITCHES NORTH RESERVOIR TO CONTROL PANEL |
| WTR02 | S111 | 1 - 1" | PVC/GRMC | 6 PAIR FO | FO | UNDERGROUND (UG) | FIBER OPTIC FROM NORTH WTP CP TO WELL #8 CP |
| WTR02 | S112 | 1 - 1" | PVC/GRMC | 1 - TSP | TSP | FIELD ROUTE | FLOW SIGNAL TO WELL CONTROL PANEL |
| WTR02 | S113 | 1 - 1" | PVC/GRMC | 1 - TSP | TSP | FIELD ROUTE | PRESSURE SIGNAL TO WELL CONTROL PANEL |
| WTR02 | S121 | 1 - 1" | PVC/GRMC | 6 PAIR FO | FO | UNDERGROUND (UG) | FIBER OPTIC FROM NORTH WTP CP TO WELL #9 CP |
| WTR02 | S122 | 1 - 1" | PVC/GRMC | 1 - TSP | TSP | FIELD ROUTE | FLOW SIGNAL TO WELL CONTROL PANEL |
| WTR02 | S123 | 1 - 1" | PVC/GRMC | 1 - TSP | TSP | FIELD ROUTE | PRESSURE SIGNAL TO WELL CONTROL PANEL |
| WTR02 | P025 | 1 - 3/4" | GRMC | 2#12, #12GND | THWN | FIELD ROUTE | DEDICATED CIRCUIT TO CHEMICAL FEED PUMP - CHEMICAL ROOM |
| WTR02 | P026 | 1 - 3/4" | GRMC | 2#12, #12GND | THWN | FIELD ROUTE | DEDICATED CIRCUIT TO CHEMICAL FEED PUMP - FILTER ROOM |
| WTR02 | P027 | 1 - 3/4" | GRMC | 2#12, #12GND | THWN | FIELD ROUTE | LIGHTING CIRCUIT |
| WTR02 | P037 | 1 - 2" | GRMC | 4-#3/0, #6GND | XHHW | FIELD ROUTE | TRANSFORMER TO MPC01 PANEL |
| WTR02 | P038 | 1 - 2" | GRMC | 3-#3/0, #6GND | XHHW | FIELD ROUTE | TRANSFORMER TO LCP01 PANEL |
| WTR02 | S021 | 1 - 3/4" | GRMC | 1 - TSP | TSP | FIELD ROUTE | CONTROL PANEL TO FLOW METER 4-20mA SIGNAL (TOTAL FLOW) |

# SPARE CONDUIT AND CABLE SCHEDULE

| CONDUIT NUMBER | | CONDUIT # & SIZE | CONDUIT TYPE | WIRE FILL | WIRE TYPE | VIA | REMARKS |
|---|---|---|---|---|---|---|---|
| PREFIX | ID | | | | | | |
| | | | | | **SOUTH PLANT (WTR01)** | | |
| WTR01 | X200 | 1 - 1 1/2" | PVC/GRMC | PULL STRING | N/A | UNDERGROUND (UG) | EXISITING SOUTH BLDG TO NEW SOUTH BLDG |
| WTR01 | X201 | 1 - 1" | PVC/GRMC | PULL STRING | N/A | UNDERGROUND (UG) | WELL 4 TO EXISTING BLDG |
| WTR01 | X202 | 1 - 1" | PVC/GRMC | PULL STRING | N/A | UNDERGROUND (UG) | EXISTING RESERVIOR TO NEW SOUTH BLDG |
| WTR01 | X203 | 1 - 1" | PVC/GRMC | PULL STRING | N/A | UNDERGROUND (UG) | NEW RESERVIOR TO NEW SOUTH BLDG |
| | | | | | | | |
| | | | | | **NORTH PLANT (WTR02)** | | |
| WTR02 | X200 | 1 - 1" | PVC/GRMC | PULL STRING | N/A | UNDERGROUND (UG) | WELL 8 TO NEW NORTH BLDG |
| WTR02 | X201 | 1 - 1" | PVC/GRMC | PULL STRING | N/A | UNDERGROUND (UG) | WELL 9 TO NEW NORTH BLDG |
| WTR02 | X202 | 1 - 1" | PVC/GRMC | PULL STRING | N/A | UNDERGROUND (UG) | NEW RESERVIOR TO NEW NORTH BLDG |
| WTR02 | X203 | 1 - 1" | PVC/GRMC | PULL STRING | N/A | UNDERGROUND (UG) | WASTE WATER LIFT STATION TO NEW NORTH BLDG |

1

**GENERAL NOTES**

A. INSTALL PULL STRING IN ALL SPARE (X) CONDUITS.
B. ALL SECURITY SYSTEM FINISH OUT, DEVICES AND WIRE ARE SUPPLIED UNDER SEPARATE CONTRACT.

# LUMINAIRE SCHEDULE

| TYPE | LUMINAIRE DESCRIPTION | MOUNTING | MOUNTING HEIGHT | LAMP | COLOR TEMP | LUMEN OUTPUT | POWER SUPPLY | MANUFACTURER & MODEL | INPUT VOLTAGE | INPUT WATTS | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P1 | 4' STRIP LIGHT | SURFACE | CEILING HEIGHT | LED | 5000K | 6,000 | INTEGRAL ELECTRONIC DRIVER | LITHONIA FEM-L48 SERIES OR APPROVED | 120 V | 38 W | |
| P2 | 4' STRIP LIGHT, EMERGENCY BATTERY | SURFACE | CEILING HEIGHT | LED | 5000K | 6,000 | INTEGRAL ELECTRONIC DRIVER | LITHONIA FEM-L48 SERIES OR APPROVED | 120 V | 38 W | |
| S1 | WALL PACK AREA LIGHT, FORWARD THROW DISTRIBUTION | WALL | 10' AFF | LED | 5000K | 2,000 | INTEGRAL ELECTRONIC DRIVER | LITHONIA WDGE1 LED SERIES OR APPROVED | 120 V | 15 W | |
| S2 | WALL PACK AREA LIGHT, FORWARD THROW DISTRIBUTION, EMERGENCY | WALL | 10' AFF | LED | 5000K | 2,000 | INTEGRAL ELECTRONIC DRIVER | LITHONIA WDGE1 LED SERIES OR APPROVED | 120 V | 15 W | |
| W1 | WALL MOUNTED STRIP, TAMPER RESISTANT | WALL | CEILING/WALL MOUNT | LED | 4000K | 1,800 | INTEGRAL ELECTRONIC DRIVER | LUMINAIRE LED CLF7-4FT-AL-NODIM-25W | 120 V | 25 W | |
| X | THERMOPLASTIC EXIT SIGN | WALL, PENDANT, CEILING | 8' AFF | LED | RED | -- | INTEGRAL ELECTRONIC DRIVER | ACUITY LIGHTING - QUANTUM LED EXIT SIGN MODEL LQM | 120 V | 5 W | |

Windsor Engineers
Vancouver, WA
Duluth + Minneapolis, MN
www.windsorengineers.com


| NO. | DATE | BY | REVISION |
|---|---|---|---|
| 1 | 07/14/2021 | BLA | ADDENDUM 02 |

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

DESIGNED
DRAWN
CHECKED

REGISTERED PROFESSIONAL ENGINEER 90718PE OREGON JUNE 30, 2017 THAYER J. HENDRICKSON
Expires: 6/30/2023

murraysmith

Branch ENGINEERING INC Since 1977
310 5th Street
Springfield, OR 97477
p: 541.746.0637
www.BranchEngineering.com

CITY OF HARRISBURG Established 1866

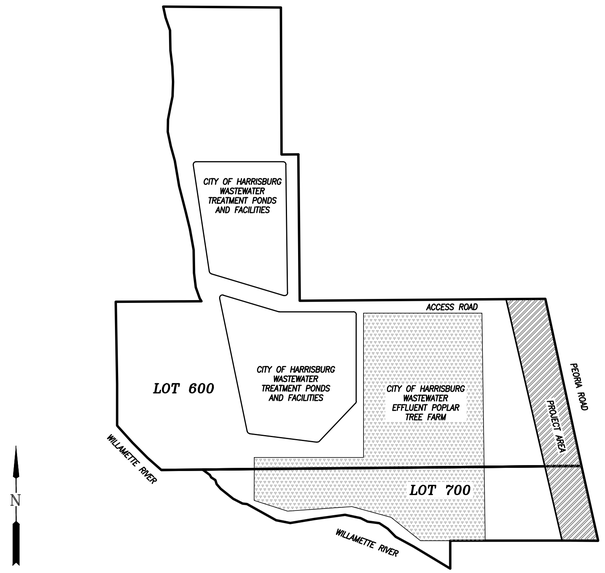
**WTP DESIGN NORTH & SOUTH**
*TAX MAP: 15S04W04 TAX LOT: 600*
*TAX MAP: 15S04W09 TAX LOT: 700*

# ELECTRICAL SCHEDULES

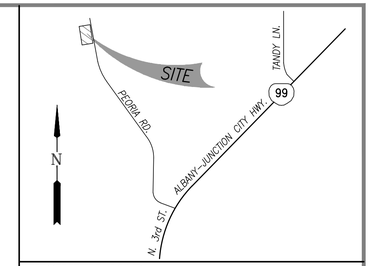
PROJECT NO.: 20064 | SCALE: AS SHOWN | DATE: JUNE 2021

SHEET
E504

# NORTH SITE WELL & WATER TREATMENT PLANT
## EROSION AND SEDIMENT CONTROL PLANS
## HARRISBURG, OREGON




***SITE MAP*** SCALE: N.T.S.




***VICINITY MAP*** SCALE: N.T.S.

## DEQ GENERAL NOTES

1. ONCE KNOWN, INCLUDE A LIST OF ALL CONTRACTORS THAT WILL ENGAGE IN CONSTRUCTION ACTIVITIES ON SITE, AND THE AREAS OF THE SITE WHERE THE CONTRACTOR(S) WILL ENGAGE IN CONSTRUCTION ACTIVITIES. REVISE LIST AS APPROPRIATE UNTIL PERMIT COVERAGE IS TERMINATED (SECTION 4.4.c.i). IN ADDITION, INCLUDE A LIST OF ALL PERSONNEL (BY NAME AND POSITION) THAT ARE RESPONSIBLE FOR THE DESIGN, INSTALLATION AND MAINTENANCE OF STORMWATER CONTROL MEASURES (e.g. ESCP DEVELOPER, BMP INSTALLER (SEE SECTION 4.10), AS WELL AS THEIR INDIVIDUAL RESPONSIBILITIES. (SECTION 4.4.c.ii)
2. VISUAL MONITORING INSPECTION REPORTS MUST BE MADE IN ACCORDANCE WITH DEQ 1200–C PERMIT REQUIREMENTS. (SECTION 6.5)
3. INSPECTION LOGS MUST BE KEPT IN ACCORDANCE WITH DEQ'S 1200–C PERMIT REQUIREMENTS. (SECTION 6.5.Q)
4. RETAIN A COPY OF THE ESCP AND ALL REVISIONS ON SITE AND MAKE IT AVAILABLE ON REQUEST TO DEQ, AGENT, OR THE LOCAL MUNICIPALITY. (SECTION 4.7)
5. THE PERMIT REGISTRANT MUST IMPLEMENT THE ESCP. FAILURE TO IMPLEMENT ANY OF THE CONTROL MEASURES OR PRACTICES DESCRIBED IN THE ESCP IS A VIOLATION OF THE PERMIT. (SECTIONS 4 AND 4.11)
6. THE ESCP MUST BE ACCURATE AND REFLECT SITE CONDITIONS. (SECTION 4.8)
7. 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. (SECTION 4.9)
8. SEQUENCE CLEARING AND GRADING TO THE MAXIMUM EXTENT PRACTICAL TO PREVENT EXPOSED INACTIVE AREAS FROM BECOMING A SOURCE OF EROSION. (SECTION 2.2.2)
9. CREATE SMOOTH SURFACES BETWEEN SOIL SURFACE AND EROSION AND SEDIMENT CONTROLS TO PREVENT STORMWATER FROM BYPASSING CONTROLS AND PONDING. (SECTION 2.2.3)
10. 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. (SECTION 2.2.1)
11. 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. (SECTION 2.2.5)
12. MAINTAIN AND DELINEATE ANY EXISTING NATURAL BUFFER WITHIN THE 50–FEET OF WATERS OF THE STATE. (SECTION 2.2.4)
13. INSTALL PERIMETER SEDIMENT CONTROL, INCLUDING STORM DRAIN INLET PROTECTION AS WELL AS ALL SEDIMENT BASINS, TRAPS, AND BARRIERS PRIOR TO LAND DISTURBANCE. (SECTIONS 2.1.3)
14. CONTROL BOTH PEAK FLOW RATES AND TOTAL STORMWATER VOLUME, TO MINIMIZE EROSION AT OUTLETS AND DOWNSTREAM CHANNELS AND STREAMBANKS. (SECTIONS 2.1.1. AND 2.2.16)
15. 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. (SECTIONS 2.2.6 AND 2.2.13)
16. ESTABLISH CONCRETE TRUCK AND OTHER CONCRETE EQUIPMENT WASHOUT AREAS BEFORE BEGINNING CONCRETE WORK. (SECTION 2.2.14)
17. APPLY TEMPORARY AND/OR PERMANENT SOIL STABILIZATION MEASURES IMMEDIATELY ON ALL DISTURBED AREAS AS GRADING PROGRESSES. TEMPORARY OR PERMANENT STABILIZATIONS MEASURES ARE NOT REQUIRED FOR AREAS THAT ARE INTENDED TO BE LEFT UNVEGETATED, SUCH AS DIRT ACCESS ROADS OR UTILITY POLE PADS.(SECTIONS 2.2.20 AND 2.2.21)
18. ESTABLISH MATERIAL AND WASTE STORAGE AREAS, AND OTHER NON–STORMWATER CONTROLS. (SECTION 2.3.7)
19. KEEP WASTE CONTAINER LIDS CLOSED WHEN NOT IN USE AND CLOSE LIDS AT THE END OF THE BUSINESS DAY FOR THOSE CONTAINERS THAT ARE ACTIVELY USED THROUGHOUT THE DAY. FOR WASTE CONTAINERS THAT DO NOT HAVE LIDS, PROVIDE EITHER (1) COVER (E.G., A TARP, PLASTIC SHEETING, TEMPORARY ROOF) TO PREVENT EXPOSURE OF WASTES TO PRECIPITATION, OR (2) A SIMILARLY EFFECTIVE MEANS DESIGNED TO PREVENT THE DISCHARGE OF POLLUTANTS (E.G., SECONDARY CONTAINMENT). (SECTION 2.3.7)
20. 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. (SECTION 2.2.7)
21. WHEN TRUCKING SATURATED SOILS FROM THE SITE, EITHER USE WATER–TIGHT TRUCKS OR DRAIN LOADS ON SITE. (SECTION 2.2.7.F)
22. CONTROL PROHIBITED DISCHARGES FROM LEAVING THE CONSTRUCTION SITE, I.E., CONCRETE WASH–OUT, WASTEWATER FROM CLEANOUT OF STUCCO, PAINT AND CURING COMPOUNDS. (SECTIONS 1.5 AND 2.3.9)
23. ENSURE THAT STEEP SLOPE AREAS WHERE CONSTRUCTION ACTIVITIES ARE NOT OCCURRING ARE NOT DISTURBED. (SECTION 2.2.10)
24. PREVENT SOIL COMPACTION IN AREAS WHERE POST–CONSTRUCTION INFILTRATION FACILITIES ARE TO BE INSTALLED. (SECTION 2.2.12)
25. 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. (SECTIONS 2.2.15 AND 2.3)
26. PROVIDE PLANS FOR SEDIMENTATION BASINS THAT HAVE BEEN DESIGNED PER SECTION 2.2.17 AND STAMPED BY AN OREGON PROFESSIONAL ENGINEER. (SEE SECTION 2.2.17.A)
27. IF ENGINEERED SOILS ARE USED ON SITE, A SEDIMENTATION BASIN/IMPOUNDMENT MUST BE INSTALLED. (SEE SECTIONS 2.2.17 AND 2.2.18)
28. PROVIDE A DEWATERING PLAN FOR ACCUMULATED WATER FROM PRECIPITATION AND UNCONTAMINATED GROUNDWATER SEEPAGE DUE TO SHALLOW EXCAVATION ACTIVITIES. (SEE SECTION 2.4)
29. IMPLEMENT THE FOLLOWING BMPS 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. (SECTION 2.3)
30. USE WATER, SOIL–BINDING AGENT OR OTHER DUST CONTROL TECHNIQUE AS NEEDED TO AVOID WIND–BLOWN SOIL. (SECTION 2.2.9)
31. 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. (SECTION 2.3.5)
32. 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 ENVIRONMENTAL MANAGEMENT PLAN APPROVAL FROM DEQ BEFORE OPERATING THE TREATMENT SYSTEM. OPERATE AND MAINTAIN THE TREATMENT SYSTEM ACCORDING TO MANUFACTURER'S SPECIFICATIONS. (SECTION 1.2.9)
33. 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. (SECTION 2.2)
34. 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. (SECTION 2.2.8)
35. SEDIMENT FENCE: REMOVE TRAPPED SEDIMENT BEFORE IT REACHES ONE THIRD OF THE ABOVE GROUND FENCE HEIGHT AND BEFORE FENCE REMOVAL. (SECTION 2.1.5.B)
36. OTHER SEDIMENT BARRIERS (SUCH AS BIOBAGS): REMOVE SEDIMENT BEFORE IT REACHES TWO INCHES DEPTH ABOVE GROUND HEIGHT AND BEFORE BMP REMOVAL. (SECTION 2.1.5.C)
37. 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. (SECTION 2.1.5.D)
38. 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 DEPARTMENT OF STATE LANDS REQUIRED TIMEFRAME. (SECTION 2.2.19.A)
39. 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. (SECTION 2.2.19)
40. DOCUMENT ANY PORTION(S) OF THE SITE WHERE LAND DISTURBING ACTIVITIES HAVE PERMANENTLY CEASED OR WILL BE TEMPORARILY INACTIVE FOR 14 OR MORE CALENDAR DAYS. (SECTION 6.5.F.)
41. 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. (SECTION 2.2.20)
42. 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 OF PROPERLY, UNLESS NEEDED FOR LONG TERM USE FOLLOWING TERMINATION OF PERMIT COVERAGE. (SECTION 2.2.21)

## SITE INFORMATION

1. TYPE OF DEVELOPMENT: MUNICIPAL WATER (SIC CODE 4941)
2. CONSTRUCTION ACTIVITY WILL CONSIST OF:
   a. MUNICIPAL WATER TREATMENT
   b. MUNICIPAL WATER STORAGE
   c. ASPHALT CONCRETE PAVING
   d. WASTEWATER SYSTEM CONSTRUCTION
   e. STORMWATER DRAINAGE CONNECTION
   f. FRANCHISE ELECTRICAL CONNECTIONS
   f. GENERAL LANDSCAPING
3. PROJECT TIMELINE:
   CLEARING: AUGUST 2021
   MASS GRADING: AUGUST 2021 – SEPTEMBER 2021
   UTILITY CONSTRUCTION: AUGUST 2021 – OCTOBER 2021
   FINAL STABILIZATION: OCTOBER 2021
4. PROJECT SITE AREAS:
   TAX MAP: 15S04W04 TAX LOT: 600
   TAX MAP: 15S04W09 TAX LOT: 700
   SITE AREA: LOT 600 – 190.9 ACRES LOT 700 – 41.8 ACRES
   DISTURBANCE AREA: LOT 600 – 1.39 ACRES LOT 700 – 2.60 ACRES
5. OFFSITE PUBLIC IMPROVEMENT AREA:
   N/A
6. ONSITE SOIL TYPES:
   a. WILLAMETTE SILT LOAM
   b. DAYTON SILT LOAM
7. CUT AND FILL DATA:
   CUT: 150 CUBIC YARDS
   FILL: 1,700 CUBIC YARDS
   (CONTRACTOR TO VERIFY)

## SHEET INDEX



## RAIN GAUGE LOCATION

(https://agacis.rcc–acis.org/)
APPROXIMATELY 1.89 MILES NORTHWEST OF THE SITE

## AUTHORIZED NON-STORMWATER DISCHARGES

1. WATER AND ASSOCIATED DISCHARGES FROM EMERGENCY FIREFIGHTING ACTIVITIES
2. FIRE HYDRANT FLUSHING
3. PROPERLY MANAGED LANDSCAPING IRRIGATION
4. WATER USED TO WASH EQUIPMENT AND VEHICLES (EXCLUDING THE ENGINE, UNDERCARRIAGE, AND WHEELS/TIRES) PROVIDED THERE IS NO DISCHARGE OF SOAPS, SOLVENTS, OR DETERGENTS USED
5. WATER USED TO CONTROL DUST
6. POTABLE WATER INCLUDING UNCONTAMINATED WATER LINE FLUSHINGS
7. EXTERNAL BUILDING WASHDOWN, PROVIDED SOAPS, SOLVENTS, AND DETERGENTS ARE NOT USED, AND EXTERNAL SURFACES DO NOT CONTAIN HAZARDOUS SUBSTANCES
8. PAVEMENT WASH WATERS, PROVIDED SPILLS OR LEAKS OF TOXIC OR HAZARDOUS SUBSTANCES HAVE NOT OCCURRED (UNLESS ALL SPILL MATERIAL HAS BEEN REMOVED) AND WHERE SOAPS, SOLVENTS, AND DETERGENTS ARE NOT USED. DIRECTING PAVEMENT WASH WATERS INTO ANY SURFACE WATER, STORM DRAIN INLET, OR STORMWATER CONVEYANCE IS PROHIBITED, UNLESS THE CONVEYANCE IS CONNECTED TO A SEDIMENT BASIN, SEDIMENT TRAP, OR SIMILARLY EFFECTIVE CONTROL FOR THE POLLUTANTS PRESENT. PER 2.2.19.b, HOSING OF ACCUMULATED SEDIMENTS ON PAVEMENT INTO ANY STORMWATER CONVEYANCE IS PROHIBITED
9. UNCONTAMINATED, NON–TURBID DISCHARGES OF GROUNDWATER OR SPRING WATER
10. FOUNDATION OR FOOTING DRAINS WHERE FLOWS ARE NOT CONTAMINATED WITH PROCESS MATERIALS SUCH AS SOLVENTS OR CONTAMINATED GROUNDWATER
11. CONSTRUCTION DEWATERING ACTIVITIES (INCLUDING GROUNDWATER DEWATERING AND WELL DRILLING DISCHARGE ASSOCIATED WITH THE REGISTERED CONSTRUCTION ACTIVITY), PROVIDED THAT:
    a. THE WATER IS LAND APPLIED IN A WAY THAT RESULTS IN COMPLETE INFILTRATION WITH NO POTENTIAL TO DISCHARGE TO A SURFACE WATER OF THE STATE, OR THE USE OF A SANITARY OR COMBINED SEWER DISCHARGEIS AUTHORIZED WITH LOCAL SEWER DISTRICT APPROVAL, OR
    b. BEST MANAGEMENT PRACTICES AND A TREATMENT SYSTEM APPROVED BY DEQ OR AGENT (SEE SECTION 1.2.9) ARE USED TO ENSURE COMPLIANCE WITH DISCHARGE AND WATER QUALITY REQUIREMENTS IN SECTION 2.4

## CONTRACTOR REQUIREMENTS

CONTRACTOR SHALL ACQUIRE A CERTIFIED EROSION CONTROL & SEDIMENT LEAD PRIOR TO CONSTRUCTION.

CONTRACTOR TO DETERMINE:
1. SPECIFIC DATES FOR ALL CONSTRUCTION PHASES
2. LIST OF POLLUTANTS THAT MAY BE ON SITE (SEDIMENT, FERTILIZERS, PESTICIDES, PAINTS, CAULKS, SEALANTS, FLUORESCENT LIGHT BALLASTS, CONTAMINATED SUBSTRATES, SOLVENTS, FUELS), AND POTENTIAL LOCATIONS ON SITE FOR POLLUTANTS.
3. SPILL PREVENTION PROCEDURES AND RESPONSE.
4. LOCATION OF PORTABLE BATHROOMS, CONSTRUCTION WASTE RECEPTACLES, AND WHERE FERTILIZERS WILL BE USED.

CONTRACTOR TO ADD TO EROSION AND SEDIMENT CONTROL SITE PLAN:
1. LOCATIONS OF POLLUTANTS
2. LIST OF ALL CONTRACTORS TO PERFORM WORK ON SITE.
3. PORTABLE BATHROOM LOCATIONS
4. WASTE RECEPTACLES LOCATIONS
5. AREAS WHERE FERTILIZER WILL BE USED
6. ALL WELLS ON OR ADJACENT TO SITE
7. LOCATIONS OF SEPTIC SYSTEMS ON SITE

## INSPECTION SCHEDULE

| SITE CONDITION | MINIMUM FREQUENCY |
|---|---|
| 1. ACTIVE PERIOD | ON INITIAL DATE THAT LAND DISTURBANCE ACTIVITIES COMMENCE.<br><br>WITHIN 24 HOURS OF ANY STORM EVENT, INCLUDING RUNOFF FROM SNOW MELT, THAT RESULTS IN DISCHARGE FROM THE SITE.<br><br>AT LEAST ONCE EVERY 14 DAYS, REGARDLESS OF WHETHER STORMWATER RUNOFF IS OCCURING. |
| 2. INACTIVE PERIODS GREATER THAN FOURTEEN (14) CONSECUTIVE CALENDAR DAYS | THE INSPECTOR MAY REDUCE THE FREQUENCY OF INSPECTIONS IN ANY AREA OF THE SITE WHERE THE STABILIZATION STEPS IN SECTION 2.2.20 HAVE BEEN COMPLETED TO TWICE PER MONTH FOR THE FIRST MONTH, NO LESS THAN 14 CALENDAR DAYS APART, THEN ONCE PER MONTH. |
| 3. PERIODS DURING WHICH THE SITE IS INACCESSIBLE DUE TO INCLEMENT WEATHER | IF SAFE, ACCESSIBLE AND PRACTICAL, INSPECTIONS MUST OCCUR DAILY AT A RELEVANT DISCHARGE POINT OR DOWNSTREAM LOCATION OF THE RECEIVING WATERBODY |
| 4. PERIODS DURING WHICH CONSTRUCTION ACTIVITIES ARE SUSPENDED AND RUNOFF IS UNLIKELY DUE TO FROZEN CONDITIONS. | VISUAL MONITORING INSPECTIONS MAY BE TEMPORARILY SUSPENDED. IMMEDIATELY RESUME MONITORING UPON THAWING, OR WHEN WEATHER CONDITIONS MAKE DISCHARGES LIKELY. |
| 5. PERIODS DURING WHICH CONSTRUCTION ACTIVITIES ARE SUSPENDED AND RUNOFF IS UNLIKELY DURING FROZEN CONDITIONS. | VISUAL MONITORING INSPECTIONS MAY BE REDUCED TO ONCE A MONTH. IMMEDIATELY RESUME MONITORING UPON THAWING, OR WHEN WEATHER CONDITIONS MAKE DISCHARGES LIKELY. |


### OWNER
OWNER NAME: CITY OF HARRISBURG
CONTACT: CHUCK SCHOLZ
ADDRESS: P.O. BOX 378 120 SMITH ST.
HARRISBURG, OR 97446
EMAIL: cscholz@ci.harrisburg.or.us

### SITE CONTRACTOR
CONTRACTOR NAME: CITY OF HARRISBURG
CONTACT: CHUCK SCHOLZ
ADDRESS: P.O. BOX 378 120 SMITH ST.
HARRISBURG, OR 97446
EMAIL: cscholz@ci.harrisburg.or.us

### CIVIL ENGINEER
BRANCH ENGINEERING, INC.
CONTACT: DAMIEN GILBERT
310 5TH STREET
SPRINGFIELD, OR 97477
PHONE: (541) 746–0637
E–MAIL: damieng@branchengineering.com

### SURVEYOR
BRANCH ENGINEERING
CONTACT: DAN NELSON
310 5TH STREET
SPRINGFIELD, OR 97477
PHONE: (541) 746–0637
E–MAIL: dann@branchengineering.com

### CESCL:
COMPANY NAME: BRANCH ENGINEERING, INC.
CONTACT: CHRIS MORRIS
310 5TH STREET
SPRINGFIELD, OR 97477
PHONE: (541) 746–0637
E–MAIL: chrism@branchengineering.com

QUALIFICATION PROGRAM:
NORTHWEST ENVIRONMENTAL TRAINING CENTER
CERTIFICATION/ID NUMBER: 81120
EXPIRATION DATE: 8/29/21

### ESCP PREPARER
BRANCH ENGINEERING, INC.
CONTACT: CHRIS MORRIS
310 5TH STREET
SPRINGFIELD, OR 97477
PHONE: (541) 746–0637
E–MAIL: chrism@branchengineering.com

### BMP INSTALLER/MAINTAINER
CONTRACTOR NAME: WINNING BID CONTRACTOR
CONTACT: WILL BE PROVIDED PRIOR TO ANY DISTURBANCE
ADDRESS: WILL BE PROVIDED PRIOR TO ANY DISTURBANCE
PHONE: WILL BE PROVIDED PRIOR TO ANY DISTURBANCE
EMAIL: WILL BE PROVIDED PRIOR TO ANY DISTURBANCE


Digitally signed by Damien Gilbert
Date: 2021.07.13 14:22:45 -07'00'

Branch ENGINEERING INC
Since 1977
310 5th Street
Springfield, OR 97477
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www.BranchEngineering.com

**1200-C PERMIT SET**

| NO. | DATE | BY | REVISION |
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NOTICE
0 ½ 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

CM DESIGNED
CM DRAWN
DG CHECKED

REGISTERED PROFESSIONAL ENGINEER #62780PE DIGITALLY SIGNED OREGON JULY 13, 2004 DAMIEN GILBERT
EXPIRES: JUNE 30, 2023

murraysmith

CITY OF HARRISBURG Established 1866

**WTP DESIGN NORTH & SOUTH**
TAX MAP: 15S04W04 TAX LOT: 600
TAX MAP: 15S04W09 TAX LOT: 700

**EROSION AND SEDIMENT CONTROL COVER SHEET**

PROJECT NO.: 20-0028.300 | SCALE: AS SHOWN | DATE: JULY 2021

SHEET ESC1

Z:\2020\20–0096 Harrisburg WTP Sites\1200–C\1200–C_North.dwg 7/13/2021 12:32 PM CHRISM

## LEGEND

**EXISTING**

- PROPERTY LINE
- EDGE OF ASPHALT
- FENCE
- BOTTOM OF DITCH
- TOP OF BANK
- BUILDING OR STRUCTURE
- WATER METER
- FIRE HYDRANT
- WATER VALVE
- POWER POLE
- WASTE WATER MANHOLE
- TELEPHONE RISER
- GRAVEL
- WETLANDS
- EXISTING DRAINAGE DIRECTION

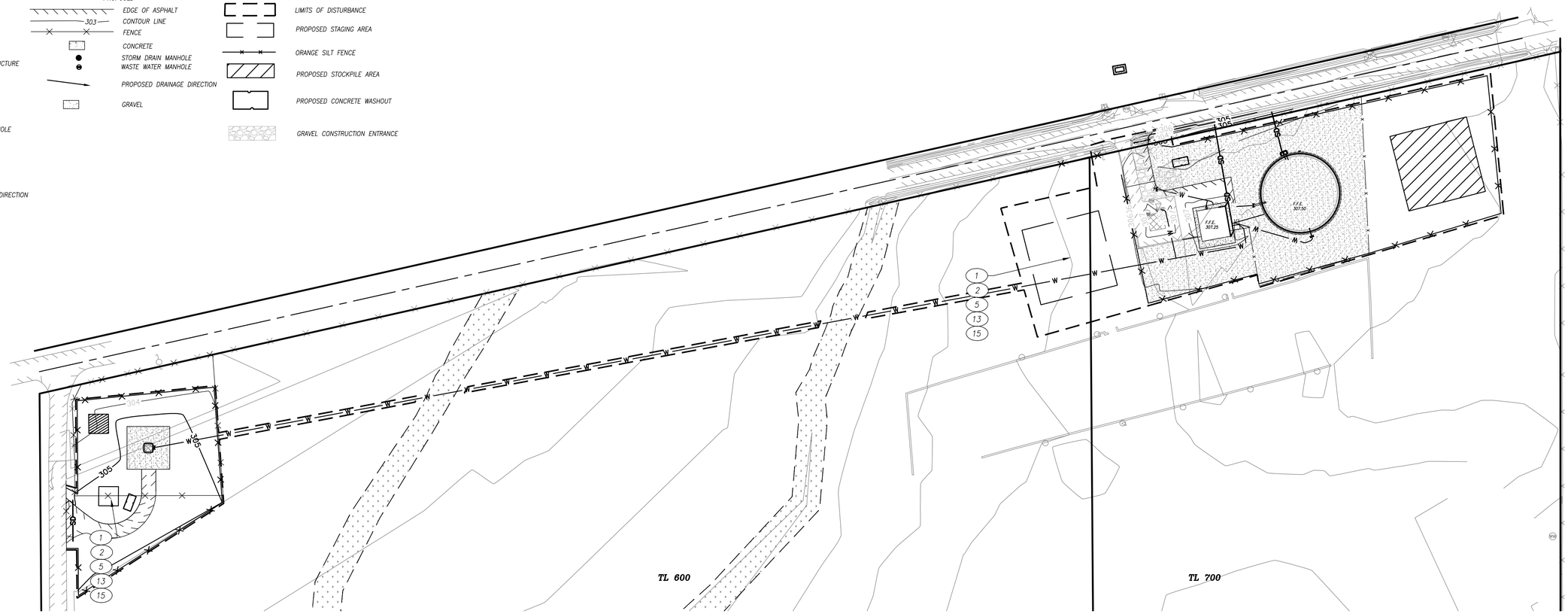
**PROPOSED**

- EDGE OF ASPHALT
- 303 CONTOUR LINE
- FENCE
- CONCRETE
- STORM DRAIN MANHOLE
- WASTE WATER MANHOLE
- PROPOSED DRAINAGE DIRECTION
- GRAVEL

## LEGEND

**PROPOSED EROSION CONTROL**

- LIMITS OF DISTURBANCE
- PROPOSED STAGING AREA
- ORANGE SILT FENCE
- PROPOSED STOCKPILE AREA
- PROPOSED CONCRETE WASHOUT
- GRAVEL CONSTRUCTION ENTRANCE




### PROJECT SITE POLLUTANT LIST MATRIX

| | POLLUTANT | ONSITE | LOCATION |
|---|---|---|---|
| 1 | FUEL | X | STAGING AREA |
| 2 | OILS | X | STAGING AREA |
| 3 | TRANSMISSION FLUID | | |
| 4 | DEF | | |
| 5 | CONCRETE WASHOUT | X | STAGING AREA |
| 6 | PAINT | | |
| 7 | PAINT THINNER | | |
| 8 | BATTERIES | | |
| 9 | STORED METALS | | |
| 10 | FERTILIZERS | | |
| 11 | PESTICIDES | | |
| 12 | HERBICIDES | | |
| 13 | PORTABLE BATHROOM | X | STAGING AREA |
| 14 | RECYCLE BIN | | |
| 15 | TRASH BIN | X | STAGING AREA |
| 16 | LIGHT BULBS | | |
| 17 | | | |
| 18 | | | |
| 19 | | | |
| 20 | | | |
| 21 | | | |
| 22 | | | |
| 23 | | | |
| 24 | | | |
| 25 | | | |
| 26 | | | |
| 27 | | | |
| 28 | | | |
| 29 | | | |
| 30 | | | |

### PROJECCT SITE CONTRACTOR LIST

| CONTRACTOR COMPANY NAME | CLEARING | MASS GRADING/ UTILITY CONSTRUCTION/ VERTICAL CONSTRUCTION | FINAL STABILIZATION |
|---|---|---|---|
| GENERAL: | | | |
| CITY OF HARRISBURG | X | X | X |
| SUBCONTRACTORS: | | | |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Since 1977
310 5th Street
Springfield, OR 97477
p: 541.746.0637
www.BranchEngineering.com


GRAPHIC SCALE
80 0 40 80 160
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NOTICE
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DG CHECKED

REGISTERED PROFESSIONAL ENGINEER
#62780PE
DIGITALLY SIGNED
OREGON
JULY 13, 2021
DAMIEN GILBERT
EXPIRES: JUNE 30, 2023

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**WTP DESIGN NORTH & SOUTH**
TAX MAP: 15S04W04 TAX LOT: 600
TAX MAP: 15S04W09 TAX LOT: 700

**EROSION AND SEDIMENT CONTROL LISTS AND LOCATIONS PLAN**

PROJECT NO.: 20-0028.300 | SCALE: AS SHOWN | DATE: JULY 2021

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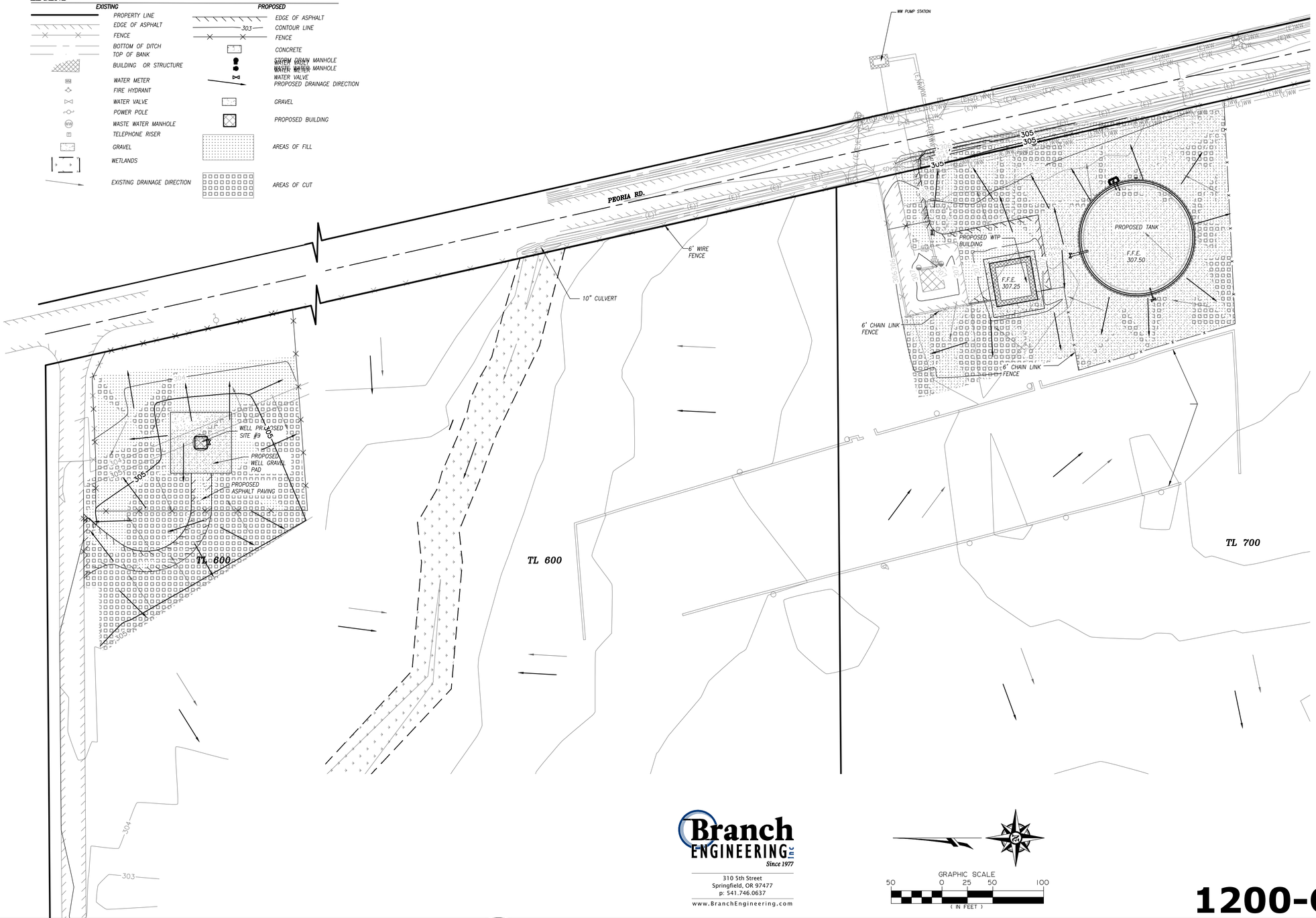
## LEGEND

| EXISTING | | PROPOSED | |
|---|---|---|---|
| | PROPERTY LINE | | EDGE OF ASPHALT |
| | EDGE OF ASPHALT | 303 | CONTOUR LINE |
| | FENCE | | FENCE |
| | BOTTOM OF DITCH<br>TOP OF BANK | | CONCRETE |
| | BUILDING OR STRUCTURE | | STORM DRAIN MANHOLE<br>WATER VALVE<br>WATER METER MANHOLE |
| WM | WATER METER | | WATER VALVE<br>PROPOSED DRAINAGE DIRECTION |
| | FIRE HYDRANT | | |
| | WATER VALVE | | GRAVEL |
| | POWER POLE | | PROPOSED BUILDING |
| WW | WASTE WATER MANHOLE | | |
| | TELEPHONE RISER | | |
| | GRAVEL | | AREAS OF FILL |
| | WETLANDS | | |
| | EXISTING DRAINAGE DIRECTION | | AREAS OF CUT |





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DG CHECKED

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JULY 13, 2005
DAMIEN GILBERT
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**WTP DESIGN NORTH & SOUTH**
TAX MAP: 15S04W04 TAX LOT: 600
TAX MAP: 15S04W09 TAX LOT: 700

**EROSION AND SEDIMENT CONTROL GRADING AND DRAINAGE PLAN**

PROJECT NO.: 20-0028.300 | SCALE: AS SHOWN | DATE: JULY 2021

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ESC3

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## LEGEND

**EXISTING**

- PROPERTY LINE
- EDGE OF ASPHALT
- FENCE
- BOTTOM OF DITCH
- TOP OF BANK
- BUILDING OR STRUCTURE
- WATER METER
- FIRE HYDRANT
- WATER VALVE
- POWER POLE
- WASTE WATER MANHOLE
- TELEPHONE RISER
- GRAVEL
- WETLANDS
- EXISTING DRAINAGE DIRECTION

**PROPOSED**

- EDGE OF ASPHALT
- CONTOUR LINE (303)
- FENCE
- CONCRETE
- STORM DRAIN MANHOLE
- WASTE WATER MANHOLE
- PROPOSED DRAINAGE DIRECTION
- GRAVEL
- PROPOSED BUILDING

## LEGEND

**PROPOSED EROSION CONTROL**

- LIMITS OF DISTURBANCE
- PROPOSED STAGING AREA
- ORANGE SILT FENCE
- PROPOSED STOCKPILE AREA
- PROPOSED CONCRETE WASHOUT
- GRAVEL CONSTRUCTION ENTRANCE

## SITE

ADDRESS: PEORIA ROAD HARRISBURG,OR 97446
TAX MAP: 15S04W04 TAX LOT: 600
TAX MAP: 15S04W09 TAX LOT: 700
SITE AREA: LOT 38 – 190.9 ACRES LOT 277 – 41.8 ACRES
DISTURBANCE AREA: LOT 600 – 4.61 ACRES LOT 700 – 2.92 ACRES

## SAW CUTTING

1. DO NOT ALLOW SAW CUT SLURRY AND/OR RUNOFF TO ENTER STORM DRAINS OR WATER COURSES.
2. RESCHEDULE SAW CUTTING IF RAINING OR RAIN IS IN THE FORECAST.
3. PROTECT STORM INLETS PRIOR TO START OF WORK
4. ALL WASTE GENERATED FROM SAW CUTTING SHALL BE VACUUMED IMMEDIATELY BEHIND THE SAW CUTTING OPERATION. DO NOT ALLOW SAW CUT SLURRY TO FLOW ACROSS THE PAVEMENT AND IT SHOULD NOT BE LEFT ON THE SURFACE OF THE PAVEMENT.
5. DISPOSAL OF SAW CUTTING WASTE APPROPRIATELY.

## SPECIFICATIONS:

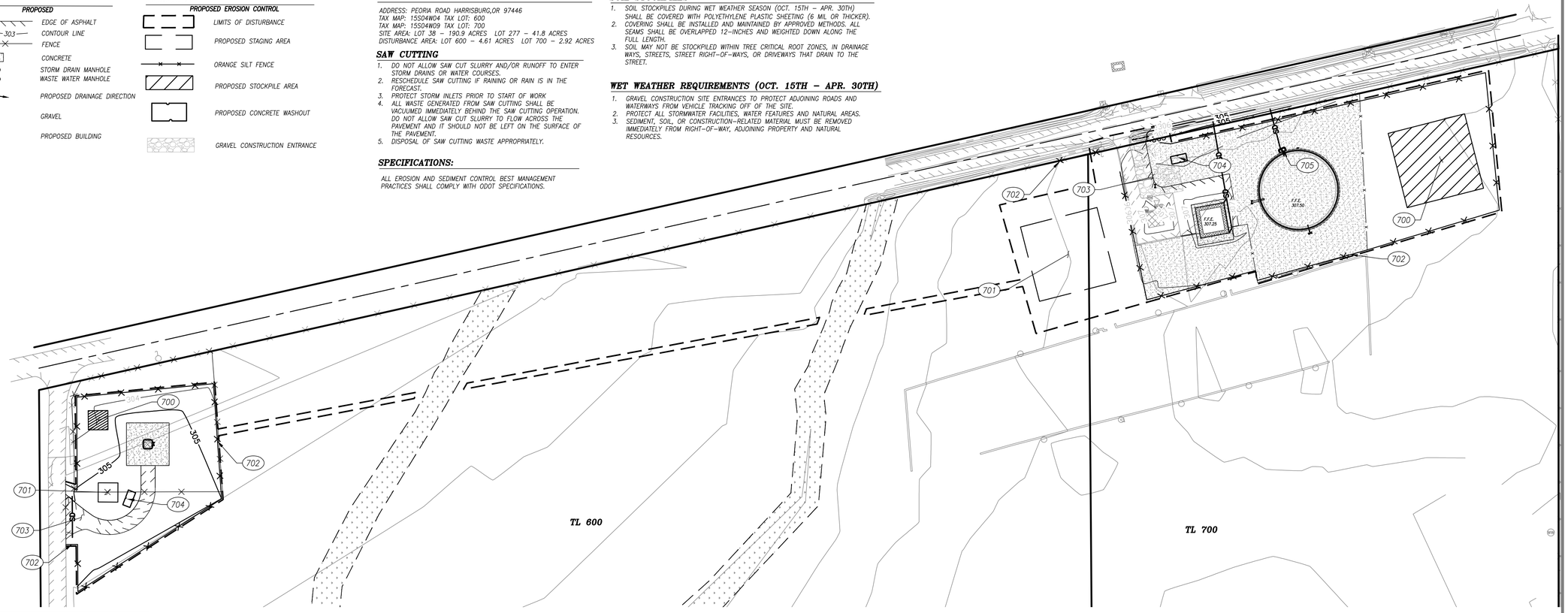
ALL EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES SHALL COMPLY WITH ODOT SPECIFICATIONS.

## SOIL STOCKPILES

1. SOIL STOCKPILES DURING WET WEATHER SEASON (OCT. 15TH – APR. 30TH) SHALL BE COVERED WITH POLYETHYLENE PLASTIC SHEETING (6 MIL OR THICKER).
2. COVERING SHALL BE INSTALLED AND MAINTAINED BY APPROVED METHODS. ALL SEAMS SHALL BE OVERLAPPED 12-INCHES AND WEIGHTED DOWN ALONG THE FULL LENGTH.
3. SOIL MAY NOT BE STOCKPILED WITHIN TREE CRITICAL ROOT ZONES, IN DRAINAGE WAYS, STREETS, STREET RIGHT-OF-WAYS, OR DRIVEWAYS THAT DRAIN TO THE STREET.

## WET WEATHER REQUIREMENTS (OCT. 15TH – APR. 30TH)

1. GRAVEL CONSTRUCTION SITE ENTRANCES TO PROTECT ADJOINING ROADS AND WATERWAYS FROM VEHICLE TRACKING OFF OF THE SITE.
2. PROTECT ALL STORMWATER FACILITIES, WATER FEATURES AND NATURAL AREAS.
3. SEDIMENT, SOIL, OR CONSTRUCTION-RELATED MATERIAL MUST BE REMOVED IMMEDIATELY FROM RIGHT-OF-WAY, ADJOINING PROPERTY AND NATURAL RESOURCES.




## BMP MATRIX FOR CONSTRUCTION PHASE

| BMP | CLEARING | MASS GRADING/ UTILITY CONSTRUCTION/ VERTICAL CONSTRUCTION | FINAL STABILIZATION |
|---|---|---|---|
| BIOBAGS | | | |
| BIOSWALES | | | |
| CHECK DAMS | | | |
| COMPOST BERM | | | |
| COMPOST BLANKETS | | | |
| COMPOST SOCKS | | | |
| CONCRETE TRUCK WASHOUT | | X | |
| CONSTRUCTION ENTRANCE | X | X | |
| DRAINAGE SWALES | | | |
| EARTH DIKES | | | |
| ENERGY DISSIPATERS | | | |
| EROSION CONTROL BLANKETS AND MATS | | | |
| HYDROSEEDING | | | |
| INLET PROTECTION | | | |
| MULCHES | | | |
| MYCORRHIZAE/BIOFERTILIZERS | | | |
| NATURAL BUFFER ZONES | | | |
| ORANGE FENCING | | | |
| OUTLET PROTECTION | | | |
| PERMANENT SEEDING AND PLANTING | | | X |
| PIPE SLOPE DRAINS | | | |
| PLASTIC SHEETING | | X | |
| PRESERVE EXISTING VEGETATION | | | |
| SEDIMENT FENCE | X | X | X |
| SEDIMENT BARRIER | X | X | X |
| SEDIMENT TRAP | | | |
| SODDING | | | |
| SOIL TRACKIFIERS | | | |
| STORM DRAIN INLET PROTECTION | | | |
| STRAW WATTLES | | | |
| TEMPORARY DIVERSION DIKES | | | |
| TEMPORARY OR PERMANENT SEDIMENTATION BASINS | | | |
| TEMPORARY SEEDING AND PLANTING | | | |
| TREATMENT SYSTEM | | | |
| UNPAVED ROADS GRAVELED OR OTHER BMP ON THE ROAD | | | |
| VEGETATIVE BUFFER STRIPS | | | |

## BMP NOTES

(700) PROPOSED SOIL STOCKPILE AREA. FINAL LOCATION FOR STOCKPILING AREA(S) TO BE DETERMINED BY CONTRACTOR. COVER PER WET WEATHER REQUIREMENTS AND DETAIL, SHEET ESC4.

(701) PROPOSED EQUIPMENT STAGING AREA LOCATION. FINAL LOCATION FOR STAGING AREA TO BE DETERMINED BY CONTRACTOR.

(702) CONSTRUCT ORANGE SEDIMENT/CONSTRUCTION FENCE OR COMPOST BERM PER PER DETAILS, SHEET ESC4.

(703) CONSTRUCT CONSTRUCTION ENTRANCE PER DETAIL, SHEET ESC4. INCLUDE WHEEL WASH IF NECESSARY.

(704) CONSTRUCT CONCRETE WASHOUT PER DETAIL, SHEET ESC4. FINAL LOCATION FOR CONCRETE WASHOUT TO BE DETERMINED BY CONTRACTOR.

(705) SUPPLY AND INSTALL INLET PROTECTION PER DETAIL, SHEET ESC4. FINAL INLET PROTECTION TO BE SELECTED BY CONTRACTOR AND APPROVED FOR ONSITE CONDITIONS.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**WTP DESIGN NORTH & SOUTH**
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**EROSION AND SEDIMENT CONTROL BMP PLAN**

PROJECT NO.: 20-0028.300 | SCALE: AS SHOWN | DATE: JULY 2021

SHEET ESC4

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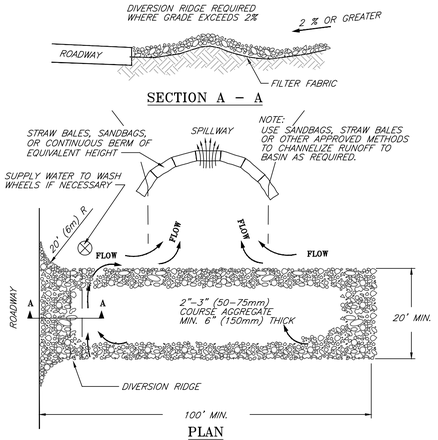
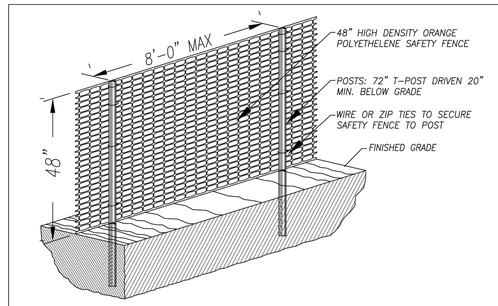



NOTES:

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT–OF–WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT–OF–WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

## TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT

NOT TO SCALE

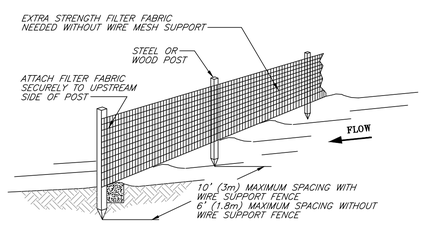


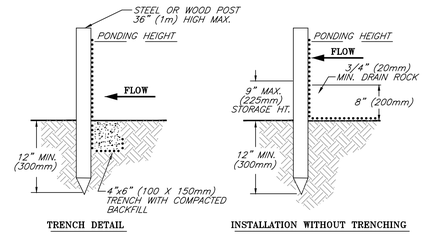

NOTES:

1. ALL SENSITIVE AREAS SHALL BE PROTECTED AS PER PLAN.
2. ALL TREES IN THE CONSTRUCTION AREA NOT SPECIFICALLY DESIGNATED FOR REMOVAL SHALL BE PRESERVED AND PROTECTED WITH HIGH VISIBILITY FENCE AS PER PLAN.
3. WHEN PRACTICABLE, INSTALL HIGH VISIBILITY 3 FEET OUTSIDE OF THE DRIP LINE OF THE TREE.
4. SAFETY FENCE SHALL BE FASTENED SECURELY TO THE POSTS.
5. THE FENCING MUST REMAIN IN PLACE DURING ALL PHASES OF CONSTRUCTION; ANY CHANGE OF THE PROTECTIVE FENCING MUST BE APPROVED.
6. THE CRITICAL ROOT ZONE (CRZ) FOR TREES 4" DIAMETER OR SMALLER SHALL BE AN AREA WITHIN A RADIUS OF AT LEAST 5' FROM THE TRUNK.
7. THE CRZ FOR TREES OVER 4" DIAMETER SHALL BE AN AREA WITH A RADIUS OF AT LEAST 1'–6" FROM THE TRUNK FOR EVERY 1" OF DIAMETER SIZE.
8. NO SOIL GRADE CHANGES OR COMPACTION SHALL TAKE PLACE WITHIN THE CRZ, EXCEPT AS APPROVED.
9. NO STORAGE OF MATERIAL SHALL BE ALLOWED WITHIN THE CRZ.
10. IF WORK IS TO BE DONE WITHIN THE CRZ, CARE MUST BE TAKEN TO MINIMIZE ROOT DISTURBANCE. SPECIAL CARE SHALL BE TAKEN DURING EXCAVATION AND REMOVAL OF EXISTING CURB, GUTTER, AND SIDEWALKS TO AVOID DAMAGE TO TREE ROOTS. LOCATE EXISTING TREE ROOTS USING HAND TOOLS OR OTHER APPROVED METHODS SUCH AS AN AIRSPADE.
11. PROTECTIVE FENCING IS REQUIRED WHEN THE WORK AREA IS WITHIN THE CRZ, EXCEPT WHERE PARTS OF THE CRZ IS COVERED BY PAVEMENT, SUCH AS WALKS OR STREETS.
12. NO ROOTS OVER 2" SHALL BE CUT WITHOUT APPROVAL. APPROVED ROOTS SHALL BE CUT WITH APPROVED SAWS. NO ROOT OVER 2" SHALL BE CUT OR TORN DURING TRENCHING WITH POWER EQUIPMENT SUCH AS BACKHOES AND TRENCHERS. UTILITY LINES AND IRRIGATION OR OTHER PIPES SHALL BE INSTALLED BY HAND DIGGING OR TUNNELING UNDER ROOTS, AS NECESSARY, TO AVOID CUTTING ROOTS 2" AND LARGER.

## ORANGE CONSTRUCTION FENCING

NOT TO SCALE



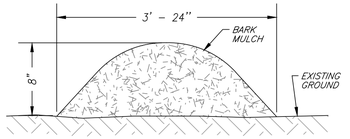




NOTES:

1. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
2. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY. 9" (225mm) MAXIMUM RECOMMENDED STORAGE HEIGHT.
3. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF–SITE AND CAN BE PERMANENTLY STABILIZED.

## SILT FENCE

NOT TO SCALE

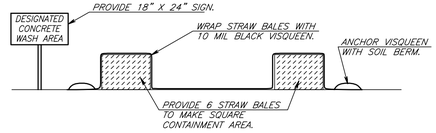



NOTES:

1. PLACE BARK BERM AROUND LIMITS OF WORK.
2. BARK BERM SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
3. INSPECT AND REPAIR BERM AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY.
4. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF–SITE AND CAN BE PERMANENTLY STABILIZED.

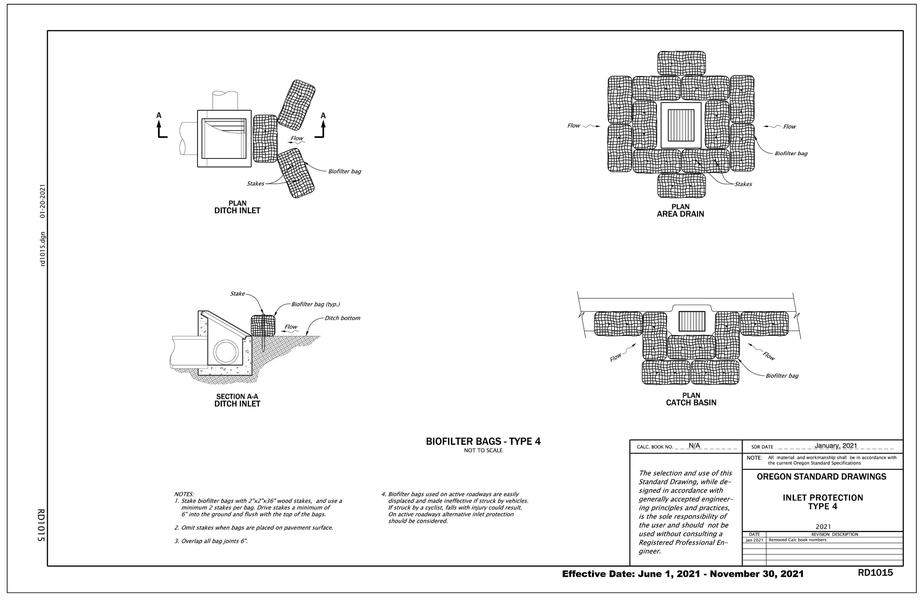
## BARK BERM

NOT TO SCALE




## CONCRETE WASH AREA

NOT TO SCALE




**BIOFILTER BAGS - TYPE 4**

NOT TO SCALE

NOTES:

1. Stake biofilter bags with 2"x2"x36" wood stakes, and use a minimum 2 stakes per bag. Drive stakes a minimum of 6" into the ground and flush with the top of the bags.
2. Omit stakes when bags are placed on pavement surface.
3. Overlap all bag joints 6".
4. Biofilter bags used on active roadways are easily displaced and made ineffective if struck by vehicles. If struck by a cyclist, falls with injury could result. On active roadways alternative inlet protection should be considered.

CALC. BOOK NO.: N/A — SDR DATE: January, 2021

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

**OREGON STANDARD DRAWINGS**

**INLET PROTECTION TYPE 4**

2021

| DATE | REVISION DESCRIPTION |
|---|---|
| Jan 2021 | Removed Cast Iook numbers |

*The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.*

**Effective Date: June 1, 2021 - November 30, 2021** RD1015

## INLET PROTECTION

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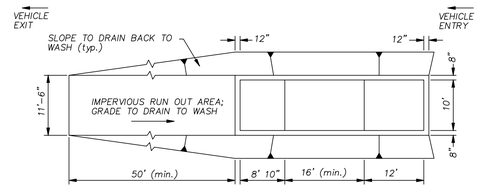
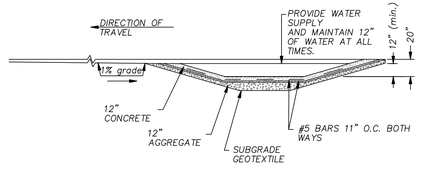


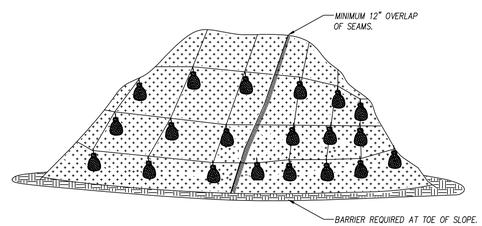

PLAN




SECTION

## WHEEL WASH

NOT TO SCALE




NOTES:

1. MINIMUM 12" OVERLAP OF ALL SEAMS REQUIRED.
2. BARRIER REQUIRED AT TOE OF STOCK PILE.
3. COVERING MAINTAINED TIGHTLY IN PLACE BY USING SANDBAGS OR TIRES ON ROPES WITH A MAXIMUM 10' GRID SPACING IN ALL DIRECTIONS.

## PLASTIC SHEETING

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REGISTERED PROFESSIONAL ENGINEER #62780PE DIGITALLY SIGNED OREGON JULY 13, 2021 DAMIEN GILBERT
EXPIRES: JUNE 30, 2023

murraysmith

CITY OF HARRISBURG Established 1866

**WTP DESIGN NORTH & SOUTH**

*TAX MAP: 15S04W04 TAX LOT: 600*
*TAX MAP: 15S04W09 TAX LOT: 700*

**EROSION AND SEDIMENT CONTROL DETIAL SHEET**

PROJECT NO.: 20-0028.300 | SCALE: AS SHOWN | DATE: JULY 2021

SHEET ESC5

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