CITY OF UMATILLA

DESIGN & CONSTRUCTION STANDARDS & SPECIFICATIONS FOR PUBLIC WORKS IMPROVEMENTS

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October 5, 2021

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City of Umatilla
700 Sixth Street
Umatilla, OR 97882
(541) 922-3226

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CHAPTER 1 - GENERAL

ENACTING AUTHORITY

These Design and Construction Standards are enacted by the City of Umatilla, in accordance with state law, to protect and preserve the public health, safety, and general welfare, consistent with City of Umatilla Municipal Code (UMC) Title 7.

PURPOSE

The purpose of these Design and Construction Standards is to provide consistent requirements, standards, and specifications for the design and construction of public works infrastructure improvements by the City and by private developers.

CONFLICTING PROVISIONS

The standards, procedures, and requirements of these Design and Construction Standards are the minimum necessary to promote the health, safety, and welfare of the residents of the City of Umatilla. The City may adopt more or less rigorous or different standards, procedures, and requirements whenever necessary. If the provisions of these Design and Construction Standards conflict with one another, or if a provision of these Design and Construction Standards conflicts with the provision of the existing City Code, or a previously enacted Ordinance of the City, the most restrictive provision or the provision imposing the highest standard shall control.

SEVERANCE

If any provision of these Design and Construction Standards or its application to any person or circumstance is for any reason held to be invalid, the remainder of these Design and Construction Standards or the application of the provisions is not affected.

PROCESS

Any project that includes the construction of public infrastructure or represents an impact to public infrastructure shall comply with the procedures listed in CHAPTER 2 and UMC. Public infrastructure includes all construction or impact to public streets, water, sanitary sewer, irrigation, storm drainage, illumination and any other facilities that will be owned, operated and

maintained by the City. Additionally, all projects shall be reviewed by the City for regulating on-site stormwater runoff.

ENGINEERING DESIGN PLAN REQUIREMENTS

All plans, specifications, engineering calculations, diagrams, details, and other relevant data shall be designed and prepared by a Civil Engineer licensed by the State of Oregon (Consultant), in accordance with CHAPTER 3.

REVIEW AND INSPECTION FEE

Application, plan review, and inspection fees are hereby established to defray the costs incurred by the City of Umatilla, its agents, employees, and elected or appointed officials, for review and approval of the plans and specifications and for inspection of construction of the public works improvements. Fees as presented in the UMC and fee schedule as adopted by ordinance shall include, but not be limited to, application review, plan review, subsequent meetings with the Developer, explanations to the Developer's Consultant, reviews of revised plans, construction inspection, re-inspections, and a final inspection prior to acceptance of the project.

Fee payments shall be made in full by the Developer prior to the City releasing the approved original plans and specifications for construction, or the issuance of a Building Permit as described in CHAPTER 2.

RECORD DRAWINGS

The Developer's Consultant shall prepare and maintain a neatly marked, full-sized print set of record drawings showing the final location and layout of all new construction of the public facilities. Record drawings shall be supplied to the City of Umatilla consistent with Section 00150.35 (e) Project Record Drawings as presented in CHAPTER 4 of these Construction Standards.

TRANSFER OF OWNERSHIP

The City Engineer or his designee shall make final inspection of all constructed public improvements at construction completion. Upon final inspection and approval of all work, the City Engineer shall provide written certification of completed public improvements including the method of construction, workmanship, materials, and quality control testing of the improvements. Public improvements shall be deemed accepted by the City one year from the date of certification and shall be conveyed to the City at that time. The Developer as the owner

is responsible for operation, maintenance, and repairs of the public improvements within the one-year period.

EASEMENTS

Public utility easements shall be established for the location of new and future public improvements serving new land divisions and land developments. Easements shall also be granted across the front of new lots and existing lots to provide future utility access as required.

All easements required shall be prepared by the Developer on the proper form and format for recording at Umatilla County of County Records. The easement legal description shall be prepared by a land surveyor licensed in the State of Oregon. The easement document shall be submitted to the Planning Division for review prior to plan approval. Once approved by the City Engineer, the Developer shall record the executed and notarized easement, and provide proof of recording to the Planning Division prior to project acceptance.

Easements for new and/or future utility lines shall be a minimum of twenty (20) feet wide, with the exception of potable water and irrigation which shall be a minimum of fifteen (15) feet wide, provided the width of easements for buried utilities will be at least twice the depth of the planned excavation. Where utilities share or lie within a single easement, Department of Health separation requirements shall apply as appropriate, and the easement width shall extend eight (8) feet beyond the center of pipe, parallel to the utility.

Utility easements shall be continuous and aligned from block to block within a subdivision and with easements in adjoining subdivisions to facilitate the extension and future extension of public utilities.

UTILITY OVERSIZING

In all cases, the City Engineer shall have final determination of the size and depth of water, sewer, and irrigation mains connected to the City utility system. The determination shall be consistent with the City's comprehensive plan and/or the long-range objectives for the associated utility.

For example, if a property owner/developer is required to install a water main with a diameter in excess of the size necessary to serve their development, and greater than the 8" minimum pipe size required for all utilities, and if the purpose of such oversizing is to provide for the future needs of the City, the City may, based upon the conditions established within this policy, reimburse the property owner/developer for the difference in material and/or labor costs

incurred solely by reason of the oversizing requirement. No such reimbursement shall be made except upon the following:

- Complete installation of the utility main and approval of the same by the City Engineer;
- Submittal to the City of a bill of sale, warranty, bonding, and proof of insurance for the utility main;
- Certification of the oversizing costs, with such verification from the material supplier and contractor as the City Engineer may require;
- Approval of the oversizing costs by the City Engineer; and
- Approval of the reimbursement by the City Engineer.

As an alternative to cash reimbursement, the City Engineer may choose to provide a credit, in the amount of the reimbursement that may otherwise be available, against the corresponding development charges imposed under the UMC. For example, if a water main is oversized, a credit may be granted against the water development charge imposed under UMC, but not the sewer development charge. Said reimbursement or credit shall not be more than 100% of any and all development charges.

The cost of labor and materials for said oversizing may be reimbursed to the owner/developer by the City. Materials include pipe, imported trench backfill, and asphalt pavement beyond trench/surfacing limits required for the development. The labor cost to install the utility oversizing may be considered when the pipe diameter oversize is greater than 250% different in size than an 8-inch diameter or the pipe diameter required for the development, whichever is greater. For example, if an 8" main is required for the development, then a pipe that is more than 20" in diameter, such as a 24" diameter main, would receive consideration of labor within the calculation for upsize credit as determined by the City Engineer. Said reimbursement or credit shall not be more than 100% of any and all development charges.

An oversizing agreement must be executed by the City Manager and Developer prior to plan approval. A summary of all eligible reimbursable costs and backup itemization must be submitted to the City Engineer, for review and acceptance, within 45 days of substantial completion of the project or phase. Following review of submission, a determination of the total reimbursement amount will be calculated by the City Engineer and provided to the Developer within 45 days of submission receipt. Upon concurrence of the calculated amount by the Developer, the City will provide reimbursement payment within 30 days

CHAPTER 2 - DEVELOPMENT PROCEDURE

INTRODUCTION

Any project that includes the construction of public infrastructure or represents an impact to public infrastructure shall comply with the following procedures. Public infrastructure includes all construction or impact to public streets, water, sanitary sewer, irrigation, storm drainage, illumination and any other facilities that will be owned, operated, and maintained by the City.

Unless otherwise specifically stated, the term "public improvement" or "public infrastructure" shall mean any improvement constructed within public right-of-way, or one that will be transferred to the City following construction, including, but not limited to, sanitary sewer, storm drainage, water, irrigation, roadway, sidewalk, traffic signals, and street lights. The term "City" shall mean the City Engineer, or his designated representatives; "Developer" shall mean the actual Owner/Developer of the proposed development that includes public improvements or his designated Agent; and, "Consultant" shall mean an individual or firm, licensed to practice Civil Engineering in the State of Oregon, who shall have been retained by the Owner/Developer for the purpose of preparing the detailed plans and specifications and doing such other engineering work as shall be specifically identified within the context of these procedures and as approved by the City Engineer.

Improvements for which these procedures shall typically apply include water, sewer, storm, and street impacts. Examples include:

Water: Public water mains, water systems, irrigation mains, irrigation systems and their appurtenances. The required procedures for private, on-site water systems from the City meter to the building, and for private, on-site irrigation systems are addressed through the Building Division.

Sanitary Sewer: Public sanitary sewer interceptors, trunks, collectors and their appurtenances including portions of the building sewers located within the public right-of- way or public easement. The required procedures for private sanitary sewer service laterals and appurtenances located outside of the public rights-of-way or public easements are addressed through the Building Division.

Stormwater: Public stormwater and drain systems and their appurtenances located within the public right-of-way or public easements, and infrastructure for private, on-site stormwater systems, located outside the public right-of-way. On-site stormwater system

designs will be reviewed by the City to ensure systems meet the required stormwater regulations.

Street: All public street or roadway facilities and their appurtenances including traffic signals, street lighting, driveways, sidewalks, curb ramps, curb, gutter, bicycle and pedestrian facilities, and parking areas. The required procedures for private on-site sidewalks, private parking and loading facilities, private driveways, and other improvements are addressed through the Building Division.

Minor improvements, such as residential driveway approaches or isolated sidewalk sections, may be exempt from these requirements at the discretion of the City Engineer.

OWNER RESPONSIBILITY

The Owner/Developer shall, if other than himself, name and identify the person who shall be designated to act on his behalf on matters relating to the project. The Consultant may, at the Owner/Developer's discretion and direction, be the Agent. The identified person shall be the single point of contact for the duration of the project.

The Owner/Developer shall retain the services of a Consultant, having the appropriate City of Umatilla business license and licensed to practice Civil Engineering in the State of Oregon, who is qualified to perform the required engineering services to design and construction stake/survey, as required, of the proposed public improvements. If the project includes installation of domestic water infrastructure, the Consultant shall comply with the requirements of Chapter 333. Division 61 drinking water of the Oregon Administrative Rule (OAR).

If, at any time during the project, the Owner/Developer terminates or reduces the level of the services of the Consultant or the designated Agent as specifically identified and accepted by the City, the Owner/Developer and Consultant/Agent shall immediately notify the City.

The Owner/Developer has the overall responsibility for project management, construction management, contract administration, permit acquisition, compliance, testing, and, if required, right-of-way acquisition. No construction work shall commence prior to a Pre-Construction Conference and plan approval by the City Engineer.

PLAN REVIEW

The Consultant shall prepare, seal, and submit to the City Planning Division four complete sets of detailed construction plans, profiles, cross sections, support data, design calculations, project details, and project specifications as applicable, consistent with UMC. Additionally, a stormwater report shall be prepared, sealed, and submitted to accompany the construction plans. All such plans and specifications shall be in accordance with the most current requirements of the

Oregon Health Authority (OHA), Department of Environmental Quality (DEQ), Oregon Department of Transportation Hydraulic Manual for Zone 13, OAR for Sanitary Sewer Design, OAR for Drinking Water, Oregon Standard Specifications for Construction and Standard Drawings (OSSC), and City of Umatilla Standards (CUS).

Plans shall be prepared in accordance with CHAPTER 3. The City shall review the submitted plans and specifications within 30 business days and shall return one reviewed and noted copy indicating the changes, additions, deletions, or modifications that are required to make the plans and specifications acceptable. When the revised plans, specifications, and other materials are resubmitted to the City, the City shall review and upon acceptance, approve the revised plans and specifications notifying the Consultant of approval and the remainder of the review and inspection fees to be paid. Review of the revised plans and specifications will be on a first-come, first-served basis, and a response will be provided to the applicant within 15 business days. The response will include additional comments or approval notification.

It is the Developer's responsibility to obtain signatures and dates from all outside utilities within the City of Umatilla indicating that they have reviewed and approved the plans, as required by CHAPTER 3 of these Construction Standards. The approval from outside utilities must be received prior to final plan acceptance and plan approval consideration by the City. If significant changes are required to the plans following the City's review, after initially receiving outside utility approval, the owner may be required to reobtain the signature and date of possible impacted utilities as designated by the City.

Upon acceptance, the City Engineer, or their designee, will approve and sign the plans. Such approved plans and specifications shall not be changed, modified, or altered without written authorization from the City Engineer. The Developer shall provide the City with a minimum of five (5) copies of the approved plan set and specifications for use by City Inspectors and City Departments as required.

CONSTRUCTION

Following selection of a Contractor and prior to construction, the Developer is responsible for scheduling a pre-construction conference with the City's Construction Supervisor. Other jurisdictions, the Developer's Engineer, Developer's contractor, utility companies, subcontractors and other necessary parties to the project shall be present at the preconstruction conference.

The City shall host the Pre-Construction Conference within two weeks of the scheduling request by the applicant. The Developer's contractor will submit his insurance and construction schedule at this conference. Construction may proceed, per the approved schedule, following the completion of the Pre-Construction Conference, provided all of the necessary documentation has been submitted and approved.

It is the responsibility of the Owner/Developer to ensure that construction is in conformance with the approved plans and specifications. The Owner/Developer is ultimately responsible for the work that is done. The City shall be notified not less than three working days before construction is to start.

The City of Umatilla will assign a construction inspector to the project at the owner/developer's expense, the cost of which covered by the plan review/inspection fees. In addition to routine observation, the City inspector will inspect specific elements and milestones during the work. All tests, inspections, or reviews to be completed by the City shall be scheduled a minimum of two working days in advance. The City's inspection will not relieve the Owner/Developer's liability of all work being performed in conformance with the approved plans, specifications, and permits.

The Owner/Developer shall independently hire and cover all costs associated with quality assurance sampling and materials testing by a certified testing company and provide documentation of the results of the sampling and testing to the City. The requirements for sampling and testing are contained in the current edition of the Oregon Standard Specifications for Construction, and these City of Umatilla Construction Standards.

The Owner/Developer, or his assigned Agent, shall administer, manage, and supervise the construction and will be readily available to approve design changes, when necessary. The Contractor shall have a representative with authority on site whenever work is being performed. Any problems that are encountered or changes required due to construction conditions will be reviewed with the Consultant and the owner/developer. Changes that require any increase or decrease to the contractor's cost will be the responsibility of the owner/developer and may result in increased City review and inspection fees.

All construction shall meet the requirements of the most current edition of the Oregon Standard Specifications for Construction, the Manual on Uniform Traffic Control Devices, DEQ, OHA, OAR for Sanitary Sewer and Drinking Water, ODOT Hydraulics Manual, City of Umatilla Standards, the approved plans, the approved Project Specifications and other applicable regulations. Special Provisions (if any) shall be prepared and submitted to the City for acceptance. All changes, alterations, or revisions to the approved plans or specifications shall be submitted for acceptance by the City Engineer.

Copies of all test records shall be furnished to the City Engineer on a weekly basis, or as deemed necessary by the City Engineer. The City Engineer, or their designee, will visit the project site to review the work related to the required inspection. Such site visits do not relieve the applicant, or the contractor of any responsibilities for performing all work in accordance with the approved plans and this chapter. The City Engineer, or their designee, may also visit the project site from time to time to monitor the overall progress of the project.

Failure to comply with testing requirements may necessitate appropriate or additional testing and certification as directed by the City Engineer. Costs of such testing and certification shall be borne by the contractor and/or applicant. At the time that such action is directed by the City Engineer, no further work will be permitted on the road or subdivision until all tests have been completed and all corrections have been made to the satisfaction of the City Engineer.

The City shall have the authority to cause a suspension of construction when, in the City's opinion, such work is not being done in conformance with the approved plans, specifications, regulations or permit. Any resultant delays, impacts, or added expenses shall not be the City's responsibility.

Upon written notice that the public improvements have been substantially completed, the City will, in the company of the Owner/Developer or his Agent, make a final inspection of the construction. The Owner/Developer shall see that all necessary additions, corrections, repairs, and/or modifications are made.

CONSTRUCTION COMPLETION

At the conclusion of construction and when all corrections and repairs have been made, the Owner/Developer shall submit record drawings together with a Certificate of Work Completion, which shall include, but not be limited to, testing records, material certifications and warranties, and a request for City Engineer certification of completed public improvements.

No building or service connection to sanitary sewers, storm drains, or water lines will be permitted until these systems have received certification by the City Engineer, or unless otherwise approved by the City for connections (including the payment of connection charges).

The completion of all public improvements, including submittal of "As-Built Drawings" shall be required prior to the issuance of a building permit, however, in certain situations, a building permit may be granted prior to the completion of the public improvements provided the Owner/Developer submits a bond for the public improvements, as required in Chapter 4. All public improvements including "As-Built Drawings" must be completed prior to receiving a Certificate of Occupancy.

When all public improvements have been completed in an acceptable manner, and following receipt of a Certificate of Work Completion package, the City Engineer shall provide certification of completed public improvements. Certification by the City shall not relieve the Owner/Developer's, or the Contractor's liability of all work being performed in conformance with the approved plans, specifications and permit. Public improvements shall be deemed accepted by the City within the timeframes set forth within the UMC.

CHAPTER 3 - GENERAL PLAN REQUIREMENTS

All plans, details, specifications, engineering calculations, diagrams, and other relevant data shall be designed and prepared by a Civil Engineer currently licensed by the State of Oregon.

GENERAL PLAN FORMAT

1. Plan sheets and profile sheets or combined plan and profile sheets and detail sheets shall be on a sheet size of 11”x17” (ANSI B) or 22" x 34" (ANSI D) with the engineers stamp at the appropriate size for the full size plan set.

2. The Cover sheet shall contain the following:

    a. Title of the project;
    b. Name, address, and phone number of the owner/developer;
    c. Name, address, and phone number and stamp of the Civil Engineer preparing the plans (Consultant);
    d. A minimum clear area of 2.5”Hx3.5”L for final acceptance stamp for City final approval of the plans;
    e. Vicinity map showing the project site location;
    f. Survey benchmark used for the project;
    g. An overall site plan with contours;
    h. Sheet Index;
    i. Legend;
    j. Applicable project information; and
    k. The utility locate call # 811.

3. Each sheet shall contain the following:

    a. Project title and City project number, work order number, or LID number, if appropriate;
    b. Quarter section, Section - Township – Range;
    c. Sheet title;
    d. Page (of page) numbering;
    e. Revision block;
    f. Subdivision or short plat name;
    g. Signed stamp by a Civil Engineer currently licensed by the State of Oregon; and
    h. A minimum clear area of 2.5”Hx3.5”L for final acceptance stamp for City final approval of the plans.

4. All plan sheets must have a NORTH arrow preferably pointing to the top of the sheet or to the left and must indicate the drawing scale. All engineering plans must be drawn to an appropriate engineer's scale. For profiles, the vertical scale shall be 1"=2', 1"=5' or 1"=10'. The horizontal scale shall be the same for both plan and profile and shall normally be 1"= 20'. Plan and profile stationing shall generally read left to right.

5. Match lines are required at breaks between sheets.

6. The Horizontal Datum for all plan submittals must be based on the City of Umatilla datum, NAD 83 (2011). The Vertical Datum for all plan submittals must be based on the City of Umatilla datum, NAVD 88. The benchmark used shall be referenced on the plans. An assumed datum will not be accepted.

7. Existing features and topography within the project construction limits must be shown on the plans. This shall include existing road width and surfacing, utility poles, existing underground utilities and surface appurtenances, significant trees, landscaping, and other elements that may affect design/construction.

8. All existing and proposed underground utilities and pipes shall be shown in the profile. The location and depth of existing facilities should be verified if there is a potential conflict with proposed facilities.

9. All street, water, sewer and storm drainage work shall be drawn on standard plan and profile sheets. Street, water, sewer, storm drainage, irrigation, and electrical design information shall all be shown on the same plan and profile sheets.

10. Plan sheets shall indicate all existing and proposed property lines, right-of-way lines, and easements.

11. Plan sheets shall show all horizontal survey control as required to properly locate and tie the improvements in horizontal location.

12. An erosion/sedimentation control plan sheet shall be included in the plan set.

WATER SYSTEM PLAN REQUIREMENTS

See CHAPTER 5 for specific design requirements.

1. Show all existing and proposed water system features if known, including but not limited to:

    a. Water mains;
    b. Water valves;
    c. Water meters;
    d. Water service lines;
    e. Fire hydrants;
    f. Blow offs;
    g. Air and vacuum release valve assemblies;
    h. Pressure reducing valves;
    i. Fire sprinkler system lines;
    j. Double check valves;
    k. Post indicator valves; and
    l. Thrust blocking/mechanical restraints.
2. Indicate all easements required for the water main extensions and future extensions.
3. Show the water system, irrigation system, and the sanitary sewer system on the same plan and profile view for verification of minimum separation requirements. The design information for each system may be on individual drawings for that system.
4. Show the length, size, and pipe type for all main extensions, fire sprinkler system services, and domestic services where applicable.
5. Identify all joint connections; provide detail of all non-standard joints.
6. Show by station or dimension the location of all fire hydrants, tees, crosses, and services relative to centerline or property lines.
7. A profile view shall be shown for all City water main extensions, aligned if practical with the plan view. Clearly indicate the horizontal and vertical scales.
8. Show the minimum cover and minimum separation on each sheet.
9. In the profile view, show all utilities crossing the proposed water main.

SANITARY SEWER SYSTEM PLAN REQUIREMENTS

See CHAPTER 6 for specific design requirements.

1. Show all existing and proposed sanitary sewer system features including, but not limited to, the following:

    a. Sewer mains, gravity and force mains;
    b. Side service, proposed locations;
    c. Manholes;
    d. Clean outs; and
    e. Lift stations.

2. Indicate all easements required for the sanitary sewer main extensions and laterals.

3. Provide an overall site plan of development with contours, to show that all lots/parcels will be served by the proposed sewer system at design depth for all new development.

4. Show the sanitary sewer system and water system on the same plan and profile for verification of minimum separation requirements. The design information for each may be on individual drawings for that system.

5. Slope, length, size, and pipe type shall be indicated for all lines and side sewers. Pipe length shall be measured from centerline of manholes.

6. Provide a profile for each sanitary sewer main extension. Clearly indicate the vertical and horizontal scale. Show the profile on the same sheet with, and aligned underneath, the plan view as practical.

7. The plan and profile must show the location of all existing and proposed gas, water, irrigation, storm drain, and other utility lines and crossings.

8. Show all vertical data in the profile view and all horizontal data in the plan view. It is not desirable to repeat the vertical data in the plan view unless it does not show in a profile.

9. Each manhole shall be uniquely numbered and shall be stationed off of a referenced centerline. Indicate rim and invert elevations in and out at all manholes.

10. Indicate the length of each side sewer stub, the centerline stationing for each side sewer, and the size.

STORMWATER SYSTEM PLAN REQUIREMENTS

See CHAPTER 7 for specific design requirements.

1. Show all existing features if known and all proposed storm sewer (drain) system features, including but not limited to:
    a. Storm drain mains and lines;
    b. Catch basins;
    c. Inlets;
    d. Drywells;

e. Infiltration trenches;
f. Retention systems;
g. Biofiltration swales;
h. Culverts;
i. Streams;
j. Ditches;
k. Natural drainage swales;
l. Headwalls;
m. Oil/water separator assembly; and
n. Other requirements of the DEQ and ODOT Hydraulic Manual.

2. Indicate all easements required for the storm drainage system.
3. The plans shall clearly indicate the location of the storm drainage items stationed from a referenced centerline.
4. Show all horizontal measurements and control in the plan view.
5. Show slope, length, size, and pipe material for all storm drain mains and lines.
6. All catch basins and inlets shall be uniquely numbered and shall be clearly labeled. Stationing and offsets shall be indicated from referenced centerline. Show all proposed storm drain features within the right of way in a profile.
7. Indicate all grate, rim, and invert elevations in the profile view.
8. Provide a stormwater report consistent with DEQ and ODOT Hydraulic Manual, with an emphasis on runoff and drainage facilities sizing calculations as described in CHAPTER 7. Additionally, the stormwater report shall include a maintenance plan for all drainage facilities, both public and private.

STREET PLAN REQUIREMENTS

See CHAPTER 8 for specific design requirements.

1. Show all existing and proposed roadway improvements, including but not limited to:

a. Contours
b. Pavement and edge of pavement;
c. Concrete curb and gutter;
d. Sidewalk(s);
e. Utilities (manholes, utility poles, pedestals, valves, water meters, etc.);
f. Sidewalk ramps;
g. Signs and Barricades;
h. Channelization and pavement markings
i. Driveways;
j. Rockery or retaining walls;
k. Mailboxes;

l. Monuments;
m. Streetlights, conduits, junction boxes, and service cabinet;
n. Compliance with ADA requirements including design elevations at all pedestrian ramps; and
o. Traffic control plans.

2. Show all Right of Way (R/W) lines, centerlines, and roadway widths for all rights of way.
3. Clearly differentiate between areas of existing pavement, areas of new pavement, and areas to be overlaid.
4. Provide a cross section or typical section of all rights of way indicating right of way width, centerline, pavement width, super-elevation or crown, sidewalk, street lights, curb and gutter, pavement, and base thickness of proposed section.
5. Provide a Plan and Profile of all new public roadways or extensions of existing roadways. Provide topography within the R/W including utilities. Indicate all horizontal and vertical curve data, percent of grade, bearings, centerline stationing every 50 feet, finish grade elevations, and existing ground line. The profile of the existing centerline ground should extend a minimum of 100 feet before the beginning and at the end of the proposed improvements to show the gradient blend.
6. Align the profile view with the plan view, if practical. Clearly indicate the horizontal and the vertical scale.
7. Clearly label all profiles with respective street names and plan sheet reference numbers if drawn on separate sheets.
8. Provide survey monuments along the road centerline at all ends of curves, intersection points, angle points, and center of cul-de-sacs.
9. For developments where road work is required on an existing street, development plans are required to include cross section of the existing street and spot elevations at proposed intersections and appurtenances to the project.

CHAPTER 4 - GENERAL REQUIREMENTS FOR ALL PROJECTS

FORWARD

The City of Umatilla has adopted the latest edition of the Oregon Standard Specifications for Construction as the standard specifications governing all design and construction of public works improvements by the City and by private developers.

All references hereinafter made to the "Standard Specifications" shall refer to the latest edition of the Standard Specifications described above. Except as may be amended, modified, or supplemented hereinafter, each section of the Standard Specifications shall be considered as much a part of these requirements as if they were actually set forth herein.

The Standard Specifications, General and Project Special Provisions, and City Standard Details contained in these Design and Construction Standards shall apply in their entirety to all City of Umatilla public works projects. These Design and Construction Standards have been prepared to form a compiled document intended to assist and inform developers, consultants, and contractors of the construction requirements to be used on proposed public works improvements.

The Standard Specifications, General and Project Special Provisions, and City Standard Details shall periodically be amended, revised, and updated. It shall be the responsibility of each user of this information to verify that he has the latest revisions prior to submitting any work covered by these specifications and details.

Copies of the Standard Specifications are available for review and inspection at the City of Umatilla Public Works Division.

Copies of the Oregon Standard Specifications for Construction may be purchased from:
Oregon Department of Transportation (ODOT)
https://5207--62.myuplinxstore.com/franchise/index.htm

Oregon standard specification for construction
https://www.oregon.gov/ODOT/Business/Pages/Standard_Specifications.aspx

Oregon standard drawings
https://www.oregon.gov/odot/Engineering/Pages/Drawings-Roadway.aspx

Developers and contractors are encouraged to obtain a copy of these standards.

GENERAL

All work shall be completed in accordance with the approved Plans, the latest edition of the Oregon Standard Specifications for Construction amendments to the Standard Specifications, referenced codes and organizations, and these Special Provisions.

All materials incorporated into a proposed public works improvements project shall meet the requirements of the various material sections of the Oregon Standard Specifications for Construction or City of Umatilla Design and Construction Standards as shown in the Standard Details and Special Provisions.

SECTION 00110 – ORGANIZATION, CONVENTIONS, ABBREVIATIONS, AND DEFINITIONS

00110.20 Definitions

The terms defined in Section 0010.20 of the Oregon Standard Specifications for Construction shall be further described by the following:

Consultant:	Means an engineer licensed in the State of Oregon, employed by the Developer to design the improvement and prepare plans and specifications, perform construction staking, or similar services.
Construction Documents:	Means the project plans, specifications, and special provisions prepared by the Developer's Consultant for the public works improvements contemplated and approved by the City.
City:	Means the City of Umatilla, a municipal corporation, as represented by its authorized officials, employees or agents. The term "Contracting Agency" and "City" are synonymous.
Contractor:	Means the person or firm employed by the Developer or under Contract with the City to do the construction of the public works improvements.
Developer:	Means the person or firm constructing the new development and engaging the services of and employing consultants, and/or contractors and paying for the design and construction of the public works improvements to be transferred to the City.

Drawings:	Means the construction plans prepared by the Developer's Consultant for the public works improvements contemplated. The terms "Construction Documents," "Contract Documents," "Plans," "Engineer's Plans," "Engineer's Drawings," "Working Drawings," and "Project Manual" are synonymous.
City Engineer:	Means the appointed City Engineer for the City of Umatilla or his/her duly authorized agent or representative.
Owner:	Means the City of Umatilla acting through its legally established officials, boards, commissions, etc., as represented by its authorized officers, employees, or agents.
Public Works Director:	Means the appointed official for the City, responsible for managing the Department of Public Works.
Standard Plans and Details:	Means specific drawings adopted by the City of Umatilla and revised from time to time which show frequently recurring components of work which have been standardized for use.
Standard Specifications:	The latest edition of the Oregon Standard Specifications for Construction. Except as may be amended, modified, or supplemented hereinafter, each section of the Standard Specifications shall be considered as much a part of these Construction Documents as if they were actually set forth herein.
Special Provisions:	The Special Provisions supplement or modify the Standard Specifications and supersede any conflicting provisions of the Oregon Standard Specifications for Construction and the appended amendments to the Standard Specifications and are made a part of a Construction Document.

Should any conflicts be encountered, the following inter-relationships shall govern: The Special Provisions shall supersede the Standard Specifications.

Supplement this section with the following:

> All references in the Standard Specifications, Amendments, or Oregon Standard Specifications for Construction, to the terms "Department of Transportation", "Oregon State Transportation Commission", "Commission", "Secretary of Transportation",

"Secretary", "Headquarters", and "State Treasurer" shall be revised to read "Contracting Agency".

All references to the terms "State" or "state" shall be revised to read "Contracting Agency" unless the reference is to an administrative agency of the State of Oregon, a State statute or regulation, or the context reasonably indicates otherwise.

All references to "State Materials Laboratory" shall be revised to read "Contracting Agency designated location".

All references to "certification of completed public improvements" shall be interpreted to mean the Contracting Agency form(s) by which final completion is granted. Public improvements shall be deemed accepted by the City one year from the date of certification.

Section 00140 - SCOPE OF THE WORK

00140.30 Agency-Required Changes in the Work

Supplement this section with the following:

No changes in the work covered by the approved Construction Documents shall be made without having prior written approval of the Developer and the City.

00140.90 Final Trimming and Cleanup

Supplement this section with the following:

The Contractor shall perform final cleanup as provided in this section to the Developer's and City's satisfaction. The date of acceptance will not be established until this is done. The material sites and all ground the Contractor occupied to do the work shall be left neat and presentable. The Contractor shall:

1. Remove all rubbish, surplus materials, discarded materials, falsework, temporary structures, equipment, and debris, and

2. Deposit in embankments, or remove from the project, all unneeded, oversized rock left from grading, surfacing, or paving.

Partial cleanup shall be done by the Contractor when he feels it is necessary or when, in the opinion of the City or Developer, partial clean-up should be done prior to either major cleanup or final inspection.

00140.91 Waste Site (New Section)

The following new section shall be added to the Standard Specifications:

> Where there is additional waste excavation in excess of that needed for the project and in excess of that needed for compliance with requests of the Developer or City, the Contractor shall secure and operate his own waste site at his own expense. The Contractor shall also be required to secure and operate his own waste site at his own expense for the disposal of all unsuitable material, asphalt, concrete, debris, waste material, and any other objectionable material which is directed to waste.
>
> The Contractor shall comply with the State of Oregon's regulations regarding disposal of waste material.

Section 00150 - CONTROL OF WORK

00150.00 Authority of the Engineer

Supplement this section with the following:

> Unless otherwise expressly provided in the approved Construction Drawings, Specifications and Addenda, the means and methods of construction shall be such as the Contractor may choose; subject, however, to the Consultant and the City's right to reject the means and methods proposed by the Contractor which (1) will constitute or create a hazard to the work, or to persons or property; or (2) will not produce finished work in accordance with the terms of the approved Construction Documents. Approval of the Contractor's means and methods of construction or his failure to exercise his right to reject such means or methods shall not relieve the Contractor of the obligation to accomplish the result intended by the Construction Documents; nor shall the exercise of such right to reject create a cause for action for damages.

00150.15 Construction Stakes, Lies, and Grades

Delete this section and replace it with the following:

A land surveyor licensed in the State of Oregon, retained by the Developer, shall establish the line and grade of proposed construction by offset stakes. Said surveyor shall establish the centerline for minor structures and benchmarks at convenient locations for use by the Contractor and City inspectors. GPS systems may be used by the Contractor, but physical reference points shall be available for City inspectors.

The Contractor shall establish grades from the surveyor's stakes at suitable intervals in accordance with industry standards and acceptable to the City. Where new construction adjoins existing construction, the Contractor shall make such adjustments in grade as are necessary, and approved by the City.

It is the contractors responsibility to hire a professional land surveyor licensed in the State of Oregon to reference, reset, and record a survey for any damaged monumentation in accordance with ORS 209.140, ORS 209.150, and ORS 209.250.

00150.20 Inspections

Supplement this section with the following:

The City Engineer or his representative may not be on the job site full-time. The Contractor shall follow the approved construction plans and specifications, schedule, and request inspections and testing at the appropriate times as required herein. The Engineer will try to provide inspections on short notice, but if unable to, the requirements for proper notice shall apply. The project schedule prepared by the Contractor and approved by the Engineer shall also be used as a guide for the Contractor to schedule inspections. The Contractor shall provide a minimum 48 hours notice to request inspections and testing, but in no case shall there be more than 72 hours notice. The request shall state the date and approximate time the inspection or test is requested. If the Contractor has requested two (2) inspections or tests and is not prepared for said inspection or test, the Contractor shall pay the costs for any additional improperly scheduled requests.

At the beginning of the project, or each applicable construction activity, the Contractor shall meet with the City Engineer or his representative and establish a minimum 100 feet of product, in the field, which meets the specifications. This work includes: Survey staking and control, pavement cuts, utility trenches, trench bedding, pipe installation, backfill, patches, curb and gutter alignment, grade and finish, sidewalk finish, paving finish, and any other activities determined by the Engineer to be important to the project. No major amount of work shall proceed until this is established. This does not waive the Contractor's requirements in the specifications for quality control or materials used.

Inspections and testing are mandatory for acceptance of backfilling any utility trenches; placing base course and top course for streets; paving; placing sidewalks, curbs and gutters; storm, sewer and water line installation.

00150.35 (e) Project Record Drawings (New Section)

The following new section shall be added to the Standard Specifications:

> Approval Requirements. Prior to approval of a final plat, all required infrastructure improvements including as-built drawings and data of all underground utilities necessary to serve said plat must be constructed and accepted by the City Engineer. In lieu of actually completing all improvements, the developer may provide the City with a bond, cash or irrevocable letter of credit in an amount equal to 125 percent of the City Engineer's estimate of the cost to complete the required infrastructure improvements. No certificate of occupancy will be issued for any structure in a subdivision until all infrastructure improvements are completed.

This shall apply to all privately developed parcels, including commercial, within the City of Umatilla and the expected as-built documentation will follow the procedures and requirements contained herein for final acceptance of work. Drawings shall be kept current weekly, with all field instruction, change orders, and construction adjustment. Drawings shall be subject to the inspection of the Developer and the City at all times.

In conjunction with the Public Works Engineering Plan Review Process, post construction record drawings are required for all Private Development projects. The intent of this document is to guide the designing Engineer, the Developer and their Consultants in providing the City with acceptable record drawings and survey information.

When the improvements are complete and intended for acceptance by the City, including landscaping, the developer shall prepare "as-built" record drawings for the City using the current set of approved construction drawings, including all revisions and contractor's field mark-ups. The record drawings shall incorporate all changes made by both the Engineer and in the field during the construction process. Changes to be noted shall include changes in material, size, grade and location of utilities.

Bonding or Phased Improvements

The Developer can bond for remaining improvements per UMC. In cases where the remaining improvements are bonded, the Developer is responsible to provide complete record drawings for constructed improvements, both paper and electronic, prior to receiving bonding acceptance consideration for remaining improvements or phases.

Future phases will not receive bonding acceptance without written acceptance of the Record Drawings from completed phases per this section.

Preliminary (Paper) Record Drawing Procedures

1. A licensed Engineer representing the Developer will ensure that all improvements associated with the approved construction plans are obtained and create an accurate as-built topographical representation of the data.

2. The data, differing from initial plan acceptance, will be incorporated into the preliminary record drawings and the Engineer will adjust the features in the record drawings to match the actual data. All revised and verified elevations for sewer, storm, water, and irrigation will be shown on the record drawings by striking a single line through the design elevations and adding the surveyed "as-built" elevations. Horizontal locations will be indicated by using centerline station and offsets. All revised and verified station and offsets will be shown on the record drawings by striking a single line through the design station and offsets and adding the surveyed station and offsets. The stationing will be based on the approved construction drawings. The Engineer will update both the plan and profile layouts with the revised and verified data. Revised information shall be "clouded" as appropriate to indicate revisions.

3. Prior to final walk-through, the Engineer will compile the data and submit two copies of the preliminary (paper) record drawings to the City. The walk-through will not be scheduled until the paper record drawings are received.

Preliminary Record Drawing Submittals

- Two (2) paper copies (22"x34") including all field changes made.
- The preliminary record drawing will have all changes from the approved construction drawings clouded.
- The preliminary record drawing submittal will include the final field information as-built.

Upon receipt of the paper record drawings, the City shall have 10 business days to review the documents. Should the paper record drawings be found to be inaccurate or incomplete, the City shall have an additional 10 business days to review all subsequent submissions.

Final (Hard Copy and Electronic) Record Drawing Procedures

After receiving approval of the preliminary paper record drawing from the City, the developer/designing Engineer will submit the following:

Final Record Drawing Submittals

- One (1) full size copy of the corrected record drawing. The final record drawing shall be signed and sealed by a licensed Engineer and licensed surveyor. The clouding of changes will be removed before the hard copy is submitted.
- One (1) PDF copy of the final record drawing.
- One (1) electronic copy of data in AutoCAD.

Upon receipt of the electronic data, the City shall have 10 business days to review the information. Should the electronic data be found to be inaccurate or incomplete, the City shall have an additional 10 business days to review all subsequent submissions. The project will not be considered Substantially Complete until both the Hard Copy and Electronic as-builts have been deemed acceptable by the City.

00150.50 Cooperation with Utilities

Supplement this section with the following:

It shall be the Contractor/Developer's responsibility to notify all non-City of Umatilla utility companies of project including coordination of any impacts.

It shall be the Contractor's responsibility to investigate and verify the presence and location of all utilities prior to construction.

The Contractor/Developer shall call for field location, not less than two nor more than ten business days before the scheduled date for commencement of excavation which may affect underground utility facilities, unless otherwise agreed upon by the parties involved. A business day is defined as any day other than Saturday, Sunday, or a legal local, state, or federal holiday. The phone number for the Oregon utility notification

center 1-800-424-5555 (or 811). If no one-number locator service is available, notice shall be provided individually by the Contractor to those owners known to or suspected of having underground facilities within the area of proposed excavation.

No excavation shall begin until all known facilities, in the vicinity of the excavation area, have been located and marked.

The Contractor shall use surface features and other evidence in determining the approximate utility location prior to excavation. The Contractor shall hand dig to expose known utilities.

Where the location of the work is in proximity to overhead wires and power lines, the Contractor shall coordinate all work with the utility and shall provide for such measures as may be necessary for the protection of workmen.

Only City personnel shall operate water system valves.

00150.55 Cooperation With Other Contractors

Supplement this section with the following:

No additional compensation will be given to the Contractor for any coordination or delays caused by other nearby construction projects.

00150.80 Removal of Unacceptable and Unauthorized Work

Supplement this section with the following:

If the Contractor fails to remedy defective or unauthorized work within the time specified in a written notice from the City Engineer, or fails to perform any part of the work required by the Contract Documents, the City Engineer may correct and remedy such work as may be identified in the written notice, with Contracting Agency forces or by such other means as the Contracting Agency may deem necessary.

If the Contractor fails to comply with a written order to remedy what the City Engineer determines to be an emergency situation, the Engineer may have the defective and unauthorized work corrected immediately, the rejected work removed and replaced, or have work the Contractor refuses to perform completed by using Contracting Agency or other forces. An emergency situation is any situation when, in the opinion of the

Engineer, a delay in its remedy could be potentially unsafe, or might cause serious risk of loss or damage to the public.

Direct or indirect costs incurred by the Contracting Agency attributable to correcting and remedying defective or unauthorized work, or work the Contractor failed or refused to perform, shall be paid by the Developer/Contractor. Such direct and indirect costs shall include in particular, but without limitation, compensation for additional professional services required, and costs for repair and replacement of work of others destroyed or damaged by correction, removal, or replacement of the Contractor's unauthorized work.

The rights exercised under the provisions of this section shall not diminish the Contracting Agency's right to pursue any other avenue for additional remedy or damages with respect to the Contractor's failure to perform the work as required.

Supplement this section with the following:

For new roadway/street construction and overlays, HMA work rejected shall require the replacement of the entire road or street width from block to block or as approved in writing from the City Engineer. For trench patching, HMA work rejected shall require the replacement of the entire patch width from block to block or as approved in writing from the City Engineer.

00150.96 Maintenance Warranties and Guarantees

Delete this section and replace it with the following:

If defective and unauthorized materials or work is discovered within the guarantee timeframe after the certification of completed public improvements date, the Developer/Contractor shall promptly, upon written request, return and in accordance with the instructions either correct such work, or if such work has been rejected, remove it from the Project Site and replace it with non-defective and authorized work, all without cost to the City. If the Contractor does not promptly comply with the written request to correct defective and unauthorized work, or if an emergency exists, the City reserves the right to have defective and unauthorized work corrected or rejected, removed, and replaced pursuant to the provisions of Section 00150.80 of the Standard Specifications.

00150.97 Responsibility for Materials and Workmanship

Supplement this section with the following:

The Contractor is responsible for constructing and completing all work included in the approved Construction Documents and any other work directed by the Developer in a professional manner with first-class workmanship.

The Contractor shall keep the City of Umatilla, the Developer, and the Consultant informed in writing of the address to which official correspondence is to be directed, the address and phone number of the person in charge of his field personnel, and the address and telephone number of the Contractor's representative who will be responsible and available outside of normal working hours for emergency repairs and the maintenance of traffic control and safety devices.

The Developer shall be responsible for the satisfactory operation and condition of all public improvements for a period consistent with that specified in CHAPTER 1, under Transfer of Ownership.

00150.98 Means and Methods (New Section)

The following new section shall be added to the Standard Specifications:

Unless otherwise expressly provided in the Contract Drawings, Specifications and Addenda, the means and methods of construction shall be such as the Contractor may choose; subject, however, to the Consultant's or City's right to reject means and methods proposed by the Contractor which (1) will constitute or create a hazard to the work, or to persons or property; or (2) will not produce finished work in accordance with the terms of the Contract. The Consultant's or City's approval of the Contractor's means and methods of construction or his failure to exercise his right to reject such means or methods shall not relieve the Contractor of the obligation to accomplish the result intended by the Contract; nor shall the exercise of such right to reject create a cause for action for damages.

00150.99 Water and Power (New Section)

The following new section shall be added to the Standard Specifications:

Water Supply: The Developer shall make necessary arrangements and shall bear the costs for water necessary for the performance of the work. Water for use on the projects may be purchased from the City of Umatilla, and the Contractor shall arrange for and convey the water from the nearest convenient hydrant or other source at his own

expense. The hydrants shall be used in accordance with the City of Umatilla Water Department regulations.

If City water is used for any work related to a project, a fire hydrant meter and gate valve will need to be obtained from the City of Umatilla to be used specifically for this project. The City will charge the Contractor for any water used during construction. The Contractor shall not operate the hydrant as a gate valve, nor shall the Contractor be allowed to operate any other City owned valve. The Contractor shall provide the necessary back flow prevention device when connecting to the water service. The Fire Hydrant Meter requirements and the Fire Hydrant Meter Application are available at the Customer Service Window and the Engineering Department.

The City reserves the right to deny the use of fire hydrants where deemed inappropriate by the City.

Power Supply: The Developer shall make necessary arrangements and shall bear the costs for power necessary for the performance of the work.

00150.100 Oral Agreements (New Section)

The following new section shall be added to the Standard Specifications:

No oral agreement or conversation with any officer, agent, or employee of the Contracting Agency, either before or after construction, shall affect or modify any of the terms or obligations contained in any of the City-approved documents. Such oral agreement or conversation shall be considered as unofficial information and in no way binding upon the Contracting Agency, unless subsequently put in writing and signed by the Contracting Agency.

Section 00165 QUALITY OF MATERIALS

00165.03 Testing by Agency

Delete this section and replace with the following:

The Contractor/Developer shall be responsible for scheduling and paying for all material and compaction testing required by these Design and Construction Standards for new public works Improvements. All testing services shall be performed by an independent, certified testing firm and/or laboratory meeting the approval of the City Engineer. The Contractor shall submit information relating to the qualifications of the proposed testing

firm to the City for review and approval prior to the preconstruction conference. The testing firm shall provide copies of all test results to the City within 24 hours after completion of any test. Test reports shall become the property of the City. Testing frequencies listed below may be modified to assure compliance with the Specifications.

Trench Backfill

Copies of moisture-density curves for each type of material encountered and copies of all test results shall be provided to the City as construction progresses.

Three (3) compaction tests, at varying depths, shall be performed within the first one hundred (100) feet of pipeline installed to establish compaction method. Once a satisfactory method has been established, one test shall be performed for each one hundred (100) linear feet of pipeline installed. Tests shall be taken at varying depths along the trench. Compaction method shall be reestablished each time backfill material, compaction equipment, or method of operation changes.

The City Engineer may request additional tests be performed at the Contractor's/Developer's expense, if test results do not meet the required trench backfill densities.

Roadway Subgrade

Copies of the moisture density curves for each type of material encountered and copies of all test results shall be provided to the City Engineer as construction progresses.

Subgrade compaction shall be as specified for 00330.42 Embankment, Fills, and Backfills and 00330.43 Earthwork Compaction requirements. The City Engineer may request additional tests be performed at the Contractor's expense, if test results do not meet the required subgrade densities.

Embankment

Copies of the moisture density curves for each type of material encountered and copies of all test results shall be provided to the City Engineer as construction progresses.

Two (2) compaction tests shall be taken for the first one thousand (1,000) square feet and one (1) test for each additional one thousand (1,000) square feet. Tests will be taken at varying depths within the embankment.

The City Engineer may request additional tests be performed at the Contractor's expense, if test results do not meet the required subgrade densities. Subgrade compaction shall be as specified for 00330.42 Embankment, Fills, and Backfills and 00330.43 Earthwork Compaction Requirements.

Aggregate Subbase, Base, Shoulders

Copies of the moisture density curves and gradation for each type of material incorporated into the project and copies of all test results shall be provided to the City Engineer as construction progresses.

Two (2) compaction tests shall be taken for the first ten thousand (10,000) square feet and one (1) test for each additional ten thousand (10,000) square feet.

The City Engineer may request additional tests be performed at the Contractor's/Developer's expense, if test results do not meet the required subgrade densities.

Compaction of aggregate subbase, base, shoulders course shall be as specified in Sections 00641.43 and 00641.44.

Asphalt Concrete Pavement

Asphalt paving may not occur until successful compaction test results are provided to the City Engineer for trench backfill, subgrade, embankment, ballast and crushed surfacing, as applicable. Copies of the reference maximum density test for each class of Hot Mix Asphalt Concrete Pavement and copies of all test results shall be provided to the City Engineer as construction progresses.

The City Engineer may request additional tests be performed at the Contractor's/Developer's expense, if test results do not meet the required densities.

Compaction of Hot Mix Asphalt Concrete Pavement shall be as specified in Section 00744.49.

Cement Concrete Curb, Gutter, and Sidewalk

A copy of the cement concrete design mix or certification from the concrete supplier that the concrete provided has been prepared to the strength requirement as specified elsewhere in these specifications.

All testing procedures shall be conducted in accordance with applicable Sections of 00440 and 00759.

Copies of all test results shall be provided to the City Engineer as construction progresses.

Section 00170 – LEGAL RELATIONS AND RESPONSIBILITIES

00170.02 Permits, Licenses, and Taxes

Supplement this Section with the following:

The Contractor shall obtain a City of Umatilla right-of-way permit for all work within the right- of-way prior to the start of work consistent with the UMC.

The Contractor and all subcontractors are responsible for obtaining and paying for business licenses in the City of Umatilla.

00170.60 Safety, Health, and Sanitation Provisions

Supplement 00170.60 with the following:

In cases of conflict between different safety regulations, the more stringent regulation shall apply.

The Contractor shall maintain at the project site office, or other well-known place at the project site, all articles necessary for providing first aid to the injured. The Contractor shall establish, publish, and make known to all employees, procedures for ensuring immediate removal to a hospital, or doctor's care, persons, including employees, who may have been injured on the project site. Employees should not be permitted to work on the project site before the Contractor has established and made known procedures for removal of injured persons to a hospital or a doctor's care.

The Contractor shall have sole responsibility for the safety, efficiency, and adequacy of the Contractor's plant, appliances, and methods, and for any damage or injury resulting from their failure, or improper maintenance, use, or operation. The Contractor shall be solely and completely responsible for the conditions of the project site, including safety for all persons and property in the performance of the work. This requirement shall apply continuously, and not be limited to normal working hours. The required or implied duty of the Engineer to conduct construction review of the Contractor's performance does

not, and shall not, be intended to include review and adequacy of the Contractor's safety measures in, on, or near the project site.

Supplement this section with the following:

All work shall be performed in accordance with all applicable local, state, and federal health and safety codes, standards, regulations, and/or accepted industry standards. It shall be the responsibility of the Contractor to ensure that his work force and the public are adequately protected against any hazards.

The City of Umatilla or Developer shall have the authority at all times to issue a stop work order at no penalty if, in their opinion, working conditions present an undue hazard to the public, property, or the work force. Such authority shall not, however, relieve the Contractor of responsibility for the maintenance of safe working conditions or assess any responsibility to the City or Developer for the identification of any or all unsafe conditions.

Supplement this section with the following:

All signs, barricades, traffic control devices, and labor for traffic control required by construction activities for the control of traffic shall be supplied, placed, and maintained by the Contractor. This shall apply to detours and traffic control both within and outside the limits of the project.

All work shall be done under a plan which shall have the approval of the City of Umatilla Engineering Division and create a minimum of interruption or inconvenience to pedestrian and vehicular traffic. All arrangements to care for such traffic will be the Contractor's responsibility and shall be made at his expense. All work shall be carried out with due regard for public safety. Open trenches shall be provided with proper barricades and at night they shall be distinctly indicated by adequately placed lights. At entrances to business properties and other private roads, driveways, bridges, or other such means as to provide access shall be provided by the Contractor. The Contractor shall maintain vehicular and pedestrian access to businesses at all times that businesses are open for business.

Upon failure of the Contractor to immediately provide and maintain adequate suitable barricades, lights and detour signs, when ordered to do so, the City shall be at liberty, without further notice to the Contractor or the Surety, to provide the same and request payment for providing proper barricades, lights, and signs, and the City assumes no liability connected therewith.

Any traffic restriction must have prior approval of the City of Umatilla Engineering Division. Appropriate traffic control measures and signing are required during such temporary road closures.

It shall be the responsibility of the Contractor to secure the City's approval for any desired road closure and associated traffic control plan including detours. Following approval, the Contractor shall notify the Developer, City of Umatilla, and the Police and Fire Departments and Umatilla School District at least 24 hours prior to closing any street. When the street is re-opened, it shall again be the responsibility of the Contractor to notify the above named departments and persons.

00170.70 Insurance

Supplement this section with the following:

The Contractor shall obtain and maintain in full force and effect during the duration of the work public liability and property damage insurance in accordance with this section and as modified herein.

The City of Umatilla shall set insurance requirements for each project. Prior to start of construction, the Contractor/Developer shall furnish the City of Umatilla a Certificate of Insurance and the additional insured endorsements as evidence of compliance with these requirements. This certificate shall name the City of Umatilla, its employees, agents, elected and appointed officials, consultants, and all subcontractors as "additional insureds" and shall stipulate that the policies named thereon cannot be canceled unless at least forty-five (45) days written notice has been given to the City of Umatilla. The certificate shall not contain the following or similar wording regarding cancellation notification: "Failure to mail such notice shall impose no obligation or liability of any kind upon the company, its agents, or representatives."

Section 00180 – PROSECUTION AND PROGRESS

00180.42 Preconstruction Conference

Supplement this section with the following:

Prior to the commencement of any work, a preconstruction conference shall be held. The Contractor or Developer shall contact the City of Umatilla Engineering Division and set a date and time for the meeting. It shall be the responsibility of the Contractor/Developer to notify and invite all parties having an interest in the project to the meeting, including

the major subcontractors, Engineering Division, Irrigation Districts, and all applicable private utilities.

At this conference, all points of the approved Plans and Specifications will be open to discussion including scope, order and coordination of work, equipment lead time required, means and methods of construction, inspection and reporting procedures, etc. The Contractor should satisfy himself that all provisions and intentions of the work are fully understood.

The Contractor shall prepare and submit to the City and Developer at the preconstruction conference a Construction Progress and Completion Schedule using a bar graph format. Items in the Schedule shall be arranged in the order and sequence in which they will be performed. The schedule shall be drawn to a time scale, shown along the base of the diagram, using an appropriate measurement per day with weekends and holidays indicated. The Construction Progress Schedule shall be continuously updated and, if necessary, redrawn upon the first working day of each month or upon issuance of any Change Order which substantially affects the scheduling. Copies (2 prints or 1 reproducible) of newly updated Schedules shall be forwarded to the City Engineer, as directed, immediately upon preparation.

Any proposed road or sidewalk closures shall be presented to City Public Works at the preconstruction conference for consideration, including duration of closure. If approved, closures shall not extend beyond permitted duration.

At the discretion of the City Engineer, a weekly meeting between representatives of the City (inspector and/or engineer) and contractor (foreman, supervisor, and/or project manager) shall be held at the project site or at City Hall at a pre-determined time. The contractor shall present an update on project status, project schedule, and any problems that have arisen.

CHAPTER 5 - WATER SYSTEM IMPROVEMENTS

GENERAL REQUIREMENTS FOR WATER SYSTEM IMPROVEMENTS

All extensions and additions to the City of Umatilla's domestic water system shall conform to the Design and Construction Standards of the City of Umatilla, Oregon Standard Specifications for Construction, Oregon Health Authority, American Water Works Association, and designed by a Civil Engineer currently licensed by the State of Oregon.

All new lots and developments shall be served by a public domestic water supply line to be maintained by the City of Umatilla and located adjacent to the lot or development site. The water supply line shall be capable of providing sufficient flow and pressure to satisfy the fire flow and domestic service requirements of the proposed lots and development requirements. If determined necessary by the City Engineer, hydraulic analysis including modeling shall be performed by the City or its agents, and all costs shall be borne by the Developer.

Water lines shall be extended by the Developer to the point where the adjoining property owner's responsibility for further extension begins. This typically requires an extension across the entire frontage of the property to the property line of the adjoining owner. In some cases, it will require dedication of an easement and a line extension across the property or extension across two or more sides of the developing property. Extensions will be consistent with and implement the City's adopted Water System Plan.

All new public domestic water mains shall be a minimum diameter of 8 inches, or larger diameters as specified in the City's Water System Plan, or larger as required to meet the fire flow demand of the development. Fire hydrants located within 50 feet of the water main shall be a minimum diameter of 6 inches. Hydrants beyond 50 feet of the water main shall be a minimum diameter of 8 inches, or larger as necessary to achieve required fire flows. Cover over new watermains shall be a minimum depth of 42 inches and a maximum of 72 inches.

If a fire hydrant is beyond 40-ft from the City main and not looped then a Reduced Pressure Double Check Valve Assembly (RPDCVA) shall be required. The RPDCVA and associated materials shall be approved by the City prior to installation.

New water mains shall be located in existing or proposed streets within City right-of-way and shall be offset from the street centerline, not located within a vehicle wheel path.

Larger public water mains may be required depending upon fire flow requirements as determined by the City and City Engineer.

All domestic water mains shall be looped, where possible, as determined by the City Engineer. Temporary dead-end mains over 300 feet in length will only be allowed where future water main looping via public right of way will be assured. No permanent dead-end water mains over 300 feet in length will be allowed to be part of the City of Umatilla's public water system.

Permanent dead-end water mains may become private water mains owned and maintained by the Developer. All dead-end water mains shall be isolated from the public water main with a RPDCVA and vault furnished and installed by the Developer in accordance with the City of Umatilla Cross-Connection Control Policy. All services must extend from a water main owned and operated by the City.

The Cross-Connection Control Policy requires all commercial/industrial properties to have a reduced pressure backflow assembly (RPBA) for premises isolation of the building water supply. Backflow prevention assemblies shall be installed at the water meter and shall be shown on the plans. Required backflow prevention assembly types shall be as specified to meet the City's Cross-Connection Control Policy. Yearly test reports shall be provided to the City's Water Quality Inspector. The backflow device shall be on the state approved list, available through the Oregon Health Authority.

All double detector check valve assemblies shall conform to City of Umatilla standards. Initial and annual testing will be required at the expense of the property owner.

Maximum valve spacing in public water mains will be 750 linear feet. Valves shall be installed on all but one of the legs of new water main intersections. Valve operating nut extensions approved by the City will be required on valves where the operating nut is deeper than 24-inches below finished grade. Valves 14-inches and smaller shall be gate valves. Valves larger than 14-inches shall be butterfly valves.

All new water main installations shall be satisfactorily tested per Section 01140.51 and 1140.52 prior to being placed into service including hydrostatic pressure and bacteriological testing, all at the expense of the Developer.

No granulated chlorine shall be allowed for disinfection of a City water main without prior City approval.

All new water service lines shall be a minimum of 1-inch, for 3/4- and 1-inch meters, and shall be a minimum of 2-inch, for 1 1/2- and 2-inch meters.

All new services 2-inches or smaller shall use a meter setter that is approved by the City of Umatilla. Meter setter shall have a lockable angle ball meter valve on the inlet. The outlet shall

have a cartridge and check valve. The top of the setter shall be 18-22-inches below finished grade with a pvc brace pipe installed to keep the setter plumb.

The Developer/Contractor is responsible for all service taps in new subdivisions. The Developer/Contractor shall furnish and install all water service components (except for the water meter 2-inches or smaller) from the water main to the property line including service saddle, corporation stop, service pipe, meter setter with meter stop and check valve, customer piping, and meter box, all at the Developer's expense. The Developer shall pay the City the cost for a 2-inch or smaller water meter to include material and installation. Only one meter shall be served from each main tap. The City of Umatilla will provide hot taps up to 2-inches in areas where new services are needed. Service taps over 2-inches shall be done at the expense of the Developer/Contractor's qualified person.

New water main connections to existing water mains shall be installed with cut-in tees/crosses, unless a hot tap is approved by the City Engineer. If the existing water main is less than 6-inch diameter, a cut-in tee shall be required, and a hot tap may be considered for approval. All 2-inch or smaller hot taps of water mains 12-inch and smaller shall be performed by the Developer/Contractor or a contractor approved by the City Engineer, using a full circle stainless steel sleeve with tapping gate valve. The contractor shall provide traffic control, excavate the connection location, provide adequate sloping/shoring, and install tapping sleeve and valve prior to City Crew arrival. All work (including City Crew tap) will be at the expense of the Developer.

Minimum 2-inch air and vacuum release valves shall be furnished and installed at high points in the water system.

Maximum spacing of fire hydrants shall be 300 feet and shall be located at intersections. Additional hydrants may be required to protect structures as determined by the Fire Chief and City Engineer. Additional fire hydrants required on a site may require a looped, on-site water main. Easements shall be provided for all on-site, public, looped water mains, in accordance with CHAPTER 1. Fire hydrants shall be located at the ends of curb returns or at property lines between lots, and not be located within driveways, driveway ramps, or handicap ramps and to the maximum extent feasible, should be located outside a pedestrian path of travel. Fire hydrants must be restrained from tee to hydrant assembly.

When additional fire hydrants are required or the required fire flow of a new site is greater than the existing fire flow capacity, the public water main shall be extended and looped around the site, reconnecting to the public distribution supply main, at the Developer's expense. Fire hydrants shall be located along the looped public water main as determined by the Fire Chief. The looped water main will remain public and will not require check valves. The looped water main shall be located within an easement centered on the water main, free of any other parallel-

aligned private utilities, see CHAPTER 1. All water main components shall be located within the easement including valves, hydrants, thrust blocks, fittings, etc. such that the City can maintain the public utility.

City-approved backflow prevention devices are required on all fire line connections to public water mains when the line is not required to be looped.

Where the water system pressures are outside of acceptable ranges as identified in the City's Water Master Plan, a pressure reducing valve (PRV) station may be required as determined by the City Engineer. The PRV station shall be designed by a Civil Engineer currently licensed by the State of Oregon and shall be submitted to the City for review. All costs for design, review, approval, procurement, installation, and construction shall be borne by the Developer, see PRV section below.

Water mains installed beneath railroad tracks, State highways, irrigation canals, building structures, etc. shall be encased in a continuous welded steel casing (or as approved by permitting agencies) and provided with casing spacers in accordance with Section 00406 of the Oregon Standard Specifications for Construction. . Casing spacers shall be galvanized, stainless steel or polyethylene sized for the type of pipe and casing size. Casing shall be sized to provide a minimum of 2-inch clear for the type of joint approved by the City Engineer. Requirements by other agencies involved in crossings shall supersede these Standards.

Water mains shall maintain a 10-foot horizontal and 18-inch vertical separation above non-potable pipelines (sanitary sewers, industrial wastewater, reclaimed water, irrigation pipelines, stormwater pipes, and other uses) in accordance with OAR 331-061-0050. Gas, power, telephone, and other dry utilities shall maintain a minimum 3-foot horizontal clearance from water mains.

The design of water mains and appurtenances is subject to review and approval consideration by the City of Umatilla Public Works Director and City Engineer. The Public Works Director may, at his discretion, adjust these Design and Construction Standards as necessary to facilitate installation of water lines and appurtenances for the health, safety, and protection of the general public.

New water systems shall be placed in service, including all successful testing, prior to placement of asphalt.

IRRIGATION SYSTEMS

Where the City of Umatilla Irrigation Water Utility is available and/or as determined by the City Engineer, new subdivisions and developments shall be served by a separate irrigation water

distribution system with an individual service for each lot. The irrigation system shall be designed by a professional engineer and constructed in accordance with applicable City of Umatilla Construction Standards. All new public irrigation mains shall be a minimum diameter of 8 inches, or larger diameters as required by the City of Umatilla. In the event irrigation water is not available in the vicinity of the subdivision, the irrigation system shall be tested, sealed, and buried with ends clearly marked to facilitate a connection when irrigation water is available. Refer to Section 1120 Irrigation Systems for material requirements.

Domestic water and non-potable irrigation services should be extended to opposite lot corners in new construction. Where it is impossible to install them in that manner, 10-feet of separation needs to be supplied between the service points (meter boxes).

PRESSURE REDUCING VALVE (PRV) STATIONS

The City's Water Master Plan define the minimum and maximum pressures admissible in the system. In locations not covered by the Plan, the City may determine a study is necessary to determine a development's impacts on the system, at the expense of the Developer. The topography of the service area dictates the division of the water system into different pressure zones. PRVs are needed where connections between different pressure zones are proposed or required for the extension of the water system. PRVs are deemed necessary when otherwise the potable water or irrigation water would be delivered at pressures non-compliant with the established threshold.

When a PRV is deemed necessary by the City, the Developer shall be responsible for providing a design in accordance with the City's Water Master Plan and City Standards. Said design will be reviewed by the Public Works/City Engineer as part of the development plan review process.

The PRV design and all associated flow calculations and thrust block/restraint calculations must be performed by a Professional Engineer licensed in the State of Oregon.

The PRV design must comply with the following criteria:

- All necessary calculations and drawings for any related design shall be submitted to the City for approval. Calculations of flow must be performed by the Developer's engineer based on the Peak Hourly Demand (PHD), plus provisions for required fire flow.

- Pressure zones must adhere to the provisions included in the Master Plan for the respective utility.

- All PRVs will be placed in vaults that are large enough to provide ample work space for field inspection and valve repair.

- Vaults shall be designed with a gravity drain or sump pump into an adjacent drainage structure, to prevent vault flooding.

- Pressure relief valves will be considered for closed pressure zones to prevent over pressurization if a PRV fails in the open position. A pressure relief valve can be incorporated into the PRV Package Station or can be design in stand-alone configuration. Pressure relief valves shall feature full flow piping to a turned down riser 18" to 36" above ground, for visible detection of relief flow. Relief flow shall be routed to a nearby retention basin of appropriate size.

- The pressure reducing valve shall be set to open at any pressure below its preset setpoint and to close at any pressure above an adjustable deadband, to maintain downstream pressure within 2.5 psi of the pressure setpoint. Downstream pressure control shall not be based on changing upstream pressures. Valve shall be provided with a valve position indicator assembly.

- The upstream pressure shall be sustained at a predetermined minimum, to be established by the City.

SPECIAL PROVISIONS FOR WATER SYSTEM IMPROVEMENTS

The following sections of the Oregon Standard Specifications for Construction have been amended or supplemented as described below and apply to the construction of public works water system improvements within the City of Umatilla.

Section 01120 – IRRIGATION SYSTEMS

01120.10 Materials

Supplement this section with the following:

Pipe for main line approved for use shall be as follows:

Pipe for Main Line:

All irrigation pipelines under roadways shall meet the requirements of Section 1140.10. Fittings shall be cast or ductile iron. All irrigation pipe shall be installed with a minimum cover of 30 inches, and pipe zone bedding and backfill per 1140.40.

Supplement this section with the following:

Meter Angle Valve: New meter angle valve shall have 1″ compression inlet x 1″ outlet with female iron pipe threads and padlock wings, Ford BA41-444W-NL or BA41-444W-Q-NL,
A.Y. McDonald 74606B-22 or 74606BQ, Mueller P24274N or B24274N.

Irrigation Service Box: New irrigation service box shall be Carson L-1220-12 (green) with T-Cover 1220-4.

Isolation Valve (3/4″ to 2″): New isolation valves shall be lead free curb stops. Approved valves shall be any of the following:

Ford:	*Mueller:*	*A.Y. McDonald*:
FIPxFIP	300 Ball Curb Stop	76101NL
B11-333-NL (3/4″)		
B11-44 4-NL (1″)		
B11-666-NL (1-1/2″)		
B11-777-NL (2″)		
CTSxPEP		
B46-333-NL (3/4″)		
B46-444-NL (1″)		
B46-666-NL (1-1/2″)		
B46-777-NL (2″)		

Backflow Assembly Isolation Valve Box: New valve box shall be Carson 708 TrussT (3″ to 4″) and Carson 910 Spec Grade (6″ and larger).

Irrigation Spigot: New spigot shall be a bronze, THD, NRS gate valve, NIBCO Class 125 T113.

Backflow Assembly Above Ground Enclosure: Enclosures shall be provided for freeze protection. Acceptable enclosures include Aquashield, Watts Safe-T-Cover, and Hot Box (fiberglass, stainless steel, ornamental rock, and ornamental stump).

Tracer Wire: Tracer wire shall be 12-gauge heavy insulated (60 mil) copper wire with UF insulation colored for the utility being installed. Direct bury splice kits shall be 3M DBY-6.

Detectable Marking Tape: Shall consist of inert polyethylene plastic that is impervious to all known alkalis, acids, chemical reagents, and solvents likely to be encountered in the soil, with a metallic foil core to provide the most positive detection and pipeline location.

The tape shall be color coded and shall be imprinted continuously over its entire length in permanent black ink. The message shall convey the type of line buried below and shall also have the word "Caution" prominently shown. Color coding of the tape shall be as follows:

Utility	Tape Color
Water	Blue
Sewer	Green
Electrical	Red
Gas/Oil	Yellow
Telephone/CATV	Orange
Irrigation	Purple

Section 01140 – POTABLE WATER PIPE AND FITTINGS

01140.10 Materials

Pipe for main line approved for use shall be as follows and conform to the Oregon Standard Specifications for Construction:

Ductile Iron Pipe

Polyvinyl Chloride (PVC) Pipe 4 Inches and Larger

Supplement this section with the following:

Ductile Iron Pipe: Ductile iron pipe shall conform to the requirements of Section 02470.20 of the Standard Specifications, except that it shall be Standard Thickness Class 52. Joints shall be rubber gasket, push-on type (Tyton Joint). Fittings shall be mechanical joint or flanged, as shown on the Plans, and shall conform to Section 02470.20 of the Oregon Standard Specifications for Construction and NSF 61.

01140.40 Trench Work

Supplement this section with the following:

The Contractor shall neatly sawcut all areas of existing pavement within the trench excavation area, then remove and haul all waste materials from the project and dispose of at an approved site provided by the Contractor. Should any undermining occur on adjacent pavement, the Contractor shall neatly cut the pavement six (6) inches beyond the undermined area.

All trench excavations shall have adequate safety systems for the trench excavation that meet all local and state code requirements. The Contractor shall be fully responsible for providing the necessary back sloping, cribbing, trench boxes, etc., as required to meet the specified safety requirements for the trench. When City crews will be making the main line taps or other work in the trench, the Contractor shall provide all trench safety measures, prior to City personnel entering the trench.

01140.44 Thrust Restraint

Supplement this section with the following:

Thrust blocks shall be formed and placed in conformance with the City of Umatilla Standard Details for the appropriate pipe size and fitting type.

Mechanically restrained pipe and fittings may be used in lieu of thrust blocking. The Engineer shall provide appropriate restraint calculations, indicating the length of pipe and fittings to be restrained for each particular diameter and type of fitting to be installed. Thrust restraint calculators such as those provided by Ductile Iron Pipe Research Association, EBAA Iron, or similar may be used to determine required restraint lengths.

01140.45 Marking Tape and Wire

Delete this section and replace it with the following:

Detectable marking tape and tracer wire shall be installed over all water lines, including service lines. The tape shall be placed approximately 2-feet above the top of the line and shall extend its full length. Care must be taken to ensure that the marking tape shall be continuous and unbroken during the backfill process. The tracer wire shall be fastened to the top of the pipe with cable ties or duct tape at 6-foot intervals and shall be routed up into valve boxes with adequate length for connection to location equipment.

01140.46 Blow-off Assemblies

Supplement this section with the following:

All permanent dead-end lines must end with a blow-off, unless there is a hydrant connection within the last 30 feet of the water main.

01140.47 Connections to Existing Mains

Supplement this section with the following:

Requests for water line shutdowns and water taps shall utilize the City of Umatilla Procedure for Scheduling Water Crews, Performing Taps, and Placing New Water Lines in Service. New water mains shall be tested, flushed, and disinfected per Section 01140, 01150, 01160, and 01170 with passing results, prior to making connection to existing main and being placed into operation.

No existing line valves shall be closed without permission by the City. In no case shall any existing water main valve be closed for a period of greater than eight (8) hours. Only City personnel or those authorized by the City may operate City valves.

The anticipated schedule for the connections shall be discussed and scheduled at the preconstruction conference and indicated on the weekly schedule. The City reserves the right to adjust the schedule of the connections, as required, subject to a minimum of 24-hour notice of schedule change to the Contractor. No connections will be scheduled for the first working day after a weekend or holiday.

01140.49 Backfilling

Supplement this section with the following:

Mechanical compaction shall be required for all trenches. The Developer/Contractor shall be responsible for scheduling and paying for all testing required.

The density of the compacted material shall be at least 98% of the maximum density as determined by ASTM D 698 Tests (Standard Proctor). Density tests shall be taken at various depths in the trench. All costs associated with testing shall be the responsibility of the Contractor. Placement of courses of aggregate shall not proceed until density requirements have been met.

The first 500 feet of trench backfill operations shall be considered a test section for the Contractor to demonstrate his backfilling and compaction techniques. The Contractor

shall notify the City at least 3 working days prior to beginning trench excavation and backfill operations. The Contractor shall arrange for in-place density tests to be taken on the completed test section in accordance with the above requirements. No further trenching will be allowed until the specified density is achieved in the test section. Passing in-place density tests in the test section will not relieve the Contractor from achieving the specified densities throughout the project.

At locations where paved streets, roadway shoulders, driveways, or sidewalks will be constructed or reconstructed over the trench, the backfill shall be spread and compacted in layers to achieve specified density requirements throughout the trench depth, by means and methods as proposed by the Contractor.

01140.51 Hydrostatic Testing

Delete this section and replace it with the following:

Water main appurtenances and service connections to the meter setter shall be tested in sections of convenient length under a hydrostatic pressure equal to 150-psi. Pumps, gauges, plugs, saddles, corporation stops, miscellaneous hose and piping, and measuring equipment necessary for performing the test shall be furnished and operated by the Contractor.

Sections to be tested shall normally be limited to 1,500 feet. The Engineer may require that the first section of pipe, not less than 1,000 feet in length, installed by each of the Contractor's crews, be tested in order to qualify the crew and the materials. Pipe laying shall not be continued more than an additional 1,000 feet until the first section has been tested successfully.

The pipeline shall be backfilled sufficiently to prevent movement of the pipe under pressure. Mechanical restraints and/or thrust blocks shall be in place and time allowed for the concrete to cure before testing. Where permanent blocking is not required, the Contractor shall furnish and install temporary blocking and remove it after testing.

The mains shall be filled with water and allowed to stand under pressure a sufficient length of time to allow the escape of air and allow the lining of the pipe to absorb water. The Contracting Agency will furnish at the developer's expense the water necessary to fill the pipelines for testing purposes at a time of day when sufficient quantities of water are available for normal system operation.

The test shall be accomplished by pumping the main up to the required pressure and stopping the pump and holding pressure for one (1) hour. During the test, the section being tested shall be observed to detect any visible leakage.

There shall not be a loss in pressure during the one-hour test period.

Pressure gauges used in the test shall be in good working condition and have a zero-pressure reading prior to use. Erroneous or damaged gauges may be rejected at the discretion of the Engineer and shall be replaced with new gauges at the Contractor's expense.

Tests shall be made with the hydrant auxiliary gate valves open and pressure against the hydrant valve. Each valve shall be tested by closing each in turn and relieving the pressure beyond. This test of the valve will be acceptable if there is no immediate loss of pressure on the gauge when the pressure comes against the valve being checked. The Contractor shall verify that the pressure differential across the valve does not exceed the rated working pressure of the valve.

Prior to calling out the Engineer to witness the pressure test, the Contractor shall have all equipment set up completely ready for operation and shall have successfully performed the test to ensure that the pipe is in satisfactory condition.

Defective materials or workmanship, discovered as a result of hydrostatic field test, shall be replaced for subsequent testing. Whenever it is necessary to replace defective material or correct the workmanship, the hydrostatic test shall be re-run until a satisfactory test is obtained.

Section 01150 – POTABLE WATER VALVES

01150.10 Materials

Supplement this section with the following:

Tapping Sleeve and Valve Assemblies: Tapping sleeves shall be full circle stainless steel with ductile iron flanged outlet, conforming to the latest AWWA Standard C223. Tapping gate valves shall meet the requirements for Gate Valves in Section 001150.10. The following stainless steel tapping sleeves are approved for use: Ford FAST style, Romac model SST, and Smith-Blair.

Valve Boxes Shall be two-piece adjustable, Olympic Foundry model 931 or approved equal.

Combination Air Release/Air Vacuum Valve: Valves shall meet the requirements of C512 and shall be APCO 140 Series, Val-Matic VM-200 Series, or approved equal.

01150.40 General

Supplement this section with the following:

Tapping Sleeve and Valve Assemblies: The Developer/Contractor will perform all taps for tapping sleeve and valve assemblies . City of Umatilla Public Works will perform taps up to 2-inch diameter. For taps greater than 2-inch diameter, the Contractor or Subcontractor completing the work shall have at least five (5) years' experience with a minimum of ten (10) water main taps of pipes with diameters equal to or larger than that specified. Contractor shall notify City at least 72 hours prior to proposed taps and provide work experience references if requested. Work to complete the tap shall not commence without City's written approval. If the Contractor or Subcontractor does not have sufficient experience in the sole opinion of the City, a qualified Subcontractor as approved by the City, shall be used to complete the tap at no cost to the City.

Valves: Upon completion of all work, the Developer/Contractor shall contact the City of Umatilla Public Works for opening water valves. Valves shall only be operated by City Public Works staff.

Valves shall not be installed in Sidewalks, Pedestrian Curb Ramps, Driveway Approaches or any other exposed concrete surface.

Valve Boxes: Valve boxes should be set to position during backfilling operations so they will be in a vertically centered alignment to the valve operating stem. The top of the box will be at final grade.

The Contractor shall adjust all water valve boxes to the final grade of the surrounding area including new concrete sidewalk, asphalt paving, gravel surfacing, or topsoil surfacing, in accordance with the details shown on the Drawings.

The Contractor shall keep the valve boxes free from debris caused by the construction activities. All valve boxes will be inspected during final walk-thru to verify that the valve box is plumb and that the valve wrench can be placed on the operating nut. Misaligned valve boxes shall be excavated, plumbed, and backfilled at the Contractor's expense.

Section 01160 – HYDRANTS AND APPURTANCES

01160.10 Materials

Supplement this section with the following:

All hydrants shall be dry-barrel, compression type, with a Main Valve Opening (MVO) of 5-1/4" and suitable for working pressures up to 150 psi meeting the requirements of C502. Hydrants shall have a 1-1/2" pentagon operating nut, opening left. All hydrants shall include a 5"x4-1/2" NH connector and cap, Storz HPHA50-45NH and HBC-50. Threads on all ports shall be National Standard Thread.

Approved manufacturers include Mueller (Centurion), Clow (Medallion), Kennedy and M&H.

01160.11 Setting Hydrants

Replace this section with the following:

The hydrant shoe shall be set to the correct elevation on a concrete block base, which has been placed on undisturbed earth. Around the base of the hydrant and weep hole, the Contractor shall place washed drain rock, to allow free drainage of the hydrant. The drain rock shall be completely surrounded with construction geotextile filter fabric.

The contractor shall set all hydrants plumb and nozzles parallel with, or at right angles to, the curb, with the pumper nozzle facing the curb. Hydrants shall be set so that the flange is 2"-8" above the back of curb, sidewalk, or finished grade to clear nuts and bolts. Hydrants shall be ordered with the bury depth required to meet the flange elevation requirements. The Contractor shall be responsible for verifying the hydrant flange elevations and no extensions will be allowed.

Fire hydrants shall be painted with two coats of high visibility yellow paint.

Fire hydrants shall be located 1-foot behind the back of sidewalk to the face of hydrant where the sidewalk is adjacent to the curb and 7-feet behind the back of curb where the sidewalk is not adjacent to the curb and outside of the sidewalk. Hydrants adjacent to roadside swales shall be located 1-foot behind the swale on the property line side. All hydrants shall be located within the City right of way.

No bends are allowed in fire hydrant runs. If a bend cannot be avoided, the elbow fittings shall be mechanically restrained with EBAA Megalugs or approved equal.

Hydrants installed outside of paved areas where there will not be maintained landscaping shall install a 4' x 4' concrete pad around the hydrant.

01160.41 Hydrant Laterals

Replace this section with the following:

Fire hydrants located within 50 feet of the water main shall be a minimum diameter of 6 inches. Hydrants beyond 50 feet of the water main shall be a minimum diameter of 8 inches, or larger as necessary to achieve required fire flows. Each hydrant lateral shall include an isolation valve at the water main connection point. The valve size shall equal the hydrant lateral diameter and shall be of the type specified in Section 02480. Where hydrant runs are in excess of 6 inches in diameter, an additional 6-inch auxiliary gate valve shall be installed just prior to the hydrant installation.

If a fire hydrant is beyond 40-ft from the City main and not looped then a Reduced Pressure Double Check Valve Assembly (RPDCVA) shall be required. The RPDCVA and associated materials shall be approved by the City prior to installation.

01160.42 Hydrant Restraints

Replace this section with the following:

All hydrants shall be securely connected to the water main as shown on the City's Standard Detail, and each joint shall be mechanically restrained.

01160.44 Hydrant Bollards

Replace this section with the following:

The City Engineer may determine that two (2) or four (4) 6-inch diameter Sch. 40 steel bollards shall be installed at a hydrant location. Hydrant bollards shall be painted the same color as the hydrants.

Section 01170 POTABLE WATER SERVICE CONNECTIONS, 2-INCH AND SMALLER

01170.00 Scope

Replace this section with the following:

All new water service lines shall be a minimum of 1-inch, for 3/4- and 1-inch meters, and shall be a minimum of 2-inch, for 1 1/2- and 2-inch meters, and shall conform to the City Standard Detail. The Developer/Contractor is responsible for all service taps in new subdivisions. The Developer/Contractor shall furnish and install all water service components (except for the water meter 2-inches or smaller) from the water main to the property line including service saddle, corporation stop, service pipe, meter setter with meter stop and check valve, customer piping, and meter box, all at the Developer's expense. The Developer shall pay the City the cost for a 2-inch or smaller water meter to include material and installation. Only one meter shall be served from each main tap. The City of Umatilla will provide hot taps up to 2-inches in areas where new services are needed. Service taps over 2-inches shall be done at the expense of the Developer/Contractor's qualified person.

01170.10 Materials

Supplement this section with the following:

All fittings shall be lead free.

Service Saddles: New service saddles less than 12" diameter shall meet the requirements of AWWA C800 and have CC threads. Approved manufacturers include Romac (202S, 101S), Mueller DS2S, McDonald (384x, 382x), and Smith-Blair (315, 317). New service saddles 12" and larger shall meet the requirements of AWWA C800 and have CC threads. Approved manufacturers include Romac (305, 306).

Corporation Stops: New 1" corporation stops shall be Ford FB1000, Mueller B-25008N, B-20013N, or McDonald 74701B. New 2" corporation stops shall be Ford FB400(CC), FB500(IP), Mueller B-2996N(CC), H-2969(IP), or McDonald 74701B .

Service Pipe: New service pipe shall be CTS Poly Pipe AWWA C901 SDR9 with 250 minimum psi rating.

Service Pipe Fittings: Fittings shall be compression type Ford C- 44, Mueller H-15403, and McDonald 4758-22. Grip fittings are not acceptable.

Locating Wire: Locate wire shall meet the requirements of Section 02470.60 and be continuous from the water main to the meter box. Locating wire shall be 12-gauge heavy

insulated (60 mil) copper wire with UF insulation colored for the utility being installed in accordance with Section 01140.45. Direct bury splice kits shall be 3M DBY-6.

Meter Setter: Required for all services 2-inches or smaller and as approved by the City Engineer.

Angle Meter Valve: New 1″ compression valve shall be Ford BA43, Mueller B-24258N, or McDonald 74602B. New 2″ threaded valves shall be Ford BFA13, Mueller B-24286N, or McDonald 74604B. All angle meter valves shall be quarter turn and shall be lockable.

Meter: New 3/4″ to 2″ meters shall meet the requirements of AWWA C700. Approved meters shall be any of the following: Badger (LP35, LP55, LP120), Neptune (T-10, Tru/Flo), and Sensus (SRII, SRH).

Meter Check Valve: New 1″ compression valve shall be Ford HA34, Mueller H-14269, or A.Y. McDonald 702-4H-54. New 1-1/2″ and 2″ threaded valves shall be Ford HFA31, Mueller H-14244, or A.Y. McDonald 712-7.

Thread Sealant: Thread sealant shall be used on all threaded pipe fittings. Approved manufacturers include Spears Blue 75, Whitlam Blue Magic, and Teflon Tape.

Meter Boxes (3/4″ to 2″ meters): New meter boxes shall be Raven RMB 1324-18, Carson HW Model 1324BCF-18, or approved equal with 1324R reader lid (3/4″ and 1″ meters) and Raven RMB 1730-18, Carson HW Model 1730BCF-18, or approved equal with 1730R reader lid (1-1/2″ and 2″ meters). Meter boxes set in or near the vehicular path shall have H-20 traffic rated lids.

Backflow Assembly Box (3/4″ to 2″): New assembly box shall be Carson 1220 and 1324 (3/4″ and 1″) and Carson 1730 (1-1/4″ to 2″), meeting inside dimension tolerances specified on Details.

Meter Vault (3″ to 8″ meters): New precast cement concrete vault shall be Oldcastle Precast or H2 Precast meeting inside dimension tolerances specified on Details and shall have diamond plate spring assisted cover with locking latch inside (332P for 2″ to 3″, 2-322P for 4″ to 6″, and 3-322P for 8″ to 12″, or H2 Precast equivalent).

Backflow Assembly Vault: New precast cement concrete vault shall be Oldcastle Precast or H2 Precast meeting inside dimension tolerances specified on Details, and shall have diamond plate spring assisted cover with locking latch inside (332P for 2″ to 3″, 2-322P for 4″ to 6″, and 3-322P for 8″ to 12″, or H2 Precast equivalent). Contractor/Developer

shall provide to the City Inspector any factory tools, keys, or wrenches required to open vault lid.

Vault Ladder: Ladders installed in vaults shall include a Bilco LadderUp safety post, model LU-2, LU-3, or LU-4.

Pipe Bedding and Backfill: Pipe bedding and select backfill shall be utilized for trench backfill as directed by the City in accordance with Section 00405.

01170.40 General

Supplement this section with the following:

The Contractor shall set the water meter box to the finished grade of the area, outside of the pedestrian path of travel. The Contractor will be required to reset the meter box if it is not at finished grade at the completion of the project. The completed water service shall be tested at system operating pressure by the Contractor and must show no signs of leakage.

The location of water services at the property line or easement line shall be marked per the Standard Detail. Fiberglass markers may be proposed for approval consideration by the City Engineer.

The fresh concrete curb above all water service lines shall be stamped on the curb face with a 2″ high "W".

Service saddle shall not be placed within one (1) foot of pipe joint, couplings, or other clamps without approval from the Engineer.

No joints are allowed between the corporation stop and the angle meter stop.

CHAPTER 6 – SANITARY SEWER SYSTEM IMPROVEMENTS

GENERAL REQUIREMENTS FOR SANITARY SEWER SYSTEM IMPROVEMENTS

All extensions and additions to the City's sanitary sewer system shall conform to the Design and Construction Standards of the City of Umatilla, the Oregon Department of Environmental Quality, and designed by a Civil Engineer currently licensed by the State of Oregon.

All sanitary sewer improvements shall be designed in accordance with the Oregon Administrative Rules and Oregon Department of Environmental Quality requirements.

All new lots and developments shall be served by a public sanitary sewer line adjacent to the lot or development site.

Sewer lines shall be extended by the Developer to the point where the adjoining property owner's responsibility for further extension begins. This typically requires an extension across the entire frontage of the property to the property line of the adjoining owner. In some cases, it will require dedication of an easement and a line extension across the property or extension across two or more sides of the developing property. Extensions will be consistent with and implement the City's adopted Wastewater Facilities Plan, including alignments, sizes, and depths necessary to serve future areas within the Urban Growth Area (UGA) boundary.

Sewer lines shall be located in streets to serve abutting properties. Lines located in streets will be offset from the street centerline and not located within a vehicle wheel path. When necessary, sewer lines may be located within public easements, see CHAPTER 1. Sewer lines located in easements shall generally be located in the center of the easement, but may, with the approval of the City Engineer, be offset to accommodate the installation of other utilities or to satisfy special circumstances.

The minimum size for public sewer lines is eight (8) inches in diameter. The developer's sewer system must provide capacity for the proposed development but must also provide capacity for future extensions consistent with the Wastewater Facilities Plan. Cover over new sewer mains shall be a minimum depth of 42 inches.

Manholes shall be installed at intervals of no greater than 400 feet and at all vertical and horizontal angle points in the sewer main. Curved or deflected pipelines will not be permitted. Sewer lines shall be terminated with a manhole. In special circumstances, a flush-end (cleanout) may be installed on the end of a sewer main extension, provided the end is no further than 150 feet from the last manhole and the sewer main line and grade will permit further extension.

Sewer mains generally should not exceed a slope of 5%, unless site constraints require steeper slopes. Should the sewer main slope exceed 5%, the Developer's Engineer shall provide calculations to determine if energy dissipaters and/or pipe restraints are necessary. The City Engineer will make the final determination if dissipaters and restraints are required. Sewer mains with a slope of 20% or greater shall be secured with concrete anchors, with spacing requirements determined by the City Engineer.

All new sewer line and manhole installations shall be satisfactorily tested and inspected per Section 00445.72, 00445.73, 00445.74, and 00470.71 prior to being placed into service including low pressure air and deflection testing, and television inspection, all at the expense of the Developer.

Each building containing sanitary sewer facilities shall be served by a separate private side sewer line. Branched side sewers serving multiple buildings and properties shall not be permitted. A single side sewer serving multi-unit buildings is permitted.

Sewer services to residential single-family lots shall be 4-inch diameter, and commercial properties shall be a minimum of 6-inch diameter.

Side sewers services shall be installed in accordance with these Construction Standards and as shown on the City Standard Details.

Side sewers shall extend 10-feet beyond the right-of-way and the pipe end shall be capped and marked for future connection. Services shall be located a minimum of 10-feet from water services and on the low side of the lot and shall comply with the water and sewer separation requirements listed in the Oregon Administrative Rules.

Sewer lines shall be designed for gravity flow operation and in accordance with the Wastewater Facilities Plan.

Sewer force mains may be necessary in specific City locations as determined by the City Engineer. Lift stations and force mains shall be limited to those locations and circumstances where they are consistent with the Wastewater Facilities Plan and are the only viable solution to serve the proposed development and other properties in the vicinity. Lift stations and force mains shall be designed by a Professional Civil Engineer licensed in the State of Oregon in accordance with the direction and requirements given by the City Engineer, for review and approval by the City of Umatilla Public Works Director and City Engineer. Hydraulic analysis including modeling shall be performed by the Developer's Civil Engineer as determined necessary by the City Engineer.

The design of sewer lines and appurtenances is subject to review and approval by the City Engineer. The City Engineer may, at his discretion, adjust these Design and Construction Standards as necessary to facilitate installation of sewer lines and appurtenances for the health, safety, and protection of the general public.

SPECIAL PROVISIONS FOR SANITARY SEWER SYSTEM IMPROVEMENTS

The following sections of the Oregon Standard Specifications for Construction have been amended or supplemented as described below and apply to the construction of public works sewer system improvements within the City of Umatilla.

Section 00415 - VIDEO PIPE INSPECTION

00415.40 (f) Recording Format and Labeling

Supplement this section with the following:

All recordings shall be in color and in DVD format, playable on standard DVD players. Television inspection shall begin at the downstream manhole and end at the next upstream manhole. The camera speed shall not exceed one-half (1/2) foot per second. A pivot head camera shall be used with detailed inspection of all laterals showing the entire lateral with a 360-degree pan around the opening. Panning of each lateral shall be a minimum of 15 seconds.

The Contractor shall add colored dye that contrasts with the pipe color and clean water to the cleaned sewer line before Television inspection. The recording shall be free from static and a minimum distance of 10 feet shall be clearly visible in front of the camera.

All recordings shall show on the screen the correct time and date of the inspection, the name of the camera operator, the manhole numbers being inspected, an accurate footage count, and all lateral locations using a 12-hour clock position.

All inspections shall be performed by Pipeline Assessment and Certification Program (PACP) trained personnel. The Contractor shall provide a copy of the inspection, with all appurtenant written logs, within 24 hours of the inspection.

Section 00445 - SANITARY, STORM, CULVERT, SIPHON, AND IRRIGATION PIPE

00445.03 Size Determination

Supplement this section with the following:

Sanitary sewer mains shall be at least 8" in diameter. All dead-end runs longer than 200 feet shall terminate in a sanitary sewer manhole. Dead-end runs less than 200 feet long may terminate with a clean out.

00445.11 Materials

Supplement this section with the following:

Pipe approved for use shall be as follows:

PVC Sanitary Sewer Pipe (Gravity): Polyvinyl Chloride Pipe with flexible gasketed joints (Ring-Tite) shall conform to the requirements of Section 02415.50 of the Standard Specifications (ASTM D3034, SDR 35 for pipe sizes up to 15 inches in diameter, and SDR 26 for all sewer pipe with any portion of the sewer main greater than 12 feet of cover). When restrained pipe is required, Certa-Lok restraints or approved equal shall be used.

PVC fittings for PVC sewer pipe such as tees, wyes, elbows, plugs, caps, etc., shall be flexible gasket joint fittings acceptable for use and connection to PVC sewer pipe.

Transition Coupling: Couplings shall be longitudinally bolted with gasketed joints. Approved manufacturers include Romac, Dresser, Rockwell, Ford, and Smith-Blair.

Supplement this section with the following:

Saddles: Side sewer saddles shall be Romac CB or approved equal with a 3-1/2" stainless steel single strap. Saddles are limited to side sewer connections on existing sewer mains and shall have prior approval by City Engineer. CDF encasement shall be installed around tapping saddle and existing sewer main, such that all exposed sections of the sewer main are bedded full depth with CDF to minimize settling. Tapping sleeves for deep sewer service (greater than 12 feet) shall provide a flange for connection. Tapping Sleeves: Tapping sleeves shall be full circle stainless steel with ductile iron flanged outlet, conforming to the latest AWWA Standard C223. The following stainless-steel tapping sleeves are approved for use in deep side sewer applications: Ford FAST style, Romac model SST, and Smith- Blair. Contractors will be responsible for all sewer taps.

00445.40 General

Supplement this section with the following:

When connecting to an existing sewer, the downstream system shall be protected from construction debris by placing a 90 degree, SRECO, UEMSI or equal "stove pipe" sand trap, the same size as the sewer main line, in the first existing manhole downstream of the connection. It shall be the Contractor's responsibility to maintain this trap until the new system is placed in service and then to remove it. Any construction debris, excavation or backfill material which enters the existing downstream system shall be removed. When the first manhole is set, the outlet shall be plugged until the entire system is accepted by the Engineer.

00445.40 (f) Installation of Sanitary Sewer Service Tees and Wyes

Supplement this section with the following:

Side sewers shall be a minimum of four (4) inches in diameter. Larger sizes, if required, will be approved by the City Engineer on a case-by-case basis.

The fresh concrete curb above all side sewer laterals shall be stamped on the curb face with a 2" high "S".

Deep side sewer outlets shall be installed consistent with Standard Detail SS-6.

00445.40 (f) Installation of Sanitary Sewer Service Tees and Wyes

Supplement this section with the following:

The location of side sewer at the property line shall be marked per the Standard Detail. Fiberglass markers may be proposed for approval consideration by the City Engineer.

00445.92 Sewer Force Mains (New Section)

The following new section shall be added to the Standard Specifications:

00445.92 (a) Description

This work shall consist of constructing sewer force mains in accordance with the Plans and Standard Specifications.

00445.92 (b) Materials

Materials shall meet the requirements of Section 02470 of the Standard Specifications except as follows:

Pipe for Main Line:

Polyvinyl Chloride (PVC) Pressure Pipe (4 inches and over): Polyvinyl Chloride (PVC) pipe shall conform to the requirements of Section 02470.40 (a) of the Standard Specifications. Joints outside of casing shall be rubber gasket push-on type with thickened bell. Joints within casing shall be restrained using mechanical restraints, Field Lok gaskets, or approved equal.

Polyvinyl Chloride (PVC) Pressure Pipe: PVC pipe (over 12-inch diameter) shall conform to the requirements of AWWA C 905 DR 25. Fittings shall be mechanical joint and/or flanged in accordance with the Plans and Section 0247.20 (b) of the Standard Specifications.

Ductile Iron Pipe: Ductile iron pipe shall conform to the requirements of Section 0247.20 of the Standard Specifications and shall be epoxy lined.

High Density Polyethylene Pipe (HDPE): HDPE pipe shall by extra high molecular weight, high density ethylene/hexane copolymer, PE 4710 polyethylene resin. The Standard Dimension Ratio shall be SDR 13.5 for pipe sizes 12-inch diameter and smaller.

Fittings for Main Lines:

Connection Couplings: Couplings for Ductile Iron or PVC pipe, either transition or straight couplings, shall be compression type flexible couplings conforming to Section 02475.60 of the Standard Specifications.

Trench Excavation, Bedding, and Backfill:

See Section 00405.01 of these Specifications.

00445.92 (c) Pipe Installation

Sewer force main installation shall conform to the requirements of Section 00405 of the Standard Specifications or as modified by these Special Provisions.

00445.92(d) Hydrostatic Pressure Test

Testing shall be consistent with the water main hydrostatic pressure test standards and special provisions of Section 01140.51.

Section 00470 - MANHOLES, CATCH BASINS, AND INLETS

00470.11 Materials

Supplement this section with the following:

Manholes: Sanitary sewer manholes shall be constructed of 48-inch or larger diameter reinforced precast concrete manhole sections in conformance with the requirements of this Section. The base and first barrel section shall be precast monolithically with preformed channels. Manholes shall have a minimum depth of six (6) feet and include an eccentric cone section with 24" opening.

A-Lok boot connectors or approved equal shall be provided for all inlets and outlets.

Joints in the manhole sections shall be watertight complying with ASTM C443 (confined groove joint) or ASTM C990 (tongue and groove joint).

Adjustment Rings: Manhole adjustment rings shall be precast concrete.

Frames and Covers: Frames and covers shall be class 30 cast iron meeting the requirements of ASTM A48. 24" round covers shall read "SEWER" and "CITY OF UMATILLA" embossed in top (2" raised letters), cover weight 150 lbs, frame weight 185 lbs. Approved manufacturers include East Jordan Iron Works (3705Z), D&L Foundry, Neenah Foundry, and Olympic Foundry. When required by the City, locking covers shall be provided as manufactured by East Jordan Iron Works (3704C) and D&L Foundry.

Mortar/Grout: Approved manufacturers include American All Patch 20, Jet Set Complete Repair, and Target expanding non-shrink.

00470.40 General

Supplement this section with the following:

The design and construction of all manholes shall provide for a 0.10-foot vertical drop through the manhole per the Oregon Administrative Rules.

00470.48 Adjusting Manholes and Catch Basins to Grade (New)

The following new section shall be added to the standard specifications:

Manholes, valve boxes, catch basins, and similar utility appurtenances and structures shall not be adjusted until the pavement is completed, at which time the center of each structure shall be relocated from references previously established by the Contractor. All existing manhole castings shall be replaced with new castings at time of adjustment.

The asphalt concrete pavement shall be cut and removed to a neat circle, the diameter as specified on the Standard Details. The frame shall be placed on cement concrete blocks or adjustment rings and brought up to the desired grade. The base materials shall be removed and Class 3000 cement concrete shall be placed to the depth specified on the Standard Detail.

On the following day, a tack coat of asphalt shall be applied to the concrete, the edges of the asphalt concrete pavement, and the outer edge of the casting. Asphalt concrete shall then be placed and compacted with hand tampers and a patching roller.

The completed patch shall match the existing paved surface for texture, density, and uniformity of grade. The joint between the asphalt patch and the existing pavement shall then be sealed with emulsified asphalt and shall be immediately covered with dry paving sand before the tack has broken.

Utility appurtenances outside paved areas shall be adjusted to match the finish grade of the area surrounding the structure. The utility cover shall be cleaned of all concrete prior to acceptance.

GENERAL REQUIREMENTS FOR SANITARY SEWER LIFT STATIONS

See separate documents for sanitary sewer lift station general requirements**.**

CHAPTER 7 - STORMWATER IMPROVEMENTS

GENERAL REQUIREMENTS FOR STORMWATER IMPROVEMENTS

All extensions and additions to the City of Umatilla's storm sewer (storm drain) system shall conform to the Design and Construction Standards of the City of Umatilla, Oregon DEQ, Oregon DOT Hydraulics Manual, and designed by a Civil Engineer currently licensed by the State of Oregon. Private systems, where required by applicable provisions of the Umatilla Municipal Code, shall also comply with these requirements.

All stormwater and drainage improvements shall be planned, designed, permitted, constructed and maintained in accordance with the requirements of the Oregon DEQ.

All new storm drainage facilities, public or private, shall be designed by a Professional Engineer licensed in the State of Oregon. Complete stormwater runoff and drainage facilities sizing calculations shall be submitted to the Engineering Division for review and comment. Storm sewer facilities and pipelines shall be designed to meet a minimum 25-year storm criteria, and both the 24-hour and short-duration storms shall be considered in the design.

All storm runoff occurring on all new lots and developments (private property) shall be retained and disposed of on-site. No private storm runoff will be permitted to enter public right-of-way or the public storm drainage system. The property owner shall maintain all stormwater Best Management Practices (BMPs) that are installed on private property.

Where existing stormwater from adjacent properties enters the proposed site, the Developer shall be responsible for including the additional stormwater in the proposed system including retention and treatment as applicable.

Storm runoff for new public streets shall be designed and constructed as required to the point where the adjoining property owner's responsibility for further extension begins. This typically requires an extension across the entire frontage of the property to the property line of the adjoining owner.

All storm sewer designs for new public streets shall be based upon an engineering analysis by the Developer's Consultant that considers total drainage areas, runoff rates, pipe and inlet capacities, treatment capacity, and any other factors pertinent to the design.

All illicit discharges as defined by Oregon DEQ are not permitted to enter any storm sewer system.

All subsurface infiltration facilities used for the treatment and disposal of stormwater shall meet the requirements of Oregon DEQ Ecology Underground Injection Control (UIC) program. Developer/Applicant must register UIC wells with DEQ in the applicant's name. The developer/applicant shall only submit the latest approved City of Umatilla standards to DEQ. Attempts to gain approval for non-compliant infrastructure will result in the developer/applicant resubmitting the approved facilities at their expense and may result in delays. Following construction completion and at the time of public improvements certification, the developer/applicant shall process an ownership transfer request with DEQ, to transition UIC ownership to the City of Umatilla.

Inlet spacing shall be designed in accordance with the ODOT Hydraulics Manual. Generally, inlet spacing shall not exceed 300 feet. There shall be a manhole or catch basin installed at the intersection of two collector storm sewers. A collector storm sewer is a sewer servicing more than one catch basin. Stormwater flow shall be kept in the gutter and shall flow across intersections. Catch basin "bubble up" installations will not be permitted.

Catch basins and inlets shall be located at the ends of curb returns or at property lines between lots. Catch basins and inlets shall not be located within driveways, driveway transitions, or pedestrian ramps.

All public stormwater pipes or culverts shall be a minimum of 12 inches in diameter. Pipes shall have a minimum slope of 0.5% and be designed with a minimum velocity of 2-feet per second. Pipes shall be sized so that they do not surcharge under design storm conditions.
Manholes shall be installed at all vertical and horizontal angle points in the stormwater pipes, and at intervals of no greater than 400 feet. Curved or deflected pipelines will not be permitted. All stormwater manholes with solid lids shall have a channeled base and all catch basin manholes with grated lids shall have a sump.

A Storm Water Site Plan is required for any project.

The applicant's project may require coverage under the Oregon DEQ 1200-C-Construction General Permit (CGP) for construction projects. The Developer shall be responsible for compliance with the DEQ stormwater permit conditions and shall provide the City with a copy of the 1200-C CGP as applicable.

A temporary erosion and sedimentation control (TESC) plan shall be included with all plan submittals and should show how existing storm systems and adjacent properties will be protected from storm runoff.

For commercial and industrial sites, the Developer's Consultant shall provide both the total square footage of the entire property under review, and the total square footage of all

impervious surfaces, including but not limited to; the proposed building, any concrete or asphalt paving, sidewalk, and roof surface, etc. Information shall be shown in a table on the cover sheet, or on the site plan sheet. This information is required of all new commercial development (or of any structure undergoing modification or addition).

DESIGN CRITERIA

Public Right-Of-Ways: 25-YR/24-HR Storm

Detention facilities:

- Storage volume of stormwater detention facility: 25-YR/24-HR Storm

Site:

- Storage volume of the site without any discharge to public rights-of-way: 100-YR/24-HR Storm

DESIGN STORMS

Design storms are used to establish the amount of precipitation to be used in calculating the runoff from a parcel or basin. Based on rainfall records and methods outlined in the Oregon DOT Hydraulics Manual, the storm events described below are applicable.

25-Year, 3-Hour Storm (Short-Duration Storm) – 0.92 inches of precipitation. This short-duration storm has a 25-year return frequency, or a 4 percent chance of occurring in any one year. This unique storm is representative of the summer thunderstorm where a significant amount of rainfall occurs over a 3-hour period and should generally be used for design of flow-based stormwater BMPs and pipe sizing.

25-Year, 24-Hour Storm (SCS Type IA Storm) – 1.6 inches of precipitation (uses 25-year, 24-hour storm intensity). This storm has a 25-year return frequency, or a 4 percent chance of occurring in any one year. Volume-based BMPs should generally be designed for this SCS Type IA storm. The intensity of this storm is lower since the rainfall occurs more slowly over an extended time within the 72-hour period. Therefore, the runoff rate is lower, but the volume is greater than the 3-hour storm.

The 25-Year design storm warranting the largest storm sewer facility size shall be the controlling storm.

100-Year, 24-Hour storm (SCS type A Storm) – 2.0 inches of precipitation.

HYDROLOGIC ANALYSIS

Hydrologic analysis determines the amount of runoff from a given storm for a given drainage area. Available methods range from simple calculations such as the Rational Method to complex computer models, requiring significant data input and knowledge of hydrologic effects.

The following hydrographic methods are considered acceptable for the watersheds within Umatilla and its urban growth area.

- The Santa Barbara Urban Hydrograph (SBUH) method may be used for all analyses regardless of the size of the drainage area. Other computer models may also be used with prior approval by the City.

- For drainage areas less than or equal to 20 acres, the rational formula and modified rational method, as described in Oregon DOT hydraulics manual, may be used for flow-rate-based applications. Inputs shall be as described in those publications, or other engineering texts. The SCS Unit Hydrograph Method may also be used.

- For drainage areas greater than 20 acres, and when it is necessary to route flows through detention facilities, the SCS Unit Hydrograph Method may be used.

The SBUH method uses a hyetograph to depict the intensity (amount) of rainfall versus time. A hyetograph may also be required for routing design storms through some BMPs. Design storm hyetographs applicable to Umatilla stormwater facilities are as follows:

- Volume-Based BMPs – SCS Type IA Storm with a 25-year OR 100-YR return frequency. Storm intensity is based on the 25-year, 24-hour storm event.

- Flow-Rate-Based BMPs – 3-hour short-duration storm with a 25-year return frequency.

FLOW CONTROL

The criteria listed below shall apply to control stormwater runoff flow and the designated design storms shall apply:

- Flow-rate-based stormwater BMPs such as storm sewer facilities and pipelines shall be designed to carry at a minimum the 25-year, 3-hour short-duration design storm (0.92 inches of precipitation). Depending on the size of the basin, time of concentration and infiltration rates, some infiltration facilities shall be designed using the 25-year, 24-hour storm (1.6 inches of precipitation, SCS Type

IA). The 25-year design storm warranting the largest storm sewer facility size shall be the controlling storm. At the City's discretion, if the facilities are critical to public health and safety, or significant property damage could occur, they shall be designed to successfully pass the 50-year or 100-year storm. Storm runoff from any new construction will not be permitted to enter the City's existing storm sewer pipelines.

- Volume-based stormwater BMPs such as retention and detention basins shall be designed based on the 25-year, 24-hour storm (1.6 inches of precipitation, SCS Type IA). A secondary outlet or emergency spillway shall be provided to pass the 100-year, 24-hour storm (2.0 inches of precipitation, SCS Type II) without damage to the facility. If there is no downstream discharge available, then site shall be able to retain a 100-Y/24-HR storm on-site.

SPECIAL PROVISIONS FOR STORMWATER IMPROVEMENTS

The following sections of the Oregon Standard Specifications for Construction have been amended or supplemented as described below and apply to the construction of public works storm sewer or drainage improvements within the City of Umatilla.

Section 00445 – SANITARY, STORM, CULVERT, SIPHON, AND IRRIGATION PIPE

00445.01 Definition and Descriptive Terms

Supplement this section with the following:

The term "storm drain(s)" shall mean the same as storm sewer(s).

00445.11 Materials

Supplement this section with the following:

The storm sewer (drain) pipe approved for use shall be as follows:

STORM DRAIN PIPE

Solid Wall PVC Storm Sewer Pipe 4"-15" PVC, ASTM D3034-SDR35
18"-27" PVC, ASTM F679

PVC Storm Sewer Pipe shall have Ring-Tite joints.

Where specified on the Plans, storm drain pipe shall be PVC pressure pipe conforming to the requirements of Section 02470.40 (a) and Ductile Iron conforming to the requirements of Section 02470.40 (b).

UNDERDRAIN INFILTRATION SYSTEM MATERIALS

Pipe: Perforated Corrugated Polyethylene Underdrain pipe, couplings, and fittings shall comply with all the requirements of Section 02415.10 of the Standard Specifications.

Drain Rock: Drain rock for use as backfill for the perforated underdrain pipe in the infiltration trench system shall be clean coarse aggregate conforming to the requirements of Granular Drain Backfill Material, as specified in Section)00430.11 of the Standard Specifications.

Construction Geotextile: Geotextile fabric for underground infiltration systems shall be non-woven fiber pore size 0-13mm, maximum water permeability 0.05 cm/sec, minimum grab strength 100 lbs, minimum fabric toughness 10,000 lbs, and meeting the requirements of ASTM D1682.

Culvert pipe approved for use on a City project shall be as follows:

Corrugated Aluminum Alloy Pipe: Aluminum Pipe shall meet the requirements of Section 02420.40 of the Standard Specifications.

Corrugated Steel Pipe and Pipe Arches: Steel Pipe shall meet the requirements of Section 02420.10 of the Standard Specifications.

Corrugated Polyethylene Pipe: Corrugated Polyethylene (CPE) pipe, couplings, and fittings shall meet the requirements of Section 02415.10 of the Standard Specifications.

00445.70 (c) Cleaning and Testing (New)

The following new section shall be added to the Standard Specifications:

All storm piping, with the exception of infiltration trench perforated pipe, shall have television inspection. Cost of television inspection shall be included in the pipe installation cost.

All recordings shall be in color and in DVD format, playable on standard DVD players. Television inspection shall begin at the downstream structure and end at the next upstream structure. The camera speed shall not exceed one-half (1/2) foot per second. A pivot head camera shall be used with detailed inspection of all laterals showing the entire lateral with a 360-degree pan around the opening. Panning of each lateral shall be a minimum of 15 seconds.

The Contractor shall add colored dye that contrasts with the pipe color and clean water to the cleaned storm line before television inspection. The recording shall be free from static and a minimum distance of 10 feet shall be clearly visible in front of the camera.

All recordings shall show on the screen the correct time and date of the inspection, the name of the camera operator, the manhole numbers being inspected, an accurate footage count, and all lateral locations using a 12 hour clock position.

All inspections shall be performed by Pipeline Assessment and Certification Program (PACP) trained personnel. The Contractor shall provide a copy of the inspection, with all appurtenant written logs, within 24 hours of the inspection.

Section 00470 - MANHOLES, CATCH BASINS, AND INLETS

00470.10 Materials

Supplement this section with the following:

Catch Basin Frames and Covers: Frames and covers shall be class 30 cast iron meeting the requirements of ASTM A48. Covers shall read "STORM" and "CITY OF UMATILLA" embossed in top (2" raised letters). Approved manufacturers include East Jordan Iron Works or approved equal.

Catch Basin Oil/Water Separators: Oil/Water separators shall be installed in catch basins upstream of infiltration trenches. Approved manufacturers include Raven Products OWS-LP-4-15 BMP 12 R or Ground Water Rescue, Inc. "The Eliminator" or approved equal.

00470.48 Adjusting Manholes and Catch Basins to Grade (New)

The following new section shall be added to the Standard Specifications:

Manholes, valve boxes, catch basins, and similar utility appurtenances and structures shall not be adjusted until the pavement is completed, at which time the center of each structure shall be relocated from references previously established by the Contractor. All existing manhole castings shall be replaced with new castings at time of adjustment.

The asphalt concrete pavement shall be cut and removed to a neat circle, the diameter as specified on the Standard Details. The frame shall be placed on cement concrete blocks or adjustment rings and brought up to the desired grade. The base materials shall be removed, and Class 3000 cement concrete shall be placed to the depth specified on the Standard Detail.

On the following day, a tack coat of asphalt shall be applied to the concrete, the edges of the asphalt concrete pavement, and the outer edge of the casting. Asphalt concrete shall then be placed and compacted with hand tampers and a patching roller.

The completed patch shall match the existing paved surface for texture, density, and uniformity of grade. The joint between the asphalt patch and the existing pavement shall then be sealed with emulsified asphalt and shall be immediately covered with dry paving sand before the tack has broken.

Utility appurtenances outside paved areas shall be adjusted to match the finish grade of the area surrounding the structure. The utility cover shall be cleaned of all concrete prior to acceptance.

CHAPTER 8 - STREET IMPROVEMENTS

GENERAL REQUIREMENTS FOR STREET IMPROVEMENTS

All new street design and construction must conform to these Design and Construction Standards of the City of Umatilla, the Manual on Uniform Traffic Control Devices, the AASHTO Green Book, Umatilla Municipal Code, and the latest edition of the Oregon Standard Specifications for Construction.

STREET REQUIREMENTS

Arterial streets serve as the high-volume corridors that connect the major traffic generators and shall be designed to meet the minimum right-of-way and roadway dimensions as shown on the City Standard Details. Face of curb radii at intersections shall be a minimum of fifty (50) feet, or as approved by the City Engineer. Arterial streets shall be designed for a WB-62 vehicle and HS-25 loadings.

Collector streets shall be designed to meet the minimum right-of-way and roadway dimensions as shown on the City Standard Details. Face of curb radii at intersections shall be a minimum of thirty-five (35) feet, or as approved by the City Engineer. Collector streets shall be designed for a WB-62 vehicle and HS-25 loadings.

Local Access (Residential) streets shall be designed to meet the minimum right-of-way and roadway dimensions as shown on the City Standard Details. Face of curb radii at intersections shall be a minimum of twenty-five (25) feet, or as approved by the City Engineer. Residential streets shall be designed for a fire truck and HS-20 loadings.

The street geometry including horizontal and vertical alignments shall be designed to meet minimum standards for applicable design speeds as presented in the Policy on Geometric Design of Highways and Streets (Green Book) published by the American Association of State Highway and Transportation Officials, or as approved by the City Engineer.

The maximum length of a cul-de-sac street shall be 600 feet measured along the street centerline from the nearest street intersection to the throat of the cul-de-sac. Where it is not feasible to construct a cul-de-sac turnaround, the City may allow the use of an “L” or “Hammerhead” turnaround upon approval by the City Engineer and Fire Department. The cul-de-sac shall have a minimum right-of-way radius of 55 feet and a minimum driving radius of 50 feet, which may include depressed curb and six-inch thick concrete sidewalk.

A subdivision of 30 or more lots shall have two or more access points consistent with the International Fire Code. All street intersection angles shall not be less than 80 degrees, including private roads. Offset street intersections shall not be less than 200 feet for Arterial and Collector streets and 100 feet for Local Access streets. A tangent at least 200 feet long shall be introduced between reverse curves on Collectors and Arterials. Distance separation from intersections shall be on a case by case basis and determined and approved by the City Engineer.

Street grades shall be kept to a maximum of six (6) percent for Arterials, eight (8) percent for Collectors, and ten (10) percent for Local Access streets, unless otherwise approved by the City Engineer. The minimum grade for all streets shall be five-tenths (0.5) percent. Vertical curves shall be designed when the profile point of intersection grade difference is greater than one (1) percent. AASHTO requirements for sight-distance shall apply.

Cement concrete barrier curb and gutter and sidewalks shall be installed along both sides of all new streets, or as approved by the City Engineer. Sidewalk widths shall be as shown on the City Standard details. Pedestrian ramps shall be designed to City Standard Details and shall meet ADA requirements. Crosswalks between pedestrian ramps shall be designed meet ADA requirements and comply with the Oregon Standard Drawings.

Driveways shall be located on the lowest classification of roadway abutting the development. Driveway widths and locations are limited to one per lot or as approved by the City Engineer. A "Corner" lot driveway shall be located as far as possible from the street intersection. Driveway widths shall be as specified on the City Standard Details.

The sight distance triangle clear view shall remain clear of anything erected, placed, planted, or allowed to grow in such a manner as to materially impede vision between the heights of 2.5' and 10' above the intersection centerline elevation. At the discretion of the City Engineer, City infrastructure may be located within the clear view including but not limited to regulatory signage, illumination, and utility poles.

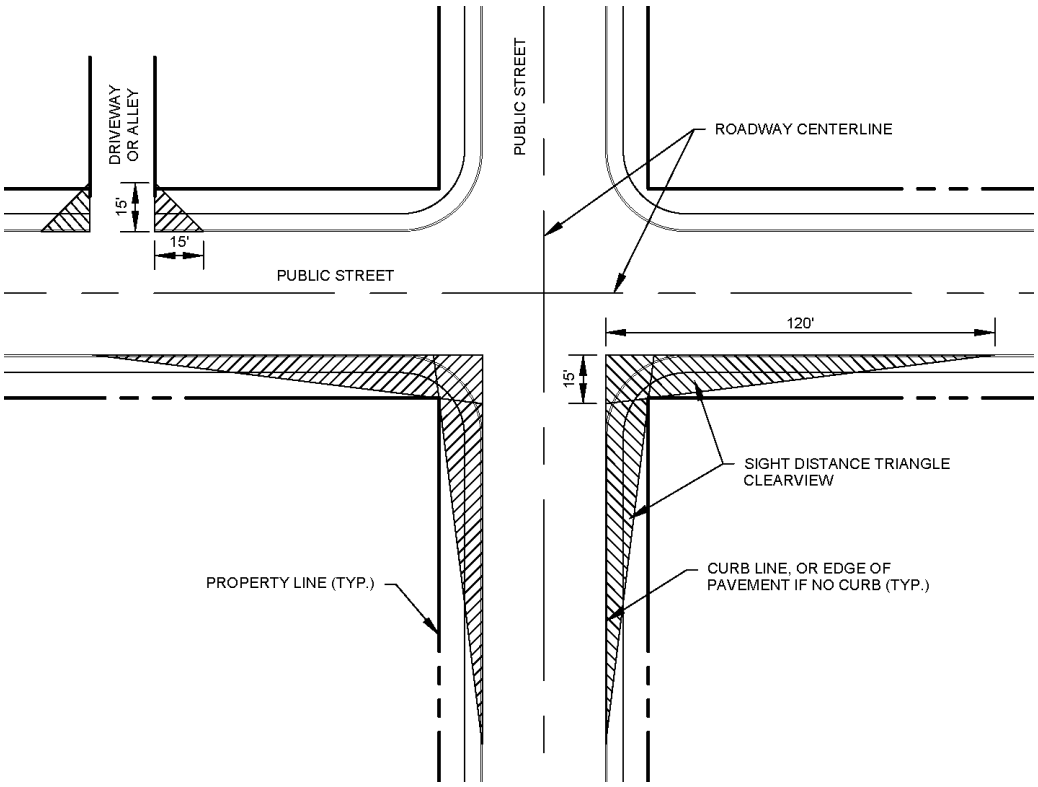


Figure 8.1 Sight Distance Triangle Clearview

Street lights shall be installed in accordance with City of Umatilla requirements. Typical street light locations include intersections, outside of curves, and along straight roadway segments. Actual locations shall be approved by the City. In all new developments, monuments with cover caps and cases shall be installed at the centerline of street intersections, angle point and points of curves, and at other locations as determined by the City Engineer.

Traffic signs, posts, sleeves, pavement markings, and channelization devices shall be provided and installed by the developer in accordance with the latest edition of the Manual of Uniform Traffic Control Devices (MUTCD) and City Design and Construction Standards. Center line markings shall be installed on all paved arterials and collectors, and any lower classified roadways having an ADT of 6,000 vehicles per day or greater.

Fencing, transformers, pedestals, and other above ground utilities shall not inhibit intersection sight triangles or access to any City utility.

The City Fire Chief may require an emergency vehicle access in addition to other access points. If required, the access shall be designed to meet the standards as approved by the Fire Chief.

CONCRETE REPAIR REQUIREMENTS

1. Concrete curbs and walks which are defective from cracking, displacement, spalling or excess surface cracking shall be repaired by removing and replacing the defective portions.
2. Surface chips in curbs bay be repaired aby an epoxy method which results in a hardened surface and neat repair. Surface texture and color must match adjacent concrete. Epoxy adhesive shall be an approved two-park epoxy bonding compound. Surfaces shall be thoroughly cleaned prior to application of the epoxy. Mortar shall have curing compound applied. Surface patching of sidewalk will not be allowed.
3. When defective portions of curbs or walks are removed, they shall be removed in segments between score marks and/or deep joints. Replacement concrete shall be formed and finished to the same standard required for new work. The edge of existing asphalt paving will not be used as a curb form unless approved by the City Engineer. When concrete being replaced is not poured monolithic, #3 rebar 12-inches long shall be placed at 2-ft 0-inches on center a minimum of 3-inches into existing concrete. Epoxy grout if drilled into existing concrete.
4. The defective portions of driveway approaches shall be removed by sawing out along scores or joints and replacing.
5. Cracking of curbs, walks and driveway aprons will require removal and replacement when the following situations occur:
   - When an individual crack is 3/32 of an inch wide or wider (the approximate width of a new 5 cent piece);
   - When two or more cracks of any width occur between scores and/or expansion joints;
   - When three or more chips occur in an 8-ft length of curb;
   - Any chip in sidewalk.
6. Use #3 rebar, 12-inches long, to dowel new concrete to existing concrete.
7. Do not dowel private improvements to public improvements.
8. When replacing curb and gutter, a 12-inch wide, 6-inch minimum thick AC deep lift patch (or match existing AC, whichever is greater) is required.
9. All concrete shall be 6-sack -lb/cy (3-inch max. slump) per city specifications unless otherwise noted on the plans.

ILLUMINATION REQUIREMENTS

Illumination may include roadways within a development and/or illumination as required as part of development frontage improvements. Existing lighting on public rights of way that does not currently meet these standards is required to be upgraded at the Developer's expense including relocation as applicable, in accordance to City Standards. The owner/developer is solely responsible for the design and installation of all lighting infrastructure required for said development.

Lighting analysis utilizing AGI software shall be completed by the Developer's Consultant for all new lighting installations or as deemed necessary by City staff. The analysis shall conform to IES RP-8-00 illuminance requirements shown below.

Illumination Requirements at Intersections Based on Pedestrian Classification

City of Umatilla Functional Classification	Average Maintained Illuminance (fc)			Uniformity (Avg/Min)
	Pedestrian Classification			
	High	Medium	Low	
Principal Arterial/Principal Arterial	3.4	2.6	1.8	3:1
Principal Arterial/Minor Arterial	2.9	2.2	1.5	3:1
Principal Arterial/Collector	2.6	2.0	1.3	3:1
Minor Arterial/Minor Arterial	2.4	1.8	1.2	4:1
Minor Arterial/Collector	2.1	1.6	1.0	4:1
Collector/Collector	1.8	1.4	0.8	6:1

Illumination Requirements on Roadways

City of Umatilla Functional Classification	Average Maintained Illuminance (fc)	Uniformity (Avg/Min)
Principal Arterial	1.3	3:1
Minor Arterial	0.9	4:1
Collector	0.7	6:1

Luminaires shall have a mounting height of 35 feet for arterial streets and 30 feet for residential (collector) streets. Luminaires shall be located a minimum of 2 feet and a maximum of 7.5 feet from the edge of curb. Street lights shall be spaced to meet illuminance requirements shown in the tables above.

ROADSIDE PLANTING, IRRIGATION AND FENCING

Where directed and required by the City of Umatilla the developer/contractor shall provide roadside planting, irrigation and/or fencing in general conformance with the requirements below:

Plantings:

1. Plants shall consist of arid grasses and/or low growing evergreen shrubs. Grasses and shrubs shall be low growing (3-ft or less).
2. Plantings shall cover a minimum of 30% of the planting area.
3. Place a minimum of 3-inches of local topsoil in the planting area prior to placing weed barrier.
4. Rock mulch consisting of 1-inch to 1.5-inch black/gray crushed basalt shall be provided in the planting area with a minimum depth of 3-inches. Rock mulch shall cover 100% of the planting area.
5. Weed barrier fabric shall be placed over the planting area prior to placement of the rock mulch. Fabric shall be secured in place per manufactures installation instructions. Weed barrier fabric shall be "Typar" 3201 geotextile landscape fabric or approved equal.
6. Backfill plants with local topsoil in accordance with supplier recommendations. Do not backfill plants with rocky and/or poor soils. Amend the soils as necessary to help support plant growth.
7. Developer/contractor shall submit a planting plan to the City and obtain City acceptance prior to the placement of any planting materials.
8. Warranty: Upon final acceptance of the project as being properly installed, the Contractor shall guarantee the plant materials for one full, continuous growing season, and replace plants that are dead, unhealthy, unsightly condition, or that have lost their natural shape due to dead branches or excessive pruning.

Irrigation:

1. Provide an automated irrigation system to provide adequate watering coverage for the planting materials.
2. Developer/contractor shall provide all the materials, parts and labor to construct an underground automated irrigation system. It shall also include the necessary electrical connections, parts and materials to operate the system.
3. Developer/contractor shall provide and submit an irrigation layout plan to the City and obtain City acceptance prior to the placement/installation or the irrigation system. The submittal shall include parts list for all of irrigation components to include but not limited to piping, fittings, valves, controller, wiring, heads, drips, boxes, etc.....
4. Irrigation piping shall be pvc class 200 for pipe sizes larger than 2-inches and schedule 40 for pipe 2-inches and smaller.
5. All main line fittings 3-inches and smaller shall be solvent weld schedule 80 pvc.

6. All main line fittings 4-inches or larger shall be push on, gasketed, and constructed of ductile iron.
7. All lateral line fittings shall be solvent weld schedule 40 pvc.
8. Main lines shall have a minimum coverage of 24-inches.
9. Lateral lines shall have a minimum coverage of 12-inches.
10. All main and lateral lines shall be sleeved where they pass under any paved areas/surfaces. The size of the sleeve shall be twice the size of the pipe being sleeved. Pipe sleeves shall be schedule 80 pvc.
11. Irrigation control wire shall be 2-wire from the controller to the field devices. Wire shall be polyethylene double-jacketed or UF-B UL pvc double jacketed two conductor solid core for direct burial systems.
12. Irrigation control wire shall be 2-wire soft drawn, annealed, solid copper conforming to ASTM 33. Conductor insulation must be 4/64-inch thick pvc conforming to UL #493.
13. All underground wire shall be placed in schedule 40 pvc conduit. All out-of-ground wire shall be placed in rigid metal conduit.
14. All splices shall be water-tight. All connections made inside the box to connect the 2-wire to the valve shall be made using a dry-splice connector 3M #DBR-6, DBR-6 direct bury splice kit or approved equal and shall be UL 486D listed.
15. No aluminum wire shall be used.
16. Drip tubing shall be Netafim Techline CV (17mm dripline), TLDL6-12 coil length as required or approved equal. Flow rate of 0.60 gph and emitter spacing of 12-inches.
17. Drip tube fittings shall be Netafim 17mm dripline fittings, barbed, uv resistant and one-piece construction or approved equal.
18. Drip tubing accessories shall include Netafim TLSOV shut-off valve and Netafim TLSOV manual drain valve or approved equal.
19. Provide irrigation rated valve boxes flush with finished grade.
20. Controller shall be low voltage system made for control of irrigation system for automatic control valves with 120 volt AC.
21. Backfill around and over the irrigation pipe using material consisting of bedding sand. Place sand 3-inches above the pipe and 3-inches below the pipe. Sand bed all main lines and remove all rocks larger than 1" from other trenches. Compact trenches outside of paved surface areas to minimum of 88% of the maximum dry density as determined by ASTM 698. Compact trenches under paved surfaces to 98% of the maximum dry density as determined by ASTM 698.
22. Provide mainline pressure test after valves have been installed at a pressure of 100 psi for a period of 2-hours. Pressure loss of 3-psi or less is acceptable. Correct all leaks and retest until acceptable pressure loss is achieved.
23. Make all necessary adjustments as needed to provide adequate water coverage to the planting materials.
24. Run sprinkler coverage test with City representative present. Run each zone and observe water coverage. Make any noted adjustments to the system upon completion of the test.

Fencing:

1. Fencing shall be 6-ft tall privacy white vinyl.
2. Fencing shall conform with ASTM F964-13.
3. Fencing structural supports shall be properly embedded into the ground and backfilled with concrete. Support shall be encased with vinyl fencing material or an approved equal.
4. Fencing shall be uniform in color, style and material and shall not use dissimilar colors, styles or materials.

SPECIAL PROVISIONS FOR STREET IMPROVEMENTS

The following sections of the Oregon Standard Specifications for Construction have been amended or supplemented as described below.

Section 00310 – REMOVAL OF STRUCTURES AND OBSTRUCTIONS

00310.41 Removal of Work

Supplement this section with the following:

Where structures or installations of concrete, brick, blocks, etc., interfere with the construction, they shall be removed and any pipe openings shall be properly plugged watertight with Class 3000 concrete, or with mortar and masonry, blocks, or brick. The removal and plugging of pipes shall be considered as incidental to the construction.

Where the structures are removed, the voids shall be backfilled with suitable, job-excavated material and compacted, and such work shall be considered as incidental to the removal work. If the City determines the job-excavated material to be unsuitable for backfill, the Contractor shall place ballast or crushed surfacing material as directed by the City.

In those areas where asphalt pavement removal is required, the Contractor shall, prior to excavation, score the edge of the asphalt concrete pavement with an approved pavement cutter such as a concrete saw. During the course of the work, the Contractor shall take precautions to preserve the integrity of this neat, clean pavement edge. Should the pavement edge be damaged prior to asphalt concrete paving activities, the Contractor shall be required to trim the edge with an approved pavement cutter as directed by the City immediately prior to paving. Sidewalk and/or curb and gutter removal shall be from construction joint to joint. No partial sidewalk panels or curb and gutter sections will be allowed.

Street excavation shall consist of removing the existing material of whatever nature encountered to the subgrade elevation and shaping the subgrade to conform to the cross- section shown on the Plans or as staked in the field.

Where directed by the Consultant, the Contractor shall excavate beyond the right-of-way in order to adequately slope adjacent properties.

The Contracting Agency will reference all known existing monuments or markers relating to subdivisions, plats, roads, street centerline intersections, etc. The Contractor shall take special care to protect these monuments or markers and also the reference points. In the event the Contractor is negligent in preserving such monuments and markers, the points will be reset by a licensed surveyor at the Contractor's expense.

Section 00340 - WATERING

00340.40 Watering

Supplement this section with the following:

The Contractor shall be solely responsible for dust control on the Developer's project and shall protect motoring public, adjacent homes and businesses, orchards, crops, and school yards from damage due to dust, by whatever means necessary. The Contractor shall be responsible for any claims for damages and shall protect the City, County, and Consultant from any and all such claims.

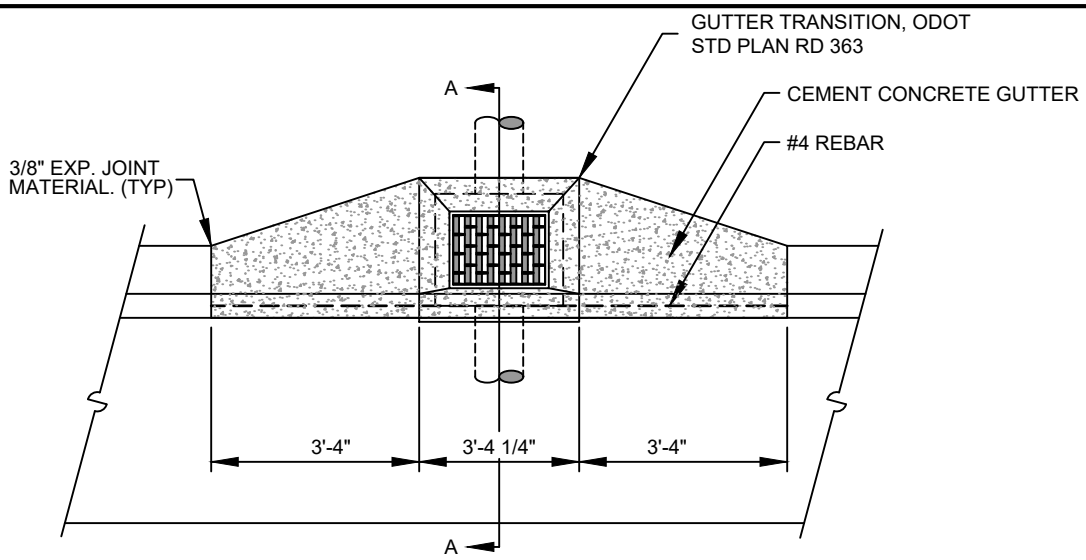
When directed by the City, the Contractor shall provide water for dust control within two hours of such order and have equipment and manpower available at all times including weekends and holidays to respond to orders for dust control measures. Should the Contractor fail to comply within two hours, the City may utilize its own staff at the prevailing Engineering Staff wage rate plus equipment rental charges, and/or contracted watering services. The Contractor will be responsible for reimbursement of all dust control costs including labor, equipment, water, and contractor costs. Subsequent building permits will not be processed until reimbursement is paid in total.

APPENDIX A – STANDARD DETAILS

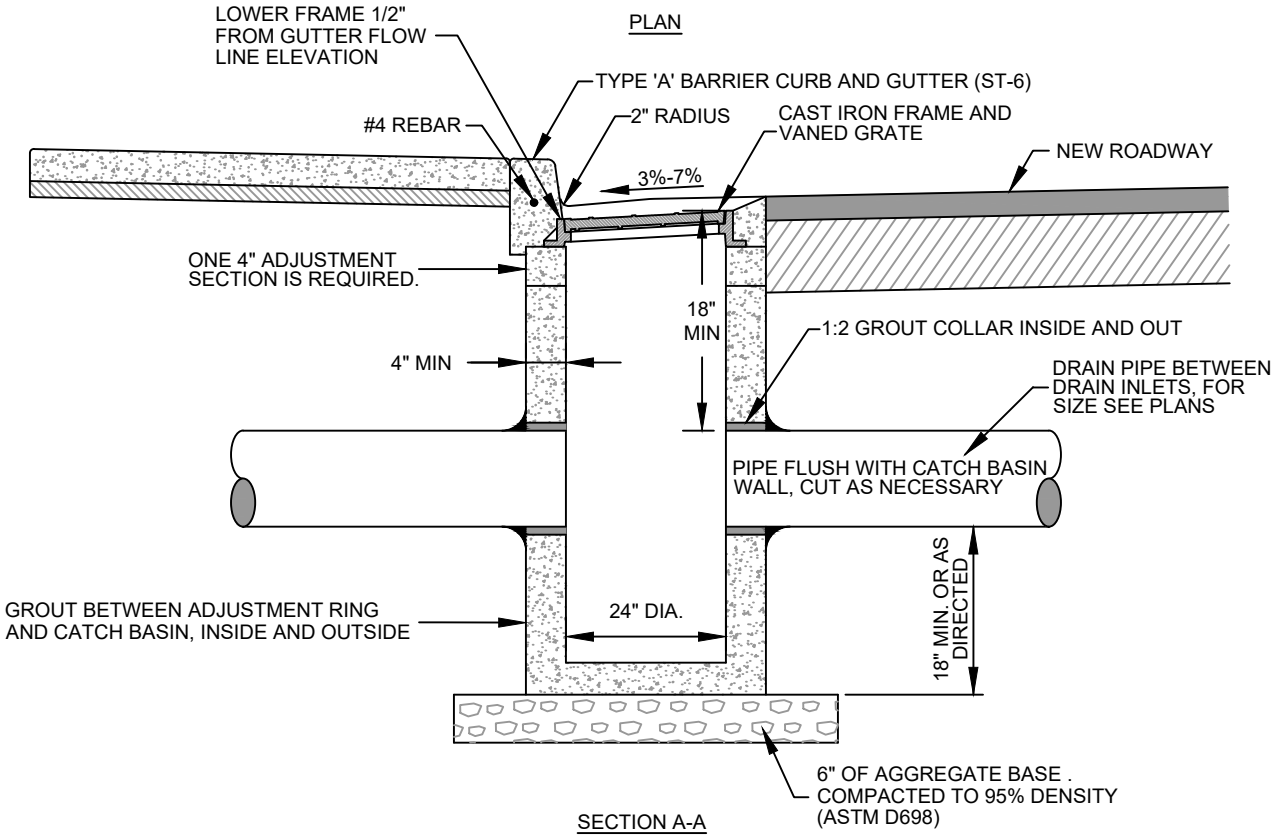
The following standard detail sheets are attached:

- SD-1 Type 1 Catch Basin
- SD-2 Type 2 Catch Basin
- SD-3 Infiltration Trench
- SS-1 Standard Manhole
- SS-2 Manhole Frame and Cover (Locking and Non-Locking)
- SS-3 Standard Drop Manhole
- SS-4 Manhole Adjustments
- SS-5 Typical Sewer/Storm Drain Trench Section
- SS-6 Sewer Stub Installation (New and Existing Main)
- SS-7 Doghouse Manhole
- SS-8 Sewer Cleanout
- ST-1 Monument Case and Cover
- ST-2A Typical Street Sections Local Access
- ST-3 Trench Surfacing Repair
- ST-4 Cement Concrete Sidewalk
- ST-5 Driveway Approaches
- ST-6 Cement Concrete Curbs
- ST-7 Cul-De-Sac
- W-1 Tapping Water Main
- W-2 Residential and 1″ Commercial Water Service
- W-3 2″ Service Installation
- W-4 Cast Iron Valve Box
- W-5 Blow-Off Assembly
- W-6 Air/Vacuum Relief and Vault
- W-7 3″ To 8″ Water Services
- W-8 Concrete Thrust Blocking
- W-9 Saddle Thrust Blocking
- W-10 Fire Hydrant Installation
- W-11 Fire Lines / Backflow
- W-12 Bollard
- W-13 PVBA/SVBA Installation 1/2″ To 2″
- W-14 DCVA Installation 1/2″ To 2″
- W-15 DCVA & DCDA Dual Installation Larger Than 2″
- W-16 DCDA & DCVA Installation Larger Than 2″
- W-17 RPBA Installation 3/4″ To 2″

- W-18 RPDA/RPBA Installation Larger Than 2″
- W-19 RPDA/RPBA Dual Installation Larger Than 2″
- W-20 Typical Water Trench Section
- W-21 Irrigation Service (Front Yard)
- W-22 City Owned or Acquired Irrigation Services



PLAN



SECTION A-A

NOTES:

1. MAXIMUM PIPE DIAMETER SHALL BE 15 INCHES.
2. SEE DWG. NO. SS-1 FOR STORM DRAIN MANHOLE.
3. SEE DWG. NO. SD-3 FOR INFILTRATION TRENCH.
4. DO NOT KNOCK OUT HOLE IN BOTTOM OF CATCH BASIN.
5. FRAME AND GRATES SHALL BE EAST JORDAN 7753 ROUND BASE CATCH FRAME AND GRATE OR APPROVED EQUAL.
6. CONCRETE SHALL BE 3,000 PSI

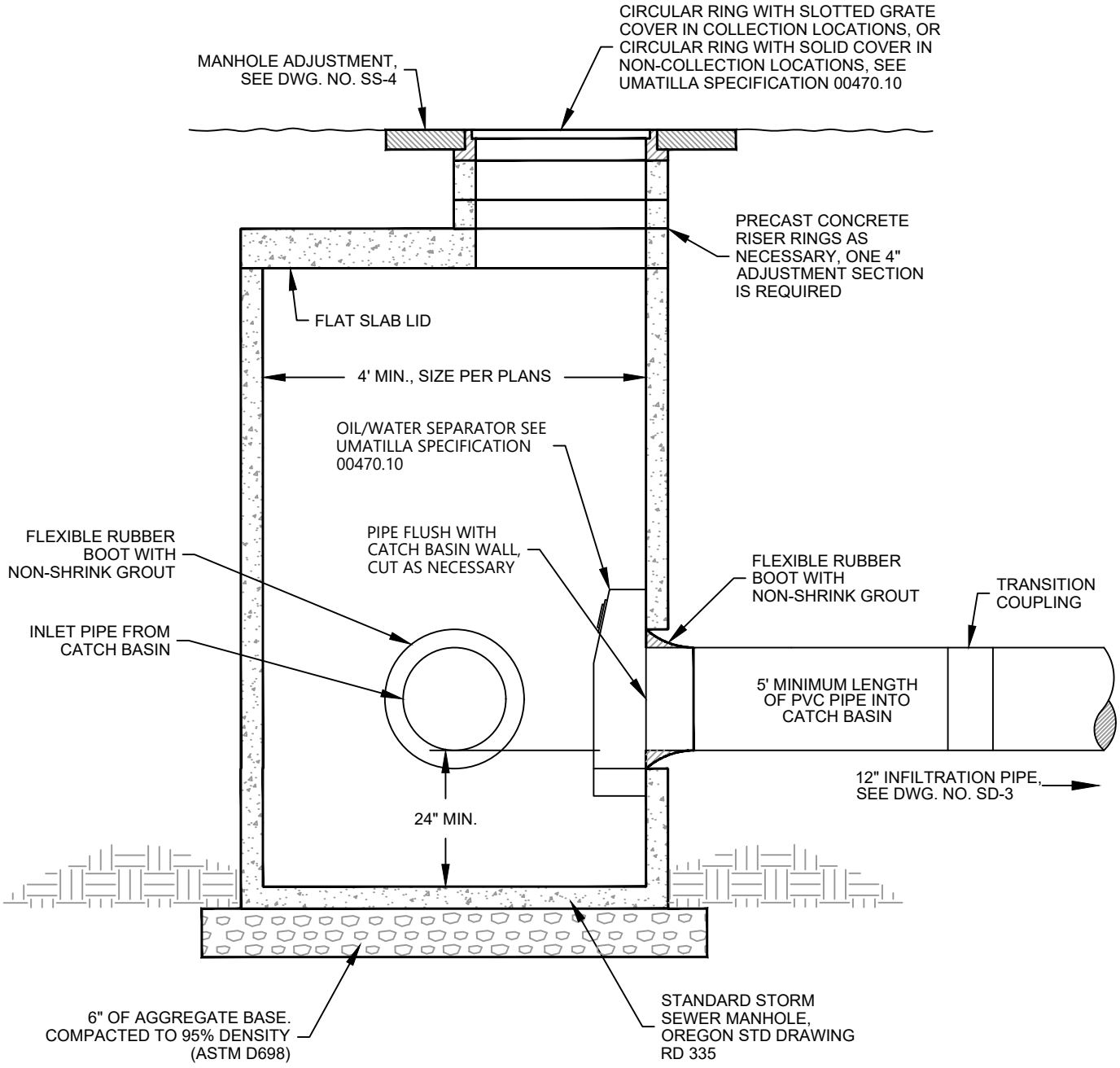
Umatilla Est. 1862

TYPE 1 CATCH BASIN

PUBLIC WORKS ENGINEERING

DATE: 10/5/21

DWG: SD-1



NOTE:

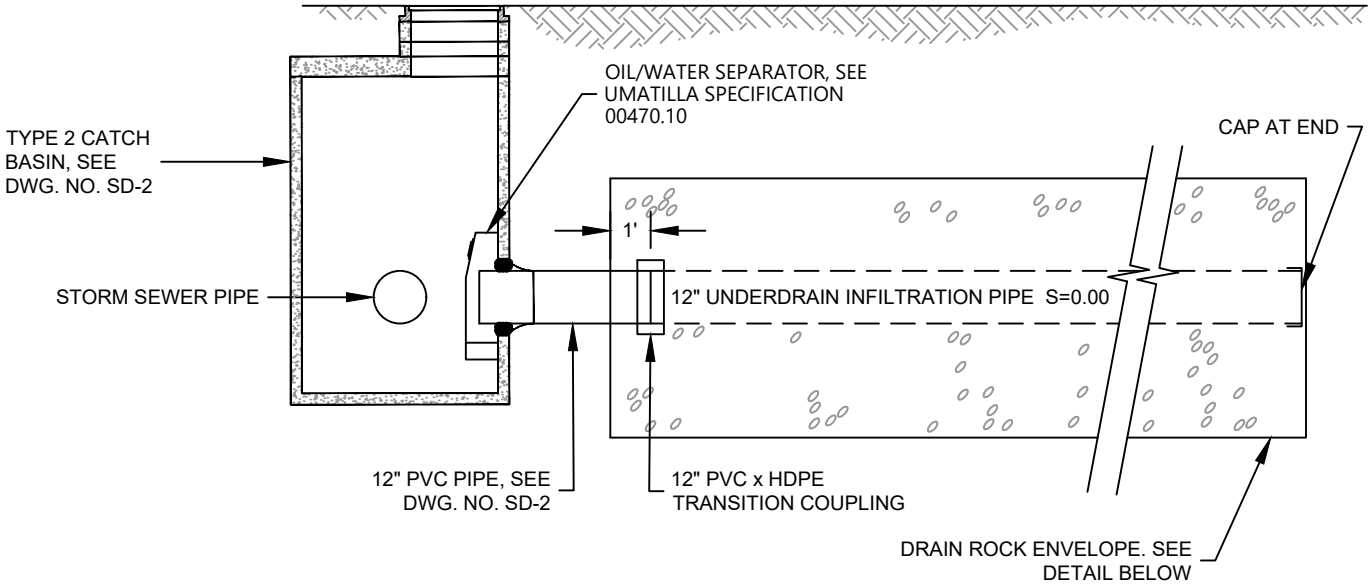
1. SEE DWG. NO. SD-3 FOR INFILTRATION TRENCH.
2. STORM MANHOLES IN EXCESS OF 6' DEEP SHALL USE A 48" CONE IN PLACE OF FLAT SLAB LID.
3. NO MANHOLE STEPS.

TYPE 2 CATCH BASIN

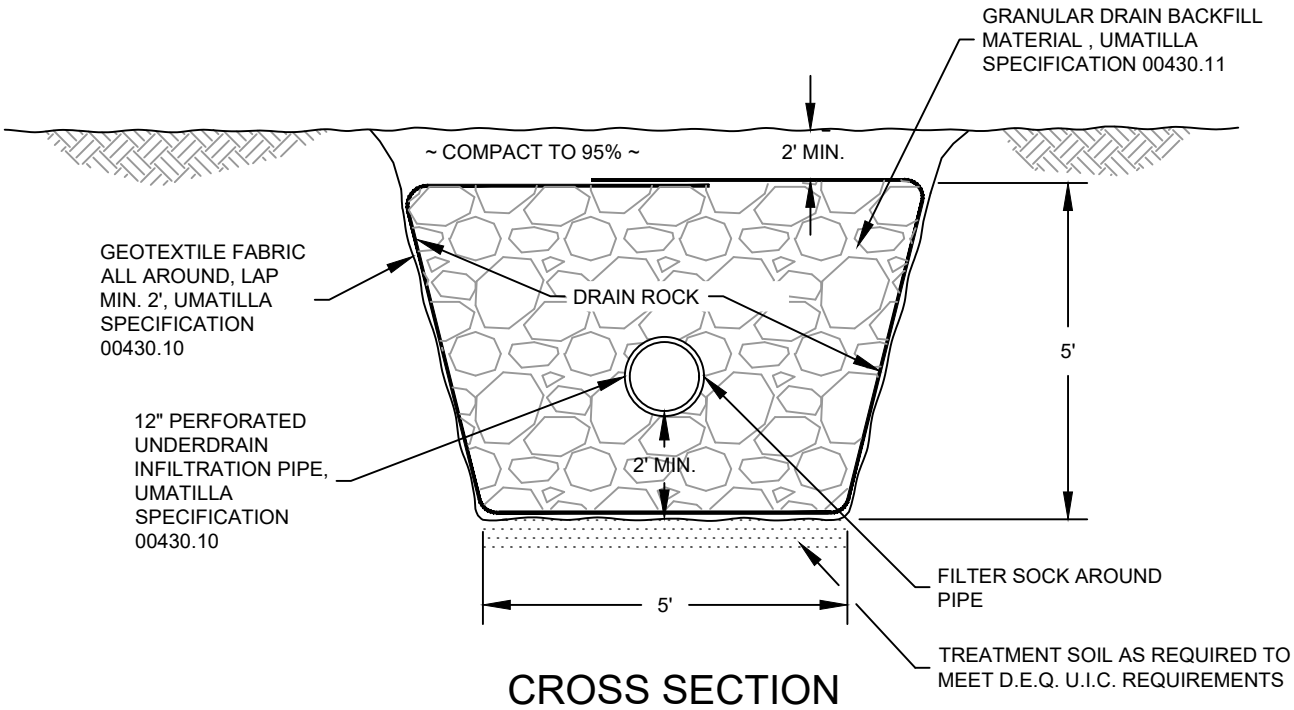
PUBLIC WORKS ENGINEERING

DATE: 10/5/21

DWG: SD-2



SIDE VIEW



CROSS SECTION

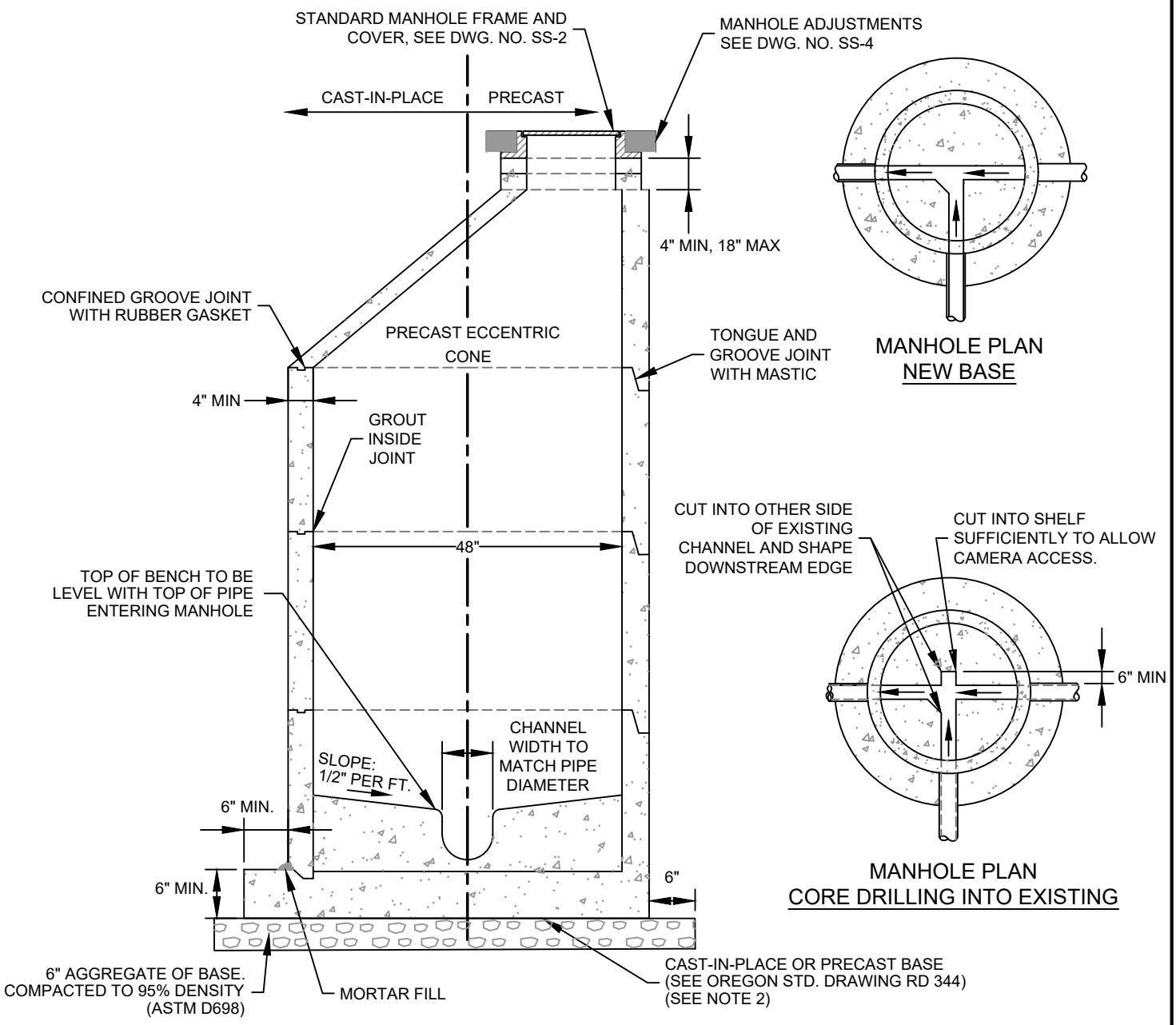
INFILTRATION TRENCH

PUBLIC WORKS ENGINEERING

DATE: 10/5/21

DWG: SD-3

MANHOLE FOR 8" TO 21" PIPE



NOTES:

1. THE INSIDE JOINT SURFACE SHALL BE GROUTED. GROUT ALL LIFT HOLES.
2. ALL CHANNELIZATION OF MANHOLE BASES SHALL BE FULLY COVERED BY A RIGID MATERIAL DURING CONSTRUCTION OF ROAD SURFACES TO PREVENT FOREIGN MATERIALS FROM ENTERING SYSTEM.
3. FOR MANHOLES LESS THAN 5'-0" USE FLAT TOP MANHOLE WITH TRAFFIC BEARING LID.
4. FOR CAST-IN-PLACE MANHOLES, THE CHANNEL SHALL BE FITTED WITH A SAND COLLAR. FOR PRECAST MANHOLES, THE CHANNEL SHALL BE FITTED WITH AN A-LOK PREMIUM GASKET OR APPROVED EQUAL. CORE DRILL HOLE SHALL BE FITTED WITH A SAND COLLAR.
5. FOR STRAIGHT THRU MANHOLES, THE INVERT ELEVATION SHALL HAVE A .10' OF FALL FROM THE INLET TO THE OUTLET. FOR MANHOLES WITH A BEND OR CHANGE IN DIRECTION, THE INVERT ELEVATION SHALL HAVE .20' OF FALL FROM THE INLET TO THE OUTLET.
6. RE-CHANNEL BASE IF INLET OR OUTLET PIPES DO NOT ALIGN WITH EXISTING MANHOLE CHANNEL.
7. PIPE ALIGNMENT INTO AND FROM MANHOLE SHALL HAVE 0° DEFLECTION.
8. MANHOLE SHALL NOT INCLUDE STEPS.

Umatilla Est. 1862

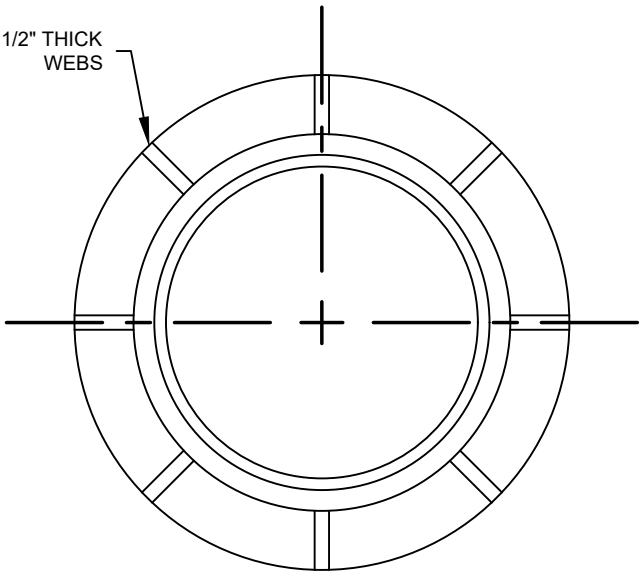
STANDARD MANHOLE

PUBLIC WORKS ENGINEERING

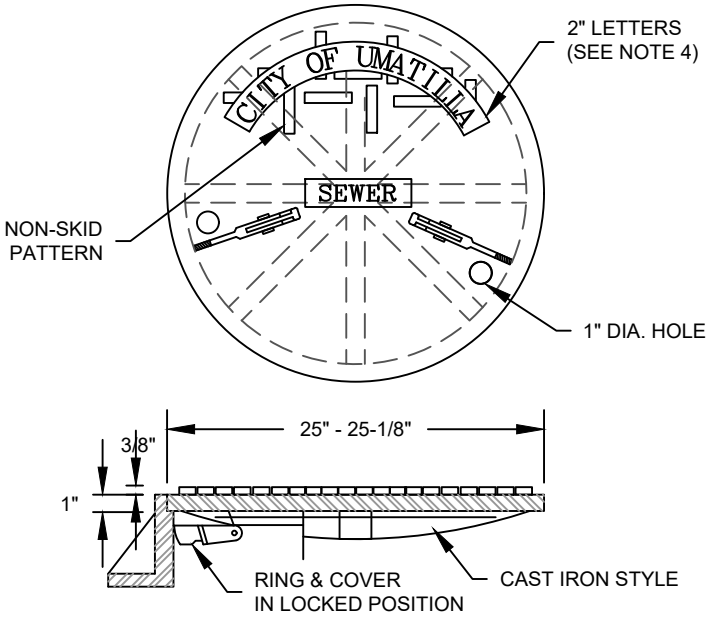
DATE: 10/5/21

DWG: SS-1

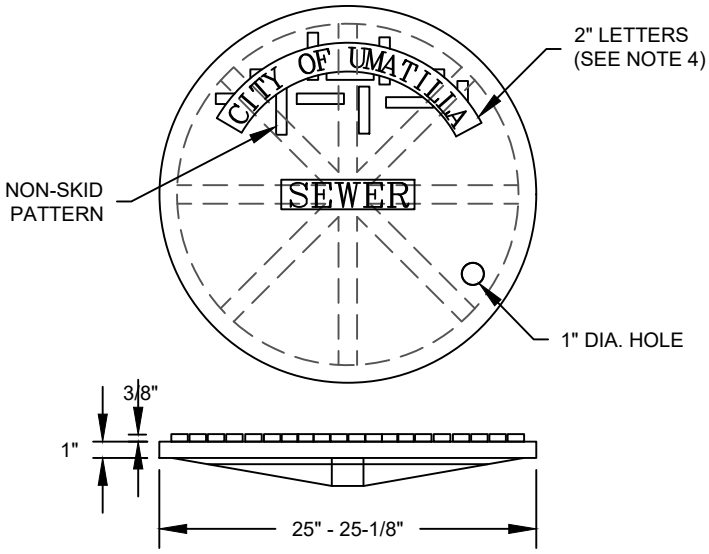
FRAME

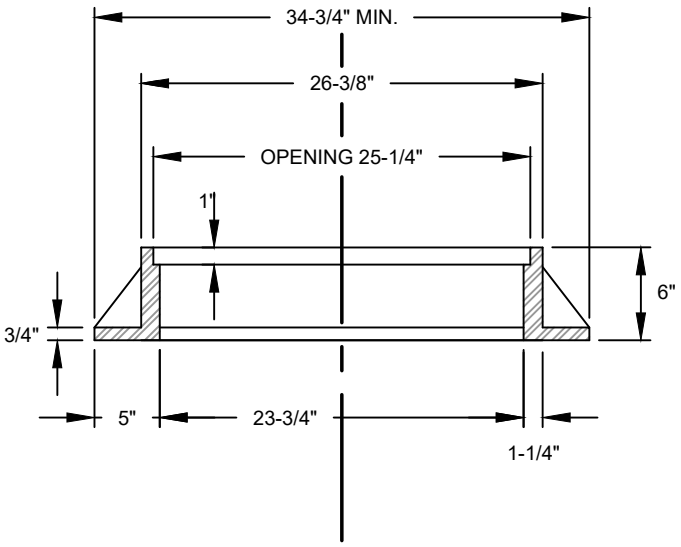


LOCKING COVER



COVER





NOTES:

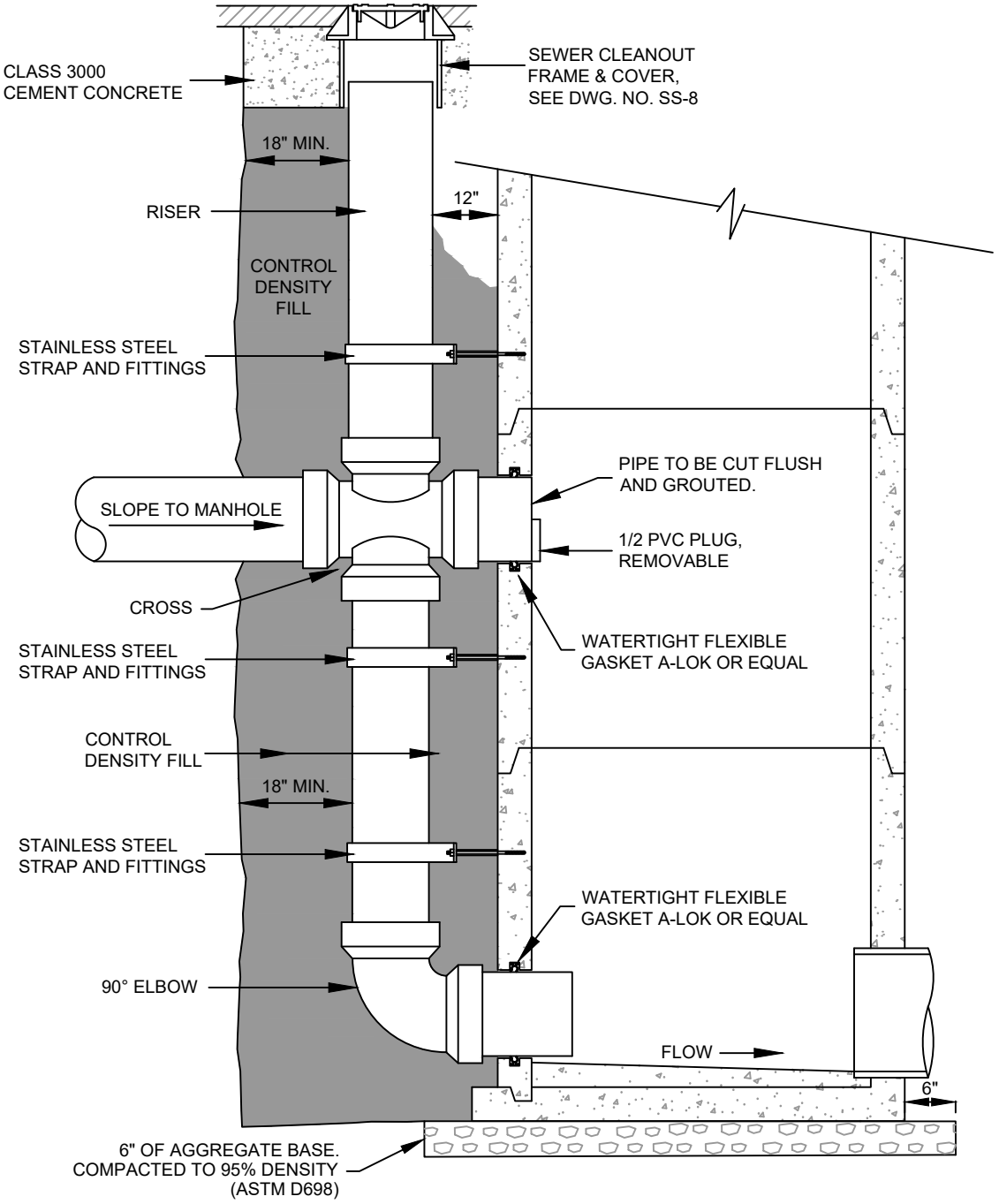
1. COVER WEIGHT - MIN. 150 LBS.
   FRAME WEIGHT - MIN. 185 LBS.
2. MACHINE COVER SEAT & COVER FACE.
3. LOADING-40,000 LBS. HEAVY (H-40 RATING) TRAFFIC LOADING
4. MANHOLE COVERS TO BE LETTERED AS "WATER," "SEWER," OR "STORM" AS REQUIRED BY TYPE OF APPLICATION. ALSO COVERS SHALL HAVE RAISED 2" LETTERS WITH THE WORDS "CITY OF UMATILLA".

MANHOLE FRAME AND COVER (LOCKING & NON-LOCKING)

PUBLIC WORKS ENGINEERING

DATE: 10/5/21

DWG: SS-2



NOTES:

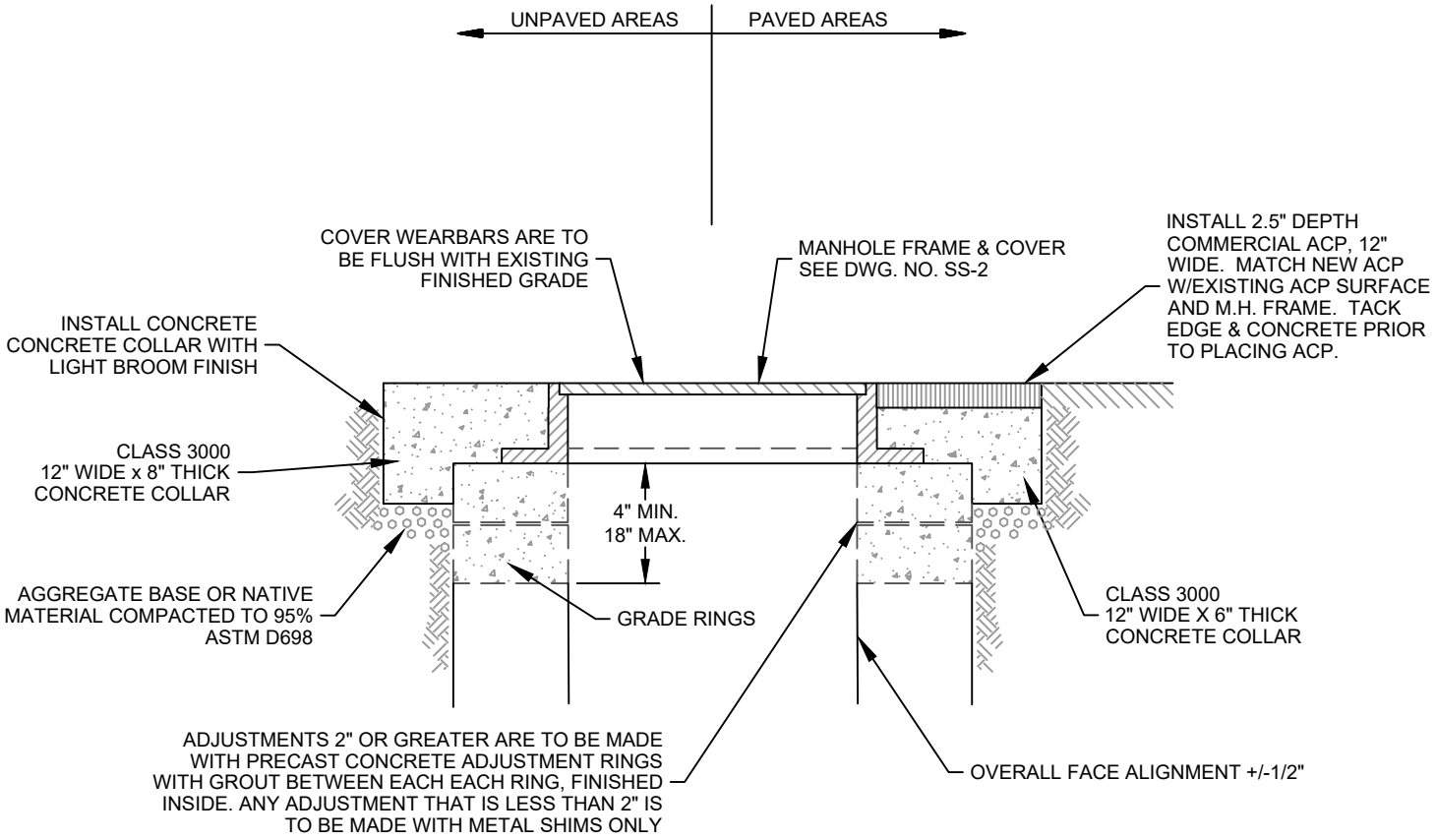
1. STAINLESS STEEL STRAP AND CONNECTOR BOLTS, OR ANCHORS, SHALL BE INSTALLED, A MINIMUM OF 2, SPACING NOT TO EXCEED 36 INCHES.
2. DROP CONNECTION PIPE DIAMETER AND FITTINGS SHALL BE EQUAL TO OR GREATER THAN THE DIAMETER OF THE SEWER MAIN.
3. DROP CONNECTION SHALL ONLY BE USED WITH APPROVAL FROM THE CITY ENGINEER.
4. ALL PIPE AND FITTINGS AND SHALL BE PVC CONSISTENT WITH UMATILLA SPECIFICATION SECTION 00445.11

STANDARD DROP MANHOLE

PUBLIC WORKS ENGINEERING

DATE: 10/5/21

DWG: SS-3



NOTE:

BOLLARDS MAY BE REQUIRED BY CITY ENGINEER.

MANHOLE ADJUSTMENTS

PUBLIC WORKS ENGINEERING

DATE: 10/5/21

DWG: SS-4

TYPICAL SEWER/STORM DRAIN TRENCH SECTION

PUBLIC WORKS ENGINEERING

DATE: 10/5/21

DWG: SS-5

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RD300

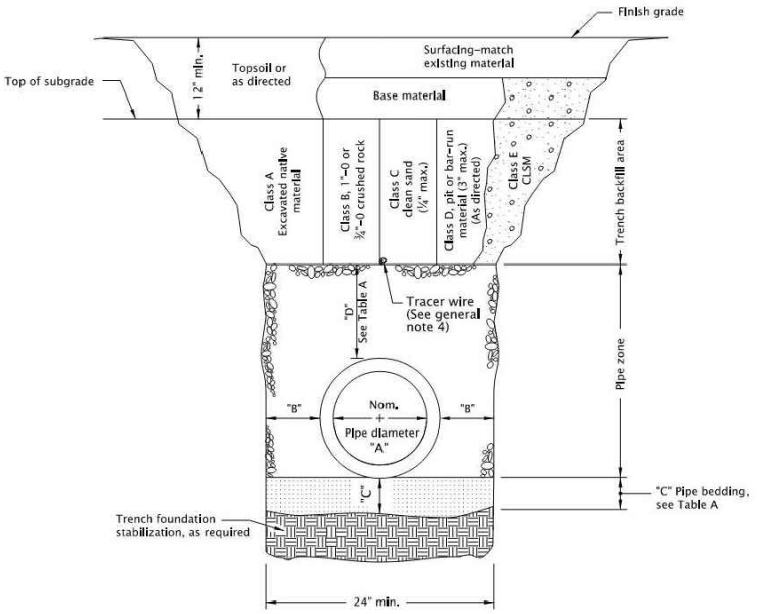


TABLE A

"A" (in)	"B" (in)	"C" (in)	"D" (in)
4	10	4	8
6	10	4	8
8	10	6	10
10	10	6	10
12	12	6	10
15	12	6	10
18	16	6	12
21	16	6	12
24	18	6	12
30	18	6	12
36	24	6	14
42	24	6	14
48	24	6	14
54	24	6	14
60	24	6	14
66	24	6	14
72	24	6	14

For pipes over 72" diameter, see general note 3.

MULTIPLE INSTALLATIONS

DIAMETER	MIN. SPACE BETWEEN PIPES
Up to 48"	24"
48" to 72"	One half (½) dia. of pipe

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Surfacing of paved areas shall comply with street cut Std. Dwg. RD302.
2. For pipe installation in embankment areas where the trench method will not be used and the pipe is ≥ 36" diameter, increase dimension "B" to nominal pipe diameter.
3. Pipes over 72" diameter are structures, and are not applicable to this drawing.
4. See Std. Dwg. RD336 for tracer wire details (When required).

CALC. BOOK NO. N/A

SDR DATE 14-JUL-2014

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

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.

OREGON STANDARD DRAWINGS

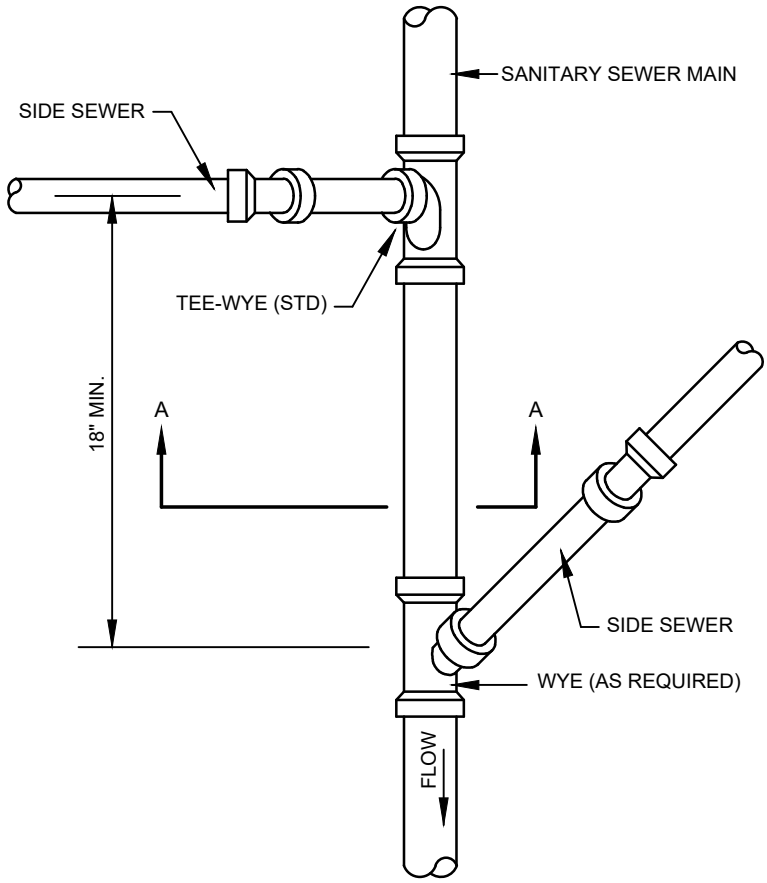
TRENCH BACKFILL, BEDDING, PIPE ZONE AND MULTIPLE INSTALLATIONS

2021

DATE	REVISION DESCRIPTION

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

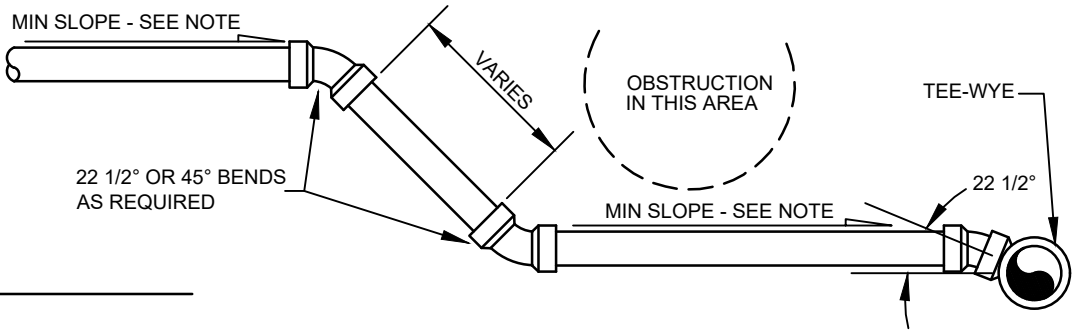
RD300



PLAN VIEW

NOTES:

1. SIZES OF SERVICE PIPE AND FITTINGS SHALL BE AS INDICATED ON THE DRAWINGS.
2. SIDE SEWER SERVICE SHALL BE EXTENDED 5' BEYOND THE PROPERTY LINE OR EASEMENT LINE, WHICHEVER IS FURTHER AND MARKED WITH AN 8' TREATED 2x4 INSIDE AN 8' STEEL STUD, PAINTED GREEN, EXTENDING 36-48" ABOVE FINISHED GROUND SURFACE. MARKER BOARD TO BE CUT OFF FLUSH WITH THE GROUND IN ALREADY ESTABLISHED AREAS.
3. NO GLUED FITTINGS IN RIGHT-OF-WAY.
4. SERVICE CONNECTIONS 8" OR LARGER SHALL BE APPROVED BY CITY ENGINEER AND MUST BE MADE AT MANHOLE. A CLEAN-OUT SHALL BE PLACED AT THE RIGHT OF WAY LINE MAKING THE DISTINCTION BETWEEN PUBLIC AND PRIVATE LINES.
5. SIDE SEWER CONNECTIONS TO NEW SANITARY SEWER MAINS SHALL BE MADE WITH TEE-WYES, TEES, OR WYES AS DIRECTED. ALL CONNECTIONS TO THE STUBS AND EXISTING SEWER MAINS SHALL BE MADE WITH "RIGID TYPE" COUPLERS. ANY DEVIATIONS FROM THIS SHALL BE APPROVED BY THE CITY ENGINEER PRIOR TO USE.
6. WHERE DEPTH IS INSUFFICIENT TO ALLOW CONNECTION AS SHOWN, CONNECT SERVICE AS DIRECTED BY ENGINEER.
7. ALL SIDE SEWER MATERIALS SHALL BE PVC SEWER PIPE CONFORMING TO THE REQUIREMENTS OF SECTION 7-18.2 OF THE STANDARD SPECIFICATIONS.
8. MINIMUM SLOPES ARE AS FOLLOWS:
   4" DIA. PIPE = 0.02 ft/ft
   6" DIA. PIPE = 0.01 ft/ft
9. INSTALL CLEANOUT AT PROPERTY LINE AS REQUESTED BY THE CITY.



CONNECTION AT OBSTRUCTION

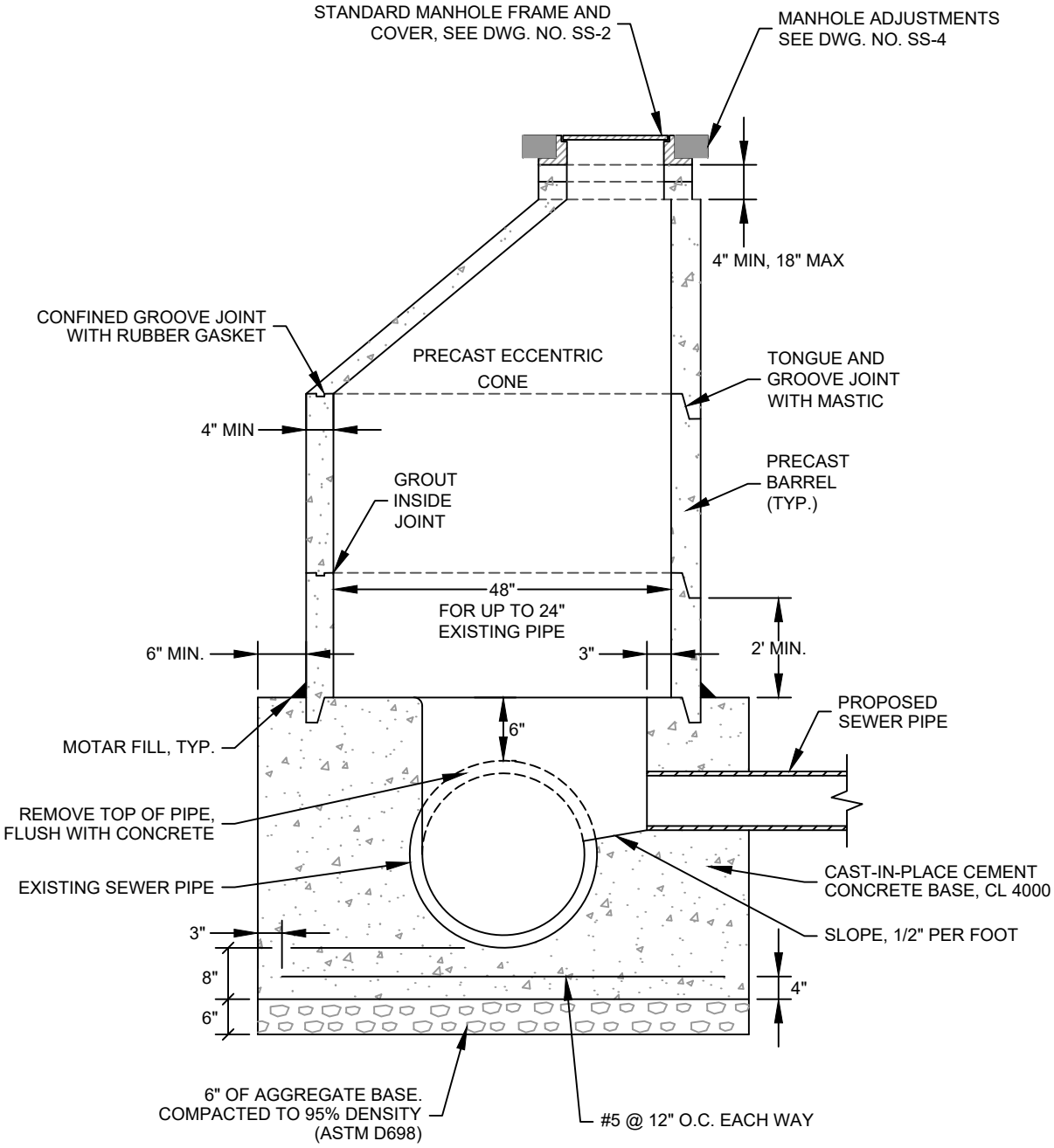
SECTION A-A

SEWER STUB INSTALLATION (NEW AND EXISTING MAIN)

PUBLIC WORKS ENGINEERING

DATE: 10/5/21

DWG: SS-6



NOTES:

1. THE INSIDE JOINT SURFACE SHALL BE GROUTED. GROUT ALL LIFT HOLES.
2. ALL CHANNELIZATION OF MANHOLE BASES SHALL BE FULLY COVERED BY A RIGID MATERIAL DURING CONSTRUCTION OF ROAD SURFACES TO PREVENT FOREIGN MATERIALS FROM ENTERING SYSTEM.
3. FOR MANHOLES LESS THAN 5'-0" USE FLAT TOP MANHOLE WITH TRAFFIC BEARING LID.
4. THE MANHOLE PIPE CONNECTIONS SHALL BE FITTED WITH SAND COLLARS.
5. MATCH CROWN OF EXISTING PIPE WITH NEW SEWER PIPE.
6. EITHER FORM RECESS IN CAST-IN-PLACE BASE OR SET RISER SECTION IN CAST-IN-PLACE BASE TO DEPTH OF JOINT, EQUAL DEPTH ALL AROUND.
7. PIPE ALIGNMENT INTO MANHOLE SHALL HAVE 0° DEFLECTION.
8. MANHOLE SHALL NOT INCLUDE STEPS.
9. THE EXISTING PIPE SURFACE SHALL BE CLEAN AND COATED WITH A BONDING AGENT PRIOR TO POURING BASE.

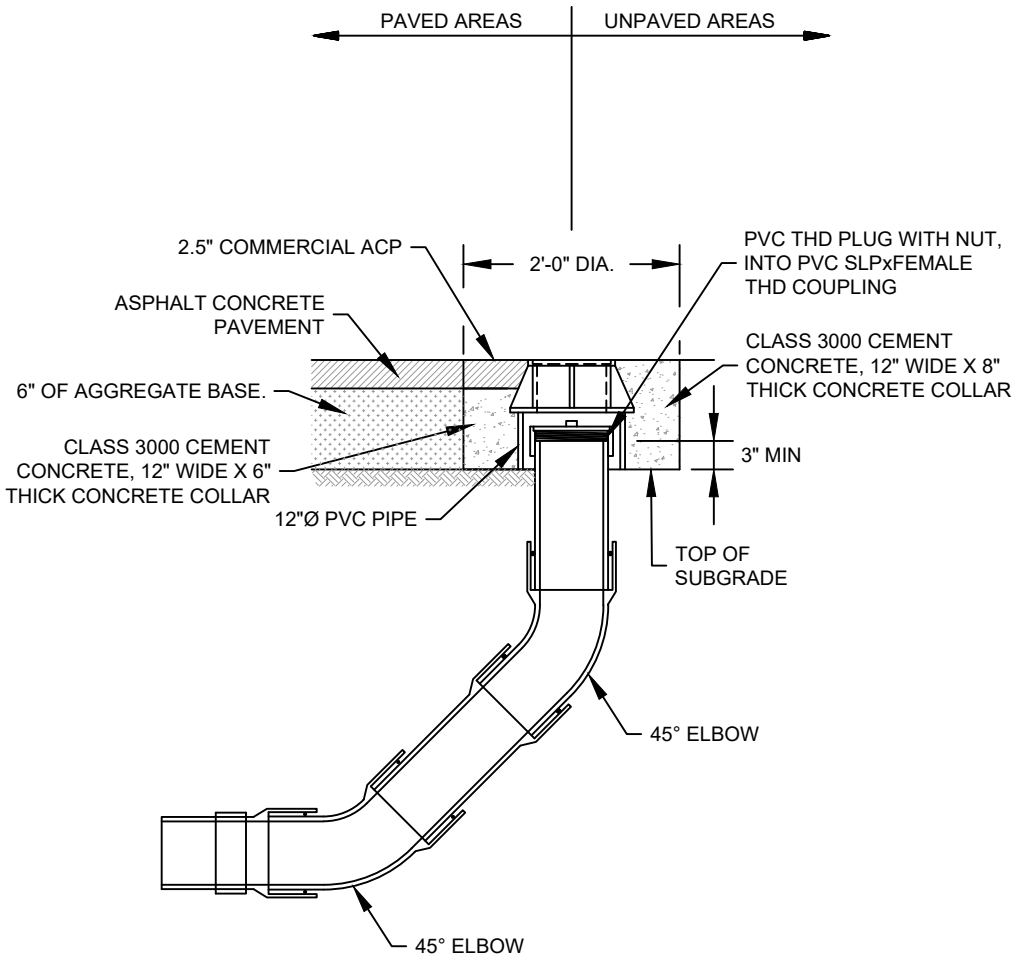
Umatilla Est. 1862

DOGHOUSE MANHOLE

PUBLIC WORKS ENGINEERING

DATE: 10/5/21

DWG: SS-7



NOTES:

1. CAST IRON FRAME & COVER INLAND FOUNDRY INC. CLEANOUT MODEL 247 RING, FRAME, AND COVER WITH "SEWER CLEANOUT" ON COVER OR APPROVED EQUAL

2. CLEANOUT PIPE SHALL BE 8" DIA. PVC SEWER PIPE IN ACCORDANCE W/ THE STANDARD SPECS.

3. CLEANOUTS SHALL ONLY BE APPROVED FOR PHASED DEVELOPMENT AT SEWER EXTENSION LOCATION.

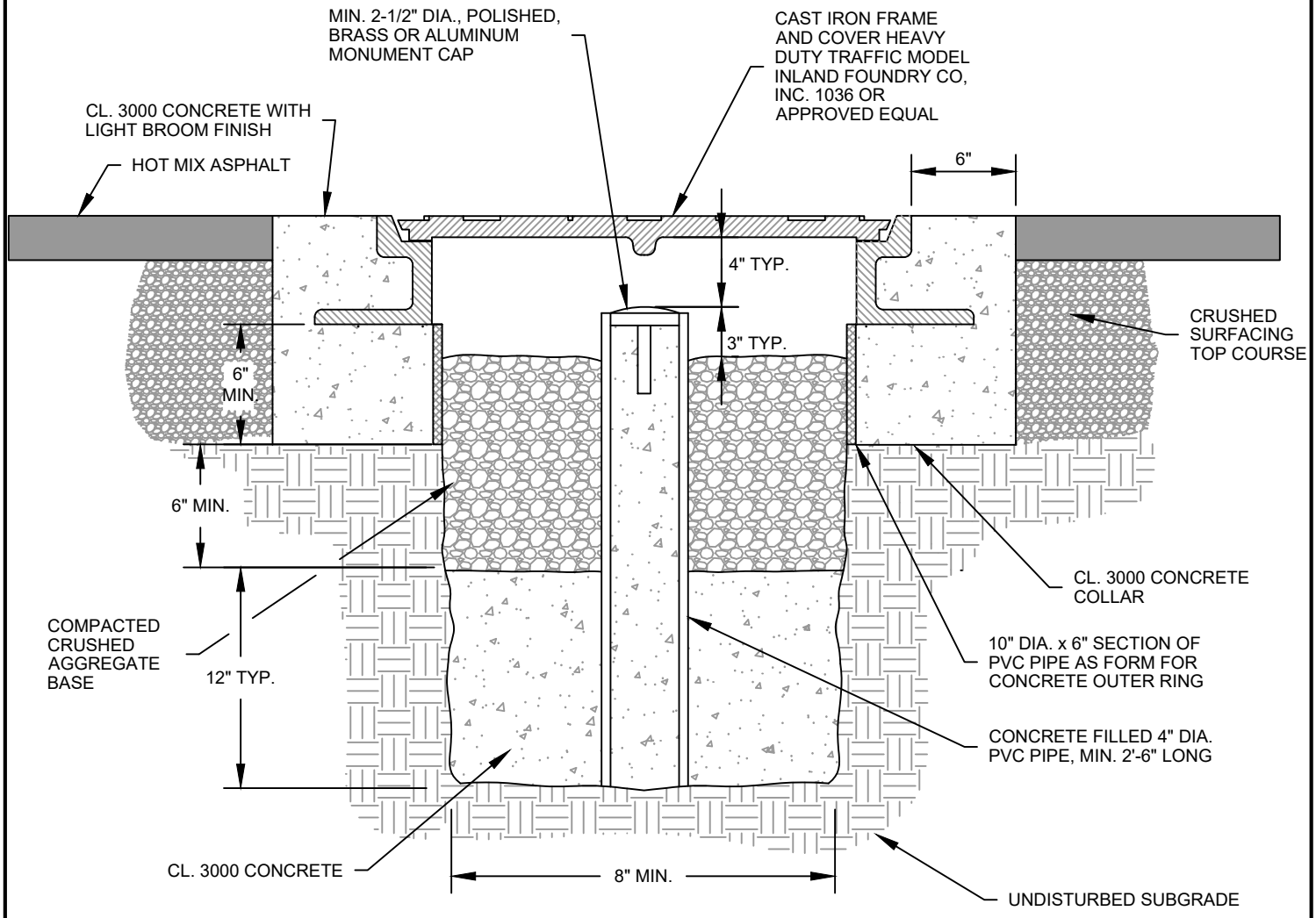
Umatilla Est. 1862

SEWER CLEANOUT

PUBLIC WORKS ENGINEERING

DATE: 10/5/21

DWG: SS-8



PERMANENT CONTROL MONUMENTS SHALL BE ESTABLISHED AT:

1. THE CENTERLINE INTERSECTIONS OF ALL ROADS WITHIN THE SUBDIVISION.
2. THE BEGINNING AND END OF CURVES ON CENTERLINES.

OREGON LICENSED PROFESSIONAL LAND SURVEYOR TO REFERENCE MONUMENT LOCATION FOR INSTALLATION AND PUNCH CAP AFTER INSTALLATION. THE MONUMENT CAP SHALL BE SET IN SUCH A FASHION AS TO ENSURE THAT THE PUNCH MARK IS ON THE MONUMENT CAP.

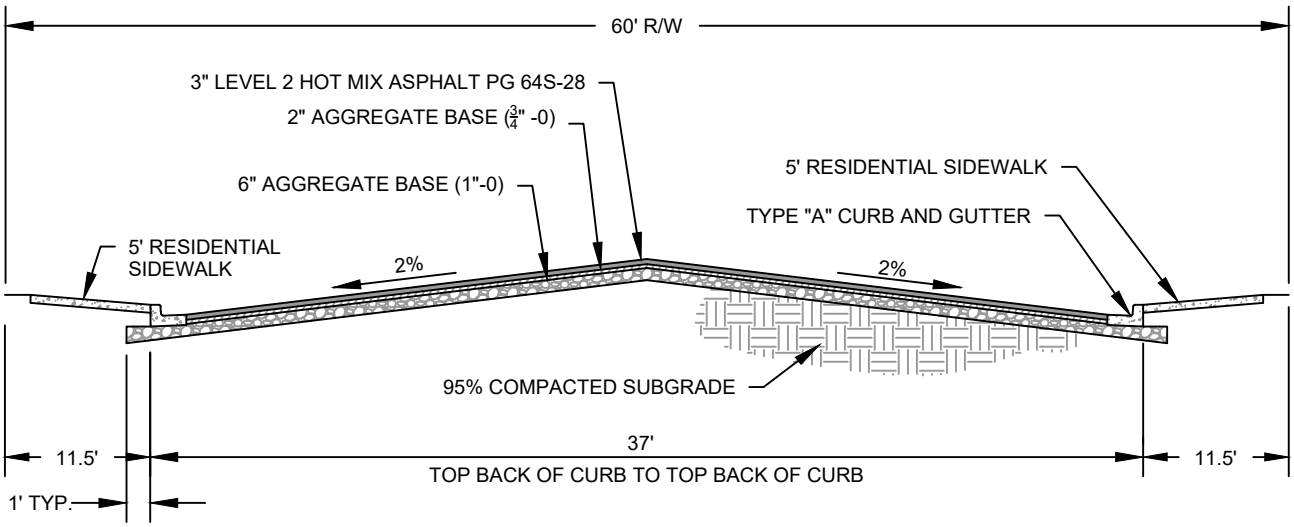
Umatilla Est. 1862

MONUMENT CASE & COVER

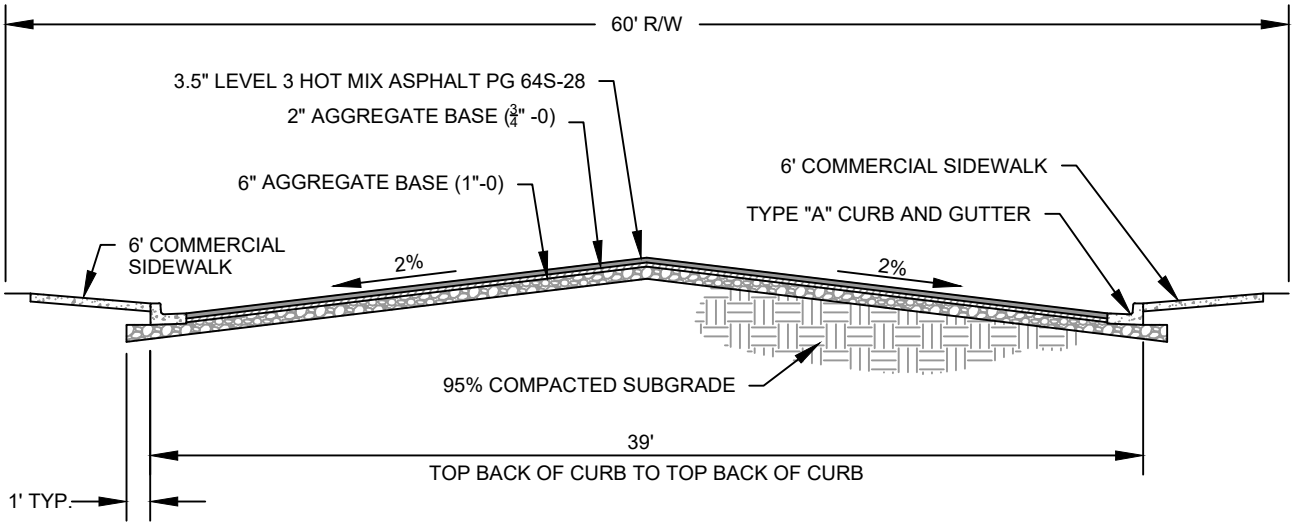
PUBLIC WORKS ENGINEERING

DATE: 10/5/21

DWG: ST-1



LOCAL ACCESS STREET (RESIDENTIAL)

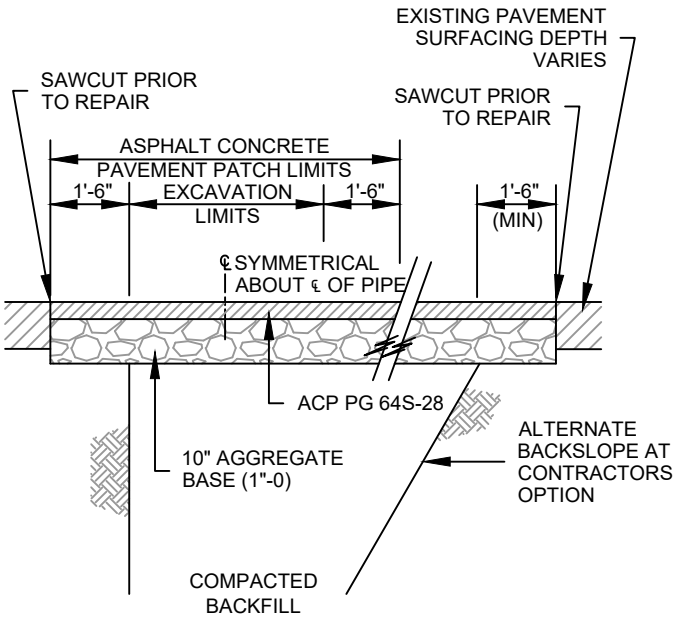


LOCAL ACCESS STREETS COMMERCIAL/INDUSTRIAL

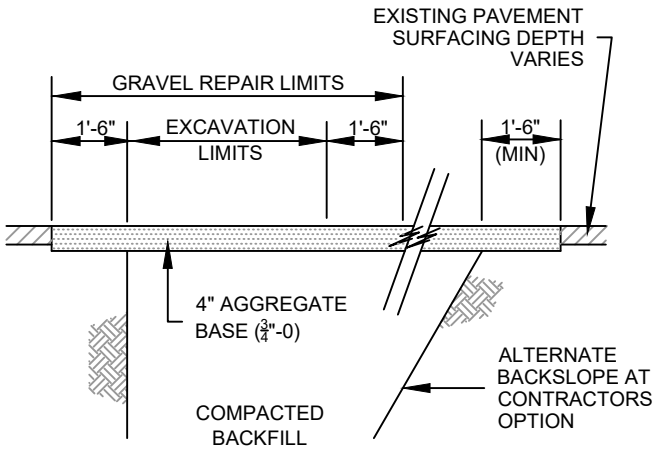
NOTES:

1. ALL ASPHALT AND ROCK DIMENSIONS SHALL BE MINIMUM THICKNESS, COMPACTED DEPTHS.

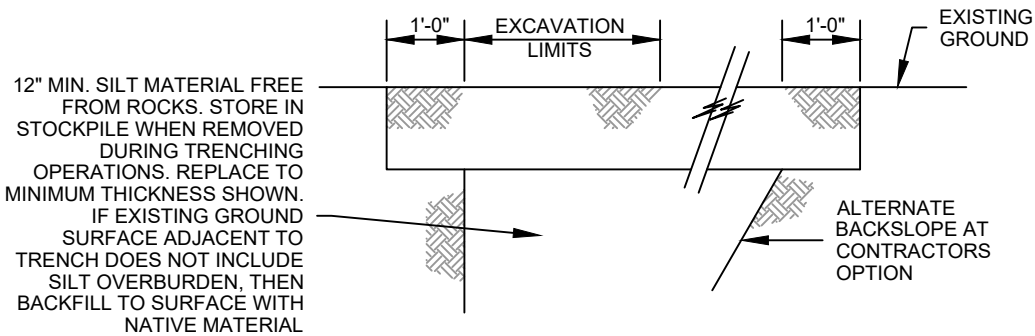
Umatilla Est. 1862	TYPICAL STREET SECTIONS LOCAL ACCESS	PUBLIC WORKS ENGINEERING DATE: 10/5/21 DWG: ST-2A



ACP PAVEMENT REPAIR



GRAVEL SURFACING



UNSURFACED AREAS

NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRENCH SURFACE RESTORATION BEYOND THE LIMITS SHOWN, INCLUDING WIDER TRENCH SECTIONS RESULTING FROM LAYING BACK TRENCH SIDES AT THE CONTRACTORS OPTION.
2. NO AREA REQUIRING ASPHALT CONCRETE SURFACING REPAIR SHALL REMAIN UNPAVED FOR MORE THAN FIVE WORKING DAYS FOLLOWING INITIAL EXCAVATION.
3. ALL THICKNESSES ARE COMPACTED DEPTHS.
4. ACP LEVEL/DEPTH SHALL BE BASED UPON ROADWAY CLASSIFICATION.

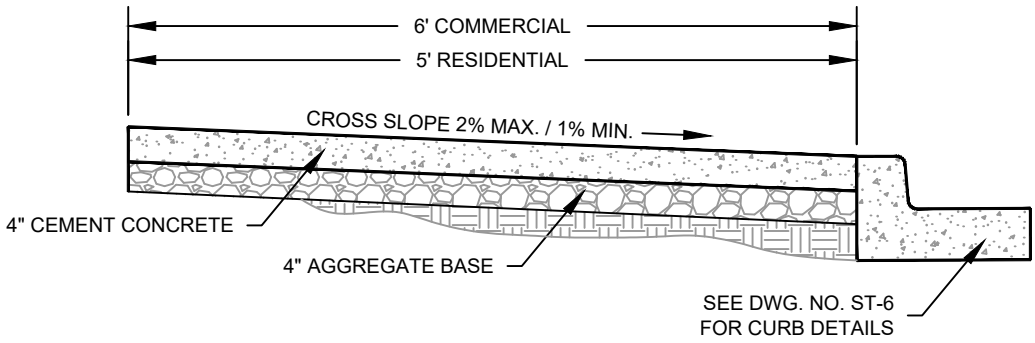
Umatilla Est. 1862

TRENCH SURFACING REPAIR

PUBLIC WORKS ENGINEERING

DATE: 10/5/21

DWG: ST-3



NOTES:

1. JOINTS ON SIDEWALKS EVERY 5' (FEET) OR AS REQUIRED TO MATCH EXISTING IMPROVEMENTS (CUT 3/4" MIN. DEEP FOR AGGREGATE SEPARATION). THE JOINTS SHALL MATCH CURB JOINTS AND BE PERPENDICULAR TO THE CURB.
2. SIDEWALK EXPANSION JOINTS USING 1/2" MASTIC ARE REQUIRED AT 30' SPACING, ALL CURB RETURNS, THE TOP AND BOTTOM OF ALL DRIVEWAY TRANSITIONS, AND AT EXISTING CONCRETE.
3. ALL 1/2" MASTIC TO BE FULL DEPTH PENETRATION AND FLUSH WITH THE FINISHED SURFACE.
4. IF THE THREAT OF RAIN OR BLOWING SAND IS PRESENT, SURFACES SHALL BE COVERED WITH 6-MIL POLY SHEETING. IF THE THREAT OF FREEZING IS PRESENT, THE WORK SHALL BE COVERED WITH THERMAL CURING BLANKETS FOR A PERIOD OF SEVEN (7) DAYS.
5. AGGREGATE BASE AND SUBGRADE SHALL BE COMPACTED TO A MINIMUM OF 95% OF ASTM D1557.
6. HEADERBOARD BULKHEADS TO BE INSTALLED PRIOR TO FORM INSPECTION.
7. SIDEWALKS BEHIND MOUNTABLE AND DEPRESSED CURB SHALL HAVE 6" THICK CONCRETE.
8. SLOPE ALL SURFACES (I.E. LANDSCAPE WHERE DETACHED SIDEWALK) AT 2% FROM RIGHT OF WAY TO BACK OF CURB.
9. SIDEWALKS MUST MEET ADA REQUIREMENTS. COMPLY WITH ALL RD700 AND RD900 SERIES OF THE OREGON STANDARD DRAWINGS.

Umatilla Est. 1862

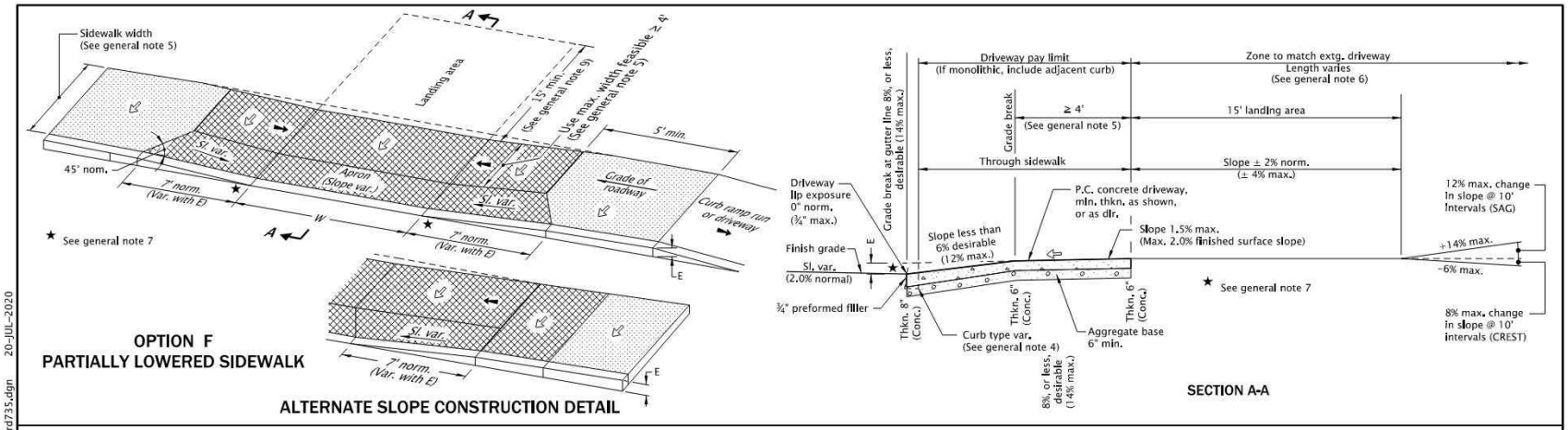
CEMENT CONCRETE SIDEWALK

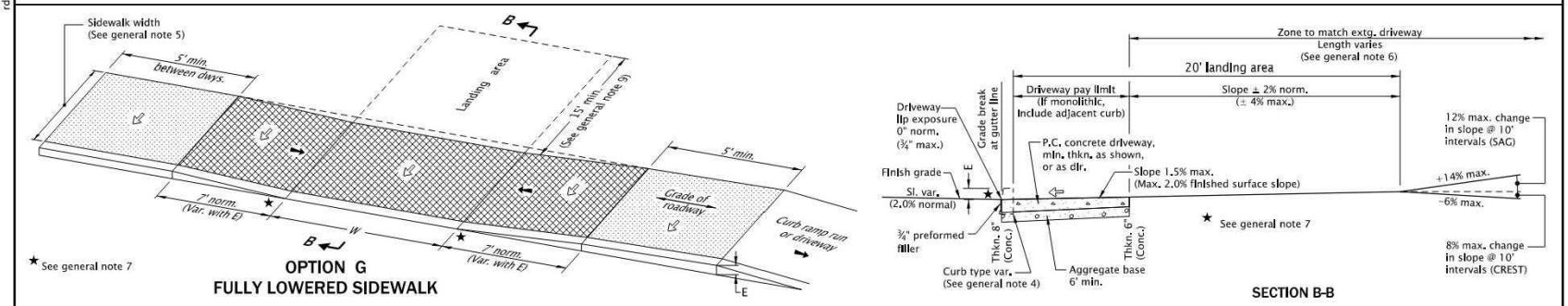
PUBLIC WORKS ENGINEERING

DATE: 10/5/21

DWG: ST-4

DRIVEWAY APPROACHES





GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Details are based on applicable ODOT Standards.
2. Only use details allowed by jurisdiction.
3. The following dimensions are as shown on plans, or as directed: driveway width, driveway slope, sidewalk width, curb exposure, driveway lip exposure, landing area length and width. See project plans for details not shown.
4. Curb, gutter, and sidewalk types varies, see plans.
   See Std. Dwgs. RD700 & RD701 for curb details.
   See Std. Dwg. RD720 for sidewalk details.
   See Std. Dwg. RD722 for joint details.
5. A greater than or equal 4' unobstructed clear passage with cross slope 1.5% max. (Max. 2.0% finished surface slope) is required behind driveway apron.
6. Where existing driveway is in good condition, and meets slope requirements, construct only as much landing area as required for satisfactory connection with new work.
7. Check the gutter flow depth at driveway locations to assure that the design flood does not overtop the back of sidewalk at driveway. If overtopping occurs place an inlet at upstream side of driveway or perform other approved design mitigation.
8. Construct a full deph expansion joints with 1#2" (in) preformed joint filler at ends of each driveway. Tooled joints are required at all driveway slope break lines.
9. 15' min. of the driveway behind the sidewalk should be surfaced to prevent tracking of gravel onto the sidewalk.
10. Monolithic curb & sidewalk shall retain thickened edge through lowered profile, to accommodate driveway use. See Std. Dwg. RD720 for details.

LEGEND:

- Sidewalk
- Driveway pay limit (If monolithic, include adjacent curb) (See project plans for details not shown)
- Cross slope 1.5% max. (Max. 2.0% finished surface slope) (Normal sidewalk cross slope)
- Running slope 7.5% max. (Max. 8.3% finished surface slope)
- W — Width of driveway
- E — Curb exposure

CALC. BOOK NO. N/A

SDR DATE 20-JUL-2020

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

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.

OREGON STANDARD DRAWINGS

CURB LINE SIDEWALK DRIVEWAYS OR ALLEYS (OPTIONS F & G) ODOT HIGHWAYS

2021

DATE	REVISION DESCRIPTION

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

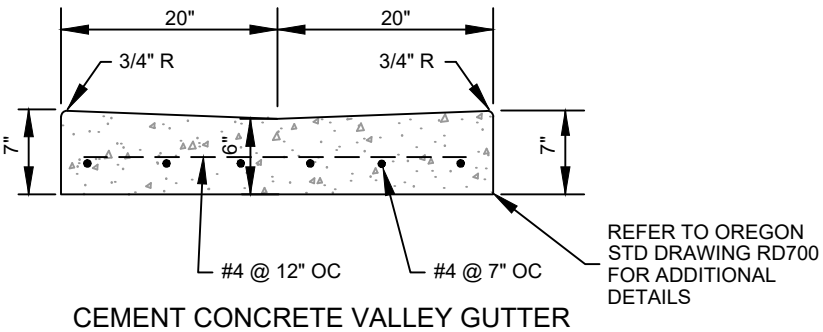
RD735

20-JUL-2020 rd735.dgn

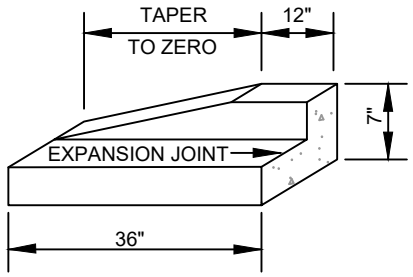
PUBLIC WORKS ENGINEERING

DATE: 10/5/21

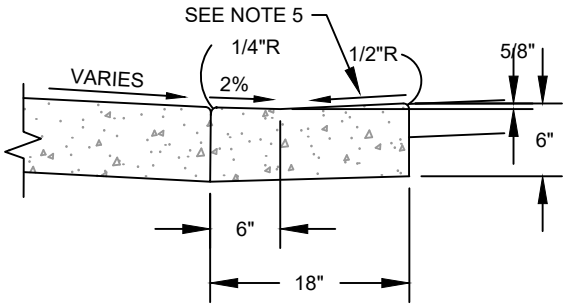
DWG: ST-5



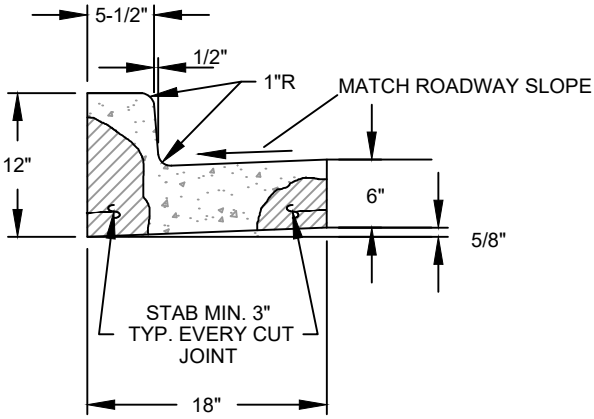
CEMENT CONCRETE VALLEY GUTTER



CURB TERMINAL END



TYPE "D" DEPRESSED CURB AND GUTTER AT DRIVEWAY DROP AND ADA RAMPS



TYPE "A" BARRIER CURB AND GUTTER

NOTES:

1. CONCRETE SHALL BE PER THE SPECIFICATIONS.
2. CUT JOINTS SHALL BE 10'-0" O/C.
3. EXPANSION MATERIAL (3/8" MASTIC) SHALL BE PLACED AT ALL CURB RETURNS.
4. BONDING AGENT TO BE FOUR (4) PARTS PORTLAND CONCRETE SLURRY TO ONE (1) PART DAYTON SUPERIOR J-40, OR APPROVED EQUAL.
5. MATCH ROADWAY SLOPE. MAXIMUM COUNTER SLOPE SHALL BE 5.0%.
6. VALLEY GUTTER SHALL BE IN ACCORDANCE WITH OREGON STD DRAWING RD700

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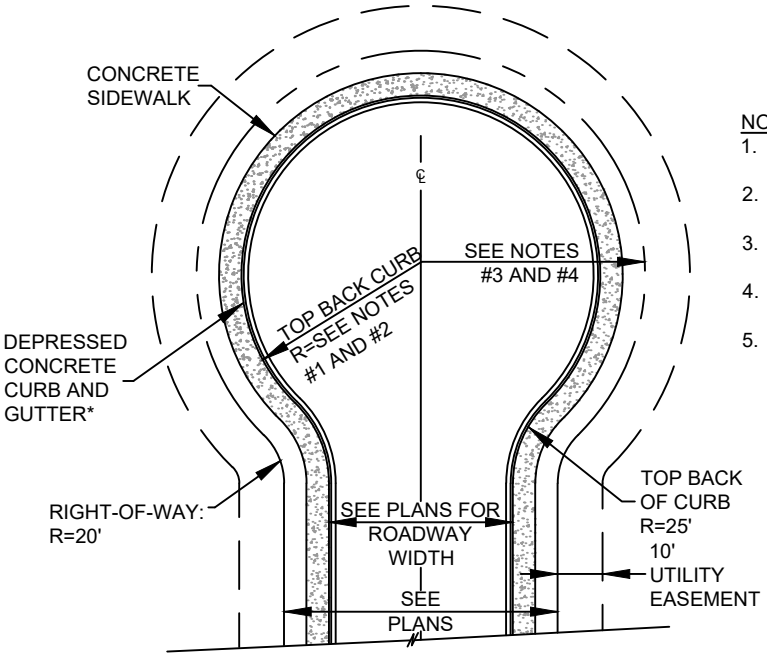
CEMENT CONCRETE CURBS

PUBLIC WORKS ENGINEERING

DATE: 10/5/21

DWG: ST-6



NOTES:

1. CUL-DE-SAC STREETS SHALL BE A MAXIMUM OF 600 FEET IN LENGTH.
2. COMMERCIAL/INDUSTRIAL INSIDE RADIUS SHALL BE 45 -FT.
3. RESIDENTIAL INSIDE RADIUS SHALL BE 40-FT.
4. COMMERCIAL/INDUSTRIAL R/W RADIUS 55' R
5. RESIDENTIAL R/W RADIUS 50' R

NOTE:

ALL ASPHALT AND ROCK DIMENSIONS SHALL BE MINIMUM THICKNESS, COMPACTED DEPTHS.

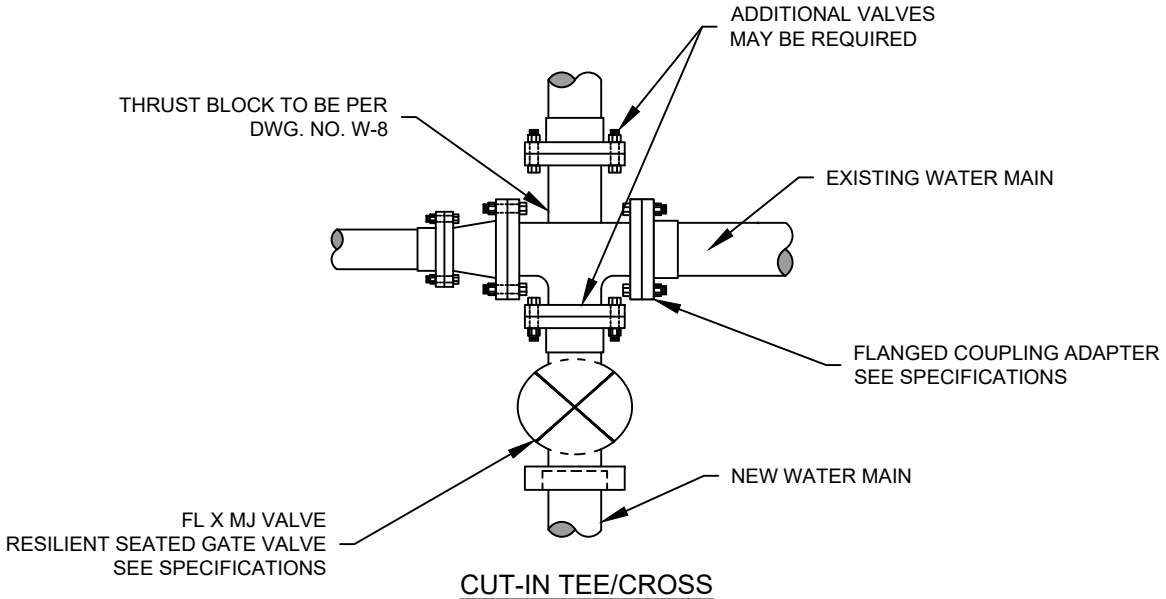
Umatilla Est. 1862

CUL–DE–SAC

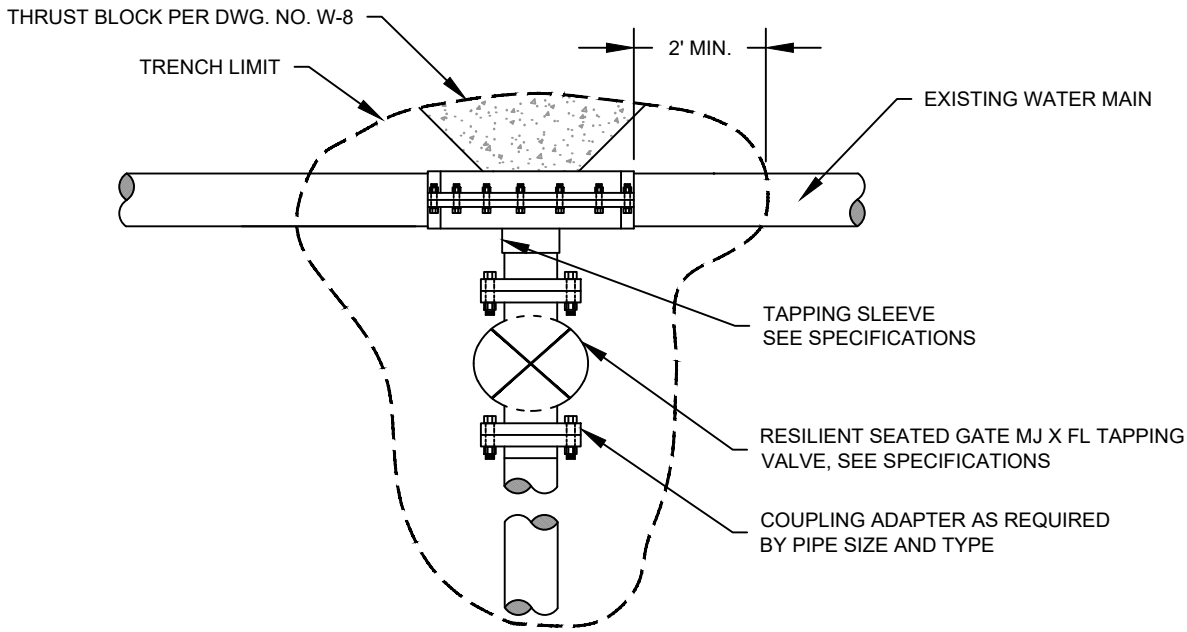
PUBLIC WORKS ENGINEERING

DATE: 10/5/21

DWG: ST–7



CUT-IN TEE/CROSS



TAPPING SLEEVE AND VALVE

NOTES:

1. CONTRACTOR TO DIG & VERIFY PIPE SIZE AND MATERIAL PRIOR TO ORDERING MATERIALS.
2. MATERIALS TO BE ON THE JOB PRIOR TO SCHEDULING SHUTDOWNS OR TAPS.
3. MAXIMUM TAP TO EXISTING LINE NOT TO EXCEED 50% OF MAIN DIAMETER ON A.C. OR P.V.C. PIPE, EXCEPT C900/905.
4. FOR D.I., C.I. STEEL AND C-900/905 SIZE ON SIZE TAPPING TEES AND SADDLES ON MAINS SHALL BE TAPPED 1/2" UNDERSIZED.
5. ONCE IN SERVICE, WATER SHALL NOT BE TURNED OFF WITHOUT APPROVAL FROM CITY ENGINEER OR CITY FIELD DIVISION MANAGER.
6. IF WATER MAIN IS LESS THAN 6" DIAMETER, A CUT-IN TEE SHALL BE USED.

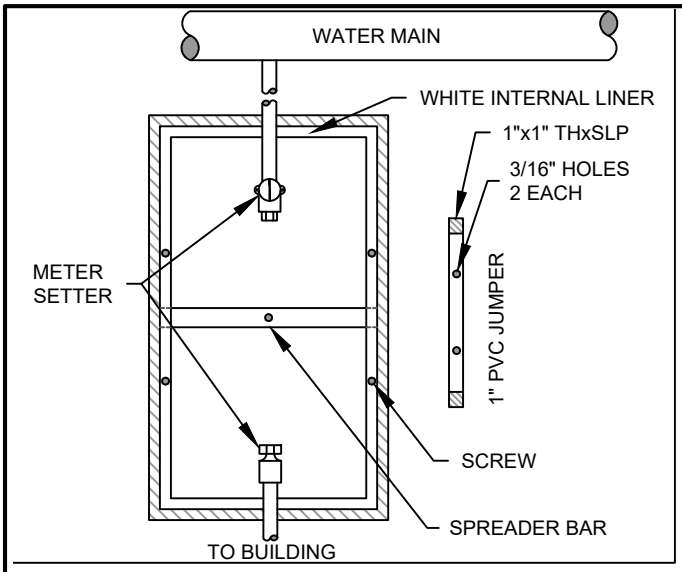
Umatilla Est. 1862

TAPPING WATER MAIN

PUBLIC WORKS ENGINEERING

DATE: 10/5/21

DWG: W-1



NOTES:

1. IF METER NOT INSTALLED, A PVC JUMPER CUT TO THE SIZE AND THREAD OF THE APPROPRIATE SERVICE SHALL BE PLACED BETWEEN ANGLE METER STOP AND METER CHECK VALVE. DRILL TWO 3/16" HOLES IN JUMPER.
2. SEE DWG. W-20 FOR BEDDING.
3. BOXES TO BE SET PERPENDICULAR TO THE STREET, TOP OF BOX LEVEL WITH TOP BACK OF SIDEWALK.
4. ATTACH THE TWO BOX SECTIONS TOGETHER WITH #14 X 2-1/2" HEX WASHER HEAD ZINC COATED SELF TAPPING SCREW AT 2 EQUALLY SPACED LOCATIONS ON THE LONG SIDE. SPREADER BAR TO BE BETWEEN THE TWO BOXES.
5. ALL SERVICE CONNECTIONS TO WATER MAIN, EXCEPT TO DUCTILE IRON PIPE CLASS 52 OR STRONGER SHALL BE MADE USING SADDLES AS SPECIFIED AND BE OF THE SIZE AND TYPE SUITABLE FOR USE WITH THE PIPE BEING INSTALLED.
6. WATER SERVICE TAIL PIECE SHALL BE EXTENDED TO THE PROPERTY LINE OR EASEMENT LINE, WHICHEVER IS FURTHER, AND MARKED WITH AN 8' TREATED 2x4 INSIDE AN 8' STEEL STUD, PAINTED BLUE, EXTENDING 36-48" ABOVE FINISHED GROUND SURFACE. MARKER BOARD TO BE CUT OFF FLUSH WITH THE GROUND IN ALREADY ESTABLISHED AREAS.
7. WATER METER BOX TO HAVE 18" CLEARANCE FROM ANY CONCRETE OR ASPHALT DRIVEWAY, SIDEWALK, ETC.
8. DO NOT BURY ANGLE METER STOP BEFORE INSTALLING METER BOX.
9. NO COUPLINGS FROM MAIN TO ANGLE METER STOP OR FROM ANGLE METER CHECK TO TERMINATION AT EASEMENT LINE.
10. SERVICE TO BE SET TO GRADE BEFORE WATER IS TURNED ON.
11. BACKFLOW PREVENTION SHALL BE A REDUCED PRESSURE BACKFLOW ASSEMBLY FOR COMMERCIAL WATER SERVICES. THIS REQUIREMENT MAY BE REDUCED OR WAIVED UPON WRITTEN REQUEST TO THE CITY ENGINEER. BACKFLOW ASSEMBLY AND FITTINGS ARE TO BE LEAD FREE.
12. PROPERTY OWNER RESPONSIBLE FOR ACCESS TO VALVE (VALVE BOX/CAN) AND FREEZE PROTECTION. SEE SPECIFICATIONS.
13. THESE BACKFLOW PREVENTION ASSEMBLY INSTALLATION STANDARDS REFLECT MINIMUM REQUIREMENTS TO COMPLY WITH OREGON HEALTH AUTHORITY REGULATIONS AND UNIFORM PLUMBING CODE. UNAPPROVED DEVIATION MAY RESULT IN THE CITY REJECTING THE INSTALLATION AND THE CERTIFICATE OF OCCUPANCY AS WELL. ALL REQUESTS FOR DEVIATION TO THESE STANDARDS MUST BE SUBMITTED IN WRITING AND APPROVED BY THE CITY'S CROSS CONNECTION SPECIALIST.

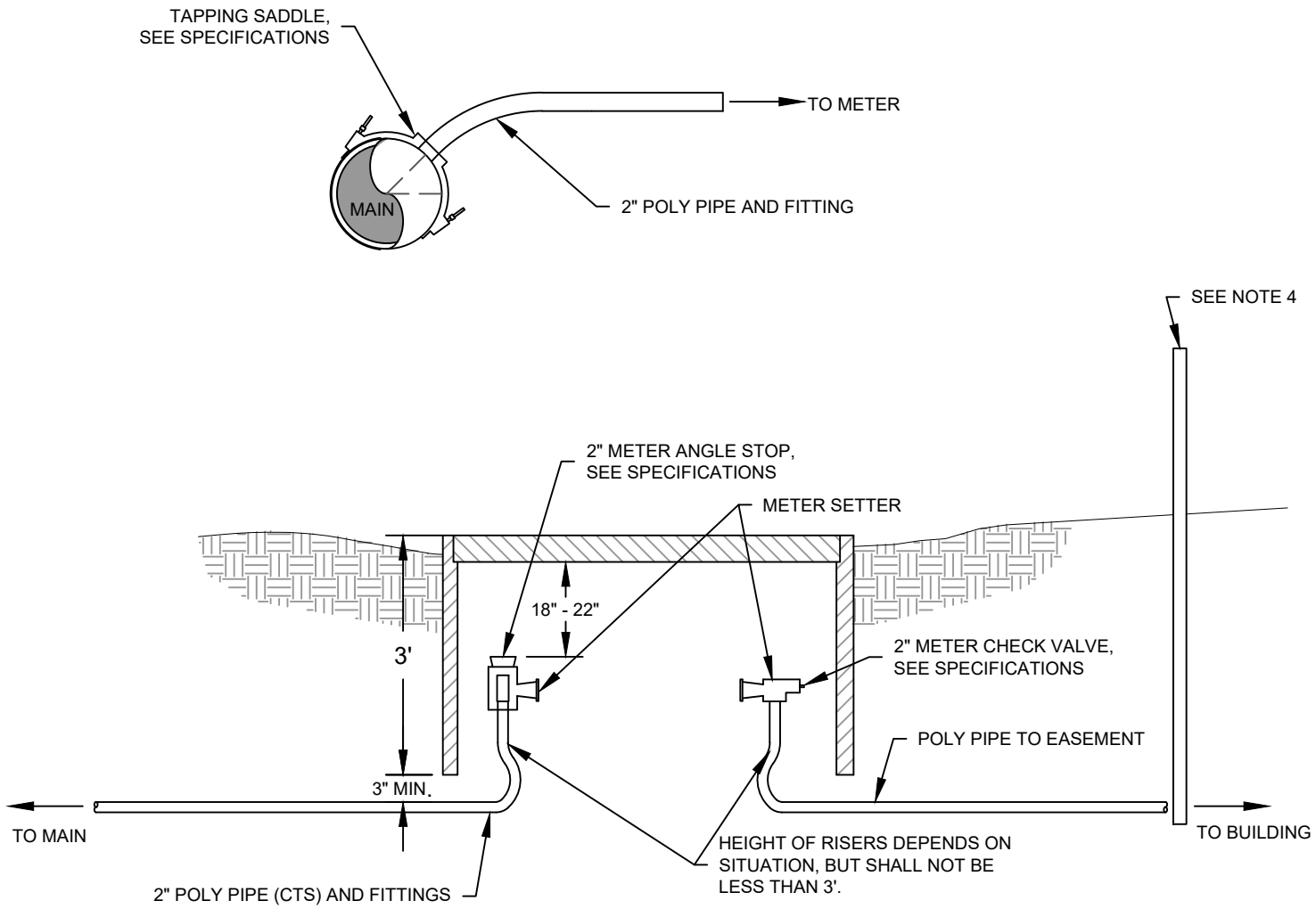
Umatilla Est. 1862

RESIDENTIAL AND 1" COMMERCIAL WATER SERVICE

PUBLIC WORKS ENGINEERING

DATE: 10/5/21

DWG: W-2



NOTES:

1. IF METER NOT INSTALLED, A POLY PIPE JUMPER CUT TO THE SIZE AND THREAD OF THE APPROPRIATE SERVICE SHALL BE PLACED BETWEEN THE ANGLE METER STOP AND METER CHECK VALVE. DRILL TWO 3/16" HOLES IN JUMPER.
2. SMALLER METER SIZES REDUCED IN BETWEEN ANGLE METER STOP AND METER.
3. DO NOT BURY METER ANGLE STOP BEFORE INSTALLING METER BOX.
4. WATER SERVICE TAIL PIECE SHALL BE EXTENDED TO THE PROPERTY LINE OR EASEMENT LINE, WHICHEVER IS FURTHER, AND MARKED WITH AN 8' TREATED 2x4 INSIDE AN 8' STEEL STUD, PAINTED BLUE, EXTENDING 36-48" ABOVE FINISHED GROUND SURFACE. MARKER BOARD TO BE CUT OFF FLUSH WITH THE GROUND IN ALREADY ESTABLISHED AREAS.
5. WATER METER BOX TO HAVE 18" CLEARANCE FROM ANY CONCRETE OR ASPHALT DRIVEWAY, SIDEWALK, ETC. THE ISOLATION VALVE SHALL BE NO LESS THAN 36" FROM THE METER BOX.
6. WATER METER BOX SHALL HAVE A WHITE RESIN INTERNAL LINER.
7. BOXES ARE TO BE SET PERPENDICULAR TO THE STREET.
8. TRACER WIRE SHALL BE WRAPPED AROUND PIPE FOR LENGTH OF SERVICE TO MARKER POST.

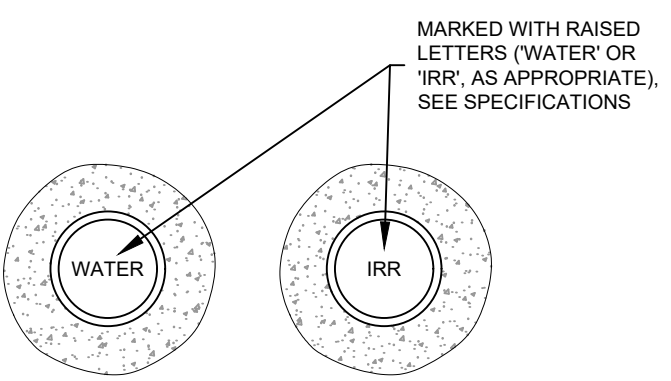
Umatilla Est. 1862

2" SERVICE INSTALLATION

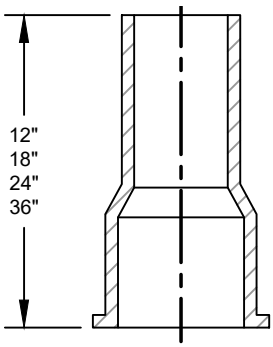
PUBLIC WORKS ENGINEERING

DATE: 10/5/21

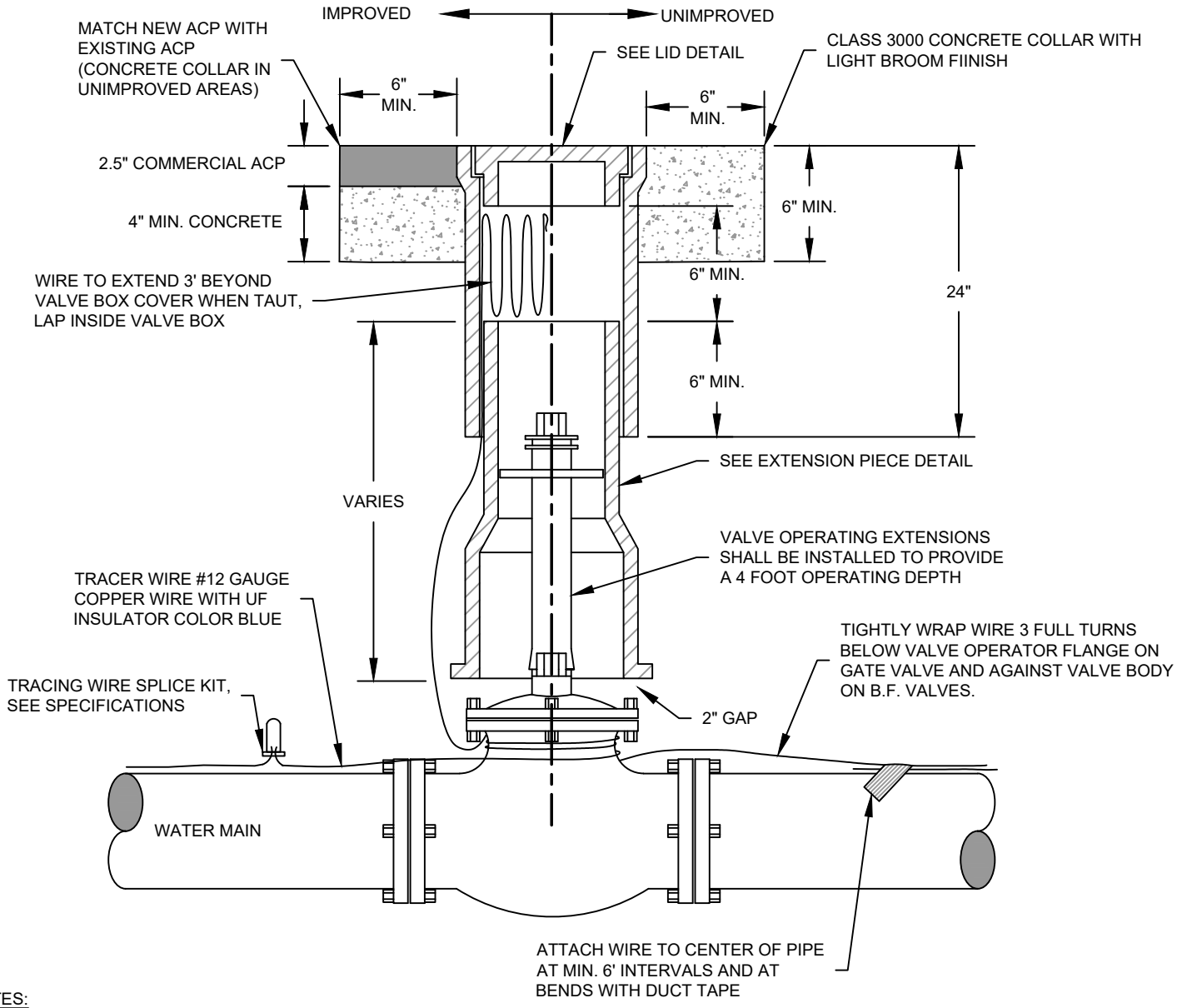
DWG: W-3



LID DETAIL



EXTENSION PIECE DETAIL



NOTES:

1. BUTTERFLY VALVES SHALL BE ORIENTED SUCH THAT THE OPERATING NUT AND VALVE BOX SHALL BE NEAR THE CENTERLINE.
2. SEE DWG. NO. W-20 FOR BEDDING.

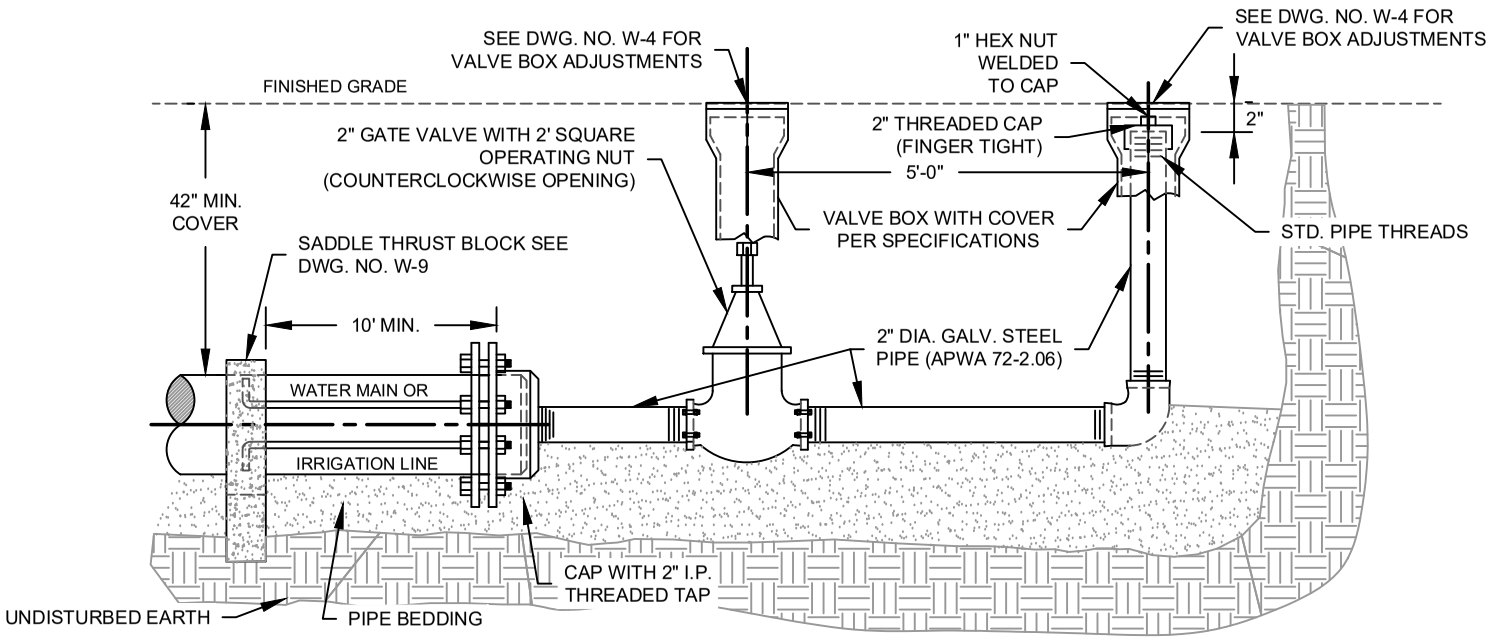
CAST IRON VALVE BOX

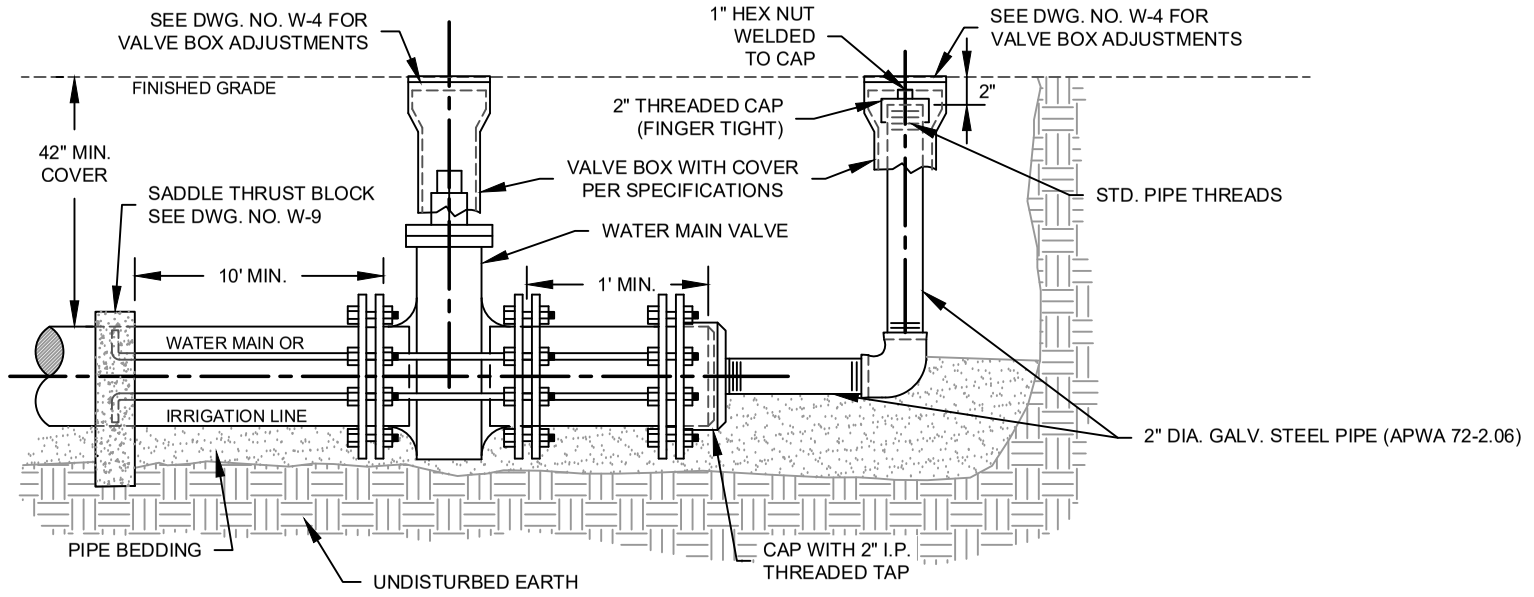
PUBLIC WORKS ENGINEERING

DATE: 10/5/21

DWG: W-4

BLOW-OFF ASSEMBLY





NOTES:

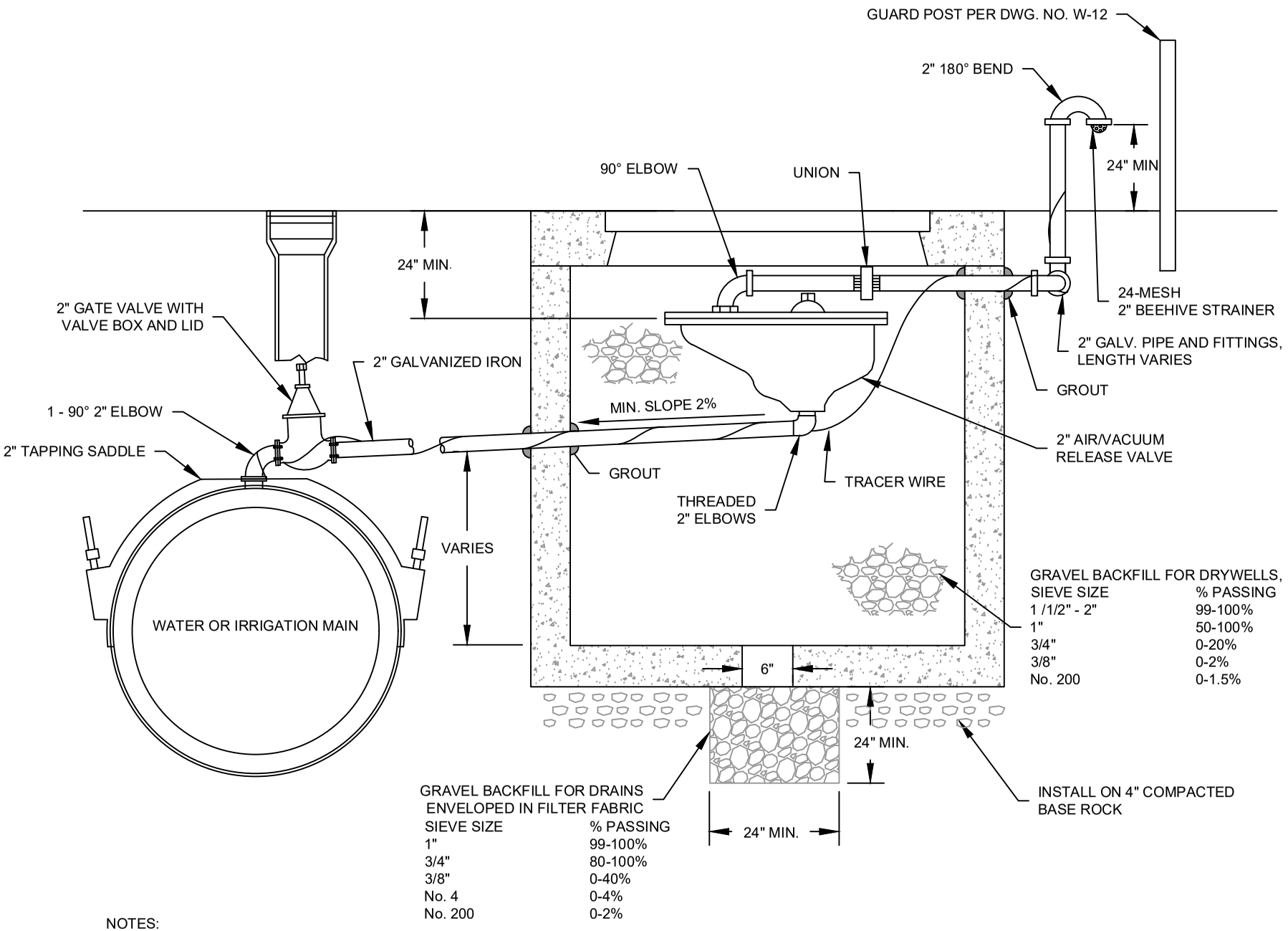
1. ON WATER MAINS WHICH WILL BE EXTENDED IN THE FUTURE, THE VALVE WHICH OPERATES THE BLOW-OFF ASSEMBLY SHALL BE THE SAME SIZE AS THE MAIN UNLESS OTHERWISE APPROVED BY THE ENGINEER.
2. THE THRUST BLOCK SHALL BE SIZED TO PROVIDE THRUST FOR THE MAIN WATER LINE.
3. JOINT RESTRAINTS AND FIELD LOK GASKETS MAY BE REQUIRED IN PLACE OF A SADDLE THRUST BLOCK OR MAY BE USED WITH PERMISSION OF THE CITY ENGINEER.

PUBLIC WORKS ENGINEERING

DATE: 10/5/21

DWG: W-5

AIR/VACUUM RELIEF AND VAULT



NOTES:

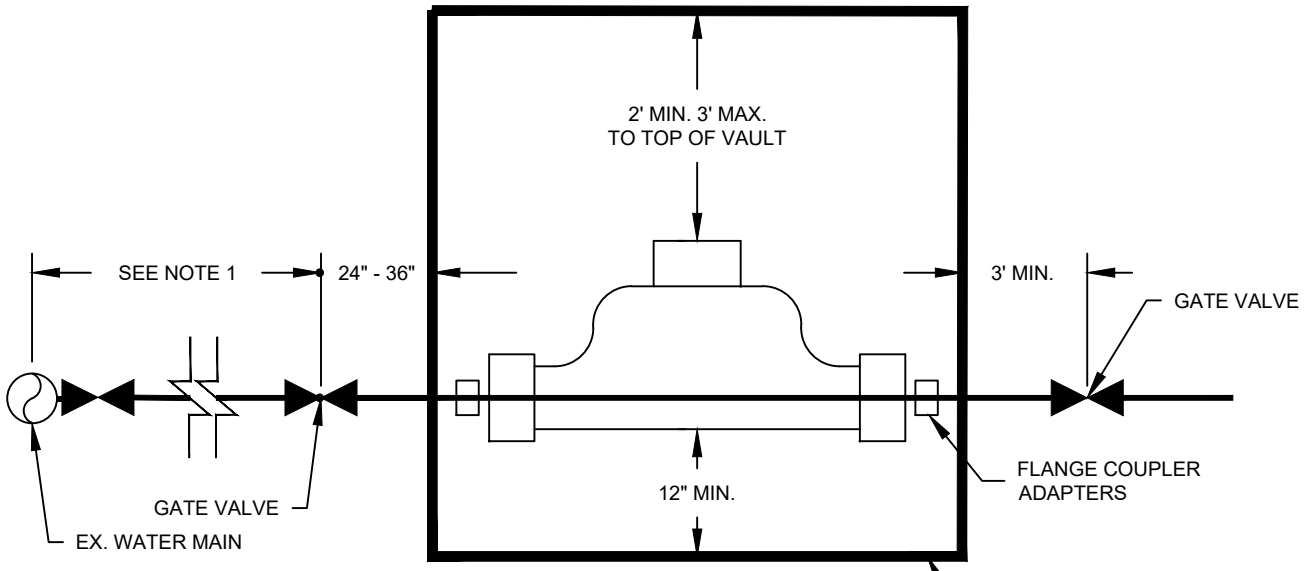
1. VAULTS TO BE UTILITY VAULT 444-LA (3.5'x3.5'x3.25') AND 332P LID (DIAMOND PLATE SPRING ASSISTED COVER WITH LOCKING LATCH), OR APPROVED EQUAL. DEPTH TO BE DETERMINED BY APPLICATION.

2. SEE SPECIFICATIONS FOR APPROVED AIR/VACUUM RELIEF.

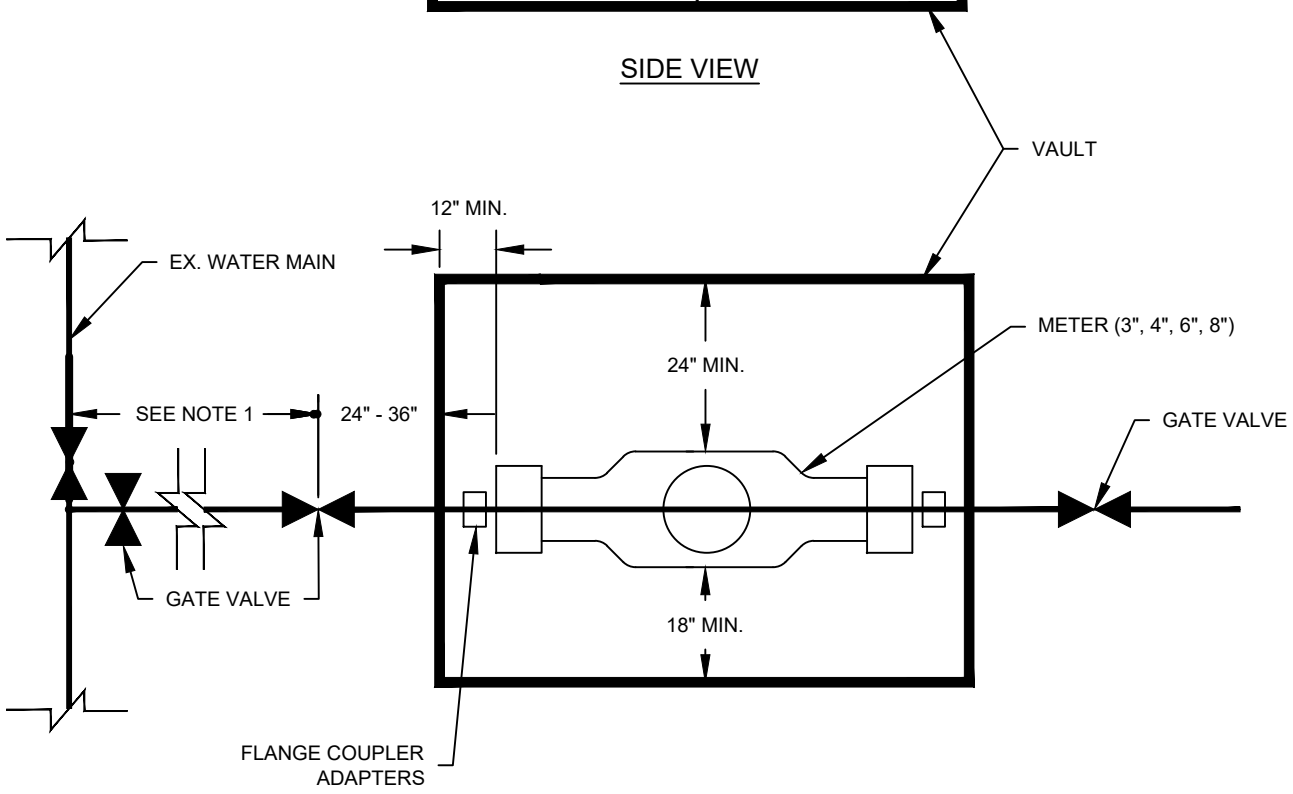
PUBLIC WORKS ENGINEERING

DATE: 10/5/21

DWG: W-6



SIDE VIEW



PLAN VIEW

NOTES:

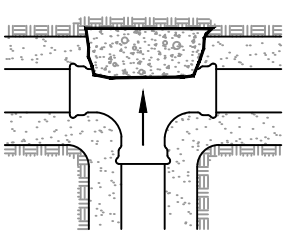
1. IF MAINLINE BRANCH VALVE IS MORE THAN 10' FROM THE VAULT, A SECOND GATE VALVE WILL BE REQUIRED.
2. VAULT REQUIREMENTS SHALL BE PER SPECIFICATIONS. SIZING SHALL BE THE RESPONSIBILITY OF THE DEVELOPER FOR REVIEW/APPROVAL BY UMATILLA WATER DEPARTMENT.
3. METERS ARE TO BE SUPPLIED AND INSTALLED BY UMATILLA WATER DEPARTMENT CREWS AFTER ALL FEES ARE PAID.

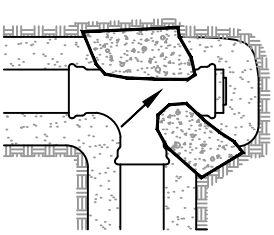
3" TO 8" WATER SERVICES

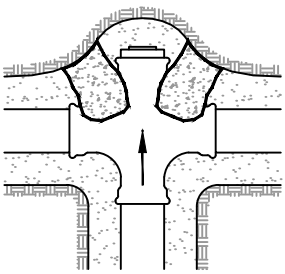
PUBLIC WORKS ENGINEERING

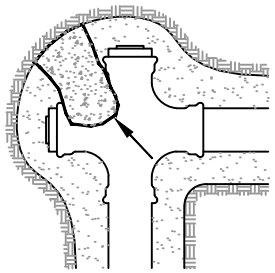
DATE: 10/5/21

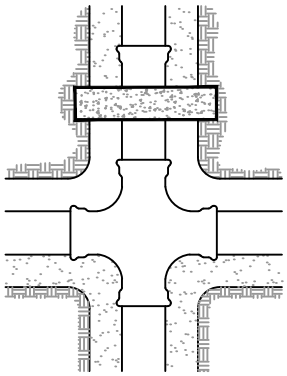
DWG: W-7



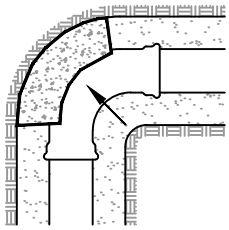


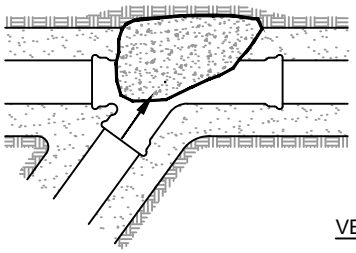


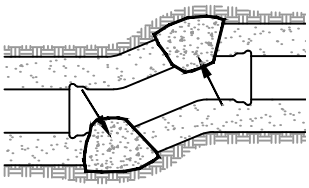




SADDLE THRUST BLOCK
SEE DWG. NO. W-9

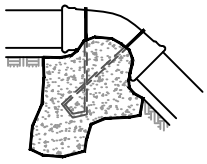






REBAR SIZE	EMBEDMENT DEPTH	HOOK SIZE
# 4	11"	6"
# 5	14"	7.5"
# 6	17"	9"
# 8	22"	12"

VERTICAL THRUST BLOCKS



	HORIZONTAL THRUST BLOCKS MIN. BEARING AREA IN SQUARE FEET				VERTICAL THRUST BLOCKS MIN. VOLUME IN CUBIC YARDS			
					45° Vertical Bend		11 1/4° & 22 1/2° Vertical Bend	
Pipe Size in Inches	Tees, Wyes & Dead Ends	90° Bend	45° Bend	11 1/4° & 22 1/2° Bend	Min Vol	Size	Min Vol	Size
4	1	1.5	1	0.4	0.5	# 4	0.2	# 4
6	2	3	1.5	0.8	1	# 4	0.5	# 4
8	4	6	3	1.5	1.5	# 4	1	# 4
10	6	9	5	2.3	2.5	# 4	1.5	# 4
12	9	12	7	4	3.5	# 4	2	# 4
14	12	16	9	5	4.5	# 4	2.5	# 4
16	15	21	12	6	6	# 4	3	# 4
18	19	27	15	8	7.5	# 5	4	# 4
20	24	33	18	9	9	# 5	5	# 4
24	34	48	26	13	13	# 6	7	# 4

NOTES:

1. THRUST BLOCKING TO BE STRUCTURAL CONCRETE PER SPECIFICATIONS. MAX. SLUMP OF 4".
2. THE TABULATIONS ARE BASED UPON A MAXIMUM WATER PRESSURE OF 150 PSI AND A SAFE BEARING CAPACITY OF 2,000 LBS. PER SQ. FOOT ADJUST FOR OTHER VALUES OF PRESSURE.
3. KEEP CONCRETE CLEAR OF JOINTS AND ACCESSORIES.
4. ALL THRUST BLOCKS MUST BE FORMED WITH PLYWOOD OR OSB AND INSPECTED. BY CITY WATER DEPARTMENT.
5. JOINTS TO BE WRAPPED POLYETHYLENE 3 MIL.
6. MECHANICALLY RESTRAINED PIPE AND FITTINGS MAY BE USED IN LIEU OF THRUST BLOCKING, SEE UMATILLA SPECIFICATIONS 01140.44

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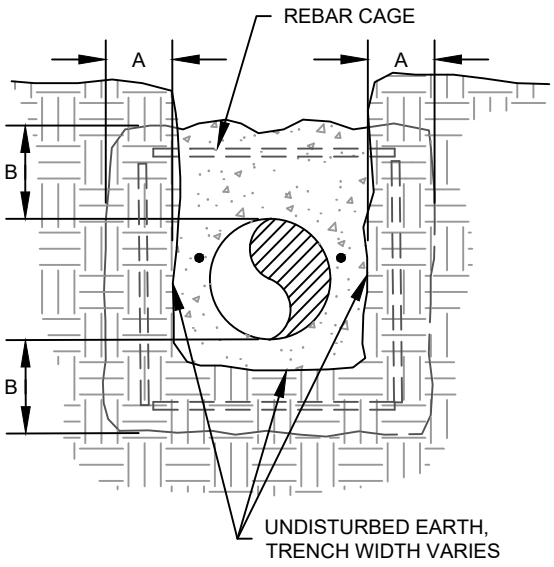
CONCRETE THRUST BLOCKING

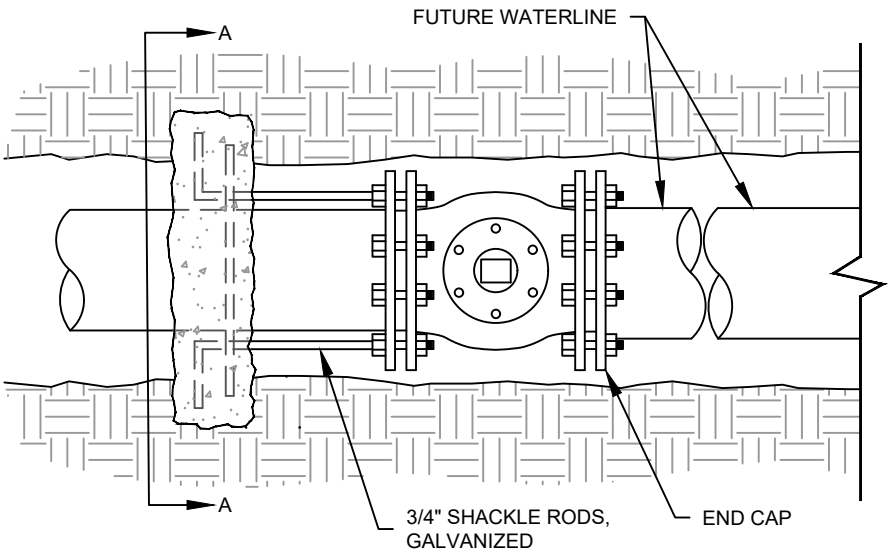
PUBLIC WORKS ENGINEERING

DATE: 10/5/21

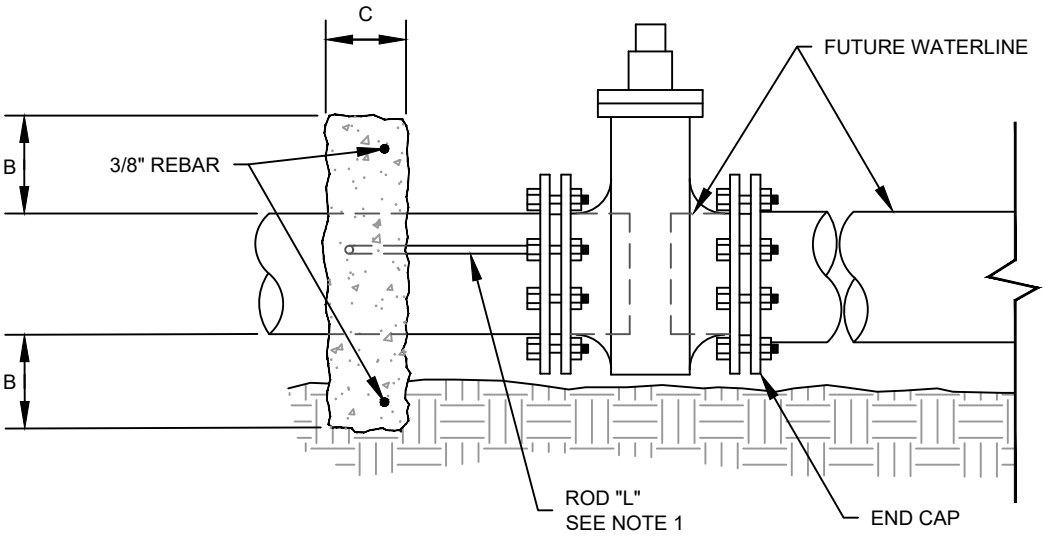
DWG: W-8



SECTION A - A



TOP VIEW



SIDE VIEW

PIPE DIAMETER	SHACKLE RODS REQUIRED	BEARING AREA(SF)	DIMENSIONS		
			A(FT)	B(FT)	C(IN)
6" & UNDER	2	2	1	1.5	8
8"	2	4	1	1.5	8
10"	2	6	1.5	1.5	12
12"	4	9	1.5	1.5	12
16"	4	15	2	1.5	16
18"	4	19	2.5	2	20
20"	6	24	3	2	24
24"	8	34	3.5	2	24

MINIMUM BEARING AREA OF THRUST BLOCK IN SQ. FEET
(BASED ON 2,000 P.S.F. SOIL BEARING CAP)

NOTES:

1. THE LENGTH OF RODS "L" SHALL BE 10 FEET MINIMUM OR AS DIRECTED BY THE CITY ENGINEER, AND SHALL BE CONTINUOUS.
2. CONCRETE SHALL BE PER THE SPECIFICATIONS.
3. RESTRAINED JOINTS (MEGA-LUG AND/OR FIELD LOC GASKETS) MAY BE USED IN LIEU OF THRUST BLOCKS, SEE UMATILLA SPECIFICATION 01140.44

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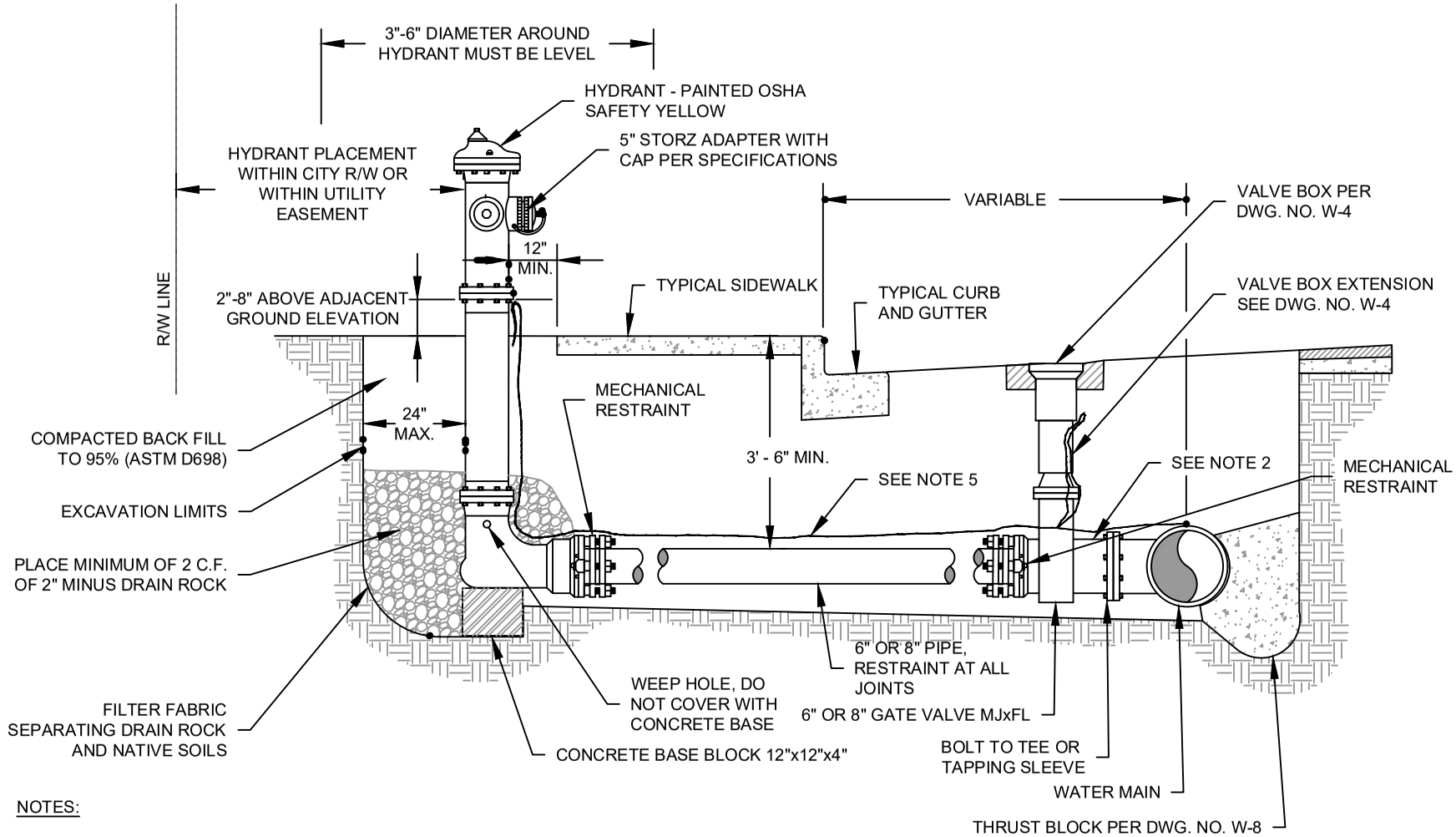
SADDLE THRUST BLOCKING

PUBLIC WORKS ENGINEERING

DATE: 10/5/21

DWG: W-9

FIRE HYDRANT INSTALLATION



NOTES:

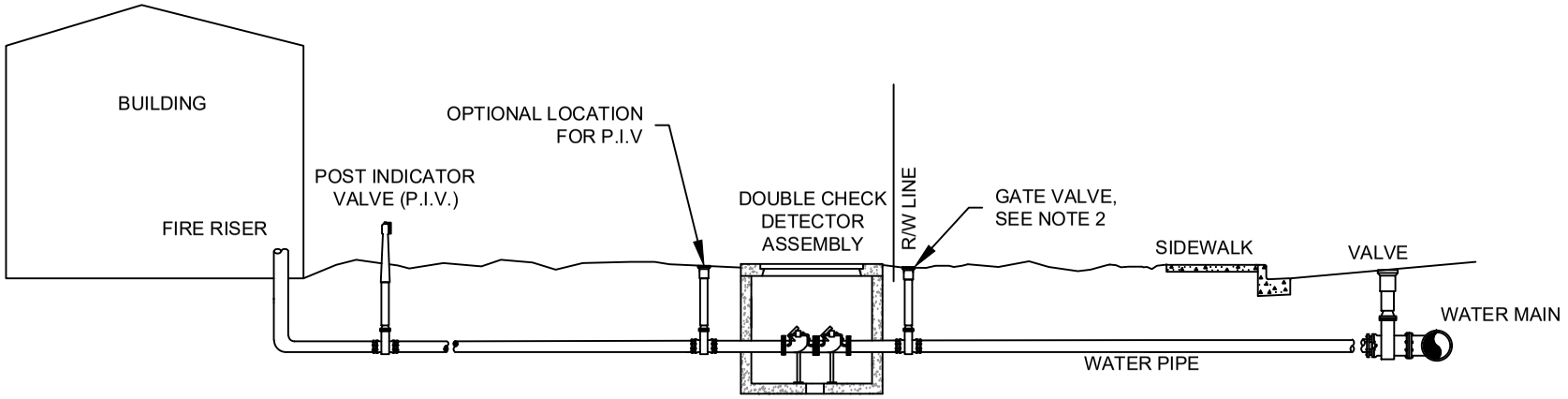
1. HYDRANTS SHALL BE PER THE SPECIFICATIONS.
2. HUB & FLANGE CASTING. (SEE SPECIFICATIONS).
3. HYDRANTS SHALL BE HOODED UNTIL OPERATIONAL.
4. HYDRANTS SHALL FACE THE STREET UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
5. TRACER WIRE FROM MAIN TO FIRE HYDRANT. (BLUE INSULATION)
6. USE OF HYDRANT EXTENSIONS MUST BE APPROVED IN WRITING BY THE CITY ENGINEER. NOT TO BE USED IN NEW INSTALLATIONS.
7. SEE BOLLARD REQUIREMENTS DWG. NO. W-12.
8. REMOVE CHAINS FROM CAPS. STORZ CABLE TO REMAIN.
9. WHEN PLACED ADJACENT TO CURB,HYDRANT PORT SHALL BE 24" FROM FACE OF CURB.

PUBLIC WORKS ENGINEERING

DATE: 10/5/21

DWG: W-10

FIRE LINES / BACKFLOW



FIRE SPRINKLER SYSTEM LINE

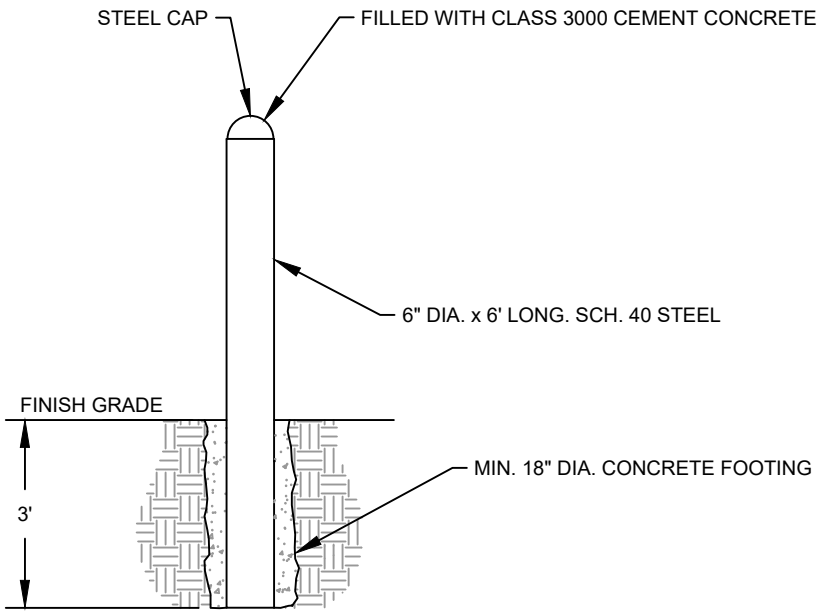
NOTE:

1. ALL FIRE LINES SHALL BE METERED.
2. GATE VALVE NOT REQUIRED IF VAULT IS WITHIN 10' OF VALVE AT MAIN.
3. FOR REFERENCE ONLY. SEE OREGON HEALTH AUTHORITY REQUIREMENTS FOR FURTHER BACKFLOW CLARIFICATION.
4. THESE BACKFLOW PREVENTION ASSEMBLY INSTALLATION STANDARDS REFLECT MINIMUM REQUIREMENTS TO COMPLY WITH OREGON HEALTH AUTHORITY REGULATIONS AND UNIFORM PLUMBING CODE. UNAPPROVED DEVIATION MAY RESULT IN THE CITY REJECTING THE INSTALLATION AND THE CERTIFICATE OF OCCUPANCY AS WELL. ALL REQUESTS FOR DEVIATION TO THESE STANDARDS MUST BE SUBMITTED IN WRITING AND APPROVED BY THE CITY'S CROSS-CONECTION SPECIALIST.
5. DETECTOR METER TO READ IN CUBIC FEET.
6. IF A REDUCED PRESSURE DETECTOR ASSEMBLY (RPDA) IS REQUIRED, IT SHALL BE INSTALLED PER DWG. W-18.
7. PROPERTY OWNER IS RESPONSIBLE FOR FREEZE PROTECTION.

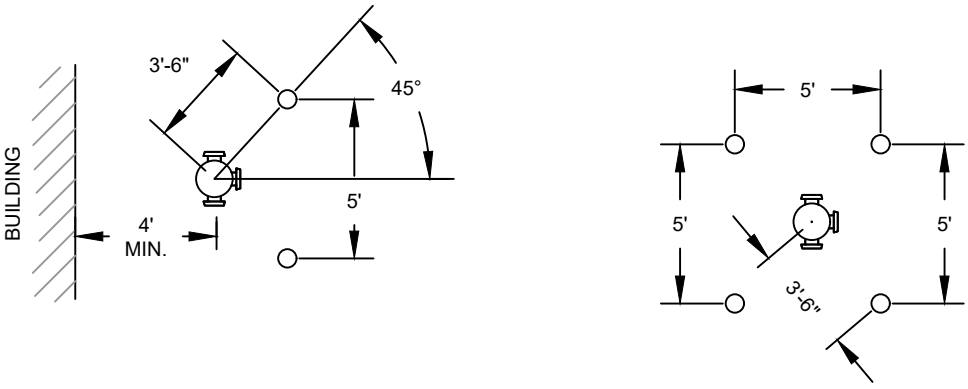
PUBLIC WORKS ENGINEERING

DATE: 10/5/21

DWG: W-11



TYPICAL GUARD POST REQUIREMENTS. OTHER CONFIGURATIONS MAY BE REQUIRED BY THE CITY ENGINEER, SUBJECT TO FIELD CONDITIONS.



NOTES:

1. CENTER OF GUARD POST TO BE SET 3' - 6" FROM HYDRANT CENTER NUT.
2. GUARD POSTS OUTSIDE OF THE RIGHT-OF-WAY ARE NOT REQUIRED IF THE FACE OF A MINIMUM SIX-INCH HIGH CURB IS LOCATED A MINIMUM OF 3' - 0" HORIZONTALLY FROM THE HYDRANT CENTER NUT.
3. DO NOT INSTALL GUARD POST IN LINE WITH HYDRANT PORTS.
4. CONCRETE SHALL BE PER SPECIFICATIONS.
5. GUARD POSTS SHALL BE PLUMB.
6. GUARD POSTS SHALL BE PAINTED OSHA YELLOW.

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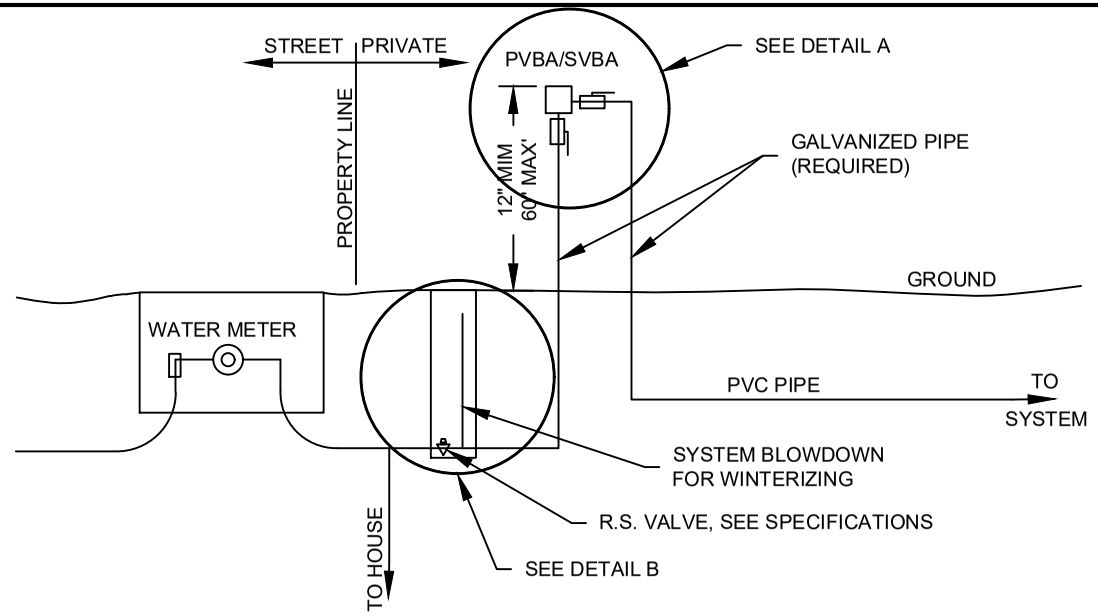
BOLLARD

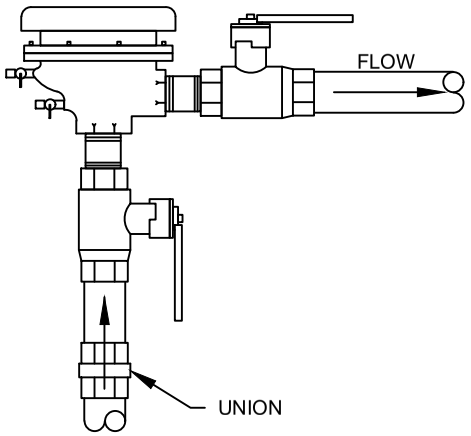
PUBLIC WORKS ENGINEERING

DATE: 10/5/21

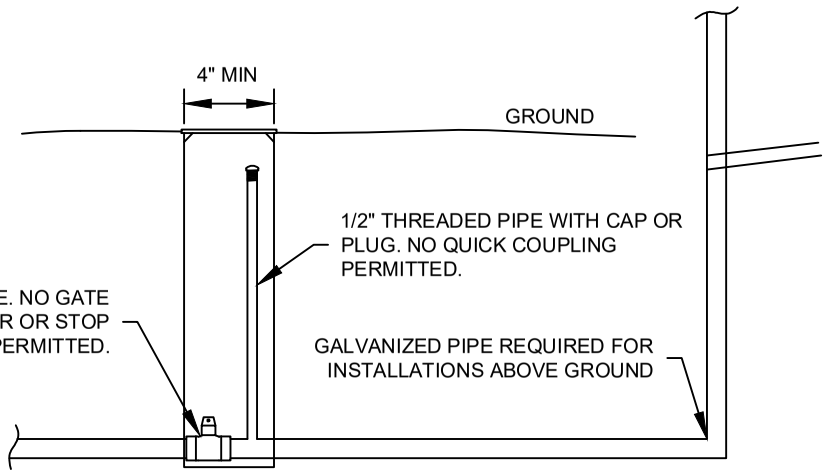
DWG: W-12

PVBA/SVBA INSTALLATION 1/2" TO 2"





DETAIL A
SCALE: NTS



DETAIL B
SCALE: NTS

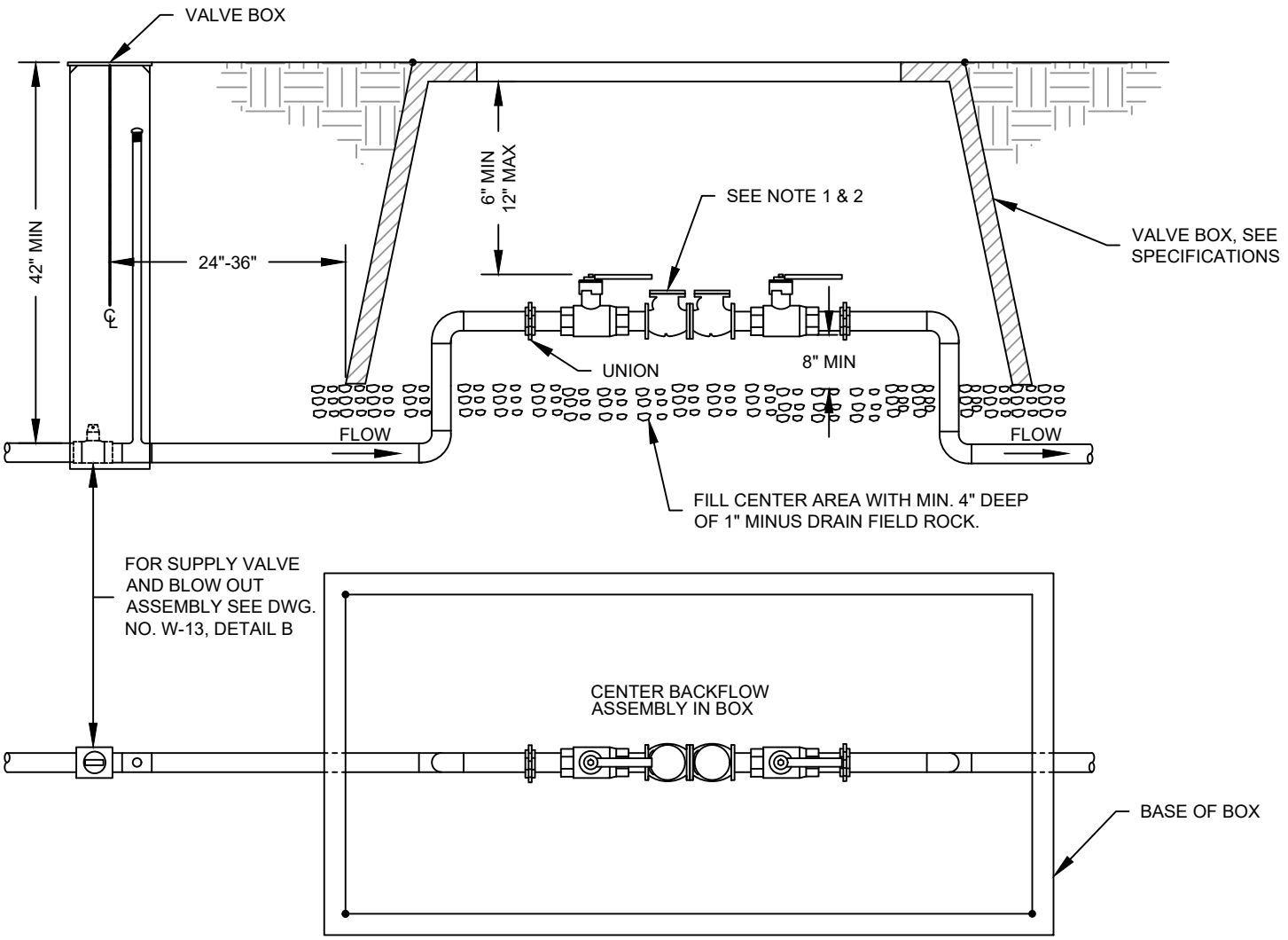
NOTES:

1. PRESSURE VACUUM BREAKER ASSEMBLY (PVBA) MAY BE INSTALLED ON LOW HAZARD POTABLE WATER SUPPLY SYSTEMS AS DETERMINED BY THE CITY OF UMATILLA CROSS CONNECTION SPECIALIST.
2. PVBA/SVBA MUST BE INSTALLED NOT LESS THAN 12" ABOVE THE HIGHEST POINT OF USE & NOT MORE THAN 60" HIGH.
3. OWNER IS RESPONSIBLE FOR FREEZE PROTECTION.
4. THE BACKFLOW ASSEMBLY IS TO BE TESTED AT THE TIME OF INSTALLATION BY A CERTIFIED TESTER APPROVED BY THE CITY UNLESS PRE-APPROVED BY THE CROSS CONNECTION SPECIALIST.
5. THE IRRIGATION SUPPLY TEE AND VALVE IS TO BE NO LESS THAN 36" OUTSIDE OF THE METER BOX ON 3/4" AND 1" SERVICES, AND SHALL BE LOCATED INSIDE PROPERTY LINE.
6. THESE BACKFLOW PREVENTION ASSEMBLY INSTALLATION STANDARDS REFLECT MINIMUM REQUIREMENTS TO COMPLY WITH OREGON HEALTH AUTHORITY REGULATIONS AND UNIFORM PLUMBING CODE. UNAPPROVED DEVIATION MAY RESULT IN THE CITY REJECTING THE INSTALLATION AND THE CERTIFICATE OF OCCUPANCY AS WELL. ALL REQUESTS FOR DEVIATION TO THESE STANDARDS MUST BE SUBMITTED IN WRITING AND APPROVED BY THE CITY'S CROSS-CONNECTION SPECIALIST.
7. TEE IS TO BE LEAD FREE.

PUBLIC WORKS ENGINEERING

DATE: 10/5/21

DWG: W-13



DCVA INSTALLATION

DOUBLE CHECK VALVE ASSEMBLY FOR ASSEMBLIES 1/2" TO 2"

NOTES:

1. MUST BE ON THE LATEST USCFCCHR LIST OF APPROVED BACKFLOW PREVENTION ASSEMBLIES.
2. MUST BE INSTALLED IN THE ORIENTATION AS APPROVED BY THE USC TESTING LAB & ACCEPTED BY THE DEPARTMENT OF HEALTH.
3. ASSEMBLY INSTALLATIONS ABOVE GROUND REQUIRE COPPER OR GALVANIZED PIPE WITH AT LEAST ONE UNION. INSTALLATIONS BELOW GROUND MUST HAVE TWO UNIONS.
4. FREEZE PROTECTION IS THE RESPONSIBILITY OF THE OWNER.
5. ASSEMBLIES APPROVED FOR BELOW GROUND INSTALLATION CANNOT BE SUBJECT TO FLOODING.
6. A LADDER IS REQUIRED IF ACCESS OPENING TO FLOOR EXCEEDS 36 INCHES.
7. THE BACKFLOW ASSEMBLY IS TO BE TESTED AT THE TIME OF INSTALLATION BY A CERTIFIED TESTER APPROVED BY THE CITY UNLESS PRE-APPROVED BY THE CROSS CONNECTION SPECIALIST.
8. THESE BACKFLOW PREVENTION ASSEMBLY INSTALLATION STANDARDS REFLECT MINIMUM REQUIREMENTS TO COMPLY WITH OREGON HEALTH AUTHORITY REGULATIONS AND UNIFORM PLUMBING CODE. UNAPPROVED DEVIATION MAY RESULT IN THE CITY REJECTING THE INSTALLATION AND THE CERTIFICATE OF OCCUPANCY AS WELL. ALL REQUESTS FOR DEVIATION TO THESE STANDARDS MUST BE SUBMITTED IN WRITING AND APPROVED BY THE CITY'S CROSS-CONNECTION SPECIALIST.

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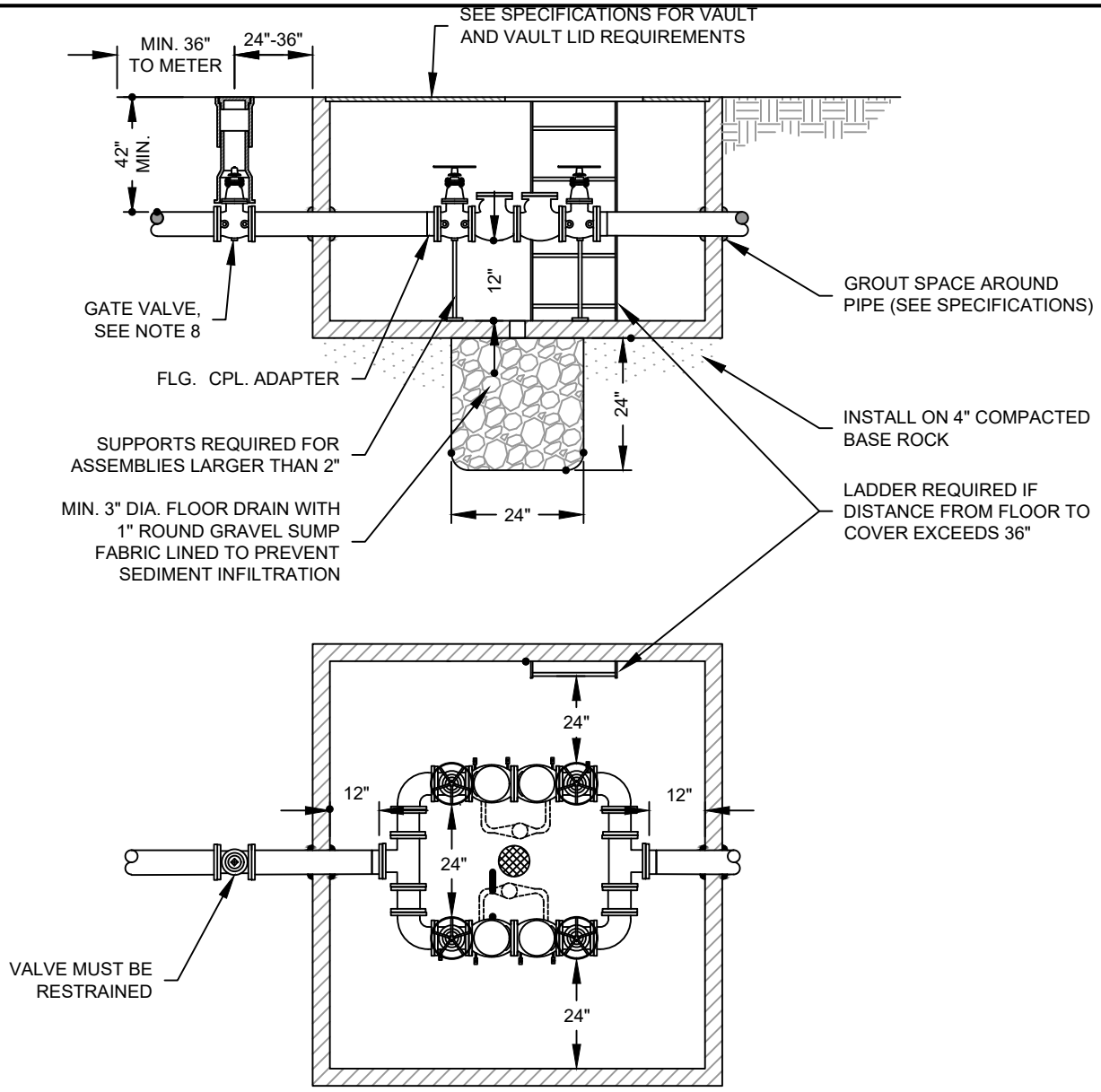
DCVA INSTALLATION 1/2" TO 2"

PUBLIC WORKS ENGINEERING

DATE: 10/5/21

DWG: W-14



DCVA & DCDA DUAL INSTALLATION LARGER THAN 2"

FOR DOUBLE CHECK VALVE ASSEMBLY & DOUBLE CHECK DETECTOR ASSEMBLY LARGER THAN 2"

NOTES:

1. MUST BE ON THE LATEST USCFCCHR LIST OF APPROVED BACKFLOW PREVENTION ASSEMBLIES.
2. MUST BE INSTALLED IN THE ORIENTATION AS APPROVED BY USC TESTING LAB AND ACCEPTED BY DEPT OF HEALTH.
3. FREEZE PROTECTION IS THE RESPONSIBILITY OF THE OWNER.
4. ASSEMBLIES APPROVED FOR BELOW GROUND INSTALLATION CAN NOT BE SUBJECT TO FLOODING.
5. THE BACKFLOW ASSEMBLY IS TO BE TESTED AT THE TIME OF INSTALLATION BY A CERTIFIED TESTER APPROVED BY THE CITY UNLESS PRE-APPROVED BY THE CROSS CONNECTION SPECIALIST.
6. ALL VAULT WALL PENETRATIONS ARE TO BE GROUTED INSIDE AND OUT.
7. IF MAIN VALVE IS LOCATED WITHIN 10' OF THE VAULT, THIS VALVE IS NOT REQUIRED.
8. THESE BACKFLOW PREVENTION ASSEMBLY INSTALLATION STANDARDS REFLECT MINIMUM REQUIREMENTS TO COMPLY WITH OREGON HEALTH AUTHORITY REGULATIONS AND UNIFORM PLUMBING CODE. UNAPPROVED DEVIATION MAY RESULT IN THE CITY REJECTING THE INSTALLATION AND THE CERTIFICATE OF OCCUPANCY AS WELL. ALL REQUESTS FOR DEVIATION TO THESE STANDARDS MUST BE SUBMITTED IN WRITING AND APPROVED BY THE CITY'S CROSS-CONNECTION SPECIALIST.

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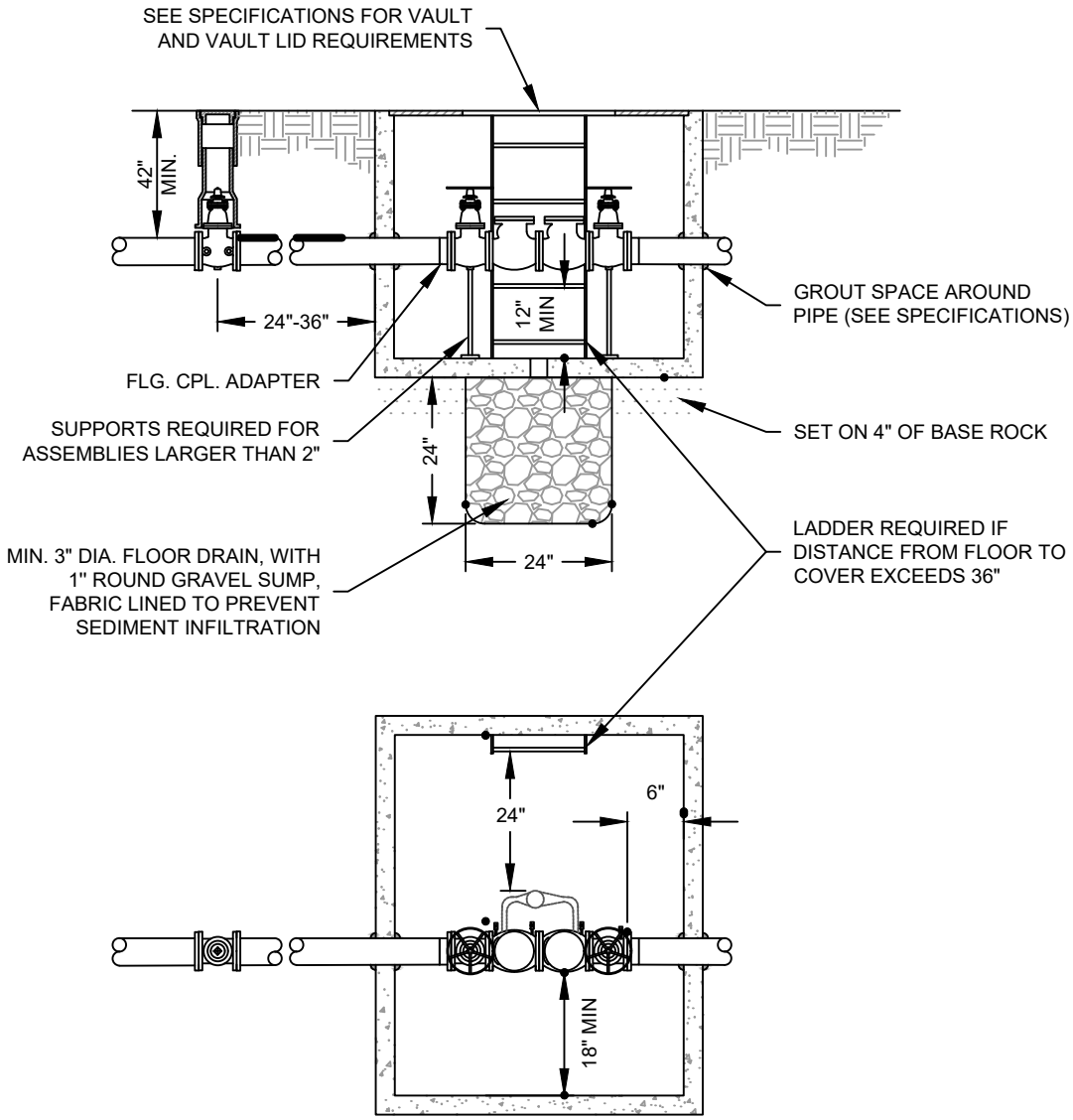
DCVA & DCDA DUAL INSTALLATION LARGER THAN 2"

PUBLIC WORKS ENGINEERING

DATE: 10/5/21

DWG: W-15



DCDA & DCVA INSTALLATION LARGER THAN 2"

FOR DOUBLE CHECK DETECTOR ASSEMBLY & DOUBLE CHECK VALVE ASSEMBLY
LARGER THAN 2"

NOTES:

1. MUST BE ON THE LATEST USCFCCHR LIST OF APPROVED BACKFLOW PREVENTION ASSEMBLIES.
2. MUST BE INSTALLED IN THE ORIENTATION AS APPROVED BY USC TESTING LAB AND ACCEPTED BY DEPT OF HEALTH. DETECTOR MUST READ IN CUBIC FEET.
3. FREEZE PROTECTION IS THE RESPONSIBILITY OF THE OWNER.
4. ASSEMBLIES APPROVED FOR BELOW GROUND INSTALLATION CAN NOT BE SUBJECT TO FLOODING.
5. THE BACKFLOW ASSEMBLY IS TO BE TESTED AT THE TIME OF INSTALLATION BY A CERTIFIED TESTER APPROVED BY THE CITY UNLESS PRE-APPROVED BY THE CROSS CONNECTION SPECIALIST.
6. ALL VAULT WALL PENETRATIONS ARE TO BE GROUTED INSIDE AND OUT.
7. THESE BACKFLOW PREVENTION ASSEMBLY INSTALLATION STANDARDS REFLECT MINIMUM REQUIREMENTS TO COMPLY WITH OREGON HEALTH AUTHORITY REGULATIONS AND UNIFORM PLUMBING CODE. UNAPPROVED DEVIATION MAY RESULT IN THE CITY REJECTING THE INSTALLATION AND THE CERTIFICATE OF OCCUPANCY AS WELL. ALL REQUESTS FOR DEVIATION TO THESE STANDARDS MUST BE SUBMITTED IN WRITING AND APPROVED BY THE CITY'S CROSS-CONNECTION SPECIALIST.

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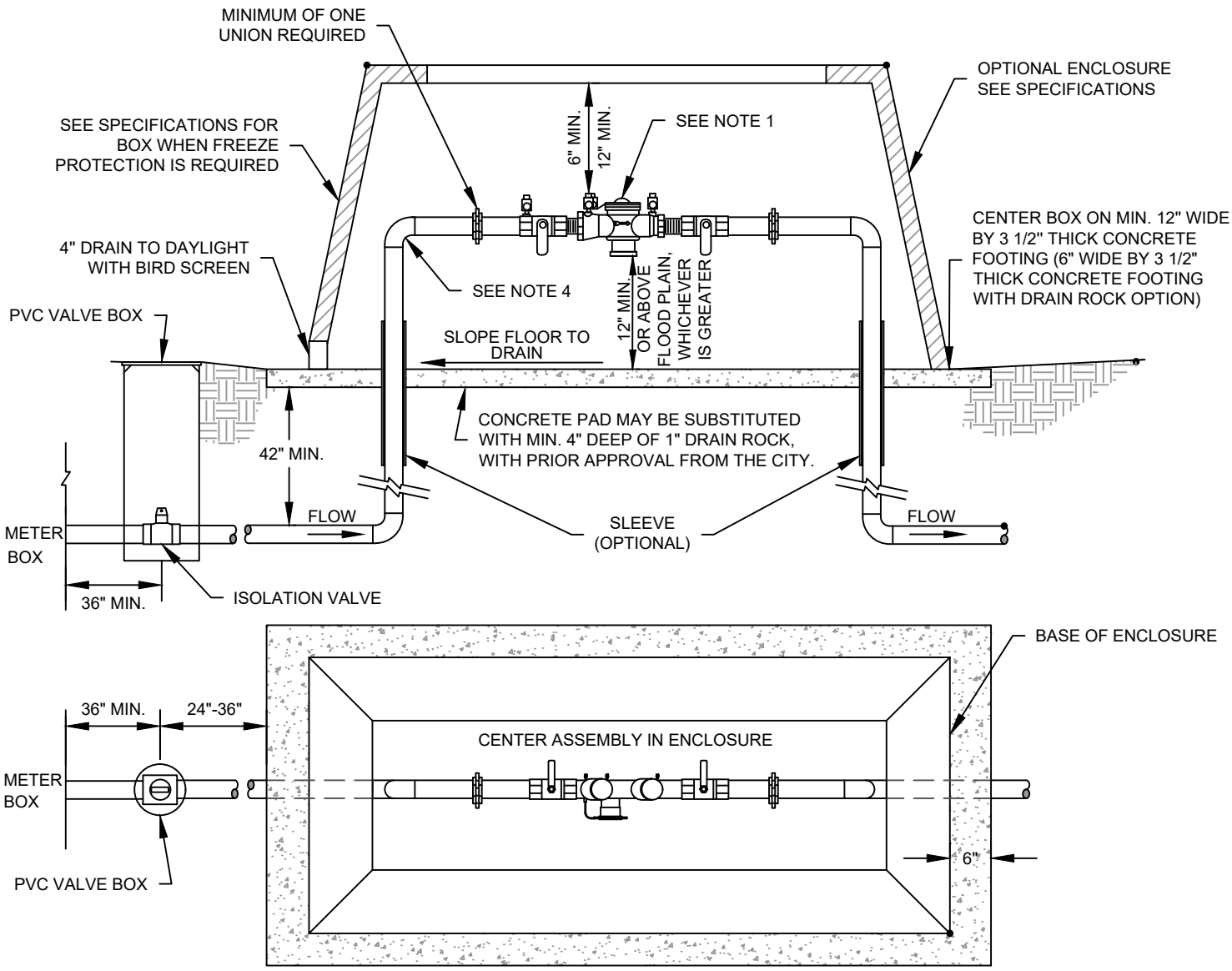
DCDA & DCVA INSTALLATION LARGER THAN 2"

PUBLIC WORKS ENGINEERING

DATE: 10/5/21

DWG: W-16



RPBA INSTALLATION

FOR REDUCED PRESSURE BACKFLOW ASSEMBLY
FOR ASSEMBLIES 3/4" TO 2"

NOTES:

1. MUST BE ON THE LATEST USCFCCHR LIST OF APPROVED BACKFLOW PREVENTION ASSEMBLIES.
2. MUST BE INSTALLED ABOVE GROUND, MINIMUM 12" CLEARANCE ABOVE THE FLOOD PLAIN AND IN THE ORIENTATION AS APPROVED BY USC TESTING LAB AND ACCEPTED BY DEPT OF HEALTH. THE ENCLOSURE MUST ALLOW FOR ROUTINE MAINTENANCE AND TESTING (REMOVABLE ENCLOSURE OR OPENS ON THE SIDE FOR ACCESS TO TEST COCKS).
3. ASSEMBLY INSTALLATIONS ABOVE GROUND REQUIRE COPPER OR GALVANIZED PIPE WITH AT LEAST ONE UNION. OPTIONAL PVC SLEEVE TO EXTEND 6" ABOVE AND 12" BELOW CONCRETE PAD TO ALLOW FOR SETTLEMENT OF PAD.
4. FREEZE PROTECTION IS THE RESPONSIBILITY OF THE OWNER.
5. THE BACKFLOW ASSEMBLY IS TO BE TESTED AT THE TIME OF INSTALLATION BY A CERTIFIED TESTER APPROVED BY THE CITY UNLESS PRE-APPROVED BY THE CROSS CONNECTION SPECIALIST.
6. FOR PREMISES ISOLATION, THE ENCLOSURE MUST HAVE A MINIMUM 3 1/2" CONCRETE PAD.
7. THESE BACKFLOW PREVENTION ASSEMBLY INSTALLATION STANDARDS REFLECT MINIMUM REQUIREMENTS TO COMPLY WITH OREGON HEALTH AUTHORITY REGULATIONS AND UNIFORM PLUMBING CODE. UNAPPROVED DEVIATION MAY RESULT IN THE CITY REJECTING THE INSTALLATION AND THE CERTIFICATE OF OCCUPANCY AS WELL. ALL REQUESTS FOR DEVIATION TO THESE STANDARDS MUST BE SUBMITTED IN WRITING AND APPROVED BY THE CITY'S CROSS-CONNECTION SPECIALIST.

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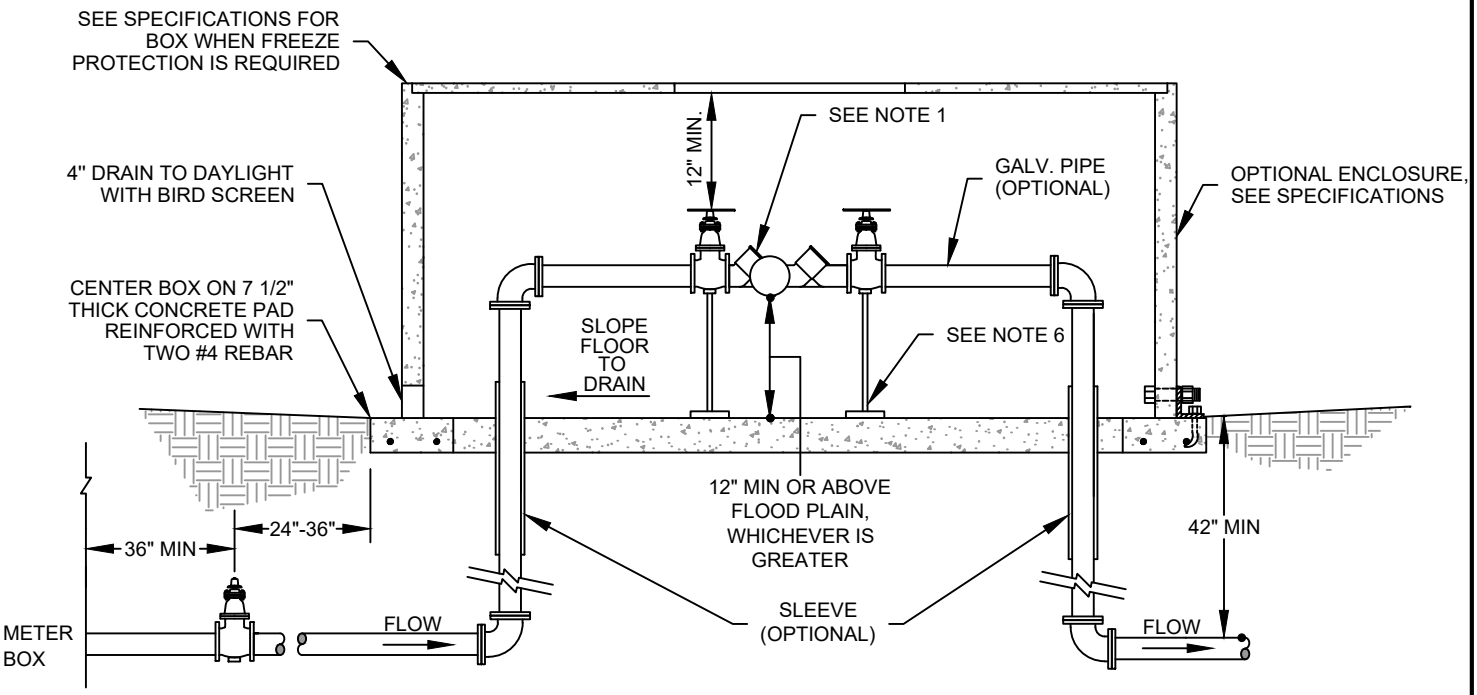
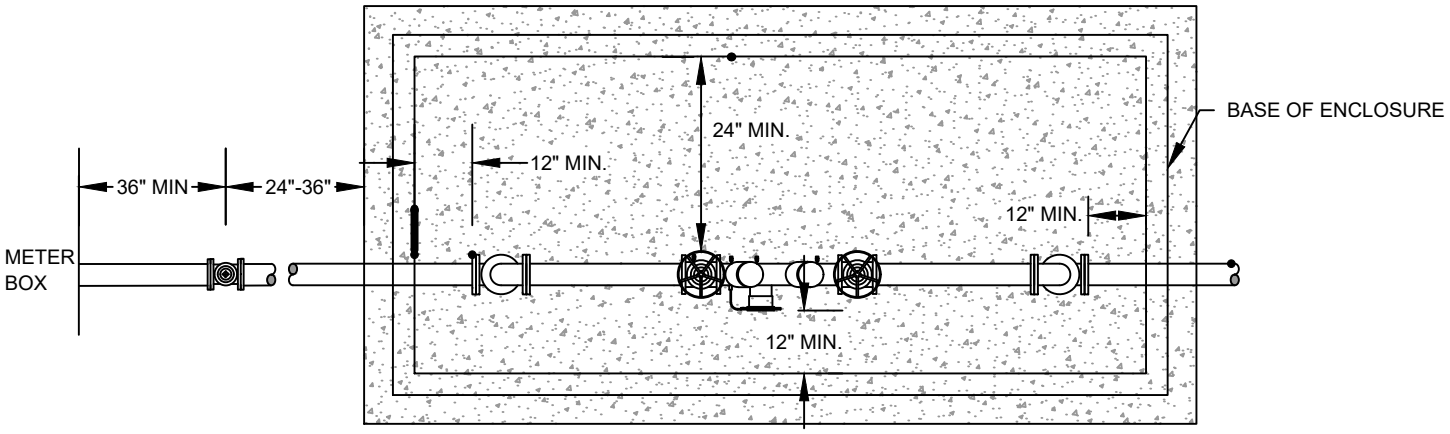
RPBA INSTALLATION 3/4" TO 2"

PUBLIC WORKS ENGINEERING

DATE: 10/5/21

DWG: W-17





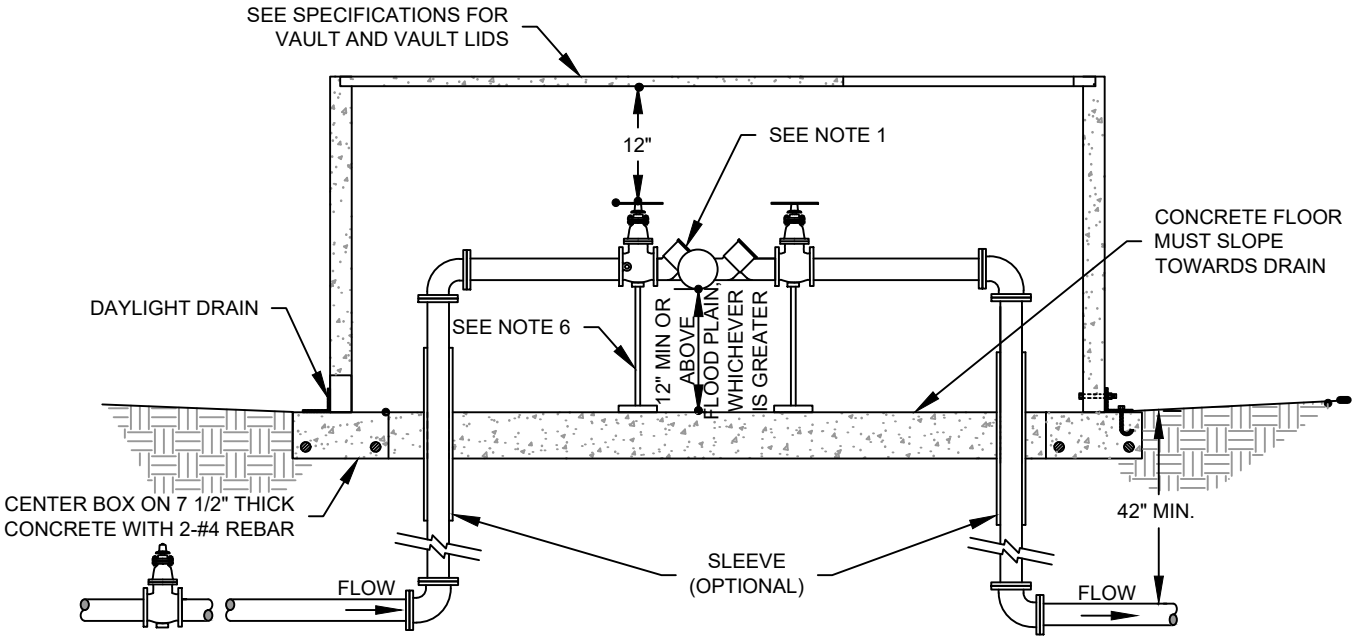
RPDA & RPBA INSTALLATION

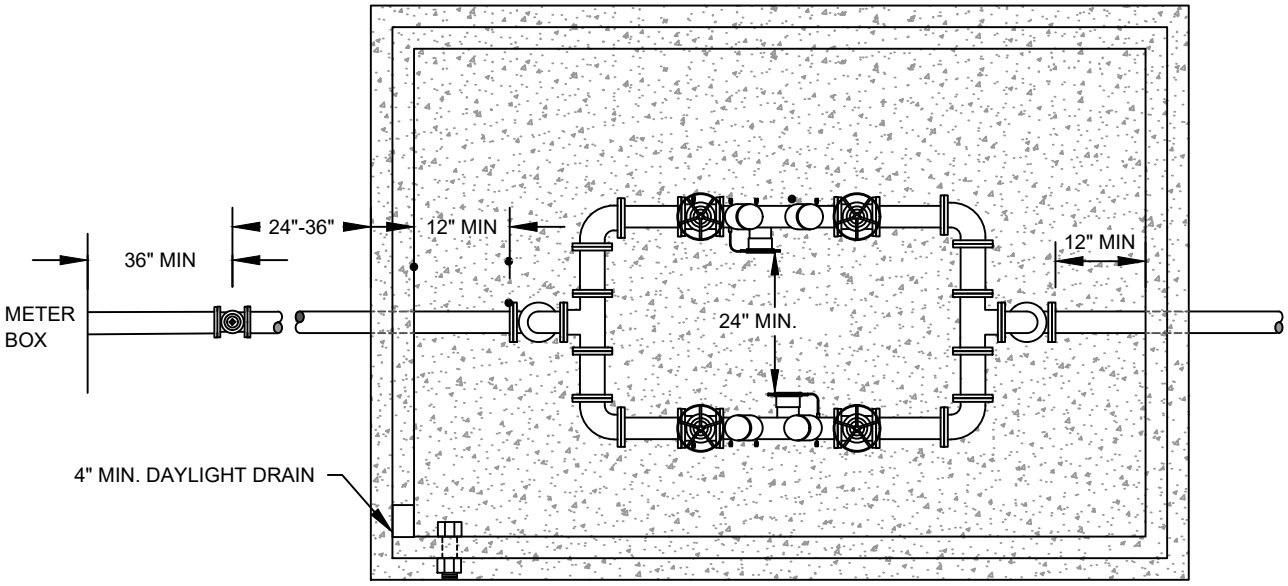
FOR REDUCED PRESSURE DETECTOR ASSEMBLY & REDUCE PRESSURE BACKFLOW ASSEMBLY LARGER THAN 2"

NOTES:

1. MUST BE ON THE LATEST USCFCCHR LIST OF APPROVED BACKFLOW PREVENTION ASSEMBLIES.
2. MUST BE INSTALLED ABOVE GROUND, MINIMUM 12" CLEARANCE ABOVE THE FLOOD PLAIN AND IN THE ORIENTATION AS APPROVED BY USC TESTING LAB AND ACCEPTED BY DEPT. OF HEALTH. THE ENCLOSURE MUST ALLOW FOR ROUTINE MAINTENANCE AND TESTING (REMOVABLE ENCLOSURE OR OPENS ON THE SIDE FOR ACCESS TO THE TEST COCKS).
3. OPTIONAL PVC SLEEVE TO EXTEND 6" ABOVE AND 12" BELOW CONCRETE PAD TO ALLOW FOR SETTLEMENT OF PAD.
4. FREEZE PROTECTION IS THE RESPONSIBILITY OF THE OWNER.
5. PIPE SUPPORTS ARE REQUIRED ON ASSEMBLIES OVER 2".
6. THE BACKFLOW ASSEMBLY IS TO BE TESTED AT THE TIME OF INSTALLATION BY A CERTIFIED TESTER APPROVED BY THE CITY UNLESS PRE-APPROVED BY THE CROSS CONNECTION SPECIALIST.
7. THESE BACKFLOW PREVENTION ASSEMBLY INSTALLATION STANDARDS REFLECT MINIMUM REQUIREMENTS TO COMPLY WITH OREGON HEALTH AUTHORITY REGULATIONS AND UNIFORM PLUMBING CODE. UNAPPROVED DEVIATION MAY RESULT IN THE CITY REJECTING THE INSTALLATION AND THE CERTIFICATE OF OCCUPANCY AS WELL. ALL REQUESTS FOR DEVIATION TO THESE STANDARDS MUST BE SUBMITTED IN WRITING AND APPROVED BY THE CITY'S CROSS-CONNECTION SPECIALIST.

Umatilla Est. 1862	RPDA/RPBA INSTALLATION LARGER THAN 2"	PUBLIC WORKS ENGINEERING DATE: 10/5/21 DWG: W-18





RPDA & RPBA DUAL INSTALLATION

FOR REDUCE PRESSURE DETECTOR ASSEMBLY & REDUCED PRESSURE BACKFLOW ASSEMBLY LARGER THAN 2"

NOTES:

1. MUST BE ON THE LATEST USCFCCHR LIST OF APPROVED BACKFLOW PREVENTION ASSEMBLIES.
2. MUST BE INSTALLED ABOVE GROUND, MINIMUM 12" CLEARANCE ABOVE THE FLOOD PLAIN (CURB) AND IN THE ORIENTATION AS APPROVED BY USC TESTING LAB AND ACCEPTED BY DEPT. OF HEALTH. THE ENCLOSURE MUST ALLOW FOR ROUTINE MAINTENANCE AND TESTING (REMOVABLE ENCLOSURE OR OPENS ON THE SIDE FOR ACCESS TO THE TEST COCKS).
3. OPTIONAL PVC SLEEVE TO EXTEND 6" ABOVE AND 12" BELOW CEMENT PAD TO ALLOW FOR SETTLEMENT.
4. FREEZE PROTECTION IS THE RESPONSIBILITY OF THE OWNER.
5. THE BACKFLOW ASSEMBLY IS TO BE TESTED AT THE TIME OF INSTALLATION BY A CERTIFIED TESTER APPROVED BY THE CITY UNLESS PRE-APPROVED BY THE CROSS CONNECTION SPECIALIST.
6. THESE BACKFLOW PREVENTION ASSEMBLY INSTALLATION STANDARDS REFLECT MINIMUM REQUIREMENTS TO COMPLY WITH OREGON HEALTH AUTHORITY REGULATIONS AND UNIFORM PLUMBING CODE. UNAPPROVED DEVIATION MAY RESULT IN THE CITY REJECTING THE INSTALLATION AND THE CERTIFICATE OF OCCUPANCY AS WELL. ALL REQUESTS FOR DEVIATION TO THESE STANDARDS MUST BE SUBMITTED IN WRITING AND APPROVED BY THE CITY'S CROSS-CONNECTION SPECIALIST.

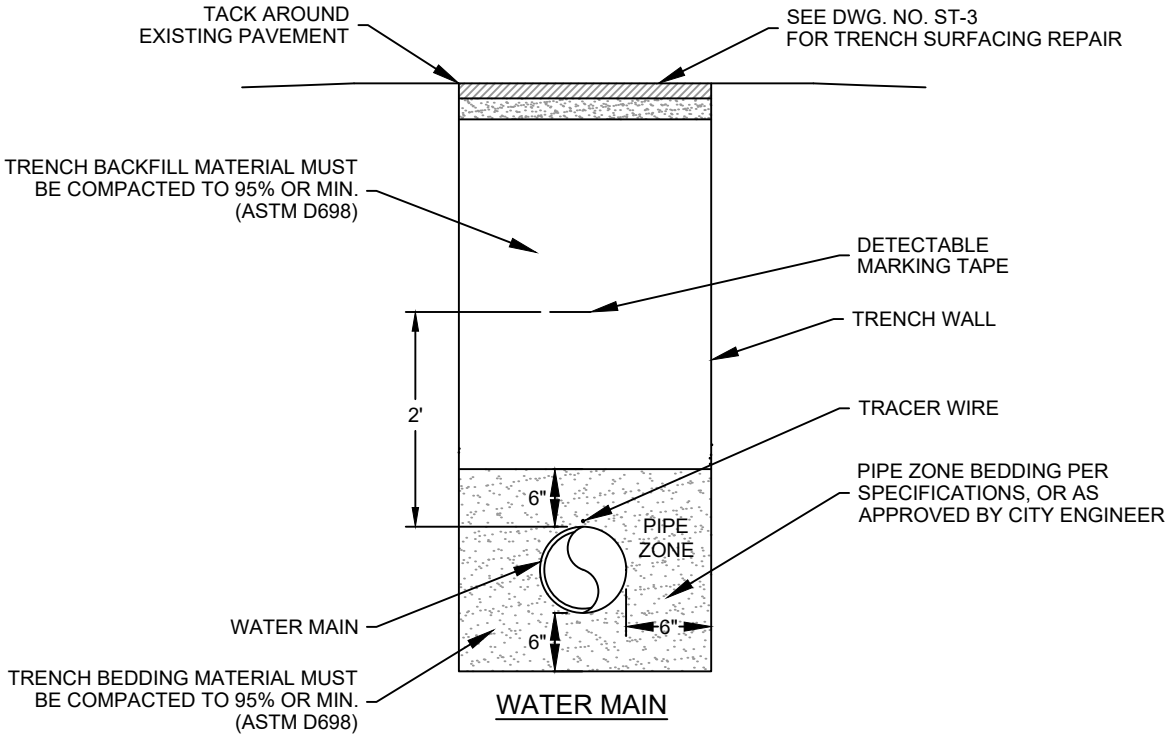
Umatilla Est. 1862

RPDA/RPBA DUAL INSTALLATION LARGER THAN 2"

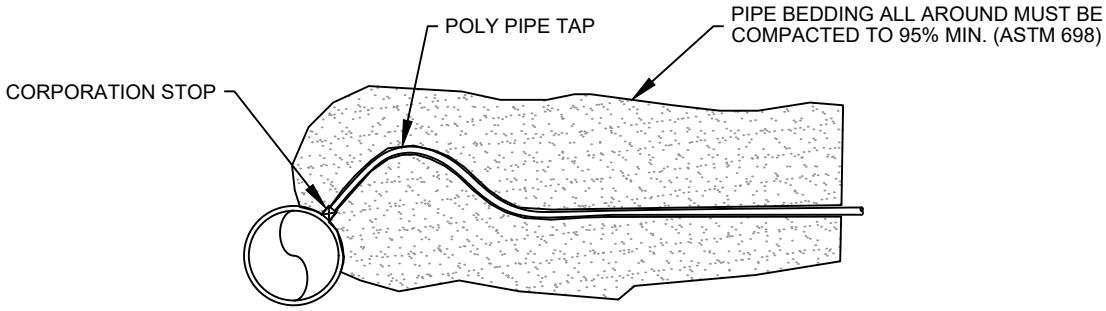
PUBLIC WORKS ENGINEERING

DATE: 10/5/21

DWG: W-19



WATER MAIN

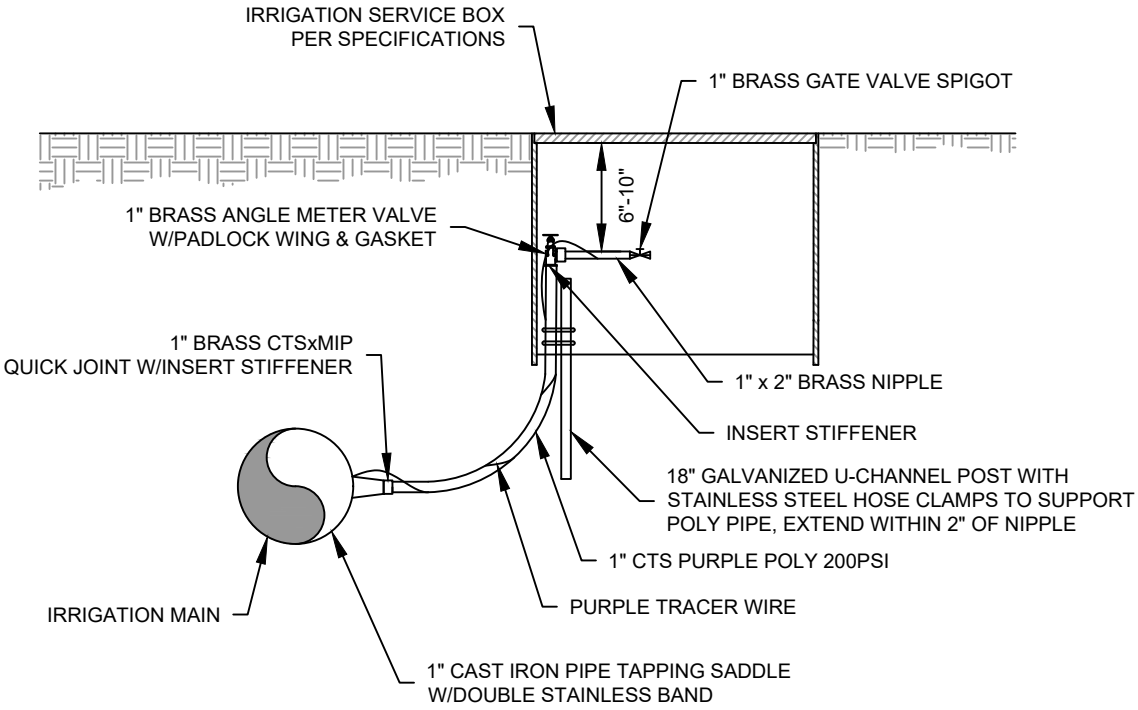


WATER SERVICE

NOTES:

1. THIS STANDARD IS ACCEPTABLE FOR DEPTHS UP TO 14 FEET. PIPES THAT EXCEED 14 FEET SHALL CONFORM TO MANUFACTURER'S RECOMMENDATIONS FOR BEDDING.
2. TRENCH SHALL BE EXCAVATED TO ACCOMMODATE PIPE BELL.

Umatilla Est. 1862	TYPICAL WATER TRENCH SECTION	PUBLIC WORKS ENGINEERING DATE: 10/5/21 DWG: W-20



IRRIGATION SERVICE
FROM IRRIGATION MAIN ONLY

STREET SIDE

IRRIGATION SERVICE FROM POTABLE WATER MAIN
MUST BE CONNECTED PER DWG. NO. W-2

NOTES:

1. NO CONNECTION BETWEEN THE DRINKING SUPPLY WATER AND IRRIGATION SUPPLY IS ALLOWED.
2. NO PRIVATE FITTINGS OR VALVES ARE ALLOWED IN THE CITY IRRIGATION SUPPLY BOX.
3. ALL THREADED CONNECTIONS MUST USE THREAD SEALANT PER SPECIFICATIONS.
4. ALL FITTINGS PER SPECIFICATIONS.

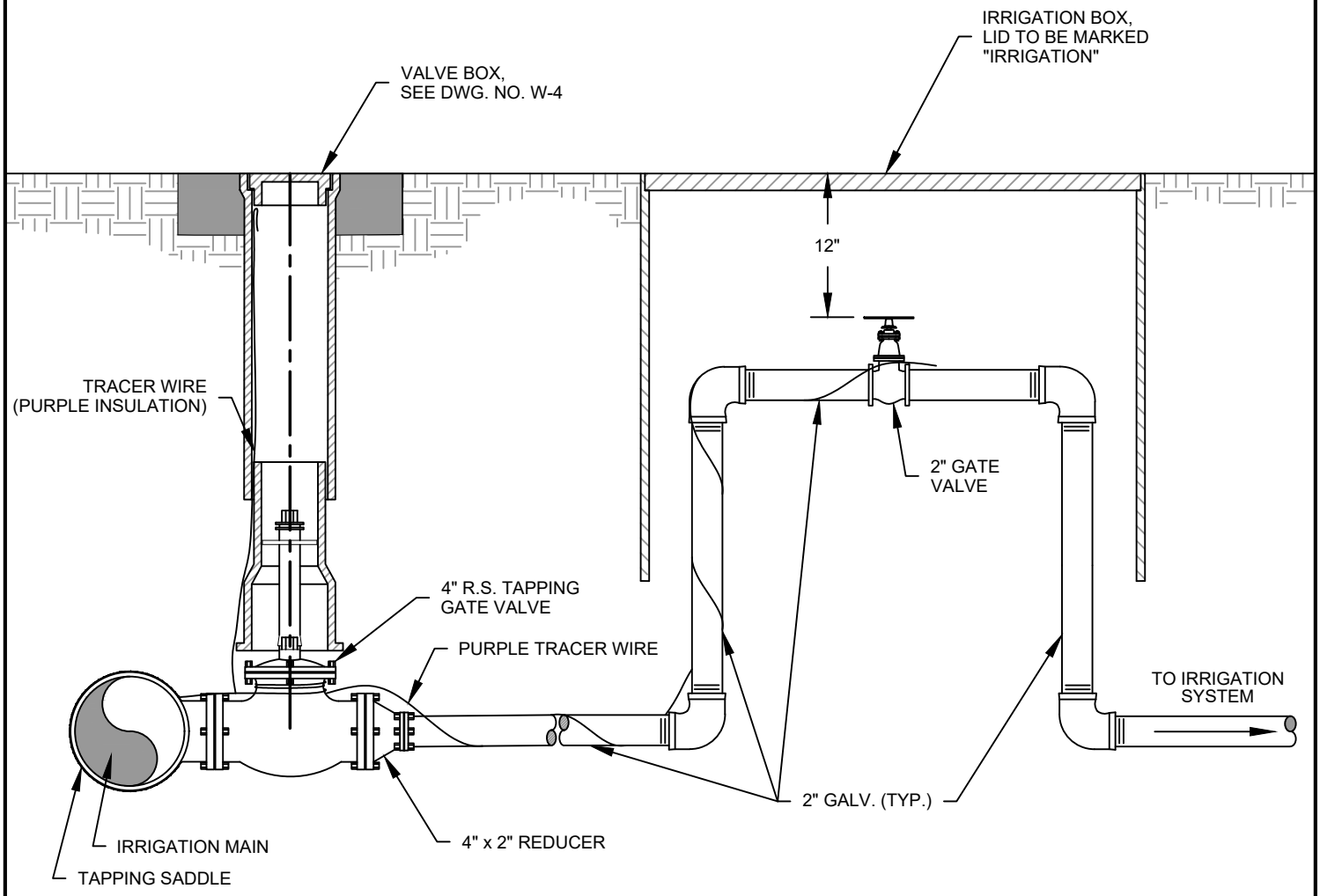
Umatilla Est. 1862

IRRIGATION SERVICE (FRONT YARD)

PUBLIC WORKS ENGINEERING

DATE: 10/5/21

DWG: W-21



CITY OWNED OR ACQUIRED IRRIGATION SERVICES

PUBLIC WORKS ENGINEERING

DATE: 10/5/21

DWG: W-22