



Engineering Design and Construction Standards Manual

City of Newport
Update: July 1, 2024

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**SECTION 1 –
GENERAL SPECIFICATIONS**

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SECTION 1 – GENERAL ENGINEERING STANDARDS

AUTHORITY AND PURPOSE

The purpose of the *Engineering Design and Construction Standards Manual* is to provide a consistent policy under which to implement certain physical aspects of public facility design. Most of the elements contained in this document are Engineering and/or Public Works oriented; the intention is that they apply to public improvements under City contract and public improvements under private contract. These Standards cannot provide for all situations. The intention behind the *Design Standards* is to assist, but not to substitute for, competent work by design professionals. Design Standards complement the City of Newport's standard construction specifications, based on the *Oregon Standard Specifications for Construction* as supplemented and/or modified by the City of Newport Special Provisions.

If a designer encounters a design feature for which a Design Standard does not exist, the responsible designer shall submit a "best professional judgment" design option for City Engineer's approval. The City Engineer retains the right to establish requirements for design of public works features for which a Design Standard does not exist, and the designer shall modify designs to reflect all requirements of the City Engineer. The City Engineer will assess any design exception to ensure the compensating or comparable result is adequate for public use. Interpretation and enforcement of these standards shall be under the authority of the City of Newport Engineering Department.

AUTHORITY OF CITY ENGINEER

The City Manager has authorized the City Engineer to issue, modify and approve all updates to the *Engineering Design and Construction Standards Manual* whenever modifications and updates are needed. These modifications, changes, and adaptations take immediate effect and may be issued throughout the calendar year.

City Council formally accepted these standards through motion and approval June 17, 2024.

UPDATES TO DESIGN MANUAL

If a discrepancy, error, or information is discovered missing, please notify the Engineering Department *in writing* using the REQUEST FOR CORRECTION / ADDITION TO ENGINEERING DESIGN AND CONSTRUCTION STANDARDS form at the end of this section. Corrections in typing or spelling errors may be sent by email. All requests will be maintained in a tracking log and addressed in the next update.

Once a year, City Council will be notified of any material changes amending the standards manual, within thirty (30) days of the close of the calendar year, and accept amendments to the standards through motion and approval. Changes made by the City Engineer throughout the course of the year remain in effect, unless Council does not accept those changes during their annual review.

QUESTIONS PROPERTY OWNERS SHOULD DISCUSS WITH DESIGNERS

1. Have you checked that I can drive my car from the street to the garage over an American with Disabilities Act (ADA) conforming sidewalk?
2. Will you survey the right-of-way (ROW) around my property to know the existing elevations?
3. Are you going to call in locates and add all of the private and public utilities to my site plan?
4. Are you going to pothole existing pipes to make sure my sewer pipe can flow to the main and storm runoff can get to the street?

5. Do you know where my lot lines are and will you make sure to add them to my site plan?
6. Do you know, and have a copy of, the City of Newport design standards?
7. What do I do if there is not a main sewer, storm, or water line in front of my house?
8. What are all the ROW improvements I will need to install when I build my house?
9. How do I calculate the cost of building my house with the required public improvements?
10. Should we meet with the City's Engineering Department before the design is finished?

FRONTAGE IMPROVEMENTS

Frontage improvements are right-of-way (ROW) requirements adjacent to the front, or street facing, area of a property. Frontage improvements are intended to incorporate new private lot development with existing City infrastructure. Improvements are intended to help and maintain public safety, ensure smooth access on and off the lot, provide for future development/maintenance of neighborhoods, both commercial and residential, and manage storm water runoff.

Community Development Department

Section 14.44.050 of the Newport Municipal Code (NMC) explains Transportation Standards. However, other sections of the municipal code also discuss improvements, so the Engineering Department recommends property developers familiarize themselves with the various design requirements discussed throughout.

Assessing Frontage Requirements

As a starting point, the following considerations are a good place to assess potential required frontage improvements for lot development:

1. Does the new development place demands on public or private transportation facilities and related utilities (NMC 14.44.020)? If yes, continue.
2. If the transportation facilities or utilities are private, has developer obtained approval to utilize the facilities/utilities from party that controls them?
3. Are public streets and utilities adjacent to, or within, a proposed development in conformance with standards outlined in NMC 14.44.060? If not, what is required to comply?
4. If improvements are needed, should they be built with this development?
5. Are traffic calming measures proposed per NMC 14.44.050©? Coordinate with Fire and Public Works Departments.
6. Are transit improvements proposed or needed per NMC 14.44.050(H)?
7. Do any of the triggers for a traffic impact analysis activate under NMC 14.45.010?
8. Are driveways and approaches in compliance with NMC 14.46.030?
9. Is the development subject to the pedestrian access requirements of NMC 14.47.030? (Applies to commercial, industrial, public/institutional, and multi-family projects.)
10. If a land division, are public improvements being provided per NMC 14.48.030 and 14.48.035?

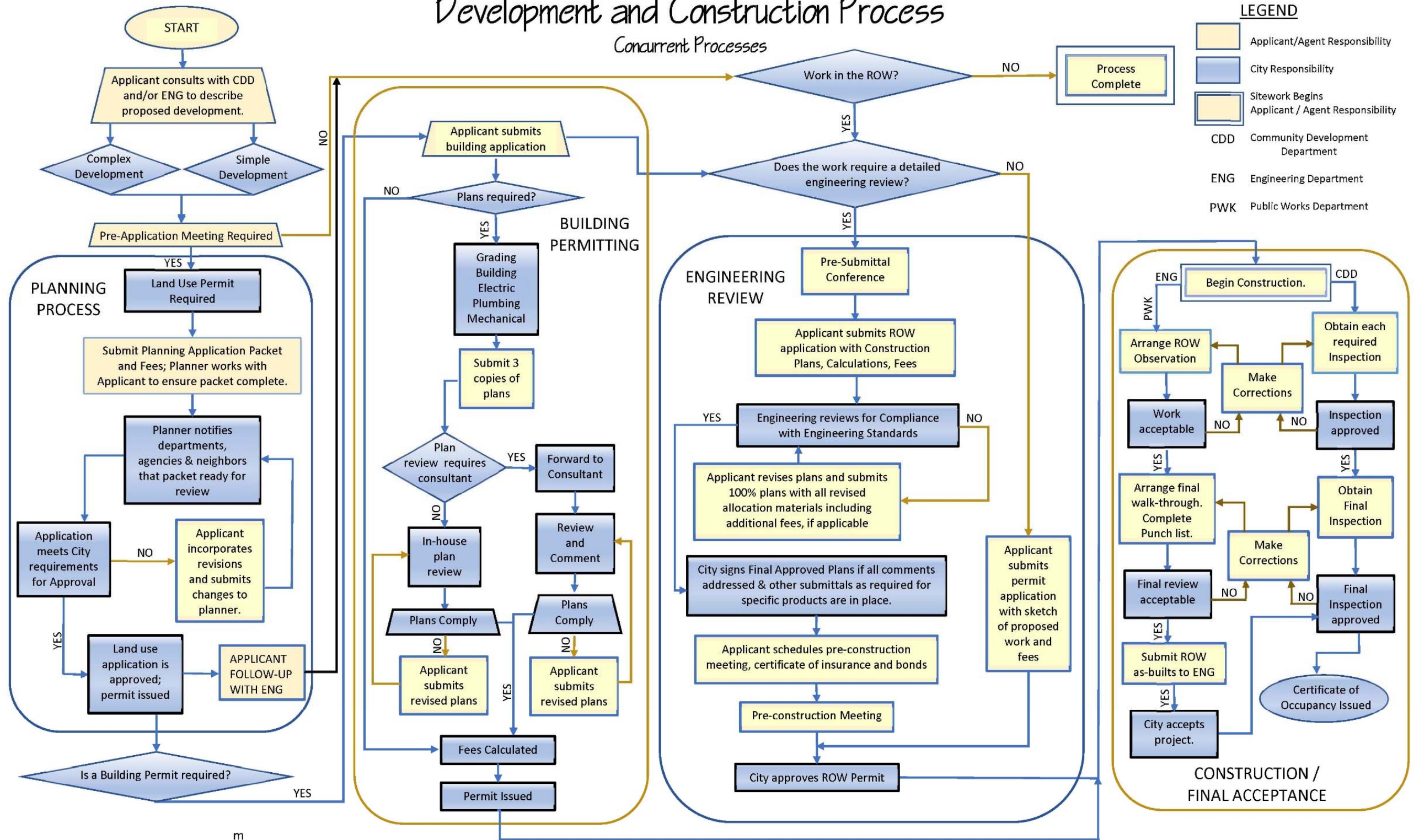
INSERT:
Development and Construction Process

The Community Development Department and the Engineering Department work to support City goals in development and maintenance. The adjacent flow chart shows the complexity of planning codes, building codes, fire codes, municipal codes and engineering standards that must be reviewed to get a development, large or small, through from conception to completion.

At each stage in the development process, City staff is working to balance the needs of the Developer with the needs of the City. Whether building a single-family home or a sub-division, Staff strive to answer questions quickly and for the long-term good of the City and everyone who lives here.

Development and Construction Process

Concurrent Processes



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11. Are water mains, and existing service line(s) to property, if any, proximate to the development and of sufficient size to support connections?
12. Is there a pre-existing water service on the lot? If so, is the water infrastructure from the water meter to the main located within rights-of-way or public utility easements (NMC 5.10.040(A) and sized appropriately for the new intended use.
13. If a fire line is proposed, is it on a metered or non-metered line? If non-metered, has an agreement been developed per NMC 5.10.040(C)?
14. Will the water pressure at the meter be at least 20 psi per Oregon Health Authority rules? (Check water master plan. City has known issue on properties above Lighthouse Drive)
15. Is an adequately sized gravity sewer main adjacent to the property? If not, is a suitable gravity line within 250-feet of the property? (NMC 5.15.020 requires connection to city sewer if service is within 250-feet of the property.)



16. Is there an existing sewer lateral on the property? If so, is it in a useful condition or does it need to be replaced. (Camera line to determine condition. Engineering Dept will want to see video)
17. Does the wastewater system have adequate capacity to accept effluent from the proposed development? (Check the wastewater master plan for capacity constraints.)
18. Is there public storm drainage infrastructure in place to accept run-off from the development? (Check the wastewater master plan for capacity constraints. If there is a potential constraint, then downstream basin analysis can be required. City standard is a 25- year, 24-hour duration storm (ref: Comprehensive Plan Stormwater Goal #2, Policy #1)
19. Does the developer's plan rely upon use of other private property for access, storm run-off, utilities, etc,? if so, are easements in place to allow such use?
20. Are the proposed service laterals generally perpendicular to the mains to which they will be connecting?

21. Is proposed sidewalk, including driveway approaches, ADA compliant? (If sidewalk is not present, then driveway approaches must still have an ADA compliant cross slope).
22. Are existing sidewalks, curbs, and driveway approaches serving the property in serviceable condition? If not, then City can require that they be replaced, even if the development involves the in-kind replacement of an existing use (e.g. replacement of a single-family residence).

Although there may be many more considerations and impacts of NMC on development, the above questions provide a place to start when considering the potential frontage improvements required as part of a development plan.

Section 3.25.050.6 of the NMC discusses a letter from the City Public Works Department identifying city infrastructure impacts on a development in relation to multiple unity housing and property tax exemption. In this instance, the Public Works Department would work with the Engineering Department to determine needed frontage improvements.

Engineering Department

When determining frontage improvements as part of a lot development, or a subdivision development, Engineering Staff use the following criteria to assess each lot on a case-by-case basis:

<p>STREET IMPROVEMENTS</p> <ul style="list-style-type: none"> • Size of lot • Remodel places new demands on the existing system • New development places new demands on the existing system • Location of Fire access • Location of street/driveway access • Size of street • Classification of street • Lot location • Lot drainage needs • Street drainage needs • Transportation System Plan • Newport Municipal Code • ADA Guidelines • Engineering Design Standards • Main Line connection points • Street Volume • Residential or Commercial Lot • Neighborhood Development • Public need impacts • Adjacent elevations • Age and condition of private services 	<p>SIDEWALK IMPROVEMENTS</p> <ul style="list-style-type: none"> • Type of development • Size of Development • Location of lot • Access points • Distance to corners • Pedestrian volumes • Street surfacing • NMC • Engineering Design Standards • Public Safety <p>ADA DESIGN IN ROW</p> <ul style="list-style-type: none"> • New developments • Utility pole removed and existing ramp is damaged-- Update ADA Ramps • Street improvements continues into the crosswalk area—Update ADA Ramps • Sidewalk improvements adjacent to non-compliant ramp—Update ADA Ramps <p>CROSSWALK STRIPING</p> <ul style="list-style-type: none"> • There are two sidewalk ramps • Areas of heavy vehicle and pedestrian traffic • Busy intersections • Mid-block crossings
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Many of right-of-way (ROW) development may be deferred to future development of a street, however, there are times, when, through usage, volume, or location, the City Engineer may require certain aspects of ROW development to happen as a lot is developed.

LOCATES

There are several kinds of “locates” that come into play with construction. Each one has a specific way to handle the locate.

Boundary / Property Lines

Property lines are best located by surveyors. The City does not know boundary line information. We have schematic lines in of Geographic Information System (GIS), but those cannot be used for legal boundary definitions. A potential source of information is the Lincoln County Assessor’s Office. They have an online GIS system that also lists previous surveys for a property, if surveys have been done before. There may also be an above ground property pin that indicates property lines.

Service Lines

Within the right-of-way (ROW), location of service laterals is done by City crews once they are notified a service request has been issued.

Sewer laterals may be located off of the main line connection. When the City videos a sewer main, the laterals are noted by direction and angle. If a section of sewer main has not been camera’ d, City crews may be able to video the main line, depending on size, to look for a nearby lateral. To get this information, a property owner would call 811 and request a locate for their property. This may require the property owner mark the outline of the area in question in white paint within the ROW. The City does not locate service lines beyond the ROW line. Often a sewer cleanout will be on private property or at the edge of the ROW. The cleanout can be used to trace a lateral on private property.

Water lines are usually found by uncovering an existing water meter box that may have been abandoned. When that isn’t possible, the City Water Crew will look through their records to see what information is available. These locates are also triggered by an 811 service call.

Privately Owned Utilities

Non-city owned utilities locates are also started through the 811 call center.

Private Property

Finding utilities outside of right-of-way (ROW) and on private property may require a plumber.

INSTALLING PIPE IN LANDSLIDE PRONE AREAS

In areas of known sliding, pipe installation, whether sewer, storm, or water, may require special pipe and fittings adopted to work with native soils. In these situations, designers shall have their designs reviewed and approved by a licensed Geo-technical Engineer before submitting a design to the City for review. Further, construction specifications will outline any site specific requirements determined by the Geo-technical Engineer. These specifications shall be submitted with the plan set for City review.

EXISTING CONNECTIONS

If a lot has been developed previously, there may be existing service laterals to the property. Before these connections can be reused for new development, sewer and storm lines will need to be camera’ d

to verify condition of the lines. A video of that camera work needs to be submitted to the Engineering Department, prior to final design, for review and approval. If a lateral is in poor condition, the City may require it to be capped at the main and a new lateral installed.

Previous water services may still be active but not sized appropriately for the new development. In this case, a new line will be required.

Previous storm water runoff/drainage lines may not work with the new development if the design changes the way water drains off site. Should this occur, the City will require the abandoned lines to be capped or removed (as outlined in NMC).

POTHOLING

Potholing is the act of uncovering a pipe to verify its depth. For all new gravity service lines, it is important to know the depth of the main and the amount of cover required for a pipe. The City does not provide elevation information to property owners for developers. There are too many variables in measuring systems. Instead, the City requires developers to survey the construction area to get surface and locate elevations, and contractors to pothole pipe crossings and depths to ensure designed pipe(s) can connect as needed. See Standard Drawing G-160 for resurfacing requirements.

PROPERTY CORNERS / SURVEY MARKERS

The City requires all property pins to be protected in place during construction. If any property pin or other survey markers are disturbed during construction it/they shall be replaced by a licensed land surveyor per Oregon Revised Statute (ORS) 209.155.

OWNER BUILDER

Some owners are interested in building their homes themselves without hiring a contractor. They may also wish to install their private infrastructure in the right-of-way (ROW). The City currently does not allow property owners to work in the ROW unless they are bonded and have a contractor's license. Since work in the ROW may impact other public infrastructure, licensed contractors are required to be bonded. That way if any damage to existing infrastructure occurs during installation of private or public improvements, the City has a process for repairing damage and holding the contractor responsible for his or her work.

OWNER DEVELOPER

Property owners that develop a section of property beyond a single-family dwelling, whether that be a duplex, triplex, apartments or a subdivision generally require licensed professionals to design both private and public improvements.

PROJECT ENGINEER

The City of Newport requires Level 2 projects be designed by licensed professional engineers compliant with ORS 672.

A registered professional engineer, or a subordinate employee under the engineer's direction, shall prepare all engineering plans, reports, or documents. Submit such documents, signed and stamped with the engineer's seal to indicate the engineer's responsibility for submitted documents to the City for review. Project Engineer shall be responsible to review with the City any proposed public facility extension, modification, or other change prior to any proposed design work to determine any special

requirements or to determine whether the proposal is permissible. The City’s approval of any project documentation does not relieve, in any way, the Project Engineer’s responsibility to meet all requirements of the City or obligation to protect life, health, and property of the public. The proposed project shall be revised or supplemented at any time the City Engineer determines that the project does not meet the full requirements of the City.

CONTRACTOR

All contractors working in the right-of-way (ROW) and/or installing City infrastructure are required to be licensed with the Oregon Construction Contractors Board, bonded, and have an active City of Newport business license. Contractors shall provide a certificate of insurance, with the City of Newport named as an additional insured.

Contractors are not allowed to operate water valves or fire hydrants. If a water shut off is required contractors shall arrange for the City of Newport Water Crew to be on site to operate valves. The same is true for fire hydrants. If contractors need water on site, they are to apply for a water account and hydrant meter, which will be installed by the City of Newport Water Crew.

INTENT OF ENGINEERING DESIGN AND CONSTRUCTION STANDARDS

The City structured these standards for designing and constructing public facilities in the City of Newport to protect the public health, safety, and welfare through the following:

NOTE: *The below engineering drawing standards, and various other standards referenced, describe how public facilities are to be designed and constructed through the use of the approved component materials, equipment, and methods set forth.*

- Setting forth uniform material and workmanship standards
- Supplementing and completing the public health and safety requirements of the Newport Municipal Code.
- Streamlining the administration and construction of public facilities in the City, minimizing the need for repairs, and allowing for the long-term maintenance of the public facilities.

The City intends that these Design and Construction Standards provide some guidance for public improvements, but this document does not identify the permitting requirements. Consult the City of Newport Community Development Department and other agencies for required project permits. Prior to design, the designer should consider proximity to all private utilities and waterways that may exist within the project boundary and understand their permitting and approval requirements. Other Agency requirements are likely different from these design standards and could impact overall design and layout of public infrastructure.

Although this document may call out the design engineer, the City assumes the designer works for, and on behalf of, the developer who has oversight of the project outside City authority. Calling out the design engineer does not relieve the developer of responsibility for seeing project completed to these standards.

Interpretation

The City Engineer, where situations arise not clearly covered by these Standards, will review the issue on

a case-by-case basis to determine the design and/or construction methodology acceptable to the City.

Order of Precedence

The City expects developers to adhere to all federal, state, county, local laws and ordinances, including this manual. If there is any conflict between this manual and pertinent laws and ordinances, the laws and ordinances shall prevail, with the discrepancy brought to the City Engineer’s attention in writing prior to beginning any work in conflict with these standards.

The City of Newport intends to align its public improvement design and construction practices with engineering industry standards. Where developers reference third party standards, the responsible designer shall obtain copies of these standards as required to understand and prepare designs in compliance with these standards using current editions of all policies. In no case shall the City of Newport be responsible for providing access to, or copies of, any referenced standard to a Consultant, Contractor, Developer, legal counsel or other party unless this standard is a unique standard published by the City of Newport.

If there is a conflict between approval documents, the document highest in precedence shall control. The order of precedence shall be:

- Permits from other agencies or jurisdictions, as may be required by law.
- City of Newport Municipal Code (NMC).
- Land use decision-making authority’s Conditions of Approval.
- City of Newport master plans (latest editions): Transportation Systems Plan, Storm Water Master Plan, Wastewater Collection System Master Plan, Wastewater Treatment Plant Master Plan, Water System Master Plan.

NOTE: *Permits, Land Use Conditions of Approval, and Master Plans are intended to provide the authority for what public facilities are to be constructed.*

- City of Newport Engineering Design and Construction Standards.
- City of Newport Standard Drawings.
- Erosion Control Field Manual, Oregon Department of Transportation (ODOT).
- American Public Works Association (APWA)
- Any reference specifications and standard practices adopted by nationally recognized professional societies such as:
 - American Society of Civil Engineers (ASCE),
 - American Water Works Association (AWWA),
 - American Concrete Institute (ACI),
 - American Society for Testing and Materials (ASTM),
 - American Association of State Highway and Transportation (AASHTO),
 - Manual on Uniform Traffic Control Devices (MUTCD).
- *Oregon Standard Specifications for Construction (OSS)*, current edition.
- ODOT Pavement Design Guide.
- Uniform Fire Code.
- Uniform Building Code and City-issued building, mechanical, electrical, and plumbing permits.
- Americans with Disabilities Act latest approved standards or guidelines as referenced in the Standard Drawings of these standards.
- Plans and drawings prepared by the design engineer.

- Supplemental written agreements, franchise agreements, and approved revisions to plans and specifications by the appropriate jurisdictions and conforming to local, state, and federal law will take precedence over documents listed above.

Specific plans shall have precedence over general plans. In any event, the determination of the City Engineer shall be final.

REVISIONS TO ENGINEERING DESIGN AND CONSTRUCTION STANDARDS

The City may amend or update these standards periodically to protect the public health, safety and welfare. The City Engineer shall have the authority to modify the Standard Drawings as needed to maintain conformance with national and state design requirements, guidelines, and specifications and industry standards. The date appearing on the title page is the date of the latest revision. Users shall apply the latest edition to the work contemplated at the time of actual construction and design, and it shall be each user's responsibility to maintain his/her copy of these Engineering Design and Construction Standards with the latest changes.

NON-ENFORCEMENT

Developer, Applicant, Design Engineer, or other entities involved in a project shall not consider that non-enforcement of any requirement in these Standards by the City as a waiver of that requirement, nor shall non-enforcement affect the enforceability of any requirement or of the remainder of the Engineering Design and Construction Standards.

SPECIAL FACILITY DESIGNS

The City does not intend that these standards address the requirements for all possible public or private facilities. The design engineer shall design facilities not addressed in these standards as unique using site-specific criteria. For these types of facilities, the Design Engineer must request a pre-design meeting to review the appropriate design, operating and maintenance criteria that will apply to the specific project prior to submittal of any design reports or plans.

The following are examples of facilities that will require special review and approval:

- Sewer Force Mains
- Water Distribution Pump Stations
- Relining of Existing Sewers
- Internal Sealing of Existing Sewers
- Water Pressure Regulating Devices
- Wastewater Regulatory Devices
- Energy Dissipaters
- Wastewater Pump Stations
- Water Reservoirs
- Water Treatment Plants
- Wastewater Treatment Plants
- Water Flow Measurement/Monitoring/Telemetry Devices
- Wastewater Flow Measurement/Monitoring Devices

PROJECT ENGINEER'S RESPONSIBILITIES

Project and design engineers are responsible to know the standards contained in the *Engineering Design and Construction Standards Manual* for design of public and private right-of-way (ROW) improvements as well as be familiar with the processes required to design and construct within the City of Newport.

Approval Of Alternate But Equal Materials, Methods, Or Design

The City will review any material or alternate method not explicitly described within these standards as

a substitute, providing the requested substitution meets the requirements set forth in this section. Persons seeking such approvals shall make application in writing. Approval of any major deviation from these Engineering Design and Construction Standards will be in written form.

Any alternate must meet or exceed the minimum requirements set in these Engineering Design and Construction Standards.

The written application for an alternate approval is to include, but is not limited to, the manufacturer’s specifications and testing results, Engineering Design and Construction Standards, design drawings, calculations, and other pertinent information.

The Design Exception form is at the back of this section. Complete and submit this form when requesting an equal or better alternative.

Responsibility for Exceptions

Project Engineer shall be responsible for requesting, in writing, any anticipated exceptions to the *Engineering Design and Construction Standards Manual* at the time of submittal of plans. City Engineer will consider only those exceptions approved during the plan review process, so noted and expressly approved, to be permitted changes. Said approved changes must be noted on the “red-line” or “as-built” drawings.

Modification Criteria

City Engineer may make project-specific modifications and amendments to an existing standard or specification authorized through City Standardizing based on the following criteria:

- The standard is inapplicable to a particular situation.
- Topography, right-of-way (ROW), or other geographical conditions or impediments impose an undue economic hardship on the applicant, and an equivalent alternative that can accomplish the same design objective is available and does not compromise public safety, increase short/long term maintenance or cause future increased costs of accessibility.
- A change to a standard is required to address a specific design or construction problem, and if not modified, the standard will impose an undue hardship on the applicant with little or no material benefit to the public.

“Field Fit” Designs

At times when the stamped, approved design cannot be installed in the field due to unknown existing conditions not taken into consideration during the design process, a “field fit” must be crafted. These should be done only with the City Engineer’s approval and oversight by City Staff. Work changes must be approved before implementation.

General

The City Engineer may approve a design exception request so long as it does not conflict with the City Development and/or Municipal Codes, the County or City Land Development Permit Decision, or any other relevant approvals, except as expressly provided herein. If the requested exception involves public safety, the City will rule in the direction of safety.

Oregon Standards & Specification for Construction Conflict

The *Oregon Specifications and Standards for Construction (OSS)* has many Oregon Department of Transportation standard details that accompany the specifications book. When the OSS specifications

and/or ODOT standard drawing conflict, the developer or the developer agent, must submit a request for clarification. The City of Newport Standard Drawings often take precedent over the ODOT standard drawings within the City ROW, but the City of Newport uses the OSS for public improvement construction specifications, especially for private development within the ROW.

Exception Requests

All exception requests shall state: 1) the applicable standard, 2) the desired exception, 3) reason for request and 4) comparison between the applicable specification or standard and the exception as to function, performance and safety. If requesting an exception due to economic hardship, the request shall contain a statement on the impact to project cost with and without the exception. An Engineer shall prepare the request for exception then stamp and sign documentation. Separate, individually prepare, and submit multiple design exception requests to the City as independent requests.

Document any approved exception to these standards and reference nationally accepted guidelines, specifications, or standards. The approval of an exception shall not compromise public safety or the intent of these standards. The City will approve an exception only if the City Engineer finds that the alternative proposed by the Engineer meets the criteria addressed in this section and will provide equivalent or better function, performance, and safety.

The City Engineer shall approve or deny each exception on a case-by-case basis. The City considers all approved exception requests unique to each request and project; approved exceptions do not set a precedent, and are not uniformly applicable.

Review Request for Deviation from Standard

The City Engineer will review the request for design exception with one of the following decisions within fourteen (14) days:

- Approve as requested;
- Approve with changes; or
- Deny with an explanation

City Engineer's decision will be based on:

- Newport Municipal Code
- Engineering Design and Construction Standards
- Public Health and Safety
- Best Management Practices
- Public Works Maintenance Policies

Approval of a request in one project shall not constitute a precedent for other projects.

Appeal of Engineer's Decision

The Applicant may appeal the City Engineer's decision to deny an exception. The appeal shall be in writing, state the relevant facts, applicable provisions of these Engineering Design and Construction Standards, Public Health and Safety, Best Management Practices, and Public Works Maintenance Policies. In addition, the specific grounds for appeal, the relief sought, and information on which the applicant relies.

Complete and submit the Appeal Form at the end of this section within 14 days of the Engineer's

decision to the City Manager’s Office. The applicant shall have the burden of proving that the requested exception meets the criteria and equals or exceeds the applicable standard as to function, performance, and safety.

The City Manager shall review all the information submitted with an appeal, may request additional information from the design engineer and/or the City Engineer, and may meet with concerned parties. The City Manager shall render a decision in writing within 14 day. The City Manager’s decision shall be final.

CONTRACTOR’S SITE RESPONSIBILITIES

Qualified Personnel

The City reserves the right to approve any Contractor or sub-Contractor performing work on City facilities. The Contractor must meet the city’s insurance, bonding and business license requirements. Any Contractor and sub-Contractor shall employ responsible and qualified personnel to perform the work. If the City Engineer or designee deems any employee or contractor to be unqualified, the Owner, Developer or Project Engineer shall immediately replace the unqualified person.

Work Hours, Trespass, Staging Areas, and Sanitation

Work hours are subject to the following limitations:

- Noise: All construction activities must comply with the noise restrictions of the Newport Municipal Code.
- Lane Restrictions: Unless approved by the City Engineer, arterial roads shall have no lane restrictions from 6:30 AM to 9:00 AM and from 3:30 PM to 6:30 PM. Collectors and Neighborhood Routes with an Average Daily Traffic of over 1000 trips shall have no lane restrictions from 7:00 am to 8:30 am and from 4:00 pm to 6:00 pm.
- Trespass: The Contractor shall limit work, including any physical disturbance, to the area defined within the boundaries of the easements and ROW shown on the approved plans for the project. The Contractor shall be solely responsible for any trespass upon adjacent property including all claims, fines, penalties and other remedies deemed applicable under Federal, State, County, and local laws, rules, ordinances, and regulations.
- Staging and Stockpiling Areas: The Contractor shall be required to obtain all necessary permissions, right-of-way (ROW) permits, easements, and any other permits associated with equipment and material staging areas. City does not allow stockpiling and staging of equipment and materials within the public ROW without prior approval of the City Engineer. These areas may be subject to local regulation and it is the sole responsibility of the Contractor to ensure that such regulations are satisfied. Materials shall be stored in a manner to ensure quality for use. Temporary fencing may be required for security and/or safety concerns.
- Sanitation: The Contractor shall be responsible for providing adequate sanitation facilities (e.g. Portable restrooms, etc.) at the job site for its employees and those of its subcontractors. Provide available access to these facilities to City representatives.
- Disposal of spoils: The Contractor shall obtain all necessary land use approvals and disposal or fill permits for the off-site disposal of spoils from the construction site.

Materials

- All construction material and components used in the construction of public improvements shall be new manufacture, unless otherwise specified by the City. New manufacture materials do not include re-built, reconditioned, or refurbished materials. Install all new manufactured

construction materials or components as designed by the manufacturer.

- Do not alter materials or components without consent of the City Engineer.
- Substitution of Products, “Approved Equal” Designation: Whenever a product, manufacturer’s name or brand, or a specific item is designated, it shall be understood that the words “or approved equal” follow such designation. The City Engineer shall determine quality in reference to the project design requirement. A Contractor shall not use an alternative product without prior written approval of the City. Contractor shall process a request to designate an alternative product as an “approved equal” to the City Authorized Representative.
- The Project Engineer shall approve all project submittals provided to the City electronically prior to the Pre-construction meeting. Keep a hard copy of all approved submittals on site during construction at all times. The Project Engineer and the City need to approve substitution of approved equals prior to their use.

Protecting Existing Utilities

Obtain maps and information regarding underground utilities from the utility owning and operating the utilities. Call 811 for utility location. The City does not guarantee locations of the utilities. In close working conditions to sensitive utilities, private or public, the contractor shall give forty-eight (48) hour notice to all utility operators potentially affected by construction activity. Contractor shall immediately notify the proper authority when interrupting a utility service due to the construction operation to restore utility service as quickly as possible.

The Contractor shall exercise due care in protecting property and shall restore any property disturbed by the construction to as near original condition as possible.

The Contractor shall notify, at least two business days in advance of work, by calling the Oregon Utility Notification Center at 1-800-332-2344 in accordance with State law.

The contractor must receive permission by the affected agency before exposing any utility. It shall be the Contractor’s responsibility to locate and expose all of the existing underground utilities in advance of the trenching operation in accordance with State law (i.e. Potholing).

It shall be the Contractor’s responsibility to protect all utilities and appurtenances above and below the ground from damage. The Contractor shall provide sufficient notice in advance of construction operations to permit the necessary arrangements with the affected utility company for protection or relocation of the interfering utility. The Contractor shall be solely and directly responsible to the Agency and operators of the utilities for any issues or claims arising out of the work done under the contract.

The Contractor shall promptly notify the apparent owner of the utility in the event of interruption to any utility service resulting from exposure, lack of proper support, or accidental breakage. Contractor shall cooperate with the authority in restoration of service as promptly as possible and shall bear all costs of repair.

The City is not responsible to the Contractor for damages resulting from inaccuracies in the location or existence of the underground utilities.

Field Relocation

Make minor relocations of the work only by direction or approval of the City Engineer or City Engineer’s representative.

Preservation, Restoration, and Cleanup

- The Owner, Developer, and Contractor must not disturb the following site features and amenities, unless expressly allowed by the permit or construction documents:
 - Existing drainage patterns and features;
 - Existing vegetation, shrubs, trees, and landscaping;
 - Public property, improvements, operations, and services;
 - Private property and improvements;
 - Access to public and private property and the enjoyment of same;
 - Private utility facilities and services;
 - Street signing, mail boxes; and,
 - Other site features and amenities expressly indicated (preserve, protect, or maintain) in the construction documents.
- Do not leave disturbance of any existing drainage features or drainage features access unrestored for more than eight (8) hours unless the City grants an extension.
- No disruptions of public utility services shall last for more than four (4) hours. Restore private utility services at the utility providers own convenience. The Contractor shall provide temporary utility services during the period of disruption of utility services that is beyond four (4) hours, until fully restoring service, unless the utility provider grants an extension.
- Leave no disturbance of other amenities un-restored for more than twelve (12) hours unless requiring more immediate restoration by the City or the City grants an extension.
- Perform ongoing site maintenance and cleanup during construction. The Contractor shall keep the premises clean and orderly at all times during the work and leave the project free of rubbish or excess materials of any kind upon completion of the work. During construction, the Contractor shall stockpile excavated materials in such a way as to do the least damage to adjacent lawns, grassed areas, gardens, shrubbery, trees, or fences, regardless of the ownership of these areas.
- Protect existing trees designated for preservation by tree protection fencing. The City does not allow stockpiling of excavated material or the storage of construction material or equipment, within the drip line of existing trees to be preserved.
- Clean and flush all existing storm systems to restore original drainage capacity. Collect and dispose of sediment, rock, and other debris in a manner meeting DEQ standards. Do not flush debris down a storm or sanitary sewer for disposal. Repair and restore all damaged water pipes and appurtenances; sanitary sewer, and storm drainage facilities, irrigation and house drainage pipe, drain tiles, sewer lateral, and culverts to City standards.
- Restore all areas of existing public right-of-way (ROW) and easements disturbed by the Contractor's operations to their original condition or better as approved by the City Observer. Areas outside public ROW that are disturbed by the Contractor's operations shall be graded and restored to original condition. When not restoring property to its original condition the Contractor shall obtain a written release from property owners, for any claims of injury or property damage. The Contractor shall submit a copy of the written release to the City prior to final acceptance.
- Street Cleanup: The Contractor shall clean up all spilled dirt, mud, rock, gravel, and other foreign material deposited by the Contractor's construction operations from all streets and roads at the conclusion of each day's operation, or as directed by the City. Cleaning shall be by grader and/or front-end loader, supplemented by power brushing and hand labor, unless otherwise approved by the City. Remove and dispose of sawcut slurry from the street in an approved manner: the

City does not permit washing of streets with a water truck or of flushing slurry down city conveyance pipes. The Contractor shall follow the City’s erosion control procedures.

- Dust Prevention: During all phases of work, the Contractor shall take precautions to abate any dust nuisance by cleaning up, sweeping, sprinkling with water, or other means as necessary to accomplish results satisfactory to the City. Dust prevention measures shall be continuous until final acceptance by the City. Obtaining water from a hydrant will require a bulk water permit from the City Water Department.
- Streams and Sensitive Areas: The Contractor shall comply with all provisions of the permits required by the Oregon Department of Environmental Quality (DEQ), Oregon Division of State Lands (DSL) and/or the U.S. Army Corps of Engineers (USACE).

Erosion and Sediment Control

Install all erosion control before mobilization, grubbing and/or grading begins. Water trucks or other means of controlling dust must be present on site and/or have a tackifier applied to disturbed soils.

It is the policy of the City to require temporary and permanent erosion and sediment control measures for all construction projects to lessen the adverse effects of construction on the environment:

- City may require that a construction project scheduled such as to minimize erosion or other environmental harm.
- Contractor shall comply with all necessary City, DEQ, DSL, USACE, and any other applicable requirements and permits.
- Contractor shall properly install, operate, and maintain both temporary and permanent measures as provided in this section or in an approved plan, to protect the environment during the term of the project.
- Nothing in this section shall relieve any person from the obligation to comply with the regulations or permits of any federal, state, or other local authority.

Erosion Control Slope Mitigation

Prior to a site’s approval, all disturbed, steep slopes (exceeding 2 horizontal to 1 vertical - 2:1), must be treated for long-term erosion control. Disturbed ground of lesser slopes shall be treated for erosion control if erosion would transport sediments into either the right of way or a neighboring property. See disturbed ground, especially steep slopes. Seeding requirements are as follows:

- Apply seed in a hydroseeding application, containing tackifier and fertilizers.
 - Seed mix shall be free of noxious weed species, be native drought tolerant, and self-perpetuating. The following is seed mix, or approved equal, shall be used

Seed mix A

Lolium perenne ssp.	Ryegrass
Multiflorium Italian (Annual)	
Festuca rubra var. sealink	Creeping Red Fescue
Sealink Slender	
Festuca brevipolia var. Spartan II	II Hard Fescue
Spartan	
Triflorium repens	White Clover
Puccinellia pumila var Fults Fults	Dwarf Alkaligrass

Seed mix B

Elymus trachycaulus	Slender Wheatgrass
Lolium perenne	Perennial Ryegrass
Dactylis glomerata	Orchardgrass
Festuca rubra	Creeping Red Fescue
Festuca rubra	Sheep Fescue
Trifolium repens	White Clover

- Place seed at a rate to provide eighty (80) to ninety (90) percent coverage over the disturbed surface.
- For immediate germination, if ground is frozen do not apply hydroseed. Hydroseeding should not occur on snow unless approved by the City Engineer.
- Hydroseed shall be a Bonded Fiber Matrices (BFM) containing tackifier with seed and fertilizer. Install to manufacturer's specifications or to a minimum 2,000 pounds per acre *on slopes flatter* than two (2) horizontal to one (1) vertical (2:1), 3,000 pounds per acre on two (2) horizontal to one (1) vertical (2:1) *slope or steeper*, whichever is most stringent.
- Prior to hydroseed placement, the contractor must
 - Track walk the full extent of the slope.
 - Install erosion control matting/blankets, fiber rolls/wattles, or other erosion control method per manufacturer's recommendations. The contractor and/or engineer shall determine the placement of these methods based on the size of the disturbed slope and identification of any point discharge (channelized flows) onto the slope.

Erosion Control Maintenance

Project Engineer shall monitor the erosion control maintained by the contractor. The minimum maintenance of the Best Management Practices (BMPs) are as follows:

- Inspect on a regular basis (at a minimum weekly; daily during/after a runoff producing storm event). Fix, replace, or add any erosion and sediment control BMPs immediately upon finding they are out of conformance or not functioning.
- Maintenance and repair:
 - Remove sediment from behind a Sediment Fence when it has reached a height of one-third (1/3) of the fence height **and** before fence removal.
 - Sediment must be removed from behind Bio Bags, Straw Wattles, and other barriers when it has reached a height of two (2) inches and also before BMP removal.
 - Sediment must be removed from a sediment basin or catch basin when it has filled fifty (50) percent of the facility storage capacity (sump area) and at the completion of the project.
- When no longer needed, remove temporary ESC BMPs within thirty (30) days.
- Permanently stabilize areas that are disturbed within ten (10) days of the project completion or when no longer conducting work.
- When soils are tracked onto pavements, said pavements shall be immediately swept and kept clean.
- City expects contractors to track weather conditions and forecasts and stabilize sites as needed to prevent erosion.

BEFORE COMMENCING WORK

Agreements and Reviews

Before starting construction obtain final approval of the documents by City Engineer, or designee; obtain approval from all affected agencies; obtain amended Agreements with the City of Newport.

Permits and Fees

Prior to scheduling a pre-construction meeting, Contractor shall have all required permit plans approved, all required fees paid. In addition, present proof of all bonding required, proof of insurance, any relevant certifications and copies of signed contracts related to the project.

Pre-Construction Meeting

The City will hold a pre-construction meeting prior to the issuance of a Notice to Proceed. See Appendix E, *City Of Newport Pre-Construction Meeting Agenda For Private Development*, for a preconstruction meeting template used on all private development projects.

During the pre-construction meeting, City will review observation requirements for the project listed in Section 2 of this document titled *Construction Observation* and Appendix A, *Construction Observation Tasks and Guidelines*. Consider these requirements from the beginning of design. Notes from the pre-construction meeting will include all in attendance, provide contact information including emergency contacts, and identify all key points to be discussed in the meeting. The responsible parties, the City, contractor, and owner, shall review and sign pre-construction notes.

The City will provide a copy of the Pre-Construction Meeting notes, with signatures, to the contractor, Project Engineer, and the project manager (if different from the Project Engineer); City will retain originals in their project files.

After applicant/owner/developer meets all pre-construction requirements, City will issue a Notice to Proceed.

Business License

All contractors performing work in the Public ROW and/or on City-owned infrastructure shall possess a current City Business License.

Water Account

All contractors performing work in the Public right-of-way (ROW) and/or on City-owned infrastructure shall open a City of Newport Water Account if requesting access to water on the work site. After opening account through the Finance Department, someone from the Water Division will set a meter at the project work site for access to water during construction.

SAFETY DURING CONSTRUCTION

Safety Requirements

- Contractor is responsible for the safety of the work and of all persons and property exposed to the work. Contractor shall conduct his work in such a manner as to comply with all the requirements prescribed by OSHA. Traffic control in work zones shall conform to the MUTCD and the ODOT supplements to the MUTCD. Submit a traffic control plan for approval by the City prior to construction.
- The City and its agents have no responsibility or liability relating to the safety of the work, or the enforcement of OSHA rules.
- City may stop work if Contractor does not address or correct a serious safety issue.

Temporary Traffic Control

Temporary traffic control has two parts: 1) a traffic control plan (TCP) to move vehicles around

construction safely and 2) a temporary pedestrian access route plan (TPAR) to make sure people can move around the project. Both the TCP and the TPAR will require extra signage and may require sign relocation during constructions.

The best source for putting together a TCP is the *Oregon Temporary Traffic Control Handbook*, latest edition, prepared by the Oregon Department of Transportation (ODOT). This guide provides different layouts depending on the work being done. Many of the examples in the handbook are for highways and will need to be adapted to our smaller neighborhood streets. ODOT also produces a TPAR guideline, which can be found on the Oregon.gov/ODOT/Engineering web page.

Both a TCP and a TPAR are required as part of the ROW application.

Traffic control is essential to construction safety and often overlooked. Temporary signage, flaggers, pedestrian channeling, all go to moving people and vehicles through improvements happening in the ROW in such a way that construction continues and no one gets hurt.

Blasting

When the Development project involves blasting, Contractor shall provide warning to all persons within the blast zone, together with the stationing of Contractor personnel at strategic locations to prevent persons and vehicles unaware of the danger from entering the blasting area.

Submit the following at the Pre-construction Conference prior to performing blasting work. Other agencies with jurisdiction may require additional approvals and submittals.

- Blasting Plan per *Oregon Standard and Specifications for Construction (OSS)*, current edition, Part 00335.
- Evidence of insurance.
- Licenses of blasting personnel.

A permit from the Oregon Department of Fish and Wildlife (ODFW) is required for any use of explosives in the cause of removing any obstruction in any waters of this state, in constructing any foundations for dams, bridges or other structures, or in carrying on any trade or business. The OSS requires a minimum of three hundred (300) feet (dependent on the amount and type of explosive used) and a minimum of forty-eight (48) hours-notice prior to blasting. Use OSS Section 00335, in all cases unless otherwise approved by the City Engineer.

Fire Safety During Construction

- City must accept any installed approved Fire Department access roads, water supply, and fire hydrants prior to any combustible construction, unless otherwise approved in writing by the Fire Department.
- All construction activities shall maintain horizontal and vertical clearance from existing structures during construction to facilitate fire department access (i.e., work in ROW may provide a physical barrier or operational issue preventing fire department and emergency services appropriate access to properties.) Coordinate work sequencing to avoid such conflicts and to provide fire department and emergency services access through construction in the ROW.

Protection of Fire Hydrants

- Maintain a three (3) foot clear space around the perimeter of fire hydrants at all times.
- Fire hydrants shall comply with City standards.

ENFORCEMENT

This Enforcement Section describes enforcement. Apply this Chapter in conjunction with the Newport Municipal Code (<https://newportoregon.gov/dept/adm/documents/NewportMunicipalCode.pdf>), and other portions of the Newport Standards and Specifications.

The City’s intent is to outline a clear process that will lead to the voluntary compliance of the “responsible party” as defined in Newport Municipal Code 2.15.005.D.

Newport Municipal Code 14.55 Interpretation, 14.56 Severability, and 14.57 Fees

Violation

The City Observer will document each violation and forward documentation to City Engineer for review. The corrective action process may not always commence with the verbal warning or include every step listed below. The City Engineer, or their designated representative, may immediately issue a stop work order for any work done in violation of any applicable law, regulation, or these Standards and Specifications. The City Engineer will evaluate each situation given the nature and seriousness of the violation, the work history, and the onsite conditions. The City may take any or all of the following steps and may vary the order of the steps:

- Verbal warning (written follow up)
- Written Warning
- Stop work and suspension of construction privileges in the City of Newport
- Civil infraction and penalties under Newport Municipal Code Chapter 2.15.

A corrective action plan will be included in each of the first three steps to provide a path towards compliance with the Construction Inspection Requirements, approved contract plans and specifications, and all other applicable regulations.

ROAD CLOSURES

The City rarely allows road closures. If a road closure is necessary to complete the work, a written request must be submitted to the City Engineer TWO WEEKS prior to commencing the road closure. The request must be accompanied by a compelling reason the work cannot be completed with the road at least partially open.

Road Closures require City Engineer and City Manager approval, public announcement, proper and complete detour signage, notification of emergency services, a detailed Traffic Control Plan, and the hours of closure.

PARTIAL ROAD CLOSURES

In most instances, a one-lane closure may be approved as long as a detailed Traffic Control Plan is submittal for approval with the lane-closure request.

PRIVATE DEVELOPMENT REQUIREMENTS

Airport Design

The City of Newport owns, operates, and maintains the Newport Municipal Airport. Airport design shall conform to the Federal Aviation Administration's (FAA) requirements. The City does not intend that any of these design standards supersede or replace the FAA requirements. Where the FAA is silent, or has no design requirements, use the City of Newport Design Standards.

Where a Developer wishes to build non-aviation facilities, use the City of Newport Design and Construction Standards to guide development standards.

Survey Plat

When either a subdivision or partition plat is necessary to create a land division, submit a preliminary plat showing complete information to the City Community Development Director or designee for review and comments. The plat must be signed by all required parties and recorded with the Lincoln County Recorder prior to the City's final acceptance of any public facilities. After addressing review comments, and the County Surveyor has approved the plat, submit the plat to the City Engineer, or designee, for review/comments and/or signature. The required public facilities must be complete and accepted by the City and infrastructure as-built drawings submitted per Section 3 prior to receiving signatures from the Community Development Director or the City Engineer.

Pre-Design Conference

The City of Newport will hold a pre-design conference with the applicant (owner/developer), before formal application for public improvement permits and review of site design and construction plans. The pre-design process allows the applicant and the City to discuss the proposed project and the standards and regulations that will apply while the project is still in a preliminary stage. Participants may discuss any specific development standards, regulations, or problem areas before the applicant makes a substantial investment in the project or proceeds with a formal application unaware of the issues.

Supporting Information

The engineer shall submit sufficient supporting information to justify the proposed design. Such information shall include, but not be limited to, the following:

- Design calculations.
 - Drywell capacity/testing volume in gallons per hour or gallons per 1/2 hour
 - Storm runoff hydrograph and drainage system sizing
 - Calculations for both offsite drainage and existing site drainage
 - Pump station and wet-well sizing, including pump station operating parameters
- Storm drainage report with all hydrology and hydraulic calculations, storm water quantity and quality calculations, basin maps and downstream analysis as required in Section 6, Storm Drainage.
- Alternate materials specifications including manufacturer's design application recommendation.
- Intersection sight distance certification as outlined in SECTION 7 - Streets.
- Grading plan support information to include as appropriate:
 - Soils engineering report
 - Hydrology report
 - Engineering geology report
 - Arborist report

- Water model calculations and fire flow calculations for waterline system needs.
- Documentation of proper protection and/or replacement of record survey monuments. If contractor, in the course of construction of the proposed development, removes, disturbs, or destroys a record survey monument, the Engineer shall cause a registered professional land surveyor to reference and replace the monument within ninety (90) days in accordance with ORS 209.
- Cross-sections from roadways to garage area showing ADA required cross-slopes through driveway
- Temporary Traffic Control Plan
- Erosion and Sediment Control Plan

UTILITY EASEMENTS

For public lines crossing private property the City requires an easement for maintenance of the line. The Pipe is to be centered in the easement. No building is allowed within seven (7) feet of an easement. See NMC for more information on easements. If the Design Engineer lays out a public line on private property, the City will request the easement as part of the project development. The easement shall be recorded prior to project close-out. A draft copy of the easement form is at the end of this section.

ELECTRONIC DRAWING FORMAT FOR AS-BUILT SUBMITTALS

Submitted electronic drawings shall be readable with the **Autodesk Standard Monochromatic pen table**. City requires all public infrastructure improvement projects submit .DWG files with red line notes at project closing.

Coordinate System

The City uses the NAD83 HARN North Oregon coordinate system. The coordinate system needs to be tied into the CAD files.

Plot Styles

Use the **Autodesk Standard Monochromatic pen table** for plot styles. Do not use company specific pen tables with line types and weights not corresponding to the monochrome pen table.

Model Space and Paper Space

All design work shall be in model space.

Title blocks, text, and dimensions shall remain in paper space with the use of a viewport for appropriate scaling of the drawing.

Units

Set drawing to the following units		Display precision setting as follows		Set drawing units to the following	
Linear units	feet	Linear	2	Length Type	Decimal
Angular units	degrees	Elevation	2	Length Precision	0.00
Angle display style	bearings	Coordinate	2	Insertion Scale	Feet
		Angular	4	Angle Type	Deg/Min/Sec
				Angle Precision	0d00'00"

Drawing Orientation

North arrows are required on all drawings where applicable. Drawings should be oriented so that north

is the top or left on all sheets. In general, orient the drawing to allow project stationing to increase from left to right.

External Reference (Xref)

Any external reference used to create a drawing shall be bound to the drawing and all objects transferred to the appropriate layers. **The City will not accept External References that need remapping upon receipt by City.**

Sheet Layout

Construction plans shall follow plan submittal checklist (*See Appendix C*). Prior to any construction work or plan approval, developer shall submit complete construction plans, specifications, and all other necessary documentation to City Engineer for review. City requires a professional engineer licensed in the State of Oregon to prepare all construction plans and specifications. Base construction plans on the current vertical datum for City of Newport, NAVD 88. City benchmark locations available from the Lincoln County Survey office.

Place plan views above profile views. Scale viewports to align stationing between plan and profile.

Sheet Size

Plot all construction plans clearly and legibly in ink on sheets measuring twenty-two inches by thirty-four inches (22 x 34). For half-size reductions scale drawings to eleven inches by seventeen inches (11 x 17). Sheets shall have an one-and-one-half (1½) inch clear margin on the left edge and an one-half (½) inch margin on all other edges.

Scale of Plans

Produce plots for projects at a scale commonly used by the engineering profession (that is, 1"=10', 1"=20', 1"=30', 1"=40', 1"=50', 1"=100').

Scale of Symbols

Scale symbols in ratio to drawing scale.

Leader Lines

Use leader lines to identify specific objects or call attention to potentially overlooked features. All leader lines shall terminate with an arrowhead indicating the object of the reference.

Good drafting practice avoids leader lines that:

- Are horizontal or vertical;
- Match cross-hatching angles;
- Form very small angles to the terminating surface;
- Lay Parallel to extension or dimension lines;
- Are Curved;
- Cross dimension lines, when necessary, break leader lines so that dimension and leader lines do not cross;
- Are Too long.

Page Layout

Submit all drawings in full compliance with the AutoCAD® software (file extension = .DWG).

Draw plan views, horizontal scale profiles, and cross-sections in scale one-to-one (1:1) in model space. Selected vertical scales should minimize number of view breaks on sheet.

Certain details may be drawn “Not to Scale”. Horizontal work must be proportional to itself and vertical work must be proportional to itself.

Draw vertical scale for cross-sections and profiles to a scale in the same ratio as final plotted product. For example, if the final plot is horizontal 1”=20’, and the vertical 1”=2’, then the vertical scale is ten (10) times that of the horizontal so it will be drawn ten (10) times larger than one-to-one (1:1).

Construction Notes

The City will provide a set of general construction notes. Additional design/engineering notes shall not conflict with City general construction notes unless approved by the City Engineer. See Appendix D for private development required construction notes.

Standard Drawings

Standard drawings are accessible at the City’s website in PDF format. Access the City of Newport website at www.newportoregon.gov. Drawings are included in this manual at the back of each applicable section.

Do not alter City standard drawings. If design engineer receives approval to modify a Standard Drawing to fit existing or unique conditions, show the modified drawing as a Special Detail on the plans with a unique assigned number. When using City Standard Drawing appurtenances or construction installations reference the specific Standard Drawing number on the relevant sheet. Insert all City of Newport standard drawings used on a detail sheet(s) in the plan set.

Special Details

Design engineer may create special details specifically for the project when standard details are not suitable. The City Engineer shall approve these special details prior to construction.

Call out special details numerically, with the detail number used only once, on the plan sheet with an embedded and pre-populated detail call-out block within the template drawing, where the top number is the detail number and the bottom number is the sheet location.

Terms and Abbreviations

Use abbreviations only when enough room is not available to spell out the word. Include abbreviation in plan legend for clarification. Include a legend on the drawing sheets.

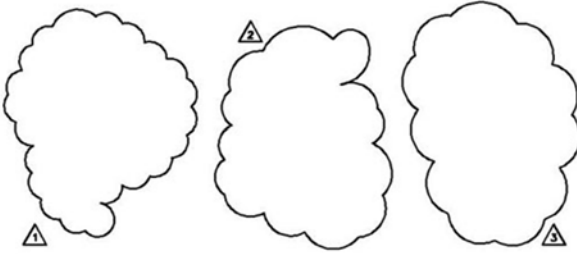
Professional Stamps

Use of professional stamps or seals shall follow the Oregon Revised Statutes (ORS) Chapter 672 regulations. Professional stamps shall be included on all final drawings and plan sets submitted for review for the discipline represented by the work. The placement of the stamp will be within the title block. Professional stamps may be either electronic or manually applied at the licensee’s direction.

Revisions

List revisions in the title block of the drawing; show:

- Place a “cloud” box around revised areas.
- Label revised area with Revision Number.



REV	DATE	APPROVED BY	COMMENTS
1	4.17.07	CKH	NEW CB
2	6.2.07	MJR	ADDITION SIDEWALK
3	10.12.07	CAP	RELOCATED DRIVEWAY
4	12.31.07	MJR	ADDED 12" STORM LINE
5	1.08.08	CKH	ASJUSTED RETAINING WALL

- Add revision information to title block.
- Note reason for revision and approving authority in title block.
- Update revision block with each change to plan sheets.
- Show the consecutively numbered revision numbers (beginning with number one) in a triangle on each drawing.

Note: A particular set of revisions affecting several drawing sheets may not have the same revision number on each sheet, depending on the number of prior revisions made to each particular drawing sheet.

- The date the revision made on the drawing.
Note: A particular set of revisions affecting several drawings shall be assigned the same date even though the actual work involved may take several days to complete.
- Note initials of person requesting revision.

GENERAL DESIGN CONSIDERATIONS

Standard Utility Locations

For new subdivision developments, the City has preferred way to align infrastructure in the streets. Existing infrastructure is laid out as closely as possible to this mapping, depending on the era of initial development. See Standard Drawing G-051 for construction details.

Joint Trenching Crossing City Owned Infrastructure

The City prefers 12" of clearance for all pipes running parallel and perpendicular to City infrastructure. If utility conflicts do not allow for this clearance, contact the City Engineer for guidance. Perpendicular crossing may be narrowed to 6" if necessary. Get City Engineer approval before installing pipes with 6" clearance. See Standard Drawing G-052 for construction details.

Joint Trenches Non-City Owned Utility

Private utility companies set their clearance requirements. This Standard Drawing is provided as reference only. The contractor and/or design engineer is responsible to know the current clearance depths required by the companies involved in the development. See Standard Drawing G-053.

Typical Trench Detail for Paved Roads

The typical trench detail is included in the general section of the design manual due to universal application of trench work for all pipes, structures, road building, etc. See Standard Drawing G-100 for construction details.

Typical Trench Detail for Gravel Roads

The typical trench detail is included in the general section of the design manual due to universal application of trench work for all pipes, structures, road building, etc. See Standard Drawing G-100 for

construction details.

Street Cut / T-Patch

Street cuts and asphalt patches for existing roads require consistent compaction and finishing. See Standard Drawing G-105 for City requirements on asphalt repairs.

Pipe Anchor / Cut-off Wall Detail

When building on a slope greater than twenty (20) percent, pipe anchors are required for pipe stability. See Standard Drawing G-150 for design/construction requirements.

Pothole Utility Location Backfill

The City does not provide pipe depths to designers or contractors. Potholing to locate underground utilities is the responsibility of all design engineers and contractors through the use of a ROW permit. When potholing occurs in pavement, the contractor digging the holes is required to repair the asphalt with non-shrink patching. See Standard Drawing G-160 for construction details.

END OF SECTION

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DESIGN EXCEPTION FORM

FEE: \$250.00

PROJECT DATA**Design Exceptions**

- | | | |
|--|--|---|
| <input type="checkbox"/> Design Speed | <input type="checkbox"/> Pavement Cross Slope | <input type="checkbox"/> Design Life and V/C Ratio |
| <input type="checkbox"/> Lane Width | <input type="checkbox"/> Superelevation | <input type="checkbox"/> Bike Lane/Multi-Use Path Width |
| <input type="checkbox"/> Shoulder Width/Shy Distance | <input type="checkbox"/> Vertical Clearance | <input type="checkbox"/> Sidewalk Width |
| <input type="checkbox"/> Sidewalk Alignment | <input type="checkbox"/> Structural Capacity | <input type="checkbox"/> Parking Width |
| <input type="checkbox"/> Sidewalk Installation | <input type="checkbox"/> Clear Zone | <input type="checkbox"/> Diagonal Parking |
| <input type="checkbox"/> Driveway Alignment | <input type="checkbox"/> ADA Standards | <input type="checkbox"/> Interchange Spacing |
| <input type="checkbox"/> Vertical Alignment | <input type="checkbox"/> Spiral Length | <input type="checkbox"/> (Other) |
| <input type="checkbox"/> Grade | <input type="checkbox"/> Superelevation Runoff | |
| <input type="checkbox"/> Horizontal Alignment | <input type="checkbox"/> Pavement Design Life | |

Description of Exception:**Description of Project:****Location of Design Feature:****Reasons For Not Attaining Standard: (Such As Cost/ Benefit, Crash History, Environmental, Etc.)****Effect on Other Standards:****Compatibility with Adjacent Sections:**

Probable Time before Construction / Reconstruction of Section:

Supporting Documentation (Include the appropriate Plan Section, Cross Section, Alignments Sheets & Plan Details):

Signatures

Prepared By: _____ **Date:** _____

(Print Name)

Print Name:		Phone:	
Company Name:			
Company Address:			
City:		ST:	Zip:
Email Address:			

**PROJECT ENGINEER
PROFESSIONAL ENGINEER
STAMP**

Approved By: _____ **Date:** _____

(Print Name)

DRAFT PUBLIC UTILITY EASEMENT FORM

After recording return to:

City of Newport
169 SW Coast Highway
Newport, OR 97365

CITY OF NEWPORT, OREGON PUBLIC UTILITY EASEMENT

GRANTOR NAME, hereinafter referred to as “GRANTOR”, owner of the real property described below and does hereby give and grant unto the City of Newport, an Oregon Municipal Corporation located in Lincoln County, Oregon, hereinafter referred to as “GRANTEE”, an exclusive, perpetual easement for public utilities, including the right to lay, construct, and maintain **TYPE OF UTILITY HERE**, and all related appurtenances, hereinafter referred to as “Public Utility”, to be constructed and located on, across, under or over the surface of the following described real property:

LEGAL DESCRIPTION HERE OR IN ATTACHMENT

This is intended to exclude all other below-surface installations, except as may be specifically-approved by the GRANTEE.

GRANTEE and its contractors, subcontractors, agents or employees shall have the right to enter and occupy the easement for the purpose of constructing the Public Utility, to permanently operate and maintain the Public Utility, to inspect, repair, replace, remove or renovate the Public Utility. In the event any damage is caused to GRANTOR’s property by the GRANTEE or the GRANTEE’s agents or independent contractors, GRANTEE shall promptly, at its expense, repair and restore the property to the condition existing prior to the damage.

GRANTOR shall be responsible for landscape and surface maintenance within the easement. In carrying out this responsibility, GRANTOR agrees not to plant any tree, shrub or plant within the Public Utility easement, nor build any structure or place any fence in the easement without first obtaining written permission from GRANTEE. It is understood that GRANTEE may remove any physical obstructions including buildings, fences, trees, or shrubbery, and abate any use of the easement if GRANTEE finds that the physical obstruction or use will interfere with the Public Utility or GRANTEE’s easement rights granted above, without recompense to the GRANTOR.

GRANTOR and GRANTEE intend that this easement bind GRANTOR, his or her heirs, successors and assigns. This easement will not be considered abandoned until GRANTEE has declared the easement abandoned and no longer in use by GRANTEE, and releases this easement in a duly executed and recorded Release of Easement.

In addition to all other remedies allowed by law, GRANTOR and GRANTEE and their successors and assigns shall have the right to seek injunctive relief for the enforcement of the terms and conditions of this easement. If either party is required to bring suit or action to enforce the terms of this easement, the prevailing party shall be entitled to recover its reasonable attorney fees and costs in such action or suit, including upon appeal.

The true and actual consideration for this easement is \$_____.

DATED this _____ day of _____, 2024.

GRANTOR

STATE OF OREGON)
) ss
County of Lincoln)

Personally appeared before me this _____ day of _____, 2024 the above named
_____.

Notary Public for Oregon

ACCEPTANCE OF EASEMENT

The City of Newport, Oregon, does hereby accept the above-described Public Utility Easement
this ____ day of _____, 2024.

Spencer R. Nebel, City Manager

STATE OF OREGON)
) ss:
County of Lincoln)

This instrument was acknowledged before me on the _____ day of _____, 2019 by
Spencer R. Nebel as City Manager of the City of Newport.

Notary Public for Oregon



APPEAL OF ENGINEERING DECISION

Name:		Date:
Address:		
Issue:		
Request:		
BASIS OF REQUEST:		
Newport Municipal Code		
Engineering Design Guide		
Public Health & Safety Reference		
Best Management Practice		
Public Works Maintenance Policies		
City Manager's Decision		

 City Manager
 Attachment: City Engineers written decision

Date: _____



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REQUEST FOR CORRECTION / ADDITION TO ENGINEERING DESIGN AND CONSTRUCTION STANDARDS

Name:		Date:
Address:		
Issue:		
Request:		
BASIS OF REQUEST:		
Newport Municipal Code		
Engineering Design Guide		
Public Health & Safety Reference		
Best Management Practice		
Public Works Maintenance Policies		

Signature

Date: _____

*Attach copy of page in manual where correction / addition is needed.

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GENERAL STANDARD DETAILS

STANDARD DETAIL DRAWINGS INDEX

- G-010: DRAWING INDEX
- G-020: LEVEL ONE SITE PLAN REQUIREMENTS
- G-051: STANDARD UTILITY LOCATIONS
- G-052: JOINT TRENCH DETAIL WHEN CROSSING PUBLIC UTILITIES
- G-053: JOINT TRENCH DETAIL
- G-100: TYPICAL TRENCH DETAIL PAVED ROADS
- G-101: TYPICAL TRENCH DETAIL FOR GRAVEL ROADS
- G-105: STREET CUT / T-PATCH
- G-150: PIPE ANCHOR / TRENCH CUT-OFF WALL DETAIL
- G-160: POT HOLE UTILITY LOCATION BACKFILL



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STANDARD DETAIL DRAWING INDEX

DETAIL NO.

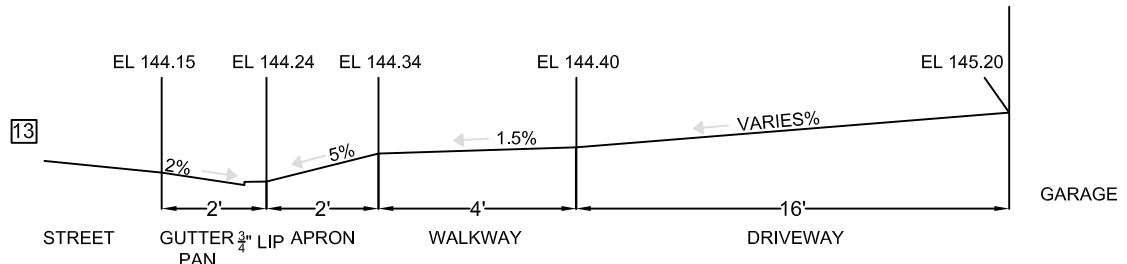
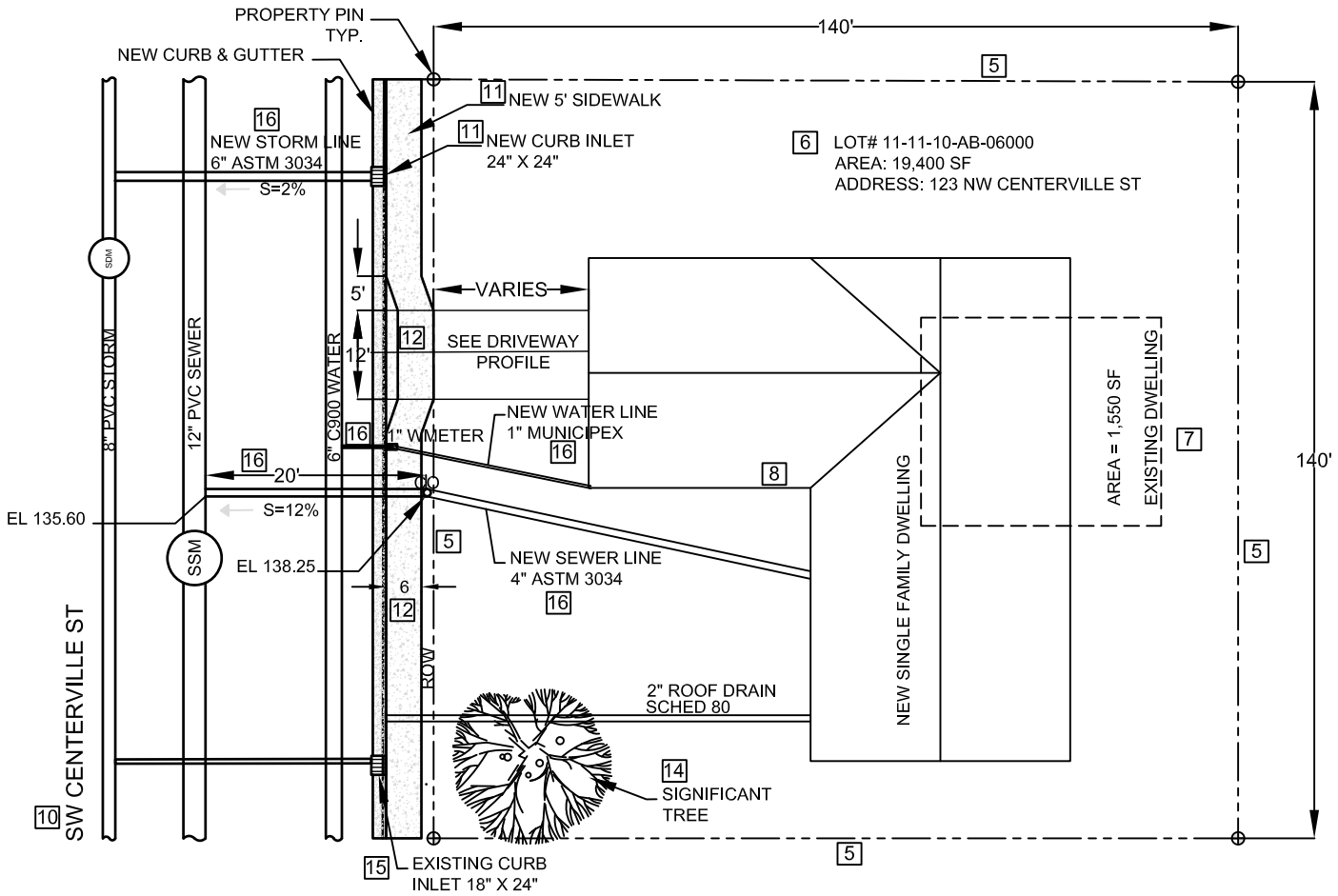
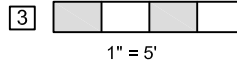
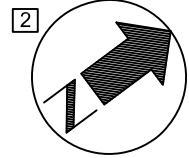
G-010

10/20/2022

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9 NUMBERS WITH BOXES CORRESPOND TO SITE PLAN SUBMITTAL CHECKLIST. SUBMIT COMPLETED CHECKLIST WITH ROW APPLICATION/ PLAN REVIEW

4 SITE PLAN



DRIVEWAY PROFILE

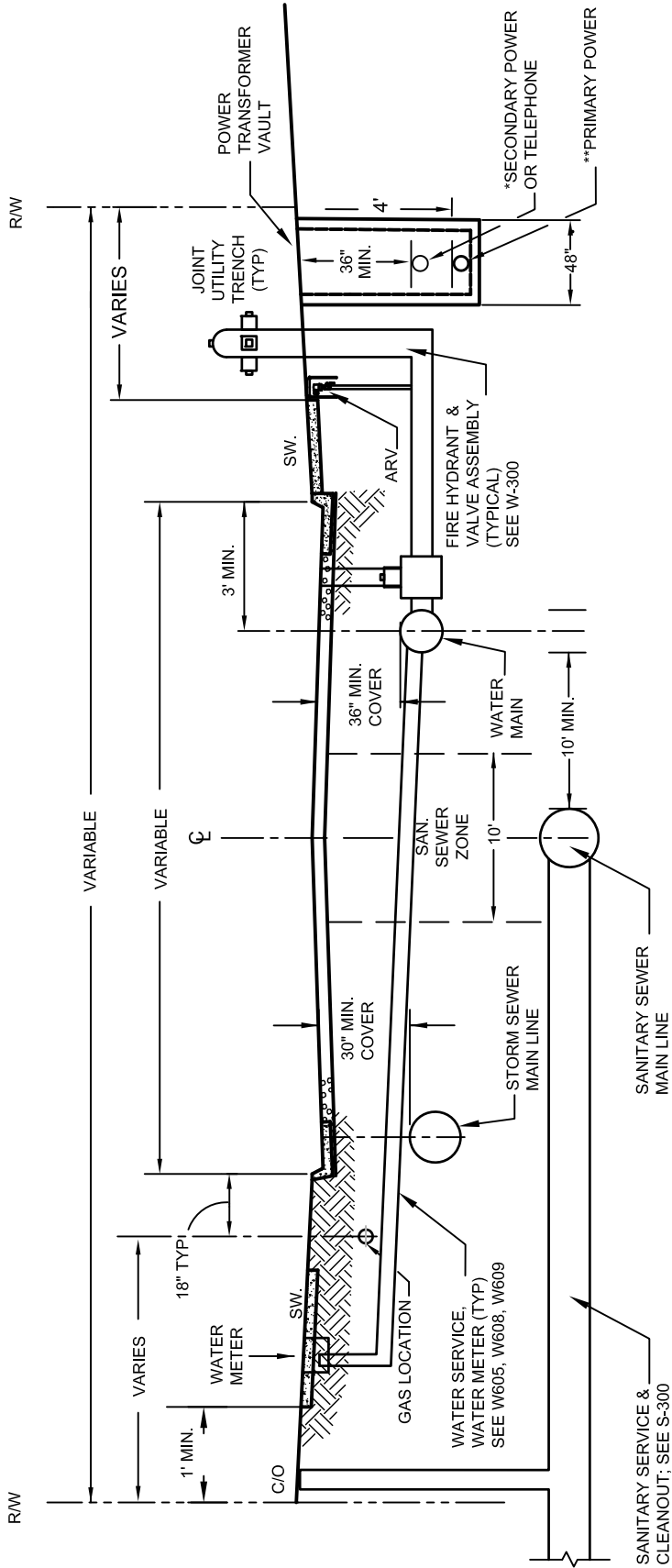
- 9 NO OVERHANGS
- 12 NO PROPOSED STRUCTURES, DECKS, PORCHES OR RETAINING WALLS IMPACTING ROW
- 17 NO EASEMENTS



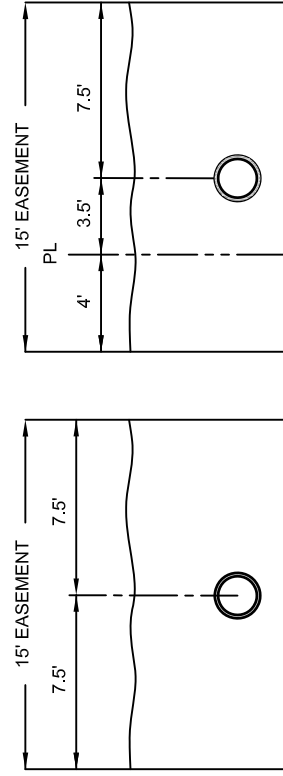
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LEVEL ONE SITE PLAN REQUIREMENTS

DETAIL NO.
G-020
5/23/2024



15' EASEMENT LAYOUT OPTIONS



- NOTES:
1. 10' HORIZONTAL SEPARATION SHALL BE MAINTAINED BETWEEN WATER AND SEWER TO COMPLY WITH SEPARATION REQUIREMENTS OF OAR 333-061-050.
 2. MANHOLE LIDS SHALL NOT BE LOCATED DIRECTLY IN NORMAL WHEEL PATH.
 3. 12" CLEARANCE ON PERPENDICULAR CROSSING TYPICAL.
 4. SUBMIT PLAN FOR JOINT UTILITY TRENCH AS PART OF ROW PERMIT APPLICATION; COORDINATE WITH LOCAL UTILITIES.
 5. EASEMENTS SHALL BE WIDE ENOUGH TO DRIVE OVER AND OPERATE MAINTENANCE EQUIPMENT.



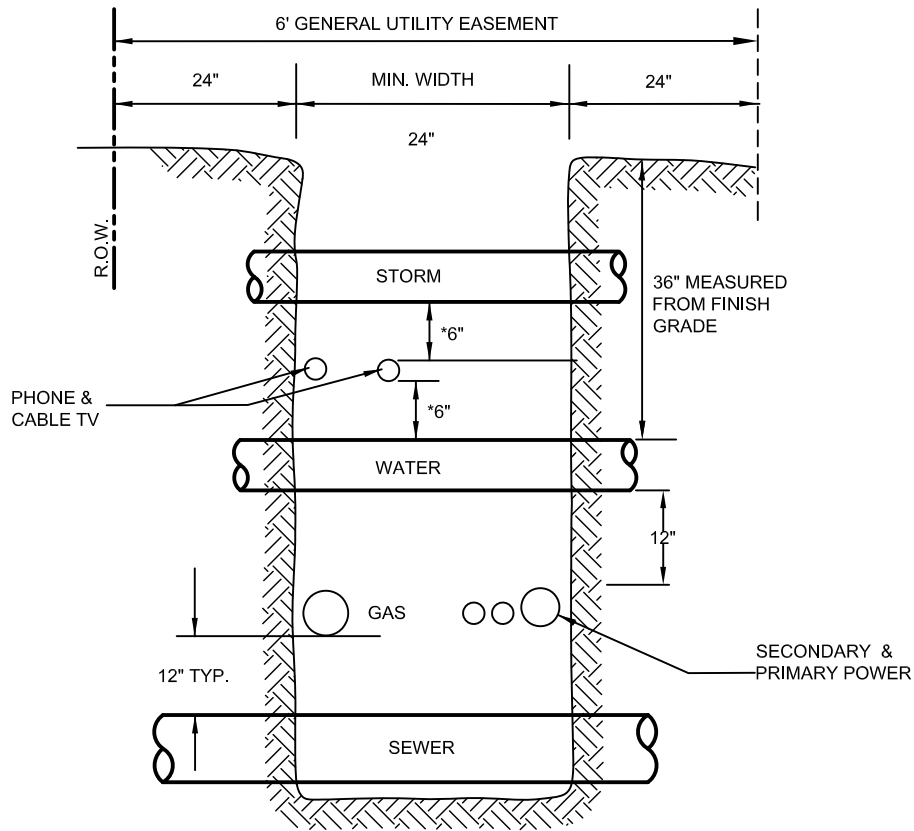
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STANDARD UTILITY LOCATIONS

DETAIL NO.

G-051

12/27/2023



PERPENDICULAR CROSSING CLEARANCES N.T.S.

NOTES:

1. WATER DISTRIBUTION MAINS SHALL HAVE 36" MINIMUM COVER OR AS OTHERWISE DIRECTED.
2. SEWER MAINS SHALL HAVE 5.25' (63") MINIMUM COVER UNLESS OTHERWISE APPROVED TO AVOID CONFLICTS WITH WATER AND OTHER UTILITIES.
3. WATER, SEWER, STREETS, AND DRAINAGE SYSTEMS SUBJECT TO CITY STANDARDS.
4. ALL LAYOUTS AND LOCATIONS ARE SUBJECT TO CITY APPROVAL.
5. SEE DWGS T-050, T-051, AND T-052 FOR STANDARD STREET WIDTHS AND SECTIONS.
6. 12" CLEARANCE ON PERPENDICULAR CROSSING TYPICAL; 6" CLEARANCE MAY BE ALLOWED IN PERPENDICULAR CROSSINGS AS DIRECTED BY ENGINEER.
7. SUBMIT PLAN FOR JOINT UTILITY TRENCH AS PART OF ROW PERMIT APPLICATION; COORDINATE WITH LOCAL UTILITIES.
8. WHENEVER POSSIBLE BOTTOM WATER LINES SHALL BE ONE-AND-ONE-HALF (1.5) FEET OR MORE ABOVE TOP OF SANITARY SEWER LINES AT CROSSINGS WITH ONE FULL LENGTH OF WATER LINE CENTERED AT CROSSING. VARIANCES MUST BE APPROVED BY CITY ENGINEER PRIOR TO COMMENCING WORK. WHERE SANITARY SEWER LINES CROSS ABOVE OR WITHIN EIGHTEEN (18) INCHES VERTICAL SEPARATION OF WATER LINE, SEWER MAINS AND/OR SERVICE LATERALS SHALL BE EITHER REPLACED WITH A FULL LENGTH OF C900 PVC PIPE (DR 18) CENTERED AT THE CROSSING OR ENCASED IN CONCRETE LOW STRENGTH MATERIAL (CLSM) IN ACCORDANCE WITH OAR 333-061-050.



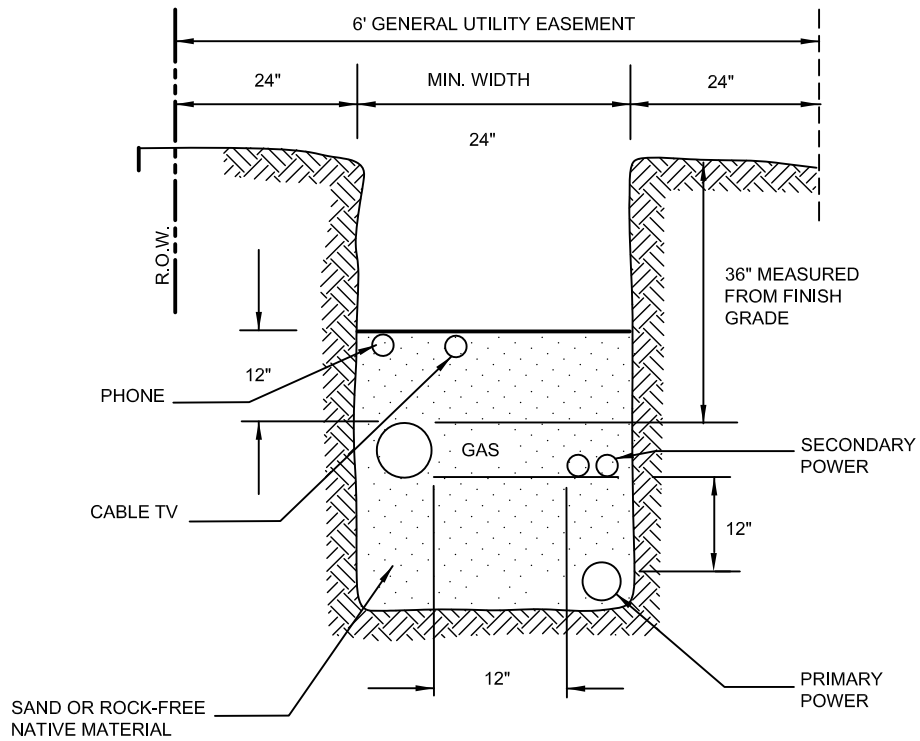
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JOINT TRENCH DETAIL WHEN
 CROSSING PUBLIC UTILITIES

DETAIL NO.

G-052

5/20/2020



*JOINT TRENCH DETAIL (OPTIONAL) N.T.S.
 PARALLEL CROSSING CLEARANCES

NOTES:

1. ALL LAYOUTS AND LOCATIONS ARE SUBJECT TO CITY APPROVAL.
2. 12" CLEARANCE ON PERPENDICULAR CROSSING TYPICAL; 6" CLEARANCE MAY BE ALLOWED IN PERPENDICULAR CROSSINGS AS DIRECTED BY ENGINEER.
3. SUBMIT PLAN FOR JOINT UTILITY TRENCH AS PART OF ROW PERMIT APPLICATION; COORDINATE WITH LOCAL UTILITIES.



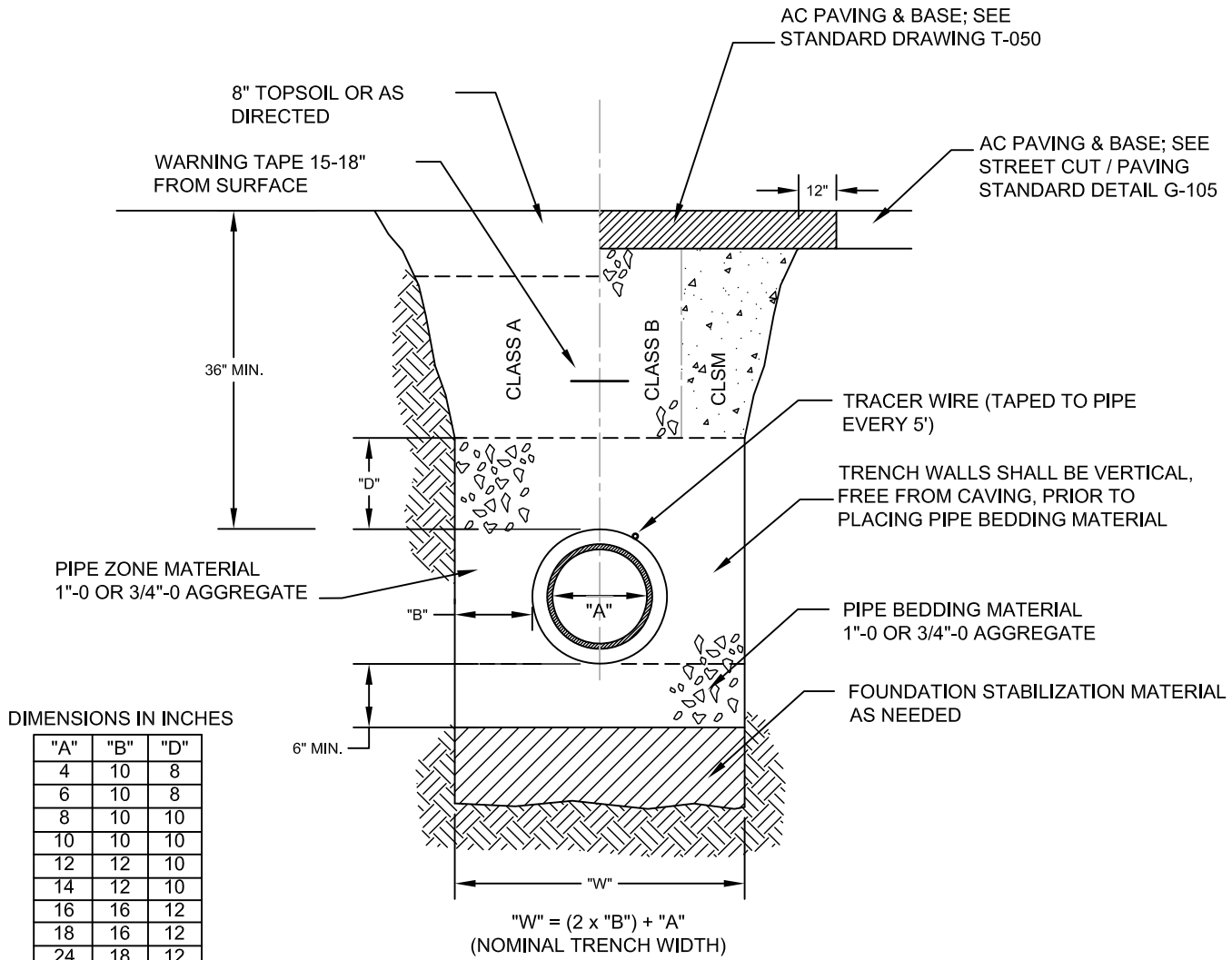
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JOINT TRENCH DETAIL

DETAIL NO.

G-053

5/20/2020



DIMENSIONS IN INCHES

"A"	"B"	"D"
4	10	8
6	10	8
8	10	10
10	10	10
12	12	10
14	12	10
16	16	12
18	16	12
24	18	12
30	18	12
36	24	14

"W" = (2 x "B") + "A"
(NOMINAL TRENCH WIDTH)

NOTES:

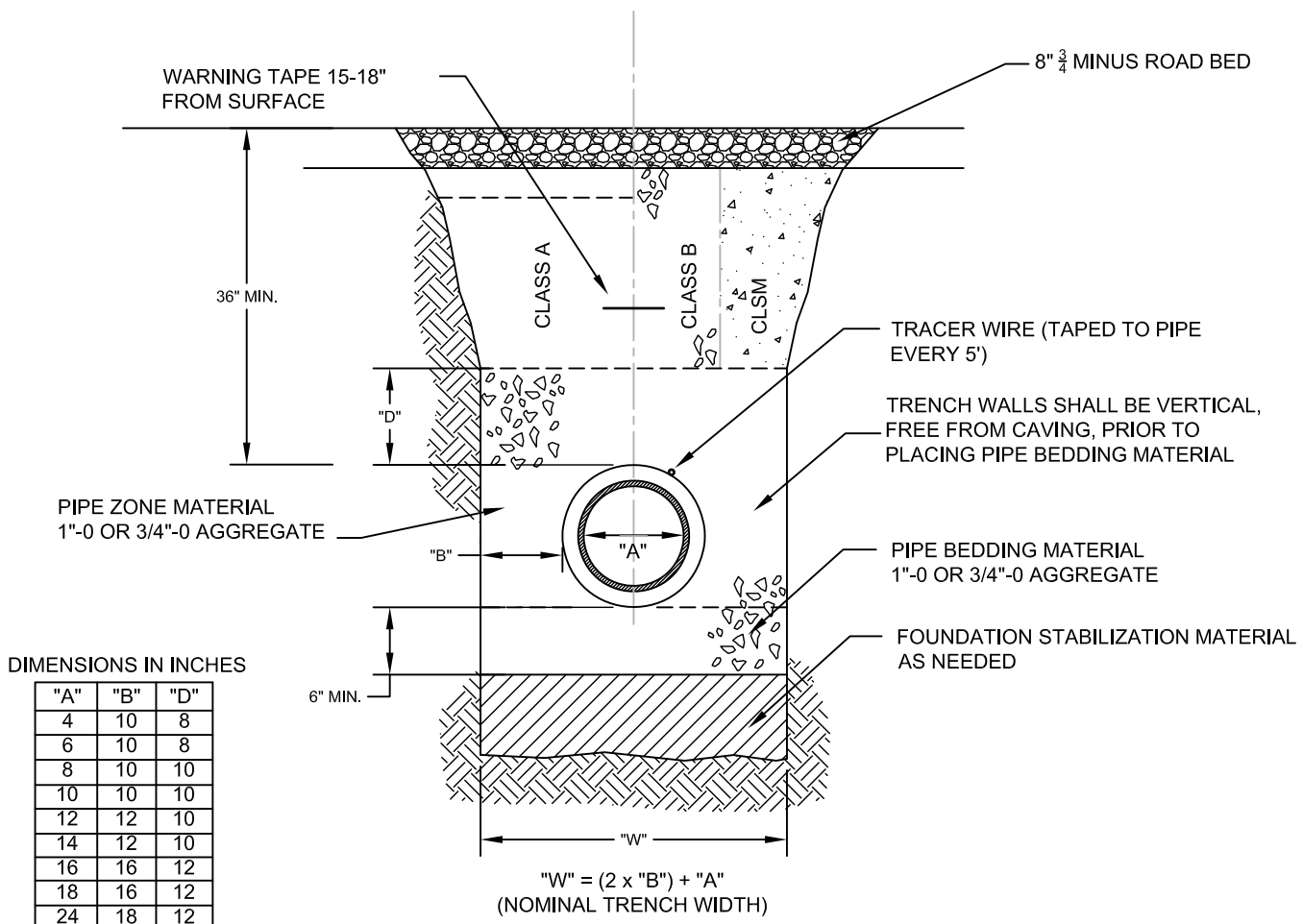
1. TRENCH EXCAVATION SHALL BE CONDUCTED IN A SAFE MANNER WITH ALL NECESSARY BRACING AND SHORING PROVIDED FOR COMPLIANCE WITH OSHA.
2. FOUNDATION STABILIZATION SHALL BE PROVIDED WHEN MATERIAL AT BOTTOM OF TRENCH IS UNSUITABLE AS DETERMINED BY CITY ENGINEER.
3. CLASS B BACKFILL REQUIRED UNLESS OTHERWISE DIRECTED BY CITY ENGINEER. BACKFILL AND DENSITY REQUIREMENTS SHALL CONFORM TO THE OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION, CURRENT VERSION, SECTION 00405.
4. TRACER WIRE REQUIRED FOR ALL NON-METALLIC PIPELINES. WIRE SHALL BE 10 GA. MINIMUM SOLID COPPER WIRE WITH BLUE 30 MIL THICK HDPE INSULATION RATED FOR DIRECT BURY. USE APPROVED WATERPROOF SPLICE AT ALL CONNECTIONS.
5. WARNING TAPE SHALL BE 6" WIDE, 4 MIL THICK TAPE; READING, AS APPROPRIATE : "CAUTION SEWER LINE BURIED BELOW"; "CAUTION WATER LINE BURIED BELOW"; "CAUTION STORM LINE BURIED BELOW"; TAPE COLOR AS APPROPRIATE FOR INSTALLED SERVICE.



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TYPICAL TRENCH DETAIL
FOR PAVED ROADS

DETAIL NO.
G-100
10/27/2022



DIMENSIONS IN INCHES

"A"	"B"	"D"
4	10	8
6	10	8
8	10	10
10	10	10
12	12	10
14	12	10
16	16	12
18	16	12
24	18	12
30	18	12
36	24	14

"W" = (2 x "B") + "A"
(NOMINAL TRENCH WIDTH)

NOTES:

1. TRENCH EXCAVATION SHALL BE CONDUCTED IN A SAFE MANNER WITH ALL NECESSARY BRACING AND SHORING PROVIDED FOR COMPLIANCE WITH OSHA.
2. FOUNDATION STABILIZATION SHALL BE PROVIDED WHEN MATERIAL AT BOTTOM OF TRENCH IS UNSUITABLE AS DETERMINED BY CITY ENGINEER.
3. CLASS B BACKFILL REQUIRED UNLESS OTHERWISE DIRECTED BY CITY ENGINEER. BACKFILL AND DENSITY REQUIREMENTS SHALL CONFORM TO THE OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION, CURRENT VERSION, SECTION 00405.
4. TRACER WIRE REQUIRED FOR ALL NON-METALLIC PIPELINES. WIRE SHALL BE 10 GA. MINIMUM SOLID COPPER WIRE WITH BLUE 30 MIL THICK HDPE INSULATION RATED FOR DIRECT BURY. USE APPROVED WATERPROOF SPLICE AT ALL CONNECTIONS.
5. WARNING TAPE SHALL BE 6" WIDE, 4 MIL THICK TAPE; READING, AS APPROPRIATE : "CAUTION SEWER LINE BURIED BELOW"; "CAUTION WATER LINE BURIED BELOW"; "CAUTION STORM LINE BURIED BELOW"; TAPE COLOR AS APPROPRIATE FOR INSTALLED SERVICE.



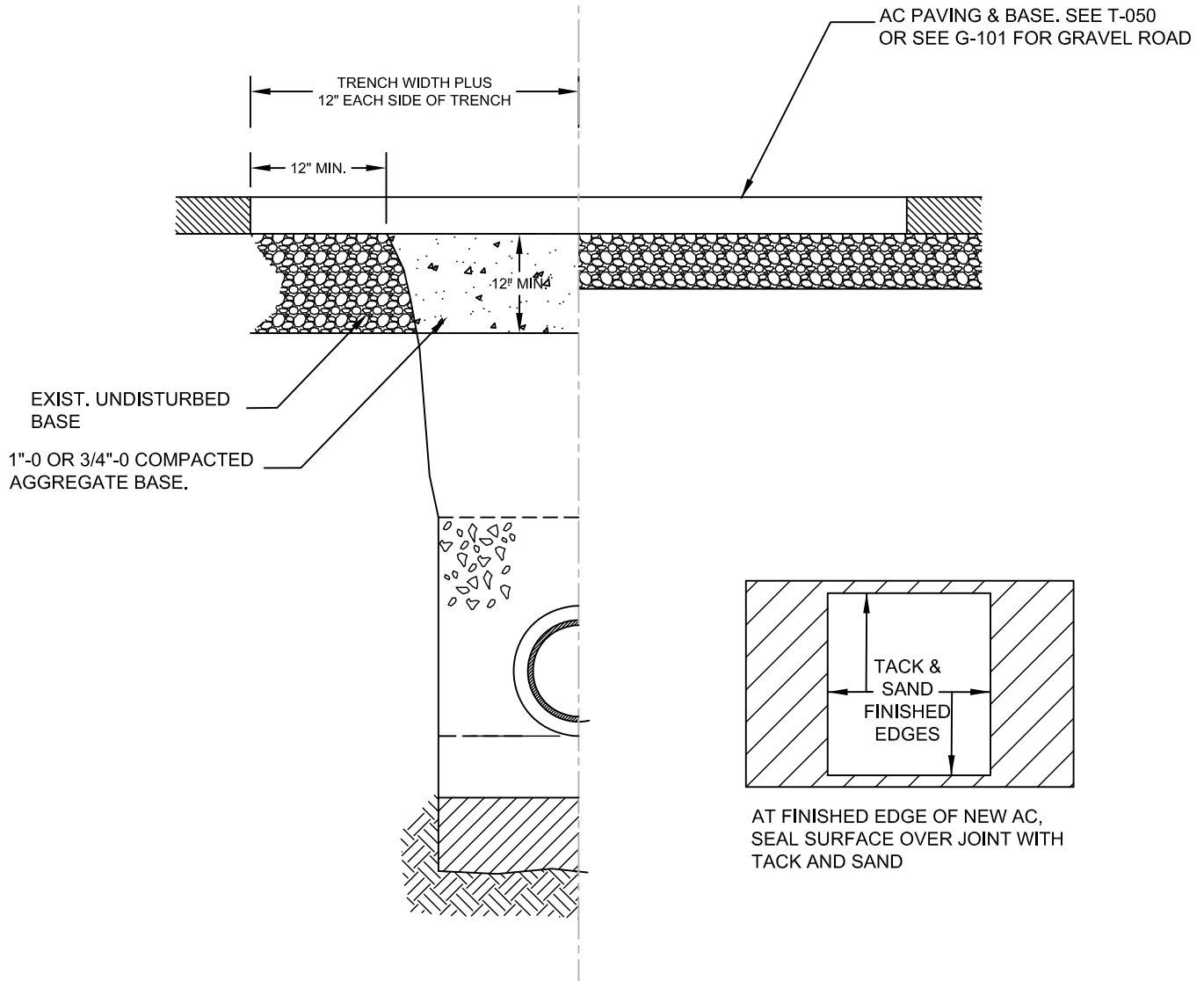
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TYPICAL TRENCH DETAIL
FOR GRAVEL ROADS

DETAIL NO.
G-101
10/27/2022

TRENCH RESURFACING

STREET REPLACEMENT



NOTES:

1. CONTRACTOR AND CITY SHALL MEET ON SITE BEFORE PAVING BEGINS TO REVIEW ROAD BASE PREPARATION PRIOR TO PLACING ASPHALT.
2. PLACE AC TO A MINIMUM THICKNESS OF 4 INCHES OR THICKNESS OF REMOVED PAVEMENT, *WHICHEVER IS GREATER*. PLACE AC IN 2 INCH LIFTS; COMPACT AS DIRECTED.
5. ALL EXISTING AC OR PCC PAVEMENT SHALL BE SAWCUT IMMEDIATELY PRIOR TO REPAVING. BROKEN EDGES ARE NOT ALLOWED.
6. COMPLY WITH THE REQUIREMENTS OF AGENCY HAVING JURISDICTION OVER THE ROAD IN WHICH THE STREET CUT OCCURS.
7. SAND AND TACK SEAL ALL AC COLD JOINTS.



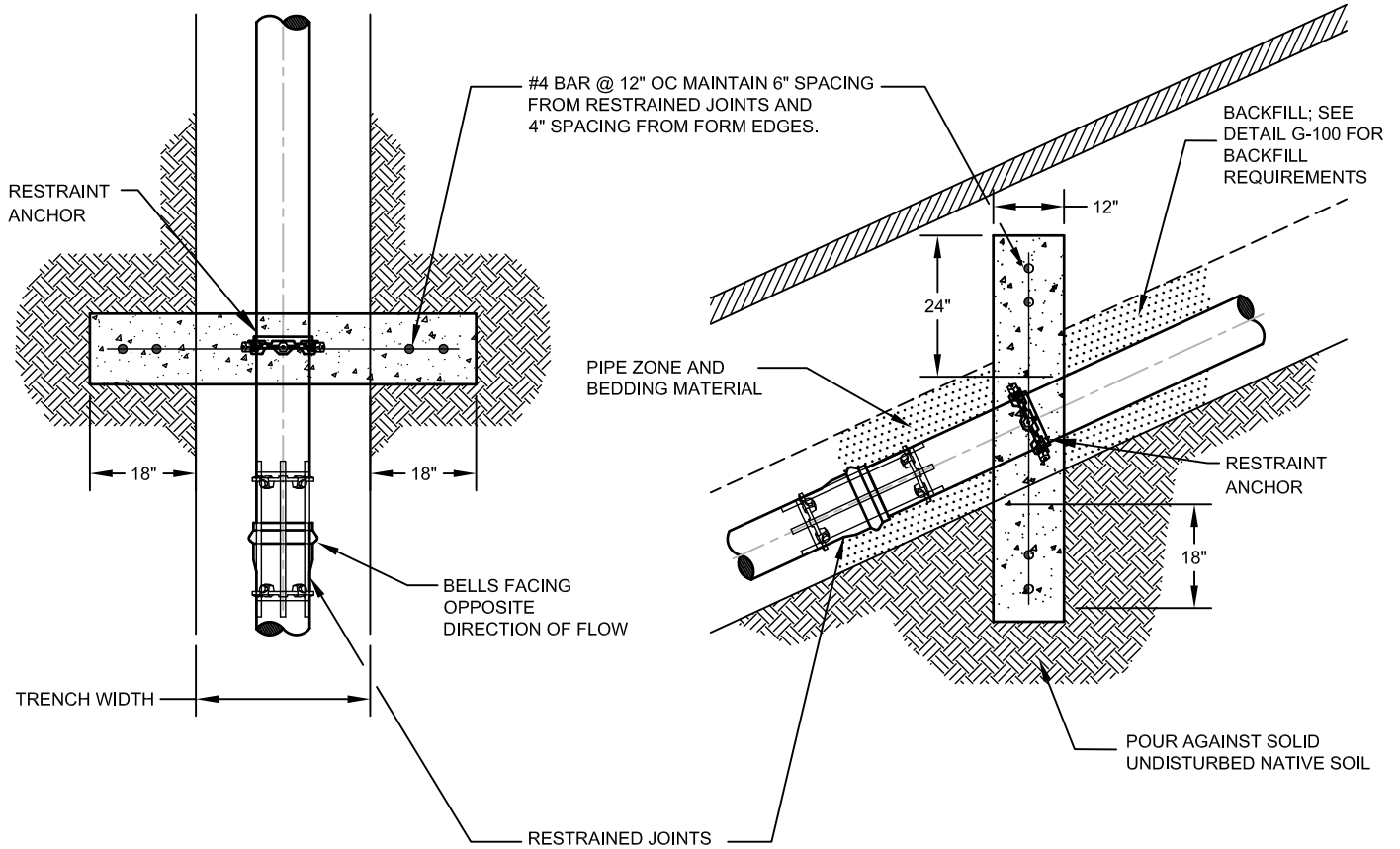
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STREET CUT / T-PATCH

DETAIL NO.

G-105

2/12/2024



NOTES:

1. PIPE ANCHOR CUT-OFF WALLS REQUIRED AT ALL PIPELINES WHERE SLOPE EXCEEDS 20%.
2. RESTRAINED JOINT PIPE REQUIRED WHEN SLOPES EXCEED 20%.
3. WALLS SHALL BE FORMED WITHIN TRENCH. REMOVE FORMS PRIOR TO BACKFILLING.
4. STRUCTURAL CONCRETE SHALL CONFORM WITH OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION, CURRENT EDITION, SECTION 00540.
5. SPACING OF WALLS SHALL BE:

SLOPE	SPACING
20-34%	35 FEET
35-50%	25 FEET
51-+%	15 FEET
6. BACKFILL SHALL CONFORM TO DETAIL G-100.



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PIPE ANCHOR / TRENCH CUT-OFF WALL DETAIL

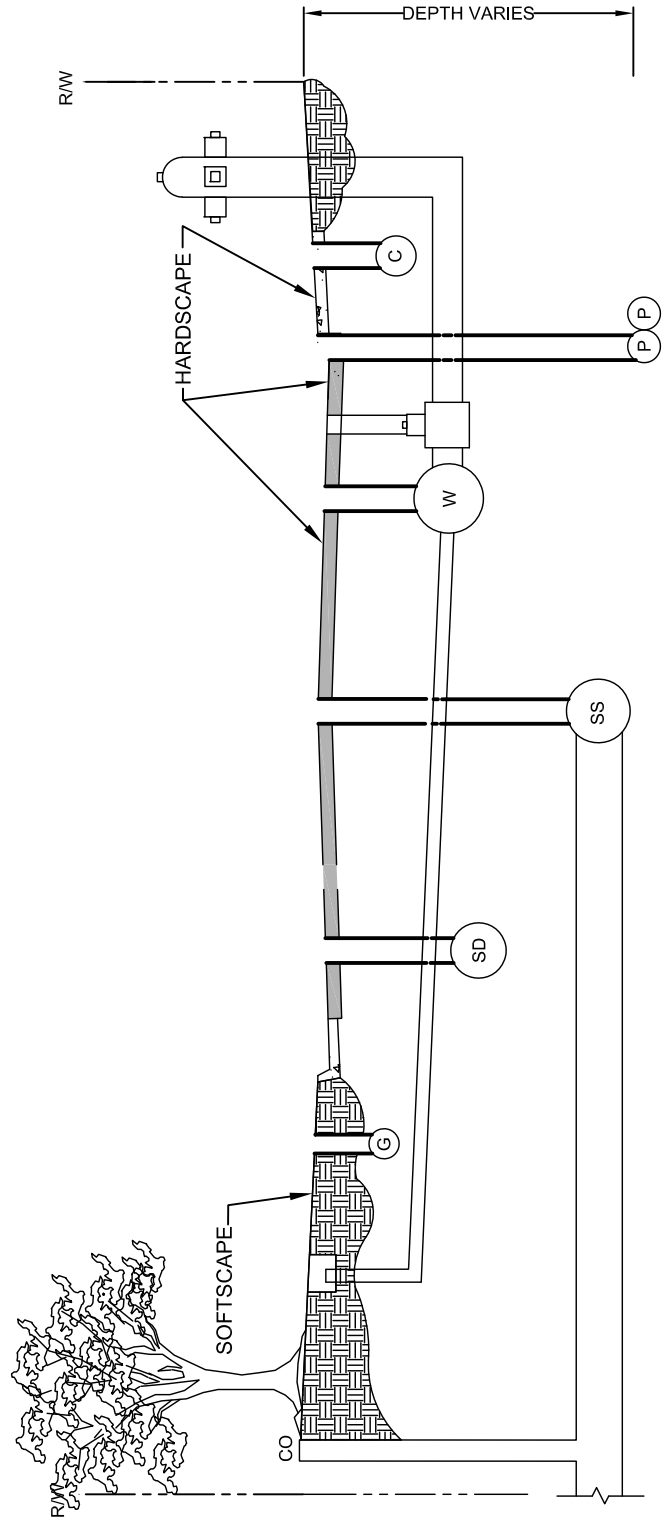
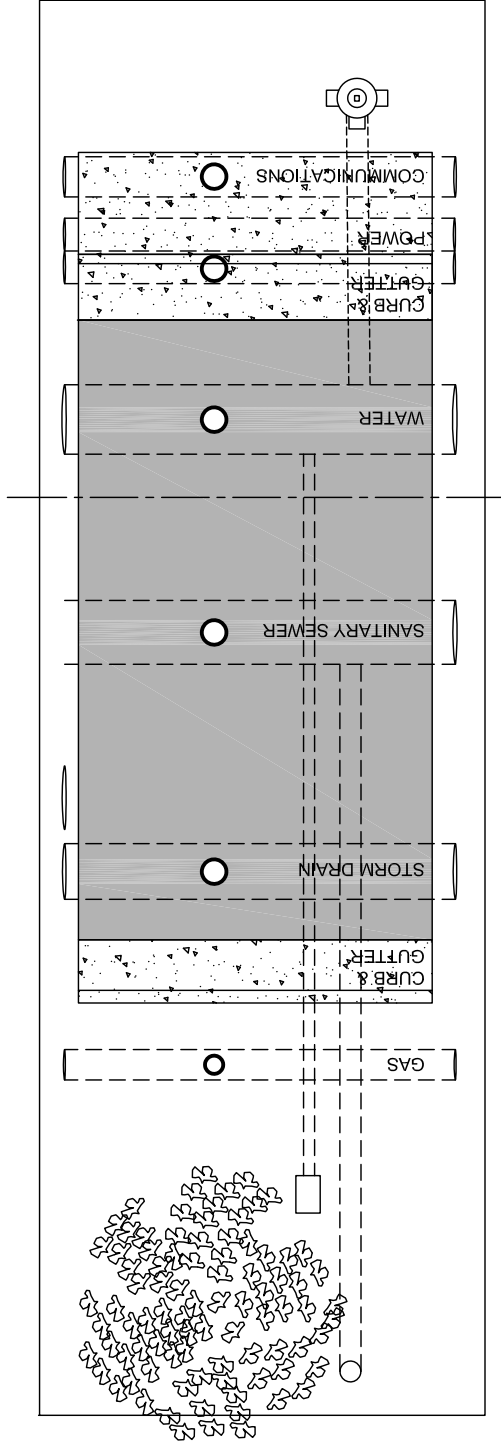
DETAIL NO.

G-150

5/20/2020

NOTES:

1. PNEUMATIC POGO STICK TAMPER REQUIRED FOR LIFT COMPACTION OF BACKFILL..
2. NO LATERAL EXCAVATION OUTSIDE SURFACE CUT. IF SIDES OF POT HOLE CAVE IN, INCREASE SURFACE CUT TO INCLUDE CAVE-IN AREA.
3. IF POTHOLES ARE WITHIN TWO FEET OF EACH OTHER, OR SEVERAL POTHOLES OCCUR ACROSS STREET, CUT SURFACE AREA TO INCLUDE ALL POTHOLES AND REPLACE SURFACE AS ONE ASPHALT PATCH.
4. BACKFILL UNDER ASPHALT SHALL BE WITH APPROVED AGGREGATE IN 12" COMPACTED LIFT.
5. POTHOLES IN SIDEWALK OR CURB REQUIRE FULL PANEL REPLACEMENT.
6. POTHOLES IN SOFT SURFACES MAY BE BACKFILLED WITH NATIVE SOILS COMPACTED IN 12" LIFTS.



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POT HOLE UTILITY LOCATION BACKFILL

DETAIL NO.

G-160

12/12/2023

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**SECTION 2 –
ROW PERMITS AND PLAN REVIEW**

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SECTION 2 – ROW PERMITS AND PLAN REVIEW

RIGHT OF WAY

All areas dedicated to the public and administered by the city for use for transportation purposes, including any city street, road, bridge, alley, sidewalk, trail, or path, and all other public ways and areas managed by the city (NMC 9.05.020E).

Includes public utility easements to the extent that the easement allows use by the utility operator planning to use or using the public utility easement. ROW includes the subsurface under and airspace over these areas. ROW does not include the airwaves for purposes of CMRS, broadcast television, DBS and other wireless providers, or easements or other property interests owned by a single utility or entity (NMC 9.05.020F).

Land within the ROW is reserved for public use. ROW width varies by location. A ROW is reserved for the purposes of maintenance or expansion of existing services with the ROW.

Undeveloped Right-of-Way

A ROW may lie dormant for decades during which adjoining properties may use the ROW for landscaping. The lack of public use of a ROW does not negate the ROW or change the ROW boundary. The undeveloped ROW remains a ROW for future use.

Developed Right-of-Way

When a undeveloped ROW is needed for public use, the full extent of the ROW may be used for needed work. If more area is required to complete the work, an easement may be negotiated with the adjacent property owner. Once an easement is created, it becomes ROW, and will be used for the purpose of maintaining public use facilities (see NMC 9.05.020F).

Right-of-Way In Wetlands

If work defined on the ROW application falls into an area designated in the local wetland inventory, the application will be forwarded to the Department of State Lands (DSL) for assessment. If they determine the area is a declared wetland, the ROW permit will include any and all requirements issued by DSL for work in the wetland area.

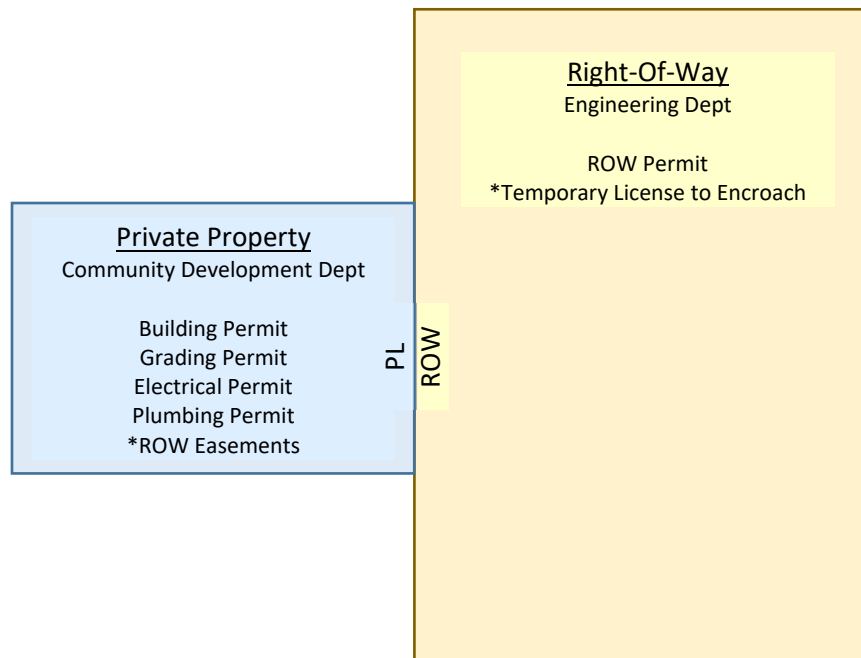
The City will not arbitrarily determine whether or not work may be completed in the wetland area without consent from DSL.

SEPARATION OF PERMIT AUTHORITY

For any needed revisions to the final plans, either during the final review or during the construction process, the Engineer whose stamp appears on the plans must sign and date each revision.

The Engineering Department does not issue private property permits. Unless work is done within a ROW easement on private property, the Engineering Department does not voice an opinion on issues pertaining to private property. The Engineering Department does not have authority to approve work on private property. If for some reason public infrastructure is on private property, an easement is required for public access. If public infrastructure is being constructed adjacent to private property, and may infringe on private property, a temporary construction easement is needed before work can be done. The Engineering Dept only constructs in the ROW.

Plan reviews initiated in the Community Development Department are for work on private property and do not necessarily impact right-of-way, although they may. Approval of the Community Development Department permits DOES NOT issue engineering approval for construction in the ROW. At this stage of permitting, the Engineering Department may have reviewed the plans, but no permit is issued for construction in the ROW or on future public infrastructure.



APPROVED PLANS

Final Approved Plans from both Planning and Engineering are used to construct improvements. Contractors are required to have plans on site when work is being installed. Any deviation in the ROW from the approved plans shall be approved by City Engineer prior to work commencing. If changes in existing conditions are found during construction that make installing the approved design obsolete, disadvantageous, or a violation of City construction standards, the City reserves the right to require a correct design prior to installing said improvements.

Examples of such conditions:

- Potholing found the outfall of a pipe elevation is incorrect on the plans and the connecting pipe will flow in reverse;
- An existing sewer lateral is not in good condition and should be replaced at the main line;
- Finish grade elevations at the property line will not tie in to existing ROW elevations;
- An area of the ROW design was missed in review and does not meet City Standards outlined in this manual;
- Existing ROW conditions vary from those drawn on plans (trees are missing, structures were not surveyed, a structure is uncovered during excavation that makes design unfeasible).

CONSTRUCTION LEVELS

Level 1— No Licensed Professional Engineer Stamped Plan Required

A smaller site plan may be submitted based on the requirements outlined in the SITE PLAN SUBMITTAL FORM in Appendix C. ROW improvements impact a single-family residence.

- Curb cuts – driveway approach.
- Sidewalk construction.
- Excavation for purpose of installing utility service lines only.
- Landscaping within the public ROW.
- Tree planting, pruning, and/or removal in the public ROW.
- ROW grading for construction of one single family dwelling that does not result in elevation

changes exceeding two feet (2') on any portion of the site.

- See Standard Drawing G-020 for example of required Level 1 site plan.

Level 2— Licensed Professional Engineer Stamped Plan Required

A Civil Engineering Plan is required when any of the conditions listed below apply to a permit application or as determined by the City Engineer. A Civil Engineering Plan typically requires a Professional Engineer. The Engineering Department recommends scheduling a pre-design meeting PRIOR to submittal if the project falls into this category. A Level 2 plan set will be submitted through the Community Development Dept prior to needing a ROW permit.

- Excavation or fill that will result in elevation changes exceeding two feet (2') on any portion of the site excluding landscaping on developed property.
- Construction of facilities, including grading, that may have an impact on stormwater runoff or downstream water quality.
- 3,000 square feet, or more, of new impervious surface will be added to the site (i.e. new parking lots, structures, or other impervious surfaces that individually or in combination replace 3,000 square feet, or more, of existing pervious surface).
- A combination of 6,000 square feet, or more, of impervious area will be added and/or reconstructed (i.e. 4,000 square foot of existing building reconstructed with the addition of a new 2,000 square foot parking lot, structure, or other impervious surface OR reconstruction of 6,000 square feet, or more, of existing impervious surface).
- One (1) acre or more of land will be disturbed or when a DEQ 1200-C permit is required.
- Dedication of public ROW.
- Infrastructure will be constructed and dedicated to the City.
- Construction and/or removal of retaining walls located within or impacting the ROW.
- Demolition of significant surfaces or structures located within or impacting the ROW.
- Proposed development on corner lots, lots without curb and gutter, streets not meeting City Standard (as shown in the Newport Municipal Code).

MINIMUM REQUIRED PLANS

Construction plan submittals shall contain the following minimum sheets:

- Title sheet
- ROW Demolition sheet (unless no demolition of existing infrastructure)
- ROW Site Plan; see APPENDIX C – SITE PLAN SUBMITTAL CHECKLIST for site plan requirements; attach completed checklist to submittal to show items have been reviewed and added to plan. Checklist will be returned with comments for revisions or as approved.
- Plan and profile sheet(s) for street, storm sewer, water, and wastewater sewer in ROW
- Overall utility plan (existing and proposed) for ROW
- Proposed grading in ROW
- Temporary and permanent erosion control impacting ROW
- Standard Drawing(s) plus any other relevant construction standards/details.

Site Plan Submittal Checklist

The Site Plan Submittal Checklist must be completed and submitted with the plan set before engineering will review plans.

Developer/Engineer Agreement

The Developer/Engineer Agreement must be signed and submitted with the plan set before engineering

will review plans. This agreement lays out the expectations and agreement of compliance to Municipal code and engineering policy required from Developers/Engineers when doing work in the City ROW or impacting the City ROW (see *Appendix K: Owner/Engineer Agreement*), and outlines the consequences of non-compliance.

The Developer/Engineer Agreement does not replace the ROW permit. The agreement is signed prior to application of a ROW permit because there are times when construction on private property begins before work in the ROW occurs. Work on private property may impact ROW through the nature of the private work. Examples of this might be trucks moving on and off property tracking mud along City Streets, or erosion control measures not adequately placed along property lines causing storm runoff to impact City structures. The City Engineer will require these violations to be corrected. Non-compliance may lead to stop work orders or a citation.

Cover Sheet

All multiple sheet improvement projects shall have a title sheet as the first page of the construction plans. Use one cover sheet when constructing more than one facility (sewer, storm drain, etc.) sheet. See SECTION 1 ELECTRONIC DRAWING FORMAT FOR AS-BUILT SUBMITTALS for document formats, scaling and alignment requirements.

Subsequent, 'general' sheets may be included to show information such as the Legend(s), Permanent Benchmarks or project controls, or similar information when the Cover Sheet becomes too crowded to show all the information requested. Additional information may include tax lot numbers or lot and block designations, land use designations, site area, and site address.

Cover sheet shall contain the following minimum information:

- Title: Project name, date, City project number, if applicable; owner's name, address, and phone number.
- Engineer's name, address, phone number including emergency contact information, fax number, email, and seal.
- Vicinity map to a scale showing the project location.
- Index of sheets.
- Statement referencing City of Newport Standard Specifications with relevant City Approvals.
- Provide contact phone number for all affected utility companies including the City.
- Date of last plan revision (large/bold).
- Land Use Planning case file number(s).

ROW Plan Sheets – General

Draw plan view sheets at the appropriate scale showing the following minimum information:

- Show existing and proposed adjacent street curbs, property lines, ROW lines, utility easements referenced to property lines, street centerlines, and intersections.
- Location of all underground utilities within one hundred (100) feet of project (if they are affected by the project), existing power/communication poles and guy anchors, valves, manholes, catch basins, fire hydrants, meter boxes and vaults, signs, location of nearest street light(s), etc.
- Location of all water lines, culverts, bridges, large water transmission pipes and gravity sewers, and/or storm drains within two hundred (200) feet of proposed gravity sewer and storm drain extensions if they affect the design of the project.

- Federal Emergency Management Agency (FEMA) maps, any current or proposed wetlands.
- Centerline stationing for each line. Increase stationing from left to right on the plan sheet and shall be consistent throughout the plan set. This should result in north pointing to the top or to the left of the sheet. Designate each separate line distinctly (e.g., sewer line 'A', storm line 'A', etc.). Tie stationing to existing street monuments, property corners, or manholes.
- Street names including area quadrant (i.e. N.E., N.W., S.E., or S.W.)
- Special details for items not shown on Standard Drawings
- All relevant public facility data, including size and quantity of improvements
- Fire flow requirements as per City of Newport Fire Marshal
- Survey Data Required on Plans
- Any existing or proposed easements
- See SECTION 1 ELECTRONIC DRAWING FORMAT FOR AS-BUILT SUBMITTALS for document formats, scaling and alignment requirements.

NOTE: Use City of Newport as-built records only as an aid to the engineer. The engineer shall field locate and verify, or cause to be located and verified, the alignment, depth, and inverts of all existing facilities where crossed by the proposed facility shown on the plans.

ROW Profile Sheet – General

Profiles for construction plans shall be the same horizontal scale as the plan sheet. Draw profiles on the same sheet as the plan view and directly below the plan view. Stationing shall increase from left to right with lower stations to the left.

Show the following minimum information:

- For sewers and storm drains, show locations of manholes, catch basins, and cleanouts, with each numbered and stationed.
- Existing profile at centerline of proposed utility or street.
- Proposed profile grade, as appropriate, for all sewers, storm drains, and waterlines, giving pipe size, length between structures or fittings, slope, backfill and pipe material, sewer inverts, rim elevations, etc.
- Existing underground utility that crosses the alignment of the proposed facility.
- Beginning of all vertical curves, points of vertical intersection, end of vertical curve, low point of sag curve, and length of vertical curve. Profiles of existing centerline grade shall extend a minimum of two-hundred-fifty (250) feet beyond the end of the improvement.
- Clearly show all potential conflicts with existing public and private utilities (i.e., pipes, conduits, vaults, cathodic protection systems, etc.) that impact proposed design.
- Future street extensions to undeveloped sites shall be designed/profiled a minimum of one-hundred-fifty (150) feet off-site.
- See SECTION 1 ELECTRONIC DRAWING FORMAT FOR AS-BUILT SUBMITTALS for document formats, scaling and alignment requirements.

NOTE: Use City of Newport as-built records only as an aid to the engineer. The engineer shall field locate and verify, or cause to be located and verified, the alignment, depth, and inverts of all existing facilities where crossed by the proposed facility shown on the plans.

SUBDIVISION DEVELOPMENT

A developer may want to build a subdivision that includes future public infrastructure. During design,

plan review, and construction the land is privately owned. In this situation the Engineering department will be greatly involved in reviewing the design of future ROW development. The ROW does not transfer out of private hands until the plat is approved and accepted by Community Development Director.

As the subdivision moves toward construction, the Engineering Department will review material submittals for compliance to City standards. City staff may be heavily involved in future City infrastructure during construction although the pipes, structures, and services line remain private property until construction of future infrastructure is complete, tested, and accepted by the City. This is true of road building also. The road remains private until the work is completed and accepted by the City. In this situation, a ROW permit is not issued due to the subdivision remaining privately owned in its entirety until accepted by the City. Further, City staff and crews work with the developer's contractor and design engineer during construction as partners without need of temporary construction easements. City staff is on-hand to ensure construction follows City of Newport Construction Standards, and work with the owner and design engineer to fix any problems that may occur as the infrastructure is installed. City staff do not have authority to direct the developer's contractor.

A Certificate of Occupancy may not be approved by the Engineering Department until all aspects of future City infrastructure is completed.

PLAN SHEETS – REQUIREMENTS FOR SUBDIVISIONS AND STREET IMPROVEMENTS

Streets – Standard Layouts

- Vertical and horizontal curve data
- Roadway centerline and stationing along centerline to a minimum of fifty (50) feet beyond proposed project limits. Show centerline intersection stationing in both directions. Show points of tangency and curvature for centerline; curve data shall show tangent length, radius distance, centerline curve length, and delta angle.
- Clear vision area at intersections
- Continuous stopping sight distance along roadway
- Sight distance measurements and protections
- Where widening streets, show edge of pavement elevations to determine pavement cross slope to new curb or pavement edge.
- Grade of all sidewalks shall be shown on the profile
- Radii and grades at the ends, midpoint, and one-quarter (1/4) points of curb returns
- Slopes of centerline, sidewalks, and gutter lines, and running slope of roadway
- Pedestrian treatments including adequate information for ADA compliance checks including a detailed grading plan and spot elevations sufficient to demonstrate accessible ramps at all sidewalk intersections
- Counter slope of roadway at ADA ramp
- Locations of driveway approaches

Streets – Roundabouts

- In addition to specific information required in SECTION 7 - Streets, include the following on all plans when applicable
- Roundabout inscribed circular diameter labeled
- Approach and Exit alignment and design shown for each leg (include stationing and profiles)
- Centerline stationing and profiles for circulatory roadway
- Speed checks (in design report is ok)
- Design vehicle identified (in design report is ok)

- Turning movement analysis for design vehicle (in design report is ok)
- Vehicle path alignments and path overlap checks (in design report is ok)
- Bicycle treatments including ramp details
- Splitter island details and curb types, elevations
- Approach and circulatory roadway widths
- Truck apron design details including reveal curb and interior curb details
- Cross-slopes labeled and identified for all roadways including truck apron
- Illumination including pole type and location, wattage, fixture type, horizontal and vertical luminance and uniformity
- Pavement markings and striping
- Signing
- Sight distance measurements and protections
- Grading, drainage, landscaping

Sewer – Plan and Profile Views

- Location of existing and proposed manholes, sewer line, and services in plan and profile
- Stationing along sewer line
- Invert and rim elevations at existing and proposed manholes
- On all manholes with multiple inverts into/out of manholes, clearly identify with directional designation (N, S, E, W, etc.) and notation of direction of flow (in or out)
- Sewer extended to provide service to adjacent properties
- A profile showing sufficient cover and finished street grade and crossing locations showing potential conflicts
- All conflicting public and private utilities indicated around the proposed development.
- Sewer service provided to each lot with station and offset at end of service line
- Pipe material identified
- Slopes, distances, and diameter of main runs
- Slope and invert elevation shown on proposed sewer lines stub-outs for future Extension
- Connection point for a new line to an existing system. Include the following NOTE on the final plans: **“Contractor shall verify the location of the existing sanitary sewer line before proceeding with trenching.”**
- Water and sewer information should be on the same plan sheet unless otherwise approved by the City Engineer.
- On sewer and storm drain plans, each manhole, catch basin, and cleanout shall be numbered and stationed.

Water – Plan and Profile Views

- Location of valves, fittings, fire hydrants and services; all fittings and valves shall be shown and identified by type (i.e., MJ x MJ, FLG x MJ, etc.); fire hydrants shown; intersection drawings for valves and fittings are required when scale of plans is smaller than 1" = 20' (i.e., 1" = 40').
- Stationing along waterline
- A profile showing sufficient minimum cover and finished street grade and crossing locations showing potential conflicts
- Fire flow requirements
- Utilities conflicts
- Service to each lot with station and offset at end of service line
- Fittings specified with stations
- All fire service lines plan and profile

- Thrust block details or reference to Standard Drawing W-700.
- Restrained joint pipe table showing restrained joint lengths for all restrained pipe
- Water and sewer information should be on the same plan sheet unless otherwise approved by the City Engineer.

Stormwater – Plan and Profile Views

- Location of manholes, storm lines, catch basins, treatment controls, and other appurtenances
- Stationing along main storm line
- Invert elevations shown at manholes, catch basins, and inlets
- Profile of storm pipe showing cover and finished street grade and crossing locations showing potential conflicts
- All utilities and services with conflicts indicated on profiles
- Pipe material identified
- Slopes, distances and diameter of main runs
- Permanent drainage plan, including drainage basin boundaries and areas
- Existing or natural drainage courses, canals, rivers and ponds
- Curb inlet basins on all arterial and collector streets
- Drainage control at low spots and storm sewers at sag curves
- Slope easements
- Storm water information should be on the same plan sheet as street improvements unless otherwise approved by the City Engineer.
- On sewer and storm drain plans, each manhole, catch basin, and cleanout shall be numbered and stationed.

Landscaping and Irrigation Plans

For all City owned public facilities and City owned landscaping, the following items shall be required on all plan submittals:

- Existing tree plan showing all existing trees 6-inch-diameter at breast height (DBH) and larger.
- Show all existing trees proposed for removal or relocation
- Specify any existing vegetation areas that will remain as-is
- Proposed protection fencing locations and type of protective measures
- Location of all structures, streets, driveways, walkways and other hard surfaces
- Identify all proposed plant materials with common name, botanical nomenclature, plant installation size and quantity of each species
- Existing and proposed grading and drainage systems
- Specify mulch types, applied depth, and location
- Specify location of all turf areas and types of proposed turf
- Specify hydrozones and landscaping features
- Schematic piping layout and size to water source
- Location of sleeves under all hard surfaces or construction obstructions
- Location, type, and coverage of each irrigation zone
- Table of hydraulic calculations showing all zones and their overall usage Site structures and obstacles that interfere with the coverage and performance of the irrigation system
- Schedule of heads, numbers of circuits, and sizes of piping
- Location of irrigation controller by note (if remote-offsite) or symbol
- Location of backflow device and “blowout” for winterization
- Location of all points of connection (POC)

Signing and Striping

- Onsite and offsite signing including MUTCD sign type or legend, size of sign, type of post.
- Existing signing, including MUTCD sign type or legend, to a minimum three hundred (300) feet beyond the proposed project limits including size of sign, and condition.
- Proposed signing with MUTCD sign types or legends
- Show any required Type III barricades or road end signage on the plan sheets
- Stations or distances to proposed signing
- Existing signing to be replaced
- Schematics or legends of nonstandard signs
- Existing striping, transitions, and tapers, including lane widths
- Proposed striping with match points identified
- Proposed lane width and turn lane storage lengths dimensioned
- Line and symbol types and colors identified
- Beginning and end points of tapers, per AASHTO and City of Newport standards, identified with stations
- Removal of existing striping identified
- Striping Quantity Table, including total linear feet of four (4) inch line, eight (8) inch line, twelve (12) inch thermoplastic, and number of symbols by type

Grading

- Show contours at a minimum of one (1) foot intervals.
- Identify drainage direction and drainage basin boundaries.
- Provide cross-sections or profile plans to show existing and final grading.
- Indicate whether land is a cut or a fill.
- The City of Newport requires a comprehensive grading and clearing plan with the drawing set. Address soil conditions where slopes greater than two (2) horizontal to one (1) vertical (2:1) exist, retaining walls greater than forty-eight (48) inches in height are proposed, design calls for extensive areas of fill, unusual soil conditions are encountered, or upon the request of the City Engineer.
- Show retaining walls or any other special structures on the plans. Walls within two (2) feet of a property line, having hydrologic, vehicular, or structural surcharge, or exceed forty-eight (48) inches in height shall be designed by a registered Engineer and reviewed by the City of Newport for permitting.
- If grading permit is required, no work shall commence until the City of Newport Community Development office issues a grading permit and the City of Newport Engineering Department holds a preconstruction meeting.
- Unless a geotechnical engineer verifies slope, grading shall not exceed a two (2) horizontal to one (1) vertical (2:1) (2:1) cut/fill. Stabilize cut promptly after grading. The City permits one-and-one-half (1.5) horizontal to one vertical (1) cuts where excavation is within stable rock.
- If a site exceeds two (2) feet of fill, place and test structural backfill in conformance to a geotechnical engineer's specifications.

Erosion and Sediment Control

Show the following items on all plan sheets, as applicable.

- Erosion and sediment control design and construction methodologies must meet or exceed the applicable standards of the City and DEQ. Erosion control plan sheets shall address all measures as required by the Department of Environmental Quality (DEQ) erosion control standards and

policies associated with this project. The City considers a construction project "active" until all permanent vegetation and/or erosion protection is established.

- Identify all drainage basins within the area
- Show existing and proposed topographic contours with clear and adequate spacing of contour labels showing direction of on-site slope.
- Define clearing limits. This includes site perimeter and protected areas (tree, utility, Areas of Special Interest, etc.)
- Construction entrance(s) / Wheel washes: every location where vehicles enter a site must have a construction entrance conforming to the minimum City standards.
- Concrete washout
- Sediment Controls (dust and water borne sediments)
- Storm inlet protection; all grated inlets are required to have Pre-Fabricated Filter Inserts with overflow installed per COB standard drawing E-2B. Field fabricated inserts (filter fabric, drain cloth, etc.) are not permitted.
- Tree protection / removal
- Slope mitigation (during construction and post construction)
- Stock pile areas
- Areas for borrow pits and waste disposal shall be in locations with appropriate land use approvals and permits with full consideration of erosion control needs during and after borrow or disposal operations.
- Runoff Control
- Dewatering
- Stream / Waterway protection; channel and outlet stabilization
- Sediment control; soil stabilization
- Permanent Facilities for un-vegetated soils and slopes; City does not permit Inlet protection placed on grated inlets of street surfaces (bio-bags, gravel bags, bales, etc.) as a form of permanent erosion control.
- Drywells, swales, other permanent detention/retention facilities
- The Engineer shall obtain and submit DEQ NPDES permit approvals for the project, if applicable.

PLAN SUBMITTAL

Submit construction plans for all privately financed public works facility improvements to City of Newport Community Development Department for review. The City Engineer (or designee) will coordinate review and approve all governing construction plans for civil work planned within the public ROW, which will include a review for compliance with all Newport Specifications, the Newport Municipal Code and Ordinances. Community Development will coordinate all applicable plan review for work done outside ROW.

All plan submittals shall include information required in the *Engineering Design and Construction Standards Manual* along with all other information requested by the City Engineer. This information is to include, but not be limited to, construction cost estimates, intersection sight-distance criteria, easement documents, ROW dedications, and executed agreements. The City will review all submittals for completeness, and notify design engineer if required information is missing.

Make submittals in a timely manner as lack of information to the City will impede the review process and lengthen review time.

The City may return plans deemed incomplete by the City without completing a full plan review. The City

will provide an explanation by indicating sections of the plans deemed incomplete. After addressing City comments, resubmit plans for review.

Submit the plan, with all required signatures. The Engineer/Developer submitting plans is required to determine the appropriate signatures of all private utilities, or agencies, beyond those required by the City. All plans require the approval of the City Engineer or the City Engineer's designee.

PLAN CHECK

Plan checks are required and issued on all construction projects within public right-of-way (ROW), or easements, or on public infrastructure that the City of Newport will maintain and operate upon completion. The person proposing the improvements shall obtain any permits required by federal, state, and other local jurisdictions, and provide proof of permits to City prior to issuance of the City's permit.

Although City staff work diligently to provide a thorough plan review, the City reserves the right to correct an error on the plans missed during plan check. A design that does not meet City of Newport Standards will not be allowed to go through construction because it was missed during the plan review process.

TWO-PART PLAN REVIEW

Engineering conducts two plan reviews: 1) a preliminary check to verify plans provide information necessary to successfully connect new development to existing city infrastructure, potentially done through submittal of plans through the Community Development Department for Level 2 projects; this review often focuses on private property without taking into consideration ROW constraints; 2) a final review done during submittal of the ROW application where focus is on what is happening or has happened in the ROW at the time just prior to construction. This second review may require *extensive revision of design* within the ROW.

Provisional Engineering Review During Community Development Permitting Process

Provisional Engineering Review during Community Development Permitting Process is completed at a generic engineering level to see that aspects of City Infrastructure have been addressed. It is anticipated that designers will base their drawings on City of Newport Design Standards and utility locate information, but this is often missing from a building review plan set focused on private property. The site plan is often missing key ROW elements as it is focused on private property.

During the first plan review Engineering assesses design for the following aspects and more (see Figure 1: UNDERGROUND UTILITIES AND ROW USE below):

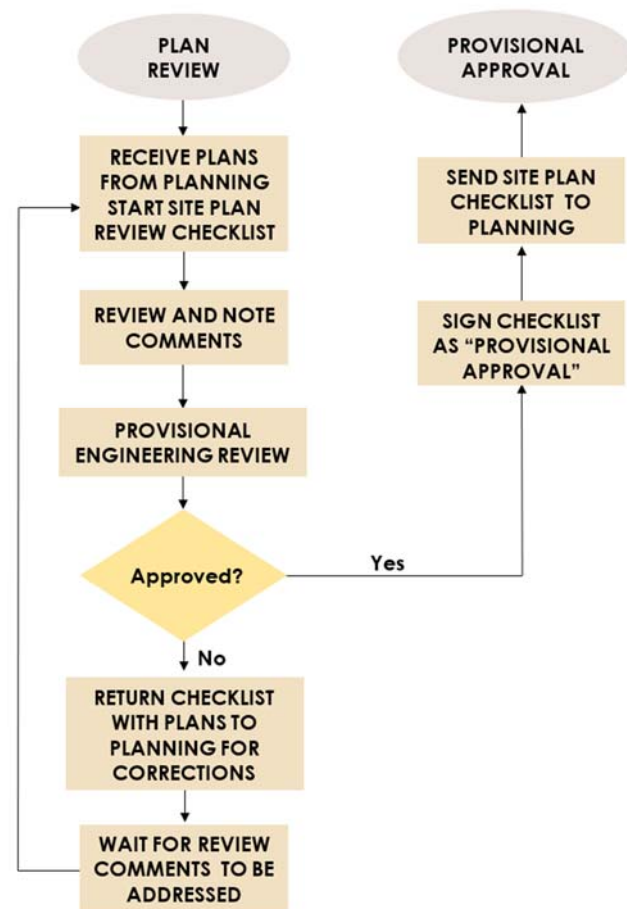
- General Engineering Principles
- Perpendicular Design
- Material / Limitations
- Service life of design
- Flow lines
- Utility profiles
- Storm runoff; where the water goes
- Future Utility Maintenance / Repairs

- Public Health and Safety
- ADA Compliance
- Elevation of garage compatible with street elevations
- Sidewalk clutter narrows walkway
- Required utility separation maintained
- New service lines have elevation to cross existing pipes and maintain flow.

ROW Permitting Review Phase

Recognizing there is often a time lapse between plan review and construction, a second *engineering review is required* prior to construction. This second review process is triggered by submittal of a ROW Permit application. While Engineering processes the ROW application, an additional detailed review of site plan is completed to ensure that any changes in the street, site plan, and updated Standard Drawings are compared to verify constructability of the design. This may include potholing to locate pipe depth and utility conflicts. This can in many instances require changes to the “approved” plan set as more detail work is done in tying in infrastructure to the City main lines and structures. During this stage, the Engineering Department issues the permit that was not issued during the Community Development plan review.

ENGINEERING SITE PLAN REVIEW FLOWCHART



During the second plan review Engineering evaluates design for field compliance:

- No changes in the ROW since plan first reviewed
- No changes in engineering policies
- Public Works checks site for existing infrastructure
- Public Works verifies service locations
- Existing tie-ins checked for service life.

This second review may require potholing of pipes to finalize depths and verify that new pipes will carry proper flow.

Plans During Construction

During construction unexpected field conditions may necessitate adaptation of approved plans. Examples of what may cause redesign of ROW features or private tie-ins:

- Potholing determines main is at a different elevation than thought during design
- Existing sewer lateral may not be in acceptable condition
- Location of the water meter may require realignment of private line to water meter
- A new utility has been installed in the ROW since plan were designed and cause conflicts

As part of the ROW review process, the Engineering Department looks at how new services will fit with existing services within the ROW. This may be the City’s pipe infrastructure, the width of the ROW, or other contributing factors.

If a conflict is noticed on the design, developers will be asked to redesign their plans in such a way as to resolve the conflict. Further, certain materials may work better in some instances than in others. These engineering standards are intended to facilitate an efficient use of the ROW as possible for the most benefit of the general public. At times this may necessitate a change in private plans to address a ROW need.

Locations of curb inlets, driveway designs, locations of water, sewer, and storm drains, all contribute to ROW assessments. Access by pedestrians, vehicles and commercial traffic further impact ROW use.

Figure 1 shows two homes within a block. Add many more homes and more pipes and the drawing illustrates how much is underground and unseen by the public.

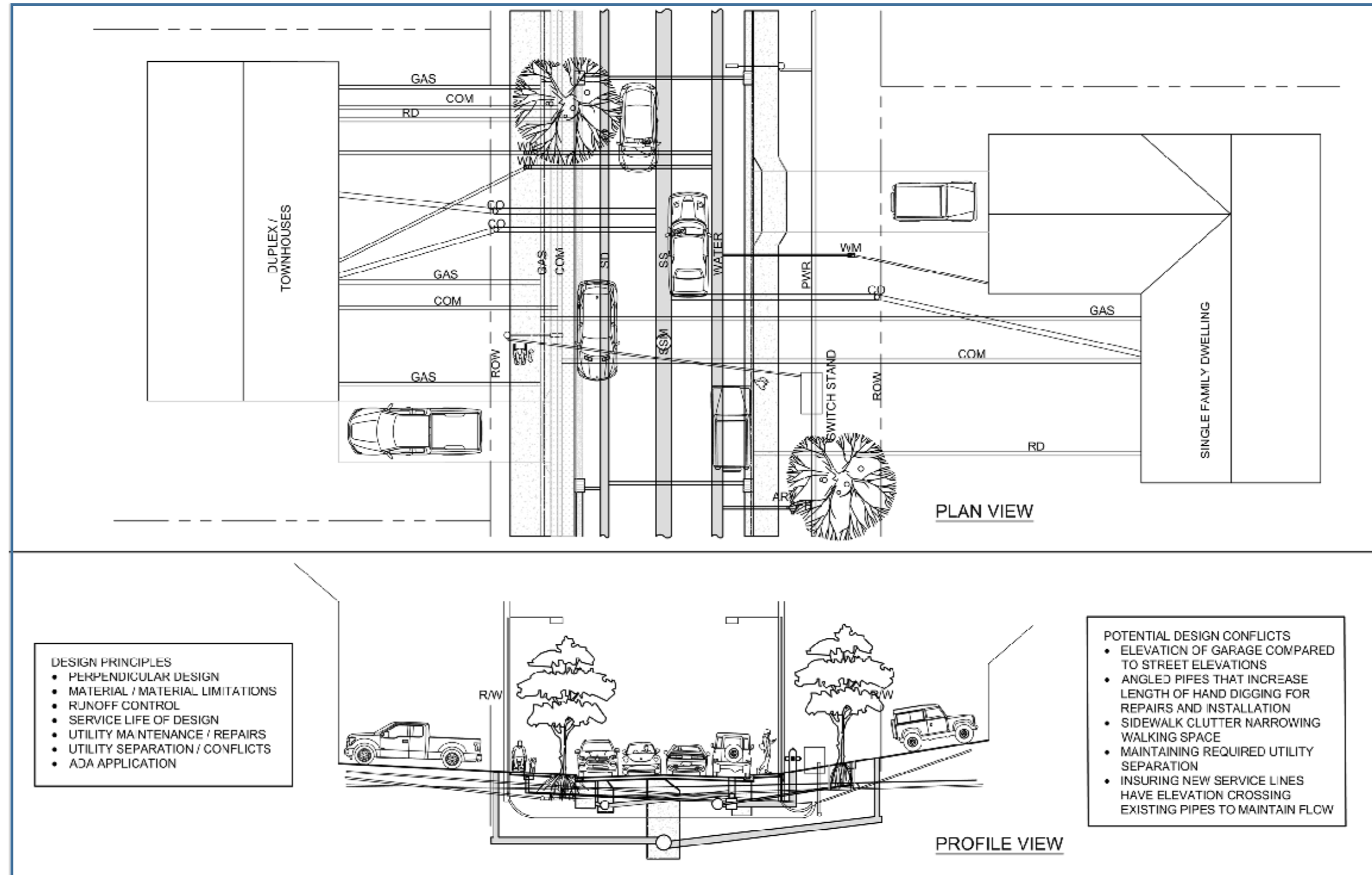


Figure 1: UNDERGROUND UTILITIES AND ROW USE

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- Street improvements have been completed that change how new development connects to street
- Private plans may not have taken blending between private property and ROW into consideration during design
- Features in the ROW were not caught on the private survey
- A previously unknown easement
- Incomplete design
- Other factors not foreseen and not listed here

Due to these and other potentialities, the first plan review is only preliminary and requires a more thorough review with submittal of the ROW permit application. The larger the development, the more potential conflicts that may impact design.

During this second review, engineering will require site specific information showing how private development connects to public infrastructure with up-to-date survey information and application of all pertaining City Standard Drawings.

- Single Family Dwelling Private Property Improvements—New Construction or Upgrades, one (1) water Service, one (1) Sewer Connection, one (1) Residential Driveway Access with limited twelve (12) foot throat approach, Sidewalk, and Landscape Areas; site plan with lot lines, dimensions, utility layouts, aerial photo.
- Multi-Family Dwelling Private Property Improvements with multiple property owners at end of project—New Construction or Upgrades, multiple water services, multiple sewer connections, a Commercial Driveway Access with maximum thirty (30) foot throat approach, Sidewalk and Landscape Areas. May require Fire Line.
- Multi-Family Dwelling Private Property Improvements with one property owner at end of project—New Construction or Upgrades, number of water and sewer connections determine by land use.
- Accessory Dwelling Units—New Construction, separate water and sewer connections may be required. Potential street improvements which include concrete flatwork.
- Commercial Development Improvements—Varies by development.

Engineering reviews are not intended to design systems. The reviewer will return a list of comments the developer is required to address. If Engineering is required to review plans not properly prepared more than three (3) times, developer will be charged a fee for review time.

Transition To Existing Infrastructure

Any Private development, whether done in phases, retrofitting, or new shall be required to show how the new structures transition into existing surfaces, pipe, concrete work, drainage, and other existing infrastructure.

Final ROW Review with ROW Application

Single Family Dwelling Private Property Improvements—

- New Construction or repair of driveways, sidewalk, landscape, water, sewer, storm, and street improvements when new building construction does not occur. If new building construction is

involved in upgrades, permit work falls under above Accela Processing.

- Level 2 Projects starting construction
- Special Event – Roads
- Private Utility Upgrades and New Installs
- See Appendix H for ROW Application.
- See Appendix I for ROW Requirements.
- See Appendix J for Tree Removal Checklist

RIGHT-OF-WAY PERMITS

The second plan review occurs when the project is nearing construction. A ROW permit is required prior to any activity on job site. No one shall perform work, store materials, nor encroach on or within a ROW, Public Easement, or Public Utility Easement without first acquiring a permit from the City’s Engineering Department.

Non-Exemptions

ROW Permits do not create exemptions for use of paid parking for staging or other use by permittees. Use of paid parking stalls for construction activity may incur parking charges.

Developer’s Responsibility

- ROW permit projects include, but are not necessarily limited to:
 - Improvements or upgrades to publicly owned and maintained streets and alley ways, City owned bridges, sidewalks, curbs, driveway approaches, water systems, sanitary sewer systems, and storm drainage systems.
 - All proposed private storm drainage, sanitary sewer, and water systems intended to connect to, or discharge into, a system under the jurisdictional control of the City of Newport.
 - The construction, repair, maintenance, or replacement of all other utilities located within a public ROW or public easement, including, but not limited to, power, telephone, gas, and cable television, shall be required to submit for plan check and obtain a ROW Permit.
 - Traffic Control Plan (TCP)
 - Temporary Pedestrian Access Route (TPAR)

ROW Application Submittal

A 100% completed design prior to discussion with City about a ROW permit. The City does not design private infrastructure, nor is the permit process review intended to be used as a system design format. Plans will be reviewed against the standards and specifications contained within this design handbook, standard drawings, and municipal code.

If the property owner is acting as a general contractor, a list of all sub-contractors, with their Oregon Construction Contractors Board (CCB) license and City of Newport Business License, shall be submitted with the ROW application. If property owner does not have that information, the application will not be processed. All work done by all sub-contractors listed in the permit is to be completed within the sixty (60) day permit period.

When site plan is ready for review, complete the ROW application, and prepare submittal.

ROW application must be taken to the City Finance Department and fees paid before submitting application to Engineering. Because fees must be paid prior to application review, ROW applications will

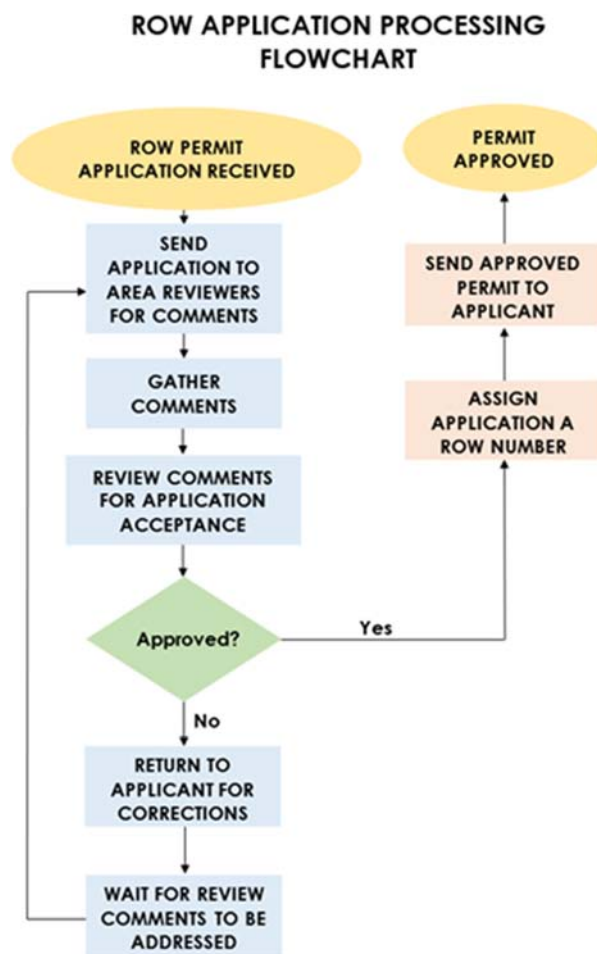
no long be accepted electronically, except for utility franchises that may submit electronically if they have made payment arrangements to do so.

If an application is found to be incomplete, the application will not be processed until any missing information is provided by applicant. [See above site plan requirements.] Once an application is complete, the City will review work outlined in application for conformance to construction standards. The review process could take up to three weeks to complete. Once approved, the application will be assigned a permit number and returned to the applicant with any applicable standard drawings attached and notes for construction.

Active Period

After receiving approval of any ROW permit, the applicant has sixty (60) days to complete construction or the permit will expire. If work does not start within sixty (60) days after issuing ROW permit, permit will expire on sixty-first (61) day of inactivity. Submit permit extensions in writing for City Engineer approval.

Note: Each phase of construction will require a separate ROW Permit for work within the ROW. Permits are good for 60 days. One permit may not cover entire construction period.



ROW PERMIT WORK

ROW Permits for Developments

Large Developments—due to construction time, large developments may choose to break ROW work down to segments with a permit for each individual segment if the work will take more than the 60 days allotted to an approved permit. This may change with the implementation of permit fees. A complete site plan is required even when work is broken into stages.

Small Developments—due to construction time and cost, small developments may want to break down ROW work into smaller pieces. Often these smaller developments want to move forward without a full development design; however, the City wants to see the full site improvements for City infrastructure and infrastructure tie-ins prior to ROW permit application. Partial plan designs can create problems in later development stages.

ROW Permits for Tree Removal or Tree Trimming

Section 9.10.025 Tree Removal Requests and Authority outlines ROW requirements for trimming and/or removal of trees in the ROW. A checklist must be completed and returned with the ROW permit application.

- See Appendix I for ROW Requirement Checklist.
- See Appendix J for Tree ROW Application and Requirements.

ROW Permits for Utility Companies

Utility companies with active franchise agreements are exempt from supplying a business license on the ROW application based on NMC 4.05.025. However, if a franchise agreement has expired, the utility company is required to purchase a City of Newport business license and supply the number on all ROW applications. If a utility company is using a sub-contractor, that sub-contractor will need a City of Newport business license and will need to provide that information on the ROW application.

ROW PERMIT FEES

On **July 1, 2024** the City of Newport will be moving to a fee based ROW permit. Fees have been approved by City Council and will include:

Base Fee	\$100.00
Expedited Review	\$100.00
Permit Extension (60 days)	\$100.00
Working Without a ROW Permit	\$500/Day

Expedited reviews may be done in three (3) calendar days with available staff. If staff is not available, expedited reviews may not be possible.

Fees must be paid prior to submittal of ROW application for review. Fees will be paid in the Finance department. A receipt, or copy, is submitted with the ROW application along with all pertinent plans and drawings. Applications will not be accepted without a receipt.

Finance is closed on Friday. Please make arrangements Monday through Thursday for submittal of ROW applications. Engineering staff is not available on Fridays to work on ROW permits.

Fees for Utility Franchises

Utilities that have ROW fees included in their active franchise agreements have already worked out payment of fees. For all utility companies without an active franchise agreement, ROW fees must be paid per ROW application. Utility franchises may want to make billing arrangements since their offices are out of town and their accounts payable departments are often separate from their permit offices.

New Service Fees

If new services are going in as part of a lot development, additional fees may be issued. These fees will be paid prior to the issuing of the approved permit. A list of service fees is listed in the Newport Municipal Code. Please see the Service Fees & ROW Permits flow chart on the next page for some of these fees and how they are processed as part of the ROW permit.

Permit Extensions

Extensions may be granted for an additional sixty (60) days. If an extension is not requested, and work continues beyond the sixty (60) days of the original approved permit, applicant will be considered as working without a permit and be subject to the \$500.00 per day working without a permit fee. If an extension is needed, applicant must bring in permit, show a second receipt for fees paid, and sign the permit to get a new closing date for the ROW permit.

Working Without a Permit

Contractors working in the ROW without a permit will be charged \$500.00 per day until a ROW

application is submitted and approved.

Permit Closeout

Permits must be officially closed. This means a final walk through by designated City representative must be conducted and all corrections made. Contractor, or permitted party, is responsible for requesting a final walk through of the project to close out ROW permit. Permit fees may continue to apply against a permit until close-out is completed and work accepted by City.

RIGHT-OF-WAY OBSERVATION

ROW observation is performed to verify that work within the ROW is following comments, notes, and details included on the approved ROW permit. Inspections are performed by two groups: Engineering personnel and Public Works personnel.

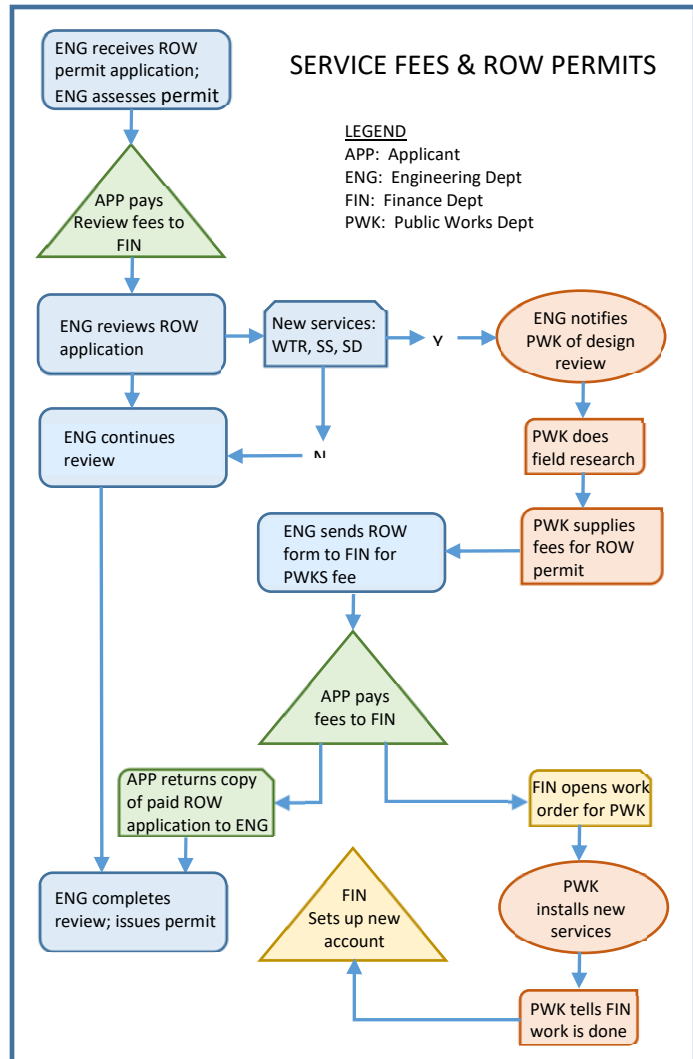
- Engineering observes work done in the ROW to ensure compliance to City of Newport design standards and permit requirements. This includes, but is not limited to:
 - Compaction testing
 - Pipe and structure installation
 - Pressure testing
 - Compliance with design standards
 - Compliance with ROW permit procedures, requirement, and notes.

- Public Works inspects work done in the ROW directly tying to mainline pipes to maintain an active awareness of what is being attached to the systems they maintain. This includes, but is not limited to:
 - Hot taps to water mains
 - Water main testing: pressure and bacte
 - Taps to sewer and storm mains
 - Installation of saddles
 - Manhole testing

A full list of required ROW observation and inspections will be attached to the approved ROW permit.

PERMIT ASSURANCES

Before any public construction begins, the applicant will submit a letter of commitment, letter of credit, assignment of deposit, bond, or cash deposit in form and substance satisfactory to the City as a performance assurance for such construction. The amount of the performance assurance for private



development projects shall be one-hundred-fifty (150) percent of the design engineer’s estimate or bid total on public improvements and shall be conditional on the performance of all terms and conditions of the permit and these standards. The guarantee shall include, but not be limited to, restoration of settled fills, trenches, pavement, and surfaces. After meeting all requirements stipulated here and the City authorized representative stamps and signs the construction plans, the Engineering Department will issue a Public Improvement or Right of Way Permit.

The Permit shall be valid for one year from the date of issuance. If time elapses on the permit, the applicant can request, in writing, a permit extension from the City Engineer or the City authorized representative. If City approves the applicant’s request, the permit holder then has sixty (60) contiguous calendar days to begin construction on permitted projects and shall show substantial progress during this permit extension, as determined by the City. If applicant does not make any substantial progress within the allotted time, the City will not grant any further permit extensions, and the ROW permit will be closed. Developer may resubmit plans. The City will review resubmitted plans to determine compliance with the Engineering Design and Construction Standards, including any newly approved codes and/or regulations.

Contractor shall submit to the City a bond worth one-hundred-ten (110) percent of improvement costs. See NMC 9.10.100 for details.

INSURANCE REQUIREMENTS

The City requires additional assurances from the applicant/contractor including, but not limited to, Certificates of Insurance from insurance companies or entities acceptable to City. The Certificate shall specify all of the parties who are Additional Insured. The contractor shall be responsible for paying all deductibles, self-insured retentions and/or self-insurance included under these provisions. For City financed projects, the successful bidder and their insurance company shall execute a Certificate of Insurance prior to the execution of the contract by the applicant.

INDEMNIFICATION

See NMC 9.05.190.

INSTRUCTIONS FOR COMPLETING ROW APPLICATION

Definitions

- Applicant—the person responsible for permit fees and final decisions; responds to questions and needs for more information; may be property owner, contractor, designer, or developer.
- Bond—Surety purchased by Contractor to protect City if ROW work is not completed or completed incorrectly.
- City of Newport Business License—License required for all persons or entities doing work in the City of Newport.
- Contractor—Person or Entity completing work in the ROW.
- Developer—Person or Entity developing a parcel, lot or area. May or may not be listed on the ROW permit.
- Level 1— No Licensed Professional Engineer Stamped Plan Required
- Level 2— Licensed Professional Engineer Stamped Plan Required
- OCCB License—Oregon Contractor Construction Board license showing contractor is bonded and in good professional standing to complete work in the ROW.
- Property Owner—Person or Entity that owns property where work will occur.

- Sketch—Site drawing/plan indicating work to be completed in the ROW for Level 1 and Level 2.
- Work Components—Parts of work to be completed in the ROW.

Part 1: Work location and Description

Address/Location of Work: Location of construction.

EXAMPLE: 169 SW 13th ST, Newport, OR 97365

Part 2: Contractor and Property Owner Information

Contractor information is required for all ROW applications. If there are sub-contractors, supply the same information as required for the prime contractor on an additional piece of paper attached to the ROW application. Each contractor, whether prime or sub will be required to have a current Newport Business License. Currently we ask for prime only? Astound for ex

If Contractor is the contact for questions and responsible for all fees, check box.

EXAMPLE: In this example, the contractor will be the primary contact and be responsible for all fees. Since the work is confined to one building and not part of a development, no bond will be required.

Contractor Information

Business name: J & H Excavating

Address: 29 Merry Lane City: Newport

24-hr Emergency Phone: 541-932-1478

Main Phone (if different): N/A

CCB License #: 56785

Bond # (attach a copy): N/A

Primary Contact for questions and fees

State: OR Zip: 97365

E-mail: jandhex@wildwind.com

City of Newport Business License #: 4358

Property Owner information is required for all ROW applications. They may or may not be the primary contact, but this information is kept on hand if for some reason the City needs to verify some aspect with the property owner specifically.

EXAMPLE: In this example, the property owner is not the primary contact, so the box is unchecked.

Property Owner Information

Property owner name: Julia McNamarrah

Address: 169 SW 13th ST City: Newport

Phone: 541-562-5573

Primary Contact for questions

State: OR Zip: 97365

E-mail: jmMac@carry.com

Part 3: Applicant's Declarations and Fees

Applicant and Property Owner signatures are required on all permits to insure both parties are aware of and verify they have read the applicant declarations.

Once the application is signed, drawings attached, all information complete, take the application to the Finance Department to pay all fees. Attach copy of payment receipt to application and submit application to the Engineering Department for review.

Part 4: City Review

When Engineering receives the submitted application, a group reviews the application for completion and conformance to the City of Newport Design Standards and Standard Drawings. If there are any

questions, staff will contact the designated person to get clarification of information included on the application or request more information or modifications. Once these questions are answered, the City will approve the permit, indicate the 60 contiguous calendar day closing date, and release the ROW permit. Work can begin as soon as the approved permit is released.

Application reviews may be completed within three weeks. On complex applications, or if the City has difficulty getting requested information, application review can take more than three weeks to complete. Applications need to be submitted with ample time to complete the work within the contractor's schedule. For review to (placed at "to" highlighted)

END OF SECTION

**SECTION 3 –
WASTEWATER**

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SECTION 3 - WASTEWATER

PERFORMANCE STANDARDS

Wastewater system design shall meet the policies and guidelines of the current City of Newport Wastewater Master Plan, Newport Municipal Code, and the Oregon Department of Environmental Quality wastewater design guidelines; design system with a seventy-five (75) year life expectancy.

Design public wastewater systems within the public right-of-way (ROW) to provide gravity service to all areas of development.

Design wastewater system capacity for ultimate development density of the tributary area. The system shall allow for future system extension and for future development.

Do not discharge storm water, including street, roof, or footing drainage, into the wastewater system; removed storm runoff by a system of storm drains or by some other method separate from the wastewater system.

Do not discharge unpolluted or non-contact cooling waters into wastewater systems. The overflow drains and filter backwash lines of swimming pools and "hot tubs" shall drain into a wastewater sewer. As a condition of wastewater service, all developments will be required to provide public wastewater lines to adjacent upstream parcels in order to provide for an orderly development of the drainage area. This shall include the extension of waste mains in easements across the property to adjoining properties, and across or along the street frontage of the property to adjoining properties when the main is located in the street ROW. This shall include trunk sewers that are oversized to provide capacity for upstream development.

Locate all City owned wastewater within the public ROW for ease of maintenance, access, control of the facility, operation of the facility, and required replacement/repair. The City Engineer may approve an exception on a case-by-case basis. See Standard Drawing G-051.

Refer to Newport Municipal Code 5.15 Sewer System and Charges for information about City sewer codes.

Dry-wells

The City does not allow sanitary sewer dry wells in any location within 250 feet of a sewer main. Developers will be required to extend the sewer main to the new development for new development tie-in to City infrastructure.

CONFLICTS AND OBSTRUCTIONS

- **Utility Notification:** The contractor shall comply with the rules and regulations of the Oregon Utility Notification Center: OAR 952-001-0010 through 952-001-0090 and ORS 757.993. Provide at least forty-eight (48) hours' notice to all utility offices affected by the construction operation.
- **General:** Contractor may encounter various obstructions during the course of the work. Obtain maps and information regarding underground utilities from the utility owning and operating such utilities, but the City does not guarantee the location of such utilities. If the contractor interrupts the utility services because of the construction operation, the contractor shall notify the utility owner and the

City authorized representative immediately.

- Protection: The contractor shall exercise all due care in protecting existing underground and surface facilities and property along the route of the project. This protection shall include, but not be limited to, trees, yards, fences, drainage lines, mailboxes, driveways, shrubs, and lawns. Any existing facilities not specifically designated for alteration or removal that are damaged during construction shall be restored or replaced to an “in kind” or better condition, at the expense of the contractor.
- Access: The contractor shall maintain access to all property, including normal delivery service, mail service, and emergency services.
- Abandoned Utilities: Properly remove, grout, or plug all abandoned utilities at the discretion of the City authorized representative.

SANITARY SEWER SYSTEMS

Find minimum design standards for sewer facilities in the Oregon Department of Environmental Quality (DEQ) regulations, as detailed in the appropriate Oregon Administrative Rules (OAR), Division 52. City of Newport Design Standards may be more stringent. In cases where the City of Newport Standards are different from the requirements specified by DEQ, use the City of Newport Design Standards. In cases where the City of Newport lacks a design standard, designers shall refer to OAR Division 52, Appendix A – Sewer Pipelines, and OAR Division 52

In places where a gravity solution is not possible, two solutions exist, pressure sewers, and a regional pump station with force main. Regional pump stations will be determined through the City’s Wastewater Master Plan. Where the Wastewater Master Plan defines a regional pump station, all sewer flowing to the wet well will be by gravity. The City does not allow pumping from one pump station to another pump station. In addition, the City does not allow lines or pump stations to connect to the discharge line (force main) of any City owned pump station, until the first manhole at which force main line becomes a gravity flow line.

Designers may propose pressure sewers as an alternative. Pressure sewers are defined where each lot is served with a privately owned, operated, and maintained sewer pump that feeds to a pressure line in the public ROW. Do not connect any City owned or operated pump station to a pressure sewer system. The City Engineer or designee will evaluate each pressure sewer on a case-by-case basis. City does not allow pressure sewers to connect to the discharge line of any City owned pump station. The City is responsible only for the main line and not the individual pressure pumps connected to the main. A single pump station on a pressure sewer system cannot serve multiple lots. Each lot is required to have its own privately owned and operated pressure pump. The City is not responsible for any maintenance or operation of any privately owned pump station. When determining if a gravity system is not possible, the City will consider the long term operational and maintenance costs associated with any pressure sewer solution.

Where the system has no capacity the City does not permit additional flow into the City sewer system. The City defines capacity as the adequate ability to convey additional sewer flow during peak flow periods without violating criteria for surcharge, wet well capacity, or velocity. Distance from a municipal sewer line that has capacity is not a limitation on providing service. If, and only if, the City lacks capacity to provide sewer service to any development, the property owner can elect to consider on-site treatment and disposal for interim sewer needs until city sewer capacity is available. On-site treatment includes, but is not necessarily limited to, traditional septic tanks and leach fields or advanced treatment systems such as membrane technology. The City of Newport, Lincoln County and DEQ must approve the process selected for treatment; the selected treatment shall comply with local, state and federal laws

and regulations. The City allows on-site treatment only after the City Engineer determines in writing that the City's sewer system lacks capacity to provide sewer when the property owner needs the service.

Design any system to treat and dispose of sewer on-site be connected to City sewer within twelve (12) months of sewer system capacity becoming available, as determined by the City Engineer. The City Engineer can extend the twelve (12) month connection requirement to a date or event certain, based on the performance of the onsite system, the anticipated lifespan of the on-site system, the investment in the on-site system and/or other relevant factors. In addition, any on-site treatment system owner will be required to enter into an agreement with the City that clearly identifies the owner's responsibility to maintain and operate the facility. The agreement will also provide that the City is not required to maintain or operate these systems and that should they fail, the land owner is responsible for any necessary repairs or requirements to satisfy State and Federal law even if the laws have been amended since contract initiation with the City. Any federal and/or state permits to operate an on-site system shall be included as an attachment to the agreement. The recorded agreement shall be against the subject property and shall remain in effect even if transferring property. The City may elect that a trust, contract to operate the system, or similar permanent financial mechanism, be established to cover repair and maintenance costs for the system to remain in compliance for perpetuity.

At the time that the City develops sewer capacity to serve a site with an on-site system, the City can require the owner to connect to the City's collection system, per the Newport Municipal Code, if it is located within three hundred (300) feet of any property line, or as required under OAR 340-071-0160. Unless the City extends the connection requirement as provided above, this connection shall occur within twelve (12) months of capacity availability. The expense of such connection will be the responsibility of the property owner. Developer shall pay all applicable connection fees, including system development charges, upon connection to the municipal sewer system.

Approval for use of any alternative to gravity sewer shall be requested in writing.

Submit all design calculations and studies of wastewater conveyance systems in an organized, legible, and professional form for review. These calculations, bearing the signature and stamp of a registered professional engineer, shall also include a thorough list of assumptions used in making the calculations. The City will return all submittals that are not legible, are poorly organized, are inaccurate in the assumptions for the calculations, or are otherwise not in accordance with submittal requirements to the applicant for correction and re-submittal. Any work done on City sewer lines requires a ROW permit. A ROW permit application may be downloaded from www.newportoregon.gov or in hard-copy from the front desk of the Engineering Department in City Hall.

MINIMUM DESIGN CRITERIA

Velocity

Design all wastewater lines on a grade, which produces a mean velocity, when flowing half-full or full, of no less than two (2) feet per second and a minimum slope of .004.

Manning Equation

When calculating minimum pipe slopes and velocities, the engineer shall use the Manning pipe friction formula.

Pipe Coefficient

The minimum pipe roughness coefficient for wastewater sewers shall be 0.013.

Inflow and Infiltration

Add an allowance of 1,000 gallons/acre/day for all land area in the basin served for calculation purposes.

Fats, Oils and Grease (FOG)

All Food Service Establishments (FSE) are required to install a grease removal device (GRD) for the kitchen or food/beverage preparation area. Clean and maintain all GRDs on a regular basis in order to ensure proper functioning and insect free performance.

FLOW CALCULATION

Average sanitary sewage flows shall be calculated using the most current land use zoning, and applying the unit rates shown in Table 4.1 below.

Flows generated by unusual land uses such as institutional or heavy industrial shall be based on actual (preferred) or estimated water consumption records. Base estimates on either an industry standard, or water consumption from a similar use.

Base projected flows for a development on the Wastewater Master Plan and Equivalent Dwelling Units (EDUs). Any subdivision building or proposing a community swimming pool that is connected to a sewer lift station shall be required to provide flow calculations and general information pertaining to volumes being discharged into the City's collection system for cleaning purposes. Additionally, there shall be a requirement mandating this procedure done during off peak hours. Furthermore, the pool maintenance staff shall be required to notify the City Collections staff prior to performing this work.

TABLE 4.1 Basis for Sanitary Sewage Flow Estimation

Land Use	Average Daily Flow
Residential	130 Gallons / Unit / Day
Non-Residential	427 Gallons / Acre / Day
School	347 Gallons / Acre / Day
Medical District Overlay	490 Gallons / Acre / Day
OSU-Cascades	490 Gallons / Acres / Day
Central Business District	185 Gallons / Unit / Day

Equivalent Dwelling Unit Calculations for known site conditions 130 Gallons/EDU/Day

Breakdown by Equivalent Dwelling Units

Residential Use

Land Use	Average Daily Flow
Single Family Dwelling	1 EDU
Two Family or Duplex Unit	2 EDU
Multi-Family	0.8 EDU / unit

Institutional Use

Land Use	Average Daily Flow
Schools	
Kindergarten	0.05 EDU / person

Elementary	0.08 EDU / person
Junior & Senior	0.10 EDU / person
College	0.15 EDU / student
Nursing Home	0.65 EDU / bed
Hospital	0.75 EDU / bed
Library	1 EDU

Commercial Use

Land Use	Average Daily Flow
Retail	1.0 EDU for first 2,000 SF floor area 0.5 EDU / Each additional 2,000 SF
Service & Repair Shop	1.0 EDU for first 1,800 SF floor area 0.5 EDU / Each additional 18,000 SF
Bank & Office	1 EDU / 2,000 SF
Medical, Dental, Veterinary	1.0 EDU / 1,000 SF floor area
Restaurant	1.0 EDU / 600 SF
Automobile service station	2 EDU
Barber Shop	0.30 EDU / Chair
Beauty Shop	0.38 EDU / Chair
Industrial, Manufacturing, Beverage Processor & Commercial Warehouse	0.09 EDU / person
Commercial laundry	2.58 EDU / 1000 Gallons of water use
Laundromat	1 EDU / machine
Theater	0.009 EDU / seat
Parks with restroom	1 EDU
Stadium	2 EDU
Swimming Pool	6 EDU
Dry Cleaners	3.10 EDU / 1,000 SF floor area
Recreational Roller Rink, Dance Hall	0.27 EDU / 1,000 SF floor area
Spa & Athletic facilities	6.67 EDU / 1,000 SF floor area
Armory	1 EDU
Carwash / wash stall	1.17 EDU
Pet Grooming	0.67 EDU / 1,000 SF floor area
Motel, Dormitories	0.40 EDU / room

Peak Factor (Domestic Flows Only)

Calculate sanitary sewage design flows by applying a peaking factor to the average daily flow. Do this by accumulating flows from the upper reaches of the system and multiplying the accumulated average daily flow at specific nodes.

Apply the following peaking factors to obtain the design peak flow at that point:

Average Domestic Flow	Peaking Factor
< 1.0 mgd	3.0
1.0 – 2.5 mgd	2.5
2.5 – 5.0 mgd	2.25
> 5.0 mgd	2.0

A qualified professional engineer shall determine peaking flows for large institutional, commercial, or heavy industrial point sources. Results require approval by the City Engineer or designee.

Base flow calculations on Manning's equation using the following values for n:

Pipe Material	Mannings 'n'
PVC pipe	0.009
HDPE pipe	0.009

Line Diameter and Velocity

Line diameters shall be computed using the procedures above to calculate the peak flow and selecting a diameter that will flow eighty percent full at that peak design flow [sewage depth/inside diameter (d/D \geq 0.8)]. For example:

- A six (6) inch line @ 0.006 ft/ft minimum grade flowing half full = 97.5 gpm
- An eight (8) inch line @ 0.004 ft/ft minimum grade flowing half full = 171.5 gpm

Design slopes and diameters for gravity sewers to maintain a minimum velocity of two (2) feet per second (fps) at the average daily flow rate. However, no design shall ever exceed eight (8) fps, to ensure the liquids do not surpass the solids.

Minimum Grade (Gravity)

Designers shall use the following minimum grades (based on PVC Manning's $n=0.013$, velocity two (2) feet per second (fps) at fifty (50) percent flowing full). Reference OAR 340 Division 52 for additional information:

Pipe Inner Diameter (inches)	Slope (feet per 100 feet)
4	1.5 min, 2 typ
6	0.75
8	0.40
10*	0.25
12	0.19
16	0.14
18	0.11
21	0.09
24	0.08
30	0.06

*10" sewer pipe not permitted with new construction unless otherwise approved by the City Engineer.

Inverted Siphons

Inverted siphons not permitted. If there are no practical alternatives for gravity sewer service without a siphon .

Flows in Pressure Sewers

Base flow calculations for pressure systems on the Hazen and William's equation using the following value for C:

Material	C Value
PVC	135

Minimum Velocity

Select line diameters for pressure sewers and force mains to maintain a minimum velocity of three (3) feet per second (fps) at the minimum pumping flow rate for variable flow pumps.

Maximum Velocity

Maximum velocity along any point in pressure sewers, including force mains, shall be eight (8) feet per second (fps).

Pressure Sewer Appurtenances

Design pressure sewers and force mains with a constant downstream elevation rise, with the discharge being the highest point in the line. Pumping downhill (the discharge elevation being lower than the pump elevation) not allowed.

Provide with freeze protection including insulated enclosures for all air or air/vacuum relief valves. A professional engineer shall design system. Designers shall assume minus ten (– 10) degrees F sustained outside temperature. Submit design calculations for air release valves with the plans.

Connection to Existing Sewers

Connections to, and extensions of, existing sewers will occur to facilitate new development. The City places certain requirements on the design engineer as to the permitted methods and/or locations. Make connections to existing manholes with the following guidelines:

- Core all manhole wall holes and base channels; approved Rubber Boots shall be used.
- Where the invert of the connecting pipe is two (2) feet or less above the invert out elevation, an inside-drop will be constructed utilizing Portland cement concrete. Wastewater entering the manhole will follow a smooth concrete channel transitioning evenly from the invert of the inlet pipe into main channel. City will not approve a wastewater design that allows wastewater to fall freely to the manhole base.
- Where the invert of the connecting pipe is more than two feet above the manhole shelf, the contractor will be required to construct an inside drop per Standard Drawing S-220 with the inlet pipe invert being located at the manhole shelf. The wastewater entering the manhole will follow a smooth concrete channel transition from the inlet pipe into the main channel.
- Core plastic pipe inserted thru manhole; install with Rubber Boot.
- Where the invert is required to enter below the shelf of the manhole, the inlet pipe will not enter below a point where the crown of the new inlet pipe is below the crown of the outlet pipe. If base damaged during this process, rebuild the manhole base. The wastewater will enter the main flow in a smooth channel transitioning from the inlet pipe to the main channel.
- No pipe will enter an existing manhole where the angle between the incoming flow and the outgoing flow is greater than ninety (90) degrees.

Remove the entire cleanout assembly, including the wye, when extending sewers from cleanouts.

Make new building service laterals at existing tees where possible.

When tees do not exist on the Public Wastewater Conveyance System, the new lateral sewer will enter the collection system through a "cored" opening with an approved connector saddle tap, or 'cut in' tee. Complete this connection in conformance with City standards.

ALIGNMENT AND COVER

ROW Location

Wastewater lines shall be located north and west from the ROW centerline as defined in Standard Drawing G-051. Make all changes in pipe direction at a manhole.

Sewers shall be located in the street ROW. If streets have curved alignments, the center of the manhole shall not be less than six (6) feet from the curb face on the outside of the curve, or the wastewater centerline less than six (6) feet from the curb face on the inside of the curve. City does not allow curved alignments in wastewater lines.

Do not place utility infrastructure within one foot of a survey monument location noted on a subdivision or partition plat per ORS 92.044 (7).

Waterline Crossings

Sanitary sewer line and water line crossings shall be designed per OAR 333-061 and/or AWWA standards, whichever is most stringent.

Minimum vertical pipe separation shall be twelve (12) inches, with reduction to six (6) inches vertical separation with approval from the City Engineer on a case-by-case basis.

- When a sanitary sewer main or lateral crosses a water main or lateral, the bottom of the water line shall be one-and-one-half (1.5) feet or more above the top of the sewer line, wherever possible. Center one full length of the water line at the crossing.
- Where water line crosses over the sewer line with a clearance of less than one-and-one-half (1.5) feet, or where the water line crosses under the sewer line, construct the sewer line with AWWA C-900 PVC pressure pipe for one full length of pipe. At the intersection, center length of pipe at a right angle with ten (10) feet on each side of the crossing water line. Install pipe with PVC gasket couplings specifically designed for transition from gravity sewer pipe to PVC water pipe.
- Provide a written report of findings indicating the reasons for reducing separation.

Minimum Cover

Place all new residential hillside subdivisions mainline and lateral sewers in the street at a depth sufficient to drain building sewers on the low side of the street.

Place wastewater sewers for residential areas in the street with the following minimum cover, Standard Drawing G-051:

Building Service Lateral - Six (6) feet
 Trunk and Collector Sewer
 In the roadway - Eight (8) feet
 In easements - Eight (8) feet

City Engineer may approve alternative cover depth where the topography is relatively flat and existing sewers are shallow.

For gravity sewer, the minimum inside diameter shall be eight (8) inches, unless otherwise approved by the City Engineer. Minimum size for pressure-collection system lines shall be four (4) inches, unless otherwise approved by the City Engineer.

Relation to Watercourses

Generally, the top of all wastewater sewers entering, crossing or adjacent to streams shall be at a sufficient depth below the natural bottom of the streambed to protect the sewer line. One (1) foot of cover is required where the sewer is in rock; three (3) feet of cover is required in other materials. In paved channels, place the top of the sewer line at least six (6) inches below finish grade of the bottom of the channel, except as provided above.

Sewers located along streams shall be located outside of the streambed and sufficiently removed from there to provide for future, possible stream channel widening. All manhole covers shall be watertight at or below the 100-year flood elevation.

Design sewers crossing streams or drainage channels to cross the stream as nearly perpendicular to the stream channel as possible, and shall be free from change of grade. The minimum cover shall be thirty-six (36) inches from the bottom of the streambed or drainage channel. Pipe material shall be Class 52 ductile iron or ASTM C-900 PVC with a twenty (20) foot length of pipe centered on the stream or drainage channel centerline. The pipe shall extend to a point where a one-to-one slope begins at the top of the bank then slopes down from the bank away from the channel centerline and intersects the top of the pipe. (No tees allowed in DI runs).

If designer is unable to meet the above cover requirements, a concrete encasement will be required. The City Engineer will review each deviation from the above requirements on a case-by-case basis.

SEWER MAIN DESIGN

Sewer facilities shall be designed using alignments in public ROW. Sanitary sewers shall be located as close to the roadway centerline as possible or centered within the ROW when no roadway exists. Sewers on curved roadways may vary from the centerline to minimize the use of manholes; however, the manholes themselves shall be located as close to the roadway centerline as possible. On narrow streets where locating the manhole on the center line of the roadway would force a water line in the same roadway to be located outside the paved area or within close proximity to the curb line, the manholes shall be located as close to six (6) feet from the roadway centerline as possible.

All sewer improvements shall terminate at a sewer manhole. City will allow stubbing sewer pipe for future extension for approved multi-phased, master planned developments only where approved by the City Engineer.

Sewer shall maintain a minimum ten (10) foot horizontal separation from all water mains and water services. Franchise utilities shall maintain two (2) feet horizontal separation and twelve (12) inches vertical from sewer services and ten (10) feet horizontal separation from sewer mains. City will grant a six-inch vertical separation from franchise utilities on a case-by-case basis. City does not allow ninety (90) degree fittings for sewer mains, unless otherwise specified. Sewer mains within private property, outside City of Newport ROW, shall be within a recorded sewer easement not less than twenty (20) feet wide, with the pipe centered in the easement. Additional easement width may be required as determined by sewer depth and topographic conditions, as determined by the City Engineer. See City of Newport Standard Drawing G-051 for utility locations.

Remove abandoned sewer mains from the ROW. The City prefers to remove sewer mains within City sewer easement, on private property, but contractor may abandon pipes in place, with approval from the City Engineer, provided City is abandoning sewer easement.

Pipe and fittings shall consist of one type of material throughout. City does not allow interchanging of pipe and fitting material.

Sanitary sewer pipe shall have flexible gasket joints. Joints on all fittings shall be the same as the joints used on the pipe. Furnish caps or plugs with each fitting, outlet, or stub, as required, with the same type of gasket or joint as the pipe.

Clearly identified each piece of pipe and fitting as to strength, class, and date of manufacture.

Depth

Minimum cover from finished grade to the outside top of the pipe for all sewer lines except sewer services shall be thirty-six (36) inches. If conditions do not allow for a thirty-six (36) inch depth consideration, the City Engineer will evaluate alternative on a case-by-case basis.

MANHOLES

Manholes shall conform to ASTM C 478.

Manholes shall be located at all changes in slope, alignment, pipe size, pipe material, and at all pipe junctions with present or future wastewater sewers. Manhole spacing shall not be greater than five hundred (500) feet. See Standard Drawing S-200 for manhole designs. They are suitable for most conditions. Do not show new designs or revisions on the construction drawings unless the standard designs are not suitable.

New or revised designs may be necessary if:

- One or more of the sewers to be connected to the manhole is over thirty-six (36) inches in diameter (smaller diameters may require a special design if the manhole is at an alignment change.)
- Connecting several sewers to the manhole.
- There is less than ninety (90) degrees between the incoming and outgoing sewer.
- The manhole will be subject to unusual structural loads.
- Diversion or other flow control measures are required.

Where encountering one or more of the above conditions, the design engineer shall draw the manhole base to determine if it is feasible to use designs shown in the Standard Drawings. It may be necessary to restrict installation options to a specific Standard Drawing specified by a note on the construction drawings. The City Engineer will need to approve design if a special design is required for any reason, it will be necessary to show the Drawing Number on the construction drawings and provide structural calculations as needed.

MANHOLES (PRESSURE)

Manholes are required in all pressure sewers where placing cleanouts, air release, or vacuum relief devices. Cleanout manholes shall not be more than five hundred (500) feet apart. As with gravity manholes, manholes shall be located on or near to pavement centerline.

MANHOLES (PRESSURE TO GRAVITY SEWER)

Place manholes where pressure sewers connect to gravity main lines after the point at which the

pressure line is in laminar non-pressurized flow. Install a minimum of one joint of gravity pipe prior to the manhole. Install the joint of gravity pipe at minimum grade, as practical.

MANHOLES (GRAVITY)

Manholes shall be located in a manner to provide unobstructed access for maintenance and inspection, to prevent stormwater infiltration, and to minimize the possibility of damage from vehicles or injury to pedestrians. Extend sewer mains as necessary to place new manholes at street intersections. Manholes shall be located on pavement centerline, at intersections, with spacing limited to not more than five hundred (500) feet. When no intersection exists within the spacing requirements, manholes shall be located in the pavement centerline. On narrow streets where locating the manhole on the center line of the roadway would force a water line in the same roadway to be located outside the paved area or within close proximity to the curb line, the manholes shall be located as close to six (6) feet from the roadway centerline as possible.

Manholes shall not be located within twenty-five (25) feet of street sag low points. Manholes located on mains larger than twelve (12) inches in diameter or at a pressure/gravity sewer intersection may require a lining for corrosion resistance.

Manholes for all piping in excess of twelve (12) inch diameter, **or manholes that have three or more inverts** must be sixty (60) inch in diameter and use an eccentric cone configuration with the manhole opening located over a point opposite the outlet pipe. All other manholes shall be a minimum of forty-eight (48) inch-diameter and use an eccentric cone configuration with the manhole opening located over a point opposite the outlet pipe.

City does not require existing forty-eight (48) inch-diameter manholes be replaced with sixty (60) inch-diameter manholes when additional invert(s) are added unless they meet the criteria discussed above. Separate the existing and new inverts by a minimum of twelve (12) inches in all directions.

Design each manhole with a minimum fall through the invert of not less than one-tenth (0.1) foot. Invert fall through manholes that divert flow more than forty-five (45) degrees or are sixty (60) inch diameter shall have a fall through the invert of not less than two-tenths (0.2) foot. At no time shall manholes direct flow more than ninety (90) degrees, preferably less, unless at intersections with multiple incoming inverts.

For pipes that are larger than eight (8) inch diameter, internal invert drops are limited to not more than two (2) foot differential between the invert in and the invert out. For pipes that are eight (8) inch diameter and smaller the internal invert drop is limited to one (1) foot differential between the invert in and the invert out. The City encourages designs that avoid the use of external drops through the adjustment of the grade of the pipe entering the manhole. Where designer cannot adjust pipe slope because of excess sewer velocities, inside-drops are required on all manholes when the differential exceeds requirements.

Alternate Manhole Features

For some alternate manhole features see Standard Drawing S-200, S-210, S-220, S-250, and S-260. Specifically note on the construction drawings where these features are required. Some examples are:

- Use flat tops in lieu of standard cones where there will be less than five (5) feet between the lowest pipe invert elevation and the top of the manhole lid. Do not use flat top manholes if a standard

frame will work with depth. Pre-approval required.

- If design Engineer expects floodwaters to cover manhole top or be below one hundred (100) year flood elevation use watertight manhole frames and covers. Avoid such conditions wherever feasible. For manhole joint seal, apply wrap-around heat-shrink protection sleeves as approved by City Engineer. In remote locations, the finish grade of the manhole casting needs to be two (2) feet above existing grade.
- Tamperproof manhole frames and covers are required in all areas outside the paved public ROW.

Establish standards for elevation differences at manholes to compensate for normal energy losses and to prevent surcharging of a sewer by a larger sewer. For purposes of slope calculation and for establishing elevation differences, give elevations at the intersection of the sewer centerlines (usually the center of the manhole). The rules for elevation differences at manholes are:

- The crowns of incoming sewers shall be at least as high as the crown of the outgoing sewer.
- If the incoming and outgoing sewers are of equal size and are passing straight through the manhole, design a two-tenths (0.2) foot. difference in invert elevations.
- If sewers intersect or the alignment changes at the manhole, the invert elevation difference shall be at least two-tenths (0.2) feet for zero (0) to forty-five (45) degrees of horizontal deflection angle, and at least two-tenths (0.2) feet for over forty-five (45) degree of horizontal deflection angle. City does not allow horizontal deflection angles greater than ninety (90) degrees.
- The slope of a sewer within a manhole shall be no less than the slope of the same sewer outside of the manhole.
- Drop connections are required when the vertical distance between flow-lines exceeds two (2) feet. Specify the diameter of the drop connection on the construction drawings. Provide smooth flow-lines with vertical distances of less than one (1) foot wherever feasible.
- All connections must enter the manhole through a channel in the base when connection to existing manholes. This does not include drop connections. The City Engineer shall approve inside-drop connections. Construct drop manholes per Standard Drawing S-220.
- Channels manhole base to maintain minimum velocity of no less than two (2) feet per second (fps). See Standard Drawing S-200 and S-210. Channels shall also allow for insertion of televised sewer inspection equipment into the pipe from outside of the manhole. Make all pipe connections with an approved Rubber Boot. Where conditions make compliance with these rules impractical, the City Engineer may make exceptions on a case-by-case basis. It will be necessary, however, for the designer to provide a complete analysis of the need for such designs. Design acceptance requires pre-approval by the City Engineer.

Manhole Placement

Where manholes are adjacent to but outside paved ROW, construct a paved access pad sufficient for service equipment to operate without blocking the traveled way. Where manholes are away from paved

ROW, a fourteen (14) foot wide two (2) inch thick paved all weather access road, with a six (6) inch base, or as approved by the City Engineer, shall be installed centered over the sewer line with six foot by six foot (6' x 6') asphalt or concrete pad around manholes. This paved access road shall be a minimum of fourteen (14) feet in width. Support facilities such as, but not limited to, vehicle turnaround or fencing with a lockable gate may be required at certain manhole locations. These requirements will be at the determination of the City Engineer or designee.

Location of manhole frame and covers in a vehicle wheel track is not acceptable. Location of the center of manholes within five (5) feet of the curb line is not acceptable. Location of manholes outside of paved areas is not acceptable.

SEWER LATERALS

Design sewer services perpendicular to the main sewer whenever possible and shall not be connected into any manhole. All sewer services shall have tracer wire and marking tape installed in conformance to Standard Drawing S-200.

Gravity sewer services are not to be less than four (4) inches in diameter. All other gravity sewer services and all pressure sewer services shall be the appropriate diameter for the application as specified by the designer and approved by the City Engineer.

Ninety-degree fittings for sewer services not permitted, unless otherwise specified. Sewer services shall have not less than twenty-four (24) inches of cover at the property line. If the service crosses a roadside ditch, or any low area, obtain twenty-four (24) inches of clearance at the crossing, measure for solid compacted backfill.

For all residential, commercial, industrial, or institutional parcels, each lot can only have a single service. On lots with multiple buildings, each building is required to have at least one service, but those services can only feed to a single service connected to a sewer main.



Figure 1: PVC Tee Fitting

Sewer services that cross property lines are discouraged and require approval from City Engineer. Width of the recorded easement is to be determined at the time of sewer approval, typically 10 feet wide with service centered in the easement. Abandoned pipes are to be removed per NMC (see Chapter 9.05 Utilities). Submit request to cut and cap all unused or abandoned service pipes within the ROW at the main to the City Engineer. Sewer services are the ownership of the property owner they service. The property owner is responsible for the maintenance of the sewer service from the main into the property, including any private pumps required for pressure sewer systems.

Where properties have sewer service utilizing a pressure sewer system, install a check valve on private property at the ROW line. Beyond the check-valve, and under a City plumbing permit, install an individual pump with sump in conformance to the Oregon State Plumbing Code. The homeowner or homeowner group owns and maintains all private pumps on their property. No lots shall pump into a force main (a sewer main close to a City pump station where force in main has not dissipated sufficiently for sewer main to have transitioned to a gravity sewer) without the approval from the City Engineer.

Service laterals are those public wastewater lines to which a private building sewer connects. See Standard Drawing S-300.

Connect each individual building site by a separate, private, building wastewater service line connected to the public sewer. Multifamily, commercial and industrial service laterals shall connect into the public mainline at a manhole. City Engineer may approve combined wastewater service lines but only when the property is such that, legally, it cannot be further divided. An example of this is a residential lot with a house and an unattached garage or shop with plumbing facilities.

The minimum inside diameter of a wastewater service lateral shall be four (4) inches and shall be equal to or greater than the building sewer diameter. Build service laterals to the same construction standards and of the same materials as the wastewater mainline. Laterals must be green colored pipes. Place service laterals in general ninety (90) degrees to the main wastewater line to avoid excessive exposure to other utilities during excavation for construction or maintenance of the service lines. The City Engineer may approve angles other than ninety (90) degrees, forty-five (45) degree minimum, special conditions such as cul-de-sac lots on a case-by-case basis. Make service line connections at manholes if such placement would not interfere with other present or future connections to the manhole.

The minimum slope of wastewater service lines shall be two (2) percent (1/4 inch per foot). City Engineer may approve a slope of one (1) percent, one-eighth (1/8) inch per foot, for unusual conditions on a case-by-case. It will be necessary, however, for the designer to provide a complete analysis of the need for any wastewater service lateral slope less than two (2) percent. The maximum slope shall be one hundred (100) percent, forty-five (45) degrees, or one (1) foot per foot.

Tees for service laterals, with a slope greater than one hundred (100) percent, shall have one-sixteenth (1/16th) or one-eighth (1/8th) bend to provide proper grade for service laterals. Install service laterals to the street ROW line or easement line. Install a watertight plug in end of the lateral with a two inch by four inch (2" x 4") standard wood marker placed from pipe invert to twelve (12) inches above finish grade. Paint the two inch by four inch (2" x 4") top green and mark with the depth of the lateral measured from ground to invert of pipe. Curb line and concrete gutter surface shall have an "S" branded into both surfaces at lateral crossing.

SEWER LATERAL CONNECTIONS

Sewer laterals shall be designed to connect to a main sewer line. Connection to a City sewer structure is prohibited. All sewer lines must have a cleanout in the ROW for aid in City location of laterals during utility locate requests and research of problems in the sewer system. Sewer laterals are owned and maintained by the property owner from building to connection at main line. City personnel will assist property owners within the purview of their job descriptions, but will not work on private lateral repairs.

Wyes

The City prefers the use of wyes in connecting laterals to the main. Wyes are installed in the direction of flow.



Figure 2: PVC Wye Fitting

Tees

Although tees may be used to connect a lateral to the main, they are not the preferred method.

Insert-a-tee

City does not allow use of insert-a-tees.

BYPASS PUMPING REQUIREMENTS

Plan for by-pass pumping when installing new laterals or repairing/retrofitting existing sewer laterals.

Bypass pump sanitary sewer and stormwater flows around the pipe section or manhole being repaired, replaced or retrofitted by plugging an existing upstream manhole and pumping the flow around the Work to a downstream manhole. Submit a bypass pumping plan to the Engineer at least forty-eight (48) hours before beginning bypass pumping. Use a pump with adequate capacity to handle existing flows and additional flow due to rain. Pumps shall not exceed a noise level of eighty-six (86) dB at a distance of fifty (50) feet. Do not operate bypass pumps at night except in an emergency. Do not discharge raw sewage onto private property or city streets, or into storm drain systems.

CLEANOUTS

City does not approve cleanouts as substitutes for manholes on public sewer lines. City permits cleanouts at the upper end of a sewer extension in preparation for a future construction phase and main line extension. If future extension requires a change in sewer alignment or grade, a manhole will be required at the cleanout location.

A clean out is required between public and private property just inside the ROW for location of lateral. The cleanout shall be flush with surface for easy location. Check the Oregon Specialty Plumbing Code for additional cleanout requirements on private property.

City does not allow the use of plastic cleanout lids in sidewalk areas. See Standard Drawing S-300 for cleanout box and cover.

WASTE CONTROL FROM INDUSTRIAL DEVELOPMENTS

Where necessary, and as determined by the City, any user of the sewer system shall provide, at their own expense, such preliminary treatment as may be necessary to reduce objectionable characteristics, or constituents within the City's prohibited discharges, that may cause pass through or interference, or to comply with water quality standards.

Some industrial facilities shall install a control vault to facilitate the observation, measurement, and sampling of the process wastewater from the facility. Such a control vault, when required, shall be twenty-four (24) hour accessible and constructed in accordance with plans approved by the City. The owner shall install and maintain control vault at his/her expense. After installation is complete, the owner shall provide the City with keys necessary to access the vault.

Plans, specifications, and any other pertinent information relating to proposed preliminary treatment facilities shall be submitted for the approval of the City Engineer or designee. Approval of plans and inspection of construction shall not relieve the owner from complying with discharge limitations.

The development is considered a Significant Industrial User (SIU) if the development will discharge

25,000 gpd or more and an additional permit will be required. City Engineer or designee shall issue this permit.

Industries that may be required to install a control vault include, but are not limited to:

Adhesive Manufacturing	Aluminum Forming	Any Industry Requiring Pretreatment
Asbestos Manufacturing	Battery Manufacturing	Black Carbon Manufacturing
Brewery	Coil Coating	Copper Forming
Dye Manufacturing/Processing	Electrical and Electronic Components Manufacturing	Electroplating
Feedlots	Ferroalloy Manufacturing	Fertilizer Manufacturing
Food Processing	Foundries (Metal Molding/Casting)	Glass Manufacturing
Frain Mills	Hospitals	Ink Formulation
Inorganic Chemical Manufacturing	Iron and Steel Manufacturing	Laboratories
Laundries	Leather tanning and finishing	Mechanical Product Manufacturing
Metal Finishing	Nonferrous Metal Manufacturing	Paint Formulation
Pesticide/Chemical Manufacturing	Petroleum Refining	Pharmaceutical Manufacturing
Porcelain Enameling	Printing and Publishing	Pulp, Paper and Paperboard Manufacturing
Rubber Manufacturing	Soap/Detergent Manufacturing	Steam Electric Power Generation
Sugar Processing	Tars, Asphalt Paving, and Roof Material Manufacturing	Textile Mills
Timber Products Processing	Wineries	

SAMPLE MANHOLE

Sample manholes must be located on private property, unless otherwise approved by the City Engineer. Sample manholes shall be located in a manner to provide complete accessibility, to prevent storm water infiltration and to minimize the possibility of damage from vehicles or injury to pedestrians. Sample manholes shall be located away from traffic and parking. Sample manhole placement shall allow easy access twenty-four (24) hours per day. Do not erect fences or walls around the manhole blocking access. Where sample manholes are constructed in unpaved areas, a 6' x 6' x 6" thick concrete pad shall be constructed around the rim.

Construct sample manholes on all commercial and industrial properties. Where there are multiple buildings on a site, the City Engineer may require each building's service lateral to have a sample manhole. Sample manholes shall always be installed downstream of a grease trap or oil water separators, when applicable. Place sample manholes connected to pressure sewer systems prior to onsite pressure-sewer manhole.

Sample manholes do not require sulfide resistant material. Drops between the inlet and outlet invert shall be five (5) percentage minimum or match existing pipe slope where installed on an existing service line.

When sample manholes are located on private property, the Building Department will inspect the sample manhole. The sample manhole will be inspected per Oregon Specialty Plumbing Code.

WASTEWATER PUMP STATION DESIGN

The City's policy is to install gravity sewer in all situations unless a design demonstrates to the City that gravity cannot service an area. The City of Newport recognizes that there may be cases where a sewer

pump station will be required due to topography or other reasons. In any case where a sewer pump station is being proposed, it needs to be verified in the most currently adopted Wastewater Master Plan that it is also showing the need for a pump station in the proposed location. There may be times where the Wastewater Master Plan does not reflect the desired location of a pump station in which case Developer must request a waiver. In such cases where requesting a sewer pump station through a waiver process, the designer should allow additional time for review. In no case will the City allow a pump station to connect to another force main or pressure sewer. Any pump station must have a dedicated force main that flows to a gravity manhole.

The City of Newport requires strict compliance with Oregon Revised Statute 672 for Professional Engineers. The professional design engineer must have had prior experience in designing similar systems. Unless otherwise indicated by the City, prior to the initiation of a study for any new pump station and/or sewer project, the Design Engineer shall submit qualifications for review, and approval by the City.

Design of pressure sewer facilities and sewage pumping stations shall conform to the City of Newport Standards and Specifications and the Oregon Department of Environmental Quality (DEQ) regulations as detailed in the appropriate Oregon Administrative Rules (OAR), Division 52. Designers shall refer OAR Appendix B – Raw Sewage Lift Stations, for detailed criteria.

All raw sewage pump stations shall use submersible pumps in the wet well. In some cases, the City will allow an immersible pump designed in a wet/dry well configuration. This will be determined at pre-design.

Provide all pump station mechanical equipment provided by a single provider, including the pumps, base, guide rails, etc. All electrical devices must be UL or CSA approved, and meet all NFPA and NEC codes and NFPA codes regarding classified areas. All pump stations are subject to submittal to DEQ for approval.

City maintained pump stations shall be located in dedicated tracts of land owned by the City or, when approved by the City Engineer, in a City of Newport easement. A hydrant shall be located at the frontage of the tracts / easement for cleaning the pump station wet well. The Design Engineer shall provide pump operation data, including pump curve, total dynamic head and calculations used to derive peak flow rate.

Schedule a pre-design meeting with the City. At the pre-design meeting, the City will provide a list of requirements for the pump station improvements. The Design Engineer shall come to the meeting with the design service area and anticipate flow rate information development by the service area. Prior to beginning the final design, the Design Engineer shall submit a pre-design report to the City for review, covering all aspects of the Pump Station Design, as described in the pre-design meeting and herein.

The following additional guidelines supplement the Oregon Standards.

Wet-wells

All Wet-wells, shall be concrete epoxy lined self-cleaning design per ASTM standards. A precast, circular Wet-well design is required unless otherwise approved by the City Engineer. City Engineer will review pre-packaged pump stations with fiberglass Wet-wells on a case-by-case basis, complying with Flygt standards or approved equal. Joints shall be keyed rubber ring per ASTM 443 with mastic gaskets and be

waterproof. The Design Engineer shall conduct a leak test by the City Observer with written documentation of the test provided.

Floors shall be sloped to drain to pump at a minimum of forty-five (45) degree.

The top of the Wet-well and associated valve pit shall be flush with the surrounding pavement. Top deck and lid of Wet-well and valve pit shall be flush with the surrounding pavement/grade with properly sized 316 Stainless Steel gooseneck vent installed in top of Wet-well.

The invert of the inlet to the Wet-well will be located in such a manner to reduce the turbulence in the Wet-well. This may require the pipe be sloped outside the Wet-well from the normal pipe depth with maximum slope of twenty-two-and-one-half (22.5) percent.

The Design Engineer shall calculate the buoyancy potential for the Wet-well assuming ground water level at the ground surface and an empty Wet-well. Use a factor of safety of a minimum of one-and-one-quarter (1.25) in the calculation and as deemed appropriate by the Design Engineer and approved by the City. Invert of inlet above operating flow level and designed to reduce turbulence.

Working Capacity

The minimum working capacity of the Wet-well, from pump off to pumps on, shall be determined at pre-design based upon estimated peak inflow rates and pump manufacturers recommendations.

Emergency Capacity

The emergency capacity of a wet well may be required under certain circumstances and shall be reviewed and approved by the City on a case by case basis and the City shall provide design criteria that must be met. This will be determined at pre-design.

Design Flow

Design pump stations and related components to discharge Peak Hourly Flow (PHF). The City shall review final design PHF for approval. Calculate the PHF using a combination of the following parameters:

- Average Residential Per Capita Flow per the City of Newport Collection System Master Plan.
- Infiltration and Inflow Allowance per the City of Newport Collection System Master Plan.
- Peak Hour (Diurnal) Flow Peaking Factor per the City of Newport Collection System Master Plan.
- Non-Residential Flow Factors per the City of Newport Collection System Master Plan.
- Apply Seasonal Peaking Factors per the City of Newport Wastewater Master Plan.

The Design Engineer shall review the City's Collection System Master Plan and DEQ guidelines for pump stations and develop the flow calculations for review and approval by the City of Newport in the Preliminary Design Report.

Design Life

Design and size Wet-wells to accommodate for the build-out within the identified basin(s) contributing to the pump station, unless otherwise approved by the City. Size and design pumps, motors, electrical systems and related components for a minimum twenty (20) year service life, unless receiving approval otherwise by the City. Structures shall be capable of a minimum seventy-five (75) year design life.

Wet-well Wiring

Submersible pump Wet-wells shall incorporate an electrical section for access to electrical boxes and seal-offs. The electrical section shall have a separate thirty (30) inch square hatch, a poured concrete

bottom, a minimum of eighteen (18) inches deep, and be open to the Wet-well. This area shall use explosion-proof seals and junction boxes supported and fastened to the floor directly under the hatch opening.

All pump cords and float cords shall run from the float suspension rod to the electrical section of the Wet-well vault. Pump power lines and float control lines shall terminate into copper-free, explosion-proof junction boxes. Boxes are to be traffic rated and approved by the City.

Acceptable products are:

- Utility Vault Hatch: Cat. # 3030 P, or
- Utility Vault Hatch: Cat. # 3030 AL

The invert of the lowest influent pipe to the Wet-well will enter no more than one (1) foot above the lead pump invert on setting, to reduce the turbulence in the Wet-well. This may require that the pipe be sloped outside the Wet-well from the normal pipe depth with maximum slope of twenty-two-and-one-half (22.5) degrees. Calculate the emergency storage time in the Wet-well to the invert elevation of the influent pipe in the last manhole prior to the sloped section.

Level Control

Provide level control by the use of a submersible level transducer or radar sensor located inside the wet well. Install a redundant level sensor. Supply one High-High level sensing float-switch type alarm in the Wet-well to provide backup pump start control and alarming in the event the primary level sensors become inoperable. This float switch will insure the lead pump activates to pump contents of the Wet-well out in the event of a primary level control failure.

Float controls shall be utilized as a redundant high and low alarm device and pump control capable of by-passing the control circuit, unless as determined by the City of Newport. The high level PLC and redundant float set point shall initiate the operation of the standby pump along with the high-level alarm. Use separate contacts for the alarm and operational points. Float controls shall be intrinsically safe and motor starters shall be NEMA rated. Float switches shall be of a weighted design, which do not require tying off in order to tip and operate properly. Floats shall be individually hung, at a distance no less than eight (8) inches apart from each other, from stainless steel uni-strut fastened to the concrete with stainless steel hardware and installed in such a manner as not to interfere with pulling pumps for maintenance and free of water turbulence.(see float suspension detail). Floats and other level control shall be intrinsically safe, run in their own conduit system, and terminate in their own explosion proof J-box. All clamps, straps, fasteners and other hardware shall be stainless steel.

Use all applicable NEC and NFPA 820 requirements for explosive environments.

Hardware

All hardware and fasteners inside the Wet-well shall be stainless steel. Hatch assembly shall align with the slide rail system for pump removal. Rails shall be one piece, solid stainless steel construction of a two-rail design. Wet-well and valve pit access lid shall be as manufactured by Utility Vault 4872AL four-foot-by-six-foot (4' x 6') Double Door Aluminum suitable for H₂O loading with no cross bar (no manhole lids).

All wet well hatches will include an OSHA approved fall protection grating. It will be a minimum of T-316 stainless steel, two-piece, with a latch to hold it in the open position. Suggested manufacturers are

Flyght and Halliday Products. All hatches shall be full traffic rated suitable for H2O loading.

Pumps

All pump stations owned and maintained by the City of Newport shall be of immersible motor construction, unless otherwise determined by the City of Newport. Design pumps for continuous operating service for pumping raw, unscreened sewage, constructed to meet the intended service.

Mount the pumps on a 316 stainless steel guide rail lift out system provided by the manufacturer. The pump shall meet NFPA 820 and NEC requirements, be explosion proof, and shall be capable of passing a minimum three (3) inch solid diameter sphere. Specify three-phase services. Require single-phase power only for pumps with a maximum power of five (5) horsepower only as explicitly approved by the City.

The pumps shall be supplied by a distributor authorized to service them throughout warranty period and afterwards. The manufacturer shall warrant the pumps for a minimum period of two (2) years after the City has accepted them into service. Manufacturer shall provide certified pump tests for each pump installed.

All wetted parts shall be compatible and suitable for application with municipal raw wastewater and the corrosive environment associated with a typical municipal pump station, in addition to the specific materials requirements specified herein. Provide each pump with a stainless steel, stamped nameplate indicating the serial number, rated head and flow, impellor size, pump speed and manufacturer's name and model number.

Select Compatibility-Pumps and pump station equipment considering compatibility with other City Pump Stations. The City of Newport shall approve final selection.

The Design Engineer shall provide system curves that indicate the required pump operating conditions. Develop system curves for static head and dynamic losses due to suction and discharge piping, valves, and other sources of head loss. The Design Engineer shall select pump(s) that operate under the determined system curve conditions with the highest efficiency possible. Pumps selected shall operate under the manufacturer's recommended operating conditions and limitations. Submit all system and pump curve information for approval by the City Engineer.

Pump Types

Supply immersible pumps from one of the following approved manufacturers:

- Flyght (N-type impellor), or
- Approved equal.

The City does not allow self-priming pump stations.

Reliability and Redundancy

Design all pump stations to meet the EPA Class I reliability requirements, which includes pump redundancy, standby power provisions, and a telemetry/SCADA system. Pump redundancy shall mean adequate pump capacity to discharge the PHF with one unit out of service. All pump stations shall be constructed with a three pump system: a minimum two (2) pumps operating alternately and an additional pump as an installed backup unless otherwise determined by the City of Newport. All installed pumps shall be capable of assuming a lead, lag, or standby role

Pumping facilities shall be equipped with a backup control system, which shall operate the pumps in the

event the primary power and/or control system fails.

Furnish standby power and telemetry systems per these standards. Supply all new, expanded, or upgraded pump stations with a permanently installed onsite generator with a functional automatic transfer switch with the capacity to operate all pumps, controls, lights and any other necessary equipment to operate the station simultaneously. The backup generator shall automatically transfer during loss of power and automatically re-transfer upon resumption of electrical utility power. The generator set shall be equipped with outputs capable of integrating pertinent information via the City of Newport SCADA system. Those outputs shall be, but are not limited to, the following factors: generator run, generator low temperature, generator low oil pressure, generator failed to start, amperage, and voltage. Fuel the backup generators by natural gas unless otherwise approved by the City of Newport.

Allowable Generator Manufacturers:

- Katolight
- Kohler,
- Or approved equal

Telemetry and SCADA

The City of Newport shall approve design and install of the telemetry system. Ancillary telemetry systems may be required in addition to the standard data transmission telemetry. Additional hardware and software may be required as determined by the City.

Supervisory Control And Data Acquisition (SCADA) software may be required as determined by the City of Newport. The software shall be installed in a panel mounted Human Machine Interface (HMI). The HMI shall be industrial quality with a touchscreen view panel as approved by the City of Newport. The Allen Bradley brand is currently the only HMI allowed in the City of Newport.

Pump Control Panels

Pump panel shall be manufactured using discrete components by a nationally recognized manufacturer. Control pump operation an Allen Bradley Programmable Logic Controller (PLC) unless otherwise determined by the City of Newport. Program the PLC for alternating pumping sequences and utilizing the Lead, Lag, Standby concept. The PLC shall be capable of integration with the current City of Newport Utility SCADA system. The PLC shall interface with an intrinsically safe level sensor that produces an isolated 4-20 mA signal for pump control. In all selected applications, redundant level controllers will be required with PLC programming to include operator selection and differential alarm settings.

Panels shall include hand, off, auto selector switches, alternating switch with lead selection capability, if applicable, phase failure/reversal relay, starter auxiliary contacts for telemetry use, elapsed time meters, and high-level alarm contacts for telemetry. HOA switches, alternating switches, handles for pump breakers, branch and control circuit breaker, reset buttons, over-temp and seal lights and resets shall be operable from the exterior of the control panel door. Mount all electrical power transfer switches externally to the control panel and inside the pump station enclosure. Properly label all wires; tie wrapped, and laid in wire way as to maintain a professional installation. Cut sheet for products along with computer generated wiring schematics, and equipment layout diagrams all properly labeled showing the entire system shall be approved through the permit process and submitted to Public Works prior to startup of the system. In addition, supply all operational, maintenance, warranty, and informational documentation including pump curve, electrical schematics, and pump information plate as provided by the manufacturer to the City at start-up.

Design all pump stations 3-phase power. Wire all stations receiving 240-volt 3-phase line power so the high leg is on B phase at the first connection after the utility company connection, with clockwise rotation, wired and labeled according to the NEC. If the pumps require counterclockwise rotation, make the change at the pump starter. Wire all 460-volt stations according to the NEC with clockwise rotation. If changing pump rotation, make change at the pump starter. Allowed Panel Manufacturers: Powers of Automatron, Renco, Pump Tech. Circuit breaker and contactor permitted: Cutler Hammer, Square "D", General Electric.

Electrical Enclosure

All electrical devices must be UL or CSA approved, meet NEC codes and NFPA codes regarding classified areas. All pump stations are subject to submittal to the Department of Environmental Quality (DEQ) for approval. All electrical components (Pump panel, telemetry, circuit breaker panel, transfer switches, etc.) shall be installed in a free standing, floor mounted, 2-door, and Nema 12 enclosure. The size shall be a minimum of seventy-two (72) inches x seventy-two (72) inches x twenty (20) inches deep and shall include a back panel on which to mount equipment. Mount a paddle lockable hasp above the exterior handle. The panel shall be on twelve (12) inch high floor stands and securely mounted to a poured concrete base, which extends at least twelve (12) inches past the edge of the panel on all sides.

The panel shall be located outside of the Class 1 Division 2 area as defined by NFPA 820. In no case shall the panel be less than sixty (60) inches from any Wet-well hatch or electrical hatch opening and sixty (60) inches from any Wet-well vent.

Acceptable Products:

- Hoffman A-727220ULP Enclosure,
- Hoffman A-72P72 Back Panel,
- Or approved equal.

The enclosure shall contain a 200 cfm; thermostatically controlled cooling fan located in the lower right or left hand sidewall. Locate a seven-inch-by-seven-inch (7" x 7") louvered plate with filter on the upper wall opposite the cooling fan. There shall also be an 800-watt, 120-volt electric fan forced heater with separate thermostat. Baseboard and residential can type heaters shall not be acceptable, nor shall open unguarded axial type cooling fans. A toggle switch controlled porcelain keyless fixture with 100-watt bulb installed on the upper back wall shall be included along with a 15-amp GFI receptacle. Next to the outlet box shall be a four (4) Square steel box with raised steel switch cover for use as a telemetry power switch. Feed the power source for the telemetry switch from the pump-panel control circuit.

Wire all this and other utilization and distribution equipment including air compressors, light and heat from or to a source other than the pump control panel, control circuit and/or control transformer. This will require adding a small six (6) or eight (8) circuit panel tapped off the load side of the pump control panel disconnecting. In the case of a 480-volt pump-station a properly sized step down transformer with disconnects shall be required.

Wire all these components in EMT conduit, rigid steel conduit, or liquid tight metallic flex.

Acceptable Products:

- Cooling fan Hoffman A-PA6AXFN
- Louver / filter Hoffman A-VX66, AFLT66

- Heater Hoffman D-AH8001B
- Light Lithonia 9875
- Electrical panels may be required to be enclosed in a pump station building as determined by the type and quantity of the equipment used.

Standby Generator Receptacle

The pump-station panel enclosure shall include a Crouse Hinds reverse contact (S22) generator receptacle with back box. Size appropriately for the pumps and station; wire through a manual transfer switch in such a way to back up power to the entire station using the City of Newport standard generator set. Mount the receptacle no less than 36-inches above grade and shall be securely fastened to the enclosure using minimum 5/16-inch diameter bolts. The wiring configuration must conform to the City standard.

Install the receptacle as an additional electrical backup system and shall be installed in accordance with all applicable codes.

Acceptable products:

- 240 Volt Crouse Hinds, reverse service, 200 Amp AREA 204126S22
- Appleton AR 200 44 RS
- Appleton 200 Amp 22 Deg. Turn, Reverse Service, AP 200 44 P4RS

Hydrogen Sulfide Protection

Each station may require a chemical treatment basin per City specification; City shall approve each odor/corrosion control system for the individual station. Odor containment systems may include valves, tanks, pumps, piping, containment, secondary containment, and other pertinent appurtenances as required by the City of Newport.

Station Access

Design all pump stations to allow for ease of access for equipment and operation of equipment.

Equipment Access

Design drawings and specifications shall incorporate all applicable and reasonable provisions to maximize efficient removal, replacement and maintenance of all equipment. This includes but is not limited to adequate clearances, sufficient anchorage, hoists, hatches and platforms as necessary.

Site Access

Provide site access such that a maintenance vehicle and/or vector truck park off-road and on the pump station site without hindering area traffic. Install paved access to the station at all times. The access shall allow a vehicle, including the City's Jet Rodder Combination Truck, with a twenty (20) foot W.B. ten (10) foot overhang, front/back, to park over the Wet-well without blocking any traffic lanes or pedestrian walkways. Access shall be level as possible, but shaped to drain away from Wet-well. Show all paving on construction plans with approval by the Engineering Division prior to construction. A ten (10) foot clear space shall be required between existing, proposed, or future equipment, including a twelve-foot-by-twenty-foot (12' x 20') designated generator area, and fencing on all sides of the pump station.

Station Fencing

Enclose stations in a chain link fence with sixteen (16) foot wide gate with sight screening vinyl slats.

There shall be a double gate at least sixteen (16) feet wide. There shall be sufficient room inside the fence for a concrete pad six (6) feet wide and nine (9) feet long next to the Wet-well and electrical panel. The City will review and approve each installation on an individual basis. Support all gates with wheels; City Engineer will consider alternate fencing materials on an individual basis. Fencing shall be at the tract property line and there shall be a minimum ten (10) foot clear space between the fence line and any existing, proposed or future pump-station equipment/structures. City will consider alternate fences if maintained by adjacent HOA.

Force Main Cleanout

Each station shall have a pig launch with a one (1) inch ball valve with a brass swivel fitting with brass plug mounted in the center of the flange to permit the attachment of jet rodder hose. There shall be a plug valve on the discharge side of the pig launch.

Flow Metering

Each sewer pump station will have an inline electro-magnetic flowmeter installed on the station discharge main in the vault. There must be no moving parts, or obstruction in the flow. The flowmeter can be used A.C. or D.C. model signal, using a 120-volt A.C. power source. Design the meter for and approved for wastewater use with an accuracy of one (1) percent. The meter must be programmable with a built-in keypad, with data storage. Mount the transmitter in the station enclosure. There must be 4-20 mA inputs and outputs, with an interface capable of communicating with the City's RTUs and/or SCADA system. Install the meter according to the manufacturers specifications with the O and M manual supplied to the City. Install and connect all necessary conduit and wires for electrical power and communications. Provide and install a downstream plug valve downstream from the meter at a distance required by the manufacturer of the meter for accurate operation and a properly sized spool piece of the same piping material to facilitate removal of the flow meter.

Acceptable manufacturers: Krohne, Endress & Hauser, Yokogawa, or approved equal

Bypass System

Each pumping station shall be equipped with a sewage bypass system unless otherwise determined by the City. The Bypass System shall consist of a manhole prior to the pumping station wet well and a discharge port located on the discharge pressure pipe. The manhole shall be readily accessible and located on the site of the pumping station. City does not allow any manholes under cover or inside any of the on-site buildings. Install the discharge port on the discharge pipe immediately after exiting the pumping station. The discharge port shall be readily accessible and on the same site as the pumping station. Construct port of six (6) inch ductile iron extended vertically twelve (12) inches above grade. Install a 6-inch plug valve with a four-inch-by-six-inch (4" x 6") cast iron, flanged concentric reducer and a four (4) inch aluminum camlock fitting with a lockable cover.

Safety Systems

Each pumping station must conform to all applicable OSHA safety regulations. Additional safety devices such as fall protection and atmosphere monitoring devices may be required as determined by the City of Newport.

Lift Station Standards

Provide an example plan set for lift station design as part of Lift Station Plan Set.

WASTEWATER DESIGN STANDARDS

Standard Manhole

Standard manholes have a cone top and are used for depths over six feet. See Standard Drawing S-200 for construction details.

Doghouse Manhole

Doghouse manholes are used when an existing pipe has too much flow to divert during construction. Pipes remain intact until base and doghouse barrel section is in place. See Standard Drawing S-204 for construction details. See Standard Drawings S-210 and S-210B for cast-in-place base requirements.

Flat-top Manhole Pipes Less than 24" Diameter

Flat-top manholes are used in shallow depths of six (6) feet or less. See Standard Drawing S-205 for construction requirements.

Manhole Base Standard Details

Cast-in-place manhole bases require a rebar cage in the pour. See Standard Drawing S-210 for construction details. See Standard Drawing S-210B for rebar layout.

Cast-In-Place Rebar Cage

Rebar cage for poured-in-place manhole bases. See Standard Drawing S-210B for details. See Standard Drawing S-210 for further cast-in-place details.

Standard Inside Drop Manhole

City does not allow outside drop manholes. If building on a slope and a drop manhole is needed, an inside drop is recommended. Drop manholes must be approved by the City Engineer. See Standard Drawing S-220 for construction requirements.

Manhole Cover and Frame Details

See Standard Drawing S-250 for details.

Manhole Frame Grade Adjustment

See Standard Drawing S-260 for construction requirements.

Standard Service Connection and Lateral

See Standard Drawing S-300 for construction details.

End of Main Line Clean Out

See Standard Drawing S-306 for details.

END OF SECTION

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WASTEWATER SYSTEM

STANDARD DETAIL DRAWINGS INDEX

- S-200: STANDARD MANHOLE
- S-204: DOGHOUSE MANHOLE
- S-205: FLAT-TOP MANHOLE PIPES LESS THAN 24" DIAM.
- S-210: MANHOLE BASE STANDARD DETAILS
- S-210B: CAST-IN-PLACE REBAR CAGE
- S-220: STANDARD INSIDE DROP MANHOLE
- S-250: MANHOLE COVER AND FRAME DETAILS
- S-260: MANHOLE FRAME GRADE ADJUSTMENT
- S-300: STANDARD SERVICE CONNECTION AND LATERAL
- S-306: END OF MAIN LINE CLEAN OUT DETAIL



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STANDARD DETAIL DRAWING INDEX

DETAIL NO.

S-010

10/27/2022

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CAST IRON (H-20 RATED) MANHOLE COVER AND FRAME SET IN NON-SHRINK GROUT, SEE STANDARD DETAIL S-250

10 GA. COPPER TRACER WIRE WITH GREEN 30 MIL THICK HDPE INSULATION

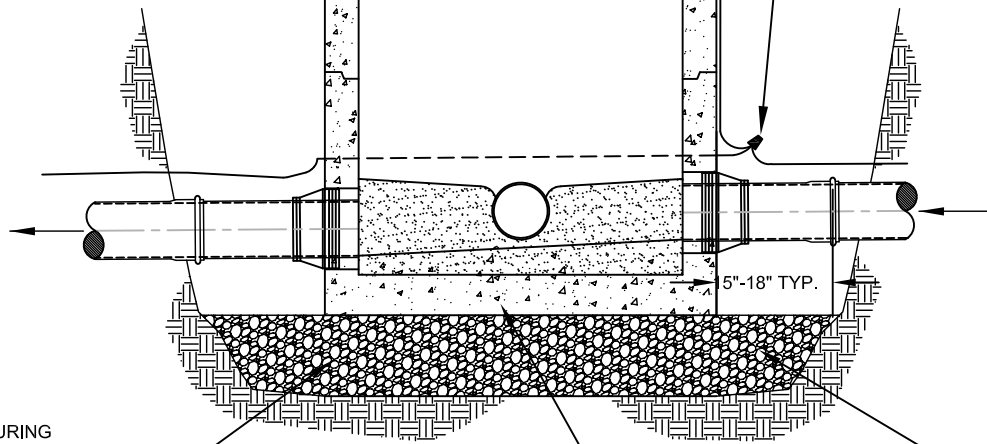
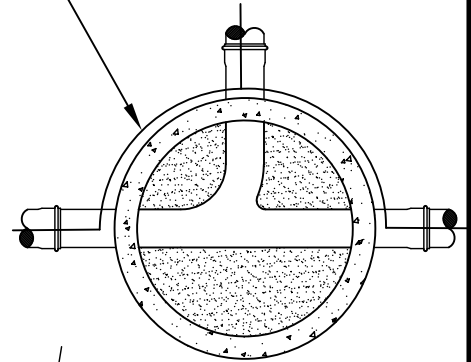
FINISH GRADE

PRECAST REINFORCED GRADE RINGS, 2" MIN., 12" MAX. EACH SET IN NON-SHRINK GROUT.

ALL TRACER WIRE SHALL CONNECT AT ONE SPLICE. DIRECT BURY WIRE FROM INDIVIDUAL PIPES TO ONE SPLICE (3M DBR/K OR EQUAL) LOCATION OUTSIDE MANHOLE THEN UP SIDE OF MANHOLE TO PLACE UNDER CASTING.

PRECAST ECCENTRIC CONE 36" TALL

KEYED JOINTS WITH PRE-FORMED SEAL (RAM-NEK) OR RUBBER RING GASKET BY MFGR. (TYP. ALL JOINTS) SEAL WATERTIGHT



DEWATER DURING INSTALLATION AS NEEDED

SEE MANHOLE BASE STANDARD DRAWING S-210

12" MIN. COMPACTED BASE ROCK

NOTES:

1. ALL PRECAST MANHOLE SECTIONS SHALL MEET ASTM C-478.
2. FLAT-TOP MANHOLE REQUIRED WHEN DEPTH FROM FINISH GRADE TO INVERT IS LESS THAN 6 FEET.
3. INTERIOR DROPS EXCEEDING 24" REQUIRE INSIDE DROP. SEE DRAWING S-220.
4. LARGER INLET PIPES THAN 24" WILL REQUIRE A SPECIAL DESIGN AND APPROVAL FROM CITY ENGINEER
5. BACKFILL AND DENSITY REQUIREMENTS SHALL CONFORM TO THE OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION, CURRENT EDITION, SECTION 00405.
6. MANHOLES SHALL BE TESTED PER OREGON STANDARD SPECIFICATIONS, CURRENT EDITION, SECTION 00470.71.b.



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STANDARD SANITARY MANHOLE
PIPES LESS THAN 24" DIAM.

DETAIL NO.

S-200

5/20/2020

CAST IRON (H-20 RATED) MANHOLE COVER AND FRAME SET FRAME IN NON-SHRINK GROUT, SEE STANDARD DETAIL S-250

10 GA. COPPER TRACER WIRE WITH GREEN 30 MIL THICK HDPE INSULATION

FINISH GRADE

PRECAST REINFORCED GRADE RINGS, 2" MIN., 12" MAX. EACH SET IN NON-SHRINK GROUT.

ALL TRACER WIRE SHALL CONNECT AT ONE SPLICE. DIRECT BURY WIRE FROM INDIVIDUAL PIPES TO ONE SPLICE (3M DBR/K OR EQUAL) LOCATION OUTSIDE MANHOLE THEN UP SIDE OF MANHOLE TO PLACE UNDER CASTING.

PRECAST ECCENTRIC CONE 36" TALL

KEYED JOINTS WITH PRE-FORMED SEAL (RAM-NEK) OR RUBBER RING GASKET BY MFG. (TYP. ALL JOINTS) SEAL WATERTIGHT

CONNECT PIPE TO STRUCTURE WITH BOOT

CUT PIPE ALONG SPRING LINE

CHANNEL TO SPRING LINE

CHANNEL FROM INFLOW PIPE TO SPRING LINE

12" TYP.

DEWATER DURING INSTALLATION AS NEEDED

SEE MANHOLE BASE STANDARD DRAWING S-210 & S-210B FOR CAST-IN-PLACE BASE

12" MIN. COMPACTED BASE ROCK

NOTES:

1. ALL PRECAST MANHOLE SECTIONS SHALL MEET ASTM C-478.
2. FLAT-TOP MANHOLE REQUIRED WHEN DEPTH FROM FINISH GRADE TO INVERT IS LESS THAN 6 FEET.
3. INTERIOR DROPS EXCEEDING 24" REQUIRE INSIDE DROP. SEE DRAWING S-220.
4. LARGER INLET PIPES THAN 24" WILL REQUIRE A SPECIAL DESIGN AND APPROVAL FROM CITY ENGINEER
5. BACKFILL AND DENSITY REQUIREMENTS SHALL CONFORM TO THE OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION, CURRENT EDITION, SECTION 00405.
6. MANHOLES SHALL BE TESTED PER OREGON STANDARD SPECIFICATIONS, CURRENT EDITION, SECTION 00470.71.b.



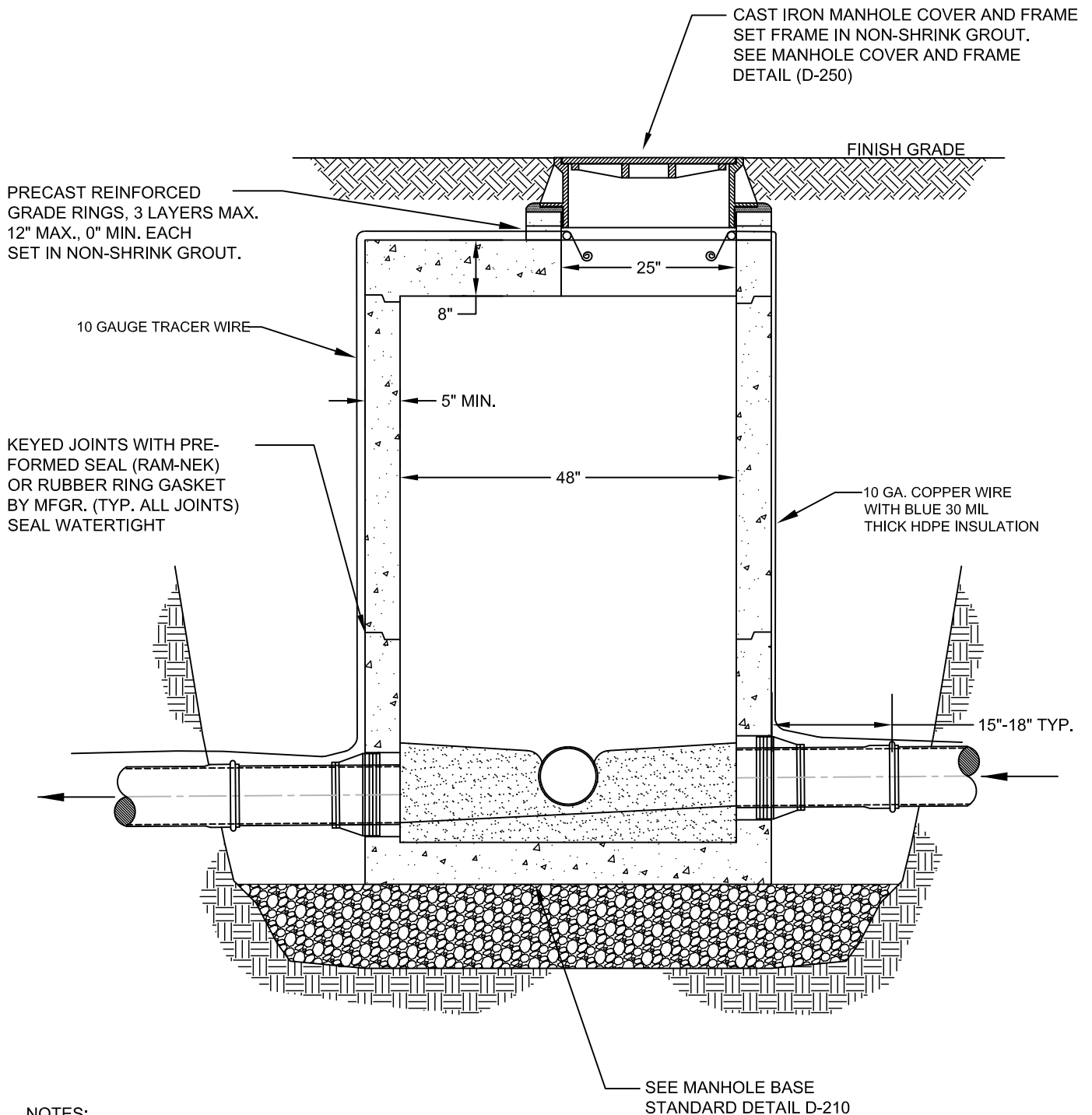
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DOGHOUSE
MANHOLE

DETAIL NO.

S-204

2/6/2023



NOTES:

1. ALL PRECAST MANHOLE SECTIONS SHALL MEET ASTM C-478.
2. STANDARD MANHOLE REQUIRED WHEN DEPTH FROM FINISH GRADE TO INVERT IS 6 FEET OR MORE.



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**FLAT-TOP MANHOLE
PIPES LESS THAN 24" DIAM.**

DETAIL NO.

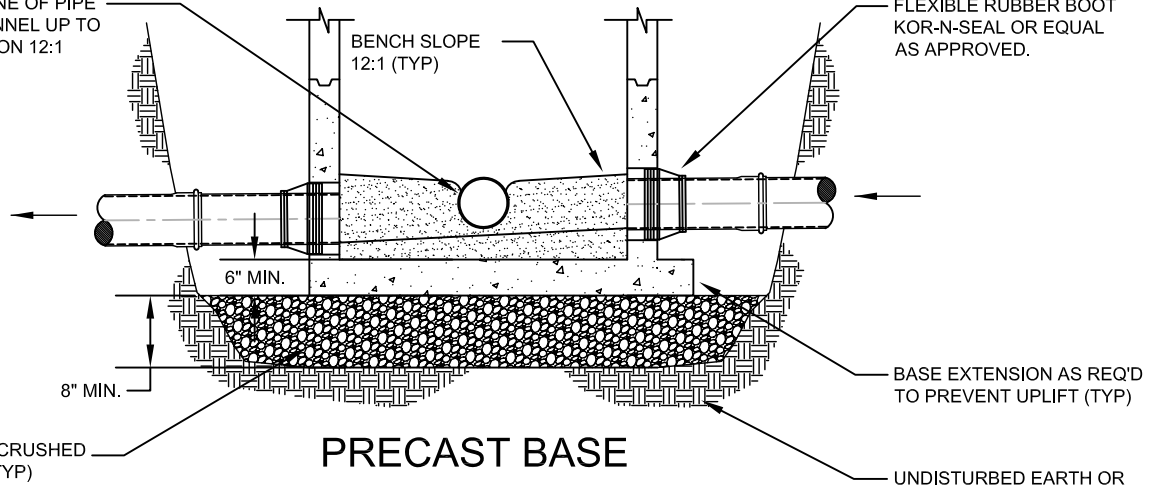
S-205

9/6/2019

AT SPRING LINE OF PIPE
EXTEND CHANNEL UP TO
CROWN LINE ON 12:1
BATTER (TYP)

BENCH SLOPE
12:1 (TYP)

FLEXIBLE RUBBER BOOT
KOR-N-SEAL OR EQUAL
AS APPROVED.



PRECAST BASE

BASE EXTENSION AS REQ'D
TO PREVENT UPLIFT (TYP)

UNDISTURBED EARTH OR
COMPACT SELECT MATERIAL
AS REQ'D

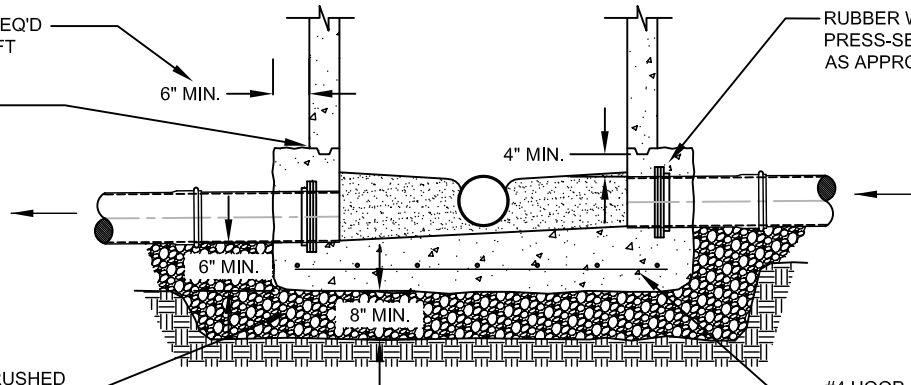
OR GREATER AS REQ'D
TO PREVENT UPLIFT

RAM-NEK SEAL

6" MIN.

RUBBER WATERSTOP GROUT RING
PRESS-SEAL GASKET OR EQUAL
AS APPROVED.

4" MIN.



1"-0 OR 3/4"-0 CRUSHED
ROCK BASE (TYP)

#4 HOOP AND #4 @ 12" E.W.
#5 BARS WHEN DEPTH
EXCEEDS 15'

CAST-IN-PLACE BASE

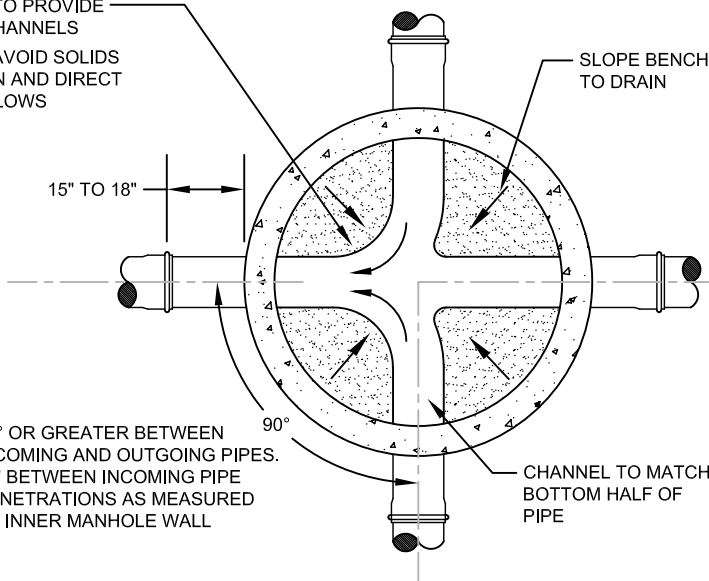
CONTOUR TO PROVIDE
SMOOTH CHANNELS
SHAPE TO AVOID SOLIDS
DEPOSITION AND DIRECT
HEAD-ON FLOWS

SLOPE BENCH
TO DRAIN

15" TO 18"

90° OR GREATER BETWEEN
INCOMING AND OUTGOING PIPES.
12" BETWEEN INCOMING PIPE
PENETRATIONS AS MEASURED
AT INNER MANHOLE WALL

CHANNEL TO MATCH
BOTTOM HALF OF
PIPE



NOTES:

1. SEE STANDARD MANHOLE DRAWING S-200 FOR TRACER WIRE REQUIREMENT.
2. PRECAST OR CAST-IN-PLACE BASE AT CONTRACTOR'S OPTION OR AS DIRECTED.
3. A MIX DESIGN SHALL BE SUBMITTED TO CITY PRIOR TO SCHEDULING POUR.
4. STRUCTURAL CONCRETE SHALL CONFORM WITH THE OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION, CURRENT EDITION, SECTION 00759.
5. MIN. 0.2 FT. INVERT DROP ACROSS MANHOLE.
6. MANHOLE BASE SHALL BE CLEAN OF DIRT AND DEBRIS PRIOR TO CHANNELING BASE.
7. PIPE PENETRATIONS SHALL NOT CROSS THROUGH BARREL SECTION JOINTS.



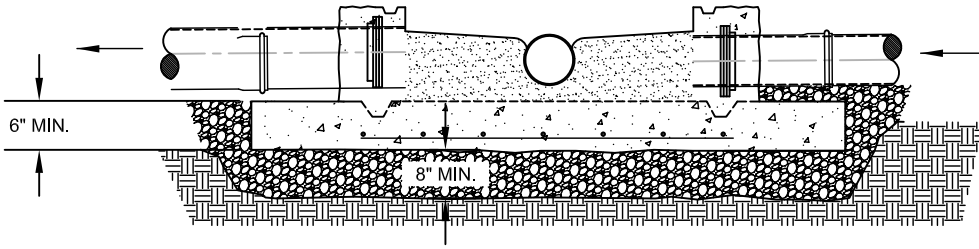
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MANHOLE BASE STANDARD DETAILS

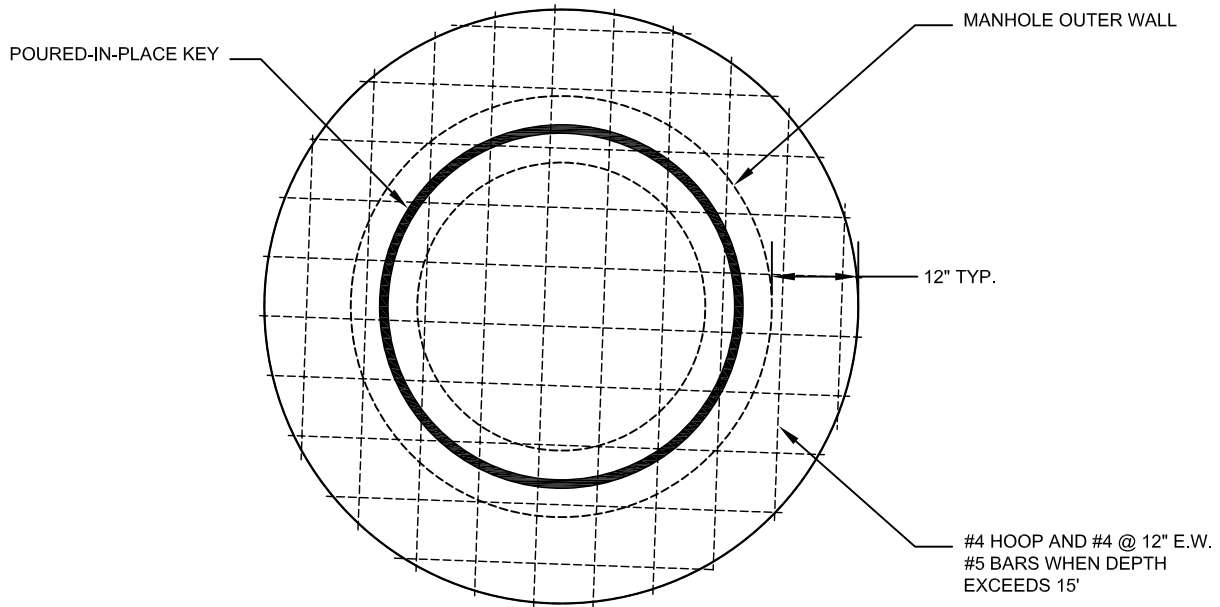
DETAIL NO.

S-210

5/20/2020



SIDE VIEW



TOP VIEW OF BASE

NOTE:
SEE DETAIL S-210 FOR CONCRETE AND
CONSTRUCTION SPECIFICATIONS



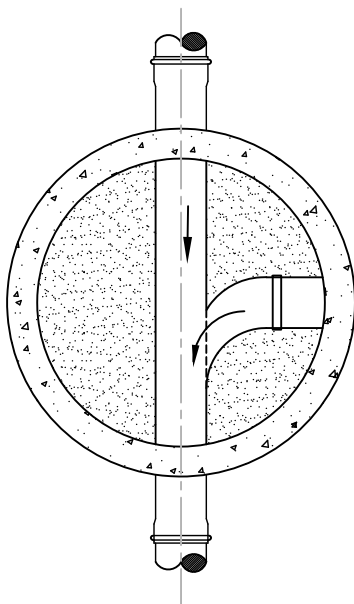
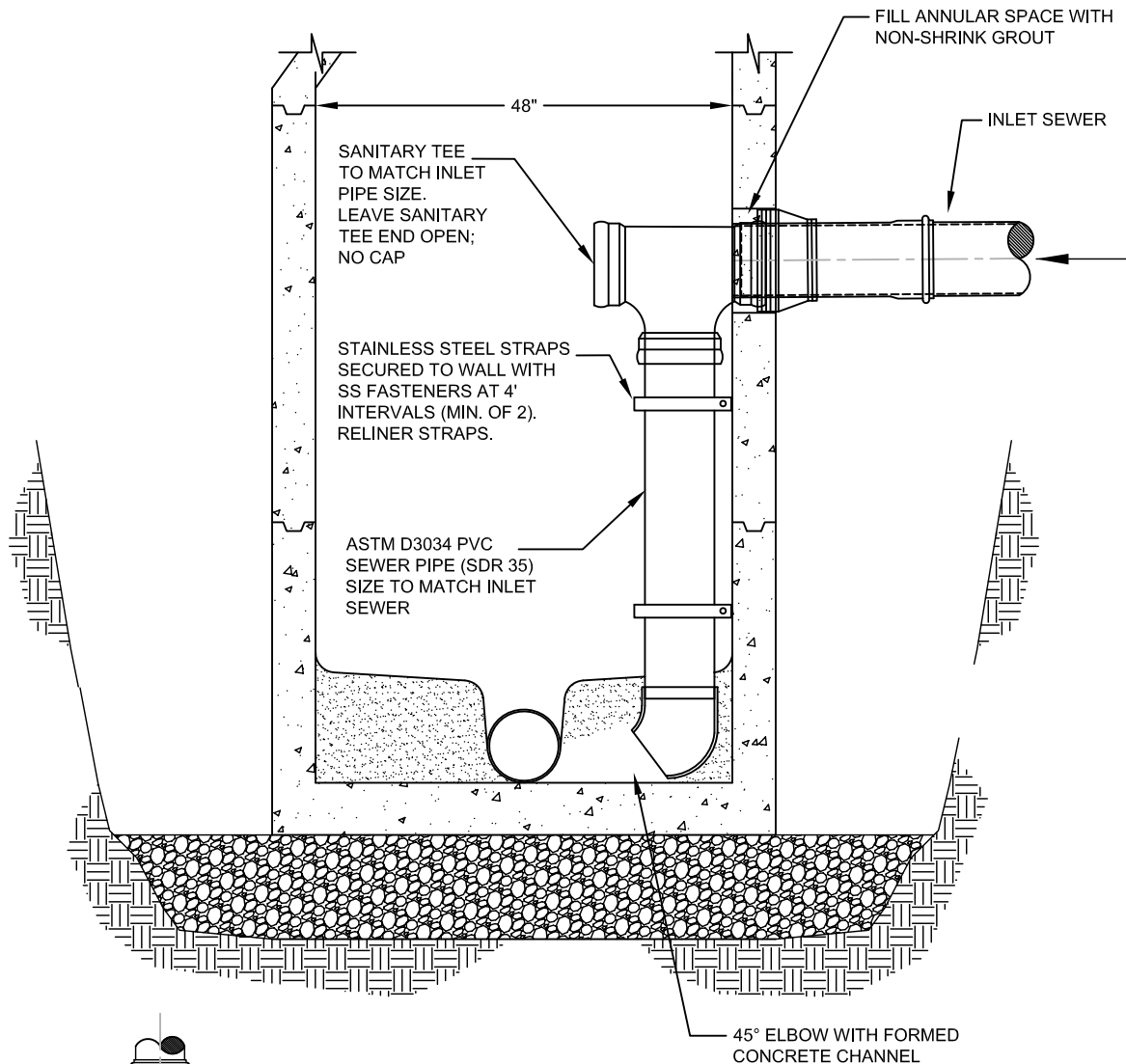
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CAST-IN-PLACE
MANHOLE BASE

DETAIL NO.

S-210B

8/24/2022



NOTES:

1. DROP MANHOLES SHALL ONLY BE USED WITH PRIOR APPROVAL FROM CITY ENGINEER.
2. EXTEND INLET SEWER PIPE INTO MANHOLE FAR ENOUGH TO ALLOW SECURE ATTACHMENT OF SANITARY TEE (DEPTH VARIES).
3. ONLY ONE DROP ASSEMBLY ALLOWED PER MANHOLE.
4. SEE STANDARD MANHOLE DRAWING S-200 FOR TRACER WIRE LAYOUT.



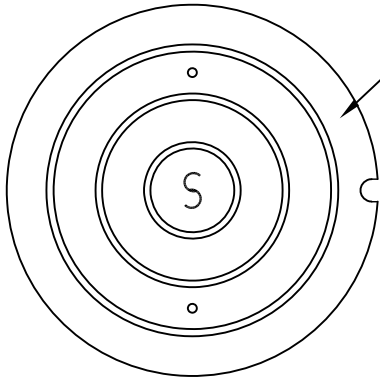
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**STANDARD INSIDE DROP
 MANHOLE**

DETAIL NO.

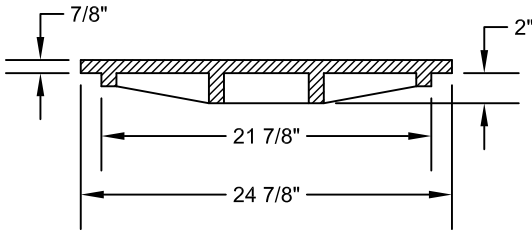
S-220

5/20/2020



TWO HOLE 'S' COVER STANDARD
NO VENT HOLES IN WATERTIGHT
COVERS

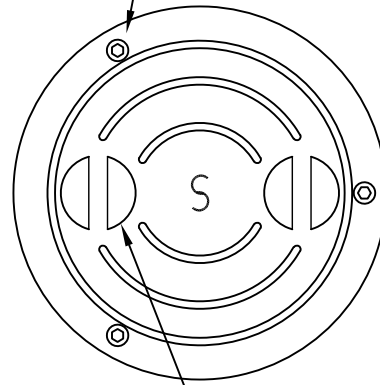
WATERPROOF/BOLT-DOWN COVER
ALLOWED ONLY IN AREAS OF
POTENTIAL SURCHARGE OR SURFACE
FLOODING ; WITH PRIOR APPROVAL
OF CITY ENGINEER



COVER (150 LBS)

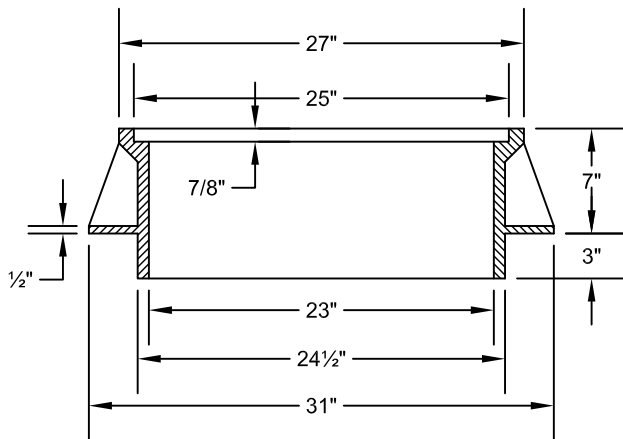
(OLYMPIC FOUNDRY MH26S, OR APPROVED EQUAL)

BOLT FOR WATERPROOF
AND BOLT-DOWN COVER
SEE DETAIL



DEPRESSED HANDLE

(OLYMPIC FOUNDRY MH26WT, OR APPROVED EQUAL)



FRAME (237 LBS)

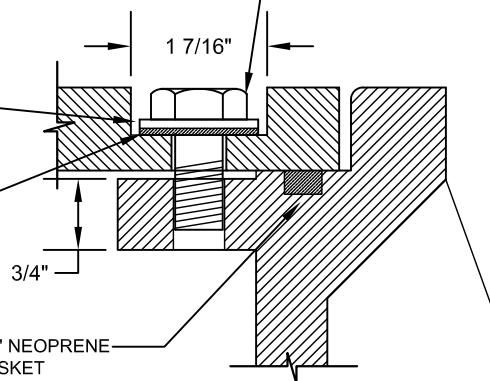
(OLYMPIC FOUNDRY MH26A, OR APPROVED EQUAL)

1/2" - 13 NC X 1 1/2" HEX
HEAD STAINLESS STEEL
CAP SCREW, 3 REQ'D.

1 1/4" OD STAINLESS STEEL
WASHER, 3/32" THICK
3 REQ'D

FLAT RUBBER WASHER
3 REQ'D

3/8" NEOPRENE
GASKET



BOLT DOWN DETAIL

NOTE:

1. MANHOLE FRAMES AND COVER SHALL HAVE H-20 RATING



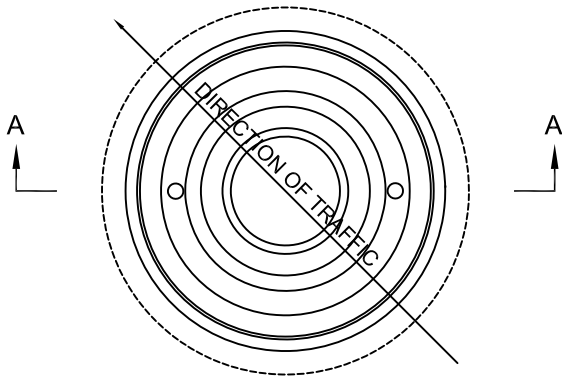
City of Newport
169 SW Coast Hwy
Newport, Oregon 97365
(541) 574-3366 Fax: (541) 265-3301

**MANHOLE COVER AND
FRAME DETAILS**

DETAIL NO.

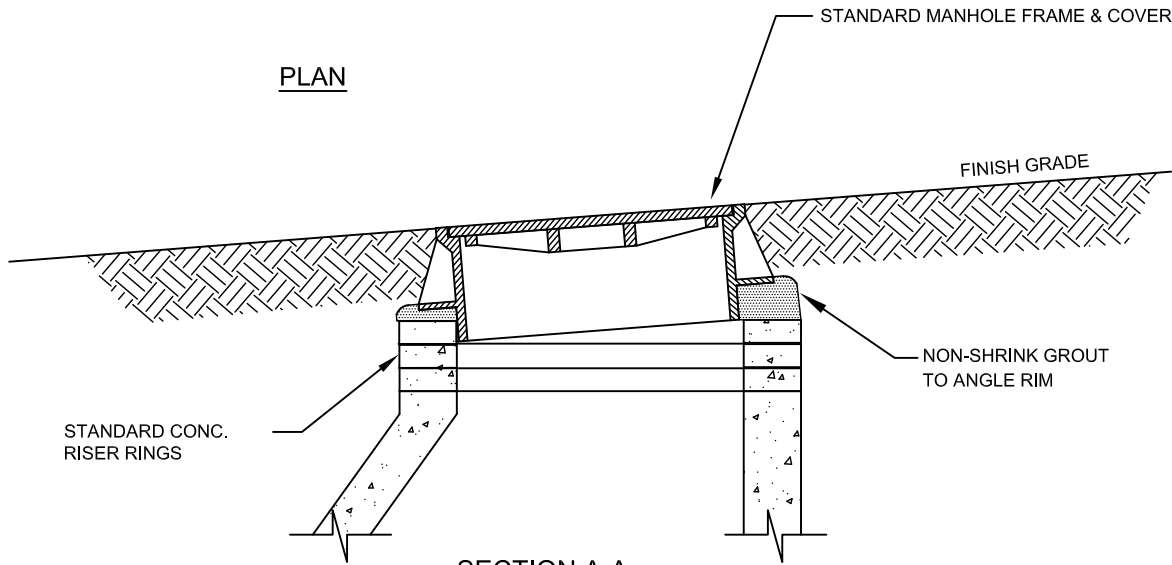
S-250

5/20/2020

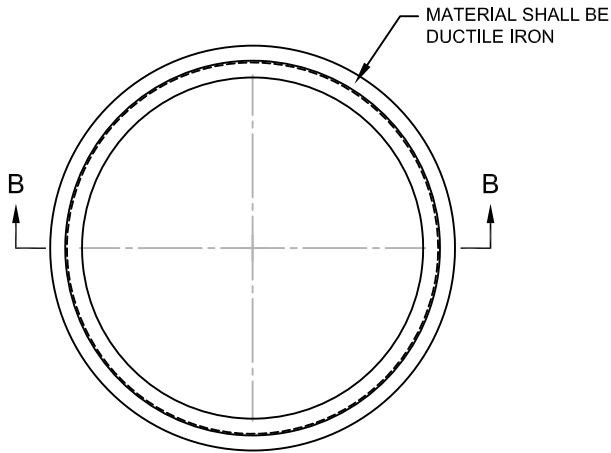


NOTE:
SEE STANDARD MANHOLE
DRAWING S-200 FOR
TRACER WIRE LAYOUT.

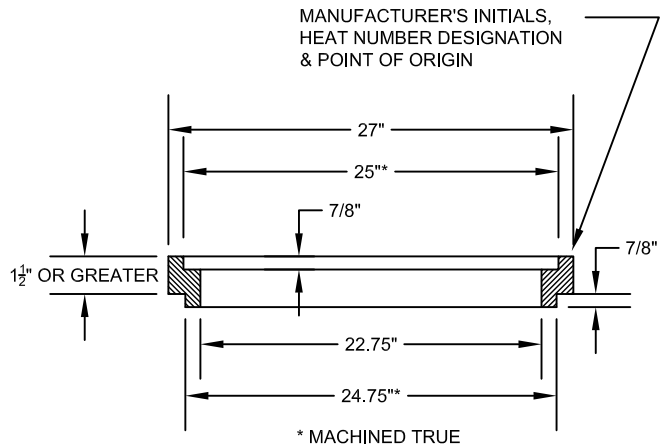
PLAN



SECTION A-A
TYPICAL MANHOLE GRADE ADJUSTMENT IN STREET



MANHOLE ADJUSTMENT RINGS
FOR RESURFACING



SECTION B-B



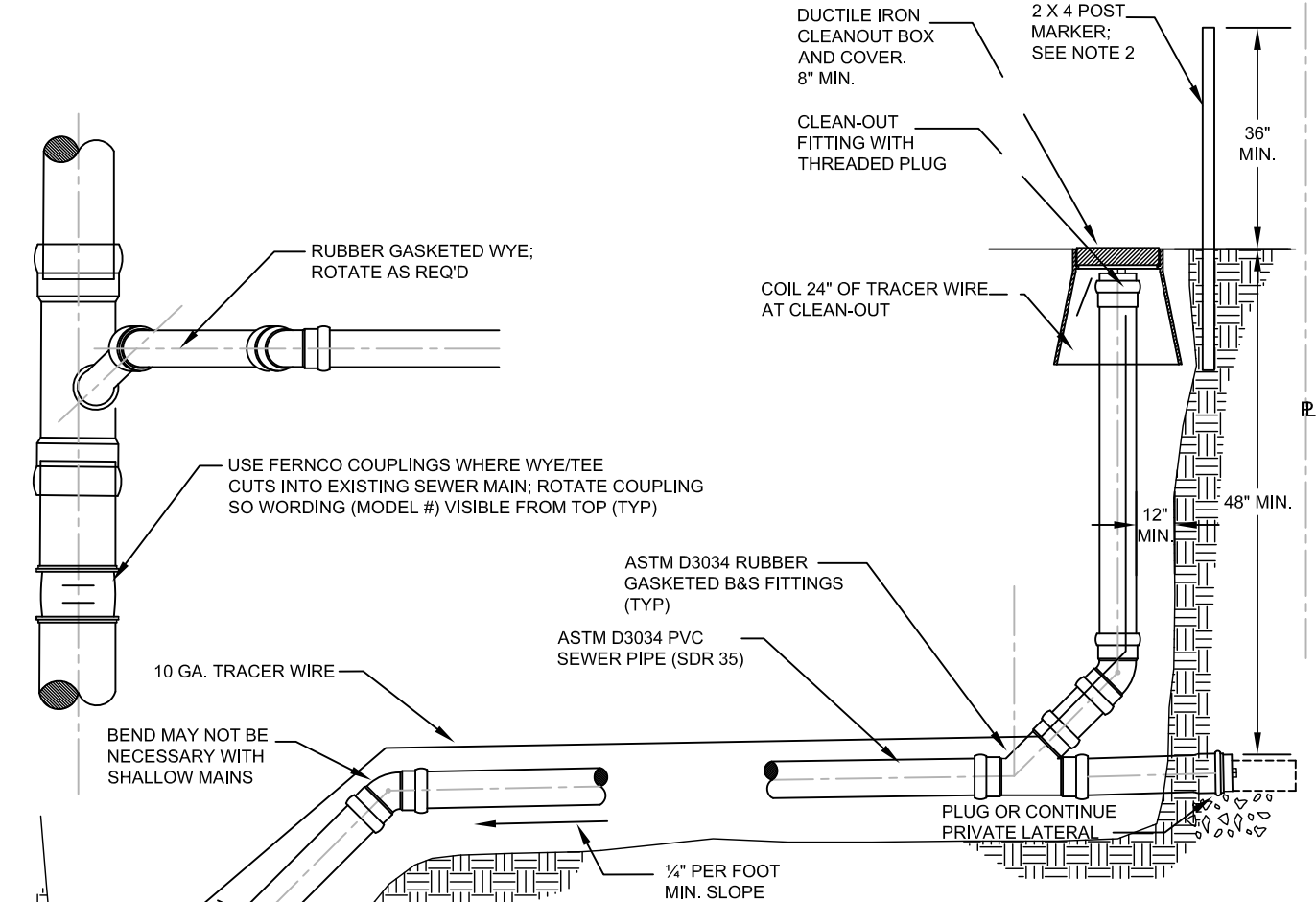
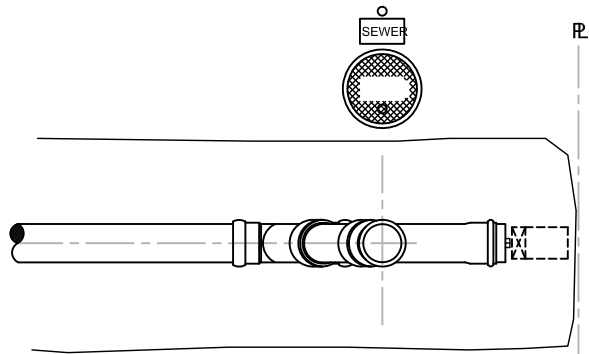
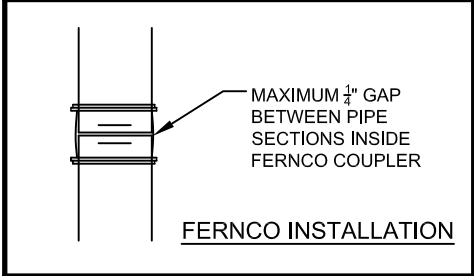
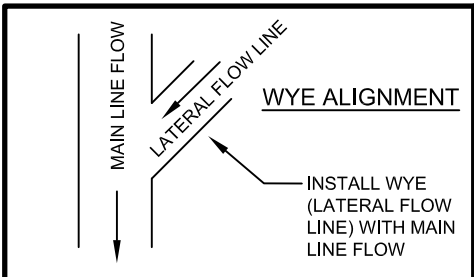
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Newport, Oregon 97365
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**MANHOLE FRAME
GRADE ADJUSTMENT**

DETAIL NO.

S-260

5/20/2020



- NOTE:**
1. CONTRACTORS MAY USE A WYE OR TEE ON NEW PIPE WORK UNLESS OTHERWISE SPECIFIED IN DRAWINGS
 2. WHEN LATERAL WILL BE CONNECTED TO PRIVATE SEWER AT LATER DATE, PLUG AS SHOWN; PROVIDE 2X4 POST MARKER AND BLOCKING. MARKER POST SHALL EXTEND 36" ABOVE FINISH GRADE AND SHALL BE LABELED WITH LOT NUMBER AND TOTAL LENGTH OF 2X4
 3. CONNECTION TO SEWER LATERAL REQUIRES PLUMBING PERMIT THROUGH BUILDING DEPARTMENT.



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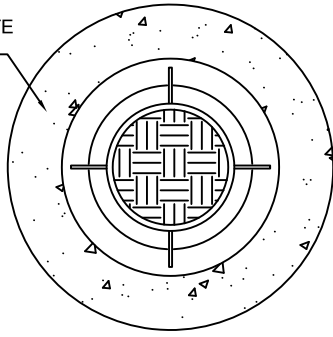
**STANDARD SERVICE
 CONNECTION AND LATERAL**

DETAIL NO.

S-300

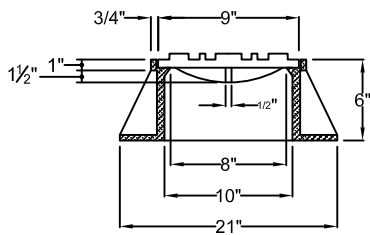
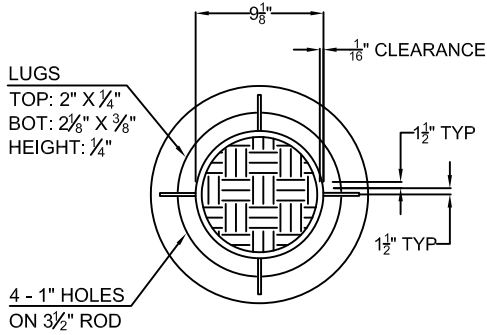
8/08/2022

6" CONCRETE COLLAR



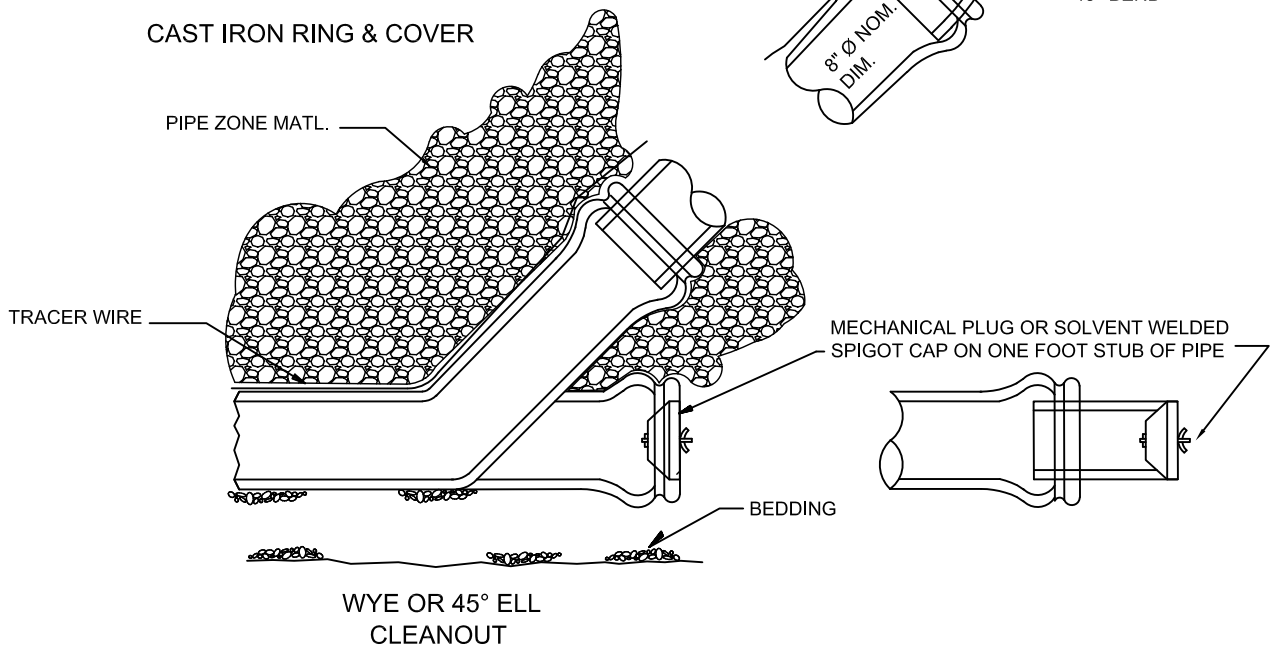
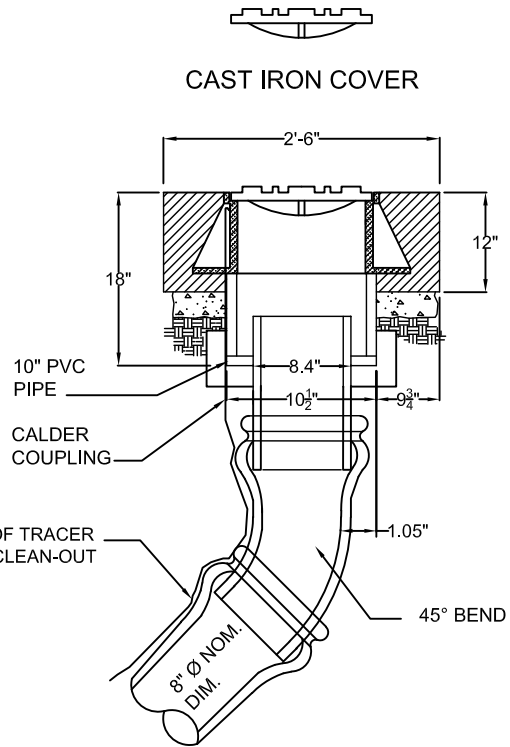
NOTE:

1. CONCRETE COLLAR INSTALLED IN GRAVEL ROADS.
- 2.



CAST IRON RING & COVER

CAST IRON COVER



City of Newport
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 Newport, Oregon 97365
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**END OF MAIN LINE
 CLEAN OUT DETAIL**

DETAIL NO.

S-306

5/20/2020

**SECTION 4 –
WATER**

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SECTION 4 - WATER SYSTEMS

PERFORMANCE STANDARDS

Design Water distribution systems to meet Oregon Administrative Rules Chapter 333 and Oregon Revised Statutes 448, AWWA Standards, and guidelines of the current Newport Water System Master Plan.

Water system design shall provide adequate flow for fire protection and ultimate water system demand. Meet required water system demands by maintaining the minimum operating pressures required by the City. For single-family residential areas, the minimum pressure shall be twenty (20) PSI measured at the meter, and the minimum fire flow shall be 1,000 GPM with a twenty (20) PSI residual. For all other developments, the required fire flow shall be as determined by the Fire Marshall.

Water system design shall meet distribution needs for ultimate water system demand within a given service area. New water systems shall allow for future extensions beyond present development that are consistent with the Master Plan.

All waterlines shall be located within the public right-of-way (ROW) or as directed by the City Engineer. Place waterlines within the public ROW for ease of maintenance and access, control of the facility, operation of the facility, and to permit required replacement and/or repair. See Standard Drawing G-051 for pipe location standards within the ROW. The City Engineer, under special conditions, may allow a public waterline to be located within a public water easement.

Do not place utility infrastructure within one foot of a survey monument location noted on a subdivision or partition plat, per ORS 92.044 (7).

Refer to Newport Municipal Code 5.10 Water for information about City water codes.

CONFLICTS AND OBSTRUCTIONS

- **Utility Notification:** The contractor shall comply with the rules and regulations of the Oregon Utility Notification Center: OAR 952-001-0010 through 952-001-0090 and ORS 757.993. Provide at least forty-eight (48) hours' notice to all utility offices affected by the construction operation.
- **General:** Contractor may encounter various obstructions during the course of the work. Obtain maps and information regarding underground utilities from the utility owning and operating such utilities, but the City does not guarantee the location of such utilities. If the contractor interrupts the utility services because of the construction operation, the contractor shall notify the utility owner and the City authorized representative immediately.
- **Protection:** The contractor shall exercise all due care in protecting existing underground and surface facilities and property along the route of the project. This protection shall include, but not be limited to, trees, yards, fences, drainage lines, mailboxes, driveways, shrubs, and lawns. Any existing facilities not specifically designated for alteration or removal that are damaged during construction shall be restored or replaced to an "in kind" or better condition, at the expense of the contractor.
- **Access:** The contractor shall maintain access to all property, including normal delivery service, mail service, and emergency services.
- **Abandoned Utilities:** Properly remove, grout, or plug all abandoned utilities at the discretion of

SECTION 4 - WATER

the City authorized representative.

- Asbestos Concrete pipes shall be removed and disposed of according to Oregon Health Standards.

PUMP STATIONS

Pumps stations would be design in close partnership with the City Engineer. The City uses Integrator of Record to integrate all pump stations to our water treatment system to ensure pump stations interact with our water distribution system.

Pumps

- Grundfoss systems

Pressure Release Valves

- Cla-Val

PLC/SCADA Equipment

- Programmable Logic Controller (PLC)
 - o Small Systems
 - Allen Bradley Compact Logix 1769-L24ER-QBFC1B
 - o Large Systems
 - Allen Bradley Compact Logix 1769-L3Xer
- Operator Interface Terminals
 - o 10" Minimum size
 - Allen Bradley Panelview Plus 7
- UPS System
 - o Small Systems
 - APC 1000 w/Smart Slot and relay card and network/Ethernet Card
 - o Large Systems
 - APC 1500 w/Smart Slot and relay card and network/Ethernet Card
- Connection to SCADA
 - o 6 port Fiber patch panel (City provides the Fiber Network Switch)

Instrumentation

- Flow Meters
 - o E&H Promag W400 w/Ethernet IP Comms (Zero Lay length style)
 - Remote transmitter
- Pressure Transducers
 - o E&H Ceraphant PTP31B
- Level Transducers
 - E&H FMX21 Water Pilot w/breather box

Variable Frequency Drives

- Small Drives
 - o Power Flex 525

SECTION 4 - WATER

- Large Drives
 - o Power Flex 753 w/2 Port Ethernet card

PRIVATE SYSTEMS

Private systems start at the back of a master meter. Private systems shall be maintained by property owner. The owner shall provide the required backflow prevention device to separate the private system from the City main line system. Maintenance of the backflow device will be the responsibility of the property owners.

Once plans have been approved, the City will purchase a master meter, if meter is larger than those kept in inventory. Developer shall buy and place infrastructure and vault in preparation for meter placement. When Contractor is ready for meter installation, contact the City Water Dept to arrange payment of installation costs and schedule meter installation. City will install the master meter after infrastructure is in place. Meter and vault shall be installed in the ROW. The master meter, like all meters, will remain property of the City. See Standard Drawings W-610 and W-611 for design specifications.

MAIN LINE

Design the City's water distribution system to meet peak hour demands, seasonal demands, and all fire flow requirements with minimal impacts to City of Newport water customers. Where constructing new water infrastructure, water systems shall be looped into existing water pipes in the project vicinity or as directed by the City Engineer.

Contractor shall completely remove abandoned City water mains and services in the City's ROW. Where decommissioning water mains and services within a City utility easement (outside of public ROW) on private property, it is preferred to have all pipes removed, however with the City Engineer's approval, they can be abandoned in place when the easement is extinguished and the City releases liability of the abandoned pipeline to the property owner. Abandoned pipe shall be filled with flowable material if they are twelve (12) inch or more in diameter or required by City Engineer or their designee.

Construct City of Newport water pipe in a trench with Class B compacted backfill within the pipe zone in conformance with the Standard Drawings G-100. Do not construct water mains on blocks.

Materials

Construct all public water distribution systems with C-900 unless conditions call for ductile iron pipe. If ductile iron pipe is used: all such pipe shall be cement mortar lined pipe with push-on or mechanical type joints meeting manufacturer and AWWA standards. HDPE pipe preferred in geologically unstable areas where ground shifting is possible.

Minimum Pipe Size

Water distribution main sizes shall generally conform to the following:

- Six (6) inch, eight (8) inch or twelve (12) inches in diameter
Minimum size for permanently dead ended mains supplying fire hydrants with a fire flow minimum of 1,000 GPM and for primary feeder mains in residential subdivisions.
- Twelve (12) inch and larger
For distribution mains and primary feeder lines in larger subdivisions, industrial areas, and commercial areas. Design shall include trench protection to impede ground water from travelling trench line after pipe is installed.

SECTION 4 - WATER

- Fire hydrant lines shall be six (6) inches in diameter and have a four hundred (400) foot maximum running length from main. All mainline extensions and system designs shall meet required minimum fire flow for that zoning

Alignment and Cover

- Grid System
The distribution system mains shall be looped at all possible locations. City requires all development designs to extend mains across existing or proposed streets to allow for future extensions of other developments. Plan all terminations and locate such that new or existing pavement will not have to be cut in the future when the main is extended. City does not permit the installation of permanent dead end mains greater than two-hundred-fifty (250) feet when fire protection and a relatively large area of single mains depends on the dead end main.
- Dead End Mains
 - Provide dead end mains placed for future extension with end of line gate valve and a properly sized blow-off (see Standard Drawing W-405) assembly. Permanent dead end mains shall terminate with a standard blow-off assembly.
 - New lines that are connecting to existing lines at both ends will require a temporary blow-off for chlorination purposes. Design shall address how to prevent water from blow-off and flushing from causing erosion or landscape damage.
- ROW Location
Water systems shall be located north and west from the ROW centerline as defined in Standard Drawing G-051.
- Air Release Valves
Make all abrupt changes in vertical or horizontal alignment with a fitting and secured with Megalugs and/or Bell and Spigot restraints. Concrete thrust blocks and joint restraints shall conform to Standard Drawing W-700. Vertical shifts may require an air release valve.
- Minimum Cover
The standard minimum cover over buried water mains within the street ROW shall be thirty-six (36) inches from finish grade.
 - The minimum cover for mains in easements across private property shall be thirty (30) inches from finish grade.
- Finish grade shall normally mean the existing or proposed pavement elevation. Where the main is located in the cut or fill side slope or where mains are located in easements, finish grade shall mean final ground elevation at the water main alignment.

The City Engineer will consider a deviation from the above standards on a case-by-case basis. When there is underlying rock strata that prohibits placement of the water main thirty-six (36) inches below finish grade, a written request must be submitted to the City Engineer for consideration, together with submission of a soils report, with a plan and profile certifying that bed rock exists less than three (3) feet below the undisturbed ground surface.

Separation with Wastewater and Other Utilities (Standard Drawing G-051)

Water mains shall be installed a minimum clear distance of ten (10) feet horizontally from wastewater sewers and shall be installed to go over the top of such sewers with a minimum of eighteen (18) inches of clearance at intersections of these pipes (in accordance with the requirements of OAR Chapter 333, Public Water Systems). The City Engineer shall approve any exceptions. In all instances, measure the distances edge to edge. The minimum spacing between water mains and storm drains, gas lines, and

SECTION 4 - WATER

other underground utilities, excepting wastewater sewers, shall be three (3) feet horizontally when unable to maintain the standard utility locations. See Standard Drawing G-051.

Where designing water mains for installation parallel with other water mains, utility pipe, or conduit lines, the clear zone around the main shall be twelve (12) inches on all sides with parallel utilities. Placement in such a manner which will permit future side connections of mains, hydrants, or services and avoid conflicts with parallel utilities without abrupt changes in vertical grade of the above mentioned main, hydrant, or service. Where perpendicular crossing of utilities are required, the minimum vertical clearance shall be six (6) inches. Pot hole all crossings to avoid conflicts. See Standard Drawing G-052 for perpendicular clearance requirements. Water lines crossing sewer mains may require flowable fill material placed between to meet safe potable water requirements.

Easements

Any water main placed within a water main easement will be permanently marked with blue delineators at blow-off locations, in overgrown areas, and at valves. In addition, place such posts and signs where the waterline intersects the public ROW at the easement location.

Submit all easements to the City for review and approval prior to recording. The City Engineer shall approve public easements across private property prior to construction. Any public water lines (domestic water services, fire services, or private water mains) entering into private property requires premise isolation (backflow devices) at the ROW. The location of the premise isolation shall be on private property, unless otherwise approved by the City Engineer. City permits backflow devices within a building on a case-by-case basis. See Standard Drawings W-900 and W-905.

Relation to Watercourses

New water mains may cross over or under existing streams, ponds, rivers, or other bodies of water as follows:

- Above Water Crossings
 - Design the pipe to provide support, anchorage, and protection from freezing and damage, yet remain accessible for repair and maintenance. All above water crossings will require review and approval by the City Engineer.
- Underwater Crossings
 - Design mains crossing stream or drainage channels to cross as nearly perpendicular to the channel as possible.
 - Provide valves at both ends of the water crossing so that the section can be isolated for testing and repair. The valves shall be easily accessible and not subject to flooding. The valve nearest to the supply source shall be in a vault. Provide permanent taps on each side of the valve within the vault to allow insertion of a small meter for testing, to determine leakage, and for sampling.
 - The following surface water crossings will be treated on a case-by-case basis:
 - Stream or drainage channel crossing for pipes twelve (12) inches inside diameter and greater.
 - River or creek crossing requiring special approval from the Division of State Lands.
- The minimum cover from the bottom of the streambed or drainage channel to the top of pipe shall be thirty-six (36) inches.

Pressures and Flow Calculations

The City of Newport has numerous pressure zones around the City, each with unique pressures. City

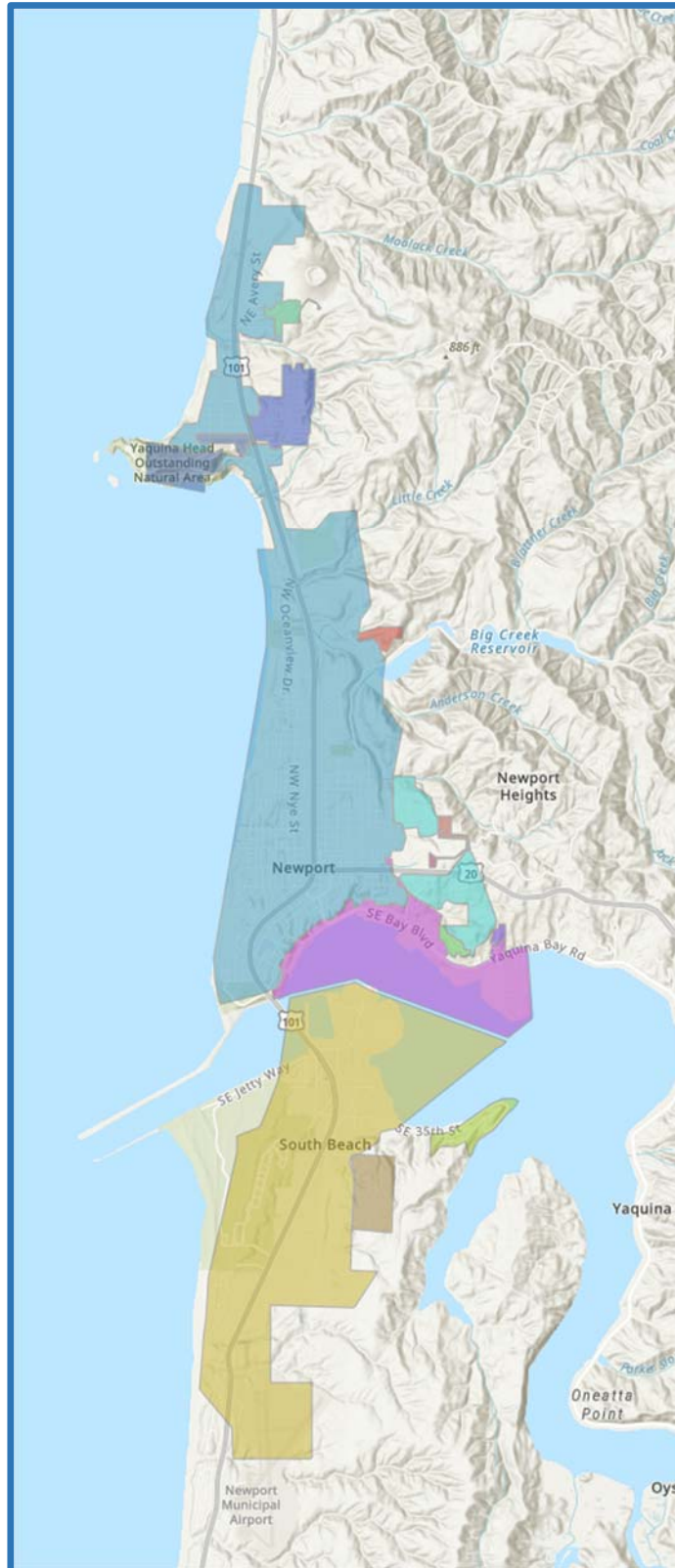


Figure 1: City of Newport Water Pressure Zones

Pressures below forty (40) PSI in most zones typically generate complaints. To avoid complaints, the

strongly recommends Design Engineer understand the pressure zone in which work is taking place and the specific requirements associated with that zone (e.g. pressure reducing values, etc).

- PRESSURE ZONES**
- Bayfront
 - Idaho Point
 - Lakewood Hills PS
 - Main Tanks
 - NE 54th St PS
 - NE 71st St PS (aka Salmon Run)
 - NE Yaquina Heights Dr
 - SE 40th St PS
 - SE Running Springs St
 - SE Vista Dr
 - Smith Tank
 - South Beach Tank
 - Yaquina Heights PS
 - Yaquina Heights Tank

The following table identifies the City of Newport requirements for pressures:

CONDITION	PRESSURE (PSI)
Minimum Service Pressure Under Fire Flow	20
Maximum Service Pressure Residential without PRV	75
Maximum Service Pressure with PRV	120

The City of Newport is required to ensure required fire flows of twenty (20) PSI. City does not guarantee pressures higher than twenty (20) PSI, and the designer should consider how pressure changes over time as additional development is added beyond any proposed tie-in or extension of the existing water distribution system.

The City defines normal service pressures static pressures on peak day demand.

SECTION 4 - WATER

designer is required to design facilities to obtain this goal. If design engineer cannot meet normal service pressures, each service line will require an individual and private pressure pump located a minimum of six feet past the City premise isolation and shall not be located on City Right-of-Way, and/or the property title for lot containing low-pressure service line modified to state:

“Known low water pressure area. The City of Newport is not responsible for inadequate service pressures associated with this property. If pressures are unsatisfactory to the property owner, the property owner at their discretion can install a pressure pump on the downstream side of the City Meter at the owner’s expense. The pump shall be located at a minimum of six feet past the premise isolation and shall not be located on City ROW. In no situation is the City responsible for maintenance, service, replacement, of this pump.”

The City strongly suggests that service lines, within ten (10) percent of maximum pressure as determined by plumbing code, have individual pressure reducing valves installed on service line. Maximum service pressures that are, or exceed, eighty (80) PSI on City owned mainlines will require a pressure reducing valve and vault. The designer will need to meet with the City Engineer, or designee, to determine installation information such as exact location, orientation, size, and valve type. Water service lines past the City owned meter must meet plumbing code requirements for maximum pressure.

Pressure Reducing Vaults

Pressure Reducing Vaults designs shall be coordinated with the City on a case-by-case basis.

Pressure Reducing Valves

Projects requiring a PRV station shall set up a meeting to discuss design requirements.

APPURTENANCES

Valve Location

The City defines transmission mains as lines that: have no other services or distribution connections to them; are typically coming from a water source. All other lines are distribution lines. The maximum distance between valves on a transmission main is eight hundred (800) feet; distribution main valves are a maximum of five hundred (500) feet. The City will have final determination of all valve locations. Main line valves shall be located in the public ROW.

Valve types and materials shall conform to the City of Newport Specifications. Distribution system valves shall be located at the tee or cross fitting. A sufficient number of valves shall be so installed that to affect any one particular shutdown, requires the operation of not more than four (4), and preferably three (3), valves to isolate a section of pipe. The spacing of valves shall be such that the length of any one shutdown in commercial or industrial areas shall not exceed eight hundred (800) feet in other areas. See Standard Drawing W-100.

In general, valves tee intersection in two branches; valve a cross intersection in three branches. Transmission water mains shall have valves with spacing of not more than eight hundred (800) feet. Install valves for creeks, railroad and freeway crossings as hazardous crossings with a valve on each side per Standard Drawing W-100.

Gate Valves

- Valves shall be located in City ROW.

SECTION 4 - WATER

- Valves two (2) inches to twelve (12) inches shall be a resilient wedge design. The valve shall have a cold water rated working pressure of two-hundred-fifty (250) PSI. All cast ferrous components shall be ductile iron and shall be manufactured in compliance with the latest edition of ANSI/AWWA C515. The valve shall also be UL Listed and FM Approved, in applicable configurations. All valves shall be certified to NSF/ANSI/CAN 61 and NSF/ANSI/CAN 372.
- The valve design shall be lightweight, easy to handle, and constructed with wall thickness per Table 3 of ANSI/AWWA C515. Heavy wall and/or cast gray iron bodies are not acceptable. The valve shall have a smooth and oversize waterway and have the marking "D.I." or "Ductile Iron" cast onto the body. The valve wedge shall be constructed of ductile iron in sizes four (4) inches to twelve (12) inches. All four (4) inch to twelve (12) inch wedges shall be fully encapsulated with EPDM rubber and provided with male type guides and polymer guide covers.
- Valve stems shall be sealed by three O-rings. Two of the O-rings shall reside above the thrust collar. Thrust collar shall be integral to the valve stem. Multi-piece collars that wrap around stem are not acceptable. O-rings set in a cartridge shall not be allowed.
- Valves two (2) inches to twelve (12) inches shall be furnished with a debris seal above the stuffing box O-rings. This seal shall also be capable of sealing against internal or external pressure equal to the valve's rated working pressure.
- The valve shall also be equipped with thrust washers above and below the stem thrust collar for reduced operating torque.
- All exterior valve body bolting shall be stainless steel and shall be provided with hexagonal heads with dimensions conforming to ANSI B18.2.1. Metric size and/or socket head cap screws, or bolts, are not allowed. The operating nut shall be two (2) inch square and shall be constructed of ductile iron fitted to a square tapered stem to help ensure even distribution of input torque. All body gaskets shall be of the pressure energized O-ring style design.
- All internal and external ferrous surfaces of the valve body and bonnet shall have fusion-bonded epoxy coating, complying with ANSI/AWWA C550.
- All valves shall be the AMERICAN Flow Control Series 2500 or 2500-1 Resilient Wedge Gate Valves.
- In four (4) inch to twelve (12) inch distribution lines, where pressure ratings may exceed two-hundred-fifty (250) PSI, a resilient wedge gate valve exhibiting a three-hundred-fifty (350) PSI rating by AWWA, UL and FM shall be furnished. All three-hundred-fifty (350) PSI rated valves shall be the AMERICAN Flow Control Series 3500.

Butterfly Valves

- Butterfly valves shall be the rubber-seated type, suitable for direct-burial service.
- Butterfly valves shall meet the testing requirements as presented in AWWA C-504.

SECTION 4 - WATER

Valve Types

Gate valves are required on all waterlines eight (8) inches and smaller. At City's required standard depth, butterfly valves shall be used on all waterlines of ten (10) inch diameter or larger. When main lines are deeper than five (5) feet, a gate valve is preferred. Designers may use a butterfly valve on smaller diameter lines when unable to obtain eighteen (18) inches of cover to the top of a gate valve body. Mount butterfly valves with the stem vertical and on the "curb" side of the main.

Air Release Valves and Combination Air/Vacuum Release Valves

When designated by the City Engineer, install air release valves (ARV). Such valves will be required on main lines at all high points in grade. See Standard Drawing W-500. Typically, ARVs will be located at all elevation rises and elevation high points. Typically, a 1-inch Air-Vac valves shall be installed for twelve (12) inch and smaller water mains and two (2) inch Air-Vac/Air Release valves installed for all larger water mains, however the sizing shall be verified against manufacturer's recommendation. All Air-Vac/Air Release valves will be located outside the vehicular roadway as illustrated in Standard Drawing G-051. Insulate all Air-Vac/Air Release valves to protect against a sustained temperature of minus ten (-10) degrees Fahrenheit. Hydrants are not considered Air-Vac or air release.

Extension Stems for Valve Operators

Where the depth of the operating nut is more than six (6) feet, provide operating extensions to bring operating nut to a point eighteen (18) inches below the surface of the ground or pavement (see Standard Drawing W-205).

Construct the extension of solid marine-grade steel rod and approved by the City authorized representative. Cut extensions to the proper length so the valve box does not ride on the extension when set at grade.

Size

In general, valves shall be the same size as the installed mains.

Valve Boxes

Shall be model 910 cast iron per ASTM A48 CL30 or equal (lug less) and placed at finished grade, centering vertically over operating wheel two (2) inch or nut.

Meters

Purchase meter through a City water account. All water meters two (2) inches and smaller shall be installed by the City of Newport.

New meters installed at commercial and industrial properties must be one-inch minimum. Design commercial water systems on residential projects that have three (3) dwelling units or more with one (1) inch meters.

Meters that are three (3) inches or larger will be Neptune meters. All accessories, except the MTU, need to be included to insure the meter functions properly.

All water service lines must have a meter box and assembly placed a minimum of one (1) foot outside of hard surfaces (concrete and asphalt) unless approved by the City Engineer. If not installing sidewalk, place meter in ROW softscape. When locating meter boxes in sidewalks with tree wells, the meter box shall be located a minimum of six (6) feet from the tree well.

SECTION 4 - WATER

Any service line that is providing water from the City of Newport distribution system for purposes other than fire flow must have the entire amount of water used measured. Fire lines no longer require meters.

Meter Testing

If the City needs to test a meter for potential problems, or if a property owner requests the City perform a test on the meter, the property owner may be asked to pay a testing fee (see NMC for fee schedule). Test and fees are for domestic meters only.

If the meter is discovered to be faulty, the City will install a new meter. Property owner is responsible to arrange for, and pay costs for, a plumber to reconnect the service line at the back of the meter.

All Compound meters tested annually. City bears cost.

HOT TAPS

Water services are to maintain eighteen (18) inches of separation when crossing sewer lines at a perpendicular within the ROW or in a utility easement; ten (10) feet of separation if running parallel to sewer line.

Service taps (all sizes) at the main shall not exceed one tap every eighteen (18) inches and be a minimum two (2) feet from bends or bells on the mainline. Hot taps two (2) inches and smaller shall be installed by City Staff. Hot taps greater than two (2) inches shall be installed by contractor's agent certified to work on potable water distribution lines.

Services two (2) inches and larger shall be hot tapped with a minimum two (2) inch valve, using the appropriate tapping saddle and appurtenances as called out by the Engineer of Record. Service connections to existing pipe shall install a saddle tap and valve.

Place all water service lines perpendicular to the water main.

City personnel shall be on site to oversee all hot taps not installed by the City. Coordinate all taps with City personnel.

AUTOMATIC METER READING SYSTEM

The City is building an automatic meter reading system. All City meters work on an AMI network by Neptune 360. All meter boxes purchased need to accommodate this system. See Standard Drawing W-605 for meter box specifications.

VAULTS AND METER BOXES

The following, or an approved equal, are the only approved meter boxes for services for 2-inch and smaller. All meter boxes must be tier 8 or equal.

Brand	Box	Lid
Armorcast	BOX –17x 30 x 18	LID-1730 Polymer with cast iron meter reader lid
Quazite	Polymer concrete; flared L 17 x 30 x 18	Quazite H20 17 x 30

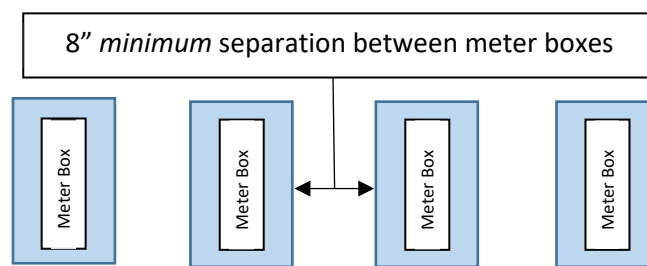
SECTION 4 - WATER

For all meters three (3) inches and larger, the designer will determine the appropriate meter box or vault. All meter boxes and vaults must be traffic rated. See Standard Detail W-609A & B for three (3) inch meter requirements when designing vault; Standard Drawing W-610 and W-611 for six (3) and eight (8) inch meters requirements.

Install all meter vaults and boxes to the correct finish grade. The City will not activate any meter vaults that do not meet this requirement, including requirements for correct depth of meter stop and service line. The water service crew will lock-off non-compliant boxes with a City of Newport lock.

MANIFOLDS

With approval from the City Engineer, the City may allow meter banks/manifolds, multiple meters placed in close proximity to one another, to provide multiple lot services. See Standard Drawing W-113.



Manifold Layout

RESTRAINED JOINTS

Provide joint restraint (locked joints) to prevent movement of the pipe or fitting at all bends, tees, crosses, plugs, and hydrants. Restrain all MJ fittings.

Mechanical Joint Restraint

Mechanical joint restraint where incorporated into the design of the follower gland shall consist of individually actuated wedges that increase their resistance to pull-out as pressure or external forces increase. Maintain the device so that it shall be capable of full mechanical joint deflection during assembly and flexibility of the joint after burial. The joint restraint ring and its wedging components shall be made of grade 60-42-10 to ductile iron conforming to ASTM A-536-84. The wedges shall be ductile iron heat-treated to a minimum hardness of 370 BHN. Dimensions shall be appropriate to match pipe materials used. Rate working pressures for the system of at least three-hundred-fifty (350) PSI for pipes sixteen (16) inches and smaller diameter and two-hundred-fifty (250) PSI for larger sizes. The devices shall be UL listed up through twenty-four (24) inch diameters and FM approved through twelve (12) inch diameters. The restraint systems and devices shall be Series 1100 Megalug restraint, as produced by EBAA Iron Sales, Inc., or approved equal. Contractor shall perform visual inspection of the restraint devices for flaws before installation. Do not use faulty restraint devices. Contractor shall bear all cost of repairing and subsequent retesting to correct the defect.

- Restrained joints by Grip Ring or Mega Lug kits
- Restrained joints on all be twenty-two-and-a-half (22.5) degrees and above
- Use torque limiting twist-off nuts to insure proper actuation of the restraining wedges or grip rings.

SECTION 4 - WATER

Thrust Blocks

Restrained joints at bends do not replace thrust block requirements.

TESTING REQUIREMENTS

All testing shall be done in the presence of a designated City representative or the test shall be considered invalid.

Pressure Testing

Main line testing shall follow OSS latest addition: one-hundred-fifty (150) PSI, held for two (2) hours, with loss of no more than five (5) PSI; unless situation calls for variation from standard test. See OSS, latest edition, Section 01140.51(a)(3).

Chlorination

Chlorination of new lines are overseen by the City Water Crew. See OSS, latest edition, Section 1140.52(b) for process.

Flushing

Contractor shall provide a minimum of 48-hours-notice prior to start of new water system flushing. Contractor shall include a proposed plan for disposal/neutralization of chlorinated water. City requires flushing to run through an energy dissipater. Blow-off/ Evacuation tap shall have a minimum flow velocity of 2.5-fps per the OSS, latest edition, Section 01140.50(a).

Bac-tee Test

Contractor is responsible for arranging delivery and testing at a City approved laboratory. Bacteriological treatments and testing of new water systems shall be conducted by City Water Staff. Acceptable test results from a certified laboratory approved by the Oregon Department of Health Services Water Program shall be provided to City prior to final acceptance of the new water system for public use. See OSS, latest edition, Section 1140.52(h) for procedure.

Test Ports

Test ports shall be one (1) inch.

TIE-INS TO LIVE WATER SYSTEM

All tie-ins between new water lines and the existing system will be overseen by the City Water Crew. No new lines may be connected until all testing has been completed and approved. Any parts needed during the connection process are to be sanitized and approved before installation.

SERVICE LINES

Premise Isolation

For all non-residential potable services, a minimum of a Double Check Valve Assembly (DCVA) shall be required for Premise Isolation. Install the Premise Isolation Assembly in accordance with OAR (Oregon Administrative Rules) 333-061-0071, Oregon Plumbing Specialty Code Chapter 6, and City of Newport standards and Specifications before City of Newport staff set a meter. The City shall identify and verify the degree of hazard of each service connection by City of Newport Safe Drinking Water Program.

Health Hazard connections shall be required to either utilize an approved In- Premise Backflow Prevention Assembly that is commensurate with the degree of hazard, (Air Gap or Reduced Pressure Principle Backflow Prevention Assembly) or install the Health Hazard Assembly as Premise Isolation. A

SECTION 4 - WATER

Reduced Pressure Backflow Assembly will be required at the service connection when non-potable water services (i.e., COIC irrigation) and City water services exist at the same project site, per State regulations.

Backflow Prevention

Backflow prevention devices shall be required on all irrigation services, fire sprinkler system services and water services one-and-one-half (1½) inch and larger. All backflow prevention shall conform to OAR 333-061-0070 and 333-061-0071. See Standard Drawing W-805.

Double Check Valves

Double detector check assemblies (DDCA) installed to detect low-flow events shall be placed inside ROW if City is to have access. See Standard Drawing W-900 and W-905.

An approved DDCA shall be minimum protection on all fire suppression systems. The DDCA shall be placed in a below ground vault. A detail of the vault shall be included in design drawings for review and approval by City. DDCA vaults shall be pre-cast structures. DDC assemblies shall be within 25 feet of the connection point to the public water system.

City is not responsible to maintain double detector check assemblies. For domestic water services, the City's ownership ends at the meter. City's ownership for fire services ends at the ROW.

Fire Department Connections

Fire Department Connections (FDCs) shall be used on fire suppression systems located on private properties; no fire hydrants will be allowed on private properties. All FDC shall be accessible from the nearest adjacent street. Parking lot access is prohibited due to possibilities of FDC blockage by cars or the limited space of a parking lot.

Between Main and Meter

City determines location of water meter in ROW. City standard is to provide services directly to property with meters and customer shutoff valve installed within the ROW for residential and commercial application.

City is not responsible for maintenance beyond the meter.

In general, individual service connections shall terminate in front of the property being served and shall be located eighteen (18) inches each side of a common side property line. Include all pipe placements on as-built records.

New subdivisions and Planned Unit Developments

Services for created lots shall be installed as part of the required improvements. Services shall be placed in pairs at shared property lines whenever possible

Sizing

The sizes of approved water service lines are one (1), two (2), four (4), six (6), eight (8), ten (10), and twelve (12) inches. City will review water service lines for effects on the distribution system. Service lines shall not be greater in size than the distribution main. Meter box lids shall accommodate installation of radio read pad. For two (2) inch and greater services, a design drawing must be submitted

SECTION 4 - WATER

showing the vault and fitting requirements with the expected flow (normal and maximum day flow) requirements and proposed usage. City will assess design against water distribution system to verify system flow and design area.

Domestic service lines one (1) inch through two (2) shall normally extend from the main to behind the curb, with a meter curb stop and meter box located at the termination of the service connection, see Standard Drawing W-605 or W-608. City Engineer may approve installation of three (3) inch meter, see Standard Drawing W-609A and B, on request. Developer shall provide meter vault for three (3) inch connection.

The minimum water service line size is one (1) inch diameter to the meter. Design Engineer may reduce this line size through the meter as required for domestic service. The water meter shall be the same size or one size smaller than the water service line. The City does not permit more than one service line per tax lot unless otherwise approved by the City Engineer. Install service lines as shown on the Standard Drawings. All service runs shall be one continuous run of municipex within the City's ROW. All service lines shall have a minimum of three (3) feet of cover.

A separate distribution line shall be required to provide for changes in service. City does not permit connections to transmission lines such as the use of fire hydrant or fire sprinkler lines as domestic service lines. Tap potable water services from the main separate from the fire line.

City requires a Professional Engineer design new service connections *greater* than two (2) inches.

Water services not being used, needing to be upsized, or needing to be relocated within a parcel are required to be removed back to the main and the pipe removed from the ROW. The City requires that line connection be removed at main and the main sealed. Repair method at the main shall be approved by the City Engineer or designee.

DEDICATED FIRE LINES

Dedicated fire lines on private property shall be maintained by property owner. The owner shall provide a master meter within the ROW, with required backflow prevention device installed on private property to separate the fire protection system from the City water main. Maintenance of the backflow device will be the responsibility of the property owners.

Once plans have been approved, the City will purchase meter if the meter is larger than those kept in inventory. Developer shall buy and place infrastructure and vault. When Contractor is ready for meter installation, contact the City Water Dept to arrange to pay installation costs and schedule meter installation. City will install meter after infrastructure is in place. Meter and vault shall be installed in the ROW. Master meter, like all meters, will remain City property.

The master meter is to monitor the fire line for leaks and in ensure water is used for fire purposed only. Property owner shall notify the City water utility in writing within 10 days of a fire. See NMC 5.10.040(C) for more information. See Standard Drawings W-610 and W-611 for design requirements.

FIRE SERVICES, FLOWS AND HYDRANTS

Fire Flow Analysis

The City of Newport requires all new developments or extension of existing facilities to have a fire flow analysis performed. Provide all relevant information on the proposed development or extension of

SECTION 4 - WATER

services.

The fire flow analysis uses a calibrated hydraulic model to determine available flow. The analysis uses the peak day demand in the distribution system with storage tanks at half full to determine the available flow, static pressures, and residual pressures.

Design Engineer cannot substitute any other fire flow analysis for the analysis performed by the City using its calibrated hydraulic model.

Fire Flow Requirements

The following table shows the required fire flows based on land use and development type:

Land Use Code	Development Type	Required Fire Flow (GPM)
AOD	Airport Operations District	2,500
ARID	Aviation Related Industrial District	2,500
ASD	Aviation Support District	2,500
ASDRA	Aviation Support District Reserve Area	2,500
CB	Central Business District (CBD)	3,500
CC	Convenience Commercial District	2,500
CG	General Commercial District	2,500
CL	Commercial Limited	2,500
CN	Commercial Neighborhood	2,500
EFUTRB	Exclusive Farm Use	1,500
IG	General Industrial District	2,500
IL	Light Industrial District	2,500
IP	Industrial Park	2,500
ME	Mixed Employment	2,500
MR	Mixed-use Riverfront	2,500
PF	Public Facilities	2,500
PO	Professional Office	2,500
PO/RM/RS	Mixed Use Office/Residential	2,500
RH	High Density Residential	1,500
RL	Low Density Residential	1,500
RM	Medium Density Residential	1,500
RR	0 Medium-10 Density Residential	1,500
RS	Standard Density Residential	1,500
SM	Surface Mining District	2,500
SR2-1/2	Suburban Low Density Residential	1,500
UAR10	Area Reserve District	1,500

Fire Service

The water fire service line shall normally extend from the main to the property line and end with a vault containing an approved backflow prevention device.

A vault will be required when a development provides fire sprinklers. The vault drawing will be included

SECTION 4 - WATER

on construction drawings submitted to the City. The vault shall contain all valves, fittings, meters, and appurtenances required for fire service to the development and be located on private property adjacent to the to the public ROW.

Hydrants shall be located such that private maintenance staff has complete access. They shall also be located to minimize the possibility of damage from vehicles or injury to pedestrians, with location preferred near intersections not directly on the corner. Protect hydrants located in parking areas by placing hydrants in a curbed landscape median/island. Hydrants placed on private property shall have a premise isolation valve installed at the ROW line. City considers such a hydrant main and hydrant privately owned and maintained by the property owner beyond the premise isolation.

The City of Newport requires that a registered Professional Engineer design all fire service and submit design through a ROW plan review and approval process. Design the fire service backflow/premise isolation device in accordance to all applicable building/fire/plumbing codes under a building department permit. Install all fire service lines from the nearest water main with a valve located adjacent to the tap/tee. PIV's and FDC's must be located on private property, unless otherwise approved by the City Engineer. If approved by the City Engineer for location within the ROW, the PIVs and FDCs shall be a minimum five (5) feet from roadways/curb. Construction documents shall provide a plan and profile of the fire service installation up to the ROW line. The City of Newport standard detail for fire lines is a minimum standard only.

All fire service lines will require a Double Check Detector Assembly (DCDA) around the backflow preventer.

Backflow Assembly vaults shall comply with the Uniform Plumbing Code requirement for electrical and heat for freeze protection as determined by the Building Department.

New Development Fire Hydrants

Fire hydrants shall be "bagged" (i.e. out of service) until City has accepted the new water system for public use.

Fire Sprinkler Lines

Fire sprinkler lines must have a DCDA installed with leak detection meter. The City's ownership of the fire sprinkler lines terminates at the ROW line with the installation of a gate valve per the standard drawing W-13B. The Building Department shall review all fire sprinkler lines and fire sprinkler vaults when on private property to be in conformance with plumbing and fire code regulations. Fire sprinkler vaults are required at the ROW when the building exceeds twenty (20) feet from the ROW line. In the instance where the building is within twenty (20) feet of the ROW, the developer has the option of installing a fire sprinkler vault or installing the fire sprinkler plumbing (DCDA, Post Indicator Valves, and Fire Department Connections) within the building as approved by the Building Official.

Fire sprinkler services that use any chemical additions shall require an approved Reduced Pressure Principle Detector Assembly (RPDA). Fire services, vaults and backflow prevention assemblies shall be installed in accordance with Oregon Administrative Rules (OAR) 333-061-0071, Oregon Plumbing Specialty Code and City of Newport Standards and Specs.

Fire Hydrants

- Materials

SECTION 4 - WATER

- Hydrants shall have a nominal five (5) inch main valve opening with 6-inch bottom connections. The main valve shall be equipped with O-ring seals and shall open when turned counterclockwise.
- The operating nut shall be a one-half (½) inch national standard pentagon nut.
- Hydrants shall be equipped with two-and-one-half (2½) inch hose nozzles and one four-and-one-half (4½) inch pumper.
- Hydrants shall conform to AWWA C-502 and have a self-lubricating rising stem. The normal depth of bury shall be four (4) feet. Nozzle threads shall be American National Standard. The inlet connection shall be mechanical joint, restrained by a mechanical joint restraint system such as Megalug® Series 1100 as manufactured by EBAA Iron, Inc., or approved equal.
- Hydrants shall be YELLOW Mueller Centurion, or approved equal and painted Yellow per Standard Drawing W-300.
- Design Requirements
 - Design the public fire hydrant system to provide maximum GPM determined by pressure zone and flow analysis. Design the distribution system in commercial/industrial areas to accommodate fire flows up to 4,500 GPM. Minimum fire flow in single-family residential areas shall be 1,000 GPM with a twenty (20) PSI residual pressure.
 - Base the distribution of hydrants upon the required average fire flow for the area served. Design coverage shall result in hydrant spacing of approximately five hundred (500) feet in residential areas, approximately two-hundred-fifty (250) feet in commercial or industrial subdivisions, or as approved by the Fire Chief and City Engineer. In addition, sufficient hydrants shall be available within one-thousand (1,000) feet of a building in commercial/industrial areas to provide its required fire flow.
 - Residential hydrants shall be located as nearly as possible to the corner of street intersections and not more than six hundred (600) feet from any cul-de-sac radius point.
 - Do not install a fire hydrant on a main of less than eight (8) inches inside diameter unless it is in a looped system of six (6) inch mains. The hydrant lead shall be a minimum six (6) inch inside diameter.
 - All fire hydrants will be located behind the existing or proposed sidewalk or in the planter strip. If any public hydrant encroaches on private property, provide an easement as directed by the City Engineer.
 - Do not install a hydrant within five (5) feet of any existing aboveground utility nor shall any utility install facilities closer than five (5) feet from an existing hydrant.
 - Hydrant installation shall conform to Standard Drawing W-300. Full depth hydrants will be required in all installations. City does not allow Installation of hydrant extensions in new construction, unless approved by the City Engineer.
 - For fire hydrant assembly see Standard Drawing W-300.
 - Do not design hydrants located within twenty (20) feet of any building or blocked by parking. The large hydrant port shall face the road or fire lane.
 - Guard posts, a minimum of three (3) feet high, shall be required for protection from vehicles *when necessary*. Such protection shall consist of four (4) inch diameter steel pipes, six (6) feet long, filled with concrete, and buried a minimum of three (3) feet deep in concrete, and located at the corners of a six (6) foot square with the hydrant located in the center. The City Engineer may approve the use of posts other than at the four corners.

Location

Fire hydrant placement shall be outside the pedestrian path of travel. Hydrants shall be spaced at no

SECTION 4 - WATER

more than four hundred (400) foot intervals. Any further spacing requires approval of the Newport Fire Department.

OPERATION OF VALVES IN CITY

Contractor shall request City operation of valves at least two (2) business days in advance. At no time shall the contractor undertake to close off, open, or take any other valve action that would affect the operation of the existing water system, unless specifically approved by City authorized representative.

WATER SHUT-OFFS FOR CONSTRUCTION

Water main shut-offs shall be coordinated through city water department representatives. Required shut-offs shall be coordinated with city water department seven (7) days prior to shutoff. Notification to users shall be no later than forty-eight (48) hour in advance for residents and seventy-two (72) hours for commercial or industrial properties. Failure to perform work within the given time will require re-notification.

WATER DESIGN REQUIREMENTS

Typical Water Valve Locations (Minimum)

See Standard Drawing W-100

Standard Water Valve Setting Detail

See Standard Drawing W-200

Valve Operator Extension Detail

See Standard Drawing W-205

Standard Fire Hydrant Assembly Detail

See Standard Drawing W-300

Blow-Off Assembly

See Standard Drawing W-405

2" Combination Air Valve Assembly

See Standard Drawing W-500

Standard 1" Water Service Connection

One inch water lines are installed by City Staff within the ROW. If installed as part of a new development, City staff will oversee installation of pipe, appurtenances, and boxes. See Standard Drawing W-605 for construction requirements.

Standard 2" Water Service Connection

Two inch water lines are installed by City Staff within the ROW. If installed as part of a new development, City staff will oversee installation of pipe, appurtenances, and boxes. See Standard Drawing W-608 for construction specifications.

3" Water Service 3" Meter

Three inch water services must be approved by the City Engineer. City staff will oversee installation of

SECTION 4 - WATER

pipe, appurtenances, and boxes. Meter owned and installed by City. All other pipe, fittings, and vault installed by developer. See Standard Drawing W-609A/B for construction requirements.

6" Master Meter Connection

The six (6) inch master meter is to separate public water infrastructure from private water infrastructure. Meter owned and installed by City. All other pipe, fittings, and vault installed by developer. Size often determined by fire line. See Standard Drawing W-610 for specifications.

8" Master Meter Connection

The eight (8) inch master meter is to separate public water infrastructure from private water infrastructure. Size often determined by fire line. See Standard Drawing W-611 for specifications.

Concrete Thrust Blocking Details

Restrained joints are required on bends for three (3) joints each side of bend twenty-two-and one-half (22.5) degrees and larger. Vertical and horizontal thrust blocks are also required. See Standard Drawing W-700 for thrust block application.

Reduced Pressure Backflow Assembly (2½" Up)

Backflow devices are required on fire lines and irrigation lines. See Standard Drawing W-805 for construction specifications.

Double Check Valve Assembly (¾" - 2")

See Standard Drawing W-900

Double Check Detector Assembly (2½" Up)

See Standard Drawing W-905

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WATER SYSTEMS

STANDARD DETAIL DRAWINGS INDEX

- W-100: TYPICAL WATER VALVE LOCATIONS (MINIMUM)
- W-113: WATER MANIFOLD CONNECTION TYPICAL 1" - 2"
- W-200: STANDARD WATER VALVE SETTING DETAIL
- W-205: VALVE OPERATOR EXTENSION DETAIL
- W-300: STANDARD FIRE HYDRANT ASSEMBLY DETAIL
- W-405: BLOW-OFF ASSEMBLY
- W-500: 2" COMBINATION AIR VALVE ASSEMBLY
- W-605: STANDARD 1" WATER SERVICE CONNECTION
- W-608: STANDARD 2" WATER SERVICE CONNECTION
- W-609A/B: 3" WATER SERVICE 3" METER
- W-610: 6" MASTER METER CONNECTION
- W-611: 8" MASTER METER CONNECTION
- W-700: CONCRETE THRUST BLOCKING DETAILS
- W-805: REDUCED PRESSURE BACKFLOW ASSEMBLY (2½" UP)
- W-900: DOUBLE CHECK VALVE ASSEMBLY (¾" - 2")
- W-905: DOUBLE CHECK DETECTOR ASSEMBLY (2½" UP)



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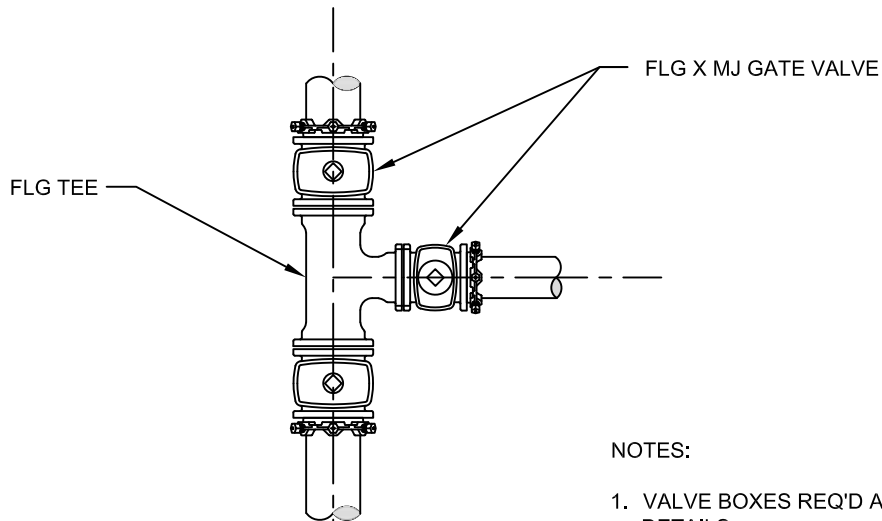
STANDARD DETAIL DRAWING INDEX

DETAIL NO.

W-010

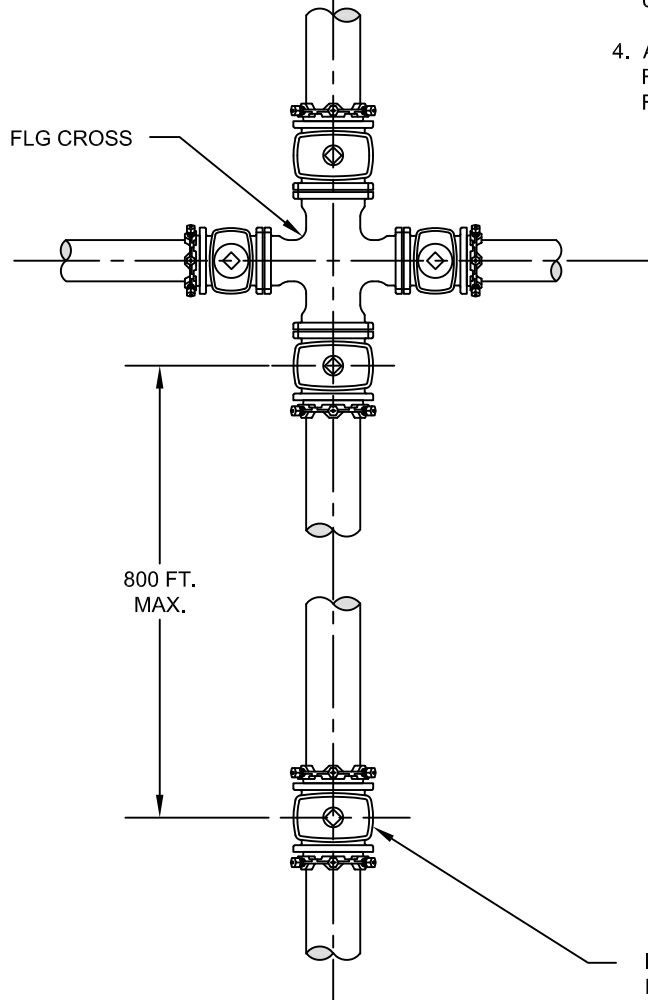
11/08/2022

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NOTES:

1. VALVE BOXES REQ'D AT EACH VALVE. SEE APPROPRIATE DETAILS.
2. VALVES/BOXES SHALL CONFORM TO CITY STANDARDS.
3. TAPPING TEES WITH VALVE MAY BE USED AT SOME LOCATIONS UPON PRIOR APPROVAL.
4. ALL MJ FITTINGS SHALL BE EQUIPPED WITH APPROVED RESTRAINT GLANDS REQ'D AT EACH VALVE AND NEARBY FITTING.



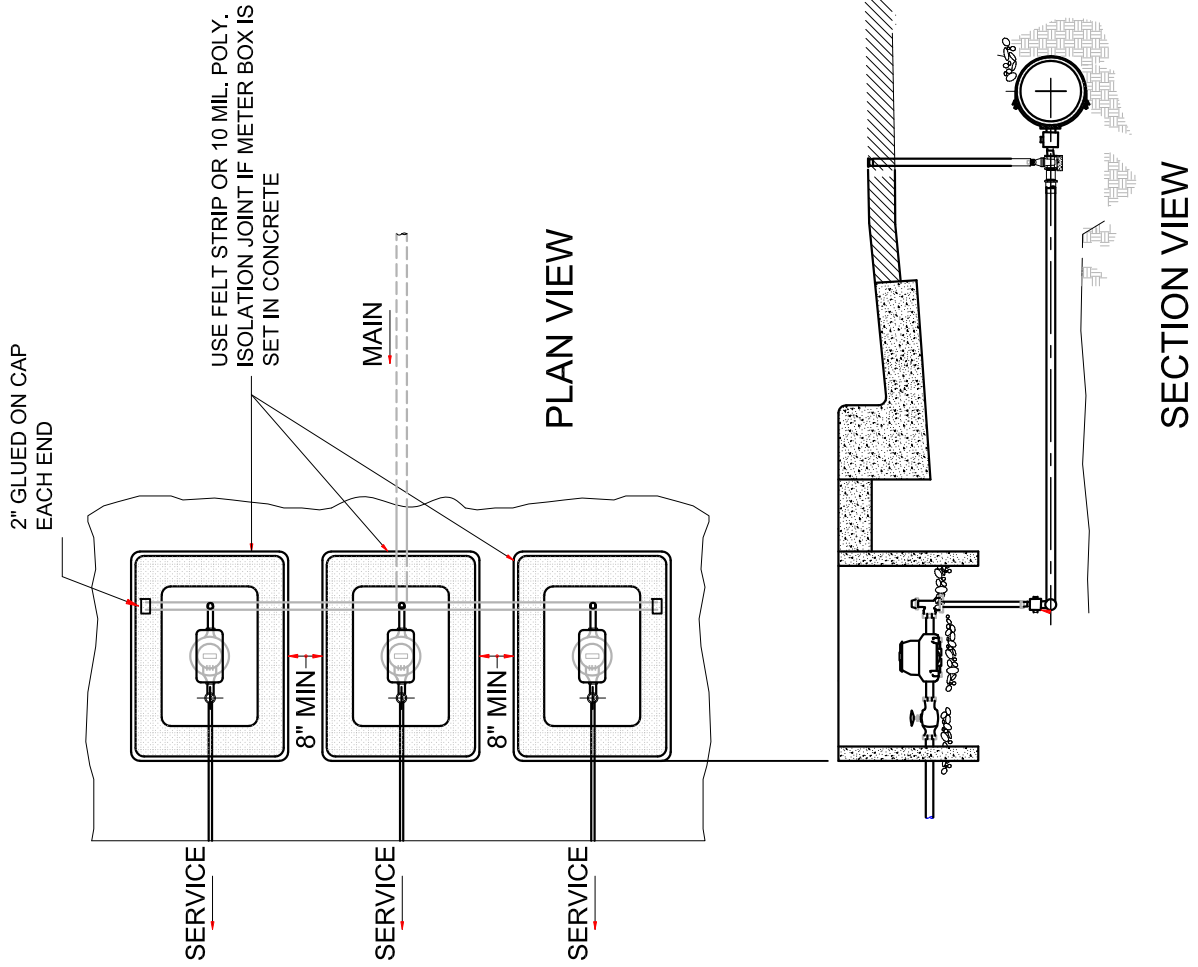
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TYPICAL WATER VALVE
 LOCATIONS (MINIMUM)

DETAIL NO.

W-100

11/30/2021



NOTES:

1. SEE W-604 FOR FOR 1" SERVICE STANDARD DRAWING.
2. CITY STAFF INSTALLS SERVICE LINES 2" AND SMALLER IN ROW
3. SPACE METER BOXES SO THAT CONCRETE BETWEEN BOXES IS SOLID.



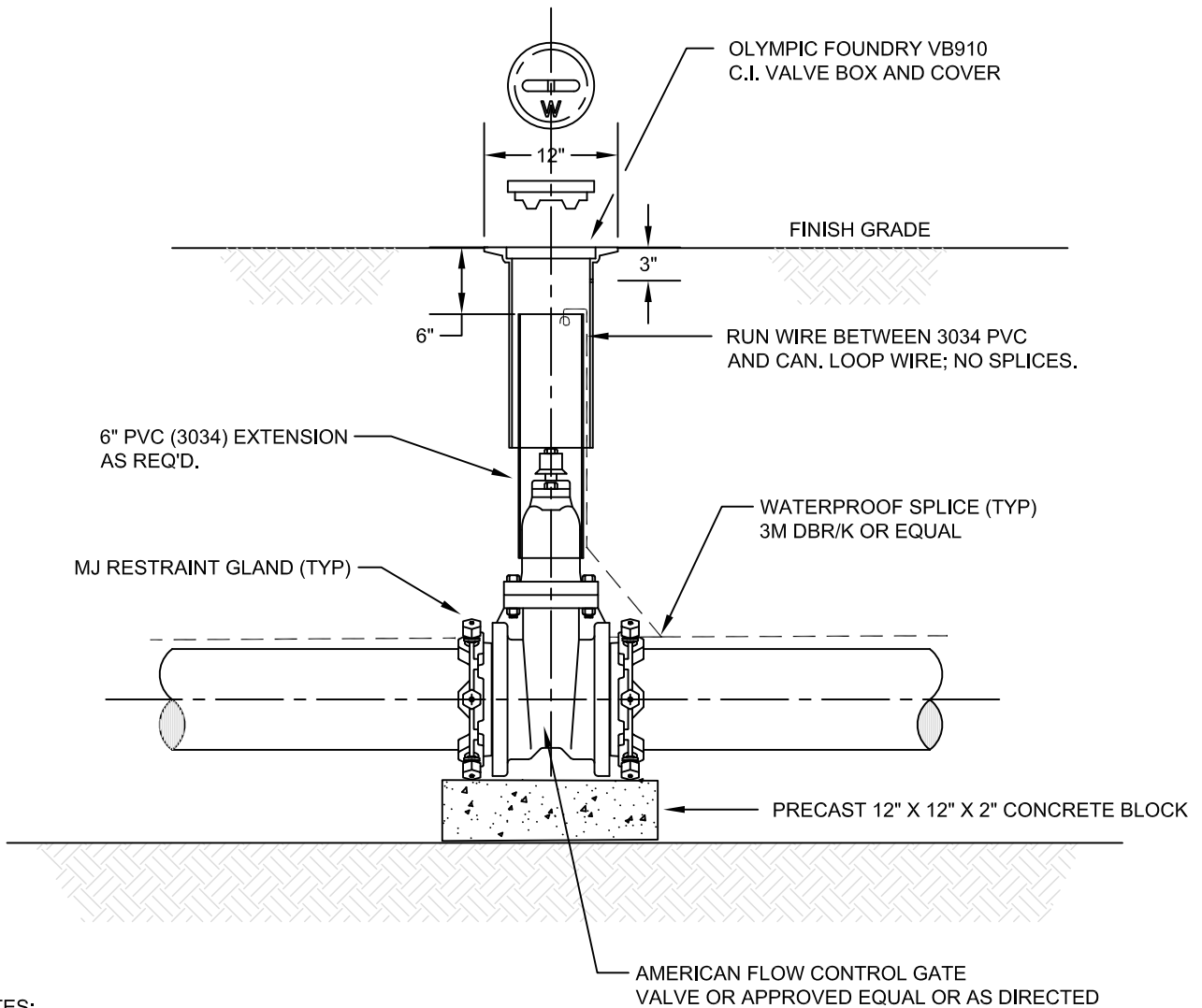
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**WATER MANIFOLD CONNECTION
 TYPICAL 1" - 2"**

DETAIL NO.

W-113

1/22/2024



NOTES:

1. VALVES SHALL BE INSTALLED PERPENDICULAR TO A PAVED SURFACE OR PLUMB IN UNPAVED AREAS. ADDITIONAL FITTING MAY BE REQUIRED.
2. VALVE BOX SHALL BE CENTERED OVER VALVE OPERATING NUT.
3. PVC EXTENSION SHALL BEGIN AS CLOSE TO VALVE AS POSSIBLE AND SHALL EXTEND TO WITHIN 6" OF GROUND SURFACE.
4. TOP OF VALVE BOX SHALL BE FLUSH WITH FINISH GRADE.
5. VALVE EQUIPPED WITH 2" SQUARE OPERATING NUT LOCATED WITHIN 24" FROM GROUND SURFACE. SEE VALVE OPERATOR EXTENSION DETAIL WHERE REQUIRED.
6. VALVES LARGER THAN 12" SHALL BE INSTALLED ON PRECAST CONCRETE PIER BLOCK. SEE DETAIL G-100 FOR BACKFILL AND PIPE BEDDING REQUIREMENTS.
7. FOR IN-LINE VALVES, INSTALL BELL RESTRAINTS FOR TWO JOINTS EITHER SIDE OF VALVE.
8. USE BUTTERFLY VALVES ON ALL PIPE 8 INCHES OR LARGER EXCEPT FOR LIVE TAPS.
9. LIVE TAPS ON PIPES 8 INCHES AND LARGER MAY BE GATE VALVES.



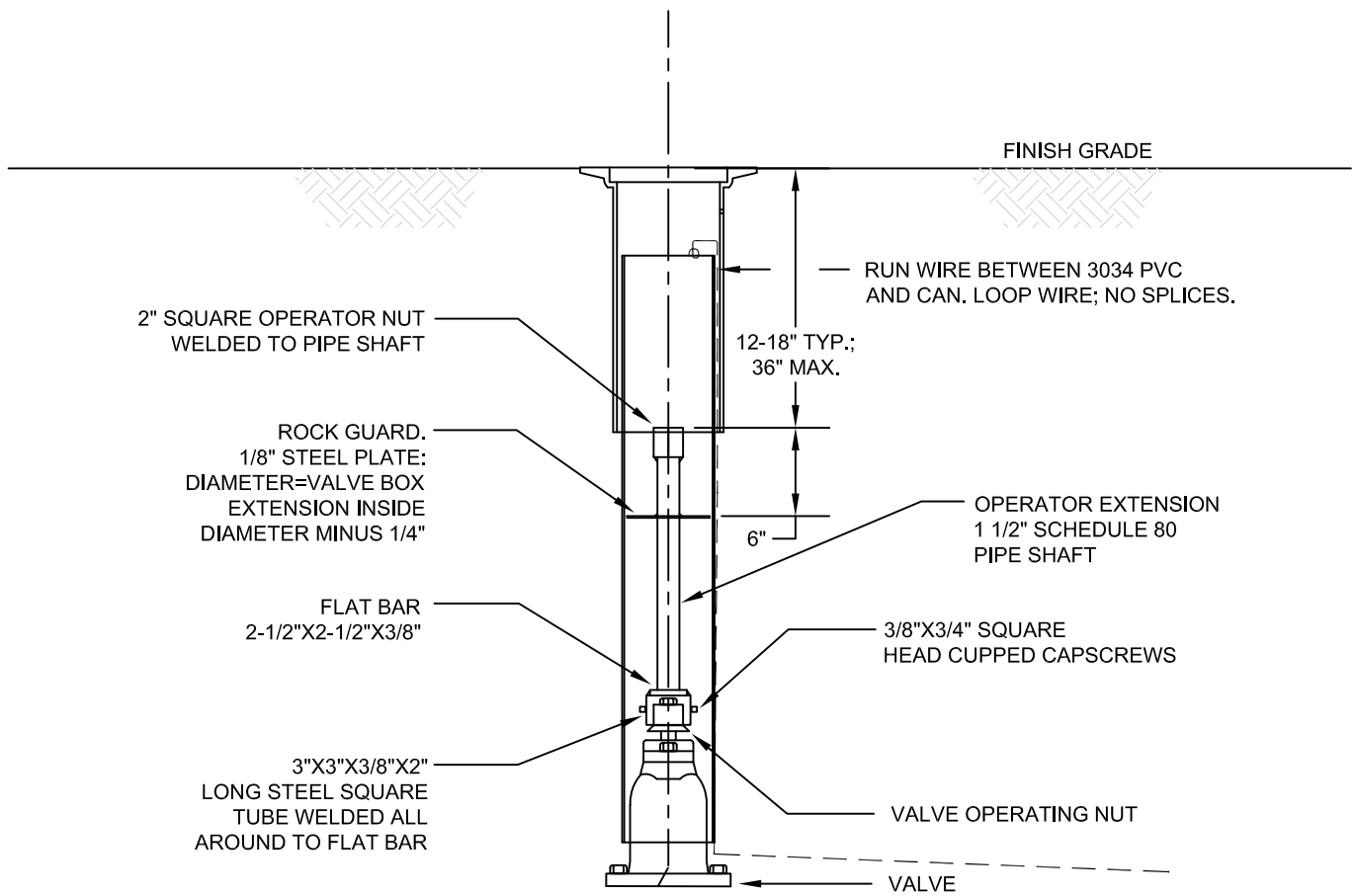
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**STANDARD WATER VALVE
 SETTING DETAIL**

DETAIL NO.

W-200

11/30/2021



NOTES:

1. WHERE DEPTH IS OVER 6 FEET, A SECOND ROCK GUARD PLATE IS REQUIRED EQUALLY SPACED BETWEEN THE TOP ROCK GUARD AND THE VALVE NUT.

2. EXTENSION IS REQUIRED WHEN VALVE OPERATING NUT IS GREATER THAN 24 INCHES FROM FINISHED GROUND SURFACE.



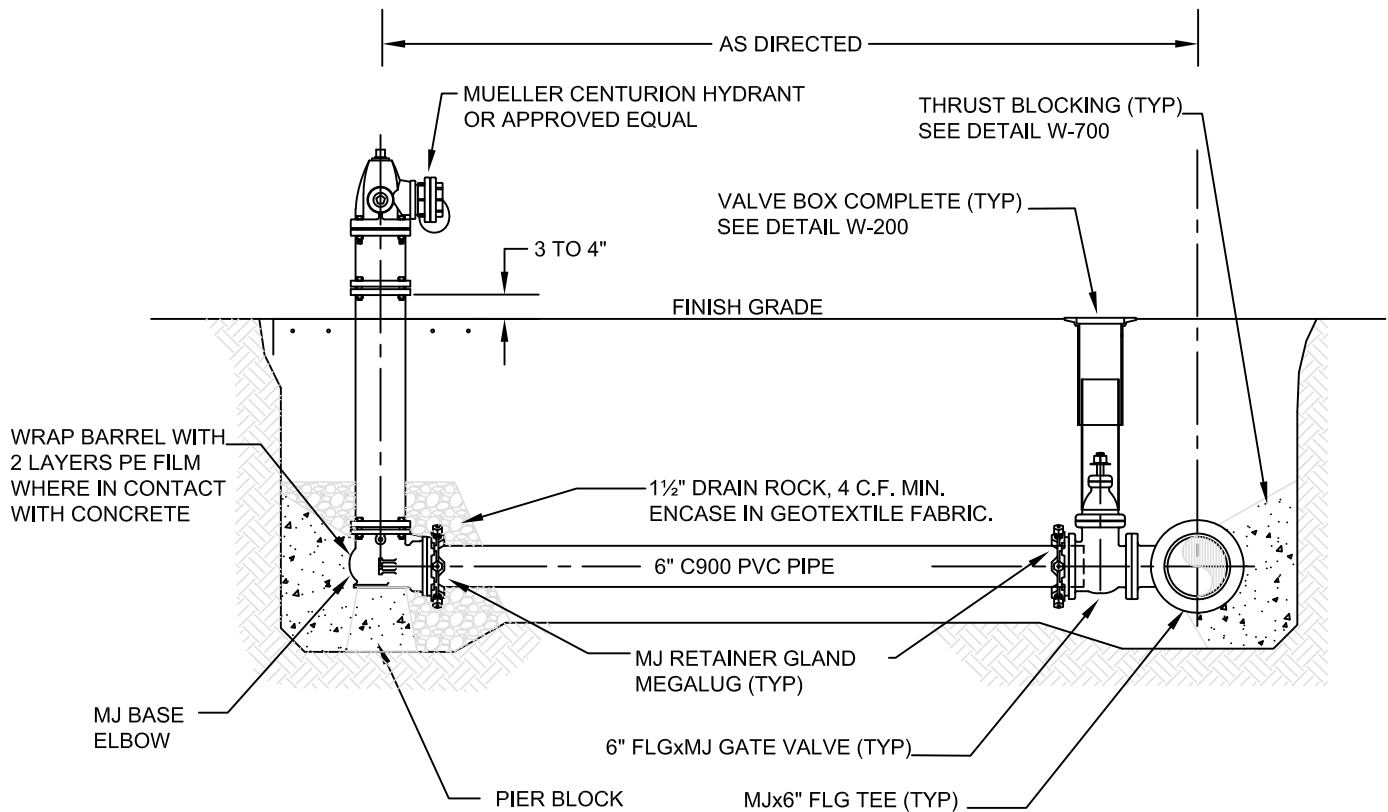
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VALVE OPERATOR
EXTENSION DETAIL

DETAIL NO.

W-205

11/30/2021



NOTES:

1. FIELD VERIFY PIPE LENGTHS AND HYDRANT BARREL LENGTH REQUIRED AT EACH HYDRANT. NO JOINTS ALLOWED WHERE PIPE/STICK LENGTH IS LESS THAN 18 FEET.
2. HYDRANT SHALL BE INSTALLED PLUMB. ADDITIONAL FITTINGS MAY BE REQUIRED.
3. KEEP DRAIN HOLES CLEAR AND FREE TO DRAIN.
4. SEE DETAIL G-100 FOR PIPE BEDDING AND BACKFILL REQUIREMENTS.
5. A MINIMUM OF 36" OF CLEAR SPACE AROUND HYDRANTS IS REQUIRED PER UNIFORM FIRE CODE (NO POSTS, WALLS, SIGNS, ETC.).
6. HYDRANT PUMPER PORT SHALL FACE ROAD OR DIRECTION OF ACCESS.
7. ALL PIPE JOINTS SHALL BE RESTRAINED BELL AND SPIGOT.
8. WHEN WRAPPING PIPE IN PLASTIC FOR POURED-IN-PLACE THRUST BLOCK DO NOT COVER HYDRANT WEEP HOLES WITH CONCRETE.



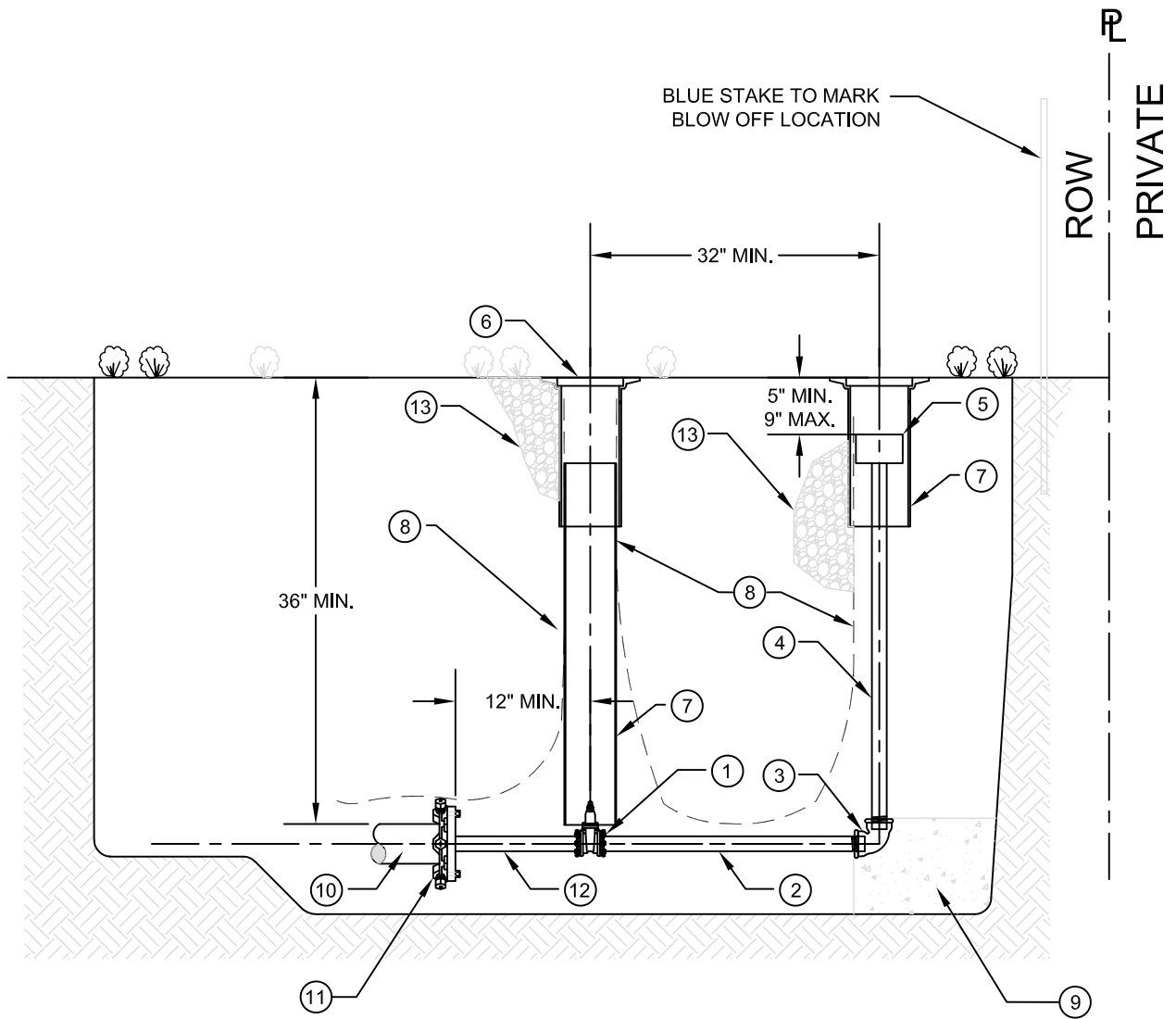
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STANDARD FIRE HYDRANT
 ASSEMBLY DETAIL

DETAIL NO.

W-300

11/30/2021



ITEM	DESCRIPTION	SPECIFICATIONS OR APPROVED EQUAL
1	VALVE	2-INCH GATE VALVE (FNPT X FNPT)
2	NIPPLE	2-INCH BRASS NIPPLE - (MNPT X MNPT). L=30-INCH (MIN)
3	ELBOW	2-INCH BRASS 90° BEND (FNPT X FNPT)
4	NIPPLE	2-INCH BRASS NIPPLE SCH 40 - (MNPT X MNPT) - LENGTH AS REQUIRED
5	COUPLING	2-INCH THREADED COUPLING (FNPT X FNPT) - WITH PLUG
6	VALVE BOX	STANDARD VALVE BOX ASSEMBLY - SEE DETAIL W-200
7	VALVE BOX	STANDARD VALVE BOX ASSEMBLY - SEE DETAIL W-200
8	TRACER WIRE	AWG #10 COPPER TRACER WIRE WITH BLUE INSULATION 30 MIL HPDE TERMINATE WITH 24-INCH EXCESS WIRE COILED IN VALVE BOX (TYP)
9	THRUST BLOCK	SEE W-700 FOR THRUST BLOCK DETAILS
10	PIPE	DEAD END - RESTRAINED
11	RESTRAINT	MJ CAP WITH WEDGE ACTION RESTRAINT GLAND, TAP 2-INCH THREADED OUTLET (FNPT)
12	NIPPLE	2-INCH BRASS NIPPLE - (MNPT X MNPT)
13		SEE STANDARD DRAWING G-100 FOR TRENCH AND BACKFILL DETAILS



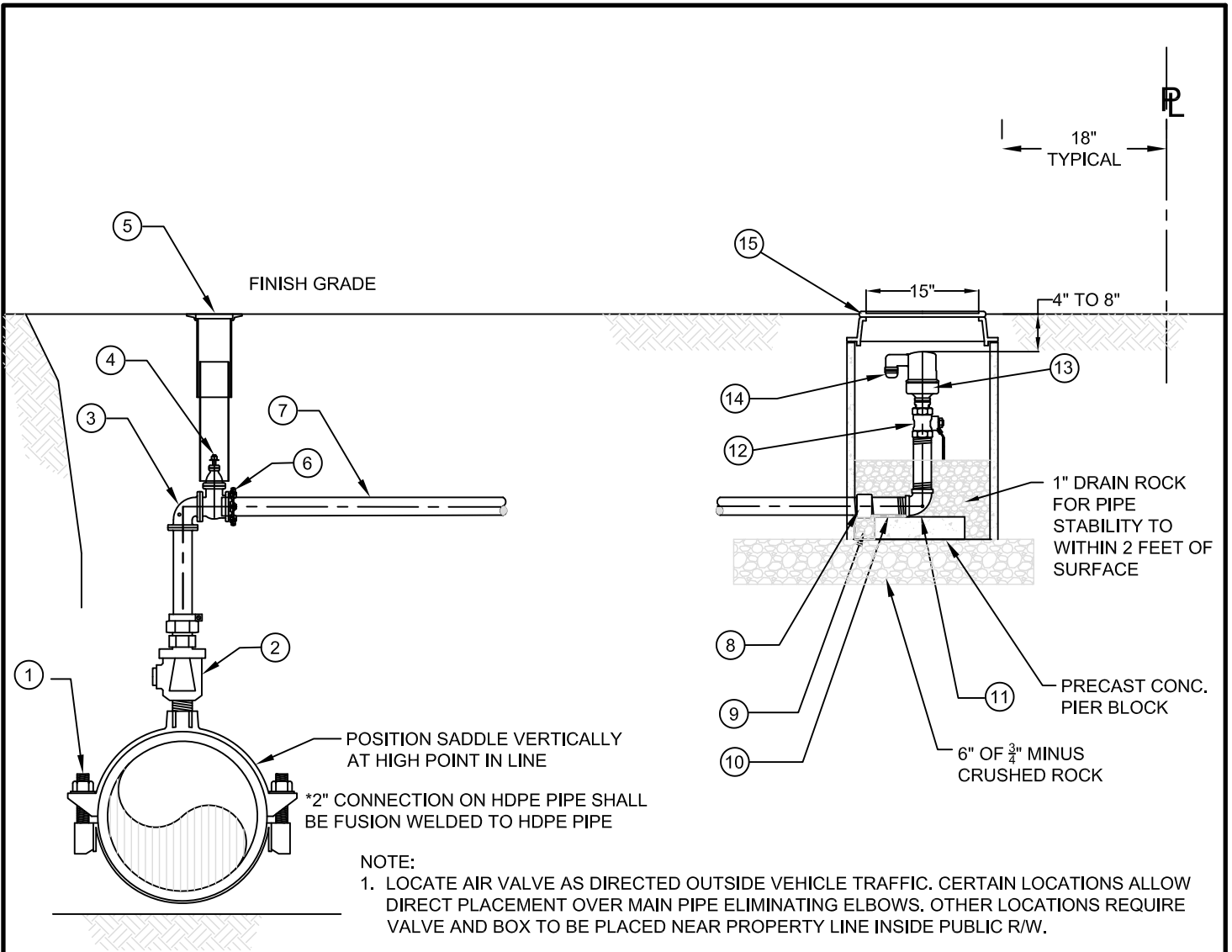
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BLOW-OFF ASSEMBLY

DETAIL NO.

W-405

11/30/2021



ITEM	SIZE	DESCRIPTION	SPECIFICATIONS OR APPROVED EQUAL
1	AS REQ'D	SADDLE	FORD/ROMAC 202BS; 2" FIP TAP* - TAP AT TOP OF PIPE
2	2"	CORP STOP	MIP X MIP
3	2"	ELBOW	304 STAINLESS STEEL OR BRASS ELBOW
4	2"	GATE VALVE	AWWA C509 RESILIENT WEDGE GATE VALVE, THRD. ENDS, 2" NUT
5	N/A	VALVE BOX	-
6	2"	ADAPTOR	MIP X CTS
7	2"	PIPE	PEX A PIPE, ANDSI/NSF 14/61, MUNICPEX BY REHAU, 200 PSI, CTS FITTING COMPATIBLE
8	2"	ADAPTOR	2" COMPRESSION X MIP ADAPTOR
9	2"	COUPLING	THREADED 304 SS OR BRASS COUPLING, SHORT
10	2"	NIPPLE	THREADED 304 SS OR BRASS NIPPLE, FIELD FIT
11	2"	ELBOW	BRASS 90° ELBOW
12	2"	BALL VALVE	2" STAINLESS STEEL BALL VALVE W/ HAND LEVER
13	2"	COMBO AIR VALVE	COMBINATION AIR VALVE; PVC ARI D-040B VALVE
14	2"	TEE VENT	ALUMINUM T-VENT, 20 MESH SS SCREEN, MORRISON BROS. FIG 155
15	-	METER BOX	OLDCASTLE FIRBERLYTE BOX, PARTS: 2 BOXES FL36, LID FL36GP



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2" COMBINATION AIR VALVE ASSEMBLY

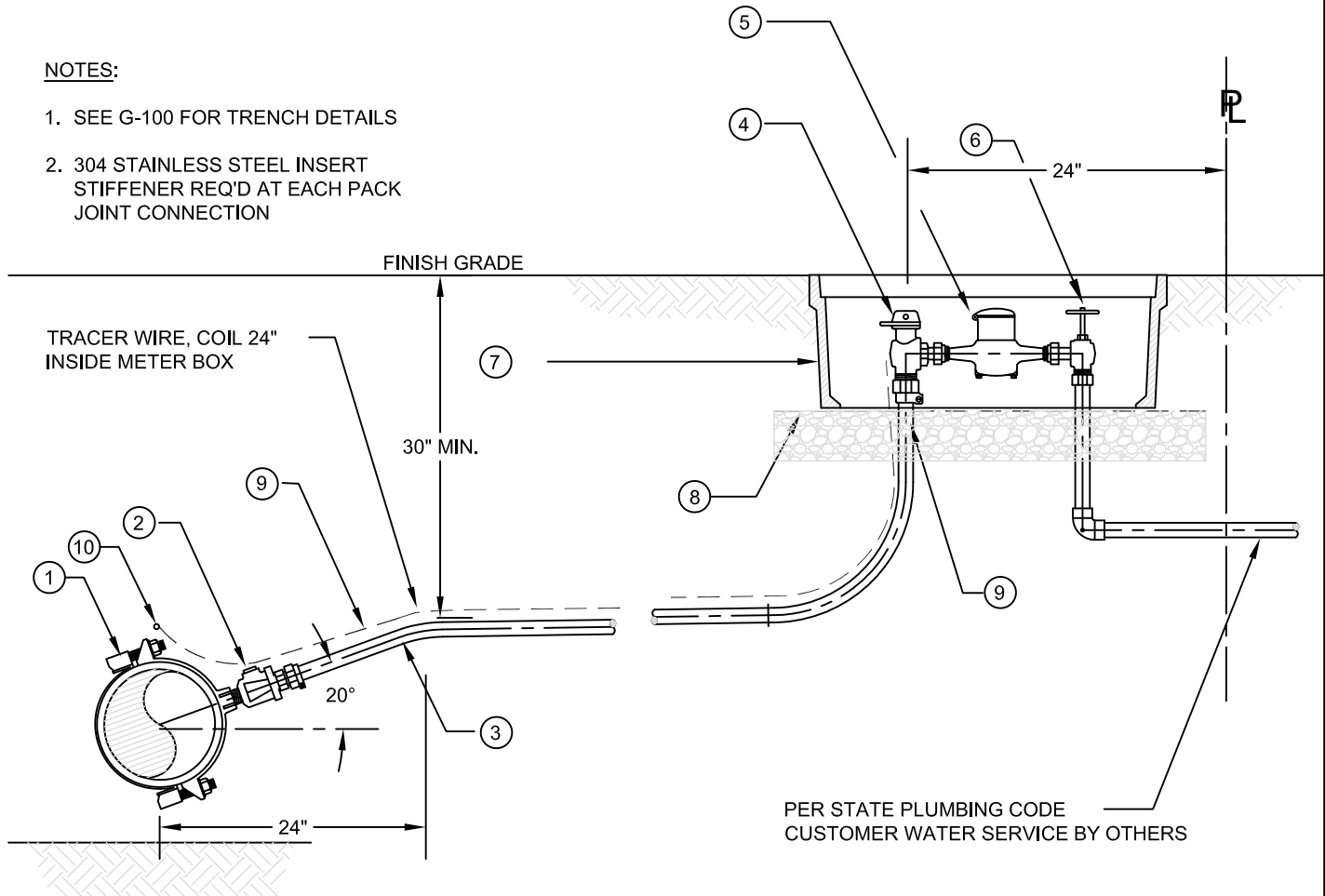
DETAIL NO.

W-500

8/9/2022

NOTES:

1. SEE G-100 FOR TRENCH DETAILS
2. 304 STAINLESS STEEL INSERT STIFFENER REQ'D AT EACH PACK JOINT CONNECTION



ITEM	SIZE	DESCRIPTION	SPECIFICATIONS OR APPROVED EQUAL
1	AS REQUIRED	SADDLE	FORD/ROMAC 202BS; 1" FIP TAP
2	1"	BALL CORP. STOP	MIP x PEP PJ; FORD FB1101-4 AWWA/CC TAPER THREADED INLET, MUELLER E-25029
3	1"	SERVICE PIPE	PEX A PIPE, ANSI/NSF 14/61, MUNICIPEX BY REHAU 200 PSI, CTS FITTING COMPATIBLE
4		ANGLE BALL METER VALVE	PEP PACK JOINT INLET x METER SWIVEL NUT OUTLET FOR 3/4" METER: FORD BA63-342W-NL, MUELLER E-24259 FOR 1" METER: FORD BA63-444W-NL, MUELLER E-24259
5	AS REQ'D	WATER METER	BY CITY
6	AS REQ'D	SERVICE VALVE ANGLE GLOBE	BY CITY
7	17"x30"x12"	METER BOX	OLD CASTLE BOX PARTS: #FL12TBOX 12 WM; #FL12GP LID WITH RECESSED ANTENNA OPENING
8	24" x 36"	AGGR. BASE	3/4" MINUS, 4" DEPTH
9	10 GA.	TRACER WIRE	10 GA. COPPER WIRE WITH BLUE 30 MIL THICK HDPE INSULATION
10	AS REQ'D	DIRECT BURY TRACER WIRE SPLICE	3M DBR/K DIRECT BURY SPLICE OR EQUAL
ALL PARTS SHALL BE BRASS UNLESS OTHERWISE INDICATED			



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**1" WATER SERVICE
WITH 1" OR 3/4" METER**

DETAIL NO.

W-605

11/30/2021



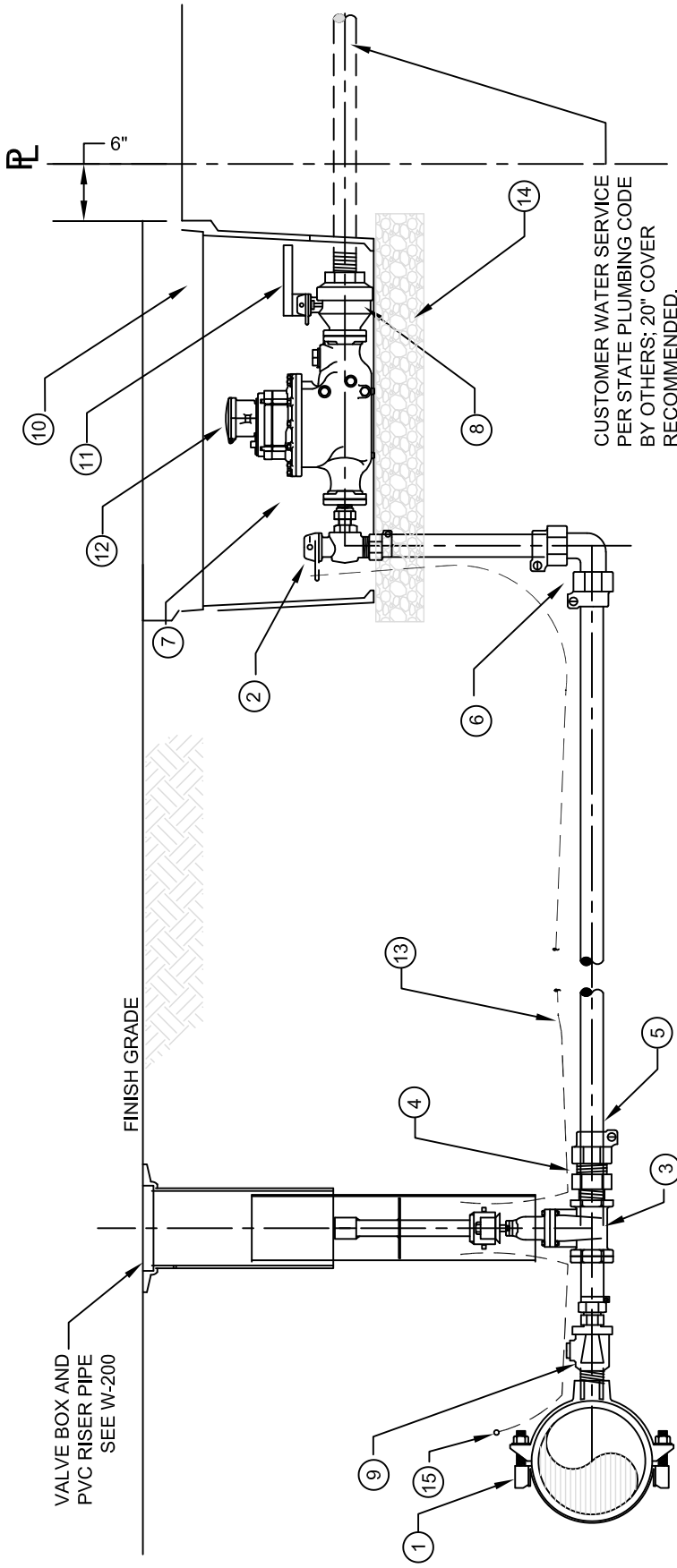
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STANDARD 2" WATER SERVICE CONNECTION

DETAIL NO.

W-608

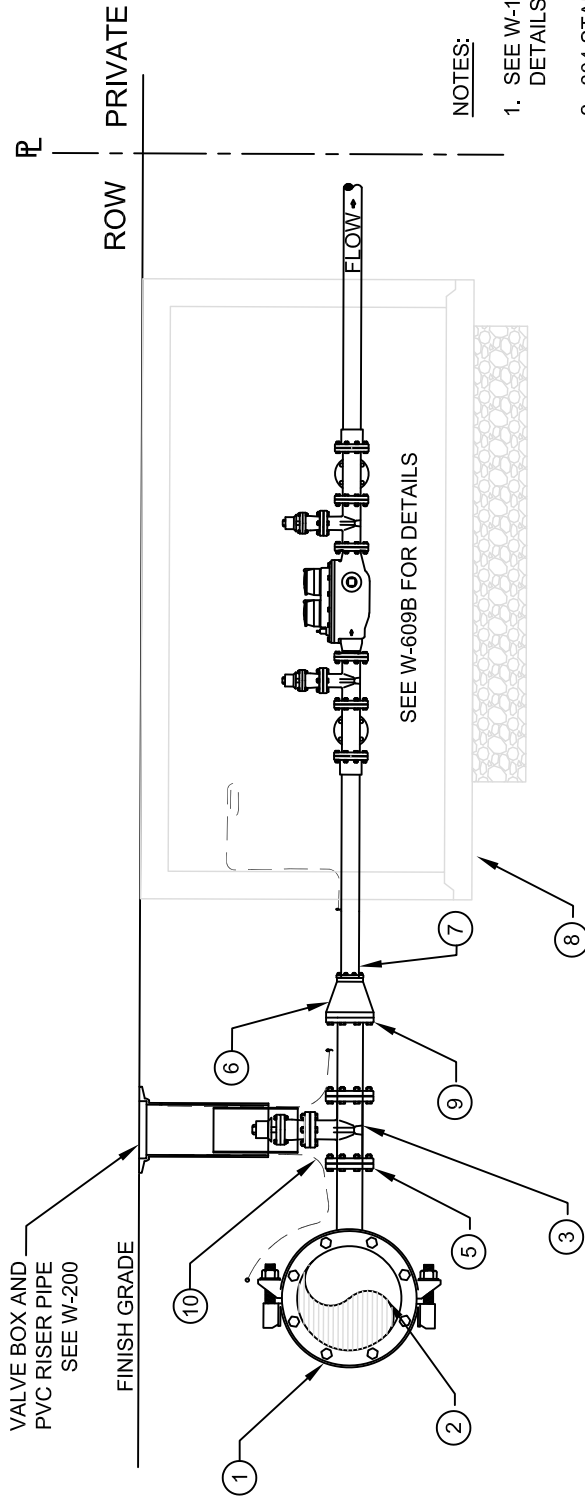
11/30/2021



ITEM	SIZE	DESCRIPTION	SPECIFICATIONS OR APPROVED EQUAL
1	AS REQ'D	SADDLE	FORD/ROMAC 202BS; 2" FIP TAP
2	2"	ANGLE METER STOP	2" CTS COMPRESS (Q) ANGLE METER STOP; FORD - BFA43-777WQ-NL; MUELLER - B24276N
3	2"	GATE VALVE	AWWA C509 RESILIENT WEDGE GATE VALVE, THRD. ENDS, 2" NUT
4	2"	COMPRESSION FITTING	MIP X CTS
5	2"	SERVICE PIPE	PEX A PIPE, ANS/NSF 14/61, MUNICIPEX BY REHAU, 200 PSI, CTS FITTING COMPATIBLE
6	2"	COMPRESSION FITTING	CTS 90 DEND
7	2"	COMPRESSION FITTING	CTS COMPRESSION X METER FLG ANGLE STOP
8	2"	BALL METER VALVE	METER FLG x FIP; FORD BF13-777W-NL; MUELLER B-24337
9	2"	CORP STOP	MIP X MIP CORPORATION STOP; FORD - FB1100-7-Q-NL; MUELLER - B25028N
10	17"x30"x18"	METER BOX	OLD CASTLE FIRBERLYTE BOX PARTS: BOX FL36T, LID FL36GP
11	N/A	HANDLE	BALL VALVE HANDLE; FORD HB-67S
12		WATER METER	BY CITY
13	10 GAUGE	TRACER WIRE	COPPER WIRE WITH BLUE 30 ML THICK HDPE INSULATION
14	24" X 36"	AGGREGATE BASE	3/4" MINUS; 4" DEPTH
15	AS REQ'D	CONDUCTOR CONNECTION	PRO-TRACE TW CONNECTOR

NOTES:

- SEE W-150 FOR TRENCH DETAILS
- 304 STAINLESS STEEL INSERT STIFFENER REQ'D AT EACH COMPRESSION FITTING



PROFILE VIEW

NOTES:

1. SEE W-150 FOR TRENCH DETAILS
2. 304 STAINLESS STEEL INSERT STIFFENER REQ'D AT EACH COMPRESSION FITTING

ITEM	SIZE	DESCRIPTION	SPECIFICATIONS OR APPROVED EQUAL
1	AS REQUIRED	SADDLE	####
2	AS DESIGNED	MAIN LINE	####
3	4"	GATE VALVE	4" GATE VALVE
4	4"	SERVICE PIPE	C900
5	4"	RMJ	RESTRAINED MJ FOR DI PIPE
6	4 X 3	REDUCER	4 X 3 FLG DUCTILE IRON REDUCER
7	3"	PIPE	3" DUCTILE IRON SPOOL FLG X PE
8	4 X 6	VAULT	575-LA OLDCASTLE CONCRETE VAULT 4'-2" X 6'-6"
9	4"	PIPE	RMJ FOR C-900 PIPE
10	10 GA	TRACER WIRE	10 GA. COPPER WIRE WITH BLUE 30 MIL THICK HDPE INSULATION
11	###	###	###

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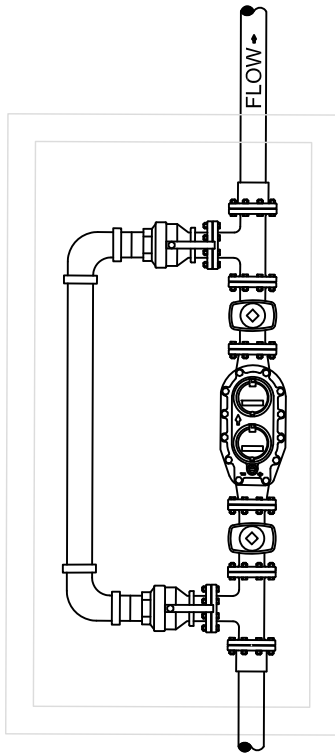
**3" WATER SERVICE
 3" METER**

DETAIL NO.

W-609A

11/30/2021

PLAN VIEW



NOTES:

1. SEE W-150 FOR TRENCH DETAILS
2. 304 STAINLESS STEEL INSERT STIFFENER REQ'D AT EACH COMPRESSION FITTING

ITEM	SIZE	DESCRIPTION	SPECIFICATIONS OR APPROVED EQUAL
1	AS REQUIRED	SADDLE	####
2	AS DESIGNED	MAIN LINE	####
3	4"	GATE VALVE	4" GATE VALVE
4	4"	SERVICE PIPE	C900
5	4"	RMJ	RESTRAINED MJ FOR DI PIPE
6	4 X 3	REDUCER	4 X 3 FLG DUCTILE IRON REDUCER
7	3"	PIPE	3" DUCTILE IRON SPOOL FLG X PE
8	4 X 6	VAULT	575-LA OLDCASTLE CONCRETE VAULT 4'-2" X 6'-6"
9	4"	PIPE	RMJ FOR C-900 PIPE

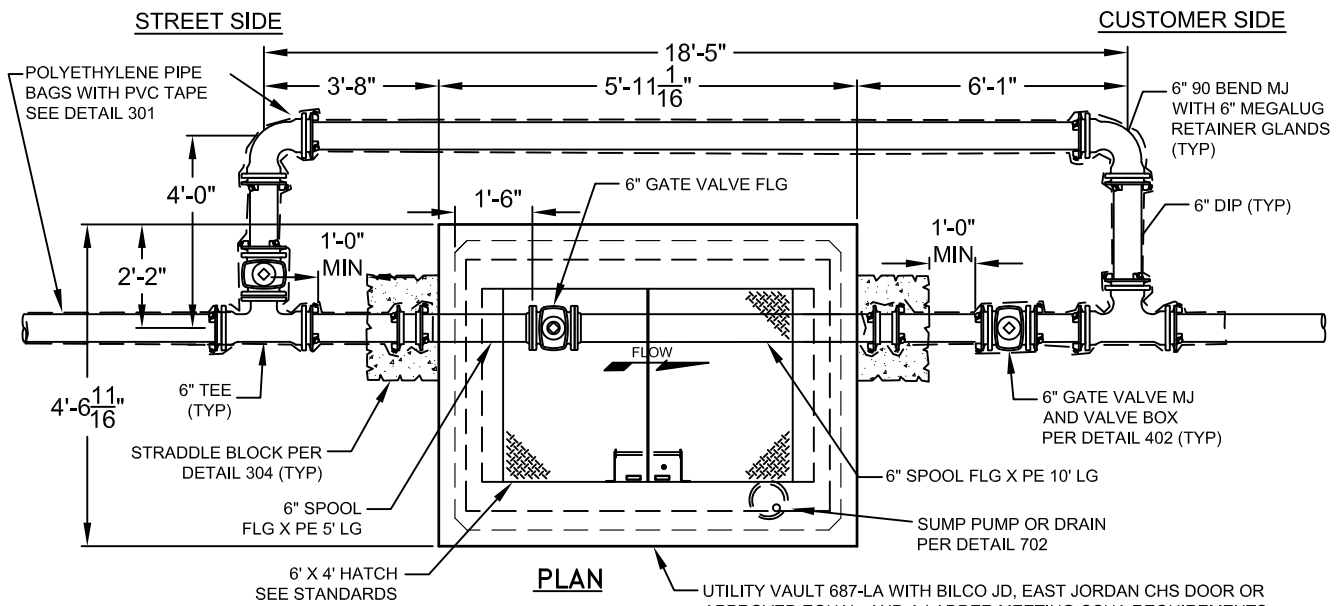
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3" WATER SERVICE
 3" METER

DETAIL NO.

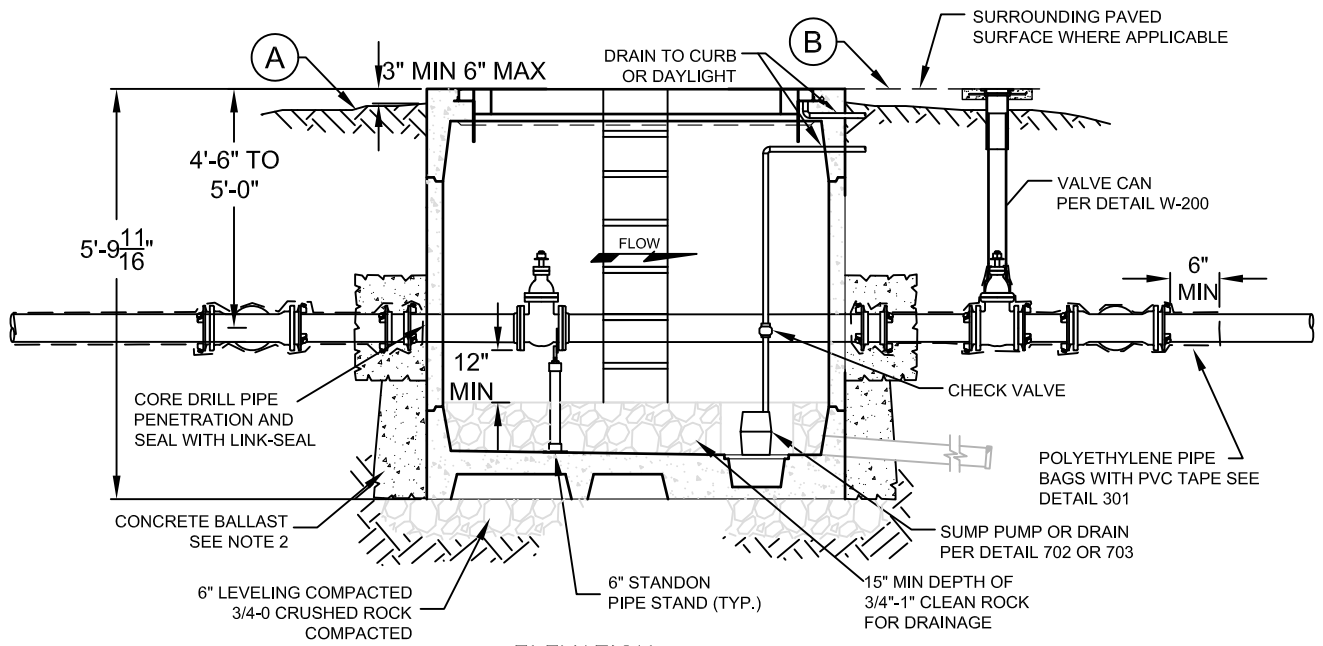
W-609B

11/30/2021



PLAN

UTILITY VAULT 687-LA WITH BILCO JD, EAST JORDAN CHS DOOR OR APPROVED EQUAL, AND A LADDER MEETING OSHA REQUIREMENTS (SEE DETAIL 701). SEE NOTE 1, EXTERIOR TO BE SEALED WITH CRYSTAL SEAL OR APPROVED EQUAL.



ELEVATION

- NOTES:**
- CONTRACTOR TO SEAL ALL OPENINGS IN VAULT WITH NON SHRINK GROUT.
 - CONTRACTOR TO INSTALL CONCRETE BALLAST 3 CU YD MIN AROUND BASE OF VAULT IN AREAS WHERE FLOODING OR HIGH GROUND WATER EXISTS.
 - ALL MATERIALS SHALL BE AS NAMED OR EQUAL. SUBMIT ALTERNATES FOR APPROVAL.
 - ORS 92.044(7) PROHIBITS LOCATING ANY UTILITY INFRASTRUCTURE WITHIN 1-FT. OF A SURVEY MONUMENT. DEVELOPER SHALL PAY FOR ANY RELOCATION OF SERVICES AND/OR METER BOXES FOUND TO FALL WITHIN 1-FT. OF A SURVEY MONUMENT LOCATION.

- KEYNOTES:**
- IN LANDSCAPING: FINISH GRADE SHALL SLOPE AWAY FROM VAULT LID.
 - IN PAVEMENT: FINISH GRADE SHALL BE FLUSH WITH SURROUNDING PAVEMENT.



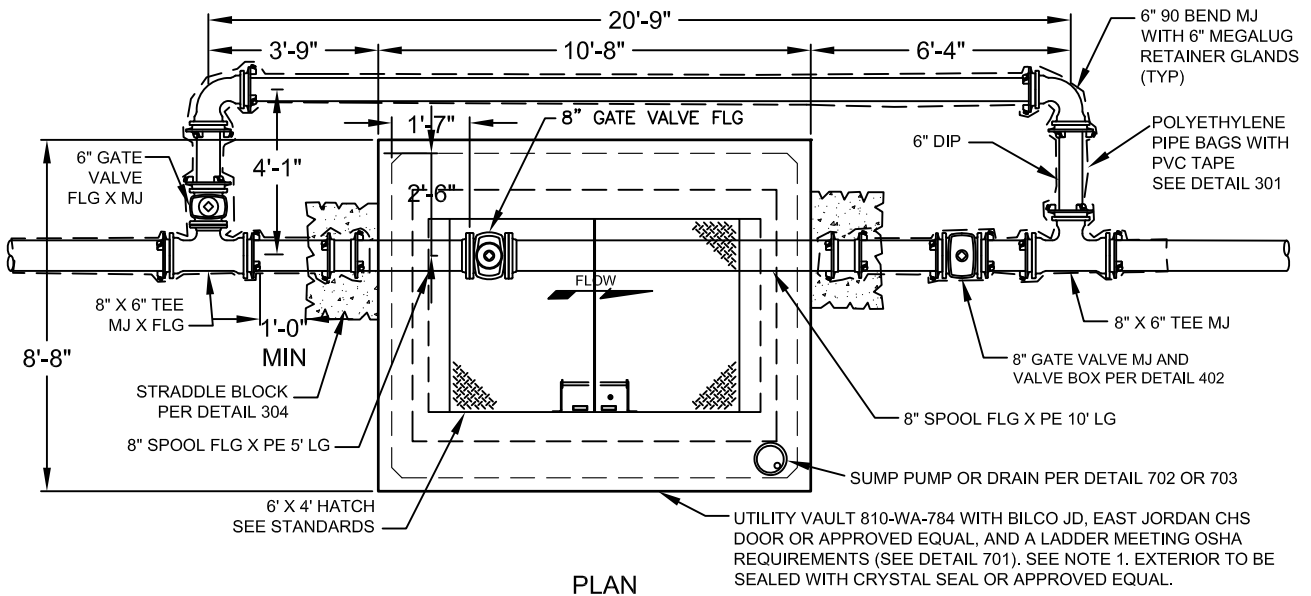
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6" MASTER METER CONNECTION

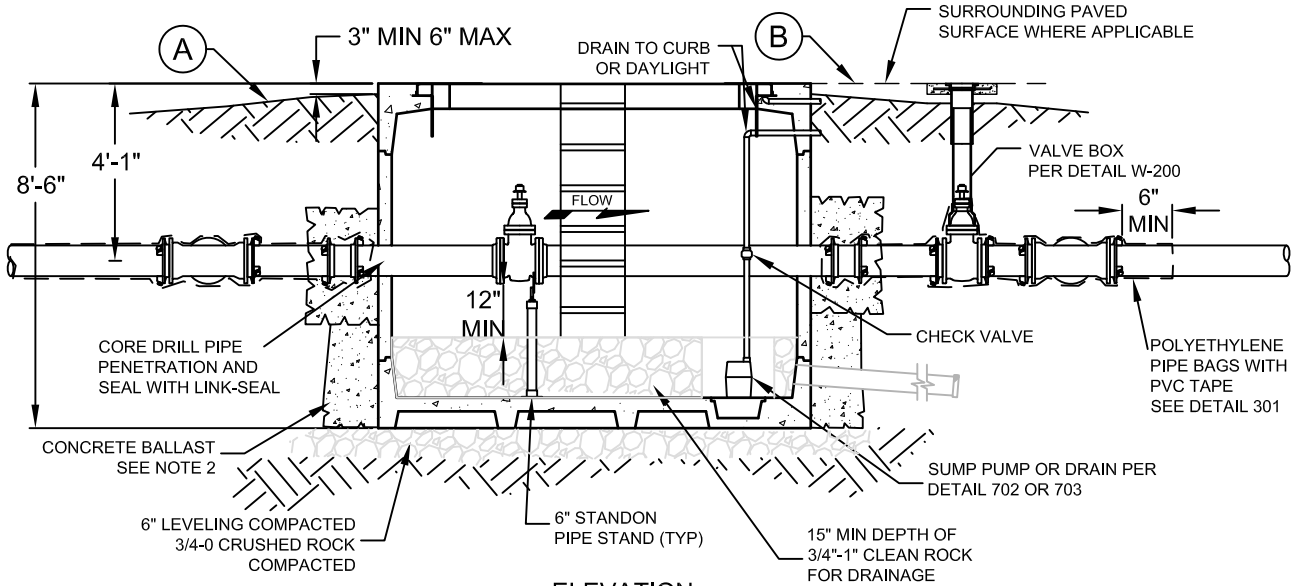
DETAIL NO.
W-610
1/22/2024

STREET SIDE

CUSTOMER SIDE



PLAN



ELEVATION

NOTES:

1. CONTRACTOR SEAL ALL OPENINGS IN VAULT WITH NON SHRINK GROUT.
2. CONTRACTOR TO INSTALL CONCRETE BALLAST 3 CU YD MIN AROUND BASE OF VAULT IN AREAS WHERE FLOODING OR HIGH GROUND WATER EXISTS.
3. ALL MATERIALS SHALL BE AS NAMED OR EQUAL. SUBMIT ALTERNATES FOR APPROVAL.
4. ORS 92.044(7) PROHIBITS LOCATING ANY UTILITY INFRASTRUCTURE WITHIN 1-FT. OF A SURVEY MONUMENT. DEVELOPER SHALL PAY FOR ANY RELOCATION OF SERVICES AND/OR METER BOXES FOUND TO FALL WITHIN 1-FT. OF A SURVEY MONUMENT LOCATION.
5. FOR FIRE MAINS, USE _____ VALVE.

KEYNOTES:

- A. IN LANDSCAPING: FINISH GRADE SHALL SLOPE AWAY FROM VAULT LID.
- B. IN PAVEMENT: FINISH GRADE SHALL BE FLUSH WITH SURROUNDING PAVEMENT.



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8" MASTER METER CONNECTION

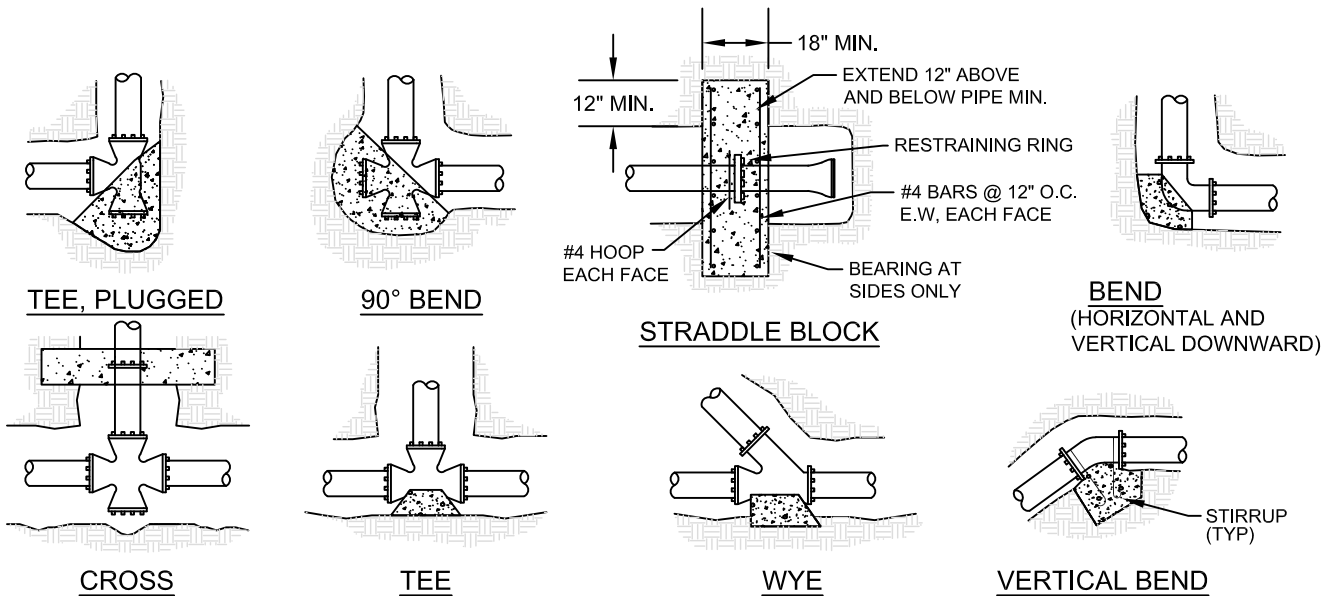
DETAIL NO.

W-611

1/22/2024

(HORIZONTAL & VERTICAL DOWN) BEARING AREA OF THRUST BLOCKS IN SQUARE FEET							(VERTICAL UP) VOLUME OF THRUST BLOCK IN CUBIC YARDS			
FITTING SIZE	TEE, WYE, DEAD END, AND HYDRANT	STRADDLE BLOCK	90° BEND	45° BEND	22-1/2° BEND	11-1/4° BEND	90° BEND	45° BEND	22-1/2° BEND	11-1/4° BEND
4	1.0	1.0	1.4	0.8	0.4	0.2	0.82	0.45	0.23	0.11
6	2.1	2.1	3.0	1.6	0.9	0.5	1.85	1.00	0.51	0.26
8	3.8	3.8	5.4	2.9	1.5	0.8	3.29	1.78	0.91	0.46
10	5.9	5.9	8.4	4.5	2.3	1.2	5.14	2.78	1.42	0.71
12	8.5	8.5	12.0	6.5	3.3	1.7	7.40	4.01	2.04	1.03
14	11.6	11.6	16.4	8.9	4.5	2.3	10.08	5.45	2.78	1.40
16	15.1	15.1	21.4	11.6	5.9	3.0	13.16	7.12	3.63	1.82
18	19.1	19.1	27.0	14.6	7.5	3.8	16.66	9.02	4.60	2.31
20	23.6	23.6	33.3	18.1	9.2	4.7	20.57	11.13	5.67	2.85
24	34.0	34.0	48.0	26.0	13.3	6.7	29.62	16.03	8.17	4.11

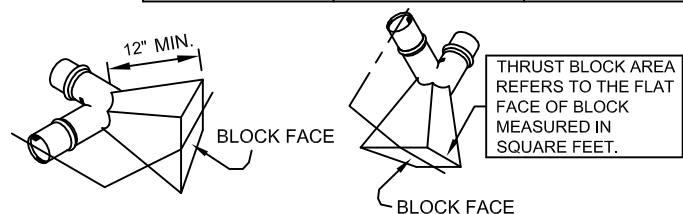
ABOVE BEARING AREAS BASED ON TEST PRESSURE OF 150 PSI AND AN ALLOWABLE SOIL BEARING STRESS OF 2000 POUNDS PER SQUARE FOOT. DESIGNER IS CAUTIONED TO ENSURE THAT 2000 PSF BEARING IS AVAILABLE.



NOTES:

1. CONCRETE BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH.
2. ALL CONCRETE TO BE 3000 PSI COMPRESSIVE STRENGTH.
3. INSTALL 6 MIL PLASTIC BETWEEN PIPE AND/OR FITTINGS BEFORE POURING CONCRETE BLOCKING.
4. CONCRETE SHALL BE KEPT CLEAR OF ALL JOINTS AND ACCESSORIES.
5. TIE RODS SHALL BE 316 STAINLESS STEEL.
6. BEARING AREA REQ'D AT REDUCERS IS THE DIFFERENCE BETWEEN VALUES FOR DEAD END FOR EACH END SIZE (IE 6x8 = 3.8-2.1 = 1.7 S.F.)
7. **INSTALL BELL & SPIGOT RESTRAINTS AND JOINT RESTRAINTS FOR TWO (2) STICKS OF PIPE LEADING TO AND AWAY FROM THRUST BLOCK. NO RESTRAINED GASKETS PERMITTED.**
8. RESTRAINED JOINTS AND THRUST BLOCKING REQUIRED AT ALL BENDS, TEES, AND CROSSES.

RODS FOR VERTICAL BENDS		
FITTING SIZE	ROD SIZE	EMBEDMENT
10" AND LESS	#5	17"
12"-16" (11.25°)	#5	17"
12"-16" (22.5°)	#7	24"
12" (45°)	#7	24"
14"-16" (45°)	#9	30"



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CONCRETE THRUST BLOCKING STANDARD DETAILS

DETAIL NO.

W-700

10/27/2022

RESTRAINED FLANGE x
COUPLING ADAPTER (TYP)
MEGAFLANGE OR EQUAL.

SEAL W/ NON-
SHRINK GROUT (TYP)

24" MIN

12" MIN

DRAIN TO DAYLIGHT

FLGxFLG ELBOWS
(TYP)

PLAN
NTS

CONCRETE UTILITY VAULT
WITH ACCESS DOORS
AS APPROVED.

3" MIN. (WITH VALVE FULLY OPEN)

FROM METER

EPOXY PAINT
AREA, TYP.
SEE NOTE 7

3" MIN
(TYP)

12" MIN.

DRAIN TO
DAYLIGHT

PROVIDE ADJUSTABLE METAL
PIPE SUPPORTS (2½" DIAM. MIN).

SIDE
NTS

6" MIN. BASE OF
CRUSHED ROCK

SCREEN FLAP GATE,
CHECKVALVE, OR OUTLET

NOTES:

1. ASSEMBLY SHALL NOT BE SUBJECT TO FLOODING.
2. RPBA SHALL BE INSTALLED ABOVE THE 100 YEAR FLOOD LEVEL, UNLESS OTHERWISE APPROVED. DRAIN LINES SHALL BE SIZED TO ACCOMMODATE FULL RELIEF VALVE DISCHARGE FLOW.
3. RPBA'S ARE TYPICALLY INSTALLED ABOVE-GRADE IN WELL-DRAINED AREAS, BUT MAY BE INSTALLED BELOW-GRADE IN VAULT IF AN ADEQUATE AIR-GAPPED, BORE-SIGHTED DRAIN (SLOPE 1/8"/FT.) TO DAYLIGHT IS PROVIDED.
4. CLEARANCES ALSO APPLY WHEN ASSEMBLIES ARE INSTALLED INSIDE BUILDING. DO NOT PLUG OR EXTEND RELIEF VALVES.
5. BRASS OR PLASTIC TEST PORT PLUGS ARE REQUIRED FOR ALL VAULT INSTALLATIONS. PROVIDE PROTECTION FROM FREEZING.
6. ALL EXPOSED PIPE AND FITTINGS SHALL BE DUCTILE IRON, C900 OR 316 STAINLESS STEEL; APPLY WHITE EPOXY PAINT AS DIRECTED BY ENGINEER.
7. RPBA SHALL BE INSTALLED HORIZONTALLY UNLESS DEVICE IS SPECIFICALLY APPROVED FOR VERTICAL INSTALLATION. MAXIMUM HEIGHT OF INSTALLATION SHALL NOT EXCEED 5 FEET UNLESS THERE IS A PERMANENTLY INSTALLED PLATFORM MEETING OSHA STANDARDS TO FACILITATE SERVICING THE ASSEMBLY.
8. LOCATION OF DEVICE SHALL BE AS DIRECTED BY THE CITY. GENERALLY LOCATED AS CLOSE TO MAIN CONNECTION AS POSSIBLE, IMMEDIATELY AFTER WATER METER.



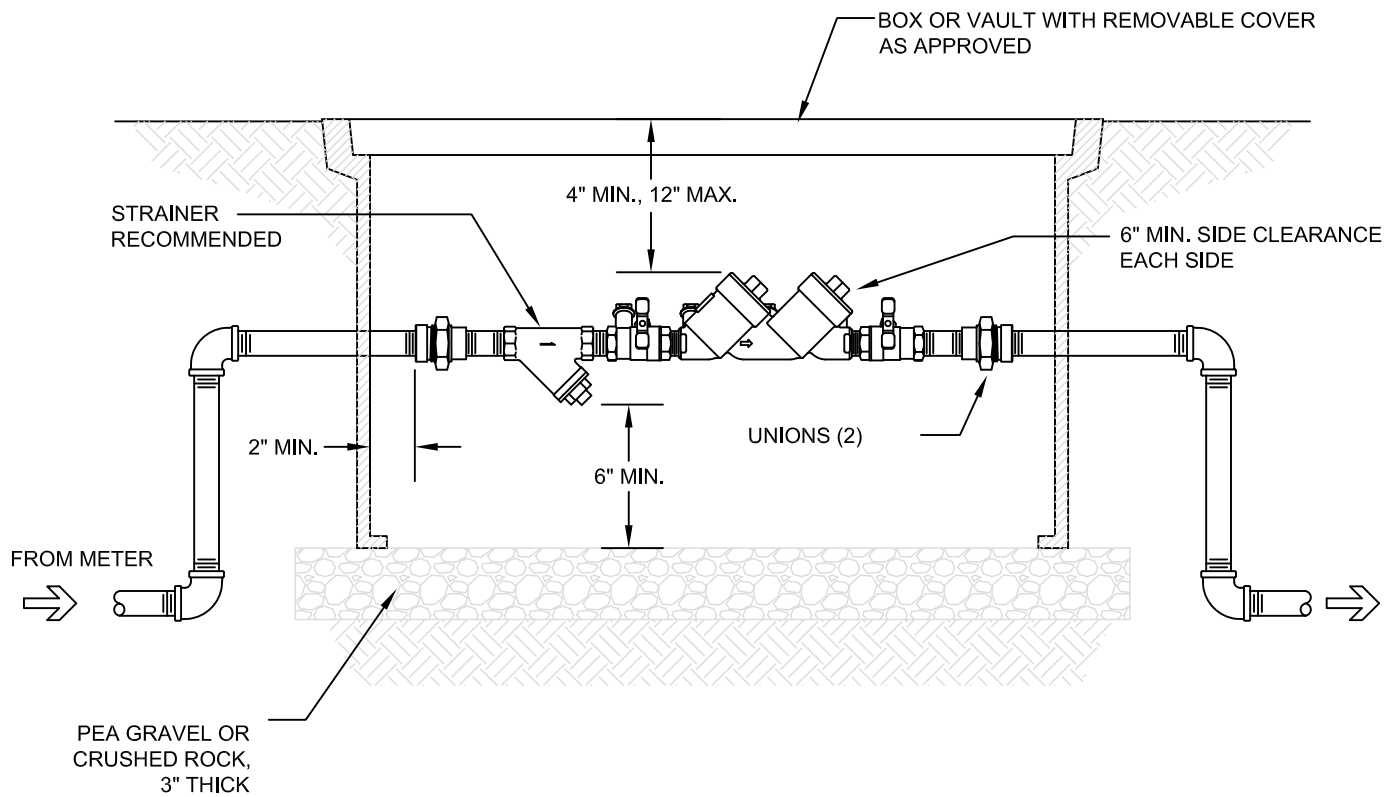
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**REDUCED PRESSURE
BACKFLOW ASSEMBLY
(2½" UP)**

DETAIL NO.

W-805

11/30/2021



NOTES:

1. PROTECTION FROM FREEZING SHALL BE PROVIDED.
2. DCVA'S MAY BE INSTALLED BELOW GRADE IN A BOX OR VAULT WITH BRASS OR PLASTIC PLUGS PROVIDED IN ALL TEST PORTS AND ASSEMBLY IS NOT TO BE SUBJECT TO CONTINUOUS IMMERSION.
3. DCVAs SHALL BE PROVIDED WITH ADEQUATE AIR-GAPPED DRAINAGE. DRAIN SHALL NOT BE CONNECTED TO SANITARY OR STORM DRAIN SYSTEMS.
4. LOCATE AS DIRECTED AS CLOSE TO MAINLINE CONNECTION AS POSSIBLE. GENERALLY LOCATED IMMEDIATELY AFTER WATER METER.
5. MAY BE INSTALLED VERTICALLY IF INTERNALLY SPRING LOADED, HAS NORMAL FLOW UPWARD, AND IS RECOMMENDED BY MANUFACTURER FOR VERTICAL INSTALLATION.
6. CLEARANCES SHALL ALSO APPLY WHEN INSTALLED INSIDE BUILDING.
7. SHALL NOT BE INSTALLED AT A HEIGHT GREATER THAN 5 FEET UNLESS THERE IS A PERMANENTLY INSTALLED PLATFORM MEETING OSHA STANDARDS TO FACILITATE SERVICING THE ASSEMBLY.
8. INSTALLATION OF A BACKFLOW ASSEMBLY MAY CREATE A CLOSED SYSTEM. CONSULT LOCAL PLUMBING CODES FOR PRESSURE RELIEF VALVE AND THERMAL EXPANSION REQUIREMENTS.
9. USE ONLY DEVICES LISTED ON CURRENT LIST OF STATE APPROVED DEVICES.



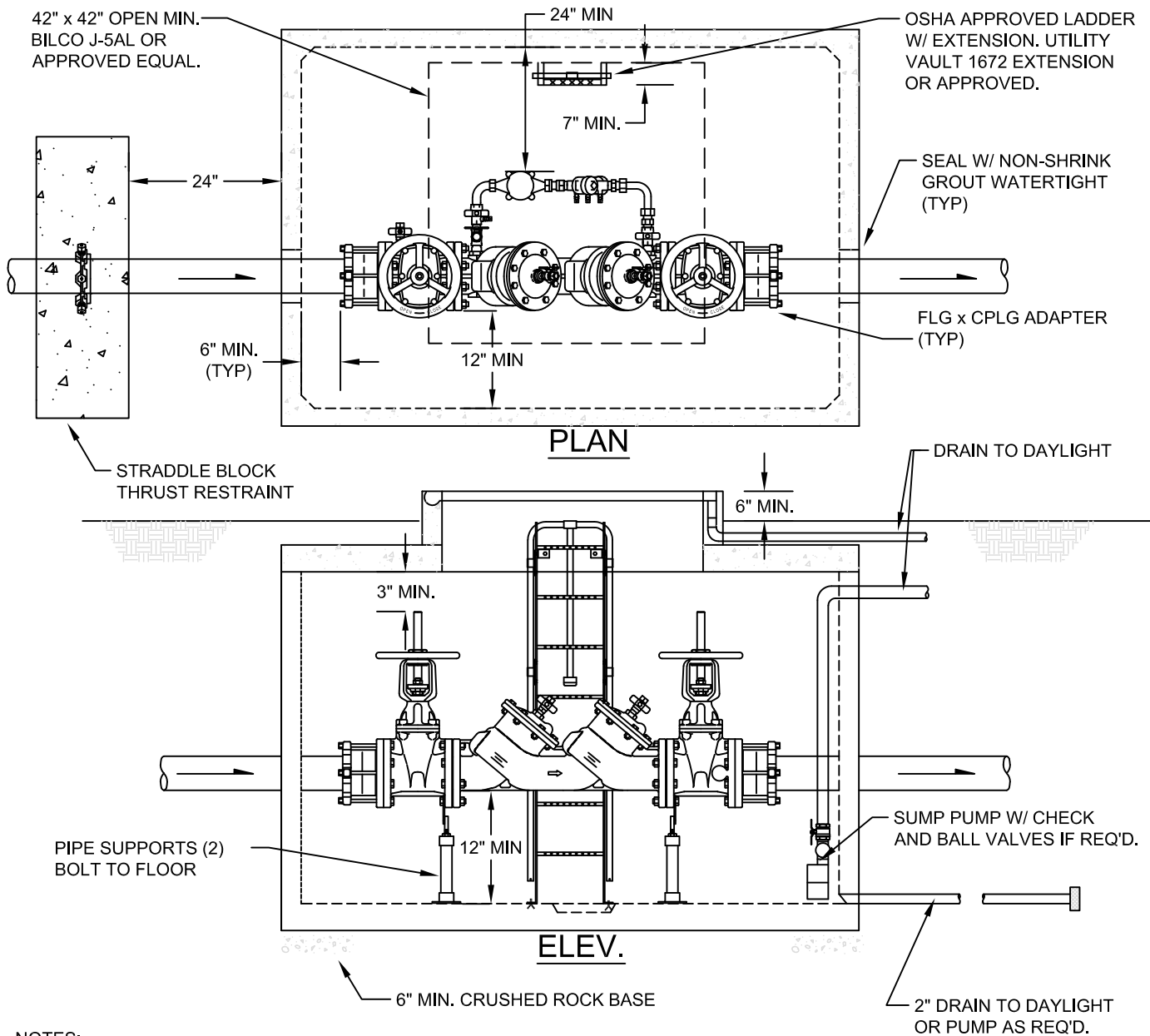
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DOUBLE CHECK VALVE
 ASSEMBLY (3/4" - 2")

DETAIL NO.

W-900

11/30/2021



NOTES:

1. FOR FIRE LINE INSTALLATIONS. SUBMIT DETAIL DRAWING AND SPECS FOR APPROVAL.
2. ASSEMBLY SHALL NOT BE SUBJECT TO FLOODING.
3. DCDAs ARE TYPICALLY INSTALLED BELOW-GRADE. DRAIN TO DAYLIGHT OR PUMP AS REQUIRED. PUMP SHALL HAVE MIN. CAPACITY OF 5 GPM. DRAIN SHALL HAVE BACKWATER VALVE AND RODENT SCREEN.
4. BRASS OR PLASTIC PLUGS ARE REQUIRED FOR ALL TESTING PORTS.
5. DOMESTIC SERVICE SHALL NOT BE INSTALLED OFF THE FIRE SERVICE UNLESS APPROVED.
6. VAULTS SHALL BE PRECAST CONCRETE AS REQUIRED.
7. ALL EXPOSED PIPE AND FITTINGS SHALL BE DUCTILE IRON, C900 OR 316 STAINLESS STEEL; APPLY WHITE EPOXY PAINT AS NEEDED.
8. LOCATE AS DIRECTED BY THE CITY. GENERALLY LOCATED AS CLOSE TO MAIN CONNECTION AS POSSIBLE, IMMEDIATELY AFTER WATER METER.



City of Newport
 169 SW Coast Hwy
 Newport, Oregon 97365
 (541) 574-3366 Fax: (541) 265-3301

**DOUBLE CHECK DETECTOR
 ASSEMBLY (2 1/2" UP)**

DETAIL NO.

W-905

11/30/2021

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**SECTION 5 –
STORM**

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SECTION 5 - STORM DRAINAGE

PURPOSE

The City's *Engineering Design and Construction Standards* define the requirements for development to treat and detain stormwater. Stormwater is the runoff from impervious surfaces such as streets, roofs and parking lots that flows to storm drains, ditches and culverts, and then to the nearest river, stream or wetland. When it rains, stormwater runoff may pick up oil, sediment, bacteria, grease and chemicals that can pollute local waterways.

To meet the City goals for stormwater management, stormwater drainage and stormwater quality as prescribed in the City of Newport Stormwater Master Plan, the City has adopted best management practices for addressing stormwater drainage in the City of Newport.

Designs of stormwater facilities and conveyance systems within the right-of-way (ROW) shall conform to the *Engineering Design and Construction Standards* and the applicable Oregon Department of Environmental Quality (DEQ) regulations. When discovering a conflict between City and DEQ requirements, the Design Engineer shall notify the City Engineer of the issue; the most stringent practice shall apply.

Refer to Newport Municipal Code 5.20 Stormwater Drainage Utility for information about City stormwater codes.

PERFORMANCE STANDARDS

Make adequate provisions for collecting, treating, detaining and conveying all stormwater runoff in all storm system designs. The system shall accommodate all runoff from upstream tributary areas whether or not such areas are within the proposed development. Base amount of runoff accommodated in the new system on the ultimate development of all upstream tributary areas. Do not adversely impact any inadequate downstream system with new or modified existing storm drain systems.

Do not place utility infrastructure within one (1) foot of a survey monument location noted on a subdivision or partition plat, per ORS 92.044 (7).

Storm drainage design shall comply with all required Erosion and Sediment Control Measures. Include adequate provisions to control runoff from the development area: all public and private streets and the roof, footing, and area drains of residential, multi-family, commercial, or industrial buildings. The design must ensure future extension of the drainage system to the entire drainage basin in conformance with the adopted Storm Drainage Master Plan and these *Engineering Design and Construction Standards*. These provisions include:

- Surface and/or subsurface drainage, caused or affected by the alteration of the natural grade, removal of natural ground cover/vegetation, or placement of impervious surfaces, shall not be allowed to flow over adjacent public or private property in a volume, velocity or location materially different from that which existed before development occurred. Manage, treat, and convey infiltrated or collected surface and/or subsurface drainage in an approved manner to an approved point of discharge.
- Receive surface water entering the subject property at the naturally occurring locations and

discharge surface water exiting the subject property at the natural locations with adequate flow control and energy dissipation, to prevent adverse impacts from flooding, erosion, or sedimentation.

- Approved points of discharge for storm water may include but not be limited to a storm drain, existing open channel, creek, low impact development approach facility, detention pond, or retention pond, as approved by the City Engineer. Acceptance of suggested facilities will depend upon the prevailing site conditions, capacity of existing downstream facilities, and feasibility of alternate designs. Use curb weep holes only for single home developments.
- A drainage report with the required analysis of downstream system conditions is required with all plan submittals. Planning applications shall include a draft/preliminary report.
- When crossing private property with City infrastructure to reach an approved point of disposal, the developer is responsible to acquire a recorded public drainage easement on a city form prior to commencement of construction. The drainage facility installed must be a closed conduit system.
- Engineer approved temporary drainage ditch facilities to contain the storm water without causing erosion or other adverse effects to the public and/or private property.
- Drainage from roofs, footings, and downspouts may drain directly to a street through the curb under the following circumstances:
 - The building-pad finish elevation is at least twelve (12) inches above the existing street curb.
 - The existing street crowns adequately to avoid sheet flow across the street.
 - Design engineer has satisfactorily addressed storm water quantity and quality facility provisions.
 - Springs/ sump pumps shall connect to a piping system, unless approved by the City Engineer.
 - Weep hole is utilized for a single home development.

CONFLICTS AND OBSTRUCTIONS

Utility Notification

The contractor shall comply with the rules and regulations of the Oregon Utility Notification Center: OAR 952-001-0010 through 952-001-0090 and ORS 757.993. Provide at least forty-eight (48) hours' notice to all utility offices affected by the construction operation.

General

Contractor may encounter various obstructions during the course of the work. Obtain maps and information regarding underground utilities from the utility owning and operating such utilities, but the City does not guarantee the location of such utilities. If the contractor interrupts the utility services because of the construction operation, the contractor shall notify the utility owner and the City authorized representative immediately.

Protection

The contractor shall exercise all due care in protecting existing underground and surface facilities and property along the route of the project. This protection shall include, but not be limited to, trees, yards,

fences, drainage lines, mailboxes, driveways, shrubs, and lawns. Any existing facilities not specifically designated for alteration or removal that are damaged during construction shall be restored or replaced to an “in kind” or better condition, at the expense of the contractor.

Property Access

The contractor shall maintain access to all property, including normal delivery service, mail service, and emergency services.

Abandoned Utilities

Properly remove, grout, or plug all abandoned utilities at the discretion of the City authorized representative.

PRIVATE STORM DRAINS

Properties that slope and drain away from the public storm drain systems may need to provide a private drainage system in private easements. This system shall be for collection of roof drains, footing drains, and surface runoff. Design this system to meet the Uniform Plumbing Code requirements. For multifamily, commercial and industrial laterals, a manhole is required at the connection between private and public storm systems.

Mainlines crossing multiple lots may be required to be public, such as rear lot drain lines as approved by the City Engineer on a case-by-case basis. Install a cleanout at the lateral connection between private and public storm system. When required by the City Engineer, install a backflow preventer on the private side at the lateral connection between private and public storm systems. Site designers shall consider potential drainage from sump pumps and/or flow from perennial flowing wall/ building footing drains. Such drainage systems shall not connect to curb weep holes; connect stormwater to a storm drain piping system.

PRIVATE AND PUBLIC PROPRIETARY TREATMENT SYSTEMS

Proprietary treatment systems shall meet the removal efficiency requirements of the City Engineer who shall allow proprietary treatment systems in situations meeting one of the following criteria:

Private

- Treatment of runoff from a single parcel.
- Treatment of runoff from an adjoining commercial, industrial, multi-family, or condominium parcels which share a common parking lot.
- Treatment of runoff from high-density zoning classifications where the development is primarily single family residential and the average lot size is $\leq 3,000$ square feet.
- Property owner shall maintain proprietary treatment systems by private parties, except for systems approved by the City Engineer on a case-by-case basis, to treat runoff from a public street.
- Proprietary systems require a long-term maintenance plan identifying maintenance techniques, schedule, and responsible parties. Submit maintenance plan for approval with submission of the drainage report for the project.

Public

The City requires treatment of runoff from all new and expanded collector and arterial roadways where no other opportunities exist for treatment without necessitation of the removal of homes or businesses. All public and private water quality proprietary treatment systems shall be in conformance with Contech

Stormwater Management Storm Filter system or approved equivalent.

In the case of a remodel or redevelopment that does not increase the previous volume of storm runoff, treatment may be waived by the City Engineer. A written request for waiver must be sent to the City Engineer during the design phase. Written approval must be received from City Engineer prior to plan review.

SMALL DEVELOPMENTS

Two (2) and three (3) parcel single-family home partitions that can demonstrate (storm report required) adequate downstream conveyance capacity are eligible for a fee in lieu of construction of stormwater quality/quantity facility payment. The City does not consider large parcel single-family home partitions with the potential for additional dwelling units and/or future subdividing/partitioning small developments.

PUBLIC IMPROVEMENTS REQUIREMENTS

Storm Water Analysis Report

Developer or Design Engineer shall submit a drainage report to the City Engineer containing the information listed below at the time of initial construction plan review by the City. The City may waive some or all of these report requirements for single-family residential partition projects and projects where post-development impervious surfaces constitute less than twenty-five (25) percent of the parcel. In order to apply for a waiver, the applicant must submit a written request to the City and the applicant or applicant's Engineer must participate in a pre-design meeting to discuss the proposed project and the stormwater impacts prior to the land use approval process submittal.

Properly drafted construction plans and supporting documents should also facilitate the operation and maintenance of the proposed drainage system long after design and construction. The City of Newport reviews the Drainage Submittal for compliance with these Design Standards and other applicable standards. The Drainage Submittal includes the Construction Plans, Full Drainage Report, and, other documentation to support the proposed stormwater management methods for the project. Depending on the complexity of the project, the City of Newport may request that a Concept Drainage Report (CDR) submittal for review with the planning application or during the preliminary design process. The submittal and/or approval of the CDR does not replace the Drainage Submittal requirements. State law requires that a qualified Engineer perform or direct all engineering work. A registered Professional Engineer shall sign and stamp final Drainage report.

- Narrative, with tables where appropriate, describing
 - Areas and flows used for design calculations per this design manual.
 - Results of downstream analysis.
 - How the project meets the water quality and quantity requirements of these rules.
- Project Description
- Summary of Basin Requirements and other conditions/permits
- Summary of Geotechnical Site Characterization
- Maps showing the following information
 - Upstream basin flowing through the site with contours.
 - Downstream basin to the point where analysis is required, with contours.
 - Site plan showing development layout with contours.
 - Existing stormwater facilities on and adjacent to the site.

- Proposed Stormwater facilities constructed by the project.
- Delineated basins contributing to the stormwater facility including labels and area calculations.
- Hydrology Assumptions
- Calculations for
 - Hydrological calculations for both existing and post development conditions.
 - Conveyance system sizing, including calculations showing portions of proposed alterations to existing conveyance system that have adequate capacity according to the criteria in these rules.
 - Sizing of water quality and quantity facilities.
- Downstream Analysis
 - A stamped certificate of investigation stating that the design engineer has considered downstream impacts required for each development constructing, collecting or discharging more than 2,877 square feet of new impervious area.
 - When the downstream analysis does not continue for at least one-quarter (1/4) mile, the design engineer shall provide a stamped certification of investigation that states the design Engineer has visually investigated the downstream system for at least one-quarter (1/4) mile downstream and is aware of no observable downstream impacts to the conveyance system.

Include the Long Term Maintenance section of the report on a separate page; attach completed form to a Storm Water Maintenance Agreement (SWMA), if applicable for the site work.

DESIGN PARAMETERS

Design Storm

The storm defines both the volume and rate of runoff. Design stormwater quality facilities using the six-month National Resource Conservation Service (NRCS) Type IA, 24-hour storm event designated water-quality storm event for both volume and flow rate-based water quality best management practices (BMP's).

Design Volume

Volume-based treatment BMPs are sized the same whether located upstream or downstream from detention facilities. Define the water-quality design volume as the volume of runoff predicted for the Proposed Conditions Pollutant Generating Impervious Surface (PCPGIS) areas from the NRCS Type IA, 24-hour storm with a three (3) stage two (2), five (5), and ten (10) year interval discharge flow rate and storage curve..

Design Flow

For runoff treatment facilities preceding detention facilities, or when detention facilities are not used, define the water-quality design flow as the peak flow rate predicted for the proposed conditions Pollutant Generating Surfaces (PGS) areas from the NRCS Type IA, twenty-four (24) hour storm with a one (1) year minimum, preferably two (2) flow rate for treatment parameters.

For runoff treatment facilities located downstream of detention facilities, define the water-quality design flow as the full two (2) year release rate of the detention facility.

Flow Control and Conveyance

At a minimum, the twenty-five (25) year design storm shall be required. Additionally, provide safe passage for the one hundred (100) year event storm via an overflow path that drains toward the natural discharge point of the contributing basin, away from adjacent buildings and residences. High-risk areas, as defined by the City Engineer, with the potential for extensive flooding, safety, or other concern,

provide design capacity for a fifty (50) year storm with safe passage for a one hundred (100) year storm. Design low/sag points within roadways to a minimum one hundred (100) year storm event.

Size flow-control facilities based on the total developed site area (both impervious and pervious areas, regardless of pollution generation); consider the immediate drainage basin(s) wherein the site lies.

FLOW DETERMINATION

Design Event/Storm Frequency

Design all public storm drain systems for the storm recurrence interval and twenty-four (24) hour rainfall depths as in Table 6.1 below. Place curb inlets in lowest elevation (sag points) to catch runoff.

Table 5.1: Drainage System Design Requirements

Drainage System Design Requirements	
Drainage System Elements	Design Storm Recurrence Interval (years)
Facilities: Water Quantity & Quality Control	See Figure 6A
Minor: Minor Collector Streets, Local Streets, Curbs, Gutters, Inlets Manholes and Mainlines up to 250 Tributary Acres	25
Major: Major Collector, Arterial Streets, the Drainage System in or under Arterial Streets, and anything greater than 250 Tributary Acres	50
Watercourses: Without FEMA Designated Floodplain	50
Watercourses: FEMA Designated Floodplain	100
Bridges:	100

Table 5.2 Rainfall Depths

24 Hour Rainfall Depths Newport, Oregon	
Recurrence Interval (years)	Total Precipitation Depth (inches)
2	3.5-4.0
5	4.0-4.5
10	4.5-5.0
25	5.0-6.0
50	6.0-7.0
100	6.0-7.0

Precipitation based on Regional Precipitation-Frequency Analysis and Spatial Mapping of twenty-four (24) Hour Precipitation for Oregon, Oregon State Department of Transportation, August 2007

TREATMENT REQUIREMENTS

Owners of new development and other activities, which create new impervious surfaces or increase the amount of stormwater runoff or pollution leaving the site, are required to construct permanent water quality facilities to reduce contaminants entering the storm and surface water system.

Design Considerations

- If developer cannot construct an onsite water-quality facility to treat runoff from the development’s impervious surface, then, with City Engineer approval, developer may design an off-site water quality facility to treat runoff from an equivalent area of adjacent untreated impervious surfaces.
- Design facilities such that pretreated flow from the development processed off-line from the storm conveyance system reconnects to upstream flows following treatment.
- Discharges to riparian and/or wetland sensitive areas shall maintain the flows of predevelopment site conditions to the extent necessary to protect the characteristic functions of the sensitive area. Conversely, the City does not allow discharge of flows into other catchments that may be damaging to downstream water quality sensitive areas.

Design these controls to the guidelines included in the standard drawings, with the City’s standard drawing configurations and sizing taking precedence in case of a discrepancy. Given the importance of water quality, the City wishes to see preferred strategies in different areas of the City.

Table 5.3. Preferred Stormwater Strategies by Area

AREA	STRATEGY	TYPES OF CONTROLS
Areas that drain to surface water	<ul style="list-style-type: none"> • Reduce flows to river/surface waters Provide highest level treatment for remaining Minimize sediment Prevent facility clogging 	<ul style="list-style-type: none"> • Drywells or infiltration trench with spill protection Bioretention/Infiltration swale, pond, basin, planter box
Wellhead Protection Areas (One through 10 year Time of Travel)	<ul style="list-style-type: none"> • Spill Protection Surface Infiltration Controls Direct runoff to outside area if can for UIC use Prevent facility clogging 	<ul style="list-style-type: none"> • Water Quality Sediment Manholes, Oil/water separator TAPE approved manufactured spill control Bioretention/ infiltration swale, pond, basin with treatment vegetation, planter boxes
Other Areas	<ul style="list-style-type: none"> • Dispersed System UICs and regional controls Prevent facility clogging 	<ul style="list-style-type: none"> • Drywell or infiltration trench with spill protection (e.g., Water Quality Sediment Manholes) Bioretention/infiltration, swale, pond, or basin Planter boxes Vegetated filter strip • Grassy swale

Storm Runoff and the Seawall

The Community Development Department has an Estuary Permit that starts the review for treatment requirements pertaining to the seawall outfall.

Impervious Surface Area

- For all sites, base the threshold and approach for the design of water quality and quantity facilities on Table 6.3 (above).

- For single family and duplex residential subdivisions, size stormwater quality and quality facilities for all net impervious area created by the subdivision. For design purposes, estimate the impervious area on an individual single-family lot at the rate of 2,877-square feet of impervious surface area per dwelling unit. Show concept facility design on the subdivision plan.
- Except as noted above, for all developments other than single family and duplex, including row houses and condominiums, base the sizing of stormwater quality facilities on the net impervious area created by the development, including structures, roads, and other impervious areas. Impervious areas shall be determined based upon building permits, construction plans, or other appropriate methods of measurement deemed reliable by the City.

Storm Water Master Plan 2016

The Storm Water Master Plan says the following about on-site detention:

On-site detention facilities shall be constructed when any of the following conditions exist:

- An identified downstream deficiency along with upstream detention, rather than downstream conveyance system enlargement, is determined to be the more effective solution.
- There is an identified regional detention site within the boundary of the development.
- The need for pre-treatment of stormwater discharge dictates that flows be detained for water quality processes.
- There is a need to mitigate flow impacts on receiving streams.
- There is a need for additional detention due to an increase in impermeable surface area.

When required, on-site stormwater detention facilities shall be designed to capture run-off so the run-off rates from the site after development do not exceed the predevelopment conditions, based upon a 25-year, 24-hour return storm. Volume and duration of predevelopment conditions will be considered.

When required, due to an identified downstream deficiency, on-site stormwater detention facilities shall be designed so that peak run-off rates will not exceed predevelopment rates for the specific range of storms that cause the downstream deficiency.

Construction of on-site detention shall not be allowed as an option if such a detention facility would have an adverse effect upon receiving waters in the basin or sub-basin in the event of flooding, or would increase the likelihood or severity of flooding problems downstream of the site.

STORM DESIGN & CONTROL STANDARDS

Conveyance

A conveyance system includes all natural or constructed components of a storm drain system that collects stormwater runoff and conveys it in a manner that adequately drains areas, sites, structures, and roadways, minimizing the potential for flooding and erosion. The City defines an underground injection control (UIC), system as a drywell. The Department of Environmental Quality (DEQ) defines a UIC as structures that are deeper than wide at the land surface and utilize infiltration by a perforated pipe or drain field. UIC regulations do not apply to swales, french drains, or footing drains. Place UICs outside the groundwater two (2) year time of travel zones for drinking water source areas and not within five hundred (500) feet from a water well. Refer to DEQ UIC registration and rule authorization guidelines.

The City of Newport does not permit drill-holes within ROW. Projects that contribute to or front an existing drill-hole will either be decommissioned in accordance to DEQ requirements or have upstream infrastructure (sedimentation manholes and/or City of Newport catch basins with sumps, as approved by the City Engineer) constructed.

General Requirements

- Each new development shall incorporate techniques for mitigating its impacts on the public stormwater system in accordance with the Newport Municipal Code, Chapter 5 by the construction of permanent on-site stormwater quantity detention facilities designed in accordance with this chapter.
- Design all water quantity facilities in accordance with City guidance documents and be consistent with this Chapter.
- When required, design stormwater quantity on-site detention facilities to capture runoff so the post-development runoff rates from the site do not exceed the predevelopment runoff rates from the site, based on twenty-four (24) hour storm events ranging from the one-half ($\frac{1}{2}$) of the two (2) year return storm to the twenty-five (25) year return storm. Specifically, the one-half ($\frac{1}{2}$) of the two (2), two (2), ten (10), and twenty-five (25) year post-development runoff rates will not exceed their respective one-half ($\frac{1}{2}$) of the two (2), two (2), ten (10), and twenty-five (25) pre-development runoff rates; unless other criteria are identified in an adopted watershed management plan or storm drainage basin master plan.
- Design for Full Build Out
Designed and constructed storm drainage and conveyance to accommodate all future full build-out flows generated from the upstream drainage basin. Demonstrate adequacy of conveyance system by performing a backwater analysis. Calculate hydraulic grade line at lower than a two (2) foot minimum from finished grade at all structure locations. The City Engineer shall determine the hydraulic grade line for shallow conveyance systems on a case-by-case basis.
- Velocity and Slope
All storm drains shall be on a grade that produces a mean velocity, when flowing full, of at least three (3) feet per second (fps).
- Pipe Roughness Coefficient
Use a minimum Manning's roughness coefficient of 0.013 in conveyance calculations.
- Open Channels
Design open channel systems, provided design water surface elevation does not impact any structures, for a minimum one (1) foot freeboard from full bank.
- Natural Channels
Control of discharge from developed areas to natural channels shall be such that the average velocity resulting from all design storms less than or equal to the ten (10) year event remains below the erosive velocity of the channel.
- Manmade Channels (Ditches)

City allows ditches only as temporary facilities; rock lining is required when flows are in excess of three (3) feet per second (fps). Design manmade channels for a ten (10) year storm with a maximum depth of two (2) feet and three-horizontal-to-one-vertical (3:1) side slopes. Water Quality Facilities are not considered ditches.

- **Overflow Analysis**
Overland/Overflow analysis shall be performed for all conveyance, water quality & water quantity systems that demonstrate that the one hundred (100) year event will not impact or inundate any buildings. Designer shall submit documentation indicating the overland/ overflow path during the permitting process to the City.

Hydraulic Design Criteria

- Assess detention design by dynamic flow routing through all the conveyance components within the basin. Documentation of the proposed design shall be included in the drainage report. Acceptable analysis programs include those listed below, as well as others using the SBUH or TR-55 methodology.
 - HEC-1
 - HEC-HMS
 - SWMM
 - HYDRA
 - Others as approved by the City Engineer
- A pond overflow system shall provide for discharge of the design storm event without overtopping the pond embankment or exceeding the capacity of the emergency spillway. III. Provide an emergency spillway sized to pass the one hundred (100) year storm event or an approved hydraulic equivalent. Emergency spillway shall be located in existing soils when feasible and armored with riprap or other approved erosion protection extending to the toe of the embankment. The emergency spillway shall direct flows away from proposed or existing structures.

Facility Design Criteria

- Provided the design meets all relevant criteria, the facility can be a combined water quality and quantity facility.
- Provide an approved outlet structure for all flows; include an approved secondary flow route/path in the design should the primary outlet and/or conveyance system fail.
- Certain situations require use of multiple orifice plates to achieve desired outflow rates.
- All water quality/ quantity facilities shall have a maximum depth of five (5) feet unless approved by the City Engineer.

Walls in Water Quantity Facilities

- If a registered professional engineer prepares and stamps a wall design, retaining walls may serve as pond walls if the design includes a fence along the top of the wall. At least twenty-five (25) percent of the pond perimeter shall be vegetated with a side slope of three-horizontal-to-one-vertical (3:1) or flatter allowing for maintenance access. All retaining walls in publicly maintained facilities, shall be cast-in-place concrete with a decorative surface finish, unless otherwise approved by the City

Engineer.

- Walls that are four (4) feet or higher that are surcharged and/or are periodically inundated shall meet all of the following criteria:
 - Permitted through the City Building Division.
 - Clearly identify party responsible to maintain walls within the water quantity tract or easement area on the final plat, or in alternate form, both with review and approval by the City Attorney and City Engineer.

Dry Wells

Controlled by the DEQ.

Wet Wells

See SECTION 3 WASTEWATER for design criteria.

Upstream Impacts

Modifications to the existing on-site storm drainage facilities shall not restrict flows thereby creating backwater onto off-site property to levels greater than the existing situation, unless approved by the impacted off-site Property Owners and the City. When approved, the off-site Property Owner(s) shall agree to and sign a permanent easement legally describing the location of the backwater storage and authorizing the use of their property for stormwater drainage and detention purposes. The easement shall be in a form approved by the City.

Downstream Impacts

The City may require developer to remove any downstream restrictions that create backwater during the twenty-five (25) year design storm in the current or post-development condition. The engineer of record shall evaluate downstream impacts and submit findings to City Engineer.

The City Engineer shall not allow the removal of downstream obstructions if the removal will cause, contribute, or exacerbate flooding and/or erosion damages to existing buildings, dwellings or properties in the one hundred (100) year design storm.

When downstream restrictions remain, an on-site detention facility shall be required.

Intersection Valley Gutters

See SECTION 6 STREETS for flow design requirements at intersections.

Cross-Lot Drainage

Developments shall accommodate existing off-site drainage entering the site so there is no impact to upstream property owners or a negative impact on the new development.

Outlet Protection/Dissipation of Runoff

Discharge runoff exiting a development site with adequate energy dissipation to prevent downstream damage. Storm drain lines shall enter a creek or drainage channel at ninety (90) degree or less to the direction of flow. The outlet shall have a head wall and appropriate scour protection to prevent erosion of the existing bank or channel bottom. The inflow size of pipe or channel will govern which protective measures are required. All protective measures must conform to the erosion control requirements of these *Engineering Design and Construction Standards Manual*.

Subsurface Drains

Provide subsurface drains (under drains) at the following locations:

- For all existing springs and field tile intercepted during construction activity for other facilities; i.e., wastewater, water, mains, street excavations, foundations, etc.
- Where high ground water exists or when it is necessary to reduce the piezometric surface to an acceptable level to prevent land slippage or under floor flooding of buildings.
- Subsurface drainage shall not discharge into a street or a street gutter.

Erosion Protection

- Protect Inlets to water quality and quantity facilities from erosive flows by using an energy dissipater or riprap stilling basin of appropriate size, based on flow velocities. Evenly distribute flow across the treatment area.
- All exposed areas of water quality and quantity facilities shall be protected using coconut or jute matting. Use coconut matting or high-density jute matting (Geojute Plus or approved equal) in the treatment area of swales and below the water quality volume levels of ponds. Developers may use Low-density jute matting (Econojute or approved equal) on all other zones.

PLANTING/VEGETATION

Planting/vegetation shall be in accordance with SECTION 8. A developer shall not plant or permit to remain within a facility, any invasive species that affects its function, including, but not limited to, the following:

- Himalayan blackberry (*Rubus discolor*)
- Reed canarygrass (*Phalaris arundinacea*)
- Teasel (*Dipsacus fullonum*)
- English Ivy (*Hedra helix*)
- Nightshade (*Solanum sp.*)
- Clematis (*Clematis ligusticifolia* and *C. vitifolia*)
- Cattail (*Typhus latifolia*)
- Thistle (*Cirsium arvense* and *C. vulgare*)
- Scotch Broom (*Cytisus scoparius*)

FENCING IN RETENTION/DETENTION AREA

Any facility with the potential of storing eighteen (18) inches or more of runoff at any time shall require delineation fencing around facilities and/or tracts containing facilities.

Fencing or other barriers shall be required to protect the health, welfare, and safety of the public under the following circumstances:

- Ponds with the first overflow at three (3) or more feet above the pond bottom
- Ponds with side slopes in excess of three-horizontal-to-one-vertical (3:1)
- Drainage facilities with retaining walls two-and-one-half (2.5) feet high or taller The City of Newport reserves the right to require a fence around any drainage facility should there be a concern for safety.

The minimum fencing requirements are as follows:

- The fencing shall be at least four (4) feet tall unless otherwise specified by the City of Newport, and provide visual access per the City of Newport building code requirements for fence height and openings.
- Provide gates where drainage facilities are fenced. The gates shall be a minimum of twelve (12) feet wide with provisions for locks. Install separate gates where the maintenance access drive connects to a public or private roadway.
- At the discretion of the City of Newport, the City may allow marking fences (that is, vegetation, boulders, etc.), terraces, steeper side-slopes, egress bars, etc.
- If a facility is located adjacent to a riparian corridor, utilize wildlife friendly fencing, as approved by the City Engineer and Planning Division.

PIPE AND STRUCTURE REQUIREMENTS

Construct storm pipe under roadways or in areas that have traffic loads with AWWA C900 PVC pipe for depths of less than 30 inches. For depths 30 inches and greater use ASTM D3034. Where storm pipe is within the landscape strips beyond the street curb, the Engineer has the option of using ASTM D3034 PVC sewer pipe. All pipe installed shall conform to City of Newport specifications.

Pipe Diameter and Length

The minimum pipe diameter shall be eight (8) inches. Calculate pipe diameter to ensure it is of proper size to convey a minimum twenty-five (25) year storm event. When in the sag/low point, design engineer shall calculate pipe size based on a one hundred (100) year storm event. The maximum length of pipe between junctions shall be no greater than three hundred (300) feet. Do not downsize pipe diameters for downstream runs.

Placement and Alignment

No storm pipe in a drainage easement shall have its centerline closer than five (5) feet to a private rear or side property line or ten (10) feet from building foundations or other structures. For a storm drain located under the road, place the storm drain in accordance with the City of Newport standard detail. If anticipating expansion of a storm drain system in the future, incorporate provisions for the expansion into the current design. Minimum depth of pipe is twelve (12) inches below street base to top of pipe.

Construct drywell perforations in native soils, outside fill material; construct the drywell barrel foundation on native ground.

Storm pipes shall meet the separation requirements of a sewer pipe: ten (10) feet from water mains and services. Storm pipe vertical separation from water mains/services shall be eighteen (18) inches unless installed storm pipe is AWWA C-900 PVC with a full stick of pipe centered at the water crossing.

Mandrel Testing

A mandrel inspection is required for all new storm pipe. Conducted after pipe installation, test verifies pipe did not bend under compaction stress or pressure from soil above pipe. Mandrel test completed before City accepts new infrastructure.

Outfalls

New outfalls to water bodies designated as waters of the United States require regulatory agency approval. The Community Development Department as an estuary permit process to accommodate outfalls to water bodies.

Sequential Implementation

In general, for any activity that creates, alters, or modifies a natural or manmade drainage system implement the following control measures sequentially:

- Reduce runoff volumes and polluted runoff through Low Impact Development designs and source control measures.
- Address stormwater drainage with surface systems, such as above ground vegetated infiltration swales.
- If surface control does not provide adequate capacity, treat the water quality storm in a surface facility and provide an overflow to an approved regional above ground retention facility or rule authorized UIC.

EMBANKMENTS

Measure the height of an embankment from the top of the bank to the catch point of the native soil at the lowest elevation. Embankments shall meet the following minimum requirements:

- Construct embankments, four (4) feet in height or more, as directed by a Licensed Geotechnical Engineer.
- Construct embankments on native consolidated soil, free of loose surface soil materials, roots, and other organic debris.
- The embankment compaction to ninety-five (95) percent of the Modified Proctor Density, ASTM Procedure D698. Placement moisture content should lie within one (1) percent dry to three (3) percent wet of the optimum moisture content.

ACCESS ROAD

Provide maintenance access roads to control structures and other drainage structures associated with the stormwater facility (that is, inlet or bypass structures). Where storm infrastructure is away from paved ROW, a fourteen (14) foot wide two (2) inch thick paved all weather access road, with a six (6) inch base, or as approved by the City Engineer, shall be installed centered over the sewer line with six foot by six foot (6' x 6') asphalt or concrete pad around manholes. In ponds and swales, an access ramp is required.

Provide access roads for maintenance of all water quality and quantity facilities. Consider the following criteria the minimum required for facilities maintained by the City. If the design Engineer anticipates not meeting the requirements due to the configuration of the proposed development, the design Engineer shall meet with the City Engineer to gain approval for the deviation prior to submittal.

Standard Road Design

- Design road section according to Standard Drawing T-050 and Standard Drawing T-050A; the subgrade shall be compacted to ninety-one (91) percent AASHTO T-180; or, the design Engineer may submit an alternate design certified as capable of supporting a 30-ton maintenance vehicle in all weather conditions.
- Strengthened sidewalk and driveway sections according to Standard Drawing T-210, T-150, T-151 and T-152.
- Maximum longitudinal grade shall be ten (10) percent with a maximum three (3) percent cross-slope.
- Minimum width shall be twelve (12) feet on straight runs and fifteen (15) feet on curves. Minimum gravel shoulder width shall be one (1) foot, matching the cross slope of the access road.
- Curves shall have a minimum forty (40) foot interior radius.

- Access shall extend to within ten (10) feet of the center of all structures unless otherwise approved by the City.
- The City may require a curb or other delineator at the edge of the road for drainage, a curb stop, or to demarcate the road where the road edge is not apparent.
- The side slope for road embankments shall be two-horizontal-to-one-vertical (2:1) or flatter, as approved by the Geotechnical Engineer for the project.
- A vehicle turnaround shall be provided when the access road exceeds one-hundred-fifty (150) feet in length.
- The road shall provide access to within ten (10) feet of all structures.

ALIGNMENT, LOCATION AND COVER

Alignment

All pipes shall run in straight lines, with a constant slope, material and diameter from manhole to manhole.

ROW Location

Locate public storm lines within the public ROW, as directed by the City Engineer, for ease of maintenance and access, control and operation of the facility, and to facilitate replacement and/or repair. Please reference Standard Drawing G-051.

Pipe Cover

Reference Standard Drawing G-051 for required stormwater cover. City Engineer must approve any storm pipe with less than thirty (30) inches of cover. Shallow pipe shall be C-900 rather than standard SDR 3034.

STRUCTURES

Manholes

Manholes shall be located at all changes in slope, alignment, pipe size, and at all pipe junctions with existing or proposed storm drain connections. Manhole spacing shall not exceed five hundred (500) feet.

Manholes are required to be water tight. See note on Standard Drawings D-200 and D-205.

When standard manholes are required at pipe junctions use flat top manholes when rim to lowest pipe invert elevation is less than five (5) feet. City Engineer may approve short cones with a standard manhole on a case-by-case basis.

When the downstream pipe size increases, the crown of all upstream pipes shall not be lower than the crown of the larger downstream pipe. Design all manholes with a minimum drop of 0.2 feet from the inlet and outlet invert elevations.

At the end of cul-de-sacs, design storm drainage to prevent manhole placement adjacent to curb inlets/catch basins.

Water Quality Manholes

- Hydraulic Criteria:
 - Minimum Design Flow: Water Quality Flow
 - Design Engineer may use upstream flow splitter to bypass conveyance flows in excess of the

Water Quality flow.

- Design Criteria:
 - Shall conform to City Standard Drawings D-230 and D-231
 - Minimum Manhole Diameter: sixty (60) inch
 - Maximum size of incoming pipe: eighteen (18) inch (high flow splitter may be required.)
 - Sump Depth: No deeper than five (5) feet from invert out to bottom of sump
 - Volume of sump: twenty (20) cubic feet/one (1) cfs of flow into the water quality manhole, up to the twenty-five (25) year flow. Flow calculations shall include the effect of an upstream flow splitter.
 - Maintain a three (3) foot clear access zone between the inside structure.
 - Orient access to structure in a clear zone.
 - Flat Top Section shall have 2 access points and meet ASTM C-478 and H – 20 Traffic Loading

Inside-Drop Manholes

City Engineer shall approve inside-drop connections. City does not allow outside drop manholes. Construct inside drop manholes per Standard Drawing D-225.

Where the invert of the connecting pipe is two (2) feet or less above the invert out elevation, an inside-drop will be constructed utilizing Portland cement concrete. Stormwater entering the manhole will follow a smooth concrete channel transitioning evenly from the invert of the inlet pipe into main channel. City will not approve a stormwater design that allows stormwater to fall freely to the manhole base.

Manhole Pipe Connectors

City prefers all pipes connect to manholes through boots attached to pre-poured manholes. Contractors may connect to existing manholes with a sand collar fabricated of the same material as the connecting pipe by an approved manufacturer in accordance with these standards when approved by City Engineer. Construct sand collars with a bell joint located within twelve (12) inch or half the pipe diameter, whichever is greater, from outside the manhole wall. Do not fabricate sand collars in the field.

Pipe Stub-outs for Future Sewer Connections

- Pipe stub-outs shall be the same type as approved for use in lateral, main, or trunk sewer construction. Strength classifications shall be the same class as in adjacent trenches. Where two or more different classes of pipe exist at a manhole, the City authorized representative shall determine the strength classification. Furnish rubber-gasketed, watertight plugs with each stub-out and shall be adequately braced against air test pressures.
- Gaskets
- Install manhole sections with preformed flexible joint sealant.
- Remove steps prior to project completion.

Curb Inlets And Catch Basins

All structures shall be located in streets at the curb line to receive storm water runoff and provide conveyance to the main storm drain. The City of Newport prefers curb inlets along all curb line. See Standard Drawings D-300.

Structures shall be located at the following locations, but in no case be spaced further than four hundred (400) feet:

- At curb returns on the upstream side of an intersection.
- At the end of all dead end streets with a descending grade.
- At intermediate locations so that storm flows at the curb line do not exceed three (3) feet in width (measured from the curb face) or three (3) inches in depth (measured at the curb face), whichever is less.
- An oversized inlet manhole at low point (sag) of all vertical curves. Street and or vertical curves with flat slopes (slopes <0.3%) may require installation of additional or flanking inlets. Flanking inlets (sags) and spacing shall be designed according to section 6, appendix D, chapter 13 of the current ODOT Hydraulic Design Manual.
- All structures shall be capable of intercepting completely the design storm flow at the curb.

In situations where pipes conflict with the installation of a new curb inlet box, the basin may be placed under the sidewalk. See Standard Drawings d-301 and D-302 for inlet and top options.

Where there are larger pipes that will not fit into 24" x 24" box, the curb inlet grate may be set on a manhole base. See Standard Drawing D-303.

Catch basins are typically used in valley gutters, driveway throats, and areas without curbs. See Standard Drawing D-304

Area Drains

Area drains are common features of properties that have extensive landscaping or in yards with lots of water. They work to drain water from vegetation areas. Area drains can clog like any other drain, causing flooding or sending debris into the City storm conveyance system. Area Drains do not tie into the City drainage through weep holes, they must have a pipe connected to a main line. See Standard Drawing D-311 details.

Ditch Inlets

Ditch inlets convey storm runoff retained in ditches and swales to the piped conveyance storm system. Grates must be sufficient to keep debris from entering the City storm system. See Standard Drawing D-310 for details.

Culverts

Design culverts at road crossings in natural, perennial channels to pass the peak discharge for the specified design storm such that the headwater:

- Does not exceed 0.8 times the culvert diameter; or
- Remains at least one (1) foot below the roadway subgrade, whichever is less.
- Bottomless or fish friendly culverts shall be installed in wetland and/or water quality sensitive areas. The developer/property owner is responsible to ensure applicable regulatory agencies permit final designs. Submit copies of approved permits to the City.
- Culvert material shall have a minimum design life of seventy-five (75) years.

Tidegates

For areas impacted by tidal changes, a tidegate may be required to manage outfalls. See Standard Drawing D-320 for details.

BRIDGES

New and replacement bridges over natural, perennial channels shall be designed to pass the one hundred (100) year peak discharge from the tributary area assuming full development. Vertical clearance between the design water surface and the bottom of any part of the bridge shall be a minimum of two (2) feet.

RETAINING WALLS

When sizing retaining walls, the designer will consider the surcharge caused by vehicles, soil and/ or future building construction on facility walls. All walls in public facilities shall be cast-in-place reinforced concrete, with a decorative surface finish, designed by a registered professional engineer.

MAINTENANCE RESPONSIBILITIES

Public Facilities

- Unless otherwise approved by the City Engineer, maintain newly constructed public water quality or quantity facilities serving public roads to City Standards.
- The developer, or other legally bound party, shall be responsible for Public facility bonding and maintenance, two years from the date of the acceptance of the public facility improvements. The maintenance period may extend beyond the two-year period if facility plant die off is greater than twenty (20) percent at the end of the two (2) year period.
- Publicly maintained water quality or quantity facilities shall be contained within a tract with an approved access road provided and encumbered by a surface/ stormwater management easement dedicated to the City. The City will retain ownership of the tract.
- Provide Irrigation to all public facilities. The system development fees and associated costs are the responsibility of the developer.

Private Facilities

Owner shall maintain private facilities. See Newport Municipal Code 5.20.110. The owner or responsible party shall complete the City standard private maintenance agreement forms and submit to the City for review/approval. The City shall approve a maintenance agreement recorded with Lincoln County before the issuance of building occupancy permits.

A maintenance plan is required for all privately maintained stormwater facilities, it shall:

- Be composed of an agreement signed by the owner of the stormwater facilities and the City and an explanation of the operation, maintenance, and preservation of the stormwater facility including a schedule of required maintenance activities. Append the maintenance plan to the property deed. Developer will provide operations and maintenance manuals to all present and subsequent owners of the facility that describes the stormwater facility, maintenance procedures including methods of waste disposal, maintenance schedule, and the location of the installation and maintenance records of previous years.
- Components
 - Inspection schedule including storm-related inspections
 - Description of facility components, the observable trigger for maintenance, and the method of maintenance including appropriate waste disposal method
 - Type of maintenance for plants and other landscaping material required for proper functioning of the stormwater facility and to maintain a seventy-five (75) percent vegetative cover

- Contain the location for stormwater installation records. Keep installation records until dismantling the facility and no longer discharging to the City's stormwater system. Installation records include, at a minimum, design calculations and assumptions as well as the construction drawings that show the individual components and the entire system.
- Provide requirements for maintenance records. Owner of the stormwater facility shall submit annual reports to the City attesting to the proper maintenance, safety, and functioning of the stormwater facility. The maintenance records will be kept with the facility installation records and be available for inspection by the City for at least five (5) years.

EROSION AND SEDIMENT CONTROL SUBMITTAL PRIOR TO CONSTRUCTION

- Storm water Facility Description, existing and proposed Conveyance System Description
- Erosion and Sediment Control (ESC) Measures Description
- Long Term Maintenance
- Inspection plan / agreement – Provide calendar of required inspections
- Spill Prevention and Control Plan
- ESC Plan
- Storm Basin Map
- Soils Map
- Phasing Map (if applicable)
- Site Photos
- Hydrology Calculations
- Facility Sizing Calculations
- Conveyance Calculations
- 1200C permit plans and application, if applicable
- Grading, drainage facility, and erosion control plans (11x17).

STORM DRAINAGE DESIGN STANDARDS

Standard Storm Manhole Pipes Less Than 24" Diameter

Standard manholes have a cone top and are used for depths over six feet. See Standard Drawing D-200 for construction requirements.

Doghouse Manhole

Doghouse manholes are used when an existing pipe has too much flow to divert during construction. Pipes remain intact until base and doghouse barrel section is in place. See Standard Drawing S-204 for construction details. See Standard Drawings S-210 and S-210B for cast-in-place base requirements.

Flat-Top Manhole

Flat-top manholes are used in shallow depths of six feet or less. See Standard Drawing D-205 for construction details.

Manhole Base Standard Details

Cast-in-place manhole bases require a rebar cage in the pour. See Standard Drawing S-210B for rebar layout. See Standard Drawing D-210 for construction requirements.

Standard Inside Drop Manhole

City does not allow outside drop manholes. If building on a slope and a drop manhole is needed, an

inside drop is recommended. Drop manholes must be approved by the City Engineer. See Standard Drawing D-225 for construction details.

Storm Manhole Cover And Frame Details

See Standard Drawing D-250 for construction requirements.

Storm Manhole Frame Grade Adjustment

See Standard Drawing D-260 for construction requirements.

24" Square Curbside Catch Basin Inlet

Curb inlets are preferred to catch basins due to the amount of water they intake. The round grate on a square box requires grouting to fill gaps caused by differing shapes. The inlet grate adjusts up and down and back to front. Contractors often have a difficult time installing these boxes the first time they see them. City staff must review inlet setup prior to concrete pour. See Standard Drawing D-300 for construction details.

In Sidewalk Curb Inlet

In locations where an existing City pipe may not allow for installation of the City standard curb inlet, the basin may be installed under the sidewalk. This will require a different inlet grate. See Standard Drawing D-301 and D-302 for inlet top options.

In Sidewalk Curb Inlet Tops

See Standard Drawing D-302 and D301 for construction requirements.

Manhole Curb Inlet

When depth of pipe reaches or exceed six feet, the standard curb inlet base is replaced with a manhole. See Standard Drawing D-303 for construction details.

CG-1 Inlet, Frame and Grate

In reasonably flat areas where drainage catches are require, a G-1 with a flat grate may be used. Typically this would be in valley gutters or the throat of a driveway.

Ditch Inlet

Used in drainage ditches. See Standard Drawing D-310 for construction requirements.

Area Drain Inlet

Used in landscaped areas. See Standard Drawing D-311 for construction details.

Headwall With Tidegate

Outfalls in tidal areas may require a tidegate. See Standard Drawing D-320 for construction requirements.

END OF SECTION

STORM DRAINAGE

STANDARD DETAIL DRAWINGS INDEX

D-200:	STANDARD STORM MANHOLE PIPES LESS THAN 24" DIAMETER
D-205:	FLAT-TOP MANHOLE
D-210:	MANHOLE BASE STANDARD DETAILS
D-225:	STANDARD INSIDE DROP MANHOLE
D-250:	STORM MANHOLE COVER AND FRAME DETAILS
D-260:	STORM MANHOLE FRAME GRADE ADJUSTMENT
D-300:	24" SQUARE CURBSIDE CATCH BASIN INLET
D-301:	IN SIDEWALK CURB INLET
D-302:	IN SIDEWALK CURB INLET TOPS
D-303:	MANHOLE CURB INLET
D-304:	CG-1 INLET BASIN,FRAME & GRATE
D-310:	DITCH INLET
D-311:	AREA DRAIN INLET
D-320:	HEADWALL WITH TIDEGATE



City of Newport
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STANDARD DETAIL DRAWING INDEX

DETAIL NO.

D-010

12/18/2020

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CAST IRON (H-20 RATED) MANHOLE COVER AND FRAME SET FRAME IN NON-SHRINK GROUT, SEE STANDARD DETAIL D-250

10 GA. COPPER TRACER WIRE WITH GREEN 30 MIL THICK HDPE INSULATION

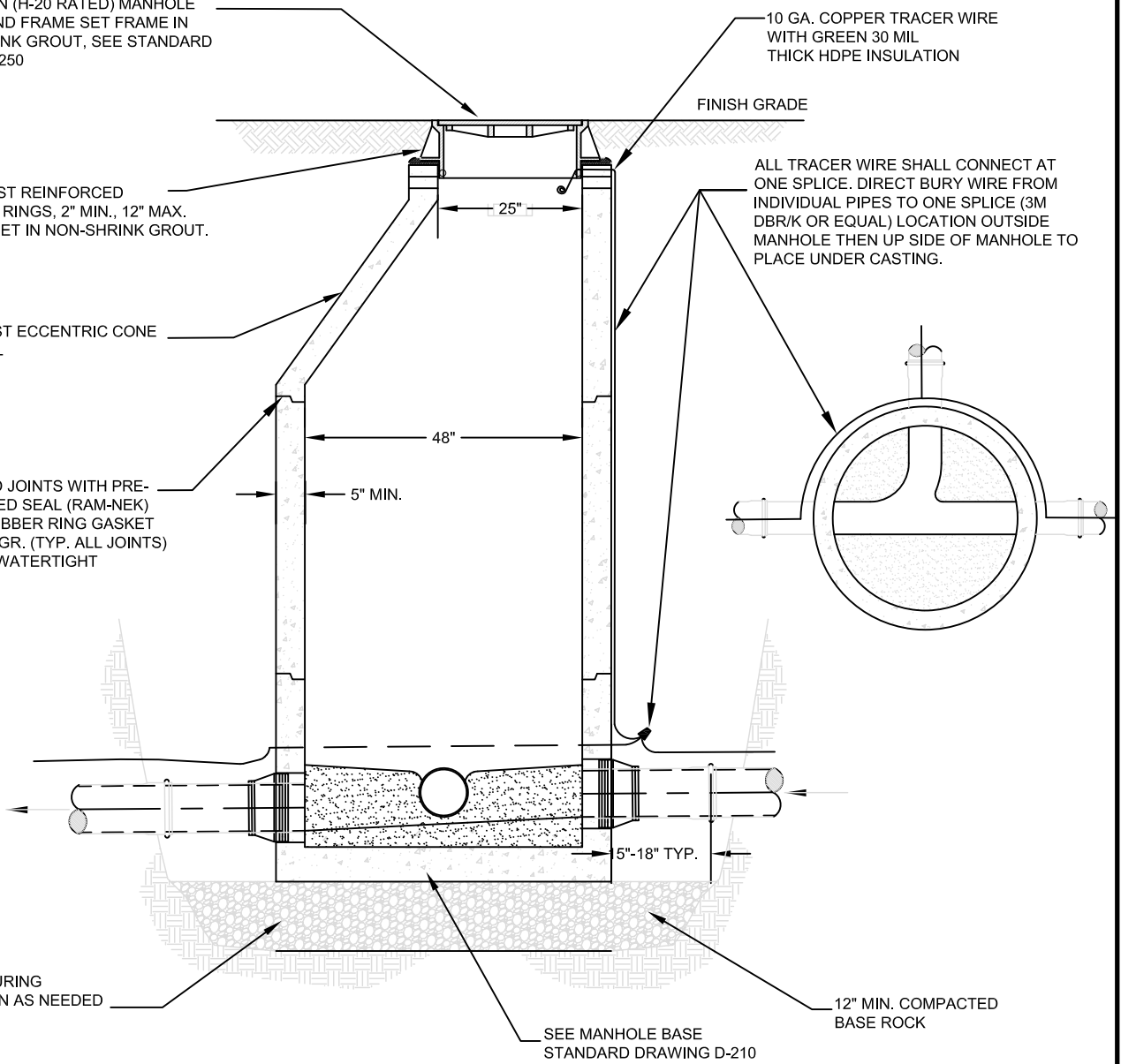
FINISH GRADE

PRECAST REINFORCED GRADE RINGS, 2" MIN., 12" MAX. EACH SET IN NON-SHRINK GROUT.

ALL TRACER WIRE SHALL CONNECT AT ONE SPLICE. DIRECT BURY WIRE FROM INDIVIDUAL PIPES TO ONE SPLICE (3M DBR/K OR EQUAL) LOCATION OUTSIDE MANHOLE THEN UP SIDE OF MANHOLE TO PLACE UNDER CASTING.

PRECAST ECCENTRIC CONE 36" TALL

KEYED JOINTS WITH PRE-FORMED SEAL (RAM-NEK) OR RUBBER RING GASKET BY MFR. (TYP. ALL JOINTS) SEAL WATERTIGHT



DEWATER DURING INSTALLATION AS NEEDED

SEE MANHOLE BASE STANDARD DRAWING D-210

12" MIN. COMPACTED BASE ROCK

NOTES:

1. ALL PRECAST MANHOLE SECTIONS SHALL MEET ASTM C-478.
2. FLAT-TOP MANHOLE REQUIRED WHEN DEPTH FROM FINISH GRADE TO INVERT IS LESS THAN 6 FEET.
3. INTERIOR DROPS EXCEEDING 24" REQUIRE INSIDE DROP. SEE DRAWING S-220.
4. LARGER INLET PIPES THAN 24" WILL REQUIRE A SPECIAL DESIGN AND APPROVAL FROM CITY ENGINEER
5. BACKFILL AND DENSITY REQUIREMENTS SHALL CONFORM TO THE OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION, CURRENT EDITION, SECTION 00405.
6. MANHOLES SHALL BE TESTED PER OREGON STANDARD SPECIFICATIONS, CURRENT EDITION, SECTION 00470.71.b.



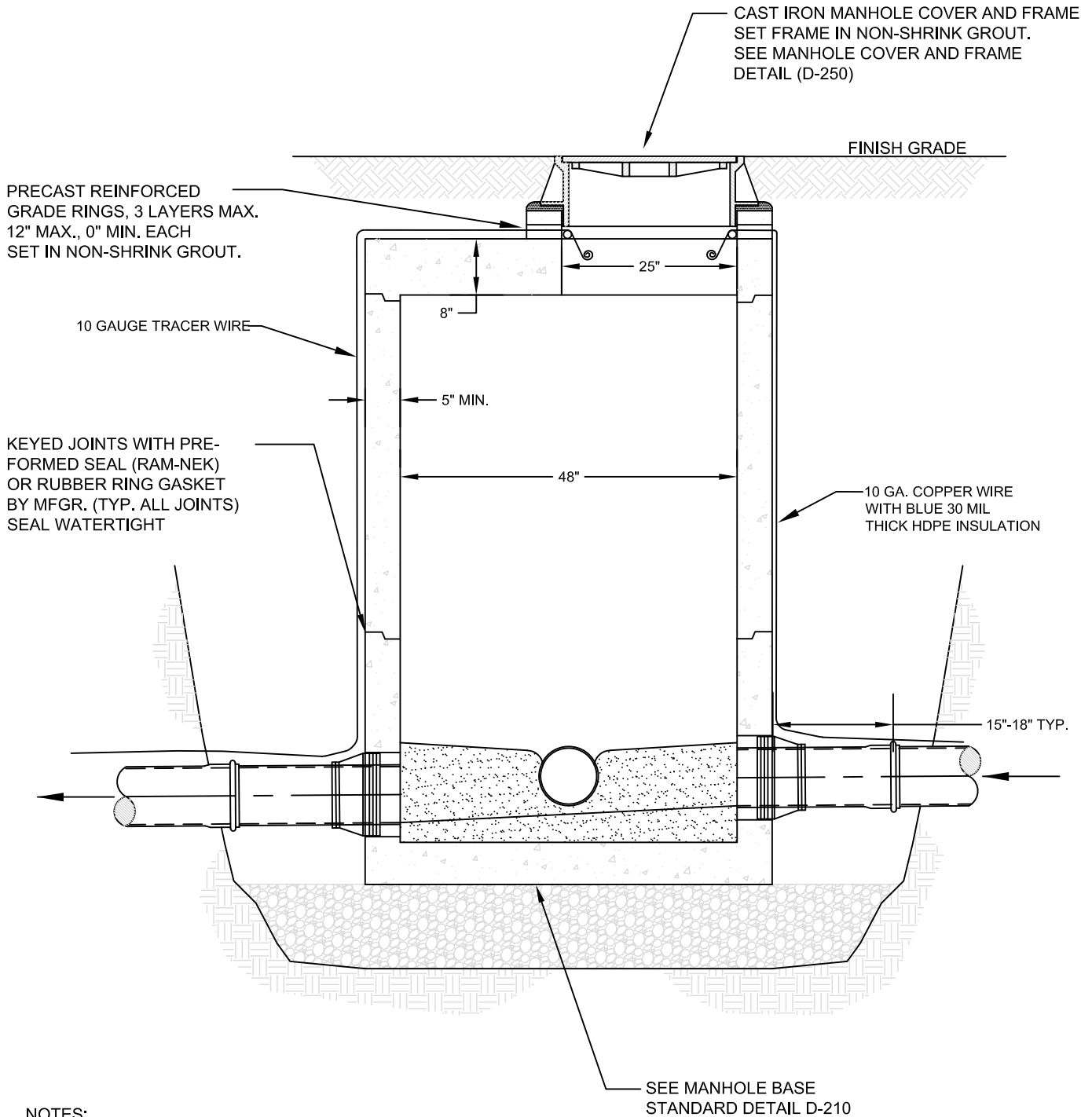
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STANDARD STORM MANHOLE
 PIPES LESS THAN 24" DIAM.

DETAIL NO.

D-200

12/18/2020



NOTES:

1. ALL PRECAST MANHOLE SECTIONS SHALL MEET ASTM C-478.
2. STANDARD MANHOLE REQUIRED WHEN DEPTH FROM FINISH GRADE TO INVERT IS 6 FEET OR MORE.



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**FLAT-TOP STORM MANHOLE
PIPES LESS THAN 24" DIAM.**

DETAIL NO.

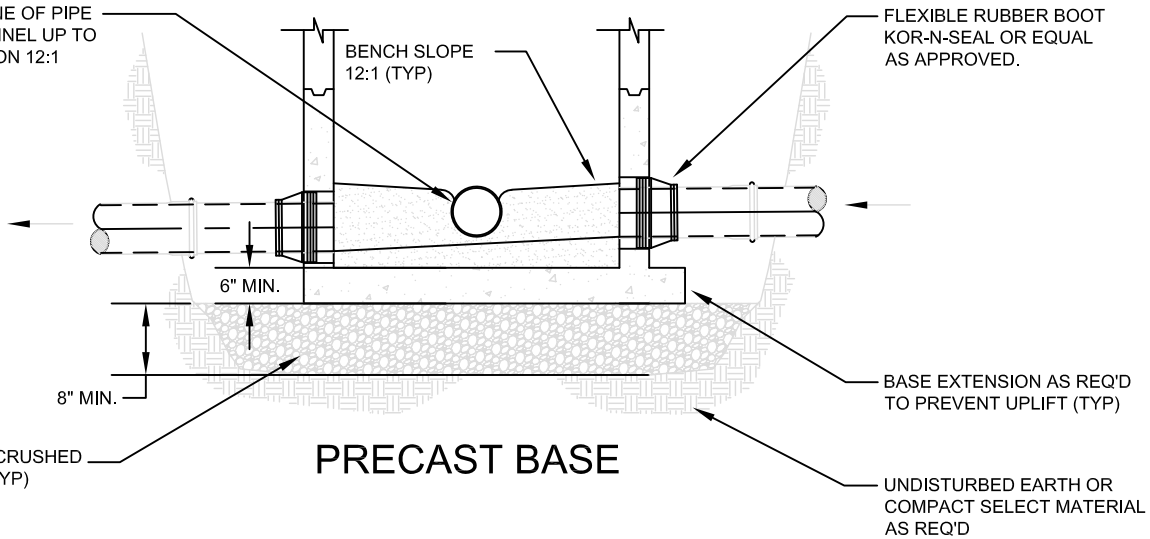
D-205

12/18/2020

AT SPRING LINE OF PIPE
EXTEND CHANNEL UP TO
CROWN LINE ON 12:1
BATTER (TYP)

BENCH SLOPE
12:1 (TYP)

FLEXIBLE RUBBER BOOT
KOR-N-SEAL OR EQUAL
AS APPROVED.



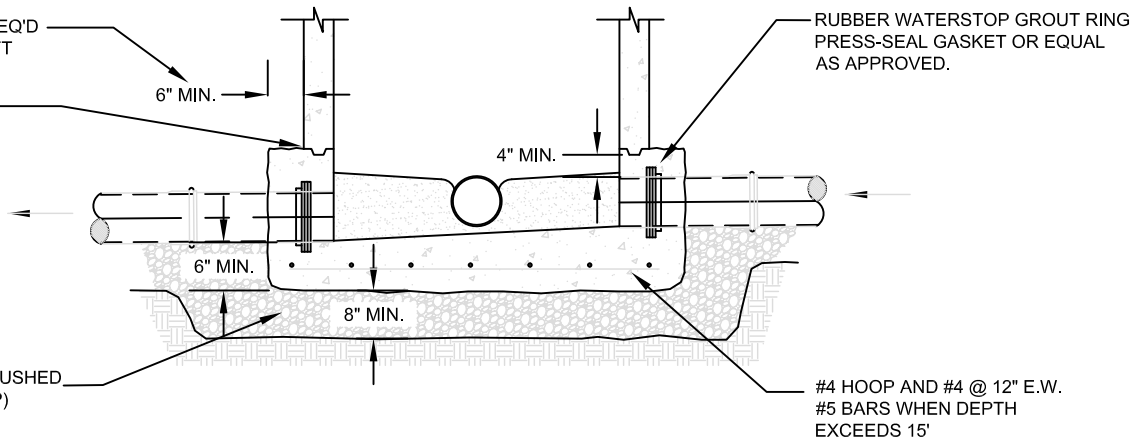
PRECAST BASE

OR GREATER AS REQ'D
TO PREVENT UPLIFT

RAM-NEK SEAL

6" MIN.

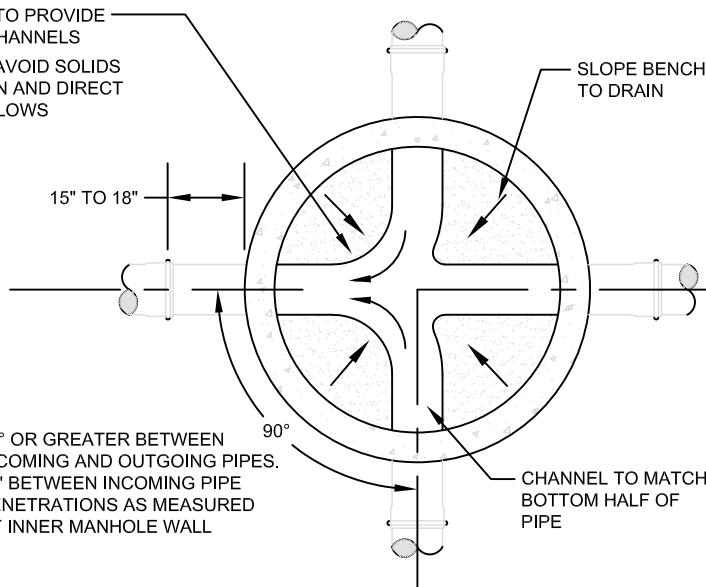
RUBBER WATERSTOP GROUT RING
PRESS-SEAL GASKET OR EQUAL
AS APPROVED.



CAST-IN-PLACE BASE

CONTOUR TO PROVIDE
SMOOTH CHANNELS
SHAPE TO AVOID SOLIDS
DEPOSITION AND DIRECT
HEAD-ON FLOWS

SLOPE BENCH
TO DRAIN



90° OR GREATER BETWEEN
INCOMING AND OUTGOING PIPES.
12" BETWEEN INCOMING PIPE
PENETRATIONS AS MEASURED
AT INNER MANHOLE WALL

CHANNEL TO MATCH
BOTTOM HALF OF
PIPE

NOTES:

1. SEE STANDARD MANHOLE DRAWING D-200 FOR TRACER WIRE REQUIREMENT.
2. PRECAST OR CAST-IN-PLACE BASE AT CONTRACTOR'S OPTION OR AS DIRECTED.
3. A MIX DESIGN SHALL BE SUBMITTED TO CITY PRIOR TO SCHEDULING POUR.
4. STRUCTURAL CONCRETE SHALL CONFORM WITH THE OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION, CURRENT EDITION, SECTION 00759.
5. MIN. 0.2 FT. INVERT DROP ACROSS MANHOLE.
6. MANHOLE BASE SHALL BE CLEAN OF DIRT AND DEBRIS PRIOR TO CHANNELING BASE.
7. PIPE PENETRATIONS SHALL NOT CROSS THROUGH BARREL SECTION JOINTS.



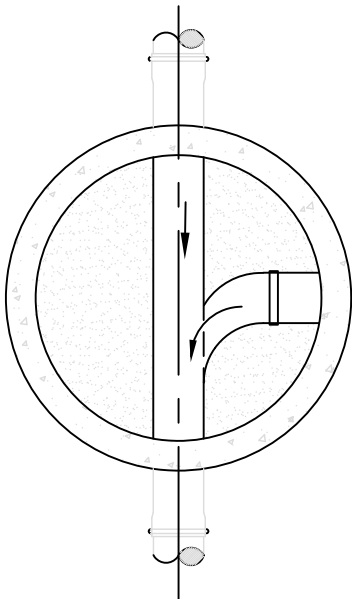
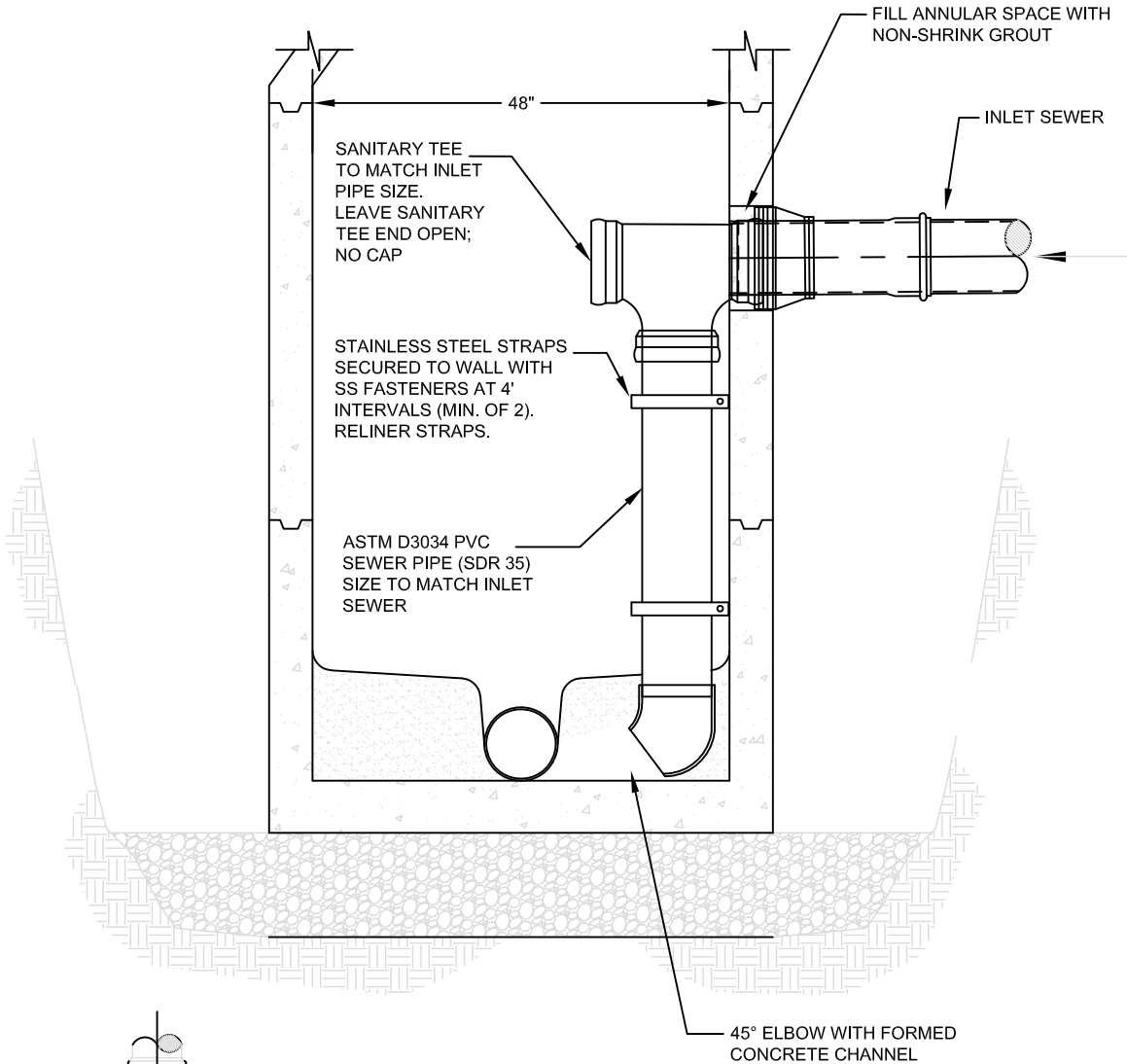
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STORM MANHOLE BASE STANDARD DETAILS

DETAIL NO.

D-210

12/18/2020



NOTES:

1. DROP MANHOLES SHALL ONLY BE USED WITH PRIOR APPROVAL FROM CITY ENGINEER.
2. EXTEND INLET SEWER PIPE INTO MANHOLE FAR ENOUGH TO ALLOW SECURE ATTACHMENT OF SANITARY TEE (DEPTH VARIES).
3. ONLY ONE DROP ASSEMBLY ALLOWED PER MANHOLE.
4. SEE STANDARD MANHOLE DRAWING S-200 FOR TRACER WIRE LAYOUT.



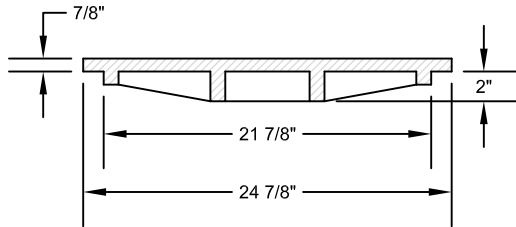
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**STANDARD INSIDE DROP
 MANHOLE**

DETAIL NO.

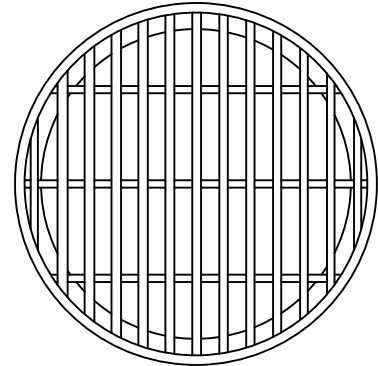
D-225

12/5/23



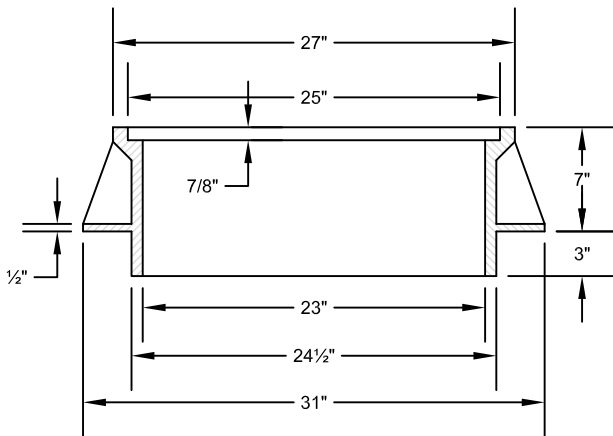
COVER (150 LBS)

(OLYMPIC FOUNDRY MH26S, OR APPROVED EQUAL)

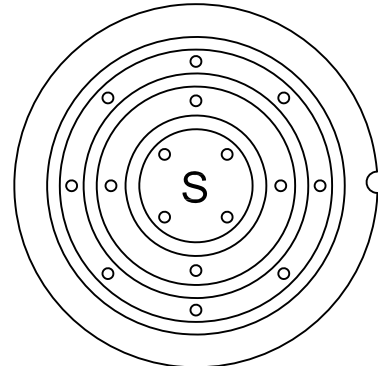


GRATE

(OLYMPIC FOUNDRY #MH26G,
REQUIRES PRE-APPROVAL BY CITY ENGINEER)



FRAME (237 LBS)



STORM

(OLYMPIC FOUNDRY #MH26P
OR APPROVED EQUAL)

NOTE:

1. MANHOLE FRAMES AND COVER SHALL HAVE H-20 RATING



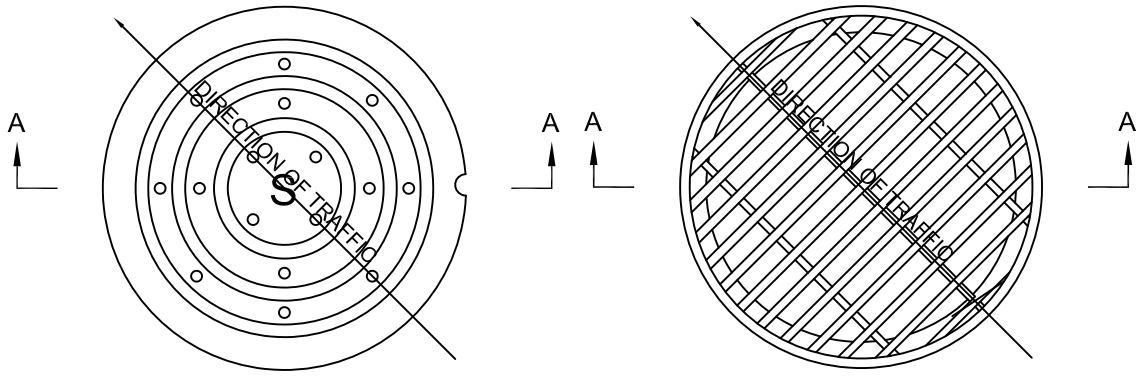
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**STORM MANHOLE COVER
AND FRAME DETAILS**

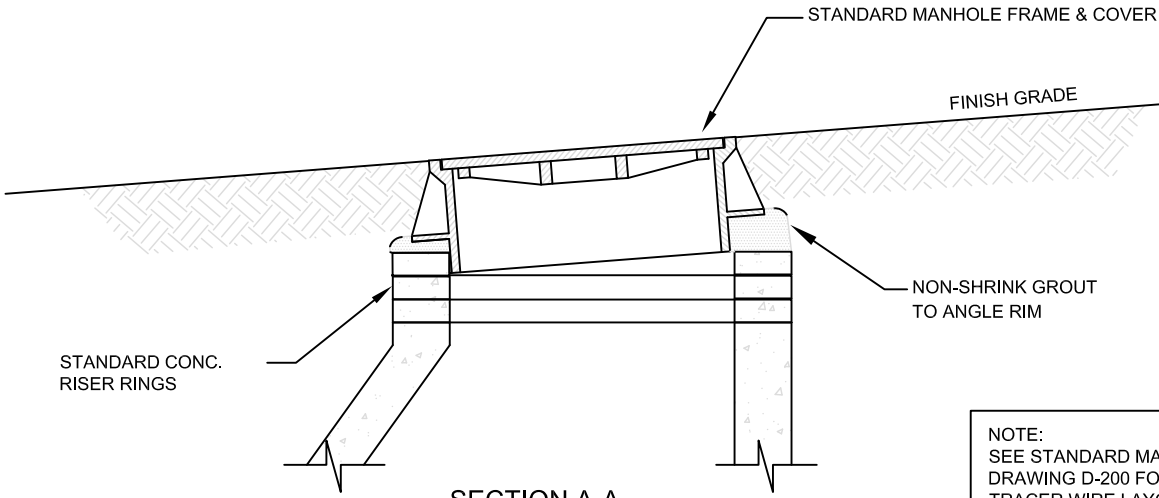
DETAIL NO.

D-250

12/18/2020

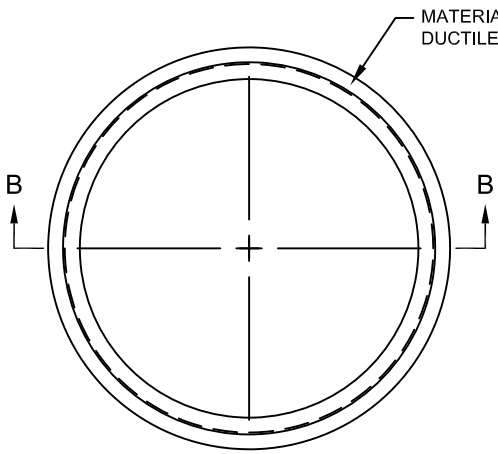


PLAN

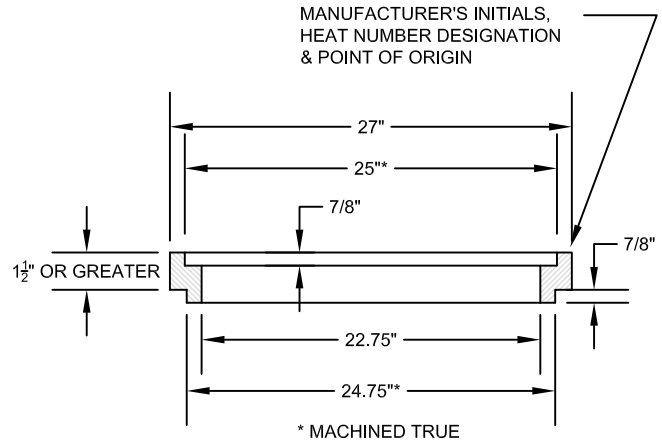


SECTION A-A
TYPICAL MANHOLE GRADE ADJUSTMENT IN STREET

NOTE:
SEE STANDARD MANHOLE
DRAWING D-200 FOR
TRACER WIRE LAYOUT.



MANHOLE ADJUSTMENT RINGS
FOR RESURFACING



SECTION B-B



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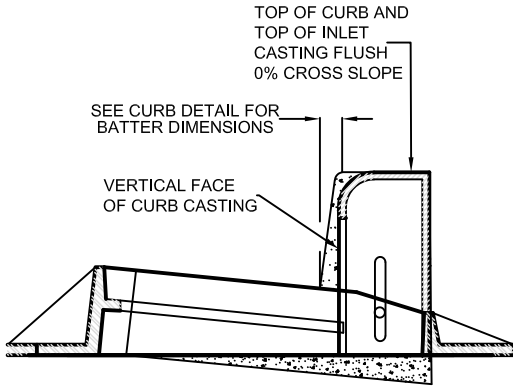
**STORM MANHOLE FRAME
GRADE ADJUSTMENT**

DETAIL NO.

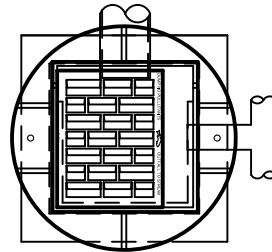
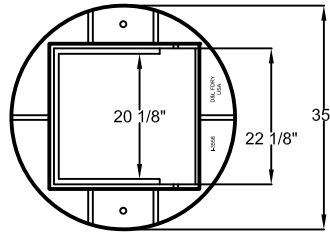
D-260

12/18/2020

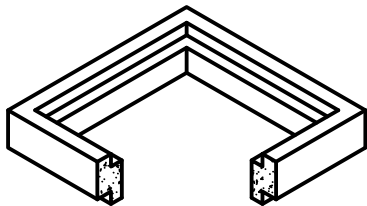
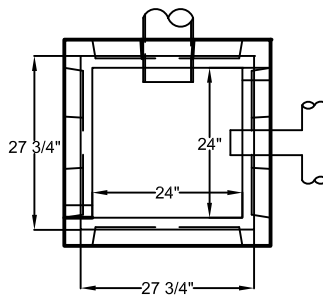
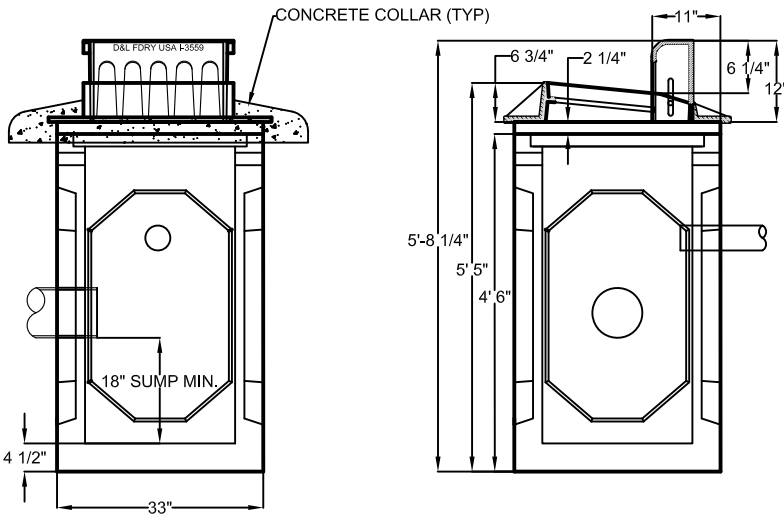
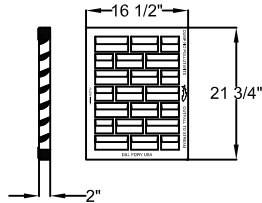
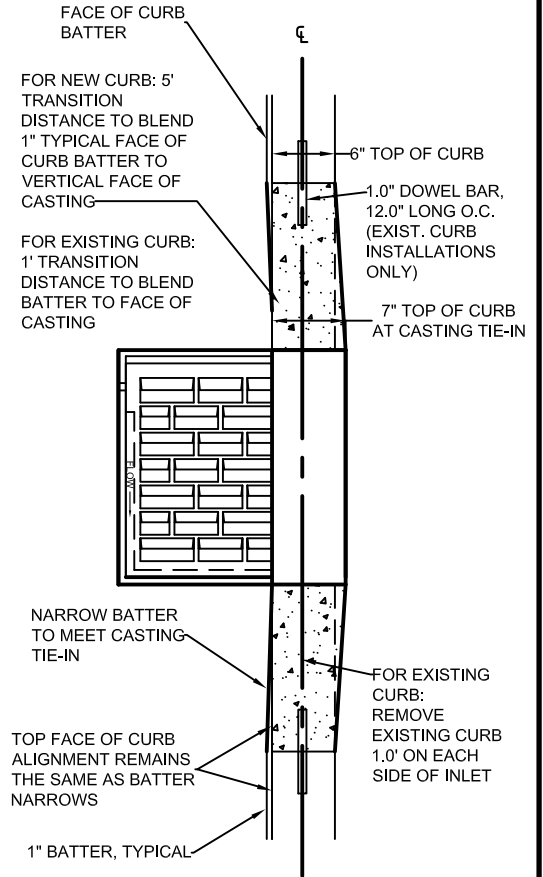
FACE OF CURB / FACE OF CASTING ORIENTATION



BOX & CASTING



TOP OF CURB / TOP OF CASTING ALIGNMENT



* 4", 6" & 12" OPTIONAL RISER RINGS FOR ADJUSTMENT

NOTES:

1. SET GRATE TO GRADE WITH CONCRETE ADJUSTMENT RINGS AND MORTAR; GROUT BETWEEN GRATE AND BOX TO SMOOTH FINISH.
2. POUR CONCRETE COLLAR AROUND GRATE AND BOX.
3. MAXIMUM VERTICAL ADJUSTMENT OF 2 1/4" WITHOUT RISER RINGS; MAX HORIZONTAL OFFSET = 3".
4. MAXIMUM OF 12" OF CONCRETE ADJUSTMENT RINGS ALLOWED WITH FULL BED OF MORTAR BETWEEN EACH.
5. VOIDS AROUND PIPE DIAMETER SHALL BE GROUTED ON THE INSIDE AND OUTSIDE OF THE BOX.
6. LOCATE WIRES (SEE PIPE INSTALLATION STANDARD DRAWINGS FOR DETAILS) SHALL BE EXTENDED TO THE TOP OF THE STRUCTURE.
7. OPTIONAL BAFFLE BOX (NOT SHOWN) FOR 6", 8", 10", OR 12" PIPES ARE AVAILABLE; AS REQUIRED BY ENGINEER.
8. USE ADVANTAGE PRECAST 24" SQUARE CATCH BASIN OR PRE-APPROVED EQUAL. USE D&L FOUNDRY I-3559 CURB INLET OR PRE-APPROVED EQUAL.



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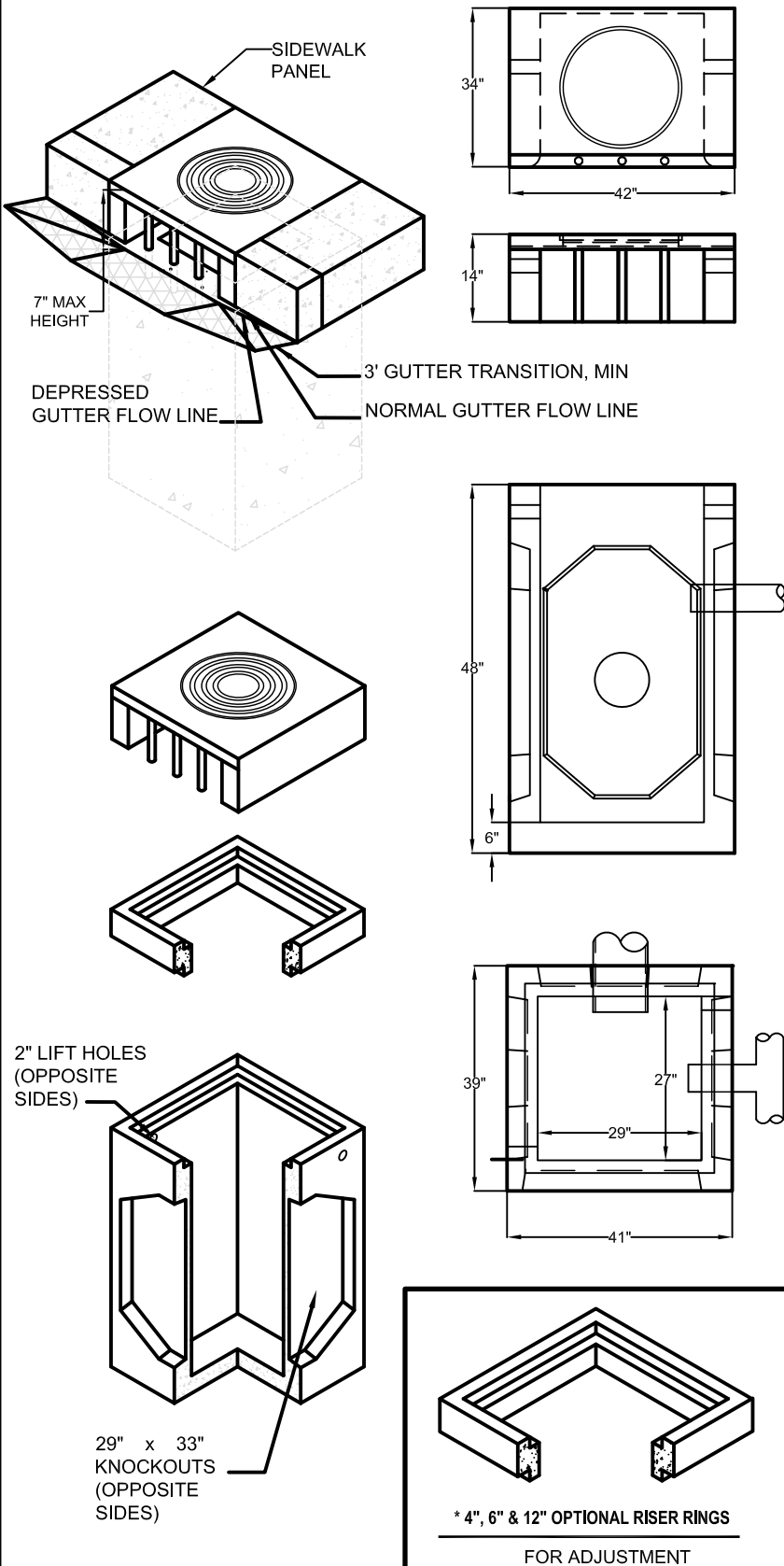
24" SQUARE CURBSIDE CATCH BASIN INLET

DETAIL NO.

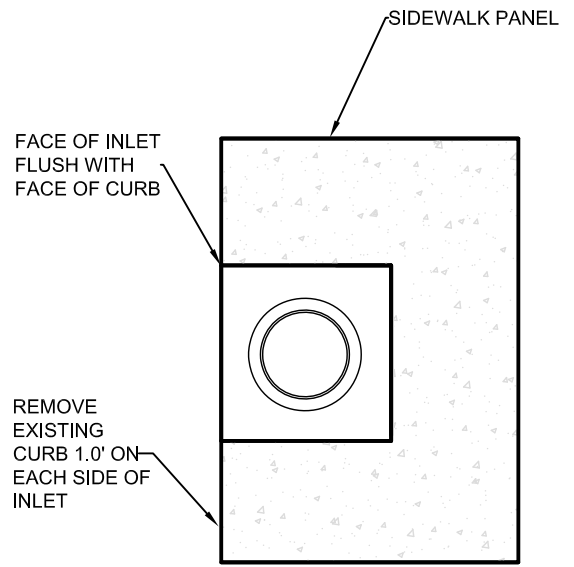
D-300

9/6/2019

BOX & CASTING



CASTING / CURB ALIGNMENT



NOTES:

1. SET GRATE TO GRADE WITH CONCRETE ADJUSTMENT RINGS AND MORTAR; GROUT BETWEEN GRATE AND BOX TO SMOOTH FINISH.
2. POUR CONCRETE COLLAR AROUND GRATE AND BOX.
3. MAXIMUM VERTICAL ADJUSTMENT OF 2 1/4" WITHOUT RISER RINGS; MAX HORIZONTAL OFFSET = 3".
4. MAXIMUM OF 12" OF CONCRETE ADJUSTMENT RINGS ALLOWED WITH FULL BED OF MORTAR BETWEEN EACH.
5. VOIDS AROUND PIPE DIAMETER SHALL BE GROUTED ON THE INSIDE AND OUTSIDE OF THE BOX.
6. LOCATE WIRES (SEE PIPE INSTALLATION STANDARD DRAWINGS FOR DETAILS) SHALL BE EXTENDED TO THE TOP OF THE STRUCTURE.
7. OPTIONAL BAFFLE BOX (NOT SHOWN) FOR 6", 8", 10", OR 12" PIPES ARE AVAILABLE; AS REQUIRED BY ENGINEER.
8. USE ODOT G2 BOX.
9. TRANSITION ASPHALT IN FRONT OF GRATE FOR FLOW INTO CURB INLET; 2" ELEVATION DIFFERENCE BETWEEN NORMAL AND DEPRESSED GUTTER LINES.



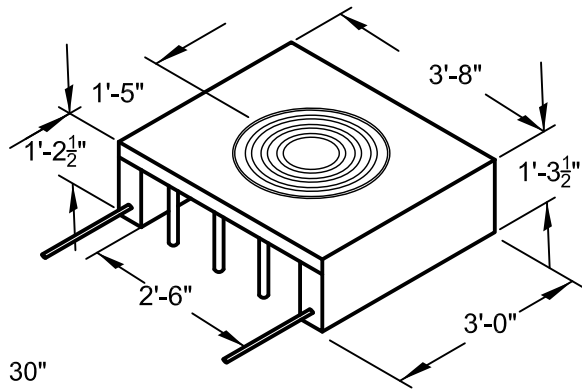
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IN SIDEWALK
CURB INLET

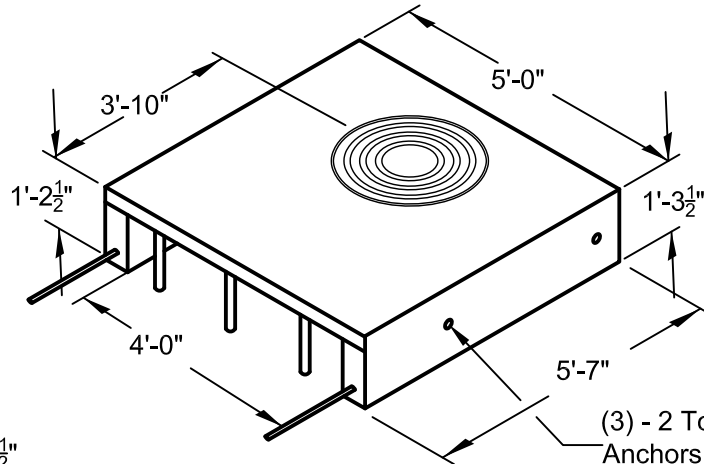
DETAIL NO.

D-301

9/6/2019

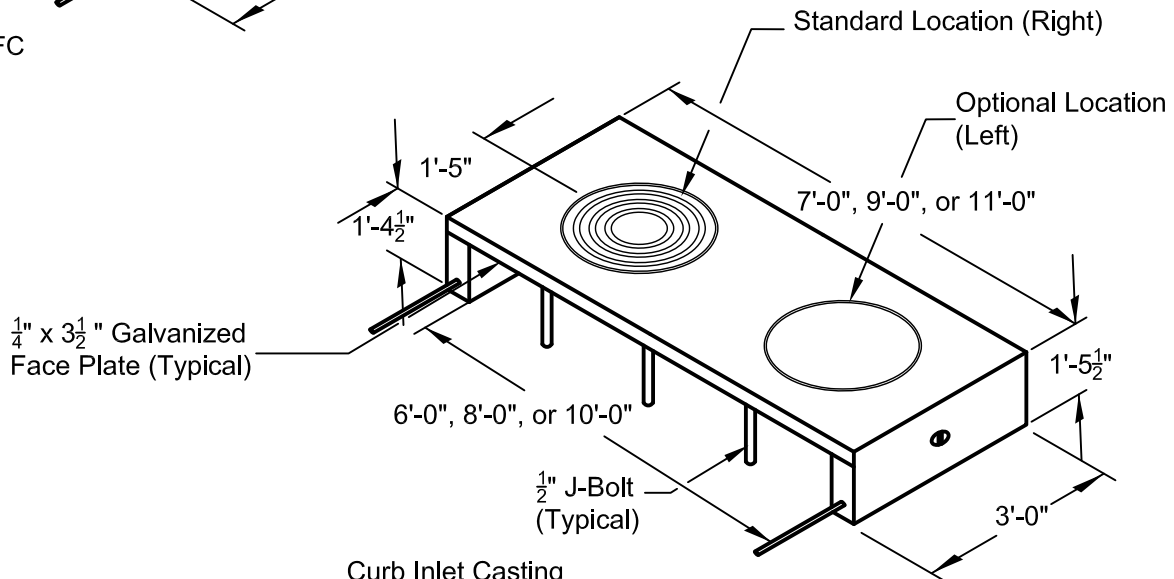


30"
No. CI-30-23FC
1,075 lbs.



48" MH
No. CI-48MH-23FC
2,375 lbs.

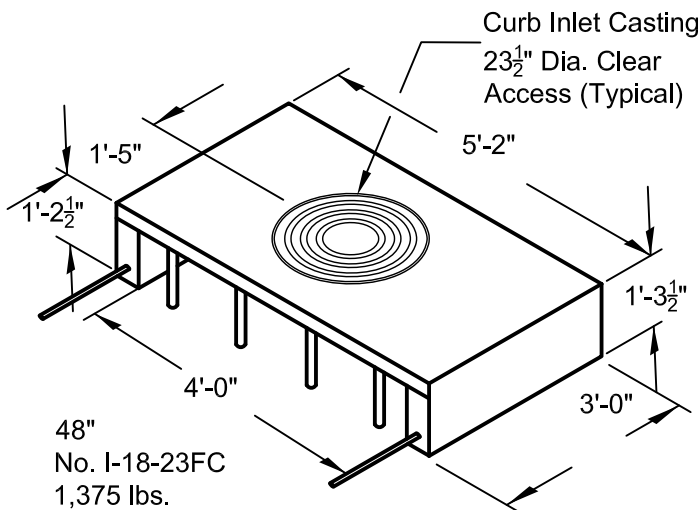
(3) - 2 Ton Lift
Anchors (1 Each
Side, 1 Back Side)



1/4" x 3/8" Galvanized
Face Plate (Typical)

1/2" J-Bolt
(Typical)

VARIABLE 6', 8', & 10' MH
No. CI-VARMH-23FC
6'-0" 2,100 lbs.
8'-0" 2,880 lbs.
10'-0" 3,520 lbs.



48"
No. I-18-23FC
1,375 lbs.



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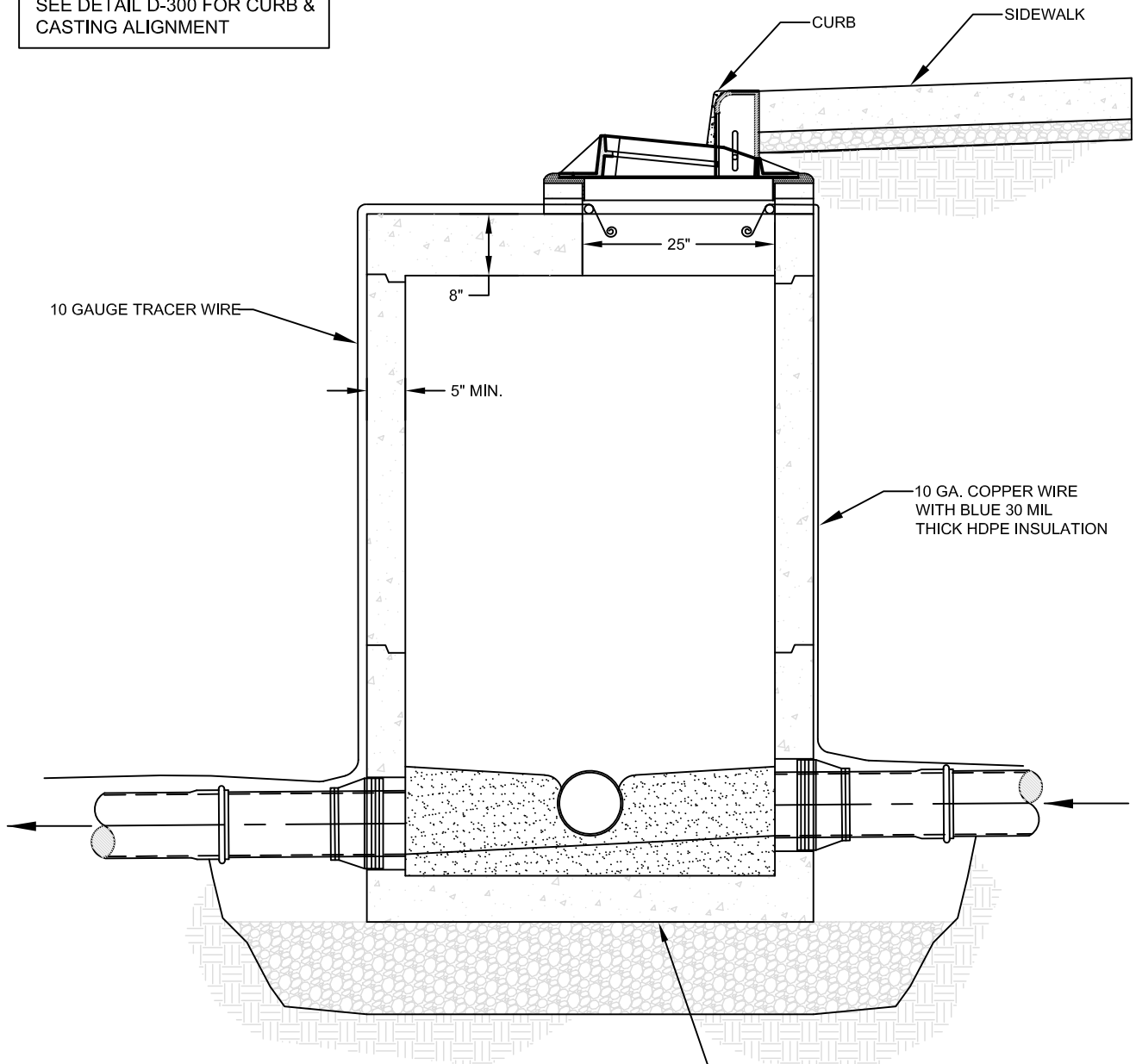
IN SIDEWALK CURB INLET TOPS

DETAIL NO.

D-302

12/18/2020

SEE DETAIL D-300 FOR CURB & CASTING ALIGNMENT



NOTES:

1. MANHOLE BASE CURB INLETS SHALL BE APPROVED PRIOR TO INSTALLATION.
2. STANDARD MANHOLE REQUIRED WHEN DEPTH FROM FINISH GRADE TO INVERT IS 6 FEET OR MORE.
3. ALL PRECAST MANHOLE SECTIONS SHALL MEET ASTM C-478.
4. MANHOLE MAY BE ROTATED AS NEEDED BY EXISTING CONDITIONS. FINAL ROTATION APPROVED BY CITY ENGINEER.

SEE MANHOLE BASE
STANDARD DETAIL D-210



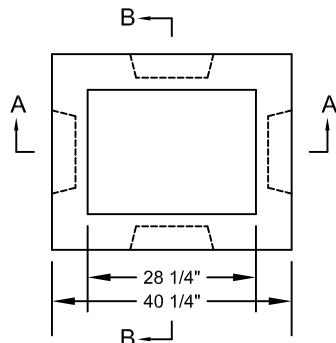
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MANHOLE CURB INLET

DETAIL NO.

D-303

12/18/2020



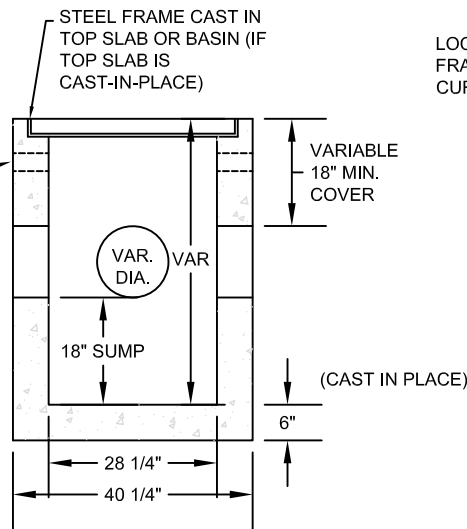
TOP VIEW

NOTES

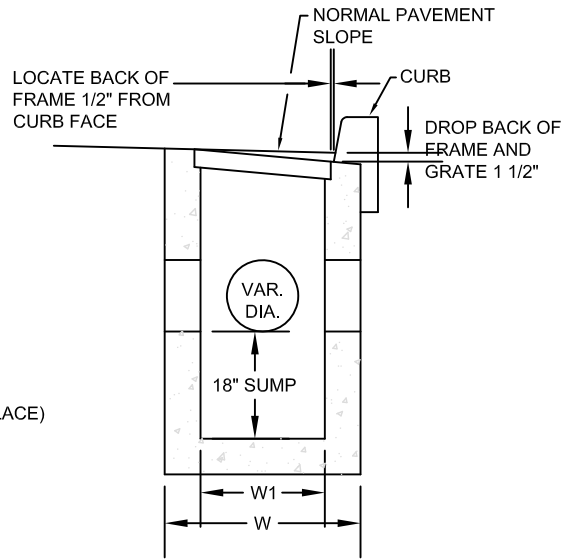
1. CONCRETE STRENGTH SHALL BE 3300 PSI.
2. PRECAST BASE WALLS SHALL BE A MINIMUM 4" THICK. CAST-IN-PLACE BASE WALLS SHALL BE 6" THICK.
3. USE VERTICAL BEADS IN CORNERS, FILLET WELD JOINT ON BOTTOM OF FRAME. GRATE MUST REST FLAT ON FRAME SURFACE.

INLET TYPE	W	W1
G-1	2' 8-7/8"	1' 8-7/8"

OPTIONAL:
INSTALL 3" WEEP HOLES
WITH FIELD INSTALLED
MESH SCREEN FOR
SUBGRADE DRAINAGE



SECTION A-A



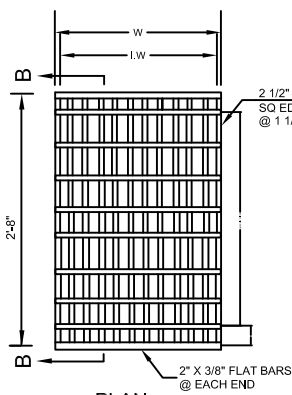
SECTION B-B

TYPE	W	I.W
STANDARD	1'-9"	1'-8 1/4"

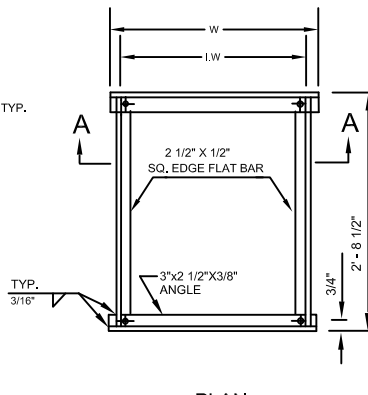
TYPE	DIA. PIPE	W	I.W
STANDARD	10"-12"	1'-10 3/4"	1'-9 3/8"

NOTE

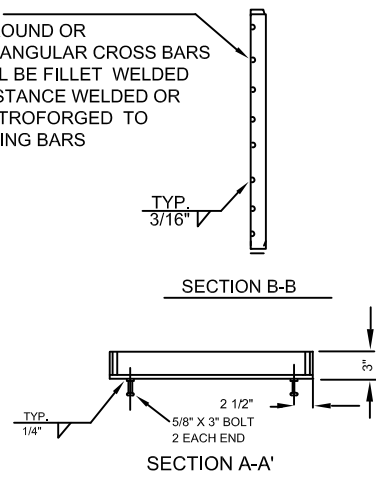
3/8" ROUND OR
RECTANGULAR CROSS BARS
SHALL BE FILLET WELDED
RESISTANCE WELDED OR
ELECTROFORGED TO
BEARING BARS



PLAN



PLAN



SECTION A-A'



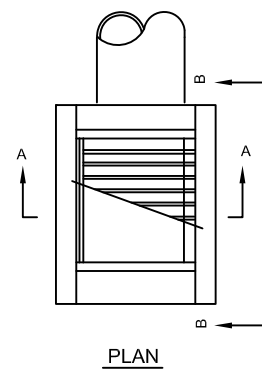
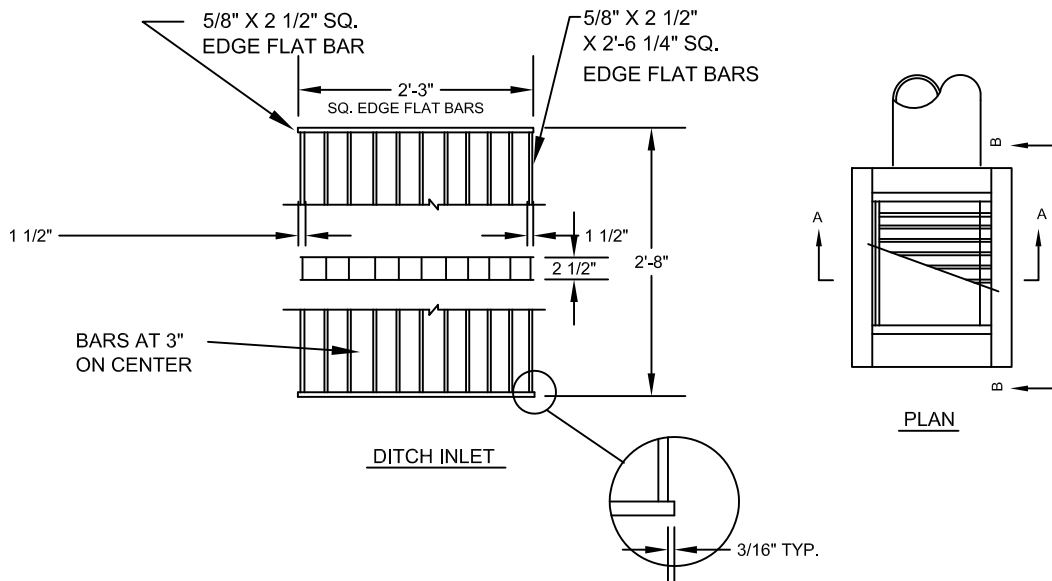
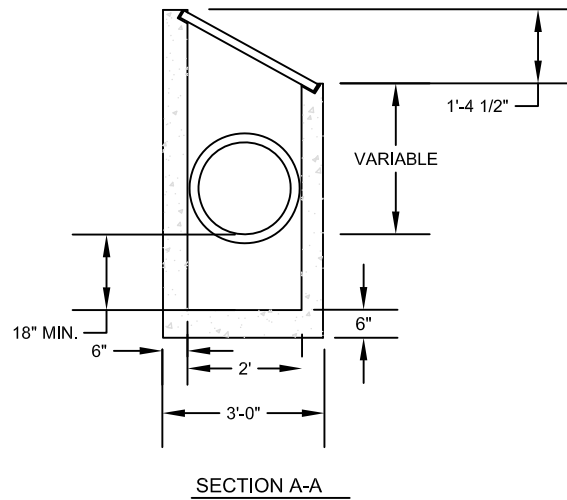
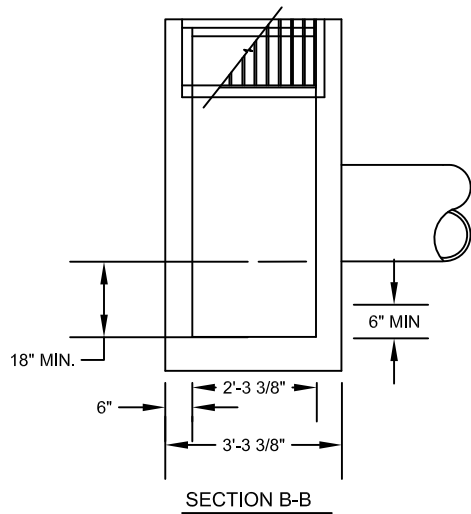
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CG-1 INLET BASIN,
FRAME & GRATE

DETAIL NO.

D-304

2/13/2024



NOTES:

1. CONCRETE STRENGTH SHALL BE 3300 PSI.
2. CATCH BASIN, FRAME, AND GRATES SHALL MEET H2O LOADING.
3. INSIDE FRAME DIMENSIONS: 2'-3 3/8", 2'-8 1/2".
4. 3/8" CROSS BARS SHALL BE FLUSH WITH THE GRATE SURFACE AND MAY BE FILLET WELDED, RESISTANCE WELDED OR ELECTROFORGED TO BEARING BARS.



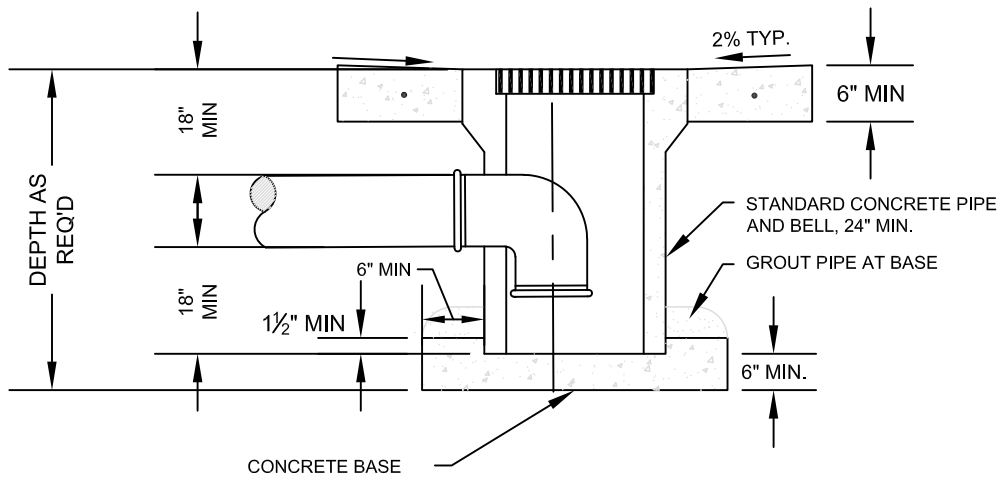
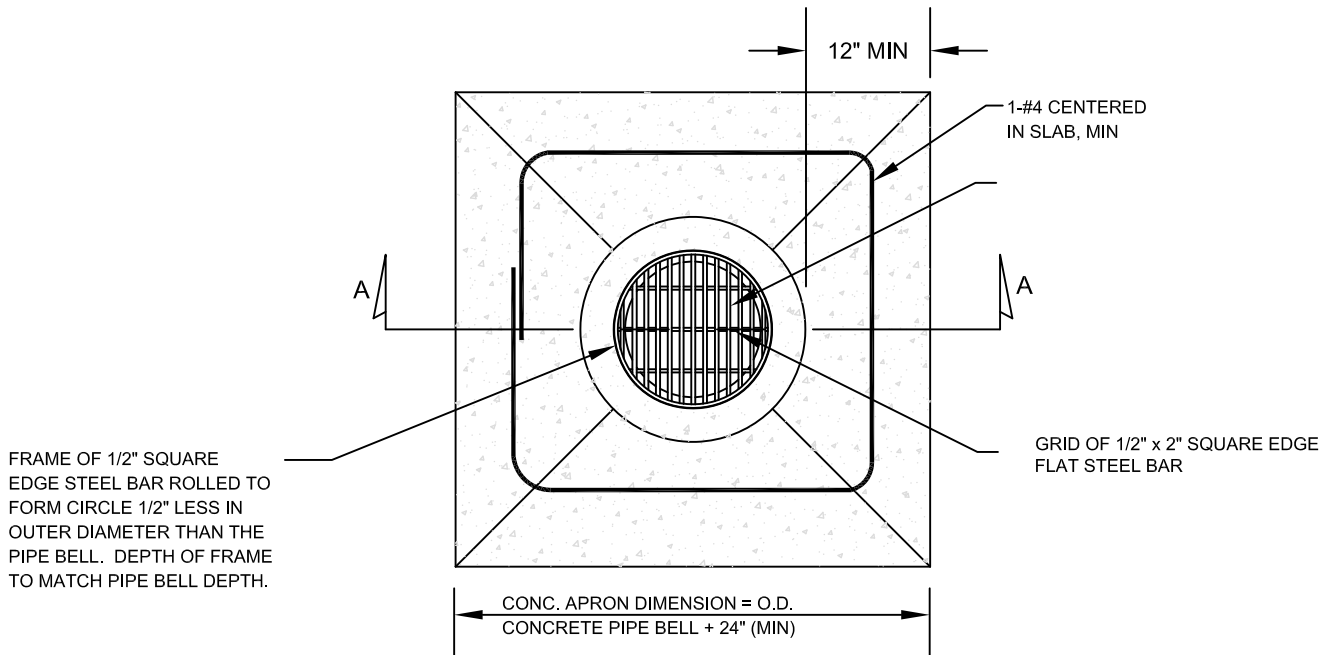
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**TYPICAL DITCH INLET
 AND GRATE**

DETAIL NO.

D-310

12/18/2020



NOTES:

1. GRATES SHALL BE CONSTRUCTED FOR BICYCLE SAFETY. PLACE 13" BARS ON TOP OF 3" BARS.
2. PRECAST CONCRETE CATCH BASINS MAY BE USED FOR AREA DRAINS WHEN APPROVED BY THE CITY.
3. NOT FOR USE IN VEHICULAR TRAFFIC AREAS.



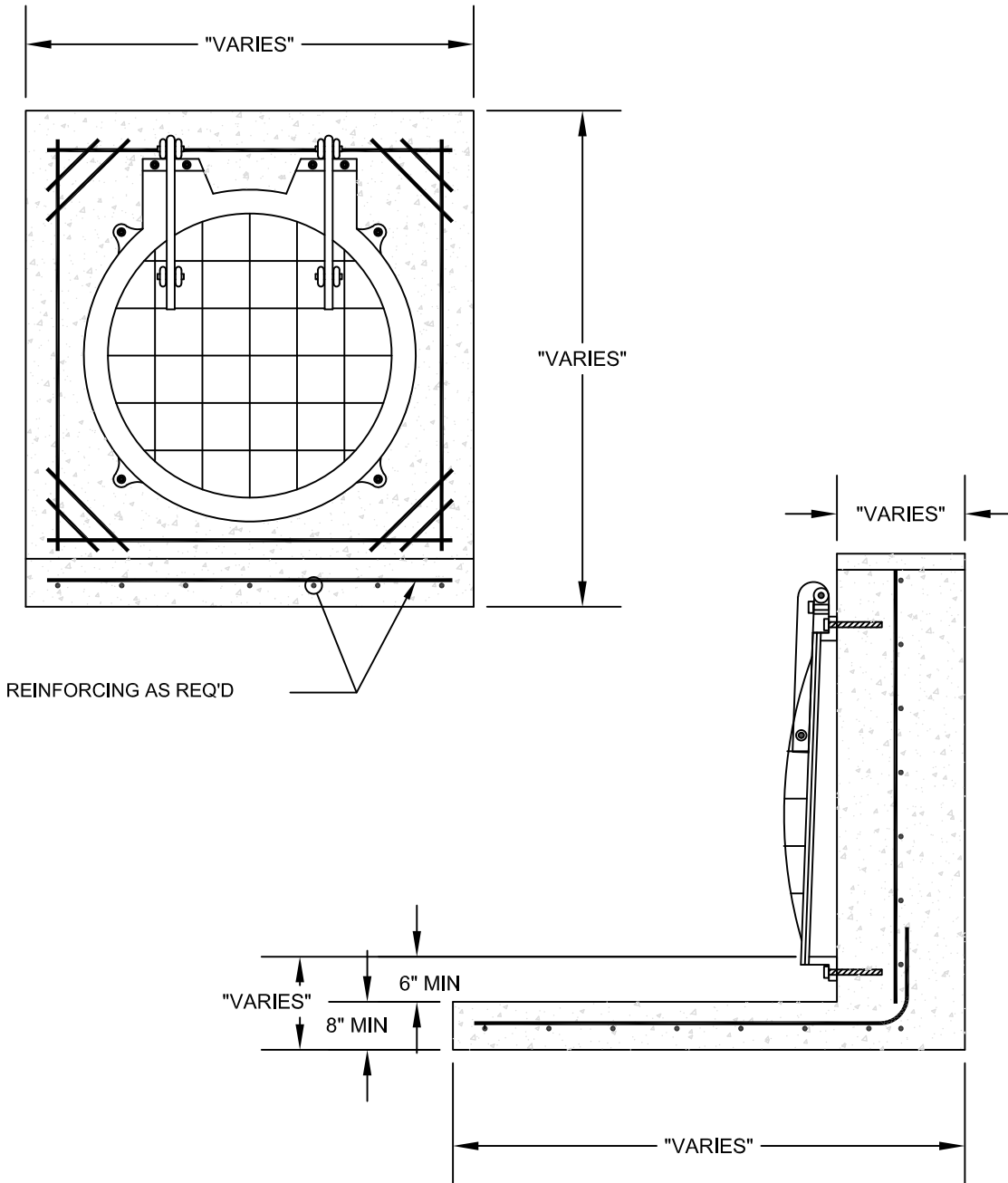
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TYPICAL AREA DRAIN INLET

DETAIL NO.

D-311

12/18/2020



REINFORCING AS REQ'D

NOTES:

1. OUTFALL HEADWALL SHOWN FOR CLARITY ONLY - ALL OUTFALLS SHALL BE SITE SPECIFIC AND SHALL CONFORM TO THE REQUIREMENTS OF ALL FEDERAL, STATE AND LOCAL REGULATIONS.
2. OUTFALL SHALL BE ABOVE THE MEAN HIGH WATER LEVEL EXCEPT AS APPROVED BY CITY ENGINEER. INSTALLATION OF TIDEGATE MAY BE REQUIRED WHEN OUTFALL IS IN A TAILWATER CONDITION.
3. ALL TIDEGATES, FLAPGATES OR OTHER OUTLET GATES INSTALLED ON SPECIFIC OUTFALLS SHALL MEET THE REQUIREMENTS OF ODFW, NOAA AND OTHER AGENCIES AS REQUIRED.
4. CONCRETE STRENGTH SHALL BE 3,300 PSI AFTER 28 DAYS.
5. PROVIDE REINFORCING AS REQUIRED.



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HEADWALL WITH TIDEGATE

DETAIL NO.

D-320

12/18/2020

**SECTION 6 –
STREETS**

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SECTION 6 - STREETS

PERFORMANCE STANDARDS

All street designs shall provide for the safe and efficient travel of the motoring public. Design streets to carry recommended traffic volumes identified for each street classification. Street classifications are set forth in the City of Newport Transportation System Plan (2022) and the Newport Municipal Code.

Design streets to meet or exceed the minimum guidelines set forth in the following documents, as well as all referenced documents cited within this Section:

- *Newport Municipal Code* and all amending ordinances
- *Newport Transportation System Plan* (City of Newport, 2022)
- Oregon Administrative Rules (OAR)
- *A Policy on Geometric Design of Highways and Streets*, 7th Edition (American Association of State Highway and Transportation Officials, 2018)
- *Manual of Uniform Traffic Control Devices* for Streets and Highways, 10th Edition (Federal Highway Administration, 2009), and all Oregon supplements
- *Highway Capacity Manual*, 6th Edition (Transportation Research Board)
- *AASHTO Roadside Design Guide*, 4th Edition (American Association of State Highway and Transportation Officials, 2011)
- *Public Right-of-way Accessible Guidelines* and appendices (U.S. Access Board, accessed 2023)
- *Oregon Standards and Specifications for Construction* (current edition)

The City of Newport plans and implements its transportation facilities to serve vehicular and non-vehicular users. Roadway designs shall be “complete streets” to serve all ages and all abilities both along and across the facility. Developers and design engineers are required to use the following street standards when planning, designing and constructing public and private street facilities, ROW, and public access facilities within the City of Newport.

Use these street standards to support the design and construction of land use requirements, exactions and mitigations within the City of Newport as well as public works projects implemented outside of the land use process.

CONFLICTS AND OBSTRUCTIONS

- **Utility Notification:** The contractor shall comply with the rules and regulations of the Oregon Utility Notification Center: OAR 952-001-0010 through 952-001-0090 and ORS 757.993.
- **General:** Contractor may encounter various obstructions during the course of the work. Obtain maps and information regarding underground utilities from the utility owning and operating such utilities, but the City does not guarantee the location of such utilities. If the contractor interrupts the utility services because of the construction operation, the contractor shall notify the utility owner and the City authorized representative immediately.
- **Protection:** The contractor shall exercise all due care in protecting existing underground and surface facilities and property along the route of the project. This protection shall include, but not be limited to, trees, yards, fences, drainage lines, mailboxes, driveways, shrubs, and lawns. Any existing facilities not specifically designated for alteration or removal that are damaged during construction shall be restored or replaced to an “in kind” or better condition, at the expense of the contractor.
- **Access:** The contractor shall maintain access to all property, including normal delivery service, mail

service, and emergency services.

- Abandoned Utilities: Properly remove, grout, or plug all abandoned utilities at the discretion of the City authorized representative.

DEVIATION FROM STREETS STANDARDS

The City of Newport provides for roadway designs that are flexible and reflective of their context while meeting current safety and operations standards. There may be times when compliance with the City of Newport Standards and Specifications is not desired or possible. If that occurs, the design engineer may petition the City Engineer for a case-by-case review. City Engineer may delegate review authority.

The City does not allow this standard-deviation process to override a Condition of Approval or any other requirement that is part of a finalized land use decision.

Except as provided elsewhere in other City codes, resolutions and land use actions, written requests for deviations from these streets standards shall be reviewed and may be granted by the City Engineer according to the criteria outlined in this document as well as the following additional review criteria for Streets Standards:

- The deviation is required due to extreme topography or natural resource constraints;
- The deviation is required due to inconsistencies with the function of the street and the adjoining land uses; and
- The request specifically addresses the deviation review criteria and those review criteria for the subject standard as provided within this chapter.

ROAD CLOSURES

See Section 1: General Specifications of the *Engineering Design and Construction Standards Manual*.

OREGON DEPARTMENT OF TRANSPORTATION (ODOT)

Within the City of Newport are both Oregon Department of Transportation (ODOT) and City of Newport ROW. With some exceptions (such as maintenance of rapid-flashing beacons), ODOT maintains ODOT ROW. For construction within ODOT ROW, designers are to utilize ODOT street standards. Designs will need approved ROW permits from both ODOT and the City. Submit approved ODOT ROW permit with the City ROW permit application. City permit will not be issued without an active ODOT ROW permit.

RIGHT-OF-WAY AND PAVEMENT WIDTH AND DEPTH

Please refer to City of Newport Municipal Code Table 14.44.060-A (shown below) for street classifications and widths. The adjacent table shows pavement and rock requirements for each classification.

NMC Table 14.44.060-A

FUNCTIONAL CLASSIFICATION	MINIMUM RIGHT-OF-WAY WIDTH	MINIMUM ROADWAY WIDTH
Major Collector	70 - feet	48 - feet
Neighborhood Collector	50 - feet	36 - feet
Local	50 - feet	36 - feet
Yield Street	40 - feet	24 - feet
Shared Street	30 - feet	16 - feet

Engineering Requirements

PAVEMENT THICKNESS	AGGREGATE DEPTH
6"	10"
6"	10"
4"	8"
4"	8"
4"	8"

ACCESS: EGRESS AND INGRESS

Please refer to City of Newport Municipal Code 14.46.030 (Approach and Driveway Standards).

TRAFFIC IMPACT ANALYSIS (TIA)

Please refer to City of Newport Municipal Code Chapter 14.45 (Traffic Impact Analysis Requirements).

The City Engineer will require a traffic analysis report as determined by the type of development and its potential impact to existing street systems. A traffic analysis will generally be required for a development in cases when:

- the development will generate in excess of one hundred (100) trips per AM or PM peak hour onto city streets or county roads, or
- a development's location, proposed site plan, and traffic characteristics could affect traffic safety, access management, street capacity, or known traffic problems or deficiencies in a development's study area.

Report and Study Objectives

A discussion of key traffic issues addressed by the new development and the transportation system and development objectives related to a specific development. General transportation system objectives are:

- To provide safe and effective transfer of vehicle traffic between site and street system;
- To maintain easy and safe traffic flow on surrounding street system;
- To provide convenient, safe and efficient on-site and off-site movement of vehicles, pedestrians, transit, service and delivery vehicles, and bicycles;
- To mitigate adverse site generated traffic impacts on affected streets and intersections. City may set site-specific objectives for each study.

The traffic study will identify and evaluate:

- Safety
- Existing volumes
- Forecast volumes
- System context (relationship of land uses with transportation system)
- Local context (ROW, design vehicle)
- Anticipated users
- Operations, and
- Corridor influences (upstream and downstream controls, railroad crossings, etc.).

Designers should identify and evaluate these components in order to facilitate a context sensitive design that implements current design standards, safety features, and efficient operations. Provide operational analysis for the existing traffic conditions, as well as the design year of the project based upon the City's current twenty-year planning model. Provide lane configurations, vehicle delays, queuing, and level of service results to support concept development as well as for the final chosen configuration.

Turn lane storage length shall be separately accounted for when providing the tapers and shall be based on the analysis of the design year's ninety-fifth (95th) percentile queuing.

The City requires submission of an operational analysis for traffic control other than roundabouts (i.e. traffic signals, stop signs) using Highway Capacity Manual methodologies except as otherwise allowed by

the City Engineer.

The Traffic Impact Assessment (TIA) shall include:

- **Executive Summary**
A concise summary of the following: study purpose/objectives, site location and study area, development description, key assumptions, findings, conclusions and recommendations.
- **Description of Site and Study Area Roadways**
Anticipated nearby development and committed roadway improvements, which would affect future traffic in the study area.
- **Study area definition**
All roads, ramps, and intersections through which peak hour site traffic composes at least 5% of the existing capacity of an intersection approach, or roadway sections on which accident character or residential traffic character is expected to be significantly impacted.
- **On site Traffic Evaluation**
An evaluation of the proposed (and alternative) site access locations, the adequacy of access drive depth, driveway lanes, and queuing storage, the safety and efficiency of proposed vehicular circulation, parking layout, pedestrian and service vehicle routes/facilities, together with recommendations for onsite traffic markings and controls.
- **Technical Appendix**
A technical appendix including worksheets, charts, and drawings to support findings described in the body of the report.
- **Recommendations for Public Improvements**
External roadway improvements recommendations, such as additional through lanes and turn lanes, and traffic control devices necessitated by new development including improvements to transit facilities, and pedestrian and bike circulation.

The recommendations should specify the time-period for making improvements, particularly if improvements are associated with a phased development, the estimated cost of improvements, and any needed monitoring of operating conditions and improvements. During the analysis, identify and report any needed unrelated street improvements to the development.

- **Access Management (see NMC 14.46, Vehicular Access and Circulation)**
On sites with arterial and major collector street frontages, the report shall evaluate and recommend the use of access management plans or techniques:
 - To separate basic conflict areas (reduce number of driveways or increase spacing between driveways and intersections).
 - To remove turning vehicles or queues from the through lanes (reduce both the frequency and severity of conflicts by providing separate paths and storage area for turning vehicles and queues).
 These techniques may include turn restrictions, striping, medians, frontage roads, channelization of lanes or driveways, shared driveways and access between similar uses, access consolidation, lanes for left or right turns, and other transportation system plan (TSP) actions.

- Offsite Traffic Evaluation
 - Offsite traffic should include:
 - Existing daily and PM peak hour counts by traffic movements at intersections effected by generated traffic from the development (use traffic flow diagrams).
 - Projected daily and PM peak hour volumes for these same intersections and proposed access points when the development is in full service. (Use traffic flow diagrams)
 - A determination of the existing levels of service and projected levels of service at each intersection and access points studied.
 - A discussion of the need for traffic signals. This should include a traffic warrant computation based on the current edition of MUTCD.
 - Base specific report recommendations on a minimum level "D" service with maximum volume to capacity (v/c) ratio of nine-tenths (0.90) when the development is in full service. As an example, if recommending a traffic signal, the recommendation should include the type of traffic signal control and identity signalized movements. If requiring a storage lane for right turns or left turns, the recommendation should include the amount of storage needed. If several intersections are involved for signalization and an interconnect system is considered, specific analysis should be made concerning progression of traffic between intersections.
 - The report should include a discussion of bike and pedestrian usage, safe route to schools, and the availability of mass transit to serve the development.

STREET COMPONENTS

Intersections

Locate connecting street intersections to provide for traffic flow, safety, and turning movements, as conditions warrant. Where signalized, design shall provide for optimal signal phasing. Consideration for arterial street progression, protected/permitted and permitted left turn phasing shall occur. New signal proposals in remote locations shall first include an evaluation of alternate applications such as roundabouts.

Intersection controls provide right-of-way guidance to motorists at intersections. Most local-to-local street intersections will utilize yield and stop controls as provided for in the MUTCD. The use of yield signs may provide the necessary right-of-way guidance at local street intersections. Considered yield signs prior to stop signs.

Higher order control forms may be necessary as volumes increase. These higher control forms include roundabout control and traffic signal control. Given similar present and future operational performance, roundabouts are preferred over traffic signal control. Although the City has implemented a 'roundabouts first' approach to intersection control form, flexibility is provided to consider other intersection control forms should there be issues identified during the traffic study that warrant further analysis.

The City Engineer will consider traffic signals only where shown to meet MUTCD warrants, and signals improve overall intersection safety and operation, as indicated by the traffic study. Place emphasis on satisfying Warrant 1, Eight (8) Hour Vehicular Volume, and Warrant 7, Crash Experience (using the three most recent years for which crash data is available). Perform warrant analysis using fourteen (14) hour traffic volumes based on actual counts.

Arterial Intersections

Provide exclusive left and right turn lanes and bus turnouts if traffic flow and safety conditions warrant; provide designated crosswalks at controlled locations. Street alignments across intersections shall be continuous.

Collectors and Local Street Intersections

Street and intersection alignments should facilitate local circulation but avoid alignments that encourage non-local, through traffic. Please see Newport Municipal Code Chapter 14.17 for a discussion of Clear Vision Areas and 14.44.060(G) for an explanation of required Intersection Angles.

Half Street Construction

Half street construction is not allowed (NMC 14.44.60, Streets, Pathways, Accessways and Trails, Section H). Modifications to this requirement may be made by the City Engineer to allow half streets only where essential to the reasonable development of the land division, when in conformity with the other requirements of these regulations and when the city finds it will be practical to require the dedication of the other half when the adjoining property is divided.

A development on an unimproved street shall be responsible for constructing a continuous City standard street connecting with the nearest standard (publicly maintained) street.

Permanent Dead-End Streets

Please refer to City of Newport Municipal Code 14.44.060(J), Cul-de-sac. See City of Newport Engineering Department Standard Drawing T-053.

Provide a standard cul-de-sac turnaround at the end of a permanent dead-end street that does not provide looped circulation. Permanent dead-end streets shall be limited to serving no more than twenty-five (25) dwellings and shall not exceed four hundred feet in length from the point of the nearest centerline/centerline intersection. See Standard Detail T-053, *Typical Cul-De-Sac Detail*.

A permanent dead-end street is measured from the right-of-way line at the nearest intersecting street which has at least two points of access, to the right of way line at the furthest end of the dead-end street.

Exceptions to the dead-end street standard must comply with the Newport Municipal Code. A cul-de-sac may terminate an existing dead-end street system which is more than 600 feet long or which serves more than twenty-five (25) dwelling units if no Future Street Plan is in place and design meets the following criteria:

- Alternative emergency vehicle access or fire protection is provided satisfactory to the Manager; and
- The proposed cul-de-sac termination of the street does not adversely impact neighborhood traffic circulation.

FIRE CODE REQUIREMENTS

This design handbook is not intended to provide an exhaustive explanation of fire code requirements. The Design Engineer is expected to be fully versed in fire code specifications and how they relate to the proposed development. However, there are a few specific requirements the City particularly wants designed into any street improvements proposed. They are as follows:

- Fire Department access route to be at least 20 feet wide, 26 feet for ladder trucks (OFC Section

D105)

- No height restrictions below 14 feet 6 inches
- Road surface: all weather with a weight rating of at least 70,000 lbs; weight rating of 80,000 lbs for ladder trucks
- Longitudinal grade no greater than 10%; exceptions can be made on a case-by-case basis (OFC Section D103.2)
- Turn arounds for dead end roads greater than 150 feet long, unless it's looped (OFC Section D103.4)

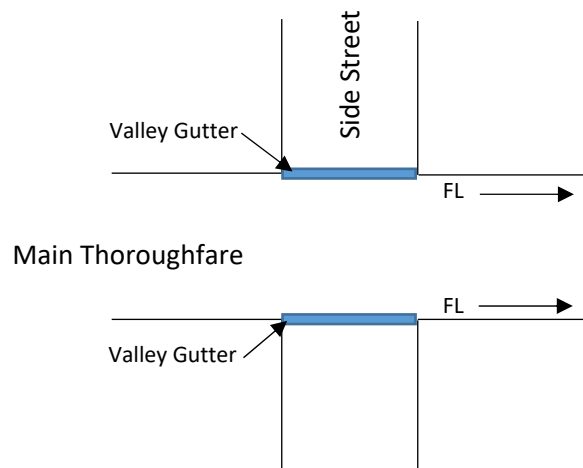
GUTTER FLOW LINES

Street Runoff

City Standard is to place the crown in the center of the street to shed water to storm system on either side of street. When street design includes an offset crown, crown shall be placed at meeting points (ie. between travel lane and parking lane, and not in a travel lane. See SECTION 6 of the Design Handbook for storm design requirements.

Valley Gutters at Intersection

Each intersection has a main road and a subordinate connecting road. At the intersection of these roads, the flow line of the main road controls elevation of the intersecting road. To keep storm runoff flowing down the main road, a valley gutter between the main road and the intersecting road will conform to the flow line of the main thoroughfare.



STREET CLASSIFICATIONS

The Newport Transportation System Plan classifies all streets within the City. The classification for any street not listed shall be that determined by the City Engineer.

DESIGN SPEED

The City provides standard design speed for each of the City's roadway classification designations.

Roadway Classification	Design Speed
Major Collectors	30 to 35 mph
Neighborhood Collectors	30 to 35 mph
Local	20 to 25 mph
Yield and Shared	20 to 25 mph
Alleys	15 mph

Where existing traffic conditions identify speeds in excess of design speeds listed, then use the higher speed for design purposes.

Design speeds shall be consistent throughout a cohesive segment of a roadway corridor. Strongly identify changes in design speeds from one segment to another through design feature changes to

encourage compliance with posted speeds and to model the street form after the abutting land use form.

Design engineers may request a standards deviation to utilize speeds outside of these design speed ranges to reflect changes in abutting land use but should not utilize a deviation to reduce the design speed for individual design elements within a cohesive roadway segment (e.g. a single horizontal or vertical curve).

Designers shall recommend a design speed within these ranges for a particular segment of roadway or roadway corridor. Consider the main factors abutting land use, the type and characteristics of multi-modal travel along-and-across the street, and the degree/style of access management that exists along the roadway segment. Supporting factors may include topography, safety and operations, queuing and intersection control type.

In general, the City brackets design speed into three broad categories:

1. slower speed residential and traffic-calmed commercial streets,
2. mid-range speeds that include commercial and industrial roadways, and
3. higher-speed rural roadways or limited-access highways.

When using higher-speed designs for roadways, the design may need to incorporate higher-level, multi-modal design features such as separated bike/pedestrian facilities, raised medians, and enhanced pedestrian crossing safety features. See the Newport Transportation Plan for information on multi-modal design features.

INTERSECTION SIGHT DISTANCE

Provide sight distance at intersections to allow drivers to perceive the presence of potentially conflicting vehicles, and to allow drivers of stopped vehicles a sufficient view of the intersecting roadway to determine whether to enter or cross it. Although Stopping Sight Distance allows drivers to anticipate and avoid collisions, drivers of major road vehicles may be required to stop or slow to avoid a collision with a minor road vehicle. Designing for longer Intersection Sight Distance enhances traffic operations and is required for all new intersections and driveways. Make adjustments for design vehicles and grades as appropriate.

To provide adequate intersection sight distance, specified areas along intersection approach legs and across their included corners should be clear of obstructions. The dimensions of the legs of these "Intersection Sight Triangles" are dependent on design speeds and type of intersection control. Refer to the 2004 American Association of State Highway and Transportation (AASHTO) "A Policy on Geometric Design of Highways and Streets", Chapter 9, and Exhibits 9-50 to 9-69 for information on these areas, (called Clear Sight Triangles in the manual).

Designers should coordinate with other disciplines as necessary to ensure that other roadway elements such as median or planter strip landscaping; do not obstruct the required sight lines.

INTERSECTION SIGHT DISTANCE VS. CLEAR VISION AREA

Similar to Intersection Sight Triangles, Clear Vision Areas are triangular areas adjacent to intersections intended to provide sight distance for conflicting traffic movements by establishing a prescribed area in which to prohibit sight obstructions. Note that Clear Vision Areas are a planning level tool and are described by fixed dimensions based on road type and land use zones. Clear Vision Areas do not take

into account vehicular speeds or intersection control, as do Intersection Sight Triangles. Intersection Clear Vision area is defined by Newport Municipal Code and City Standard Drawing T-600.

Clear Vision Area

Please refer to City of Newport Municipal Code 14.17.030 for further information. See Standard Drawing T-600 for various clear vision area layouts.

Intersection Sight Distance

It is the City's policy to have ROW applicant's Project Engineer evaluate safe intersection sight distance using the principles and methods recommended by the current edition of AASHTO. This policy shall apply to the design of new streets and driveways, as well as the placement of any object in the public ROW, including landscaping features. Unless superseded by the current version of AASHTO, the following minimum standards shall apply:

Intersection (and Driveway) Sight Distance

Intersection Sight Distance Design Speed (MPH)	Minimum Intersection Sight Distance (Feet)
15	145
20	195
25	240
30	290
35	335
40	385
45	430

Source: American Association of State Highway and Transportation Officials, *A Policy of Geometric Design of Highways and Streets* 2001, Fourth Edition, (based on AASHTO Case B2 and B3).

Sight distance shall be determined for each street approach to an intersection. A driver on the approach street should be able to see each vehicle on the intersecting street from the time that the vehicle is the sight distance from the intersection until the time that the vehicle reaches the intersection. The City does not allow poles, trees, and similar obstructions within the sight distance area unless designer can show that such obstructions do not prevent the continuous view of the vehicle approaching on the intersecting street.

Calculate site distance with the following assumptions:

- the driver's eye is fifteen (15) feet from near edge of nearest lane of the intersecting street
- the driver's eye is a height range of three-and-one-half (3.5) feet to seven and six-tenths (7.6) feet above the approach street pavement*
- the top of the vehicle on the intersecting street is three-and-one-half (3.5) feet above the cross-street pavement

*Meet the sight distance criteria throughout the range of driver's eye heights.

Traffic speed used in the calculation shall be the highest of the following:

- The design speed of the intersecting street;

- The posted speed of the intersecting street; or
- The measured eighty-fifth (85th) percentile speed of the intersecting street. Assume a design speed of zero where a stop sign or yield sign controls an intersecting street.

Where traffic signal control exists at an intersection or where a transportation master plan shows a future traffic signal, provide adequate sight distance for potential right turns on red. In some locations, maintenance of the required sight distance may require restrictions to potential development outside the public ROW. The Project Engineer shall demonstrate that adequate restrictions are in place (and enforceable by the City such as sight distance easements) to assure that the required sight distance can be maintained in the future.

At the time of construction plan submittal, the project engineer shall submit a stamped intersectional sight distance report for each new or modified intersection by a development, which generally includes a sketch, calculations, narrative, and photographs, for review by the City.

REQUEST FOR DEVIATION

The City will not allow modifications or exceptions to these standards unless approved by the City Engineer. Traffic control devices shall not eliminate the need for the appropriate sight lines without first receiving a design standards deviation from the City Engineer. The design deviation review for intersection sight distances shall include the following criteria:

- Ability to design intersection at a different location that provides adequate sight distance;
- Ability to provide sight triangles across adjacent property;
- Complexity and level of uniqueness of proposed intersection;
- Extent of access control, number of accesses within functional area of intersection;
- Concentration of travel demand in area;
- Amount of visual clutter or distractions;
- Crash history in the vicinity of the proposed intersection;
- Prevailing speeds on all uncontrolled approaches;
- Traffic volumes and truck percentages.
- Tangent approaches shall be required at all intersections.

SIGHT DISTANCE OBSTRUCTIONS

Identify intersection sight triangles and Clear Vision Areas early in the design process and show on the plans. Sight obstructions between sight lines two (2) and eight (8) feet above curb grade are not permitted within these areas. Show existing obstructions on the plans and identify for removal or relocation. Designers may be required to provide sight distance profiles, if deemed necessary by the engineer, to demonstrate that design meets AASHTO requirements.

Roadways design that extend to and through adjoining properties: designers shall demonstrate roadway extension with centerline profiles for horizontal and vertical geometry while meeting the City's standards or shall adjust the design to allow for the continuation of the roadway.

Where sight triangles extend across private property, acquisition and execution of a recorded "Intersection Sight Triangle" easement is required. Such easements granted to the City of Newport limit the height of vertical features, including but not limited to buildings, walls, fences, berms, signs, roadside terrain and trees/vegetation. If developer cannot provide easements, alternative roadway alignments may be necessary.

Landscaping / Vegetation

Landscaping designed, or natural scape retained, within the Clear Vision Zone is subject to on-going property owner maintenance as defined by NMC Section 8.10.060 and NMC Chapter 14.17.

STREET GEOMETRY

Designers shall align street intersections at right angles when possible except where topography or existing geometric constraints requires a lesser angle. In no case shall the acute angle be less than 80 degrees.

Cross streets that intersect arterial or collector roadways shall have their centerlines aligned. City does not allow centerline offsets unless there is a median on the arterial or collector roadway that creates two tee-intersections.

For dedicated right-turn lanes on approaches to signalized and roundabout intersections, the design engineer shall design turn lanes to incorporate pedestrian islands to minimize the impact of the additional crossing width of the roadway and intersection.

Pedestrians with total blindness cannot easily navigate channelized turn lanes. Provide adequate way-finding, orienteering, and reduced speed approach speeds in order to be fully accessible. Gap identification supplements (eg. truncated domes) may be necessary.

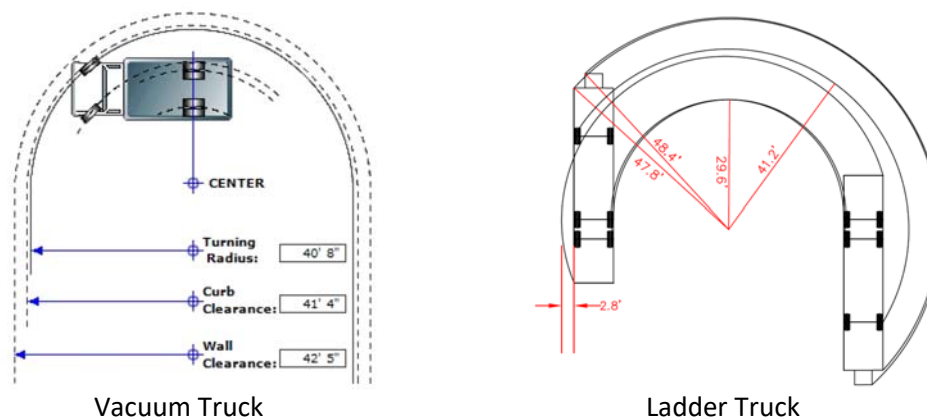
LOCAL STREET DESIGN FOR ADVERSE TOPOGRAPHY

Local streets shall have a minimum cross section slope of two-and-one-half (2.5) percent ("crown") in accordance with Standard Drawings T-051 and T-051A, except in situations of adverse topography. The Design Engineer may utilize a "shed" section when existing ground slope exceeds five (5) percent across the roadway section.

Base existing ground "side slope" criteria on the relationship of ground slope to transverse slope of roadway profile. Continue slope relationship for entire length of roadway alignment.

TURNING RADIUS

The City of Newport has several large pieces of equipment that need to maneuver around corners, through neighborhoods, and in cul-de-sacs. One is the PWKS 2010 Vacuum Truck, another is the Fire Dept's Ladder Truck.



Streets needs to be designed to allow these and other large trucks ease of movement.

CURB RADIUS AND CURB RETURNS

Design curb returns and corresponding grades and transitions to ensure drainage of the intersection, with no standing water. Note grades on each quarter delta of the curb return.

The minimum curb radius shall be as follows:

Curb Return Type	Minimum Curb Radius
Local, Yield, and Shared	15 feet
Collector-Neighborhood	25 feet
Collector-Major	35 feet
Minor arterial – Major arterial	55 feet

Where a designing a radius larger than thirty-five (35) feet, or where site constraints warrant, a three (3) centered symmetric compound curve shall be used. Design three-centered symmetric compound curves only on ROW sufficiently large to accommodate twelve (12) feet minimum between curb face and the property line. The radii of the 3-centered symmetric compound curve shall be one-hundred-twenty (120) feet forty (40) feet one-hundred-twenty (120) feet. Develop the offset of the forty (40) foot radius determined by the design vehicle as follows:

Design Vehicle	Offset
SU	2 feet
BUS	3 feet
WB-40	4 feet
WB-50	5 feet
WB-67	6 feet

HORIZONTAL/VERTICAL CURVES AND GRADES

Design all horizontal curves to the current version of the American Association of State Highway and Transportation Officials (AASHTO) Manual. Further, design horizontal curve radius (on centerline) for each street classification according to the roadway design speed. The radius shall not be less than the following:

Design Speed (MPH)	Radius (Feet)
25	180'
30	300'
35	450'
40	670'

Design criteria for vertical curve length shall include:

- Design speed
- Crest vertical curve
- Sag vertical curve – base stopping sight-distance for crest and sag vertical curves on sight distance and headlight sight distance, respectively. All vertical curves shall be parabolic and the length computed for each location and designed to the current version of the American Association of State Highway and Transportation Officials (AASHTO) Manual.

HORIZONTAL ALIGNMENT

Cross slope

Standard normal cross slope is two (2) percent straight line with a crown in the center of the roadway. Unless approved by the City Engineer, cross slopes shall not exceed four (4) percent.

Standard roadway alignment shall place the centerline of the roadway at the centerline of the right of way. This may lead to a negative super-elevation for some relatively flat curves. Pay particular attention to the design of downhill left turns and downhill left turns on rightward turning curves to eliminate overturning hazards.

Super-elevation

Use super-elevation only as a design element to enhance drivability of horizontal curves on arterial and collector roadways. Super-elevation design is typically around the road centerline in conformance to AASHTO's 2004 Exhibit 3-40 (A). The use of super-elevation for other purposes, or on local streets, shall require a design deviation from the City Engineer.

The maximum design super-elevation shall be six-hundredth (0.06) ft/ft, however in conditions where traffic operations frequently limit travel speeds to below the design speed, the maximum design super-elevation shall be four-hundredth (0.04) ft/ft four (4) percent to reduce the possibility of sliding during snow and ice conditions. Minimum design super-elevation shall be two-hundredth (0.02) ft/ft two (2) percent.

Horizontal Curves

The minimum radius of curvature for a particular super-elevation rate shall be calculated using AASHTO's 2004 formula 3-10 and those values presented in AASHTO's 2004 Exhibit 3-15 and 3-16.

Street Class	Design Speed (mph)	Friction Factor (f)	Super Elevation, e (%)						
			-2.0	0.0	2.0	3.0	4.0	5.0	6.0
Local, Yield, and Shared	15	0.38	50	47	44	43	42	Not Recommended	
	20	0.27	107	99	92	89	86		
	25	0.25	198	180	167	160	154		
Collector	30	0.20	333	300	273	261	250		
	35	0.18	510	454	408	389	371		
Arterial	40	0.16	762	667	593	561	533		508
	45	0.15	1039	900	794	750	711	675	643

Avoid compound horizontal curves on streets having a design speed of greater than 30 mph. If a compound curve is necessary, the ratio of the flatter radius to the sharper radius should not exceed the following:

- 31 – 49 mph design speed two-to-one (2:1)
- 50 + mph design speed one-and-one-half-to-one (1.5:1)

Where the ratio exceeds these limits, insert a suitable length of spiral or a circular arc of intermediate

radius between the two curves.

Adjustments for traveled way widths shall be provided based on AASHTO's 2004 Exhibit 3-48 and 3-50 in order to reduce the amount of off-lane tracking on horizontal curves for the design vehicles ranging from bus to semi-tractor trailer combinations.

On all streets with a design-speed greater than thirty (30) mph there shall be a minimum one hundred (100) foot tangent section between reverse horizontal curves.

VERTICAL ALIGNMENT

Sight Distance

Vertical curves shall conform to the AASHTO design criteria and be designed to provide at least the stopping sight distance shown in AASHTO 2004 Exhibit 3-1. Consider these distances minimums; City recommends additional sight distance to provide drivers with additional margin for error. Drivers need longer decision sight at critical locations such as those with concentrated demand, visually cluttered localities, at changes in cross-section, or at intersections where unexpected or unusual maneuvers are required. AASHTO 2004 Exhibit 3-3 provides decision sight distances for various maneuver types.

GRADES

Minimum Grades

To allow for adequate drainage, the minimum longitudinal tangent grade is 0.0050 feet per foot (0.50%) however, in all cases street grades shall allow for proper and adequate drainage. Cul-de-sac "bulbs" shall have a minimum slope of 0.0060 feet per foot (0.60%).

Maximum Grades

Street grades shall be determined with consideration of topographical conditions and relation to existing and planned streets. Where intersections occur on roadway sections with moderate to steep grades, reduce grades through the intersection wherever practical to facilitate vehicular turning movements and reduce the potential for crashes.

Roadway Classification	Maximum Permissible Grade
Arterial	0.060 ft/ft (6%)
Major Collector	0.080 ft/ft (8%)
Neighborhood Collector	0.100 ft/ft (10%)
Local, Yield, Shared, Cul-de-sac	0.120 ft/ft (12%)

Exceptions:

- Grade breaks – City permits grade breaks within a corridor, but are not to exceed one (1) percent every one hundred (100) feet.
- Hillsides – Street grades on hillsides exceeding fifteen (15) percent slope may exceed maximum street grades, subject to Fire Department approval.

Local and cul-de-sac streets may exceed twelve (12) percent, but in no case permitted to fifteen (15) percent. The City Engineer may approve a grade greater than twelve (12) percent when all of the following conditions exist:

- Topographic constraints do not allow the development served by a street with a maximum grade of twelve (12) percent without causing destabilization of soils by excessive cuts and fills.
- There is no access to the developing property through adjacent properties at a maximum twelve (12) percent grade.

- The local street section will not exceed a combination of length, horizontal alignment, and/or grades exceeding twelve (12) percent will create hazardous traffic conditions. IV. In no case shall the maximum street grade exceed fifteen (15) percent.

Cross Slopes

Street cross slopes shall be as shown in street typical section Standard Drawings T-051 and T-051A.

PAVEMENT DESIGN

Construct all streets with asphaltic concrete.

Typical flexible pavement thicknesses will be as shown in Standard Drawings T-050 and T-050A. This will apply only to local streets and lower classifications. Rigid pavement thickness shown on Standard Drawing T050B.

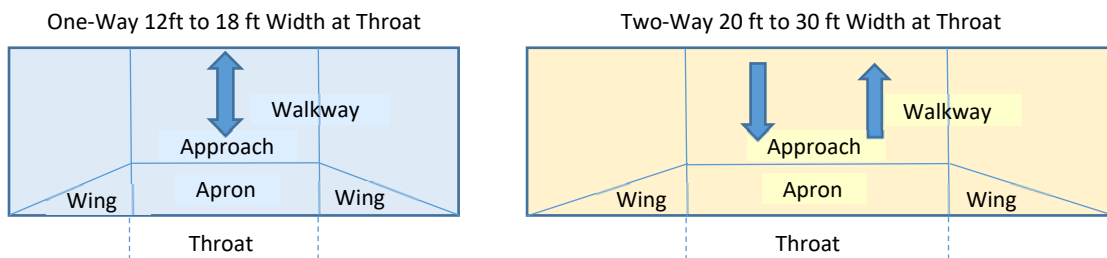
The Design Engineer will provide a street structural design section for all roadways classified as "Major Collector" or "Neighborhood Collector" and higher, and for local streets in industrial zones, see Standard Drawing T-050A. Minimum standards for roads classified as "Local", "Yield", or "Shared" shall be as shown in Standard Drawing T-050. For concrete street sections see Standard Drawing T-050B

OTHER RIGHT-OF-WAY DESIGN ELEMENTS

Please see Newport Municipal Code Chapters 14.46 (Vehicular Access and Circulation), 14.47 (Pedestrian Access) and Chapter 14.48 (Land Divisions)

DRIVEWAYS

A "driveway" is a private way that begins at a public ROW. The driveway is proposed to serve not more than four individual lots/parcels cumulative as the primary vehicular access to those individual lots/parcels. (NMC 14.01.020, Definitions, "Private Street" and "Private Driveway"). City Staff do not maintain roads serving four or fewer developed lots as they are considered private driveways.



Driveway Design

Driveways in the ROW are required to be perpendicular to the ROW line. When designing a garage, building elevations need to consider how the car will transition from existing street grades to finish floor elevations using a perpendicular ADA compliant driveway. Designing a driveway after a house plan has been devised may make it impossible to get a car in the driveway if the slope between street and building is too steep. Finish floor grades need to be adjusted to accommodate driveway transitions.

The locations of new driveways shall be approved through land use and through a ROW permitting process. The City Engineer will base a driveway review on the following considerations:

- Limit of one (1) one-way driveway per single-family Lot

- Multi-residential unit driveways may require a commercial, twenty (20) foot throat, and require rebar
- Lot location
- Corner lot – more constraints than mid-block driveways
 - Access is to the lowest classified roadway facility abutting the property);
 - Adequate intersection sight distance for all turning movements in and out of the proposed driveway are provided;
 - Clear Vision Zone thirty-five (35) feet back
 - Maximum distance to an intersection is provided given the lot configuration and site layout;
- Proximity of proposed driveway to property line and adjacent property driveway
 - Top of wing begins a minimum on two-and-one-half (2.5) ft from adjacent property line
 - Allow full-height six (6) inch curb between driveways
 - Allow room for catch basin, if needed
 - Create a smooth walkway transition
 - Design for easy constructability
- Five (5) foot wings: transition from six (6) inch reveal to one (1) inch lip
- Driveway apron shall extend all the way to the ROW.
- Road Slope both longitudinal and cross
- Apron has maximum twelve (12) percent slope
- Minimum depth walkway: four (4) foot through driveway
- Minimum depth apron: two (2) foot behind curb
- Minimum one (1) inch lip across driveway throat
 - To maintain gutter flow
- Elevation at back of driveway
 - Elevation below street grade – drop panel or partial drop panel; rotate sidewalk/apron
- Maximum sixteen (16) percent grade break in combined street cross slope and apron slope
- Green Strip
 - Three (3) Foot wings
 - Apron depth varies
- There is a valid land use approval for the driveway (or it is confirmed that no land use approval is necessary for the driveway in question);
- Driveways shall not compromise safety and operations;
- Where a proposed driveway is across the street from another driveway, alley, or street, align the path of travel, where possible.
- Concrete driveway approaches are required on all new construction or reconstruction where there is existing or proposed sidewalk or curb.
 - City permits asphalt driveways where sidewalk or curb is not existing or proposed, as approved by the City Engineer.
- New alleys or reconstructed alleys must have a driveway approach at the intersection of the alley and roadway.
- Proposed driveway approach ensures that all drainage is contained on-site.
- Design standards deviation requests to consider a curb return rather than a driveway approach may be considered by the City Engineer in accordance with the following specific driveway review criteria:
 - Design vehicle for site is too large to accommodate turns within the standard driveway apron; and
 - All site drainage is still contained on-site.

Define permitted access to private property with the use of driveway curb cuts. Street access points shall be the minimum necessary to provide egress/ingress while not inhibiting the safe circulation and carrying capacity of the street.

On Major Collector streets and above, one driveway per site frontage will be the normal maximum number. Double frontage lots and corner lots on these streets may be limited to access from a single street, usually the lower classification street. For the City Engineer to approve additional driveways on frontage roads there must be a finding that no eminent traffic hazard would result and impacts on through traffic would be minimal; restrictions may be imposed on additional driveways, such as limited turn movements, shared access between uses, closure of existing driveways, or other access management actions.

Driveway approach types shall generally be limited to those shown in the Standard Drawings for residential driveways, and commercial/industrial driveways. Residential driveways shall conform to Standard Drawing T-151 & T-151; commercial / industrial driveways shall conform to Standard Drawing T-152. City Engineer shall approve curb return for driveway approaches.

For classification of Major Collector and above, driveways adjacent to street intersections shall be located beyond the required queue length for traffic movements at the intersection. If this requirement prohibits access to the site, City Engineer may allow a driveway with restricted turn movements.

Driveway grades shall not exceed twelve (12) percent from the curb line to the front edge of sidewalk. Place a one-half (½) inch to one (1) inch curb lip across driveway. See NMC 14.46.030 for Access Spacing Standards.

Widths (Minimum/Maximum in Feet)

Street Classification	Residential Zone	Commercial Zone	Industrial Zone
Principal Arterial	NA ¹	12/30 ⁵	12/40 ⁵
Major Collector	NA ¹	12/30 ⁵	12/40 ⁵
Neighborhood Collector	12/18 ²	12/30 ⁵	12/40 ⁵
Local, Yield, Shared	12/18 ²	NA ¹	NA ¹
Cul-de-sac	12/18 ²	NA ¹	NA ¹

NOTES:

¹Special conditions may warrant access.

²Twenty-Eight (28) foot maximum with three (3) car garage (measured at low curb cut)

³For frontage greater than 130/ft. one additional curb cut permitted.

⁴Build to Minor Collector standard.

⁵Certain businesses may warrant one additional curb cut for service driveway.

For classification of Major Collector and above, driveways adjacent to street intersections shall be located beyond the required queue length for traffic movements at the intersection. If this requirement prohibits access to the site, City Engineer may allow a driveway with restricted turn movements.

Within commercial, industrial, and multi-family areas, shared driveways and internal access between similar uses are encouraged to reduce the access points to the higher classified roadways, to improve internal site circulation, and to reduce local trips or movements on the street system. Establish shared driveways or internal access between uses by means of common access easements at the time of

development.

Sidewalk Through Driveways

Sidewalks shall travel through City Standard driveway aprons at sidewalk grade by segmenting the driveway with the sidewalk. To maintain their effectiveness, detectable warning surfaces should not typically be used where an accessible route of travel intersects a residential or commercial driveway entrance or within a parking lot. However, the City reserves the right to require detectable warning surfaces at certain high-volume commercial entrances that may function like a roadway.

- The minimum sidewalk width through driveways is four (4) feet for construction within the City of Newport. The design shall provide sufficient horizontal and vertical control and the drawings annotated to ensure that driveway conforms to federal, state, and local accessibility standards.
- ADA-compliant walkway required even when not constructing sidewalk adjacent to driveway.*
- On five (5) foot sidewalks, increase driveway depth by one (1) foot to allow a two (2) foot apron and a four (4) foot walkway. See Standard Drawing T-150.
- On six (6) foot sidewalks, driveway depth shall match sidewalk depth with a two (2) foot apron and a four (4) foot walkway. See Standard Drawing T-150.

Drop Panel Driveways

In areas where the existing ground falls away at back of driveway, design drop panel driveways to maintain ADA walkway requirements. In all other situations, design driveways with city standard rising apron and plane-through walkway. See Standard Drawings T-151. Drop panel wing lengths shall conform to ADA requirements for maximum running slopes.

Commercial Driveways

In areas with heavy traffic such as commercial, industrial, and multi-family areas, reinforced concrete is required for driveways. See Standard Drawing T-152. A commercial driveway may be a one-way or two-way driveway.

SIDEWALK

The City of Newport, in association with the Americans with Disabilities Act (ADA) *Transition Plan for Curb Ramps and Sidewalks in the Public Rights-of-way* August 2013 and the 2016 – 2018 *ADA Transition Plan for Curb Ramps in Public Rights-of-Way update* wants to make sidewalks accessible to everyone. The City has developed the following design guidelines and policy in association with the United States Code of Federal Regulations (CFR) (See 28 CFR 35). The *2010 ADA Standards for Accessible Design* (<https://www.ada.gov>) for helping meet Federal ADA requirements set forth in *Public Rights-Of-Way Accessibility Guidelines* (<https://www.access-board.gov>). Curb ramps are required for both new construction and most reconstruction projects. Additionally, maintenance operations or approved privately-funded (public) improvements may require upgrades, roadway surface alterations or addition of ADA facilities. See Standard Drawing T-210 for sidewalk details.

Sidewalk construction and location details shall be as shown on the Standard Details. The City does not permit asphalt sidewalks. Developers may use asphalt multi-use trails in place of sidewalks as planned in the City's Transportation System Plan. It is not desirable to have two parallel facilities (sidewalk and trail) therefore, when replacing the sidewalk, the trail shall conform and meet all sidewalk requirements as outlined herein.

Sidewalks shall be located within the ROW. If design engineer desires a deviation to this location then a

request shall be made of the City Engineer. Deviation considerations shall include these specific criteria:

- The centerline of the sidewalk shall not meander more than thirty-five (35) feet from the street curb line; and
- Where topographical or vegetation limitations require, fifteen (15) foot public access easements, seven-and-one-half (7.5) feet each side of centerline, shall be provided.
- Sidewalk shall be five (5) to six (6) feet in width as required by the Newport Municipal Code.

The pedestrian zone, which includes sidewalks and pathways, must remain free of obstacles. Obstructions include, but are not limited to, fire hydrants, mailboxes, utility pedestals, utility poles, utility vaults, trees, sign posts and signs, street light poles, signal poles, and signal control equipment. Where wide sidewalks exist, place above ground obstructions as close as possible to curb to clear and maintain a pedestrian corridor at least four (4) feet wide.

In areas where there will be industrial use and small equipment driven over the sidewalk, rebar reinforced concrete may be required (eg. in front of the fish plants along Bay Boulevard).

Stamp all new curbs to indicate where each water service, sanitary lateral, storm lateral, and irrigation line crosses beneath curb line. Stamped impressions shall be as follows: water service—"W", sanitary lateral—"S", storm lateral—"D", and irrigation lines—"IR". Impressions shall be two (2) inch high, on top of the curb, and shall accurately locate service below stamp.

Wedge Walls

Sidewalk adjacent to adverse sloping ground may need extra support to stabilize walk and base rock. The City allows for installation of a concrete wedge with extended back edge, known as a wedge wall. See Standard Drawing T-202 for depth and shape.

Pony Walls

Pony walls are short, under twelve (12) inches, non-engineered retaining walls used to protect the back of walk. See Standard Drawing T-202.

Obstructions

Structures and obstructions including but not limited to fire hydrants, street signs, utilities, utility poles, signal poles, central delivery mailboxes, and individual mailboxes shall not be located in the accessible path of travel portion of the sidewalk.

Horizontal Alignment

Construct sidewalks abutting property line with the back of walk at twelve (12) inches from property line within the ROW. Designers may meander sidewalk from the property line if there is room between property line and curb. Sidewalk does not need to be curb tight. Green strips may be used as landscaping around winding sidewalks.

The sidewalk shall generally follow a smooth and gradual alignment free of sharp angles or bends; horizontal curves shall not be less than twenty (20) foot radius.

Vertical Alignment

Sidewalk grades shall comply with Public Rights-of-Way Accessibility Guidelines. Changes in vertical elevation of the sidewalk with respect to the roadway's running curb elevation can lead to difficulties in achieving ADA compliance with running slopes and ramp slopes.

The total vertical separation between the top of curb and the top of the sidewalk influences roadside grades and cross-slopes of planter strips.

When a curb-tight sidewalk is constructed, the total vertical separation between the top of curb and the top of sidewalk shall be zero (0) feet – the sidewalk shall be flush with the curb.

SURFACE ALTERATIONS

A roadway **alteration** includes activities such as reconstruction, rehabilitation, resurfacing, widening, and projects of similar scale and effect (See 2010 *ADA Accessibility Standards*, section 106.5). Designers should not consider maintenance activities, such as filling potholes, minor pavement patching, and limited trench cuts for utilities as alterations. However, activities that occur within a street level pedestrian walkway (a marked or unmarked crosswalk) may not reduce the path's accessibility (See 28 CFR 35.133(a)). A street-level pedestrian walkway (e.g. marked or unmarked crosswalk), regardless if curb ramps are currently present, is where pedestrians would cross an intersecting road.

ENCROACHMENTS

Sidewalk designs that include encroachments on City of Newport property or ROW will require completion of an License to Encroach form and review. Encroachment permit requests will be reviewed against NMC Chapter 9.15 (Encroachment Permits).

CONCRETE CURB

All development projects will be required to construct street improvements with concrete curbs meeting the following criteria:

- Joint spacing in curbs shall be fifteen (15) foot maximum for contraction joints and forty-five (45) foot maximum for expansion joints. In addition, expansion joints shall be located at all curb return points and at driveway curb-drop transition points.
- Provide a minimum of two drainage block outs to accommodate 3" drainpipe for each lot.
- Do not use valley gutters except when designing inverse crown alleys or other special conditions as approved by City Engineer. See Standard Drawing T-302.
- Extruded curb not used on public streets. Use in ROW only with City Engineer Approval. See Standard Drawing T-303.
- Surmountable curb Standard Drawing T-301.
- Monolithic sidewalk-and-curb prohibited.

C Curb

In places where C curb is already in place, install new curb to match existing C curb.

Curb and Gutter

The City of Newport prefers curb and gutter installation for all new development.

Mountable Curb

Mountable curb is used in areas where there is a high likelihood of normal traffic driving over the curb (eg, a roundabout). Mountable curb may be used in other circumstances with City Engineer approval.

Curb Endings

Curb endings are tapered to avoid creating a tripping hazard. If a curb ends in an area where no further

curb will be installed, taper the ends to avoid an abrupt edge.

Weep Holes

Weep holes are used to drain water from behind a curb to the street drainage system. Weep holes must have a minimum of two (2) inches of concrete cover to avoid cracking the sidewalk. Weep holes must also be an inch above the flow line along the curb to insure that leaves or other debris floating along the flow do not clog the weep hole. See Standard Drawing S-210.

CURB RAMPS, CROSSWALKS, AND CURB EXTENSIONS

Curb Ramps

All new street intersections shall provide sidewalk ramps (for access) that meet the requirement of the Americans with Disabilities Act (ADA). In residential areas, the ramp will be located at the midpoint of the curb return. On streets classified above local or cul-de-sac, ramps may be required at different locations within the curb return. It may also be required to construct two (2) ramps at a curb return when a different location is required. Retrofit of existing ramps within the project limit may be required.

Design sidewalk ramp locations with regard to storm water flows, street grades, and pole locations. Other factors may also dictate sidewalk ramp location. See Standard Drawing T-211 and T-212 for standard locations.

Exceptions to ADA requirements may be granted in some circumstances. See ADA Ramp Design Exception Form 211.A at end of this Section.

All required curb ramps must meet the *Public Rights-of-Way Accessibility Guidelines* published by the U.S. Access Board. The City, by this reference adopts *Public Rights-of-Way Accessibility Guidelines* into its standards.

Curb ramps are required where a pedestrian walkway (e.g. a sidewalk or trail/path) with a *prepared surface* intersects a roadway. *Prepared surfaces* may include concrete, asphalt, or other compacted materials such as soil and granite. Concrete and asphalt are the two most common *prepared surfaces* found in Newport. Conditions for curb ramp construction:

- If any new construction, or reconstruction, impacts a curb where a pedestrian walkway (e.g. a sidewalk or trail/path) intersects a roadway then a new ramp or replacement of an existing non-compliant curb ramp must be constructed.
- If any work includes resurfacing through a street level pedestrian walkway (e.g. marked or unmarked crosswalk), even if the work is not the full width of the roadway, then curb ramps must be built or reconstructed on both ends of the crosswalk.
- If any sidewalk work connecting to an existing non-compliant ramp that requires modification to any portion of the ramp to meet current sidewalk design standards, then the City requires reconstruction the entire ramp to current standards.
- If any utility trench work impacts a curb at a cross walk, with or without a ramp, then the City requires replacement of existing non-compliant curb ramp or construction of new ramp if none exists.
- If utility trench work does not impact a curb ramp but is “limited to a portion of the pavement, including a portion of the cross walk,” replacement of an existing non-compliant curb ramp may not be required (depending on overall project scope and required pavement restoration limits).

Any land use application for new development, that includes requirements for sidewalk construction or

frontage improvements, to meet current City Standards, the City Engineer will review all curb ramps along the property frontages for compliance with current standards. Applicants will be required to bring any non-complaint curb ramps along the property frontage into compliance. This requirement must be included as a condition of approval in the land use decision.

Number and Direction of Curb (ADA) Ramps

The City prefers each new intersection designs contain a perpendicular curb ramp on narrow sidewalks with small radii allowing room for wheel chair turns within the crosswalk area of street, unless site conditions require modification. If site conditions prevent the use of directional ramps, the design engineer must provide documentation to the City Engineer for review and approval.

When perpendicular ramps are installed the striping of adjacent crosswalks is also required to provide the safety area within the roadway required by perpendicular ramps.

See Standard Drawing T-214 for truncated dome placement.

Design Details

Design curb ramps to fit the site; detail curb ramps on constructions plans. The City may require that curb ramps be designed and stamped by a professional engineer as part of any permit application. Complete *Design Criteria For New Ramps* form at end of this section. Submit design form with plans for review.

The design must provide sufficient horizontal and vertical control, with the drawings annotated to ensure that ramp conforms to federal, state, and local accessibility standards. Design curb ramps with corresponding grades and transitions to ensure positive drainage of the intersection. Note grades including running slopes and cross slopes on each quarter delta of the curb return. The City may require that curb ramps be designed and stamped by a professional engineer as part of any permit application. To assist in the City's review of plans and for contractors and observation staff to ensure compliant and quality ramp construction, designers are required to show the following information in plans:

- **Running slope** (parallel to path of travel) percentage and direction
- **Cross slope** (perpendicular to path of travel) percentage and direction
- **Control points** with finished grade and top of curb (where applicable) elevation information
Control points may include throats of ramps, top and bottom of ramps and landings, tie-in points to match existing or other proposed features, and any wings or curb returns. Per *Public Rights-Of-Way Accessibility Guidelines*, the absolute legal maximum constructed slopes allowed are:
- **Dimensions** of features (e.g. length and widths of ramps and landings)

Per *Public Rights-of-way Accessibility Guidelines*, the absolute legal maximum constructed slopes allowed are:

- $\leq 8.3\%^*$, twelve horizontal to one vertical (12:1) run/rise, for a **running slope** (parallel to the direction of travel); and
- $\leq 2.0\%$, forty-eight horizontal to one vertical (48:1) run/rise, for **cross slope** (perpendicular to the direction of travel).*

*The City standard cross slope is one-and-one-half (1.5) percent to allow for tolerance during construction.

The City recognizes that when curb ramps are constructed in the field some tolerances from the design may occur; designers are directed to use the following maximum design values to ensure the

constructed ramps and sidewalks will follow *Public Rights-of-Way Accessibility Guidelines* required absolute maximum slopes:

- For **running slope** (parallel to direction of travel) the maximum design value should be 7.5%, curb ramps and transition ramps are not required to be longer than fifteen (15) feet.
- For **cross slope** (perpendicular to direction of travel) the maximum design value should be 1.5%

Cross-slope Challenges

When cross slope compliance is challenged by existing ground, especially when multi-use paths/sidewalks are crossing perpendicular to a hillside designers are required to keep cross slopes to a maximum 5%. When tying in a multi-use path/sidewalk perpendicular to a street with a steep longitudinal slope, designers are required to have a one-and-one-half (1.5) percent cross slope landing at the top of the transition ramp area where path/sidewalk meets street.

Existing Physical Constraints

Where existing physical constraints make full compliance with current construction standards impracticable for altered elements, spaces, or facilities, compliance is required to the extent practical within the scope of the project. If the engineer of record deems the work is not practical due to existing constraints, the City Engineer will decide whether any deviation or claim of impracticality is justified.

A common example of “within the scope of the project” would be when all work related to a project is restricted to one corner of an intersection. In this case, the developer would only be responsible for providing two accessible curb ramps at this location (regardless of what was present in the existing conditions). They would not be responsible to construct new or alter existing curb ramps on the other corners of the intersection outside of the project limits.

Existing physical constraints can include, but are not limited to, underlying terrain and topography, ROW availability, underground structures, adjacent developed facilities, drainage, or the presence of a notable natural or historic feature.

Crosswalks

ORS 801.220 defines crosswalks as any portion of a roadway at an intersection or elsewhere distinctly indicated for pedestrian crossing by lines or other markings on the surface of the roadway. Where no marked crosswalk exists, a crosswalk is every crossing of an intersection.

Detectable warning surfaces are required on all accessible curb ramps, and where the pedestrian paths of travel crosses intersecting roadways, such as a paved trail intersecting a roadway with no curb. *Public Rights-of-Way Accessibility Guidelines* refers to this as a blended transition. Detectable warning surfaces must extend for the full width of the curb ramp or blended transition.

Standard crosswalks placed at street corners comprise two solid lines running across street. Mid-block crosswalks, when approved, are a continental crosswalk design with staggered white bars. Conform design of crosswalk to MUTCD for Streets and Highways, current edition, Section 3B.18. See Standard Drawing T-213 for details.

Crosswalk striping may be dependent on intersection usage. Although the MUTCD may not require crosswalk striping on all crosswalks at an intersection, the MUTCD is only one criteria for striping assessments of crosswalks, pedestrian safety, ADA requirements, pedestrian traffic volume, nearby businesses and gathering points, and other factors, will be included when evaluating the need for

crosswalk striping.

Curb Extensions

Curb extensions are used to increase pedestrian safety, designate parking spaces, slow traffic, smooth elevation transition, and various other usages. The need for a curb extension is assessed by the City Engineer based on existing and planned usage of an area.

Curb extensions shall be designed to ensure storm runoff continues around extensions to reach drainage basins, are large enough to allow for proper ADA ramps, walkway, pedestrian gathering, signage, and hydrants when applicable.

ADDITIONAL REQUIREMENTS

In general, when altering a feature in the public ROW, apply the requirements for new construction to the maximum extent feasible. Document, in writing, any design that does not meet the accessibility requirements for new construction; submit document to the City for review or approval prior to construction.

PLANTER STRIP

The planter strip is that portion of the roadside located between the curb and the sidewalk. Planter strips are required to conform to roadside safety requirements in terms of their slope, landscaping, appurtenances, utilities, etc.

The landscaped portion of the planter strip must be a minimum of five (5) feet wide, except where the sidewalk meander returns to be adjacent to the curb. In order to prevent sharp re-entrant angles in the landscaped portion of the planter strip, construct an edge not less than eight (8) inches long and squared to the curb at the juncture of the sidewalk to the curb.

Planter strips must contain street trees when required by the Newport Municipal Code. Street trees shall conform to the City's landscaping requirements found in Chapter 9.10 and 14.19 and sight distance requirements in this SECTION.

Planter strips may be utilized for swales or landscaping. See SECTION 8 of the Engineering Design Manual for Landscape requirements.

The cross-slope of the planting strip between the curb and the ROW must not be steeper than 4H:1V to provide a recoverable roadside slope. All appurtenances, utilities and structures located within the planter strip that are roadside safety obstacles must comply with roadside safety principles of Chapter 1.6 of this document. Obstacles must be located as far from the roadway as possible and be designed with recoverable slopes or breakaway foundations complying with AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, with interim revisions."

The planter strip must not contain stairs. The City does not allow stairs to be located within the public way. Deviations to this standard may be submitted to the City Engineer for design standard deviation review.

BOLLARDS

Bollards may be used in the ROW. City Engineer will assess need and application by individual use. See

Standard Drawing T-604.

PARKING

Please refer to City of Newport Municipal Code 14.14.030 for required number of parking spaces.

- Where bike lanes exist, the City Engineer may prohibit parking.
- No parking within thirty (30) feet of curb return.

For streets designated as “Neighborhood Collector” and below, the City Engineer may consider design modifications to conserve major trees in the public ROW. The City Engineer may approve removing parking lanes on one or on both sides of a street.

ON-STREET PARKING

Design on-street parking accommodate parking parallel to the curb. There may be instances when head in or back in angle parking is desirable. The City will consider these instances on a case-by-case basis.

BUSINESS AND PASSENGER LOADING ZONES

See NMC 6.05.015 for creation and requirements of loading zones.

MULTI-USE PATHS

A shared-use path or mixed-use path is a form of infrastructure supporting multiple recreation and transportation opportunities, such as walking, bicycling, inline skating and people in wheelchairs. The City prohibits motorcycles and mopeds on multi-use paths. See Standard Drawing 201.

PUBLIC USE STAIRWAYS

Design Stairways shall conform to the *Oregon Standards and Specifications for Construction*, current edition.

BIKEWAYS

Off-Street Bike Paths

The Newport Transportation System Plan, 2023, summarizes the City's policy and implementation strategies for bikeways within the City. Follow AASHTO and ODOT standards and criteria as the minimum guidelines for bikeway design, construction, and control. Use the following guidelines for bikeway improvements:

- *Oregon Bicycle & Pedestrian Plan* (ODOT, current edition)
- *Guide to Development of Bicycle Facilities* (AASHTO, current edition)
- *Manual on Uniform Traffic Control Devices* with Oregon supplements (Oregon Transportation Commission, current edition)

In general, bikeway design shall meet the standards referred to above. All bikeways shall have a minimum cross slope of two percent (2%) and a maximum cross slope of five percent (5%). On curved alignments, the cross slope shall be to the inside of the curve. Use a minimum design speed of twenty (20) MPH for base bikeway curvature.

Bikeway grades shall be limited to a maximum of five (5) percent unless topography dictates otherwise... Where topography dictates, grades over five (5) percent are acceptable when a higher design speed is used; provide additional width.

TRAFFIC CONTROL SIGNAGE

The City Engineer or designee shall first review and approve any sign designed for installation within public ROW.

Street signs and barricades shall be designed and installed according to City of Newport Standards and Specifications, and meet the requirements of the most current edition of the MUTCD as well as the Oregon Supplements to the MUTCD. This applies to signs and traffic control devices on all streets open to public travel, whether publicly or privately owned or maintained.

To provide appropriate roadside safety, ground-mounted signposts shall be breakaway in compliance with the current AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, with interim revisions."

New signs shall be installed, and existing signs modified, to reflect new lane configurations and in coordination with existing or revised pavement markings. Remove and replace signs beyond the project limits as necessary to reflect changes implemented with the project.

Update existing signs within project limits not compliant with these requirements in terms of offsets, siting, physical condition, and applicability to bring them into compliance.

Plans shall reference signs by MUTCD type, and include designs for all non-standard signs. Before any new highway, detour, or temporary route opens to traffic, all necessary signs and barricades shall be in place. Signs necessitated by road conditions or restrictions shall be removed when those conditions cease to exist or the restrictions are withdrawn. Install temporary TRAFFIC CONTROL CHANGE AHEAD signs, wood posts, on any project that changes traffic control type.

Sign Design

These guides shall be followed for sign dimensions, colors, messages, letters, numerals, spacing, borders, etc., except as otherwise provided in these City Standards and Specifications.

Drawn-to-scale drawings for nonstandard signs shall be included in the construction plan set for approval prior to fabrication.

Standard post-mounted street name signs are single-sided; signal mast arm-mounted street name signs and central-island, roundabout, street name signs are single-sided. Refer to Standard Drawing R-7, R-7A, R-8 and R-9.

See City Standard Drawing T-450 for City sign standards.

Sign Placement

Sign installations shall not block pedestrian paths of travel in the sidewalk; maintain an ADA compliant pedestrian access route at all times.

For arterial and collector roadways, the signs shall be visible from, at a minimum, the stopping sight distance of the roadway for the design speed (AASHTO). Do not place street name signs so far around curb returns on side streets signs fail to meet required visibility parameters. The City Engineer or designee shall review existing and proposed site features ensure that there are no existing or proposed obstructions to sign visibility within this required sight distance.

Install signs for private streets at intersections with public streets (i.e. Stop sign/street name sign installations) within public ROW. Refer to MUTCD for required signs. See Standard Drawing T-450 for City of Newport Sign requirements.

Install End-of-Road Markers on dead-end or stub streets where the pavement ends. Type III barricades are advisable where a higher level of visual cue is desired, such as where the end of roadway precedes a non-traversable slope or major obstruction.

Type III barricades, with appropriate road closed signage, shall be installed at the end of the traveled way when the pavement continues but travel is restricted beyond a certain point. The barricades shall effectively block traffic. Barricade colors, reflectivity, and design shall conform to the most current edition of the MUTCD with Oregon Supplements.

Horizontal and Vertical Clearance

Sign installations shall comply with the most current edition of the MUTCD and City of Newport Standard Details. Maintain vertical and horizontal clearance to the sign face for vehicular and non-motorized traffic.

Street Name Signs

Design street name signs labeling all streets at each intersection. See Standard Drawing T-450.

In business districts and on collectors and arterials, place street name signs in at least two locations, on diagonally opposite corners so that they shall be on the far right side of the intersection for traffic on the major street. On local streets and residential areas, place street name signs in at least one location for each intersection.

Install signs for private streets on private property, outside of public right of way. Such sign installations shall incorporate a supplemental PRIVATE DRIVE sign mounted below the standard street name sign.

Street Names

Please refer to City of Newport Municipal Code 9.85.025 and 9.85.030.

The City's Planning Division, prior to recording of any maps or plats will approve street names for all new development. The city planner shall refer proposed street names to the Newport Fire Department for their consideration.

Colors and Visibility

Public street name signs shall have a white border along the outside edge of the sign and white lettering. The colored background shall be green.

Private street name signs mounted on private property, at locations other than intersections with public streets, shall include a background color of retro-reflective green, blue, brown, or black, with white retro-reflective lettering. Pair private street name signs with a supplemental black on yellow PRIVATE DRIVE sign when installed at intersections with public streets.

School-related signs shall be fluorescent yellow-green.

PAVEMENT AND CURB MARKING

Pavement Marking

Provide striping and other pavement markings on all arterial and collector streets within City limits. Striping of local streets is not required unless deemed necessary by the City Engineer.

Striping designs shall comply with the current edition of the MUTCD with Oregon Supplements, and City Standards and Specifications. Oregon Standard Drawings contain pavement marking line and legend details. Provide up-to-date Oregon Standard Drawings with design submittal. Striping materials may be restricted to City equipment limitations.

Plans shall show and identify a minimum of three hundred (300) feet of existing striping beyond the project limits, to ensure proper tie-in to existing striping. Where project limits occur within five hundred (500) feet of existing pavement or striping tapers, extend the limits of striping plans to include the full taper. Plans shall show and identify all existing striping and include all striping removal necessary to implement new striping as shown. Plans shall reflect the following City standards:

- Left turn lane transitions - where painted center medians transition to left turn lanes, gaps are preferred over reverse curves.
- Turn lane storage shall reflect 95th-percentile queues as determined in a queuing analysis; submit with the striping plan.
- Leading ends of raised medians and islands shall be painted yellow or white as applicable, in conformance with the MUTCD. In addition, install surface-mounted tubular markers as shown the *Oregon Standard Specifications for Construction*.
- Where a fixed obstruction is present within a paved roadway, such as a raised median preceded by a painted median or two-way-left-turn-lane, the approach area shall be marked with Transverse diagonal lines and no passing lines, unless otherwise provided in Section 3 of the MUTCD.
- Provide marked crosswalks at all signalized intersections and at other locations according to the City's Standard Operating Policy. Do not mark crosswalks at uncontrolled locations without City Engineer approval. See CURB RAMPS, CROSSWALKS, AND CURB EXTENSIONS above for further direction on crosswalk striping.

Curb Painting

Paint curbs yellow for a total of twenty (20) feet approaching a stop sign. Paint red curbs for a total of twenty (20) feet at fire hydrants, ten (10) feet on either side of the hydrant. Paint shall be high performance latex, designed for streets and parking lots. The paint must meet federal specification TT-P-01952E Type II. The paint should be suitable for surfaces such as Portland cement concrete, bituminous cement concrete, asphalt, tar, and previously painted areas of these type surfaces.

Colors must meet Traffic Standards for the Traffic Yellow and OSHA Safety Red. Examples of common colors and their FED-STD-595 color chip Yellow – #33538 and Red – #31136.

The curb must be prepared for the paint application. Remove any organic material near the curb, remove existing loose paint, and clean oil spills. Acceptable methods of cleaning the curb surface are high-pressure washing and/or hand scrubbing using clean water and clean water to rinse.

Surface shall be clean and completely dry before application of paint starts. Paint curb from the top seam of the curb (sidewalk or planter strip edge) to a point even with the driving surface and within the limits specified by the City of Newport and its representative.

Paint areas shall be protected (masked, taped or both) to prevent dripping or over spray of paint onto the sidewalk or street surfaces and to provide clean/straight edges.

Apply the paint per manufacturer's specifications, or, typically, when the weather is between 60° and 80° Fahrenheit and overnight temperatures do not drop below freezing for optimal adhesion. Choose a day when the weather is dry and when the wind is not blowing to avoid the wind carrying the paint and to prevent blowing debris onto the freshly painted surface.

STREET LIGHTING, TREES, AND NAMES

Street Lighting

Please see the City of Newport Municipal Code 14.48.055.

On private development projects, all costs of installation shall be borne by the developer. The City will pay for ongoing power and maintenance expenses for public street lighting. Ongoing expenses for private street lighting (including power costs) shall be borne by the developer or homeowner's association.

For street lights in the ROW, Central Lincoln Peoples Utility District (CLPUD) has two choices for street lighting: a "Cobra" overhead light on a pole and an "Acorn" decorative light. For additional street lights in the ROW, the City prefers CLPUD lights to unique lighting features.

Additional Street Lights

A local citizen may request an additional street light near his or her home through submitting a request to the Engineering Department. When a request comes in, a letter will be sent to surrounding property owners to see if a majority of neighbors are in agreement with adding a light. If no one protests the additional light, the City will contact Central Lincoln PUD (CLPUD) and arrange for installation of an light.

In residential neighborhoods additional lights may cause problems if a light shines into a bedroom window, blocks a sidewalk, or there isn't an existing pole on which to set the light. If streets lights are powered by underground conduit, there may not be access to power for the desired area.

In some areas of town, the City owns the street lights. Installing an additional light of the same make and model may not be possible. Most often however, the City prefers to use either the decorative "acorn" lights or overhead "cobra" lights owned by CLPUD.

Illumination Design Requirements

Streetlights are required at all street intersections with collectors and arterials, including private street intersections with collectors and arterials. This requirement does not extend to alley intersections. When developing property in an area without existing street lights, check with Newport Municipal Code to see what is required.

Separate street lighting plans are not required for most projects although plans should show proposed streetlights on plan and profile or utility sheets. Plans must include the following:

- Proposed pole locations shall comply with the City's Roadside Safety requirements of this document.
- Provide power supply via underground wiring and conduit systems conforming to power company requirements.

- Fixtures shall be cut-off fixtures to minimize light pollution and up lighting.
- CLPUD shall approve, own, and maintain light poles and fixtures.

Do not place utility infrastructure within one foot of a survey monument location noted on a subdivision or partition plat, per ORS 92.044 (7).

General Design

- Design all street lighting using the American National Standards Institute (ANSI), Illuminating Engineering Society of North America (IESNA), National Electrical Code, Oregon Amended (NEC) and Central Lincoln Public Utility District (PUD) unless otherwise amended by these Standards or City Engineer.
- The City prefers all streetlights within the ROW be owned and maintained by Central Lincoln Public Utility District.
- The Contractor shall be responsible to arrange with PUD for installation and connecting the street lighting system to the local distribution system, and following all installation requirements specified by PUD.
- All electrical components shall be lab approved from labs accepted by the State of Oregon or Underwriter's Laboratories, Inc. (UL).
- All street light plans shall include model number for intended material used which includes but not limited to; conduit, wire, junction box, precast foundation, transformer/unmetered distribution panel/controller, pole, LED Luminaire, photoelectric control and plan layout with all electrical components included. Plans may require P.E. Certification. All materials shall be on the latest PUD Approved Materials List.
- The Contractor shall be responsible to provide all required traffic control during system installation and follow workmanship conforming to the National Electrical Safety Code (NESC), and Standards for the American Society for Testing and Materials (ASTM).
- For installation of new street lighting on an existing street lighting system, contact the City Engineer.
- All street light poles should be located near property lines and at least twenty-five (25) feet from any street trees, unless otherwise approved in writing by the City Engineer.
- The Design Engineer shall submit a copy of the approved lighting plan to the City before commencement of any work.
- The City and the appropriate natural resource agencies shall determine whether to provide lighting for shared-use paths in designated natural resource and wildlife areas.
- Luminaire shall be a "historic" style.

On private development projects, all costs of installation shall be borne by the developer. The City will pay for ongoing power and maintenance expenses for public street lighting supplied by Central Lincoln PUD. Ongoing expenses for private street lighting (including power costs) shall be borne by the developer or homeowner's association.

The City does not permit decorative lighting without special approval and maintenance agreements signed by the City Engineer.

Street Trees

Please refer to City of Newport Municipal Code 14.19.050 Landscaping Required for New Development, Exceptions (see Section 7 Landscaping of the *Engineering Design and Construction Standards Manual*). City does not maintain trees in the ROW. Adjacent property-owners are required to maintain trees

planted as part of a landscape design or natural scape next to their property.

Root barriers are required in sidewalk tree wells NMC 14.19.050(D)(5). See Standard Drawing L-605 for root barrier details.

Tree Wells are a concrete cutout in a curb-tight sidewalk for planting a street tree in the ROW. These may be installed in areas where there is room for a tree well and a 5 ft sidewalk around the tree. See Standard Drawing L-606 for construction specifications.

UNDERGROUND UTILITIES

City Owned

Please refer to City of Newport Municipal Code Title V: Public Works and Utilities and Chapter 9.05, Utilities. See Standard Drawing G-051.

Privately Owned

Please refer to City of Newport Municipal Code Section 14.48.045, Underground Utilities and Service Facilities. See Standard Drawing G-052 and G-053.

FOUR-YEAR MORATORIUM STREET CUT REPLACEMENT GUIDELINES

The City of Newport has a four-year moratorium on all new street pavement surfaces, starting at date of pavement completion (NMC 9.10.095). This includes overlays, inlays, reconstruction, and new construction of at least a half street or greater.

Anyone applying to open cut a moratorium street for emergency repair of subsurface facilities shall apply for the appropriate permit through the City of Newport Engineering Department. If applicant receives an approved permit, the applicant thereby agrees to adhere to strict reconstruction guidelines to achieve the following goals:

- Minimize pavement degradation
- Maintain structural integrity of street
- Maintain a smooth riding surface
- Limit visual impact and perceptions

TRENCH RESTORATION REQUIREMENT

Repair the trench cut per Standard Drawing G-105. Asphaltic concrete shall be replaced in a minimum of two (2) inch lifts and be at least 92% of Rice test (ASTM D2041) theoretical maximum density as determined in conformance with AASHTO T-209.

MORATORIUM REPAIR

After performing trench cut restoration, a two (2) inch grind/inlay for a distance of one (1) foot per posted mile per hour (mph) each direction from the cut is required. The extent of surface grind/inlay width will be as follows:

- A single lane that is impacted will have full restoration for the width of the lane
- If multiple lanes, the full width of those lanes shall be restored
- If impact extends past the centerline, all lanes curb to curb shall be restored
- Place all inlayed asphaltic concrete with a self-propelled slip form paver. Drag boxes shall not be used

- All tie-in joints to existing asphaltic concrete surfaces shall be sealed with rubberized asphalt emulsion (hot or cold)
- All striping removed by grinding shall be replaced with thermoplastic. All symbols, emblems, arrows, letters and bars shall be pre-formed thermoplastic

STRIPING RESTORATION

All striping removed by grinding shall be replaced with thermoplastic. All symbols, emblems, arrows, letters and bars shall be performed thermoplastic.

MAILBOXES

Mailboxes located within ROW are subject to these Standards and Specifications. Consider roadside design safety aspects. Fatal crashes have occurred within the City of Newport due to vehicles striking mailbox fixed object hazards that did not provide breakaway supports. Foundations and support structures of individual and cluster postal delivery boxes shall meet the current AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, with interim revisions."

Firmly secure the mailbox to the post to ensure that the impact of a vehicle does not loosen the box that could then become a flying object hazard.

Mailboxes shall not require that users cross an arterial or collector roadway. Locate mailboxes on the user's side of arterial and collector roadways.

For all new and reconstructed roadway projects, consider rural delivery mailbox styles for consolidation into cluster postal delivery boxes.

Show the location of cluster postal delivery boxes on the engineered plan submittal drawings for review and approval. The United States Postal Service will approve the location of cluster postal delivery boxes.

Design and construct an accessible pedestrian path of travel to the mailbox per *Public Rights-of-Way Accessibility Guidelines* requirements.

Maintain an accessible pedestrian path of travel on sidewalks adjacent to cluster boxes per *Public Rights-of-Way Accessibility Guidelines* standards.

Cluster postal delivery boxes shall not be located on arterial and collector streets, unless otherwise approved by the City Engineer. Their location shall be shifted to nearby and convenient local streets. When locating the cluster postal deliver box take care to locate it in an area that minimizes impact on abutting properties.

The back edge of the sidewalk shall smoothly meander back from the central delivery mailbox station to provide a 5-foot wide unobstructed pathway. The edge of the mailbox shall comply with the City's Clear Zone Requirements of this document.

STREET STANDARD DRAWINGS

Standard Street Section: Local, Yield, And Shared Streets

Aggregate and asphalt depth varies by anticipated street volume. See Standard Drawing T-050 for

construction requirements.

Standard Street Section: Major Collector And Neighborhood Collector Streets

Aggregate and asphalt depth varies by anticipated street volume. See Standard Drawing T-050A for construction Requirements.

Typical Concrete Section

Not typically used for streets in ROW. See Standard Drawing T-050B.

Typical Roadway Layouts: Major Collectors, Neighborhood Collectors, Local Streets

Transportation System Plan July 2022 for design guidance. See Standard Drawing T-051.

Typical Roadway Layouts: Yield And Shared Streets

Transportation System Plan July 2022 for design guidance. See Standard Drawing T-051A.

Typical Cul-De-Sac Detail

See Standard Drawing T-053 for construction requirements.

Standard One-Way Driveway Approach Detail

One-way driveways are used for standard residential driveways. See Standard Drawing T-150.

Drop Panel Driveway One-Way Approach Detail

Used when elevations fall away from the back of sidewalk. See Standard Drawing T-151.

Commercial One-Way And Two-Way Driveway Reinforcement Detail

Commercial driveways may be one-way two way. Due to the traffic weights traversing the driveway, concrete is required of all commercial driveways, which may include apartments as well as industrial areas. See Standard Drawing T-152 and T-150 for construction requirements.

Multi-Use Path

Wide paths used for pedestrians and bikers. See Standard Drawing T-201 for construction details.

Pony Walls & Wedge Walls

Pony and wedge walls are used with the elevation at the back of sidewalk either climbs or drops away from the sidewalk. See Standard Drawing T-202 for construction details.

Standard Sidewalk Details

See Standard Drawing T-210.

Sidewalk And Ramp Detail With Planter Strip

See Standard Drawing T-211.

Sidewalk And Ramp Detail Without Planter Strip

See Standard Drawing T-212.

Pedestrian Crossing Detail

City prefers new ramps have updated crosswalk striping installed. See Standard Drawing T-213 for construction requirements.

Truncated Dome Placement

Domes must be oriented in the direction of travel. See Standard Drawing T-214.

Curb And Gutter Detail

Types of curb used within the City of Newport. See Standard Drawing T-301 for construction requirements.

Valley Gutter Detail

In areas where elevations may be particularly flat, a concrete valley gutter may be required at intersections to keep water flowing. See Standard Drawing T-302 for construction specifications.

Extruded Curb Detail

Not used on roadways or with sidewalk. See Standard Drawing T-303 for construction details.

Standard Sign Detail

Guidelines for street sign lettering and post installation. See Standard Drawing T-450 for construction specifications.

Clear Vision Area At Intersection

Detailed view of clear vision areas with differing angles. See Standard Drawing T-600 and Newport Municipal Code for further information on clear vision areas.

Bollard Detail

Bollards are used to protect infrastructure. See Standard Drawing T-604 for construction specifications.

Root Barrier

Street trees are required to have a root barrier system in some situations. See Standard Drawing T-605 for construction details.

Tree Wells

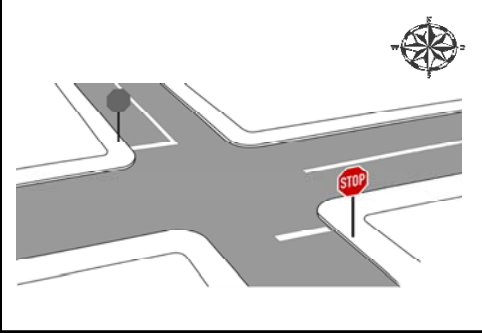
Trees wells along sidewalks require root barrier systems and unobstructed walkways. See Standard Drawing T-606 for installation specifications.

END OF SECTION

ADA Ramp Design Exception Form

Project Name: _____	Project No: _____
Project Designer: _____	Engineer of Record: _____

1. Curb Ramp Locations (One Form Per Intersections). Newport Municipal Code **9.70.010.B.4** requires Property owners to install ADA compliant access in adjacent sidewalks, driveways and street corners.



- SKETCH CURB RAMPS.
- GIVE EACH CURB RAMP A REFERENCE NUMBER, 1 – 8.
- NOTE LOCATION OF NEARBY MID-BLOCK RAMPS, IF APPLICABLE.
- PROVIDE STREET NAMES.
- SHOW LOCATIONS OF ANY EXISTING SIGNS, HYDRANTS, ETC.

2. Use Back of Form to Identify Design Criteria for New Ramps.
 3. Identify Corners that Do Not Meet the Design Criteria Listed On the Back of This Form.
 List the Criteris That Are Not Met and Explain Why
 Describe Mitigation Options
 Provide Recommendations for Adding to Transition Plan List

Additional Space Provided On Back of This Form.

Approvals
 If all corners have two single ramps and they meet design criteria listed on back, additional approval by an ADA techical Advisor in NOT REQUIRED.

_____ Engineer of Record, Sign and Print Name	_____ Date
_____ ADA Technical Advaisor, Sign and Print Name	_____ Date

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Design Criteria for New Sidewalk Ramps Form

DESIGN CRITERIA FOR NEW RAMPS								
1	2	3	4	5	6	7	8	CHECK IF ELEMENT MET
<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D	A. 1. A DIAGONAL RAMP PROVIDING BOTH DIRECTIONS OF TRAVEL (D) OR 2. A SINGLE RAMP PROVIDING ONLY ONE DIRECTION OF TRAVEL (S) (E.G. ACROSS ONLY ONE STREET, INCLUDES MID-BLOCK RAMPS).
<input type="checkbox"/> S	<input type="checkbox"/> S	<input type="checkbox"/> S	<input type="checkbox"/> S	<input type="checkbox"/> S	<input type="checkbox"/> S	<input type="checkbox"/> S	<input type="checkbox"/> S	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	B. IF DIAGONAL RAMP (D), (4.5' X 4.5') LANDING IN ROADWAY IS OUTSIDE OF TRAVEL WAY.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	C. RAMP PERPENDICULAR TO THE FACE OF CURB.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	D. ROADWAY RAMP THROAT COMPLETELY WITHIN LEGAL CROSSING.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	E. 7.2% MAXIMUM RAMP RUNNING GRADE WITH 1.1% FOR CONSTRUCTION TOLERANCE.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	F. FLAT (4' X 4') LANDING IN SIDEWALK.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	G. MINIMUM RAMP WIDTH (NOT INCLUDING WINGS) IS 48".
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	H. MAXIMUM DRAINAGE SLOPE OF THE GUTTER IS 2% WITH MAXIMUM CROSS SLOPE OF 5% AT THE GUTTER.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	I. MAXIMUM RAMP TO STREET GRADE BREAK IS 11% MAXIMUM (ALGEBRAIC DIFFERENCE).

Space for Additional Comments.

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STREET AND TRANSPORTATION SYSTEMS

STANDARD DETAIL DRAWINGS INDEX

- T-050: STANDARD STREET SECTION: LOCAL, YIELD, AND SHARED STREETS
- T-050A: STANDARD STREET SECTION: MAJOR COLLECTOR AND
NEIGHBORHOOD COLLECTOR STREETS
- T-050B: TYPICAL CONCRETE SECTION
- T-051: TYPICAL ROADWAY LAYOUTS: MAJOR COLLECTORS,
NEIGHBORHOOD COLLECTORS, LOCAL STREETS
- T-051A: TYPICAL ROADWAY LAYOUTS: YIELD AND SHARED STREETS
- T-053: TYPICAL CUL-DE-SAC DETAIL
- T-150: STANDARD DRIVEWAY APPROACH DETAIL
- T-151: DROP PANEL DRIVEWAY APPROACH DETAIL
- T-152: COMMERCIAL ONE-WAY AND TWO-WAY DRIVEWAY
REINFORCEMENT DETAIL
- T-201: MULTI-USE PATH
- T-202: PONY WALLS & WEDGE WALLS
- T-210: STANDARD SIDEWALK DETAILS
- T-211: SIDEWALK AND RAMP DETAIL WITH PLANTER STRIP
- T-212: SIDEWALK AND RAMP DETAIL WITHOUT PLANTER STRIP
- T-213: PEDESTRIAN CROSSING DETAIL
- T-214: TRUNCATED DOME PLACEMENT
- T-301: CURB AND GUTTER DETAIL
- T-302: VALLEY GUTTER DETAIL
- T-303: EXTRUDED CURB DETAIL
- T-450: STANDARD SIGN DETAIL
- T-600: CLEAR VISION AREA AT INTERSECTION
- T-604: BOLLARD DETAIL
- T-605: WHEEL STOPS



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STANDARD DETAIL DRAWING INDEX

DETAIL NO.

T-010

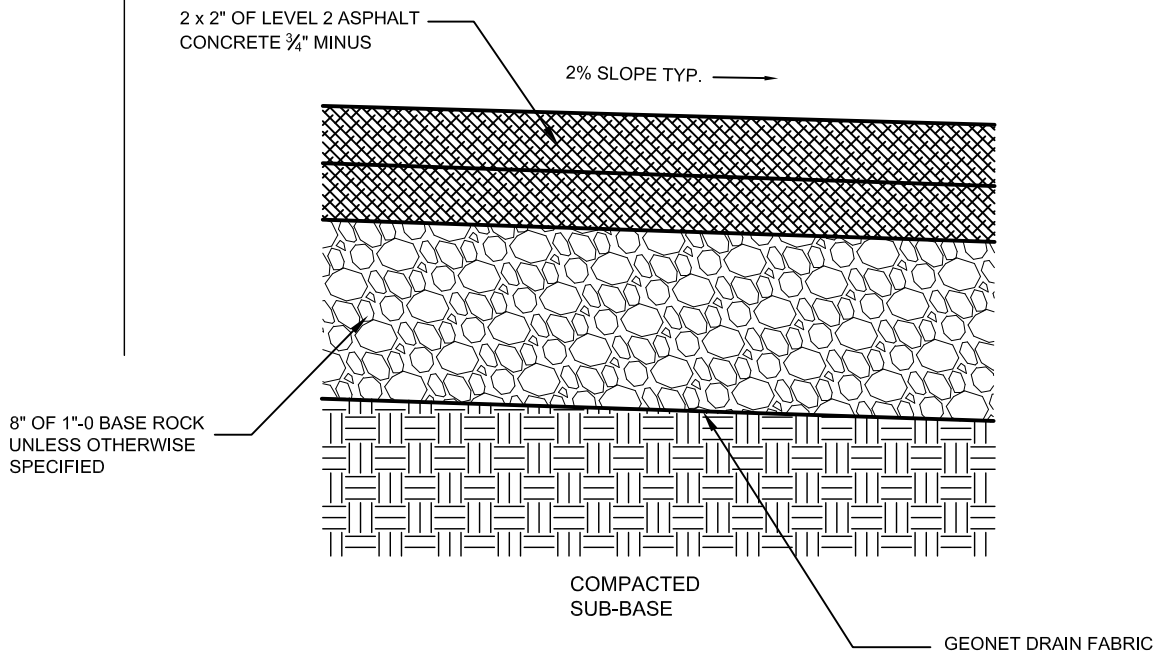
11/9/23

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℄

CURB

4" AC PAVEMENT WITH 8" AGGREGATE BASE



NOTES:

1. ASPHALT CONCRETE PAVEMENT SHALL CONFORM TO OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION (OSS), CURRENT EDITION, SECTION 00744
2. SEE ODOT STANDARD DRAWING RD610 FOR SAW CUT SPECIFICATIONS
3. NEW ASPHALT CONCRETE SHALL NOT HAVE GREATER THAN A ¼" VERTICAL TRANSITION WHEN MEETING EXISTING ASPHALT CONCRETE
4. EARTHWORK AND SUBGRADE SHALL CONFORM TO OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION (OSS), CURRENT EDITION, SECTION 00330
5. AGGREGATE BASE SHALL CONFORM TO OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION (OSS), CURRENT EDITION, SECTION 00641
6. ALL ACP AND JOINTS SHALL BE SANDED AND SEALED WITH TACK.
7. GEONET DRAIN FABRIC SHALL CONFORM TO OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION (OSS), CURRENT EDITION, SECTION 00350



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TYPICAL STREET
SECTION: LOCAL, YIELD,
AND SHARED STREETS

DETAIL NO.

T-050

2/12/2024



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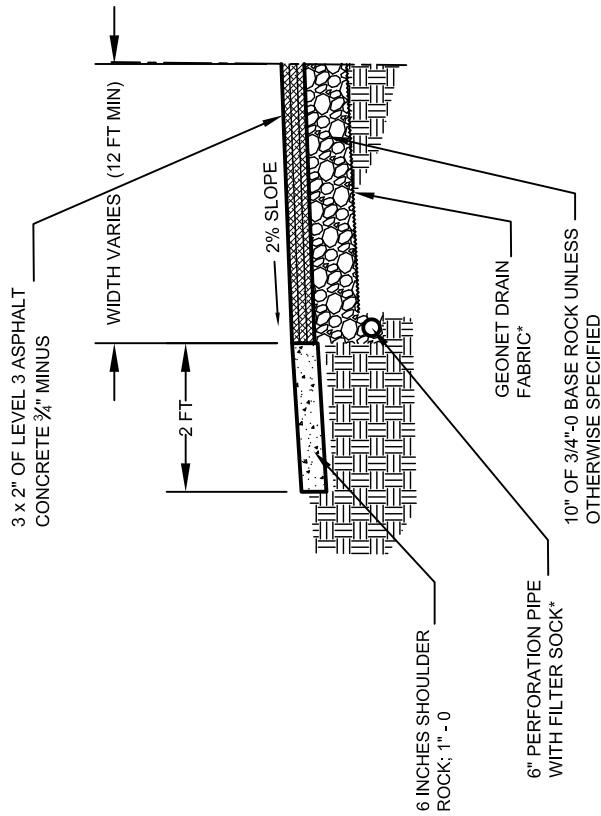
STANDARD STREET SECTION: MAJOR COLLECTOR AND NEIGHBORHOOD COLLECTOR STREETS

DETAIL NO.

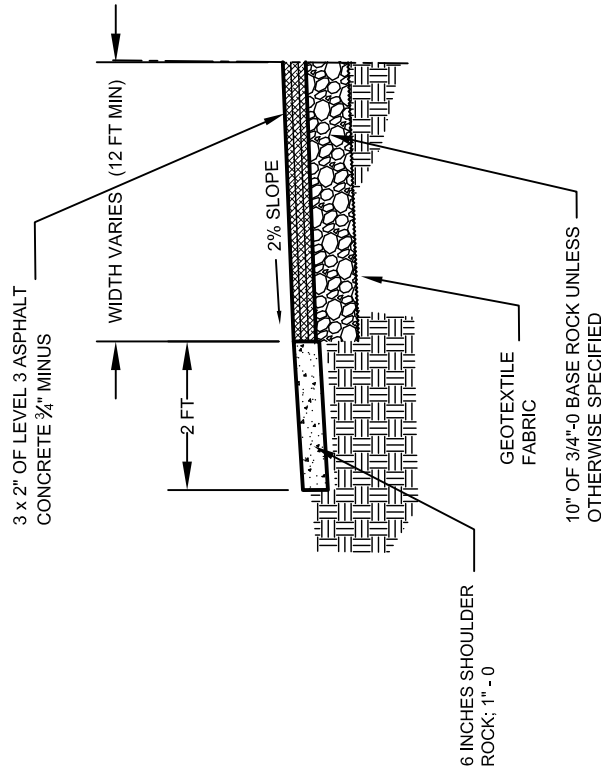
T-050A

2/12/2024

6" AC PAVEMENT WITH 10" AGGREGATE BASE



FULL ROAD SECTION REPLACEMENT*



FULL ROAD SECTION REPLACEMENT** , *** , **** , *****

- NOTES:
1. ASPHALT CONCRETE PAVEMENT SHALL CONFORM TO OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION (OSS), CURRENT EDITION, SECTION 00744
 2. SEE ODOT STANDARD DRAWING RD610 FOR SAW CUT SPECIFICATIONS
 3. NEW ASPHALT CONCRETE SHALL NOT HAVE GREATER THAN A ¼" VERTICAL TRANSITION WHEN MEETING EXISTING ASPHALT CONCRETE
 4. GEOTEXTILE FABRIC SHALL CONFORM TO OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION (OSS), CURRENT EDITION, SECTION 02320
 5. EARTHWORK AND SUBGRADE SHALL CONFORM TO OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION (OSS), CURRENT EDITION, SECTION 00330
 6. AGGREGATE BASE SHALL CONFORM TO OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION (OSS), CURRENT EDITION, SECTION 00641
 7. ALL ACP AND JOINTS SHALL BE SANDED AND SEALED WITH TACK.
 8. GEONET DRAIN FABRIC SHALL CONFORM TO OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION (OSS), CURRENT EDITION, SECTION 00350

℄

CURB

8" CONCRETE

2% SLOPE TYP. →



#4 REBAR 12" OC EW

4" OF 1"-0 BASE ROCK
UNLESS OTHERWISE
SPECIFIED

COMPACTED
SUB-BASE

GEONET DRAIN FABRIC

NOTES:

1. CONCRETE PAVEMENT SHALL CONFORM TO OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION (OSS), CURRENT EDITION, SECTION 00756
2. SEE ODOT STANDARD DRAWING RD610 FOR SAW CUT SPECIFICATIONS
3. EARTHWORK AND SUBGRADE SHALL CONFORM TO OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION (OSS), CURRENT EDITION, SECTION 00330
4. AGGREGATE BASE SHALL CONFORM TO OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION (OSS), CURRENT EDITION, SECTION 00641
5. GEONET DRAIN FABRIC SHALL CONFORM TO OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION (OSS), CURRENT EDITION, SECTION 00350



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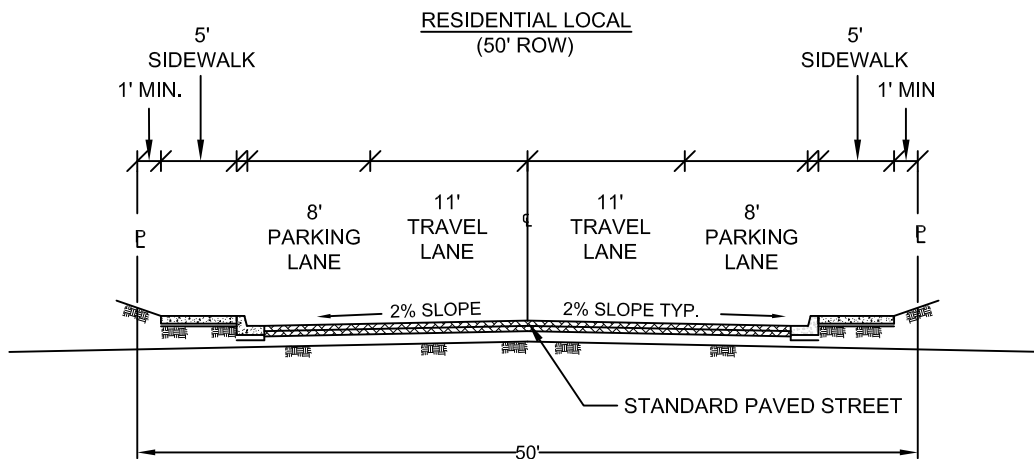
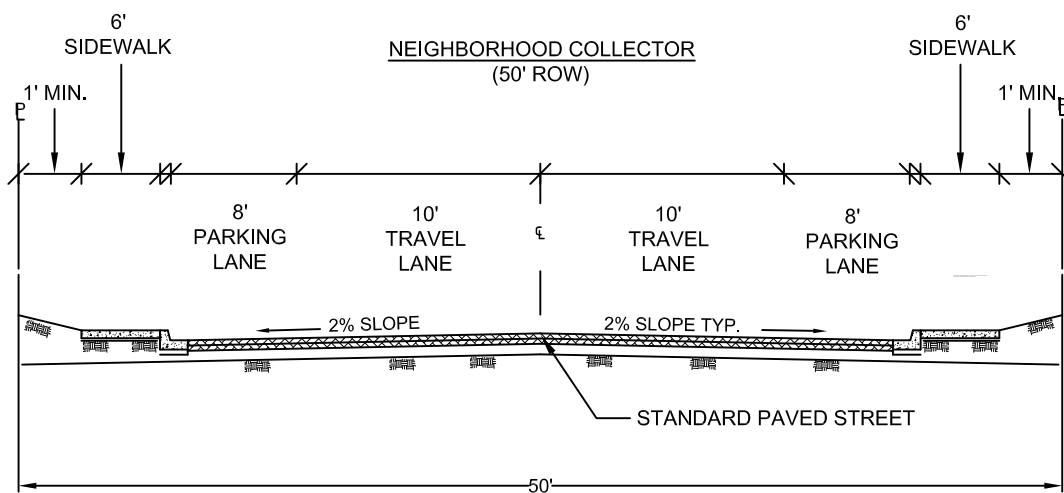
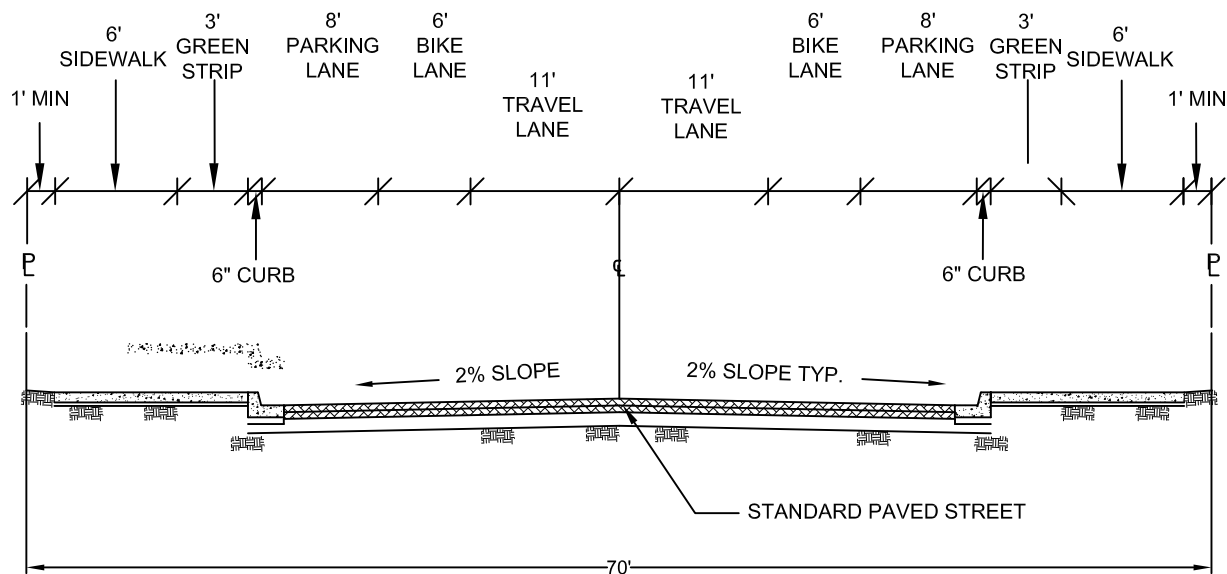
TYPICAL CONCRETE SECTION

DETAIL NO.

T-050B

2/12/2024

MAJOR COLLECTOR (70' ROW)
 REFER TO THE 2022 TRANSPORTATION
 SYSTEM PLAN FOR POTENTIAL ALTERNATIVES



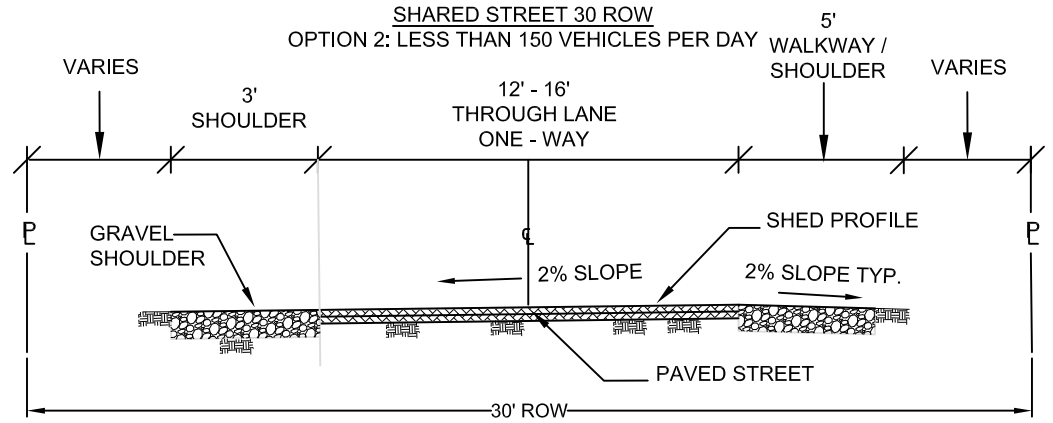
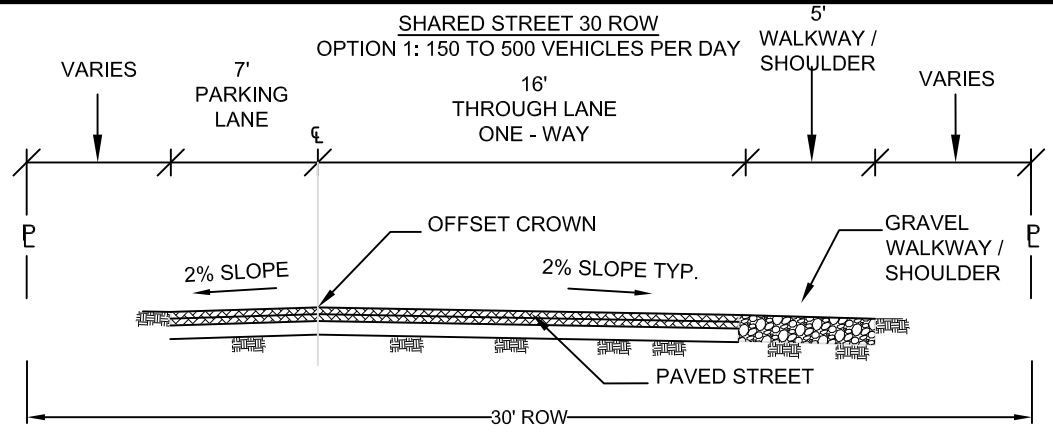
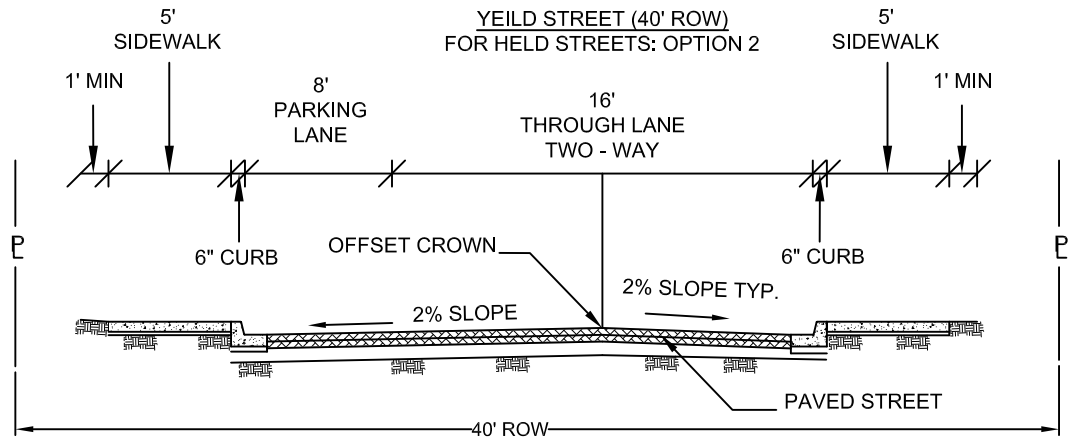
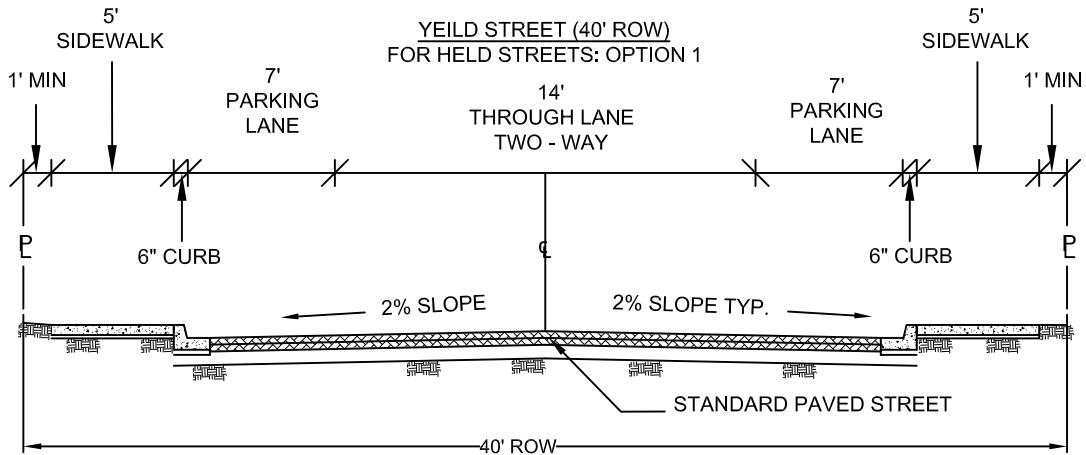
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TYPICAL ROADWAY LAYOUTS:
 MAJOR COLLECTORS, NEIGHBORHOOD
 COLLECTORS, LOCAL STREETS

DETAIL NO.

T-051

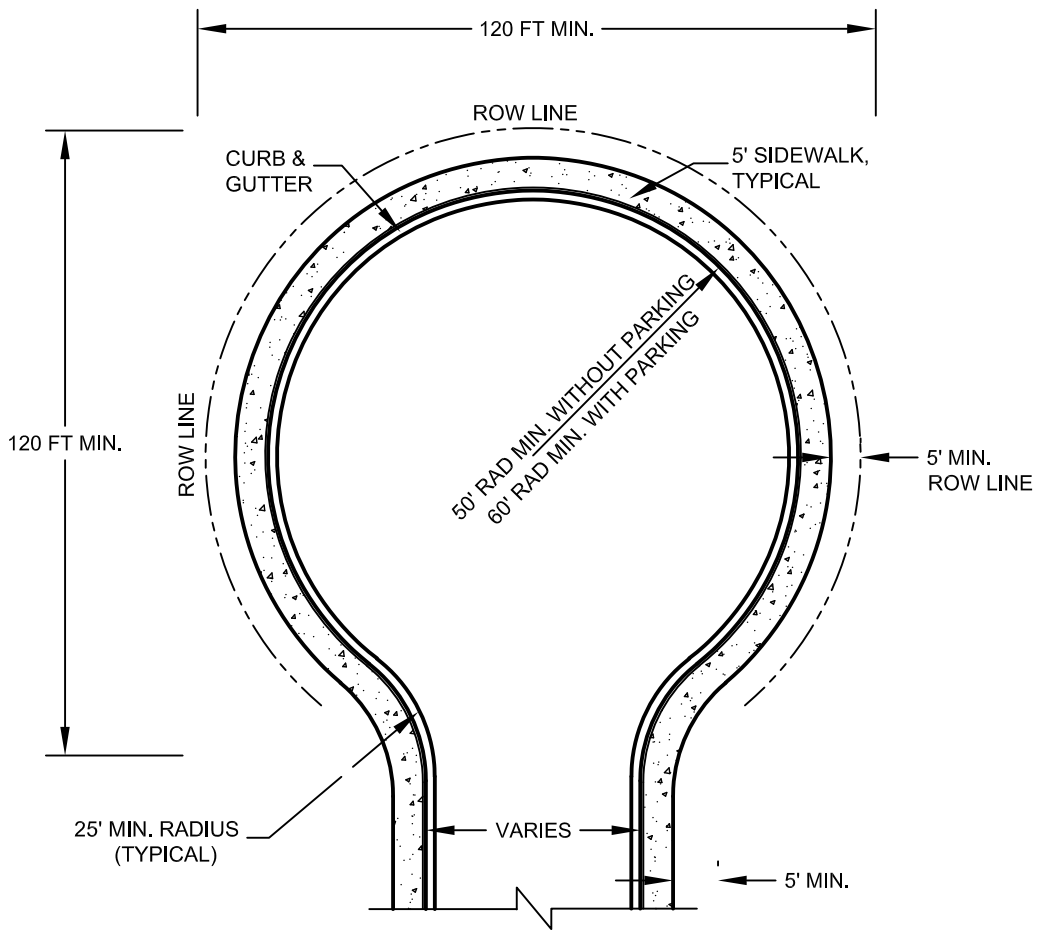
11/9/2023



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**TYPICAL ROADWAY LAYOUTS:
YIELD AND SHARED STREETS**

DETAIL NO.
T-051A
11/9/2023



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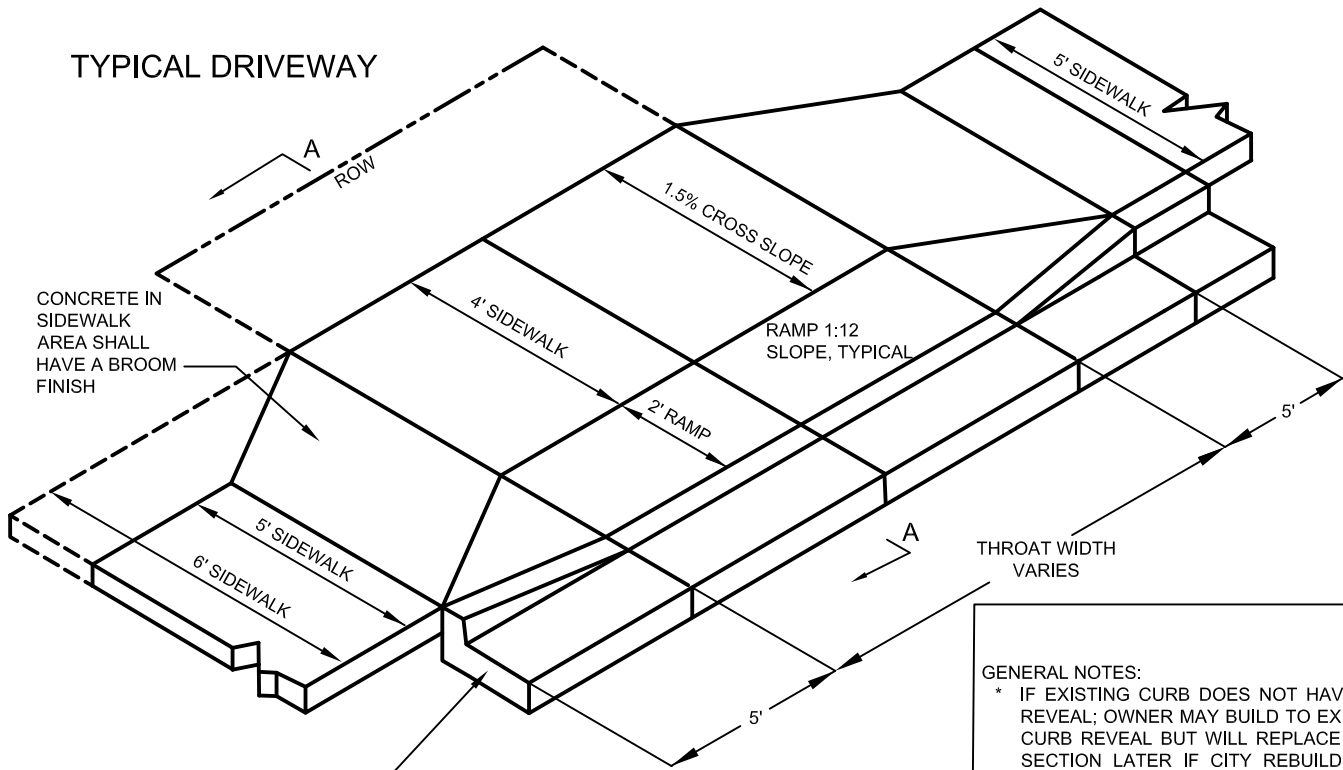
TYPICAL CUL-DE-SAC DETAIL

DETAIL NO.

T-053

5/7/2024

TYPICAL DRIVEWAY



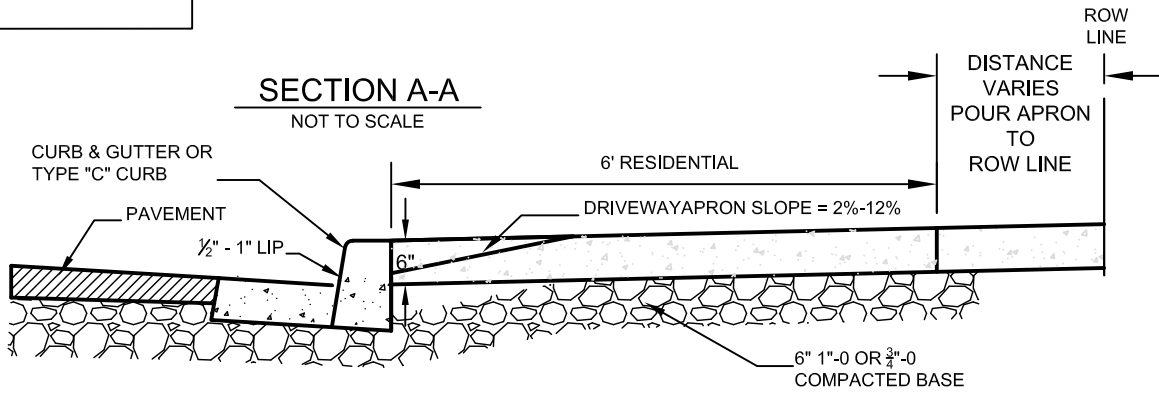
REFER TO NMC 14.46.030 FOR APPROACH AND DRIVEWAY DEVELOPMENT. APPROACHES AND DRIVEWAYS SHALL BE A MINIMUM OF TWELVE (12) FEET FOR A ONE-WAY DRIVEWAY Y AND NO GREATER THAN EIGHTEEN (18) FEET MAXIMUM WIDTH.

CURB & GUTTER OR TYPE "C" CURB; MATCH ADJACENT

THROAT WIDTH VARIES

GENERAL NOTES:
 * IF EXISTING CURB DOES NOT HAVE A 6" REVEAL; OWNER MAY BUILD TO EXISTING CURB REVEAL BUT WILL REPLACE RAMP SECTION LATER IF CITY REBUILDS THE ADJACENT STREET WITH A 6" CURB REVEAL.
 ** REGARDLESS OF CURB REVEAL; DEPTH OF CURB REMAINS THE SAME AS THOUGH THERE WERE A 6" REVEAL. SEE CURB STANDARD DETAILS.

SECTION A-A NOT TO SCALE



NOTES

1. A MIX DESIGN SHALL BE SUBMITTED TO THE CITY ENGINEER PRIOR TO SCHEDULING POUR.
2. DRIVEWAY STRUCTURE SHALL CONFORM TO OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION (CURRENT EDITION) SECTION 00759.
3. ADA CROSS-SLOPE COMPLIANT CONCRETE APRON REQUIRED FOR ALL DRIVEWAYS EVEN WHERE NO SIDEWALK IS CONSTRUCTED ADJACENT TO DRIVEWAY.
4. CURB SHALL BE FORMED & POURED SEPARATE FROM DRIVEWAY; MONOLITHIC POURS NOT ALLOWED.
5. A RIGHT-OF-WAY PERMIT IS REQUIRED ON NEW DRIVEWAYS AND DRIVEWAY MODIFICATIONS. SCHEDULE ONSITE MEETING WITH CITY
6. REPRESENTATIVE AFTER FORMS ARE SET BUT BEFORE POURING CONCRETE; ALLOW ADEQUATE TIME FOR FORM ADJUSTMENT BEFORE SCHEDULED POUR.
7. FOR SIDEWALKS REFER TO STANDARD SIDEWALK DETAIL T-210.
8. FOR CURBS REFER TO STANDARD CURB & GUTTER DETAIL T-301.
9. DROP PANEL DRIVEWAYS MAY BE USED WHEN GROUND AT BACK OF WALK SLOPES DOWN TO A HOUSE OR DRIVEWAY LOWER THAN THE SIDEWALK. SEE DETAIL T-151.
10. FOR COMMERCIAL DRIVEWAYS SEE T-152 FOR REINFORCEMENT REQUIREMENTS.
11. CONCRETE TO EXTEND STRAIGHT BACK FROM DRIVEWAY THROUGH ROW TO PROTECT WALKWAY.

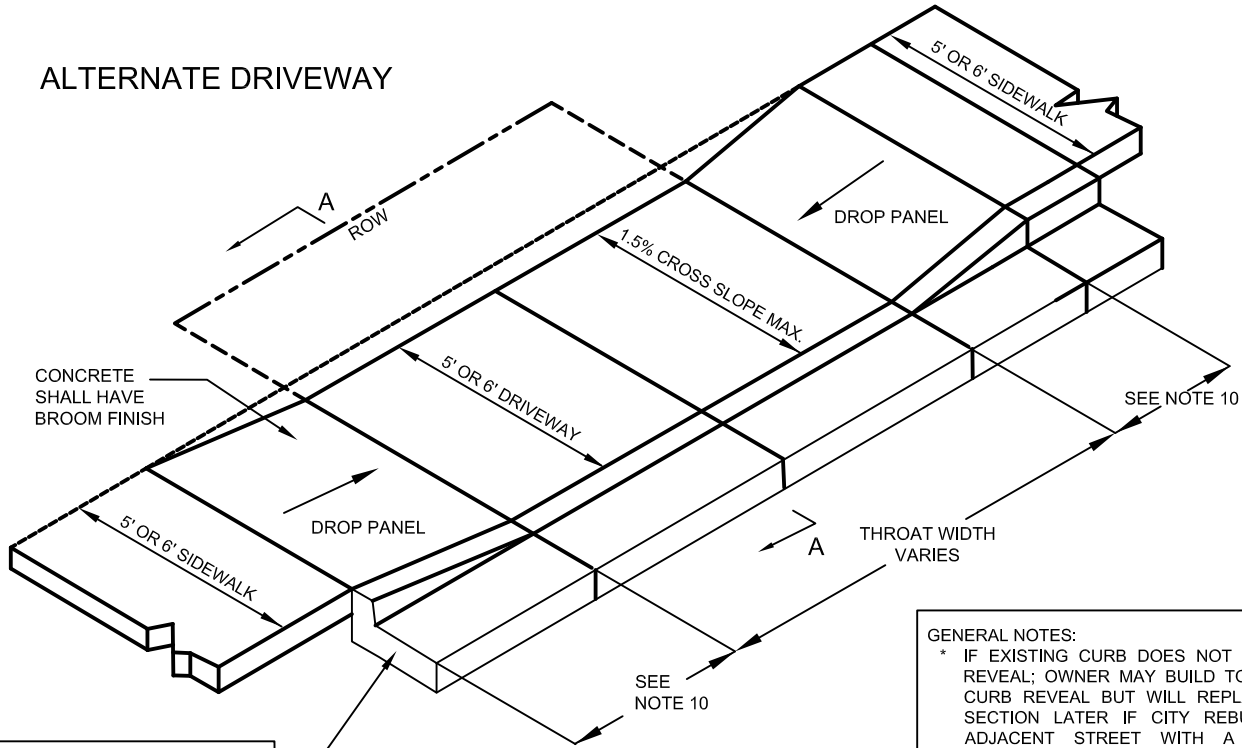


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STANDARD APPROACH FOR 5' SIDEWALK

DETAIL NO.
T-150
 2/12/2024

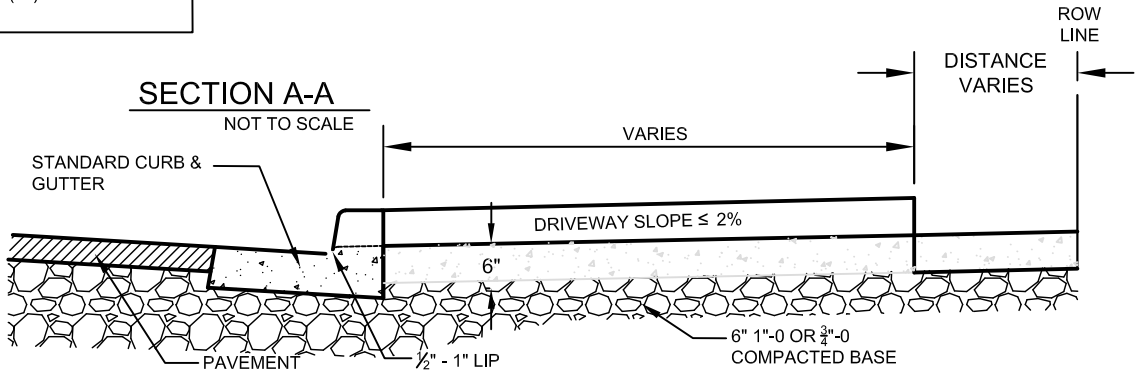
ALTERNATE DRIVEWAY



REFER TO NMC 14.46.030 FOR APPROACH AND DRIVEWAY DEVELOPMENT. APPROACHES AND DRIVEWAYS SHALL BE A MINIMUM OF TWELVE (12) FEET FOR A ONE-WAY DRIVEWAY AND NO GREATER THAN EIGHTEEN (18) FEET MAXIMUM WIDTH.

GENERAL NOTES:

- * IF EXISTING CURB DOES NOT HAVE A 6" REVEAL; OWNER MAY BUILD TO EXISTING CURB REVEAL BUT WILL REPLACE RAMP SECTION LATER IF CITY REBUILDS THE ADJACENT STREET WITH A 6" CURB REVEAL.
- ** REGARDLESS OF CURB REVEAL; DEPTH OF CURB REMAINS THE SAME AS THOUGH THERE WERE A 6" REVEAL. SEE CURB STANDARD DETAILS.



NOTES

1. A MIX DESIGN SHALL BE SUBMITTED TO THE CITY ENGINEER PRIOR TO SCHEDULING POUR.
2. DRIVEWAY STRUCTURE SHALL CONFORM TO OREGON STANDARD SPECIFICATION FOR CONSTRUCTION (CURRENT EDITION) SECTION 00759.
3. ADA COMPLIANT CONCRETE APRON REQUIRED FOR ALL DRIVEWAYS EVEN WHERE NO SIDEWALK IS CONSTRUCTED ADJACENT TO DRIVEWAY.
4. CURB SHALL BE FORMED & POURED SEPARATELY FROM DRIVEWAY; MONOLITHIC POURS NOT ALLOWED.
5. A RIGHT-OF-WAY PERMIT IS REQUIRED ON NEW DRIVEWAYS AND DRIVEWAY MODIFICATIONS. SCHEDULE ONSITE MEETING WITH CITY REPRESENTATIVE AFTER FORMS ARE SET BUT BEFORE POURING CONCRETE; ALLOW ADEQUATE TIME FOR FORM ADJUSTMENT BEFORE SCHEDULED POUR.
6. FOR SIDEWALKS REFER TO STANDARD SIDEWALK DETAIL T-210.
7. FOR CURBS REFER TO STANDARD CURB & GUTTER DETAIL T-301.
8. DROP PANEL DRIVEWAYS MAY BE USED WHEN GROUND AT BACK OF WALK SLOPES DOWN TO A HOUSE OR DRIVEWAY LOWER THAN THE SIDEWALK.
9. FOR COMMERCIAL DRIVEWAYS SEE T-152 FOR REINFORCEMENT REQUIREMENTS.
10. WING WIDTH VARIES IN CONFORMANCE TO ADA REQUIREMENTS AND EXISTING GEOGRAPHY.
11. CONCRETE TO EXTEND STRAIGHT BACK FROM DRIVEWAY THROUGH ROW TO PROTECT WALKWAY.

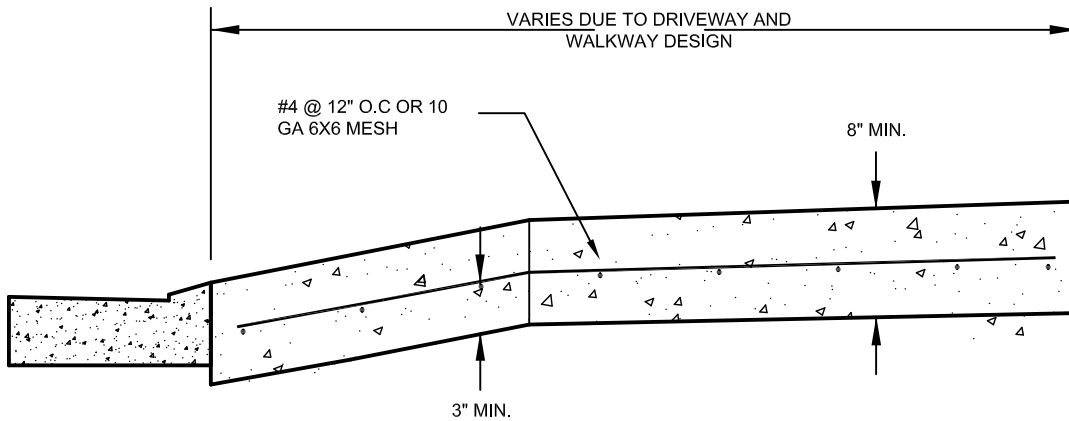


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DRIVEWAY DROP PANEL APPROACH FOR 5' SIDEWALK

DETAIL NO.
T-151
 2/12/2024

REFER TO NMC 14.46.030 FOR APPROACH AND DRIVEWAY DEVELOPMENT. APPROACHES AND DRIVEWAYS SHALL BE A MINIMUM OF TWELVE (12) FEET FOR A ONE-WAY DRIVEWAY OR TWENTY (20) FEET FOR A TWO-WAY DRIVEWAY AND NO GREATER THAN 150% OF MINIMUM WIDTH.



NOTES:

1. SCORE MARKS ARE TO BE TOOLED INTO CONCRETE SURFACE TO FORM A SQUARE BUT NOT TO EXCEED 8' IN ANY DIRECTION.
2. REINFORCING BAR IS TO BE HELD UP WITH NON-CORROSIVE MATERIALS (ROCK, CONCRETE) PRIOR TO CONCRETE BEING PLACED.
3. REBAR SHALL BE BENT WITH GRADE BREAK TO MATCH SLOPE CHANGE WHERE WALKWAY AND RAMP MEET.
4. REBAR FRAME CAN BE USED WITH EITHER T-150 OR T-151 APPROACH LAYOUTS.



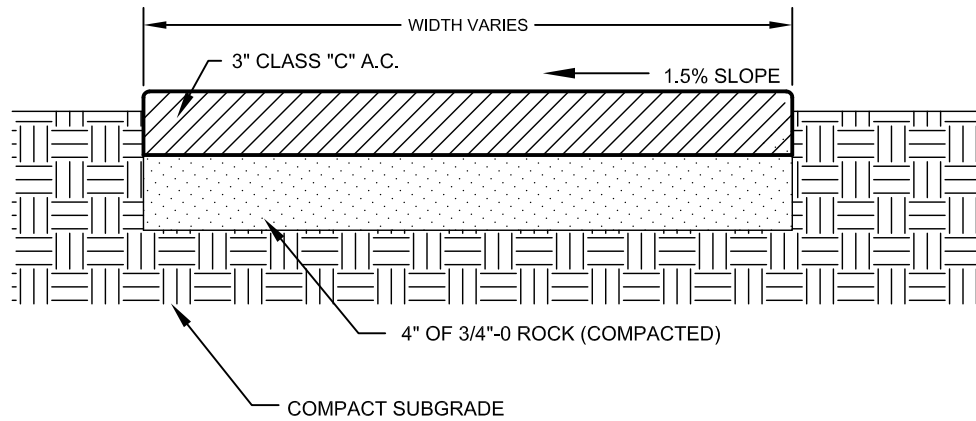
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**COMMERCIAL ONE-WAY
 AND TWO-WAY DRIVEWAY
 REINFORCEMENT DETAIL**

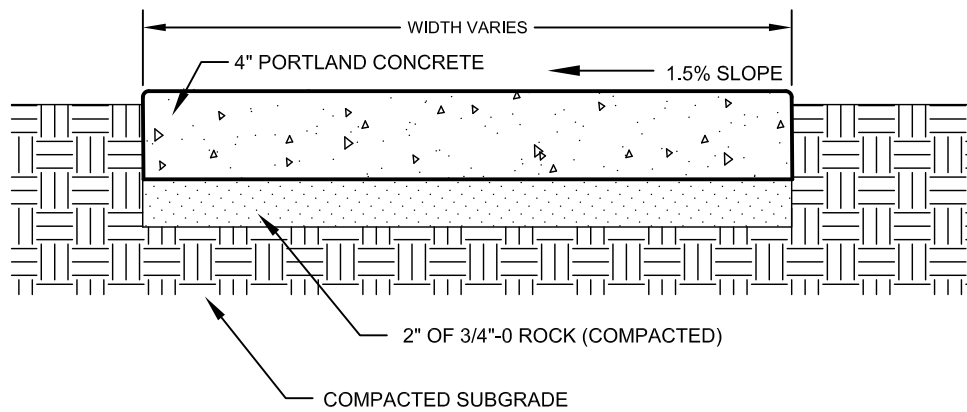
DETAIL NO.

T-152

11/14/2023



-OR-



NOTES:

1. CONCRETE TO HAVE 28 DAY COMPRESSIVE STRENGTH OF 3500 PSI
2. SIDEWALK PANELS SHALL BE SQUARE, 3/4" DEEP SCRIBES AT JOINTS, EDGED ON 4 SIDES AND HAVE A LIGHT BROOM FINISH.
3. PEDESTRIAN PATH OR BIKEWAY SHALL HAVE A MINIMUM WIDTH OF 5 FEET (ONE WAY) A MINIMUM WIDTH OF 10 FEET (TWO WAY)



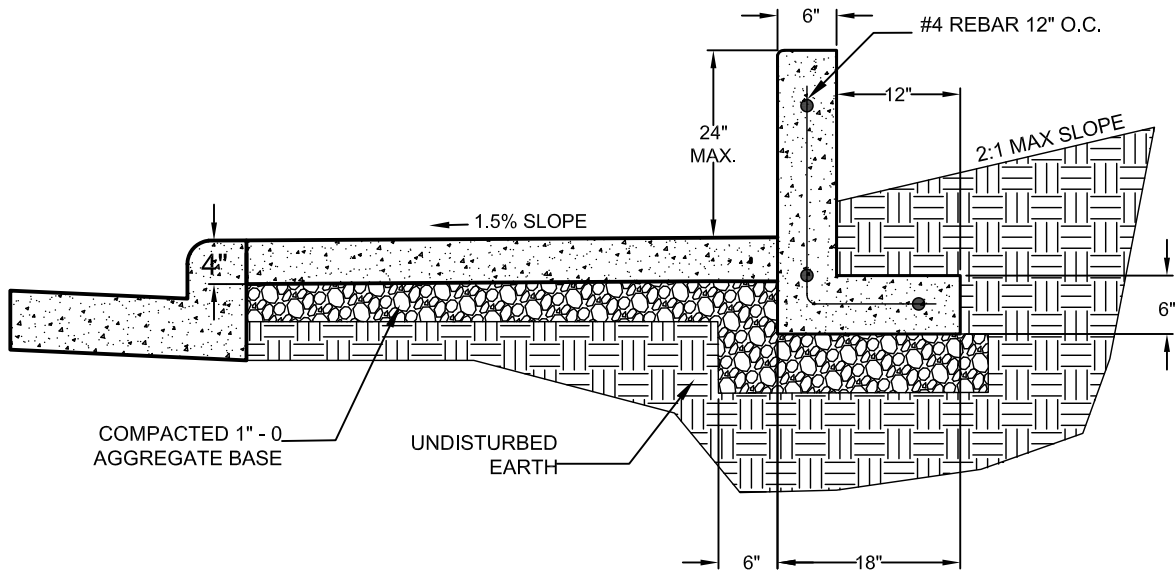
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**MULTI-USE PATH
 DETAILS**

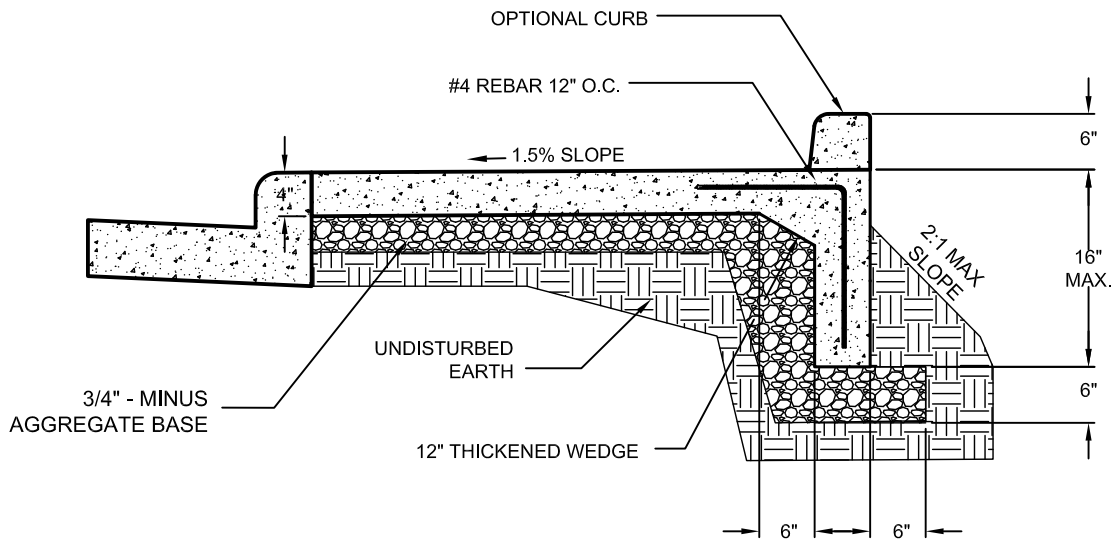
DETAIL NO.

T-201

2/12/2024



PONY WALL



WEDGE WALL

NOTES

1. A CONCRETE MIX DESIGN SHALL BE SUBMITTED TO THE CITY ENGINEER PRIOR TO SCHEDULING POUR.
2. STRUCTURES SHALL CONFORM TO OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION, CURRENT EDITION, SECTION 00759.
3. REINFORCING BAR IS TO BE HELD UP WITH NON-CORROSIVE MATERIALS (ROCK, CONCRETE) PRIOR TO CONCRETE BEING PLACED.
4. REBAR SHALL HAVE A MINIMUM 2" CONCRETE COVER FROM OUTSIDE CONCRETE EDGE.
5. CONCRETE SHALL RECEIVE A MEDIUM BROOM FINISH. BROOMING SHALL BE PERPENDICULAR TO CURB LINE.
6. CURB JOINT SHALL BE TROWELED JOINT WITH MIN. 1/2" RADIUS ALONG BACK OF CURB.
7. FOR SIDEWALKS REFER TO STANDARD SIDEWALK DETAIL T-210.
8. FOR CURB REFER TO STANDARD CURB & GUTTER DETAIL T-301.
9. PONY WALLS TALLER THAN 24 INCHES WILL NEED TO BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER..



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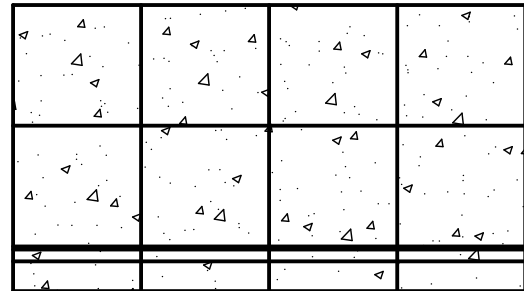
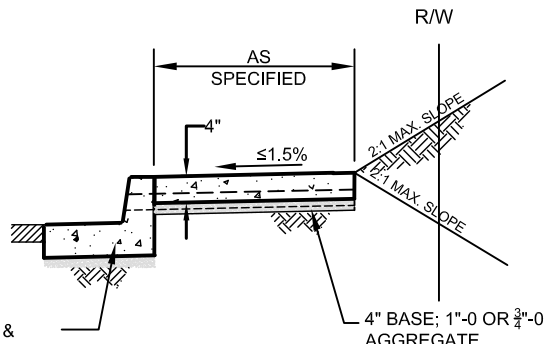
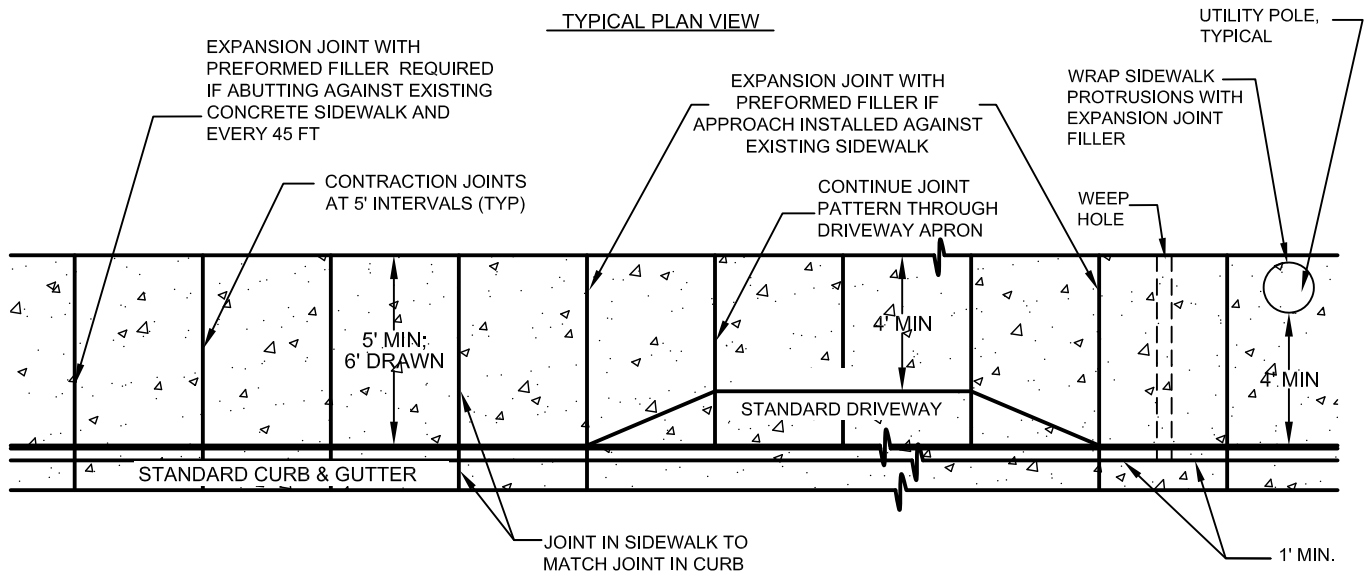
PONY WALLS & WEDGE WALLS

DETAIL NO.

T-202

2/12/2024

TYPICAL PLAN VIEW



NOTES:

1. A CONCRETE MIX DESIGN SHALL BE SUBMITTED TO THE CITY ENGINEER PRIOR TO SCHEDULING POUR.
2. STRUCTURES SHALL CONFORM TO OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION, CURRENT EDITION, SECTION 00759.
3. STANDARD SIDEWALK CROSS SLOPE SHALL BE 1.5% TOWARD THE STREET. WHEN THE ADJACENT PROPERTY IS LOWER THAN THE TOP OF THE CURB, SIDEWALK MAY SLOPE AWAY FROM STREET.
4. DRAIN BLOCKOUTS IN THE CURB SHALL BE EXTENDED TO THE BACK OF THE SIDEWALK WITH A 3" DIA. PLASTIC PIPE AT A 1.5% SLOPE. A CONTRACTION JOINT SHALL BE PLACED OVER THE PIPE. NO COUPLINGS UNDER SIDEWALK. OUTFALL AT FACE OF CURB EQUALS GUTTER PAN ELEVATION.
5. SEE STANDARD WHEELCHAIR/BICYCLE RAMP DETAILS ODOT STANDARD DRAWING RD744, CITY STANDARD DRAWING T-212.
6. SEE STANDARD DETAILS FOR DRIVEWAYS: T-150, T-151, AND T-152.
7. WRAP PROTRUDING STRUCTURES IN SIDEWALKS WITH PREFORMED EXPANSION JOINT FILLER.



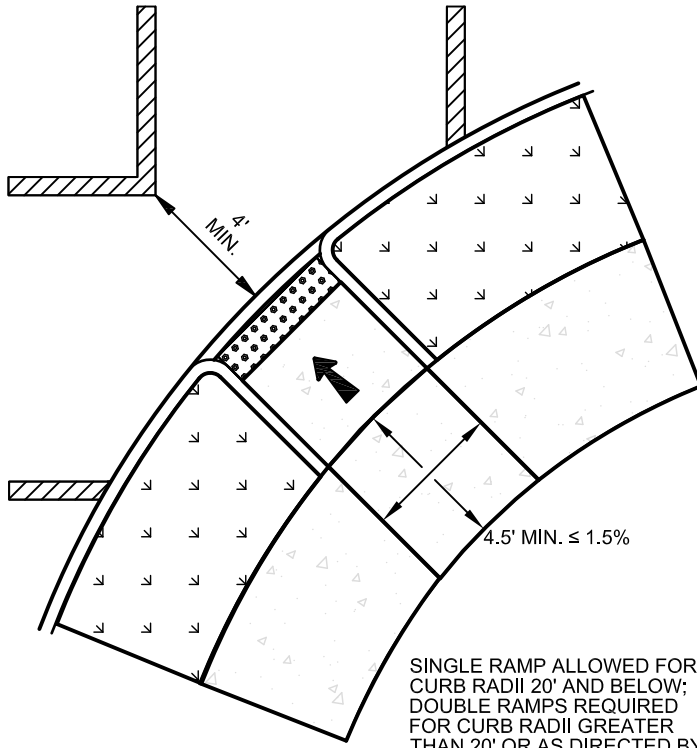
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STANDARD SIDEWALK
 DETAILS

DETAIL NO.

T-210

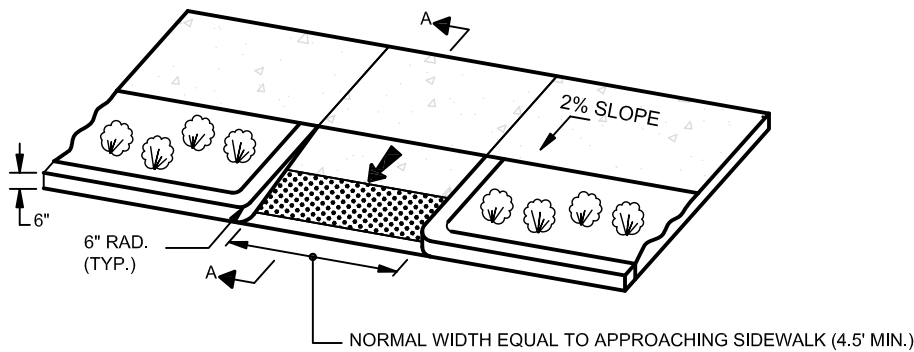
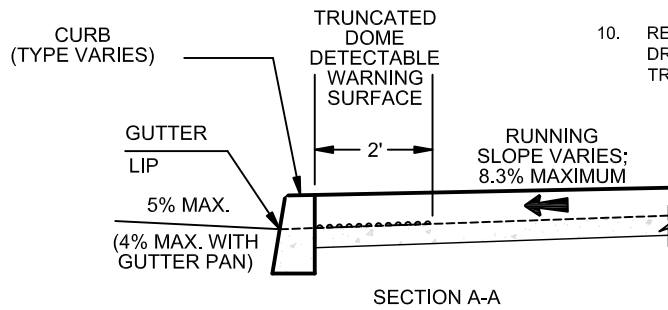
2/12/2024



SINGLE RAMP ALLOWED FOR CURB RADII 20' AND BELOW; DOUBLE RAMPS REQUIRED FOR CURB RADII GREATER THAN 20' OR AS DIRECTED BY CITY ENGINEER.

GENERAL NOTES FOR ALL DETAILS:

1. SIDEWALK RAMP DETAILS ARE BASED ON UNITED STATES ACCESS BOARD STANDARDS.
2. ALL SIDEWALK AND RAMP GRADES SHALL MEET ADA STANDARDS.
3. TOOLED JOINTS ARE REQUIRED AT ALL SIDEWALK RAMP SLOPE BREAK LINES.
4. SIDEWALK CURB RAMP SLOPES SHOWN ARE RELATIVE TO THE TRUE LEVEL HORIZON (ZERO BUBBLE).
5. PLACE TRUNCATED DOME DETECTABLE WARNING SURFACE IN THROAT OF RAMP CLOSEST TO STREET. SEE STANDARD DRAWING T-213.
6. CURB INLET OR CATCH BASIN SHALL NOT BE ALLOWED IN RAMP PATHWAY.
7. CROSSWALK LINES WHERE REQUIRED MUST BE AS PER STRIPING PLAN APPROVED BY THE CITY ENGINEER.
8. SEE STANDARD SIDEWALK DETAIL T-210 FOR ADDITIONAL INFORMATION.
9. CONFORM WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION, SECTION 3B.18 FOR PEDESTRIAN CROSSWALK MARKINGS.
10. REFER TO ODOT STANDARD DRAWING RD 758 & RD 759 FOR TRUNCATED DOME PLACEMENT.



PERPENDICULAR SIDEWALK RAMP DETAIL (THROUGH BUFFER STRIP)



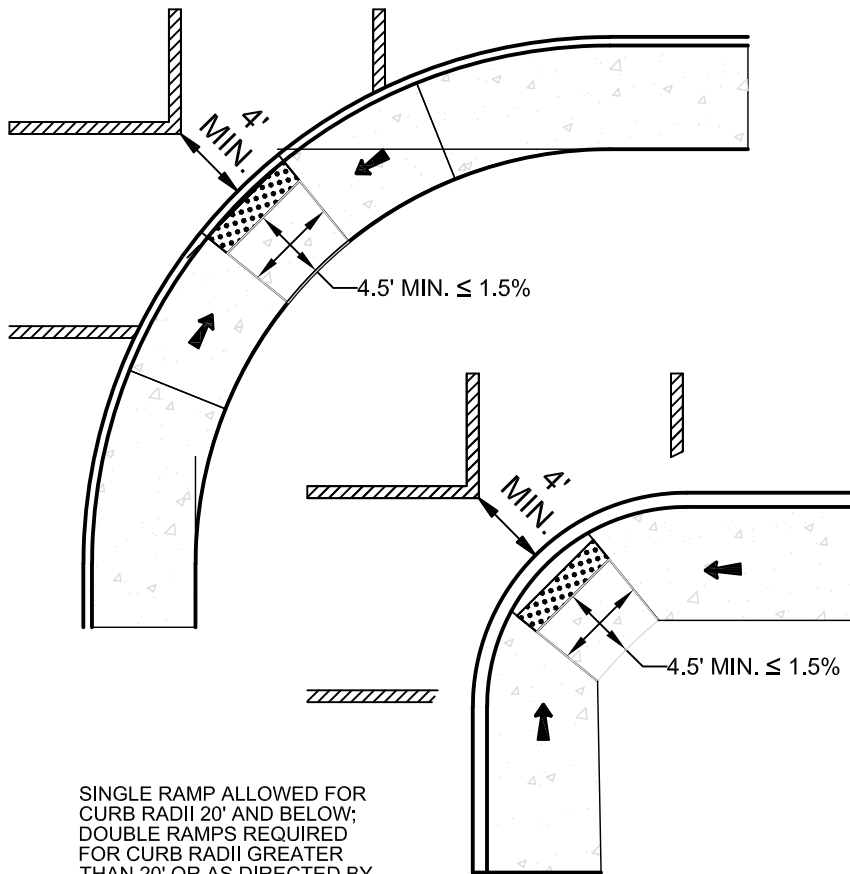
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SIDEWALK AND RAMP DETAIL WITH PLANTER STRIP

DETAIL NO.

T-211

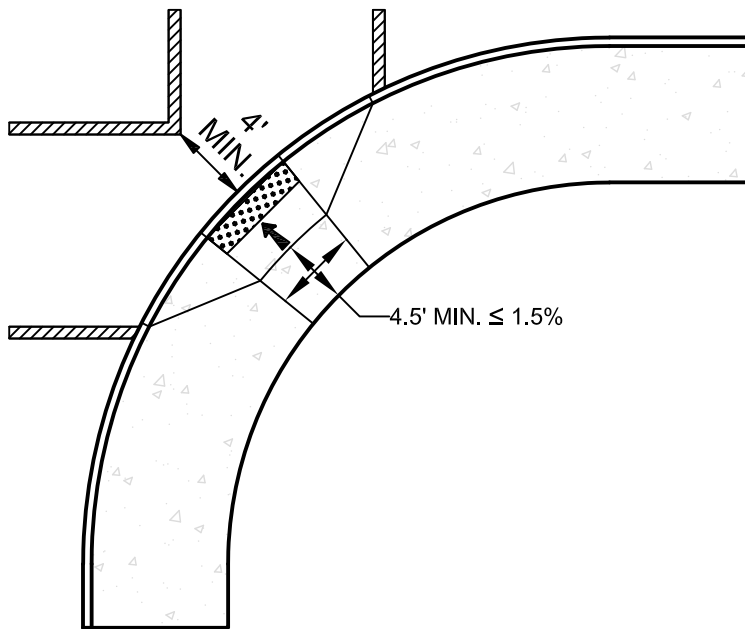
5/12/2020



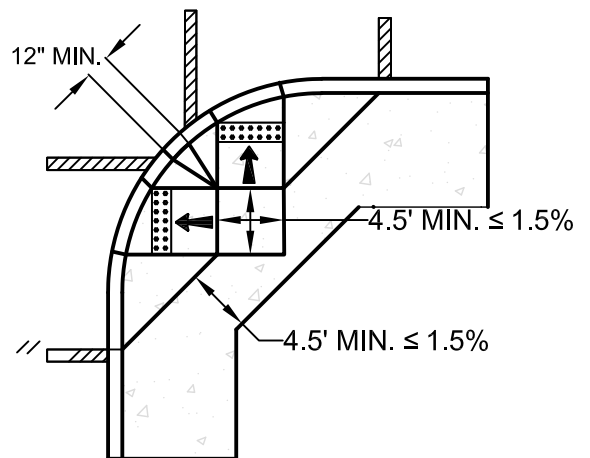
SINGLE RAMP ALLOWED FOR CURB RADII 20' AND BELOW; DOUBLE RAMPs REQUIRED FOR CURB RADII GREATER THAN 20' OR AS DIRECTED BY CITY ENGINEER.

GENERAL NOTES FOR ALL DETAILS:

1. SIDEWALK RAMP DETAILS ARE BASED ON UNITED STATES ACCESS BOARD STANDARDS.
2. ALL SIDEWALK AND RAMP GRADES SHALL MEET ADA STANDARDS.
3. TOOLED JOINTS ARE REQUIRED AT ALL SIDEWALK RAMP SLOPE BREAK LINES.
4. SIDEWALK CURB RAMP SLOPES SHOWN ARE RELATIVE TO THE TRUE LEVEL HORIZON (ZERO BUBBLE).
5. PLACE TRUNCATED DOME DETECTABLE WARNING SURFACE IN THROAT OF RAMP CLOSEST TO STREET. SEE STANDARD DRAWING T-213.
6. CURB INLET OR CATCH BASIN SHALL NOT BE ALLOWED IN RAMP PATHWAY.
7. CROSSWALK LINES WHERE REQUIRED MUST BE AS PER STRIPING PLAN APPROVED BY THE CITY ENGINEER.
8. SEE STANDARD SIDEWALK DETAIL T-210 FOR ADDITIONAL INFORMATION.
9. CONFORM WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION, SECTION 3B.18 FOR PEDESTRIAN CROSSWALK MARKINGS.
10. REFER TO ODOT STANDARD DRAWING RD 758 & RD 759 FOR TRUNCATED DOME PLACEMENT.



COMBINATION RAMP (FOR WIDE SIDEWALKS; USE IN ALTERATIONS ONLY AND WHEN SITE CONSTRAINTS PROHIBIT INSTALLING TWO RAMPs)



PERPENDICULAR RAMP (FOR NARROW SIDEWALKS)



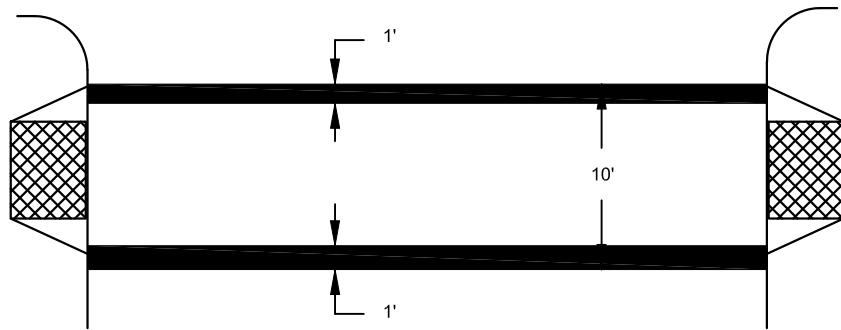
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SIDEWALK AND RAMP DETAIL
WITHOUT PLANTER STRIP

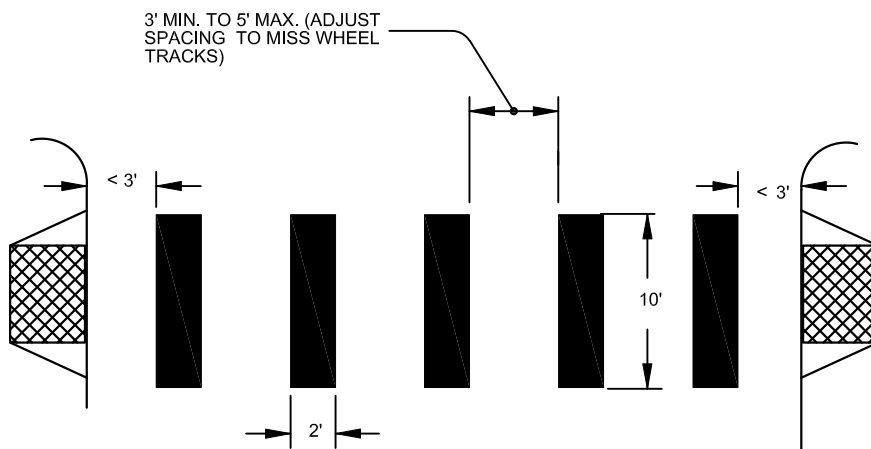
DETAIL NO.

T-212

2/12/2024



STOP CROSSINGS
STANDARD CROSSWALK
TWO 1' WHITE BARS
USED AT AT STREET INTERSECTIONS



NON-STOP CROSSINGS
STAGGERED CONTINENTAL CROSSWALK
2' WHITE BARS
USED AT MID-BLOCK CROSSINGS

NOTES:

1. CROSSWALKS SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL, CURRENT EDITION, SECTION 3B.18.
2. ALL PAVEMENT MARKING SHALL BE WHITE THERMOPLASTIC.
3. THERMOPLASTIC MATERIAL SHALL CONFORM TO THE OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION, CURRENT EDITION, SECTION 00850.



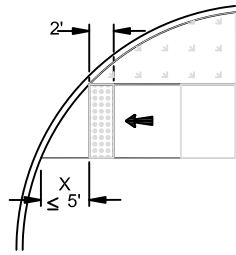
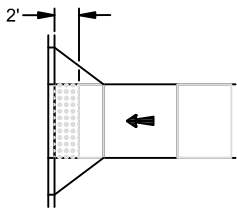
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PEDESTRIAN CROSSING
DETAIL

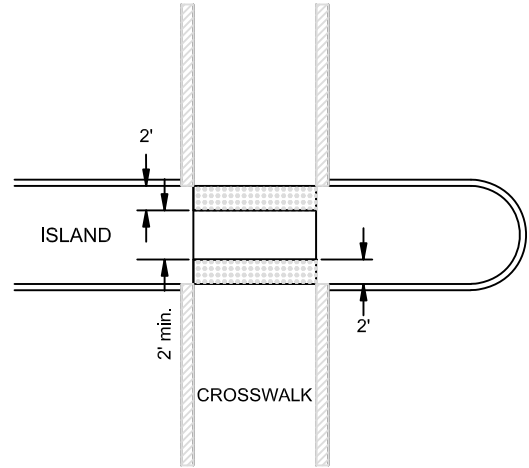
DETAIL NO.

T-213

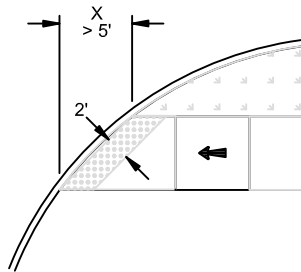
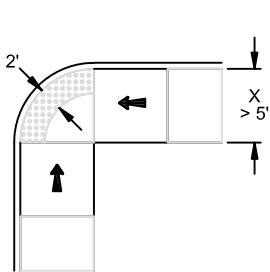
5/12/2020



WHEN DISTANCE "X" IS LESS THAN 5', TRUNCATED DOME DETECTABLE WARNING SURFACE SHALL BE PLACED PERPENDICULAR TO THE PATH OF TRAVEL.



PLACEMENT ON CROSSING ISLAND

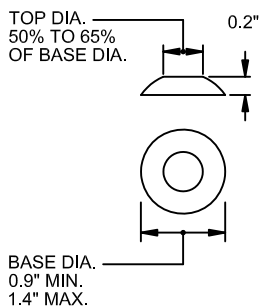


WHEN DISTANCE "X" IS GREATER THAN 5', TRUNCATED DOME DETECTABLE WARNING SURFACE SHALL BE PLACED PARALLEL TO THE BOTTOM OF CURB RAMP.

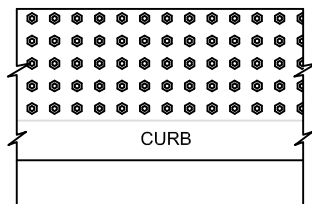
PLACEMENT ON SIDEWALK RAMP

NOTES

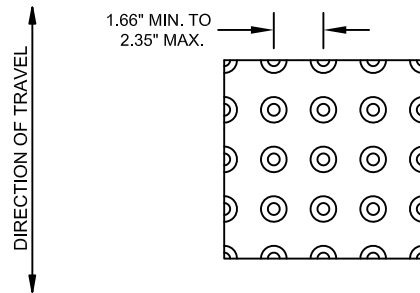
1. REFER TO ODOT STANDARD DRAWING RD759 FOR DETAILS.
2. COLOR OF DOMES TO BE SAFETY YELLOW.



TRUNCATED DOME DETAIL



TRUNCATED DOME PATTERN



RAMP TEXTURE DETAIL

TRUNCATED DOME DETECTABLE WARNING SURFACE



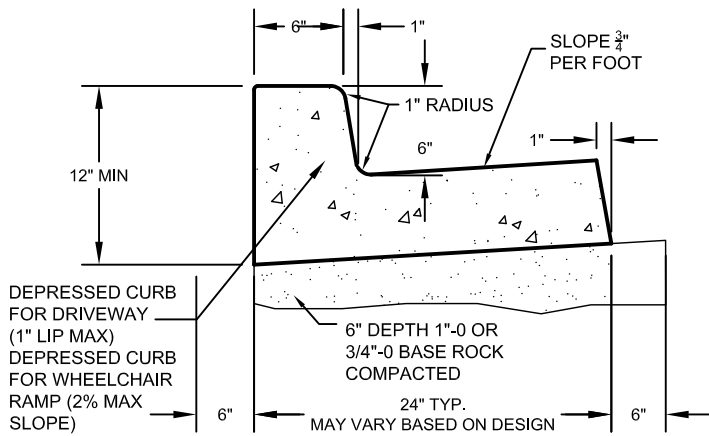
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TRUNCATED DOME
PLACEMENT

DETAIL NO.

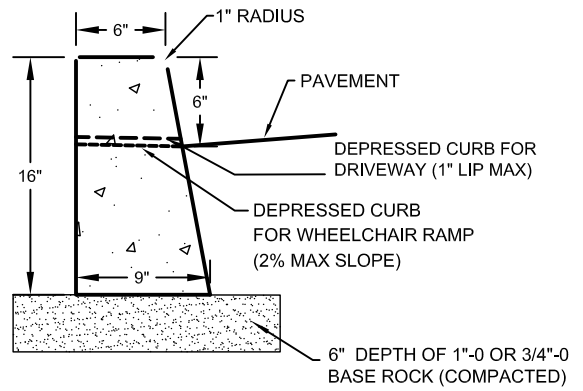
T-214

6/7/23



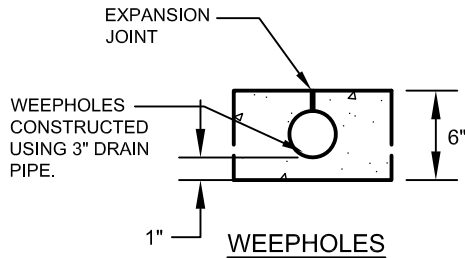
TYPICAL INTEGRAL CURB & GUTTER

NOT TO SCALE; FOR CROWN ROADS ONLY; SEE NOTE 8 FOR SHED ROADS.



TYPE C CURB

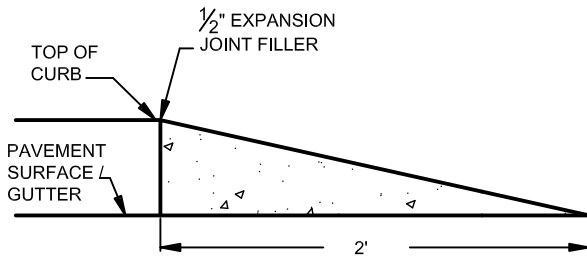
NOT TO SCALE



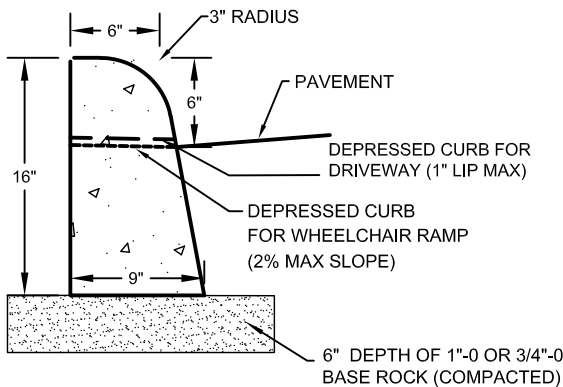
DRAIN PIPES SHALL BE EXTENDED TO BACK OF WALK WHEN SIDEWALKS ARE CONSTRUCTED ADJACENT TO CURB

NOTES:

1. A CONCRETE MIX DESIGN SHALL BE SUBMITTED TO THE CITY ENGINEER PRIOR TO SCHEDULING POUR.
2. CURB STRUCTURES SHALL CONFORM TO THE OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION, CURRENT EDITION, SECTION 00759.
3. CONTRACTION JOINTS
 - A) TO BE PROVIDED
 - AT EACH POINT OF TANGENCY
 - AT EACH SIDE OF INLET STRUCTURES
 - AT BOTH SIDES OF AN APPROACH
 - B) SPACING TO BE NOT MORE THAN 15 FEET
 - C) DEPTH OF JOINT SHALL BE AT LEAST 1/3 THICKNESS OF CONCRETE
3. EXPANSION JOINTS
 - A) TO BE PROVIDED
 - AT EACH COLD JOINT
 - AT EACH JOINT BETWEEN NEW AND EXISTING CONCRETE
 - B) EXPANSION JOINTS IN CURB & GUTTER SHALL BE PLACED AT MAX 45' INTERVALS
 - C) DEPTH OF JOINT SHALL BE EQUAL TO THICKNESS OF CONCRETE
 - D) EXPANSION JOINTS SHALL USE PREFORMED EXPANSION JOINT FILLER
4. WEEPHOLES
 - A) DRAINAGE ACCESS THROUGH EXISTING CURBS SHALL BE DONE BY:
 - CORE DRILLING, OR
 - VERTICAL SAWCUT OF CURB 18" EACH SIDE OF DRAIN AND RE-POURED (WITH DOWELS BOTH SIDES INTO EXISTING CUT) TO FULL DEPTH OF CURB OR CURB & GUTTER
5. STAMP TOP OF CURB WITH "W" AT WATER SERVICE CROSSING AND "S" AT SANITARY LATERAL CROSSING AS SPECIFIED.
6. SEE STANDARD CURB CUT DETAIL FOR DRIVEWAYS: T-150, T-151, AND T-152.
7. TYPE C CURB MAY BE USED FOR REPLACEMENT OF EXISTING TYPE C CURBS ONLY UPON APPROVAL BY CITY ENGINEER.
8. STANDARD CURB AND GUTTER MUST BE ROTATED ON SHED ROADS TO DRAIN TOWARD STREET.



CURB ENDING DETAIL
NOT TO SCALE



SURMOUNTABLE CURB



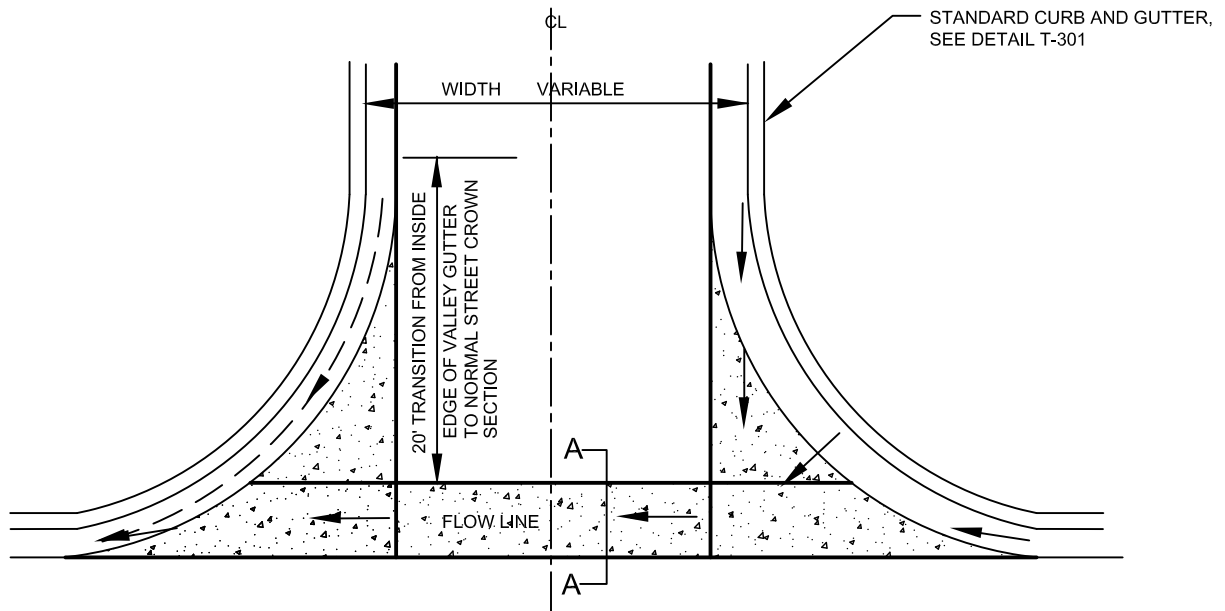
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CURB AND GUTTER DETAILS

DETAIL NO.

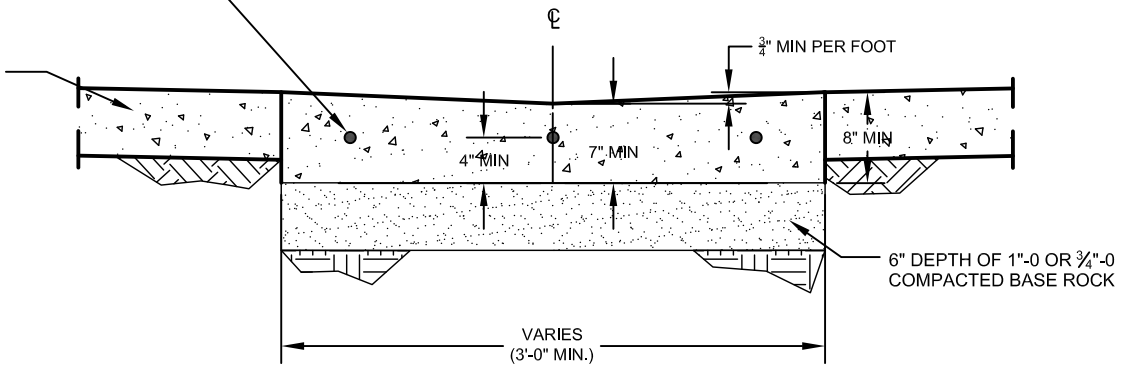
T-301

12/13/2023



3 - #4 REBAR CONTINUOUS, REBAR SHOULD BE CENTERED IN VALLEY GUTTER

SEE STANDARD STREET DRAWING T-050



SECTION A - A

NOTES:

1. A CONCRETE MIX DESIGN SHALL BE SUBMITTED TO THE CITY ENGINEER PRIOR TO SCHEDULING POUR.
2. STRUCTURES SHALL CONFORM TO OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION, CURRENT EDITION, SECTION 00759.



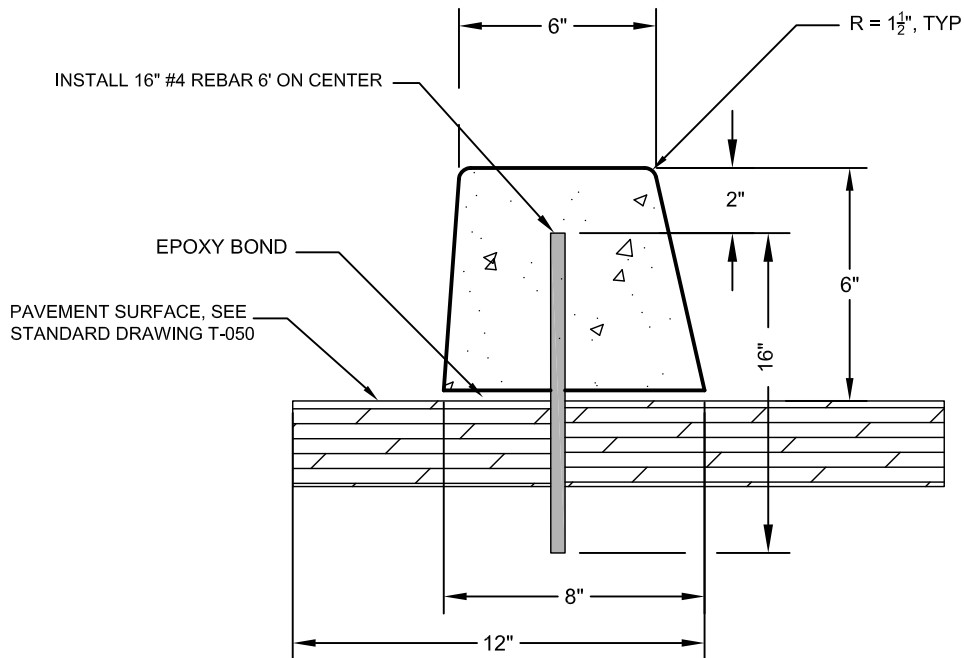
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VALLEY GUTTER DETAIL

DETAIL NO.

T-302

5/12/2020



NOTES

1. A CONCRETE MIX DESIGN SHALL BE SUBMITTED TO THE CITY ENGINEER PRIOR TO SCHEDULING POUR.
2. STRUCTURES SHALL CONFORM TO OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION, CURRENT EDITION, SECTION 00759.
3. DOWEL NEW CURB TO EXISTING ASPHALT WITH #4 BAR WITH 6" PENETRATION.
4. REBAR SHALL HAVE A MINIMUM 2" CONCRETE COVER FROM OUTSIDE CONCRETE EDGE.
5. CONCRETE SHALL RECEIVE A MEDIUM BROOM FINISH.
6. CURB JOINT SHALL BE TROWELED JOINT WITH MIN. 1/2" RADIUS ALONG BACK OF CURB.
7. FOR SIDEWALKS REFER TO STANDARD SIDEWALK DETAIL T-210.
8. FOR CURB REFER TO STANDARD CURB & GUTTER DETAIL T-301.



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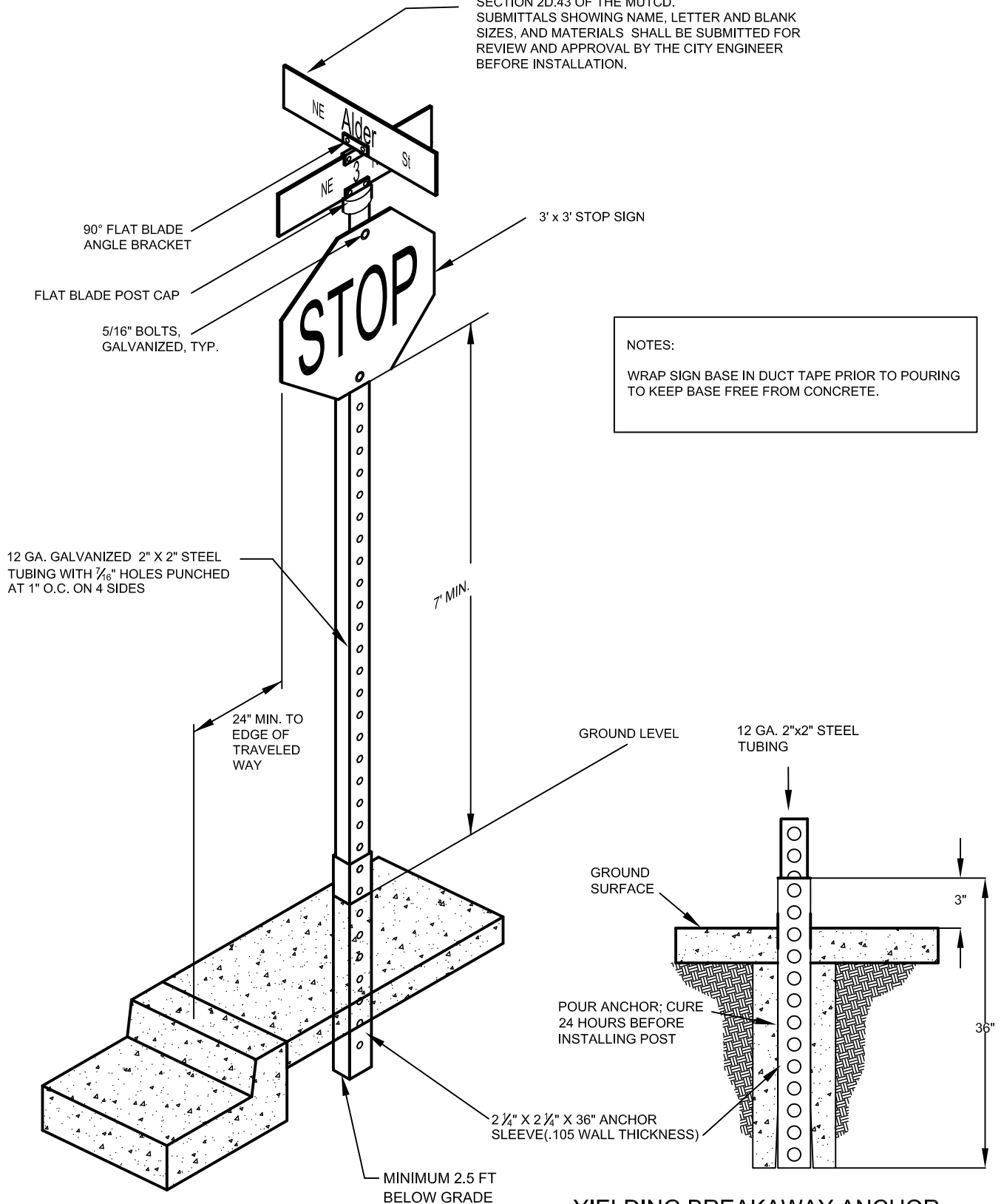
**EXTRUDED BONDED CURB
 CONCRETE**

DETAIL NO.

T-303

12/13/2023

STREET SIGNS SHALL BE IN ACCORDANCE WITH SECTION 2D.43 OF THE MUTCD. SUBMITTALS SHOWING NAME, LETTER AND BLANK SIZES, AND MATERIALS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY THE CITY ENGINEER BEFORE INSTALLATION.



NOTES:
WRAP SIGN BASE IN DUCT TAPE PRIOR TO POURING TO KEEP BASE FREE FROM CONCRETE.

YIELDING BREAKAWAY ANCHOR BASE ASSEMBLY



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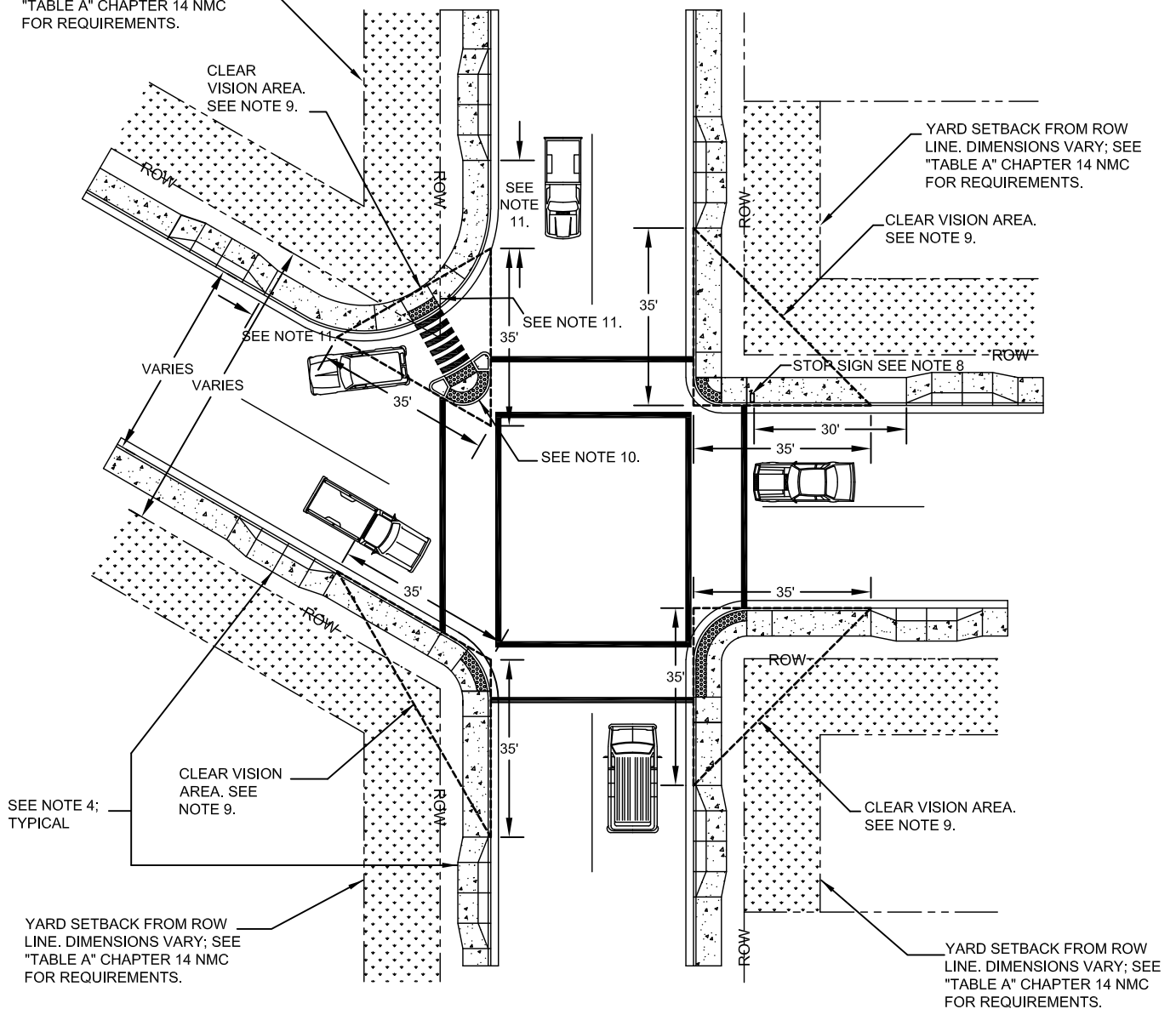
STANDARD SIGN DETAIL FOR LOCAL STREETS

DETAIL NO.

T-450

5/12/2020

YARD SETBACK FROM ROW LINE. DIMENSIONS VARY; SEE "TABLE A" CHAPTER 14 NMC FOR REQUIREMENTS.



NOTES

1. CLEAR VISION AREA BASED ON NEWPORT MUNICIPAL CODE (NMC 14.17) REQUIREMENTS. REFER TO NMC FOR FURTHER INFORMATION.
2. DRIVEWAYS SHALL BE LOCATED OUTSIDE CLEAR VISION AREA .
3. YARD SETBACKS ARE BASED ON NMC "TABLE A" CHAPTER 14; SEE NMC FOR FURTHER INFORMATION.
4. MULTIPLE DRIVEWAYS SHOWN FOR ILLUSTRATIVE PURPOSES ONLY. CITY ENGINEER HAS FINAL APPROVAL OF DRIVEWAY LOCATION.
5. ACUTE ANGLE CORNERS SHALL BE DESIGNED FOR APPROPRIATE TURNING RADIUS.
6. PEDESTRIAN CROSSING SHALL NEED ADAPTATION DEPENDING ON TURNING RADIUS.
7. TURNING LANE SHALL BE 12 FT WIDE FROM FACE OF CURB TO FACE OF CURB.
8. DRIVEWAYS SHALL BE LOCATED NO CLOSER THAN 30 FT FROM STOP SIGNS. CITY ENGINEER HAS FINAL APPROVAL ON DRIVEWAY LOCATION.
9. CLEAR VISION AREA SHALL REMAIN CLEAR OF ALL NATURAL OR MAN MADE STRUCTURES 3 FT OR HIGHER BLOCKING LINE OF SIGHT EXCEPT FOR THOSE ALLOWED BY NMC 14.17.
10. UNUSUAL CURB RADIUS MAY REQUIRE PEDESTRIAN SAFETY ISLAND.
11. DISTANCE VARIES. CURB RADIUS MAY REQUIRE DRIVEWAY SET BACK FURTHER FROM 35 FT LINE OF CLEAR VISION AREA . CITY ENGINEER HAS FINAL APPROVAL ON DRIVEWAY LOCATION.



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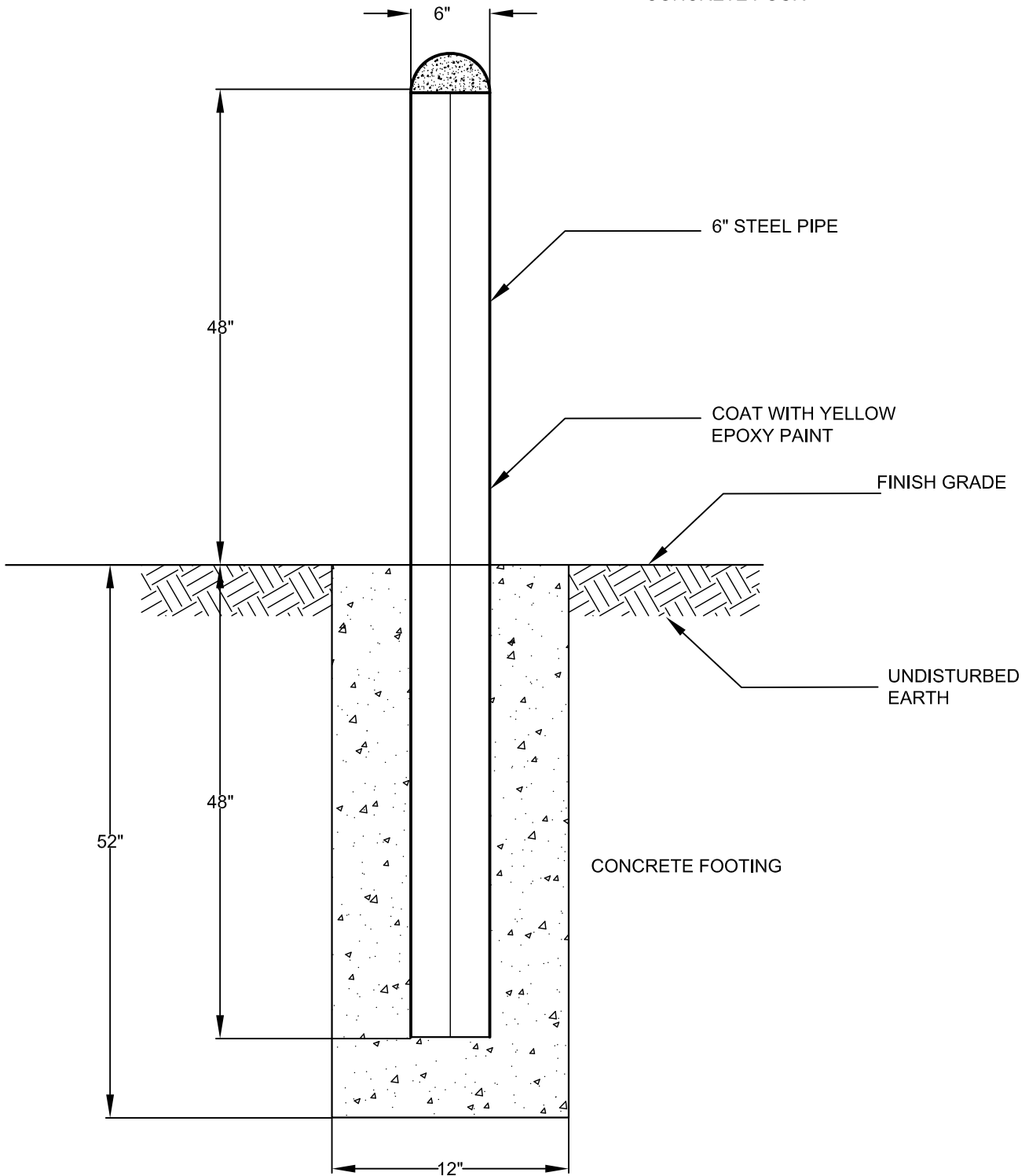
CLEAR VISION AREA AT INTERSECTION

DETAIL NO.

T-600

5/12/2020

FILL PIPE WITH CONCRETE; CONE TOP OF CONCRETE POUR



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BOLLARD DETAILS

DETAIL NO.

T-604

11/22/2022

**SECTION 7 –
LANDSCAPING**

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SECTION 7 - LANDSCAPE ARCHITECTURE AND IRRIGATION SYSTEMS

PURPOSE

The purpose of these guidelines is to promote community health, safety and welfare by protecting natural vegetation, set development standards for landscaping and street trees, and reduce water consumption by using appropriate site design, plant materials, and irrigation technologies. These standards are in addition to and complement the Newport Municipal Code (NMC) Chapter 14.19. Requirements may also be stated in other chapters of the municipal code.

APPLICABILITY

The City shall require submittal of Landscape and Irrigation plans for any system that is located within City right-of-way (ROW) and/or will become owned, operated and maintained by the City of Newport and require a licensed landscape architect, defined by the Oregon Revised Statutes, stamp and sign all landscape and/or irrigation plans for work within all public ROW. The Project Architect shall use the minimum general specifications for construction set forth in the Oregon Standard Specifications for Construction and these City of Newport Standards and Specifications.

Design standards include tree and existing plant habitat protection, removal of trees and landscaping materials, plant selection, tree spacing, as well as the safety of the public and City maintenance staff. City staff do not maintain landscape in the ROW and may remove landscaping if required to maintain City infrastructure.

Any proposed design including existing trees in the ROW shall be completed after receiving an approved Tree ROW Permit (see end of section for copy of permit application). Landscaping within the ROW is controlled NMC 9.10 ROW Permits and 9.15 Encroachment Permits.

PARKS AND RECREATION

The Parks and Recreation Department of the City maintains not only parks, but also other green areas. They review Landscape Plan submittal to ensure those plans follow the Tree Manual criteria and other City standards. The Parks and Recreation Dept. may be involved in plan review for landscaping.

TREE BOARD

The Parks and Recreation Committee acts as the City's Tree Board. The Tree Board has authority given in the NMC to approve or deny requests for removal of public trees not fitting the criteria described in Section 9.10.025(A)1-5) and other cases where the City chooses to refer the Tree ROW Permit application to the Board for consideration. Involvement of the Tree Board is discussed in several places of the NMC. Designers should be aware of the Board's authority and participation in maintaining the City's landscaping.

LANDSCAPE PLAN SUBMITTALS

A landscape plan is required to include the following Submittal Requirements:

- A planting schedule containing the location, size, and species of the existing and proposed plant materials (at time of planting);
- Existing and proposed building and pavement outlines;
- Irrigation plans, written soil specifications at time of planting, and anticipated plant installation time line;

- The location of existing and proposed terraces, retaining walls, decks, patios, shelters, and play areas;
- Existing and proposed abutting street ROW landscaping;
- Other information as deemed appropriate by the Development Services Director. An arborist's report may be required for sites with mature, protected trees.

Refer to the NMC for more information about Landscape Plans.

DESIGN PARAMETERS

The design criteria for public ROW projects shall conform to the current City of Newport specifications, codes and ordinances of the City of Newport. The following are the minimum design standards for the City of Newport. These standards apply to all public ROW projects unless the City of Newport approves a variance in writing.

Stormwater Source Control Principles

The landscape plan shall adhere to current stormwater quality control principles including but not limited to identifying the development/building envelope, designing with the natural topography, minimizing impervious areas, working to minimize the volume and velocity of stormwater runoff through features such as canopy coverage and infiltration, where appropriate, and incorporating treatment through soils.

Water Efficient Landscaping Principles

The landscape plan shall adhere to current water conservation principles for water efficient landscape design, including, but not limited to, addressing microclimatic conditions in the site design process, grading, plant selection, soil amendments, irrigation design, and other material selection. Consider also exposure to sun, shade and wind when determining plantings options.

HYDROZONING

The landscape design shall select and group plants by implementing principles of "matched hydrozones" that is, grouping and watering plants based on their water needs.

The City of Newport recognizes four hydrozone classifications as outlined in the Oregon State University Extension Service publication Water-wise Gardening in Central Oregon. The four hydrozones are:

- Very Low - Most natives / may require supplemental water for plant establishment;
- Low - Perennials and some shrubs / some supplemental water required during the growing season (Apr - Oct);
- Moderate - Fruit trees, ornamental trees, and shrubs / regular amounts of supplemental water required during the growing season (Apr - Oct); and,
- High - Turfgrass and vegetable gardens / regular amounts of supplemental water required during the growing season (Apr - Oct). In addition, the following site-specific situations shall be considered for separating zones:
 - Separate zones for planting areas that have soil types that are significantly different as a result of being amended or disturbed;

- Separate zones for plants in raised planters, containers, tree wells, tree pits, or other limited spaces because those spaces dry out faster;
- Separate zones for plants on slopes, because they may require several short irrigation cycles to prevent runoff;
- Separate zones for landscape areas separated by physical barriers such as walls, fences, roads, sidewalks and driveways.

LANDSCAPE CONSERVATION

Landscape Conservation prevents the indiscriminate removal of significant trees and other vegetation, including vegetation and features associated with streams, riparian areas, wetlands and other protected natural resource areas.

TREE PROTECTION PLAN

Inventory significant trees during the site design process and protected during construction unless otherwise approved for removal through the site-plan review process. The City defines “significant trees” as individual trees, with a specific trunk diameter as measured four feet above the ground, known as diameter at breast height (DBH). City considers deciduous trees measuring six (6) inches or greater and coniferous trees measuring ten (10) inches or greater significant.

Retain significant trees unless City approves, in writing, removal for development. On a case-by-case review, the City may consider preservation impracticable when leaving the tree would prevent development of public streets, public utilities, needed housing, or land uses permitted by the applicable land use district. Define a protection area around the edge of all branches of each tree (drip-line) or strand of trees. Drip-lines may overlap between trees.

The tree protection plan shall include the following:

- Inventory of Significant Vegetation. Depict all significant vegetation by DBH and species, showing property lines, two (2) foot contours and rock outcroppings;
- Building Envelopes. The developer shall depict the buildable area of a lot that is consistent with the lot coverage area of the zone.
- Barriers. Show protection barriers on the site plan; locate and mark with flagging and/or signs all construction roads, parking places for workers, and areas for the storage of building materials, gravel and soil; stake out the exact locations of all utility trenches; erect physical barriers around all trees to be retained or groups of trees around the work site. Barriers that extend beyond the drip-line of the tree are preferred.
- Soil Compaction. The Tree Protection Plan shall depict typical details of methods for protecting the critical root zone. If barriers are not feasible to keep away vehicles and foot traffic, use six to eight inches of wood chips spread over the root zone or bridge root area overlaid by plates of steel or other suitable material.
- Grade Changes. If a grade change is unavoidable, use retaining walls to protect the root system.
- Severing Roots. Avoid cutting anchoring roots if possible. Tunneling for smaller household utility lines may be an option for tree preservation. When root cuts are unavoidable, make cuts with a pruning saw.
- Above Ground Injuries to Trees. Do not use trees for posting signs, electrical wires and pulleys. Keep trees free of nails, screws, and other fastening devices. Prevent trunk injuries by surrounding trunk with one (1) inch by four (4) inch wooden slats and securing in place with gauge wire around slats.

- Soil Contamination. Altering the soil chemistry can result in weakened trees, making them more susceptible to insects and disease. Prevent adverse effects on soil chemistry by spreading heavy plastic tarping where mixing concrete or cutting sheet rock; do not clean paintbrushes and tools over tree roots; dispose of chemical wastes properly and do not drain onto soil.
- Altering the Natural Drainage Course. When altering the natural drainage of a site, augment water for existing trees with an irrigation system. Prior to site grading, prepare a site drainage plan. Sometimes surface water containment can sustain existing stands of trees without artificial irrigation. Landscape plans or specifications shall note a requirement for the City to be notified within twenty-four (24) hours of any damage to existing trees within the project area that were not approved for removal or relocation. If damage occurs during construction, the contractor shall employ a certified arborist to determine whether it is possible to repair the damage or whether to replace the tree according to City standard mitigation procedures.

TREE REMOVAL AND RELOCATION

Do not remove or relocate trees within the public ROW without prior written approval received by an approved ROW permit. The applicant shall submit a Tree Removal and Planting Permit application to the City of Newport that identifies the number, type of trees, and location of trees for removal, reason for removal, and proposed planting mitigations. See NMC 9.10.025 A and B. The Tree Board with input from the Engineering Dept shall approve removal/relocation of the tree based on the following criteria:

- the site cannot feasibly be developed, either by alternative site design or construction methods without removing or relocating existing trees;
- trees left in their present location will be so undermined by construction that their viability is threatened to the extent they become a danger in the future; or
- existing location interferes with the clear vision standards, intersection sight triangles, and intersection sight distances (for traffic, bicycles, and/or pedestrians and causes a safety concern that may not be resolved by appropriate pruning or thinning).

A licensed landscape architect or certified arborist shall provide City Engineer with recommendations for removal, pruning or thinning. Under no circumstances may a tree be “topped”. Clearly identify existing trees approved for removal or relocation on the landscape plan. Notify the City forty-eight (48) hours in advance of any approved tree removal activity.

STREET TREES AND PLANTS

City requires street trees relocated and replanted with all public-ROW projects. They may be located within the ROW or located in the front yard setback or buffer area immediately adjacent to the ROW. Deviation from this standard shall require approval from the City Engineer.

Select trees and plant species for use in non-paved public ROW projects for their durability, drought tolerance, proportionality to site circumstances, low maintenance, and clearance standards for pedestrian, bicycle, and vehicular traffic safety.

All trees and plants considered shall be hardy to USDA Zone 8b.

City of Newport personnel do not maintain private landscaping installed in the ROW and may remove said landscaping if it interferes with infrastructure maintenance.

TREE STAKING

Newly planted trees do not need staking if they are in a safe, gust-free location. If trees are planted in a location where they experience gusts or constant wind, or are in any other location where they could be damaged by vehicles or pedestrians, staking or other physical structures (i.e. bollards, temporary wind breaks or tree stakes) are required. Trees should be staked for one year only, loose enough to allow for movement in the wind. A minimum of two stakes per tree is required.

APPROVED STREET TREE LIST

Submit proposed street trees with drawing submittal for approval.

NON-APPROVED STREET TREES AND PLANTS

Turf and artificial turf is prohibited in public ROW projects, but will be assessed by the City Engineer on a case-by-case basis.

HEIGHT STANDARDS FOR STREET TREES AND PLANTS

On public ROW landscape projects without existing sidewalks, trees shall be located to accommodate future sidewalk locations with consideration for existing and future utility corridors.

Do not install plants that will attain a mature height of two (2) feet or more in height in Clear Vision Areas, Intersection Sight Triangles, or Sight Distance Areas. Refer to Standard Drawing T-600, Clear Vision Areas. The height of the plant shall include the adjacent curb height and any earthwork or grading within the plant bed.

The City does not permit planting trees within the Clear Vision Area, Intersection Sight Triangles, nor Sight Distance Areas. Contractor shall limb existing trees to a minimum of eight (8) feet above the adjacent curb. This applies to center medians as well as roadside areas.

Size of Street Trees and Plants

Minimum plant and tree sizes will be determined during plan review. Shrubs shall be planted from two-gallon containers or larger.

The minimum caliper size of street trees at planting shall be two and one-half (2.5) inches DBH (diameter at breast height, or four (4) feet above ground), based on the American Association of Nurserymen Standards. If the required caliper is not available, the Planning Director/Review Authority may accept replacement trees with an extended maintenance guarantee of two additional years depending on substituted size.

For more information on types of trees allowed within the City please refer to the *City of Newport Tree Manual, 2023*. The manual may be found on the www.newportoregon.gov website under “City Parks”.

STREET TREE LOCATION AND SPACING

Where the landscape strip and/or sidewalk is not wide enough to accommodate street trees, with the Community Development Director and City Engineer to determine potential tree locations.

Where practical, plant small stature trees no closer to the curb or sidewalk than five feet. Root barriers are required with street tree planting to protect the City’s curb, sidewalk, and pipes.

Base street tree spacing upon the type of tree(s) selected and the canopy size at maturity. Plant small canopy trees and columnar shaped trees no further than twenty-five (25) feet apart; medium and large canopy trees must be planted no further than thirty-five (35) feet apart, except where planting a tree would conflict with existing trees, retaining walls, utilities and similar physical barriers. The Community Development Director and Assistant City Engineer may approve a random spacing of street trees for the equivalent number of trees required for the length of the frontage.

Trees should be spaced no less than the following distances from existing or planned infrastructure:

- Stop signs: twenty (20) feet;
- Intersections: thirty-five (35) feet;
- Street lights: twenty-five (25) feet;
- Non-street light utility poles: five (5) feet;
- Overhead and underground utilities: ten (10) feet;
- Property lines: five (5) feet;
- Fire hydrants: ten (10) feet;
- Water meters or sampling manholes: five (5) feet;
- Driveways, sidewalks, curbs, or alleys: five (5) feet;
- Traffic signs: twenty (20) feet; and,
- Bus benches and shelters: five (5) feet.
- Designer responsible to call for locates and get proper survey information before designing.



Graphic taken from the City of Newport Municipal Code.

Trees shall not be planted within the following areas:

- Clear vision areas (see Standard Drawing T-600);
- Intersection sign triangles;
- Sight distance areas;
- City water or sewer easements, unless approved by the City Engineer;
- Public utility easements, unless written approval is obtained from the applicable agency(ies); or,
- Medians less than four (4) feet wide.
- With drip line extending over catch basins/Curb inlets (see Standard Drawing L-130 for drip line

location to inlet specifications).

- Locations that restrict on-street parking access.

EXEMPTIONS

The Assistant City Engineer will consider exceptions and/or exemptions to tree and plant location within the ROW on a case-by- case basis.

STANDARD MATERIALS AND EQUIPMENT

Designs shall incorporate materials and equipment that comply with the City of Newport Standards and Specifications. Submit a request for alternative materials only when desiring a deviation from Standards and Specifications. City must grant approval before landscaper may use alternate materials.

TREE WELLS

Install street trees planted within sidewalk tree wells within a pedestrian rated tree grate or surrounded by permeable pavers or pavement appropriate for pedestrian circulation. The minimum tree pit dimensions shall be a minimum of one-hundred-weight (108) cf four-by-nine feet (4' x 9'), minimum three (3) feet deep, and a minimum surface dimension of four-by-four feet (4' x 4'). See Standard Drawing L-140 for tree well grate requirements.

SOIL AMENDMENTS

The City of Newport requires an agricultural soil analysis for all public works projects. Soil analysis shall include pH, N-P-K, SAR, ECe, boron levels, percolation rates and soil particle evaluation. The report shall include recommendations for amendments, fertilizers, application rates, and procedures for conditioning the soil. When soil analysis shows that the site has compacted soil, disturbed non-native fill or soil lacking in nutrients, the city of Newport will require the use of organic soil amendments to improve soil structure and increase aeration, water penetration, and water retention for plant hydration. In order to prevent a layering of soil types work/till soil amendments to an appropriate depth for the planting. Do not disturb existing native shrub zones soil amendment processes.

The City of Newport requires that trees are planted in planting holes appropriate for the root ball/root mass, and that planting holes are backfilled with native material, except in certain situations where the existing soil is determined to not be suitable (i.e. rubble or rocks, compacted, or poor and inadequate soil as shown by soil analysis report). The planting area is mulched and receives irrigation as required through the first three growing seasons. Whenever possible, planting occurs during the fall.

Mulches

Apply organic mulch such as shredded bark or composted bark to all planting areas for moisture retention, weed control, and moderation of soil temperatures. See current OSS for mulch requirements.

The City prohibits impermeable weed barriers made of plastic under any mulches. City allows woven geotextile products under gravel or rock mulches.

The landscape plan shall identify the proposed type and recommended depth of installation for all proposed mulch materials and maintenance requirements.

Fertilizers

The landscape plan or specifications shall specify any additional fertilization requirements that may be

necessary for the establishment of new plant material.

The landscape plan shall specify type and recommended application rate for each proposed use of any fertilizer recommendation that deviates from the Oregon Standards and Specifications, Section 10130-Seeding, and Section, 01040-Planting, for approval by the City.

BARRIERS

Weed Barrier

Landscape fabric (geotextile products) is usually used to discourage weeds while allowing for movement of moisture both in and out of the soil. It's best to use landscape fabric under inorganic materials such as rock, gravel, or sand. It's easiest to use in places where you don't want anything to grow, such as under landscape pavers. Landscape fabrics should be applied on bare soil where all weeds and other vegetation have been removed.

Root Barrier

Root barriers can be either linear or surround the tree. Install when new tree is planted. See Standard Drawing L-100 for specifications.

Installing a plastic membrane vertical root barrier. This type of barrier is made from heavy-duty polypropylene and is between forty and sixty mil thick. The thick material is strong and impenetrable, and helps prevent excessive moisture from reaching the tree's roots. Place a three-inch space between the root ball and the barrier. City Engineer will consider other root barrier systems upon submittal of design.

Some of the most important keys to the proper design of root barriers include:

- Footprint of the barrier system. Will it be impacted by later road, sidewalk, or pipe excavation?
- Placing the tree root barrier before planting trees or when trees are new and immature with very minimal root systems at the time of installation.
- Preparing soil. Will there be enough room to loosen and till the soil, adding compost into the expected depth of the mature root system after sidewalk, curb, and pipes are installed?
- Expanding root barrier so it is at least the width of the "apron" area under the tree's projected trunk and branches. Will this fit into a green strip adjacent to sidewalks and roads?
- Installing root barrier at correct depth, leaving enough room for the tree roots to grow well but in a manner that is directed or controlled downward and away from the surface. Will there be utility conflicts during installation?
- Leaving some of the root barrier above the surface of the ground, compacting the soil around the base of the tree, then adding mulch. Who will maintain the mulch once it deteriorates?

WHEEL STOPS, CURBS, BOLLARDS

Wheel stops, curbs, and bollards may be part of a landscape design. For landscaped areas in the ROW, the City has standard drawings to help in the design.

- Wheel stop requirements, see Standard Drawing T-605.
- Curb requirements, see Standard Drawing T-301.
- Bollard requirements, see Standard Drawing T-604.
- Xeriscape landscape islands, see Standard Drawing L-105.

IRRIGATION PLAN SUBMITTALS

Landscape architect shall design efficient and uniform distribution irrigation systems. Consider specific criteria designs such as soil type, slope, root depth, plant materials, hydro-zones, microclimate conditions, water source, peak-precipitation rate demand, and watering windows.

To conserve and protect water resources, designs shall utilize appropriate equipment and components that meet the City of Newport Codes, Standards and Specifications. Irrigation designs should strive to design projects that are aesthetically pleasing, conserve water resources, and do not require maintenance by City staff.

For capital improvement and development projects, implement the following design requirements in all design deliverables and submittals presented to the City of Newport for review. An irrigation plan shall accompany the site/landscape plan and identify the location, type, and coverage of sprinklers, as well as drip lines, valves, zones, point(s) of connection and other equipment required to provide water as prescribed by the City of Newport as part of the submittal to the City for review and approval prior to installation. An irrigation plan is required for any public development where landscaping within the City of Newport ROW is part of the improvements, either new or existing. Irrigation plans shall comply with these standards and those set forth in the *Oregon Standard Specifications for Construction*, current edition, and in other City of Newport Standards and Specifications.

See SECTION 1 – General Specifications for plan submittal requirements and City of Newport CAD Standards.

DESIGN PARAMETERS

Irrigation systems shall fully irrigate plant materials shown or specified on the site plan. System design should consider plant size and spacing at maturity to ensure long-term effectiveness.

Base the minimum supply water pressure on information supplied by the water utility, field-verified and noted on the drawings.

Design irrigation systems to maximize efficient water usage based on existing and proposed site-specific topography, soils, site orientation, prevailing wind conditions, and microclimates to eliminate the possibility of run-off and overspray, minimize evaporation, and increase the rate of infiltration. Overhead irrigation sprinklers shall be inset three to five (3-5) inches from hardscape, curbs and sidewalks to prevent irrigation overspray and runoff onto adjacent surfaces.

Irrigation designs shall not mix rotary, fixed spray, bubblers, micro-sprays, drip, or subsurface irrigation methods on the same zone.

Provide separate irrigation zones for trees shrubs and groundcovers, and turf. Landscape architect may use fixed spray or rotary head irrigation for “temporary irrigation zones”. Temporary irrigation is required to establish revegetation areas with drought-tolerant and native plant species. The City Engineer review temporary irrigation systems on a case-by-case basis. Remove temporary irrigation after establishing health vegetation. Irrigation designs shall identify location, number of zones, and irrigation types proposed for any areas determined to be temporary irrigation zones.

Separate zones are required for permanent and temporary irrigation lines.

Safety

Eliminate run-off and/or over-spray from sprinkler heads on streets and sidewalks by use of proper design principles and installation practices.

To conserve and protect water quality, all landscapes and irrigation installations shall consider the conservation of resources, and protect native habitats and watersheds.

Irrigation designs shall utilize products that require the least amount of service, repair, and replacement. Buried vaults and valves should be located near areas with low pedestrian and vehicular traffic.

Hydro-zones

The irrigation plan, in conjunction with the landscape plan, shall prevent over-watering and under-watering by implementing principles of "matched hydro-zones."

Hydraulic Calculations

Irrigation designs shall supply complete calculations for all irrigation zones (drip zones and spray zones separately). Supply a table showing the total water required for each zone to ensure that the design has not exceeded the maximum for the meter, proposed pipe size, and zone watering times.

DRIP IRRIGATION DESIGN

Use drip irrigation when practical and where potential for irrigation overspray and/or runoff is likely to occur. Design drip irrigation systems according to standards and engineering practices specified by the American Society of Agricultural and Biological Engineers or Irrigation Association. In addition, design systems to meet the changing water requirements of the landscape as it matures.

Drip irrigation is required where dimensions are less than six (6) feet in any direction. Overhead irrigation in areas greater than six (6) feet in dimension shall utilize low-precipitation rate sprinkler nozzles and have a precipitation rate of less than one (1) inch per hour.

Design drip irrigation systems with drip emitters having an 'Emission Uniformity' (relative flow rate between like emitters) of at least eighty (80) percent at time of installation.

STANDARD MATERIALS AND EQUIPMENT

Designs shall incorporate materials and equipment that comply with City of Newport Standard Specifications and OSS for Irrigation Systems, Section 01120. Only use alternative materials after submitting and receiving an approved Deviation from Standards and Specifications. Use materials designated by trade name as per City of Newport Special Provisions or an approved equal, as verified from information in the manufacturer's catalogue and shown to contain comparable components.

Irrigation Controllers

The City of Newport uses the current technology for programming and monitoring irrigation systems for landscape areas within the city to ensure the most efficient delivery of water to the public ROW. See Standard Drawing L-135 for tree well irrigation requirements.

Irrigation controllers shall be EPA WaterSense labeled smart irrigation controllers that automatically adjust irrigation run times in response to environmental conditions.

Automatic Control Valves

Automatic electric solenoid remote control valves shall be slow acting diaphragm-type, as per Newport Standards and Specifications, 01120.17 Valves (h) Control Valves, (2) Automatic Control Valves.

Sprinkler Heads

Sprinkler heads shall provide coverage as specified in the manufacturer's design literature. The use of high efficiency sprinklers or nozzles is encouraged wherever practicable.

Pipe

ROW projects shall be entirely furnished with one pipe class or schedule type as per the Newport Standards and Specifications, and conforming to all other national and local standards.

Blowouts

Install a blowout connection point to facilitate winterization by use of compressed air. Locate blowout connection immediately downstream from backflow device.

BENCHES

City requires all benches installed in a developed site placed on a concrete pad. A developed site may include a city park, residential development, office buildings, outdoor structures such as a gazebo, picnic areas, recreational facility, etc. Bench are to be attached to the pad in a secure and permanent manner. The concrete pad shall be a minimum of four (4) inch deep and level to the surrounding grade. A concrete pad measuring seven feet by four feet (7' x 4') is required for a six (6) foot bench, and the bench shall be centered on the concrete pad. See Standard Drawing L-120 for construction requirements.

Bench requests are approved by Parks and Recreation Department.

HANGING BASKETS, PLANTER BOXES, AND WINDOW BOXES

Landscape design requirement vary by location. When hanging baskets, planter boxes and window boxes extend in ROW, more particularly, pedestrian pathway, ROW requirements are consistent regardless of location. See Standard Drawing L-115 for height and walkway width minimums.

DESIGN STANDARDS

Root Barriers

Root barrier applications in ROW design. See Standard Drawing L-100 for installation requirements.

Tree Wells

In wider areas where there is room for trees and sidewalk a tree well may be a design options. See Standard Drawing L-102 for construction details.

Xeriscape Landscape island in public spaces

In public spaces where water may not be accessible, a xeriscape option may be possible. See Standard Drawing L-110 for construction specifications.

Landscape islands in public spaces

Landscaping islands may be possible where there is a water available for irrigation. See Standard Drawing L-115 for construction requirements.

Hanging Baskets, Planter Boxes and Window Boxes in ROW

Portable landscaping in the ROW needs to be designed with pedestrian access in mind. See Standard Drawing L-120 for minimum widths and heights.

Public benches

Benches in public spaces require a concrete pad and marine grade steel fasteners. See Standard Drawing L-120 for construction standards.

Drip line location to Curb Inlets

Trees are to be planted down stream from curb inlets to avoid clogging inlet grates with falling leaves or needles. See Standard Drawing L-130 for specifications.

Tree Well Irrigation

Tree well irrigation shall be built into the design for the health and maintenance of the tree. See Standard Drawing L-135 for construction standards.

Tree Well Grate

Tree Well Grates must be compatible with sidewalks and ADA requirements. See Standard Drawing L-140 for required specifications.

END OF SECTION

LANDSCAPING IN ROW

STANDARD DETAIL DRAWINGS INDEX

- L-100: ROOT BARRIER
- L-105: TREE WELL
- L-110: XERISCAPE LANDSCAPE ISLAND IN PUBLIC SPACES
- L-115: LANDSCAPE ISLANDS IN PUBLIC SPACES
- L-120: HANGING BASKETS, PLANTER BOXES AND WINDOW BOXES IN ROW
- L-125: PUBLIC BENCHES
- L-130: DRIP LINE LOCATION TO CURB INLETS



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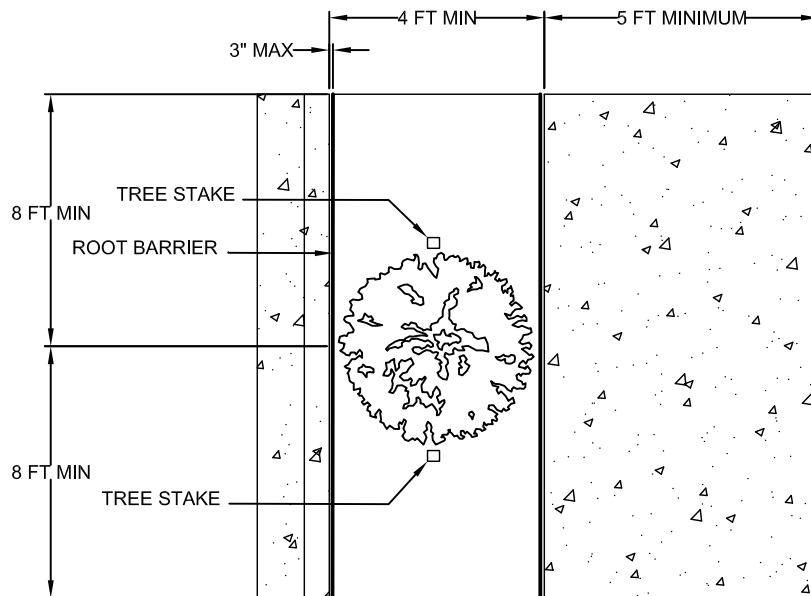
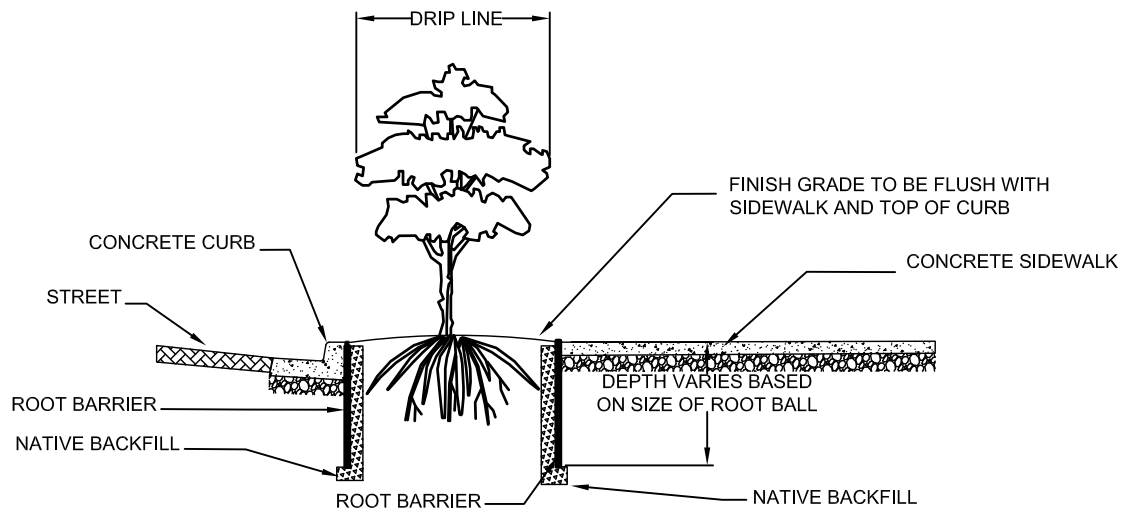
STANDARD DETAIL DRAWING INDEX

DETAIL NO.

L-010

2/13/2024

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NOTES:

1. ROOT BARRIERS SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
2. TAMP SOIL ADJACENT TO ROOT BARRIERS TO STABILIZE BARRIERS.
3. TOP OF ROOT BARRIER 1" ABOVE FINISHED GRADE.
4. SOIL FINISH GRAD 2" BELOW ADJACENT PAVEMENT OR CONCRETE.
5. ROOT BARRIER SYSTEMS REQUIRED TO PROTECT NEARBY CITY INFRASTRUCTURE.
6. WATER MAINS HAVE MINIMUM 30 INCHES OF COVER; SHAPE ROOT SYSTEMS AWAY FROM CONFLICT WITH WATER MAINS.
7. STORM PIPE OFTEN RUNS PARALLEL WITH CURB LINE WITH 30 INCHES OF COVER. SHAPE ROOT SYSTEMS AWAY FROM CONFLICT WITH MAINS.
8. INSTALL TREE STAKE TO NURSERY STANDARDS TO PROTECT BARK.
9. HEIGHT OF TREE TO COMPLY WITH NMC REQUIREMENTS FOR OVERHANGING LANDSCAPE AND CLEAR WALKWAYS.



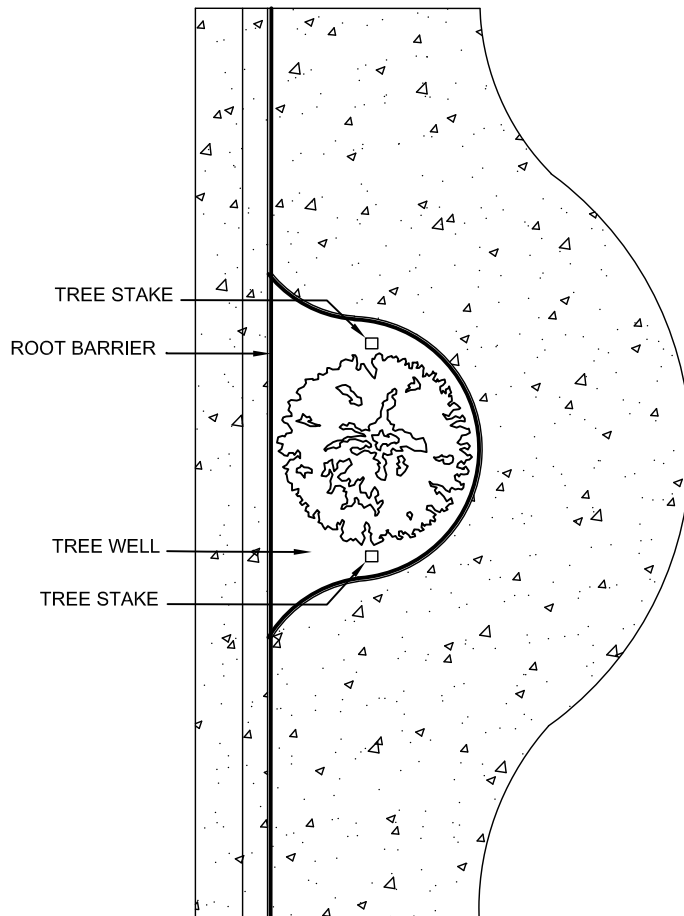
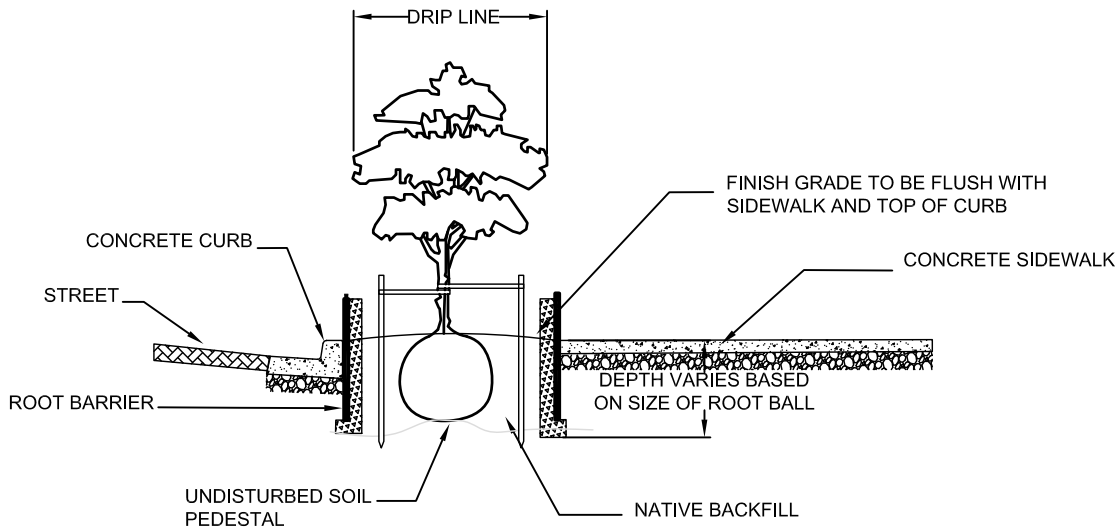
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ROOT BARRIER

DETAIL NO.

T-100

2/6/2024



NOTES:

1. LEAVE A FIRM PEDESTAL OF UNDISTURBED SOIL TO PREVENT SETTLING
2. INSTALL ROOT FLARE TO BE VISIBLE ABOVE GRADE AFTER BACKFILL
3. ROOT BARRIERS SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS. SEE STANDARD DRAWING T-605.
4. DIG A HOLE AT LEAST 2 TIMES THE WIDTH OF THE ROOT BALL AND NOT ANY DEEPER THAN THE TREE'S ROOT FLARE.
5. STAKE TREE WITH TWO WOODEN STAKES; LOOSELY ATTACH WITH TREE TIE SO AS NOT TO DAMAGE BARK.
6. APPLY 3 INCHES OF MULCH; KEEP MULCH AWAY FROM TRUNK.
7. CREATE A SOIL BERM ABOUT 3-5 INCHES HIGH AROUND THE TREE HOLD AFTER BACKFILLING
8. BACKFILL WITH THE ORIGINAL SOIL AND WATER THOROUGHLY



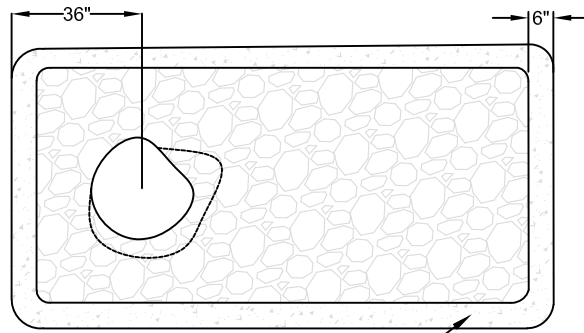
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**TREE WELL CURB TIGHT
 SIDEWALK**

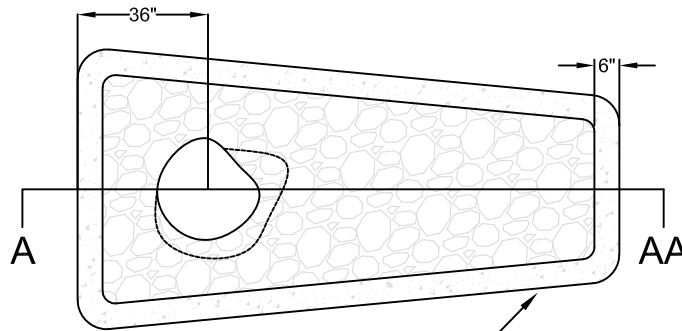
DETAIL NO.

T-105

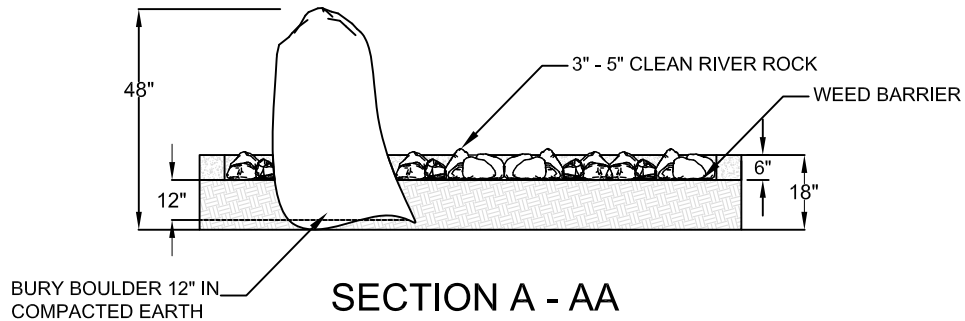
2/6/2024



STANDARD "C" CURB



STANDARD "C" CURB



BURY BOULDER 12" IN
COMPACTED EARTH

SECTION A - AA

NOTES:

1. BOULDERS SHALL HAVE ROUNDED EDGES.
2. INSTALL WEED CONTROL FABRIC BELOW RIVER ROCK.
3. 12" BURY ON BOULDER.
4. ISLANDS MATCH LENGTH OF PARKING STALLS.
5. ANY USE OF BOULDERS SHALL INSURE BOULDER IS PLACED SO AS NOT TO OBSTRUCT PASSENGER EGRESS AND INGRESS.
6. MATCH ANGLE OF LANDSCAPE ISLAND WITH ANGLE OF PARKING STALL WHEN ISLANDS USED IN CORNERS.
7. SIX (6) INCH CURB REVEAL; STANDARD "C" CURB; SEE STANDARD DRAWING T-301.



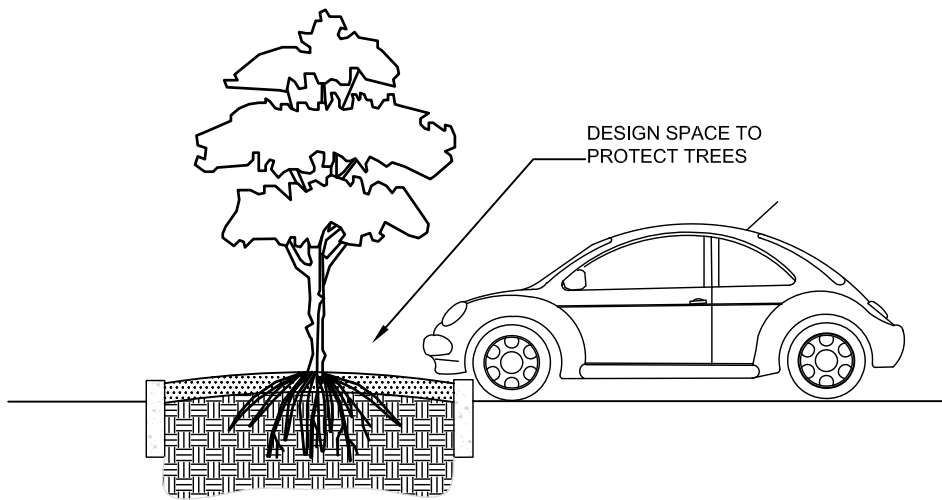
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**XERISCAPE ISLANDS
IN PUBLIC SPLACES**

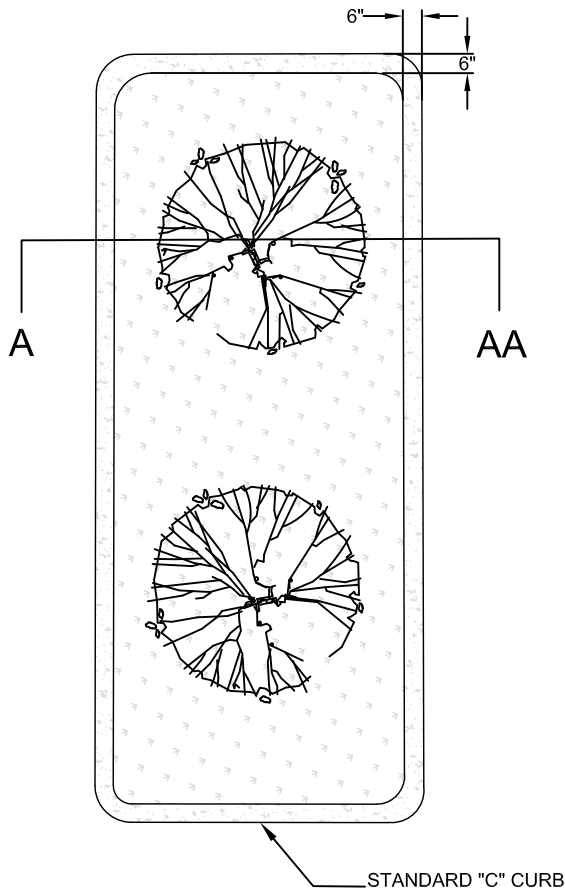
DETAIL NO.

L-110

2/7/24



SECTION A - AA



NOTES:

1. INSTALL WEED CONTROL FABRIC BELOW RIVER ROCK.
2. SIX (6) INCH CURB REVEAL; "C" CURB; SEE STANDARD DRAWING T-301.
3. MINIMUM 48 SF FROM INSIDE CURB TO INSIDE CURB.
4. SEE CITY OF NEWPORT TREE MANUAL FOR ALLOWABLE PLANTINGS.
5. IRRIGATION SYSTEM REQUIRED IF WATER IS NEEDED FOR LANDSCAPE TO FLOURISH OTHERWISE USE LOW WATER PLANTS.
6. SEE STANDARD DRAWING L-100 FOR ROOT BARRIER SPECIFICATIONS



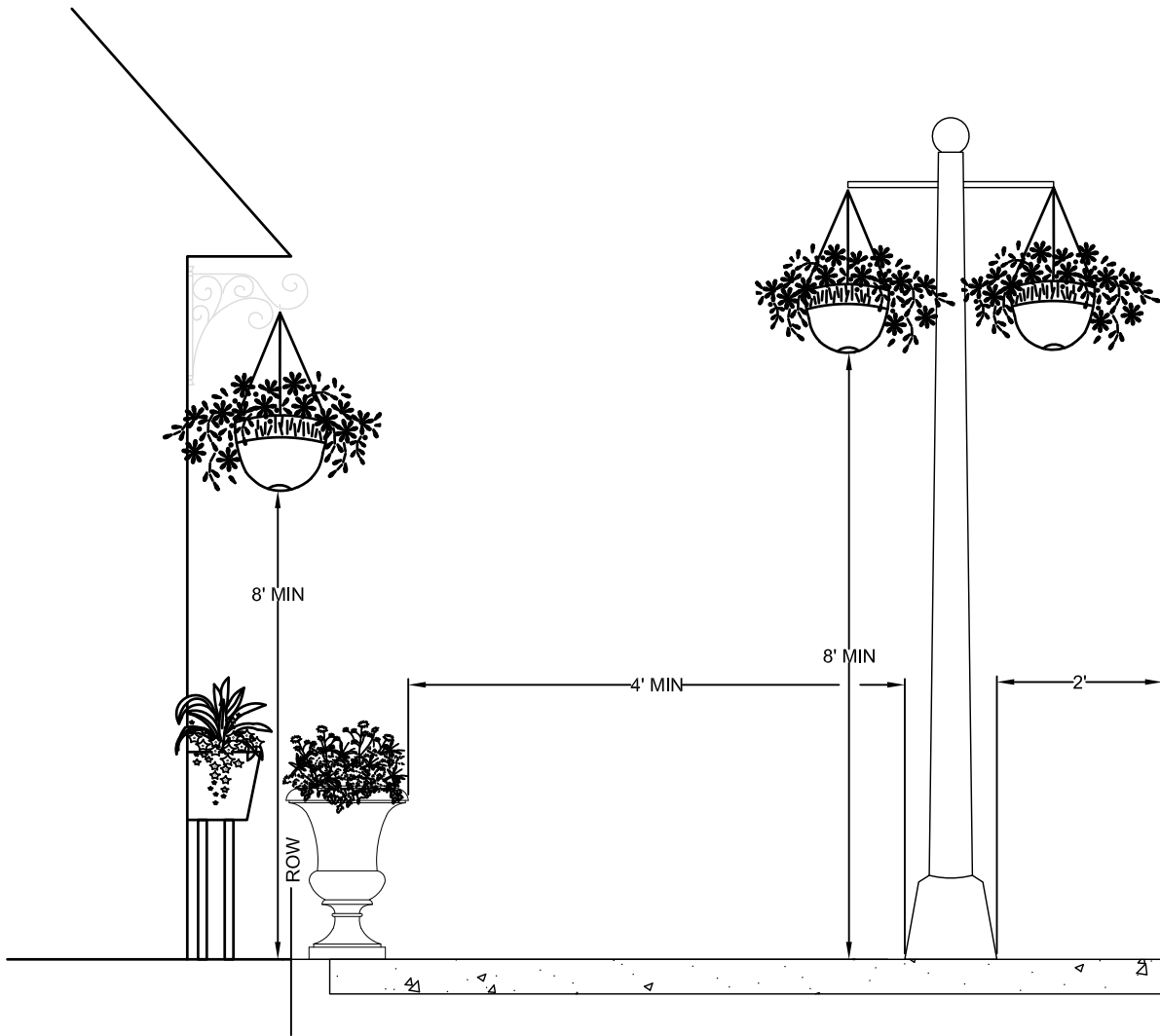
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LANDSCAPE ISLANDS
 IN PUBLIC SPACES

DETAIL NO.

L-115

2/7/24



NOTES:

1. WINDOW BOXES AND PLANTER BOXES EXTENDING INTO ROW, SPECIFICALLY IN A SIDEWALK AREA, SHALL LEAVE A 4 FT MINIMUM WALK AREA.
2. AN 8 FT HEIGHT CLEARANCE IS REQUIRED FOR ALL PEDESTRIAN WALKWAYS.
3. HANGING BASKETS SHALL BE PLACED ON POLES RATED TO WITHSTAND WIND LOADS COMMON TO THAT AREA.
4. IRRIGATION SYSTEMS SHALL BE DESIGNED TO PROTECT FOOT TRAFFIC AND NOT CAUSE SLIPPERY WALKING SURFACES.



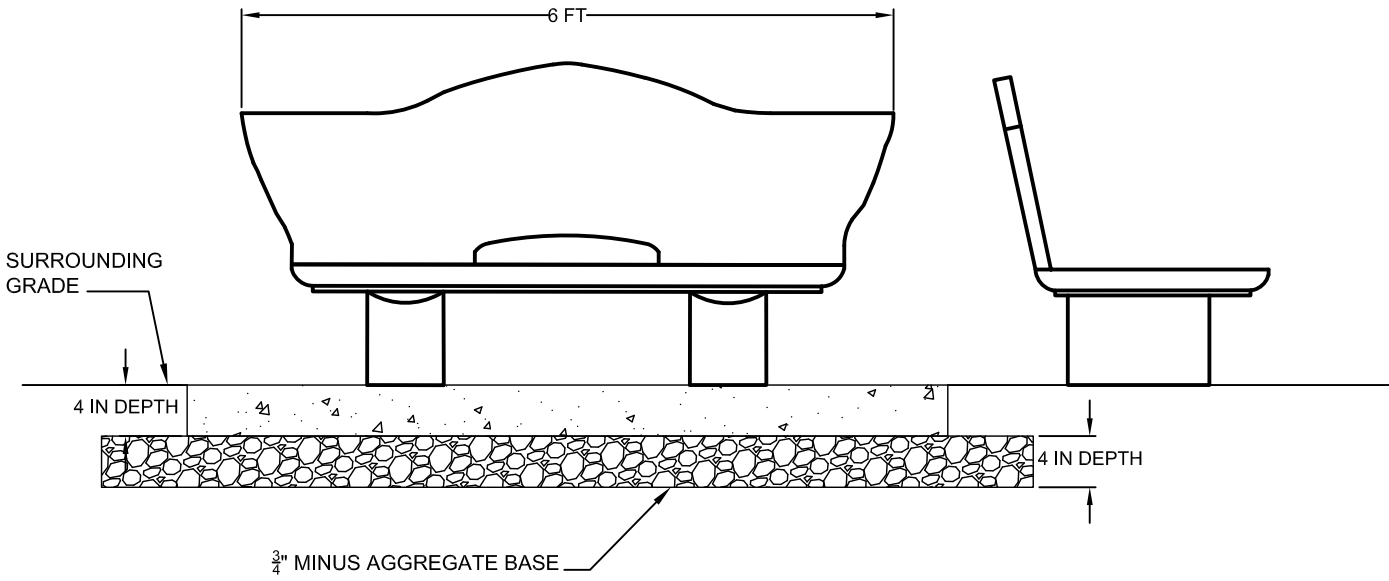
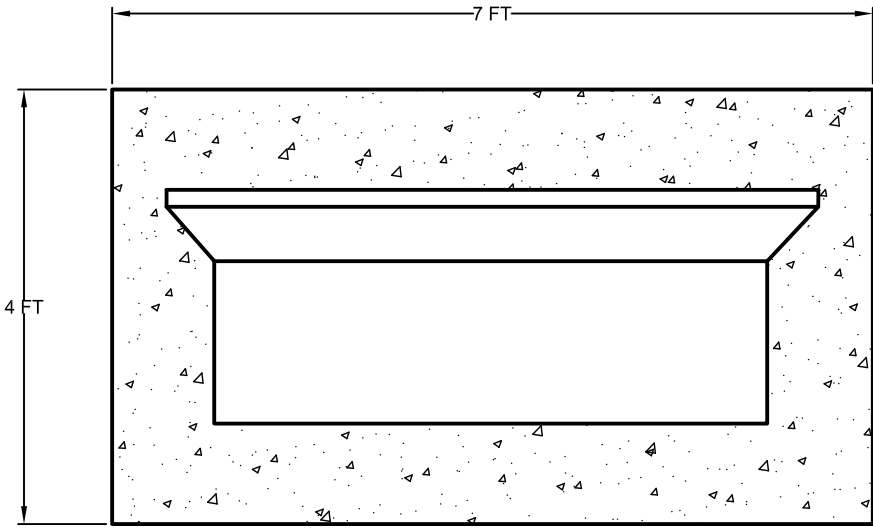
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**PLANTER BOXES, WINDOW BOXES
 AND HANGING BASKETS IN ROW**

DETAIL NO.

L-120

2/7/24



NOTES:

1. CONCRETE PAD 4" DEPTH. A CONCRETE MIX DESIGN SHALL BE SUBMITTED TO THE CITY ENGINEER PRIOR TO SCHEDULING POUR.
2. STRUCTURES SHALL CONFORM TO OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION, CURRENT EDITION, SECTION 00759.
3. FINISH GRADE OF CONCRETE PAD TO MATCH SURROUNDING ELEVATIONS.
4. MARINE GRADE STEEL REDHEADS; L-BRACKETS; EPOXY SEALED
5. CENTER BENCH ON CONCRETE PAD



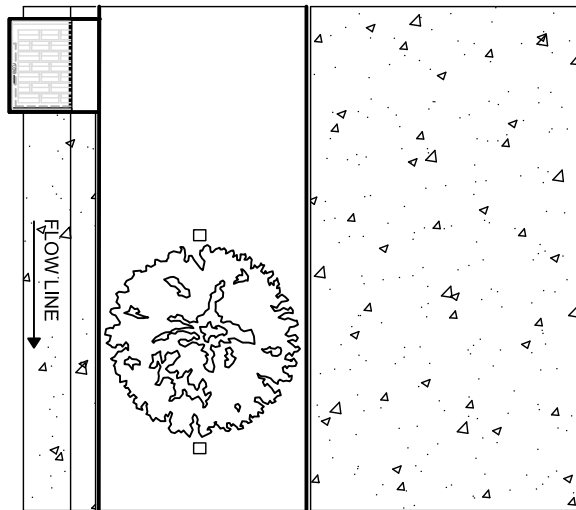
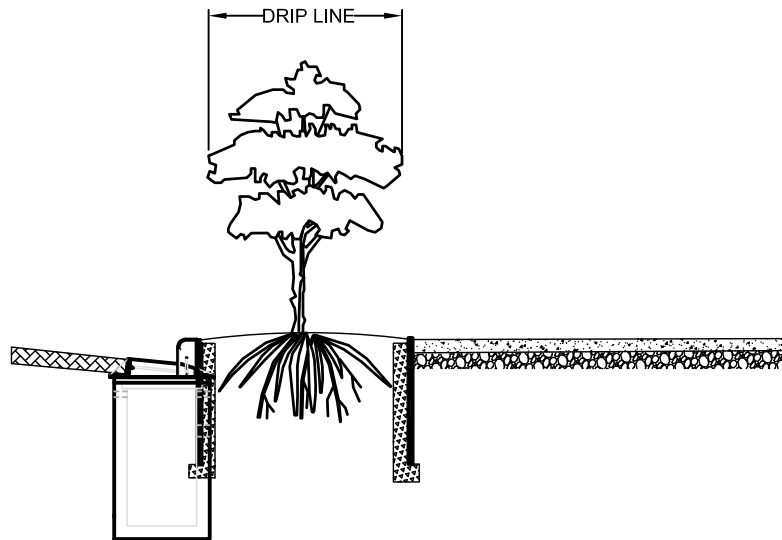
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PUBLIC BENCHES

DETAIL NO.

L-125

2/7/2024



NOTES:

1. DESIGN DRIP LINE TO BE DOWN FLOW LINE OF CURB INLET SO FALLING LEAVES AND NEEDLES DO NOT CLOG INLET GRATE.
2. INLET FRAME IS SEVEN INCHES WIDE AT CURB INTERFACE; LOCATE ROOT BARRIER WITH ADDITIONAL WIDTH IN MIND IF TREE WITHIN EIGHT (8) FEET OF CURB INLET. SEE STANDARD DRAWING L-100 FOR ROOT BARRIER SPECIFICATIONS.
3. SEE STANDARD DRAWING D-300 FOR CURB INLET SPECIFICATIONS.



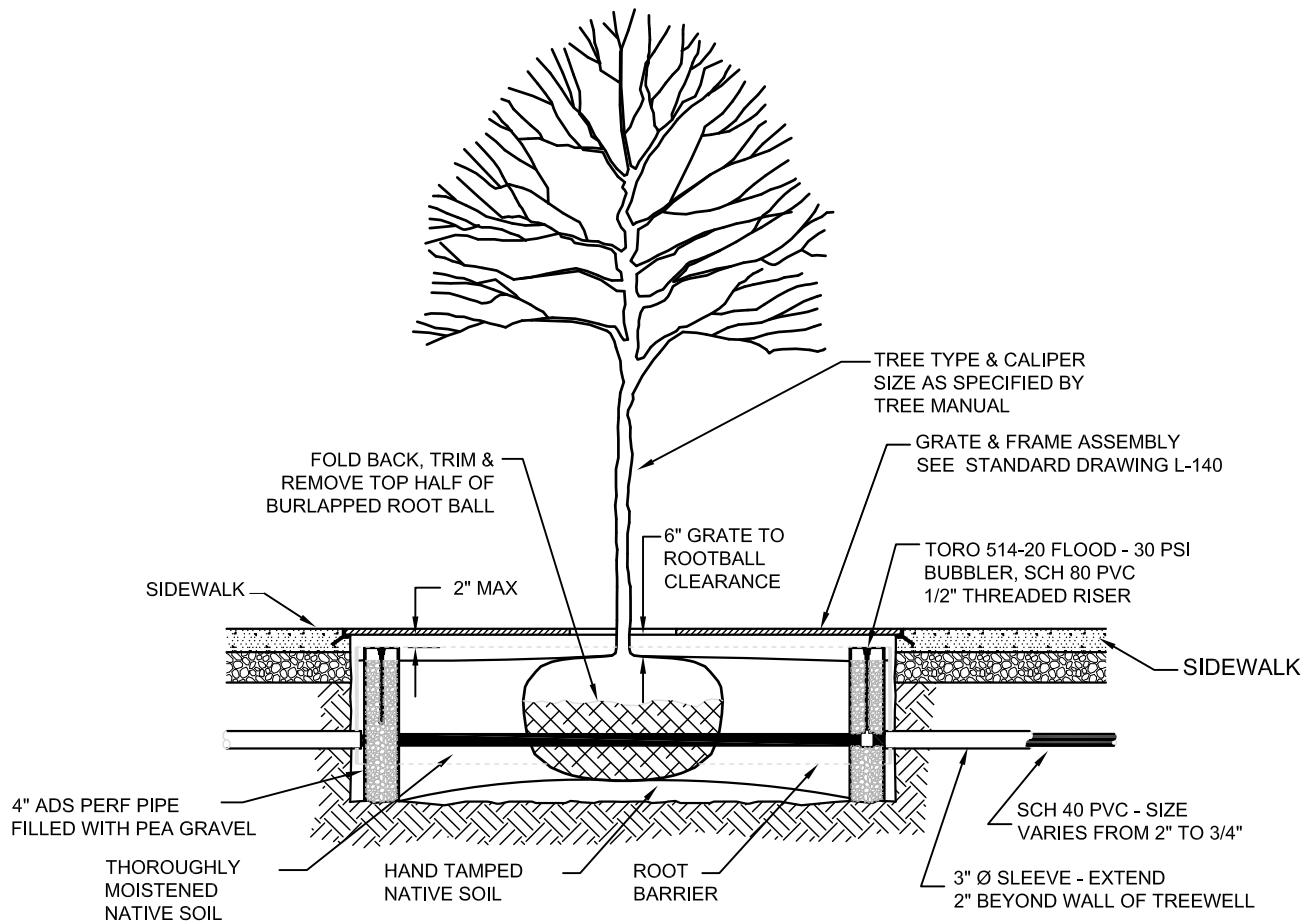
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DRIP LINE LOCATION TO CURB INLETS

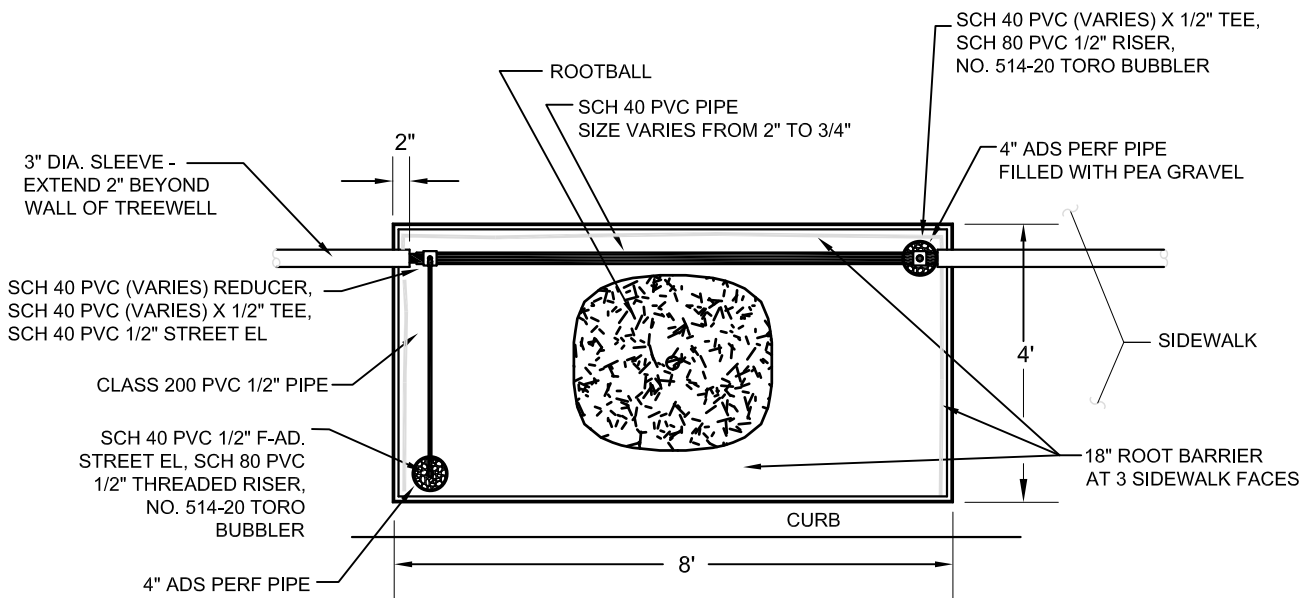
DETAIL NO.

L-130

2/13/2024



TREEWELL CROSS-SECTION



TREEWELL PLAN VIEW



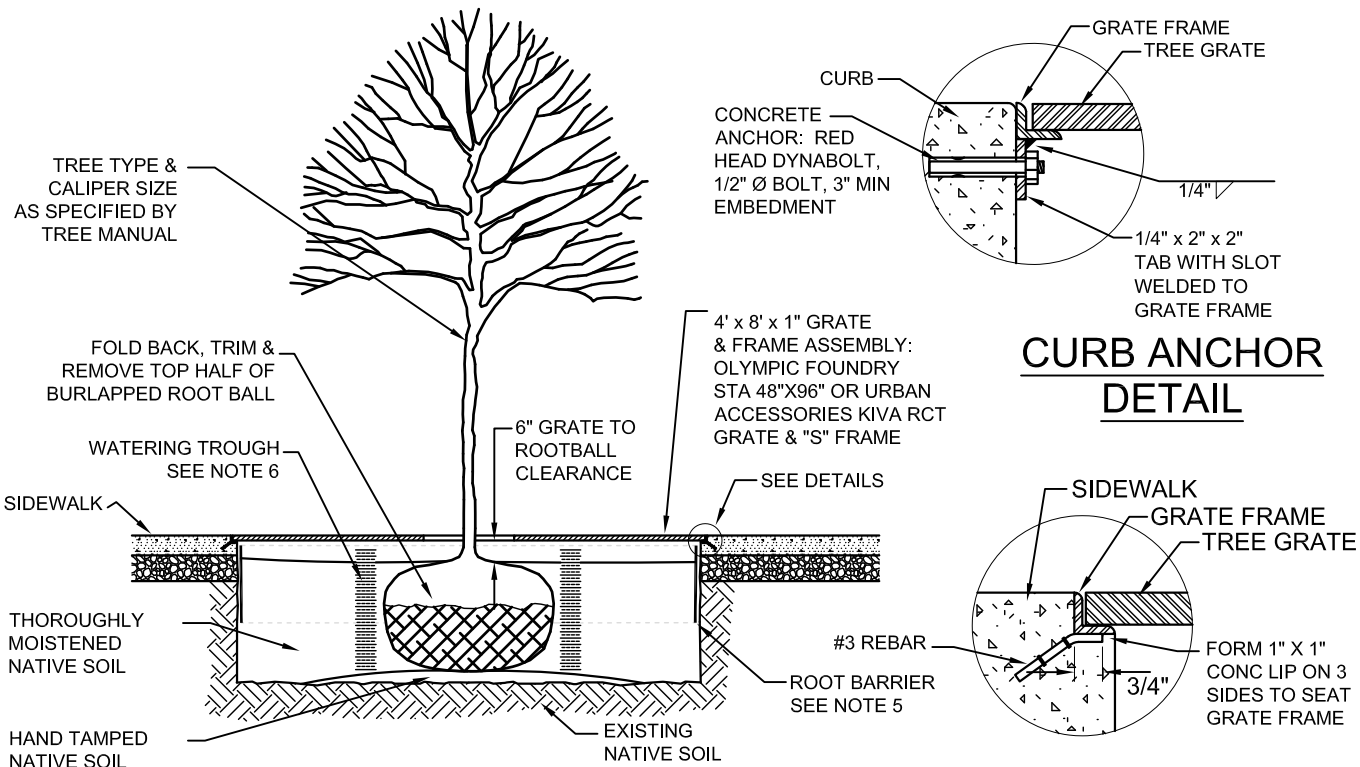
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TREE WELL IRRIGATION

DETAIL NO.

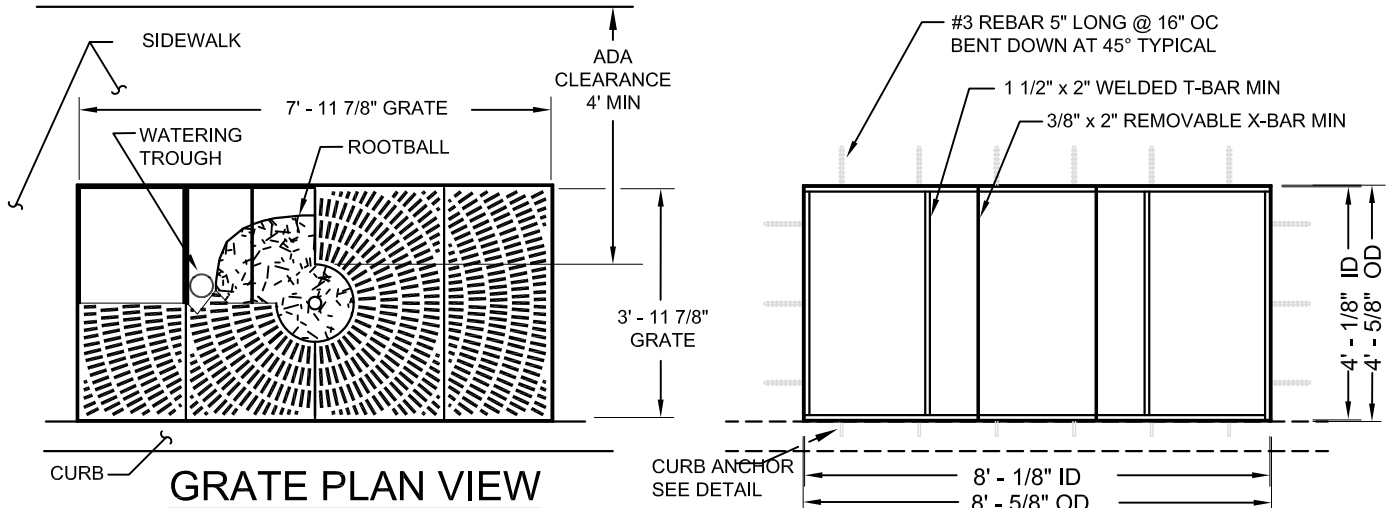
L-135

4/09/2024



TREEWELL CROSS-SECTION

SIDEWALK ANCHOR DETAIL



NOTES:

1. GRATES ARE TO BE MADE OF CAST IRON WITH A NATURAL FINISH.
2. CASTINGS WILL BE 3/4 INCH THICK IN 4 PIECES.
3. THE CENTER OPENING SHALL BE 16 INCH DIAMETER WITH A BREAKOUT AT 23 1/2 INCHES.
4. SLOTTED PENETRATIONS SHALL BE NO GREATER THAN 3/8 INCH WIDE.
5. AN 18 INCH DEEP ROOT BARRIER SHALL BE PLACED AT BOTH SIDES AND ALONG SIDEWALK FACE.
6. PROVIDE TWO, 3 INCH DIAMETER ADS PERFORATED PIPE WATERING TROUGHS FILLED WITH PEA GRAVEL.
7. DO NOT UNDERMINE CURB OR SIDEWALK WHEN EXCAVATING.
8. ADA CLEARANCE SHALL BE 4 FEET AS SHOWN, UNLESS OTHERWISE PERMITTED BY THE CITY ENGINEER PURSUANT TO A DESIGN EXCEPTION OF THE *ENGINEERING DESIGN AND CONSTRUCTION MANUAL*.



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TREE WELL GRATE

DETAIL NO.
L-140
4/09/2024

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**SECTION 8 –
CONSTRUCTION OBSERVATION**

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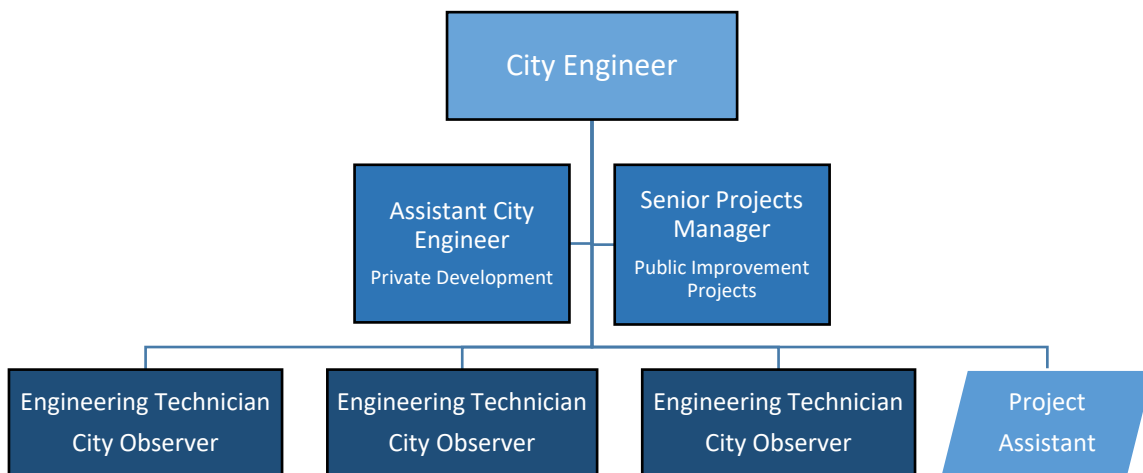
SECTION 8 - CONSTRUCTION OBSERVATION

AUTHORITY AND PURPOSE

The purpose of this document is to provide clear expectations for design and construction of public infrastructure accepted for City ownership and maintenance by Contractors, Developers, Engineers of Record and City staff.

Private development projects must include provisions governing the structure of the City’s observation authority. For Development projects, authorization to observe construction and verify that materials, methods, and workmanship used by the Contractor to meet the requirements of the approved engineered specifications and construction documents lies with the Project Engineer and their Resident Project Representative.

The City Engineer authorizes the Approved Representative and City Observer to visit right-of-way (ROW) construction sites, both private development and public improvements, to observe the progress and quality of Contractor’s work. The City does not intend these observations to be the sole review services provided for a private development project nor are these observations meant to be exhaustive. The Project Engineer shall provide construction inspection services. The City Engineer shall designate an approved representative as the primary point of contact for the City during the construction period. All initial inquiries, clarifications, documentation and communications shall be coordinated through the designated representative. The authorized representative shall coordinate with the City Engineer and other City Departments as needed throughout the construction period.



City Observers authorized to represent the City Engineer perform the following:

- Observe work performed and materials furnished including, without limitation, the preparation, fabrication, or manufacture of materials used.
- Orally reject defective materials or work and confirm such rejection in writing.
- Orally suspend work for improper prosecution pending City Engineer’s decision.
- Exercise additional delegated authority.

City Observers do not represent the City Engineer for the following:

- Address apparent Contractor safety concerns (unless as otherwise stated).

- Accept work or materials, except as delegated by the City Engineer.
- Alter or waive provisions of the Contract Documents.
- Provide instructions or advice inconsistent with the approved Contract Documents.

ROLES AND RESPONSIBILITIES PRIVATE DEVELOPMENT

Developer

As the project's owner, financier, and applicant, the Developer is responsible for all project financing. May be involved in processing plan submittals and questions during construction.

Project Engineer

The Project Engineer is the person responsible for the design of public improvements in accordance with the Newport Standards and Specifications. Project Engineer may provide construction phase services during the construction period of the project. The Project Engineer shall immediately report any discrepancies or issues that would adversely affect the quality of work as defined in the approved plan set or have a significant impact on existing or proposed City facilities to the City Engineer or authorized representative for evaluation and final determination.

On private developments, as the contractor is an agent of the Developer and not under City contract, the City works through the Project Engineer to resolve field conflicts and address problems during construction. City personnel do not have authority to direct private contractors, other than to stop work if necessary, and therefore will not answer Contractor questions directly, but work through the Project Engineer, who then works with Developer/Owner to resolve conflicts and answer questions.

Developer may fill this role if Project Engineer is no longer attached to the project. These services include, but are not limited to, the following:

- **Pre-Construction Meeting**
Attend and participate in the City's mandatory pre-construction meeting prior to commencement of any work on the site. Included in this meeting are all contractors associated with work in the right-of-way (ROW).
- **Schedules**
As work in the ROW may take place during various stages of private construction, it is the Project Engineer's responsibility to keep the City informed about Contractor schedules to determine applicability of the schedule to the major project milestones and critical path elements in the ROW that require City observer to be on-site to monitor testing, record progress of ROW work, and document compliance of work to City of Newport Standards.
- **Site Visit Reporting**
The Project Engineer shall submit to the designated City Observer a Monthly Project Status Report on the progress of construction. The report shall include a summary of activities that were performed during that month, including but not limited to:
 - Description of work performed
 - Identify any construction or design issues.
 - Document any approved field changes, change orders or design revisions.
 - Updated construction schedule
 - Summary of any public agency contacts

- Summary of any citizen complaints or contacts.

The City may elect to require more frequent reporting based on the complexity and construction schedule of the project or forgo a written report for weekly or bi-weekly progress meetings instead. If the reports become more than two weeks in arrears, or are significantly deficient as determined by the City, the City Engineer, or authorized representative may post a stop work order on the project site.

- Submittals

Project Engineer shall submit all shop drawings and material cut sheets pertaining to proposed City infrastructure to City Engineer for review and approval.

City Engineer shall review the following submittals listed as required but not limited to:

- Drainage Structures (manholes and inlets) Shop Drawings
 - Work Containment Plans and Systems
 - Bridge Removal Plans
 - Shoring and Falsework Calculations and Drawings
 - Reinforcing Steel Shop Drawings
 - Prefabricated Steel Shop Drawings
 - Prefabricated Concrete Shop Drawings
 - Concrete Mix Designs
 - Pavement Designs
 - Material Submittals and Certifications
 - Pile and Driving Equipment submittal
 - Bridge Rail and Protective Fencing Shop Drawings
 - Retaining Wall Calculations and Drawings
 - Drilled Shaft Submittals
 - Lighting Pole and Traffic Signal Pole Submittals
- Substitutes and “Or Equal”
Review and provide a recommendation to the City Engineer indicating the acceptability of Contractor’s request for substitute or “as-equal” materials and equipment.
 - Special Inspections and Tests
Receive and review all certificates of special inspections and test results from an independent testing laboratory as required by the Contract Documents. The Project Engineer, for purposes of determining that certified results indicate compliance with the Contract Documents, shall be entitled to rely on the results of such tests. The review does not constitute an independent evaluation that the methods for inspections and test results comply with the requirements of the Contract Documents.
 - Clarifications and Interpretations
Issue necessary clarifications and interpretations as initiated by the Contractor in reference to the Contract Documents.
 - Modifications or Change Orders
Provide recommendations of approval or denial to the City Engineer of any project modifications or change orders that directly alter the Contract Documents.

- **Defective Work Notification**
If, during the course of construction, the Project Engineer observes or is informed of any defective work not meeting requirements in the approved Contract Documents, the Project Engineer shall immediately notify the designated City Authorized Representative. The Authorized Representative will determine whether any work shall be uncovered for observations, corrected, rejected, or requires special testing, inspection, or approval of the City Engineer.
- **System Start Ups and Testing**
Verify authorized personnel conduct tests, schedule observer oversight during startup and testing, arrange equipment trials/systems start-ups, as well as arrange any operation and maintenance trainings with the appropriate City personnel. These requirements shall be identified at the pre-construction meeting. Schedule observation services and training a minimum of forty-eight (48) hours prior to activity. Forty-eight (48) hour advance notice does not include holidays or weekends in hour count.
- **Substantial Completion**
After notification from the Contractor that the project is in substantial completion with the Contract Documents, the Project Engineer shall visit the project to determine if the work is substantially complete and it is time to submit the Final Acceptance Request to the City Engineer. If the work is not substantially complete, then the Project Engineer shall provide an itemized punch list to the Contractor, and the City Observer, for remedy prior to submitting the Final Acceptance Request to the City.
- **Final Acceptance Request**
Upon receipt of the Final Acceptance Request from the Project Engineer, the City Engineer shall schedule a final site visit to determine if the contractor's completed work is acceptable to the City.
- **Final Acceptance As-Builts**
Coordinate with the Contractor, special inspectors, and independent testing laboratories to receive, compile, and review all required as-built information.
- **Resident Project Representative**
Project Engineer may elect to provide a qualified Resident Project Representative to assist the Project Engineer in monitoring the progress and quality of the Contractor's Work. Project Engineer shall designate a Resident Project Representative as an authorized representative at the project site who shall act as directed by, and under the direct supervision of, Project Engineer. The existence of a resident project representative shall not limit, extend, or modify Project Engineer's responsibilities or authority. Project Engineer shall verify that the resident project representative has competent work related experience appropriate for the requirements for each project and submit a copy of that work experience to the City.

If a resident project representative is utilized by Project Engineer, City reserves the right to require replacement of the resident project representative if it is determined that the resident project representative is not qualified or is missing the required competency to perform the work required by City.

Limitations of the Project Engineer and Resident Project Representative

Observations and site visits conducted by Project Engineer and Resident Project Representative are not required to be exhaustive or to extend to every aspect of the Contractor's Work, but rather may be limited to periodic verifications, select sampling, and similar methods of general observation of the Contractor's Work based on Project Engineer's exercise of professional judgment.

The intended purpose of Project Engineer's visits, and representation by the resident project representative, if any, is to enable Project Engineer to provide the City with a greater degree of confidence that the completed public improvements will conform in general to the requirements of the Contract Documents. Based on the information obtained during site visits, the Project Engineer shall determine, in general, if the Contractor's Work is proceeding in accordance with the Contract Documents. The Project Engineer shall be required to keep the City informed of the work progress through scheduled project updates.

The Project Engineer and Resident Project Representative shall not be responsible to have control over the Contractor's work or have authority of the Contractor's means, methods, techniques, sequences or procedures of construction. In addition, the Contractor shall be responsible for all safety and security of the project site and shall be solely responsible to ensure compliance with all laws and regulations applicable to the Contractor's work. The Project Engineer's site inspection is not a guarantee of Contractor performance nor a claim of responsibility for Contractor's failure to furnish or correctly perform the work in accordance with the Contract Documents.

CONSTRUCTION MANAGEMENT

Pre-Construction Meeting

City shall hold a pre-construction meeting following construction drawing approval and prior to 'Notice to Proceed' for construction. Before holding the meeting, insure all necessary agreements are signed and active, all City of Newport easements are prepared and recorded, and City has received all requested payments.

Items to be discussed/supplied are:

- The Work: Construction documents, agreements, bonds, public facilities improvement agreement, and ROW permit.
- Contractor's work schedule.
- City Observer assignment.
- Traffic Control Plan/Public Notification.
- Sub-Contractors and suppliers, including testing laboratories/engineering firms.
- EOR approved material submittals proposed to be furnished (that is, type, brand, etc., trench backfill-sieve/proctor).
- Public safety requirements.
- Any work requiring inspection outside normal work hours shall require prior coordination and advance payment of an hourly rate as established in the most recent City of Newport fee resolution.
- Standard requirements for working in the City of Newport ROW.
- Change/substitution request procedures.
- See draft agenda in Appendix E – City Of Newport Pre-Construction Meeting Agenda For Private Development

Perform no work on the job site until holding a pre-construction meeting with the City.

Progress Meetings

City Observer does not participate in progress meetings held between Developer and Contractor unless requested by private party. If City wishes to have progress meetings with Project Engineer and Contractor, City will send a request to all parties.

Meetings with Partner Agencies

Public improvements may fall within the jurisdiction of several governmental agencies; for example, Lincoln County, ODOT, etc. When multiple jurisdictions are involved, Developer, Contractor, and/or Project Engineer shall coordinate with and obtain all necessary approvals prior to commencing work in City ROW. Contractor shall verify all approvals before starting work and inform City of approval verification. The City may stop work on any project that lacks a necessary approval.

Developer, Project Engineer, and Contractor shall copy the City on all written correspondence with authorizing agencies as pertains to work in the ROW or City jurisdiction.

Changes to Approved Plans or Character of Work

Project Engineer Generated Changes

Project Engineer must notify City Observer of changes from the approved Contract Documents. Changes to the approved documents require approval of the City Engineer. Significant changes as determined by City Engineer shall require Developer to submit a plan revision in conformance with this document indicating the proposed changes and an explanation providing the issue and need for the design alteration. The City Engineer shall review and approve any revised plans before construction of any changes may proceed. The Project Engineer and City Observer do not have authority to approve field changes to public infrastructure.

City Engineer Generated Changes

A design that does not meet City of Newport Standards will not be allowed to go through construction because it was missed during the plan review process and approved as is. City Engineer may require a design adjusted to conform to standard drawings.

Plan Revisions

The City defines revisions to the plans as all changes made between the date of approving the project plans and the date of accepting the Record Drawings.

“Cloud” the particular area of the drawing where a major revision has been made. Place the appropriate revision number placed in a triangle in that location. The clouded area shall not be shaded or in any form of grey tones. See *Section 1 – General Specifications* for revision format and requirements.

SITE VISITS AND OBSERVATION

General

Project Engineer or a qualified Resident Project Representative under the direct supervision of the Project Engineer shall observe the construction of all public improvements for private development projects. City will not authorize work to begin on public improvement without designation of the Project Engineer and Resident Project Representative, if applicable, at the City’s mandatory pre-construction conference. The owner or developer shall pay all inspection costs, including required testing.

The Engineering Department’s policies on observation services for infrastructure improvements are as follows:

- **City Observation Services:** City observer will provide only “spot check” services. These services do not relieve the Developer, Project Engineer, or Contractor of responsibility for proper construction and compliance with the Contract Documents and these Standards and Specifications, nor do City observation services constitute approval of any modification to the approved construction plans. City observer’s do not make field decisions independent of City Engineer.
- **Project Engineer Services:** The Project Engineer and/or Resident Project Representative construction services are the primary construction inspection services on a project. These site visits are the responsibility of the owner, developer, and Project Engineer and shall be more comprehensive and extensive than City observation services. Further, such visits shall insure construction is meeting City of Newport design and construction requirements.

City Observer

The City Observer is the authorized representative of the City Engineer. Observers monitor construction, keeping written reports and photographic records during construction. City Observer may represent the City Engineer in project meeting. Field communications go through City Observer to the City Engineer.

Daily Inspection Reports

Maintain a Project Log Book of site visit reports containing the following applicable information:

- Names and contact information for all Contractors, subcontractors, and major suppliers of materials and equipment.
- Site development permit number.
- Date and time (arrival and departure) of site visits.
- Weather conditions.
- A description of construction activities and equipment on site.
- Statements of directions to change plans, specifications, stop work, reject materials, or other work quality actions.
- Public agency contacts which result in plan changes or other significant actions.
- Perceived problems and action taken.
- Specific Observations to provide additional detail as in the case of observing testing procedures.
- General remarks including citizen contact or complaints.
- Information on the Erosion and Sediment Control Best Management Practices and status of applicable inspection reports.
- Digital Photo Log of Construction Activities.
- Time & Material Work & Forms
- See Appendix A - Construction Observation Tasks And Guidelines for list of areas for compliance assessments.

Photograph Construction Progress

Photographic records may include, but are not limited to:

- Construction methods
- Construction materials
- Location of bends
- Connections to structures
- Grouting
- Compliance
- Pipe connections
- Equipment

Limitations of City Observer Services

The City Observers may make site visits to observe the progress of work and provide project coordination. These services do not relieve the Contractor of the responsibility for proper construction and compliance with the requirements of the Contractor Documents, nor do City observation services constitute approval of any modification to the approved construction plans. The City Observers shall provide, but are not limited to, the following services:

- Acting as a liaison between the designated Project Engineer, Resident Project Representative, and the City.
- Observe and report both work progress and performance testing results.
- Administrative and coordination activities as required for supporting the processing and completion of the project.
- Issuing a stop work order for the City Engineer. If the Project Engineer is not available to receive stop work order, City Observer may post the stop work order.
- Informing the City Engineer of all proposed plan changes, material changes, stop work orders, or errors or omissions in the approved plans or specifications. Any revision to approved plans must be under the direction of the Project Engineer. The City Authorized Representative has discretion as to whether the revision is significant enough to warrant review by the City Engineer.
- Coordinate observations with Public Works staff.

TABLE 8.1 Minimum Observation Requirements (Vary by Project)

GRADING	STREETS	SANITARY & STORM SEWERS	WATER LINE
<ul style="list-style-type: none"> • Cut & Fill Staking • Fill Placement/Compaction • Temporary Drainage Work • Dust/Erosion Control Proof 	<ul style="list-style-type: none"> • Horizontal/Vertical. Staking • Curb Staking • Curb Forms/Pouring • Sidewalk Forms/Pouring • Base rock Installation • Leveling Course Installation • Base Compaction/ Proof Roll • Wearing Course Placement • Wearing Course Compaction • Power Trenching/Utilities • Street Light Base Installation • Monumentation • Overlay Installation • Sidewalk/Wheelchair Ramp Installation 	<ul style="list-style-type: none"> • Pipe Installation/Backfill • Trench Compaction Testing • Vacuum, Mandrel, & TV Testing • Trench Repairs/Resurfacing • Traffic & Pedestrian Control • Video inspection of mainlines • Sewer-Pressure testing of all pipes. • Setting Structures • Tracer wire Placement & testing prior to paving. • Outfalls/Rip-Rap • Connections to Structures • Backfill Compaction 	<ul style="list-style-type: none"> • Pipe Installation • Trench Backfill & Compaction • Pressure Test • Chlorination • Observe proper operation of all appurtenances and valves • Tracer Wire Placement • Tracer wire testing prior to paving • Bends, joint locks, Thrustblocks

For a more complete list of observation tasks see Appendix A.

The City's observer shall have the authority to direct replacement of defective material and uncovering work not inspected as required. Contractor shall remove material rejected by the City authorized representative from the job immediately after its rejection and not use rejected material on the project.

Contractor shall respect and execute instructions given by the City authorized representative. City observer, however, shall not have the power to waive the obligations of the contractor to furnish high-quality equipment, supplies, and materials, or to perform good work.

The contractor shall notify the City observer in writing of any changed condition if Contractor encounters a condition different from that indicated by the construction documents. No work shall precede until receiving the City's written response. The City Engineer shall review the change with the contractor and the Project Engineer and issue a written directive to the contractor. Any work associated with the changed condition commenced prior to the issuance of a written directive from the City will be at the contractor's risk.

Contact your assigned Public Improvement Observer a minimum of forty-eight (48) hours before beginning any public improvement construction work within the City limits. Review Observation is required before "covering" or "pouring" anything. At a minimum, review by the City Observer is required at the start and end of each of the following work phases listed in TABLE 2.1 below.

SCHEDULING OPERATIONS

Construction Work

- The Contractor shall plan construction work and execute its operation with a minimum of interference with the operation of the existing public facilities. It may be necessary for Contractor to schedule work outside normal working hours of 7 AM to 7 PM in order to avoid impacting surrounding public. Work outside of normal working hours will require the approval of the City Engineer, and possibly the City Manager, depending on the request. All scheduling of work in ROW or on future City infrastructure is subject to City's approval and does not relieve the Contractor from making work available for observation.
- No connections between existing work and new work shall be made until the new work conforms in all respects to the requirements of the plans and specifications.
- Progress of Construction: construction shall proceed in a systematic manner that will result in a minimum of inconvenience to the public.

SCHEDULING OBSERVERS

Advance Notification for City Services

City Observer (City authorized representative) shall observe the project as necessary and shall check materials, equipment, and the construction of the project to determine whether the work is proceeding in accordance with City standards.

Please schedule City Observers at least 48-hours in advance. The City may at times be able to observe on shorter notice, but make no guarantees. Any work performed without a required observer shall be

subject to removal at City Engineer’s discretion. No such observation, however, shall relieve the contractor of their duties under these standards.

COMMUNICATIONS

Written Communications

Project Engineer shall issue all project communications, required documentation, interpretations, clarifications, and changes to approved plans for the Owner / Developer to the City in writing. The City Observer may provide verbal notification to the Contractor, Project Engineer, or Resident Project Representative at the job site if observing work is not conforming to the construction documents, but will follow-up with written communication when applicable. The substance of this communication will be included in the City Observer’s regular written reports. City Observer will initiate formal, written notice to the Project Engineer and City Engineer when the work does not meet the requirements on the approved plans or the City of Newport Standard Drawings.

Public Notification

The Owner, Developer, or Project Engineer shall provide forty-eight (48) hours’ prior notice to the public of any impeding or interruptions of existing public services. Each notification shall be the responsibility of Contractor performing the work and shall be coordinated with the City Observer. City may immediately suspend Contractor activity for failure to adequately notify public of work occurring in their neighborhood. Any required street closures need two-week advance prearrangement and City approval. City will *not* arrange a street closure within a forty-eight (48) hour notice to the City or the Public.

END OF SECTION

**SECTION 9 –
PROJECT CLOSEOUT**

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SECTION 9 - PROJECT CLOSEOUT

PURPOSE

The purpose of this document is to provide clear expectations for project closeout and City acceptance of new infrastructure for City ownership and maintenance, including restoration of site and warranty of new systems.

POST-CONSTRUCTION REVIEW

The City Engineer, Developer, or the Contractor may request a post-construction meeting.

CLOSEOUT PROCESS

At the conclusion of the project, the applicant shall notify the City's authorized representative in writing that the project is ready for final inspection. On receipt of this notice, the City's authorized representative will schedule the final walk-thru.

Final Inspection

Once the City authorized representative receives the initial set of record drawings in paper and electronic PDF format, the City authorized representative will conduct a final inspection of the project.

Project Punch List

After this inspection, the City authorized representative will issue a project correction/repair list (punch-list) to the applicant and contractor. The project correction/repair list will include any items either damaged or improperly placed during construction, and any item(s) that, in the opinion of the City authorized representative, need repair.

Project Corrections

Contractor shall perform correction/repair work as required on the project correction/repair list. The City encourages the contractor to complete all correction/repair work as expeditiously as possible, the City will retain the performance assurance until the project correction list has been completed, inspected and approved by the City authorized representative, and the contractor submits all maintenance and landscape maintenance assurances to the City. The City authorized representative will consider the project complete and shall so state in writing when all of the following items are complete:

- Contractor/Project Engineer completes all items on the project punch list and the City authorized representative inspect and approves work.
- Developer submits final set of AutoCAD and digitally signed PDF record drawings to the City and City authorized representative approves drawings.
- Confirmation that developer has recorded all easements and legal documents with the County Recorder.
- Contractor submits approved maintenance assurances and warranty as specified in this section. At this time, the warranty period will go into effect on written notice from the Engineering Division.

Project Completion Requirements For Maintenance Status (Final Acceptance)

The following items shall be complete prior to placing a project onto the one-year maintenance period:

- A completion report from the private Engineer, in accordance with the Developer-Engineer

Agreement.

- Check print of as-builts submitted for review and approval.
- Site grading and compaction complete per plan.
- Final report from Geotechnical Engineer submitted for review and approval.
- General clean up, post construction erosion control installed as necessary.
- Power trench and franchise utility installation complete (power, gas, telephone, cable TV), backfilled and compacted.
- Streetlights installed per plan and ready to be energized.
- Sanitary sewer installed; air, mandrill, and TV inspections complete and approved.
- Storm sewer installed; mandrill and TV inspections complete and approved.
- Water mains installed; tests complete and passed, and services installed.
- Water quality/detention facility installed and complete per plan.
- Curbs installed.
- Sidewalks, wheel chair ramps, and mailbox bubble outs installed per plan.
- Bike paths and maintenance access roads installed per plan.
- Streets complete.
- All easements and dedications recorded, including plat at Lincoln County.
- Mailboxes installed per plan.
- Street signs and barricades installed per plan.
- Final Walk-Thru Completed.
- Electronic as-builts submitted.
- Punch List completed.
- Request for Letter of Substantial Completion or Certificate of Occupancy.

See Appendix F for *Project Completion Requirements For Maintenance Status Checklist for Private Development* form. Submit completed checklist with request for letter of Substantial Completion or Certificate of Occupancy.

USE OF SYSTEM IMPROVEMENTS

The public improvements shall be available for public use only after Final Acceptance, or by approval with the City Engineer.

FINAL ACCEPTANCE AND PROJECT CLOSEOUT DOCUMENTATION

When all required work is complete, Project Engineer shall submit a formal Final Acceptance Request to the City. The Project Engineer shall compile and submit the following closeout documentation:

- A complete set of Record Drawings both hardcopy and electronic
- Contractor's field installation notes of the facilities as-constructed
- All lab and on-site materials testing reports/results
- Drywell Testing Reports and final Grading and Drainage Certification Letter
- ADA Compliance Documents
- Final water and sewer testing documents
- Any other documentation as required by the City

City Engineer shall coordinate with Developer or Project Engineer to complete all required final project acceptance and warranty documents. Once City Engineer accepts all completed required documents and

the warranty financial guarantees, City Engineer shall issue a Certificate of Substantial Completion that establishes a specific date for the project substantial completion, recommendations for approval for occupancy of the project or final plat signatures, and the initiation of the warranty period begins.

MAINTENANCE AND WARRANTY

Maintenance Assurance Required

Contractor shall fully warrant all work from defect, for a time-period determined by the type of work. The warranty shall be required for work to ensure post-construction quality and landscape survivability. Contractor will automatically extend warranty from date of accepted/approved repair if City discovers defective or negligent work. This warranty from the Contractor is in addition to, and not in lieu of, any other warranties provided by various suppliers or manufacturers. Guarantee such warranty in the form of maintenance assurance. Assurances shall be in the form of a letter of commitment, letter of credit, assignment of deposit, bond, or cash deposit, in form and substance satisfactory to the City. Assurances shall remain in place until the City issues a written release. This provision of the Maintenance Assurance is to help secure Contractor performs any corrective work needed within the Project warranty period, but in no way limits the Contractor's liability therefore.

Construction Maintenance Assurance:

Maintenance assurance shall be required for all public improvements constructed by the Contractor. The construction maintenance assurance shall be for ten (10) percent of the cost to construct the public improvements and be in place for a period of not less than one (1) year from the date of Final Acceptance. Prior to the end of the one (1) year assurance, the City will provide contractor with a maintenance project corrections list; the City reserves the option to video inspect the sanitary and/or storm sewer lines, if any were constructed, repaired or installed as part of the contract. Contractor shall make, in a manner satisfactory to the City authorized representative and at no cost to the City, all necessary repairs and replacements to remedy any-and-all defects, breaks, or failures of the public improvements due to faulty or inadequate materials or workmanship as identified by City and occurring within one (1) year following the date of Final Acceptance.

Contractor shall repair damage or disturbances to other improvements under, within, or adjacent to the public improvements, whether or not caused by settling, washing, or slipping, when such damage or disturbance is caused, in whole or in part, from activities of Contractor in performing his/her duties and obligations when such defects or damage occur within the warranty period. City will release the construction maintenance assurance one (1) year after acceptance of any corrective work performed during the maintenance assurance period.

Landscape maintenance assurance

Landscape maintenance assurance shall be for 100% of the cost to install all required landscaping in water quality/quantity facilities, plus 100% of the cost to maintain the landscaping in these areas and be in place for a period of not less than one (1) year from the date of Final Acceptance. City shall release the assurance two years after acceptance of construction, providing remaining landscapes meets the 90% survival level.

Prompt Compliance

If Contractor, after written notice, fails within ten (10) days to proceed to comply with the terms of this section, Owner may have the defects corrected, and Contractor and Contractor's Surety shall be liable for all expenses incurred. If the assurance is in the forms of cash or letter of credit, the City may

immediately draw upon such amount. In case of an emergency where, in the opinion of City Engineer, delay would cause serious loss or damage, City shall make repairs without giving notice to Contractor; Contractor or Surety shall pay the cost of repairs. Failure of City Engineer to act in case of an emergency shall not relieve Contractor or Surety from liability and payment of all such costs.

Warranty Period Observation

City Engineer and City Observer shall monitor the project during the warranty period and schedule a final project inspection with the Owner approximately thirty (30) days before the end of the warranty period. City Engineer shall issue to the Owner a Final Warranty Punch List if there are items to correct. Owner shall be responsible to repair all punch list items and notify City Observer to verify repair of all items to the satisfaction of City. City Observer shall notify City Engineer after successful completion of all requirements of the warranty period. City Engineer shall then issue a Certification of Final Project Acceptance and release the warranty document.

PRESERVATION AND RESTORATION

Site Restoration and Cleanup

- Prime / General contractor responsible to repair any damage done by sub-contractors before project is accepted by City.
- The contractor shall keep the premises clean and orderly at all times during the construction period and leave the project free of rubbish or excess materials of any kind on completing the work. The contractor shall immediately replace mailboxes and signposts disturbed by construction activities.
- During construction, the contractor shall stockpile the excavated trench materials in such a way as to do the least damage to adjacent lawns, grassed areas, gardens, shrubbery, trees, or fences, regardless of the ownership of these areas. These surfaces shall be left in a condition equivalent to their original condition or better and free from all rocks, gravel, boulders, or other foreign material.
- Contractor shall expeditiously re-grade/repair original drainage tiles, sewer laterals, existing trenches, drainage ditches, and culverts if any damaged during construction. Within five hundred (500) feet of pipe-laying and backfilling operations in any trench section, Contractor shall rake and drag all disturbed areas and leave them free of rocks, gravel, clay, or any other foreign material and ready, in all respects, for seeding. The finished surface shall conform to the original surface, and shall be free draining and free from holes, rough spots, or other surface features detrimental to a seeded area.
- After backfilling the trenches, Contractor shall restore all public and private irrigation and/or utility systems destroyed, damaged, or otherwise modified during construction to their original condition or better.
- Return all areas disturbed by Contractor operations inside dedicated ROW or easements to their original condition or better. Return areas outside the easements or ROW disturbed by the contractor's operations to their original condition or better.
- Contractor shall perform all site restoration and cleanup work as described above within five (5) working days of substantial completion of the work associated with the disturbance.

Street Cleanup

- The contractor shall clean spilled soil, mud, rock, gravel, or other foreign material caused by construction operations from all sidewalks, gutters, streets, and roads at the conclusion of each day's operation.
- Cleaning shall be by grader and front-end loader, power brushing, vacuuming, and hand labor, unless otherwise approved by the City authorized representative. Do not wash or flush material into any part of the stormwater and surface water system. If the contractor does not follow these standards, the City may exercise its option to have the street(s) cleaned and bill the contractor for such service.
- When directed by the City authorized representative, the contractor shall, within five (5) working days of notice, remove all erosion-control materials and thoroughly remove all dirt, mud, rock, gravel, and other foreign material from sidewalks, gutters, catch basins, curb inlets, area drains, manholes, and paved surfaces.

Preservation of Irrigation and Drainage Ditches

- The contractor shall arrange schedules so that construction will not interfere with the irrigation of cultivated lands or pasturelands. Construction may proceed during the irrigation season provided the contractor constructs, at their own expense, temporary irrigation ditches, turnouts, and miscellaneous structures acceptable to the owner of the land in question that permit irrigation of the land others during construction.
- After backfilling the trenches, the contractor shall restore all irrigation and storm drain ditches destroyed, damaged, or otherwise modified during construction to a condition equivalent, in the opinion of the City authorized representative, to the condition of the ditches before construction. Rebuild ditches in their original locations, unless specified otherwise on the construction plans.

RECORD DRAWING CERTIFICATION STATEMENTS

The Project Engineer shall provide the following certification stamp to the Record Drawings. This stamp (in PDF and dwg format) is available from the City Engineer.

The as-built drawing shall show the following on the cover sheet in a box:

RECORD DRAWING CERTIFICATION

I certify that the contractor constructed this project in substantial compliance with the City approved plans and the City of Newport Public Improvement Construction Procedure Standards and Specifications date (XXXX edition). I base this certification on periodic inspections performed by me or by representatives under my direct supervision and information provided by the Construction Contractor and other independent testing and inspection agencies. I assume information provided by others to be correct and verified by the Engineer. This certification indicates that I have reviewed this information and verified that any revision(s) or changes as defined by the record do not appear to be adverse to the planned use and/or intent of the original design.

*Project Engineer Signature and Date***RECORD DRAWINGS REQUIREMENTS**

For all public works facility improvements, the engineer shall submit a record drawing of as-built drawings for all approved construction plans. As-built drawings shall meet the requirements of these Engineering Design and Construction Standards and shall be of archival quality.

The as-built drawings include the full set of approved construction documents approved by the City under the Final Plan Submittal with all changes applied to the drawings from approved plan modifications and/or Project Engineer.

- Have all modification clouds removed;
- All construction plan sheets signed by the Project Engineer;
- Each sheet's title block containing the permit number and "As-Built"; and,
- Show any changes authorized in the field as "field change".

MINIMUM INFORMATION ON AS-BUILT DRAWINGS:**General**

- Vertical and horizontal location on all existing utilities exposed by the trench excavation. Horizontal location may be relative to the newly installed line.
- Horizontal location or stationing, from the nearest feature, at any change in pipe material (i.e., transitions to ductile, change in pipe class, etc.).
- Areas where foundation material is used and/or where bedding material is imported.
- Information on subsurface soil conditions encountered in trenches every three hundred (300) feet or where significant changes occur. Place particular emphasis on native materials at the bottom of the trench. Delineate areas where preforming over-excavation and placing foundation material.
- Location and stationing of all pipe abandonment. Include both length of pipe removed and pipe abandoned in place.
- Horizontal dimensions of all easements.
- Actual location and depth, from finish grade of street and City datum, of any other utilities encountered during construction.
- As-built drawings must show actual design numbers, "crossed out", and updated with actual as-built numbers.
- Place the words "As-built Drawing" as the last entry in the revision block of the plans, along with the month, day, and year the as-built drawing was prepared.
- *Show actual location and depth from finish grade of any other utilities encountered during construction on both plan and profile of the as-built plans.*

Street

- Change in horizontal alignment, curve data, and stationing of primary control points (e.g., PC, PI, PT, PRC, and PCC).
- Vertical curve or grade changes; change in location of low point in sag vertical curve.
- Change to approved thickness for street structural section components. Show station limits where changes in structural section have occurred including subgrade stabilization rock section.
- Change to driveway locations or widths, or construction materials.
- Other change(s) altering the approved plans.

Storm Drains

- Station of wye or tee connection into main line; tie end of branch line to nearest property corner at ROW line and distance back from the face of curb.
- Show alignment changes, grade changes, and changes in construction materials. If changed alignment results in station changes, show a station equation as appropriate at a manhole.
- Other change(s) altering the approved plans.
- Actual location and depth, from finish grade of street and City datum, of any other utilities encountered during construction.

Wastewater

- Station of wye or tee into main line. Tie end of service lateral to nearest property corner at ROW line and distance back from the face of curb.
- Depth at the end of service lateral measured from existing ground to invert of pipe. When required by the City Engineer, note invert elevations.
- Length of service lateral measured from centerline of sewer main to end of pipe.
- Show alignment changes, grade changes, and changes in construction materials. If changed alignment results in station changes, show a station equation as appropriate at a manhole.
- Other change altering the approved plans.
- Type of pipe, backfill material and location.
- Actual location and depth, from finish grade of street and City datum, of any other utilities encountered during construction.

Water Main

- Station and/or property line/corner to valves (not at standard location), all fittings, blow-offs, and dead ended lines.
- All changes from standard thirty-six (36) inch depth cover. Show limits on plan with annotated reason for change. Specify actual pipe elevation at regular intervals by Project Engineer.
- Show alignment changes, grade changes, and changes in construction materials. If changed alignment results in station changes, show a station equation as appropriate at a valve.
- Provide manufacturer of all valves and hydrants; identify types of fittings (i.e., MJ x MJ, FLG x MJ, etc.).
- Other change altering the approved plans.
- Lineal footage of pipe installed, including revisions to stationing and elevations.

RESIDENTIAL AS-BUILTS

Due to the current requirement for City to locate all laterals in the ROW, residential work on laterals done through a ROW permit, will require submittal of as-built drawings with locations of all laterals prior to closing out ROW permit.

PLATS

Prior to recording a plat or providing certificate of occupancy, as-built drawings (pdf and CAD files) for public infrastructure improvements shall be submitted to the City of Newport.

DRAWING SUBMITTAL

Consultants shall obtain a file number for the project and make sure to complete the appropriate information in the title block. Obtain a file number from the Project Engineer.

At the time of the final as-built plan approval submittal, the applicant shall provide the City with as-built drawings of the public improvements as follows:

- Georeferenced .dwg complete plan set on CD/DVD.
- Georeferenced .pdf format on CD/DVD of the complete plan set.
- Shapefiles containing all of the infrastructure, structure, underground and/or any visible asset to be compatible with the City's GIS and asset management system.
- a .DWG file with all corresponding drawing sheets. All files necessary to reproduce the complete set of construction documents must be included. Drawing files must conform to the City of Newport CAD Standards, text files in MS Word, and spreadsheet files in MS Excel.
- All final drawing files shall be fully purged (purge) prior to final submittal.
- Save and submit all final drawing files with the current layer set to "0".
- Project drawing images (PDF Format) file in electronic format (CD, DVD). Combine PDFs into a single file easily printed to scale. Every sheet in the record set of construction drawings needs to have a corresponding one-to-one (1:1) image file. Produce the image directly from the CAD application or scanned from the hard copy. Regardless of production method, **the image file must match the content of the CAD file and hard copy for each sheet submitted.**
- Hard copies of project drawing. When a prime consultant designs a project in collaboration with sub-consultants, the prime consultant shall be responsible for all submittals of electronic and paper drawing files. Electronic submittals shall be in the form of a single media (1 CD/DVD) and shall include the entire project. Label all electronic media, including the project name, City's project number, design firm name and submittal date.
- Purge all .dwg files prior to final submittal to remove bad blocks, unused layers, etc.

END OF SECTION

**SECTION 10 –
GLOSSARY**

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SECTION 10 - GLOSSARY

ABBREVIATIONS

AC	Asphaltic Concrete	HDPE	High-Density Polyethylene
ADA	Americans with Disabilities Act	IE	Invert Elevation
ADT	Average Daily Traffic	IPS	Iron Pipe Size
BMP	Best Management Practice according to Oregon DEQ <i>Construction Stormwater Best Management Practices Manual 1200-C NPDES General Permit</i>	LUCS	Land Use Compatibility Statement
BOD	Biological Oxygen Demand	MFTP	Manual of Field Test Procedures
CAD	Computer Aided Design	MUTCD	Manual on Uniform Traffic Control Devices
DWG	File format used by CAD software design programs such as AutoCAD®	NPDES	National Pollutant Discharge Elimination System
EA	Environmental Assessment	OSS	Oregon Standard Specifications for Construction, Current Edition
ESC	Erosion and Sediment Control	PE	Oregon Licensed Professional Engineer
ESCP	Erosion and Sediment Control Plan	PRV	Pressure Reducing Valve
FOG	Fats, oils, and grease	PUE	Public Utility Easement
GIS	Geographic Information System	PVC	Polyvinyl Chloride
GPS	Global Positioning System	ROW	Right-Of-Way or Rights-Of-Way
		TMDL	Total Maximum Daily Load

AGENCIES

AASHTO	American Association of State Highway and Transportation Officials	LOS	Level of Service Classification as defined by TRB Highway Capacity Manual, AASHTO Geometric Design of Highways and Streets and the HRMC
ACI	American Concrete Institute.	LPSS	Low Pressure Sanitary Sewer Mains
ADDAG	U.S. Department of Justice ADA Standards for Accessible Design	NEC	National Electric Code with Oregon amendments
ALTA	American Land Title Association	NEMA	National Electrical Manufacturers Association
ANSI	American National Standards Institute	NRCS (SCS)	Natural Resources Conservation Service (Soil Conservation Service)
APWA	American Public Works Association	OAR	Oregon Administrative Rules
ASTM	American Society for Testing and Materials	ODFW	Oregon Department of Fish and Wildlife
AWG	American Wire Gauge	ODOT	Oregon Department of Transportation
AWWA	American Water Works Association	OFC	Oregon Fire Code
CARV	Combination Air and Vacuum Release Valve	OHA	Oregon Health Authority
CBR	California Bearing Ratio	O&M	Operations and Maintenance
CFP	Capital Facilities Plan	OMC	Oregon Mechanical Code
DEQ	Oregon Department of Environmental Quality	OPSC	Oregon Plumbing Specialty Code
DHS	Oregon Department of Human Services	ORS	Oregon Revised Statutes
DSL	Oregon Department of State Lands	OSHA	Occupational Safety and Health Administration
DOGAMI	State of Oregon Department of Geology and Mineral Industries	OSSC	Oregon Structural Specialty Code
DWS	Oregon Drinking Water Services	OSRC	Oregon Residential Specialty Code
EIS	Environmental Impact Statement	P&ID	Piping and Instrumentation Diagram
EPA	U.S. Environmental Protection Agency	PROWAG	U.S. Access Board Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way
FEMA	Federal Emergency Management Agency		
FHWA	U.S. Department of Transportation Federal Highway Administration		
HCM	Highway Capacity Manual (by TRB)		
IAMP	Interchange Area Management Plan (ODOT)		

TERMS

Alley. A narrow street twenty-five (25) feet or less through a block primarily for vehicular service access to the back or side of properties otherwise abutting on another street. Frontage on said alley shall not be construed as satisfying the requirements of this Ordinance related to frontage on a dedicated street.

Applicant. A person, corporation, association, or agency applying for water service.

Arterial. A street of considerable continuity which is primarily a traffic artery among large areas.

As built Plans. Engineered plans in a form acceptable to the city showing the location of all new utility facilities within rights-of-way after initial construction of systems.

Backflow. The reverse of flow from its normal or intended direction of flow. Backflow can be caused by back-pressure or back-siphonage.

Backflow Preventer. An approved device investigated and approved by the City and the Oregon State Health Division or means to prevent backflow into the potable water system.

Back-siphonage. Backflow resulting from negative or reduced pressure (partial vacuum) in the supply piping system.

Bicycle. Every device propelled by human power upon which any person may ride, having two tandem wheels any of which is over twenty (20) inches in diameter. Bicycle includes any trailer pulled by a bicycle and includes any three or four-wheeled vehicle propelled by human power designed for use by adults.

Bicycle Facilities. A general term denoting improvements and provisions that accommodate or encourage bicycling, including parking facilities, maps, signs, pathways, bike lanes, widened sidewalks, bikeways, and shared roadways designated for bicycle use.

Bike Lanes. A lane reserved for use by bicycles.

Bike Path. A designated bicycle travel way, completely separated from the vehicular travel lanes, and within independent rights-of-way.

Bike Route. A designated bicycle travel way shared with vehicular traffic. A portion of a roadway designated by striping, signing, and pavement markings for the preferential or exclusive use of bicyclists.

Block. A length of one side of a street between intersections on that side of the street.

Building Sewer. The system that receives sewage inside the walls of the building and conveys it to the service lateral.

Channel Morphology. The stream channel type and the physical characteristics of the streambed.

City. The City of Newport, Oregon.

City Engineer. The individual or his/her designated representative designated by the City Manager to have the authority for review and approval on all projects subject to these Engineering Design and Construction Standards.

City Observer. The person observing construction on behalf of the City verifying that projects are constructed in accordance with City of Newport Standards and Specifications and approved construction documents. The City Observer may be an employee of the City or may work for an entity contracting with the City to provide construction inspection services.

Collection Sewer. A sewer to which one or more service laterals are tributary and which serves a local neighborhood.

Collector Street. Facility allowing traffic within an area/neighborhood to connect to the arterial system.

Contract Documents. For public improvement projects, Contract Documents are the contract between the City and the entity constructing the public improvements. For private development projects that include public improvements, the Contract Documents include, but are not limited to, the Public Improvement Facilities Agreement (PFIA), approved infrastructure plans, and the City of Newport Standards and Specifications.

Contractor. Person listed on the Construction Site/ROW Permit application as the party performing construction of the permitted work.

Control Vault. a chamber used for pretreatment to reduce/eliminate the amount of pollutants or alter the nature of pollutants to a less harmful state or concentration prior to discharge.

Core. To cut and remove a portion of pipe, manhole, or pavement with a circular hollow drill.

County. Lincoln County, Oregon.

Cross Connection. Any actual or potential physical connection between a potable waterline and any pipe or vessel containing a non-potable or potable (i.e., well) fluid (suspended solid or gas) so that it is possible to introduce the non-potable fluid into the potable fluid by backflow.

Cul-de-sac. A dead end street that has a vehicular turnaround area at the end.

Curb. The edge of a street.

Cut Sheets. Sheets of tabulated data, indicating stationing, structures, fittings, angle points, beginning of curve, points on curve, end of curves, storm drain slope, staking offset, various elevations, offset cuts, and storm drain depths for streets, waterlines, wastewater sewers, and storm drains.

Datum. Vertical elevation control for City of Newport, "The North American Vertical Datum of 1988."

Dead end Street. A Street, or series of streets, accessible from only one point. Dead end streets can be either temporary (intended for future extension as part of a future street plan) or permanent. New construction of permanent dead end streets (including cul-de-sacs) must be publicly maintained and

provide adequate turnaround capability.

Definition of Words. That, whenever, in these Standards, the words "directed", "required", "permitted", "ordered", "designated", or words of like importance are used, they shall be understood to mean the direction, requirement, permission, or order of designation of the City Engineer. Similarly, the words "approved", "acceptable", or "satisfactory", shall mean approved by, acceptable to, or satisfactory to the City Engineer.

Demolition. Any act or process of wrecking or destroying a building, improvement, or structure.

Designated Arterial or Collector Street: A Street designated as an arterial or collector in the Comprehensive Plan or the Newport Transportation System Plan.

Design Engineer. Oregon licensed Professional Engineer responsible for preparation of the construction plans for review and approval by the City Engineer. The Design Engineer shall be competent and experienced to practice in the specific disciplines of engineering. City may ask the Design Engineer to provide references and a list of representative projects that he/she has completed.

Design Storm. A hypothetical discrete rainstorm characterized by a specific duration, temporal distribution, rainfall intensity, return frequency and total depth of rainfall.

Detention Facility. Area used to temporarily contain stormwater and reduce the peak velocity and volume of runoff to provide additional system capacity and to reduce erosion in surface and/or conveyance facilities.

Director. The City of Newport's director of public works or their authorized representative.

Developer. The entity/owner/agency financing and constructing a street, utility, road, or other facility for future ownership and maintenance by the City.

Development. Any construction of improvements on a site, including buildings, other structures, parking and loading areas, landscaping, paved or graveled areas, and water and sewer fixtures. Development includes redevelopment of property requiring a building permit. Development includes improved open areas such as plazas and walkways.

Development Plan. A site plan with supporting materials, drawn to scale, that shows in detail the entire project, including streets, driveways, sidewalks, pedestrian ways, off-street parking, and loading areas, location and dimension of structures, use of land and structures, major landscaping features, and design of structures.

Domestic Wastewater. The liquid and water borne waste derived from the ordinary living processes, free from industrial wastes, and of such character to permit satisfactory disposal without special treatment into the public sewer or by means of private wastewater disposal system.

Double Check Valve Assembly. An assembly composed of two single, independently acting, approved check valves, including tightly closing shut off valves located at each end of the assembly and fitted with properly located test cocks.

Double Detector Check Valve Assembly. A line sized, approved, double check valve assembly with a parallel meter and meter sized, approved, double check valve assembly. The purpose of this assembly is to prevent backflow contamination to the distribution system and, at the same time, provide a metering of the fire system showing any system leakage or unauthorized use of water.

Drainage Facilities. Pipes, ditches, detention basins, creeks, culvert bridges, etc., used singularly or in combination with each other for the purpose of conveying or storing storm water runoff.

Driveway. A vehicular connection between private on-site parking and the public right-of-way that provides the principle means of access to a property.

Driveway Apron. A portion of the driveway connecting a street to the right-of-way; also known as driveway approach or driveway ramp.

Driveway Throat. The flat area between the wings of a driveway adjacent and parallel to the street. Used to determine the size of a driveway.

Driveway Walkway. The sidewalk area across a driveway.

Easement. Areas located outside of dedicated right-of-way, granted to the City for special uses. Property owners may grant easements to non-City entities such as franchise utility companies for their uses.

Engineer of Record. The engineer, including the City's engineer, licensed by the State of Oregon as a Professional Engineer under whose direction plans, profiles, and standards for the work are prepared and submitted to the City for review and approval, or who is in charge of and responsible for construction of the improvement.

Engineer's Authorized Representative, City. The City Engineer's project representative.

Engineer's Authorized Representative, Designer. The Design Engineer's project representative.

Engineers Cost Estimate. A unit price estimate of probable construction costs prepared and stamped by an Oregon licensed Professional Engineer competent and experienced in preparing construction cost estimates.

Engineering Design and Construction Standards Manual. The current version of the City of Newport *Public Works Design and Construction Standards Manual* and specifications.

Engineering Standard(s). The City of Newport Engineering Design and Construction Handbook.

Equivalent Service Unit (ESU). A configuration of development or impervious surface estimated to contribute an amount of runoff to the city's stormwater system that is approximately equal to that created by the average developed single-family residence. One ESU is equal to 2,700 square feet of impervious surface area. All single-family residences deemed as one ESU, regardless of impervious surface area.

Expansion Joint. A joint to control cracking in the concrete surface structure. Felt or fabric type expansion joint is not allowed.

Fill. A deposit of soil or other earth material placed by artificial means.

Final Acceptance. City Engineer’s written acceptance of public facilities constructed by others.

Final Approved Plans. Complete set of construction plans approved and signed by the City Engineer.

Fire Hydrant Assembly. The fire hydrant, with restraint devices, spool and attached auxiliary valve in valve box. Refer to 300 series drawings. Make mechanical joint restraint using Field Lok® Gaskets and/or Megalugs® (no thrust blocks in new construction).

Fire Protection Service. Provision of water to premises for automatic fire protection.

Food Service Establishment (FSE). Any place routinely providing completely prepared food and/or drink intended for individual service and consumption. The term includes any such place regardless of whether consumption is on or off the premises and regardless of whether there is a charge for the food and/or drink. The term includes a restaurant, commercial kitchen, food stand, food cart, beverage shop, caterer, hotel, school, religious institution, hospital, prison, correctional facility, or care installation. The term does not include private home where food is prepared for individual family consumption, and it does not include the location of food vending machines.

Gate. Movable barrier designed and constructed to prohibit or limit motor vehicle access from a public street to private property.

Georeference. To associate with location in physical space, containing spatial information – coordinate system (Coordinate System: NAD83 Oregon North; Datum: North American 1983).

Grade. The degree of inclination of a street or slope.

Grading. Any act by which soil is cleared, stripped, stockpiled, excavated, scarified, filled, or any combination thereof.

Gravity Grease Interceptor (GGI). A plumbing appurtenance or appliance generally mounted outside, installed in a sanitary drainage system to intercept nonpetroleum fats, oils, and greases (FOG) from a wastewater discharge and is identified by volume, thirty (30) minute retention time, baffle(s), not less than two (2) compartments, a total volume of not less than three hundred (300) gallons, and gravity separation. Gravity grease interceptors.

Grease Interceptor. A plumbing appurtenance or appliance installed in a sanitary drainage system to intercept nonpetroleum fats, oil and greases from a wastewater discharge.

Grease Removal Device (GRD). means any hydro-mechanical or gravity grease interceptor that automatically, mechanically removes non-petroleum fats, oils and grease form the interceptor, the control of which are either automatic or manually initiated.

Half-Street. A portion of the width of a right of way, usually along the edge of a subdivision or partition, where the remaining portion of the street could be provided in another subdivision or partition, and consisting of at least a sidewalk and curb on one side and at least two travel lanes.

Hydrant Spool. The waterline connecting the fire hydrant to the auxiliary valve on the City distribution main.

Hydro-mechanical Grease Interceptor (HMI). A plumbing appurtenance or appliance, generally mounted inside, installed in a sanitary drainage system to intercept nonpetroleum fats, oil, and grease (FOG) from a wastewater discharge and identified by flow rate, and separation and retention efficiency. The design incorporates air entrainment, hydro-mechanical separation, interior baffling, and/or barriers in combination or separately, and one of the following: A – External flow control, with air intake (vent): directly connected; B – External flow control, without air intake (vent): directly connected; C – Without external flow control, directly connected; D – Without external flow control, indirectly connect. Hydromechanical grease interceptors are.

Illicit Connections. A situation that can be alleviated or repaired the City Engineer determines would cause harm to the public, environment, or downstream stormwater facilities before the situation.

Illicit Discharge. Any direct or indirect non-stormwater discharge to the stormwater system except discharges regulated under NPDES permit or exempted by this chapter.

Immediate Threat. A situation that can be alleviated or repaired the City Engineer determines would cause harm to the public, environment, or downstream stormwater facilities before the situation.

Impervious Surface. An artificially created hard surfaced area that either prevents or retards the entry of water into the soil mantle and/or causes water to run off the surface in greater quantities or at an increased rate of flow from that present under natural conditions. Impervious surfaces may include, but are not limited to, rooftops, concrete or asphalt paving, walkways, patios, driveways, parking lots or storage areas, trafficked gravel, and oiled, macadam or other surfaces which similarly impede the natural infiltration or runoff of stormwater. However, not all driveways or concrete are impervious, and the city will determine whether a particular surface is impervious.

Improved Premises. Any area that the public works director determines has been altered such that the runoff from the site is greater than that which could historically have been expected. “Improved premises” do not include public roads under the jurisdiction of the city, county, state or federal government.

Industrial Waste. Solid, liquid, or gaseous waste resulting from any industrial, manufacturing, trade, or business processes; or development, recovery, or processing of natural resources.

Infiltration. The passage or movement of water into the soil subsurface.

Intercepting Sewer/Interceptor Sewer. A sewer that receives sewage from a number of collection sewers or other sewage sources and conducts the sewage to a point for treatment or disposal. A “force main” is a type of intercepting sewer to which service laterals cannot be directly attached.

Intersection. Refers to the area jointed by two (2) or more roads intersecting. Used for approaches of a continuous street at an acute curve or some other angle point with different street names.

Irrigation Service. A metered connection intended for seasonal use and delivering water not discharged

to the wastewater collection and treatment system.

Lateral Sewer. A building sewer service line.

Local or Residential Street. A facility designated to serve primarily direct access to abutting land and offers the lowest level of traffic mobility. Through-traffic movement is deliberately discouraged.

Longitudinal Joint. A joint that follows a course approximately parallel to the centerline of the roadway.

Mains. Water distribution pipelines owned by the city used to serve the general public.

Maintenance Agreement. An agreement between the City and a maintenance organization for private stormwater facilities specifying the operation and maintenance requirements of the facilities.

Maintenance Organization. The person(s), company, or nonprofit organization(s) responsible for long-term operation and maintenance of stormwater facilities recorded in the maintenance agreement.

Major Trees. Trees within the right-of-way which have a twelve-inch (12") caliper or larger. Street improvement plans should identify major trees by location, caliper, and species.

Manager. The City Manager (or designee) of the City of Newport acting either directly or through authorized representatives.

Manufacturer's Name. Any manufacturer's name, specification, catalog, number or type used herein specified by make and order to establish the standard requirements of the City. The City Engineer may consider other equivalent models for approval, providing they are comparable with this established standard.

Multi-Use Trail. A pathway designated for pedestrian or bicycle use.

Natural Grade. The grade of the land in an undisturbed state.

Natural Outlet. Any outlet into a watercourse, pond, ditch, lake, or other body of surface or groundwater.

Net Impervious Area. The increase in impervious area on a property after a project is completed.

Non-Stormwater Discharge. Any discharge to the stormwater system not composed entirely of stormwater.

Owner. The owner of record of real property as shown on the latest tax rolls or deed records of Lincoln County, and includes a person who purchases a parcel of property and furnishes evidence of the purchase under a written recorded land sale contract.

Partition. To divide an area or tract of land into two or three parcels within a calendar year when such area or tract of land exists as a unit or contiguous units of land under a single ownership at the beginning of such year. Partition does not include divisions of land resulting from the creation of cemetery lots. Partition does not include any adjustment of a lot line by the relocation of a common

boundary where not creating an additional parcel; where the existing parcel size reduction created by the adjustment is not reduced below the minimum lot size established by any applicable code. Partition does not include the sale of a lot in a recorded subdivision, even though previously attained lot acquired with other contiguous lots or property by a single owner.

Parking Lot. Paved surfaces on private property intended for the movement and storage of six (6) or more vehicles.

Peak Run Off. The maximum stormwater runoff rate (in cubic feet per second) as determined for the design storm.

Person. Individual firm, corporation, association, agency, or other entity.

Plans. Construction plans include: any applicable system plans, sewer plans, profiles, cross sections, elevations, project specific standard drawings, standard drawings, etc., or reproductions thereof stamped and signed by the Engineer of Record, approved, or to be approved, by the City Engineer; show the location, character, dimensions, and standards of the work to be performed. Plans constitute part of the construction contract documents for privately financed development projects or publicly financed infrastructure improvement projects.

Potable Water. Water that is satisfactory for drinking, culinary, and domestic purposes and meets the requirements of the health authority having jurisdiction over it.

Premises. Buildings or other property operated as a separate unit from other property.

Pretreatment. The reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater to a less harmful state or concentration prior to or in lieu of discharging or otherwise introducing such pollutants into the city wastewater system.

Private Development Project. A project owned and constructed by a private entity that includes future transference of public infrastructure to the City for perpetual operations and maintenance (commonly water, sewer, stormwater, and street facilities).

Private Wastewater Collection System. A privately owned and maintained lateral wastewater conveyance system installed to serve multi-unit structures on single ownership properties that cannot legally be further divided.

Private Water Service Line. The water line between the water meter and the premises. For unmetered lines for fire protection service, the private service line is the line between the connection with the main and the fire suppression sprinkler.

Private Storm Drain. A storm drain located on private property or serving private parking lot catch basins.

Private Utilities. Any utilities not owned by the City of Newport

Project. An activity that creates impervious area.

Project Summary. A narrative that includes the project description, location, emergency contacts, and other information determined by the public works director such that the project can be located and a determination made regarding methods of stormwater management.

Public Wastewater System. Any sewer in public right-of-way or easement operated and maintained by the City for carrying wastewater and industrial wastes.

Public Storm Drain. Any storm sewer in public right-of-way or easement operated and maintained by the City.

Reclaimed Water. Treated wastewater sufficient for reuse but not for drinking purpose.

Record Drawings. Complete set of plans incorporating all changes made to the Final Approved Plans during construction.

Record Survey Monument. Any physical marker, such as an iron rod with a plastic, brass, or aluminum cap, set in place by a professional land surveyor to indicate the location of a land boundary, street centerline, elevation, or other legal or physical land features as noted on a survey recorded in the County Surveyor's Office.

Regional Water Quality Facility. A water quality facility that treats more than 15,000 square feet of impervious area runoff.

Release Rate. The controlled rate of release of drainage, storm, and runoff water from property, storage pond, runoff detention pond, or other facility during and following a storm event.

Resident Engineer. Oregon Licensed Professional Engineer responsible for project oversight during construction.

Resident Project Representative. The authorized representative under the direction of the Engineer of Record assigned to the project to assist the Engineer of Record.

Responsible Party. A person or entity holding fee title to the property, tenant, lessee, or a person or entity who is acting as an owner's representative including any person, company, nonprofit organization or other entity performing services that are contracted, subcontracted, or obligated by other agreement to meet the requirements of this code.

Retention Facility. An area used to reduce the volume of storm runoff to the downstream system by means of evaporation, plant transpiration, or infiltration into the soil.

Right-of-Way. All areas dedicated to the public and administered by the city for use for transportation purposes, including any city street, road, bridge, alley, sidewalk, trail, or path, and all other public ways and areas managed by the city.

Includes public utility easements to the extent that the easement allows use by the utility operator planning to use or using the public utility easement. "Right-of-way" includes the subsurface under and airspace over these areas. "Right-of-way" does not include the airwaves for purposes of CMRS, broadcast television, DBS and other wireless providers, or easements or other property interests

owned by a single utility or entity

Roadway. The portion of a street right-of-way developed for vehicular traffic.

Sanitary Facility. Any drain from any sink, toilet, or other means of disposing of liquid waste by means of drains. A system of collecting liquid hazardous wastes for shipment to an appropriate disposal facility is not a sanitary facility.

Sanitary Sewer. A pipe or conduit that carries sewage.

Sediment. Soil or other surficial materials held in suspension in surface water or stormwater.

Sedimentation. The process or action of sediment deposition from which decreased surface water or stormwater velocity result.

Service Connection. The pipe, valves, and other facilities by means of which the water utility conducts water from its distribution mains to and through the meter, but does not include the private service line.

Service Lateral. The extension from a building sewer to the collection sewer.

Sewage. Water-carried wastes from residences, business buildings, institutions, and industrial establishments and any liquid wastes.

Sewer System. All city-owned facilities for collection, pumping, treating, and disposing of sewage

Sidewalk. The portion of a street designed for preferential use by pedestrians.

Significant Tree. Tree with a DBH equal to or great than six (6) inches.

Silt. Fine clay and silt textured soil particles, including clay that is easily erodible and remains in suspension even at low stream velocities.

Site. Any property or combination of properties where a project is being proposed or completed.

Slope. The change in elevation of a ground surface expressed as a ratio of horizontal distance to vertical distance, e.g. 3H:1V.

Standard Drawings. The latest edition of the City of Newport's Standard Drawings for City infrastructure construction.

Stop Work Order. An order issued by the director or Building Official which requires all project activity, except those specifically stated in the stop work order, to cease on the site.

Storm Drain. A pipe or conduit that carries stormwaters and surface waters and drainage, but is not intended for sewage and polluted industrial wastes.

Stormwater. Water from precipitation, surface, or subterranean water from any source, drainage and nonseptic waste water.

Stormwater Facility. A location to filter, retain, or detain stormwater for the purpose of water quality or quantity management. The facility required by the City to control post-construction stormwater may be structural or non-structural; design and construct according to the City Public Works Design and Construction Standards.

Stormwater Facility Operations and Maintenance Plan. The required steps undertaken by an owner or maintenance organization to ensure proper functioning of a stormwater facility.

Stormwater Management. Techniques or structures intentionally used to temporarily or permanently reduce or minimize the adverse effects of stormwater velocities, volumes, and water quality on receiving watercourses. A series of techniques or structures constitute a stormwater system or treatment train.

Stormwater Service. The operations of the city's stormwater utility in providing programs and facilities for maintaining, improving, regulating, collecting, and managing stormwater quantity and quality within the city's service area.

Stormwater System. Any structure or configuration of ground that is used or by its location becomes a place where stormwater flows or is accumulated, including but not limited to pipes, sewers, curbs, gutters, manholes, catch basins, ponds, creeks, open drainage ways, ditches and their appurtenances. "Stormwater system" does not include the Yaquina River, Yaquina Bay, or the Pacific Ocean.

1. City Stormwater System means the portions of the stormwater system in public rights of way, within easements in favor of the city, or on city property.
2. Private Stormwater Facility means any portion of the stormwater system on private property and not within an easement in favor of the city.

Street. A public or private way other than a driveway that is created to provide ingress or egress for persons to one or more lots, parcels, areas, or tracts of land. For the purposes of this section, a "driveway" is a private way that begins at a public right-of-way that is proposed to serve not more than four individual lots/parcels cumulative as the primary vehicular access to those individual lots/parcels.

Structures. Anything constructed or built, an edifice or building of any kind, or any piece of work artificially built up or composed of parts joined together in some definite manner.

Subdivision. Either an act of subdividing land or an area or tract of land subdivided as defined in this section.

Super elevation. The tilting of the pavement that helps vehicles travel around a horizontal curve; measured as a vertical distance between the heights of the inner and outer edges of pavement surface. Design of super elevation shall follow the latest AASHTO (American Association of State Highway and Transportation Officials) design guide

Three-Quarter Street. Means a minimum seventy-five (75) percent portion of the ultimate width of the street (but not less than twenty-four (24) feet with no parking on either side, twenty-eight (28) feet with parking on one side). Usually along the edge of a subdivision where, when adjacent property is developed (per Newport Development Code), the remaining portion of the street shall be provided.

Transportation System Plan. The goals and objectives that define how the community's vision will shape the design, construction, operation, and management of the transportation system.

Transverse Joint. A joint that follows a course approximately perpendicular to the centerline of the roadway.

Travel Way. That portion of the roadway used for the movement of vehicles, exclusive of shoulder and auxiliary lanes.

Trunk Sewer. A wastewater sewer which is primarily intended to receive wastewater from a collector sewer, another trunk sewer, an existing major discharge of raw or inadequately treated wastewater, or water pollution control facility.

Turnaround Area. A paved area of sufficient size and configuration that a motor vehicle may maneuver such to travel in the opposite direction. The City Fire Marshall may require the turnaround sized to accommodate turning movements of their specified design vehicle.

Uniform Plumbing Code. The Uniform Plumbing Code adopted by the International Association of Plumbing and Mechanical Officials (current edition), as revised by the State of Oregon, called the "Oregon State Plumbing Specialty Code."

Wastewater. The total fluid flow in the conveyance and treatment system that includes industrial waste, water carried wastes from residences, business buildings, institutions, and industrial establishments, or any other waste (including that which may be combined with any ground water, surface water, or stormwater) that may be discharged into the conveyance and treatment system.

Water Distribution System. Water distribution pipelines, pumping stations, reservoirs, valves, and ancillary equipment used to transmit potable water from the supply source to the service line.

Water Main. The water supply pipe for public or community use.

Water Service Line. The pipe connection from the City water main to the users' water meter, hydrant, backflow prevention device, or fire sprinkler double check valve.

Watercourse. Any natural or artificial stream, river, creek, ditch, channel, canal, conduit, culvert, drain, gully, ravine, swale, wetlands, or wash in which water flows either continuously or intermittently. The width of the watercourse includes any adjacent area that is subject to inundation from overflow or floodwaters from the design storm.

Wetlands. Transitional lands where the water table is usually at or near the land surface or the land is covered by shallow water. Wetlands have one or more of the following attributes:

- Support, at least periodically, plants that thrive in saturated conditions,
- Contains predominately un-drained hydric soil, or
- The area is saturated or covered with shallow water at some time during the growing season of each year.

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**SECTION 11 –
APPENDICES**

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APPENDIX A - CONSTRUCTION OBSERVATION TASKS AND GUIDELINES

These are the preferred Construction Observation tasks and guidelines for the construction of City accepted improvements. The Senior Project Manager will determine to what extent observation is necessary to ensure construction of improvements comply with the approved Contract Documents. This is not a comprehensive list, and the Senior Project Manager may need to add additional inspection requirements as prescribed by the approved plans.

Project Observer should complete the following tasks, if relevant to the development:

- Confirm installation of erosion and sediment control measures prior to site activities that have potential to cause erosion or sediment movement.
- Confirm that materials delivered meet requirements of the construction documents. The Engineer of Record may conduct field tests of material and request copies of manufacturers' certifications to verify that material at the construction site meets requirements of the construction documents.
- Confirm acquisition of required permits.
- Observe compliant subgrade conditions before placing work bearing on the subgrade, including, but not limited to compaction testing or proof rolling as appropriate required by City Standards. See Appendix B
- Observe placement of bedding or base materials.
- Review test results from Contractor-provided testing including: density tests on fill materials, such as bedding, backfill, and road base, and asphaltic concrete paving. Perform additional density tests to verify in-place densities. The *ODOT Manual of Field Test Procedures (MFTP)* describes test procedures for density testing.
- Observe backfill methods for placement, lifts, and compaction.
- Confirm measurement for payment on unit price contracts if a City Contract.
- If a traffic control plan is required, Observer should provide periodic site visits to observe implementation of the approved traffic plan or any required corrections.
- Observe topsoil and landscaping placement as specified.
- Verify that work meets requirements of the construction documents for irrigation and maintenance of landscaping materials during the specified maintenance period.
- Observe project start-up and commissioning activities.
- Observe and document required testing of equipment.
- Check grades of buried pipe.
- Observe final installation of buried structures prior to backfill
- Observe all boot bands are tight.
- Verify all pipe connections are grouted inside and out when applicable.
- Verify manhole channeling smooth and follows direction of flow.

For Waterline construction perform the following inspections and record date of each:

- Confirm notifications of residents of temporary shutdowns required to perform the work.
- Observe fire hydrant installation, assuring proper installation of the hydrant brace, gravel placed around drain ports, installation of the fire hydrant branch restraining devices, the hydrant and isolation valve operate properly, and the valve box is free of debris.
- Observe operation of valves from fully open to fully closed and verify that no debris remains within the valve box.

- Verify valve is in the position required for system operations.
- Coordinate with the City Observer and fire department for marking of hydrants that are to remain out of service.
- Check joint type is per specifications and joint assembly practices.
- Observe pipe restraints and verify that restrained lengths match those shown in the construction documents.
- Check line and grade to verify straightness of pipe installation before covering. The Standard Specifications define acceptable pipe deflection and deviations from line and grade.
- Before placing pipe observe whether pipe has been stored properly, made in the US per specifications, is undamaged, and is clean of pests and debris.
- Ensure tracer wire installed above pipe; taped to top of pipe when weather allows.
- Check for pipe location with respect to easements.
- Observe bedding procedures and verify that bell holes are provided.
- Observe pressure test and verify that leakage is within acceptable limits specified by American Water Works Association (AWWA) for the joint type and pipe material.
- Observe flushing and disinfection and verify that chlorinated water is disposed of following state and federal regulations. Done in coordination with City Water Crew.
- Verify test results of bacteria test sampling and verify written test reports from a certified laboratory demonstrate samples passed the testing.
- Obtain from Contractor test reports from all new backflow preventers.
- Check meters, pressure gauges, and other instruments for proper operation.
- Observe thrust block framing and pouring.

For sanitary sewer pipe systems construction perform the following inspections and record date of each:

- Gravity sewer pipe
 - Confirm that the sewer pipe has been stored properly.
 - Check pipe for damage either prior to or as Contractor commences excavation for pipe placement.
 - Check joint type is per specifications and joint assembly practices.
 - Ensure tracer wire installed above pipe; taped to top of pipe when weather allows.
 - Make a line and grade check before covering.
 - Make sure excavation provides for projecting bells.
 - Check lateral connections for proper installation.
 - Perform pressure testing as specified.
 - Check for pipe location with respect to easements (if any).
 - Ensure crews perform television inspection of pipes to confirm condition, no presence of debris, and pipe invert vertical sags and deflection compliance.
 - Review TV test results with City staff; confirm contractor addressed any deficiencies.
 - Confirm mandrel test.
- Pressure sewer pipe and sewer force-mains
 - Confirm that the sewer pipe has been stored properly.
 - Check each piece of pipe for damage before lowering into the trench.
 - Make a line and grade check before covering (minimum cover and location of high points in pressure sewer).
 - Make sure excavation provides for projecting bells.
 - Check lateral connections, and check valves for proper installation.
 - Perform pressure testing as specified.

- Check pipe pigging facilities (if present), including valves, drains, foundation supports, linings and coatings, and appurtenances.
- Check for pipe location with respect to easements (if any).
- Check manhole installations
 - Confirm inverts formed and grouted per construction documents.
 - Confirm manhole materials (including lining, gaskets, castings, ladders/steps) as required by specifications.
 - Confirm gasket installation as required.
 - Confirm manhole exterior coating and exterior joint seals as required (possible for high groundwater areas).
 - Verify that sample manhole (even if not in public ROW), meets design and construction standards.
 - Verify Cast-in-place manholes follow City Standard Drawing.
- Observe placement of cut-off walls, if part of the design.
- For flexible pipe (for example, PVC), observe specified mandrel test to verify that deflection of flexible pipe does not exceed limits allowed by the Standard Specifications.
- Verify that video of pipe installation meets requirements.
- Observe a hydrostatic or low-pressure air test on pipe system and manhole as specified. Low-pressure air test shall conform to the requirements of Uni-Bell B-6-90, *Recommended Practice for Low Pressure Air Testing of Installed Sewer Pipe*.
- Equipment - Pump Stations
 - Verify hydrostatic testing of wet well.
 - Follow procedures identified in Supplemental Specifications, including Equipment Testing and Facility Startup.
 - Confirm equipment nameplate data versus approved submittals.
 - Perform functional and performance testing per equipment specifications.
 - Obtain copies of sign-offs for all required building permits.
 - Test each unit process (pumps, chemical feed systems, odor control systems, etc.) independently, and then as complete system.
 - Inspect all hardware to ensure nuts, bolts, chains and all other fasteners and hardware are made of the appropriate grade of stainless steel.
 - Inspect guiderails for proper alignment, installation, and material.
 - Inspect all components of the facility against approved submittal from Contractor / vendor / supplier.
- Equipment - Engine Generator and Automatic Transfer Switch
 - Follow procedures identified in Supplemental Specifications, including Equipment Testing and Facility Start-up.
 - Confirm equipment nameplate data versus approved submittals.
 - Perform functional and performance testing per equipment specifications.
 - Simulate power failure and test system operation.
 - Test auxiliary power connection and transfer switch with portable generator, as applicable.

For Stormwater construction perform the following inspections and record date of each:

- Observe construction site erosion controls, sediment controls, and pollution prevention devices. These are required items by City standards, and intended to be included on the approved construction plans for all CIP and Development projects.

- Confirm erosion and sediment control plan (ESCP) is submitted and approved.
- Confirm implementation of ESCP providing erosion and sediment control protection for existing drainage facilities.
- Observe construction of catch basins.
 - Observe excavation.
 - Observe placement of rebar.
 - Observe concrete pours and check mix age, temperature, mix composition and slump to determine compliance with specifications in accordance with ODOT MFTP.
 - Check pipe wall thickness for compliance with plan.
 - Check castings for compliance with specifications.
 - Check for proper protection bars, if required.
 - Confirm all interior joints grouted per specifications (lid to base).
- Observe construction of manhole installations.
 - Confirm inverts formed per construction documents.
 - Confirm manhole materials (including lining, gaskets, castings, ladders/steps, riser ring shims) as required by specifications.
 - Confirm gasket installation as required.
 - Confirm manhole exterior coating and exterior joint seals as required (possible for high groundwater areas).
- Check pipe installation.
 - Check for proper pipe orientation.
 - Check for connection of laterals.
 - Check outlet location and invert from all structures.
 - Ensure tracer wire installed above pipe; taped to top of pipe when weather allows.
 - Check for pipe location with respect to easements.
 - Confirm sealing of manhole interior joints per specification.
 - Confirm channel inverts are smooth and properly aligned.
 - Confirm mandrel test.
- Check treatment facility installation.
 - Check grading versus plan to confirm placement as designed (ie, within ROW or within established private easements.)
 - Verify swale or other facility dimensions
 - Verify swale infiltration, if swales provided
 - Check plantings, if provided, against specifications.
- Check underground injection control (drywell).

For street construction perform the following inspections and record date of each:

- Subgrade and Base
 - Check all prior construction requirements for completion; for example, utilities, sewers, water pipe, electrical and communication conduit, curb and gutter work.
 - Verify manholes and valve boxes are at finish grade.
 - Check soil foundation preparation and stabilization completed per specifications.
 - Check density, moisture, and thickness of base and subbase meet specifications.
 - Check for protection and setting of hubs by the Contractor. Confirm grade stakes are established.

- Review requirements and procedures with the Contractor, including sources of base and subbase, soil stabilization method, material tests and approvals, and compaction tests.
- Check for soil movement under rollers and hauling equipment to locate soft spots.
- Confirm backfilled trenches are sufficiently dry and ready for base and subbase construction.
- Sample base and subbase materials and confirm results are satisfactory.
- Collect delivery tickets for tonnage payment from certified Weighmaster.
- Test for compacted density of subbase and base.
- Check Contractor's provisions for protecting finished subgrade. Do not permit subgrade to dry out prior to covering with finished surfacing.
- Paving
 - Check plans and specifications for pavement type, thickness, method of payment, number of courses, and other project-specific paving requirements.
 - Check pavement material comply with specified requirements.
 - Review procedures and requirements with Contractor.
 - Check all detours for proper setup and signage placement.
 - Observe whether pavement placement and finishing are meeting specifications.
 - Check Contractor's preparations, source of paving material, and condition of equipment.
 - Check subgrade meets grade, cross-section, and compaction requirements.
 - Check subgrade is frost-free.
 - Check all underground construction for completion.
 - Check manholes and valve box location markings.
 - Check contact surfaces and joints have been clean and prepared.
 - Check asphalt cut edges are straight.
 - After milling, check all grindings have been swept clean from surface.
 - Check asphalt temperature is acceptable for correct for rolling.
 - Check ambient temperature is warm enough for paving.
 - Check compaction tests are representative and in accordance with the specifications.
 - Check tack placement; nozzles have even spray, cuts are tacked.
 - Check joints for smoothness.
 - Check rolling at curb for tightness and no gaps.
 - Check valve cans and structures have been lifted to finish grade.
 - Verify no valve cans and structures have been left under asphalt.
 - Check catch basins remain free from asphalt falling inside basin.
 - Check all erosion control materials; nothing buried under asphalt.
 - Check catch basins for compacted slopes around basin and water flow.
 - Check cleanup operations are adequate, including removal of all temporary signage.
 - Check cold joints have been tacked and sanded.
- Sidewalks
 - Verify that Contractor has notified nearby property occupants and potential users about the work to be performed and established accessible detour routes.
 - Check to see that subgrade meets specified requirements.
 - Check grades for proper slopes to meet City and ADA requirements.
 - Check that all vault, meter boxes, and pull boxes are set to grade, oriented parallel with curb, and located in appropriate horizontal position per Standard Drawing G-020 (ie. not in sidewalk, except where approved).
 - Check tree well blocked outs.

- Check joint sawing operation.
- Check concrete mix meets specified requirements.
- Check installation of required reinforcement meets specifications.
- Check rebar ties are pushed flat.
- Check cut ends of rebar are a minimum of two-inch (2") from forms with minimum two-inch (2") concrete cover.
- Check Spacer layout to insure continuous rebar support.
- Check edging.
- Check surface texture meets specified requirements.
- Check broomed finish for uniformity.
- Check application of curing compound if required.
- Check application of joint sealing compound if required.
- Check for properly barricaded and protected work while the concrete pour cures.
- Check for properly blanketed concrete to protect pour during freezing weather.
- Check for cracks in new concrete after curing.
- ADA Ramps with two (2) foot and four (4) foot levels for ADA compliant grades
 - Cross slope
 - Running slope
 - Landing
 - Truncated Dome placement and direction of domes.
- Curbs and Gutters
 - Check radius of curb returns are per plan.
 - Check driveway and ADA ramp depressions are located and marked properly.
 - Check if keys, dowels, or performed joint filler (PJF) are required for adjoining sidewalk (if required, provide per specifications and standard detail).
 - Check curb grades.
 - Check alignment for compliance to plans and smoothness.
 - Check broomed finish for uniformity.
 - Check for installation of expansion board.
 - Check batter for correct angle.
 - Check TOC drains to street, especially with curb machines.
 - Check curb inlet tie-ins.
 - Verify drainage slopes.
- Transit Facilities
 - Complete inspection for other features as specified (sidewalks, signage)
 - The Engineer of Record will complete US Access Board ADAAG Form 29a: Transportation Facilities -- Bus Stops.

The intent of this checklist is to confirm that the constructed facility meets design standards.

APPENDIX B - COMPACTION REQUIREMENTS

STRUCTURAL LOT FILL:

Minimum percent compaction required	90%
Test method required to determine maximum density	T-180
Frequency of density testing in lots	8" lifts 3 test for each 2 feet of fill

ROAD SECTION – EMBANKMENT:

Minimum percent compaction required	90% below
	3' of subgrade
	95% within 3' of subgrade
Test method required to determine maximum density	T-99 or T-180
Frequency of density testing of embankment 8" lifts	3 tests for each 2' of embankment

ROAD SECTION – SUBGRADE:

Minimum percent compaction required	95%
Percent compaction required to what dept below subgrade	1 foot
Test method required to determine maximum density	AASHTO T-99
Frequency of density testing of subgrade	As needed

ROAD SECTION – AGGREGATE BASE:

Minimum percent compaction required	95%
Test methods required to determine maximum density	OSHD TM 106 or T-99
Frequency of density testing of aggregate base	As needed

ROAD SECTION – ASPHALT PAVEMENT:

Minimum percent compaction required	92%
Test method required to determine maximum density	OSHD TM 306
Frequency of density testing of aggregate base	5 tests minimum* average density
Full time inspection or spot-checking of compaction	Spot

UTILITY TRENCH BACKFILL: (Beneath pavement or sidewalk)

Minimum percent compaction required for bedding	90%
Minimum percent compaction required for pipe zone	90%
Minimum percent compaction required above pipe zone	95%
Test method required to determine maximum density	T-99
Different Requirement for PVC	No
In landscape area	85%

ADDITIONAL INFORMATION/COMMENTS:

*When using nuclear gauge, two readings at each site, the second at right angles to the first.
Average the two readings to obtain test density.

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APPENDIX C – SITE PLAN SUBMITTAL CHECKLIST

Development: _____ Approved Y / N _____

Review Date: _____ Approved Date: _____

Comments: _____

All ROW applications submitted to the City of Newport must include a Site Plan.

The following checklist breaks down minimum information required on Level 1 and Level 2 submittals. Submittals that do not address all required items listed below will be deemed incomplete and returned without a review.

Submitted plans must meet the minimums set forth in the checklist and placed in a logical order. See Sections 1 for required CAD Standards and Section 2 for required construction information. Provide the following plan sheets/set listed below (as required):

- | | |
|---|---|
| <ol style="list-style-type: none"> 1. Coversheet <ol style="list-style-type: none"> a) Vicinity Map (Max Scale 1" = 1000'); b) Index of Sheets; c) Legend of symbols and line types. 2. Existing Condition Plans <ol style="list-style-type: none"> a) Existing topography, public and private utilities stormwater flow patterns and tree removal or protections. 3. Grading Plans <ol style="list-style-type: none"> a) Proposed finished grading contours and slopes; b) Stage earthwork plan. 4. Building improvements plans. 5. Landscaping plans (as required) <ol style="list-style-type: none"> a) Plans view; b) Plant List and quantities; c) Irrigation plans and schematics; 6. Utility plans <ol style="list-style-type: none"> a) Stormwater; b) Sanitary; c) Municipal water; | <ol style="list-style-type: none"> 7. Erosion Control Plans (Follow DEQ guidelines for 1200-C) <ol style="list-style-type: none"> a) Mass Grading; b) Road and utility; c) Vertical Construction (as required); d) Final Stabilization (Landscape plans can be used). 8. Roadway improvement plans <ol style="list-style-type: none"> a) Roadway plan and profile; b) Driveway Details; c) ADA details. 9. Stormwater Plans – Quality and quantity (as required) <ol style="list-style-type: none"> a) Plan, profile and cross section views; b) Include connection pipes; c) Grading and water level elevations; d) Bypass or overflow details; e) Other details. 10. Signing and Striping Plans <ol style="list-style-type: none"> a) Plan View; b) Sign Table. 11. Standard Drawing and Details . |
|---|---|

LEVEL 1: No Licensed Professional Engineer Stamped Plan Required – examples:

Small Level 1 projects require only a Site Plan, and do not require the plan to be stamped by a Professional Engineer. ROW improvements impact a single-family residence.

- Curb cuts – driveway approach.
- Sidewalk construction.
- Excavation for purpose of installing utility service lines only.
- Landscaping within the public right-of-way (ROW).
- ROW grading for construction of one single family dwelling that does not result in elevation changes exceeding two feet (2') on any portion of the site.
- Tree planting, pruning, and/or removal in the public ROW.

Level 1 plans require the following plan sets as listed above: 1 through 6. See Standard Drawing G-020.

Site Plan Checklist Level 1

	COMPLETED BY SUBMITTING PARTY (Circle Y, N, N/A as appropriate)			COMPLETED BY CITY	
1	Y	N	N/A	Adequate detail to allow confirmation that calculations meet design criteria outlined in <i>Engineering Design and Construction Standards Manual</i> .	<input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:
2	Y	N	N/A	North arrow on all plan view sheet.	<input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:
3	Y	N	N/A	Bar scale (Horizontal 1" = 20' Vertical 1" = 2')	<input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:
4	Y	N	N/A	Accurate narrative on each sheet	<input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:
5	Y	N	N/A	Surveyed property lines with dimensions.	<input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:
6	Y	N	N/A	Tax Lot Number, Area (in Square Feet) and address	<input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:
7	Y	N	N/A	Existing building locations, lot coverage (sq ft).	<input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:
8	Y	N	N/A	Proposed building locations, lot coverage (sq ft).	<input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:
9	Y	N	N/A	Any overhangs impacting ROW.	<input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:

10	Y	N	N/A	Label existing roads, existing curbs, gutter flow lines, sidewalk width, existing driveway locations.	<input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:
11	Y	N	N/A	Locations and dimensions of proposed public structures, roads, curbs, gutters, sidewalks, driveways.	<input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:
12	Y	N	N/A	Locations and dimensions proposed private structures, decks, porches, or retaining walls impacting ROW.	<input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:
13	Y	N	N/A	Depiction and dimensions of proposed driveway, <i>including</i> : <ul style="list-style-type: none"> elevations showing ADA cross-slope on driveway walkway; a profile from street to garage driveway location in relation to Clear Zone Area and 30ft setback from corner. 	<input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:
14	Y	N	N/A	Show existing significant trees and/or vegetation in ROW to be removed, replacement trees, and tree protection measures. See Tree Permit for requirements.	<input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:
15	Y	N	N/A	Locations and dimensions of existing City/Public structures: <ul style="list-style-type: none"> curb inlets manholes water main sewer main storm main 	<input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:
16	Y	N	N/A	Show proposed private service laterals: <ul style="list-style-type: none"> Size Material Length Location Connection to Main 	<input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:
17	Y	N	N/A	Easement(s): 1) Proposed and existing; 2) location and dimensions; 3) purpose of easements.	<input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:

LEVEL 2: Licensed Professional Engineer Stamped Plan Required

A Civil Engineering Plan is required when any of the conditions listed below apply to a permit application or as determined by the City Engineer. A Civil Engineering Plan typically ~~requires~~ a Professional Engineer. The Engineering Department recommends scheduling a pre-design meeting PRIOR to submittal if you project falls into this category. A Level 2 plan set will be submitted through the Community Development Dept prior to needing a ROW permit. Requirements of Level 1 plans must also be met.

- Excavation or fill that will result in elevation changes exceeding two feet (2') on any portion of the site excluding landscaping on developed property.
- Construction of facilities, including grading, that may impact stormwater runoff or downstream water

quality.

- 3,000 square feet, or more, of new impervious surface will be added to the site (i.e. new parking lots, structures, or other impervious surfaces that individually or in combination replace 3,000 square feet, or more, of existing pervious surface).
- A combination of 6,000 square feet, or more, of impervious area will be added and/or reconstructed (i.e. 4,000 square foot of existing building reconstructed with the addition of a new 2,000 square foot parking lot, structure, or other impervious surface OR reconstruction of 6,000 square feet, or more, of existing impervious surface).
- One (1) acre or more of land will be disturbed or when a DEQ 1200-C permit is required.
- Dedication of public ROW.
- Infrastructure will be constructed and dedicated to the City.
- Construction and/or removal of retaining walls located within or impacting the ROW.
- Demolition of significant surfaces or structures located within or impacting the ROW.
- Proposed development on corner lots, lots without curb and gutter, streets not meeting City Standard (as shown in the Newport Municipal Code).

Items listed in the checklist are minimums. Applicant must provide other required information and details on plans necessary to confirm that the proposed work is consisting with the requirement of the City, State and Federal codes and standards, as determined by the applicable City department. Additional details may be required. See Section 2 of the *Engineering Design and Construction Standards Manual*.

Applicant must also provide the estimated cost of the proposed work when the work occurs within the public right-of-way or easements and provide a bond for the proposed ROW work.

Level 2 plans require the following plan sets as listed above: 1 through 11.

Site Plan Checklist Level 2

COMPLETED BY SUBMITTING PARTY (Circle Y,N, N/A as appropriate)			COMPLETED BY CITY
Basemap/ Existing Condition Plans			
Y	N	N/A	Size/location of existing manholes, catch basins, clean outs, laterals, fire hydrants, meter boxes, valves, tees or wyes; existing public and private utilities obtained via utility locates or as-builts.
			<input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:
Y	N	N/A	Location of existing cross walks, mail boxes, signs, bike racks, utility poles, pole anchors, utility splice boxes, transformers or vaults, etc.; location of existing public and private utilities shall be obtained via utility locates or as-builts.
			<input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:
Y	N	N/A	Existing storm water drainage flow paths.
			<input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:

Y	N	N/A	Include dimensions that clearly define sizes of existing City utility lines and connecting City owned structures; location of public and private utilities obtained via utility locates or as-builts.	<input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:
Y	N	N/A	Include dimensions that clearly define lengths and distances: *between buildings or structures to ROW facilities, *lengths of street cuts, *distances between all ROW and private utilities; location of public and private utilities shall be obtained via utility locates or as-builts.	<input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:
Erosion Control Plan ≤ 1 Acre of disturbance				<input type="checkbox"/> N/A
Y	N	N/A	Plans views showing accurate locations and layout BMP to be installed prior to land clearing and soil disturbance. Perimeter control, erosion and sediment control measures, inlet and outfall protections, construction entrances, truck washed, concrete cleanouts etc. Additional protection may be required.	<input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:
Y	N	N/A	Plans views showing accurate locations and layout BMP to be installed during and after earthwork and soil disturbance. Show each stage of earthwork.	<input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:
Y	N	N/A	Area of disturbance and estimated earthwork volumes.	<input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:
Y	N	N/A	General notes, inspection intervals, location of equipment staging, solid waste storage etc.. Provide a legend of all symbols and line types used.	<input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:
Erosion Control Plan ≥ 1 Acre of disturbance				<input type="checkbox"/> N/A
			Refer to Oregon DEQ guidance and checklist for 1200-C.	<input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:

Building Improvement Plans			
Y	N	N/A	Proposed grade elevations at building corners, finished floor and transition to ROW (sidewalk, driveway, door frames, etc). <input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:
Utility Plans			
Y	N	N/A	Size and location of proposed public and private water, sanitary sewer, storm sewer utilities (including lateral lines, pump systems). City water staff will locate water meters for new lines. <input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:
Y	N	N/A	Proposed stormwater drainage flows <input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:
Y	N	N/A	Proposed grade elevations at building corners, finished floor and transition to ROW (sidewalk, driveway, door frames, etc). Provide cross-section/profiles. <input type="checkbox"/> Meets Requirements <input type="checkbox"/> Does not meet Requirements Comments:
Y	N	N/A	Proposed contours when cuts/fills have potential to impact neighboring properties or when grading is an integral part of the stormwater site drainage. Use two (2) foot, maximum (one (1) foot contours preferred), contour intervals unless otherwise approved. Indicate direction of stormwater flows. <input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:
Y	N	N/A	Any other requirements or details necessary to confirm that the proposed work is consistent with the requirements of City, State, and Federal codes and standards, as determined by the applicable City Department. <input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:
Roadway Improvement Plans			
Y	N	N/A	Designed ADA complaint sidewalks and curb ramps. Provide dimension and elevation details to meet US Access Board PROWAG minimum standards. <input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:
Y	N	N/A	Estimated cost of the proposed work when cuts in existing city streets are required. <input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:

Y	N	N/A	Proposed roadway or roadside improvement in plans. Provide the existing or proposed center alignment. Provide tangent bearing, points of curvature, points of tangency and proposed centerline radii. Provide dimensions to demonstrate the proposed widths of the travel area, bike facility, parking and pedestrian pathways. Roadways must meet City Code and/or AASHTO standards.	<input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:
Y	N	N/A	Proposed roadway or roadside improvement in profile. Provide the existing or proposed center alignment. Provide location of vertical intersection and vertical curves. Roadways must meet City Code and/or AASHTO standards.	<input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:
Y	N	N/A	Provide typical sections of proposed roadway or full/half- street improvement. Include all width dimensions and all proposed types and depths of materials.	<input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:
Y	N	N/A	Provide dimensions and elevation details for residential and commercial driveways. Driveway with pedestrian pathways must meet the US Access Board PROWAG minimum standards.	<input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:
Stormwater Plans (as required) <input type="checkbox"/> N/A				
Y	N	N/A	Provide plan, profiles and cross sections for all stormwater quality or quantity facilities. Provide all dimensions, slopes and critical elevation.	<input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:
Y	N	N/A	Provide pipe size, location and slope for pipe connection to proposed facilities.	<input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:
Y	N	N/A	Provide design water depths for treatment or detention depths and 50-year storm events. Provide calculated retention time and detention volumes.	<input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:

Y	N	N/A	Provide by-pass or overflow outlet details.	<input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:
Y	N	N/A	Provide manufacture details for all proprietary water quality or quantity facilities. Detail must include information specified above.	<input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:
Landscaping Plans (as required) <input type="checkbox"/> N/A				
Y	N	N/A	Provide planting, seeding construction notes as require in the City Code.	<input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:
Y	N	N/A	Provide plant list and installed quantities. Provide plan views of plant location and a legend of symbols.	<input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:
Y	N	N/A	Provide irrigation layout plan schematics, piping and backflow locations.	<input type="checkbox"/> Meets requirements <input type="checkbox"/> Does not meet requirements Comments:
Y	N	N/A	Provide location of all protected trees or vegetation.	<input type="checkbox"/> Meets Requirements <input type="checkbox"/> Does not meet Requirements Comments:
Y	N	N/A	Provide location and detail for street trees.	<input type="checkbox"/> Meets Requirements <input type="checkbox"/> Does not meet Requirements Comments:
Signing and Striping Plans (as required) <input type="checkbox"/> N/A				
Y	N	N/A	Signage and striping must meet the latest edition of the MUTCD and any applicable standard drawing.	<input type="checkbox"/> Meets Requirements <input type="checkbox"/> Does not meet Requirements Comments:
Y	N	N/A	Provide locations, dimensions for proposed striping and signage.	<input type="checkbox"/> Meets Requirements <input type="checkbox"/> Does not meet Requirements Comments:
Y	N	N/A	Plan view or list of sign locations, dimensions and MUTCD sign designation.	<input type="checkbox"/> Meets Requirements <input type="checkbox"/> Does not meet Requirements Comments:

APPENDIX D – CONSTRUCTION NOTES FOR PRIVATE DEVELOPMENT IN ROW

GENERAL NOTES:

1. PERMIT HOLDER SHALL PROVIDE TO CITY REPRESENTATIVE, IN WRITING, THE NAME AND TWENTY-FOUR (24) HOUR EMERGENCY TELEPHONE NUMBER OF ONE (1) PERSON WHO HAS AUTHORITY TO RESOLVE PROBLEMS, TAKE CORRECTIVE ACTION AND, IN GENERAL, BE RESPONSIBLE IN CASE OF ANY EMERGENCY. THE PERMIT HOLDER SHALL NOTIFY THE CITY REPRESENTATIVE, IN WRITING, OF ANY/ALL ASSIGNMENT CHANGES.
 2. CONTRACTOR IS RESPONSIBLE TO VISIT SITE AND VERIFY ALL EXISTING CONDITIONS BEFORE START OF WORK. CONTRACTOR SHALL TAKE NECESSARY FIELD MEASUREMENTS AND OTHERWISE VERIFY ALL DIMENSIONS AND EXISTING CONSTRUCTION CONDITIONS INDICATED AND SHOWN ON THE PLANS. SHOULD ANY ERROR OR INCONSISTENCY EXIST, CONTRACTOR SHALL NOT PROCEED WITH AFFECTED WORK UNTIL REPORTING DISCREPANCY TO CITY FOR CLARIFICATION OR CORRECTION.
 3. CONTRACTOR IS RESPONSIBLE TO OBTAIN ROW PERMIT(S) FROM CITY OF NEWPORT ENGINEERING DEPT PRIOR TO ANY WORK IN EXISTING ROW.
 1. CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL (TCP) IN ACCORDANCE WITH OREGON TEMPORARY TRAFFIC CONTROL HANDBOOK AND IN ACCORDANCE WITH JOB SPECIFIC LIMITATIONS. SUBMIT TCP WITH ROW APPLICATION FOR APPROVAL. APPROVED TRAFFIC CONTROL PLAN. A COPY OF APPROVED TRAFFIC CONTROL PLAN SHALL BE AVAILABLE AT WORK AREA. CONTRACTOR SHALL PROVIDE AND
- MAINTAIN ADEQUATE TRAFFIC CONTROL ALONG EXISTING ROADS AS REQUIRED BY CITY.
4. CITY RESERVES THE RIGHT TO MODIFY TRAFFIC CONTROL REQUIREMENTS TO IMPROVE TRAFFIC CONTROL AND ASSURE PUBLIC SAFETY.
 5. OBTAIN WRITTEN APPROVAL FROM CITY TWO WEEKS PRIOR TO CLOSING ANY PUBLIC ROADWAY. ROW PERMIT HOLDER IS RESPONSIBLE TO PROVIDE TIMELY NOTIFICATION OF TRAFFIC FLOW DISRUPTIONS TO AREA WIDE EMERGENCY SERVICES (NEWPORT POLICE DEPARTMENT, NEWPORT FIRE DEPARTMENT), PACIFIC WEST AMBULANCE, NEWPORT SCHOOL DISTRICT. ETC.).
 6. CONTRACTOR SHALL PLACE ADVANCE NOTIFICATION SIGNS AT EACH END OF THE CONSTRUCTION AREA SEVENTY-TWO (72) HOURS (MIN.) BEFORE INITIATION OF CONSTRUCTION WORK. TRAFFIC CONTROL DEVICES, FLAG PERSONS, ETC., SHALL BE IN PLACE PRIOR TO INITIATION OF CONSTRUCTION WORK AND SHALL BE EFFECTIVELY MAINTAINED.
 7. MAINTAIN ACCESS TO EXISTING PROPERTIES AT ALL TIMES, INCLUDING NORMAL DELIVERY SERVICE AND MAIL SERVICE.
 8. NO WORK MAY BE PERFORMED IN ROW OUTSIDE 7 AM TO 7 PM, ON WEEKENDS, OR HOLIDAYS WITHOUT PRIOR WRITTEN CITY APPROVAL. SUBMIT VARIANCE REQUESTS SEVENTY-TWO (72) HOURS PRIOR TO CHANGE IN SCHEDULE.
 9. MINIMUM VEHICLE TRAVEL LANE WIDTH

- SHALL BE TEN (10) FEET; PROVIDE FOUR (4) FOOT MINIMUM PEDESTRIAN ACCESS.
10. BEFORE INITIATING ANY CONSTRUCTION ACTIVITY, PERMIT HOLDER SHALL CONTACT CITY REPRESENTATIVE TO ESTABLISH A PLACE, TIME, AND DATE FOR A PRE-CONSTRUCTION MEETING.
 11. PERMIT HOLDER OR CONTRACTOR SHALL NOTIFY CITY REPRESENTATIVE: FORTY-EIGHT (48) HOURS PRIOR TO COMMENCING WORK, FORTY-EIGHT (48) HOURS PRIOR TO ANY REQUIRED SITE REVIEW, AND AFTER COMPLETING WORK COVERED BY PERMIT.
 12. A COPY OF ROW PERMIT, WITH ALL ATTACHMENTS, AND A COPY OF APPROVED CONSTRUCTION PLANS, AND ALL AMENDMENTS, SHALL BE AVAILABLE AT WORK AREA AT ALL TIMES. ALL WORK IN ROW SHALL CONFORM TO CITY APPROVED PERMIT TERMS, CONDITIONS AND PROVISIONS, ANY APPROVED PLAN AMENDMENTS, THESE GENERAL CONSTRUCTION NOTES AS WELL AS CITY STANDARDS AND SPECIFICATIONS. CITY MUST GIVE PRIOR APPROVAL TO ANY WORK CHANGES.
 13. CITY STRICTLY PROHIBITS THE SPREADING OF MUD, DEBRIS, STORAGE OF MATERIALS OR EQUIPMENT OF ANY KIND ON PUBLIC ROADWAYS. VIOLATION SHALL BE CAUSE FOR IMMEDIATE CANCELLATION OF PERMIT. CITY MAY AT ANY TIME ORDER IMMEDIATE CLEANUP AND STOPPAGE OF WORK TO ACCOMPLISH CLEANUP.
 14. PERMIT HOLDER RESPONSIBLE TO MAINTAIN WORK AREA AND APPROACH ROADS IN CLEAN CONDITION FREE FROM OBSTRUCTIONS AND HAZARDS. A COPY OF PERMIT HOLDER'S CERTIFICATE OF INSURANCE SHALL BE AVAILABLE AT WORK AREA.
 15. EFFECTIVE ROW DRAINAGE CONTROL IS REQUIRED. CONTRACTOR SHALL CONTROL DRAINAGE WITHIN THE WORK SITE. ROUTE DRAINAGE SO ADJACENT PRIVATE PROPERTY, PUBLIC PROPERTY, AND THE RECEIVING SYSTEM ARE NOT ADVERSELY IMPACTED.
 16. NO OPEN TRENCHES ARE ALLOWED IN ROW. ALL TRENCHES SHALL BE PLATED OR BACKFILLED BY END OF WORK DAY. CONTRACTOR SHALL ENSURE BACKFILL LEVELS ARE FLUSH WITH EXISTING UNDISTURBED SURFACE. CONTRACT REQUIRED TO MAINTAIN ROCK LEVEL IN COMPACTED CONDITION UNTIL FINAL SURFACE INSTALLED. PERMIT HOLDER RESPONSIBLE FOR, AND LIABLE FOR, HAZARDS OR DAMAGE RESULTING FROM LACK OF MAINTENANCE OF TRENCH SURFACE.
 17. WORK PROVIDED FOR UNDER ROW PERMIT SHALL INCLUDE REPAIR OF EXISTING FACILITIES (ROADS, DITCHES, ETC.) AS MAY BE NECESSARY, IN THE CITY REPRESENTATIVE'S OPINION, TO OVERCOME DETERIORATION OF DRAINAGE WHICH OCCURS IN CONJUNCTION WITH WORK AUTHORIZED BY PERMIT. CONTRACTOR SHALL COMPLETE CORRECTIVE WORK AT PERMIT HOLDER'S EXPENSE.
 18. CONTRACTOR SHALL MAINTAIN ONE (1) COMPLETE SET OF APPROVED PLANS ON SITE AT ALL TIMES. CONTRACTOR WILL RECORD ALL APPROVED DEVIATIONS ON APPROVED CONSTRUCTION DRAWINGS, INCLUDING LOCATIONS AND DEPTHS OF ALL EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION. CONTRACTOR SHALL KEEP FIELD RECORD DRAWINGS UP TO DATE AT ALL TIMES. RECORD DRAWINGS SHALL BE AVAILABLE FOR INSPECTION BY CITY REPRESENTATIVE UPON REQUEST.

19. UPON COMPLETION OF CONSTRUCTION OF ALL NEW FACILITIES, CONTRACTOR SHALL SUBMIT A CLEAN SET OF FIELD RECORD DRAWINGS CONTAINING ALL AS-BUILT INFORMATION TO CITY AS PART OF PROJECT CLOSE-OUT. ALL INFORMATION ON CONTRACTOR'S FIELD RECORD DRAWINGS SHALL BE SUBJECT TO VERIFICATION. IF SIGNIFICANT ERRORS OR DEVIATIONS ARE NOTED, A REGISTERED PROFESSIONAL LAND SURVEYOR SHALL COMPLETE A STAMPED AS-BUILT SURVEY AT CONTRACTOR'S EXPENSE.
20. CITY REPRESENTATIVE MAY, AT CITY ENGINEER'S DISCRETION, REQUIRE PROVISION OF TESTS AND OR REPORTS FROM PERMIT HOLDER, PERMIT HOLDER'S ENGINEER, OR CONTRACTOR. PERMIT HOLDER SHALL BEAR EXPENSE OF SUCH TESTS/REPORTS.
21. PROTECT ALL EXISTING MONUMENTS, PROPERTY CORNERS, AND SURVEY MARKERS. REPLACEMENT SHALL BE AT CONTRACTOR'S EXPENSE.
22. CONTRACTOR REMAINS OBLIGATED TO PERFORM WORK IN COMPLIANCE WITH APPLICABLE CODES, REGULATIONS, CITY AND OSHA SAFETY STANDARDS, ENGINEERING PLANS, AND PROJECT CONTRACT DOCUMENTS REGARDLESS OF ANY INSPECTION/OBSERVATION DONE BY DESIGN ENGINEER OR CITY REPRESENTATIVE.
23. CITY OF NEWPORT SPECIFICATIONS AND STANDARDS, WHICH INCORPORATE THE OREGON STANDARD SPECIFICATIONS (OSS), CURRENT EDITION, FOR CONSTRUCTION, APPLY TO PUBLIC STREET, WATER SYSTEM, SANITARY SEWER AND STORMWATER CONSTRUCTION AS WELL AS EROSION CONTROL.
24. CONTRACTOR SHALL PROTECT AND MAINTAIN OPERATION OF ALL EXISTING UTILITIES WITHIN ROW CONSTRUCTION AREA DURING CONSTRUCTION PROCESS. CONTRACTOR RESPONSIBLE FOR REPLACEMENT OF ALL DISTURBED EXISTING UTILITIES. CONTRACTOR SHALL COORDINATE ALL WORK ON UTILITIES WITH THE VARIOUS OWNERS.
25. CONTRACTOR SHALL HOLD TO A MINIMUM DOWNTIME OF ANY CITY INFRASTRUCTURE AND PROVIDE TEMPORARY BYPASS, WHERE REQUIRED, TO MAINTAIN PROPER CITY SERVICES.
26. CONTRACTOR SHALL BE RESPONSIBLE FOR ARRANGEMENTS WITH CENTRAL LINCOLN PUD TO CONNECT THE STREET LIGHTING SYSTEM TO LOCAL POWER DISTRIBUTION SYSTEM.
27. CONTRACTOR SHALL PERFORM ALL WORK NECESSARY TO COMPLETE PROJECT IN ACCORDANCE WITH PLANS AND SPECIFICATIONS INCLUDING SUCH INCIDENTALS AS MAY BE NECESSARY TO MEET THE INTENT OF PROJECT CONTRACT DOCUMENTS, APPLICABLE AGENCY REQUIREMENTS, AND OTHER WORK NECESSARY TO PROVIDE A COMPLETE PROJECT.
28. NOTIFY CITY OF ALL CONSTRUCTION MODIFICATIONS IN ROW. CITY MUST PROVIDE PRIOR AUTHORIZATION BEFORE CONTRACTOR INITIATES ROW MODIFICATIONS OF APPROVED DESIGN.
29. CITY RESERVES THE RIGHT TO ADJUST GRADES OR ALIGNMENT TO ACCOMMODATE OTHER CITY UTILITIES AS REQUIRED; SUCH ADJUSTMENTS OR REVISIONS SHALL BE REVIEWED AND APPROVED BY CITY PRIOR TO COMMENCEMENT OF WORK.
30. CONTRACTOR SHALL COORDINATE WITH

PRIVATE UTILITY COMPANIES FOR TIMING OF INSTALLATION OF POWER, TELEPHONE, CABLE, TV, AND GAS. POWER, TELEPHONE, CABLE, AND TV TRENCHING. CONTRACTOR SHALL INSTALL PULL STRINGS PER UTILITY COMPANY REQUIREMENTS. VERIFY CONDUIT SIZE AND TYPE WITH UTILITY COMPANY PRIOR TO CONSTRUCTION.

31. CONTRACTOR SHALL LOCATE EXISTING PIPE CONFLICTS PRIOR TO CONSTRUCTION (POTHOLE & VIDEO AS NECESSARY).
32. CONTRACTOR SHALL NOTIFY CITY REPRESENTATIVE IF UNKNOWN PIPES ARE UNCOVERED DURING CONSTRUCTION. CONTRACTOR SHALL CREATE A PLAN TO CONNECT ANY FUNCTIONING PIPE SYSTEM TO NEW PIPE SYSTEM IN AN APPROPRIATE MANNER AND SUBMIT TO CITY FOR APPROVAL PRIOR TO COMMENCING WORK. CONTRACTOR SHALL NOTE DISCOVERED PIPE ON AS-BUILT RECORD DRAWINGS.

SPECIFICATIONS (OSS) REQUIREMENTS.

4. REMOVE AND DISPOSE OF ALL ORGANIC AND/OR UNSUITABLE MATERIALS, INCLUDING TREES, STUMPS, ROOTS, BRUSH, AND GRASS IN SUCH A MANNER TO MEET ALL APPLICABLE REGULATIONS. SITE PREPARATION MUST INCLUDE THE REMOVAL OF VEGETATION, NON-COMPLYING FILL, TOPSOIL OR OTHER UNSUITABLE MATERIAL PRIOR TO PLACEMENT OF FILL.
5. CONSULT CITY ENGINEER TO IDENTIFY REMOVAL OF UNSUITABLE ROW MATERIAL.
6. MATERIAL IN SOFT SPOTS WITHIN PROPOSED BUILDING, PAVED, SIDEWALK AREAS SHALL BE REMOVED TO THE DEPTH REQUIRED (AS DIRECTED BY CITY ENGINEER) TO PROVIDE A FIRM FOUNDATION; REPLACE EXCAVATION WITH SUITABLE BACKFILL CONSTRUCTED IN HORIZONTAL LIFTS NOT TO EXCEED EIGHT INCHES (8") LOOSE MEASURE. COMPACT ENTIRE SUBGRADE TO NINETY-FIVE PERCENT (95%) PER AASHTO T-180 UNDER PAVED AREAS; 92% UNDER LANDSCAPING AREAS.
7. ENGINEERED FILL SHALL BE COMPACTED IN HORIZONTAL LIFTS NOT EXCEEDING EIGHT INCHES (8") (UN-COMPACTED DEPTH) USING STANDARD COMPACTION EQUIPMENT.
8. NO CUT OR FILL SHALL EXCEED A GRADE OF 2H:1V UNLESS APPROVED BEFOREHAND BY CITY ENGINEER.
9. ANY FILL USED FOR SITE GRADING MUST BE OBSERVED AND APPROVED BY THE PROJECT GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT. UPON COMPLETION OF GRADING, CONTRACTOR SHALL PROVIDE COPIES OF ALL INSPECTION REPORTS TO CITY FOR THEIR FILES.

GRADING NOTES:

1. CONTRACTOR RESPONSIBLE FOR COORDINATING WITH CITY REPRESENTATIVE FOR SITE OBSERVATION, COMPACTION TESTING, AND FOR SUBMITTING TEST RESULTS TO CITY FOR REVIEW.
2. CONTRACTOR SHALL USE APPROVED TESTING LABORATORY FOR ALL COMPACTION TESTS AND REPORTS. CITY ENGINEER SHALL DETERMINE TEST FREQUENCY. TAKE ONE TEST FOR EVERY FIVE HUNDRED (500) CUBIC YARDS PLACED OR TWO (2) VERTICAL FEET, WHICHEVER IS LESS. TESTING TO COMMENCE WITH FILL ACTIVITIES.
3. ALL GRADING IN ROW SHALL CONFORM TO CURRENT OREGON STANDARDS AND

10. APPROPRIATE BENCHING OF TRENCHES IS REQUIRED FOR FILLS OVER FIVE (5) FEET IN HEIGHT ON SLOPES IN EXCESS OF 5H:1V IF NOT USING SPECIALIZED SHORING.
11. CONTRACTOR SHALL COORDINATE WITH CITY REPRESENTATIVE FOR REQUIRED REVIEWS AT THE FOLLOWING STAGES OF CONSTRUCTION:
- A. REVIEW CLEARING AND GRUBBING IN THE ROW PRIOR TO FILL PLACEMENT;
 - B. PREPARATION OF BENCH CONSTRUCTION PRIOR TO FILL PLACEMENT;
 - C. FOLLOWING PLACEMENT OF EACH FIVE HUNDRED (500) YARDS OF FILL;
 - D. FOLLOWING COMPLETION OF “ROUGH” GRADE PRIOR TO FINAL GRADING;
 - E. COMPLETION OF FINAL GRADING;
 - F. DURING FINAL GRADING PRIOR TO BASE ROCK AND PAVEMENT CONSTRUCTION.
12. ROW GRADING LIMITS SHALL BE WITHIN PROJECT BOUNDARY AND/OR STREET ROW, UNLESS OTHERWISE SHOWN ON PLANS. CONDUCT NO GRADING IN WETLANDS OR OTHER ENVIRONMENTALLY SENSITIVE AREAS UNLESS SPECIFICALLY SHOWN ON APPROVED PLANS.
13. GRADE SITE TO ELEVATIONS SHOWN ON DRAWING WITH NECESSARY ADJUSTMENTS TO ACCOMMODATE FINISHED GRADES AS SPECIFIED. SHAPE AREAS TO SUBGRADE ELEVATION THAT ACCOMMODATES FUTURE BASE ROCK AND PAVING.
14. FINISH GRADES ARE TO DRAIN AS INDICATED ON PLANS. FINISH ROUGH GRADING BY BLADING AND RAKING TO SMOOTH CONTOURS WITH GENTLE TRANSITIONS.
15. CONTRACTOR SHALL PROTECT ALL TREES OVER SIX (6) INCH DBH NOT SPECIFICALLY SHOWN FOR REMOVAL ON APPROVED PLANS. ALL TREES TO BE PRESERVED SHALL BE FENCED WITH STANDARD FOUR (4) FOOT ORANGE CONSTRUCTION FENCING.
16. IF CONTRACTOR ENCOUNTERS A SPRING OR GROUNDWATER DURING CONSTRUCTION, CONTRACTOR SHALL NOTIFY CITY REPRESENTATIVE OF CONDITIONS FOUND AND COORDINATE ACTIVITIES IN A MANNER THAT ALLOWS TIME TO REVIEW SITUATION AND PREPARE WATER MITIGATION PLAN.

CURB AND SIDEWALK CONSTRUCTION NOTES:

2. ALL CONCRETE FLATWORK AND MATERIALS SHALL CONFORM TO APPROVED PLANS, APPLICABLE REQUIREMENTS OUTLINED ON CITY OF NEWPORT STANDARD DRAWINGS, AND ALL APPLICABLE SECTIONS OF THE OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION (OSS), CURRENT EDITION.
3. BASE ROCK SHALL BE COMPACTED TO NINETY-FIVE (95) PERCENT OF MODIFIED PROCTER PER AASHTO T-180 (ASTM 01557).
4. ADJUST ALL MANHOLE LIDS, VALVE BOXES, AND MONUMENT BOXES TO FINISH GRADE. SEE CITY OF NEWPORT STANDARD DRAWINGS S-260 FOR MANHOLE LID ADJUSTMENTS; W-200 AND W-205 FOR VALVE CAN ADJUSTMENT.
5. SAWCUT STRAIGHT LINES TO CREATE BUTT JOINT BETWEEN EXISTING AND NEW CONCRETE POURS.

6. A REQUIRED PROOF-ROLL TEST IS IN ADDITION TO REQUIRED COMPACTION TESTING. DEFLECTION TESTING SHALL BE ACCOMPLISHED ACCORDING TO ODOT TM158. USE A FULLY LOADED TEN (10) YARD DUMP TRUCK TO CHECK SUBGRADE DEFLECTION. COMPLETE DEFLECTION TEST PRIOR TO PLACEMENT OF ROCK SUBBASE, AT COMPLETION OF BASE ROCK PLACEMENT, PRIOR TO PLACEMENT OF CURB, AND PRIOR TO PAVING FIRST LIFT OF ASPHALT.
7. PLACE DRY UTILITY CROSSINGS PRIOR TO PROOF ROLL TEST FOR CURB INSTALLATION. PRIVATE UTILITY CARRIERS SHALL SPECIFY NUMBER OF CROSSINGS, EXACT LOCATION, DEPTH, SIZE OF CONDUIT, ETC. CONTRACTOR SHALL COORDINATE. SEE CITY OF NEWPORT STANDARD DRAWING G-052 FOR REQUIRED CLEARANCE WHEN CROSSING PUBLIC UTILITIES.
8. ALL ELECTRICAL EQUIPMENT SHALL CONFORM TO CURRENT STANDARDS OF THE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA) AND THE UNDERWRITERS LABORATORIES, INC. (UL) IN ADDITION TO REQUIREMENTS LISTED IN THE PLANS AND STANDARD SPECIFICATIONS. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE CURRENT REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC), THE NATIONAL ELECTRICAL SAFETY CODE, STANDARDS OF THE AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI), AND ANY LOCAL ORDINANCES THAT MAY APPLY.
9. STAMP ALL NEW CURBS TO INDICATE WHERE EACH WATER SERVICE, SANITARY LATERAL, STORM LATERAL, AND IRRIGATION LINE CROSSES BENEATH CURB LINE. STAMPED IMPRESSIONS SHALL BE AS FOLLOWS: WATER SERVICE—"W", SANITARY LATERAL—"S", STORM LATERAL—"D", AND IRRIGATION LINES—"IR". IMPRESSIONS SHALL BE TWO (2) INCH HIGH, ON TOP OF THE CURB, AND SHALL ACCURATELY LOCATE SERVICE BELOW STAMP.
10. CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTION OF SIDEWALK AND ADA RAMPS TO MEET ADA AND JURISDICTIONAL REQUIREMENTS. SEE CITY OF NEWPORT STANDARD DRAWING T-211 AND T-212.
11. GUTTER PAN CROSS SLOPE TO BE FIVE (5) PERCENT MAXIMUM. SEE CITY OF NEWPORT STANDARD DRAWING T-301.
12. ALL SIDEWALKS SHALL HAVE A MAXIMUM CROSS SLOPE OF ONE-AND-ONE-HALF (1½) PERCENT. SEE CITY OF NEWPORT STANDARD DRAWING T-210.

ASPHALT CONCRETE PLACEMENT (ACP) NOTES:

1. THE AGGREGATE BASE SHALL HAVE A DENSITY OF NOT LESS THAN NINETY-FIVE (95) PERCENT OF MODIFIED PROCTOR PER AASHTO T-180 (ASTM 01557). SEE CITY OF NEWPORT STANDARD DRAWINGS T-050 AND T-050B FOR STREET CONSTRUCTION.
2. PLACING ASPHALT CONCRETE WILL BE PERMITTED ONLY DURING DRY WEATHER WHEN AMBIENT TEMPERATURE IS RISING, EQUAL TO, OR GREATER THAN 45^o REQUIREMENT.
3. PLACE ASPHALT CONCRETE ON DRY PREPARED SURFACE.
4. APPLY TACK COAT AGAINST FACE EDGE OF CURB & AROUND MANHOLE CASTING & OTHER EXPOSED STRUCTURES BEFORE PAVING.
5. SAW CUT STRAIGHT MATCH LINES WHERE

EXISTING PAVEMENT MEETS NEW PAVEMENT. AFTER PLACING ASPHALT CONCRETE, TACK AND SAND ALL CUT EDGES. SEE CITY OF NEWPORT STANDARD DRAWING G-105

6. ALL PAVEMENT MARKINGS REMOVED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED IN KIND, PAINTED IN CONFORMANCE WITH OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION (OSS), CURRENT EDITION CHAPTERS 00850 AND 00860.

LANDSCAPE AREAS PER AASHTO T-180. CITY SHALL CONSIDER ANY SUBSEQUENT SETTLEMENT OF TRENCH DURING WARRANTY PERIOD A RESULT OF IMPROPER COMPACTION; CONTRACTOR SHALL PROMPTLY CORRECT SETTLEMENT AT NO EXPENSE TO CITY.

5. CONTRACTOR SHALL AT ALL TIMES PROVIDE AND MAINTAIN AMPLE MEANS AND DEVICES TO REMOVE AND DISPOSE OF ALL WATER ENTERING TRENCH EXCAVATION DURING PROCESS OF LAYING PIPE. WATER AND DEBRIS SHALL NOT ENTER INTO CITY'S STORM AND SEWER SYSTEMS. DISPOSE OF WATER AND DEBRIS IN APPROVED MANNER.

SANITARY AND STORM PIPE CONSTRUCTION NOTES:

1. ALL CONSTRUCTION AND MATERIALS SHALL COMPLY WITH APPROVED PLAN SPECIFICATIONS, APPLICABLE REQUIREMENTS OF CITY STANDARD DRAWINGS, AND THE OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION (OSS), CURRENT EDITION.
2. CONTRACTOR SHALL ABIDE BY APPLICABLE OSHA SAFETY RULES AT ALL TIMES, IN PARTICULAR THOSE PERTAINING TO ADEQUATE SHORING AND TRENCH PROTECTION.
3. CONTRACTOR SHALL FLUSH ENTIRE STORM SYSTEM ON COMPLETION OF PIPE LINES AND VIDEO INSPECT ALL PIPE. SUBMIT COPY OF REPORT AND VIDEO TO CITY. PIPE MATERIALS SHALL BE DEFLECTION-TESTED BY PULLING AN APPROVED MANDREL THROUGH COMPLETED PIPE LINE.
4. AFTER PLACING BACKFILLS THROUGH PIPE ZONE AS REQUIRED, BACKFILL BALANCE OF TRENCH IN ONE (1) FOOT LIFTS, MECHANICALLY COMPACTING EACH LAYER TO NINETY-FIVE (95) PERCENT IN PAVING AREAS AND NINETY (92) PERCENT IN

6. TEST SANITARY SEWER PIPE AND APPURTENANCES FOR LEAKAGE IN ACCORDANCE OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION (OSS), CURRENT EDITION. LEAK TESTS INCLUDE AIR TESTING OF SEWER MAINS AND SERVICE CONNECTIONS AND VACUUM TESTING OF MANHOLES. EXCAVATE, REPAIR, OR REALIGN, ANY PORTION OF PIPE THAT FAILS TO PASS TESTS; RETEST. IN ADDITION TO HYDROSTATIC OR AIR TESTING, SANITARY SEWERS CONSTRUCTED OF PVC SEWER PIPE SHALL BE DEFLECTION TESTED AFTER COMPLETING TRENCH BACKFILL AND COMPACTION. CONDUCT TEST BY PULLING APPROVED SOLID POINTED MANDREL THROUGH PIPELINE MANHOLE TO MANHOLE. VIDEO SEWER MAIN TO CHECK FOR DEFLECTION. SUBMIT COPY OF REPORTS AND VIDEO TO CITY.
7. UNLESS OTHERWISE SPECIFIED ON PLANS OR DIRECTED BY CITY ENGINEER, LAY EACH SERVICE CONNECTION IN A SEPARATE TRENCH ON A STRAIGHT LINE AND GRADIENT FROM TEE TO END OF SERVICE CONNECTION.
8. MANHOLES CONSTRUCTED OVER EXISTING SANITARY SEWERS SHALL CONFORM TO

THE REQUIREMENTS OF OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION (OSS), CURRENT EDITION 490.41, MANHOLES OVER EXISTING SEWERS. DO NOT BREAK OUT EXISTING PIPE UNTIL AFTER THE COMPLETION OF THE MANHOLE TEST.

BE APPROVED BY CITY ENGINEER PRIOR TO COMMENCING WORK. WHERE SANITARY SEWER LINES CROSS ABOVE OR WITHIN EIGHTEEN (18) INCHES VERTICAL SEPARATION A PUBLIC WATER LINE, SEWER MAINS AND/OR SERVICE LATERALS SHALL BE EITHER REPLACED WITH A FULL LENGTH OF C900 PVC PIPE (DR 18) CENTERED AT THE CROSSING OR ENCASED IN CONCRETE IN ACCORDANCE WITH OAR 333-061-050. SEE CITY OF NEWPORT STANDARD DRAWING G-052

WATER CONSTRUCTION NOTES:

1. ALL WORK AND MATERIALS SHALL COMPLY WITH ALL APPLICABLE CITY CODES AND STANDARDS, OREGON STATE HEALTH DIVISION ADMINISTRATION RULES, AWWA STANDARDS, APWA STANDARDS, THE OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION (OSS), CURRENT EDITION, AND CITY OF NEWPORT STANDARD DRAWINGS.
2. DRAWINGS INDICATING EXISTING UTILITY LOCATIONS ARE APPROXIMATE AND BASED ON AVAILABLE INFORMATION. CONTRACTOR SHALL FIELD VERIFY DEPTH AND LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION AND INFORM CITY REPRESENTATIVE OF ANY DISCREPANCIES IN THE PLANS. IF AN ELEVATION BREAK IS FOUND APPROVED PLANS MAY NEED TO BE REDESIGNED TO OVERCOME CHANGE IN ELEVATION.
3. ALL VALVE-OPERATING NUTS SHALL BE WITHIN THIRTY-SIX (36) INCH OF FINISHED GRADE, OTHERWISE VALVE OPERATING NUT EXTENSIONS WILL BE REQUIRED. SEE CITY OF NEWPORT STANDARD DRAWING W-205.
4. WHENEVER POSSIBLE THE BOTTOM OF PUBLIC WATER LINES SHALL BE ONE-AND-ONE-HALF (1.5) FEET OR MORE ABOVE TOP OF SANITARY SEWER LINES AT CROSSINGS WITH ONE FULL LENGTH OF WATER LINE CENTERED AT CROSSING. VARIANCES MUST
5. JOINT DEFLECTION OF CITY INFRASTRUCTURE ALLOWED ONLY WITH APPROVAL OF CITY ENGINEER.
6. CONTRACTOR SHALL NOTIFY CITY OF NEWPORT A MINIMUM OF FORTY-EIGHT (48) HOURS PRIOR TO CONSTRUCTION AND PRIOR TO REQUESTED TESTING. NOTIFICATION TIME DOES NOT INCLUDE WEEKENDS AND HOLIDAYS.
7. CITY REPRESENTATIVE SHALL MONITOR HYDROSTATIC TESTS; TESTS SHALL CONFORM TO ALL APPLICABLE CODES.
8. CONTRACTOR TO PROVIDE CITY WITH DISINFECTION AND PRESSURE TEST RESULTS, FLUSHING RATES/QUANTITIES, AND AWWA STANDARD CHLORINE DOSING.
9. DISINFECTION: PIPELINES SHALL BE FLUSHED AND DISINFECTED AFTER PERFORMING HYDROSTATIC TESTING AND BEFORE PLACING INTO SERVICE. DISINFECTION SHALL CONFORM TO ALL APPLICABLE CODES. DO NOT DISCHARGE HIGHLY CHLORINATED WATER USED FOR DISINFECTION INTO SURFACE WATERS. FOLLOW APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS CONCERNING DISCHARGE. TESTING AND INSPECTION SHALL BE IN ACCORDANCE WITH ALL APPLICABLE CODES. CITY WATER DEPARTMENT SHALL BE PRESENT DURING CHLORINATION AND TESTING.

10. CITY OF NEWPORT WILL REVIEW RESULTS OF OREGON STATE HEALTH DIVISION BACTERIOLOGICAL TESTS. CONTRACTOR MUST MAINTAIN AN AIR GAP BETWEEN PROPOSED AND EXISTING SYSTEM. OLD AND NEW SYSTEMS SHALL NOT BE CONNECTED UNTIL NEW WATER SYSTEM PASSES BACTERIA TESTING AND IS APPROVED BY CITY.
11. PRIOR TO TAPPING INTO OR CONNECTING TO EXISTING WATER MAINS, CONTRACTOR WILL CONTACT CITY TO COORDINATE PRESENCE OF CITY WATER STAFF DURING HOT TAP.
12. ALL JOINTS (TEES, ELBOWS, BENDS, AND BLOW OFFS) TO BE MECHANICALLY RESTRAINED FOR CHANGES IN PIPE DIRECTION MORE THAN TEN (10) DEGREES. FIELD LOK GASKETS ALONE ARE INSUFFICIENT TO MEET THIS REQUIREMENT. USE THRUST BLOCKING WHEN DIRECTED BY CITY ENGINEER, CITY REPRESENTATIVE, OR WHERE SHOWN ON DRAWINGS. SEE CITY OF NEWPORT STANDARD DRAWING W-700
13. IN THE EVENT OF CONFLICTS OR CHANGES IN CONDITIONS, CITY RESERVES THE RIGHT TO MAKE FIELD ADJUSTMENTS TO LOCATIONS OF WATER LINES AND APPURTENANCES AS REQUIRED FOR CONSTRUCTION OF CITY INFRASTRUCTURE.
14. ALL DAMAGE CAUSED BY THE CONTRACTOR SHALL BE RESTORED TO AN “AS GOOD OR BETTER” CONDITION AS DETERMINED BY CITY.
15. WATER MAIN SHUT-OFFS SHALL BE COORDINATED THROUGH CITY WATER DEPARTMENT REPRESENTATIVES. REQUIRED SHUT-OFFS SHALL BE COORDINATED WITH CITY WATER DEPARTMENT SEVEN (7) DAYS PRIOR TO SHUTOFF. NOTIFICATION TO USERS SHALL BE NO LATER THAN FORTY-EIGHT (48) HOUR IN ADVANCE FOR RESIDENTS AND SEVENTY-TWO (72) HOURS FOR COMMERCIAL OR INDUSTRIAL PROPERTIES. FAILURE TO PERFORM WORK WITHIN THE GIVEN TIME WILL REQUIRE RE-NOTIFICATION.
16. A MINIMUM OF THREE LENGTHS OF PIPE SHALL BE RESTRAINED AT ALL WATER SYSTEM DEAD-ENDS.
17. TEN (10) GAUGE COPPER TRACER WIRE REQUIRED ON ALL SERVICE LINES BETWEEN WATER MAIN AND METER.

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APPENDIX E – PRE-CONSTRUCTION MEETING AGENDA FOR PRIVATE DEVELOPMENT

Pre-Construction Conference Meeting Agenda

Project: [Project Name] Date/Time: _____

ATTENDANCE: See attached Attendance Sign-in Sheet.

DISTRIBUTION: Sent to all attendee emails that were provided at the pre-construction meeting.

PRE-CONSTRUCTION MEETING FOR: [Project Name]

1. Public Improvements Permits and Insurance.
 - A. Insurance Certs
 - 1) Contractor shall name the City of Newport and _____ as additional insured.
 - B. Bonds
 - 1) Performance bond
 - 2) Maintenance bond
 - C. Permits and licenses
 - 1) City of Newport business license,
 - 2) City of Newport ROW permit (observation requirements)
 - 3) City of Newport bulk water permit and meter
 - 4) Oregon DEQ 1200-C permit (if applicable)

2. Building/ Permits.
 - A. The Contractor is responsible for obtaining all required permits for any building, electrical, mechanical or plumbing required for this project and obtaining all required associated inspections.

3. Construction Drawings & Specifications. The construction drawings for this project consist of _____ Sheets. Although half-size drawings are provided for reference and the convenience of the Contractor, the utility companies and the Owner’s representative, the official construction drawings are the full-size drawings. *Special provisions for this project are included in this pre-construction agenda document.* The technical specifications consist of the drawing notes and Standards for the City of Newport, which incorporate the most current edition of the *Oregon Standard Specifications for Construction*, all sections. If there is a conflict between this agenda and either the City of Newport standard drawing details or the *Oregon Standard Specifications for Construction*, Contractor is responsible to request a clarification before proceeding with work.

4. Street & Public Utility Owner. City Newport, Oregon
 1. City Hall 541-574-0603 Office phone
 2. Public Works Engineering 541-574-3366 Office phone
 The primary contact for public utility issues will be _____, Assistant City

Engineer (Public Works).

5. Project Engineer. _____
The primary contact will be _____

6. Contractor. _____
The Contractor must designate one person as primary project superintendent to be on site, to oversee and coordinate construction. For this project, the superintendent will be _____ . The project foreman will be _____ .

7. Emergency Contacts and Telephone Numbers. The Contractor must provide the names and telephone numbers of at least one (1) person who can be contacted after hours in case of emergencies. These afterhours contact numbers are as follows:

Contractor

- 1) _____ (____) ____ - ____ _____ phone
- 2) _____ (____) ____ - ____ _____ phone
- 3) _____ (____) ____ - ____ _____ phone

City of Newport

- 1) _____, Asst. City Engr. 541 574-3370 Office phone
- 2) _____ (____) ____ - ____ _____ phone
- 3) _____ (____) ____ - ____ _____ phone

ENGINEER

- 1) _____ (____) ____ - ____ _____ phone
- 2) _____ (____) ____ - ____ _____ phone
- 3) _____ (____) ____ - ____ _____ phone

8. Private Utility Companies & Private Utility Construction and/or Relocation

A. Utility Locates. The Contractor shall be responsible for ensuring that current utility locates are performed prior to the commencement of construction activities. All utilities and the City are on the one-call system.

The Contractor is responsible for maintaining locate markings once they have been established by the utility companies. Relocates should be requested when/if the marks are disturbed.

B. New or Relocated Franchise Utilities. The detailed design of proposed new franchise utilities and relocated franchise utilities are not shown on the construction documents. It is the Contractor’s responsibility to coordinate this work in accordance with utility company requirements. Franchise utility work includes but may not be limited to the following.

- 1) Power: _____
- 2) Telephone: _____
- 3) Gas: _____
- 4) TV/Cable: _____

C. Private Utility Easements: There are proposed ten (10) foot Private Utility Easements (PUEs)

along the street frontages. Except at crossings, all franchise utilities shall be installed within the PUEs where they are available except as otherwise noted.

- D. Unity Trench: All franchise utilities shall be installed in a common trench where those utilities follow a common alignment. Maintain all mandatory utility separation requirements during utility placement.
- E. Utility Company Comments. The franchise utility companies were notified regarding the pre-construction conference. Franchise utility discussions included the following:
- 1) NW Natural Gas - Representative was/was not present.
 - a. _____ is the contact person. Contact numbers are as follows:
 - i. (____) ____ - ____ Mobile phone
 - ii. (____) ____ - ____ Office phone
 - b. The Contractor shall coordinate directly with the utility company for service related work or conflicts.
 - 2) Power (Central Lincoln PUD) - Representative was/was not present.
 - a. _____ is the contact person. Contact numbers are as follows:
 - i. (____) ____ - ____ Mobile phone
 - ii. (____) ____ - ____ Office phone
 - b. The Contractor shall coordinate directly with the utility company for service related work or conflicts.
 - 3) Telephone (CenturyLink) - Representative was/was not present.
 - a. _____ is the contact person. Contact numbers are as follows:
 - i. (____) ____ - ____ Mobile phone
 - ii. (____) ____ - ____ Office phone
 - b. The Contractor shall coordinate directly with the utility company for service related work or conflicts.
 - 4) Cable TV (Charter Communications) - Representative was/was not present.
 - a. _____ is the contact person. Contact numbers are as follows:
 - i. (____) ____ - ____ Mobile phone
 - ii. (____) ____ - ____ Office phone
 - b. The Contractor shall coordinate directly with the utility company for service related work or conflicts.

PARTY RESPONSIBILITY

9. Owner. The City of Newport is the governing jurisdiction and Owner of all public utility improvements. The City will own and operate these facilities upon acceptance. The City also operates existing valves, pump stations, etc. Responsibilities of the City include but are not limited to operating existing valves, providing construction observation, and representing the City's interests during construction of the work. The City does not "supervise" the contractor's employees, equipment, work safety or operations, and will work with the prime contractor if subcontractor work needs to be corrected.
10. Project Engineer. _____. Responsibilities of the Engineer include but are not limited to interpreting plans and specifications, answering questions, and addressing changes in the scope of work. The Engineer does not "supervise" the contractor's employees, equipment, work safety or operations.

11. Contractor: _____. Responsibilities of the Contractor include but are not limited to completing the work within the contract time per plans and specifications, providing submittals in a timely manner, and coordinating with the City for construction observation, any impacts to traffic, or the operation of existing systems. Further, Contractor shall coordinate traffic control, utility locates, etc.
12. Field Record Drawings & As-builts. Contractor shall always maintain one clean set of up-to-date field record drawings. The drawings shall be kept current with the work as it progresses. A clean set of marked up construction drawings must be submitted *to the City Engineer* prior to substantial completion.
13. Subcontractors. The general contractor is responsible for coordinating and verifying all work performed by subcontractors. Attached is a list of the primary subcontractors provided by the Contractor. The following is a list of subcontractors that are anticipated for the project:
- Civil Sitework:
 - Underground:
 - Curbs:
 - Sidewalks:
 - AC pavement grinding:
 - AC pavement:
 - Base-rock source:
 - Compaction testing lab:
 - Sewer & storm mandrel testing:
 - Sewer TV Inspection:
 - Waterline Hot Tapping:
 - Street light installation:
 - 1200-C Erosion Control Inspection:
14. Safety.
- A. The Contractor is responsible for conforming to OSHA & other safety requirements. City and Engineer are not acting as safety inspectors on the project. However, if unsafe conditions are noted, the Contractor will be requested to correct the situation. Failure to conform to safety regulations may result in notification of OSHA.
 - B. All trenches in existing ROW or easements are to be backfilled or covered with steel plates at the end of each working day. Plywood sheets are not acceptable.
15. Erosion and Sediment Control Plan (ESCP). The Contractor is responsible for ensuring that adequate erosion control is in place at all times until construction is complete and approved, including establishment of vegetation and/or landscaping. Adequate ESCP shall be in place to prevent mud and/or sediment-laden water from leaving the site during rainy events. Water from trench dewatering shall not carry sediment into City storm systems or adjacent watercourses.
16. Dust/Mud Abatement.
- A. The Contractor shall be responsible for watering the site as required to prevent dust from leaving the site during dry weather.

- B. The Contractor shall be responsible for ensuring that all City streets remain free and clear of mud, debris, dirt, etc. Any mud or debris tracked onto City streets shall be cleaned up at the end of each work day.

GENERAL CONTRACT ITEMS

17. Construction Schedule:

- A. Overall Project Schedule: Prior to beginning construction, the Contractor must submit a document showing the projected overall construction schedule, including the general sequence in which the grading, utilities and street improvements are to be constructed.
- B. Weekly Work Schedule: Every three weeks, a proposed work schedule for the following three weeks must be submitted to the City. Failure to submit this schedule may result in the issuance of a stop work order at the City’s discretion until the schedule is submitted. This schedule is especially critical when testing requires observation by a City representative.
- C. Community Events & other Coordination Construction Dates:
 - 1) _____
 - 2) _____
 - 3) _____
- D. Hours of Work: The City limits construction work to the hours of 7 AM to 7 PM, Monday through Friday. Any work beyond these hours must be approved by the City Engineer. City personnel are available for construction observation between 8:30 AM and 4:30 PM weekdays with forty-eight (48) hour advanced scheduling. The City expects the Contractor to respect project property owners and maintain good relations.

- 18. Changes: If there are changes to the scope of the work, these items will be addressed by the Engineer, City and Contractor.

GENERAL DISCUSSION ITEMS

- 19. Lines of Communication. Design engineer will be the point of contact regarding any design questions. Direct questions regarding existing City utilities and overall construction coordination to the Assistant City Engineer. Other City staff may be included in the conversation at the Assistant City Engineer’s discretion. The City will maintain correspondence with the project manager and will not have direct correspondence with construction crews without involving the project manager.
- 20. Coordination Meetings. The Contractor may request coordination meetings on site at any time when there are questions or clarifications required which cannot be resolved on the phone. The Contractor will be responsible for coordinating with all franchise utilities.
- 21. Submittals.
 - A. All submittals must come from and be stamped or signed by the general contractor. Submittals directly from subcontractors or suppliers will not be accepted.
 - B. The Contractor shall coordinate with the City regarding submittal procedures, including the submittal report form. Submittals not conforming to the requirements of that section or the

submittal report form may be returned without review.

- C. The Contractor shall review submittal requirement with supplier(s) regarding the format and content for the submittal packets, particularly to highlight applicable information/options or cross out nonapplicable information/options). It is acceptable to submit all the waterline materials under a single submittal report, as with storm materials and sanitary sewer materials, respectively.
- D. Submittals for alternate materials or equipment that will require changes to the design must include detailed information on all changes or modifications required to adapt the proposed equipment to the design. All variances to the specifications or differences from the specified equipment must be noted on the submittals.

22. Traffic Control & Maintaining Access.

- A. The Contractor shall submit a traffic control and/or pedestrian control plan to the city for approval. A copy of the approved plans shall be available at work area.
- B. The Contractor shall erect and maintain barricades, warning signs, and traffic cones per City and ODOT requirements in accordance with the MUTCD (including Oregon amendments). All traffic and pedestrian control measures shall be approved and in place prior to any construction activity.
- C. Access to existing driveways and buildings shall be maintained at all times for residential, mail, delivery, fire, and emergency vehicles.
- D. Contractor shall provide a minimum of seventy-two (72) hours (three (2) work days), not including weekends or holidays, notice prior to any work that will impact vehicular traffic, particularly emergency vehicles and school buses.
- E. Contractor shall place advance notification signs at each end of the construction area seventy-two (72) hours (minimum) before initiation of construction work.
- F. The City reserves the right to modify traffic control requirements to improve traffic control and assure public safety.

23. Project Observation & Testing.

- A. The City will conduct regular observations to ensure that this project is being constructed in accordance with project drawings and City standards.
- B. The Contractor should contact Newport Engineering Dept for observations, etc. a minimum of forty-eight (48) hours prior to the requested observation. The contact phone number for observation requests is 541-574-3366.
- C. As outlined in the drawing construction notes, materials testing is to be performed by an independent laboratory retained by the Contractor. Re-tests will be at Contractor's expense. An assigned member of City staff shall be on hand to witness all testing or City will not accept test results regardless of vendor or tester experience.
- D. Trench Bedding & Backfill. A minimum of six (6) inches of three-quarter inch minus ($\frac{3}{4}$ "-0) granular bedding is required under all water, sewer, and storm drain piping, regardless of

pipe type. See Standard Drawing G-100 for details.

- 1) Where soft subgrade is encountered in trench bottoms, or where open trenches are left exposed with standing water, the trench base shall be over-excavated to firm subgrade and additional base-rock installed to provide a firm base for the utility pipelines.
 - 2) After backfilling pipe zone of trench, contractor shall backfill balance of trench in one (1) foot layers, mechanically compacting each layer to ninety-five (95) percent in public ROW. Compaction tests shall be witnessed by City representative.
 - 3) Compaction testing shall occur as the trench is being backfilled.
 - 4) **NOTE:** Some testing agencies will not test in trenches deeper than five feet.
- E. Site grading/lot fills. Following completion of the site grading and fill work, submit to the City a written soils certification (from the geotechnical engineer/testing lab) that the street fills and areas within the building envelopes of all lots conform to compaction requirements.

All fills shall be engineered, tested and certified by or under the authority of the project geotechnical engineer prior to final approval of the project.

- F. Streets. The City shall be notified of the schedule for testing & proofrolling for subgrade and base-rock, as well as curb stringline and AC pavement placement. Written results for all tests shall be submitted to the City.
- 1) The Contractor shall provide compaction testing services by an independent testing laboratory.
 - 2) The subgrade for all streets must be approved by the project geotechnical engineer prior to placement of base-rock. The compaction standard for subgrade is both a proofroll and compaction to ninety-five (95) percent of AASHTO T-180 or equivalent.
 - 3) Written base-rock compaction results must be received by the project geotechnical engineer and City prior to paving, including new streets or trench cuts in existing streets. Copies of the current proctor curves for the rock used shall be submitted to the City for review with the compaction results.
 - 4) Written pavement compaction results for AC pavement must be received by the City prior to final approval of the project. The compaction standard is ninety-two (92) percent of maximum density as determined by the Rice Standard Method for pavement.
 - 5) All sidewalk, driveway and other concrete forms shall be approved by the City prior to concrete placement. It is the Contractor's responsibility to relay this information on to his flatwork crews or subcontractor.
 - 6) The need for temporary trench patching will depend on the staging of the construction work within the ROW. It is not acceptable to have gravel trenches exposed in paved streets for extended periods. However, if the trench work is followed immediately by the street reconstruction, temporary trench patching obviously may not be required.
- G. Storm Drainage. All storm system tests shall be witnessed by the City and all results shall be submitted on standard testing forms. The Contractor shall be responsible for completing the test forms prior to testing and submitting the completed forms to the City.

Storm system tests required include mandrel tests for all mainlines, followed by cleaning and TV inspection of all mainlines. Copies of all inspection reports shall be submitted to the City.

- H. Sanitary Sewer. All sanitary sewer system tests shall be witnessed by the City and all results shall be submitted on standard testing forms. The Contractor shall be responsible for completing the test forms prior to testing and submitting the completed forms to the City.

Sanitary sewer system tests required include mandrel tests for all mainlines; air tests for pipelines and laterals prior to paving; mandrel and video inspection of all mainlines; vacuum tests for manholes after paving; and air tests for pipelines and laterals after backfilling trenches. Copies of the inspection reports and TV tapes shall be submitted to the City.

- I. Water System. All water system tests shall be witnessed by the City and all results shall be submitted on standard testing forms. The Contractor shall be responsible for completing the test forms prior to testing and submitting the completed forms to the City.

Water system tests required include pressure tests for all main pipelines and services, as well as chlorination and bacteriological tests per OHA and City requirements.

24. Existing Utilities & Systems

- A. Damage to Existing Utilities. The Contractor shall be responsible for all damage to existing equipment or utilities caused by construction activities or equipment.
- B. Survey Monuments. The Contractor shall be responsible for locating and marking all existing survey monuments of record (including but not limited to property and street monuments) prior to construction. If any survey monuments are removed, disturbed or destroyed during construction of the project, the Contractor shall retain and pay for the services of a Registered Professional Surveyor licensed in the State of Oregon to reference and replace all such monuments prior to final payment. The monuments shall be replaced within a maximum of 90 days, and the County Surveyor shall be notified in writing as required by per ORS 209.150.
- C. Maintain Service. Water service is to be maintained to all structures and users. Contractor shall notify the City and all affected customers a minimum of 48 hours prior to any interruption of service.
- D. Operation of Existing Valves. All existing water valves (including hydrants) are to be operated by City staff only.

25. Construction Staking and Advance Notification: Construction staking will be by _____ . The Contractor shall provide a minimum of 10 days' advance written notice when requesting staking.

26. Potholing Existing Utilities: Contractor is responsible to pothole existing utilities far enough in advance and notify Engineer of any conflicts or discrepancies without delaying the work.

27. Staging Area: Use of any private property for staging or storage areas outside of the property must be coordinated between the Contractor and the private property owners.

28. Work Area and Cleanup. Cleanup shall closely follow the work as it progresses.

29. Final Acceptance of Work: All test reports, record drawings, final inspection certificates, etc. must be submitted and accepted by the City prior to final acceptance of the work.

30. Construction Access. Fill dirt and rock trucks need to be routed _____.

31. Standard Notes & Details: The standard details on the drawings include the following items that are particularly noted:

- A. _____
- B. _____
- C. _____
- D. _____
- E. _____
- F. _____

32. Additional Items

- A. _____
- B. _____
- C. _____
- D. _____
- E. _____
- F. _____
- G. _____
- H. _____
- I. _____
- J. _____
- K. _____
- L. _____
- M. _____
- N. _____

33. ATTACHMENTS:

- A. Pre-Conference Meeting Attendance Sign-Up Sheet

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APPENDIX F – PROJECT COMPLETION REQUIREMENTS FOR MAINTENANCE STATUS FOR PRIVATE DEVELOPMENT

PROJECT _____

DATE: _____

The following items shall be complete prior to placing a project onto the one-year maintenance period, and prior to issuance of Certificate of Occupancy:

- Sanitary sewer installed, air, mandrill, and TV inspections complete and approved. _____
- Storm sewer installed, mandrill and TV inspections complete and approved. _____
- Water mains installed, tests complete and passed, and services installed. _____
- Curbs installed with 2 weep holes per lot. _____
- Streets complete through first lift of asphalt. _____
- Site grading and compaction complete per plan. _____
- Power trench and franchise utility installation complete (power, gas, telephone, cable TV), backfilled and compacted. _____
- Bike paths and maintenance access roads installed per plan. _____
- General clean up, post construction erosion control installed as necessary. _____
- Sidewalks, wheel chair ramps, and mailbox bubble outs installed per plan. _____
- Streetlights installed per plan and ready to be energized.. _____
- All easements and dedications recorded, including plat at Lincoln County. _____
- Check print of as-builts submitted for review and approval. _____
- Water quality/detention facility installed and complete per plan. _____
- Final report from Geotechnical Engineer submitted for review and approval, in accordance with UBC Appendix Chapter 33. _____
- A completion report from the private Engineer, including a Certificate of Compliance (City form), in accordance with the Developer-Engineer Agreement. _____
- Mailboxes installed per plan. _____
- Street signs and barricades installed per plan. _____
- Maintenance bond submitted (City form). _____ **w**_____

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APPENDIX G – PROJECT CLOSEOUT CHECKLIST FOR PUBLIC IMPROVEMENT PROJECTS

PROJECT COMPLETION REQUIREMENTS FOR MAINTENANCE STATUS CHECKLIST


PROJECT _____


The following items shall be complete prior to placing a project onto the one-year maintenance period. Submit checklist with request for Substantial Completion letter.

- Check print of as-builts submitted for review and approval. _____
- Site grading and compaction complete per plan. _____
- Final report from Geotechnical Engineer submitted for review and approval _____
- General clean up, post construction erosion control installed as necessary. _____
- Power trench and franchise utility installation complete (power, gas, telephone, cable TV), backfilled, compacted, and resurfaced. _____
- Streetlights installed per plan and ready to be energized. _____
- Sanitary sewer installed; air, mandrill, and TV inspections complete and approved. _____
- Storm sewer installed; mandrill and TV inspections complete and approved. _____
- Water mains installed; tests complete and passed; services installed. _____
- Water quality/detention facility installed and complete per plan. _____
- Curbs installed. _____
- Sidewalks, wheel chair ramps, and mailbox(es) installed per plan. _____
- Bike paths and maintenance access roads installed per plan, if any. _____
- Streets complete with striping. _____
- All easements and dedications recorded, including plat at Lincoln County. _____
- Mailboxes installed per plan. _____
- Street signs and barricades, if any, installed per plan. _____
- Final Walk-Thru Completed _____
- Electronic as-builts submitted with corrections, if any, from City review. _____
- Punch List completed. _____
- Request for Letter of Substantial Completion _____

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APPENDIX H – ROW APPLICATION AND DOCUMENTATION

	<p>City of Newport Right-of-Way Permit Application Permit # _____</p> <p style="color: red; font-weight: bold;">Allow Up to Three (3) Weeks for Application Processing</p>	<p>Newport Engineering Dept. 169 SW Coast Hwy Newport, OR 97365 541-574-3366</p>				
<p>Call Before You Dig: dial 811, or go to digsafelyoregon.com for online locate requests Inspection Requests (48 hrs notice): 541-574-3366 or rightofwaypermits@newportoregon.gov</p>						
Address/Location of work:						
<p>*SITE PLAN: Application will not be processed without a completed check list with attached drawing.</p>	<p>WORK:</p>	Water	Gas	Street Cut	One Land Closure	
		Sewer	Comm.	Paving	Site Specific TCP <i>(Attach Plan)</i>	
		Storm	Electric	Landscaping	Site Specific Pedestrian Control Plan <i>(Attach Plan)</i>	
		Trenching	Boring	Staging in ROW	Site Specific Pedestrian Control Plan <i>(Attach Plan)</i>	
		Sidewalk / Driveway	Tree Trim / Removal**	Block Public Parking	Site Specific Pedestrian Control Plan <i>(Attach Plan)</i>	
	<p>TYPE OF SERVICE</p>	Single Family	Commercial	Motel	NO. & SIZE OF SERVICE	
		Duplex	Retail/Service	Municipal	Water/Sewer	
Triplex		Restaurant	Church	Service Size		
Fourplex		Fish Plant	Public / Institutional	Water Only		
	Apartments			Hydrant Meter		
<p>**Complete Tree Trimming/Removal Checklist (attach to application)</p>						
Part of Community Development Building Permit			Building Permit Number:			
Expected start date:			Expected project duration:			
Contractor Information			<input type="checkbox"/> Primary Contact for questions and fees			
Business Name:		Business Contact:				
Address:		City:		State:	Zip:	
24-hr Emergency Phone:		Email:				
Main Phone (if different):						
CCB License #:		City of Newport Business License #:				
Property Owner Information			<input type="checkbox"/> Primary Contact for questions and fees			
Property owner name:						
Address:		City:		State:	Zip:	
Phone:		Email:				
Applicant's Declarations						
1. *Drawings, plans, & specifications submitted with application comply with all applicable technical codes, rules, & regulations.						
2. I have reviewed, understand, and agree to comply with standard permit requirements posted with this application.						
3. Fees must be paid prior to application review.						
4. Work cannot commence until application is reviewed, approved, and returned by the City of Newport.						
Applicant (print name):			Signature:			
			Date:			
Property owner (print name):			Signature:			
			Date:			

		<p style="text-align: center;">City of Newport Right-of-Way Permit Application Permit # _____ Allow Up to Three (3) Weeks for Application Processing</p>				<p style="text-align: center;">Newport Engineering Dept. 169 SW Coast Hwy Newport, OR 97365 541-574-3366</p>	
APPLICATION REVIEW FEES						FEE	EXTENSION
Application Fee						\$100.00	
Expedited Review (3 Calendar Days)						\$100.00	
Submittal Date:						Total:	
Applicant Signature:						ROW Fees to 701-3110-46480	
PERMIT SERVICE FEES	# OF SERVICES	CHECK SIZE OF SERVICE				FEE	EXTENDED COST
Water/ Sewer		3/4"	1"	1-1/2"	2"		
Water (Irrigation Meter)		3/4"	1"	1-1/2"	2"		
Meter		3/4"	1"	1-1/2"	2"		
Sewer Lateral Inspection		Sewer Fees to 602-3490-48001				200.00	
Storm Review Fee		Storm fees to 603-3790-48001				50.00	
Asphalt Cut	Length: X	Area =					
Service Charge							
Submittal Date:						Total:	
Applicant Signature:						Water Fees to 601-3390-45503	
PERMIT EXTENSION AND OTHER FEES							
Permit Extension for 60Days						\$	100.00
Working Without A ROW Permit - \$500.00 / Date Work Occurs						Day: X \$500.00 =	
						Total:	
						Receipt Number	
Approval Date:						Expiration Date	
Applicant Acknowledgement:							
ROW Permit much be closed to insure no further fees attached to permit. Applicant is responsible to arrange final inspection with City for permit close-out.							
Applicant Signature						ROW Fees to 701-3110-46480	
PERMIT CLOSEOUT							
Complete Drawing Provided: <input type="checkbox"/> Yes <input type="checkbox"/> N/A Bond Attached: <input type="checkbox"/> Yes <input type="checkbox"/> N/A							
						Bond #:	
Approved by:		Approval Date:			Expiration Date:		
As-Built Drawing Submitted: Y N		Date:		Fees Paid Y / NA		Receipt #:	
Final Inspection Approved by:				Date			
Comments:							

Note: Permit Requirements Attached.

APPENDIX I – RIGHT-OF-WAY PERMIT REQUIREMENTS

1. Applicant shall attach the following to the Right-of-Way Permit Application:
 - A. Plans, drawings, and specifications in sufficient detail to demonstrate:
 - 1) That all work will be performed and any facilities will be constructed in accordance with all applicable codes, rules, and regulations.
 - 2) If applicant is a franchise or a contractor working on behalf of a franchise, that all work will be performed, and any facilities will be constructed, in accordance with the franchise agreement.
 - 3) The location, route, and description of all of applicant's new facilities to be installed, as well as their relation to streets, curb, sidewalk, rights-of-way (ROW), and all existing utilities in the construction area.
 - 4) The construction methods to be employed for protection of existing structures, fixtures, and facilities, and a description of any improvements that the applicant proposes to temporarily or permanently remove or relocate.
 - B. A written construction schedule, including a deadline for completion. The construction schedule is subject to approval by the City Engineer or the City Engineer's designated representative (designee). Schedules shall follow those outlined in the *Oregon Standards and Specifications for Construction*, (OSS), current edition.
2. Comply with all applicable laws, rules, regulations, codes, and standards, including but not limited to:
 - A. Oregon Standard Specifications for Construction Manual, (OSS); current edition.
 - B. City of Newport Municipal Code (NMC) – available at City Hall or on the City website at <http://newportoregon.gov/dept/adm/documents/NewportMunicipalCode.pdf>.
 - C. Oregon Temporary Traffic Control Handbook
 - D. Rules adopted by the Oregon Utility Notification Center. Call for locates at 811 or 503-232-1987.
 - E. City of Newport Standard Details- available at City Hall or on the City website.
3. All construction shall be in accordance with the permit and approved plans and specifications. Any changes must be approved by the City Engineer or designee prior to proceeding with work.
4. Provide, upon request, any information needed by the City Engineer to determine compliance with applicable requirements.
5. Keep a copy of the approved permit and plans on-site and available upon request by any City representative.
6. Notify the City Engineer not less than two working days prior to any excavation or construction in the ROW.
7. All permittees shall make a good faith effort to coordinate their construction schedules with those of the City and other users of the ROW.
8. The City Engineer may impose conditions regulating the time, place, and manner of performing the work, such as specifying a time period within which all work must be performed and/or require coordination of construction activities.
9. The City Engineer or designee shall be provided access to the work site and the opportunity to inspect any work in the ROW.

10. Use suitable traffic control, barricades, signs, and other measures as required for safety of the general public and protection of property.
11. Any obstruction or excavation in the ROW shall be properly safeguarded by suitable barricades, and lighting at night (see NMC 9.10.120 for complete requirements). Promptly remove any obstructions when no longer needed.
12. Restore the ROW to good order and condition as existed prior to the work being undertaken, unless otherwise directed by the City Engineer or designee.
13. Final asphalt restoration must be with ACP (asphalt concrete pavement hot mix). If ACP isn't available at the time of restoration, then a temporary cold mix patch may be used and replaced with ACP within 30 days.
14. Upon completion, notify the City Engineer or designee for final review of the work.
15. All work that does not comply with permit requirements shall be corrected or removed at the sole expense of the permittee.
16. All work must be completed within 60 days of permit issuance unless an extension or alternate schedule has been approved by the City Engineer.
17. Provide City with one complete sets of utility as-built plans showing the location of the new water, sewer, and storm infrastructure facilities. Level 1 projects may submit a hardcopy; level 2 project shall submit an electronic .dwg or .dxf file.
18. Promptly remedy any defects that appear, for two years after completion.
19. City may require a financial security to assure restoration of ROW and other property (see NMC 9.10.140 for complete requirements).
20. Contractors shall work to keep debris out of the right-of-way during construction and hauling of material (see NMC 6.35.035 for complete requirements).
21. Permittee holds the City and its employees harmless against any contaminated waste cleanup, injury, damage, or other claim resulting from work under this permit.

Construction Specifications, Standard Details and Inspection Requirements

The following construction specifications and standard detail drawings are attached:

<ul style="list-style-type: none">• WATER<ul style="list-style-type: none"><input type="checkbox"/> Construction specifications (____ pages) <input type="checkbox"/> Standard detail drawings: _____<input type="checkbox"/> Notes: _____INSPECTIONS<ul style="list-style-type: none"><input type="checkbox"/> Water tap (observe all work) <input type="checkbox"/> Other: _____<input type="checkbox"/> Water service (prior to backfilling) <input type="checkbox"/> Other: _____<input type="checkbox"/> Final inspection
<ul style="list-style-type: none">• SEWER<ul style="list-style-type: none"><input type="checkbox"/> Construction specifications (____ pages) <input type="checkbox"/> Standard detail drawings: _____<input type="checkbox"/> Notes: _____INSPECTIONS<ul style="list-style-type: none"><input type="checkbox"/> Sewer tap (observe all work) <input type="checkbox"/> Other: _____<input type="checkbox"/> Sewer lateral (prior to backfilling) <input type="checkbox"/> Other: _____<input type="checkbox"/> Final inspection
<ul style="list-style-type: none">• STORM<ul style="list-style-type: none"><input type="checkbox"/> Construction specifications (____ pages) <input type="checkbox"/> Standard detail drawings: _____<input type="checkbox"/> Notes: _____INSPECTIONS<ul style="list-style-type: none"><input type="checkbox"/> Final inspection
<ul style="list-style-type: none">• SIDEWALK/DRIVEWAY<ul style="list-style-type: none"><input type="checkbox"/> Construction specifications (____ pages) <input type="checkbox"/> Standard detail drawings: _____<input type="checkbox"/> Notes: _____INSPECTIONS<ul style="list-style-type: none"><input type="checkbox"/> Concrete formwork (prior to pouring) <input type="checkbox"/> Other: _____<input type="checkbox"/> Final inspection
<ul style="list-style-type: none">• STREET CUT<ul style="list-style-type: none"><input type="checkbox"/> Construction specifications (____ pages) <input type="checkbox"/> Standard detail drawings: _____<input type="checkbox"/> Notes: _____<input type="checkbox"/> Prepared base rock (prior to paving) <input type="checkbox"/> Other: _____<input type="checkbox"/> Final inspection

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APPENDIX J – TREE REMOVAL CHECKLIST

TREE TRIMMING OR REMOVAL REQUIREMENTS

Right-of-Way Permit Application Checklist

The following information must be submitted with a City of Newport Right-of-Way (ROW) Permit Application for Tree Pruning or Removal:

- 1. A description of the number, diameter and species of tree(s) requested to be pruned or removed.

- 2. A site plan identifying the size, location and species of the tree(s) to be pruned or removed, including property lines, North arrow and adjacent streets. Applicants may use aerial maps as a site plan.

- 3. For pruning, a statement from a tree care professional indicating that the proposed pruning measures will not foreseeably lead to death or permanent damage to the tree(s).

For removals:

- 4. Reasons justifying the removal, referencing the criteria in Newport Municipal Code (NMC) Section 9.10.025.

- 5. If the application is being made on the criteria in NMC Section 9.10.025(A)(1-4), a formal report from a tree care professional establishing that one or more of the criteria for removal are being met may be required by the Public Works Department, in the case that the Department is unable to make its own determination.

- 6. For removals that are being referred to the Tree Board, a list of names and addresses of property owners, as shown in the records of the Lincoln County Assessor, within two hundred (200) feet of the subject property.

7. Photograph(s) of the tree(s) to be removed wherein tree(s) to be removed are clearly marked with brightly colored tape.
8. A description of proposed tree replacement, including planting details specifying the number, size, species, cost and proposed replacement location(s). If approval criteria in NMC Section 9.10.025(A)(1-4) apply, then one (1) mitigation tree is required for each tree that is removed. All other tree replacements shall be in accordance with the table below:

DBH OF TREE TO BE REMOVED (INCHES IN DIAMETER 4.5' ABOVE THE GROUND)	NUMBER OF MITIGATION TREES TO BE PLANTED
<4" (City planted)	1
4" to 6"	1
>6" to 12"	2
>12" to 18"	3
>18" to 24"	4
>24" to 30"	5
>30"	8

In lieu of replacing trees, the applicant may propose to pay into the City tree fund an amount equivalent to the value of the mitigation trees after installation, as detailed in NMC Section 9.10.055(E).

9. All contractors performing tree pruning or removals must be licensed, bonded and insured. Contractors shall provide a certificate of insurance, with the City of Newport named as an additional insured.

If permission for tree removal is granted, all costs of removal, cleanup and replacement shall be borne by the person requesting the removal. Trees are to be removed at least flush with ground level, and all debris is to be removed.

Decisions of the Tree Board may be appealed to the City Council in writing within 10 calendar days of the date of the decision. If it is not appealed, a decision of the Tree Board becomes final 10 business days after the decision is issued.

APPENDIX K – CONTRACTING & BIDDING PROCESSES

Below is a brief explanation of the bidding process, contracts, and when the varied contracts are used.

DEFINITIONS

Advertisement to Bid – The public notice inviting submission of Bids for the work.

Bid Solicitations – A competitive, sealed procurement method intended to create a transparent, open, and fair environment.

Local Contract Review Board (LCRB) – Newport City Council.

Public Contracting Rules – Rules by which the City of Newport makes purchases; based on Oregon Regulatory Statutes.

Quotes – Smaller purchasing contracts that do not require public advertisement; completed by requesting a minimum of three quotes to complete work.

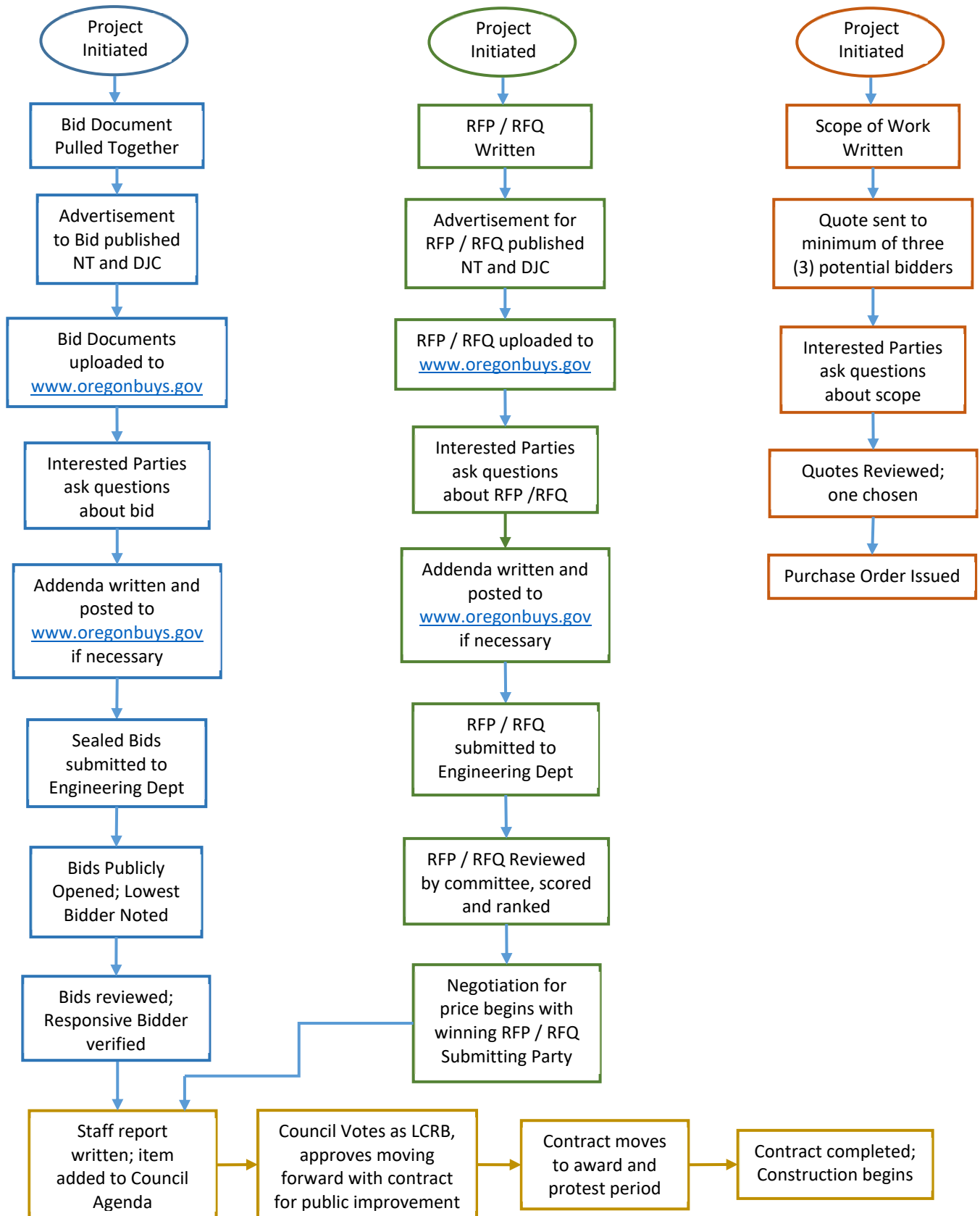
Request for Qualifications – Request for professional services capable of completing a specific work.

Request for Proposal – Specific requirements where bidder designs an adequate solution to the problem.

CONTRACT TYPES

PUBLIC CONTRACTING / PURCHASE TYPE	LIMITS	PROCESS	APPROVAL
GOOD AND SERVICES			
Small Procurement 137-047-0265	\$25,000 or less	Direct Solicitation / Award	Dept Head if direct purchase or purchase order used
Intermediate Procurements 137-047-0270	\$25,001 to \$250,000	Solicit three (3) quotes.	City Manager Local Contract Review Board if total contract amount exceeds \$150,000
Large Procurements	\$250,001 or greater	Formal Procurement	Local Contract Review Board
CONSULTANT SECTION			
Direct Appointment 137-048-0200	\$100,000 or less	Direct Appointment / Selection	City Manager
Informal Selection 137-048-0210	\$100,000 or less	Process described on pages 39-41 of Purchasing Rules.	Local Contract Review Board
Formal Selection 137-048-0220	\$250,001 or greater	Process described on pages 41-44 of Purchasing Rules	Local Contract Review Board
CONSTRUCTION SERVICE			
Direct Award Purchase Order(?)	Less than \$25,000	Direct Award	Dept Head
Intermediate Procurements 137-049-0160	\$25,001 to \$100,000	Three (3) verbal / written quotes for \$50,000 or less. \$50,000 or greater prevailing wage.	City Manager
Formal Procurements 137-049-0200 (Section)	\$100,001 or greater	Process described on pages 52-71 of Purchasing Rules	Local Contract Review Board
PERSONAL SERVICES			
Direct Award Purchase Order(?)	\$25,000 or less per annum	Direct Award	Department Head
Intermediate Contracts	\$25,001 or greater per annum	Solicit proposals from three (3) prospective contractor.	City Manager Local Contract Review Board if total contract amount exceeds \$150,000

BIDDING PROCESS



APPENDIX L – DEVELOPER/ENGINEER AGREEMENT

CITY OF NEWPORT ENGINEERING DEPARTMENT DEVELOPER/PROJECT ENGINEER AGREEMENT

By this agreement, _____ (Owner/Developer) and _____ (Engineer) agree to provide the following professional engineering services associated with the development _____ (Name of project identified by City Planning File: _____.) This agreement is not transferable. Breach of this Agreement may be reason for the City of Newport to issue a “Stop Work” order.

1. Prepare construction plans and provide documents required to obtain approval for the development in accordance with the City of Newport *Engineering Design and Construction Standards Manual* (Manual) and obtain approvals from other governing agencies when necessary.
2. Attend a pre-construction meeting.
3. Prior to work in the right-of-way (ROW), apply for a ROW permit, which will include a second, deeper plan review. All ROW Permit requirements are included in this agreement by reference once permit is issued.
4. City shall approve and review materials/workmanship for work in right-of-way/easement areas as required by approved plans, specifications, material submittal checklists, and inspection checklists.
5. Arrange for City observation for project work in ROW to ensure materials and construction meets City of Newport specifications for construction and adhere to the City minimum guidelines for observation (see *Manual*, Appendix A), construction of public improvements, and work in the right-of-way/easements. In person observation by City Staff is required for all testing and any items stated on the minimum inspection checklists. City Engineer may give written notice that all work be stopped until the City Engineer is satisfied that materials and workmanship conform to the applicable specifications. The Engineer and Owner/Developer understand that a “Stop Work” order may be issued by the City of Newport if the quality of observed materials and workmanship do not conform to this agreement or work in the right-of-way is occurring without notice given to the City and on-site observation arranged.
6. Process design changes mandated by field conflict to approved plans and submit modification requests to the City of Newport for approval.
7. Provide copies of all test results and inspection logs for acceptance and approval by the City of Newport.
8. Submit completed *Private Development Project Completion Requirements for Maintenance Status* checklist.
9. Provide “As-Built/Record” Drawings per City of Newport Standards as required.
10. Notify the City of Newport immediately if there is a change in Owner/Developer or if the Engineer is unable to perform the above duties.
11. Report summarizing completion of work in the right-of-way.
12. Repeated violation of this agreement may result in a citation being issued against Developer/Engineer.

Engineer: _____ Owner/Developer: _____

Registration Number: _____ Authorized Representative of Owner/Developer: _____

Expiration Date: _____

Signature: _____ Signature: _____

Date: _____ Date: _____

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**INDEX AND
SOURCES**

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Sources

These Standards compiled from information or input received from the following sources:

American Public Works Association
American Water Works Association
Newport Municipal Code
Oregon Department of Environmental Quality
Oregon Department of Transportation
Oregon Standards and Specifications for Construction
Portland Cement Association
City of Newberg
City of Bend
City of Tigard
City of Hood River
City of Medford

14.44.030 Engineering Design Criteria, Standard Specifications and Details

The design criteria, standard construction specifications and details maintained by the City Engineer, or any other road authority within Newport, shall supplement the general design standards of this Chapter. The city's specifications, standards, and details are hereby incorporated into this code by reference.

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*Reviewed by Justin Scharbrough and Matt Hall

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**Reviewed by Justin Scharbrough

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***Reviewed by Anita (and Mike) P & Rec

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