CITY OF OMAK

OKANOGAN COUNTY **WASHINGTON**

CONSTRUCTION STANDARDS FOR THE PRIVATE CONSTRUCTION OF PUBLIC FACILITIES

G&O #23805
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Gray & Osborne, Inc.
CONSULTING ENGINEERS

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CHAPTER 1

GENERAL

ENACTING AUTHORITY

These Design and Construction Standards are enacted by the City of Omak, in accordance with state law, to protect and preserve the public health, safety, and general welfare.

PURPOSE

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

STATE ENVIRONMENT POLICY ACT (SEPA)

These Design and Construction Standards will not affect any considerations involving issues under the State Environmental Policy Act (SEPA). The City's responsible official will continue to make all necessary SEPA decisions when individual proposals are submitted.

CONFLICTING PROVISIONS

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

SEVERANCE

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

PROCESS

Any project by a private developer that includes the construction of public infrastructure or represents an impact to public infrastructure shall comply with the procedures listed in CHAPTER 2 and the OMC.

ENGINEERING DESIGN PLAN REQUIREMENTS

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

REVIEW AND INSPECTION FEE

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

Fee payments shall be made in full by the Developer prior to the City releasing the approved original plans and specifications for construction or the issuance of the certificate of occupancy.

RECORD DRAWINGS

The Developer's Consultant shall prepare and maintain a neatly marked, full-sized print set of record drawings showing the final location and layout of all new construction of the public facilities. Record drawings shall be supplied to the City of Omak consistent with Section 1-05.3(1) Project Record Drawings as presented in CHAPTER 4 of these Design and Construction Standards.

TRANSFER OF OWNERSHIP

The City shall make final inspection of all constructed public improvements at construction completion. Upon final inspection and approval of the work, the Developer shall complete a Transfer of Ownership of Public Works Improvements form.

EASEMENTS

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

All easements required shall be prepared by the Developer on the proper form and format for recording at the Okanogan County Auditor's Office. The easement legal description shall be prepared by a land surveyor licensed by the State of Washington. He easement document shall be submitted to the City for review prior to plan approval. Once approved by the City, the Developer shall record the executed and notarized easement, and provide proof of recording to the City prior to project acceptance.

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

CHAPTER 2

DEVELOPMENT PROCEDURE

INTRODUCTION

Any project by a private developer that includes the construction of public infrastructure or represents an impact to public infrastructure shall comply with the following procedures. Public infrastructure includes all construction or impact to public streets, water, sanitary sewer, storm drainage, illumination and any other facilities that will be owned, operated and maintained by the City. Additionally, all projects shall be reviewed by the City for regulating on-site stormwater runoff.

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

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

> Water: Public water mains and their appurtenances located with public rights-of-way and public easements. The required procedures for private on-site water systems from the City meter to the building is addressed through the building department.
>
> Sanitary Sewer: Public sanitary sewer interceptors, trunks, collectors and their appurtenances including portions of the building sewers located within public rights-of-way or public easements. The required procedures for private sanitary sewer service laterals and appurtenances located outside of the public rights-of-way or public easements are addressed through the building department.
>
> Stormwater: Public stormwater and drain systems and their appurtenances located within public rights-of-way or public easements, and infrastructure for private on-site stormwater systems located outside public rights-of-way and public

easements. On-site stormwater system designs will be reviewed by the City to ensure systems meet the required stormwater regulations.

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

OWNER RESPONSIBILITY

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

The Owner/Developer shall retain the services of a Consultant licensed to practice Civil Engineering in the State of Washington, who is qualified to perform the required engineering services for design and construction stake/survey, as required, of the proposed public improvements. If the project includes installation of domestic water infrastructure, the Consultant shall comply with the requirements of WAC 246-290-125.

If a deviation from Design and Construction Standards or other adopted standards is proposed by the Owner/Developer, the Consultant shall provide to the City with their plan submission a letter on company letterhead stating the following:

- A clear description or exact quote and reference of the code or standard under consideration;
- The intent of the code and/or standard as interpreted by the Consultant;
- The requested deviation or consideration with respect to the interpreted intent of the code and/or standard; and
- The justification for the deviation from the code and/or standard.

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

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

PLAN REVIEW

The Consultant shall prepare, seal, and submit to the City four (4) complete sets of detailed construction plans, profiles, cross sections, support data, design calculations, project details, and project specifications, as applicable, consistent with OMC 17.28.040. Additionally, a stormwater report shall be prepared, sealed, and submitted to accompany the construction plans. All such plans and specifications shall be in accordance with the requirements of the most current edition of the WSDOT Standard Specifications for Road, Bridge, and Municipal Construction, the Manual on Uniform Traffic Control Devices, the Department of Health Water System Design Manual, the Department of Ecology Criteria for Sewage Works Design, the Stormwater Management Manual for Eastern Washington, City of Omak Design and Construction Standards, and all design of domestic water shall be compliant with WAC 246-290-200, 220, and 230.

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

In an effort to ensure that outside utilities are made aware of private development activities, it is critical that the Developer/Consultant notify the utility providers early in project planning. It is the Developer's/Consultant's responsibility to certify that they have contacted all impacted outside utility providers associated with the project, and that they will work with those utilities to ensure that the utility's infrastructure will be addressed prior to the start of construction without change to City-approved plans. Certification will be required as outlined in CHAPTER 3 of these Design and Construction Standards. The City does not take responsibility for construction standards and/or processes of outside utility providers.

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

CONSTRUCTION

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

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

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

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

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

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

All construction shall meet the requirements of the most current edition of the WSDOT Standard Specifications for Road, Bridge, and Municipal Construction, the Manual of

Uniform Traffic Control Devices, the Department of Health Water System Design Manual, the Department of Ecology Criteria for Sewage Works Design, the Stormwater Management Manual for Eastern Washington, City of Omak Design and Construction Standards, the approved plans and specifications, and all other applicable regulations. Special Provisions (if any) shall be prepared and submitted to the City for acceptance. All changes, alterations, or revisions to the approved plans and specifications shall be submitted for acceptance by the City.

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

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

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

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

CONSTRUCTION COMPLETION

At the conclusion of construction and when all corrections and repairs have been made, the Owner/Developer shall submit record drawings together with a Transfer of Ownership of Public Improvements form which shall include, but not be limited to, testing records, material certifications and warranties.

CHAPTER 3

GENERAL PLAN REQUIREMENTS

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

GENERAL PLAN FORMAT

1. Plan sheets and profile sheets or combined plan and profile sheets and details sheets shall be on a sheet size of 22″ x 34″ (ANSI D).

2. The Cover sheet shall contain the following:

    a. Project title;
    b. Name, address, and phone number of the Owner/Developer;
    c. Name, address, and phone number and stamp of the Civil Engineer preparing the plans (Consultant);
    d. A minimum clear area of 2.5″H x 3.5″L for final acceptance stamp for City final approval of the plans;
    e. Signature block for Consultant's signature with the statement "I am certifying that I have contacted all of the impacted outside utility providers associated with this project. Furthermore, I will work with those utilities to ensure that their infrastructure will be addressed prior to the start of construction without change to City-approved plans." The Developer is responsible to coordinate with each utility, and their established system requirements and review/approval processes separate from the City plan submission requirements. For reference, the outside utilities, at a minimum, that this certification of acknowledgement covers is:
        i. Omak-Okanogan Irrigation District
        ii. Charter Communications
        iii. CenturyLink
        iv. Pacific Power
    f. Vicinity map showing the project site location;
    g. Survey benchmark used for the project;
    h. An overall site plan with contours;
    i. Sheet Index;
    j. Legend;
    k. Applicable project information; and
    l. Utility locate call #811

3. Each sheet shall contain the following:

    a. Project title and City project number, work order number, or LID number, if appropriate;
    b. Quarter section, Section – Township – Range;
    c. Sheet title;
    d. Page (of page) numbering;
    e. Revision block;
    f. Subdivision or short plat name;
    g. Signed stamp by a Civil Engineer currently licensed by the State of Washington; and
    h. A minimum clear area of 2.5″H x 3.5″L for final acceptance stamp for City final approval of the plans.

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

5. Match lines are required at breaks between sheets.

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

7. Existing features and topography within the project construction limits must be shown on all plan sheets for clarity. This shall include existing road width and surfacing, utility poles, existing underground utilities and surface appurtenances, significant trees, landscaping, and other elements that may affect design/construction. The project construction limits shall include any and all adjacent complete road rights-of-way and/or at least 75 feet outside of parcel boundaries.

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

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

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

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

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

WATER SYSTEM PLAN REQUIREMENTS

See CHAPTER 5 for specific design requirements.

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

    a. Water mains, valves, meters, and service lines;
    b. Fire hydrants and blowoffs;
    c. Air and vacuum release valve assemblies;
    d. Pressure reducing valves;
    e. Fire sprinkler system lines;
    f. Double check valves;
    g. Post indicator valves; and
    h. Thrust blocking/mechanical restraints.

2. Indicate all easements required for the water main extensions and future extensions.

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

4. Show the length, size, and pipe type for all main extensions, fire sprinkler system services, and domestic services, where applicable.

5. Identify all joint connections; provide detail of all non-standard joints.

6. Show by station or dimension the location of all fire hydrants, tees, crosses, and services relative to centerline or property lines.

7. A profile view shall be shown for all City water main extensions, aligned if practical with the plan view. Clearly indicate the horizontal and vertical scales.

8. Show the minimum cover and minimum separation on each sheet.

9. In the profile view show all utilities crossing the proposed water main.

SANITARY SEWER SYSTEM PLAN REQUIREMENTS

See CHAPTER 6 for specific design requirements.

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

    a. Sewer mains, gravity and force mains;
    b. Side sewers, proposed locations;
    c. Manholes, cleanouts; and
    d. Lift Stations

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

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

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

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

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

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

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

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

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

STORMWATER SYSTEM PLAN REQUIREMENTS

See CHAPTER 7 for specific design requirements.

1. Show all existing features if known and all proposed storm drain system features, including, but not limited to, the following:

    a. Storm drain mains and lines;
    b. Catch basins, inlets, and drywells;
    c. Infiltration trenches;
    d. Retention systems;
    e. Biofiltration swales;
    f. Culverts;
    g. Streams;
    h. Ditches;
    i. Natural drainage swales;
    j. Headwalls;
    k. Oil/water separator assemblies; and
    l. Other requirements of the Department of Ecology's Stormwater Management Manual for Eastern Washington;

2. Indicate all easements required for the storm drainage system;

3. The plans shall clearly indicate the location of the storm drainage items stationed from a referenced centerline.

4. Show all horizontal measurements and control in the plan view.

5. Show slope, length, size, and pipe material for all storm drain mains and lines.

6. All catch basins and inlets shall be uniquely numbered and shall be clearly labeled. Stationing and offsets shall be indicated from referenced centerline. Show all proposed storm drain features within the right-of-way in the profile.

7. Indicate all grate, rim, and invert elevations in the profile view.

8. Provide a stormwater report consistent with Chapter 3 of the Stormwater Management Manual for Eastern Washington, with an emphasis on runoff and drainage facilities sizing calculations as described in CHAPTER 7. Additionally, the stormwater report shall include a maintenance plan for all drainage facilities, both public and private.

STREET PLAN REQUIREMENTS

See CHAPTER 8 for specific design requirements.

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

    a. Contours;
    b. Pavement and edge of pavement;
    c. Concrete curb and gutter;
    d. Sidewalks;
    e. Utilities (manholes, utility poles, pedestals, valves, water meters, etc.)
    f. Sidewalk ramps;
    g. Signs and barricades;
    h. Channelization and pavement markings;
    i. Driveways;
    j. Rockery or retaining walls;
    k. Mailboxes;
    l. Monuments;
    m. Streetlights, conduits, junction boxes, and service cabinets;
    n. Compliance with ADA requirements including design elevations at all pedestrian ramps; and
    o. Traffic control plans.

2. Show all right-of-way lines, centerlines, and roadway widths for all rights-of-way.

3. Clearly differentiate between areas of existing pavement, areas of new pavement, and areas to be overlaid.

4. Provide a cross section or typical section of all rights-of-way indicating right-of-way width, centerline, pavement width, superelevation or crown, sidewalk, street lights, curb and gutter, pavement, and base thickness of proposed section.

5. Provide a plan and profile of all new public roadways or extensions of existing roadways. Provide topography within the right-of-way including utilities. Indicate all horizontal and vertical curve data, percent of grade, bearings, centerline stationing every 50 feet, finish grade elevations, and existing ground line. The profile of the existing centerline ground should extend a minimum of 100 feet before the beginning and at the end of the proposed improvements to show the gradient blend.

6. Align the profile view with the plan view, if practical. Clearly indicate the horizontal and the vertical scale.

7. Clearly label all profiles with respective street names and plan sheet reference numbers if drawn on separate sheets.

8. Provide survey monuments along the road centerline at all ends of curves, intersection points, angle points, and center of cul-de-sacs.

9. For developments where road work is required on an existing street, development plans are required to include cross section of the existing street and spot elevations at proposed intersections and appurtenances to the project.

CHAPTER 4

GENERAL REQUIREMENTS FOR ALL PROJECTS

FORWARD

The City of Omak has adopted the latest edition of the Standard Specifications for Road, Bridge, and Municipal Construction (Standard Specifications) prepared by the Washington State Department of Transportation (WSDOT), and the American Public Works Association (APWA) General Special Provisions (GSPs) for Division One General Requirements as the standard specifications governing all design and construction of public works improvements by private developers.

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

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

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

Copies of the Standard Specifications are available for review and inspection at the City of Omak:

City of Omak
Public Works Department
2 North Ash Street
Omak, Washington 98841
(509) 826-1170

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

GENERAL

All work shall be completed in accordance with the approved Plans, the latest edition of the Standard Specifications for Road, Bridge, and Municipal Construction prepared by the Washington State Department of Transportation, amendments to the Standard Specifications, referenced codes and organizations, and these Special Provisions.

The American Public Works Association (APWA) General Special Provisions (GSPs) to Division One of the WSDOT Standard Specifications shall amend Division One of the Standard Specifications for Road, Bridge, and Municipal Construction.

All materials incorporated into a proposed public works improvements project shall meet the requirements of Division 9 of the Standard Specifications or City of Omak Design and Construction Standards as shown in the Standard Details and Special Provisions.

1-01 DEFINITIONS AND TERMS

1-01.3 Definitions

The terms defined in Section 1-01.3 of the Standard Specifications shall be further described by the following:

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

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

Should any conflicts be encountered, the following inter relationships shall govern: The Special Provisions shall supersede the APWA GSPs, which shall supersede the WSDOT Amendments, which shall supersede the Standard Specifications.

Supplement this section with the following:

All references in the Standard Specifications and WSDOT General Special Provisions to the terms "Department of Transportation," "Washington State Transportation Commission," "Commission," "Secretary of Transportation," "Secretary," "Headquarters," and "State Treasurer" shall be revised to read "Contracting Agency."

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

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

All references to "final contract voucher certification" shall be interpreted to mean the Contracting Agency form(s) by which final completion is granted.

1-04 SCOPE OF THE WORK

1-04.4 Changes

Supplement this section with the following:

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

1-04.11 Final Cleanup

Delete this section and replace it with the following:

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

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

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

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

1-04.12 Waste Site (New Section)

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

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

The Contractor shall comply with the State of Washington's regulations regarding disposal of waste material as outlined in WAC 173-304, Subchapter 461.

1-05 CONTROL OF WORK

1-05.1 Authority of the Engineer

Supplement this section with the following:

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

1-05.3(1) Project Record Drawings (New Section)

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

The Contractor shall maintain a neatly marked, full-size set of record drawings showing the final location and layout of all new construction. Drawings shall be kept current weekly, with all field instruction, change orders, and construction adjustment.

Drawings shall be subject to the inspection of the Developer and the City at all times. Prior to acceptance of the work, the Contractor shall deliver to the Developer record drawings in accordance with CHAPTER 1.

Bonding or Phased Improvements

The Developer can bond for remaining improvements per OMC 17.46.010. The Engineer's Estimate used for the bond amount will be itemized including item descriptions and units, consistent with the WSDOT Standard Specifications for Road, Bridge, and Municipal Construction. In cases where the remaining improvements are bonded, the Developer is responsible to provide complete record drawings for constructed improvements, both paper and electronic, prior to receiving bonding acceptance consideration for remaining improvements or phases.

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

Preliminary (Paper) Record Drawing Procedures

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

2. The data, differing from initial plan acceptance, will be incorporated into the preliminary record drawings and the Engineer will adjust the features in the record drawings to match the actual data. All revised and verified elevations for sewer, storm, water, and irrigation will be shown on the record drawings by striking a single line through the design elevations and adding the surveyed "as-built" elevations. Horizontal locations will be indicated by using centerline station and offsets. All revised and verified station and offsets will be shown on the record drawings by striking a single line through the design station and offsets and adding the

surveyed station and offsets. The stationing will be based on the approved construction drawings. The Engineer will update both the plan and profile layouts with the revised and verified data. Revised information shall be "clouded" as appropriate to indicate revisions.

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

Preliminary Record Drawing Submittals

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

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

Final (Mylar and Electronic) Record Drawing Procedures

After receiving approval of the preliminary paper record drawings from the City, the Developer/Developer's Engineer will submit the following:

Final Record Drawing Submittals

- One full size Mylar copy of the corrected record drawings. The final record drawings shall be signed and sealed by a licensed Engineer and licensed surveyor. The clouding of changes will be removed before the Mylar is submitted.
- One PDF and one full size paper copy of the final record drawings.

Upon receipt of the Mylar and electronic data, the City shall have 10 business days to review the information. Should the Mylar and/or electronic data be found to be inaccurate or incomplete, the City shall have an additional 10 business days to review all subsequent submissions. The project will not be considered

Substantially Complete until both the Mylar and electronic as-builts have been deemed acceptable by the City.

1-05.5 Construction Staking (New Section)

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

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

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

1-05.6 Inspections of Work and Materials

Supplement this section with the following:

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

At the beginning of the project, or each applicable construction activity, the Contractor shall meet with the Engineer or his representative and establish a minimum 100 feet of product, in the field, which meets the specifications. This work includes: Survey staking and control, pavement cuts, utility trenches, trench bedding, pipe installation, backfill, patches, curb and gutter alignment, grade and finish, sidewalk finish, paving finish, and any other activities determined by the Engineer to be important to the project. No major amount of work shall proceed

until this is established. This does not waive the Contractor's requirements in the specifications for quality control or materials used.

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

1-05.7 Removal of Defective and Unauthorized Work
(October 1, 2005 APWA GSP)

Supplement this section with the following:

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

If the Contractor fails to comply with a written order to remedy what the Engineer determines to be an emergency or urgent situation, the Engineer may have the defective and unauthorized work corrected immediately, have the rejected work removed and replaced, or have the work that the Contractor refuses or fails to perform completed by others. An emergency or urgent situation is any situation when, in the opinion of the Engineer, a delay in taking remedial action could be potentially unsafe and might cause risk of personal injury, property damage, or economic loss to the public, the Work, or the Contracting Agency.

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

The rights provided to the Contracting Agency by this Section shall not diminish the Contracting Agency's right to pursue any other avenue or additional remedy with respect to the Contractor's failure to perform the work as required.

Add the following new section:

1-05.12(1) 2-Year Guarantee Period
(March 8, 2013 APWA GSP)

The Contractor shall return to the project and repair or replace all defects in workmanship and material discovered within two years after Final Acceptance of the Work. The Contractor shall start work to remedy any such defects within 7 calendar days of receiving Contracting Agency's written notice of a defect, and shall complete such work within the time stated in the Contracting Agency's notice. In case of emergency, where damage may result from delay or where loss of services may result, such corrections may be made by the Contracting Agency's own forces or another contractor, in which case the cost of corrections shall be paid by the Contractor. In the event the Contractor does not accomplish corrections within the time specified, the work will be otherwise accomplished and the cost of same shall be paid by the Contractor.

When corrections of defects are made, the Contractor shall then be responsible for correcting all defects in workmanship and materials in the corrected work for two years after acceptance of the corrections by Contracting Agency.

This guarantee is supplemental to and odes not limit or affect the requirements that the Contractor's work comply with the requirements of the Contract or any other legal rights or remedies of the Contracting Agency.

1-05.13 Superintendents, Labor, and Equipment of Contractor
(August 14, 2013 APWA GSP)

Delete the sixth and seventh paragraphs of this section.

1-05.14 Cooperation with Other Contractors

Supplement this section with the following:

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

1-05.16 Water and Power (New Section)

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

Water Supply: The Developer shall make necessary arrangements and shall bear the costs for water necessary for the performance of the work. Water for use on the projects may be purchased from the City of Omak, and the Contractor shall

arrange for and convey the water from the nearest convenient hydrant or other source at his own expense. The hydrants shall be used in accordance with the City of Omak Water Department regulations.

If City water is used for any work related to a project, a fire hydrant meter and gate valve will need to be obtained from the City of Omak to be used specifically for this project. The City will charge the Contractor for any water used during construction. The Contractor shall not operate the hydrant as a gate valve, nor shall the Contractor be allowed to operate any other City owned valve. The Contractor shall provide the necessary back flow prevention device when connecting to the water service.

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

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

1-05.17 Oral Agreements (New Section)

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

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

1-06 CONTROL OF MATERIAL

1-06.1 Approval of Materials Prior to Use

Revise the first paragraph to read:

Prior to use, the Contractor shall notify the Engineer of all proposed materials. The Contractor shall use the Request for Approval of Material (RAM) form, WSDOT Form 350-071. Materials included in the WSDOT Qualified Products List (QPL) but not in the City's Construction Standards will be taken under consideration by use of the RAM form. The Contractor shall note all deviations from the governing specifications and/or drawings and shall reference the appropriate paragraph of the section or sheet of the drawing. If the reason for the deviation from the specifications is not readily apparent, a written explanation shall be included. The Engineer's review of the Contractor's submittals shall not

relieve the Contractor of the entire responsibility for the correctness of details and dimension. The Contractor shall assume all responsibility and risk for any misfits due to any errors in information submitted by the Contractor. Any fabrications or other work performed in advance of the receipt of approved submittals shall be entirely at the Contractor's risk and expense. The Contractor shall be responsible for the dimensions and the design of adequate connections and details.

1-06.2(1) Samples and Tests for Acceptance

Supplement this section with the following:

The Developer/Contractor shall be responsible for scheduling and paying for all material and compaction testing required by these Design and Construction Standards for new public works improvements. All testing services shall be performed by an independent, certified testing firm and/or laboratory meeting the approval of the Engineer. The Contractor shall submit information relating to the qualifications of the proposed testing firm to the City for review and approval prior to the preconstruction conference. The testing firm shall provide copies of all test results to the City within 24 hours after completion of any test. Test reports shall become the property of the City. Testing frequencies listed below may be modified to assure compliance with the Specifications.

Trench Backfill

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

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

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

Roadway Subgrade

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

Compaction tests shall be taken at a frequency sufficient to document that the required density has been achieved. At a minimum, one compaction test shall be taken for the every 5,000 square feet of subgrade.

The Engineer may request additional tests be performed at the Developer's/Contractor's expense, if test results do not meet the required subgrade densities. Subgrade compaction shall be as specified for Embankment in Section 2-03.3(14)C, Method C.

Embankment

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

Compaction tests shall be taken at a frequency sufficient to document that the required density has been achieved. At a minimum, one compaction test shall be taken for every 5,000 square feet of surface area for each lift of embankment.

The Engineer may request additional tests be performed at the Developer's/Contractor's expense, if test results do not meet the required densities. Embankment compaction shall be as specified for Embankment in Section 2-03.3(14)C, Method C.

Ballast and Crushed Surfacing

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

Compaction tests shall be taken at a frequency sufficient to document that the required density has been achieved. At a minimum, one compaction test shall be taken for every 5,000 square feet of surface area for each lift of ballast or crushed surfacing.

The Engineer may request additional tests be performed at the Developer's/Contractor's expense, if test results do not meet the required densities. Compaction of ballast and crushed surfacing shall be as specified in Section 4-04.3(5).

Asphalt Paving

Asphalt paving may not occur until successful compaction test results are provided to the Engineer for trench backfill, subgrade, embankment, ballast and

crushed surfacing, as applicable. Copies of the reference maximum density test for each class of Hot Mix Asphalt pavement and copies of all test results shall be provided to the Engineer as construction progresses.

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

Compaction of Hot Mix Asphalt shall be as specified in Section 5-04.3(10).

Cement Concrete Curb, Gutter and Sidewalk

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

All testing procedures shall be conducted in accordance with applicable Sections of Division 6-02 of the Standard Specifications and Section 8-04 and 8-14 of these Design and Construction Standards.

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

1-06.2(2) Statistical Evaluations of Materials for Acceptance

Delete Section 1-06.2(2).

1-07 LEGAL RELATION AND RESPONSIBILITIES TO THE PUBLIC

1-07.1 Laws to be Observed

Supplement this section with the following:

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

The Washington State Department of Labor and Industries shall be the sole and paramount administrative agency responsible for the administration of the provisions of the Washington Industrial Safety and Health Act of 1973 (WISHA).

The Contractor shall maintain at the project site office, or other well known place at the project site, all articles necessary for providing first aid to the injured. The Contractor shall establish, publish, and make known to all employees, procedures for ensuring immediate removal to a hospital, or doctor's care, persons, including

employees, who may have been injured on the project site. Employees should not be permitted to work on the project site before the Contractor has established and made known procedures for removal of injured persons to a hospital or a doctor's care.

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

Amend the second sentence of the first paragraph to read:

The Developer/Contractor shall indemnify and save harmless the City of Omak (including any agents, officers, employees, and representatives) against any claims that may arise because the Contractor (or any employee of the Contractor or subcontractor or materialman) violated a legal requirement.

1-07.5(3) State Department of Ecology

Add the following to this section:

11. Comply with the requirements and special general conditions of the Construction Stormwater General Permit issued by the Washington State Department of Ecology or Environment Protection Agency, as applicable.

1-07.13 Contractor's Responsibility for Work

1-07.13(1) General

Delete this section in its entirety and replace it with the following:

All Work and material for the contract, including any change order work, shall be at the sole risk of the Contractor until the entire improvement has been completed as determined by the Engineer, except as provided in this section.

The Contractor shall rebuild, repair, restore, and make good all damages to any portion of the permanent or temporary work occurring before the physical completion date and shall bear all the expense to do so.

If the performance of the Work is delayed as a result of damage by others, an extension of time will be evaluated in accordance with Section 1-08.8.

Nothing contained in this section shall be construed as relieving the Contractor of responsibility for, or damage resulting from, the Contractor's operations or negligence, nor shall the Contractor be relieved from full responsibility for making good any defective Work or materials as provided for under Section 1-05.

1-07.17 Utilities and Similar Facilities

Supplement this section with the following:

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

Locations and dimensions shown on the plans for existing facilities are in accordance with available information obtained without uncovering, measuring, or other verification. It shall be the Contractor's responsibility to investigate and verify the presence and location of all utilities prior to construction.

The Contractor shall call for field location, not less than two nor more than ten business days before the scheduled date for commencement of excavation which may affect underground utility facilities, unless other wise agreed upon by the parties involved. A business day is defined as any day other than Saturday, Sunday, or a legal local, state, or federal holiday. The phone number for the Northwest Utility Notification Center for Omak is 1-800-424-5555 (or 811). If no one-number locator service is available, notice shall be provided individually by the Contractor to those owners known to or suspected of having underground facilities within the area of proposed excavation.

The Contractor is alerted to the existence of Chapter 19.122 RCW, a law relating to underground utilities. Any cost to the Contractor incurred as a result of this law shall be at the Contractor's expense.

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

1-07.18 Public Liability and Property Damage Insurance

Supplement this section with the following:

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

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

1-07.23 Public Convenience and Safety

Supplement this section with the following:

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

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

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

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

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

1-07.23(1) Construction Under Traffic

Delete the second paragraph of this section and replace it with the following:

To disrupt public traffic as little as possible, the Contractor shall permit traffic to pass through the Work with the least possible inconvenience or delay. The Contractor shall maintain existing roads, streets, sidewalks, and paths within the project limits, keeping them open, and in good, clean, safe condition at all times. Accessibility to existing or temporary pedestrian push buttons shall not be impaired. Deficiencies caused by the Contractor's operations shall be repaired at the Contractor's expense. Deficiencies not caused by the Contractor's operations shall be repaired by the Contractor when directed in writing by the Engineer, at the Contracting Agency's expense. The Contractor shall also maintain roads, streets, sidewalks, and paths adjacent to the project limits when affected by the Contractor's operations. The Contractor shall perform the following:

1. Remove or repair any condition resulting from the Work that might impede traffic or create a hazard.

2. Keep existing traffic signal and street lighting systems in operation as the Work proceeds.

3. Maintain the striping on the roadway.

4. Maintain existing permanent signing.

5. Keep drainage systems clean and allow for unobstructed flow of water.

1-07.29 Safety Standards (New Section)

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

> All work shall be performed in accordance with all applicable local, state, and federal health and safety codes, standards, regulations, and/or accepted industry standards. It shall be the responsibility of the Contractor to ensure that his work force and the public are adequately protected against any hazards.
>
> The City of Omak or Developer shall have the authority at all times to issue a stop work order at no penalty if, in their opinion, working conditions present an undue hazard to the public, property, or the work force. Such authority shall not, however, relieve the Contractor of responsibility for the maintenance of safe working conditions or assess any responsibility to the City of Developer for the identification of any or all unsafe conditions.

1-07.30 Notifying Property Owners (New Section)

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

> When construction activities will affect ingress and egress to a property along the project alignment, the Contractor shall be responsible for notifying the occupant/occupants of the property 72 hours prior to the construction activity beginning. If personal contact with the occupant is not possible, The Contractor shall leave written notification. A copy of all notifications shall be provided to the City.

1-08 PROSECUTION AND PROGRESS

1-08.3 Progress Schedule

Supplement this section with the following:

> Prior to commencement of any work, a preconstruction conference shall be held. The Contractor or Developer shall contact the City of Omak and set a date and time for the meeting. If shall be the responsibility of the Contractor/Developer to notify and invite all parties having an interest in the project to the meeting, including the major subcontractors and all applicable private utilities.
>
> At this conference, all points of the approved Plans and Specifications will be open to discussion including scope, order and coordination of work, equipment lead time required, means and methods of construction, inspection and reporting procedures, etc. The Contractor should satisfy himself that all provisions and intentions of the work are fully understood.

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

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

At the discretion of the City, a weekly meeting between representatives of the City and Contractor shall be held at the project site or at City Hall at a pre-determined time. The Contractor shall present an update on project status, project schedule, and any problems that have arisen.

1-10 TEMPORARY TRAFFIC CONTROL

Supplement this section with the following:

The provisions of the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways and amendments thereto published by the U.S. Department of Transportation, Federal Highway Administration, and WSDOT by the reference are made a part of these Contract Documents.

1-10.2(2) Traffic Control Plans

Delete the entire section and replace with the following:

The Contractor shall prepare a signing plan showing the necessary Class A and B construction signing, barricades, and traffic control devices required for the project and submit it to the City, no later than the preconstruction conference date. When the Class B signing for a particular area will be provided as detailed on one or more of the figures included in the MUTCD without modification, the Contractor may reference the applicable MUTCD figure at the appropriate location on the plan. When this procedure is used, variable distances such as minimum length of taper must be specified by the Contractor.

The signing plan prepared by the Contractor shall provide for adequate warning within the limits of the project and on all streets, alleys, and driveways entering the project so that approaching traffic may turn left or right onto existing undisturbed streets before reaching the project. The plan shall be prepared to create a minimum of inconvenience for pedestrian and vehicle traffic.

All modifications to the accepted signing plans shall be reviewed by the City.

1-10.3(3)A Construction Signs

The first sentence of the first paragraph is revised to read:

All signs, barricades, flashers, cones, traffic safety drums, and other traffic control devices required by the approved traffic control plan(s), as well as any other appropriate signs prescribed by the City or County, shall be furnished and maintained by the Contractor.

Open trenches shall be provided with proper barricades and at night they shall be distinctly indicated by adequately spaced lights.

7-08 GENERAL PIPE INSTALLATION REQUIREMENTS

7-08.1 General

Delete this section and replace it with the following:

This work includes installing culverts, storm sewers, sanitary sewers, water main, and conduits. The Contractor shall also follow Sections 7-02, 7-04, 7-09, 7-15, 7-17, or 8-20 as it applies to the specific kind of work. In cases of conflict between sections, the more stringent regulation shall apply.

All construction work shall be inspected by the City of Omak prior to backfilling. At least 48 hours' notice shall be given to the City prior to backfilling.

The Contractor shall notify the Utility Notification Center (One Call Center) at least 48 hours prior to start of excavation so that underground utilities may be marked. Telephone number is 1-800-424-5555.

7-08.3 Construction Requirements

7-08.3(1)A Trenches

Delete the first paragraph under this section and replace with the following:

> The length of trench excavation in advance of pipe laying shall be kept to a maximum of 100 feet. Excavation shall either be closed up at the end of the day or protected per Section 1-07.23(1).

7-08.3(2)B Pipe Laying - General

Supplement this section with the following:

> All pipe shall be unloaded from delivery vehicles with mechanical equipment. Dropping of pipe onto the ground or mats will not be permitted. All pipe and fittings shall be carefully lowered into the trench in such a way as to prevent damage to pipe materials and protective coatings and linings. Under no circumstances shall materials be dropped or dumped into the trench.
>
> All pipe shall be laid in straight lines and at uniform rate for grade between structures. Variation in the invert elevation between adjoining ends of pipe due to non-concentricity of joining surface and pipe interior surfaces shall not exceed 1/64 inch per inch of pipe diameter, or 1/2 inch maximum. The invert line may vary from the true line and grade within the limits stated to develop uniformity, concentricity, and uniform compression of jointing material provided such variance does not result in a reverse sloping invert. The limit of variance at the invert elevation of the pipe shall be plus or minus 3/4 inch for a completed, backfilled pipe. Checking of the invert elevation of the pipe shall be done by remote operated CCTV camera utilizing a 3/4-inch measuring device (lead ball).
>
> Every precaution shall be taken to prevent foreign material from entering the pipe while it is being laid. After placing a length of pipe in the trench, the spigot end shall be centered in the bell and pipe forced home and brought to correct line and grade. The pipe shall be secured in place with pipe bedding tamped under it. Precaution shall be taken to prevent dirt from entering the joint space. At times when pipe laying is not in progress, the open ends of pipe shall be closed by a watertight plug or other means approved by the City. If water is in the trench when work resumes, the seal shall remain in place until the trench is dewatered as specified for groundwater control. Tee branches shall be blocked and sealed with the same joint and pipe material as used for pipes.

Care shall be taken to properly align, clean and lubricate the spigot and socket area of the pipes before joining. The pipe spigot shall be forced into the socket until the reference mark on the spigot is flush with the bell end.

All connections to existing pipe of differing materials shall be made with adapters which are specifically manufactured for this purpose. If the band type adapters are used, then only stainless steel bands will be allowed.

The Contractor shall obtain approved grading and filling permits for all spoils material sites, from the City, County, or both as required. These permits shall be secured and paid for by the Contractor.

Potable domestic water mains shall maintain a 10-foot horizontal and 18-inches vertical separation above non-potable pipelines (sewer, irrigation, and storm) consistent with the Department of Health Water System Design Manual.

When parallel to existing utilities, new domestic water mains shall be installed a minimum of 10-feet horizontally (outside pipe wall to outside pipe wall, typical) and 18-inches vertically above other non-potable pipelines. Where this is not possible at the discretion of the City, a water main may be installed a minimum of 5-feet horizontally and 18-inches vertically above other non-potable pipelines, as long as the water main is placed in a separate trench and on a bench of undisturbed earth.

When crossing existing utilities, new domestic water mains shall be installed a minimum of 18 inches vertically above non-potable pipelines. Where this is not possible, or the water main passes under a non-potable pipeline, the water main shall be installed in a pressure rated pipe casing extending 10 feet each side of the crossing. In addition, where the water main passes under an existing non-potable pipeline, support shall be provided for the non-potable pipeline by backfilling the non-potable pipeline trench with controlled density backfill or other approved methods. A minimum of 6 inches of separation between the crossing pipelines must be maintained in all cases.

When parallel to existing potable water mains, new non-potable pipelines shall be installed a minimum of 10-feet horizontally and 18-inches vertically below existing water mains. Where this is not possible at the discretion of the City, a non-potable pipeline may be installed a minimum of five feet horizontally from an existing water main, as long as the non-potable pipeline is placed in a separate trench. If the vertical separation cannot be met, then the non-potable pipeline shall be constructed of or encased in materials equal to water main standards with a minimum pressure rating of 235 psi (C900 PVC DR 18, ductile iron, etc.).

When crossing existing potable water mains, new non-potable pipelines shall be installed a minimum of 18-inches vertically below existing water mains. Due to difficulties in compacting under existing utilities, controlled density backfill or other City-approved materials shall be placed as backfill at the crossing locations, to a depth of the water main spring line. Where the minimum clearance is not possible, or the non-potable pipeline passes above a water main, a full length of non-potable pipeline shall be centered at the crossing. In addition, the non-potable pipeline shall either be installed in a pressure rated pipe casing extending 10 feet each side of the crossing, or be constructed of one standard length of pipe material equal to waterline standards with a minimum pressure rating of 235 psi (C900 PVC DR 18, ductile iron, etc.). A minimum of 6 inches of separation between the crossing pipelines must be maintained in all cases.

Detectable marking tape shall be installed above the pipe. The tape shall be placed above the top of the pipe as shown on the Standard Details and shall extend its full length. The horizontal location of the tape shall vary no more than one-half foot from the centerline alignment of the pipe. In addition, tracer wire shall be taped to the top of all water mains and water services and tied off in valve and meter boxes.

7-08.3(3) Backfilling

Delete the second paragraph under this section and replace with the following:

Pipe zone backfill shall be gravel backfill for pipe zone bedding conforming to the requirements of Section 9-03.12(3).

Supplement this section with the following:

The City may require the use of controlled density fill (CDF) for trench backfill in certain circumstances. The requirements for CDF are set forth in Section 2-09.3(1)E Backfilling.

The Contractor shall be responsible for scheduling, conducting, and paying for all testing required.

CHAPTER 5

WATER SYSTEM IMPROVEMENTS

GENERAL REQUIREMENTS FOR WATER SYSTEM IMPROVEMENTS

All extensions and additions to the City of Omak's domestic water system shall conform to the Design and Construction Standards of the City of Omak, the Washington State Department of Health (DOH), American Water Works Association, and be designed by a Civil Engineer licensed by the State of Washington.

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

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

All new public domestic water mains shall be a minimum diameter of 8 inches or larger diameters as specified in the City's Water System Plan, or larger as required to meet the fire flow demand of the development. Fire hydrants located within 50 feet of the water main shall be a minimum diameter of 6 inches. Hydrants beyond 50 feet of the water main shall be a minimum diameter of 8 inches, or larger as necessary to achieve required fire flows. Cover over new water mains shall be a minimum depth of 48 inches and a maximum of 72 inches.

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

Larger public water mains may be required depending upon fire flow requirements as determined by the City Fire Chief and City Building Code Department.

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

water mains over 300 feet in length will be allowed to be part of the City of Omak's public water system.

Permanent dead-end water mains may become private water mains owned and maintained by the Developer. All dead-end water mains shall be isolated from the public water main with a reduced pressure double check valve assembly and vault furnished and installed by the Developer. All services must extend from a water main owned and operated by the City.

The cross-connection control policy requires all commercial/industrial properties to have a reduced pressure backflow assembly (RPBA) for premises isolation of the building water supply. Backflow prevention assemblies shall be installed at the water meter and shall be shown on the plans. Yearly test reports shall be provided to the City's water quality inspector. The backflow device shall be on the state approved list, available through the Washington State Department of Health.

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

Maximum valve spacing in public water mains will be 750 linear feet. Valves shall be installed on all but one of the legs of new water main intersections. Valve operating nut extensions approved by the City will be required on valves where the operating nut is deeper than 36 inches below finished grade.

All new water main installations shall be satisfactorily tested per Section 7-09 prior to being placed into service including hydrostatic pressure and bacteriological testing, all at the expense of the Developer.

All new water service lines shall be a minimum of 1 inch, for 5/8" x 3/4" and 1-inch meters, and shall be a minimum of 2 inches for 1-1/2- and 2-inch meters. The Developer/Contractor shall furnish and install all water service components (except water meter) from the water main to the property line including service saddle, corporation stop, service pipe, meter stop, meter check valve, customer piping, meter setter and box, all at the Developer's expense. Only one meter shall be served from each main tap. Each building containing water system facilities shall be served by an independent water service with dedicated meter. Branched water service lines serving multiple buildings and properties shall not be permitted. A single water service line serving multi-unit buildings is permitted with approval from the City.

New water main connections to existing water mains shall be installed with cut-in tees/crosses, unless a hot tap is approved by the City. If the existing water main is less than 6 inch diameter, a cut-in tee shall be required, and a hot tap will not be considered for approval. All hot taps of water mains 12 inches and smaller shall be performed by City public works crews or a contractor approved by the City, using a full circle stainless

steel sleeve with tapping gate valve. The Contractor shall provide traffic control, excavate the connection location, provide adequate sloping/shoring, and install tapping sleeve and valve prior to City crew arrival. All work (including City crew tap) will be at the expense of the Developer.

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

Maximum spacing of fire hydrants shall be 500 feet and shall be located at intersections. Additional hydrants may be required to protect structures as determined by the Fire Chief. Additional fire hydrants required on a site may require a looped, on-site water main. Easements shall be provided for all on-site, public, looped water mains, in accordance with CHAPTER 1. Fire hydrants shall be located at the ends of curb returns or at property lines between lots, and not be located within driveways, driveway ramps, or handicap ramps.

When additional fire hydrants are required or the required fire slow of a new site is greater than the existing fire flow capacity, the public water main shall be extended and looped around the site, reconnecting to the public distribution supply main, at the Developer's expense. Fire hydrants shall be located along the looped public water main as determined by the Fire Chief. The looped water main will remain public and will not require check valves. The looped water main shall be located within an easement centered on the water main, free of any other parallel-aligned private utilities, see CHAPTER 1. All water main components shall be located within the easement including valves, hydrants, thrust blocks, fittings, etc. such that the City can maintain the public utility.

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

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

Water mains installed beneath railroad tracks, State highways, irrigation canals, building structures, etc. shall be encased in a continuous welded steel casing (or as approved by the permitting agencies) and provided with casing spacers in accordance with these Standards. Requirements by other agencies involved in crossings shall supersede these Standards.

Water mains shall maintain a 10-foot horizontal and 18-inch vertical separation above non-potable pipelines (sanitary sewers, reclaimed water, irrigation, stormwater pipes, and other uses) in accordance with the current edition of the Washington State Department of Health Water System Design Manual. Additionally, water and sewer mains shall be separated in accordance with Section C1-9.1 of the Washington State Department of Ecology Criteria for Sewage Works Design. Gas, power, telephone, and other dry utilities shall maintain a minimum 5-foot horizontal clearance from water mains.

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

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

Pressure Reducing Valve (PRV) Stations

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

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

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

The PRV design must comply with the following criteria:

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

- Pressure zones must adhere to the provisions included in the Water System Plan.

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

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

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

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

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

SPECIAL PROVISIONS FOR WATER SYSTEM IMPROVEMENTS

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

7-09 WATER MAINS

7-09.2 Materials

Pipe and fittings approved for use shall be as follows:

Pipe for Main Line:

Ductile Iron Pipe

Supplement this section with the following:

Ductile Iron Pipe: Ductile iron pipe shall conform to the requirements of Section 9-30.1(1) of the Standard Specifications, except that it shall be Standard

Thickness Class 52 for main line and Standard Thickness 53 for flanged spools. Joints shall be rubber gasket, push-on type (TYTON JOINT®). Fittings shall be mechanical joint or flanged, as shown on the Plans, and shall conform to Section 9-30.2(1) of the Standard Specifications and NSF 61. Flange gaskets shall be full face.

Fittings for Main Lines:

Ductile Iron Pipe Fittings: Fittings shall be cement lined, ductile iron, rubber gaskets and glands, and bolts meeting the requirements of AWWA C110, C111, or C153. Fittings shall comply with NSF 61 requirements. Flange gaskets shall be full face.

Hardware: Bolts and studs shall be carbon steel, grade B meeting the requirements of ASTM A307 and nuts meeting the requirements of ASTM A563.

Restrained Joints: Mechanical joint restrainer shall utilize the full circumference of the pipe for restraining and utilize standard MJ gaskets and bolts. The mechanical joint restraint device shall have a working pressure of at least 250 psi with a minimum safety factor of 2:1. The restrainer shall be GRIPRING™ as manufactured by Romac Industries, or approved equal.

Restrained joint pipe in buried applications shall be push-on joint pipe with FIELD LOK 350® gaskets as manufactured by U.S. Pipe, or approved equal.

Joint restraint for ductile iron hydrant pipe shall be MEGALUG®, as manufactured by EBAA Iron, Inc., or ROMAGRIP™, as manufactured by Romac Industries, or approved equal.

Appurtenances:

Detectable Marking Tape: Underground marking tape shall be a minimum of six inches in width, detectable marking tape, with a minimum of 5.0 mil overall thickness. Tape shall be manufactured using a 0.8 mil clear virgin polypropylene film, reverse printed and laminated to a 0.35 mil solid aluminum foil core, and then laminated to a 3.75 mil clear virgin polyethylene film. Tape shall be printed diagonally striped design for maximum visibility, and meet the APWA Color-Code standard for identification of buried utilities. Detectable marking tape shall be Pro-Line Safety Products, or approved equal.

Tracer Wire: Tracer wire shall be 14-gauge heavy insulated (60 mil) copper wire with UF insulation colored for the utility being installed in accordance with 9-15.18. Direct bury splice kits shall be 3M DBY-6.

7-09.3 Construction Requirements

7-09.3(5) Grade and Alignment

Replace the first sentence of the third paragraph with the following:

> The depth of trenching for water mains shall be such as to give a minimum cover of 48 inches and a maximum cover of 72 inches over the top of the pipe, unless otherwise approved by the City.

Supplement this section with the following:

> Except where necessary, in making connections with other lines and unless authorized by the City, pipes shall be laid with bells facing in the direction of laying. Bells shall be placed on the uphill side for lines installed on an appreciable slope.
>
> Water mains shall be laid on a continuous positive grade as shown on the plans to minimize the number of high or low points in the pipeline profile unless approved by the City. The Contractor shall, based on his review of the site and the plans, note areas where additional depth beyond the minimum pipe cover is required to avoid certain utility conflicts and provide adequate bury at ditches, and adjust the pipeline profile accordingly to maintain a continuous grade.

7-09.3(7) Trench Excavation

Delete the third paragraph under this section and replace it with the following:

> The length of trench excavation in advance of pipe laying shall be kept to a maximum of 100 feet. Excavation shall either be closed up at the end of the day or protected per Section 1-07.23(1).

Supplement this section with the following:

> The Contractor shall neatly sawcut all areas of existing pavement within the trench excavation area, then remove and haul all waste materials from the project and dispose of at an approved site provided by the Contractor. Should any undermining occur on adjacent pavement, the Contractor shall neatly cut the pavement 6 inches beyond the undermined area.
>
> All trench excavations shall have adequate safety systems for the trench excavation that meet the requirements of the Washington Industrial Safety and Health Act, Chapter 49.17 RCW. The Contractor shall be fully responsible for providing the necessary back sloping, cribbing, trench boxes, etc., as required to

meet the specified safety requirements for the trench. When City crews will be making the main line taps or other work in the trench, the Contractor shall provide all trench safety measures, prior to City personnel entering the trench.

7-09.3(9) Bedding the Pipe

Supplement this section with the following:

All construction work shall be inspected by the City or its representative before pipe installation and backfilling.

7-09.3(11) Compaction of Backfill

Delete the second paragraph and supplement this section with the following:

Mechanical compaction shall be required for all trenches. The Contractor shall provide the services of a City-approved soils testing laboratory to conduct materials testing to determine the maximum compaction values and in-place density tests of the compacted materials used for backfilling trenches to ensure their placement is in compliance with the Contract Documents. An advance copy of any and all results obtained by the independent testing laboratory onsite shall be given to the City prior to the laboratory representative leaving the site.

The density of the compacted material shall be at least 95 percent of the maximum density as determined by ASTM D1557 (Modified Proctor). Density tests shall be taken at various depths in the trench. All costs associated with testing shall be the responsibility of the Contractor. Placement of courses of aggregate shall not proceed until density requirements have been met.

The first 500 feet of trench backfill operations shall be considered a test section for the Contractor to demo backfilling and compaction techniques. The Contractor shall notify the City at least 3 working days prior to beginning trench excavation and backfill operations. The Contractor shall arrange in-place density tests to be taken on the completed test section in accordance with the above requirements. No further trenching will be allowed until the specified density is achieved in the test section. Passing in-place density tests in the test section will not relieve the Contractor from achieving the specified densities throughout the project.

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

7-09.3(13) Handling of Pipe

Supplement this section with the following:

Pipe shall be stacked in such a manner as to prevent damage to the pipe, to prevent dirt and debris from entering the pipe, and to prevent any movement of the pipe. Stacking layers shall be limited to the recommendations of the DIP Installation Guide.

Pipe shall not be strung across driveways, in ditches, or within 10 feet of the edge of the travel lane.

7-09.3(15)A Ductile Iron Pipe

Revise the first paragraph of this section to read:

Long radius curves, either horizontal or vertical, may be laid with standard pipe lengths by deflecting the joints. If the pipe is shown curved on the Plans and no special fittings are shown, the Contractor can assume that the curves can be made by deflecting the joints with standard lengths of pipe. If shorter lengths are required, the Plans will indicate maximum lengths that can be used. The amount of deflection at each pipe joint when pipe is laid on a horizontal or vertical curve shall not exceed one-half of the manufacturer's printed recommended deflections. If the deflection required to maintain the line shown on the approved construction drawings exceeds one-half of the manufacturer's printed recommended deflection, then the Contractor shall utilize fittings to maintain the approved line. Additional labor and materials will be at the Developer's expense.

7-09.3(16) Cleaning and Assembling Joints

Supplement this section with the following:

All joints in the pipe, fittings, valves, flexible couplings, ductile iron sleeves, etc., shall be fully seated with small clearances allowed for pipe expansion. Where flexible couplings and ductile iron sleeves are called for, the space between pipe ends shall not exceed 1/4 inch, to prevent pipe movement such as would possibly be caused by the resultant thrust of a nearby closed valve.

When the space between pipe ends is excessive, a short section (1 inch to 2 inches) of pipe may be inserted as a spacer ting to limit such pipe movement within the coupling (or sleeve), to obtain the 1/4-inch limitation stipulated herein.

7-09.3(19)A Connections to Existing Mains

Supplement this section with the following:

The location, type, and size of existing facilities have been determined from available records and are approximate. It is anticipated that connections can be made, in general, as shown on the Plans. It shall be the responsibility of the Contractor to determine the exact location and to ascertain the type and size of the existing facilities prior to starting work on each connection and to provide minor alteration as may be required at no additional cost to the City.

If the connection to the existing system involves turning off the water, the Contractor shall provide a minimum notice of 5 working days to the City prior to scheduling the shutoff. The Contractor shall notify (i.e., by distributing door hangers) all water customers affected by a scheduled shutdown. The notices shall be hand delivered not less than 48 hours nor more than 72 hours before the scheduled shutdown. The City will advise the Contractor which property owners are to be notified, and provide door hangers that the Contractor will be required to hang on each residential or commercial service location. No service shall be shut down for more than 4 hours per day without prior approval of the City.

The Contractor shall maintain service in the existing facilities at each connection until such time that the connection is actually made. Final connection will be permitted under the supervision of the City after receiving satisfactory water quality tests, and a continuous safe supply of water is available through the new facilities.

The Contractor shall furnish, install and remove all temporary plugs, caps, blowoffs, temporary blocking, and all other items of a temporary nature required to construct the proposed facilities up to the point of connections for the pressure and purity tests.

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

7-09.3(19)B Maintaining Service

Supplement this section with the following:

No City-owned utility service will be allowed to be shutdown for more than 4 hours per day without prior City approval.

7-09.3(20) Detectable Marking Tape

Delete this section and replace it with the following:

Detectable marking tape and tracer wire shall be installed over all water lines, including service lines. The tape shall be placed approximately 18 inches above the tope of the line and shall extend its full length. Care must be taken to ensure that the marking tape shall be continuous and unbroken during the backfill process. The tracer wire shall be fastened to the top of the pipe with duct tape at 6-foot intervals and shall be routed up into valve and meter boxes with adequate length for connection to location equipment.

7-09.3(21) Concrete Thrust Blocking

Supplement this section with the following:

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

All fittings requiring a thrust block or anchor concrete block shall first be covered with 4 mil visqueen plastic sheets before concrete is placed. At no time shall the concrete be allowed to cover pipe joints, bolt heads, or nuts.

The poured in place concrete thrust and/or anchor blocks shall be in place at least 24 hours before beginning the pressure test to allow the concrete to set. Longer durations may be required to ensure adequate curing has been established to conduct the necessary testing.

7-09.3(22) Blowoff Assemblies

Delete all paragraphs in this section and replace with the following:

Blowoff assemblies shall be constructed at the locations shown on the Plans and in accordance with the City of Omak Standard Details.

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

7-09.3(23) Hydrostatic Pressure Test

Delete the fifth paragraph and replace with the following:

> The test shall be accomplished by pumping the main up to the required test pressure and closing a valve between the pump and the main. The main shall be pumped back up to the required test pressure at 15-minute intervals. The test shall be conducted for a period of two hours. During the test, the section being tested shall be observed to detect any visible leakage.

Delete the ninth paragraph and replace with the following:

> There shall not be an appreciable or abrupt loss in pressure during the 2-hour test period.

Supplement this section with the following:

> Testing pressure against closed butterfly valves shall not exceed 150 psi differential between upstream and downstream pressures.
>
> All water service lines shall be installed prior to testing the main lines.

7-09.3(24) Disinfection of Water Mains

Supplement this section with the following:

> AWWA Standard C651 shall be used as a guideline for disinfecting water mains.

7-09.3(24)A Flushing

Supplement this section with the following:

> The Contractor shall check the downstream capacity of the drainage system proposed to facilitate disposal of flushing water prior to starting the flushing process.
>
> The City will furnish the water necessary to fill and flush the pipelines for testing purposes at a time of day when sufficient quantities of water are available for normal system operation.
>
> The Contractor shall monitor the rate of disposal to prevent flooding of any areas downstream of the Contractor flushing operations.
>
> All service lines shall be flushed prior to connecting the meters.

7-09.3(24)J Preventing Reverse Flow

Supplement this section with the following:

> The configuration of the installation of an approved backflow prevention device shall be submitted to the City for review and approval prior to the installation and used of the device and making the connection.

7-09.3(24)K Retention Period

Revise this section to read as follows

> Treated water shall be retained in the pipe at least 24 hours but not more than 48-hours. After the 24-hour period, the chlorine residual at pipe extremities and at other representative points shall be at least 25 mg/l.

7-09.3(24)N Final Flushing and Testing

Delete the third paragraph and replace with the following:

> Before placing the line into service, a satisfactory report shall be received on samples collected from representative points in the new system. Samples will be collected and bacteriological tests obtained by the City.

Supplement this section with the following:

> All water mains shall be flushed within 48 hours of chlorination. No flushing will be allowed on weekends or on holidays. The City shall be notified by the Contractor a minimum of 48 hours in advance of any flushing or flow testing.

7-09.3(24)O Repetition of Flushing and Testing

Supplement this section with the following:

> The Contractor shall be responsible for payment of all repeat bacteriological testing. Testing shall not be cause for claims for delay by the Contractor and all expenses accruing therefrom shall be borne by the Contractor. Retesting and reinspection required because of defective work and testing performed for the convenience of the Contractor shall be paid by the Contractor.

7-09.3(25) Temporary Blowoff Assemblies (New Section)

Any temporary blowoff assemblies required for the project shall be furnished and installed by the Contractor at no expense to the City. Blowoffs shall be sized to provide a minimum pipe flow (scouring velocity) of 2.5 feet per second. Only brass plugs will be allowed to be utilized to plug pipelines where these temporary facilities were installed.

7-12 VALVES FOR WATER MAINS

7-12.2 Materials

Supplement this section with the following:

Gate Valves: All valves sizes 4 inch through 8 inch diameter shall be resilient seat, wedge disc, gate valves with ductile iron bodies and shall conform to the latest revision of AWWA Resilient Seated Gate Valves Standard C515 or AWWA C509. All valves shall have non-rising stems, open counterclockwise, and shall be provided with a 2-inch square AWWA operating nut. Valves shall have all interior and exterior surfaces epoxy coated meeting NSF standards for potable water. Valves shall be Clow, Mueller, or approved equal.

Butterfly Valves: All valves 10-inch diameter and larger shall be butterfly valves suitable for direct burial and shall be rubber seated and conform to the latest revision of AWWA Standard C504 Class 150B. All valves shall open counterclockwise and shall be provided with a 2-inch square AWWA operating nut. Valves shall have all interior and exterior surfaces epoxy coated meeting NSF standards for potable water.

Valve Boxes: Valve boxes shall be two-piece adjustable, cast iron, 5-inch inside diameter, coal-tar epoxy painted, Olympic Foundry model 940, or approved equal. Cover shall have the word “WATER” cast into it.

Valve Marker Posts: Valve marker posts shall be Carsonite fiberglass composite CRM3-060 with flexible anchor barb, APWA blue.

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

Tapping Sleeve and Valve Assembly: Tapping sleeves shall be full circle stainless steel with ductile iron flanged outlet, conforming to the latest AWWA Standard C223. Tapping gate valves shall meet the requirements for Gate Valves in Section 7-12.2. The following stainless steel tapping sleeves are approved for use: Ford FAST style, Romac Model SST III.

7-12.3 Construction Requirements

Supplement this section with the following

The required field inspection shall include operating the valve over the full range of opening to closed to ensure the valve firmly seals and fully clears the flow path.

The ears of the valve box cover shall be aligned along the pipe centerline.

The Contractor performing taps for tapping sleeve and valve assemblies shall have at least 5 years' experience with a minimum of ten water main taps with diameters equal to or larger than that specified. The Contractor shall notify the City at least 72 hours prior to proposed taps and provide work experience references if requested. Work to complete the tap shall not commence without the City's written approval. If the Contractor does not have sufficient experience, in the sole opinion of the City, a qualified subcontractor as approved by the City shall complete the tap at no cost to the City.

7-14 HYDRANTS

7-14.2 Materials

Supplement this section with the following:

All hydrants shall be dry-barrel, compression type, with a Main Valve Opening (MVO) of 5-1/4 inches and suitable for working pressures up to 250 psi meeting the requirements of AWWA C502. Hydrants shall have a 1-1/2-inch pentagonal operating nut, opening counter-clockwise. Hydrants shall be equipped with two 2-1/2-inch NST hose ports and one 4-1/2-inch NST pumper connection. A permanent anodized short profile style Storz hydrant adapter and anodized Storz blind flange shall be installed on the pumper port. The size of the adapter shall be 4 inches. Fire hydrants shall be Mueller Super Centurion 250 model A-423, or approved equal.

7-14.3(1) Setting Hydrants

Delete the first two paragraphs and replace with the following:

Where shown on the Plans, hydrants shall be installed in accordance with the City's Standard Detail. In addition, a minimum 3-foot radius unobstructed working area shall be provided around all hydrants. The safety flange shall be set 3 inches above finished grade.

All hydrants shall be set on concrete blocks as shown on the City's Standard Detail. The hydrant barrel drain shall waste into a pit of porous gravel materials situated at the base of the hydrant as shown on the City's Standard Detail.

Supplement this section with the following:

The Contractor shall furnish fire hydrants with the correct bury depth (trench depth), in accordance with the specified pipe depth and special conditions of the project. The fire hydrants shall be installed to provide the mounting height above finished grade as shown on the plans. The hydrant shall be installed plumb on the vertical axis.

Hydrants shall be equipped with one Storz pumper nozzle. The pumper port shall be turned to face the street.

After installation, each hydrant shall receive two field coats of paint. The first coat shall be thoroughly dried before applying the second coat. The exact colors shall be per the City's current standards.

7-14.3(2) Hydrant Connections

Replace this section with the following:

Fire hydrant laterals where hydrants are located within 50 feet of the water main shall be a minimum diameter of 6 inches. Fire hydrant laterals where hydrants are located beyond 50 of the water main shall be a minimum diameter of 8 inches, or larger as necessary to achieve required fire flows. Each hydrant lateral shall include an isolation valve set vertically at the water main connection point. The valve size shall equal the hydrant lateral diameter. Where hydrant runs are in excess of 50 feet an additional auxiliary gate valve shall be installed just prior to the hydrant location.

7-14.3(2)A Hydrant Restraints

Replace this section with the following:

The thrust created in the hydrant lateral shall be restrained as shown on the City Standard Detail.

7-14.3(2)C Hydrant Guard Posts

Replace this section with the following:

The City may determine that up to four 6-inch diameter Schedule 40 steel guard posts filled with concrete are required to be installed at a hydrant location. Hydrant guard posts shall be painted with two coats of high visibility yellow paint.

7-15 SERVICE CONNECTIONS

7-15.1 Description

Replace this section with the following:

All new water service lines shall be a minimum of 1-inch, for 5/8" x 3/4" and 1-inch meters, and shall be a minimum of 2 inch for 1-1/2- and 2-inch meters. The Developer/Contractor shall furnish and install all water service components (except water meter) from the water main to the property line including service saddle, corporation stop, service pipe, meter stop, meter check valve, customer piping, meter setter and box, all at the Developer's expense. Only one meter shall be served from each main tap.

7-15.2 Materials

Supplement this section with the following:

All fittings shall be lead free.

Saddles: Service saddles shall be stainless steel, female iron pipe thread outlet, and shall be Style 101S (3/4- and 1-inch services) and Style 202S (2-inch services) as manufactured by Romac Industries, Inc., or approved equal.

Corporation Stops: Corporation stops shall be ball type, made of either bronze or brass alloy, as manufactured by Mueller Co., Ford Meter Box Co., Inc., or approved equal.

Service Pipe: HDPE tubing for water service shall meet the requirements of AWWA C901. Tubing shall be high molecular mass with a 250-psi rating. Tubing shall be SDR 9 copper tubing size. Stainless steel liners shall be used when utilizing compression fittings on HDPE tubing.

Service Fittings: Fittings shall be brass, either compression or stab type. Stab type fittings shall utilize an internal grip ring and O-ring seal.

Meter: Meters will be furnished by the City of Omak.

5/8" x 3/4" Meter Installations: Meter boxes shall be Mueller Thermal-Coil meter box as manufactured by Mueller Company, or approved equal. Meter box shall be 15-inch diameter, 48-inch deep, bottomless, and equipped with a 15-inch flat lid (touch-read register capable) with side mounted key lock and 4-inch thick insulating pad. Traffic rated lids and frames shall be provided for installations subject to traffic, including installations located in roads, alleys, and driveways. Meter box inlet shall be lockwing angle meter stop with a dual check valve outlet.

1-Inch Meter Installations: Meter boxes shall be Mueller Thermal-Coil meter box as manufactured by Mueller Company, or approved equal. Meter box shall be 18-inch diameter, 48-inch deep, bottomless, and equipped with an 18-inch flat lid (touch-read register capable) with side mounted key lock and 4-inch thick insulating pad. Traffic rated lids and frames shall be provided for installations subject to traffic, including installations located in roads, alleys, and driveways. Meter box inlet shall be lockwing angle meter stop with a dual check valve outlet.

7-15.3 Construction Requirements

Delete the first paragraph and first sentence of the second paragraph in this section and supplement this section with the following:

Service connections shall be constructed at the locations shown on the plans and in accordance with the City Standard Details.

The Contractor shall set the water meter box to the finished grade of the area, typically flush with the top back of sidewalk. The Contractor will be required to reset the meter box if it is not at finished grade at the completion of the project. The completed water service shall be tested at system operating pressure by the Contractor and must show no signs of leakage.

The location of water services at the property line or easement line shall be marked. Fiberglass markers may be proposed for approval consideration by the City. The fresh concrete curb above all water service lines shall be stamped on the curb face with a 2 inches high "W."

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

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

All pipe and fittings shall be left exposed until they have been inspected by the City and approval is given for backfilling.

CHAPTER 6

SANITARY SEWER SYSTEM IMPROVEMENTS

GENERAL REQUIREMENTS FOR SANITARY SEWER SYSTEM IMPROVEMENTS

All extensions and additions to the City of Omak's sanitary sewer system shall conform to the Design and Construction Standards of the City of Omak, the Washington State Department of Ecology, and be designed by a Civil Engineer licensed by the State of Washington.

All sanitary sewer improvements shall be design in accordance with the Washington State Department of Ecology's Criteria for Sewage Works Design.

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

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

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

The minimum size for public sewer lines is 8 inches in diameter. The Developer's sewer system must provide capacity for the proposed development but must also provide capacity for future extensions consistent with the General Sewer Plan.

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

end is no further than 150 feet from the last manhole and the sewer main line and grade will permit further extension.

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

All new sewer line installations shall be satisfactorily tested and inspected per Section 7-17 prior to being placed into service including low pressure air and deflection testing, and television inspection, all at the expense of the Developer.

Each building containing sanitary sewer facilities shall be served by an independent side sewer line. Branched side sewers serving multiple buildings and properties shall not be permitted. A single side sewer serving multi-unit buildings is permitted with approval from the City.

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

Side sewers shall be installed in accordance with these Construction Standards and as shown on the City Standard Details. Water service and side sewer service lines shall not be laid in the same trench, except if approved materials (those listed in Section 7-17.2 of the Standard Specifications for Road, Bridge, and Municipal Construction) are used and the following requirements are met:

1. The bottom of the water pipe shall not be less than 12 inches above the top of the sewer or drain pipe.
2. The water pipe shall be place on a solid shelf excavated at one side of the common trench with a clear horizontal distance of not less than 12 inches from the sewer or drain line.

Side sewers shall extend 10-feet beyond the right-of-way and the pipe shall be capped and marked for future connection. Side sewers shall be located a minimum of 10 feet from water services and on the low side of the lot.

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

Sewer force mains may be necessary in specific City locations as determined by the City Engineer. Lift stations and force mains shall be limited to those locations and circumstances where they are consistent with the General Sewer Plan and are the only

viable solution to serve the proposed development and other properties in the vicinity. Lift stations and force mains shall be designed by a Professional Engineer licensed in the State of Washington in accordance with the direction and requirements given by the City, for review and approval by the City. Hydraulic analysis including modelling shall be performed by the Developer's Engineer as determined necessary by the City.

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

SPECIAL PROVISIONS FOR SANITARY SEWER SYSTEM IMPROVEMENTS

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

7-05 MANHOLES, INLETS, CATCH BASINS, AND DRYWELLS

7-05.2 Materials

Supplement this section with the following:

> Manholes: Sanitary sewer manholes shall be constructed of 48-inch or larger diameter reinforced precast concrete manhole sections in conformance with the requirements of this Section. The base and first barrel section shall be precast monolithically with preformed channels. Precast components shall conform to the requirements of ASTM C478.
>
> Standard precast base sections shall conform to the requirements for precast riser sections. The base shall be a minimum of 6 inches thick underneath the pipe invert for 48-inch diameter manholes and a minimum of 8-inches thick underneath the pipe invert for 60- and 72-inch diameter manholes. Openings for pipe shall be circular and tapered toward the inside of the section. Openings shall be of the minimum size possible to accommodate the size of the pipe to be inserted and to effectively seal the joint, unless otherwise shown on the plans. Precast base sections shall have a minimum foot base diameter of 12 inches greater than the outside diameter of the riser sections.
>
> The taper section (cone) for 48-inch diameter manholes shall be eccentric, tapering from 48 inches inside diameter to 24 inches inside diameter and shall be between 24- and 36-inches high. Joining to the riser sections shall be similar to

joining between riser sections, but the top surface shall be flat and at least 5-inches wide, radially, to receive grade rings.

Top slabs, where applicable, shall be a minimum of 8-inches thick.

Grade rings above the taper section, or top slab, where applicable, shall be 24 inches inside diameter and 4-inches high.

Rubber gaskets for use in precast manhole sections shall conform to the applicable requirements of AASHTO M198.

Pipe connections shall be as shown on the Standard Details.

Frames and Covers: Castings for rings shall be gray iron conforming to the requirements of ASTM A48/AASHTO M105, Grade 35B. Covers shall be ductile iron conforming to ASTM A536, Grade 80-55-06. All castings shall be of uniform quality, free from blowholes, porosity, shrinkage, distortion, cracks, or other defects. All mating surfaces shall be machined finished to ensure a non-rocking fit. All covers shall be interchangeable and marked "SEWER." All castings shall have a design wheel load conforming to AASHTO design loading H-20 and shall be made by Olympic Foundry, Inc., D&L Foundry, East Jordan Iron Works, Neenah Foundry, or approved equal.

Steps: Polypropylene manhole steps shall be made of a copolymer polypropylene meeting the requirements of ASTM D4101 and shall completely encapsulate a deformed 1/2-inch steel reinforcing rod conforming to ASTM A615, Grade 60. Polypropylene steps shall be factory installed in complete accordance with the manufacturer's instructions. This shall be accomplished by pre-drilling two parallel 1-inch diameter holes, 3-3/4 inches deep, and 13 inches on center in the cured concrete base and riser sections of the manhole. The insertion ends of the step shall be fully coated with a non-shrink epoxy grout then driven into the holes to the prescribed depth. In no case will the pre-drilled hole be allowed to penetrate through the wall of the manhole. Steps shall be Lane International Corporation Manhole Step, or approved equal.

7-05.3 Construction Requirements

Supplement this section with the following:

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

7-05.3(1) Adjusting Manholes and Catch Basins to Grade

Delete this section and replace with the following:

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

The asphalt concrete pavement shall be cut and removed to a neat circle to a diameter of 36 inches centered around the cover. The frame shall be placed on cement concrete blocks or adjustment rings and brought up to the desired grade. A tack coat of asphalt shall be applied to the edges of the asphalt concrete pavement and the outer edge of the casting. HMA Cl. 3/8-inch asphalt concrete shall then be placed and compacted with hand tampers and a patching roller.

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

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

7-05.3(2) Abandon Existing Manholes

Replace this section with the following:

Where shown on the Plans, existing sanitary sewer manholes shall be abandoned in place after the new sanitary sewer collection system is in place and all side sewers have been transferred to the new sanitary sewer pipeline.

At least the top three feet of each manhole, or the top conical section in precast concrete manholes, shall be removed, including the cast iron ring and cover and concrete pad, if any. Debris resulting from breaking of the upper portion of the manhole may be mixed with backfill subject to the approval of the City. Ring and cover shall become the property of the City and all other surplus material shall be disposed of by the Contractor.

The existing pipe openings shall be plugged watertight with Class 3000 concrete and the manhole bottom slabs shall be crushed to promote drainage. The remaining manhole structure shall be backfilled with granular material

conforming to Section 9-03.9(3) Crushed Surfacing Base Course. Place backfill in uniform layers and compact to 95 percent maximum dry density, as determined by ASTM D 1557.

Excavations resulting from manhole abandonment shall be backfilled with suitable, job-excavated material to top of subgrade. Compact to 95 percent maximum dry density, as determined by ASTM D1557. Restore surface to the condition existing prior to excavation with native material, gravel surfacing, or asphalt concrete pavement, as show for trench repair on the Plans.

7-17 SANITARY SEWERS

7-17.1 Description

Supplement this section with the following:

The term "sewer(s)" and "sanitary sewer(s)" shall mean the same.

7-17.2 Materials

Supplement this section with the following:

Pipe approved for use shall be as follows:

PVC Sanitary Sewer Pipe (Gravity): Solid wall PVC sanitary sewer pipe and fittings with flexible gasketed joints shall conform to the requirements of Section 9-05.12(1) of the Standard Specifications (ASTM D3034, SDR 35 for pipe sizes up to 15 inches in diameter, and SDR 26 for all sewer pipe with any portion of the sewer main greater than 12 feet of cover).

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

Transition Couplings: Couplings shall be longitudinally bolted with gasketed joints and fusion bonded epoxy lined and coated. Approved manufacturers include Romac, Ford, and Smith-Blair.

Detectable Marking Tape: Underground marking tape shall be a minimum of 6 inches in width, detectable marking tape, with a minimum of 5.0 mil overall thickness. Tape shall be manufactured using a 0.8-mil clear virgin polypropylene film, reverse printed and laminated to a 0.35-mil solid aluminum foil core, and then laminated to a 3.75-mil clear virgin polyethylene film. Tape shall be printed diagonally striped design for maximum visibility, and meet the APWA Color-

Code standard for identification of buried utilities. Detectable marking tape shall be Pro-Line Safety Products, or approved equal.

7-17.3(1) Protection of Existing Sewerage Facilities

Supplement this section with the following:

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

7-17.3(2) Cleaning and Testing

7-17.3(2)A General

Delete the first paragraph and replace it with the following:

All sewer pipes and appurtenances shall be cleaned and low-pressure air tested after backfilling. Both infiltration (if applicable) and exfiltration testing of the gravity sewer pipeline will be required. Deflection testing of the pipeline may be required should video inspection review identify any irregularities or concerns at the discretion of the City.

All testing shall be performed by the Contractor and witnessed by the City.

Supplement this section with the following:

The Contractor shall keep the pipeline clean and free of debris. The pipeline shall be cleaned prior to the Contractor requesting inspections.

7-17.3(2)F Low Pressure Air Test for Sanitary Sewers Constructed of Non Air Permeable Materials

Supplement this section with the following:

The pipe installation shall be tested with low pressure air immediately following cleaning and flushing. Air shall be slowly supplied to the plugged pipe installation until the internal air pressure reaches 4.0 psi greater than the average

back pressure of any ground water that may submerge the pipe. At least 2 minutes shall be allowed for temperature stabilization before proceeding further. After the internal air temperature stabilizes, the pressure in the pipe shall be bled down to 3-1/2 psi above the average back pressure of groundwater above the centerline of the pipe. The Contractor shall be responsible for coordinating and providing for rerouting existing sewage flow around the test area as necessary.

7-17.3(2)H Television Inspection

Delete the first paragraph and replace it with the following:

The costs incurred in making the initial inspection shall be borne by the Contractor.

Supplement this section with the following:

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

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

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

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

See Section 7-08.3(2) B for invert elevation confirmation and measuring device specifications.

7-18 SIDE SEWERS

7-18.3 Construction Requirements

7-18.3(1) General

Supplement this section with the following:

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

Side sewers shall be constructed with a minimum of 30 inches of cover. The City may way this provision under special circumstances; however, under no circumstances shall the side sewer be laid with less than 18 inches of cover.

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

7-20 SEWER FORCE MAINS (NEW SECTION)

The following new section is added to the Standard Specifications:

7-20.1 Description

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

7-20.2 Materials

Materials shall meet the requirements of section 7-09 Water Mains of the Standard Specifications except as follows:

Pipe for Main Line:

Polyvinyl Chloride (PVC) Pressure Pipe (4 inches and over): PVC pipe shall conform to the requirements of Section 9-30.1(5)A of the Standard Specifications. Joints outside of casing shall be rubber gasket, push-on type (TYTON JOINT®) with thickened bell. Joints within casing shall be restrained using mechanical restraints, FIELD LOK 350® gaskets as manufactured by U.S. Pipe, or approved equal.

Ductile Iron Pipe: Ductile iron pipe shall conform to the requirements of Section 9-05.13 of the Standard Specifications, except that it shall be Standard Thickness Class 52. Joints shall be rubber gasket, push-on type (TYTON

JOINT®). Fittings shall be mechanical joint or flanged, as shown on the Plans, and shall conform to Section 9-30.2(1) of the Standard Specifications. Flange gaskets shall be full face. Pipe shall be polyethylene or epoxy lined to a nominal thickness of 40 mils. Minimum lining thickness shall be 30 mils. Products meeting the standard are U.S. Pipe's PROTECTO 401™, or approved equal.

High Density Polyethylene Pipe (HDPE): HDPE pipe shall be butt welded PE 4710 conforming to ASTM D3350 having a cell classification of PE 445574C or better. HDPE pipe shall be ductile iron pipe size (DIPS). HDPE pipe thickness shall be minimum DR 11.

7-20.3 Construction Requirements

7-20.3(2) Laying Pipe

Sewer force main installation shall conform to the requirements of Section 7-08 General Pipe Installation Requirements of the Standard Specifications or as modified by these Special Provisions.

7-20.3(23) Hydrostatic Pressure Test

Testing shall be consistent with the water main hydrostatic pressure test standards and special provisions of Section 7-09.3(23) with the exception that the test pressure shall be 100 psi.

CHAPTER 7

STORMWATER IMPROVEMENTS

GENERAL REQUIREMENTS FOR STORMWATER IMPROVEMENTS

All extensions and additions to the City of Omak's storm sewer system shall conform to the Design and Construction Standards of the City of Omak, the Washington State Department of Ecology, and be designed by a Civil Engineer licensed by the State of Washington. Private systems, where required by applicable provisions of the Omak Municipal Code, shall also comply with these requirements.

All stormwater and drainage improvements shall be planned, design, permitted, constructed and maintained in accordance with the requirements of the latest edition of the Washington State Department of Ecology Stormwater Management Manual for Eastern Washington (SWMMEW).

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

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

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

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

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

All illicit discharges as defined by the Washington State Department of Ecology are not permitted to enter any storm sewer system.

Infiltration ponds, swales, or other surface infiltration facilities will not be acceptable within City right-of-way without City approval.

All subsurface infiltration facilities used for the treatment and disposal of stormwater shall meet the requirements of and be registered with the Ecology Underground Injection Control (UIC) program. Developer/Applicant must register UIC wells with Ecology in the applicant's name, 60 days prior to construction as required by Ecology. The Developer/Applicant shall only submit the latest approved City of Omak standards to Ecology. Attempts to gain approval for non-compliant infrastructure will result in the Developer/Applicant resubmitting the approved facilities at their expense and may result in delays. Following construction completion and at the time of public improvements certification, the Developer/Applicant shall process an ownership transfer request with Ecology, to transition UIC ownership to the City of Omak.

Inlet spacing shall be designed in accordance with the WSDOT Hydraulics Manual, Chapter 5. Generally, inlet spacing shall not exceed 300 feet. There shall be a manhole or Type II catch basin installed at the intersection of two collector storm sewers. A collector storm sewer is a sewer servicing more than one catch basin. Stormwater flow shall be kept in the gutter and shall flow across intersections. Catch basin "bubble up" installations will not be permitted.

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

All public stormwater pipes or culverts shall be a minimum of 12 inches in diameter. Pipes shall have a minimum slope of 0.5 percent and be designed with a minimum velocity of 3 feet per second. Pipes shall be sized so that they do not surcharge under design storm conditions.

Manholes shall be installed at all vertical and horizontal angle points in the stormwater pipes, and at intervals of no greater than 400 feet. Curved or deflected pipelines will not be permitted. All stormwater manholes with solid lids shall have a channeled base and all catch basin manholes with grated lids shall have a sump.

The applicant's project may require coverage under Ecology's Construction Stormwater General NPDES Permit or similar permit issued by the Environmental Protection Agency. The Developer shall be responsible for compliance with the stormwater permit conditions and shall provide the City with a copy of the approved Notice of Intent (NOI), Stormwater Pollution Prevention Plan (SWPPP), or Erosivity Waiver Certification, as applicable.

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

SPECIAL PROVISIONS FOR STORMWATER IMPROVEMENTS

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

7-02 CULVERTS

7-02.2 Materials

Supplement this section with the following:

Culvert pipe approved for use shall be as follows:

Aluminum Culvert Pipe: Aluminum Culvert Pipe shall meet the requirements of Section 9-05.5 of the Standard Specifications.

Steel Culvert Pipe: Steel Culvert Pipe shall meet the requirements of Section 9-05.4 of the Standard Specifications, treatment two galvanized steel or plain aluminized steel.

7-04 STORM SEWERS

7-04.1 Description

Supplement this section with the following:

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

7-04.2 Materials

Supplement this section with the following:

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

12 INCH TO 24 INCH

Solid Wall PVC Storm Sewer Pipe: Solid Wall PVC Storm Sewer Pipe shall meet the requirements of Section 9-05.12(1) of the Standard Specifications. Pipe and fittings shall be furnished with bells and spigots, which are integral with the pipe wall and with a rubber gasket securely locked in place in the bell.

UNDERDRAIN INFILTRATION SYSTEM MATERIALS

Pipe: Perforated Corrugated Polyethylene Underdrain pipe, couplings, and fittings shall meet the requirements of Section 9-05.2(8) of the Standard Specifications.

Drain Rock: Drain rock for use as backfill for the perforated underdrain pipe in the infiltration trench system shall be clean coarse aggregate conforming to the requirements of Gravel Backfill for Dry Wells, as specified in Section 9-03.12(5) of the Standard Specifications.

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

7-04.3(1) Cleaning and Testing

7-04.3(1)A General

Supplement this section with the following:

All storm piping shall have television inspection. The costs incurred in making the initial inspection shall be borne by the Contractor.

The Contractor shall bear all costs incurred in correcting any deficiencies found during television inspection including the cost of any additional television inspection that may be required by the Engineer to verify the correction of said deficiency.

The Contractor shall be responsible for all costs incurred in any television inspection performed solely for the benefit of the Contractor.

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

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

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

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

See Section 7-08.3(2) B for invert elevation confirmation and measuring device specifications.

7-05 MANHOLES, INLETS, CATCH BASINS, AND DRYWELLS

7-05.2 Materials

Supplement this section with the following:

Drain Rock: Backfill for drywells shall be Gravel Backfill for Dry Wells as specified in Section 9-03.12(5) of the Standard Specifications.

Precast Concrete Catch Basin: Catch basins shall be WSDOT Type 1, 1L, or 2 and constructed as shown on WSDOT Standard Plans.

Catch Basin Metal Castings: All frames and grates shall be capable of withstanding, with a reasonable margin of safety, a concentrated load of 20,000 pounds and shall be as specified in Section 9-05.15(2) of the Standard Specifications and WSDOT Standard Plan B-30.30-03 or B-30.40-03, or

B-30.80-01 (circular for manholes). The grate shall be ductile iron and "bicycle safe." The contact surfaces of the frame and grate shall be machine finished to a common plane and shall be so cast as to prevent rocking.

Frames and Covers: Castings for rings shall be gray iron conforming to the requirements of ASTM A48/AASHTO M105, Grade 35B. Covers shall be ductile iron conforming to ASTM A536, Grade 80-55-06. All castings shall be of uniform quality, free from blowholes, porosity, shrinkage, distortion, cracks, or other defects. All mating surfaces shall be machined finished to ensure a non-rocking fit. All covers shall be interchangeable and marked "STORM." All castings shall have a design wheel load conforming to AASHTO design loading H-20 and shall be made by Olympic Foundry, Inc., D&L Foundry, East Jordan Iron Works, Neenah Foundry, or approved equal.

7-05.3(1) Adjusting Manholes and Catch Basins to Grade

Delete and replace with the following:

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

The asphalt concrete pavement shall be cut and removed to a neat circle, the diameter of which shall be equal to the outside diameter of frame plus 2 feet. The frame shall be placed on cement concrete blocks or adjustment rings and wedged up to the desired grade. The base materials shall be removed and Class 3000 cement concrete shall be placed within the entire volume of the excavation up to, but not to exceed, 1-1/2 inches below the finished pavement surface.

On the following day, a tack coat of asphalt shall be applied to the concrete, the edges of the asphalt concrete pavement, and the outer edge of the casting. HMA Cl. 3/8" asphalt concrete shall then be placed and compacted with hand tampers and a patching roller.

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

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

7-05.3(2) Abandon Existing Manholes

Delete and replace with the following:

> Where shown on the Plans, existing sanitary sewer manholes shall be abandoned in place after the new sanitary sewer collection system is in place and all side sewers have been transferred to the new sanitary sewer pipeline. Remove the structure to a depth of at least 4 feet below the finish ground surface, plug all connections with concrete, and fill the remaining structure with crushed surfacing top course. Rings and covers shall be salvaged to the City, at the City's discretion, and all surplus excavated materials shall be hauled to waste.

CHAPTER 8

STREET IMPROVEMENTS

GENERAL REQUIREMENTS FOR STREET IMPROVEMENTS

All new street design and construction shall conform to the Design and Construction Standards of the City of Omak, the Manual on Uniform Traffic Control Devices, the Omak Municipal Code, and the latest edition of the Standard Specifications.

The maximum cul-de-sac length shall be 600 feet as measured along the street centerline from the nearest street intersection to the center of the cul-de-sac.

Cement concrete curb and gutter shall be installed along all new streets. Rolled curb may be permitted along certain residential streets as determined by the City. If rolled curb is allowed, barrier curb must be installed around all new radii. New concrete sidewalks behind rolled curb shall be a minimum of 6 inches thick.

Sidewalks shall be constructed on both sides of all new streets. If the Developer believes there are special circumstances whereby the construction of sidewalk on one side should be deferred, he may make written request to the City.

A street light shall be installed at each street intersection, one at mid block, no more than 300 feet apart, and at ends of cul-de-sacs. Street lights shall meet the design and placement these Standards and the City.

New street lighting shall be designed to provide required levels of lighting based upon street classification and location as determined by the City. All electrical panels will be designed to City Standards.

TRAFFIC STUDIES

In order to provide sufficient information to assess a development's impact on the transportation system and level of service, the City may require a traffic study to be completed by the Developer at the Developer's expense. This decision will be based upon the size of the proposed development, existing roadway condition, existing and expected traffic volumes, accident history, expressed community concern, and other factors relating to transportation.

Traffic studies shall be conducted under the direction of a traffic engineer or civil engineer licensed in the State of Washington and possessing special training and experience in traffic engineering. The level of detail and scope of the traffic study may vary with the size, complexity, and location of the proposed development. A traffic study

shall, at a minimum, be a thorough review of the immediate and long-range effects of the proposed development on the City's transportation system. Guidelines for the traffic study shall be reviewed by the City on a project basis.

At a minimum, a traffic study shall include the following:

- Description of development (location, current and proposed land use and zoning, lot size and description, any proposed project phasing) AM, PM, and daily trip generation. If the highest number of trips generated by the development in a 1-hour period occurs outside the typical AM or PM periods, then the peak hour of the generator trips shall be presented, in addition to the typical peak period trips.
- Other factors affecting trip generation (pass-by trips, diverted trips, internal trips, etc.
- Site plan review (access locations; bike/pedestrian/vehicle circulation; parking evaluation)
- Inventory of existing transportation network (bike, pedestrian, vehicular, transit)
- Trip distribution
- Surrounding area land uses and zoning
- Existing conditions (traffic counts collected within previous 12 months)
- No build conditions – future year of opening (using background growth and project trips)
- Build conditions – future year of opening
- Mitigation measures, as required (off-site, such as proportionate share of infrastructure improvements; on-site, such as traffic management plan or parking management plan)
- Safety analysis (crash data for all study intersections from last 5 years; discussion on crash trends; recommendations for safety improvements

SPECIAL PROVISIONS FOR STREET IMPROVEMENTS

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

2-01 CLEARING, GRUBBING, AND ROADSIDE CLEANUP

2-01.1 Description

Supplement this section with the following:

In no case shall the Contractor be required to clear and grub beyond the right-of-way line, except as specifically directed by the City or noted on the Plans to

remove trees, stumps, shrubs, or other items which, by proximity or due to root growth, would constitute a hazard to the public or endanger the facility. All work beyond the right-of-way line shall be coordinated with affected property owner(s) per Section 1-07.24 Rights of Way.

The Contractor shall temporarily remove and later replace to its original condition or relocate nearby as directed, all mail boxes, small trees, shrubs, street signs and posts, culverts, irrigation facilities, concrete or rock walls, or other similar obstructions which lie in or near the line of work and are not intended for removal. Should any damage be incurred, the cost of replacement or repair shall be borne by the Contractor.

2-01.3(5) Fencing (New Section)

Add the following new section:

The Contractor shall carefully remove existing fencing located within or near the work, as required for construction. All fencing materials to be removed and reset shall be temporarily place on the adjacent properties or stored as directed by the City. Fencing shall be reset along the property lines or as directed by the City. The removal and resetting of all fencing shall be done at the Contractor's expense.

2-02 REMOVAL OF STRUCTURES AND OBSTRUCTIONS

2-02.3 Construction Requirements

2-02.3(2) Removal of Bridges, Box Culverts, and Other Drainage Structures

Supplement this section with the following:

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

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

2-02.3(3) Removal of Pavement, Sidewalks, Curbs, and Gutters

Supplement this section with the following:

Where shown on the Plans or as directed by the City, the Contractor shall be required to remove existing pavement, sidewalks, curbs, gutters, etc., which are outside the right-of-way line and are required to be removed for construction of the proposed improvements.

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

2-03 ROADWAY EXCAVATION AND EMBANKMENT

2-03.1 Description

Supplement this section with the following:

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

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

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

2-03.3 Construction Requirements

2-03.3(3) Excavation Below Subgrade

Supplement this section with the following:

At the direction of the Consultant, areas within the street subgrade which exhibit instability due to high moisture content shall be:

1. Aerated and allowed to dry,
2. Over-excavated and backfilled with ballast, or crushed surfacing base course. The Contractor may be instructed to install construction geotextile for soil stabilization in the excavation,
3. Or a combination of any of the above.

2-03.3(14)D Compaction and Moisture Control Tests

Delete this section and replace it with the following:

Compaction shall be 95 percent of maximum density as determined by ASTM D 1557 (Modified Proctor). The Contractor shall notify the City when ready for in-place subgrade density tests. Placement of courses of aggregate shall not proceed until density requirements are met. The Developer/Contractor shall be responsible for scheduling and paying for all testing. All costs associated with failed tests/testing shall be the responsibility of the Contractor.

If the product fails any test, the City will require additional testing to determine the extent of the failure and more frequent tests may be required on additional work. Testing shall be in accordance with Section 1-06.2(1).

2-07 WATERING

2-07.1 Description

Supplement this section with the following:

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

When directed by the City, the Contractor shall provide water for dust control within 2 hours of such order and have equipment and manpower available at all times including weekends and holidays to respond to orders for dust control measures. Should the Contractor fail to comply within 2 hours, the City may utilize its own staff at the prevailing staff wage rate plus equipment rental charges, and/or contracted watering services. The Contractor will be responsible for reimbursement of all dust control costs including labor, equipment, water, and contractor costs. Subsequent building permits will not be processed until reimbursement is paid in total.

2-11 TRIMMING AND CLEANUP

2-11.3 Construction Requirements

Add the following to the first paragraph:

7. Restore all grass area affected by construction with sod and in accordance with these Standards.
8. Restore all landscaping rock, mulch, and bark with the same materials as existed prior to construction.
9. Restore all shoulders, from edge of pavement to right of way line, with the same material as existed prior to construction, except that earth shoulders shall be restored with 2 inches of compacted crushed surfacing top course.
10. Restore the site and offsite areas damaged by the work to their original conditions or better and to the satisfaction of the City and the adjoining homeowners.

4-04 BALLAST AND CRUSHED SURFACING

4-04.3 Construction Requirements

4-04.3(5) Shaping and Compaction

Supplement this section with the following:

The Contractor shall notify the City when he is ready for in-place ballast, base course, or top course density tests. Placement of successive courses of aggregate or asphalt concrete shall not proceed until density requirements are met. The Developer/Contractor shall be responsible for scheduling and paying for all testing. All costs associated with failed tests/testing shall be the responsibility of the Contractor.

5-04 HOT MIX ASPHALT

Delete this entire section with the exception of 5-04.2(1), and replace it with the following:

5-04.1 Description

This Work shall consist of providing and placing one or more layers of plant-mixed hot mix asphalt (HMA) on a prepared foundation or base in accordance with these Specifications and the lines, grades, thicknesses, and typical cross-sections shown in the Plans. The manufacture of HMA may include warm mix asphalt (WMA) processes in accordance with these Specifications. WMA processes include organic additives, chemical additives, and foaming.

HMA shall be composed of asphalt binder and mineral materials as may be required, mixed in the proportions specified to provide a homogeneous, stable, and workable mixture.

5-04.2 Materials

Materials shall meet the requirements of the following sections:

Asphalt Binder	9-02.1(4)
Cationic Emulsified Asphalt	9-02.1(6)
Anti-Stripping Additive	9-02.4
HMA Additive	9-02.5
Aggregates	9-03.8
Recycled Asphalt Pavement	9-03.8(3)B
Mineral Filler	9-03.8(5)
Recycled Material	9-03.21
Portland Cement	9-01
Sand	9-03.1(2)
(As noted in 5-04.3(5)C for crack sealing)	
Joint Sealant	9-04.2
Foam Backer Rod	9-04.2(3)A

The Contractor may choose to utilize recycled asphalt pavement (RAP) in the production of HMA. The RAP may be from pavements removed under the Contract, if any, or pavement material from an existing stockpile.

The Contractor may use up to 20 percent RAP by total weight of HMA with no additional sampling or testing of the RAP. The RAP shall be sampled and tested at a frequency of one sample for every 1,000 tons produced and not less than ten samples per project. The asphalt content and gradation test data shall be reported

to the Contracting Agency when submitting the mix design for approval on the QPL. The Contractor shall include the RAP as part of the mix design as defined in these Specifications.

The grade of asphalt binder shall be PB 64S-28. Blending of asphalt binder from different sources is not permitted.

The Contractor may only use warm mix asphalt (WMA) processes in the production of HMA with 20 percent or less RAP by total weight of HMA. The Contractor shall submit to the Engineer for approval the process that is proposed and how it will be used in the manufacture of HMA.

Production of aggregates shall comply with the requirements of Section 3-01.

Preparation of stockpile site, the stockpiling of aggregates, and the removal of aggregates from stockpiles shall comply with the requirements of Section 3-02.

5-04.2(1) How to Get an HMA Mix Design on the QPL

If the Contractor wishes to submit a mix design for inclusion in the Qualified Products List (QPL), please follow the WSDOT process outlined in Standard Specifications 5-04.2(1).

5-04.2(2) Mix Design – Obtaining Project Approval

No paving shall begin prior to the approval of the mix design by the Engineer.

Nonstatistical evaluation will be used for all HMA not designated as Commercial HMA in the contract documents.

Commercial evaluation will be used for Commercial HMA and for other classes of HMA in the following applications: sidewalks, road approaches, ditches, slopes, paths, trails, gores, prelevel, and pavement repair. Other nonstructural applications of HMA accepted by commercial evaluation shall be as approved by the Project Engineer. Sampling and testing of HMA accepted by commercial evaluation will be at the option of the Project Engineer. The Proposal quantity of HMA that is accepted by commercial evaluation will be excluded from the quantities used in the determination of nonstatistical evaluation.

Nonstatistical Mix Design. Fifteen days prior to the first day of paving the contractor shall provide one of the following mix design verification certifications for Contracting Agency review:

- The WSDOT Mix Design Evaluation Report from the current WSDOT QPL, or one of the mix design verification certifications listed below.

- The proposed HMA mix design on WSDOT Form 350-042 with the seal and certification (stamp & signature) of a valid licensed Washington State Professional Engineer.

- The Mix Design Report for the proposed HMA mix design developed by a qualified City or County laboratory that is within one year of the approval date.

The mix design shall be performed by a lab accredited by a national authority such as Laboratory Accreditation Bureau, L-A-B for Construction Materials Testing, The Construction Materials Engineering Council (CMEC's) ISO 17025 or AASHTO Accreditation Program (AAP) and shall supply evidence of participation in the AASHTO resource proficiency sample program.

Mix designs for HMA accepted by Nonstatistical evaluation shall:

- Have the aggregate structure and asphalt binder content determined in accordance with WSDOT Standard Operating Procedure 732 and meet the requirements of Sections 9-03.8(2), except that Hamburg testing for ruts and stripping are at the discretion of the Engineer, and 9-03.8(6).

- Have anti-strip requirements, if any, for the proposed mix design determined in accordance with AASHTO T 283 or T 324, or based on historic anti-strip and aggregate source compatibility from previous WSDOT lab testing.

At the discretion of the Engineer, agencies may accept verified mix designs older than 12 months from the original verification date with a certification from the Contractor that the materials and sources are the same as those shown on the original mix design.

Commercial Evaluation Approval of a mix design for "Commercial Evaluation" will be based on a review of the Contractor's submittal of WSDOT Form 350-042 (For commercial mixes, AASHTO T 324 evaluation is not required) or a Mix Design from the current WSDOT QPL or from one of the processes allowed by this section. Testing of the HMA by the Contracting Agency for mix design approval is not required.

For Commercial HMA, the Contractor shall select a class of HMA and design level of Equivalent Single Axle Loads (ESAL's) appropriate for he required use.

5-04.2(2)A Vacant

5-04.2(2)B Using Warm Mix Asphalt Processes

The Contractor may elect to use additives that reduce the optimum mixing temperature or serve as a compaction aid for producing HMA. Additives include organic additives, chemical additives and foaming processes. The use of Additives is subject to the following:

- Do not use additives that reduce the mixing temperature more than allowed in Section 5-04.3(6) in the production of mixtures.

- Before using additives, obtain the Engineer's approval using WSDOT Form 350-076 to describe the proposed additive and process.

5-04.3 CONSTRUCTION REQUIREMENTS

5-04.3(1) Weather Limitations

HMA shall not be placed on any traveled way beginning October 1st through March 31st of the following year without written approval from the Engineer.

Asphalt for prime coat shall not be applied when the ground temperature is lower than 50^0F without written approval of the Engineer.

Do not place HMA on any wet surface, or when the average surface temperatures are less than those specified below, or when weather conditions otherwise prevent the proper handling or finishing of the HMA.

Minimum Surface Temperature for Paving

Compacted Thickness (Feet)	Wearing Course	Other Courses
Less than 0.10	55 degrees F	45 degrees F
0.10 to .20	45 degrees F	35 degrees F
More than 0.20	35 degrees F	35 degrees F

5-04.3(2) Paving Under Traffic

When the Roadway being paved is open to traffic, the requirements of this Section shall apply.

The Contractor shall keep intersections open to traffic at all times except when paving the intersection or paving across the intersection. During such time, and provided that there has been an advance warning to the public, the intersection may be closed for the minimum time required to place and compact the mixture. In hot weather, the Engineer may require the application of water to the pavement to accelerate the finish rolling of the pavement and to shorten the time required before reopening to traffic.

Before closing an intersection, advance warning signs shall be placed and signs shall also be placed marking the detour or alternate route.

During paving operations, temporary pavement markings shall be maintained throughout the project. Temporary pavement markings shall be installed on the Roadway prior to opening to traffic. Temporary pavement markings shall be in accordance with Section 8-23.

5-04.3(3) Equipment

5-04.3(3)A Mixing Plant

Plants used for the preparation of HMA shall conform to the following requirements:

1. **Equipment for Preparation of Asphalt Binder** – Tanks for the storage of asphalt binder shall be equipped to heat and hold the material at the required temperatures. The heating shall be accomplished by steam coils, electricity, or other approved means so that no flame shall be in contact with the storage tank. The circulating system for the asphalt binder shall be designed to ensure proper and continuous circulation during the operating period. A valve for the purpose of sampling the asphalt binder shall be placed in either the storage tank or in the supply line to the mixer.

2. **Thermometric Equipment** – An armored thermometer, capable of detecting temperature ranges expected in the HMA mix, shall be fixed in the asphalt binder feed line at a location near the charging valve at the mixer unit. The thermometer location shall be convenient and safe for access by Inspectors. The plant shall also be equipped with an approved dial-scale thermometer, a mercury actuated thermometer, an electric pyrometer, or another approved thermometric instrument placed at the discharge chute of the drier

to automatically register or indicate the temperature of the heated aggregates. This device shall be in full view of the plant operator.

3. **Heating of Asphalt Binder** – The temperature of the asphalt binder shall not exceed the maximum recommended by the asphalt binder manufacturer nor shall it be below the minimum temperature required to maintain the asphalt binder in a homogeneous state. The asphalt binder shall be heated in a manner that will avoid local variations in heating. The heating method shall provide a continuous supply of asphalt binder to the mixer at a uniform average temperature with no individual variations exceeding 25 degrees F. Also, when a WMA additive is included in the asphalt binder, the temperature of the asphalt binder shall not exceed the maximum recommended by the manufacturer of the WMA additive.

4. **Sampling and Testing of Mineral Materials** – The HMA plant shall be equipped with a mechanical sampler for the sampling of the mineral materials. The mechanical sampler shall meet the requirements of Section 1-05.6 for the crushing and screening operation. The Contractor shall provide for the setup and operation of the field testing facilities of the Contracting Agency as provided for in Section 3-01.2(2).

5. **Sampling HMA** – The HMA plant shall provide for sampling HMA by one of the following methods:

    a. A mechanical sampling device attached to the HMA plant.

    b. Platforms or devices to enable sampling from the hauling vehicle without entering the hauling vehicle.

5-04.3(3)B Hauling Equipment

Trucks used for hauling HMA shall have tight, clean, smooth metal beds and shall have a cover of canvas or other suitable material of sufficient size to protect the mixture from adverse weather. Whenever the weather conditions during the work shift include, or are forecast to include, precipitation or an air temperature less than 45 degrees F or when time from loading to unloading exceeds 30 minutes, the cover shall be securely attached to protect the HMA.

The Contractor shall provide an environmentally benign means to prevent the HMA mixture from adhering to the hauling equipment. Excess release agent shall be drained prior to filling hauling equipment with HMA. Petroleum derivatives or

other coating material that contaminate or alter the characteristics of the HMA shall not be used. For live bed trucks, the conveyer shall be in operation during the process of applying the release agent.

Sufficient numbers of trucks shall be provided by the Contractor to assure a continuous paving operation at proper HMA mix temperatures. Paving operations shall not proceed until hauling equipment sufficient to assure continuous operations is provided.

5-04.3(3)C Pavers

HMA pavers shall be self-contained, power-propelled units, provided with an internally heated vibratory screed and shall be capable of spreading and finishing courses of HMA plant mix material in lane widths required by the paving section shown in the Plans.

The HMA paver shall be in good condition and shall have the most current equipment available from the manufacturer for the prevention of segregation of the HMA mixture installed, in good condition, and in working order. The equipment certification shall list the make, model, and year of the paver and any equipment that has been retrofitted.

The screed shall be operated in accordance with the manufacturer's recommendations and shall effectively produce a finished surface of the required evenness and texture without tearing, shoving, segregating, or gouging the mixture. A copy of the manufacturer's recommendations shall be provided upon request by the Contracting Agency. Extensions will be allowed provided they produce the same results, including ride, density, and surface texture as obtained by the primary screed. Extensions without augers and an internally heated vibratory screed shall not be used in the Traveled Way.

If the paving machine in use is not providing the required finish, the Engineer may suspend Work as allowed by Section 1-08.6. Any cleaning or solvent type liquids spilled on the pavement shall be thoroughly removed before paving proceeds.

5-04.3(3)D Vacant

5-04.3(3)E Rollers

Rollers shall be of the steel wheel, vibratory, oscillatory, or pneumatic tire type, in good condition and capable of reversing without backlash. Operation of the roller shall be in accordance with the manufacturer's recommendations. When ordered by the Engineer for any roller planned for use on the project, the Contractor shall provide a copy of the manufacturer's recommendation for the use of that roller for

compaction of HMA. The number and weight of rollers shall be sufficient to compact the mixture in compliance with the requirements of Section 5-04.3(10). The use of equipment that results in crushing of the aggregate will not be permitted. Rollers producing pickup, washboard, uneven compaction of the surface, displacement of the mixture or other undesirable results shall not be used.

5-04.3(4) Preparation of Treated Surfaces for HMA

A treated surface includes cement concrete, asphalt concrete, brick, seal coat, bituminous surface treatment and cement treated base. When the treated surface or old base is irregular, the Contractor shall bring it to a uniform grade and cross-section as shown on the Plans or approved by the Engineer.

Preleveling of uneven or broken treated surfaces over which HMA is to be placed may be accomplished by using an asphalt paver, a motor patrol grader, or by hand raking, as approved by the Engineer.

Compaction of preleveling HMA shall be to the satisfaction of the Engineer and may require the use of small steel wheel rollers, plate compactors, or pneumatic rollers to avoid bridging across preleveled areas by the compaction equipment. Equipment used for the compaction of preleveling HMA shall be approved by the Engineer.

Before construction of HMA on an existing paved surface, the entire surface of the pavement shall be clean. All fatty asphalt patches, grease drippings, and other objectionable matter shall be entirely removed from the existing pavement.

All treated surfaces over which HMA is to be placed shall be thoroughly cleaned of dust, soil, pavement grindings, and other foreign matter. All holes and small depressions shall be filled with an appropriate class of HMA. The surface of the patched area shall be leveled and compacted thoroughly. Prior to the application of tack coat, or paving, the condition of the surface shall be approved by the Engineer.

A tack coat of asphalt shall be applied to all treated surfaces on which any course of HMA is to be placed or abutted. Tack coat shall be uniformly applied to cover the treated surface with a thin film of residual asphalt free of streaks and bare spots at a rate between 0.02 and 0.10 gallons per square yard of retained asphalt. The rate of application shall be approved by the Engineer. A heavy application of tack coat shall be applied to all joints. For Roadways open to traffic, the application of tack coat shall be limited to surfaces that will be paved during the same working shift. The spreading equipment shall be equipped with a thermometer to indicate the temperature of the tack coat material.

Equipment shall not operate on tacked surfaces until the tack has broken and cured. If the Contractor's operation damages the tack coat it shall be repaired prior to placement of the HMA.

The tack coat shall be CSS-1, or CSS-1h emulsified asphalt. The CSS-1 and CSS-1h emulsified asphalt may be diluted once with water at a rate not to exceed one part water to one part emulsified asphalt. The tack coat shall have sufficient temperature such that it may be applied uniformly at the specified rate of application and shall not exceed the maximum temperature recommended by the emulsified asphalt manufacturer.

Overlays and Utility Patches

Edges of asphalt and curb edge shall be tack coated.

Prior to paving utility trenches, the edges of the trenches shall be saw-cut parallel to the center of the street leaving long straight edges. Should any undermining occur on existing adjacent pavement, the Contractor shall neatly cut the pavement 6 inches beyond the undermined area. The Engineer may waive all or a portion of the saw cutting requirement if the original street cut is straight and not damaged.

All utility patching and/or pre-leveling of damaged areas must be completed prior to overlay. A minimum depth of 2 inches is required for overlays.

5-04.3(4)A Vacant

5-04.3(4)B Soil Residual Herbicide

Contractor shall apply one application of an approved soil residual herbicide on areas where hot mix asphalt is applied. The requirements of Section 8-02.3(2)A shall apply to this application. The application of herbicide shall precede paving by no more than 24 hours.

5-04.3(4)C Pavement Repair

The Contractor shall excavate pavement repair areas and shall backfill these with HMA in accordance with the details shown in the Plans and as marked in the field. The Contractor shall conduct the excavation operations in a manner that will protect the pavement that is to remain. Pavement not designated to be removed that is damaged as a result of the Contractor's operations shall be repaired by the Contractor to the satisfaction of the Engineer at no cost to the Contracting Agency. The Contractor shall excavate only within one lane at a time unless approved otherwise by the Engineer. The Contractor shall not excavate more area

than can be completely finished during the same shift, unless approved by the Engineer.

Excavated materials will become the property of the Contractor and shall be disposed of in a Contractor-provided site off the right-of-way or used in accordance with Sections 2-02.3(3) or 9-03.21.

Asphalt for tack coat shall be required as specified in Section 5-04.3(4). A heavy application of tack coat shall be applied to all surfaces of existing pavement in the pavement repair area.

After the completion of trench and patch repairs, the Contractor shall seal all joints with CSS-1 and dry paving sand.

5-04.3(5) Vacant

5-04.3(6) Vacant

5-04.3(7) Spreading and Finishing

The mixture shall be laid upon an approved surface, spread, and struck off to the grade and elevation established. HMA pavers complying with Section 5-04.3(3) shall be used to distribute the mixture. Unless otherwise directed by the Engineer, the nominal compacted depth of any layer of any course shall not exceed 0.30 feet.

On areas where irregularities or unavoidable obstacles make the use of mechanical spreading and finishing equipment impractical, the paving may be done with other equipment or by hand.

5-04.3(8) Aggregate Acceptance Prior to Incorporation in HMA

For HMA accepted by nonstatistical evaluation the aggregate properties of sand equivalent, uncompacted void content and fracture will be evaluated in accordance with Section 3-04. Sampling and testing of aggregates for HMA accepted by commercial evaluation will be at the option of the Engineer.

5-04.3(9) HMA Mixture Acceptance

Acceptance of HMA shall be as provided under nonstatistical, or commercial evaluation.

Nonstatistical evaluation will be used for the acceptance of HMA unless Commercial Evaluation is specified.

Commercial evaluation will be used for Commercial HMA and for other classes of HMA in the following applications: sidewalks, road approaches, ditches, slopes, paths, trails, gores, prelevel, temporary pavement, and pavement repair. Other nonstructural applications of HMA accepted by commercial evaluation shall be as approved by the Engineer. Sampling and testing of HMA accepted by commercial evaluation will be at the option of the Engineer.

5-04.3(9)A Vacant

5-04.3(9)B Vacant

5-04.3(9)C Mixture Acceptance – Nonstatistical Evaluation

5-04.3(9)C1 Vacant

5-04.3(9)C2 Mixture Nonstatistical Evaluation Sampling

Samples for acceptance testing shall be obtained by the Contractor when ordered by the Engineer. The Contractor shall sample the HMA mixture in the presence of the Engineer and in accordance with AASHTO T 168. A minimum of 3 samples should be taken for each class of HMA placed on a project.

5-04.3(9)C3 Mixture Nonstatistical Evaluation – Acceptance Testing

Testing of HMA for compliance of V_a will at the option of the Contracting Agency. If tested, compliance of V_a will use WSDOT SOP 731.

Testing for compliance of asphalt binder content will be by WSDOT FOP for AASHTO T 308.

Testing for compliance of gradation will be by FOP for WAQTC T 27/T 11.

Testing costs shall be the responsibility of the Contractor.

The Contractor will furnish the Engineer with a copy of the results of all acceptance testing performed in the field.

5-04.3(10) HMA Compaction Acceptance

HMA mixture accepted by nonstatistical evaluation that is used in traffic lanes, including lanes for intersections, ramps, truck climbing, weaving, and speed change, and having a specified compacted course thickness greater than 0.10-foot, shall be compacted to a specified level of relative density. The specified level of

relative density shall be a minimum of 92 percent of the maximum density. The maximum density shall be determined by WSDOT FOP for AASHTO T 729. The specified level of density attained will be determined by the evaluation of the density of the pavement. The density of the pavement shall be determined in accordance with WSDOT FOP for WAQTC TM 8, except that gauge correlation will be at the discretion of the Engineer, when using the nuclear density gauge and WSDOT SOP 736 when using cores to determine density.

Tests for the determination of the pavement density will be taken in accordance with the required procedures for measurement by a nuclear density gauge or roadway cores after completion of the finish rolling. The test procedures FOP for WAQTC TM 8 and WSDOT SOP T 729 will be used on the day the mix is placed and prior to opening to traffic.

Two density tests shall be taken within the first 100 tons of asphalt delivered to the site each day and 1 every 100 tons thereafter for the remainder of the day. If the asphalt fails any test, the Engineer will require additional testing to determine the extent of the failure and more frequent tests may be required on additional asphalt. Testing and samples shall be in accordance with Section 1-06.2(1).

In addition to randomly selected density test locations, the City may also isolate any area that is suspected of being defective in relative density and may require additional testing at the Contractor's expense.

HMA for pre-leveling shall be thoroughly compacted. HMA that is used for pre-leveling wheel rutting shall be compacted with a pneumatic tire roller unless otherwise approved by the Engineer.

Test Results

HMA testing shall be pre-arranged and oil content results reported within 2 hours of sampling. Initial reports may be by phone, subsequent written documents shall be submitted to the City prior to the next day's paving shift.

5-04.3(10)A HMA Compaction – General Compaction Requirements

Compaction shall take place when the mixture is in the proper condition so that no undue displacement, cracking, or shoving occurs. Areas inaccessible to large compaction equipment shall be compacted by other mechanical means. Any HMA that becomes loose, broken, contaminated, shows an excess or deficiency of asphalt, or is in any way defective, shall be removed and replaced with new hot mix that shall be immediately compacted to conform to the surrounding area.

The type of rollers to be used and their relative position in the compaction sequence shall generally be the Contractor's option, provided the specified densities are attained. Unless the Engineer has approved otherwise, rollers shall only be operated in the static mode when the internal temperature of the mix is less than 175 degrees F. Regardless of mix temperature, a roller shall not be operated in a mode that results in checking or cracking of the mat. Rollers shall only be operated in static mode on bridge decks.

5-04.3(11) Reject Work

5-04.3(11)A Reject Work General

Work that is defective or does not conform to requirements shall be rejected. The Contractor may propose, in writing, alternatives to removal and replacement of rejected material. Acceptability of such alternative proposals will be determined at the sole discretion of the Engineer. HMA that has been rejected is subject to the requirements in Section 1-06.2(2) and this specification, and the Contractor shall submit a corrective action proposal to the Engineer for approval.

5-04.3(11)B Rejection by Contractor

The Contractor may, prior to sampling, elect to remove any defective material and replace it with new material. Any such new material will be sampled, tested, and evaluated for acceptance.

5-04.3(12) Joints

5-04.3(12)A HMA Joints

5-04.3(12)A1 Transverse Joints

The Contractor shall conduct operations such that the placing of the top or wearing course is a continuous operation or as close to continuous as possible. Unscheduled transverse joints will be allowed and the roller may pass over the unprotected end of the freshly laid mixture only when the placement of the course must be discontinued for such a length of time that the mixture will cool below compaction temperature. When the Work is resumed, the previously compacted mixture shall be cut back to produce a slightly beveled edge for the full thickness of the course.

A temporary wedge of HMA constructed on a 20H:1V shall be constructed where a transverse joint as a result of paving or planing is open to traffic. The HMA in the temporary wedge shall be separated from the permanent HMA by strips of heavy wrapping paper or other methods approved by the Engineer. The wrapping

paper shall be removed and the joint trimmed to a slightly beveled edge for the full thickness of the course prior to resumption of paving.

The material that is cut away shall be wasted and new mix shall be laid against the cut. Rollers or tamping irons shall be used to seal the joint.

5-04.3(12)A2 Longitudinal Joints

The longitudinal joint in any one course shall be offset from the course immediately below by not more than 6 inches nor less than 2 inches. All longitudinal joints constructed in the wearing course shall be located at a lane line or an edge line of the Traveled Way. A notched wedge joint shall be constructed along all longitudinal joints in the wearing surface of new HMA unless otherwise approved by the Engineer. The notched wedge joint shall have a vertical edge of not less than the maximum aggregate size or more than 1/2 of the compacted lift thickness and then taper down on a slope not steeper than 4H:1V. The sloped portion of the HMA notched wedge joint shall be uniformly compacted.

All joints shall be hand raked prior to rolling. The final joint shall be straight, level with the abutting edge, free of coarse material at the surface, and neat in appearance. The Contractor shall use panel widths that minimize longitudinal pavement joints.

5-04.3(12)B Vacant

5-04.3(13) Surface Smoothness

The completed surface of all courses shall be of uniform texture, smooth, uniform as to crown and grade, and free from defects of all kinds. The completed surface of the wearing course shall not vary more than 1/8 inch from the lower edge of a 10-foot straightedge placed on the surface parallel to centerline. The transverse slope of the completed surface of the wearing course shall vary not more than 1/4 inch in 10 feet from the rate of transverse slope shown in the Plans.

When deviations in excess of the above tolerances are found that result from a high place in the HMA, the pavement surface shall be corrected by one of the following methods:

1. Removal of material from high places by grinding with an approved grinding machine; or
2. Removal and replacement of the wearing course of HMA; or
3. By other method approved by the Engineer.

Correction of defects shall be carried out until there are no deviations anywhere greater than the allowable tolerances.

5-04.3(14) Planing Bituminous Pavement

Plane in such a manner that the underlying pavement is not torn, broken, or otherwise damaged by the planing operation. The finished planed surface must be slightly grooved or roughened and must be free from gouges, deep grooves, ridges, or other imperfections. Delamination or raveling of the underlying pavement will not be construed as damage due to the Contractor's operations. Pavement outside the planing limits designated by the Engineer that is damaged by the Contractor's operations shall be repaired to the satisfaction of the Engineer at no additional cost to the Contracting Agency.

For mainline planing operations, use equipment with automatic controls and with sensors. The controls shall be capable of sensing the grade from an outside reference line, or a mat-referencing device. The automatic controls shall have a transverse slope controller capable of maintaining the mandrel at the desired transverse slope (expressed as a percentage) within plus or minus 0.1 percent.

Remove all loose debris from the planed surface before opening the planed surface to traffic. The planings and other debris resulting from the planing operation shall become the property of the Contractor and be disposed of in accordance with Section 2-03.3(7)C.

The finished product must be a prepared surface acceptable for receiving an HMA overlay.

5-04.3(14)A Paving and Planing Under Traffic

5-04.3(14)A1 General

In addition, the requirements of Section 1-07.23 and the traffic controls required in Section 1-10, and unless the Engineer approves, the Contractor must comply with the following:

1. Intersections

    a. Keep intersections open to traffic at all times, except when paving or planing operations through an intersection requires closure. Such closure must be kept to the minimum time required to place and compact the HMA mixture, or plane as appropriate. For paving, schedule such closure to individual lanes or portions thereof that allows the traffic volumes and

schedule of traffic volumes required in the approved traffic control plan. Schedule work so that adjacent intersections are not impacted at the same time and comply with the traffic control restrictions required by the Traffic Engineer. Each individual intersection closure or partial closure, must be addressed in the traffic control plan, which must be submitted to and accepted by the Engineer, see Section 1-10.2(2).

b. When planing or paving and related construction must occur in an intersection, consider scheduling and sequencing such work into quarters of the intersection, or half or more of an intersection with side street detours. Be prepared to sequence the work to individual lanes or portions thereof.

c. Should closure of the intersection in its entirety be necessary, and no trolley service is impacted, keep such closure to the minimum time required to place and compact the HMA mixture, plane, remove asphalt, tack coat, and as needed.

d. Any work in an intersection requires advance warning in both signage and a number of Working Days advance notice as determined by the Engineer, to alert traffic and emergency services of the intersection closure or partial closure.

e. Allow new compacted HMA asphalt to cool to ambient temperature before any traffic is allowed on it. Traffic is not allowed on newly placed asphalt until approval has been obtained from the Engineer.

2. Temporary centerline marking, post-paving temporary marking, temporary stop bars, and maintaining temporary pavement marking must comply with Section 8-23.

3. Permanent pavement marking must comply with Section 8-22.

4. Roadways Open to Traffic

When the roadway being paved is open to traffic, the following requirements shall apply:

The Contractor shall keep roadways open to traffic at all times except where paving is in progress. During such time, and provided that there has been an advance warning to the public, only that specified section of road being paved may be closed for the minimum time required to place and

compact the HMA. Adjacent travel lanes and shoulder shall be left open for traffic during these times. In hot weather, the Engineer may require the application of water to the pavement to accelerate the finish rolling of the pavement and to shorten the time required before reopening to traffic.

Before temporarily closing a portion of the road, advance-warning signs shall be placed and signs shall also be placed clearly alerting the driver of temporary lane closures.

During paving operations, temporary pavement markings shall be maintained throughout the project. Temporary pavement markings shall be installed on the roadway prior to opening to traffic and shall be in accordance with Section 8-23.

6-02 CONCRETE STRUCTURES

6-02.3(14) Finishing Concrete Surfaces

Supplement this section with the following:

The completed surface shall be of uniform texture, smooth, uniform as to grade, and free from defects of all kinds. The completed surface shall not vary more than 1/8-inch from the lower edge of a 10-foot straightedge place on the surface parallel to the centerline.

The finish shall be a light broom finish, or as noted in the City of Omak Standard Plans, or as approved by the Engineer. A non-uniform broom finish, an overworked finish, a finish where a cement layer has formed, discolored, is spalling, or a finish damage by the weather, will not be accepted, and shall be replaced at the Contractor's expense.

8-04 CURBS, GUTTERS, AND SPILLWAYS

8-04.3 Construction Requirements

Supplement this section with the following:

Any curb and gutter damaged, defaced, cracked, chipped, or determined to be of poor workmanship, in the opinion of the Contracting Agency, shall be removed, wastehauled and replaced by the Contractor, at the Contractor's expense. Sacking and grinding shall not be considered an acceptable means for repairing unacceptable sections. The Contractor shall further provide verbal and written notice (door hangers) to property owners identifying restricted used of their

walkways, sidewalks, etc. This notice must be provided twice: at 1 week prior and again 1 day prior to the work being performed.

8-06 CEMENT CONCRETE DRIVEWAY ENTRANCES

8-06.2 Materials

Supplement this section with the following:

Reinforcing Steel 9-07

8-06.3 Construction Requirements

Supplement this section with the following:

The driveway entrance shall be protected against damage or defacement of any kind until acceptance by the Contracting Agency. Any driveway entrance not acceptable, in the opinion of the Engineer, because of damage or defacement shall be removed, wastehauled, and replaced by the Contractor at the Contractor's expense. Sacking, grinding, or spot repair shall not be considered an acceptable means for repairing unacceptable sections.

8-13 MONUMENT CASES

8-13.1 Description

Delete this section and replace it with the following:

This work shall consist of furnishing and placing monument cases, covers, and pipes in accordance with the Standard Plans and these Specifications, in conformity with the lines shown on the plans.

8-13.2 Materials

Supplement this section with the following:

Pipe for monuments shall be Schedule 40 galvanized steel pipe. Caps shall be 2 inch diameter brass caps.

8-13.3 Construction Requirements

8-13.3(1) Monument Case and Cover

The last paragraph of this section is revised to read:

> The monument, case, cover, pipe, and brass cap shall be furnished and set in concrete, adjusted and patched with concrete and hot mix asphalt by the Contractor.

8.14 CEMENT CONCRETE SIDEWALKS

8-14.3 Construction Requirements

Supplement this section with the following:

> Any sidewalk damaged, defaced, cracked, chipped, or determined to be of poor workmanship, in the opinion of the Contracting Agency, shall be removed, wastehauled and replaced by the Contractor, at the Contractor's expense. Damaged sidewalk shall be removed at a construction or expansion joint; sawcutting will not be allowed. Sacking, grinding, or spot repaired shall not be considered an acceptable means for repairing unacceptable sections. The Contractor shall further provide verbal and written notice (door hangers) to property owners abutting the project identifying restricted used of their walkways, sidewalks, etc. This notice must be provided twice: at 1 week prior and again 1 day prior to the work being performed.

8-22 PAVEMENT MARKING

8-22.1 Description

Supplement this section with the following:

> Pavement markings shall conform to this section and the latest edition and amendments thereto of the Manual on Uniform Traffic Control Devices (MUTCD) as adopted by the State of Washington, and shall be constructed as shown in the Plans, except as modified herein.
>
> This work includes temporary pavement markings as described in the Plans.
>
> The Contractor shall be responsible for all traffic control required to place and protect pavement marking material, as outlined in Sections 1-07.23 and 1-10 of the Standard Specifications and these specifications

8-22.2 Materials

Supplement this section with the following:

Plastic pavement marking materials shall be Type A – liquid hot applied thermoplastic.

Patents

The Contractor shall assume all costs arising from the use of patented materials, equipment, devices, or processes used on or incorporated in the work, and agrees to indemnify and save harmless the Contracting Agency and its duly authorized representatives from all suits of law or action of every nature for, or on account of, the use of any patented materials, equipment, devices, or processes.

Acceptance

The Contractor shall be responsible for supplying material that meets aforestated material and testing requirements. The Contractor shall supply certification that the pavement marking material meets the above specifications.

City of Omak

WASHINGTON STATE

heart of the okanogan

STANDARD DETAILS

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City of Omak
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WATER DETAILS

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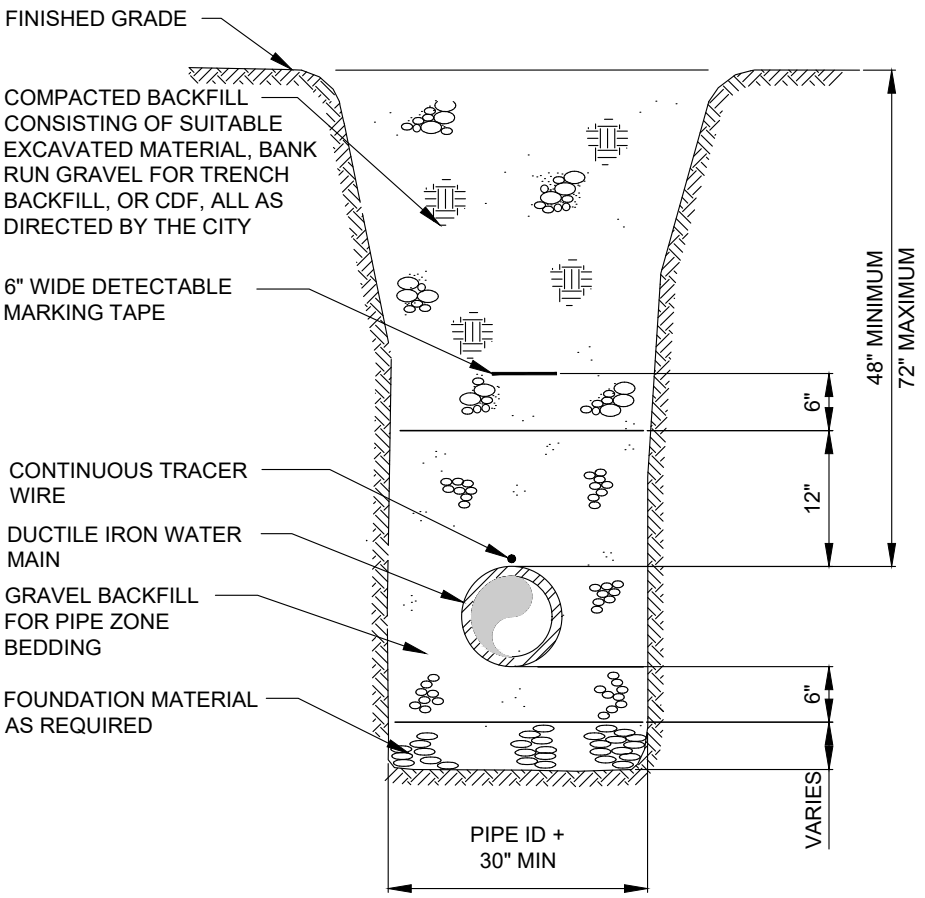

NOTE:

ALL BACKFILL SHALL BE COMPACTED TO 95% MODIFIED PROCTOR, ASTM D1557.

BACKFILL MATERIAL AND COMPACTION SHALL BE IN CONFORMANCE WITH THE CITY STANDARDS AND/OR STATE OR COUNTY PERMIT REQUIREMENTS.

City of Omak
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W-1
WATER MAIN TRENCH SECTION

Gray & Osborne, Inc.
CONSULTING ENGINEERS

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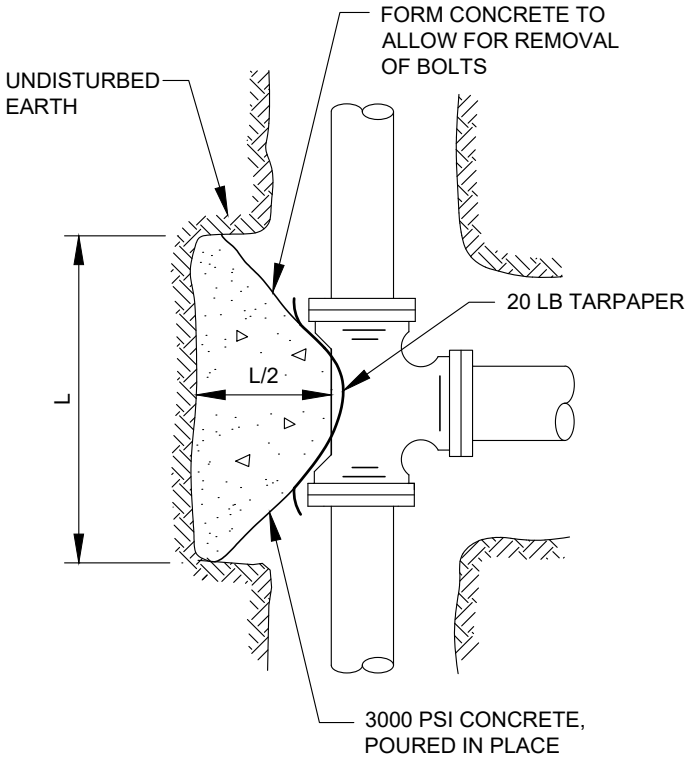
MINIMUM BEARING AREA TABLE					
FITTING D	**TEE**	**90°**	**45°**	**22 1/2°**	**11 1/4°**
6"	4 SQ FT	6 SQ FT	3 SQ FT	2 SQ FT	2 SQ FT
8"	7 SQ FT	10 SQ FT	6 SQ FT	3 SQ FT	2 SQ FT
12"	14 SQ FT	22 SQ FT	12 SQ FT	6 SQ FT	4 SQ FT
16"	25 SQ FT	38 SQ FT	21 SQ FT	11 SQ FT	7 SQ FT
20"	40 SQ FT	52 SQ FT	31 SQ FT	15 SQ FT	11 SQ FT
24"	54 SQ FT	68 SQ FT	44 SQ FT	21 SQ FT	16 SQ FT

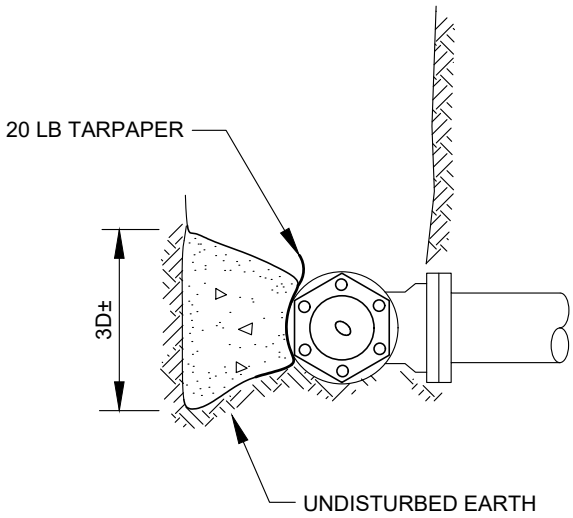
TYPICAL FOR SANDY SOIL WITH 2,000 PSF BEARING STRENGTH & 100 PSI WORKING PRESSURE. ADJUST BEARING AREA BY PRESSURE & SOIL BEARING CAPACITY. USE TEE FOR DEAD ENDS.

NOTES:

1. BLOCKING SHALL BE TO SOLID BEARING SURFACE.
2. FITTING SHALL BE PROTECTED WITH VISQUEEN.
3. BEARING AREA SHALL BE PROPORTIONALLY INCREASED WITH PRESSURES IN EXCESS OF 100 PSI OR IN SOIL CONDITIONS WITH LESS THAN 2,OOO PSF BEARING STRENGTH.
4. ALL BLOCKS ON TEES SHALL BE SEPARATED FOR DIRECTION OF THRUST.



PLAN



ELEVATION

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W-2
THRUST BLOCKS

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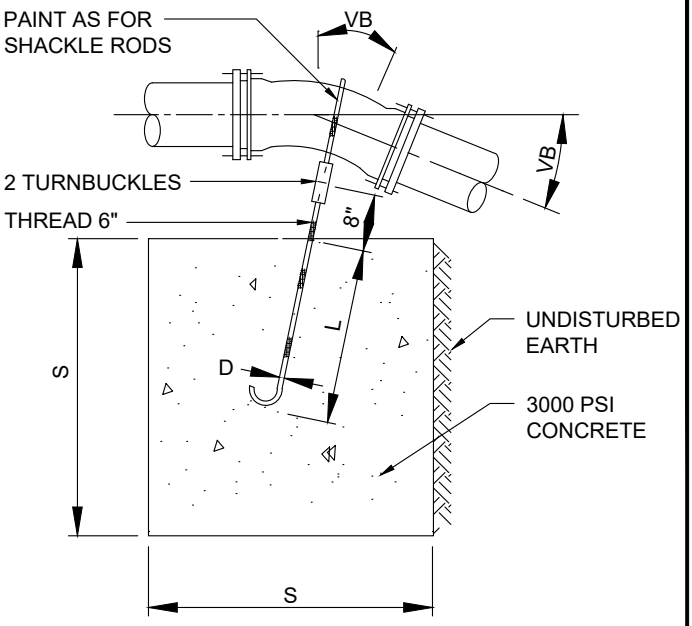
TYPE "A" BLOCKING
FOR 11 1/4° - 22 1/2° - VERTICAL BENDS

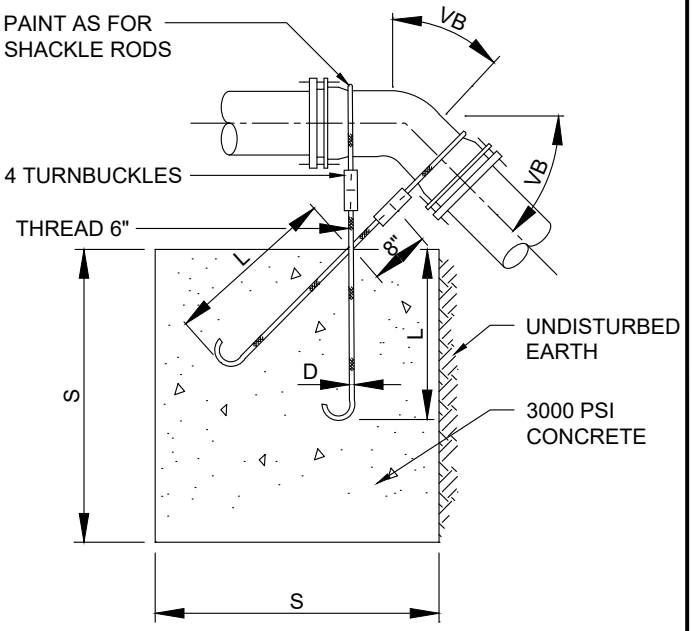
PIPE SIZE NOMINAL DIAMETER- INCHES	TEST PRESSURE PSI	VB: VERTICAL BEND DEGREES	No. OF CU. FT. OF CONC. BLOCKING	S: SIDE OF CUBE LIN. FT.	D: DIAM. OF SHACKLE RODS (2) INCHES	L: DEPTH OF RODS IN CONCRETE LIN. FT.
6"	300	11 1/4	11	2.2	5/8"	2.0
		22 1/2	25	2.9		
8"	300	11 1/4	16	2.5	5/8"	2.0
		22 1/2	47	3.6		
12"	250	11 1/4	32	3.2	5/8"	2.0
		22 1/2	88	4.5	7/8"	3.0
16"	225	11 1/4	70	4.1	7/8"	3.0
		22 1/2	184	5.7	1 1/8"	4.0
20"	200	11 1/4	91	4.5	7/8"	3.0
		22 1/2	225	6.1	1 1/4"	4.0
24"	200	11 1/4	128	5.0	1"	3.5
		22 1/2	320	6.8	1 3/8"	4.5

TYPE "B" BLOCKING
FOR 45° VERTICAL BENDS

		VB		S	D	L
6"	300	45	68	4.1	5/8"	2.0
8"			123	5.0		
12"	250		232	6.1	3/4"	2.5
16"	225		478	7.8	1 1/8"	4.0
20"	200		560	8.2	1 1/4"	
24"			820	9.4	1 3/8"	4.5



TYPE "A" BLOCKING



TYPE "B" BLOCKING

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W-3
VERTICAL ANCHOR BLOCK

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CONSULTING ENGINEERS

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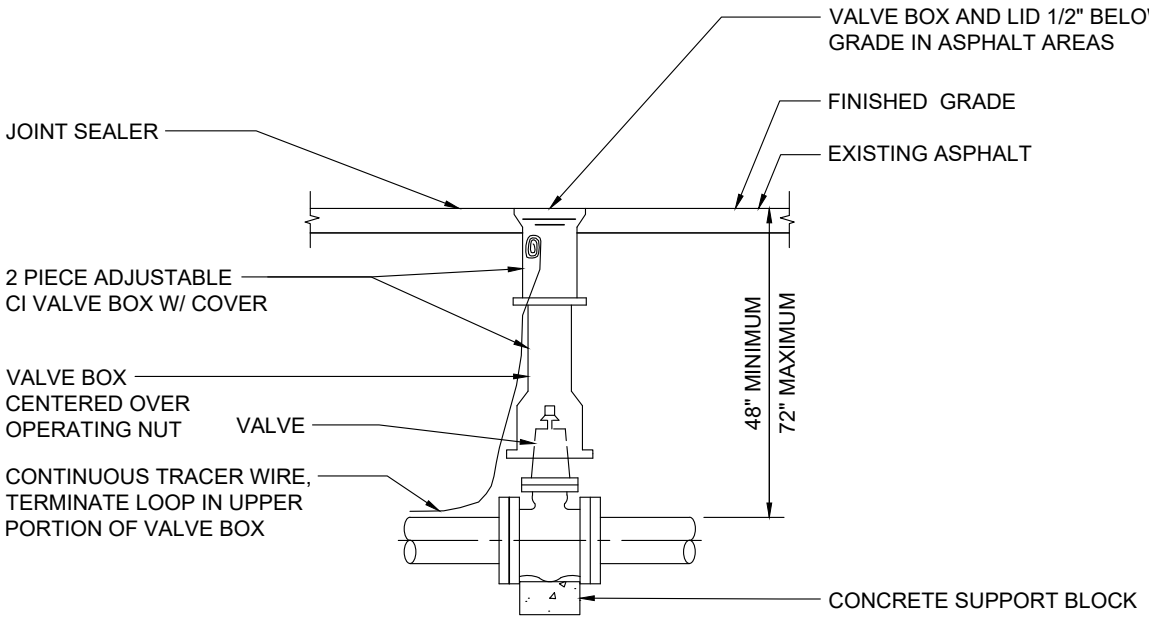
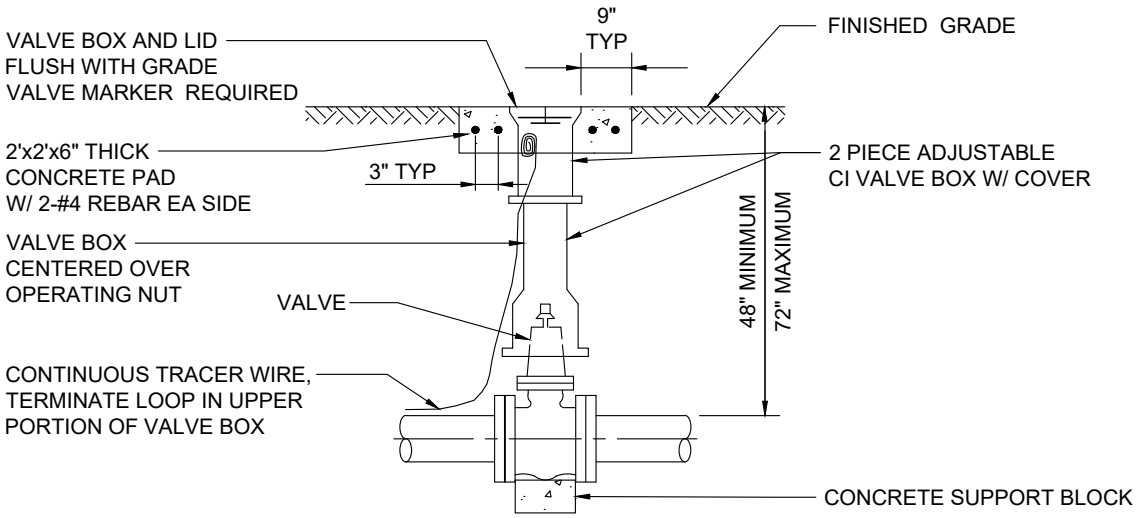


VALVE BOX IN ASPHALT AREA



VALVE BOX IN UNIMPROVED AREA (VALVE MARKER REQUIRED)

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W-4
TYPICAL VALVE INSTALLATION

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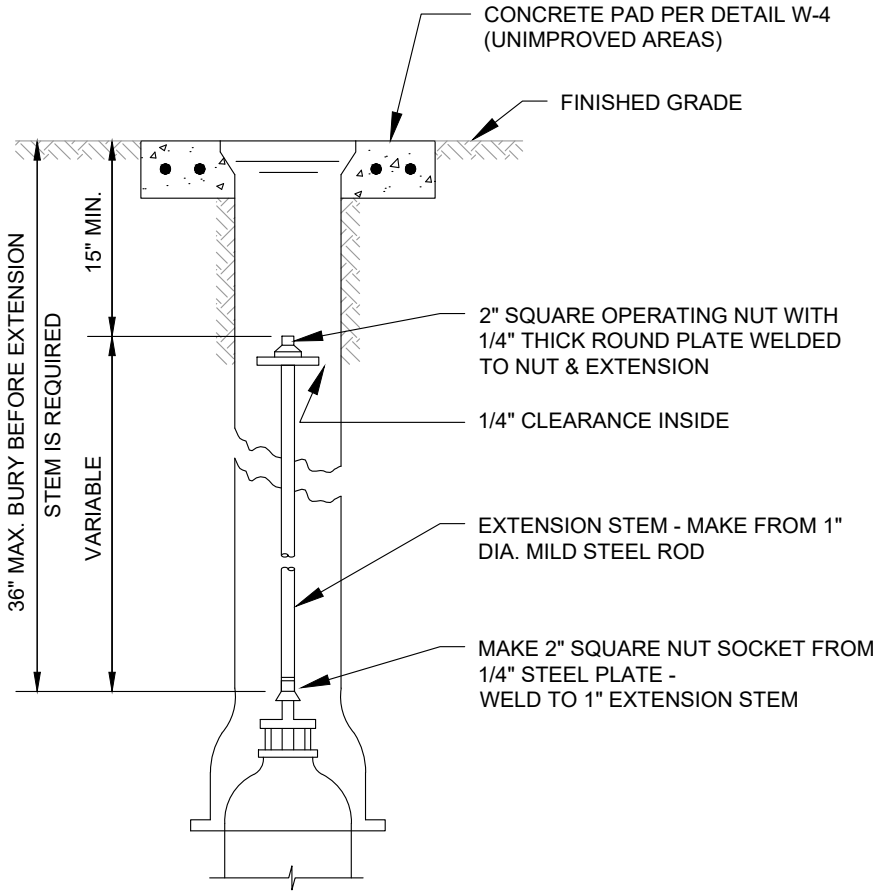

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W-5
VALVE STEM EXTENSION

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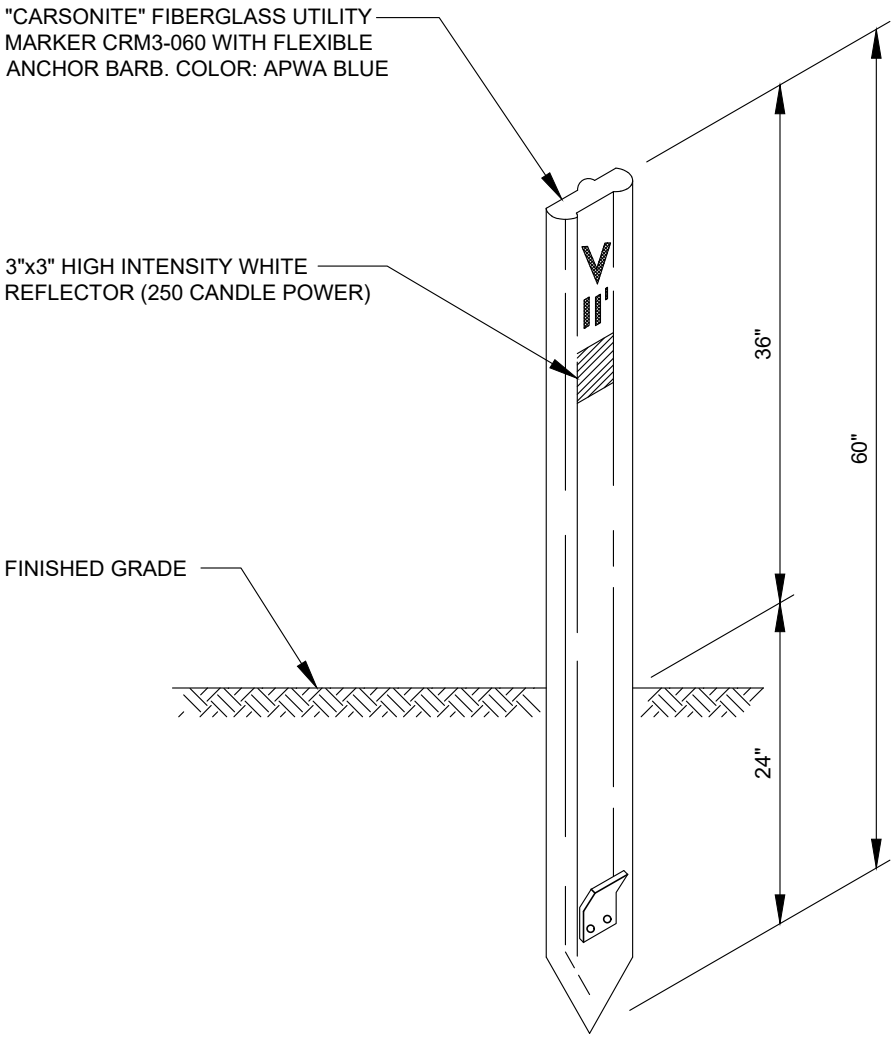

NOTES

1. THE LETTER "V" AND THE DISTANCE IN FEET TO THE VALVE SHALL BE ON THE POST WITH 2" HIGH DECALS DESIGNED FOR USE ON FIBERGLASS BOATS.

2. EACH POST SHALL INCLUDE THE FOLLOWING DECAL: "CAUTION WATER VALVE, BEFORE DIGGING, CALL 811, UTILITY UNDERGROUND LOCATION CENTER."

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W-6
VALVE MARKER

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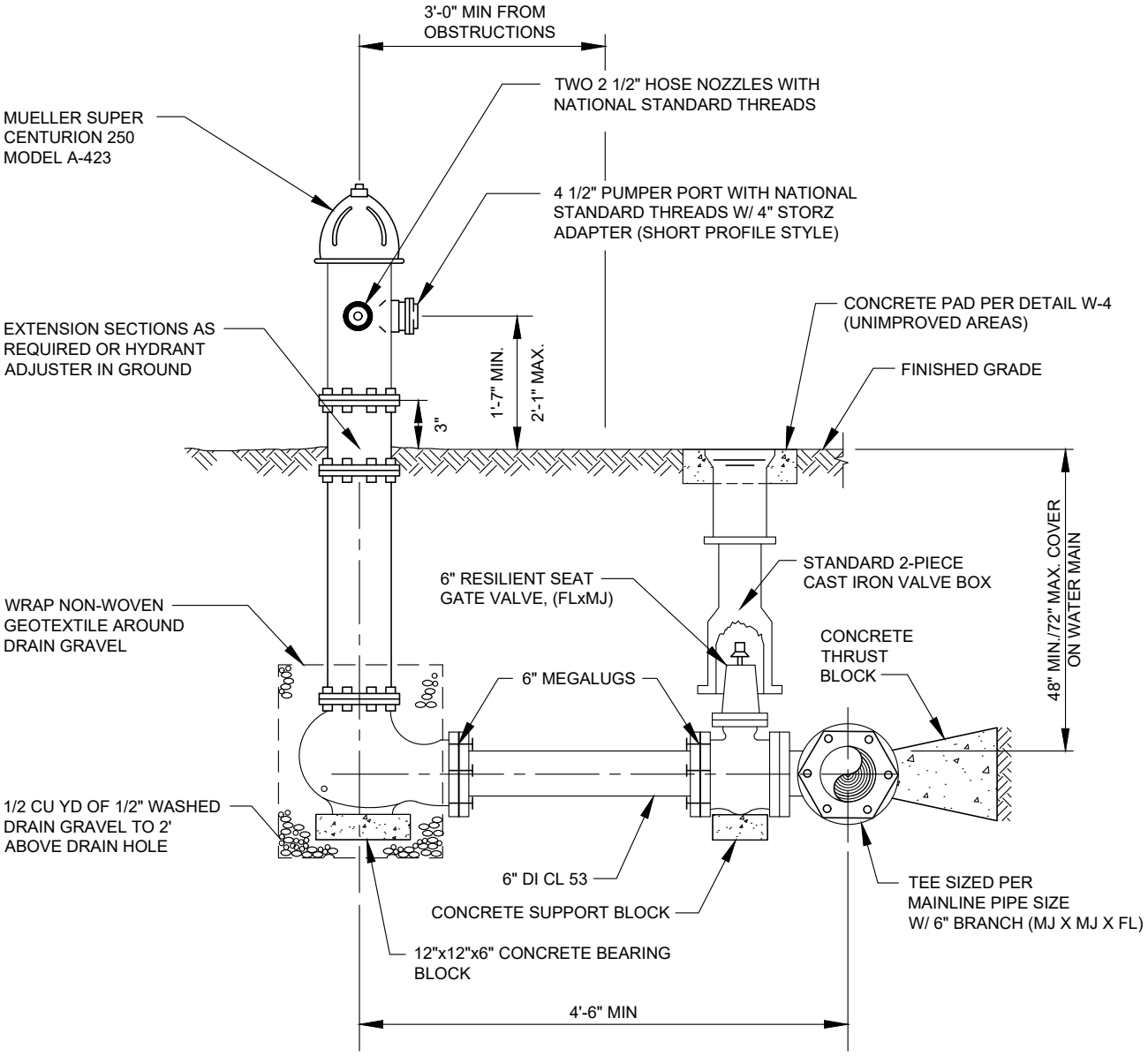

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W-7
FIRE HYDRANT ASSEMBLY

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CONSULTING ENGINEERS

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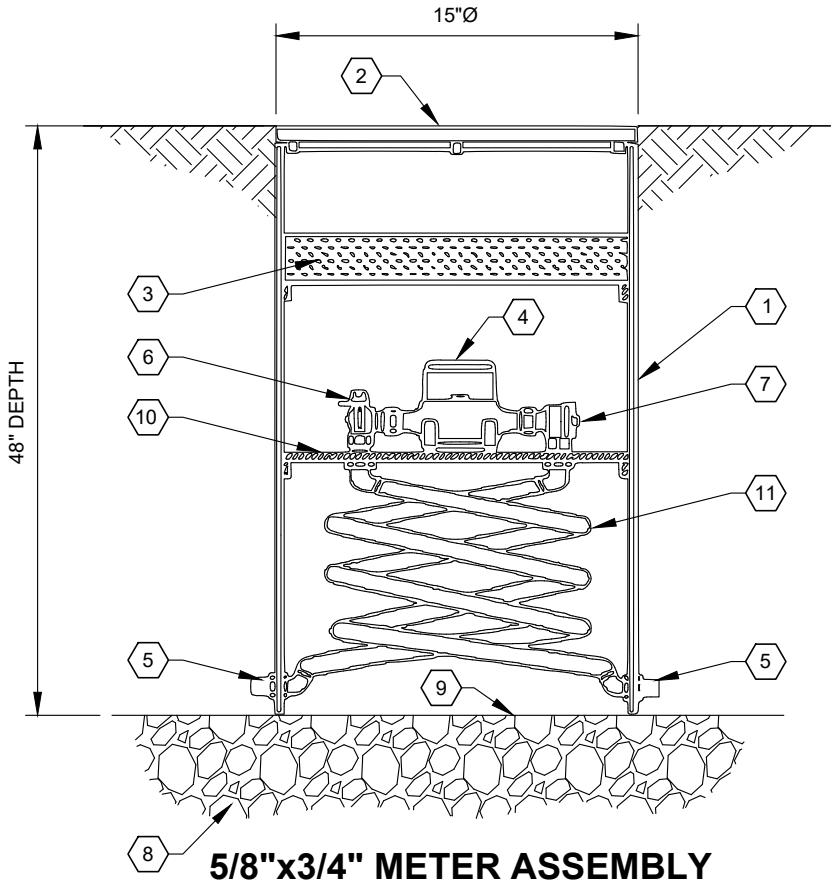

5/8"x3/4" METER ASSEMBLY

NTS

1. MUELLER THERMAL-COIL METER SETTER
2. FLAT LID WITH SIDE MOUNTED KEY LOCK
3. INSULATION PAD BY MANUFACTURER
4. 5/8"x3/4" METER, PROVIDED BY CITY
5. 1" MALE I.P. THREAD INLET AND OUTLET CONNECTIONS
6. LOCKWING ANGLE METER STOP
7. DUAL CHECK VALVE OUTLET
8. 4" THICK COMPACTED BEDDING MATERIAL
9. OPEN BOTTOM
10. MOVABLE PLATFORM BY MANUFACTURER
11. POLY COIL TUBING BY MANUFACTURER

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W-8
5/8"x3/4-SERVICE METER INSTALLATION

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CONSULTING ENGINEERS

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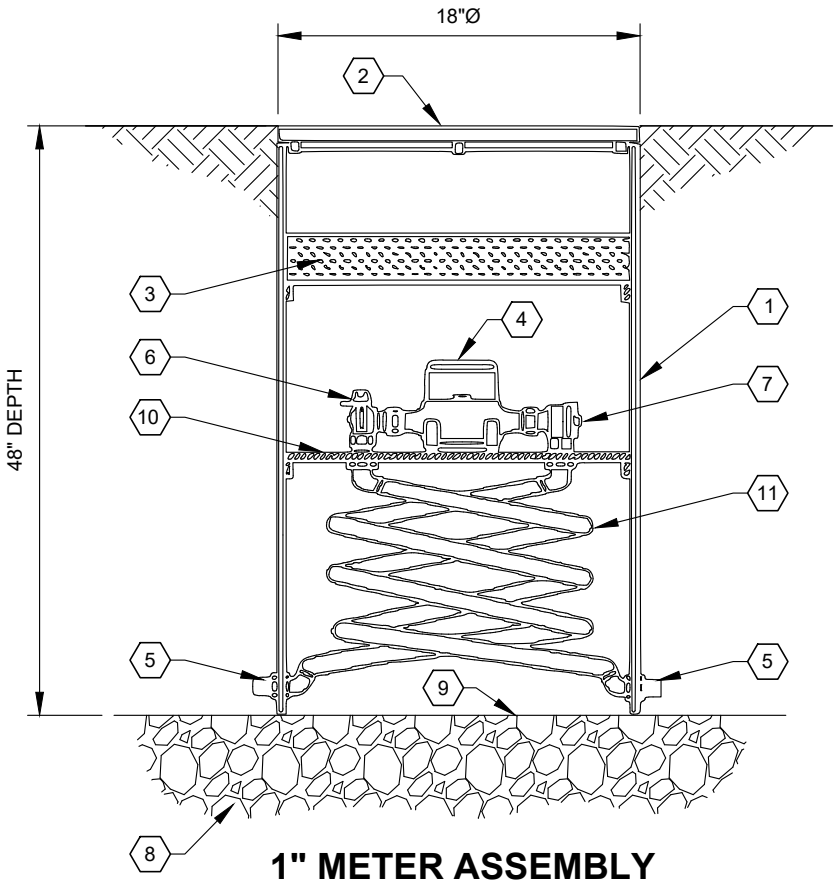

1" METER ASSEMBLY

NTS

1. MUELLER THERMAL-COIL METER SETTER
2. FLAT LID WITH SIDE MOUNTED KEY LOCK
3. INSULATION PAD BY MANUFACTURER
4. 1" METER, PROVIDED BY CITY
5. MALE I.P. THREAD INLET AND OUTLET CONNECTIONS
6. LOCKWING ANGLE METER STOP
7. DUAL CHECK VALVE OUTLET
8. 4" THICK COMPACTED BEDDING MATERIAL
9. OPEN BOTTOM
10. MOVABLE PLATFORM BY MANUFACTURER
11. POLY COIL TUBING BY MANUFACTURER

City of Omak
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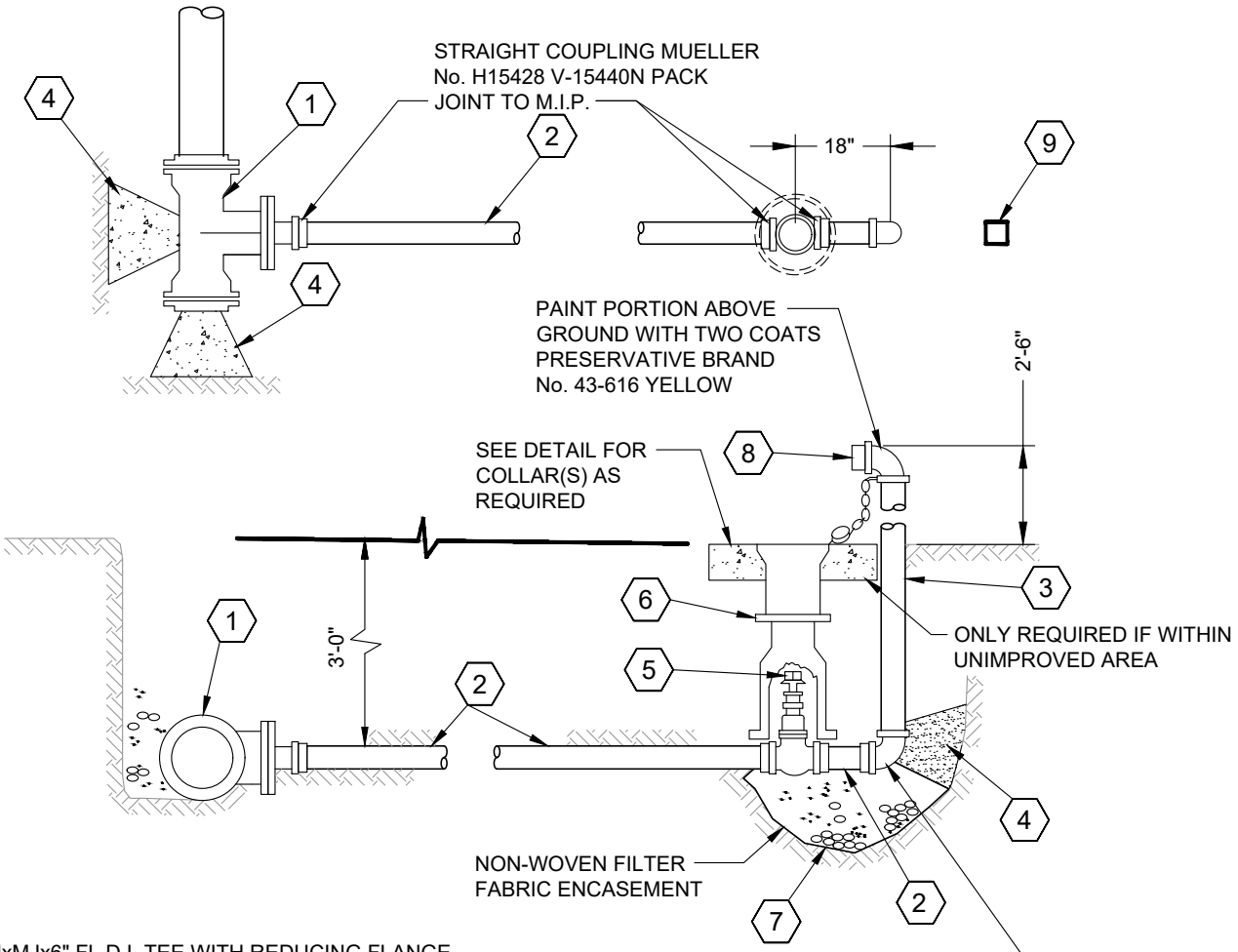
W-9
1" SERVICE METER INSTALLATION

Gray & Osborne, Inc.
CONSULTING ENGINEERS

m:\OMAK\GENERAL\developer standards\Details\W-9 1 Inch Water Service.dwg, 5/1/2024 10:50 AM, FRANK PARKER



1. MJxMJx6" FL D.I. TEE WITH REDUCING FLANGE TAPPED 2" AND MJ PLUG
2. 2" POLY-PIPE 250 PSI
3. 2" GALVANIZED IRON PIPE
4. CONCRETE THRUST BLOCK
5. 2" AWWA RESILIENT SEAT GATE VALVE, THD x THD, WITH OPERATING NUT
6. CAST IRON VALVE BOX
7. 1/4 CUBIC YARD WASHED GRAVEL POCKET
8. 2"x2-1/2" HOSE THREADS BRASS INSERT WITH CAP AND CHAIN
9. VALVE MARKER POST

NOTES:

1. TURN NOZZLE TOWARDS ROADSIDE DITCH.
2. INSTALL DIELECTRIC COUPLINGS AT DISSIMILAR METALS.
3. TEMPORARY BLOWOFFS INSTALLED FOR FLUSHING WATERMAIN SHALL BE SIZED TO PROVIDE 2.5fps VELOCITY IN MAIN LINE.

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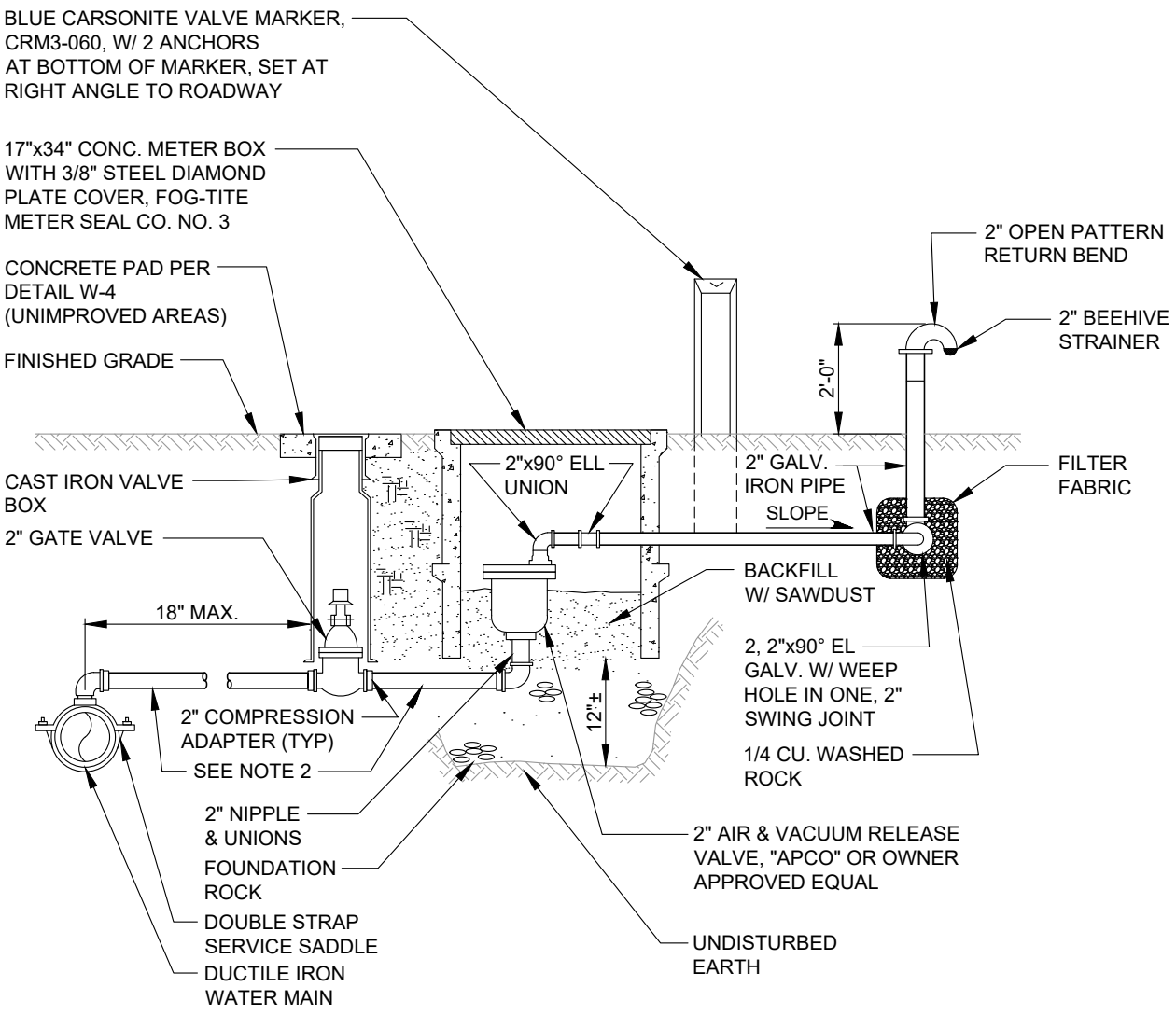
W-10
PERMANENT END-LINE BLOWOFF ASSEMBLY

Gray & Osborne, Inc.
CONSULTING ENGINEERS

m:\OMAK\GENERAL\developer standards\Details\W-10 Blowoff Assembly.dwg, 5/1/2024 10:50 AM, FRANK PARKER



NOTES:

1. GATE VALVE: AWWA RESILIENT SEAL, THRDxTHRD WITH OPERATING NUT.
2. ALL PIPING BETWEEN DOUBLE STRAP SADDLE AND INLET SIDE OF COMBINATION AIR & VAC ASSEMBLY SHALL BE POLY PIPE 250 PSI.
3. TAP MAIN AT SYSTEM HIGH POINT. LOCATION TO BE APPROVED BY THE CITY.
4. PAINT PORTION ABOVE GROUND WITH TWO COATS RUSTOLEUM 31-144 CATERPILLAR YELLOW ENAMEL GLOSS.

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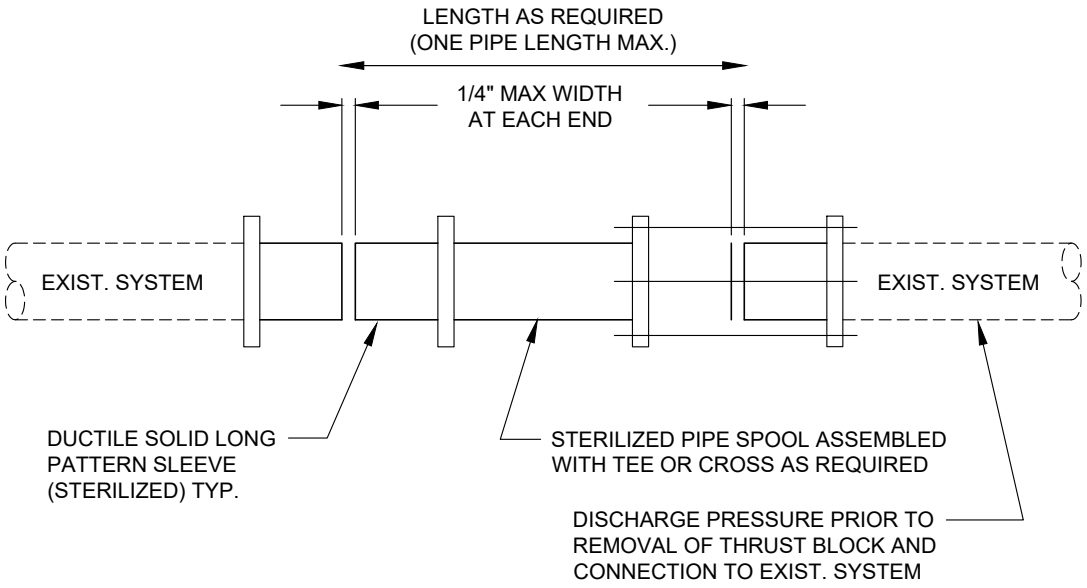
W-11
2" AIR AND VACUUM RELEASE ASSEMBLY

Gray & Osborne, Inc.
CONSULTING ENGINEERS

m:\OMAK\GENERAL\developer standards\Details\W-11 Airvac Assembly.dwg, 5/1/2024 10:50 AM, FRANK PARKER



NOTES:

1. NO DEFLECTION SHALL BE ALLOWED AT EITHER COUPLING.

2. CUT-IN CONNECTIONS ON NON-DI PIPE SHALL USE EXTENDED RANGE COUPLING (ROMAC XR501 OR EQUAL)

3. IN-LINE VALVE(S) IN EXISTING SYSTEM MAY BE REQUIRED AT THE SOLE DISCRETION OF THE CITY AT ALL NEW INTERTIE LOCATIONS (NOTE: VALVE(S) ARE NOT SHOWN ABOVE FOR CLARITY)

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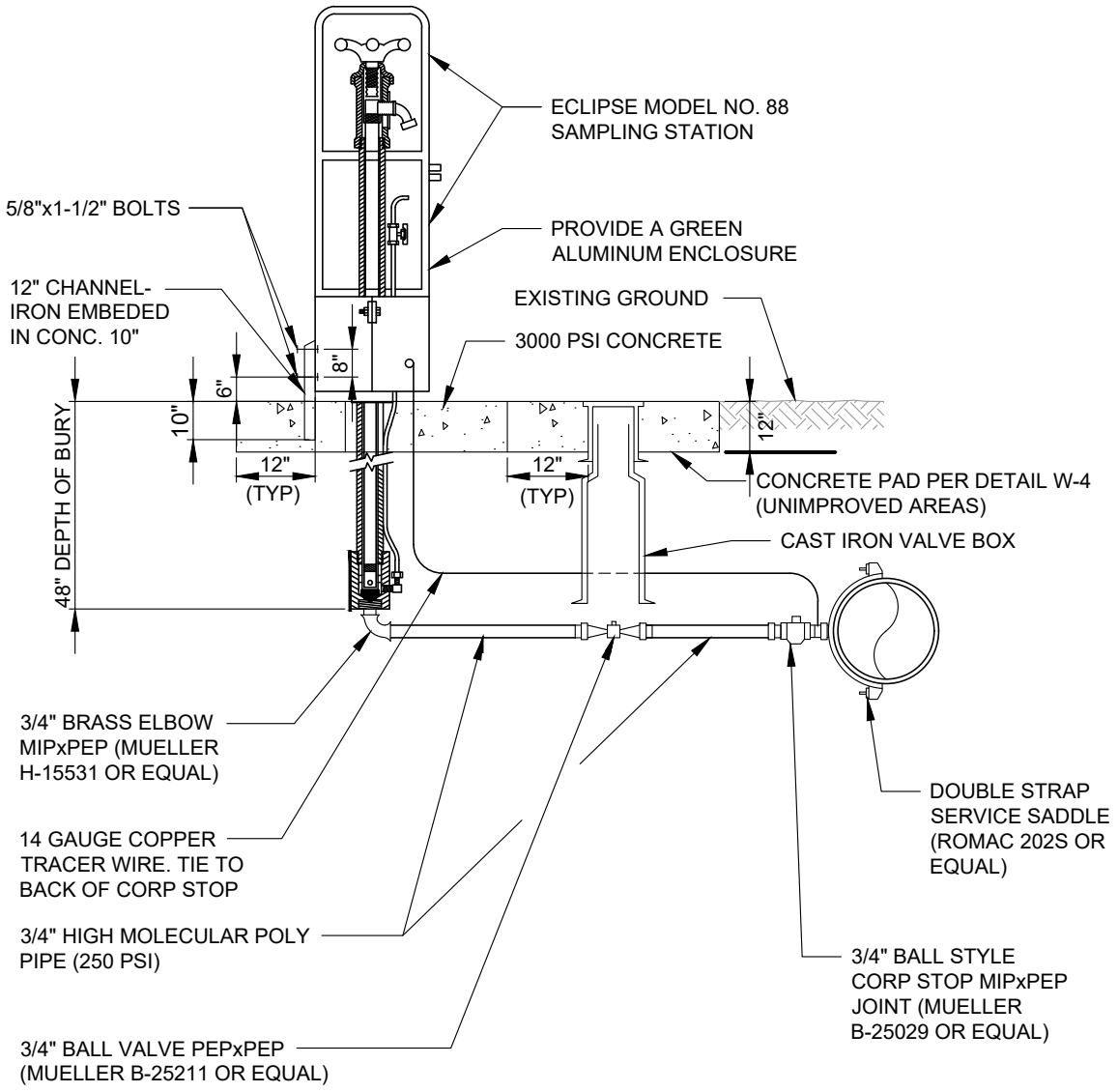
W-12
CUT IN CONNECTION

Gray & Osborne, Inc.
CONSULTING ENGINEERS

m:\OMAK\GENERAL\developer standards\Details\W-12 Cut In Connection.dwg, 5/1/2024 10:51 AM, FRANK PARKER



City of Omak
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W-13
WATER SAMPLING STATION

Gray & Osborne, Inc.
CONSULTING ENGINEERS

m:\OMAK\GENERAL\developer standards\Details\W-13 Water Sampling Station.dwg, 5/1/2024 10:51 AM, FRANK PARKER

SEWER DETAILS

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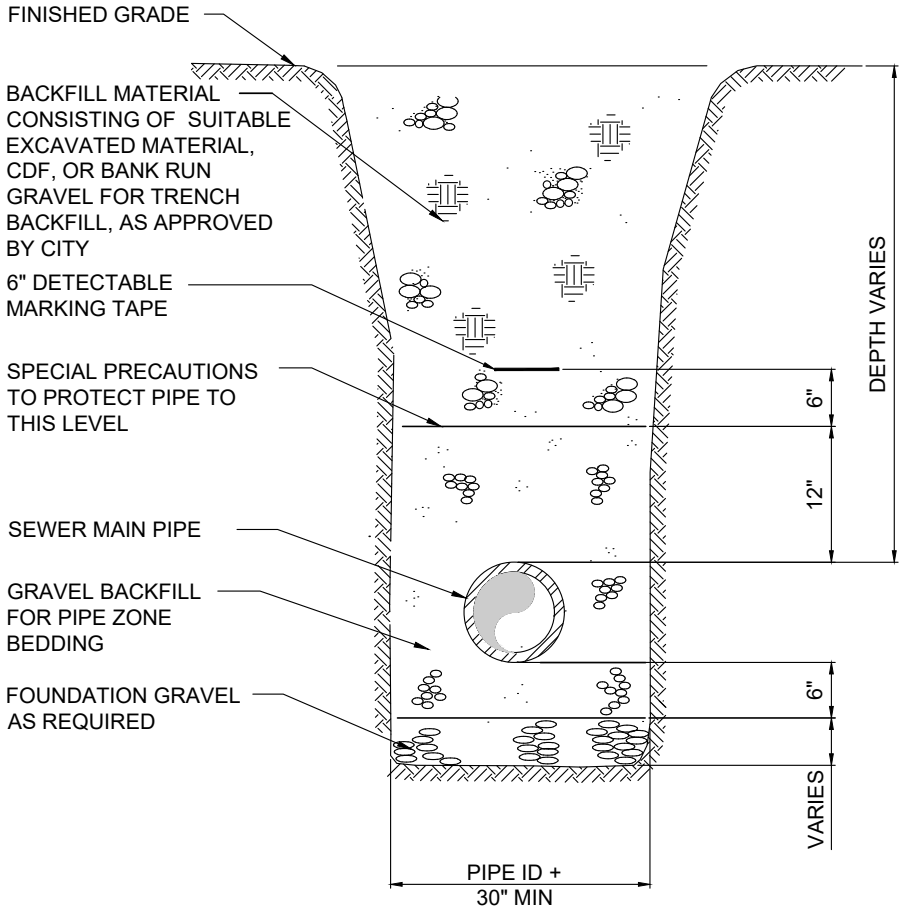

NOTE:

ALL BACKFILL SHALL BE COMPACTED TO 95% MODIFIED PROCTOR, ASTM D1557

BACKFILL MATERIAL AND COMPACTION SHALL BE IN CONFORMANCE WITH THE CITY STANDARDS AND/OR STATE OR COUNTY PERMIT REQUIREMENTS.

City of Omak
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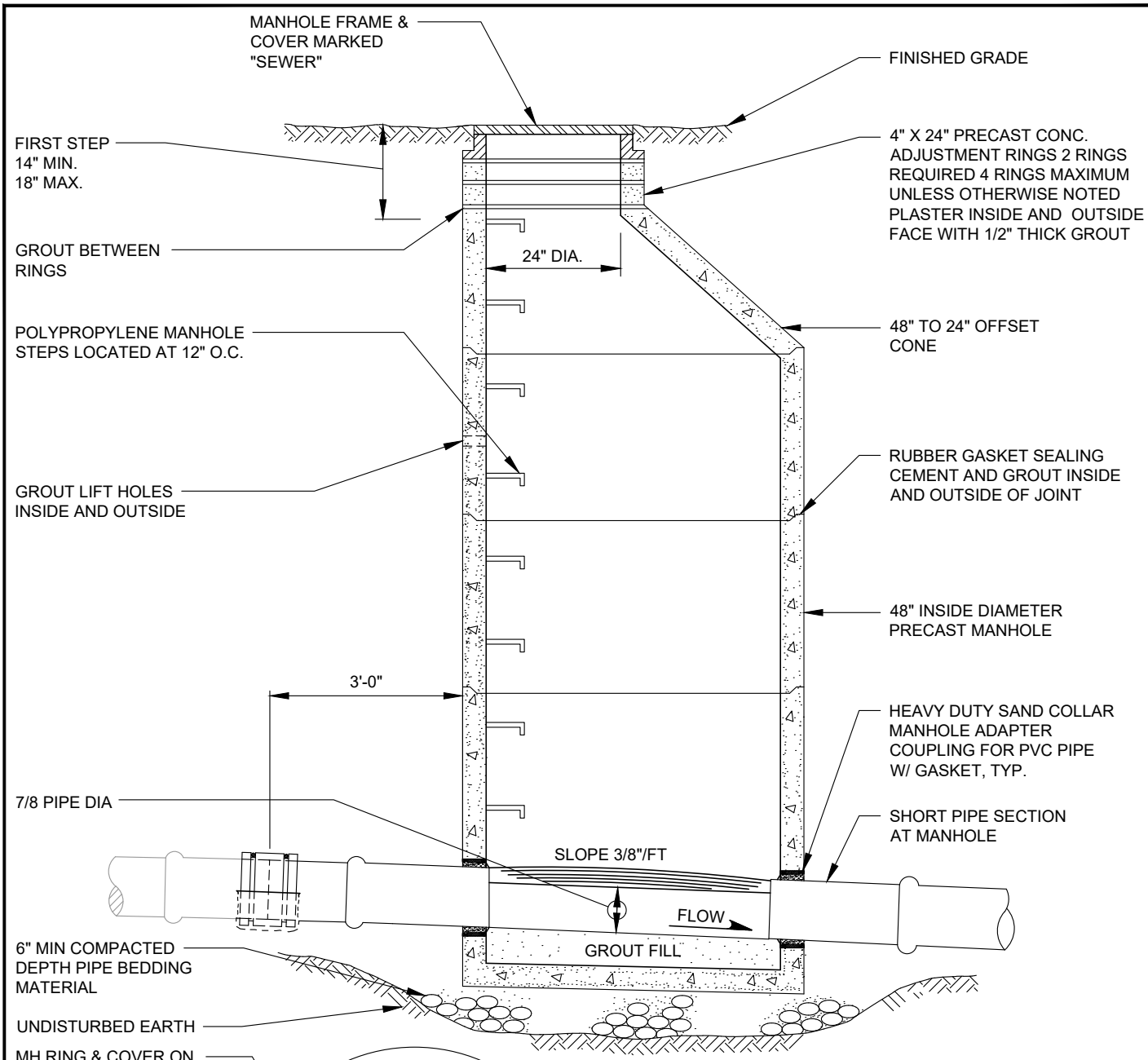
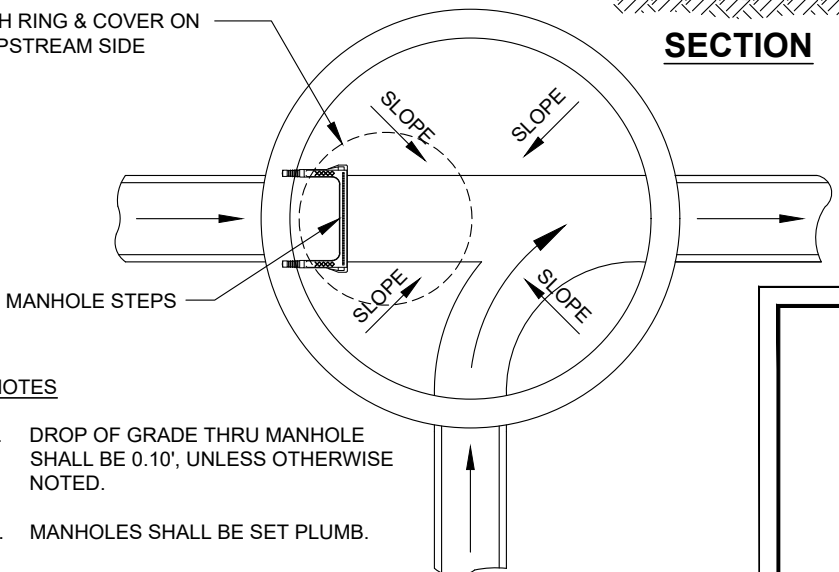
SS-1
SANITARY SEWER MAIN TRENCH SECTION

Gray & Osborne, Inc.
CONSULTING ENGINEERS

m:\OMAK\GENERAL\developer standards\Details\SS-1 Typical Trench Section.dwg, 5/1/2024 10:51 AM, FRANK PARKER



SECTION



PLAN

NOTE;

TRANSITION FROM MANHOLE BENCH TO CHANNEL SHALL BE ROUNDED WITH NO SHARP EDGES. PIPE PENETRATIONS AND CHANNELS SHALL PROVIDE A SMOOTH SURFACE THAT SHALL NOT RETAIN ANY WATER.

NOTES

1. DROP OF GRADE THRU MANHOLE SHALL BE 0.10', UNLESS OTHERWISE NOTED.
2. MANHOLES SHALL BE SET PLUMB.
3. FOR CONNECTION OF EXISTING SEWER PIPE TO NEW MANHOLE, PROVIDE 3 LF OF PVC SEWER PIPE AND ROMAC 501 COUPLING, OR EQUAL.

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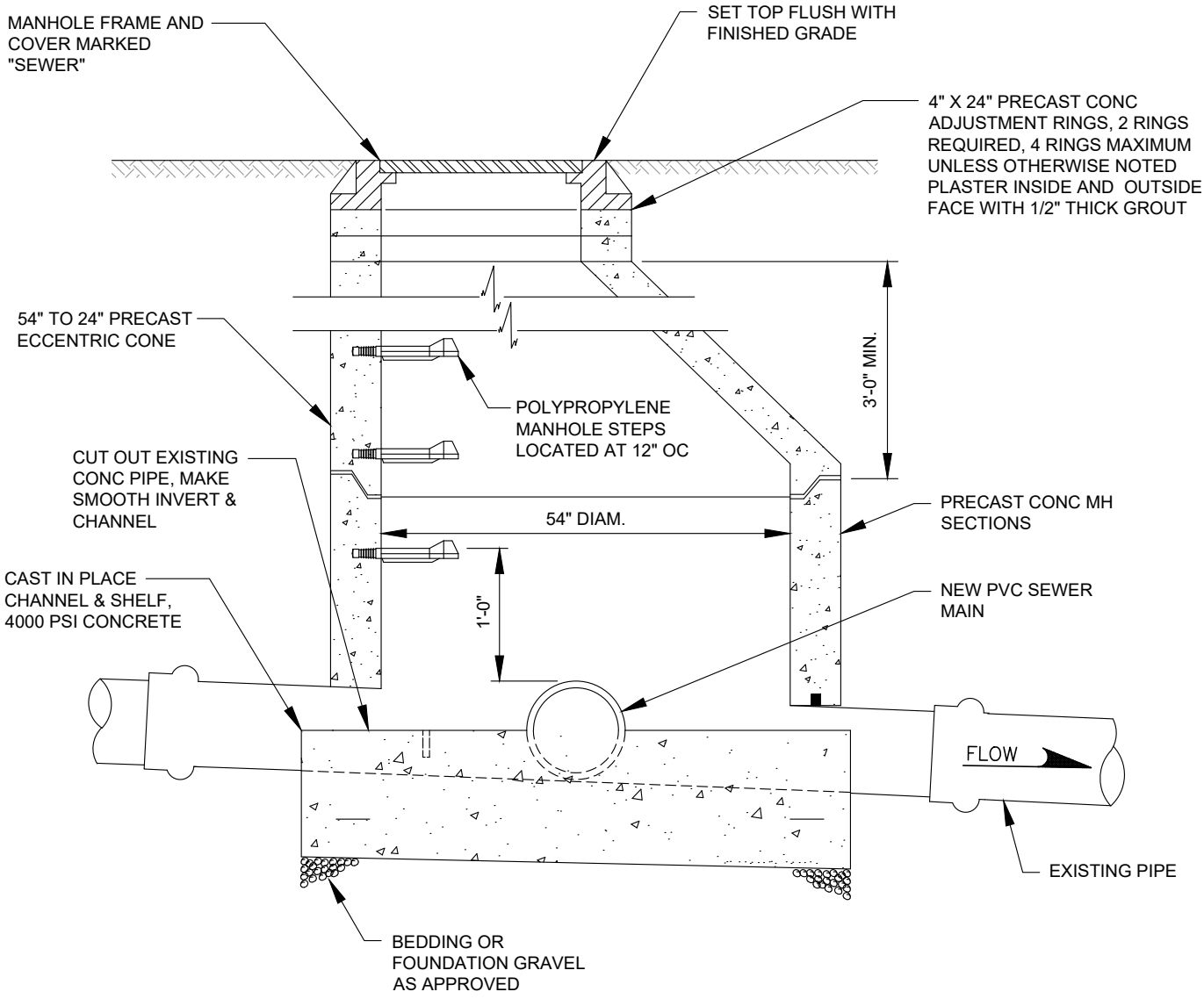
SS-2
STANDARD 48-INCH MANHOLE

Gray & Osborne, Inc.
CONSULTING ENGINEERS

m:\OMAK\GENERAL\developer standards\Details\SS-2 Standard 48-in Manhole.dwg, 5/1/2024 10:52 AM, FRANK PARKER



City of Omak
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SS-3
SADDLE MANHOLE

Gray & Osborne, Inc.
CONSULTING ENGINEERS

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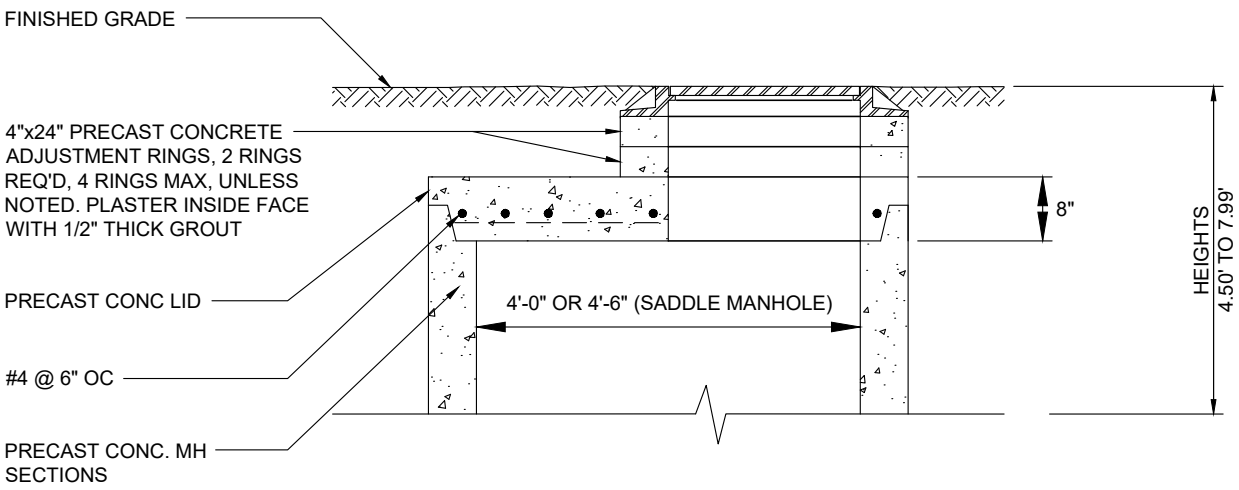

NOTE:

DETAILS OF MH BASE, WALL SECTIONS & STEPS IDENTICAL W/STANDARD 48" MANHOLE AND 54" SADDLE MANHOLE DETAILS.

City of Omak
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SS-4
SHALLOW MANHOLE

Gray & Osborne, Inc.
CONSULTING ENGINEERS

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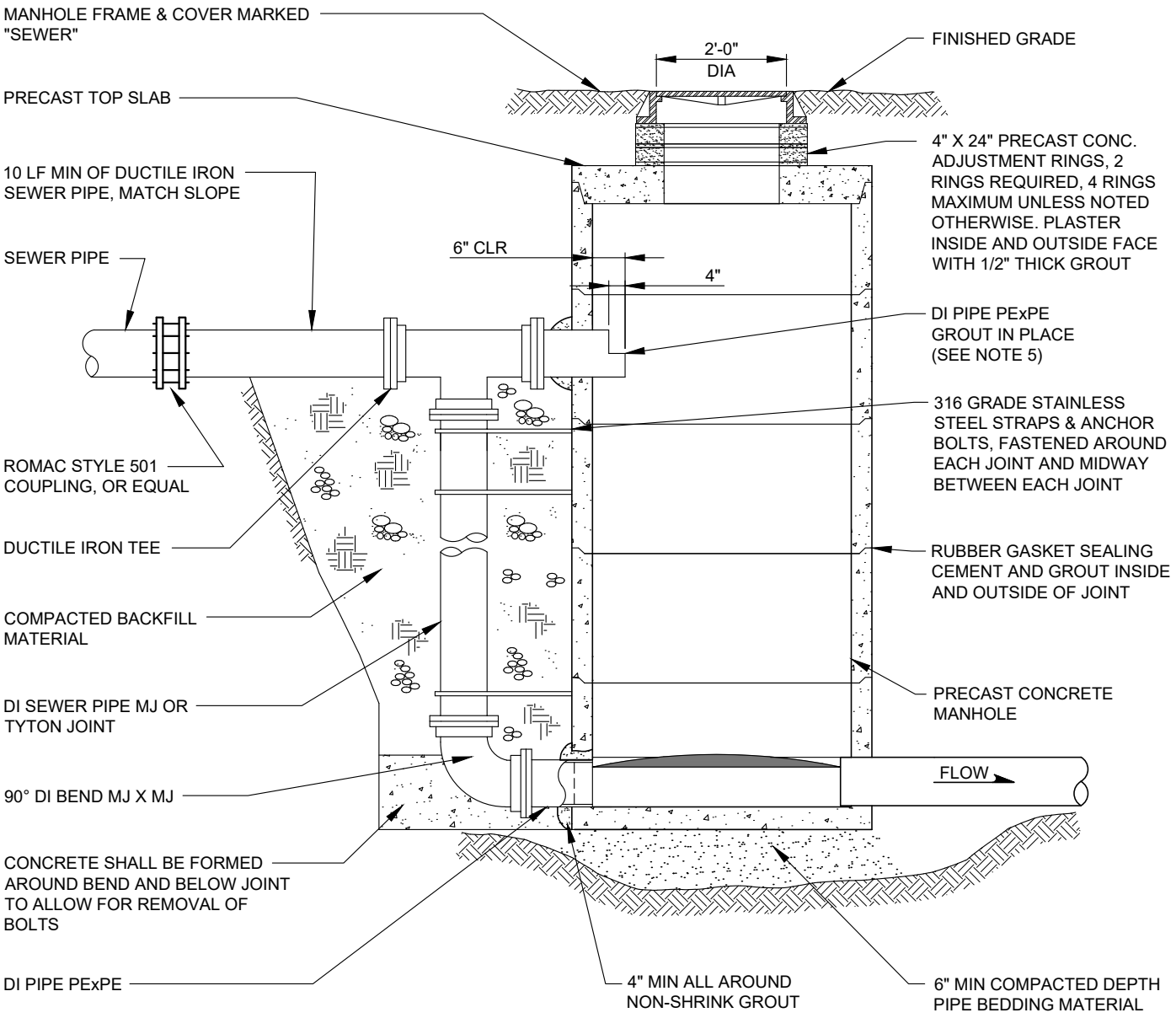

NOTES

1. MANHOLE STEPS NOT SHOWN FOR CLARITY (TO BE LOCATED 90° FROM DROP CONNECTIONS).
2. MANHOLES SHALL BE SET PLUMB.
3. CONTRACTOR SHALL NOTE THAT DROP MANHOLES MAY HAVE MULTIPLE DROP CONNECTIONS (REFER TO PLANS).
4. MANHOLE FRAME AND COVER NOT SHOWN IN ACTUAL LOCATION (SEE MANHOLE PLAN).
5. CONTRACTOR SHALL CUT PIPE TO PROVIDE 4-INCH HALF PIPE PROTRUSION INTO MANHOLE.

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SS-5
DROP MANHOLE CONNECTION

Gray & Osborne, Inc.
CONSULTING ENGINEERS

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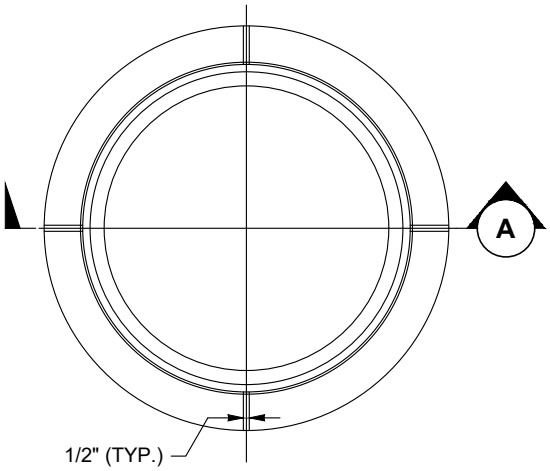
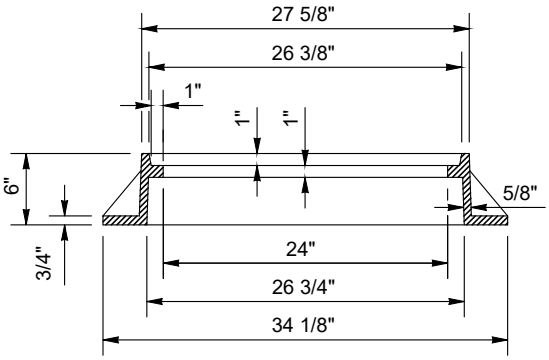
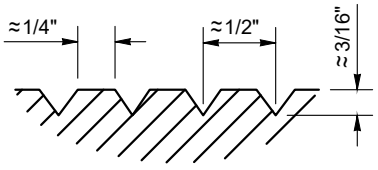


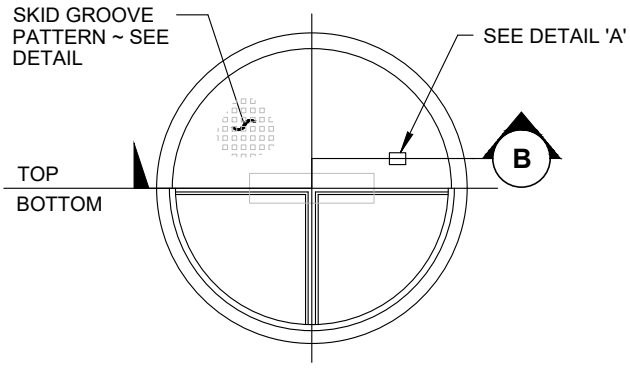
RING PLAN



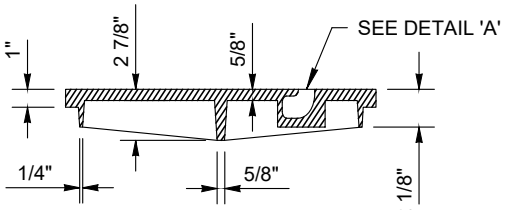
RING SECTION (A)



SKID GROOVE PATTERN DETAIL



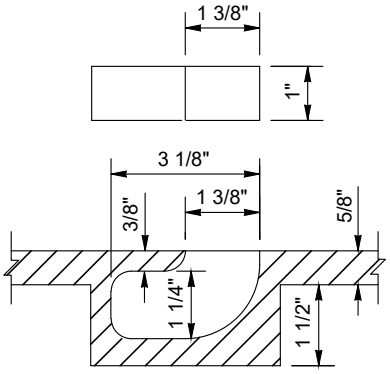
COVER PLAN



COVER SECTION (B)

(SEE NOTE 7)

STANDARD TYPE 1



BLIND PICK NOTCH DETAIL 'A'

NOTES:

1. THE GASKET AND GROOVE MAY BE IN THE SEAT (FRAME) OR IN THE UNDERSIDE OF THE COVER. THE GASKET MAY BE "T" SHAPED IN SECTION. THE GROOVE MAY BE CAST OR MACHINED.
2. BOLT-DOWN CAPABILITY IS REQUIRED ON ALL FRAMES, GRATES, AND COVERS, UNLESS SPECIFIED OTHERWISE IN THE CONTRACT. PROVIDE 3 HOLES IN THE FRAME THAT ARE VERTICALLY ALIGNED WITH THE GRATE OR COVER SLOTS. THE FRAME SHALL ACCEPT THE 304 STAINLESS STEEL (S.S) 5/8" - 11 NC X 2" (IN) ALLEN HEAD CAP SCREW BY BEING TAPPED, OR OTHER APPROVED MECHANISM. LOCATION OF BOLT DOWN HOLES VARIES BY MANUFACTURER.
3. FOR BOLT-DOWN MANHOLE RING AND COVERS THAT ARE NOT DESIGNATED "WATERTIGHT," THE NEOPRENE GASKET, GROOVE, AND WASHER ARE NOT REQUIRED.
4. WASHER SHALL BE NEOPRENE (DETAIL "B").
5. IN LIEU OF BLIND PICK NOTCH FOR MANHOLE COVERS, A SINGLE 1" (IN) PICK HOLE IS ACCEPTABLE. HOLE LOCATION AND NUMBER OF HOLES MAY VARY BY MANUFACTURER.
6. ALTERNATIVE REINFORCING DESIGNS ARE ACCEPTABLE IN LIEU OF THE RIB DESIGN.
7. FOR CLARITY, THE VERTICAL SCALE OF THE COVER SECTION HAS BEEN EXAGGERATED, IT IS 1.5 TIMES THE HORIZONTAL SCALE (1H:1.5V).

City of Omak
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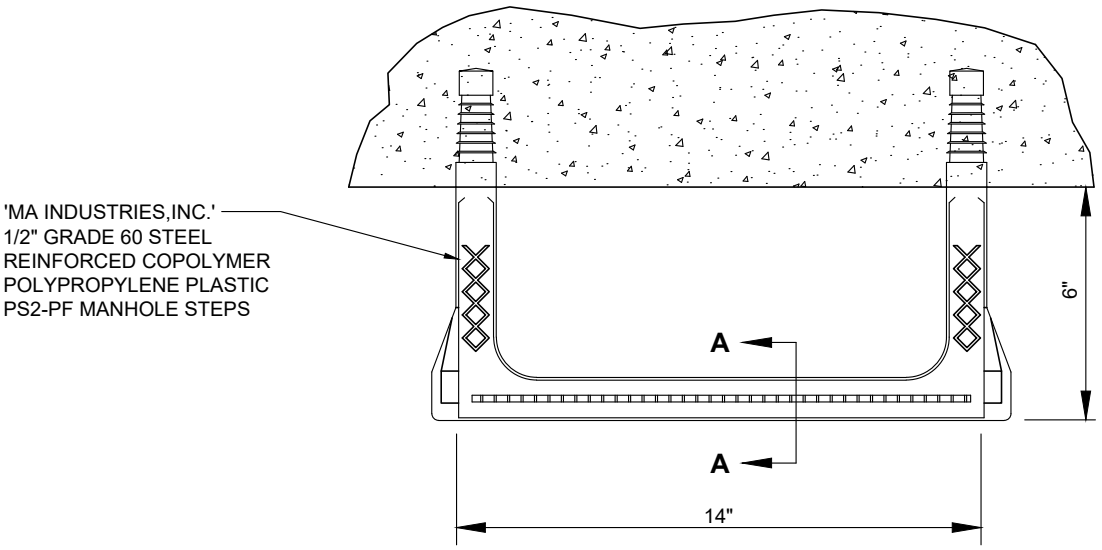
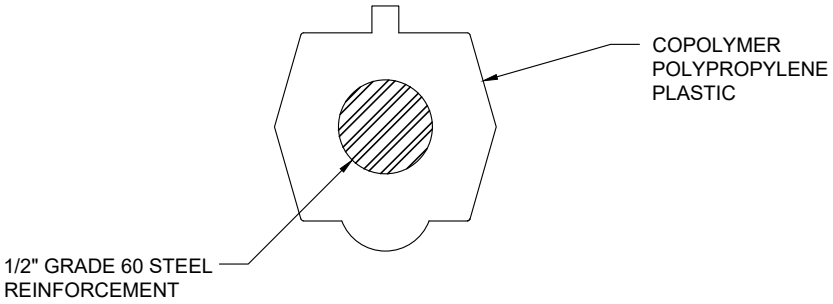
SS-6
STANDARD MANHOLE FRAME AND COVER

Gray & Osborne, Inc.
CONSULTING ENGINEERS

m:\OMAK\GENERAL\developer standards\Details\SS-6 Manhole Frame and Cover.dwg, 5/1/2024 10:53 AM, FRANK PARKER





SECTION A-A

City of Omak
WASHINGTON STATE
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SS-7
MANHOLE STEPS

Gray & Osborne, Inc.
CONSULTING ENGINEERS

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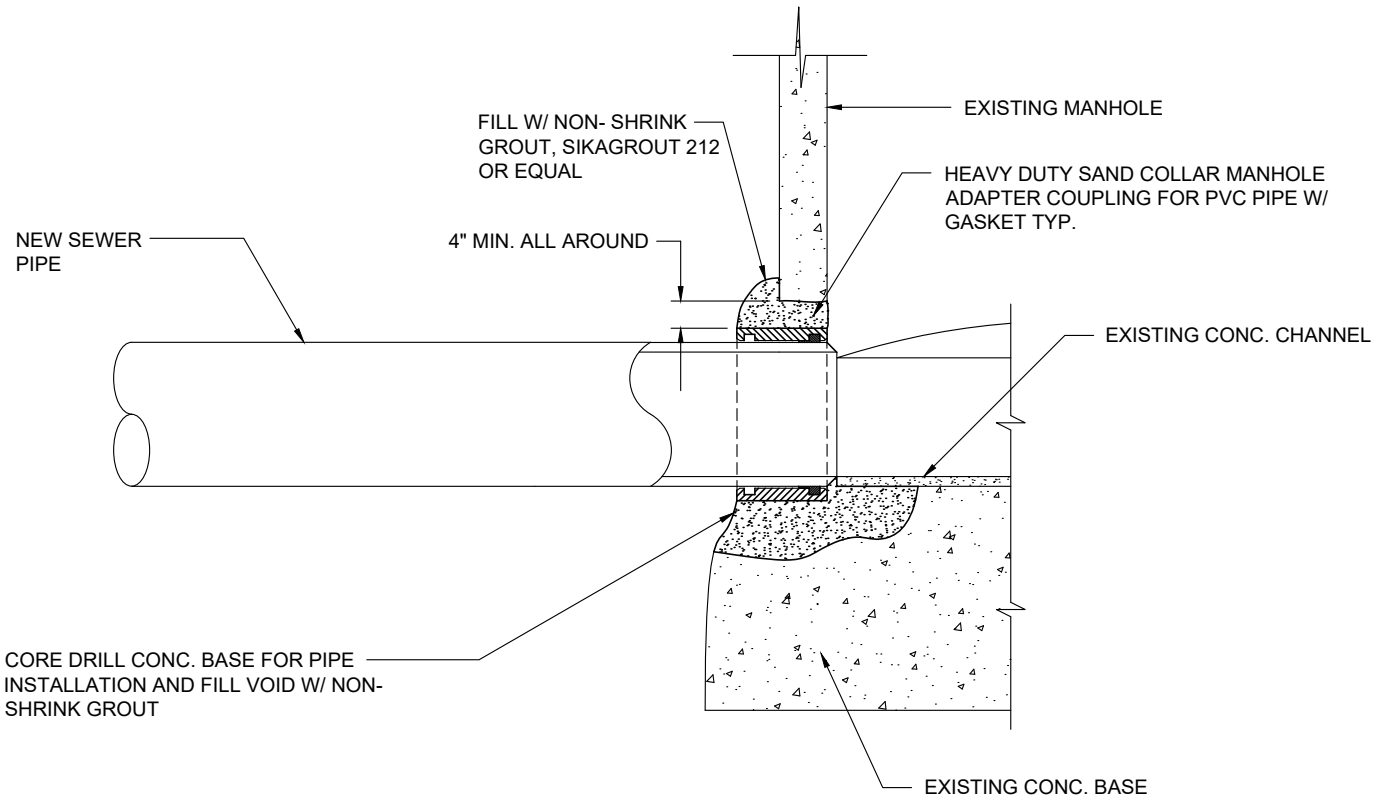

City of Omak
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SS-8
CONNECTION TO EXISTING MANHOLE STRUCTURE

Gray & Osborne, Inc.
CONSULTING ENGINEERS

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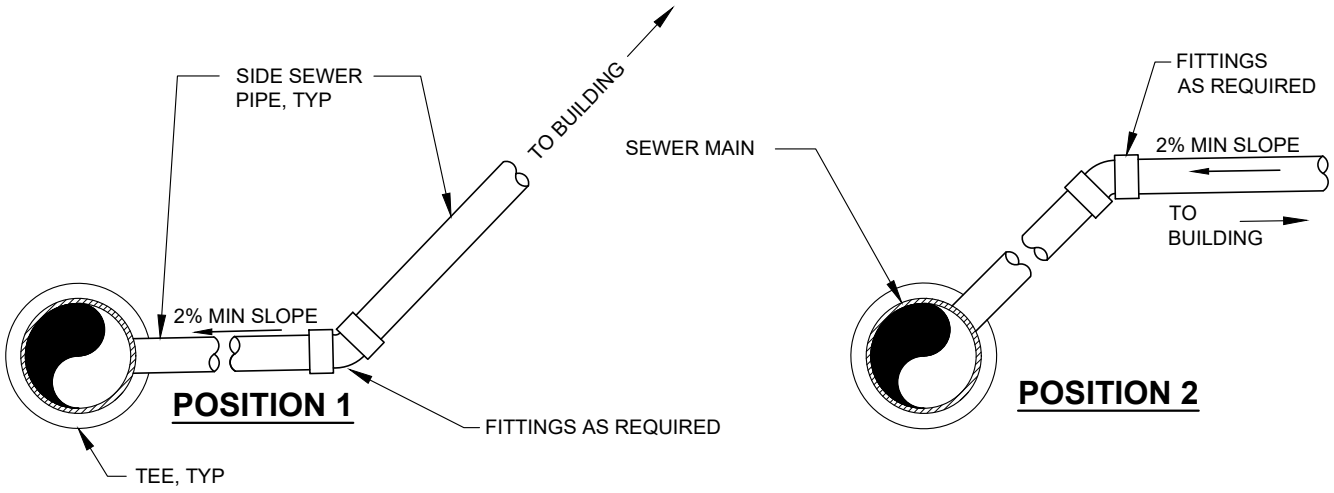
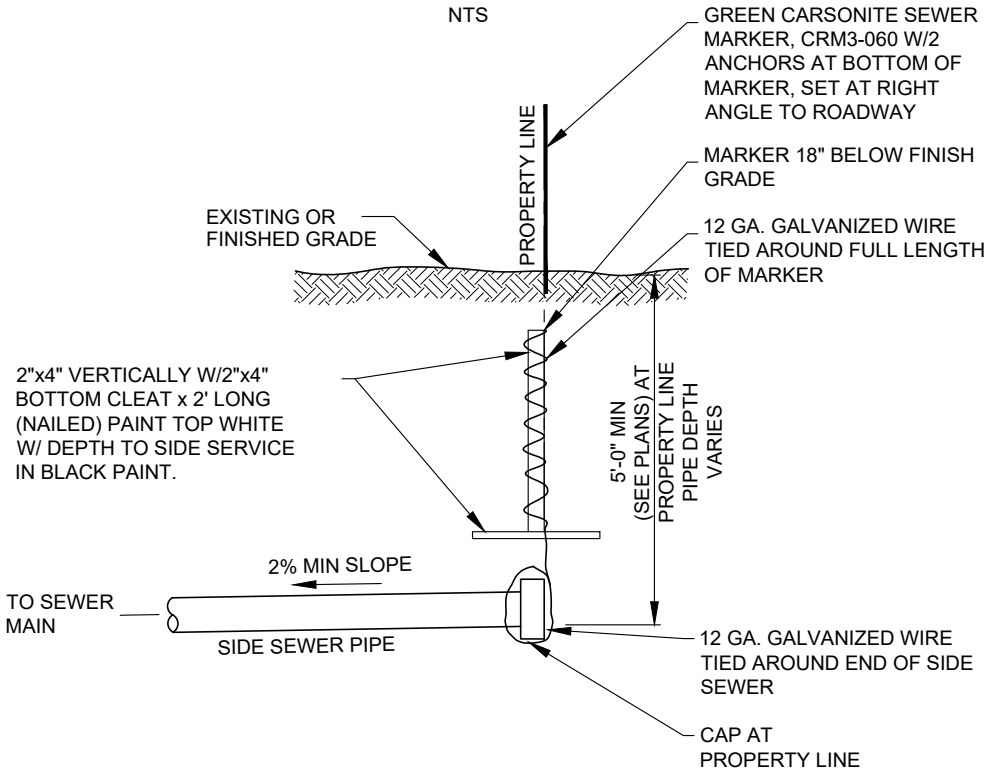


SIDE SEWER CONNECTION

NTS



SIDE SEWER STUB

NTS

City of Omak
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SS-9
STANDARD SIDE SEWER

Gray & Osborne, Inc.
CONSULTING ENGINEERS

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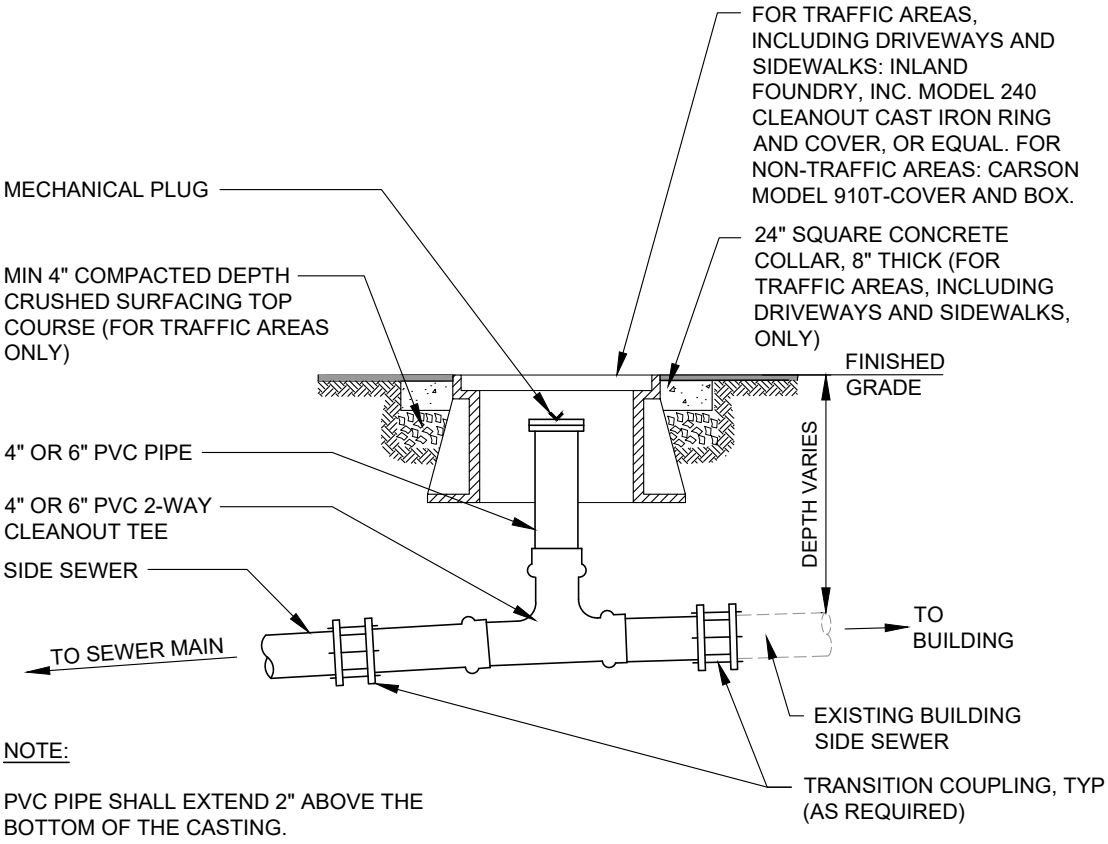

NOTE:

PVC PIPE SHALL EXTEND 2" ABOVE THE BOTTOM OF THE CASTING.

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SS-10
SANITARY SEWER CLEANOUT

Gray & Osborne, Inc.
CONSULTING ENGINEERS

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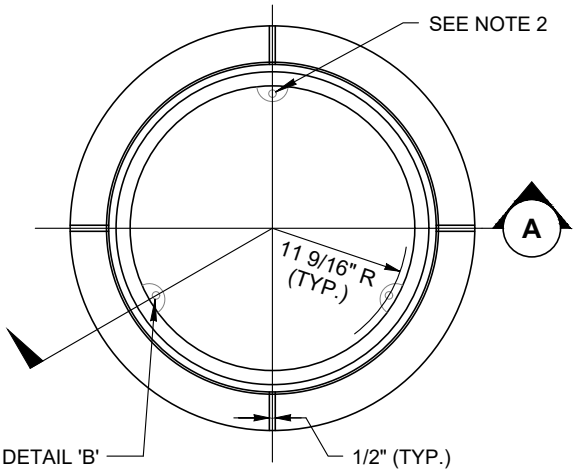
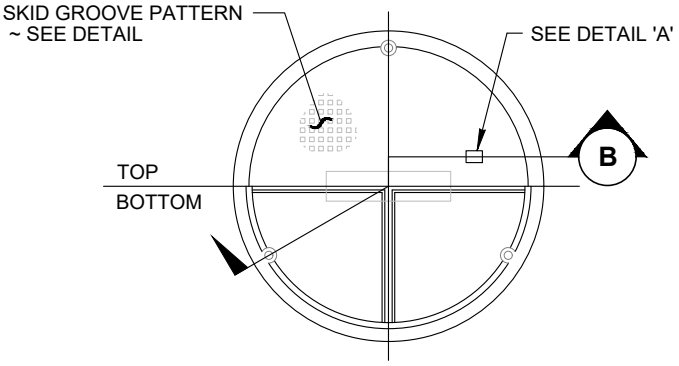
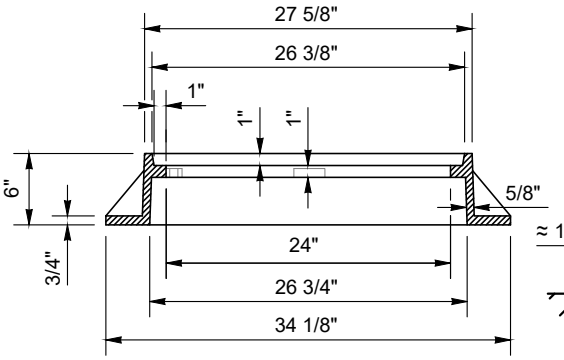


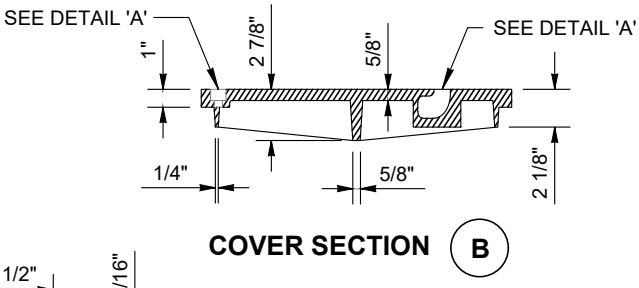
RING PLAN



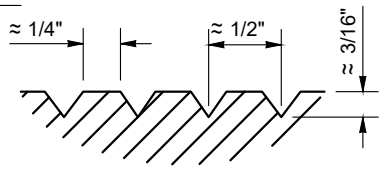
COVER PLAN



RING SECTION (A)

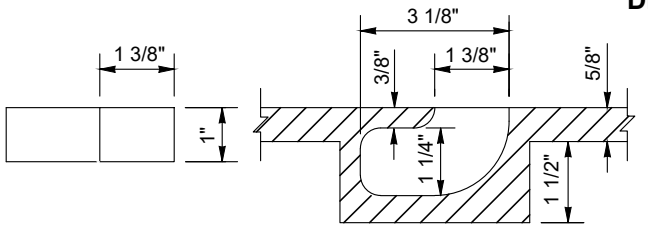


COVER SECTION (B)

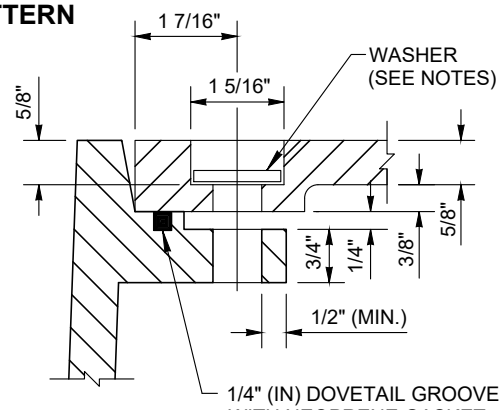


SKID GROOVE PATTERN DETAIL

BOLT-DOWN / WATERTIGHT TYPE 2



BLIND PICK NOTCH DETAIL 'A'



BOLT-DOWN / WATERTIGHT DETAIL 'B'

NOTES:

1. THE GASKET AND GROOVE MAY BE IN THE SEAT (FRAME) OR IN THE UNDERSIDE OF THE COVER. THE GASKET MAY BE "T" SHAPED IN SECTION. THE GROOVE MAY BE CAST OR MACHINED.
2. BOLT-DOWN CAPABILITY IS REQUIRED ON ALL FRAMES, GRATES, AND COVERS, UNLESS SPECIFIED OTHERWISE IN THE CONTRACT. PROVIDE 3 HOLES IN THE FRAME THAT ARE VERTICALLY ALIGNED WITH THE GRATE OR COVER SLOTS. THE FRAME SHALL ACCEPT THE 304 STAINLESS STEEL (S.S) 5/8" - 11 NC X 2" (IN) ALLEN HEAD CAP SCREW BY BEING TAPPED, OR OTHER APPROVED MECHANISM. LOCATION OF BOLT DOWN HOLES VARIES BY MANUFACTURER.
3. FOR BOLT-DOWN MANHOLE RING AND COVERS THAT ARE NOT DESIGNATED "WATERTIGHT," THE NEOPRENE GASKET, GROOVE, AND WASHER ARE NOT REQUIRED.
4. WASHER SHALL BE NEOPRENE (DETAIL "B").
5. IN LIEU OF BLIND PICK NOTCH FOR MANHOLE COVERS, A SINGLE 1" (IN) PICK HOLE IS ACCEPTABLE. HOLE LOCATION AND NUMBER OF HOLES MAY VARY BY MANUFACTURER.
6. ALTERNATIVE REINFORCING DESIGNS ARE ACCEPTABLE IN LIEU OF THE RIB DESIGN.
7. FOR CLARITY, THE VERTICAL SCALE OF THE COVER SECTION HAS BEEN EXAGGERATED, IT IS 1.5 TIMES THE HORIZONTAL SCALE (1H:1.5V).

City of Omak
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heart of the okanogan

SS-11
WATER TIGHT MANHOLE FRAME AND COVER

Gray & Osborne, Inc.
CONSULTING ENGINEERS

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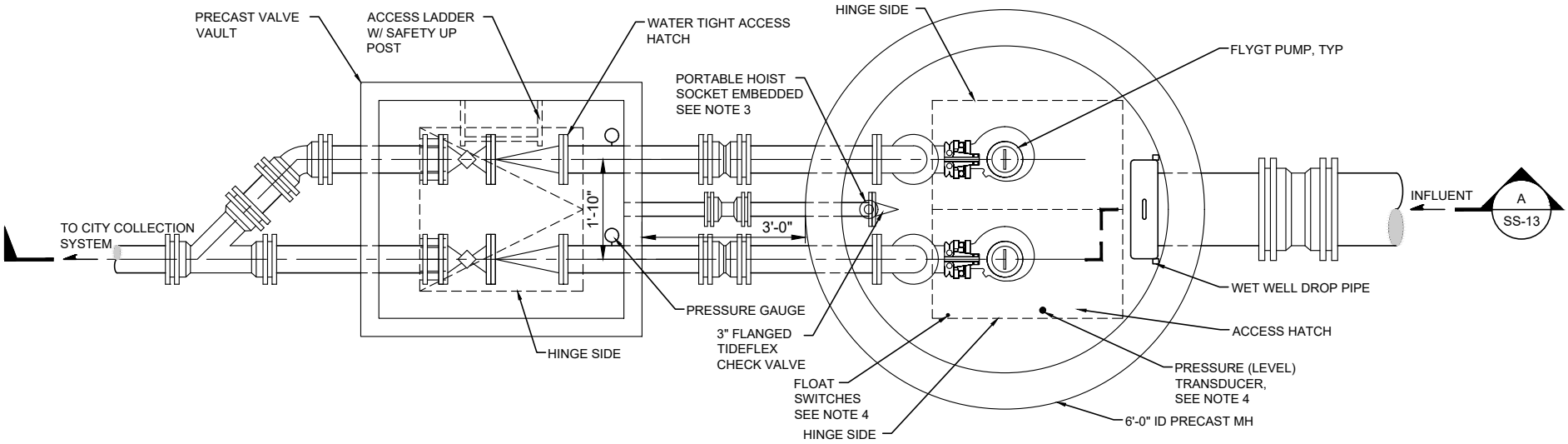

NOTES:

1. PUMP STATION SHOWN IS A GENERAL ARRANGEMENT DRAWING. EACH DEVELOPER PUMP STATION SHALL BE REVIEWED ON A CASE BY CASE BASIS AND MODIFIED TO MEET THE NEEDS OF THE DEVELOPMENT AND THE CITY.

2. PUMP STATION SHALL BE DESIGNED IN ACCORDANCE WITH CURRENT DEPARTMENT OF ECOLOGY CRITERIA FOR SEWAGE WORKS DESIGN.

3. CONTRACTOR SHALL COORDINATE THE LOCATION OF THE HOST SOCKET WITH THE SPECIFIC PUMP SELECTED FOR THE PROJECT. HOIST SHALL BE LOCATED SUCH THAT THE HOOK IS DIRECTLY CENTERED ON THE LIFTING POINT OF THE PUMP.

4. TELEMETRY AND CONTROLS SHALL BE PROVIDED IN ACCORDANCE WITH THE CITY'S LATEST STANDARDS.

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SS-12
COLLECTION SYSTEM PUMP STATION

Gray & Osborne, Inc.
CONSULTING ENGINEERS

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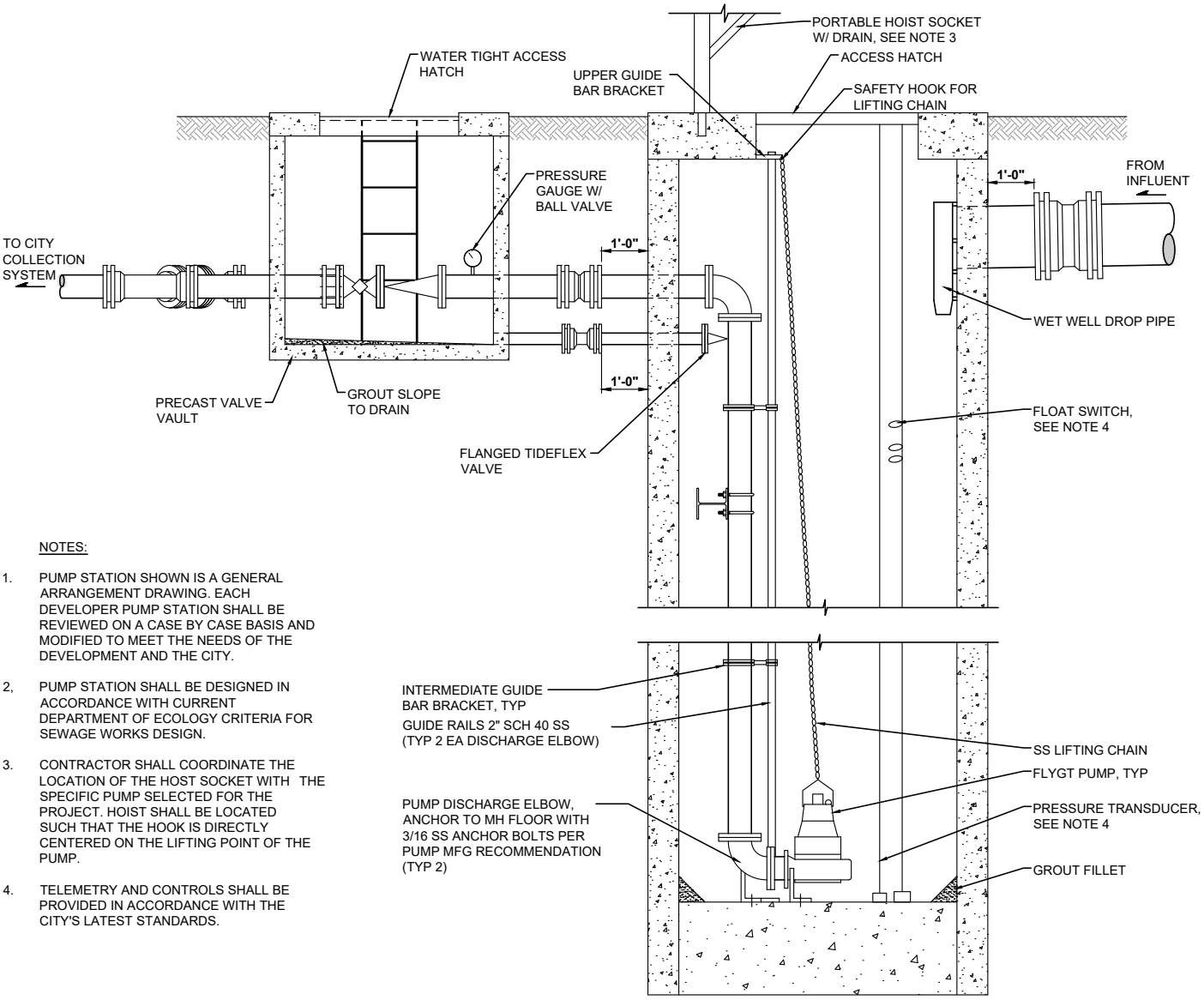

NOTES:

1. PUMP STATION SHOWN IS A GENERAL ARRANGEMENT DRAWING. EACH DEVELOPER PUMP STATION SHALL BE REVIEWED ON A CASE BY CASE BASIS AND MODIFIED TO MEET THE NEEDS OF THE DEVELOPMENT AND THE CITY.

2. PUMP STATION SHALL BE DESIGNED IN ACCORDANCE WITH CURRENT DEPARTMENT OF ECOLOGY CRITERIA FOR SEWAGE WORKS DESIGN.

3. CONTRACTOR SHALL COORDINATE THE LOCATION OF THE HOST SOCKET WITH THE SPECIFIC PUMP SELECTED FOR THE PROJECT. HOIST SHALL BE LOCATED SUCH THAT THE HOOK IS DIRECTLY CENTERED ON THE LIFTING POINT OF THE PUMP.

4. TELEMETRY AND CONTROLS SHALL BE PROVIDED IN ACCORDANCE WITH THE CITY'S LATEST STANDARDS.

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SS-13
COLLECTION SYSTEM PUMP STATION SECTION

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STORM DRAIN DETAILS

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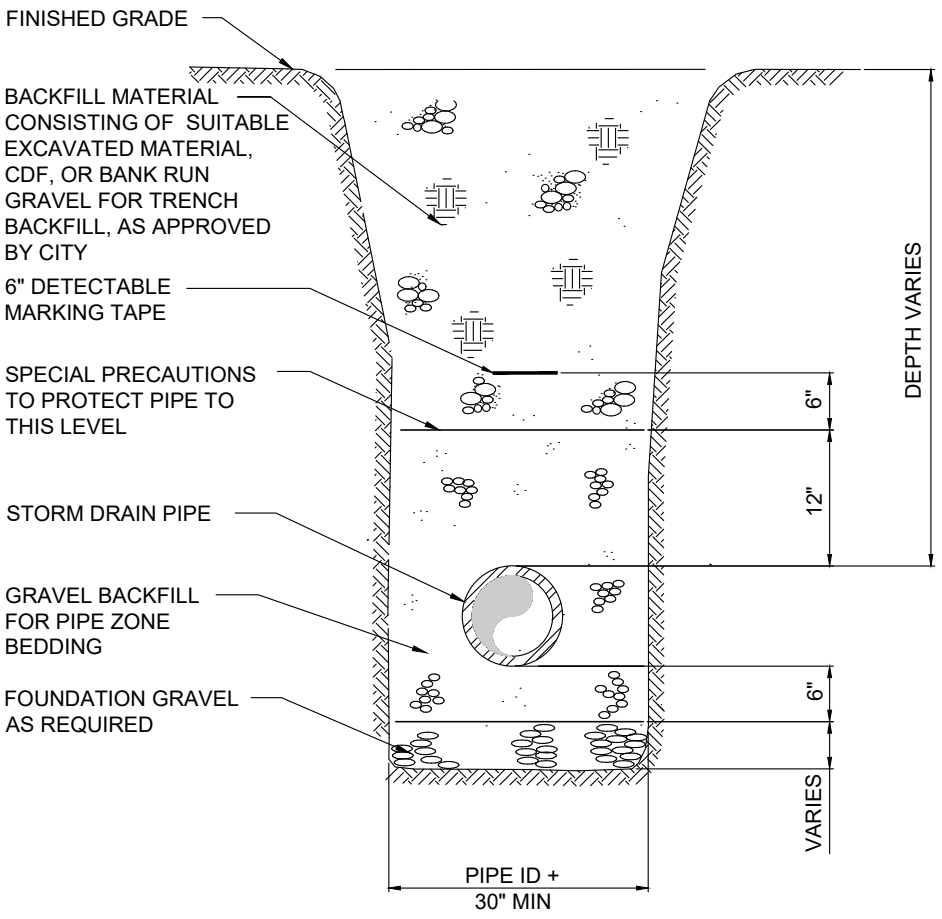

NOTE:

ALL BACKFILL SHALL BE COMPACTED TO 95% MODIFIED PROCTOR, ASTM D1557

BACKFILL MATERIAL AND COMPACTION SHALL BE IN CONFORMANCE WITH THE CITY STANDARDS AND/OR STATE OR COUNTY PERMIT REQUIREMENTS.

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SD-1
STORM DRAIN TRENCH SECTION

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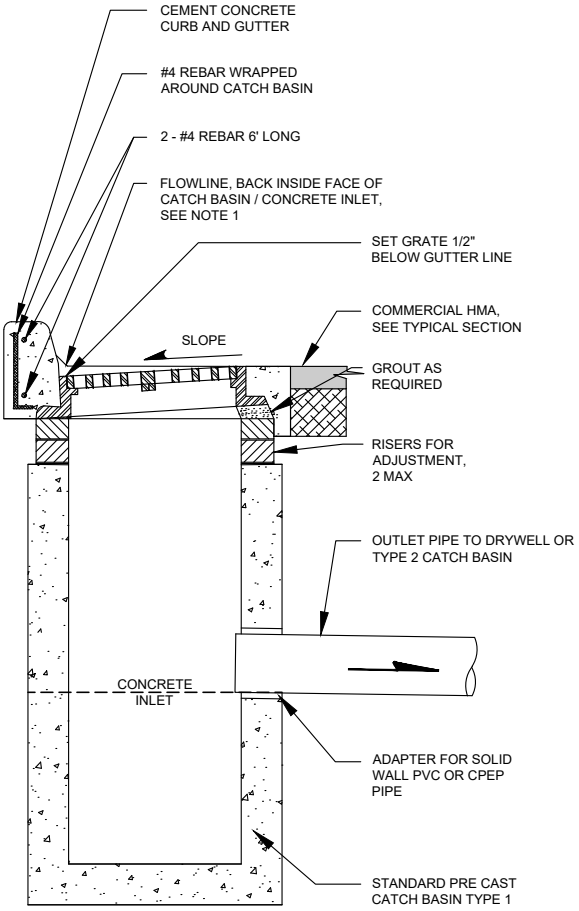
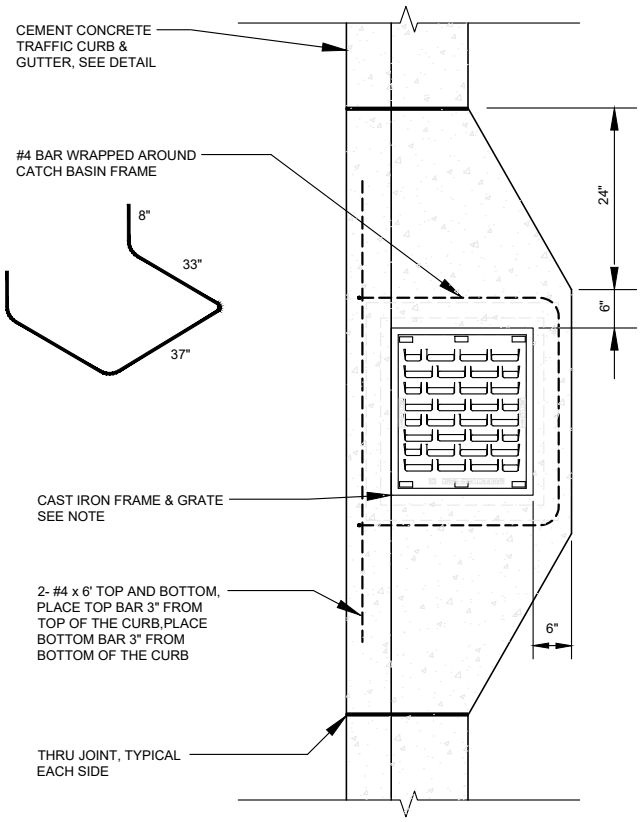
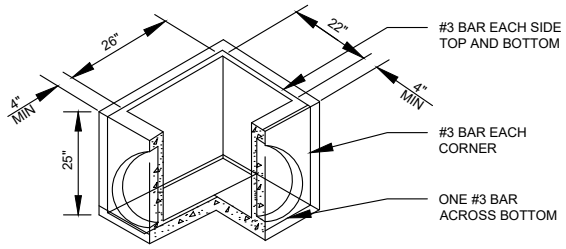


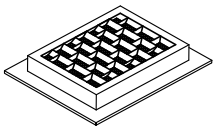
SECTION



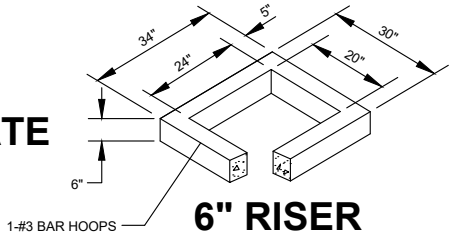
PLAN



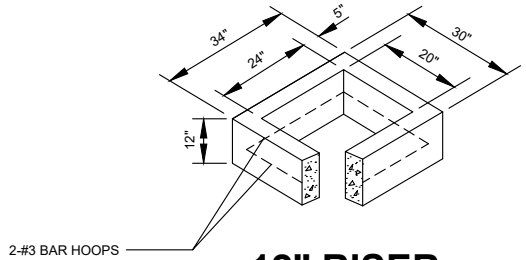
CONCRETE INLET



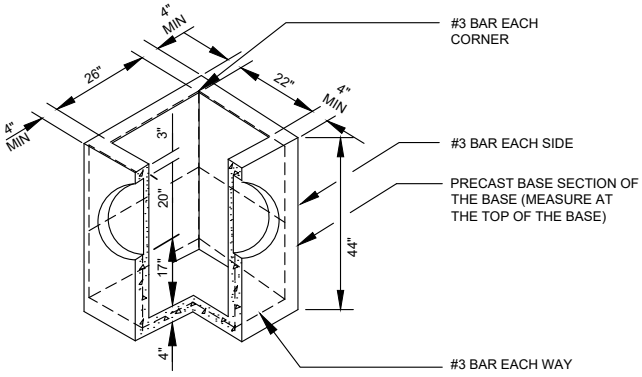
FRAME & GRATE



6" RISER



12" RISER



CATCH BASIN TYPE 1

NOTES:

1. OFFSET DISTANCE FOR CATCH BASINS TYPE 1 AND/OR CONCRETE INLETS IS ℄ OF ROAD TO FLOWLINE, BACK INSIDE FACE OF CATCH BASIN / CONCRETE INLET.
2. CONTRACTOR SHALL USE BI-DIRECTIONAL GRATE WHERE FLOW COMES FROM GUTTER TO GRATE FROM BOTH DIRECTIONS.
3. BOLT-DOWN CAPABILITY IS REQUIRED ON ALL FRAMES, GRATES, AND COVERS UNLESS OTHERWISE DIRECTED BY THE CITY.

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SD-2
CATCH BASIN TYPE 1

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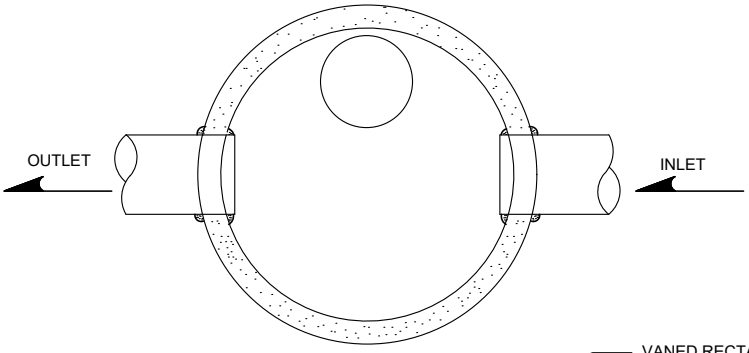
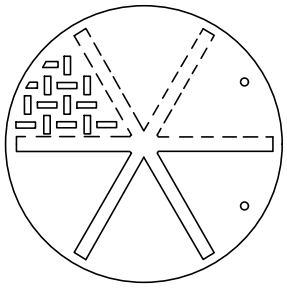




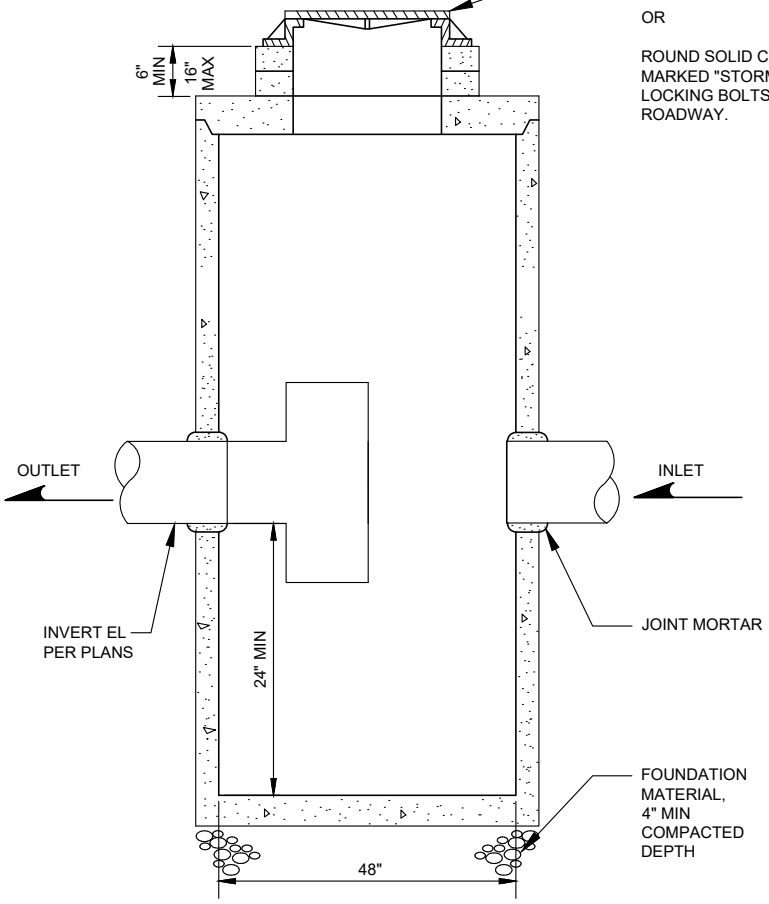
NON-SKID PATTERN SHALL BE CAST INTEGRAL ON TOP OF COVER, PATTERN NOT SHOWN FOR CLARITY

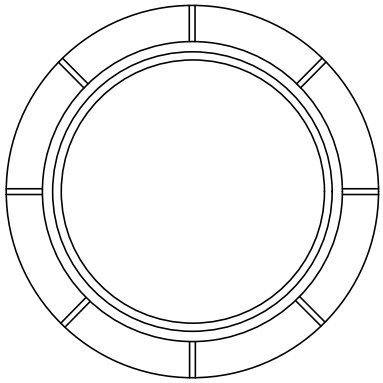
1" CORE, 1 HOLE TYP

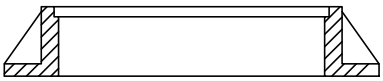
VANED RECTANGULAR COVER IF IN CURB & GUTTER.

OR

ROUND SOLID COVER MARKED "STORM" WITH LOCKING BOLTS IF IN ROADWAY.







FRAME AND COVER

NOTES:

1. CATCH BASINS AND CONCRETE INLETS TO BE CONSTRUCTED TO ASTM C 478 (AASHTO M 199) AND ASTM C 890 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE STANDARD SPECIFICATIONS.
2. AS AN ACCEPTABLE ALTERNATE TO REBAR, WELDED WIRE FABRIC HAVING A MINIMUM AREA OF 0.12 SQUARE INCHES PER FOOT MAY BE USED. WELDED WIRE FABRIC SHALL COMPLY TO ASTM A 497 (AASHTO M 221). WIRE FABRIC SHALL NOT BE PLACED IN THE KNOCKOUTS.
3. THE BOTTOM OF THE PRECAST BASE SECTION MAY BE ROUNDED
4. PRECAST BASES SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MINIMUM.
5. KNOCKOUTS MAY BE ON ALL 4 SIDES WITH MAXIMUM DIAMETER OF 20". KNOCKOUTS MAY BE EITHER ROUND OR "D" SHAPE. PIPE TO BE INSTALLED IN FACTORY SUPPLIED KNOCKOUTS.
6. KNOCKOUT OR CUTOUT HOLE SIZE IS EQUAL TO PIPE OUTER DIAMETER

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SD-3
CATCH BASIN TYPE 2

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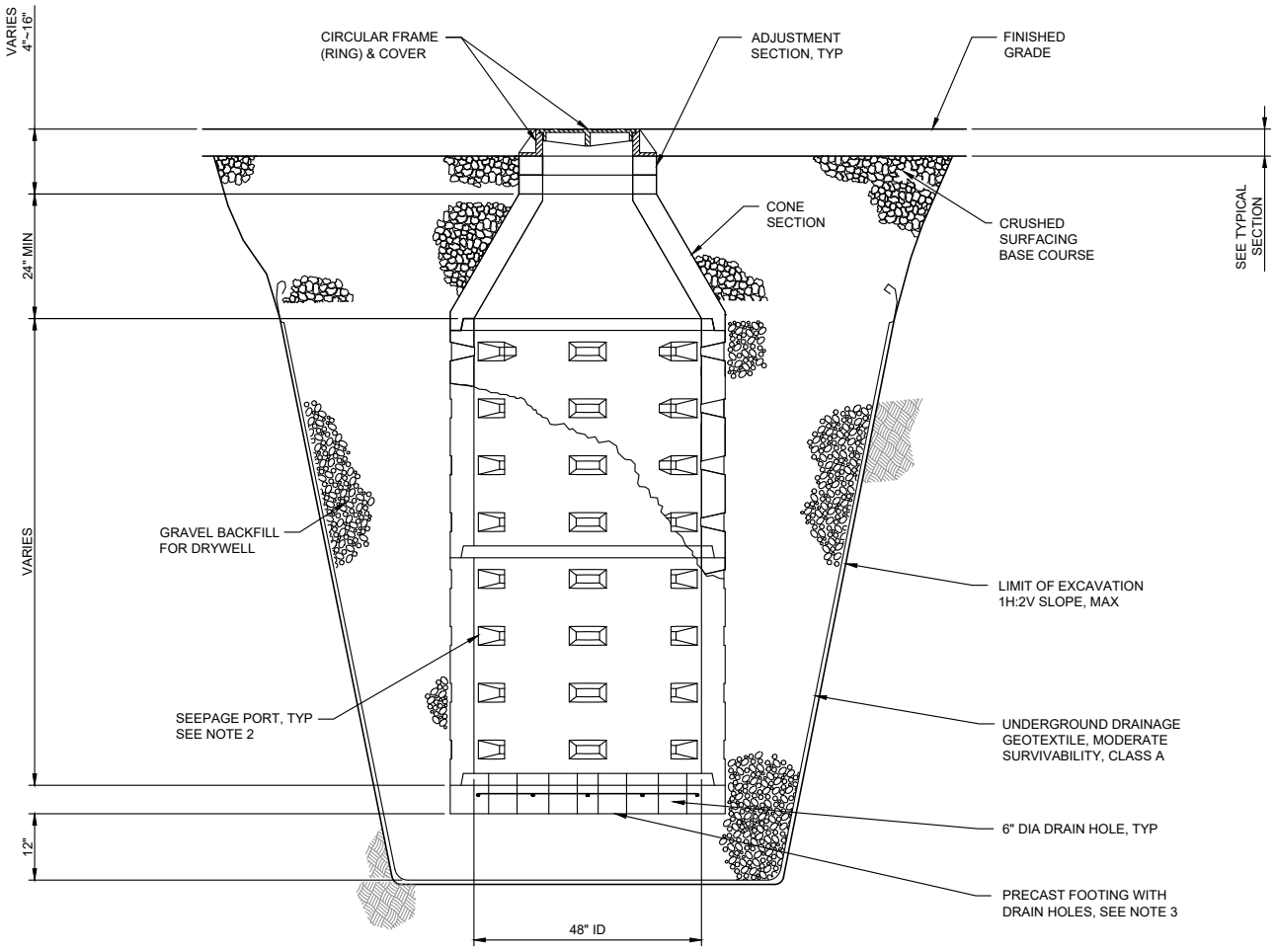
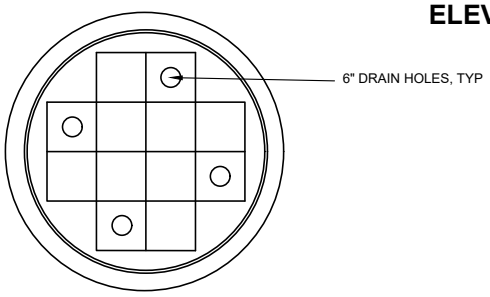


ELEVATION



PRECAST FOOTING DETAIL

NOTES:

1. PRECAST CONCRETE CONE SECTIONS MAY BE ECCENTRIC OR CONCENTRIC.
2. SEEPAGE PORT ORIENTATION VARIES AMONG MANUFACTURERS.
3. FOR DEPTHS OVER 15' USE 72" X 8" ALTERNATIVE PRECAST FOOTING.

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SD-4
PRECAST CONCRETE DRYWELL

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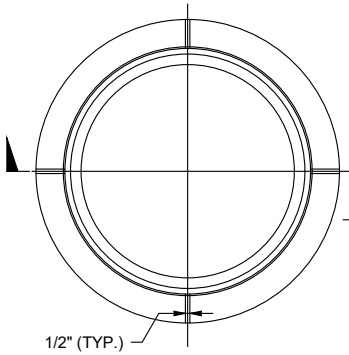
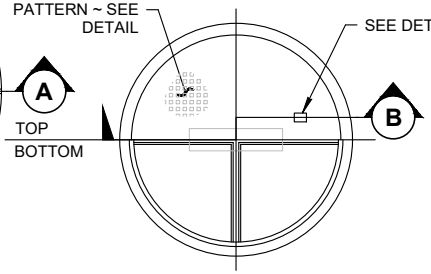
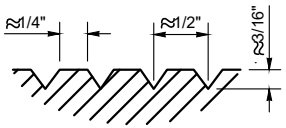


RING PLAN



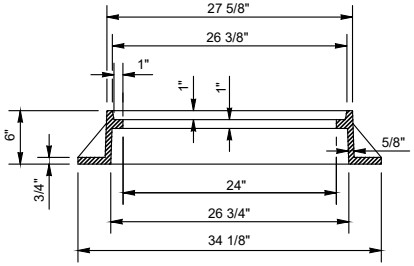
COVER PLAN



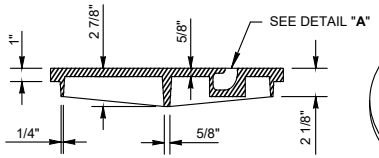
SKID GROOVE PATTERN DETAIL

NOTES:

1. THE GASKET AND GROOVE MAY BE IN THE SEAT (FRAME) OR IN THE UNDERSIDE OF THE COVER. THE GASKET MAY BE "T" SHAPED IN SECTION. THE GROOVE MAY BE CAST OR MACHINED.
2. BOLT-DOWN CAPABILITY IS REQUIRED ON ALL FRAMES, GRATES, AND COVERS, UNLESS SPECIFIED OTHERWISE IN THE CONTRACT. PROVIDE 3 HOLES IN THE FRAME THAT ARE VERTICALLY ALIGNED WITH THE GRATE OR COVER SLOTS. THE FRAME SHALL ACCEPT THE304 STAINLESS STEEL (S.S) 5/8" - 11 NC X 2" (IN) ALLEN HEAD CAP SCREW BY BEING TAPPED, OR OTHER APPROVED MECHANISM. LOCATION OF BOLT DOWN HOLES VARIES BY MANUFACTURER.
3. FOR BOLT-DOWN MANHOLE RING AND COVERS THAT ARE NOT DESIGNATED "WATERTIGHT," THE NEOPRENE GASKET, GROOVE, AND WASHER ARE NOT REQUIRED.
4. WASHER SHALL BE NEOPRENE (DETAIL "B").
5. IN LIEU OF BLIND PICK NOTCH FOR MANHOLE COVERS, A SINGLE 1" (IN) PICK HOLE IS ACCEPTABLE. HOLE LOCATION AND NUMBER OF HOLES MAY VARY BY MANUFACTURER.
6. ALTERNATIVE REINFORCING DESIGNS ARE ACCEPTABLE IN LIEU OF THE RIB DESIGN.
7. FOR CLARITY, THE VERTICAL SCALE OF THE COVER SECTION HAS BEEN EXAGGERATED, IT IS 1.5 TIMES THE HORIZONTAL SCALE (1H:1.5V).

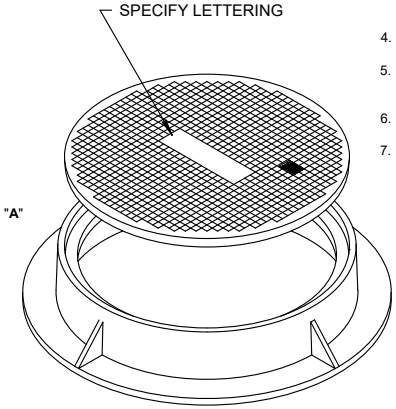


RING SECTION (A)

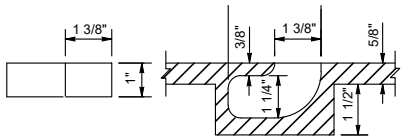


COVER SECTION (B)
(SEE NOTE 7)

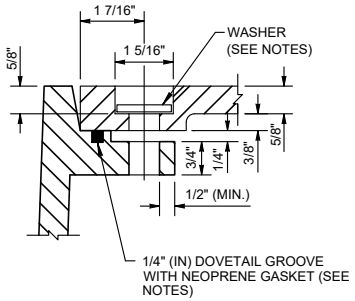
STANDARD TYPE 1



ISOMETRIC VIEW



BLIND PICK NOTCH DETAIL 'A'



BOLT-DOWN / WATERTIGHT DETAIL 'B'

STANDARD DRYWELL FRAME & COVER

NTS

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SD-5
STANDARD DRYWELL FRAME AND COVER

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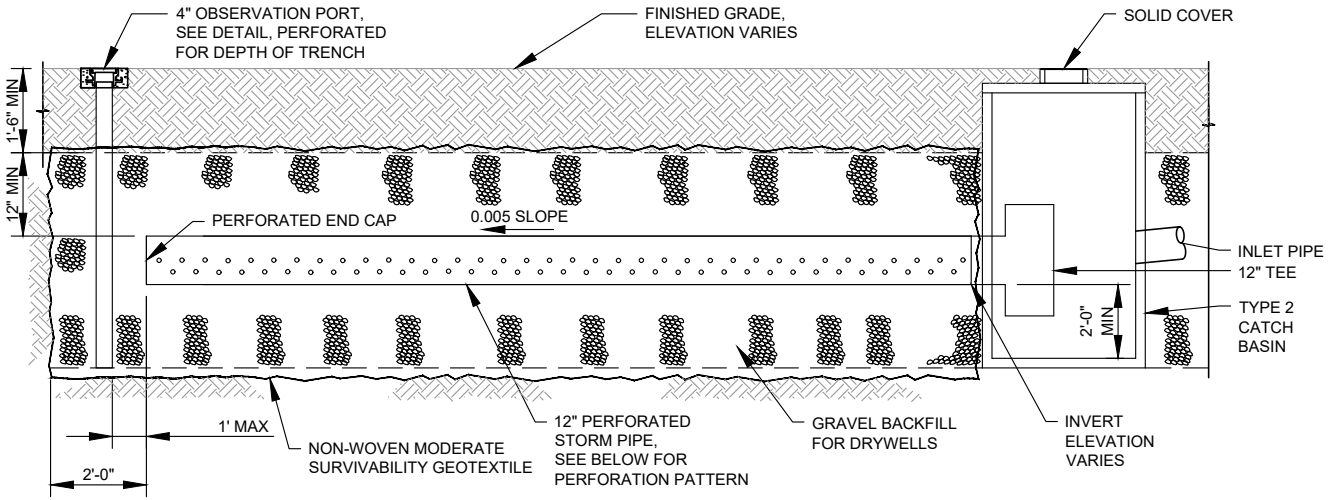
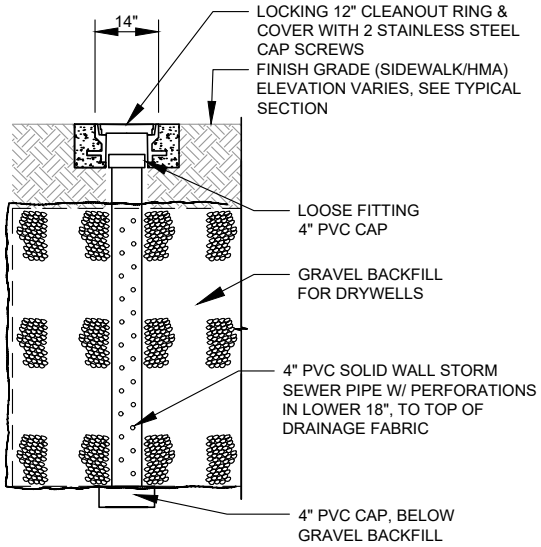
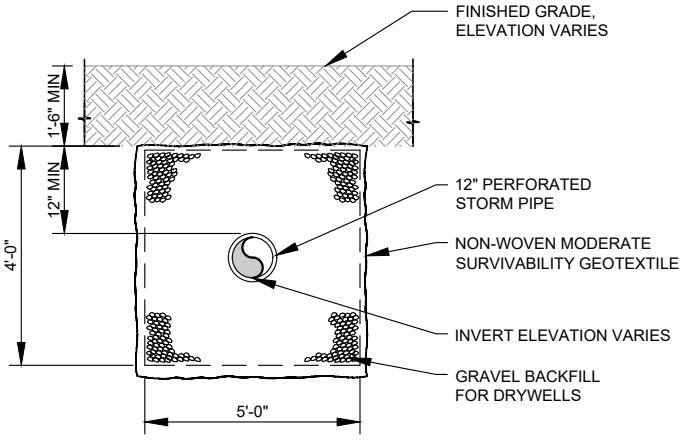


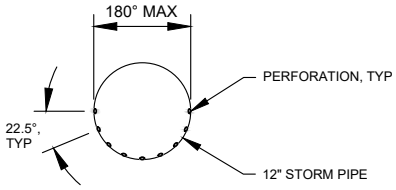
SIDE VIEW



OBSERVATION PORT



SECTION VIEW



PERFORATION PATTERN

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SD-6
INFILTRATION TRENCH

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STREET DETAILS

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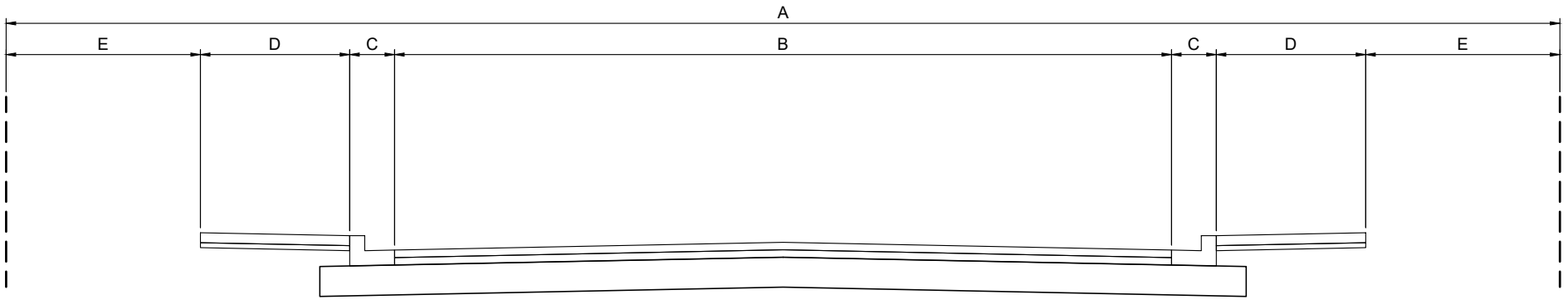

TYPICAL STREET SECTION TABLE

STREET CLASSIFICATION & ZONING (IF APPLICABLE)	A RIGHT-OF-WAY WIDTH	B PAVEMENT WIDTH (GUTTER LIP TO GUTTER LIP)	C CURB AND GUTTER TYPE (& WIDTH)	D SIDEWALK WIDTH	E UTILITY CORRIDOR / BUFFER
PRINCIPAL ARTERIAL STREET: COMMERCIAL AND/OR INDUSTRIAL ZONING DISTRICTS	80'	44'	VERTICAL (1.5') BOTH SIDES	12' BOTH SIDES	4.5' BOTH SIDES
MINOR ARTERIAL STREET: RESIDENTIAL ZONING DISTRICTS	70'	42'	VERTICAL (1.5') BOTH SIDES	7' BOTH SIDES	5.5' BOTH SIDES
MAJOR COLLECTOR STREET	60'	38'	VERTICAL (1.5') BOTH SIDES	5' BOTH SIDES	4.5' BOTH SIDES
MINOR COLLECTOR STREET	60'	30'	VERTICAL (1.5') BOTH SIDES	5' BOTH SIDES	8.5' BOTH SIDES
LOCAL ACCESS STREET	60'	30'	VERTICAL (1.5') BOTH SIDES	5' ONE SIDE DESIGNATED BY CITY	VARIES

NOTES:

1. ROADWAY SECTION DEPTHS MUST BE DETERMINED FROM A GEOTECHNICAL INVESTIGATION PERFORMED BY A LICENSED GEOTECHNICAL ENGINEER.
2. SIDEWALKS WILL BE REQUIRED WHERE EXTENDING CITY DESIGNATED WALKING ROUTES AND WHERE REQUIRED BY CITY TO SERVE PROPOSED PEDESTRIAN GENERATORS.
3. NO ON-STREET PARKING SHALL BE ALLOWED, UNLESS APPROVED BY THE CITY.
4. BIKE LANES WILL BE REQUIRED WHERE EXTENDING CITY DESIGNATED BIKE ROUTES AND WHERE REQUIRED BY CITY TO SERVE PROPOSED GENERATORS.

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ST-1
TYPICAL ROADWAY SECTION

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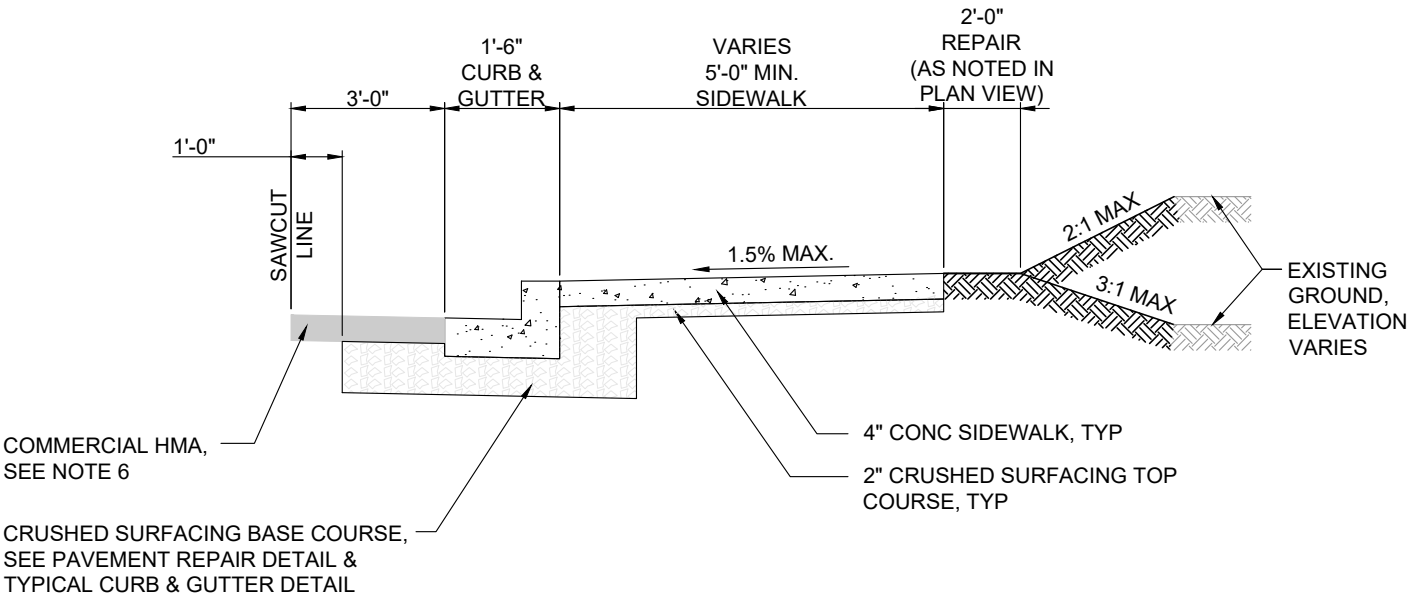

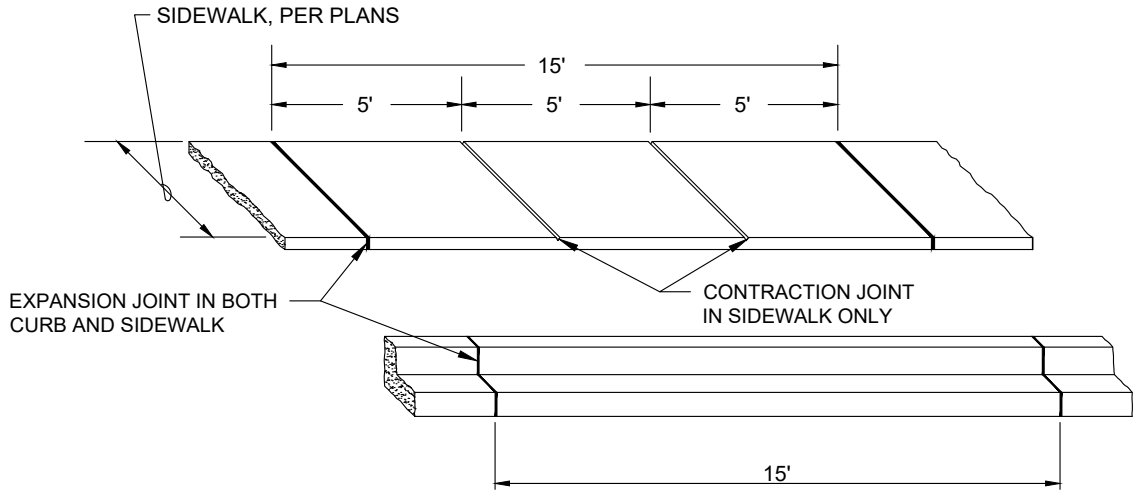

NOTES

1. EXPANSION/CONTRACTION JOINTS SHALL BE 3/8" ASPHALT SATURATED FELT TO FULL DEPTH OF CONCRETE PLACED AT 15' O.C. AND AT POINTS OF TANGENCY ON CURVES, AT CATCH BASINS/INLETS, AND AT EDGES OF ALLEYS, DRIVEWAYS, AND CURB RAMPS.

2. V-GROOVE MARKS SHALL BE 1/8" DEEP AND 1/4" WIDE PLACED AT 5' OC FOR 5' SIDEWALKS.

3. ALL JOINTS SHALL BE CLEAN AND EDGED TO A 1/4" RADIUS. JOINTS SHALL BE FLUSH WITH THE FINISHED SURFACE.

4. SIDEWALK SHALL CONSIST OF 4" DEPTH CEMENT CONC. PLACED ON 2" COMPACTED DEPTH CRUSHED SURFACING BASE COURSE.

5. SIDEWALK SHALL MEET ADA REQUIREMENTS AND SHALL HAVE NO LESS THAN FIVE FEET OF WIDTH SHALL BE THE MINIMUM PEDESTRIAN ACCESSIBLE ROUTE FREE OF VERTICAL AND HORIZONTAL OBSTRUCTIONS. GRATINGS, ACCESS COVERS, JUNCTION BOXES, CABLE VAULTS, PULL BOXES AND OTHER APPURTENANCES WITHIN THE SIDEWALK MUST HAVE SLIP RESISTANT SURFACES, BE FLUSH WITH SURFACE, AND MATCH GRADE OF THE SIDEWALK.

6. COMMERCIAL HMA PER TYPICAL ROADWAY SECTION FOR NEW CONSTRUCTION OR COMMERCIAL HMA PER TRENCH PATCH DETAIL (SEE WATER DETAILS) IF ADDING SIDEWALK TO AN EXISTING ROADWAY.

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ST-2
TYPICAL CONCRETE SIDEWALK

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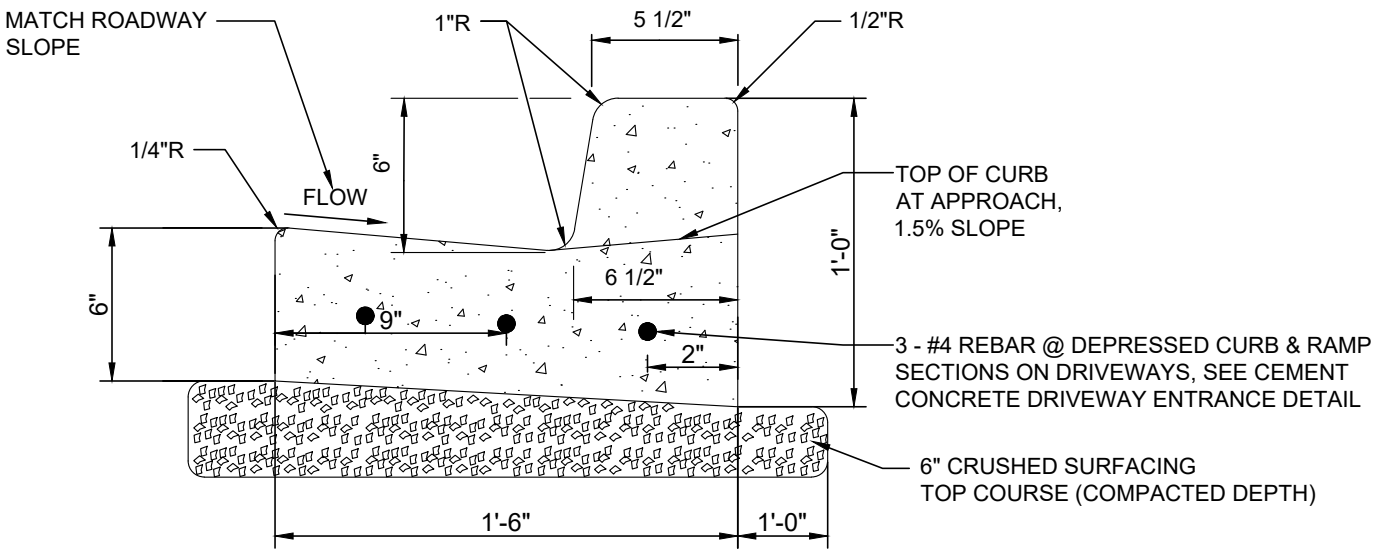

NOTES:

1. EXPANSION JOINT MATERIAL SHALL BE 3/8" THICK PREMOLDED JOINT FILLER FULL THICKNESS OF CONCRETE SPACING.

2. FORMS AND SUBGRADE INSPECTION AND APPROVAL BY THE CONTRACTING AGENCY REQUIRED PRIOR TO POURING CONCRETE.

3. THE TOP, FACE & GUTTER SHALL BE BROOM FINISHED PARALLEL TO THE ROADWAY.

4. 3 - #4 REBAR AT DRIVEWAYS AND DEPRESSIONS.

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ST-3
TYPICAL CURB AND GUTTER

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CONSULTING ENGINEERS

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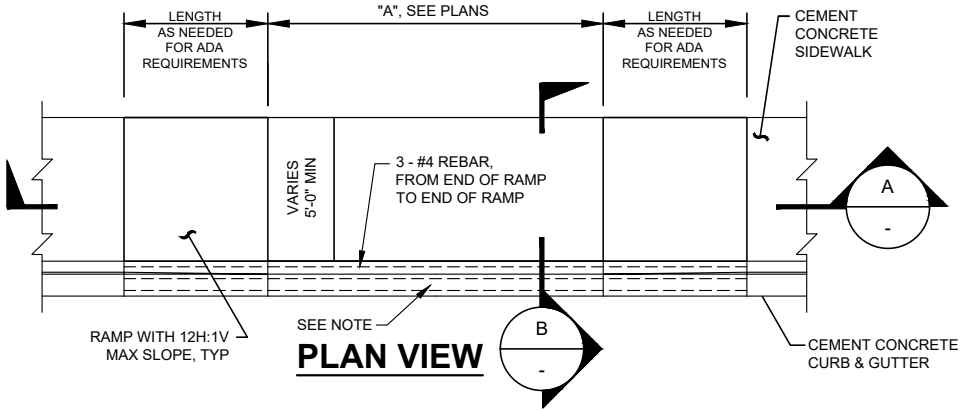
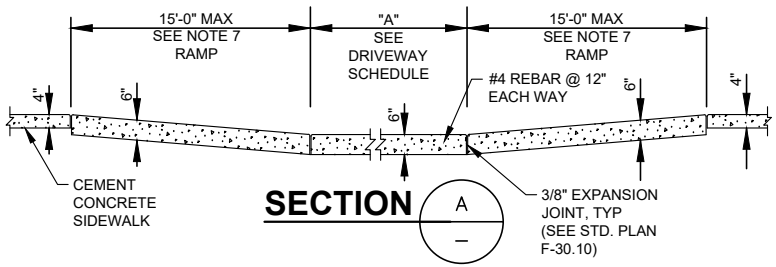
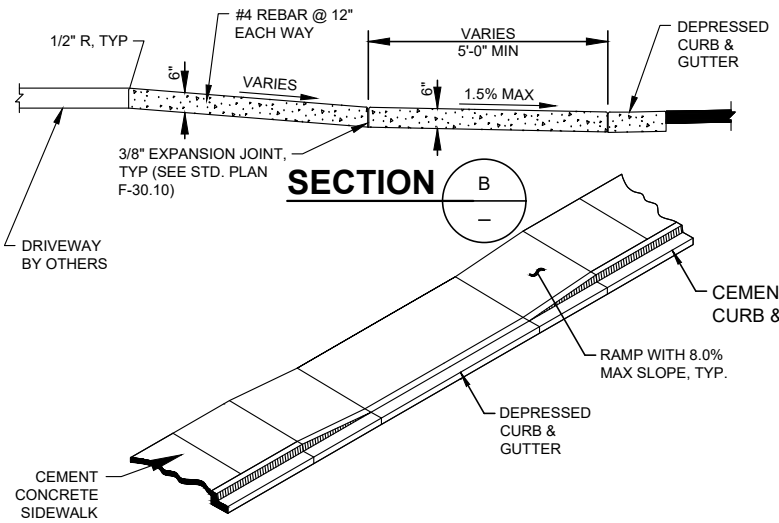


PLAN VIEW



SECTION



SECTION

NOTES:

1. WHEN THE DRIVEWAY WIDTH EXCEEDS 10 FEET, CONSTRUCT A FULL DEPTH EXPANSION JOINT, SEE WSDOT STANDARD PLAN F-30.10 WITH 3/8" JOINT FILLER ALONG THE DRIVEWAY CENTERLINE. CONSTRUCT EXPANSION JOINTS PARALLEL WITH THE CENTERLINE AS REQUIRED AT 15' MAX SPACING WHEN DRIVEWAY WIDTHS EXCEED 30'.
2. COMPACT NATIVE MATERIAL TO 95%.
3. 6" CEMENT CONCRETE CLASS 4000.
4. 2" CRUSHED SURFACING TOP COURSE FOR BASE. CRUSHED SURFACING MATERIAL BENEATH CONCRETE DRIVEWAY NOT SHOWN FOR CLARITY.
5. CONCRETE DRIVEWAYS SHALL INCLUDE #4 REBAR AS SHOWN.
6. AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF DRIVEWAY ENTRANCES.
7. THE CURB RAMP MAXIMUM RUNNING SLOPE SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15' (FT) TO AVOID CHASING THE SLOPE INDEFINITELY WHEN CONNECTING TO STEEP GRADES. WHEN APPLYING THE 15' (FT) MAX LENGTH, THE RUNNING SLOPE OF THE CURB RAMP SHALL BE AS FLAT AS FEASIBLE.
8. RAMPS SHALL BE ADA COMPLIANT.

DRIVEWAY SEPARATION (MEASURED FROM BOTTOM OF THE TAPERS)

	PRIMARY ARTERIAL	MINOR ARTERIAL	MAJOR COLLECTOR	MINOR COLLECTOR	LOCAL ACCESS
DISTANCE FROM INTERSECTIONS	100 FEET	75 FEET	50 FEET	30 FEET	30 FEET
DISTANCE FROM INTERIOR LOT LINES	30 FEET	20 FEET	20 FEET	TAPER LENGTH	TAPER LENGTH
SEPARATION BETWEEN DRIVEWAYS ON ONE LOT	100 FEET	75 FEET	60 FEET	12 FEET	12 FEET

DRIVEWAY WIDTH
SINGLE - 10 FEET MIN
DUPLEX - 30 FEET MAX

City of Omak
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ST-4
CONCRETE DRIVEWAY ENTRANCE
OPTION A

Gray & Osborne, Inc.
CONSULTING ENGINEERS

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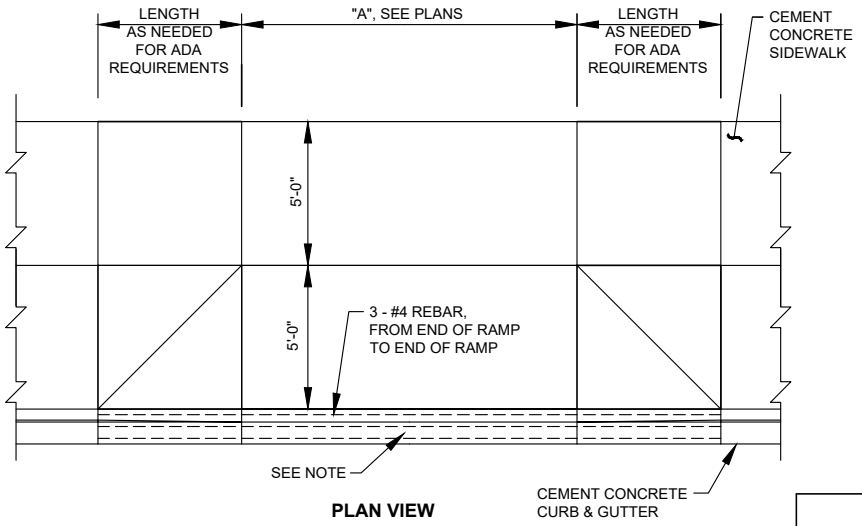


PLAN VIEW

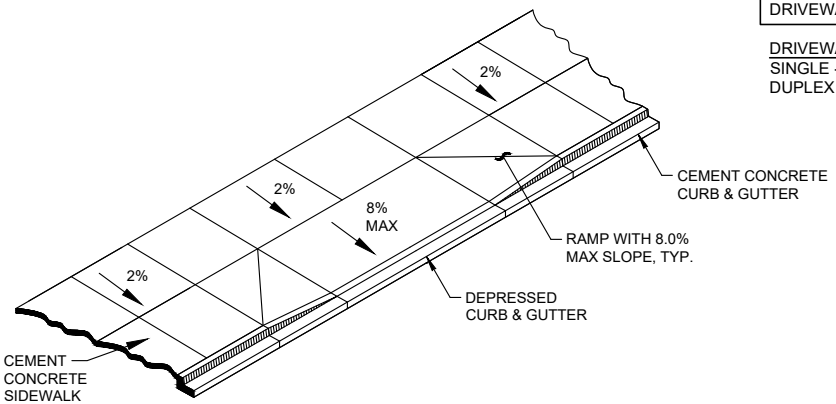
NOTES:

1. WHEN THE DRIVEWAY WIDTH EXCEEDS 10 FEET, CONSTRUCT A FULL DEPTH EXPANSION JOINT, SEE WSDOT STANDARD PLAN F-30.10 WITH 3/8" JOINT FILLER ALONG THE DRIVEWAY CENTERLINE. CONSTRUCT EXPANSION JOINTS PARALLEL WITH THE CENTERLINE AS REQUIRED AT 15' MAX SPACING WHEN DRIVEWAY WIDTHS EXCEED 30'.
2. COMPACT NATIVE MATERIAL TO 95%.
3. 6" CEMENT CONCRETE CLASS 4000.
4. 2" CRUSHED SURFACING TOP COURSE FOR BASE. CRUSHED SURFACING MATERIAL BENEATH CONCRETE DRIVEWAY NOT SHOWN FOR CLARITY.
5. CONCRETE DRIVEWAYS SHALL INCLUDE #4 REBAR AS SHOWN.
6. AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF DRIVEWAY ENTRANCES.
7. THE CURB RAMP MAXIMUM RUNNING SLOPE SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15' (FT) TO AVOID CHASING THE SLOPE INDEFINITELY WHEN CONNECTING TO STEEP GRADES. WHEN APPLYING THE 15' (FT) MAX LENGTH, THE RUNNING SLOPE OF THE CURB RAMP SHALL BE AS FLAT AS FEASIBLE.
8. RAMPS SHALL BE ADA COMPLIANT.

DRIVEWAY SEPARATION (MEASURED FROM BOTTOM OF THE TAPERS)

	PRIMARY ARTERIAL	MINOR ARTERIAL	MAJOR COLLECTOR	MINOR COLLECTOR	LOCAL ACCESS
DISTANCE FROM INTERSECTIONS	100 FEET	75 FEET	50 FEET	30 FEET	30 FEET
DISTANCE FROM INTERIOR LOT LINES	30 FEET	20 FEET	20 FEET	TAPER LENGTH	TAPER LENGTH
SEPARATION BETWEEN DRIVEWAYS ON ONE LOT	100 FEET	75 FEET	60 FEET	12 FEET	12 FEET

DRIVEWAY WIDTH
SINGLE - 10 FEET MIN
DUPLEX - 30 FEET MAX



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ST-5
CONCRETE DRIVEWAY ENTRANCE
OPTION B

Gray & Osborne, Inc.
CONSULTING ENGINEERS

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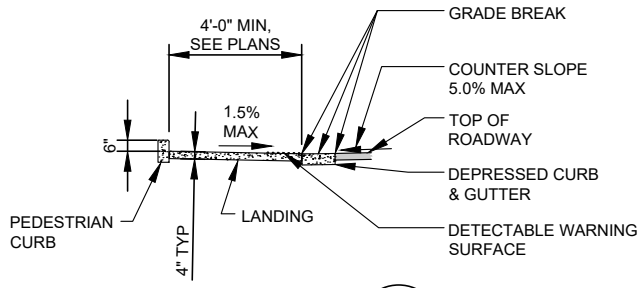
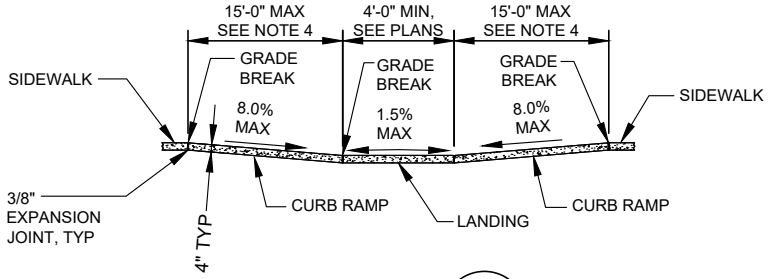
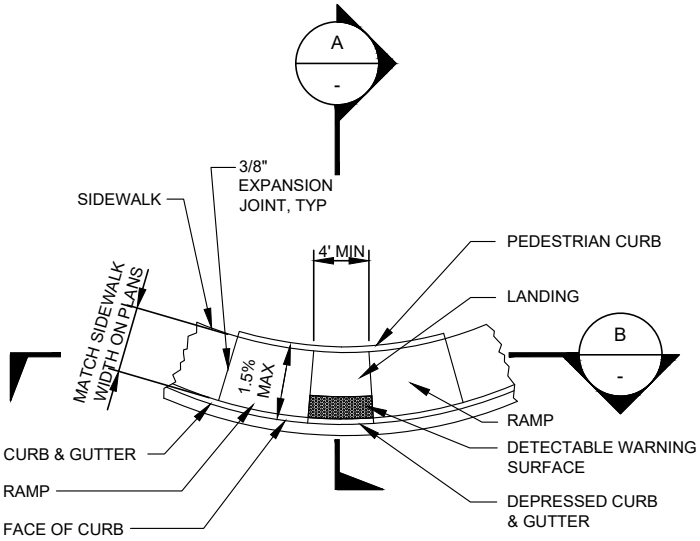


SECTION B



SECTION A



PLAN VIEW

NOTES:

1. PROVIDE A SEPARATE CURB RAMP FOR EACH MARKED OR UNMARKED CROSSWALK. CURB RAMP LOCATION SHALL BE PLACED WITHIN THE WIDTH OF THE ASSOCIATED CROSSWALK.
2. WHERE "GRADE BREAK" IS CALLED OUT, THE ENTIRE LENGTH OF THE GRADE BREAK BETWEEN THE TWO ADJACENT SURFACE PLANES SHALL BE FLUSH.
3. DO NOT PLACE GRATINGS, JUNCTION BOXES, ACCESS COVERS, OR OTHER APPURTENANCES IN FRONT OF THE CURB RAMP OR ON ANY PART OF THE CURB RAMP OR LANDING.
4. THE CURB RAMP MAXIMUM RUNNING SLOPE SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15 FEET TO AVOID CHASING THE SLOPE INDEFINITELY WHEN CONNECTING TO STEEP GRADES. WHEN APPLYING THE 15 FOOT MAX LENGTH, THE RUNNING SLOPE OF THE CURB RAMP SHALL BE AS FLAT AS FEASIBLE.
5. CURB RAMP, LANDING, & FLARES SHALL RECEIVE BROOM FINISH.
6. DETECTABLE WARNING SURFACE SHALL MEET REQUIREMENTS OF WSDOT STANDARD DETAIL F45.10-02.
7. WHERE ADA REQUIREMENTS CANNOT BE MET, THE DEVELOPER SHALL PROVIDE JUSTIFICATION FOR THE DESIGN USED AND STATE WHY IT WAS CONSTRUCTED TO THE MAXIMUM EXTENT FEASIBLE. THE FORMAT FOR THE EXPLANATION SHALL BE AS REQUIRED BY WSDOT AT THE TIME THE RAMP IS CONSTRUCTED.

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ST-6
PARALLEL SIDEWALK RAMP

Gray & Osborne, Inc.
CONSULTING ENGINEERS

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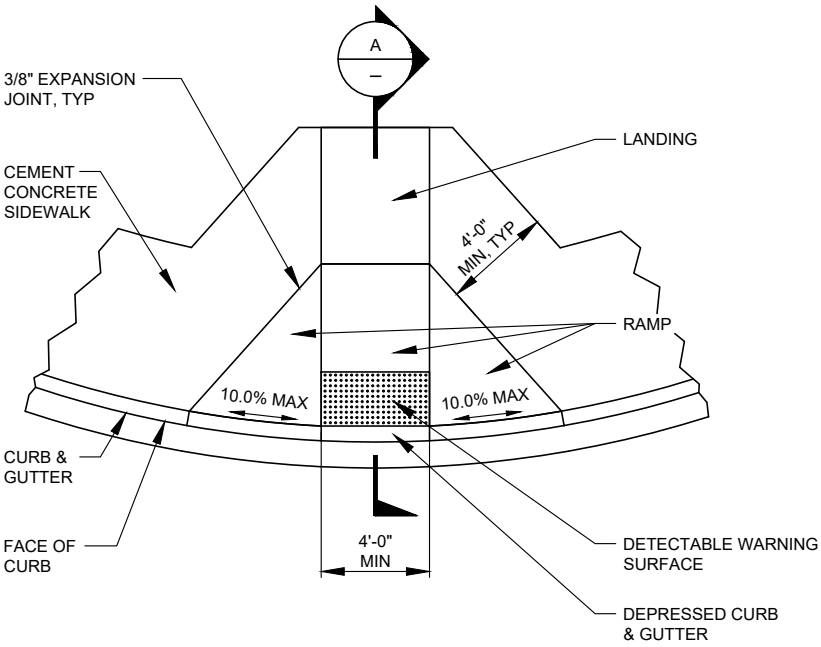

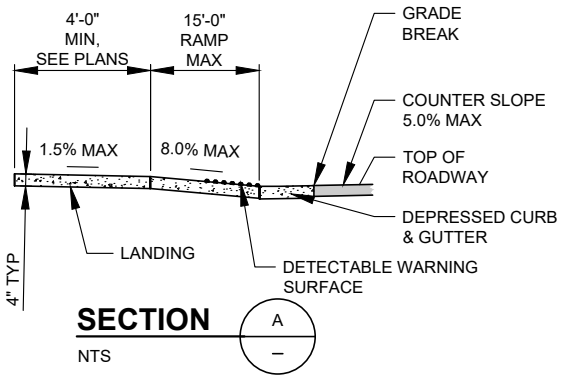

SECTION A

NTS

NOTES:

1. PROVIDE A SEPARATE CURB RAMP FOR EACH MARKED OR UNMARKED CROSSWALK. CURB RAMP LOCATION SHALL BE PLACED WITHIN THE WIDTH OF THE ASSOCIATED CROSSWALK.
2. WHERE "GRADE BREAK" IS CALLED OUT, THE ENTIRE LENGTH OF THE GRADE BREAK BETWEEN THE TWO ADJACENT SURFACE PLANES SHALL BE FLUSH.
3. DO NOT PLACE GRATINGS, JUNCTION BOXES, ACCESS COVERS, OR OTHER APPURTENANCES IN FRONT OF THE CURB RAMP OR ON ANY PART OF THE CURB RAMP OR LANDING.
4. THE CURB RAMP MAXIMUM RUNNING SLOPE SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15 FEET TO AVOID CHASING THE SLOPE INDEFINITELY WHEN CONNECTING TO STEEP GRADES. WHEN APPLYING THE 15 FOOT MAX LENGTH, THE RUNNING SLOPE OF THE CURB RAMP SHALL BE AS FLAT AS FEASIBLE.
5. CURB RAMP, LANDING, & FLARES SHALL RECEIVE BROOM FINISH.
6. DETECTABLE WARNING SURFACE SHALL MEET REQUIREMENTS OF WSDOT STANDARD DETAIL F45.10-02.
7. WHERE ADA REQUIREMENTS CANNOT BE MET, THE DEVELOPER SHALL PROVIDE JUSTIFICATION FOR THE DESIGN USED AND STATE WHY IT WAS CONSTRUCTED TO THE MAXIMUM EXTENT FEASIBLE. THE FORMAT FOR THE EXPLANATION SHALL BE AS REQUIRED BY WSDOT AT THE TIME THE RAMP IS CONSTRUCTED.

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ST 7
PERPENDICULAR SIDEWALK RAMP

Gray & Osborne, Inc.
CONSULTING ENGINEERS

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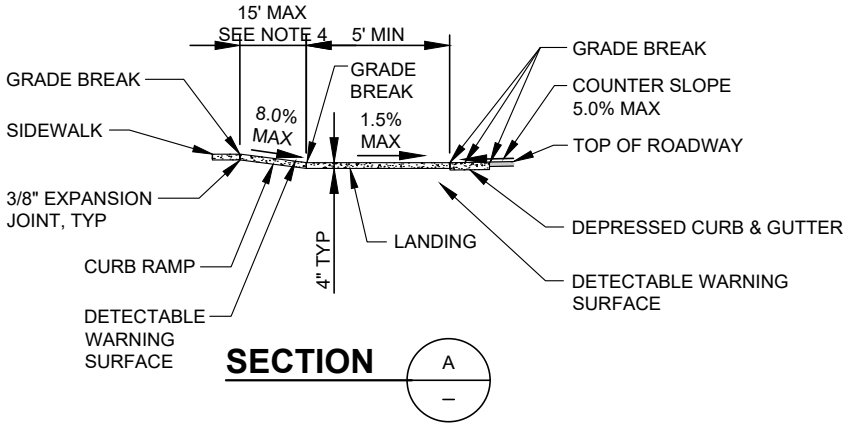

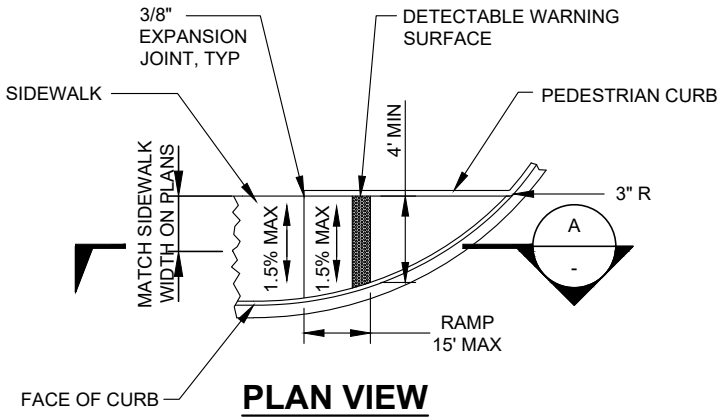

NOTES:

1. PROVIDE A SEPARATE CURB RAMP FOR EACH MARKED OR UNMARKED CROSSWALK. CURB RAMP LOCATION SHALL BE PLACED WITHIN THE WIDTH OF THE ASSOCIATED CROSSWALK.
2. WHERE "GRADE BREAK" IS CALLED OUT, THE ENTIRE LENGTH OF THE GRADE BREAK BETWEEN THE TWO ADJACENT SURFACE PLANES SHALL BE FLUSH.
3. DO NOT PLACE GRATINGS, JUNCTION BOXES, ACCESS COVERS, OR OTHER APPURTENANCES IN FRONT OF THE CURB RAMP OR ON ANY PART OF THE CURB RAMP OR LANDING.
4. THE CURB RAMP MAXIMUM RUNNING SLOPE SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15 FEET TO AVOID CHASING THE SLOPE INDEFINITELY WHEN CONNECTING TO STEEP GRADES. WHEN APPLYING THE 15 FOOT MAX LENGTH, THE RUNNING SLOPE OF THE CURB RAMP SHALL BE AS FLAT AS FEASIBLE.
5. CURB RAMP, LANDING, & FLARES SHALL RECEIVE BROOM FINISH.
6. DETECTABLE WARNING SURFACE SHALL MEET REQUIREMENTS OF WSDOT STANDARD DETAIL F45.10-02.
7. WHERE ADA REQUIREMENTS CANNOT BE MET, THE DEVELOPER SHALL PROVIDE JUSTIFICATION FOR THE DESIGN USED AND STATE WHY IT WAS CONSTRUCTED TO THE MAXIMUM EXTENT FEASIBLE. THE FORMAT FOR THE EXPLANATION SHALL BE AS REQUIRED BY WSDOT AT THE TIME THE RAMP IS CONSTRUCTED.

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ST-8
SINGLE DIRECTION CURB RAMP

Gray & Osborne, Inc.
CONSULTING ENGINEERS

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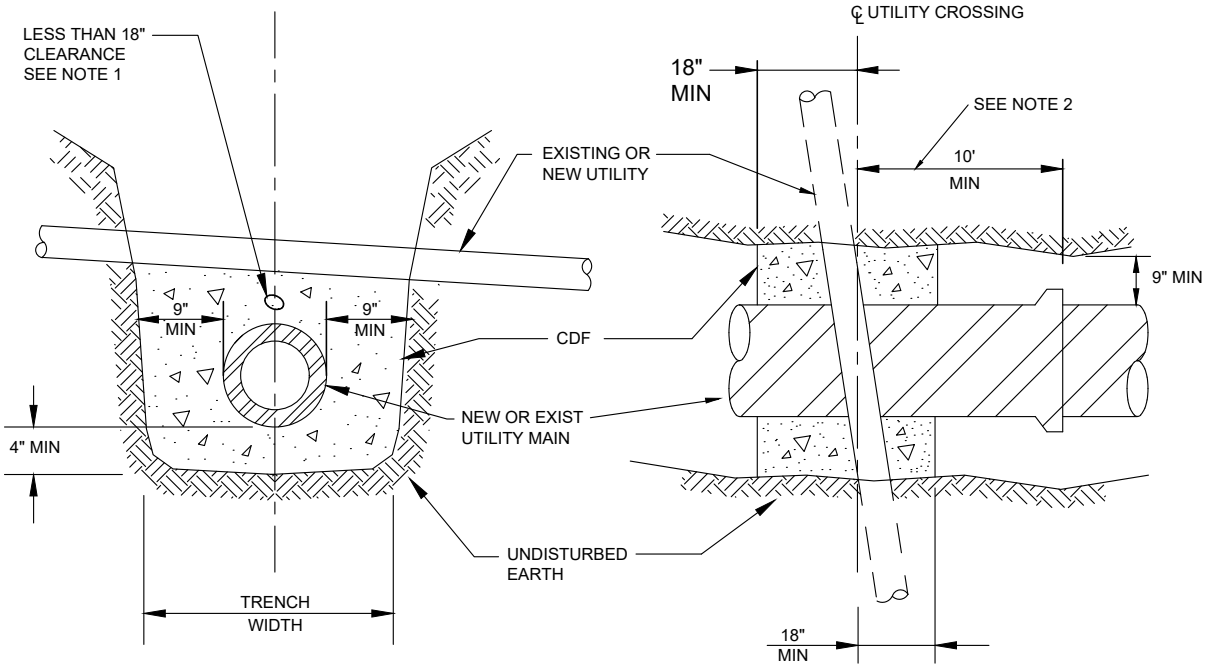

NOTES:

1. CONTRACTOR SHALL PROVIDE CONTROLLED DENSITY FILL PIPE ENCASEMENT AT ALL EXISTING UTILITY CROSSINGS IN THE EVENT THAT AN 18" SEPARATION CANNOT BE PROVIDED. THE CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH THE SITE UTILITIES TO ANTICIPATE PROVIDING AND INSTALLING CONCRETE ENCASEMENTS WHERE NECESSARY. THIS SHALL ALSO APPLY AT NEW STORM DRAIN STRUCTURES NEAR EXISTING WATER MAINS. SEE DEPARTMENT OF ECOLOGY CRITERIA FOR SEWAGE WORKS DESIGN SECTION C1-9.1 AND THE DEPARTMENT OF HEALTH WATER SYSTEM DESIGN MANUAL SECTION 8.4.4.

2. CONTRACTOR SHALL NOT CONSTRUCT ANY NEW PIPE JOINT WITHIN 10 FEET OF THE EXISTING CENTERLINE OF THE UTILITY CROSSING.

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ST-9
TYPICAL UTILITY CROSSING

Gray & Osborne, Inc.
CONSULTING ENGINEERS

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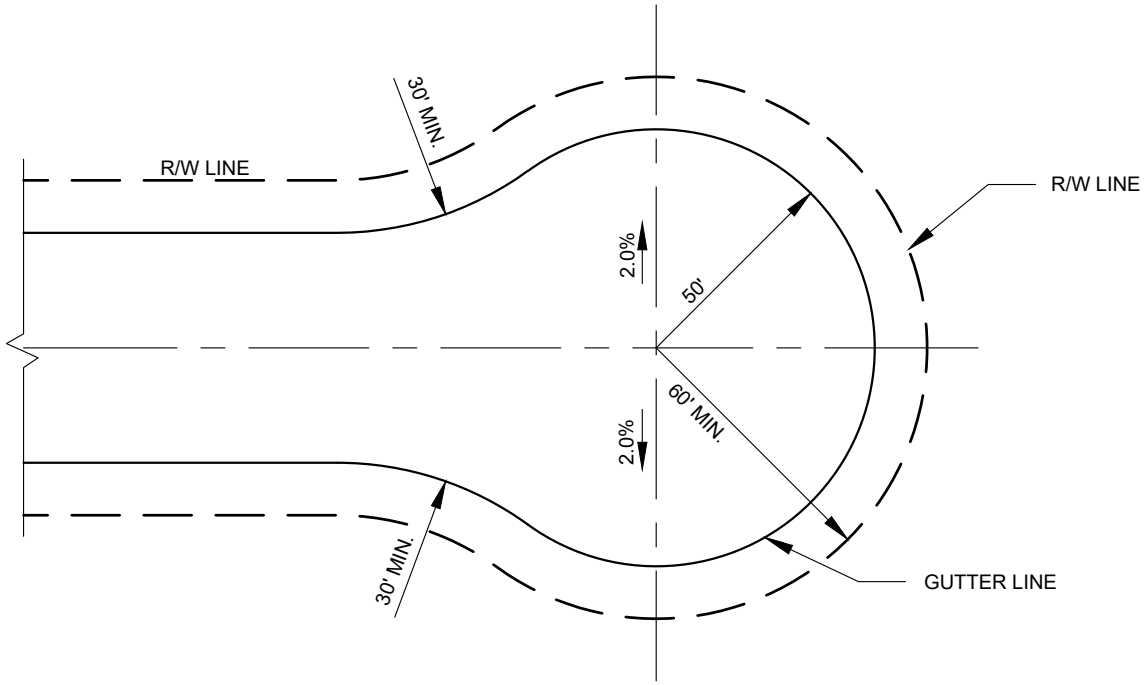

NOTE:

ALTERNATIVE DEAD-END STREET DESIGNS SHALL BE IN ACCORDANCE WITH THE INTERNATIONAL FIRE CODE, FIRE APPARATUS ACCESS ROADS, AND SHALL BE SUBJECT TO APPROVAL BY THE CITY.

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ST-10
CUL-DE-SAC STANDARD

Gray & Osborne, Inc.
CONSULTING ENGINEERS

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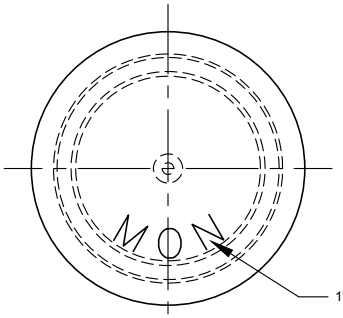
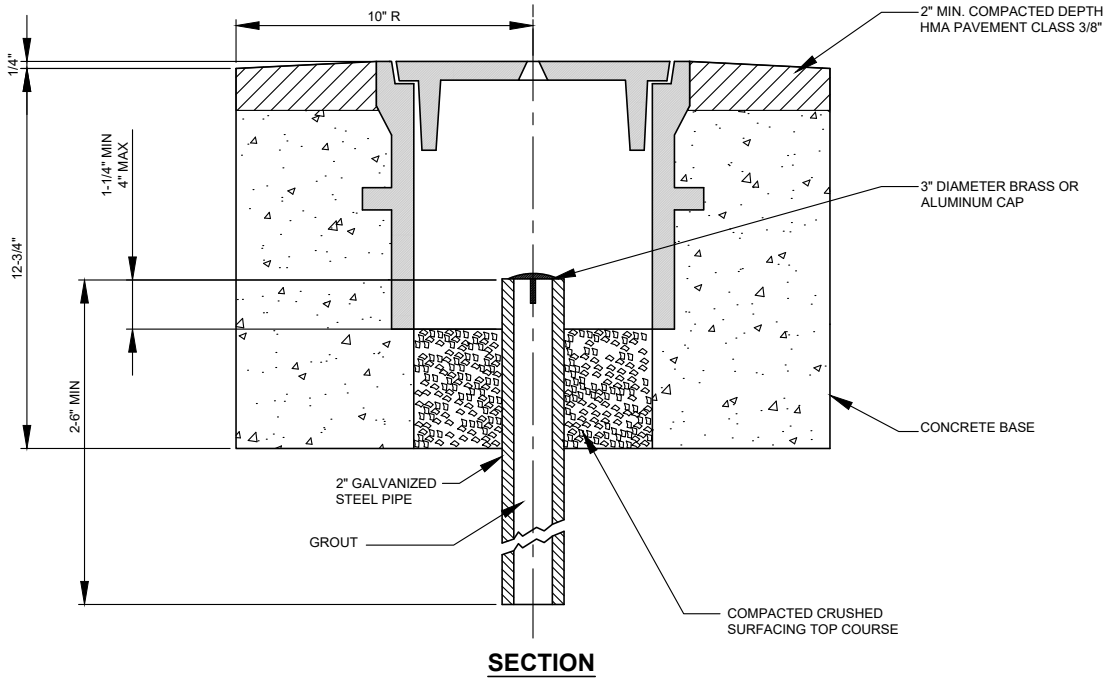


COVER



SECTION

City of Omak
WASHINGTON STATE
heart of the okanogan

ST-11
MONUMENT CASE AND COVER

Gray & Osborne, Inc.
CONSULTING ENGINEERS

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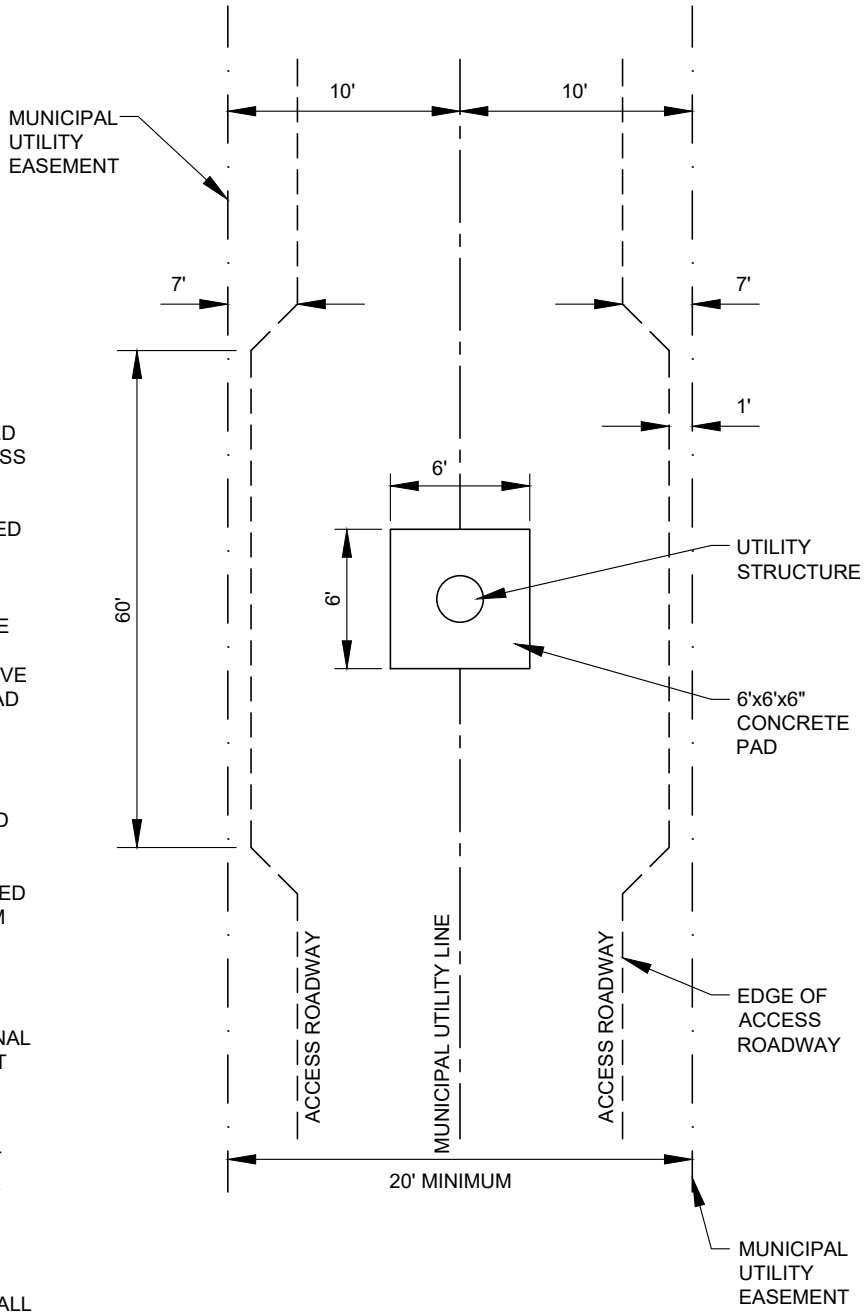

NOTES:

1. MUNICIPAL UTILITIES SHALL BE INSTALLED WITHIN DEDICATED RIGHT-OF-WAY UNLESS A DEVIATION IS APPROVED.
2. MUNICIPAL UTILITIES THAT ARE APPROVED TO BE INSTALLED OUTSIDE OF THE RIGHT-OF-WAY SHALL BE INSTALLED WITHIN A MUNICIPAL EASEMENT AND ACCESS ROADWAY PER THIS DETAIL. THE DEVELOPER MAY SUBMIT AN ALTERNATE PLAN FOR APPROVAL. THE CITY MAY WAIVE THE REQUIREMENT FOR AN ACCESS ROAD IF ALL UTILITY STRUCTURES CAN BE SERVICED BY AN APPROVED ROADWAY.
3. ACCESS ROADWAY SHALL BE CSBC OR CSTC, MINIMUM 3" DEPTH, AND DESIGNED FOR 50,000 lb MAINTENANCE VEHICLES.
4. UTILITY STRUCTURES SHALL BE CENTERED WHERE POSSIBLE AND AT LEAST 1' FROM THE OUTER EDGE OF RIGHT-OF-WAY OR MUNICIPAL EASEMENT.
5. UTILITY STRUCTURES THAT ARE MORE THAN 10' DEEP SHALL REQUIRE ADDITIONAL RIGHT-OF-WAY OR MUNICIPAL EASEMENT WIDTHS.
6. 6'x6'x6" CONCRETE PADS ARE REQUIRED AROUND ALL UTILITY STRUCTURES THAT ARE INSTALLED IN NON-ASPHALT AREAS.
7. ACCESS ROADWAY SHALL DRAIN AWAY FROM UTILITY STRUCTURE.
8. ALL CONSTRUCTION AND MATERIALS SHALL MEET THE WSDOT SPECIFICATIONS AND BE APPROVED BY THE CITY.

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ST-12
ACCESS EASEMENT AND ROADWAY FOR MUNICIPAL UTILITIES

Gray & Osborne, Inc.
CONSULTING ENGINEERS

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STREET REPAIR DETAILS

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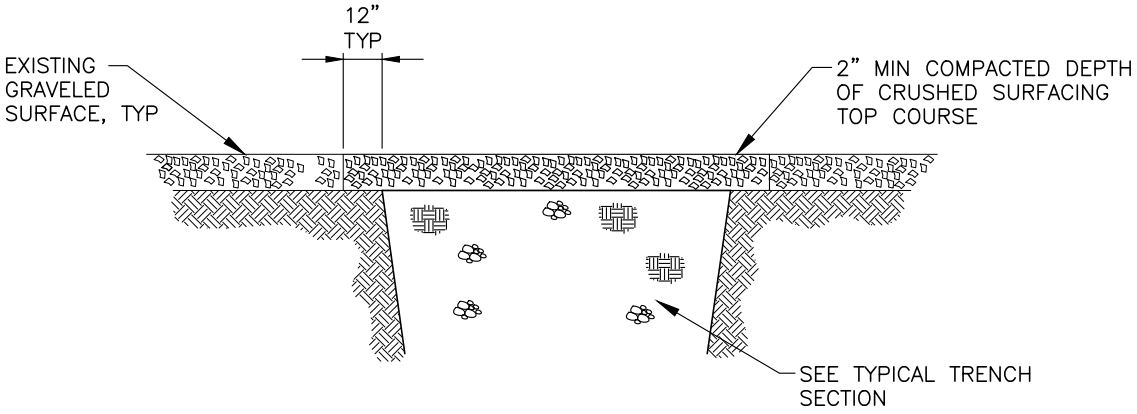

CRUSHED SURFACING TOP COURSE REPAIR

NTS

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SR-1
CSTC REPAIR DETAIL

Gray & Osborne, Inc.
CONSULTING ENGINEERS

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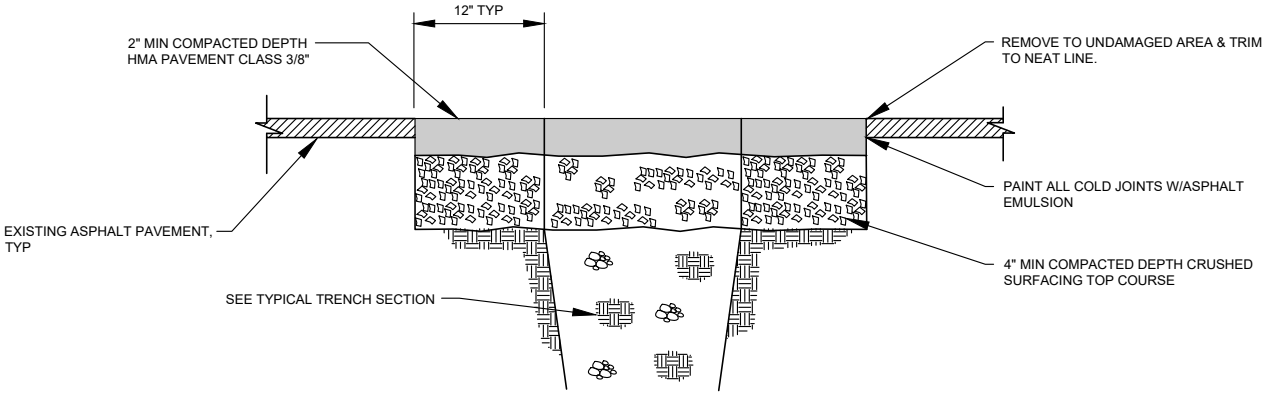

HMA PAVEMENT REPAIR

NTS

City of Omak
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SR-2
HMA PAVEMENT REPAIR DETAIL

Gray & Osborne, Inc.
CONSULTING ENGINEERS

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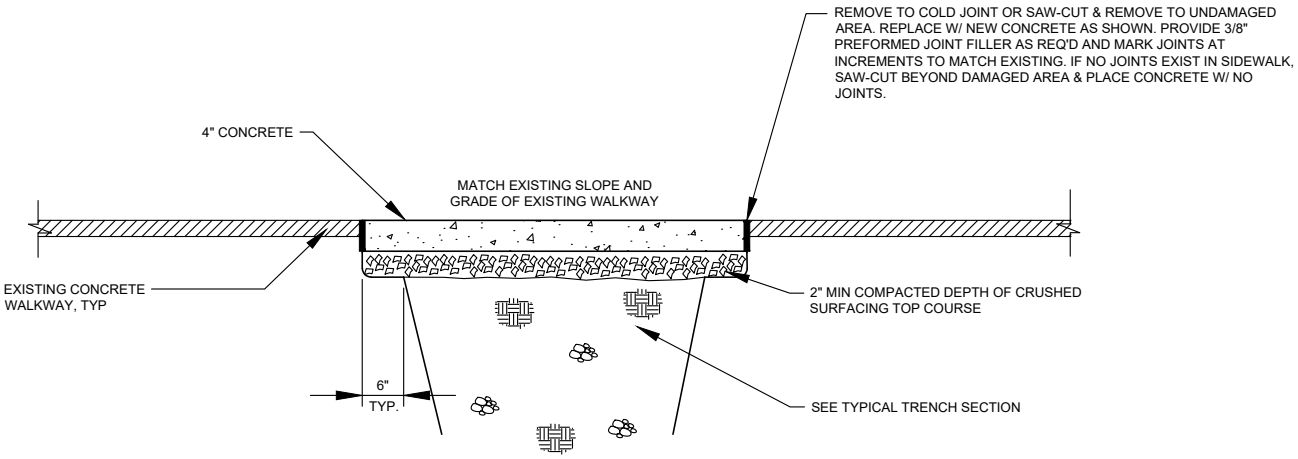

CEMENT SIDEWALK REPAIR DETAIL

NTS

City of Omak
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SR-3
CEMENT SIDEWALK REPAIR DETAIL

Gray & Osborne, Inc.
CONSULTING ENGINEERS

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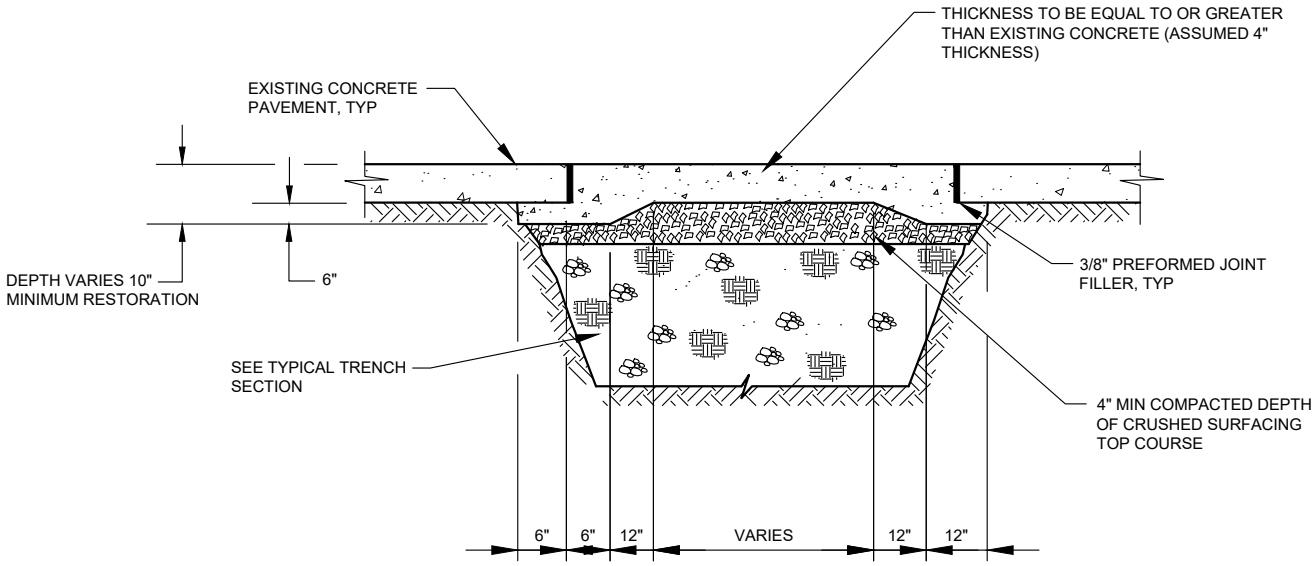

CEMENT CONCRETE PAVEMENT REPAIR

NTS

City of Omak
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SR-4
CEMENT CONCRETE PAVEMENT REPAIR DETAIL

Gray & Osborne, Inc.
CONSULTING ENGINEERS

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