City of Orting
Development Standards
Special Provisions and Standard Details

Prepared for
City of Orting

Prepared by
Parametrix

CITY OF ORTING

DEVELOPMENT STANDARDS SPECIAL PROVISIONS AND STANDARD DETAILS

Prepared for:

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PMX #216-1711-003 (7037)
April 1998
Revised April 1999
Revised November 2001
Revised July 2013

TABLE OF CONTENTS

Page

Special Provisions

Special Provisions SP-1
- Division 1A – Public Works Projects Contract with City
- Division 1B – Developer Extensions and Plat Improvement Projects

Standard Details
- Concrete Curb and Gutter T-1A
- Location and Width of New Driveways T-2A
- Cement Concrete Approach T-2B
- Sidewalk with Planter Strip T-3A
- Sidewalk with Planter Strip Notes T-3B
- Sidewalk T-3C
- Sidewalk Ramp Plans and Sections T-4A
- Sidewalk Ramp Details and Notes T-4B
- Minimum Sidewalk Width at Obstructions T-4C
- Typical Road Section T-5A
- Typical Road Section Notes T-5B
- Public and Private Alley Cross Section T-5C
- Private Roadway Minimum Cross Section T-5D
- Private Roadway Minimum Cross Section Notes T-5E
- Poured In Place Monument T-6A
- Monument Frame and Cover T-6B
- Fire Access Requirements T-7
- Dead End Private Road Requirements T-8A
- Cul-De-Sac Bulb Neighborhood Street T-8B
- Cul-De-Sac Private Access Road T-8C
- "T" Intersection T-8D
- Neighborhood Street Knuckle T-8E
- Typical Roadway Utility Layout T-9
- Thermoplastic Crosswalk T-10
- Pavement Replacement T-11A
- Concrete Pavement Replacement T-11B
- Concrete Pavement Replacement Notes T-11C
- Asphalt Pavement Replacement T-11D
- Adjustment of New and Existing Utility Structures to Finish Grade T-12
- Typical Trench and Bedding Section for DIP Watermain W-1A
- Water Service and Bedding Within Right-of-Way W-1B
- 5/8″ x 3/4″ Double and Single Meter Service W-2A
- 5/8″ x 3/4″ Double and Single Meter Service Notes W-2B

TABLE OF CONTENTS

Page

1 1/2 ″ and 2″ Meter Service W-3
Standard Fire Hydrant W-4A
Standard Fire Hydrant Notes W-4B
Fire Hydrant Guard Post W-4C
Fire Hydrant Street Markings W-5
Valve Box and Operating Nut Extender W-6
Mid-Run 2″ Blowoff Assembly W-7A
End of Main 2″ Blowoff Assembly W-7B
Blow-Off Hydrant W-7C
Thrust Blocking W-8
Water Main Blocking W-9
Water Main 2″ Air Release Valve Assembly W-10A
Water Main 2″ Air Release Valve Assembly W-10B
Water Sampling Station W-11A
Water Sampling Station Details W-11B
2″ and Smaller Double Check-Valve Assembly W-12
2″ and Smaller Reduced Pressure Backflow Assembly W-13A
2″ and Smaller Reduced Pressure Backflow Assembly Notes W-13B
3″ to 6″ Domestic Meter Installation W-14A
3″ to 6″ Domestic Meter Installation Notes W-14B
Tapping Sleeve and Valve Assemblies W-15
Valve Marker Post W-16
Pressure Reducing Valve with Box for 3/4″, 1″, 1 1/2 ″ or 2″ Service Lines W-17
Double Detector – Check Valve Assembly Installation W-18A
Double Detector – Check Valve Assembly Installation Notes W-18B
Fire Department Connection W-19
24″ Watertight Manhole Frame and Cover S-1A
24″ Locking Manhole Frame and Cover S-1B
Standard 24″ Manhole Frame and Cover S-1C
Sanitary Sewer or Storm Trench S-2
Type 1 Manhole S-3A
Manhole Ring and Safety Steps S-3B
Ductile Iron Drop Connection S-3C
Manhole Inside Drop Detail S-4A
Outside Manhole Drop Connection S-4B
Side/Building Sewer S-5A
Side Sewer Cleanout S-5B
Typical Split Side Sewer Detail S-5C
Typical A/C Watermain Crossing Replacement S-6
Exterior Grease Interceptor Detail S-7A

TABLE OF CONTENTS

Page

Exterior Grease Interceptor Notes S-7B
Interior Grease Interceptor Notes S-7C
Sanitary Sewer Forcemain Air Inlet Valve Chamber (FM) S-8
Combination Air Valve and Chamber (W & RCL) S-9
Control Structure D-1A
Flow Restrictor (FROP-T) (Tee) Details D-1B
Catch Basin Type 1 ..... D-2A
Catch Basin Type 1 Placement D-2B
Catch Basin Type 1 Placement D-2C
Catch Basin Type 2 ..... D-3A
Catch Basin Type 2 Notes D-3B
Catch Basin Type 2 Placement D-3C
Catch Basin Type 2 ..... D-3D
Oil Spill Control Device (Not for Oil Treatment) D-4
Infiltration Trench D-5
Trash Rack D-6
Single Family Lot Erosion and Sediment Control X-1
Temporary Construction Access X-2A
Temporary Construction Access Notes X-2B
Silt Fence X-3

Appendices

Appendix A – Developer Checklist
Appendix B – Developer Extension Agreement
Appendix C – Bill of Sale
Appendix D – Plan Requirements
Appendix E – As-Built Requirements
Appendix F – Erosion Control Practices for Single Family Residences and Small Sites

SPECIAL PROVISIONS

A. Standard Specifications

The "1998 Standard Specifications for Road, Bridge, and Municipal Construction" prepared by the Washington State Department of Transportation and the Washington State Chapter of the American Public Works Association (APWA) and all amendments thereto, including the "Division One Supplement", shall be hereinafter referred to as the "Standard Specifications" together with the laws of the State of Washington and the ordinances of the City of Orting, so far as applicable, are hereby included in these Specifications and shall apply as though quoted in their entirety.

B. Special Provisions

The following Special Provisions replace, amend, or supplement the Standard Specifications. All provisions of the Standard Specifications, which are not so amended, replaced, deleted, or supplemented, remain in full force and effect. In case of conflict, the Special Provisions shall take precedence over the Standard Specifications. Additional Special Provisions shall be included as part of the Special Provisions and are considered to be a supplement.

C. Division I

These Special Provisions contain two of Division I; those sections are IA and IB. All work in which the contractor has a contract with the City, please refer to IA. Developer extensions and plat improvements, please refer to IB and the City's Developer Extension Agreement (separate document).

DIVISION 1A
GENERAL REQUIREMENTS

FOR PUBLIC WORKS PROJECTS CONTRACTED BY THE CITY OF ORTING

1-01 DEFINITIONS AND TERMS

1-01.3 Definitions

Contracting Agency

Delete and add the following:

"City of Orting
P.O. Box 489
Orting, WA 98360"

Laboratory

Delete and add the following:

"Private testing laboratory employed by the Engineer or City."

Secretary, Secretary of Transportation

Delete and add the following:

"City of Orting Council"

State

Delete and add the following:

"City of Orting
P.O. Box 489
Orting, WA 98360"

acting through its representatives

The change from "State" to "City of Orting" is intended to be used only when it refers to the Owner. This substitution is not to be construed to apply to Washington State laws or statutes. All applicable State of Washington or federal laws and regulations shall remain in force.

1-02 BID PROCEDURES AND CONDITIONS

1-02.1 Prequalification of Bidders

Section 1-02.1 is deleted.

1-02.4(1) General

Add the following to the end of Section 1-02.4(1):

> The Contractor shall verify the locations and elevations of all existing pipelines, structures, grades, and utilities prior to construction. The City assumes no responsibility for any conclusions or interpretations made by the Contractor on the basis of the information made available.
>
> The Contractor shall be responsible for any breakage of the existing utilities or services, publicly or privately owned, resulting from his operations, and shall hold the City and its agents harmless from any claim resulting from disruption of or damage to the same.

1-02.4(2) Subsurface Information

Delete section and replace with the following:

> Contractor is responsible for knowing, understanding, and being familiar with the local subsurface conditions. The City assumes no responsibility for soil conditions or groundwater level.

1-03.8 Notice to Proceed (New Section)

Written notice to proceed will not be given until a Preconstruction Meeting has been held. No work shall be performed until the notice has been issued.

1-05 CONTROL OF WORK

1-05.11 Final Inspection

Add the following sentences:

> "The Contractor shall notify the Engineer in writing at least three (3) days prior to completion of all work and shall certify that all items have been accomplished ready for final inspection. If all items are not completed and ready for final inspection, no inspection will be made at that time. The Contractor shall reschedule the final inspection as indicated above."

1-05.12 Final Acceptance

Delete the third sentence of the first paragraph.

1-07 LEGAL RELATIONS AND RESPONSIBILITIES TO THE PUBLIC

1-07.13 Contractor's Responsibility for Work

1-07.13(1) General

Add the following:

The Contractor shall submit a performance bond in accordance with City of Orting, State of Washington, Public Work performance and payment bond. The performance bond amount shall be set by the City.

Whether or not there appears here or elsewhere herein specific reference to guarantees of all items of materials, equipment, and workmanship, they nevertheless shall be so guaranteed against mechanical, structural, or other defects for which the Contractor is responsible that may develop or become evident within a period of one year from and after acceptance of the work by the City. Such guarantees shall include care of backfilling of trenches or at structures should the fill settle to such extent as to require refilling or resurfacing roadway surfaces to restore the original or intended condition or grade.

This guarantee shall be understood to imply prompt attention to any remedy of such defects as those mentioned above if and as they occur after the Contractor shall have written notice of their existence. If the defect, in the opinion of the Owner, is of such nature as to demand immediate repair, the Owner shall have the right to correct and cost thereof shall be borne by the Contractor.

To support the above guarantee, the Contractor's performance bond shall remain in full force and effect for one year following the acceptance of the project by the Owner. The bond shall be executed by a surety company authorized to do business within the State of Washington and it shall be subject to the approval of the attorney for the Owner.

1-07.15 Temporary Water Pollution/Erosion Control

Add the following to the end of this section:

The Contractor shall employ Best Management Practices as outlined in the DOE Stormwater Management Manual, “Erosion and Sediment Control,” Volume II.

1-07.16 Protection and Restoration of Property

1-07.16(5) Utility Service (New Section)

The Contractor shall maintain the operational service of water distribution, storm drainage and sanitary sewer service systems in as continuous a manner as possible. Where services are to be shut down, affected parties shall be notified in writing at least 48 hours and not more than 72 hours in advance of the time and period of shut-down. The Contractor shall make every effort to keep shut down schedules to periods of anticipated minimum usage and for the least period of time. No utility service will be allowed to be shut down for more than 4 hours per day.

Should a shutdown of any utility be required for a period in excess of 4 hours, the Contractor shall take necessary measures to provide temporary service. The method of all temporary utility services shall first be approved by the City of Orting.

1-07.16(6) Restoration of Property (New Section)

The Contractor shall protect property in the vicinity of the work site and in instances of destruction or damage, restore the item to pre-construction condition.

1-07.17 Utilities and Similar Facilities

Section 1-07.17 of the Standard Specification is supplemented by the following:

Locations and dimensions which may be provided by the City for existing facilities are in accordance with available information obtained without uncovering, measuring, or other verification. The contractor shall protect all private and public utilities from damage resulting from the work.

The Contractor shall call the utility relocation center (one-call center) at 1-800-424-5555, for field location, not less than two nor more than ten business days before the scheduled date for commencement of excavation which may affect under ground facilities, unless otherwise agreed upon in writing 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 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 Section 1-07.18 with the following:

The Contractor shall, before commencing work on said project, file with the City of Orting, certificate or certificates of insurance on a form acceptable to the Owner showing insurance coverage in force prior to or at the start of construction and including the City of Orting and its agents as an additional named insured.

Unless otherwise specified, the public liability and property damage insurance limits for each accident or occurrence shall be not less than $1,000,000 for bodily injury, including accidental death to any one person and in a total amount of not less than $2,000,000 bodily injury and property damage for each accident or occurrence. At the discretion of the City, such limits may be increased or decreased provided that any decrease shall not reduce such limits below the minimum limits provided by the City of Orting Municipal Code.

Insurance required to be obtained and maintained by the Contractor include: Comprehensive automobile, general comprehensive liability, Contractor's liability insurance covering risk of loss or damage to premises and property on which work is to be performed, and property casualty insurance as to the perils of fire, extended coverage of vandalism and malicious mischief.

1-07.22 Use of Explosives

Delete the entire section and add the following:

"No explosives shall be used without written permission from the City of Orting and the Orting Fire Department."

1-07.23 Traffic Control

When performing work within the public roadway, the Contractor shall comply with all requirements of Section 1-07.23 of the Standard Specifications and the latest edition of the Uniform Traffic Control Manual.

1-07.23(1)A Residential Access (New Section)

The Contractor shall notify any affected property owner at least 24 hours and not more than 36 hours prior to construction that would block access to said property. Blockage must occur only during construction hours and shall not remain overnight. Contractor shall maintain or provide immediate access for emergency vehicles at all times.

1-07.28 Responsibility for Damage; Indemnification (New Section)

The Contractor hereby agrees to save the City harmless from all loss or damage occasioned to the City or to any third person by reason of any acts or admissions on the part of the Contractor, subcontractors, agents, employees, or persons working directly or indirectly in the performance of the contract, including acts or omissions attributable jointly the City, its officers, agents or employees, and shall, after reasonable notice thereof, defend and pay the expense of defending any suit which may be commenced against the City by any third person alleging injury by reason of such acts of omissions, and will pay any judgment which may be obtained against the City in such suit. The Contractor agrees to repair and replace all property of the City and all property of others damaged by himself, his employees and subcontractors and agents.

It is understood that the whole of the work is to be done at the Contractor's risk, and that he has familiarized himself with the conditions of excavation, backfill, materials, climatic conditions and other contingencies likely to affect the work and has made his bid accordingly and that he is to assume the responsibility and risk of all loss or damage to materials of work which may arise from any cause whatsoever prior to completion.

1-08 PROSECUTION AND PROGRESS

1-08.3.1 Contractor's Weekly Activity Schedule

In addition to the requirements of Section 1-08.3, the Contractor shall submit a weekly activity schedule. The schedule shall indicate the Contractor's proposed activities for the forthcoming week to permit the City of Orting to more efficiently and effectively implement the contract engineering and inspection for the Contractor's operation.

The written weekly activities schedule shall be submitted to the City of Orting by the weekly construction meeting preceding the indicated activities.

1-08.4 Prosecution of Work

Replace the first sentence with the following:

> Contractor, and its duly appointed superintendent, shall attend a weekly construction meeting at City Hall, at a timetable to be specified by the City.

1-08.5(1) Work Hours (New Section)

Work hours shall be limited to weekdays only, between the hours of 7:00 a.m. and 6:00 p.m. unless otherwise approved in advance by the City of Orting. In addition, no work shall be done that affects SR 162 during normal commuting hours: 6:00 a.m. to 8:00 a.m. and 4:00 p.m. to 6:00 p.m.

1-08.10(4) Arbitration of Disputes

Delete the entire section and add the following:

> "All claims, counter-claims, disputes and other matters in question between the Owner and the Contractor arising out of or relating to this agreement or the breach thereof will be decided by arbitration if the parties hereto mutually agree, or in a court of competent jurisdiction within the County in which the City is located. Pending final decision of a dispute hereunder, the Contractor shall proceed diligently with the performance of the Contract and in accordance with the Engineer's decision."

1-99 APWA SUPPLEMENT

The Supplement is included in the Special Provisions except as modified, deleted or supersede herein.

DIVISION 1B
GENERAL REQUIREMENTS

FOR DEVELOPER EXTENSION AND PLAT IMPROVEMENT PROJECTS

1-01 DEFINITIONS AND TERMS

1-01.3 Definitions

Contract

Delete and add the following:

> "The written agreement is between the Developer and the Contractor. No contractual relationship exists between the City and the Contractor."

Contract Plans

Delete and add the following:

> "The plans and specifications approved by the City."

Engineer

Delete and add the following:

> "The City's Engineer or Consultant."

Inspector

Delete and add the following:

> "The City's designated inspector."

1-02 BID PROCEDURES AND CONDITIONS

Section does not apply. Delete entire section.

1-03 AWARD AND EXECUTION OF CONTRACT

Section does not apply. Delete entire section.

1-04 SCOPE OF WORK

Replace the entire section with the following:

> "If any conflict exists between the approved Plans/Specifications and these Special Provisions/Details, the latter shall take precedence. Conflicts shall be resolved by the Engineer."
>
> "The Contractor shall perform final cleanup within the right-of-way to the Engineer's satisfaction. The Contractor shall maintain the right-of-way to provide safe travel to the public. Roadways shall be cleaned off at the end of each workday."

1-05 CONTROL OF WORK

1-05.1 Authority of Engineer

Delete and replace with the following:

> "The Engineer shall be satisfied that all work is being done in accordance with the approved Plans and the standards of the City. The decision of the Engineer is final on all questions concerning quality and acceptability of work."

1-05.2 Authority of Assistant's Inspections

Replace the word "contract" with the following:

> "Approved Plans/Specifications and City Standards"

1-05.3 Plans and Working Drawings

Delete and replace with the following:

> "City-approved Plans/Specifications"

1-05.4 Conformity With and Deviations From Plans and Stakes

Delete this section and replace with the following:

> "The Developer's Engineer shall provide horizontal control during construction. The Contractor shall take full responsibility for detailed dimensions and elevations required to place all improvements as shown on the Plans."

1-05.5 Pre-Construction Meeting (New Section)

Written notice to proceed will not be given until a Preconstruction Meeting has been held. No work shall be performed until the notice has been issued.

1-05.6 Inspection of Work and Materials

Replace the first and second paragraphs with the following:

> "The Engineer or inspector may inspect all work and materials for conformity with Plans/Specifications or City Standards. Contractor shall provide any equipment needed for said inspection. Contractor shall supply any materials when requested by Engineer for testing."

Replace the third and fourth paragraphs with the following:

> "The Contractor shall correct any substandard work or materials as determined by the Engineer. The Contractor shall remove or uncover any area of completed work as requested by the Engineer and restore said area to required standards."

Delete remaining paragraphs.

1-05.7 Removal of Defective and Unauthorized Work

Replace with the following:

> "At the direction of the Engineer, the Contractor shall immediately remove and replace all defective work or materials that do not comply with City Standards."

Delete Sections 1-05.9 through 1-05.12.

1-05.13 Superintendents, Labor, and Equipment of Contractor

Delete section with the following exceptions:

- First paragraph
- First sentence, second paragraph

Delete Sections 1-05.14 and 1-05.15.

1-06 CONTROL OF MATERIAL

Replace entire section with the following:

"Prior to construction, Contractor shall deliver to City information regarding all proposed materials and equipment to be used on the project. Contractor shall not proceed until Engineer has reviewed and approved all materials and equipment. Information shall include standard manufacturer's data and as requested by the Engineer."

For Special Facilities (i.e., pump stations), the following materials shall be supplied:

A. In addition to notification of material suppliers and fabricators, the Contractor shall also furnish for the Engineer's review and approval all required shop drawings.

Shop drawings are defined as drawings or data which illustrate how specific items shall be fabricated, manufactured, or installed. Shop drawings shall be required for all shop or field fabricated or manufactured items and shall include all information necessary for the fabrication and installation of the item. The information shall include:

1. For fabricated items or those constructed in place, show component sizes, layout, materials and connection details including connectors or weld type, reinforcement schedules and sizes.

2. Shop drawings for reinforced concrete structures shall include, but not be limited to, reinforcement bending and placing drawings.

3. Manufacturers standard catalog information and details may be submitted; however, standard manufacturer information and advertising literature may not necessarily be sufficient.

In addition to the above, the Contractor shall note any required exceptions to the Contract and require deviations from the Contract Plans and any required modifications to other details that would result from the exceptions or deviations.

B. Shop Drawings Submittal Procedure.

1. The Contractor shall review and sign all shop drawings to certify that he has reviewed the shop and supplemental drawings submittal and submit them to the Engineer attached to a transmittal form noting the item name, quantity, location by drawing number and section in the Specification where the item is described. The Contractor shall clearly note on shop drawings, and in writing at the time of submission, any changes or deviations from the Plans or Specifications.

2. The Contractor shall submit to the Engineer three copies of all shop drawings for review and approval. Shop drawings for major equipment items should be submitted in one package to allow a complete check. One copy should be sent to the City.

3. Following review of the shop drawings, the Engineer will indicate appropriate action to be taken by the Contractor and return one copy to the Contractor. In the event that revisions are required, the Contractor shall follow the same procedure for the resubmittal as for the original submittal. For scheduling purposes, the Contractor shall allow the Engineer a minimum of ten (10) days for each review.

4. The Contractor shall be responsible for insuring that items submitted for shop drawing submittal meet the requirements of the Contract Documents and that the shop drawings information is complete and accurate.

5. Approval of the shop drawings by the Engineer is only for general conformance with the design concept of the product and general compliance with the information given in the approved Plans. Any action shown is subject to the requirements of the Plan and Specifications and City Standards. The Contractor is responsible for dimensions which shall be confirmed and correlated at the job site, coordination of his work with that of all other trades and the satisfactory performance of his work.

C. Samples: Samples are defined as physical examples to illustrate materials, equipment or workmanship, and to establish standards by which completed work is judged. Samples submitted shall be of sufficient size and quantity to clearly illustrate functional characteristics of product or material and full range of colors available.

D. O&M Manuals: The Contractor shall assemble an operations and maintenance manual for the facility which shall include, as a minimum, the following:

1. Catalog cut sheets and individual O&M manuals for each piece and type of equipment installed.

2. Wiring diagrams and schematics for all electrical equipment.

3. Programming instructions for control of the equipment.

The Contractor shall provide six copies of the completed O&M manual to the Owner. Manuals shall be bound in a three-ring binder (K&M VB11-20 or equal).

1-07 LEGAL RELATIONS AND RESPONSIBILITIES TO THE PUBLIC

Delete Sections 1-07.1 through 1-07.13

1-07.15 Temporary Water Pollution/Erosion Control

Add the following to the end of this section:

The Contractor shall employ Best Management Practices as outlined in the DOE Stormwater Management Manual, "Erosion and Sediment Control," Volume II.

1-07.16 Protection and Restoration of Property

1-07.16(6) Restoration of Property (New Section)

The Contractor shall protect property in the vicinity of the work site and in instances of destruction or damage, restore the item to pre-construction condition.

1-07.23 Traffic Control

1-07.23(1)A Residential Access (New Section)

The Contractor shall notify any affected property owner at least 24 hours and not more than 36 hours prior to construction that would block access to said property. Blockage must occur only during construction hours and shall not remain overnight. Contractor shall maintain or provide immediate access for emergency vehicles at all times.

1-07.23(3)C Traffic Control Plans

Add the following:

> "Traffic control plans will be required when work will occur on existing right-of-way. Said plans will be submitted at the pre-construction meeting. Work shall not start until the City has approved the traffic control plan."

1-08 PROSECUTION AND PROGRESS

Delete Sections 1-08.1 through 1-08.2 and 1-08.4 through 1-08.5 and 1-08.8 through 1-08.10

1-08.5 Time for Completion

1-08.5(1) Work Hours (New Section)

Work hours shall be limited to weekdays, between the hours of 7:00 a.m. and 6:00 p.m. unless otherwise approved in advance by the City of Orting. In addition, no work shall be done that affects SR 162 during normal commuting hours: 6:00 a.m. to 8:00 a.m. and 4:00 p.m. to 6:00 p.m. Work is permitted on Saturdays between the hours of 9:00 a.m. and 5:00 p.m. No work shall be done on City observed holidays without written approval from the City. All requested additional working days shall be given to the City 48 hours in advance of the holiday or weekend to be worked on. All inspection will be billed at time-and-a-half for a minimum of 4 hours.

Delete Section 1-09.

DIVISION 2

EARTHWORK

2-01 CLEARING, GRUBBING AND ROADSIDE CLEANUP

2-01.1 Description

Delete the third paragraph of this section and replace with the following:

> "Roadside cleanup," shall mean work required to give the construction activities completed an attractive, finished appearance.

2-01.2 Disposal of Usable Material and Debris

Delete the third paragraph of this section and replace with the following:

> Refuse and debris shall be hauled to a waste site secured by the Contractor and shall be disposed of in such a manner as to meet all requirements of state, county, and municipal regulations regarding health, safety and public welfare.

2-02 REMOVAL OF STRUCTURES AND OBSTRUCTIONS

2-02.1 Description

Supplement this section with the following:

> The work shall consist of the removal and disposal or salvaging of existing improvements, including pavements, concrete road structures, pipe fittings, valves, fire hydrants, manholes, and other items necessary for the accomplishment of the improvement.

2-02.3 Construction Details

2-02.3(1) General Requirements

Supplement this section with the following:

> The removal of street improvements shall be conducted in such a manner as not to damage utilities and any portion of the improvement that is to remain in place. Any deviation in this matter will obligate the Contractor at his own expense, to repair, replace or otherwise make proper restoration to the satisfaction of the City. Any dirt tracked onto the City right-of-way shall be cleaned off by a sweeper or other approved method by the end of that day's construction work.

When sawing of concrete or combinations of rigid materials is required, the depth of cut shall be such as will accomplish the intended purpose, and will be determined in the field to the satisfaction of the City of Orting.

2-02.3(3) Removal of Pavement

Delete this section and replace with the following:

The Contractor shall remove existing permanent type pavement as necessary for proper installation of the improvements.

Make a vertical saw cut between any existing pavement, sidewalk, or curb that is to remain and the portion to be removed.

2-02.3(8) Salvage (New Section)

Unless otherwise indicated in the construction plans or in the special provisions, all casting, pipe and other material of recoverable value taken from the discarded City-owned facilities shall be carefully salvaged and delivered to the City of Orting in good condition and in such order of salvage as the Engineer may direct. Materials and things deemed of no value by the Engineer shall be removed by the Contractor and becomes his property, to be disposed of at his discretion.

2-02.3(9) Waste Disposal (New Section)

Waste materials shall be hauled to a waste site secured by the Contractor and shall be disposed of in such a manner as to meet all requirements of state, county and municipal regulations regarding health, safety and public welfare.

2-04 HAUL

Delete this entire section.

DIVISION 5

SURFACE TREATMENTS AND PAVEMENTS

5-04 ASPHALT CONCRETE PAVEMENT

5-04.1 Description

Add the following:

Asphalt concrete pavement shall be Class B.

5-04.2 Materials

Supplement this section with the following:

Tack Coat

Tack coat shall be emulsified asphalt grade CSS-1 as specified in Section 9-02.1(6) of the Standard Specification and will be used at locations specified or as directed by the Engineer.

5-04.3 Construction Requirements

5-04.3(2) Hauling Equipment

Add the following to the first paragraph:

If truck has not used canvas to protect asphalt from weather during haul the Engineer, or its representative, reserves the right to reject the load.

5-04.3(5)A Preparation of Existing Surfaces

Add the following sentences to this section:

Tack coat shall be heated and applied to all joints between new and existing asphalt. Existing road surface shall be clean and free of all foreign debris prior to placement of tack coat.

Saw cut lines shall be in a straight line, 5 feet in length minimum.

5-04.3(5)C Crack Sealing

Delete the first sentence and replace with the following:

Contractor shall seal all asphalt concrete pavement joints. First all cracks and joints shall be cleaned with compressed air.

5-04.3(9) Spreading and Finishing

Supplement this section with the following:

Asphalt Concrete Pavement Class B

ACP Class B shall be placed to the compacted depths shown on the plans as leveling and wearing course. Asphalt over 3 inches in compacted depth shall be placed in two equal lifts. Placement shall be in accordance with applicable provisions of Section 5-04 of the Standard Specifications, except that longitudinal joints between successive layers of ACP shall be displaced laterally a minimum of 12 inches.

Feathering Asphalt Concrete Pavement

The Contractor shall feather the ACP in a manner to produce a smooth riding connection to existing pavements.

5-04.3(17) Paving Under Traffic

Add the following sentence to the second paragraph of this section:

The Contractor shall be responsible for opening newly placed pavement to traffic, unless otherwise directed by the Engineer. Traffic control where necessary shall be maintained during the curing period.

5-05 CEMENT CONCRETE PAVEMENT

5-05.3 Construction Requirements

5-05.3(22)A Existing PCC Pavement Replacement (New Section)

PCC pavement that is slated for removal and replacement shall be replaced with Class 3,000 LS concrete in accordance with Section 6-02.3(6) of the Standard Specifications.

DIVISION 7

DRAINAGE STRUCTURES, STORM SEWERS, SANITARY SEWERS, WATER MAINS, AND CONDUITS

7-02 CULVERTS

7-02.3(4) Removing and Relaying Culverts

Replace the first sentence of the first paragraph of this section with the following:

> Where it is necessary to remove existing storm drain pipes for installation of improvements, the existing pipes shall be removed and relaid in accordance with these Specifications. All joints shall be made as directed by the Engineer to achieve a watertight joint.

Replace the second paragraph with the following:

> All storm drain pipe removed and not relaid shall be disposed of by the Contractor, unless otherwise directed by the Engineer.

7-04 STORM SEWERS

7-04.2 Materials

Replace the third paragraph with the following:

> Thermoplastic storm sewer pipe shall be smooth walled corrugated N-12 polyethylene pipe, shall conform to AASHTO M294 performance specifications, and be manufactured by Advanced Drainage Systems or approved equal. Fittings and cuppler joints shall be able to pass the low-pressure air test and conform to AASHTO M294 performance specifications. Cupplers shall be ADS Series 85 Integral Bell Type or approved equal.

7-05 MANHOLES

7-05.3 Construction Requirements

Replace the third paragraph and replace with the following:

> All manholes shall be 48-inch diameter, pre-cast concrete manufactured by Pipe Inc., Associated Sand and Gravel, or approved equal.

Add the following to the fifth paragraph:

Ladder rungs shall be polypropylene coated conforming to ASTM D-4101. Coating shall not be field applied.

7-05.3(1) Adjusting Manholes to Grade

Supplement this section with the following:

All manholes, catch basins, grates, and valve boxes affected by the construction shall be adjusted to final grade. Covers shall not rock when seated in any position on the frame.

7-05.3(3) Connection to Existing Manholes

Supplement this section with the following:

The Contractor shall notify the city at least 24 hours prior to connecting to any existing utilities. Also see Section 7-17.3(2)G.

Excavate completely around the existing manhole to ensure against unbalanced loading on the manhole.

Keep the manhole in operation at all times and take precautions necessary to prevent any debris or other materials from entering the sewer.

Contractor may be required to install a tight pipeline bypass through the existing channel. If the connection is to a dead-end manhole, the outlet shall be plugged and sealed with cement grout.

The Contractor shall verify the existing manhole invert elevations prior to construction.

Bring laterals into the existing manhole so that the crowns of the two incoming pipes are at the same elevation unless otherwise specified.

Reshape the existing base to provide a channel equivalent to that specified for a new manhole.

The Contractor shall be responsible for repairing all damage to the manholes resulting from his operations.

7-08 GENERAL PIPE INSTALL

7-08.3(1)C Pipe Zone Bedding

Supplement this section with the following:

Pipe bedding shall conform to 9-03.12(3) and shall extend 6 inches above and below the pipe. The base of the excavation should be as dry as possible and all loosened soil, organic material and other debris removed. Any bedding material should be placed on a firm nonyielding, relatively dry subgrade. The top 6 inches of bedding should be contoured to fit the pipe.

Pipe zone material should be placed in layers not exceeding 6 inches (loose thickness), compacted to 90 percent density as the standard (ASTM D 1557), and should be brought up evenly on both sides of the pipe for its full length up to at least 6 inches above the top of the pipe. Compaction within the pipe zone should be accomplished with hand-operated lightweight equipment as approved by the pipeline manufacturer to avoid pipe damage.

7-08.3(2)H Sewer Line Connections

Supplement this section with the following:

Temporary connections shall be made to ensure that the side sewers can continue to be used. Said connections shall be constructed so that they will not leave permanent damage to the finished pipeline. Temporary connections which are visibly leaking will not be allowed.

7-03.3(2)I Side Sewer Connections

Supplement this section with the following:

Side sewer connections shall conform to Section 7-18.

7-08.3(3) Backfilling

Supplement this section with the following:

Select trench backfill shall conform to Section 9-03.19.

7-09 PIPE AND FITTINGS FOR WATER MAINS

7-09.2 Materials

Supplement this section with the following:

A. Pipe

Pipe installed shall be Class 50, or higher, ductile iron pipe as shown on the plans conforming to the requirements of Section 9-30.1(1).

Water service installed shall be 200 psi polyethylene pipe as shown on the Plans conforming to the requirements of Section 9-30.6(3)B.

B. Fittings

All water main fittings shall be ductile iron conforming to the requirements of Section 9-30.2(1), and shall be installed with appropriate thrust blocking or other approved means of restraints.

Following assembly, all fitting nuts, bolts, exposed threads and shackle rods shall be treated with two field coats of asphalt varnish, or other suitable material as approved by the project engineer. Couplers shall be further protected with plastic wrap as described in Section 7-11.3(3)A.

Joint restraints are to be mechanical joint retainer glands, manufactured from ductile iron to a minimum 60-40-12 grade. Set screws are to be manufactured from AISI 4140 steel, case and core hardened, unplated. Screws are to have breakable automatic torque caps. All sizes must be UL listed and meet all specifications of AWWA/ANSI C 111/A21 11-80 where applicable.

7-10 TRENCH EXCAVATION, BEDDING, AND BACKFILL FOR WATER MAINS

7-10.3 Construction Details

7-10.3(6)A Potholing (New Section)

At the direction of the Engineer, the Contractor shall pothole a minimum of 100 feet ahead of the pipe-laying operation on existing right-of-way to determine the exact horizontal and vertical location of existing utilities and determine if a conflict exists. If a conflict should exist, the Engineer shall be notified prior to any change in water line grade.

7-10.3(7) Trench Excavation

Supplement this section with the following:

Where indicated on the plans or directed by the Engineer, the Contractor shall excavate around trees with hand tools to prevent damage to the root system.

7-10.3(10) Backfilling Trenches

Supplement this section with the following:

Backfill shall be bank run gravel for trench backfill free of organic materials, conforming to the requirements of Section 9-03.19 and the Standard Details.

Open excavations will not be allowed to be left during non-working hours. All open excavation shall be backfilled or covered with steel sheets with appropriate traffic warning signs.

Replace the second sentence of second paragraph of this section with the following:

Atop the pipe zone select backfill material should be placed in 8-inch thick layers, loose depth, and compacted to at least 90 percent of the ASTM D 1577 as the standard. In pavement areas this should be increase to 95 percent for the top two feet of backfill (immediately underlying pavement base course).

Supplement this section with the following:

Import trench backfill shall conform to Section 9-03.19.

All native material removed from the trench shall be disposed of at a site secured by the Contractor.

7-10.3(12) Compaction Testing (New Section)

The Contractor shall excavate to depths and locations when and as directed by the Engineer to allow for compaction tests. The request for compaction tests shall be made in writing two working days prior to the need. Shoring shall be supplied by the Contractor as required.

For non-Public Works contract, all testing shall be at the Developer's expense.

Any areas which fail to meet compaction requirements shall be retested. For public works contracts, any retesting shall be at the Contractor's expense.

No paving will be allowed until trench compaction has been tested and accepted.

7-11 PIPE INSTALLATION FOR WATER MAINS

7-11.3(9)A Connections to Existing Mains

Supplement this section with the following:

Connections to existing water mains shall be made in accordance with the standard details and the provisions of Section 7-11.3(9), and shall not be made without prior approval of the Engineer.

Connections to existing AC (asbestos cement) pipe shall be performed by approved methods by qualified personnel in strict accordance with the provisions of all applicable laws, codes, and regulations, particularly the provisions of the Washington Administrative Code regarding asbestos materials.

7-11.3(10) Detectable Marking Tape

Replace this section with the following:

All new services shall be paralleled by #12 AWG insulated copper wire taped at not less than 10-foot intervals to the top of the pipe.

7-11.3(11) Hydrostatic Pressure Test

Supplement this section with the following:

The water main shall be pressure tested in accordance with Section 7-11.3(11) of the Standard Specifications.

Temporary lines used for pressure testing and flushing shall be removed in their entirety following successful testing. The corporation stop shall be left exposed so that the project engineer may verify that it is not leaking prior to final backfilling. Any visible leakage shall be the responsibility of the Contractor to repair by methods approved by the Engineer.

7-11.3(11)A Testing Extensions From Existing Mains

Add the following after the last paragraph:

When an extension greater than 18 feet is made from an existing valve, or from a section of main without services which can be isolated by an existing valve, the Contractor may have the option of pressure testing the existing section or valve to eliminate the need for a final connection by pretested prechlorinated pipe, subject to the consent of the Engineer.

In order to ensure the integrity of the existing valve and prevent possible cross-connection hazards, the existing section or valve must be pressure tested prior to connecting the new

main. Subsequently, the connected new construction must be pressure tested together with the connected pretested section.

In electing and receiving consent to utilize the method of pretesting and direct connection, the Contractor retains all responsibility for successful final testing of the completed new construction and assumes all risk for damages which may be caused to the existing system valves, piping, or appurtenances.

7-11.3(12) Disinfection of Water Mains

Supplement this section with the following:

All new pipe and appurtenances shall be disinfection, flushed, and tested in accordance with Section 7-11.3(12) before placing the mains into service. Samples will be collected and bacteriological tests obtained by the Project Engineer. The Contractor shall give a minimum of two (2) working days written notice prior to disinfection test is required and allow a minimum of five (5) working days for test results. No chlorinated water shall be directly discharged to the sanitary sewer or storm drainage system when flushing out the water main.

7-11.3(13) Thrust Blocking

Replace this section with the following:

Concrete thrust blocking or other suitable means of restraint approved by the project engineer shall be provided for all bends, reducers, tees, valves, caps, and plugs. Blocking shall be 3,000 psi concrete.

Concrete blocking shall bear against solid undisturbed earth at the sides and bottom of the trench excavation and shall be shaped so as not to obstruct access to the joints of the pipe or fittings.

The exposed portions of any rebar used in thrust blocks shall be field treated with two coats of asphalt varnish. All fittings and valves shall be protected from contact with the concrete with plastic film.

7-12 VALVES FOR WATER MAINS

7-12.2 Materials

Supplement this section with the following:

A. Gate Valves

Gate valves shall be resilient seat, complying with AWWA C509 and C550, non-rising stem type opening counterclockwise. Valves shall be installed with cast iron boxes with the lids marked "Water." The valves shall be provided with asphalt or concrete pads as indicated on the standard details.

7-15 SERVICE CONNECTIONS

7-15.1 General

Replace this section with the following:

This work consists of installing the service connection from the new water main to the customer's service line with fittings required to make a watertight connection.

7-15.2 Materials

Supplement this section with the following:

Corporation Stops and Service Saddles

Service saddles shall be a painted saddle with a single stainless steel strap. Castings shall be high tensile ductile (modular) iron and shall meet the requirements of ASTM 536-71, and shall be protected with corrosion resistant paint. All bolts, nuts, and washers shall be stainless steel; all stainless steel shall be type 304 (13-8). Corporation stops shall be plug-type with cc inlet and IPT outlet Mueller Model Number H-15005, or approved equal.

7-17 SANITARY SEWERS

7-17.2 Materials

Replace section with the following:

Pipe used for sanitary sewers shall be:

Solid Wall PVC Sanitary Sewer Pipe per 9-05.12(1)

7-17.3(2) Cleaning and Testing

Supplement this section with the following:

Gravity sewer pipe shall be subject to low pressure air test per Section 7-17.3(4)E. Contractor shall furnish all equipment and personnel for conducting the test. All tests shall be done under observation of the inspector. Contractor shall give inspector 24-hour written notice prior to conducting test.

All wyes, tees, and end of side sewer stubs shall be plugged with flexible joint caps, or acceptable alternates, securely fastened to withstand the internal test pressures. Such plugs or caps shall be readily removable and their removal shall provide a socket suitable for making a flexible jointed lateral connection or extension.

Immediately following the pipe cleaning, the pipe installation shall be tested with low-pressure air.

A water test of all new manholes is also required. The water test shall be made by the Contractor first by filling the manhole up with water and letting it sit to allow the water to saturate the concrete. After the saturation period, the manhole shall be filled to the top of the cone. The water cannot drop more than 0.05 gallons in 15 minutes per foot of head above invert to pass.

Contractor shall be responsible for maintaining service during manhole and sewer testing.

7-17.3(2)H Television Inspection

Delete the first paragraph and supplement with the following:

The Contractor shall give the Engineer a 48-hour written notice prior to conducting the video inspection.

After cleaning the new sewer pipe, passing the air test, and passing the compaction testing on the trench backfill, the Contractor shall make a video recording (DVD format) of the new sewer main and side sewers using remote camera normally used for said application and deliver the tape, and associated written transcript, to the engineer within 48 hours of performing the video recording.

Television inspection of the sewer main shall include a 1-inch sewer ball attached in front of the camera to allow for inspection of the depth of water in low points in the sewer pipe. Low points exceeding ½ inch shall be repaired. The inspection will be done one manhole section at a time, and the flow in the section being inspected shall be suitably controlled as necessary to observe the depth of flow on the 1-inch sewer ball.

The television camera used for the inspection shall be one specifically designed and constructed for such inspection with a rotating camera capable of looking into the side sewers from the main. Lighting for the camera shall be suitable to allow a clear picture of the entire periphery of the pipe.

The camera shall be operative in 100 percent humidity conditions. The camera, television monitor, and other components of the video system shall be capable of producing picture quality to the satisfaction of the Engineer, and, if unsatisfactory, equipment shall be removed, and no payment will be made for an unsatisfactory inspection.

Television inspection of the sewer main and side sewers shall be incidental to the Contract unit price for PVC sanitary sewer pipe 8-inch diameter.

7-18 SIDE SEWERS

7-18.1 Description

Replace this section with the following:

The work shall consist of reconnecting existing side sewers to the new side sewers at the right-of-way, and extending new side sewers to the right-of-way from the new sewer.

7-18.2 Materials

Replace this section with the following:

Side sewers shall be 6″ PVC conforming to Section 9-05.12. Contractor shall be responsible to have fittings available for connecting to existing side sewers.

DIVISION 8

MISCELLANEOUS CONSTRUCTION

8-01 EROSION CONTROL

8-01.3(2) Topsoil

Supplement this section with the following:

All damage occurring to existing roadbeds, shoulders, walks, curbs, lawn, planting areas or other existing adjacent structures or areas due to the Contractor's operation in hauling and placing the topsoil shall be repaired by the Contractor. All topsoil shall be Type A or native topsoil as approved by the City.

8-01.3(3) Miscellaneous Erosion Control (New Section)

Contractor shall take necessary precautions and use the Best Management Practices to prevent sediment from construction activities from entering into storm water systems or natural waterways and from being carried away from the construction area by storm water.

All catch basins shall have filter fabric installed over the inlet to prevent sedimentation from entering the storm system.

8-02 ROADSIDE PLANTING

8-02.3(14) Lawn Installation

Supplement this section with the following:

Areas to receive new sod shall be cleared and grubbed, and leveled to a depth of 3 inches below grade.

Before placing of planting soil, areas shall be cultivated to a depth of 3 inches unless otherwise specified, or as ordered by the Engineer. Cultivation of the soil may be done by disc, spring-tooth harrow, rototiller, or similar equipment.

The area shall be raked to make it smooth and level. Topsoil shall be added as shown on the Plans, or designated by the Engineer.

Immediately prior to placement of sod, a 10-20-20 fertilizer shall be raked into the soil at a rate of 12 pounds per 1,000 square feet. The fertilizer shall be applied by approved hand or mechanical methods. Application in one direction will be sufficient.

The sod strips shall be placed within 48 hours after being cut. Dry soil shall be moistened by sprinkling prior to the laying of the sod. Sod shall be placed without voids, and have the end joints staggered. Butt joints shall be staggered and tightly fitted.

Following placement, the sod shall be rolled with a smooth-water-filled type roller. After rolling, the sod shall be heavily watered by sprinkling. Lawn areas shall be uniformly level.

The Contractor shall commence watering immediately as specified in Section 8-02.3(15). Watering and fertilizing shall be the Contractor's responsibility during the Lawn Establishment period. Watering shall be scheduled to prevent drying of joints between the sod strips.

8-02.3(15) Lawn Establishment

Supplement this section with the following:

Lawn Establishment shall consist of providing adequate and proper care for all public and private lawn areas installed within the limits of the project. The lawn establishment period shall begin immediately after the lawn has been planted and accepted in writing by the Engineer and shall extend through a minimum 30-day period or until the Actual Completion Date, whichever comes first.

During the lawn establishment period, the Contractor shall provide adequate and proper care to ensure the continuing healthy growth of the turf. Adequate and proper care shall include the labor, materials, and equipment necessary to keep the planted areas in a presentable condition.

8-02.3(17) Remove and Replace Sod (New Section)

The Contractor shall remove and replace sod within the project. All sod removed shall be protected during its period away from the native soil. The Contractor shall not allow sod to deteriorate and shall make every effort to save native sod. If sections of sod are damaged beyond reuse the Contractor shall replace with new sod.

8-161 ENGINE GENERATOR (New Section)

8-161.1 General

8-161.1(1) Description of Work

A. This entire system shall be built, tested, and shipped by the manufacturer, who is currently engaged in the production of such equipment. All applicable licensing fees shall be paid by the Contractor and the units shall be ready for street use at the time of delivery. The system shall be a package of new and current equipment consisting of:

1. A diesel engine driven electric plant to provide emergency power.

2. Engine mounted start-stop and control system.

3. Generator housing.

4. Mounted accessories as specified.

8-161.1(2) Rating

A. The units shall be rated at 480 Y/277 volts, 3-phase, 4-wire, 60 Hz, and 1800 rpm.

8-161.1(3) Submittals

A. The Contractor shall furnish six copies of the following information on the generator with its accessories in one complete submittal to the Engineer for review.

1. Shop drawings of the generator showing all equipment being supplied.

2. Interconnecting and wiring diagrams of all equipment.

3. Drawings and/or literature describing auxiliary equipment to be furnished.

8-161.1(4) Operation and Maintenance Manuals

The Contractor shall furnish operation and maintenance manuals in accordance with Section 106.1.

8-161.1(5) Warranty

The manufacturer shall provide a warranty of all parts and shall service for a period of two years or 1500 hours of operation from date of Substantial Completion whichever occurs first.

8-161.1(6) Size

The E-G manufacturer shall guarantee that the proposed unit will carry the standby loads as shown on the one-line diagrams and as required by the City. Refer to pump station design and specification for connected loads. If a larger unit is provided, then the Contractor shall upsize all wire, conduit, and equipment as necessary.

8-161.2 Materials

8-161.2(1) Engine

The engine shall be a compression-ignition engine, two- or four-cycle, solid-injection engine of either in-line or V-type. The continuous power output capacity of the engine for standby applications shall not be less than 1.5 bhp/kw at synchronous speed, corrected to the specified application.

A. Governor: Engine speed shall be governed by an electronic-type governor capable of maintaining engine speed such that generator output frequency is held to within 3 percent of the 60 cycles per second from no-load to full-load. The frequency at any constant load, including no-load, shall be maintained within a steady-state band width of ± 0.25 percent of the 60-Hz rated frequency. The governor shall not permit frequency modulation (defined as the number of times per second that the frequency varies from the average frequency in cyclic manner) to exceed one cycle per second.

B. Fuel System: The engine shall be capable of satisfactory performance on a commercial grade of distilled petroleum fuel oil such as No. 2 fuel oil. The system shall include a replaceable element fuel filter conveniently located for servicing. Fuel consumption of the generator set with all engine-driven accessories operating shall not exceed 0.75 pounds of fuel per kilowatt-hour at any load between 50 to 100 percent of rated load. Provide an appropriate fuel transfer pump complete with fuel system.

   A 24-hour (based on 100% wading) diesel, double-walled fuel tank shall be mounted inside the skid base of the generator set housing. Piping shall be in accordance with the applicable codes. Provide a tank-mounted fuel gage.

C. Lubrication: The engine shall have a gear-type lubricating oil pump for supplying oil under pressure to main bearings, crank pin bearings, and valve rocker mechanisms. Full flow oil filters, conveniently located for servicing, shall be provided. Filters shall be equipped with a spring-loaded bypass valve to ensure oil circulation if filters are clogged. Sufficient lubricating oil as recommended by the engine manufacturer shall be supplied to charge the lubricating oil system. A corrosion resistant, oil-drip pan shall be provided under the entire engine area.

D. Cylinder Liners: The engine shall be provided with removable, wet or dry-type cylinder liners of close-grained alloy iron.

E. Air Cleaners: The engine shall be provided with one or more dry-type air cleaners.

F. Cooling: The engine shall be furnished with a cooling system having sufficient capacity for cooling the engine when the set is delivering full rated load and when operating in an ambient temperature of up to 100°F. In addition, the engine shall be equipped with a radiator and fan of a type and capacity recommended by the engine manufacturer. The radiator shall have a flange to permit the attachment of sheet-metal

exhaust duct. The cooling system shall be filled with a mixture of antifreeze (ethylene glycol type) and water. This mixture shall protect the cooling system to -40°F. The engine shall be equipped with an integral, thermostatically-controlled immersion-type engine coolant heater which shall provide a minimum coolant temperature of 120°F at an ambient room temperature of 32°F. This heater shall be suitable for operation on 120-volt, single-phase AC power.

G. Exhaust System: The engine shall be equipped with a critical rated welded steel exhaust silencer, of sufficient size to ensure low loss of power output due to excessive back pressure. The silencer shall have appropriately sized inlet and outlet and shall have side inlet if required due to space limitations. The silencer shall be provided with a protective coating which shall remain intact and unblemished at operating temperatures of 1000°F. Provide a stainless-steel flexible exhaust connection. Unit shall include an appropriate exhaust pipe extension and rain cap through the roof or sidewall of the new building or enclosure.

H. Safety Controls and Alarms: The engine shall be equipped with automatic safety controls which will shut down the engine in the event of low-lubricating oil pressure, high jacket water temperature and engine overspeed. The alarms shall be transmitted and displayed on the control panel. In addition, the unit shall include a separate isolated output alarm contacts for input to the alarm system.

I. Starting: The engine shall be equipped with a 24-volt electric starting system of sufficient capacity to crank the engine at a speed which will allow for full diesel start of the engine. The battery shall be of the lead-acid type, fully charged at 1225 specific gravity for stationary service. Mounting base and holding brackets shall be provided on the unit subbase. The battery charger shall be of the static, silicon rectifier type, self-regulated and provide a 10-ampere DC charging rate to the battery. The input shall be from a single-phase, 120-volt AC power. The charging system shall be complete with voltmeter, ammeter, charging rheostat and automatic equalizing timer.

Automatic starting shall be initiated by the closing of contacts for this purpose in the automatic transfer switch. The starting system shall provide four cranking and three rest periods. A starting switch with the positions of "Automatic," "Off," and "Manual" shall be provided in the control panel. A 24-volt alarm system, both audio and visual, shall be provided for failure to start, safety shutdown, and charger failure.

8-161.2(2) Alternator

The alternator shall be a four-pole, revolving field design, equipped with a solid-state voltage regulator. Maximum regulation shall be ± 2 percent no-load to full-load. The enclosure shall be of drip-proof construction. Insulation shall be Class F. Wiring shall be 12-lead, reconnectable for 3-phase, 60-Hz operation. The alternator shall have a minimum of 0.8 power factor while operating at sea level in an ambient temperature range from 0°F to 100°F. The alternator shall be provided with a full capacity output circuit breaker.

8-161.2(3) Control Panel

A. The unit control panel shall be of the dead-front type, mounted adjacent to the alternator and contain the following instruments and controls:

1. Indicating and alarm lights described previously.

2. AC voltmeter and switch.

3. AC ammeter, current transformers and test switch.

4. Frequency meter.

5. Engine control selector switch.

6. Lube oil pressure gage and alarm.

7. Coolant temperature gage.

8. Running time meter.

9. Generator output protection circuit breaker.

10. Automatic exercise and cycle timer (this unit may be included in Load Transfer Control, Paragraph 8-161.2(4).

11. Emergency shutdown button.

12. Time-delay relay to permit operation at no load after retransfer of load-to-normal source.

13. Contacts for transmission of failure alarm to remote location.

14. Contact (4 sets) of run status.

15. Contacts (and 120 V control) for motorized louvers.

8-161.2(4) Load Transfer Control

A. Provide for the engine generator set, an automatic transfer switch capable of transferring the rated output of the generator from normal to standby power.

B. The transfer switch shall be 3-phase, 3-pole, rated for 480-volt operation. The switch shall be electrically and mechanically held, have high current breaking capacity with silver-surfaced contacts complete with arc barriers and magnetic blow-out coils. The contacts shall be rated in accordance with UL 1008 for current carrying and switching capabilities. Unit shall be housed in a NEMA 12 enclosure. The switch shall be UL listed, and so labeled.

C. Interlocking: The transfer switch shall be interlocked to prevent supplying the load from more than one source at a time.

D. Control: The transfer switch shall transfer from normal to standby when normal voltage falls to 70 percent of rated value and retransfers to normal voltage when normal voltage returns to 90 percent of rated value. Adjustable time delay shall be provided to prevent transfer and retransfer on voltage dips. The load transfer unit shall be equipped with a voltage sensing device to start the engine on power failure and prevent load transfer until the generator has reached rated voltage.

Additional features shall include a test switch for both simulation and an actual outage transfer, an adjustable time delay in the neutral position, status lights for normal, standby and test conditions, and auxiliary breaker contacts (DPDT) for both normal and standby source.

8-161.2(5) Plant Mounting

A. The engine and alternator shall be equipped with a suitable fabricated steel subbase for mounting the entire set as a unit on a concrete foundation. All instrument panels, safety alarms, and measuring devices shall be mounted on or within the subbase and equipped with suitable shock and vibration isolators. In addition, the engine shall be equipped with spring-type vibration isolators between the subbase and the concrete foundation. Vibration isolation efficiency shall be 99 percent at 1800 rpm.

8-161.2(6) Finish and Painting

A. The entire diesel electric set shall be factory painted with heat-resistant enamel of at least two coats of the manufacturer's standard color. Manufacturer shall ship with the unit one quart of identical paint for touch-up purposes.

8-161.2(7) Spare Parts

A. The Contractor shall furnish the following spares: (provide in an appropriately labelled fiberglass enclosure)

1. One complete replacement set of combustion air filters; fuel oil filters; all V-belts; fuel oil transfer pump packing; any special tools required for maintenance.

2. Two complete replacement sets of lube oil filters.

8-161.3 Construction Details

A. Installation: Generator set shall be installed in strict accordance with the manufacturer's specifications. All equipment permanently mounted on concrete shall be leveled, aligned, and have a minimum of 1-1/2 inches of dry pack grout under the base plates. Grout shall be neatly trimmed and finished and all splatter shall be completely cleaned from all surfaces.

1. Startup: Initial startup and testing shall be performed by the manufacturer's service personnel in the presence of the Engineer's representative. The manufacturer shall supply six copies of certified reports on the unit's factory test performance and on the installation of the equipment.

2. Field Test: The unit shall be field tested at the pump station with the largest pumps served for a minimum of two hours of uninterrupted service. Additional tests shall also be conducted for each phase and voltage output. Provide written reports of the recordings (same as factory test).

3. Factory Test: The manufacturer shall provide certified copies of a 4-hour full-load test with recordings of voltage, frequency, amperage, engine temperature, lube oil pressure and load transfer results.

B. Operation and Maintenance Instructions

1. The Contractor shall furnish three copies of operating and maintenance instructions covering the engine generator and such auxiliary equipment as may require published operating instructions or periodic maintenance. Manuals shall be bound in suitable three-ring binders.

DIVISION 9

MATERIALS

Division 9 of the Standard Specifications is supplemented as follows:

9-03 AGGREGATES

9-03.9(3) Crushed Surfacing

Add the following sentence:

Crushed rock for base and top course used in pavement restoration shall conform to this section.

9-03.12(3) Bedding Material

Add the following to the section:

Bedding material for all PVC piping shall conform to type and depths shown on the Standard Detail.

9-03.12(5) Controlled Density Fill (New Section)

1. Description:

   Controlled Density Fill shall be a mixture of Portland cement, fly ash, aggregates, water, and admixtures which has been batched and mixed in accordance with ASTM C 94 or Section 6-02.3 of the Standard Specifications.

2. Materials:

a.	Portland cement	ASTM C 150 or AASHTO M 85 or WSDOT 9-01
b.	Fly Ash	Class F or Class C
c.	Aggregates	ASTM C 33 or WSDOT 9-03.1
d.	Water	WSDOT 9-25
e.	Admixtures	WSDOT 9-23.6 or AASHTO M 194 or ASTM C 494 or ASTM C 260

3. Classification of Controlled Density Fill:

Class A Free-flowing . . . void fills, abandoned pipe fills

Class BFree-flowing . . . trench backfills and pipe bedding

4. Proportioning:

The table below provides a guideline for Controlled Density Fill mixes. The weights shown are only an estimate of the amount to be used per cubic yard of CDF. Actual amounts may vary from those shown as approved by the Engineer or approved trial mix data or field test results for proper strength, workability, consistency, and density.

Class of CDF	**A**	**B**
Maximum Compressive strength, lbs. per sq. in. (lbs./sq. ft.)	100 (14,400)	300 (43,200)
Maximum gallons of mixing water per cubic yard	50	50
Pounds of cement per cubic yard, approximate	30	50
Pounds of fly ash per cubic yard, approximate	200	250
Pounds of dry aggregate per cubic yard, approximate (assumed Sp. G. 2.67)	3,200	3,200

NOTES: If air entraining or water reducing admixture is used for flowability, total water and aggregates may be adjusted for yield.

For flowable or excavatable CDF, 3/8″ minus or sand is recommended.

Weights may be adjusted for flowability and pumpability.

9-03.13 Backfill for Sand Drains

Add the following to the section:

Bedding material for all polyethylene pipe shall conform to this section.

9-03.19 Bank Run Gravel for Trench Backfill

Add the following to the section:

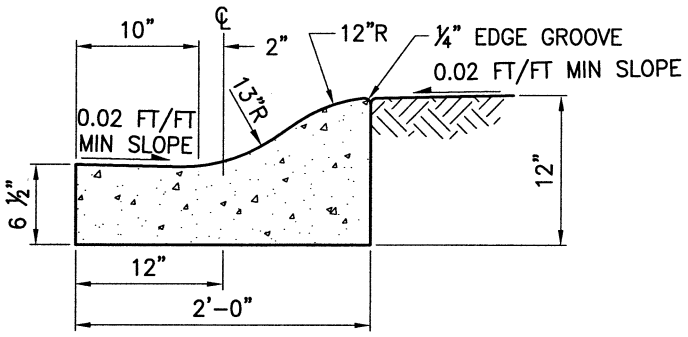
All trench backfill, to replace unsuitable native material, shall conform to this section.

9-05 DRAINAGE STRUCTURES, CULVERTS, AND CONDUITS

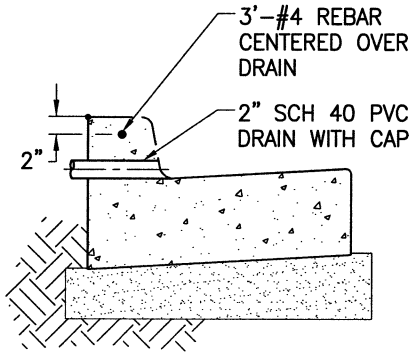
9-05.12 PVC Sewer Pipe

Add the following to the second paragraph of this section:

PVC pipe shall conform to ASTM D 3034-SDR35.

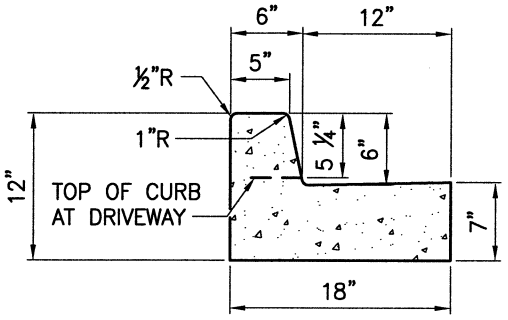


ROLLED CONCRETE CURB & GUTTER



PVC THROUGH CURB

(SEE NOTE 7)



VERTICAL CONCRETE CURB & GUTTER

NOTES

1. CONTRACTION JOINTS SHALL BE 3/8" x 2 1/4" ASPHALT SATURATED FELT PLACED IN ALL EXPOSED SURFACES OF CURB AND GUTTER AND SPACED AT 15' MAX 10' MIN OC.

2. THRU JOINTS SHALL BE 3/4" ASPHALT SATURATED FELT PLACED AT POINTS OF TANGENCY ON CURVES, AT CATCH BASINS AND AT EDGES OF ALLEY AND DRIVEWAYS. THE MAXIMUM DISTANCE BETWEEN THRU JOINTS SHALL BE 100'.

3. CONCRETE SHALL BE CLASS 3000 (6% AIR) (COARSE AGGR GR NO 2) (FINE AGGR CL 1).

4. FORMS SHALL BE STEEL UNLESS PRIOR APPROVAL IS GIVEN BY THE CITY ENGINEER. FORMS SHALL BE SET TRUE TO LINE AND GRADE AND SECURELY STAKED PRIOR TO CONCRETE PLACEMENT. FULL DEPTH DIVISION PLATES ARE ONLY TO BE USED WHERE THRU JOINTS ARE TO BE PLACED.

5. THE 1" RADIUS ON THE UPPER FACE OF THE CURB MAY BE FORMED BY AN EDGER TOOL OR BUILT INTO THE FACE FORM. THE 1" RADIUS AT THE BOTTOM FACE OF THE CURB SHALL BE FORMED BY THE FACE FORM.

6. ROLLED CURBS AND GUTTERS SHALL ONLY BE ALLOWED AS A REPLACEMENT TO EXISTING ROLLED CURBS AND GUTTERS.

7. 2" SCHEDULE 40 PVC SHALL BE PLACED THROUGH CURB AT LOW POINTS OF PROPERTY OR LOT WHEN GRADE SLOPES DOWN TO STREET AT LOCATIONS APPROVED BY THE CITY.

IMAGES:
XREFS:

DATE: 02/27/08 10:57am FILENAME: Std-T-1A

CITY OF ORTING

CONCRETE CURB & GUTTER

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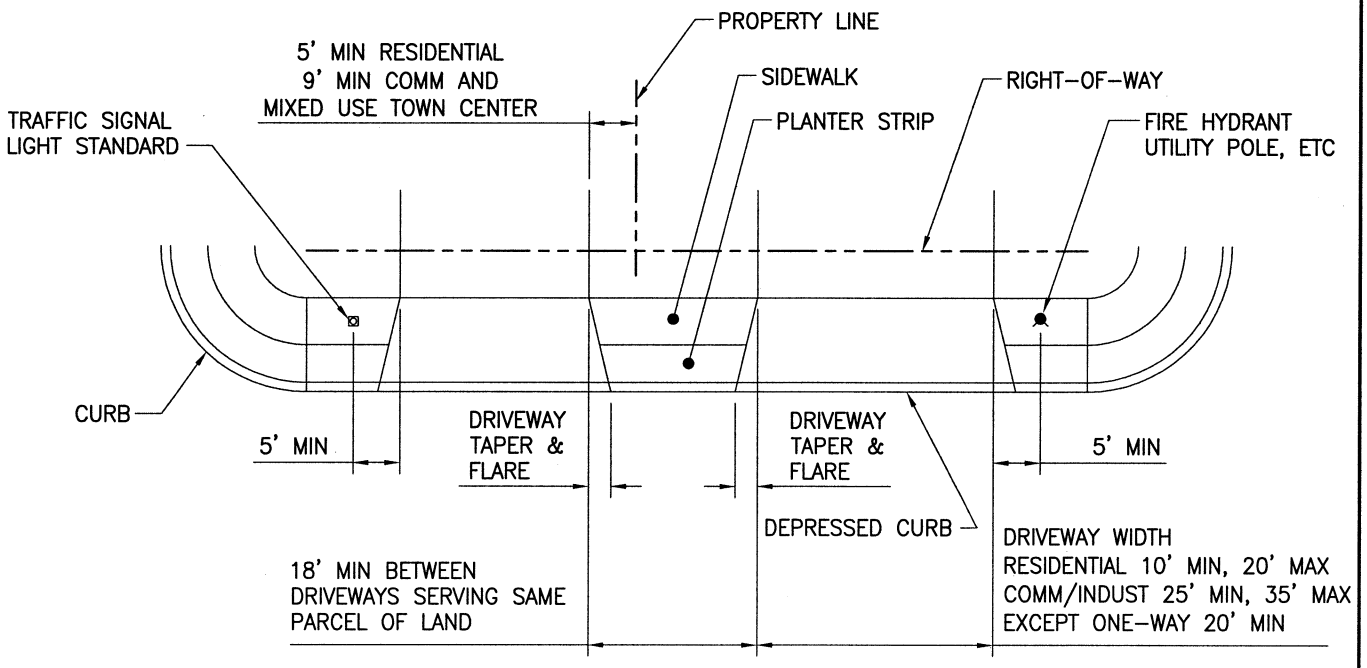
FILE NAME: STD-T-1A		



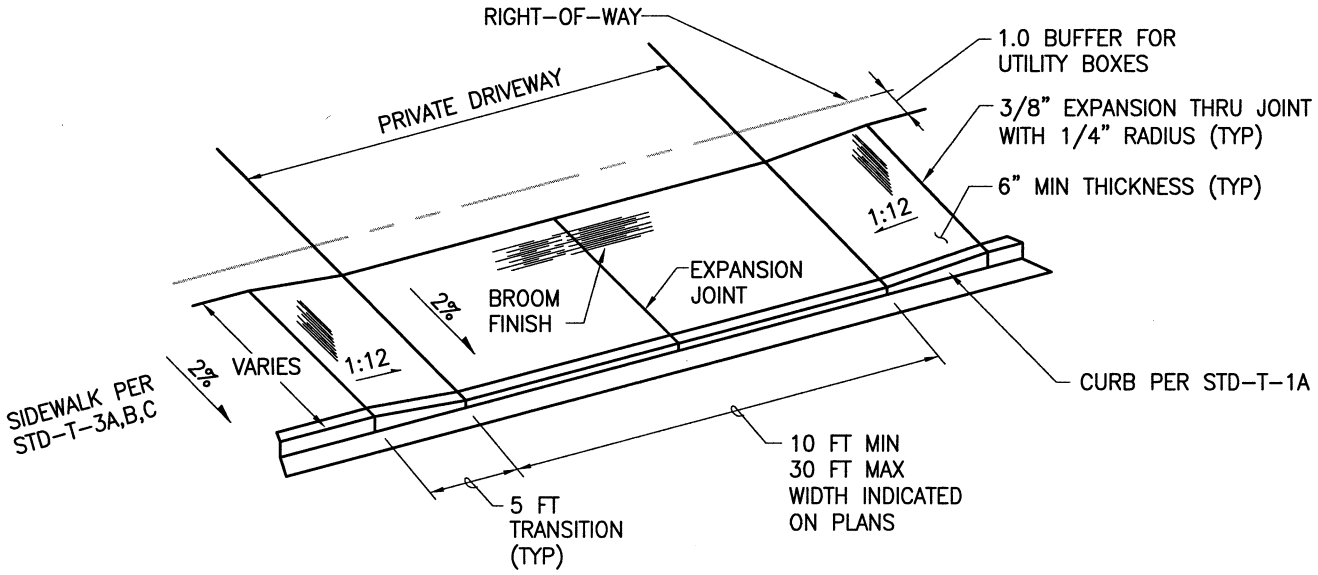
NOTES

1. NO PORTION OF ANY DRIVEWAY SHALL ENCROACH IN CURB RETURN.
2. COMMERCIAL/INDUSTRIAL DRIVEWAYS MUST BE APPROVED BY THE ENGINEER, CONSIDERING BOTH TRAFFIC SAFETY AND THE ACTIVITY BEING SERVED. ALL COMMERCIAL/INDUSTRIAL DRIVEWAYS SHALL HAVE AN EXPANSION JOINT LOCATED MID-WIDTH.
3. DRIVEWAYS SHALL BE LOCATED AS FAR FROM THE INTERSECTION AS POSSIBLE.

CITY OF ORTING

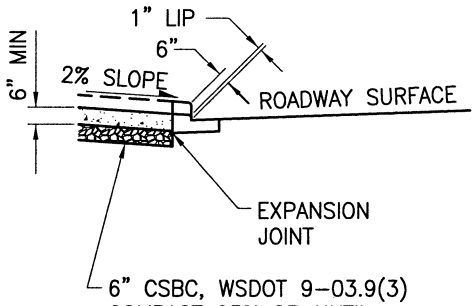
LOCATION & WIDTH OF NEW DRIVEWAYS

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. T-2A
FILE NAME: STD-T-2A		



NOTES

1. EXPANSION JOINTS SHALL BE PLACED AT 10' SPACING. ELASTOMERIC JOINT MATERIAL SHALL BE IN CONFORMANCE TO SECTION 9-04.1 (4) OF THE WSDOT STANDARD SPECIFICATIONS.
2. JOINTS SHALL BE STEEL TROWELED FOR FINISH.
3. BROOM FINISH SHALL BE PARALLEL TO ROADWAY IN DRIVEWAY ONLY (PERPENDICULAR IN SIDEWALKS).
4. APPROACHES TO EXISTING DRIVEWAYS THAT ARE IN USE BY HOME OWNERS, REQUIRE A 48 HOUR CONCRETE STRENGTH TIME LIMIT SO THAT DRIVEWAYS CAN BE PUT BACK INTO SERVICE.
5. DRIVEWAYS TO DEVELOPED LOTS SHALL NOT BE BLOCKED FOR MORE THAN 4 HOURS. CONTRACTOR SHALL PROVIDE IMMEDIATE TEMPORARY ACCESS FOR DEVELOPED LOTS WHEN SO DIRECTED BY THE ENGINEER.



CITY OF ORTING

CEMENT CONCRETE APPROACH

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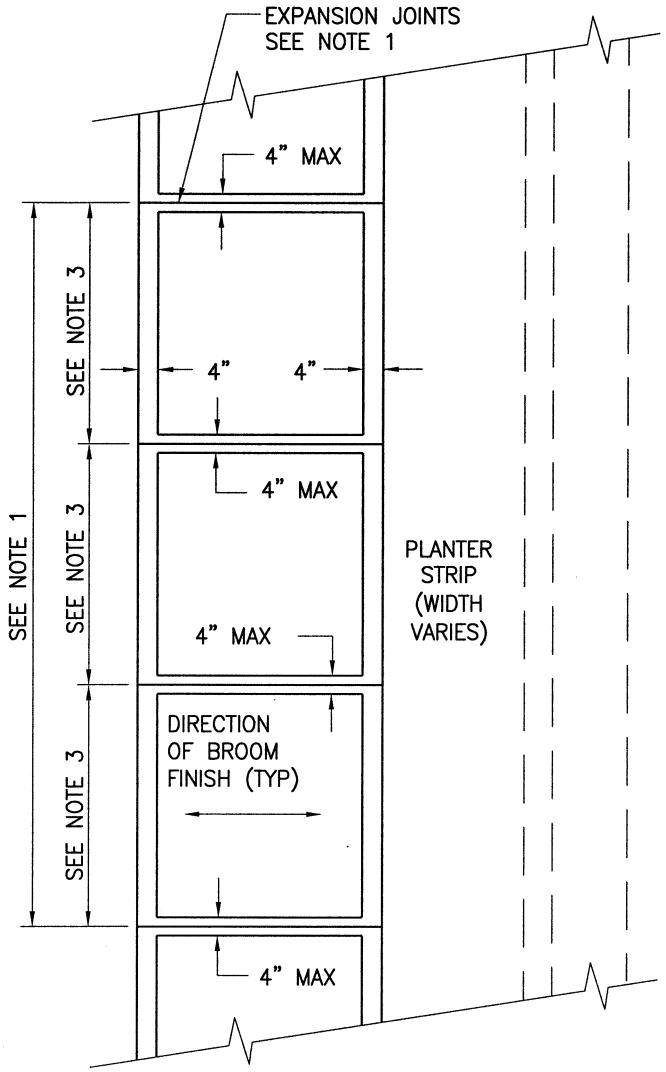
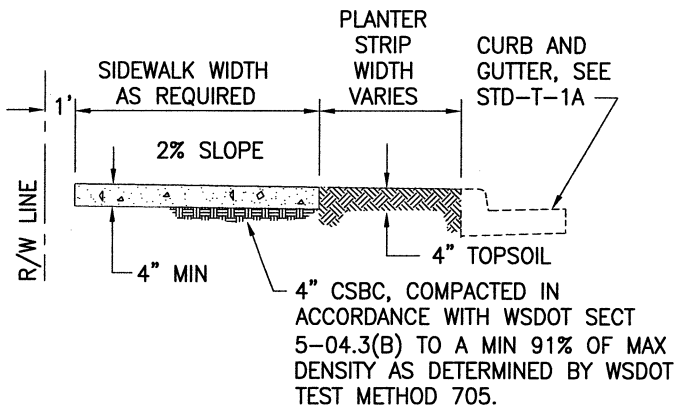
FILE NAME: STD-T-2B		

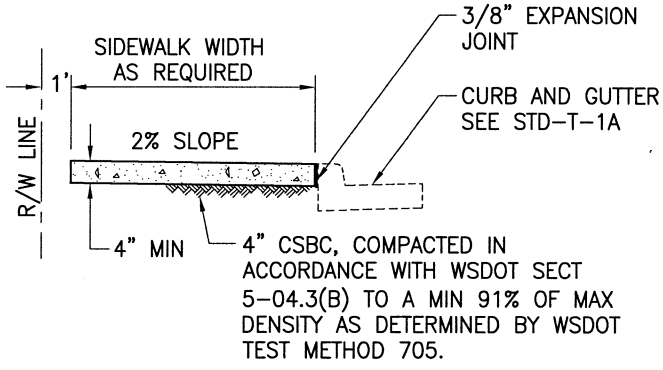


PLAN



SECTION

SIDEWALK W/PLANTER STRIP



SECTION

SIDEWALK ONLY

FOR NOTES SEE STD-T-3B

IMAGES:
XREF'S:

DATE: 01/04/08 08:48am FILENAME: STD-T-3A

CITY OF ORTING

SIDEWALK W/PLANTER STRIP

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. T-3A
FILE NAME: STD-T-3A		

MINIMUM SIDEWALK WIDTHS

5'	SINGLE FAMILY RESIDENTIAL AREAS (DETACHED DWELLINGS)
8'	MEDIUM AND HIGH DENSITY MULTI-FAMILY RESIDENTIAL AREAS
8'	INDUSTRIAL AREAS
8'	COMMERCIAL AREAS, MIXED USE TOWN CENTERS (MUTC)*

* MUTC PROPERTIES FRONTING SR-162 SHALL BE REQUIRED TO HAVE 10 FOOT SIDEWALKS UNLESS OTHERWISE NOTED BY PLANNING COMMISSION/CITY ENGINEER.

NOTES

1. EXPANSION JOINTS SHALL BE ⅜" x 1½" ELASTOMERIC JOINT MATERIAL CONFORMING TO WSDOT 9-04.1(4) PLACED AT 10' OC FOR 5' SIDEWALKS AND 15' OC FOR 8' SIDEWALKS.
2. THRU JOINTS SHALL BE ⅜" x 4" ASPHALT SATURATED FELT PLACED AT DRIVEWAYS, ALLEY RETURNS AND WHEELCHAIR RAMPS.
3. V-GROOVEMARKS SHALL BE ⅛" DEEP AND ¼" WIDE PLACED AT 5' OC FOR 5' SIDEWALKS AND 7 ½' OC FOR 8' AND 10' SIDEWALKS.
4. ALL JOINTS SHALL BE CLEAN AND EDGED TO A ¼" RADIUS. JOINTS SHALL BE FLUSH WITH THE FINISHED SURFACE.
5. ALL UTILITY POLES AND STREET SIGN POSTS IN SIDEWALK AREA NOT REQUIRED TO BE RELOCATED BY THE CITY ENGINEER SHALL HAVE A SQUARE SECTION OF REINFORCED CONCRETE SURROUNDED BY ⅜" EXPANSION JOINT MATERIAL AROUND THE POLE. THE JOINT SHALL BE NO CLOSER THAN 6" TO ANY SIDE OF THE POLE.
6. FORMS SHALL BE EITHER WOOD OR STEEL AND SHALL MEET ALL REQUIREMENTS OF THESE SPECIFICATIONS.
7. CONCRETE SHALL BE CLASS 3000 PSI 5-1/2 SACK WITH 6% AIR COARSE AGGREGATE GRADING NO. 2, FINE AGGREGATE CLASS 1.

IMAGES:
XREF'S:

DATE: 02/15/08 3:21pm FILENAME: STD-T-3B

CITY OF ORTING

SIDEWALK W/PLANTER STRIP NOTES

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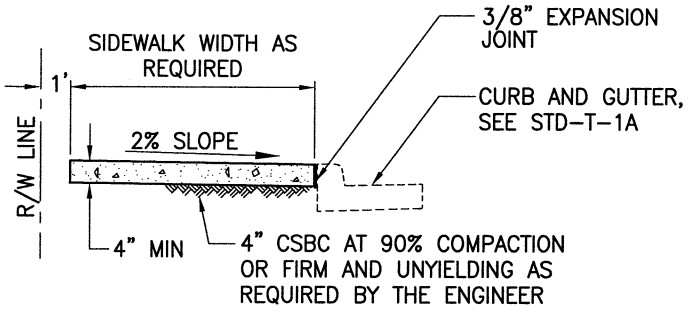
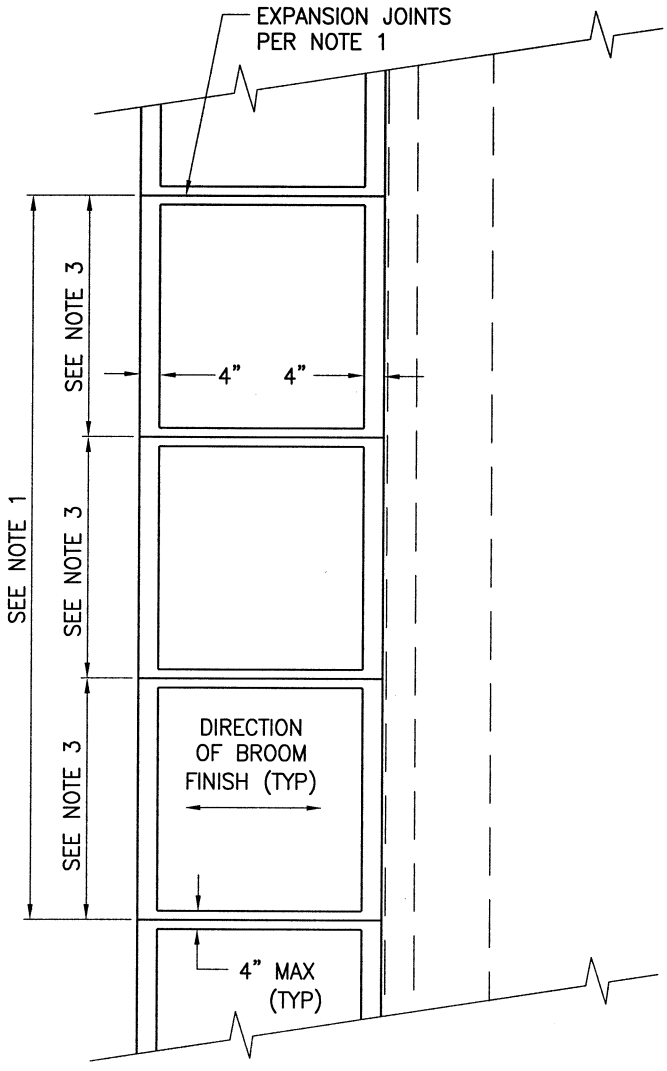
FILE NAME: STD-T-3B		



SECTION



PLAN

MINIMUM SIDEWALK WIDTHS

5'	SINGLE FAMILY RESIDENTIAL AREAS (DETACHED DWELLINGS)
8'	MEDIUM AND HIGH DENSITY MULTI-FAMILY RESIDENTIAL AREAS. MIXED USE TOWN CENTERS (MUTC)*
8'	INDUSTRIAL AREAS
8'	COMMERCIAL AREAS

* MUTC PROPERTIES FRONTING SR-162 SHALL BE REQUIRED TO HAVE 10 FOOT SIDEWALKS UNLESS OTHERWISE NOTED BY PLANNING COMMISSION/CITY ENGINEER.

NOTES

1. EXPANSION JOINTS SHALL BE ⅜" x 1½" ELASTOMERIC JOINT MATERIAL CONFORMING TO WSDOT 9-04.1(4) PLACED AT 10' OC FOR 5' SIDEWALKS AND 15' OC FOR 8' SIDEWALKS.
2. THRU JOINTS SHALL BE ⅜" x 4" ASPHALT SATURATED FELT PLACED AT DRIVEWAYS, ALLEY RETURNS AND WHEELCHAIR RAMPS.
3. V-GROOVEMARKS SHALL BE ⅛" DEEP AND ¼" WIDE PLACED AT 5' OC FOR 5' SIDEWALKS AND 7 ½' OC FOR 8' SIDEWALKS.
4. ALL JOINTS SHALL BE CLEAN AND EDGED TO A ¼" RADIUS. JOINTS SHALL BE FLUSH WITH THE FINISHED SURFACE.
5. ALL UTILITY POLES AND STREET SIGN POSTS IN SIDEWALK AREA NOT REQUIRED TO BE RELOCATED BY THE CITY ENGINEER SHALL HAVE A SQUARE SECTION OF REINFORCED CONCRETE SURROUNDED BY ⅜" EXPANSION JOINT MATERIAL AROUND THE POLE. THE JOINT SHALL BE NO CLOSER THAN 6" TO ANY SIDE OF THE POLE.
6. FORMS SHALL BE EITHER WOOD OR STEEL AND SHALL MEET ALL REQUIREMENTS OF THESE SPECIFICATIONS.
7. CONCRETE SHALL BE CLASS 3000 PSI 5-1/2 SACK WITH 6% AIR COARSE AGGREGATE GRADING NO. 2, FINE AGGREGATE CLASS 1.

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DATE: 01/04/08 08:50am FILENAME: STD-T-3C

CITY OF ORTING

SIDEWALK

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. T-3C
FILE NAME: STD-T-3C		

FILE: Std-t-4A
DATE: Feb 28, 2008 - 10:54am PLOTTED BY: morridea
IMAGES: OrtingLogobandw |
XREF'S:

CITY OF ORTING

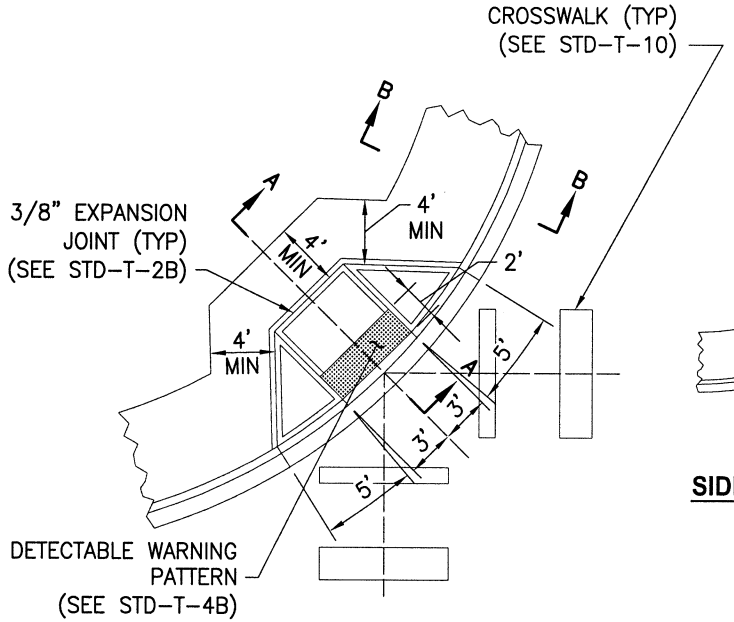
SIDEWALK RAMP PLANS & SECTIONS

SCALE: NO SCALE

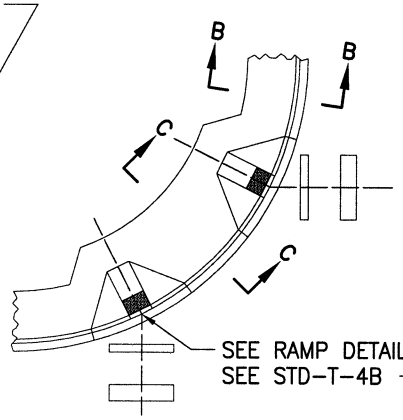
APPROVAL
DATE:

FILE NAME: STD-T-4A

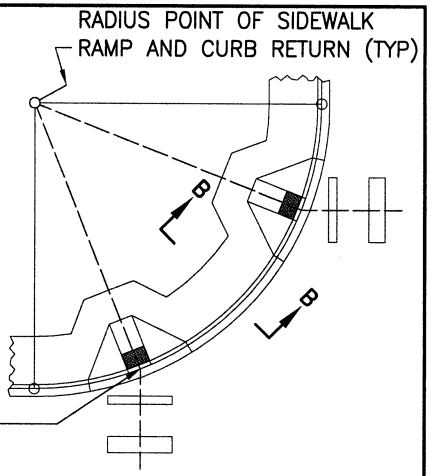
DRAWING NO. T-4A



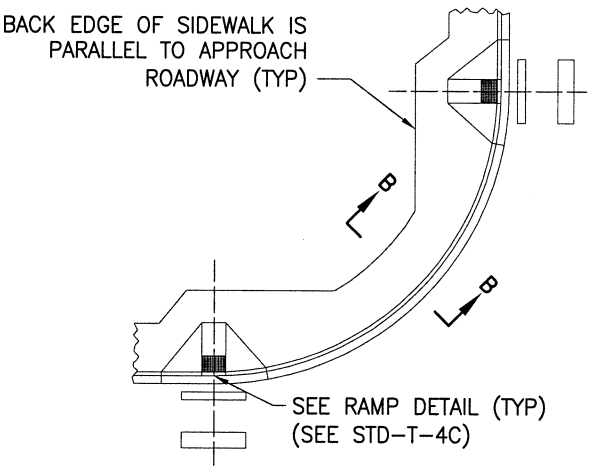
SIDEWALK RAMP TYPE 1A
PLAN



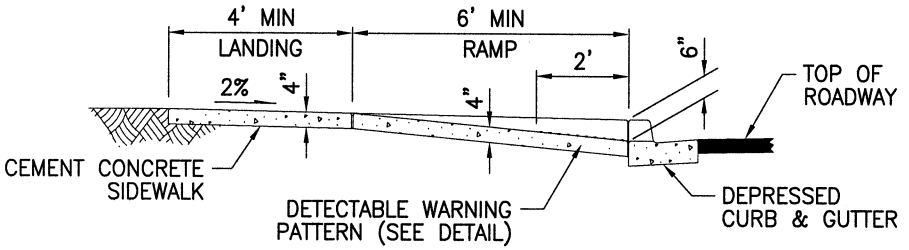
SIDEWALK RAMP TYPE 1B
PLAN



SIDEWALK RAMP TYPE 1C
PLAN



SIDEWALK RAMP TYPE 1D
PLAN



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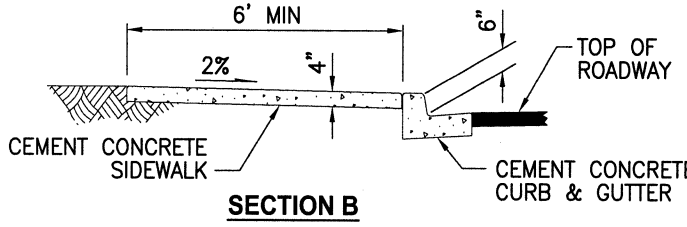
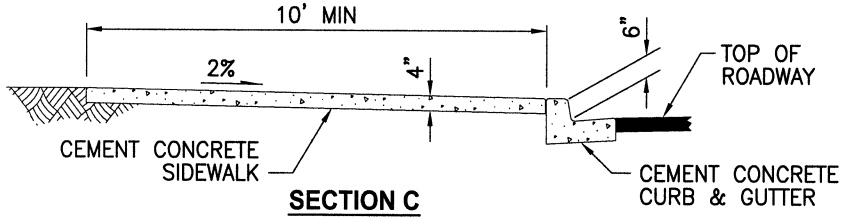


SECTION B



SECTION C

SEE STD-T-4B FOR ADDITIONAL RAMP DETAILS & NOTES.

FILE: Std-t-4B
DATE: Feb 28, 2008 - 10:58am PLOTTED BY: morridea
IMAGES: OrtingLogobandw |
XREF'S:

CITY OF ORTING

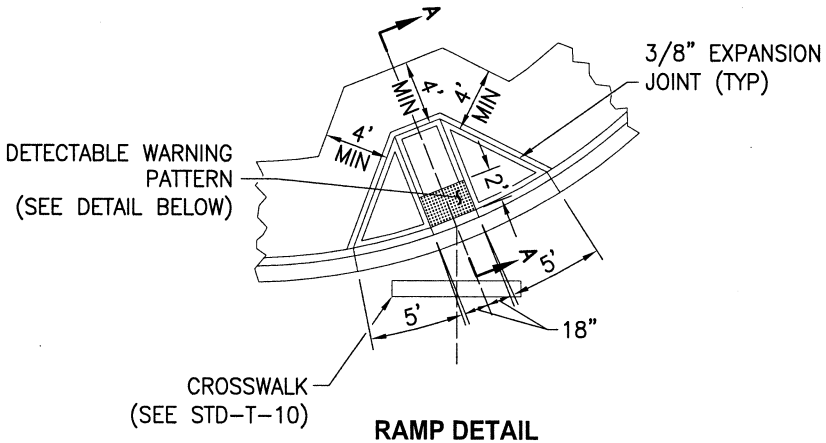
SIDEWALK RAMP DETAILS & NOTES

SCALE: NO SCALE

APPROVAL DATE:

FILE NAME: STD-T-4B

DRAWING NO. T-4B

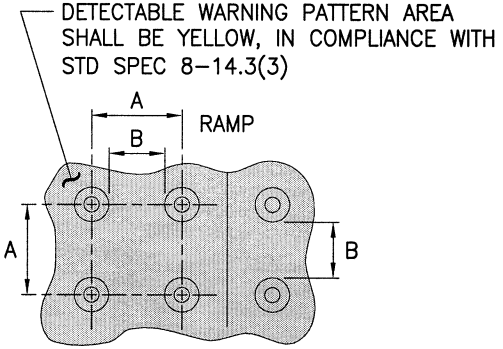


RAMP DETAIL

FOR SIDEWALK RAMP TYPES 1B, 1C, 1D

NOTES

1. AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.
2. DETECTABLE WARNING PATTERNS SHALL BE AN ADA CAST IN PLACE TRUNCATED DOME TACTILE SYSTEM OR APPROVED EQUAL.
3. CURB AND GUTTER SHOWN, SEE THE CONTRACT PLANS FOR THE CURB DESIGN SPECIFIED. SEE STD-T-1A FOR CURB DETAILS.
4. THE PLAN VIEWS FOR SIDEWALK RAMP TYPES 1B, 1C & 1D ARE PROVIDED TO DEFINE EACH RAMP TYPE - SEE STD-T-4A.
5. RAMP SLOPES SHALL NOT BE STEEPER THAN 12H:1V.



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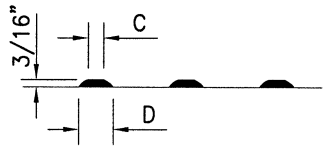
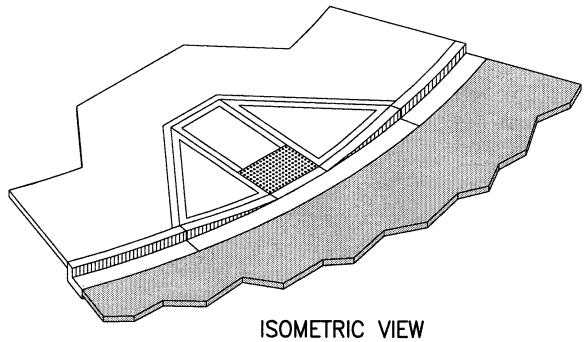


ELEVATION

	MIN	MAX
A	1 5/8"	2 3/8"
B	5/8"	1 1/2"
C	7/16"	3/4"
D	7/8"	1 7/16"

TRUNCATED DOMES DETECTABLE WARNING PATTERN DETAIL

(SEE NOTE 2)

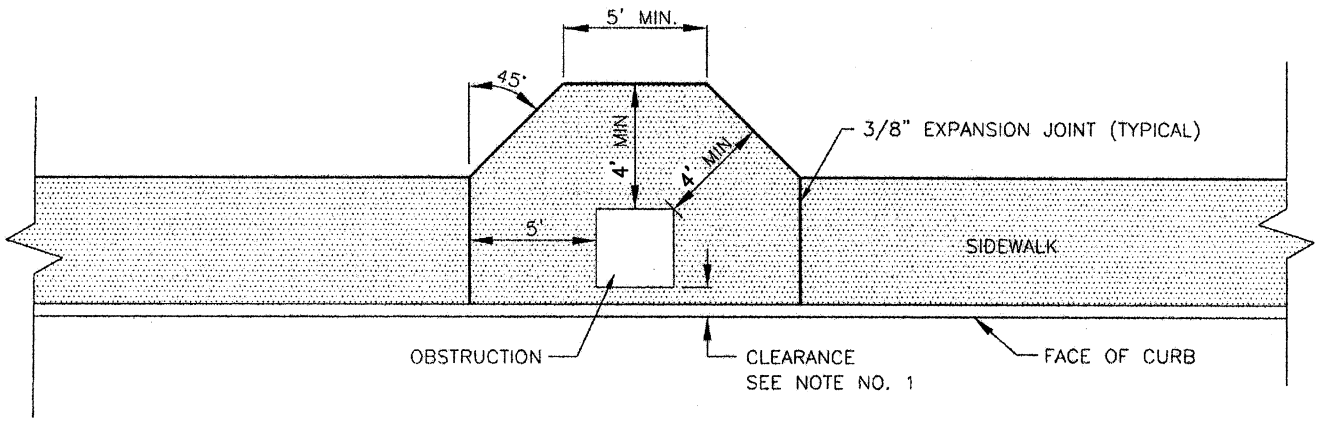


ISOMETRIC VIEW

FILE: Std-T-4C
DATE: Feb 21, 2008 - 4:29pm PLOTTED BY: morridea
IMAGES: OrtingLogobandw | T6 |
XREF'S:

CITY OF ORTING

MINIMUM SIDEWALK WIDTH AT OBSTRUCTIONS



NOTES

1. THE CLEARANCE BETWEEN THE FACE OF CURB AND ANY OBSTRUCTION, EXCEPT MAIL BOXES, SHALL BE A MINIMUM OF 1'-6". THE FRONT OF A MAIL BOX SHALL HAVE 1'-0" MINIMUM CLEARANCE FROM FACE OF CURB.
2. A MINIMUM CLEAR WIDTH OF 4' SHALL BE PROVIDED FOR CONTINUOUS PASSAGE AROUND THE OBSTRUCTION.

SCALE: NO SCALE

APPROVAL DATE:

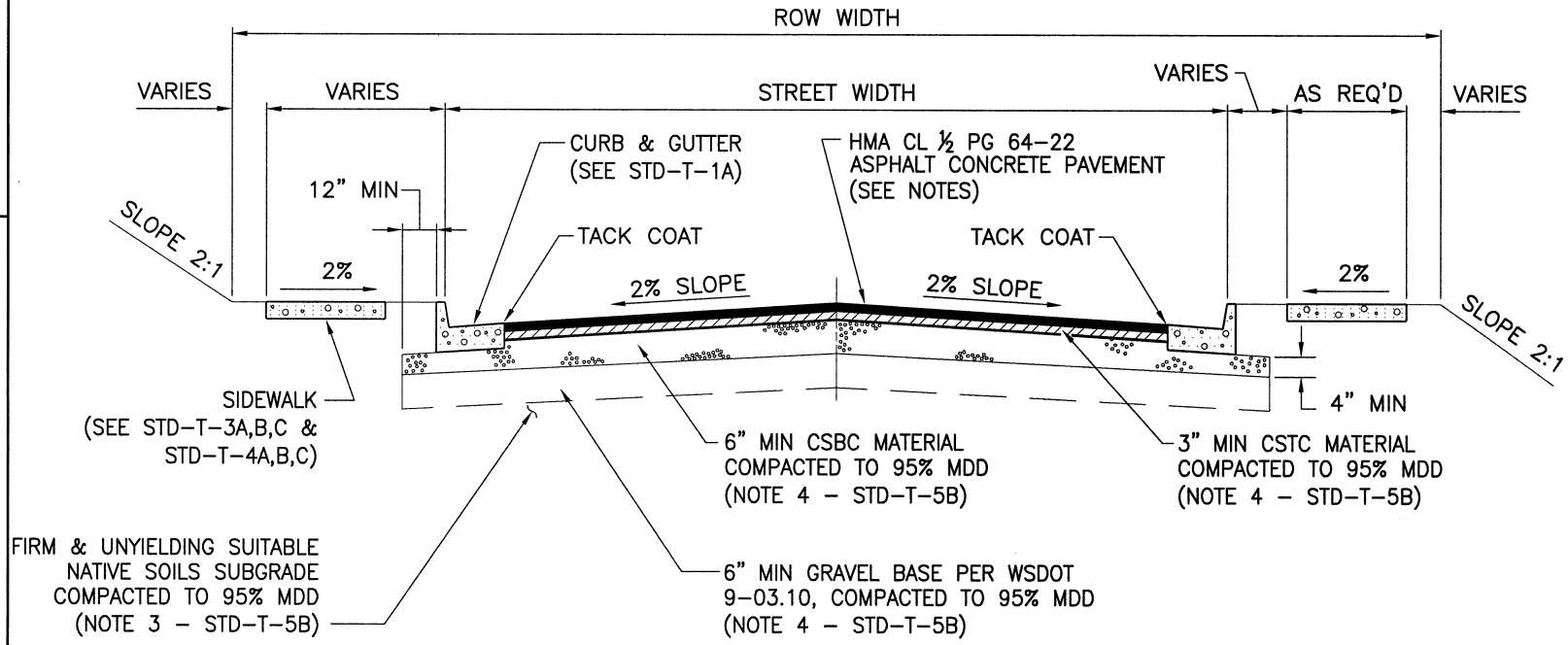
FILE NAME: STD-T-4C

DRAWING NO. T-4C

FILE: Std-t-5A
DATE: Feb 28, 2008 - 11:05am PLOTTED BY: morridea
IMAGES: OrtingLogobandw |
XREF'S:

CITY OF ORTING

TYPICAL ROAD SECTION



TYPE OF STREET	MAXIMUM CENTERLINE GRADES	MINIMUM ROW WIDTHS	MINIMUM STREET WIDTH	MINIMUM PAVEMENT THICKNESS
NEIGHBORHOOD STREETS	10%	50'	28'	3" (2-1.5" LIFTS)
LOCAL RESIDENTIAL STREETS	10%	60'	38'	3" (2-1.5" LIFTS)
RESIDENTIAL ARTERIALS	8%	60'	44'	4" (2-2" LIFTS)
MAJOR ARTERIALS PRINCIPLE	5%	60'	44'	4" (2-2" LIFTS)
ARTERIALS	5%	72'	56'	4" (2-2" LIFTS)

MINIMUM CENTERLINE AND FLOWLINE GRADE FOR ALL STREETS IS 0.5%

FOR NOTES - SEE STD-T-5B

FILE NAME: STD-T-5A

SCALE: NO SCALE

APPROVAL DATE:

DRAWING NO. T-5A

FILE: Std-t-5B
DATE: Feb 28, 2008 - 11:09am PLOTTED BY: morridea
IMAGES: OrtingLogobandw |
XREFS:

CITY OF ORTING

TYPICAL ROAD SECTION NOTES

SCALE: NO SCALE

APPROVAL DATE:

FILE NAME: STD-T-5B

DRAWING NO. T-5B

NOTES

1. THE ABOVE REPRESENTS THE MINIMUM ACCEPTABLE ROADWAY COURSE. ULTIMATE ROADWAY COURSE SHALL BE VERIFIED BY A LICENSED GEOTECHNICAL ENGINEER PRIOR TO PLAN APPROVAL.

2. ALL DEPTHS ARE MINIMUM COMPACTED DEPTHS.

3. SUBGRADE PREPARATION SHALL MEET THE REQUIREMENTS OF WSDOT SPEC. SECTION 2-06.3(1). IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MEET THE COMPACTION REQUIREMENTS AND CONTROL ALL WORK. THE CITY OF ORTING RESERVES THE RIGHT TO CONDUCT COMPLIANCE TESTS, AT THE CONTRACTORS EXPENSE.

4. SUBBASE MATERIAL SHALL BE BANKRUN GRAVEL MEETING THE REQUIREMENTS OF WSDOT SPEC. SECTION 9-03.10 OR CRUSHED BALLAST MEETING THE REQUIREMENTS OF WSDOT SPEC. SECTION 9-03.9(1). CRUSHED SURFACING SHALL MEET THE GRADATION REQUIREMENTS OF WSDOT SPEC SECTION 9-03.9(3). THE SUBBASE AND BASE MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH WSDOT SPEC SECTION 4-04.

5. SOIL STABILIZATION FABRIC MAY BE REQUIRED BY THE ENGINEER TO BE INSTALLED PRIOR TO THE INSTALLATION OF THE BASE MATERIAL. WHEN REQUIRED, THE CONTRACTOR SHALL PLACE A GEOTEXTILE FABRIC OVER THE PREPARED SUBGRADE WITH A 2 FOOT MINIMUM OVERLAP. THE MATERIAL SHALL BE A WOVEN GEOTEXTILE FOR SOIL STABILIZATION (WSDOT 9-33.2, TABLE 3) THE MATERIAL SHALL BE PROPERLY PACKED AND DELIVERED TO THE SITE AS RECOMMENDED BY THE MANUFACTURER.

6. SUBGRADE SHALL BE PROOF ROLLED WITH A LOADED DUMP TRUCK. ANY SOFT SPOTS OR YIELDING EARTH SHALL BE REMOVED AND REPLACE WITH GRAVEL BASE, PRIOR TO PLACING THE NEXT LIFT OF MATERIAL.

7. ASPHALT CONCRETE PAVEMENT SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH WSDOT SPEC SECTION 5-04.

8. THE CITY RESERVES THE RIGHT TO MODIFY THE GRADATION OF THE ASPHALT CONCRETE PAVEMENT IF THE CONDITIONS WARRANT IT. THE CONTRACTOR SHALL SUBMIT A JOB MIX FORMULA TO BE REVIEWED BY THE CITY ENGINEER PRIOR TO ANY ASPHALT PLACEMENT.

9. THE MAXIMUM COMPACTED THICKNESS OF ANY SINGLE LIFT OF PAVEMENT SHALL BE 2". PAVEMENT SECTIONS OF THICKNESS GREATER THAN 3" SHALL BE PLACED IN MULTIPLE LIFTS. EACH LIFT SHALL BE COMPACTED IN ACCORDANCE WITH WSDOT SPEC. SECTION 5-04.3(10). PERIODIC COMPLIANCE TESTS SHALL BE MADE BY A CERTIFIED TESTING AGENCY AT THE EXPENSE OF THE CONTRACTOR.

10. THE FACE OF THE GUTTER LIP AND EDGES OF EXISTING ASPHALT MEET LINES SHALL BE TACK COATED PRIOR TO PAVEMENT PLACEMENT. WHEN SUCCESSIVE LIFTS OF ASPHALT ARE REQUIRED TACK COAT SHALL BE DISTRIBUTED UNIFORMLY OVER THE PREVIOUS LIFT AT A RATE OF 0.06-0.08 GALLONS PER SQUARE YARD AT A TEMPERATURE OF 100 F AND SHALL BE ALLOWED TO SET TO A TACKY STATE PRIOR TO THE PLACEMENT OF THE NEXT LIFT.

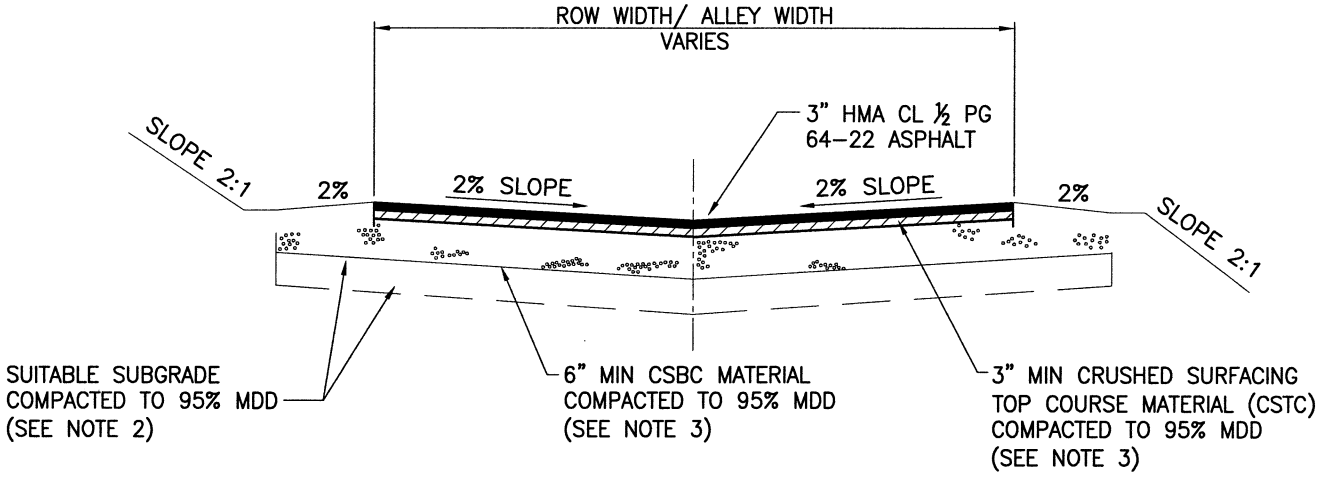
11. ALL MEET LINES BETWEEN LIFTS OF ASPHALT SHALL BE UNIFORM, WITH EDGES VERTICAL AND AT THE REQUIRED THICKNESS. IF SUBSEQUENT LIFTS ARE NOT COMPLETED WITHIN 48 HOURS OR THE EDGES HAVE BEEN CONTAMINATED, THE MEET LINES SHALL BE CLEANED AND TACK COATED.

12. ALL EXISTING MANHOLE COVERS AND MONUMENT CASES SHALL BE REMOVED AND STORED. THE MANHOLES AND MONUMENTS SHALL BE COVERED TO PREVENT DIRT AND DEBRIS FROM ENTERING DURING PAVING OPERATION. AFTER PAVING, THE CASTINGS SHALL BE REINSTALLED TO THE PROPER ELEVATION AND PATCHED IN ACCORDANCE WITH THE CITY OF ORTING SPECS.

13. ANY CHANGES TO THE MINIMUM PAVEMENT SECTION SHALL REQUIRE APPROVAL OF THE CITY ENGINEER. A STRUCTURAL PAVEMENT CROSS SECTION DESIGN WITH CALCULATIONS SHALL BE REQUIRED.

14. ALL MANHOLE FRAMES, VALVE FRAMES AND MONUMENT COVERS SHALL BE INSTALLED AFTER FINAL LIFT OF ASPHALT PAVEMENTS. SEE SPECIFIC DETAILS FOR METHOD OF INSTALLATION.

15. NEIGHBORHOOD STREET CROSS SECTION SHALL OBTAIN PLANNING COMMISSION APPROVAL PRIOR TO IMPLEMENTATION.



NOTES

1. ALL DEPTHS ARE MINIMUM COMPACTED DEPTHS.

2. SUBGRADE PREPARATION SHALL MEET THE REQUIREMENTS OF WSDOT SPEC SECTION 2-06.3(1). IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MEET THE COMPACTION REQUIREMENTS AND CONTROL ALL WORK. THE CITY OF ORTING RESERVES THE RIGHT TO CONDUCT COMPLIANCE TESTS, AT THE CONTRACTORS EXPENSE.

3. SUBBASE MATERIAL SHALL BE BANKRUN GRAVEL MEETING THE REQUIREMENTS OF WSDOT SPEC SECTION 9-03.10 OR CRUSHED BALLAST MEETING THE REQUIREMENTS OF WSDOT SPEC SECTION 9-03.9(1). CRUSHED SURFACING SHALL MEET THE GRADATION REQUIREMENTS OF WSDOT SPEC SECTION 9-03.9(3). THE SUBBASE AND BASE MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH WSDOT SPEC SECTION 4-04.

4. SOIL STABILIZATION FABRIC MAY BE REQUIRED BY THE ENGINEER TO BE INSTALLED PRIOR TO THE INSTALLATION OF THE BASE MATERIAL. WHEN REQUIRED, THE CONTRACTOR SHALL PLACE A GEOTEXTILE FABRIC OVER THE PREPARED SUBGRADE WITH A 2 FOOT MINIMUM OVERLAP. THE MATERIAL SHALL BE A WOVEN GEOTEXTILE FOR SOIL STABILIZATION (WSDOT 9-33.2, TABLE 3). THE MATERIAL SHALL BE PROPERLY PACKED AND DELIVERED TO THE SITE AS RECOMMENDED BY THE MANUFACTURER.

5. ALL EXISTING MANHOLE COVERS AND MONUMENT CASES SHALL BE REMOVED AND STORED. THE MANHOLES AND MONUMENTS SHALL BE COVERED TO PREVENT DIRT AND DEBRIS FROM ENTERING DURING PAVING OPERATION. AFTER PAVING, THE CASTINGS SHALL BE REINSTALLED TO THE PROPER ELEVATION AND PATCHED IN ACCORDANCE WITH THE CITY OF ORTING SPECS.

6. ALL MANHOLE FRAMES, VALVE FRAMES AND MONUMENT COVERS SHALL BE INSTALLED AFTER FINAL LIFT OF ASPHALT PAVEMENTS. SEE SPECIFIC DETAILS FOR METHOD OF INSTALLATION.

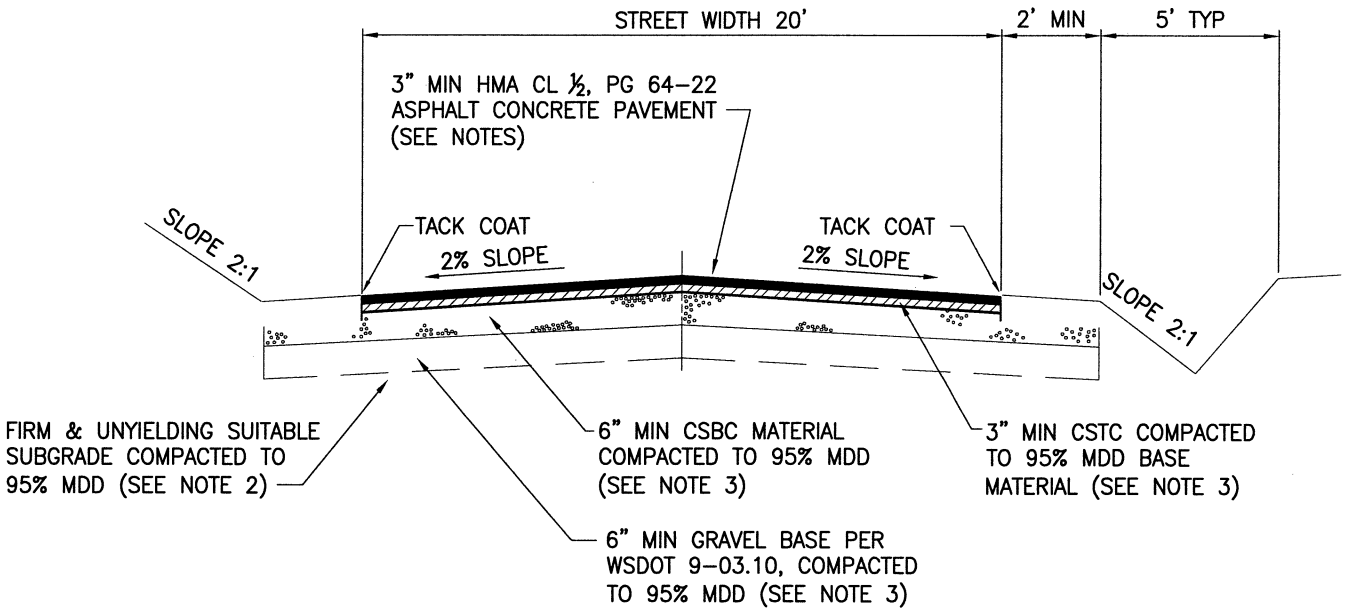
IMAGES:
XREF'S:

DATE: 01/04/08 08:58am FILENAME: Std-T-5C

CITY OF ORTING

PUBLIC & PRIVATE ALLEY CROSS SECTION

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. T-5C
FILE NAME: STD-T-5C		



TYPE OF STREET	MAXIMUM CENTERLINE GRADES	MINIMUM STREET WIDTH	MINIMUM PAVEMENT THICKNESS
PRIVATE RESIDENTIAL STREETS	10%	20'	3"

MINIMUM CENTERLINE AND FLOWLINE GRADE FOR ALL STREETS IS 0.5%

NOTES

1. ALL DEPTHS ARE MINIMUM COMPACTED DEPTHS.
2. SUBGRADE PREPARATION SHALL MEET THE REQUIREMENTS OF WSDOT SPEC. SECTION 2-06.3(1). IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MEET THE COMPACTION REQUIREMENTS AND CONTROL ALL WORK. THE CITY OF ORTING RESERVES THE RIGHT TO CONDUCT COMPLIANCE TESTS, AT THE CONTRACTORS EXPENSE.
3. SUBBASE MATERIAL SHALL BE BANKRUN GRAVEL MEETING THE REQUIREMENTS OF WSDOT SPEC SECTION 9-03.10 OR CRUSHED BALLAST MEETING THE REQUIREMENTS OF WSDOT SPEC. SECTION 9-03.9(1). CRUSHED SURFACING SHALL MEET THE GRADATION REQUIREMENTS OF WSDOT SPEC SECTION 9-03.9(3). THE SUBBASE AND BASE MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH WSDOT SPEC SECTION 4-04.
4. SOIL STABILIZATION FABRIC MAY BE REQUIRED BY THE ENGINEER TO BE INSTALLED PRIOR TO THE INSTALLATION OF THE BASE MATERIAL. WHEN REQUIRED, THE CONTRACTOR SHALL PLACE A GEOTEXTILE FABRIC OVER THE PREPARED SUBGRADE WITH A 2 FOOT MINIMUM OVERLAP. THE MATERIAL SHALL BE A WOVEN GEOTEXTILE FOR SOIL STABILIZATION (WSDOT 9-332, TABLE 6A). THE MATERIAL SHALL BE PROPERLY PACKED AND DELIVERED TO THE SITE AS RECOMMENDED BY THE MANUFACTURER.
5. SUBGRADE SHALL BE PROOF ROLLED WITH A LOADED DUMP TRUCK. ANY SOFT SPOTS OR YIELDING EARTH SHALL BE REMOVED AND REPLACED WITH GRAVEL BASE PRIOR TO PLACING THE NEXT LIFT OF MATERIAL.
6. ASPHALT CONCRETE PAVEMENT SHALL BE INSTALLED IN ACCORDANCE WITH WSDOT SPEC SECTION 5-04.
7. THE CITY RESERVES THE RIGHT TO MODIFY THE GRADATION OF THE ASPHALT CONCRETE PAVEMENT IF THE CONDITIONS WARRANT IT. THE CONTRACTOR SHALL SUBMIT A JOB MIX FORMULA TO BE REVIEWED BY THE CITY ENGINEER PRIOR TO ANY ASPHALT PLACEMENT.

NOTES CONTINUED ON STD-T-5E

CITY OF ORTING

PRIVATE ROADWAY MINIMUM CROSS SECTION

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. T-5D
FILE NAME: STD-T-5D		

FILE: Std-t-5D
DATE: Feb 28, 2008 - 11:20am PLOTTED BY: morridea IMAGES: Orting\Logobandw | XREF'S:

NOTES (CONTINUED)

8. THE MAXIMUM COMPACTED THICKNESS OF ANY SINGLE LIFT OF PAVEMENT SHALL BE 3". PAVEMENT SECTIONS OF THICKNESS GREATER THAN 3" SHALL BE PLACED IN MULTIPLE LIFTS. EACH LIFT SHALL BE COMPACTED IN ACCORDANCE WITH WSDOT SPEC. SECTION 5-04.3(10). PERIODIC COMPLIANCE TESTS SHALL BE MADE BY A CERTIFIED TESTING AGENCY AT THE EXPENSE OF THE CONTRACTOR.

9. THE FACE OF THE GUTTER LIP AND EDGES OF EXISTING ASPHALT MEET LINES SHALL BE TACK COATED PRIOR TO PAVEMENT PLACEMENT. WHEN SUCCESSIVE LIFTS OF ASPHALT ARE REQUIRED TACK COAT SHALL BE DISTRIBUTED UNIFORMLY OVER THE PREVIOUS LIFT AT A RATE OF 0.06-0.08 GALLONS PER SQUARE YARD AT A TEMPERATURE OF 100 F AND SHALL BE ALLOWED TO SET TO A TACKY STATE PRIOR TO THE PLACEMENT OF THE NEXT LIFT.

10. ALL MEET LINES BETWEEN LIFTS OF ASPHALT SHALL BE UNIFORM, WITH EDGES VERTICAL AND AT THE REQUIRED THICKNESS. IF SUBSEQUENT LIFTS ARE NOT COMPLETED WITHIN 48 HOURS OR THE EDGES HAVE BEEN CONTAMINATED, THE MEET LINES SHALL BE CLEANED AND TACK COATED.

11. ALL EXISTING MANHOLE COVERS AND MONUMENT CASES SHALL BE REMOVED AND STORED. THE MANHOLES AND MONUMENTS SHALL BE COVERED TO PREVENT DIRT AND DEBRIS FROM ENTERING DURING PAVING OPERATION. AFTER PAVING, THE CASTINGS SHALL BE RE-INSTALLED TO THE PROPER ELEVATION AND PATCHED IN ACCORDANCE WITH THE CITY OF ORTING SPECS.

12. ANY CHANGES TO THE MINIMUM PAVEMENT SECTION SHALL REQUIRE APPROVAL OF THE CITY ENGINEER. A STRUCTURAL PAVEMENT CROSS SECTION DESIGN WITH CALCULATIONS SHALL BE REQUIRED.

13. ALL MANHOLE FRAMES, VALVE FRAMES, AND MONUMENT COVERS SHALL BE INSTALLED AFTER FINAL LIFT OF ASPHALT PAVEMENTS. SEE SPECIFIC DETAILS FOR METHOD OF INSTALLATION.

14. ADEQUATE DRAINAGE SHALL BE PROVIDED.

CITY OF ORTING

PRIVATE ROADWAY MINIMUM CROSS SECTION NOTES

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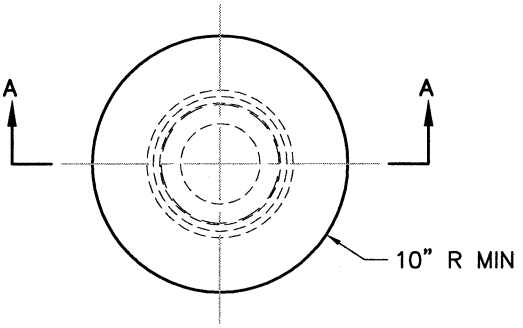
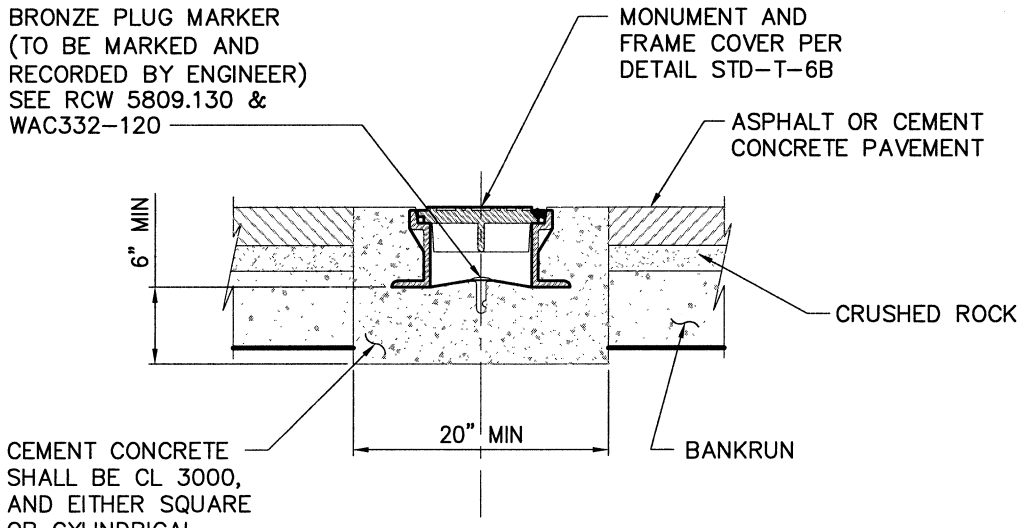
FILE NAME: STD-T-5E		



PLAN



SECTION A-A

NOTES

1. THIS TYPE IS USED PRIMARILY ON BITUMINOUS OR ASPHALT CONCRETE PAVEMENT.
2. OWNER WILL FURNISH BRONZE PLUG MARKER FREE OF CHARGE.
3. CONCRETE BASE NEED NOT BE FORMED.
4. FOR RESURFACING PROJECTS, THE EXISTING PAVEMENT STRUCTURE MAY DIFFER FROM THAT AS SHOWN ON THIS PLAN.
5. THE REMOVAL OF ANY EXISTING MONUMENTS AND ALL PAVEMENT REQUIRED SHALL BE CONSIDERED INCIDENTAL TO THE CONSTRUCTION OF THE MONUMENT.
6. SHALL BE LOCATED AT ALL POINTS OF INTERSECTION OF STREETS, PCS, PTS AND ALL CENTER POINTS OF CUL-DE-SAC BENDS.

CITY OF ORTING

POURED IN PLACE MONUMENT

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. T-6A
FILE NAME: STD-T-6A		

FILE: Std-T-6A
DATE: Feb 21, 2008 - 4:36pm PLOTTED BY: morrideo
IMAGES: OrtingLogobondw |
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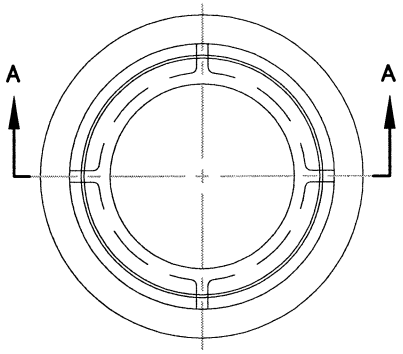
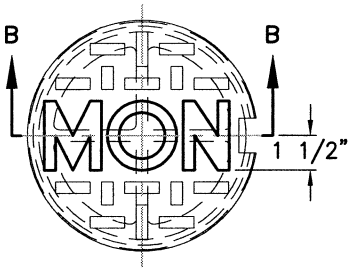
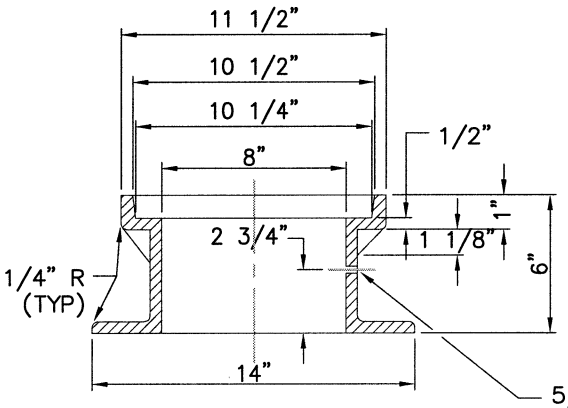


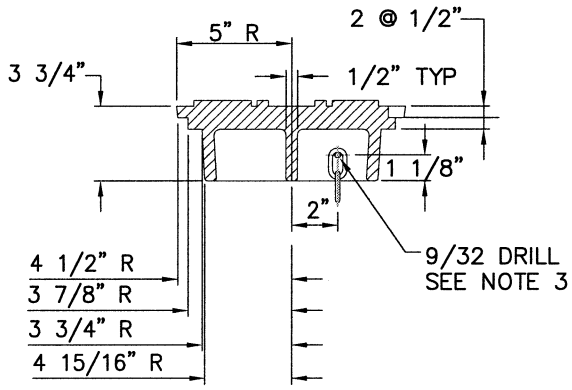
FRAME (PLAN VIEW)



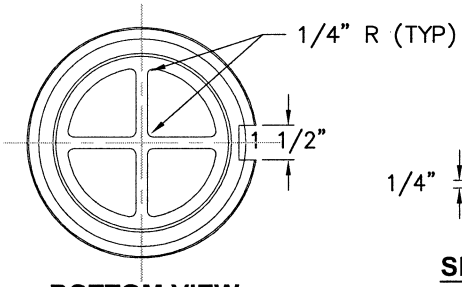
COVER (PLAN VIEW)



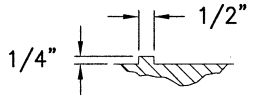
SECTION A-A



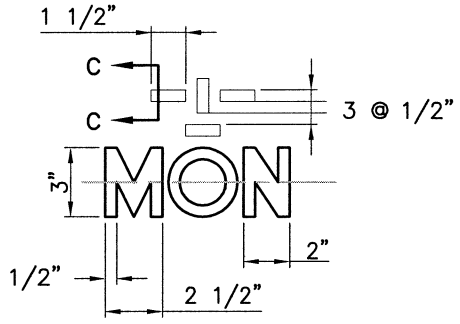
SECTION B-B



BOTTOM VIEW



SECTION C-C



NOTES

1. MACHINE BEARING FACES OF COVER AND CASE TO INSURE POSITIVE FIT.
2. CASTINGS SHALL BE GRAY IRON, ASTM A-48, CLASS 40 AND SHALL CONFORM FURTHER TO APPLICABLE SECTION OF THE SPECIFICATIONS.
3. ATTACH 15" RETENTION CHAIN TO COVER WITH 1/4" RIVET AND OVERSIZE WASHER AND TO FRAME WITH 1/4"x1-1/2" BOLT AND OVERSIZE WASHER.

CITY OF ORTING

MONUMENT FRAME AND COVER

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. T-6B
FILE NAME: STD-T-6B		

SECTION 10.207 - UNIFORM FIRE CODE POLICY; ACCESS ROADWAYS FOR FIRE APPARATUS

1. ALL BUILDINGS THAT HAVE AN EXTERIOR WALL LOCATED OVER 150 FEET FROM THE CURB LINE OF A DEDICATED PUBLIC STREET SHALL BE PROVIDED WITH FIRE DEPARTMENT ACCESS WAYS WHICH SHALL BE TOTALLY UNOBSTRUCTED, INCLUDING THE PARKING OF MOTOR VEHICLES.

2. THE 150 FEET FROM THE REQUIRED ACCESS ROADWAY TO ALL EXTERIOR WALLS OF BUILDINGS SHALL BE MEASURED IN A STRAIGHT LINE AND SHALL RUN THROUGH ALL BUILDINGS AND OTHER OBSTRUCTIONS. IF TOPOGRAPHICAL CONDITIONS EXIST THAT WOULD MAKE IT IMPOSSIBLE FOR HOSE LINES TO BE ADVANCED TO A CERTAIN PORTION OF A BUILDING FROM A REQUIRED ACCESS WAY, AN ADDITIONAL ACCESS WAY WILL BE REQUIRED TO ACCOMMODATE ACCESS TO THAT PARTICULAR PORTION OF THE BUILDING.

3. THE FIRE DEPARTMENT ACCESS MAY BE MODIFIED IF THE BUILDING IS PROVIDED WITH AN APPROVED COMPLETE AUTOMATIC SPRINKLER SYSTEM OR OTHER APPROVED PROTECTION.

4. REQUIRED ACCESS ROADWAYS SHALL BE KEPT A MINIMUM OF 28 FEET IN WIDTH IN THE IMMEDIATE VICINITY OF ANY BUILDING OVER 35 FEET IN HEIGHT ABOVE NATURAL GRADE. AT LEAST ONE REQUIRED ACCESS ROADWAY SHALL BE LOCATED WITHIN A MINIMUM OF 15 FEET AND A MAXIMUM OF 25 FEET FROM THE BUILDING, AND SHALL BE POSITIONED PARALLEL TO ONE ENTIRE SIDE OF THE BUILDING.

5. ACCESS ROADWAYS ADJACENT TO REQUIRED FIRE HYDRANTS SHALL BE A MINIMUM OF 28 FEET IN WIDTH, 20 FEET IN EITHER DIRECTION FROM THE FIRE HYDRANT.

6. ACCESS DOORS SHALL BE REQUIRED EVERY 100 FEET OR OPENINGS AS SPECIFIED IN SECTION 3802(b) 1 OF THE UNIFORM BUILDING CODE ON THE EXTERIOR WALLS OF BUILDINGS ALONG REQUIRED ACCESS WAYS.

7. REQUIRED ACCESS ROADWAYS SHALL BE LOCATED ON TWO SIDES OF A BUILDING WHEN THE WIDTH OF THE BUILDING EXCEEDS 150 FEET AND THE LENGTH EXCEEDS 150 FEET.

8. REQUIRED ACCESS ROADWAYS SHALL BE LOCATED ALONG THE TWO LONG DIMENSIONS OF A BUILDING EXCEEDING 100 FEET IN WIDTH AND 600 FEET IN LENGTH.

9. MAXIMUM GRADES FOR ACCESS ROADWAYS WILL BE 10 PERCENT FOR CONCRETE AND 10 PERCENT FOR ASPHALT.

10. THE MINIMUM TURNING RADII FOR ALL TURNS SHALL BE 28 FEET INSIDE TURNING RADIUS AND 50 FEET OUTSIDE TURNING RADIUS.

11. IF ACCESS ROADWAYS ARE NOT LOOPED, THEN THE PROVIDED DEAD–END ACCESS ROADWAYS WILL MEET THE REQUIREMENTS AS SPECIFIED IN THE FOLLOWING TABLE:

REQUIREMENTS FOR DEAD-END ACCESSWAYS

LENGTH	WIDTH	TURNAROUNDS REQUIRED
* 0 – 150'	22'	NONE REQUIRED
*150' – 500'	24'	90' DIAMETER CUL–DE–SAC 60' HAMMERHEAD
500' – 750'	28'	90' DIAMETER CUL–DE–SAC 120' HAMMERHEAD
OVER 750' – SPECIAL APPROVAL REQUIRED		

*CURVES AND TOPOGRAPHICAL CONDITIONS COULD ALTER THE REQUIREMENTS FOR TURNAROUNDS AND THE WIDTH OF ACCESSWAYS.

CITY OF ORTING

FIRE ACCESS REQUIREMENTS

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FILE NAME: STD–T–7		

FILE: Std-T-7
DATE: Feb 28, 2008 - 11:56am PLOTTED BY: morridea
IMAGES: OrtingLogobandw |
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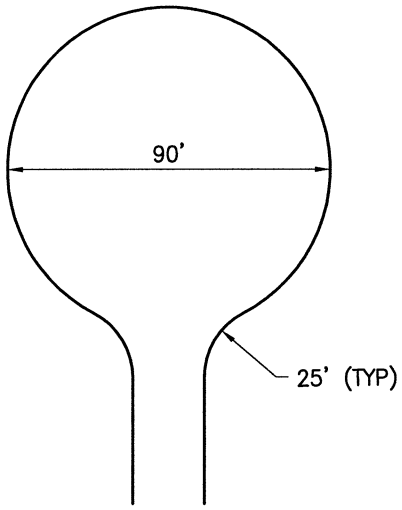
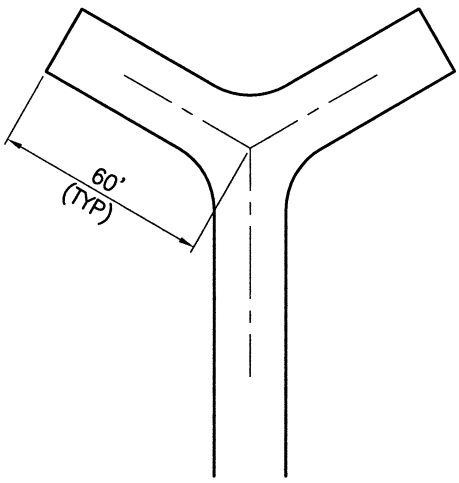
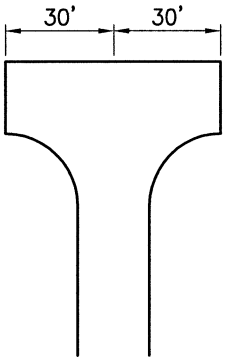
90' DIAMETER
CUL–DE–SAC



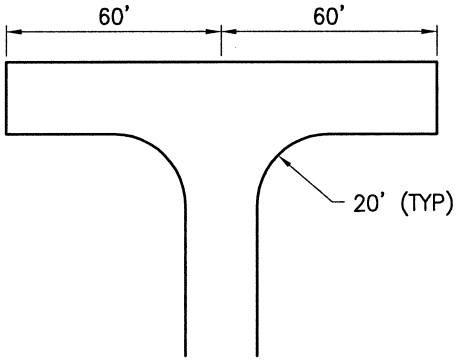
ACCEPTABLE
ALTERNATIVE TO
120' HAMMERHEAD



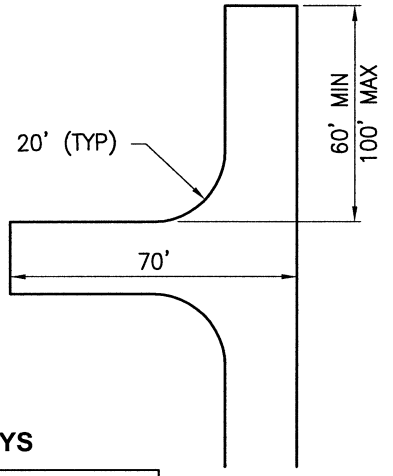
60' HAMMERHEAD



120' HAMMERHEAD



ACCEPTABLE
ALTERNATIVE TO
120' HAMMERHEAD



REQUIREMENTS FOR DEAD-END ACCESSWAYS

LENGTH	WIDTH	TURNAROUNDS REQUIRED
* 0 – 150'	20'	NONE REQUIRED
*150' – 500'	24'	90' DIAMETER CUL–DE–SAC 60' HAMMERHEAD
500' – 750'	28'	90' DIAMETER CUL–DE–SAC 120' HAMMERHEAD
OVER 750' – SPECIAL APPROVAL REQUIRED		

*CURVES AND TOPOGRAPHICAL CONDITIONS COULD ALTER THE REQUIREMENTS FOR TURNAROUNDS AND THE WIDTH OF ACCESSWAYS.

CITY OF ORTING

DEAD END PRIVATE ROAD REQUIREMENTS

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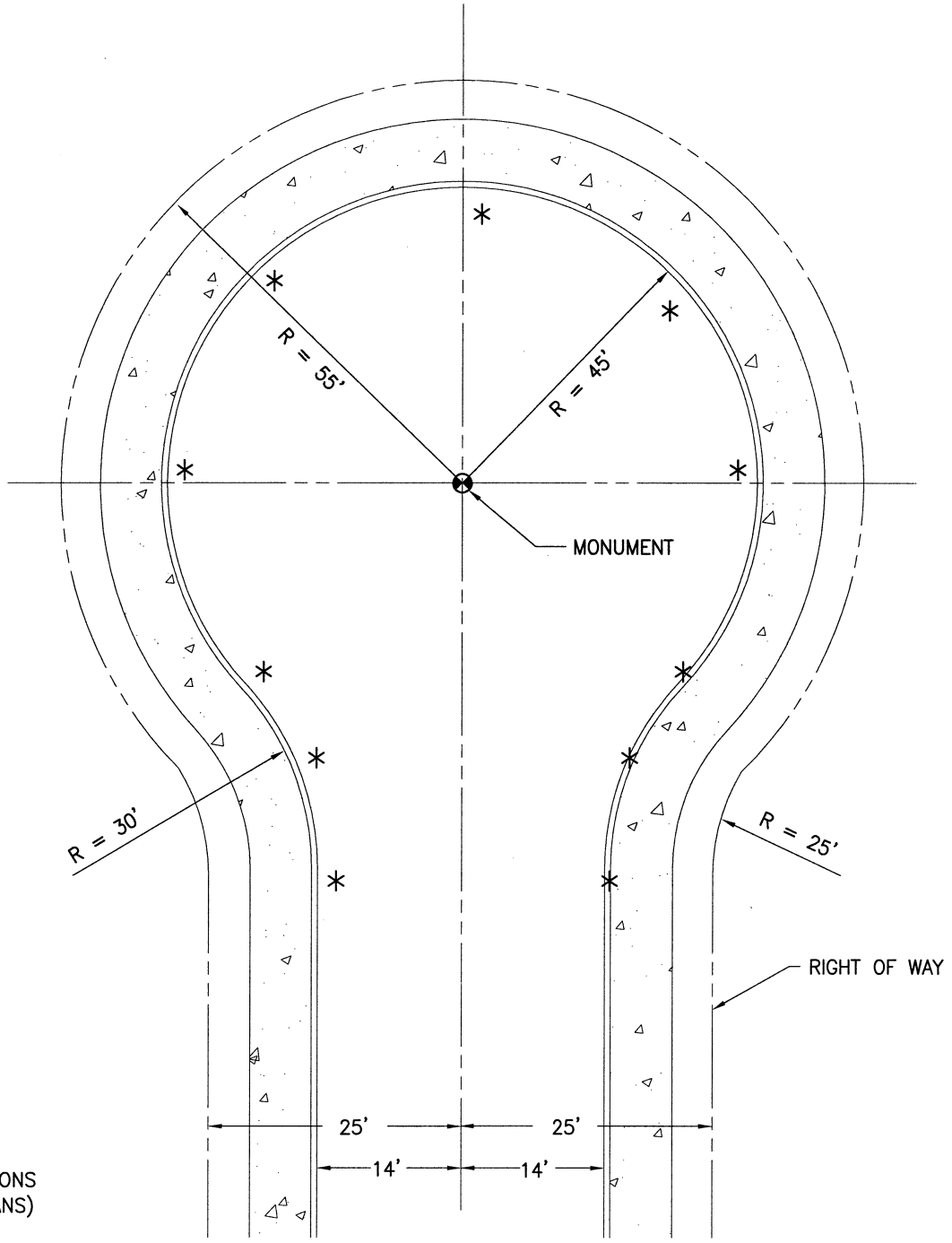

LEGEND

* FLOW LINE ELEVATIONS (REQUIRED ON PLANS)

CITY OF ORTING

CUL-DE-SAC BULB NEIGHBORHOOD STREET

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. T-8B
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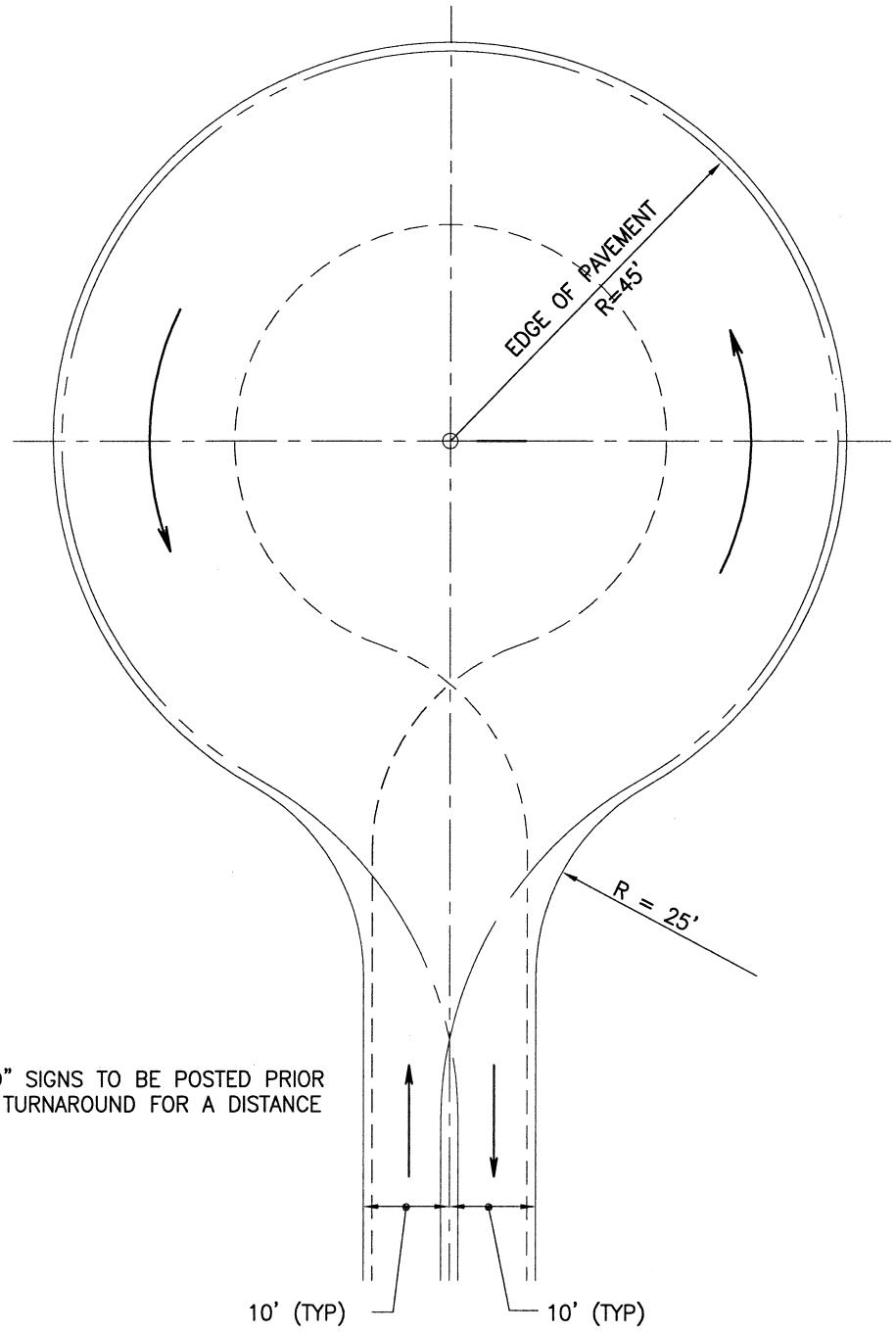

NOTES

"NO PARKING PERMITTED" SIGNS TO BE POSTED PRIOR TO, ALONG, AND AFTER TURNAROUND FOR A DISTANCE OF 100 FT.

CITY OF ORTING

CUL-DE-SAC BULB PRIVATE ACCESS ROAD

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. T-8C
FILE NAME: STD-T-8C		

FILE: Std-T-8C
DATE: Feb 21, 2008 - 4:48pm PLOTTED BY: morrideq
IMAGES: OrtingLogobandw |
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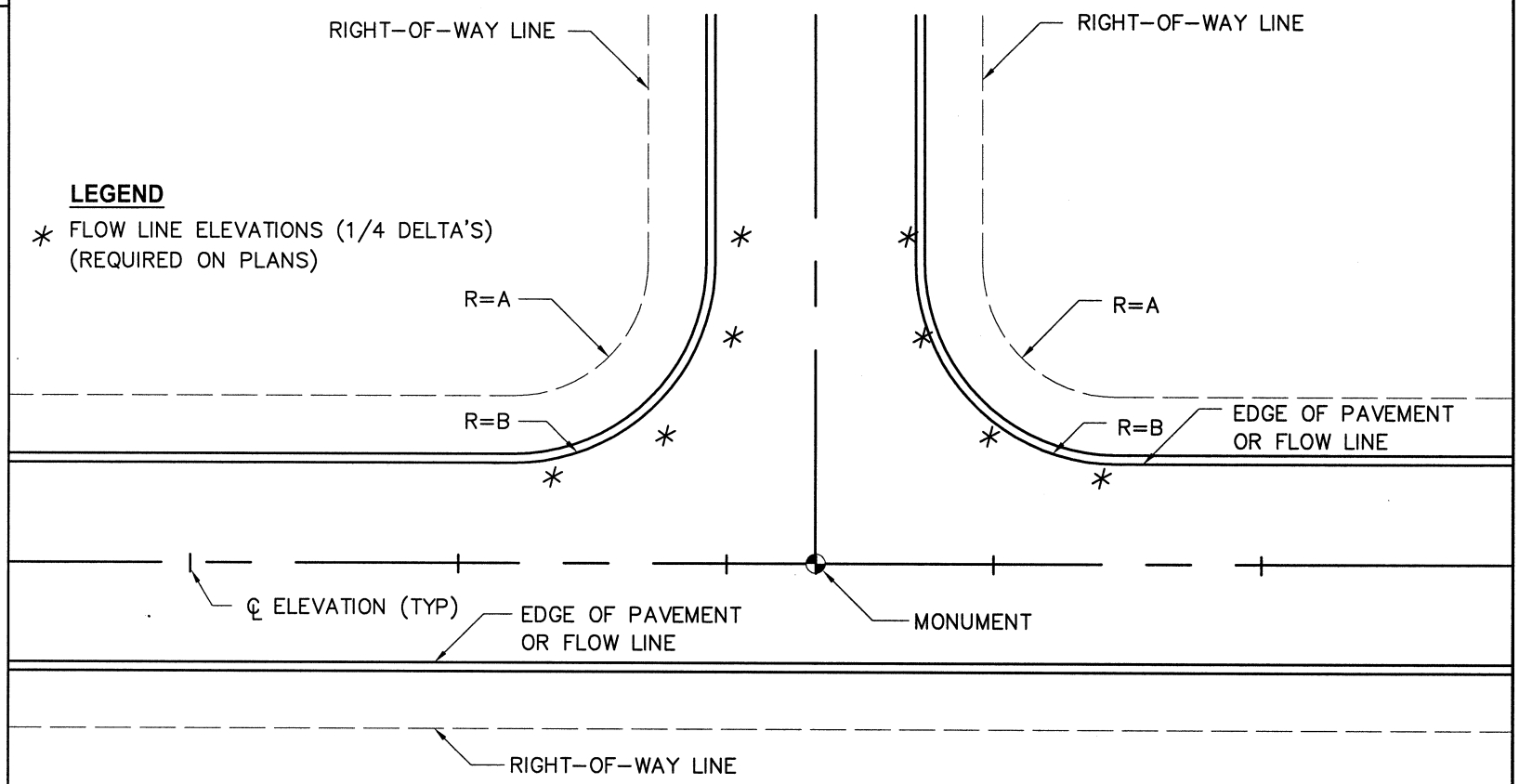
FILE: Std-T-8D
DATE: Feb 21, 2008 – 4:48pm PLOTTED BY: morridea

IMAGES: OrtingLogobandw |
XREF'S:

CITY OF ORTING

"T" INTERSECTION

TYPE OF STREET	MIN ROW WIDTH	MIN STREET WIDTH	ROW RADII (A)	CURB RADII (B)
NEIGHBORHOOD STREET	50'	28'	25'	30'
LOCAL RESIDENTIAL STREET	60'	38'	25'	30'
RESIDENTIAL ARTERIAL	60'	44'	30'	35'
MAJOR ARTERIAL	60'	44'	35'	40'
PRINCIPAL ARTERIAL	72'	56'	35'	40'



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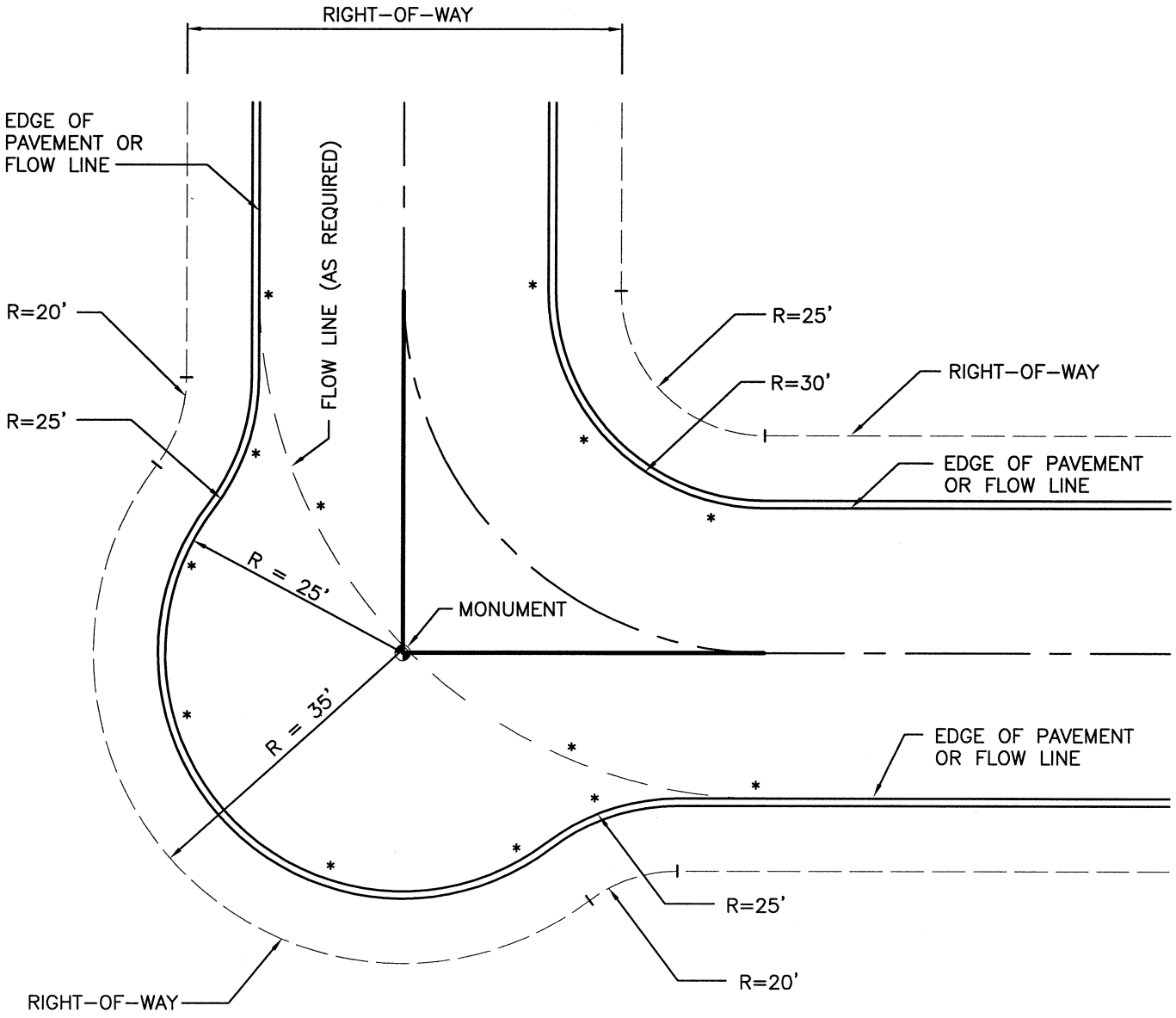

LEGEND

* FLOW LINE ELEVATIONS (REQUIRED ON PLANS)

CITY OF ORTING

NEIGHBORHOOD STREET KNUCKLE

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. T-8E
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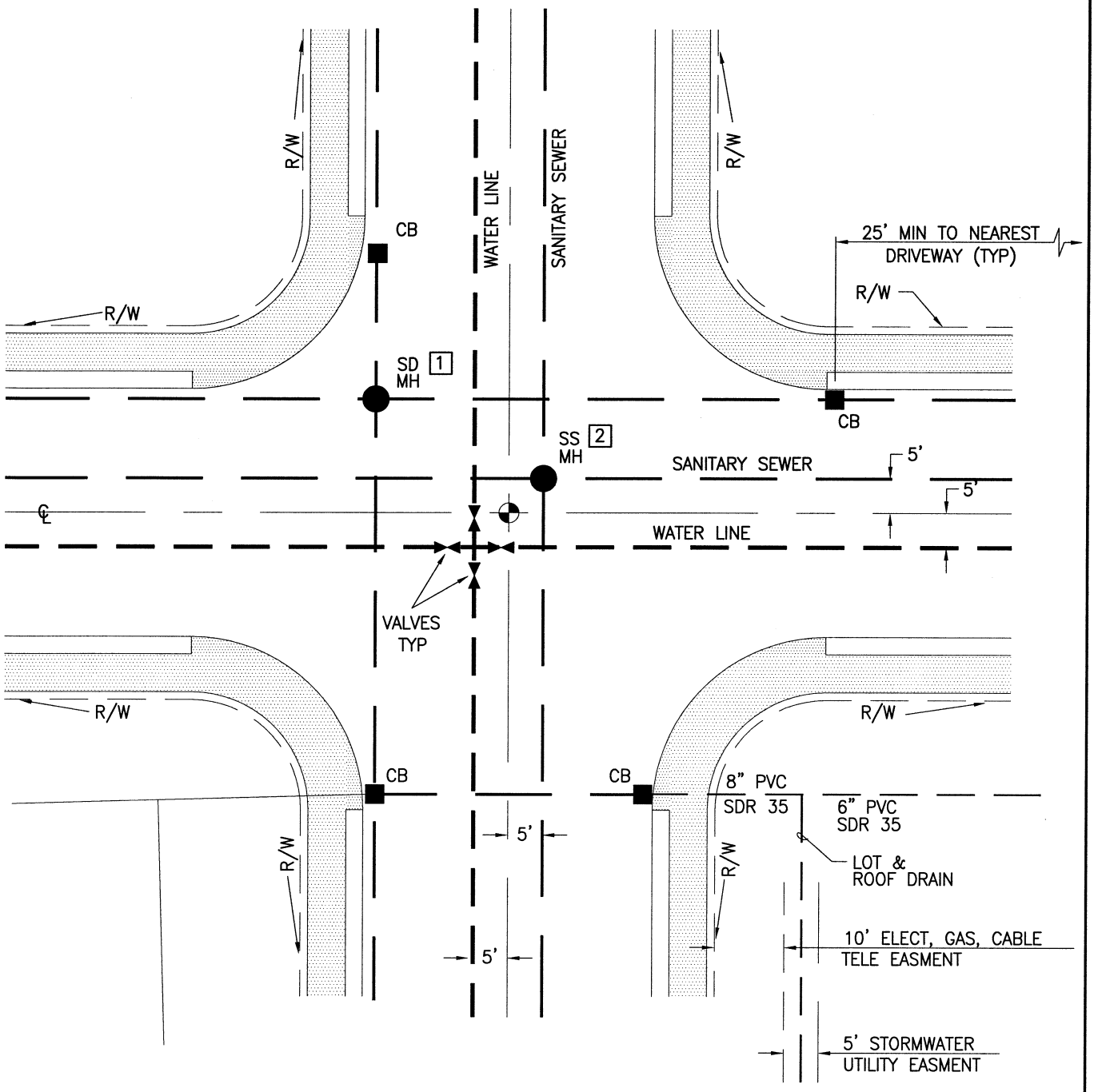

NOTES

1. MH LID SHALL BE MARKED "DRAIN" ON THE LID, SEE STD-S-1A.
2. MH LID SHALL BE MARKED "SEWER" ON THE LID, SEE STD-S-1A.

CITY OF ORTING

TYPICAL ROADWAY UTILITY LAYOUT

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. T-9
FILE NAME: STD-T-9		

FILE: Std-T-9
DATE: Feb 28, 2008 - 2:23pm PLOTTED BY: morridea
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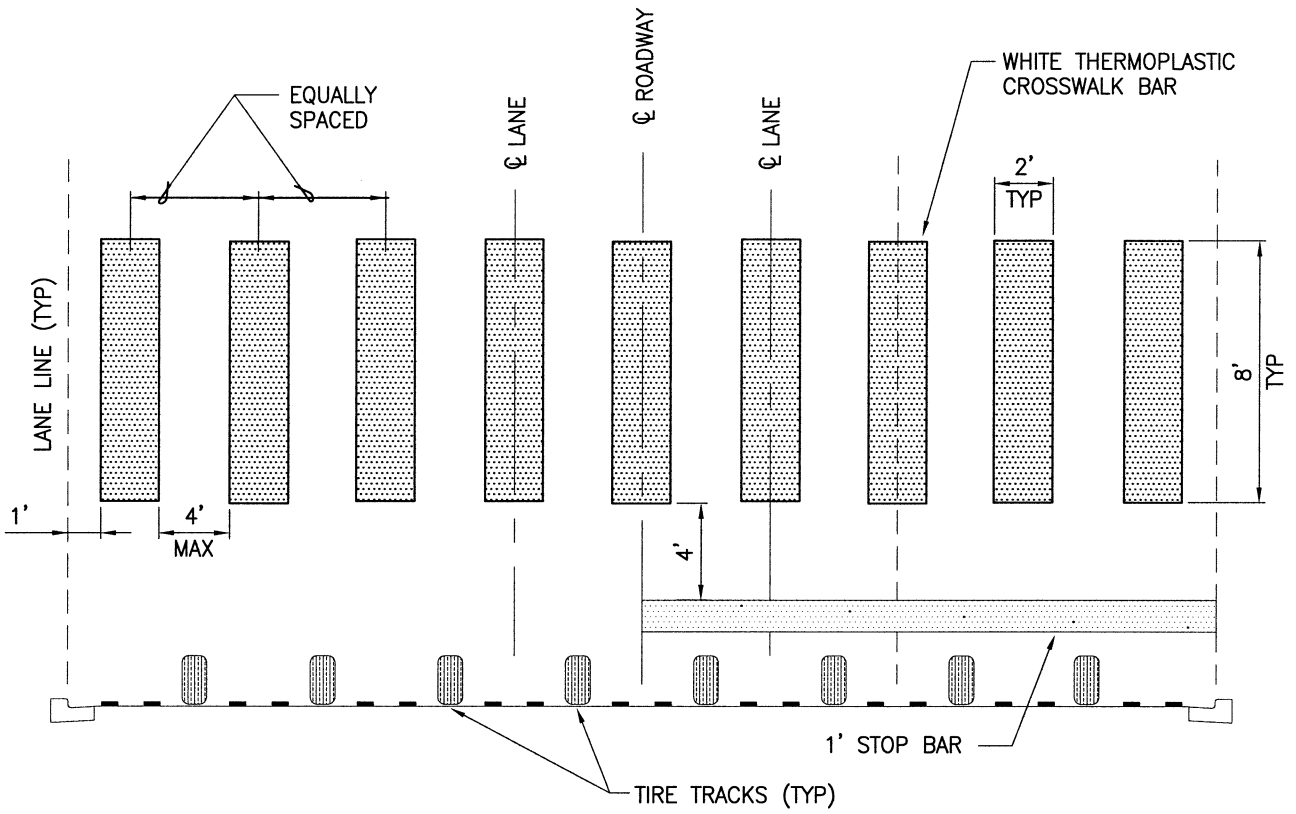


*** TYPICAL 4 LANE ROADWAY CONFIGURATION**

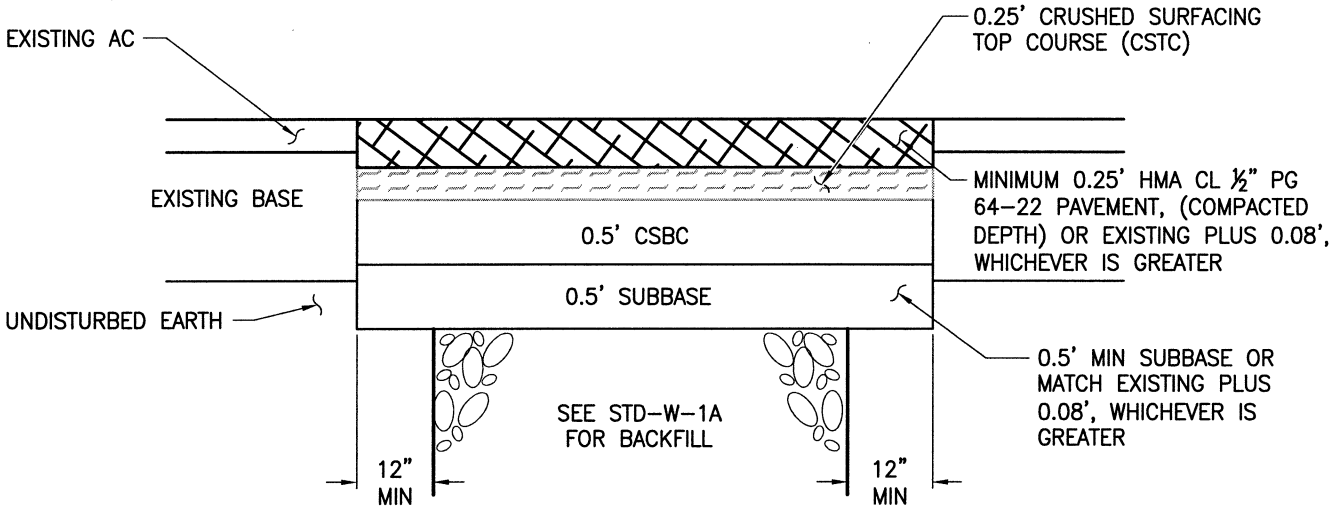
***NOTES**

FOR ROADWAYS WITH MORE OR LESS LANES THE SAME CONFIGURATION APPLIES, KEEPING THERMOPLASTIC BARS CENTERED ON THE LANE LINES, AND IN THE CENTER OF THE TRAVELED PORTION OF THE LANE TO MINIMIZE TIRE WEAR ON THE THERMOPLASTIC.

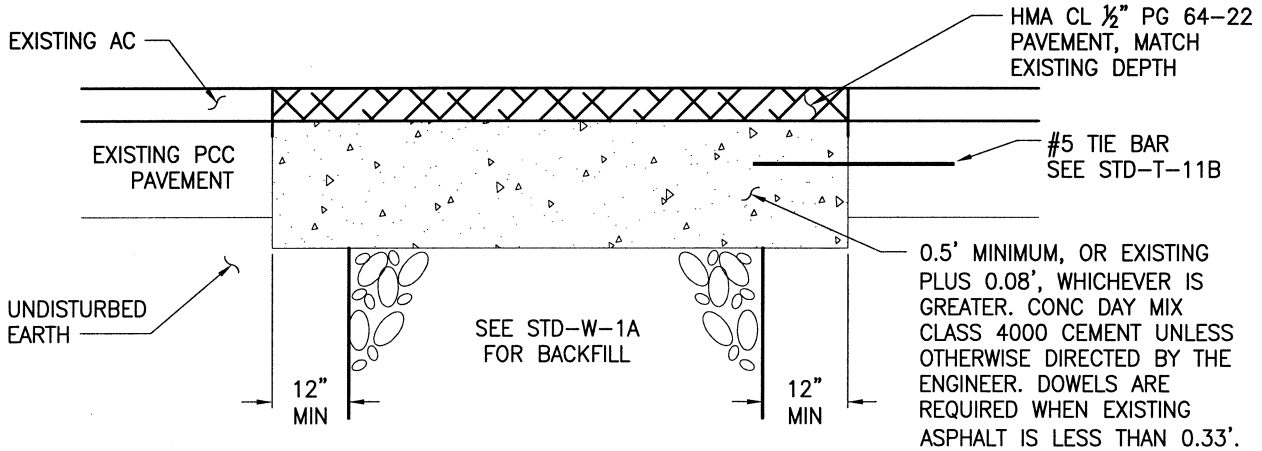
CITY OF ORTING

THERMOPLASTIC CROSSWALK

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. T–10
FILE NAME: STD–T–10		



CASE 1



CASE 2

(WITH AC PAVEMENT ON PCC PAVEMENT)

NOTES

1. WHEN CUT LINE IS LESS THAN THREE FEET FROM A CUT LINE, CURB OR PAVEMENT EDGE, THE EXISTING PAVEMENT SHALL BE REMOVED TO THE CUT LINES (CASE 1 & 2).

IMAGES:
XREFS:

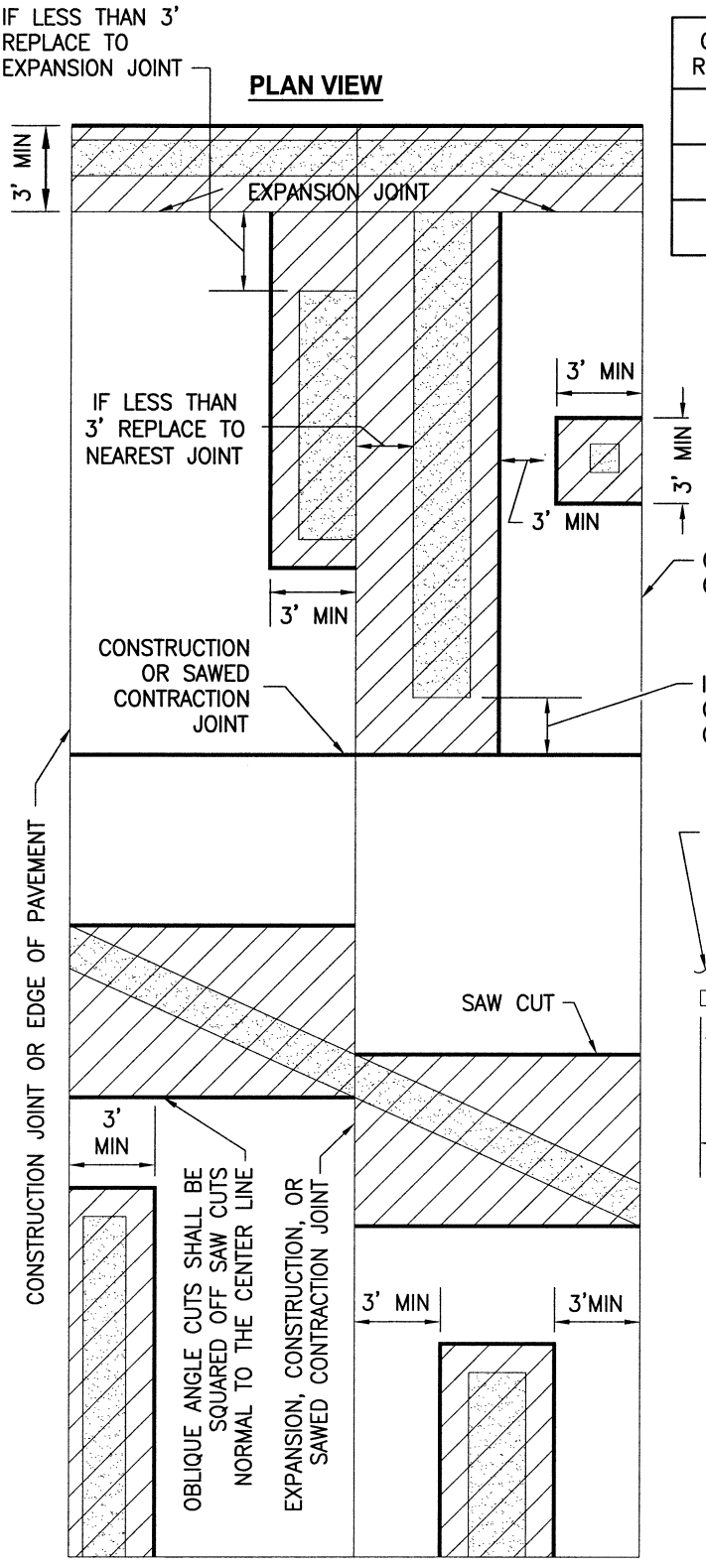
DATE: 01/19/05 3:24pm FILENAME: Std-T-11A

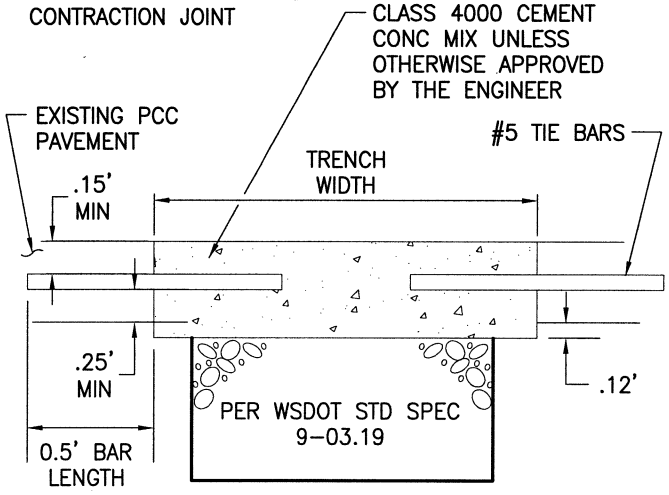
CITY OF ORTING

PAVEMENT REPLACEMENT

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. T-11A
FILE NAME: STD-T-11A		

CEMENT CONCRETE REPLACEMENT WIDTH	DOWEL BAR LENGTH	SPACING
4' OR LESS	16 INCHES	18 INCH CENTERS
4' TO 6'	24 INCHES	18 INCH CENTERS
6' OR GREATER	30 INCHES	18 INCH CENTERS





REPLACEMENT SECTION

LEGEND

EXCAVATION

AREA OF CONCRETE PAVEMENT TO BE REPLACED

SAW CUT 1 1/2" DEPTH

SEE STD-T-11C FOR NOTES.

CITY OF ORTING

CONCRETE PAVEMENT REPLACEMENT

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. T-11B
FILE NAME: STD-T-11B		

FILE: Std-T-11B
DATE: Feb 21, 2008 - 5:04pm PLOTTED BY: morrideo
IMAGES: OrtingLogobondw |
XREF'S:

NOTES

1. THE EXTENT OF REPAIR OF CONCRETE CUTS NOT SHOWN ON THIS STANDARD, OR FOR CUTS MADE WITHIN THREE FEET OF EXISTING PATCHES, CRACKS, OR DETERIORATED SLABS, SHALL BE DETERMINED BY THE ENGINEER.

2. ALL TRANSVERSE AND LONGITUDINAL JOINTS AND OUTER EDGES OF THE PAVEMENT WHICH ARE PART OF THE REPLACED CONCRETE SHALL BE EDGED WITH AN EDGING TOOL HAVING A RADIUS OF 0.25 INCH.

3. REPLACED CONCRETE THAT JOINS A SAWED EDGE OF THE EXISTING PAVEMENT SHALL NOT BE EDGED.

4. REPLACED CONCRETE SHALL BE FINISHED TO THE SAME SURFACE TEXTURE AS THAT OF ADJACENT EXISTING CONCRETE.

5. ALL PAVEMENT REMOVALS SHALL BE MADE ON STRAIGHT LINE SAW CUTS A MINIMUM OF 1.5 INCHES DEEP. IF CUT LINE IS LESS THAN THREE FEET FROM A CUT LINE, EXPANSION JOINT OR EDGE, THE EXISTING PAVEMENT SHALL BE REMOVED TO THOSE CUT LINES, EXPANSION JOINT OR EDGE OR AS DIRECTED BY THE ENGINEER.

6. DURING EXCAVATION AND SUBGRADE PREPARATION, THE CONTRACTOR SHALL TAKE ALL NECESSARY STEPS TO INSURE THE PROTECTION OF ALL UTILITIES AND ADJACENT PAVEMENT SECTIONS.

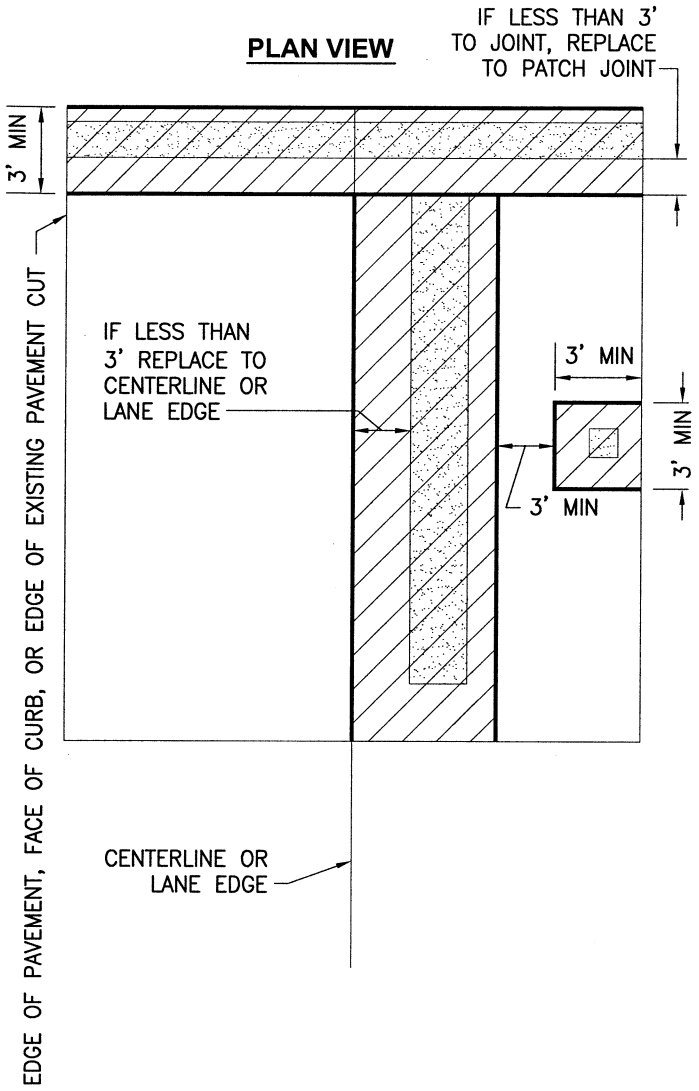
7. DOWELS ARE NOT REQUIRED ON THE SIDE BORDERING CURBS, LONGITUDINAL EXPANSION JOINTS, OR TRANSVERSE CONSTRUCTION JOINTS.

CITY OF ORTING

CONCRETE PAVEMENT REPLACEMENT NOTES

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. T-11C
FILE NAME: STD-T-11C		

PLAN VIEW



NOTES

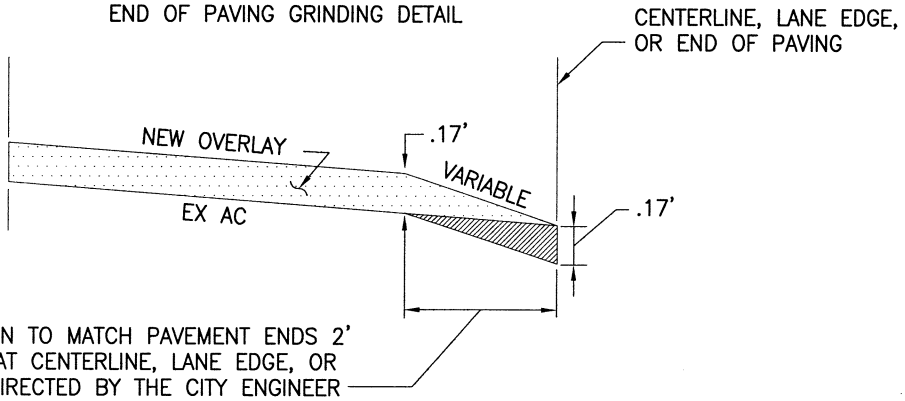
1. THE EXTENT OF REPAIR OF ASPHALT CUTS NOT SHOWN ON THIS STANDARD, OR FOR CUTS MADE WITHIN THREE FEET OF EXISTING PATCHES, CRACKS, OR DETERIORATED PAVEMENTS, SHALL BE DETERMINED BY THE ENGINEER AND PERFORMED PER THE SUBMITTED RESTORATION/PAVEMENT DESIGN.
2. ALL PAVEMENT REMOVALS SHALL BE MADE ON STRAIGHT LINE SAW CUTS. IF CUT LINE IS LESS THAN THREE FEET FROM A CUT LINE, EXPANSION JOINT, OR EDGE, THE EXISTING PAVEMENT SHALL BE REMOVED TO THOSE CUT LINES, EXPANSION JOINT, OR EDGE, OR AS DIRECTED BY THE ENGINEER.
3. DURING EXCAVATION AND SUBGRADE PREPARATION, THE CONTRACTOR SHALL TAKE ALL NECESSARY STEPS TO INSURE THE PROTECTION OF ALL UTILITIES AND ADJACENT PAVEMENT SECTIONS.

LEGEND

- EXCAVATION
- AREA OF PAVEMENT TO BE REPLACED
- SAW CUT

PAVEMENT CROSS SECTION

END OF PAVING GRINDING DETAIL



CITY OF ORTING

ASPHALT PAVEMENT REPLACEMENT

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. T-11D
FILE NAME: STD-T-11D		

FILE: Std-T-11D
DATE: Feb 14, 2008 - 2:31pm PLOTTED BY: morridea
IMAGES: OrtingLogobandw |
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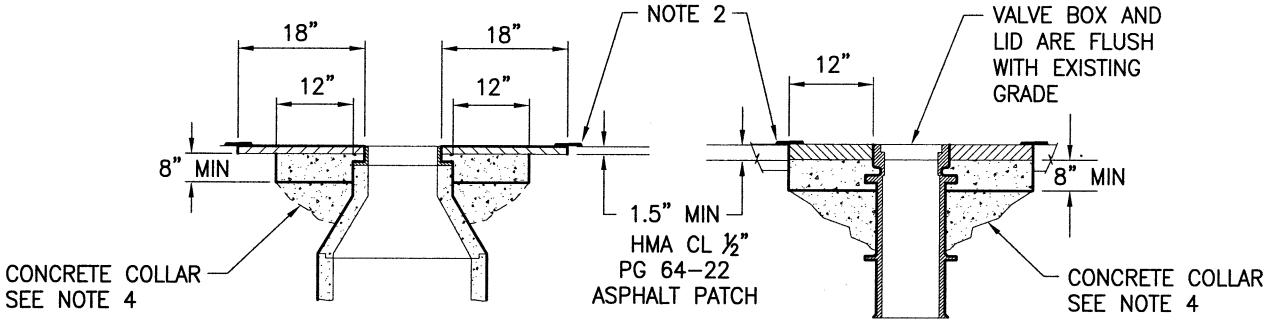
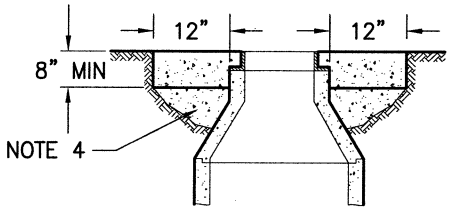


MANHOLE OR CATCH BASIN IN ASPHALT AREA

SCALE: NONE

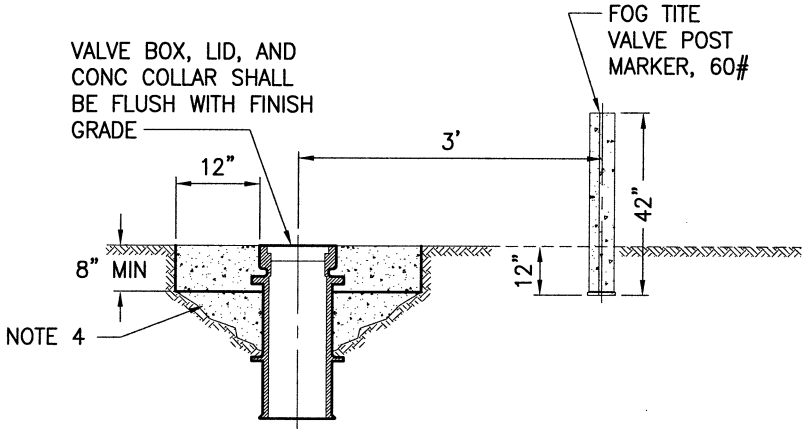
VALVE BOX IN ASPHALT AREA

SCALE: NONE



MANHOLE OR CATCH BASIN IN UNIMPROVED AREA

NO SCALE



VALVE BOX IN UNIMPROVED AREA

NO SCALE

NOTES

1. ADJUSTMENT OF UTILITY STRUCTURES SHALL BE PER STANDARD SPECIFICATION SECTION 7-05.3(1).
2. SURFACE SEAL AT MATCHLINE SHALL BE PG 64.
3. VALVES IN UNIMPROVED AREAS SHALL HAVE A MARKER.
4. 3000 PSI CONCRETE COLLAR, IF OVER-EXCAVATED, BACKFILL WITH CONCRETE.

CITY OF ORTING

ADJUSTMENT OF NEW AND EXISTING UTILITY STRUCTURES TO FINISH GRADE

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. T-12
FILE NAME: STD-T-12		

FILE: Std-T-12
DATE: Feb 14, 2008 - 2:38pm PLOTTED BY: morridea
IMAGES: OrtingLogobandw |
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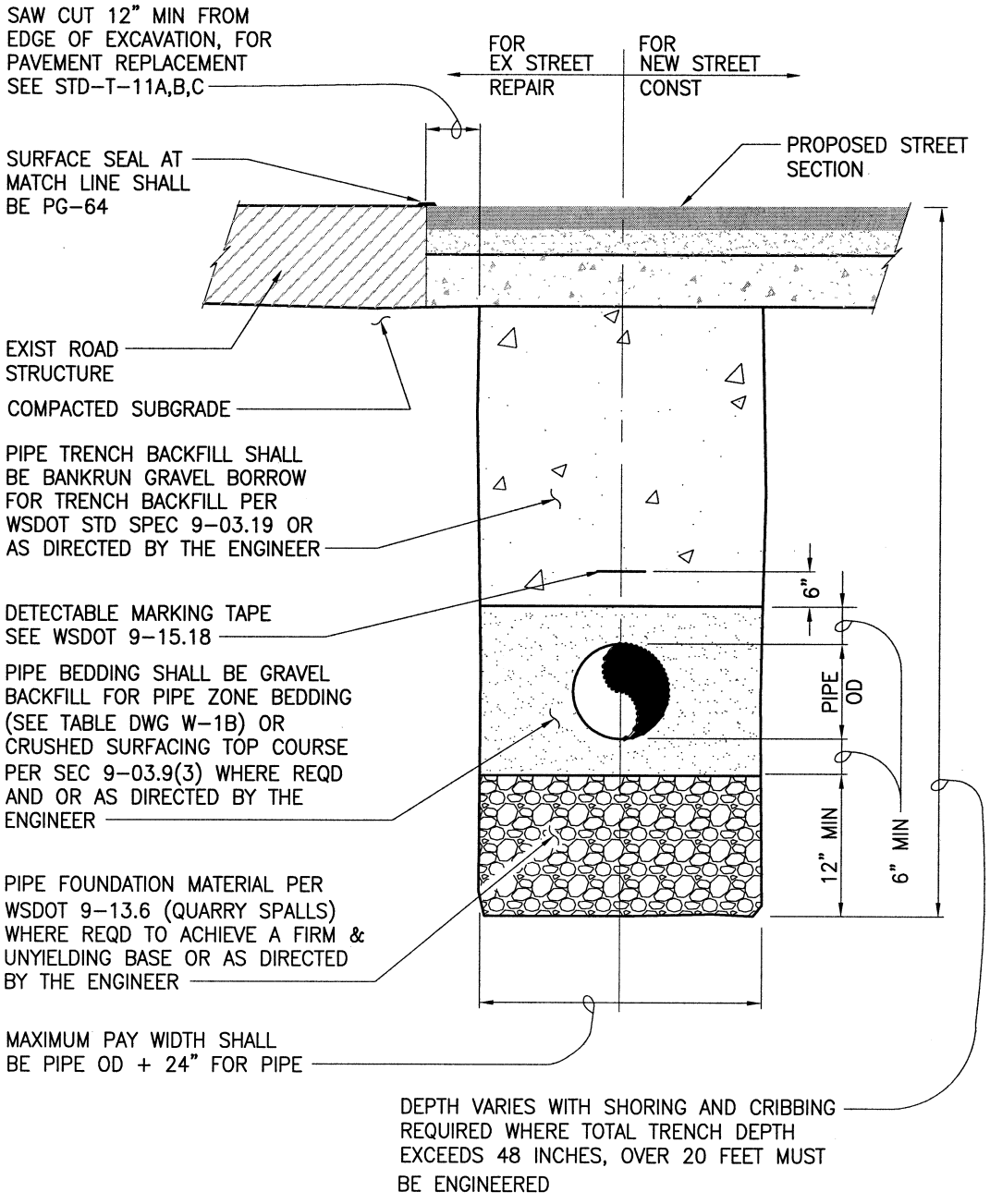


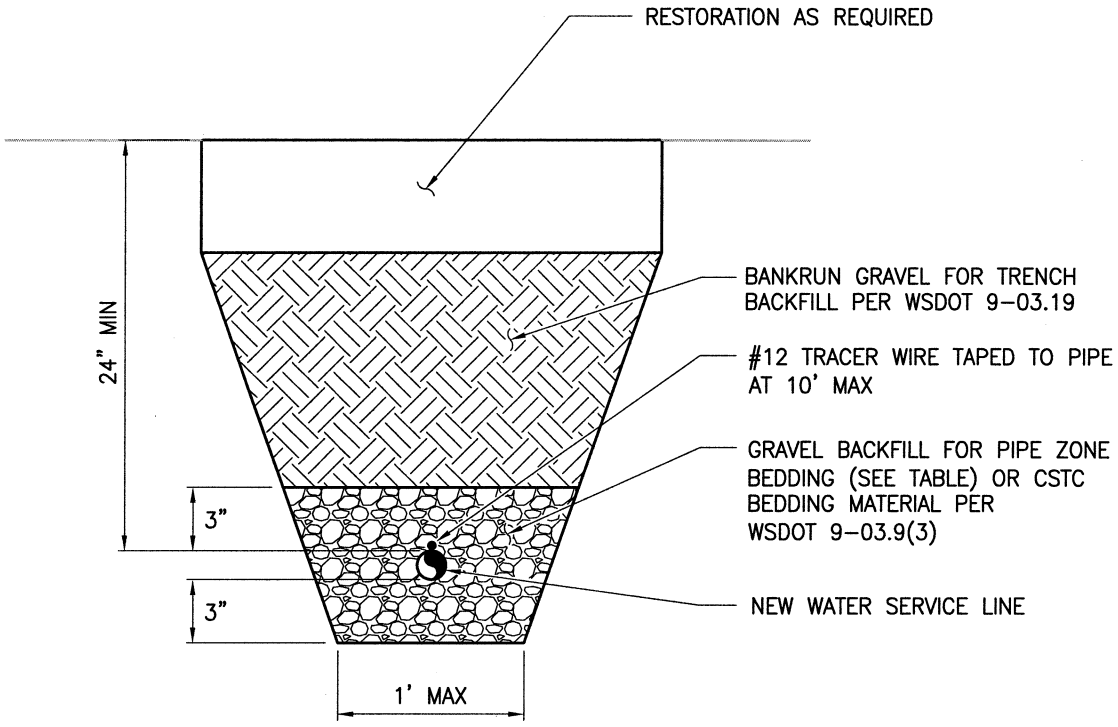
NOTES

1. ALL BACKFILL SHALL BE COMPACTED TO 95% OPTIMUM DENSITY.
2. FOR PIPE COVER LESS THAN 36", PIPE TRENCH BACKFILL SHALL BE CRUSHED SURFACING TOP COURSE PER SECTION 9-03.9(3).
3. THIS DETAIL IS GENERALLY USED WHEN TRENCH RUNS PARALLEL WITH PAVED OR PROPOSED ROADWAY.
4. ALL WATER MAIN SHALL BE MECHANICALLY RESTRAINED.

CITY OF ORTING

TYPICAL TRENCH AND BEDDING SECTION FOR DIP WATERMAIN

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. W-1A
FILE NAME: STD-W-1A		



GRAVEL BACKFILL FOR PIPE ZONE BEDDING	
SIEVE SIZE	**PERCENT PASSING**
¾" SQUARE	100
⅜" SQUARE	95-100
U.S. NUMBER 8	0-10
U.S. NUMBER 200	0-3
SAND EQUIVALENT	35 MINIMUM

CITY OF ORTING

WATER SERVICE AND BEDDING WITHIN RIGHT-OF-WAY

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. W-1B
FILE NAME: STD-W-1B		

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DATE: Feb 22, 2008 - 9:22am PLOTTED BY: morridea
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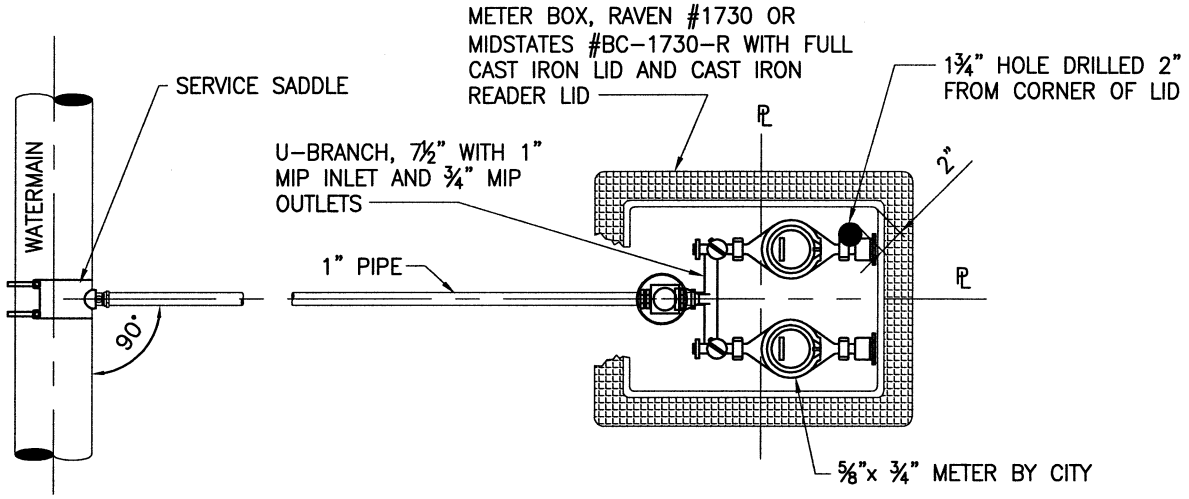

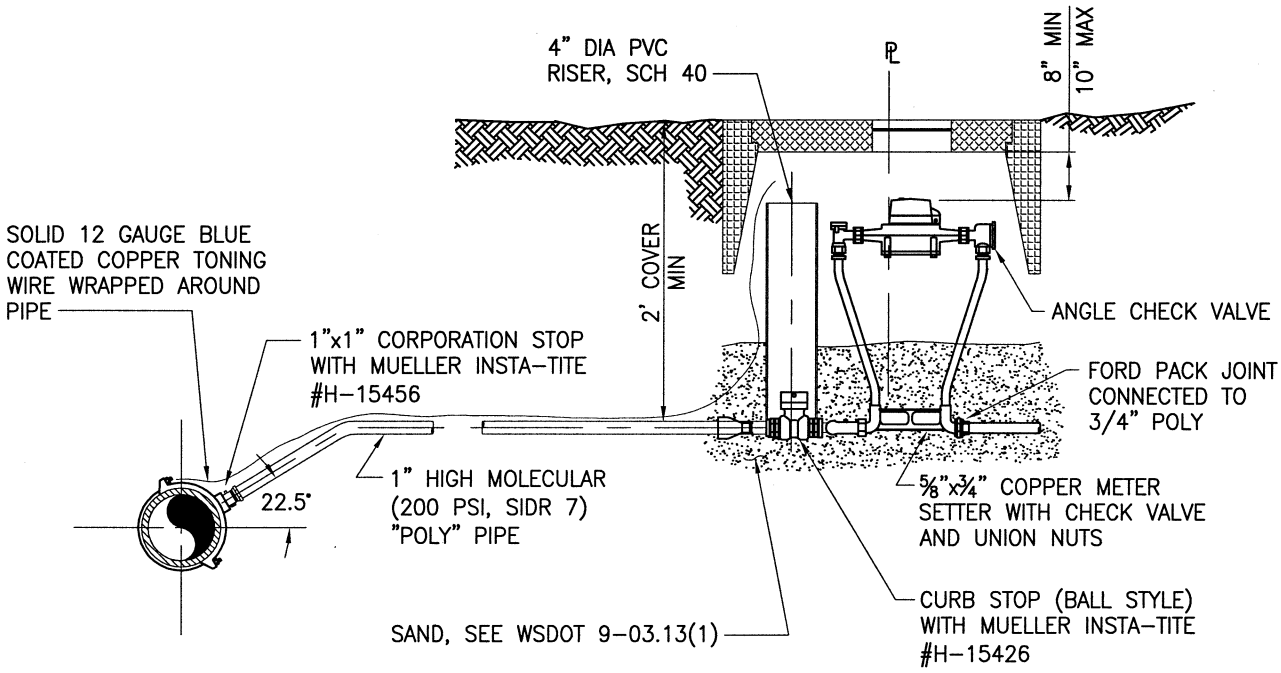

NOTES

1. FOR SINGLE METER SERVICE, SEE NOTE 9, STD-W-2B.
2. SEE STD-W-2B FOR ADDITIONAL DOUBLE & SINGLE METER NOTES.

CITY OF ORTING

5/8"x3/4" DOUBLE & SINGLE METER SERVICE

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. W-2A
FILE NAME: STD-W-2A		

FILE: Std-W-2A
DATE: Feb 26, 2008 - 2:24pm PLOTTED BY: morridea
IMAGES: OrtingLogobandw |
XREFS:

NOTES

1. THE CITY SHALL SUPPLY AND INSTALL THE METER AT TIME OF OCCUPANCY.
2. THE WATER METER SHALL BE LOCATED ON THE PROPERTY LINE OR AS DIRECTED BY THE CITY.
3. ALL CONNECTIONS OF "POLY" PIPING SHALL BE MUELLER INSTA-TITE.
4. SERVICE SADDLE: ROMAC 202ES OR FORD FS202. ALL SERVICE SADDLES SHALL HAVE RUBBER GASKET AND IP THREADS.
5. CORPORATION STOP: FORD FB500-4, AYMCDONALD 3131B, MUELLER B-20013.
6. CURB STOP: FORD B-11-444, AYMCDONALD 6101-1IN, MUELLER B-20283.
7. U-BRANCH: FORD U-88-43, AYMCDONALD 08UMM, MUELLER H15364.
8. METER SETTERS: FORD VBH72-15W-11-33, AYMCDONALD 20-215WCDD33, MUELLER B-2404-2 5/8"x3/4"X15".
9. FOR SINGLE SERVICE, SUBSTITUTE U-BRANCH WITH 1"x3/4" BUSHING AND 3/4"x3" MIP NIPPLE. METER BOX SHALL BE 15"x27"x12".
10. DOUBLE METER SERVICES SHALL BE USED WHERE POSSIBLE AND SHALL BE LOCATED ON THE OPPOSITE PROPERTY LINE OF THE DOUBLE SEWER SERVICE. IF SERVICES CAN NOT BE LOCATED ON OPPOSITE PROPERTY LINES, 10' MIN SEPARATION IS REQUIRED.

CITY OF ORTING

5/8"x3/4" DOUBLE & SINGLE METER SERVICE NOTES

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. W-2B
FILE NAME: STD-W-2B		

FILE: Std-W-2B
DATE: Feb 14, 2008 - 4:03pm PLOTTED BY: morridea IMAGES: OrtingLogobandw |
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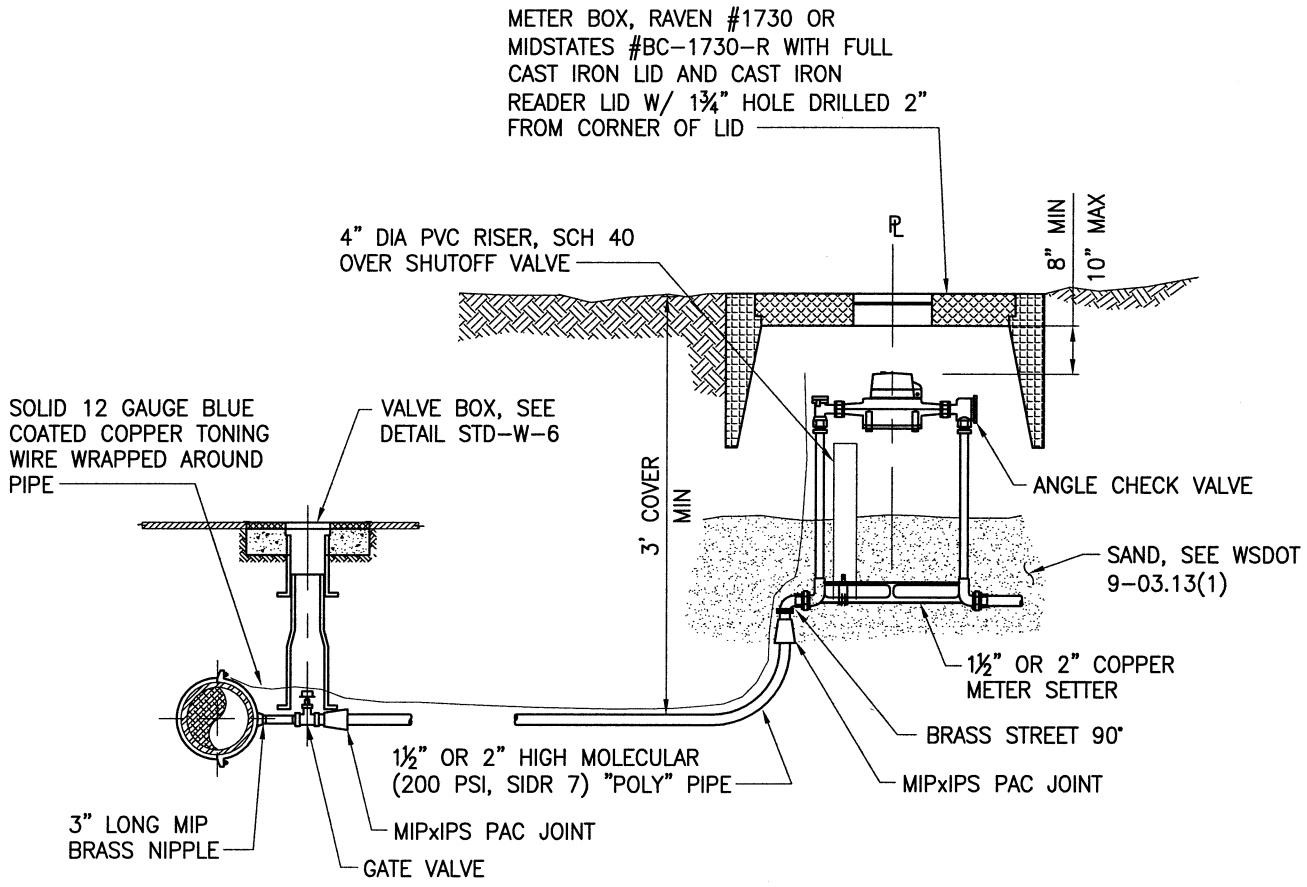


NOTES

1. THE CONTRACTOR SHALL SUPPLY AND INSTALL METER – T10 PROREAD NEPTUNE AND 6' WIRE WITH RADIO, OR AS SPECIFIED BY CITY.
2. THE WATER METER SHALL BE LOCATED ON THE PROPERTY LINE OR AS DIRECTED BY THE CITY.
3. ALL CONNECTIONS AND FITTINGS SHALL BE SAME DIAMETER AS METER.
4. ALL CONNECTIONS OF "POLY" PIPING SHALL BE PAC JOINT COUPLINGS W/ INSERT STIFFENERS: 2" FORD #C86-77-IDR7, 1½" FORD #C86-66-IDR7 OR APPROVED EQUAL.
5. SERVICE SADDLE: ROMAC 202ES OR FORD FS202. ALL SERVICE SADDLES SHALL HAVE RUBBER GASKET AND IP THREADS.
6. GATE VALVE: 2" AWWA RESILIENT SEATED WEDGE FIPxFIP CI W/ 2" OPERATING NUT. 1½" WATER SERVICES SHALL USE 2" GATE VALVE AND INSERT A BRASS BUSHING TO REDUCE 2" OPENING TO 1½".
7. METER SETTER: 2" FORD VBH77-18B-44-77, 1½" FORD VBH76-18B-44-66 OR APPROVED EQUAL.

CITY OF ORTING

1 1/2" & 2" METER SERVICE

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. W-3
FILE NAME: STD-W-3		

FILE: Std-W-4A
DATE: Feb 22, 2008 - 9:36am PLOTTED BY: morridea

IMAGES: OrtingLogobandw |
XREF'S:

CITY OF ORTING

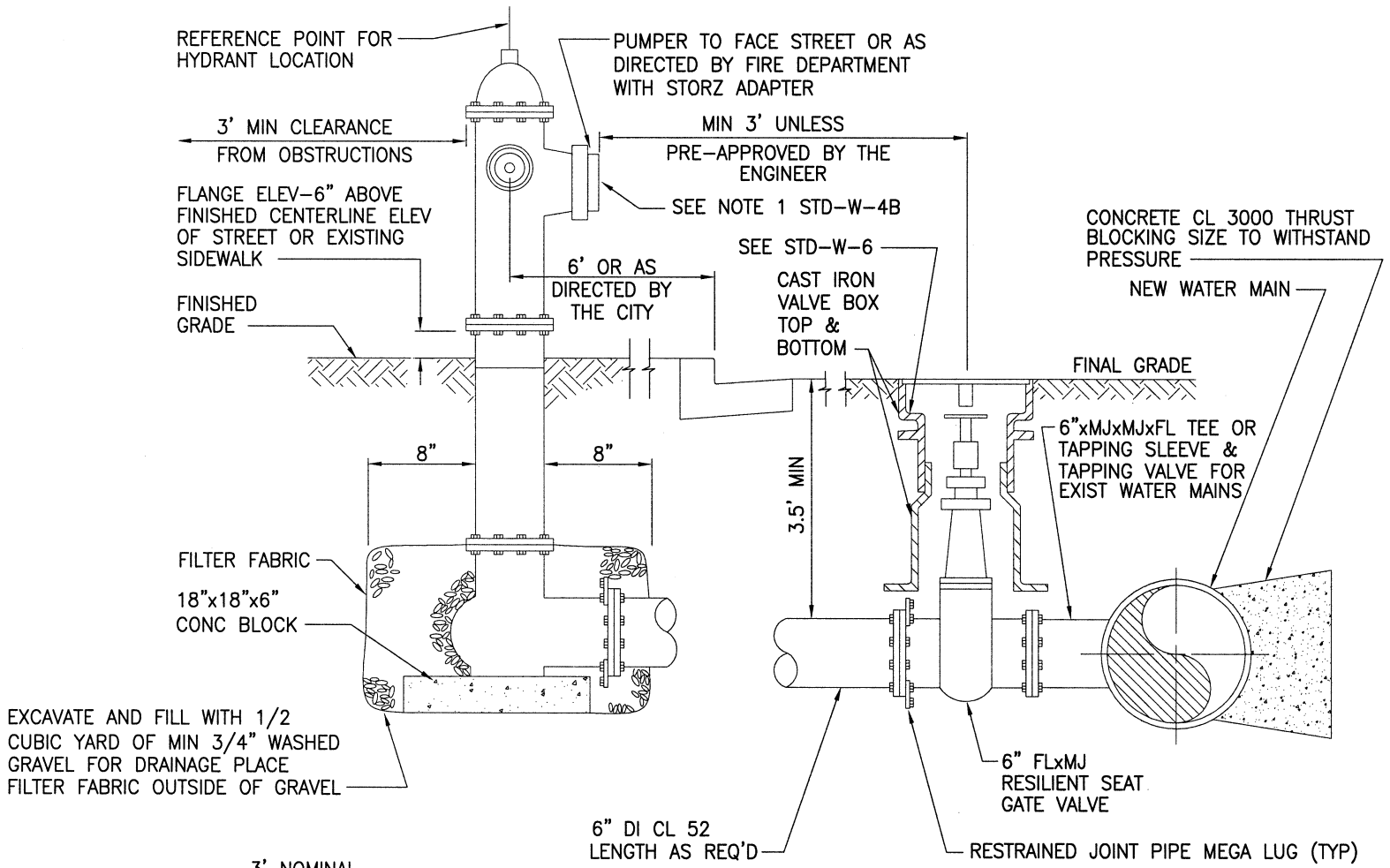
STANDARD FIRE HYDRANT

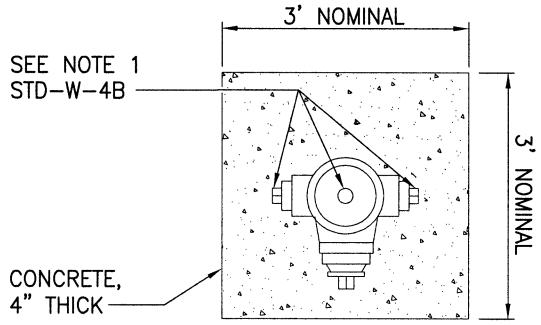
SCALE: NO SCALE

APPROVAL DATE:

FILE NAME: STD-W-4A

DRAWING NO. W-4A





PLAN

FOR NOTES SEE STD-W-4B

NOTES

1. FIRE HYDRANT SHALL BE A CENTER OPERATING VALVE SUCH AS M&H, DRESSER, CLOW MEDALLION OR APPROVED EQUIVALENT MEETING AWWA STDS C502. ALL OPERATING NUTS SHALL BE 1 1/4" PENTAGONAL.

2. PAINT HYDRANTS WITH TWO (2) COATS OF "SIREN RED" SEMI-GLOSS DERUSTO PAINT.

3. ALL HYDRANTS SHALL BE 5 1/2" COMMERCIAL WITH 1-1/4 NTS THREADED PORT WITH 1-5" TWO LUG QUARTER TURN STORTZ OR APPROVED EQUAL PUMPER PORT CONNECTOR AND 2-2½" NST, PUMPER PORT TO FACE STREET OR AS DIRECTED BY FIRE DEPARTMENT.

4. ALL FIRE HYDRANTS SHALL BE LOCATED BEHIND SIDEWALK OR AS SHOWN ON PLANS. THE PORT CAP SHALL NOT BE OVER THE SIDEWALK.

5. WHEN FIRE HYDRANTS FALL BEHIND DITCH LINE, PLACE CULVERT IN DITCH FOR MIN OF 10' & BACKFILL WITH CRUSHED SURFACING. RIPRAP ENDS AS NEEDED FOR EROSION CONTROL.

6. NO HYDRANT SHALL BE INSTALLED LESS THAN 10 FEET FROM THE EDGE OF A DRIVEWAY APPROACH.

7. FIRE HYDRANT SHALL FACE THE ADJACENT STREET UNLESS DIRECTED OTHERWISE BY CITY OFFICIALS.

8. ALL PIPE AND FITTINGS THAT WILL COME IN CONTACT WITH THRUST BLOCKS SHALL BE WRAPPED IN PLASTIC.

9. THE HOLDING SPOOL SHALL CLASS 52 DUCTILE IRON, MJ TYPE WITH MEGA-LUG CONNECTORS.

10. 3 GUARD POSTS TO BE INSTALLED IN UNPROTECTED AREAS (4' RADIUS).

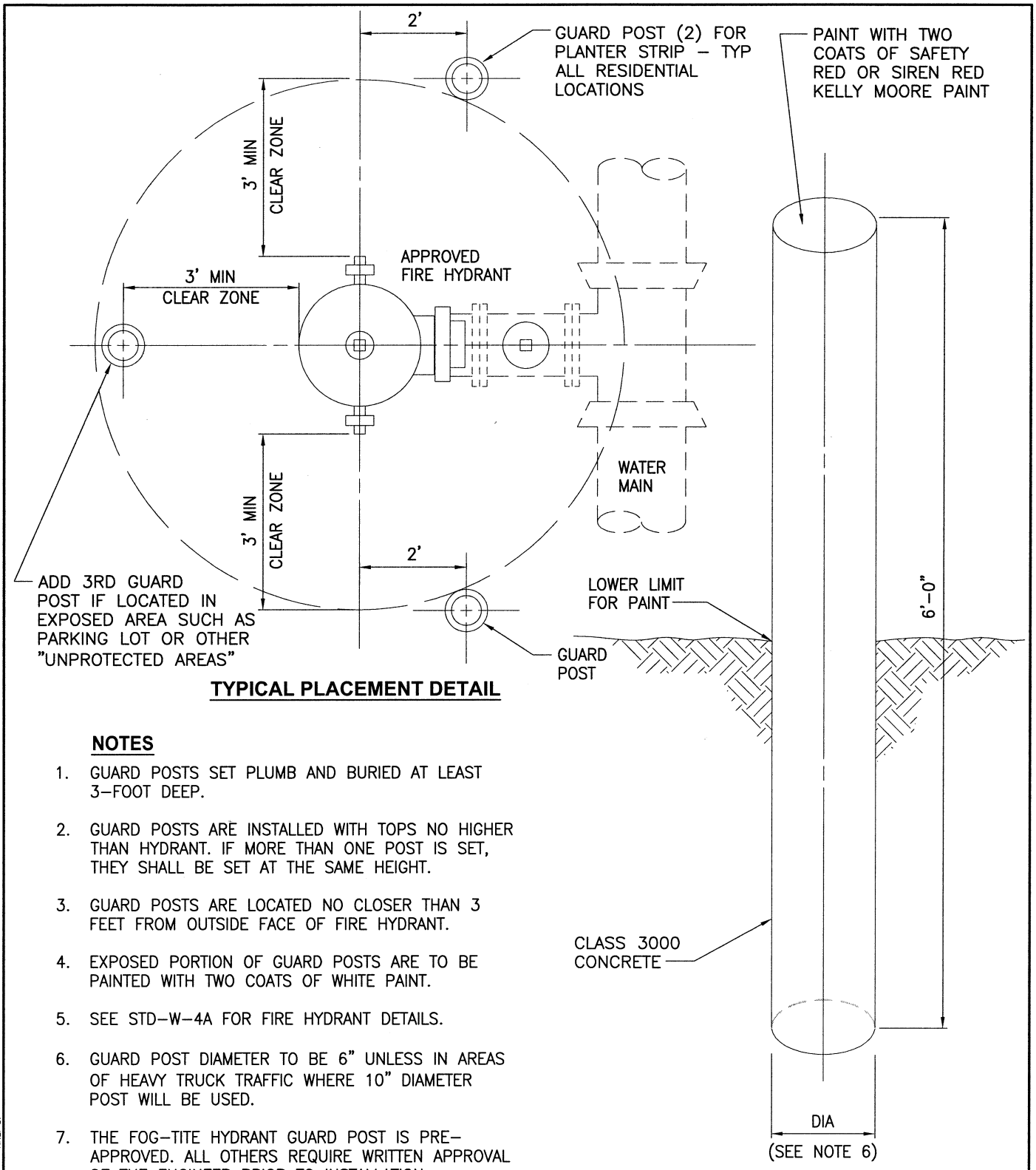
11. SEE STD-W-4C FOR GUARD POST DETAILS.

CITY OF ORTING

STANDARD FIRE HYDRANT NOTES

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. W-4B
FILE NAME: STD-W-4B		

FILE: Std-W-4B
DATE: Feb 28, 2008 - 2:57pm PLOTTED BY: morridea IMAGES: OrtingLogobandw | XREFS:



TYPICAL PLACEMENT DETAIL

NOTES

1. GUARD POSTS SET PLUMB AND BURIED AT LEAST 3–FOOT DEEP.
2. GUARD POSTS ARE INSTALLED WITH TOPS NO HIGHER THAN HYDRANT. IF MORE THAN ONE POST IS SET, THEY SHALL BE SET AT THE SAME HEIGHT.
3. GUARD POSTS ARE LOCATED NO CLOSER THAN 3 FEET FROM OUTSIDE FACE OF FIRE HYDRANT.
4. EXPOSED PORTION OF GUARD POSTS ARE TO BE PAINTED WITH TWO COATS OF WHITE PAINT.
5. SEE STD–W–4A FOR FIRE HYDRANT DETAILS.
6. GUARD POST DIAMETER TO BE 6" UNLESS IN AREAS OF HEAVY TRUCK TRAFFIC WHERE 10" DIAMETER POST WILL BE USED.
7. THE FOG–TITE HYDRANT GUARD POST IS PRE–APPROVED. ALL OTHERS REQUIRE WRITTEN APPROVAL OF THE ENGINEER PRIOR TO INSTALLATION.

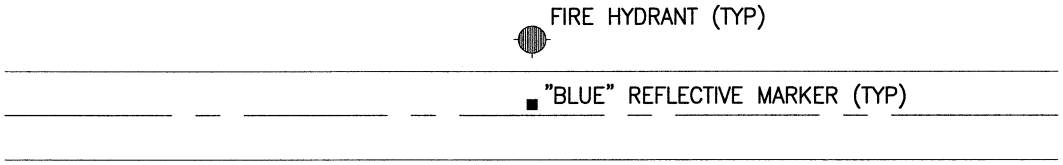
CITY OF ORTING

FIRE HYDRANT GUARD POST

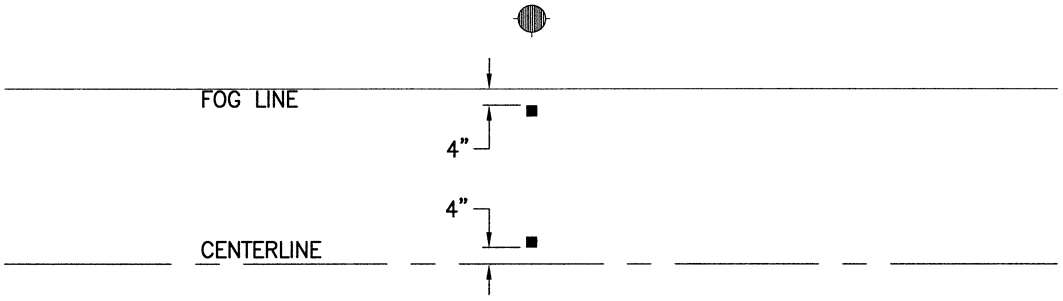
SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. W–4C
FILE NAME: STD–W–4C		

FILE: Std-W-4C
DATE: Feb 22, 2008 - 9:41am PLOTTED BY: morrideo
IMAGES: OrtingLogobandw |
XREFS:

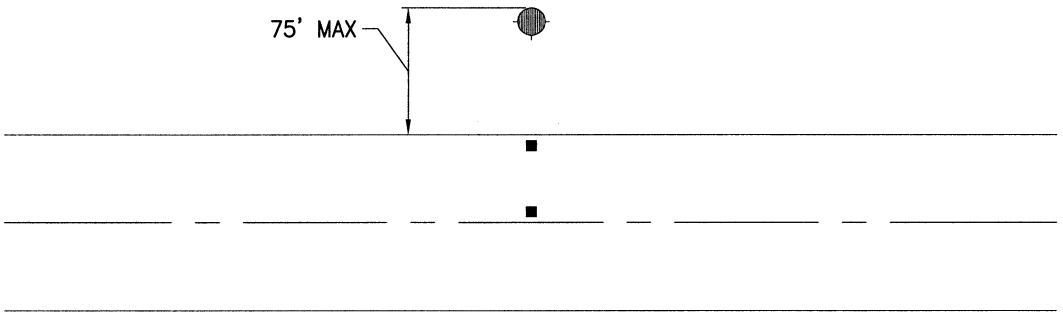
1. USE ONE REFLECTOR WHEN THE HYDRANT IS LESS THAN TWENTY FEET (20') FROM THE EDGE OF THE PAVEMENT.



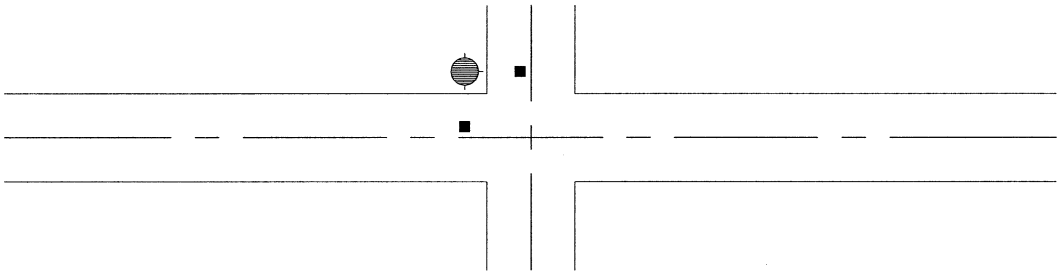
2. REFLECTOR TO BE ON THE HYDRANT SIDE OF THE CENTERLINE AND ON THE STREET SIDE OF THE FOG LINE TO BE IN LINE WITH THE HYDRANT. AT A DISTANCE OF FOUR INCHES (4") FROM THE LINE BEING USED.



3. USE TWO REFLECTORS WHERE THE HYDRANT IS MORE THAN TWENTY FEET (20') FROM THE EDGE OF THE PAVEMENT UP TO SEVENTY–FIVE FEET (75') AND IS NOT OBSTRUCTED BY A FENCE.



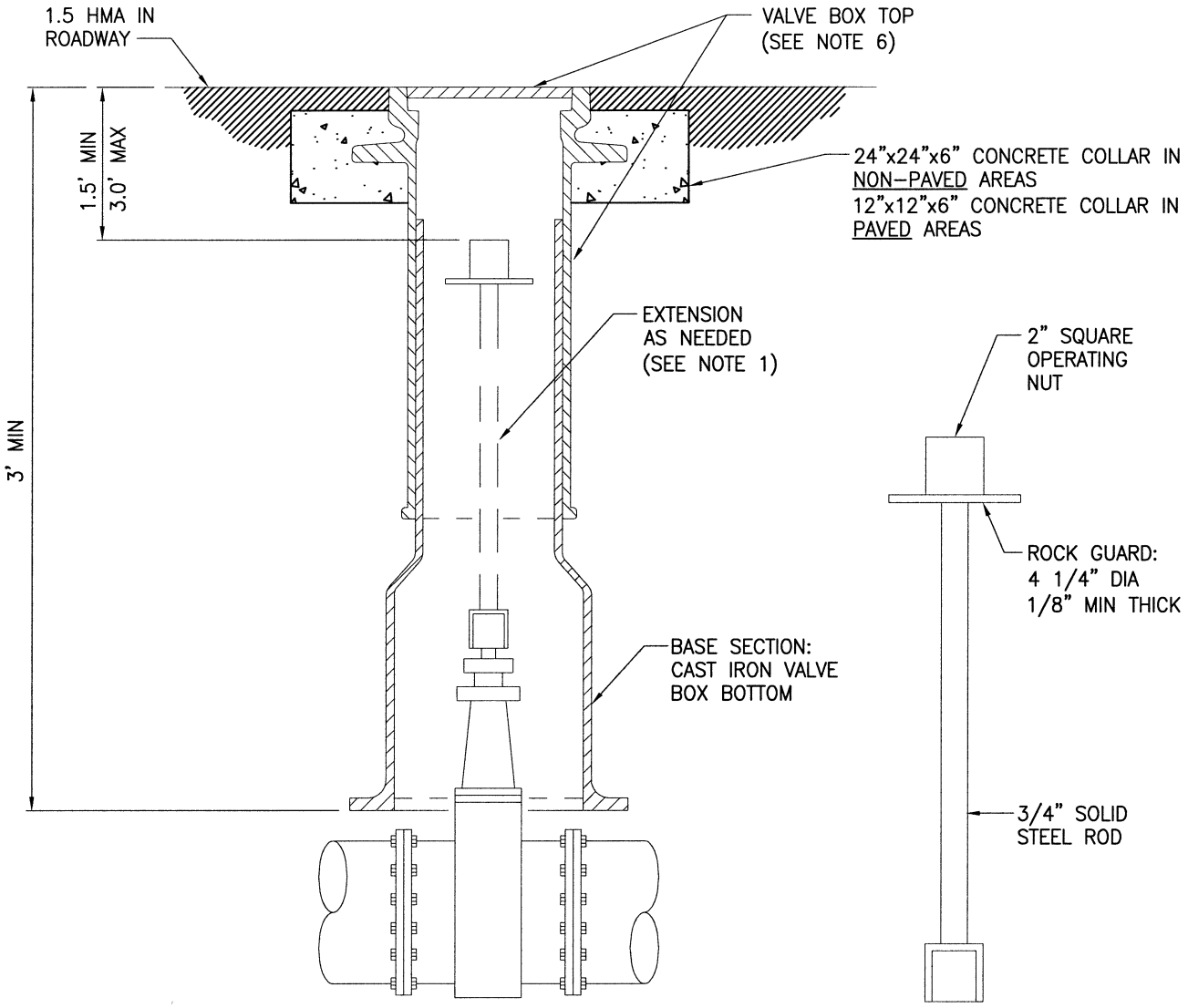
4. USE TWO REFLECTORS WHERE A HYDRANT IS IN THE CORNER OF AN INTERSECTION.



CITY OF ORTING

FIRE HYDRANT STREET MARKINGS

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. W–5
FILE NAME: STD–W–5		



VALVE BOX WITH OPERATING NUT EXTENDER

OPERATING NUT EXTENDER

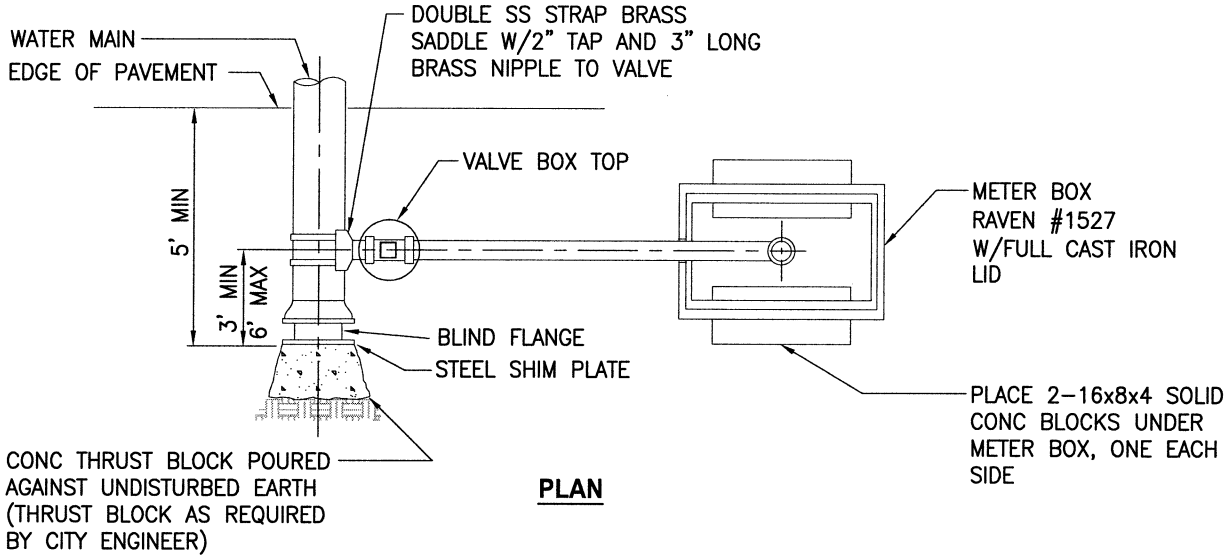
NOTES

1. EXTENSIONS ARE REQUIRED WHEN VALVE NUT IS MORE THAN FOUR FEET BELOW FINISHED GRADE.
2. EXTENSIONS SHALL BE A MINIMUM OF ONE FOOT LONG.
3. EXTENSIONS SHALL BE SIZED AS NOTED, AND PAINTED WITH TWO COATS OF METAL PAINT.
4. EXTENSIONS ARE AS AVAILABLE FROM HD FOWLER OR US FILTER WATERWORKS.
5. LUGS OR STAINLESS CAP SCREWS ON COVER SHALL BE ALIGNED WITH DIRECTION OF WATER FLOW.
6. CAST IRON VALVE BOX TOP WITH COVER MARKED "WATER", 5 7/8" INSIDE DIAMETER W/LID TABS POINTING IN DIRECTION OF PIPING.

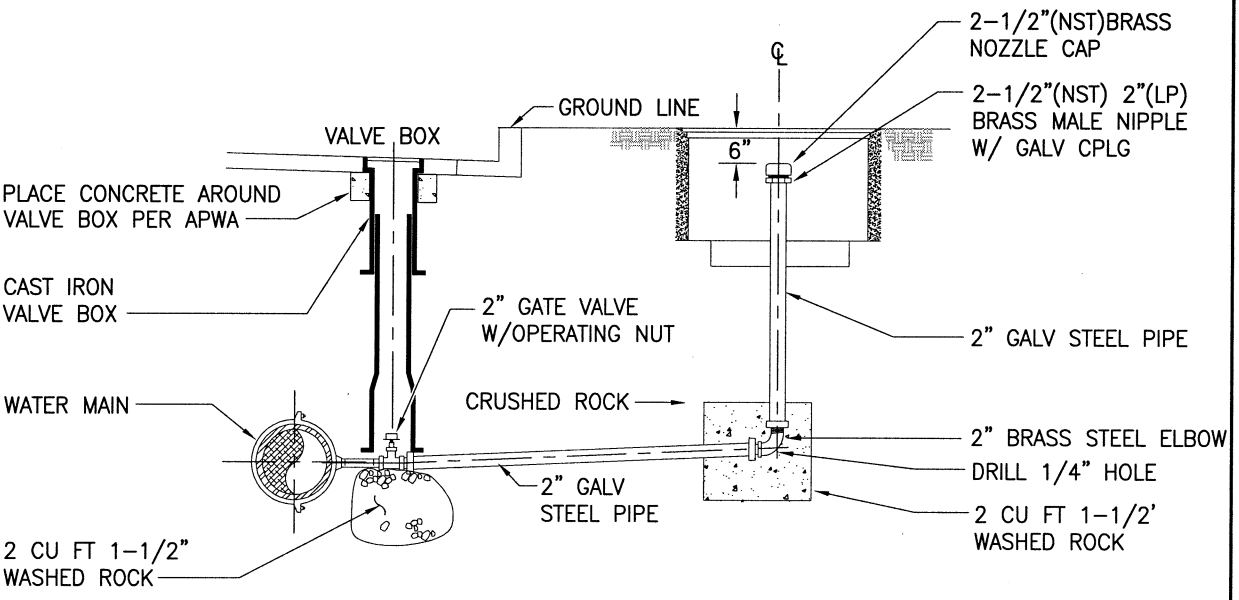
CITY OF ORTING

VALVE BOX & OPERATING NUT EXTENDER

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. W-6
FILE NAME: STD-W-6		



PLAN



ELEVATION

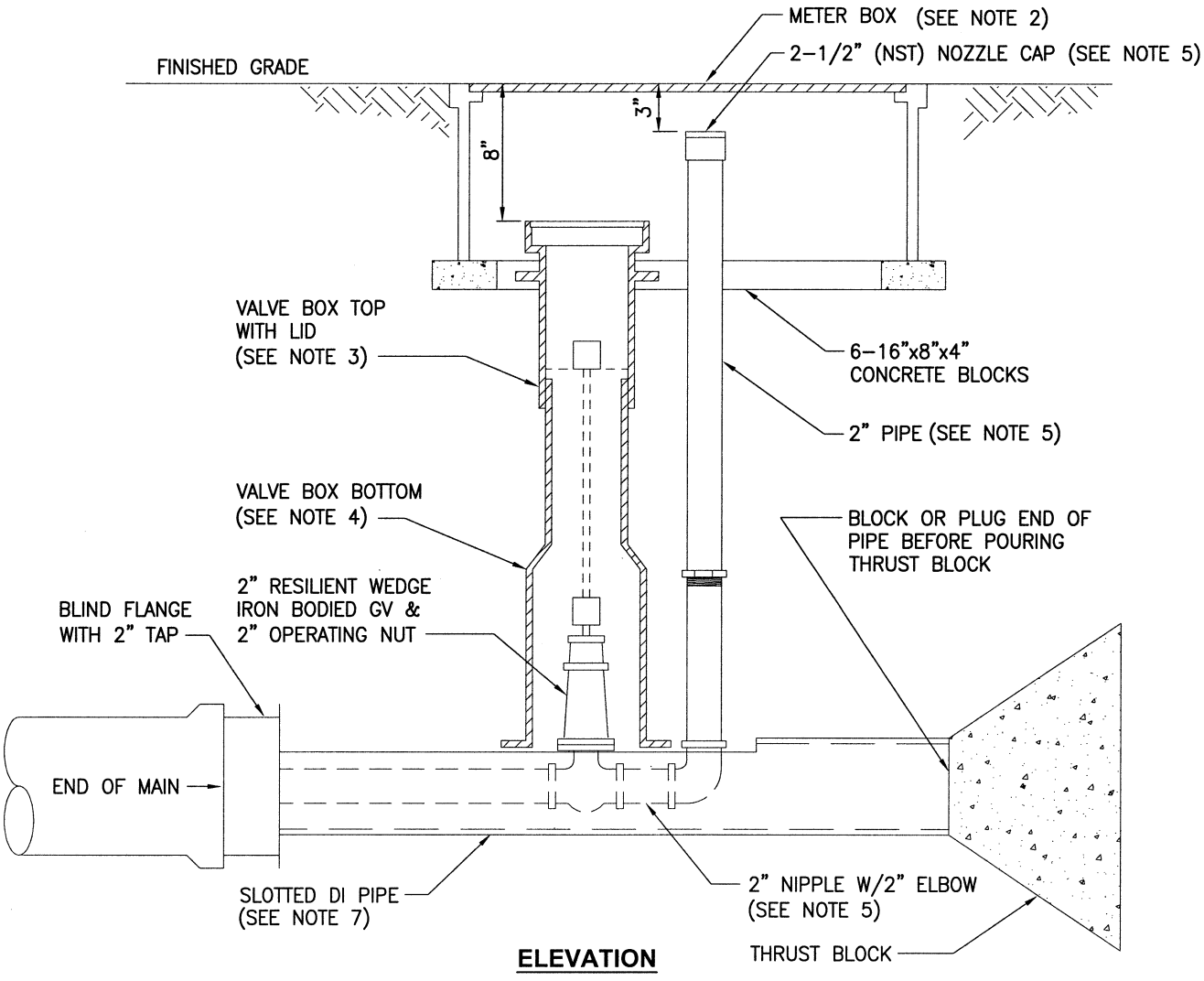
IMAGES:
XREF'S:

DATE: 02/15/08 09:06am FILENAME: Std-w-7A

CITY OF ORTING

MID-RUN 2" BLOWOFF ASSEMBLY

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. W-7A
FILE NAME: STD-W-7A		



ELEVATION

NOTES

1. THE FOLLOWING ITEMS ARE PRE-APPROVED. ALL OTHERS REQUIRE WRITTEN APPROVAL OF THE CITY ENGINEER.
2. REINFORCED CONCRETE NO. 2 BOX WITH 3/8" STEEL TRAFFIC LID.
3. CAST IRON VALVE BOX TOP OR PRE-APPROVED EQUAL WITH LUG TYPE COVER MARKED "WATER" 5-7/8" INSIDE DIAMETER.
4. BASE SHALL BE COMPATIBLE WITH TOP SECTION, LENGTH AS REQUIRED. USE CAST IRON BOTTOM SECTION OR PRE-APPROVED EQUAL.
5. ALL FITTINGS TO BE BRASS.
6. VALVE MARKER POST REQUIRED FOR PLANTER AREA INSTALLATIONS (SEE STD-W-16).
7. DI PIPE BRACE SHALL BE SLOTTED ON THE TOP AND BOTTOM TO ALLOW DRAINAGE FROM THE BLOW-OFF UPRIGHT.
8. GATE VALVE SHALL BE PLACED PRIOR TO THE BLIND FLANGE IF MAIN MAY POTENTIALLY BE EXTENDED IN THE FUTURE.

IMAGES:
XREF'S:

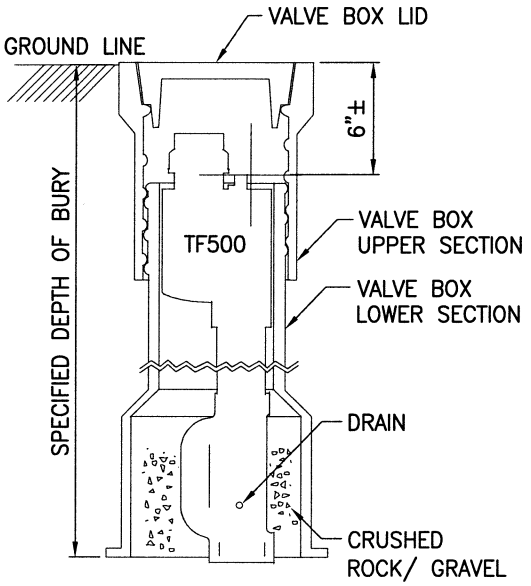
DATE: 01/04/08 10:49am FILENAME: Std-w-7B

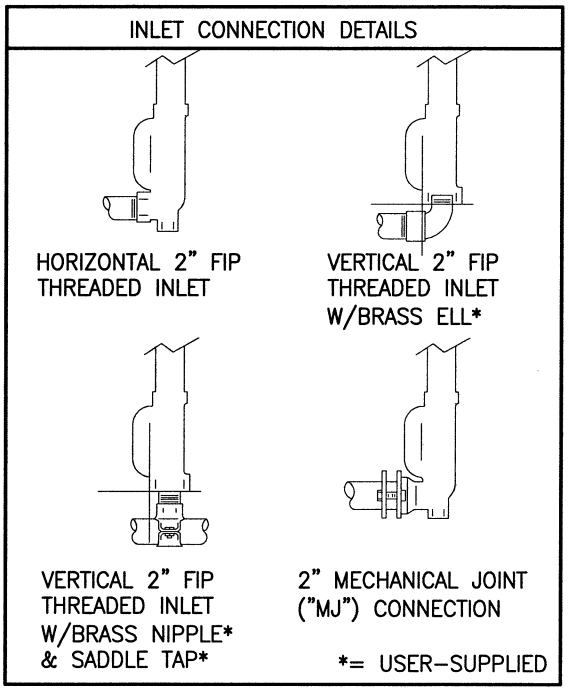
CITY OF ORTING

END OF MAIN 2" BLOWOFF ASSEMBLY

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. W-7B
FILE NAME: STD-W-7B		

TF500 HYDRANT





NOTES

1. HYDRANT SHALL BE _____' BURY, WITH (2" VERTICAL FIP / 2" HORIZONTAL FIP / 2" MJ) INLET AND 2" NPT NOZZLE OUTLET. HYDRANT SHALL FIT IN A 5-1/4" ID VALVE BOX. HYDRANT SHALL BE NON-FREEZING AND SELF-DRAINING. HYDRANT SHALL BE OPERATED BY TURNING A TOP-MOUNTED 9/16" SQUARE OPERATING NUT COUNTERCLOCKWISE TO OPEN, CLOCKWISE TO CLOSE. HYDRANT MUST SEAL THE DRAIN OUTLET IN ALL POSITIONS FROM 1/4"-OPEN TO FULLY-OPEN. ALL INTERNAL WORKING PARTS, THE INLET, AND THE OUTLET SHALL BE LEAD-FREE BRASS. ALL WORKING PARTS SHALL BE SERVICEABLE FROM ABOVE WITH NO DIGGING REQUIRED. DISASSEMBLY MUST BE ACCOMPLISHED WITH NO TURNING FORCES APPLIED TO THE HYDRANT. ALL WEAR PARTS (O-RINGS AND VALVE SEAT) SHALL BE OF COMMONLY AVAILABLE DIMENSIONS AND MATERIAL, AND NONE MAY BE OF VENDOR-UNIQUE DESIGN. HYDRANT SHALL BE THE MODEL TF500 AS MANUFACTURED BY THE KUPFERLE FOUNDRY CO, ST LOUIS, MO 63102.

2. INSURE THAT THE HYDRANT IS FREE TO MOVE VERTICALLY WITHIN THE VALVE BOX. IN ORDER TO PREVENT THE TRANSMISSION OF TRAFFIC LOADS TO THE HYDRANT, IT SHOULD NOT BE JAMMED OR WEDGED AGAINST THE VALVE BOX ID.

3. THE HYDRANT OPERATING NUT SHALL BE LOCATED 6" BELOW VALVE BOX TOP UNLESS OTHERWISE DIRECTED BY THE CITY ENGINEER

4. THE SUGGESTIONS OF THE AWWA SHALL BE FOLLOWED FOR HYDRANT INSTALLATIONS. IN PARTICULAR, SURROUNDING THE DRAIN PORT WITH A SUFFICIENT AMOUNT OF CRUSHED ROCK/GRAVEL TO PROVIDE AN ADEQUATE DRAIN FIELD.

FILE: Std-W-7C
DATE: Feb 28, 2008 - 4:20pm PLOTTED BY: morridea IMAGES: OrtingLogobandw | XREFS:

CITY OF ORTING

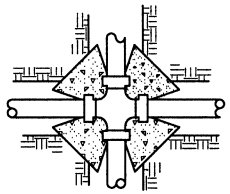
BLOW-OFF HYDRANT

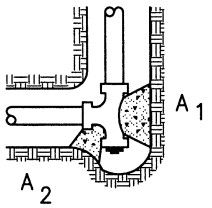
SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. W-7C
FILE NAME: STD-W-7C		

FILE: Std-w-8
DATE: Feb 22, 2008 - 10:48am PLOTTED BY: morridea
IMAGES: OrtingLogobandw |
XREF'S:

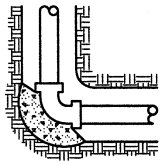
CITY OF ORTING

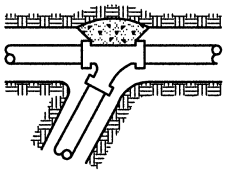
THRUST BLOCKING

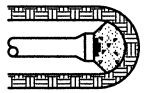

CROSS - PLAN

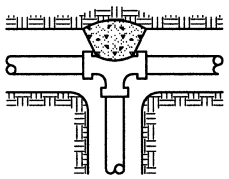


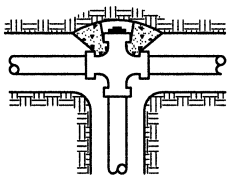
TEE

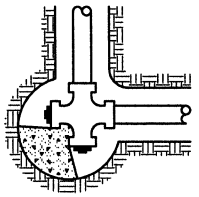

BEND


WYE


PLUG OR CAP


TEE


PLUGGED CROSS


PLUGGED CROSS

NOTES

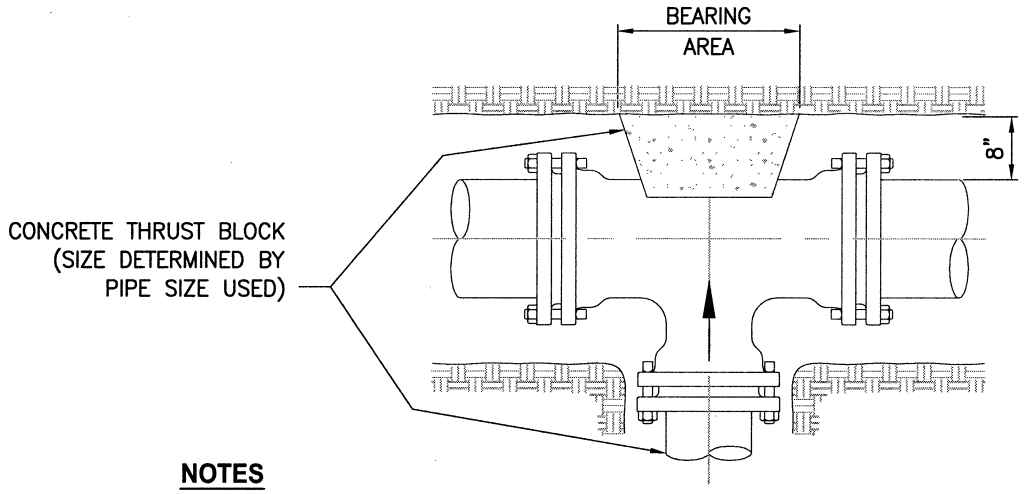
1. FITTINGS FLANGED TOGETHER, I.E. VALVES TO TEES ETC., ARE NOT INDICATED FOR CLARITY.
2. REBAR USED IN THRUST BLOCKS SHALL BE ASPHALT TREATED AS FOR SHACKLE RODS.
3. CONCRETE SHALL NOT BE POURED ABOVE THE PIPE SPRINGLINE IN THRUST BLOCKS WITH REBAR.
4. FITTINGS SHALL BE PROTECTED FROM CONCRETE WITH PLASTIC FIRMLY WIRED OR TAPED TO THE FITTINGS.
5. CONCRETE THRUST BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH.
6. KEEP CONCRETE CLEAR OF JOINT AND ACCESSORIES.
7. THE REQUIRED THRUST BEARING AREAS FOR SPECIAL CONNECTIONS ARE SHOWN ENCIRCLED ON THE PLANS;
8. IF NOT SHOWN ON PLANS REQUIRED BEARING AREAS AT FITTING SHALL BE AS PRESSURE(S) ALLOWABLE SOIL BEARING STRESS(ES) STATED IN THE SPECIAL SPECIFICATIONS.
9. BEARING AREAS AND SPECIAL BLOCKING DETAILS SHOWN ON PLANS TAKE PRECEDENCE OVER BEARING AREAS AND BLOCKING DETAILS SHOWN ON THIS STANDARD DETAIL.
10. ALL PIPE FITTINGS & BENDS SHALL HAVE JOINT RESTAINT, MEGA-LUG OR EQUAL. FIELD LOK GASKETS MAY NOT BE USED AT PIPE FITTINGS & BENDS. FIELD LOK GASKETS SHALL BE USED AT ALL PIPE JOINTS.

FILE NAME: STD-W-8

SCALE: NO SCALE

APPROVAL DATE:

DRAWING NO. W-8



NOTES

1. BLOCK HEIGHT SHALL BE EQUAL OR LESS THAN ONE HALF OF TOTAL DEPTH FROM GROUND SURFACE TO BLOCK BASE.
2. BLOCK SIZE BASED ON 225 PSI TEST PRESSURE.
3. WRAP FITTINGS WITH POLYETHYLENE PLASTIC BEFORE POURING CONCRETE THRUST BLOCK.
4. SEE STD–W–8 FOR PLACING OF THRUST BLOCKS.

FITTING SIZE (INCHES)	BEARING AREA OF BLOCK IN SQUARE FEET				
	TEES & PIPE ENDS	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND
	1000 PSF SOIL BEARING STRENGTH				
3	1.6	2.3	1.3	1.0	1.0
4	2.8	4.0	2.2	1.1	1.0
6	6.4	9.0	4.9	2.5	1.2
8	11.3	16.0	8.7	4.5	2.3
10	17.7	25.0	13.6	6.9	3.5
12	25.4*	36.0*	19.5	10.0	5.0
14	34.6*	49.0*	26.5*	13.6	7.0
16	45.2*	64.0*	34.6*	17.7	8.9
	2500 PSF SOIL BEARING STRENGTH				
3	1.0	1.0	1.0	1.0	1.0
4	1.1	1.6	1.0	1.0	1.0
6	2.6	3.6	2.0	1.0	1.0
8	4.5	6.4	3.5	1.8	1.0
10	7.1	10.0	5.4	2.8	1.4
12	10.1	14.4	7.8	4.0	2.0
14	13.8	19.6	10.6	5.4	2.8
16	18.1	25.6*	13.8	7.1	3.6

* MAXIMUM BEARING AREA ALLOWED IS 25 SQ FT; BEARING AREA MAY BE REDUCED BY USING RODS, RESTRAINED JOINT PIPE, OR CONDUCTING SOILS TEST TO CONFIRM HIGHER SOIL BEARING.

IMAGES:
XREF'S:

DATE: 01/04/08 10:57am FILENAME: Std-w-9

CITY OF ORTING

WATER MAIN BLOCKING

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. W–9
FILE NAME: STD–W–9		

DATE: 02/22/08 2:07pm FILENAME: Std-W-10A

IMAGES: OrtingLogobandw |
XREF'S:

CITY OF ORTING

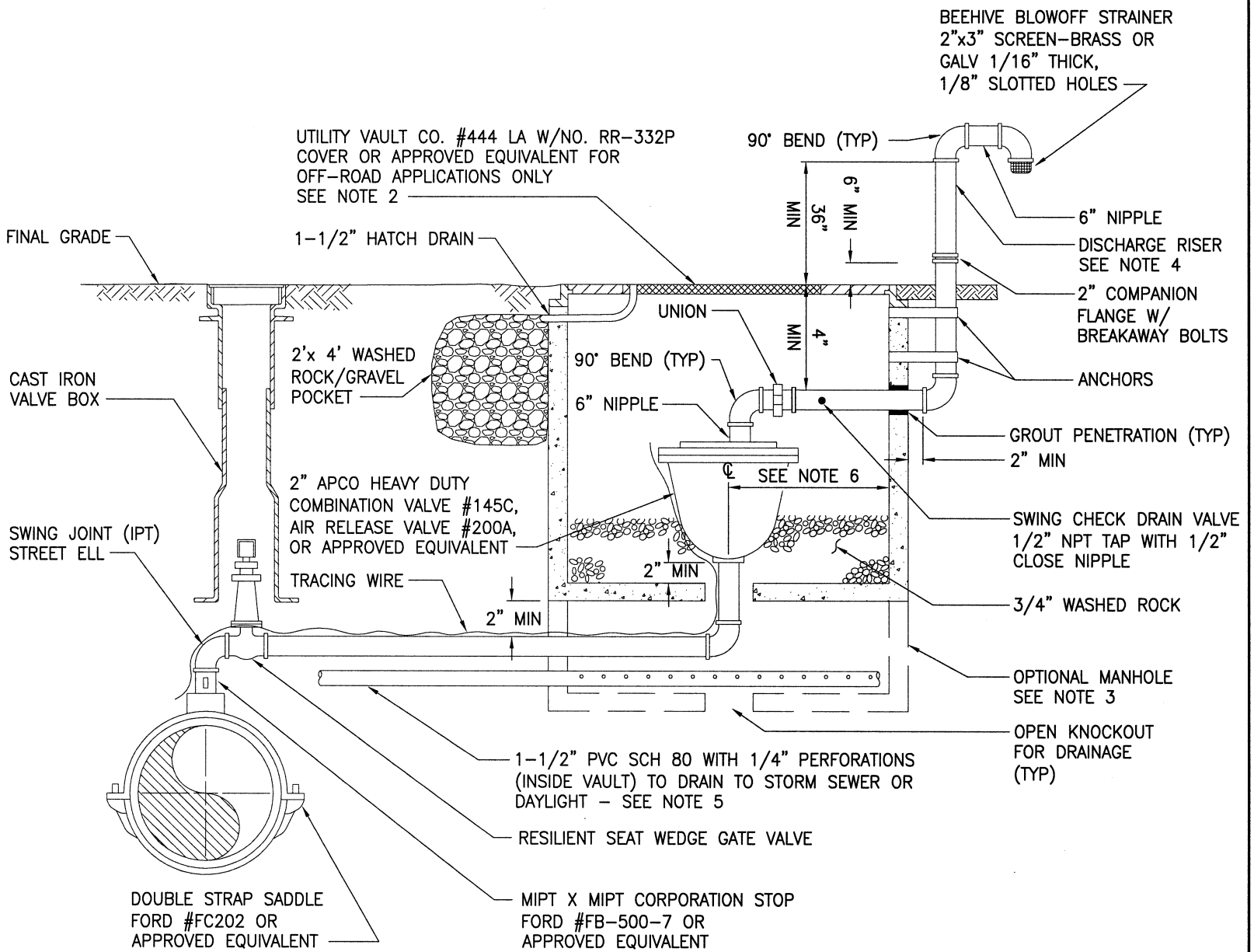
WATER MAIN 2" AIR RELEASE VALVE ASSEMBLY

SCALE: NO SCALE

APPROVAL DATE:

FILE NAME: STD-W-10A

DRAWING NO. W-10A



SEE STD-W-10B FOR NOTES

NOTES

1. ALL PIPE AND FITTINGS TO BE 2" DIA BRASS UNLESS OTHERWISE NOTED.
2. INSTALLATIONS IN AREAS REQUIRING TRAFFIC BEARING VAULTS WITH MANHOLE ENTRY REQUIRE ENGINEER'S APPROVAL.
3. A MANHOLE OF NOT LESS THAN 3'-6" DIAMETER MAY BE USED IN LIEU OF VAULT WITH ENGINEER'S APPROVAL.
4. DISCHARGE RISER SHALL BE INSTALLED IN PLANTER AREAS ONLY. ANCHOR RISER WITH 2"x1/4" STAINLESS STEEL STRAPS AND 3/8" HILTI EXPANSION BOLTS. PAINT THE ABOVE GROUND PIPING WITH TWO COATS OF FARWEST WONDERGLO QUICKSET HI-PERFORMANCE ENAMEL, #1100 SERIES, WHITE.
5. INSTALL COMBINATION VALVE IN DRY, FREE DRAINING AREAS WHERE POSSIBLE, OR INSTALL PVC DRAIN PIPE IN AN APPROVED LOCATION.
6. COMBINATION VALVES SHALL BE INSTALLED AT ALL PEAKS & SHARP CHANGES IN GRADIENT. AIR RELEASE VALVES SHALL BE INSTALLED ON LONG HORIZONTAL, ASCENDING, OR DESCENDING STRETCHES AND BE CENTERED WITHIN IT'S VAULT OR MANHOLE.

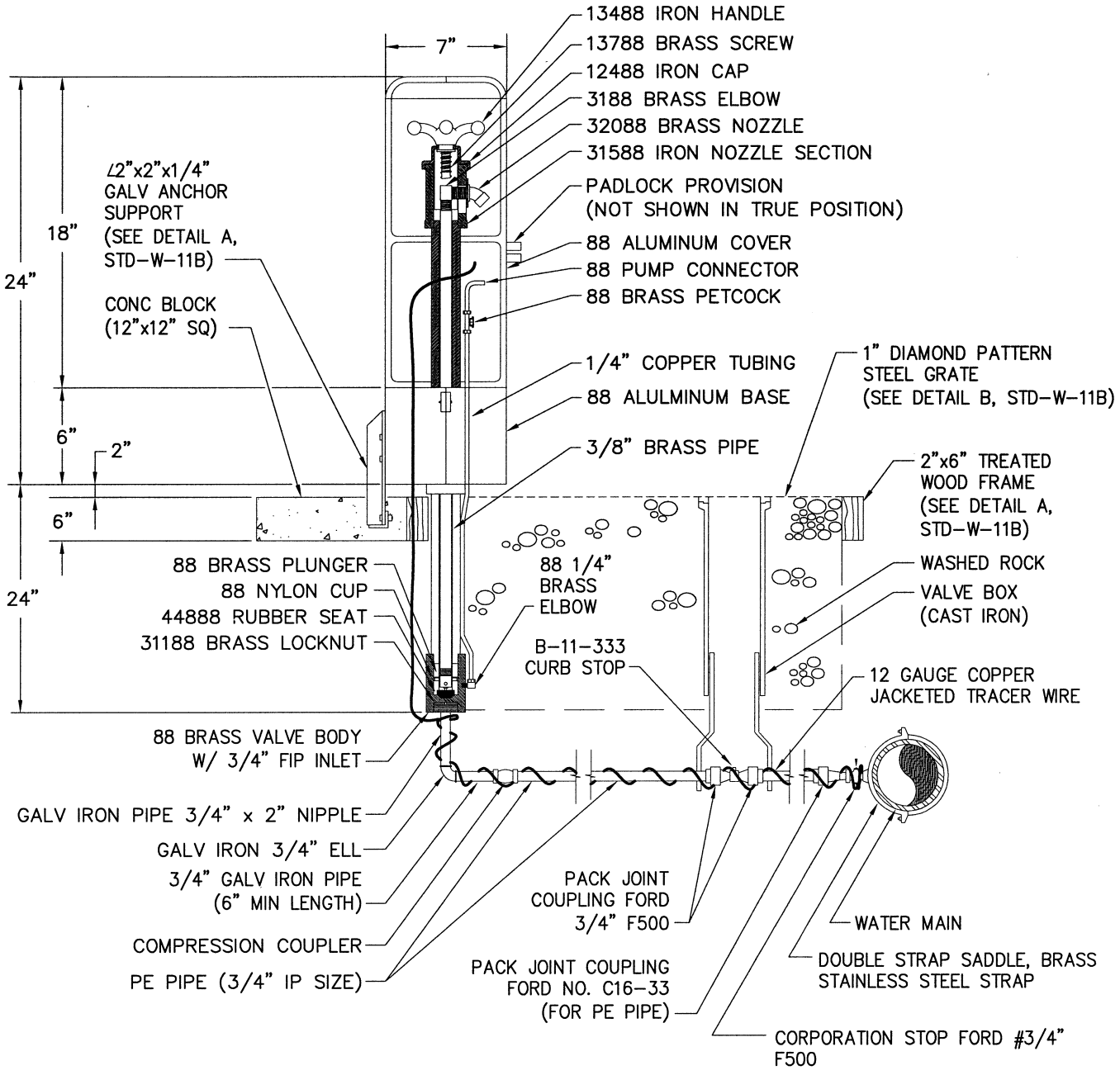
IMAGES: OrtingLogobandw |
XREF'S:

DATE: 02/22/08 2:08pm FILENAME: Std-W-10B

CITY OF ORTING

WATER MAIN 2" AIR RELEASE VALVE ASSEMBLY

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. W-10B
FILE NAME: STD-W-10B		



NOTE

SAMPLING STATION SHALL BE "ECLIPSE NO.88" OR AN APPROVED EQUIVALENT

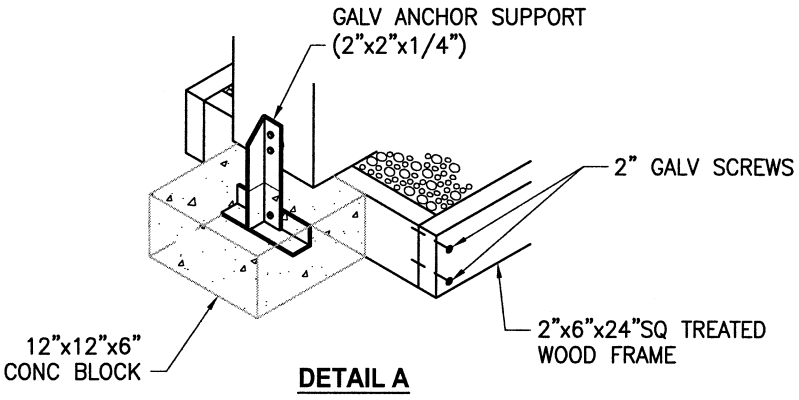
IMAGES: OrtingLogobandw |
XREF'S:

DATE: 02/28/08 3:13pm FILENAME: std-W-11A

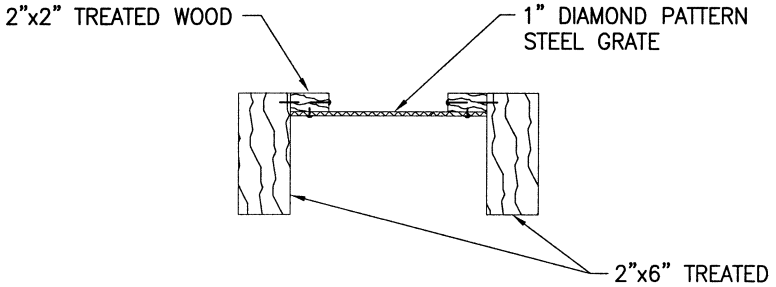
CITY OF ORTING

WATER SAMPLING STATION

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. W-11A
FILE NAME: STD-W-11A		



DETAIL A



DETAIL B

NOTES

1. ASSEMBLE TREATED WOOD FRAME WITH GALVANIZED SCREWS.
2. STEEL GRATE SHALL BE CUT AS NEEDED TO ALLOW ACCESS TO VALVE BOX.

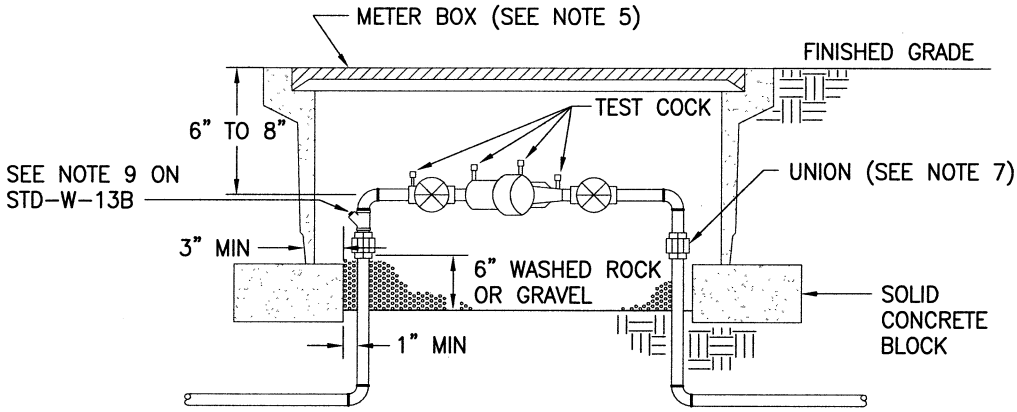
IMAGES: OrtingLogobandw |
XREFS:

DATE: 02/22/08 2:12pm FILENAME: std-W-11B

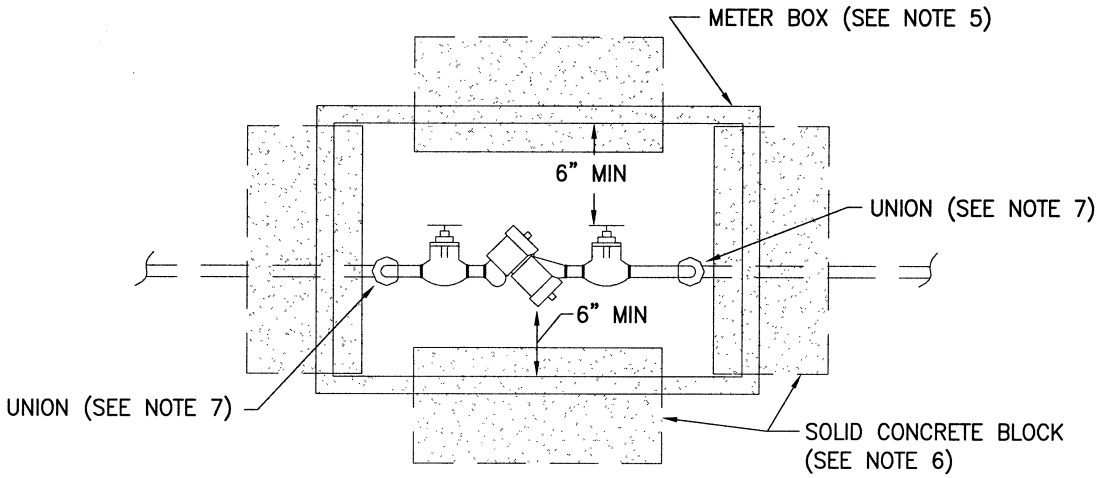
CITY OF ORTING

WATER SAMPLING STATION DETAILS

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. **W-11B**
FILE NAME: STD-W-11B		



SECTION VIEW



PLAN VIEW

NOTES:

1. DCVA SHALL BE DOH APPROVED AND SHALL BE TESTED, UPON INSTALLATION, BY A WASHINGTON STATE CERTIFIED BACKFLOW ASSEMBLY TESTER, AND THE REPORT FORM SHALL BE RECEIVED BY THE CITY OF ORTING PRIOR TO OCCUPANCY.
2. DCVA INSTALLATION AND MATERIALS SHALL CONFORM TO THE CITY OF ORTING CROSS CONNECTION CONTROL MANUAL.
3. DCVA SHALL BE PLACED IMMEDIATELY DOWNSTREAM OF WATER METER.
4. DCVA SHALL BE PROTECTED FROM FREEZING.
5. METER BOX SHALL BE LARGE ENOUGH TO ALLOW THE MINIMUM SET BACKS ILLUSTRATED ABOVE. METER BOX LID SHALL BE A TRAFFIC METER READER LID WITH H-20 LOADING.
6. METER BOX SHALL BE SUPPORTED BY FOUR 16" X 8" X 4" SOLID CONCRETE BLOCKS.
7. DIELECTRIC UNIONS SHALL BE USED TO SEPARATE DISSIMILAR MATERIALS.

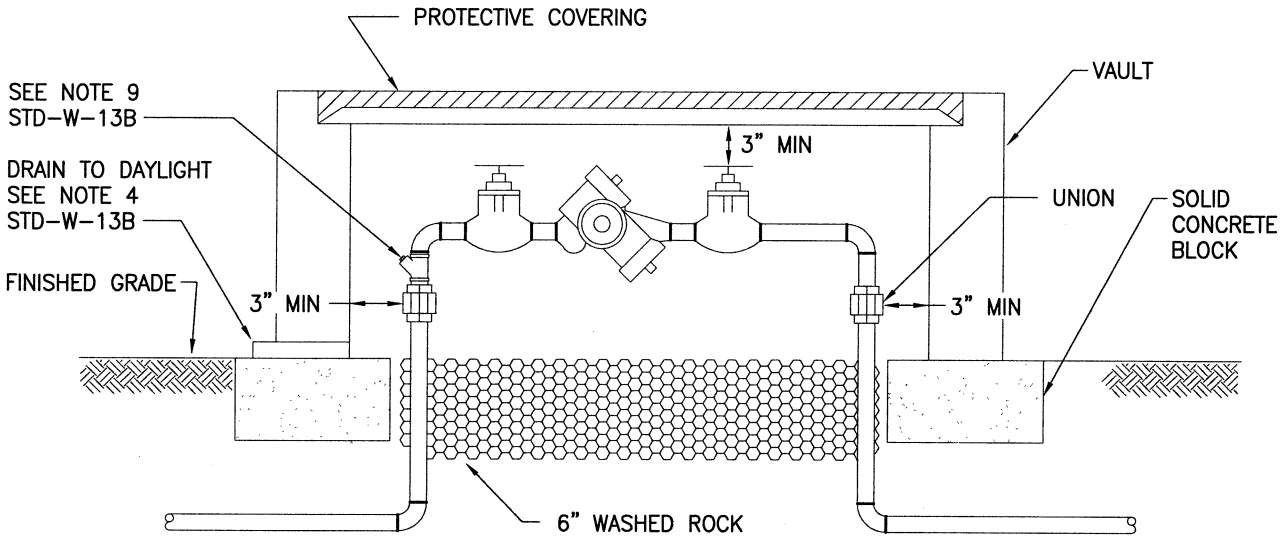
IMAGES:
XREFS:

DATE: 02/22/08 3:10pm FILENAME: Std-w-12

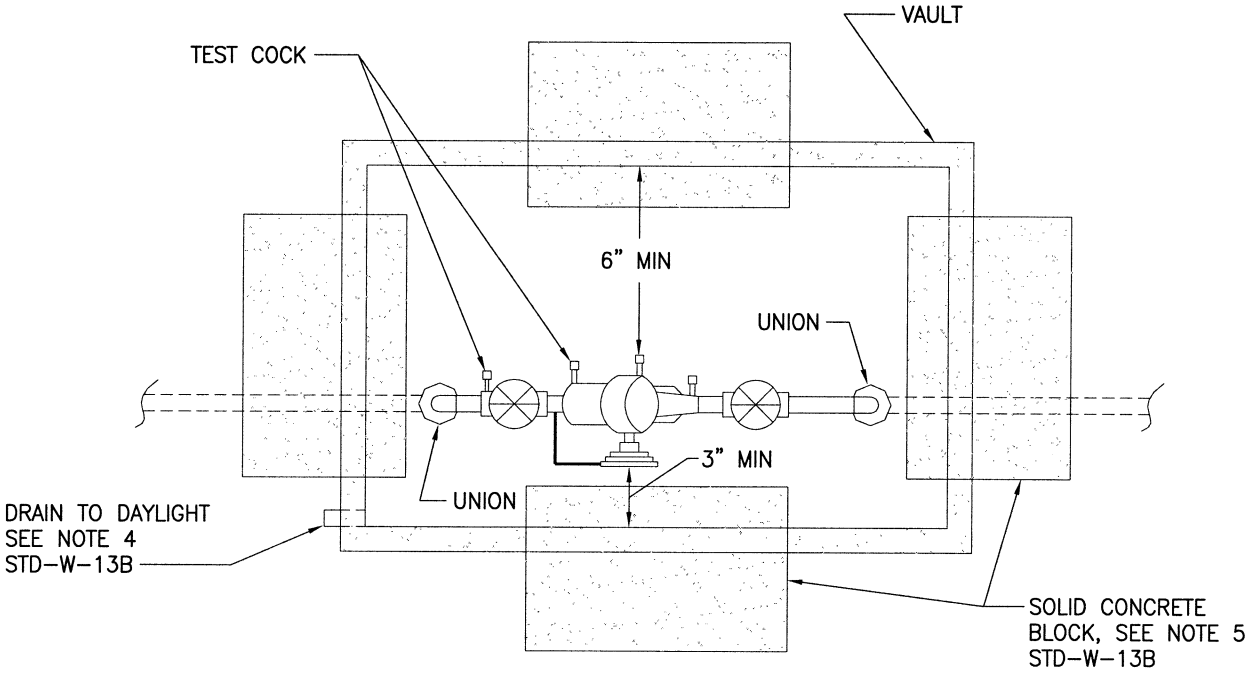
CITY OF ORTING

2" AND SMALLER DOUBLE CHECK-VALVE ASSEMBLY

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. W-12
FILE NAME: STD-W-12		



SECTION VIEW



PLAN VIEW

FOR NOTES SEE STD-W-13B

IMAGES:
XREFS:

DATE: 02/22/08 3:20pm FILENAME: Std-w-13A

CITY OF ORTING

2" AND SMALLER REDUCED PRESSURE BACKFLOW ASSEMBLY

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. W-13A
FILE NAME: STD-W-13A		

NOTES:

1. THE RPBA SHALL BE INSTALLED WITH ADEQUATE SPACE TO FACILITATE MAINTENANCE AND TESTING. THE RPBA SHALL BE DOH APPROVED AND SHALL BE TESTED AFTER INSTALLATION, BY A WASHINGTON STATE CERTIFIED BACKFLOW ASSEMBLY TESTER, AND THE REPORT FORM SHALL BE RECEIVED BY THE CITY OF ORTING PRIOR TO OCCUPANCY.

2. THE RPBA INSTALLATION AND MATERIALS SHALL BE DOH APPROVED AND CONFORM TO THE CITY OF ORTING CROSS CONNECTION CONTROL MANUAL.

3. AN RPBA SHALL NOT BE INSTALLED IN A PIT BELOW GROUND LEVEL. SEMI-BURIED PITS MAY BE ACCEPTABLE IF THE RPBA IS INSTALLED ABOVE GROUND OR MAXIMUM FLOOD LEVEL IN A VAULT WITH AN APPROVED AIR GAP BETWEEN THE RELIEF VALVE PORT AND A BORE-SIGHTED DAYLIGHT DRAIN.

4. THE PROTECTIVE COVERING FOR THE RPBA SHALL INCLUDE A DAYLIGHT DRAIN. THE DRAIN SHALL BE ABLE TO BE BORE SIGHTED AND SHALL BE INSTALLED ABOVE GROUND OR MAXIMUM FLOOD LEVEL, WHICHEVER IS HIGHER. THE DRAIN SHALL ALSO BE ABLE TO HANDLE THE VOLUME OF WATER THAT POTENTIALLY COULD BE DISCHARGED FROM THE RELIEF VALVE PORT.

5. RPBA SHALL BE INSTALLED WITHIN A VAULT OR OTHER PROTECTIVE COVERING.

6. RPBA SHALL BE PROTECTED FROM FREEZING.

7. AN RPBA INSTALLED MORE THAN FIVE (5) FEET ABOVE FLOOR LEVEL SHALL HAVE A PLATFORM UNDER IT FOR THE TESTER OR MAINTENANCE PERSON TO STAND ON. THE PLATFORM SHALL MEET ALL APPLICABLE SAFETY STANDARDS AND CODES.

8. WHEN THE RPBA IS LOCATED INSIDE A BUILDING IT SHALL BE INSTALLED IN A LOCATION WHERE BOTH THE OCCASIONAL SPITTING FROM THE RELIEF VALVE PORT AND THE POSSIBLE CONSTANT DISCHARGE DURING A FOULED CHECK VALVE SITUATION WILL NOT BE OBJECTIONABLE. AN APPROVED AIR GAP FUNNEL ASSEMBLY, EITHER PROVIDED BY THE MANUFACTURER OR FABRICATED FOR THE SPECIFIC INSTALLATION, MAY BE INSTALLED TO HANDLE THE OCCASIONAL SPITTING OF THE RELIEF VALVE DUE TO PRESSURE FLUCTUATIONS. A LINE FROM THIS FUNNEL ASSEMBLY MAY THEN BE RUN TO AN ADEQUATELY SIZED FLOOR DRAIN OF EQUAL OR GREATER SIZE.

9. A STRAINER WITH BLOWOUT TAPPING SHALL BE INSTALLED AHEAD OF THE RPBA OR DCVA.

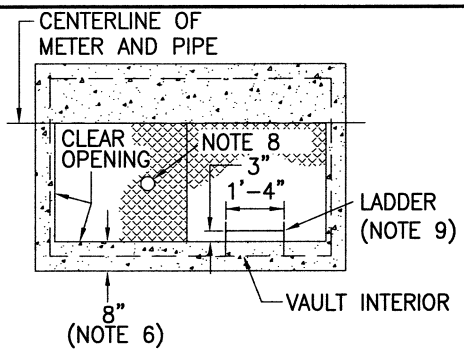
IMAGES:
XREFS:

DATE: 02/22/08 3:21pm FILENAME: Std-w-13B

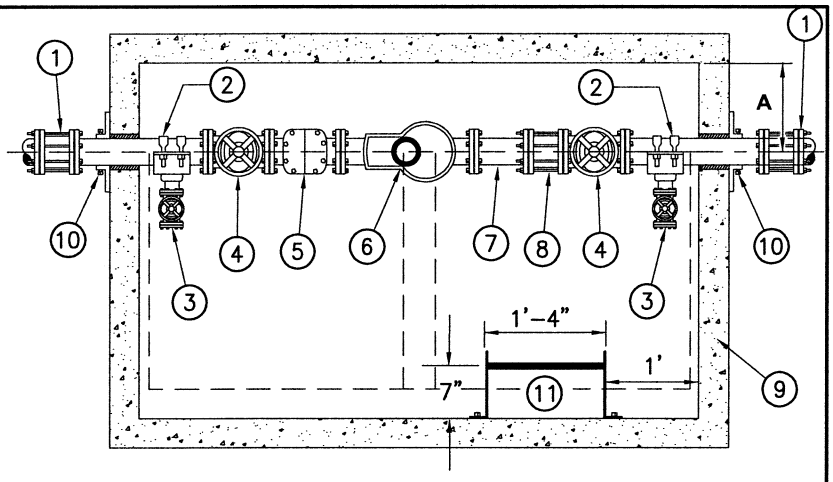
CITY OF ORTING

2" AND SMALLER REDUCED PRESSURE BACKFLOW ASSEMBLY NOTES

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. W-13B
FILE NAME: STD-W-13B		



VAULT COVER W/
LOCKING STEEL DOORS
NOT TO SCALE



PLAN
NOT TO SCALE

MATERIAL LIST:

(1) 1–FLEX CPLG TO FIT, EQUAL ROCKWELL 441 (4"X3" REDUCER, MJ FOR 3" METER INSTALLATION)

(2) 1– DOUBLE STRAP SERVICE SADDLE EQUAL TO FORD FC 202 WITH IPS TAP. ROCKWELL 313.

(3) 1– 2" GATE VALVE WITH BLIND FLANGE OR PLUG.

(4) 1– GATE VALVE FL EQUAL TO 'MUELLER' A–2360–6.

(5) 1–NEPTUNE STRAINER

(6) NEPTUNE TURBINE WATER METER SHALL BE FITTED WITH NEPTUNE'S PROREAD (ARB VI) METER READING SYSTEM.

(7) 1–DI ADPT, FL X PE, LENGTH TO FIT.

(8) 1– CPLG ADPT, FL EQUAL TO ROCKWELL 912.

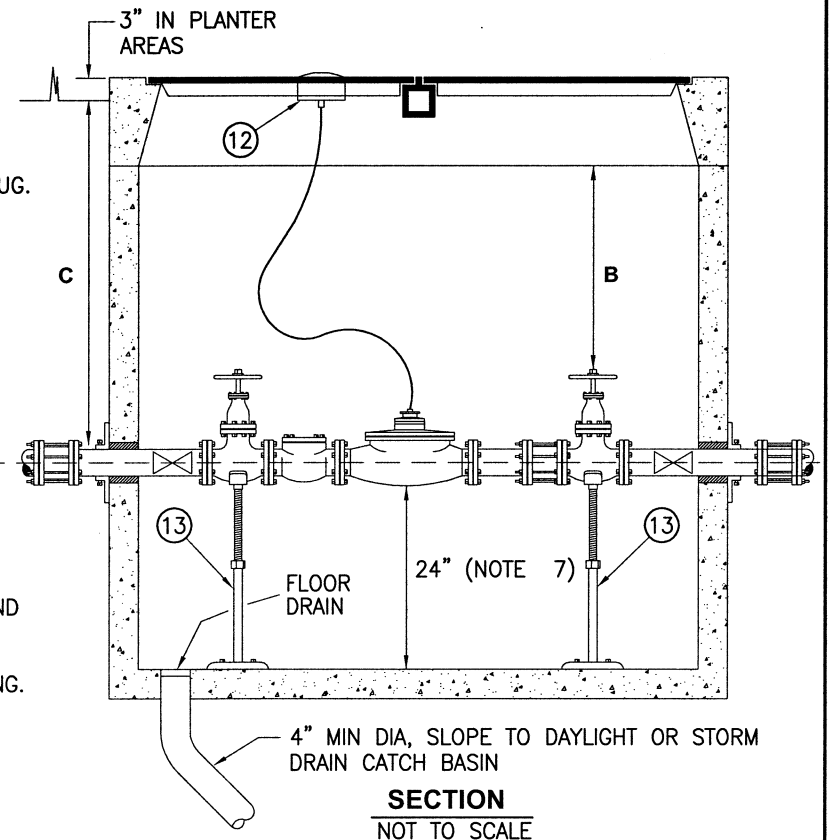
(9) PRECAST CONC VAULT BY 'UTILITY VAULT CO' (SEE TABLE FOR MODEL NO) WITH TWO DIAMOND PLATE DOORS RATED FOR H–20 LOADING.

(10) WELDED FL RESTRAINT OR MEGALUG WALL RING.

(11) 1–GALV STEEL LADDER TO BE ATTACHED TO VAULT.

(12) SENSOR (TO BE MOUNTED IN VAULT ACCESS DOOR).

(13) 1–ADJUSTABLE STANCHION BOLTED TO FLOOR.



SECTION
NOT TO SCALE

METER SIZE	SERVICE SIZE	MINIMUM CLEARANCES			VAULT MODEL	VAULT COVER (WITH SPECIAL OFFSET)
		A	B	C		
3"	3" DIP	12"	6"	2' – 8"	577 – LA	57 TL – 2 – 332 P
4"	4" DIP	12"	6"	2' – 8"	676 – WA	676 – TL – 2 – 332 P
6"	6" DIP	13"	6"	3' – 2"	4484 – LA	4484 – TL 2 – 332 P

FOR NOTES SEE STD–W–14B

CITY OF ORTING

3" TO 6" DOMESTIC METER INSTALLATION

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. **W–14A**
FILE NAME: STD–W–14A		

IMAGES: OrtingLogobandw |
XREFS:

DATE: 02/22/08 3:25pm FILENAME: Std–W–14A

NOTES

1. ALL MATERIALS, INCLUDING METER SHALL BE FURNISHED BY THE CONTRACTOR.
2. ALL PIPE AND FITTINGS 3" AND LARGER SHALL BE CEMENT LINED DUCTILE IRON PIPE, CLASS 52 MINIMUM.
3. PIPING FROM MAIN TO VAULT SHALL BE 4" ON 3" METER INSTALLATION, TEE WITH VALVE ON EXISTING MAIN REQUIRED.
4. VAULTS SHALL NOT BE INSTALLED IN AREAS WITH VEHICULAR TRAFFIC.
5. IN CENTRAL BUSINESS DISTRICT, 3" THROUGH 6" METERS SHALL CONNECT TO WATER MAIN WITH 8" PIPE (SUBSTITUTE 8" X SERVICE REDUCER FOR ITEM (1)).
6. VAULT COVER SHALL INCLUDE TWO LOCKING STEEL DOORS (GALVANIZED DIAMOND PLATE). DOORS SHALL BE CAST IN COVER WITH 8" SPECIAL OFFSET FROM VAULT WALL, AS SHOWN.
7. PROVIDE 24" CLEARANCE BETWEEN VAULT FLOOR AND BOTTOM OF METER. WHERE ELEVATION OF VAULT FLOOR IS TOO LOW TO DRAIN TO DAYLIGHT OR STORM SYSTEM, THIS CLEARANCE CAN BE REDUCED TO A MINIMUM OF 12". IF SUBSTITUTION OF A SHORTER VAULT ALLOWS FLOOR TO DRAIN TO DAYLIGHT OR STORM SYSTEM (APPROVED BY THE UTILITY ON A CASE BY CASE BASIS ONLY). SUBSTITUTE VAULTS ARE AS FOLLOWS:
   - 3" 575-LA WITH 57TL-2-332P COVER (W/ SPECIAL OFFSET)
   - 4" 675-LA WITH 675-TL-2-332P COVER (W/ SPECIAL OFFSET)
8. PROVIDE 2 1/4" DIAMETER OPENING IN STEEL DOOR FOR TR/PL SENSOR.
9. LADDER TO BE BOLTED TO VAULT FLOOR AND TO VAULT WALL AT TWO LOCATIONS. RUNGS SHALL BE SPACED 12" ON CENTER.

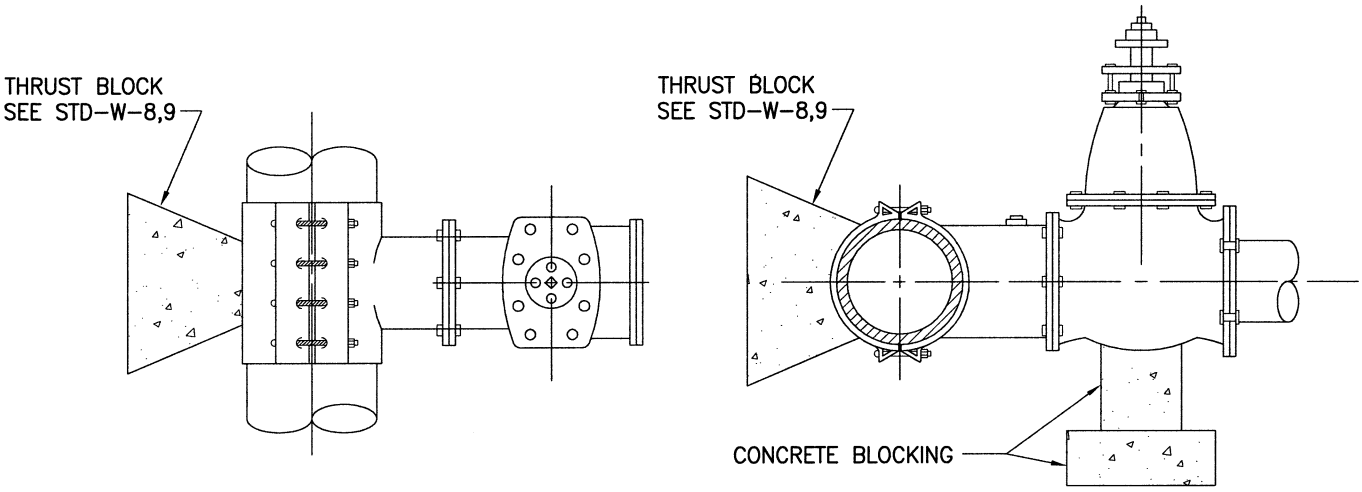
IMAGES: OrtingLogobandw |
XREFS:

DATE: 02/22/08 3:26pm FILENAME: Std-W-14B

CITY OF ORTING

3" TO 6" DOMESTIC METER INSTALLATION NOTES

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. W-14B
FILE NAME: STD-W-14B		



PLAN **ELEVATION**

STAINLESS STEEL TAPPING TEE

NOTES

1. TAPPING SLEEVE & VALVE ASSEMBLY TO BE PRE-APPROVED BY THE CITY ENGINEER. PRESSURE TESTING SHALL BE APPROVED BY THE CITY INSPECTOR PRIOR TO TAPPING FOLLOW AWWA/WSDOT REQUIREMENTS FOR DISINFECTION OF TAPPING SLEEVES AND APPURTENANCES (AWWA STD C651).
2. TAPPING SLEEVE SHALL HAVE 18-8 STAINLESS STEEL BODY, STRAPS, FLANGE, NUTS, AND BOLTS. FULL AND OUTLET GASKETS SHALL CONFORM TO ASTM D2000-80M-4AA607.
3. WET TAPS SHALL NOT BE ALLOWED ON SAME SIZE OR SMALLER MAINS.
4. WRAP ALL PIPE AND FITTINGS WITH PLASTIC THAT COME IN CONTACT WITH THRUST BLOCKS.

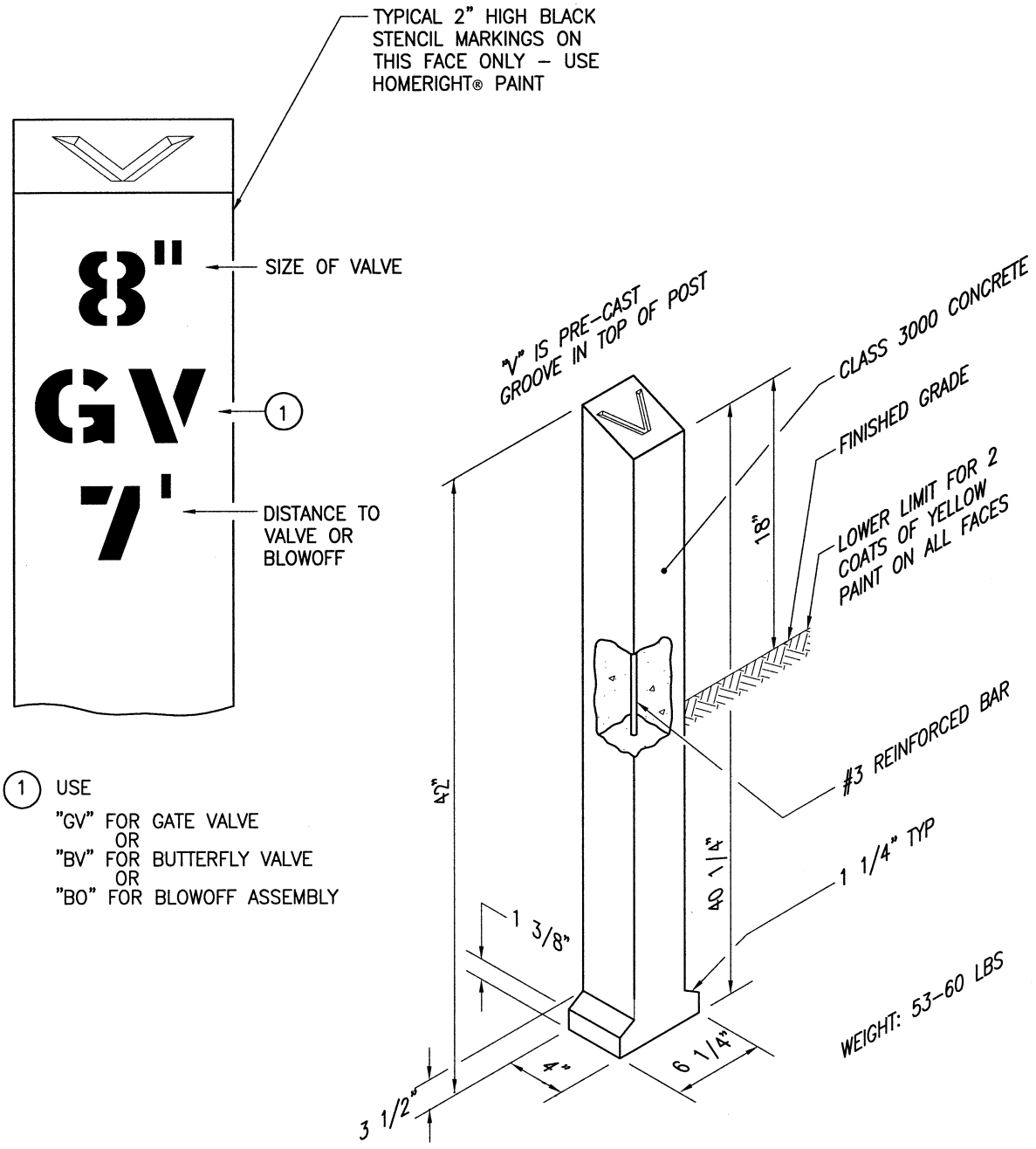
IMAGES: OrtingLogobandw |
XREF'S:

DATE: 02/22/08 3:33pm FILENAME: Std-W-15

CITY OF ORTING

TAPPING SLEEVE & VALVE ASSEMBLIES

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. W-15
FILE NAME: STD-W-15		



(1) USE
"GV" FOR GATE VALVE
OR
"BV" FOR BUTTERFLY VALVE
OR
"BO" FOR BLOWOFF ASSEMBLY

NOTES

1. THE FOG TITE INC VALVE MARKER POST WITH THE "WATER" LEGEND IS THE PRE-APPROVED PRODUCT. ALL OTHERS REQUIRE THE WRITTEN APPROVAL OF THE ENGINEER PRIOR TO INSTALLATION.
2. A VALVE MARKER POST SHALL BE REQUIRED WHENEVER A VALVE IS LOCATED OUTSIDE OF PAVED AREAS.

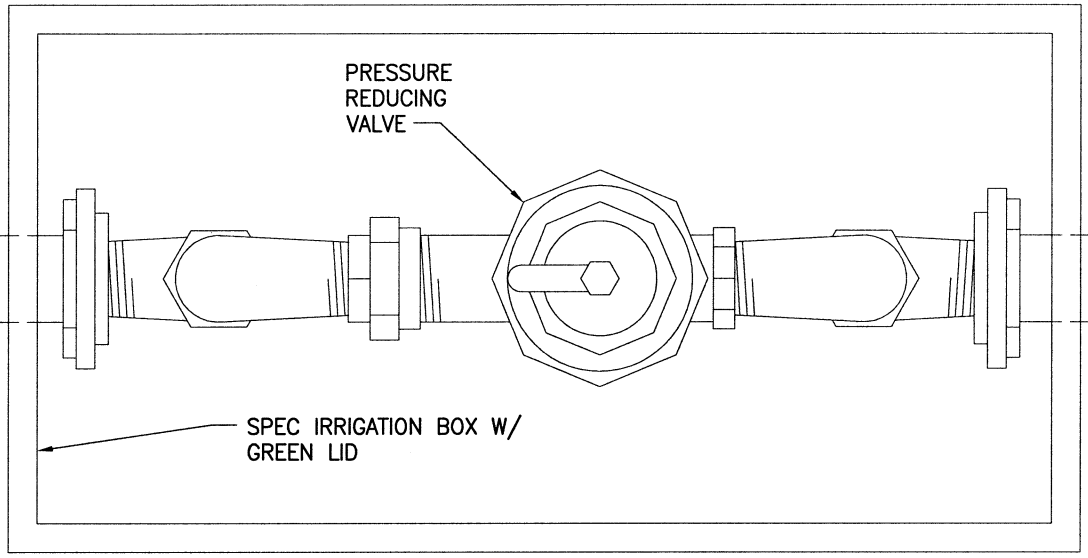
CITY OF ORTING

VALVE MARKER POST

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. W-16
FILE NAME: STD-W-16		

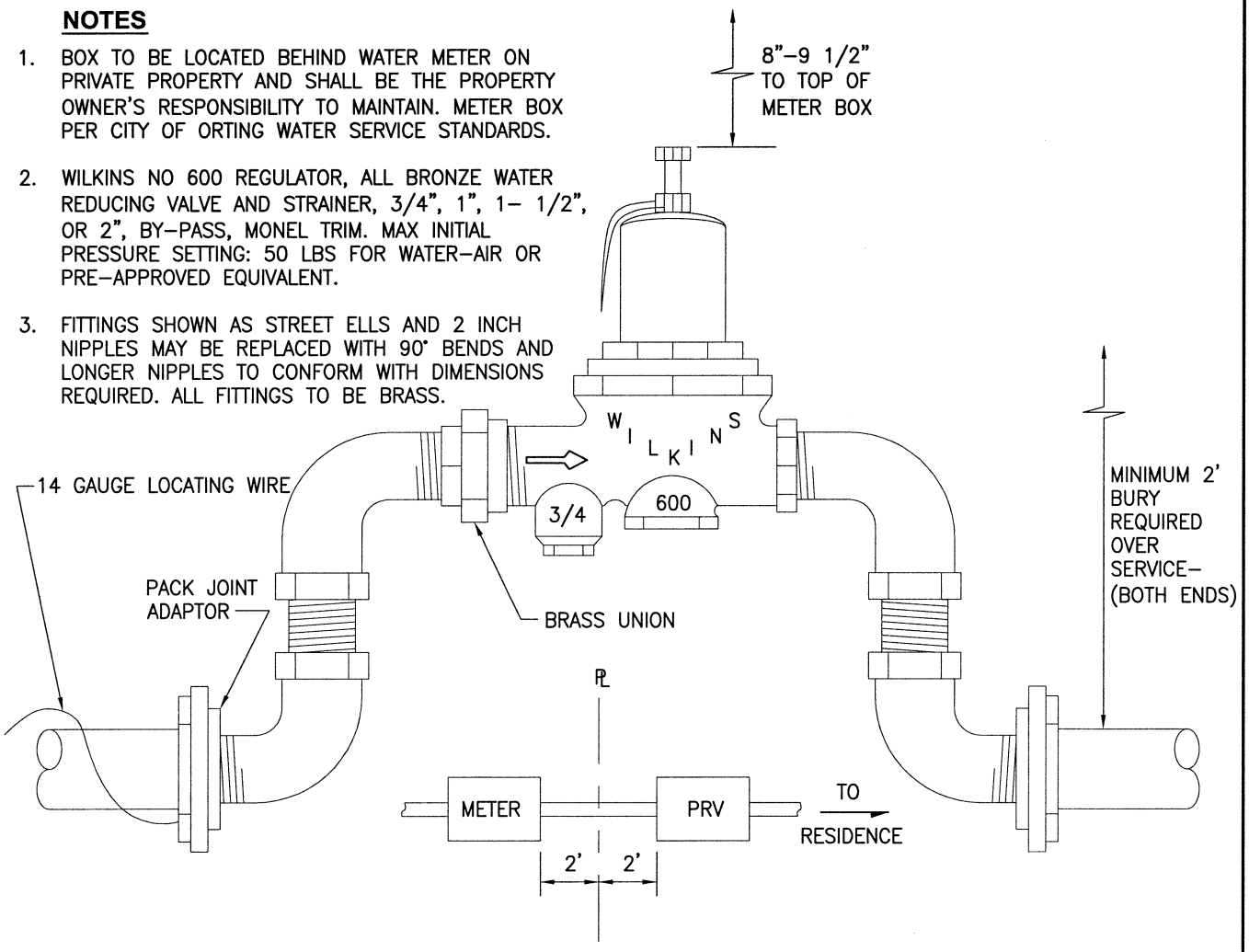
IMAGES: OrtingLogobandw |
XREF'S:

DATE: 02/22/08 3:44pm FILENAME: Std-W-16



NOTES

1. BOX TO BE LOCATED BEHIND WATER METER ON PRIVATE PROPERTY AND SHALL BE THE PROPERTY OWNER'S RESPONSIBILITY TO MAINTAIN. METER BOX PER CITY OF ORTING WATER SERVICE STANDARDS.
2. WILKINS NO 600 REGULATOR, ALL BRONZE WATER REDUCING VALVE AND STRAINER, 3/4", 1", 1- 1/2", OR 2", BY-PASS, MONEL TRIM. MAX INITIAL PRESSURE SETTING: 50 LBS FOR WATER-AIR OR PRE-APPROVED EQUIVALENT.
3. FITTINGS SHOWN AS STREET ELLS AND 2 INCH NIPPLES MAY BE REPLACED WITH 90° BENDS AND LONGER NIPPLES TO CONFORM WITH DIMENSIONS REQUIRED. ALL FITTINGS TO BE BRASS.



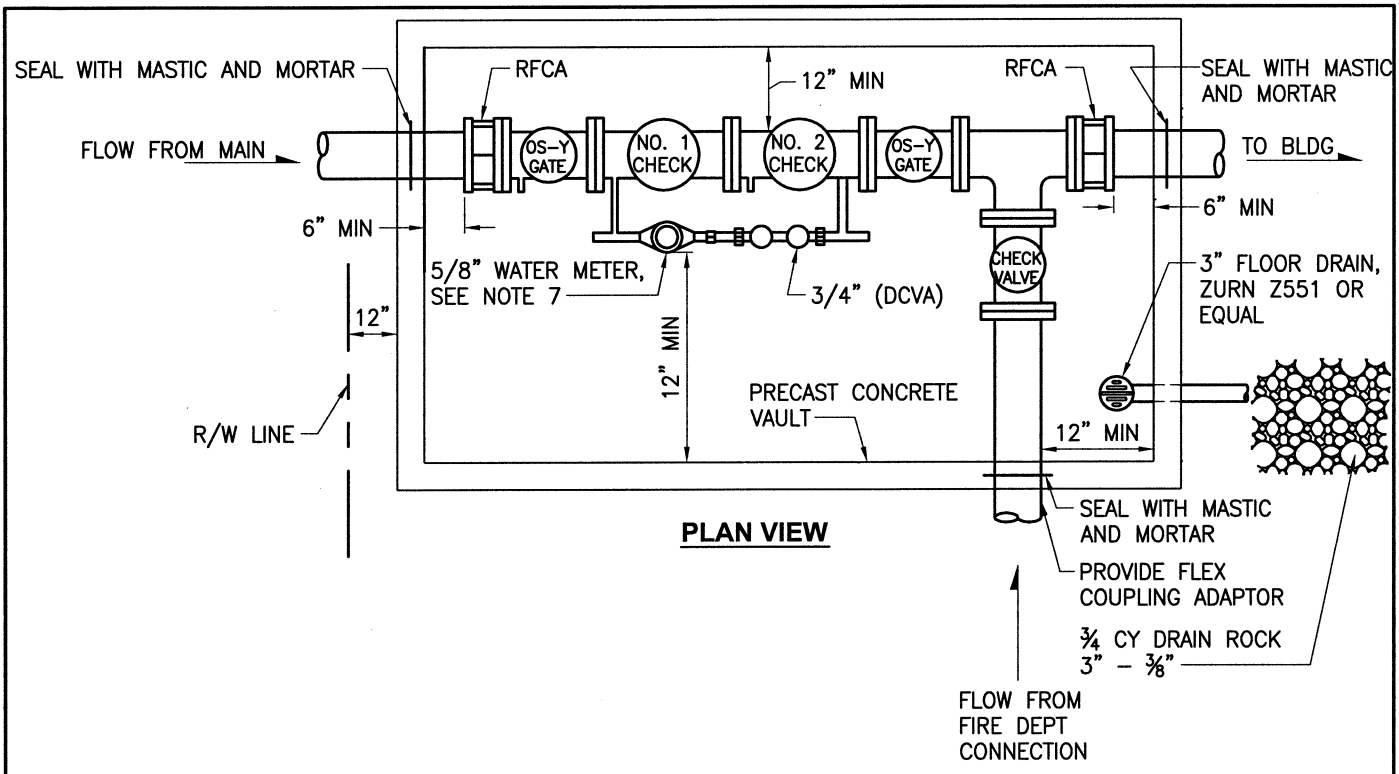
IMAGES: OrtingLogobandw |
XREFS:

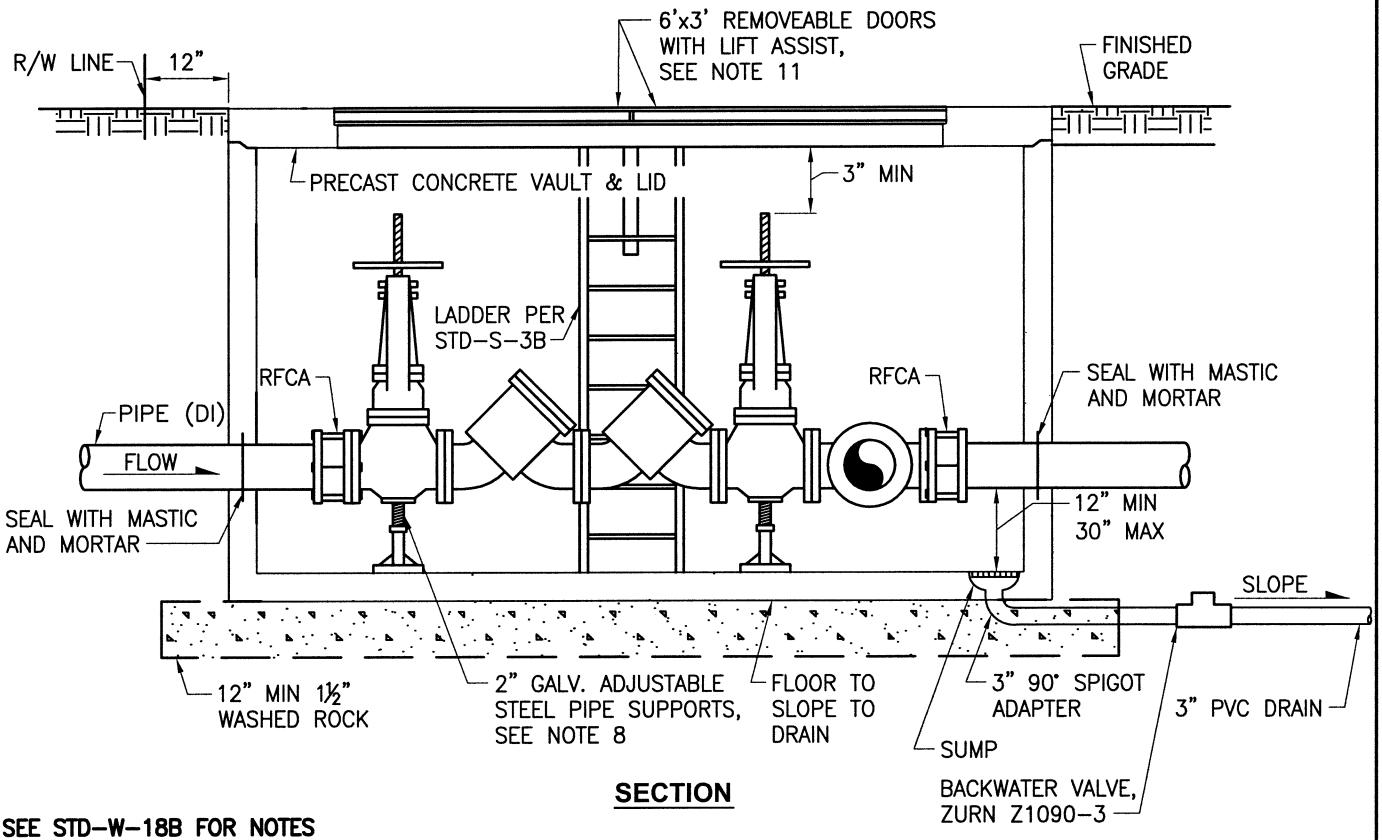
DATE: 02/22/08 4:09pm FILENAME: Std-W-17

CITY OF ORTING

PRESSURE REDUCING VALVE WITH BOX FOR 3/4", 1", 1-1/2" OR 2" SERVICE LINES

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. W-17
FILE NAME: STD-W-17		





SEE STD-W-18B FOR NOTES

IMAGES:
XREFS:

DATE: 02/22/08 4:14pm FILENAME: STD-W-18A

CITY OF ORTING

DOUBLE DETECTOR-CHECK VALVE ASSEMBLY INSTALLATION

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. W-18A
FILE NAME: STD-W-18A		

NOTES

1. INSTALLATION OF THE APPROVED BACKFLOW ASSEMBLY SHALL BE IN ACCORDANCE WITH THE "ACCEPTED PROCEDURE AND PRACTICE IN CROSS-CONNECTION CONTROL" MANUAL, OF THE CROSS-CONNECTION CONTROL COMMITTEE, PACIFIC N.W. SECTION OF THE A.W.W.A., MAY 1990, 5TH EDITION MANUAL OR CURRENT ADDITION.

2. BACKFLOW ASSEMBLY MUST BE SELECTED FROM WASHINGTON STATE DEPARTMENT OF HEALTH LIST OF BACKFLOW PREVENTION ASSEMBLIES APPROVED FOR INSTALLATION IN WASHINGTON STATE, LATEST EDITION.

3. UPON INSTALLATION OF THE APPROVED BACKFLOW ASSEMBLY, (AND ANNUALLY THEREAFTER). THE ASSEMBLY SHALL BE TESTED BY A WASHINGTON STATE CERTIFIED BACKFLOW ASSEMBLY TESTER, WHO SHALL PROMPTLY FORWARD THE TEST RESULTS TO: THE CITY OF ORTING, 110 TRAIN ST. ORTING, WA 98360, PRIOR TO OCCUPANCY.

4. DOUBLE DETECTOR CHECK VALVE ASSEMBLY OS & Y GATE VALVES SHALL HAVE SUPERVISED TAMPER SWITCHES.

5. DDCVA MUST BE PURCHASED AS A UNIT. NO MODIFICATIONS TO ASSEMBLY ARE ALLOWED.

6. WATER METER SHALL BE A T10 PROREAD NEPTUNE AND 6' OF WIRE WITH RADIO OR AN APPROVED EQUAL.

7. PIPE SUPPORTS SHALL BE RUST-PROTECTED WITH ALUMINUM PAINT.

8. THE FIRE DEPARTMENT CONNECTION SHALL BE LOCATED WITHIN 25 FEET OF A FIRE HYDRANT BUT NOT LESS THAN 10 FEET.

9. WHEN DDCVA IS LOCATED WITHIN A BUILDING, THE BALL DRIP SHALL DRAIN TO THE NEAREST APPROVED CATCH BASIN.

10. DRAIN SHALL DISCHARGE TO STORM SYSTEM OR BY GRAVITY TO CONVEYANCE SWALE. IF FALL IS NOT AVAILABLE, DRAIN SHALL BE FITTED WITH A BACKWATER VALVE AND DISCHARGE TO ¾ CY OF DRAIN ROCK.

11. REMOVABLE DOORS SHALL BE A MINIMUM OF 6'-0" X 3'-0" DIAMOND PLATE HINGED LOCKING DOORS, WITH HINGES LOCATED AT EACH END OF OPENING. DOORS SHALL HAVE AN H-20 LOAD RATING IN AREAS THAT ARE SUBJECT TO VEHICLE TRAFFIC. DOORS SHALL BE SPRING LOADED WITH OPEN POSITION LOCK.

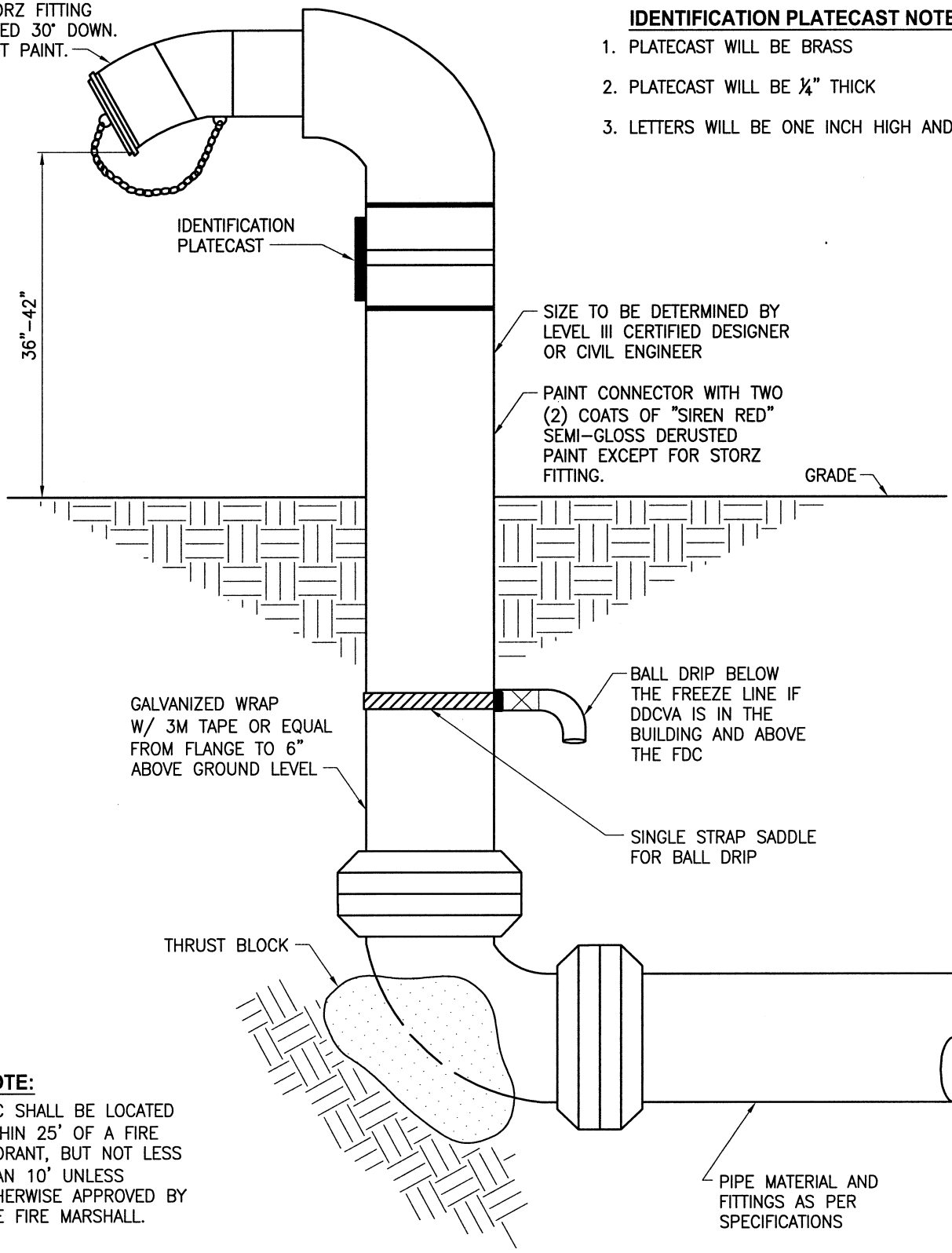
IMAGES:
XREFS:

DATE: 02/22/08 4:17pm FILENAME: STD-W-18B

CITY OF ORTING

DOUBLE DETECTOR-CHECK VALVE ASSEMBLY INSTALLATION NOTES

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. W-18B
FILE NAME: STD-W-18B		



IDENTIFICATION PLATECAST NOTES:

1. PLATECAST WILL BE BRASS
2. PLATECAST WILL BE ¼" THICK
3. LETTERS WILL BE ONE INCH HIGH AND RAISED

NOTE:

FDC SHALL BE LOCATED WITHIN 25' OF A FIRE HYDRANT, BUT NOT LESS THAN 10' UNLESS OTHERWISE APPROVED BY THE FIRE MARSHALL.

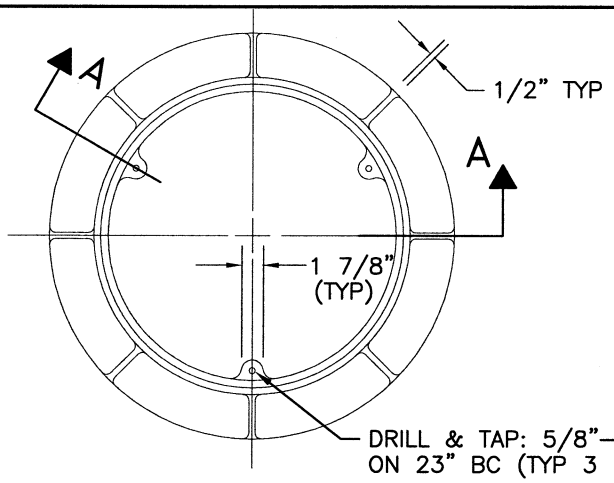
IMAGES:
XREFS:

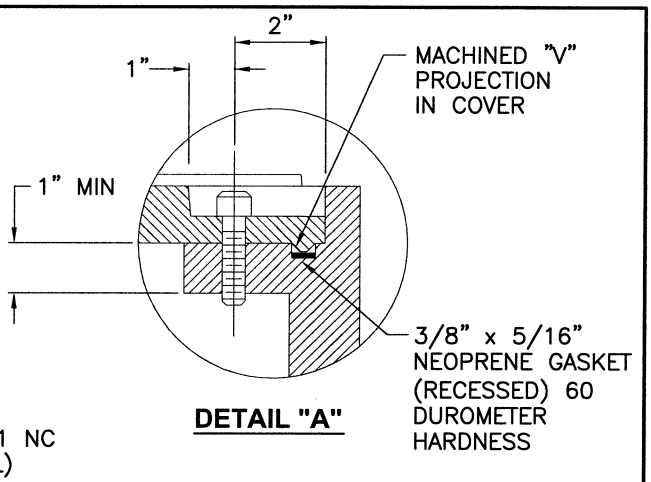
DATE: 02/22/08 4:41pm FILENAME: STD-W-19

CITY OF ORTING

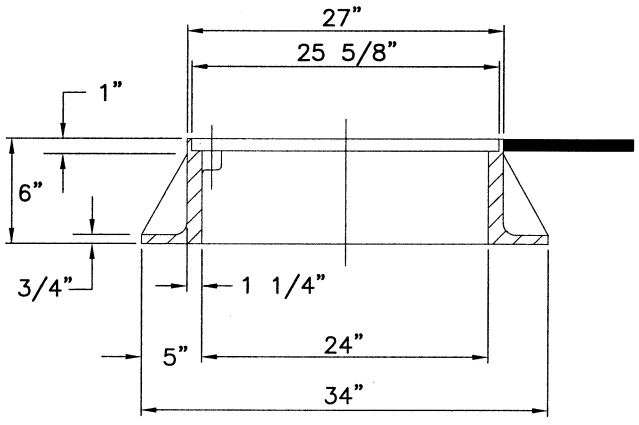
FIRE DEPARTMENT CONNECTION

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. W–19
FILE NAME: STD–W–19		



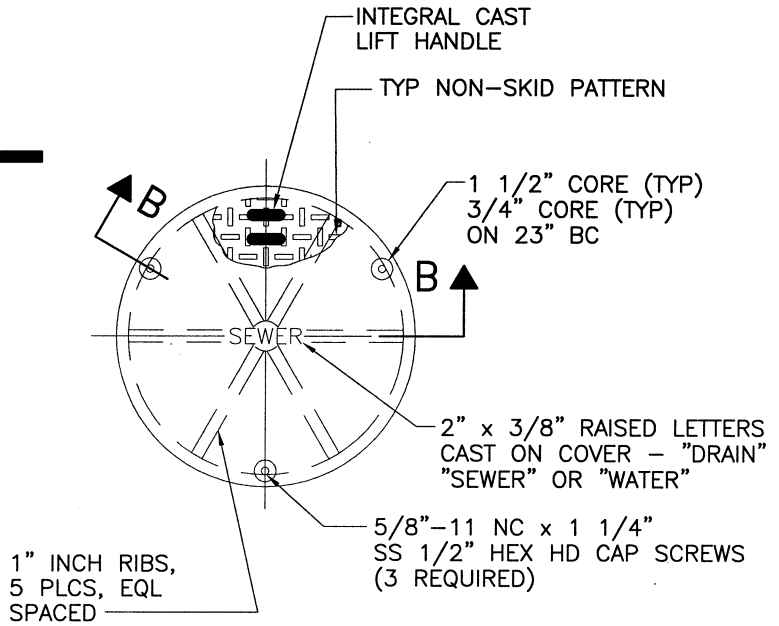


DETAIL "A"



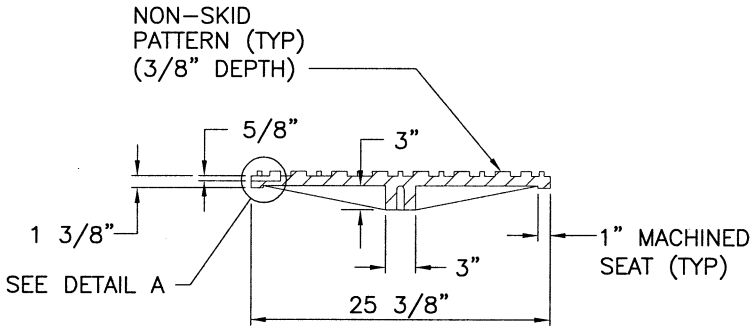
SECTION A-A

*TOP OF FRAME SHALL BE ADJUSTED EVEN WITH ROADWAY SECTION



NOTES:

1. RATING – H–20
   APPROX. WEIGHT–
   FRAME – 261 LBS
   COVER – 170 LBS
2. OLYMPIC FOUNDRY PART NO. MH 36W/T IS THE PRE–APPROVED PRODUCT. ALL OTHERS REQUIRE WRITTEN APPROVAL OF THE CITY ENGINEER PRIOR TO INSTALLATION.
3. ALL SS MHS SHALL BE WATERTIGHT AND DISPLAY THE CITY LOGO, UNLESS APPROVED BY CITY ENGINEER.



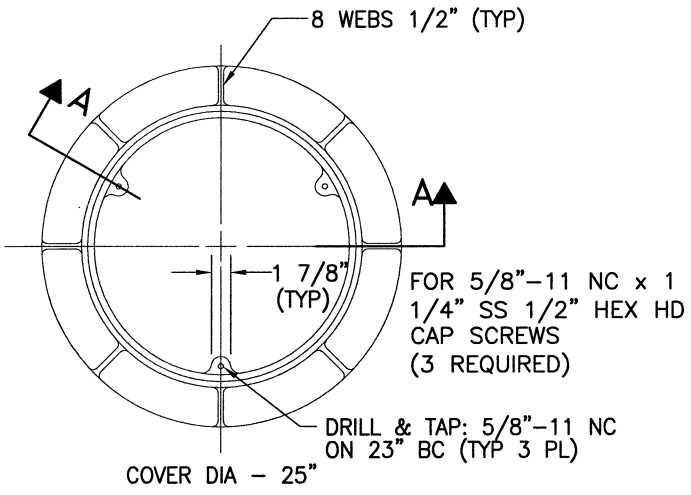
SECTION B-B

CITY OF ORTING

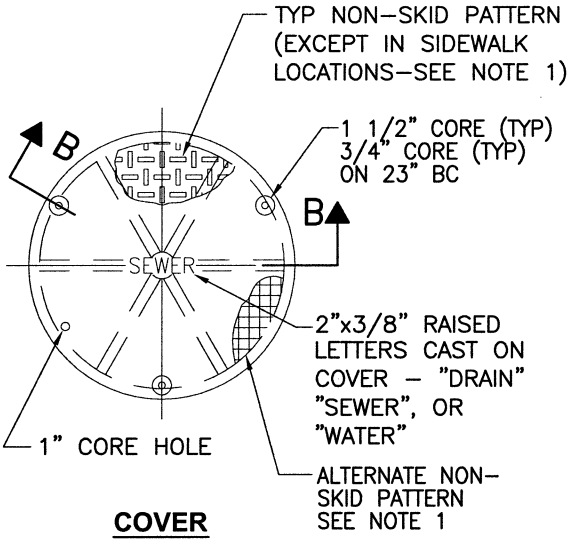
24" WATERTIGHT MANHOLE FRAME AND COVER

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. S–1A
FILE NAME: STD–S–1A		

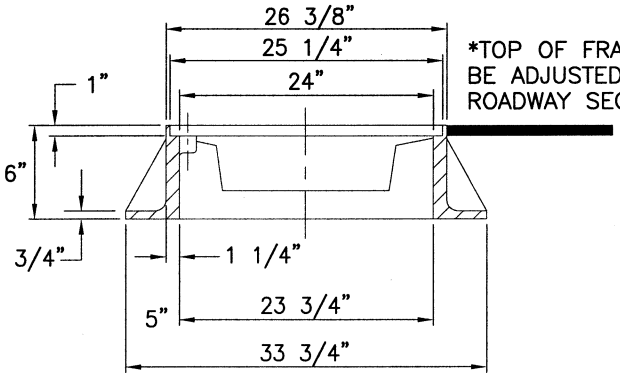
FILE: Std-s-1A
DATE: Feb 26, 2008 – 11:22am PLOTTED BY: morrideo
IMAGES: OrtingLogobandw |
XREF'S:



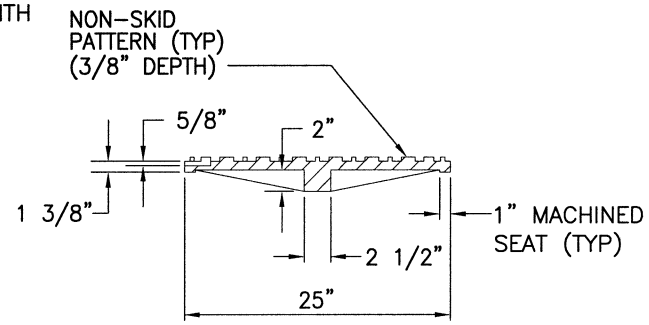
FRAME



COVER



SECTION A-A

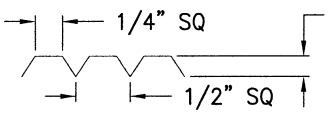


SECTION B-B

NOTES

RATING - H-20
APPROX. WEIGHT-
FRAME - 229 LBS
COVER - 157 LBS

1. THE ALTERNATE NON-SKID PATTERN SHALL BE UTILIZED WHEN THE COVER IS LOCATED IN THE SIDEWALK.
2. OLYMPIC FOUNDRY PART NO. MH 30D/T IS THE PRE-APPROVED PRODUCT. ALL OTHERS REQUIRE WRITTEN APPROVAL OF THE ENGINEER PRIOR TO INSTALLATION.



ALTERNATE COVER NON-SKID DESIGN DETAIL

(SEE NOTE 1)

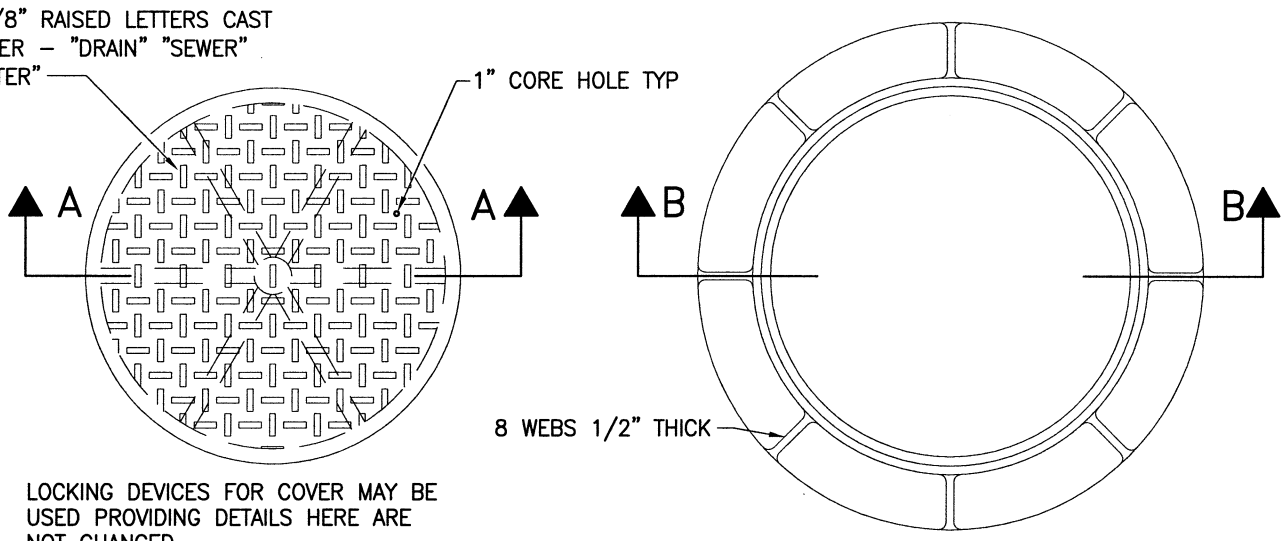
IMAGES: OrtingLogobandw |
XREF's:

DATE: 02/26/08 11:23am FILENAME: Std-s-1B

CITY OF ORTING

24" LOCKING MANHOLE FRAME AND COVER

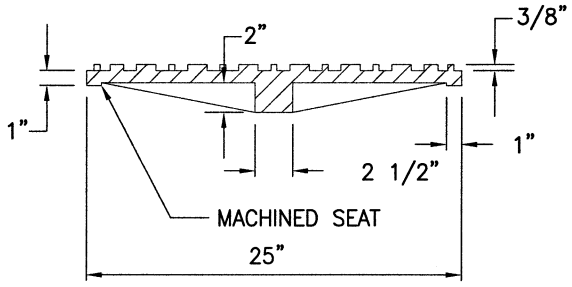
SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. S-1B
FILE NAME: STD-S-1B		



LOCKING DEVICES FOR COVER MAY BE USED PROVIDING DETAILS HERE ARE NOT CHANGED

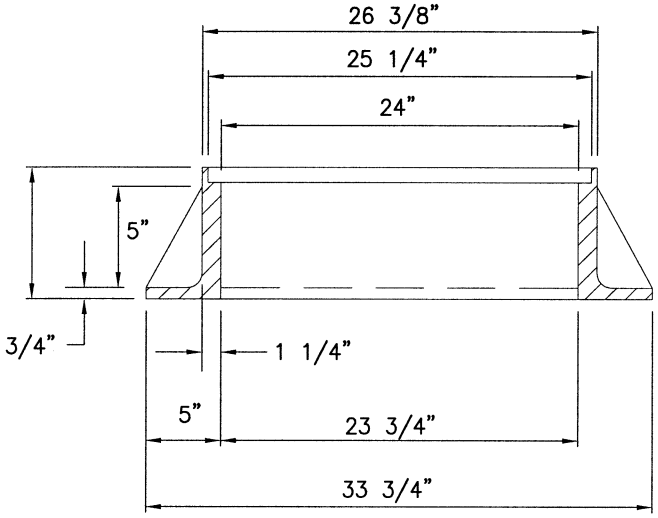
HEAVY RINGS – (9" DEPTH) USE WHERE PORTLAND CEMENT CONCRETE PAVEMENT IS BEING PLACED TO THICKNESS GREATER THAN 6"

LIGHT RINGS – (6" DEPTH) USE WHERE PAVEMENT THICKNESS IS 6" OR LESS



SECTION A-A

DUCTILE IRON NON–LOCKING COVER
MIN WEIGHT – 150 LBS



SECTION B-B

GRAY IRON FRAME MINIMUM WEIGHT – 207 LBS

NOTES

1. RING AND COVER CASTINGS SHALL CONFORM TO WSDOT SPECIFICATION 9–05.15(1).
2. SEAT OF COVER & FRAME MACHINED.
3. NON–ROCKING FIT FOR MANHOLE COVERS.
4. BREAK ALL SHARP CORNERS WHERE POSSIBLE.
5. CASTING TO BE SHOT BLASTED AND FREE FROM SURFACE SAND AND SCALE.
6. CASTING TO BE SMOOTH, TRUE TO PATTERN, FREE FROM BLOWHOLES, POROSITY, HARD SPOTS, SHRINK HOLES, WARP, OR ANY OTHER DEFECTS WHICH COULD IMPAIR SERVICEABILITY.
7. CASTINGS SHALL BE COATED AS DIRECTED BY THE ENGINEER.
8. OLYMPIC FOUNDRY PART NO. MH 30, MAY SUBSTITUTE OLYMPIC FOUNDRY PART NO. 5920, TYPE "C" LID WITH 1–1" DRILL HOLES OR EQUIVALENT.

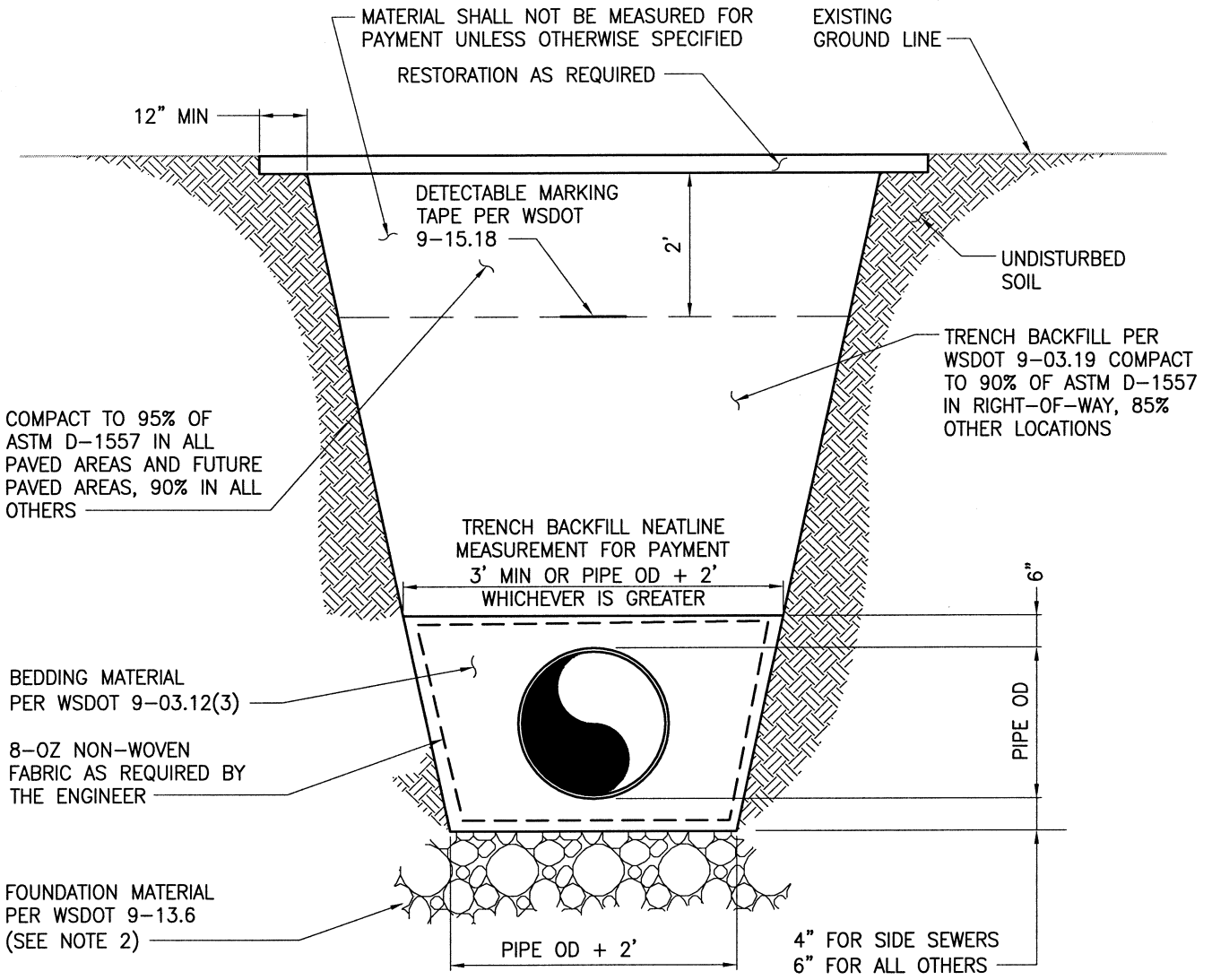
IMAGES: OrtingLogobondw |
XREF'S:

DATE: 02/15/08 11:46am FILENAME: Std-s-1C

CITY OF ORTING

STANDARD 24" MANHOLE FRAME AND COVER

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. S–1C
FILE NAME: STD–S–1C		



NOTES

1. FOUNDATION MATERIAL REQUIRED WHERE NECESSARY TO ACHIEVE A FIRM AND UNYIELDING SUB-BASE. DEPTH AS REQUIRED.
2. NO NATIVE MATERIAL SHALL BE USED FOR BACKFILL UNLESS APPROVED BY THE CITY ENGINEER IN WRITING.
3. SEWER MAIN AND LATERAL INSTALLATIONS SHALL BE VIDEO INSPECTED. SEE SPECIAL PROVISIONS FOR REQUIREMENTS.
4. CONTRACTOR SHALL MAINTAIN A MINIMUM OF 18" OF VERTICAL SEPARATION AND 10' OF HORIZONTAL SEPARATION BETWEEN WATER AND SEWER LINES OR ENCASE PER SECTION C1-9 OF DOE CRITERIA FOR SEWAGE WORKS DESIGN.

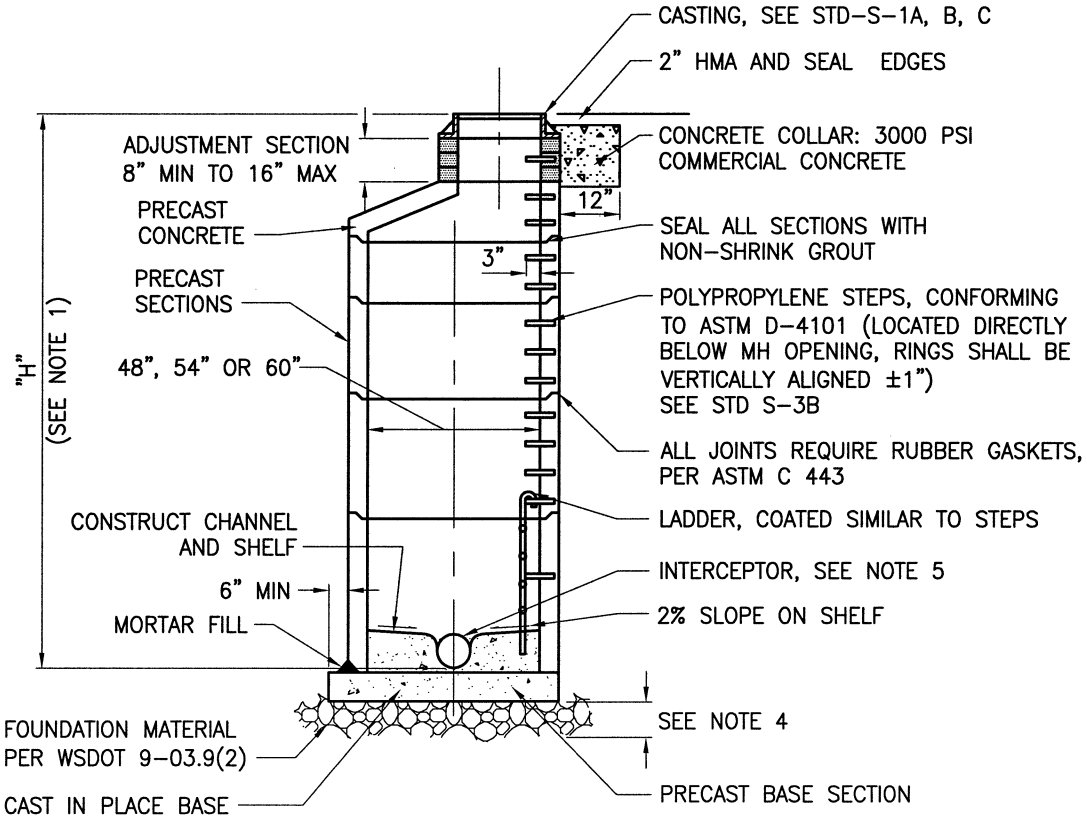
IMAGES:
XREFS:

DATE: 01/03/08 3:35pm FILENAME: Std-s-2

CITY OF ORTING

SANITARY SEWER OR STORM TRENCH

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. S-2
FILE NAME: STD-S-2		



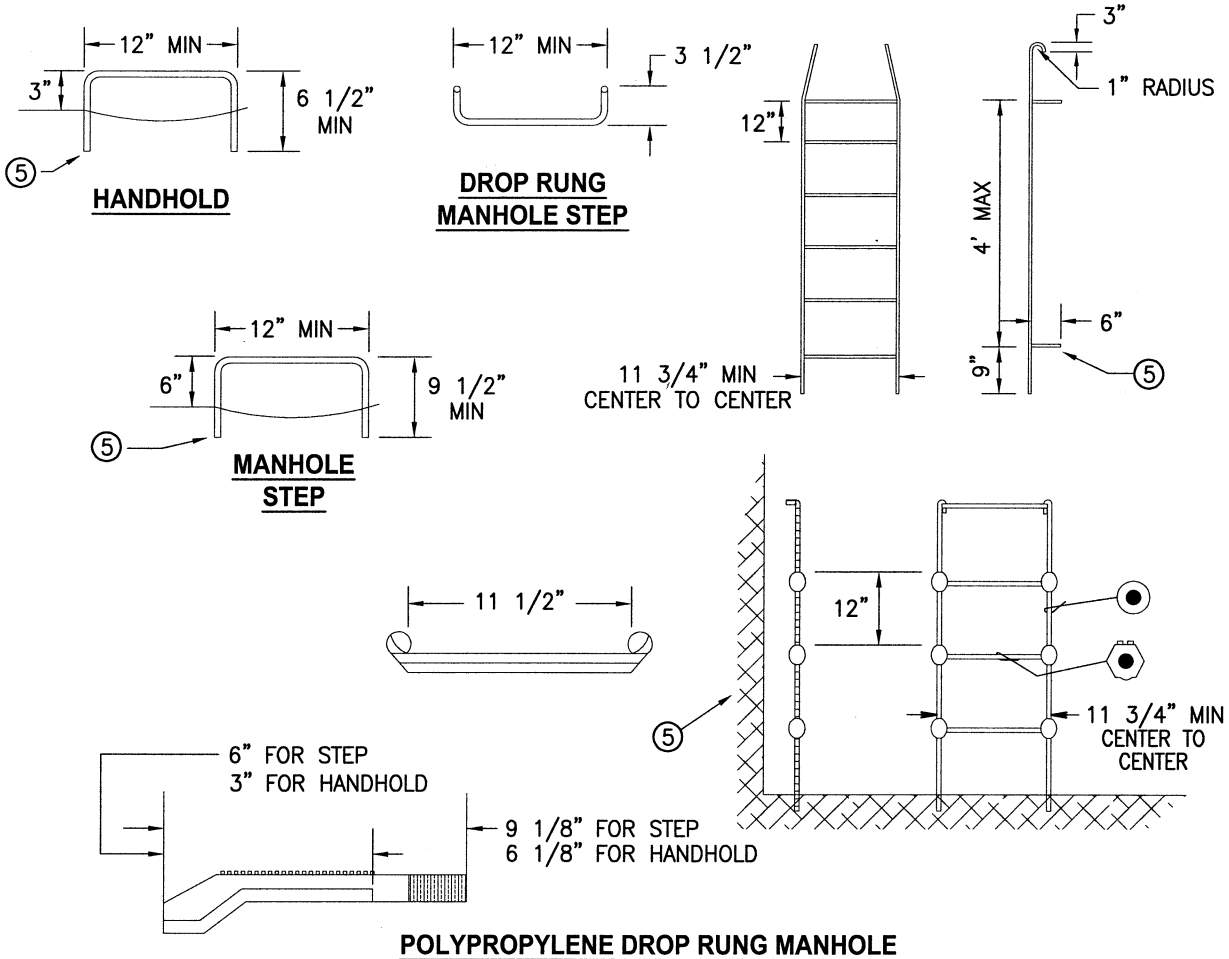
NOTES

1. WHEN "H" IS LESS THAN 8' USE TYPE III MANHOLE, SEE WSDOT STD PLAN B-23c.
2. WHEN 'H' IS GREATER THAN 20', MANHOLE SHALL BE 60" DIAMETER.
3. WALL OPENING REQUIREMENTS FOR PIPE, SEE WSDOT STD PLAN B-23a & B-23c.
4. FOUNDATION MATERIAL SHALL BE 6" MIN OR AS REQUIRED TO ACHIEVE A FIRM AND UNYIELDING SUB-BASE.
5. USE KOR-N-SEAL BOOT OR OTHER APPROVED WATER TIGHT FLEXIBLE BOOT.
6. MANHOLES SHALL BE SEALED WITH TAMOSEAL CEMENT BASED WATERPROOF FINISH OR APPROVED EQUAL.

CITY OF ORTING

TYPE 1 MANHOLE

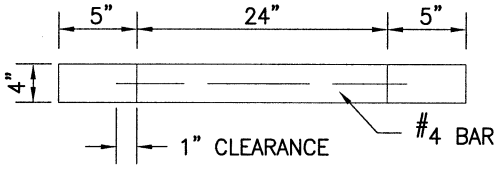
SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. S-3A
FILE NAME: STD-S-3A		



POLYPROPYLENE DROP RUNG MANHOLE STEP AND PREFABRICATED LADDER

NOTES

1. MANHOLE STEPS CONFORMING TO SECTION R, ASTM C-478. AASHTO M-199 REQUIREMENTS AND REQUIREMENTS OF ASTM D-4101 FOR POLYPROPYLENE AND ASTM A-615 FOR 1/2" GRADE 60 DEFORMED REINFORCING BAR FOR POLYPROPYLENE STEPS, AND ALL WISHA AND OSHA SPECIFICATIONS, ARE ACCEPTABLE PROVIDED THEY ARE PRE-APPROVED BY THE DIRECTOR OF PUBLIC WORKS.
2. DROP RUNG STEPS ARE TO BE #8 GALVANIZED DEFORMED REBAR.
3. PREFABRICATED LADDERS ARE TO BE #7 GALVANIZED SMOOTH STEEL.
4. MANHOLE PREFABRICATED LADDER STEPS SHALL BE PARALLEL OR APPROXIMATELY RADIAL AT THE OPTION OF THE MANUFACTURER, EXCEPT THAT ALL STEPS IN ANY MANHOLE SHALL BE THE SAME.
5. PENETRATION OF OUTER WALL BY A STEP LADDER OR LADDER LEG IS PROHIBITED.



GRADE RING

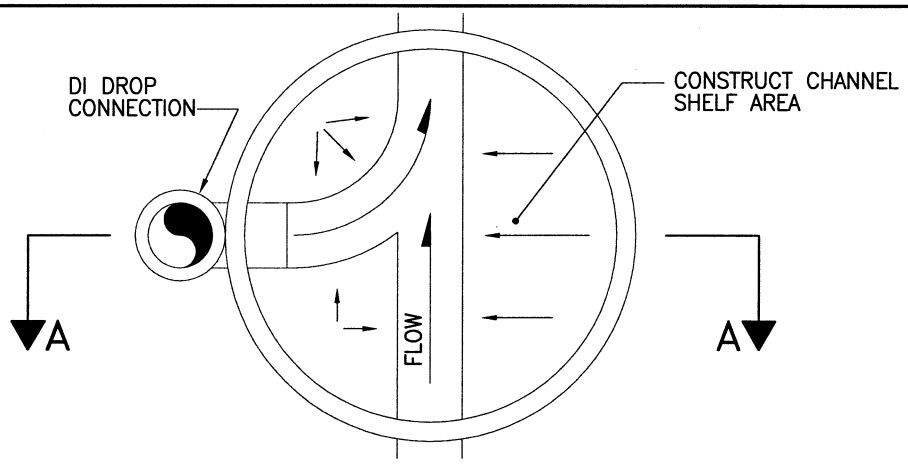
CITY OF ORTING

MANHOLE RING AND SAFETY STEPS

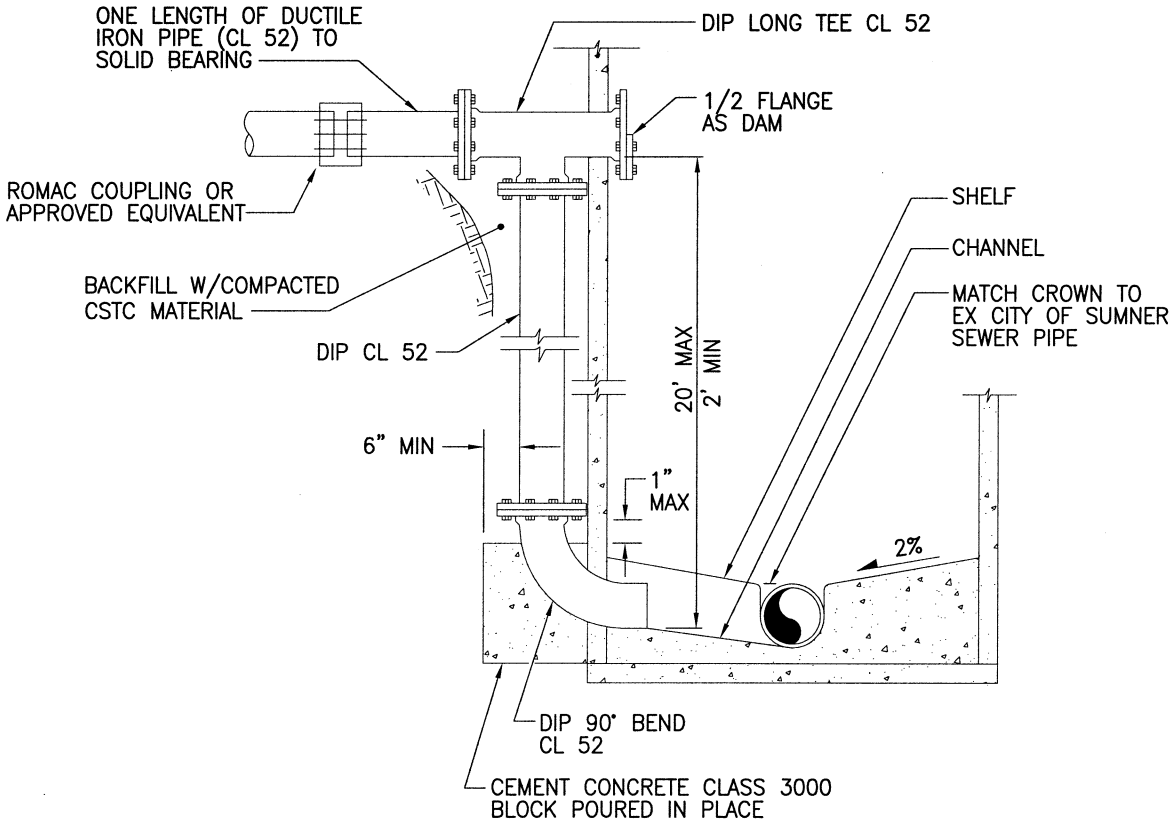
SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. S-3B
FILE NAME: STD-S-3B		

NOTES

1. OUTSIDE DROPS MUST BE CONSTRUCTED WITH DUCTILE IRON AS SHOWN; CONC ENCASED PVC IS NOT ACCEPTABLE.
2. USE RIGID RESTRAINED FITTINGS AT ALL CONNECTIONS.
3. DIP SHALL HAVE CEMENT–MORTAR LINING MEETING THE REQUIREMENTS OF AWWA C104.
* 4. SHALL OBTAIN APPROVAL FROM CITY ENGINEER PRIOR TO IMPLEMENTING.



CITY OF ORTING MANHOLE PLAN



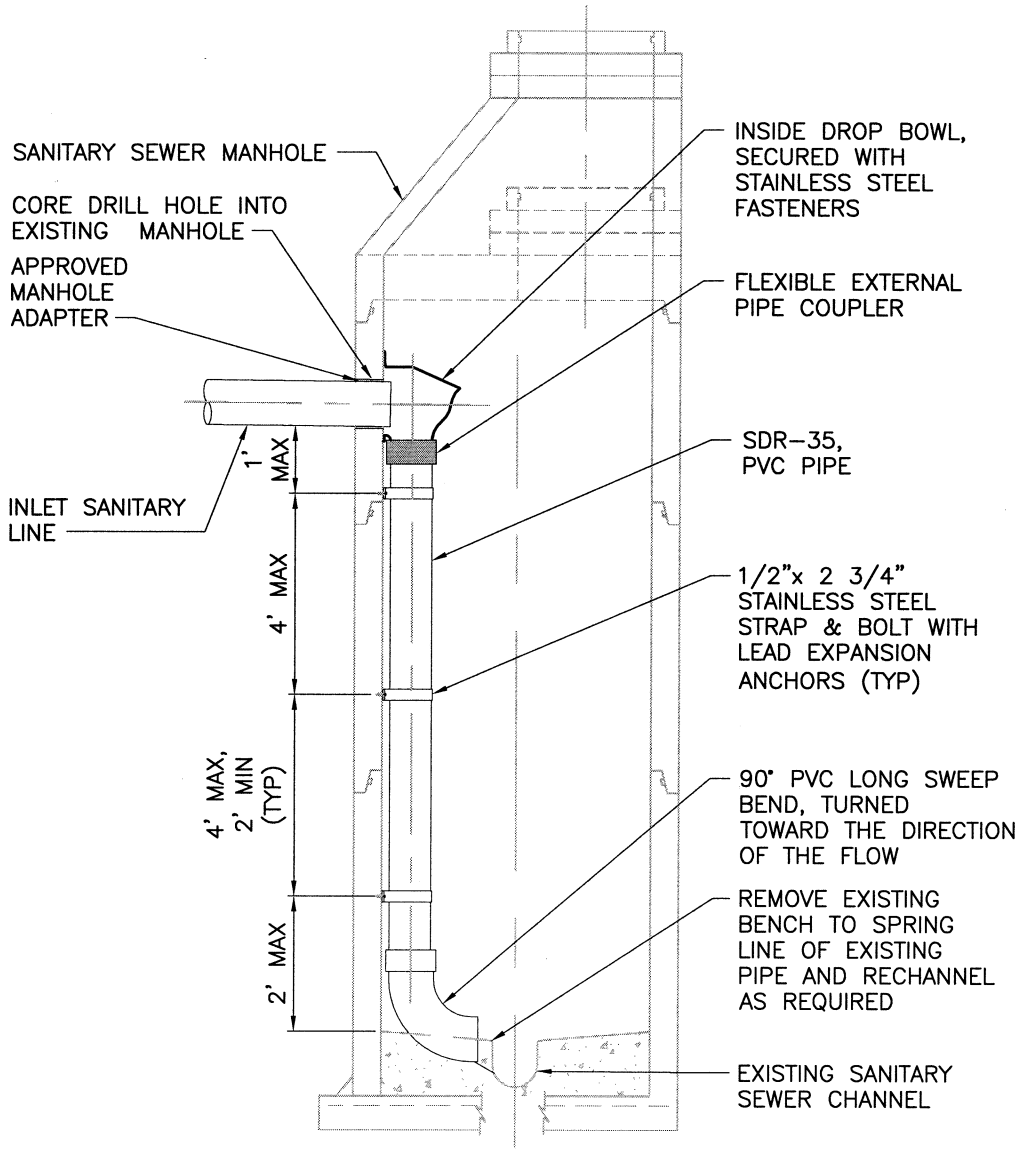
CHANNEL SECTION "A-A"

CITY OF ORTING

DUCTILE IRON DROP CONNECTION

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. S–3C
FILE NAME: STD–S–3C		

FILE: Std-s-3C
DATE: Feb 26, 2008 - 12:00pm PLOTTED BY: morridea IMAGES: OrtingLogobandw | XREF'S:



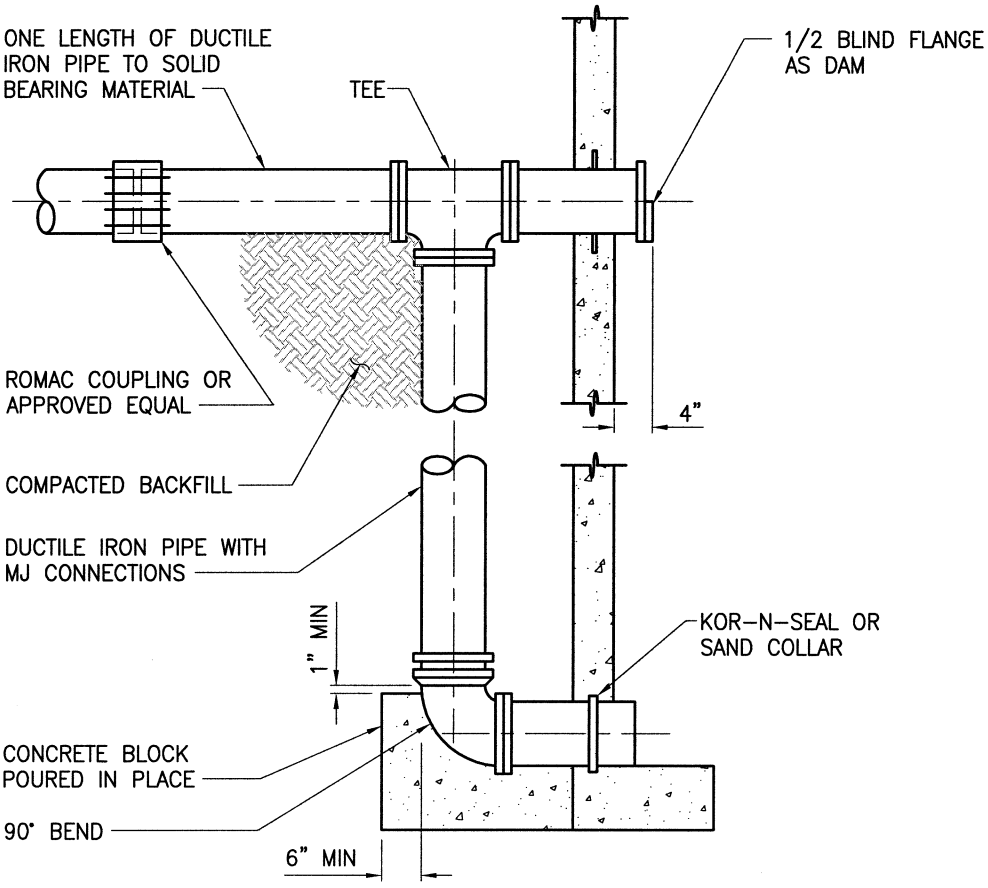
NOTES

1. INSIDE DROP INSTALLATION SHALL BE APPROVED BY THE CITY ENGINEER.
2. DROP BOWL SHALL BE "RELINER-DURAN, INC." BRAND OR APPROVED EQUAL. SELECT A SIZE APPROPRIATE TO FLOW RATE AND PIPE DIAMETER. CENTER BOWL DIRECTLY UNDER INLET PIPE, ALLOW APPROXIMATELY 1" CLEARANCE BETWEEN PIPE AND BOWL. ATTACH BOWL TO MANHOLE WALL WITH 3/8"ø STAINLESS STEEL BOLTS INTO LEAD EXPANSION ANCHORS.
3. TRIM INLET PIPE SO THAT 2" PROTRUDES INTO MANHOLE. FOR IMPROVED FLOW CONTROL, CUT A 1" LONG 'V' SHAPED NOTCH AT BOTTOM EDGE OF INLET PIPE.
4. PIPE STRAP AND APPURTENANCES SHALL BE STAINLESS STEEL. ALL MATERIALS SHALL BE SUBMITTED TO THE CITY FOR APPROVAL PRIOR TO INSTALLATION.
5. MANHOLE SIZE SHALL INCREASE 1 DIAMETER FOR INSIDE DROP (48"ø——54")
   (54"ø——60"ETC)

CITY OF ORTING

MANHOLE INSIDE DROP DETAIL

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. S-4A
FILE NAME: STD-S-4A		



IMAGES: OrtingLogobandw |
XREFS:

DATE: 01/03/08 3:52pm FILENAME: Std-s-4B

CITY OF ORTING

OUTSIDE MANHOLE DROP CONNECTION

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. S-4B
FILE NAME: STD-S-4B		

DATE: 01/03/08 11:26am FILENAME: Std-s-5A

IMAGES:
XREF'S:

CITY OF ORTING

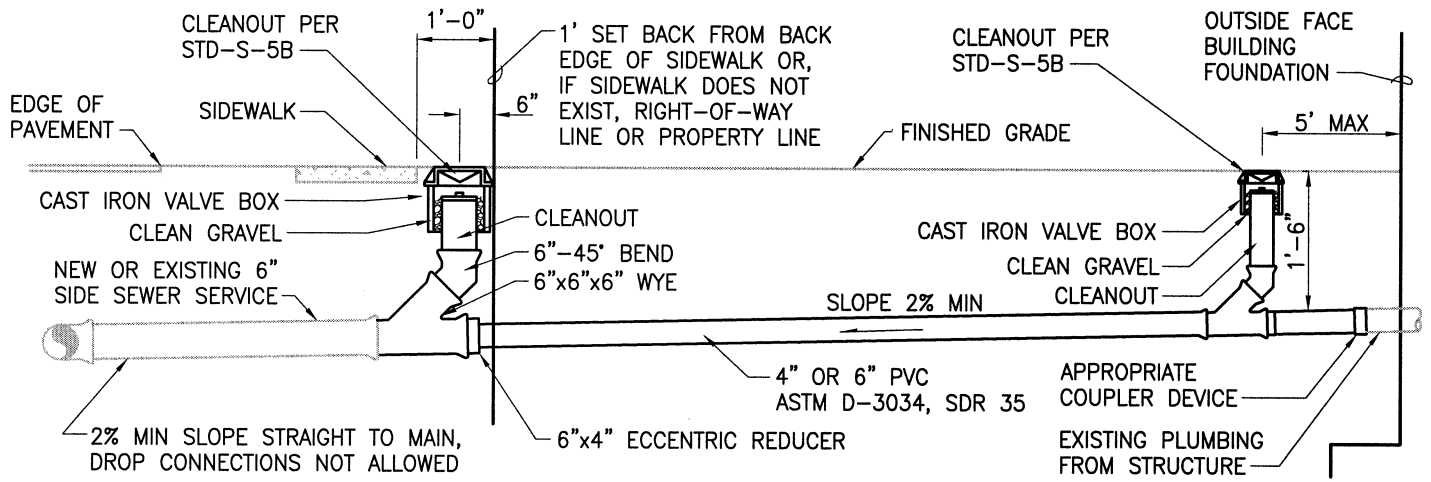
SIDE/BUILDING SEWER

SCALE: NO SCALE

APPROVAL DATE:

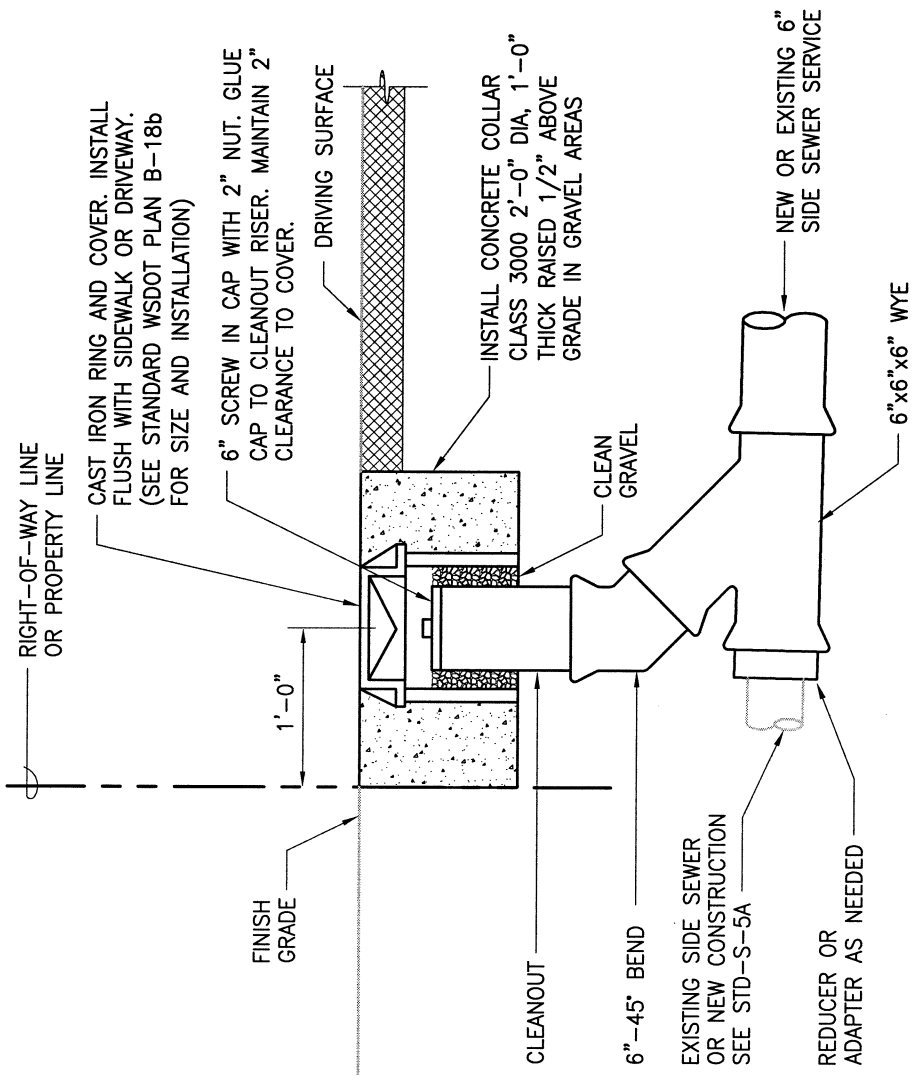
FILE NAME: STD-S-5A

DRAWING NO. S-5A



NOTES

1. DO NOT REMOVE PLUG FROM SIDE SEWER UNTIL A INSPECTOR IS PRESENT. WATER TEST FOR 1 HOUR.
2. CLEANOUTS SHALL BE PROVIDED W/"EXISTING" SIDE SEWER STUB. SEWER CLEANOUTS ARE REQUIRED FOR NEW CONSTRUCTION, REPAIRS, AND REHABILITATION OF EXISTING SIDE SEWERS.
3. ALL FITTINGS SHALL INCLUDE RUBBER GASKETS. GLUE CLEANOUT ADAPTERS TO RISERS.
4. ADDITIONAL BUILDING SEWER CLEANOUTS SHALL BE INSTALLED AT INTERVALS NOT TO EXCEED ONE HUNDRED (100) FEET (30.4 m) IN STRAIGHT RUNS AND FOR EACH AGGREGATE CHANGE IN DIRECTION EXCEEDING ONE HUNDRED AND THIRTY FIVE (135) DEGREES.
5. PROVIDE CAST IRON H20 LOAD RATED CLEANOUT COVER.
6. DISCHARGE OF SURFACE OR GROUNDWATER TO A SEWER IS A VIOLATION OF CITY CODE AND A FINABLE OFFENSE, PER OMC 9-2A-9, $5,000 PER DAY FINE.
7. THE CONTRACTOR SHALL EXPOSE MAIN AND LATERAL TO VERIFY 2% SLOPE CAN BE ACHIEVED PRIOR TO INSTALLATION OF CLEANOUTS OR SIDE SEWER.
8. ALL CLEANOUTS AND JOINTS SHALL BE VISIBLE AND INSPECTED BY THE CITY PRIOR TO BACKFILL.
9. ALL EXCAVATIONS SHALL BE INSPECTED BY THE CITY AND COMPLETELY BACKFILLED WITHIN 48 HOURS. TRENCHES SHALL BE BACKFILLED AND COMPACTED IN 18 INCH LIFTS. BEDDING MATERIAL FOR THERMOPLASTIC PIPE (9-03.16) SHALL BE INSTALLED AND COMPACTED TO 90% TO PROTECT CLEANOUTS, REMAINING BACKFILL SHALL CONFORM TO 9-03.19, GRAVEL FOR TRENCH BACKFILL SEWER.
10. BUILDING SEWER PIPING SHALL BE LAID ON A FIRM AND AND UNYIELDING SUBGRADE THROUGHOUT ITS ENTIRE LENGTH.
11. VIDEO INSPECTION PER 7-17.3(2)H FROM R-O-W CLEANOUTS TO MAIN IS REQUIRED BY INSTALLING CONTRACTOR PRIOR TO FINAL ACCEPTANCE. CONTRACTOR SHALL ADD MINIMUM OF 5 GALLONS OF WATER TO CLEANOUTS IMMEDIATELY PRIOR TO VIDEO INSPECTION.



CITY OF ORTING

SIDE SEWER CLEANOUT

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. S-5B
FILE NAME: STD-S5B		

FILE: Std-s-5B
DATE: Feb 27, 2008 - 9:23am PLOTTED BY: morridea IMAGES: OrtingLogobandw I
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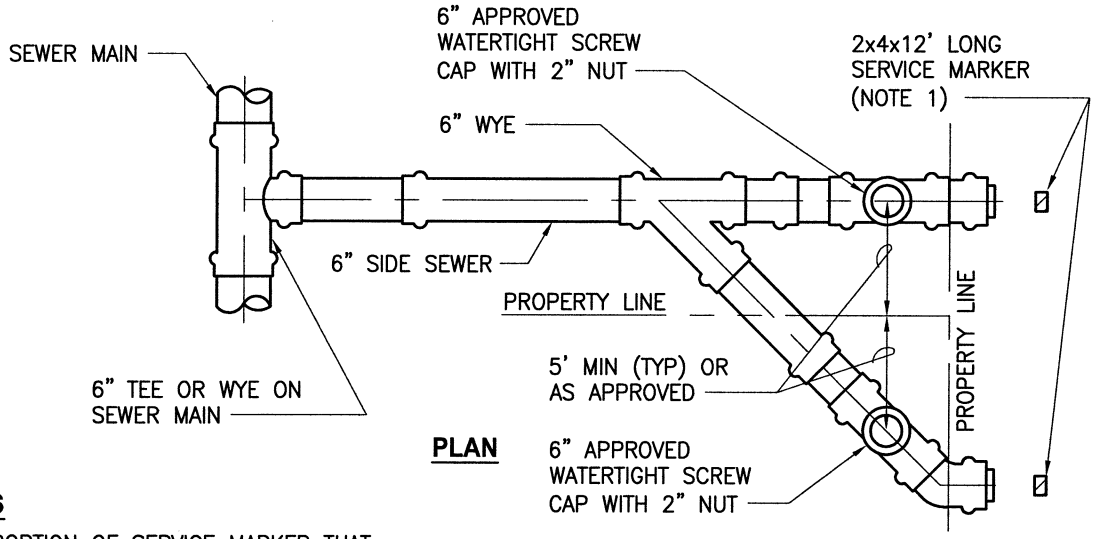
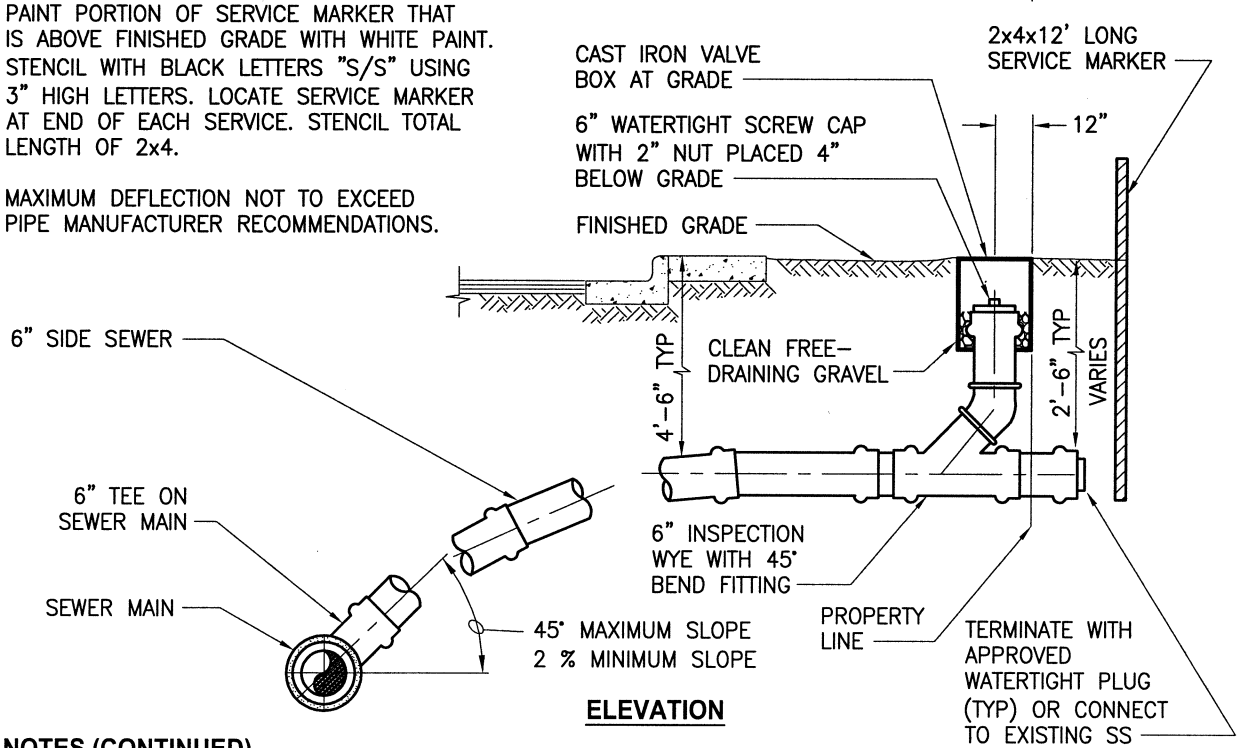


PLAN

NOTES

1. PAINT PORTION OF SERVICE MARKER THAT IS ABOVE FINISHED GRADE WITH WHITE PAINT. STENCIL WITH BLACK LETTERS "S/S" USING 3" HIGH LETTERS. LOCATE SERVICE MARKER AT END OF EACH SERVICE. STENCIL TOTAL LENGTH OF 2x4.
2. MAXIMUM DEFLECTION NOT TO EXCEED PIPE MANUFACTURER RECOMMENDATIONS.



ELEVATION

NOTES (CONTINUED)

3. SIDE SEWER LATERAL SHALL BE THE SAME MATERIAL AS THE MAIN LINE SEWER AND BEDDED THE SAME.
4. PIPE BEDDING PER WSDOT 9-03.9(3)
5. A LOAD-BEARING CASTING & COVER SHALL BE USED ON ALL CLEANOUTS.
6. MINIMUM SIDE SEWER DIAMETER WITHIN THE RIGHT-OF-WAY SHALL BE 6". THE CITY RESERVES THE RIGHT TO REQUIRE INCREASED SIDE SEWER DIAMETER AS NEEDED TO ACCOMMODATE INCREASED FLOWS.

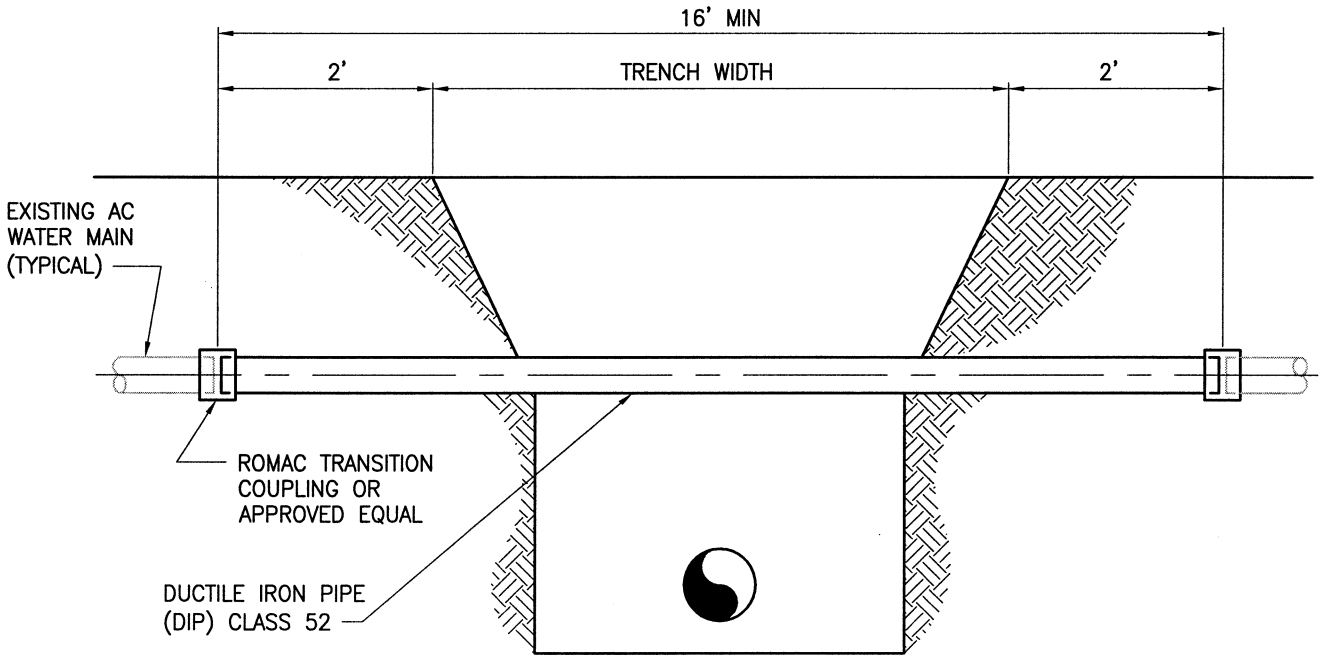
IMAGES:
XREF'S:

DATE: 01/03/08 2:05pm FILENAME: Std-s-5C

CITY OF ORTING

TYPICAL SPLIT SIDE SEWER DETAIL

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. S-5C
FILE NAME: STD-S5C		



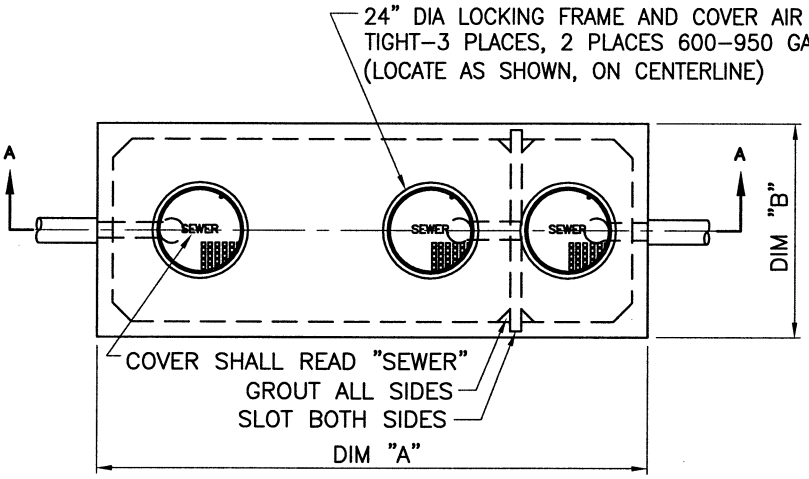
NOTES

1. WRAP DIP AND TRANSITION COUPLINGS WITH 8 MIL POLYETHYLENE CONFORMING TO AWWA C-105.
2. THE CONTRACTOR SHALL PROVIDE PROTECTIVE CLOTHING AND EQUIPMENT (COVERALLS, GLOVES, BOOTS, HEAD COVERINGS, GOGGLES, RESPIRATOR) TO CREWS WORKING WITH ASBESTOS CEMENT PIPE IN ORDER TO ASSURE THE WORKERS' EXPOSURE TO ASBESTOS MATERIAL BE AT OR BELOW THE LIMIT PRESCRIBED IN WAC 296-62-07705.
3. ASBESTOS CEMENT PIPE SHALL BE CUT WITH A REED WHEEL CUTTER WITH CONTROLLED FLOWING WATER.
4. CONTAMINATED CLOTHING SHALL BE TRANSPORTED IN SEALED IMPERMEABLE BAGS AND LABELED IN ACCORDANCE WITH WAC 296-62-07721. ASBESTOS CEMENT GREATER THAN 12" IN LENGTH MAY BE LEFT AND BURIED IN THE TRENCH.

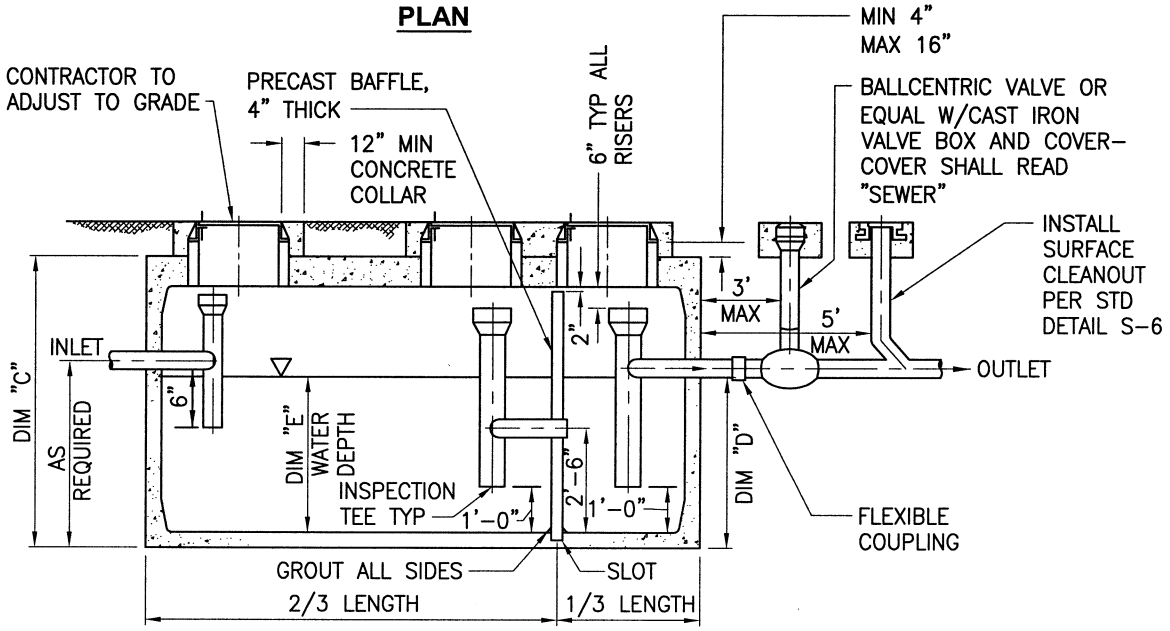
CITY OF ORTING

TYPICAL A/C WATERMAIN CROSSING REPLACEMENT

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. S-6
FILE NAME: STD-S-6		



PLAN



SECTION A-A

(INTERIOR PIPING SHOWN FULL SECTION FOR CLARITY)

GALLON CAPACITY	600	750	950	1000	1250	1500	1750	2000	2500	2750	3000	4000	5000	6000
DIM "A"	7'-0"	7'-0"	7'-0"	9'-0"	9'-0"	11'-2"	11'-2"	12'-8"	12'-8"	12'-8"	15'-7"	15'-7"	19'-11"	19'-11"
DIM "B"	4'-8"	4'-8"	4'-8"	5'-0"	5'-0"	5'-8"	5'-8"	6'-8"	6'-8"	6'-8"	9'-7"	9'-7"	9'-11"	9'-11"
DIM "C"	7'-0"	7'-0"	7'-0"	7'-2"	7'-2"	7'-2"	7'-2"	8'-0"	8'-0"	8'-0"	8'-6.5"	8'-6.5"	8'-11"	8'-11"
DIM "D"	3'-6"	4'-3"	5'-3"	4'-2"	5'-2"	4'-4"	4'-11"	4'-7"	5'-6"	6'-0"	5'-0"	6'-3"	6'-2"	7'-2"
DIM "E"*	3'-2"	3'-11"	4'-11"	3'-10"	4'-10"	4'-0"	4'-7"	3'-10"	4'-9"	5'-3"	3'-9"	5'-0"	4'-9"	5'-9"

* WATER DEPTH

FOR NOTES SEE STD-S-7B

CITY OF ORTING

EXTERIOR GREASE INTERCEPTOR DETAIL

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. S-7A
FILE NAME: STD-S-7A.DWG		

NOTES

1. LOCATE STRUCTURE ADJACENT TO DRIVE FOR ACCESS BY MAINTENANCE VEHICLE.
2. FILL WITH CLEAN WATER PRIOR TO START UP OF SYSTEM.
3. INTERCEPTOR AND APPURTENANCES TO CLEANOUT SHALL BE MAINTAINED BY PRIVATE OWNER AND
4. ANNUAL MAINTENANCE REPORT SHALL BE SUBMITTED TO THE CITY OF ORTING.
5. CONNECTIONS TO CONCRETE WALLS WITH PVC PIPE SHALL BE MADE USING KOR-N-SEAL BOOT OR EQUAL. SEAL ALL PIPE CONNECTIONS WITH NON-SHRINK GROUT.
6. 6" PVC SHALL BE USED THROUGHOUT. TYPE OF PIPE PER CITY OF ORTING STANDARDS. TOP OF "TEES" TO BE KEPT OPEN.
7. A BALLCENTRIC VALVE SHALL BE LOCATED IN THE DISCHARGE PIPING, A MAXIMUM OF 3 FEET FROM THE GREASE INTERCEPTOR UPSTREAM OF THE CLEANOUT. THIS VALVE SHALL BE CLOSED WHEN CLEANING OR SERVICING THE DEVICE.
8. GRAY WATER ONLY. BLACK WATER SHALL BE CARRIED BY SEPARATE SIDE SEWER.
9. A CLEANOUT SHALL BE INSTALLED DOWNSTREAM OF BALLCENTRIC VALVE PER ORTING STANDARD STD-S-5.
10. THE PLANS SHALL ILLUSTRATE PROPERTY BOUNDARIES, PIPING/DRAINAGE DETAILS AND CONNECTIONS TO THE SANITARY SEWER. DETAIL AND ELEVATION DRAWINGS OF THE GREASE INTERCEPTOR SHALL INCLUDE UPC APPENDIX 'H' DESIGN CALCULATIONS TO SHOW CAPACITY, DETENTION TIME AND REMOVAL EFFICIENCIES.
11. NO. OF MEALS/PEAK HOUR X WASTE FLOW RATE X RETENTION TIME X STORAGE FACTOR = CAPACITY IN GALLONS. EFFLUENT FROM GREASE INTERCEPTORS SHALL NOT EXCEED 100 mg/l FAT, OIL, AND GREASE DISCHARGED TO THE SANITARY SEWER.
12. GREASE INTERCEPTORS INSTALLED IN PAVED AREAS SHALL COMPLY WITH H-20 LOADING.
13. PLUMBING/PIPING SHALL BE CONSTRUCTED TO ESTABLISH "PARALLEL FLOW" (90 DEGREES TO THE TANK BAFFLE) THROUGH THE GREASE INTERCEPTOR. NO RADIUS, BEND OR ELBOW SHALL BE ALLOWED IN THE INLET PIPE, FOR A MINIMUM OF 10 FEET OR 20 PIPE DIAMETERS, WHICHEVER IS GREATER, UPSTREAM OF THE INTERCEPTOR.
14. OPTIONAL VENTING OF THE INTERCEPTOR SHALL BE IN ACCORDANCE WITH CHAPTER 9 OF THE UNIFORM PLUMBING CODE-2006.
15. FINAL INSPECTION IS REQUIRED BY THE CITY ENGINEER OR HIS REPRESENTATIVE PRIOR TO CONNECTION TO THE SANITARY SEWER.
16. CONCRETE: 28 DAY COMPRESSIVE STRENGTH fc = 4500 psi
17. REBAR: ASTM A-615 GRADE 60
18. MESH: ASTM A-185 GRADE 65
19. DESIGN: ACI-318-83 BUILDING CODE ASTM C-857 "MINIMUM STRUCTURAL DESIGN LOADING FOR UNDERGROUND PRECAST CONCRETE UTILITY STRUCTURES"

CITY OF ORTING

EXTERIOR GREASE INTERCEPTOR NOTES

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. S-7B
FILE NAME: STD-S-7B.DWG		

NOTES

1. INTERIOR GREASE INTERCEPTORS MAY BE ALLOWED AT THE DISCRETION OF THE CITY OF ORTING BUILDING DEPARTMENT FOR RETROFIT/REMODEL APPLICATIONS BY PERMIT ONLY. ALL NEW CONSTRUCTION THAT MAY CONTRIBUTE FATS, OILS, OR GREASES (FOG) TO THE CITY COLLECTION SYSTEM SHALL INSTALL AN EXTERNAL GREASE INTERCEPTOR IN ACCORDANCE WITH CITY OF ORTING STANDARD DETAILS S-7A AND S-7B.

2. SIZING OF THE INTERIOR GREASE INTERCEPTOR SHALL BE IN ACCORDANCE WITH APPENDIX H OF THE UNIFORM PLUMBING CODE. CALCULATIONS SHALL BE REVIEWED BY THE CITY ENGINEER OR HIS REPRESENTATIVE PRIOR TO INSTALLATION.

3. THE INTERIOR GREASE INTERCEPTOR SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO THE SOURCE OF FOG AND SHALL BE MADE READILY ACCESSIBLE FOR INSPECTION BY CITY PERSONNEL UPON REQUEST.

4. PLUMBING/PIPING SHALL BE CONSTRUCTED TO ESTABLISH "PARALLEL FLOW" (90 DEGREES TO THE TANK BAFFLES) THROUGH THE GREASE INTERCEPTOR.

5. GRAY WATER ONLY. BLACK WATER SHALL BE CARRIED BY SEPARATE SIDE SEWER.

6. A SOLIDS INTERCEPTOR SHALL BE INSTALLED UPSTREAM OF THE GREASE INTERCEPTOR IF A FOOD GRINDER OR FOOD PREPARATION/PRE-RINSE STATION IS PLUMBED TO THE GREASE INTERCEPTOR.

7. FILL WITH CLEAN WATER PRIOR TO START UP OF THE SYSTEM.

8. THE GREASE INTERCEPTOR SHALL BE CERTIFIED BY THE PLUMBING AND DRAINAGE INSTITUTE (WATTS, ZURN, THERMACO, OR EQUAL).

9. INSTALLATION AND MAINTENANCE PRACTICES SHALL CONFORM TO PLUMBING AND DRAINAGE INSTITUTE GUIDELINES.

10. PER OMC SECTION 9-2D-2, EFFLUENT FROM GREASE INTERCEPTORS SHALL NOT EXCEED 100 MG/L FAT, OIL, AND GREASE (COMBINED). THE BUSINESS OWNER IS RESPONSIBLE FOR PROPER OPERATION, MAINTENANCE, SAMPLING AND MONTHLY COMPLIANCE REPORT GENERATION.

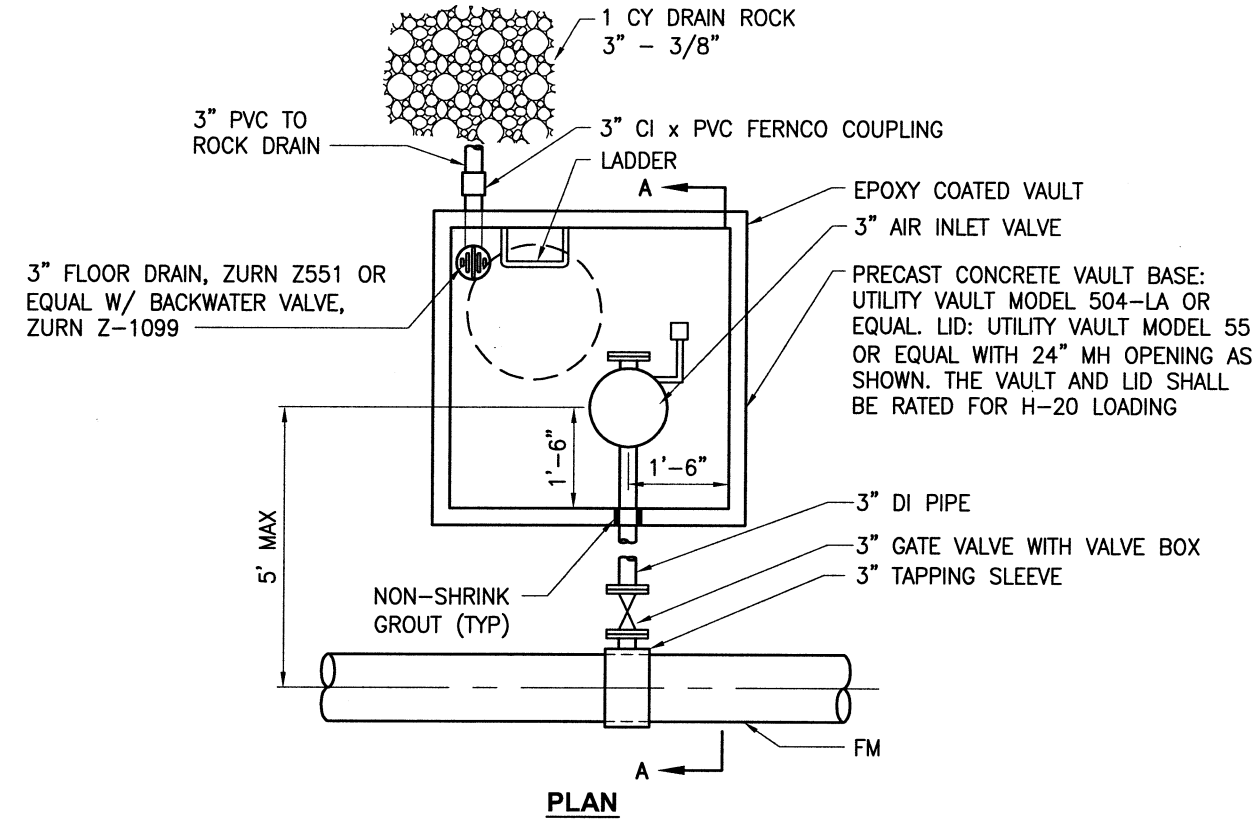
11. THE OWNER SHALL SUBMIT A MONTHLY MAINTENANCE REPORT TO THE CITY TO DEMONSTRATE COMPLIANCE WITH FOG DISCHARGE LIMITATIONS. IF THE OWNER IS UNABLE TO MEET THE DISCHARGE LIMITATIONS OR FAILS TO SUBMIT THE MONTHLY MONITORING REPORT, THE OWNER MAY BE SUBJECT TO A FINE PER OMC SECTION 9-2A-9 AND/OR BE REQUIRED TO INSTALL AN EXTERNAL GREASE INTERCEPTOR IN ACCORDANCE WITH CITY OF ORTING STANDARD DETAILS S-7A AND S-7B.

12. FINAL INSPECTION IS REQUIRED BY THE CITY ENGINEER OR HIS REPRESENTATIVE PRIOR TO CONNECTION TO THE SANITARY SEWER.

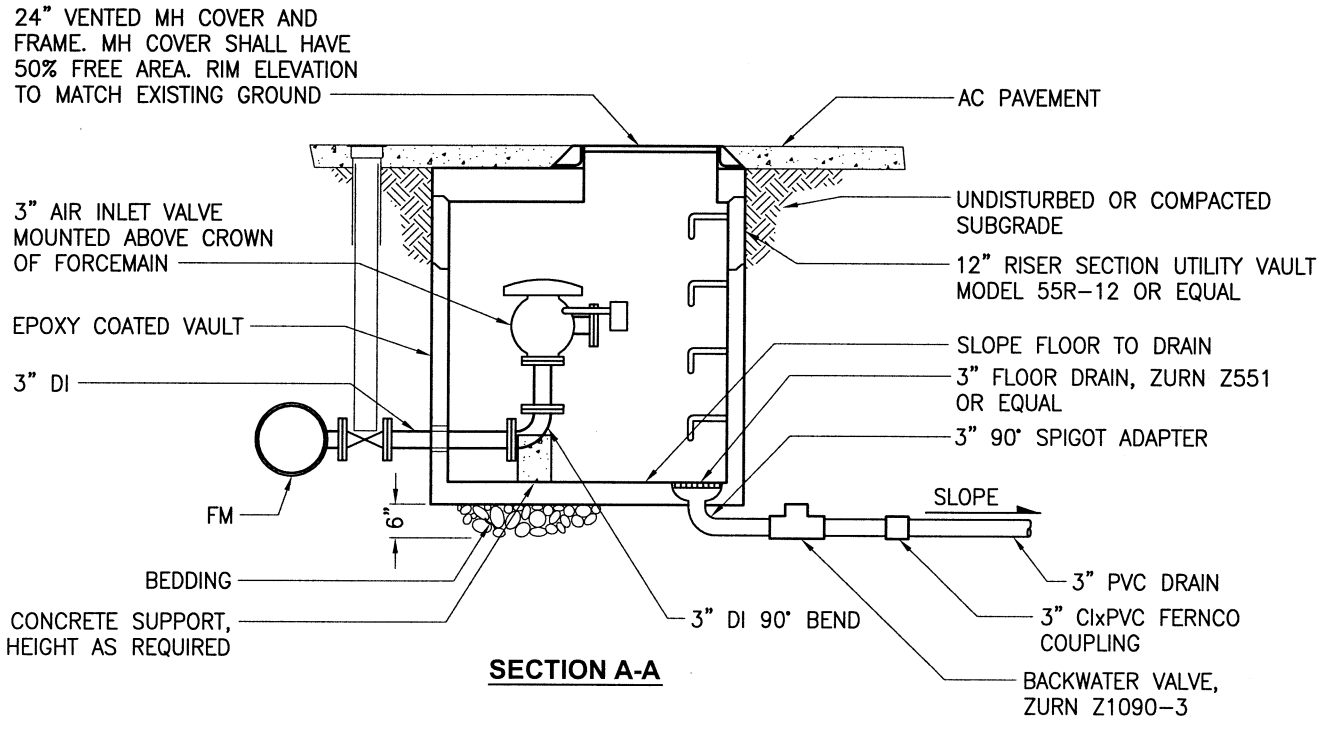
CITY OF ORTING

INTERIOR GREASE INTERCEPTOR NOTES

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. S-7C
FILE NAME: STD-S-7C.DWG		



PLAN



SECTION A-A

CITY OF ORTING

SANITARY SEWER FORCEMAIN AIR INLET VALVE CHAMBER (FM)

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. S-8
FILE NAME: STD-S-8		

FILE: Std-s-8
DATE: Feb 21, 2008 – 11:33am PLOTTED BY: morridea
IMAGES: OrtingLogobandw |
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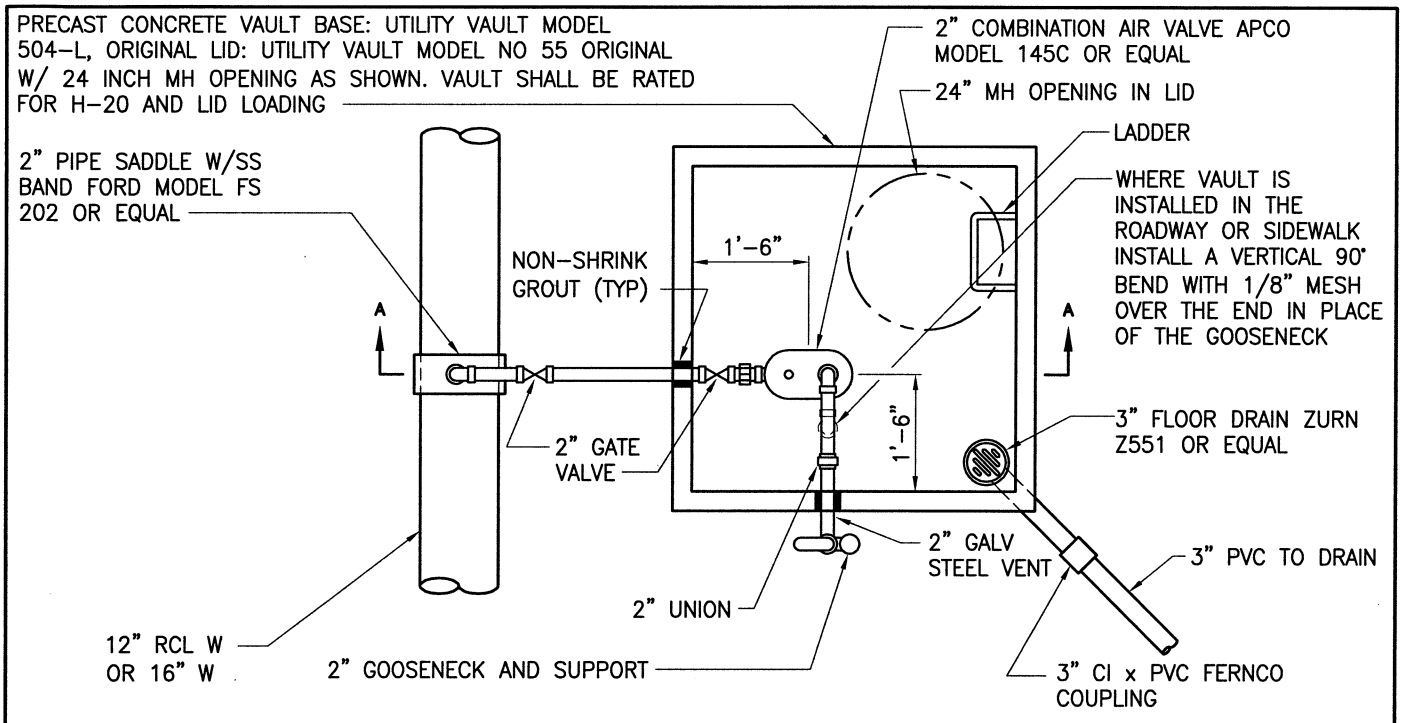

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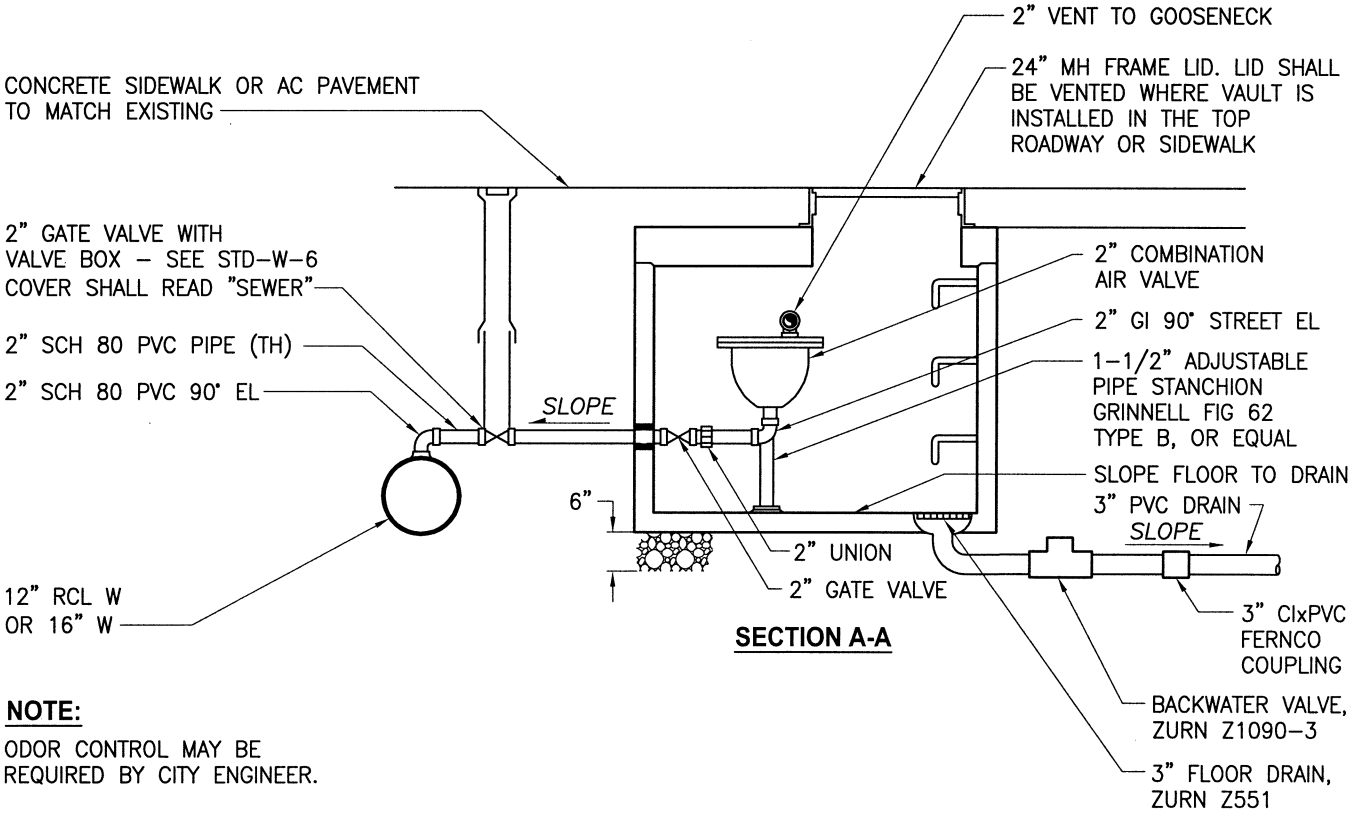


SECTION A-A

NOTE:

ODOR CONTROL MAY BE REQUIRED BY CITY ENGINEER.

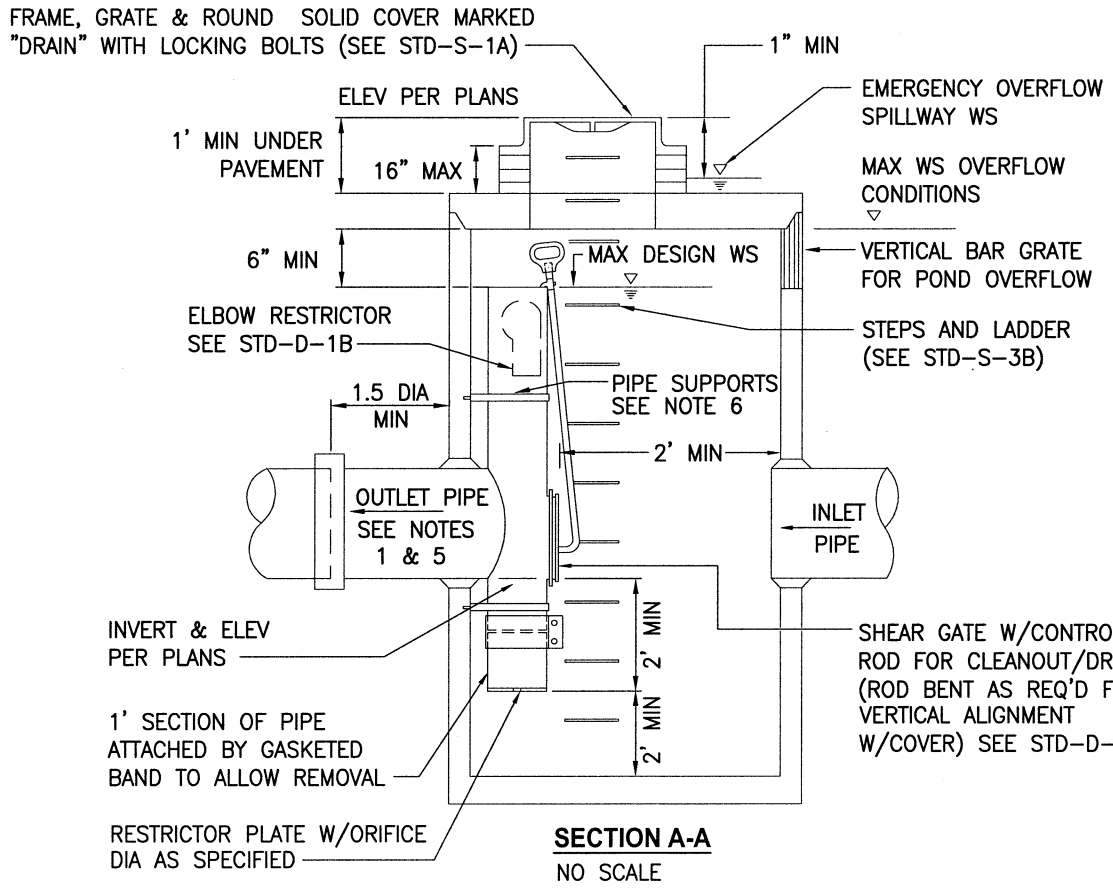
IMAGES:
XREFS:

DATE: 02/06/08 3:38pm FILENAME: Std-s-9

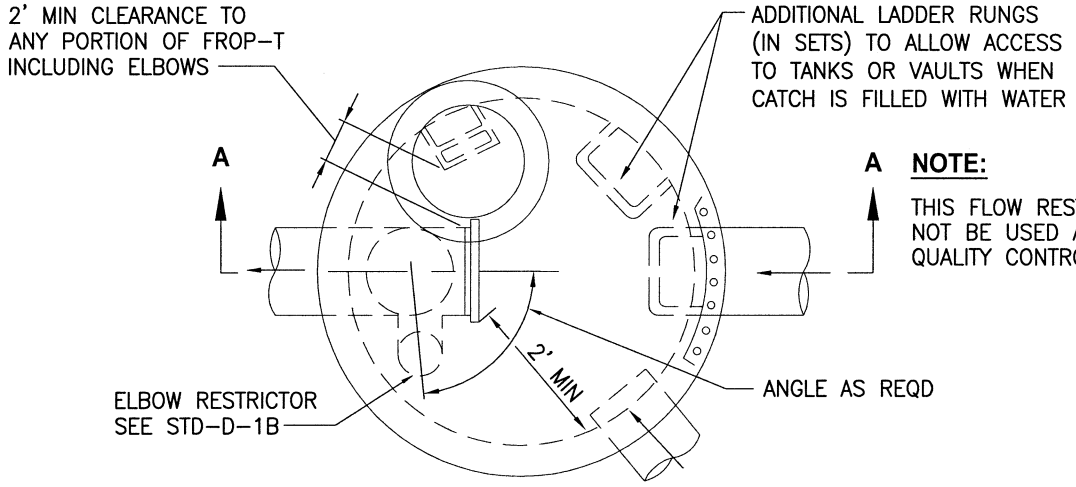
CITY OF ORTING

COMBINATION AIR VALVE & CHAMBER (W & RCL)

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. S-9
FILE NAME: STD-S-9		



SECTION A-A
NO SCALE



PLAN VIEW
NO SCALE

NOTE:

THIS FLOW RESTRICTOR SHALL NOT BE USED AS A WATER QUALITY CONTROL FACILITY.

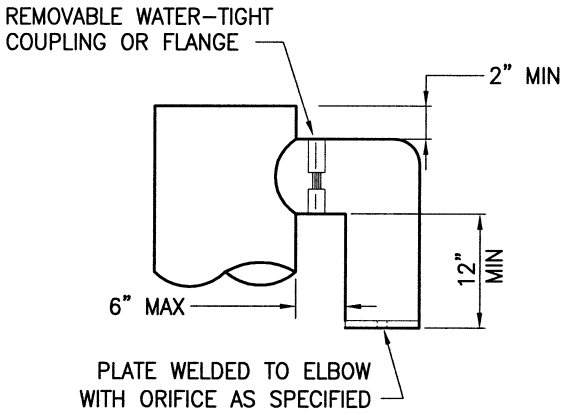
FOR NOTES SEE STD-D-1B

CITY OF ORTING

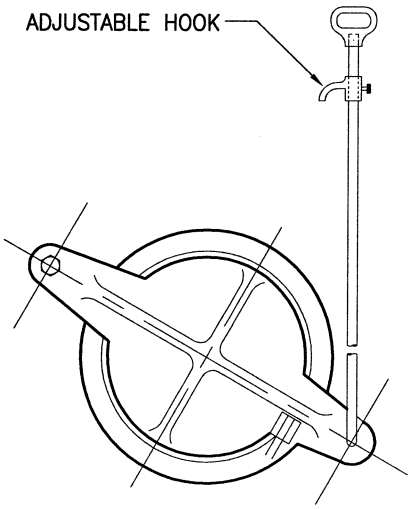
CONTROL STRUCTURE

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. D-1A
FILE NAME: STD-D-1A		

FILE: STD-D-1A
DATE: Feb 27, 2008 - 10:20am PLOTTED BY: morridea IMAGES: OrtingLogobandw | XREF'S:



ELBOW RESTRICTOR
NO SCALE



SHEAR GATE
NO SCALE

NOTES

1. USE MIN 48" DIA CATCH BASIN TYPE 2. SEE STD-D-3A & STD-D-3B.
2. OUTLET CAPACITY: DEVELOPED DESIGN FLOW.
3. METAL PARTS: CORROSION RESISTANT. ALUMINUM PIPE
4. FRAME & LADDER OR STEPS OFFSET SO:
   A: CLEANOUT GATE IS VISIBLE FROM TOP.
   B: CLIMB-DOWN SPACE IS CLEAR OF RISER AND CLEANOUT GATE.
   C: FRAME IS CLEAR OF CURB.
5. IF METAL OUTLET PIPE CONNECTS TO CEMENT CONCRETE PIPE: OUTLET PIPE TO HAVE SMOOTH ID EQUAL TO CONCRETE PIPE ID LESS 1/4".
6. PROVIDE AT LEAST TWO 3" X .090 GAGE SUPPORT BRACKET ANCHORED CONCRETE WALL (MAX 3'-0" VERTICAL SPACING).
7. LOCATE ELBOW RESTRICTOR(S) AS NECESSARY TO PROVIDE MIN CLEARANCE AS SHOWN.
8. LOCATE ADDITIONAL LADDER RUNGS IN STRUCTURES USED AS ACCESS TO TANKS OR VAULTS TO ALLOW ACCESS WHEN CATCH BASIN IS FILLED WITH WATER.
9. ALL METAL PARTS AND SURFACE MUST BE MADE OF CORROSION RESISTANT MATERIAL OR GALVANIZED.
10. FILL CATCH BASIN (WITH WATER) TO INVERT LEVEL OF OUTFLOW PIPE TO PREVENT ANY OIL ESCAPING.

SHEAR GATE NOTES

1. SHEAR GATE SHALL BE ALUMINUM.
2. GATE SHALL BE 8" DIAMETER UNLESS OTHERWISE SPECIFIED.
3. GATE SHALL BE JOINED TO TEE SECTION BY BOLTING (THROUGH FLANGE), WELDING, OR OTHER SECURE MEANS.
4. LIFT ROD: AS SPECIFIED BY MANUFACTURER WITH HANDLE EXTENDING TO WITHIN ONE FOOT OF COVER AND ADJUSTABLE HOOK LOCK FASTENED TO FRAME OR UPPER HANDHOLD.

CITY OF ORTING

FLOW RESTRICTOR (FROP-T) (TEE) DETAILS

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. D-1B
FILE NAME: STD-D-1B		

FILE: STD-D-1B
DATE: Feb 27, 2008 - 10:24am PLOTTED BY: morridea
IMAGES: OrtingLogobandw |
XREFS:

FILE: STD-D-2A
DATE: Feb 27, 2008 - 10:28am PLOTTED BY: morridea
IMAGES: OrtingLogobandw |
XREF'S:

CITY OF ORTING

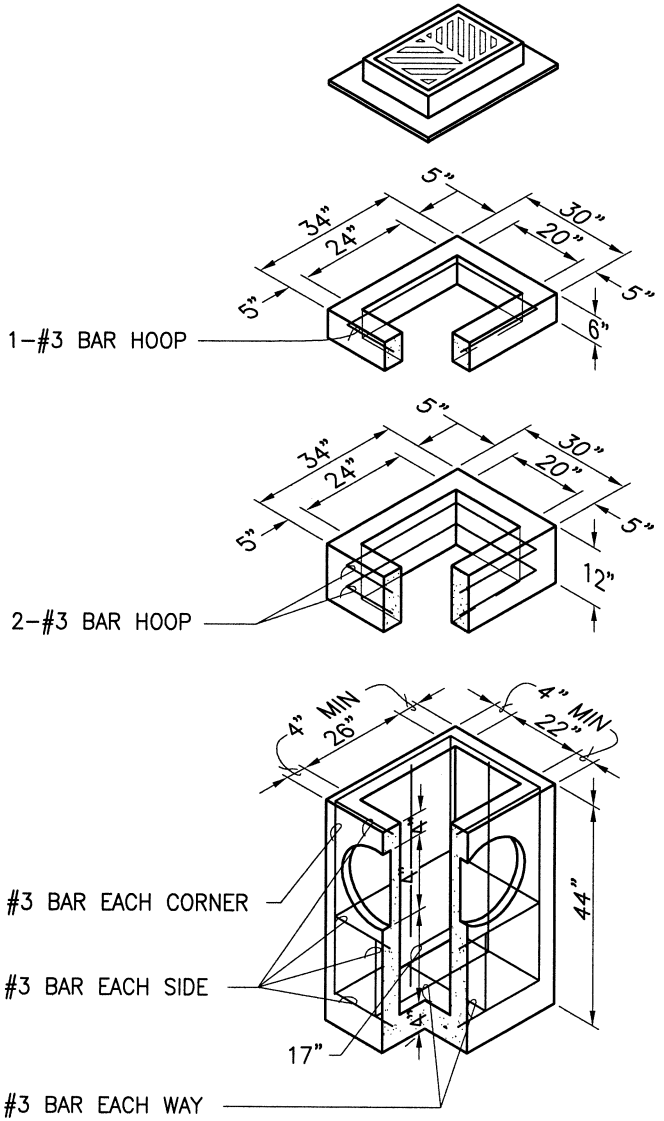
CATCH BASIN TYPE 1

SCALE: NO SCALE

APPROVAL
DATE:

FILE NAME: STD-D-2A

DRAWING NO. D-2A



NOTES

1. CATCH BASINS TO BE CONSTRUCTED IN ACCORDANCE WITH 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. THE BOTTOM OF THE PRECAST BASE SECTION MAY BE ROUNDED.
3. PRECAST BASES SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MINIMUM.
4. 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.
5. KNOCKOUT OR CUTOUT HOLE SIZE IS EQUAL TO PIPE OUTER DIAMETER PLUS CATCH BASIN WALL THICKNESS. THE MAXIMUM DEPTH FROM THE FINISHED GRADE TO THE PIPE INVERT IS 5'-0".
6. THE TAPER ON THE SIDES OF THE PRECAST BASE SECTION AND RISER SECTION SHALL NOT EXCEED 1/2"/FT.
7. CATCH BASIN FRAME AND GRATE SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS AND MEET THE STRENGTH REQUIREMENTS OF FEDERAL SPECIFICATION RR-F-621D. MATING SURFACES SHALL BE FINISHED TO ASSURE NON-ROCKING FIT.
8. FRAME AND GRATE MAY BE INSTALLED WITH FLANGE DOWN OR CAST INTO RISER.

FILE: STD-D-2B
DATE: Feb 27, 2008 - 10:36am PLOTTED BY: morridea
IMAGES: OrtingLogobandw |
XREF'S:

CITY OF ORTING

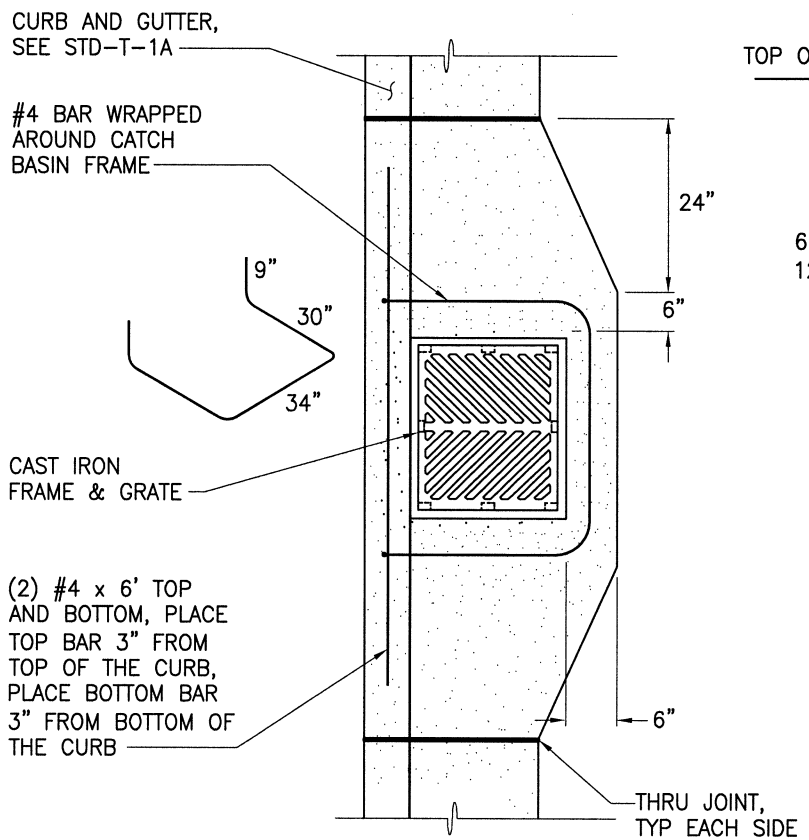
CATCH BASIN TYPE 1 PLACEMENT

SCALE: NO SCALE

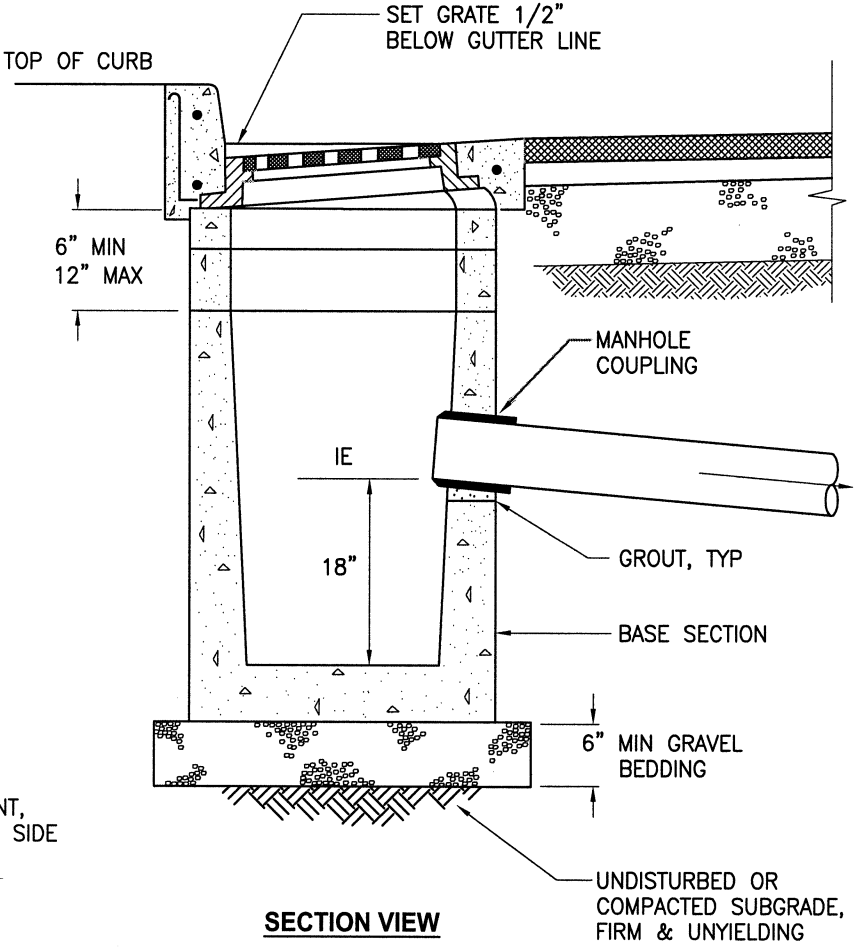
APPROVAL
DATE:

FILE NAME: STD-D-2B

DRAWING NO. D-2B

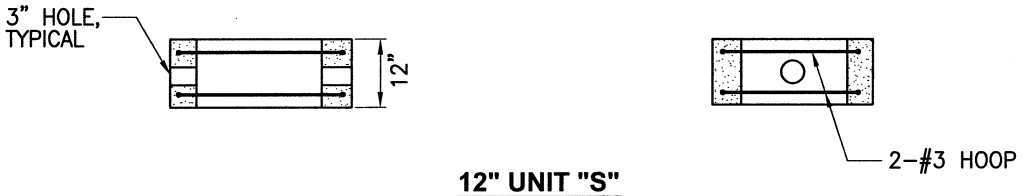


PLAN VIEW

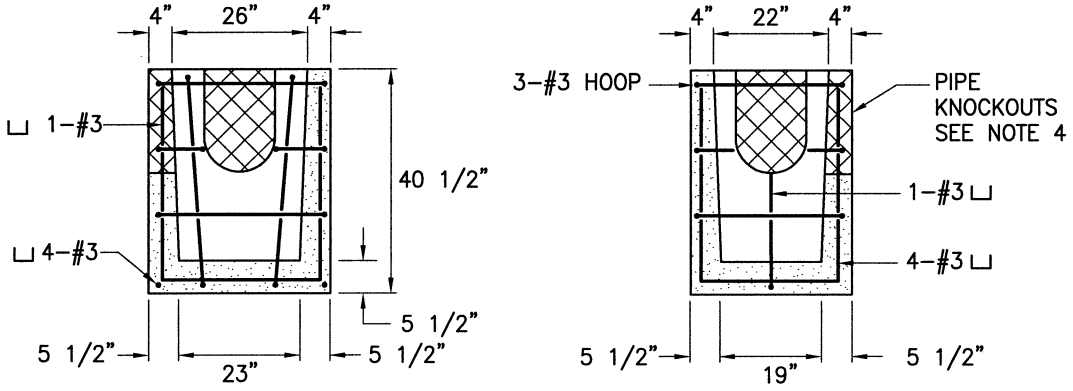


SECTION VIEW

6" UNIT "S"
(RISER SECTION)



12" UNIT "S"
(RISER SECTION)



BASE SECTION

NOTES

1. MAXIMUM LENGTH OF PIPE BETWEEN CATCH BASINS SHALL BE 400'.
2. MAXIMUM GUTTER LINE FLOW LENGTH SHALL BE 300'.
3. TYPE I CATCH BASIN IS USED FOR DEPTHS LESS THAN 5'-0" FROM TOP OF GRATE TO IE (PIPE INVERT).
4. PRECAST BASE SECTION SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MINIMUM KNOCKOUTS SHALL BE ON 4 SIDES WITH A MAXIMUM DIAMETER OF 20" TO PROVIDE FOR A MINIMUM SUMP DEPTH OF 18".
5. REINFORCING BARS SHALL BE CUT OR BENT AS REQUIRED TO CLEAR CUTOUTS.
6. THE TAPER ON THE SIDES OF THE PRECAST BASE SECTION SHALL NOT EXCEED 1/2" PER FOOT.
7. CATCH BASIN SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C 478 (AASHTO M 199) AND ASTM C 890 UNLESS OTHERWISE NOTED.
8. ALL SECTIONS AND JOINTS SHALL BE SEALED WITH NON-SHRINK GROUT.
9. STENCIL REQUIRED "DUMP NO WASTE - DRAINS TO WETLANDS OR STREAMS".

CITY OF ORTING

CATCH BASIN TYPE 1 PLACEMENT

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. D-2C
FILE NAME: STD-D-2C		

FILE: STD-D-2C
DATE: Feb 21, 2008 - 2:52pm PLOTTED BY: morrideo
IMAGES: OrtingLogobandw
XREFS:

FILE: STD-D-3A
DATE: Feb 21, 2008 – 3:23pm PLOTTED BY: morridea

IMAGES: OrtingLogobandw |
XREF'S:

CITY OF ORTING

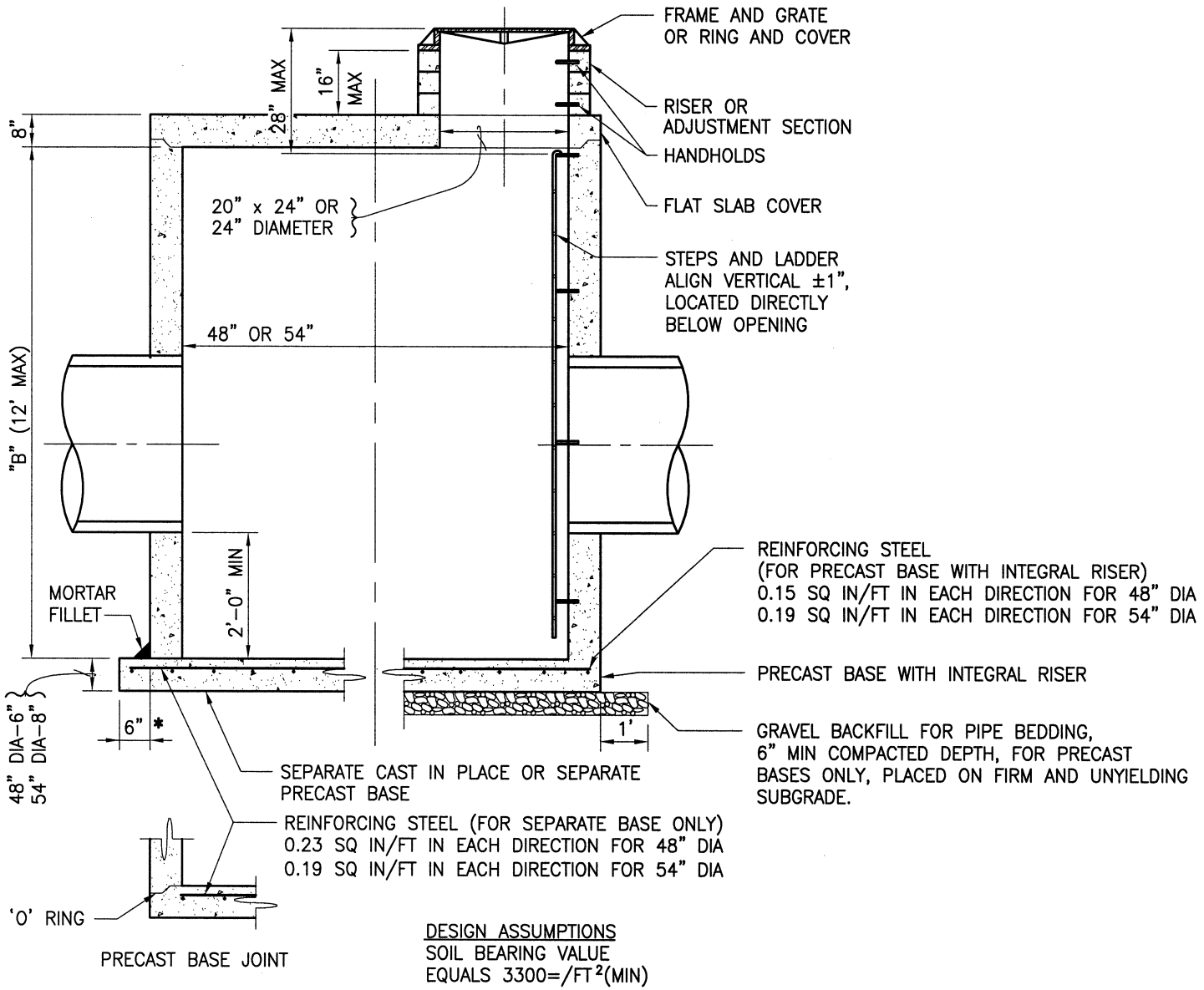
CATCH BASIN TYPE 2

SCALE: NO SCALE

APPROVAL DATE:

FILE NAME: STD-D-3A

DRAWING NO. D-3A



DESIGN ASSUMPTIONS
SOIL BEARING VALUE
EQUALS 3300=/FT^2(MIN)

* FOR SEPARATE CAST IN PLACE ONLY

FOR NOTES SEE STD-D-3B

NOTES

1. CATCH BASINS TO BE CONSTRUCTED IN ACCORDANCE WITH ASTM C 478 (AASHTO M 199) AND ASTM C 890 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE STANDARD SPECIFICATIONS.

2. HANDHOLDS IN RISER OR ADJUSTMENT SECTION SHALL HAVE 3" MINIMUM CLEARANCE. STEPS IN CATCH BASIN SHALL HAVE 6" MINIMUM CLEARANCE. NO STEPS ARE REQUIRED WHEN 'B' IS 4' OR LESS.

3. ALL REINFORCED CAST-IN-PLACE CONCRETE SHALL BE CLASS A. ALL PRECAST CONCRETE SHALL OBTAIN 4000 PSI AT 28 DAYS.

4. PRECAST BASES SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MINIMUM.

5. KNOCKOUT OR CUTOUT HOLE SIZE IS EQUAL TO PIPE OUTER DIAMETER PLUS CATCH BASIN WALL THICKNESS. MAXIMUM HOLE SIZE IS 36" FOR 48" CATCH BASIN, 42" FOR 54" CATCH BASIN. MINIMUM DISTANCE BETWEEN HOLES IS 8".

6. FRAME AND GRATE OR RING AND COVER SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS AND MEET THE STRENGTH REQUIREMENTS OF FEDERAL SPECIFICATION RR-F-621D. MATING SURFACES SHALL BE FINISHED TO ASSURE NON-ROCKING FIT.

7. ALL BASE REINFORCING STEEL SHALL HAVE A MINIMUM YIELD STRENGTH OF 60,000 PSI AND BE PLACED IN THE UPPER HALF OF THE BASE WITH 1" MINIMUM CLEARANCE.

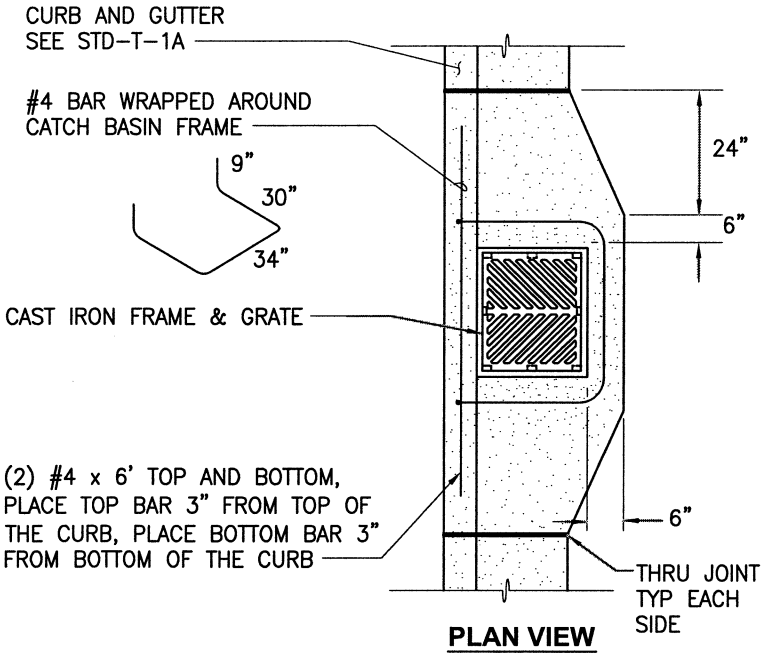
8. THE BOTTOM OF THE PRECAST CATCH BASIN MAY BE ROUNDED. FRAME AND GRATE MAY BE INSTALLED WITH FLANGE DOWN OR CAST INTO RISER.

9. TYPE 3 SIMILAR EXCEPT WITH WALL PERFORATIONS FOR STORMWATER EXFILTRATION.

CITY OF ORTING

CATCH BASIN TYPE 2 NOTES

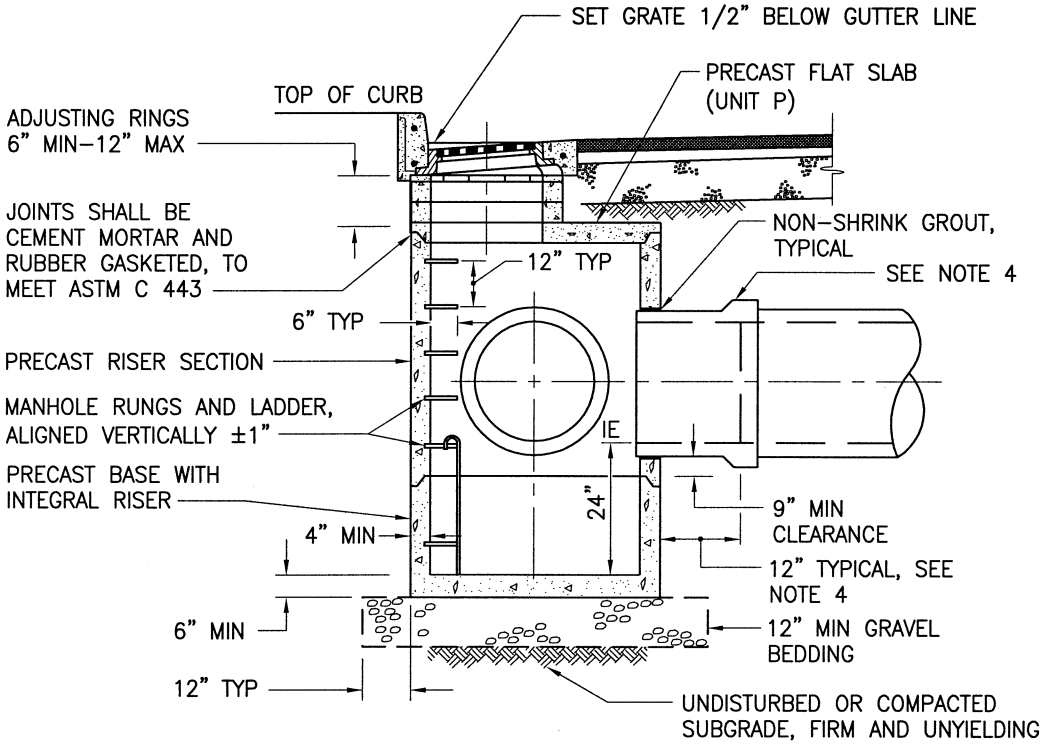
SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. D-3B
FILE NAME: STD-D-3B		



PLAN VIEW

NOTES:

1. MAXIMUM LENGTH OF PIPE BETWEEN CATCH BASINS SHALL BE 400'.
2. MAXIMUM GUTTER LINE FLOW LENGTH SHALL BE 300'.
3. TYPE II CATCH BASIN IS USED FOR DEPTHS GREATER THAN 5'-0" FROM TOP OF GRATE TO IE (PIPE INVERT).
4. PRECAST BASE SECTION SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MIN KNOCKOUT OR CUTOUT HOLE SIZE SHALL EQUAL THE PIPE OUTER DIAMETER PLUS THE MANHOLE WALL THICKNESS.
5. CATCH BASIN SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C 478 (AASHTO M 199 AND ASTM C 890 UNLESS OTHERWISE NOTED).



SECTION VIEW

CITY OF ORTING

CATCH BASIN TYPE 2 PLACEMENT

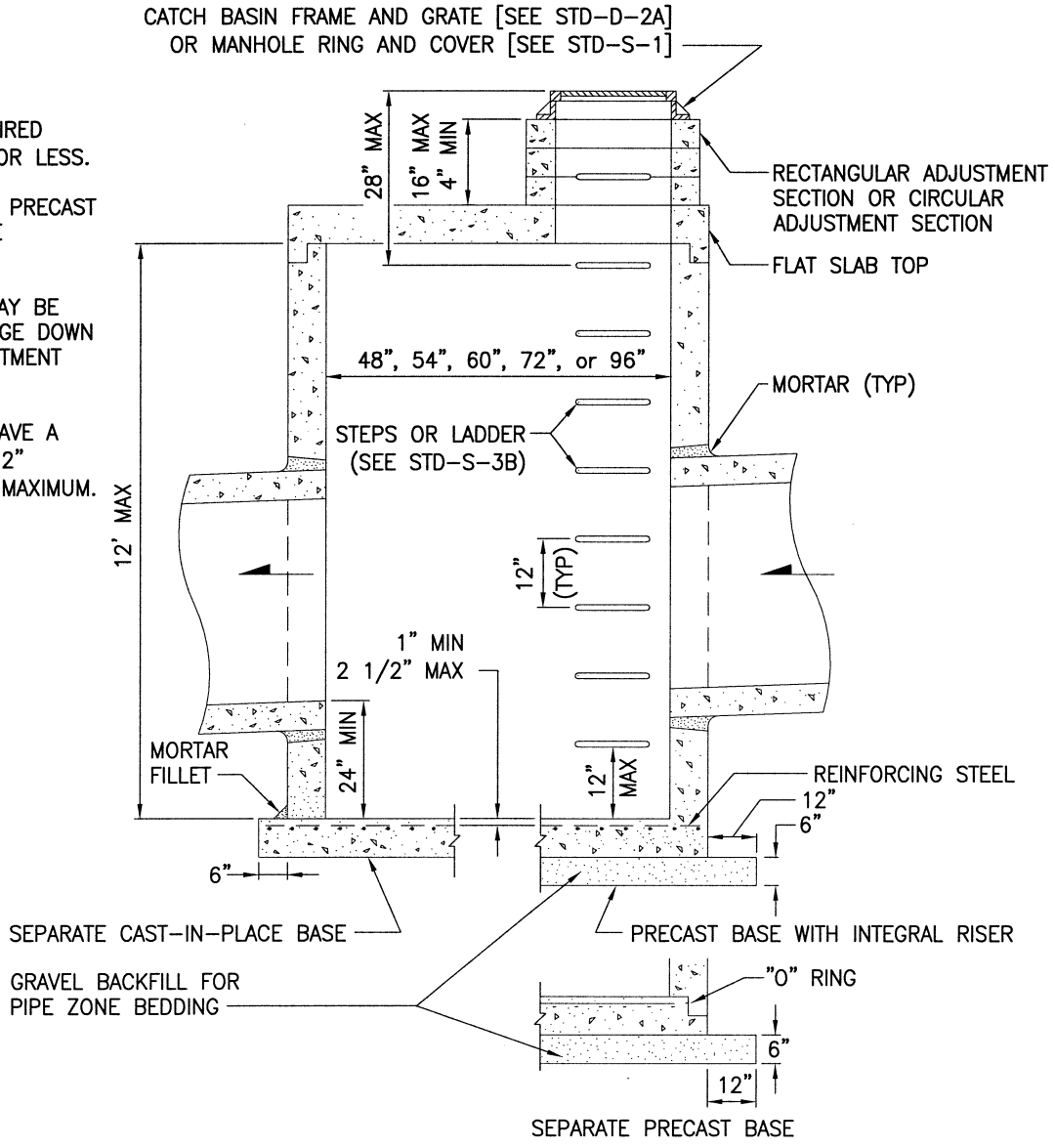
SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. D-3C
FILE NAME: STD-D-3C		

FILE: STD-D-3C
DATE: Feb 27, 2008 - 10:48am PLOTTED BY: morridea IMAGES: OrtingLogobandw | XREFS:

CATCH BASIN DIMENSION TABLE						
DIA	WALL THICKNESS	BASE THICKNESS	MAXIMUM KNOCKOUT SIZE	MINIMUM DISTANCE BETWEEN KNOCKOUTS	BASE REINFORCING STEEL in 2/ft IN EACH DIRECTION	
					INTEGRAL BASE	SEPARATE BASE
48"	4"	6"	36"	8"	0.15	0.23
54"	4 1/2"	8"	42"	8"	0.19	0.19
60"	5"	8"	48"	8"	0.25	0.25
72"	6"	8"	60"	12"	0.24	0.35
96"	8"	12"	84"	12"	0.29	0.39

NOTES:

1. NO STEPS ARE REQUIRED WHEN HEIGHT IS 4' OR LESS.
2. THE BOTTOM OF THE PRECAST CATCH BASIN MAY BE ROUNDED.
3. FRAME AND GRATE MAY BE INSTALLED WITH FLANGE DOWN OR CAST INTO ADJUSTMENT SECTION.
4. KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MINIMUM TO 2 1/2" MAXIMUM.



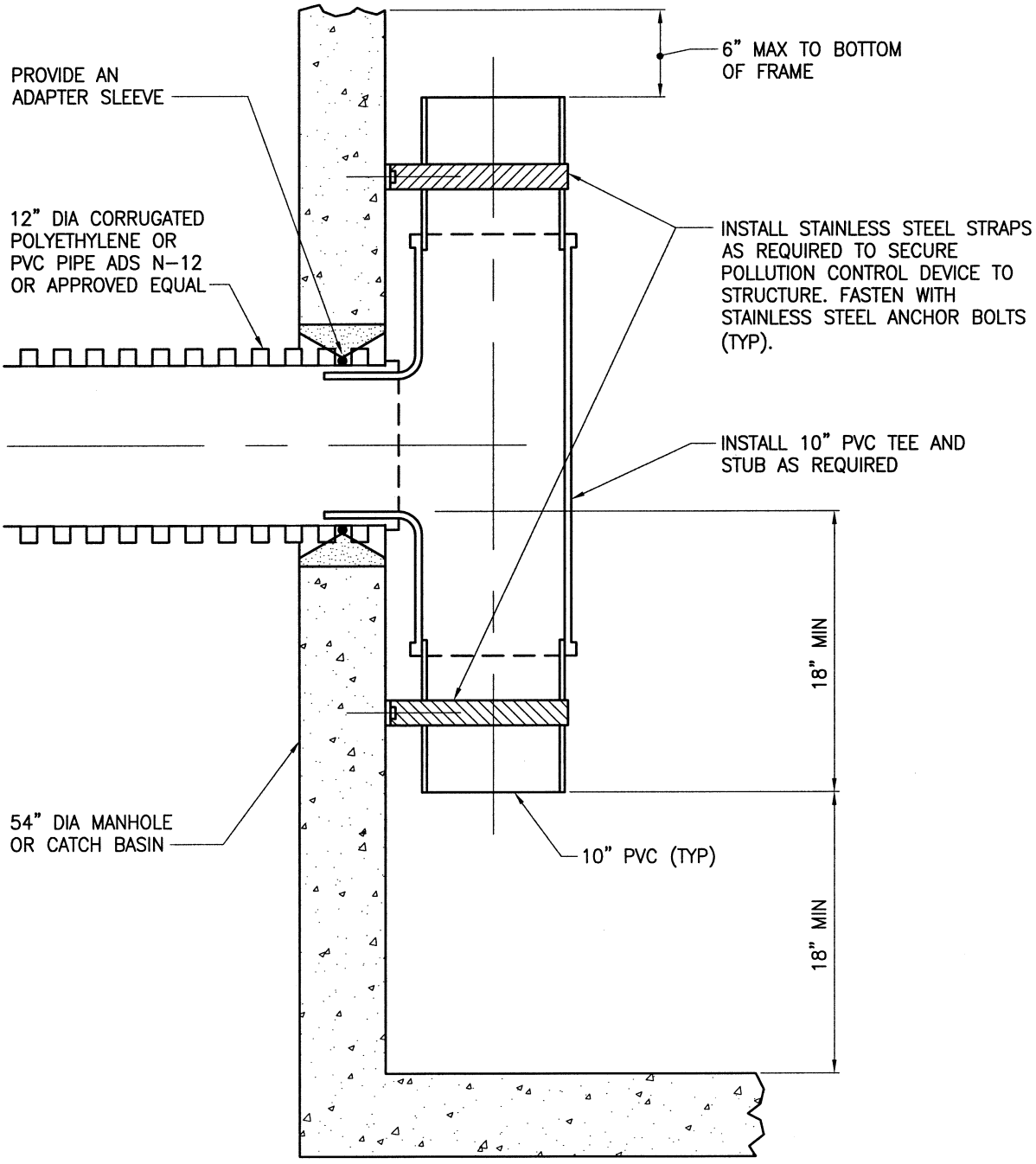
IMAGES:
XREFS:

DATE: 02/15/08 2:47pm FILENAME: STD-D-3D

CITY OF ORTING

CATCH BASIN TYPE 2

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. D-3D
FILE NAME: STD-D-3D		



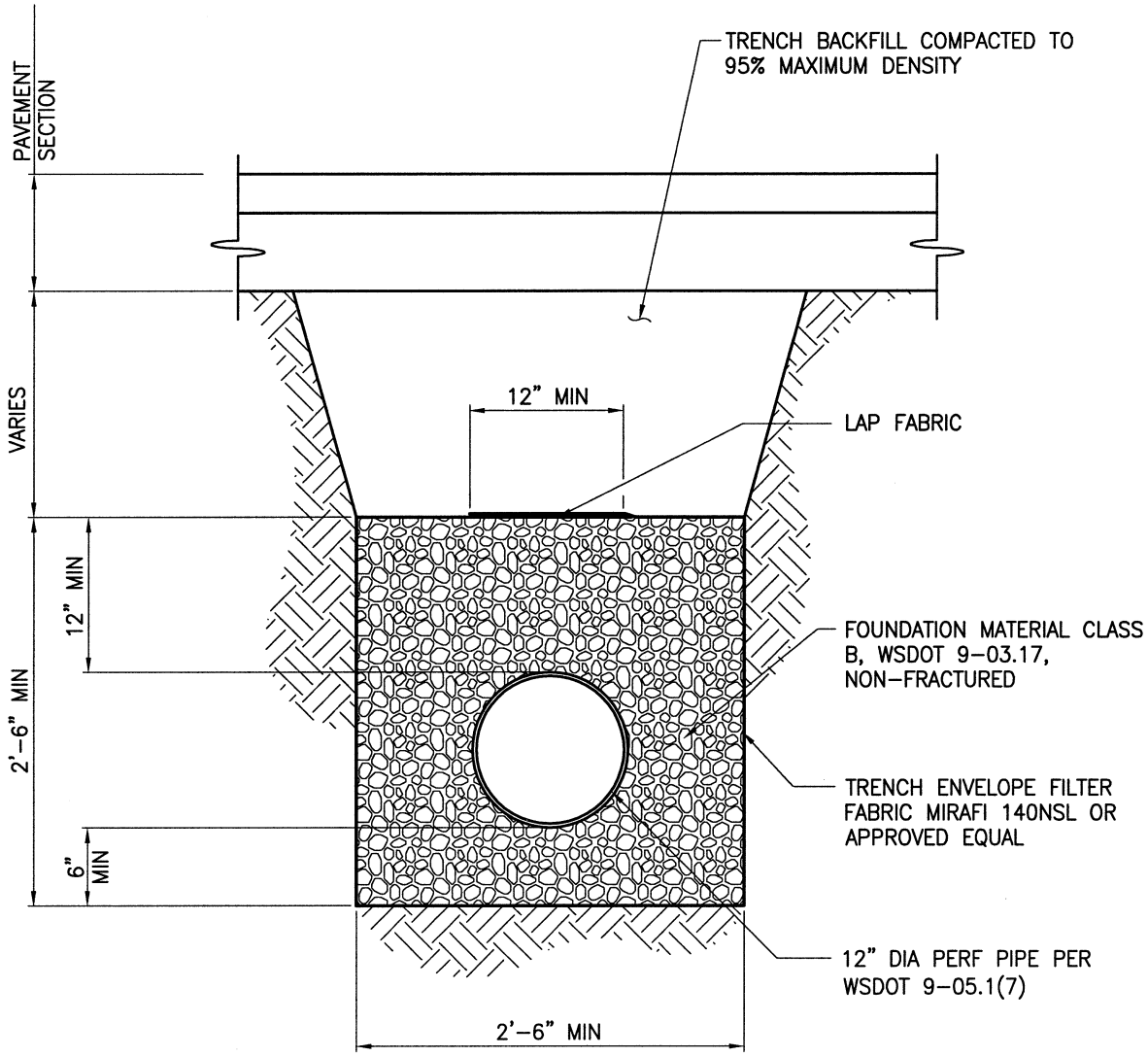
IMAGES: OrtingLogobandw |
XREF'S:

DATE: 02/21/08 3:42pm FILENAME: std-D-4

CITY OF ORTING

OIL SPILL CONTROL DEVICE (NOT FOR OIL TREATMENT)

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. D-4
FILE NAME: STD-D-4		



NOTES

1. SEE STD-D-4 FOR REQUIRED OIL SPILL CONTROL DEVICE.
2. SEE STD-S-5B FOR REQUIRED CLEANOUT ASSEMBLY.
3. LENGTH OF TRENCH TO BE DETERMINED BY A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF WASHINGTON.
4. PERCOLATION TRENCH MAY ONLY BE USED WHEN APPROVED BY CITY ENGINEER.

CITY OF ORTING

INFILTRATION TRENCH

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. D-5
FILE NAME: STD-D-5		

FILE: Std-D-5
DATE: Feb 21, 2008 - 3:51pm PLOTTED BY: morrideo
IMAGES: OrtingLogobandw |
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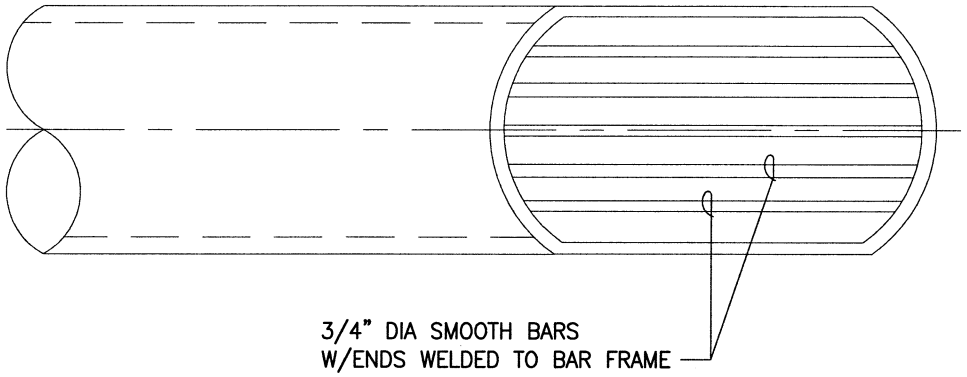
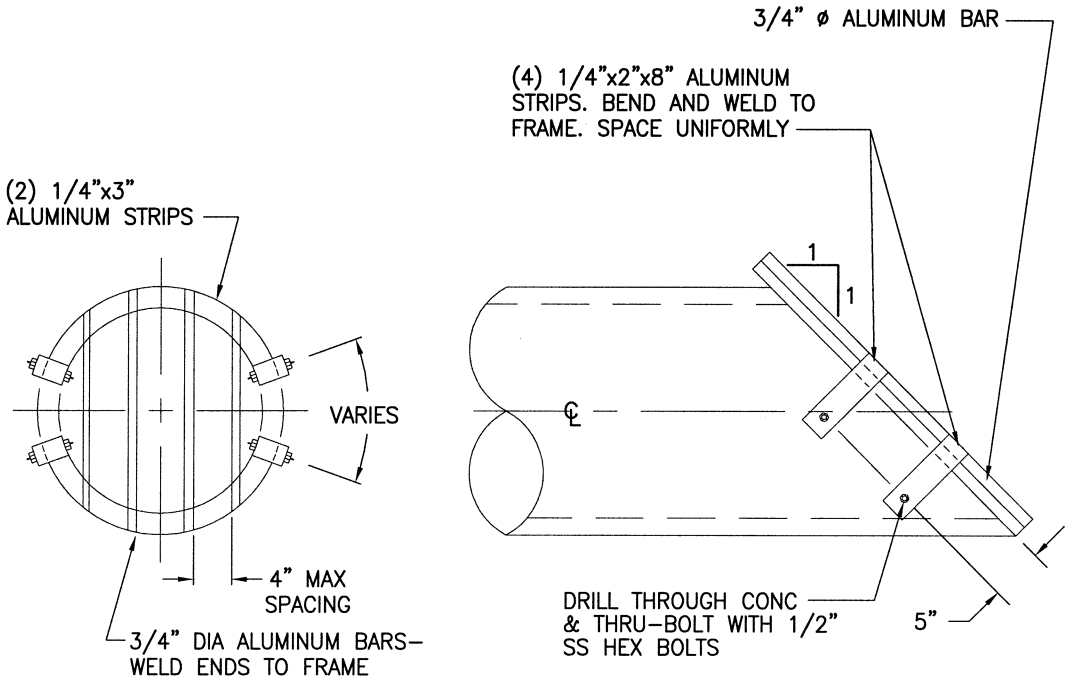


PLAN VIEW



END VIEW

SIDE VIEW

NOTES

1. WELD AT ALL JOINTS.
2. SHOP DRAWINGS REQUIRED.

FILE: STD-D-6
DATE: Feb 21, 2008 – 3:53pm PLOTTED BY: morrideo IMAGES: OrtingLogobandw |
XREF'S:

CITY OF ORTING

TRASH RACK

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. D–6
FILE NAME: STD–D–6		

DATE: 02/25/08 08:41am FILENAME: STD-X-1

IMAGES:
XREF'S:

CITY OF ORTING

FILE NAME: STD-X-1

SCALE: NO SCALE

APPROVAL DATE:

DRAWING NO. X-1

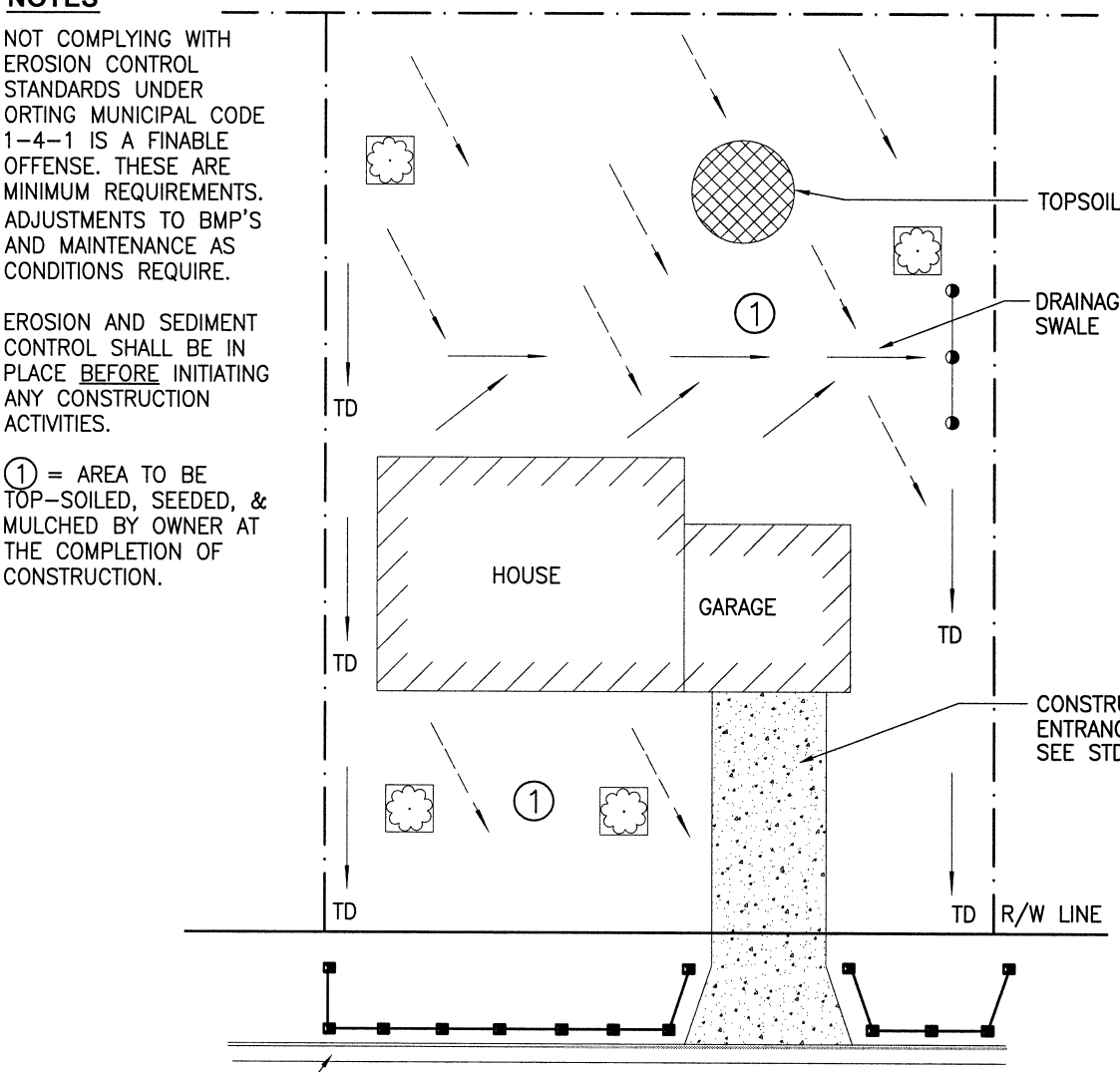
SINGLE FAMILY LOT EROSION & SEDIMENT CONTROL

SAMPLE EROSION CONTROL PLAN

(FOR SITES OF ONE ACRE OR LESS)

NOTES

1. NOT COMPLYING WITH EROSION CONTROL STANDARDS UNDER ORTING MUNICIPAL CODE 1-4-1 IS A FINABLE OFFENSE. THESE ARE MINIMUM REQUIREMENTS. ADJUSTMENTS TO BMP'S AND MAINTENANCE AS CONDITIONS REQUIRE.
2. EROSION AND SEDIMENT CONTROL SHALL BE IN PLACE BEFORE INITIATING ANY CONSTRUCTION ACTIVITIES.
3. (1) = AREA TO BE TOP-SOILED, SEEDED, & MULCHED BY OWNER AT THE COMPLETION OF CONSTRUCTION.



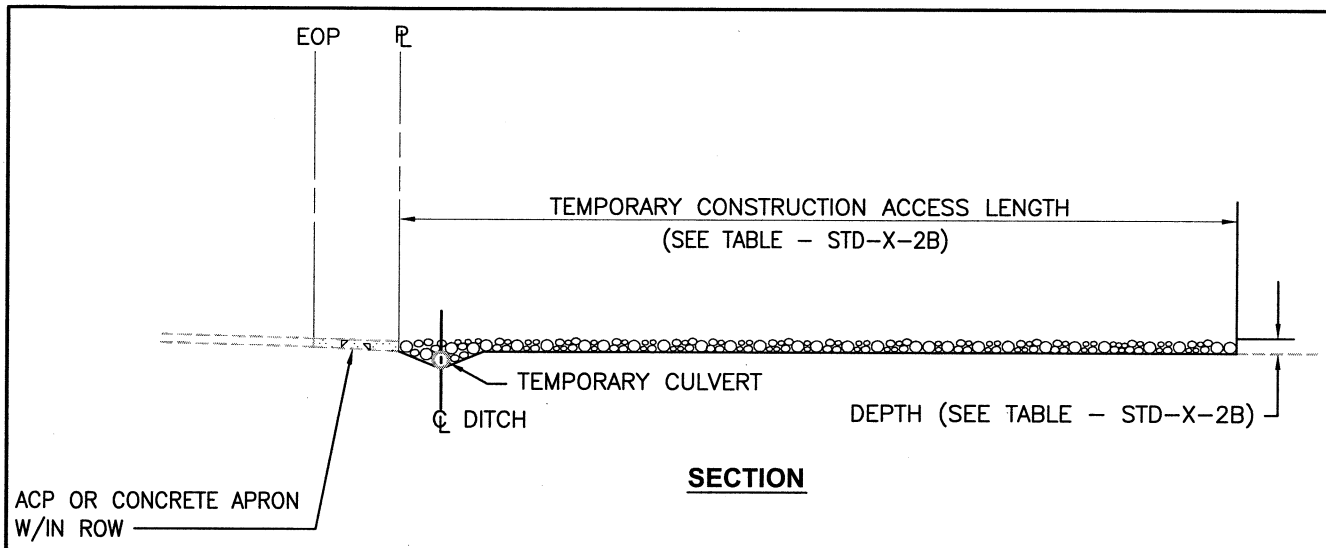
LEGEND

- EXISTING DRAINAGE
- PROPERTY LINE
- TD TEMPORARY DIVERSION
- FINISHED DRAINAGE
- LIMITS OF GRADING
- SILT FENCE
- STRAW BALES
- GRAVEL
- (1) VEGETATION SPECIFICATION AREA
- TREE PRESERVATION
- STOCKPILED TOPSOIL

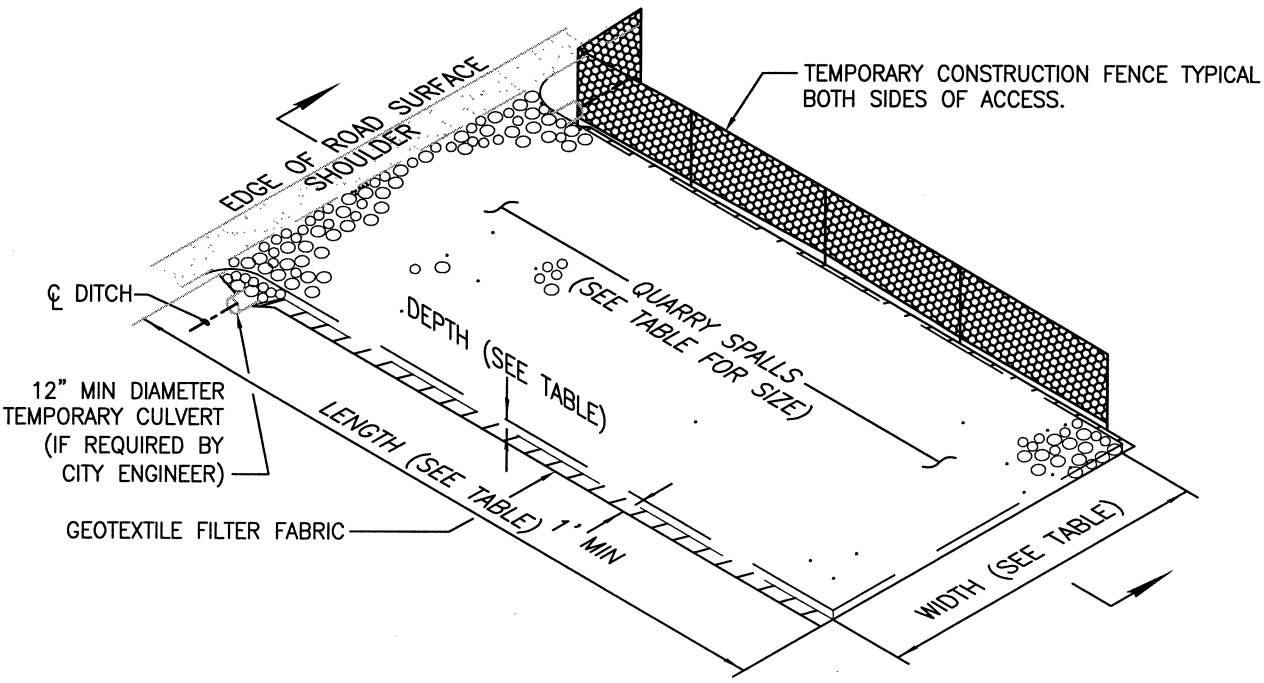
SINGLE FAMILY LOT
EROSION & SEDIMENT CONTROL

STREET NAME

PROJECT LOCATION:	
PROPERTY OWNER:	
CONTRACTOR:	
PREPARED BY:	DATE:



SECTION



PLAN

NOTE:

THE 'TEMPORARY CONSTRUCTION ACCESS' WILL BE THE ONLY ALLOWED POINT OF ACCESS IN AND OUT OF THE CONSTRUCTION AREA.

SEE STD–X–2B FOR ADDITIONAL NOTES AND DIMENSION TABLE

IMAGES:
XREFS:

DATE: 02/15/08 11:22am FILENAME: STD–X–2A

CITY OF ORTING

TEMPORARY CONSTRUCTION ACCESS

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. X–2A
FILE NAME: STD–X–2A		

TEMPORARY CONSTRUCTION ENTRANCE CRITERIA FOR TESC, GRADE & FILL, SITE WORK & BUILDING CONSTRUCTION					CATEGORY
DESCRIPTION	TYPE 1	TYPE 2	TYPE 3	TYPE 4	
SITE SIZE IN ACRES	<1.0	1.0 to 3.0	3.0 to 6.0	>6.0	SITE SIZE CRITERIA
VOLUME OF CUT & FILL (CY)	<2,500	<20,000	<100,000	>100,000	
MINIMUM WIDTH IN FEET	15	24	24	30	GEOMETRY & DIMENSIONS OF ENTRANCE
MIN DEPTH OF SPALLS (INCHES)	8	12	12	18	
MIN LENGTH OF SPALL ENTRANCE	50	75	100	150	
MIN RETURN RAD OFF ST (FT)	0	30	35	40	
DEPTH OF ACP APPROACH IN ROW	3	4	6	6	
TYPE OF ACP FOR APPROACHES	CLASS "B"	CLASS "B"	CLASS "B"	CLASS "B"	MATERIAL SPECIFICATIONS FOR ENTRANCE IN RIGHT-OF-WAY
CONCRETE APPROACH THICKNESS	6	6	7	7	
TYPE OF CONCRETE CEMENT	6 SACK-1 1/2	6 SACK-1 1/2	6 SACK-1 1/2	6 SACK-1 1/2	
28 DAY OF STRENGTH OF CONC	4,000 lb	4,000 lb	4,000 lb	4,000 lb	
CONC CEMENT REINFORCEMENT	FIBER MESH	#4@12"EW	#5@12"EW	#5@12"EW	
GEOTEXTILE REQUIRED	YES	YES	YES	YES	
SIZE OF QUARRY SPALLS	2" - 4"	4" - 6"	4" - 6"	4" - 6"	

PURPOSE:

THE PURPOSE OF CONSTRUCTION ENTRANCES IS TO REDUCE THE AMOUNT OF SEDIMENT TRACKED OFF-SITE BY CONSTRUCTION VEHICLES, PROTECTION OF THE CITY'S STORM DRAINAGE SYSTEM FROM UN- DUE AMOUNTS OF SEDIMENT AND PROTECTION OF THE CITY'S STREETS AND ROADS. AN ACP OR CONCRETE APPROACH WITHIN THE LIMITS OF THE RIGHT-OF-WAY PROTECTS THE CITY STREET AND REDUCES THE POTENTIAL OF ROCKS GETTING ONTO THE STREETS.

NOTES:

1. ACP WILL BE USED WITHIN THE RIGHT-OF-WAY WHERE THE STREET IS WITHOUT CURB & GUTTER.
2. FOR ACCESS OFF IMPROVED STREETS, PROVIDE CONCRETE DRIVEWAY IN ROW AS SPECIFIED IN THE TABLE.
3. CURB CUTS SHALL MEET THE SAME MATERIAL REQUIREMENTS AS CONCRETE DRIVEWAY APPROACHES.
4. FOR ACP APPROACHES, EDGE OF ROAD SHALL BE SAW CUT, EDGE TACKED AND JOINT SEALED WITH AR4000.

DESIGN AND INSTALLATION SPECIFICATIONS:

1. SEE PAGE 1 OF THIS CITY STANDARD (DETAIL _____) FOR LAYOUT OF ENTRANCE.
2. GEOTEXTILE SHALL BE PLACED UNDER THE SPALLS TO PREVENT FINE SEDIMENTS FROM PUMPING UP INTO THE ROCK PAD. THE FABRIC SHALL CONFORM TO WSDOT STANDARD SPECIFICATION 9-33, TABLE 3 FOR SOIL STABILIZATION FABRIC.
3. FENCING SHALL BE INSTALLED AS NECESSARY TO RESTRICT TRAFFIC TO THE CONSTRUCTION ENTRANCE.
4. LOCATION OF CONSTRUCTION ENTRANCE SHALL BE APPROVED BY THE CITY ENGINEER. TYPE 1 AND 2 SITES WILL GENERALLY BE ALLOWED ONLY ONE ENTRANCE.
5. TRUCK ROUTES FOR TYPE 2, 3, AND 4 SITES SHALL BE SUBMITTED WITH THE PERMIT APPLICATION FOR REVIEW AND APPROVAL BY THE CITY ENGINEER.
6. PERMITEE SHALL POST PERFORMANCE BOND FOR TYPE 2, 3, AND 4 SITES.

MAINTENANCE STANDARDS:

1. QUARRY SPALLS SHALL BE ADDED IF THE PAD IS NO LONGER IN ACCORDANCE WITH THE SPECIFICATIONS.
2. IF THE ENTRANCE IS NOT PREVENTING SEDIMENT FROM BEING TRACKED ONTO PAVEMENT, ALTERNATIVE/ADDITIONAL MEASURES SHALL BE REQUIRED WHICH MAY INCLUDE STREET SWEEPING, INCREASING DIMENSIONS OF THE ENTRANCE, OR THE INSTALLATION OF A WHEEL WASH.
3. ANY ROCK SPALLS THAT ARE LOOSENED FROM THE PAD AND END UP IN THE ROADWAY SHALL BE REMOVED IMMEDIATELY.
4. DIRT TRACKED ONTO THE STREETS SHALL BE REMOVED BY SWEEPERS. WATER TRUCKS MAY BE USED AS A SECONDARY MEASURE TO COMPLETE THE CLEANING IF NECESSARY.

IMAGES:
XREFS:

DATE: 02/15/08 11:23am FILENAME: STD-X-2B

CITY OF ORTING

TEMPORARY CONSTRUCTION ACCESS NOTES

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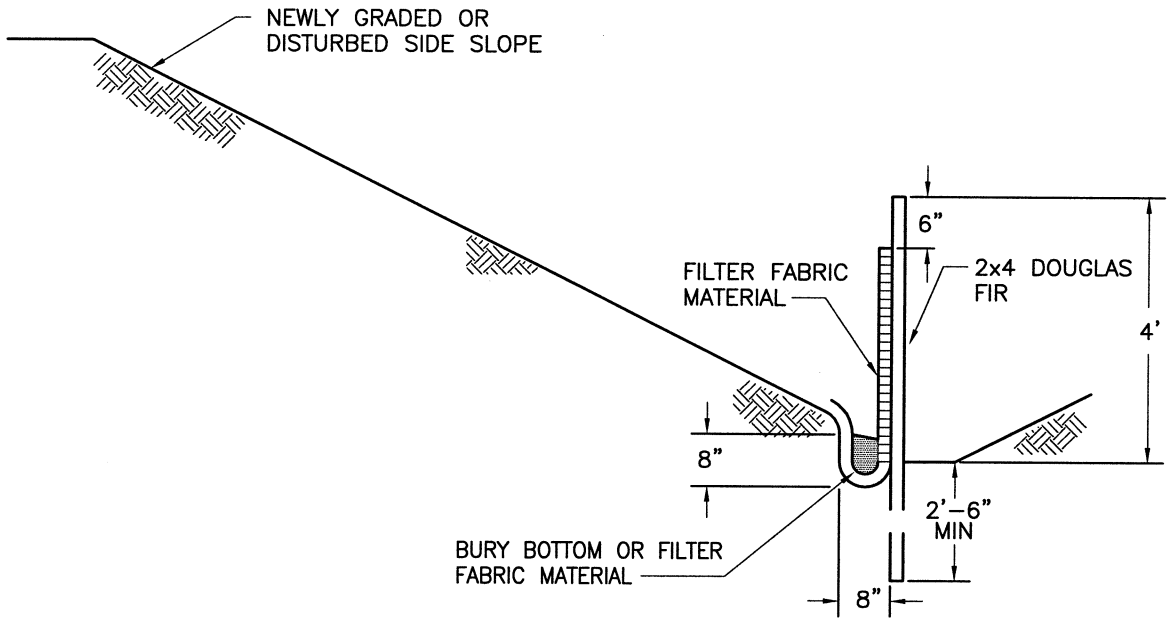
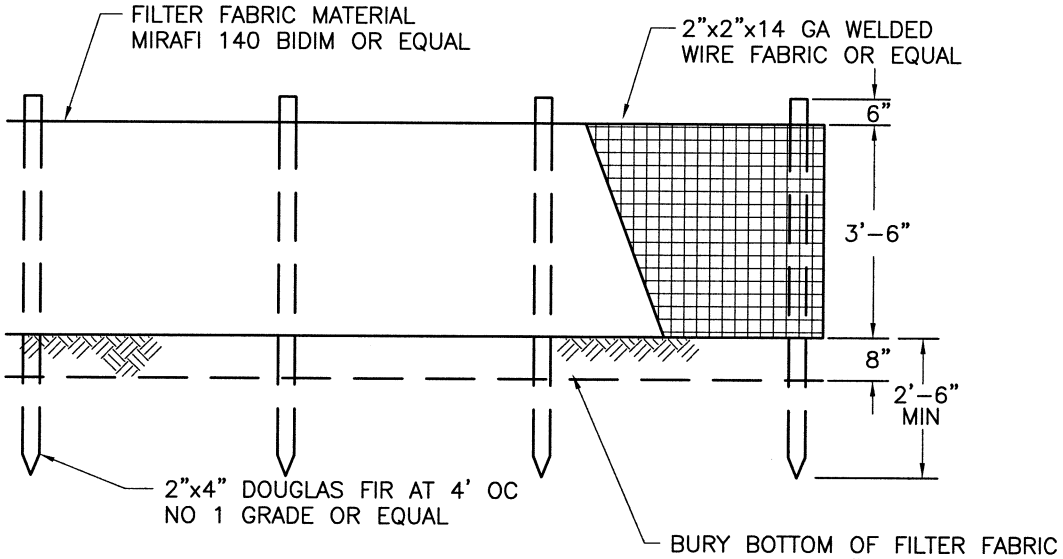
FILE NAME: STD-X-2B		



TYPICAL CROSS SECTION



ELEVATION

IMAGES:
XREF'S:

DATE: 01/04/08 12:13pm FILENAME: STD–X–3

CITY OF ORTING

SILT FENCE

SCALE: NO SCALE	APPROVAL DATE:	DRAWING NO. X–3
FILE NAME: STD–X–3		

APPENDIX A

DEVELOPER CHECKLIST

City of Orting
Developer Checklist

Development Name_____

Application Number_____

A. Preliminary Plat

Date	Initial		
_____	_____	1.	Environmental Documentation and Request for Determination Submitted (D)
_____	_____	2.	Environmental Determination (C)

No Impact or **Impact**

_____ DNS Issued (C)	_____ DS Issued (C)
_____ Public Notice (C)	_____ Scoping Notice (C)
_____ Comment Period (C) (15 days)	_____ Draft EIS (D)
_____ Ecology Review	_____ Public Notice (C)
_____ DNS Accepted (C)	_____ Comment Period (C) (30 days)
	_____ Final EIS (D)
	_____ EIS Accepted (C)

DNS or EIS must be accepted by City prior to Preliminary Plat Application.

_____ _____ 3. Preliminary Plat Application (D)
Plans Required (10 each)

___ a. Plat Map
___ b. Contour Map
___ c. Utility Plan and Profile
- streets
- stormwater
- sewer
- water

Date	Initial		
_____	_____	4.	City Review and Comment (C) • Mayor • City Administrator • Fire Chief • Engineer • Building Inspector • Utility Superintendent • Schools
_____	_____	5.	Planning Commission (C) • Public hearing and determination
_____	_____	6.	City Council (C) • Public hearing and action on Planning Commission recommendation

B. Improvements

_____	_____	1.	Developer Extension Agreement (D and C)
_____	_____	2.	Review Deposit Paid (D)
_____	_____	3.	Submit Final Construction Plans (D)
_____	_____	4.	Review and Approval (C) _____ • City Engineer _____ • Fire Chief _____ • Utility Superintendent _____ • City Council
_____	_____	5.	Bond Posted (D)
_____	_____	6.	Inspection Fee Paid (D)
_____	_____	7.	Contractor Approval (C)
_____	_____	8.	Complete Construction (D)
_____	_____	9.	Final Charges and Fees Paid (D)
_____	_____	10.	Latecomers Agreement Executed (if necessary) (C)
_____	_____	11.	Construction Acceptance (C) _____ • Engineer Approval _____ • Council Approval
		12.	As-built Mylars (D) _____ • Engineer Approval _____ • Council Approval _____ • AutoCAD Files to City

Date Initial

C. Final Plat

_____ _____ 1. Final Plat Application (D)
Requirements
___ a. Final Plat Map
___ b. Land Surveyor Certification
___ c. Owner adoption of plat and dedication of public right-of-way and easements
___ d. County Treasurer Certification
___ e. Clerk/Treasurer Certification

_____ _____ 2. Final Plat Approval (C)
___ a. Engineer
___ b. Planning Commission
___ c. City Council

_____ _____ 3. Plat Recording (within 1 year of City approval) (D)

Notes: (D) Developer Responsibility
(C) City Responsibility

APPENDIX B

DEVELOPER EXTENSION AGREEMENT

CITY OF ORTING
UTILITY EXTENSION AGREEMENT

The undersigned, hereinafter referred to as DEVELOPER, hereby makes application to the City of Orting, hereinafter referred to as CITY, for permission to construct and install an extension to the CITY's utility and street system, on public right-of-way, and/or on easements which are subject to the approval of the CITY and connect the same to the utility and street system of the CITY and makes the following representation and agreements to wit:

I. Location

The proposed utility extension and streets shall be for the use and benefit of the property hereinafter described, which property is owned by the DEVELOPER and/or other owners who are contributing to the cost of said extension and construction; said other owners join in this application and referred to as "additional owners"; that said property is described as follows:

Description of Property

II. Description of Extension

The proposed extension will consist of the following:

	Length of Extension		Other Improvements[4]	
	Off-Site[1]	**On-Site[2]**	**Off-Site[1]**	**On-Site[2]**
Water Main				
Sewer Main				
Storm Drain				
Roadway[3]				
Sidewalk				

(1) Improvements outside property described in Section I.
(2) Improvements within property described in Section I.
(3) Based on center line.
(4) For example, pump stations, detention facilities.

The above utility and street extensions shall be constructed in accordance with plans and specifications approved by the CITY and in accordance with the standards and conditions of the CITY. The standards and conditions are on file in city hall of the CITY. The terms and conditions of which are by this reference made a part hereof as though set forth in full herein.

III. Fees

Fees are to be paid by the DEVELOPER for administration, engineering, legal and other costs incurred or to be incurred in connection with the construction and installation of utilities and streets for this project. Fees shall be paid by the DEVELOPER in consideration of the CITY providing the following services:

a. Review Services

1. General consultation with the DEVELOPER regarding the requirements of the CITY and procedures for the DEVELOPER to complete the project and administration of the DEVELOPER Extension Agreement.

2. Review of the proposed development. Comments will be made in accordance with compliance with the CITY's comprehensive plans and adopted standards.

3. Submittal of comprehensive plan amendments and contract plans and specifications, if necessary, to the regulatory agencies for approval.

b. Construction Engineering Services

1. Inspection of the construction in progress as required to assure that the construction of the utilities and roadway system is in accordance with the construction plans and specifications and CITY standards.

2. Inspection of pressure tests of pipelines and other tests required for utilities is outlined in the CITY standards. Inspection of any retesting which may be necessary and sampling for the purposes of water quality control.

3. Final inspection of the completed project. Preparation of inspection reports and setting forth any deficiencies that may exist.

4. Re-inspection of any deficient work.

5. Review of as-built plans provided by the DEVELOPER which are to conform to construction records.

c. Legal Services

1. Review DEVELOPER's Extension Agreement, easements, insurance, and bonds.

2. Prepare the resolutions for amending comprehensive plans as necessary, accepted DEVELOPER Extension Agreements and other agreements as necessary.

3. Prepare latecomers agreement if required.

d. Additional Services

1. Additional engineering review that may be necessary for changes in contract plans and/or specifications and/or changes in conditions.

2. In the event this agreement is referred or placed into the hands of attorneys by the CITY for review and/or enforcement of any portion or if suit is instituted with respect to this agreement, then in either event the DEVELOPER and additional Owner shall pay reasonable attorney's fees as may be incurred by the CITY or ordered by the court, court costs and all other expenses in connection therewith as may be incurred by the CITY.

e. Other Costs - Such fees and additional charges as required by governmental agencies charges in lieu of assessments, general facility charges, publication costs, notification costs, and other such additional costs and charges as incurred by the CITY in connection with the execution of this DEVELOPER Extension Agreement or as are established by ordinance and/or resolution of the CITY.

IV. Extension Fees

a. Review Engineering Services.

A deposit for engineering review services shall be $50.00 per lot. This shall be paid prior to submitting construction plans for review by the CITY. The DEVELOPER will be responsible for any additional costs connected with review of corrected plans and specifications that are resubmitted.

b. Construction Engineering Services.

The fee for construction engineering services shall be on an actual time and expense basis. A deposit shall be made in the amount of $1.20 per lineal foot of water main, plus $1.20 of lineal foot of sewer main, plus $1.20 per lineal foot of storm drain. The total of these costs shall be deposited with the CITY prior to construction approval. The minimum deposit shall be $1,800.00 if the total length of utilities is less than 1,500 lineal feet.

c. Legal Services.

The deposit for legal services shall be 15 cents per lineal foot of water main, plus 15 cents per lineal foot of sewer main, plus 15 cents per lineal foot of storm drain with a minimum deposit of $225.00 if the collective extension is less than 1,500 lineal feet. The fees charged for legal services shall be on an actual time and expense basis.

d. Additional Services.

Additional services shall be provided on an actual time and expense basis. DEVELOPERs shall pay final charges and fees prior to acceptance of the improvements by the CITY.

e. Other Costs.

Fees and charges for all other costs described in Section IIIe shall be based on actual invoice amounts or in such amount as established by CITY resolution and/or ordinance for each such fee and/or charge.

V. Calculation of Deposits

Review Engineering:

Number of Lots _____ x $50 = $_____

Deposit shall be made prior to submitting design plans for review.

Construction Engineering and Legal Services:

Total length of Utilities (excluding sidewalks) from
Section III _____ x $1.35 = $_____

Deposit shall not be less than $2,525.00 for a subdivision, and $500.00 for a short subdivision.

Deposit shall be made prior to construction.

VI. Latecomers Agreements

If DEVELOPER desires to enter into a Latecomers Agreement providing for reimbursement and/or contribution from property owners that benefit from the extension of certain utilities, said agreement shall be made a part of this document herein and shall be attached. All Latecomers Agreements are subject to the sole approval of the CITY.

VII. Evidence of Insurance

The DEVELOPER shall provide to the CITY written evidence of insurance covering public liability and property damage to third parties in which the CITY and it's Engineer shall be named as an insured.

VIII. Cash Deposit

DEVELOPER agrees to have any contractor installing an extension in accordance with this application and agreement provide for the CITY a cash deposit of $1,000.00 prior to beginning construction of said extension, and no construction shall be commenced until said cash deposit is furnished. This cash deposit shall be conditioned upon the contractor's strict compliance with the CITY's conditions and standards contained herein and shall insure the CITY against any damage to the existing system as a result of the contractor's failure to comply. Deposit shall not apply to Subcontractors.

The cash deposit will be refunded to the contractor upon satisfactory completion of the extension and connection of the extension to the existing system. In the event of the contractor's failure to comply, the CITY may exercise the right to irrevocably forfeit the total amount of the cash deposit as liquidated damages.

IX. Easements

Any required easements shall be obtained by the DEVELOPER at his sole cost and expense, and shall name the CITY as grantee, and a true and fully executed copy of such easement in a form acceptable to the CITY shall be delivered to the CITY prior to the time DEVELOPER commences construction hereunder. Upon completion of construction and prior to acceptance of said extension by CITY in accordance with the provisions hereof, the original easement shall be delivered to the CITY. The DEVELOPER shall provide all necessary easements at his sole cost regardless of changes in the Contract Plans, together with good and sufficient evidence of title and, if required, a title insurance policy in sum not less than $1,000 per 500 feet of easement, establishing clear title to the easement in the CITY.

X. Permits

All the necessary permits from any governmental agency shall be obtained by the DEVELOPER directly or, only if required, CITY will obtain the same, but at DEVELOPER's expense; and CITY shall be provided with a copy of all such permits before construction commences.

XI. Contractors, Subcontractors, Labormen, and Materialmen

The CITY has a substantial interest in determining that the extension is to be constructed and connected to the existing system of the CITY in a good workmanlike manner and, therefore, the DEVELOPER and/or additional owners agree to submit the names of all contractors, subcontractors, materialmen, and suppliers, or in the event that the owner or additional owners are contractors, then a statement that said DEVELOPER or additional owner will perform said improvement, and the CITY reserves the right to approve or disapprove of the same, which approval the CITY will not unreasonably withhold; however, in determining whether said DEVELOPER, additional owner, contractor, subcontractor, materialmen, or laborer is or is not satisfactory, the CITY can take into consideration said parties' financial ability, prior work performed by said party for or on behalf of the CITY, and the recommendation of the CITY Engineer. Said names shall be submitted prior to any construction being performed with respect to said real property described in this agreement and, if said party is not acceptable to the CITY, the CITY will so notify the DEVELOPER within 15 days after notification is given to the CITY of the name of said party, whereupon the DEVELOPER and/or additional owner shall re-submit alternates and said alternates shall likewise be subject to the same approval, upon the same criteria as the original party submitted, and notification will be given by the CITY within the same period of time specified.

XII. Performance Bond

DEVELOPER shall furnish to CITY a performance bond between DEVELOPER and the CITY upon the form approved by CITY and in an amount equal to 125% of the Engineer's estimated cost of the project, or actual cost, if known, whichever is less, prior to the staking of the extension for construction.

The performance bond shall assure and guarantee the payment of all persons furnishing labor and materials and completion of the improvements including payment of all fees required herein in accordance with the terms hereof, and shall hold the CITY harmless from any claims thereof, whether any such claim would arrive under the public works lien statutes or the mechanic lien statutes of the State of Washington, and compliance with the formal requirements of either or both of said statutes shall not be a condition of recovery upon said bond.

XIII. Grading of Roads

DEVELOPER shall grade all roads to the design subgrade elevation prior to the start of construction and shall advise the CITY in writing of any changes which may be contemplated during construction. If the DEVELOPER changes the subgrade elevation of the road after completion of the extension or any part thereof, the DEVELOPER shall be responsible for all costs incurred to raise or lower the pipelines or other improvements as required as a result of said change in subgrade elevation. This obligation shall remain in full force until CITY releases the bond in connection with the DEVELOPER's obligation to the CITY for construction of the roads and streets.

XIV. Connection to the CITY's Utility System

Not less than 48 hours prior to the time that said extension is partially or fully completed and connection to the CITY's system is desired, written application for permission to make the actual connection to the CITY's system at a specified time shall be made by DEVELOPER or his contractor. All connections to the existing system and all testings of the new line shall require authorization of the CITY and its Engineer and shall be conducted in the presence of the CITY's Engineer and/or his authorized representatives. For pressurized pipelines the CITY reserves the right to require that connections be made by live tap where disruption of service would, in the opinion of the CITY, be detrimental.

XV. Condition Precedent

Compliance with the terms and conditions of the DEVELOPER Extension Agreement and all applicable resolutions of the CITY shall be a condition precedent to the CITY's obligation to accept a Bill of Sale and a condition precedent to the CITY's agreement to maintain and operate the improvements and to provide service to the real property that is the subject matter of this agreement, and particularly, without limiting the generality of the aforesaid, the CITY shall be under no obligation to allow connections to the utility system of any portion of the real property described in this application if there are any fees or costs due and owing to the CITY arising from this agreement and resolutions of the CITY or from regulations, resolutions, or ordinances of any other governmental agency.

The CITY shall not be obligated to provide utility service to the property herein described if construction by third parties of facilities to be deeded to the CITY has not been completed and title accepted by the CITY if said third party facilities are necessary to provide utility service to the real property to be served.

XVI. Acceptance for Use and Operation

At such times as the extension is partially completed or it is not ready for acceptance of title by CITY by reason of other incomplete plat improvements, and one or more residences therein are in need of utility service and the CITY is satisfied that the extension will be completed, the CITY may, but is not required to, accept the system in a platted subdivision for use and operation only and authorize temporary utility service to the designated residences. In order to insure that the DEVELOPER will complete the system in the entire subdivision or specific phase thereof for which this application is filed, the CITY reserves the right to designate the number of residences or other structures which can be connected to the system for temporary service upon acceptance of a partially completed system for use and operation by the CITY and also reserves the right to refuse to connect all residences or other structures to the utility system as installed until the CITY can be assured that the system will be completed in accordance with this application.

Acceptance for use and operation shall be subject to satisfactory completion of the following:

a. Passing tests on all required parts in the system; and

b. Acceptance by the appropriate agencies of the State of Washington Department of Health; Department of Ecology; Department of Labor and Industries; or any other governmental agency having jurisdiction.

c. Inspection and approval by CITY Engineer of the system for use and operation in accordance with the plans and specifications.

After satisfactory completion of the test and inspection provided for in Section IIIb and acceptance of the utilities for use and operation only, the CITY may connect such extensions to the utility system and furnish temporary service to such residences as it may designate, which residences shall be subject to the charges and subject to all resolutions, rules, regulations, and policies of the CITY.

The charges for the use and operation inspection shall be paid for under fees outlined in Section IV of this Agreement, and shall be based on the actual time and expense incurred by CITY or their authorized representative and paid for as “additional inspection.” Any subsequent re-inspection of the deficient work which may have prevented final inspection of the improvements shall also be based on actual time and expense incurred.

XVII. Final Acceptance

The CITY agrees to accept title to the utility and street systems at such time as all work has been completed, and any damage, which may have been caused thereby, has been repaired, and the CITY's Engineer has made final inspection and given approval of the system as having been completed in accordance with the plans and specifications. DEVELOPER shall execute and deliver to the CITY a Bill of Sale in the form approved or furnished by the CITY containing a two-year warranty. Upon acceptance of title by the CITY, said extension shall be subject to the control, use and operation of the CITY and all regulations applicable to service and charges therefore as established by the CITY from time to time.

Such acceptance by CITY shall not relieve the DEVELOPER of the obligations to correct defects in labor and/or materials as heretofore provided and/or the obligation set forth in applicable paragraphs hereof nor for liability to third parties arising from the DEVELOPER's completed system. After acceptance of the extension by CITY and the transferring of title to such extension as set forth above, the DEVELOPER shall furnish a Maintenance Bond which shall continue in force from the date of acceptance and transfer of title by CITY in lieu of the Performance Bond required herein. The bond shall be in a form acceptable to CITY and shall require the DEVELOPER and/or bonding company to correct defects in labor and material which arise in said system for a period of two (2) years from the date of acceptance and transfer of title. The maintenance bond shall be in an amount equal to fifteen percent (15%) of cost of said extension, or a minimum of Ten Thousand Dollars ($10,000).

XVIII. Limitation of Period for Acceptance

The extension shall be complete and accepted within one year of date of acceptance of this application by CITY. The completion and acceptance of the extension within the one-year period shall be subject to the following provisions.

a. Failure to Commence Construction

In the event the DEVELOPER, after the receipt of approved construction plans, has not commenced construction and posted the required performance bond, and, if CITY determines, in its absolute discretion, that it is necessary that the DEVELOPER extension be completed in order that the CITY can provide utility service to other property and completion of the extension is necessary to provide utility service to other property, then in such event, the CITY may give the DEVELOPER or additional owners notice that construction of the system improvements must be commenced within sixty (60) calendar days of the notice by the CITY to said DEVELOPER and/or additional owners, provided that plans have been prepared by the CITY and submitted to said DEVELOPER and/or additional owners and, if construction is not commenced within the time specified, then the CITY may, at its discretion, determine that this Agreement is terminated and the CITY shall retain all payments made by the DEVELOPER to the CITY and the CITY shall be free to proceed with construction of the improvements in the manner and method provided by law. If delay in plans is occasioned by failure of the DEVELOPER to provide necessary data to the CITY Engineer for a period of thirty (30) days after notice, then this Agreement likewise can be terminated and the CITY may proceed with construction of the improvements in the manner and methods provided by law.

b. Failure to Complete Construction

If the extension is not completed and accepted within one year from the date below, then the DEVELOPER's rights under this agreement shall cease and no additional utility services (if any utility services have been connected to the extension under the provisions of acceptance for temporary use and operation) shall be connected to such extension unless and until DEVELOPER shall make a new Application and the DEVELOPER shall pay the additional administrative, legal, engineering, and inspection costs involved, all as determined by the CITY.

In the event no new application or renewal of the existing application is made, the CITY may proceed to require completion of construction under the provisions of the DEVELOPER's Performance Bond, if determined in the sole discretion of the CITY to be necessary for CITY purposes.

XIX. Warranty of Authority

The undersigned DEVELOPER and additional owners warrant that they constitute the owners of all of the real property that is the subject matter of this Agreement and upon the request of the CITY agree to provide title insurance or preliminary title report, at the CITY's option and at the DEVELOPER's sole cost and expense, establishing to the satisfaction of the CITY that the parties executing this application constitute the owners of all the real property described and have the authority to execute this Agreement with respect to said real property.

DATED at_____, Washington, this _____ day of _____, 20_____

_____

_____ DEVELOPER's ADDRESS

_____ _____

_____ _____

Additional Owners

Upon compliance with the terms and conditions of the application and Contract Documents furnished by the CITY to the above-named DEVELOPER, the City of Orting will accept said extension and furnish utility service thereto.

CITY OF ORTING
Pierce County, Washington

By_____
Mayor

APPENDIX C

BILL OF SALE

BILL OF SALE

The Bill of Sale executed by _____, hereinafter referred to as the DEVELOPER, to the City of Orting, hereinafter referred to as the CITY;

WHEREAS the DEVELOPER is the owner of property commonly known as _____, which is being developed according to CITY standards and municipal code, and;

WHEREAS the DEVELOPER has constructed utility improvements outside said development to connect utilities therein with the existing CITY system which has been approved and accepted by the CITY, and;

WHEREAS the DEVELOPER has paid fees and charges that are necessary for connection to the CITY's utility system, and;

WHEREAS the DEVELOPER has executed and recorded easements for those portion of the utilities not located within existing CITY right-of-way, and;

WHEREAS the CITY is obligated to operate and maintain the following utilities within easements and right-of-way necessary for operation of utilities within said development:

_____ Sanitary Sewer

_____ Stormwater

_____ Water

_____ Streets/Sidewalk

THEREFORE, the DEVELOPER does hereby convey and transfer unto the CITY said utilities now constructed as an extension of the CITY's system, and the CITY hereby accepts said conveyance, and;

THEREFORE, the DEVELOPER shall warranty said utilities from defects and improper installation for a period of two (2) years from the date of this agreement.

Dated this _____ day of _____, 20_____.

DEVELOPER CITY

_____ _____

Authorized Official Mayor

APPENDIX D

PLAN REQUIREMENTS

PLAN REQUIREMENTS

The plans for street design shall conform to the requirements of Sections 3 and 4. The following requirements shall also be shown on the plans where applicable.

Road and Storm Plans:

- Plan and profile view.
- All existing trees 6 inches in diameter or larger, and which trees are proposed to be removed and remain.
- Existing and proposed contours at 1-foot intervals.
- The fill and/or excavation quantities in cubic yards.
- The type of fill materials and compaction requirements.
- State whether or not the fill material will be placed upon native or stripped vegetation.
- Cross-sections at 200 feet minimum intervals showing the fill/grading shall be shown on the plans through all properties, and 30 feet beyond the property lines.
- Limits of grading.
- Street names.
- Center line bearings.
- Center line/baseline stationing.
- Center line elevations at 50-foot intervals, except as otherwise stated.
- Where transverse slope (crown) varies from 3 percent, include gutter line elevations at 50-foot intervals, and the beginning, end, and other critical locations throughout the duration of slope variations (i.e., P.C.'s, P.T.'s, B.V.C.'s, E.V.C.'s and slope transition changes).
- Center line grade shall be in percentage.

- Horizontal curve datum at center line.
- Vertical curve datum at center line.
- Intersection gutter line elevations at 1/4 points and right-of-way curve.
- Intersection elevation datum at 1/4 points of radii.
- Accurate locations of monuments at all center line intersections, cul-de-sacs, P.C.'s, P.T.'s and P.R.C.'s.
- Location, length, width of sidewalks, and driveways.
- Length, type, and location of curb and gutter.
- Wheelchair ramp locations.
- Right-of-way and width; lot/subdivision lines and street addresses.
- Right-of-way radii.
- Curb to curb pavement width.
- Mailbox design and/or placement/replacement.
- Street landscaping.
- Standard street construction notes.
- Legend (complete for existing and new).
- Storm drainage system.
- Utility locations (new and existing) for:
    - Water system
    - Sanitary sewer system
    - Gas
    - Telephone
    - Power
    - Cable TV
    - Address any horizontal or vertical conflicts

Street Light Plans:

- Street light layout plans shall be on separate drawings from the street plan/profile sheets. The final locations shall be determined by the City Engineer after the City receives a copy of the Puget Power transformer layout design drawings. Street light bases shall be located 22 inches from face of curb to center of light standard bolt circle.

- Street light disconnects shall be located near the power transformers.

- Street light conduit for wiring shall be located within the utility easement for power, gas, telephone, and cable TV wherever possible.

- Street Light: Location, type, height, and wattage.

- Service Cabinets: Location and type.

- Conduits and Wire: Location, type, size, and length.

- Junction Boxes: Locations and types.

Channelization and Signing Plans:

- Incorporated with "Street Light Plans".

- Lane Markers: Locations and types.

- Pavement Markings: Locations and types.

- Signs: Locations, types, and mountings.

- Painted street curbs.

Signalization Plans:

- Separate detailed plans required.

- Pole base locations.

- Traffic loop location.

- Conduit location.

- Details of traffic signal system to be reviewed and approved by the City Engineer.

- Location of power source.

Storm Drainage Plan Requirements:

The following requirements shall be shown on the street plans:

- Plan and profile.

- Storm pipe including locations, lengths, materials, slopes, depths, and sizes.

- Manholes and catch basins including location, types, and rim and invert elevations. All new and existing manholes and catch basins shall be numbered consecutively.

- Typical ditch cross-sections shall be shown on the plans.

- Easement widths and locations.

- Identify any possible utility conflicts.

- Roof drain connections.

- The distance from the center line of pipes to any building structure.

- An all-weather maintenance access to all structures, ditches, ponds, etc., including typical cross-section of said access road.

WATER SYSTEM DESIGN REQUIREMENTS

Water Mains:

- All new water main lines shall be installed to the size as indicated in the City's Comprehensive Plan. The minimum water main pipe size shall be 8 inches in diameter.

- Connections to existing water mains shall be wet taps through a tapping tee and tapping valve and shall be made by a city approved contractor. The City shall approve the time and location for these connections.

- Where water mains are to be extended to serve a particular property, the water lines shall be extended along the entire frontage of the property to be served. Looped connections may be required to maintain continuity in the system.

- All public water mains shall have a minimum cover of 36 inches in improved right-of-way, and 42 inches cover in unimproved right-of-way or easements.

- All water mains and appurtenances shall be hydrostatically tested at 200 psi in accordance with Section 7-11.3(11) of the Standard Specifications.

- Two-inch (2″) Blow-off Assemblies are required on dead-end water lines, except where fire hydrants are installed at the dead-end. The blow-off assembly shall be installed in accordance with City Standards. Water valves shall be installed along the water line at a maximum space of 400 feet and at the intersection of lateral lines.

- Minimum distance between sewer and water lines shall be 10 feet horizontally and 1-foot vertically.

- Air relief valves are required at high points in water lines. Air relief valves shall be installed in accordance with City Standards.

- Water valves shall be located in clusters when possible and shall be located so that each leg of the main line system can be isolated separately.

- Easements shall be a minimum of 20 feet in width for water lines. No building structures shall be allowed within easements.

- Sampling station per City standards shall be installed by the developer at locations designated by the City.

Fire Hydrants:

- Fire hydrants shall be installed at a maximum lateral spacing of 600 feet along streets in single-family residential zones. A fire hydrant is required within 300 feet of a proposed structure on a new building lot.

Fire Service Connections:

- A double detector check valve assembly (DDCVA) complete with 3/4-inch bypass DCVA and 5/8-inch Rockwell SR-II water meter reading in cubic feet is required on the fire service line to any building which is equipped with a fire sprinkler system.

- The DDCVA shall be located in a vault at or near the property line and shall be installed in accordance with City Standard.

- Upon approval of the installation by the City Inspector, the DDCVA and the DCVA shall be tested with a Washington State certified backflow assembly tester, and the test report results shall be submitted to the City prior to use of the water system.

- The domestic water service shall not be connected directly to a fire system service line, but rather shall be a separate connection to the main line.

- The fire department connection shall be located within 15 feet of a fire hydrant but not less than 10 feet.

- All underground piping shall be installed by a State of Washington Licensed Sprinkler Contractor.

Brass or dielectric unions shall be installed immediately downstream of all backflow assemblies 2 inches and smaller. A Rockwell #912 (or approved equal) flanged coupling adapter shall be installed on the immediate upstream side of all backflow assemblies 3 inches and larger.

All landscape irrigation systems require backflow protection. The City will determine the type of backflow device required for each installation.

Integral air-vacuum breakers are required on all threaded water outlets, including lab faucets, janitor sink faucets, and hose bib faucets.

Water System Plan Requirements:

The following items shall be shown on the plans:

- Plan and profile.

- Water pipe, including location, length, material, slope, depth, and size.

- Detail all new connections to the existing water system.
- Identify any possible utility conflicts.
- Stationing and reference points.
- Valves, meters, and fittings, including size and location.
- Fire hydrant protection if hydrant is not protected by street curb and gutter.
- Blow-offs at low points or dead-ends (2-inch minimum).
- Air and vacuum relief valve at high points.
- Pressure reducing valves.
- Concrete blocking.
- An all-weather maintenance access, including typical cross-section of said access road.
- Service sizes and locations.
- Meter sizes and locations.
- Minimum one (1) service per lot.
- Sewer deduct meter locations and sizes.

SANITARY SEWER PLAN REQUIREMENTS

The following requirements shall be shown on the plans:

- Plan and profile.
- Sanitary sewer pipe, including locations, length, material, slope, depth, and size.
- Manholes, including location, type, and rim and invert elevations. All new manholes shall be numbered consecutively.

- Detail any inside drop manhole connections per City Standard.
- Identify any possible utility conflicts.
- Provide stationing and reference points.
- All public sewer main lines shall be located within roadway rights-of-way or easements.
- Location and stationing from downstream manholes shown.
- Perpendicular connection of side sewers to the main lines.
- Proper reference and layout for saw cutting and patching existing streets.
- An all-weather maintenance access, including typical cross-section of said access roads.

APPENDIX E

AS-BUILT REQUIREMENTS

AS-BUILT REQUIREMENTS

- Submit a complete set of mylar copies of design Drawings with verification of all utility location, both horizontal and vertical, by a professional land surveyor and sealed with a stamp.

- All elevations and slopes shall be verified with a check, or the corrected numbers written in with the design number lined out.

- Each sheet shall be stamped “Record Drawing” or “As-built Drawing” and dated.

- All changes to the original Drawings shall be shown on the mylars.

- Submit four sets of blueline copies with the mylars.

- Obtain City approval of the As-built Drawings prior to submittal of the mylars.

- Submit all drawings in AutoCAD to City.

APPENDIX F

EROSION CONTROL PRACTICES FOR SINGLE FAMILY RESIDENCES AND SMALL SITES

EROSION CONTROL PRACTICES FOR SINGLE FAMILY RESIDENCES AND SMALL SITES

This Appendix contains the step-by-step instructions needed by builders on most home sites to control offsite migration of soils and materials and to prevent undesired onsite migration of sediments. Additional controls may be needed for sites that have steep slopes, are adjacent to lakes and streams, receive a lot of runoff from adjacent land, or are larger than an acre.

The homeowner is encouraged to review the information herein, pass it along to his/her contractor, and prepare an erosion control plan similar to the following Detail located in this Appendix as required for an Abbreviated Plan.

All sites shall comply with the *2005 Stormwater Management Manual for Western Washington* and Title 9, Chapter 5 of the Orting Municipal Code.

Preventing Erosion is Easy:

Erosion control is important even for home sites of an acre or less. The materials needed are easy to find and relatively inexpensive – straw bales or silt fencing, stakes, gravel, plastic tubes, and grass seed. Proper use and placement is a straightforward process. Most sites only need a few controls. The following is a brief description of what to do to prevent erosion problems:

- Silt fencing or straw bales to trap sediment on the downslope side of the lot;
- Locate soil piles away from any roads or watercourses;
- Use a construction entrance for all vehicles to limit tracking of mud onto streets;
- Cleanup sediments carried offsite by vehicles or storms;
- Use infiltration trenches or downspout extenders to prevent erosion from roof runoff;
- Preserve existing trees and vegetation where possible to prevent erosion and decrease the amount of runoff from your site; and
- Revegetate the site as soon as possible.

Use of these common sense measures will greatly reduce or eliminate erosion off the site and reduce any impacts to the surrounding environment and stormwater conveyance system.

STEP-BY-STEP
EROSION CONTROL PRACTICES

Following these steps will reduce erosion on- and off-site.

Filter Fabric Fencing or Straw Bales:

- Install prior to any other work being done.
- Install on downslope side(s) of site with ends extended up side slopes a short distance.
- Place parallel to the contour of the land to allow water to pond behind the fence.
- Entrench into the ground.
- Stake (1 stake every 3 feet for filter fabric fencing or 2 stakes per bale).
- Leave no gaps between bales or sections of filter fabric fencing.
- Inspect and repair once a week and after every large rainfall. Remove sediment if deposits reach more than 6 inches.
- Maintain until a lawn or permanent landscaping is in place.

Soil Piles:

- Locate away from any downslope street, stream, lake, wetland, ditch, or drainageway.
- Temporary seed such as annual rye is recommended for topsoil piles which will not be moved through the winter.

Construction Entrances:

- Install a construction entrance.
- Use to prevent tracking of dirt onto the road by *all vehicles*.
- Maintain throughout construction.

Sediment Cleanup:

- By the end of each work day, sweep or scrape up soil tracked onto the road.
- By the end of the next work day after a storm, cleanup soil washed offsite.

Revegatation:

- Seed, sod, or mulch bare soil as soon as possible.

Seeding and Mulching:

- Spread 4 to 6 inches of topsoil, till into native material to a depth of 12 inches.
- Fertilize according to soil test (or apply 10 pounds per 1,000 square feet of 20-10-10 or 10-10-10 fertilizer).
- Seed with an appropriate mix for the site (discuss with a lawn expert or home gardening center).
- Rake lightly to cover seed with 1/4″ of soil. Roll lightly.
- Mulch with hay or straw (70 to 90 pounds, or one bale per 1,000 square feet).
- Water gently every day or two to keep soil moist. Less watering is needed once grass is 2 inches tall. *Do not over water so that soil runs off lawn*.

Sodding:

- Spread 4 to 6 inches of topsoil.
- Fertilize according to soil test (or apply 10 pounds per 1,000 square feet of 20-10-10 or 10-10-10 fertilizer).
- Lightly water the soil.
- Lay sod. Tamp or roll lightly.
- On slopes, lay sod starting at the bottom and work toward the top. Peg each piece down in several places.
- Initial watering should wet soil 6 inches deep (or until water stands 1 inch deep in a straight-sided container). Then water lightly every day or two for 2 weeks.

Preserving Existing Vegetation:

- Whenever possible, preserve existing trees, shrubs, and other vegetation.
- To prevent root damage, do not grade, place soil piles, or park vehicles near trees marked for preservation.
- Place plastic mesh or snow fence barriers around trees to protect the area below their branches.

Reference: Washington State Department of Ecology. 2005. Stormwater Management Manual for Western Washington. February 2005. Publication Numbers 05-10-029 through 05-10-033.