

EXHIBIT B

CITY OF PORTLAND

BUREAU OF ENVIRONMENTAL SERVICES

SPECIAL PROVISIONS

FOR

ELK ROCK BYPASS PROJECT

CONSOLIDATED SPECIAL PROVISIONS

The preparer of the consolidated specifications for this Project:

Handwritten notes and scribbles, including a date that appears to be 01/22/10.

By: Sungmo Sung, PE Date: 12/23/09

CITY OF PORTLAND

BUREAU OF ENVIRONMENTAL SERVICES

SPECIAL PROVISIONS

FOR

Elk Rock Bypass Project

PROFESSIONAL OF RECORD CERTIFICATION(s):

| | |
|--|--|
| <p>Seal w/signature</p>  <p>Seal description: A circular professional engineer seal for Lloyd C. Starnes, No. 13719, expires 6/30/10. The seal includes the text 'REGISTERED PROFESSIONAL ENGINEER', '13719', 'LLOYD C. STARNES', and 'JULY 18, 1951'. A handwritten signature is written across the seal.</p> | <p>Signing as the Professional of Record for the Special Provisions sections listed below:</p> <p>ALL Sections of Special Provisions</p> |
|--|--|

SPECIAL PROVISIONS

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SPECIAL PROVISIONS

WORK TO BE DONE

The Elk Rock By-pass Project involves sewer bypass pipe construction near the following streets.

- 2071 SW Military Rd. & 12055 SW Breyman Ave

Improvements shall consist of those items of work listed in the Proposal and as shown on the accompanying Plans. The Contractor shall perform all labor, and furnish all materials, equipment and incidentals required to make each item complete. Work shall include, but not be limited to:

1. Construct, maintain, and remove temporary work zone traffic control measures.
2. Construct, maintain, and remove erosion control measures.
3. Perform all removal of trees, clearing and grubbing, and earthwork operations.
4. Construct drainage system including sewer pipes and manholes.
5. Complete pavement restoration.
6. Construct a maintenance access road.

APPLICABLE SPECIFICATIONS

The Specification that is applicable to the Work on this Project is the 2007 edition of the "City of Portland Standard Construction Specifications".

All number references in these Special Provisions shall be understood to refer to the Sections and subsections of the Standard Specifications bearing like numbers and to Sections and subsections contained in these Special Provisions in their entirety.

OWNER'S REPRESENTATIVE ENGINEER

Owner's Representative: Brad Huard
1120 SW 5th Ave, Suite 1000
Portland, Oregon 97204
503 823-4885

Engineer: Lloyd Stauning
1120 SW 5th Ave, Suite 1000
Portland, Oregon 97204
503 823-7633

TIME FOR COMPLETION

See subsection 00180.50(d) for the time to complete all Work under the Contract.

The written Notice to Proceed will be sent to the Contractor in accordance with subsection 00130.80.

The Owner considers on-site work to have commenced when the Contractor mobilizes equipment onto the Project site.

* * * * *

| Note: As an aid to reviewers of these Special Provisions, text that has been modified specifically for this project is marked by a left-hand vertical bar as shown in this paragraph.

* * * * *

PART 00100 – GENERAL REQUIREMENTS

**SECTION 00110 - ORGANIZATION, CONVENTIONS, ABBREVIATIONS
AND DEFINITIONS**

Comply with Section 00110 of the Standard Specifications supplemented and/or modified as follows:

00110.20 Definitions – Add the following:

Pea Gravel – Naturally occurring round gravel that will pass a 3/8 inch sieve and be retained on a No. 4 sieve.

SECTION 00140 - SCOPE OF WORK

Comply with Section 00140 of the Standard Specifications supplemented and/or modified as follows:

00140.40 Differing Site Conditions: Delete this subsection in its entirety.

SECTION 00150 – CONTROL OF WORK

Comply with Section 00150 of the Standard Specifications supplemented and/or modified as follows:

Add the following subsection:

00150.50(e) Utility Information:

(1) Arranging for a utility company to remove, relocate, or adjust a facility is the responsibility of the Owner. The Contractor shall schedule work such so as to afford the utility companies sufficient time and space to perform their work. Contact the Owner for information regarding these arrangements.

(2) The following organizations may be adjusting utilities within the work area during the life of this Contract with adjustment work estimated to be completed by the following time frame.

| <u>Utility</u> | <u>Estimated Completed Date (Time)</u> |
|---|---|
| NW Natural Gas | 1 day to adjust 2 gas valves. |
| Murray, Smith & Associates for Palatine Hill Water District | 5 days to relocate 7 meters. 1 day to adjust 3 meters. 2 days to relocate a fire hydrant. 1 day to adjust 3 valves. |

- (3) The above time frames reflect actual working and not calendar days and are not necessarily concurrent or continuous.
- (4) The Contractor shall be responsible for all other utility adjustments to finish grade.
- (5) Utilities and their field coordinators include:

| <u>Utility Company</u> | <u>Contact Person</u> | <u>Telephone No.</u> |
|--|-----------------------|----------------------|
| Pacific Power & Light | Justin Moore | 503-280-2709 |
| Qwest Communications | Scott Miller | 503-242-4144 |
| Comcast | Jamie Stencil | 503-605-6158 |
| NW Natural | Christine Jeibmann | 503-721-2463 |
| Dunthorpe-Riverdale Sanitary Sewer District | Tom Hansell | 503-988-5050x29833 |
| Murray, Smith & Associate for Palatine Hill Water District | Jim Hilton | 503-225-9010 |

- (6) There may be unavoidable delays due to utility companies or utility contractors working in the same construction zone. It is imperative for the Contractor to provide accurate work schedules to the Owner's Representative. Notify the Owner's Representative immediately when utility work causes delays or construction issues.
- (7) The utility companies or utility contractors may be in the right-of-way working concurrently with this Contract. The contractor's schedule and the schedules of the utility companies shall be coordinated and agreed upon prior to beginning construction. The Contractor shall work with the utility companies or the utility contractors so that all work on the project completed within the Contract Time.
- (8) The Owner does not guarantee the site conditions will remain the same after the utility companies or the utility contractors have performed their work. The Contractor shall perform an assessment of site conditions prior to beginning work and after the utility companies or utility contractors have completed their work to determine actual conditions.
- (9) The Owner's Representative has the option to direct the Contractor to work in another area of the project in an effort to reduce conflicts and delays that may prevent the utility company or utility contractors from getting their work done.

SECTION 00160 - SOURCE OF MATERIALS

Comply with Section 00160 of the Standard Specifications.

SECTION 00165 - QUALITY OF MATERIALS

Comply with Section 00165 of the Standard Specifications supplemented and/or modified as follows:

00165.04 Cost of Testing - Replace this Subsection with the following:

00165.04 Cost of Testing - The Project is administered by BES. BES will provide and pay for materials testing services for this project.

SECTION 00170 - LEGAL RELATIONS AND RESPONSIBILITIES

Comply with Section 00170 of the Standard Specifications supplemented and/or modified as follows:

00170.03 Right-Of-Way, Easements and Premises – Add the following paragraph:

(c) The easement for the Project will be secured as follows (see easement plat map in the Appendix):

| Location | Date Secured |
|--|--------------|
| A portion of Lot 22, Abernethy Heights, Multnomah County | 12/31/09 |
| A portion of Lot 23, Abernethy Heights, Multnomah County | 12/31/09 |

SECTION 00180 – PROCUREMENT AND PROGRESS

00180.40(b) On-Site Work - Add the following:

(9) An approved Site Specific Safety and Health Plan

Add the following Subsection:

00180.40(c) Specific Limitations - Limitations of operations specified in these Special Provisions include, but are not limited to, the following:

| Limitations | Subsection |
|--|-------------|
| Cooperation with Utilities | 00150.50 |
| Cooperation with Other Contractors | 00150.55 |
| Interim Completion Time | 00180.50 |
| Final Completion Time | 00180.50 |
| Right-of-Way and Access Delays | 00180.60(e) |
| Traffic Restrictions | 00220.40 |
| Noise Control | 00290.30(d) |

Be aware of and subject to schedule limitations in the Standard Specifications that are not listed in this Subsection.

00180.41 Project Work Schedules

00180.41 Project Work Schedules – Add the following six subsections.

(j) The Contractor shall submit a Project Work schedule meeting the requirements of 00180.41(k) to the Owner's Representative. The Project Work schedule is intended to identify the sequencing of activities and time required for prosecution of the Work. The schedule is used to plan, coordinate, and control the progress of construction. Therefore, the Project Work schedule shall provide for orderly, timely, and efficient prosecution of the Work, and shall contain sufficient detail to enable both the Contractor and the Owner's Representative to plan, coordinate, analyze, document, and control their respective Contract responsibilities.

Contractor's activity related to developing, furnishing, monitoring, and updating these required schedules is Incidental.

A type "A" schedule will be required under the Contract.

(k) **Type "A" Schedule** - The Contractor shall do the following:

(1) **Schedule** - Ten Calendar Days prior to the preconstruction conference, the Contractor shall provide to the Owner's Representative four copies of a Project Work schedule, including a time-scaled bar chart and narrative, showing:

- Expected beginning and completion dates of each activity, including all staging;
- Elements of the Traffic Control Plan as required under 00225.05;
- Duration of Work, including completion times of all stages and their subphases; and
- Elements of the Diversion of Flow Plan under 00490.40(b).

The schedule shall show detailed Work activities as follows:

- Construction activities;
- Submittal and approval of Materials samples and shop drawings; and
- Fabrication, installation, and testing of special Materials and Equipment.

For each activity, the Project Work schedule shall list the following information:

- A description in common terminology;
- The quantity of Work, where appropriate, in common units of measure;
- The activity duration in Days; and
- Scheduled start, completion, and time frame shown graphically using a time-scaled bar chart.

The schedule shall show the Work broken down into logical, separate activities by area, stage, or size. The duration of each activity shall be verifiable by manpower and Equipment allocation, in common units of measure, or by delivery dates.

The bar chart shall be prepared as follows:

- The length of bar shall represent the number of Work Days scheduled.
- The time scale shall be appropriate for the duration of the Contract.
- The time scale shall be in Calendar Days.
- The smallest unit shown shall be one Calendar Day.
- The first day and midpoint of each month shall be identified by date.
- Distinct symbols shall be used to denote multiple shifts, holiday, and weekend Work.

Each page of the bar chart shall include a title block showing the Contract name and number, Contractor's name, date of original schedule, and all update dates; and a legend containing the symbols used, their definitions, and the time scale, shown graphically. To ensure readability the bar chart shall be drawn on a reasonable size of paper up to a maximum of 36 inch by 36 inch, using multiple sheets when needed.

Within seven Calendar Days after the preconstruction conference, the Owner's Representative and the Contractor shall meet to review the Project Work schedule as submitted. The Owner's Representative will review the schedule for compliance with all Contract Time limitations and other restraints. Within 10 Calendar Days of this meeting, the Contractor shall resubmit to the Owner's Representative four copies of the Project Work schedule, including required revisions.

(2) Review with the Owner's Representative - The Project Work schedule may need revision as the Work progresses. Therefore, the Contractor shall periodically review the Project Work schedule and progress of the Work with the Owner's Representative. If the Owner's Representative or the Contractor determines that the Project Work schedule no longer represents the Contractor's own plans or expected time for the Work, a meeting shall be held between the Owner's Representative and the Contractor. At this meeting, the Contractor and the Owner's Representative shall review Project events and any changes for their effect on the Project Work schedule.

The Contractor shall compile an updated Project Work schedule incorporating any changes to the Project completion time(s). The bar chart shall reflect the updated information. The Contractor shall submit four copies of the updated Project Work schedule to the Owner's Representative within seven Calendar Days after the meeting. The report shall include without limitation the following:

- Sufficient narrative to describe the past progress, anticipated activities, and stage Work;
- A description of any current and expected changes or delaying factors and their effect on the construction schedule; and
- Proposed corrective actions.

(I) Specified Contract Time Not Superseded by Schedule Revisions - The predicted completion date(s) for the Project Work schedule shall be within the specified Contract Time(s) or adjusted Contract Time or as shown on pending requests for adjustments of Contract Time. If the Contractor believes that additional Contract Time is due, the Contractor shall submit, with

the updated Project Work Schedule, a request for adjustment of Contract Time according to 00180.60.

(m) Float Time - Float time shown on the Project Work schedule, including any time between a Contractor's scheduled completion date and the specified Contract completion date, does not exist for the exclusive use of either party to the Contract and belongs to the Project.

(n) Schedules Do Not Constitute Notice - Submittal of a Project Work schedule with supporting narrative does not constitute or substitute for any notice the Contractor is required under the terms of the Contract to give the Owner.

(o) Owner's Representative Review - Owner Representative's review and approval of Contractor's schedules will not constitute a warranty or representation by the Owner that the Contractor can perform the Work according to such schedule. Review of Project Work Schedules and subsequent schedules by the Owner's Representative shall not relieve the Contractor of responsibility for timely and efficient execution of the Contract.

(p) Failure to Provide Schedule - The Project Work schedule is essential to the Owner. The Contractor's failure to provide the schedule, schedule information, progress reports or schedule updates when required will be cause to suspend the Work, or to withhold Contract payments as necessary to protect the Owner, until the Contractor provides the required information to the Owner's Representative.

Add the following subsection:

00180.50(d) Contract Time to Complete Work Add the following:

00180.50(d) Contract Time to Complete Work - Complete all Work to be done under the Contract, except for seeding establishment and plant establishment, not later than **90** Calendar Days after receipt of Written Notice

00180.80(b) Liquidated Damages - Add the following paragraph:

(6) The liquidated damages for failure to complete the Work on time is **\$980** per Calendar Day *.

* Calendar Day amounts are applicable when the Contract time is expressed on the Calendar Day or fixed date basis.

SECTION 00190 - MEASUREMENT OF PAY QUANTITIES

Comply with Section 00190 of the Standard Specifications.

SECTION 00195 - PAYMENT

Comply with Section 00195 of the Standard Specifications.

SECTION 00196 - PAYMENT FOR EXTRA WORK

Comply with Section 00196 of the Standard Specifications.

SECTION 00197 - PAYMENT FOR FORCE ACCOUNT WORK

Comply with Section 00197 of the Standard Specifications supplemented and/or modified as follows:

00197.20(a) Equipment - Use rental rates given in the Rental Rate Blue Books for Construction Equipment, Volumes 1, 2, and 3, published Penton Media, Inc. Contact: EquipmentWatch, 1735 Technology Drive, San Jose, CA 95110-1333, phone number 800-669-3282. Website <https://www.equipmentwatch.com/HomePage.isp>, Email: customerservice@equipmentwatch.com.

SECTION 00199 - DISAGREEMENTS, PROTESTS AND CLAIMS

Comply with Section 00199 of the Standard Specifications supplement and/or modified as follows:

PART 00200 – TEMPORARY FEATURES AND APPURTENANCES

SECTION 00210 - MOBILIZATION

Comply with Section 00210 of the Standard Specifications supplemented and/or modified as follows:

Add the following subsection:

00210.10 Project Signing - Provide a minimum of two "Clean River Project" signs. Camera-ready artwork will be provided for the Project signage. Signs shall be made in accordance with 00225.11.

00210.60 Clean River Signage - Maintain signs in accordance with 00225.60.

00210.90 Lump Sum Basis - Add the following sentence:

Payment for the item "Mobilization" includes furnishing, installing, maintaining, moving and removing the "Clean River Project" signage.

SECTION 00220 - ACCOMMODATIONS FOR PUBLIC TRAFFIC

Comply with Section 00220 of the Standard Specifications supplemented and/or modified as follows:

00220.02 Public Safety and Convenience - Add the following bullets to the end of this subsection:

- Do not stop or hold vehicles more than 5 minutes, block driveways, intersections or connections for more than 5 minutes unless otherwise authorized in writing.
- Provide notice to business and residents of upcoming construct at least *10 days*, but no more than *20 days* before construction is expected to begin in front of their property. The notice will be on an approved form or letter. The notice shall include the Project name, the name and address of the Contractor, daytime and emergency phone numbers, daytime Project contact person's name and an emergency contact person's name. If other means of delivery are not effective, the notice shall be hung on a business's or resident's building in a waterproof plastic bag.
- Coordinate work to accommodate any reasonable special needs of the business and residents. The Engineer will make a final determination should a question arise whether a special need or request submitted to the Contractor is reasonable.
- In coordination with the Owner's Representative, provide notice to public agencies impacted by disruption or restriction of traffic or access to property as a result of project-related TCM:

| Agency/ Company/ Residence: | Person Contacted: | Telephone: |
|------------------------------------|--------------------------|----------------------|
| Portland Fire Bureau | | (503) 823-3700 |
| Multnomah County Sheriff's office | | (503) 823-3333 |
| Traffic Engineer's office | Steve Miles | (503) 988-5050x29629 |
| Bureau of Emergency Communications | | (503) 823-1911 |
| Riverdale Public School | Terry Hoagland | (503) 636-8611 |

Add the following subsection(s):

00220.40(i) Lane Restrictions - Do not close any traffic lanes on SW Military Rd between SW Corbett Hill Circle and SW Breyman Ave. Monday through Friday, except holidays between:

7:00 a.m. - 9:00 a.m.
and
4:00 p.m. - 7:00 p.m.

For the purposes of this section, legal holidays are as follows:

- New Year's Day on January 1
- Memorial Day on the last Monday in May
- Independence Day on July 4
- Labor Day on the first Monday in September
- Thanksgiving Day on the fourth Thursday in November
- Christmas Day on December 25

When a holiday falls on Sunday, the following Monday shall be recognized as a legal holiday. When a holiday falls on Saturday, the preceding Friday shall be recognized as a legal holiday.

SECTION 00225 - WORK ZONE TRAFFIC CONTROL

Comply with Section 00225 of the Standard Specifications supplemented and/or modified as follows:

00225.05 Contractor's Traffic Control Plan - Add the following bullet to the end of the bullet list:

- Multnomah County has the jurisdiction on street permits so the Contractor shall submit the Traffic Control Plan to the County's Traffic Engineer listed in Section 220.02. See detailed instructions in the street permit issued by Multnomah County.

00225.11(a)(2) Type – Delete the bullet that begins "3/4 inch medium density..."

00225.41(a) Orange Construction Speed Zone Signage - Replace this subsection with the following:

00225.41(a) Speed Signs - Use speed signs as follows:

(1) Advisory Speed Signs - Install the advisory Type "O4" speed signs as directed.

When advisory Type "O4" speed signs are used, cover the appropriate Type "W1" speed zone signs with sign covers according to Section 00941. Uncover them when the advisory Type "O4" speed signs are removed or covered. At the trailing end of the Project, install a Type "W1" speed zone sign with the original designated speed. If existing Type "W1" speed signs are 500 feet or less beyond the Project, additional signs are not required.

When there is no work on the Project or when directed, cover or remove the advisory Type "O4" speed signs and restore the original Type "W1" speed zone signs.

(2) Regulatory Speed Signs - Install and maintain the regulatory signs as directed.

When regulatory Type "W1" speed signs are used, cover the appropriate Type "W1" speed zone signs with sign covers according to Section 00941. When there is no work on the Project or when directed, cover or remove the regulatory Type "W1" speed signs and restore the original speed zone signs.

00225.42(d) Impact Attenuators - Replace the sixth bullet with the following sentence:

For narrow site systems, pin or restrain the first two barrier sections as shown on ODOT Standard Drawing RD516.

00225.43(h) Stripe Removal and Durable Stripe Removal - Replace the first paragraph with the following:

Remove striping by hydroblasting, steel shot blasting or grinding so the pavement surface is not damaged below a depth of 1/8 inch. Do not use paint or asphalt to cover existing stripes. Repair any damaged surfaces to the Engineer's satisfaction at no additional compensation.

00225.46(a) Sequential Arrow Signs – Delete the second bullet.

00225.80 General - Add the following at end of this subsection:

For this project, use Method " B " .

00225.80(a) Quantity Limitations - Replace the first two bullets with the following:

- The initial installation of quantities necessary to complete the Project based on the Schedule of Items
- The initial installation of additional TCD and TCM that the Engineer and Contractor agree are necessary to ensure a safe work zone

00225.90(a)(2) Temporary Protection and Direction of Traffic - Add the following bullet(s) to the end of the bullet list:

- Moving, reinstalling, and removing existing post-mounted signs required by stage construction

SECTION 00275 – TEMPORARY PLATING

Comply with Section 00275 of the Standard Specifications supplemented and/or modified as follows:

00275.11 Plating Coating - Replace this subsection with the following:

00275.11 Plating Coating - Use plating coating from the CPL.

SECTION 00280 - EROSION AND SEDIMENT CONTROL

Comply with Section 00280 of the Standard Specifications supplemented and/or modified as follows.

00280.02 City Controlled Lands Erosion and Sediment Control Plan - Replace the second paragraph with the following:

The Contractor may submit the ESCP that is included in the Project plans. To assist in the preparation or modification of the ESCP, refer to the current version of the City's Erosion and Sediment Control Manual along with Title 10 of the City Code.

Add the following subsection:

00280.05 Project Signing - Install 2 erosion signs on the Project with the following information:

- "Erosion Control Information"
- Elk Rock Bypass Project (BES Project No. 8378)
- Contact Number BES 503-823-7180
- Type: "G" Sign

Contact the Engineer to confirm the above information before fabricating the signs.

00280.10(i) Matting - Add the following paragraph to the end of this subsection:

Where shown, furnish hydraulically applied bonded fiber matrix slope protection matting. Bonded fiber matrix is a hydraulically applied product consisting of fully biodegradable long fiber strands held together by a water resistant bonding agent. This product is designed to be the functional equivalent of rolled erosion matting on slopes where there is no potential for displacement from physical traffic. It is typically used with seed for holding soil in place until vegetation is able to provide protection from soil erosion, but may also be used without seed for temporary applications. For seeding and fertilizing requirements, see Section 01030.

SECTION 00310 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS

Comply with Section 00310 of the Standard Specifications supplemented and/or modified as follows:

00310.93 Incidental Basis - There is an unknown drainage 4 inch pipe near to the proposed pipe construction alignment around the station 2+25. The Contractor shall provide a protection plan to save the pipe. If the pipe removal is required, the removal of the 4 inch pipe is considered incidental to the work and no separate or additional payment will be made.

SECTION 00320 - CLEARING AND GRUBBING

Comply with Section 00320 of the Standard Specifications supplemented and/or modified as follows:

00320.02 Definitions - Add the following paragraph

Root Protection Zone - A generally circular area around an existing plant to be protected from disturbance or compaction by the use of temporary fencing or other means. The zone as actually staked may exceed the current root area to allow for future growth of the plant. Root Protection Zones will be shown on the plans or staked before construction activities begin.

00320.40(a) Clearing Trees and Other Vegetation - Add the following paragraph:

The Contractor is advised that the project area is a wooded area so there are many trees to be removed as part of clearing and grubbing. All trees inside the 15 ft permanent easement area and the 10 ft permanent easement area shall be removed. The trees to be removed over 10" in diameter are identified in the Construction Management Plan.

Tree removals over 10" in diameter are separate pay items as shown in 00320.92.

00320.40(b)(3) Tree Trimming - Replace the first line of 00320.40(b)(3) Tree Trimming beginning with (3) and ending with "as:" with the following:

00320.40(b)(3) Tree Trimming - The Owner will coordinate with the City Forester office and pay for all arboreal services for this project if necessary.

- The Owner's Representative will issue written notice of planned work on trees to adjacent property owners 10 calendar days in advance of work.
- Before beginning work, attend a walk-through of the entire project area with the Owner's Representative and the City Forester. Identify all trimming necessary to complete the Work. Notify the Owner's Representative if additional arboreal work arise during the project. Following completion of work, attend a final walk-through of the project area and identify any needed post-construction tree-related work.

Trim trees according to good tree surgery practices as directed to remove safety hazards such as blocking visibility.

00320.40(b) Tree Trimming - Add the following paragraph:

00320.40(b)(5) Tree Root Protection - Exercise care when excavating near existing trees. Where roots are 2 inches and greater in diameter, except in the direct path of the pipe, hand excavate and tunnel the pipe trench. When large roots are exposed, wrap them with heavy burlap for protection and to prevent excessive drying. When digging trenches by machine adjacent to trees having roots 2 inches and less in diameter, hand trim the sides of the trench, making a clean cut of the roots. Treat all cut and trimmed roots 1/2 inch or larger in diameter with an approved tree wound dressing. Backfill trenches having exposed tree roots within 24 hours unless protected by continuously moist burlap or canvas.

00320.80 Measurement - Add the following paragraph:

Unit Basis – Tree removal – Trees shown or directed to be removed measuring 12 inches or more measured 4.5 feet from the ground shall be measured per each, based on the tree diameter.

00320.90 Payment - Payment for the clearing, grubbing, disposal, and cleanup work specified to be done will be made at the Contract lump sum amount or the contract unit price per acre for the item "Clearing and Grubbing". Payment will be payment in full for furnishing all equipment, labor, and incidental to complete the work as specified.

00320.92 Unit Basis - Add the following paragraph:

| Pay Item | Unit of Measurement |
|--|---------------------|
| a) Tree removal, 10 inches – 12 inches | Each |
| b) Tree removal, 13 inches – 24 inches | Each |

- | c) Tree removal, over 24 inches..... Each

Payment for items (a), (b) and (c) include all labor, equipments, materials, and incidentals required to remove, handle, and dispose of trees shown on the Plans, including removal and disposal of roots.

SECTION 00330 - EARTHWORK

Comply with Section 00330 of the Standard Specifications supplemented and/or modified as follows:

00330.42(c)(5) Embankment, Fills and Backfills

(5) Embankment Construction around Minor Structures- Backfill prior excavations in the vicinity of curbs, walks, driveways, inlets, manholes and such minor structures with selected general backfill, or selected granular backfill material as directed with no particles larger than 1 inch and that is compatible with the adjacent material, unless otherwise specified. The material shall have a moisture content as specified in 00330.43, and be placed in layers according to 00330.42(c)(1) and compacted according to 00330.43.

| Place topsoil-selected (Spec. 1040.14(a)) over the top before finishing grade and seeding.

00330.92 Access Road Earthwork - Add the following to the end of this subsection:

(i) Maintenance Access Road - Earthwork as shown on the Typical Sections on Plan D01, necessary to construct construction road.

| Pay Item | Unit of Measurement |
|-----------------------------------|---------------------|
| (i) Maintenance Access Road | Square Yard |

Payment for (i) will be payment in full for excavating, selecting, handling, hauling, placing, compacting and all materials including geotextiles, and providing all equipment, labor and incidentals necessary to complete the work.

00330.94 Embankment Basis Payment

| Pay Item | Unit of Measurement |
|------------------------------|---------------------|
| a) Embankment in Place | Cubic Yard |

PART 00400 - DRAINAGE AND SEWERS

SECTION 00405 - TRENCH EXCAVATION, BEDDING AND BACKFILL

Comply with Section 00405 of the Standard Specifications supplemented and/or modified as follows:

00405.02 Definitions - Add the following paragraph

Root Protection Zone - A generally circular area around an existing plant to be protected from disturbance or compaction by the use of temporary fencing or other means. The zone as actually staked may exceed the current root area to allow for future growth of the plant. Root Protection Zones will be shown on the plans or staked before construction activities begin.

00405.40 General - Add the following paragraph:

(e) Tree Root Protection - Exercise care when excavating near existing trees. Where roots are 2 inches and greater in diameter, except in the direct path of the pipe, hand excavate and tunnel the pipe trench. When digging trenches by machine adjacent to trees having roots 2 inches and less in diameter, hand trim the sides of the trench, making a clean cut of the roots. Treat all cut and trimmed roots 1/2 inch or larger in diameter with an approved tree wound dressing. Backfill trenches having exposed tree roots within 24 hours unless protected by continuously moist burlap or canvas.

00405.41(b)(2) Cleanup - Add the following words to the first sentence "according to 00275.40"

00405.45(b) Flexible Pipe Bedding - Replace the first paragraph with the following:

(b) Bedding for Flexible Sewer Pipe (Class D Bedding) - Unless otherwise specified, bed flexible sewer pipe with 3/4" - 0" aggregate placed a minimum of 4 inches under the pipe, between the sides of the pipe and the undisturbed trench walls, and to the top of the pipe zone which is 12 inches above the top of the pipe.

00405.80(e) Trench Excavation, Bedding and Backfill for Inlet Lead Pipe - Delete this subsection in its entirety.

00405.90 General - Replace this subsection with the following

00405.90 General - The accepted quantities of trench work will be paid at the Contract price per unit of measurement for the following items

| | Pay Item | Unit of Measurement |
|-----|---|----------------------------|
| (a) | Rock Excavation | Cubic Yard |
| (b) | Boulder Excavation | Cubic Yard |
| (c) | Exploratory Excavation | Cubic Yard |
| (d) | Pothole Excavation | Each |
| (e) | Trench Excavation and Native backfill | Cubic Yard |
| (f) | Trench Excavation, _____ | Cubic Yard |
| (g) | Trench Backfill, Class _____ | Cubic Yard |
| (h) | Dewatering | Lump Sum |

Payment will be payment in full for furnishing, placing and compacting all materials, and providing all equipment, labor and incidentals necessary to complete the work.

For item (a), the type of excavation will be inserted in the blank (Common, Rock, Boulder or Concrete). This work includes any additional excavation required for installation of manholes,

inlets, pipe or other structures in rock or concrete. Other than as provided in 00405.82(a) and (b), such additional excavation is considered incidental to the work and no separate or additional payment will be made.

Item (c) includes pavement restoration. All other exploratory excavation work performed by the Contractor for its sole use is considered incidental to the work with no additional payment.

Under item (d), if another method is used than described, no additional payment will be made. All other pothole excavation work performed by the Contractor for its sole use is considered incidental to the work with no additional payment.

For item (g), the class of backfill will be inserted in the blank according to 00405.14.

SECTION 00445 - SANITARY, STORM AND CULVERT PIPE

Comply with Section 00445 of the Standard Specifications supplemented and/or modified as follows:

Add the following subsection:

00445.48 Electronic Location and Visual Identification of Sewers - Use only marker balls for electronic location and visual identification of inlet lead piping. A marker ball shall be placed over any bend constructed for the inlet lead pipe.

00445.72(d)(1) General - In the fourth sentence of the first paragraph, change 0.0625 to 0.1.

00445.81(i) Concrete Blocks - Add the words "as shown" to the end of the sentence.

00445.84 Television Inspection - In the first sentence, insert the word "all" before "television".

00445.91 Pipes and Appurtenances - Replace this subsection with the following:

00445.91 Pipes and Appurtenances - The accepted quantities will be paid for at the Contract price per unit of measurement for each of the pay items listed in the Proposal. Payment will be payment in full for furnishing and placing all materials, equipment, labor and Incidentals necessary to complete the work as specified.

(a) Pipes - Payment for pipes will be made at the Contract unit price per foot for the following item:

___ inch Pipe, _____, Bedding Type: _____

The nominal pipe diameter will be inserted in the first blank. The type and design standard of pipe will be inserted in the second blank. The appropriate pipe zone bedding type will be inserted in the third blank.

Payment for pipes will include bedding, pipe and pipe zone backfilling, compacting, joint materials, joining, collars, fittings, field closures.

Payment for trench excavation and backfill will be according to 00405.

Payment for perforated pipe will be according to Section 00430.

(b) Appurtenances - The following items, when in the Schedule of Items, will be paid for at the Contract price for the unit of measure installed as specified:

| Pay Item | Unit of Measurement |
|--|---------------------|
| (a) Pipe Tees or Wyes, ____ X ____ inch..... | Each |
| (b) Concrete Pipe Anchors..... | Each |
| (c) Concrete Closure Collars..... | Each |
| (d) Terminal Cleanout..... | Each |
| (e) Service Lateral Cleanout..... | Each |
| (f) Deep Connection Risers..... | Each |
| (g) Field Fabricated Connections..... | Each |
| (h) Concrete in Blocks..... | Cubic Yards |
| (i) Metal Pipe Anchors..... | Each |

Payment for items (a) through (g) will be by actual count for units installed, and will include payment for pipe plugs, stoppers and other fittings required to accomplish the work.

For item (a) the pipes to be installed are PVC pipe as shown in the plan, not concrete pipes. The Contractor shall use the concrete pipe anchors in PVC pipe to prevent any creeping/sliding of backfill by anchoring to at least 1 ft more than the trench excavation required.

For item (b) the tee or wye will be a compatible pipe type and class as indicated in 00445.91(a) or as specified. The nominal size will be inserted in the first blank and the lateral size inserted in the second blank.

Payment for a service lateral connection to a new manhole will made under item (a) for a tee of the same inside diameter as the service lateral.

Payment for service lateral 2"x4" markers will be according to Section 00446.

The accepted quantities of reinforcement will be paid for on the weight or lump sum basis according to 00530.90. If there is no item provided in the Schedule of Items for "Reinforcement in Blocks" the cost will be considered Incidental with payment for reinforcement included in the item "Concrete in Blocks".

00445.94 Television Inspection - In the first sentence, insert the word "all" before "television".

SECTION 00446 - ELECTRONIC LOCATION AND VISUAL IDENTIFICATION OF SEWERS

Comply with Section 00446 of the Standard Specifications supplemented and/or modified as follows:

00446.40 General - Add to this section the following:

Install Marker Balls wherever electronic locating facilities are required or when directed to be installed.

SECTION 00470 - MANHOLES, CATCH BASINS AND INLETS

Comply with Section 00470 of the Standard Specifications supplement and/or modified as follows:

00470.90 General - Replace this subsection with the following:

00470.90 General - The accepted quantities will be paid for at the Contract unit price for one or more of the following items:

| Pay Item | Unit of Measurement |
|---|---------------------|
| (a) Concrete Manholes, _____inch, 0-8 Ft Depth..... | Each |
| (b) Concrete Manholes, _____inch, Deeper than 8 Ft..... | Foot |
| (c) Concrete Shallow Manholes _____inch..... | Each |

In items (a), (b) and (c) the diameter of the manhole or assembly will be inserted in the blank, with a separate pay item provided for each size.

Payment will be payment in full for furnishing all materials, equipment, labor and incidentals necessary to complete the work as specified.

There will be no separate payment for performing required acceptance testing.

Resurfacing work will be paid for according to Section 00495.

SECTION 00490 - WORK ON EXISTING SEWERS AND STRUCTURES

Comply with Section 00490 of the Standard Specifications supplemented and/or modified as follows:

00490.40 General – Add the following to the second paragraph:

00490.40(c) Anticipated Storm Sewer Flow Rate and Diversion of Flow - The following table is the best estimate of flow rate for the existing 8 inch PVC pipe on SW Military Rd.

| Project Location (COP Manhole ID and Street reference) | Maximum Dry Weather Flow Rate (cfs/gpm) | Maximum Wet-Weather Flow Rate (cfs/gpm) |
|--|---|---|
| 8 inch PVC pipe at MH-1 | 0.50/45 | 1.5/670 |

00490.83 Volume Basis - Measurement will include only the volume within the neat lines of the abandon structure as shown or as revised.

00490.90 Unit Basis - Replace the heading, first paragraph, and pay items with the following:

00490.90 Unit Basis - The accepted quantities of work on existing sewers and structures will be paid for at the Contract price per unit of measurement for the following items:

| Pay Item | Unit of Measurement |
|--|---------------------|
| (a) Connections to Existing Structures | Each |
| (b) Flow Diversion | Lump Sum |

SECTION 00495 – TRENCH RESURFACING

Comply with Section 00495 of the Standard Specifications supplemented and/or modified as follows:

Add the letter "M" in front of all references to "HMAC" throughout the Section.

00495.00 Scope – Add "and excavated areas in front of curb replacement" after the words "consists of resurfacing pipe trenches".

00495.40 General – Add the following:

Construct the MHMAC pavement section in front of the curb replacement as shown.

Add the following subsection:

00495.42 Permanent Resurfacing

Resurface all trenches and excavations according to the table below:

| Location | Trench Resurfacing Formula |
|---|--|
| 2071 SW Military Rd | 5" PG64-22 binder HMAC Asphalt Concrete placed in two separate lifts of 2.5" each over 6" Aggregate Base(1"-0) Level 2, ½" Dense grade |
| Private Road (Extension of SW Pally Ct) | 3" PG64-22 binder HMAC Asphalt Concrete over 4" Aggregate Base(1"-0) Level 2, ½" Dense grade |

00495.90 General – Add the following pay item:

| Pay Item | Unit of Measurement |
|------------------------------------|---------------------|
| (c) Trench Surfacing w/o Base..... | Square Yard |

Item (c) is only for the replacement of the trench resurfacing material. In the first blank, indicate the resurfacing material according to 00495.10. Payment for any aggregate base will be paid for according to Section 00640.

PART 00600 - BASES

SECTION 00640 - AGGREGATE BASE AND SHOULDERS

Comply with Section 00640 of the Standard Specifications supplemented and/or modified as follows:

00640.81 Volume Basis Measurement for Aggregate Base for trench resurfacing will be on the volume basis. Volume will be computed using the following dimensions:

Length - Measure horizontally along the full length of the centerline of the installed pipe.

Width – Measure width according to 00405.80(b)

Depth – Measure as shown.

00640.90 General – Add the words “or Cubic Yards” to the unit of measurement for item (a).

PART 00700 - WEARING SURFACES

SECTION 00744 - HOT MIXED ASPHALT CONCRETE (HMAC) PAVEMENT

Comply with Section 00744 of the Standard Specifications supplemented and/or modified as follows:

Replace the Section heading with the following:

SECTION 00744 – MINOR HOT MIXED ASPHALT CONCRETE (MHMAC) PAVEMENT

Add the letter “M” in front of all references to “HMAC” throughout the Section.

00744.00 Scope – Add the word “minor” after the word “constructing” in the first sentence.

00744.02 Definitions: Add the word “Minor” to the definition that begins with **Hot Mixed Asphalt** ...

00744.10 Aggregate – Delete the word “and” and add the phrase “and RAP” after the word “fine” in the first sentence.

Add the following subsection:

00744.10(d) Fractured Faces - Provide crushed aggregate with not less than the minimum number of fractured faces as determined by AASHTO TP 61 as follows:

| Type of Mix | Percent of Fracture (by weight) | Material Retained on No. 8 Sieve (one fractured faced) |
|---------------------------------|--|--|
| | Material retained on 1 1/2," 1", 3/4", 1/2" and No. 4 Sieve (two fractured faces) | |
| All Dense Graded MHMAC, ATPB | 75 | 75 |
| All Open Graded MHMAC | 90 | 75 |

00744.11(a) Asphalt Cement - Add the following sentence to the first paragraph of this subsection:

Use **PG 64-22 binder HMA** asphalt cement on the Project.

00744.12(b) Broadband Limits – Replace this subsection with the following:

00744.12(b) Broadband Limits - Provide a JMF for the specified mix type within the control points listed below:

| Sieve Size | 3/4" Dense | | 1/2 " Dense | | 3/8" Dense | |
|---------------|--|------|--|------|--|------|
| | Control Points (% passing by Weight) | | Control Points (% passing by Weight) | | Control Points (% passing by Weight) | |
| | Min. | Max. | Min. | Max. | Min. | Max. |
| 1" | 100 | | | | | |
| 3/4" | 90 | 100 | 100 | | | |
| 1/2" | – | 90 | 90 | 100 | 100 | |
| 3/8" | – | – | – | 90 | 90 | 100 |
| No. 4 | – | – | – | – | – | 90 |
| No. 8 | 23 | 49 | 28 | 58 | 32 | 67 |
| No. 200 | 2.0 | 8.0 | 2.0 | 10.0 | 2.0 | 10.0 |

00744.13 Job Mix Formula (JMF) Requirements – Replace this subsection with the following:

00744.13 Job Mix Formula (JMF) Requirements – Provide a JMF for the mixture to be used on the project meeting the criteria set forth below. The JMF shall have been performed or verified according to the ODOT Contractor Mix Design Guidelines for Asphalt Concrete within 3 years of the date the Contract was advertised. Perform a new TSR when the source of the asphalt cement changes.

(a) Contractor Provided JMF – The CMDT shall prepare, sign and submit a JMF to the Engineer for each mixture required at least 10 days prior to the anticipated use in MHMAC, and according to the latest copy of the ODOT Contractor Mix Design Guidelines for Asphalt Concrete. If requested, submit material samples 10 calendar days prior to use.

(b) JMF Requirements - The JMF shall meet the following mixture requirements

Dense Graded Mixture

| | Level 1 | Level 2 | Level 3 |
|-------------------------|------------------------------|---|---|
| Design Method | Superpave | Superpave | Superpave |
| Compaction Level | 65 Gyration | 65 Gyration | 80 Gyration |
| Air Voids, % | 3.5 | 4.0 | 4.0 |
| VMA, % minimum | 1/2" - 14.0 3/8" - 15.0 | 3/4" - 13.0 1/2" - 14.0 3/8" - 15.0 | 3/4" - 13.0 1/2" - 14.0 3/8" - 15.0 |
| VMA, % maximum | min + 2.0% | min + 2.0% | min + 2.0% |
| P No. 200/ Eff AC ratio | 0.8 to 1.6 | 0.8 to 1.6 | 0.8 to 1.6 |
| TSR, % minimum | 80 | 80 | 80 |
| VFA, % | 70 – 80 3/8 inch: 70 – 80 | 65 - 78 3/8 inch: 70 - 80 | 65 - 75 3/8 inch: 70 - 80 |

Open Graded Mixture

| | 3/4" Open and 1/2" Open | 3/4" ATPB |
|---------------------|------------------------------------|------------------|
| Design Method | ODOT | ODOT |
| Air Voids, % | 13.5 – 16.0 | ---- |
| Draindown, % | 70 – 80 | ---- |
| TSR, % minimum | 80 | ---- |
| Coating, %, minimum | ---- | 90 |
| VFA, % | 40 – 50 | ---- |

* Percent of Theoretical Maximum Density

00744.40 Season and Temperature Limitations – Replace this subsection with the following:

00744.40 Season and Temperature Limitations - Place MHMAC when the temperature of the surface that is to be paved is not less than the temperature indicated:

| Nominal Compacted Thickness of Individual Lifts and Courses as shown on the typical section of the plans | All Levels All Courses Surface Temperature** |
|---|--|
| Dense Graded Mixes | |
| Less than 2" | 60 °F |
| 2" - 2 1/2" | 50 °F |
| Greater than 2 1/2" | 40 °F |

Open Graded Mixes

| | |
|--------------|-------|
| Less than 2" | 60 °F |
| 2" and Over | 50 °F |
| ATPB | 40 °F |

Temporary 40 °F

- * If placing MHMAC between March 15 and September 30, temperature requirement may be lowered 5 °F.
- ** Do not use field burners or other devices to heat the pavement surface to the specified minimum temperature.

PART 01000 – RIGHT OF WAY DEVELOPMENT AND CONTROL

SECTION 01030 - SEEDING

Comply with Section 01030 of the Standard Specifications supplemented and/or modified as follows:

01030.13(f) Types of Seed Mixes - Provide the following seed mix formulas:

- **Permanent Seeding, Slope:** Use a mixture of 50% tall fescue, 20% creeping red fescue, 15% hard fescue, 20% annual ryegrass, and 5% White Dutch clover. The seeding rate shall be 100 lbs/acre.

The Contractor shall use seeds supplied by the Owner.

01030.15 Mulch The amount paid for permanent seeding items will be as follows:

At completion of seeding..... 100%

SECTION 01040 – PLANTING

Comply with Section 01040 of the Standard Specifications supplemented and/or modified as follows:

01040.14(a) Selected Topsoil – Add the following:

The topsoil shall be free from any contamination.

01040.19 Plants - Replace this subsection with the following:

Add the followings in (a):

The species of the trees to be planted are Bigleaf Maple and Oregon Alder, native Oregon plants, in 3 inch caliper. The location and details of re-vegetation is shown on Plan CE03. Follow proper instructions and procedures to plant the trees in a right manner.

PERMITS



MULTNOMAH COUNTY OREGON

DEPARTMENT OF COMMUNITY SERVICES
 LAND USE & TRANSPORTATION PROGRAM
 RIGHT-OF-WAY PERMIT SECTION
 1600 SE 190TH AVENUE, ROOM 119/120
 PORTLAND, OREGON 97233
 503-988-3582 FAX: 503-988-3389

APPLICATION AND PERMIT TO OCCUPY OR PERFORM OPERATIONS UPON A COUNTY ROAD OR DEDICATED STREET

Revocable Permit No. 67653
 District: 2
 Fee: # 80
 From: DRSVC0901C
 Check No.:

Name and Address of Applicant
SUNG MO SUNG
Rm # 1000 Bureau of Environmental Services
City of Portland.
1120 SW 5TH AVE. Portland, OR 97204
 Phone: 503-827-7205

Applicant hereby applies to the Board of County Commissioners through the Department of Community Services for permission to perform certain operations upon the right-of-way of a County road or dedicated street as shown on the map or plan attached hereto and by this reference made a part hereof.

- () Construct, operate and maintain a _____ pole line.
- () Construct, operate and maintain a _____ buried cable.
- (X) Construct, operate and maintain a 21 FT pipe line
- () Miscellaneous operations and/or facilities as described
- () Erect and maintain non-commercial sign

County Maintained ROAD - YES
 Ins. Req. X Bond Req. X
 Depth: () inches minimum cover
 Cut X Push or Bore _____
 Trenching or tunnelling nearer than _____ ft.
 To surface portion of road not permitted

POLE LINE, BURIED CABLE, OR PIPE LINE TO BE CONSTRUCTED ALONG OR ACROSS:

| STREET | Between/at/near and | Side of Road | Distance from | | Buried Cable or Pipe | |
|-----------------|--|--------------|---------------|----------|----------------------|-------------|
| | | | Center Line | R/W Line | Depth | Size & Kind |
| SW Military Rd. | Carbett hill Dr. & Breyman Ave. (Approximately 1100 ft from Carbett hill Dr.) | Cross | 5 | 21 | 5.31 | 8" PVC |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

DESCRIPTION AND LOCATION OF NON-COMMERCIAL SIGN, MISCELLANEOUS OPERATIONS AND/OR FACILITIES

There is an 8" CSP sewer pipe running along SW Military Rd. at the site. This project will construct a 48" manhole on the 8" CSP and branch out an 8" PVC pipe, from the manhole to East through Riverdale Elementary school's property. (Plan is attached)
 The total area of the excavation on street will be 6'x6' for MH and 21'x2.5' for the pipe.
 This permit is issued by the Department of Community Services subject to the terms and provisions contained herein and on attached hereto and is accepted and approved by applicant subject to said terms and provisions.

See the attached special provisions which are made part of this permit.

APPLICANT MUST NOTIFY OFFICE BEFORE COMMENCING WORK: PERMIT VALID FOR 90 DAYS FROM DATE ISSUED.

Applicant: SUNG MO SUNG
 By: BES
City of Portland
 Date of Application: Oct. 23, 2009

MULTNOMAH COUNTY, OREGON
 DEPARTMENT OF COMMUNITY SERVICES

Approved By: Alan M. Young
 Right-of-Way Use Permit Specialist
 Effective Date: October 27, 2009

Expected construction time: March, 2010.

REVOCABLE COUNTY ELK ROCK BYPASS PROJECT PERMIT # 67653

SPECIAL PROVISIONS

1. A. This permit is issued by Multnomah County (hereinafter the "County") to the City of Portland, Bureau of Environmental Services (BES), (hereinafter the "Permittee"), (hereinafter collectively referred to as the "Parties") for the construction of new Dunthorpe-Riverdale Sewer District improvements within SW Military Road right-of-way and more particularly provided in those certain set of construction plans (job # E08378 sheet no.1-7) and BES Special Provisions specifications, dated 10/5/09 which are attached and collectively identified and referred to as **Exhibit A**, and which is hereby incorporated by this reference; or as the Parties agree in writing to amend or revise said Exhibit A.

B. **Exhibit A** shall not be changed, altered or modified without first obtaining the written consent of the County.

C. Permittee is to construct a standard 48-inch diameter sanitary sewer manhole on the existing 8-inch diameter concrete sewer main located in SW Military Road right-of-way, approximately 1100 ft SE of Corbett Hill Drive and an 8-inch diameter PVC sewer branch from the new manhole in the Permit Area. Permittee shall be responsible for periodic inspection and maintenance of all the new improvements in the Permit Area and the Permit Area generally for the duration of the Permit.
2. The County contact person to coordinate work activities under this permit within SW Military Road right-of-way is County Right-of-Way Inspector, Bob Wheatley, 503-970-1621 or 503-988-3582.
3. A. Prior to beginning any work under this permit the Permittee shall confirm in writing to the County that the general contractor has obtained a commercial insurance policy that provides: (i) for a combined single limit of not less than \$1,000,000 per each incident or occurrence; and with an annual aggregate limit of not less than \$2,000,000; (ii) for extended reporting period coverage for claims made within two years after the work or associated work authorized under this permit is completed; (iii) for the County, its officers, employees and agents to be named as additional insureds for all work or associated work, being authorized under this permit. This permit may be revoked without further action if the insurance is permitted to lapse, is canceled, or for any other reason becomes inoperative.

B. Prior to beginning work the Permittee shall confirm in writing to the County that the contractor has agreed to defend, indemnify and hold harmless the County, its officers, employees and agents upon the same terms and conditions as this permit imposes on the Permittee under Section 4 of this Permit, excepting therefrom any limitation invoked on behalf of the Permittee under the Oregon Tort Claims Act, under ORS 30.260 through 30.300.

4. A. Subject to the limitations of the Oregon Tort Claims Act and the Oregon Constitution the City agrees to defend, indemnify and hold the County, its officers, and agents (the "Indemnitees") harmless from:

(a) All claims, demands, suits, liabilities, damages, losses, costs or expenses, including but not limited to attorney's fees, that the indemnitees may sustain or incur on account of any damage to or destruction of any property that the County may own or in which it may have an interest;

(b) All claims, demands, suits, liabilities, damages, losses, costs or expenses, including but not limited to attorney's fees, on account of any damage to or destruction of any property belonging to any person, firm or corporation; and

(c) All claims, demands, suits, liabilities, damages, losses, costs or expenses, including but not limited to attorney's fees, on account of any damage resulting from injury to or death of any person or persons;

which arise out of or are in any way connected with the work performed under this Permit by the City, its officers, employees, or agents.

(B) Subject to the limitations of the Oregon Tort Claims Act, the City agrees to defend, indemnify, and hold the Indemnitees harmless from all claims, demands, suits, liabilities, damages, losses, costs or expenses which arise out of or are in any way connected with the use, generation, manufacture, storage, discharge, disposal, transportation or possession of Hazardous Materials by the City, its officers, employees or agents at any time while working under this permit. "Hazardous Materials" means: (a) any petroleum, including crude oil or any fraction thereof, natural gas, natural gas liquids, liquefied natural gas or synthetic gas usable for fuel, or any mixture thereof, flammable substances, explosives, radioactive materials, hazardous wastes or substances, toxic wastes, wastes or substances or any other materials or pollutants which: (1) pose a hazard to the Permit Site or to persons on or about the Permit Site or (ii) cause the Permit Site to be in violation of any federal, state or local law, ordinance, regulation, code, or rule relating to Hazardous Materials; (b) asbestos in any form which is or could become friable, urea formaldehyde foam insulation, transformers or other equipment which contain dielectric fluid containing levels of polychlorinated biphenyls in excess of fifty (50) parts per million; (c) any chemical, material or substance defined as or included in the definition of "hazardous substances," "hazardous wastes," "hazardous materials," "extremely hazardous waste," "restricted hazardous waste," "waste" or "toxic substances" or words of similar import under any applicable local, state or federal law or under the regulations adopted or publications promulgated pursuant thereto, including, but not limited to, the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended, 42 U.S.C. § 9601, et seq. the Hazardous Materials Transportation Act, as amended, 49 U.S.C. § 1801, et seq.; the Resource Conservation and Recovery Act, as amended, 42 U.S.C. § 6901, et seq.; the Federal Water Pollution Control Act, as amended, 33 U.S.C. § 1251, et seq.; and (d) any other chemical, material or substance, exposure to which is prohibited, limited or regulated by any governmental authority or

may or could pose a hazard to the health and safety of the owners and/or occupants of property adjacent to or surrounding the Permit Site.

(C) The City's indemnity obligations under this Section 4, Subsections (A), (B) and (C) shall survive the termination of this Permit.

5. Traffic control is the responsibility of the Permittee/Contractor and shall be performed in accordance with the Manual of Uniform Traffic Control Devices and Oregon Supplements. No work may be done under this permit until the Permittee/ Contractor has submitted a traffic control plan for review to Steve Miles, Multnomah County Traffic Section, (503) 988-5050 ext 29629, fax (503) 988-3321. Traffic control is the responsibility of the Permittee / Contractor and shall be performed in accordance with the Manual of Uniform Traffic Control Devices and Oregon Supplements. Working hours may be limited in some cases due to traffic control plan impact on the public. **Allow a minimum of five (5) working days to review and approve a submitted traffic control plan.** Additional safety signing may be required as the situation dictates.
6. The Permittee shall provide the name and telephone contact number for their inspector and a 24-hour emergency telephone number(s) for their contractor prior to beginning work under this permit.
7. **ATTENTION:** Oregon law requires you to follow rules adopted by the Oregon Utility Notification Center. Those rules are set forth in OAR 952-001-0010 through OAR 952-001-0090. You may obtain copies of the rules by calling the center. The telephone number for the Oregon Utility Notification Center is (503) 232-1987.
8. No modification shall be made to any installation authorized under this permit without prior approval from the County. Failure to comply with any term or condition of this permit shall be cause for revocation. The County reserves the right to stop the work performed under this permit for failure to comply. All costs associated with work stoppage or revocation as provided herein are the responsibility of the Permittee and all costs shall be borne by the Permittee.
9. The Permittee/Contractor shall restore SW Military Road right-of-way to an equal or better condition than existed prior to the work authorized under this permit. The Permittee/ Contractor is responsible for quality control of all new construction within SW Military Road right-of-way. The County may perform spot inspections to monitor quality control. The Permittee shall correct all construction work that does not conform to County standards. The County may require additional work to return the public right-of-way to "as good" or "better" Condition.
10. Permittee will hold the construction and maintenance bond for work authorized under this permit. Permittee shall not release the construction bond until all work within the County right-of-way has been approved by the County and any direct costs incurred by the County has been paid to the County.

temporary asphalt trench patch that is deemed to be in noncompliance with the County standard within the time specified by the County and the County is required to do such work, the **Permittee/Contractor** shall reimburse the County for all costs incurred within 30 days of billing.

17. Final pavement restoration shall consist of 5-inches of level 2, ½” dense grade, with PG 64-22 binder HMAC asphalt concrete. The asphalt pavement is to be placed in separate lifts that are not less than 1-1/2 inches or greater than 3-1/2 inches in depth. **NOTE: The limits of the final pavement restoration will be determined after the sewer line is installed and prior to the final pavement restoration based on the construction impact to the County road.**
18. Immediately prior to placing the final asphalt wearing surface the existing pavement shall be cleaned, removing all loose material, and coated with hot liquid asphalt to insure a bond with the new asphalt surfacing. The restored pavement shall be finished to a smooth riding surface and to the grade of the surrounding undisturbed pavement. The final pavement joints are to be sealed and sanded.
19. The Permittee shall be in compliance with all federal, state, and local laws, regulations, rules and ordinances, pertaining to all the work performed under this Permit, including but not limited to obtaining all necessary City required permits and approvals prior to beginning the work authorized under this permit; and compliance with all applicable OSHA rules and regulations.
20. Permittee shall provide at no cost to Multnomah County an “as built” or “as constructed” set of plans upon completion of the work authorized under this permit. The plans shall detail any variances from the originally approved plan.
21. Multnomah County reserves the right to revoke this permit in the event the County determines the permitted activity is in conflict with a future street improvement project; public need requires it, or the Permittee fails to comply with the conditions of this permit. No expenditure of money, lapse of time, or other act or thing shall operate as an estoppel against the County, or be held to give the Permittee any vested or other right. Upon revocation of this permit the Permittee shall within 30 days of receiving notification, modify, remove, relocate or abandon if granted by the County said installations from SW Military Road right-of-way and restore the right-of-way as directed by and to the satisfaction of the County.

11. The Permittee shall provide the County the opportunity to attend the pre-construction meeting for the work authorized under this permit. The individual /contractor shall notify this office (503) 988-3582 twenty-four (24) hours prior to being work under this permit. If notification is not given and a stop work order is issued work may resume 24 hours after issuance of the stop work order.
12. It will be the responsibility of the Contractor to find an adequate storage site for all equipment and construction material. No equipment or construction material will be allowed to be stored in the road right-of-way except that used in a workday.
13. A saw cut with a "T" patch will be required on all trench work in the paved roadway. Backfill material for any perpendicular or diagonal road crossing or at specific locations identified by the inspector shall consist of a CDF (controlled density fill) from an approved source to be placed in the area above the pipe zone and below the required pavement depth stated below. The CDF shall not exceed 150 lbs psi. A minimum of 12 hours curing time for the CDF will require the temporary placement of the steel plating over the trench. The exposed plate edges are to be dressed with asphalt mix as described below. A granular backfill of 1"-0 crushed aggregate rock is required below the CDF backfill material. A granular backfill of 1"-0 crushed aggregate rock may be used as backfill material on a trench cut that parallels the direction of travel of the road.
14. If the use of a steel plate is required **overnight** the steel plate is to be secured to prevent movement by traffic and the exposed edges of the plate shall be ramped with asphalt mix. A steel plate is to be removed from the roadway by the following day unless otherwise approved by the County. The use of a steel plate in the roadway over a weekend or holiday is prohibited unless approved in advance; backfill material is to be made level with the existing road surface and a 24-hour emergency telephone contact number(s) shall be provided to the County. Lighted barricades with "CONSTRUCTION AHEAD" and "BUMP" signs mounted on them shall be placed sufficiently both ahead of and adjacent to the steel plating to warn all traffic and are to remain in place until permanent surface restoration is underway.
15. Manhole assemblies are to be rotated to provide minimal impact where a motor vehicle tire will run in the traveled roadway.
16. All trench work in the paved roadway shall be backfilled and temporarily patched with a 1 to 1 1/2-inch minimum depth hot asphalt mix skin patch to provide a smooth driving surface. The Permittee's Contractor is responsible to maintain the condition of the **temporary hot asphalt trench patch** in accordance with Multnomah County Design and Construction Manual. A temporary patch that becomes settled, cracked, broken or otherwise faulty **shall be replaced** as directed by the County to provide a **smooth driving surface** during the course of construction. Settlement of the replaced road surface of one-half (1/2) inch or more with a six (6) foot straight edge shall constitute evidence of improperly compacted backfill material. The trench backfill material shall be re-compacted to obtain the required compaction results and a **new temporary patch** is to be applied. If the Permittee/Contractor fails to repair a

SOIL BORING
LOGS

SOIL BORING LOGS

LOG OF HA-01

Date Excavated: 1/20/2009

Logged by: J. Wood

Equipment: Hand Auger

Surface Elevation(ft): 316.0*

| DEPTH (feet) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE | HAND PEN. (tsf) | MOISTURE (%) | DRY UNIT WT. (pcf) | LAB TESTS |
|-----------------|------------------|---|--------|--------------------|-----------------|-----------------------|--------------|
| | IVY | Sandy SILT (ML) soft to loose, trace to some clay, low plasticity, trace to some organics, 10-25 % fine Sand, moist, tan. | | | | | |
| 5 | Weathered BASALT | Weathered BASALT decomposed vesicular Basalt with relic structure in a matrix of sand sized-fragments, friable to R-1 in strength, moist, brown with orange mottles. Refusal at 60" bgs. | | | | | |
| 10 | | | | | | | |

LOG OF HA-02

Date Excavated: 1/20/2009

Logged by: J. Wood

Equipment: Hand Auger

Surface Elevation(ft): 305.0*

| DEPTH (feet) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE | HAND PEN. (tsf) | MOISTURE (%) | DRY UNIT WT. (pcf) | LAB TESTS |
|-----------------|----------------|---|--------|--------------------|-----------------|-----------------------|--------------|
| | IVY | Sandy SILT (ML) [fill] soft to loose, low plasticity, trace to some organics, 10-25 % fine Sand, moist, Dark Brown. | | | | | |
| 5 | | Hit obstruction 20" bgs, probably tree root, moved 2' north small rounded gravel clasts and brick shards encountered below 24" bgs. Refusal at 30" bgs. | | | | | |
| 10 | | | | | | | |

MTL HAND AUGER BES 8378 ELK ROCK BYPASS.GPJ LAGNN07.GDT 1/26/09



City of Portland Materials Testing Laboratory
 1405 N. River Street
 Portland, OR 97227
 Phone: (503) 823-2340 Fax: (503) 823-2342

Elk Rock Bypass

BES 8378

PLATE

ENVIRONMENTAL ANALYSIS



Memorandum

Date: 8/18/08
To: Holly Walla, PE
From: Michael Hodge
Taryn Meyer
RE: Environmental Records Search for Elk Rock Bypass Project #8378

BACKGROUND:

The City of Portland's Bureau of Environmental Services (BES) Coordinated Site Analysis Program was requested to conduct an environmental records search at 11733 SW Breyman Ave., Portland OR and surrounding properties. A sanitary bypass is going to be installed between SW Military Rd. and SW Breyman Ave. The project site and surrounding properties are shown in **Figure 1**.

The construction will occur using open cut methods. Soil samples will be obtained from soil pits excavated by the contractor before construction activities begin. The purpose of this records search is to identify any recognized environmental conditions (RECs) at or adjacent to the project site that indicate the possible presence of contamination.

SUMMARY OF ENVIRONMENTAL FEATURES OF CONCERN:

The project site is in a residential area. The main features of concern in residential areas are underground storage tanks. One leaking underground storage tank site (LUST) was found near the project site and it is possible that other undocumented tanks may exist nearby. The condition and current status of these tanks are unknown.

ODEQ Environmental Cleanup Site Information System (ECSIS)

The ECSI system includes facilities entered into the Oregon Department of Environmental Quality (ODEQ) database pursuant to the site discovery requirements of ORS 466.560. The list includes facilities where investigation or cleanup has been initiated and facilities suspected of a release of hazardous substances.

There were no DEQ ECSI facilities adjacent to the subject site as of 8/7/2008.

ODEQ Leaking Underground Storage Tank (LUST) List

The ODEQ LUST list identifies facilities that are currently or have been under investigation for leaking underground storage tanks. There is one known Leaking Underground Storage Tank

Appendix 1



Oregon Department of Environmental Quality

Heating Oil Tank

Summary Information

General Site Information

26-00-6330
Site Name: Heating Oil Tank
Address: 11836 SW BREYMAN AVE
 PORTLAND, 97219
County: MULTNOMAH
Site Type: Risk Based Standards
Project Manager N/A - Project Completed.

Basic Incident Information

Received Date: 11/08/2000
Status: CLOSED
Tank Type: Home Heating Oil Tank
File Status: Certification
UST Facility Id:

Assessment Information

| | | | | | |
|--------------------------|--------------|------------------------------|--------------|--------------------------|-----------------|
| Cause of Release: | NOT REPORTED | Source of Release: | TANK | Discovery Method: | SITE ASSESSMENT |
| Media Effected | >Soil | Contaminants Released | >Heating Oil | | |

Management Information

| | | | | | |
|------------------------------|------------|----------------------------|------------|--------------------------|------------|
| Release Stopped Date: | 12/05/2000 | Cleanup Start Date: | 11/08/2000 | Cleanup End Date: | 04/04/2000 |
|------------------------------|------------|----------------------------|------------|--------------------------|------------|

Site Documents

Click the link to view the document.

| <u>File Name</u> | <u>Category</u> | <u>File Size MB</u> | <u>Upload Date</u> |
|--------------------------------|-----------------|---------------------|--------------------|
| 26-00-6330.pdf | Closure Letter | 0.0509 | 7/22/2008 |

Oregon Department of Environmental Quality
 Headquarters: 811 Sixth Ave., Portland, OR 97204-1390
 phone: 503-229-5696 or toll free in Oregon 800-425-4011
 TTY: 503-229-6993 FAX: 503-229-6124

The Oregon Department of Environmental Quality is a regulatory agency authorized to protect Oregon's environment by the State of Oregon and the Environmental Protection Agency.

[DEQ Web site privacy notice](#)



Oregon

John A. Kitzhaber, M.D., Governor

Department of Environmental Quality

Northwest Region

2020 SW Fourth Avenue

Suite 400

Portland, OR 97201-4987

(503) 229-5263 Voice

TTY (503) 229-5471

April 4, 2002

KAREN GERBER
145 FURNACE ST
LAKE OSWEGO OR 97034

Re: GERBER, KAREN
File No.: 26-00-6330

Dear Karen Gerber:

The Department of Environmental Quality has received a report and ARMAC Inc. certification concerning the heating oil underground storage tank (UST) assessment and/or cleanup conducted at 11836 SW BREYMAN AVE, in PORTLAND, Oregon.

ARMAC Inc. was licensed to provide heating oil tank services and has certified that the cleanup has met the Department's requirements. The Department has registered this report and certification and closed its file on the project.

The decision to register the report and certification and to close the Department's file will no longer apply if new or undisclosed facts show that the project does not comply with the rules governing heating oil tank cleanups.

We recommend that you keep a copy of this information with the permanent property records.

Your efforts to comply with Oregon's environmental rules and regulations to ensure that your heating oil tank has been adequately addressed have been appreciated. Proper decommissioning and cleanup helps ensure protection of the environment from future heating oil tank leaks and ensures that the heating oil does not adversely impact human health or the environment. If you have any questions, please feel free to contact me at (503) 229-5474.

Sincerely,

Andree Pollock, Manager
UST Cleanup and Compliance Section

cc: Contractor



Figure 1

Elk Rock
Sanitary Bypass
BES Project #8378
CSA #926

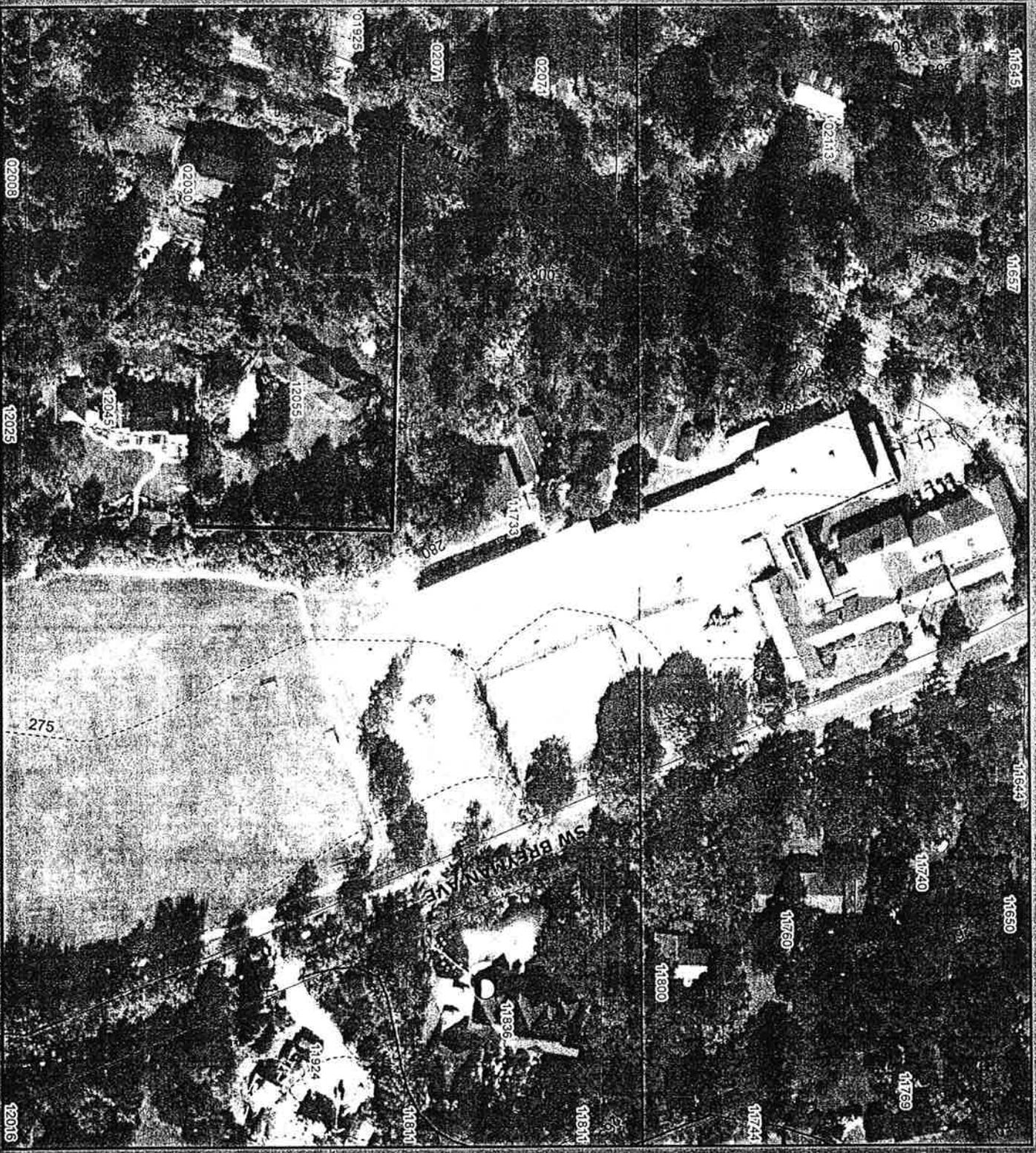
Map Symbols

-  Leaking Tanks
-  5ft Contours
-  Project Site
-  Taxlots

1:1,386
1 inch equals 0.02 mi



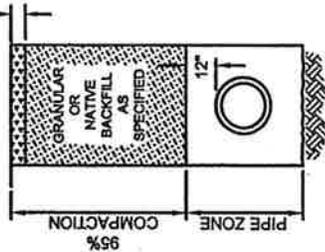
Map Created by michaiah Aug 8, 2008



MODELING REPORT

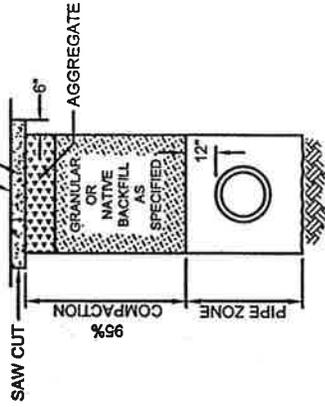
STANDARD DRAWINGS
&
DETAILS

WHEN NOT OTHERWISE SPECIFIED, RESURFACING SHALL CONSIST OF 6" OF 1'-0" AGGREGATE AS DIRECTED.



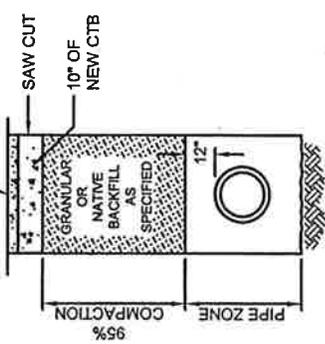
TRAVELED UNIMPROVED STREET

FOR RESURFACING, REFER TO PDOT UTILITY CUT STANDARD DETAILS.



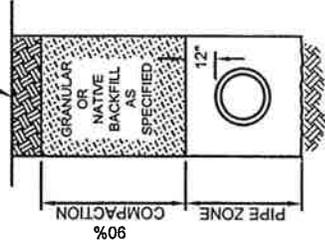
HARD SURFACE (CONCRETE)

MHMAC TO MATCH EXISTING



CTB STREET (CEMENT TREATED BASE)

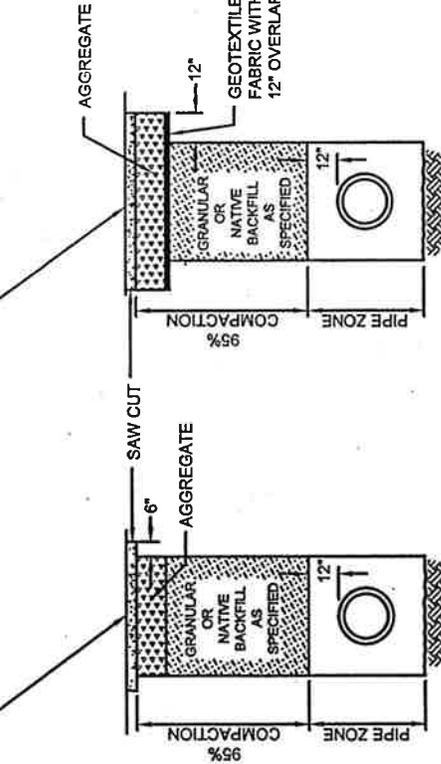
6" SELECTED TOP SOIL IF TOP SOIL EXISTED PRIOR TO EXCAVATION



UNIMPROVED AREAS

WHEN NOT OTHERWISE SPECIFIED, RESURFACE TRENCHES WITH:

- PAVEMENT: MHMAC EQUAL IN THICKNESS TO EXISTING PAVEMENT, BUT NOT TO EXCEED 6" MAX. OR 2" MIN.
- BASE: 1'-0" OR 3/4'-0" AGGREGATE EQUAL IN THICKNESS TO EXISTING BASE, BUT NOT TO EXCEED 12" MAX. OR 6" MIN.



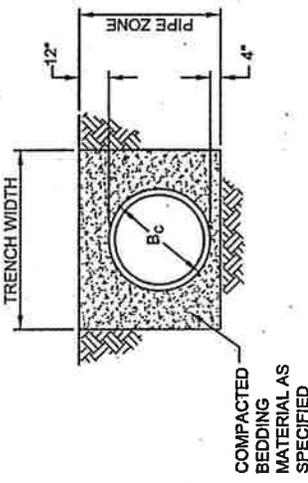
OIL GRAVEL OR ASPHALT CONCRETE SURFACE

OIL GRAVEL OR ASPHALT CONCRETE SURFACE WITH GEOTEXTILE FABRIC

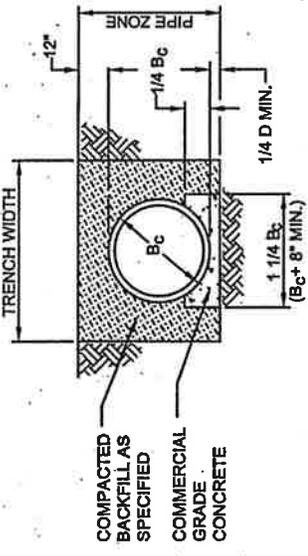
NOTE:

1. FOR PIPE ZONE BEDDING, BACKFILL AND COMPACTION REQUIREMENTS, SEE STANDARD DETAIL NO. P-101.

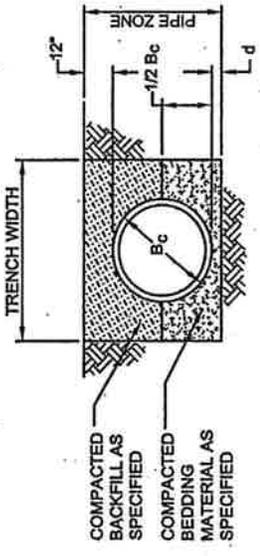
| | | |
|--|-----------------------|---------------------------|
|  <p>Bureau of Environmental Services CITY OF PORTLAND, OREGON</p> | Standard Detail Title | Standard Detail No. |
| | Chief Engineer | 01-01-09 |
| <p>Typical Trench Sections Backfill and Surfacing</p> | | Calc. Book No.: N/A |
| <p>The selection and use of this Standard Detail, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user.</p> | | Baseline Report Date: N/A |
| <p>Note: All material and workmanship shall be in accordance with the City of Portland Standard Construction Specifications.</p> | | SPECIAL |



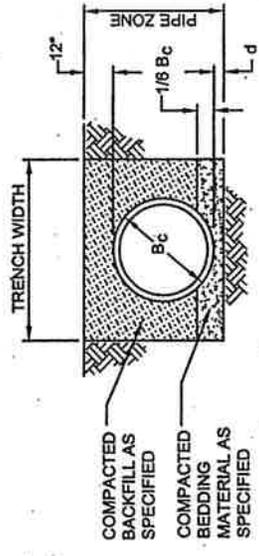
FLEXIBLE PIPE OR CLASS D BEDDING



CLASS A CONCRETE CRADLE



CLASS B BEDDING



CLASS C BEDDING

| DEPTH OF BEDDING MATERIAL BELOW PIPE FOR CLASSES B AND C | |
|--|----------|
| D | d (MIN.) |
| 27" & SMALLER | 3" |
| 30" TO 60" | 4" |
| 66" & LARGER | 6" |

NOTES:

- FOR ROCK OR OTHER INCOMPRESSIBLE MATERIALS, THE TRENCH SHALL BE OVEREXCAVATED A MINIMUM OF 6" AND REFILLED WITH GRANULAR MATERIAL AS DIRECTED BY THE ENGINEER.
- FOUNDATION STABILIZATION: WHERE DIRECTED, FOUNDATION STABILIZATION SHALL BE PLACED PRIOR TO PLACEMENT OF PIPE BEDDING.

LEGEND:

- B_c = OUTSIDE DIAMETER
- d = DEPTH OF BEDDING MATERIAL BELOW PIPE
- D = INSIDE DIAMETER

The selection and use of this Standard Detail, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user.

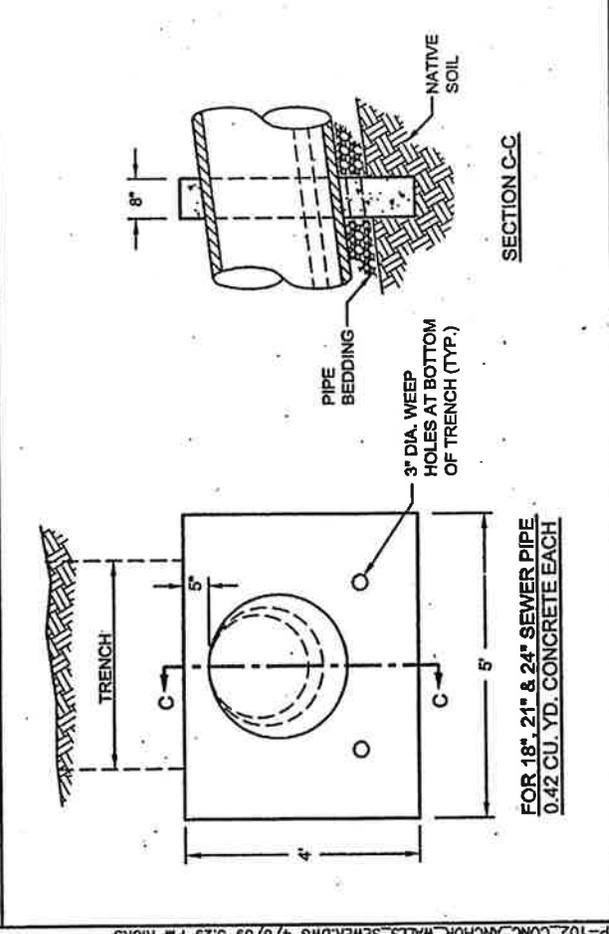
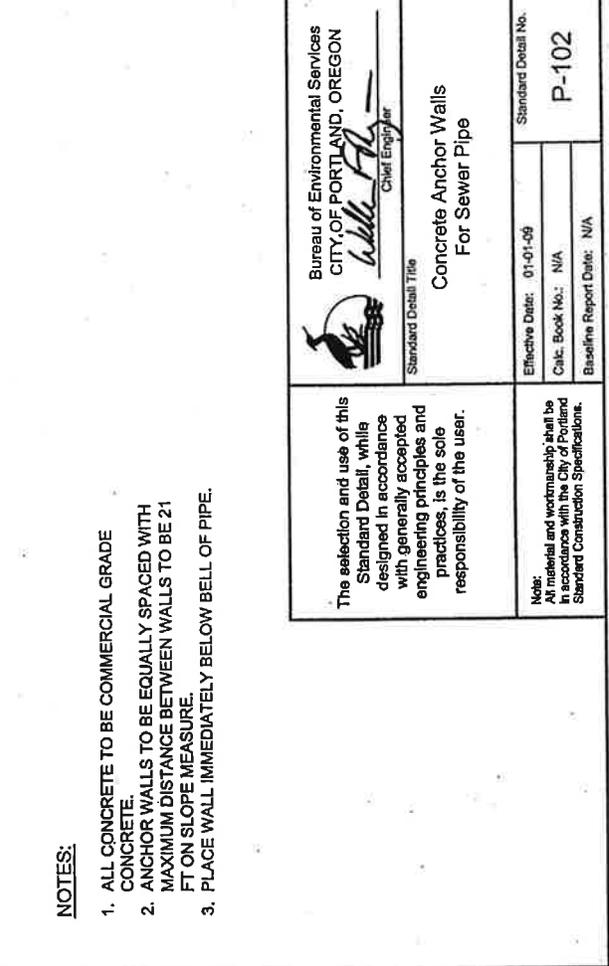
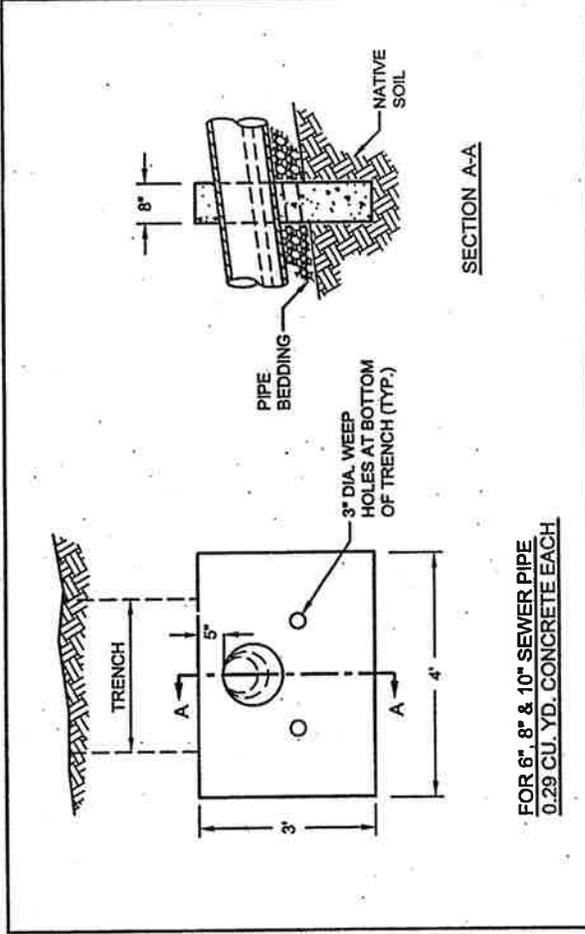
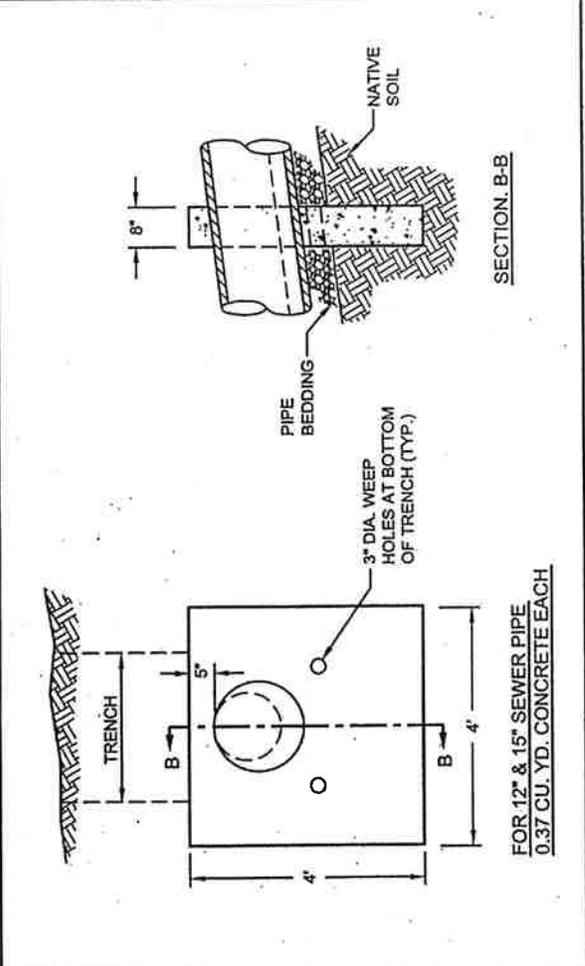
Note: All materials and workmanship shall be in accordance with the City of Portland Standard Construction Specifications.

Bureau of Environmental Services
CITY OF PORTLAND, OREGON

Chief Engineer

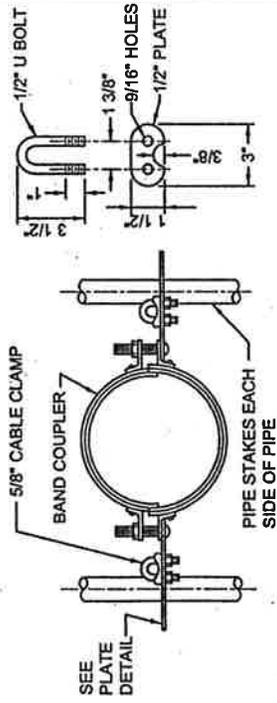
Standard Detail Title
Pipe Bedding and Pipe Zone

Effective Date: 01-01-09
Calc. Book No.: N/A
Standard Detail No.: P-101
Baseline Report Date: N/A



- NOTES:**
1. ALL CONCRETE TO BE COMMERCIAL GRADE CONCRETE.
 2. ANCHOR WALLS TO BE EQUALLY SPACED WITH MAXIMUM DISTANCE BETWEEN WALLS TO BE 21 FT ON SLOPE MEASURE.
 3. PLACE WALL IMMEDIATELY BELOW BELL OF PIPE.

| | | | |
|--|---|--|---|
| <p>Bureau of Environmental Services CITY OF PORTLAND, OREGON</p> <p><i>Willie Fly</i> Chief Engineer</p> | <p>Standard Detail Title</p> <p>Concrete Anchor Walls For Sewer Pipe</p> | | <p>Standard Detail No.</p> <p>P-102</p> |
| | <p>Effective Date: 01-01-09</p> <p>Calc. Book No.: N/A</p> <p>Baseline Report Date: N/A</p> | <p>The selection and use of this Standard Detail, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user.</p> | |
| <p>Note: All material and workmanship shall be in accordance with the City of Portland Standard Construction Specifications.</p> | | | |



ANCHOR ASSEMBLY ALTERNATE "A"
 CABLES AND CABLE CLAMPS TO BE USED
 WHEN SPECIFIED.

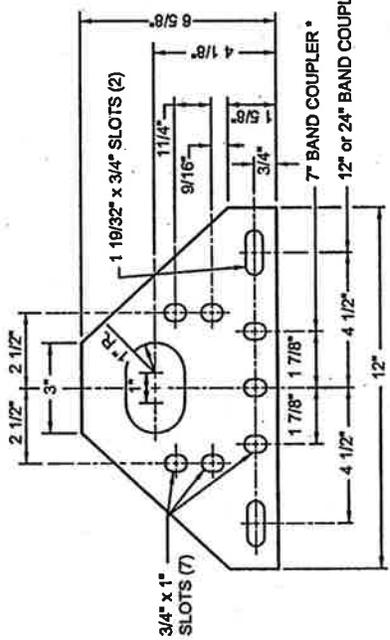
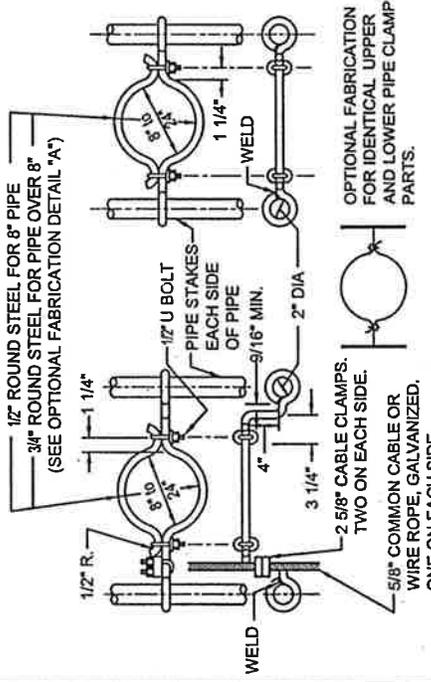


PLATE DETAIL 1A
 * LENGTH OF BAND COUPLER
 MEASURED PARALLEL TO THE
 CENTERLINE OF THE PIPE.

GENERAL NOTES FOR ALL DETAILS:

1. ALL PIPE STAKES AND HARDWARE TO BE GALVANIZED AFTER FABRICATION.
2. EITHER TYPE 1 OR TYPE 2 PIPE STAKES MAY BE USED WITH EITHER ANCHOR ASSEMBLY ALTERNATE AT THE CONTRACTOR'S OPTION.
3. PLACE SLOPE ANCHOR ASSEMBLIES ON 20° MAX. CENTERS ON SLOPES 20° OR GREATER.
4. PLATE MATERIAL TO BE ASTM A36 1/4". GALVANIZE AFTER FABRICATION.



ANCHOR ASSEMBLY ALTERNATE "B"
 CABLES AND CABLE CLAMPS TO BE USED WHEN SPECIFIED.

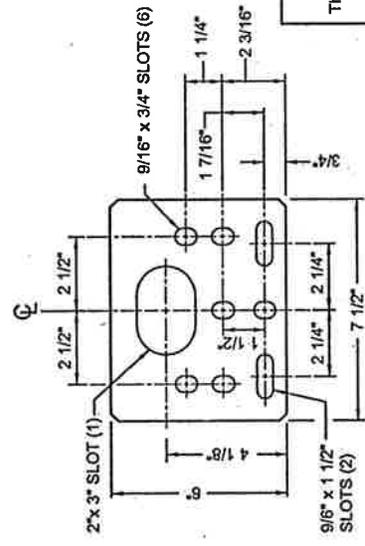
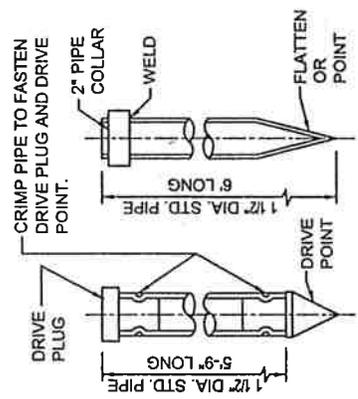
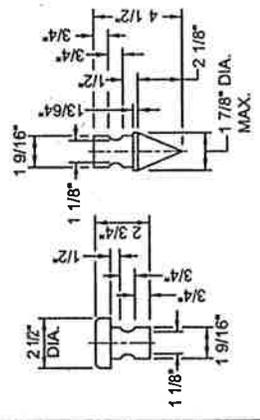


PLATE DETAIL 1B



PIPE STAKES
 TYPE II
 TYPE I



DRIVE PLUG
 (CAST IRON)
DRIVE POINT
 (CAST IRON)

The selection and use of this Standard Detail, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user.

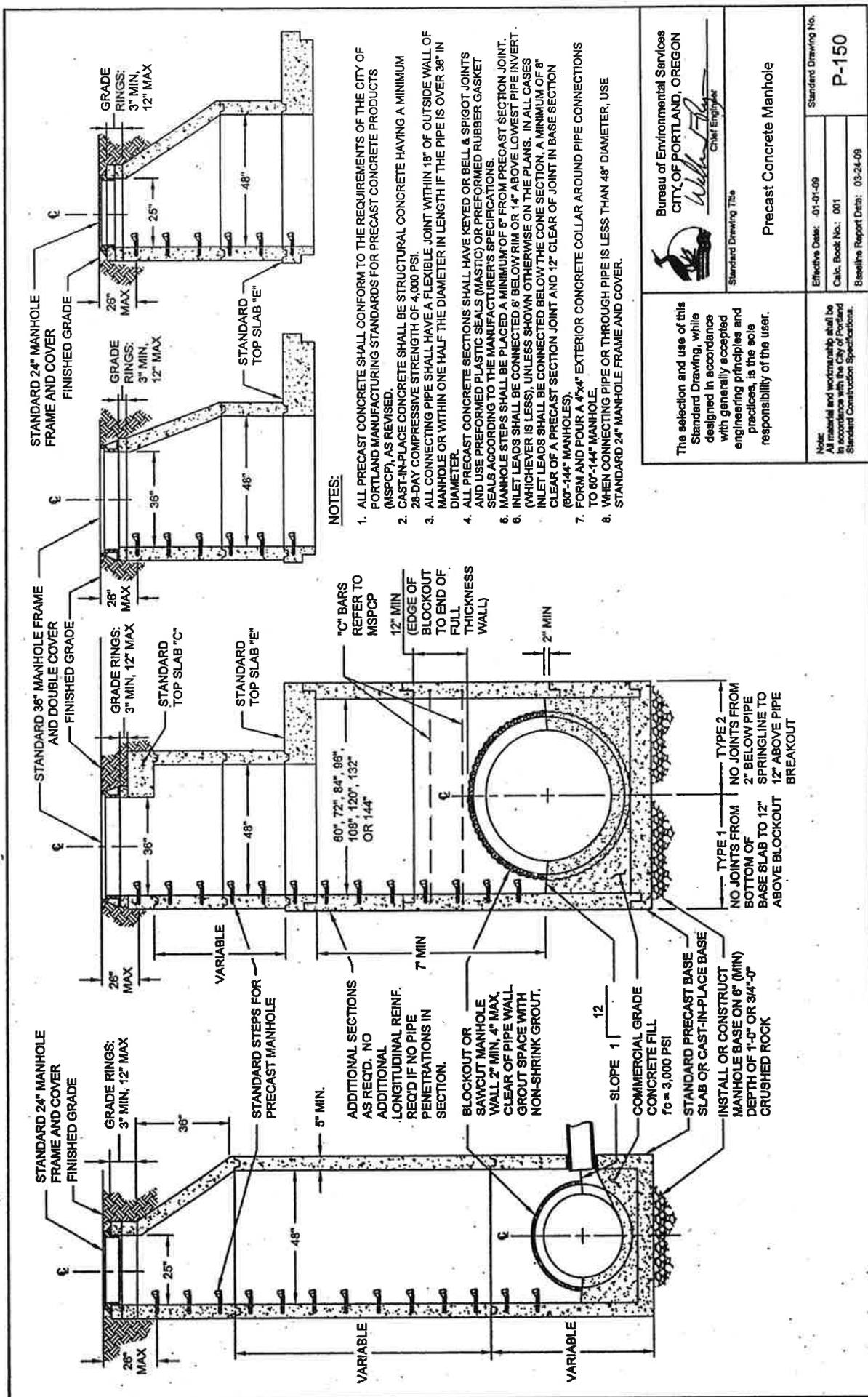
Note: All material and workmanship shall be in accordance with the City of Portland Standard Construction Specifications.

Effective Date: 01-01-09
 Calc. Book No.: N/A
 Baseline Report Date: N/A

Bureau of Environmental Services
 CITY OF PORTLAND, OREGON
 Chief Engineer

Standard Detail Title
 Metal Slope Anchors

Standard Detail No.
 P-104



NOTES:

1. ALL PRECAST CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF THE CITY OF PORTLAND MANUFACTURING STANDARDS FOR PRECAST CONCRETE PRODUCTS (MSPCP), AS REVISED.
2. CAST-IN-PLACE CONCRETE SHALL BE STRUCTURAL CONCRETE HAVING A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI.
3. ALL CONNECTING PIPE SHALL HAVE A FLEXIBLE JOINT WITHIN 18" OF OUTSIDE WALL OF MANHOLE OR WITHIN ONE HALF THE DIAMETER IN LENGTH IF THE PIPE IS OVER 36" IN DIAMETER.
4. ALL PRECAST CONCRETE SECTIONS SHALL HAVE KEYS OR BELL & SPIGOT JOINTS AND USE PREFORMED PLASTIC SEALS (MASTIC) OR PREFORMED RUBBER GASKET SEALS ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS.
5. MANHOLE STEPS SHALL BE PLACED A MINIMUM OF 5" FROM PRECAST SECTION JOINT.
6. INLET LEADS SHALL BE CONNECTED 8" BELOW RIM OR 14" ABOVE LOWEST PIPE INVERT. (WHICHEVER IS LESS), UNLESS SHOWN OTHERWISE ON THE PLANS. IN ALL CASES INLET LEADS SHALL BE CONNECTED BELOW THE CONE SECTION. A MINIMUM OF 8" CLEAR OF A PRECAST SECTION JOINT AND 12" CLEAR OF JOINT IN BASE SECTION (80"-144" MANHOLES).
7. FORM AND POUR A 4"x4" EXTERIOR CONCRETE COLLAR AROUND PIPE CONNECTIONS TO 60"-144" MANHOLE.
8. WHEN CONNECTING PIPE OR THROUGH PIPE IS LESS THAN 48" DIAMETER, USE STANDARD 24" MANHOLE FRAME AND COVER.

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user.

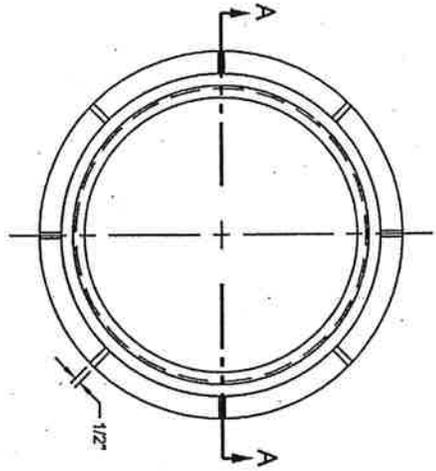
Bureau of Environmental Services
CITY OF PORTLAND, OREGON
William J. ...
Chief Engineer

Standard Drawing Title: Precast Concrete Manhole

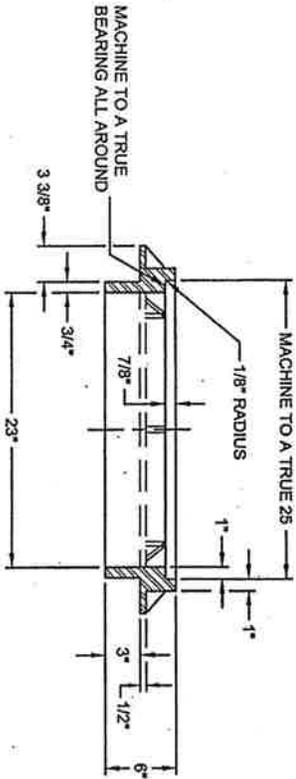
Effective Date: 01-01-09
Calc. Book No.: 001
Baseline Report Date: 03-24-09

Standard Drawing No. P-150

Note: Materials and workmanship shall be in accordance with the City of Portland Standard Construction Specifications.



TOP VIEW



SECTION A-A

NOTE: MATERIAL TO BE GRAY CAST IRON ASTM A-48, CLASS 30 WEIGHT APPROX. 172 LBS.

The selection and use of this Standard Detail, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user.

Note:
All material and workmanship shall be in accordance with the City of Portland Standard Construction Specifications.



Bureau of Environmental Services
CITY OF PORTLAND, OREGON
William Ricks
Chief Engineer

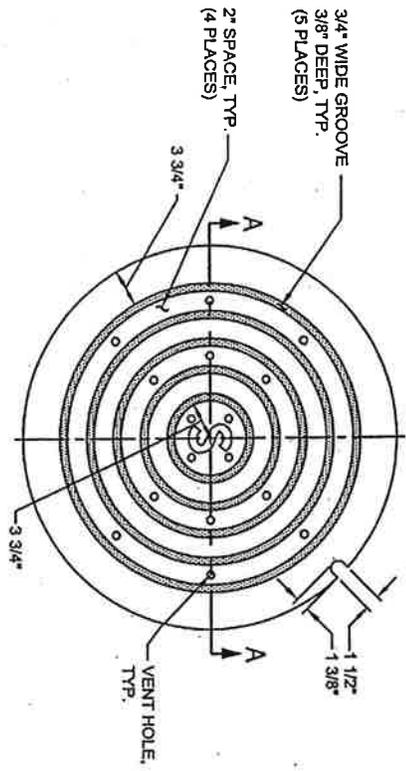
Manhole Frame - 6 Inch Depth

Standard Detail Title

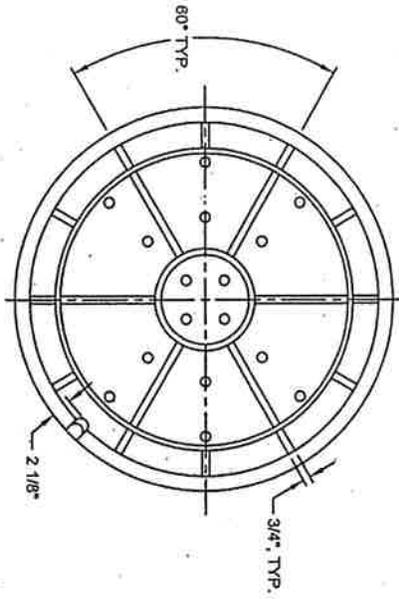
Effective Date: 01-01-09
Calc. Book No.: N/A
Baseline Report Date: N/A

Standard Detail No.

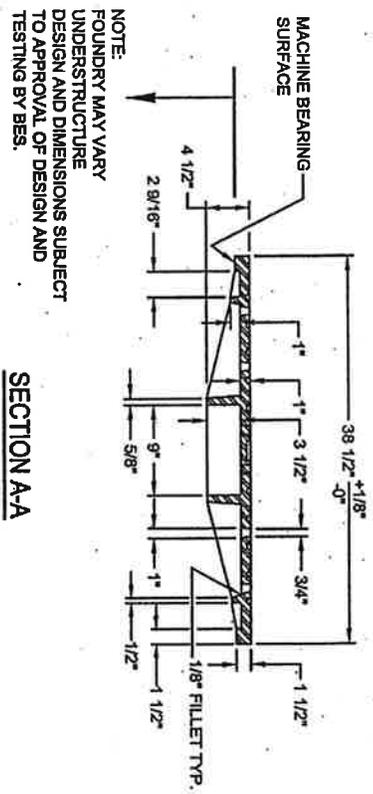
P-171



TOP VIEW



BOTTOM VIEW



NOTE:
 FOUNDRY MAY VARY
 UNDERSTRUCTURE
 DESIGN AND DIMENSIONS SUBJECT
 TO APPROVAL OF DESIGN AND
 TESTING BY BES.

SECTION A-A

NOTES:

1. EACH CASTING SHALL BE STAMPED WITH MANUFACTURER'S INITIALS, HEAT NUMBER, AND YEAR OF THE CAST.
2. TOLERANCE ON NON-MACHINED SURFACES TO BE $\pm 1/16"$.
3. APPROX. WT. = 330 LBS. MATERIAL TO BE DUCTILE IRON, ASTM A536, GRADE 80-55-08.

| | | |
|--|----------------------------------|---|
| <p>The selection and use of this Standard Detail, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user.</p> | | <p>Bureau of Environmental Services CITY OF PORTLAND, OREGON <i>W. R. Ricks</i> Chief Engineer</p> |
| <p>Standard Detail Title 36 Inch Manhole Cover</p> | | |
| <p>Name: All material and workmanship shall be in accordance with the City of Portland Standard Construction Specifications.</p> | <p>Effective Date: 01-01-09</p> | <p>Standard Detail No. P-177</p> |
| <p>Calc. Book No.: N/A</p> | <p>Baseline Report Date: N/A</p> | |