

PUBLIC IMPROVEMENT BY PRIVATE CONTRACT

PIPC Permit Procedure Manual

City of Corvallis



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SECTION I

INTRODUCTION

SECTION I - INTRODUCTION

A. Scope of Work, Roles & Responsibilities

This PIPC Permit Procedure Manual presents procedures which shall apply to all required public improvements constructed under private contracts within the City of Corvallis. A public improvement is defined as infrastructure that must be constructed in accordance with the latest edition of the *City of Corvallis Standard Construction Specifications* and which will become the permanent maintenance responsibility of the City. Public improvements must be permitted, constructed and inspected under the authority of the City Engineer.

This Manual is intended to provide a general description of the permitting procedures and requirements for Public Improvement by Private Contract (PIPC) projects.

PIPC projects generally encompass the following:

1. New or reconstructed sanitary and storm sewers, laterals and appurtenances, including:
 - a. all sewer lines in the public right-of-way; and
 - b. all sewer main in public easements (sewer is private to point of connection); and
 - c. any part of a sewer system which serves two or more parcels; and
 - d. any part of a sewer which serves two or more buildings. Sewers should be configured so that each building has its own private connection to the public sanitary or storm sewer. An exception may be permitted where one building stands at the rear of another on an interior lot. Under this exception, the sewers shall be private and permitted through Development Services; and
 - e. any storm water piping system and water quality/detention/conveyance system that carries storm water discharge from a public facility (e.g. street) should be public and at minimum requires a public drainage easement.
2. New or reconstructed public water mains and appurtenances, including:
 - a. all water service lines from the City main to the meter that are not installed under a tap card issued by Development Services; and
 - b. fire service waterlines up to the point of connection to the backflow prevention device in instances where the backflow prevention device is located outside of a building. In instances where the backflow prevention device is located inside of a building, the property Owner shall own and maintain the fire service waterline from the valve at the point of connection to the City's water main (refer to PRO #3013 in Appendix D).

3. New or reconstructed public street or roadway facilities, including bridges; drainage structures; pedestrian, bicycle, transit facilities; and street lights.
4. Drainageway improvements that are required concurrent with development, in accordance with *Land Development Code Section 4.5.80*.

B. Responsibilities

PIPC projects require coordination with the project Owner/Developer; the Engineer of Record; the Contractor; and City staff. General responsibilities of each representative are as follows:

1. The Owner/Developer shall be responsible for the following:
 - a. Maintaining overall responsibility for project and construction management; contract administration; permit acquisition and compliance; and, if required, right-of-way and/or easement dedications.
 - b. Naming an agent in writing, if other than the Owner/Developer, to act on the Owner's/Developer's behalf.
 - c. Retaining the services of a licensed professional Engineer of Record to fulfill their responsibilities as defined below including regular on-site inspection, authority to ensure Contractor's work conforms with plans and specifications, preparation of as-built plans and coordination of final and warranty inspection punch-list repairs. A copy of the Engineer's scope of work shall be provided prior to issuance of the PIPC Permit.
 - d. Hiring a licensed and insured Contractor.
 - e. Obtaining Erosion Prevention & Sediment Control and Excavation and Grading Permits from the City's Development Services Division when warranted.
 - f. Obtaining an electrical permit for public street lights from the City's Development Services Division when warranted.
 - g. Providing project performance, warranty and maintenance securities. These may be issued under the Contractor's name. Standard forms are provided in Section IV of these guidelines.
 - h. Ensuring that construction does not begin until the PIPC Permit is issued and the preconstruction meeting is held.
 - i. Ensuring that any and all final and warranty inspection punch-list repairs are completed and accepted by the City.

2. The Engineer of Record shall be responsible for the following:
 - a. Preparing and submitting to the City complete detailed construction plans.
 - b. Scheduling and conducting a preconstruction conference prior to issuance of the PIPC Permit.
 - c. Providing primary construction inspections consistent with this Manual and the City's standards and accepted engineering practice.
 - d. Serving as authority to ensure Contractor's work conforms with approved plans and specifications. Note: This does not mean to imply responsibility or authority over Contractor's ways & means.
 - e. Coordinating and providing certified test results for required testing.
 - f. Requesting TV inspections and waterline chlorination testing.
 - g. Submitting a written request for the final inspection including support documents.
 - h. Notifying and furnishing plans to franchise utilities and US Postal Service and resolving franchise and City utility conflicts.
 - i. Preparing stamped and signed as-built drawings as outlined in Step 5.
3. The City shall be responsible for the following items:
 - a. Reviewing submitted construction plans. Plan reviews are typically completed within fifteen (15) working days of receipt of a complete plan set, including associated support documentation, such as detention and water quality calculations.
 - b. Processing project security.
 - c. Calculating and collecting PIPC permit fees and issuing the PIPC Permit upon receipt and approval of all Permit Application Check List items.
 - d. Assisting in issue resolution and facilitating conformance with requirements.
 - e. Scheduling television inspections and witnessing/conducting quality assurance tests and conducting a final inspection as outlined in this Manual.
 - f. Accepting the improvements subject to a warranty period.
 - g. Conducting a warranty inspection and verifying completion and acceptance of required warranty repairs.

C. Procedures

This Manual is a general description of the PIPC process. Specific PIPC applications and permits may vary from the general description. If there are questions about the applicability of the general description to a specific project, the applicant should direct inquiries to Public Works Engineering Development Review at (541) 766-6941. The City of Corvallis reserves the right to change this process without notice at any time.

Any work requiring a PIPC permit that is performed without the required permits is subject to a fine of \$500 for each day that such violation continues (*Land Development Code Chapter 1.3 - Enforcement*).

The *City of Corvallis Standard Construction Specifications* may be purchased from Public Works Engineering Development Review and are also available at the City's website: www.ci.corvallis.or.us.

D. Discrepancies, Omissions, and Inconsistencies

In resolving inconsistencies between the authorized plans and the *City of Corvallis Standard Construction Specifications*, precedence shall be given in the following order:

- Special Permit Conditions
- PIPC Permit Procedure Manual
- Standard Construction Specifications
- Authorized Plans*

* Figure dimensions on plans shall take precedence over scale dimensions; and detailed plans shall take precedence over general plans.

SECTION II

PIPC PERMIT PROCEDURES

SECTION II - PIPC PERMIT PROCEDURES

Step 1 - Plan and Support Documentation Submittal

- A. The Engineer of Record shall prepare and submit to Public Works Engineering Development Review seven (7) complete sets of stamped and signed detailed construction plans, on 24" by 36" sheets, containing, at a minimum, the following information on scaled drawings:
1. A cover sheet with a project title; vicinity map; sheet index; and an overall site plan showing lot lines, right-of-way lines, public & franchise utility lines (existing and new), drainage ways, and other pertinent features. Private facilities should be noted and labeled as private.
 2. Separate plan and profile drawings for each utility with all utility crossings shown and clearances labeled.
 3. Stationing for all manholes, service taps, valves, fittings, and other appurtenances, labeled on both plan and profile drawings.
 4. Plan, profile, cross-sections, and curb return data for street designs. Street design information must also include centerline radii and dimensions of sidewalk; landscaped parkways; and right-of-way.
 5. Reference to, and inclusion of, appropriate City Standard Detail Drawings.
 6. Details for waterline valve configurations.
 7. A "streetscape" plan that incorporates the following features: composite utility layers, ROW and property lines, existing street center and edge lines, existing and proposed traffic signals, street lights and related structures (conduit, pedestals), proposed driveway locations, vision clearance triangles for all intersections, existing and proposed street striping and signing (in conformance with the MUTCD), existing and proposed sidewalks, dimensions showing location of curb from ROW lines, and proposed street tree locations and tree species. Refer to LDC 4.2.30 for tree/utility separation requirements.
 8. A landscaping & irrigation plan showing types, locations and quantities of specified plant materials and irrigation system for public stormwater detention and quality facilities.
 9. A letter from the Engineer of Record indicating how all conditions of approval from the public hearing process are addressed.
 10. Certification by the Engineer of Record that existing utility locations have been reviewed for conflicts, that Franchise Utility representatives have been provided copies of the plans, and that potential for franchise utility relocation has been addressed pursuant to applicable Franchise Utility Agreements.

- B. In conjunction with the submittal of detailed construction plans described above in A., the Engineer of Record shall prepare and submit to Public Works Engineering Development Review three (3) complete sets of calculations and support data used for all engineering designs, including geotechnical, detention, and water quality designs. The calculations shall include an executive summary describing approach and conclusions and shall be stamped by the Engineer of Record.
- C. Upon receipt of plans and associated support documentation, the City will review and, within approximately fifteen (15) working days, authorize the plans or provide a letter outlining required revisions. If the plans are incomplete, a letter of incompleteness may be issued instead.
- D. When corrected plans are returned to the City, the City will review and, within approximately fifteen (15) working days, authorize the plans or provide another letter requesting revisions to the plans.
- E. Plans authorized for construction shall be stamped “Authorized for Construction” and signed and dated by the City.
- F. Plan authorizations are valid for a period of 6 months. If a permit has not been issued within 6 months after plan authorization then the authorization expires and plans will need to be resubmitted for authorization and subject to City Standards in effect at the time of re-application.

Upon authorization of the plans, the following items must be submitted prior to scheduling of a Preconstruction Conference and issuance of the PIPC Permit:

1. A completed and signed Application for Permit to Construct Public Improvements Under Private Contract, including fully executed Special Permit Conditions.
2. Seven (7) sets of plans to be stamped "Authorized for Construction of Public Improvements", and signed and dated by the City. Five (5) of the seven sets are retained by the City and two (2) are returned to the applicant. Additional plan sets required by the applicant need to be provided in addition to the seven (7) sets. **Note: Provide one 11" x 17" plan set for field use.**
3. An electronic copy of the plan set (in a non-executable AutoCAD or a dxf file and a tif file) with reference to at least two Oregon North NAD 27 state plane coordinates. Questions on format or obtaining state plane coordinates should be addressed to the City's GIS group at (541)766-1742. Control information may be accessed at the City's website: <ftp://ftp.ci.corvallis.or.us/pw/engineering/Survey%20Data/Control/>
4. A Certificate of Insurance in the Contractor's name, identifying the project name and permit number and naming the City of Corvallis as additional insured. **Note: If the project name and permit number are missing, the certificate can not be accepted.** The certificate shall contain substantially the following statement: "The Insurance covered by this certificate will not be canceled or materially altered, except after 30 days written notice has been received by the City". The amounts shall be as follows:
 - a. Comprehensive or Commercial General Liability Insurance - the Contractor shall maintain during the life of the project such Comprehensive or General Liability Insurance as shall protect them, the City, the Engineer, and any Subcontractor performing work covered under the PIPC permit from claims of damages for bodily injury, including accidental death, as well as from claims for property damage, which may arise from negligent operations during the project, whether such operations be by themselves or by any Subcontractor or by anyone directly or indirectly employed by either of them.

This insurance shall include personal injury coverage, contractual liability coverage for the indemnity provided for under this contract and products/completed operations liability. Combined single limit per occurrence shall not be less than **two million dollars** when applicable.
 - b. Automobile Liability Insurance - the Contractor shall maintain during the life of the contract such Automobile Liability Insurance as shall protect them, the City, the Engineer and any Subcontractor performing work covered under the PIPC permit.

This coverage may be written in combination with the Comprehensive or Commercial General Liability Insurance. Combined single limits per occurrences shall not be less than **one million dollars** or the equivalent.
5. A Contractor's Indemnity Agreement form (Section IV), signed by the Contractor and

notarized.

6. A signed and notarized Stormwater Facilities Agreement (Section IV).
7. A detailed project schedule. This schedule will be used to establish a completion date within a PIPC Improvements Security Agreement if the plat is to be recorded.
8. The Engineer of Record's Scope of Work itemizing engineers's responsibilities contained herein (e.g. performing regular inspections, confirming conformance to plans & specifications, submitting as-builts, etc).
9. Approved Erosion Control & Sediment Prevention Permit and/or Grading and Excavation Permit, as applicable. This permit is processed through the City's Development Services Division at (541) 766-6929.
10. Copies of tap cards for any water meters larger than 2-inch. These cards are processed through the City's Development Services Division at 541 766-6929.
11. Copies of any other required permits or documentation requested by the City Engineer, such as permits from Benton County, ODOT, Division of State Lands (DSL), Army Corps of Engineers, railroad, etc.
12. Any necessary off-site recorded easements. Standard forms are provided in Section IV.
13. An itemized Bid Tab or a stamped, itemized Engineer's Estimate including itemized costs for construction of:
 - * Public streets
 - * Public street lights
 - * Public waterlines
 - * Public sanitary sewers
 - * Public storm drains
 - * Franchise utility installation
 - * Field engineering/inspecting/surveying
 - * Materials testing
 - * Mobilization/Traffic Control/Cleanup
14. Payment of PIPC permit fees based on the total cost of construction for the public improvements itemized in No. 8 above as outlined in *Corvallis Municipal Code Article 8.03.400*, plus applicable television inspection fees, infrastructure cost recovery charge, and street improvement prepayment, as applicable.
15. Performance security in accordance with Land Development Code Chapter 2.4.40.09.
 - a. If an applicant chooses to install the improvements, the subdivision plat shall contain all the required certifications except the County Surveyor and the Board of County Commissioners. The plat shall be kept by the City until the improvements have been completed and approved by the City Engineer (LDC 2.4.40.09 a).
 - b. If an applicant chooses to record a final plat prior to warranty initiation of PIPC improvements, a PIPC Improvement Security Agreement shall be

executed and a performance guarantee as provided in LDC 2.4.40.09.01 & 2 shall be provided (LDC 2.4.40.09 b). Performance security shall be established at 120% of the total cost of construction for the public improvements itemized in No. 13 above. The Agreement shall reference a completion date based on the project schedule submitted in No. 7 above and as acceptable to the City Engineer. Standard forms are included in Section IV.

The issuance of the PIPC plans will be valid for six months. If construction has not commenced within the permit effective period, re-application will be required and the project will be subject to City Standards in effect at the time of re-application.

Step 3 - Preconstruction Conference

- A. Once the plans have been authorized by the City and the permit items noted above have been submitted, a preconstruction conference shall be scheduled, held and conducted by the Engineer of Record. The preconstruction conference shall be held prior to the issuance of the PIPC Permit and the start of construction. The Engineer of Record shall provide five (5) working days notice to the City prior to the preconstruction conference.
- B. The Engineer of Record shall inform the Owner/Developer, Contractor, City, and representatives from all pertinent franchise utilities (power, TV cable, natural gas, telephone) of the time and location of the meeting, and request their attendance.

Items to be discussed include, but are not limited to:

1. Roles and responsibilities of the Owner/Developer; Engineer of Record; Contractor; City; and franchise utility representatives: The Engineer of Record shall be the point of contact for the development team. Coordination of communication between the development team and the City will be coordinated by the development team's point of contact. The City's point of contact will be the field representative assigned to the project.
2. Project scheduling: All PIPC projects require a detailed schedule to be updated weekly in writing and submitted to the City's field representative by the development team's point of contact. The schedule must list major activities such as system connections, initial installation of infrastructure features (i.e. the first catch basin, ADA ramp, etc.), paving, pavement marking installation, quality assurance testing, phasing transitions, and any other item potentially affecting City staff or the public.
3. Scheduling of trenching by the Contractor for franchise utility installation.
4. Erosion control and site weatherization.
5. Traffic and dust control, and the City's noise ordinance: The Engineer of Record shall submit a traffic control plan for City approval. The Engineer of Record shall monitor plan implementation and performance throughout construction and shall have the authority to direct work with respect to traffic control.
6. Haul Routes. Haul routes shall be selected to minimize damage to City streets and generally route trucks to major streets as directly as possible.
7. City involvement when taps to live waterlines and valve operation are required.

8. Materials testing and reporting: The Engineer of Record shall verify in writing that the proposed products meet applicable specifications or note exceptions and justify acceptance. Products for which verification shall be submitted include, but are not limited to: pipe and fittings, valves, meters greater than 2 inches, meter and valve boxes, fire hydrants, manhole and catch basin components, cleanout covers, grout, aggregate, asphaltic and portland cement concrete, geotech fabrics, tack, traffic signal components, street striping and pavement markings. This verification shall be provided to the City prior to placing or installing products.
9. Provision of weekly inspection reports including test results and locations: The Engineer of Record shall conduct adequate site visits to monitor the progress of the work and verify compliance with plans and specifications. These site visits shall be comprehensive enough to allow the Engineer of Record to stamp “As-Built” or “Record Drawings” on the plans and ensure that the as-built drawings accurately represent the actual finished work product according to accepted engineering practice.
10. Process for field revisions (and change orders where SDC reimbursement is sought) and required approvals for requested revisions: The Engineer of Record shall prepare and submit written documentation of any design or material deviation from approved plans and specifications that materially affects the finished product. This documentation shall be submitted at least two working days prior to implementing the change to allow for City review and concurrence. Any deviating work performed without prior City review and concurrence may be rejected.
11. TV inspections.
12. Procedures for requesting required inspections for work impacting adjacent properties or rights-of-way.
13. Appropriate public notification that may be required for work impacting adjacent properties or rights-of-way.
14. Durable pavement markings (reference *Appendix C*).
15. Weekly meetings: Unless otherwise waived or altered by the City, on-site weekly meetings shall be held to discuss the work. At a minimum, the Authority to Direct Work party, the Contractor, the Engineer of Record, and City Field Representative shall attend these meetings.

Step 4 - Construction & Testing

A. The Engineer of Record shall notify the City's field contact, within the time frames specified below, in advance of the following situations to ensure that the field contact can be present on-site:

1. Any over-excavation: provide 2 working days advance notice;
2. Hot taps: provide 10 working days advance notice;
3. Pressure and chlorination testing of public water lines: provide 2 working days advance notice;
4. Line flushing: provide 2 working days advance notice;
5. Pavement marking: provide 2 working days advance notice; and
6. Connections to existing manholes: provide 2 working days advance notice.

B. The Engineer of Record shall be responsible for scheduling, monitoring, reporting, and verifying the results of the tests detailed below. Reports shall include all tests conducted, including failing tests, as well as a map with both plan and profile views indicating the location of all field density tests. All required compaction tests for street subgrade and base course shall be separate from compaction tests for trenches (ie. tests conducted for either streets or trenches cannot be applied toward the requirements of the other).

1. Streets

a. Subgrade Compaction

- 1) A minimum of one field density test shall be conducted on compacted material every 50 lineal feet. In the event that any test indicates less than the specified percent compaction, the substandard area shall be defined by additional testing and shall be re-compacted with additional tests conducted at the same locations until test results indicate the material has met or exceeded the specified percent compaction.
- 2) If the required compacted depth of the subgrade materials exceeds 6 inches, it shall be constructed in two or more layers of approximately equal thickness. The maximum compacted thickness of any one layer shall not exceed 6 inches.

- 3) Moisture density curves shall be conducted as per procedures set forth in ASTM D 698 or AASHTO T-99. Minimum density in the field shall be 95% of the maximum dry density. A new moisture density curve shall be developed for each type of material encountered. Additionally a new moisture density curve shall be developed for every 1,000 cubic yards of compacted in place material. All moisture density curves for aggregate shall only be valid for a period of 30 days from the date that they were generated. Field density tests shall be conducted as noted above, with all tests being run in the direct transmission mode. In instances when direct transmission cannot be utilized alternative methods may be proposed.
- 4) Over-excavation shall conform to the *City of Corvallis Standard Construction Specifications*.

b. Base Compaction

- 1) A minimum of one field density test shall be conducted on compacted material every 50 lineal feet. In the event that any test indicates less than the specified percent compaction, the substandard area shall be defined by additional testing and shall be re-compacted with additional tests conducted at the same locations until test results indicate the material has met or exceeded the specified percent compaction.
- 2) If the required compacted depth of the base materials exceeds 6 inches, it shall be constructed in two or more layers of approximately equal thickness. The maximum compacted thickness of any one layer shall not exceed 6 inches.
- 3) All base course material must be supplied with test results as specified in the *City of Corvallis Standard Construction Specifications*. Required test results include: percent fracture; durability; sand equivalent; liquid limit and plasticity; and gradation.
- 4) Moisture density curves shall be conducted as per procedures set forth in ASTM D 698 or AASHTO T-99. Minimum density in the field shall be 95% of the maximum dry density. A new moisture-density curve shall be developed for each source of material. Additionally a new moisture curve shall be developed for every 1,000 cubic yards of material placed. All moisture density curves for aggregate shall only be valid for a period of 30 days from the date that they were generated. Field density tests shall be conducted as noted above, with all tests being run in the direct transmission mode.

c. Asphalt Pavement

- 1) For dense graded Hot Mix Asphalt Concrete, the mixture shall be compacted to at least 92% of the theoretical maximum density (Rice Density) as determined by ODOT TM 306.
- 2) The Job Mix Formula is the stamped and approved mix design for the project, as per ODOT *Standard Specification* Section 00745, Hot Mix Asphalt Concrete and as approved by the City Engineer.

d. Portland Cement Concrete Pavement

- 1) Compressive strength specimens, air entrainment, and slump tests shall be taken for every 50 cubic yards of concrete with a minimum of one series of tests per day. A minimum of four specimens shall be molded with one of those being tested at 7 days and two at 28 days and the remaining as a hold. The compressive strength shall be the average of two or more 28 day specimens from the same truck with no more than 500 psi of difference in the strengths. In the event that the first 28 day specimen does not meet the design strength, then the remaining 28 day specimen and hold specimen shall be tested for average compressive strength at 56 days.

e. Curbs

- 1) Compressive strength tests for extruded curbs are not required unless, due to situations that arise in the field, the Engineer of Record or the City representative determines such tests are necessary. Poured in place curbs will be tested according to the above-noted procedures (PCC).

2. Sanitary Sewer

- a. Air test of lines, including service lines.
- b. Manhole leakage testing, which includes vacuum testing (to be conducted after final lift of paving when all manholes have been set to finish grade) and visible leak inspection (visible leaks constitute a failure). All manholes, including existing manholes with new connections, shall pass leakage testing.
- c. Trench Backfill
 - 1) Material tests for Class 'B' as per the *City of Corvallis Standard Construction Specifications*.

- 2) For trench compaction a minimum of one field density test shall be conducted on compacted material for every 50 lineal feet, or fraction thereof, of trench and for every 3 feet, or fraction thereof, of fill placed. Unless otherwise specified, mechanical compaction of all pipe zone material and trench backfill material is required. The materials shall be compacted according to the pipe manufacturer's recommendations and in lifts of appropriate thickness for the type of equipment being used, to a density of 95% of the maximum relative density as determined by AASHTO T99. The method of compaction shall be modified as necessary to protect the pipe. At the option of the Engineer, backfill density tests may be taken at any time and location.
- 3) Moisture density curves shall be conducted as per procedures set forth in ASTM D 698 or AASHTO T-99. Minimum density in the field shall be 95% of the maximum dry density. A new moisture-density curve shall be developed for each source of material. Additionally a new moisture curve shall be developed for every 1,000 cubic yards of material placed. All moisture density curves for aggregate shall only be valid for a period of 30 days from the date that they were generated. Field density tests shall be conducted as outlined above, with all tests being run in the direct transmission mode.

d. Deflection (mandrel) Test

- 1) Deflection tests shall be performed by the Contractor and witnessed by the Engineer of Record.
- 2) PVC pipe shall be subject to a deflection test after the trench backfill and compaction has been completed. The test shall be conducted by pulling an approved mandrel through the completed pipeline. The diameter of the mandrel shall be not less than 93% of the pipe diameter unless otherwise specified by the Engineer. Any sections of pipe that do not pass this test shall be located and removed or repaired as directed by the Engineer.

e. Television Inspection

- 1) The PIPC permit fees cover TV inspection by the City, one time only, during the final inspection and during the warranty inspection. All public lines 4 inches and larger are included in the TV inspection.

- 2) The Engineer of Record shall notify the City, in writing, 5 working days prior to the requested TV inspection date. The results of mandrel, pressure, and back fill density tests shall be submitted prior to or concurrent with the TV inspection request. The Engineer of Record shall allow the City a minimum of 5 working days to complete TV inspection work. The 5 working days shall be working days following the requested date on the notification. The Engineer of Record shall allow 1 additional working day to complete the inspection for each 500 lineal feet of pipe over 2,000 lineal feet. The Contractor shall construct no improvements over sewers/drains until they are inspected and accepted. A TV inspection will be scheduled for separate completed sections of the project to allow paving only if approved by the City.
 - 3) In the event that TV inspections cannot be completed due to improperly cleaned systems; incomplete systems; inadequate site access; or when repairs are required to be verified, the Owner will be responsible for the cost of additional TV inspections. The schedule for completing TV inspections, when additional inspections are required, will be at the convenience of the City.
 - 4) The Contractor shall be responsible for de-watering the trenches as specified in *Section III.1.D.05 of the City of Corvallis Standard Construction Specifications*.
3. Storm Drain (including all catch basin laterals)
- a. Trench Backfill
 - 1) Material tests for Class 'B' as per the *City of Corvallis Standard Construction Specifications*.
 - 2) For trench compaction, a minimum of one field density test shall be conducted on compacted material for every 50 lineal feet, or fraction thereof, of trench and for every 3 feet, or fraction thereof, of fill placed. Unless otherwise specified, mechanical compaction of all pipe zone material and trench backfill material is required. The materials shall be compacted according to the pipe manufacturer's recommendations and in lifts of appropriate thickness for the type of equipment being used, to a density of 95% of the maximum relative density as determined by AASHTO T99. The method of compaction shall be modified as necessary to protect the pipe. At the option of the Engineer, backfill density tests may be taken at any time and location.

3) Moisture density curves shall be conducted as per procedures set forth in ASTM D 698 or AASHTO T-99. Minimum density in the field shall be 95% of the maximum dry density. A new moisture-density curve shall be developed for each source of material. Additionally a new moisture curve shall be developed for every 1,000 cubic yards of material placed. All moisture density curves for aggregate shall only be valid for a period of 30 days from the date that they were generated. Field density tests shall be conducted as outlined above, with all tests being run in the direct transmission mode.

b. Deflection (mandrel) Test

- 1) Deflection tests shall be performed by the Contractor and witnessed by the Engineer of Record.
- 2) PVC pipe shall be subject to a deflection test after the trench backfill and compaction has been completed. The test shall be conducted by pulling an approved mandrel through the completed pipeline. The diameter of the mandrel shall be not less than 93% of the pipe diameter unless otherwise specified by the Engineer. Any sections of pipe that do not pass this test shall be located and removed or repaired as directed by the Engineer.

c. Television Inspection

- 1) The PIPC permit fees cover TV inspection by the City, one time only, during the final inspection and during the warranty inspection. All public lines 4 inches and larger are included in the TV inspection.
- 2) The Engineer of Record shall notify the City, in writing, 5 working days prior to the requested TV inspection date. The results of mandrel, pressure, and back fill density tests shall be submitted prior to or concurrent with the TV inspection request. The Engineer of Record shall allow the City a minimum of 5 working days to complete TV inspection work. The 5 working days shall be working days following the requested date on the notification. The Engineer of Record shall allow 1 additional working day to complete the inspection for each 500 lineal feet of pipe over 2,000 lineal feet. The Contractor shall construct no improvements over sewers/drains until they are inspected and accepted. A TV inspection will be scheduled for separate completed sections of the project to allow paving only if approved by the City.

- 3) In the event that TV inspections cannot be completed due to improperly cleaned systems; incomplete systems; inadequate site access; or when repairs are required to be verified, the Owner will be responsible for the cost of additional TV inspections. The schedule for completing TV inspections, when additional inspections are required, will be at the convenience of the City.
- 4) The Contractor shall be responsible for de-watering the trenches as specified in *Section III.1.D.05 of the City of Corvallis Standard Construction Specifications*.

4. Waterlines

a. Trench Backfill

- 1) Material tests for Class 'B' as per the *City of Corvallis Standard Construction Specifications*.
- 2) For trench compaction a minimum of one field density test shall be conducted on compacted material for every 50 lineal feet, or fraction thereof, of trench and for every 3 feet, or fraction thereof, of fill placed. Unless otherwise specified, mechanical compaction of all pipe zone material and trench backfill material is required. The materials shall be compacted according to the pipe manufacturer's recommendations and in lifts of appropriate thickness for the type of equipment being used, to a density of 95% of the maximum relative density as determined by AASHTO T99. The method of compaction shall be modified as necessary to protect the pipe. At the option of the Engineer, backfill density tests may be taken at any time and location.
- 3) Moisture density curves shall be conducted as per procedures set forth in ASTM D 698 or AASHTO T-99. Minimum density in the field shall be 95% of the maximum dry density. A new moisture-density curve shall be developed for each source of material. Additionally a new moisture curve shall be developed for every 1,000 cubic yards of material placed. All moisture density curves for aggregate shall only be valid for a period of 30 days from the date that they were generated. Field density tests shall be conducted as outlined above, with all tests being run in the direct transmission mode.

b. Angle Stop Location Verification

- 1) Verification of both horizontal and vertical angle stop alignment shall be provided in writing by the Engineer of Record (refer to *City of Corvallis Standard Detail No. 306*).

- 2) No initial flush, pressure or bacteriological testing of waterlines will be conducted by the City until curbs have been constructed; angle stop locations verified; and all thrust blocking poured with a 3-day cure.

c. Initial Flush

- 1) Prior to any waterline testing, an initial flush shall be performed on all new main lines, hydrants, and appurtenances such that a velocity of 2.5 fps is achieved through the new main.

d. Pressure and Leakage Testing

- 1) City personnel shall be notified of all pressure tests a minimum of 2 working days in advance.
- 2) Testing shall be performed per AWWA standards and the tests shall be conducted by the Contractor and witnessed by City personnel.
- 3) Pressure tests shall be made on all valved sections of all newly laid main and service pipe thereof. Pressure tests shall be conducted prior to disinfection of the line but after all curbs have been placed and angle stop locations verified. All entrained air shall be expelled from the line prior to elevating the internal pressure to the specified test pressure. The test pressure shall be 150 psi (minimum) calculated for the point of highest elevations but shall not exceed 200 psi at any point. The test pressure shall be applied and maintained for a two hour duration unless otherwise specified by the Engineer. Thrust blocking required for any reach of pipe shall be allowed a minimum of 3 days cure time prior to pressure testing.
- 4) A leakage test shall be conducted concurrently with the pressure test. The City shall furnish the pressure gauge and monitor the test and the Contractor shall furnish the pump, pipe, connections, and all other necessary apparatus and shall conduct the test. Testing shall be against closed hydrants with pipe line valves open. In addition, the test shall include the service lines to the closed meter stops with corporation stops open.

e. Chlorination

- 1) New waterlines must be chlorinated to a minimum 25 parts per million (ppm) and must have a residual of 10 ppm after 24 hours. After chlorination, waterlines shall be flushed to achieve upstream main line residual. All hyper-chlorinated water must be flushed into the sanitary sewer system. After flushing, the line shall remain closed for an additional 24 hour period (for regrowth).

f. Microbiological Testing

- 1) City personnel shall perform all required microbiological tests.
- 2) Microbiological samples shall be taken after the regrowth period if the chlorine residual is less than 1 ppm or if it matches the residual of existing waterlines upstream of the new waterlines. Note that water samples must reach the lab no later than 12:00 p.m. on Monday through Thursday. Samples shall be taken to City lab (state approved). In the event that the sample is positive the line shall be retested, including chlorination.

Step 5 - Final Inspection

- A. When the work is complete, the Engineer of Record shall use and stamp the *Notice of Completion* form (Section IV) to provide the City with written notification of substantial completion and to request a final inspection. This Notice must be submitted in order for the City to conduct a final inspection and accept the improvements into warranty. Submission of this Notice shall also include:
1. A *Notice of Franchise Installation by Developer* form (Section IV) for each franchise utility.
 2. All test results, certified by the Engineer of Record.
 3. All required easements, dedications and/or plats, signed by the grantor, for City signatures. See Section III for more information. Standard forms are provided in Section IV. All documents shall be recorded at the Developer's expense prior to warranty initiation. Note that dedications and plats require an environmental assessment.
 4. Stamped paper and electronic (.dxf and .tif) as-built drawings. As-built drawings shall be reviewed with the final inspection and a final copy (reproducible, print and electronic copies) shall be submitted and approved prior to acceptance of the project and initiation of the warranty period. Final as-built drawings shall reference all recording numbers for all applicable easements and/or dedications as well as other recorded agreements such as irrevocable petitions for public improvements. Questions concerning electronic as-built format should be directed to the City's GIS group at (541)754-1742.
 5. For public stormwater detention and water quality facilities, a warranty and maintenance period of two years from acceptance will be established. The terms for the warranty and maintenance period shall be specified under the following documents:
 - a. A Stormwater Facilities Agreement form (Section IV); and
 - b. A Stormwater Facilities Maintenance Plan prepared in conformance with the King County Surface Water Design Manual or other applicable criteria acceptable to the City.
- B. Upon receipt of all items noted above, the City will schedule and conduct a final inspection of the project within ten 10 working days.
- C. After the final inspection, the City will provide a written correction notice (punch-list) identifying repairs that must be made prior to acceptance of the public improvements.

Step 6 - Warranty Initiation & Termination

- A. Except for public stormwater detention and/or water quality facilities, public improvements are subject to a one-year warranty from the date of City acceptance. Stormwater detention and/or water quality facilities are subject to a two-year warranty and maintenance period from the date of City acceptance. The City accepts public improvements upon satisfaction of the following requirements:
1. All required final inspection corrections have been completed and accepted by the City; and
 2. Final mylar and electronic (.dxf and .tif) as-built drawings have been submitted; and
 3. Copies of all required recorded easements, dedications and/or plats and applicable environmental assessments have been submitted to the City (See Section III); and
 4. Warranty Security has been established:
 - a. Except for stormwater detention and/or water quality facilities, the 1-year warranty security amount shall be equal to 10% of the total cost of construction for the public improvements or \$2,500, whichever is greater. Standard forms are provided in Section IV.
 - b. For stormwater detention and/or water quality facilities, the 2-year maintenance and warranty security amount shall be equal to 20% of the total cost of the construction for the stormwater facilities or \$5,000, whichever is greater. Standard forms are provided in Section IV.
- B. Upon receipt of all necessary paperwork and materials, the City will provide a letter to initiate the warranty period and define the terms of the warranty. The warranty period shall be effective for one year from the date of acceptance, unless otherwise specified.
- C. The City will provide written notification requiring correction of any deficiencies that arise during the warranty period. In addition, the City will conduct an 11th month warranty inspection prior to the end of the one-year period. Any required correction identified during the warranty period shall be made according to the *City of Corvallis Standard Construction Specifications* and the terms outlined in the corrections letter.
- D. The warranty period will not be terminated, and warranty security will not be released, until all items identified in the corrections letter have been completed and accepted by the City. Following satisfactory repair, the City shall terminate the warranty and release the warranty fund. If warranty repairs are not completed in a timely manner, as determined by the City Engineer, the City may cause the repairs to be completed at Developer's expense.

SECTION III

PLATS, DEDICATIONS & EASEMENTS

SECTION III - PLATS, DEDICATIONS & EASEMENTS

All right-of-way and drainageway dedications and/or easements and City utility easements that are required with any PIPC permit, and that are not recorded on a subdivision or partition plat, must be reviewed and recorded separately (at the developer's expense) by Public Works Engineering Development Review. These documents must be recorded prior to the release of project security for PIPC permits and prior to the issuance of building permits. The City's standard easement and warranty deed forms are included in Section IV. Processing of these documents is as follows:

1. Prior to requesting a final inspection, the applicant needs to submit a completed Easement, Warranty Deed (Forms in Section V) or Plat with: notarized signatures; a legal description, prepared by a licensed professional land surveyor; and a graphic of the easement or dedication area.
2. For Dedications or Warranty Deeds, the applicant needs to submit an environmental assessment in conformance with Land Development Code 4.0.110 h.
2. City staff will review the legal description and the City Attorney will review the document's format for approval. Once the format is approved, the City Manager's signature will be obtained. Allow a minimum of ten (10) working days for this process, assuming no corrections are required.
3. Once the documents are fully executed and ready for recording, Public Works Engineering Development Review staff will contact the developer and request a check, made payable to *Benton County Recorders*, for the recording fee. When the check is received, staff will record the documents.
4. Upon request by the applicant, a copy of the recorded documents will be forwarded to the applicant.

SECTION IV

PIPC FORMS

CITY OF CORVALLIS PIPC PERMIT APPLICATION CHECK LIST

Items below must be submitted and accepted by the City prior to City issuance of the PIPC permit:

- A completed and signed *Application for Permit to Construct Public Improvements Under Private Contract*, including fully executed Special Permit Conditions.
- Seven (7) sets of plans to be stamped "Authorized for Construction of Public Improvements", and signed and dated by the City. Five (5) of the seven sets are retained by the City and two (2) are returned to the applicant. Additional plan sets required by the applicant need to be provided in addition to the seven (7) sets. **Note: Provide one 11" x 17" plan set for field use.**
- An electronic copy of the plan set (in a non-executable AutoCAD *or* a dxf file and a tif file) with reference to at least two Oregon North NAD 27 state plane coordinates. Questions on format or obtaining state plane coordinates should be addressed to the City's GIS group at (541)754-1742. Control information may be accessed at the City's website: <ftp://ftp.ci.corvallis.or.us/pw/engineering/Survey%20Data/Control/>
- Certificate of Insurance in the contractor's name, identifying the project name and permit number and naming the City of Corvallis as additional insured. **Note: If the project name and permit number are missing, the certificate can not be accepted.**
- Signed & Notarized Contractor's Indemnity Agreement.
- Signed & Notarized Stormwater Facilities Agreement, as applicable.
- Detailed Project Schedule
- Engineer of Record's Scope of Work
- Approved Erosion Prevention Sediment Control and/or Grading & Excavation Permits. These permits are processed through the City's Development Services Division at (541) 766-6929.
- Confirm That Applicable LUA Conditions of Approval Have Been Satisfied.
- Copy of tap cards for large meters (over 2 inches) and double detector check valve bypass meters. These cards are processed through the City's Development Services Division at (541) 766-6929.
- Other Agency Approvals. Attach copies of all permits issued by other governing agencies.
- Any required off-site easements.
- An itemized Bid Tab or a stamped, itemized Engineer's Estimate including itemized construction costs and engineering and surveying services as specified within the PIPC Permit Procedure Manual.
- Payment of PIPC permit fees.
- Approved and Finalized Project Security (check one):
 - Surety Bond No. _____
 - Deposit Check No. _____
 - LOC/MIA: Acct No. _____
 - Plat (For Subdivisions Only)
- PIPC Improvement Security Agreement (For Security Other Than Plat).
- Pre-construction conference. **Note: the pre-construction conference will not be scheduled until plans are authorized by the City and the permit items noted above have been submitted. Allow five (5) working days notice to the City prior to the preconstruction conference.**

FOR CITY USE ONLY

Project Name: _____ Permit No. _____

Special Conditions Attached Yes () No () Permit Authorized by: _____ Date of Authorization: _____

CITY OF CORVALLIS, ENGINEERING DIVISION
APPLICATION FOR PERMIT TO CONSTRUCT PUBLIC IMPROVEMENTS UNDER PRIVATE CONTRACT

PROJECT LOCATION: _____

DESCRIPTION OF PUBLIC IMPROVEMENTS (check public improvements to be constructed under private contract):

- Water Sanitary Sewer Streets/Lights Storm Drainage Other:

OTHER AGENCY APPROVAL (check required approvals from other governing agencies and include copies of the authorized permits):

- DSL ACOE Railroad ODOT Benton Co. ODEQ ODF&W

PROJECT SECURITY (check applicable form of security):

- Performance Bond MIA Plat Other:

24-HOUR EMERGENCY CONTACT & PHONE #: _____

I, the undersigned, hereby apply to the City of Corvallis Engineering Division for permission to construct public improvements under private contract. This is subject to and with full knowledge of the appropriate City of Corvallis Standard Construction Specifications, City Codes and Ordinances, Procedures and the attached Special Conditions. I understand that if these specifications, codes and ordinances, procedures and special conditions are not complied with, the City has the right and authority to issue a stop work order and impose a fine of \$500 per day for each day that such violation continues. No construction shall be undertaken prior to receipt of the authorized permit. PIPC plan authorization and permit issuance are each effective for six months. If permit issuance has not commenced within six months of authorization or construction has not commenced within six months of permit issuance, re-application will be required and improvements will be subject to specifications and requirements in effect at the time of re-application.

In Witness Whereof, the undersigned has caused this Permit Application to be executed. If Applicant is an entity (Inc., LLC, LLP, Co., etc) or principal, their representative, by signing below, certifies that such representative is authorized by Applicant to execute this Permit Application.

Applicant Date

STATE OF OREGON)
: ss.
County of Benton)

This instrument was acknowledged before me this _____ day of _____, 20____,
by _____.

NOTARY PUBLIC FOR OREGON
My Commission Expires _____

CONTRACTOR'S INDEMNITY AGREEMENT

_____, Contractor, hereby agrees to hold harmless, indemnify, and defend the City of Corvallis, a municipal corporation; and each of their officers, officials, employees, or agents, from any and all liability claims, losses, or damages arising, or alleged to have arisen, from the performance of work during the construction of public works improvements described as all public infrastructure associated with authorized

plans for _____ Permit No. PIP _____
(fill in project name) (fill in permit number)

by reason of any negligent act or omission of the Contractor, any Subcontractor, or Supplier, or by any agent, employee, or representative of any of them.

In Witness Whereof, the undersigned has caused this Indemnity Agreement to be executed this

_____ day of _____, 20____. If Contractor is an entity (Inc., LLC, LLP, Co., etc) or principal, their representative, by signing below, certifies that such representative is authorized by the entity or principal to execute this agreement.

Contractor Representative

STATE OF OREGON)
) ss.
County of Benton)

This instrument was acknowledged before me this _____ day of _____, 20____,

by _____ as _____ of _____.
(Name) (Title) (Party)

NOTARY PUBLIC FOR OREGON
My Commission Expires _____

Approved As To Form

City Attorney

PERFORMANCE BOND

BOND NO. _____

KNOW ALL PERSONS BY THESE PRESENTS that we, _____,
as Principal, and _____ as Surety, are jointly and severally held
and bound unto the City of Corvallis, Oregon, in the sum of

_____ Dollars \$ _____

for the payment of which we jointly and severally bind ourselves, our heirs, executors,
administrators, successors and assigns firmly by these presents.

This Bond is being established to cover the costs of installing specified public improvements and
related engineering and inspection fees; franchise utilities; contingency costs; and City of Corvallis
administration costs (estimated at 20% of project costs).

THE CONDITION OF THIS BOND IS SUCH THAT:

Whereas the Principal herein has made application to the City Engineer of the City of
Corvallis for a permit to install public improvements under private contract within the City of
Corvallis; whereas these public improvements are required to satisfy conditions of minor land
partition/subdivision _____; whereas said permit application was approved by the
City Engineer and Permit No. _____ issued, subject to and upon certain conditions,
directions, stipulations, terms, provisions and requirements, including completion dates, provided
for in said permit, a copy of which permit is attached hereto and hereby made a part of this bond to
the same extent and effect as if written herein and specific reference now made to all the terms,
provisions, specifications and requirements set out, declared and provided for in said permit.

NOW THEREFORE, IF THE Principal herein shall faithfully and truly observe the terms,
provisions, conditions, stipulations, directions and requirements of said permit and shall in all
respects, whether the same be enumerated herein or not, faithfully comply with the same and shall
assume the defense of, indemnify and save harmless the City of Corvallis its officers, agents and
employees from all claims, liabilities, loss, damage or property directly or indirectly resulting from
or arising out of the operations or conduct of said Principal or any subcontractor in connection with
performance or conduct of the work under said permit, and shall in all respects faithfully keep and
observe all of said terms, provisions, conditions, stipulations, directions and requirements, then this
obligation is void, otherwise it shall remain in full force and effect. WITNESS our hands and seals
this _____ day of _____, 20_____.

Principal

Surety

By: _____

By: _____

Attorney-In-Fact

Approved As to Form:

City Attorney

MUTUAL IMPROVEMENT AGREEMENT FOR LINE OF CREDIT

This Mutual Improvement Agreement, hereinafter referred to as Agreement, is made and entered into by and between _____ the developer of _____, hereinafter referred to as DEVELOPER; and _____, an approved lending institution, hereinafter referred to as LENDING INSTITUTION; and the City of Corvallis, an Oregon municipal corporation, hereinafter referred to as CITY. The promises and agreements of each being in consideration of the promises and agreements of the other.

The above-named parties mutually agree to the following conditions of this Agreement which is hereby established to fulfill the requirements of the CITY's Land Development Code, Ordinance No. 93-20, as amended, and any or all other existing CITY policies and ordinances, and as a guarantee of faithful performance.

I. DEVELOPER agrees:

- A. That a line of credit has been established in the LENDING INSTITUTION, in the total amount specified in Section II.D of this Agreement, to cover the costs of installing public improvements permitted under PIPC Permit No. _____ and related engineering and inspection fees; contingency costs; warranty security; and CITY of Corvallis administration cost (estimated at 20% of the total project cost), as specifically set forth in Section II.D of this Agreement.
- B. That the amounts for each construction item identified in Section II.D. of this Agreement shall be determined from the finalized contract or an engineer's estimate or contractor's bid tabulation, subject to the approval of the City Engineer. In the event that the amounts established in this Agreement are insufficient to cover the actual costs to construct the public improvements, DEVELOPER shall provide CITY with a new Agreement, which shall have sufficient funds to complete construction of all required public improvements.
- C. That the funds established in said account, except for the warranty security, shall be used only for the construction of the public improvements and such other items as specifically itemized in Section II.D of this Agreement. Said funds shall be disbursed as specifically itemized in Section II.D of this Agreement. Said funds, with the exception of the warranty security, shall be disbursed by LENDING INSTITUTION only after CITY provides written authorization of DEVELOPER's itemized payment request.
- D. That interim disbursements may be made from the account, on the basis of the percentage of work completed, with written authorization by CITY of DEVELOPER's itemized payment request.

- E. To obtain a permit from CITY for construction of the public improvements, and for any other related items specifically identified, and to notify CITY at least two days (exclusive of Saturdays, Sundays and legal holidays) prior to commencing construction. No construction shall be undertaken prior to receipt of the approved permit.
- F. All required improvements shall be satisfactorily completed and accepted by CITY on or before completion dates set forth within the PIPC permit unless a written extension of time shall have been requested by DEVELOPER and granted by the written mutual consent of LENDING INSTITUTION and CITY.
- G. That DEVELOPER shall submit record drawings for approval of the CITY Engineer and, if required by conditions of approval, shall provide fully executed easements and/or dedications, along with associated recording fees, prior to CITY acceptance of the public improvements.
- H. That, except for stormwater detention and water quality facilities, DEVELOPER shall be responsible for all public improvements for a one (1) year warranty period from the date of acceptance by CITY, and DEVELOPER shall immediately correct all failures in the physical improvements so identified by CITY.
- I. That, except for stormwater detention and water quality facilities, a \$2,500 or ten (10) percent of the total amount of all construction items, whichever is greater, warranty fund shall be established as part of the total fund; however, the warranty fund shall not be used for construction or other activities related to the project except warranty repair and/or replacement, if necessary, and shall be retained in the account until the end of the one year warranty period as called for in Section I.G. of this Agreement. The warranty fund shall, unless otherwise authorized for release by CITY, remain in the account through the warranty period until all warranty repairs have been accepted by CITY and CITY provides written notice of warranty termination.
- J. That, for stormwater detention and water quality facilities, DEVELOPER shall be responsible for all public stormwater detention and water quality improvements for a two (2) year warranty period from the date of acceptance by CITY, and DEVELOPER shall immediately correct all failures in the physical improvements so identified by CITY.
- K. That, for stormwater detention and water quality facilities, a \$5,000 or twenty (20) percent of the total cost of the stormwater facilities construction, whichever is greater, a maintenance and warranty fund shall be established as part of the total fund; however, the maintenance and warranty fund shall not be used for construction or other activities related to the project except for maintenance and repair during the warranty period, and shall be retained in the account until the end of the two year warranty period as called for in Section I. J. of this Agreement. The maintenance and warranty fund shall, unless otherwise authorized for release by CITY, remain in the account through the warranty period until all warranty repairs have been accepted by CITY and CITY provides written notice of warranty termination.

- L. In the event that DEVELOPER fails to comply with the terms of this Agreement, LENDING INSTITUTION is hereby authorized to release all funds remaining in the account, established by this Agreement, to CITY upon written notification by CITY, to DEVELOPER and to LENDING INSTITUTION that DEVELOPER has breached the Agreement, notwithstanding the provisions of Section I.C. of this Agreement. If the amount remaining in the account is insufficient, as determined by CITY, to cover the costs for completing all improvements and such other items as specifically called for in this Agreement for which the line of credit was established, including the warranty fund, DEVELOPER shall provide to CITY such additional funds as required and substantiated in writing by CITY. If said additional funds are not forwarded to CITY within thirty (30) calendar days of the written request for such funds, CITY may file an action at law for the collection of the additional amounts plus all attorney fees and legal costs.
- M. That an amount of not less than five (5) percent of the total amount established, exclusive of the warranty securities identified in Section I. I and I. K of this Agreement, shall remain in the account until the public improvements have received acceptance by CITY.

II. LENDING INSTITUTION agrees:

- A. That a line of credit has been established for DEVELOPER for the purpose of installing the public improvements permitted under the PIPC Permit No. referenced above in Section I. A, for such other engineering fees and contingencies as approved by CITY, and for the warranty securities which are called for in Sections I. I. and I. K of this Agreement, in the total amount as stated in Section II. D. of this Agreement.
- B. Funds from said account shall only be disbursed when authorized by CITY, in writing, on the basis of the percentage of work completed, with written authorization by CITY of DEVELOPER's itemized payment request. All funds so disbursed shall be paid to CITY or DEVELOPER. In no case shall the disbursement of funds from this line of credit exceed the total amount of the account, exclusive of the warranty fund, identified in Section II.D of this Agreement, until DEVELOPER shall have filed a new Agreement with CITY. In the event that any funds shall be disbursed in violation of this Agreement, LENDING INSTITUTION shall be liable for payment of such amounts to CITY. Neither LENDING INSTITUTION nor DEVELOPER may cancel the line of credit account without completion of all improvements specified in Section II. D. and written acceptance of the improvements by CITY.
- C. To establish as a part of the total account, warranty funds as specified in Sections I. I and I. K, and to release the funds from this account only upon written authorization by CITY. The warranty funds shall, unless otherwise authorized for release by CITY, remain in the account through the applicable warranty period to secure warranty repair and/or replacement until termination of the warranty period or upon completion and written acceptance by CITY of all required warranty repairs and/or construction, whichever is later.

D. That a line of credit has been established for the following physical improvements in the total amount of \$_____ established to complete the project based on the costs listed below:

- 1. Public Streets \$_____
- 2. Public Street Lights \$_____
- 3. Public Waterlines \$_____
- 4. Public Sanitary Sewers \$_____
- 5. Public Storm Drains (less Detention/
Water Quality) \$_____
- 6. Stormwater Facilities (Detention/WQ) \$_____
- 7. Franchise Utility Installation \$_____
- 8. Field Engineering, Inspection, and Survey \$_____
- 9. Materials Testing \$_____
- 10. Mobilization/Traffic Control & Cleanup \$_____

- 11. Total of all Construction Items (1 - 10) \$_____
- 12. Project Administration (20% of Total of All
Above Construction Items) \$_____
- 13. 1-Year PIPC Warranty Fund
(\$2,500 or 10% of Items 1 Thru 10 Less No. 6) \$_____
- 14. 2-Year Stormwater Facilities Maintenance &
Warranty Fund
(\$5,000 or 20% of Item No. 6) \$_____
- 15. Total Fund (Sum 11 Thru 14) \$_____

- Total Account (Items 11 - 14)** \$_____

E. A minimum of five (5) percent of the total account, exclusive of the warranty funds, as established within DEVELOPER's itemized payment request shall be retained in the account and shall be disbursed only with CITY's written acceptance of the public improvements. This retainage shall not be construed to be the same as the warranty securities as called for in Sections I. I., I. J., II.C. and II.D. of this Agreement.

III. CITY agrees:

A. To accept this Agreement in lieu of a performance and payment bond or in lieu of the completed improvements required by CITY's Land Development Code, Ordinance No. 93-20, as amended, and/or by other CITY policies and ordinances, or as otherwise required by CITY, as a guarantee of performance by DEVELOPER.

B. After receiving written notice that all improvements have been completed, CITY shall conduct a final inspection of the improvements. CITY shall notify DEVELOPER, in writing, of all items of work that shall be corrected and/or completed prior to acceptance of the public improvements by CITY. Additionally, CITY shall make an inspection near the end of the applicable warranty period and shall notify DEVELOPER of any and all warranty corrections that are required. When all corrections have been satisfactorily made, CITY shall notify DEVELOPER and LENDING INSTITUTION that any remaining balance in the warranty fund is no longer required.

C. To review DEVELOPER's itemized payment request and approve or disapprove said request within ten (10) days of its receipt. CITY shall only provide written authorization for DEVELOPER's last itemized payment request, together with funds retained per Section II.E., when all improvements have been satisfactorily completed and accepted in writing by CITY.

PIPC Improvement Security Agreement

PIPC Permit No. _____

_____, Applicant, is the person(s) or entity applying for a final subdivision Plat associated with Land Use Decision Name/Order No.: _____.

City is the City of Corvallis, an Oregon Municipal Corporation.

Per Land Development Code 2.4.40.09 b), Applicant and City hereby execute this Agreement to allow recording of a final subdivision plat prior to full completion and acceptance of required improvements (City and Franchise, etc). Applicant affirms and agrees that:

1. Required improvements as specified in the Corvallis Land Development Code necessary to serve this development are not complete and accepted by the City.
2. It is the policy of the City of Corvallis (CC Policy 7.04) that building permits should not be issued until all required improvements are completed and accepted by the City of Corvallis.
3. All plans for required on-site improvements shall be authorized for construction by the City Engineer under the PIPC Permit No. referenced above prior to recording any plat.
4. Any off-site improvements required for the development shall be addressed to the satisfaction of the City Engineer prior to recording any plat (e.g. plans authorized).
5. The Applicant shall provide a performance guarantee for the required improvements meeting the requirements of Land Development Code Sections 2.4.40.09.01 & 2 prior to recording any plat. For this Agreement, this guarantee is established as (Bond/Acct No.) _____.
6. Required improvements will meet all applicable City of Corvallis criteria and be suitable for warranty acceptance by _____, 20____, unless mutually extended in writing.
7. If required improvements are not complete as described herein, the City may cause the work to be completed and recover the full cost and expense thereof from the applicant and/or their surety.
8. All potential lot purchasers shall be informed in writing that required improvements have not been accepted and that the City shall not be liable regarding the timing of such acceptance and ability to obtain building permits, connect or occupy.

In Witness Whereof, the undersigned has caused this Agreement to be executed. If Applicant is an entity (Inc., LLC, LLP, Co., etc) or principal, their representative, by signing below, certifies that such representative is authorized by the Applicant to execute this agreement.

Applicant Date

STATE OF OREGON)
: ss.
County of Benton)

This instrument was acknowledged before me this _____ day of _____, 20____,
by _____.

NOTARY PUBLIC FOR OREGON
My Commission Expires _____

Jon S. Nelson, City of Corvallis Date

STATE OF OREGON)
: ss.
County of Benton)

This instrument was acknowledged before me this _____ day of _____, 20____,
by Jon S. Nelson, as City Manager for the City of Corvallis, and accepted on behalf of the City of Corvallis by authority of its City Council.

NOTARY PUBLIC FOR OREGON
My Commission Expires _____

Approved As To Form

City Attorney

(DATE)

City of Corvallis
Engineering Division
P.O. Box 1083
Corvallis, OR 97339

Subject: (Project Number, Project Name) - Notice of Franchise Installation by Developer

The developer's obligation to install franchise utility service as required by the City of Corvallis Land Development Code for the above-referenced project has been completed.

(Franchise Utility Company's Name) hereby acknowledges that the developer of the above-referenced project has constructed the necessary improvements required prior to (Franchise Utility Company's Name) completion of providing (Name the service provided by the franchise utility company) service to each lot.

Franchise Utility Company Name, Franchise Utility Representative

Date

Engineer of Record

Date

Affix PE
Stamp Here

DRAINAGEWAY EASEMENT

KNOW ALL PERSONS BY THESE PRESENTS, that _____ hereinafter referred to as Grantor, is the owner of real property described herein and does hereby and forever grant unto the CITY OF CORVALLIS, an Oregon municipal corporation, referred to herein as City, a permanent easement and right-of-way over and along the full length and width of the premises described as follows; to wit:

REFER TO ATTACHED EXHIBIT(s) _____

With the right, privilege, and authority, to said City, to construct, maintain, replace, reconstruct, and/or remove a Public Drainageway in properly functioning condition with all appurtenances incident thereto or necessary therewith, on, under and across the said premises, and to cut and remove from said right-of-way any trees and other obstructions which may endanger the safety or interfere with the construction, use, or maintenance of said Public Drainageway and the right of ingress and egress to, over, and from the above described premises at any and all times for the purpose of doing anything necessary, useful, or convenient for the enjoyment of the easement hereby granted.

THE CITY SHALL, upon each and every occasion that such Public Drainageway is constructed, maintained, replaced, reconstructed, or removed, restore the premises of the Grantor, and any buildings or improvements disturbed by the City, to a condition as near as practicable as they were prior to any such installation or work, and if not practicable, then pay to Grantor a reasonable compensation for such conditions that cannot be reasonably or practicably restored.

GRANTOR AGREES to limit use of the premises to purposes consistent with the City's construction, use and maintenance of said Public Drainageway. Such uses typically include natural landscaping and stormwater quality treatment as approved by City. No new building or other permanent structure, dumping, regrading, paving, decrease in vegetative cover, or other action which would enjoin the City from the intended purpose of this easement shall be placed or occur upon the premises without the written permission of the City.

In Witness Whereof, the undersigned have caused this Easement to be executed. If Grantor is an entity (Inc., LLC, LLP, Co.) Or principal, their representative, by signing below, certifies that such representative is authorized by the Grantor to execute this Easement.

By: _____
Grantor(s) Date

STATE OF OREGON)
 : ss.
County of Benton)

The foregoing instrument was acknowledged before me this _____ day of _____, 20____.

by: _____.

NOTARY PUBLIC FOR OREGON
My Commission Expires: _____

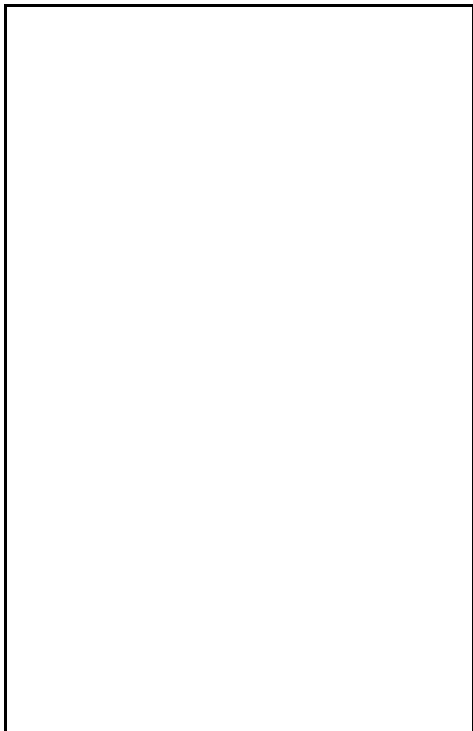
CITY OF CORVALLIS

By: _____
Jon S. Nelson, City Manager



STATE OF OREGON)
 : ss.
County of Benton)

The foregoing instrument was acknowledged before me this _____ day of _____, 20____, by Jon S. Nelson, City Manager, and accepted on behalf of the City of Corvallis by authority of its City Council.



Notary Public
My Commission Expires: _____



Approved As to Form:

City Attorney

WARRANTY DEED

_____, hereinafter referred to as Grantor, conveys and warrants to the CITY OF CORVALLIS, an Oregon municipal corporation, referred to herein as City, the following described real property free of encumbrances except as specifically set forth herein:

REFER TO ATTACHED EXHIBIT(s) _____, _____, _____, _____

and covenants that Grantor is the owner of the above-described property free of all encumbrances except as above stated and will warrant and defend the same against all persons who may lawfully claim the same except as shown above.

BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON TRANSFERRING FEE TITLE SHOULD INQUIRE ABOUT THE PERSON'S RIGHTS, IF ANY, UNDER ORS 197.352. THIS INSTRUMENT DOES NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY APPROVED USES, TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES AS DEFINED IN ORS 30.930 AND TO INQUIRE ABOUT THE RIGHTS OF NEIGHBORING PROPERTY OWNERS, IF ANY, UNDER ORS 197.352.

The true and actual consideration for this conveyance is other than money (\$0.00)_____.

In Witness Whereof, the undersigned have caused this Warranty Deed to be executed. If Grantor is an entity (Inc., LLC, LLP, Co.) or principal, their representative, by signing below, certifies that such representative is authorized by Grantor to execute this Warranty Deed.

Grantor Date

STATE OF OREGON)
: ss.
County of Benton)

The foregoing instrument was acknowledged before me this _____ day of _____, 20____, by:_____.

CITY OF CORVALLIS

NOTARY PUBLIC FOR OREGON
My Commission Expires _____

By:_____
Jon S. Nelson, City Manager

STATE OF OREGON)
: ss.
County of Benton)

The foregoing instrument was acknowledged before me this _____ day of _____, 20____, by Jon S. Nelson, as City Manager for the City of Corvallis, and accepted on behalf of the City of Corvallis by authority of its City Council.

NOTARY PUBLIC FOR OREGON
My Commission Expires _____

APPROVED AS TO FORM:

City Attorney

PROJECT/LOCATION _____
PROJECT NUMBER _____

RETURN TAX STATEMENT TO:
City of Corvallis, Engineering Division
P.O. Box 1083
Corvallis, OR 97339

AFTER RECORDING, RETURN TO CITY OF CORVALLIS
Engineering Division, City Hall ext 5057

WARRANTY BOND

BOND NO. _____

KNOW ALL PERSONS BY THESE PRESENTS that we _____,
as Principal, and _____, a corporation organized and existing
under the Laws of the State of Oregon, Surety are held and firmly bound unto the City of Corvallis
as Obligee, in the total sum of _____ Dollars \$ _____
for the payment of which, well and truly to be made, the executors, administrators, successors and
assigns, jointly and severally, firmly by these presents:

for public improvements constructed under PIPC Permit No. PIP_____.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH that if the Principal
shall maintain and remedy said work free from defects in materials and workmanship for a period
of _____ year(s) following completion and acceptance by the City, then this obligation
shall be void; otherwise it shall remain in full force and effect.

WITNESS our hands and seals this _____ day of _____, 20_____.

Principal

Surety

By: _____

By: _____
Attorney-In-Fact

Approved As to Form:

City Attorney

SECTION V

APPENDICES

APPENDIX A

Pre-Construction Conference Checklist

PRECONSTRUCTION CONFERENCE CHECKLIST

Project Name _____

Permit No. _____

Date _____

ROLES AND RESPONSIBILITIES	COVERED	COMMENTS
1. The Point of Contact, which has been designated as the Engineer of Record in the Roles and Responsibilities Section of the Special Permit Conditions, and City Field Contact are contacts for this project.		
2. Engineer of Record shall conduct inspections and submit weekly reports.		
3. Engineer of Record shall certify and have a representative present at all required testing except waterline testing which shall be witnessed by City personnel.		
4. All design changes shall be submitted to the City for review by the City Engineer.		
5. City field contact shall inform contractor of issues as a courtesy, but shall seek resolution to all issues from Engineer of Record only.		
6. All compaction testing shall follow procedures outlined in the PIPC Process Guide and Permit Packet, (refer to Section II, Step 4).		
7. A project schedule shall be submitted to the City prior to any construction activity.		

PRECONSTRUCTION CONFERENCE CHECKLIST

Project Name _____

Permit No. _____

Date _____

WATER	COVERED	COMMENTS
<p>1. All City water system valves shall be operated by City personnel only. This includes the hot tap valve once the hot tap has been completed by City crews.</p>		
<p>2. Hot taps shall be performed by City crews at the contractor's or developer's expense. Hot taps shall be scheduled by the Engineer of Record through the City inspector, who shall be given 10 working days notice. Note that any required traffic control and/or shoring must be supplied by the contractor. If the City crews experience any delay or are forced to abandon the job until a later date, any additional mobilization and hourly costs shall be billed to the project.</p>		
<p>3. Waterline construction practices; -waterline shall be clean -no ground/storm water may be allowed to enter the waterline. -waterline shall be fully bedded as per City of Corvallis Standard Detail 201. -pipe shall be plugged when construction is not taking place.</p>		
<p>4. Place chlorination corp 18 inches to 10 feet from first in-line valve downstream of tie-in, extend to back of curb with soft copper if necessary to maintain pedestrian, bike, and vehicular traffic. Additionally, it is in the best interest of the contractor to install a test corp near the end of the line to allow for a sampling port.</p>		

<p>5. Testing shall be conducted by the contractor and witnessed by City personnel. The waterline shall be pressure/leakage tested as per AWWA standards. Line must be chlorinated to min. 25ppm and must have a residual of 10ppm after 24 hours. After chlorination, line shall be flushed to achieve upstream main line residual. All hyper-chlorinated water must be flushed into the sanitary sewer system. After flushing, the line shall remain closed for an additional 24 hour period (regrowth). After the regrowth period microbiological samples shall be taken if chlorine residual is less than 1ppm or matches residual of City waterline upstream of new development. Note that water samples must reach the lab no later than 12:00 p.m. on Monday through Thursday. Samples shall be taken to City lab (state approved). In the event that the sample is positive the line shall be retested, including chlorination.</p>		
<p>6. Corps which are used for testing only, shall be turned off and all soft copper removed after line has passed all required testing and is placed into service.</p>		
<p>7. Fire hydrants must remain bagged until waterline and hydrants are put into service. Fire hydrants must have the storz adapters installed prior to placing them into service.</p>		

PRECONSTRUCTION CONFERENCE CHECKLIST

Project Name _____

Permit No. _____

Date _____

SANITARY SEWER	COVERED	COMMENTS
1. Sanitary sewer lines must be mandreled and pressure tested after backfilling and compaction is complete.		
2. All sanitary sewer line construction and the placement of backfill shall be monitored by the Engineer of Record.		
3. Sanitary manholes shall be vacuum tested after final lift of paving is complete. Engineer of Record shall be present during these tests.		
4. TV inspection of all sanitary sewer lines shall take place upon the request of the Engineer of Record after all lines and manholes have been completed and the backfill placed and compacted.		
5. Pipes entering manholes shall have a flexible joint placed within 18 inches (minimum) or a distance equal to 1 ½ times the pipe diameter, whichever is greater, of the manhole structure.		

PRECONSTRUCTION CONFERENCE CHECKLIST

Project Name _____

Permit No. _____

Date _____

STORM DRAIN	COVERED	COMMENTS
<p>1. All PVC storm sewer lines must be mandreled after backfilling and compaction is complete.</p>		
<p>2. All storm sewer line construction and the placement of backfill shall be monitored by the Engineer of Record. All construction and compaction shall follow the latest edition of the City of Corvallis Standard Construction Specifications and the PIPC Process Guide and Permit Packet.</p>		
<p>3. TV inspection of the lines shall take place upon the request of the Engineer of Record after all lines and manholes have been completed and the backfill placed and compacted.</p>		
<p>4. Pipes entering manholes shall have a flexible joint placed within 18 inches (minimum) or a distance equal to 1 ½ times the pipe diameter, whichever is greater, of the manhole structure.</p>		

PRECONSTRUCTION CONFERENCE CHECKLIST

Project Name _____

Permit No. _____

Date _____

STREETS	COVERED	COMMENTS
1. A full panel replacement shall be required on any damaged concrete street panel.		
2. Durable pavement marking materials shall be approved by the City prior to installation. The Engineer of Record shall notify the City 2 weeks in advance of installation to schedule a pre-striping and marking meeting with the Engineer of Record, striping contractor, and City representatives.		
3. All AC street cuts shall conform to Standard Detail No. 110.		
4. Any and all pavement markings that are damaged during construction shall be replaced by the contractor to original condition or better.		
5. The Engineer of Record shall monitor erosion control plan implementation and performance throughout construction.		

PRECONSTRUCTION CONFERENCE CHECKLIST

Project Name _____

Permit No. _____

Date _____

GENERAL	COVERED	COMMENTS
1. Working hours are from 7:00 a.m. to 6:00 p.m., 7 days per week, 365 days per year.		
2. All City streets must be cleaned of any potential hazards immediately and cleaned of dirt, rock, and all construction debris at the end of business each day (5 p.m.).		
3. Traffic control plans must be submitted to the City. A minimum of 5 working days should be allowed for the review of traffic control plans including sidewalk and lane closures.		
4. Change Orders (process for projects with SDC reimbursement requests)		

APPENDIX B

Special Permit Conditions

Appendix B - Special Permit Conditions for PIPXX-XXXX: Project Name

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. Note: the telephone number for the Oregon Utility Notification Center is (503) 232-1987 or 1-800-332-2344.

Project-Specific Conditions:

1. All work shall comply with conditions of approval from associated land use decisions.
2. All construction activity shall be conducted in a manner that is consistent with the natural features preservation plan.
3. Vision clearance and sight distance shall be provided at all driveways and street intersections per the *City of Corvallis Off-Street Parking and Access Standards*.
4. Subgrade preparation and street sections shall be as described in the date: _____ geotechnical report, and related documents, and as shown in the plans, unless modified by mutual consent of the City; Engineer of Record; developer; and geotechnical Engineer of Record. All work, including construction monitoring, shall conform to the Conclusions and Recommendations as described in the geotechnical report. All work shall comply with UBC Appendix Chapter 33 including grading inspection (3317) and completion of work (3318).

General Conditions:

5. No modifications to either the approved plans or the *City of Corvallis Standard Construction Specifications* shall be made without prior authorization from the City Engineer.
6. Per *Council Policy No. 91-9.02*, any dirt or debris deposited upon any street, alley, or sidewalk which creates a potential hazard shall be removed immediately by the project contractor. If for any reason the project contractor cannot immediately accomplish the work or cannot be readily notified, City staff shall cause the hazard to be removed and bill the project contractor at a rate of 1.5 times the actual cost. Under a hazardous situation the offender may be cited in Municipal Court. ** Streets must be kept swept and not flushed unless flushing can be accomplished without causing run-off to enter and/or impact public storm drainage systems, including drainageways.
7. Per *Council Policy No. 91-9.02*, all dirt or debris deposited on a public street, alley, or sidewalk from any construction activity that is not an immediate hazard shall be removed before 5:00 p.m. of that same day. After appropriate notice, if the clean up is not accomplished by 5:00 p.m. of the following day, a stop-work order shall be placed upon the project and shall remain until the street, alley, or sidewalk has been cleaned to the satisfaction of the City Manager. ** Streets must be kept swept and not flushed unless flushing can be accomplished without causing run-off to enter and/or impact public storm drainage systems, including drainageways.
8. All work shall be performed in compliance with applicable OSHA safety regulations.
9. All materials and workmanship shall comply with *City of Corvallis Standard Construction Specifications*, latest edition.

10. Street cuts shall be per *City of Corvallis Standard Detail No. 110*. Existing pavement shall be sawcut after trench backfilling and prior to paving to remove construction- related damaged pavement and provide 6 inches undisturbed base. Cut joints shall be tacked immediately prior to and sand sealed immediately after paving.
11. Existing public utilities to be abandoned shall be removed unless previous written authorization to abandon the utilities in place is obtained from the City.
12. All work within public streets requires traffic control. Traffic control plans consistent with the *ODOT Short Term Traffic Control Handbook* and the *City of Corvallis Engineering Policy on Traffic Control for Construction Zones* or *MUTCD Section 6* must be submitted and approved prior to any work within the public right-of-way. The contractor shall submit traffic control plans to this office for review and approval a minimum of five (5) working days in advance of the work. If applicable, No Parking signs shall be posted a minimum of 48 hours prior to their effective date.
13. All testing shall be performed in accordance with the City's *Public Improvement by Private Contract Process Guide and Permit Packet* as outlined in *Section I, Step 4.B*.
14. The Engineer of Record shall certify all test results as required for all public infrastructure. These test results shall be submitted to the City for review prior to final inspection and acceptance.
15. A *Notice of Franchise Installation by Developer* form, located in *Section II* of the City's *Public Improvement by Private Contract Process Guide and Permit Packet*, shall be submitted for each franchise utility and certified by the consulting Engineer of Record prior to final inspection by the City.
16. The Engineer of Record shall stamp and submit as-built drawings for City review with the request for a final inspection of the project. As-built drawings shall be reviewed with the final inspection and a final copy (reproducible, print and electronic copies) shall be submitted and approved prior to acceptance of this project and initiation of the warranty period. Final as-built drawings shall reference all recording numbers for all applicable easements and/or dedications as well as other recorded agreements such as irrevocable petitions for public improvements. Questions concerning electronic as-built format should be directed to the City's GIS group at (541)754-1742.
17. All required easements and/or dedications shall be signed by the grantor and submitted for City signatures with the request for a final inspection of the project. All required easements and/or dedications shall be recorded at the developer's expense prior to warranty initiation.
18. Allowable working hours shall be from 7:00 AM to 6:00 PM per *Corvallis Municipal Code 5.03.030.020.05*.
19. All adjacent property owners shall be notified prior to any new construction.
20. No mechanical trenching shall occur within the drip-line of any tree. Work within the drip-line of any tree shall be performed by hand-digging or boring. Permittee shall protect existing trees. No tree limbs, or roots larger than two (2) inches shall be cut or disturbed without written authorization from a licenced arborist.
21. Permittee shall maintain seven (7) feet horizontal separation from existing City utilities for parallel installations and one (1) foot vertical separation for crossings.

22. All concrete sidewalk, curbs, curb ramps, gutter bars, driveway approaches, accesses and/or street panels that are damaged or removed during construction shall be replaced with full-panel replacements to original or better than original condition using three (3) day 3000psi /5000psi ultimate design concrete. Temporary patches shall be cold mix asphalt or alternate materials as approved by the City. Temporary patches are the responsibility of the permittee and shall be maintained until complete restoration has been completed.
23. Sidewalks shall be replaced within five (5) business days and shall be made handicapped accessible at all times other than during closure for actual concrete placement and curing. If the remainder of site is not returned to original or better condition within ten (10) working days, the permittee shall contact the City and submit a schedule (subject to approval) for completion of that work.
24. If hard surface cuts fall within bicycle lanes, extend surface cut and terminate at strip and/or concrete curb/gutter. No longitudinal patches allowed within bike lane.
25. All unattended excavations shall be backfilled, fenced or plated.

Water System Conditions:

26. All meter settings 2 inches or less shall be installed per *City of Corvallis Standard Detail No. 306*.
27. Domestic water meters 3 inches or larger shall have an Invensys TRPL installed by the contractor that reads in cubic feet and City crews will wire the MXU transmitter.
28. Hot taps shall be provided by City crews at Contractor's expense. Contractor shall excavate for the hot tap and shall provide and install associated shoring, stainless steel full circle tapping saddle, and gate valve. The excavation for the hot tap shall be 8 feet long on the tapping side of the main, 4 feet wide centered on the tapping point, 1 foot behind the main, and 2 feet below the main. The tap shall be located a minimum of 18 inches from all joints and appurtenances.
29. All tapping saddles/sleeves shall be full circle stainless steel.
30. All bolts, other than "Tee" bolts, shall be cadmium or zinc plated, or stainless steel.
31. Per AWWA requirements, samples of the water line must be taken a minimum of every 200 feet, at every branch, and at the end of the line. All valved sections of public waterline shall have a 1 inch chlorination corp or service within each valved section to allow each valved section to be tested for pressure and bacterial contamination. The chlorination corps/services shall be located between 18 inches and 10 feet downstream of each valve. Water line acceptance testing shall be pursuant to *City of Corvallis Standard Construction Specification Technical Requirement IV*.
32. Angle stop location verification shall be required prior to any waterline testing.
33. All sewer main and laterals shall be separated from water main and services in compliance with Oregon Health Division (OAR 333-061-0050 (10)) and Oregon Department of Environmental Quality regulations.
34. Per *City of Corvallis Standard Construction Specification Technical Requirement IV*, all valves 8 inches or smaller shall be resilient seated gate valves and larger valves shall be butterfly valves.
35. Water valves shall be set per *City of Corvallis Standard Detail No. 302*.

36. Fire hydrants shall be installed per *City of Corvallis Standard Detail No. 303*. Acceptable hydrants are: Clow Medallion, Kennedy K81, Mueller Super Centurion, or M&H 129. Hydrant port orientation shall be subject to Fire Department approval. All hydrants shall be painted "Safety Orange" as manufactured by Pittsburgh Paint (Color No. 90-313 Gloss).
37. Fire service vaults with Double Detector Check (DDC) and Fire Department Connection (FDC) shall be installed per *City of Corvallis Standard Detail No. 308*.
38. Thrust blocks shall be installed per *City of Corvallis Standard Detail No. 301*.
39. All water main shall be cement lined Class 52 AWWA C151 ductile iron, and poly-encased per AWWA standards for Method A, wet trench installation.
40. All water main and cut/cover services shall be bedded and backfilled per *City of Corvallis Standard Detail No. 201*. All backfill associated with public improvements shall be "Class B" unless otherwise specified. All pipe zone and Class B backfill material shall be compacted to minimum 95% of maximum dry density per AASHTO T99. The results of the compaction tests shall be submitted to the City prior to waterline testing and paving.
41. All waterlines shall maintain between 36 inches and 42 inches of cover to finished grade. Water services shall have minimum 30 inches of cover within public right-of-way and shall be installed per *City of Corvallis Standard Detail No. 306*.
42. Meter boxes shall be installed in pairs less than 4 feet apart and shall have a 3/4-inch conduit 18 inches deep between the boxes to accommodate multiple meters on a single radio transmitter reader. The conduit shall be placed within 3 inches of the meter's inner corner and each end shall be sealed using a removable plug. Any bends in the conduit shall be made using a 6-inch sweep and conduit joints shall be glued with a manufacturer-approved compound.
43. Concrete caps shall be installed per *City of Corvallis Standard Detail No. 202* where clearance between other utilities is less than 1 foot.
44. All water main high points shall be fitted with an air relief per *City of Corvallis Standard Detail No. 305*.
45. Water main blow-offs shall be installed per *City of Corvallis Standard Detail No. 304*.

Sanitary/Storm Sewer System Conditions:

46. Standard manholes shall be installed per *City of Corvallis Standard Detail No. 203*.
47. Drop manholes shall be installed per *City of Corvallis Standard Detail No. 203a*.
48. Pipes entering manholes shall have a flexible joint placed within 18 inches (minimum) or a distance equal to 1 ½ times the pipe diameter, whichever is greater, of the manhole structure.
49. Cleanouts shall be placed on all laterals at the public right-of-way per *City of Corvallis Standard Detail No. 206*.
50. Service piping details shall be per *City of Corvallis Standard Detail No. 206A*.
51. Common service laterals shall be installed per *City of Corvallis Standard Detail No. 206B*.

52. Gutter inlet catch basins are generally not allowed and require City approval prior to installation. When approved, gutter inlets shall be installed per *City of Corvallis Standard Detail No. 208*, with “bike friendly” (Inland Foundry 517-2 Style C-2 or approved equal). Poured in place bases shall have monolithic bottoms and walls.
53. Curb inlet catch basins shall be installed per *City of Corvallis Standard Detail No. 209*. Poured in place bases shall have monolithic bottoms and walls.
54. All sewer main and laterals shall be separated from water main and services in compliance with Oregon Health Division (OAR 333-061-0050 (10)) and Oregon Department of Environmental Quality regulations.
55. All sewer/storm drain main and laterals shall be bedded and backfilled per *City of Corvallis Standard Detail No. 201*. All backfill within public right of way shall be “Class B” unless otherwise specified. All pipe zone and Class B backfill material shall be compacted to minimum 95% of maximum dry density per AASHTO T99. The results of the compaction tests shall be submitted to the City prior to acceptance testing.
56. Storm Drain and Sanitary Sewer acceptance testing shall be pursuant to *City of Corvallis Standard Construction Specification Technical Requirements III* and the City’s *Public Improvement by Private Contract Process Guide and Permit Packet* as outlined in *Section I, Step 4.B*.

Street Network Conditions:

57. Street striping to be “heat-fused” hot tape (ODOT Type B), 3M Stamark Series 380I tape (inlaid), or listed ODOT QPL equivalent. Stimsonite/Avery Dennison “heat-fused” tape for legends, symbols and pavement markings. Reflective pavement markers to be 3M RPM 290 Series or equivalent, epoxy per manufacturer’s recommendations. Reflective pavement markers and buttons shall be used for centerline delineation unless other materials are approved. Bike lane symbols are required for bike lanes. Installation of all products shall be per manufacturer’s recommendations. Layout of striping shall meet MUTCD standards. Notify the City at least 48 hours prior to installing any striping - a City representative will need to be on site during striping installation. Allow for 20-day review on all “approved equal” submittals.
58. Durable pavement markings and marking materials shall be approved by the City prior to installation. The Engineer of Record shall notify the City 2 weeks in advance of installation to schedule a pre-striping and marking meeting with the Engineer of Record, striping contractor, and City representatives.
59. All sidewalk, curb (ADA) ramps, and driveway construction shall be consistent with ADA standards and requirements.
60. All ADA ramps shall be constructed with truncated domes per City standards.
61. Any and all pavement markings damaged during construction shall be replaced by the Contractor to the original condition or better.

Billing Information Conditions:

- 62. Hot taps and street signs, including installation, shall be provided by the City at the Contractor’s expense. Bills shall be sent to the following address:

Name: _____

Address: _____

City, State, Zip: _____

Phone: () _____

Roles and Responsibilities Conditions:

Under *Section 4.0.90* of its *Land Development Code*, the City of Corvallis has established procedures for the installation of Public Improvements by Private Contract (PIPC). A PIPC Procedure Manual has been prepared to detail these procedures. The Manual includes discussion of the general responsibilities of the Owner/Developer (or their agent) and Engineer of Record (who comprise the development team) as well as the City. In order to improve coordination between these parties, especially during the construction phase, parties responsible for the following items shall be as designated below, as discussed during the Preconstruction Conference:

- 56. ENGINEER OF RECORD shall be Point of Contact. Communication between the development team and the City will be coordinated by the development team’s Point of Contact, which shall be the Engineer of Record. The City point of contact during the construction phase shall be the Field Contact assigned to the project.
- 57. Submit & Maintain Project Schedule. All PIPC projects shall require a detailed schedule to be updated weekly in writing and submitted to the City’s Field Contact by the development team’s Engineer of Record. The schedule shall list major planned work activities such as system connections, initial installation of infrastructure features (i.e. first catch basin, ADA ramp), paving, striping, quality assurance testing, phasing transitions, and any other item potentially affecting City staff or the public.

RESPONSIBLE PARTY: _____

- 58. Weekly Meetings. Unless otherwise waived or altered by the City, on-site weekly meetings shall be held to discuss the work. At a minimum, the Contractor, the Engineer of Record, and City Field Contact shall attend these meetings.

MEETING SCHEDULE & LOCATION: _____

- 59. ENGINEER OF RECORD shall Submit & Monitor Traffic Control Plan. The Engineer of Record shall submit a traffic control plan for City approval. The Engineer of Record shall monitor plan implementation and performance throughout construction and shall have Authority to Accept or Reject Work with respect to traffic control.

60. For the following items, the ENGINEER OF RECORD shall be the responsible party:

- Authority to Accept or Reject Work*. The Engineer of Record shall have the authority to accept or reject all aspects of the work including, but not limited to, conformance with plans and specifications; any modifications or corrections; traffic control; and erosion control.

* Note that City acceptance of all public improvements must ultimately be obtained.

- Submit & Monitor Erosion Control Plan. For all PIPC projects that require an erosion control plan, the Engineer of Record or other qualified professional shall prepare the erosion control plan, submit the plan for City (Development Services) approval, and monitor plan implementation and performance throughout construction.
- Verify Submittals. The Engineer of Record shall verify in writing that proposed products meet applicable specifications or note exceptions and justify acceptance. Products for which verification shall be submitted include, but are not limited to: pipe and fittings, valves, meter and valve boxes, fire hydrants, manhole and catch basin components, cleanout covers, grout, aggregate, asphaltic and portland cement concrete, geotech fabrics, tack, traffic signal components, striping and pavement markings. This verification shall be provided prior to placing or installing products.
- Conduct Site Visits. The Engineer of Record shall conduct adequate site visits to monitor the progress of the work and verify compliance with plans and specifications. These site visits shall be comprehensive enough to allow the Engineer of Record to stamp "As-Built" or "Record Drawings" on the plans and ensure that the as-built drawings accurately represent the actual finished work product according to accepted engineering practice.
- Coordinate Testing. The Engineer of Record shall schedule, apply for, monitor, report, verify, and submit results for all quality assurance testing as specified in the PIPC Process Guide at a minimum or as determined to be necessary to confirm compliance.
- Design Changes. The Engineer of Record shall prepare and submit written documentation of any design or material deviation from approved plans and specifications that materially affects the finished product. This documentation shall be submitted at least two working days prior to implementing the change to allow for City review and concurrence. Any deviating work performed without prior City review and concurrence may be rejected.

Review and Concur:

ENGINEER OF RECORD

Signature: _____

Printed Name: _____

Firm: _____

Street Address: _____

City/State/Zip: _____

Phone/Fax: _____//_____

Email: _____

OWNER

Signature: _____

Printed Name: _____

Firm: _____

Street Address: _____

City/State/Zip: _____

Phone/Fax: _____ // _____

Email: _____

CONTRACTOR

Signature: _____

Printed Name: _____

Firm: _____

Street Address: _____

City/State/Zip: _____

Phone/Fax: _____ // _____

Email: _____

APPENDIX C

Pavement Marking Standards

APPENDIX C - DURABLE PAVEMENT MARKING STANDARDS

INTRODUCTION

All Retro Reflective preformed pavement marking tape, patterned and non-patterned, such as 3M Stamark 3801 series and 420 series; all high durability heat-fused Retro Reflective polymer thermoplastic preformed pavement material markings such as Stimsonite "Hot" Tape; and all reflectorized and non-reflectorized high durable, high brightness, polymer buttons, such as 3M RPM 291 Y and RPM 290 W, shall be installed in accordance with the manufacturer's recommendations and in accordance with the Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD), 2000 edition, or as modified and in the 1996 Oregon State Highway Division Standard Specifications for Highway Construction.

When a specific brand name or model number is specified, but an approved equal is offered, no limitation on other brand names is intended. Rather, the intent is to indicate and guarantee the level of quality desired. Pavement markings shall be considered for qualification prior to installation when, in the opinion of the City's Representative, the material is capable of meeting performance and material requirements and can meet or exceed a 4-year manufacturer's warranty for retro reflectivity and failure due to loss of adhesion; bead crushing and loss; fading; lifting; shrinkage; softening; and/or complete wear-through. The Contractor shall furnish information demonstrating the proposed material has been used successfully in a substantial pavement marking program for at least four years in similar climatic conditions. The alternative material must be approved by the City in writing twenty (20) days prior to application.

The Contractor shall satisfy the City's Representative that sufficient marking material is on the job site 2 working days before paving/installation may begin. The markings shall be inlayed in the fresh asphalt concrete surface during the final rolling of the mat and in all cases, shall be applied before the close of the shift on the day on which the surface is paved. Pavement temperature at the time of inlay shall not be less than 125°F nor higher than 160°F. Markings shall also be overlaid on existing pavement surfaces in contiguous areas to complete the marking patterns. Reflective and non-reflective buttons shall be installed on new asphalt concrete pavements two weeks after pavement installation. Disposable reflective tabs will be used for center, lane and bike lane line delineation until permanent markings can be applied

The Contractor is to contact the manufacture's local representative ten (10) days prior to application of materials to coordinate all phases of application. ***The manufacturer's representative and the City's Representative are to be present until both are satisfied the application personnel are sufficiently trained and experienced to competently install the materials in accordance with the manufacturer's recommendations.***

A finish paving roller shall be available for the exclusive use of the inlay crew at all times. The manufacturer shall provide two (2) complete sets of manual application equipment when center panels are paved for installation of both sides of the center left turn lane simultaneously. The applicators shall be capable of applying two 4-inch lines (110 mm) simultaneously with a 4-inch

spacing between lines. Additional supplemental equipment for manual application of required primers, or for manual tamping of the applied markings shall also be provided.

DEFINITIONS

* 3m Tape 3801 series, patterned - Intended use on center lines, lane lines, skip lines and bike lane lines for inlay onto newly paved and existing paved streets. Thickness of tape in all series is 60 mil.

* 3m Tape 420 series - Intended use on bike lane lines, cross-walks and legends and symbols for inlay onto newly paved and existing paved streets. The tape width for bike lanes is eight (8) inches and twelve (12) inches for cross-walks.

* Stimsonite “HOT” Tape - Intended use on bike lane lines, cross-walks and legends and symbols for inlay onto newly paved and existing paved streets. This product needs to be heated by a torch to adhere to newly and existing pavements. Thickness of “Hot” Tape is 60 mil.

STREET STRIPING

Centerline Delineation

Skip center lines shall be denoted with a yellow five (5) button pattern (reflectorized and non-reflectorized, in that order), spaced three (3) feet on center (for an overall length of 15 feet), separated by a twenty-five (25) foot space.

Double solid center lanes shall denoted with yellow pavement tape, two 4-inch lines (110 mm) simultaneously with a 4-inch spacing between lines. Double yellow stripe shall be inlayed with 3M 380 series material.

Reflective buttons shall be 3M or an approved equal. Reflectivity shall be per 3M specification for the RPM 291 Y for yellow and the RPM 290 W for white. The Epoxy/adhesive shall be as per manufactures’ recommendation.

Non-reflective (yellow/white) buttons shall be four (4) inch round Titans.

Lane Line and Turn Bay Delineation

Lane line buttons shall be the same pattern as the center skip pattern, except one-way reflective white, and the turn bay buttons shall be spaced one button, eight (8) foot on center and one-way reflective white.

The tape width for turn bays shall be eight (8) inches wide. The turn bay striping shall be inlayed with 3M Series 420.

Bike Lane Delineation

Bike lane stripes shall be inlayed with 3M series 420 material or 3801 series. The tape width for bike lanes shall be eight (8) inches wide.

Bike lane symbols shall be painted on by City crews.

“Hot” Tape

Shall be used for existing pavements or after a section of newly paved surface is over one (1) day old for center, turn bay, bike lane, and cross-walk lines.

Cross-walk Delineation

Cross-walks shall be inlayed with 3M 420 series or Stimsonite “Hot” Tape. The tape shall be twelve (12) inches wide and the spacing between the bars shall be ten (10) feet and or as required by the City depending upon lane widths.

Stop Bar Delineation

Stop bars are no longer required as per MUTCD. However, if they are used, stop bars shall be inlayed with 3M series 420 or Stimsonite “Hot” Tape. The tape shall be twelve (12) inches wide. Stop bars should ordinarily be placed 4 feet in advance of and parallel to the nearest cross walk line. In the absence of a marked cross walk, the stop bar should be placed at the desired stopping point, in no case more than 30 feet or less than 4 feet from the nearest edge of the intersecting street.

If a stop bar is used in conjunction with a Stop sign, it should be ordinarily be placed in line with the Stop sign. However, if the sign cannot be located exactly where vehicles are expected to stop, the Stop bar should be placed at the stopping point.

Legends and Arrows

Legends and arrows shall be inlayed with 3M, 420 series or Stimsonite “Hot” Tape.

YELLOW CURBING POLICY

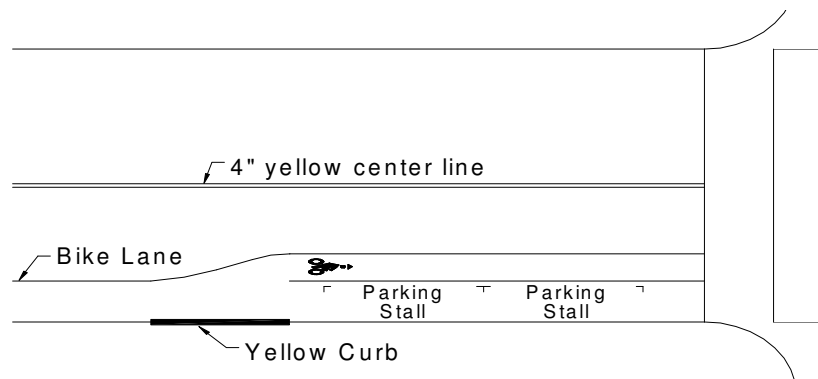
GENERAL

Yellow durable goods or painted street curbs may be used in the City of Corvallis to supplement the section 811.550 of the Oregon Vehicle Code by denoting no-parking zones. In addition, yellow curbing may be used in approach to stop, yield, and flashing signal signs, in front of fire hydrants, at limited visibility intersections to provide sight distance, at bike lane transition areas, and on either side of driveway approaches. Under the city code, yellow curbing may be used to denote no-parking without any additional supplement of restricting parking signs.

POLICY

Yellow curbing may be used under these typical circumstances:

- 1. Stop, Yield, and Flashing Symbol Signs:** Yellow curbs may extend a total of thirty (30) feet to fifty (50) feet from stop, yield, and flashing symbol signs except where “No parking” signs are posted, the street is striped with a bike lane, or the stop, yield, or flashing symbol sign is near a driveway.
- 2. Fire Hydrant:** Yellow curbing should extend a total of twenty (20) feet, ten (10) feet in each direction from the center of the hydrant except in combination with a stop sign.
- 3. Site Visibility at Intersections:** Yellow curbing may be used to provide sight distance at limited visibility intersections and narrow streets where it has been determined by the traffic study that yellow curbing is needed for improved sight distance. The length of yellow curbing should be based on width, speed, and geometry of the particular intersection or street.
- 4. Bike Lane Transitions:** Yellow curbs may be used for street lane transitions from a curb side bike lane to a parking lane or from a curb side bike lane to a vehicle travel lane.



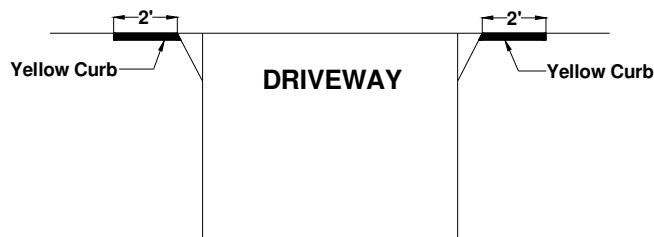
Transition from curb side bike lane to parking lane

5. **Existing Yellow Curbing** : Before changes to existing yellow curb can be made, the following needs to happen;

- Check files to see if prior traffic/work order was issued for that site and what it states for the restriction.
- If order is present, does it still apply to the situation. If not, a engineering study based on width, speed, and geometry of the particular intersection or street will need to be performed.
- After study, if changes are warranted, a traffic order will need to be issued before work can be completed.

6. **Driveways:** Yellow curbs may extend two feet (see below) on either side of driveway approaches. Unlike other yellow curb zones, the City of Corvallis does not paint or maintain yellow curbing on either side of driveway approaches due to the painting and maintenance costs. Instead, it is the responsibility of the respective property owner to paint approaches to driveways if they feel that it would be helpful in preventing obstruction of street visibility and/or blocking their driveway.

Before any work is done on the curbs a permit must be obtained from the City's Development Services Division at 501 SW Madison Avenue. The permit is free.



Yellow paint extends a maximum of 2' on either side of driveway approach

TRAFFIC CONTROL

When applicable, the suitable traffic control devices will be utilized as to ensure the safety of the public and work-crew while installing yellow curbs. Because of the short time spans that any one section of the road is affected during yellow curb installation, it is generally held that simplified traffic control procedures are favorable. Signing is usually not required for pedestrians and cyclists. However, each situation must be assessed individually. The intent of traffic control is to close the specified area during the course of work and for a period thereafter until it is determined that pedestrian and vehicular traffic may utilize the new area. All traffic control devices must conform to the latest edition of the Manual on Uniform Traffic Control Devices and to the City of Corvallis Traffic Control Manual as appropriate.

DURABLE GOODS APPLICATION PROCESS - Capital Improvement Projects, Public Improvement Projects, Street Reconstruction and Maintenance Projects

Approved Materials

All Retro Reflective preformed pavement marking tape, patterned and non-patterned, such as 3M Stamark 3801 series, with pressure sensitive adhesive; all high durability heat-fused Retro Reflective polymer thermoplastic preformed pavement material markings such as Flint Trading's "Hot Tape", shall be installed in accordance with the manufacturer's recommendations and in accordance with the Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD), 2000 edition, or as modified and in the 1996 Oregon State Highway Division Standard Specifications for Highway Construction.

When a specific brand name or model number is specified, but an approved equal is offered, no limitation on other brand names is intended. Rather, the intent is to indicate and guarantee the level of quality desired. Pavement markings shall be considered for qualification prior to installation when, in the opinion of the City's Representative, the material is capable of meeting performance and material requirements and can meet or exceed a 4-year manufacturer's warranty for retro reflectivity and failure due to loss of adhesion; bead crushing and loss; fading; lifting; shrinkage; softening; and/or complete wear-through.

Curb Preparation

Scaling, loose paint, and grass must be removed prior to the paint application. Debris from the curb preparation must also be removed thoroughly and disposed of properly.

Durable Goods Application

When using 3M products, the air temperature should be 50°F and rising. When using Hot Tape, the air temperature should be 32°F and rising. All surfaces shall be clean and dry with no rainfall within the last 24 hours prior to application

When using the pressure sensitive adhesive 3M product, apply to the top of the horizontal curb and roll with small hand roller until firmly seated. When using other 3M products, apply P-50 adhesive to the top part of the curb using a spray applicator. Allow the adhesive to set where it feels tacky but is no longer in liquid form and has a matte finish rather than a glossy wet appearance. Apply the tape by hand and seat with a hand roller.

When using Hot Tape, ensure moisture is removed on the surface by utilizing a heat torch or similar heat source to pre-heat the pavement surface to 300 ° F. Apply a strip of Hot Tape and re-heat Hot Tape until adhered to the surface.

PAINT APPLICATION PROCESS - Homeowner

Paint Preparation

Scaling, loose paint, and grass must be removed prior to the paint application. Debris from the curb preparation must also be removed thoroughly and disposed of properly.

Paint Application

A water based paint is applied to the curb with an airless spray unit. Cardboard, a sign blank, or similar material can be used in order to prevent paint over-spray on crosswalks, stop bars, lawns, or street.

Design Life

Yellow painted street curbs may last between 6-12 months.

Follow up Site Inspection

After you have completed the work, contact Public Works (766-6916) for a follow up site inspection. If the paint exceeds the 2 foot strip on each side of the driveway, you will have seven (7) calendar days to remove excess paint. If you do not remove the excessive paint within seven calendar days, Public Works and/or their designee, will do so and bill you for the work at one and one half times the hourly rate. Failure to pay for work performed by Public Works and/or their designee could result in a lien against your property.

APPENDIX D

PRO 3013 - Fire Line Installation Procedure



Community Development

Development Services Division

501 SW Madison Avenue

P.O. Box 1083

Corvallis, OR 97339-1083

(541) 766-6929

TTY (541) 766-6477

FAX (541) 766-6936

Policies / Interpretations / Procedures

PRO 3013

Adopted: February 7, 1996

Last Reviewed: February, 2006

Fire Service Line Installation

Policy Summary:

1. Specifies when a fire service line is public vs private
2. Specifies staff responsibilities for review and inspections
3. Specifies the standards for installation

Background:

The installation of fire service lines has been a source of great confusion with respect to delineating between public vs private, the role of staff from various departments in the review and inspection processes, and what standards apply.

Water lines serving fire protection systems or "fire service lines" are a unique extension of the potable water system in that Attorney General Opinion OP-6299 dated May 26, 1989, states that these lines are not within the regulatory authority of the Building Codes Division. These service lines are not regulated by the State of Oregon Plumbing Specialty Code, and those who install these lines need not be licensed plumbing contractors. The issuance of this Attorney General opinion raised questions as to which City department should be reviewing plans for and inspecting the lines, which standards should be used during the plan review and inspection process, and which regulations could be used to require backflow devices for these lines.

Staff consensus is that the Development Services Division will conduct the initial review of fire service line submittals. Because a Public Improvement by Private Contract (PIPC) permit is often involved, Development Services staff will coordinate the transition of the applicant into the PIPC process.

Discussion:

There are two layers of permitting procedures and installation standards applicable to fire service installations.

1. Public: Public Improvement by Private Contractor (PIPC) permits are issued by Public Works through the Development Review Division. City Engineering Standards for permitting, flushing, pressure testing, disinfecting and bacteriological testing apply to any portion of the fire service open to the public system.
2. Private: Building Permits are handled by the Development Services Division. NFPA-13 standards for materials certification, bag testing and pressure testing apply to the private portion of the fire service.

The following is a basic overview of the two installation scenarios involving fire service line installations. More detail on the specific steps is provided in the procedure section:

Scenario 1: When the Double Detector Check Assembly (DDCA) is located in a vault at the property line/public right-of-way.

The point of public/private delineation is the first OS&Y valve at the Double Detector Check Assembly (DDCA). The installation up to this valve is reviewed, inspected and approved by Development Review under a PIPC permit.

The DDCA, vault, and fire service line up to and into the building are reviewed and inspected by Development Services under a Building Permit.

Under this scenario, the processes outlined in the PIPC permit packet must be completed and installation accepted by Development Review before Development Services then assumes the lead.

Development Services inspectors will require an approval from Development Review for the PIPC portion and a completed NFPA-13 Underground Certificate for all piping installed downstream of the DDCA. This shall be completed by the contractor before granting final approval.

Scenario 2: When the Double Detector Check Assembly (DDCA) is located inside of the building or in a vault distant from the public right-of-way.

This installation is called a Combined Fire Service. In this scenario a public/private delineation valve is installed at the property line on the fire service line. Technically, the line is then private from the delineation valve into the vault or building, and NFPA-13 standards apply.

Because the public water feed for the fire service line is not protected by a backflow preventer until it reaches the DDCA in the building or vault, the private portion must be flushed, disinfected and accepted by Development Review in accordance with City Engineering Standards, in addition to NFPA-13 Standards. Because these two codes differ in a few instances, the most restrictive shall govern. For example, City Engineering standards require a 150 psi pressure test and full flow flush. NFPA-13 requires a 200 psi pressure test and full flow flush with a clean bag test. In this case the NFPA-13 standard is more restrictive and therefore governs. Conversely, NFPA-13 does not require a disinfection and Bac-T test where City Engineering Standards do, so the latter governs. In either case, Development Review and Development Services inspectors will coordinate and jointly monitor all inspections and testing procedures.

Development Services inspectors will require an approval from Development Review and an Underground Certificate, as published in NFPA-13, to be completed by the contractor before granting final approval.

Procedure

1. Building Permit. The building permit for fire service lines begins at either the DDCA in scenario 1, or the delineation valve in scenario 2. Plans for fire service lines are required to be submitted to the Development Services Division for review. The plan review will be conducted by the Development Services Plans Examiner with input from the Plumbing Inspector, Fire Marshal, and the Civil Engineer (CE-1). The CE-1 will coordinate the transition of the applicant into the PIPC process. Under scenario 2, the building permit fee will include the entire fire service line installation beginning from the delineation valve at the right-of-way.
2. PIPC Permit (Scenario 1 - vault). Permitting of the public fire service waterline from its point of connection at the public water mainline up to the first valve in the DDCA located in a vault at the ROW will be administered by Development Review (DR) as outlined in the PIPC Process Guide and Permit Packet. Coordination with Development Services (DS) will be required to ensure consistency with the building permit application for the private portion of the fire service.

PIPC Permit (Scenario 2 - building). Permitting of the public and private portions of the combined fire service will be administered through the Development Review (DR) PIPC Process Guide and Permit Packet. This includes the point of connection at the existing public mainline, all public waterline within the ROW, and the public delineation valve. The public delineation valve shall be located at or near the ROW line. The PIPC process shall insure that this delineation valve is fitted with a PVC sleeve labeled “Fire Service - Normally Open” to avoid inadvertent closure. The PIPC permit fee shall include only the cost of the public portion of the combined fire service up to the delineation valve. Design coordination with Development Services (DS) will be required to ensure consistency with the building permit application for the private fire system and the private waterline up to and including the first OS&Y valve of the DDCA in the building.

3. Pre-Construction Conferences. PIPC and Building Permit pre-construction conferences shall be held. Representatives from each department should be invited to each pre-con.
4. Construction Standards. In considering the specific elements of the various standards, the most restrictive shall govern.

(Scenario 1 - vault) Construction of the public fire service up to the first OS&Y valve of the DDCA and the vault shall be in accordance with the City’s Engineering Standards, Fire Department Operating Guideline 11.2.8, and the “Construction and Testing” guidelines outlined in the City’s PIPC Process Guide and Permit Packet. Construction of the private fire service from the DDCA and throughout the building shall be in accordance with NFPA-13 and applicable building, electrical and plumbing codes.

(Scenario 2 - building) Construction of the public portions of the combined fire service waterline up to the delineation valve shall be in accordance with the City’s Engineering Standards and the “Construction and Testing” guidelines outlined in the City’s PIPC permit packet and Fire Department Operating Guideline 11.2.8. After the delineation valve, construction of the private fire service shall be in accordance with NFPA-13 and applicable building, electrical and plumbing codes. In addition, the NFPA-13 materials certification, type of materials, bag testing and pressure testing requirements are applicable. Development Review and Development Services inspectors will coordinate and jointly monitor all inspections and testing.

5. Flushing. Per the guidelines outlined in the City’s PIPC Process Guide and Permit Packet, an initial PIPC flush shall be performed on all new public waterlines including the public or combined fire service.

(Scenario 1 - vault) Two flushes shall occur. The first flush includes the public fire service up to and including the first OS&Y valve of the DDCA. After this occurs the contractor may proceed with steps 6 & 7 below. The second flush is performed after the public portion is accepted by DR and released for service. The second flush shall occur under the NFPA-13 bag test requirements below.

(Scenario 2 - building) At the discretion of the inspector, one flush may be all that is necessary so long as it meets the most restrictive city standard or NFPA-13 flushing requirement. The combined fire service up to and including the first OS&Y valve of the DDCA shall be installed in the appropriate location inside of the building and flushed according to NFPA-13 bag test requirements as noted below.

In either scenario, only DR may operate the public water valves to facilitate these flushes.

NFPA-13 Bag Test. Per the requirements of NFPA-13, DS shall coordinate the contractor's request for a bag test with DR and Fire. It is the contractor's responsibility to ensure that adequate measures are taken to accommodate water disposal from flushing. This includes preventing the structure from being adversely impacted or undermined. The inspector has the latitude to refuse a flush and require the contractor to make additional provisions for wastewater disposal if structural components are in danger of undermining, flooding is likely to occur, or other adverse impacts are likely from discharges.

6. Pressure & Leak Testing.

(Scenario 1 - vault) Pressure and leakage testing up to the DDCA is required at 150 psi. DR shall witness this pressure and leakage testing. From the DDCA into the building, NFPA-13 requires fire service and waterline testing to be conducted at 200 psi. DS shall witness this testing.

(Scenario 2 - building) The combined fire service must be pressure and leak tested to NFPA-13 standards at a minimum of 200 psi pressure. DS shall witness this testing and provide a copy of documentation to DR.

7. PIPC Disinfection & Bacteriological Testing. Per the guidelines outlined in the City's PIPC Process Guide and Permit Packet, the Contractor shall disinfect all new public waterline and the combined fire service prior to being placed into service. DR shall confirm proper chlorination levels and perform all required microbiological sampling. All hyper-chlorinated water must be flushed into the sanitary sewer system or other DEQ approved method. After flushing, the line shall remain closed for an additional 24 hour period (for regrowth). Note that water samples must reach the lab no later than 12:00 p.m. on Monday through Thursday. Samples shall be taken to City lab (state approved) by a City representative. In the event that the sample is positive the line shall be retested, including disinfection.

8. Acceptance for Operation. Following a passing microbiological test, the fire service will be accepted for operation by DR.
9. Locking of OS&Y Valve: Upon acceptance for operation, DR will lock the DDCA OS&Y valve closed. After installation of the DDCA and DS finaling the private system, a tap card will be used to initiate a water service account and unlock the valve. The DDCA valve may be unlocked and operated by DR to facilitate private flushing and testing.
10. PIPC Warranty. The public portion of the combined fire service waterline (from the hot tap to the delineation valve) will be subject to a PIPC one-year warranty period. The one-year warranty will not be initiated until the project is accepted and all requirements outlined in the City's PIPC Process Guide and Permit Packet are complete. The privately owned and maintained portion of the combined fire service (from the delineation valve on the mainline, typically located at the ROW line, to the first OS&Y valve in the DDCA) will not be subject to the PIPC one-year warranty period.

NOTE: At this point the lead contact for the project shifts from Development Review staff back to Development Services staff.

11. NFPA-13 Inspection and Testing. After acceptance of the fire service by DR, the DDCA will be installed by the contractor and the private fire service line will be inspected and tested according to NFPA-13 standards and Fire Department Operating Guideline 11.2.8, by DS. DS staff will coordinate with DR or other qualified Public Works representative to operate the valve as needed for testing. These standards include materials certification, bag test and pressure testing to a minimum 200 psi (unless pressure testing has already been performed under #6 above). Chlorination is not required due to the DDCA protection.
12. Finaling. The private portion of the fire service downstream of the delineation valve will be finalized through the building permit process.
 - The DDCA must be tested by a certified backflow assembly tester. Evidence in the form of a testing certificate shall be provided to the plumbing inspector at the time of final.
 - A completed "Underground Certificate" as published in NFPA-13, shall be provided to the building inspector at the time of final.
 - The building inspector shall verify that DR has accepted the system and the one-year warranty period has been initiated before closing the case.
 - The inspector will notify the CE-1 and a tap card will be used to initiate a water service account and unlock the valve. The DDCA valve may then be unlocked by DR

NEXT SCHEDULED REVIEW: February, 2008