CITY OF COOS BAY CITY COUNCIL
Agenda Staff Report

MEETING DATE	AGENDA ITEM NUMBER
May 19, 2015	

TO: Mayor Shoji and City Councilors

FROM: Jim Hossley, Public Works Director

Through: Rodger Craddock, City Manager RDC

ISSUE: Public Hearing to Consider Adoption of Resolution 15-07, Restoration Policy for Utility and Service Lateral Installation in City of Coos Bay Right-of-Way

BACKGROUND:

The Streets Taskforce expressed concerns related to utility trench failure in City streets and recommended adoption of a right-of-way restoration policy. In response, over the last year City staff presented a draft policy for restoring trench cuts in the City's public right-of-way at two City Council meetings and with contractors and utilities we believe would be most affected by the policy. Based on feedback from the Council and affected parties modifications to previous drafts have been made

The Coos Bay Municipal Code (CBMC) requires that a permit be obtained prior to cutting into any road surface and/or excavating within the right-of-way of public streets, and the code requires proper repair to any resulting damage to the pubic street right-of-way or road surface. The proposed policy establishes the basis and process for determining the level of repair and replacement for utility cuts for both old and newly paved streets. The legal basis for this City Policy is established in the Coos Bay Municipal Code, Title 12, Chapter 12.25, Utility Use of Streets.

In an effort to better manage pavement degradation from the affects of utility cuts, staff recommends through this policy that the City prohibit (except in emergency and case by case basis) cutting into new pavements for three (3) years after the paving is complete. This 3-year moratorium on cutting into all new pavement surfaces will include overlays, inlays, reconstruction, and new construction of at least a half street or greater.

Prior to the public hearing, staff will present a more detail discussion regarding the attached draft policy. After Council receives public comment, staff requests Council consider adopting Resolution 15-07 implementing the policy along with any desired revisions the policy. Utilities (including the City) will incur additional construction costs associated with meeting the standards in the proposed policy. I recommend the resolution not take effect until January 1, 2016 in order to give utilities the opportunity to budget for the additional costs.

ADVANTAGES:

The draft policy provides substantial written guidance to City staff, utility owners/contractors and residents. The policy is rigorous but not necessarily uncommon as many requirements in the policy were derived from requirements from other municipalities throughout the country. Implementation of and adherence to this policy should provide long term performance of trench repairs.

The proposed policy provides for two different levels of effort related to the utility permit application process. Cutting into a moratorium street requires more significant effort to obtain the permit and perform the repair work than cutting into a non-moratorium street. The idea here is to discourage cutting into new pavement, but when absolutely necessary, ensuring that the repair to the cut performs as well as, if not better than, the surrounding new pavement.

DISADVANTAGES:

The proposed policy will result in increase requirements and effort to obtain a utility permit for excavation. As a result there will be an increase, and in some cases a substantial increase, in the cost of repairing trench cuts. This policy will apply to not only private utilities but to property owners making connection to or repairing their existing connection to City sewer and water mains. The policy would also apply to Coos Bay – North Bend Water Board and the City of Coos Bay. The policy will result in an increase in the cost of repair and replacement projects for City drainage and sanitary sewer pipes.

BUDGET IMPLICATIONS:

The proposed policy will likely result in an increase in the cost of paving associated with the City's pipe repair and replacement projects. As a result of this policy, total project cost could increase anywhere from 10% to 40% depending upon road type and nature of the repair. For City projects, the funds for these repair and replacement projects come from wastewater fees.

As a result of the policy, staff assumes that over time the longevity of City streets will be significantly improved. Thus, in the long run, the City's limited street maintenance funds will go further as a result of the City's maintenance efforts focusing on street degradation related to wear and age without the addition of trench failure damage.

RELATED CITY GOAL:

Adoption of this policy will help the City meet the goal stating, "Infrastructure and Services: To maintain and improve the City's physical infrastructure and provide quality services for current and future citizens."

ACTION REQUESTED:

If it pleases the City Council, hold a public hearing and adopt Resolution 15-07.

ATTACHMENTS:

Resolution 15-07
Recommended changes to verbiage in proposed policy
Restoration Policy for Utility and Service Lateral Installation in City of Coos Bay Right-of-Way

City of Coos Bay

Resolution 15 - 07

A RESOLUTION OF THE CITY OF COOS BAY, COOS COUNTY, OREGON, ADOPTING THE RESTORATION POLICY FOR UTILITY AND SERVICE LATERAL INSTALLATION IN CITY OF COOS BAY RIGHT-OF-WAY

WHEREAS, the citizens of Coos Bay, having invested substantial public and private funds in the construction and maintenance of the existing public roadway system within the City, desire to protect and prolong these investments, and maintain a safe, clean roadway environment; and

WHEREAS, prior to cutting into any road surface and/or excavating within the right-of-way of public streets a permit authorizing such activity is required as is proper repair to any resulting damage to the pubic street right-of-way or road surface; and

WHEREAS, the City of Coos Bay has created a document titled Restoration Policy for Utility and Service Lateral Installation in City of Coos Bay Right-of-Way (Exhibit A), hereinafter referred to as The Policy; and

WHEREAS, The Policy establishes the basis and process for determining the level of repair and replacement for utility cuts for both old and newly paved streets; and

WHEREAS, In an effort to better manage pavement degradation from the effects of utility cuts, The Policy imposes a 3-year moratorium on cutting into all new pavement surfaces, and

WHEREAS, The authority for creating and adopting The Policy is established in the Coos Bay Municipal Code, Title 12, Chapter 12.25, Utility Use of Streets; and

WHEREAS, the City Council held a duly noticed public hearing regarding the adoption of this Resolution on May 19, 2015.

NOW, THEREFORE, BE IT RESOLVED THAT, the City of Coos Bay, Coos County Oregon hereby adopts the Resolution as set forth above.

The foregoing resolution was duly adopted by the City of Coos Bay, Coos County, Oregon this 19th day of May, 2015 and shall become effective on January 1, 2016.

_____

Crystal Shoji, Mayor

ATTEST:

_____

Susanne Baker, City Recorder

RESTORATION POLICY FOR UTILITY AND SERVICE LATERAL INSTALLATION IN

CITY OF COOS BAY RIGHT-OF-WAY

Proposed language to be added to section IV of the policy (pg 7):

8) The time for city review of a utility permit application commences once the application is considered complete. A complete application includes an accurately filled out application form accompanied by supporting documents called out in this policy (e.g. traffic control plan, engineered plans, etc...) and applicable fees. The time necessary for the review will depend upon the complexity of the work proposed and/or where the project is located (e.g. in the pavement of an arterial street versus outside the pavement along a low volume residential street). Review of permits for lateral hook-ups will typically take 3 – 5 business days, while the city staff will endeavor to complete review of permits for more complex permits in 10 - 20 business days. Should the city need to use the services of outside professionals to review the application materials, 30 business days, or more, may be necessary.

Proposed language: Revise section V 1. d) and h) (pg 8); V 2. d) and h) (pg 9 & 10) as follows:

d) Backfill and base materials shall be compacted in 12" maximum lifts, including the pipe zone. Methods for compaction in the pipe zone shall be in conformance with pipe manufacturers' specifications/recommendations.

Deleted: . Six inch (6") maximum lift in the pipe zone

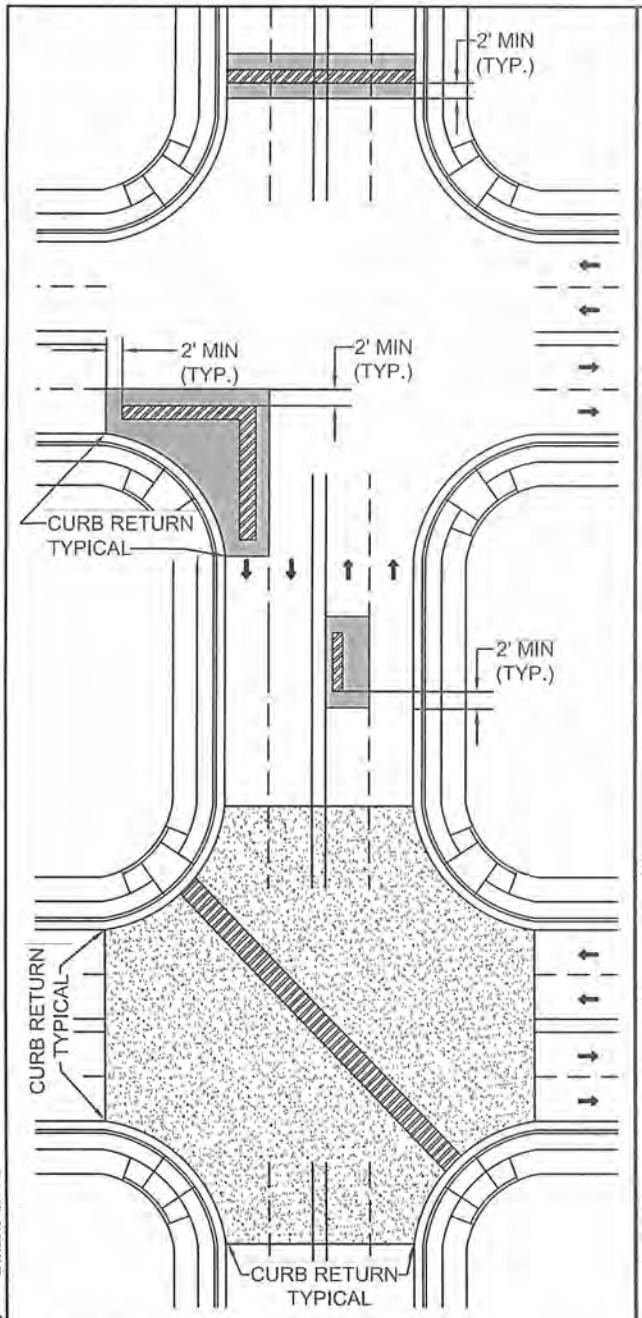
h) ODOT (latest version of Oregon Standard Specifications for Construction) spec Hot Mixed Asphalt Concrete (HMAC) shall be installed in lifts to match the existing pavement thickness in 2" lifts. Replacement HMAC minimum thickness is 4 inches (2 – 2 inch lifts) or the thickness of the removed asphalt, whichever is greater. Minimum asphalt density is 90% in lower lifts and 92% of maximum specific gravity in top lift. The City inspector may exercise professional judgment in allowance for variation to these maxima but in no case more than a 2% variation.

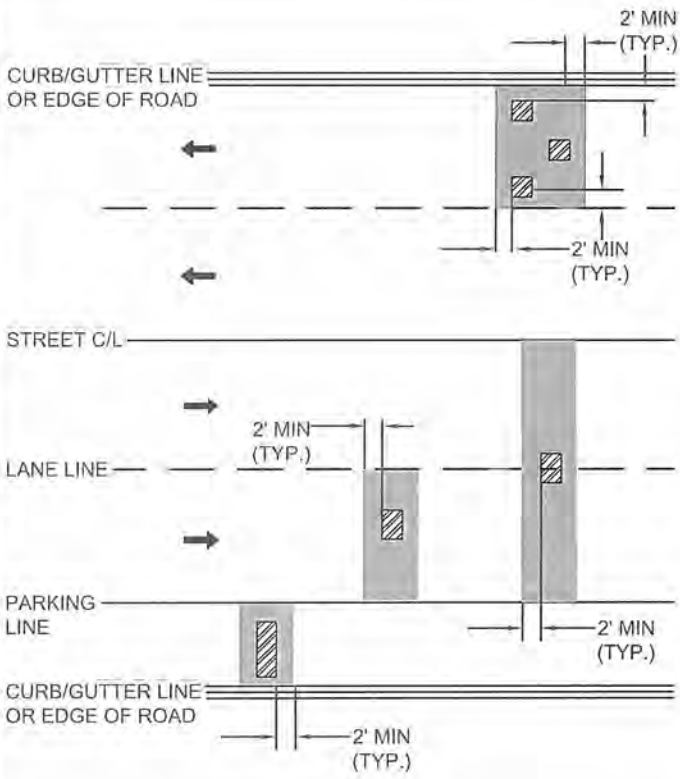
Drawing SS 2.1 NOTES:

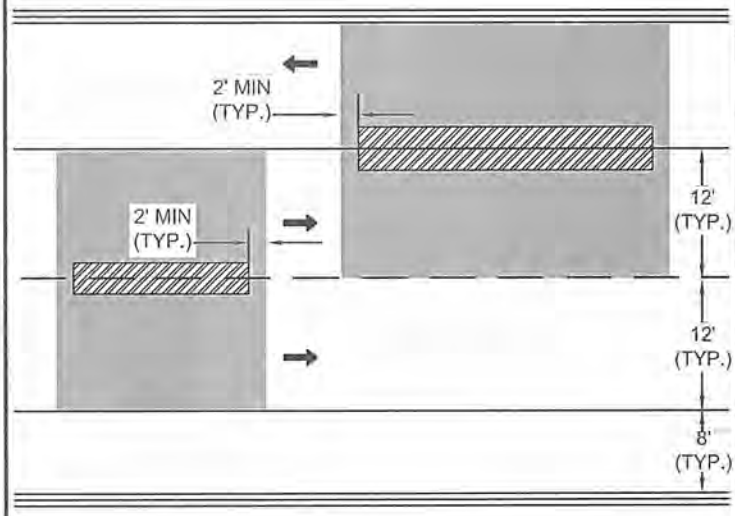
8. Should be revised to read - Backfill in pipe zone shall be placed in maximum 12" lifts and compacted as specified/recommended by pipe manufacturer, typically 95% of max density AASHTO T-99.

Drawing SS 2.0 AND 2.2

Language regarding the pipe zone should be revised from "...PLACED IN MAXIMUM 6" LIFTS." To read "...PLACED IN MAXIMUM 12" LIFTS."







LEGEND

UTILITY/STREET CUT

CITY STANDARD RESTORATION REQUIREMENTS

SITE RESTORATION TO BE CONDITIONED BY PUBLIC WORKS

NOTE:

1. FOR DETAILED NOTES REFER TO DETAIL RD 1.1

LEGEND

TRENCH LIMITS AT THE SURFACE OF PAVEMENT.

WHEN PAVEMENT IS LESS THAN 3-YRS OLD, FULL-DEPTH PAVEMENT PATCH IS REQUIRED TO THESE LIMITS. NO JOINTS OR REDUCTION IN AREA ARE ALLOWED.

NOTE:

1. FOR DETAILED NOTES REFER TO DETAIL RD 1.1

City of Coos Bay
ENGINEERING DEPARTMENT
500 Central Avenue
Coos Bay, Oregon 97420
541-269-8918

DRAWN BY: JESSICA SPANN

REVISIONS

REVISED BY:	DATE:

MORATORIUM STREET AC REPLACEMENT DETAIL

DRAWING NO. RD 1.0

DATE FEB. 2014

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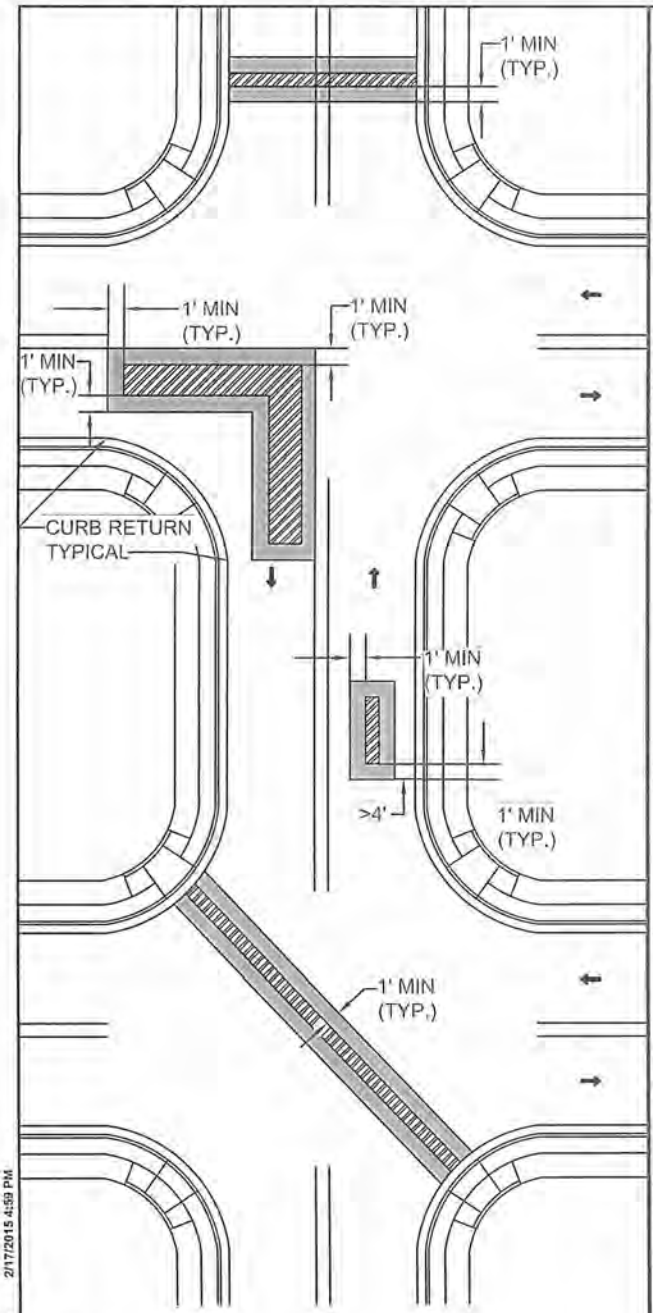

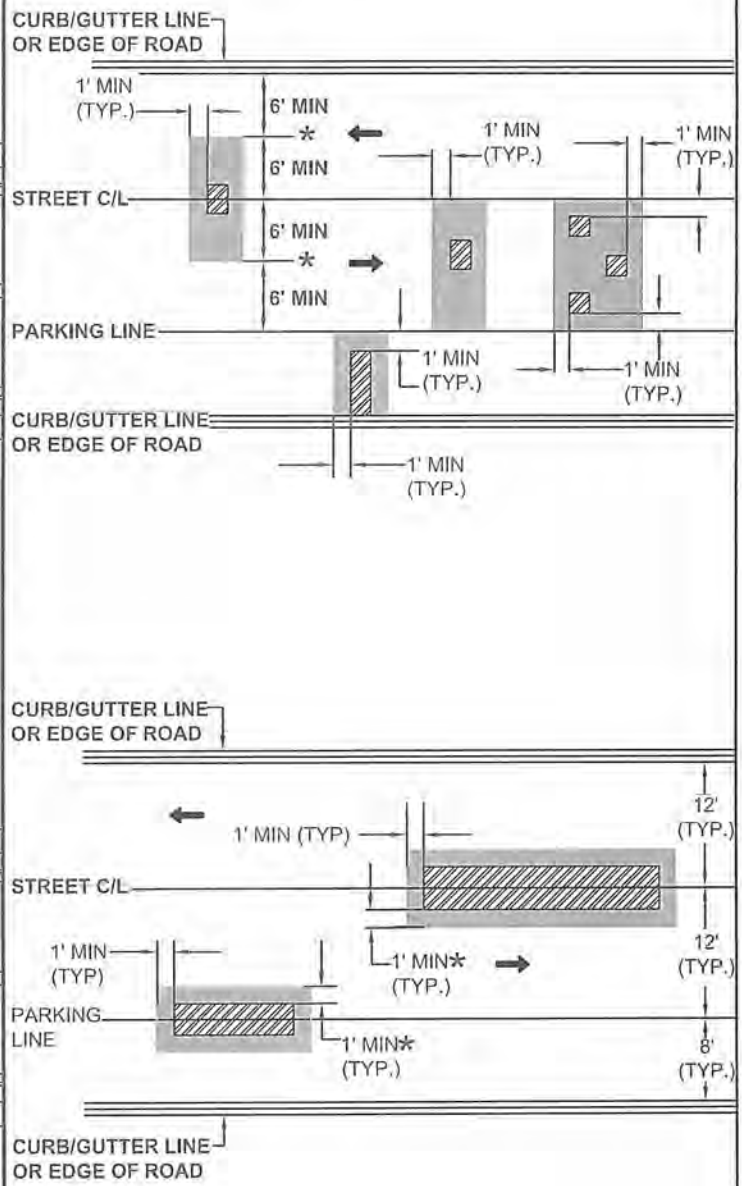

LEGEND

UTILITY/STREET CUT

CITY STANDARD RESTORATION REQUIREMENTS

NOTE:
1. FOR DETAILED NOTES REFER TO DETAIL RD 1.1

LEGEND

TRENCH LIMITS AT THE SURFACE OF PAVEMENT.

WHEN PAVEMENT IS GREATER THAN 3-YRS OLD, FULL-DEPTH PAVEMENT PATCH IS REQUIRED TO THESE LIMITS. NO JOINTS OR REDUCTION IN AREA ARE ALLOWED.

* PAVEMENT RESTORATION/REPAIR SHALL EXTENDED BEYOND WHEEL PATH.

NOTE:
1. FOR DETAILED NOTES REFER TO DETAIL RD 1.1

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City of Coos Bay ENGINEERING DEPARTMENT 500 Central Avenue Coos Bay, Oregon 97420 541-269-8918	DRAWN BY: JESSICA SPANN REVISIONS REVISED BY: / DATE:	**NON-MORATORIUM STREETS AC REPLACEMENT DETAIL**	DRAWING NO. RD 1.2 DATE FEB. 2014

DRAFT DOCUMENT

City of Coos Bay

Public Works & Development Dept.

500 Central Ave., Coos Bay, Oregon 97420 • Phone (541) 269-8918
Fax (541) 269-8916

RESTORATION POLICY FOR UTILITY AND SERVICE LATERAL INSTALLATION IN CITY OF COOS BAY RIGHT-OF-WAY

March --, 2015

The Citizens of Coos Bay, having invested substantial public and private funds in the construction and maintenance of the existing public roadway system within the City, desire to protect and prolong these investments, and maintain a safe, clean roadway environment. Therefore, prior to cutting into any road surface and/or excavating within the right-of-way of public streets a permit authorizing such activity is required as is proper repair to any resulting damage to the pubic street right-of-way or road surface. The legal basis for this City Policy is established in the Coos Bay Municipal Code, Title 12, Chapter 12.25, Utility Use of Streets.

In an effort to better manage pavement degradation from the effects of utility cuts, the City of Coos Bay imposes a 3-year moratorium on cutting into all new pavement surfaces. This will include overlays, inlays, reconstruction, and new construction of at least a half street or greater.

Through research of other municipalities throughout the country and from the City's own experience with trench cuts, it is clear that trench cuts significantly alter and degrade pavement surfaces adjacent to the actual trench line. The City of Coos Bay is implementing this policy to reduce the negative impacts of the trench cut.

Public interest in the integrity, ride-ability and appearance of new street surfaces is significant. Residents don't appreciate new streets being dug up by utility trenches. However, in the event of an emergency or a new development, it will occasionally be necessary to cut into a street that has been paved within the past three years. This policy establishes the basis and process for determining the level of repair and replacement for utility cuts for **both** old and newly paved streets.

City of Coos Bay Street Cut Policy

I. Definitions

"Arterial street" means a street of considerable continuity which is used primarily for through traffic and travel between large areas. This includes all state highways and major routes leading into and through the city.

"City" means the city of Coos Bay.

"Collector street" means a street penetrating neighborhoods, collecting traffic from local streets in the neighborhood and channeling it into the arterial system.

"Compaction" means restoration and backfill of a utility trench with appropriate back fill material that is compacted in lifts using the industry standard equipment to tamp the backfill material to the proper density.

"Department" means the public works department.

"Director" means the public works director or his/her designee.

"Excavation" means digging, scooping, hollowing out or other removal of soil or earth.

"Full depth" means pavement depth top to base of pavement or thickness of pavement

"Keyhole" means a technology for core drilling; used to drill a plug in the asphalt when checking the depth of existing utilities.

"Local Street" means a street which is primarily to provide direct access to abutting property and for local traffic movement.

"Moratorium street" means any street pavement surface that has been constructed, reconstructed, paved, or overlaid (including asphalt, chip seal, slurry seal, or similar process/material) by City forces, under City contract, or under permit shall not thereafter be cut or opened for a period of 3 years.

"Neighborhood street" means a street that is generally longer than a local street and provides connectivity to collectors or arterials. Neighborhood streets have greater connectivity and generally have more traffic than local streets and are used by residents in the area to get into and out of the neighborhood.

"Non-moratorium" street means any street that was constructed, reconstructed, or paved by City forces, under City contract, or under permit more than 3 years prior to time of application for a utility permit.

"Permitee" means the person who submits an application for and receives a permit to obstruct and/or conduct construction, installation or maintenance operations in the public right-of-way.

"Person" means a natural person; a corporation, partnership, limited liability company; or any other entity in law or fact.

"Potholing" means the practice of digging a test hole to expose underground utilities to ascertain the horizontal and vertical location of the facility.

"Public improvement" means any street, sidewalk, curb, gutter, sewer line or other public improvement which is located in a public right-of-way and which will be dedicated or otherwise transferred to the city at the time the improvement is completed, or any other improvement over which the city has regulatory authority.

"Public rights-of-way" (ROW) means any real property owned by the city that is used for the free and unimpeded passage of the public; any lesser interest in real property held by the city which contains a grant for the free and unimpeded access by the public across such property. Public rights-of-way include, but are not limited to, streets, roads, highways, bridges, alleys, sidewalks, public trails and paths, and all other easements which provide the public with a right of access or give the city the right to construct, maintain, repair and operate a public improvement. As used in this policy, public rights-of-way includes subsurface and air space over the property.

"Qualified professional" means a licensed contractor, licensed professional engineer, or utility employee with significant applicable experience to 1.) Prepare a street or surface repair plan in conformance with the requirements of this policy; and 2.) Ensure that repair work done in the ROW meets the requirements of this policy.

"Service lateral" means pipe or similar conduit connecting a building or property to the City's wastewater or stormwater main. The purpose for which is to provide wastewater/stormwater service to the building or property.

"Sewer permit" means a City of Coos Bay Sewer Connection/Sewer Cap/Sewer Repair Permit obtained to connect or repair a service lateral.

"Street" means any part of the full dedicated width or length of a public street, alley, place or easement.

"Travel lane" means the traveled area of the street established based on striping, or where there is no striping, shall be twelve feet (12'- 0") in width.

"Utility" means a person, firm, corporation, company, board, or commission, whether public or private, which owns, possesses, or maintains over, on, or under the public streets, alleys, places and easements within the city any poles, wires, cables, conduits, pipelines or other fixtures. "Utility" does not mean privately owned water, sanitary sewer, or storm drainage laterals connecting an individual building to a Coos Bay/North Bend Water Board water main or to a City of Coos Bay sanitary sewer or storm drainage main.

"Utility Permit" means a permit to install franchised utility mainlines (pipe, conduit, wire, or similar conveyance) and the service connections to the franchise utility mainline infrastructure within the City of Coos Bay right-of-way or properties.

II. Introduction

To ensure that City streets are functional and to provide reasonable regulation of excavations this policy is authorized by and further clarifies the Coos Bay Municipal Code, Chapters 12.20 and 12.25. No person or utility shall excavate or cause an excavation within any public right of way until the department has issued an applicable City permit for such excavation to the person/ utility. Prior to any work being performed (this can include but is not limited to excavation, cut, open trench, use of no dig/trenchless technology, bore pit, pipe bursting, etc.) within a City street and/or right-of-way (ROW) the person/utility shall:

1) Submit the appropriate permit application, supporting documents, and for service laterals, the necessary fee(s) to the City.

2) Receive permit approval, coordinate with City and other applicable entity staff, and commence work. A bond will be required before issuance of permits involving service laterals.

3) Be responsible to coordinate all non-City utility issues and for quality of work performed by excavators and pavers to ensure all City policies, standard and details are met.

4) Be responsible for performance, maintenance and repair of their utility/lateral trench for the warranty life of the trench (see section XIV). The person/utility is responsible for restoration to the pavement surface above due to installation, repair, or failure of the utility infrastructure, lateral, trench and trench material for the warranty life of the trench.

When determining conditions of approval for the permits to perform cuts for utility or lateral installation, repair, relocation, or replacement, Department staff will consider location of work, the age of the pavement, the street classification(s) (arterial, collector, neighborhood/local), disturbance to curb and sidewalk, traffic and pedestrian control, traffic and pedestrian detours,

need for public notifications, and quality control. The Department has the right to deny a permit or issue a stop work order for non-compliance.

III. Moratorium Street (Exception Process)

After any street has been constructed, reconstructed, paved or overlaid by City forces, under City contract, or under permit, the pavement surface shall not thereafter be cut or opened for a period of 3 years. It is understood that field conditions may warrant an exception to this Policy. However, the exception process in NO WAY obligates the Director to allow cutting or opening the moratorium street, and any such decisions are at the Director's discretion.

A utility desiring to perform work in moratorium streets shall schedule a pre-application meeting with Department staff prior to submittal of a permit application. The fee for the pre-application is set by the City Council in the City's fee resolution and is due at the time the application is submitted. If an exception is granted, the Department will make a concerted effort to protect the integrity of the pavement structure, and to ensure a high quality replacement patch or overlay. When granting exceptions to this policy, the Director may impose conditions determined appropriate to insure the rapid and complete restoration of the street and the surface paving.

IV. Permits for Non Moratorium Streets and Moratorium Streets with Approved Exception

1) No excavation or tunneling shall be performed under any area within public rights-of-way prior to first obtaining the applicable permit from the City (permits for emergency work may be issued after the fact per this policy). Utility and sewer permits are managed through the City of Coos Bay Public Works Department (541-269-8918). Supporting documents may include a scope of work, re-striping plan, erosion and sediment control plan, etc. as necessary. Online applications can be made at: www.coosbay.gov (on the Public Works Department page) or you may pick one up at the Public Works Department, City Hall, 500 Central Avenue, Coos Bay, OR.

2) Applications for utility permits shall be made on forms provided by the City. The applicant shall describe the purpose, location, and size of the anticipated utility construction project (work), the name of the person/firm performing the actual work, and the name of the person/firm for whom the utility work is being performed. The application shall be endorsed by the person/firm for whom the work is being performed or the person's/firm's agent. By signing the application, it is understood that the person/firm performing the utility work will comply with the requirements of this policy and any conditions imposed upon the work. Applicants for permits to work in moratorium streets shall first schedule a pre-application meeting with the Department staff prior to submitting an application.

3) The appropriate sewer permit fees are due at the time of application for the permit to install, repair or maintain a service lateral. The permit fee is per current City Council fee schedule

resolution. Online applications can be made at: www.coosbay.gov (on the Public Works Department page) or may be picked up at the Public Works Department, City Hall, 500 Central Avenue, Coos Bay, OR. A bond is due prior to issuance of the permit. The bond may be a cash deposit, performance bond, or other security acceptable to the city attorney, to insure proper restoration of the ROW. The security shall be released by the City upon final inspection and approval of the permit. If the ROW is not restored in accordance with the permit, the expense, if any, incurred by the city in cleaning up and removing material and debris and restoring the ROW shall be deducted from this security. The balance, if any, shall be returned to the person/firm posting the security after excavation is complete and the ROW has been restored to good order and condition as the property was in immediately prior to the time excavation was undertaken. The applicant shall be responsible for reimbursing the City for any expenses incurred beyond the amount of the security.

4) A motor vehicle and pedestrian traffic control plan shall be submitted with each utility and sewer permit application for work within the right-of-way for all excavations affecting motorists and pedestrians. The plan shall be based on the functional classification of the street(s) and the amount of traffic using the Manual of Uniform Traffic Control Devices (MUTCD Part 6 – Temporary Traffic Control) for guidance or reference Oregon Department of Transportation (ODOT), TM 800 found on ODOT website:

   http://www.oregon.gov/ODOT/HWY/ENGSERVICES/pages/traffic_drawings.aspx.

   Depending on the impact to traffic, pedestrians, businesses or residents, public notification plans (signs, advertisements, flyers, public service announcement, etc.) may be necessary and submitted as part of the permit application. It shall be the responsibility of the utility and sewer permit applicant or the duly authorized representative to coordinate with all affected neighbors. A pedestrian detour route shall be clearly delineated whenever sidewalks are obstructed.

5) Emergency utility or service lateral repair work necessary for the immediate preservation of life or property is acceptable; provided that any person making such emergency repair work notifies the City of the emergency as soon as they call for emergency locates, then applies for the appropriate permit on the first working day after which the work is commenced. For emergency repair involving the City's sanitary sewer or stormwater system, the applicant shall provide photographs of the connection to the City main, crossing of City main, alignment of service lateral relative to permanent reference points as well as a televised pipe investigation recording showing that this repair has been completed per City standards. The ROW restoration for such emergency repairs shall be in conformance with the criteria stated in this policy. Note, work necessary to locate trouble in conduit or pipe causing the emergency situation is considered part of the emergency repairs.

6) When traffic conditions, safety or convenience of the public has necessitated ROW utility or service lateral construction and repair be performed as quickly as possible, as determined by the Director, the Director shall order that the permittee provide adequate personnel, equipment, and facilities on a 24-hour basis such that the utility or service lateral work be completed as soon as practicable. This may include, but is not limited to, flaggers, temporary traffic control signs and devices, lighting, etc. The permittee shall be responsible for the cost of providing the necessary personnel, equipment, and facilities.

7) If work is being performed within Highway 101 (including North and South Broadway and Bayshore Drive), in addition to complying with this policy, the applicant shall coordinate with the Oregon Department of Transportation (ODOT) and comply with their requirements prior to commencement of work. The utility/permittee shall provide a copy of the ODOT permit to work in its ROW to the Department.

V. Street and Surface Repair Plan

1) Street and Surface Repair Plans for **moratorium** streets; should an exception be approved to cut into a moratorium street, the applicable permit application to cut into moratorium streets shall be accompanied by a street or surface repair plan prepared by a qualified contractor or utility personnel. The Director may require the plan be prepared by a qualified licensed engineer for complex situations. Said plan shall include street or surface repairs consistent with this policy and conditions, if any, imposed by the Director during the pre-application meeting along with a location map for the original installation or relocation of the wires, pipelines or conduits. In the case of utility pipelines and conduits, the utility shall also provide a profile map in addition to a location map.

   Pavement cuts shall be full depth and extend 2 feet (2’ 00”) beyond the nominal trench edge longitudinally and transversely. Sawcutting beyond the minimum of 2’0” may be required as field conditions dictate. There shall be no gaps less than four feet (4’ 00”) from curb or gutter. Sawcuts shall be parallel or perpendicular to the travel lanes. No jagged, broken or undermined edges. See detail SS 2.0, SS 2.1, RD 1.0, and RD 1.1, and all referenced details called out within those RD and SS details. Pavement repair/replacement shall extend the full width of all established travel, bike, parking, and turn lanes on either side of the trench. Milling or grinding may be employed, as necessary, outside the full depth asphalt removal limits to achieve full patch/repair limits. Minimum depth of milling or grinding shall be two inches (2”).

   The permittee shall be responsible for back filling the trench and making the pavement repair in compliance with City standard and specifications. All materials shall meet the City’s specifications. In the absence of City specifications, use the current edition of ODOT’s “Oregon Standard Specifications for Construction.” For moratorium streets, the permittee shall employ third party construction inspection and material testing services to ensure conformance with City specifications. Results shall be provided to the City. Failure to adequately meet minimal standards shall result in re-excavation and re-work of the trench

and resurfacing to the satisfaction of the City. If the applicant fails to rectify the problem, the director may cause the resurfacing to be done, and the costs therefore assessed against the applicant.

If the Public Works Director determines that final repaving of the street is not appropriate at that particular time for reasons relating to weather or other short term problems, the Public Works Director may grant a delay until proper conditions allow for repaving. Temporary repair guidelines in Section X of this policy will be followed.

Reference shall be made to the attached details (SS 2.0, SS 2.1, RD 1.0, and RD 1.1, and all referenced details called out within those RD and SS details) and to applicable City of Coos Bay engineering standards and details.

a) Trench backfill material shall be 1"- 0 or ¾" – 0 crushed aggregate meeting ODOT Class B specifications found in the 2008 Oregon Standard Specifications for Construction sections 00641 and 02630.

b) Refer to detail SS2.0 & SS2.1 for suitable backfill material.

c) 12-inch minimum of aggregate base course (ABC) material shall be used on City streets.

d) Backfill and base materials shall be compacted in 12" maximum lifts. Six inch (6") maximum lift in the pipe zone.

e) Backfill and base materials shall be compacted by a mechanized tamper (i.e. jumping jack) for most excavations, however, vibratory rollers > 18" width may be used for larger excavations. Plate tamping will be allowed at the discretion of the City.

f) ABC and sub-base compacted to 95% of maximum dry density as defined by a Standard Procter Test.

g) All existing AC pavement shall be sawcut immediately prior to repaving. 2-foot cutbacks of existing asphalt shall be made on undisturbed soil. Clean square cuts shall be applied with tack to all asphalt joints.

h) ODOT (latest version of Oregon Standard Specifications for Construction) spec Hot Mixed Asphalt Concrete (HMAC) shall be installed in lifts to match the existing pavement thickness in 2" lifts. Replacement HMAC minimum thickness is 4 inches (2 – 2 inch lifts) or the thickness of the removed asphalt, whichever is greater. Minimum asphalt density is 92% of maximum specific gravity.

i) All pavement joints shall be sand sealed with asphalt sealer meeting ODOT specifications.

2) Street and Surface Repair Plans for **non-moratorium** streets; the applicable permit application for work required to trench or excavate shall be accompanied by a street or surface repair plan prepared by a qualified professional. The City reserves the right to require plans be prepared by a licensed professional engineer when, in the opinion of the Director, field conditions or the magnitude of trench repair dictates. The applicant shall ensure all placed materials conform to City specifications and shall provide proof of conformance at the City's request.

   Where utility construction impacts pavement more than 3 years old, the applicant shall provide a pavement repair and replacement plan with the permit application. The plan shall include proposed pavement cut and trench cut dimensions. The City will review the plan for conformance with detail RD 1.0, RD 1.1 and SS2.0 and SS 2.1, and all referenced details called out within those RD and SS details. Pavement restoration/repair shall extend beyond the wheel path to the middle of the travel lane of the lane impacted by the trench cut. Pavement cuts shall be full depth and extend one foot (1'0") beyond the nominal trench edge longitudinally and transversely. There shall be no gaps four feet (4'0") or less from curb or gutter. The paving area may require extended saw-cutting beyond either end of the trench in addition to the minimum of 1'0" depending on the conditions. Milling or grinding shall be employed as necessary. Minimum depth of milling or grinding shall be two inches (2").

   If the Public Works Director determines that final repaving of the street is not appropriate at that particular time for reasons relating to weather or other short term problems, the Public Works Director may grant a delay until proper conditions allow for repaving. Temporary repair guidelines in Section X of this policy will be followed.

   Reference shall be made to the attached details and to applicable City of Coos Bay engineering standards and details.

   a) Trench backfill material shall be 1"- 0 or ¾" – 0 crushed aggregate meeting ODOT Class B specifications found in the 2008 Oregon Standard Specifications for Construction sections 00641 and 02630.

   b) Refer to detail SS2.0 & SS2.1 for suitable backfill material.

   c) 12-inch minimum of aggregate base course (ABC) material shall be used on City streets.

   d) Backfill and base materials shall be compacted in 12" maximum lifts. Six inch (6") maximum lift in pipe zone.

   e) Backfill and base materials shall be compacted by a mechanized tamper (i.e. jumping jack) for most excavations, however, vibratory rollers > 18" width may be used for larger excavations. Plate tamping will be allowed at the discretion of the City.

f) ABC and sub-base compacted to 95% of maximum dry density as defined by a Standard Procter Test.

g) All existing AC pavement shall be sawcut immediately prior to repaving. 1-foot cutbacks of existing asphalt shall be made on undisturbed soil. Clean square cuts shall be applied with tack to all asphalt joints.

h) ODOT (latest version of Oregon Standard Specifications for Construction) spec Hot Mixed Asphalt Concrete (HMAC) shall be installed in lifts to match the existing pavement thickness in 2" lifts. Replacement HMAC minimum thickness is 4 inches (2 – 2 inch lifts) or the thickness of the removed asphalt, whichever is greater. Minimum asphalt density is 92% of maximum specific gravity.

i) All pavement joints shall be sand sealed with asphalt sealer meeting ODOT specifications.

The permittee shall be responsible for back filling the trench and making the pavement repair in compliance with City standard and specifications. All materials shall meet the City's specifications. In the absence of City specifications, use the current edition of ODOT's "Oregon Standard Specifications for Construction." Failure to adequately meet minimal standards shall result in re-excavation and re-work of the trench and resurfacing to the satisfaction of the City. If the applicant fails to rectify the problem, the director may cause the resurfacing to be done, and the costs therefore assessed against the applicant.

VI Manner of Excavation for Moratorium & Non Moratorium Streets

1) The permittee shall perform utility construction in the ROW in such a manner so as to avoid unnecessary inconvenience or annoyance to the general public and occupants of neighboring properties. The permitee shall take appropriate measures to reduce, to the fullest practicable extent, noise, dust and unsightly debris. Between the hours of 6:00 p.m. and 7:00 a.m., the utility shall not, except in case of emergency, use any tool, appliance or other equipment producing noise of sufficient volume to disturb the peace or repose of occupants of neighboring properties.

2) No permittee shall perform any utility or service lateral construction or repair work at variance with, or in any way contrary to, the terms of their permit issued therefore. All trenches must be braced/shored in a manner consistent with OSHA requirements. Excavation shall not at any point extend underneath or beyond the width of the opening at ground level.

3) No damage or injury shall be done to pipes, cables or conduit in making excavation. Notice shall be given to all persons maintaining pipes, cables or conduit which are or may be endangered or affected by the excavation prior to the time excavation commences.

4) Damage or injury to any vegetation, tree or shrub or the roots thereof, shall be avoided. No root greater than three (3) inches in diameter shall be cut. If damage occurs, the permittee will be required to replace. Prior to any removal of a tree in the ROW, approval must be obtained through the City of Coos Bay Tree Board unless the work is an emergency. Any tree removed will be replaced at the expense of the permittee and may be planted, with concurrence of the Tree Board, at another location.

5) The permittee shall adequately barricade the area under construction, and shall install sufficient warning devices to protect the public.

6) All permittees shall call (811) or (1-800-332-2344) to utilize the Oregon Utility Notification Call Center (OUNCC) for locate requests, marking, positive response, etc. prior to excavation and with proper request times (i.e. 48-hours in advance). Permittees shall exercise appropriate caution to avoid damage and ensure safety. All permittees are subject to federal regulations, State of Oregon statues, Coos Bay Municipal Code, Coos Bay Engineering Design Standards for adherence to excavation rules and penalties.

7) Prior to commencing work, appropriate traffic control shall be installed and implemented by the permittee in accordance with the approved traffic control plan pursuant to the Manual of Uniform Traffic Control Devices (MUTCD Part 6 –Temporary Traffic Control) guidance or http://www.oregon.gov/ODOT/HWY/ENGSERVICES/pages/traffic_drawings.aspx. If necessary, the public notification plan will be implemented.

8) All excavated native material not meeting trench backfill standards shall be disposed of properly.

9) It shall be the responsibility of the permittee to employ good housekeeping on the project site from start to finish of construction. Additionally it shall be the responsibility of the permittee to employ temporary sediment and erosion control throughout the duration of construction.

10) All asphalt cuts shall be sawcut to create a clean and straight edge.

VII. Final Asphalt and Striping Restoration

Upon completion of the utility and service lateral work, the permittee shall restore pavement (per V above) and striping to the dimensions and methods in the permit and approved street and surface repair plan. Any alternate material shall first be approved by the Department prior to placement. Under no circumstances shall the permittee attempt to skin patch on top of existing asphalt. Removed traffic markings or striping shall be restored using what was in place originally; thermo-plastic or thermo plastic paint with reflectivity (consult Department staff for material specifications). Temporary traffic markings or other means acceptable to the Department shall be used to maintain traffic safety until original striping and markings are restored.

VIII. Gravel Streets

When trenches are excavated in streets or alleys that have only a gravel surface, the permittee shall replace such surfacing on a satisfactory compacted backfill with gravel conforming to City specification aggregate base course. Gravel replacement shall be one (1) inch greater in depth to that which originally existed, but not less than four (4) inches. The surface shall conform to the original street grade. Where the completed surface settles, additional gravel base shall be placed and compacted by the applicant within fourteen (14) days after being notified by the City, to restore the roadbed surface to finished grade (see section XIV for warranty period). Some streets may have been treated with a special surface treatment to control dust and/or bind the aggregates together. In these cases, the permittee is responsible for installing the gravel surface using the same surface treatment that existed prior to the excavation work or a substitute acceptable to the Department. The Department shall note on the permit what, if any, surface treatment will be required.

IX. Driveway, Curbing & Sidewalk Restoration

Where excavations impact a driveway, curbing, sidewalk or signs, restoration of the same shall be in conformance with City standards. The permittee shall reference all applicable City of Coos Bay technical standards and details to restore these facilities. Directional drilling methods may be used to cross under a driveway, curb or sidewalk; however, there will be no tunneling or jetting for this purpose. When necessary to remove sidewalk sections, the concrete shall be removed to neatly sawed edges to full depth for sidewalks, curb, and gutter. The sawcuts shall be in straight lines either parallel to the curb or perpendicular to the alignment of the sidewalk or curb. Any removal shall be done to the nearest joint. Replaced sections may require doweling connections if required by the Department. Concrete provided for restoration shall be from a drum mix. The permittee shall contact Department staff to schedule an inspection of the forms prior to placement of concrete to confirm that the restoration follows City guidelines and standards.

X. Temporary Repair

Where construction and repair activities require a trench to be backfilled or covered for any reason, including restoring traffic, resuming construction, or awaiting asphalt restoration, the permittee shall safely maintain the trench and all traffic control until the following temporary pavement repairs are made on a suitable base in a safe manner. For local and neighborhood streets up to 45 days, use 6” compacted ABC gravel; for > 45 days, discuss with Department staff for approved material. For arterial and collectors, less than 24-hours – 6” compacted ABC gravel; 1 - 45 days – 6” compacted ABC gravel topped by 1” cold patch asphalt; > 45 days, discuss with Department staff for approved material. Steel plates may be used under certain circumstances up to 30 days with prior approval from the City. Depending on the type of street and weather conditions the City reserves the right to determine the type of temporary asphalt repairs required at that time.

XI. Concrete Street Restoration

Restoration requirements for concrete streets shall be determined on a case by case basis in consultation with Department staff. Concrete pavement, driveways, streets, and alleys shall be removed to neatly sawed edges (using a concrete saw) cut to full depth. For a utility-cut, the repair section needs to be kept at least 2 feet away from an existing joint or pavement edge. If the repair would fall within 2 feet of a joint or edge, extend the repair to joint or edge. The width of the concrete cut shall extend 12 inches (1 foot) beyond each side of the excavation. This is to allow a shoulder of at least 12 inches of subgrade on each side of the trench to minimize undermining of the existing concrete and to help support the concrete patch. Need for dowels, keyways, or tie bars shall be determined on a case by case basis considering the condition of existing and adjacent slabs. At a minimum, replacement concrete slabs to be installed upon completion of the trench shall be as listed in the latest edition of ODOT/APWA Standard Section 00756 (Plain concrete Pavement). Any alternate material shall be first approved by the Department prior to placement. New concrete shall be applied to the same thickness as existing conditions. Care shall be made not to undermine the existing panels. All joints shall be sealed with material approved by the City. Asphalt over concrete road cuts shall be discussed with Department staff before beginning work (except in the case of an emergency situation).

XII. Worksite Safety and Access

Any permit holder conducting utility or service lateral installation, repairs, and excavation shall take reasonable actions and precautions to ensure that such work does not endanger people or property. The work shall be in such a manner as to minimize the interference with the free and proper use of public streets, alleys, sidewalks, bridges, etc. The work shall not hinder with the operation of any other utilities. The permittee is responsible for following all Federal and Oregon OSHA requirements.

XIII. Exceptions

Valve and manhole repairs shall be exempt from the patching requirements of this policy. Valve and manhole patching requirements shall be per the City's engineering standards. All warranty and construction requirements shall be met. No longitudinal construction joints shall be allowed in the wheel path.

Potholing to find utilities, along with key holing, shall be allowed. To be exempt from this policy, cuts shall be a maximum of two-feet square (2'-0") with no longitudinal joints in the wheel path and shall be backfilled with approved fill from six inches above the utility to six inches below bottom of asphalt. Round vs. square cuts are preferred.

XIV Warranty Requirements

1) Permittees shall be responsible for the performance of their trenches in the ROW and their trench cut pavement repairs for three (3) years for moratorium streets and one (1) year for non-moratorium streets. Permittees shall be responsible for repair to failing or failed trenches and trench cut pavement repairs during the warranty period.

2) All curbs, sidewalks and structures damaged by the failure of permittees' trench or trench cut repair shall be repaired by the responsible permittee.

3) All warranty work requires permittee meet specification and testing requirements required in section V, as applicable.

4) The following defects identified by City staff shall be covered by the warranty:
    i) Sunken pavement patches greater than or equal to one-fourth inch as determined by the ODOT straight edge method.
    ii) Poor workmanship.
    iii) Failure to meet compaction per standards in this policy.
    iv) Sunken or damaged curb and sidewalks in excavation work area.
    v) Sunken or damaged catch basins in excavation work area.

5) Notice of Warranty Repairs:
    i) If emergency warranty repairs are needed due to safety concerns, the permittee shall have twenty-four hours in which to make safe and start such repairs from time of verbal notice by the City.
    ii) For non-emergency repairs on arterial/collector roads the permittee shall have forty-eight hours in which to make safe and start such repairs.
    iii) Residential streets, the utility shall have up to seven days to make such repairs.

XV. No Dig/Trenchless Technology

To minimize damage to road surfaces and other surface infrastructure, implementation of no dig/trenchless technology is the preferred method for most utility work.

Trenchless Technology Plan Requirements

Applicants for work in the ROW planning to use trenchless technology shall submit plans prepared by a qualified professional. Any qualified professional, as defined in this policy, experienced in trenchless utility installation may prepare plans for simple work. Typical "simple work" includes borings of 100' or less perpendicular to street alignment and borings of 200' or less parallel to road and sidewalk surfaces. For longer distances, the applicant shall meet with Department staff to discuss the proposed operations. The Director may require the plan to be prepared by a qualified registered civil engineer, geotechnical engineer or geological engineer licensed in the State of Oregon and require additional studies or information than those required for "simple work". The plans for "simple work", at a minimum, shall address/consider the following:

1) The proposed bore path should be planned to allow sufficient room from other utilities or structures for workers to perform maintenance or operations on adjacent utilities. There shall be a 5' minimum horizontal and 18" vertical separation between the proposed utility and City sewers. However, additional separation may be required depending upon depth of new utility installation, environmental factors, and engineering conditions.

2) The locations of other utilities within or adjacent to the proposed bore path must be shown. In preparing the plan, location of other structures such as manhole covers, valve box covers, meter boxes, telephone and cable television boxes, electrical transformers, conduit, or drop lines from utility poles, pavement patches, previous locator markers, heating oil tanks, utility vaults, and sewer lateral cleanouts shall be considered.

3) Determine the need for traffic control and/or flaggers. Provide appropriate traffic control measures in accordance with the MUTCD & ODOT highway standards. A Traffic Control Plan shall be submitted with the utility or sewer permit application.

4) Include proposed potholing locations.

5) Include pavement restoration details (as needed) according to this policy. This includes repair of borehole entry pits and potholes.

Drilling Fluid Handling

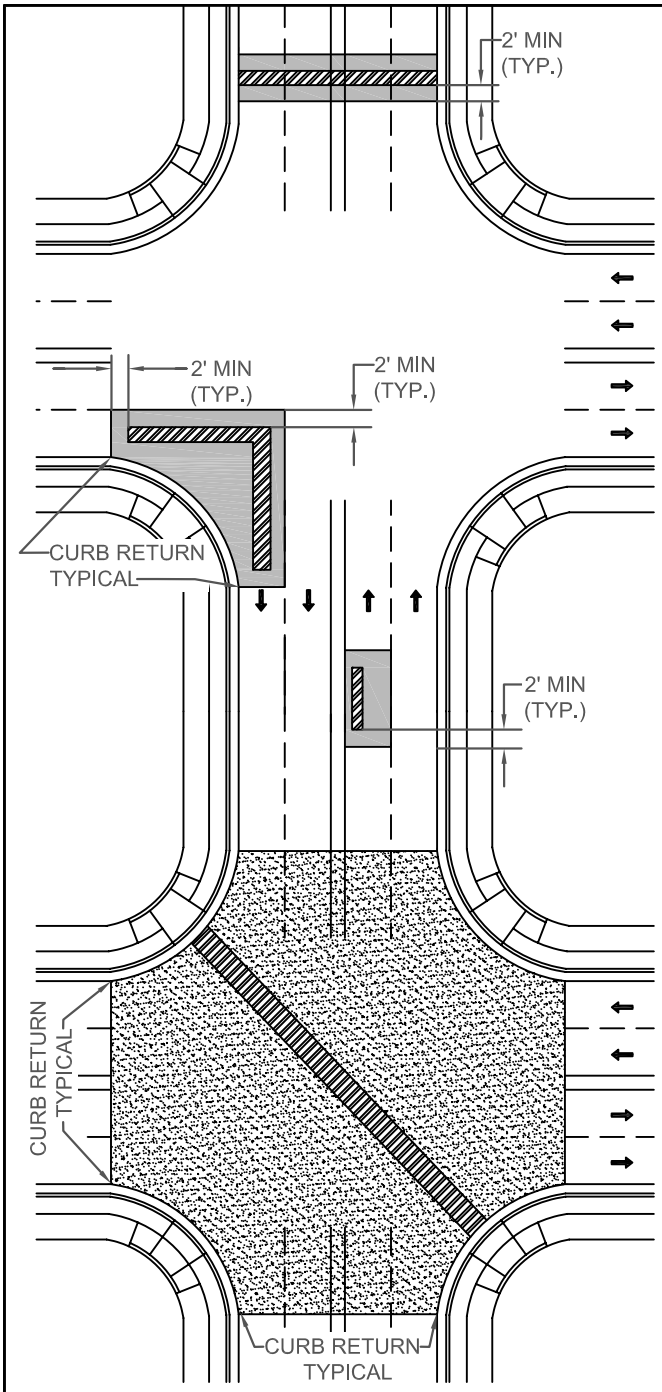
The trenchless technology contractor shall contain, handle, and dispose of drilling fluids in accordance industry and Oregon Department of Environmental Quality standards. Excess drilling fluid shall be confined in a containment pit at the entry and exit locations until recycled or removed from the site. Precautions shall be taken to insure that drilling fluid does not enter roadways, streams, municipal storm or sanitary sewer lines, and/or any other drainage system or body of water. Unintended surfacing of drilling fluid shall be contained at the point of discharge and recycled or removed from the site. Drilling fluids that are not recycled and reused shall be removed from the site and disposed at an approved disposal site.

Settlement/Heaving Monitoring

Trenchless technologies shall be performed in a manner that will minimize the movement of the ground in front of, above, and surrounding the boring operation; and will minimize subsidence of the surface above and in the vicinity of the boring. The applicant shall be responsible for the repair to City infrastructure resulting from heave or settlement caused by the use of the trenchless technology. All operations shall stop immediately whenever a vertical change in elevation of 1/2 inch or more, or any surface disruption is observed. The permittee shall then immediately report the amount of settlement to the Department.

Trenchless Technology Operations Guidelines

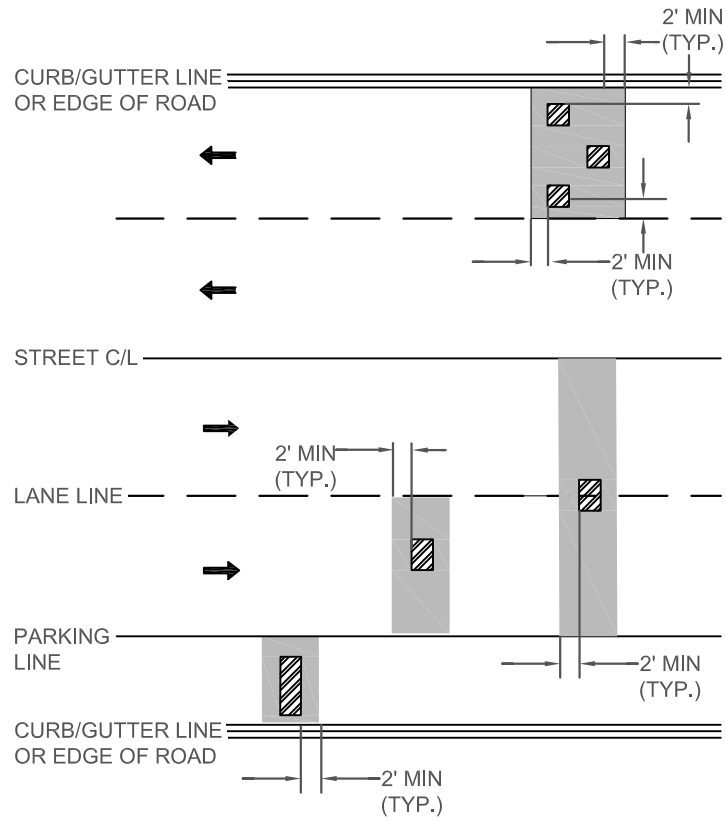
All construction work shall be performed in accordance with City requirements. The permittee shall ensure that all cleanup and restoration is in compliance with the City requirements for right of way restoration. In some cases determined by the Department, the permittee will televise, in the presence of Department staff, the City stormwater and wastewater components within five feet parallel to boring activity or crossed by the boring activity.

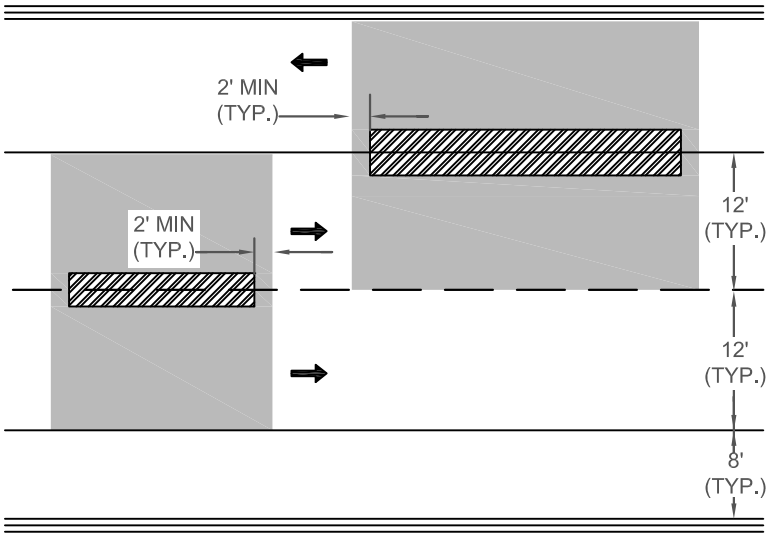


LEGEND

- UTILITY/STREET CUT
- CITY STANDARD RESTORATION REQUIREMENTS
- SITE RESTORATION TO BE CONDITIONED BY PUBLIC WORKS

NOTE:
1. FOR DETAILED NOTES REFER TO DETAIL RD 1.1





LEGEND

- TRENCH LIMITS AT THE SURFACE OF PAVEMENT.
- WHEN PAVEMENT IS LESS THAN 3-YRS OLD, FULL-DEPTH PAVEMENT PATCH IS REQUIRED TO THESE LIMITS. NO JOINTS OR REDUCTION IN AREA ARE ALLOWED.

NOTE:
1. FOR DETAILED NOTES REFER TO DETAIL RD 1.1

City of Coos Bay
ENGINEERING DEPARTMENT
500 Central Avenue
Coos Bay, Oregon 97420
541-269-8918

DRAWN BY: JESSICA SPANN	
REVISIONS	
REVISED BY:	DATE:

MORATORIUM STREET AC REPLACEMENT DETAIL

DRAWING NO. **RD 1.0**

DATE **FEB. 2014**

NOTE:

1. THE EXISTING AC SHALL BE SAWCUT THROUGH ENTIRE AC SECTION PRIOR TO EXCAVATION.

2. WORK RESULTING IN IRREGULAR TRENCH WIDTHS OR INCIDENTAL DAMAGE TO THE ROADWAY SURFACE WILL REQUIRE ANOTHER SAWCUT AND SUBSEQUENT REMOVAL OF AC. THE SAWCUT LINE SHALL BE APPROVED BY PUBLIC WORKS DEPARTMENT PRIOR TO PERMANENT AC REPAIR.

3. IF ANY TRAFFIC MARKINGS ARE REMOVED THEY MUST BE REPLACED WITH EXISTING MATERIAL THERMOPLASTIC AND/OR TRAFFIC MARKING PAINT PROFILED METHYL METHACRYLATE (MMA) OR EQUAL TO.

4. PUBLIC WORKS DEPARTMENT SHALL BE NOTIFIED FOR INSPECTIONS, SEE PERMIT.

5. REFER TO STANDARD UTILITY TRENCH DETAIL AND STREET CUT - UTILITY STANDARD UTILITY TRENCH DETAIL FOR FURTHER DETAILS.

6. FULL DEPTH REPLACEMENT IS REQUIRED TO CURB/GUTTER LINE OR EDGE OF ROAD WHEN REMAINING DISTANCE BETWEEN EDGE OF PAVEMENT OR CURB IS LESS THAN 4-FT.

7. REFER TO DETAIL SS 2.0, SS2.1 AND SS2.2 FOR FURTHER SPECIFICATIONS.

8. MORATORIUM STREET RESTORATION REQUIREMENTS WILL BE DETERMINED ON A CASE BY CASE BASIS BY THE DIRECTOR. HOWEVER, RD 1.0 IS TYPICALLY MINIMUM REQUIREMENTS.

CIty of Coos Bay
ENGINEERING DEPARTMENT
500 Central Avenue
Coos Bay, Oregon 97420
541-269-8918

DRAWN BY: JESSICA SPANN

REVISIONS

REVISED BY:	DATE:

AC REPLACEMENT NOTES

DRAWING NO. **RD 1.1**

DATE **FEB. 2014**

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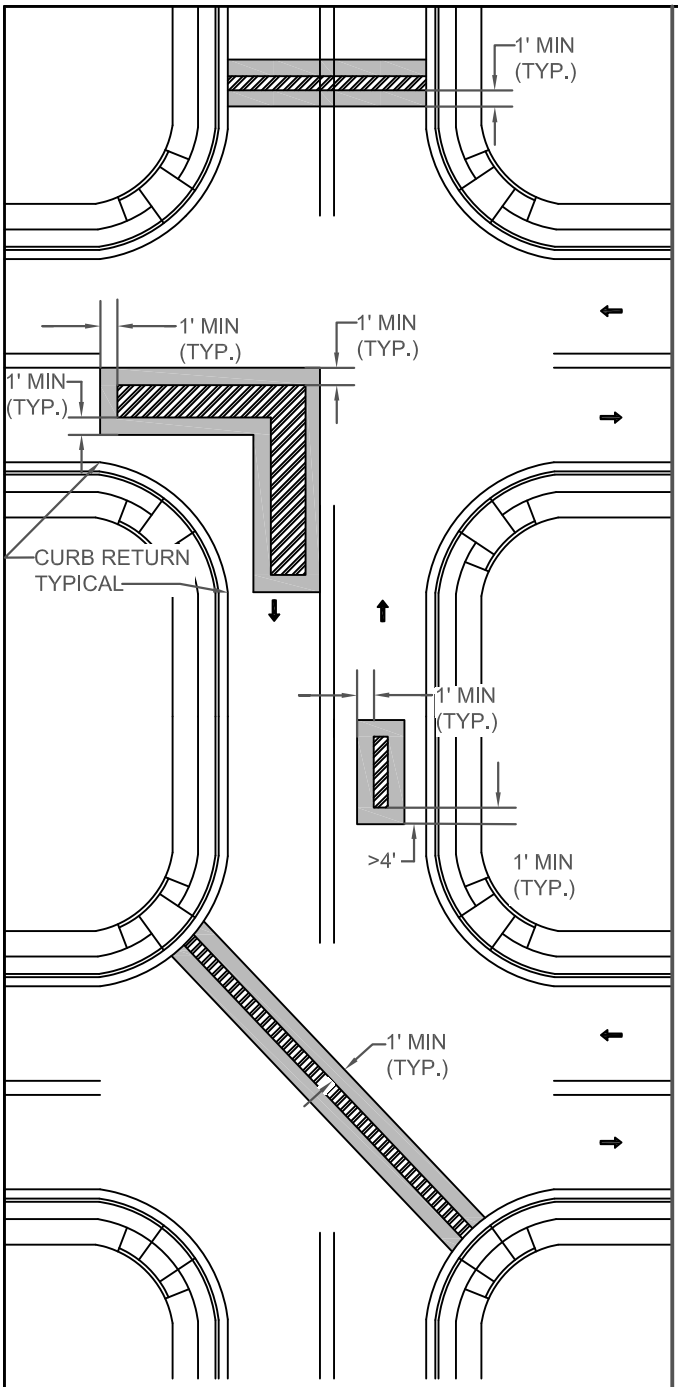
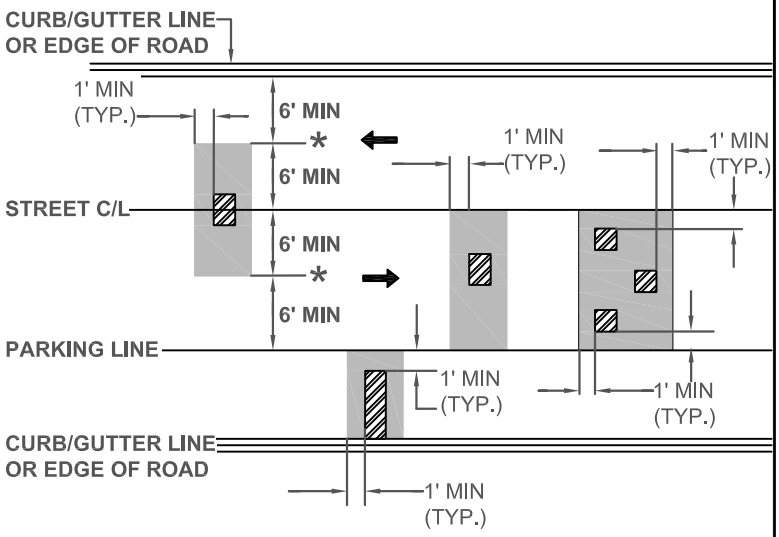
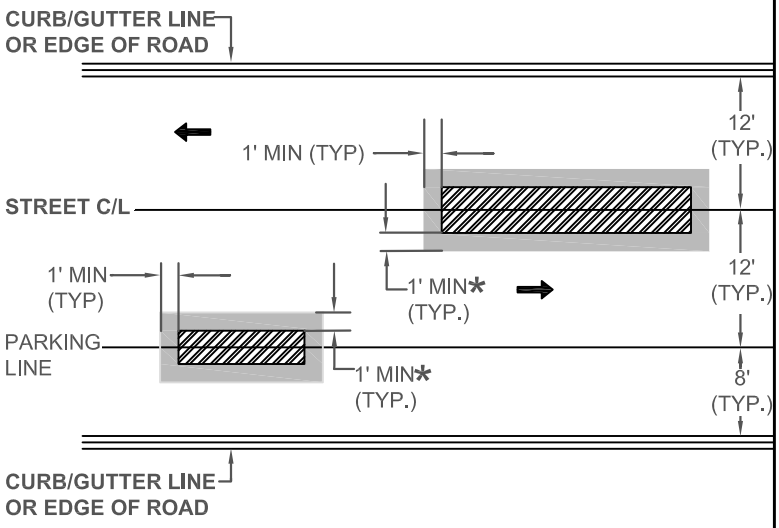






LEGEND

UTILITY/STREET CUT

CITY STANDARD RESTORATION REQUIREMENTS

NOTE:

1. FOR DETAILED NOTES REFER TO DETAIL RD 1.1

LEGEND

TRENCH LIMITS AT THE SURFACE OF PAVEMENT.

WHEN PAVEMENT IS GREATER THAN 3-YRS OLD, FULL-DEPTH PAVEMENT PATCH IS REQUIRED TO THESE LIMITS. NO JOINTS OR REDUCTION IN AREA ARE ALLOWED.

* PAVEMENT RESTORATION/REPAIR SHALL EXTENDED BEYOND WHEEL PATH.

NOTE:

1. FOR DETAILED NOTES REFER TO DETAIL RD 1.1

CIty of Coos Bay
ENGINEERING DEPARTMENT
500 Central Avenue
Coos Bay, Oregon 97420
541-269-8918

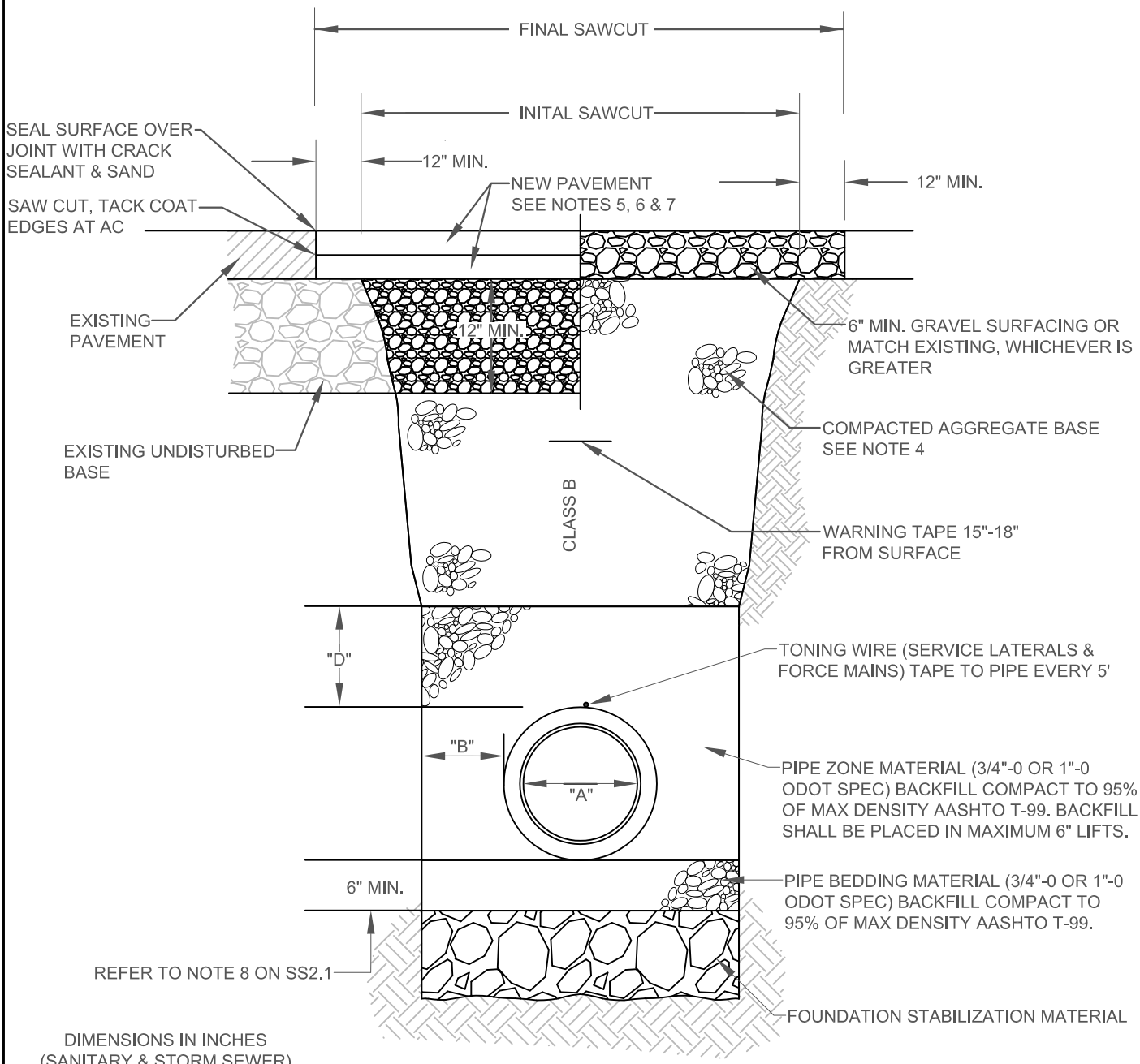
DRAWN BY: JESSICA SPANN

REVISIONS	
REVISED BY:	DATE:

NON-MORATORIUM STREETS AC REPLACEMENT DETAIL

DRAWING NO. RD 1.2

DATE FEB. 2014



DIMENSIONS IN INCHES
(SANITARY & STORM SEWER)

"A"	"B"	"D"
4	10	12
6	10	12
8	10	12
10	10	12
12	12	12
15	12	12
18	16	12
21	16	12
24	18	12
30	18	12
36	24	14

NOTES:

1. FOR ALL DETAILED NOTES REFER TO DETAIL SS 2.1

City of Coos Bay
ENGINEERING DEPARTMENT
500 Central Avenue
Coos Bay, Oregon 97420
541-269-8918

DRAWN BY: JESSICA SPANN

REVISIONS

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STANDARD UTILITY TRENCH DETAIL FOR AREAS IN ROW

DRAWING NO. SS 2.0

DATE AUG 2014

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NOTES:

1. TRENCH EXCAVATION SHALL BE CONDUCTED IN A SAFE MANNER WITH ALL NECESSARY BRACING AND SHORING PROVIDED TO BE IN COMPLIANCE WITH OSHA.

2. ALL EXISTING AC OR PCC PAVEMENT SHALL BE SAWCUT IMMEDIATELY PRIOR TO REPAVING.

3. FOUNDATION STABILIZATION SHALL BE PROVIDED WHEN MATERIAL AT BOTTOM OF TRENCH IS UNSUITABLE, IN THE OPINION OF THE CITY, TO PROVIDE A STABLE TRENCH BASE.

4. PLACE COMPACTED AGGREGATE BASE TO A MINIMUM THICKNESS OF 12 INCHES OR THE THICKNESS OF REMOVED AGGREGATE BASE, WHICH EVER IS GREATER. COMPACTED AS DIRECTED

5. IF EXISTING TRENCH CONSISTED OF CONCRETE PAVEMENT THEN CONCRETE PAVEMENT SHALL BE REPLACED WITH CONCRETE TO A MINIMUM THICKNESS OF 6 INCHES OR TO THE THICKNESS OF REMOVED PAVEMENT, WHICHEVER IS GREATER. (UNLESS DIRECTED BY THE CITY TO USE AC)

6. IF EXISTING TRENCH CONSISTED OF AC, PLACE AC MIX TO A MINIMUM THICKNESS OF 4 INCHES (2-2 INCH LIFTS) OR THE THICKNESS OF REMOVED PAVEMENT, WHICHEVER IS GREATER. COMPACT AS DIRECTED. AC PAVEMENT SHALL BE PLACED IN AT LEAST TWO 2 INCH LIFTS.

7. IN SITUATIONS WHERE EXISTING PCC PAVEMENT IS OVERLAYED WITH AC PAVEMENT. PLACE PCC PAVEMENT IN ACCORDANCE WITH NOTE 3 AND WITH AC PAVEMENT PLACED IN ACCORDANCE WITH NOTE 4.

8. BACKFILL IN PIPE ZONE SHALL BE PLACED IN MAXIMUM 6" LIFTS AND COMPACTED AS SPECIFIED TO 95%.

9. TONING WIRE REQUIRED AT SERVICE LATERALS, FORCEMAINS, AND GRAVITY LINE. WIRE SHALL BE 18 GA. MINIMUM SOLID COPPER WIRE WITH GREEN 30 MIL THICH HDPE INSULATION RATED FOR DIRECT BURY. USE APPROVED WATERPROOF SPLICE AT ALL CONNECTIONS.

10. SANITARY AND STORM SEWER LINES MUST HAVE WARNING TAPE AND IT SHALL BE 6-INCHES WIDE, 4 MIL THICK, APWA GREEN, READING "CAUTION SEWER LINE BURIED BELOW".

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DRAWN BY: JESSICA SPANN

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STANDARD UTILITY TRENCH DETAIL FOR AREAS IN ROW

DRAWING NO.
SS 2.1

DATE
AUG 2014

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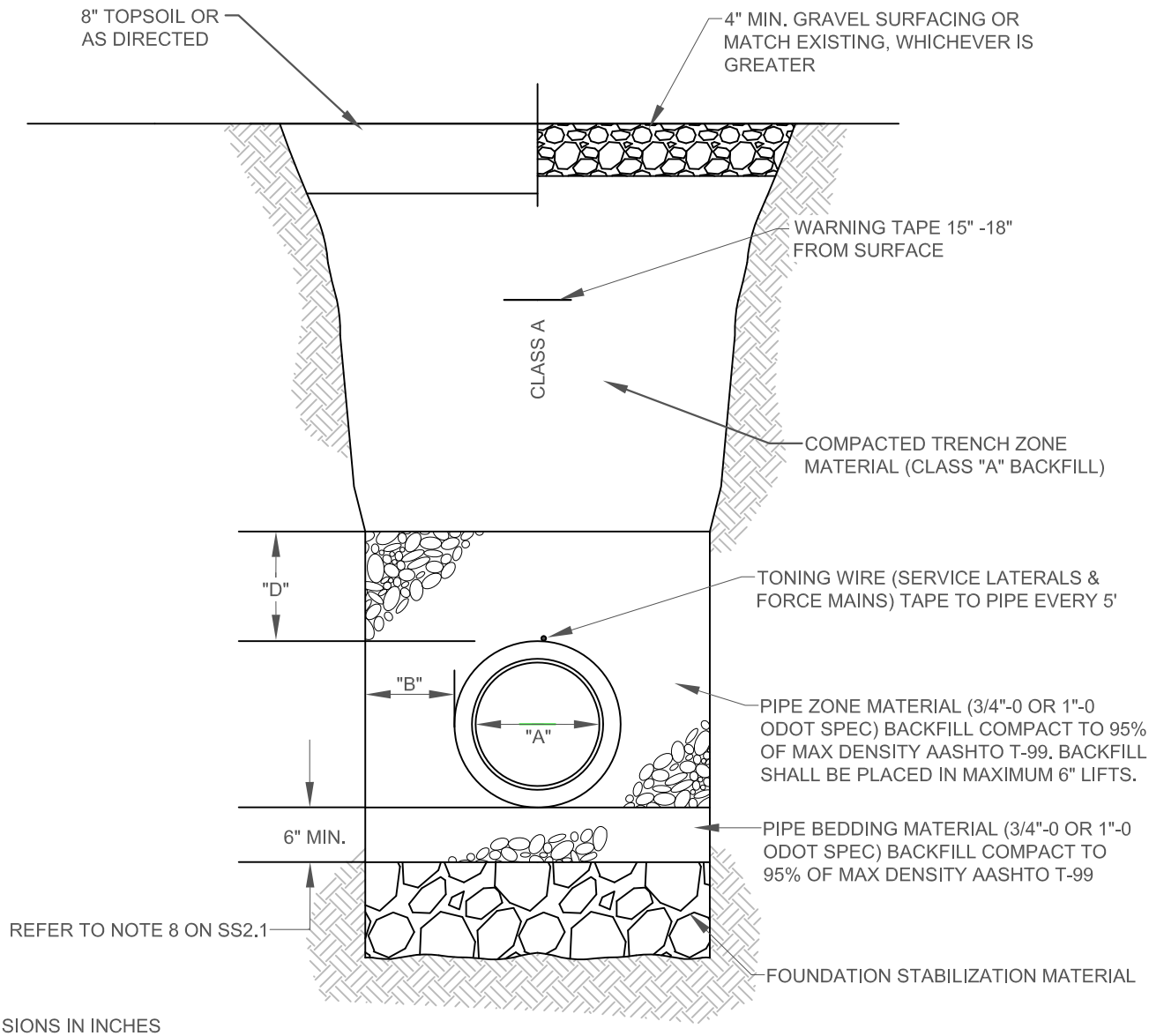

DIMENSIONS IN INCHES
(SANITARY & STORM SEWER)

"A"	"B"	"D"
4	10	12
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10	10	12
12	12	12
15	12	12
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21	16	12
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36	24	14

NOTES:

1. FOR ALL DETAILED NOTES REFER TO DETAIL SS 2.1

City of Coos Bay
ENGINEERING DEPARTMENT
500 Central Avenue
Coos Bay, Oregon 97420
541-269-8918

DRAWN BY: JESSICA SPANN

REVISIONS

REVISED BY:	DATE:

STANDARD UTILITY TRENCH DETAIL FOR AREAS OUTSIDE ROW

DRAWING NO.
SS 2.2

DATE
FEB 2015

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