



**APPLICATION FOR PIPELINE CROSSING/ENCROACHMENT ON
FORMER RAILROAD RIGHT-OF-WAY OWNED BY THE CITY OF ASTORIA**

**PUBLIC WORKS/
ENGINEERING**

Name of Applicant: _____

Company Name: _____

Address: _____

Individual to contact in event of questions:

Name: _____ Phone: _____

E-mail: _____ Fax: _____

Do you plan to use the right-of-way for a public use (for a utility crossing)? Yes No

When do you expect construction to begin on the railroad property? _____

Is installation: Permanent or Temporary?

If Temporary, estimated term: _____

Is installation a crossing _____ an encroachment _____ or both? _____

Location of installation: _____ Ft. (N), (E), (S), (W) of right-of-way line of _____ Street

To (if encroachment) _____ Ft. (N), (E), (S), (W) of right-of-way line of _____ Street

Attach drawings "Exhibit A" (See attached instructions)

Is this a new installation or relocation or modification of existing installation which is located on the railroad right-of-way or across tracks? New installation _____ Relocation _____

Do you have an existing agreement at this location with the Railroad Company which is to be affected by this request?

No Yes Railroad Company Contract No.: _____

Is installation located within a dedicated public street? Yes No

Who will be served by the crossing or encroachment? _____
(City, City Tenant, General Public, etc.)

Additional information pertinent to this installation: _____

CONTRACTOR AND INSTALLATION INFORMATION

Will construction be by a Contractor? Yes No

If yes, Contractor name: _____

Address: _____

Name and Phone Number of individual to contact in the event of questions: _____

Describe in detail the method and manner of installation on the railroad right-of-way: _____

City Council Approval Date: _____

Preparation of Application for Pipeline Crossings or Encroachments

Drawings of proposed crossings or encroachments must be submitted with an **Application for Pipeline Crossing/Encroachment on Former Railroad Property Owned by the City of Astoria**. The following information should be used to aid in the preparation of construction drawings and will expedite approval of the application by the city.

Encroachments

1. Encroachments shall be constructed in accordance with City Standard Detail RR1-Parallel Encroachments for Utility Lines. Any proposed deviations in the placement of the encroachment such as in the areas of steep banks, rivers, ditches, bridges, culverts, etc., must be shown on the plan views and a cross-section drawing furnished for each.
2. The encroachment must be located at the outer limits of railroad right-of-way within 5 feet of property line and a minimum of 20 feet from centerline of nearest track.
3. The following must be shown on the drawings: bridges, culverts, signals, signal houses, and other signal facilities, street and road crossings, overpasses and bridge piers in relation to track and pipeline, pole line, railroad milepost, streets and name of the street, rivers, fences, underground utilities, railroad right-of-way, all necessary dimensions, measured at right angles to the main line track, and any other information which could be helpful.
4. In addition, provide the following special information as necessary:
 - a. A sheet showing any details unique to the situation.
 - b. Small scale maps showing overall encroachment route.
 - c. Details for trenching ditch or stream crossings (plan and profile view). Include all shoring plans.
 - d. Location of pipeline marker signs and a detail of the sign furnished for city approval.
 - e. Sheet showing details of all proposed poles on the right-of-way.
5. If the proposed location of the encroachment crosses existing culverts, the top of the buried encroachment must be installed a minimum of 12" below the culvert invert. If the location crosses a ditch beyond the end of the culvert, then the top of the buried encroachment must be installed 12" below the clean bottom elevation of the ditch.
6. All excavations and backfilling must be done using workmanship acceptable to the city and in accordance with city standard specifications. All backfilling must be placed in a maximum of 6" lifts and compacted to 90% of maximum standard density as determined by AASHTO T-99. All areas disturbed in any manner must be reseeded in a manner to prevent erosion using a grass seed mixture native to the area.
7. The encroachment should not be installed in the slope of cut or fill sections (see Detail RR1) of the roadbed nor can the slope of cut or fill sections of the roadbed be benched, unless permission has been obtained from the city engineer's office to do otherwise.
8. Manholes must be capable of withstanding H-20 highway loading requirements and must be installed so as not to create a stumbling hazard. Construct in accordance with City Standard Detail S5 where appropriate.
9. Before work can begin on railroad rights of way, the application must be approved by the City of Astoria.
10. The encroachment must be located behind (field side) all signal facilities because of the numerous underground signal cables running between track and the signal facility.

Crossings

1. The appropriate "Exhibit A" (Flammable or non-flammable pipeline crossing) is required for all crossings. Each crossing requires a separate "Exhibit A". Track bores must be a minimum of 48 inches below base of rail. The ends of steel casing must be a minimum of 20 feet from centerline of the track when measured at right angle to the track. Also, bore pits must be a minimum of 20 feet from centerline of track when measured at right angle to the track. The bore pit size must be kept to a minimum.
2. The following specifications shall be used for utility crossings:
 - A. **For Flammable Substances**

1. **Scope** - Pipelines included under these specifications are those installed to carry oil, gas, gasoline, or other Flammable or highly volatile substances.
2. **Installation** - Pipelines under railroad track and right-of-way shall be encased in a larger pipe or conduit installed as indicated in City Standard Detail RR3. The casing pipe or conduit is the essential feature of the plan.
3. **Carrier Pipe** - Carrier pipe inside of casing under railroad track and right-of-way shall be constructed of steel or HDPE and shall be either seamless or substantially welded pipe, with welded coupling, or other "approved" joints. Pipe shall be laid with slack (no tension or compression) in the line. Use of a carrier pipe of material other than the above mentioned must be approved by the city engineer.
4. **Casing Pipe** - Casing pipe and joints shall be uniformly thick steel construction approved by the city engineer and shall be capable in its entirety of withstanding load of railroad roadbed, track and traffic; also shall be constructed so as to prevent leakage of any matter from the casing or conduit throughout its length under track and railroad right-of-way. The casing shall be installed with even bearing throughout its length, and to prevent formation of standing liquids shall slope to one end. Wall thickness of the casing must be no less than that specified in the steel casing pipe wall thickness chart below. Inside diameter of the casing shall be at least 10% larger than the outside diameter of the carrier pipe but no less than 2 inches greater than largest outside diameter of carrier pipe, joints or couplings.

Steel Casing Pipe Wall Thickness Chart

Minimum Thickness	Diameter Of Casing Pipe
1/4" (0.2500")	12" or less
5/16" (0.3125")	over 12"-18"
3/8" (0.3750")	over 18"-22"
7/16" (0.4375) - -	over 22"-28"
1/2" (0.5000")	over 28"-34"
9/16" (0.5625)	over 34"-42"
5/8" (0.6250")	over 42"-48"

This chart is only for smooth steel casing pipes with minimum yield strength of 35,000 psi. Casing pipes larger than 48" diameter or with any portion deeper than 20' shall be submitted to city engineer for approval.

5. **Cathodic Protection** - Where cathodic protection is used on the carrier pipe, an above ground test box constructed specifically for this purpose will be provided adjacent to casing vent pipe with test wires attached to casing wall and carrier pipe, see detail RR3
6. **Seals and Vents** - Where ends of casing are below ground, they shall be suitably sealed to outside of carrier pipe against intrusion of foreign material which might prevent ready removal of the carrier pipe. Also, the casing must be properly vented above ground with vent pipes having inside diameter equal to 10% of nominal size of the carrier pipe but no less than 2 inches and extending not less than 4 feet above ground surface. Vent pipe at low end of casing shall be connected with bottom of casing and vent at high end shall be connected with top of casing. Top of vent shall be fitted with down-turned elbow properly screened.
7. **Depth of Casing** - The depth from base of railroad rail to top of casing at its closest point shall not be less than 4 feet and on other portions of railroad right-of-way where casing is not directly beneath any track the depth from surface of right-of-way, and from bottom of ditches to top of casing, shall not be less than 3 feet. Where it is not possible to secure the above depths, special construction shall be used as approved by the city engineer.
8. **Length of Casing** - Casing shall extend at least 20 feet each side from (measured at right angles to) centerline of outside track. If additional tracks are constructed in the future, the casing shall be extended as necessary at the utility's expense.

9. **Jacking Pits** - Jacking pits shall be a minimum of 20 feet from the centerline of track except in cases where pipe is to be located at a depth of more than 10 feet. In that case, the applicant shall provide plans for shoring or locate jacking pit at a distance acceptable to the city.
10. **Shut-Off Valves** - Where warranted by special local conditions as determined by the city, accessible emergency shutoff valves shall be installed within effective distances at each side of the crossing.
11. **Location** - Pipelines shall where practicable, be located to cross tracks at approximately right angles thereto and said crossing shall not be closer than 50 feet to any portion of any railroad bridge, building, or other important structure, nor to any switch unless specifically approved by the city engineer. Pipelines, casing pipe and vent pipes shall be at least 16 feet (vertically) from aerial electric wires and shall be suitably insulated from underground conduits carrying electric wires on railroad right-of-way.
12. **Topography** - Pipelines carrying extremely high pressure, volatile or highly flammable material shall, where practical, be located where the ground surface slopes downward away from the railroad tracks. Also, when large capacity pipes are located where the ground surface ascends above the railroad roadbed, there must be sufficient adjacent opening under the tracks to carry off the material in event of rupture.
13. **Restoration of Right-of-Way** - Upon completion of the pipeline installation work, all rubbish, excess materials, temporary structures and equipment are to be removed and the railroad right-of-way cleaned and restored to the satisfaction of the city engineer or his authorized representative. Disturbed areas shall be seeded or otherwise protected to control erosion as necessary.
14. **Approval of Plans** - Plans for a proposed pipeline shall be submitted to and meet the approval of the city engineer before work is begun and all work on railroad right-of-way, including the supporting of the track or roadbed, shall be subject to his inspection and direction. All costs incurred shall be borne by the utility.

B. For Non-flammable Substances

1. **Scope** - Pipelines included under these specifications are those installed to carry steam, water or any nonflammable substance which from its nature or pressure might cause damage if escaping on or in the vicinity of railroad property.
2. **Installation** - Pipelines under railroad track and right-of-way shall be encased in a larger pipe or conduit installed as indicated in City Standard Detail RR2. The casing pipe or conduit is the essential feature of the plan.
3. **Carrier Pipe** - Carrier pipe inside the casing under the railroad track and right-of-way shall conform to city standard specifications for the substance it is carrying.
4. **Casing Pipe** - Casing pipe and joints may be of any conduit construction approved by the city engineer and shall be capable of withstanding the load of railroad roadbed, track and traffic. It shall be constructed so as to prevent leakage of any matter from the casing or conduit throughout its length under track and railroad right-of-way. The casing shall be installed so as to prevent the formation of a waterway under the railroad. Casing shall be installed with even bearing throughout its length and shall slope to one end. Wall thickness of the casing must be no less than that specified in the steel casing pipe wall thickness chart above. The inside diameter of the casing shall be no less than 2 inches greater than largest outside diameter of carrier pipe, joints or couplings.
5. **Cathodic Protection** - Where cathodic protection is used on the carrier pipe, a flush test box constructed specifically for this purpose will be provided with test wires attached to casing wall and carrier pipe, as shown in Detail RR2.
6. **Seals** - The ends of the casing shall be suitably sealed to outside of carrier pipe against the intrusion of foreign material that might prevent ready removal of the carrier pipe.
7. **Depth of Casing** - The top of the casing pipe shall be below the frost line, and its closest point shall not be less than 4 feet below base of railroad rail. On other portions of the railroad right-of-way where casing is not directly beneath any track the depth from the surface of the ground and from bottom of ditches to top of casing, shall not be less than 3

feet. Where it is not possible to secure the above depths, special construction shall be used as approved by the city engineer.

8. **Length of Casing** - Casing shall extend at least 20 feet each side from (measured at right angles to) centerline of outside track. If additional tracks are constructed in the future, the casing shall be extended as necessary at the utility's expense.
9. **Jacking Pits** - Jacking pits shall be a minimum of 20 feet from the centerline of track except in cases where pipe is to be located at a depth of more than 10 feet. In that case, the applicant shall provide plans for shoring or locate jacking pit at a distance acceptable to the city.
10. **Shut-Off Valves** - Where warranted by special local conditions and when mutually agreed to by the city and the owner of the pipeline, accessible emergency shutoff valves shall be installed within effective distances at each side of the crossing.
11. **Location** - Pipelines shall, where practicable, be located to cross tracks at approximately right angles thereto and said crossing shall not be closer than 50 feet to any portion of any railroad bridge, building, or other important structure. Pipelines and casing pipe shall be at least 16 feet (vertically) from aerial electric wired and shall be suitably insulated from underground conduits carrying electric wires on railroad right-of-way.
12. **Topography** - Where practicable, pipelines shall be located where the ground surface slopes downward away from the railroad tracks. Also, when large capacity pipes are located where the ground surface ascends above the railroad roadbed, there must be sufficient adjacent opening under the tracks to carry off the material in event of rupture.
13. **Restoration of Right-of-Way** - Upon completion of the pipeline installation work all rubbish, excess materials, temporary structures and equipment are to be removed and the railroad right-of-way cleaned and restored to the satisfaction of the city engineer or his authorized representative. Disturbed areas shall be seeded or otherwise protected to control erosion as necessary.
14. **Approval of Plans** - Plans for a proposed pipeline shall be submitted to and meet the approval of the city engineer or his authorized representative before work is begun and all work on railroad right-of-way, including the supporting of the track or roadbed, shall be subject to his inspection and direction. All costs incurred shall be borne by the utility.

Construction Procedures

1. Trees or brush cleared from the right of way must be removed.
2. Contractor must coordinate with the Astoria Trolley Association at least 48 hours prior to the start of construction
3. Adequate barrier protection is required for all excavation on railroad right-of-way to protect individuals from falling into holes.
4. Areas disturbed by construction must be graded to prevent ponding of storm water.
5. Erosion protection must be established on all areas disturbed by construction using measures appropriate to the situation.
6. Projects may require a project inspector and flagman for protection of train operations.