PW Right-Of-Way Engineering Services
Engineering, Regulatory & Analytics
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720-865-3003
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SMALL CELL FREESTANDING ANTENNA POLE ROW PERMIT ENTRANCE REQUIREMENTS

Department:	Public Works, Right of Way Services, Engineering Regulatory & Analytics
Authority:	Public Works Rules and Regulations for Encroachments in the Public Right of Way (Dec 15, 2014), and Public Works Utility Plan Review (July 15, 2015); City Charter, Art II; and DRMC, Chapter 49
Document Date:	August 31, 2017
Permits and Applicant Obligations	Small Cell Freestanding Antenna pole infrastructure proposed in the public right of way of the City and County of Denver will be permitted pursuant to these Entrance Requirements. The procedures contained herein combine Public Works requirements for Encroachment Permit and Utility Plan Review (UPR) into a single process for that can handle up to 10 unique sites with each application. *Please note that completion of this Process does not substitute or replace any additional permits or approvals that may be required from the City such as Public Works Construction Permitting (Street Occupancy for construction equipment, Street Cut to cut into the right of way, Erosion Control if over 1 acre of disturbed soil), or specific permitting from affected City departments.* *For your convenience, we have provided information here on where to obtain Construction Permitting from the Dept of Public Works: www.denvergov.org/pwpermits 2000 W. 3rd Ave. 2nd floor, WMDPWDESCE@denvergov.org, P: (303) 446-3469*
Summary of Permitting process	Small Cell Programs proposing freestanding antenna poles shall be permitted by following the procedures within this document to obtain a one-time MASTER Tier III Encroachment Resolution (approved City Council), followed by subsequent applications that will result in Tier II Encroachment permits that reference the Master. Poles shall be submitted in "Groups" as described below whenever more than one (1) location is submitted within a one (1) week period. The very first application from any given company or program may submit up to 5 unique freestanding antenna poles in a first Group that should be generally representative of the forthcoming proposed infrastructure of the submitting company. Because the very first application will result in a City-Council approved Master Tier III Encroachment Resolution, the timeline to process can range from 3-6 months depending on the responsiveness of the applicant. Once obtained, the Master Encroachment Resolution number will then be referenced on all subsequent applications. An Annual Fee of $200 applies to each pole approved in the Master Encroachment Resolution. All subsequent applications for freestanding Small Cell antenna poles shall be submitted in Groups of up to 10 unique pole locations each, and will be processed pursuant to this document with the outcome of each as an approved Tier II Encroachment Permit. Expected timelines to complete each Tier II Encroachment Permit process are less than 3 months and are highly dependent on the responsiveness of the applicant. An Annual Fee of $200 applies to each pole approved in each Tier II Encroachment Permit. Please note that the outcome of each application will be an approved Encroachment Resolution/ Permit (renewed annually) that can subsequently be used to pursue City Construction permitting. Also, please note that the process described in this document was designed for permitting Freestanding Small Cellular Antenna poles. Associated Fiber optic and power conduit may be included in each application, but if so, the included designs must be complete. If Fiber optic and power conduit associated with these poles is expected to be designed and constructed by others, permitting of same can be handled as follows: - Submit a separate Utility Plan Review application if the total aggregate length of all conduit associated with the pole Group constructed by others is greater than 750 feet. - Submit directly to Public Works Construction Permitting if the total aggregate length of all conduit associated with the pole Group is less than 750 feet, or if the program requires that conduit will be constructed by others in smaller batches or per pole less than 750'.

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Insurance and Indemnification	As a condition for placement of a Permitted Encroachment, the owner of such Encroachment shall hold the CCD harmless from all loss or damage to persons or property on account of injury arising from the construction or maintenance of the Encroachment; and (a) Post with the Executive Director of Public Works, a bond in a penal sum not to exceed $50,000 with sureties approved by the Executive Director; or (b) Obtain and keep current a policy of public liability insurance in the name of the permittee, with the CCD as a named insured, with the minimum limits of coverage of $50,000/$100,000 for bodily injury and $5,000 for property damage, covering the location of the Encroachment on the public property for which the permit is issued.
Permit Submittal Requirements	❑ **Completed Small Cell Freestanding Antenna Pole Permit application form** – (City provided template) ▪ Filename "*CompanyName YEAR-Group # Application Form.pdf*" ❑ **Current Small Cell Program Group Tracking spreadsheet** (City provided template), sorted in same order as other areas of application. ▪ Filename "*CompanyName YEAR-Group # Master Tracker.xlsx*" ❑ **Current Small Cell Program Pole Location Map**, including: ▪ Filename "*CompanyName YEAR-Group # Location Map.pdf*" ▪ Proposed pole(s) included in the current Group application as yellow dot) ▪ Previously proposed poles not yet approved (blue dot) ▪ All poles currently constructed under the company Small Cell program (black dot). ▪ The map should be scaled to overall City without aerial photo background, and then into more detailed quadrants as appropriate. PW ERA will provide examples of desired format upon request. ❑ **Single PDF of all Address Cards** assigned to the proposed pole locations, sorted in same order as submitted in other areas of application. ▪ Filename "*CompanyName YEAR-Group # Address Cards.pdf"* ▪ Official Addresses for each pole must be obtained from the City in advance of submitting. ▪ A link to the Addressing process is provided **here.** ❑ **Pole Location Description Editable Document** (Microsoft Word format) document containing a list of all proposed poles with a location description for each, including: ▪ Filename "*CompanyName YEAR-Group # Pole Locations.doc"* ▪ Approximate location of each pole referenced from official City Streets and intersections, distance from corner point of curb curvature, back from curb, etc. ▪ Written text of latitude and longitude GPS coordinate**.** ❑ **Complete Construction plans** for proposed infrastructure bundled into a single PDF file, formatted to 11"x17", including: ▪ Filename "*CompanyName YEAR-Group # Construction Plans.pdf"* ▪ A cover sheet containing City map scaled to include all pole locations included in the subject application, a list of each pole location including GPS coordinate and assigned Denver Address, and a legend for all plan sheets. ▪ Each pole represented by a self-contained set of plans within the overall file, so that if any single pole is removed from the application, the remaining plan set remains valid. ▪ Each pole plan set shall include the following: 1. Cover sheet with pole title, name, location, information, and photograph of the proposed location of the pole. 2. "Required Notes for Each set of Pole Plans" as provided below.

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3. Labeled and dimensioned site plan and elevation plan, including the following when applicable:
   a) Key symbols, ROW lines, property lines, etc.
   b) Street information including names, curblines, sidewalk, street amenities, vegetation, existing and proposed utilities
   c) Identification of immediately adjacent property owner(s) and/ or easements
   d) Structural Plans for pole and associated foundation prepared and stamped by a Professional Engineer Registered in the State of Colorado including:
      - Depth, diameter, reinforcing, Class B 4,500 psi concrete
   e) Labeled construction materials, color, finish, etc.
   f) Pole dimensions and total maximum height from adjacent grade
   g) Size and dimension of any projection(s) from pole
   h) Typical duct bank installation section detail
   i) Proposed voltage, maximum transmission wattage, radio frequency and Microwave expulsion, in accordance to the maximum allowable, per the Federal Communications Commission (FCC)
   j) Detail of proposed electrical connection location (if known)

- ❑ **Appropriate structural and foundation calculations**, signed and stamped by a Colorado Licensed Professional Engineer (PE), to the most stringent of the following design standard(s):
  - AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals (AASHTO LTS), 6th Edition, with 2015 Interim Revisions
  - State specific DOT Standard for Pedestal Poles, or equivalent standard that considers Colorado applications, wind loads, etc.
  - Commercial criteria (from pole manufacturer)

- ❑ **Processing & Permit Fees,** paid separately, as follows:
  - **Encroachment Processing fee**, due at time of application:
    $2,100.00 if Tier III Master Encroachment Resolution; or,
    $1,500.00 if Tier II Encroachment Permit

    Utility Plan Review Processing fee, due at time of application:
    If 1 new pole location = $320.00
    If 2 new pole locations = $640.00
    If 3-10 new pole locations = $1,000.00

  - **First year Annual Permit fee** (may be paid at time of application or prior to issuance of Resolution or Permit)
    Fee is assessed at $200.00 for each pole approved in the issued permit. This fee to be collected at time of permit issuance covers the first permitted year of the approved Encroachment Permit Group. For example, if five (5) poles are approved in a given Encroachment Permit when completing this process, a first year annual fee of 5 times $200, or $1,000 will be due before issuance of Permit. The same amount of $1,000 will be payable annually to renew said permit thereafter.

  - Please note that once paid, all fees are non-refundable.

  - Payment options:
    - Credit card – Discover, Master Card and Visa
    - Over the phone credit card payment available upon request
    - Checks or Money Order, payable to the “Manager of Finance”.

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Application Submittal Options	To submit your Small Cell Program application to the City of Denver Public Works Department, you must submit electronically: ❑ Send an email to: Denver.PWERA@denvergov.org ▪ Email Subject: "*CompanyName Small Cell Group # – 1st/2nd, etc Submittal*" ▪ If the total size of all files to submit is less than 15MB in size, please attach to the email and send. ▪ If the total size of all files to submit is greater than 15MB in size, all attachments may be submitted in the following manner: ▪ Drop box, using your own account, or ▪ via Denver FTP using following credentials: o https://exteft.denvergov.org o Login: PWDIST, Pswd: DenverPW#1 o Select all files for transmittal and drop them into FTP tool where indicated. It is not necessary or recommended to create sub-folders within the FTP tool. Ignore errors
Resubmittal Process	During the application process, the application materials will be circulated for regulatory and agency review. At the end of each review cycle, the applicant must evaluate and formally respond in writing to any comment(s) received. ❑ The City may direct you in writing that a resubmittal is required, as it was determined that one or more comments received demonstrated technical merit. ❑ Additionally, should any plan revision result in any pole being relocated greater than eighteen (18) inches in any direction, a formal resubmittal of the entire pole Group will be required. ❑ Revision of associated electric or fiber optic facilities to any pole will not require a resubmittal of the pole Group, assuming that the plans for construction of the electric or fiber optic facilities are either being submitted in a separate Utility Plan Review application, or directly (and individually being under the Utility Plan Review threshold) to Public Works Construction Permitting. ❑ Resubmit all required documents described in application process above, as well as a Comment Response Matrix acknowledging any comment(s) received, with formal written response to each. A sample copy of a suggested Matrix will be provided upon request. ▪ Please make appropriate changes based on each pertinent comment (denied, condition and/or approved). Please note what changes were made, and what pages they were updated on. ▪ Please note if any single pole location within the application is denied, the Group is denied, until the subject comment is resolved in writing by the original reviewer, or the subject pole is removed (see next bullet). • Individual poles experiencing comment resolution challenges or denials can be completely removed at any time from the application Group (at request of applicant) without delaying the application or requiring resubmittal. ❑ **Document Naming Convention for Resubmittals:** ▪ *"CompanyName YEAR- Group # - Resubmittal Application and Letter.pdf"* ▪ *"CompanyName YEAR- Group # - Resubmittal Construction Plans.pdf"* ▪ *"CompanyName YEAR- Group # - Resubmittal Address Cards.pdf"* ▪ *"CompanyName YEAR- Group # - Resubmittal Master Tracker.xlsx"* ▪ "*CompanyName YEAR- Group # - Resubmittal Pole Locations.doc"* ▪ *"CompanyName YEAR- Group # - Resubmittal Master Map.pdf"*

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Final Submittal Process	Once the applicant has resolved all comments to the satisfaction of the City, you will be prompted to submit a final set of all documents for approval. This will include: ❑ Final plan set, PE signed and stamped, including: ▪ Comment Response Matrix ❑ All application materials reflecting final updates including the following: ▪ Any changes to Tracking Spreadsheet ▪ Any changes to official issued City addresses ▪ Any changes to Location descriptions or Latitude/Longitude ▪ Proof of written notice to adjacent owner(s) at each location ❑ Any remaining fees including first Annual permit fee ❑ **Document Naming Convention for Final Submittals:** ▪ *"CompanyName YEAR- Group # - Final Application and Letter.pdf"* ▪ *"CompanyName YEAR- Group # - Final Construction Plans.pdf"* ▪ *"CompanyName YEAR- Group # - Final Address Cards.pdf"* ▪ *"CompanyName YEAR- Group # - Final Master Tracker.xlsx"* ▪ "*CompanyName YEAR- Group # - Final Pole Locations.doc"* ▪ "*CompanyName YEAR- Group # - Adjacent Owner Notices.pdf"* ▪ *"CompanyName YEAR- Group # - Final Master Map.pdf"*
General Design Requirements for Small Cell Infrastructure	❑ No part of any proposed equipment or infrastructure shall infringe upon minimum pedestrian accessible route (PAR) surfaces. Any equipment proposed to overhang such surfaces must be mounted 80" or higher above walk grade. ❑ All new freestanding Small Cell Antenna Poles shall be located to avoid any conflicts with vehicles parked or traveling on adjacent roadway. Cross slopes of adjacent streets can cause some larger vehicles to lean into amenity zones. ❑ All new freestanding Small Cell Antenna poles shall be 30' or less in total height unless previously coordinated with Public Works. ❑ All poles shall be designed for "stealth", so that Small Cell equipment is contained within the pole itself to the maximum extent feasible. ❑ All poles shall be designed to avoid existing street trees with no proposed disturbance within 5' of the existing drip-line of any tree. ❑ Landscaping restoration surrounding each pole location shall be detailed to meet adjacent streetscaping character. ❑ All electric and fiber optic conduit proposed to each pole location shall be designed to be located to avoid unpaved area between roadway curb and sidewalk, generally referred to as "tree lawn" or "amenity zone" to the max extent feasible. ❑ Poles or associated equipment shall be composed of steel painted federal green in color, with a finish that is corrosion and graffiti resistant and can be repaired / repainted to original finish quality. ❑ Ownership name, unique pole identification number matching Company Pole Code from Master Tracker, and contact phone number for each freestanding pole location must be clearly posted as a permanent plaque on each pole at 3 to 6 feet in height. ❑ All associated underground vaults or pull-boxes shall be appropriately labeled to identify owner. ❑ All pole locations shall be designed to current national and local electric code including proper grounding.

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Resources	In addition to current published City mapping resources, the City offers an additional resource to research presence of Special, Neighborhood, Design, or Business Districts applicable at each pole location – **Link here**
Required Notes for each set of Pole Plans	**GENERAL NOTES** 1. All current Transportation Standards details shall be followed 2. The applicant and contractor are responsible for obtaining all project permits associated with construction and related activities such as Street Occupancy, Street Cut, Construction, Erosion Control and Parks Permits. 3. The contractor should remove materials and equipment from the ROW by the close of daily operations. 4. No work shall be permitted at night or on Saturdays, Sundays, and holidays or as restricted by City Noise Ordinance without prior authorizations or unless otherwise specified in this permit. City may restrict work on ROW during adverse weather conditions or during periods of high traffic volume. 5. The contractor shall maintain at least one copy of the approved plans, specifications, and standards on the job site at all times. 6. The contractor shall notify Public Works Right of Way (PW ROW) Construction Inspections at (303) 446-3469 or WMDPWDESCE@denvergov.org: 1) two days before commencing work in the ROW; 2) when suspending operations for 5 or more working days; 3) two working days before resuming suspended work; and 4) upon completion of work. 7. The applicant and contractor are responsible for being aware of, notifying, coordinating, and scheduling all inspections required for final approvals and project acceptance. 8. All work, including correction work, is subject to notification and inspection. 9. In the event that an emergency repair to existing facilities is necessary, the PW ROW Construction Inspections shall immediately be notified via telephone at (303) 446-3469. Emergency procedures shall be coordinated beforehand, where possible, and no work will be allowed until notification is received. The telephone notification must be followed up with a letter to PW ROW Construction Inspections as soon as possible. 10. All trenches shall be adequately supported and the safety of workers provided for as required by the most recent Occupational Safety and Health Administration (OSHA) "Safety and Health Regulations for Construction." These regulations are described in subpart P, Part 1926 of the Code or Federal Regulations. Sheeting and shoring may be utilized where necessary to prevent any excessive widening or sloughing of the trench. The contractor may be required to use an approved piling instead of sheeting and shoring. The contractor shall accept sole liability and responsibility for complying with the current OSHA regulations applicable to all work. 11. All work will be properly backfilled prior to the end of the workday; no open holes and/or trenches are allowed overnight. All work is to be in accordance with permit requirements and applicable standards. 12. Where consistent with safety and space considerations, excavated material is to be placed on the uphill side of trenches. 13. All potholes must be core drilled or saw cut to 2' x 2'. 14. Unless confined in a predefined berm containment area, the cleaning of cement delivery chutes is prohibited at the job site. The discharge of water containing waste cement to the storm sewer system is prohibited. (DRMC §. 56-102 (a.)(c.)) 15. Where ROW fences need to be removed or cut to facilitate construction, approval must be given by PW ROW Construction Inspections before work is performed. Existing line must be established by good survey practices. The contractor will supply and install new materials required to restore fence to acceptable condition. New posts and wire will be required including corner posts for gates placed in locations as determined by the original survey. Fences will be replaced according to fencing standards of the Public Works Department. 16. If livestock is present in the area of fence removal, a temporary fence, equivalent to the existing, will be required to contain livestock until new fence is in place; temporary fence will then be removed. 17. Utility Plan Review approval does not constitute approval for any work on, in, under, or over private property.

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ROADWAY NOTES

1. Construction of any portion of the public roadway, including the pavement structure, subsurface support, drainage, landscaping elements, and all appurtenant features, shall comply with the provisions of the most current version of the City & County of Denver Rules & Regulations, City standard specifications, and standard details.
2. Material removed from any portion of the roadway section must be replaced in accordance with the Public Works Rules & Regulations Governing Street Cuts.
3. The contractor is responsible for providing and maintaining adequate traffic control throughout the project, including proper traffic control devices and/or personnel as required. A traffic control plan is subject to CDOT and/or PW ROW Construction Inspections for approval prior to commencing work on public ROW. A copy of approved traffic control plans must be available on site during work. Traffic control to be in accordance with the most recent version of the Manual on Uniform Traffic Control Devices (MUTCD), Section VI.
4. The traffic control plan must include protective measures where materials and equipment may be stored on ROW.
5. Prior to final acceptance, all disturbed portions of ROW shall be cleaned up and restored to their original condition, subject to City approval.
6. No cleated or tracked equipment may work in or move over paved surfaces without mats.
7. Restoration is required for any holes or cuts made in walking and/or paved surfaces, including those for test holes or potholing for Investigation activities for any locates.
8. Any potholes drilled into sidewalks will require full panel replacement. Permanent patching of potholes or cuts is also required in asphalt pavements, and for concrete pavement with up to 2 potholes. When 3 or more potholes exist, then full street panel replacements are required. All restoration shall be per City and County of Denver Transportation Standards and Details. Contact PW Construction Engineering at 303-446-3469 if more information is requested.
9. When an existing asphalt street is cut, the street must be restored to a condition equal to or better than its original condition. The existing street condition shall be documented before any cuts are made; patching shall be done in conformance with the Public Works Rules & Regulations Governing Street Cuts. The finished patch shall blend smoothly into the existing surface. All large patches shall be paved with a self-propelled asphalt paving machine.
10. The contractor shall protect all storm sewer facilities adjacent to any location where any pavement cutting operations involving wheel cutting, saw cutting or abrasive cutting is to take place.
11. The contractor shall remove and properly dispose of all waste products generated by said cutting operations on a daily basis.
12. The discharge of any water contaminated by waste products from cutting operations to the storm sewer system is prohibited.

UTILITY NOTES

1. **Caution**: Location of existing utilities is shown according to the best information available as supplied by the utility providers including type, size, location and number of utilities. Prior to date of construction contractor shall verify existing utilities with the Utility Notification Center of Colorado (UNCC) and/or utility companies. **For additional information contact: UNCC at 1-800-922-1987**. The contractor shall verify existence, size, and location of existing utilities and facilities prior to construction and shall notify the engineer of any discrepancies.
2. Prior to commencement of construction, the contractor shall contact all utilities to coordinate scheduling. Should any conflicts, reconstruction, or other interruptions in service be required, contractor shall coordinate utility scheduling.
3. The applicant shall correctly show on submitted drawings the locations of all utilities in the vicinity where the applicant may bore, trench, excavate, and install conduit, fiber, fiber enclosures, vaults, and handholds. In the event that the conduit run, fiber enclosures, vaults, or handholds are located within the vicinity of any utility, the applicant shall be responsible for the design and installation that will prevent damage to the installation under normal utility operating conditions. It is the responsibility of the applicant to obtain information on each of the utilities as applicable such as gas pressure, steam and water pressures, temperatures, etc.

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4. It is the responsibility of the applicant to examine the site for evidence of failures of or deficiencies in utility company facilities (i.e. Xcel, Denver Water, Denver Public Works, WMD, etc.) and to immediately call any such evidence of pre-existing damage to the attention of the utility company along with proper documentation. The applicant hereby agrees that the repair of any and all damages (direct or indirect), that may be subsequently discovered and proven to have been caused by the construction activities, is the sole responsibility of the applicant without such evidence of pre-existing damage. The applicant hereby agrees that any and all damages (direct or indirect) to utility company facilities, which may be subsequently discovered within those areas where construction occurred within six feet of utility company facilities (direct or indirect), and within a period of three years from the date of construction, were caused by the construction activities. Furthermore, the repair is agreed to be the sole responsibility of the applicant. It shall be the applicant's responsibility to protect all utility company facilities within the area of construction. This includes all steps necessary to prevent subsidence of the soil adjacent to or near utility company facilities.
5. Any casing or sleeve so installed under the roadway shall be the same diameter as the bore so as to eliminate a void around the casing. In the event jacking operations result in voids, the resultant voids shall be grouted or otherwise backfilled, subject to City approval. Ends of bored sections shall not be covered before being inspected.
6. The contractor shall maintain at least a 10' clear zone to utilities at all times in accordance with City standards. The contractor/applicant shall clearly identify owner name & contact info on all manhole covers.
7. For all manholes in asphalt streets, add a 2" riser ring directly under the cover to facilitate future rotomill/overlay operations.

DENVER WATER NOTES

1. The contractor shall notify Denver Water at (303) 628-6682 prior to any construction that could affect or disturb a Denver Water facility.
2. Applicant assumes full responsibility for all damages incurred to Denver Water facilities due to activities authorized by the approved plans.
3. Denver Water, at the sole expense of the applicant will make all replacement or repair of Denver Water facilities attributed to the work.
4. In the event the applicant's facilities are damaged or destroyed due to Denver Water's repair, replacement and/or operation of its facilities, repairs shall be made by the applicant at its sole expense.
5. Adding fiber optics to an existing duct not previously permitted requires the duct to be subject to the aforementioned provisions.
6. Parallel ducts or cable will not be permitted within five (5) feet of a Denver Water facility (mains or conduits), and a minimum of ten (10) feet of clearance is required between potable and non-potable mains (e.g., storm, sanitary, reuse).
7. When crossing a Denver Water main or conduit, a minimum vertical clearance of eighteen (18) inches is required.
8. A Denver Water representative must be present when installation crosses a sixteen (16) inch or larger main.
9. Locates and potholes shall be required for all crossings involving Denver Water facilities including, but not limited to, hydrant lateral runs and service line crossings.
10. In the event of a conflict with requirements, the latest versions of Denver Water's Engineering Standards and Capital Projects Construction Standards shall supersede these provisions.

FORESTRY & LANDSCAPING NOTES

1. The contractor shall not spray, cut, or trim trees or other landscaping elements within ROW, unless such work is otherwise specified or clearly indicated on the approved plans with prior written authorization from the Office of the City Forester.
2. Any disturbed landscaping will be replaced to equal or better condition than that which existed prior to work.
3. Seeding, sodding, and planting shall be as specified or otherwise approved by City. Construction, maintenance, and watering requirements shall conform to the City standard specifications. Where landscape restoration must be delayed due to seasonal requirements, a separate permit may authorize such work
4. The City requires compliance with the following when work is required around trees in the public right-of-way. Trenching techniques shall comply with:

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a) Trenching should not be closer to the tree than the drip line (the area under the tree branches); (2) Adjust the route to avoid roots as much as possible;
b) Store soil opposite the tree side of the trench;
c) Backfill quickly and cleanly, and water roots deeply;
d) Tunneling must be at least 4 feet below ground;
e) No excavation or equipment storage shall occur in the critical root zone (1' for every 1" caliper surrounding the tree);
f) All pit locations must be staked and approved prior to an excavation;
g) No root 2" or larger will be cut;
h) Minimize the work pit to no wider than the trench;
i) Where equipment is working near trees erect a snow fence at or just outside the drip line;
j) Prevent soil compaction by adding 6" to 12" of wood chips;
k) Retain a licensed tree company to prune broken branches as well as compensatory pruning if necessary to help the tree recover from root loss.

5. The City of Denver Tree Retention and Protection Specifications must be followed. For a copy of the Tree Protection Specifications please contact the Forestry desk at (720) 913-0651 or email at Forestry@denvergov.org.

EROSION CONTROL NOTES

The Owner, Site Developer, Contractor and/or their authorized agents shall ensure that all potential pollutants generated during demolition or construction work associated with this Project, be prevented from discharge to stormwater conveyance systems in the vicinity of this Project Site in accordance with the following:

1. The Owner, Site Developer, Contractor and/or their authorized agents shall prevent sediment, debris and all other pollutants from entering the storm sewer system during all demolition, excavation, trenching, boring, grading, or other construction operations that are part of this Project. The Owner, Site Developer, Contractor and/or their authorized agents shall be held responsible for remediation of any adverse impacts to the Municipal Separate Storm Sewer System, receiving waters, waterways, wetlands, and or other public or private properties, resulting from work done as part of this Project.
2. The Owner, Site Developer, Contractor and/or their authorized agents shall remove all sediment, mud, construction debris, or other potential pollutants that may have been discharged to or, accumulate in the flow lines of storm drainage appurtenances, and public rights of ways of the City and County of Denver, as a result of construction activities associated with this Project. All removals shall be conducted in a timely manner.
3. The Owner, Site Developer, Contractor and/or their authorized agents shall insure that all loads of cut and fill material imported to or exported from this site shall be properly covered to prevent loss of the material during transport on public rights of way. (Sec.49-552; Revised Municipal Code)
4. The use of rebar to anchor best management practices, other than portable toilets, is prohibited.
5. The Owner, Site Developer, Contractor and/or their authorized agents shall implement the following Best Management Practices (BMPs) on site during construction:
    a. VEHICLE TRACKING CONTROL: This BMP is required at all access points for ingress/egress from off-site impervious surfaces to construction site pervious areas that are used by vehicular traffic or construction equipment.
    b. INLET PROTECTION: This BMP is required on all existing or proposed storm sewer inlets in the vicinity of the construction site that may receive site runoff. The BMP must be appropriate to the type of storm inlet and appropriate for the ground surface at the inlet.
    c. INTERIM SITE STABILIZATION: This BMP is required to provide a measure for preventing the discharge of sediment from construction sites where overlot grading or other site disturbance has occurred. This BMP is particularly necessary on sites where construction activities/disturbance will be limited to small areas of the Project site. Acceptable BMPs include:
        i. Preserving existing vegetation
        ii. Seeding and planting
        iii. Mulching
        iv. Mulching and seeding
        v. Temporary/Permanent re-vegetation operations
        vi. Chemical soil stabilizer application (requires WMD approval)

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d. WASTE MANAGEMENT/CONTAINMENT: This BMP requires that all construction wastes, fuels, lubricants, chemical wastes, trash, sanitary wastes, contaminated soils or debris shall be contained on site, protected from contact with precipitation or surface runoff, periodically removed from the construction site, and properly disposed of.

e. SPILL PREVENTION /CONTAINMENT: This BMP defines the measures proposed for preventing, controlling, or containing spills of fuel, lubricants, or other pollutants; and protecting potential pollutants from contact with precipitation or runoff.

f. CHUTE WASHOUT CONTAINMENT: Water used in the cleaning of cement truck delivery chutes shall be discharged into a predefined, bermed containment area on the job site. The required containment area is to be bermed so that wash water is totally contained. Wash water discharged into the containment area shall be allowed to infiltrate or evaporate. Dried cement waste is removed from the containment area and properly disposed of.

    i. The direct or indirect discharge of water containing waste cement to the storm sewer system is prohibited (Sec.56-102a, c; Revised Municipal Code, City and County of Denver).

g. SWEEPING: This BMP requires that impervious surfaces which are adjacent to or contained within construction sites be swept on a daily basis or as needed during the day when sediment and other materials are tracked or discharged on to them. Either sweeping by hand or use of Street Sweepers is acceptable. Street sweepers using water while sweeping is preferred in order to minimize dust. Flushing off paved surfaces with water is prohibited.

h. PERIMETER CONTROL: This BMP requires that a construction site install a perimeter control measure along the edge of the construction Site, to prevent, or filter the discharge of surface runoff from the construction site. The type of perimeter control used shall be determined based on-site conditions and location. Maintenance and repair of the control measure shall occur as needed, in a timely manner.

i. STOCK PILES: Soils that will be stockpiled for more than thirty (30) days shall be protected from wind and water erosion within fourteen (14) days of stockpile construction. Stabilization of stockpiles located within 100 feet of receiving waters, or with slopes 3 to 1 or greater shall be completed within seven (7) days following stockpile construction. Stabilization and protection of the stockpile may be accomplished by any of the following: Mulching, Temporary/Permanent Revegetation Operations, Chemical Soil Stabilizer Application (requires Denver Public Works approval), or erosion control matting/Geotextiles. If stockpiles are located within 100 feet of receiving waters, a drainageway or the site perimeter, additional sediment controls shall be required.

j. SAW CUTTING OPERATIONS: The Contractor shall protect all storm sewer facilities adjacent to any location where pavement cutting operations involving wheel cutting, saw cutting, or abrasive water jet cutting are to take place. The Contractor shall remove and properly dispose of all waste products generated by said cutting operations on a daily basis or as needed throughout the work day. The discharge of any water contaminated by waste products from cutting operations to the storm sewer system is prohibited. (Sec.56-102a, c; Revised Municipal Code, City and County of Denver)

k. STRUCTURAL CONTROLS: Development sites that are required to provide detention and water quality enhancement facilities for storm runoff need to install the detention facilities early in the construction build-out of the site. Projects that are using underground detention are required to install a pretreatment structure(s) or sedimentation basin(s) as a means of treating potentially polluted storm water prior to entering the detention structure. Use of these structures is required for entrapping sediment and construction debris during the active construction phase of the project. A narrative section of a Management Plan should address operation and maintenance of the structural controls being used as an active construction BMP.

6. Erosion and sediment control 'Best Management Practices' shall be maintained and kept in effective operating condition for the duration of this Project. All necessary maintenance and repair shall be completed immediately upon discovery of any deficiency or defect.