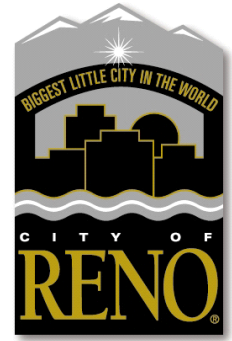


City of Reno Public Works

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City of Reno Guidelines for Horizontal Directional Drilling (HDD)

1.0 Purpose

The purpose of the following information is to establish the City of Reno's guidelines for Horizontal Directional Drilling (HDD) within the City's right of way for conduit of 6 inches or less. The information provided herein is intended to promote public safety and protect all existing underground facilities. This is not a step-by-step procedural manual, but rather a collection of standard practices which must be followed in order to obtain an Encroachment and Excavation Permit (EE Permit) and perform HDD within the City of Reno right of way.

2.0 Design Requirements

A thorough design showing all existing utilities and infrastructure must be submitted to the City of Reno for review prior to obtaining an EE Permit. Proposed construction plans must be prepared and stamped by a State of Nevada Licensed Engineer and comply with Chapter V of the Public Works Design Manual. In addition to standard design practices, designs shall utilize the Subsurface Utility Engineering (SUE) process as outlined by the ASCE and the Federal Highway Administration.

The licensed engineer shall complete the following design requirements prior to submitting an Encroachment and Excavation Permit Application to the City of Reno for all HDD work:

- 2.1. Obtain right-of-way and property line information through survey records or other acceptable sources. Include property parcel numbers, addressing, and street names.
- 2.2. Collect underground utility information utilizing ASCE Quality Level A locating (QL-A) through the use of test holes; commonly known as potholing. Data collection methodology, process, and findings must be documented for each location and available to the City upon request. Construction plan information must include: horizontal and vertical positions of all known underground facilities and structures within 10' vertical and 25' horizontal of the edge of bore path.
- 2.3. It is the responsibility of the design engineer to determine the necessity and extent of a soils investigation based on the location, complexity, and depth of the proposed HDD operation. The City reserves the rights to order a soils report and analysis addressing soil conditions if there is cause to believe that conditions are less than optimal for HDD operations. The report must provide information at the

entry/exit pits and along the drilling path (at drilling depth for the entire length of the operation). The design engineer shall provide recommendations based on the report.

- 2.4. Prepare scaled construction plans for review by the City’s Public Works Department using the information provided within these guidelines. The proposed plans must include plan and profile drawings which show the exact location of all planned improvements and the location of existing surface and subsurface utilities. Typical information shown on the design plans should include, but are not limited to: location of existing curb & gutters, sidewalks, roadway markings, notable surface improvements, exact product to be installed, drill/reamer diameter, bore lengths, entry/exit pit locations, degree of entry/exit at each pit, and pit size.
- 2.5. A minimum of 4’ of clearance (horizontal and vertical) must be maintained between the proposed bore path and existing sewer or storm infrastructure. At the discretion of the City, the required separation may be increased depending on the size of the proposed bore, soil conditions, or other causes for concern.
- 2.6. A consistent depth of the proposed utility must be maintained between pull boxes, vaults, access points, and other equipment associated with the proposed installation. The exact proposed depth must be shown in a profile view within the plans.
- 2.7. Complex or compound curves in the alignment of the proposed bore path will only be approved on a case by case basis.
- 2.8. Proposed HDD operations which cross or are in close proximity to sanitary sewer, storm drain, irrigation ditches, gas, water, or electric, must be approved by the respective agencies/owners of the utilities. The design engineer or their representative is responsible for obtaining all approvals and construction comments, and providing copies of the approvals to the City. For all other utilities crossed by the HDD operation, the owner of the utility must be notified of the work no later than 14 days prior to the start of construction.
- 2.9. To the best of their ability, the design engineer must identify all potentially un-marked public and private infrastructures within proximity of the proposed HDD construction. A large percentage of private sanitary sewer laterals are not mapped and will not be accurately marked under the USA North Locates Program.
- 2.10. Construction plans must provide information showing the location of all surface restoration (asphalt, concrete, landscaping, etc.). Restoration must meet the City of Reno’s Standard Details.
- 2.11. Minimum Recommended Depth of Cover

Diameter	Depth of Cover
2 inches to 6 inches	4 feet

3.0 Permitting

At a minimum, the following information shall be provided as part of the City’s Encroachment and Excavation Permit Application:

- 3.1. Final Construction Plans providing the information previously outlined.

- 3.2. MUTCD compliant Traffic Control Plans depicting all traffic control to be used during each phase of the HDD construction.
- 3.3. An accurate daily construction schedule showing all work days, work times, and work phasing.
- 3.4. An accurate description of the equipment, including make and model, to be used during construction.
- 3.5. Material Data Safety Sheet for the drilling fluids and additives to be used on the project.
- 3.6. Provide a Storm Water Pollution Prevention Plan (SWPPP) showing all Best Management Practices to be used during construction. The SWPPP must provide detailed information for protection of the City's municipal separate storm sewer system (MS4's) and the methods used for: containment of drilling fluids, dewatering of the entry/exit pits (if needed), clean up of the area and proper disposal.
- 3.7. Disposal (dewatering) of the groundwater into the municipal system will require prior approval from the City.
- 3.8. Provide a video recording of the entire construction area showing existing conditions, surface features, public improvements, etc.
- 3.9. Exact methods for monitoring the drill path alignment must be identified. Monitoring shall be consistent with the methods required by the design engineer for the preparation of as-built plans which must be submitted to the City upon completion of the work.
- 3.10. If a direct visual inspection of the HDD equipment crossing all storm drain, ditches, sanitary sewer, and sanitary sewer laterals cannot be achieved, a video recorded using CCTV to show existing conditions will be required. A second recording of the same infrastructure will be required at the conclusion of the work.
- 3.11. The HDD contractor is responsible for obtaining all required Federal, State and municipal permitting. A copy of the permits must be provided to the City prior to the start of work.
- 3.12. The permit applicant must be a State of Nevada Licensed Contractor who has been approved by the City to perform HDD work.
- 3.13. Projects deemed by the City to require full or part time inspection will be assigned an additional EE permit fee. Inspection fees are calculated using the construction schedule provided with the permit submittal.
- 3.14. When necessary, the contractor may be required to retain the services of a material and testing firm.

Note: The City of Reno will provide Special Conditions of Approval upon review of the Encroachment and Excavation Permit Application.

4.0 Pre-Construction and Safety

Prior to performing work involving HDD, the contractor shall implement safety standards consistent with the best practices of the industry, legal requirements of Federal, State, and the Municipal government, and include the following safety measures:

- 4.1. All operations must conform to OSHA standards.
- 4.2. A copy of the SWPPP must be on the job site at all times.
- 4.3. USA North- Call before you dig has been notified and all known utilities have been marked.
- 4.4. All crossed and parallel utilities have been positively located and exposed by potholing. This includes all water, gas, fiber, electric, sanitary sewer (main and laterals), storm drain, etc.
- 4.5. The HDD contractor shall have a prepared Emergency Plan in the event of a utility strike which will include utility owner information and emergency phone numbers on-site at all times. A copy of this plan must be submitted to the City prior to the start of work.
- 4.6. Provide a contingency plan for the containment of drilling fluids.

5.0 Construction

- 5.1. Upon receiving the Encroachment and Excavation Permit, the applicant agrees to abide by all conditions of a Stop Work Order posted by the City of Reno. A Stop Work Order may be posted by the City of Reno whenever the City has reasonable cause to believe that a violation of terms outlined on the Encroachment and Excavation Permit or the Special Conditions has occurred. A Stop Work Order will necessitate a meeting between the applicant and City staff to resolve the issues leading to the posting of the Order. Work shall only continue once a successful resolution addressing the issues of the Stop Work Order has been met to the satisfaction of City staff.
- 5.2. All construction activities must meet the terms of the City's EE Permit, the standards of the Occupational Safety and Health Administration (OSHA), the SWPPP, Federal and State requirements, and all required permits issued from other agencies.
- 5.3. Continuous monitoring and plotting of the drill progress shall be required to ensure compliance with the approved construction plans. Monitoring shall be consistent with the methods required by the design engineer for the preparation of as-built plans which must be submitted to the City upon completion of the work.
- 5.4. The contractor must notify the utility/infrastructure owner a minimum of 14 days in advance prior to all utility and infrastructure crossings,.
- 5.5. Daily logs of construction activities must be submitted to the City at completion of work. At a minimum, the log must provide information for the location of work via stationing or other methods of measurements, the problems and conditions encountered during work, and the time of work start and stop.
- 5.6. The HDD construction must be completed as per the approved construction plans. "Field Changes" must be approved by the Design Engineer and the City of Reno prior to any changes in the work. Deviations from the approved construction drawings, in vertical or horizontal alignment, greater than 2.5 feet, must be approved by the design engineer and the City prior to the commencement of work. At no time shall the minimum coverage or the required separation of utilities be less than the requirements provided in these guidelines.

- 5.7. Prior to the start of backfill within the City Right-of -Way, the contractor shall notify the City to schedule an inspection of the work area. If deemed necessary, compaction testing may be required at the expense of the contractor.
- 5.8. The Permittee shall be responsible for restoring the affected work area to an “as good” or better condition. Reference the City of Reno Standards Details for approved methods.
- 5.9. If a drill hole must be abandoned, the location of the abandonment must be mapped for the as built plans, the City inspector and design engineer must be notified, and the hole must be backfilled using an excavatable slurry approved by the City.
- 5.10. Should pavement heaving, settlement or damage to infrastructure occur, all repairs will be at the expense of the contractor. If required by the City Engineer, an engineered design for remediation of the damaged area may be required with all costs being the responsibility of the contractor.

6.0 Post- Construction.

The following information must be submitted at the conclusion of work.

- 6.1. As-Built plans, prepared and stamped by a State of Nevada Licensed Engineer, with all approved field changes shown and noted appropriately.
- 6.2. A copy of the Daily Logs.
- 6.3. A post- construction CCTV video recording of all City infrastructure crossed or in close proximity to the HDD construction work.
- 6.4. Copies of all material testing results (if required).
- 6.5. Engineer of Record Construction submittal package (if required).