City Council Policy: CP207 – Horizontal Directional Boring (HDD) Standards

Effective Date: September 18, 2006

Amends:

Approved By: City Council

I. SCOPE

A. HDD is a trench-less installation technique developed to install pipe under natural or man-made obstacles, especially water ways and highways. Today directional drilling is utilized not only for crossings, but also for parallel installations along the right-of-way as an alternative to digging trenches. HDD is utilized for the installation of gas, water and sewer mains; chemical pipelines; electric and communications conduits.

B. Every HDD project is unique and will have unique elements, conditions and requirements. Therefore, the standard, set forth herein, is a compilation of practices for HDD projects, which may be amended by the Director of Public Works to address unique circumstances.

II. PURPOSE

A. The purpose of this standard is to a provide, as an inclusion in the City of Prairie Village Manual of Infrastructure Standards, practices for projects utilizing Horizontal Directional Drilling (HDD) that will help ensure public safety and protect existing underground facilities within the City .

B. This standard is closely modeled after The City of Overland Park, Kansas, Right-of-Way Permits, Horizontal Directional Drilling Guidelines Handbook and the Kansas City Metro Damage Prevention Report prepared by the Mid-America Regional Council (MARC).

III. RESPONSIBILITY

A. Public Works Director

IV. DEFINITIONS

A. *City* shall mean the City of Prairie Village

B. *City Clerk* shall mean the City Clerk employed by the City of Prairie Village or designee.

C. *City Lands* shall mean any land owned in fee by the City of Prairie Village such as, but not limited to, grounds at City buildings, City parks and City right-of-ways,

D. *Public Works Director* shall mean the Director of Public Works employed by the City or that person's designee.

E. *Storm Drain System* shall mean any City owned pipe, structure, channel or other City drain facility.

V. POLICY

A. PLANNING AND DESIGN

1. Subsurface utility engineering is an engineering process used to identify and map underground utilities and structures. The site information is collected by surveying visible subsurface utility structures such as manholes, hand-holes, utility valves and meters, fire hydrants, pedestals and utility markers; and then correlating data from existing utility records, as-built drawings, distribution and services maps, existing geographic information system databases, and construction plans, to create a composite design drawing.

2. Prior to submitting an application for a right-of-way permit for an HDD installation, the project plan preparer shall undertake a review of City Council Policy CP203 - Construction Plans Requirements and Standards. At a minimum, the plan preparer shall comply with the Policy CP203 and complete the plan

preparation tasks prior to submitting a right-of-way permit application. The following additional information is to be provided on the plans:

a.) Obtain existing easement, right-of-way and property line information through survey records, or other sources

b.) Obtain general and/or specific geotechnical information (as required or deemed necessary by the Permittee or City Public Works Director) including USDA Soil Conservation Service data for the project area and site-specific geotechnical sampling and analysis

c.) State minimum horizontal and vertical clearance requirements, including road setbacks, existing surface features and existing underground utilities and structures

d.) Present bore geometry for the given ground profile including bore length(s) and depth requirements, bending radii for the final product pipe plus entry and exit pit locations with size and depth as required.

e.) At critical points, prepare plan and profile on half scale (11x17 inches) using 1-inch equals 20 feet horizontal scale and 1-inch equals 5 feet vertical scale.

f.) Proposed facility information and design details including the proposed alignment (dimensioned), final product type and dimensions, proposed depths of cover and clearances, and all proposed above and below grade structures.

B. PERMITTING

1. As part of the permit application process, the applicant shall state the project type (communication, gas, etc.), purpose, system capacities and location.

2. The construction plans shall comply with City Council Policy CP203 – Construction Plans Requirements & Standards.

3. A Storm Water Pollution Prevention and Erosion Control Plan shall:

   a.) Ensure that all construction activities shall be performed in accordance with the National Pollution Discharge Elimination System (NPDES) as regulated by the Environmental Protection Agency (EPA), as well as state and local requirements.
   b.) Ensure that sediment controls are in place prior to disturbance.
   c.) Maintain sediment controls throughout the construction and restoration processes.
   d.) Minimize the overall disturbance whenever possible.
   e.) Protect disturbed areas throughout the construction process.
   f.) Prevent storm water runoff from entering disturbed areas.
   g.) Never intentionally discharge construction contaminants directly into creeks, rivers, ditches, or storm systems. Avoid causing flooding in roadways and adjacent right-of-way by not block existing culverts and storm inlets except as a last resort and ensuring that sediment is removed from sediment traps and filters after all storm events.

4. A permanent restoration plan shall be provided with detail sheets and specifications for restoration of City infrastructure.

5. A Construction Schedule shall be provided indicating the proposed start date(s), completion date(s), and restoration schedule.

C. CONSTRUCTION SAFETY

1. Prior to performing work involving HDD under a Right-of-Way Permit, the Permittee (or its Contractor) shall implement the following safety guidelines:

   a.) Perform all operations in compliance with OSHA guidelines and insure that all personnel are properly trained and equipped to work in the public right-of-way

b.) Ensure that utility One-Calls and other utility coordination requirements have been met

2. The HDD Contractor shall have a planned response in the event of a utility strike including utility owner notification call numbers.

D. CONSTRUCTION GUIDELINES

1. All construction work shall be performed in accordance with City requirements and as outlined below. For all work involving horizontal directional drilling under a Right-of-Way Permit, the Permittee (or its Contractor) shall perform the tasks outlined in the following sections.

2. The following shall be performed **during construction**:

   a.) The HDD Contractor shall calibrate its tracking and locating equipment at the beginning of each work day. A log shall be maintained and submitted to the permitting agency on a weekly basis.

   b.) The HDD Contractor shall monitor and maintain a log recording the alignment and depth readings provided by their tracking system every 25 to 30 feet for normal conditions, or every 5 to 10 feet where precise alignment control is requested by the engineer.

   c.) The HDD contractor should back-ream to accommodate the product size. It is preferable that the use of compaction reamers be avoided. However, the Contractor shall not expand the bore hole by more than six inches (6") using only a compaction reamer.

   d.) The HDD Contractor shall plan its reaming and back pulling operations carefully to ensure that, once started, all reaming and back pulling operations can be completed without stopping and within the permitted work hours

   e.) Positively locate/expose (by potholing) all utilities crossed

   f.) Positively locate/expose (by potholing) all parallel utilities at the beginning and ending of all bores, every 200 feet if it is within 5 feet of the proposed alignment, or every 50 feet if it is within 3 feet of the proposed alignment, and additionally as requested by the Public Works Inspector

   g.) A municipal Public Works inspector will monitor and verify the alignment measurements provided by the HDD Contractor on a frequent and un-announced schedule

   h.) The HDD Contractor shall inspect the work and surrounding area to ensure that no construction-related damage has occurred including heaving or humping of paved surfaces, and drilling fluid fractures or releases

   i.) At the request of the City Public Works Director, the Contractor shall provide access for inspection of the HDD operations

3. Items noted below shall be performed **following construction**:

   a.) Prior to the start of backfilling excavations under paved surfaces, the Permittee shall notify the Public Works Inspector to schedule an inspection

   b.) The Permittee (or its Contractor) shall ensure that all cleanup and restoration is in compliance with the City requirements for right-of-way restoration. Upon completion of all right-of-way restoration activities, the Permittee will schedule a closeout inspection

   c.) The Permittee shall notify the Public Works Inspector upon completion of all project work including final punch list items

   d.) The two-year maintenance period for the permittee will not begin until all corrective actions required have been completed and subsequently approved by the Public Works Inspector

e.) Additional permits will not be issued if restoration work is not complete on the existing permit

f.) The permittee will televise, in the presence of the Public Works Inspector, the City of Prairie Village stormwater components within five feet parallel to boring activity or crossed by the boring activity.

E. The HDD Contractor shall contain, handle, and dispose of drilling fluids in accordance with the following requirements:

1. All drilling fluid and fluid additives shall be disclosed, and Material Safety Data Sheets (MSDS) shall be provided to the Public Works Inspector upon request

2. Excess drilling fluid shall be confined in a containment pit at the entry and exit locations until recycled or removed from the site

3. 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

4. Unintended surfacing of drilling fluid shall be contained at the point of discharge and recycled or removed from the site

5. Drilling fluids that are not recycled and reused shall be removed from the site and disposed at an approved disposal site

6. Drilling fluids shall be completely removed from the construction site prior to back filling or restoring the site

7. Collection, transportation, and disposal of drilling fluids shall be environmentally safe and comply with local ordinances and government regulations

F. CONSTRUCTION RECORDS

1. The HDD Contractor shall keep detailed and accurate records of all activities associated with the HDD process. Upon completion of HDD installations, the Permittee shall provide the Public Works Inspector with As Built plans and any supporting documents within 60 days of project completion. Failure to submit as-built plans and supporting documents will be justification for rejecting future permits.

2. As Built plans should be in electronic format, but hard copy format may be approved on a case-by-case basis by the permitting agency. HDD construction records and As Built plans shall conform to the same plans submission requirements as for Right-of-Way Permits and as described in this handbook.

G. REFERENCES

1. City of Prairie Village Municipal Code Section 13.500
2. City of Prairie Village Municipal Code Section 13.700
3. City of Prairie Village City Council Policy CP203