Unified Government of Wyandotte County, Kansas City, Kansas

Right-of-Way Management Regulations

1. General

1.1 The Unified Government Engineer may delegate any or all of his duties under this regulation.

1.2 Enforcement: As allowed by the right-of-way management ordinance, penalties for violation of this regulation include stop work orders, revocation of permit, doubling fees for work without a permit, denial of future permits, and fines levied by the Municipal Court.

1.3 The definitions contained in Chapter 32 of the 1988 Code of Ordinances of Kansas City, Kansas, are hereby adopted by reference and made a part of these regulations and, whenever words which are defined in Chapter 32 are used in these regulations, they shall have the meanings set forth in Chapter 32 unless the context in which they are used clearly requires a different meaning.

2. Applicability

2.1 Regulated uses: Uses of the right-of-way covered by this regulation include the following:

2.1.1 Excavation, construction, repair, and maintenance of facilities (utilities) and streets, including drilling, jacking, tunneling, boring, pipe lining, and other trenchless technologies.

2.1.2 Construction or reconstruction of driveways, driveway culverts, and other entries from the street to private property.

2.1.3 Disruption or obstruction of the right-of-way associated with design, inspection, management, maintenance, adjustments or protection of facilities, regardless of the location of the facilities.

2.1.4 Placement of dumpsters in the right-of-way.

2.1.5 Oversize/overweight loads.

2.2 Uses not covered by this regulation: The following uses are not covered by this regulation. Permits other than right-of-way use permits may be required for these activities.
2.2.1 Normal pedestrian, bicycle, automobile and truck traffic, including on street parking, where permitted.

2.2.2 Mailboxes

2.2.3 Parades

2.3 Exceptions: Exceptions are made to the specific requirements for the specific work described below. The work shall comply with all other requirements.

2.3.1 Emergency work: when a condition poses a clear and immediate danger to life or health, or of a significant loss of property, the work may be performed and the required permit shall be obtained as soon as possible during the next Unified Government working day.

2.3.2 Publicly funded projects: fees will be waived for projects constructed from general fund, special city street and highway fund, tax increment financing funds or general obligation bonds of the Unified Government.

2.3.3 Public agency crews: fees will be waived for work performed by employees of the Unified Government and the Board of Public Utilities.

2.3.4 Routine maintenance activities: the Pre-construction Requirements section and Construction section of these regulations will not apply to service work that does not include cutting of pavement or excavation of the right of way.

2.3.5 Residential driveway and field entry permits: the Pre-construction Requirements section of these regulations will not apply to driveway permits for residential or agricultural uses or for driveway culverts.

3. Permits

3.1 Permit required: No regulated use will proceed without a current and valid permit issued by the Unified Government Public Works Department.

3.1.1 Application for permit shall be made three working days in advance of the start of work.

3.2 Types of right-of-way use permits are:

3.2.1 Driveway culvert permit - for the installation of a driveway culvert located on a roadway with rural (curbless) cross section.

3.2.2 Driveway permit - for construction, rehabilitation or reconstruction of a permanent or temporary driveway or entry.
3.2.3 Individual site excavation permit - for construction, maintenance or service at a single site overall length of work 500 feet or less.

3.2.4 Multiple site excavation permit - for construction, maintenance or service that has multiple discrete locations or an overall length greater than 500 feet. Multiple site permits will not be open ended. All sites must be identified at the time the permit is issued. All sites must be under the control of a single contractor.

3.2.5 Routine maintenance disruption/obstruction annual permit - for routine maintenance or service activities that do not include cutting of pavement or excavation of the right-of-way. The installation of new poles or pole foundations; replacement of damaged or obsolete pole in the same location and all work on the overhead lines themselves shall fall under the routine maintenance disruption/obstruction permit

3.2.6 Dumpster placement - for placing or parking in the right-of-way a dumpster or other lawful types of containers for debris or waste holding 8 yards or more.

3.2.7 Oversize/overweight loads - for transportation of oversize or overweight loads on the Unified Government’s streets. Size limits are those set out in the Unified Government’s traffic code.

3.2.7.1 Single event is for one-time movement of an oversized load.

3.2.7.2 Fixed route is for multiple vehicles between a single fixed destination and the designated connection to a state or federal Highway.

3.2.8 Hauling permit - for the hauling or moving of any earth, excavated rock, rubbish or used building materials, regardless of where it originated. A separate permit shall be required for each point of origination.

3.3 Fees and Time Limits: Fees and time limits are listed in Appendix A. Time Limits are calendar days for which the permit will be valid. Work, including temporary or final restoration, shall be complete within these times. More than one fee may be imposed.

4. Preconstruction requirements

4.1 Sketch submittal: Driveway, driveway culvert, and individual site excavation permit applications, and multiple site excavation permit applications where work consists of discrete locations, shall be accompanied by a location sketch. If an applicant is a service provider, drawings shall be prepared by a Kansas licensed professional engineer. Information shown shall include at a minimum:
4.1.1 Scaleable drawing showing extents of pavement, curb and sidewalk, building foundation, and a graphic scale and north arrow (such as shown on the plot plan for the property);

4.1.2 The property address, permittee’s name and phone number, labels for the adjacent street and an indication of the direction to and name of the nearest cross street;

4.1.3 Location, size and material of proposed improvements;

4.1.4 For an individual site excavation permit, the location of the existing utility mains and the location and presumed size of the excavation;

4.1.5 Sketch shall be legible and line weights and styles, symbols and abbreviations shall be distinct and widely recognized by practitioners in the Kansas City area.

4.2 Design review: construction affecting more than 500 LF of right-of-way shall be subject to a design review.

4.2.1 Coordination: Applicant shall demonstrate that all registered service providers have had 14 days to review and comment on the plans and that such comments have been reasonably addressed.

4.2.2 Horizontal separation between the facility and deeper utilities such as water, sanitary sewer or storm sewer shall be 4 foot or ½ of the deeper utilities’ depth, whichever is greater.

4.2.3 Projects involving Horizontal Directional Drilling shall follow the design guidelines in Appendix B.

4.2.4 Plan Content: The drawings shall include the following minimum content:

4.2.4.1 Base map shall be scalable map showing extents of pavement, curb, sidewalk, above ground utility appurtenances and other above ground improvements.

4.2.4.2 Show marked location of existing underground facilities. Underground facilities shall be marked from record drawings, visible above ground appurtenances, or by tracing electric signal in metallic line or tracer wire.

4.2.4.3 Show accurate horizontal location of improvements including bulk dimensions of conduit, mains or other buried lines.

4.2.4.4 Show vertical information where necessary to identify and avoid potential conflicts.
4.2.4.5 Show property lines, right of way lines and construction limits.

4.2.4.6 Show traffic control plan and erosion control plan.

4.2.5 Plan presentation: Plans shall be neat, orderly, and legible and shall comply with the following format and content requirements.

4.2.5.1 Employ distinct line types, symbols and notes to indicate different types of facilities. Include a drawing legend.

4.2.5.2 Sheet size shall be a minimum 11 by 17 to maximum 24 by 36.

4.2.5.3 Name of facility owner and legend of symbols and abbreviations shall be on each sheet.

4.3 Preconstruction Documentation: Document the existing conditions of the improvements along the route that are scheduled to remain. Provide copies of preconstruction photos to the Unified Government on request.

4.4 Notification: Permittee shall provide notification to impacted property owners or tenants.

4.4.1 Who: Applicants for individual site excavation permits and multiple site excavation permits must comply with these notification requirements. Driveway, driveway culvert, and routine maintenance permit applicants are exempted from notification requirements.

4.4.2 What: Notice shall include:

4.4.2.1 The nature of the work and length of time delays and disruptions that may be expected.

4.4.2.2 Whether streets will be closed or remain open to traffic.

4.4.2.3 Whether any utilities will be out of service during construction.

4.4.2.4 The name and phone number of the superintendent or project manager or person who has authority over the job site, schedule, workers and subcontractors on the worksite.

4.4.2.5 Subject to UG discretion for project more than 500 linear feet of right-of-way, provide invitation and opportunity for residents and businesses to review project plans.

4.4.3 How: Notice may be a door hanger, post card or other written medium. The Unified Government Engineer shall be given a copy of the notice and distribution list.
4.4.4 Where: Notify all residents and business adjacent to the work on both sides of the street. If the street will be completely closed for any portion of the work, contact all residents and business in the entire block.

4.4.5 When: For projects affecting more than 500 linear feet of right-of-way notice shall be given a minimum 21-days prior to start of construction. For emergency work, notice shall be given as soon as practicable after start of work. For all other work, notice shall be given a minimum of 24 hours before start of work.

5. Safety

5.1 Potholing:

5.1.1 Prior to excavating in the public rights-of-way, permittee must pothole to verify existing utilities when the following circumstances are present:

5.1.1.1 Whenever an excavation or bore, including one using trenchless technology except CIPP or slip lining, will be within the tolerance zone of an existing underground facility

5.1.1.2 Whenever an excavation using trenchless technology except CIPP or slip lining will parallel an underground facility within three feet of that facility, potholing is required every 100 feet.

5.1.1.3 Whenever an excavation will be in the vicinity of an area of congested underground facilities.

5.1.1.4 Whenever an excavation is within three feet of a hazardous or vital underground facility.

5.1.2 The preferred method of excavating a pothole is air vacuum excavation. When air vacuum excavation is not feasible the preferred method of potholing is the use of water vacuum excavation or hand digging. When potholing, exposed underground facilities should be protected and supported. Potholes shall be backfilled in accordance with current Technical Provisions.

5.1.3 If potholing reveals incorrectly located lines, permittee must report discrepancy to the facility owner and Kansas One Call along with proper location information.

5.2 Locates: Prior to excavation permittee shall call for locates pursuant to Kansas One Call.
5.3 Clothing: Workers in the right-of-way shall wear shirt, vest or jacket that is orange, yellow green or fluorescent versions of these colors. For nighttime work, outer garments shall be retroreflective.

5.4 Safety officer: Permittee shall identify a safety officer, and 24-hour contact numbers, with job site responsibilities to oversee compliance with all safety regulations. Safety officer shall be on 24-hour call.

5.5 Trench safety: U.S Department of Labor, Occupational Safety and Health Administration has standards for excavations and trenches that may affect the work.

5.6 Hazardous material spills: Permittee shall comply with Kansas Department of Health and Environment requirements for reporting spills of hazardous materials, including fuels and other equipment maintenance fluids.

5.7 Traffic Control: Permittee must provide adequate traffic control for any permitted activity that obstructs any part of the roadway pavement. Obstructions requiring traffic control include but are not limited to workers adjacent to or in the roadway, excavations, equipment maneuvering areas, stored materials, spoil stockpiles, any stationary equipment that is a source of construction activity such as delivery trucks, tool trucks, lifts, excavators, and unoccupied parked maintenance equipment, except where parked entirely within permitted parking zones, and any other area or activity that present a potential conflict with the traffic operations of the roadway.

5.7.1 Installer Qualifications: Individuals designing, placing and maintaining traffic control devices shall have adequate training and have a basic understanding of the principles established by the Manual of Uniform Traffic Control Devices (MUTCD).

5.7.2 Traffic Safety Resources: the permittee shall either:

5.7.2.1 have on staff a work zone traffic safety officer who has either an American Traffic Safety Services Association traffic control technician certification or International Municipal Signal Association certification in work zone traffic safety and who has oversight responsibility of traffic control and work zone safety, or

5.7.2.2 contract all traffic control setup, maintenance and removal to a firm specializing in traffic control that has a technician on each crew that has either an American Traffic Safety Services Association traffic control technician certification or International Municipal Signal Association certification in work zone traffic safety.

5.7.3 All traffic devices shall conform to the MUTCD and shall be placed in conformance with the principles described in the MUTCD. All traffic
control devices shall be marked with the name and contact information of the right of way user. All traffic plates shall be marked with the name of the right of way user.

5.7.4 All traffic control devices shall be removed immediately upon elimination of the roadway obstacle.

5.7.5 The permittee, the responsible person on site, and each individual worker creating an obstruction shall be severally liable for fines and other penalties for failure to provide adequate traffic control.

6. Construction requirements

6.1 Construction specifications: All work done by the permittee shall be done in accordance with the Technical Provisions and Standard Drawings of the Unified Government. In addition, projects involving Horizontal Directional Drilling will follow the construction and containment requirements in Appendix B.

6.2 Times of operation: The permittee shall perform all work on the right-of-way at such times that will allow the least interference with the normal flow of traffic and the peace and quiet of the neighborhood. Except with the written approval of the Unified Government Engineer, non-emergency work shall be restricted as follows:

6.2.1 On arterial and collector streets work may not be performed during the hours of 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m.

6.2.2 Work may not be performed on any street during the hours of darkness or on weekends.

6.3 Service disruptions: Permittee shall not disrupt the utility service to any structure unless:

6.3.2 Separate notification has been given to the tenant/owner of the structure on both the day before and the day of the disruption.

6.3.3 Disruption is limited to the hours between 9:00 a.m. and 4:00 p.m. or other times as negotiated with the structure tenant/owner.

6.4 Inspections: Required inspections are noted on the permit; permittee shall notify the Unified Government Engineer of the work’s readiness for inspection; minimum notice and other requirements regarding inspection are as follows:

6.4.1 Notice for inspection for non-emergency work shall be 24 hours.

6.4.2 Notice for inspections for emergency work shall be 1 hour.
6.4.3 If the UG inspector fails to make the inspection appointment, 1 hour after the scheduled time for inspection, permittee may proceed with work.

6.5 Impact on adjoining properties: Permittee shall make all reasonable efforts to promptly respond to adjacent business’ and residents’ needs and requests, particularly:

6.5.1 Times of operation

6.5.2 Unscheduled service or access disruption

6.5.3 Mud on street and general job site clean up

6.5.4 Handicap access equipment

6.5.5 Incomplete restoration

6.6 Vehicle marking: Any vehicle or mobile equipment used by the permittee in connection with excavation of, disruption of, or any work in the right-of-way shall be clearly identified with the name of the permittee or the person doing the work painted or otherwise durably marked on both sides of the vehicle or equipment, in plain letters, not less than two inches high and not less than one-fourth inch stroke.

6.7 Sediment and erosion control: The permittee shall utilize temporary erosion control methods on the project site to prevent mud and debris from entering the roadway or the storm/sanitary system and to prevent damage to existing residential yards. The forms of temporary erosion control shall include but not be limited to construction of temporary cutoff ditches, installation of staked straw bales, temporary hydro seeding, erosion control fabric fences, fiber logs, temporary erosion control blankets, and check dams.

6.8 Dumpster locations: Dumpsters shall not be placed in alleys unless there is sufficient room for emergency vehicles and other vehicular traffic to pass safely. The minimum clearance for vehicular movement is 10 feet. Dumpsters shall not be placed on sidewalks unless appropriate sidewalk closure and detours are in place.

6.9 Horizontal Directional Drilling: Horizontal directional drilling under any street or paved alley shall be at a minimum depth of 4 feet. Additional guidelines are set forth in the HDD Handbook, appendix B.

6.10 Tracer wire: New non-metallic underground facilities placed in the right of way shall be accompanied by tracer wire as provided below, tracer wire shall comply with the Unified Government’s Technical Provisions and Standard Drawings. Except spot repairs that replace less than 100 feet are not required to have tracer wire.
6.10.1 New nonmetallic underground facilities placed by trenchless methods shall have a tracer wire placed with the underground facility.

6.10.1.1 If conduit or innerduct is used the tracer wire can be preinstalled or blown in after conduit or innerduct installation.

6.10.1.2 If conduit or innerduct is not used then the tracer wire should be installed as integral part of the facility installation.

6.10.2 Tracer wire shall be accessible at least every three hundred feet. Access points may include valve boxes, hand-holes, manholes, vaults or other covered access devices. Access point covers should be clearly marked with the type of facility.

6.11 Damage to utilities: Any right of way user that damages an underground facility, power pole or tracer wire shall immediately notify the owner of the facility and the Unified Government Engineer. Owner of the damaged facility may conduct, direct, oversee or specify how the repair is to take place. Permittee shall coordinate and cooperate with the owner of the damaged facility.

6.12 Pavement Restoration:

6.12.1 Temporary plates will be used where directed by the Unified Government Engineer to allow early or temporary opening to traffic. Plates shall be ASTM A-36 structural steel, minimum ¾” thick and of sufficient length to provide adequate bearing surface on solid pavement. Plate shall be securely pinned with smooth head pin rising no more than ½” above the plate. Plates on arterial and collector streets and State highways shall be ramped.

6.12.2 If weather conditions do not permit placement of permanent pavement within the time limits of the permit, flush fill concrete shall be used as temporary paving. Final paving shall be made as soon as practicable after weather conditions allow. Remove temporary pavement prior to final restoration.

6.12.3 Under no circumstance shall granular material be used as a temporary surfacing other than on a construction entrance.


7. Driveways: Except as noted requirements apply only to that part of the driveway located in the right-of-way. Entrance and driveway requirements of sections 7.8, 7.9, 7.10, 7.11, and 7.12 are shown graphically in Appendix C.
7.1 Minimum driveway width is 10 feet

7.2 Equivalent or increased pavement sections may be proposed at the option of the owner.

7.3 Materials and execution shall comply with the Unified Government’s Technical Provisions and Standard Drawings. Driveway culvert shall comply with the Unified Government’s Technical Provisions and Standard Drawings. Materials may be:

7.3.1 Reinforced Concrete Pipe-ASTM C 76 or

7.3.2 High Density Poly Ethylene, profile wall with smooth interior, AASHTO M 294 or

7.3.3 Aluminized Steel type 2, AASHTO M 274-Ultra flo.

7.4 Setback from the lot line: No part of the drive or return shall cross a line originating at the corner formed by the right-of-way line and the side lot line and drawn perpendicular to the street center line.

7.5 Handicap access: Where driveway intersects a sidewalk the driveway shall provide continuous accessible path meeting the requirements:

7.5.1 Minimum width 3 feet

7.5.2 Maximum cross slope 2%

7.5.3 Continuous accessible connection with sidewalk

7.6 Drainage: Driveways shall be constructed so as not to alter the roadside drainage.

7.6.1 Fillets in the gutter section, whether placed before or after the effective date of this regulation, are not a permitted use. Such fillets shall be removed upon notification by the Unified Government. The Unified Government may remove such fillets without notice to the property owner or tenant.

7.6.2 Driveways on curbless roads shall have culverts or a depressed valley low water crossing as appropriate for site conditions. Driveway culvert length shall not exceed the width of pavement plus a reasonable length for embankment slopes. Except at driveways, drainage along curbless roads shall be provided as an open channel with the flow line located at least 3 feet from the edge of the asphalt. Flows moving toward or away from the pavement may be sheet flow ditched or piped.
Driveways (Continued)

7.7 Gravel driveways restricted: No new, or reconstructed driveways or aprons shall be constructed of a granular material with the following exceptions:

7.7.1 Construction entrance as defined in this section

7.7.2 Residential driveways that exceed one hundred linear feet may transition to granular surfacing at a distance of at least 40 feet from the curb or edge of the pavement. Additional zoning limitations may apply to gravel driveways.

7.8 Field Entrance: The definition of a Field Entrance is an entry from a rural section roadway to a field or tract with no permanent roadway or structure. Layout and construction requirements for a Field Entrance are as follows:

7.8.1 Pavement section: turf

7.8.2 Width: 25 feet, maximum, exclusive of returns

7.8.3 Returns: 5 feet minimum, 25 feet maximum

7.8.4 Setback from intersection: The end of the return shall not be closer than 40 feet from the point of intersection of the edge of pavement and the prolongation of the near right-of-way line cross street.

7.9 Construction Entrance: The definition of a Construction Entrance is a temporary entry to a construction site, length of service to be negotiated at time of permit.

7.9.1 The following are required:

7.9.1.1 Cushion for existing curb and sidewalk: wood planks, steel plate, earth cushion or other effective and durable cushion subject to the approval of the UG Engineer.

7.9.1.2 Mud free zone: minimum 50 feet of 1.5 inch clean gravel surface; except entries where use is so limited that existing vegetation remains intact will not require the mud free zone; if clean up problems persist on the public street the UG Engineer may require temporary asphalt pavement in the mud free zone for a longer mud free zone.

7.9.2 Width: as required for vehicle movements

7.9.3 Returns: as required for vehicle movements

7.9.4 Setback from intersection: the end of the return shall not be closer than 60 feet from the point of intersection of the prolongation of the curbs, or pavement edges of the intersecting streets.
7.10 Residential Driveways: The definition of a Residential Driveway is an entry from a public street to a single family or duplex lot.

7.10.1 Pavement section: 5.5 inches concrete on compacted 4 inch aggregate base, steel reinforcing optional.

7.10.2 Width: 25 feet maximum exclusive of returns.

7.10.3 Returns: 3 feet minimum, 5 feet maximum.

7.10.4 Setback from intersection: The end of the return shall not be closer than the point of intersection of the curb, or edge of pavement, and the building setback line applicable to the cross street.

7.11 Policy for UG Installation of residential driveway culverts: The Unified Government may provide equipment and labor to replace existing culvert pipes for single family residential dwellings. This policy does not apply to new residential construction or for commercial or industrial zoned areas. The following conditions are applicable to this service:

7.11.1 The culvert must be located wholly within the right-of-way and is under a driveway that complies with these regulations.

7.11.2 Work must be completed without crossing property lines or changing drainage patterns. The owner must furnish culvert pipe that meets the specifications for storm sewers in the public right-of-way.

7.11.3 The owner must obtain a right-of-way use or appropriate permit and all other applicable permits.

7.11.4 The owner restores the driveway approach to current Technical Provisions and Standard Drawings.

7.11.5 If the above conditions are met, Unified Government equipment and labor may be provided, as other work schedules permit, at no cost to the owner.

7.12 Commercial Driveway: The definition of a Commercial Driveway is an entry to a multifamily development or a commercial zoned lot or development. Layout and construction requirements for a Commercial Driveway are as follows:

7.12.1 Pavement: 8 inches concrete on 4 inches aggregate base, steel reinforcing optional.

7.12.2 Width: 30 feet maximum exclusive of returns.

7.12.3 Returns: 10 feet minimum, 25 feet maximum. Returns shall have curbed edge when streets have curbs.
7.12.4 Setback from intersection: The end of the return shall not be closer than 40 feet from the point of intersection of the curb, or edge of pavement and the prolongation of the near right-of-way line of the cross street.

7.13 Industrial Driveway: The definition of an Industrial Driveway is an entry into an industrial zoned lot or development. Layout and construction requirements for an Industrial Driveway are as follows:

7.13.1 Pavement section: 8 inches concrete on 4 inches aggregate base, steel reinforcing optional. Custom design of industrial pavement encouraged.

7.13.2 Width: 25 feet maximum exclusive of returns.

7.13.3 Returns: 15 feet minimum, 25 feet maximum. Returns shall have curbed edge when street has curbs.

7.13.4 Setback from intersection: The end of the return shall not be closer than 40 feet from the point of intersection of the curb, or edge of pavement, and the prolongation of the near right-of-way line of the cross street.

APPROVED BY THE UNIFIED GOVERNMENT COUNTY ADMINISTRATOR OF WYANDOTTE COUNTY, KANSAS CITY, KANSAS,

THIS__________DAY OF___________, 2004

________________________________________
Dennis M. Hays, Administrator

Attest:         Approved As To Form:

______________________
Unified Government Clerk             Assistant Counsel
Appendix B

Horizontal Directional Drilling Guidelines Handbook

The guidelines handbook is not intended to be a step-by-step procedure manual but rather a collection of fundamental elements of the HDD process.

Introduction

This handbook is to be used as a basic guide for Horizontal Directional Drilling (HDD) applications performed within the limits of the Unified Government. The overall purpose is to provide guidelines that will help ensure public safety and protection of existing underground facilities. This protection effort is made up of many different aspects and each one has been addressed within this booklet.

This guidelines handbook is not intended to be a step-by-step procedure manual but rather a collection of fundamental elements of the HDD process.

By following these guidelines, all involved can better assure that all reasonable steps have been taken to ensure public safety and to protect existing underground facilities.

Any ideas for the improvement of this handbook and our protection effort are welcome.
Appendix B – Horizontal Directional Drilling

Contents

Design Guidelines

Horizontal Directional Drilling Minimum Clearances

Construction Safety Guidelines

Drilling Fluid Containment and Disposal

Construction Requirements

Storm Water Pollution Prevention Best Management Practices

Construction Record and As Built Plan Requirements
Appendix B – Horizontal Directional Drilling

Design Guidelines

Prior to submitting an application for a Right-of-Way Permit that will involve horizontal directional drilling (HDD), the Permittee, or its designer shall undergo a thorough design process. At a minimum, the Permittee shall complete the following tasks prior to submitting a Right-of-Way application.

Prepare or obtain scaled mapping for the planned installation, including all exiting surface facilities and improvements, and including any indication of underground facilities or improvements.

Collect existing underground utility information, including the horizontal location of all known substructures.

Obtain right-of-way information through AIMS, survey records or other sources.

Obtain general and/or specific geotechnical information, including USDA Soil Conservation Service Data for the project area and possibly including site specific geotechnical sampling and analysis.

Prepare construction plans using the information noted above including location of all planned improvements, existing underground utility information, right-of-way limits and property ownership information.

In addition to the design requirements listed previously, the Permittee (or designer) should:

A. Consider the minimum horizontal and vertical clearance requirements when determining the HDD alignment to include road setbacks, existing surface features, exiting underground utilities and underground facilities.

B. Consider product pipe and reamer diameter requirements:

<table>
<thead>
<tr>
<th>Product Diameter</th>
<th>Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;8”</td>
<td>Product + 4”</td>
</tr>
<tr>
<td>8” to 24”</td>
<td>Product * 1.5</td>
</tr>
<tr>
<td>&gt;24”</td>
<td>+ 12”</td>
</tr>
</tbody>
</table>

C. Consider the bore geometry for the given ground profile including bore length(s) and depth requirements, bending radii for the final product pipe; typically 100’ radius per 1 inch product diameter with 600’ to 1000’ radius minimums depending on subsurface materials and equipment requirements.

D. Consider drilling equipment for the given geotechnical conditions, geometry and final product diameter including thrust and pullback ratings, mud motors vs jetting heads, wireline vs walkover tracking systems.
Appendix B – Horizontal Directional Drilling

E. Consider equipment and material handling requirements including drilling fluid and drilling containment, drill operation and final product staging.

F. Consider material strengths, capacities and coupling methods.

Construction Safety Guidelines

Prior to performing work involving HDD under a right-of-way permit, the Permittee or Contractor shall consider the listed safety guidelines.

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.

Insure that the approved traffic control plan is implemented and followed at all times.

Insure that all storm water pollution prevention measures (required with permit application) are implemented and followed at all times.

Insure all setbacks, offsets and clearances are maintained.

Insure that utility One-Call and other utility coordination have been met.

Positively identify (by potholing) all crossed utilities that are expected to be above and within 5’ of the proposed vertical alignment, below and within 3’ of the proposed vertical alignment and as required by the UG Engineer.

Positively identify (by potholing) all parallel utilities at the beginning and ending of all bores, every 200’ if it is within 5’ of the proposed alignment, every 50’ if it is within 3’ of the proposed alignment and as otherwise required by the UG Engineer.

The HDD Contractor shall have a planned response in the event of a utility strike including utility notification and avoiding electrocution in the event of an electric strike, avoiding combustion in the event of a gas line strike and avoiding contamination in the case of a sewer strike.

Drilling Fluid Containment and Disposal requirements

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

All drilling fluid and fluid additives shall be disclosed and Material Safety Data Sheets (MSDS) shall be provided to the UG Engineer on request.

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.
Appendix B – Horizontal Directional Drilling

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

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

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

Construction Requirements

All construction work shall be performed in accordance with the Unified Government Code of Ordinances, Technical Provisions and Standard Drawings. For all work involving HDD under a right-of-way permit, the Permitte or Contractor shall perform the following:

Prior to the construction the HDD Contractor shall familiarize himself with the work area and the technical requirements of the plans.

The Permittee or Contractor shall establish construction marking/staking prior to construction to indicate HDD entry and exit locations and proposed HDD alignment at 50-foot (max) intervals.

Provide the UG with a contact list of all crew foreman and or superintendents.

During construction the HDD contractor shall calibrate its’ tracking and locating equipment at the beginning of each work day.

The HDD Contractor shall monitor and record the alignment and depth readings provided by the tracking system every 25 to 30 feet for normal conditions and every 50 to 10 feet where precise alignment control is necessary.

The HDD Contractor shall complete the HDD installation as designed and permitted both horizontally and vertically unless otherwise authorized by the UG Engineer.

The HDD Contractor shall attempt to maintain drilling fluid circulation throughout the HDD process during the initial pilot hole installation and during the reaming and back pull process (do not pull the fluid circulation rate).

The HDD Contractor shall not expand the bore hole by more than six inches (6”) using only compaction reamer.

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

The HDD Contractor shall at all times for the entire length of the HDD alignment be able to demonstrate the horizontal and vertical position of the alignment, the fluid volume used, return rates and pressures.
Appendix B – Horizontal Directional Drilling

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

At the request of the UG Engineer, the Contractor shall provide access for inspection for the HDD operations.

Following construction the Permittee shall notify the UG Engineer on completion of the authorized work.

Prior to the start of the backfilling excavations under paved surfaces, the permittees shall notify the UG Engineer to schedule an inspection. On completion of all right-of-way restoration activities, the Permittee will schedule a closeout inspection.

The Permittee or Contractor shall insure that all cleanup and restoration is in compliance with the UG Technical Provisions and Standard Drawings.

The Permittee’s 2 year maintenance period will not begin until any corrective actions required have been completed and inspected to the UG’s satisfaction.

Storm Water Pollution Prevention
Best Management Practices

All construction activities shall be performed in accordance with the National Pollution Discharge Elimination System (NPDES) as regulated by the Environmental Protection Agency (EPA), the Kansas Department of Health and Environment (KDHE) and the Unified Government.

The Permittee or Contractor shall implement Best Management Practices (BMP’s) to insure that storm water runoff is not contaminated by sediment caused by land disturbances associated with construction activities. For a full list and discussion of recommended BMPs’, please see the following publication:

Publication: Construction Site Storm Water Runoff Control
Source: http://www.epa.gov/npdes/menuofbmps/con_site.htm

The following seven goals shall be applied for all Storm Water Pollution Prevention planning:

A. Insure that sediment controls are in place
B. Maintain sediment controls throughout the construction and restoration process.
C. Minimize the overall disturbance whenever possible.
D. Protect disturbed areas throughout the construction process.
E. Prevent storm water runoff from entering disturbed areas.
Appendix B – Horizontal Directional Drilling

F. Never intentionally discharge construction contaminants directly into creeks, rivers, ditches or storm systems.

G. Complete permanent restoration as soon as possible.

In addition to those overall goals stated previously, the contractor shall, at a minimum, implement the following Best Management Practices:

A. Provide temporary erosion protection whenever possible. Mulch, seed, or gravel may be applied even if a disturbed area may and/or will be disturbed again or other permanent measures of stabilization are to follow.

B. Cover spoil piles with a tarp or contain with a sediment barrier

C. Contain disturbed sediment on site by using sediment barriers such as silt fence, sand bags, straw bails, rock checks and/or sediment traps to contain sediment on the construction site.

D. Existing vegetation may be used as a sediment filter where minimal grades and sheet flow runoff will occur.

E. Insure that all sediment barriers are installed and functioning properly.

F. Avoid causing flooding in roadways and adjacent right-of-way.

G. Do not block existing culverts and storm inlets except as a last resort.

H. Insure that sediment is removed from sediment traps and filters after all storm events.

Construction Records and As Built Plan Requirements

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 Unified Government with As Built plans and any supporting documents within 60 days of project completion. As Built Plans are preferred in AutoCAD format but may be submitted in paper form. HDD construction records and As Built Plans shall include the following:

A. HDD tracking data and operator logs shall be maintained daily and shall be made available on request from the UG Engineer. These records and operator notes shall specify:

   a. The type of tracking equipment used

   b. The length and depth of the HDD installation
Appendix B – Horizontal Directional Drilling

c. Additional information that may include steering adjustments and other equipment performance parameters.

B. As Built Plans shall be derived from the tracking data and operator logs. At a minimum, the drawings shall indicate:

a. Horizontal and vertical HDD alignment

b. Existing utility horizontal locations and depths at all exposed or potholed locations

c. Existing utility horizontal locations where indicated with field locates.

C. As Built Plans shall conform to the same UG requirements for Right-of-Way permits included previously.
Appendix C

Right of Way Management Reference Drawings

Contents

Field Entrance ................................................................................................................100
Minimum Standards for Construction Entrance........................................................200
Minimum Standards for Residential Driveway ..........................................................300
Standards for Long Driveway on Residential Lots.....................................................400
Standards for Side Property Line Setback All Driveways..........................................500
Minimum Standards for Commercial/Industrial Driveway ......................................600