F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338/IL 59	~~2011-035-I~~	DUPAGE		
			CONTRACT 60P42	
FED.ROAD.DIST.NO.	ILLINOIS		FED. AID PROJECT	

Guided Horizontal Drilling System (HDD)

The work specified in this specification consists of furnishing and installing underground utilities using the horizontal directional drilling (HDD) method of installation, also commonly referred to as directional boring or guided horizontal boring. This work shall include all services, equipment, materials, and labor for the complete and proper installation, testing, restoration of underground utilities and environmental protection and restoration. For the supply of domestic water during construction, the contractor shall utilize cities supply (meter & backflow device) and pay for all water consumed. Un-accountable domestic water quantities shall be minimized, where possible.

The requirements set forth in this specification specify a wide range of procedure precautions necessary to insure that the very basic, essential aspects of proper directional bore installation are adequately controlled. Strict adherence shall be required under specifically covered conditions outlined in these specifications or within any associated permit. Adherences to the specifications contained herein are required. DPU-E approval on any aspect of any directional bore operation covered by this specification shall in no way relieve the Contractor of their ultimate responsibility for the satisfactory completion of the work authorized under the Contract. The HDD Contractor shall be responsible for the repair of all damage to private and/or public property (at no expense to DPU-E). Repair work shall meet all local state and federal rules and requirements.

The project schedule shall be established on the basis of working a normal work schedule including five days per week, single shift, and eight hours per day. Unless approved otherwise by DPU-E normal or general items of work, such as testing, and final inspections, shall be scheduled during the normal work schedule. Due to operational, and manpower limitations on the DPU-E systems, DPU-E will require the Contractor to perform outage work outside of the normal work schedule. These operational outage and manpower limitations, including but not limited to tie-in work, (cut-in work or other work) and other phases of the work are required to limit the impact and the continued (non-interruptible) service to existing DPU-E customers. The Contractor shall plan and anticipate the cost impact of these systems limitations and provide such work or services at no additional cost to DPU-E.

Prior to beginning work, the Contractor must submit to DPU-E a work plan detailing the procedure and schedule to be used to execute the project. The work plan should include a description of all equipment to be used, down-hole tools, a list of personnel and their qualifications and experience (including back-up personnel in the event that an individual is unavailable), list of sub-Contractor, a schedule of work activity, a safety plan (including MSDS of any potentially hazardous substances to be used), traffic control plan (if applicable), an environmental protection plan and contingency plans for possible problems including a Frac-Out and Surface Spill Contingency Plan. Work plan should be comprehensive, realistic and based on actual working conditions for this particular project. Plan should document the thoughtful planning required to successfully complete the project. The HDD Contractor shall submit and obtain DPU-E's approval of a pre-construction bore-log depicting a plan and profile (horizontal and vertical alignment) of the proposed bore path. The bore-log shall show all utility crossings and existing structures.

The DPU-E representative must be notified 96 hours (minimum) in advance of starting the drilling work. The Directional Bore shall not begin until the proper preparation (work plan) for operation has been completed.

Prior to any alterations to work-site, Contractor shall video tape entire work area. One copy of which shall be given to DPU-E Representative and one copy to remain with Contractor for a period of two (2) years following the completion of the project.

HDD – Horizontally directionally drilling by definition.

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Guided Horizontal Drilling System (HDD) (Continued)

Work site shall be graded and filled to provide a level working area. No alterations beyond what is required for operations are to be made. Contractor shall confine all activities to designated work areas. Following drilling operations, Contractor will de-mobilize equipment and restore the work-site to original condition or better. All exactions will be backfilled and compacted to 95% of original density (as a minimum).

Contractor shall place site/silt fence between all drilling operations and any drainage, wetland, waterway or other area designated for such protection by contract documents, state, federal and local regulations. Contractor shall place hay bales, or approved protection, to limit instruction upon project area. Additional environmental protection necessary to contain any hydraulic or drilling fluid spills shall be put in place, including berms, lines, turbidity curtains and other measures. Contractor shall adhere to all applicable environmental regulations including environment condition stated in local, state and federal permits. Fuel may not be stored in bulk containers (greater than 25 gallons) within 200' of any water-body or wetland.

The horizontal Directional Drilling operation is to be operated in a manner to eliminate the discharge of water, drilling mud and cuttings to the adjacent creek or land areas involved during the construction process. The Contractor shall provide equipment and procedures to maximize the recirculation or reuse of drilling mud to minimize waste. All excavated pits used in the drilling operation shall be lined by Contractor with heavy duty plastic sheeting with sealed joints to prevent the migration of drilling fluids and/or ground water.

The Contractor shall visit the site and must be aware of all structures and the limitations at the directional drill crossing and provide the Engineer with a drilling plan outlining procedures to prevent drilling fluid from adversely affecting the surrounding area.

Clearing and grubbing shall consist of the removal and disposal of all trees (less than 6" dia.), stumps, roots, logs, shrubs, grass, weeds, fallen timber and other surface liter, wherever they occur within the right-of-way and within such other areas as directed and staked out by the Contractor.

Within the limits of the right-of-way and staked out by the Contractor's land surveyor all brush and trees, except those designated to be saved, shall be cut level with the ground, and all surface debris, including fallen timber, slash limbs, brush, grass and weeds, shall be disposed of off site.

Within areas where excavation will be made and where the embankment grade is less than 3 feet above the original ground level, all stumps and roots shall be grubbed out.

Trees shall be felled towards the centre of the area to be cleared. Any brush or trees falling outside of the area to be cleared shall be moved back to the right-of-way and disposed of. The Contractor shall take all precautions against damage to other trees, traffic, structures, pole lines or property in his felling of trees, and he shall be liable for any damages occurring in the performance of this work.

Clearing and grubbing shall be completed in advance of grading operations. The Contractor shall not start any clearing, grubbing without permission from the Engineer.

Removal of debris shall be carried on concurrently with clearing operations so that the debris from each day's operations is disposed of in that day. No additional compensation will be payable because of being required to handle the debris in this manner.

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Guided Horizontal Drilling System (HDD)

Debris and other materials must be disposed of off site by the Contractor and shall perform these operations well in advance of grading operations

Clearing, grubbing operations shall be conducted in accordance with the applicable Federal, County and Municipal regulations and Acts.

Before final acceptance of the work, the Contractor shall make a final clean-up of the right-of-way and remove debris which may have been covered with snow or blown in by the wind after the original clearing and grubbing operations were completed at no cost.

The general work areas on the entry and exit sides of the crossing shall be enclosed by a berm to contain unplanned spills or discharge.

Waste cuttings and drilling mud shall be processed through a solids control plant comprised as a minimum of sumps, pumps, tanks, desalter/desander, centrifuges, material handlers and haulers all in a quantity sufficient to perform the cleaning/separating operation without interference with the drilling program. The cuttings and excess drilling fluids shall be dewatered and dried by the Contractor to the extent necessary for disposal in offsite landfills. Water from the dewatering process shall be treated by the Contractor to meet permit requirements and disposed of locally. The cuttings and water for disposal are subject to being sampled and tested. The construction site and adjacent areas will be checked frequently for signs of unplanned leaks or seeps.

Equipment (graders, shovels, etc.) and materials (such as groundsheets, hay bales, booms and absorbent pads) for cleanup and contingencies shall be provided in sufficient quantities by the Contractor and maintained at all sites for use in the event of inadvertent leaks, frac out, seeps or spills.

Waste drilling mud and cuttings shall be dewatered, dried, and stock piled such that it can be loaded by a front end loader,, transferred to a truck and hauled offsite to a suitable legal disposal site. The maximum allowed water content of these solids is 50% of weight.

Due to a limited storage space at the worksites, dewatering and disposal work shall be concurrent with drilling operations. Treatment of water shall satisfy regulatory agencies before it is discharged.

The Contractor shall install; 3inch, 5 Inch or 6 inch HDPE coilable conduit, into various configurations and lengths and combinations. Contractor to review drawings for all work. The HDPE coilable conduit shall be connected by the butt fusion process. The Contractor shall reposition the conduit, for installation in to electrical facilities after installing the HDPE conduit by the HDD method, using schedule 40 PVC or Steel conduit and positioning conduit into the proper cross sections. The Contractor is to connect HDPE conduit by rotating, aligning, cutting, leveling, bending, coupling, mitering, measuring, cropping, fitting, positioning and laying out the conduit using steel conduit or schedule 40 PVC as required to provide the cross section required and then connecting this cross section to splices boxes, hand holes, manholes, switchgear vaults, transformer vaults, pedestals or risers. The work to reposition the HDPE is included in the contract and is incidental to the pricing.

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PROJECT TITLE: ROUTE 59 ROAD IMPROVEMENTS				
PROJECT DESCRIPTION: DETAILS AND STANDARDS				
ENGINEER: BCC	DRAFTING DATE: 5-11-12	MAP #: 4211,4212,4223	SCALE: N.T.S.	
GIS DESIGN BY: DL / DRAFTED BY: PSM	REVISIONS DATE:	AT&T JOINT AGREEMENT #: N/A	PROJECT #: EU-12	
CHECKED BY:	APPROVED BY:	CAD FILE: 0060648001D143.DWG	SHEET #: 43 OF 63	
Naperville — Department of Public Utilities, Electric Division				WORK REQUEST #: 60468