Directional Boring Safety
Definition

- Directional boring, commonly called horizontal directional drilling or HDD, is a steerable trenchless method of installing underground pipes, conduits and cables in a shallow arc along a prescribed bore path by using a surface launched drilling rig, with minimal impact on the surrounding area. Directional boring is used when trenching or excavating is not practical. It is suitable for a variety of soil conditions and jobs including road, landscape and river crossings.
Used in different industries

• Communication
• Electrical distribution and transmission
• Gas distribution and transmission
• Water
• Sewer
What a drill crew consist of

• Locator: Tracks the bore path with the electronics and relays instruction to the operator back on the machine.
• Operator: Runs the machine and follows the instructions of the locator but also relays ground conditions back to the locator.
• Laborer: Helps wherever is needed for traffic control, vac up spoils, or mixing of mud.
Locator and operator
Equipment

Directional Drill
Water Truck
Support Truck and a mini excavator
Vac of some kind
Equipment

• Directional Drill with electronics
• Water Truck or Trailer with mix system
• Support Truck with mini excavator or backhoe
• Vac of some kind
• Reel or pipe trailer to handle product
Getting started

• Pre-field of job
  – Look at site conditions
    • What size rig is needed to do the job
    • Urban or rural
    • Try to contact property owners
    • Ground conditions (Rock, sand, clay, black dirt etc.)
    • See if there are any signs of existing utilities
    • Take down all information to call in locates
    • What traffic signage is needed and is traffic an issue
    • Water supply
Before you send crew to job

• Call in locates

• Make sure the crew has:
  – Copy of plans for the job
  – Copy of locate ticket with all utilities listed
  – Copy of all applicable permits
  – Proper signage for traffic control
  – Right material to pull back, reamers and proper pull back heads
  – Fencing, cones or trench plates to protect the open pits
When crew gets to the job

• Set up traffic signage as needed
• Walk bore path looking for anything
  – Locates
  – Terrain
  – Manholes, inlets and sewer cleanouts
  – Document any broken sidewalk, street, or driveway
  – Check for interference with the locator
• Pothole utilities by digging up or vac
  – Secure potholes
• Plan bore path
Start Boring

- Setup Machine
- Hookup drilling fluid
- Calibrate the electronics
- Make sure radios are working correctly and the frequency is free of other chatter
- Start boring with the locator tracking and guiding the head
- Make sure to keep proper clearance for all existing utilities
- Watch for fracouts
- After bore is shot, ream is necessary and pull back product
If a utility is hit

- Call emergency locate
- Call emergency personnel if needed
- Check safety of employees and the public
- Make sure proper utility is notified
- Document everything with notes and pictures
- Supply all information to whoever is fixing the utility and try to help as needed
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