

## Job Hazard Analysis (JHA)

### Task: Plowing for Conduit in the Telecom Industry

#### Risk Assessment Code (RAC) Legend

- **☒ Red (High Risk):** Unacceptable—stop work and implement controls before proceeding.
- **☑ Yellow (Moderate Risk):** Proceed with caution—implement and verify controls.
- **☑ Green (Low Risk):** Acceptable—maintain controls and continuous monitoring.

**Overall Initial RAC for Plowing for Conduit Task: ☑ High Risk**

#### Job Steps, Hazards, and Controls

Step No.	Task Description	Potential Hazards	Controls / Safe Work Practices	Initial RAC
1	Pre-job planning & scope review	Missing permits; incomplete scope; failure to coordinate with utilities	Conduct tailboard/JSA meeting; review construction drawings and bore path; confirm 811/One-Call ticket; coordinate with utility owners; assign stop-work authority.	☑
2	Material staging (conduit reels, pull tape, equipment)	Struck-by rolling reels; trip hazards; improper storage	Chock conduit reels; store on level ground; stage away from vehicle/pedestrian traffic; mechanical assist for heavy reels.	☑
3	Traffic control setup (if plowing along roadway)	Vehicle strikes; inadequate signage; limited visibility at night	Implement MUTCD-compliant traffic control; cones, barricades, advance warning signs; certified flaggers; ANSI/ISEA 107 Class 2/3 garments; work zone lighting.	☑
4	Pre-excavation utility verification	Striking existing utilities; electrocution; gas release	Pothole/tone out tolerance zones before plowing; use vacuum excavation when required; follow utility owner guidance; stop work if unmarked utilities suspected.	☑
5	Mobilizing plow equipment	Struck-by moving machinery; backing accidents; tip-over	Designate spotters with radios; conduct 360° walk-around before movement; use backup alarms/cameras; maintain stable ground conditions.	☑
6	Aligning conduit reel with plow chute	Pinch/crush hazards; reel roll-off	Secure reels on stand; align chute carefully; use two-person team; maintain exclusion zone.	☑

Step No.	Task Description	Potential Hazards	Controls / Safe Work Practices	Initial RAC
7	Feeding conduit into plow chute	Pinch points; strain injuries; entanglement	Use conduit guides and rollers; never place hands inside chute; wear cut-resistant gloves; keep clear of rotating parts.	?
8	Operating plow to install conduit	Struck-by moving equipment; underground utility strike; ground collapse	Operator must be trained and authorized; maintain exclusion zone; monitor depth with tracker; stop if abnormal resistance; maintain OSHA Subpart P excavation safety around pits.	?
9	Pulling conduit into place	Conduit snap-back; entanglement; over-tensioning	Monitor pull force with gauge; exclusion zone along conduit path; use swivels and grips; never wrap conduit around body.	?
10	Crossing driveways, intersections, or sidewalks	Struck-by vehicles; pedestrian hazards	Use flaggers and barricades; schedule work during off-peak times; maintain safe pedestrian detours.	?
11	Monitoring plow depth and alignment	Insufficient cover; conduit damage	Use depth indicators and trackers; spotter verifies plow path; confirm depth meets engineering/owner requirements.	?
12	Handling long conduit pulls	Ergonomic strain; reel runaway	Use mechanical assist; brake reel stands; maintain communication between reel tender and plow operator.	?
13	Weather/environmental conditions	Heat stress, cold stress, lightning, slippery surfaces	Hydration and shaded rest in hot weather; thermal PPE in cold; suspend operations during lightning; de-ice as necessary.	?
14	Backfilling and compacting plow line	Struck-by compaction equipment; improper cover depth	Compact in lifts; place warning tape above conduit; spotter required near equipment; verify cover depth per spec.	?
15	Site restoration	Trip hazards; poor restoration leading to settlement	Restore soil, landscaping, or pavement to pre-construction condition; follow permit requirements; inspect before demobilization.	?
16	Equipment demobilization	Struck-by during load-out; transport hazards	Spotters during loading; secure equipment on trailers; check tie-downs before travel.	?
17	Documentation & turnover	Missing records; regulatory non-compliance	Record conduit footage, depth, and GPS path; update as-builts; submit QC documentation to owner/utility.	?

### PPE Requirements

- **Head/Face/Eye:** Hard hat (ANSI Z89.1); safety glasses with side shields (ANSI Z87.1).
- **Hearing:** Hearing protection when exposed to >85 dBA (plow equipment, generators).

- **Hands:** Cut-resistant gloves for conduit handling; insulated gloves if working near energized utilities.
  - **Feet:** Safety-toe boots with slip-resistant soles.
  - **High-Visibility Apparel:** ANSI/ISEA 107 Type R, Class 2 (day) or Class 3 (night/high-speed).
  - **Fall Protection:** Required if working near pits >6 ft or elevated platforms.
  - **Respiratory:** Dust mask or respirator when cutting or working in dusty soil conditions.
  - **Weather-Specific:** Rain gear, thermal clothing, or UV protection as required.
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### **Regulatory & Industry Practice Alignment (summary)**

- **OSHA:** 29 CFR 1926 Subpart P (Excavations), Subpart O (Motor Vehicles/Mechanized Equipment), Subpart E (PPE), Subpart M (Fall Protection), Subpart Z (Hazardous Substances—dust and fumes).
- **NIOSH:** Best practices for equipment operation, ergonomic handling of reels, silica exposure prevention.
- **ANSI/ISEA:** ANSI/ISEA 107 (high-visibility apparel), ANSI Z87.1 (eye protection), ANSI Z359 (fall protection).
- **NESC:** Separation requirements for telecom conduits installed near energized utilities.
- **MUTCD:** Traffic control standards for utility plowing operations near roadways.