Job Hazard Analysis (JHA)

Task: Accessing Vaults, Pedestals, and Nodes 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 Accessing Vaults, Pedestals, and Nodes 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 diagrams; lack of utility coordination	Conduct tailboard/JSA meeting; review prints/as-builts; confirm 811/One-Call ticket; coordinate with utility owners; assign stop-work authority.	🟧
2	Material staging (tools, PPE, testing equipment, lifting devices)	Struck-by falling tools; trip hazards; improper staging	Stage on level ground; secure covers/lifting tools; barricade staging area; maintain housekeeping.	🟧
3	Traffic control setup (if vault/pedestal/node in roadway/sidewalk)	Vehicle strikes; inadequate signage; pedestrian hazards	Implement MUTCD-compliant traffic control; cones, barricades, advance warning signs; certified flaggers; ANSI/ISEA 107 garments; night lighting as required.	🟥
4	Inspecting and lifting vault/pedestal/node covers	Strains from manual lifting; pinch points; struck-by falling cover	Use approved lifting tools (hooks, mechanical lifts); team lift if required; never place fingers under covers; barricade opening immediately.	🟥
5	Atmospheric testing of vault (if enclosed)	Oxygen deficiency; toxic gases (H_2S, CO); explosive atmospheres	Test with calibrated 4-gas monitor (O_2, LEL, CO, H_2S); ventilate if required; continuous monitoring during work.	🟥
6	Ventilating vault or enclosure	Hazardous atmosphere not dispersed; fan noise	Use explosion-proof blowers/ducting; verify airflow direction; maintain hearing protection if blower noise exceeds 85 dBA.	🟧

Step No.	Task Description	Potential Hazards	Controls / Safe Work Practices	Initial RAC
7	Setting up fall protection/retrieval system (vaults >6 ft)	Fall into opening; lack of rescue capability	Barricade opening; tripod/winch with full-body harness; trained attendant required; ensure retrieval line attached before entry.	
8	Entering vault or accessing pedestal/node	Slips/trips on cables; confined space hazards; ergonomic strain	Maintain 3-point contact; wear gloves and boots; organize work area; limit number of entrants; follow confined space entry procedures if required.	
9	Handling and testing fiber/power cables	Cuts/lacerations; exposure to fiber shards; electrical shock	Use cut-resistant gloves; dispose of fiber scraps in sharps container; only qualified personnel handle energized circuits; insulated tools when required.	
10	Working inside node/pedestal electronics	Arc flash; energized contact; eye strain from fiber lasers	Follow lockout/tagout procedures where applicable; wear safety glasses; post laser hazard warnings; do not look into fiber ends.	
11	Bonding/grounding metallic components	Electrical shock; improper bonding	Only qualified technicians perform bonding; follow NEC/NESC requirements; test before contact; wear insulated gloves.	
12	Weather/environmental hazards	Rain/flooding inside vault; icy surfaces; extreme heat/cold	Inspect for standing water before entry; pump/dewater if necessary; slip-resistant boots; thermal PPE in cold; hydration in hot weather.	
13	Exiting and resecuring vaults, pedestals, nodes	Struck-by dropped cover; pinch points; improper locking	Use lifting tools for cover replacement; ensure flush seating; secure locks/bolts; confirm pedestrian/vehicle safety.	
14	Housekeeping and cleanup	Slips/trips from tools, debris, or cables	Remove scrap materials and fiber shards; coil and secure cords; sweep/clean area before demobilization.	
15	Removing traffic control & demobilization	Vehicle strikes during removal	Remove traffic control in reverse order; maintain flaggers until last cone removed; final site walkdown.	
16	Documentation & turnover	Missing confined space logs; incomplete QC records	Record vault/pedestal/node ID, cable IDs, fiber counts, and test results; photograph work; update as-builts; submit to utility/owner.	

PPE Requirements

- **Head/Face/Eye:** Hard hat (ANSI Z89.1); safety glasses with side shields (ANSI Z87.1); face shield when handling energized equipment or cutting materials.
- **Hearing:** Hearing protection when using blowers, vac trucks, or working near traffic/equipment >85 dBA.
- **Hands:** Cut-resistant gloves for handling cables and covers; insulated gloves when working near energized equipment.
- **Feet:** Safety-toe boots with slip-resistant soles, waterproof for vaults with standing water.
- **High-Visibility Apparel:** ANSI/ISEA 107 Type R, Class 2 (day) or Class 3 (night/high-speed).
- **Fall Protection/Confined Space:** Full-body harness with retrieval line for vault entry; tripod/winch system when vault depth >6 ft.
- **Respiratory:** Dust mask for debris/dust; respirator if hazardous atmosphere or poor ventilation is identified.
- **Weather-Specific:** Rain gear, insulated PPE, sun protection as applicable.

Regulatory & Industry Practice Alignment (summary)

- **OSHA:** 29 CFR 1910.146 (Permit-Required Confined Spaces), 29 CFR 1926 Subpart E (PPE), Subpart P (Excavations), Subpart M (Fall Protection), Subpart O (Motor Vehicles/Equipment), Subpart Z (Hazardous Substances—fiber shards, solvents, fumes).
- **NIOSH:** Confined space entry guidelines; ergonomic safe lifting; best practices for fiber shard exposure prevention.
- **ANSI/ISEA:** ANSI/ISEA 107 (high-visibility apparel), ANSI Z87.1 (eye protection), ANSI Z89.1 (head protection), ANSI Z359 (fall protection).
- **NESC:** Bonding/grounding of metallic telecom facilities; safe separation from electrical utilities in shared vaults/pedestals/nodes.
- **MUTCD:** Work zone traffic control requirements when accessing telecom facilities in roadways.