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COMMUNICATIONS

Health, Safety & Environment Manual

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COMPLIANCE STATEMENT

This manual has been developed in accordance with OSHA 29 CFR 1926 (Construction Industry Standards), OSHA 29 CFR 1910 (General Industry Standards), and applicable state regulations for Texas and Louisiana. This manual also fulfills contractor safety requirements specified in the Metronet Master Service Agreement.

Table of Contents

Chapter 1

Introduction & Safety Policy

1.1 Company Safety Commitment

LYT Communications, LLC is unconditionally committed to the health and safety of every person who works on or visits our job sites. Safety is not merely a priority that can be superseded by production demands—it is a core value that guides every decision we make. We believe that:

- All injuries and occupational illnesses are preventable
- No job is so important that it cannot be done safely
- Working safely is a condition of employment
- Safety excellence and operational excellence go hand in hand
- Every employee has the right to a safe work environment
- Every employee has the responsibility to work safely and look out for others

Our goal is simple: **Zero injuries, zero incidents, every day.** We will provide the training, tools, and resources necessary to achieve this goal, and we expect every person to do their part.

1.2 Purpose and Scope

This Health, Safety & Environment (HSE) Manual establishes the minimum safety standards that must be followed on all LYT Communications projects. The purpose of this manual is to:

- Define safety policies, procedures, and expectations
- Ensure compliance with OSHA regulations (29 CFR 1926 and 1910)
- Meet client contractual requirements, including Metronet MSA safety provisions
- Protect workers, the public, and property from harm
- Minimize environmental impact of our operations
- Establish clear accountability for safety performance at all levels

Scope: This manual applies to:

- All LYT Communications employees (full-time, part-time, temporary)
- All subcontractors and their employees working on LYT projects
- All visitors to LYT job sites or facilities
- All vendors and suppliers while on LYT-controlled work areas

■■ **IMPORTANT:** Where this manual conflicts with more stringent client requirements, local regulations, or site-specific rules, the more stringent requirement shall apply. When in doubt, ask your supervisor.

1.3 Management Responsibilities

Management at all levels is responsible for creating and maintaining a culture where safety is valued. Specific responsibilities include:

Executive Management:

- Establish safety as a core company value
- Provide adequate resources for safety programs
- Set measurable safety goals and track performance
- Hold all levels accountable for safety results
- Review and respond to serious incidents personally

Project Managers and Supervisors:

- Plan work with safety as the first consideration
- Ensure workers have proper training before starting tasks
- Conduct and document daily safety briefings (toolbox talks)
- Perform regular job site safety inspections
- Correct unsafe conditions and behaviors immediately
- Investigate all incidents and implement corrective actions
- Lead by example—follow all safety rules without exception

Safety Director:

- Develop and maintain safety policies and procedures
- Conduct safety training and maintain training records
- Perform safety audits and inspections
- Investigate incidents and track corrective actions
- Monitor regulatory changes and update policies accordingly
- Serve as liaison with clients, regulators, and insurers on safety matters

1.4 Employee Rights and Responsibilities

Employee Rights:

Every employee has the right to:

- A workplace free from recognized hazards
- Information about hazards present in the workplace
- Training on how to perform their job safely
- Access to safety data sheets (SDS) for chemicals they work with
- Report safety concerns without fear of retaliation
- Refuse work they believe is immediately dangerous to life or health
- File a complaint with OSHA if they believe conditions are unsafe

Employee Responsibilities:

Every employee is responsible to:

- Follow all safety rules, policies, and procedures
- Use required personal protective equipment (PPE) properly
- Report all hazards, unsafe conditions, and near-misses immediately
- Report all injuries, no matter how minor
- Participate in safety training and meetings

- Use tools and equipment only as intended and only if trained
- Never bypass or disable safety devices or guards
- Look out for the safety of coworkers
- Ask questions if unsure how to do a task safely

1.5 Stop Work Authority

■ **STOP WORK AUTHORITY:** Every person on a LYT Communications job site has the RIGHT and the OBLIGATION to stop work when they observe or become aware of an unsafe condition or behavior. This authority extends to all employees, subcontractors, and visitors regardless of position or employer.

When to Stop Work:

- You observe an imminent danger that could cause serious injury or death
- You see someone not following established safety procedures
- Conditions have changed and the original safety plan no longer applies
- Required safety equipment is missing, damaged, or not being used
- You don't understand how to do a task safely
- You feel pressured to take shortcuts that compromise safety
- Weather conditions make work unsafe
- You observe signs of impairment in a coworker

How to Stop Work:

1. Call out 'STOP WORK' clearly so others can hear
2. Ensure everyone moves to a safe location
3. Explain the hazard or concern you observed
4. Work with supervision to resolve the issue
5. Do not resume work until the hazard is corrected
6. Document the stop work event

No Retaliation: LYT Communications strictly prohibits retaliation against anyone who exercises stop work authority in good faith. Retaliation will result in disciplinary action up to and including termination.

1.6 Safety Violation Disciplinary Policy

Safety rules exist to protect lives. Violations of safety rules are taken seriously and will result in disciplinary action. The following progressive discipline policy applies to safety violations:

Violation	First Offense	Second Offense	Third Offense	Fourth Offense
Minor Violation (PPE, housekeeping, etc.)	Verbal warning + retraining	Written warning	1-3 day suspension	Termination
Serious Violation (Fall protection, excavation, etc.)	Written warning + retraining	3-5 day suspension	Termination	—

Major/Willful Violation (Intentional disregard for safety)	Immediate Termination	—	—	—

Examples of Major/Willful Violations: Operating equipment while impaired, intentionally bypassing safety devices, falsifying safety records, refusing to follow direct safety instructions, fighting or horseplay resulting in injury.

Chapter 2

Personal Protective Equipment (PPE)

2.1 General PPE Requirements

Personal Protective Equipment is the last line of defense against workplace hazards. While engineering and administrative controls are preferred, PPE is essential when hazards cannot be eliminated. LYT Communications requires the following minimum PPE on ALL job sites (the 'Basic Four'):

PPE Item	Minimum Standard	When Required
Hard Hat	ANSI Z89.1 Type I, Class E	All active work areas
Safety Glasses	ANSI Z87.1 rated	All times on job site
High-Visibility Vest	ANSI 107 Class 2 (min)	All times on job site
Safety Footwear	ASTM F2413 (steel/composite toe)	All times on job site

■■ **PPE POLICY:** Failure to wear required PPE is a safety violation subject to disciplinary action. If you do not have proper PPE, notify your supervisor immediately—do not enter the work area.

2.2 Head Protection

Head injuries can be fatal or life-altering. Hard hats protect against falling objects, bumping into fixed objects, and electrical shock (Class E).

Hard Hat Requirements:

- ANSI Z89.1 Type I (top impact) minimum; Type II (top and side) for aerial work
- Class E (electrical) rated for protection up to 20,000 volts
- Shell and suspension must be compatible (same manufacturer)
- No holes, cracks, dents, or chalky/faded appearance on shell
- Suspension must be in good condition with no fraying or damage
- Chin strap required for aerial work, high winds, or when working over water

Hard Hat Care:

- Clean with mild soap and water only—no solvents or harsh chemicals
- Do not store in direct sunlight or extreme heat (e.g., vehicle dashboard)
- Do not drill holes, paint, or apply stickers that may hide damage
- Replace shell every 5 years from manufacture date (check inside shell)
- Replace suspension annually or sooner if damaged
- Replace immediately after any impact, even if no visible damage

2.3 Eye and Face Protection

Eye injuries are among the most common yet preventable construction injuries. Safety glasses are required at ALL times on LYT job sites.

Hazard	Protection Required
General work (dust, debris)	ANSI Z87.1 safety glasses with side shields
Grinding, chipping, drilling	Safety glasses + face shield
Chemical splash	Chemical splash goggles + face shield
Welding/cutting	Welding helmet with proper shade lens
Laser (fiber optic)	Laser safety glasses (wavelength/OD specific)
UV exposure	Safety glasses with UV protection (outdoor work)

2.4 Hand Protection

Hands are involved in most construction tasks and are frequently injured. Proper glove selection depends on the hazard:

Task/Hazard	Recommended Glove Type
General material handling	Leather or synthetic leather work gloves
Cut hazards (cable, sharp edges)	ANSI A4 or higher cut-resistant gloves
Chemical handling	Nitrile or chemical-specific gloves
Electrical work (>50V)	Voltage-rated rubber insulating gloves
Fiber optic splicing	Lint-free fiber handling gloves
Concrete/masonry	Alkali-resistant rubber or PVC gloves
Hot work (welding)	Leather welding gloves

■■ **GLOVE WARNING:** Never wear gloves when operating rotating machinery (drill press, lathe) as they can get caught and pull your hand into the equipment.

2.5 Foot Protection

Safety footwear must meet ASTM F2413 standards and include protective toe caps (steel or composite). Additional requirements based on hazard:

- Metatarsal guards when handling heavy materials
- Electrical hazard (EH) rated soles for electrical work
- Puncture-resistant soles for areas with nails/debris

- Slip-resistant soles for wet or oily surfaces
- Rubber boots for work in water or mud

2.6 High-Visibility Apparel

High-visibility vests or shirts are required on all LYT job sites to ensure workers are visible to equipment operators and vehicle traffic.

Class	Requirements	When Required
Class 2	775 sq in background, 201 sq in reflective	Standard daytime work
Class 3	1240 sq in background, 310 sq in reflective	Night work, high-speed roadways

2.7 Hearing Protection

Hearing protection is required when noise levels exceed 85 dB (8-hour TWA). Common sources of hazardous noise include:

- HDD drill rigs (90-100 dB)
- Trenchers and excavators (85-95 dB)
- Compressors and generators (80-95 dB)
- Jackhammers and concrete saws (100-110 dB)
- Chain saws (105-115 dB)

Acceptable hearing protection includes foam earplugs (NRR 29+), reusable earplugs, or earmuffs. Double protection (plugs + muffs) required for noise levels above 100 dB.

2.8 Respiratory Protection

Respiratory protection is required when engineering controls cannot reduce airborne contaminants to safe levels. A written respiratory protection program and medical clearance are required before wearing respirators.

Hazard	Minimum Respirator
Nuisance dust	N95 filtering facepiece
Silica dust (concrete cutting)	N95 or higher (fit-tested)
Paint/solvent vapors	Half-face with OV cartridges
Confined space (unknown atmosphere)	SCBA or supplied air

2.9 Fall Protection Equipment

Fall protection equipment is covered in detail in Chapter 5 (Aerial Construction). Key points:

- Full body harness required for fall protection (body belts prohibited for fall arrest)
- All equipment must meet ANSI Z359.1 standards

- Equipment must be inspected before each use
- Equipment must be removed from service after any fall arrest event
- Anchor points must support 5,000 lbs per worker attached

2.10 PPE Inspection and Maintenance

All PPE must be inspected before each use. Remove damaged or defective PPE from service immediately. Report PPE deficiencies to your supervisor.

PPE Item	Inspection Points	Replace When
Hard Hat	Cracks, dents, UV damage, suspension	5 years or after impact
Safety Glasses	Scratches, cracks, loose frames	Visibility impaired
Gloves	Holes, tears, wear, grip	Protection compromised
Hi-Vis Vest	Tears, fading, reflective tape	Visibility reduced
Safety Boots	Sole wear, toe cap damage	Protection compromised
Harness	Fraying, cuts, hardware, labels	Any damage or after fall

Chapter 3

Trenching & Excavation Safety

■ **EXCAVATION FATALITIES:** Cave-ins are the greatest risk in excavation work and are often fatal. One cubic yard of soil weighs approximately 3,000 pounds—enough to crush and suffocate a worker in seconds. There is NO time to escape a cave-in. Strict compliance with these procedures is MANDATORY.

3.1 Underground Utility Location (Call 811)

Texas and Louisiana law REQUIRES notification to 811 (One-Call) before ANY excavation. Failure to call 811 can result in utility damage, serious injury, death, and significant legal liability.

811 Requirements:

- Call 811 at least 48 hours (2 business days) before excavation in Texas
- Call 811 at least 48 hours (2 working days) before excavation in Louisiana
- Provide accurate location information (address, cross streets, GPS coordinates)
- Mark the proposed excavation area with white paint/flags before locators arrive
- Wait for all utilities to be marked before beginning excavation
- Locate tickets are valid for 14 calendar days in Texas, 10 working days in Louisiana
- Re-notify 811 if work extends beyond ticket validity

Utility Marking Colors:

Color	Utility Type
RED	Electric power lines, cables, conduit
YELLOW	Gas, oil, steam, petroleum
ORANGE	Communications, alarm, signal lines, cables
BLUE	Water, irrigation, slurry lines
GREEN	Sewer and drain lines
PURPLE	Reclaimed water, irrigation
PINK	Temporary survey markings
WHITE	Proposed excavation (marked by excavator)

Tolerance Zone (Hand Dig Zone):

The tolerance zone extends 18 inches on either side of marked utility lines. Within this zone, you MUST:

- Hand dig only (no mechanical excavation)
- Use hand tools, vacuum excavation, or soft digging techniques
- Expose the utility to verify exact location before mechanical excavation nearby

• Support exposed utilities to prevent damage from movement

3.2 Competent Person Requirements

OSHA 29 CFR 1926 Subpart P requires a Competent Person for all excavation work. The Competent Person must be on site at all times when workers are in or near an excavation.

Competent Person Definition:

A Competent Person is one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

Competent Person Responsibilities:

• Classify soil type using at least one visual and one manual test
• Select and implement appropriate protective system
• Inspect excavation daily before work begins
• Inspect after rainstorm, vibration, or any condition change
• Monitor for hazardous atmospheres (if >4 feet deep)
• Ensure proper access/egress (ladder within 25 feet)
• Remove workers immediately if hazardous conditions develop
• Document inspections and corrective actions

3.3 Soil Classification

Soil must be classified to determine the appropriate protective system. Classification must be made by a Competent Person using at least one visual and one manual test.

Type	Description	Unconfined Compressive Strength	Max Slope
Stable Rock	Natural solid mineral matter	N/A	Vertical (90°)
Type A	Clay, silty clay, sandy clay, hardpan (no cracks, not disturbed)	≥1.5 tsf	¾:1 (53°)
Type B	Silt, sandy loam, medium clay, unstable Type A, previously disturbed	0.5-1.5 tsf	1:1 (45°)
Type C	Gravel, sand, loamy sand, soft clay, submerged soil, water seepage	<0.5 tsf	1½:1 (34°)

Manual Soil Tests:

• **Plasticity Test:** Roll soil into a thread. If it holds together at ■" diameter, it may be cohesive (Type A or B)
• **Thumb Penetration:** Press thumb into trench wall. Type A = difficult to penetrate; Type C = thumb penetrates easily
• **Dry Strength Test:** Dry a soil sample. If it crumbles easily, it's granular (Type C)

- **Pocket Penetrometer:** Measures unconfined compressive strength directly

3.4 Protective Systems

Excavations 5 feet or deeper must have a protective system unless the excavation is made entirely in stable rock. Excavations less than 5 feet deep must also be protected if a Competent Person identifies a potential for cave-in.

Types of Protective Systems:

Sloping:

Cutting back the trench wall to an angle that prevents cave-in. The angle depends on soil type. Requires more space but no additional equipment.

Benching:

Creating a series of horizontal steps in the trench wall. Only allowed in Type A and Type B soil. Never use benching in Type C soil.

Shoring:

Installing support structures (hydraulic, mechanical, or timber) to prevent soil movement. Requires less space than sloping. Must be installed from top down and removed from bottom up.

Shielding (Trench Boxes):

Using a protective structure to shield workers from cave-in. Most common method for utility work. Shield must extend at least 18 inches above the bottom of the excavation if there is no sloping.

■■ **TRENCH BOX WARNING:** Trench boxes protect workers INSIDE the box but do not support the trench walls. Workers must stay inside the shielded area when in the excavation.

3.5 Access and Egress

Safe access into and out of excavations is critical. Workers must be able to exit quickly in an emergency.

- Ladders, ramps, or steps required in excavations 4 feet or deeper
- Ladders must extend at least 3 feet above the edge
- Ladders must be positioned so workers travel no more than 25 feet laterally to reach one
- Ramps must have cleats or non-slip surface if used for access/egress
- Structural ramps for equipment must be designed by a competent person
- Never use mechanical equipment as a means of access/egress

3.6 Hazardous Atmospheres

Excavations deeper than 4 feet in areas where hazardous atmospheres could exist must be tested before entry. Potential atmospheric hazards include:

- Oxygen deficiency (<19.5%) or enrichment (>23.5%)
- Flammable gases (natural gas leaks, decomposing materials)
- Toxic gases (hydrogen sulfide from sewers, carbon monoxide)

- Welding fumes if welding in excavation

If hazardous atmosphere is detected, provide continuous forced-air ventilation sufficient to maintain safe levels. Workers in excavations with potential atmospheric hazards must wear a rescue harness attached to a retrieval line.

3.7 Water Accumulation

Water in excavations increases the risk of cave-in and creates drowning hazards. Procedures for water control:

- Use pumps or well points to remove water accumulation
- Divert surface water away from excavation with berms or ditches
- Inspect excavation after every rainstorm before allowing entry
- Competent Person must evaluate stability after any water intrusion
- Workers must wear life jackets when working over or near water >6 feet deep

3.8 Daily Inspection Requirements

The Competent Person must inspect the excavation:

- Before the start of work each day
- After every rainstorm or other water intrusion
- After any vibration-causing event (blasting, heavy equipment)
- After any other hazard-increasing occurrence
- At least every 4 hours during continuous work

Daily Excavation Inspection Checklist:

- ■ 811 locate ticket valid and all utilities marked
- ■ Soil has been classified by Competent Person
- ■ Appropriate protective system in place
- ■ Spoil pile at least 2 feet from edge
- ■ Ladder within 25 feet of all workers
- ■ Barricades and warning signs in place
- ■ Heavy equipment positioned away from edge
- ■ No water accumulation
- ■ No evidence of cracks, spalling, or bulging
- ■ Workers briefed on today's work plan and hazards

Chapter 4

Horizontal Directional Drilling (HDD)

HDD is a trenchless method for installing underground utilities. While it minimizes surface disturbance, HDD operations present unique hazards including utility strikes, high-pressure fluid injection, rotating machinery, and environmental releases.

4.1 Pre-Drill Planning

Before ANY drill begins, complete the following:

- Obtain valid 811 locate ticket (minimum 48 hours prior)
- Review bore path for all utilities, including private utilities not marked by 811
- Identify all utility crossings and determine if potholing is required
- Establish entry and exit pit locations
- Verify adequate clearance from utilities at entry/exit angles
- Review soil conditions and groundwater levels
- Assess environmental sensitivity (waterways, wetlands, contaminated soil)
- Establish drilling fluid containment plan
- Verify emergency shutdown procedures with crew
- Confirm communication system between operator and locator

4.2 Utility Potholing Requirements

■ **CRITICAL:** Potholing (vacuum excavation or hand digging to expose utilities) is REQUIRED before drilling beneath ANY marked utility crossing. Do NOT rely solely on locate marks—they have limited accuracy.

Potholing Procedures:

- Pothole ALL utilities that cross the bore path
- Expose utility to verify horizontal and vertical position
- Document actual depth and offset from bore path
- Maintain minimum clearance of 2 feet from utilities (or per utility owner specification)
- If utility position differs significantly from marks, re-evaluate bore path
- Never assume utility depth based on 'typical' depths—always verify

Minimum Clearance Requirements:

Utility Type	Minimum Clearance	Notes
Gas (high pressure)	5 feet	Per pipeline owner—may be greater
Gas (distribution)	2 feet	Verify with local gas company
Electric (high voltage)	5 feet	Pothole to confirm depth

Electric (distribution)	2 feet	Minimum—more if possible
Water/Sewer	2 feet	Watch for joint separation
Fiber/Telecom	1 foot	Be aware of direct-buried cable

4.3 Drilling Operations Safety

Equipment Safety:

- Only trained and authorized operators may operate HDD equipment
- Perform daily pre-operation inspection per manufacturer checklist
- Keep all guards and shields in place during operation
- Never reach into rotating machinery or drill string
- Use proper hand signals for communication (or radios in high-noise areas)
- Wear hearing protection—HDD rigs exceed 85 dB
- Establish exclusion zone around drill rig (minimum 10 feet)
- Secure all hydraulic hoses with whip checks

Tracking the Drill Head:

- Use electronic locating equipment to track drill head continuously
- Verify depth readings at regular intervals (every 20-50 feet minimum)
- Stop drilling immediately if locator loses signal
- Stop drilling if unexpected resistance is encountered
- Never drill 'blind' without knowing drill head location

4.4 Drilling Fluid Management

Drilling fluid (bentonite slurry) lubricates the drill, removes cuttings, and stabilizes the bore hole. Improper management can cause environmental violations and property damage.

- Contain all drilling fluid at entry and exit pits using berms, pools, or tanks
- Never allow drilling fluid to enter storm drains, waterways, or wetlands
- Clean up spills immediately—bentonite can damage landscaping and pavement
- Dispose of used drilling fluid per local regulations (check with waste hauler)
- Monitor for inadvertent returns along entire bore path during drilling
- Maintain adequate fluid levels to prevent bore hole collapse

4.5 Inadvertent Returns (Frac-outs)

Inadvertent returns occur when drilling fluid escapes to the surface through soil fractures. This is most common in sandy soils, near waterways, and when drilling pressure is too high.

Frac-out Prevention:

- Assess soil conditions and groundwater before drilling
- Use appropriate drilling fluid viscosity for soil type

- Monitor drilling pressure—reduce if approaching limits
- Station observer(s) along bore path to watch for surface returns
- Have containment materials (sandbags, berms, vacuum) ready

Frac-out Response:

- Stop drilling immediately if frac-out occurs
- Contain the release with berms, sandbags, or vacuum
- Do NOT allow fluid to reach waterways or storm drains
- Notify supervisor and assess whether drilling can continue
- Document the event with photos and incident report
- Clean up all released fluid and restore affected area

■■ **ENVIRONMENTAL WARNING:** Frac-outs near waterways can result in significant regulatory fines. If fluid enters a waterway, stop all work and notify the client and appropriate environmental agencies immediately.

4.6 Product Pullback Operations

Pullback is the final phase where the product (conduit or cable) is pulled back through the bore hole.

- Ensure bore hole is fully reamed to proper diameter before pullback
- Verify product is properly attached to reamer/swivel
- Maintain constant tension—avoid stop/start that can cause bore collapse
- Station personnel at exit pit to guide product and watch for problems
- Never exceed pull force limits for the product being installed
- Watch for 'birdcaging' (twisting) of cable during pullback
- Clean and inspect product as it exits the bore
- Document pull force and any anomalies

Chapter 5

Aerial Construction & Pole Work

■ **FALL HAZARDS:** Falls from elevation are a leading cause of death in the telecommunications industry. 100% tie-off is required when working at heights of 4 feet or greater on poles and 6 feet or greater on other structures. There are NO exceptions.

5.1 Climbing Qualifications

Before performing aerial work, personnel must:

- Complete an approved pole climbing/aerial safety training program
- Demonstrate proficiency in climbing techniques and rescue procedures
- Pass a medical evaluation confirming fitness for climbing work
- Be trained on all fall protection equipment they will use
- Understand minimum approach distances for electrical hazards
- Be trained in emergency descent/rescue procedures

■■ **NOTE:** Workers with fear of heights, balance issues, or certain medical conditions may not be suitable for climbing work. Consult with the Safety Director if you have concerns about your ability to work at heights safely.

5.2 Fall Protection Requirements

Height Trigger	Fall Protection Required
4 feet (poles/towers)	100% tie-off at all times while climbing or working
6 feet (general)	Guardrails, safety nets, or personal fall arrest
10 feet (bucket trucks)	Fall restraint or fall arrest in bucket

Fall Protection Equipment Requirements:

- **Full Body Harness:** ANSI Z359.1 compliant, proper fit, D-ring positioned at center back between shoulder blades
- **Positioning Lanyard:** For work positioning on poles, allows hands-free work while maintaining tie-off
- **Fall Arrest Lanyard:** Shock-absorbing, maximum 6-foot length, limits fall to 6 feet with max arrest force of 1,800 lbs
- **Self-Retracting Lifeline (SRL):** For bucket trucks and when climbing with greater fall distances
- **Climbing Belt:** May be used for positioning ONLY, not fall arrest—must be used with body harness
- **Pole Gaffs:** Must be sharp, properly fitted, inspected before each use

Anchor Point Requirements:

- Must support 5,000 lbs per worker attached, OR
- Be designed/installed/used under supervision of qualified person with safety factor of 2

- On poles: Use approved pole strap or strand anchor
- Never anchor to conduit, cable, or unsecured attachments
- Inspect anchor point before use

5.3 Pole Inspection

Every pole must be inspected before climbing. Defective poles can fail under the additional load of a climber.

Visual Inspection (from ground):

- Check for rot, decay, or damage at ground line
- Look for woodpecker holes, splits, or cracks
- Check for fire damage or charring
- Inspect for bullet holes or other damage
- Verify pole is plumb (not leaning excessively)
- Check for broken or damaged crossarms
- Look for signs of previous repairs

Physical Inspection:

- Sound the pole with a hammer—listen for hollow sound indicating decay
- Push against the pole at about 6 feet high to check for excessive movement
- If pole shows any signs of weakness, do not climb—use bucket truck instead
- Report defective poles to the pole owner

■■ **WARNING:** When in doubt, don't climb. If a pole shows ANY signs of weakness, use a bucket truck or request the pole be replaced/reinforced before climbing.

5.4 Bucket Truck Operations

Daily Pre-Operation Inspection:

- Check fluid levels (engine oil, hydraulic, coolant)
- Inspect tires and wheels
- Test all controls (upper and lower)
- Inspect boom, bucket, and hydraulic lines
- Check outriggers for damage and proper operation
- Verify emergency descent system functions
- Test horn and backup alarm
- Check all lights and signals

Setup Requirements:

- Park on firm, level ground whenever possible
- Set parking brake and chock wheels if on grade
- Fully extend outriggers on solid surface (use pads if needed)
- Do not set up on soft ground, over vaults, or near excavations

- Establish exclusion zone around vehicle
- Stay at least 10 feet from power lines (20 feet if >50kV)

Operating Requirements:

- Wear full body harness with lanyard attached to bucket anchor
- Never exceed rated bucket capacity (typically 300-400 lbs)
- Keep both feet on bucket floor—never stand on edge or use ladder in bucket
- Maintain 3-point contact when entering/exiting bucket at ground level
- Do not operate in winds above 30 mph or during lightning
- Lower bucket before moving vehicle—NEVER travel with elevated bucket
- Operator must maintain communication with ground personnel

5.5 Minimum Approach Distances (MAD)

Contact with energized power lines is frequently fatal. Maintain these minimum distances at all times:

Voltage	Minimum Distance	Notes
0 - 50V	Avoid contact	Can still cause shock/burns
51V - 1kV	3 feet	Typical secondary distribution
1.1kV - 15kV	4 feet	Primary distribution
15.1kV - 36kV	6 feet	Primary distribution
36.1kV - 50kV	8 feet	Subtransmission
50.1kV - 72.5kV	10 feet	Subtransmission
72.6kV - 121kV	12 feet	Transmission
121kV - 145kV	14 feet	Transmission

■ **ASSUME ALL LINES ARE ENERGIZED** unless you have verified with the utility owner that power is off AND proper lockout/tagout procedures are in place. Never touch or move power lines or their attachments.

5.6 Strand and Lashing Operations

- Verify strand tension is appropriate before lashing cable
- Use proper strand grips and tensioning equipment
- Do not exceed cable manufacturer's tension specifications
- Maintain proper sag and clearances per engineering specifications
- Keep strand and cable away from power lines during installation
- Ground strand at each dead-end pole
- Use proper techniques when handling coiled strand (can 'bird cage' explosively)

Chapter 6

Confined Space Entry

A confined space is an area that: (1) is large enough for a worker to enter, (2) has limited entry/exit, and (3) is not designed for continuous occupancy. Examples in telecom work include manholes, vaults, and large handholes.

6.1 Confined Space Identification

A **permit-required confined space** has one or more of the following hazards:

- Contains or has potential for hazardous atmosphere (toxic, flammable, oxygen-deficient)
- Contains material that could engulf an entrant
- Has inwardly converging walls or floor that could trap an entrant
- Contains any other recognized serious safety or health hazard

6.2 Entry Requirements

Before entering ANY confined space:

- Obtain confined space entry permit (if permit-required)
- Test atmosphere with calibrated gas monitor: O■, LEL, CO, H■S (minimum)
- Ventilate space if atmosphere is not safe
- Provide continuous forced-air ventilation during entry
- Position attendant at entry point—attendant must remain outside
- Establish communication between entrant and attendant
- Have rescue equipment readily available
- Ensure rescue services are available or have trained rescue team on site

Safe Atmospheric Levels:

Parameter	Safe Range	Action Level
Oxygen (O■)	19.5% - 23.5%	<19.5% or >23.5%: Do not enter
Lower Explosive Limit (LEL)	<10%	≥10%: Do not enter
Carbon Monoxide (CO)	<25 ppm	≥25 ppm: Ventilate or do not enter
Hydrogen Sulfide (H■S)	<10 ppm	≥10 ppm: Ventilate or do not enter

Chapter 7

Traffic Control & Work Zone Safety

Work zone safety protects both workers and the public. All traffic control must comply with the Manual on Uniform Traffic Control Devices (MUTCD) and applicable state/local requirements.

7.1 Traffic Control Requirements

- Obtain encroachment permit from road authority before beginning work
- Implement traffic control plan appropriate for road type and work activity
- Use only MUTCD-compliant signs, cones, and barricades
- Wear ANSI Class 2 (day) or Class 3 (night/high-speed) high-visibility apparel
- Never turn your back to traffic
- Establish buffer space between traffic and work area
- Provide adequate advance warning for drivers

7.2 Flagger Operations

- Flaggers must complete approved flagger training
- Use STOP/SLOW paddle (18" minimum, retroreflective)
- Position flagger in safe location visible to approaching traffic
- Establish escape route for flagger in case of errant vehicle
- Use clear, consistent hand signals
- Flaggers must wear Class 2/3 high-visibility apparel

7.3 Night Work Requirements

- Class 3 high-visibility apparel required (vest + pants or coveralls)
- Retroreflective signs and barricades required
- Additional lighting for work area
- Flashing warning lights on vehicles
- Consider reducing speed limit through work zone
- Additional advance warning signs

Chapter 8

Electrical Safety

■ **ELECTRICAL CONTACT IS OFTEN FATAL:** Respect electricity at all times. Assume all wires are energized until verified otherwise through proper lockout/tagout procedures.

8.1 Electrical Hazard Awareness

Electrical hazards exist in many forms during telecommunications work:

- Overhead power lines on or near poles
- Underground power cables in conduit or direct-buried
- Energized equipment in buildings and cabinets
- Power supplies and batteries in telecommunications equipment
- Lightning during outdoor work
- Induced voltage on communications cables near power lines

8.2 Lockout/Tagout (LOTO)

When working on equipment that could be energized, follow lockout/tagout procedures:

1. Notify affected personnel that equipment will be locked out
2. Identify all energy sources (electrical, stored energy, etc.)
3. Shut down equipment using normal procedures
4. Isolate energy sources (disconnect switches, valves, etc.)
5. Apply lock and tag to each isolation point
6. Release/block stored energy (capacitors, springs, pressure)
7. Verify isolation—test that equipment cannot be started
8. Perform work
9. Remove tools, reinstall guards, verify safe to energize
10. Remove locks/tags, restore energy, notify personnel

8.3 Electrical Emergency Response

If someone contacts an energized line:

- Do NOT touch them—you will also be electrocuted
- Call 911 immediately
- If safe to do so, de-energize the circuit (open breaker, disconnect)
- If person is in vehicle contact with power line, tell them to stay in vehicle
- If vehicle is on fire and they must exit, instruct them to JUMP clear (not step)
- Once power is confirmed off, begin first aid/CPR if trained

Chapter 9

Fiber Optic & Laser Safety

9.1 Fiber Handling Safety

Fiber optic glass strands are extremely small (125 microns) and can easily penetrate skin or eyes. Proper handling prevents injuries and fiber contamination.

- Wear safety glasses when cleaving or handling bare fiber
- Never look into the end of a fiber—laser light is invisible but can damage eyes
- Dispose of fiber scraps in a proper container (not trash cans where they can be touched)
- Do not eat, drink, or smoke in fiber work areas—scraps can be ingested
- If fiber penetrates skin, do not rub—use tape to remove, then wash with soap and water
- Work in well-lit areas so fiber scraps are visible
- Keep fiber work area clean—scraps can become airborne

9.2 Laser Safety

Fiber optic systems use laser light for transmission. While most telecom lasers are Class 1 (eye-safe under normal conditions), OTDR test equipment can be Class 3A or 3B, which can cause eye injury.

Class	Hazard Level	Precautions
Class 1	Safe under normal use	Standard fiber handling precautions
Class 1M	Safe except with optics	Do not view with magnifying optics
Class 2	Low power visible	Blink reflex provides protection
Class 3A	May be hazardous	Do not stare into beam, use caution
Class 3B	Hazardous to eyes	Laser safety glasses required

Laser Safety Rules:

- Never look into the end of a fiber or connector—assume it is 'live' with laser light
- Use a fiber optic power meter to check for light before working on fibers
- When using OTDR, ensure fiber is dark (no connected equipment)
- Use wavelength-appropriate laser safety glasses when required
- Post warning signs when using Class 3B lasers
- Know the laser classification of all equipment you use

Chapter 10

Emergency Response Procedures

10.1 Emergency Contact Information

Emergency	Contact	Number
Life-Threatening Emergency	911	911
LYT Safety Hotline	Matt Campbell	(281) 555-SAFE
LYT Main Office	Main Line	(281) 555-0100
Poison Control	National Hotline	1-800-222-1222
Texas One-Call (811)	Utility Locate	811
Louisiana One-Call	Utility Locate	811
National Response Center	Spills/Releases	1-800-424-8802

10.2 Medical Emergency Response

For ANY medical emergency:

1. Ensure the scene is safe before approaching
2. Call 911 (or have someone call while you provide aid)
3. Do not move the victim unless they are in immediate danger
4. Provide basic first aid if you are trained (stop bleeding, CPR, AED)
5. Send someone to meet emergency responders and guide them to the scene
6. Stay with the victim until help arrives
7. Preserve the scene for investigation (do not clean up)
8. Notify LYT supervision as soon as practical

10.3 Utility Strike Response

GAS LINE STRIKE:

■ GAS LEAK - IMMEDIATE DANGER:

- EVACUATE the area immediately—move at least 300 feet upwind
- Do NOT use cell phones, radios, or start vehicles near the leak
- Do NOT operate any electrical switches

- Call 911 from a safe distance
- Call the gas company emergency number
- Prevent others from entering the area
- Do not attempt to stop the leak

ELECTRIC LINE STRIKE:

- If in equipment that contacts power line: STAY IN THE EQUIPMENT
- Call 911 and the utility company
- Warn others to stay at least 35 feet away
- If you must exit (fire): JUMP clear—do not touch equipment and ground simultaneously
- Shuffle away with small steps keeping feet together (to avoid step potential)
- Do not touch anyone who is in contact with energized equipment

WATER/SEWER LINE STRIKE:

- Exit the excavation immediately
- Call the water/sewer utility
- Prevent water from entering storm drains if possible
- Barricade the area to keep public away
- Do not attempt to cap or repair the line

10.4 Severe Weather

Lightning:

- Use the 30/30 rule: If thunder follows lightning by 30 seconds or less, seek shelter
- Stop all outdoor work when lightning is observed or thunder heard
- Move to a substantial building or hard-topped vehicle
- Stay away from poles, trees, fences, and metal objects
- Do not resume work until 30 minutes after the last thunder

Tornado:

- Monitor weather forecasts when severe weather is possible
- WATCH = conditions favorable; WARNING = tornado has been sighted
- If WARNING is issued, seek shelter immediately
- Go to interior room on lowest floor of sturdy building
- If no shelter, lie flat in ditch or low area away from vehicles and trees
- Protect head and neck; do not shelter under overpasses

Chapter 11

Incident Reporting & Investigation

11.1 Reporting Requirements

ALL incidents must be reported immediately to your supervisor. This includes:

- All injuries, no matter how minor (including first aid cases)
- All near-misses (events that could have caused injury)
- All property damage (vehicles, equipment, third-party property)
- All utility strikes or damages
- All environmental releases (fuel, drilling fluid, etc.)
- All motor vehicle incidents (including private vehicle on company business)
- All fires, regardless of size

■■ **FAILURE TO REPORT:** Failure to report an incident is a serious safety violation. Even minor incidents provide valuable information to prevent future injuries.

11.2 Near-Miss Reporting

A near-miss is an unplanned event that did not result in injury or damage but had the potential to do so. Near-misses are 'free lessons'—they show us hazards before someone gets hurt.

Examples of near-misses:

- A tool falls from height but doesn't hit anyone
- A vehicle narrowly avoids hitting a worker
- A trench wall shows signs of cracking (caught before collapse)
- An employee stumbles but catches themselves before falling
- Equipment malfunctions but is noticed before causing damage

Report near-misses through the LYT Portal or to your supervisor. All near-miss reports are non-punitive—the goal is to learn and prevent future incidents, not to assign blame.

11.3 Incident Investigation

All incidents will be investigated to determine root causes and prevent recurrence. The investigation process includes:

1. Secure the scene and provide medical treatment to injured
2. Document the scene with photos and measurements
3. Interview witnesses separately as soon as possible
4. Gather physical evidence (damaged equipment, materials)
5. Review relevant procedures, training records, and equipment inspections
6. Identify root causes using 5-Why or similar analysis
7. Develop corrective actions to prevent recurrence

8. Implement and verify effectiveness of corrective actions
9. Share lessons learned with all affected personnel

Chapter 12

Drug & Alcohol Policy

12.1 Policy Statement

LYT Communications maintains a DRUG-FREE WORKPLACE. The use, possession, distribution, or sale of illegal drugs, unauthorized controlled substances, or alcohol on company time, company property, or job sites is strictly prohibited and will result in immediate termination.

12.2 Prohibited Substances

- Illegal drugs (marijuana, cocaine, methamphetamine, heroin, etc.)
- Prescription drugs used without a valid prescription
- Prescription drugs that impair ability to work safely (even with prescription)
- Alcohol
- Synthetic drugs, designer drugs, and 'legal highs'
- Inhalants used for intoxication

■■ **MARIJUANA:** Marijuana remains illegal under federal law and is prohibited regardless of state laws. Even if marijuana is legal in your state, it is NOT permitted under LYT policy.

12.3 Testing Requirements

Employees and subcontractors are subject to drug and alcohol testing under the following circumstances:

Test Type	When Required
Pre-Employment	Before starting work (all new hires)
Random	Unannounced selection from employee pool
Reasonable Suspicion	When supervisor observes signs of impairment
Post-Accident	After any recordable injury or significant property damage
Return-to-Duty	Before returning after positive test or policy violation
Follow-Up	Periodic testing after return-to-duty (minimum 6 tests in 12 months)

12.4 Consequences

- **Positive test result:** Immediate termination
- **Refusal to test:** Treated as positive result (termination)
- **Tampering with test:** Termination and possible legal action
- **Possession of drugs/alcohol on site:** Termination and law enforcement notification

Chapter 13

Environmental Conditions

13.1 Heat Illness Prevention

Heat-related illness can be fatal. Texas summers routinely exceed 100°F, making heat stress a serious concern. Know the signs and take precautions.

Heat Illness Progression:

Condition	Symptoms	Response
Heat Cramps	Muscle cramps, sweating	Rest in shade, drink water, stretch
Heat Exhaustion	Heavy sweating, weakness, nausea, headache, dizziness	Move to cool area, remove excess clothing, cool with water, seek medical
Heat Stroke	High body temp, confusion, hot/dry skin, unconsciousness	911 IMMEDIATELY—cool with water/ ice, this is life-threatening

Prevention Measures:

- Drink water frequently (1 cup every 15-20 minutes)—don't wait until thirsty
- Take breaks in shade or air-conditioned vehicle
- Wear light-colored, loose-fitting, breathable clothing
- Use cooling towels, vests, or bandanas
- Schedule heavy work for cooler parts of day when possible
- Acclimatize new workers gradually (7-14 days to adjust to heat)
- Watch out for coworkers—buddy system

13.2 Cold Stress Prevention

Cold weather creates risks of hypothermia, frostbite, and increased injury risk from reduced dexterity.

- Dress in layers—moisture-wicking base, insulating middle, wind-resistant outer
- Keep head, hands, and feet covered—most heat loss occurs from extremities
- Take breaks in warm areas
- Avoid exhaustion—fatigue increases cold susceptibility
- Keep extra dry clothes available
- Know signs of hypothermia (shivering, confusion, drowsiness) and frostbite (numbness, white/gray skin)

Chapter 14

Tool & Equipment Safety

14.1 Hand Tool Safety

- Inspect tools before each use—do not use damaged tools
- Use the right tool for the job—never improvise
- Keep cutting tools sharp—dull tools require excessive force
- Carry tools in a tool belt or bucket—not in pockets
- Hand tools to coworkers handle-first, never throw
- Store tools properly to prevent damage and injuries

14.2 Power Tool Safety

- Only use tools you are trained and authorized to operate
- Inspect tool and cord before each use
- Use GFCI protection for all corded tools
- Do not remove or bypass guards or safety devices
- Disconnect power before changing bits, blades, or accessories
- Secure workpiece—never hold small pieces by hand
- Let tool reach full speed before contacting material
- Keep bystanders clear of work area

14.3 Equipment Pre-Use Inspection

All equipment must be inspected before each use. Document inspections on the appropriate checklist. Do not operate equipment with defects that affect safety.

Items to Inspect:

- Fluid levels (oil, hydraulic, coolant, fuel)
- Tires/tracks—condition and pressure
- Lights, horn, backup alarm
- Mirrors and visibility
- Controls—proper operation
- Safety devices—guards, kill switches, alarms
- Hydraulic hoses and connections
- Structural components—cracks, damage

Chapter 15

Housekeeping & Organization

15.1 Work Area Organization

Good housekeeping is essential for safety. Cluttered, disorganized work areas lead to trips, falls, and injuries. Keep work areas clean and organized throughout the day—not just at the end.

- Keep walkways and access routes clear at all times
- Store materials and equipment in designated areas
- Clean up spills immediately
- Dispose of waste materials promptly
- Keep cords and hoses routed to prevent tripping hazards
- Stack materials safely—not too high, on stable surfaces
- Secure loose materials in windy conditions

15.2 End-of-Day Procedures

- Secure the work area (barricades, warning devices)
- Store tools and materials properly
- Lock vehicles and equipment
- Remove trash and debris
- Verify excavations are properly protected
- Ensure no tripping hazards remain in public areas
- Complete required documentation (inspection logs, daily reports)

Chapter 16

Safety Acknowledgment & Agreement

This acknowledgment must be signed by ALL employees and subcontractors before performing any work for LYT Communications. By signing, you confirm that you have received, read, and understand this HSE Manual.

EMPLOYEE/CONTRACTOR ACKNOWLEDGMENT

By signing below, I acknowledge and agree to the following:

- I have received, read, and understand the LYT Communications HSE Manual (Version 2.2, January 2026)
- I understand my responsibility to follow all safety policies, procedures, and instructions
- I will wear required Personal Protective Equipment (PPE) at all times on job sites
- I will report all hazards, unsafe conditions, incidents, and near-misses immediately
- I understand I have STOP WORK AUTHORITY and the obligation to use it when conditions are unsafe
- I will participate in all required safety training sessions and toolbox talks
- I will comply with the Drug-Free Workplace Policy
- I consent to drug and alcohol testing as described in this manual
- I consent to a background check as a condition of employment/engagement
- I will call 811 before any ground disturbance and follow utility locating procedures
- I understand that safety violations may result in disciplinary action up to and including termination
- I will report any changes to my driver's license status if I operate company vehicles
- I will not operate any equipment or perform any task for which I have not been trained

CERTIFICATION & SIGNATURE

I certify that I have read, understand, and agree to comply with all policies and requirements in this HSE Manual. I understand that my failure to comply may result in disciplinary action, removal from job sites, or termination of my employment/engagement. I attest that all information I have provided is true and accurate.

Print Name: _____

Signature: _____

Date: _____ Employee/Contractor ID: _____

Company (if subcontractor): _____

Position/Title: _____

SUPERVISOR VERIFICATION

I verify that the above individual has received safety orientation and understands the requirements of this manual.

Supervisor Name: _____ Date: _____

Supervisor Signature: _____

FOR OFFICE USE ONLY

Received By:	_____	Date Entered:	_____
Orientation Completed:	■ Yes ■ No	Training Verified:	■ Yes ■ No
Background Check:	■ Pass ■ Pending ■ N/A	Drug Test:	■ Pass ■ Pending ■ N/A
Filed Location:	_____	Notes:	_____