Overhead Utility Guidelines

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Scope

These guidelines apply to all our projects where employees are required to perform work around live overhead utilities. Where state or local codes require more strict standards than those established in these guidelines, the stricter standards shall apply. All subcontractors shall be required to provide equivalent protection and programs as those established by SECC through these guidelines.

Policy

Our managers shall ensure all activities that have the potential to damage or disrupt live overhead utility services are properly planned, evaluated, and controlled for the duration of the work. Activities that have the potential to damage or disrupt utility service requires explicit authorization by following the procedures contained in these guidelines.

These activities shall be continuously monitored to ensure that selected safety controls and emergency protocols are in place and effective. Specifically, the following elements must be part of the overall management process for activities taking place where live overhead utilities may be encountered.

Planning	All activities around live overhead utilities shall be pre-planned and Documented.
Identifying Overhead Utilities	The Superintendent shall determine the scope and limits of all overhead work activities and verify if any utilities are present within those limits.
Overhead Warning Signage	Overhead warning signage shall be installed and maintained for the duration of the work.
Overhead Utility Mapping	Superintendent shall use project drawings and plans to develop a live overhead utility map before allowing equipment to pass or work near overhead utility lines.
Communication of Known Utilities to Employees	Superintendent shall ensure that all employees are advised of the location of overhead utilities in the work area.
Overhead Utility Avoidance	Superintendent shall ensure the minimum approach distances for overhead equipment are maintained according to the Overhead Clearance Distances.
Equipment in Transit	Superintendents shall ensure that all equipment traveling under or near overhead utilities maintains proper equipment clearance distance in accordance with the Overhead Clearance Distances.
Reporting Utility Strikes	All accidental contact with overhead utilities shall be reported using the Utility Strike Report Form.

Procedures

Planning

Superintendent(s) shall review the project schedule, plans, scope of work, and drawings to ensure that the proper planning of all activities is performed and documented in the Utility Avoidance Pre-planning Worksheet.

The superintendent shall evaluate the jobsite to determine what type of equipment, if any will be

working near or has the potential to encroach upon minimum clearance distances of overhead utilities.

Identifying and Marking Overhead Utilities

Prior to any work around overhead utilities the Superintendent shall ensure adequate identification and marking by looking for signs of overhead utilities and contacting the utility owner or operator to determine the height, type, and voltage of overhead utilities and any other special requirements.

Overhead Warning Signage

The superintendent shall ensure that overhead signage is installed, that is legible, durable, visible in lowlight conditions, and maintained for the duration of work.

Overhead warning signage shall be posted where equipment will pass near or underneath overheadlines and must contain the following information:

- Overhead Utility line height off the ground
- Max height of equipment that will be allowed to pass underneath
- Voltage of Utility

Overhead warning signage shall also be posted in a location visible to the equipment operator when work is being performed and equipment has the potential to breach the buffer zone.

Overhead Utility Mapping

Project Engineers shall use overhead utility markings and all available project drawings and plans to develop a live site utility map at the beginning of each project and before starting any work around overhead utility lines.

The live site utility map shall be updated as work progresses and whenever utilities are installed, removed, or relocated. The following are items that must be included in the live site utility map:

- Applicable utility owner's phone number
- Location of temporary utilities
- Dimensions/height of overhead outlined as necessary
- Voltage of overhead utility
- Revision dates to ensure most recent map is posted

Additionally, this map shall be made available to subcontractors performing work around overhead utilities. A copy of the updated live utility map may also be printed and placed in the office or on jobsite information board.

Communication of Known Utilities to Employees

Superintendent shall ensure that all employees are advised of the location of overhead utilities in the work area. Equipment operators must be notified about the presence and location of overhead utilities and obstructions when arriving to site.

An acceptable means of training such as jobsite orientation, field walk, or overview of site utility map must be used to verify that employees, including equipment operators have been properly informed.

If the superintendent determines that equipment will travel through an area and has potential to breach the minimum clearance distance, the equipment operator shall be notified.

A spotter is also required to guide the equipment through the danger zone. The activity and verification of communication to equipment operator and spotter shall be documented in the DRA.

Overhead Utility Avoidance (Working Equipment)

Prior to any work around overhead utilities, the Superintendent shall determine the minimum clearance distance for mobile equipment by using the Overhead Clearance Distances. Once determined, the work zone shall be identified by defining work zone as the area 360 degrees around mobile equipment up to its maximum working radius.

A special (20 foot) buffer zone shall be established in addition to the minimum clearance distance listed. If no part of the equipment can break the buffer zone, then no other requirements need to be met.

However, if any part of the equipment has the potential to break the buffer zone distance, you mustplace signage and demarcate the Buffer Zone by clearly establishing ground markings. The superintendent shall also discuss the hazards and controls during the daily meeting.

If you are required to work WITHIN the buffer zone, you must either:

- De-energize and Ground the utility or
- Obtain supervisors authorization to work in the buffer zone, in addition to using a dedicated spotter, demarcating the minimum clearance distance and use non-conductive taglines.

If you will be required to work WITHIN the minimum clearance distance, you are required to de-energize and ground the utility.

Overhead Utility Avoidance (Equipment in Transit)

Superintendents shall ensure that all equipment traveling under or near overhead utilities, maintains the proper equipment clearance distance using Table 2 in the Overhead Clearance Distances.

Superintendents shall ensure that all overhead utilities that cross over travel routes are marked withsigns on both sides of the utility.

Superintendent shall ensure that when equipment passing under the utility has the potential to breach the minimum clearance distance from Table 2, the equipment must be guided through the danger zone by a ground guide/spotter.

Superintendent shall ensure a safe path of travel is identified and used at night or in conditions of poor visibility.

Additional precautions must be taken to ensure that overhead lines are illuminated or another effective means of identifying the location of the lines is used.

Reporting Utility Strikes

If accidental contact is made with an overhead utility all work in the affected area shall immediately stopuntil it is deemed safe to resume.

Superintendent shall ensure the emergency plan developed for utility strikes is followed. The Superintendent shall report all overhead utility strikes using the Utility Strike Report Form.

Responsibilities and Authorities

Project Manager

- Maintains site utility maps for all utilities within project limits.
- Ensures all work activities are properly planned.
- Ensures implementation of these guidelines is periodically audited and results reported to them.
- Remains current on training for Overhead Utility Avoidance.
- Oversees hazard evaluation, planning, selection of controls, training and emergency procedures. Ensures all aspects of these guidelines are properly and fully implemented prior to authorizing work to begin. Ensures crews are properly trained and aware of overhead utility hazards according to these guidelines.
- Ensures all utility related activities are being performed per the utility pre-planning worksheet and DRA. Ensures that the Overhead Utility DRA is revised whenever site conditions or tasks change.
- Immediately corrects hazards or instructs work stoppage any time a deviation from these guidelines is detected. Maintains all required written records of compliance with these guidelines in the project safety files.

Safety Manager

- Provides training and education to all Key Personnel identified in these guidelines.
- Routinely performs documented assessments of the implementation of these guidelines.
- Corrects and communicates any deficiencies in these guidelines or its implementation to the key project staff.

Crew Performing Overhead Work

- Participates in “Overhead Utility Avoidance” training.
- Participates in Daily Risk Assessments to ensure plans address site conditions and work tasks. Surveys work area and activities, materials, tools and equipment to detect recognizable hazards. Observes work and communicates to the operator when an overhead line is approached.
- Immediately exercises “stop work authority” whenever equipment breaches allowable clearance for work being performed.

Training Requirements

Training Type	Required	Recommended	Renewal	Instructor Qualifications
Overhead Utility Avoidance For Supervisors	Superintendents, Foremen and Safety Pros	Project Managers and Project Engineers	3 Years	Approved by Safety Manager
Overhead Utility Awareness	All employees required to work under or around live utilities	None	None	Overhead Utility Avoidance Supervisor

Records and Record Retention

Form / Record	Record Location	Retention Period
Utility Avoidance Pre-planning Worksheet	Work Site / Office	Duration of work plus 1 year
Site Utility Map	Work Site / Office	Duration of project plus 1 year
Employee Training Records	Job Site /Office	Minimum 5 years

Utility Avoidance Preplanning Worksheet

This form to be used by project management team prior to performing any ground disturbing activities.

Job Number:	Job Name:
PM or Designee:	Date:

Pre-Planning Checklist

Potential Hazard Identification		Treatment of Hazard if "Yes"
Are underground utilities or other underground structures present in work area?	Yes☐ No☐	Ensure available project drawings, plans, photos and otherhistorical data are used to develop a live site utility map.
Are overhead utilities present in work area?	Yes☐ No☐	Ensure available project drawings, plans, photos and otherhistorical data are used to develop a live site utility map.
Are any high priority undergroundutilities present?	Yes☐ No☐	Ensure 10 foot Tolerance Zone is maintained and standby personnel from the utility company is present for durationof work.
Does scope of work have potentialto strike underground utilities?	Yes☐ No☐	Complete the Underground Utility AvoidancePermit.
Does scope of work have potentialto strike overhead utilities?	Yes☐ No☐	Consult Table 1– Overhead ClearanceDistances.
Will mobile equipment pass near orunderneath overhead utilities?	Yes☐ No☐	Consult Table 2 – Overhead ClearanceDistances.
Are there utilities serviced by 811 within project boundaries?	Yes☐ No☐	Call 811 (Dig Alert) arrange for utility location and marking. Call private locate company for any utilities onprivate property within project boundaries.
Will a subcontractor be performingthe work?	Yes☐ No☐	Provide subcontractor with site utility map and ensure that personnel are trained and obtain their own dig alertlocate tickets.
Will utility demolition be taking place?	Yes☐ No☐	Complete Demo Verification checklist beforestarting any ground disturbing activity.
Will any utilities be exposed?	Yes☐ No☐	Plan for utility protection. (i.e. shoring, bracing, or equivalent protection must be developed by Qualified Person).

APWA Uniform Color Codes

For temporary marking of underground utilities

WHITE – Proposed Excavation Limits or Route

RED - Electric Power Lines, Cables, Conduit, and Lighting Cables

YELLOW - Gas, Oil, Steam, Petroleum, or Gaseous Material

ORANGE – Communication, Alarm or Signal Lines, Cables, or Conduit

BLUE – Potable Water

GREEN – Sewers and Drain Lines

PINK – Temporary Survey Markings, Unknown / Unidentified Facilities

PURPLE – Reclaimed Water, Irrigation, and Slurry Lines

SECC
INCIDENT / DAMAGE REPORT

ACCURACY IS HIGHLY IMPORTANT. SWORN TESTIMONY REGARDING THE FACTS GIVEN BELOW MAY BECOME NECESSARY IN THE EVENT OF LEGAL ACTIONS.

ANSWER ALL QUESTION

SECC Job #: _____ W.O.#_____ (2nd Job #/W.O.# if applicable_____)

Incident date: _____ Time: _____am / pm Report date: _____

Incident location (address): _____
City: _____ State: _____

Employee/Subcontractor causing damage: _____

Address_____
City: _____ State: _____

If sub-contactor, Ins. Carrier_____ Policy No._____

PROPERTY / VEHICLE DAMAGE:

Owner of damaged property, vehicle: _____
Contact No._____
Description of damaged property: _____
_____
_____
_____

Description of damaged vehicle:
Year Make Model VIN
_____

INJURED PEDESTRIAN:

Name of injured person(s) and contact No.: _____
_____
_____

Description of INJURY(S): _____
_____
_____
_____

UTILITY DAMAGE:

Type of utility damaged: __ Telephone __ Electric __Gas __Water __Sewer __CATV __Other
Private Property: ___Yes ____No
If Yes, was Private Locate accomplished ____Yes (Attach Results) _____No (Reason:_____)
If Yes, what did property owner indicate regarding existing utilities prior to SECC excavating:
_____
_____

Description of damage: _____
_____
_____

Size and Type of damaged plant: _____
Damage done by: ____Backhoe ____Trencher ____Bore ____Shovel ____ Other_____

INVESTIGATION:

PROPERTY / VEHICLE DAMAGE / INJURED PEDESTRIAN:

What Happened? Be Specific:

_____
_____
_____
_____
_____
_____
_____
_____

Photos taken of damage or injury? _____Yes (Attach photos to report) _____No

UTILITY DAMAGE:

Was existing cable or utility shown on print? ____ Yes ____ No
Existing utility identified before starting? ____ Yes ____ No
Locator required locating and marking? ____ Yes ____ No
If no, why not? _____
_____

One Call Conf. Number: _____ Did locator respond? ____Yes ____ No

If no, why not? _____
_____

Name of Locator _____

Did locator locate? ____ Yes ____ No
Did locator mark facilities? ____ Yes ____ No
Was location accurate (within 18 inches)? ____ Yes ____ No
If no, distance from point to damage point. _____ Ft. _____ Inches

Exact depth of damaged facility: _____ Ft. _____ Inches
Construction practices specify hand-exposing 2 ft to either side of location point.
Did we hand expose within this distance? _____ Yes _____ No
If no, why not? _____
Our excavation path: ____ Angled ____ Paralleled ____Crossed Damaged Service
Photos taken of damages? ____Yes ____ No
List who repaired, how many people and type of vehicles/equipment: _____
_____
_____

FINDINGS AND CONCLUSIONS
What was the direct cause of the damage/injury?:_____
_____
_____
_____
What other factors contributed? :_____
_____
_____
Why did it happen? :_____
_____
Were deficiencies in tools, training and/or attitude identified? _____
_____
_____
Which practices were violated, if any? :_____
_____
_____

RECOMMENDED ACTION:
What should be done to prevent this or similar accidents from happening again? :_____
_____
_____
_____
By whom? :_____
When? :_____

Report completed by_____Date:_____
Signature_____

Yard Manager Reviewed (Print Name) _____Date:_____
Signature_____

Overhead Clearance Distances

TABLE 1—OVERHEAD POWER LINE CLEARANCE CHART		
	Note: Verify distances with local, state, or provincial regulations	An additional 20' from the regulatory distance
Voltage (nominal, kV, alternating current)	**Minimum Clearance Zone**	**20 Foot Buffer Zone**
Up to 50	**10**	**30**
Over 50 to 200	**15**	**35**
Over 200 to 350	**20**	**40**
Over 350 to 500	**25**	**45**
Over 500 to 750	**35**	**55**
Over 750 to 1000	**45**	**65**
Over 1000	As established by the utility owner/operator or registered professional engineer who is a qualified person with respect to electrical power transmission and distribution	**Established distance plus 20'**

See **Table 2** below for operations when mobile equipment is **traveling** with *no load* and the boom ormast is lowered.

TABLE 2—EQUIPMENT IN TRANSIT MINIMUM CLEARANCE DISTANCES

Voltage (nominal, kV, alternating current)	Minimum clearance distance (feet)
up to 0.75 over .75 TO 50 over 50 to 345 over 345 to 750 over 750 to 1,000 over 1,000	4 6 10 16 20 (As established by the utility owner/operator or registered professional engineer who is a qualified person with respect to electrical power transmissionand distribution).

Always verify that the above table has not been changed and follows the regulations and utility company distances.