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		REV 3	DATE: 11/18
CATEGORY UNDERGROUND STRUCTURES			
SUBJECT REQUIREMENTS FOR EXCAVATION IN PROXIMITY OF SMUD’s UNDERGROUND TRANSMISSION CABLES			

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1 PURPOSE

This document is intended to be a guide for use by third parties who plan on performing excavation activities within 10 feet of SMUD 115kV and 230kV underground transmission lines. These underground transmission lines, belonging to SMUD are identified as "High Priority Subsurface Installations" and are covered under California Government Codes.

2 REFERENCES

California Government Code	Section 4216
California Senate Bill	1359
USA North's Excavation Manual	

3 MINIMUM REQUIREMENTS

3. 1 The Contractor shall provide SMUD with a schedule of work (with dates and times) for any excavation within ten feet of the transmission line(s).
3. 2 **ALL** work within ten (10) feet of the underground transmission line(s) shall be in the presence of a SMUD Inspector (or a SMUD Qualified Electrical Worker) prior to the start of work. A 72-hour advance notice is required. Please contact SMUD Inspection Services' at (916)732-4990 to schedule for inspections.
3. 3 It is the Contractor's responsibility to plan and execute its work such that SMUD facilities are not damaged in any way. Any damage to SMUD facilities shall be repaired at the Contractor's sole expense (see California code 4216.7, page 5 this specification). This includes all SMUD expenses necessary to repair its facilities including emergency repairs, environmental cleanup, asbestos and lead abatement, etc...
3. 4 SMUD will provide the approximate location of the transmission line(s) before excavation begins. The Contractor shall determine the exact location of the SMUD line(s) every 25 feet when its work (excavation, drilling or boring) is within ten (10) feet of the approximate location(s), the Contractor shall use hand tools to determine the exact location of SMUD line(s).
3. 5 When excavating within three (3) feet of the exact location of any SMUD transmission line, the contractor shall hand expose and protect the SMUD line prior to using power equipment. Hand-power tools may be used to remove street asphalt **IF** approved in advance by the SMUD Engineer.

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3. 6 All SMUD direct buried pipes have a lead paint coating, in addition to a somastic coating which contains asbestos. **THESE COATINGS SHALL NOT BE DISTURBED.**
3. 7 The bottom surface of a SMUD transmission line shall be hand exposed and protected prior to any excavation, drilling or boring under a SMUD line.
3. 8 All shoring shall maintain soil pressure when in place. Shoring shall be placed six (6) to twelve (12) inches beyond vertical faces, and above the top horizontal face of exposed concrete encasements. Additional safeguards maybe required for direct buried lines and will be determined on a case-by-case basis.
3. 9 Excavation under concrete encasements or transmission pipes shall be minimized to limit the unsupported length of the encasement or pipe (See Requirement # 3.13 for backfill requirements). Shoring of the encasement or pipe may be required depending upon the extent of the work. SMUD may require the Contractor to submit a shoring plan stamped by a California licensed Civil Engineer prior to start of work. Shoring plan submittals will be determined by SMUD on a case-by-case basis.
3. 10 Twelve (12) inches of clearance shall be maintained from SMUD duct banks or direct buried pipes to any installed facilities for all crossings of SMUD facilities. Three (3) feet of clearance shall be maintained from SMUD duct banks or direct buried pipes for all installed facilities running parallel to SMUD facilities.
3. 11 Joints for wet utilities, conduits, etc..., will be at least three (3) feet from the vertical edge of the duct bank or direct buried pipes.
3. 12 Trench plates shall not create a slipping or tripping hazard and shall extend two (2) feet minimum beyond the edge of excavation. Plates shall be pinned and cutback placed per City of Sacramento / County of Sacramento requirements.
3. 13 Backfill within three (3) feet of the vertical edge of the duct bank or direct buried pipes, above the direct buried pipes, and any void created as a result of tunneling under a SMUD facility shall be 2 sacks of cement per cubic yard. Any warning tape that is removed shall be replaced in kind. **NO** mechanical compaction equipment shall be allowed in this area. **Changes to this requirement to meet County or City requirements must be approved by the SMUD Civil Engineer.**
3. 14 Additional safeguards to protect the transmission line(s) may be required if warranted by site conditions. SMUD inspector will notify the contractor's site supervisor immediately if additional safeguards are required.

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3. 15 In addition to the above, the customer and/or their representatives or contractors **SHALL NOT ENTER** any vault, manhole, or other SMUD facility except in the presence of a SMUD qualified electrical worker. Please see requirements # 3.2 for SMUD contact Information.

4 RELATED CALIFORNIA GOVERNMENT CODES

Disclaimer; the information provided in this section is intended to be for convenience. It is the responsibility of the user of this document to ensure that they are using the latest revision of the California codes as they may have changed since the adoption of this document.

- 4216 (e) "High priority subsurface installation" means high-pressure natural gas pipelines with normal operating pressures greater than 415 kPA gauge (60 psig), petroleum pipelines, pressurized sewage pipelines, high voltage electric supply lines, conductors, or cables that have a potential to ground of greater than or equal to 60 kV [103.9 kV phase-to-phase], or hazardous materials pipelines that are potentially hazardous to workers or the public if damaged.
- 4216 (h) "Operator" means any person, corporation, partnership, business trust, public agency, or other entity that owns, operates, or maintains a subsurface installation.
- 4216 (i) "Qualified person" means a person who completes a training program in accordance with the requirements of Title 8, California Code of Regulations, Section 1509, Injury Prevention Program, that meets the minimum training guidelines and practices of Common Ground Alliance current Best Practices.
- 4216 (l) "Subsurface installation" means any underground pipeline, conduit, duct, wire, or other structure, except nonpressurized sewer lines, nonpressurized storm drains, or other nonpressurized drain lines.
- 4216.2 (a2) When the excavation is proposed within 10 feet of a high priority subsurface installation, the operator of the high priority subsurface installation shall notify the excavator of the existence of the high priority subsurface installation prior to the legal excavation start date and time. The excavator and operator or its representative shall conduct an onsite meeting at a mutually-agreed-on time to determine actions or activities required to verify the location of the high priority subsurface installations prior to start time.
- 4216.3 (a4) Operators of high priority subsurface installations shall maintain and preserve all plans and records for its subsurface installations.

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- 4216.4 (a) When the excavation is within the approximate location of subsurface installation, the excavator shall determine the exact location of subsurface installations in conflict with the excavation by excavating with hand tools within the area of the approximate location of subsurface installations as provided by the operators in accordance with Section 4216.3 before using any power-operated or power-driven excavating or boring equipment within the approximate location of the subsurface installation, except that power-operated or power-driven excavating or boring equipment may be used for the removal of any existing pavement if there are no subsurface installations contained in the pavement. If documented notice of the intent to use vacuum excavation devices, or power-operated or power-driven excavating or boring equipment, has been provided to the subsurface installation operator or operators and it is mutually agreeable with the operator or operators and the excavator, the excavator may utilize vacuum excavation devices, or power-operated or power-driven excavating or boring equipment within the approximate location of a subsurface installation and to any depth.
- 4216.4 (c) An excavator discovering or causing damage to a subsurface installation, including all breaks, leaks, nicks, dents, gouges, grooves, or other damage to subsurface installation lines, conduits, coatings, or cathodic protection, shall immediately notify the subsurface installation operator. The excavator may contact the regional notification center to obtain the contact information of the subsurface installation operator. If high priority subsurface installations are damaged and the operator cannot be contacted, the excavator shall call 911 emergency services.
- 4216.6 (a1) Any operator or excavator who negligently violates this article is subject to a civil penalty in an amount not to exceed ten thousand dollars (\$10,000).
- 4216.6 (a2) Any operator or excavator who knowingly and willfully violates any of the provisions of this article is subject to a civil penalty in an amount not to exceed fifty thousand dollars (\$50,000).
- 4216.7 (a) If a subsurface installation is damaged by an excavator as a result of failing to comply with Section 4216.2 or 4216.4, or as a result of failing to comply with the operator's requests to protect the subsurface installation as specified by the operator prior to the start of excavation, the excavator shall be liable to the operator of the subsurface installation for resulting damages, costs, and expenses to the extent the damages, costs, and expenses were proximately caused by the excavator's failure to comply.