

Redfearn, Tyke

From: Heuer, Buddy <edward.heuer@santeecooper.com>
Sent: Wednesday, October 14, 2015 9:42 AM
To: Redfearn, Tyke
Cc: Pope, Christine; Mattox, James H.
Subject: FW: Port Access (Santee Cooper Relocation) Clearances
Attachments: Permissible_RW_Encroachments.pdf

Tyke,
Here's the info from Christie. Let me know if you have any questions.

... Buddy

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From: Pope, Christine
Sent: Wednesday, October 14, 2015 8:06 AM
To: Heuer, Buddy
Subject: RE: Port Access (Santee Cooper Relocation) Clearances

Horizontal Clearance should follow our encroachment agreement policy where possible (see attached). Since we only have a 50' right-of-way, I would say that we would not allow anything closer than 25' left and right of centerline parallel to the line and any crossings should be 50' from structure locations per the encroachment policy.

Minimum Design Vertical Clearance in Feet of Conductors and Cables Above Ground, Roadway, Rail, or Water Surfaces as Applied to NESC Rule 232 and Table 232-1

All listed clearances exceed NESC clearances by 2.5'.

Line conditions under which NESC states vertical clearances shall be met (Calculations are based on Maximum Operating Voltage):					
• 32°F, no wind, radial ice thickness of ice for loading district or • 200°F conductor temperature or other maximum operating temperature exceeding 120°F					
The condition which creates the maximum sag shall be used.					
Clearance Required When Conductors Cross Over:	ADSS Fiber Optic Cable	Nominal Voltage, Phase to Phase (kV)			
		44	69	115	230
1. Railroad Tracks (Top of Rail)	26	29.2	29.7	30.6	32.9
2. Roads, Streets, and Other Areas Subject	18	21.2	21.7	22.6	24.9

to Truck Traffic					
3. Driveways, Parking Lots, and Alleys	18	21.2	21.7	22.6	24.9
4. Other Land Traversed by Vehicles such as Cultivated Grazing, Forest, Orchards, etc	18	21.2	21.7	22.6	24.9
5. Spaces and Ways Subject to Pedestrians or Restricted Traffic Only (A)	18	21.2	21.7	22.6	24.9
6. Water Areas not Suitable for Sailboating or where Sailboating is Prohibited (B) (C)	USE CLEARANCES SPECIFIED BY SIZE ACREAGE IN 7 a – d				
7. Water Areas Suitable for Sailboating Including Lakes, Ponds, Rivers, Streams, and Canals with an Unobstructed Surface Area of:					
a. Less Than 20 Acres	20	23.2	23.7	24.6	26.9
b. Over 20 to 200 Acres	28	31.2	31.7	32.6	34.9
c. Over 200 to 2000 Acres	34	37.2	37.7	38.6	40.9
d. Over 2000 Acres	40	43.2	43.7	44.6	46.9
8. Established Boat Ramps and Rigging Areas; Areas for Rigging or Launching of Sailboats (B)	Values are 5' Greater than in 7 a – d for the Type of Water Areas Served by the Launching Site				
Where Conductors or Cables Run Along and Within the Limits of Highways or Road Right of Way but DO NOT Overhang the Roadway					
9. Roads, Streets, or Alleys	18	21.2	21.7	22.6	24.9
10. Roads Where it is Unlikely Vehicles will be Crossing Under the Line (D)	18	21.2	21.7	22.6	24.9

(A) Minimum design clearances in these areas are the same as for clearances over a road to avoid clearance problems in the event conditions change to Category 2.

(B) Where the U.S. Army Corps of Engineers, or the State, or surrogate thereof, has issued a crossing permit, the most stringent clearances shall govern.

(C) Minimum design clearances in these areas are the same as clearances where sailboating is permitted to avoid clearance problems if sailboating is to be permitted in the future.

(D) Minimum design clearances in these areas are the same as clearances over a road to avoid clearance problems in the event the conditions change to Category 2.

Christie Pope
Ext. 5084

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RIGHT OF WAY (R/W) ENCROACHMENTS

Permissible Encroachments

The following encroachments are generally permitted on the R/W, as long as we maintain adequate access to our facilities and all current or applicable National Electric Safety Code (NESC) required clearances plus our safety adders are maintained. Any modifications to our facilities will need to be approved by Santee Cooper and paid for by the requester.

1. Roads (including dirt roads), streets and driveways which cross the R/W at an angle not to interfere with present or future structure placement. If paralleling the R/W, the maximum allowable encroachment for all hard surfaces, including curbing and sidewalks, is restricted to the outer 5 feet of the R/W. Proposed roadside swales and shoulders that extend further into the R/W greater than 5 feet will be approved on a case by case basis. Also, these encroachments must be located at least 50 feet away from transmission structures, guy wires and anchors.
2. Sewer lines, water lines, gas lines, underground and overhead distribution lines and other utilities which cross the R/W at an angle not to interfere with present or future structure placement. If paralleling the R/W, the maximum encroachment that may be allowed is within the outer 5 feet of the R/W. Also, these encroachments must be located at least 50 feet away from transmission structures, guy wires and anchors and must be buried at a minimum depth of 3 feet. For overhead lines crossing the R/W, all supporting structures should be located off the R/W or on the outer 5 feet of the R/W.
3. Parking lots in which the parking spaces are kept a minimum of 50 feet away from structures, guy wires and anchors. Under certain circumstances, approved barriers or islands may be required around our facilities to protect both our facilities as well as the patrons of the parking area. Installation of these barriers would be the responsibility of the requester. Access to our facilities must be maintained at all times, even if the parking lot is full. **Commercial over-night parking is not allowed.** It should be noted that additional grounding may be required in the future for the existing transmission and/or for future transmission lines. This will cause damage to the pavement of the parking lot. Any damage caused by this or other construction, maintenance or operation activities on the R/W by Santee Cooper personnel will not be the responsibility of Santee Cooper.
4. Fences will be reviewed on a case by case basis. All approved metal fences on the R/W shall be properly grounded in accordance with applicable industry standards, and in some cases, this grounding plan must be approved by Santee Cooper. Typically, requests for fences crossing the R/W in subdivisions are not allowed because this greatly inhibits our access up and down the R/W. If a fence that restricts our access to our facilities is approved, the requester must provide and install a 16 foot gate and interlock their lock with a Santee Cooper lock. If the fence is to be electrified, it should be equipped with a Underwriters Laboratory (UL) approved fence charger with a DC output and fence filters. Fences that parallel the R/W for significant distances must be placed off of the R/W.

5. Ditches which do not obstruct access along our R/W and which are located a minimum of 50 feet away from our structures, guy wires and anchors. If the ditch restricts our access to our facilities, the requester must provide a 20 foot wide (minimum) culvert of approved size, strength and location. The intent here is to have a minimum access/road width of 16 feet for our vehicles to pass over the culvert. For extremely deep ditches, additional culvert length will be required. Any ditch construction should not interfere with Santee Cooper owned underground facilities or any other underground facility that may be on the R/W.
6. Outdoor signs and light poles that have a maximum height above ground not to exceed the lesser of 15 feet or a height that maintains a vertical clearance to our neutral or conductor (NESC minimum clearance + 1.5 feet of extra clearance) as determined by Santee Cooper. Signs and light poles (including the fixtures) are to be placed no closer than 15 feet from the vertical axis of the outside conductor of existing lines. If future lines are constructed on the R/W, the signs or lights may need to be relocated at the owner's expense. All signs and lighting must be a minimum of 50 feet from our structures, guy wires and anchors.
7. Low growing vegetation may be allowed within our R/W as long as their mature height is no greater than 12 feet and they do not interfere with access to or along the R/W. No planted vegetation should be allowed to grow within 6 feet of our facilities. Santee Cooper is not responsible for damages to plantings within the R/W.
8. Commercial sprinkler systems may be permitted, but all piping and hardware should be sufficiently buried so that our heavy equipment will not damage these facilities. Santee Cooper is not responsible for any damage to these facilities. The water sprayed from these sprinklers should not contact our facilities in any way and should not come within 20 feet of our energized conductors, regardless of which direction the wind is blowing.

Non-Permissible Encroachments

The following encroachments are not permitted on the R/W:

1. Structures or obstructions of any kind such as buildings, sheds, pump houses, mobile homes, wells, trees, etc.
2. Septic tanks and drain fields.
3. Intentional flooding of the R/W.
4. Swimming pools, tennis courts, playgrounds, recreational fields, agricultural and residential irrigation systems, recreational ponds, etc.
5. Storage facilities for boats, recreation vehicles, trailers, junk cars, mobile homes, etc.

6. Cable gates.
7. Retaining walls.
8. Dumpsters.
9. Ditches running parallel to and within the R/W.
10. Any other encroachment which would endanger our facilities or the public.

Miscellaneous Items

Placement of fill material on the R/W that reduces our clearance above ground as well as excavation within the R/W are generally not permitted, but will be reviewed on a case by case basis.

Detention and retention ponds are typically not permitted but will be reviewed on a case by case basis.

Other items not listed in this document will be dealt with on a case by case basis.