

6350302 PULL, SPLICE, AND JUNCTION BOXES  
COMMENTS FROM INTERNAL/INDUSTRY REVIEW

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Comments: (7/25/22, Internal)

*I only have one questions, in some applications or installations this may not be possible to install pull and Splice Boxes 2 Feet above ditch bottoms or features. That could allow water flow within the “ Ditch/Water features ” ( “**Place pull and splice boxes a minimum of two feet above ditch bottoms or drainage features**” (The addition of the following “When Locations or condition allow”)*

Response: Based on comments received during this review cycle, this language is being removed. See additional comments and rationale in responses that follow.

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Bruce Boyd  
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Comments: (7/27/22, Internal)

PCS has comments on the Pull box specification 635-3.2

**635-3.2.1 Placement and Spacing:** Place pull and splice boxes as shown in the Plans and at the following locations, unless directed otherwise by the Engineer:

1. At all **major** fiber optic cable and conduit junctions—~~in both rural and metropolitan areas where any non-continuous pathway intersects another.~~

What Is a major junction point?

And PCS suggested language

2. Approximately every 2,500 feet for fiber optic cable applications in **rural areas** with any **continuous section of straight** conduit, in a straight conduit segment with a change in deployment depth greater than three (3’) feet of depth within the segment, and transitions in the pathway exceeding a forty-five degree (>45°) deflection within the segment, and at all ~~if no~~ fiber optic cable splice locations. ~~is required.~~

What areas will be defined as rural?

And PCS suggested language

3. At a maximum of 1,760 feet for fiber optic cable applications in **metropolitan areas** with any continuous section of straight conduit, in a straight conduit segment with a change in deployment depth greater than three (3’) feet of depth within the segment, and transitions in the pathway exceeding a forty-five degree (>45°) deflection within the segment, and at all fiber optic cable splice locations.

What areas will be defined as metropolitan?

3. At a maximum of 500 feet for electrical applications.
4. At each end of a tunnel, and on each side of a river or lake crossing.
5. On each side of an aboveground conduit installation, such as an attachment to a bridge or wall.
7. At all turns in the conduit system. **exceeding pathway exceeding a forty-five degree (>45°) deflection within the segment.**
8. Near the base of a service pole or communication cabinet to provide:
  - a. A transition point between the fiber optic conduits extending from the fiber backbone and the conduit feeding the communication cabinet.
  - b. An assist point for the installation of fiber optic **backbone and/or** drop cable.
  - c. Storage of slack fiber optic **backbone and/or** drop cable.

The ability to store BACKBONE slack is way more important than drop cable ...just as a placing boxes in the backbone pathway to alleviate the potential for backbone FO cable damage during placement is highly critical.

Placements of pullboxes to ensure Contractors can place FO cable without exceeding pulling tensions is critical

**Response: We will consider these points for future edits but are making no changes at this time.**

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**Comments: (7/27/22, Internal)**

Ensuring pull boxes are placed two feet above ditch bottoms or drainage features is a responsibility of design. This new language transfers the burden of the EOR onto the contractor, and more specifically the crews in the field.

I also don't understand why conduit & pull box crews would be expected to have to verify & interpret cross sections in the roadway plans to ensure this new language is met; when the conduit running line & pull box locations that we are following is based on the EOR's design.

To that point, the very next paragraph in the 635 spec reads:

**635-3.2.1 Placement and Spacing:** Place pull and splice boxes as shown in the Plans and at the following locations, unless directed otherwise by the Engineer:

**Response: The intent was not to transfer responsibility for design but rather provide an additional check during construction that boxes are not inadvertently placed in ditches due to an unintentional error in design. If a location is questionable, the contractor should bring this to the**

attention of the Engineer. In addition, the proposed sentence was intended to prevent field adjustments that would move boxes into drainage areas. However, the consensus is that this sentence could create additional issues. Therefore, the draft has been revised and the proposed sentence has been removed at this time.

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Comments: (8/17/22, Industry)  
Here is my comment:

**635-3.2 Pull and Splice Boxes:** Install pull and splice boxes in accordance with Standard Plans, Index 635-001. Ensure pull and splice boxes are sized for the amount of cable to be placed inside. Ensure that the pull or splice box cover is flush with the concrete apron or sidewalk. Do not install pull or splice boxes in roadways, driveways, parking areas, ~~ditches~~ or public sidewalk curb ramps. Avoid placing pull and splice boxes in low-lying locations with poor drainage. **Place pull and splice boxes a minimum of two feet above ditch bottoms or drainage features.** Ensure that pull and splice boxes house fiber optic cable without subjecting the cable to a bend radius less than 14 times the diameter of the cable. Install identification plates according to the box manufacturer’s instructions.

The sentence “ Pull and splice boxes a minimum of two feet above ditch bottoms and drainage features” does not address the case of the normal water level of the ditch is over 2’.

I suggest replacing “ditch bottom” to “ditch Normal Depth” or any other phrase that indicates that the location of the box is 2’ above the water level of the ditch.

Response: The proposed sentence has been deleted from the draft due to all comments received. References to ditch bottom, water level, or similar have been removed.

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Peter Vega  
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Comments: (8/12/22, Industry)

SUBARTICLE 635-3.2 is deleted and the following substituted:

**635-3.2 Pull and Splice Boxes:** Install pull and splice boxes in accordance with Standard Plans, Index 635-001. Ensure pull and splice boxes are sized for the amount of cable to be placed inside. Ensure that the pull or splice box cover is flush with the concrete apron or sidewalk. Do not install pull or splice boxes in roadways, driveways, parking areas, ~~ditches~~ or public sidewalk curb ramps. Avoid placing pull and splice boxes in low-lying locations with poor drainage. **Place pull and splice boxes a minimum of two feet above ditch bottoms or drainage features.** Ensure that pull and splice boxes house fiber optic cable without subjecting the cable to a bend radius less than 14 times the diameter of the cable. Install identification plates according to the box manufacturer’s instructions.



I need to disagree with the inclusion of this sentence. In District Two, we direct design firms and contractors to avoid installations in ditch bottoms and drainage areas due to the impact to ITS Maintenance staff. If this is included, we will always have to submit an MSP to delete since it now introduces an option to contractors when a challenge is encountered.

Response: The intent was not to encourage placement of boxes in ditches or drainage areas but rather provide an additional check during construction that boxes are not inadvertently placed in

ditches due to an unintentional error in design or poor choices made during allowable field adjustments. If a location is questionable, the contractor should bring this to the attention of the Engineer. However, the consensus is that this sentence could create additional issues. Therefore, the draft has been revised and the proposed sentence has been removed at this time.

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