ATTENTION: These documents are provided for informational purposes. They provide standard configurations, general requirements, and guidelines for trenching and standard customer interconnections for APS customers. These documents do not address every possible situation. It is the responsibility of the customer to ensure that the documents provided here are the most current version. APS reserves the rights to require modifications based on site specific or system conditions.

8716.A _

SPLICING MATERIAL ONLY

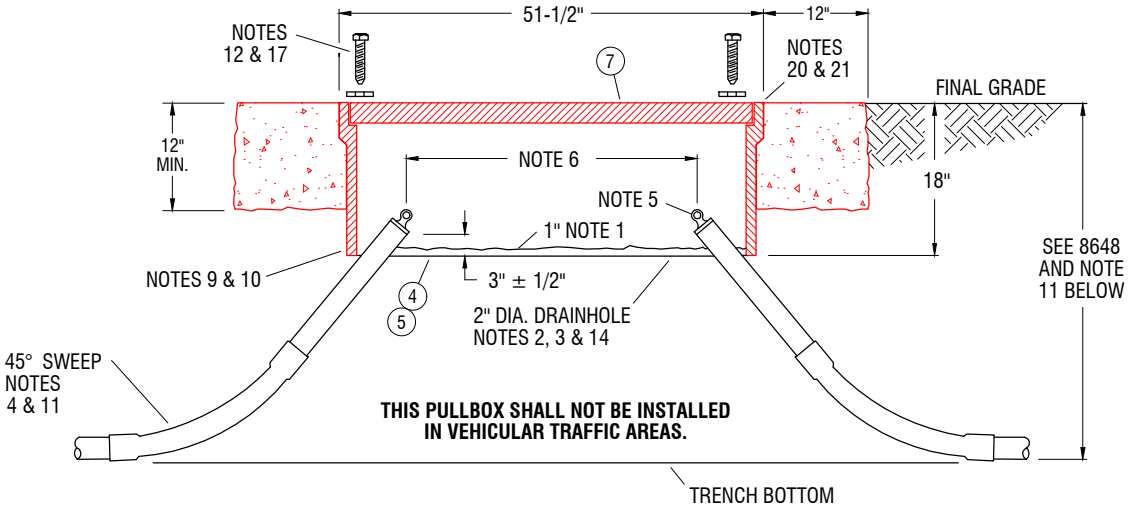
- **1** = ONE SPLICE
- **2** = TWO SPLICE
- **3** = THREE SPLICE
- **X** = WITHOUT SPLICES

8718.A _ _

SEE NOTE 13
WITH CONCRETE SUPPORT
PER NOTES 20 AND 21

IF APPLICABLE
- **G** = APS GROUT PROVIDED

- **1** = ONE SPLICE
- **2** = TWO SPLICE
- **3** = THREE SPLICE
- **X** = WITHOUT SPLICES



NOTES:

1. USE PRE-MIX, APN 71301280, TO GROUT THE BOTTOM OF THE PULLBOX.
2. A 2-INCH MINIMUM DIAMETER DRAIN HOLE, INSTALLED IN THE AREA OF LOWEST ELEVATION, IS REQUIRED TO ENSURE PROPER DRAINAGE.
3. WHERE A GROUND ROD IS UTILIZED, IT SHALL BE DRIVEN THRU THE DRAIN HOLE TO PREVENT RODENT PENETRATION.
4. ONLY FORTY-FIVE DEGREE CONDUIT SWEEPS ARE ACCEPTABLE.
5. CONDUIT SHALL BE SEALED, CAPPED, OR PLUGGED PER 8601 - SECTION 18, AND 8881.
6. PROPER CONDUIT SEPARATION IS CRITICAL FOR CABLE TRAINING AND SPLICING. THE SPACING SHALL BE AS FOLLOWS:
   36 INCHES WHEN 45 DEGREE SWEEPS ARE SPECIFIED.
7. MINIMUM SEPARATION BETWEEN CENTER LINES OF THE CONDUITS IS 3 INCHES.
8. COMPACTION BENEATH AND AROUND PULLBOX SHALL BE A MINIMUM OF 90 PERCENT OF THE MAXIMUM DENSITY AS DEFINED IN 8601.
9. UTILIZE THE PRE-FABRICATED CONDUIT HOLES (WHEN AVAILABLE) WHERE 45 DEGREE SWEEPS ARE UTILIZED.
10. GAPS CREATED BY THE CONDUIT HOLES SHALL BE GROUTED TO PREVENT RODENT PENETRATION. THIS REQUIREMENT SHALL NOT RESULT IN A REDUCTION OF THE VERTICAL SPACE INSIDE THE PULLBOX.
11. ADDITIONAL TRENCH DEPTH IS USUALLY REQUIRED AT ALL EQUIPMENT LOCATIONS. SEE 8648 FOR THE MINIMUM TRENCH DEPTHS AND THE DEGREE OF SLOPE ALLOWED AS THE TRENCH DEPTH CHANGES.
12. PENTA-HEAD BOLTS SHALL BE INSTALLED PRIOR TO ENERGIZING NEW UNDERGROUND SYSTEMS. TORQUE BOLTS TO 40FT - LBS.
13. INSTALLATION OF THE PULLBOX WITH CONCRETE SUPPORT IS LIMITED TO AREAS SUBJECT TO OCCASIONAL LOAD SUCH AS IN SIDEWALKS ADJACENT TO STREETS AND RAISED ISLANDS IN THE CENTER OF STREETS. **THIS PULLBOX SHALL NOT BE INSTALLED IN VEHICULAR TRAFFIC AREAS**.
14. THE PARTY RESPONSIBLE FOR THE INSTALLATION OF THE CONDUIT SYSTEM SHALL BE RESPONSIBLE FOR INSTALLATION OF THE GROUND ROD OR AN APPROVED ALTERNATE.

ARIZONA PUBLIC SERVICE COMPANY T&D CONSTRUCTION STANDARDS				
BY	LDR.	MGR.	DATE	REV.
MLM	M. CAMPA	M. W. ADAMS	06/2022	12

SUBSTRUCTURES
LIGHT DUTY PULLBOX, POLYMER
1/0 AL PRIMARY

8716 THRU 8718

15. ALL SPLICES SHALL BE INSTALLED IN STRAIGHT PORTIONS OF THE CABLE. INSTALLING THE SPLICES IN THE LOWER PORTION OF PULLBOX WILL OPTIMIZE THE STRAIGHT SECTION IN CABLE.

16. WEIGHTS:
    BOX 192 LBS
    COVER 100 LBS EACH (2 COVERS TOTAL)

17. THE PULLBOX, COVER, PENTA-HEAD BOLTS, AND WASHERS ARE INCLUDED WITH THIS STANDARD. BOLTS AND WASHER ARE AVAILABLE AS REPLACEMENTS WHEN NEEDED.

18. CONDUIT FOR PRIMARY OR FEEDERS INSTALLED LOWER THAN A 36-INCH DEPTH SHALL BE PARTIALLY ENCASED WITH A MINIMUM 4-INCH CONCRETE CAP ON TOP AND 2-INCHES ON THE SIDES. PARTIAL CONCRETE ENCASEMENT SHALL INCLUDE TOP AND SIDES OF CONDUIT, BUT NOT THE BOTTOM (SEE 8601).

19. UNLESS OTHERWISE SPECIFIED, INSTALL THE PULLBOX TO WITHIN 1/8-INCH OF FINAL GRADE. A DEPRESSION IS PREFERABLE TO A PROJECTION (BUMP) ABOVE FINAL GRADE.

20. A 12-INCH CONCRETE SUPPORT SURROUNDING THE PULLBOX IS REQUIRED FOR THE 8718.A INSTALLATION. THE CONCRETE SHALL HAVE A MINIMUM RATING OF 2000 PSI AT 24 HOURS, THE CONCRETE MAY BE 4000 PSI AT 28 DAYS (2000 PSI AT 72 HOURS) IF QUICK SET-UP IS NOT REQUIRED. THE CONCRETE IS NOT PROVIDED BY THIS STANDARD AND MUST BE SPECIAL ORDERED. THE CONCRETE MUST BE FORMED UP ON ALL SIDES AND THE SURFACE TROWELLED SMOOTH.

21. IN LATE 2010, PRY BAR SLOTS WERE ADDED TO EACH END OF THE BOX. WHEN POURING THE CONCRETE SUPPORT, KEEP CONCRETE OUT OF THOSE PRY BAR SLOTS.

22. LID SHOULD BE INSTALLED PRIOR TO POURING THE CONCRETE SUPPORT AROUND THE BOX. THIS WILL PREVENT THE BOX WALLS FROM BOWING.

23. WHEN THE PULLBOX IS INSTALLED IN A SIDEWALK, 1/2 IN. BITUMINOUS TYPE PREFORMED EXPANSION JOINT FILLER PER ASTM D-1751 SHALL BE PLACED AROUND ALL SIDES OF THE BOX PRIOR TO POURING CONCRETE. THIS MATERIAL IS NOT STOCKED, HOWEVER, IT CAN BE PURCHASED AT MOST HARDWARE STORES.

24. COVERS WITH 1 IN. X 4 IN. LIFTING SLOTS ARE RATED FOR 3000 LBS. OF TENSION.

25. THIS STANDARD WILL NOT AUTOMATICALLY SUPPLY GROUT FROM APS. THE LETTER "G" MUST BE PLACED AT THE END OF THE CODE FOR THE GROUT TO BE SUPPLIED BY APS AND TO BE ORDERED ON THE BILL OF MATERIALS.

26. AN ELECTRONIC MARKER IS PROVIDED WITH THE PULLBOX. THE MARKER IS EMBEDDED IN THE PULLBOX LID.

27. OFFSET PULLBOXES FROM JOINTLY USED TRENCHES TO AVOID BLOCKING THE TRENCH WHEREVER PRACTICAL. SEE 1286.

28. THE EXACT LOCATION AND ORIENTATION OF THE PULLBOX SHALL BE SPECIFIED ON THE WORK ORDER CONSTRUCTION DRAWINGS. PULLBOX SHALL BE POSITIONED OUTSIDE DRAINAGE AREAS WHERE PRACTICAL.

29. THIS PULLBOX IS SUITABLE FOR TANGENT APPLICATIONS ONLY. CABLE DIRECTION CHANGES INSIDE PULLBOX ARE UNACCEPTABLE.

30. THIS PULLBOX IS SUITABLE FOR USE AS A TRIFURCATION BETWEEN A SINGLE CONDUIT AND MULTIPLE CONDUITS FOR A SINGLE 750 KCMIL FEEDER, PULLBOX MUST BE LOCATED IN CLOSE PROXIMITY TO EXISTING PHASE-ISOLATED EQUIPMENT. SPLICING THE FEEDER IN THIS PULLBOX IS UNACCEPTABLE.

31. THIS PULLBOX WILL ACCOMMODATE A MAXIMUM OF THREE PHASES/SPLICES.

32. WHERE IT IS NECESSARY TO INSTALL A PRIMARY PULLBOX IN THE LINE, ALL PRIMARY CIRCUITS SHOULD UTILIZE (PASS THROUGH) THE PULLBOX WHEREVER PRACTICAL. THIS WILL HELP PREVENT A POSSIBLE DIG-IN WHILE DIGGING IN OR AROUND A PULLBOX WHICH HAS ADDITIONAL CIRCUITS IN THE IMMEDIATE VICINITY AND WILL FACILITATE TROUBLE SHOOTING.

33. HIGH AND LOW-VOLTAGE CIRCUITS SHALL NOT BE INSTALLED IN THE SAME PULLBOX.

34. PULLBOX AND LID COLOR IS SIMILAR TO THE COLOR OF CONCRETE.

35. T&D ENGINEERING & STANDARDS SHALL VERIFY THAT THE STRENGTH OF THE PULLBOX WILL NOT BE ADVERSELY AFFECTED, PRIOR TO APPROVING ANY FIELD MODIFICATIONS, SUCH AS CUTS TO FORM SLOTS OR HOLES. POLYMER CONCRETE CAN BE CUT WITH A HOLE SAW.

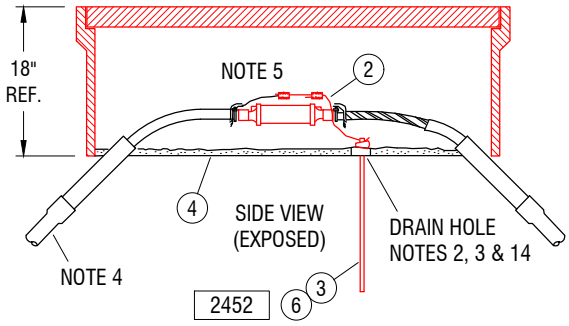
36. SEE 8601 FOR TRENCH BACKFILL AND COMPACTION REQUIREMENTS.

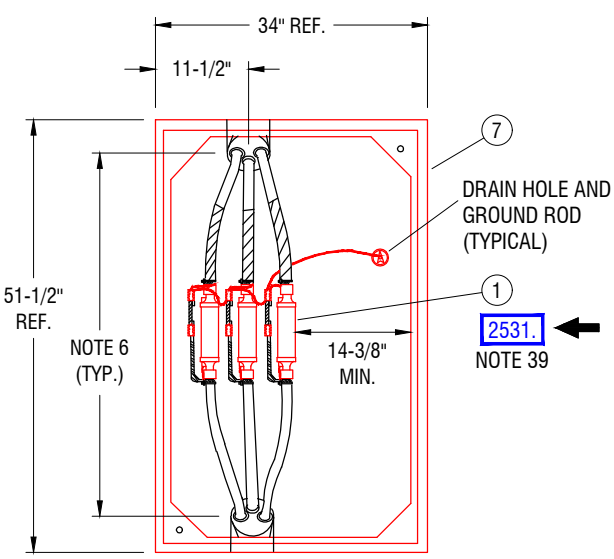
37. SEE 6210 FOR MINIMUM BENDING RADIUS FOR PRIMARY CABLE.

38. SEE 2449-2453 & 2458-2460 FOR ALTERNATE GROUNDING METHODS.

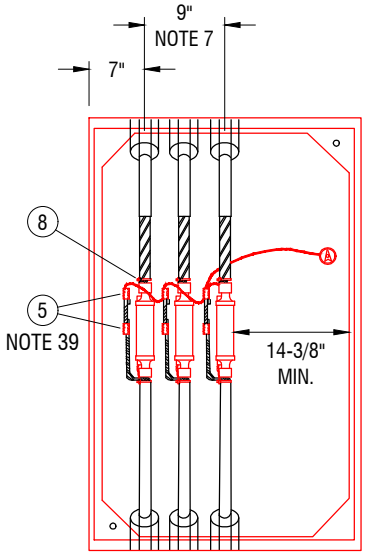
39. SPLICES SHALL BE PLACED ON SIDE ADJACENT TO STREET TO AVOID WORKER HAVING HIS/HER BACK TOWARDS TRAFFIC.

CODE	8716	8718	MATERIAL LIST	
ITEM	QTY	QTY	DESCRIPTION	CU / APN
1	VAR	VAR	SPLICE 1/0, 4/0	2531.
2	VAR	VAR	CABLE, #2/7 STRD CU BARE	31001415
3	1	1	CLAMP GROUND ROD 5/8"	33002580
4	-	VAR	CONCRETE PRE-MIX 30#	71301280
5	VAR	VAR	CONN CU "H" 2-1/0 2-1/0	33101345
6	-	1	ROD COPPERCLAD GRD 5/8" X 8"	33004805
7	-	1	SPLICE BOX 30 X 48 X 18 H-20	32907220
8	VAR	VAR	TIE CABLE MAX 2 IN OD	00103864





TOP VIEW - EXAMPLE A
3-#1/0 AL IN A SINGLE 4" CONDUIT



TOP VIEW - EXAMPLE B
3-#1/0 AL IN SEPARATE 2" CONDUITS

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SUBSTRUCTURES
LIGHT DUTY PULLBOX, POLYMER
1/0 AL PRIMARY

SH 3 OF 3

8716 THRU 8718