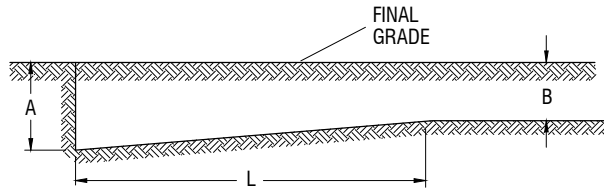


ATTENTION: These documents are provided for informational purposes. They provide standard configurations, general requirements, and guidelines for trenching and standard customer interconnections for APS customers. These documents do not address every possible situation. It is the responsibility of the 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.

 ARIZONA PUBLIC SERVICE COMPANY T&D CONSTRUCTION STANDARDS					SUBSTRUCTURES TRENCH SLOPE REQUIREMENTS FOR CONDUIT SWEEPS	COVER
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THE FORMULA TO CALCULATE THE LENGTH OF SLOPE REQUIRED IS:

$$L = \left(\frac{(A - B) \text{ in}}{12 \text{ in}} \right) 12 \text{ ft}$$

FORMULA

WHERE:

A = MINIMUM TRENCH DEPTH (IN INCHES) REQUIRED TO ALLOW VERTICAL SPACE TO INSTALL SWEEP. SEE TABLE 1 ON THE ADJACENT PAGE.

B = TRENCH DEPTH (IN INCHES) SPECIFIED ON THE WORK ORDER DRAWINGS.

L = MINIMUM LENGTH (IN FEET) OF TRENCH SLOPE REQUIRED.

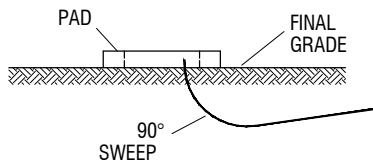


FIGURE 1
TRANSFORMERS AND SWITCHING
CABINET ENCLOSURES

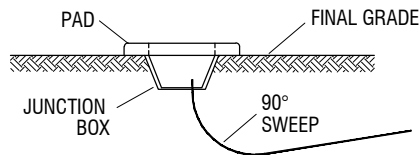


FIGURE 2
FOUR-WAY JUNCTION AND
SECTIONALIZING ENCLOSURES

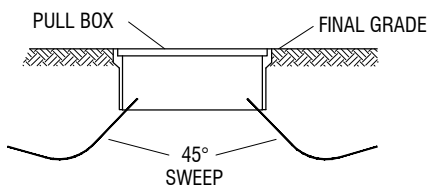


FIGURE 3
PRIMARY PULL BOXES

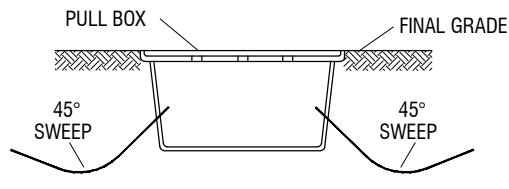


FIGURE 4
FEEDER PULL BOXES

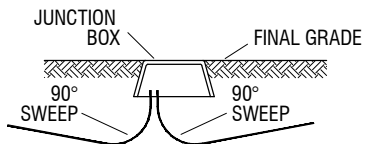


FIGURE 5
SECONDARY
JUNCTION BOXES

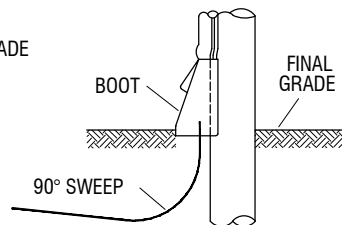


FIGURE 6
TRANSITIONS AT
POLES AND SUBSTATION RISERS

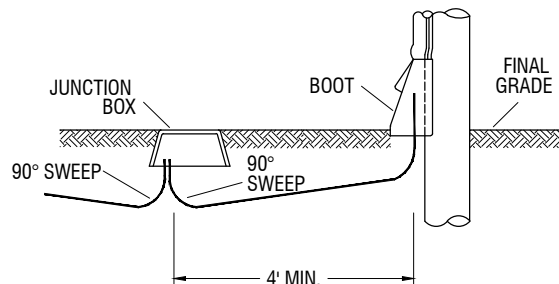


FIGURE 7
SECONDARY
JUNCTION BOXES
AT POLES



ARIZONA PUBLIC SERVICE COMPANY
T&D CONSTRUCTION STANDARDS

BY	LDR.	MGR.	DATE	REV.
MLM	M. CAMPA	K. WOOLFOLK	08/2024	4

SUBSTRUCTURES TRENCH SLOPE REQUIREMENTS FOR CONDUIT SWEEPS

SH 1 OF 2

8648

MINIMUM TRENCH DEPTH FOR CONDUIT SWEEPS DIMENSION "A" (IN INCHES)											
SWEEP TYPE CONDUIT DIAMETER CONDUIT RADIUS	90-DEGREE					45-DEGREE (SEE NOTE 3)					
	2"	2.5"	3"	4"	5"	2"	2.5"	3"	4"	5"	
	24"	36"	24"	36"	60"	24"	36"		36"	60"	
FIGURE 1	32	49	32	49	50	77	--	--	--	--	--
FIGURE 2	48	61	48	--	62	--	--	--	--	--	--
FIGURE 3	--	--	--	--	--	--	37	--	38	38	49
FIGURE 4	--	--	--	--	--	--	46	--	47	47	47
FIGURE 5	51	--	51	--	53	--	--	--	--	--	--
FIGURE 6	32	45	32	46	47	73	--	--	--	--	--
FIGURE 7	51	--	51	--	53	--	--	--	--	--	--
FIGURE 8	--	70	--	70	70	95	--	54	--	54	64

TABLE 1

NOTES:

- THE TRENCH DEPTHS SPECIFIED IN TABLE 1 ABOVE ALLOW FOR AN 8-INCH STRAIGHT SECTION TO BE INSTALLED ON THE STUBBED END OF THE SWEEP.
- WHERE THE TRENCH DEPTHS SPECIFIED ON THE WORK ORDER DRAWINGS EXCEED THE DEPTHS SPECIFIED IN TABLE 1 ABOVE, THIS STANDARD 8648 SHALL NOT BE APPLICABLE.
- CONDUIT SWEEPS INTO THE BOX PAD SHOULD BE 90 DEGREES. ANY CHANGES TO THE SWEEP ANGLE SHALL BE REQUESTED IN A VARIANCE.
- SEE 8601, 4.6 FOR CHANGE IN LEVEL OF TRENCH BOTTOM REQUIREMENTS.
- SEE 8601, 16.4 FOR STANDARD RADII FOR SWEEPS.
- SEE 8601, 18.0 FOR CONDUIT TERMINATION REQUIREMENTS.

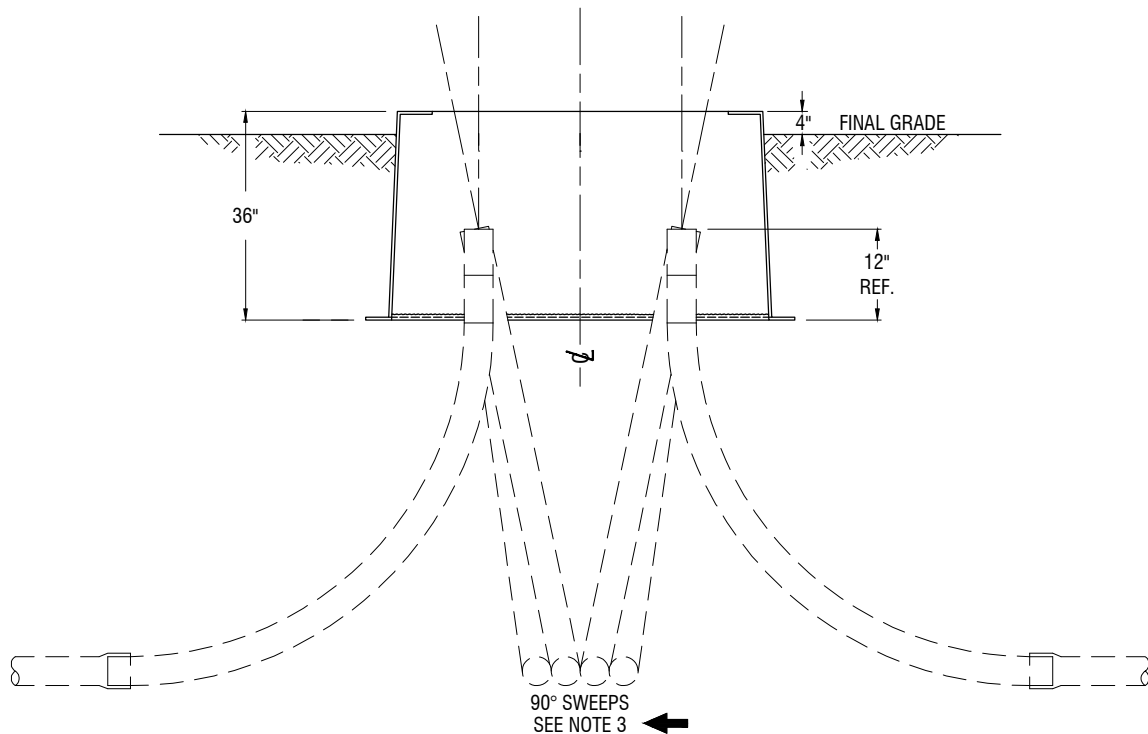


FIGURE 8
SWITCHING CABINET
BOX PAD