

# CONDUIT APPLICATION STANDARD

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## 2.0 PURPOSE

This standard covers approved types of electrical conduits and fittings for either above ground or buried use within Sierra Pacific Power Company's (SPPC) service territory.

It also provides a dimensional guide to aid in the design and selection of electrical conduit and fittings used in residential or commercial developments.

## 3.0 GENERAL

These electrical conduit requirements are SPPC approved types and can be replaced with another type only if it exceeds the designated minimum conduit classification requirements.

There will be certain cases when a heavier walled or specific type of electrical conduit will be required for a particular installation. When such cases occur, the Utility Project Coordinator or Project Engineer will designate the conduit class required. (Refer to Sheet 23 for approved electrical conduit and applications.)

- 3.1 All approved electrical conduits and fittings covered in this standard shall meet applicable specifications and their latest revisions.
- 3.2 These electrical conduits are in compliance with "USA" trade sizes having iron-pipe-size (IPS) outside diameters and special wall thicknesses. Refer to Sheet 25 and Sheet 26 for dimensional information.

## 4.0 APPROVED CONDUIT TYPES

- 4.1 **Hot-Dip Galvanized Rigid Steel Conduit (GRS)** - For use as riser conduit.
- 4.2 **Intermediate Metal Conduit (IMC)** - May be used as a substitute for galvanized rigid steel conduit with inspector approval.
- 4.3 **Type DB-120 PVC Conduit** - For underground buried applications only, as direct burial or with concrete encasement.
- 4.4 **Schedule 40 & 80 PVC Conduit** - For use in above-ground exposed locations.

## 5.0 CONDUIT APPLICATIONS

- 5.1 **Underground Straight Lengths**  
DB-120 rated conduit including sweeps shall be the preferred conduit for buried conduit applications. No portion of a DB-120 PVC conduit/sweep may be exposed above ground. Each conduit run shall be one size conduit continuously, no reducers allowed.
- 5.2 **Radius of Conduit Sweeps**
  - a. 36" radius sweeps shall be the minimum for 2", 3" and 4" conduits.
  - b. 48" radius sweeps shall be the minimum for 6" conduit.

**NOTE:** The larger the radius sweep the better for cable pulling.
- 5.3 **Pole Risers, Primary/Secondary**
  - a. **Upper Section:** A minimum conduit classification of Schedule 40 PVC shall be required. No metallic conduits are allowed on this portion of the power pole.
  - b. **Lower Section:** (1) In traffic areas (exposed to traffic) the first ten-foot (10') length from the base of the power pole and including the sweep, shall be galvanized rigid steel (GRS). (2) In traffic areas (not exposed to traffic) and nontraffic areas, the first ten-foot (10') length from the base of the power pole and including the sweep may be a minimum classification of schedule 80 PVC conduit. Exception: 6" schedule 80 risers will not be utilized.
  - c. Riser conduit and sweep must be of the same type, (PVC-PVC, Steel-Steel).
  - d. Whenever possible, risers should be installed on the side of the pole opposite traffic flow.
  - e. When single conductor risers (3-4" C) are utilized for three phase 1000kcm risers, steel must not be used. Schedule 80 is required. (NEC 300-20, 330-16).

				
DRAWN	DESIGN	SUPR	DATE	REV
JL	JF	SJ	5/04	03

ENGINEERING & CONSTRUCTION STANDARD
<b>CONDUIT APPLICATION GUIDE</b>

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VOLUME <u>17</u>
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## 5.4 Service Entrance

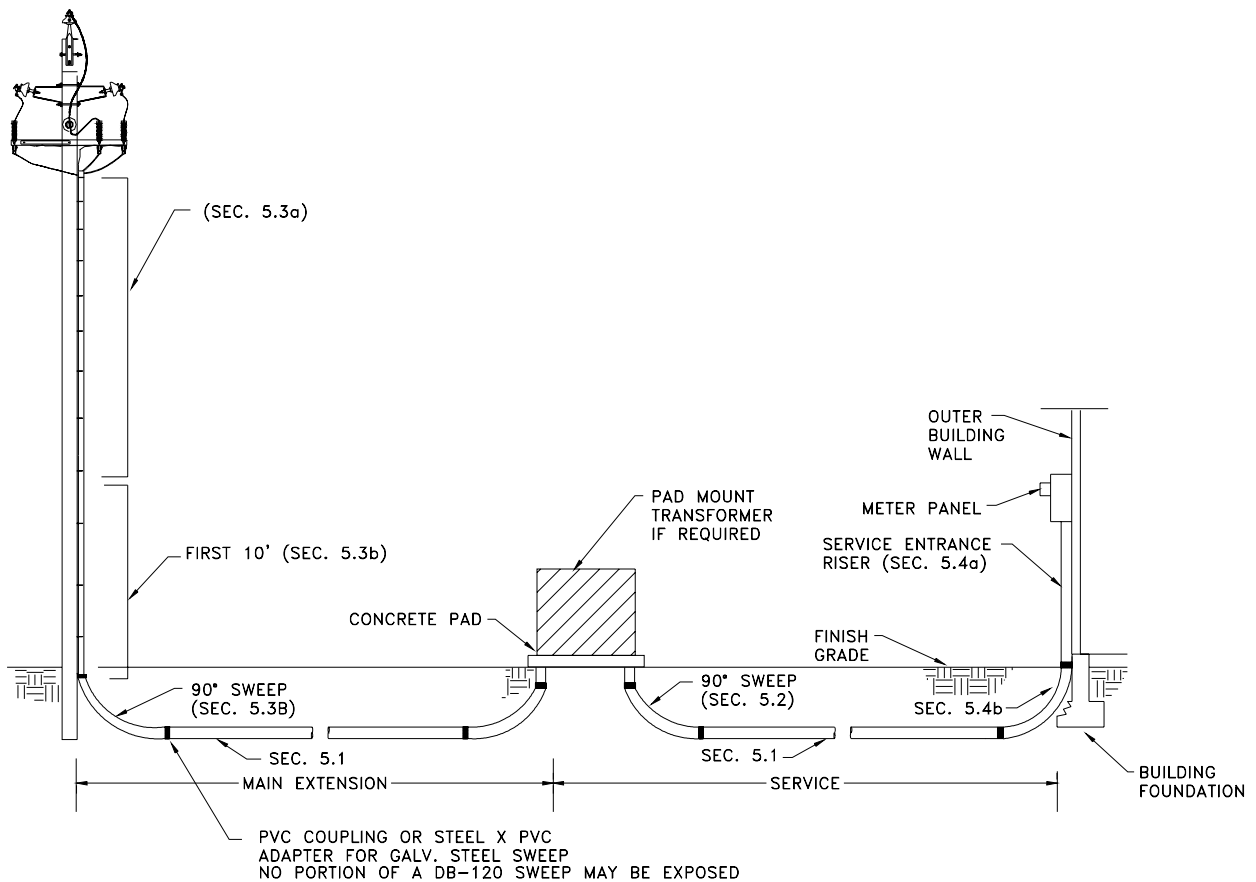
### a. Risers:

Exposed (outside building wall): A minimum conduit classification of Schedule 80 PVC conduit shall be required.

Recessed (inside building wall): A minimum conduit classification of Schedule 40 PVC conduit shall be required.

### b. Sweeps:

Conduit sweeps, if exposed will be a minimum schedule 80 when connected to either Schedule 40 or Schedule 80 PVC conduit riser. DB-120 PVC is OK, but no portion of a DB-120 sweep can be exposed above ground.



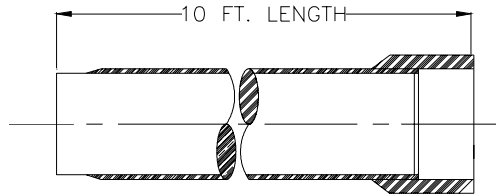
## REFERENCES:

Listed below are related SPPCO Standards, Volume 17, governing installation procedures:

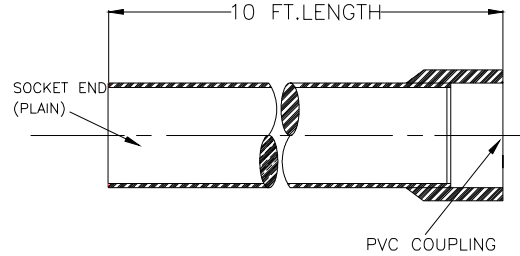
- CD0001U (Conduit Installation Guide)
- CI0001M (Commercial & Industrial Electric Service Requirements)
- US0001M (Underground Electric Residential Service)
- UT0001M (Underground Temporary Service Pole)

# STANDARD CONDUIT LENGTHS

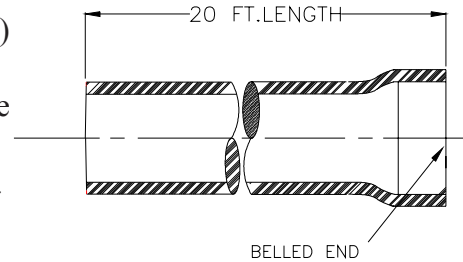
## GALVANIZED RIGID STEEL (GRS)



## SCHEDULE 40 & 80 PVC CONDUIT



## TYPE DB - PVC CONDUIT



### NOTES:

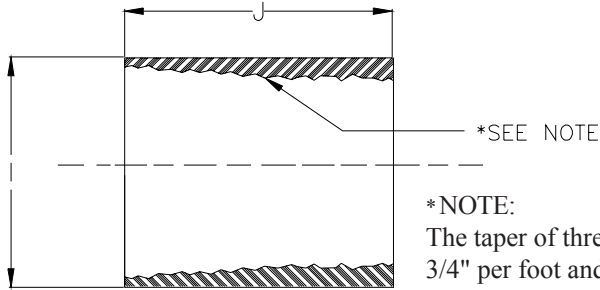
1. All conduit inside diameters (I.D.) are nominal sizes.
2. All conduits shall meet applicable specifications and their latest revisions.
3. Refer to sheet 25 for coupling standards.

CONDUIT STOCK NUMBERS				
SIZE	GRS	DB-120	SCHED. 40	SCHED. 80
2"	24-0110	24-0155	24-0179	24-0160
3"	24-0120	24-0170	---	24-0180
4"	24-0130	24-0200	24-0190	24-0191
6"	24-0140	24-0210	24-0220	

CONDUIT MINIMUM WALL THICKNESS				
SIZE	GRS	DB-120	SCHED. 40	SCHED. 80
2"	0.095	0.077	0.154	0.218
3"	0.13	0.118	0.216	0.3
4"	0.13	0.154	0.237	0.337
6"	*	0.227	0.28	0.432

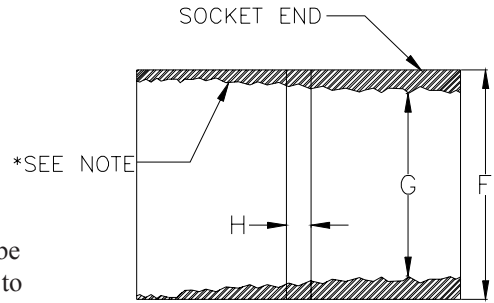
\*Galvanized rigid steel conduit min. wall thickness is .280"

# STANDARD COUPLINGS



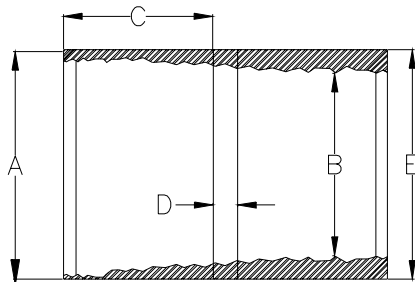
**TRANSITION DIMENSIONS**

SIZE	I	J
2"	2.73	2.18
3"	4	3.25
4"	5	3.5
6"	7.39	4



**TRANSITION RS/IMC X PVC DIMENSIONS**

SIZE	F	G	H
2"	2.844	1.964	0.078
3"	4.047	2.915	0.172
4"	5.109	3.825	0.172
6"	7.516	5.762	.234



**PVC COUPLING DIMENSIONS**

INTEGRAL COUPLING					
SIZE	A	B	C	D	E
2"	2.393	2.369	1.125	0.094	2.734
3"	3.515	3.492	1.125	0.109	3.969
4"	4.515	4.491	1.75	0.109	5.031
6"	6.658	6.614	2.125	0.141	7.5



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VOLUME 17

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