CONDUIT APPLICATION STANDARD

1.0 INDEX

2.0 PURPOSE

This standard covers approved types of electrical conduits and fittings for either above ground or buried use within NV Energy's (NVE) 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.

Gray electrical PVC conduit and fittings will meet the following specifications: ANSI/ASTM F512-79 smooth-wall polyvinyl chloride, NEMA TC-2/UL651 for conduit and NEMA TC-3/UL514b for fittings.

3.0 GENERAL

These electrical conduit requirements are NVE 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 Inspector or Project Planner will designate the conduit class required.

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. The last pages of this standard give dimensional information.

4.0 APPROVED CONDUIT TYPES

4.1 **Hot-Dip Galvanized Rigid Steel Conduit (GRS) -** For use as riser conduit.

4.2 **Type DB-120 PVC 'gray' Conduit -** For underground buried applications only, as direct burial or with concrete encasement.

4.3 **Schedule 40 & 80 PVC 'gray' 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 including the sweep, shall be galvanized rigid steel (GRS).
(2) In non-traffic areas (riser is at least ten feet (10') away from traffic and protected by a curb), the first ten-foot (10') length from the base of the power pole will be a minimum schedule 80 PVC conduit. The first sweep at the base of the pole will be a minimum of DB-120 PVC conduit.
Exception: 6" schedule 80 risers will not be used they must be steel.

c. The first section of riser conduit and the first 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 3-4" conduits are used for three phase 1000KCM, steel must not be used. Schedule 80 is required. (NEC 300-20, 330-16).

5.4 **Service Entrance**

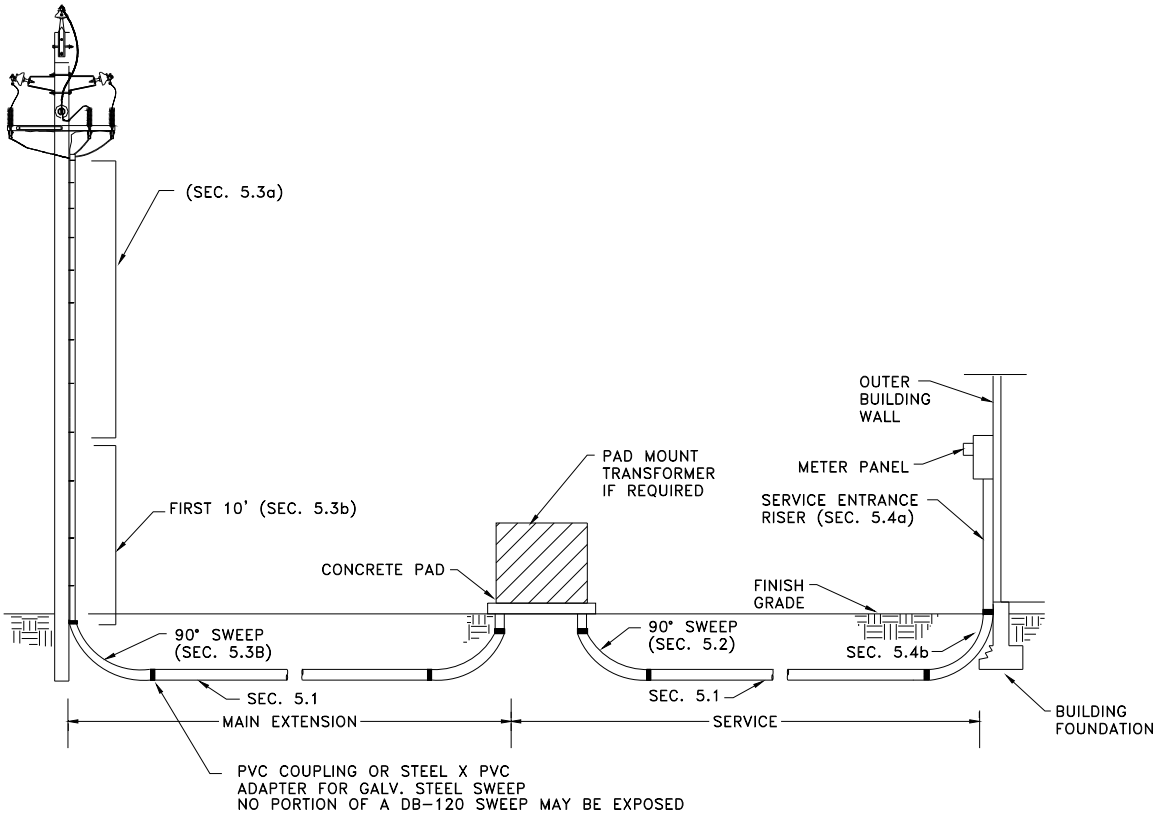
a. **Risers:**

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.



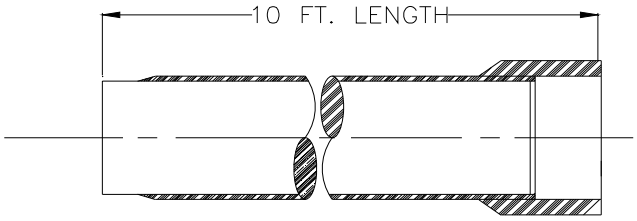
REFERENCES:

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

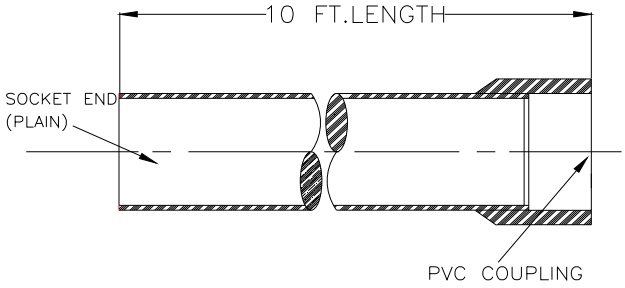
a. **CD0001U** (Conduit Installation Guide)
b. **CI000IM** (Commercial & Industrial Electric Service Requirements)
c. **US0001M** (Underground Electric Residential Service)

STANDARD CONDUIT LENGTHS

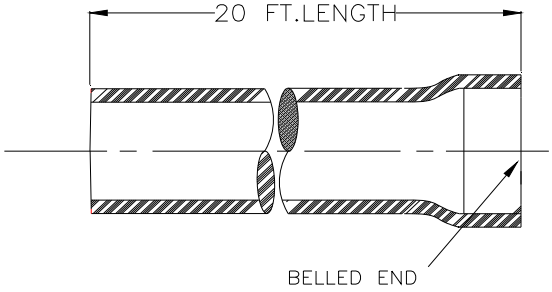
GALVANIZED RIGID STEEL (GRS)



SCHEDULE 40 & 80 PVC CONDUIT



TYPE DB - PVC CONDUIT



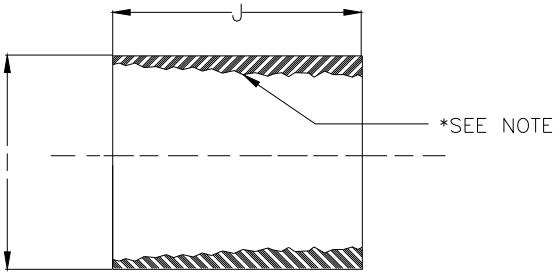
NOTES:

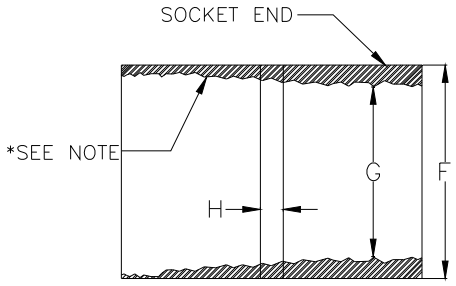
1. All conduit inside diameters (I.D.) are nominal sizes.
2. All conduits shall meet applicable specifications and their latest revisions.

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”				

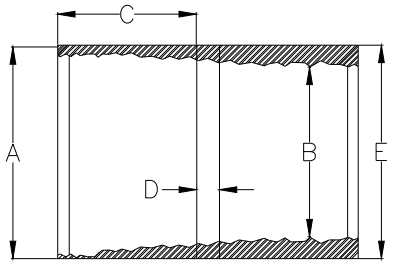
STANDARD COUPLINGS





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

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	0.234



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