

3.0 CONDUIT REQUIREMENTS

THE CONDUIT SYSTEMS SHALL BE INSTALLED AND PROVIDED IN ACCORDANCE WITH THE FOLLOWING NOTES, RELATED PROJECT DRAWINGS AND CONSTRUCTION SPECIFICATIONS 502 AND 511. THESE PRACTICES SHALL BE FOLLOWED BY THE CONTRACTOR EXCEPT WHERE SPECIFICALLY WAIVED BY ENGINEER.

3.01 GENERAL

- A FOR ADDITIONAL NOTES RELATED TO GROUNDING, CATHODIC PROTECTION, MANHOLES, HANDHOLES, UNDERGROUND DUCT BANKS & FOR NOTES RELATED TO LIGHTING AND COMMUNICATIONS, SEE APPROPRIATE REFERENCE DRAWINGS.
- B FOR METHOD OF LOCATING EMBEDDED AND EXPOSED CONDUITS SEE PAR 3.02T AND 3.03E.
- C ALL EXPOSED AND EMBEDDED CONDUITS IN CONCRETE FLOORS AND WALLS SHALL BE GALVANIZED RIGID STEEL UNLESS OTHERWISE NOTED. ALL UNDERGROUND CONDUIT DUCT BANKS SHALL BE SCHEDULE 40 PVC UNLESS OTHERWISE NOTED. THE NOMINAL SIZE OF EACH CONDUIT IS IDENTIFIED ON THE RESPECTIVE CONDUIT DRAWING.
- D CONDUIT FITTINGS AND ACCESSORIES SHALL BE OF THE SAME MATERIAL AND FINISH AS THEIR CONDUITS.

E MINIMUM BENDS FOR ALL CONDUIT EXCEPT DIMENSIONED CONDUIT RUNS SHALL BE AS FOLLOWS:

1. METALLIC CONDUITS WITH STANDARD BENDS OR FIELD BENDS MADE WITH A ONE SHOT BENDING MACHINE.

CONDUIT TRADE SIZE	MINIMUM BENDING RADIUS TO CENTER LINE OF BEND
3/4"	4"
1"	5"
1 1/2"	8"
2"	9"
3"	13"
4"	16"
5"	24"
6"	30"

2. FIELD BENDS MADE WITHOUT A ONE SHOT BENDING MACHINE:

CONDUIT SIZE	MINIMUM BENDING RADIUS TO INNER EDGES OF BEND
3/4"	5"
1"	6"
1 1/2"	10"
2"	12"
3"	18"
4"	24"
5"	30"
6"	36"

ALL CONDUITS CONTAINING 5KV OR 15KV CABLES SHALL HAVE BENDS WITH A 24" MINIMUM BENDING RADIUS.

- G. ALL CONDUITS CUT IN FIELD SHALL BE REAMED AND FREED OF BURRS BEFORE INSTALLATION. NO STRUCTURAL STEEL MEMBER OR REINFORCING BARS SHALL BE CUT OR DRILLED TO AVOID PHYSICAL INTERFERENCE WITH CONDUIT, UNLESS APPROVED BY THE ENGINEER.
- H. FIELD CUT GALVANIZED STEEL CONDUIT THREADS SHALL BE PAINTED WITH ZINC RICH PAINT BEFORE FITTINGS ARE ATTACHED.
- I. ALL CONDUITS SHALL BE SLOPED TOWARD PULL BOXES, HANDHOLES OR MANHOLES FOR DRAINAGE. WHERE NO PROVISION FOR DRAINAGE CAN BE MADE, BOTH ENDS OF CONDUIT SHALL BE SEALED AFTER CABLE HAS BEEN INSTALLED TO PREVENT ENTRANCE OF WATER. SEE SPECIFICATION 3240-485. EXCEPTION: CONDUIT INSIDE CONTAINMENT SHALL NOT BE SEALED TO ALLOW FOR PRESSURE EQUALIZATION.
- J. FOR SEPARATION AND IDENTIFICATION, REFER TO SECTION 5 & 6 OF GENERAL NOTES.

- K. ALL METALLIC CONDUITS SHALL BE GROUNDED IN ACCORDANCE WITH DWG D-5020 PAR. 16.
- L. ALL CONDUIT MARKERS SHALL BE ATTACHED IN THE MOST VISIBLE MANNER AS VIEWED FROM THE FLOOR.
- M. A CONDUIT INSTALLATION CARD SHALL BE ISSUED TO CONTRACTOR FOR EACH CONDUIT. THE FOLLOWING INFORMATION SHALL BE PRINTED ON THE CARD:
  - a - DATE CARD ISSUED
  - b - CONDUIT NUMBER AND SEPARATION CODE
  - c - CONDUIT REPORT IDENTIFICATION
  - d - CABLE & CONDUIT LIST REVISION
  - e - CONDUIT SIZE AND KIND
  - f - CONNECTING RACEWAY OR EQUIPMENT

THE CONTRACTOR SHALL FILL IN THE FOLLOWING INFORMATION IN THE SPACES PROVIDED ON THE CARD:

- a - DATE CONDUIT INSTALLED
- b - ACTUAL CONDUIT LENGTH
- c - NAME OF INSTALLER

AN ADDITIONAL SPACE SHALL BE PROVIDED ON THE CARD FOR QC INSPECTOR NAME AND SIGNATURE.

- N. ALL CONDUITS ENTERING CABLE TRAY HORIZONTALLY WILL TERMINATE AT THE EDGE OF THE CABLE TRAY. A TOLERANCE OF ± TWO INCHES IS ACCEPTABLE.
- O. NON-SEISMIC CONDUITS ENTERING CABLE TRAY VERTICALLY WILL TERMINATE AS FOLLOWS:
  - a. VERTICAL MEASUREMENT AT LEAST TEN INCHES, BUT NOT MORE THAN 16" FROM THE TRAY BOTTOM PROVIDED THE SPACING ALLOWS FOR TRAINING THE LARGEST CABLE INSTALLED IN THE CONDUIT.
  - b. HORIZONTAL MEASUREMENT NOT TO EXCEED THREE INCHES FROM THE TRAY EDGE TO CONDUIT EDGE.
- P. THE MAXIMUM RECOMMENDED SPACING BETWEEN PULL POINTS FOR CONDUITS OR DUCTS SHALL BE AS FOLLOWS:
  - a) 100 FEET INCLUDING EQUIVALENT OF THREE 90° BENDS.
  - b) 200 FEET INCLUDING EQUIVALENT OF TWO 90° BENDS AND ONE 90° SWEEP.
  - c) 300 FEET INCLUDING EQUIVALENT OF TWO 90° BENDS.
  - d) 400 FEET INCLUDING EQUIVALENT OF ONE 90° BEND AND ONE 90° SWEEP.
  - e) 450 FEET INCLUDING EQUIVALENT OF ONE 90° BEND OR TWO 90° SWEEP.
  - f) 500 FEET INCLUDING EQUIVALENT OF ONE 90° SWEEP.
  - g) 600 FEET WITHOUT BENDS OR SWEEPS.
- Q. THE MAXIMUM UNSUPPORTED CABLE LENGTH SHALL BE 18".

PRC  
APERTURE  
CARD

NUCLEAR SAFETY RELATED

WPPSS QUALITY CLASS I, II & G

REV.	DATE	BY	APPROVED
3	5-7-22	SP	[Signature]
4	7-21-51	SP	[Signature]
3	2-17-51	SP	[Signature]
2	8-22-80	EM	[Signature]
1	4-10-79	ES	[Signature]

EBASCO SERVICES INCORPORATED  
DIV. ELECT. DR. E.M.  
CH. R. ABRAMOWITZ  
DATE FEB. 24-77

WASHINGTON PUBLIC POWER  
SUPPLY SYSTEM  
NUCLEAR PROJECTS NO. 3 & 5  
GENERAL NOTES, SYMBOLS AND  
REFERENCE DRAWINGS

WPPS-3240  
D-5023  
SHEET 4

DCN-ED-79  
INCORPORATED IN REV. 5



**RIDS**

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