

CHAPTER SIX

DRAFTING AND CADD STANDARDS

I. GENERAL

Note: As every design firm has their own drafting standards, the following information is meant to be informational, and to provide general guidance in the preparation of electronic drawings for submission to PWC.

Drawings shall be prepared utilizing an AutoCAD compatible system and shall generally be of the size and scale indicated below utilizing the PWC Standard Layer List. The utility layout sheet shall be provided to PWC in an electronic file format with a .DXF or .DWG extension. **PWC may approve other drawing/drafting standards on a case-by-case basis.**

A. LETTERING

Text shall be not less than $0.08 \times \text{Drawing Scale}$ in height. (i.e. 50 scale drawing $\times .08 = 4'$ text height, 200 scale drawing $\times .08 = 16'$ text height). Text shall be **Arial** text font and shall be clear and legible in all instances.

B. LINE WEIGHTS

All lines shall be depicted to show a marked contrast between new work and existing features. Drawings not readily discernable as to new work and existing will not be accepted for review and comment by the PWC Staff and will be returned. Ultimate responsibility for depicting the work in a clear, concise, uncluttered format rest with the Engineer.

C. SHADING

The use of stick-on shadings, user defined line types, etc. is not acceptable.

D. REPRODUCTION

All drawings may be reproduced utilizing a full size document copier or a high quality scanner and shall be blue or black on a white background.

E. FINISHED FORMAT SHEET SIZES

All drawings shall be produced in accordance with the following sheet sizes as follows in inches, unless indicated otherwise.

Table 1. Standard Sheet Sizes

Drawing Size	Format Width	Format Length	Margin Inches	Intended Use
A	8½"	11" or 14"	5/8"	A, R, E, Enc, W
B	11"	17"	1/2"	R, Enc
C	17"	22"	1/2"	Pl
D	24"	36"	1/2"	D, Pl
E	30"	42"	1/2"	Non-Construction and presentation drawings

INTENDED USE KEY:

- E - Easement
- Enc - Encroachment
- W - Wetland/Water Quality Submittals
- Pl - Plats for Recordation (See NCGS 47-30 and Requirement of Cumberland County Register Of Deeds)
- D - Water and Sewer Design Plans
- R - Revisions
- A - Addenda Drawings

All drawings for PWC funded projects shall be prepared on the appropriate PWC Standard Title Block as indicated in the following exhibit and are available in AutoCAD.DWG format from the PWC Water Resources Engineering Department. Drawings must be the sizes indicated unless otherwise approved by the PWC Engineer.

II. STANDARD LAYER LIST

LAYER NO.	DESCRIPTION	LINE TYPE	COLOR	PLOT STYLE
1	DRAWING SHEET INFORMATION - SHT. NO. BAR SCALE/NORTH ARROW, ETC.	CONTINUOUS	7	0.01
2	BREAKLINES	CONTINUOUS	7	0.01
3	X-SECTION DATA	N/A	3	0.01
4	BUILDINGS, SHEDS, ETC. (EXIST STRUCTURES)	CONTINUOUS	4	0.02
5	ANNOTATION OF LAYER 4 ITEMS	N/A	7	0.01
6	TRAVERSE DATA AND TRAVERSE ANNOTATION	CONTINUOUS	2	0.01
7	LOCATION DATA	CONTINUOUS	1	0.01
8	EDGE OF PAV'T. ROADS, PARKING LOTS, ETC. (EXIST)	CONTINUOUS	2	0.01
9	DESIGN "CENTERLINE" PLAN	CENTERLINE	1	0.01
10	SIDEWALKS, CURBS, GUARDRAILS	CONTINUOUS	1	0.01
11	EDGE WATER/CREEK/ ETC.	CONTINUOUS	121	0.01
12	DRIVEWAYS	CONTINUOUS	1.	0.01

LAYER NO.	DESCRIPTION	LINE TYPE	COLOR	PLOT STYLE
13	EXIST. SIGNS AND PAV'T. MARKINGS	CONTINUOUS	1	0.01
14	TIN	CONTINUOUS	1	0.01
15	UNASSIGNED			
16	UNASSIGNED			
17	PAVEMENT HATCH	CONTINUOUS	8	0.002
18	LIGHT LINES IN LEGEND	CONTINUOUS	8	0.002
19	UNASSIGNED			
20	WOODS LINE, SHRUBS, ETC.	CONTINUOUS	3	0.01
21	EXIST. LANDSCAPING	CONTINUOUS	3	0.01
22	EXIST. IRON PIPE, CONC. MON. ETC.	CONTINUOUS	3	0.01
23	EXIST. FENCES	CONT. W/X	1	0.01
24	REMOVALS AND HEAVY LINES IN LEGEND	CONTINUOUS	4	0.02
25	EXIST. GAS W/ANNOTATION	CONT. W/G	2	0.01
26	EXIST. ELECTRIC W/ANNOTATION	CONTINUOUS W/LABEL	1	0.01
27	STREET NAME RIGHT-OF-WAY WIDTH - GREEN	CONTINUOUS	4	0.02
28	SUBDIVISION NAME, PLAT BOOK, PAGE, ETC.	N/A	1	0.01

LAYER NO.	DESCRIPTION	LINE TYPE	COLOR	PLOT STYLE
29	WETLANDS AND ANNOTATION	CONTINUOUS (HATCH AREA)	3	0.01
30	CABLEVISION	CONT W/TV	1	0.01
31	MAJOR CONTOURS	DASHED	4	0.02
32	ANNOTATION MAJOR CONTOURS	N/A	4	0.02
33	MINOR CONTOURS	DASHED	8	0.002
34	ANNOTATION, MINOR CONTOURS, SPOT ELEV. (FINISH FLOOR ELEV.)	N/A	2	0.01
35	TBM DATA	N/A	6	0.01
36	LOT NUMBER (ADDRESS)	N/A	6	0.01
37	PIN NUMBER	N/A	6	0.01
38	UNASSIGNED			
39	UNASSIGNED			
40	UNASSIGNED			
41	UNASSIGNED			
42	CONSTRUCTION LIMITS	CONTINUOUS W/CIRCLE	4	0.02
43	UNASSIGNED			
44	LOT FRONTAGE	N/A	6	0.01
45	NEW FENCE	CONTINUOUS W/X	4	0.02

LAYER NO.	DESCRIPTION	LINE TYPE	COLOR	PLOT STYLE
46	RIGHTS-OF-WAY	CONTINUOUS	4	0.02
47	EASEMENTS (ALL)	HIDDEN	7	0.01
48	PROPERTY LINES	PHANTOM	2	0.01
49	TELEPHONE	CONTINUOUS W/TEL.	2	0.01
50	EROSION CONTROL W/ANNOTATION	CONTINUOUS	4	0.02
51	NEW WALKS	CONTINUOUS	4	0.02
52	EXIST. SANITARY SEWER LATERALS	CONTINUOUS	3	0.01
53	EXIST. SANITARY SEWER MAINS	CONTINUOUS	3	0.01
54	EXIST. SANITARY SEWER SYMBOLS	CONTINUOUS	3	0.01
55	EXIST. SANITARY SEWER ANNOTATION	N/A	3	0.01
56	NEW SANITARY SEWER LATERALS	CONTINUOUS	4	0.02
57	NEW SANITARY SEWER MAINS	CONTINUOUS	4	0.02
58	NEW SANITARY SEWER SYMBOLS	CONTINUOUS	4	0.02
59	NEW SANITARY SEWER MAIN MANHOLE ANNOTATION	CONTINUOUS	4	0.02
60	NEW SANITARY SEWER LATERAL ANNOTATION	CONTINUOUS	4	0.02

LAYER NO.	DESCRIPTION	LINE TYPE	COLOR	PLOT STYLE
61	EXIST. WATER MAINS	PHANTOM W/W	121	0.01
62	EXIST. WATER LATERALS	CONTINUOUS	121	0.01
63	EXIST. WATER SYMBOLS	CONTINUOUS	121	0.01
64	EXIST. WATER ANNOTATION	N/A	121	0.01
65	NEW WATER MAINS	PHANTOM	4	0.02
66	NEW WATER LATERALS	CONTINUOUS	4	0.02
67	NEW WATER SYMBOLS	CONTINUOUS	4	0.02
68	NEW WATER ANNOTATION	N/A	4	0.02
69	EXIST. STORM LINES	HIDDEN CONTINUOUS W/SD	40	0.01
70	EXIST. STORM SYMBOLS	N/A	40	0.01
71	EXIST. STORM ANNOTATION	N/A	40	0.01
72	NEW STORM LINES	CONTINUOUS W/SD	4	0.02
73	NEW STORM SYMBOLS	CONTINUOUS	4	0.02
74	NEW STORM ANNOTATION	N/A	4	0.02

III. STANDARD ABBREVIATIONS

A

ALT.	ALTERNATE
ALUM.	ALUMINUM
AMP., A.	AMPERES
A.O.	ACCESS OPENING
APPROX.	APPROXIMATELY
ARCH.	ARCHITECTURAL
ASSY.	ASSEMBLY
ASTM	AMERICAN SOCIETY TESTING MATERIALS

B

BLDG.	BUILDING
BM.	BENCH MARK
BOT.	BOTTOM
BRG.	BEARING

C

CAP.	CAPACITY
CB	CATCH BASIN
C/B	CIRCUIT BREAKER
CEM.	CEMENT
CER.	CERAMIC
C.F.M.	CUBIC FEET/MINUTE
CIRC.	CIRCULATING
C.J.	CONTROL JOINT
CKT.	CIRCUIT
C/L	CENTER LINE
CM	CONCRETE MONUMENT
C.M.U.	CONCRETE MASONRY UNIT
C.O.	CLEAN OUT
COL.	COLUMN
CONC.	CONCRETE
COND.	CONDENSATE

CONN.	CONNECTION
CONST.	CONSTRUCTION

C (cont'd)

CONT.	CONTINUOUS
CONTR. J.T.	CONTRACTION JOINT
CP&L	PROGRESS ENERGY (CAROLINA POWER & LIGHT)
C. TO C.	CENTER TO CENTER

D

DCVA	DOUBLE CHECK VALVE ASSEMBLY
DET.	DETAIL
DI	DROP INLET
DIA.	DIAMETER
DIM.	DIMENSION
DISC.	DISCONNECT
D.J.	DUMMY JOINT
DN.	DOWN
DR.	DRAIN
D.S.	DOWN SPOUT
DWG. (S)	DRAWING (S)

E

EA.	EACH
E.C.	EMPTY CONDUIT
EL.	ELEVATION
ELEC.	ELECTRIC
EQUIP.	EQUIPMENT
EXP. JT.	EXPANSION JOINT
EXT.	EXTERIOR
EXIST.	EXISTING

F

F.D. FLOOR DRAIN
 F.H. FIRE HYDRANT
 FIN. FINISH
 FL. FLOOR
 FM FORCE MAIN
 FT. FOOT, FEET
 FTG. FOOTING

G

GA. GAGE
 GAL. GALLON
 GALV GALVANIZED
 G.P.M. GALLONS/MINUTE
 G.W.B. GYPSUM WALL BOARD
 GYP. GYPSUM

H

H.B. HOSE BIBB
 HT. HEIGHT
 H.P. HORSE POWER
 HR. HOUR
 H/W HEADWALL

I

I.D. INSIDE DIAMETER
 IN. INCHES
 INV. INVERT ELEVATION
 INCAND. INCANDESCENT
 INSUL. INSULATION
 INT. INTERIOR
 I.P. IRON PIPE
 I.S. IRON STAKE

J

J.B. JUNCTION BOX
 JCT. JUNCTION
 JT. JOINT

K

KVA KILOVOLT AMPERE
 KW KILOWATT

L

LB. POUND
 LG. LONG

M

MAINT. MAINTENANCE
 MAX. MAXIMUM
 M.D.P. MAIN DISTRIBUTION
 PANEL
 MECH. MECHANICAL
 MTL. METAL
 MIN. MINIMUM
 MISC. MISCELLANEOUS
 M.J. MECHANICAL JOINT
 M.O. MASONRY OPENING
 M.T. METAL THRESHOLD
 MTD. MOUNTED
 MTG. MOUNTING
 MH MANHOLE

N

N.A. NOT APPLICABLE
 NCNG NORTH CAROLINA
 NATURAL GAS
 N.I.C. NOT IN CONTRACT
 NO. NUMBER

NPSH NET POSITIVE SUCTION
HEAD

Q

O.C. ON CENTER
O.D. OUTSIDE DIAMETER

Q (cont'd)

OH OVERHEAD
OPNG. OPENING
OPP. OPPOSITE
OTCB OPEN THROAT CATCH
BASIN

P

PAV'T. PAVEMENT
PER. PERIMETER
PL. PROPERTY LINE
PLBG. PLUMBING
PNL. PANEL
P.P. POWER POLE
PRESS. PRESSURE
PSF POUNDS/SQUARE FOOT
PSI POUNDS/SQUARE INCH
PSIG POUNDS/SQUARE INCH
GAGE
PT. POINT
PTD. PAINTED
PIV POST INDICATOR VALVE
PED. PEDESTAL
PVC POLYVINYL CHLORIDE

Q

QTR. QUARTER
QUAN. QUANTITY

R

RAD. RADIUS
RD. ROUND
REC'D. RECESSED
RECIRC. RECIRCULATING
RECP. RECEPTACLE
REINF. REINFORCING
REQ. REQUIRED
RET. RETURN
RM. ROOM

R (cont'd)

R.J. RESTRAINED JOINT
R.P.M. REVOLUTION/MINUTE
R.P.Z REDUCED PRESSURE
ZONE

S

SCH. SCHEDULE
SDR. STANDARD DIMENSION
RATIO
SECT. SECTION
SERV. SERVICE
SHT. SHEET
SPEC. SPECIFICATIONS
SQ. FT. SQUARE FEET
ST. STEEL
STOR. STORAGE
STRUC.. STRUCTURAL
SUSP. SUSPEND
SW. SWITCH

T

TB TOP BANK
TBM TEMPORARY BENCH
MARK
TC TOP CURB
TEL. TELEPHONE
TEMP. TEMPERATURE

THK. THICKNESS
TYP. TYPICAL

U

UGE UNDERGROUND
ELECTRIC

V

VOLT
VERT. VERTICAL

W

WATT
W/ WITH
WD. WOOD
WF WIDE FLANGE
WM WATER METER
WP WEATHERPROOF
WTR. WATER
W.W.F. WELDED WIRE FABRIC

X

XFMR TRANSFORMER