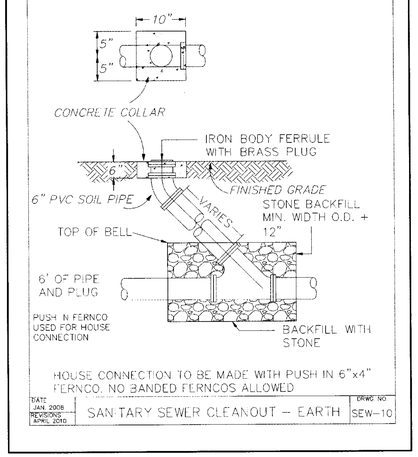
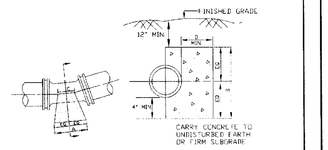
PRINCE GEORGE COUNTY DEPARTMENT OF PUBLIC UTILITIES



HOUSE CONNECTION TO BE MADE WITH PUSH IN 6"x4" FERNCO. NO BANDED FERNCOS ALLOWED

DATE JAN 2008	SANITARY SEWER CLEANOUT – EARTH	DRWG. NO. SEW-10
REVISIONS APRIL 2010		

PRINCE GEORGE COUNTY DEPARTMENT OF PUBLIC UTILITIES

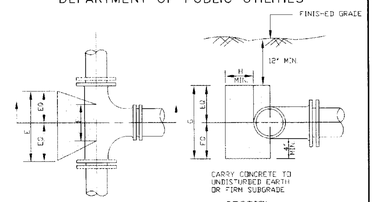


PIPE SIZE	11 1/4 BEND				22 1/2° BEND				45° BEND				90° BEND			
	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
4"	6"	1'-0"	4"	6"	8"	1'-0"	5"	7"	1'-4"	1'-0"	6"	6"	2'-10"	1'-0"	6"	1'-0"
6"	8"	1'-2"	6"	7"	10"	1'-2"	5"	8"	1'-4"	1'-2"	6"	8"	2'-3"	1'-2"	6"	1'-6"
8"	8"	1'-4"	8"	7"	1'-4"	1'-4"	6"	8"	2'-0"	1'-4"	6"	9"	3'-2"	1'-4"	8"	1'-6"
10"	1'-1"	1'-6"	8"	8"	1'-7"	1'-6"	8"	12"	2'-6"	1'-6"	8"	10"	3'-9"	1'-7"	10"	1'-6"
12"	1'-4"	1'-8"	1'-0"	9"	2'-0"	1'-8"	1'-0"	1'-0"	3'-0"	1'-8"	1'-0"	1'-0"	5'-0"	2'-0"	10"	1'-6"
16"	1'-9"	2'-0"	1'-0"	9"	2'-6"	2'-0"	1'-0"	1'-3"	4'-0"	2'-0"	1'-0"	1'-3"	6'-0"	2'-6"	1'-4"	1'-9"
18"	1'-9"	2'-6"	1'-0"	10"	3'-0"	2'-6"	1'-0"	1'-6"	4'-6"	2'-6"	1'-0"	1'-6"	6'-9"	3'-0"	1'-4"	1'-8"	1'-9"
20"	1'-9"	2'-6"	1'-0"	10"	3'-3"	2'-6"	1'-0"	1'-6"	5'-0"	2'-6"	1'-0"	1'-9"	7'-6"	3'-4"	1'-8"	1'-9"
24"	2'-0"	3'-0"	1'-0"	11"	3'-9"	3'-0"	1'-0"	1'-6"	7'-0"	3'-0"	1'-0"	2'-0"	9'-9"	4'-0"	2'-0"	2'-0"

NOTE:
1.) BLOCKING DIMENSIONS ARE SHOWN AT A MINIMUM.
2.) BLOCKING DIMENSIONS ARE BASED ON A STATIC PRESSURE OF 150 PSI AND AN ALLOWABLE SOIL BEARING CAPACITY OF 2000 PSF.
3.) WHERE SOIL BEARING CAPACITY IS LESS THAN OR GREATER THAN 2000 PSF, BLOCKING DESIGN CALCULATION ARE TO BE SHOWN ON THE PLANS.
4.) FITTINGS TO BE WRAP IN 4 MIL POLYETHYLENE TO PROTECT NUTS, BOLTS, OR OTHER
5.) MEGA LUGS TO BE USED FOR ALL FITTINGS

DATE JAN 2008	BLOCKING DETAIL HORIZONTAL BENDS	DRWG. NO. BLK-1
REVISIONS		

PRINCE GEORGE COUNTY DEPARTMENT OF PUBLIC UTILITIES

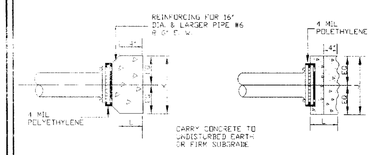


BRANCH SIZE	E	F	G	H
4"	1'-0"	8"	1'-4"	6"
6"	1'-4"	1'-0"	1'-8"	8"
8"	1'-6"	1'-0"	2'-6"	9"
10"	2'-4"	1'-0"	2'-8"	10"
12"	2'-6"	1'-0"	3'-6"	1'-0"
16"	3'-4"	1'-4"	4'-8"	1'-6"
18"	4'-0"	2'-0"	6'-0"	1'-6"
20"	4'-6"	2'-0"	6'-0"	1'-6"
24"	5'-0"	2'-0"	6'-8"	1'-8"

NOTE:
SEE APPLICABLE NOTES AS SHOWN ON BLK-1

DATE JAN 2008	BLOCKING DETAIL TEES	DRWG. NO. BLK-2
REVISIONS		

PRINCE GEORGE COUNTY DEPARTMENT OF PUBLIC UTILITIES



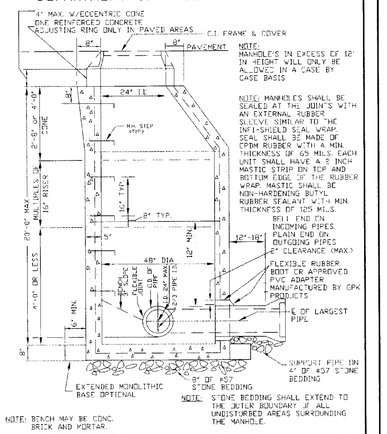
SIZE	J	K	L
4"	1'-6"	1'-0"	8"
6"	1'-6"	1'-6"	8"
8"	2'-6"	1'-6"	10"
10"	2'-8"	2'-4"	1'-0"
12"	3'-6"	2'-6"	1'-2"
16"	4'-8"	3'-4"	1'-4"
18"	6'-0"	4'-0"	1'-6"
20"	6'-0"	4'-0"	1'-6"
24"	6'-8"	5'-0"	1'-8"

NOTE:
SEE APPLICABLE NOTES AS SHOWN ON BLK-1

NOTE: BLOCKING BASED ON PRESSURE OF 150 P.S.I. AND ALLOWABLE SOIL BEARING CAPACITY OF 2000 P.S.I. CONCRETE TO BE 3000 P.S.I.

DATE JAN 2008	BLOCKING DETAIL PLUGS, CAPS, AND HYDRANTS	DRWG. NO. BLK-3
REVISIONS		

PRINCE GEORGE COUNTY DEPARTMENT OF PUBLIC UTILITIES



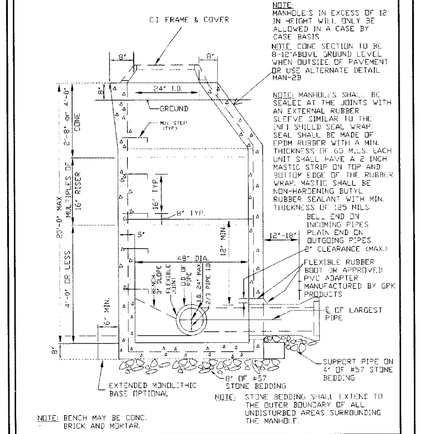
NOTE:
MANHOLES IN EXCESS OF 12' IN HEIGHT WILL ONLY BE ALLOWED IN A CASE BY CASE BASIS

NOTE: MANHOLES SHALL BE SEALED AT THE JOINTS WITH AN EXTERNAL RUBBER SLEEVE SIMILAR TO THE INFI-SHIELD SEAL WRAP. SEAL SHALL BE MADE OF EPDM RUBBER WITH A MIN. THICKNESS OF 65 MILS. EACH UNIT SHALL HAVE A 5 INCH MASTIC STRIP ON TOP AND BOTTOM EDGE OF THE RUBBER WRAP. MASTIC SHALL BE NON-HARDENING BUTYL RUBBER SEALANT WITH MIN. THICKNESS OF 125 MILS.

BELL END ON INCOMING PIPES
PLAIN END ON OUTGOING PIPES
2" CLEARANCE (MAX.)

DATE JAN. 2008	STANDARD PRECAST CONCRETE MANHOLE SEWERS 8" TO 24" LOCATED IN PAVED AREAS	DRWG. NO. MAN-2
REVISIONS		

PRINCE GEORGE COUNTY DEPARTMENT OF PUBLIC UTILITIES



NOTE:
MANHOLES IN EXCESS OF 12' IN HEIGHT WILL ONLY BE ALLOWED IN A CASE BY CASE BASIS

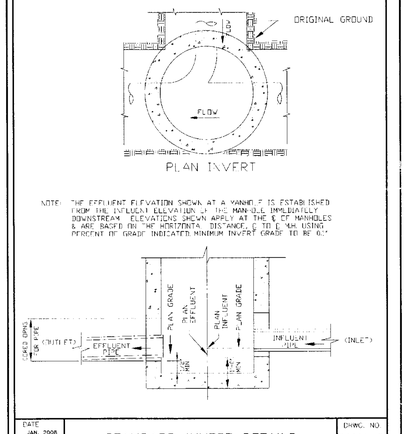
NOTE: CONE SECTION TO BE 8-10" ABOVE GROUND LEVEL WHEN OUTSIDE OF PAVEMENT OR USE ALTERNATE DETAIL MAN-2B

NOTE: MANHOLES SHALL BE SEALED AT THE JOINTS WITH AN EXTERNAL RUBBER SLEEVE SIMILAR TO THE INFI SHIELD SEAL WRAP. SEAL SHALL BE MADE OF EPDM RUBBER WITH A MIN. THICKNESS OF 65 MILS. EACH UNIT SHALL HAVE A 2 INCH MASTIC STRIP ON TOP AND BOTTOM EDGE OF THE RUBBER WRAP. MASTIC SHALL BE NON-HARDENING BUTYL RUBBER SEALANT WITH MIN. THICKNESS OF 125 MILS.

BELL END ON INCOMING PIPES
PLAIN END ON OUTGOING PIPES
2" CLEARANCE (MAX.)

DATE JAN. 2008	STANDARD PRECAST CONCRETE MANHOLE SEWERS 8" TO 24" LOCATED OUTSIDE PAVEMENT	DRWG. NO. MAN-2A
REVISIONS		

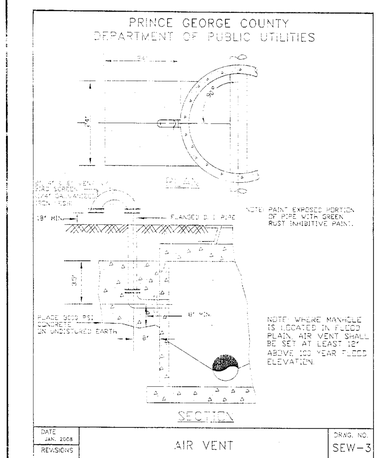
PRINCE GEORGE COUNTY DEPARTMENT OF PUBLIC UTILITIES



NOTE: THE EFFLUENT ELEVATION SHOWN AT A MANHOLE IS ESTABLISHED FROM THE INFLUENT ELEVATION OF THE MANHOLE IMMEDIATELY DOWNSTREAM. ELEVATIONS SHOWN APPLY AT THE ℄ OF MANHOLES & ARE BASED ON THE HORIZONTAL DISTANCE, ℄ TO ℄ MH USING PERCENT OF GRADE INDICATED. MINIMUM INVERT GRADE TO BE 0.1'

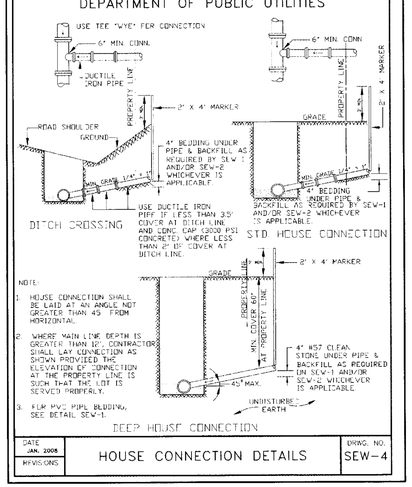
DATE JAN. 2008	STANDARD INVERT DETAILS	DRWG. NO. MAN-9
REVISIONS		

PRINCE GEORGE COUNTY DEPARTMENT OF PUBLIC UTILITIES



DATE JAN. 2008	AIR VENT	DRWG. NO. SEW-3
REVISIONS		

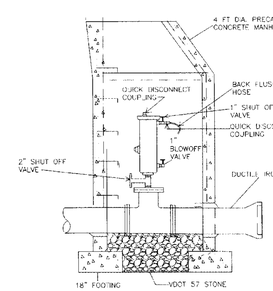
PRINCE GEORGE COUNTY DEPARTMENT OF PUBLIC UTILITIES



NOTE:
1. HOUSE CONNECTION SHALL BE LAID AT AN ANGLE NOT GREATER THAN 45° FROM HORIZONTAL.
2. WHERE MAIN LINE DEPTH IS GREATER THAN 12', CONTRACTOR SHALL LAY CONNECTION AS SHOWN PROVIDED THE ELEVATION OF CONNECTION AT THE PROPERTY LINE IS SUCH THAT THE LOT IS SERVED PROPERLY.
3. FOR PVC PIPE BEDDING, SEE DETAIL SEW-1.

DATE JAN. 2008	HOUSE CONNECTION DETAILS	DRWG. NO. SEW-4
REVISIONS		

PRINCE GEORGE COUNTY DEPARTMENT OF PUBLIC UTILITIES

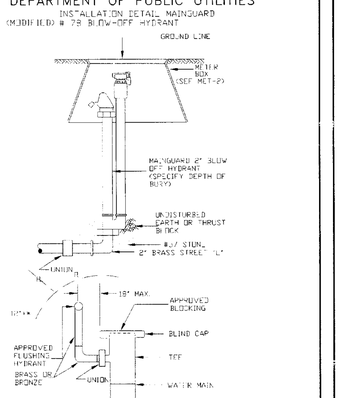


Note, Air Relief valve shall be Stainless Steel Type

DATE JAN. 2008	SEWAGE COMBINATION AIR VALVE	DRWG. NO. SEW-12
REVISIONS		

PRINCE GEORGE COUNTY DEPARTMENT OF PUBLIC UTILITIES

INSTALLATION DETAIL MAINGUARD (MODIFIED) # 78 BLOW-OFF HYDRANT



* DISTANCE FROM HYDRANT TO PROPERTY LINE (R/W LINE)

DATE JAN. 2008	FLUSHING HYDRANT (BLOW-OFF)	DRWG. NO. WAT-3
REVISIONS		

PRINCE GEORGE COUNTY DEPARTMENT OF PUBLIC UTILITIES

PIPE MATERIAL TYPE AND SIZE	MAXIMUM DEFLECTION AT EACH JOINT	DEFLECTIONS (INCHES EACH JOINT) 19' LAYING LENGTH	RADIUS (MINIMUM)
DUCTILE IRON (PUSH ON JOINT)			
6" TO 12"	2° 30'	8.5"	413'
16"	2° 00'	7.5"	516'
18"	1° 30'	5.5"	688'
DUCTILE IRON (MECHANICAL JOINT)			
4"	5° 30'	13.5"	291'
6" TO 12"	3° 00'	10.5"	344'
16"	2° 00'	7.5"	516'
24"	1° 30'	5.5"	688'

Note: Any deflection not listed for this pipe may not be used by

$R = \frac{.33'}{\text{TYE Manufacturer's Max. Jt. Deflection}} \times 18' \times R$ Deflection = ton joint deflection X 18' X 12

PVC PIPE (C-900, C-905)

PIPE NOM. DIA.	PIPE O.D.	RADIUS (MIN.)	PRESSURE RATING - DIMENSION RATIO	
6"	6.9"	272.3'	150 psi	DR 18
8"	9.05"	326.3'	150 psi	DR 18
10"	11.0"	377.5'	150 psi	DR 18
12"	13.20"	439.2'	150 psi	DR 18
14"	15.30"	492.5'	165 psi	DR 26
16"	17.40"	535.0'	165 psi	DR 26
18"	19.50"	587.5'	165 psi	DR 26
20"	21.60"	640.0'	165 psi	DR 26
24"	25.80"	745.0'	165 psi	DR 26

Notes: 1. Any radius not listed for PVC pipe may be derived by: De 360 ÷ 180 (De = outside diameter in feet)

2. Due to the difficulty of measuring deflections on curved pipe, no deflections are given. It is expected that curved water lines will be properly shown on the plans and staked in the field.

DATE JAN. 2008	ALLOWABLE DEFLECTIONS FOR WATER PIPE	DRWG. NO. WAT-11
REVISIONS		

REVISIONS	BY
10-7-13	
12-4-13	
2-3-14	
4-24-14	

Architectural Graphics
6676 LAKESHORE DRIVE
QUINTON, VIRGINIA 23141
804-551-6944

UTILITY DETAILS
EAGLE PRESERVE
AT JORDAN ON THR JAMES

SEAL: COMMONWEALTH OF VIRGINIA — WALTER M. ALTMAN III — No. 11039 — 4/24/14 — PROFESSIONAL ENGINEER

DRAWN : PBM	CHECKED : WMA
DATE : 10-7-13	
SCALE : AS NOTED	
JOB NO. :	
SHEET C19A	
OF 35 SHEETS	