

**MINIMUM DIMENSIONS IN FEET FOR CONCRETE BLOCKING**

BEND DEGREE	SIZE (Ft)	A (Ft)	B (Ft)	C (IN)	D (Ft)	VOLUME CU YDS APPROX	THRUST LBS
6"	1.0	2.0	6	1.0	0.04	1,385	
8"	1.0	2.0	7	1.0	0.05	2,465	
10"	1.0	2.0	9	1.0	0.07	3,650	
11 1/4"	1.0	2.5	11	1.5	0.12	5,580	
14"	2.0	2.5	11	2.0	0.24	7,550	
18"	2.0	2.5	12	2.0	0.28	9,880	
20"	2.0	3.5	15	2.5	0.48	15,405	
24"	2.0	4.0	18	3.0	0.7	22,185	
6"	1.0	2.0	6	1.0	0.04	2,780	
8"	1.0	2.0	7	1.5	0.06	4,905	
10"	1.0	2.0	9	2.0	0.1	7,665	
22 1/2"	1.0	3.0	11	2.0	0.18	11,040	
14"	2.0	3.5	11	2.5	0.37	15,025	
18"	2.0	3.5	12	3.0	0.45	19,625	
20"	2.0	4.0	15	4.0	0.74	30,565	
24"	3.0	5.0	18	4.5	1.47	44,160	
6"	1.0	2.0	6	1.5	0.06	5,415	
8"	1.0	2.5	7	2.0	0.1	8,625	
10"	2.0	3.5	9	2.5	0.31	15,040	
12"	2.0	3.5	11	3.0	0.41	21,955	
14"	2.0	4.0	11	3.75	0.56	29,475	
16"	3.0	5.0	12	4.0	1.45	38,495	
20"	4.0	6.0	15	5.0	2.08	60,145	
24"	4.0	7.5	18	6.5	3.38	91,610	
6"	1.0	2.5	12	2.0	0.13	10,005	
8"	2.0	3.0	14	3.0	0.38	17,785	
10"	2.5	4.5	18	3.0	0.74	27,785	
12"	3.0	6.0	20	4.0	1.24	40,010	
14"	3.0	6.5	24	5.0	1.77	54,460	
18"	4.0	8.5	28	6.5	2.91	111,725	
20"	4.0	8.0	32	7.0	4.68	111,135	
24"	6.0	10.0	40	8.0	8.1	160,035	
6"	1.0	2.5	12	1.5	0.1	7,070	
8"	1.0	3.25	14	2.0	0.27	12,385	
10"	2.0	4.0	18	2.5	0.5	19,635	
12"	2.5	4.5	20	3.25	0.91	28,275	
14"	3.0	5.0	24	4.0	1.41	38,485	
16"	3.0	6.0	28	5.0	1.77	54,265	
20"	4.0	7.0	32	6.75	3.68	78,540	
24"	6.0	9.0	40	8.5	7.94	113,100	

**NOTES:**  
1. SOIL CONDITIONS SHALL BE VERIFIED BY THE ENGINEER BEFORE THRUST BLOCK DESIGN IS IMPLEMENTED.

**DESIGN DATA**  
1. DIMENSION OF THRUST BLOCK IN FEET BASED ON 2000 POUNDS PER SQUARE FOOT SOIL BEARING PRESSURE. ACTUAL INSIDE DIAMETER OF DIP, CLASS 50, 250 PSI TEST PRESSURE.  
2. CONCRETE SHALL BE CLASS A, 3000 PSI.  
3. UNDER ADVERSE CONSTRUCTION CONDITIONS, CONCRETE SHALL BE "HIGH EARLY" TYPE.

City of Cumming  
Department of Utilities - Distribution and Collection Division  
**THRUST RESTRAINT: HORIZONTAL BLOCK**  
W-24

**NOTES:**  
1. TEMPORARILY SUPPORT TAPPING SADDLE AND VALVE AND APPLY STANDARD HYDROSTATIC TEST.  
2. IF NO LEAKS, POUR INDICATED PERMANENT CONCRETE BLOCK AND SUPPORT PAD.  
3. MAKE TAP, LINE EXTENSION AND BACKFILL.  
4. COVER GLANDS AND BOLTS WITH HEAVY POLYETHYLENE SHEETING TO KEEP CONCRETE FROM BONDING. TYPICAL WHENEVER RODS OR GLANDS MAY BE "WRAPPED" IN CONCRETE.  
5. COAT TAPPING SLEEVE AND BOLTS WITH AN APPROVED BITUMASTIC COATING BEFORE POURING CONCRETE. TYPICAL FOR ALL STEEL INCLUDING RODS, COUPLERS, STRAPS AND OTHER BURIED STEEL. SEE NOTE 1, DRAWING W-6 FOR COATING.

City of Cumming  
Department of Utilities - Distribution and Collection Division  
**TAPPING SLEEVE AND VALVE INSTALLATION DETAILS**  
W-14

**NOTES:**  
1. ALL FITTINGS ARE FLANGED.  
2. VAULT TOP IS REINFORCED. MINIMUM INSIDE HEIGHT IS 6 FEET. VAULT BOTTOM IS 4\"/>

City of Cumming  
Department of Utilities - Distribution and Collection Division  
**8-INCH DOUBLE DETECTOR CHECK VALVE CONFIGURATION**  
W-60

**SAINTARY SEWER NOTES:**

- ALL SEWER CONSTRUCTION SHALL COMPLY WITH THE MOST CURRENT EDITION OF THE CITY OF CUMMING MANUAL OF TECHNICAL SPECIFICATIONS AND CONSTRUCTION STANDARD DETAILS.
- DUCTILE IRON PIPE IS REQUIRED.**  
A. FOR LINES WITH LESS THAN 4 FEET OF COVER.  
B. WHEN A SEWER LINE CROSSES A STORM SEWER WITH LESS THAN 2 FEET OF COVER.  
C. WHEN THE LINE PASSES LATERALLY WITHIN 1 FOOT OF A STORM SEWER.  
D. WHEN THE LINE IS AT A DEPTH OF 16 FEET OR GREATER.  
E. IN SWAMPY OR UNSTABLE SOIL CONDITIONS WHERE BEDDING IS DIFFICULT TO ESTABLISH.  
F. WHEN THE SEWER SLOPE IS GREATER THAN 20%.
- THE DEVELOPER SHALL BE RESPONSIBLE FOR DESIGNING A GRAVITY SEWER SYSTEM THAT WILL SERVE ALL FLOORS OF EACH UNIT DEVELOPED. THE CITY WILL NOT BE RESPONSIBLE FOR PROVIDING SEWER SERVICE TO ANY BUILDING BUILT BELOW THE GRADE OF THE GRAVITY SEWER LINE. WHEN A UNIT IS BUILT ON A LOT IN SUCH A WAY THAT GRAVITY SEWER WILL NOT SERVE ALL LEVELS OF THE UNIT, THAT LOT MUST BE IDENTIFIED AS SUCH ON THE FINAL PLAT.
- THE CITY WILL NOT BE RESPONSIBLE FOR SERVICE STUBS THAT HAVE BEEN DAMAGED OR COVERED OVER BY CONSTRUCTION DEBRIS OR PAVEMENT.
- THE CITY REQUIRES THAT ALL CONNECTIONS MADE TO AN EXISTING MANHOLE BE MADE BY CORING THE MANHOLE AND INSTALLING A RUBBER BOOT.
- THE CITY REQUIRES THAT WATER LINES AND SEWER LINES BE SEPARATED BOTH 10 FEET HORIZONTALLY AND 18 INCHES VERTICALLY.
- SEWER LINES SHALL BE INSTALLED IN THE STREET AT A SUFFICIENT DEPTH SO THAT EACH SEWER LATERAL WILL BE INSTALLED WITH 6 FEET OF COVER. THE 6 FEET OF COVER SHALL BE PROVIDED AT THE FARTHEST POINT OF THE RIGHT-OF-WAY OVER THE INLET END OF THE SEWER LATERAL.
- NO CONSTRUCTION WORK WILL BE ALLOWED WITHIN THE RIGHT-OF-WAY OF A GEORGIA DEPARTMENT OF TRANSPORTATION JOB SITE WITHOUT AN APPROVED PERMIT AND WITHOUT 48 HOURS NOTICE TO THE CITY OF CUMMING UTILITY INSPECTOR.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY PERMITS FROM THE FORSYTH COUNTY DEPARTMENT OF ENGINEERING PRIOR TO THE CONSTRUCTION OF ANY UTILITY WITHIN THE RIGHT-OF-WAY OF A COUNTY MAINTAINED ROAD. (770) 781-2165
- DEVELOPMENTS REQUESTING WATER SERVICE AT ELEVATIONS IN EXCESS OF 1290 FEET (MSL) SHALL BE RESPONSIBLE FOR DESIGNING AND CONSTRUCTING A WATER BOOSTER PUMP SYSTEM WHICH MEETS THE APPROVAL OF THE CITY OF CUMMING ENGINEER.

City of Cumming  
Department of Utilities - Distribution and Collection Division  
**SEWER NOTES**  
S-25

City of Cumming  
Department of Utilities - Distribution and Collection Division  
**SEWER SERVICE LATERAL**  
S-2

\*NOTIFY FORSYTH COUNTY INSPECTOR 24 HOURS BEFORE THE BEGINNING PHASE OF CONSTRUCTION. (770) 781-2165.\*

THIS DRAWING AND ANY COPIES THEREOF ARE THE PROPERTY OF K.E.Q., INC. AND SHALL NOT BE REPRODUCED OR COPIED, IN WHOLE OR IN PART, OR OTHERWISE USED WITHOUT WRITTEN PERMISSION OF THE OWNER, AND SHALL BE RETURNED TO THE OWNER UPON REQUEST. THIS PLAT WAS PREPARED AS PER THE INSTRUCTIONS AND FOR THE BENEFIT AND EXCLUSIVE USE OF THE PERSON, PERSONS, OR ENTITY NAMED HEREON. NO WARRANTY, EXPRESSED OR IMPLIED, IS EXTENDED TO ANY UNNAMED THIRD PARTY.

Site Development Plans for:  
**CANVAS CHRISTIAN CHURCH**  
Land Lot #100, 14th Dist., 1st Section  
Forsyth County, Georgia  
04-01-2017

416 Pickle Ferry Road  
Building H, Unit 300  
Cumming, GA 30040  
(770) 889-9430  
www.mga-se.com

**Mchworter & Anderson**  
LAND SURVEYING &

SHEET TITLE:  
**DETAIL SHEET**

SHEET:  
**C-5.0**

GSWCC LEVEL II  
CERTIFICATION #16,729

**Impact**  
DESIGN-BUILD  
Contractors

GEORGIA REGISTERED PROFESSIONAL ENGINEER  
DAVID L. ANDERSON

© K.E.Q., INC. 2017  
FILE: 11634BA