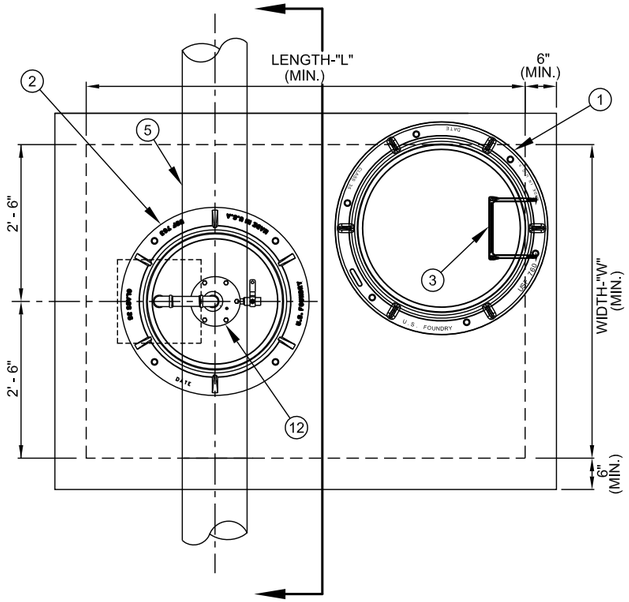
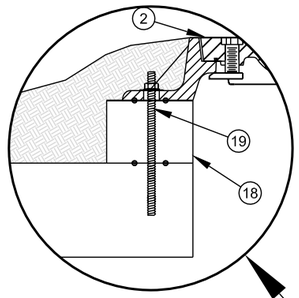
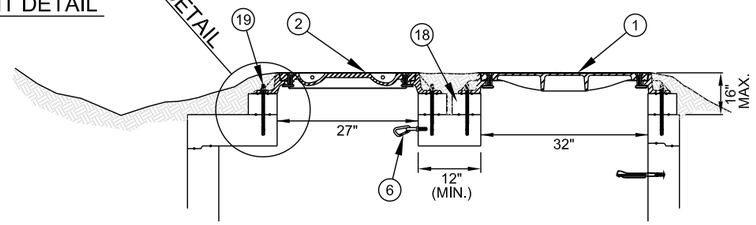


TOP VIEW

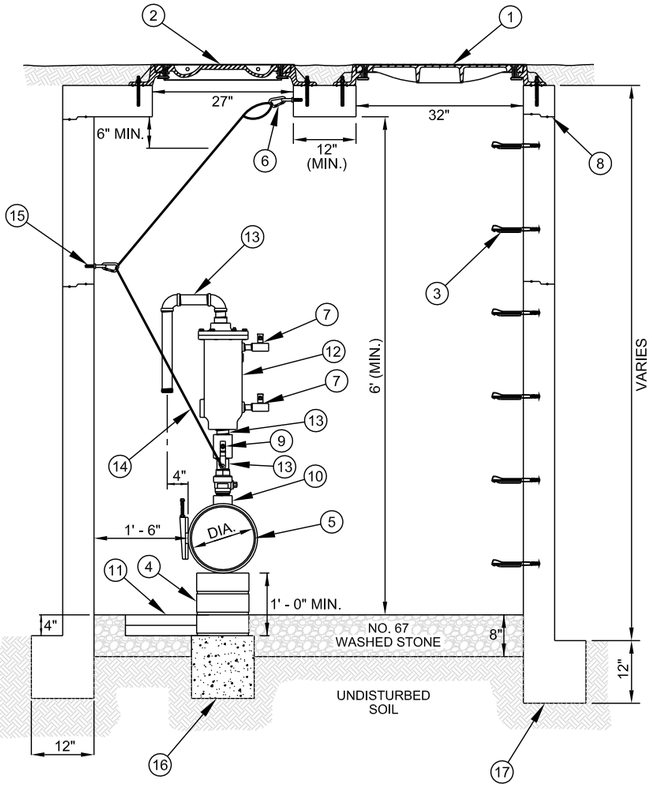
VAULT DIMENSION REQUIREMENTS		
PIPE DIA. D - (IN.)	LENGTH L - (FT.)	WIDTH W - (FT.)
4 - 6	6.5	5.0
8 - 16	7.0	5.0
18 - 24	7.5	5.0
30 - 36	8.0	5.0
42 - 48	8.5	5.0



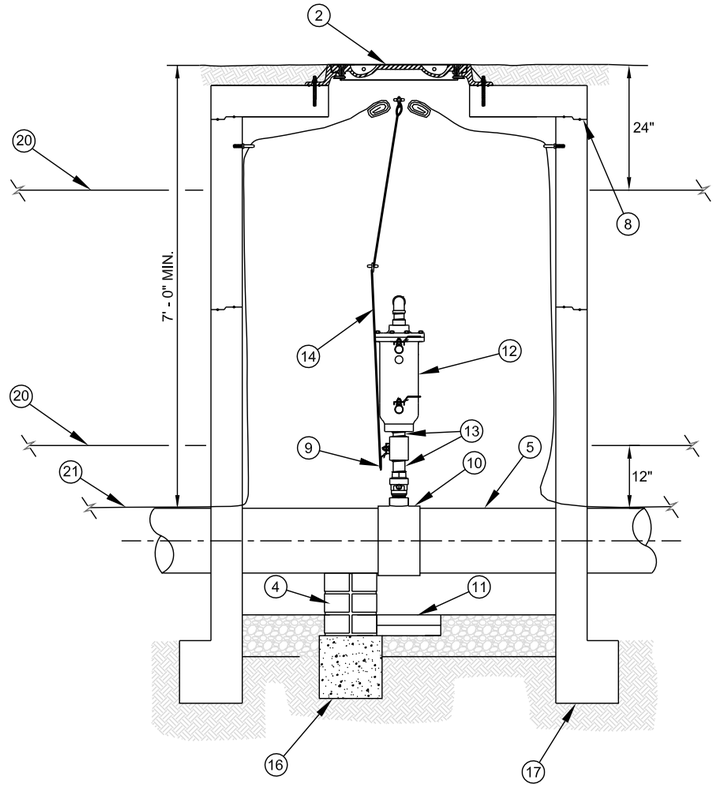
JOINT DETAIL



ALTERNATE GRADE ADJUSTMENT DETAIL



PROFILE VIEW



SECTION VIEW

NO.	DESCRIPTION
1	30" CAST IRON MANHOLE FRAME AND COVER (MAN ACCESS) PER CMU STANDARDS - TYPE D / 4
2	24" CAST IRON MANHOLE FRAME AND COVER (EQUIPMENT ACCESS) PER CMU STANDARDS - TYPE B / 1 CENTER OVER AIR / VACUUM VALVE
3	MANHOLE STEPS AT 12" OR 16" O.C. - CENTERED WITH FRAME ①
4	SOLID CONCRETE STANDARD BRICK & MORTAR PIPE SUPPORT
5	DUCTILE IRON PIPE FORCE MAIN
6	1/2" DIA. TYPE 304 STAINLESS STEEL HOOK (ADHESIVE ANCHOR)
7	STAINLESS STEEL BALL VALVE - 1/4 TURN AND NIPPLE
8	JOINT REQUIRED AT FLAT TOP SECTION
9	STAINLESS STEEL BALL VALVE
10	BRONZE BALL CORPORATION STOP WITH ALL STAINLESS STEEL (TYPE 304) TAPPING SADDLE - FORD FS 303 - ROMAC STYLE 306 OR APPROVED EQUAL
11	16" x 16" x 2" CONCRETE PAVER (SPLASH PAD) - 2 EACH - STACKED - CENTER UNDER BRASS PIPE DISCHARGE
12	AIR AND VACUUM VALVE - SEE SPECIFICATIONS
13	SCHEDULE 40 RED BRASS PIPING
14	ROUTE 1/8" TYPE 304 STAINLESS STEEL CABLE FROM BALL VALVE HANDLE (MOUNTED ON TOP OF CORP. STOP THROUGH EYELET TO HOOK) LEAVE 6" SECURED LOOP IN CABLE END TO HANG OVER HOOK
15	1/2" DIA. TYPE 304 STAINLESS STEEL EYE BOLT (ADHESIVE ANCHOR)
16	12"x12"x12" CONCRETE FOOTING FOR PIPE SUPPORT OFFSET LATERALLY FROM VALVE
17	CONTINUOUS PRECAST OR CAST IN PLACE FOOTING
18	PRECAST CONCRETE GRADE ADJUSTMENT RING AS NEEDED
19	1/2" DIA. GALV. ANCHOR BOLTS - FRAME TO VAULT (ADHESIVE ANCHOR)
20	GREEN DETECTABLE PLASTIC LOCATOR TAPE
21	AWG #12 GAUGE COPPER TRACER WIRE (THWN) - WITH GREEN INSULATION - TERMINATE AT HOOK ⑥ WITH 24" EXCESS WIRE (COILED).

NOTES:

A. VAULT SHALL BE SIZED AS NEEDED FOR PIPE (6.5'x5' MINIMUM) AND RATED FOR NCDOT HS-20 LOADING - SUBMIT SHOP DRAWINGS / P.E. SEALED FOR REVIEW.
B. ALL CONCRETE SHALL BE MINIMUM 4000 PSI COMPRESSIVE STRENGTH.
C. DESIGN SHALL CONFORM TO ASTM C858 - SPECIFICATIONS FOR "UNDERGROUND PRECAST CONCRETE UTILITY STRUCTURE"
D. STEEL REINFORCING DESIGN SHALL CONFORM TO ASTM C857
E. REBARS SHALL BE GRADE 60 PER ASTM A615
F. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185
G. DIAGONAL REINFORCING SHALL BE ADDED AT ALL OPENINGS
H. PIPE PENETRATIONS SHALL BE SEALED WITH FLEXIBLE CONNECTERS (MANHOLE BOOTS) OR WITH 8-INCHES OF BRICK & MORTAR (AND 1/2 INCH THICK CONSTRUCTION EXPANSION MATERIAL)
I. ALL VALVES SHALL OPEN COUNTERCLOCKWISE. (OPEN LEFT)
J. FRAME TO BE FLUSH WITH GROUND IN MAINTAINED ROAD OR YARD R/W AND 2 FEET ABOVE GROUND IN SEWER EASEMENT
K. AIR AND VACUUM VALVE TO BE SHORT BODY TYPE, SIZED PER MANUFACTURER'S RECOMMENDATIONS
L. VALVE TO BE INSTALLED AT MIDPOINT OF A FULL JOINT OF DUCTILE IRON PIPE WHEN INSTALLING PVC FORCE MAIN
M. VAULTS LOCATED IN AREAS SUBJECT TO FLOODING SHALL HAVE SOLID CONCRETE FLOOR AND VENT (PER CMU STANDARD DETAILS) EXTENDING TO 2 FEET ABOVE 100 YEAR FLOOD ELEVATION - FRAME AND COVERS SHALL BE WATERTIGHT TYPE D/5 AND TYPE B/3.
N. ALL JOINTS SHALL BE MADE WATERTIGHT USING 2 RINGS OF BUTYL RUBBER JOINT MASTIC - SEE JOINT DETAIL.

NO SCALE

STANDARD NO. 1

VERSION NO. 1.2

VERSION DATE 10.22.2009

COMBINATION AIR AND VACUUM VALVE FOR SEWER FORCE MAINS

CHARLOTTE-MECKLENBURG UTILITIES

STANDARD DETAILS

SEWER PUMP STATION

CHARLOTTE