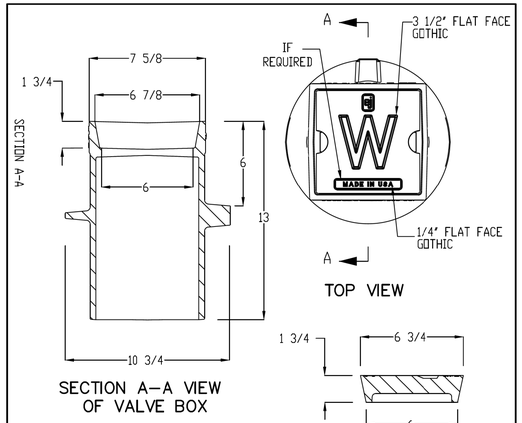
DocuSign Envelope ID: 69C646E0-57E1-452E-B79B-844BDBAC3738

8/17/99



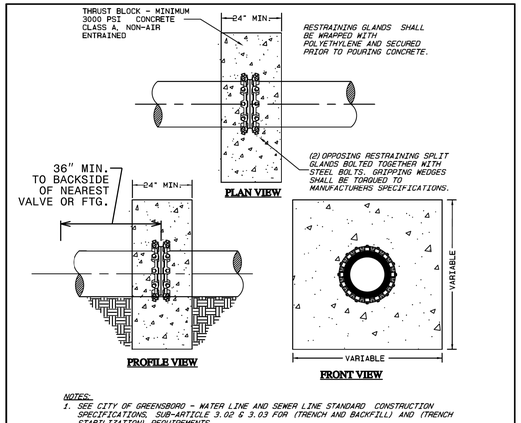
SECTION A–A VIEW OF VALVE BOX

SECTION VIEW OF VALVE BOX COVER

NOTES:
1. VALVE BOX EXTENSION SHALL BE EITHER 6" DIA. SOIL PIPE OR SCH. 40 PVC PIPE.
2. EXTENSION TO BE ONE SOLID PIECE OF PIPE UNLESS BURIAL DEPTYH IS GREATER THAN STANDARD LENGTH OF PIPE. A BELL OR COUPLING SHALL BE UTILIZED AT THE TOP OF VALVE CONNECTION (SEE COG STD #101)
3. LETTER HEIGHT 3-1/2"
4. COUNTERSINK LETTER 3/16"
5. TO BE USED IN PAVED OR NON-PAVED AREAS.
6. ALL CASTINGS SHALL MEET THE REQUIREMENTS OF AASHTO M.306.
7. DUE TO VARIATIONS IN CASTINGS OF DIFFERENT MANUFACTURER'S, DIMENSIONS SHALL BE WITHIN REASONABLE TOLERANCES AS PRE-APPROVED BY GREENSBORO WATER RESOURCES DEPARTMENT AND/OR FIELD INSPECTOR PRIOR TO INSTALLATION.
8. VALVE BOX MAY BE REQUIRED TO BE "MADE IN U.S.A." IF FEDERAL FUNDS ARE INVOLVED

CITY OF GREENSBORO

WATER VALVE BOX AND EXTENSION	STD. NO.	REV.
	102	03-93 03-12 08-02 12-12 09-10 03-15



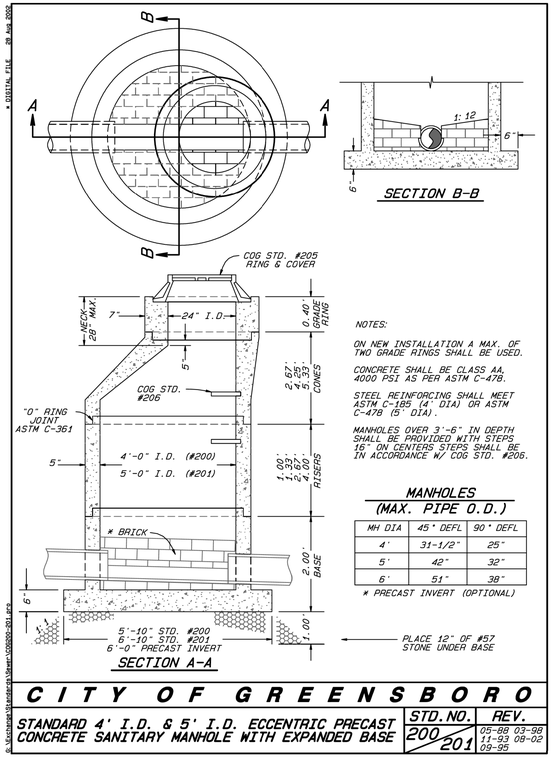
NOTES:
1. SEE CITY OF GREENSBORO - WATER LINE AND SEWER LINE STANDARD CONSTRUCTION SPECIFICATIONS, SUB-ARTICLE 3.02 & 3.03 FOR (TRENCH AND BACKFILL) AND (TRENCH STABILIZATION) REQUIREMENTS.
2. THRUST BLOCK SHALL BE ORIENTED APPROXIMATELY CENTER OF PIPE JOINT.
3. *(OPTIONAL)* A WELDED COLLAR (INSTALLED BY PIPE MANUFACTURER) MAY BE USED IN LIEU OF RESTRAINING GLANDS. ALL OTHER DESIGN REQUIREMENTS SHALL APPLY AS SHOWN.
4. FOR PIPES LARGER THAN 16" DIAMETER, THE DEADMAN THRUST RESTRAINT WITH BLOCKING MUST BE DESIGNED AND SEALED BY A N.C. PROFESSIONAL ENGINEER.
5. ANY PROPOSED MODIFICATIONS TO THIS STANDARD BASED ON THE FIELD CONDITIONS MUST BE PRE-APPROVED BY THE CITY OF GREENSBORO FIELD INSPECTOR AND/OR THE ENGINEER OF RECORD.
6. QUANTITIES SHOWN BELOW ARE TO THE NEAREST QUARTER YARD AND ARE BASED ON MINIMUM MASS WEIGHT REQUIREMENTS OF THE TEST PRESSURES SHOWN.

MINIMUM CUBIC YARDS OF CONCRETE REQUIRED

PIPE DIAMETER	150 PSI TEST PRES.	200 PSI TEST PRES.	250 PSI TEST PRES.
6"	0.75	1.0	1.25
8"	1.5	2.0	2.25
10"	2.0	3.0	3.5
12"	3.0	4.0	5.0
16"	5.5	7.25	9.0

CITY OF GREENSBORO

DEADMAN THRUST RESTRAINT WITH MASS WEIGHT BLOCKING	STD. NO.	REV.
	118	08-13 08-15



NOTES:

ON NEW INSTALLATION A MAX. OF TWO GRADE RINGS SHALL BE USED.

CONCRETE SHALL BE CLASS AA, 4000 PSI AS PER ASTM C-478.

STEEL REINFORCING SHALL MEET ASTM C-185 (4" DIA) OR ASTM C-478 (5" DIA).

MANHOLES OVER 3'-6" IN DEPTH SHALL BE PROVIDED WITH STEPS. 16" ON CENTERS STEPS SHALL BE IN ACCORDANCE W/ COG STD. #206.

MANHOLES (MAX. PIPE O.D.)

MH DIA	45° DEFL	90° DEFL
4'	31-1/2"	25"
5'	42"	32"
6'	51"	38"

* PRECAST INVERT (OPTIONAL)

PLACE 12" OF #57 STONE UNDER BASE

CITY OF GREENSBORO

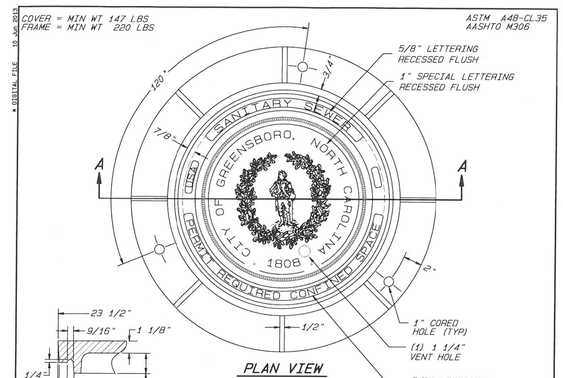
STANDARD 4' I.D. & 5' I.D. ECCENTRIC PRECAST CONCRETE SANITARY MANHOLE WITH EXPANDED BASE	STD. NO.	REV.
	200 / 201	05-88 03-98 11-93 08-02 09-95

PROJECT REFERENCE NO.	SHEET NO.
B-5717	UC-3A
DESIGNED BY: DMP	
DRAWN BY: DMP	
CHECKED BY: DMP	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE:(919)707-6690 FAX:(919)250-4151	UTILITY CONSTRUCTION PLANS ONLY

NORTH CAROLINA PROFESSIONAL SEAL 26457 ENGINEER ANDREW P. LARRICK
DocuSigned by: Andrew P. Larrick
2/26/2021

UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



NOTES:

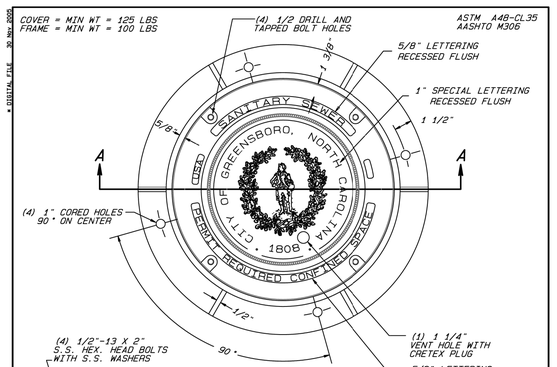
ALL DIMENSIONS AND TOLERANCES ARE TO BE CONCENTRIC AND WILL SUPERSEDE ANY ASTM STANDARDS WITH A MAXIMUM VARIATION ± 1/16" ON ALL DIMENSIONS.

MANHOLE RING TO BE ANCHORED WITH 1/2" REDHEAD STAINLESS STEEL ANCHORS AND SEALED BETWEEN RING AND CONE WITH BITUMASTIC SEALER.

▼ MACHINED BEARING SURFACE

CITY OF GREENSBORO

STANDARD MANHOLE RING AND COVER	STD. NO.	REV.
	205	12-05 06-13



NOTES:

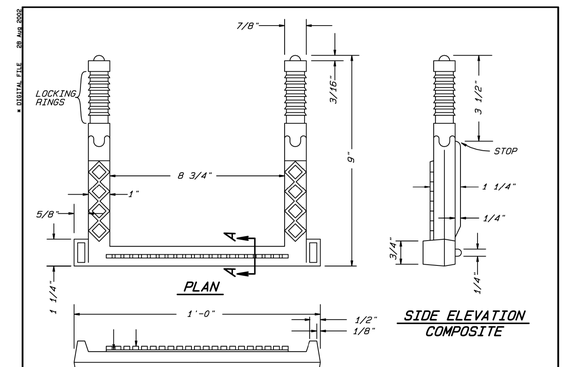
ALL DIMENSIONS AND TOLERANCES ARE TO BE CONCENTRIC AND WILL SUPERSEDE ANY ASTM STANDARDS WITH A MAXIMUM VARIATION ± 1/16" ON ALL DIMENSIONS.

MANHOLE RING TO BE ANCHORED WITH 1/2" REDHEAD STAINLESS STEEL ANCHORS AND SEALED BETWEEN RING AND CONE WITH BITUMASTIC SEALER.

▼ MACHINED BEARING SURFACE

CITY OF GREENSBORO

STANDARD WATERTIGHT MANHOLE RING AND COVER	STD. NO.	REV.
	205-B	MAR-07 DEC-05 MAR-98 MAR-01



CITY OF GREENSBORO

STANDARD MANHOLE STEP FOR PRECAST CONCRETE MANHOLE	STD. NO.	REV.
	206	

UTILITY CONSTRUCTION PLANS PREPARED BY:
DAVIS • MARTIN • POWELL
ENGINEERS & SURVEYORS
6415 OLD PLANK RD., HIGH POINT, NC 27265
PHONE: (336)886-4821 FAX: (336)886-4458
WWW.DMP-INC.COM LICENSE: F-0245