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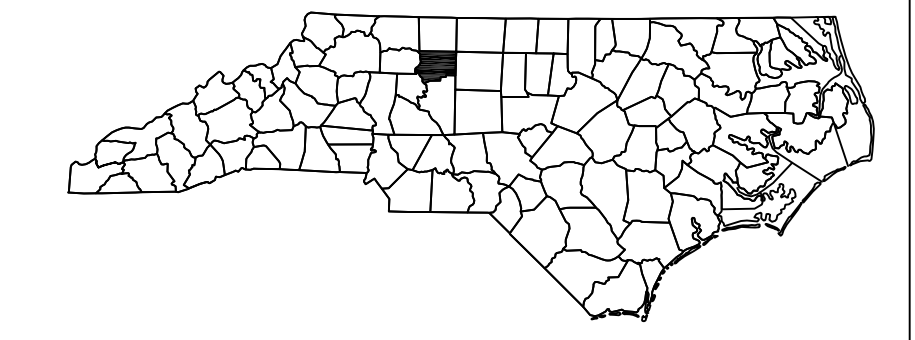
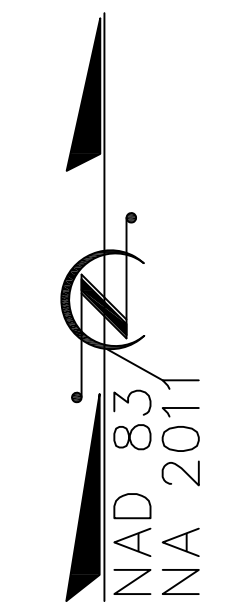
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STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

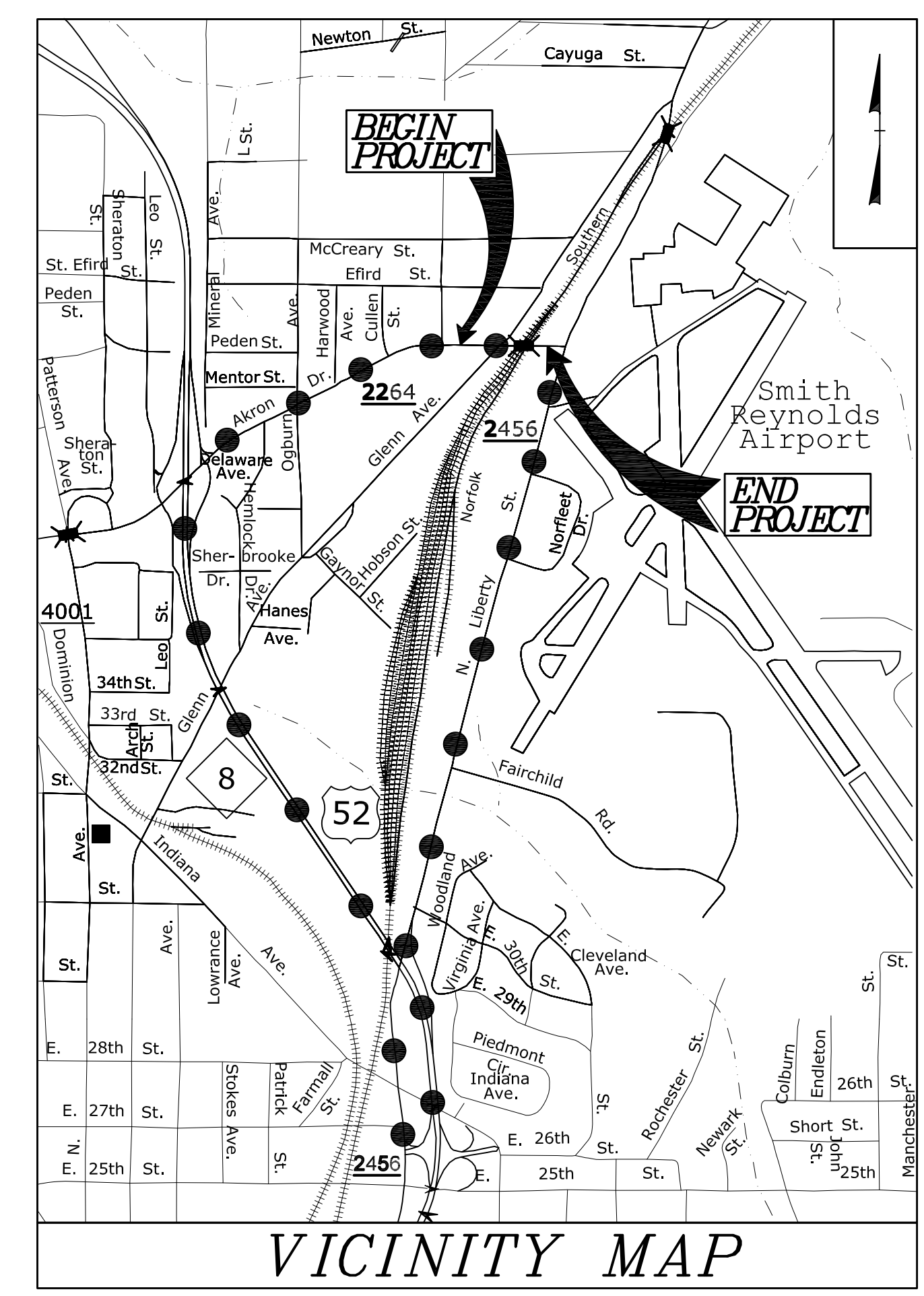
UTILITY CONSTRUCTION PLANS FORSYTH COUNTY

LOCATION: WINSTON-SALEM - BRIDGE NO. 229 OVER NORFOLK SOUTHERN RAILROAD ON SR 2264 (AKRON DR.)

TYPE OF WORK: UTILITIES

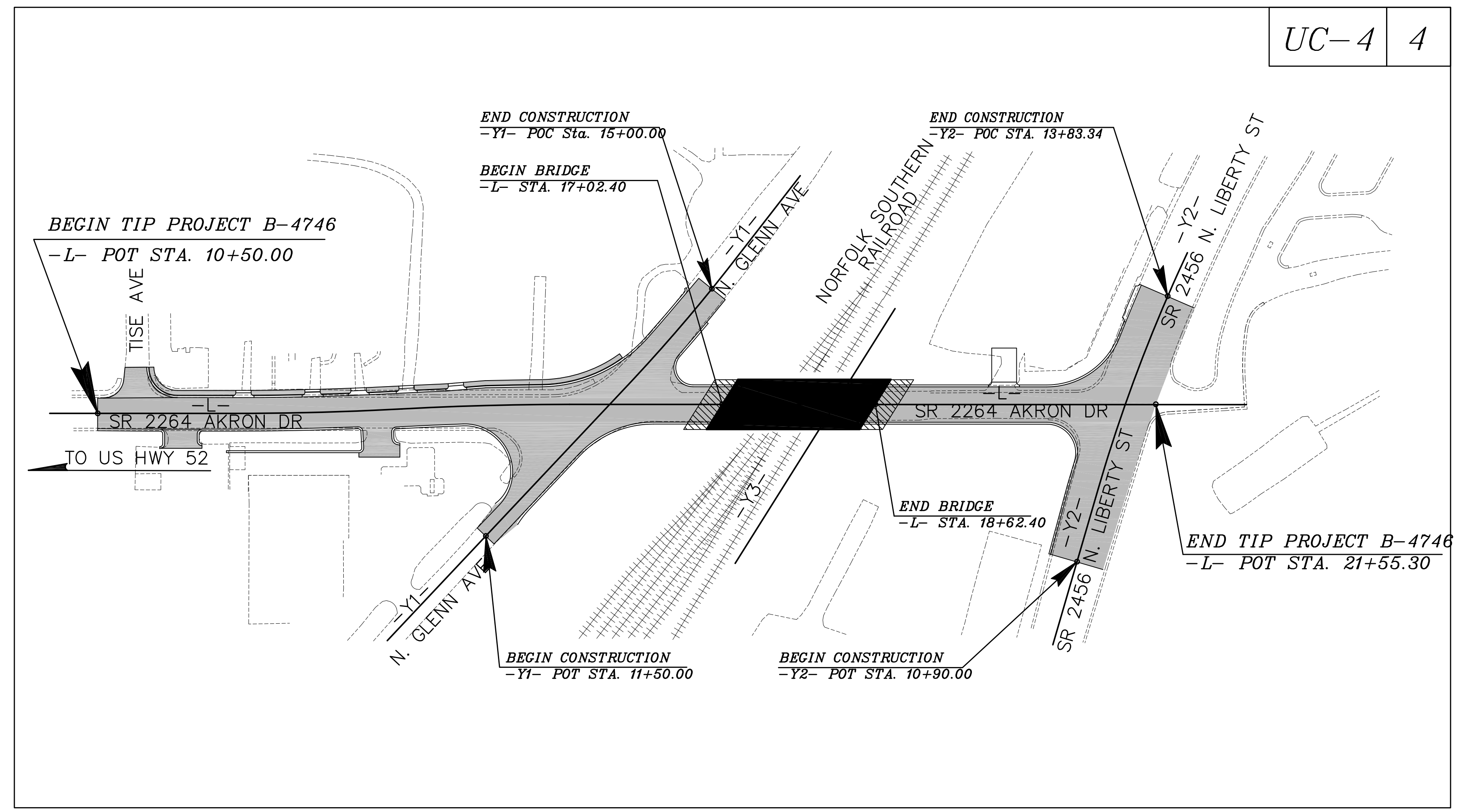


TIP PROJECT: B-4746

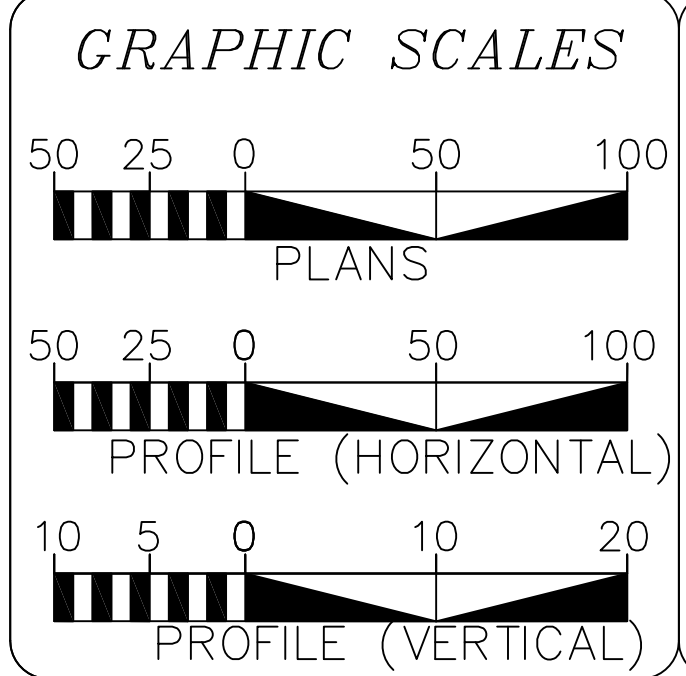


VICINITY MAP
OFFSITE DETOUR

NOTES:
THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF WINSTON-SALEM.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.



UC-4 4



INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UC-1	TITLE SHEET
UC-2	UTILITY SYMBOLOGY
UC-3	NOTES
UC-3A THRU UC-3C	DETAILS
UC-4	UTILITY CONSTRUCTION SHEETS
UC-5	PROFILE SHEETS

- WATER AND SEWER OWNERS ON PROJECT
- (1) SEWER: WINSTON-SALEM/FORSYTH COUNTY UTILITIES COMMISSION
 - (2) WATER: WINSTON-SALEM/FORSYTH COUNTY UTILITIES COMMISSION

SEAL

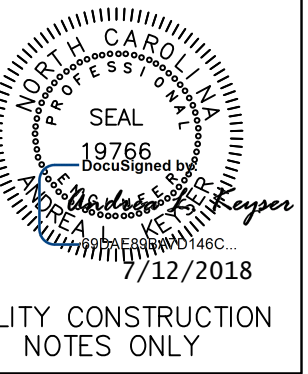
DocuSigned by:
7/12/2018
Ashley S. Webb, P.E. P.E.
SIGNATURE: BCF87A7628F642A

PREPARED IN THE OFFICE OF:
ENGINEERING DIVISION
CITY OF WINSTON-SALEM

P.O. BOX 2511
WINSTON-SALEM, NC 27102
PHONE: (336) 727-8000
FAX: (336) 727-2361

ASHLEY S. WEBB, P.E. PROJECT ENGINEER

\$\$\$\$\$SYTIME\$\$\$\$\$
\$\$\$\$\$DGN\$\$\$\$\$
\$\$\$\$\$USERNAME\$\$\$\$\$



UTILITY CONSTRUCTION

GENERAL NOTES:

1. THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENTS OF THE NC DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2018 OR THE PROJECT SPECIAL PROVISIONS UTILITY CONSTRUCTION.

2. THE EXISTING UTILITIES BELONG TO WINSTON-SALEM / FORSYTH COUNTY UTILITY COMMISSION.

3. ALL WATER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL AND NATURAL RESOURCES, DIVISION OF WATER RESOURCES, PUBLIC WATER SUPPLY SECTION. ALL SEWER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES, DIVISION OF WATER RESOURCES, WATER QUALITY SECTION. PERFORM ALL WORK IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODES.

4. THE UTILITY OWNER OWNS THE EXISTING UTILITY FACILITIES AND WILL OWN THE NEW UTILITY FACILITIES AFTER ACCEPTANCE BY THE DEPARTMENT. THE DEPARTMENT OWNS THE CONSTRUCTION CONTRACT AND HAS ADMINISTRATIVE AUTHORITY. COMMUNICATIONS AND DECISIONS BETWEEN THE CONTRACTOR AND UTILITY OWNER ARE NOT BINDING UPON THE DEPARTMENT OR THIS CONTRACT UNLESS AUTHORIZED BY THE ENGINEER. AGREEMENTS BETWEEN THE UTILITY OWNER AND CONTRACTOR FOR THE WORK THAT IS NOT PART OF THIS CONTRACT OR IS SECONDARY TO THIS CONTRACT ARE ALLOWED, BUT ARE NOT BINDING UPON THE DEPARTMENT.

5. PROVIDE ACCESS FOR THE DEPARTMENT PERSONNEL AND THE OWNER'S REPRESENTATIVES TO ALL PHASES OF CONSTRUCTION. NOTIFY DEPARTMENT PERSONNEL AND THE UTILITY OWNER TWO WEEKS PRIOR TO COMMENCEMENT OF ANY WORK AND ONE WEEK PRIOR TO SERVICE INTERRUPTION. KEEP UTILITY OWNERS' REPRESENTATIVES INFORMED OF WORK PROGRESS AND PROVIDE OPPORTUNITY FOR INSPECTION OF CONSTRUCTION AND TESTING.

6. THE PLANS DEPICT THE BEST AVAILABLE INFORMATION FOR THE LOCATION, SIZE, AND TYPE OF MATERIAL FOR ALL EXISTING UTILITIES. MAKE INVESTIGATIONS FOR DETERMINING THE EXACT LOCATION, SIZE, AND TYPE MATERIAL OF THE EXISTING FACILITIES AS NECESSARY FOR THE CONSTRUCTION OF THE PROPOSED UTILITIES AND FOR AVOIDING DAMAGE TO EXISTING FACILITIES. REPAIR ANY DAMAGE INCURRED TO EXISTING FACILITIES TO THE ORIGINAL OR BETTER CONDITION AT NO ADDITIONAL COST TO THE DEPARTMENT.

7. MAKE FINAL CONNECTIONS OF THE NEW WORK TO THE EXISTING SYSTEM WHERE INDICATED ON THE PLANS, AS REQUIRED TO FIT THE ACTUAL CONDITIONS, OR AS DIRECTED.

8. MAKE CONNECTIONS BETWEEN EXISTING AND PROPOSED UTILITIES AT TIMES MOST CONVENIENT TO THE PUBLIC, WITHOUT ENDANGERING THE UTILITY SERVICE, AND IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS. MAKE CONNECTIONS ON WEEKENDS, AT NIGHT, AND ON HOLIDAYS IF NECESSARY AND APPROVED BY THE DEPARTMENT AND THE UTILITY OWNER.

9. ALL UTILITY MATERIALS SHALL BE APPROVED PRIOR TO DELIVERY TO THE PROJECT. SEE 1500-7, "SUBMITTALS AND RECORDS" IN SECTION 1500 OF THE STANDARD SPECIFICATIONS.

PROJECT SPECIFIC NOTES:

1. ALL VALVES 3" THROUGH 16" SHALL BE GATE VALVES.

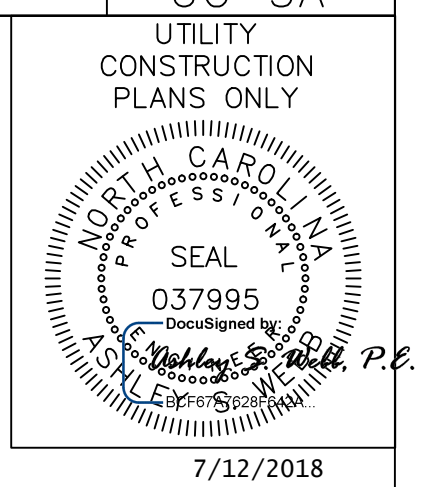
2. THE CONTRACTOR SHALL CHECK THE INSIDE OF ALL SERVICE CONNECTION METER BOXES THAT ARE WITHIN THE LIMITS OF WATER MAINS TO BE ABANDONED. IF ANY METER BOX CONTAINS A METER, THE METER SHALL BE REMOVED AND RETURNED TO THE CITY OF WINSTON-SALEM'S UTILITIES CONSTRUCTION AND MAINTENANCE DIVISION AT 1550-B MARTIN LUTHER KING JR DRIVE. THE INVESTIGATION OF METERS AND ANY REMOVAL AND SUBSEQUENT DELIVERY TO THE CITY SHALL BE CONSIDERED INCIDENTAL TO THE WORK OF CLEARING AND GRUBBING.

UTILITY CONSTRUCTION

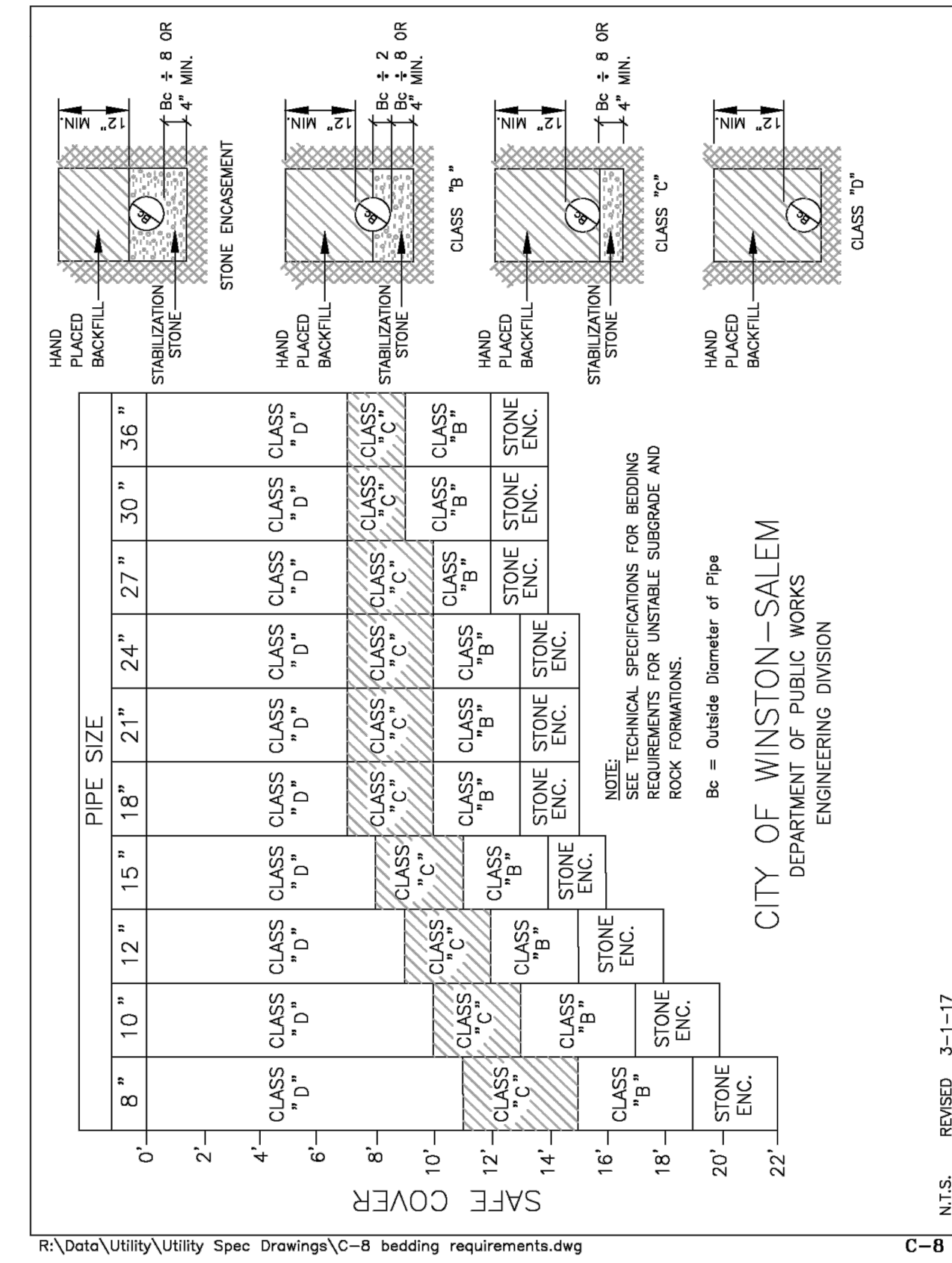
8/17/99

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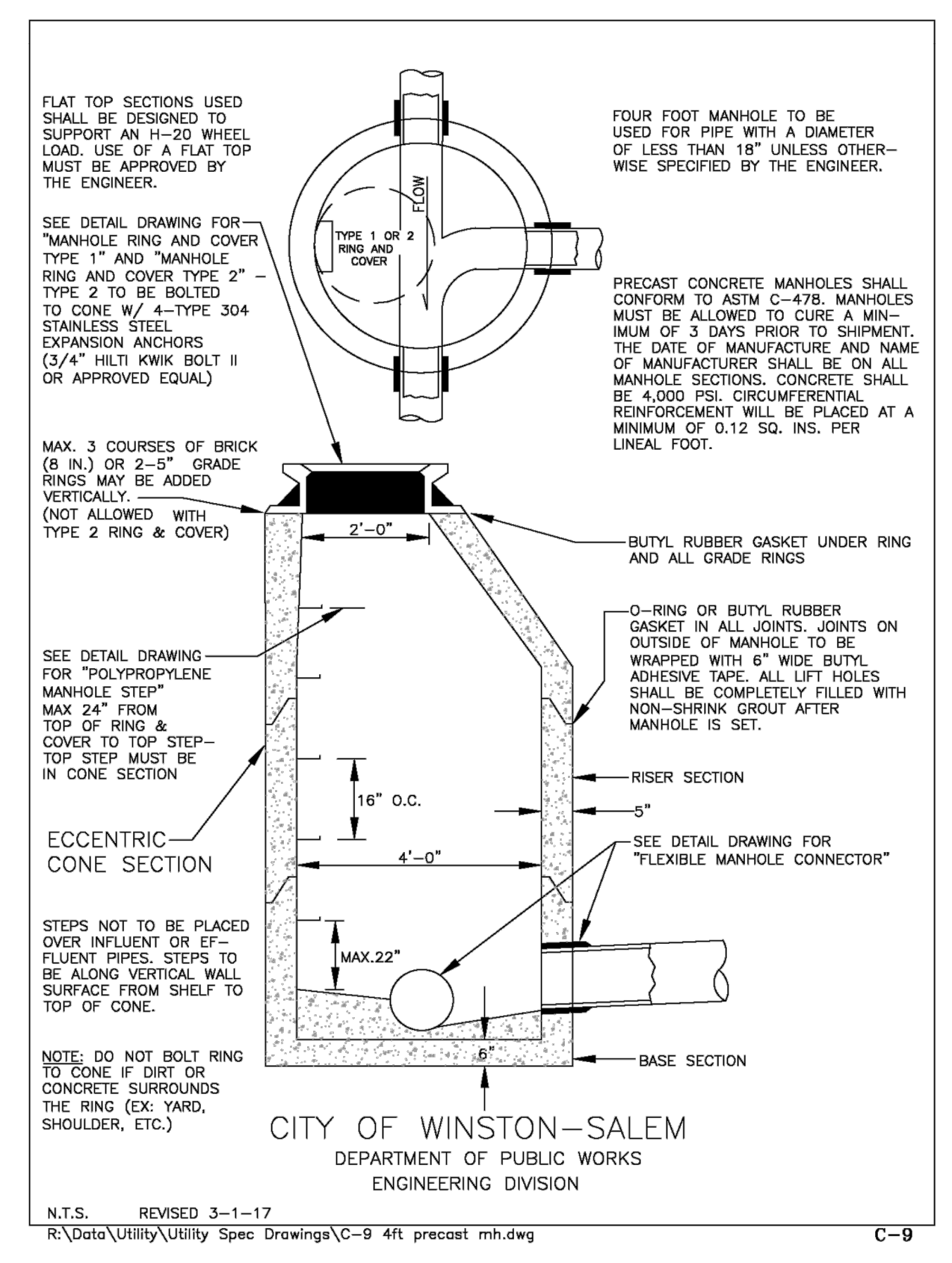
UNLESS OTHERWISE NOTED ALL DIMENSIONS ARE IN FEET AND INCHES. DIMENSIONS ARE TO FACE UNLESS OTHERWISE NOTED. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES AND THE PROJECT SPECIAL PROVISIONS.



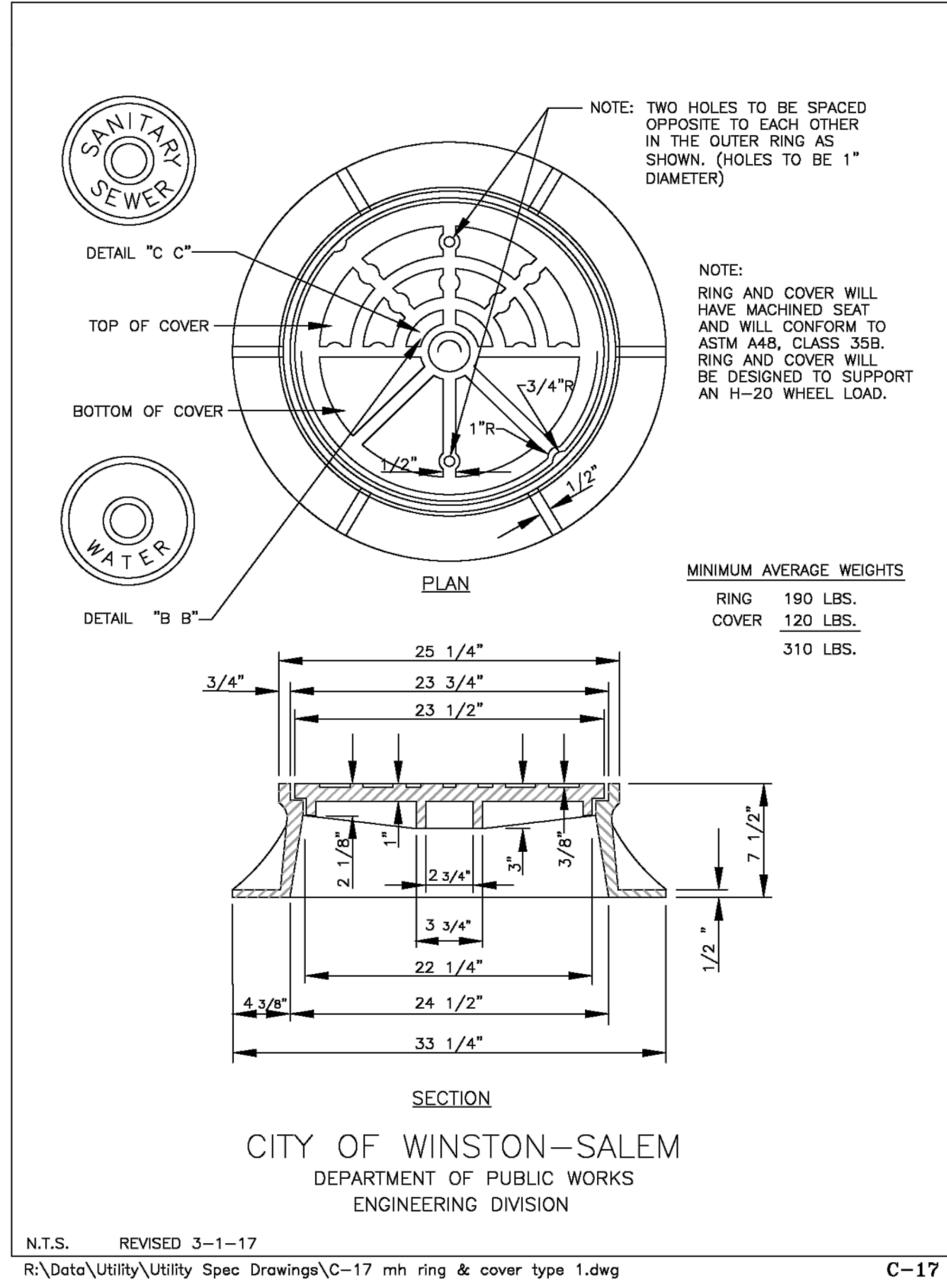
Bedding Requirements & Safe Cover for VC Pipe on Stable Subgrade



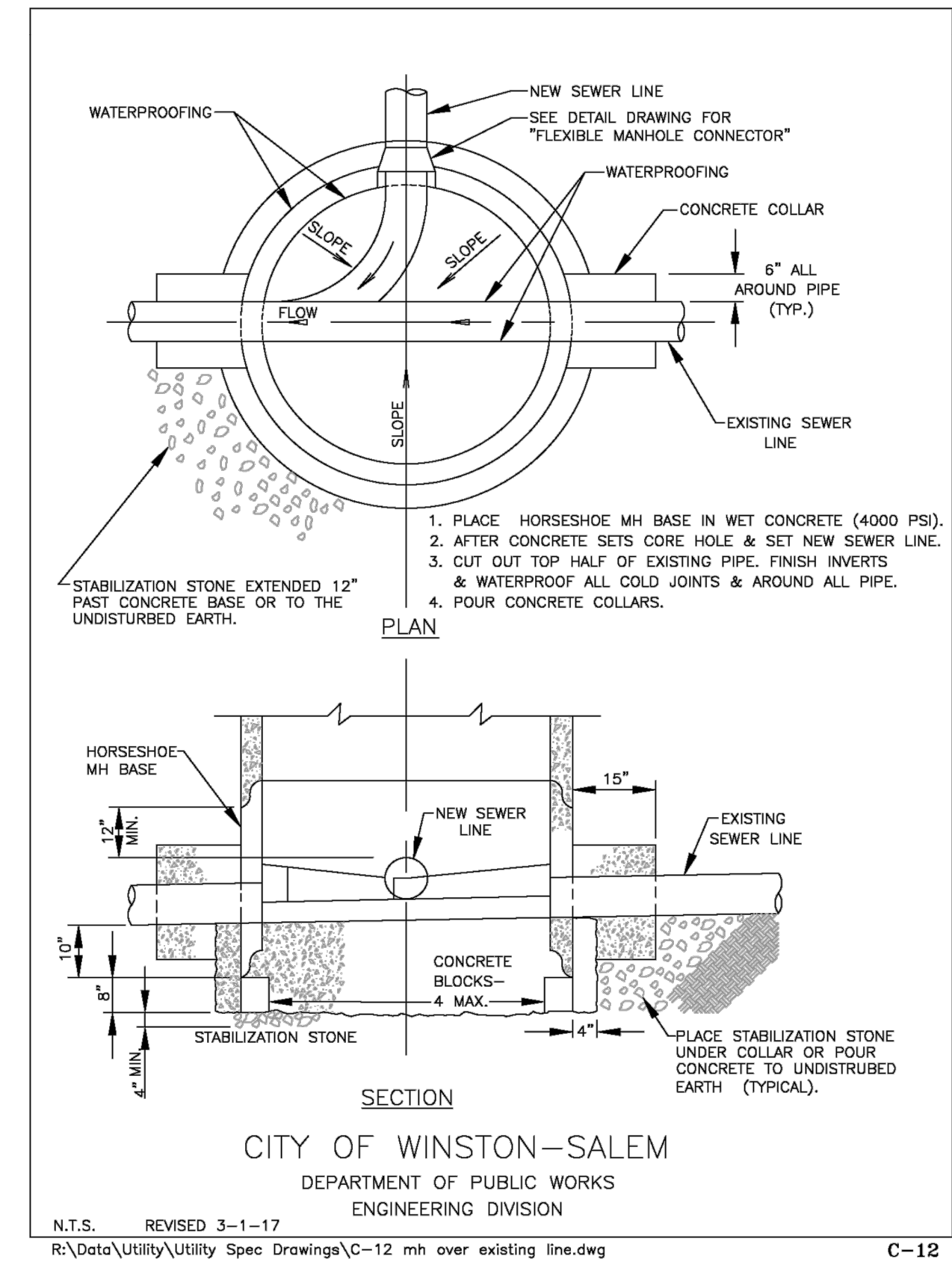
4' Precast Reinforced Concrete Manhole



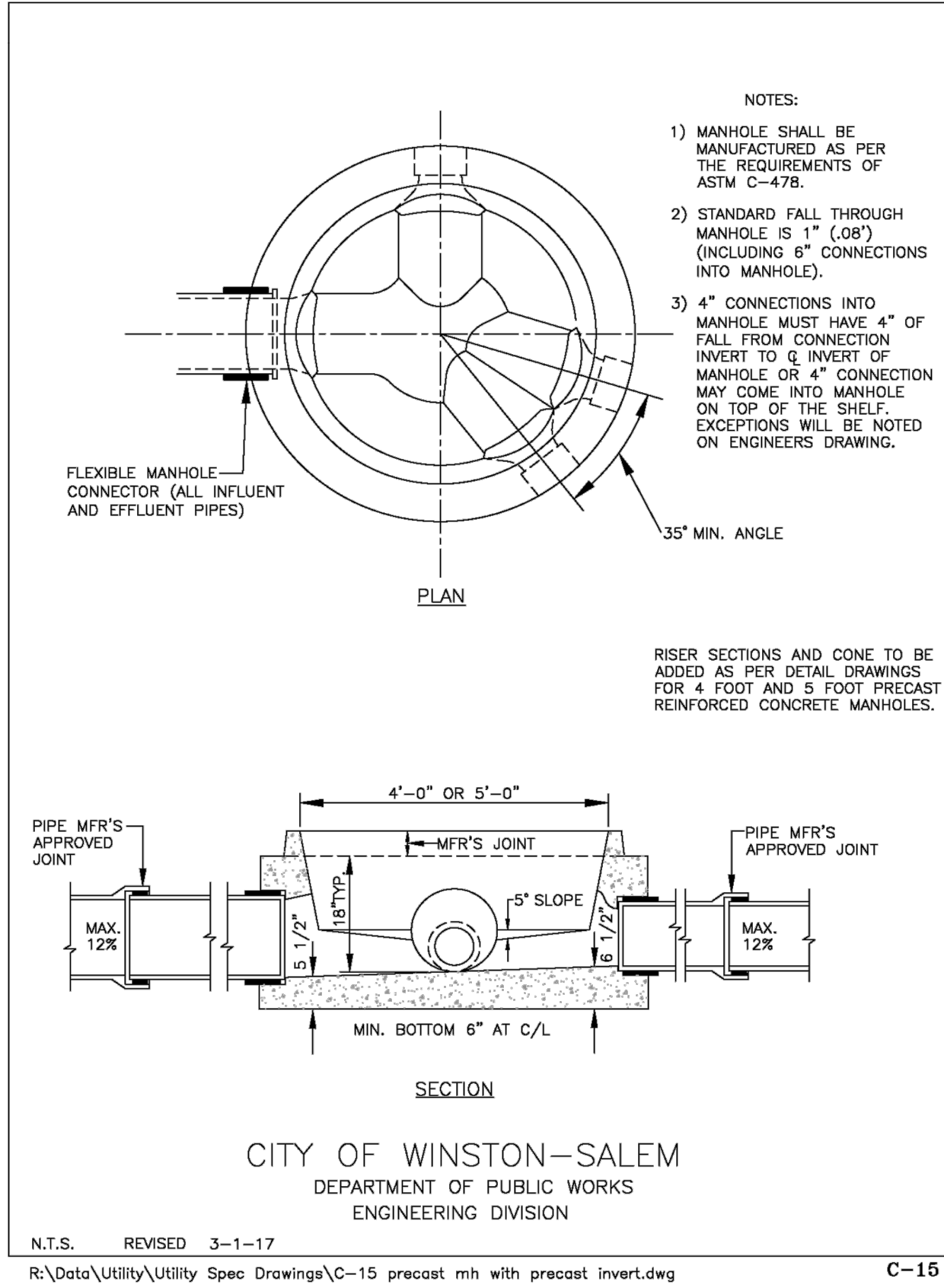
Manhole Ring and Cover (Type 1)



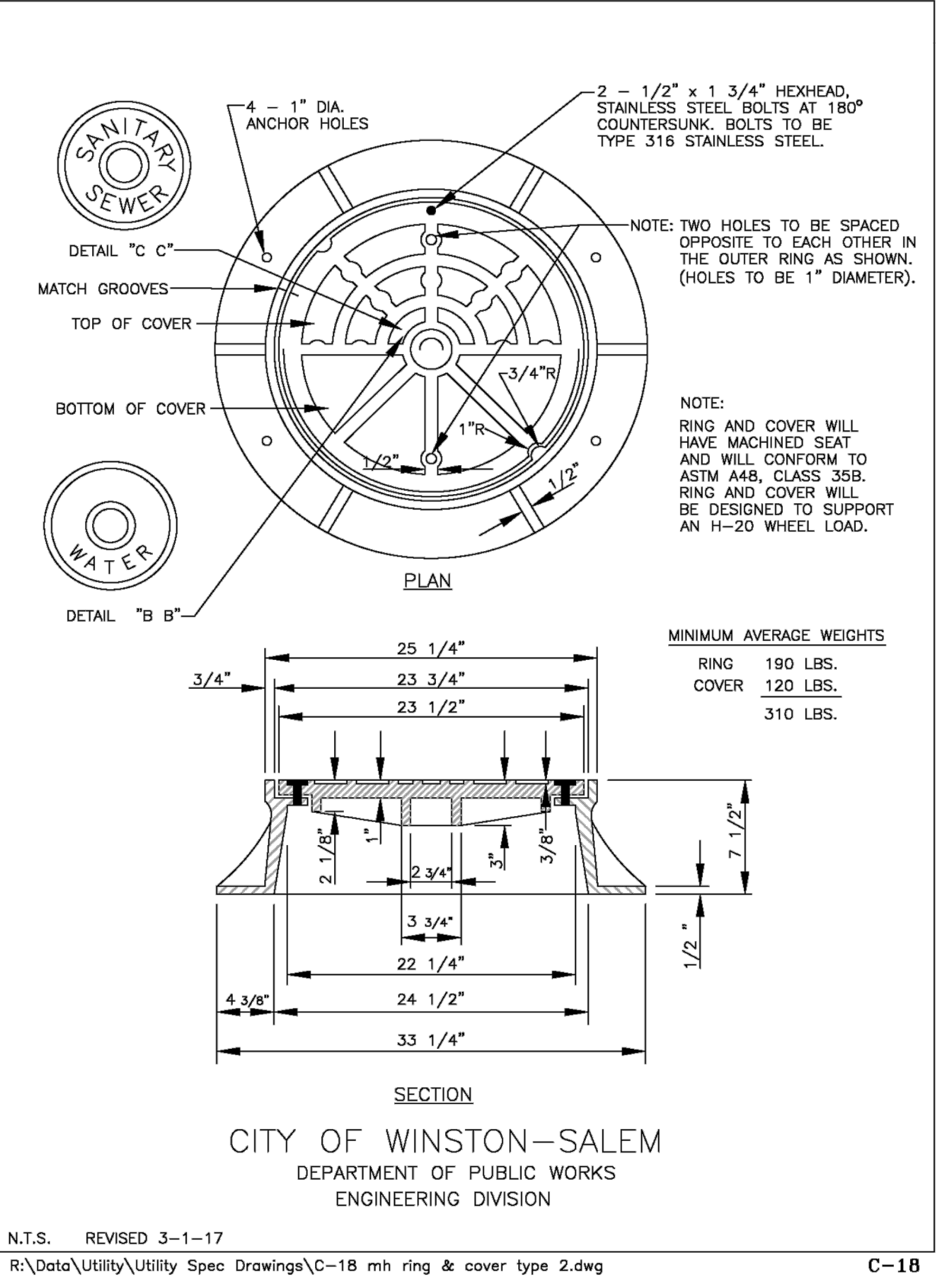
Manhole Built Over Existing Line



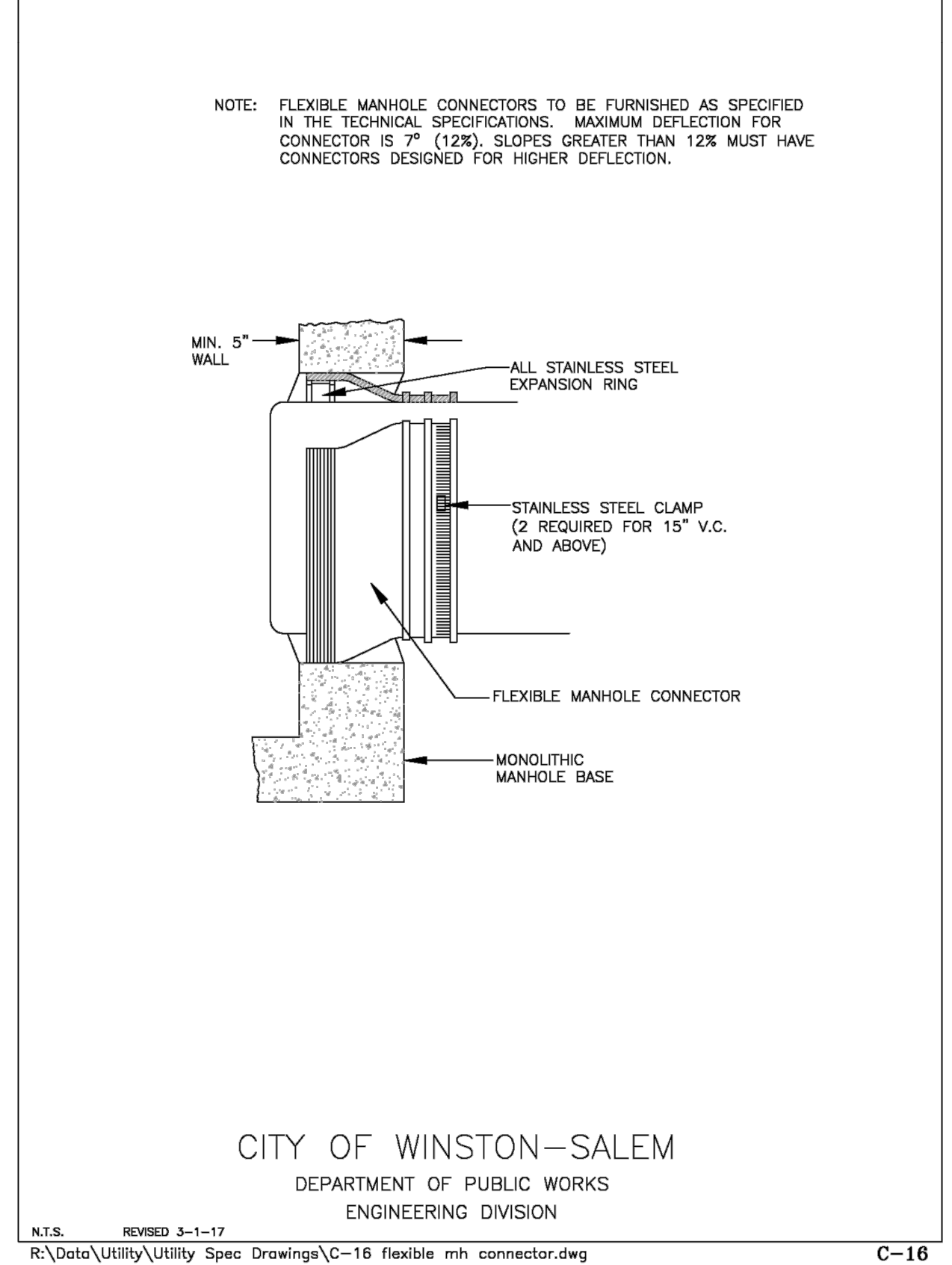
Precast Reinforced Concrete Manhole with Precast Invert



Manhole Ring and Cover (Type 2)



Flexible Manhole Connector



8/17/99

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R:\Data\Utility\Utility Spec Drawings\C-8 bedding requirements.dwg C-8

R:\Data\Utility\Utility Spec Drawings\C-9 4ft precast mh.dwg C-9

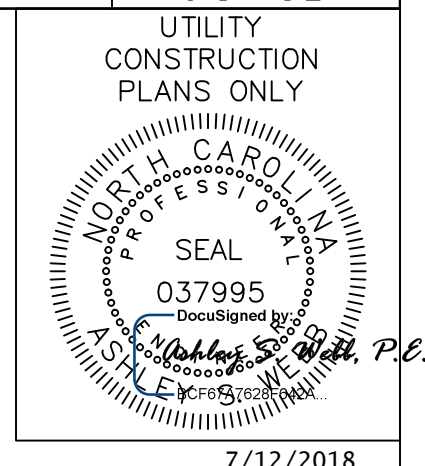
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R:\Data\Utility\Utility Spec Drawings\C-12 mh over existing line.dwg C-12

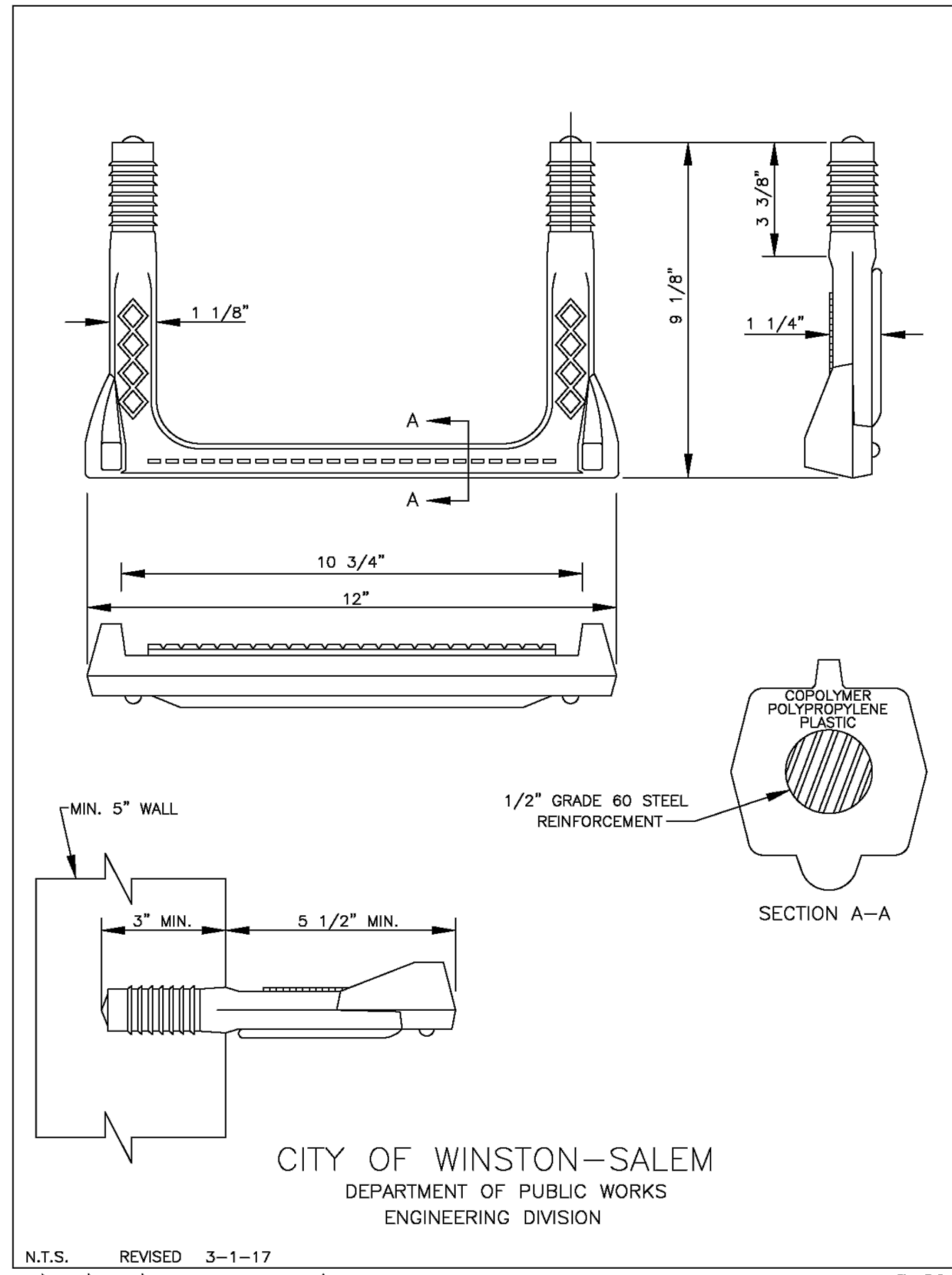
R:\Data\Utility\Utility Spec Drawings\C-15 precast mh with precast invert.dwg C-15

R:\Data\Utility\Utility Spec Drawings\C-18 mh ring & cover type 2.dwg C-18

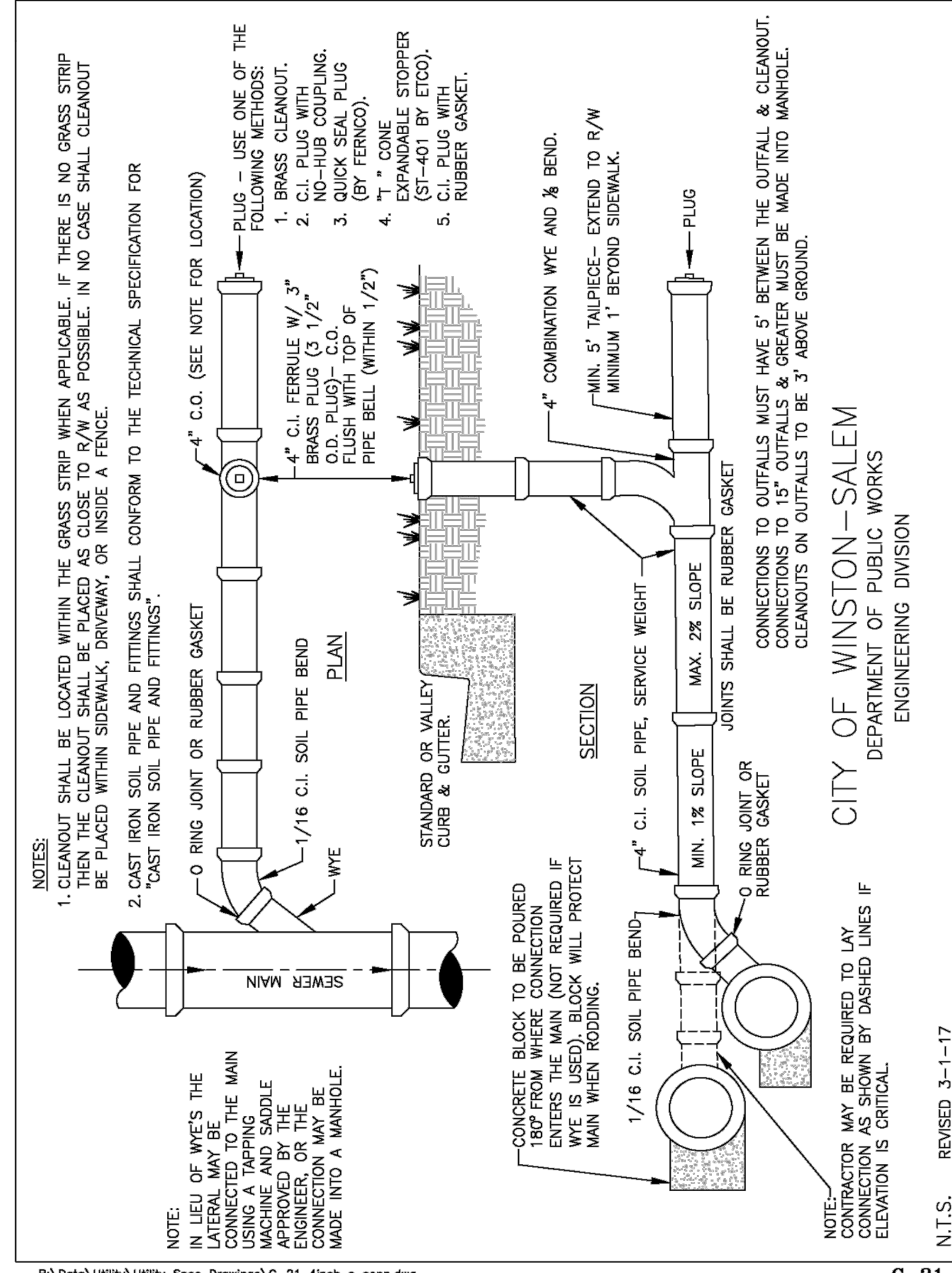
R:\Data\Utility\Utility Spec Drawings\C-16 flexible mh connector.dwg C-16



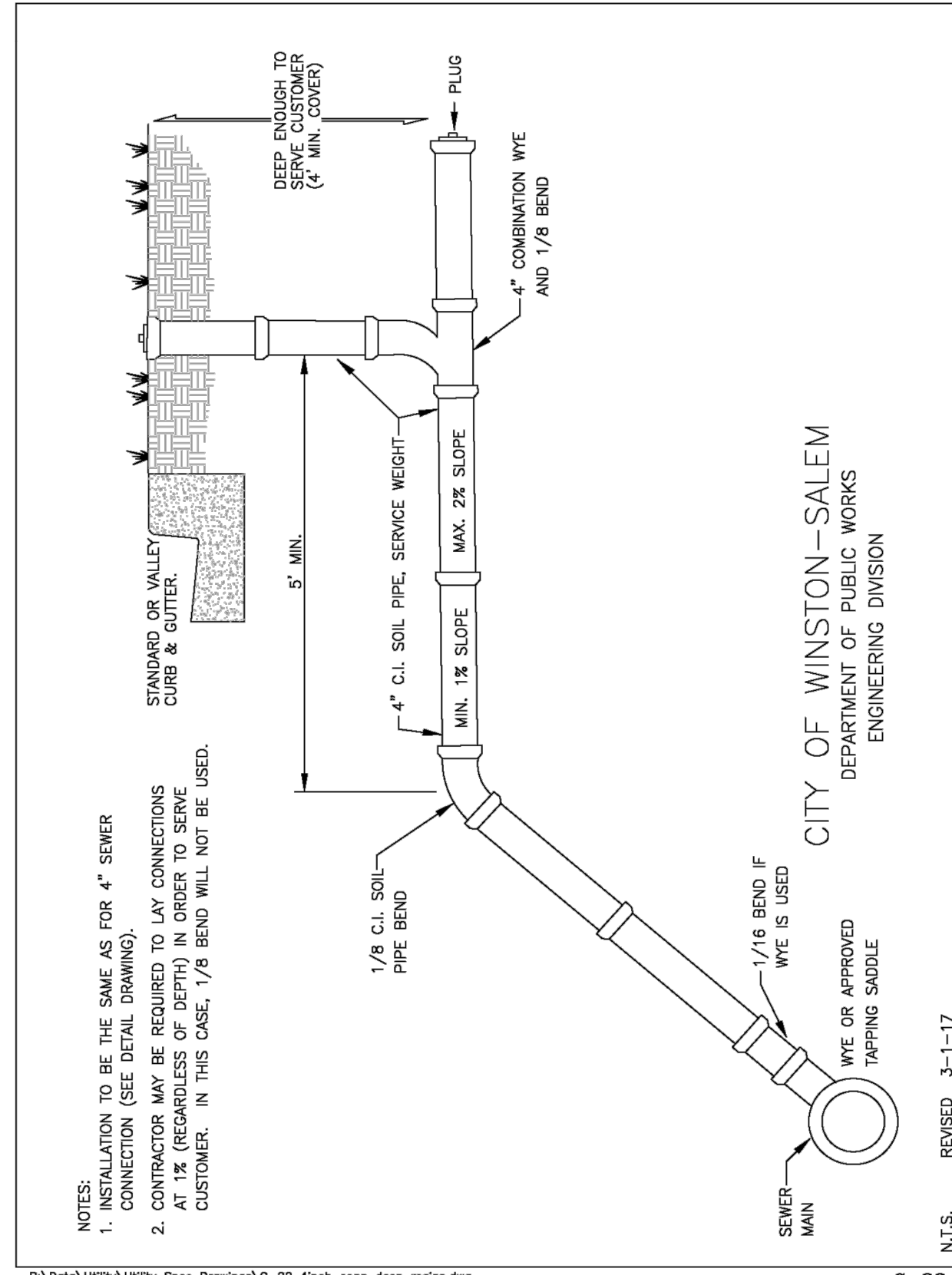
Polypropylene Manhole Step



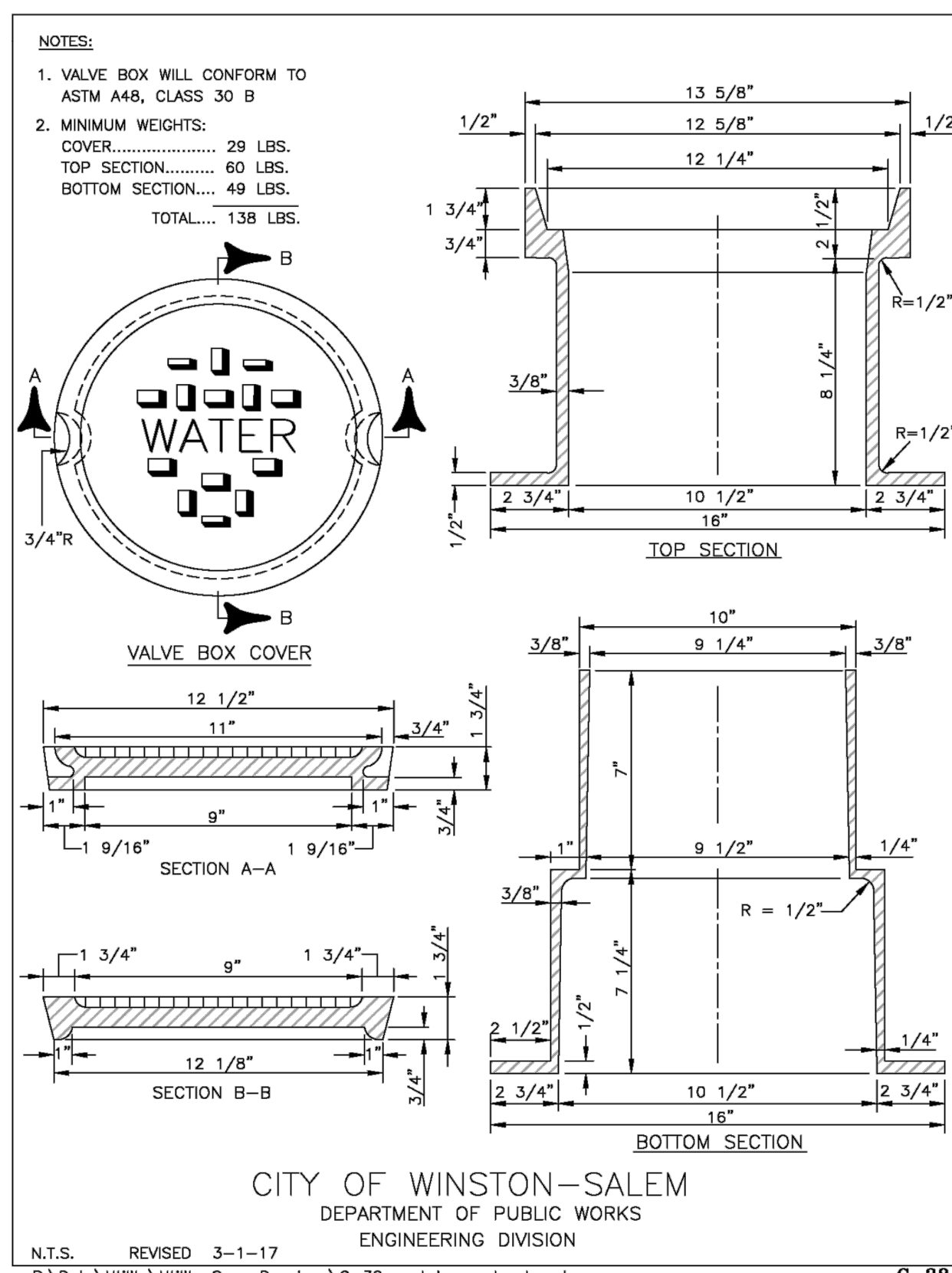
4" Sewer Connection



4" Sewer Connection for Deep Mains

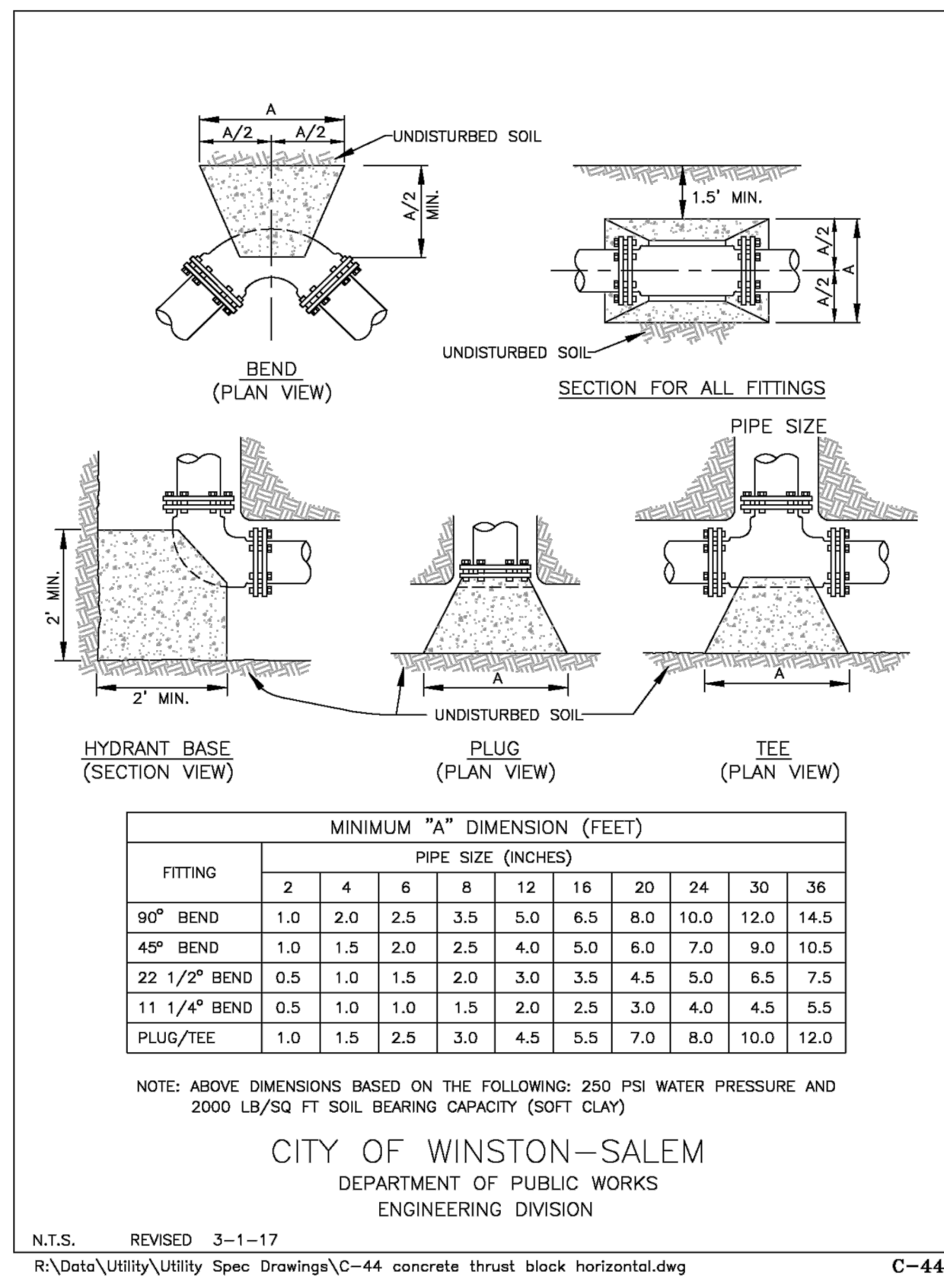


Cast Iron Valve Box

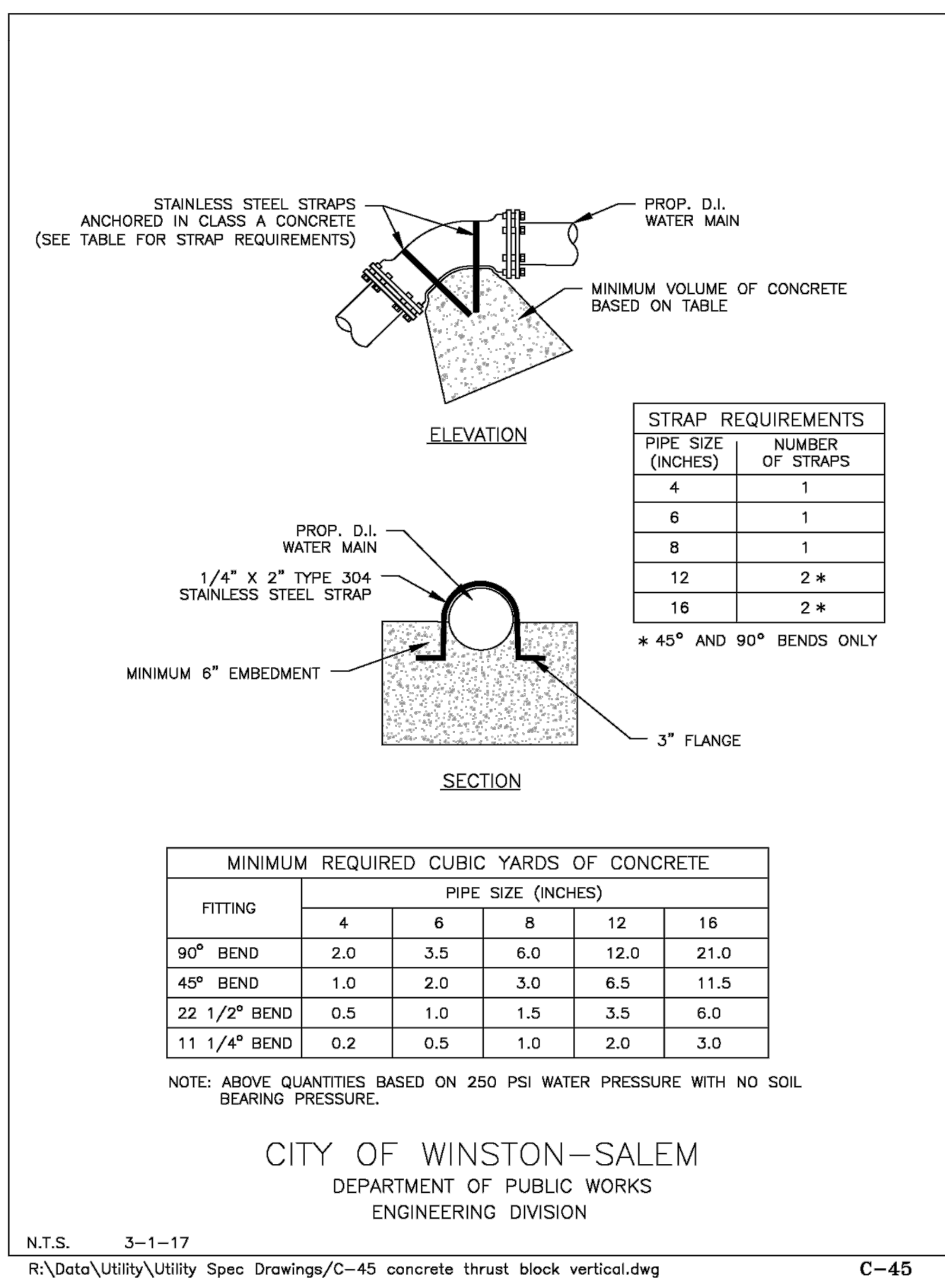


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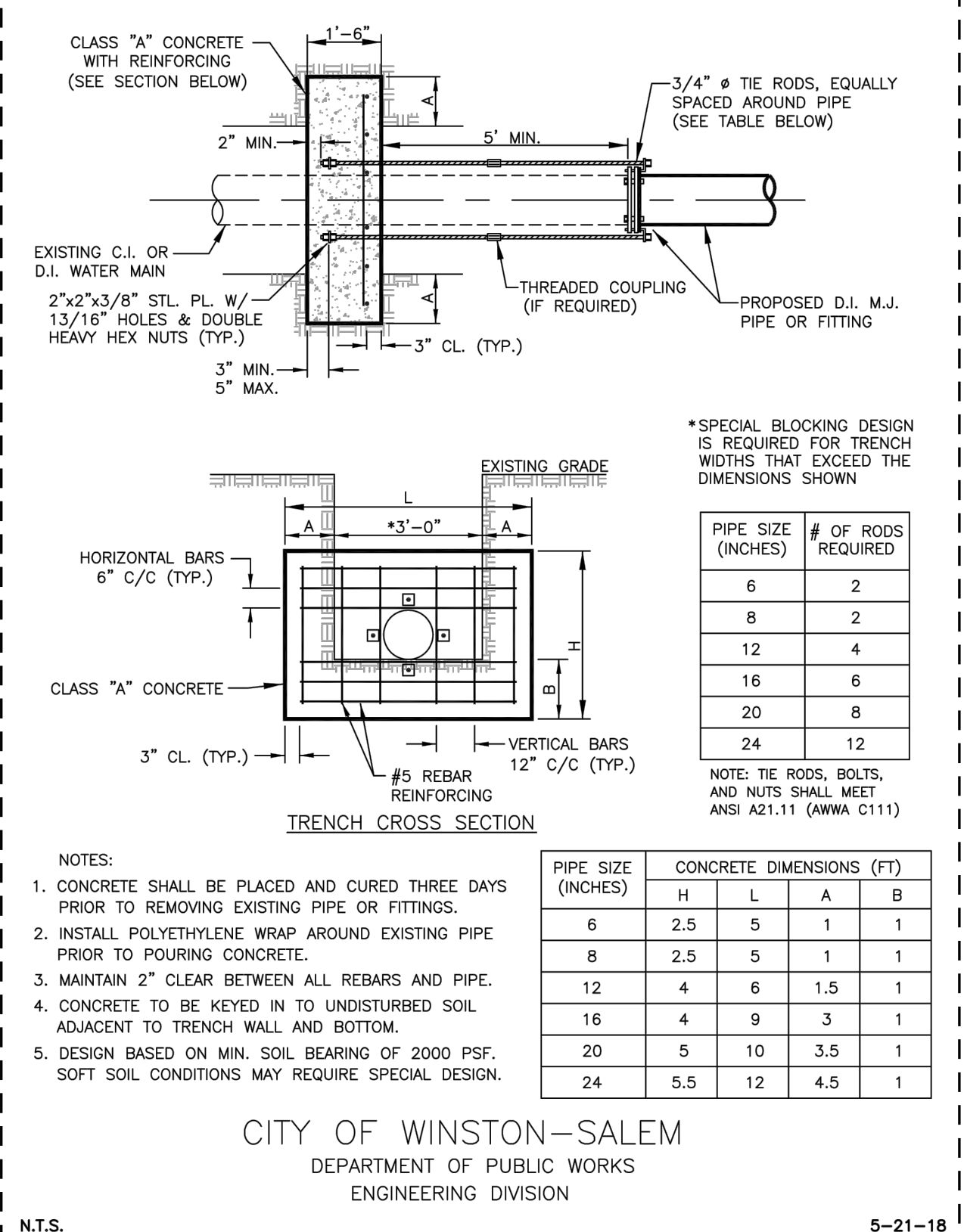
Concrete Thrust Blocks for Horizontal Bends



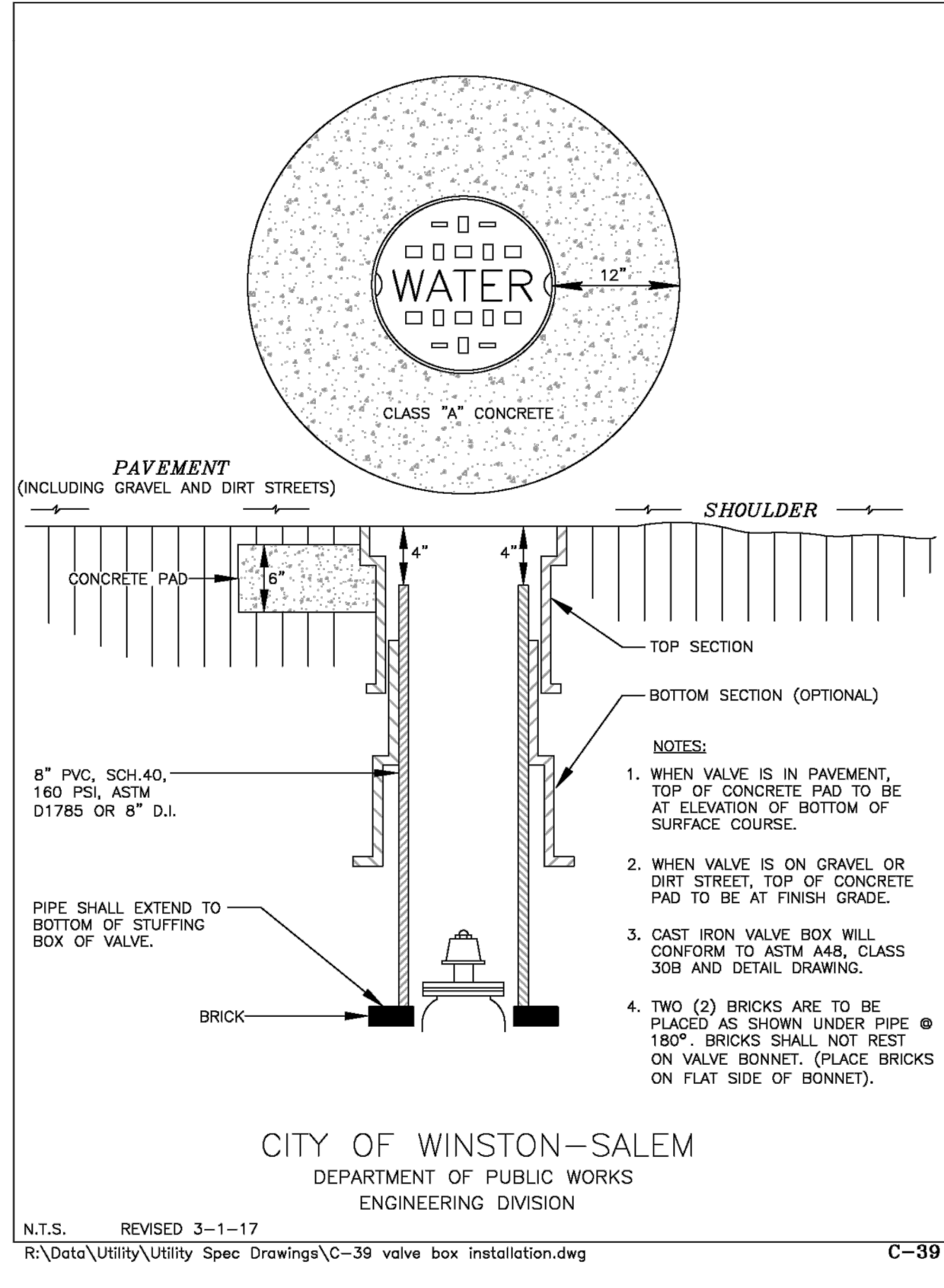
Concrete Thrust Blocks w/ Anchors for Top Vertical Bends

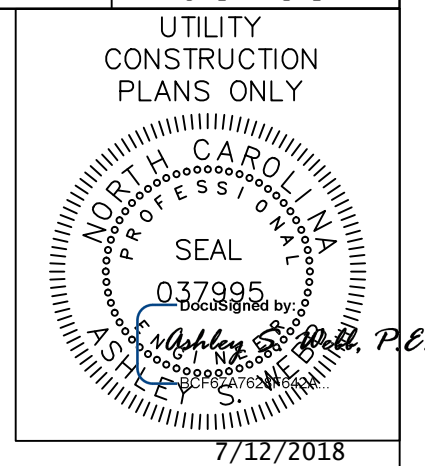


THRUST HARNESS FOR EXISTING PIPE

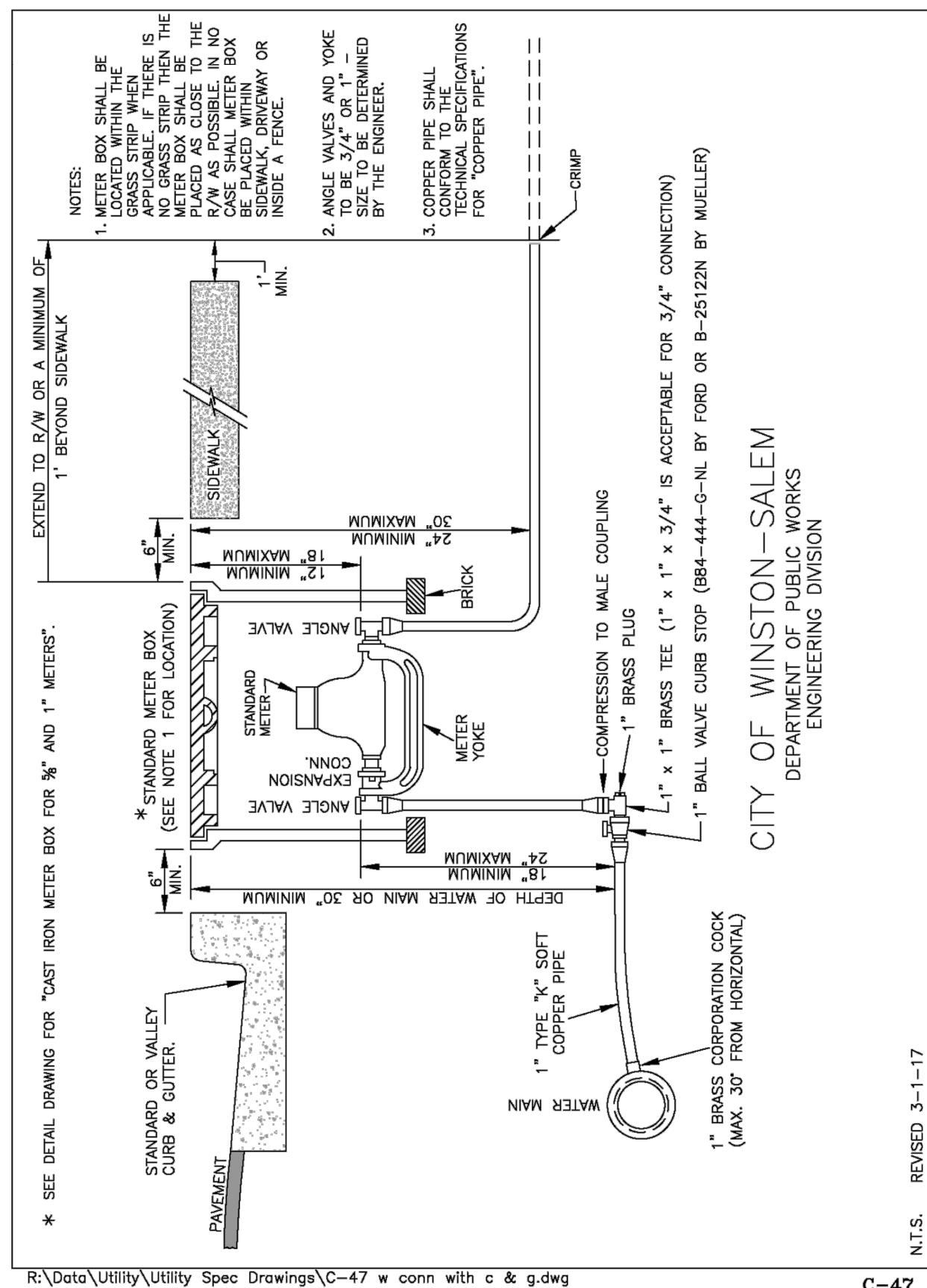


Valve Box Installation

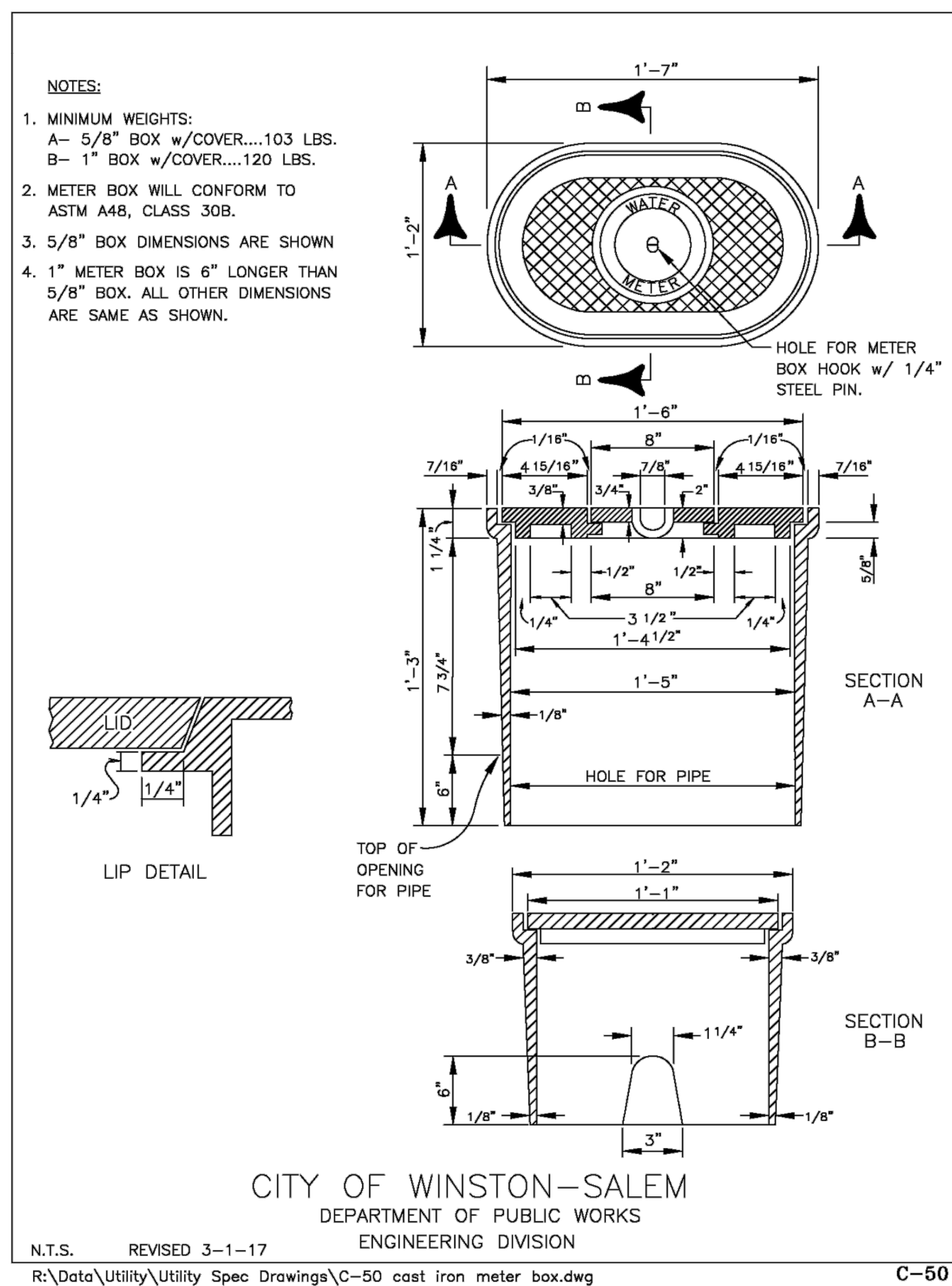




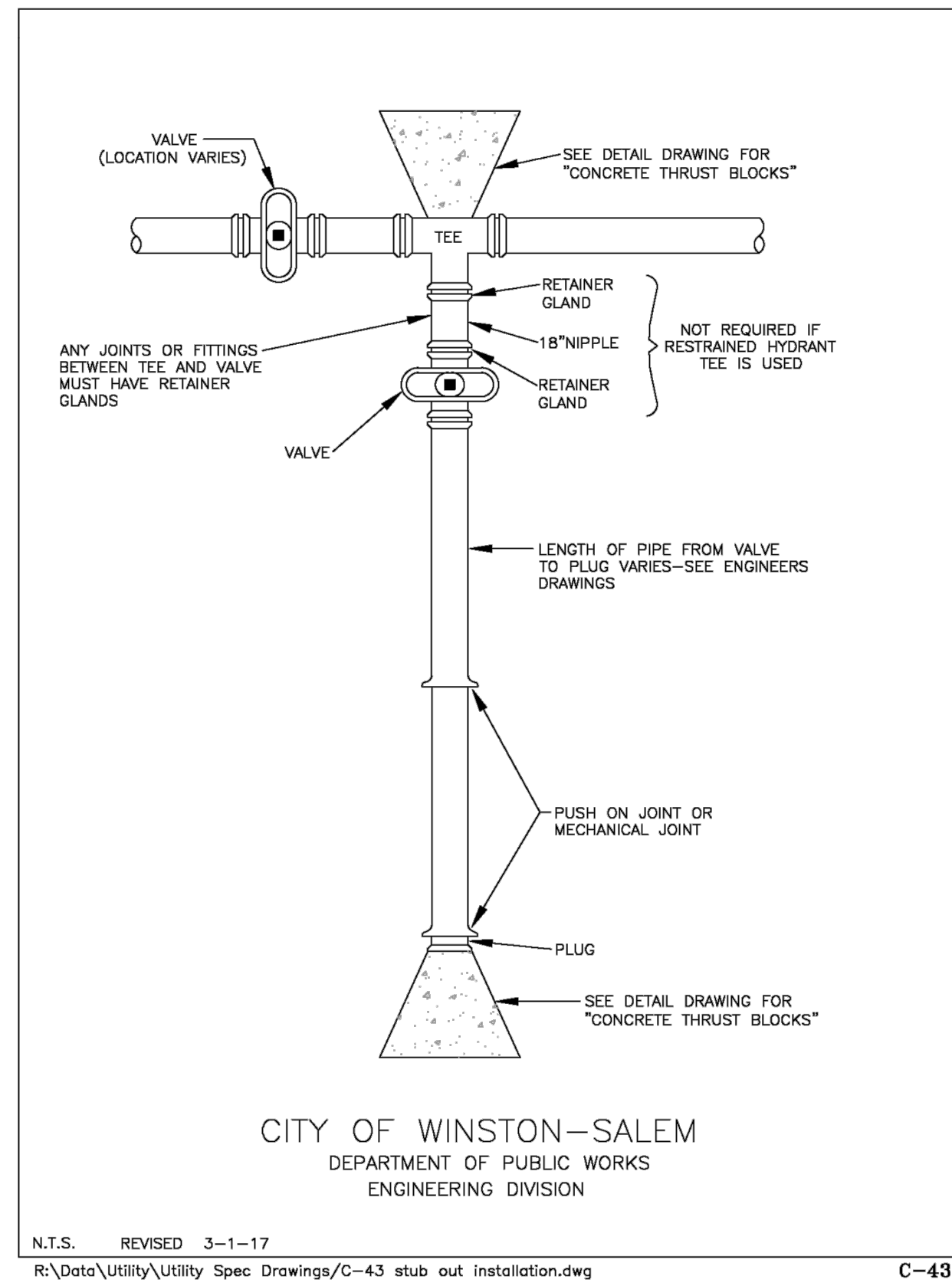
3/4" and 1" Water Connection (With Curb & Gutter / Single Family)



Cast Iron Meter Box for 5/8" and 1" Meters



Stub Out Installation

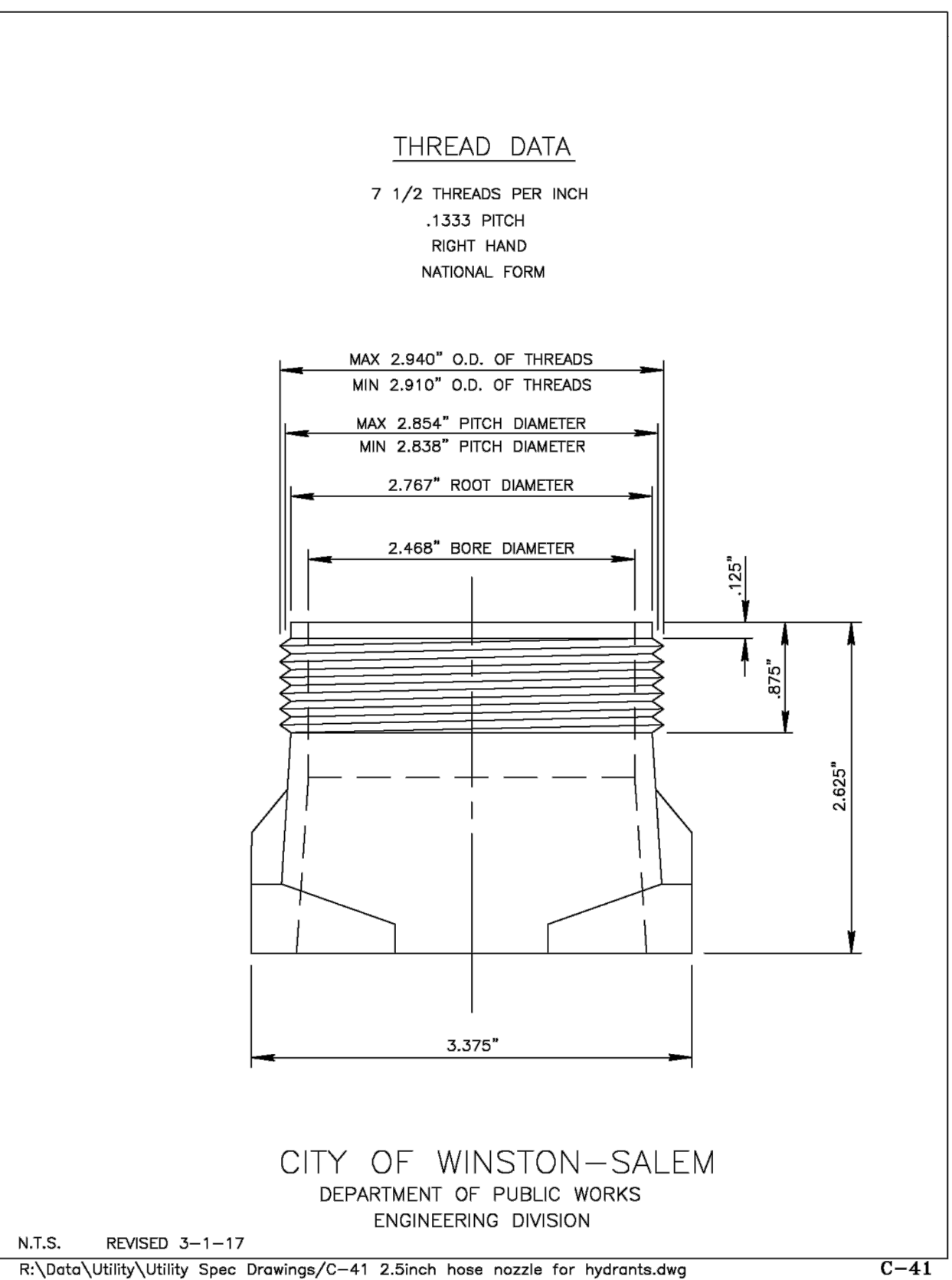


ANSI/AWWA C150/A21.50 and ANSI/AWWA C151/A21.51 Standard Laying Conditions

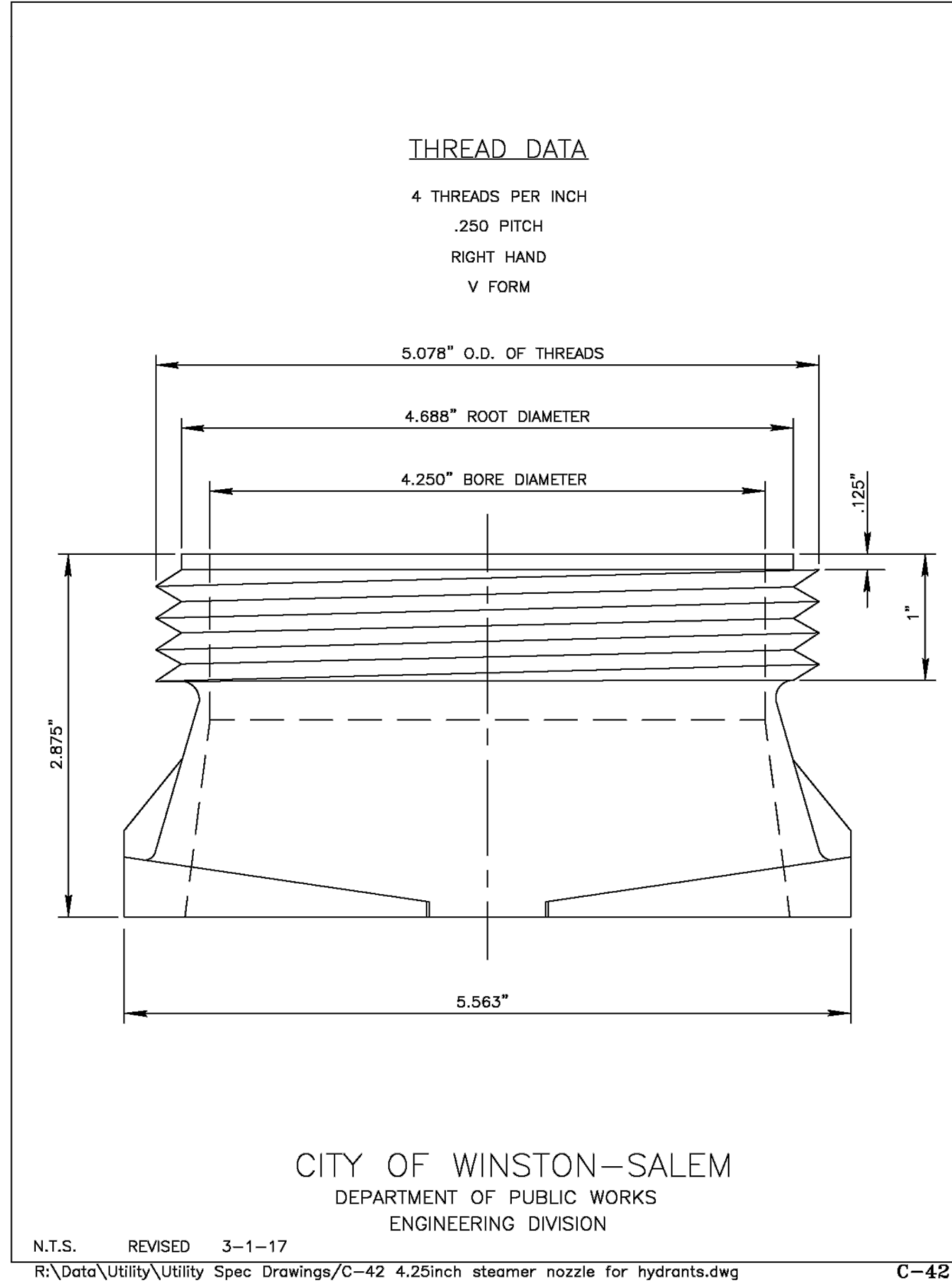
Laying Condition	Description
Type 1	Flat-bottom trench. † Loose backfill.
Type 2	Flat-bottom trench. † Backfill lightly consolidated to centerline of pipe.
Type 3	Pipe bedded in 4" minimum loose soil. † Backfill lightly consolidated to top of pipe.
Type 4	Pipe bedded in sand, gravel or crushed stone to depth of 1/4 pipe diameter, 4" minimum. Backfill compacted to top of pipe. (95% Standard Proctor, AASHTO T-99.)
Type 5	Pipe bedded to its centerline in compacted granular material, 4" minimum under pipe. Compacted granular or select material † to top of pipe. (95% Standard Proctor, AASHTO T-99.)

† For 14" and larger pipe, consideration should be given to the use of laying conditions other than Type 1.
 † "Flat bottom" is defined as undisturbed earth.
 † "Loose soil" or "select material" is defined as native soil excavated from the trench, free of rocks, foreign material and frozen earth.
 † Granular materials are defined per the AASHTO Soil Classification System (ASTM D2487) or the Unified Soil Classification System (ASTM D2487), with the exception that gravel bedding backfill adjacent to the pipe is limited to 2" maximum particle size per ANSI/AWWA C200.

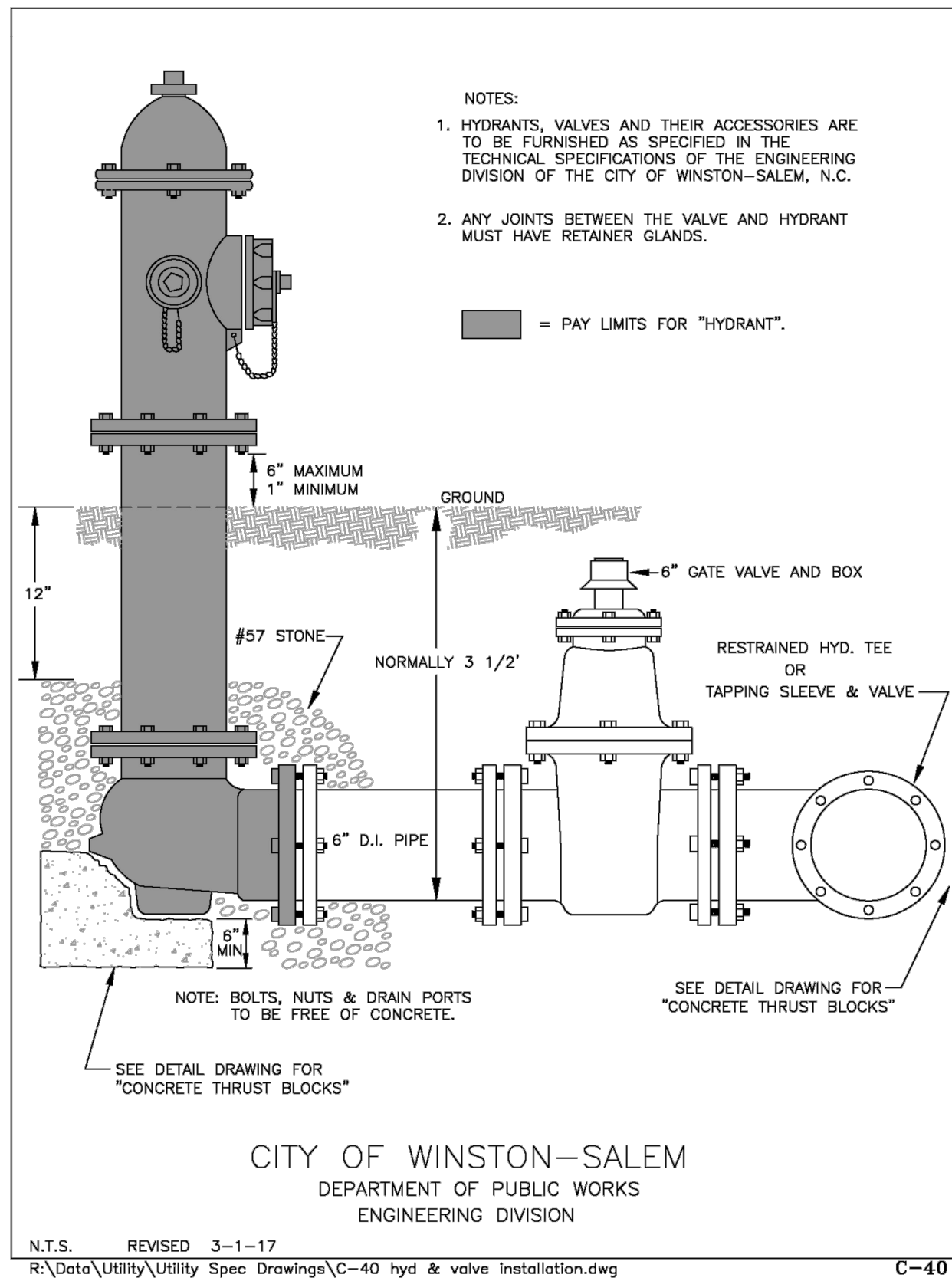
2 1/2" Hose Nozzle for Hydrants



4 1/4" Steamer Nozzle for Hydrants

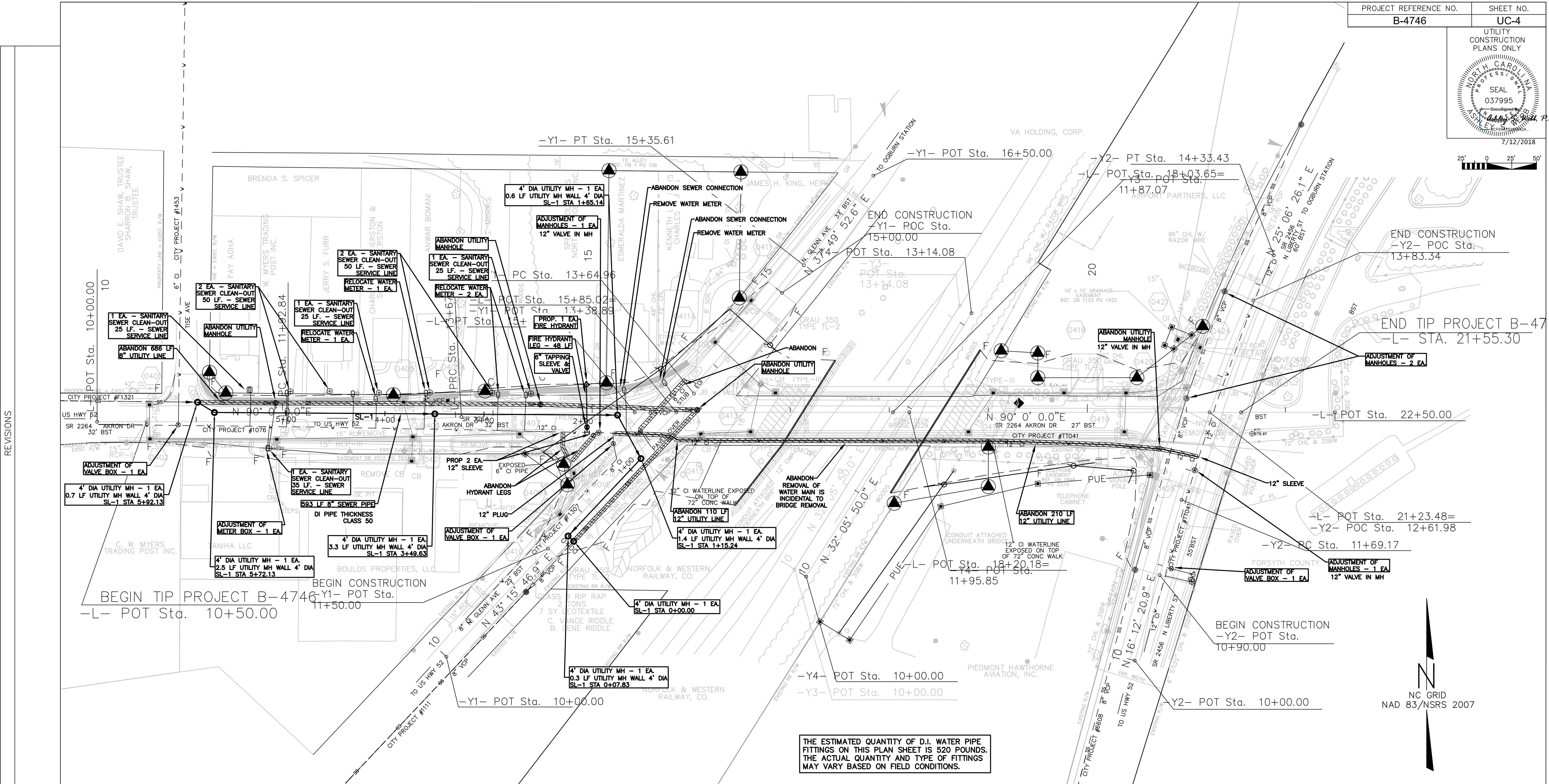
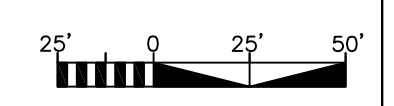
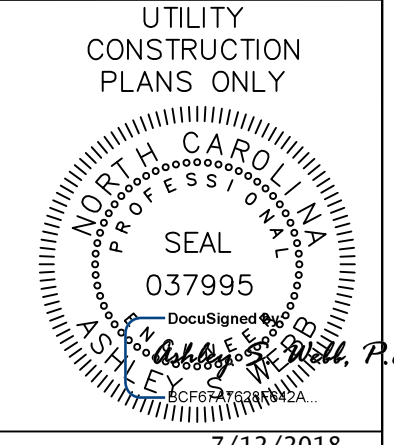


Hydrant and Valve Installation

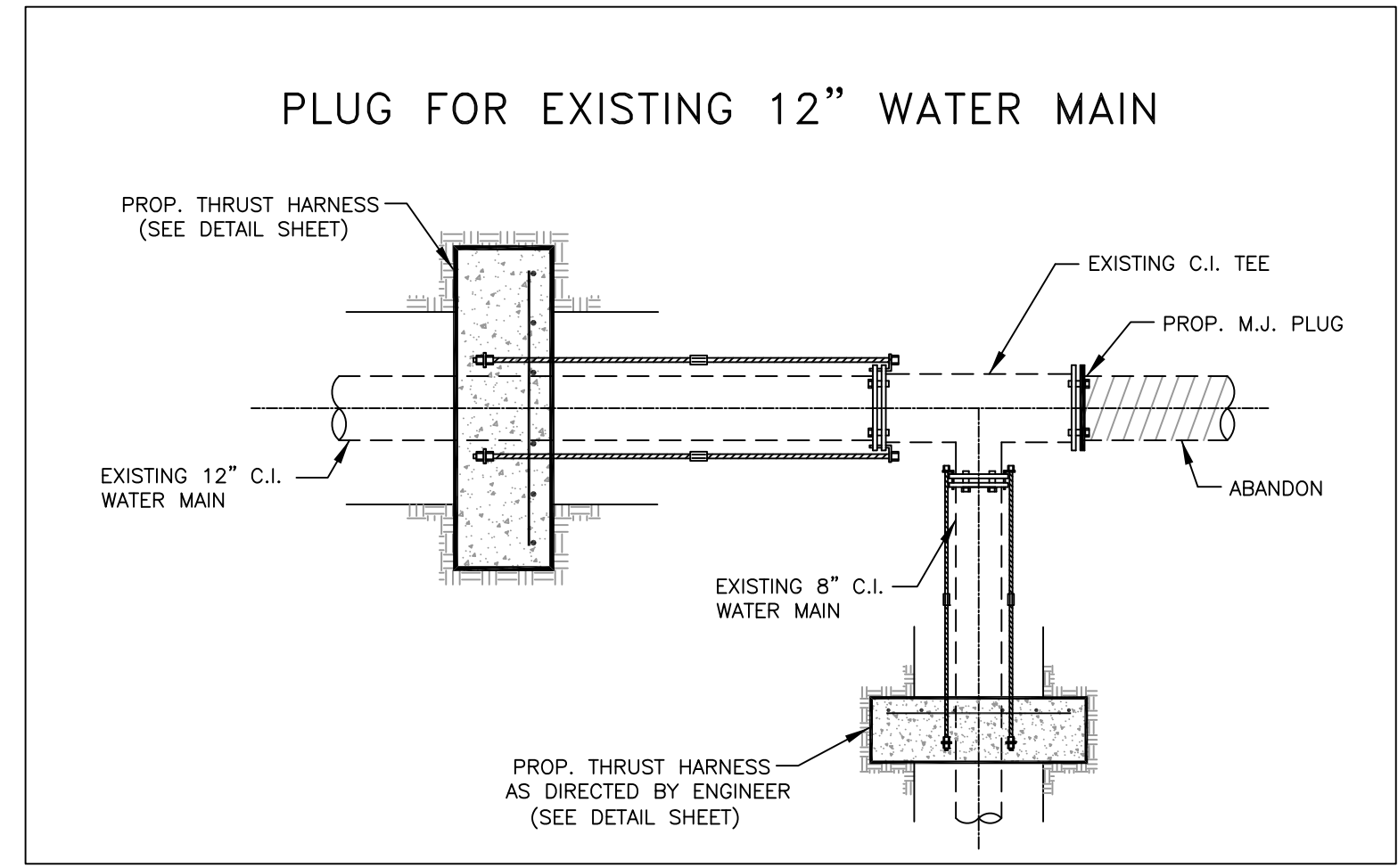


MAXIMUM TRENCH WIDTH AT TOP OF PIPE

NOMINAL PIPE SIZE (INCHES)	TRENCH WIDTH (INCHES)	NOMINAL PIPE SIZE (INCHES)	TRENCH WIDTH (INCHES)
4	28	20	44
6	30	24	48
8	32	30	54
10	34	36	60
12	36	42	66
14	38	48	72
16	40	54	78
18	42		



THE ESTIMATED QUANTITY OF D.I. WATER PIPE FITTINGS ON THIS PLAN SHEET IS 520 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS MAY VARY BASED ON FIELD CONDITIONS.



NOTE : FOR PROFILE, SEE SHEET UC-5

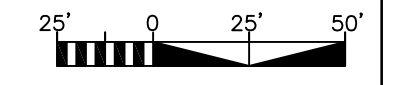
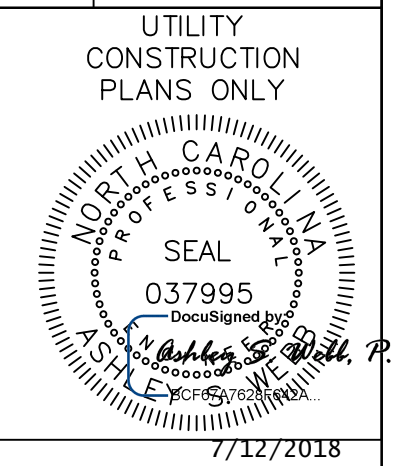
**12" D.I. WATER MAIN
ABANDONMENT - PROJECT 74358**

**8" D.I. SEWER MAIN
RELOCATION - PROJECT 75358**

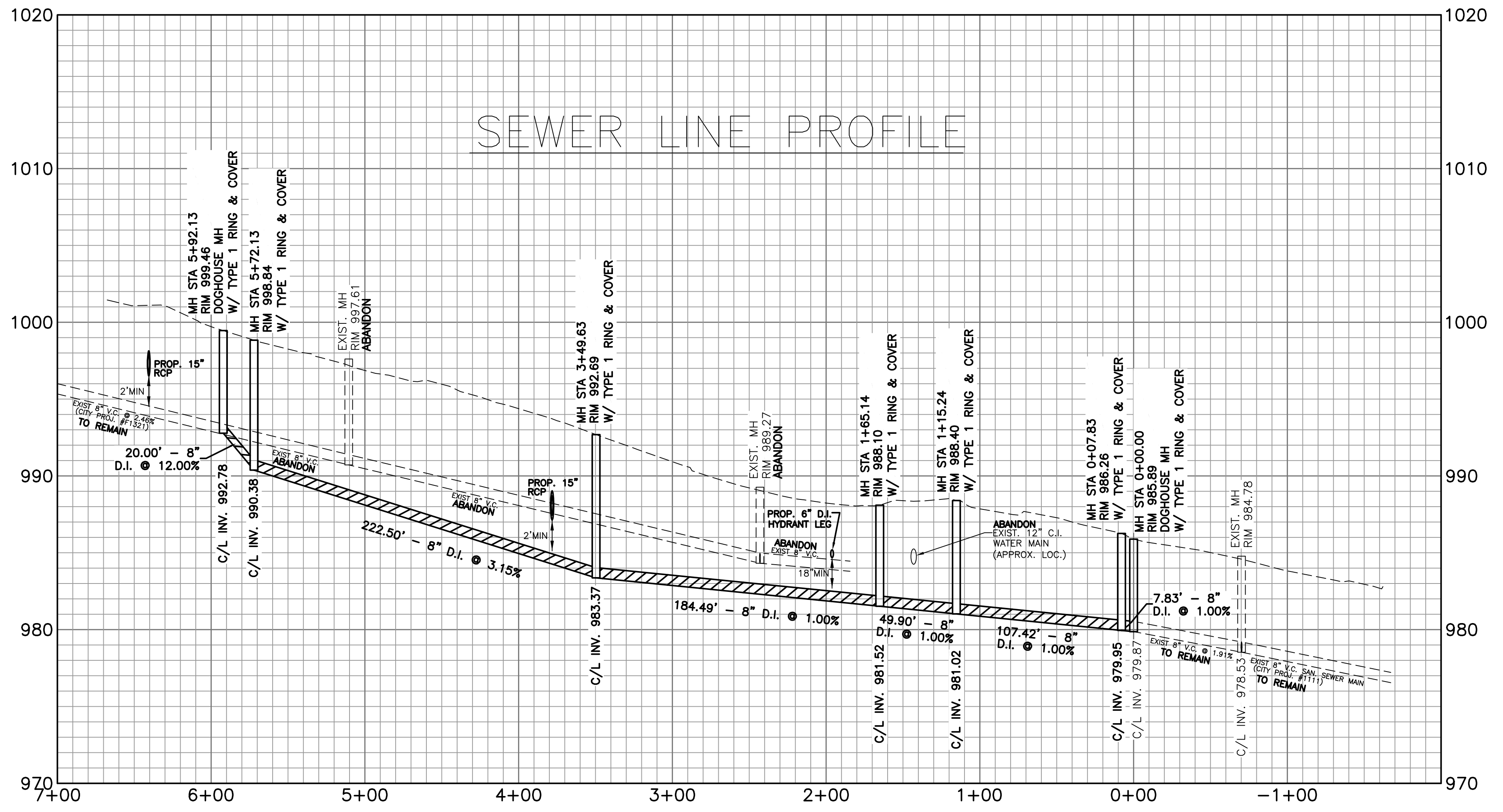
CITY OF WINSTON-SALEM
 PERMIT NUMBER
 WATER 2916
 SEWER 2916
 DATE 7/11/18

9358

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NOTE : FOR PLAN,
SEE SHEET UC-4

12" D.I. WATER MAIN
ABANDONMENT - PROJECT 74358

8" D.I. SEWER MAIN
RELOCATION - PROJECT 75358

9358