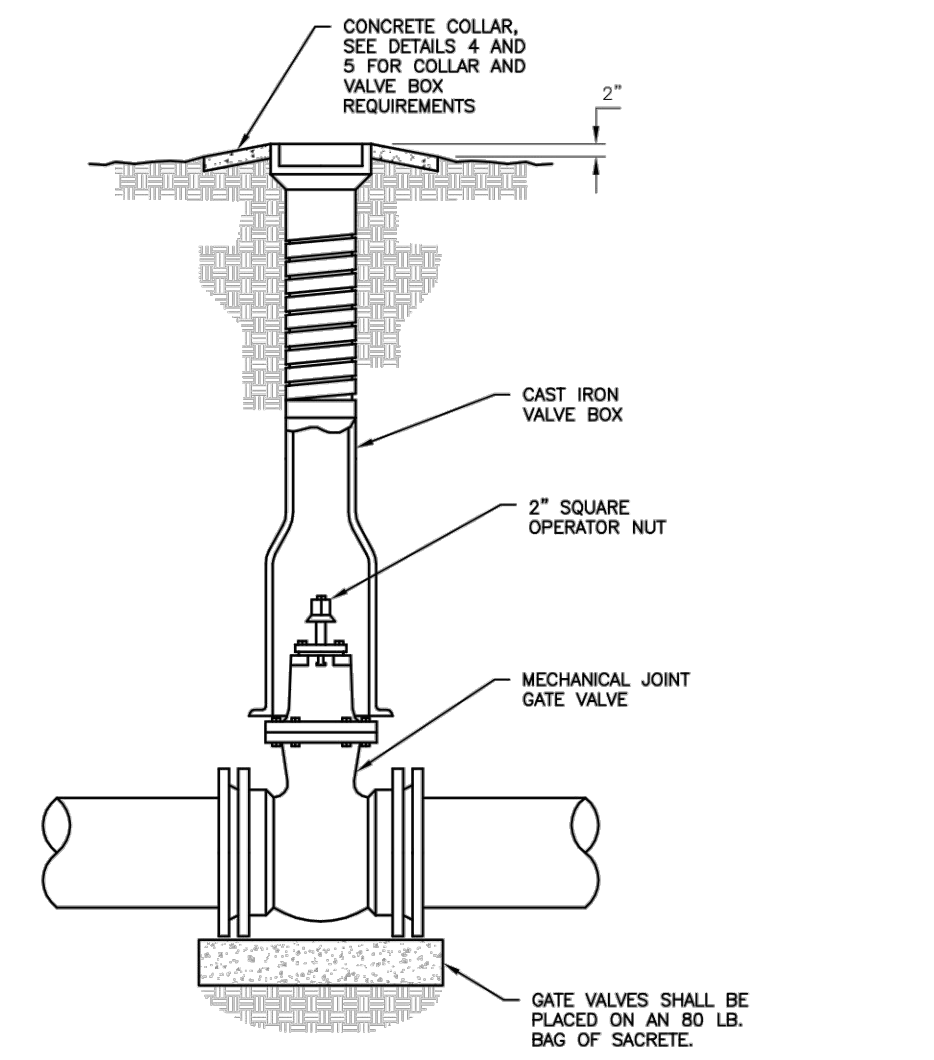
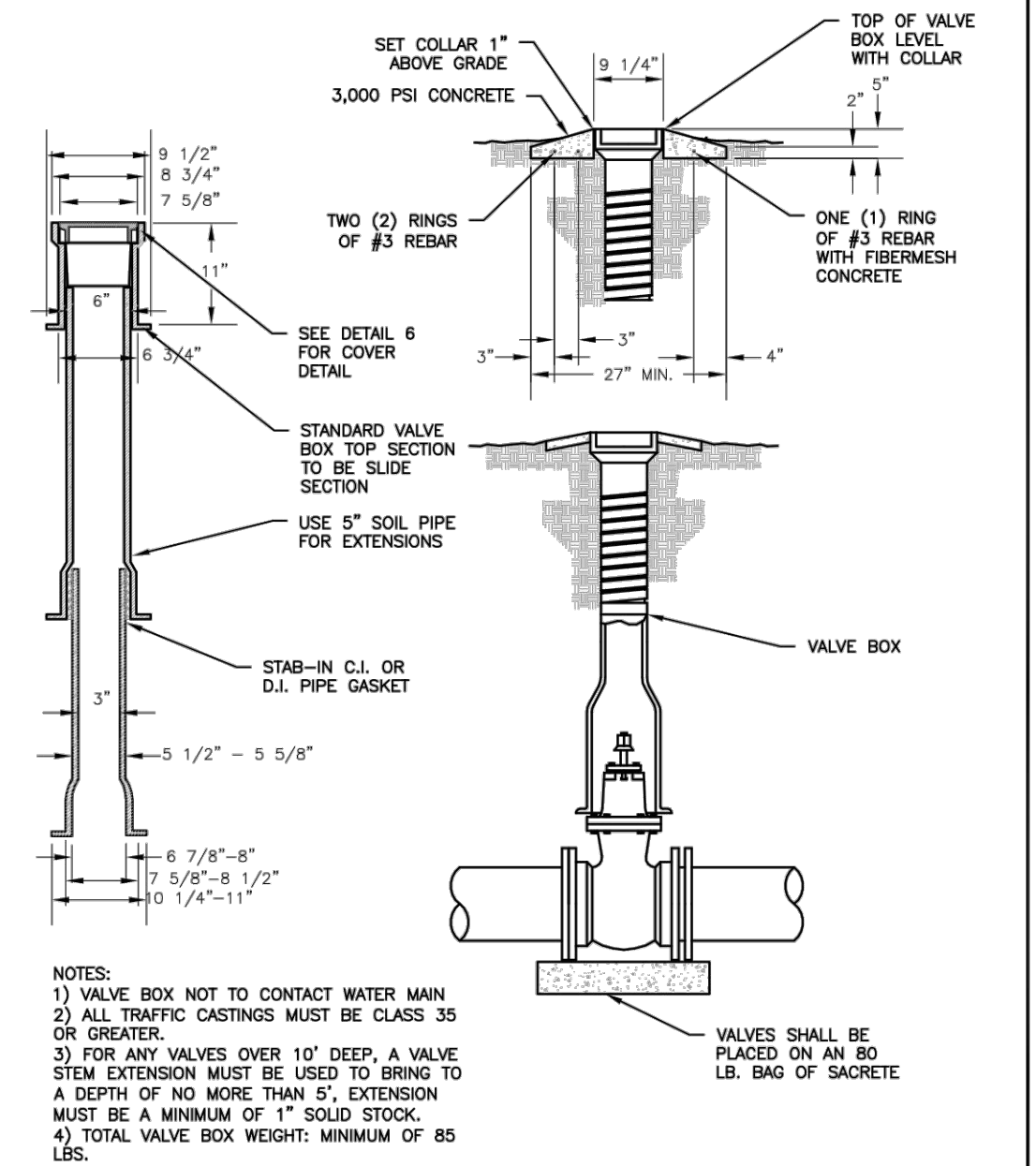


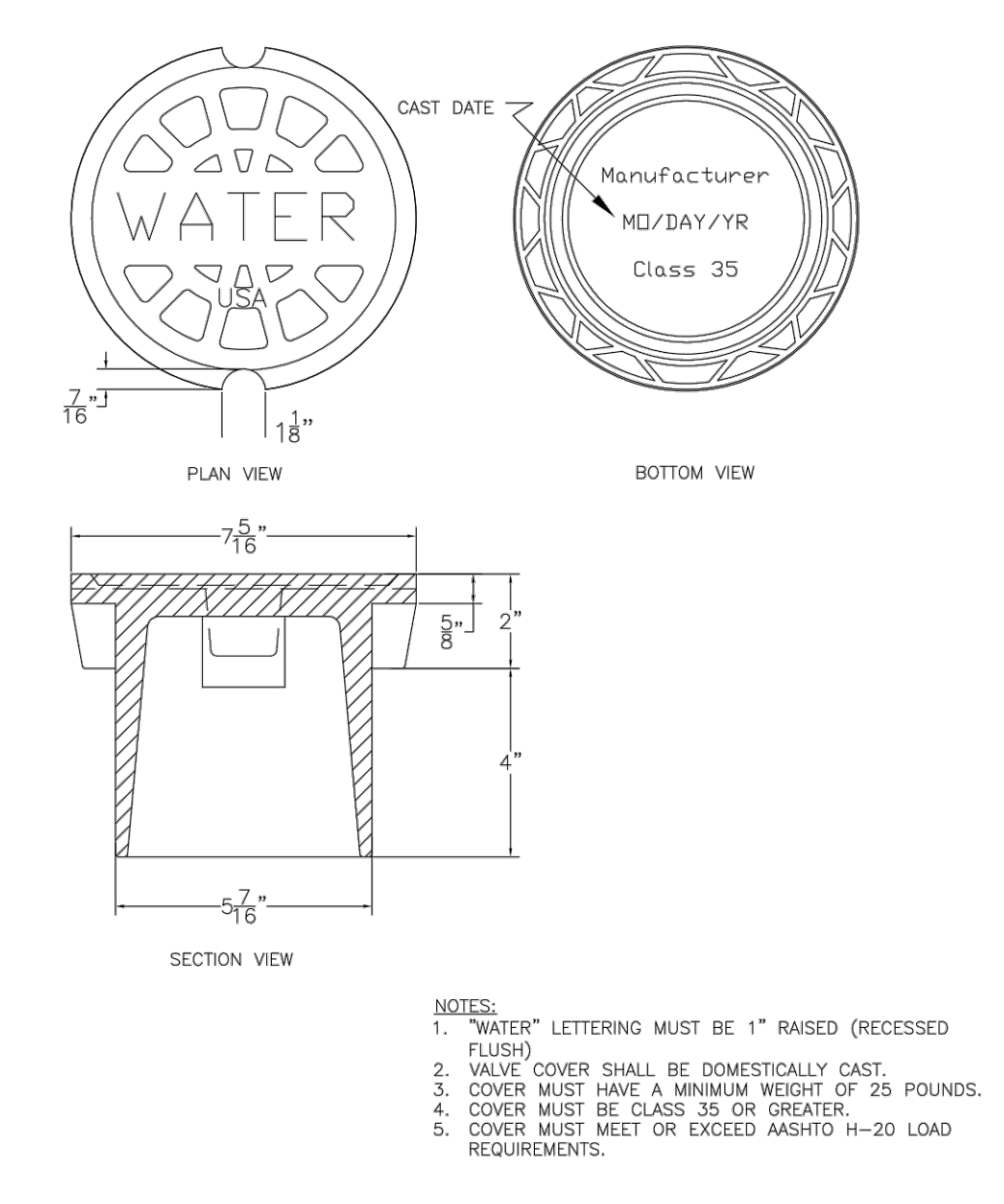
DETAIL	CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION
1	FIRE HYDRANT ASSEMBLY
REVISION DATE	JULY 1, 2015



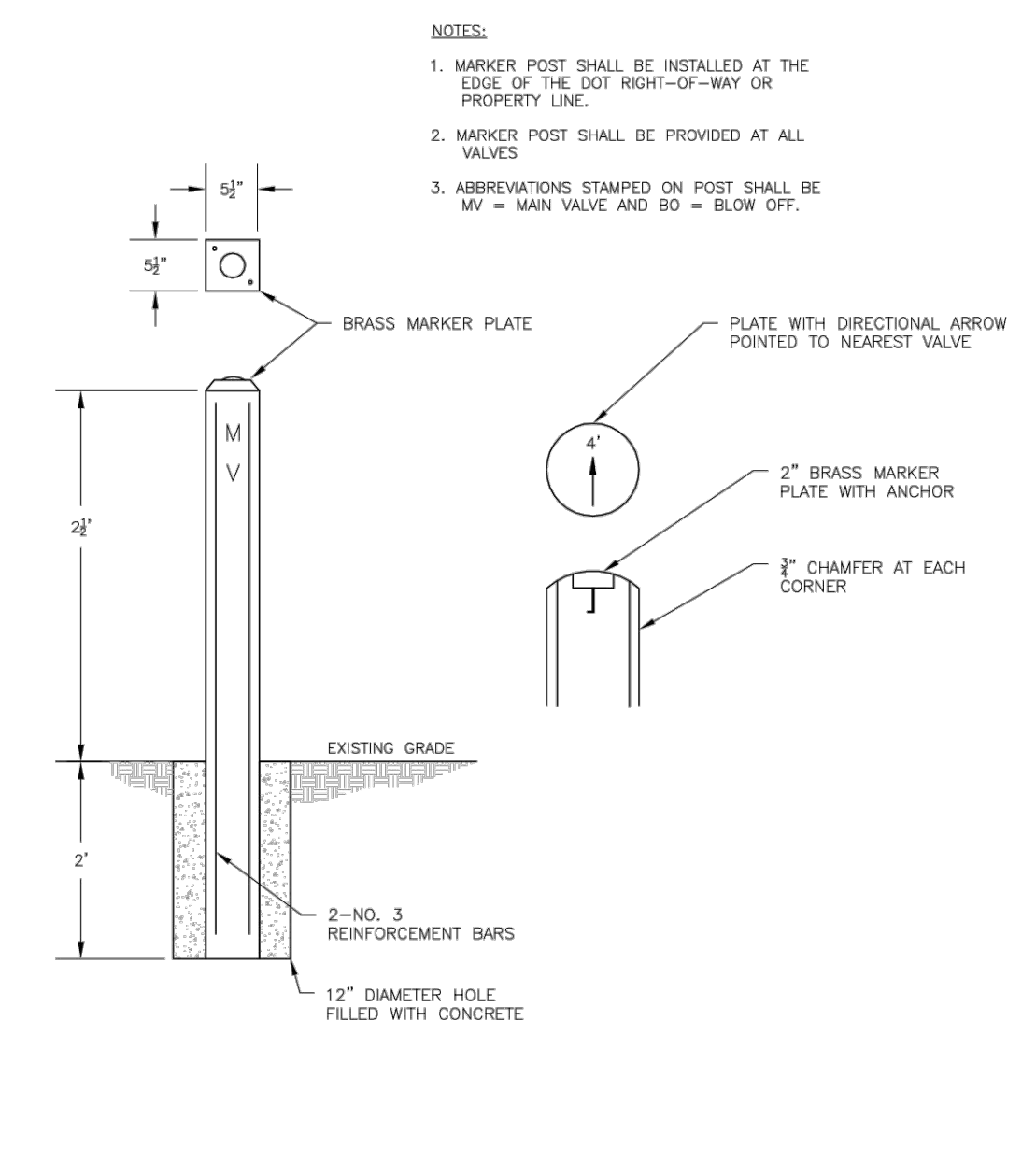
DETAIL	CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION
3	GATE VALVE ASSEMBLY
REVISION DATE	JULY 1, 2015



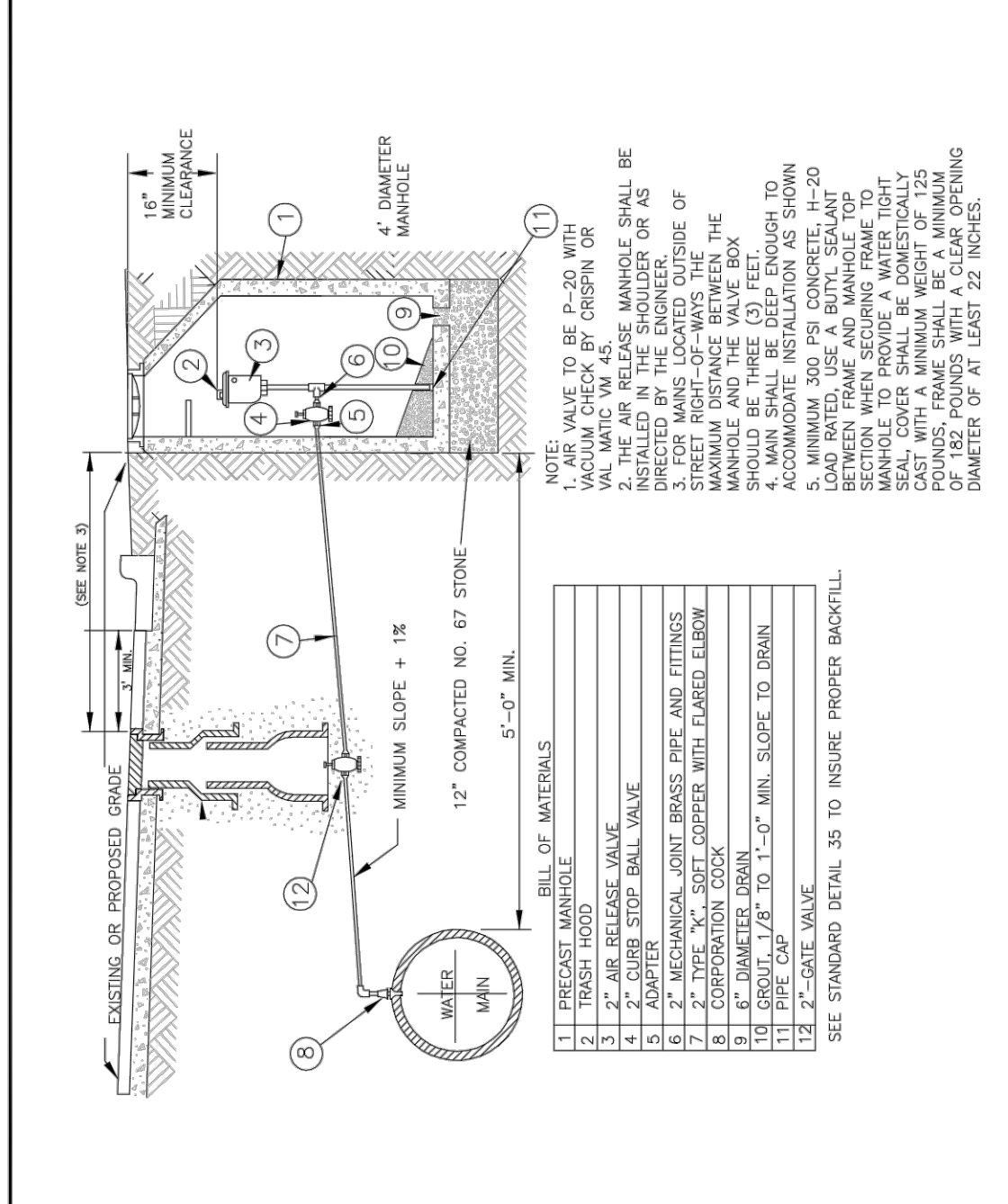
DETAIL	CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION
4	VALVE BOX AND COLLAR NOT IN PAVEMENT
REVISION DATE	JULY 1, 2015



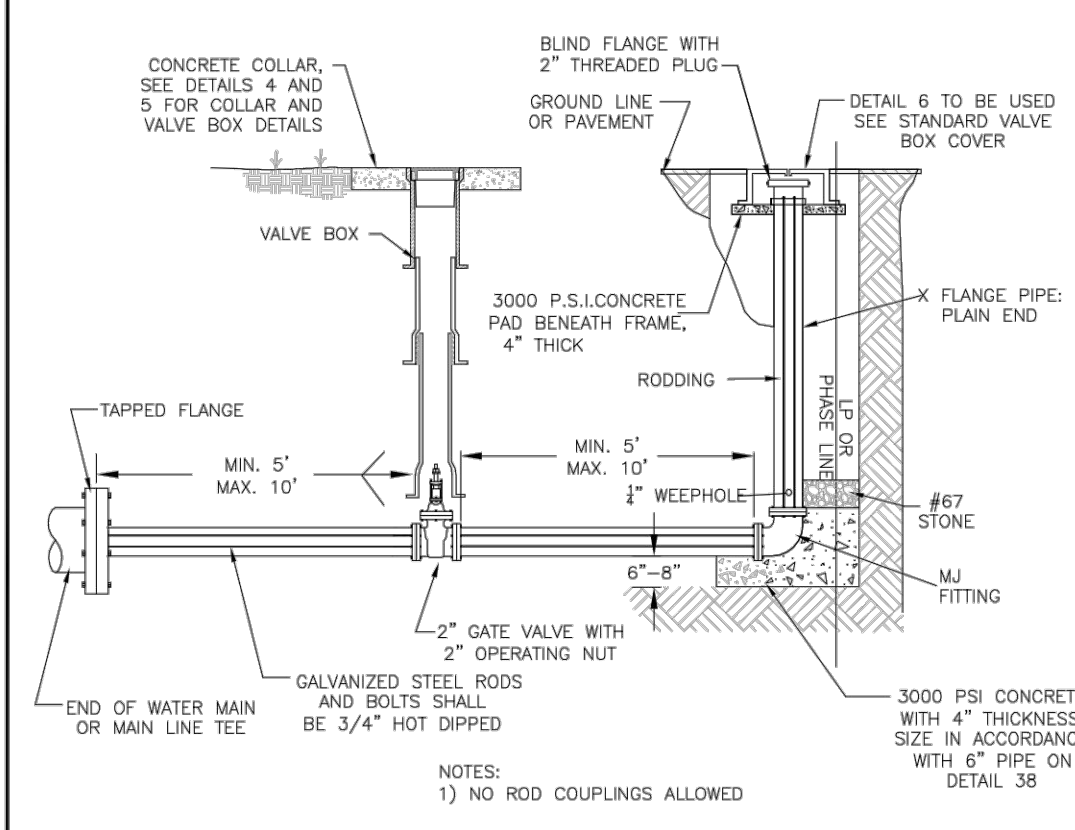
DETAIL	CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION
6	VALVE BOX COVER
REVISION DATE	JULY 1, 2015



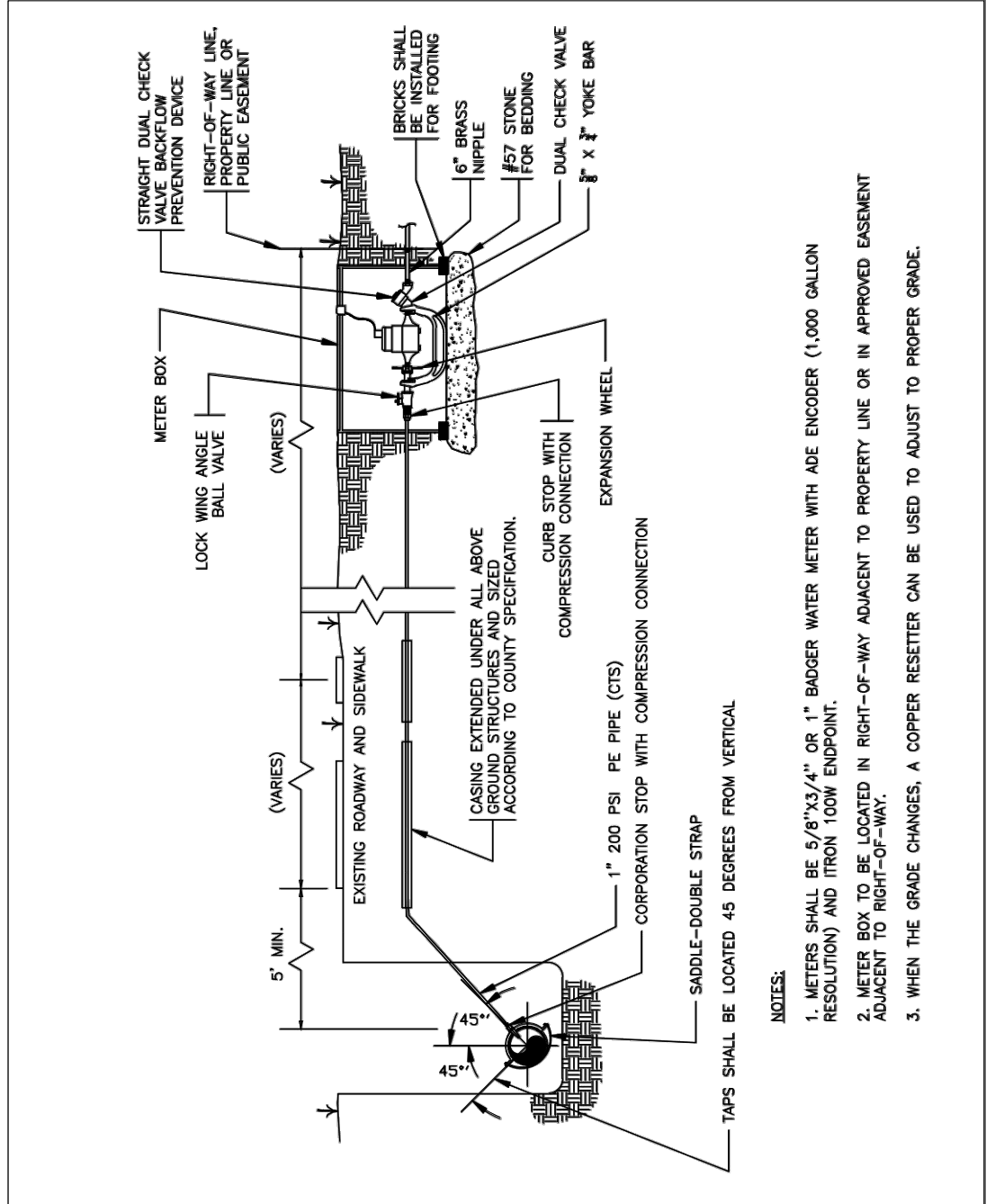
DETAIL	CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION
7	VALVE MARKER POST
REVISION DATE	JULY 1, 2015



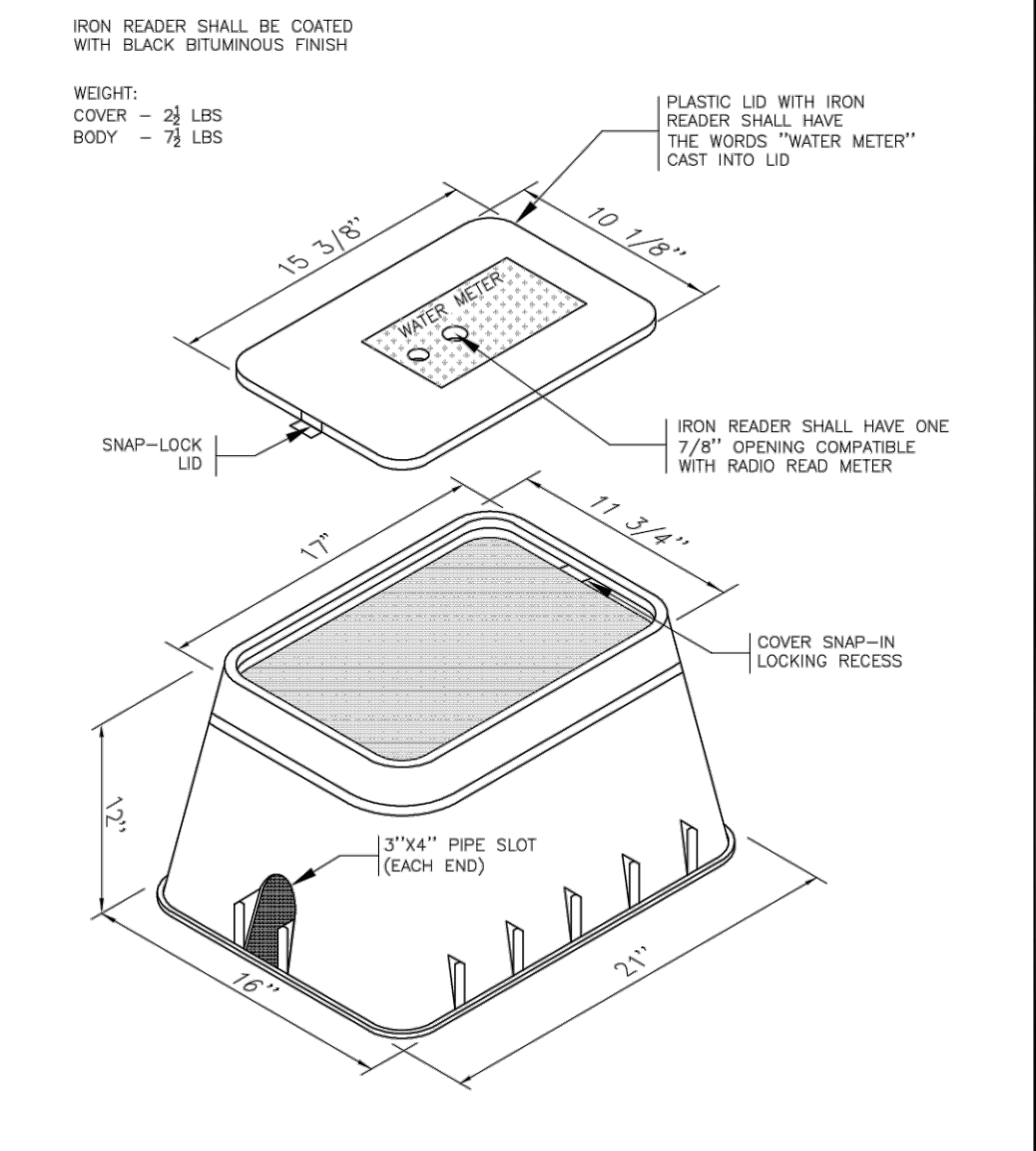
DETAIL	CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION
11	STANDARD WATER AIR RELEASE VALVE
REVISION DATE	JULY 1, 2015



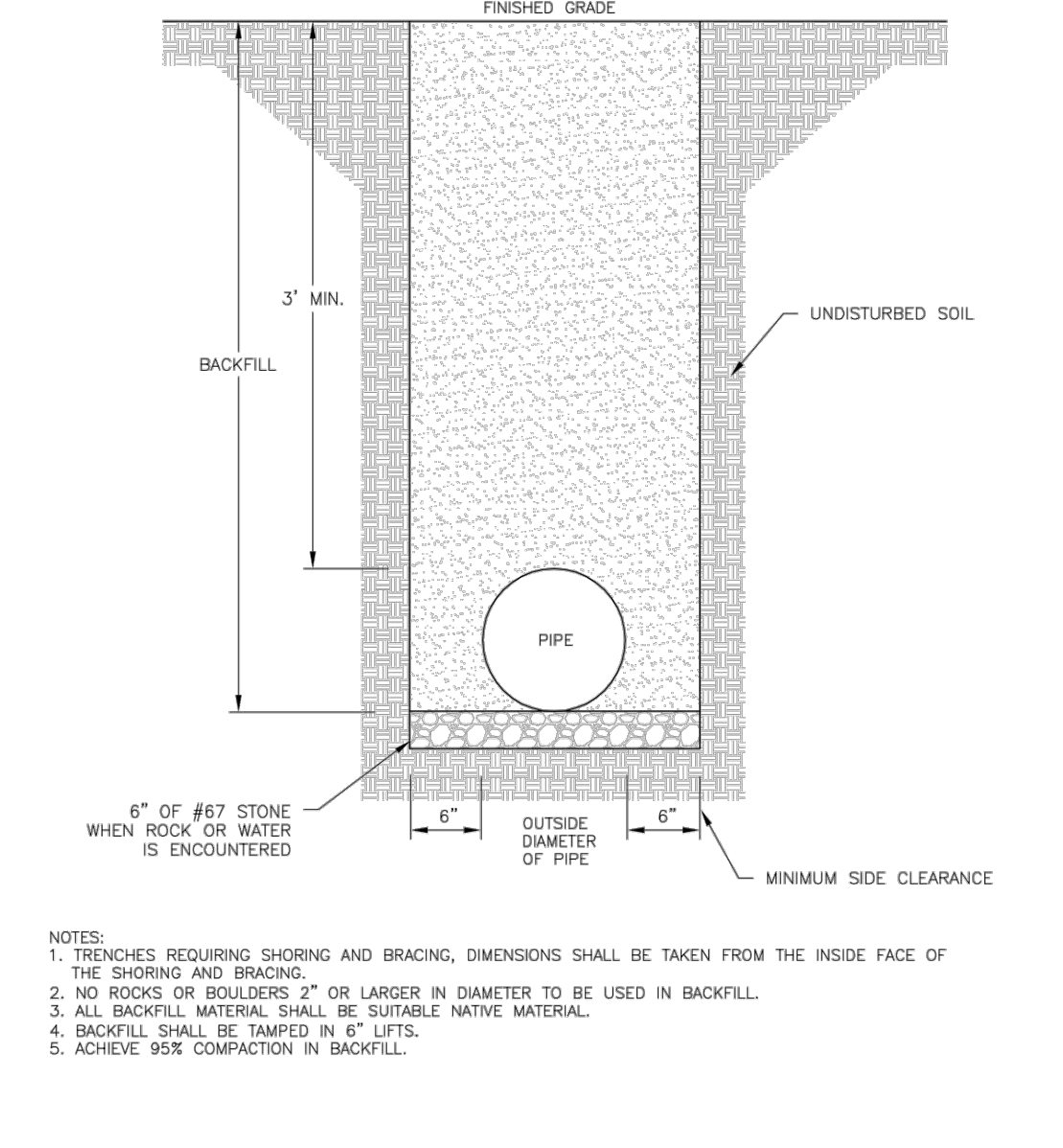
DETAIL	CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION
13	2" BLOW-OFF ASSEMBLY AT END OF WATER MAIN
REVISION DATE	JULY 1, 2015



DETAIL	CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION
16	1" x 3/4" - 1" METER SERVICE CONNECTION
REVISION DATE	NOVEMBER 16, 2015



DETAIL	CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION
17	WATER METER BOX
REVISION DATE	JULY 1, 2015



DETAIL	CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION
35	DUCTILE IRON PIPE TRENCH BOTTOM DIMENSIONS AND BACKFILLING REQUIREMENTS
REVISION DATE	JULY 1, 2015

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL CHATHAM COUNTY, NCDEQ PWSS, AND NCDOT STANDARDS AND SPECIFICATIONS.

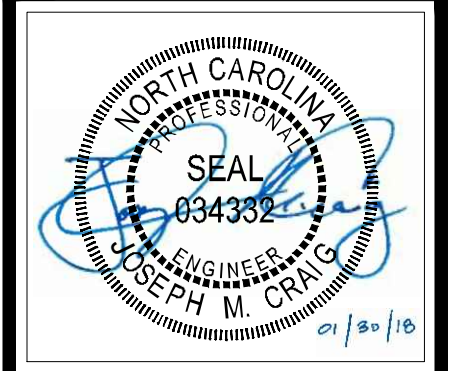
NO.	REVISIONS	DATE
3	REVISIONS PER NCDOT COMMENTS	01/30/18
2	REVISIONS PER CHATHAM COUNTY WATER & AQUA COMMENTS	10/31/17
1	CLIENT REQUESTED REVISIONS	10/11/17

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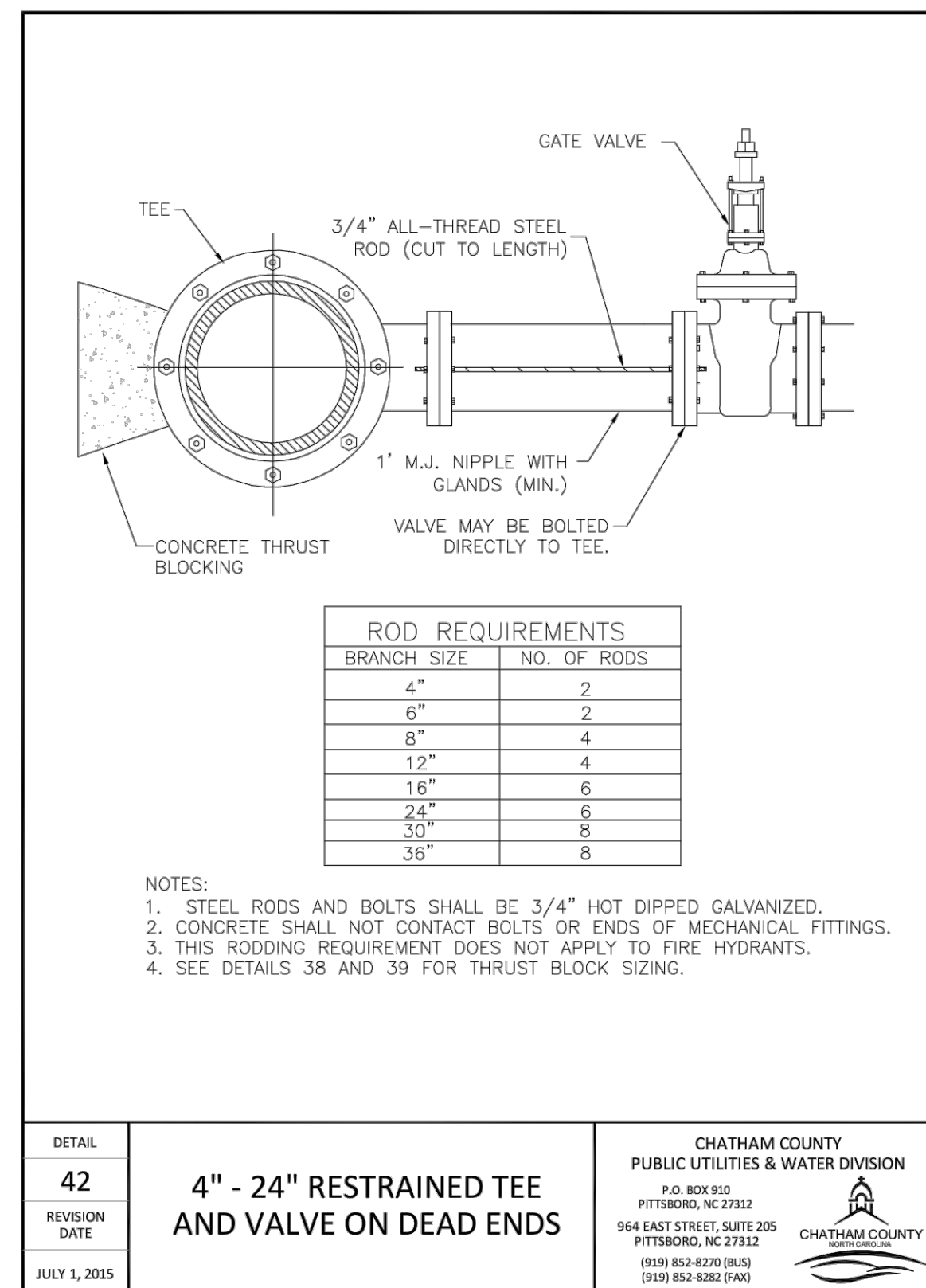
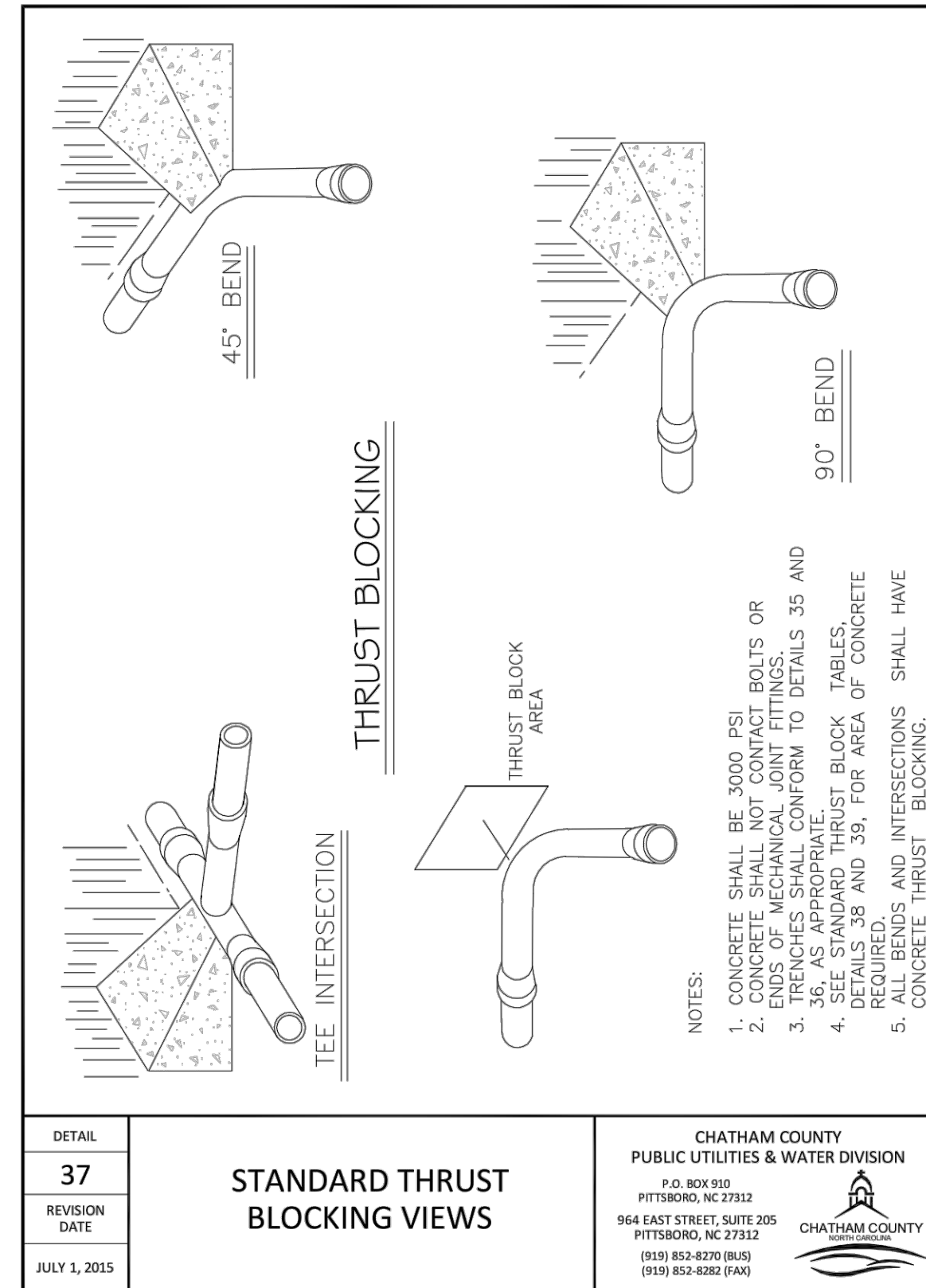
THE LEGACY PHASE 5A3

CONSTRUCTION PLANS

WATER UTILITY DETAILS

CHATHAM COUNTY, NORTH CAROLINA

Date:	10/06/17
Scale:	AS NOTED
Drawn:	TAN
Checked:	MPA
Project No:	330-05
Computer Dwg. Name:	8 - Water Details



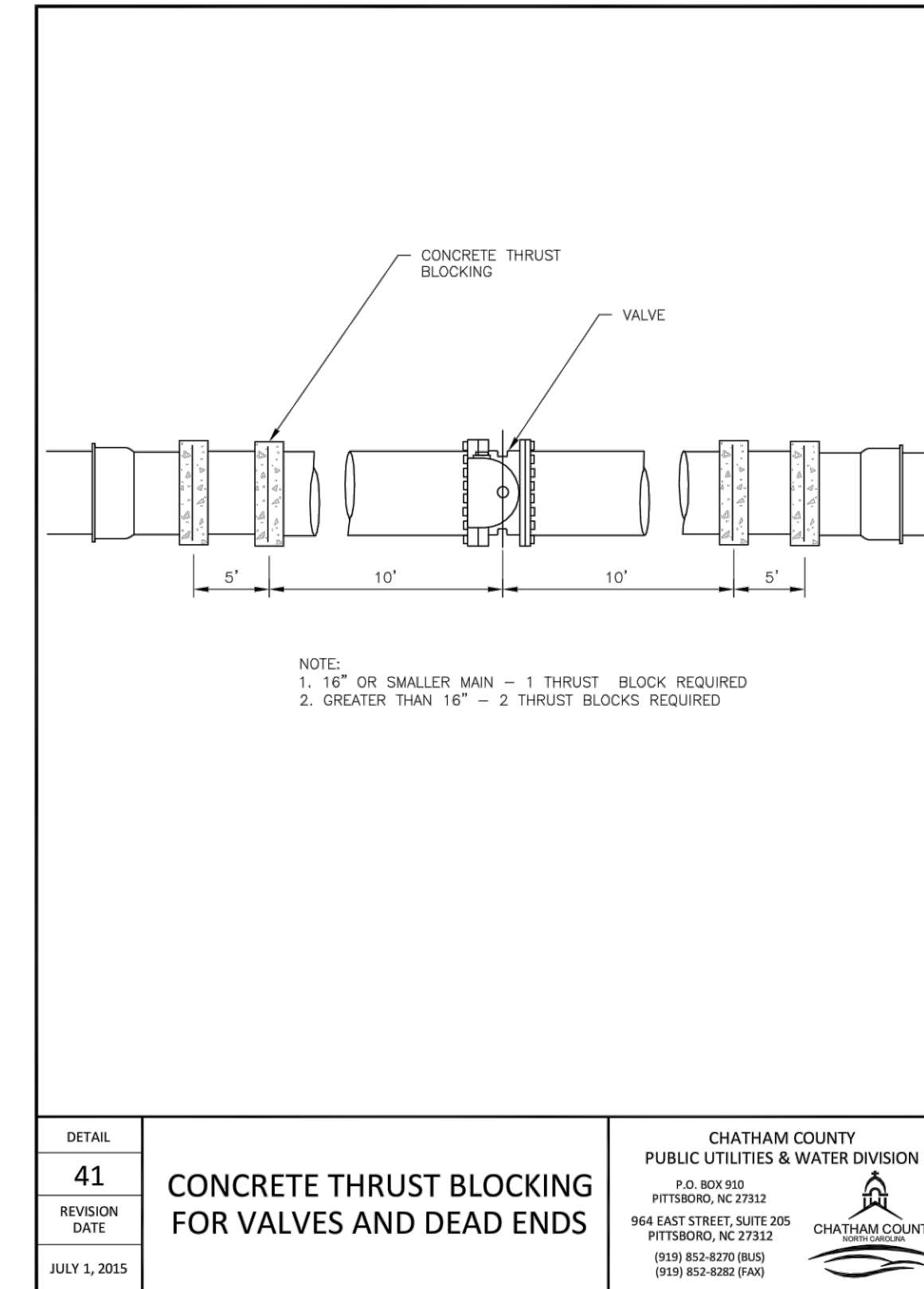
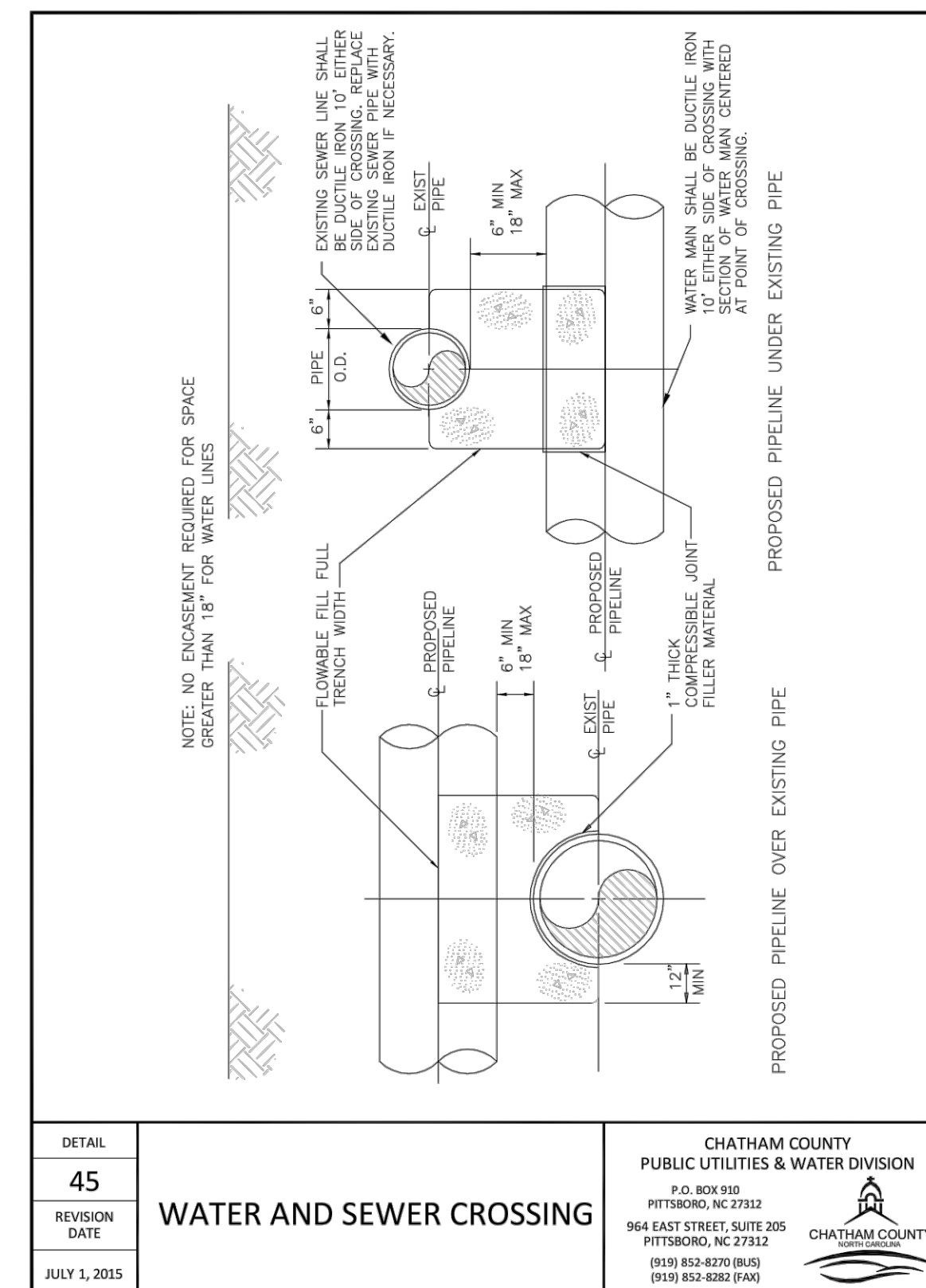
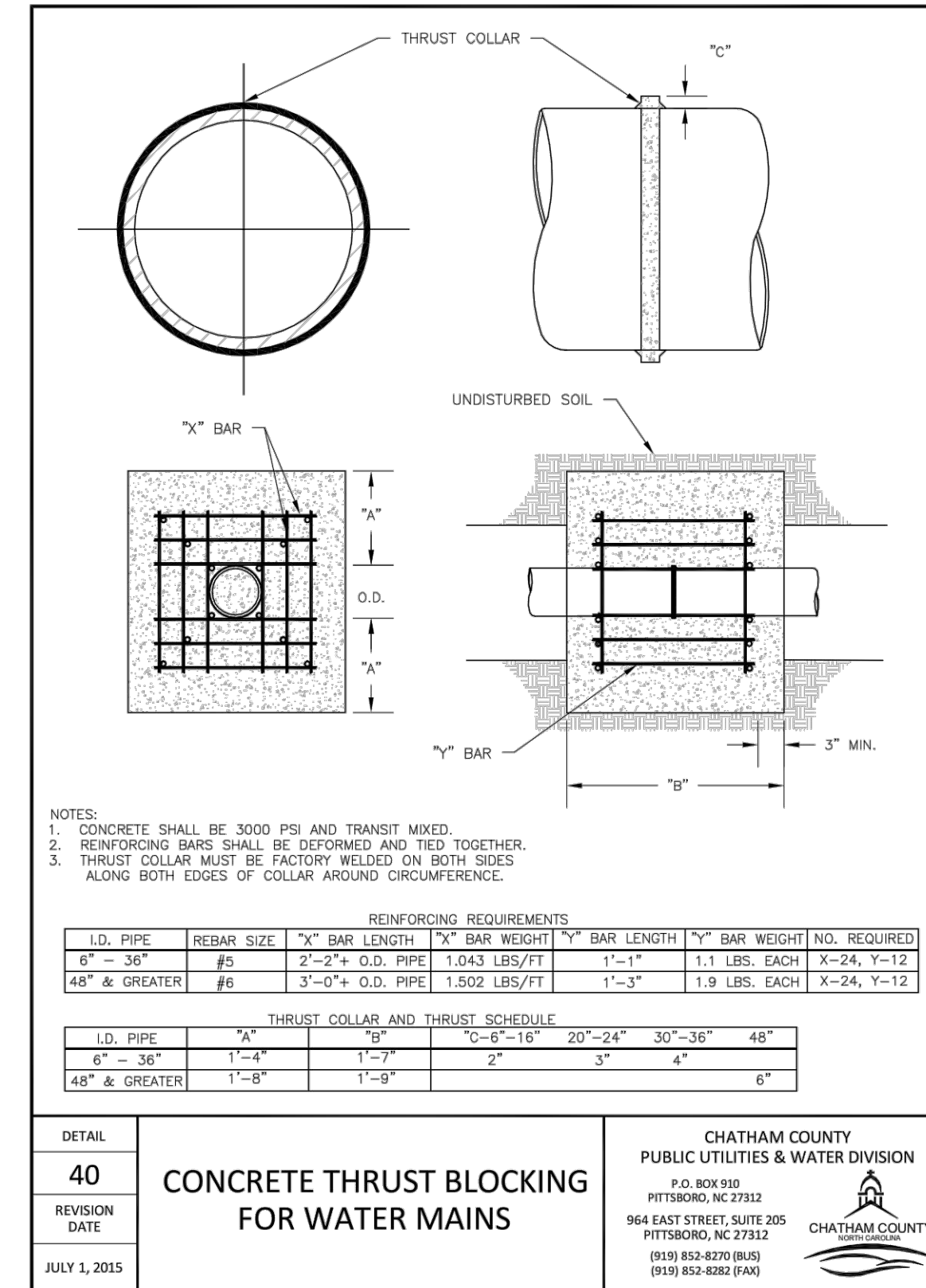
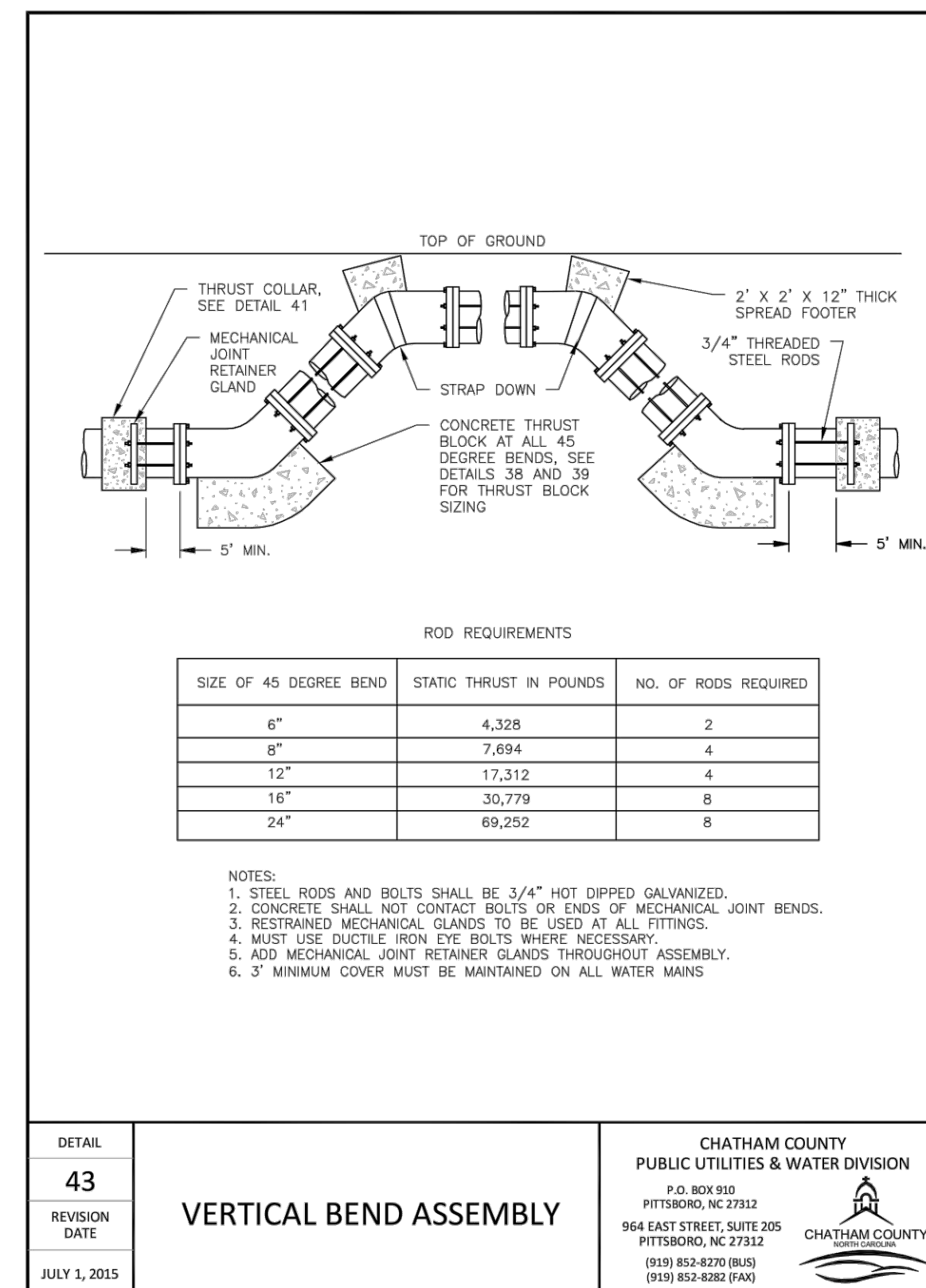
REACTION BEARING AREAS FOR HORIZONTAL WATER PIPE BENDS  
BASED ON TEST PRESSURE OF 200 P.S.I.  
ALL AREAS GIVEN IN SQUARE FEET.

SIZE AND DEGREE OF BEND	STATIC THRUST IN POUNDS	MODERATELY DUCTILE CLAY PIPE 18\"/>
6"		
11 1/4"	1,108	1 1 1 1 1 1 1 1
22 1/2"	2,207	1 2 2 1 1 1 1 3
45"	4,328	2 4 3 1 1 2 5 1
90"	7,996	2 4 5 1 1 2 8 1
PLUG	5,659	2 3 4 1 1 2 6 1
8"		
11 1/4"	1,970	1 1 2 1 1 1 2 1
22 1/2"	3,922	1 2 3 1 1 1 4 1
45"	7,694	2 4 5 1 1 2 8 1
90"	14,215	4 8 9 2 2 4 15 2
PLUG	10,053	3 5 6 2 2 3 10 1
12"		
11 1/4"	4,433	2 3 3 1 1 2 5 1
22 1/2"	8,826	3 5 6 2 2 3 9 1
45"	17,312	5 9 11 3 3 5 18 2
90"	31,983	8 16 19 4 4 8 32 4
PLUG	22,619	6 12 14 3 3 6 23 3
16"		
11 1/4"	7,881	2 4 5 1 1 2 8 1
22 1/2"	15,691	4 8 10 2 2 4 16 2
45"	30,779	8 16 19 4 4 8 31 4
90"	56,861	15 29 35 8 8 15 57 6
PLUG	40,213	10 21 25 5 5 10 41 5

REACTION BEARING AREAS ARE IN SQUARE FEET MEASURED IN A VERTICAL PLANE IN THE TRENCH SIDE AT AN ANGLE OF 90° TO THE THRUST VECTOR.  
USE 6" - 90 DEGREE BEND VALUE FOR HYDRANTS FOR ADDITIONAL SAFETY FACTOR.

DETAIL: 38  
REVISION DATE: JULY 1, 2015

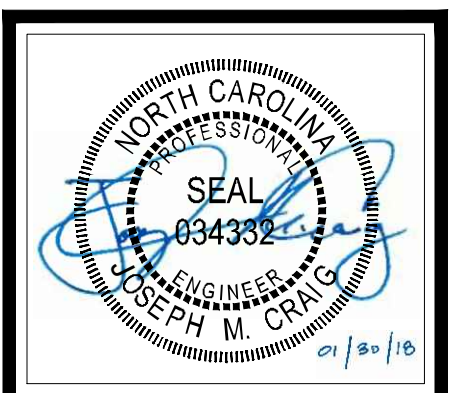
CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION  
P.O. BOX 910  
PITTSBORO, NC 27312  
964 EAST STREET, SUITE 205  
PITTSBORO, NC 27312  
(919) 852-8270 (919) 852-8282 (FAX)



ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL CHATHAM COUNTY, NCDEQ PWSS, AND NCDOT STANDARDS AND SPECIFICATIONS.

NO.	REVISIONS	DATE
3	REVISIONS PER NCDOT COMMENTS	01/30/18
2	REVISIONS PER CHATHAM COUNTY WATER & AQUA COMMENTS	10/31/17
1	CLIENT REQUESTED REVISIONS	10/11/17

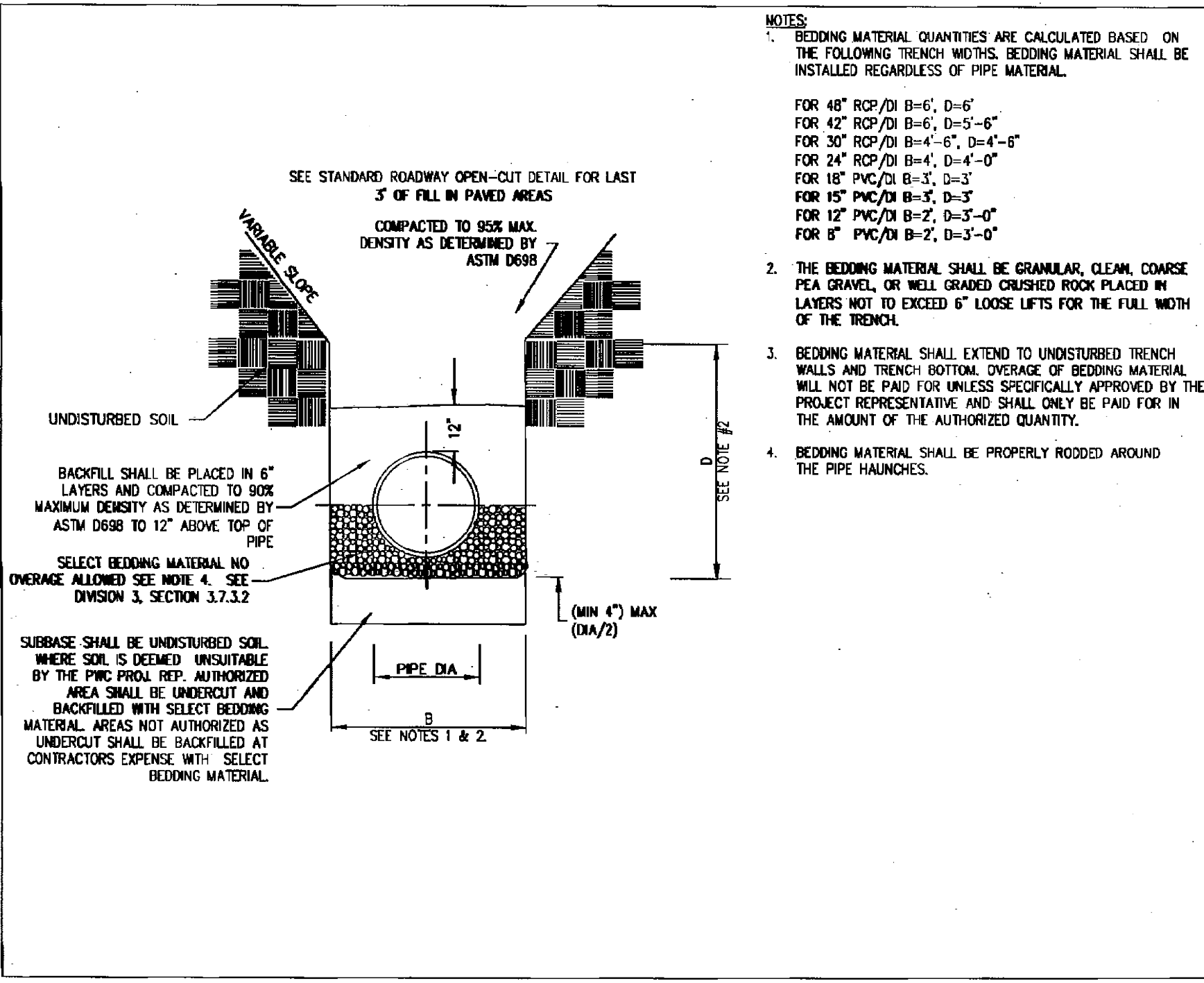
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PHONE: 919-367-8790  
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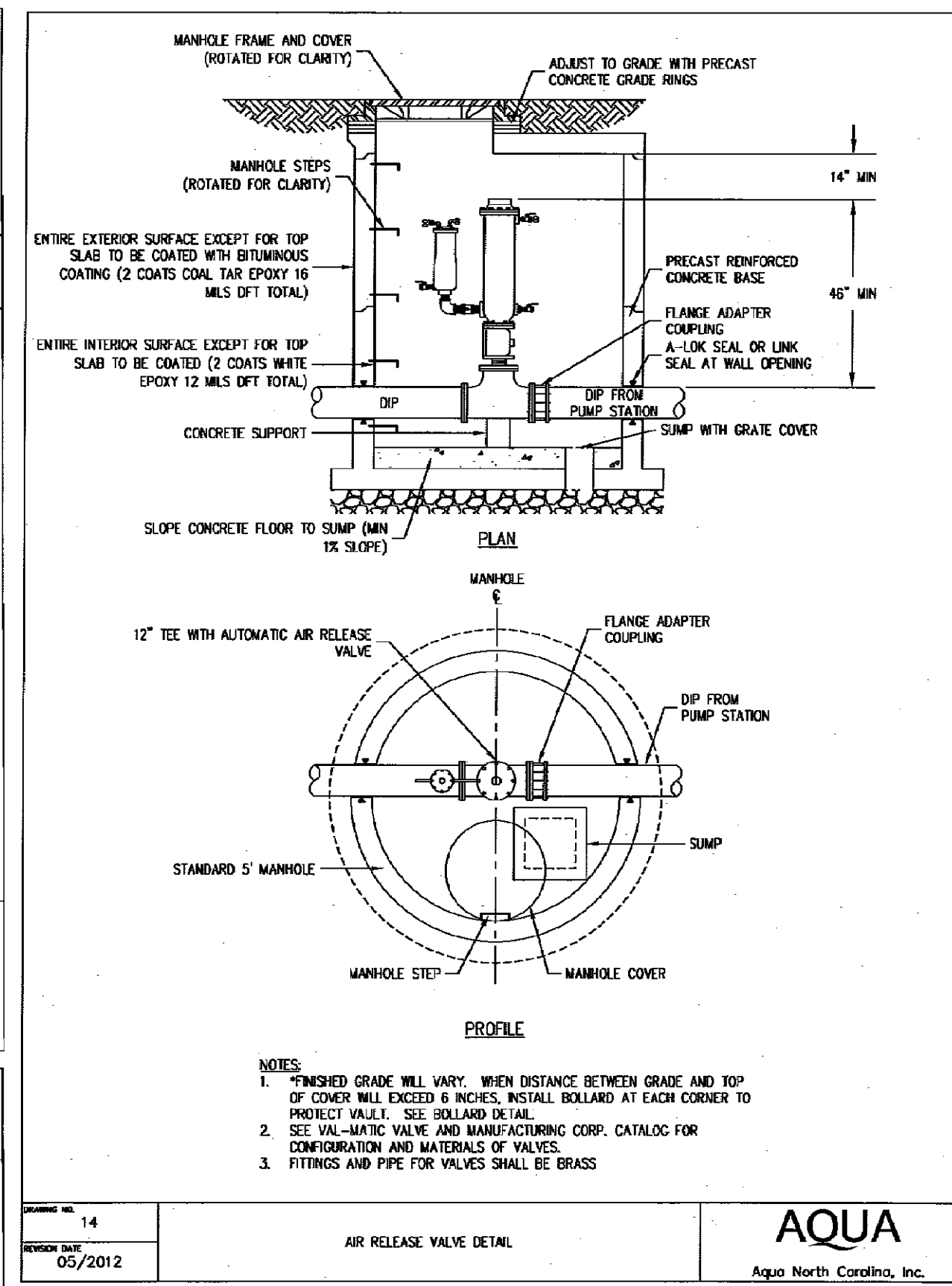
**THE LEGACY PHASE 5A3**  
CONSTRUCTION PLANS  
WATER UTILITY DETAILS  
CHATHAM COUNTY, NORTH CAROLINA

Date: 10/06/17  
Scale: AS NOTED  
Drawn: TAN  
Checked: MPA  
Project No: 330-05  
Computer Dwg. Name: 9 - Water Details

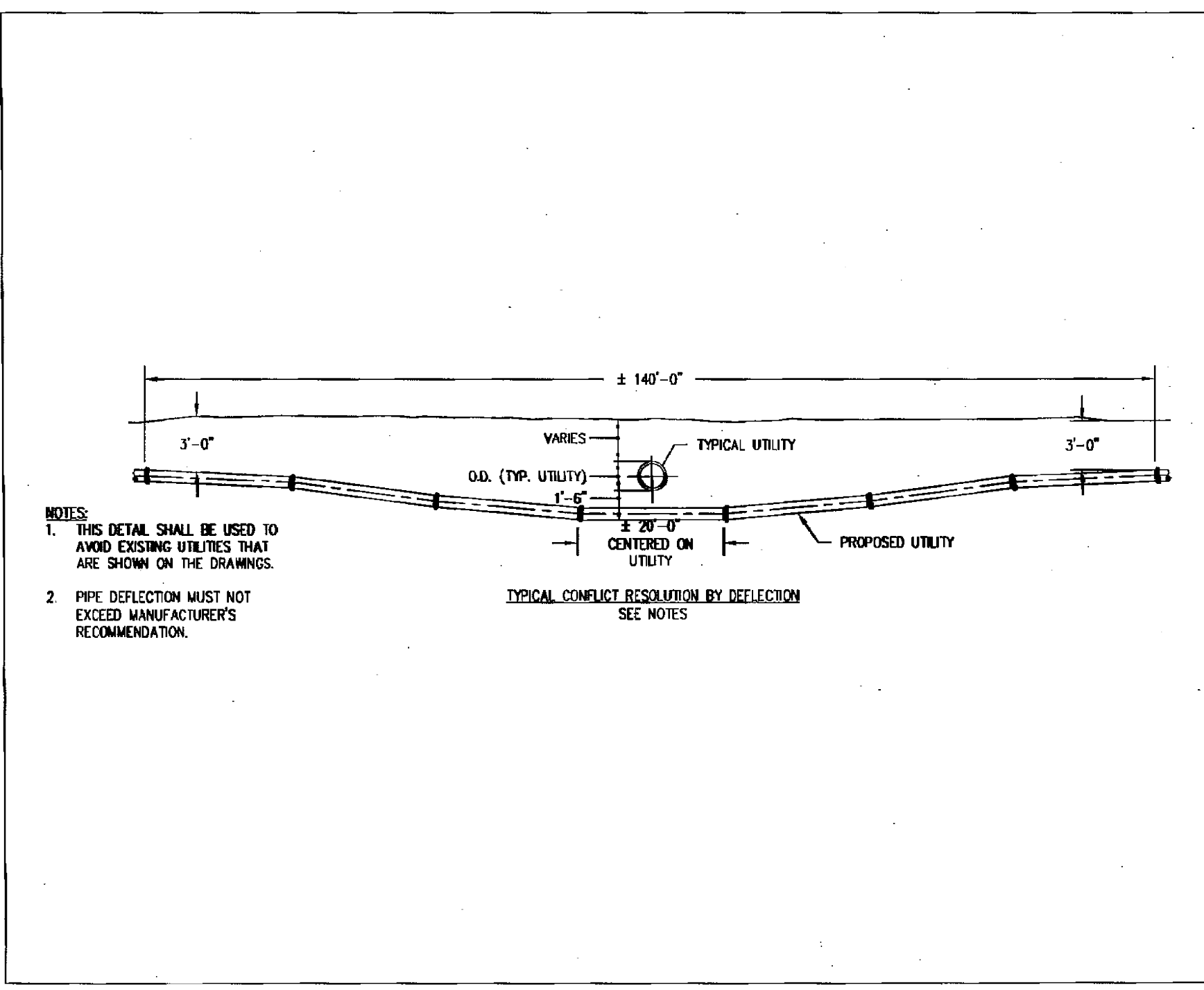
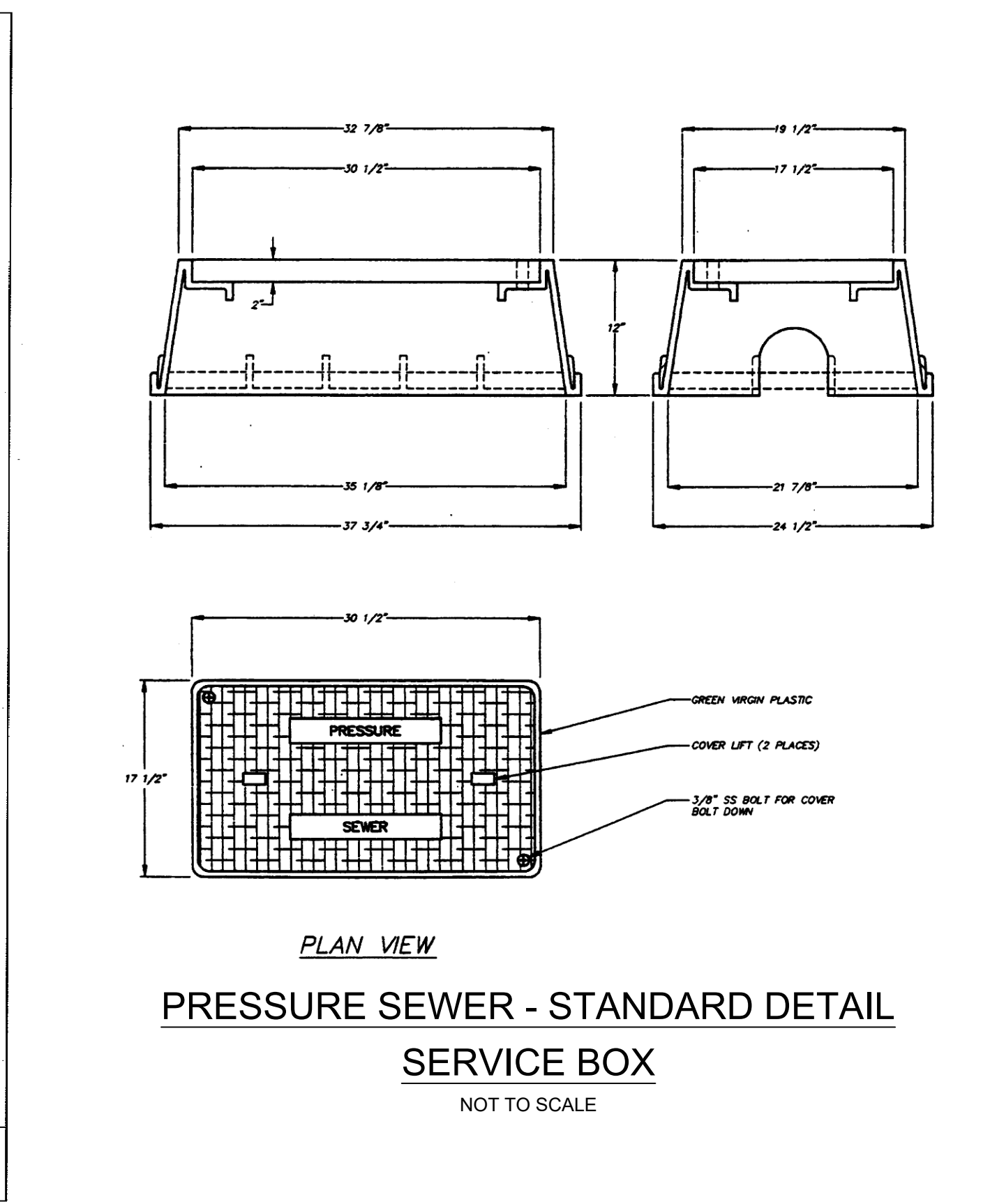
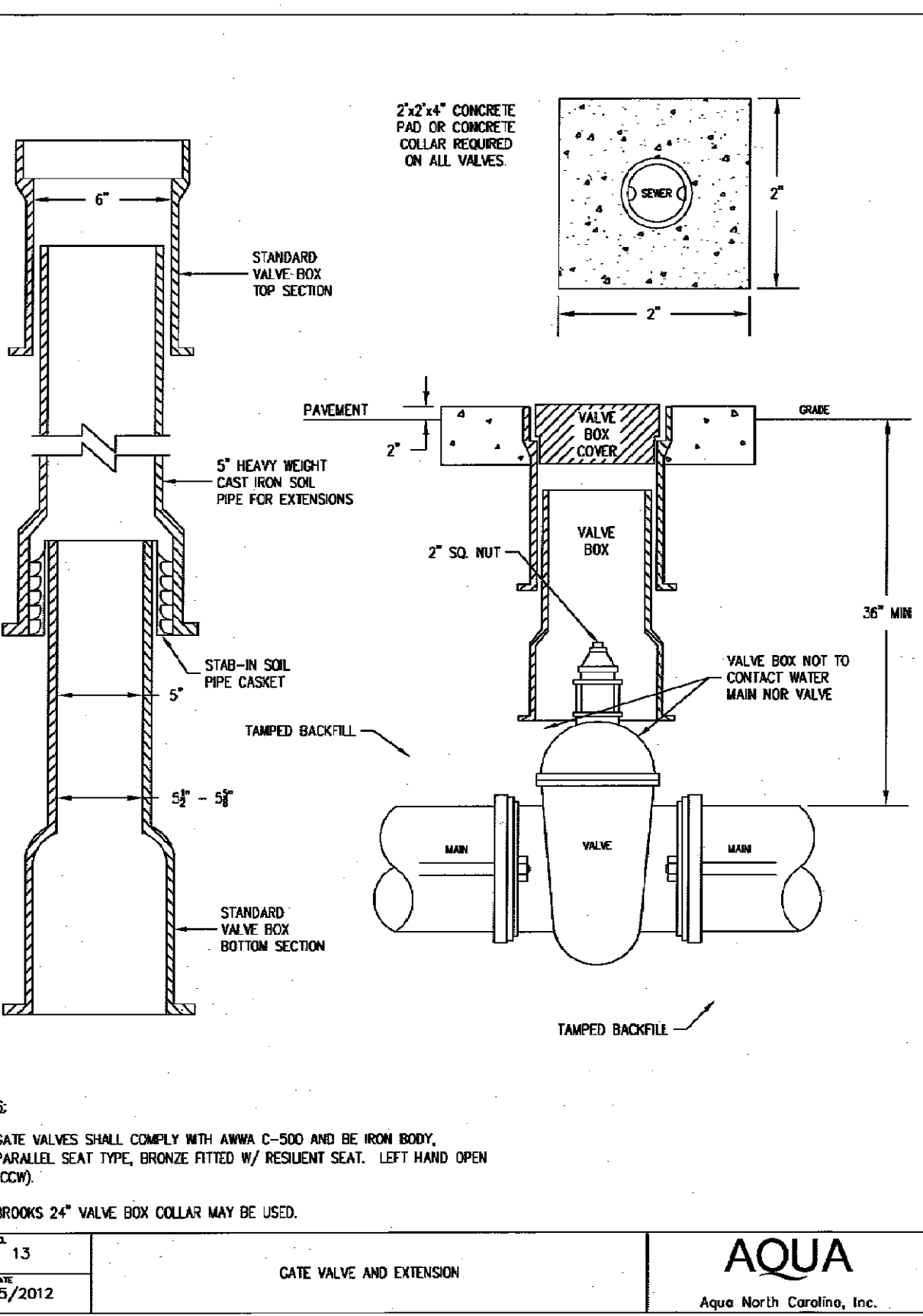
Sheet No: **9**  
Of 13



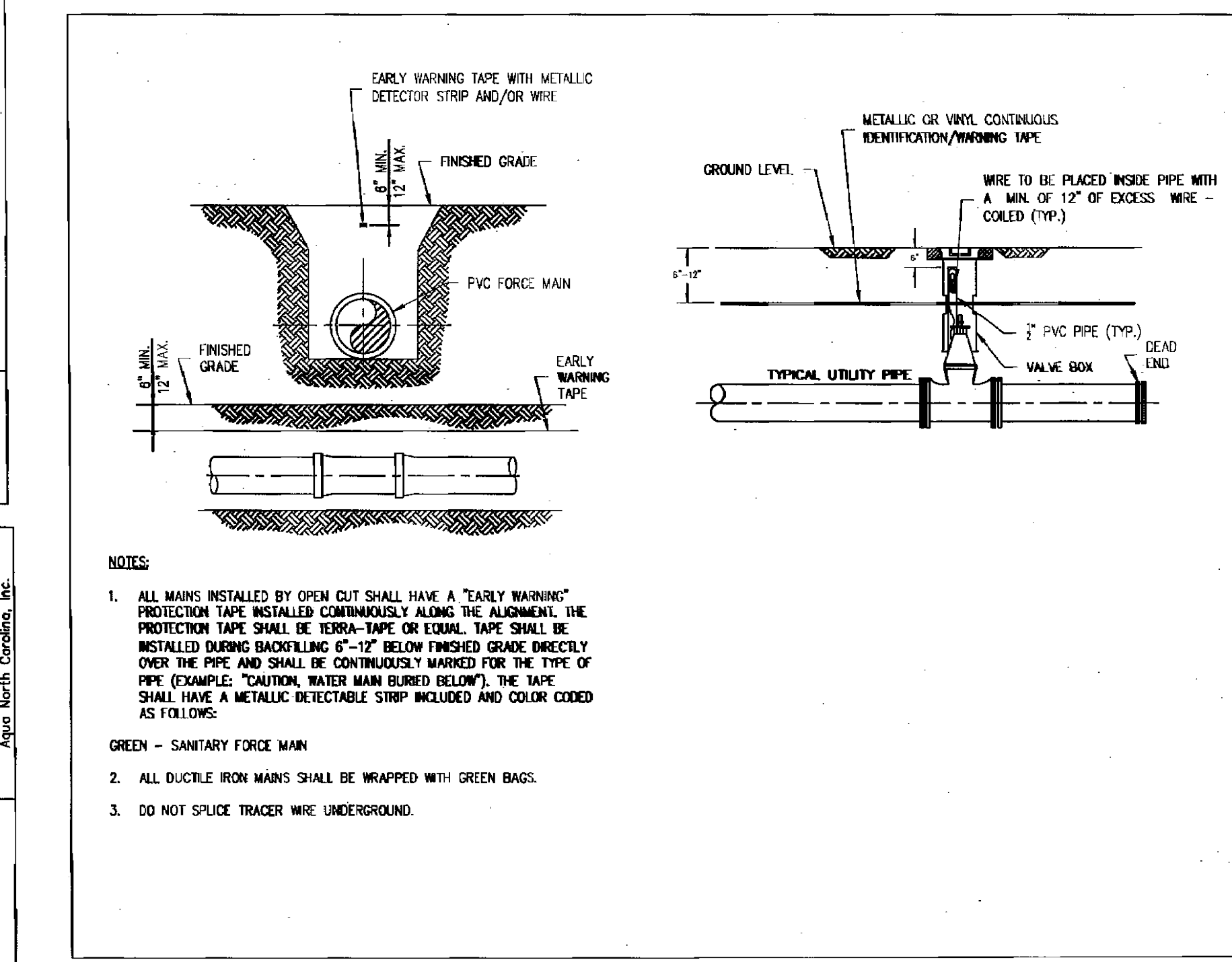
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05/2012



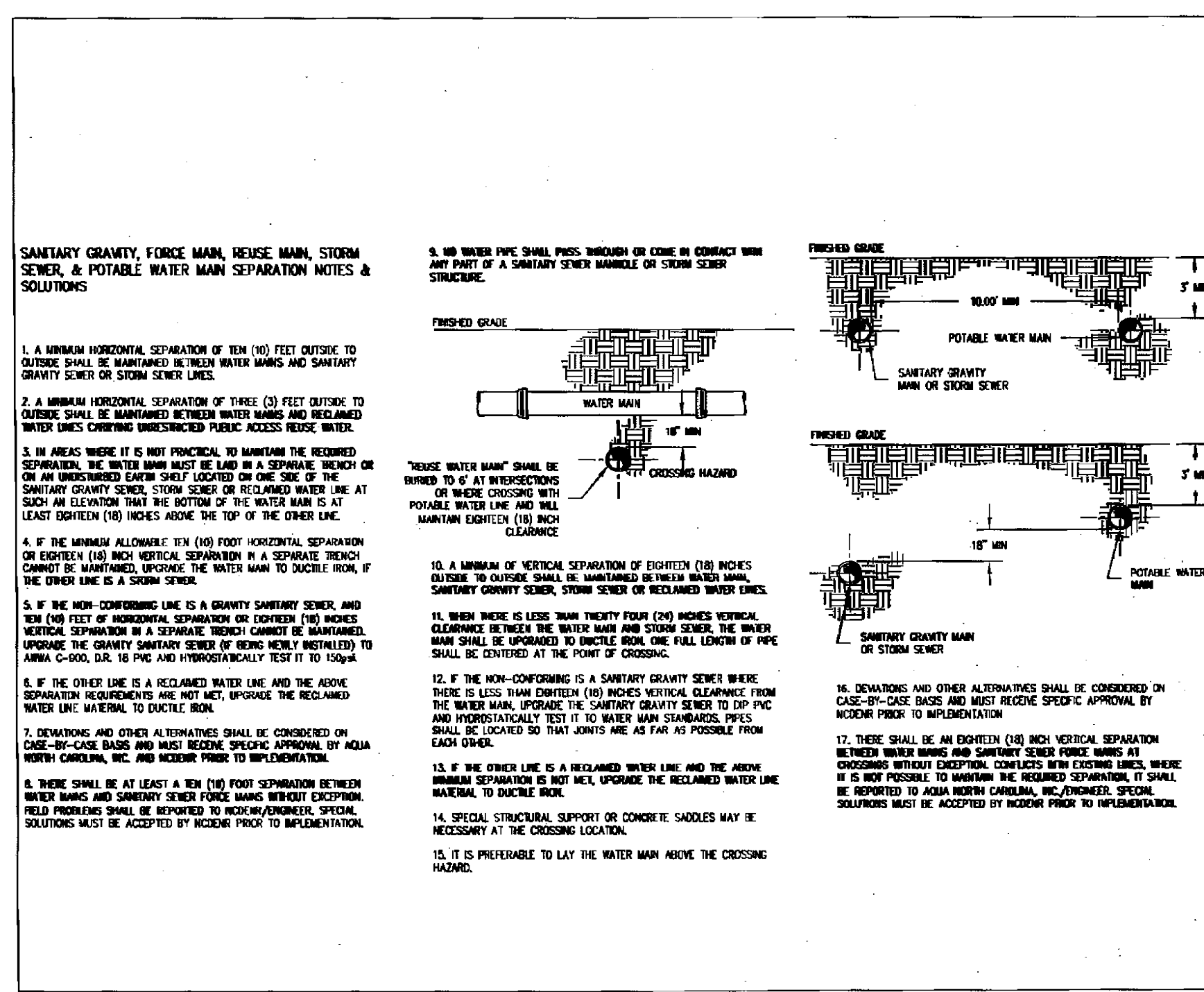
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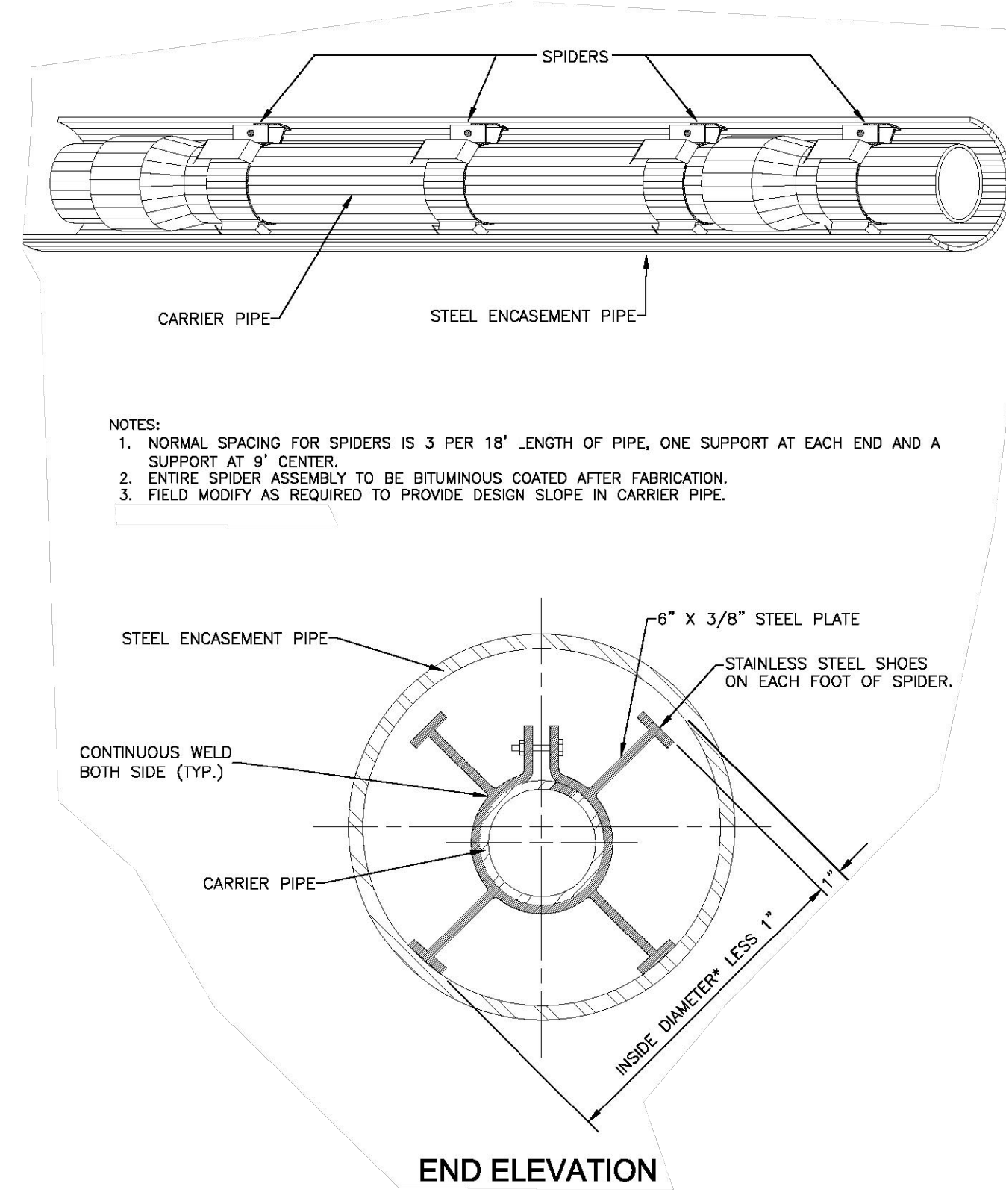
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05/2012



5  
05/2012



8  
05/2012



NO.	REVISIONS	DATE
1	CLIENT REQUESTED REVISIONS	10/17/17
2	REVISIONS PER NCDOT COMMENTS	10/31/17
3	REVISIONS PER AECOM COMMENTS	01/30/18

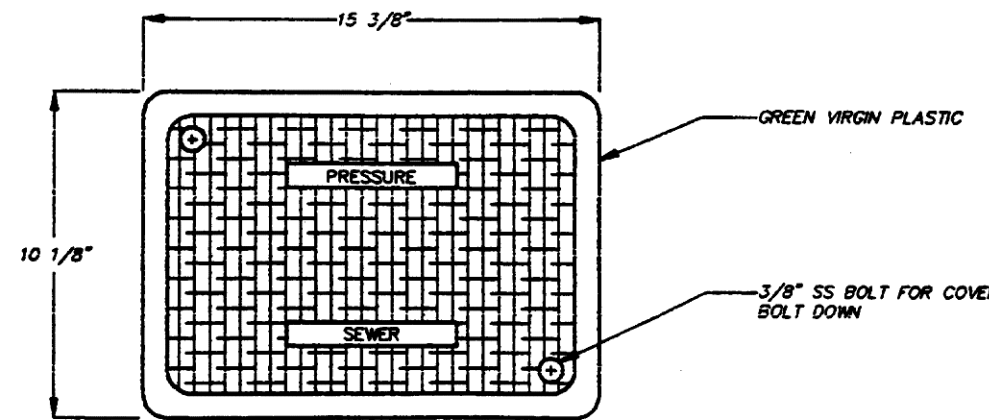
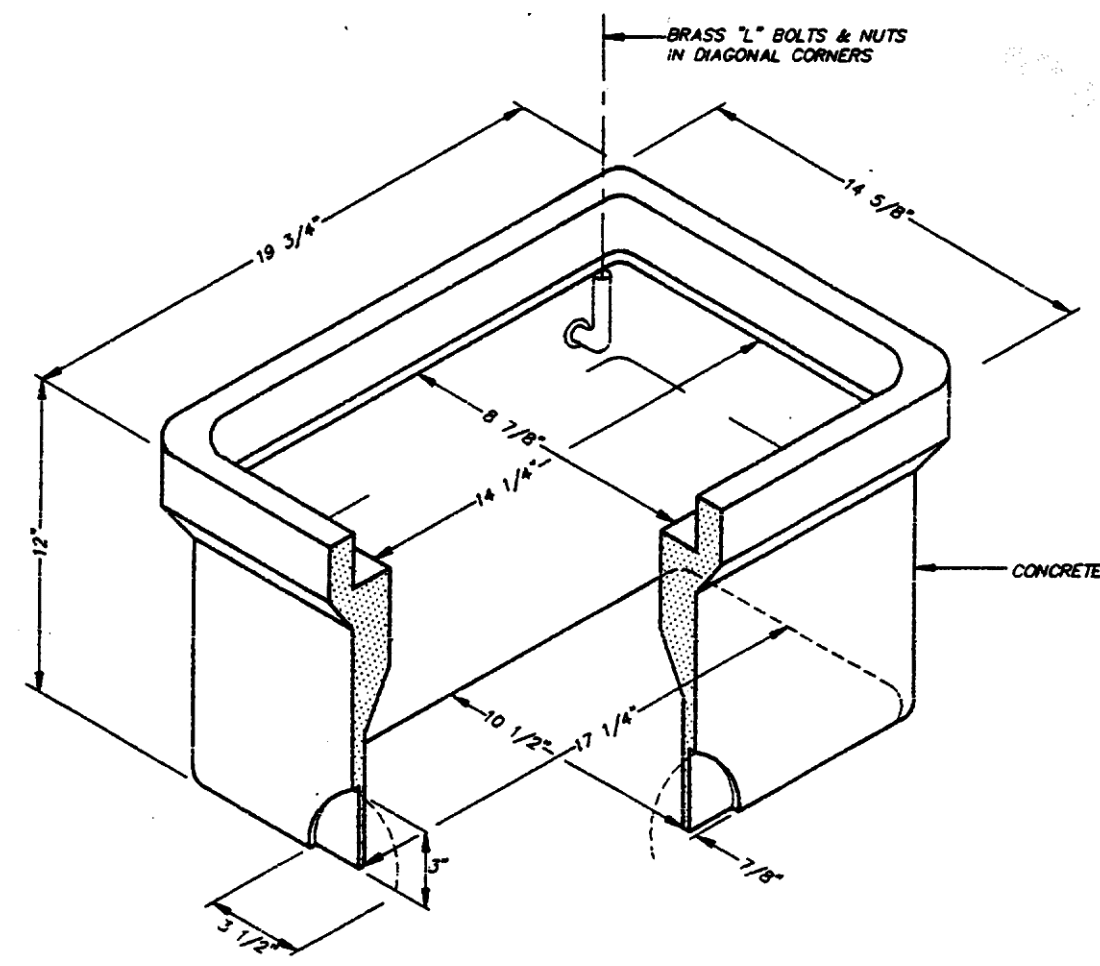
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**THE LEGACY PHASE 5A3**  
CONSTRUCTION PLANS  
SANITARY SEWER DETAILS  
CHATHAM COUNTY, NORTH CAROLINA

Date: 10/06/17  
Scale: AS NOTED  
Drawn: TAN  
Checked: MPA  
Project No: 330-05  
Computer Dwg. Name: 10 - Sewer Details  
Sheet No: 10 Of 13

**STOP!**  
BEFORE YOU DIG CALL THE NC ONE CALL CENTER 1-800-632-4949 IT'S THE LAW!

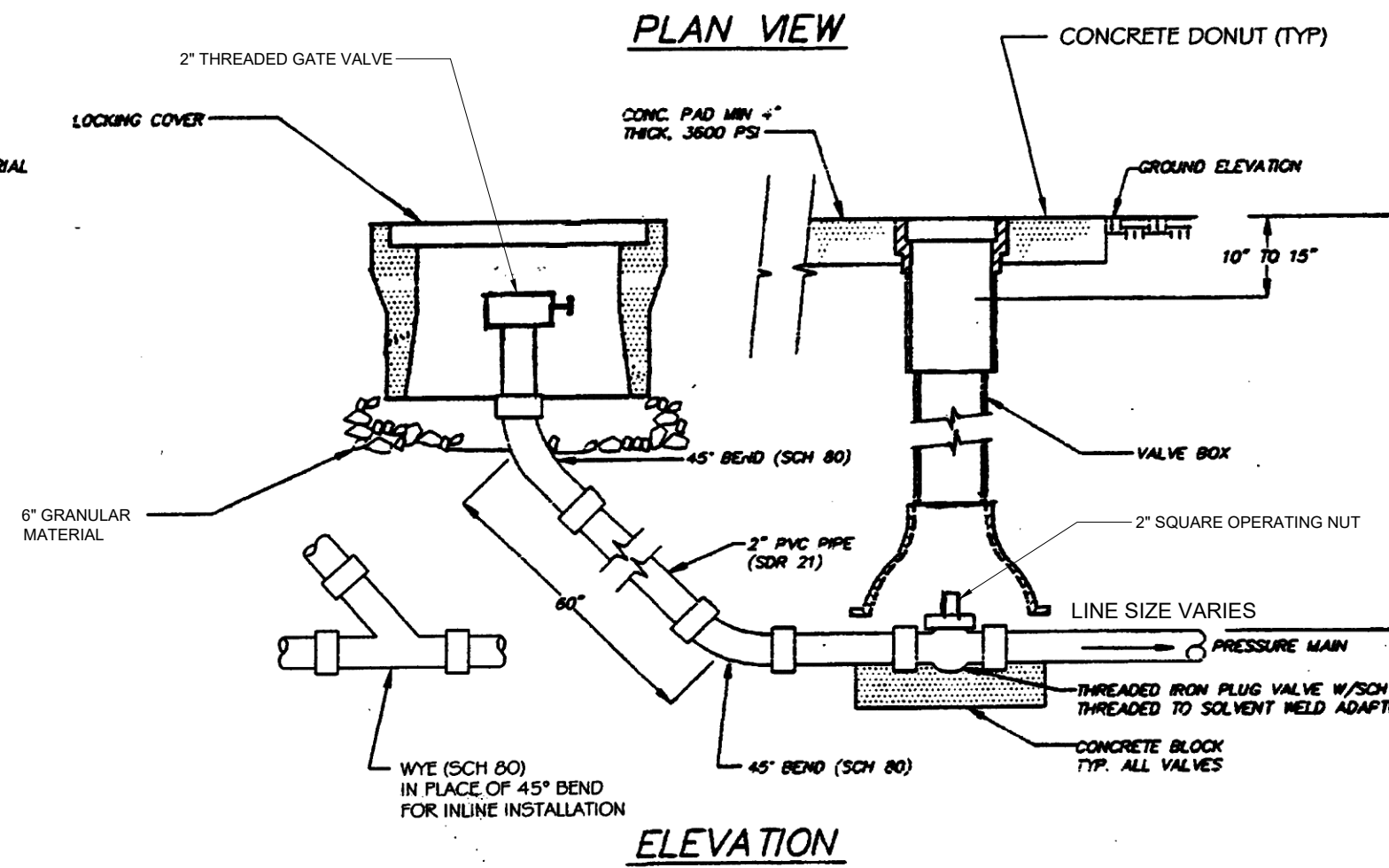
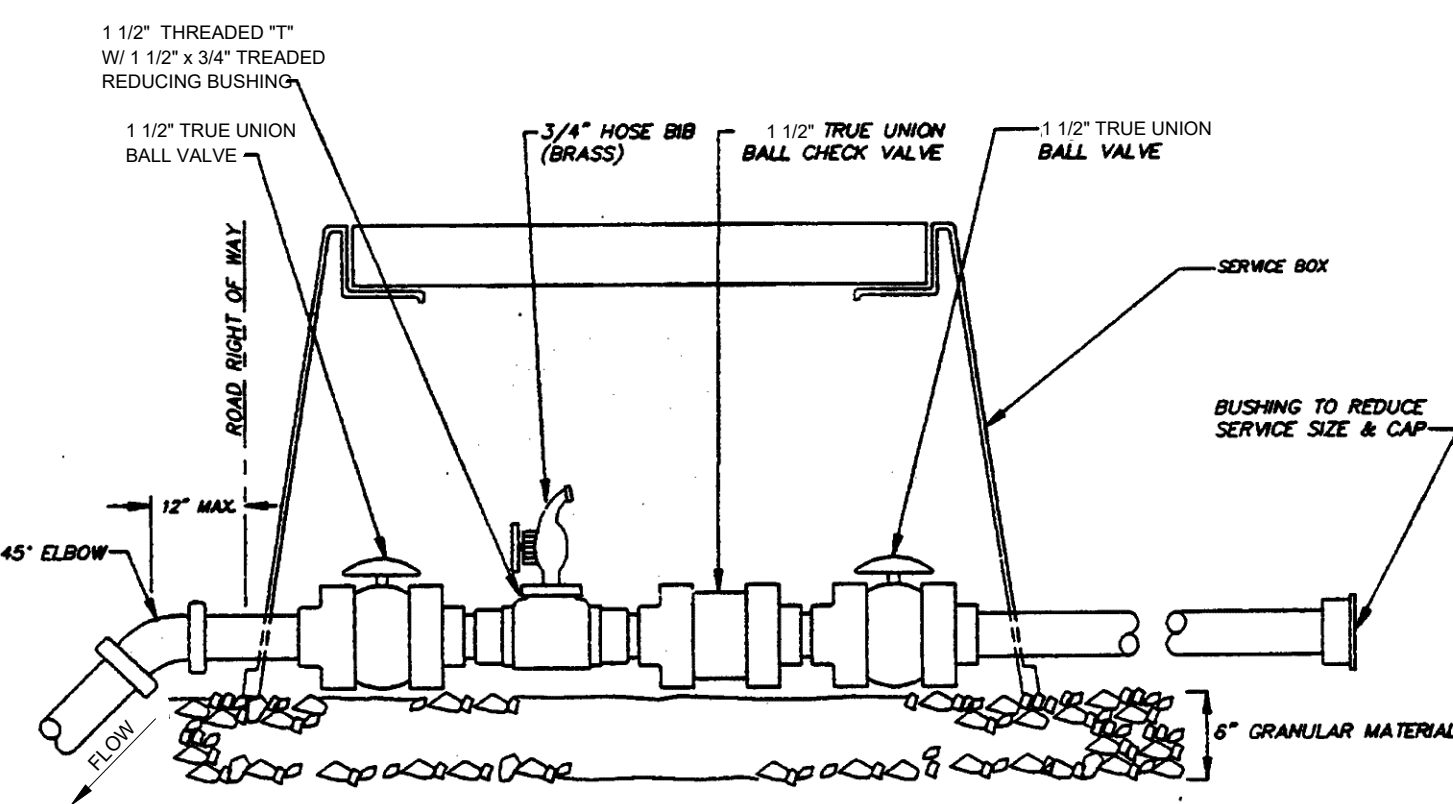


PLAN VIEW

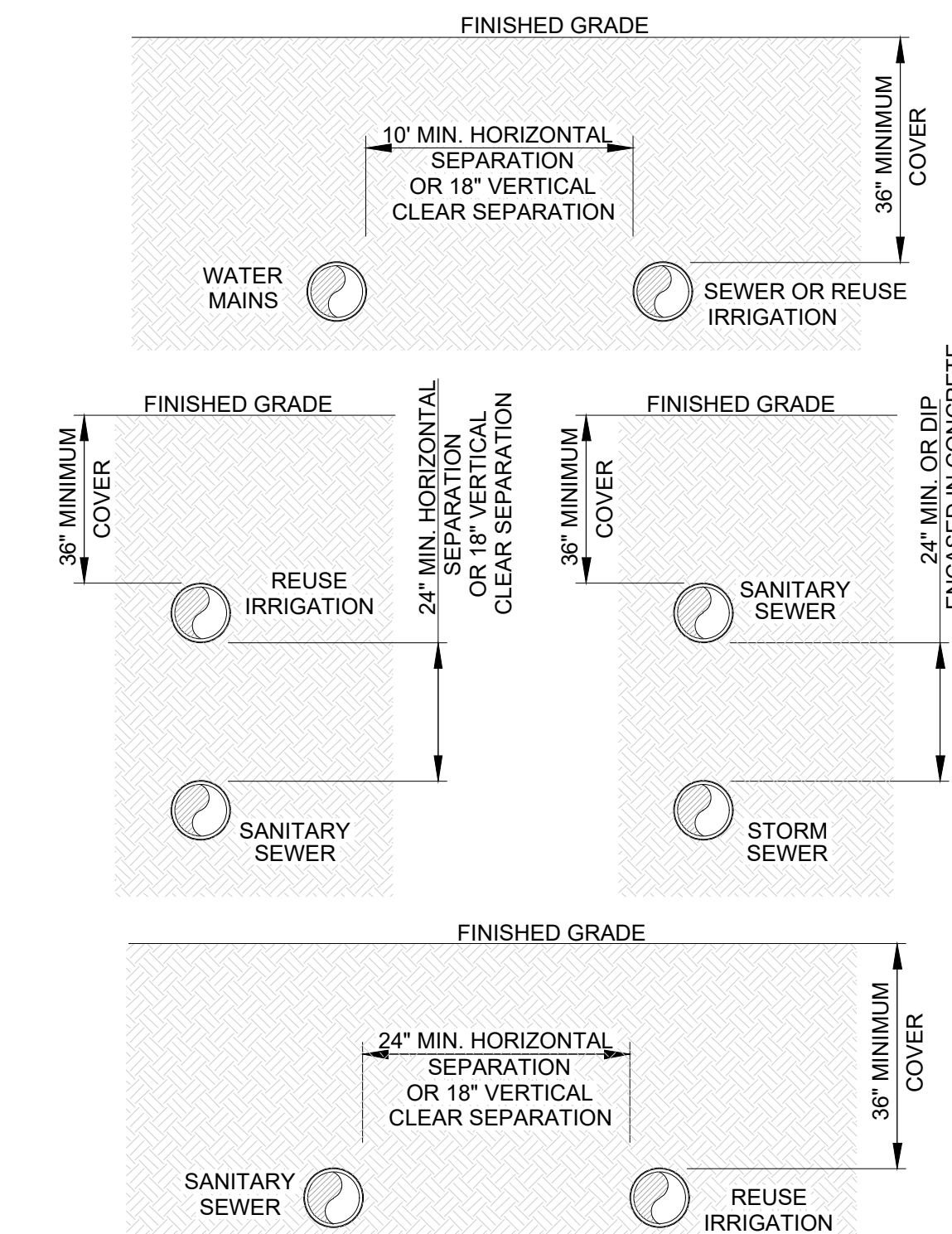
- NOTES:
- SERVICES SHALL BE LOCATED ADJACENT TO LOT LINE IN THE LOT ROAD FRONTAGE.
  - BOX SHALL NOT BE IN SIDEWALKS OR DRIVEWAYS.
  - TOP OF BOX SHALL BE FLUSH WITH FINISH GRADE OF LOT.

PRESSURE SEWER - STANDARD DETAIL  
CLEANOUT BOX  
NOT TO SCALE

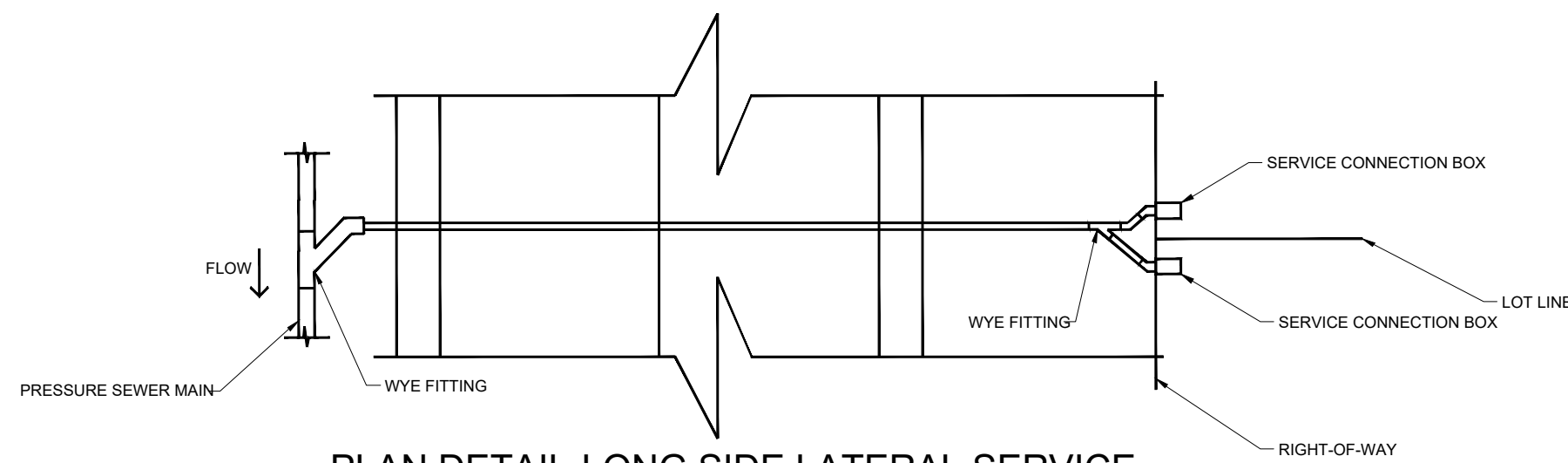
PRESSURE SEWER - STANDARD DETAIL  
SERVICE CONNECTION  
NOT TO SCALE



PRESSURE SEWER - STANDARD DETAIL  
CLEANOUT AT END LINE INSTALLATION  
NOT TO SCALE

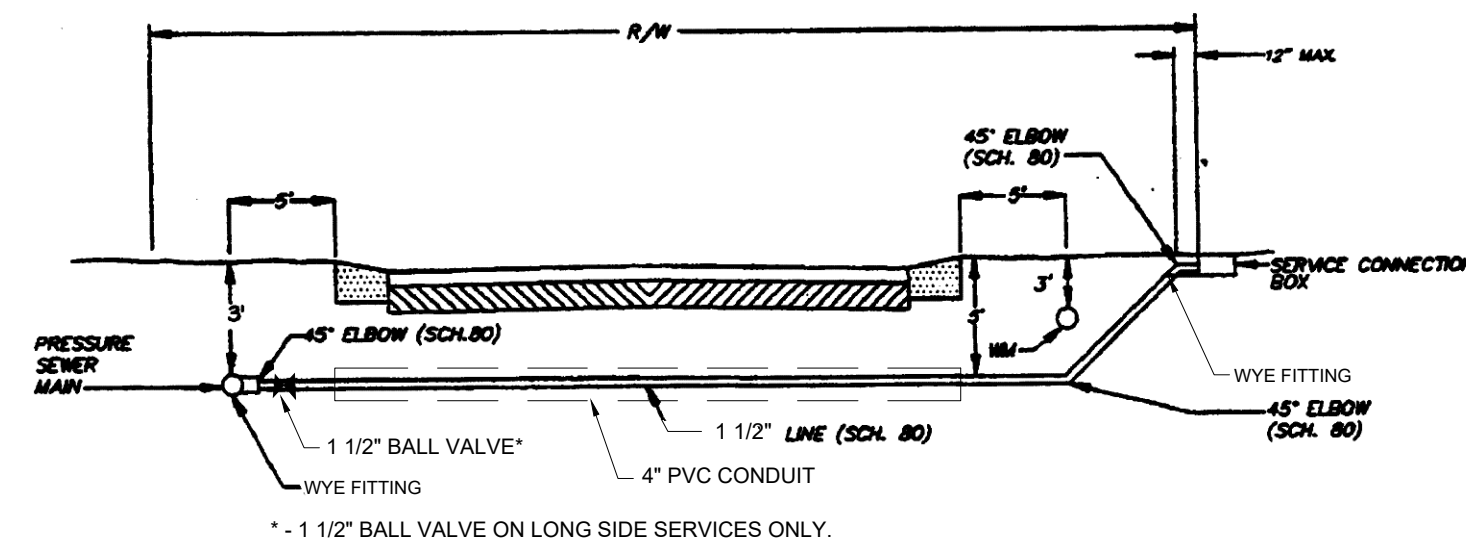


TYPICAL SEPARATION DETAIL  
NTS

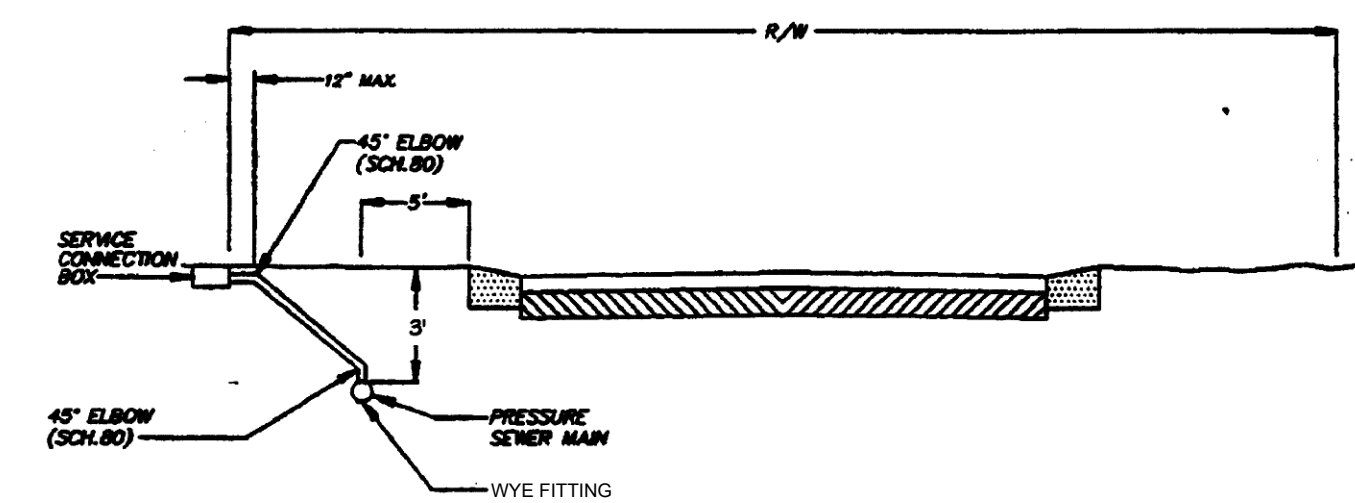


PLAN DETAIL-LONG SIDE LATERAL SERVICE

NOTE: SEWER LATERALS WILL MEET THE SEPARATION REQUIREMENTS OF 15A NCAC 02T.0305 (F).

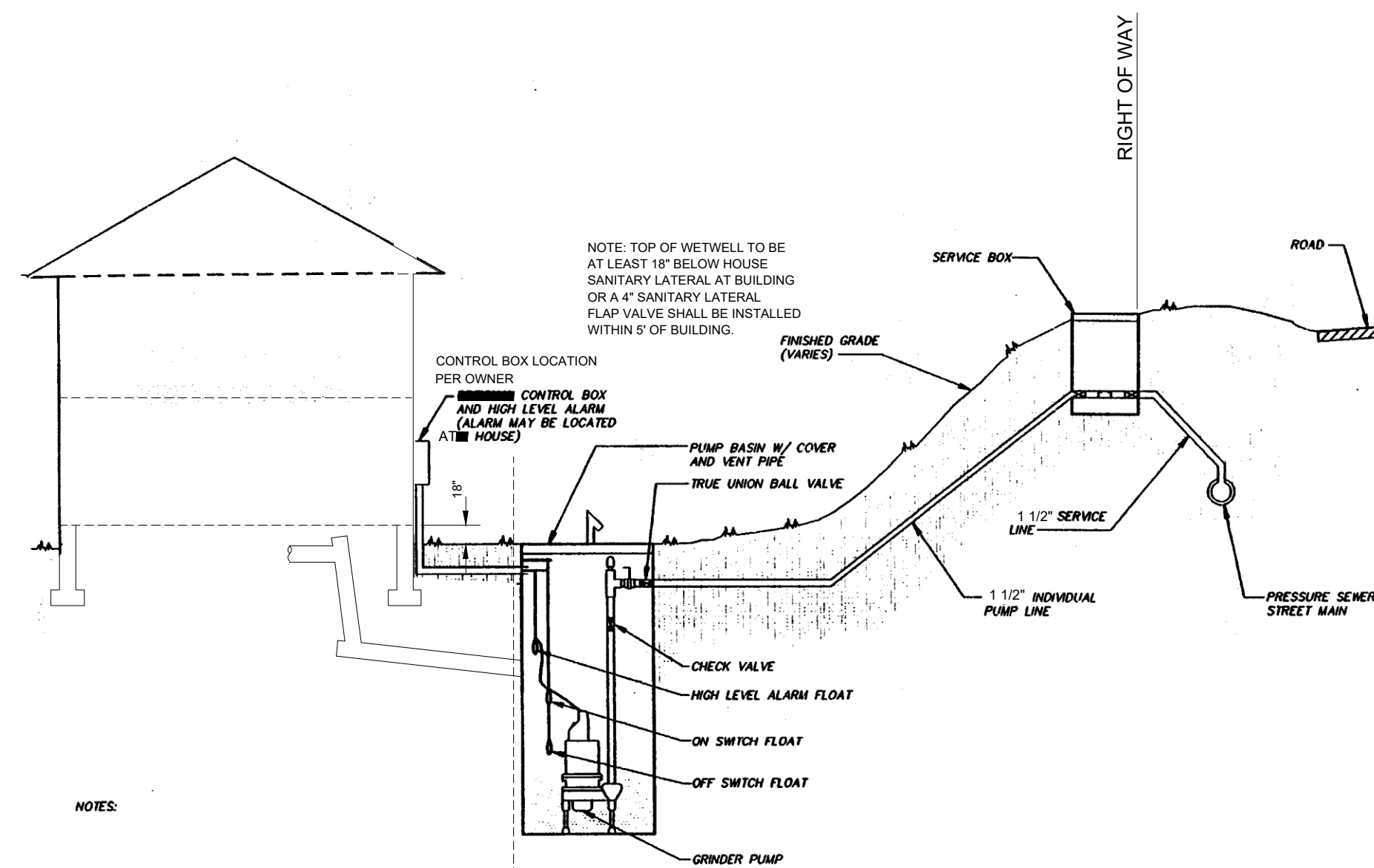


LONG SIDE LATERAL SERVICE



SHORT SIDE LATERAL SERVICE

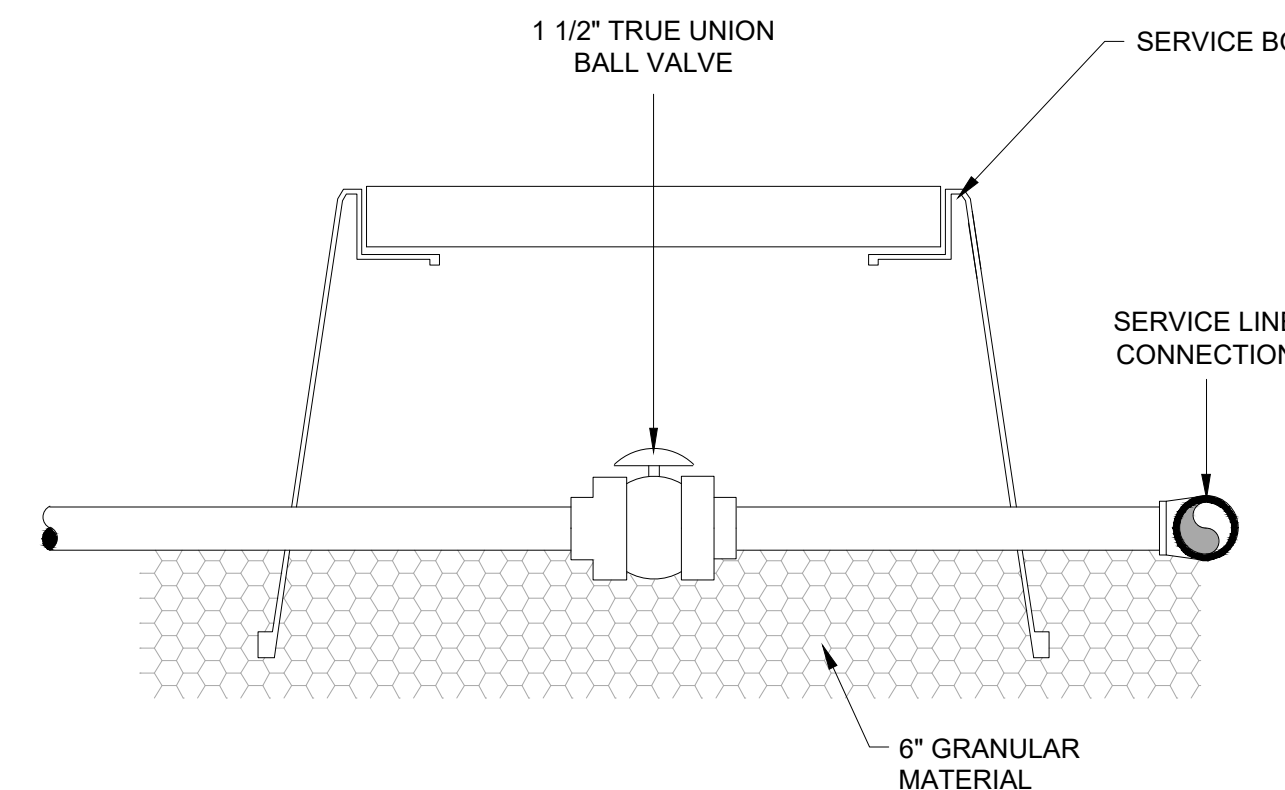
PRESSURE SEWER - STANDARD DETAIL  
LATERAL SERVICE  
NOT TO SCALE



NOTES:  
ALL PRIVATE PLUMBING SHALL BE IN ACCORDANCE WITH NORTH CAROLINA BUILDING CODE.

HOMEOWNER MAINTENANCE  
UTILITY OWNERSHIP AND MAINTENANCE (INCLUDES CONTROL PANEL)

PRESSURE SEWER - STANDARD DETAIL  
INDIVIDUAL GRINDER PUMP SYSTEM  
NOT TO SCALE



BALL VALVE DETAIL  
FOR LONG-SIDE SERVICE  
NOT TO SCALE

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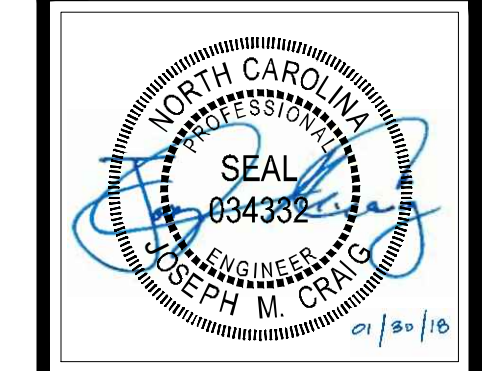


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THE NC ONE CALL CENTER  
1-800-632-4949  
IT'S THE LAW!

NO.	REVISIONS	DATE
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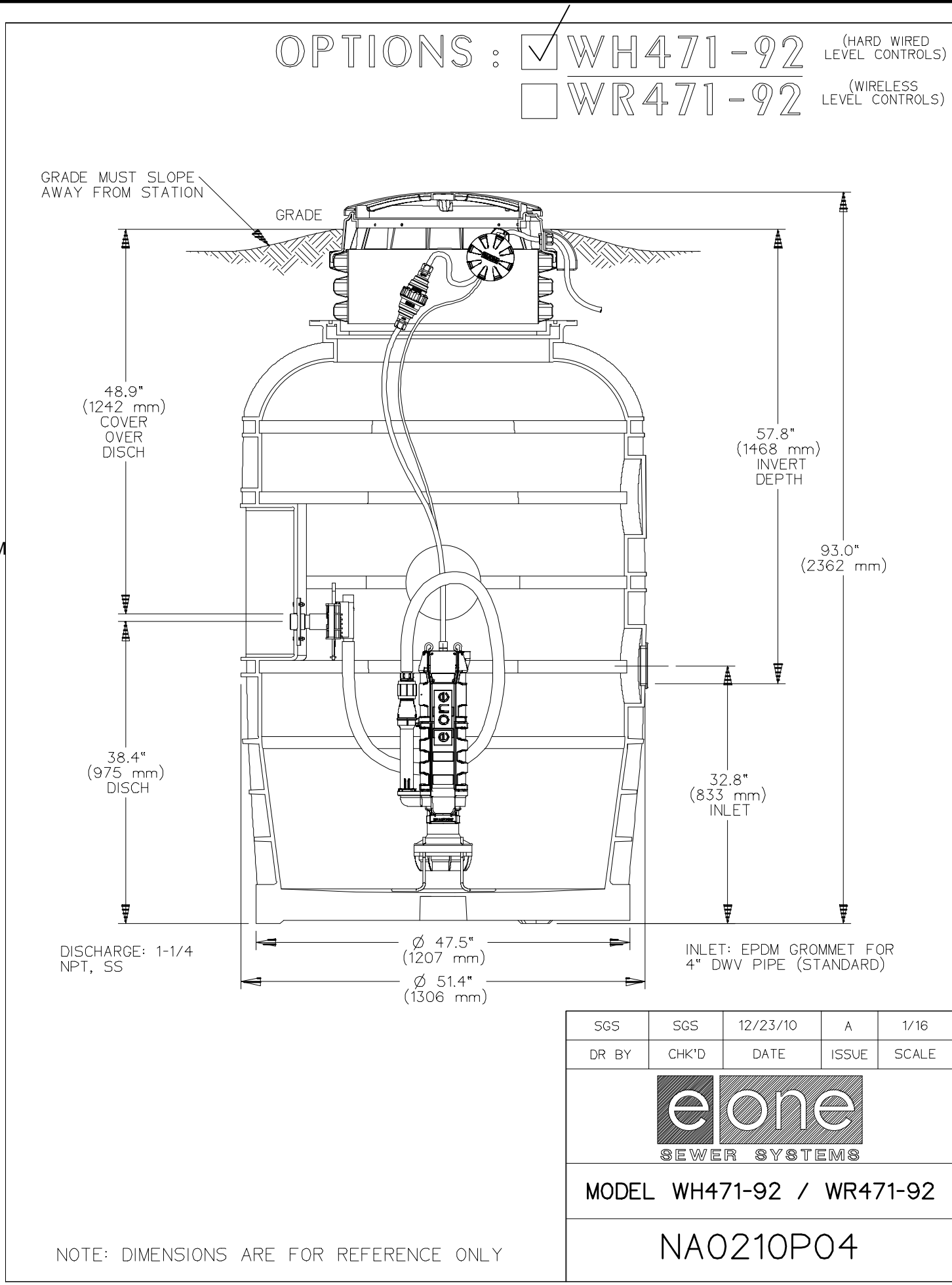
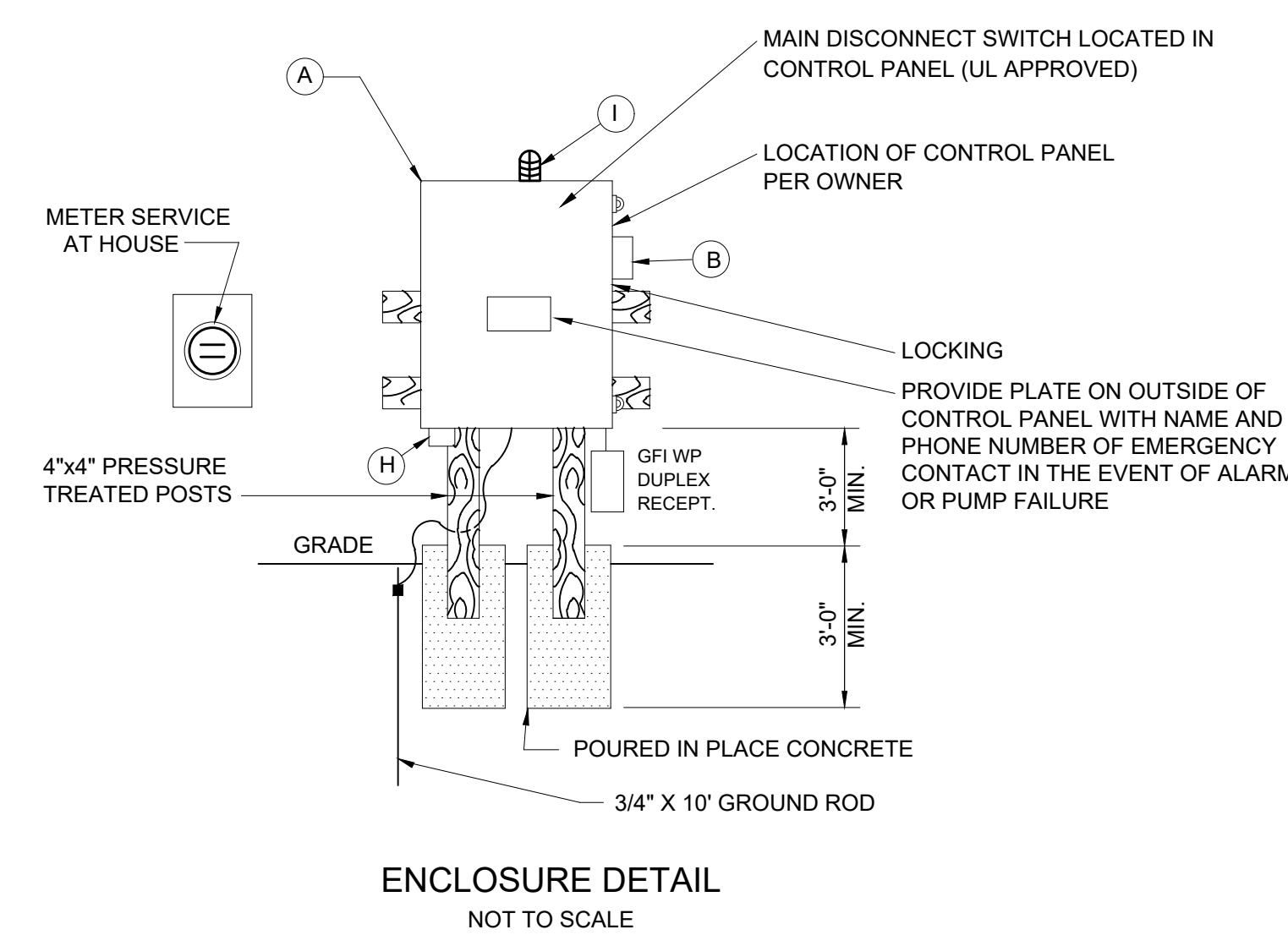
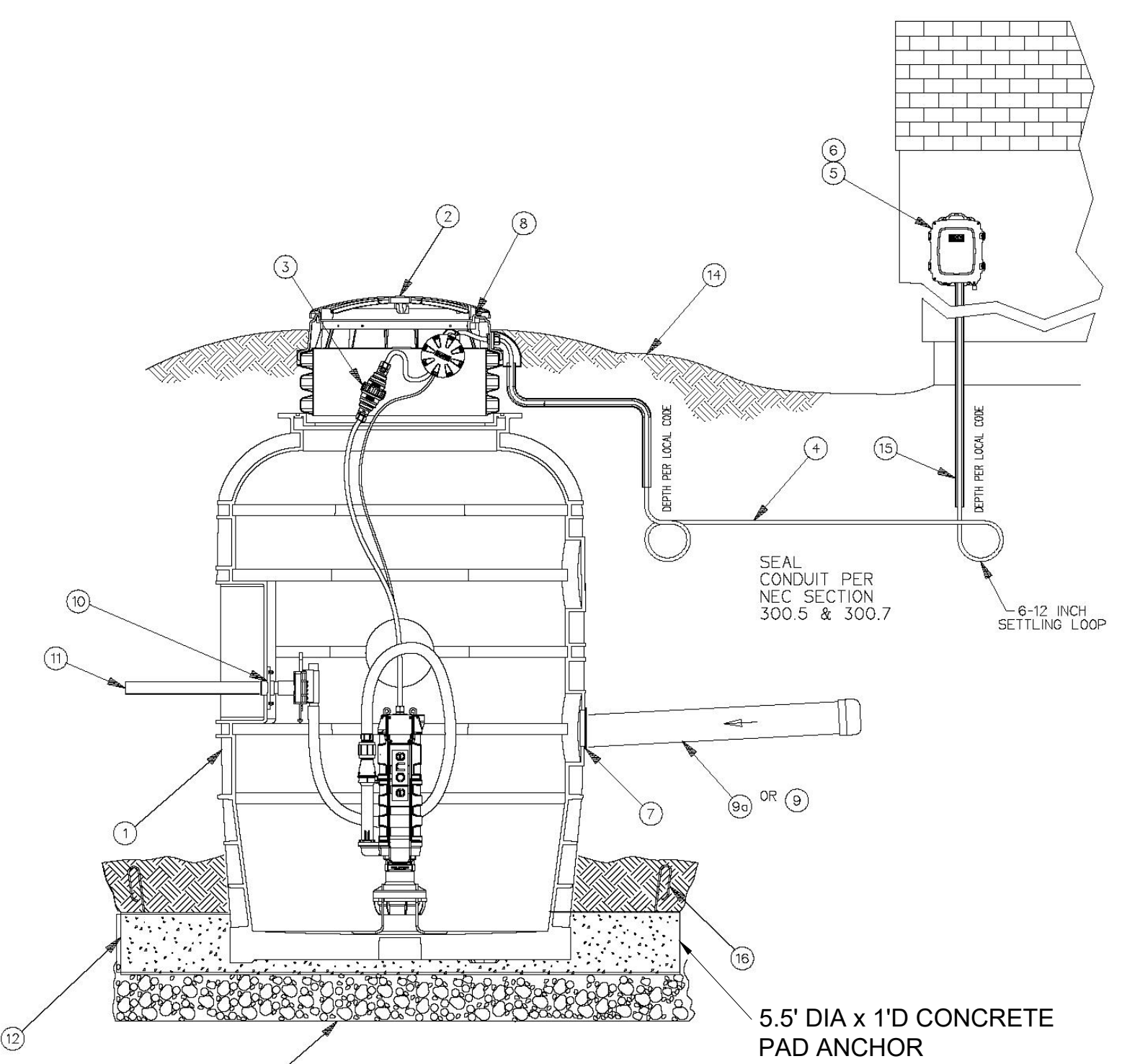
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THE LEGACY PHASE 5A3  
CONSTRUCTION PLANS  
SANITARY SEWER DETAILS  
CHATHAM COUNTY, NORTH CAROLINA

Date: 10/06/17  
Scale: AS NOTED  
Drawn: TAN  
Checked: MPA  
Project No: 330-05  
Computer Dwg. Name: 11 - Sewer Details



**Environment One Grinder Pump Feature Identification**

- GRINDER PUMP BASIN - Polyethylene
- ACCESSWAY COVER - High density polyethylene (HDPE)
- ELECTRICAL QUICK DISCONNECT (EQD) - Cable from pump core terminates here
- POWER AND ALARM CABLE - Circuits to be installed in accordance with local codes
- ALARM PANEL - NEMA 4X enclosure and equipped with circuit breakers. Locate according to local codes.
- ALARM DEVICE - Every installation is to have an alarm device to alert the homeowner of a potential malfunction. Visual devices should be placed in very conspicuous locations.
- INLET - EPDM grommet (4.5" ID). For 4.5" OD DWV pipe (standard).
- WET WELL VENT - 2.0" tank vent
- GRAVITY SERVICE LINE - 4" DWV. (4.5 OD). Supplied by others.
- STUB-OUT - 4" x 5' long watertight stub-out, to be installed at time of burial unless the gravity service line is connected during installation. Supplied by others.
- DISCHARGE FTG - 1-1/4" Female NPT, stainless steel
- DISCHARGE LINE - 1 1/2" Nominal pipe size. Supplied by others.
- CONCRETE ANCHOR - See Ballast DETAIL for specific weight for your station height.
- BEDDING MATERIAL - 6" minimum depth, round aggregate, (gravel). Supplied by others.
- FINISHED GRADE - Grade line to be 1" to 2" below removable lid and slope away from the station.
- CONDUIT - 1" or 1-1/4", material and burial depth as required per national and local codes. Conduit must enter panel from bottom and be sealed per NEC section 300.5 & 300.7. Supplied by others.
- REBAR - For use with precast concrete ballast. Required to lift tank after ballast (concrete anchor) has been attached, 4 places, evenly spaced around tank.

**PUMP SERVICE LINE AND TANK**

- PUMP CHAMBER: SHALL BE 47.5" Ø FIBERGLASS BASIN, AS MANUFACTURED BY PUMP MANUFACTURER.
- PVC PIPE FOR SERVICE: SHALL BE PRESSURE CLASS 160 PER ASTM D2241 AS INDICATED ON THE DRAWINGS. FITTINGS SHALL BE SOLVENT WELD SOCKET-TYPE CONFORMING TO ASTM D2467 AND ASTM D2855.
- CHECK VALVES: SHALL BE MADE OF PVC THERMOPLASTIC.
- PVC PIPE IN DOSING TANK: SHALL BE SCHEDULE 80.

**PUMPS CONTROL INFORMATION:**

- SIMPLEX PUMP CONTROL PANEL: INCLUDES INDIVIDUAL CIRCUIT BREAKERS, MOTOR STARTER, TERMINAL STRIP AND GROUND BUS IN A LOCKABLE NEMA 4X ENCLOSURE. THE CONTROLLER SHALL HAVE THREE LEVEL SENSING POINTS: PUMP OFF, PUMP ON, HIGH WATER ALARM. CONTROL PANEL AND CONTROLS SHALL BE SUPPLIED BY PUMP MANUFACTURER THE CONTROL PANEL AND ALARM MAY BE ATTACHED TO THE HOME EXTERIOR AT THE OWNERS OPTION OR POST-MOUNTED 36" ABOVE GRADE AT A LOCATION CONVENIENT TO THE OWNER. THE ALARM CIRCUIT SHALL SENSE HIGH WATER LEVEL AND INITIATE THE ALARM. AN ALARM RESET SWITCH AND ALARM TEST SWITCH SHALL BE PROVIDED ON THE CONTROL PANEL DOOR. A HIGH VISIBILITY RED ALARM LIGHT AND AUDIBLE ALARM SHALL BE MOUNTED ON THE EXTERIOR OF THE PANEL.
- LIQUID LEVEL SENSOR: SHALL BE ADJUSTABLE LEVEL MERCURY FLOAT SWITCH SUPPLIED BY THE MANUFACTURER.
- DUPLEX RECEPTACLE: A RECEPTACLE (120 VOLTS) WITH GROUND FAULT PROTECTION AND A WATER PROOF COVER SHALL BE MOUNTED ON THE EXTERIOR OF THE PUMP PANEL.
- ELECTRIC CONDUIT: UNDERGROUND CONDUIT SHALL BE SCHEDULE 40 PVC DIRECT BURIAL WITH A MINIMUM DEPTH OF 30". ABOVE GROUND SHALL BE RIGID GALVANIZED STEEL.
- GENERAL: ALL CONTROLS AND WIRING SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE AND ANY APPLICABLE STATE AND LOCAL CODES.

**TESTING:**

- FINAL TESTING OF PUMP STATION SHALL BE MADE AFTER ITS COMPLETION. THE CONTRACTOR SHALL NOTIFY THE OWNER AND COUNTY INSPECTOR A MINIMUM OF 72 HOURS PRIOR TO INSPECTION.
- PUMPING: THE CONTRACTOR SHALL PROVIDE SUFFICIENT WATER TO ALLOW FULL DEMONSTRATION OF THE PUMPING CYCLES AND ALARM SEQUENCE TO THE SATISFACTION OF THE OWNER AND COUNTY INSPECTOR.
- PUMP TANK: SHALL BE TESTED FOR INFILTRATION/EXFILTRATION PRIOR TO THE COMPLETION OF THE SYSTEM. TANKS SHALL BE FILLED TO THE TOP OF INFLUENT LINE WITH WATER AND TESTED FOR 24 HOURS. IF WATER LEVEL EITHER INCREASES OR DECREASES MORE THAN 1/2" DURING THIS TIME THE TANKS WILL HAVE FAILED THE INFILTRATION/EXFILTRATION TEST. THE CONTRACTOR MAY OPT TO PERFORM A VACUUM TEST TO SATISFY REQUIREMENTS.

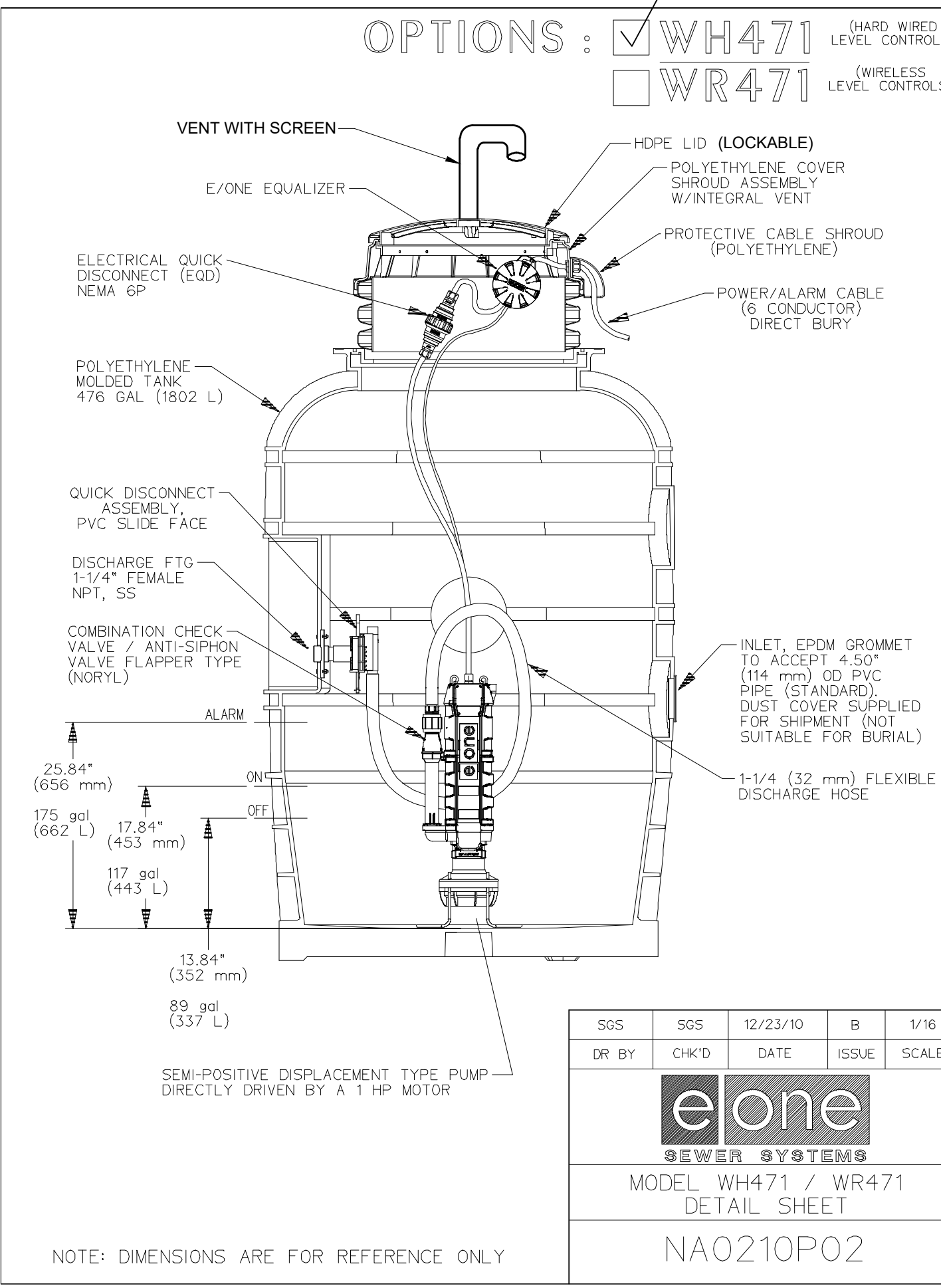
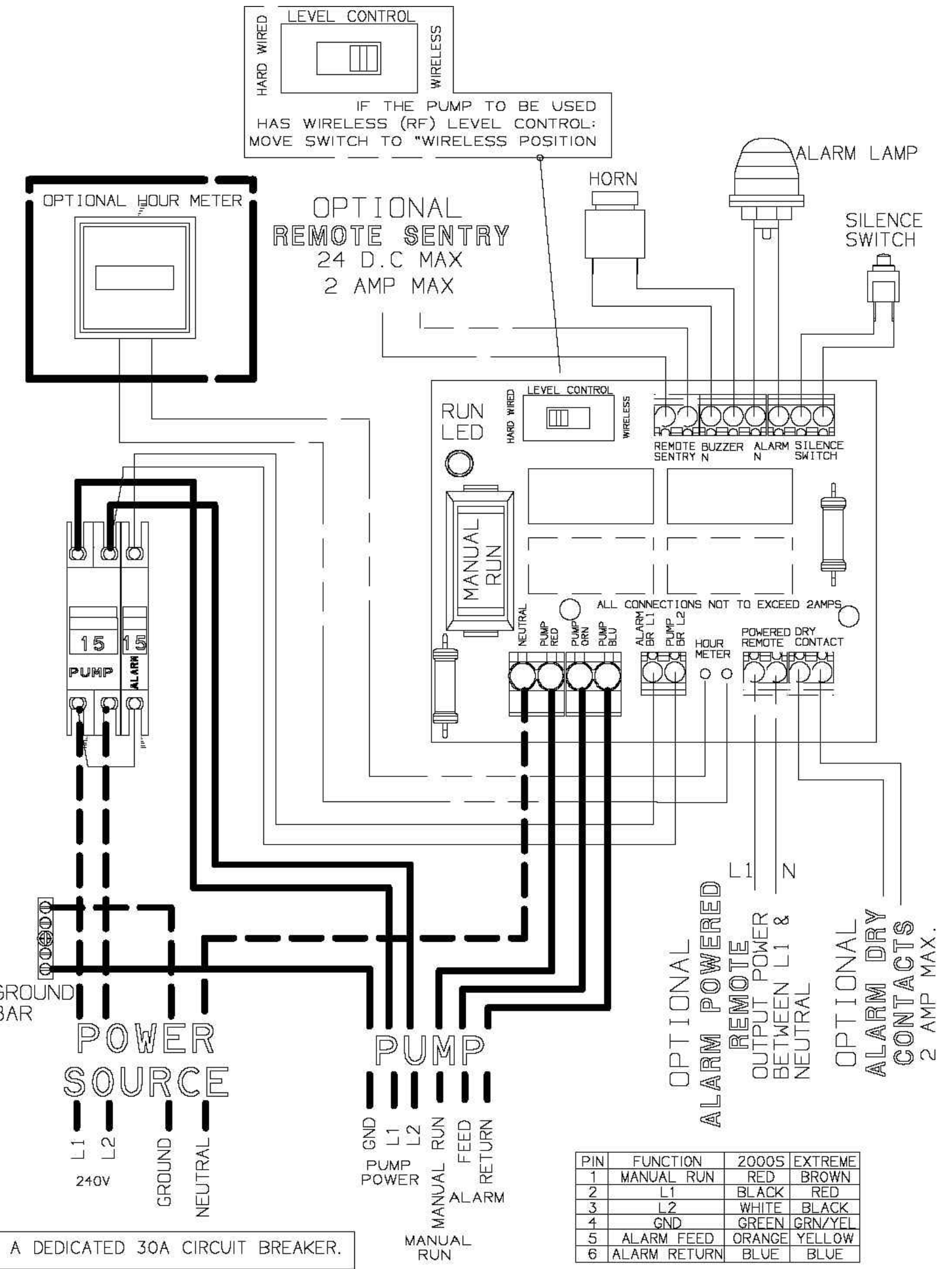
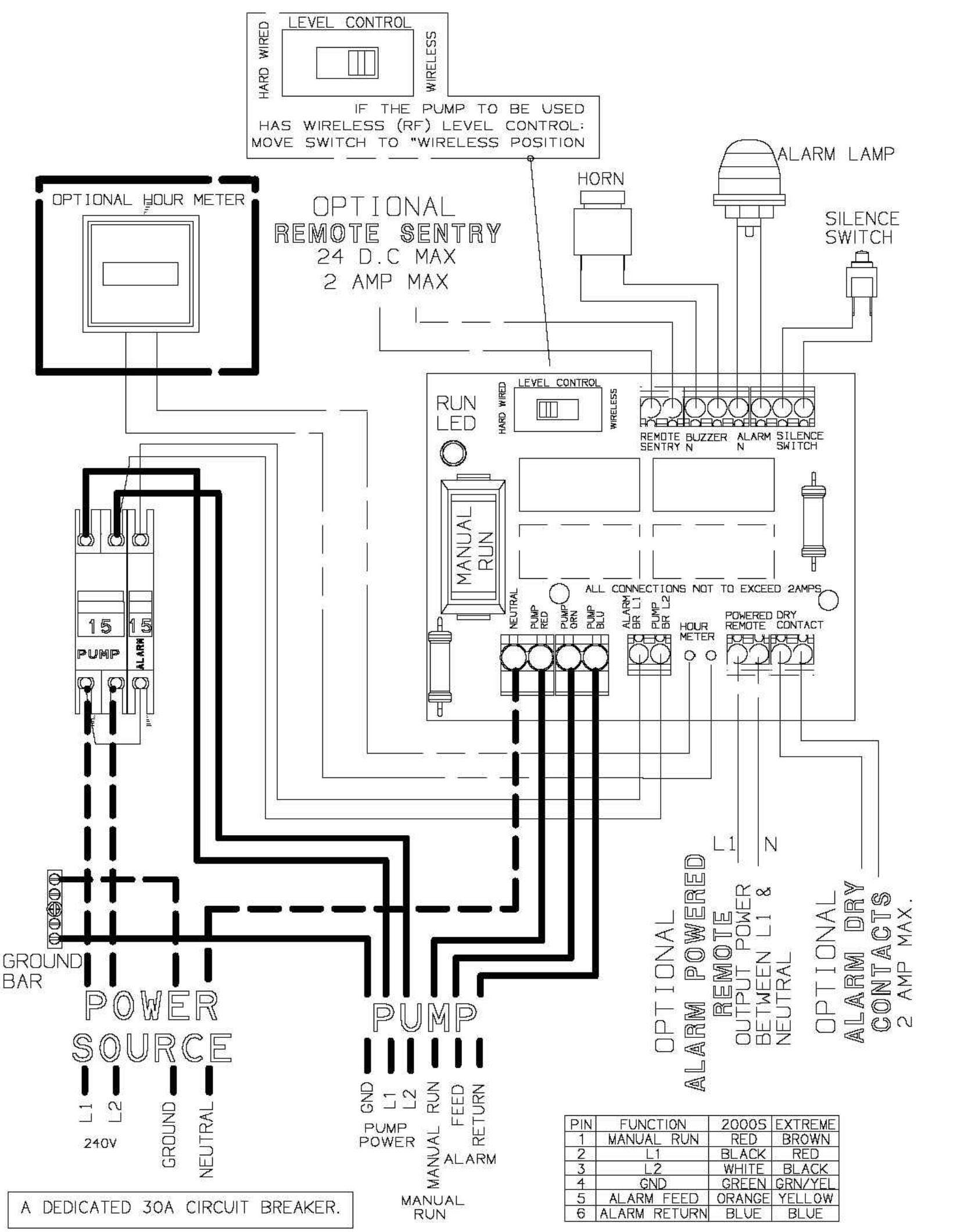
**ELECTRICAL NOTES**

- 14" HIGH x 12" WIDE x 6" DEEP NEMA - 4X FIBERGLASS ENCLOSURE.
- DUPLEX CONVENIENCE RECEPTACLE, GROUND FAULT INTERRUPT, WEATHER PROOF COVER.
- MANUAL TRANSFER SWITCH - 2 POLE - DOUBLE THROW.
- CONTROL PANEL FURNISHED BY PUMP MANUFACTURER.
- AUDIBLE - VISIBLE HIGH-LEVEL ALARM WITH HORN, FURNISHED BY PUMP MANUFACTURER.
- ALL CONTROL WIRING TO BE FURNISHED BY PUMP MANUFACTURER.
- DISCONNECT SWITCH, SERVICE ENTRANCE RATED, 60A/2P/W/40AF.
- ALARM BUZZER
- ALARM LIGHT



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IT'S THE LAW!

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SGS	SGS	12/23/10	B	1/16
DR BY	CHK'D	DATE	ISSUE	SCALE
<b>eone</b> SEWER SYSTEMS				
MODEL WH471 / WR471				
NA0210P02				

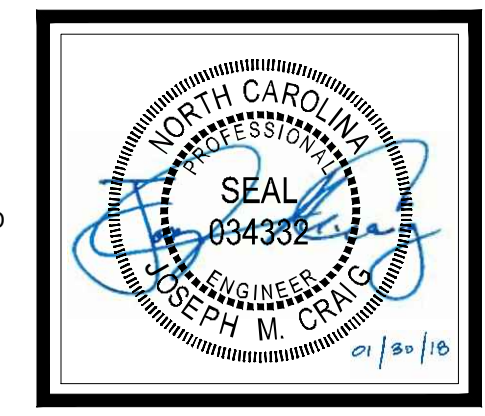
**240 VOLT WIRING - SIMPLEX 240 VOLT WIRING - SIMPLEX**

NO.	REVISIONS	DATE
3	REVISIONS PER NCDEQ COMMENTS	01/30/18
2	REVISIONS PER CHATHAM COUNTY WATER & AQUA COMMENTS	10/31/17
1	CLIENT REQUESTED REVISIONS	10/11/17

**CE GROUP**

301 GLENWOOD AVE. 220  
RALEIGH, NC 27603  
PHONE: 919-367-8790  
FAX: 919-322-0032

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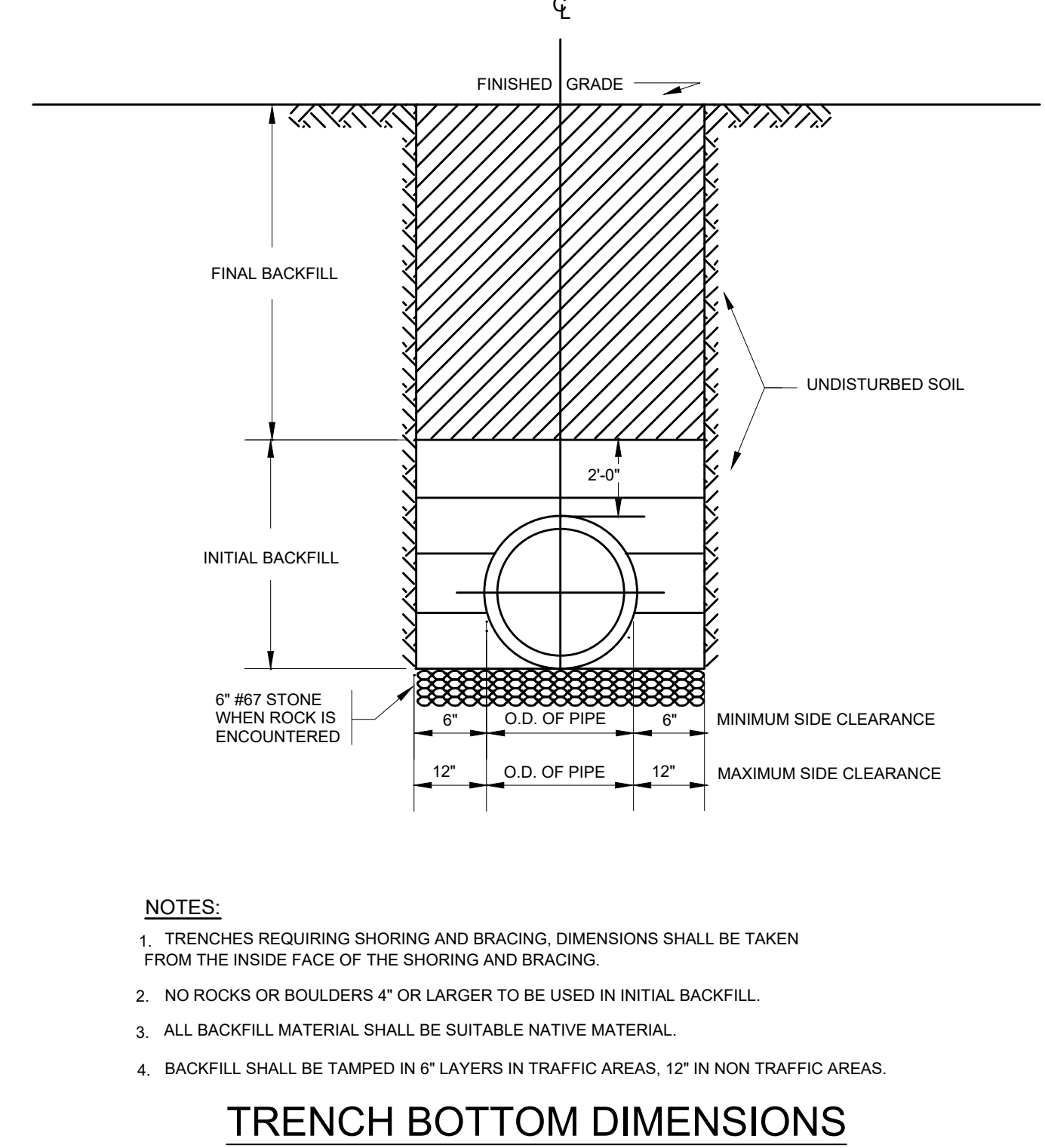
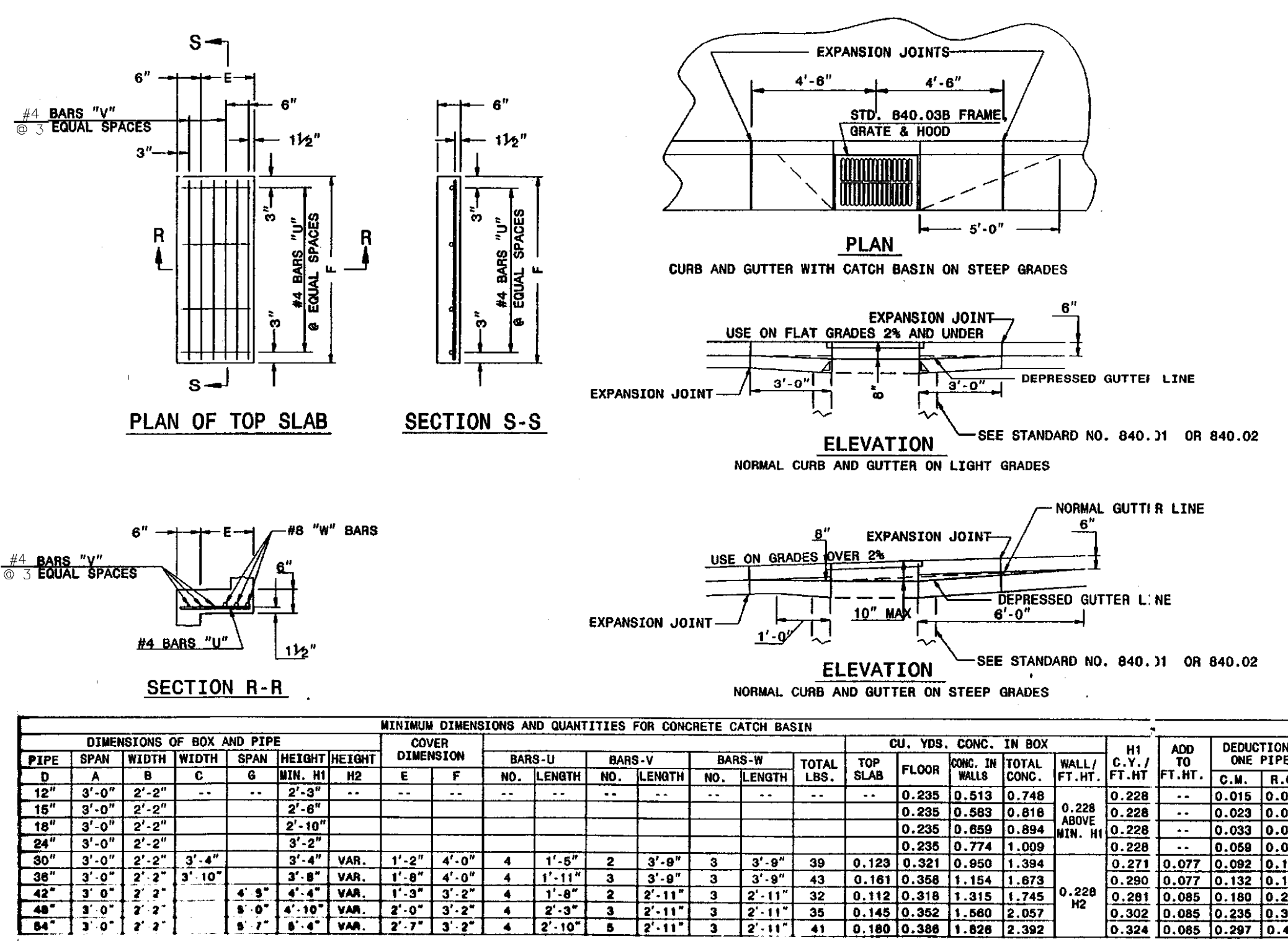
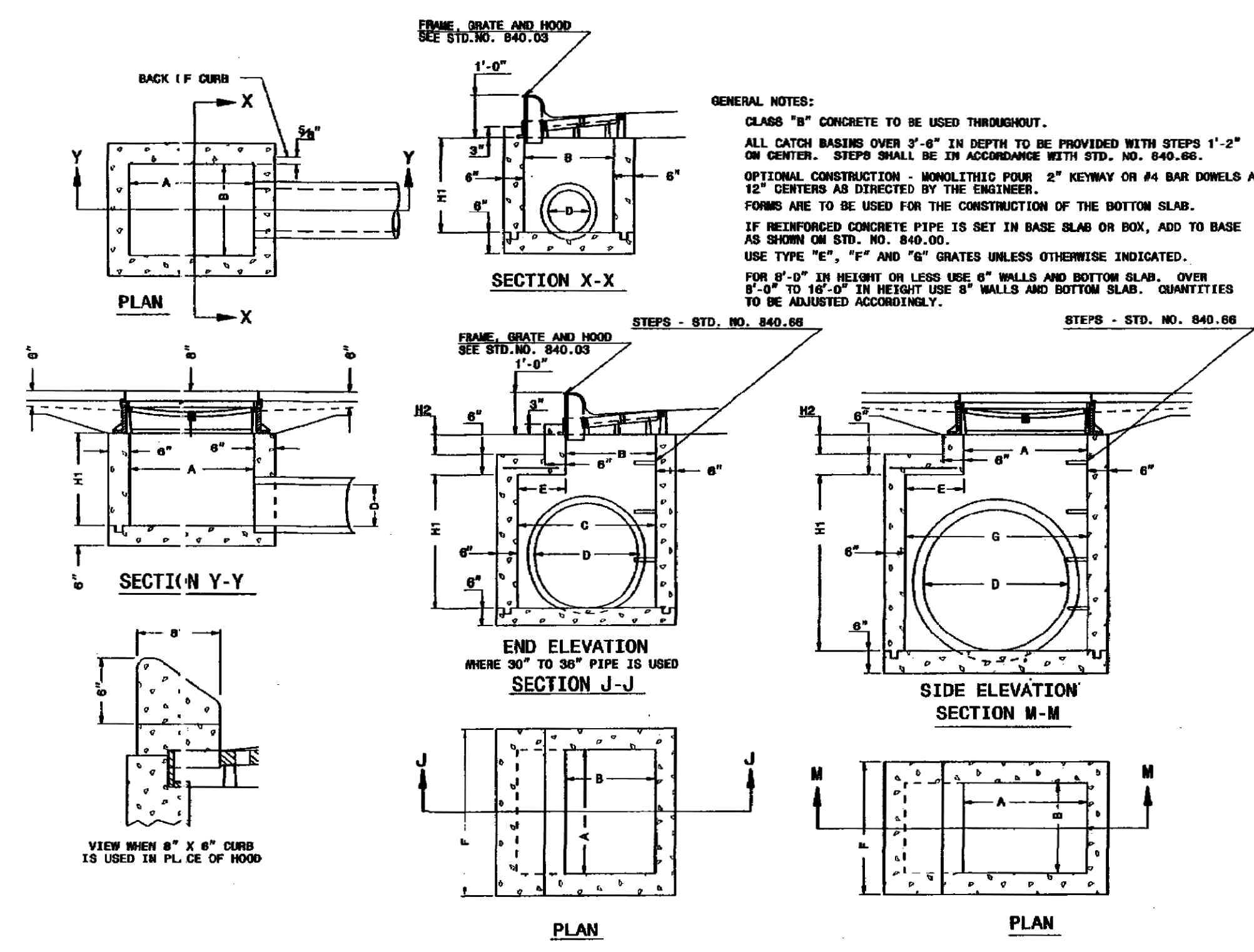


**THE LEGACY PHASE 5A3**

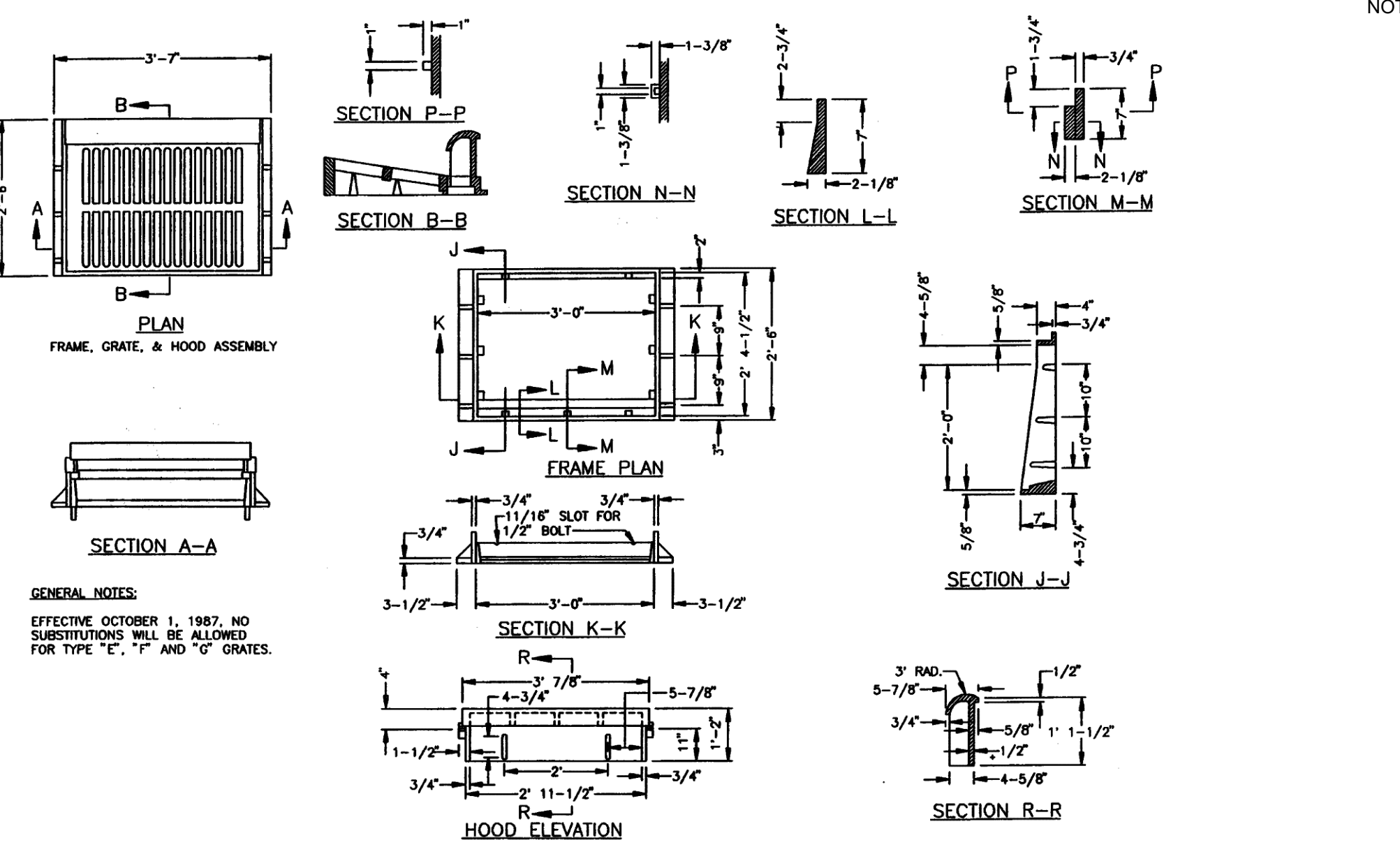
CONSTRUCTION PLANS  
SEWER DETAILS

CHATHAM COUNTY, NORTH CAROLINA

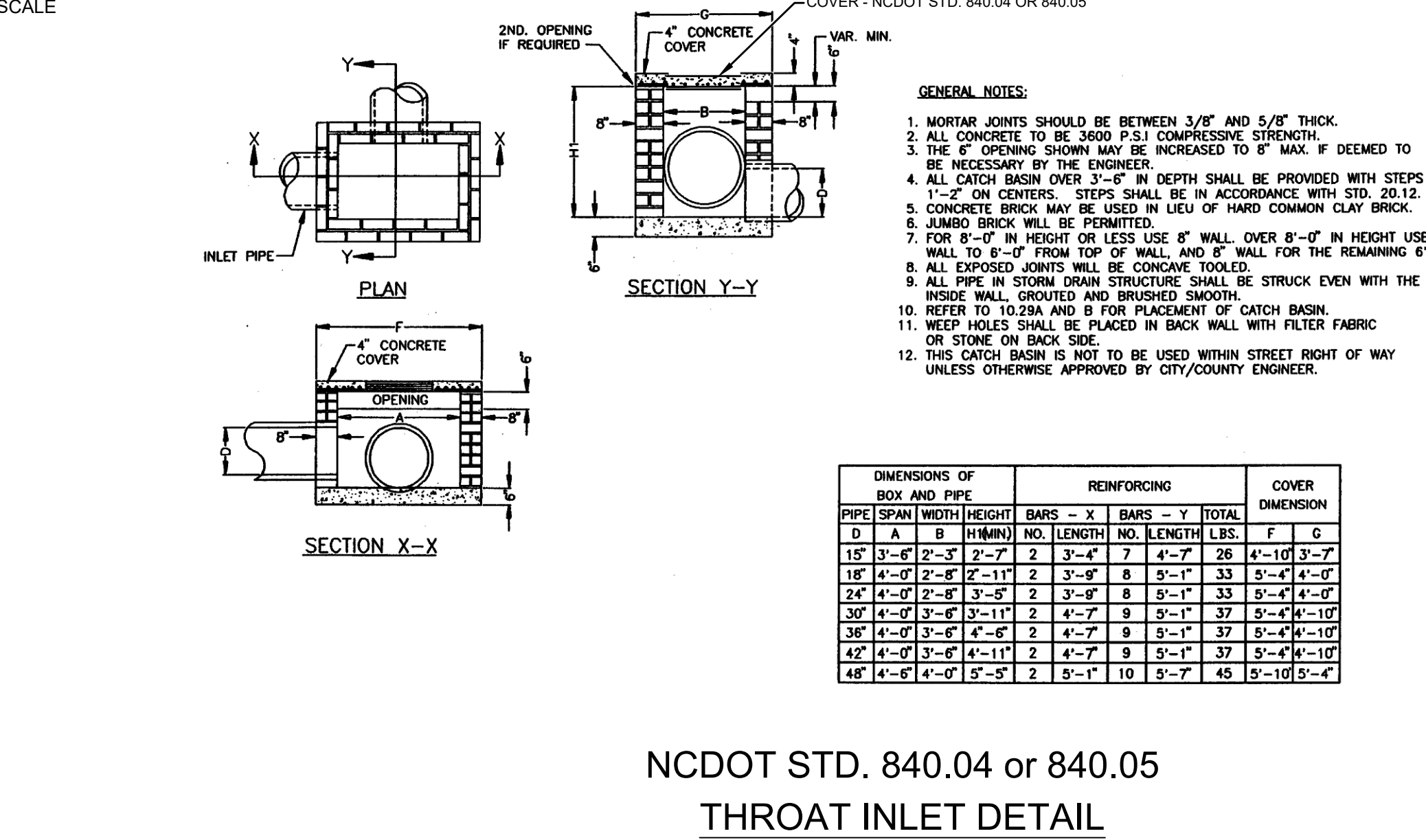
Date: 10/06/17  
Scale: AS NOTED  
Drawn: TAN  
Checked: MPA  
Project No: 330-05  
Computer Dwg. Name: 12 - Sewer Details  
Sheet No: 12 Of 13



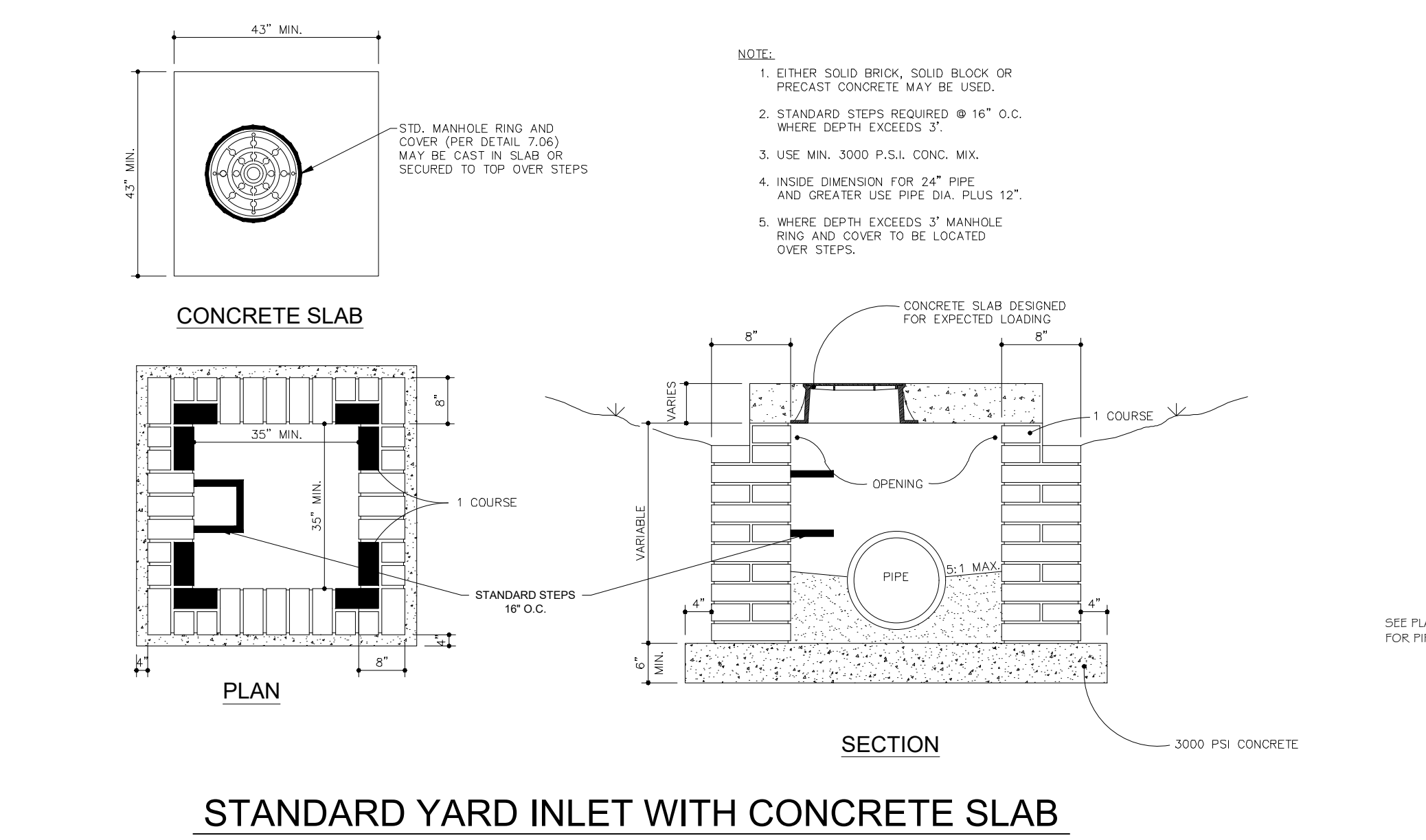
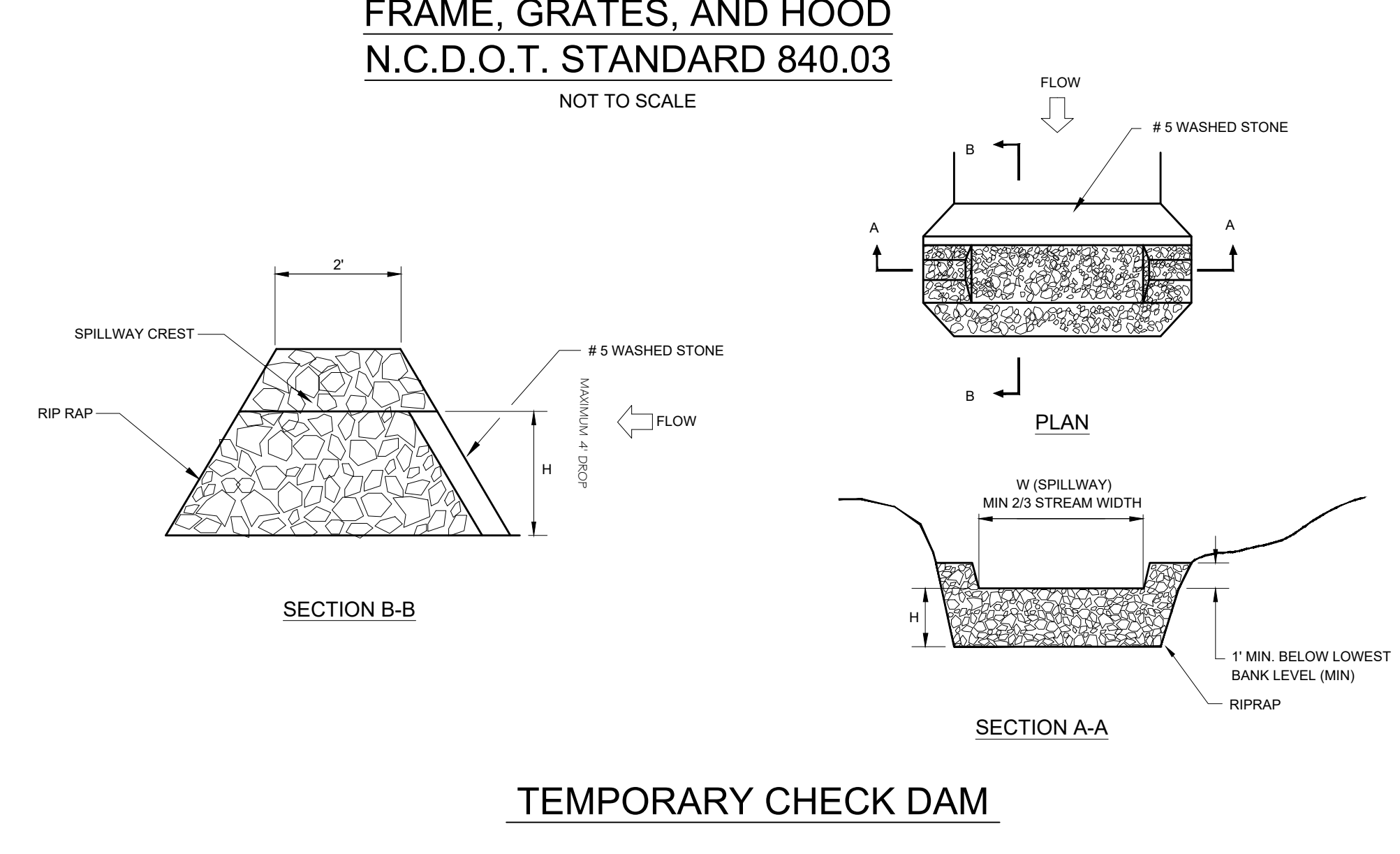
**CONCRETE CATCH BASIN, 12" THRU 54" PIPE  
 N.C.D.O.T. STANDARD 840.02**



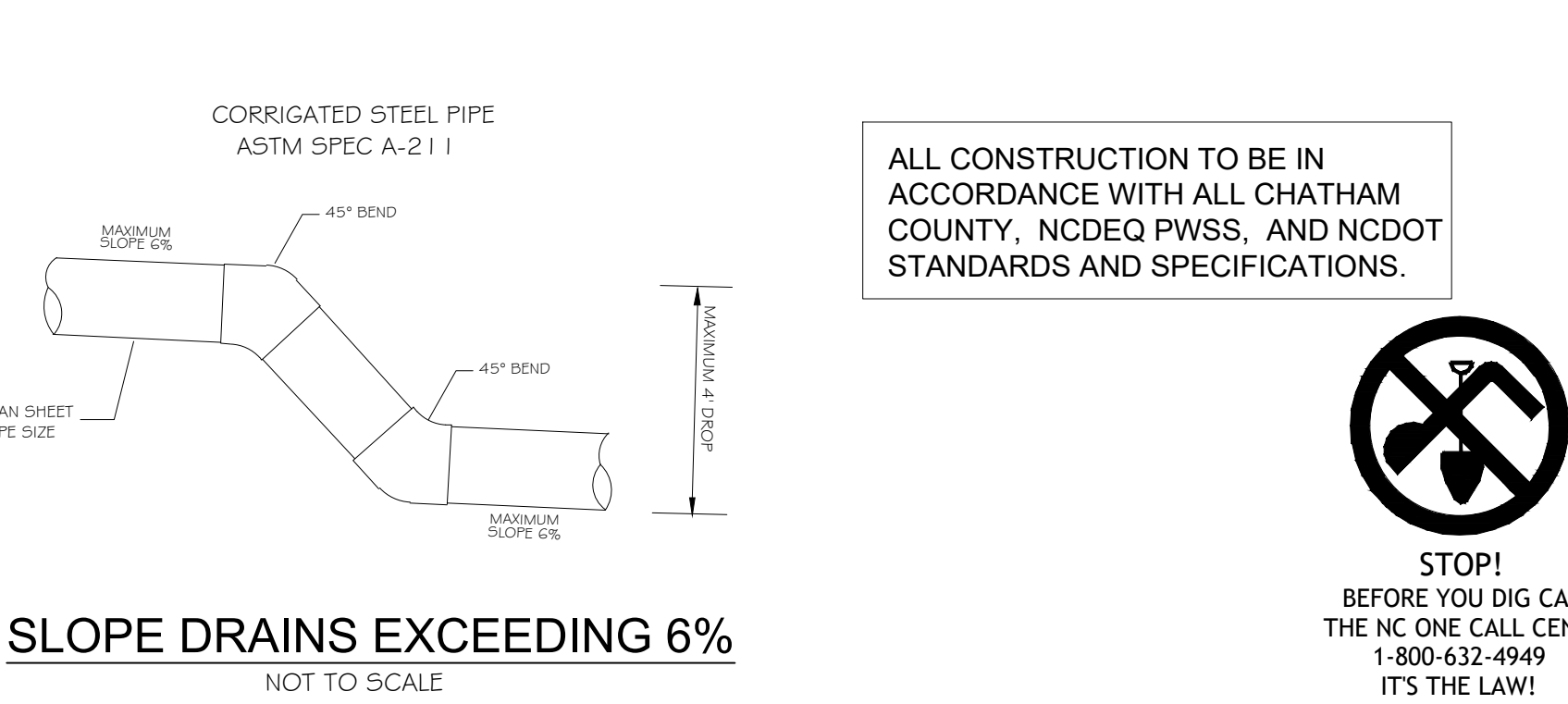
**FRAME, GRATES, AND HOOD  
 N.C.D.O.T. STANDARD 840.03**



**NCDOT STD. 840.04 or 840.05  
 THROAT INLET DETAIL**

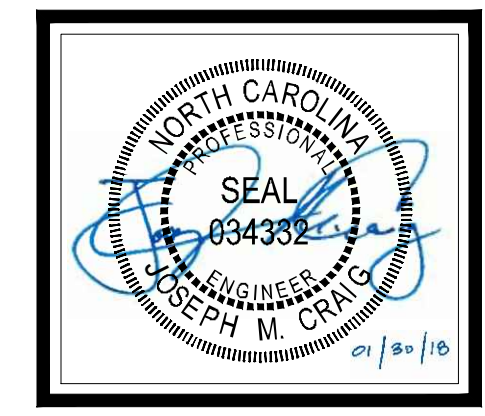


**OUTLET PROTECTION FOR DEFINED CHANNEL**



NO.	REVISIONS	DATE
1	CLIENT REQUESTED REVISIONS	10/11/17
2	REVISIONS PER NCDOT COMMENTS	10/31/17
3	REVISIONS PER CHATHAM COUNTY WATER & AQUA COMMENTS	01/30/18

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**THE LEGACY PHASE 5A3**  
 CONSTRUCTION PLANS  
 STORM DRAINAGE DETAILS  
 CHATHAM COUNTY, NORTH CAROLINA

Date:	10/06/17
Scale:	AS NOTED
Drawn:	TAN
Checked:	MPA
Project No.:	330-05
Computer Dwg. Name:	13 - Storm Details

