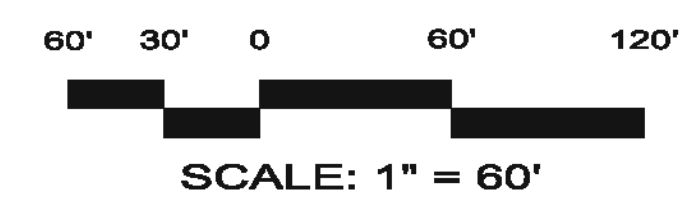


**SITE DATA**

TOTAL SITE AREA: ± 23.86 Ac.  
 PINS: 9785-46-4160  
 9785-46-6087  
 9785-56-3026  
 9785-56-4582  
 NEW LOTS: 13 LOTS  
 MINIMUM LOT SIZE: 19,859 SF (0.46 Ac.)  
 MAXIMUM LOT SIZE: 36,304 SF (0.83 Ac.)  
 AVERAGE LOT SIZE: 26,719 SF (0.61 Ac.)  
 SETBACKS  
 FRONT: 30'  
 SIDE: 15'  
 REAR: 25'

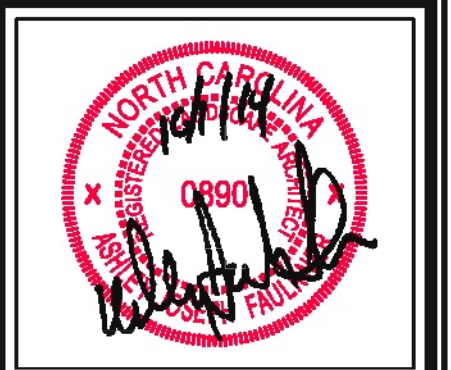
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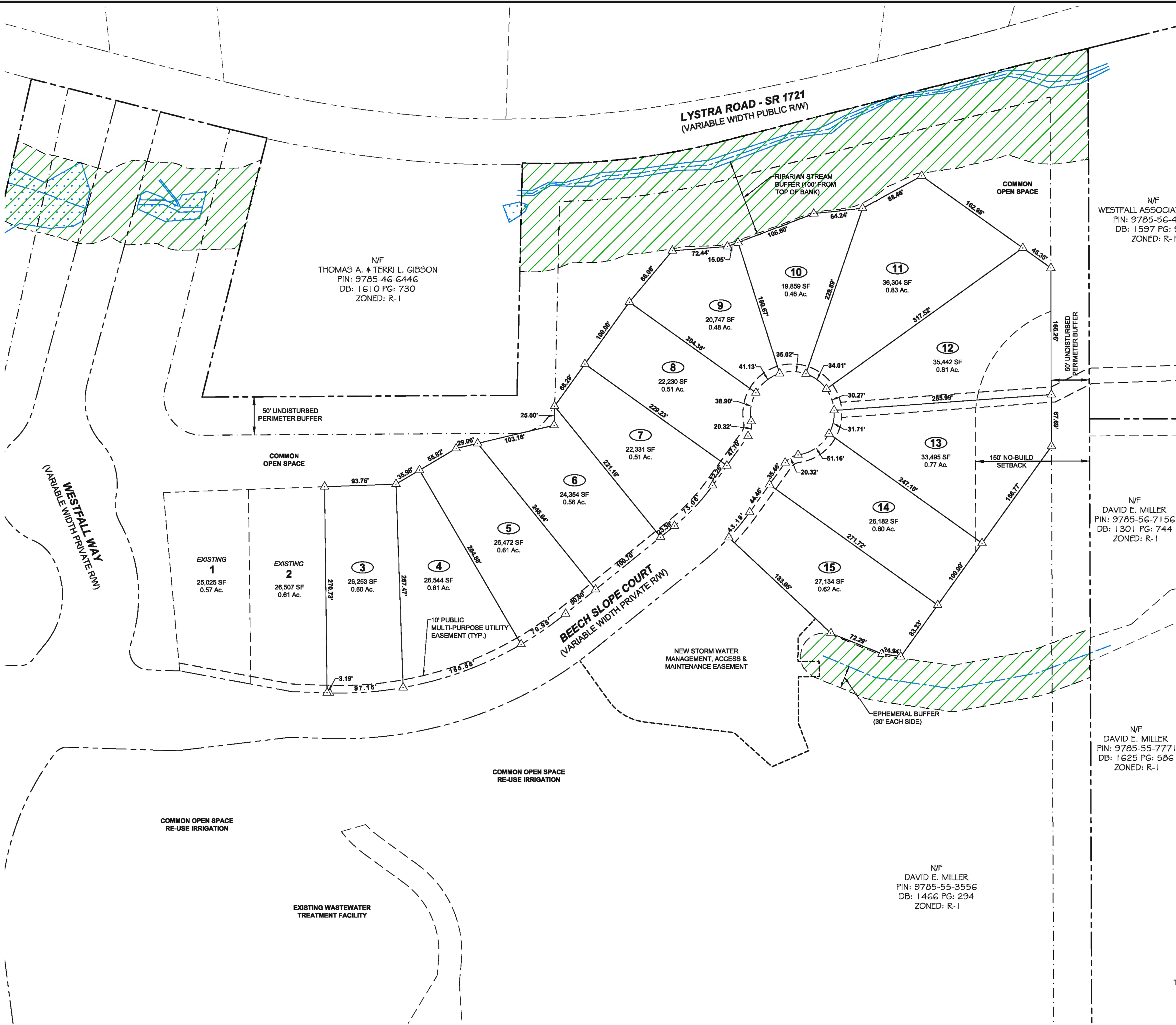
NO.	REVISIONS	DATE

**CE GROUP**  
 301 GLENWOOD AVE. 220  
 RALEIGH, NC 27603  
 PHONE: 919-367-8790  
 FAX: 919-322-0032  
 www.cegroupinc.com  
 License # C-1739



**WESTFALL SUBDIVISION PH-3A**  
 CONSTRUCTION PLANS  
**EXISTING CONDITIONS**  
 WILLIAMS TOWNSHIP  
 CHATHAM COUNTY, NORTH CAROLINA

Date: APRIL 17, 2014  
 Scale: 1" = 60'  
 Drawn: ACS  
 Checked: AJF  
 Project No. 800-12  
 Computer Dwg. Name 800-12 Phase 3A - 02 Ex Cond.dwg



N/F  
WESTFALL ASSOCIATES, LLC  
PIN: 9785-56-4582  
DB: 1597 PG: 939  
ZONED: R-1

N/F  
THOMAS A. & TERRI L. GIBSON  
PIN: 9785-46-6446  
DB: 1610 PG: 730  
ZONED: R-1

N/F  
DAVID E. MILLER  
PIN: 9785-56-7156  
DB: 1301 PG: 744  
ZONED: R-1

N/F  
DAVID E. MILLER  
PIN: 9785-55-7771  
DB: 1625 PG: 586  
ZONED: R-1

N/F  
DAVID E. MILLER  
PIN: 9785-55-3556  
DB: 1466 PG: 294  
ZONED: R-1

**NO BUILD SETBACK**

RESTRICTION WILL BE PUT IN PLACE THAT WILL ALLOW HOMEOWNERS TO CLEAR SUCH AREAS WITH HAND TOOLS (EFFECTIVELY LIMITING TO CLEARING OF UNDERBRUSH AND REMOVAL OF DEAD VEGETATION) AND DISALLOW GRADING.

**SITE DATA**

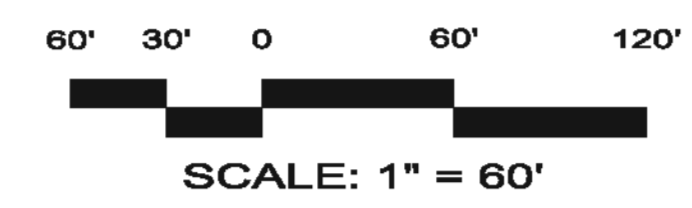
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NO.	REVISIONS	DATE

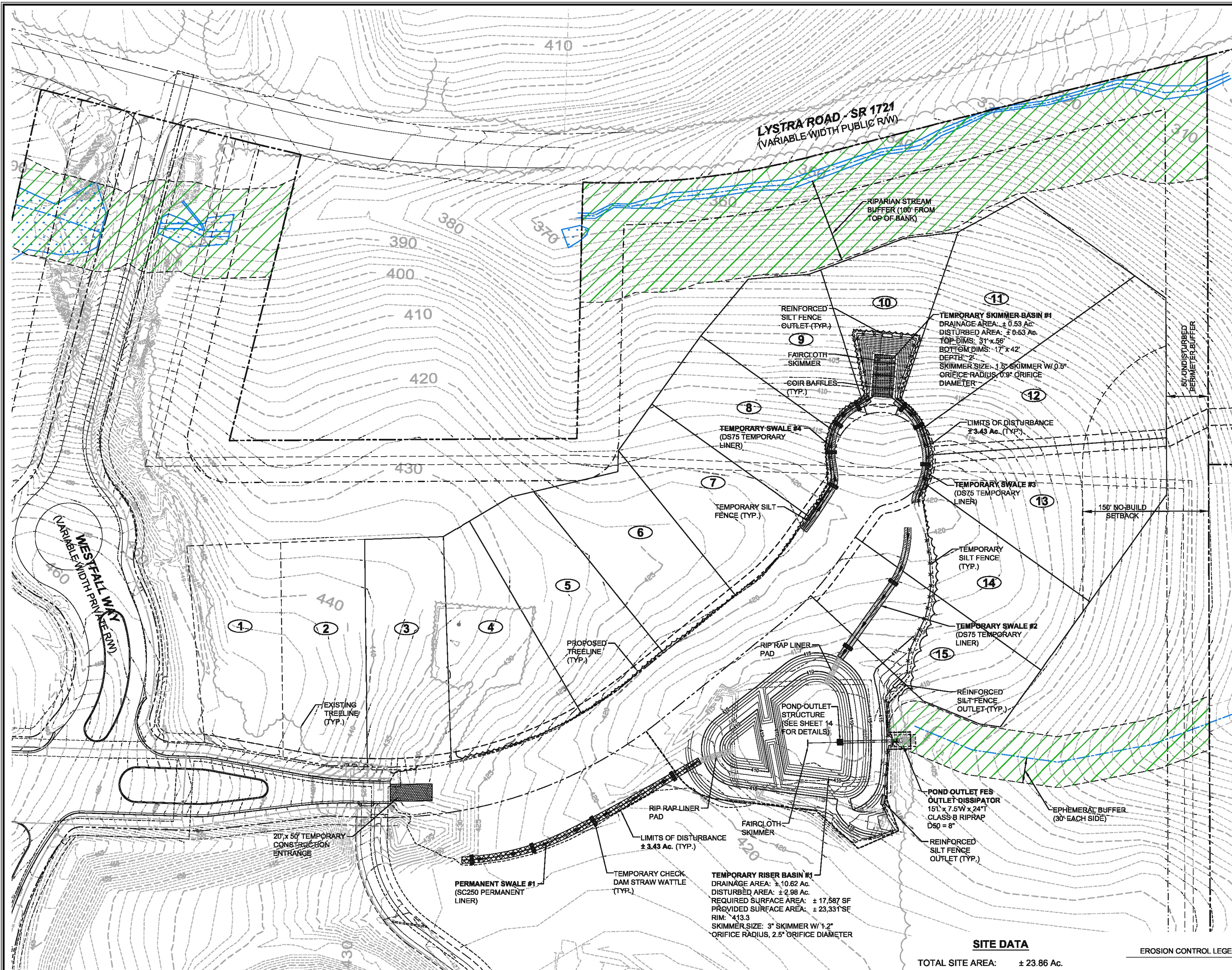
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License # C-1739



**WESTFALL SUBDIVISION PH-3A**  
**CONSTRUCTION PLANS**  
**OVERALL SUBDIVISION PLAN**  
WILLIAMS TOWNSHIP  
CHATHAM COUNTY, NORTH CAROLINA

Date:	APRIL 17, 2014
Scale:	1" = 60'
Drawn:	ACS
Checked:	AJF
Project No.:	800-12
Computer Dwg. Name:	800-12 Phase 3A - Overall Subdivision Plan.dwg
Sheet No.:	3



**CONSTRUCTION SEQUENCE**

- OBTAIN GRADING PERMIT / FINAL APPROVAL FROM CHATHAM COUNTY ENVIRONMENTAL HEALTH.
- CONTACT THE CHATHAM COUNTY EROSION CONTROL SECTION AT 919-646-8345 TO SET UP A PRE-CONSTRUCTION MEETING PRIOR TO ANY LAND DISTURBANCE WORK PERFORMED.
- INSTALL, IN ORDER OF THIS SEQUENCE: DELINEATE THE PROPOSED TREELINE/DISTURBED LIMIT LINE AND INSTALL ALL PROPOSED SILT FENCING THROUGHOUT THE ENTIRE PROJECT AREA ALONG WITH TEMPORARY CONSTRUCTION ENTRANCE.  
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\*CONTRACTOR TO REESTABLISH TEMPORARY DIVERSION SWALES AT THE END OF EACH DAY TO ENSURE DRAINAGE TO THE APPROPRIATE STRUCTURE.

NO.	REVISIONS	DATE

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**WESTFALL SUBDIVISION PH-3A  
 CONSTRUCTION PLANS  
 PHASE 1 EROSION CONTROL PLAN**  
 WILLIAMS TOWNSHIP  
 CHATHAM COUNTY, NORTH CAROLINA

Date: APRIL 17, 2014  
 Scale: 1" = 60'  
 Drawn: ACS  
 Checked: AJF  
 Project No. 800-12  
 Computer Dwg. Name 800-12 Phase 3A - PH-1 EC Plan.dwg  
 Sheet No. 4 of 1

**NC DENR SELF-INSPECTION PROGRAM**  
 THE SEDIMENTATION POLLUTION CONTROL ACT WAS AMENDED IN 2006 TO REQUIRE THAT PERSONS RESPONSIBLE FOR LAND-DISTURBING ACTIVITIES INSPECT A PROJECT AFTER EACH PHASE OF THE PROJECT TO MAKE SURE THAT THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN IS BEING FOLLOWED.  
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 THE SELF-INSPECTION REPORT FORM IS AVAILABLE AS AN EXCEL SPREADSHEET FROM THE LAND QUALITY WEB SITE.  
<http://portal.ncdenr.org/web/infocenter>

**EROSION CONTROL NOTES**  
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 MAINTENANCE: ALL EROSION AND SEDIMENT CONTROL PRACTICES TO BE INSPECTED WEEKLY AND AFTER EVERY RUNOFF PRODUCING RAINFALL EVENT. NEEDED REPAIRS WILL BE MADE IMMEDIATELY.  
 MAXIMUM GRADED SLOPE SHALL NOT EXCEED THREE (3) TO ONE (1).  
**TOTAL DISTURBED SOIL AREA IS 3.43 ACRES.**

**GROUND STABILIZATION \***

SITE AREA DESCRIPTION	STABILIZATION TIME FRAME	STABILIZATION TIME FRAME EXCEPTIONS
Perimeter dikes, swales, ditches and slopes	7 days	None
Tight Quality Water (TQW) Zones	7 days	None
Slopes steeper than 3:1	7 days	If slopes are 10' or less in length and are not steeper than 2:1, 14 days allowed
Slopes 3:1 or flatter	14 days	7-days for slopes greater than 50-feet in length
All other areas with slopes flatter than 4:1	14 days	None (except for perimeters and HQW Zones)

\*Extensions of time may be approved by the permitting authority based on weather or other site-specific conditions that make compliance impracticable. (Section 11.9 (2)(b))

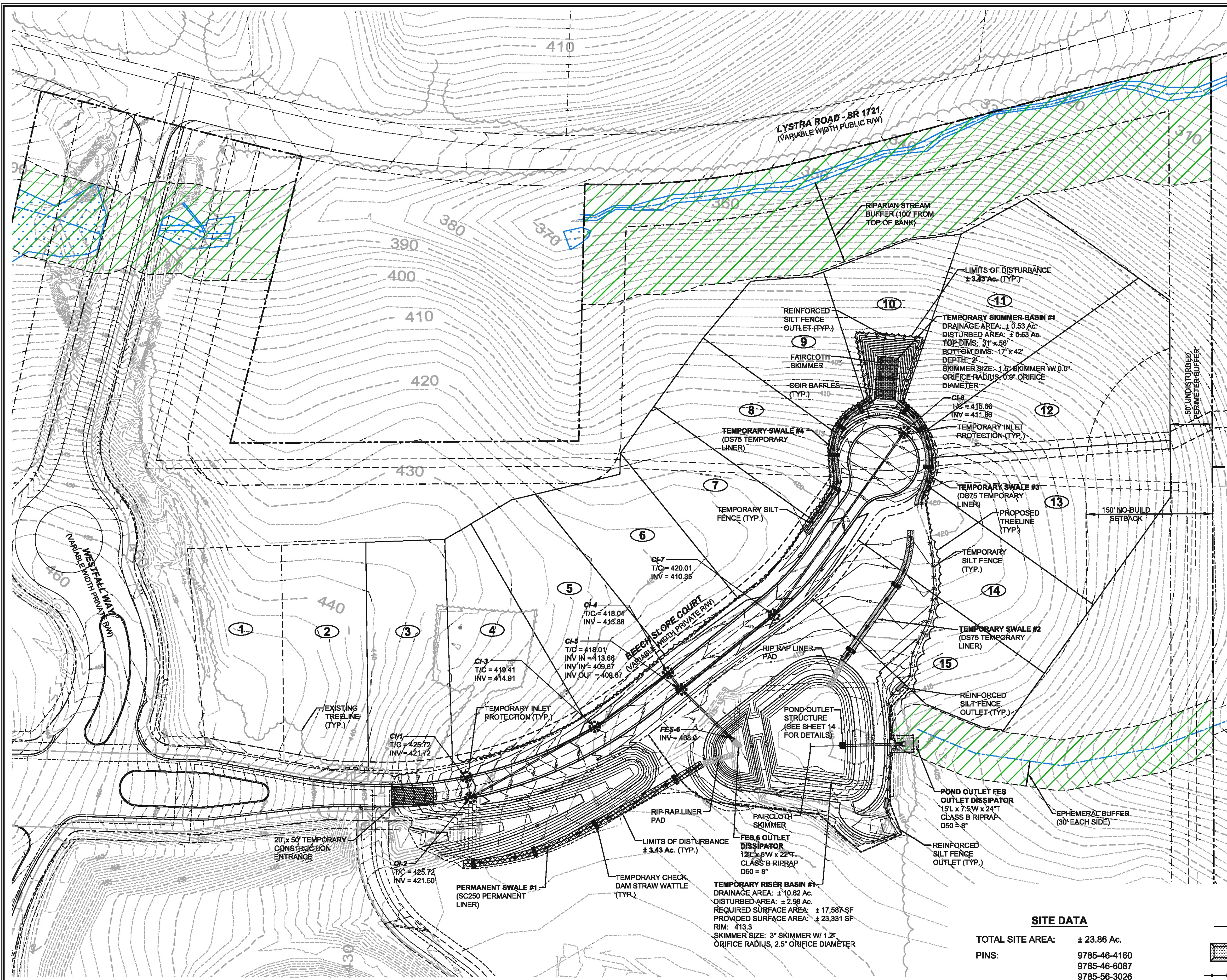
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 SETBACKS  
 FRONT: 30'  
 SIDE: 15'  
 REAR: 25'

**EROSION CONTROL LEGEND**

- TEMPORARY SEDIMENT TRAP / SKIMMER BASIN WITH OUTLET LOCATION
- TEMPORARY DIVERSION DITCH / BERM
- TEMPORARY SILT FENCE
- REINFORCED SILT FENCE OUTLET
- TEMPORARY STONE CHECK DAM
- TEMPORARY SILT BAG INLET PROTECTION
- LIMIT OF DISTURBANCE
- TREE LINE

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

**NORTH**  
 SCALE: 1" = 60'



- ### CONSTRUCTION SEQUENCE
- OBTAIN GRADING PERMIT / FINAL APPROVAL FROM CHATHAM COUNTY ENVIRONMENTAL HEALTH.
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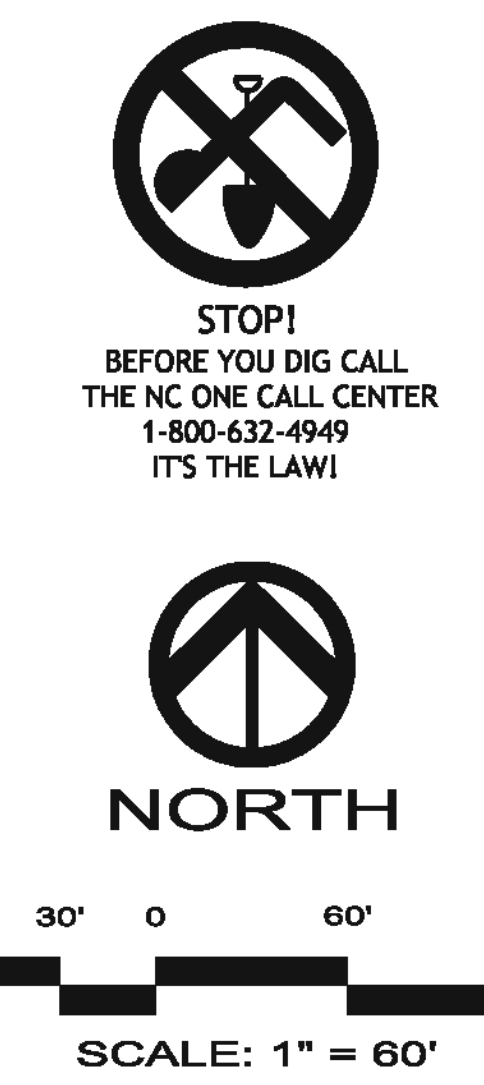
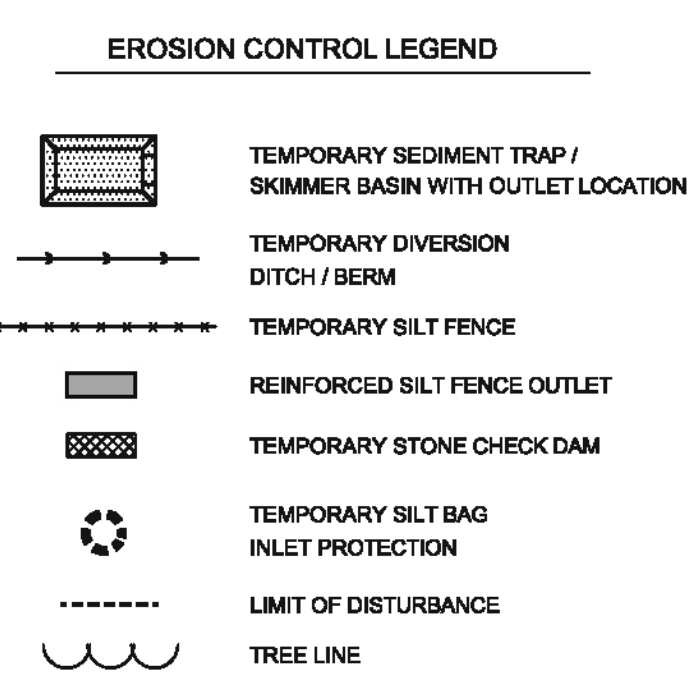
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#### NC DENR SELF-INSPECTION PROGRAM

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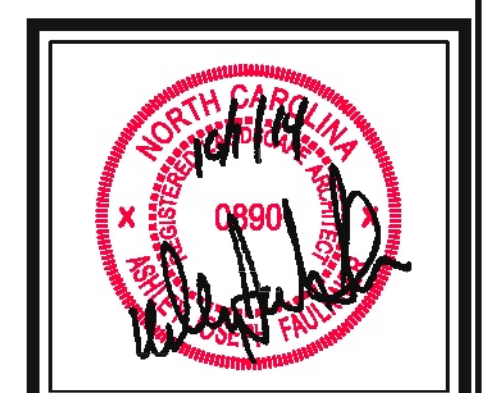
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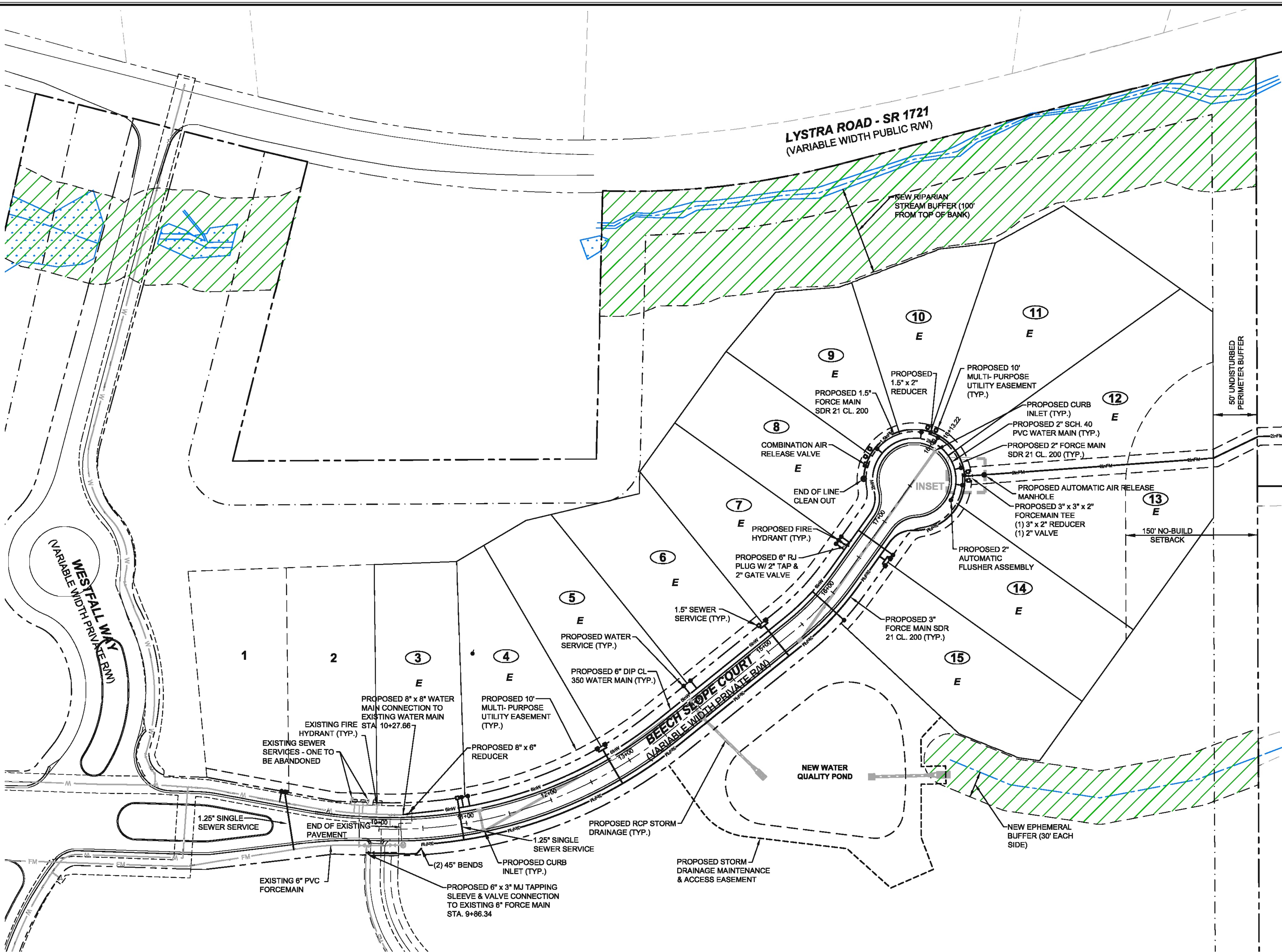
NO.	REVISIONS	DATE

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**WESTFALL SUBDIVISION PH-3A**  
**CONSTRUCTION PLANS**  
**PHASE 2 EROSION CONTROL PLAN**  
 WILLIAMS TOWNSHIP  
 CHATHAM COUNTY, NORTH CAROLINA

Date: APRIL 17, 2014  
 Scale: 1" = 60'  
 Drawn: ACS  
 Checked: AJF  
 Project No. 800-12  
 Computer Dwg. Name 800-12 Phase 3A - PH-2 EC Plan.dwg  
 Sheet No. **5** of 5



### LEGEND

— 2"W —	2" WATER MAIN	◆	FIRE HYDRANT
— 6"W —	6" WATER MAIN	⋈	WATER VALVE
— 2"FM —	SEWER FORCE MAIN	◀	REDUCER
—	REINFORCED CONCRETE PIPE STORM DRAINAGE	●	WATER SERVICE
■	RISER / YARD INLET	□	SEWER SERVICE
■	CURB INLET	●	PLUG / END CAP
▷	FLARED END SECTION	⊠	AIR RELEASE VALVE

### SITE DATA

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 9785-56-3026  
 9785-56-4582

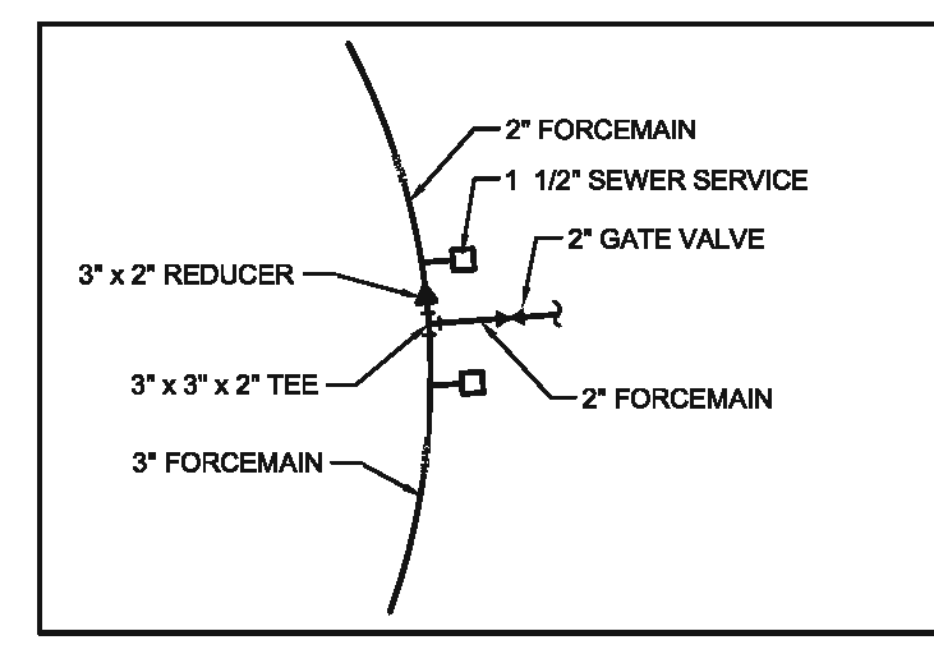
NEW LOTS: 13 LOTS  
 MINIMUM LOT SIZE: 19,859 SF (0.46 Ac.)  
 MAXIMUM LOT SIZE: 36,304 SF (0.83 Ac.)  
 AVERAGE LOT SIZE: 26,719 SF (0.61 Ac.)

SETBACKS  
 FRONT: 30'  
 SIDE: 15'  
 REAR: 25'

- ### GENERAL NOTES
- EXISTING UNDERGROUND STRUCTURES AND UTILITIES SHOWN ARE BASED ON FIELD SURVEYS AND BEST AVAILABLE RECORD DRAWINGS. THE CONTRACTOR SHALL FIELD VERIFY CONDITIONS, INCLUDING THE HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES, PRIOR TO STARTING CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
  - THE CONTRACTOR SHALL CONTACT NORTH CAROLINA ONE CALL AT 1-800-632-4949. THE CONTRACTOR SHALL CALL AT LEAST 48 HOURS PRIOR TO ANY DIGGING.
  - ALL WATER UTILITY CONSTRUCTION SHALL CONFORM TO THE CHATHAM COUNTY STANDARDS AND SPECIFICATIONS.
  - ALL WATER MAINS SHALL HAVE A MINIMUM OF 3.0' OF COVER AS MEASURED FROM FINISH GRADE AT THE LOCATION OF WHERE INSTALLED.
  - ALL SANITARY SEWER UTILITY CONSTRUCTION SHALL CONFORM TO AQUA OF NORTH CAROLINA STANDARDS AND SPECIFICATIONS.
  - THE SUBJECT PROPERTY IS LOCATED IN A FLOOD HAZARD AREA PER FEMA FIRM PANEL 9784 MAP NUMBER 3710978400J, DATED FEBRUARY 2, 2007.
  - AQUA PERSONNEL SHALL BE NOTIFIED 48 HOURS BEFORE CONSTRUCTION IS TO BEGIN, ANY TESTING IS SCHEDULED, OR BEFORE ANY PIPE IS COVERED.
  - EXISTING OVERALL TOPOGRAPHIC INFORMATION TAKEN FROM NCDOT LIDAR FOR CHATHAM COUNTY. ROADWAY CORRIDOR TOPOGRAPHIC INFORMATION TAKEN FROM SURVEYED INFORMATION BY CE GROUP, INC.
  - ALL STREETS ARE PRIVATE.
  - ALL CONNECTIONS TO EXISTING MAINS SHALL BE MADE BY THE CONTRACTOR ONLY AFTER THE CONNECTION PROCEDURE AND THE WORK SCHEDULING HAS BEEN REVIEWED AND APPROVED BY AQUA. THE CONTRACTOR SHALL SUBMIT WRITTEN REQUEST TO AQUA A MINIMUM OF ONE (1) WEEK PRIOR TO SCHEDULING SAID CONNECTIONS. THE REQUEST SHALL OUTLINE THE FOLLOWING:
    - POINTS OF CONNECTION, FITTING TO BE USED AND METHOD.
    - ESTIMATED CONSTRUCTION TIME FOR SAID CONNECTIONS.
 ALL CONNECTIONS SHALL ONLY BE MADE ON THE AGREED UPON DATE AND TIME. IF THE CONTRACTOR DOES NOT INITIATE AND COMPLETE THE CONNECTION WORK IN THE AGREED UPON MANNER, THE CONTRACTOR SHALL BE REQUIRED TO RESCHEDULE THE SAID CONNECTION BY FOLLOWING THE ABOVE PROCEDURE.

LOT#	PUMP TYPE	PUMP MODEL#	CAPACITY	TOP OF WET WELL	MIN. PUMP OFF ELEV.	LOT#	PUMP TYPE	PUMP MODEL#	CAPACITY	TOP OF WET WELL	MIN. PUMP OFF ELEV.
3	E	e one WH471-92	7.8 - 15 GPM	428	421.50	13	E	e one WH471-92	7.8 - 15 GPM	418	411.50
4	E	e one WH471-92	7.8 - 15 GPM	421	414.50	14	E	e one WH471-92	7.8 - 15 GPM	420	413.50
5	E	e one WH471-92	7.8 - 15 GPM	421	414.50	15	E	e one WH471-92	7.8 - 15 GPM	420	413.50
6	E	e one WH471-92	7.8 - 15 GPM	421	414.50						
7	E	e one WH471-92	7.8 - 15 GPM	421	414.50						
8	E	e one WH471-92	7.8 - 15 GPM	415	408.50						
9	E	e one WH471-92	7.8 - 15 GPM	414	407.50						
10	E	e one WH471-92	7.8 - 15 GPM	413	406.50						
11	E	e one WH471-92	7.8 - 15 GPM	413	406.50						
12	E	e one WH471-92	7.8 - 15 GPM	417	410.50						

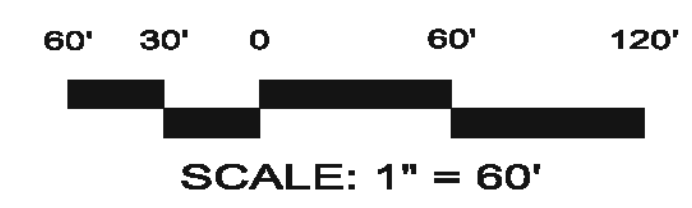
NOTE: ALL SINGLE SERVICES SHALL USE 1.25" SERVICE LATERAL AND DUAL SERVICES SHALL HAVE 1.5" SERVICE LATERALS.



INSET  
NTS



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NO.	REVISIONS	DATE

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 301 GLENWOOD AVE. 220  
 RALEIGH, NC 27603  
 PHONE: 919-367-8790  
 FAX: 919-322-0032  
 www.cegroupinc.com  
 License # C-1739

**WESTFALL SUBDIVISION PH-3A  
 CONSTRUCTION PLANS  
 UTILITY PLAN**  
 WILLIAMS TOWNSHIP  
 CHATHAM COUNTY, NORTH CAROLINA

Date: APRIL 17, 2014  
 Scale: 1" = 60'  
 Drawn: ACS  
 Checked: AJF  
 Project No: 800-12  
 Computer Dwg. Name: 800-12 Phase 3A - Utility Plan.dwg

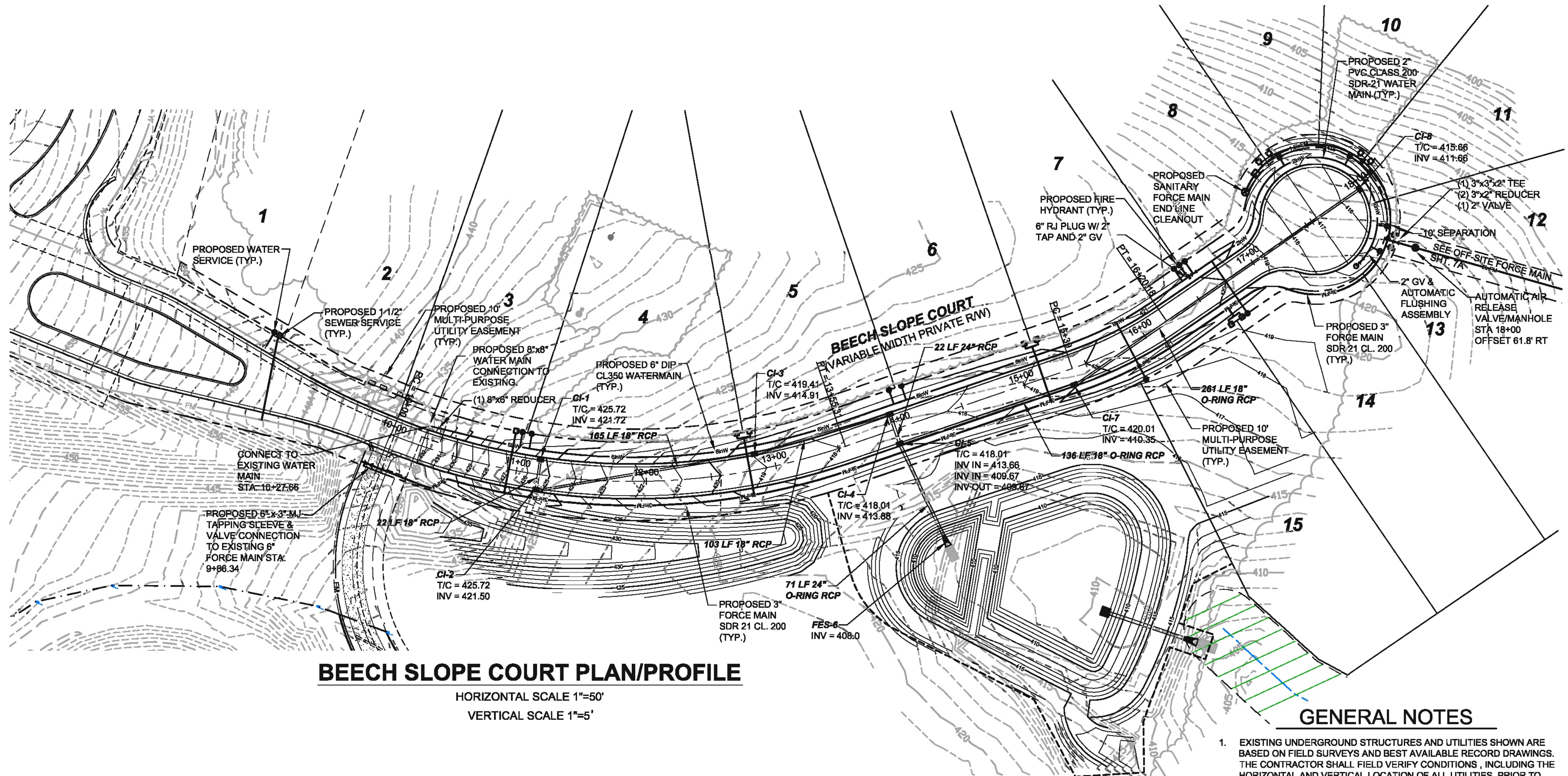
**SITE DATA**

TOTAL SITE AREA: ± 23.86 Ac.  
 PINS: 9785-46-4160  
 9785-46-6087  
 9785-56-3026  
 9785-56-4582  
 NEW LOTS: 13 LOTS  
 MINIMUM LOT SIZE: 19,859 SF (0.46 Ac.)  
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 SETBACKS  
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**GENERAL CONSTRUCTION NOTES**

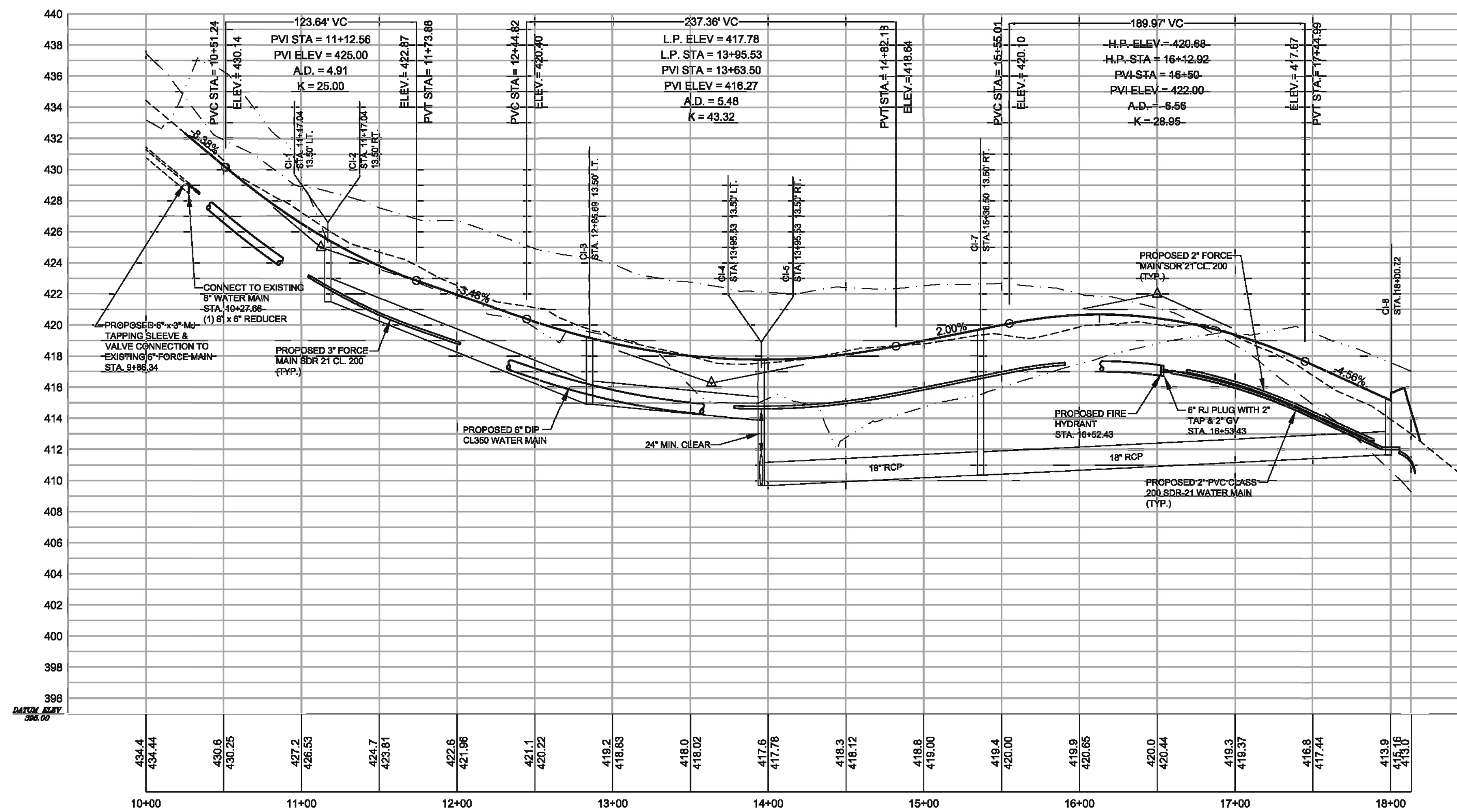
EXISTING UNDERGROUND STRUCTURES AND UTILITIES SHOWN ARE BASED ON FIELD SURVEY. THE CONTRACTOR SHALL FIELD VERIFY CONDITIONS PRIOR TO STARTING CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES IMMEDIATELY.  
 THE CONTRACTOR SHALL CONTACT NORTH CAROLINA ONE CALL AT 1-800-632-4949 FOR ASSISTANCE LOCATING UTILITIES. THE CONTRACTOR SHALL CALL AT LEAST 48 HOURS PRIOR TO ANY DIGGING.  
 ALL WATER MAINS SHALL HAVE A MINIMUM OF 3.0' OF COVER AS MEASURED FROM FINISHED GRADE AT THE LOCATION WHERE INSTALLED.  
 ALL WATER CONSTRUCTION SHALL CONFORM TO THE CHATHAM COUNTY STANDARDS AND SPECIFICATIONS. ALL SEWER CONSTRUCTION SHALL CONFORM TO AQUA UTILITIES STANDARDS AND SPECIFICATIONS.  
 TOPOGRAPHIC INFORMATION PROVIDED BY CE GROUP, INC. PROFILE DATA FROM FIELD SURVEY. BACKGROUND TOPOGRAPHY FROM CHATHAM COUNTY GIS.  
 FOR TYPICAL STREET SECTIONS, SEE SHEET \_\_\_\_ ALL STREETS ARE PRIVATE.  
 NO CHANNEL DISTURBANCE TO OCCUR UNLESS ACOE AND DWQ PERMITS HAVE BEEN ACQUIRED. NO DISTURBANCE TO TAKE PLACE WITHOUT PERMIT ON-SITE.

AQUA PERSONNEL SHALL BE NOTIFIED 48 HOURS BEFORE CONSTRUCTION IS TO BEGIN, ANY TESTING IS SCHEDULED, OR BEFORE ANY PIPE IS COVERED.



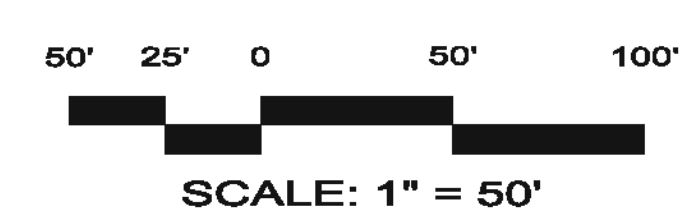
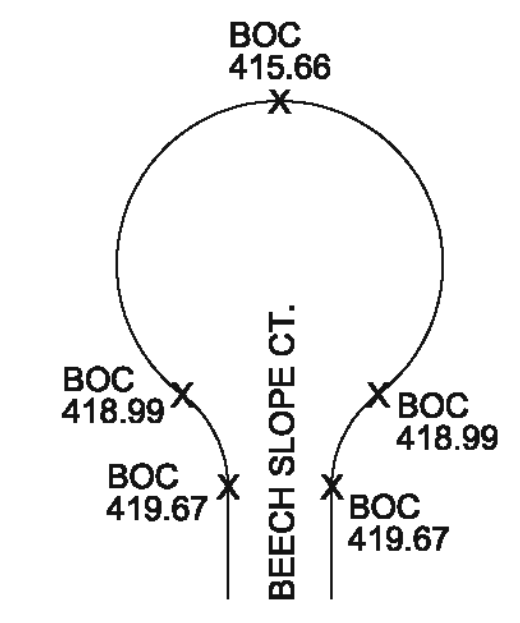
**BEECH SLOPE COURT PLAN/PROFILE**

HORIZONTAL SCALE 1"=50'  
 VERTICAL SCALE 1"=5'



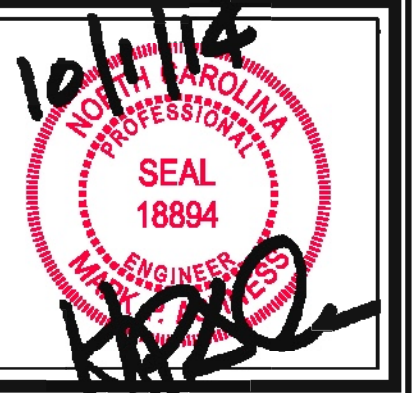
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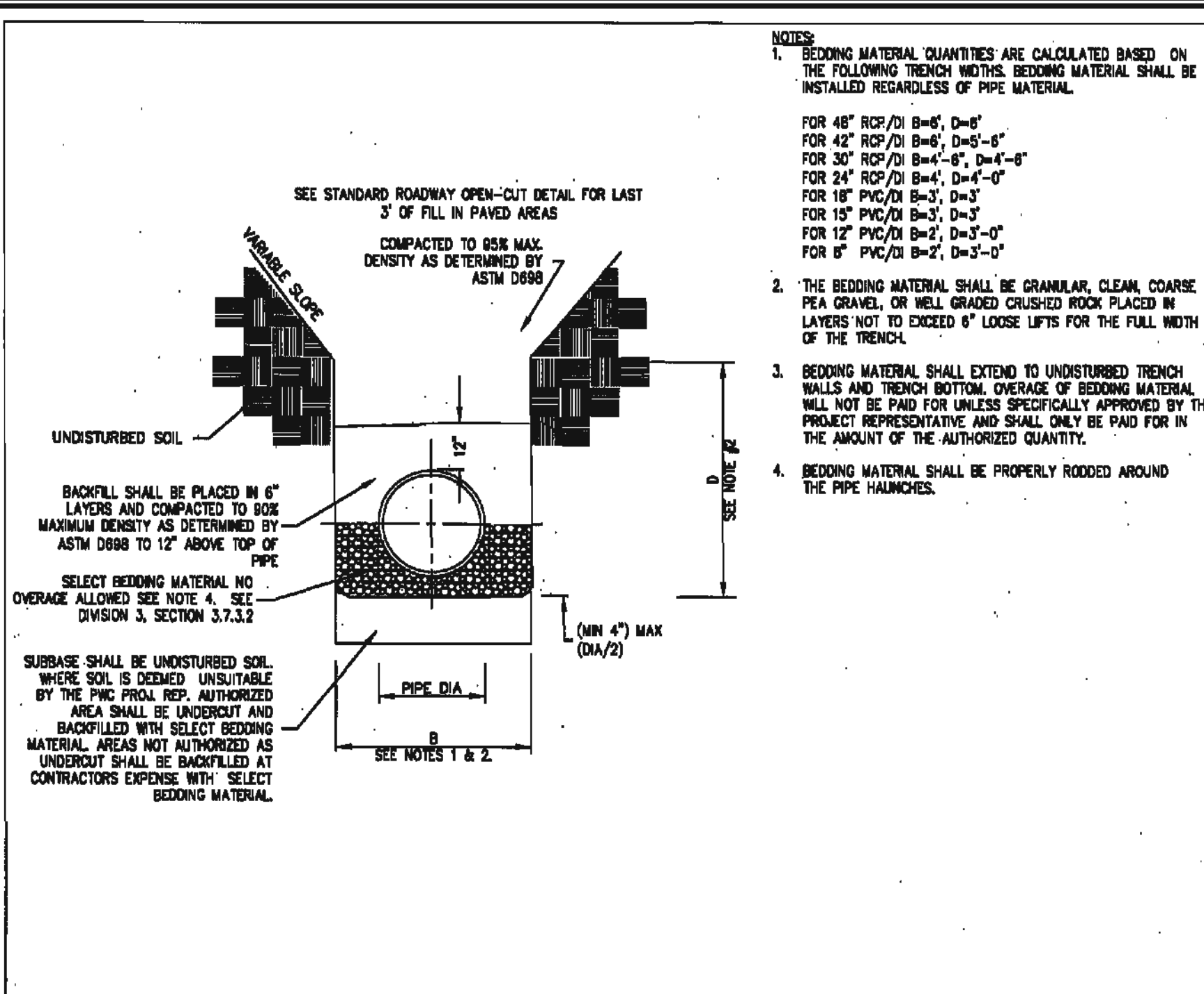
NO.	REVISIONS	DATE

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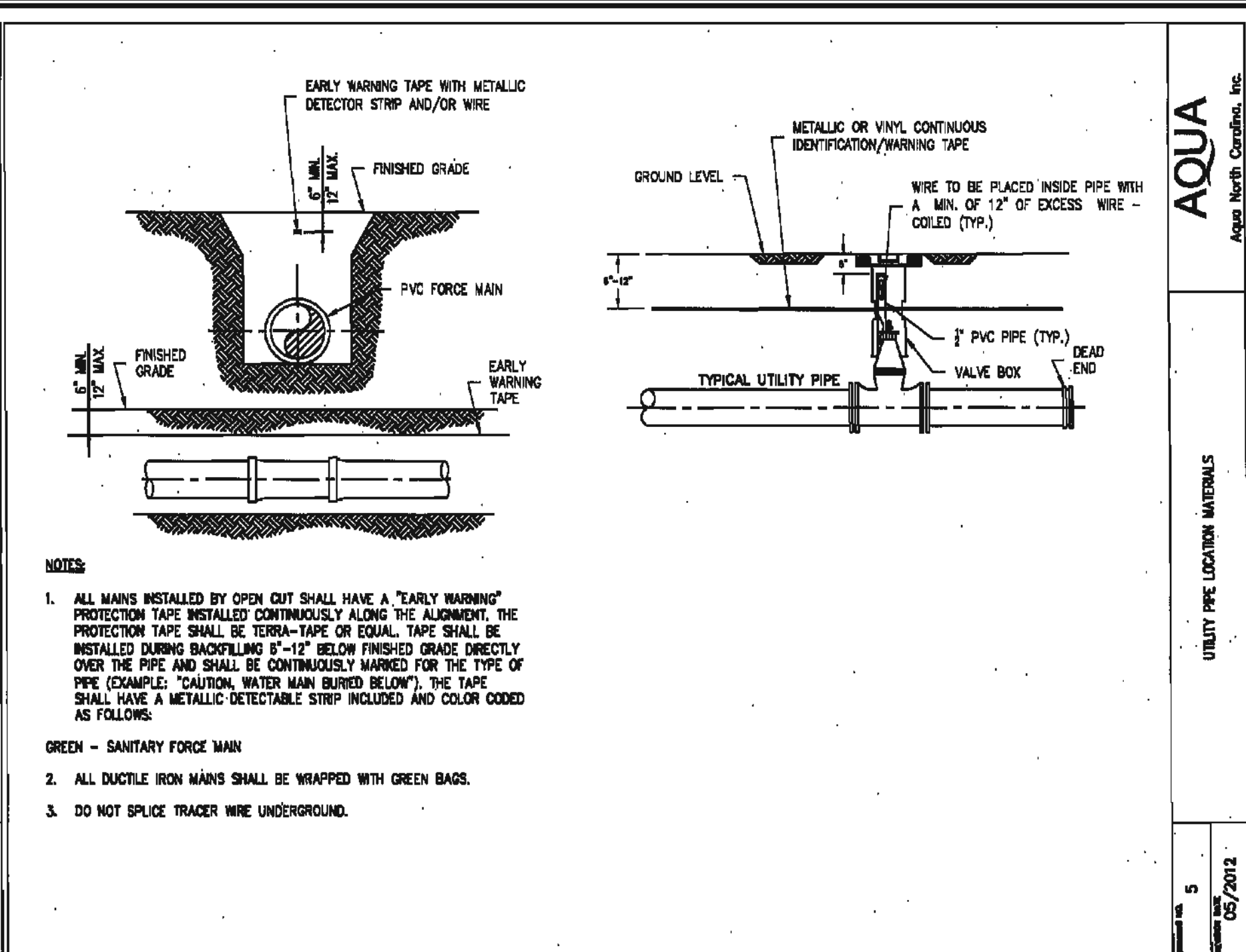


**WESTFALL SUBDIVISION PH-3A**  
**CONSTRUCTION PLANS**  
**BEECH SLOPE CT PLAN/PROFILE**  
 WILLIAMS TOWNSHIP  
 CHATHAM COUNTY, NORTH CAROLINA

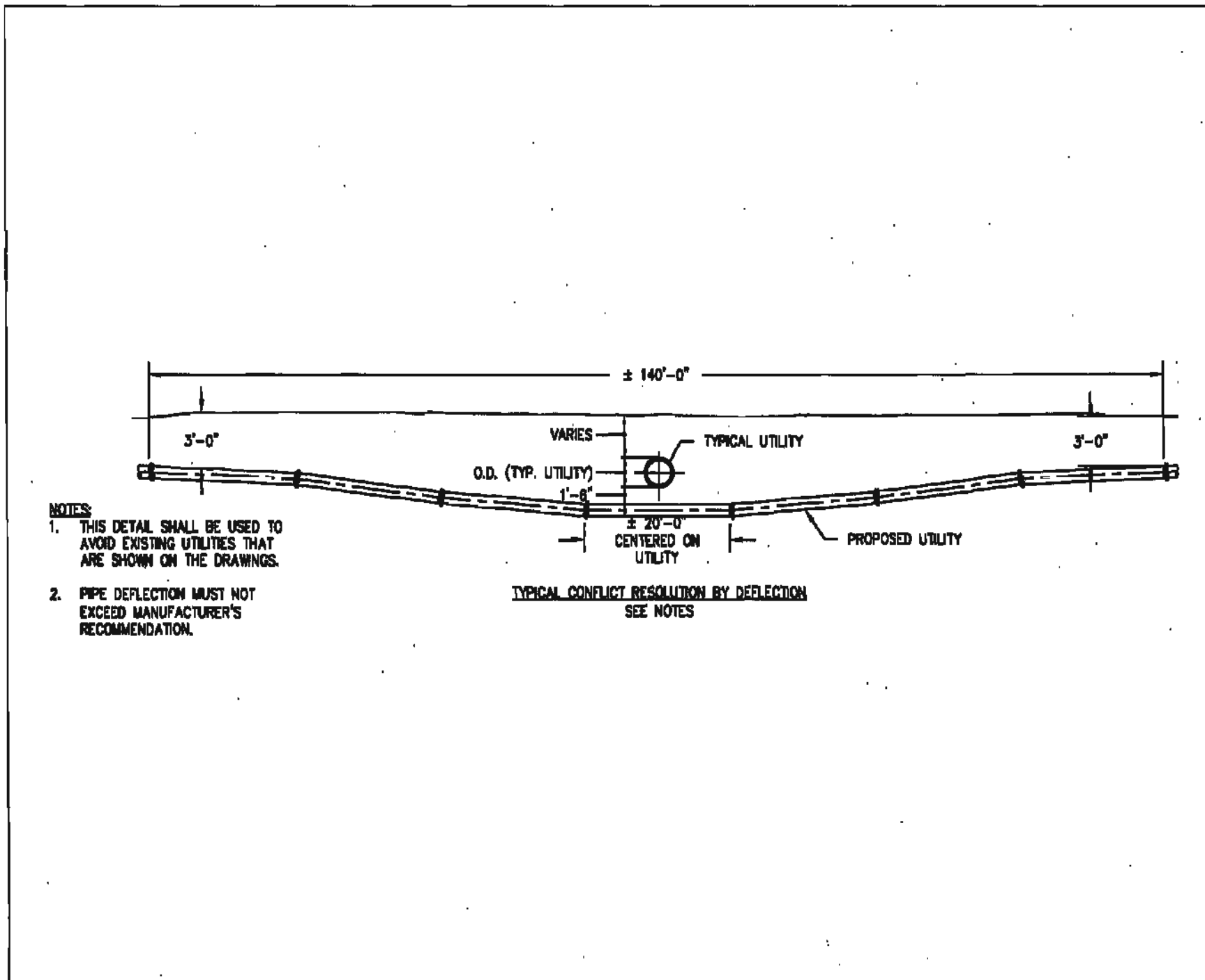
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Checked:	AJF
Project No.	800-12
Computer Dwg. Name	800-12 Phase 3A - P&P Beech Slope.dwg



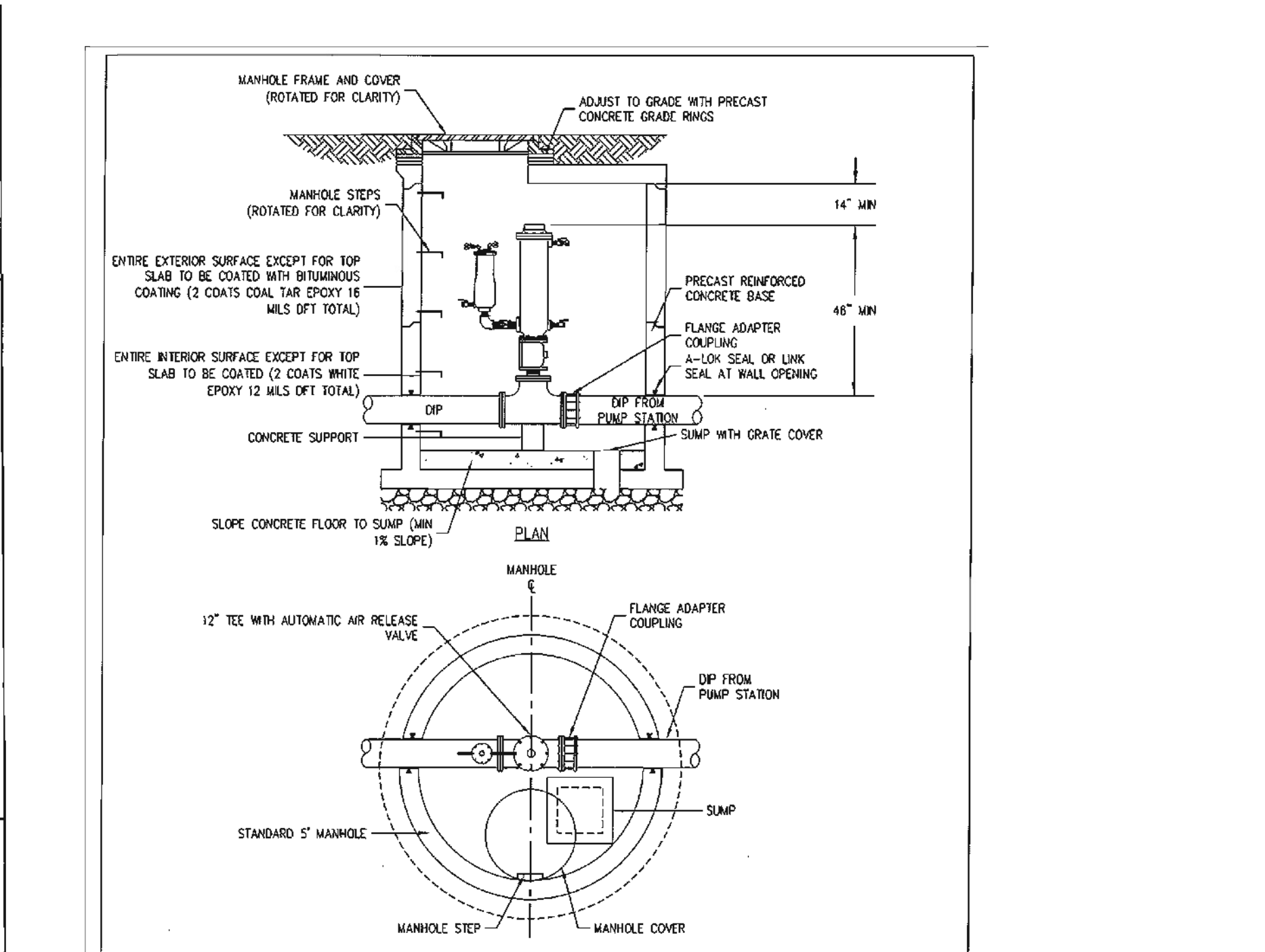
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Aqua North Carolina, Inc.  
TRENCH DETAIL  
05/2012



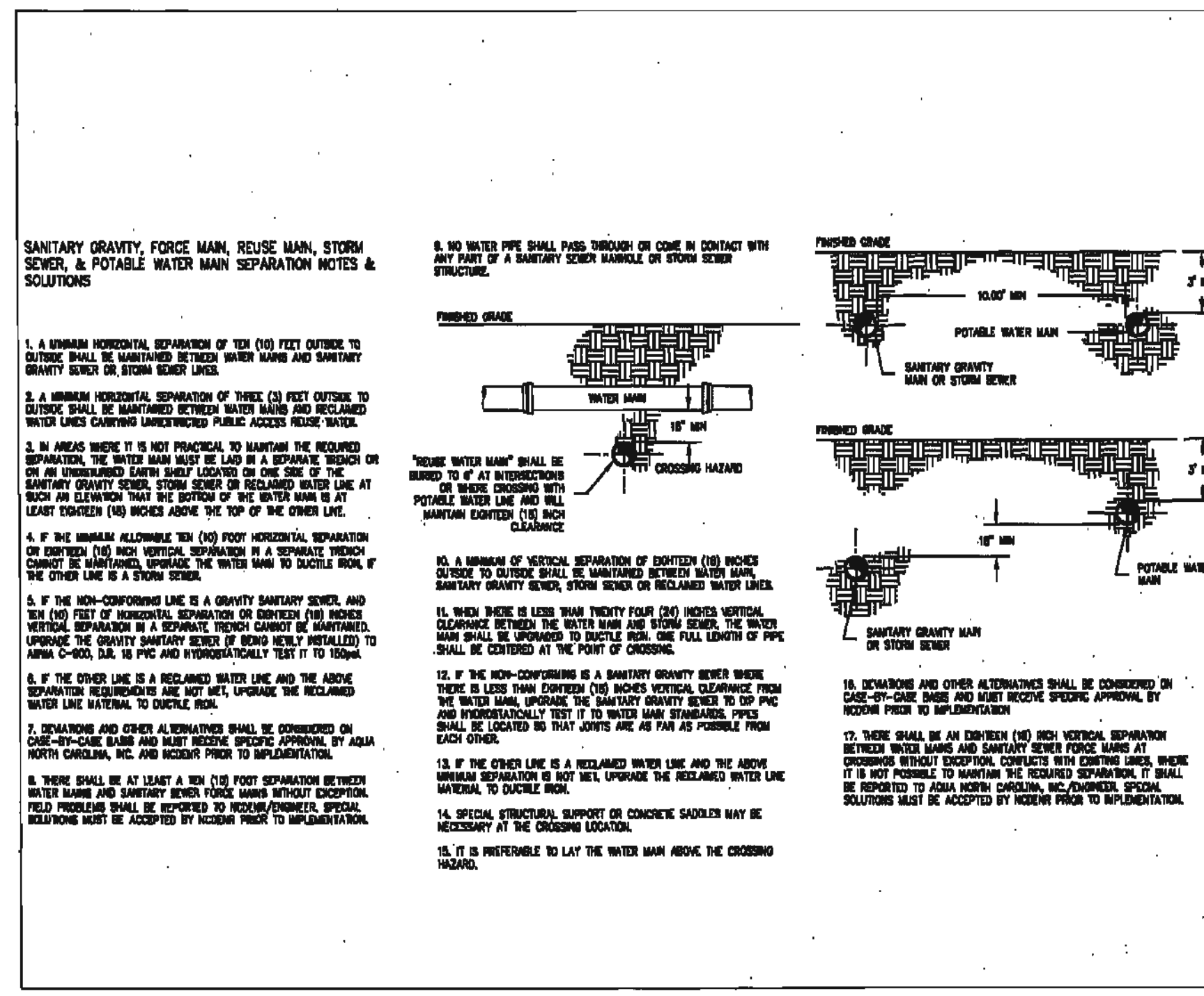
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Aqua North Carolina, Inc.  
UTILITY PIPE LOCATION MATERIALS  
05/2012



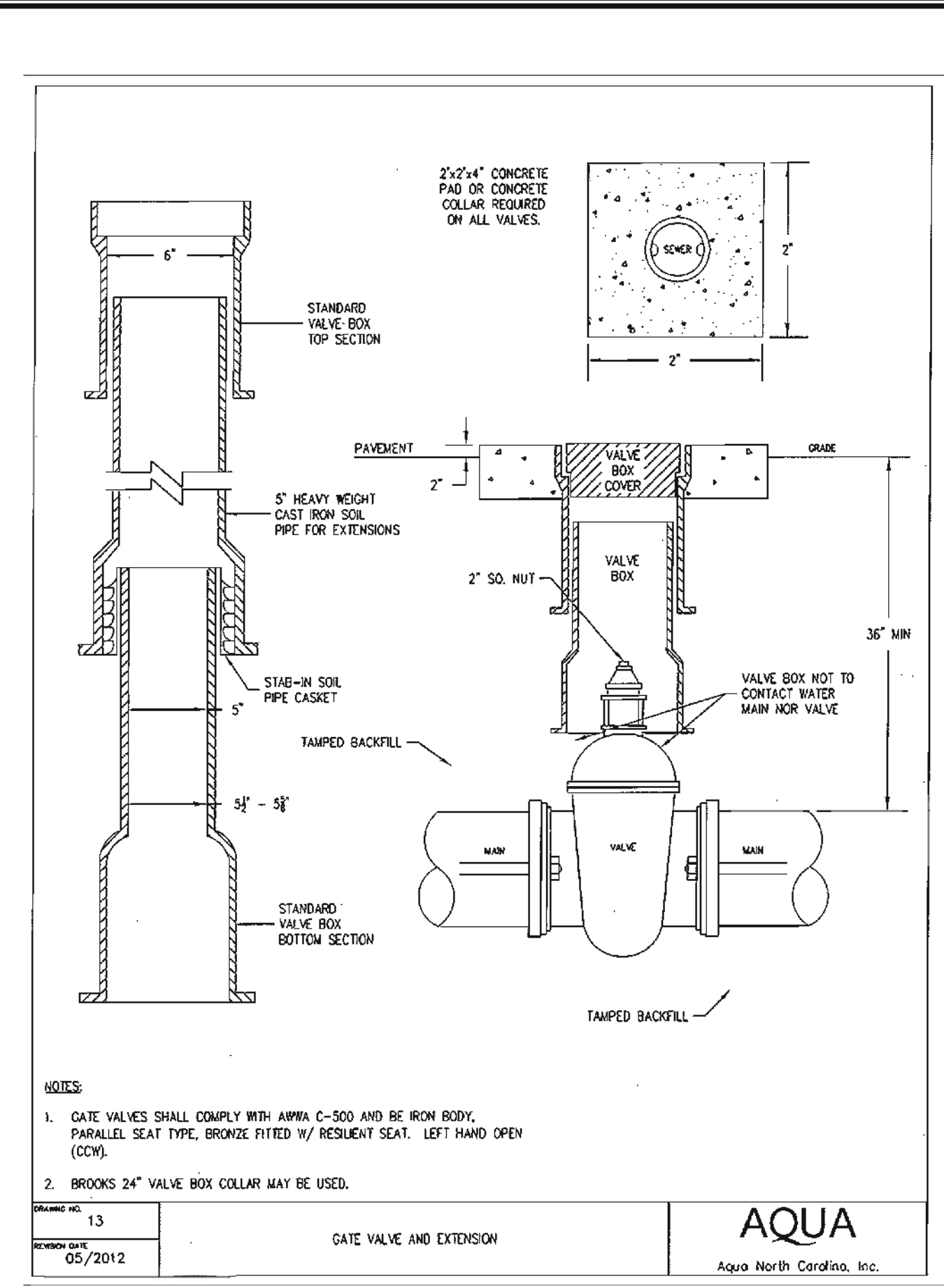
**AQUA**  
Aqua North Carolina, Inc.  
TYPICAL CONFLICT RESOLUTION BY DEFLECTION  
05/2012



**AQUA**  
Aqua North Carolina, Inc.  
AIR RELEASE VALVE DETAIL  
05/2012



**AQUA**  
Aqua North Carolina, Inc.  
UTILITY SEPARATION DETAILS  
05/2012



**AQUA**  
Aqua North Carolina, Inc.  
GATE VALVE AND EXTENSION  
05/2012

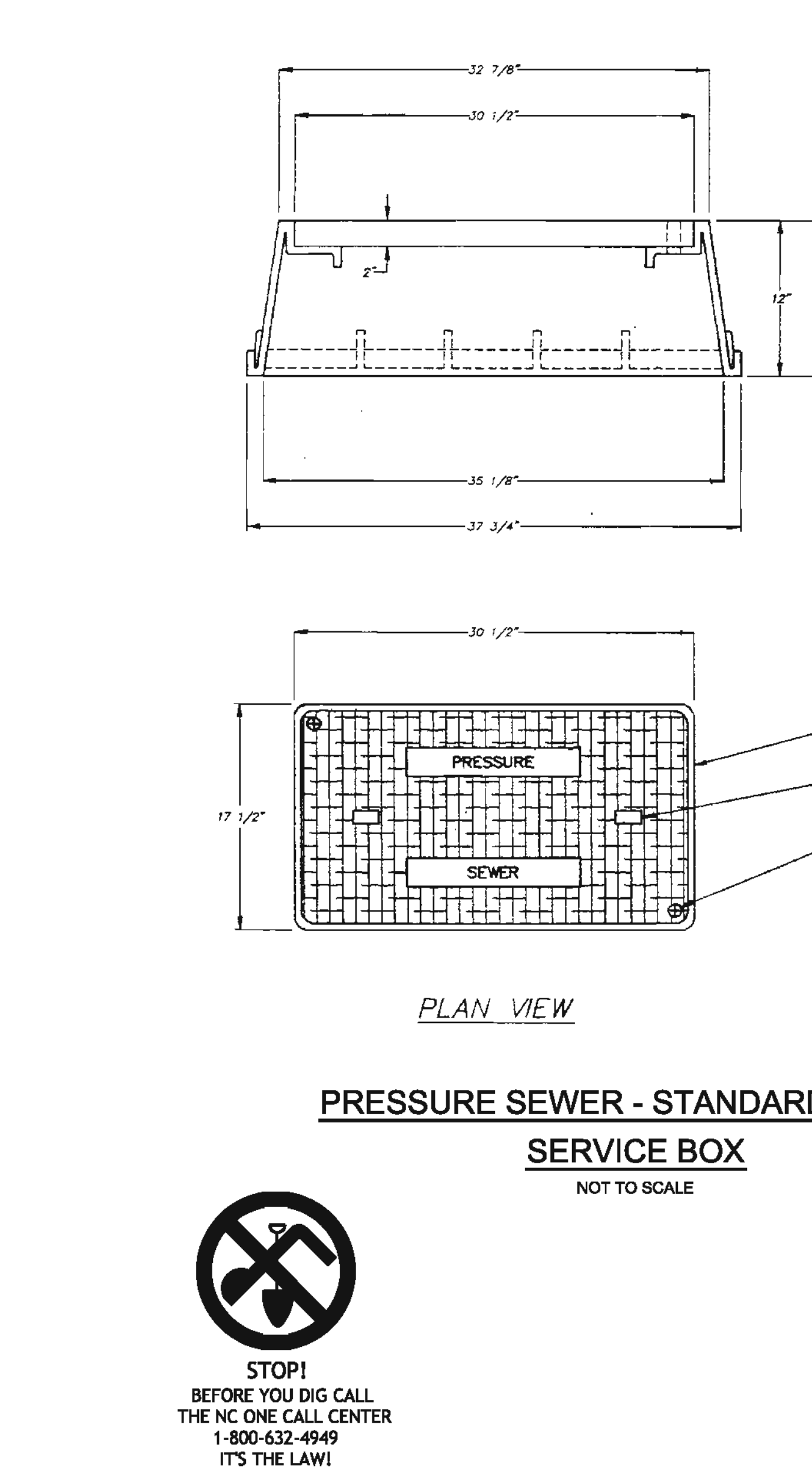
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www.cegroupinc.com  
License # C-1739

**WESTFALL SUBDIVISION PH-3A**  
CONSTRUCTION PLANS  
**SEWER DETAILS**  
WILLIAMS TOWNSHIP  
CHATHAM COUNTY, NORTH CAROLINA

**10/17/16**  
NORTH CAROLINA PROFESSIONAL SEAL 18894  
CIVIL ENGINEER  
H. J. JONES

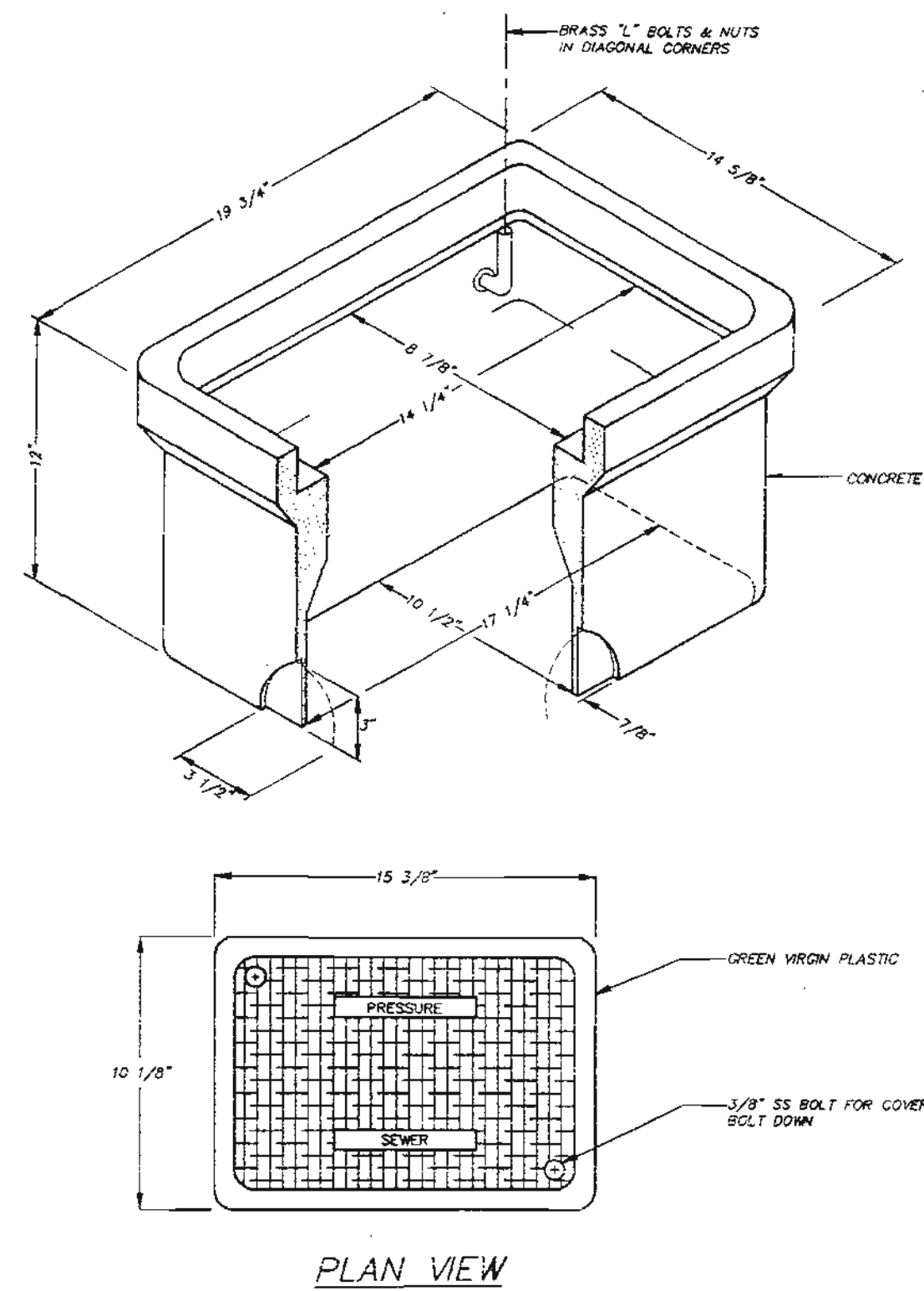
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Project No: 800-12  
Computer Dwg. Name: 800-12 Phase 3A - Sewer Details.dwg  
Sheet No: **8** Of -



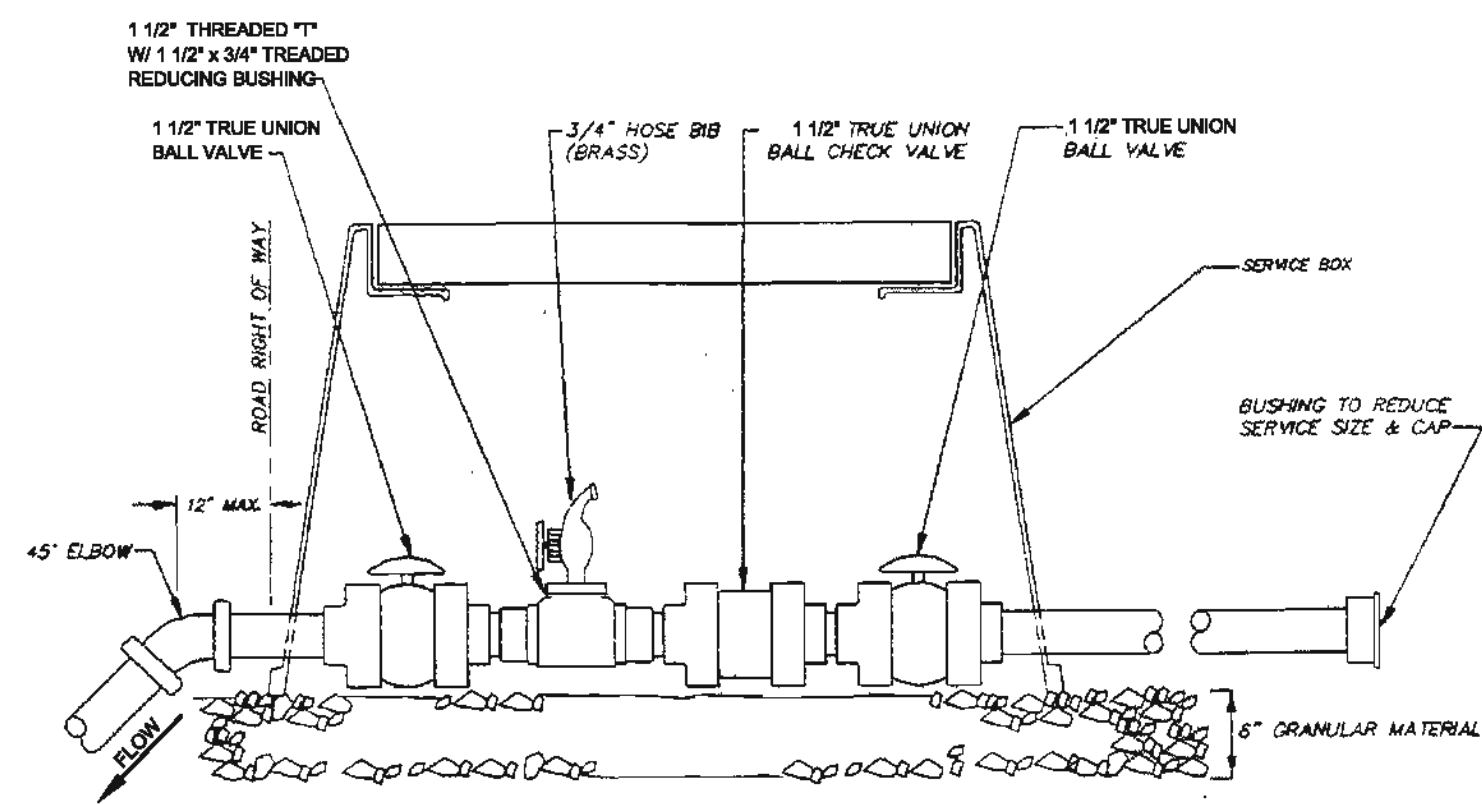
**AQUA**  
Aqua North Carolina, Inc.  
PRESSURE SEWER - STANDARD DETAIL SERVICE BOX  
NOT TO SCALE

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



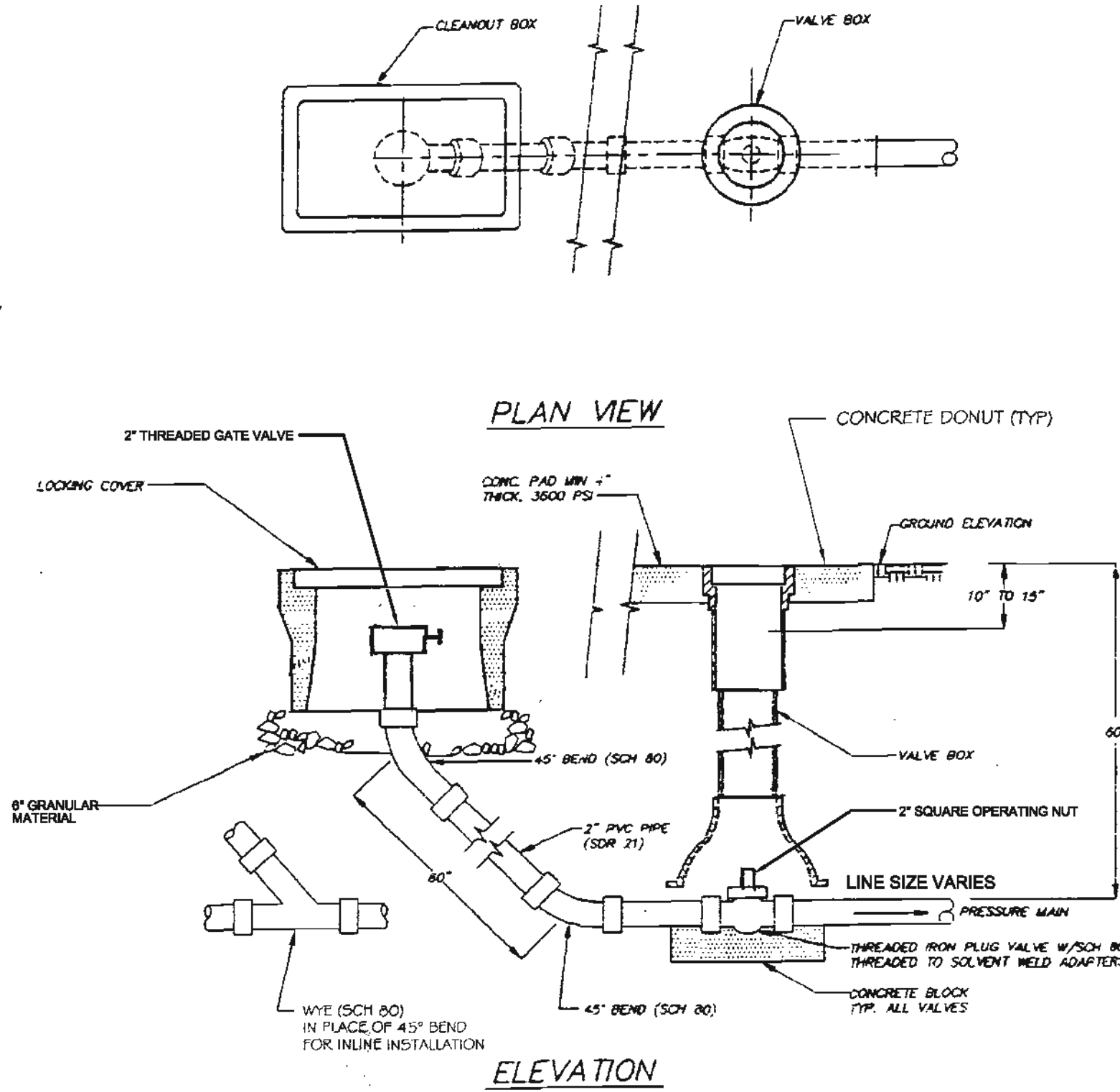


PLAN VIEW



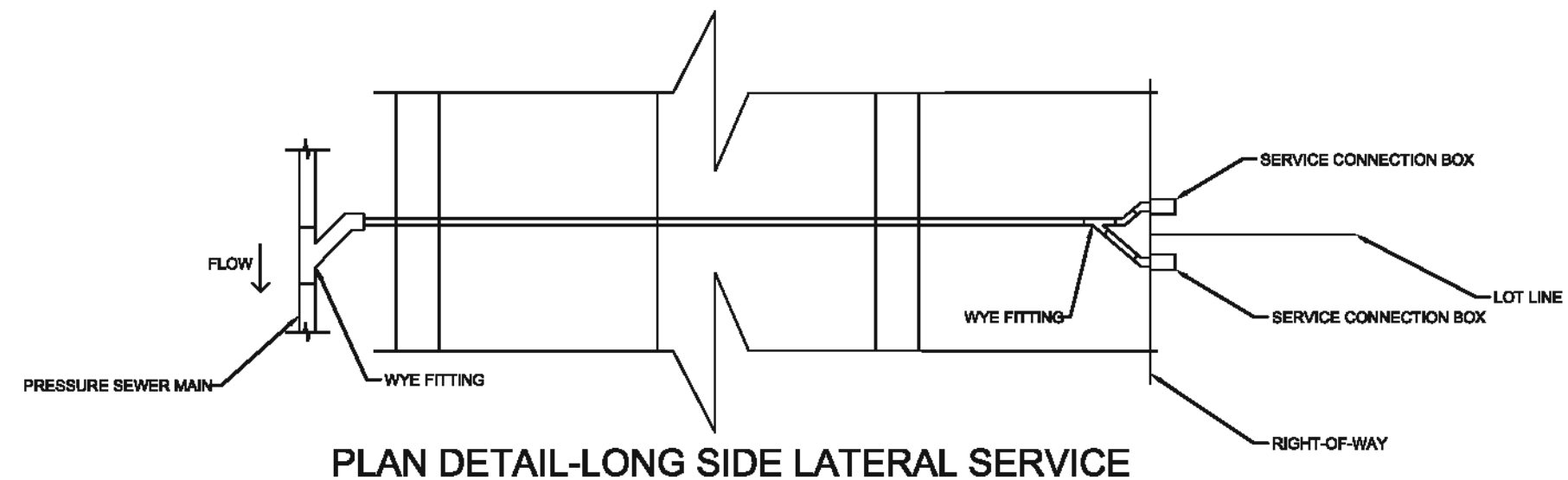
- NOTES:
- SERVICES SHALL BE LOCATED ADJACENT TO LOT LINE IN THE LOT ROAD FRONTAGE.
  - BOX SHALL NOT BE IN SIDEWALKS OR DRIVEWAYS.
  - TOP OF BOX SHALL BE FLUSH WITH FINISH GRADE OF LOT.

PRESSURE SEWER - STANDARD DETAIL  
SERVICE CONNECTION  
NOT TO SCALE



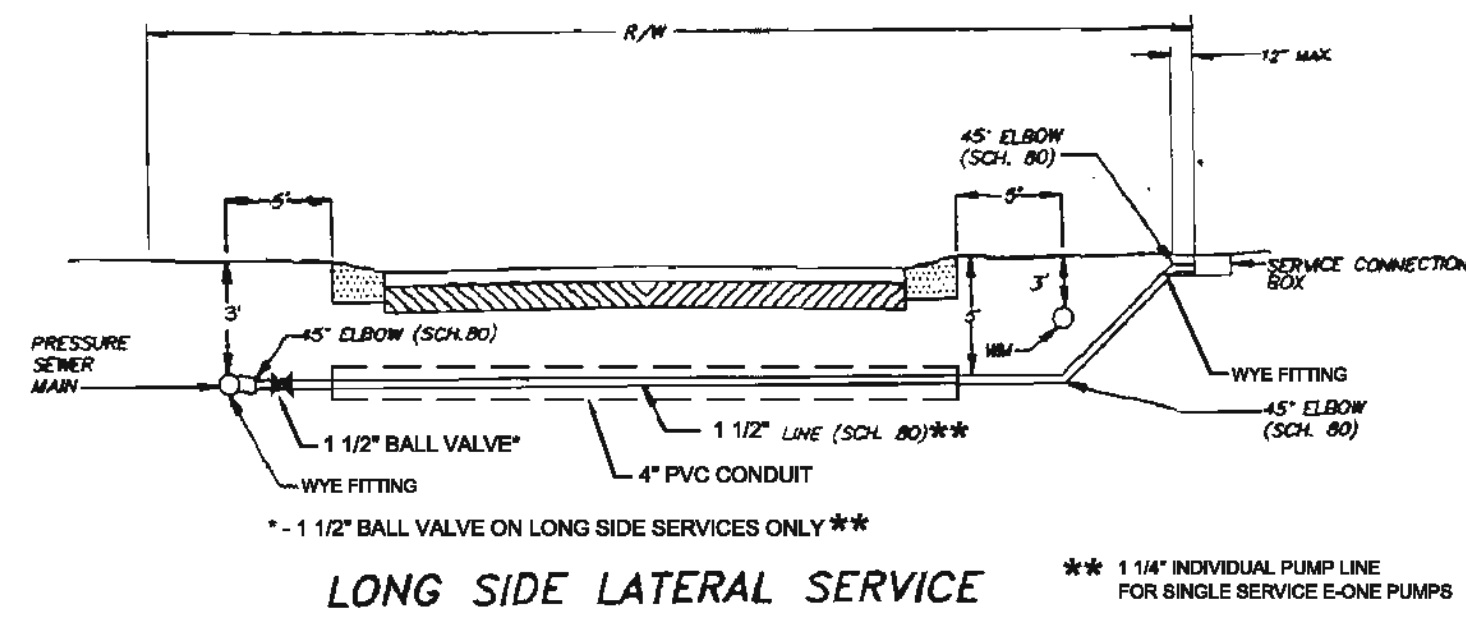
PRESSURE SEWER - STANDARD DETAIL  
CLEANOUT AT END LINE INSTALLATION  
NOT TO SCALE

PRESSURE SEWER - STANDARD DETAIL  
CLEANOUT BOX  
NOT TO SCALE

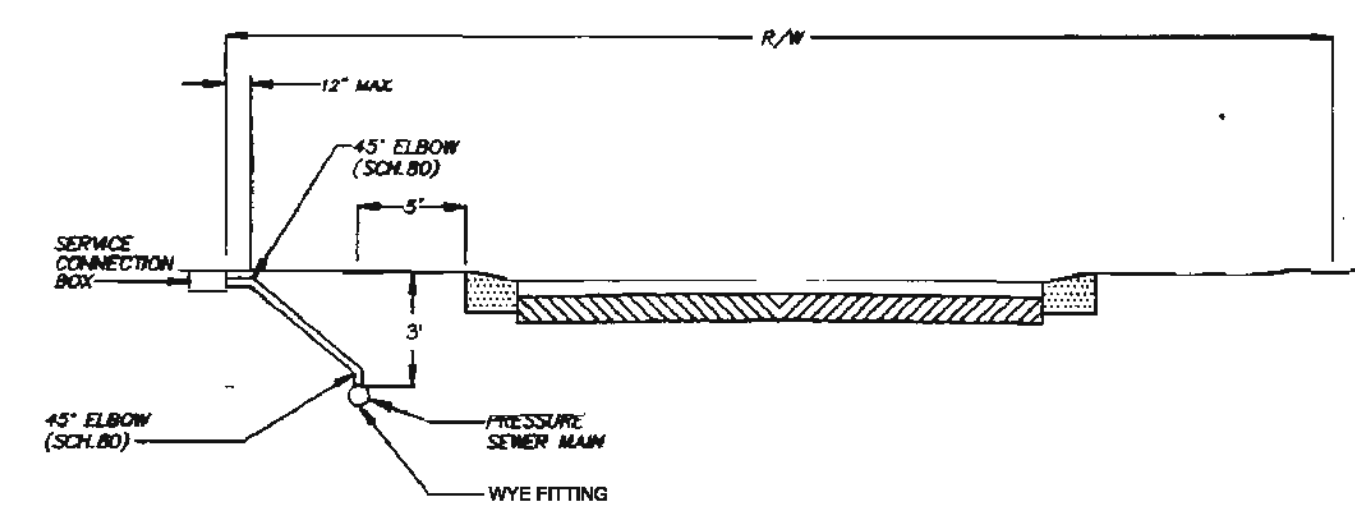


PLAN DETAIL-LONG SIDE LATERAL SERVICE

NOTE: NEW SEWER LATERALS WILL MEET THE SEPARATION REQUIREMENTS OF 15A NCAC 02T.0305 (F). EXISTING SEWER LATERALS MEET THE SEPARATION REQUIREMENTS OF 15A NCAC 02H PER ORIGINAL APPROVED PERMIT.

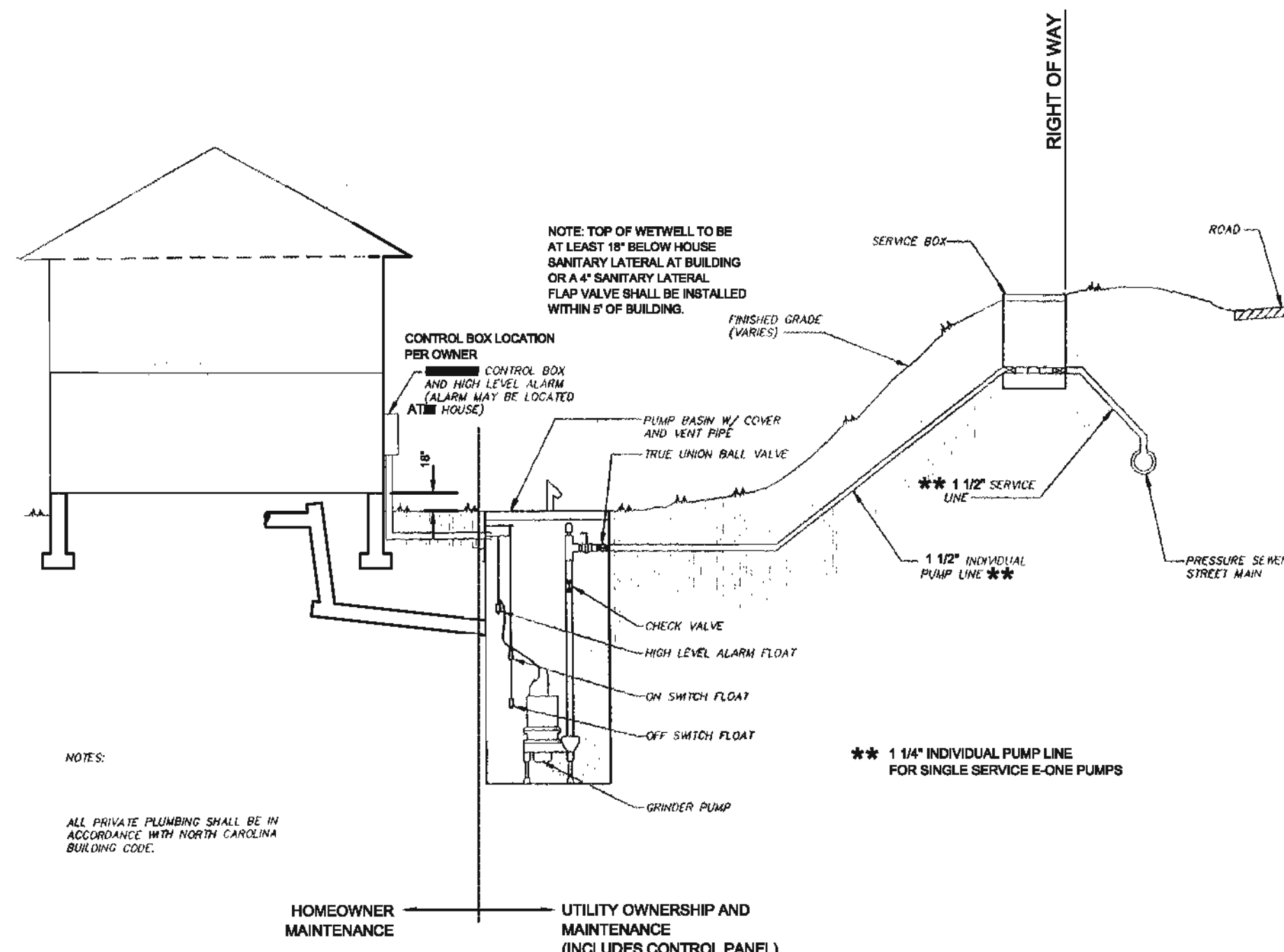


LONG SIDE LATERAL SERVICE

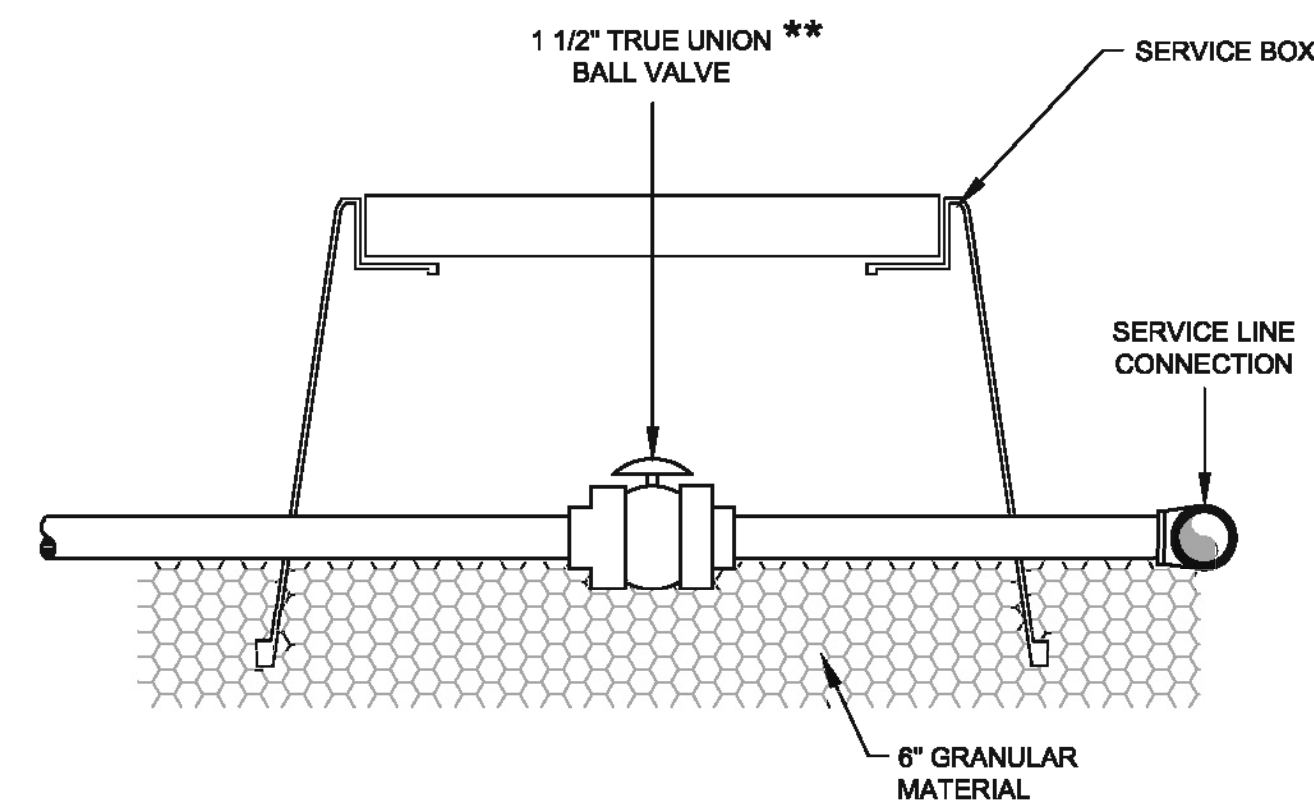


SHORT SIDE LATERAL SERVICE

PRESSURE SEWER - STANDARD DETAIL  
LATERAL SERVICE  
NOT TO SCALE



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



BALL VALVE DETAIL  
FOR LONG-SIDE SERVICE  
NOT TO SCALE

NO.	REVISIONS	DATE

**CE GROUP**  
 301 GLENWOOD AVE. 220  
 RALEIGH, NC 27603  
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**WESTFALL SUBDIVISION PH-3A  
 CONSTRUCTION PLANS  
 SEWER DETAILS**  
 WILLIAMS TOWNSHIP  
 CHATHAM COUNTY, NORTH CAROLINA

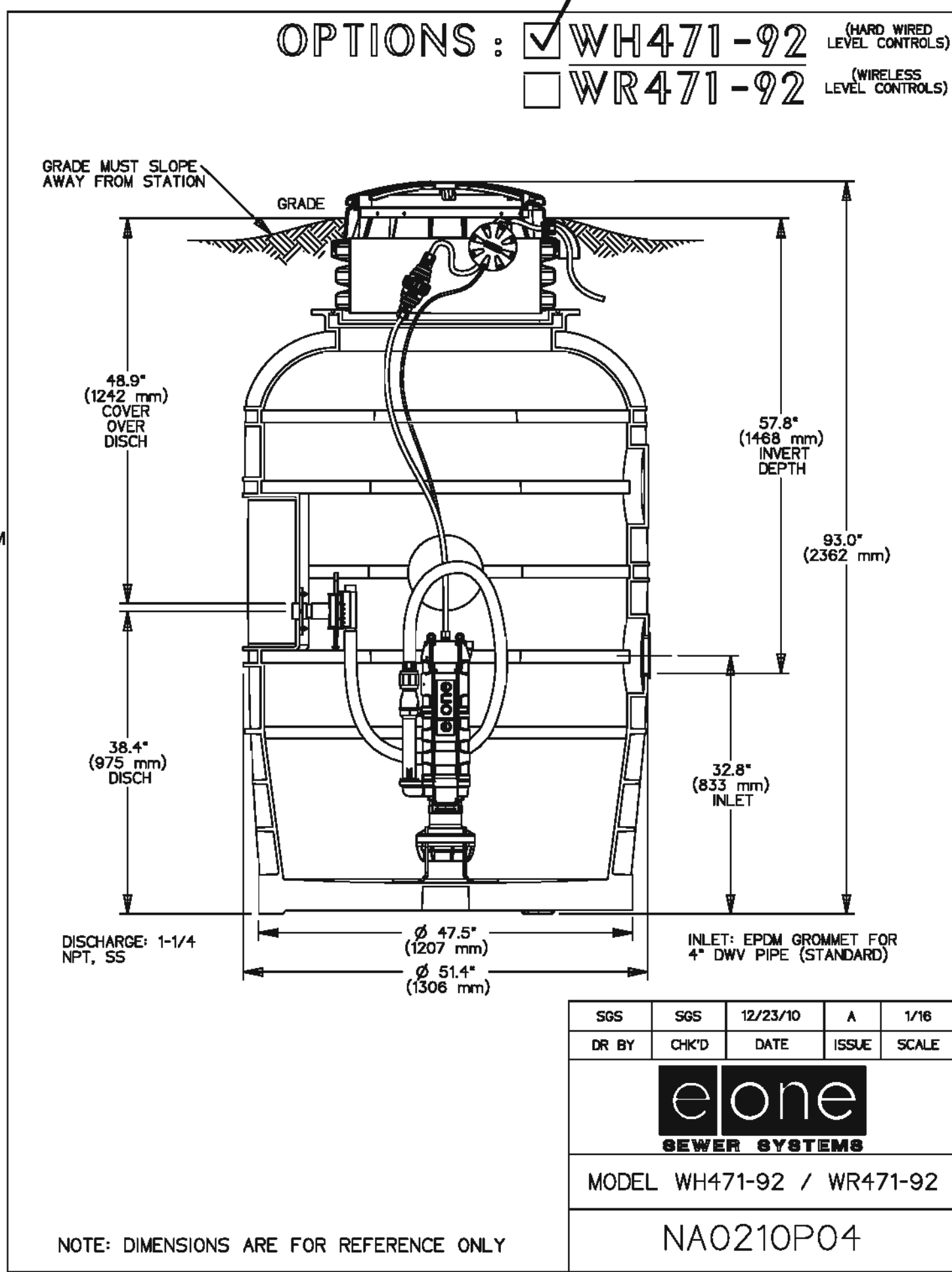
Date:	APRIL 17, 2014
Scale:	-
Drawn:	ACS
Checked:	AJF
Project No.:	800-12
Computer Dwg. Name:	800-12 Phase 3A - Sewer Details.dwg



NO. DATE

Environment One Grinder Pump Feature Identification

1. GRINDER PUMP BASIN - Polyethylene
2. ACCESSWAY COVER - High density polyethylene (HDPE)
3. ELECTRICAL QUICK DISCONNECT (EQD) - Cable from pump core terminates here
4. POWER AND ALARM CABLE - Circuits to be installed in accordance with local codes
5. ALARM PANEL - NEMA 4X enclosure and equipped with circuit breakers. Locate according to local codes.
6. 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.
7. INLET - EPDM grommet (4.5" ID). For 4.5" OD DWV pipe (standard).
8. WET WELL VENT - 2.0' tank vent
9. GRAVITY SERVICE LINE - 4" DWV, (4.5 OD). Supplied by others.
- 9a. 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.
10. DISCHARGE FTG - 1-1/4" Female NPT, stainless steel
11. DISCHARGE LINE - 1-1/4" Nominal pipe size. Supplied by others.
12. CONCRETE ANCHOR - See Ballast DETAIL for specific weight for your station height.
13. BEDDING MATERIAL - 6" minimum depth, round aggregate, (gravel). Supplied by others.
14. FINISHED GRADE - Grade line to be 1" to 2" below removable lid and slope away from the station.
15. 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.
16. 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

1. PUMP CHAMBER: SHALL BE 47.5" Ø FIBERGLASS BASIN, AS MANUFACTURED BY PUMP MANUFACTURER.
2. PVC PIPE FOR SERVICE: SHALL BE PRESSURE CLASS 180 PER ASTM D2241 AS INDICATED ON THE DRAWINGS. FITTINGS SHALL BE SOLVENT WELD SOCKET-TYPE CONFORMING TO ASTM D2487 AND ASTM D2865.
3. CHECK VALVES: SHALL BE MADE OF PVC THERMOPLASTIC.
4. PVC PIPE IN DOSING TANK: SHALL BE SCHEDULE 80.

PUMPS CONTROL INFORMATION:

1. 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 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.
2. LIQUID LEVEL SENSOR: SHALL BE ADJUSTABLE LEVEL MERCURY FLOAT SWITCH SUPPLIED BY THE MANUFACTURER.
3. 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.
4. ELECTRIC CONDUIT: UNDERGROUND CONDUIT SHALL BE SCHEDULE 40 PVC DIRECT BURIAL WITH A MINIMUM DEPTH OF 30". ABOVE GROUND SHALL BE RIGID GALVANIZED STEEL.
5. 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:
1. GENERAL: 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.
  2. 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.
  3. 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 VACCUUM TEST TO SATISFY REQUIREMENTS.

ELECTRICAL NOTES

- A. 14" HIGH x 12" WIDE x 6" DEEP NEMA - 4X FIBERGLASS ENCLOSURE.
- B. DUPLEX CONVENIENCE RECEPTACLE, GROUND FAULT INTERRUPT, WEATHER PROOF COVER.
- C. MANUAL TRANSFER SWITCH - 2 POLE - DOUBLE THROW.
- D. CONTROL PANEL FURNISHED BY PUMP MANUFACTURER.
- E. AUDIBLE - VISIBLE HIGH-LEVEL ALARM WITH HORN, FURNISHED BY PUMP MANUFACTURER.
- F. ALL CONTROL WIRING TO BE FURNISHED BY PUMP MANUFACTURER.
- G. DISCONNECT SWITCH, SERVICE ENTRANCE RATED, 80A/2P/W/40AF.
- H. ALARM BUZZER
- I. ALARM LIGHT

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10/1/16

**PROFESSIONAL SEAL**

18894

1/27/16

WESTFALL SUBDIVISION PH-3A  
 CONSTRUCTION PLANS  
**E-ONE GRINDER PUMP DETAILS**  
 WILLIAMS TOWNSHIP  
 CHATHAM COUNTY, NORTH CAROLINA

Date: APRIL 17, 2014

Scale:

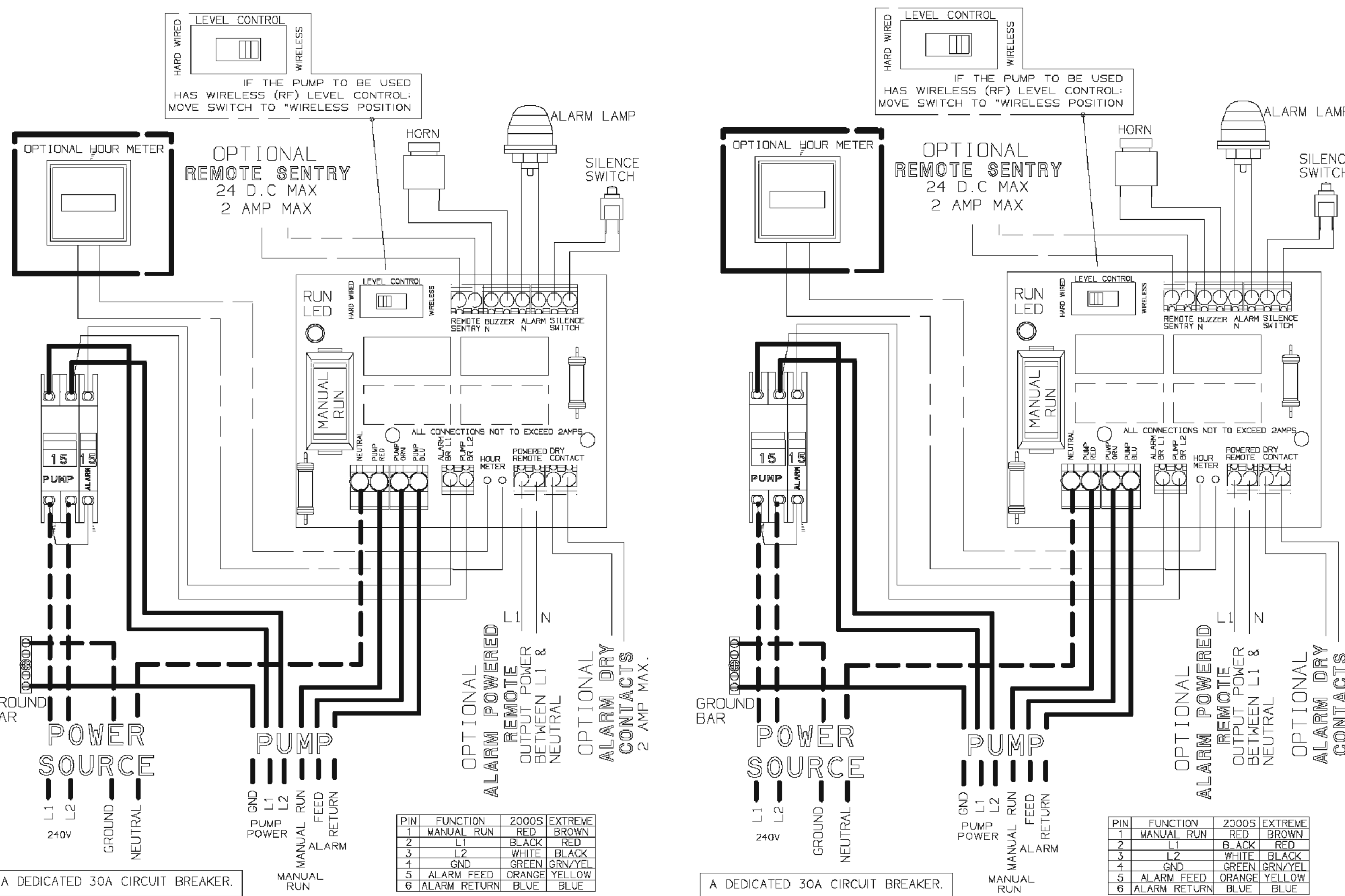
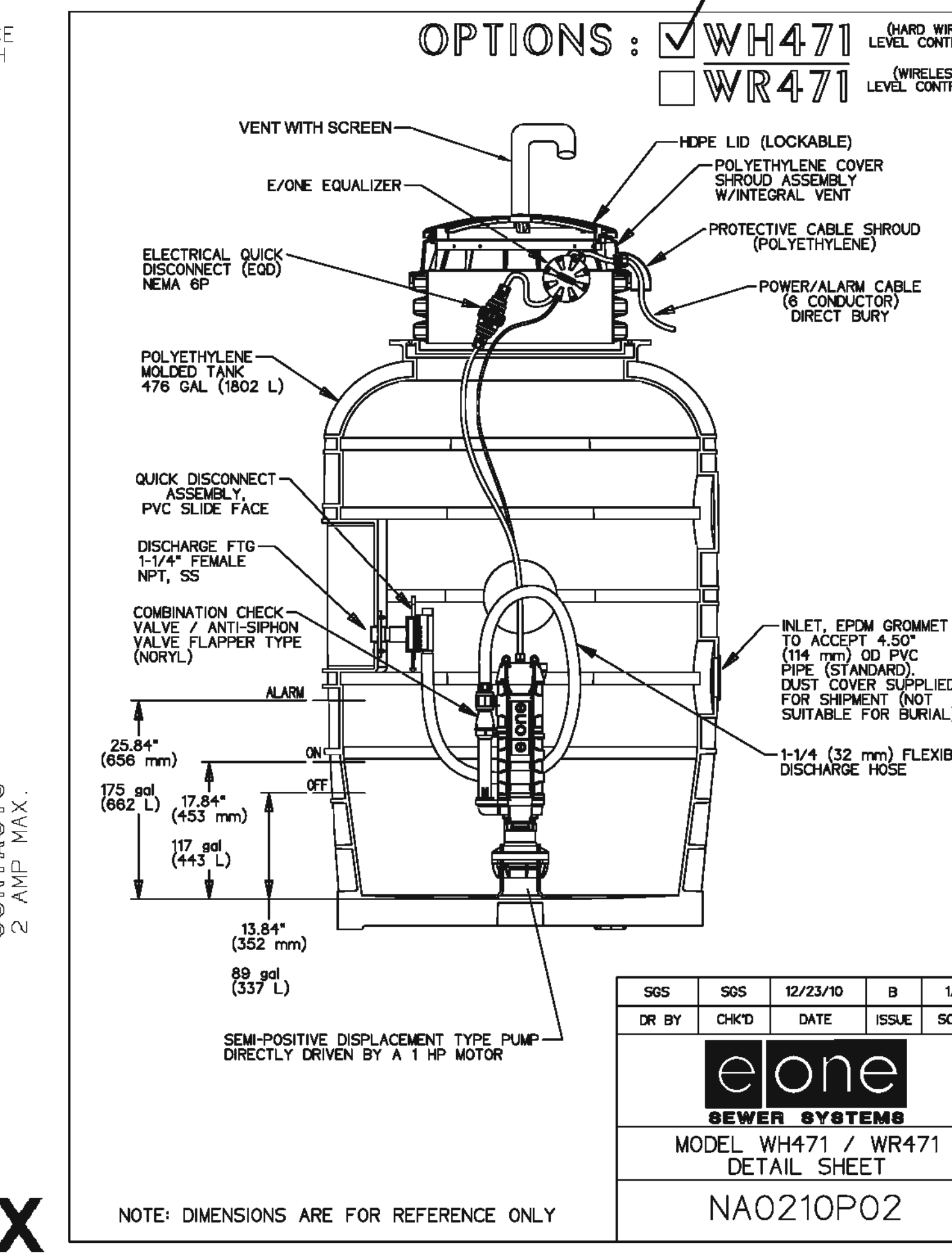
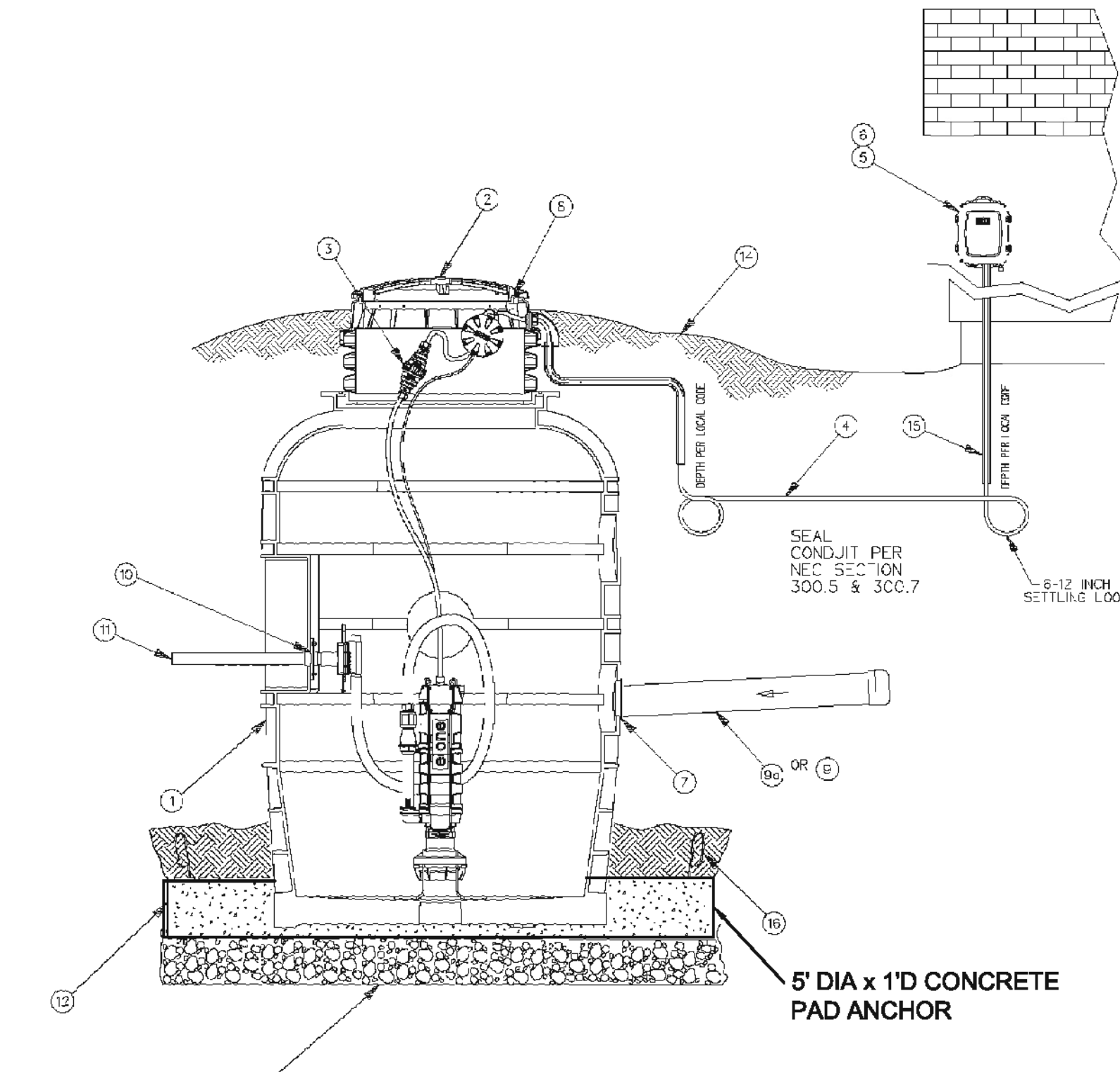
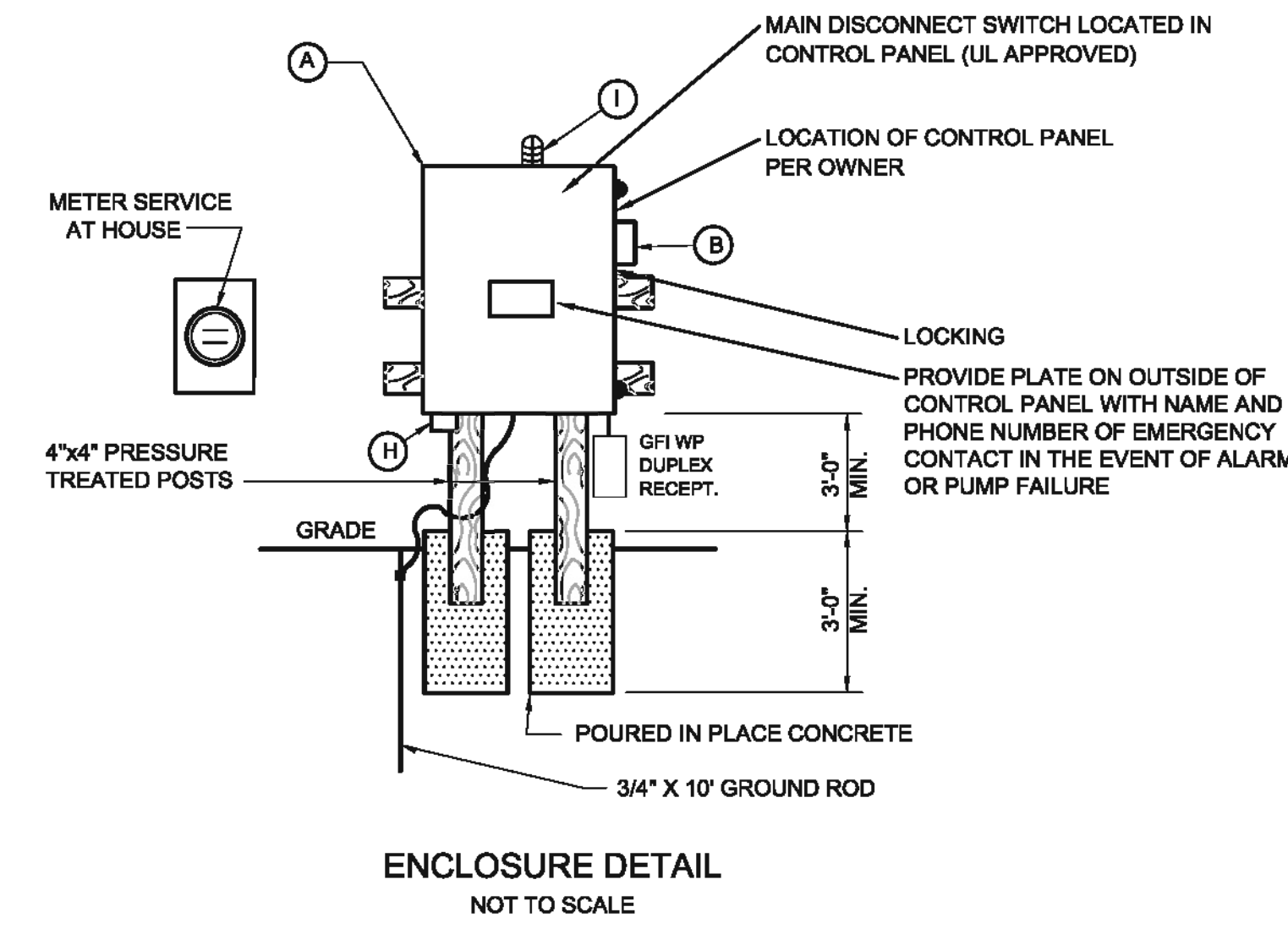
Drawn: ACS

Checked: AJF

Project No. 800-12

Computer Dwg. Name 800-12-Phase 3A - Sewer Details.dwg

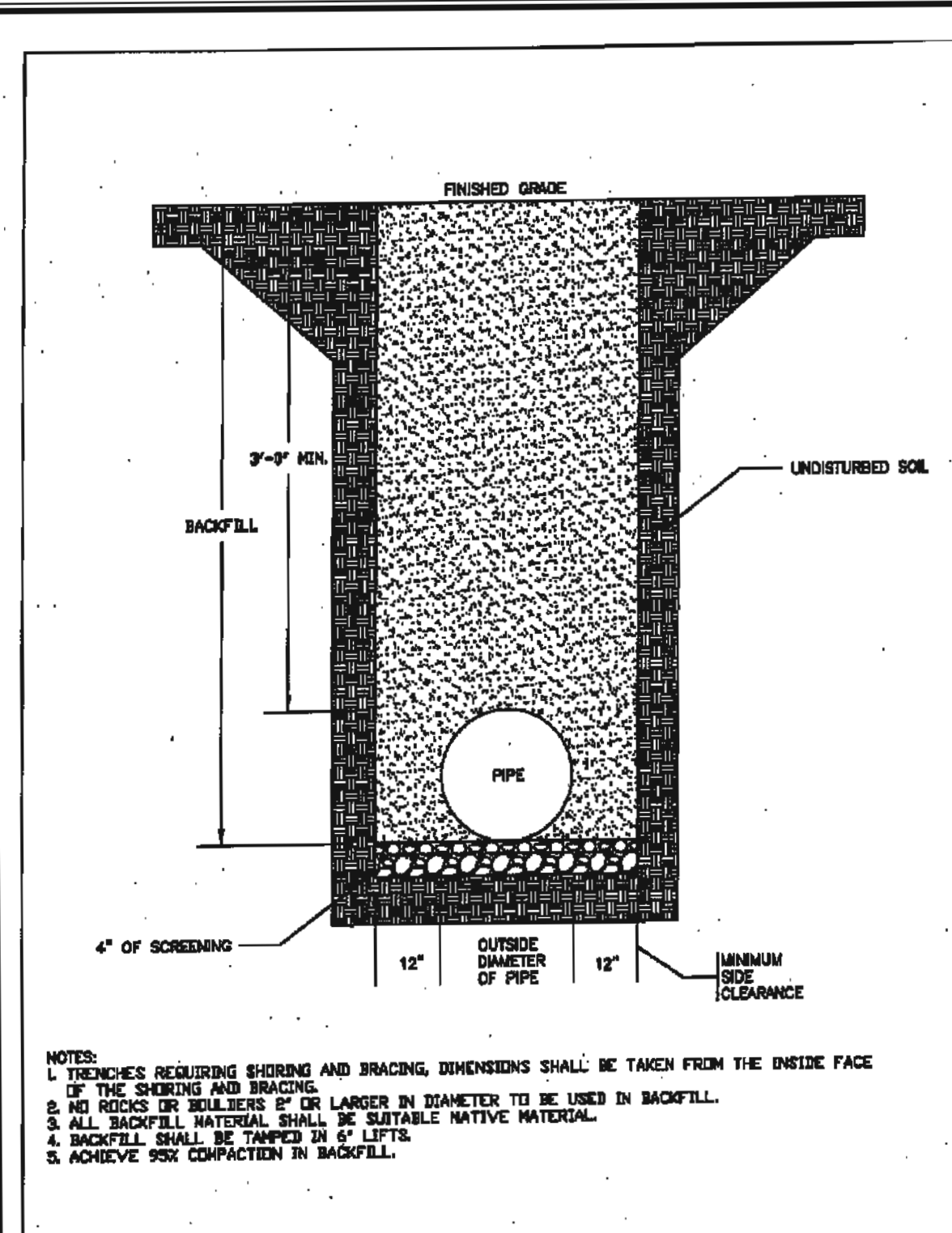
Sheet No. 10 Of 12



240 VOLT WIRING - SIMPLEX 240 VOLT WIRING - SIMPLEX

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UNDESIGNED SERVICE ALERT

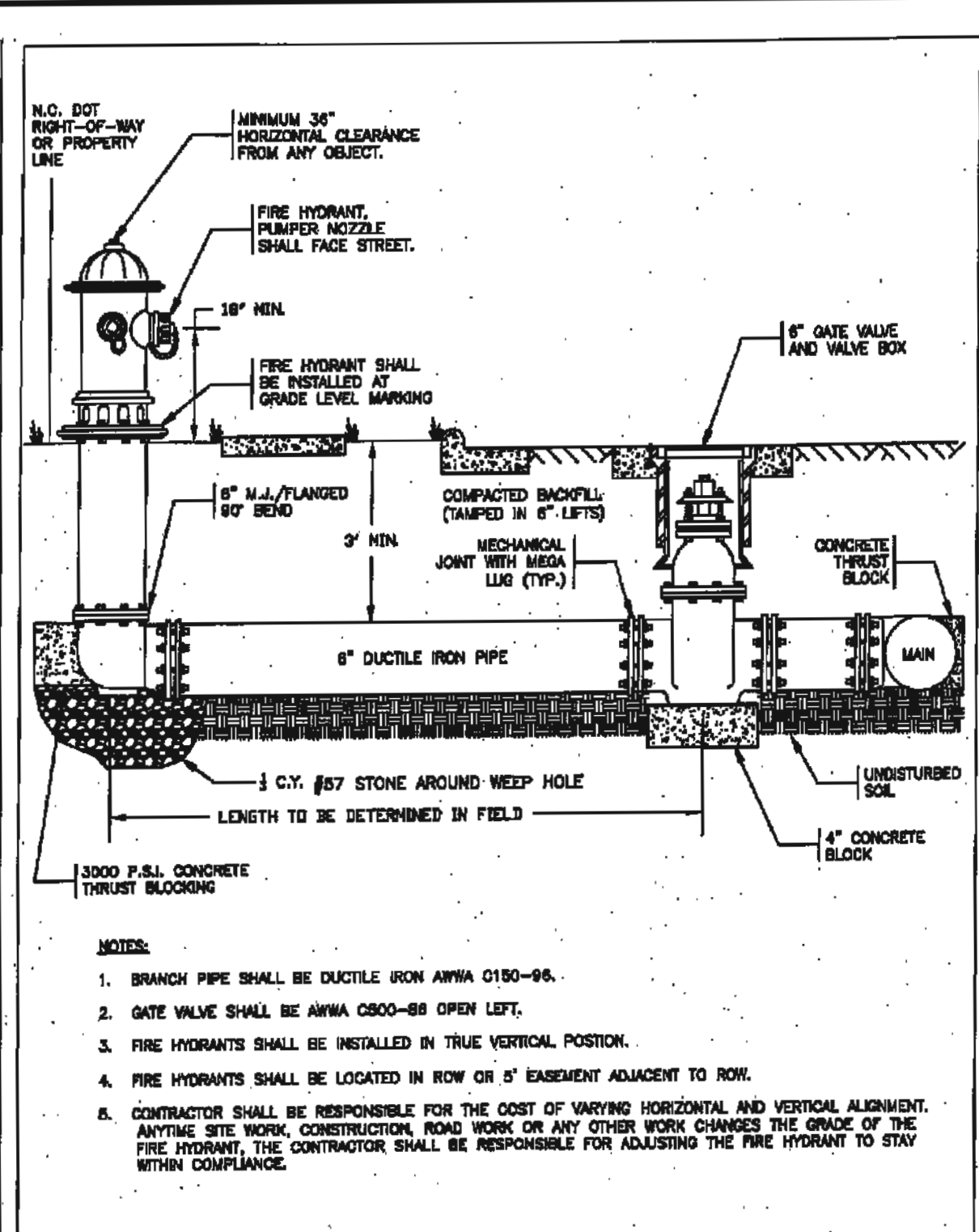
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CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION

DUCTILE IRON PIPE TRENCH BOTTOM DIMENSIONS AND BACKFILLING REQUIREMENTS

CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION

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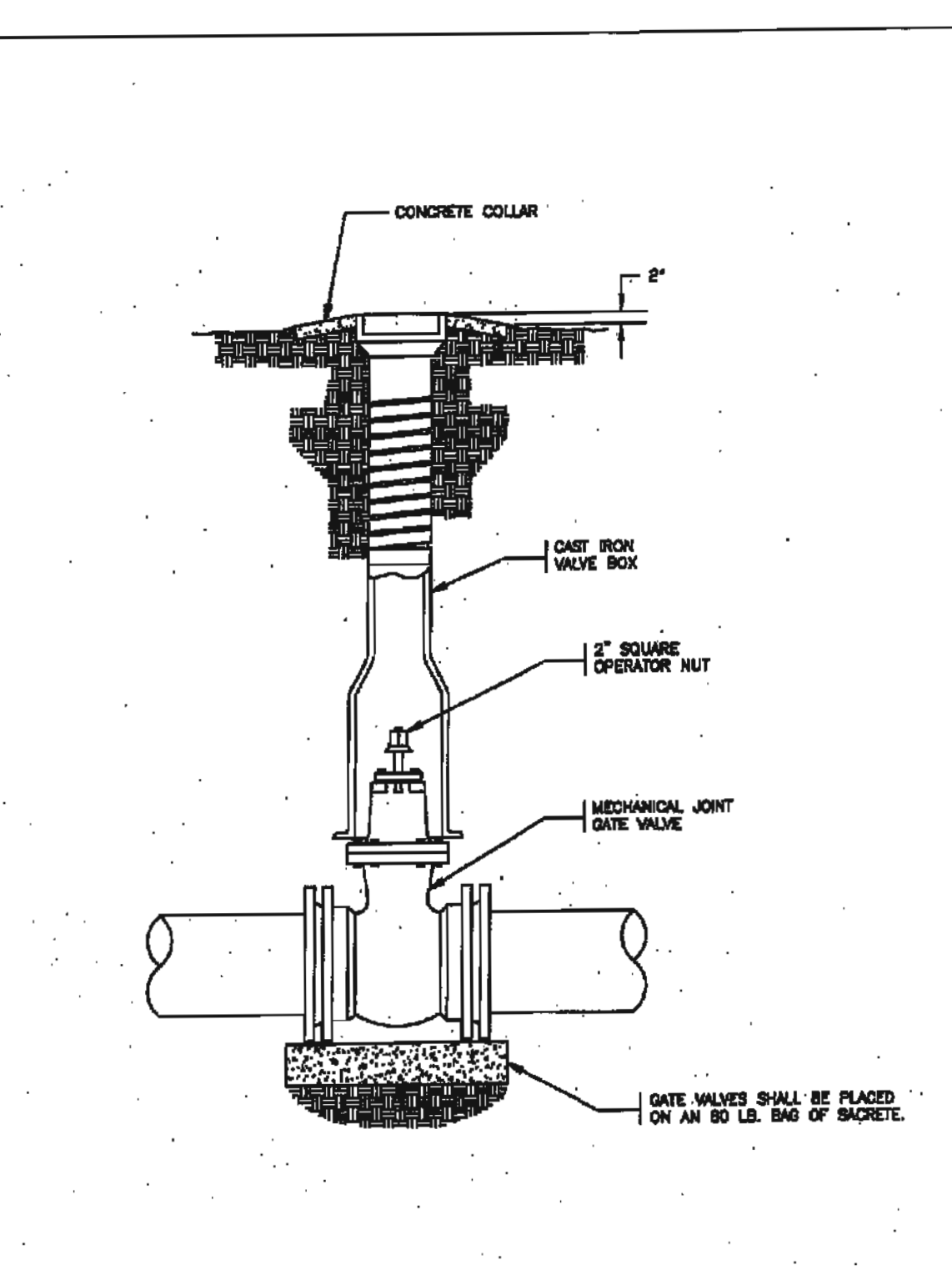
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FIRE HYDRANT ASSEMBLY

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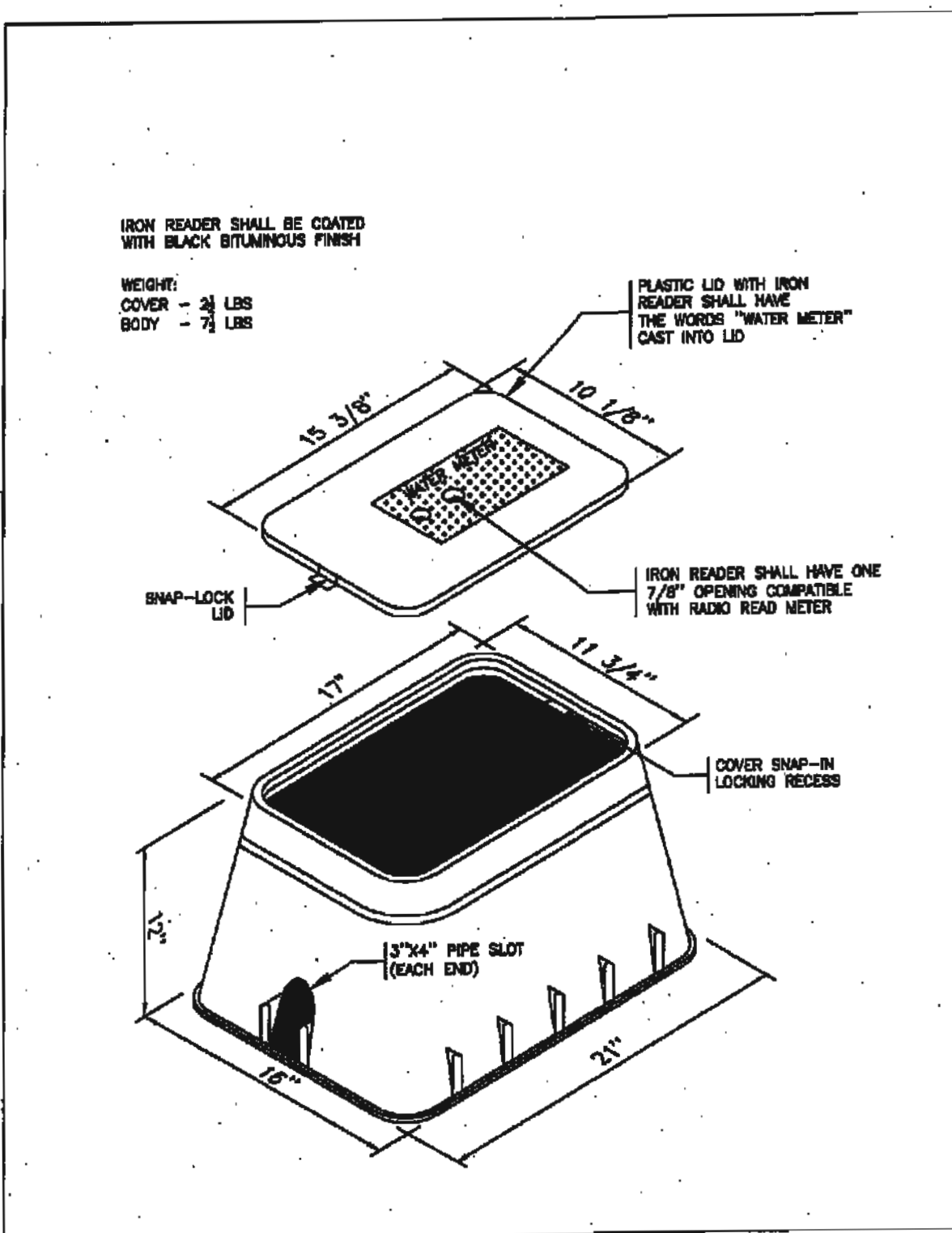
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GATE VALVE ASSEMBLY

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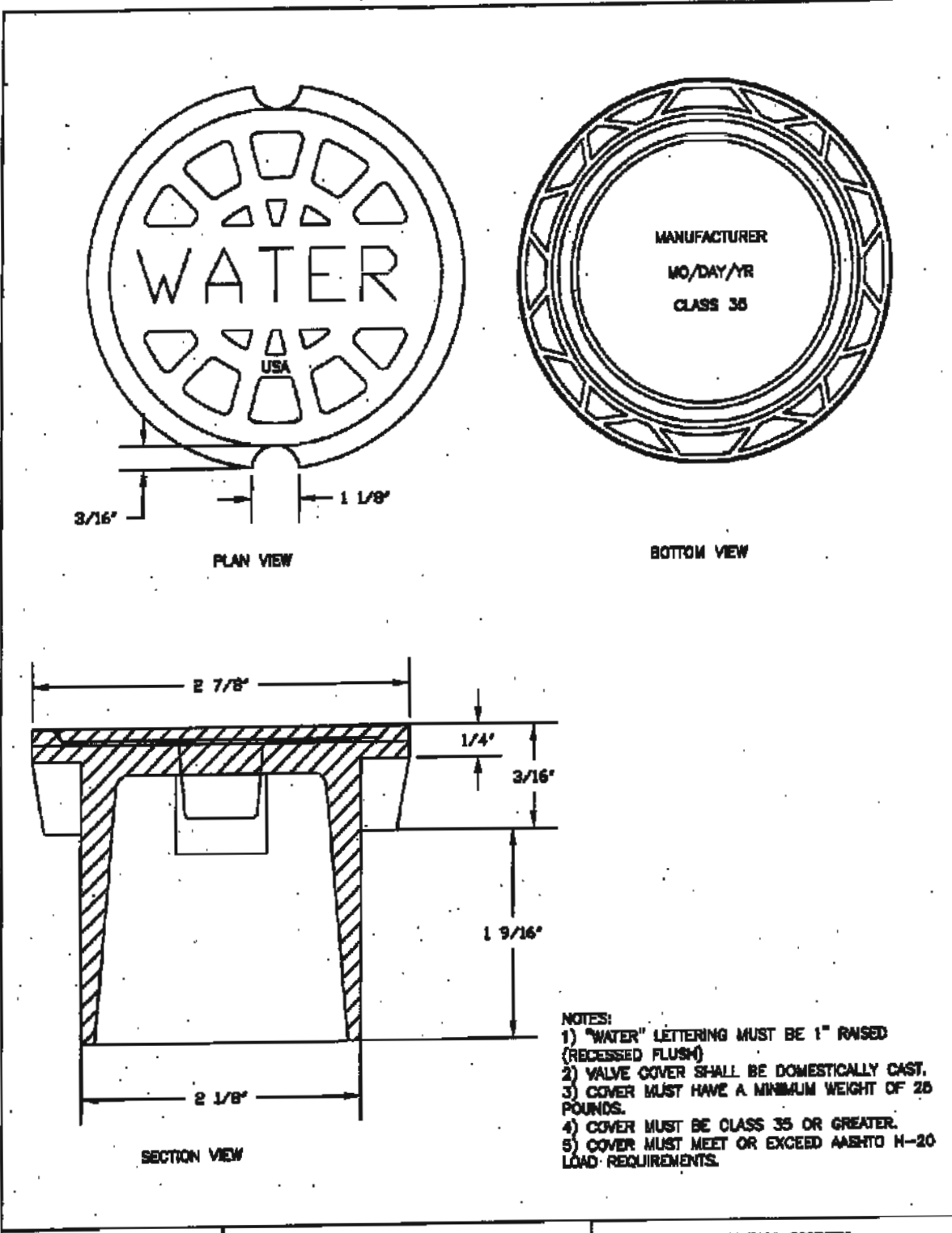
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METER BOX

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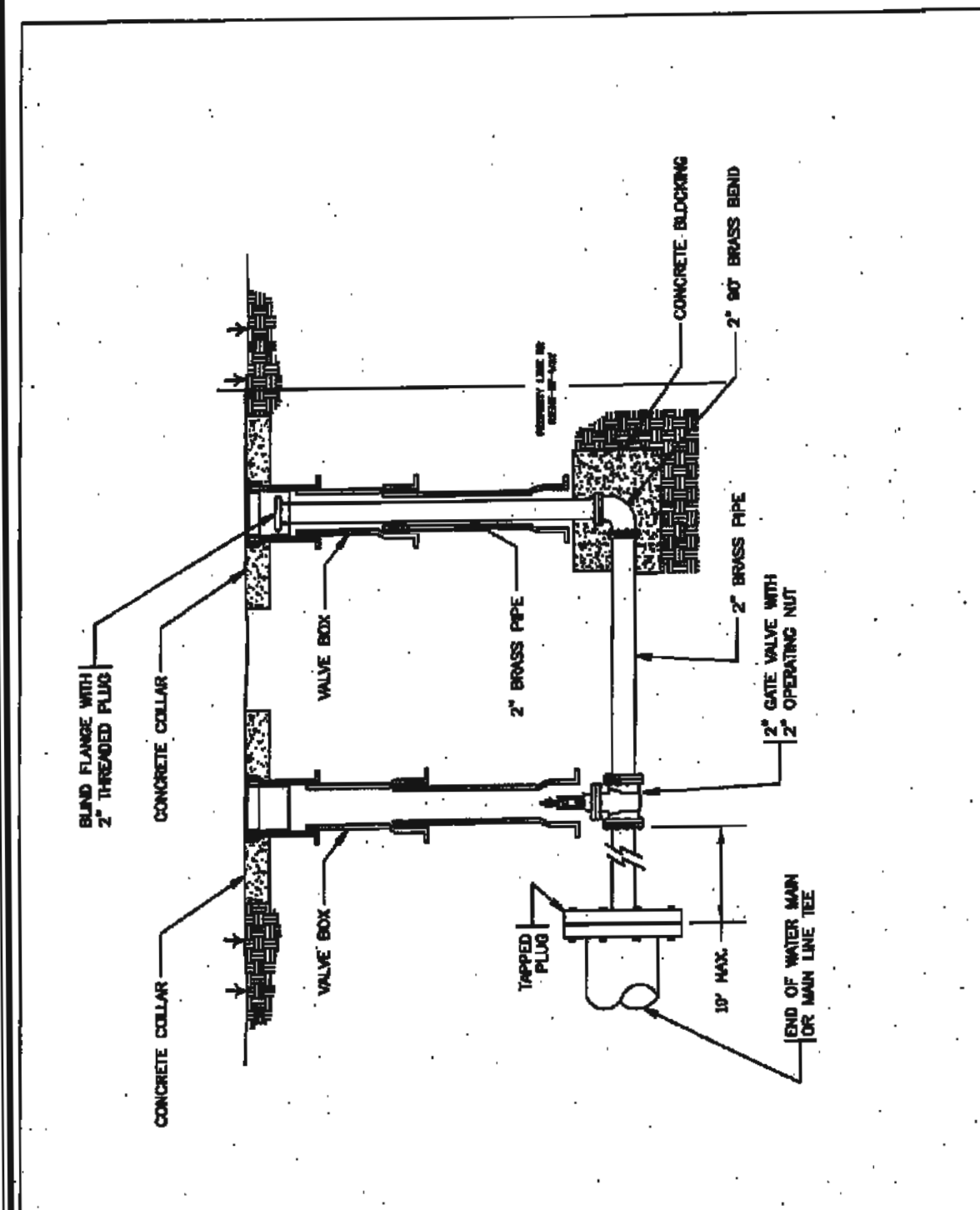
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VALVE BOX COVER

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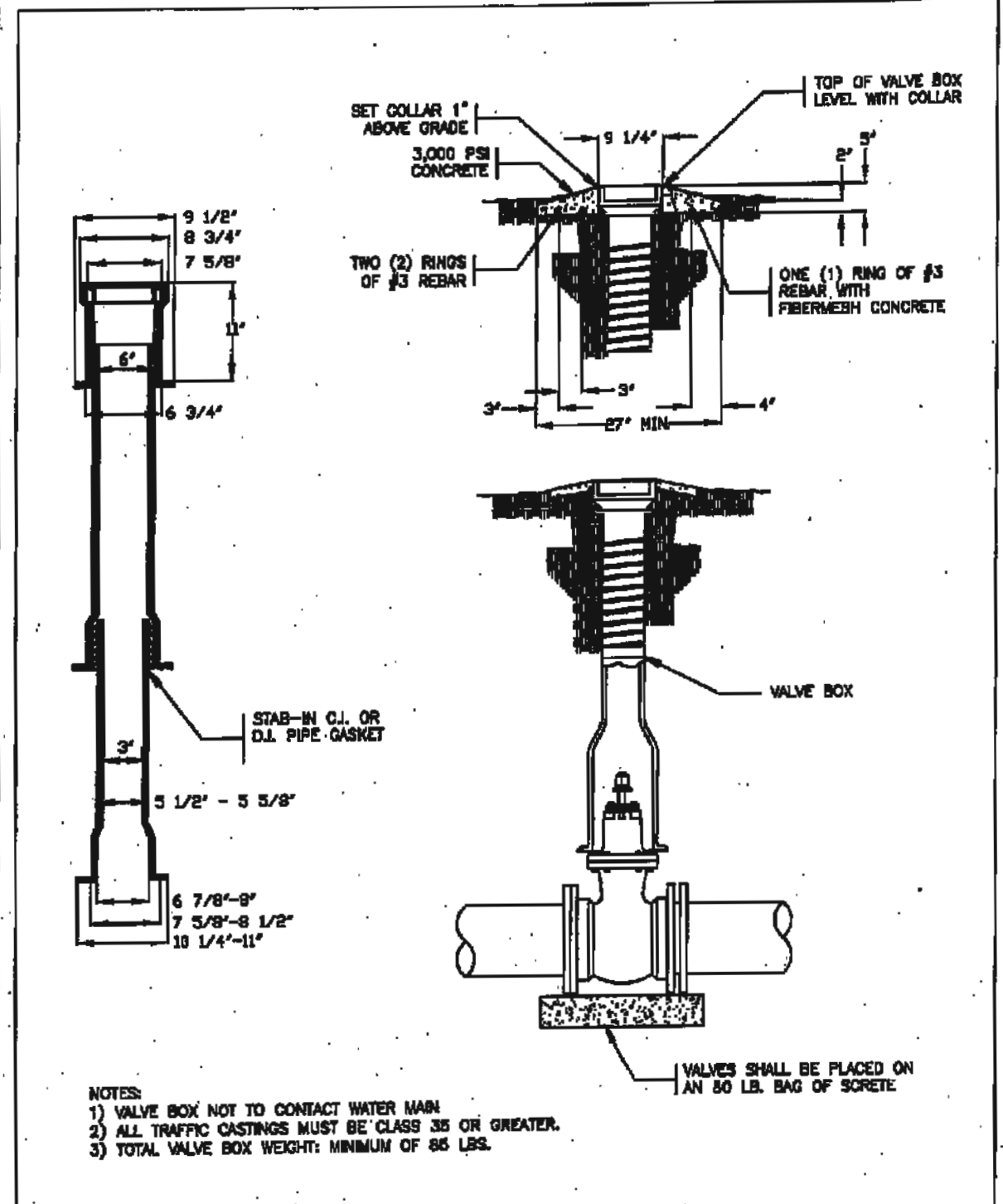
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2" BLOW-OFF ASSEMBLY

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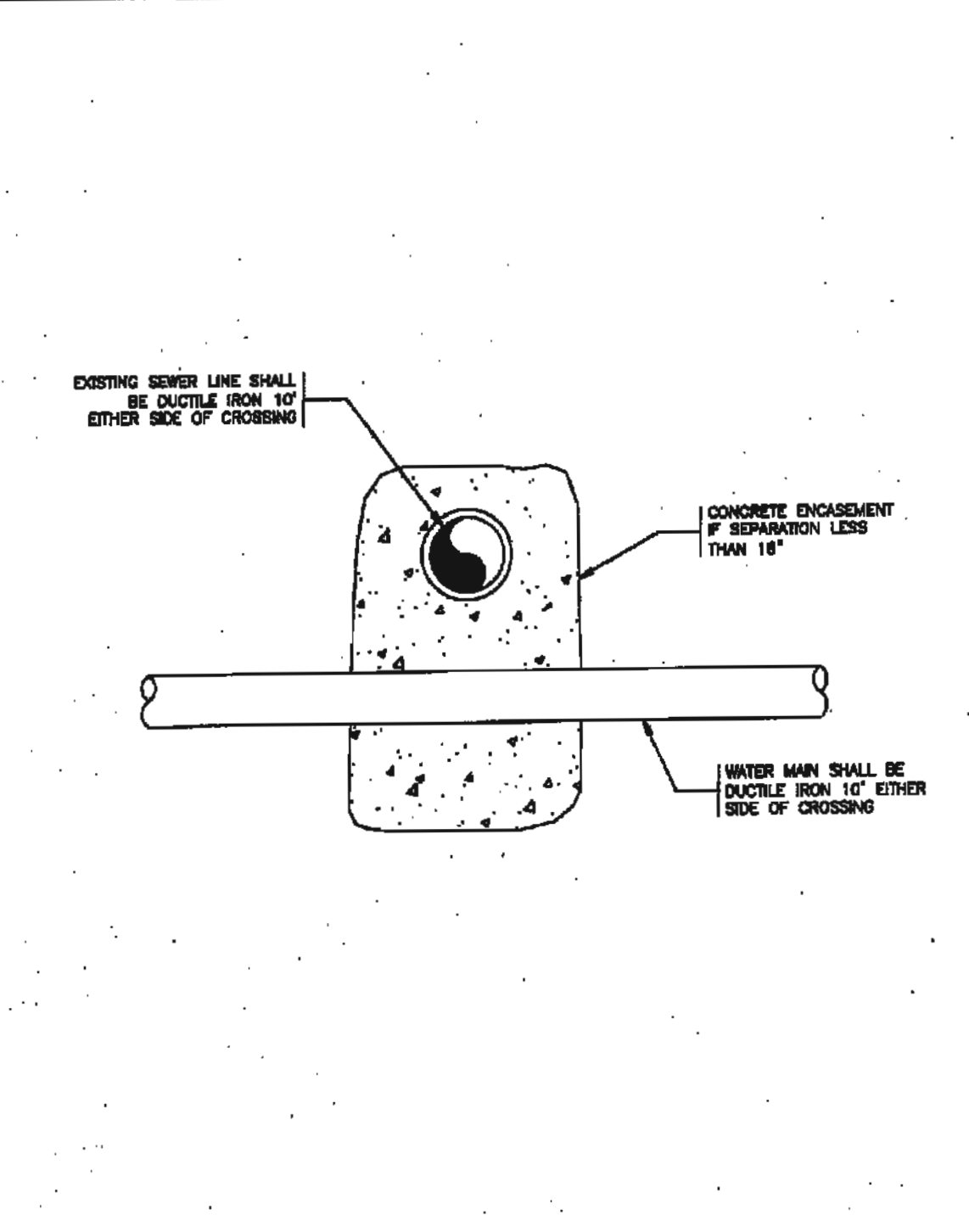
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VALVE BOX AND COLLAR

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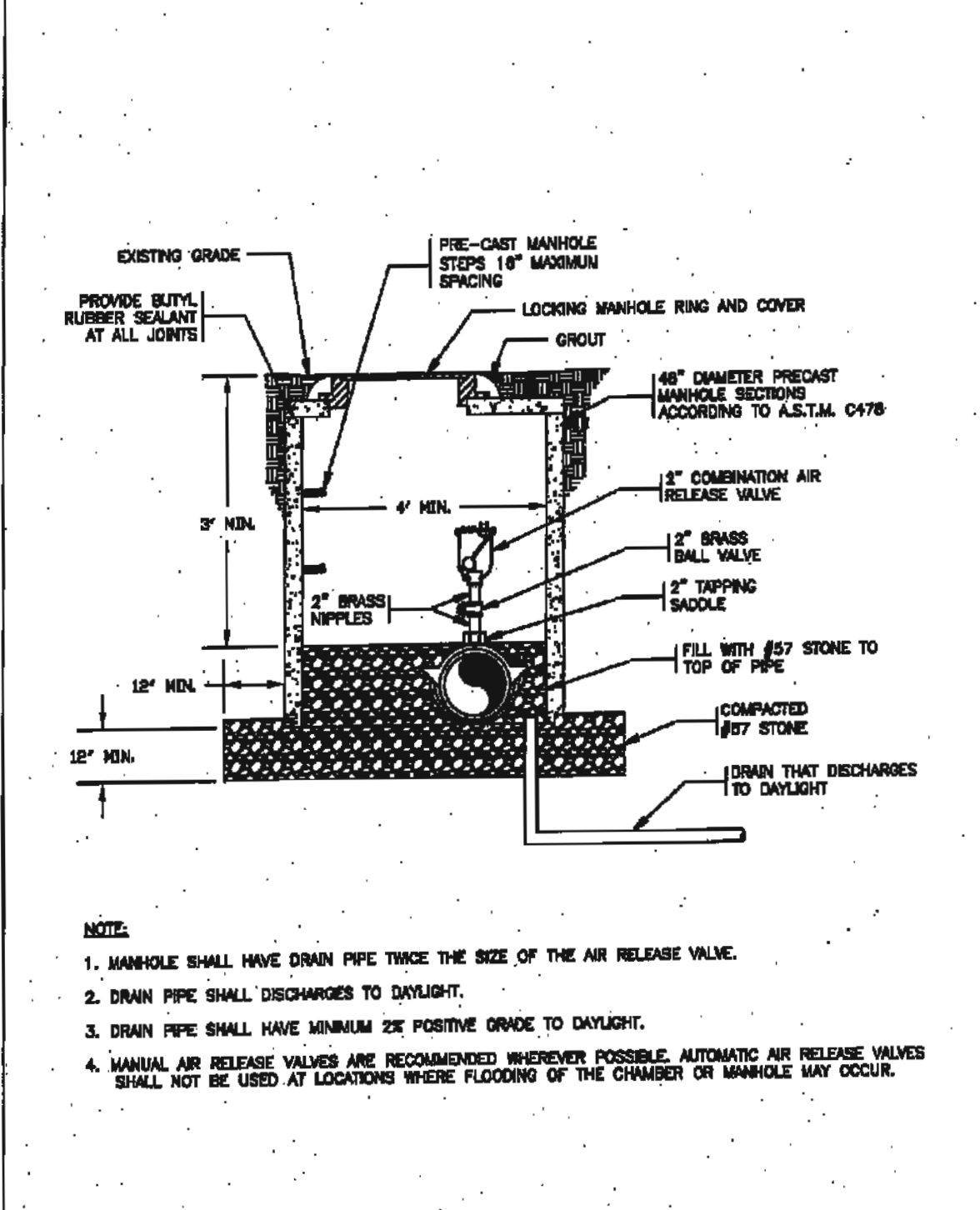
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WATER AND SEWER CROSSING

CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION

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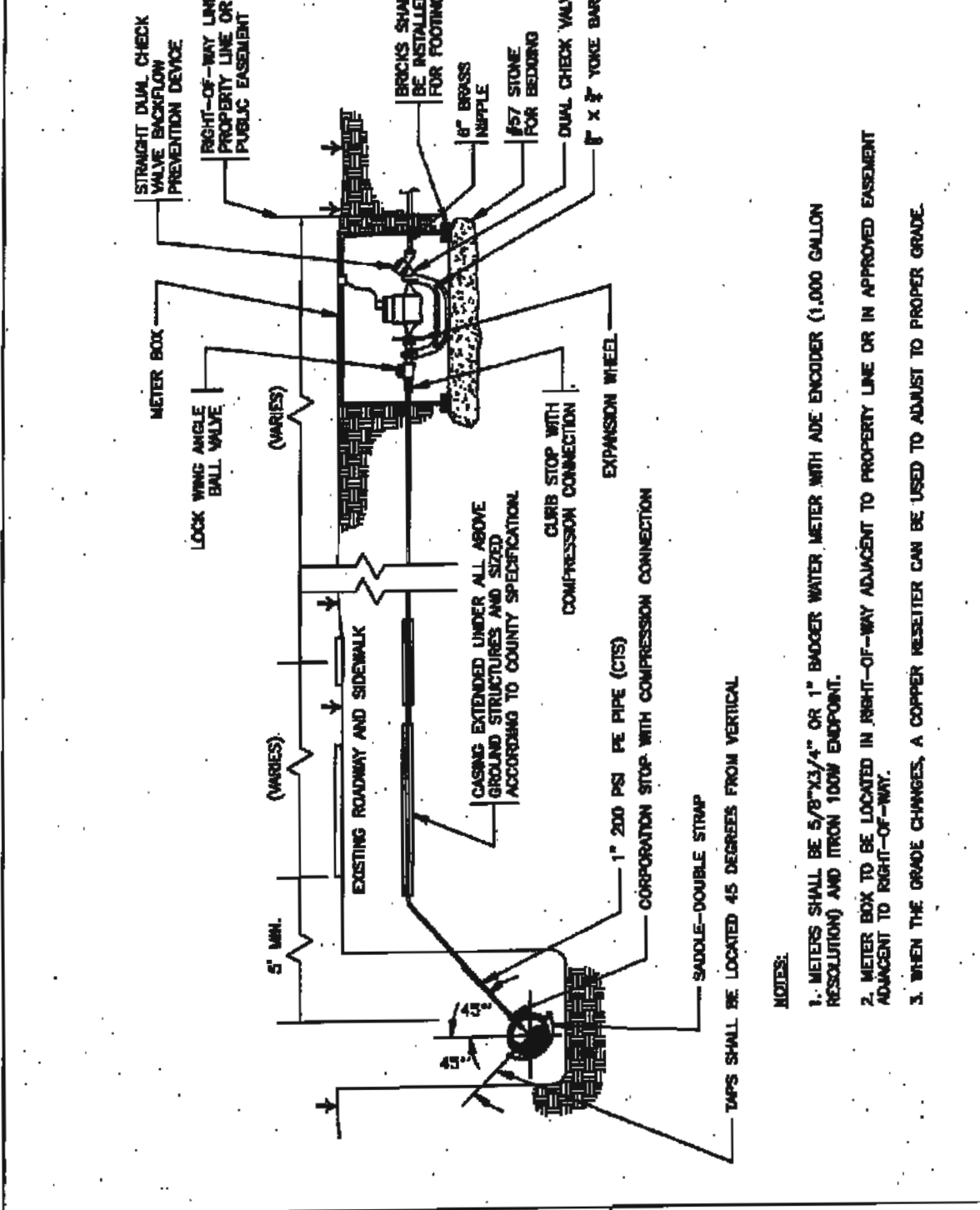
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COMBINATION AIR RELEASE VALVE ASSEMBLY

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1" x 1" - 1" METER SERVICE CONNECTION

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NO. 10114

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ENGINEER

MA

WESTFALL SUBDIVISION PH-3A

CONSTRUCTION PLANS

WATER DETAILS

WILLIAMS TOWNSHIP

CHATHAM COUNTY, NORTH CAROLINA

Date: APRIL 17, 2014

Scale:

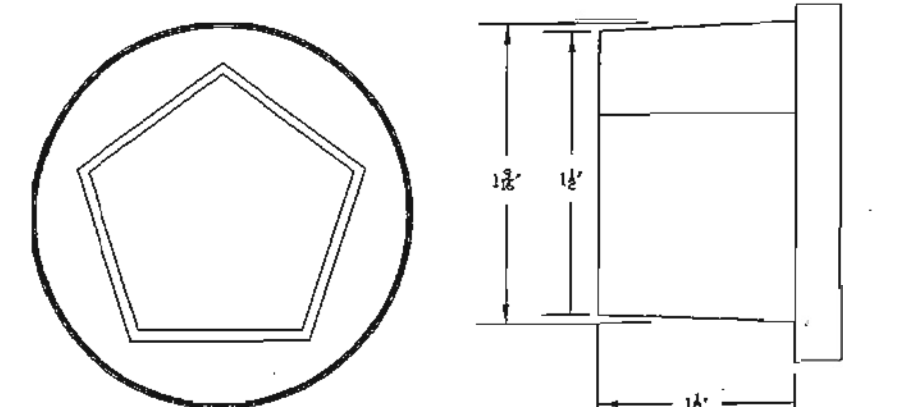
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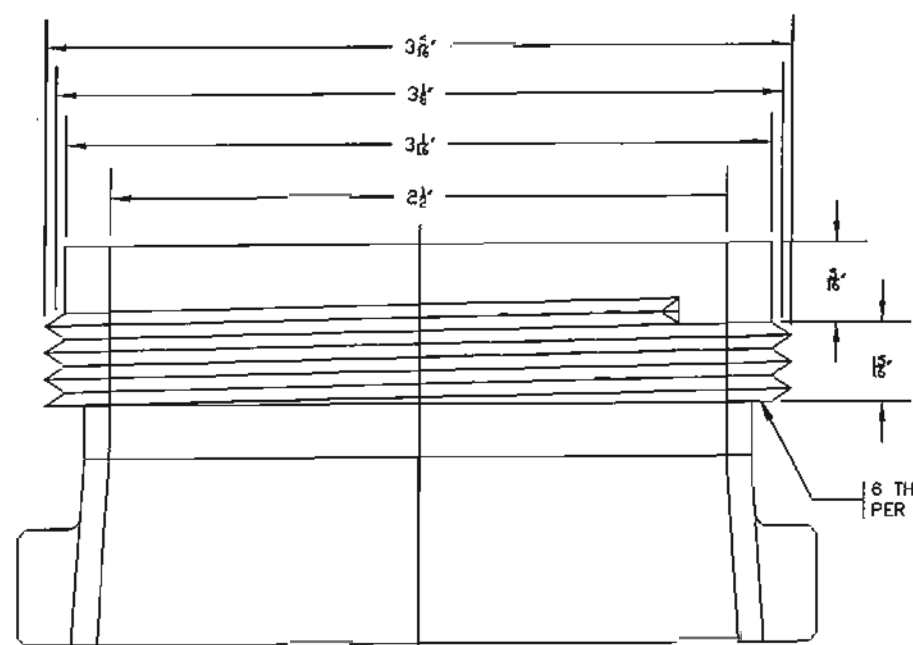
Project No: 800-12

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1 1/8" OPERATION NUT

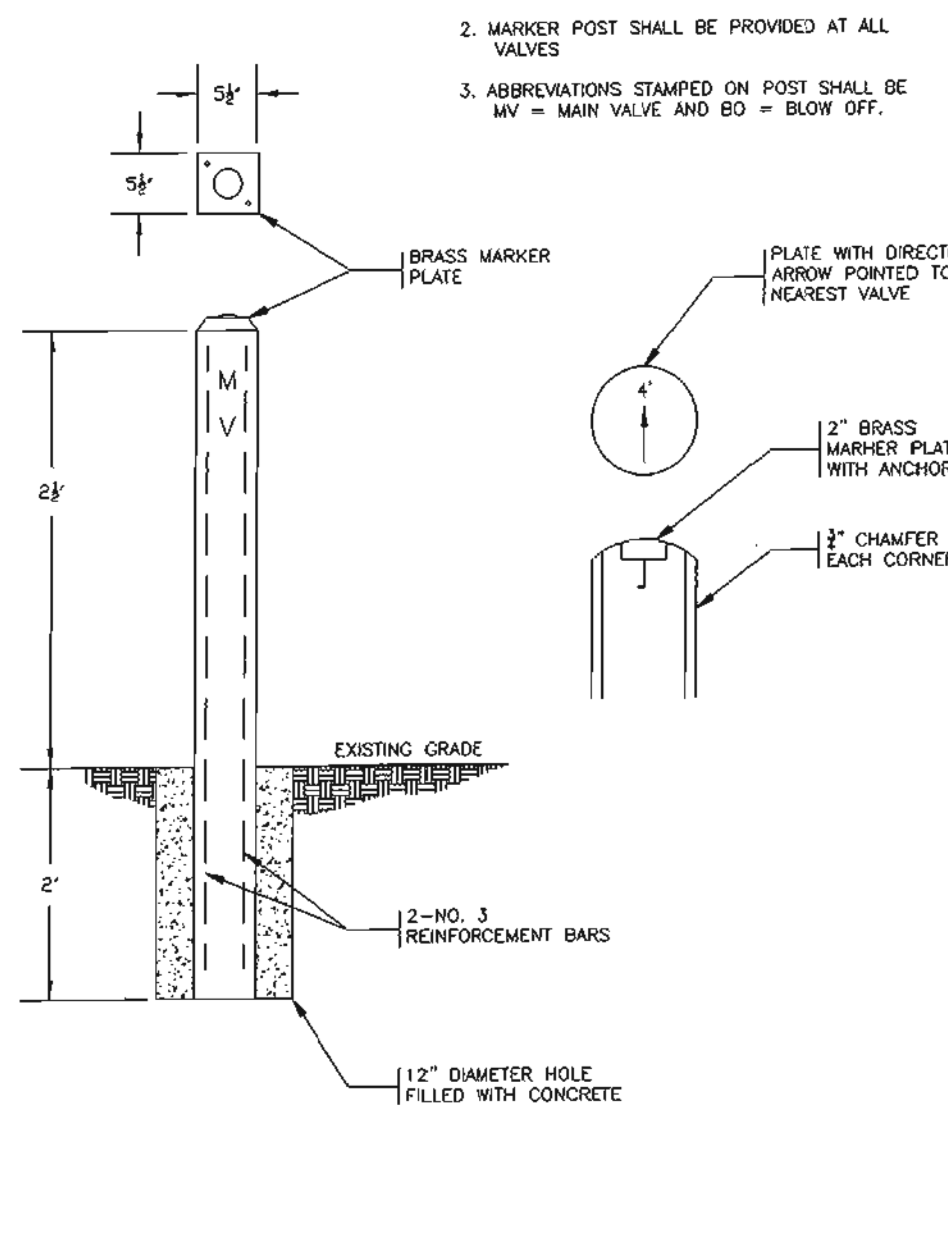


2 1/2" OUTLET THREADS

CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION  
FIRE HYDRANT OPERATING NUT AND 2 1/2" OUTLET THREADS  
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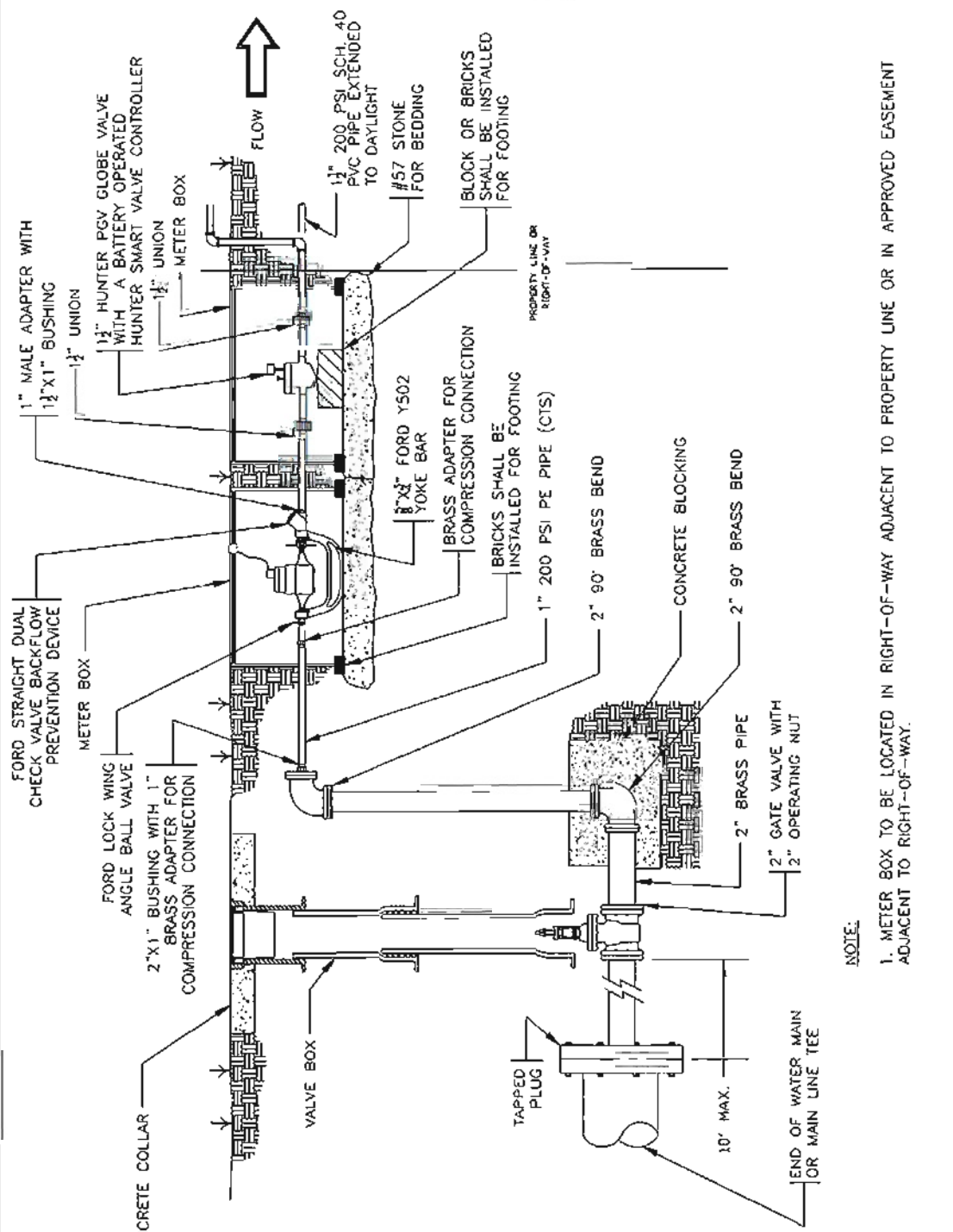
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- NOTES:  
1. MARKER POST SHALL BE INSTALLED AT THE EDGE OF THE DOT RIGHT-OF-WAY OR PROPERTY LINE.  
2. MARKER POST SHALL BE PROVIDED AT ALL VALVES.  
3. ABBREVIATIONS STAMPED ON POST SHALL BE MV = MAIN VALVE AND BD = BLOW OFF.



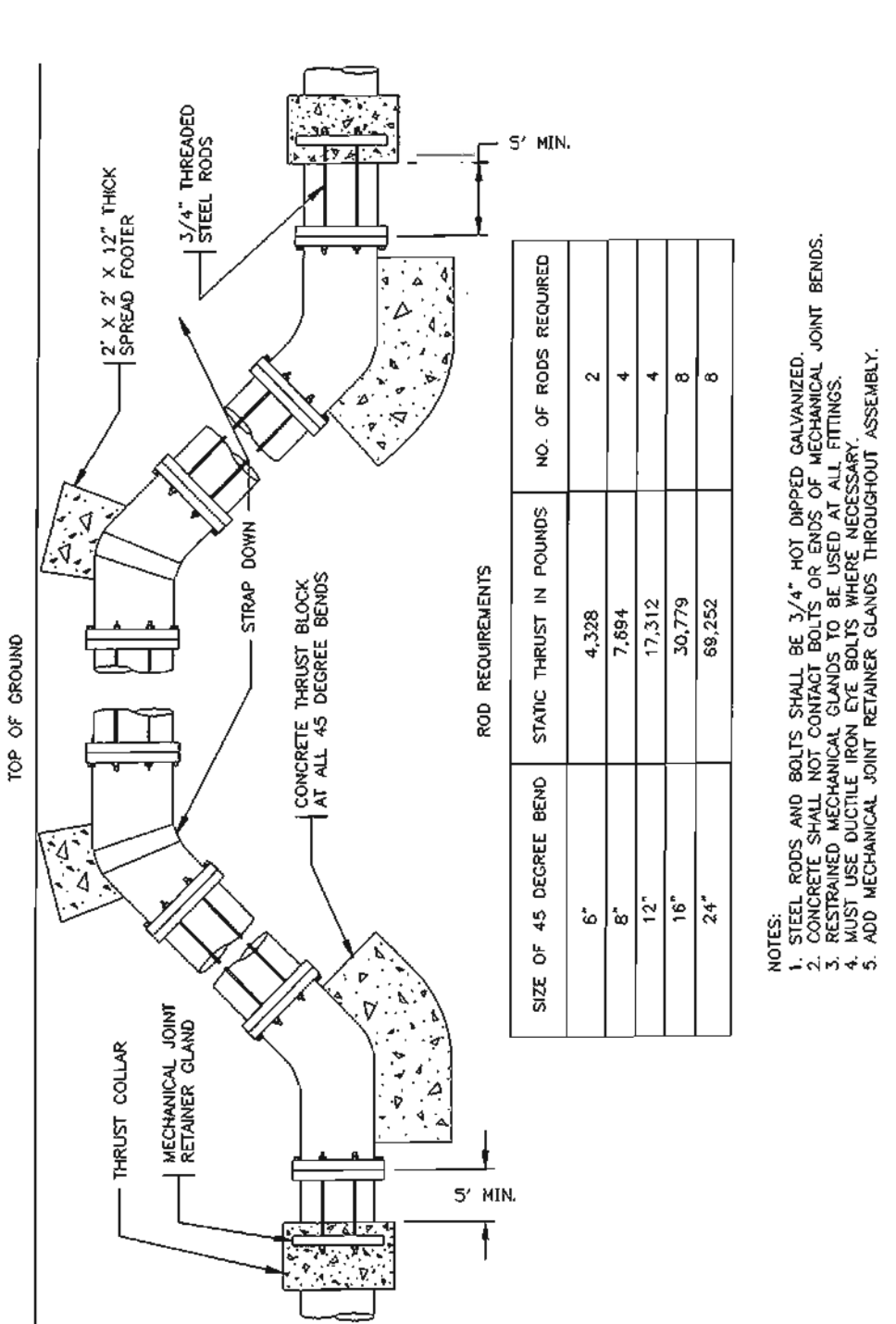
CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION  
VALVE MARKER POST  
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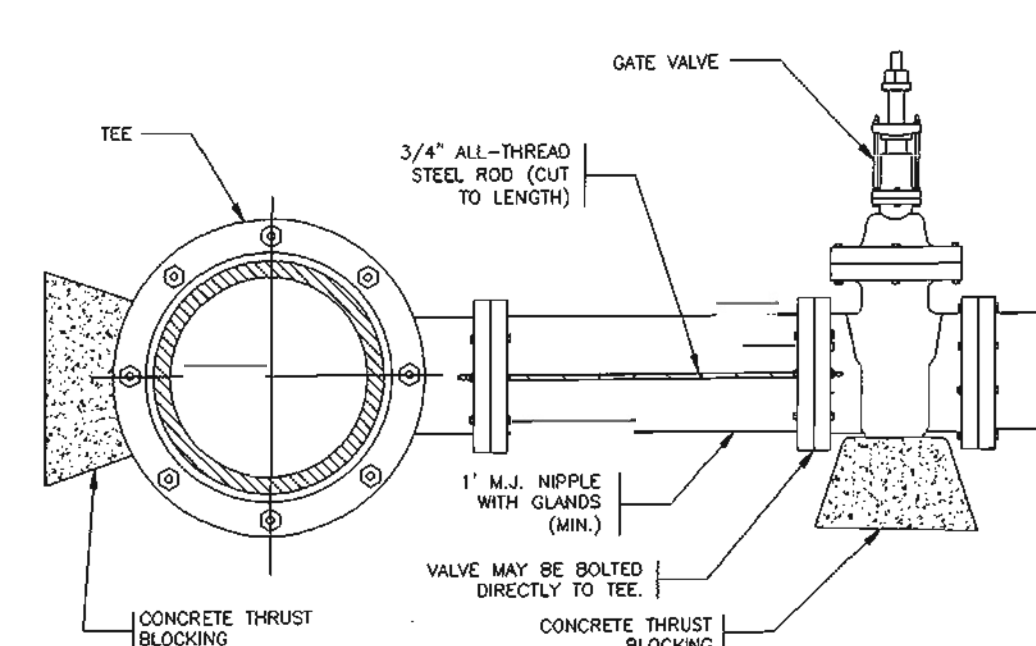
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AUTOMATIC FLUSHING ASSEMBLY  
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CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION  
VERTICAL BEND ASSEMBLY  
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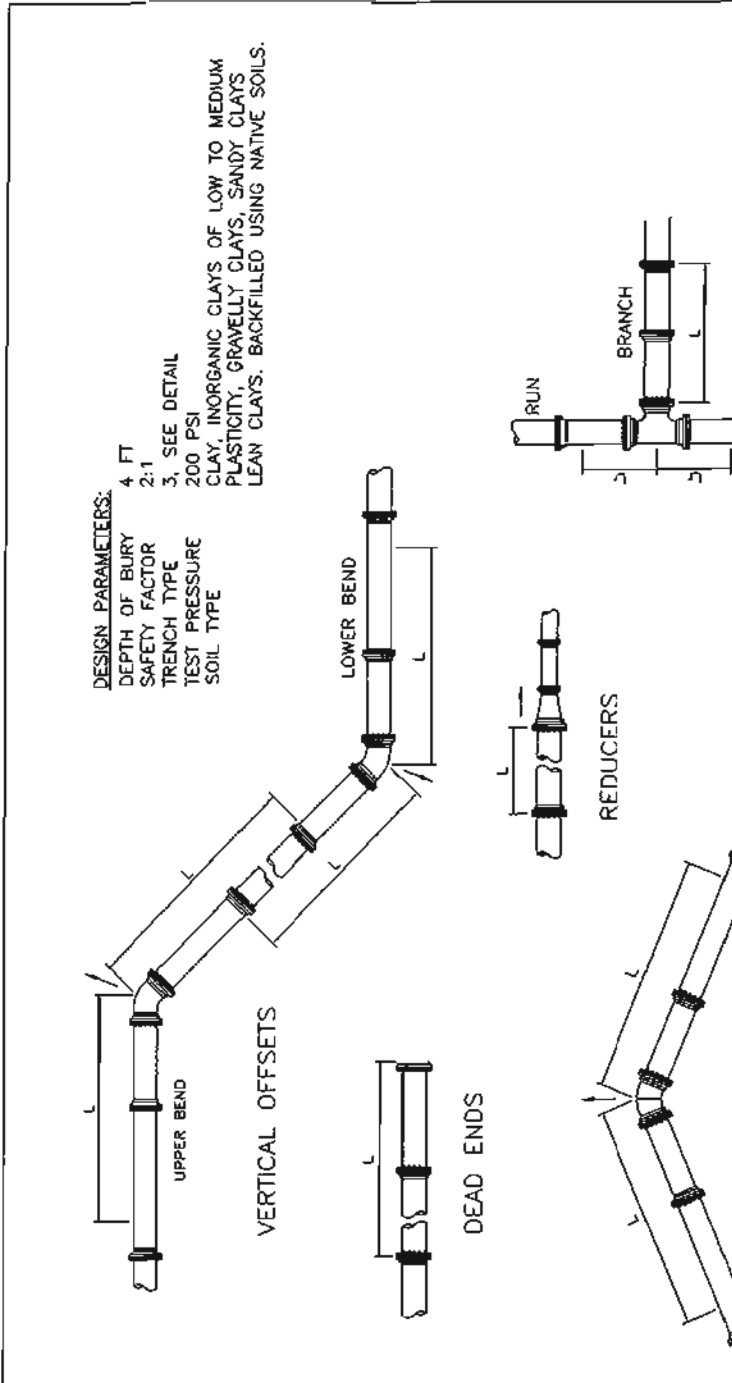


BRANCH SIZE	NO. OF RODS
4"	2
6"	2
8"	4
12"	4
16"	6
24"	6
30"	8
36"	8

- NOTES:  
1. STEEL RODS AND BOLTS SHALL BE 3/4" NOT DIPPED GALVANIZED.  
2. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL FITTINGS.  
3. THIS RODDING REQUIREMENT DOES NOT APPLY TO FIRE HYDRANTS.

CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION  
4" - 24" RESTRAINED TEE AND VALVE ON DEAD ENDS  
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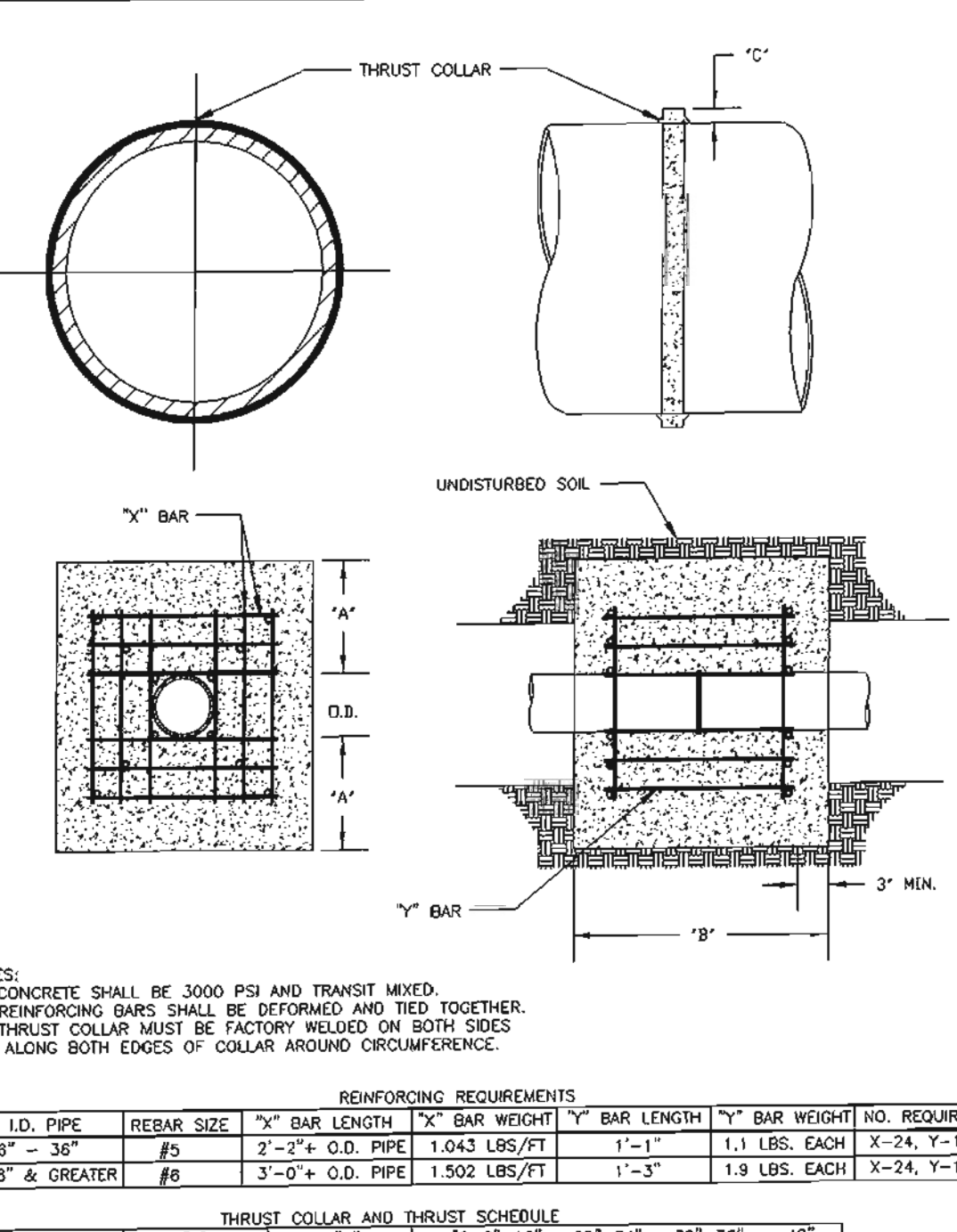
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REINFORCING REQUIREMENTS	REINFORCING SCHEDULE					
I.D. PIPE	REBAR SIZE	"X" BAR LENGTH	"Y" BAR WEIGHT	"Z" BAR LENGTH	"V" BAR WEIGHT	NO. REQUIRED
6" - 36"	#5	2'-2"+ O.D. PIPE	1.043 LBS/FT	1'-1"	1.1 LBS. EACH	X-24, Y-12
48" & GREATER	#6	3'-0"+ O.D. PIPE	1.502 LBS/FT	1'-3"	1.9 LBS. EACH	X-24, Y-12

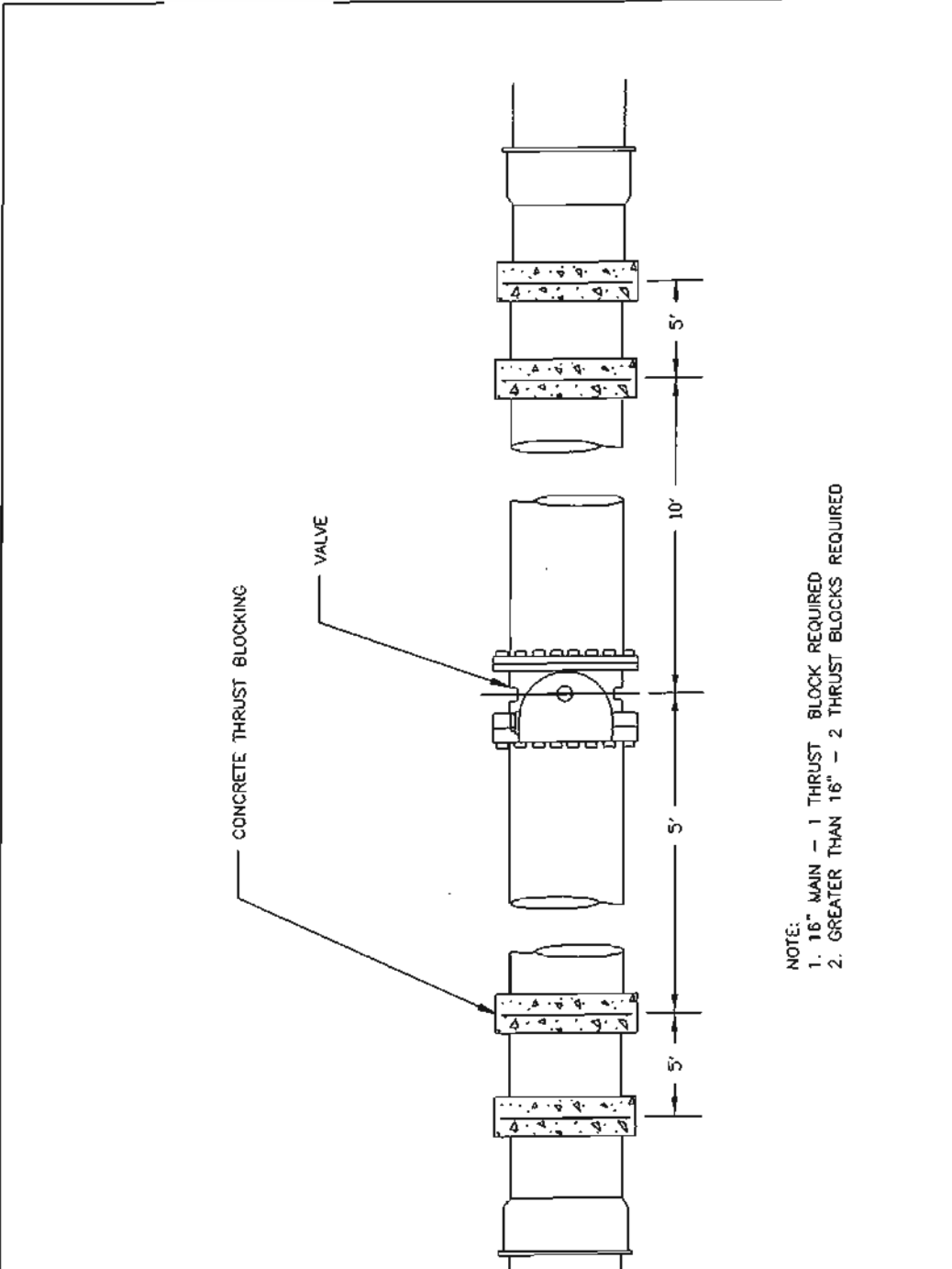
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MECHANICAL JOINT RESTRAINT  
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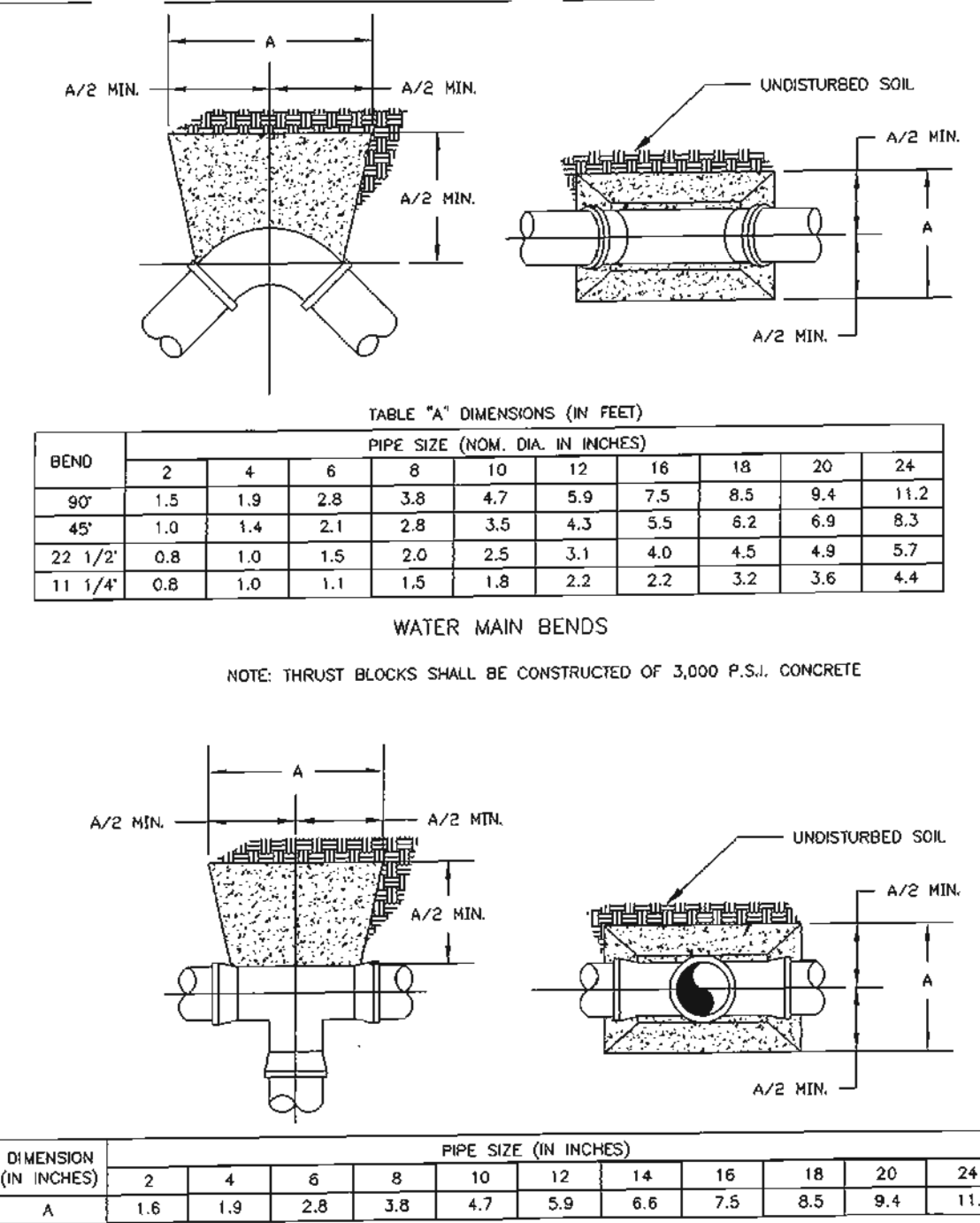
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CONCRETE THRUST BLOCKING FOR WATER MAINS  
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CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION  
CONCRETE THRUST BLOCKING FOR VALVES AND DEAD ENDS  
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CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION  
CONCRETE THRUST BLOCKING FOR BENDS AND TEES  
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SIZE AND DEGREE OF BEND	STATIS. THRUST IN POUNDS	MIDDERGATELY DRY CLAY 8000 LBS./FT <sup>2</sup>	SOFT CLAY 2000 LBS./FT <sup>2</sup>	GRAVEL LAYER SAND 1600 LBS./FT <sup>2</sup>	DRY CLAY - ALL WAYS 8000 LBS./FT <sup>2</sup>	SAND COMPACT FIRM 8000 LBS./FT <sup>2</sup>	SAND CLEAN DRY 4000 LBS./FT <sup>2</sup>	QUICKSAND - VERY POOR	ROCK 10,000 LBS./FT <sup>2</sup>
5"									
11 1/4°	1,108	1	1	1	1	1	2	1	
22 1/2°	2,207	1	2	2	1	1	1	3	1
45°	4,328	2	3	3	1	1	2	5	1
90°	7,996	2	4	5	1	1	2	8	1
PLUG	5,655	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°	7,891	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

CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION  
CONCRETE THRUST BLOCKING QUANTITY TABLE  
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WESTFALL, N.C.

**WESTFALL SUBDIVISION PH-3A CONSTRUCTION PLANS WATER DETAILS**  
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Project No: 800-12  
Computer Dwg. Name: 800-12 Phase 3A - Water Details.dwg

Sheet No: 12  
Of -

**Seedbed Preparation:**

1. Chisel compacted area and spread topsoil three inches deep over adverse soil conditions, if available.
2. Rip the entire area to six inches deep.
3. Remove all loose rock, roots, and other obstructions leaving surface reasonable smooth and uniform.
4. Apply agricultural lime, fertilizer and superphosphate uniformly and mix with soil (see notes).
5. Continue tillage until a well-subsoiled, firm reasonably uniform seedbed is prepared four to six inches deep.
6. Seed on a freshly prepared seedbed and cover seed lightly with seeding equipment and pack after seeding.
7. Mutch immediately after seeding and anchor mutch.
8. Inspect all seeded areas and make necessary repairs for seedings within the planting season, if possible. If stand should be over 60 seedlings following the original lime, fertilizer and seeding rates.
9. Consult EFS Environmental Engineers on maintenance treatment and fertilization after permanent cover is established.

**Limings**  
 Agricultural Limestone: 2 tons/acre (3 tons/acre in clay soils)  
 Fertilizer: 1,000 lbs/acre - 10-10-10  
 Superphosphate: 500 lbs/acre - 20% analysis  
 Mutch: 2 tons/acre - small grain straw  
 Anchor: Asphalt Emulsion at 500 gallons/acre

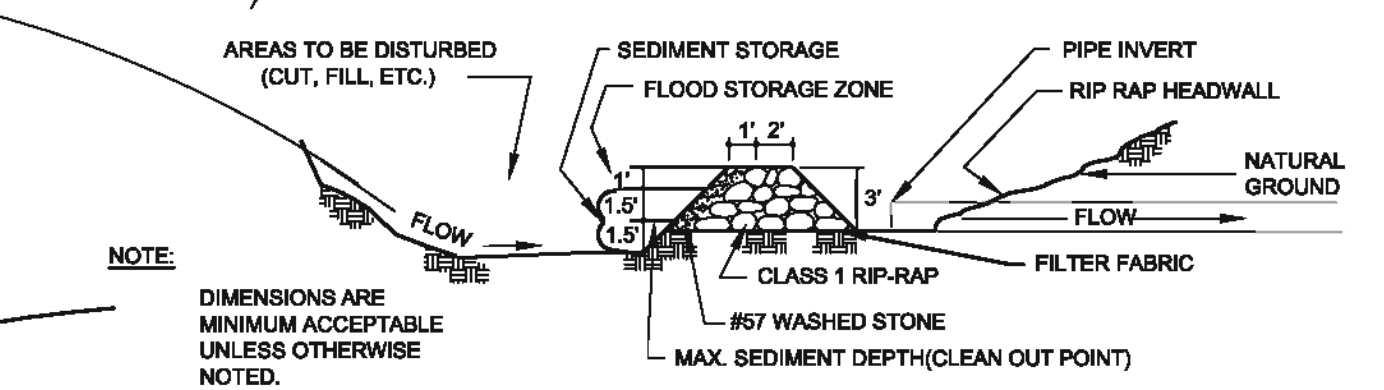
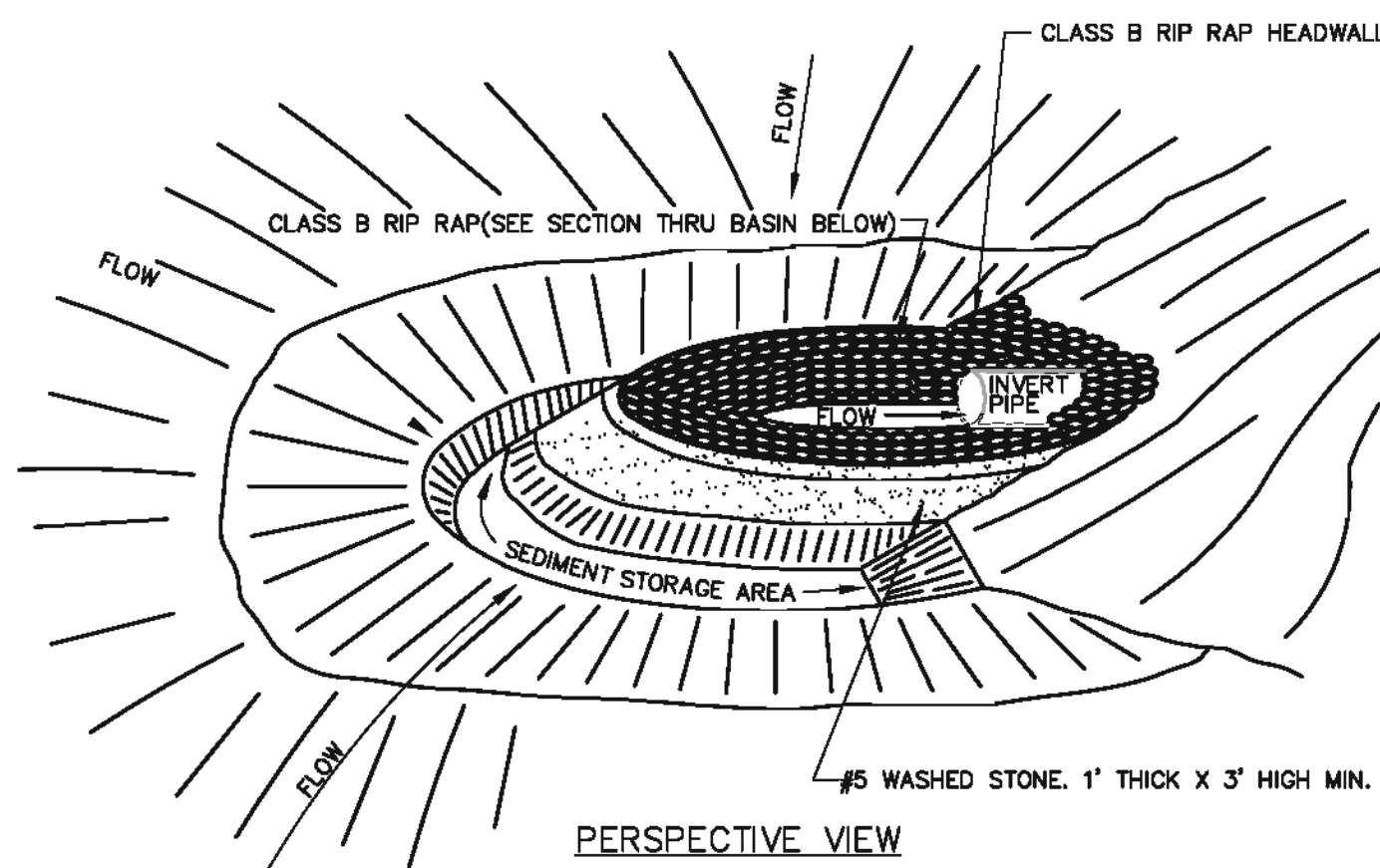
**Seeding Schedule**

PERMANENT	Date	Type	Planting Notes
	Aug 15 - Nov 1	Tall Fescue	300 lbs/acre
	Nov 1 - Mar 1	Tall Fescue & Abruzzi Rye	300 lbs/acre
	Mar 1 - Apr 15	Tall Fescue	300 lbs/acre
	Apr 15 - Jun 30	Hulled Common Bermudagrass	300 lbs/acre
	Jul 1 - Aug 15	Tall Fescue AND Browning Millet or Sorghum - Sudan Hybrid <sup>***</sup>	25 lbs/acre
			150 lbs/acre (100 lbs/acre; 50 lbs/acre topsoil Mutch); 30 lbs/acre (Sorghum - Sudan Hybrid)

TEMPORARY	Date	Type	Planting Notes
	Mar 1 - Jun 1	Berlone Lycopodium (scarified) and use the following combinations:	60 lbs/acre (Berlone Lycopodium)
	Mar 1 - Apr 15	Add Tall Fescue	150 lbs/acre
	Mar 1 - Jun 30	Or add Hulled Common Bermudagrass	150 lbs/acre
	Jun 1 - Sept 1	Tall Fescue AND Browning Millet or Sorghum - Sudan Hybrid <sup>***</sup>	25 lbs/acre
	Sept 1 - Mar 1	Berlone Lycopodium (unhulled - unscarified) AND Tall Fescue	120 lbs/acre (100 lbs/acre; 20 lbs/acre topsoil Mutch); 30 lbs/acre (Sorghum - Sudan Hybrid)
	Nov 1 - Mar 1	And Abruzzi Rye	150 lbs/acre (Tall Fescue)

Consult EFS Environmental Engineer for additional information concerning other alternatives for vegetation of disturbed areas. The above vegetation rates are those which do well under local conditions; other seeding rate combinations are possible.

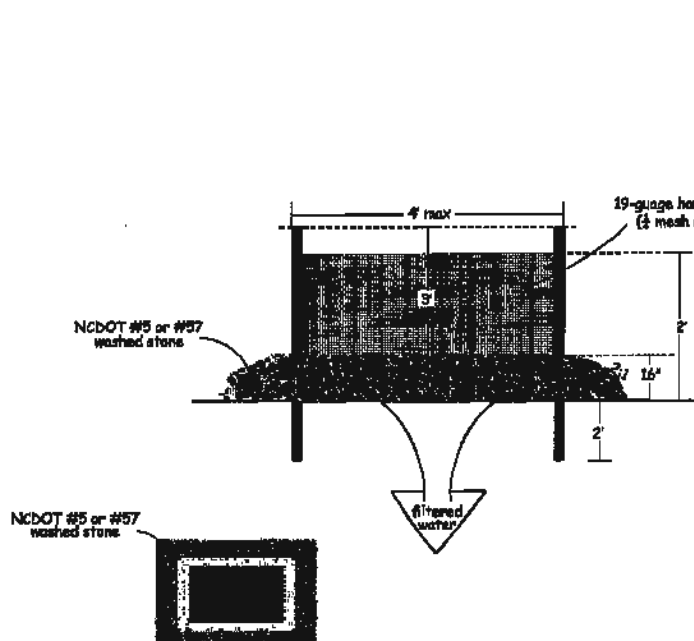
<sup>\*\*\*</sup>TEMPORARY: Reseed according to optimum season for desired permanent vegetation. Do not allow temporary cover to grow over 12" in height before mowing, otherwise fescue may be shaded out.



SECTION THRU BASIN, FILTER AND CULVERT PIPE

**MAINTENANCE:**  
 INSPECT ROCK PIPE INLET PROTECTION AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT AND RESTORE THE SEDIMENT STORAGE AREA TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-HALF THE DESIGN DEPTH OF THE TRAP. PLACE THE SEDIMENT THAT IS REMOVED IN THE DESIGNATED DISPOSAL AREA AND REPLACE THE CONTAMINATED PART OF THE GRAVEL FACING.  
 CHECK THE STRUCTURE FOR DAMAGE. ANY RIPRAP DISPLACED FROM THE STONE HORSESHOE MUST BE REPLACED IMMEDIATELY.  
 AFTER ALL THE SEDIMENT-PRODUCING AREAS HAVE BEEN PERMANENTLY STABILIZED, REMOVE THE STRUCTURE AND ALL THE UNSTABLE SEDIMENT. SMOOTH THE AREA TO BLEND WITH THE ADJOINING AREAS AND PROVIDE PERMANENT GROUND COVER (SURFACE STABILIZATION).

**GRAVEL & RIPRAP HORSESHOE INLET BASIN**

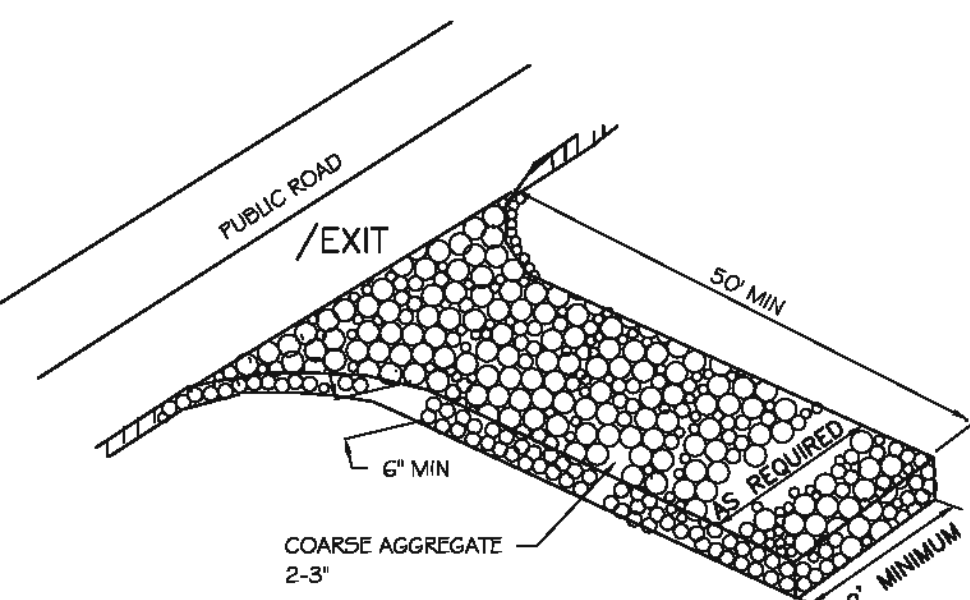


**Specifications**

1. Uniformly grade a shallow depression approximating the inlet.
2. Drive 5-foot steel post 2 feet into the ground surrounding the hole. Drive post evenly toward the perimeter of the hole a maximum of 4 feet apart.
3. Remove the post with wire snips between holes. Secure the wire mesh to the steel post at the hole, inlet, and bottom. Place a 1-foot flap of the wire mesh under the gravel for anchoring is recommended.
4. Place coarse gravel (NO. 57 or #57 washed) to 2.5' deep with a height of 16 inches around the wire, and smooth to an even grade.
5. Check for underlying drainage area has been verified, remove accumulated sediment, and establish final grading elevations.
6. Compact the area properly and stabilized with grass/clover.

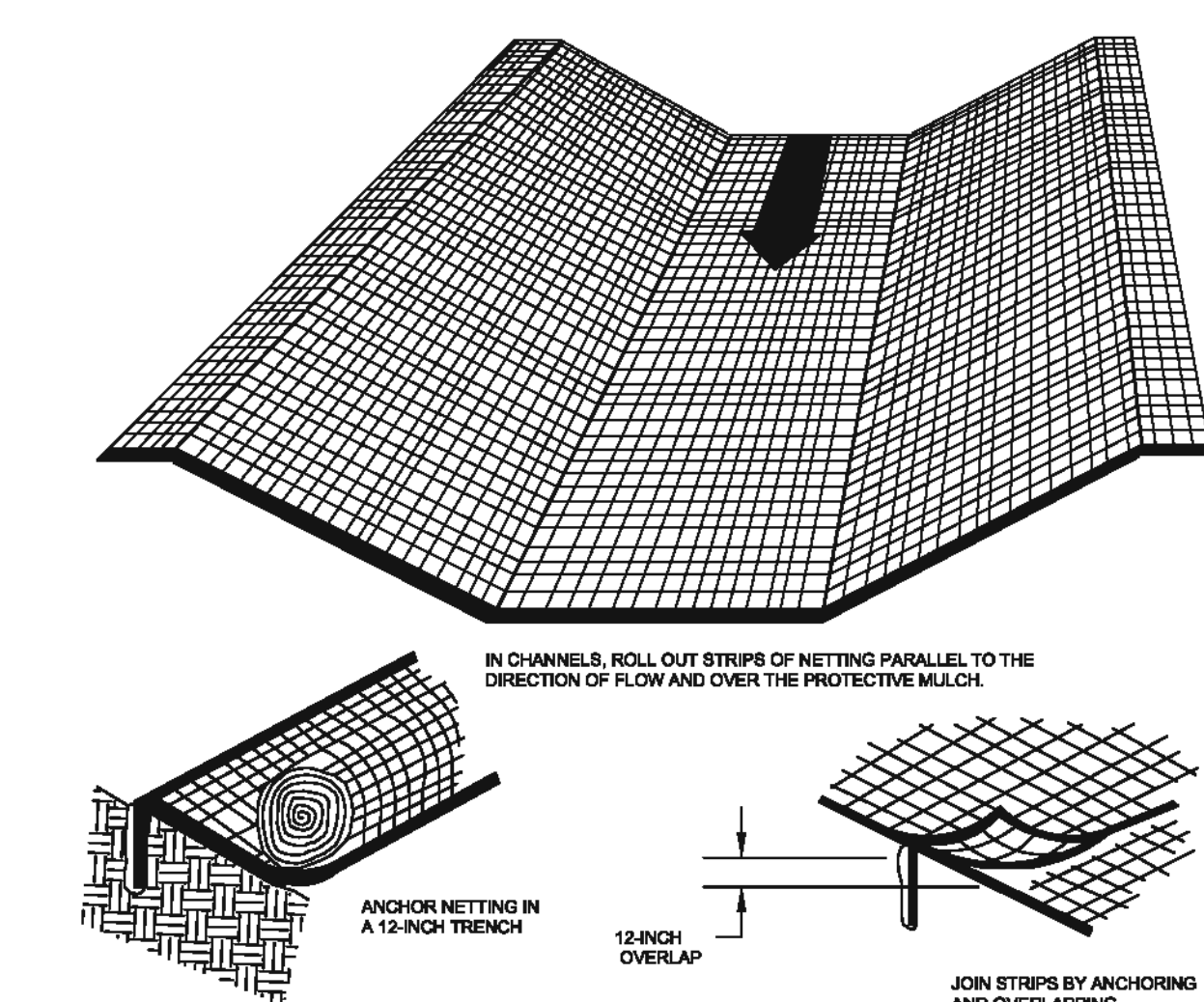
**References:** Inlet Protection, E-30, Block and Gravel Inlet Protection, E-31, Block Gravel Inlet Protection, North Carolina Department of Transportation Standard Specifications for Roads and Structures

**TEMPORARY INLET PROTECTION**



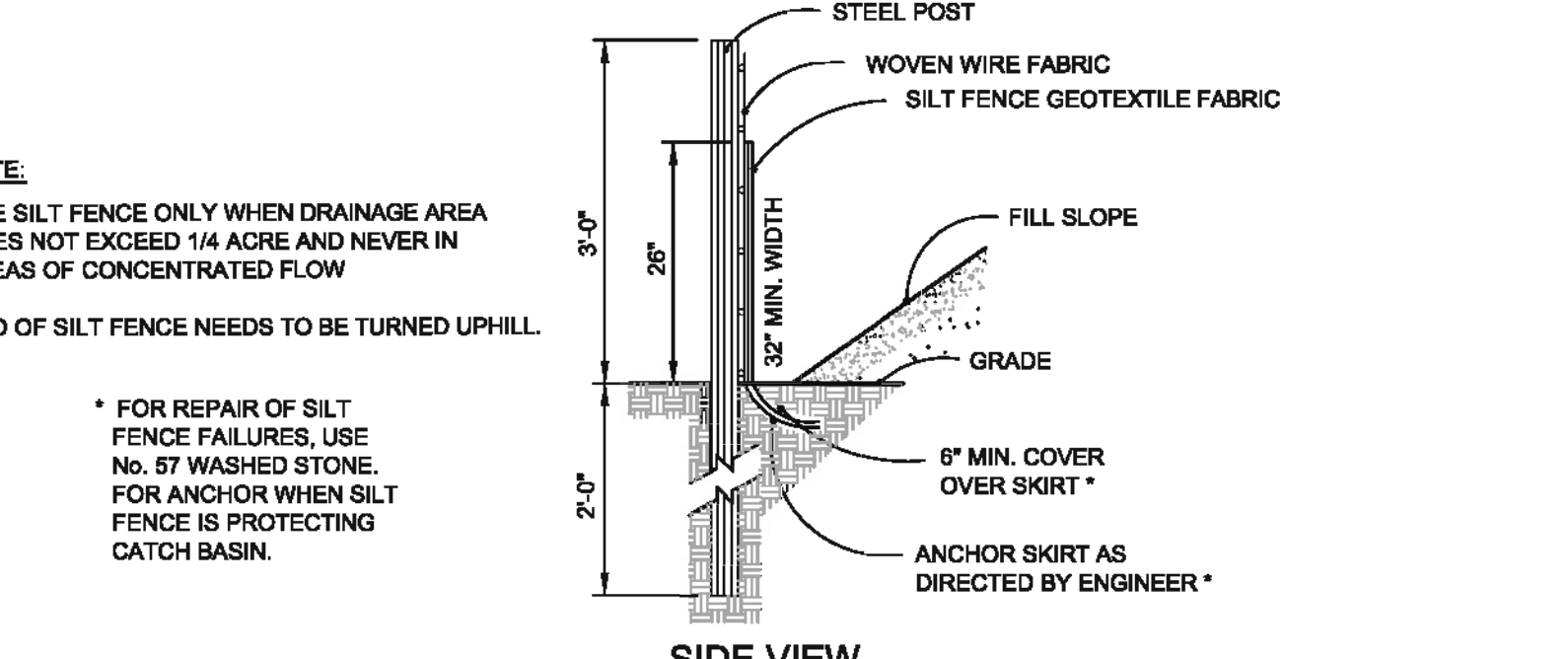
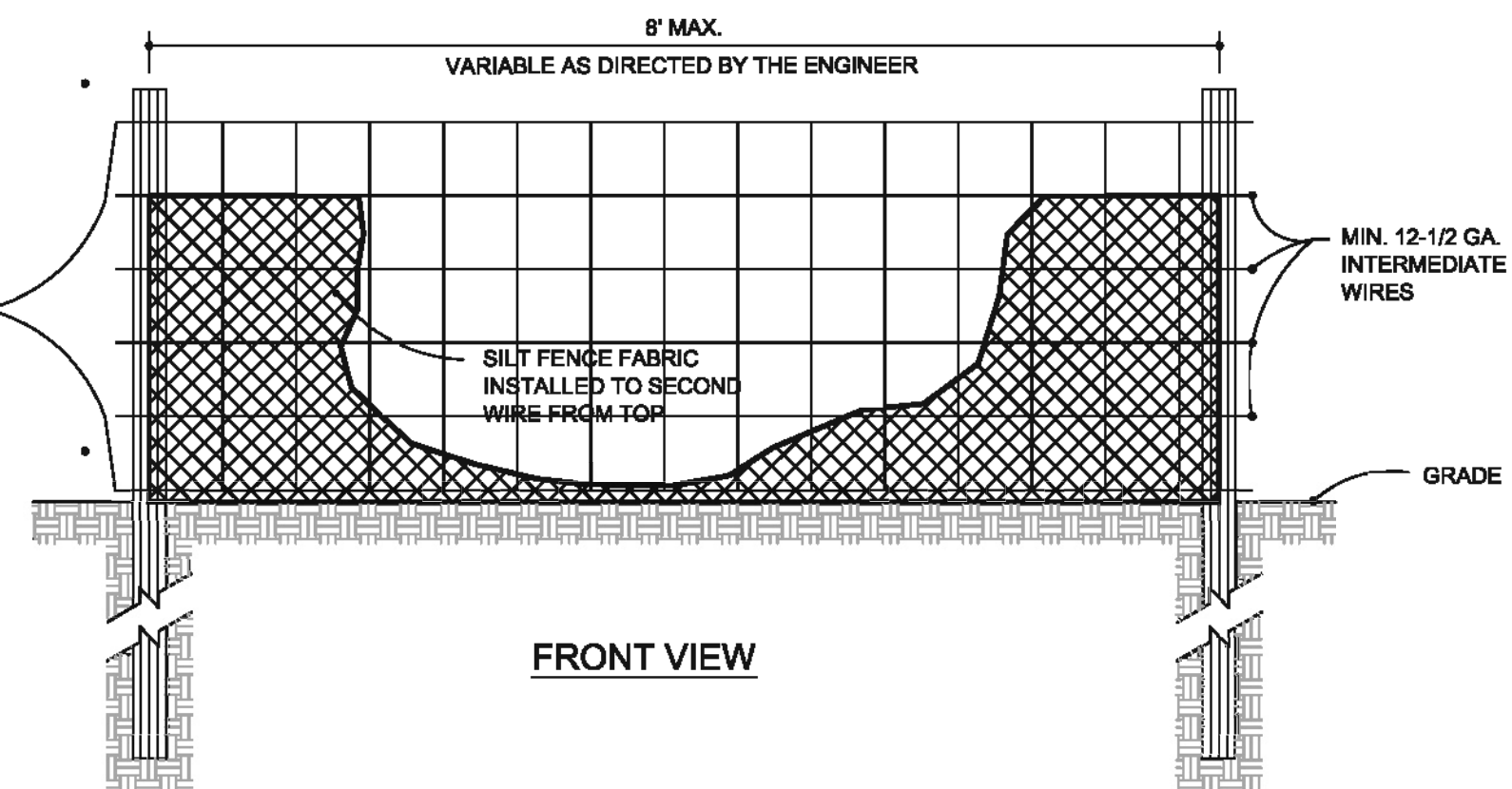
**NOTES:**  
 a. GRAVEL PAD TO BE 20'x 50' AND 6" THICK MINIMUM.  
 b. TURNING RADIUS SUFFICIENT TO ACCOMMODATE LARGE TRUCKS IS TO BE PROVIDED.  
 c. ENTRANCE(S) SHOULD BE LOCATED TO PROVIDE FOR MAXIMUM UTILITY BY ALL CONSTRUCTION VEHICLES.  
 d. MUST BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR DIRECT FLOW OF MUD ONTO STREETS. PERIODIC TOPDRESSING WITH STONE SILL BE NECESSARY; KEEP SHOVE HANDY.  
 e. ANY MATERIAL WHICH STILL MAKES IT ONTO THE ROAD MUST BE CLEANED UP IMMEDIATELY.  
**MAINTENANCE:** APPLICABLE AT ALL POINTS OF INGRESS & EGRESS UNTIL SITE IS STABILIZED, FREQUENT CHECKS OF THE DEVICE AND TIMELY MAINTENANCE MUST BE PROVIDED.  
**MAINTENANCE:** MAINTAIN THE GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. THIS MAY REQUIRE PERIODIC TOPDRESSING WITH 2-INCH STONES AFTER EACH RAINFALL. INSPECT ANY STRUCTURE USED TO TRAP SEDIMENT AND CLEAN IT OUT AS NECESSARY. IMMEDIATELY REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED, OR TRACKED ONTO PUBLIC ROADWAYS.

**TEMPORARY CONSTRUCTION ENTRANCE**



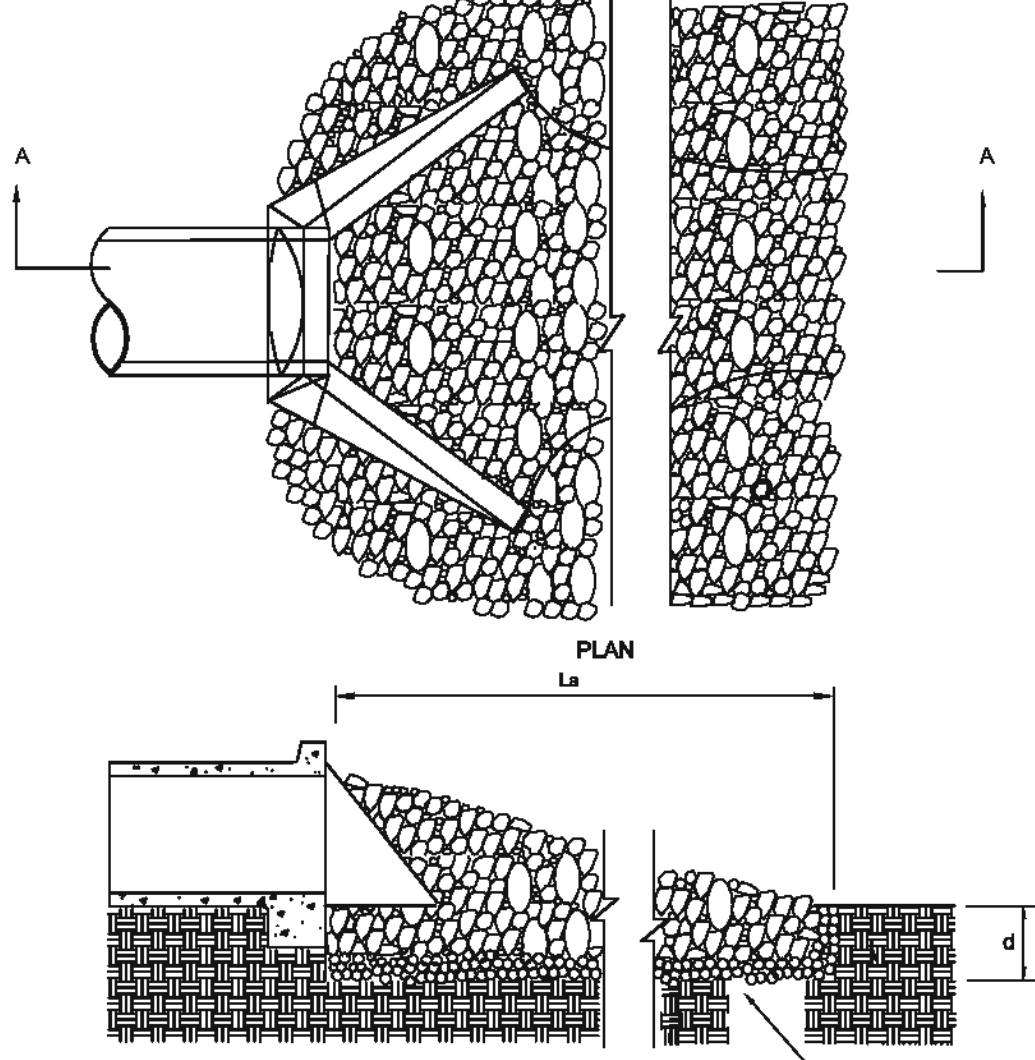
**MAINTENANCE:**  
 AFTER GRASS IS ESTABLISHED, PERIODICALLY CHECK THE CHANNEL; CHECK IT AFTER EVERY HEAVY RAINFALL EVENT. IMMEDIATELY MAKE REPAIRS. IT IS PARTICULARLY IMPORTANT TO CHECK THE CHANNEL OUTLET AND ALL ROAD CROSSINGS FOR BANK STABILITY AND EVIDENCE OF PIPING OR SCOUR HOLES. REMOVE ALL SIGNIFICANT SEDIMENT ACCUMULATION TO MAINTAIN THE DESIGN CARRYING CAPACITY. KEEP THE GRASS IN A HEALTHY, VIGOROUS CONDITION AT ALL TIMES, SINCE IT IS THE PRIMARY EROSION PROTECTION FOR THE CHANNEL.

**TEMPORARY CHANNEL LINING**



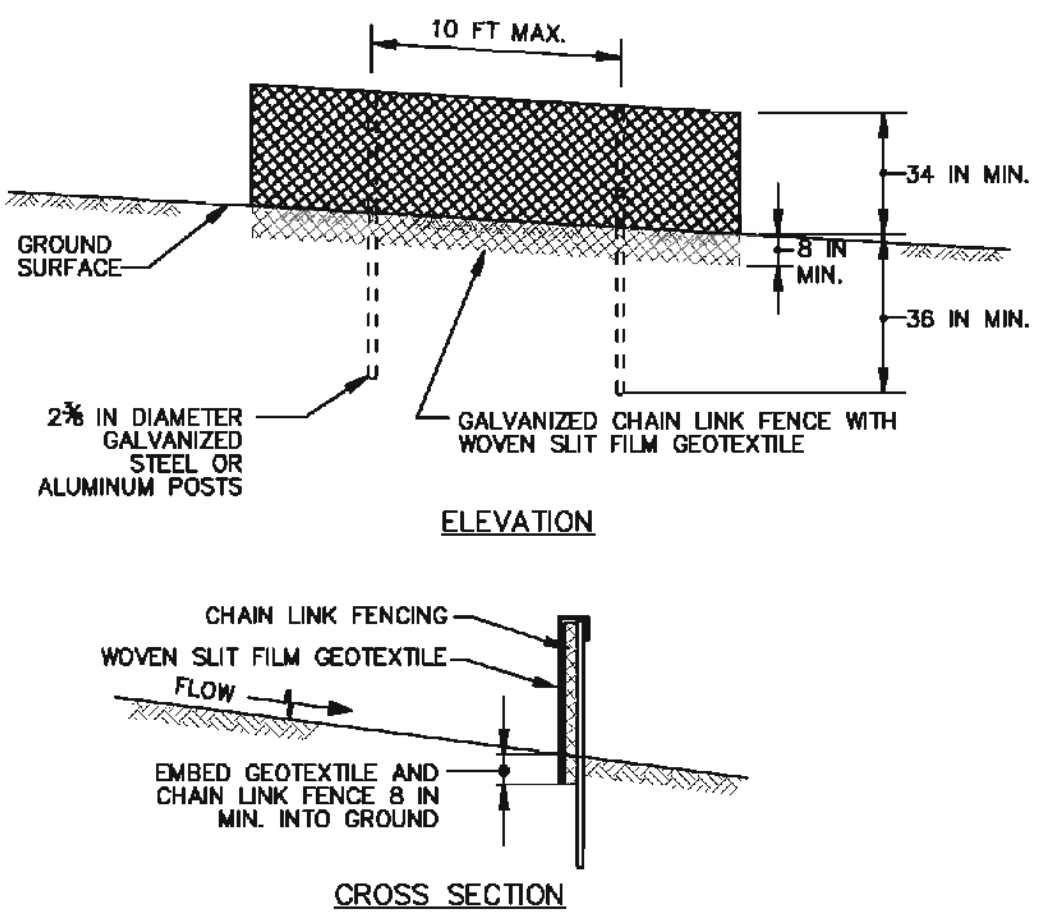
**NOTE:**  
 -USE SILT FENCE ONLY WHEN DRAINAGE AREA DOES NOT EXCEED 1/4 ACRE AND NEVER IN AREAS OF CONCENTRATED FLOW.  
 -END OF SILT FENCE NEEDS TO BE TURNED UPHILL.  
**MAINTENANCE:**  
 INSPECT SEDIMENT FENCES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.  
 SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, TEAR DECOMPOSE OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.  
 REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT.  
 REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT DEPOSITS AND BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

**TEMPORARY SILT FENCE**



**NOTES:**  
 1. La is the length of the riprap apron.  
 2. d = 1.5 times the maximum stone diameter but not less than 6".  
 3. In well-defined extend the apron up the channel banks to an elevation of 6' above the maximum fallwater depth or to the top of the bank whichever ever is less.  
 4. A filter blanket or filter fabric should be installed between the riprap and soil foundation.

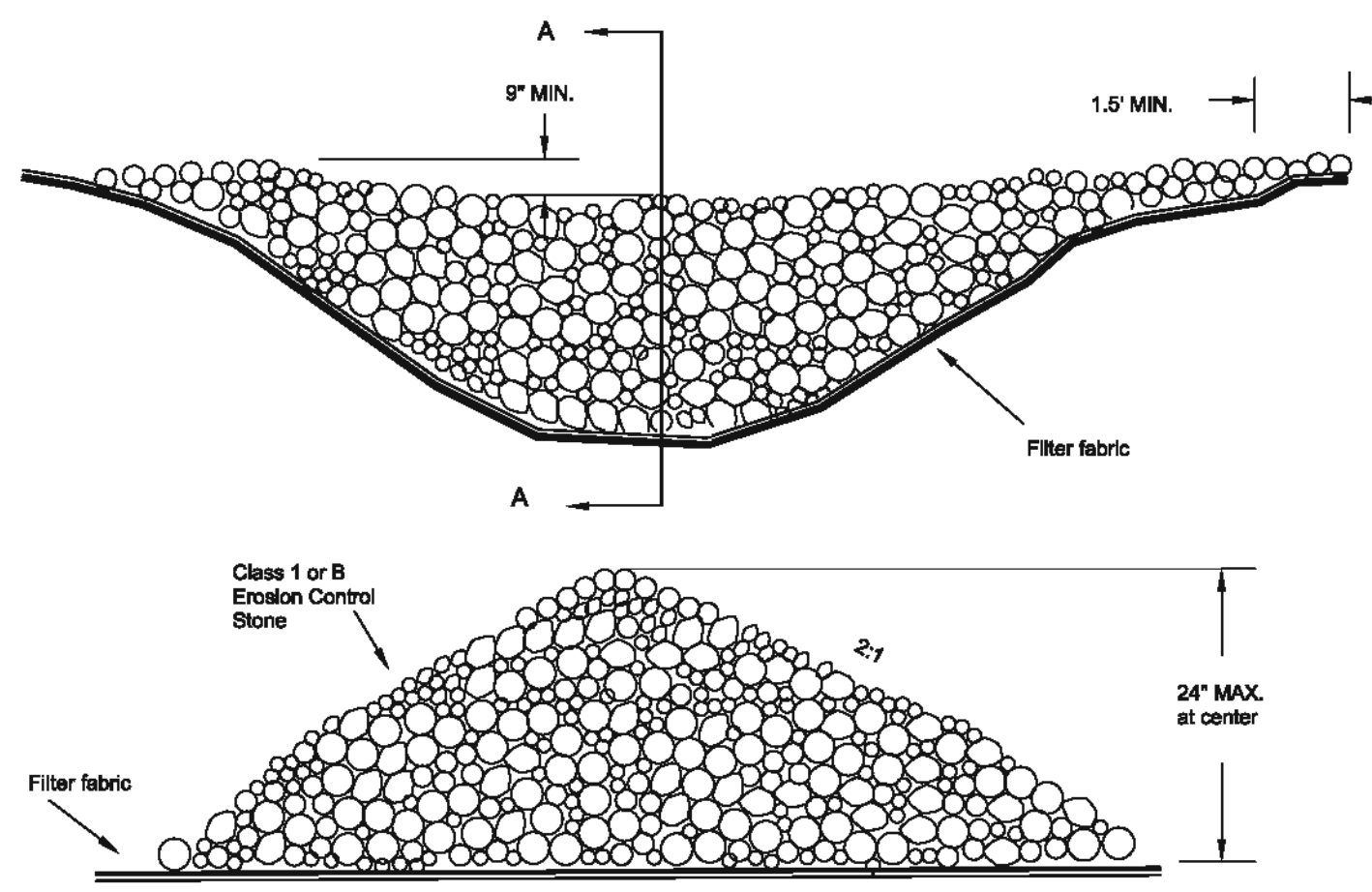
**OUTLET PROTECTION FOR DEFINED CHANNEL**



**CONSTRUCTION SPECIFICATIONS**

1. INSTALL 2 3/8 INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2 3/8 INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
3. FASTEN WOVEN SILT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHOULD BE OVERLAPPED BY 8 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
5. EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
6. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
7. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

**SUPER SILT FENCE**



Stone should be placed over the channel banks to keep water from cutting around the dam.  
**MAINTENANCE:**  
 INSPECT CHECK DAMS AND CHANNELS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. CLEAN OUT SEDIMENT, STRAW, LIMBS, OR OTHER DEBRIS THAT COULD CLOG THE CHANNEL WHEN NEEDED.  
 ANTICIPATE SUBMERGENCE AND DEPOSITION ABOVE THE CHECK DAM AND EROSION FROM HIGH FLOWS AROUND THE EDGES OF THE DAM. CORRECT ALL DAMAGE IMMEDIATELY. IF SIGNIFICANT EROSION OCCURS BETWEEN DAMS, ADDITIONAL MEASURES CAN BE TAKEN SUCH AS, INSTALLING A PROTECTIVE RIPRAP LINER IN THAT PORTION OF THE CHANNEL.  
 REMOVE SEDIMENT ACCUMULATED BEHIND THE DAMS AS NEEDED TO PREVENT DAMAGE TO CHANNEL VEGETATION, ALLOW THE CHANNEL TO DRAIN THROUGH THE STONE CHECK DAM, AND PREVENT LARGE FLOWS FROM CARRYING SEDIMENT OVER THE DAM. ADD STONES TO DAMS AS NEEDED TO MAINTAIN DESIGN HEIGHT AND CROSS SECTION.

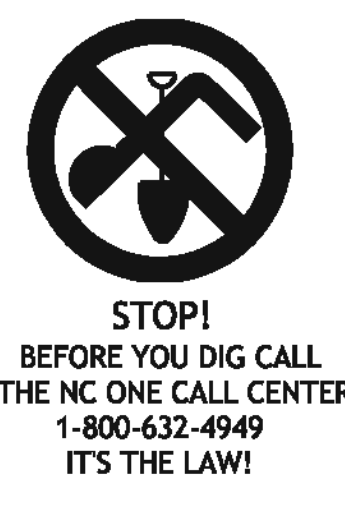
**STONE CHECK DAM**

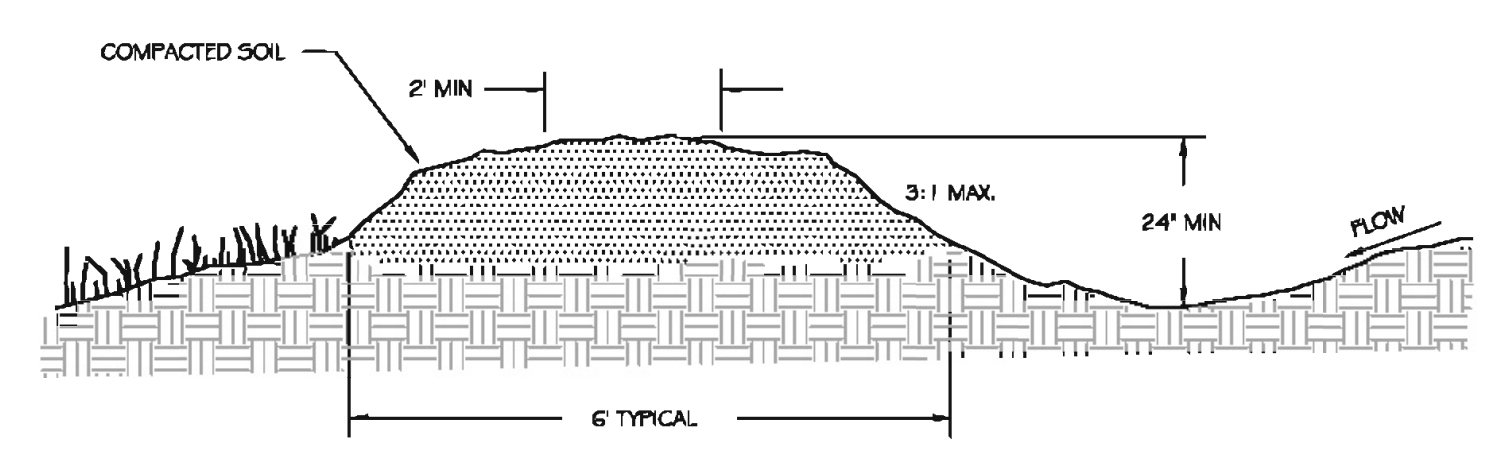
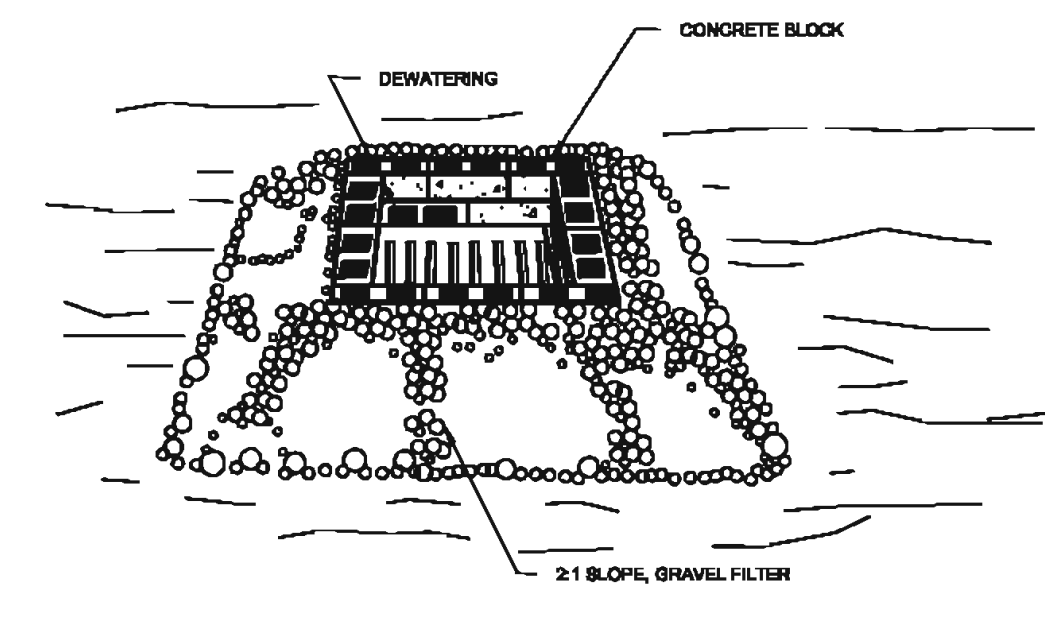
NO.	REVISIONS	DATE

**CE GROUP**  
 301 GLENWOOD AVE. 220  
 RALEIGH, NC 27603  
 PHONE: 919-367-8790  
 FAX: 919-322-0032  
 www.cegroupinc.com  
 License # C-1739

**WESTFALL SUBDIVISION PH-3A**  
 CONSTRUCTION PLANS  
**EROSION CONTROL DETAILS**  
 WILLIAMS TOWNSHIP  
 CHATHAM COUNTY, NORTH CAROLINA

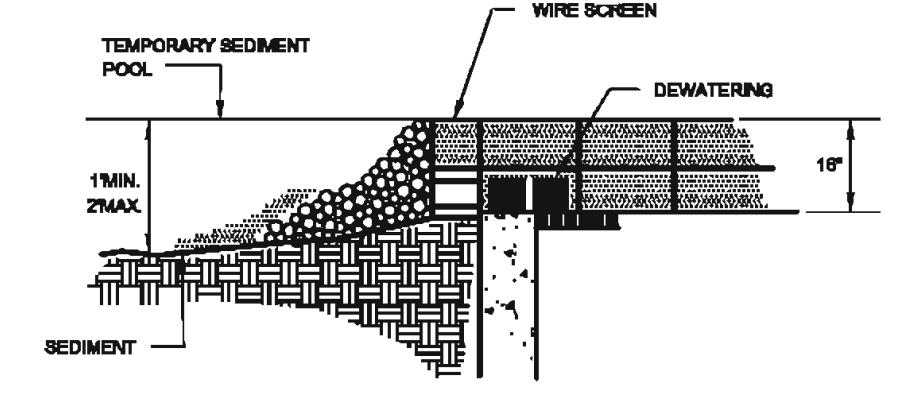
Date: APRIL 17, 2014  
 Scale:  
 Drawn: ACS  
 Checked: AJF  
 Project No: 800-12  
 Computer Dwg. Name: 800-12 Phase 3A - EC Details.dwg  
 Sheet No: 13 of 13





**MAINTENANCE**  
INSPECT TEMPORARY DIVERSIONS ONCE A WEEK AND AFTER EVERY RAINFALL. IMMEDIATELY REMOVE SEDIMENT FROM THE FLOW AREA AND REPAIR THE DIVERSION RIDGE. CAREFULLY CHECK OUTLETS AND MAKE TIMELY REPAIRS AS NEEDED. WHEN THE AREA PROTECTED IS PERMANENTLY STABILIZED, REMOVE THE RIDGE AND THE CHANNEL TO BLEND WITH THE NATURAL GROUND LEVEL AND APPROPRIATELY STABILIZE IT.

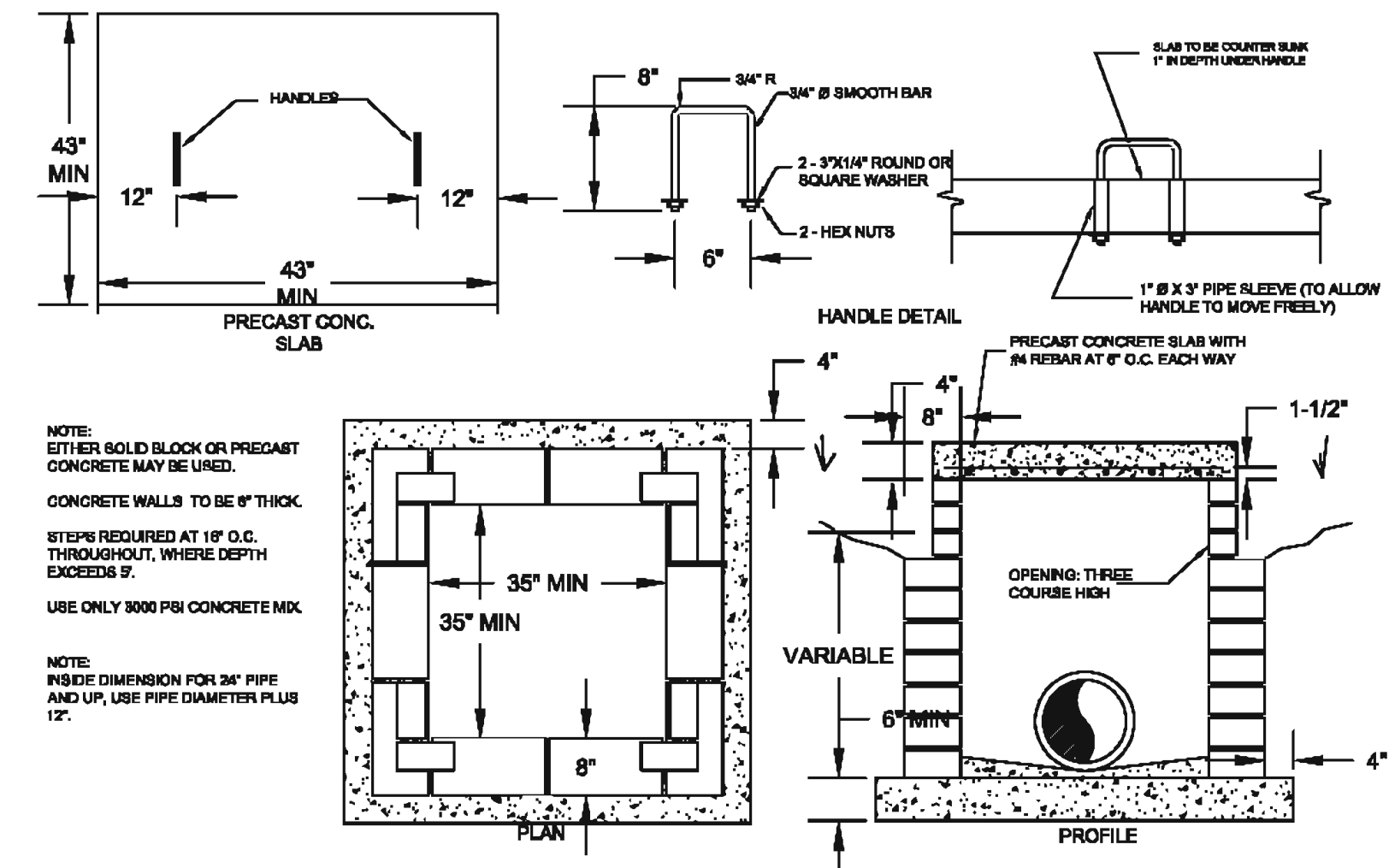
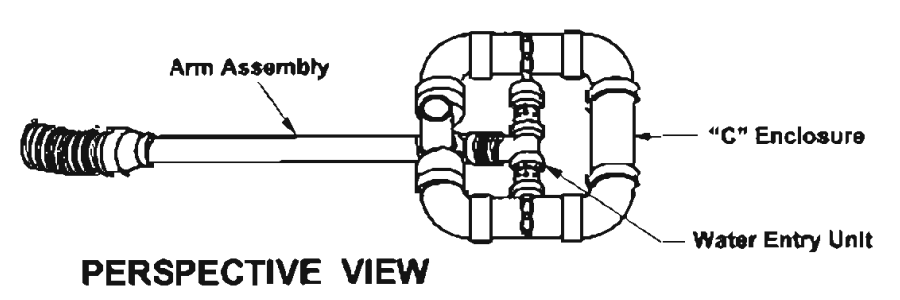
**TEMPORARY DIVERSION BERM/DITCH**



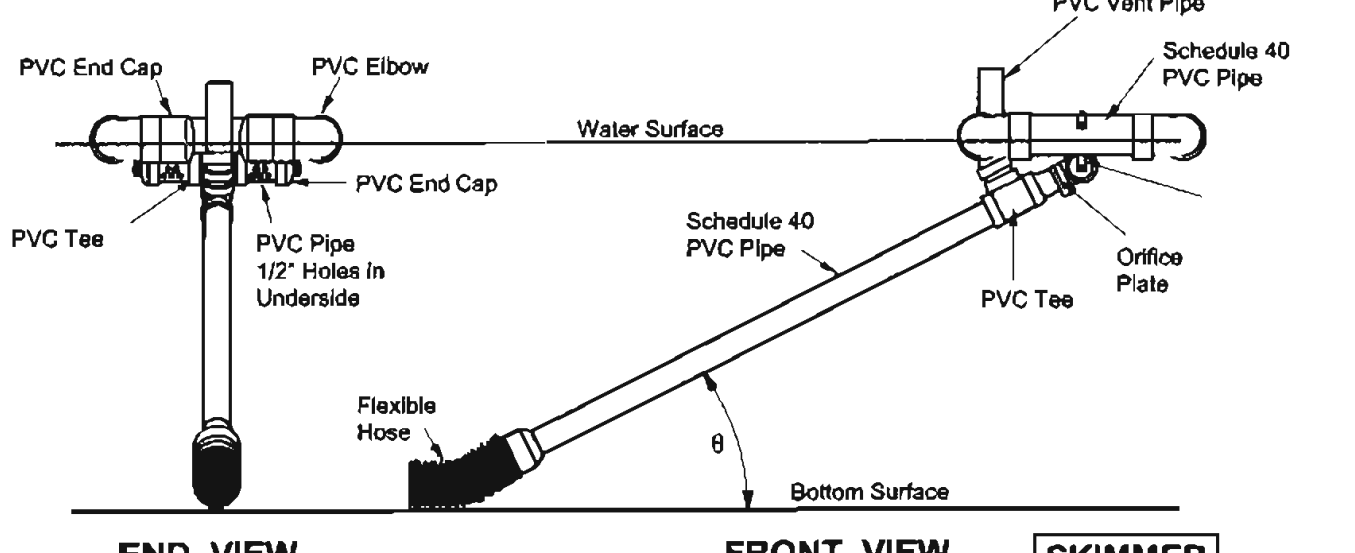
**CONSTRUCTION SPECIFICATIONS**

- LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE ON THE BOTTOM ROW TO ALLOW POOL DRAINAGE. THE FOUNDATION SHOULD BE EXCAVATED AT LEAST 2 INCH BELOW THE CREST OF THE STORM DRAIN. PLACE THE BOTTOM ROW OF THE BLOCK AGAINST THE EDGE OF THE STORM DRAIN FOR LATERAL SUPPORT AND TO AVOID WASHOUTS WHEN OVERFLOW OCCURS. IF NEEDED, GIVE LATERAL SUPPORT TO SUBSEQUENT ROWS BY PLACING 2" WOOD STUDS THROUGH BLOCK OPENINGS.
- CAREFULLY FIT HARDWARE CLOTS OR COMPRESSIBLE WIRE MESH WITH 1/2" HOLES OVER ALL BLOCK OPENINGS TO HOLD GRAVEL IN PLACE.
- USE CLEAN GRAVEL, 3/4" TO 1 1/2" IN DIAMETER, PLACED 2 INCHES BELOW THE TOP OF THE BLOCK ON A 2:1 SLOPE OR FLATTER AND SMOOTH IT TO AN EVEN GRADE. DOT #87 WASHED STONE IS RECOMMENDED.

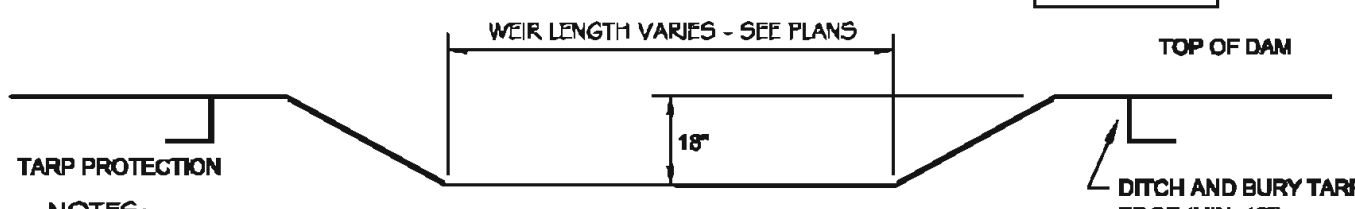
**BLOCK AND GRAVEL INLET PROTECTION**  
SCALE: NONE



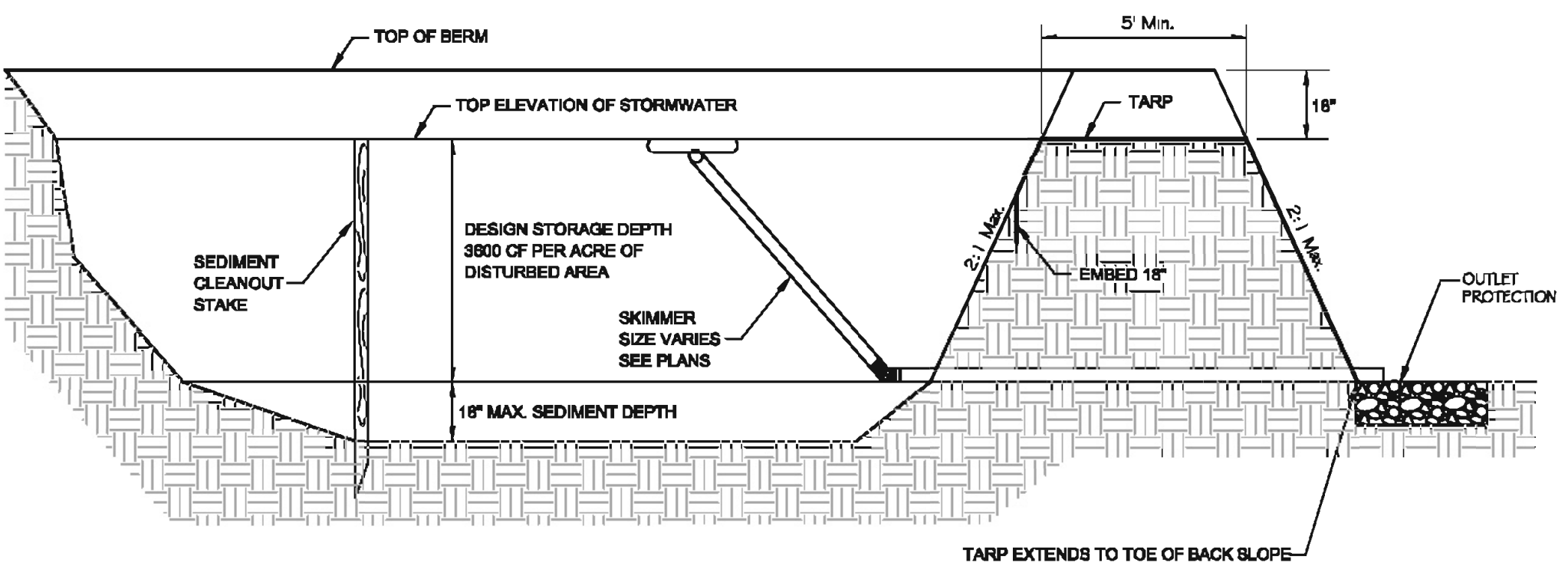
**DROP INLET W/ CONCRETE SLAB**



**SKIMMER**  
Des. By: W. Fardosh  
Des. By: W.K.M.  
Date: April 17, 1997



**SKIMMER DETAIL**

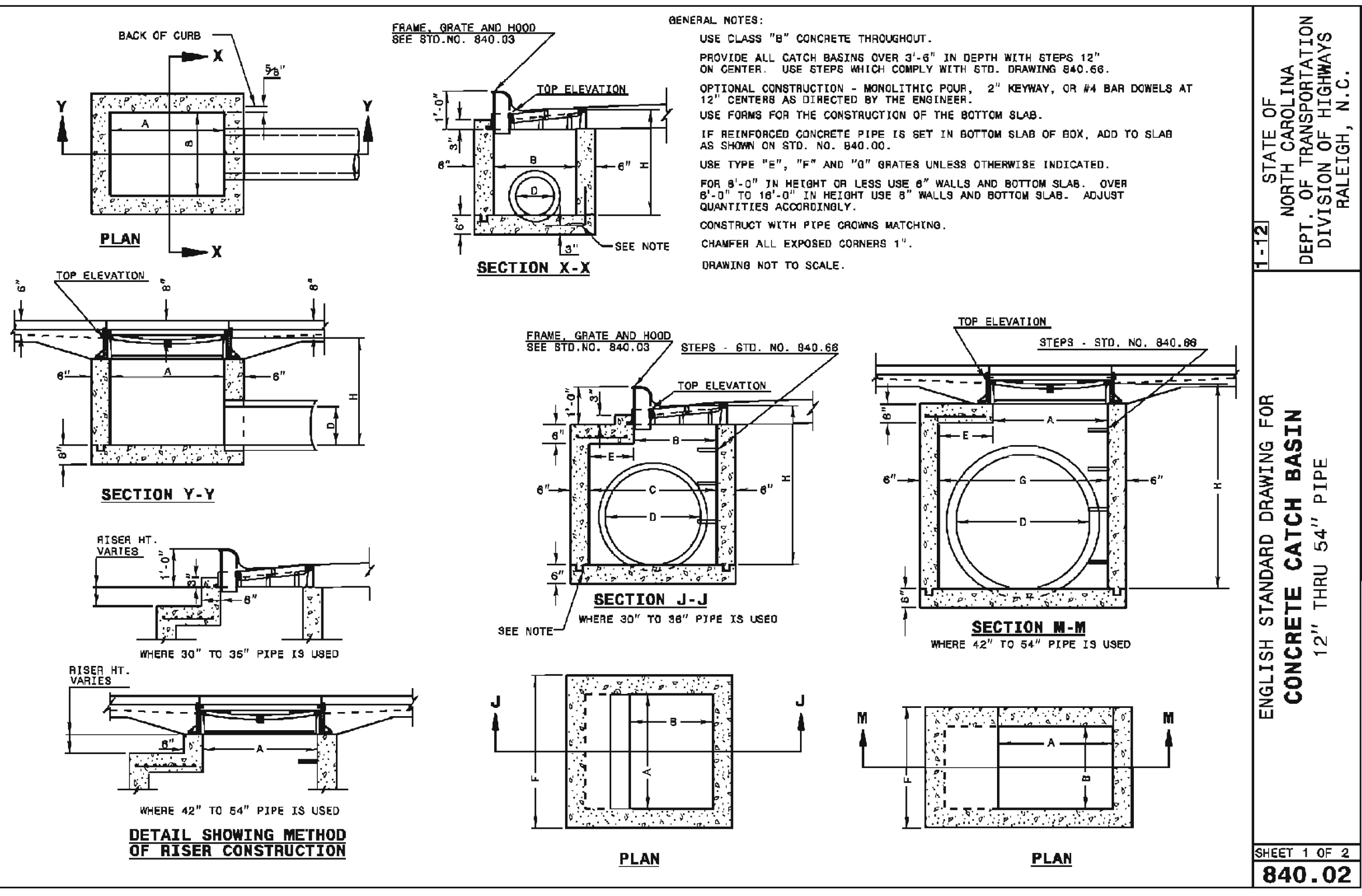


**TEMPORARY SKIMMER SEDIMENT BASIN**

STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N. C.

ENGLISH STANDARD DRAWING FOR  
**CONCRETE CATCH BASIN**  
12" THRU 54" PIPE

SHEET 1 OF 2  
**840.02**



STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N. C.

ENGLISH STANDARD DRAWING FOR  
**CONCRETE CATCH BASIN**  
12" THRU 54" PIPE

SHEET 1 OF 2  
**840.02**

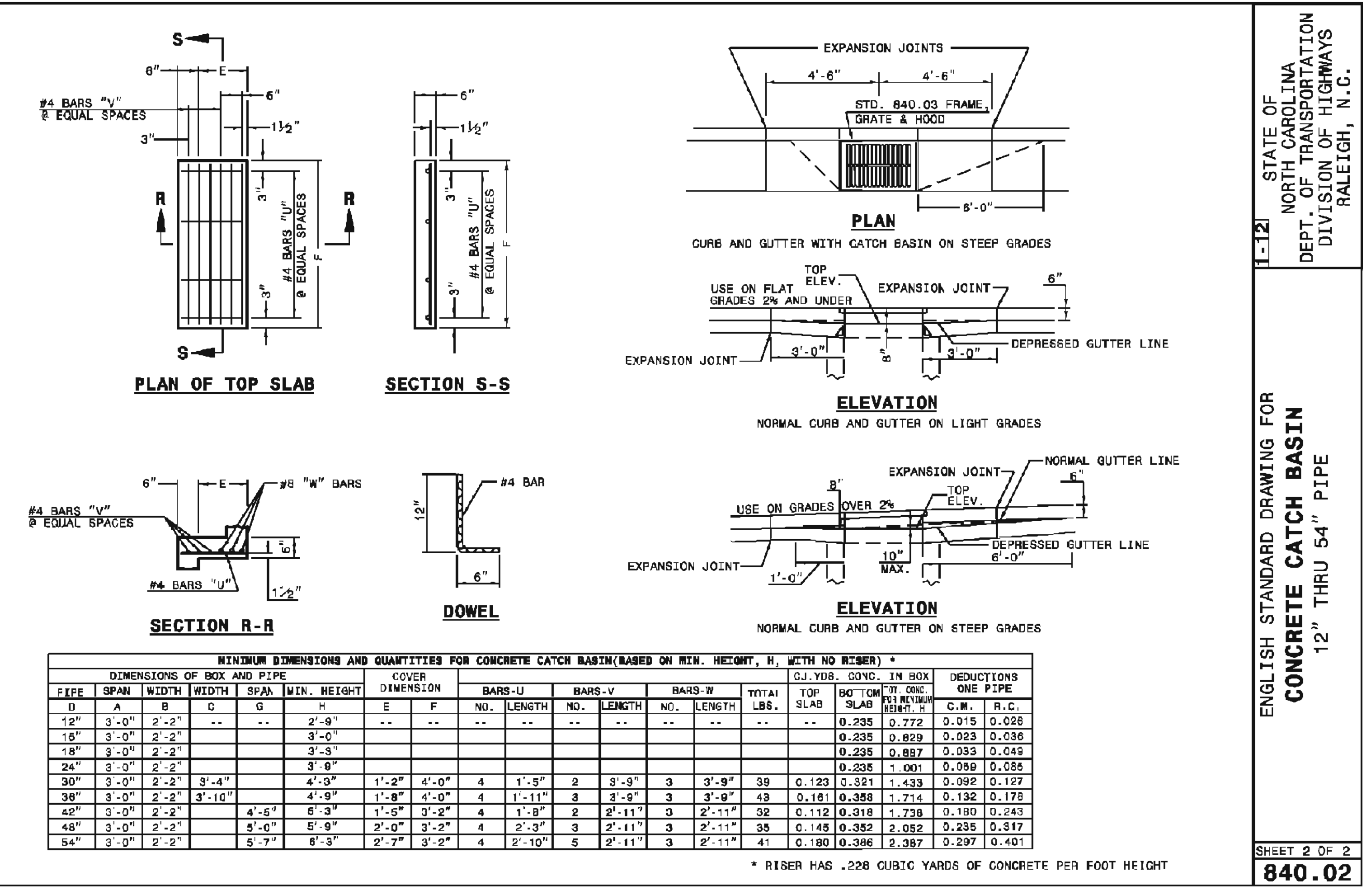
NO.	REVISIONS	DATE

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ENGLISH STANDARD DRAWING FOR  
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12" THRU 54" PIPE

SHEET 2 OF 2  
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STATE OF NORTH CAROLINA  
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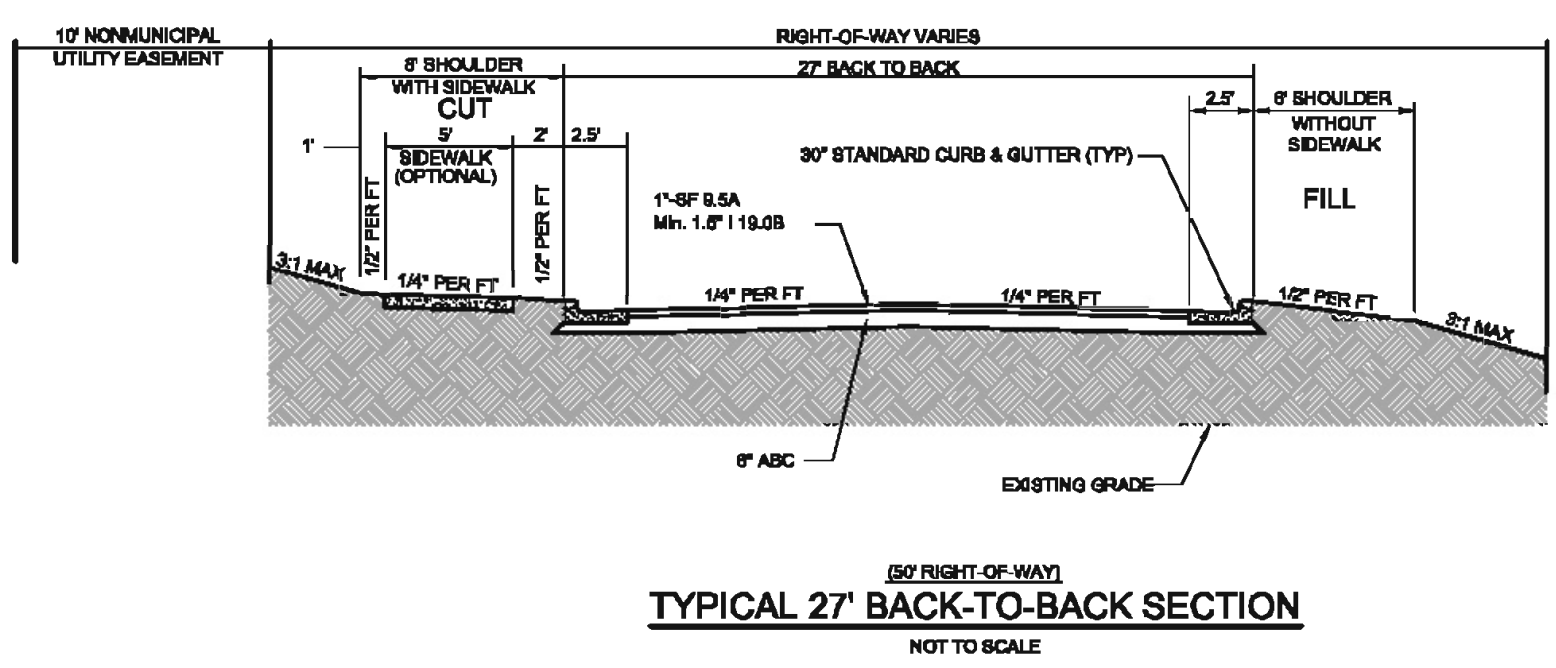
ENGLISH STANDARD DRAWING FOR  
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12" THRU 54" PIPE

SHEET 2 OF 2  
**840.02**



**WESTFALL SUBDIVISION PH-3A**  
CONSTRUCTION PLANS  
**EROSION CONTROL DETAILS**  
WILLIAMS TOWNSHIP  
CHATHAM COUNTY, NORTH CAROLINA

Date: APRIL 17, 2014  
Scale: -  
Drawn: ACS  
Checked: AJF  
Project No: 800-12  
Computer Des. Name: 800-12 Phase 3A - EC Details.dwg  
Sheet No: 14  
Of: -



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

**GENERAL NOTES**

- EXISTING UNDERGROUND STRUCTURES AND UTILITIES SHOWN ARE BASED ON FIELD SURVEYS AND BEST AVAILABLE RECORD DRAWINGS. THE CONTRACTOR SHALL FIELD VERIFY CONDITIONS, INCLUDING THE HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES, PRIOR TO STARTING CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
- THE CONTRACTOR SHALL CONTACT NORTH CAROLINA ONE CALL AT 1-800-632-4949. THE CONTRACTOR SHALL CALL AT LEAST 48 HOURS PRIOR TO ANY DIGGING.
- ALL WATER UTILITY CONSTRUCTION SHALL CONFORM TO THE CHATHAM COUNTY STANDARDS AND SPECIFICATIONS.
- ALL WATER MAINS SHALL HAVE A MINIMUM OF 3.0' OF COVER AS MEASURED FROM FINISH GRADE AT THE LOCATION OF WHERE INSTALLED.
- ALL SANITARY SEWER UTILITY CONSTRUCTION SHALL CONFORM TO AQUA OF NORTH CAROLINA STANDARDS AND SPECIFICATIONS.
- THE SUBJECT PROPERTY IS LOCATED IN A FLOOD HAZARD AREA PER FEMA FIRM PANEL 9784 MAP NUMBER 3710978400J, DATED FEBRUARY 2, 2007.
- AQUA PERSONNEL SHALL BE NOTIFIED 48 HOURS BEFORE CONSTRUCTION IS TO BEGIN, ANY TESTING IS SCHEDULED, OR BEFORE ANY PIPE IS COVERED.
- EXISTING OVERALL TOPOGRAPHIC INFORMATION TAKEN FROM NCDOT LIDAR FOR CHATHAM COUNTY. ROADWAY CORRIDOR TOPOGRAPHIC INFORMATION TAKEN FROM SURVEYED INFORMATION BY CE GROUP, INC.
- ALL STREETS ARE PRIVATE.

NO.	REVISIONS	DATE

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**WESTFALL SUBDIVISION PH-3A**  
 CONSTRUCTION PLANS  
**STORMWATER POND PLAN & DETAILS**  
 WILLIAMS TOWNSHIP  
 CHATHAM COUNTY, NORTH CAROLINA

Date:	APRIL 17, 2014
Scale:	1" = 20'
Drawn:	ACS
Checked:	AJF
Project No.:	800-12
Computer Dwg. Name:	800-12 Phase 3A - Storm Pond Plan & Det.
Sheet No.:	15

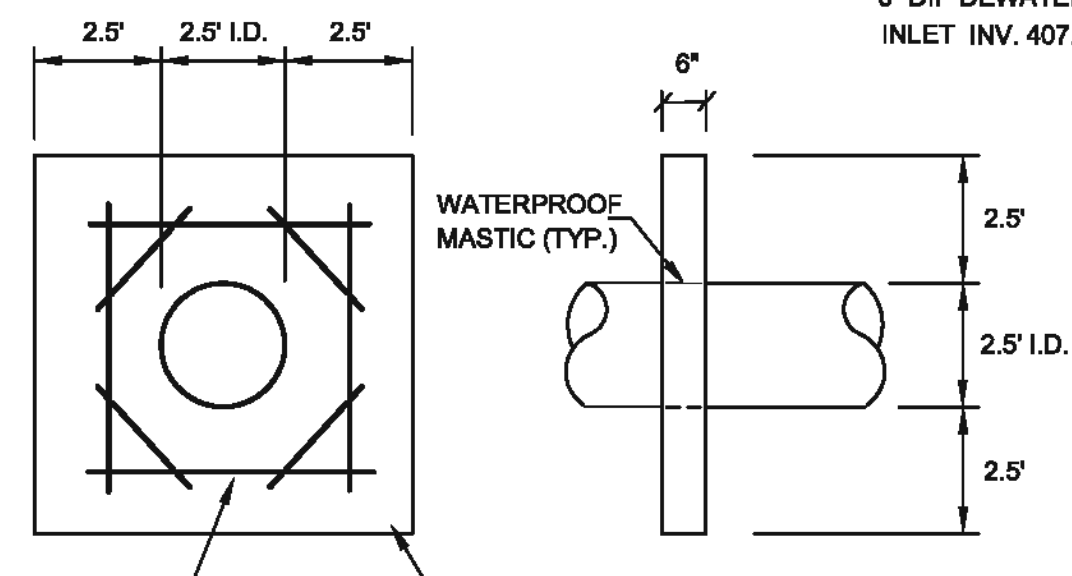
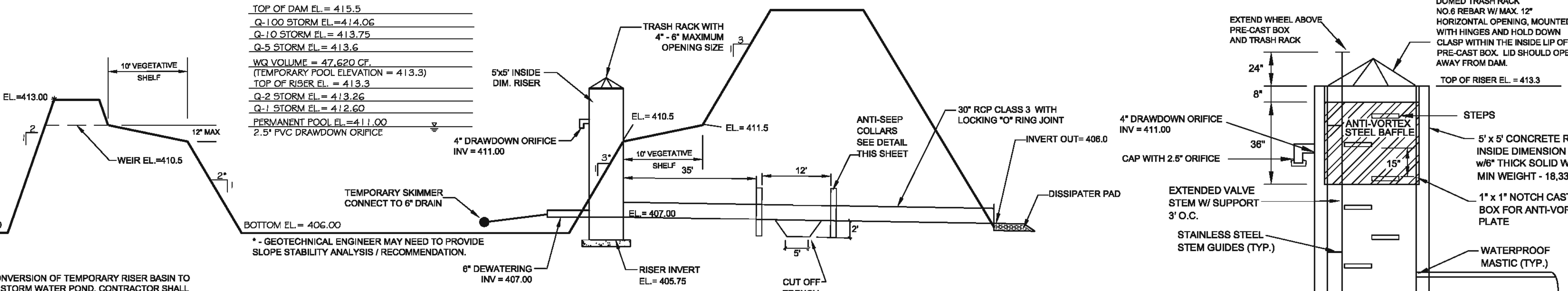
TOP OF DAM EL. = 415.5
Q-100 STORM EL. = 414.06
Q-10 STORM EL. = 413.75
Q-5 STORM EL. = 413.6
WQ VOLUME = 47,620 CF (TEMPORARY POOL ELEVATION = 413.3)
TOP OF RISER EL. = 413.3
Q-2 STORM EL. = 413.26
Q-1 STORM EL. = 412.60
PERMANENT POOL EL. = 411.00
2.5' PVC DRAWDOWN ORIFICE

- NOTES:**
- PRIOR TO CONVERSION OF TEMPORARY RISER BASIN TO PERMANENT STORM WATER POND, CONTRACTOR SHALL REMOVE SEDIMENT TO OVERALL CONTOUR ELEVATION AS SHOWN.

- NOTES:**
- POND REQUIRES A MINIMUM 25 GPM PORTABLE PUMP FOR PERMANENT POOL DRAWDOWN BELOW DRAIN PIPE.
  - CONTRACTOR TO SUPPLY SHOP DRAWINGS OF RISER STRUCTURE PRIOR TO FABRICATION.

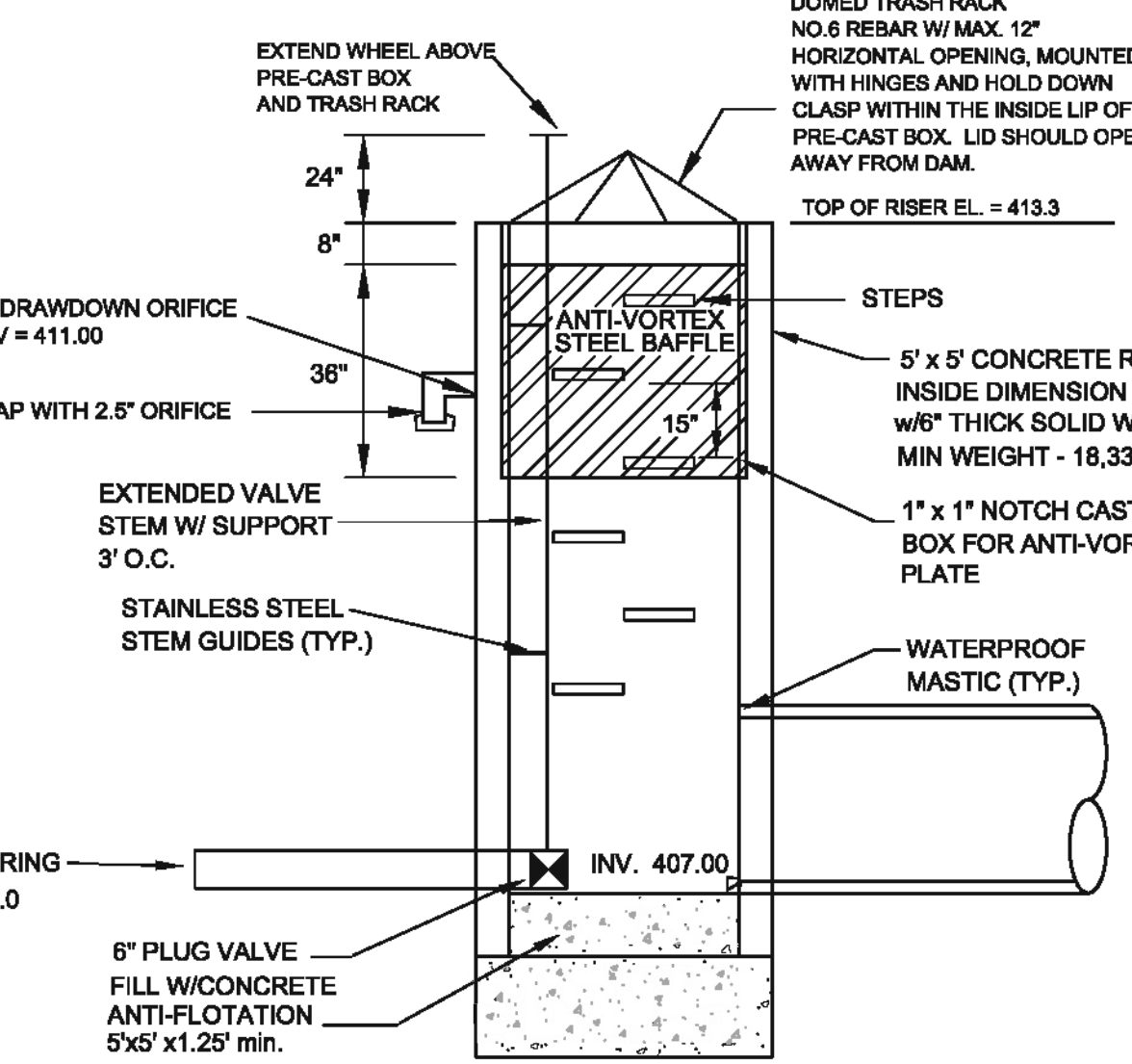
\* GEOTECHNICAL ENGINEER MAY NEED TO PROVIDE SLOPE STABILITY ANALYSIS / RECOMMENDATION.

**WET POND PROFILE**



**ANTI-SEEP COLLAR DETAIL**

NOTE: CONCRETE SHALL BE 3000 PSI @ 28 DAYS REINFORCING STEEL, ASTM A615, GRADE 60; FY - 60,000 PSI COLLAR SHOULD BE PLACED AT LEAST TWO FEET FROM PIPE JOINT



**RISER DETAIL**

NOTE: CONTINUOUS RUBBER WATERSTOPS SHALL BE PROVIDED AT ALL CONSTRUCTION JOINTS IN RISER AND SECTIONS SHALL BE STRAPPED TOGETHER WITH STAINLESS STEEL HARDWARE.

**DAM EMBANKMENT CONSTRUCTION NOTES**

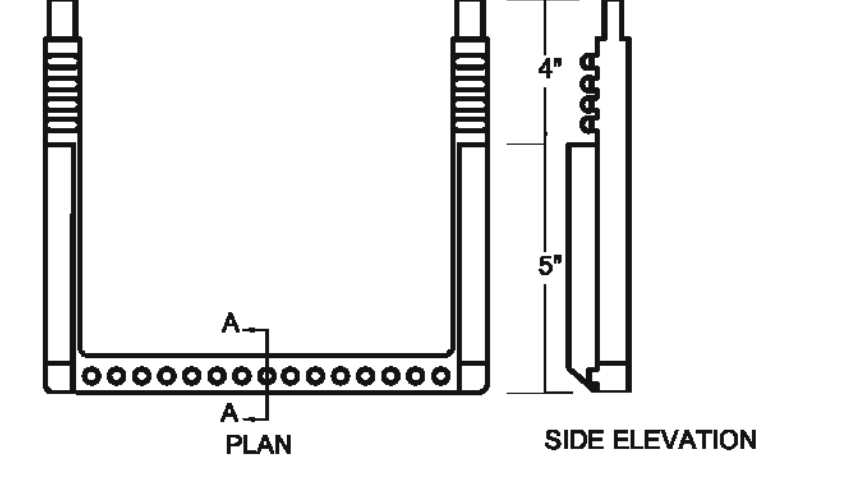
- CONTROLLED FILL, AS SPECIFIED BY THE GEOTECHNICAL ENGINEER, IN THE DAM EMBANKMENT SHALL BE PLACED IN 8-INCH LOOSE LAYERS (3-INCH LOOSE LAYERS WITHIN 3-FEET OF EITHER SIDE OF THE PRINCIPAL SPILLWAY PIPE TO A DEPTH OF 2-FEET OVER THE PIPE) AND SHALL BE COMPACTED TO A DENSITY OF NO LESS THAN 95% OF THE STANDARD PROCTOR MAXIMUM DENSITY AT A MOISTURE CONTENT OF + OR - TWO PERCENTAGE POINTS OF THE OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM D688.
- ALL VISIBLE ORGANIC DEBRIS SUCH AS ROOTS AND LIMBS SHALL BE REMOVED FROM THE FILL MATERIAL PRIOR TO COMPACTION TO THE REQUIRED DENSITY. SOILS WITH ORGANIC MATTER CONTENT EXCEEDING 5% BY WEIGHT SHALL NOT BE USED. STONES GREATER THAN 3-INCH (IN ANY DIRECTION) SHALL BE REMOVED FROM THE FILL PRIOR TO COMPACTION.
- FILL MATERIAL PLACED AT DENSITIES LOWER THAN SPECIFIED MINIMUM DENSITIES OR AT MOISTURE CONTENTS OUTSIDE THE SPECIFIED RANGES OR OTHERWISE NOT CONFORMING TO SPECIFIED REQUIREMENTS SHALL BE REMOVED AND REPLACED WITH ACCEPTABLE MATERIALS.
- ANY FILL LAYER THAT IS SMOOTH DRUM ROLLED TO REDUCE MOISTURE PENETRATION DURING A STORM EVENT SHALL BE PROPERLY SCARIFIED PRIOR TO THE PLACEMENT OF THE NEXT SOIL LIFT.
- SURFACE WATER AND STREAM FLOW SHALL BE CONTINUOUSLY CONTROLLED THROUGHOUT CONSTRUCTION AND THE PLACEMENT OF CONTROLLED FILL.
- FOUNDATION AREAS MAY REQUIRE UNDERCUTTING OF COMPRESSIBLE AND/OR UNSUITABLE SOILS IN ADDITION TO THAT INDICATED ON THE PLANS. ALL SUCH UNDERCUTTING SHALL BE PERFORMED AT THE DISCRETION OF THE GEOTECHNICAL ENGINEER AND SHALL BE MONITORED AND DOCUMENTED. IN NO CASE SHALL THERE BE AN ATTEMPT TO STABILIZE ANY PORTIONS OF THE FOUNDATION SOILS WITH CRUSHED STONE.
- TREATMENT OF SEEPAGE AREAS, SUBGRADE PREPARATION, FOUNDATION DEWATERING AND ROCK FOUNDATION PREPARATION (I.E., TREATMENT WITH SLUSH GROUTING, DENTAL CONCRETE, ETC.) MAY BE REQUIRED AT THE DISCRETION OF THE GEOTECHNICAL ENGINEER. ALL SUCH ACTIVITIES SHALL BE CLOSELY MONITORED AND DOCUMENTED BY THE GEOTECHNICAL ENGINEER.
- FILL ADJACENT TO THE RISER AND PRINCIPAL SPILLWAY PIPE SHALL BE PLACED SO THAT LIFTS ARE AT THE SAME LEVEL ON BOTH SIDES OF THE STRUCTURES.
- EARTHWORK COMPACTION WITHIN 3-FEET OF ANY STRUCTURES SHALL BE ACCOMPLISHED BY MEANS OF HAND TAMPERS, MANUALLY DIRECTED POWER TAMPERS OR PLATE COMPACTORS OR MINATURE SELF-PROPELLED ROLLERS.
- COMPACTION BY MEANS OF DROP WEIGHTS FROM A CRANE OR HOIST SHALL NOT BE PERMITTED.
- HEAVY EQUIPMENT SHALL NOT BE ALLOWED TO PASS OVER CAST-IN-PLACE STRUCTURES UNTIL ADEQUATE CURING TIME HAS ELAPSED.
- TO RE-ESTABLISH VEGETATION AFTER CONSTRUCTION, A 2- TO 3-INCH LAYER OF TOPSOIL SHALL BE PLACED ON THE DISTURBED EMBANKMENT SURFACE AND THE AREA SEEDED AND MULCHED OR HYDROSEEDING.

**NOTES:**

- CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR OUTLET STRUCTURE AND TRASH RACK FOR APPROVAL.
- DAM EMBANKMENT IS TO BE SEEDED IMMEDIATELY AFTER DAM CONSTRUCTION IS COMPLETE.
- STORMWATER MANAGEMENT STRUCTURE IS TO BE UTILIZED AS A TEMPORARY EROSION CONTROL DEVICE INITIALLY. ONCE CONSTRUCTION IS COMPLETED AND UPSTREAM SURFACES HAVE BEEN PERMANENTLY STABILIZED, CONTRACTOR IS TO REMOVE ALL SEDIMENT FROM BASIN AND CONVERT TO PERMANENT WATER QUALITY STRUCTURE. THIS INCLUDES INSTALLING THE PROPOSED PLANTINGS ALONG THE LITTORAL SHELF.
- DRAWDOWN PIPE IS NOT TO BE INSTALLED UNTIL ALL UPSTREAM SURFACES HAVE BEEN PERMANENTLY STABILIZED.

**STORMWATER MANGEMENT CERTIFICATION**

I, Ashley Joseph Faulkner, certify that the stormwater management facilities and practices will control and treat the runoff from the 1 year 1-hour storm event for the total drainage area of the structure, that the designs and plans are sufficient to comply with the applicable standards and codes found in the NC DENR Stormwater BMP Design Manual, and that the designs and plans ensure compliance with the County's Stormwater Ordinance.

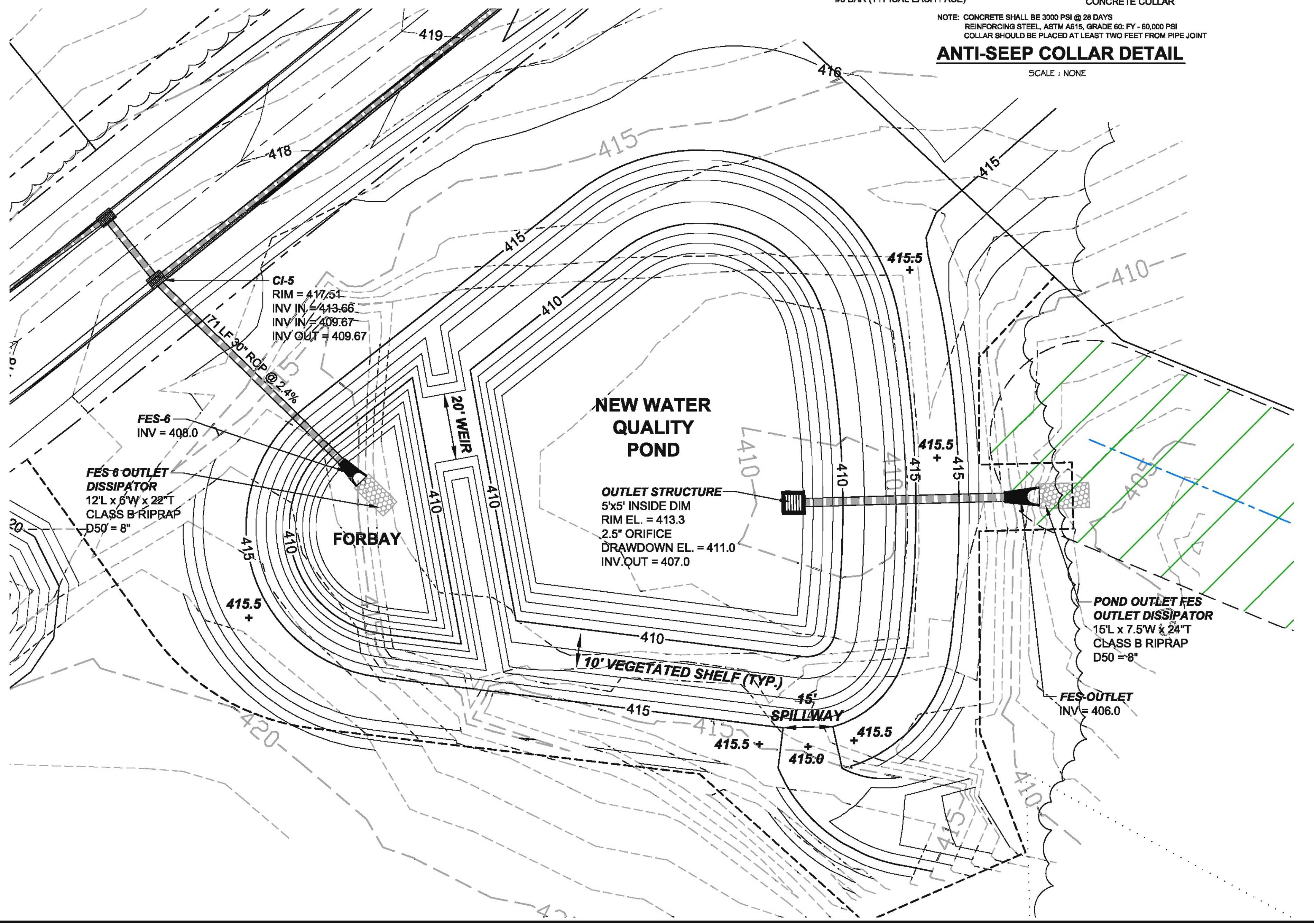
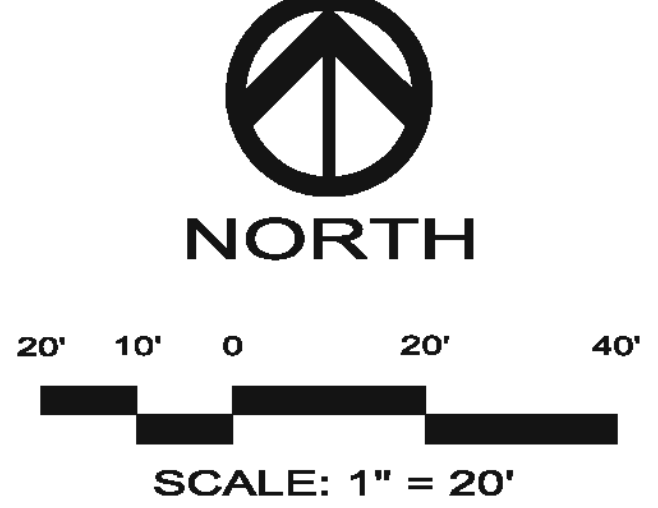


**STANDARD SLIP RESISTANT MANHOLE STEP DETAIL**

**WATER COURSE INFORMATION**

HERNDON CREEK WS-IV, NSW  
 PROTECTED AREA  
 WATERBODY STREAM INDEX - 16-41-1-(0.5)

LAT = 35° 49' 16.41" N  
 LONG = 79° 03' 32.67" W



### PLANT LIST

SYM.	QUAN.	BOTANICAL NAME	COMMON NAME	HT.	ROOT	REMARKS
<b>WETLAND PLANTINGS</b>						
SA	43	Hibiscus coccineus 'Alba'	White Rose Mallow	-	4" cont.	3' O.C. Shallow Land
CF	37	Lobelia cardinalis	Cardinal Flower	-	4" cont.	3' O.C. Shallow Land
NP	43	Saccharum baldwinii	Narrow Plumegrass	-	4" cont.	3' O.C. Shallow Land
DP	73	Sagittaria latifolia	Duck Potato	-	4" cont.	3' O.C. Shallow Water
LT	74	Saururus cernuus	Lizard Tail	-	4" cont.	3' O.C. Shallow Water
PW	81	Pontederia cordata	Pickerelweed	-	4" cont.	3' O.C. Shallow Water

#### PLANTING NOTES:

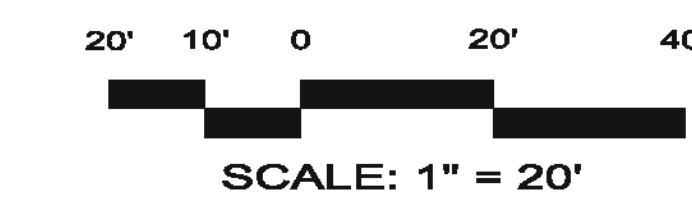
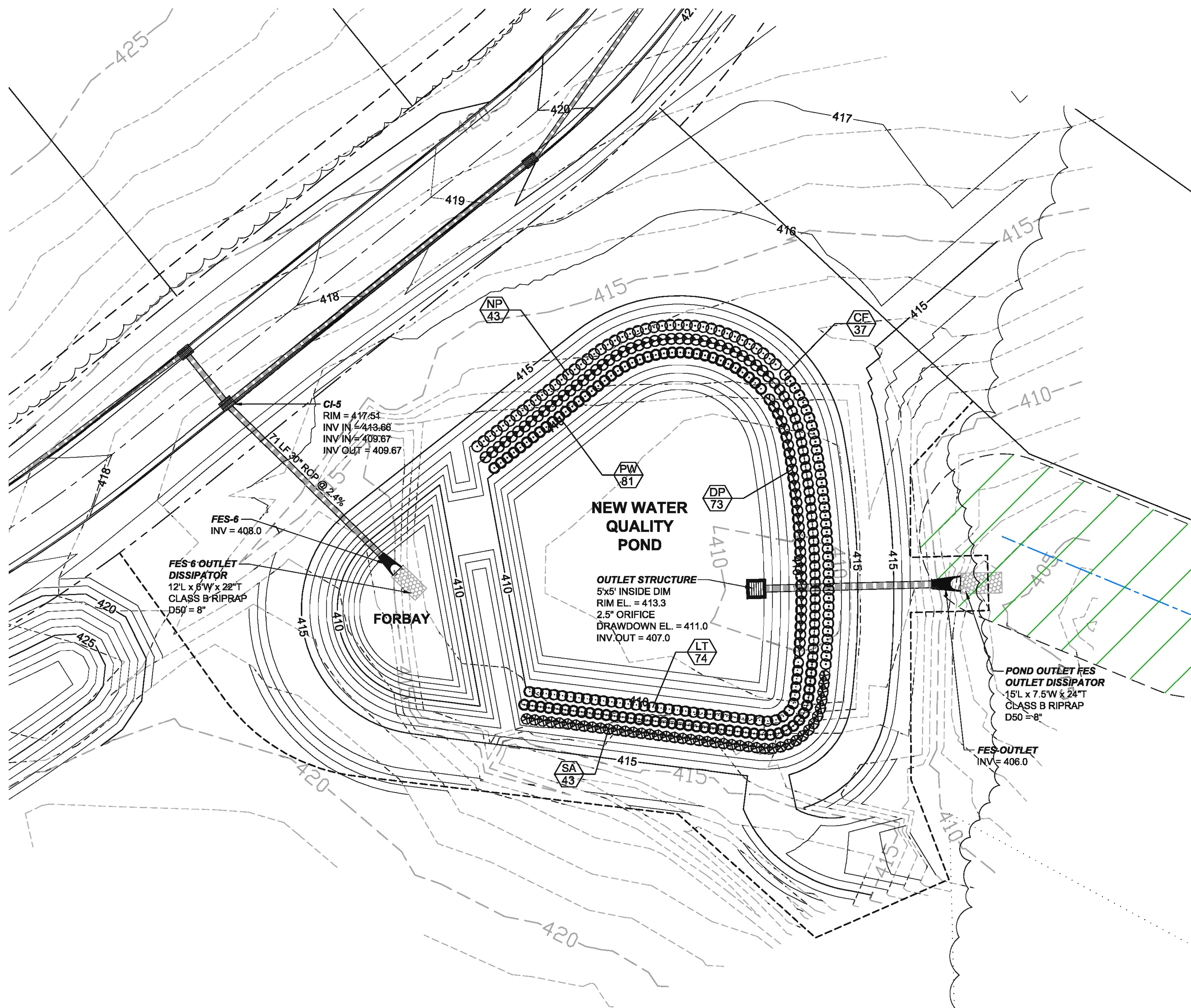
LANDSCAPE CONTRACTOR SHALL PROVIDE PLANT MATERIAL FROM LOCAL SOURCE TO ENSURE SURVIVABILITY. CONTRACTOR TO PROVIDE SOURCE OF PLANT MATERIAL AND LOCATION FOR APPROVAL PRIOR TO INSTALLATION OF MATERIAL.

**LOCAL WETLAND NURSERY**  
MELLOW MARSH FARM NURSERY - SILER CITY, NC

A MINIMUM TWO-YEAR WARRANTY PERIOD SHALL BE PROVIDED FOR PLANT SURVIVAL AND REPLACEMENT. AT THE END OF THE FIRST YEAR AND AGAIN AT THE END OF THE 2ND YEAR ALL PLANTS THAT DO NOT SURVIVE MUST BE REPLACED.

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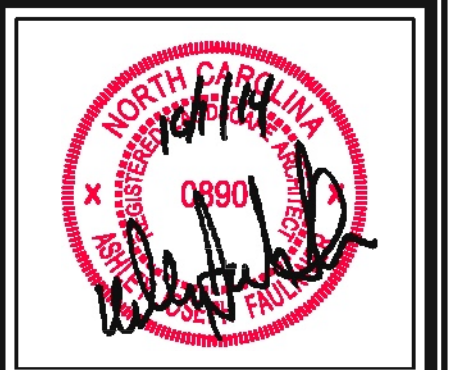


NO.	REVISIONS	DATE

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**WESTFALL SUBDIVISION PH-3A**  
CONSTRUCTION PLANS  
**STORMWATER POND PLANTING PLAN**  
WILLIAMS TOWNSHIP  
CHATHAM COUNTY, NORTH CAROLINA

Date:	APRIL 17, 2014
Scale:	1" = 20'
Drawn:	ACS
Checked:	AJF
Project No.:	800-12
Computer Dwg. Name:	800-12 Phase 3A - 14 Storm Pond Plan & D

Sheet No:  
**16**  
Of -