

BOBBITT DESIGN BUILD, INC.

US HIGHWAY 401 N NW HARNETT FIRE STATION 3 CONVENTIONAL GRAVITY SYSTEM

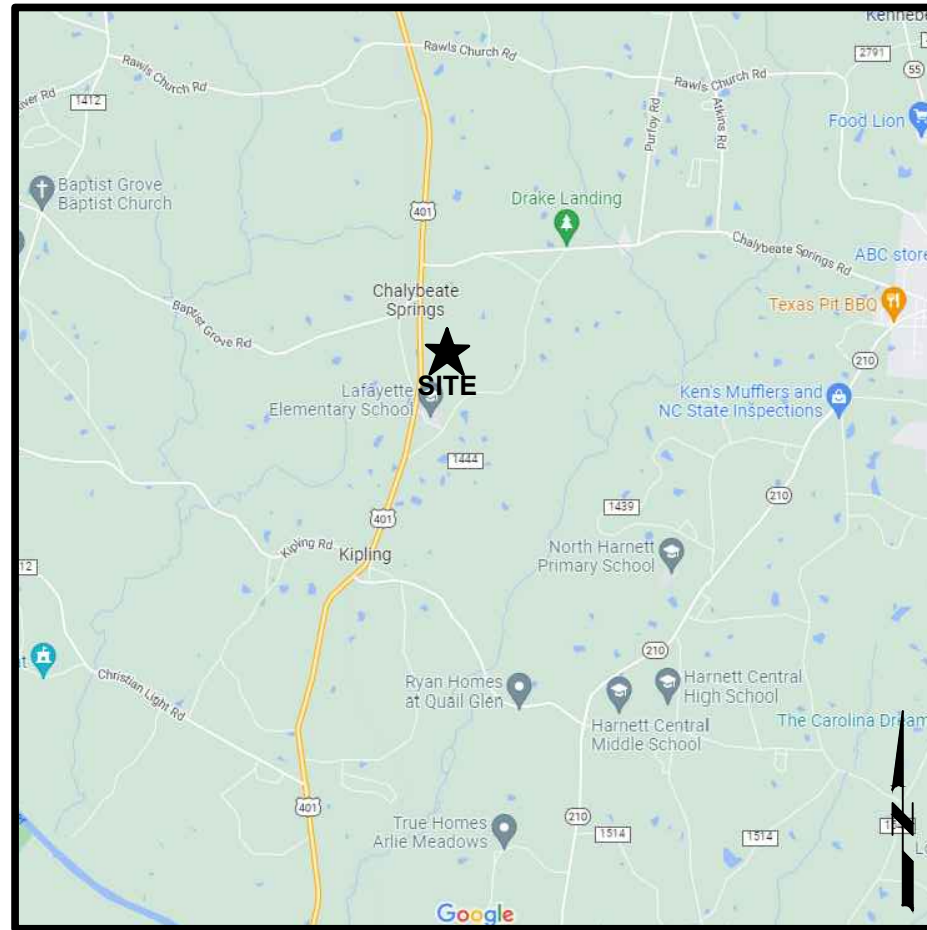
PROJECT No. A21303.00

HARNETT COUNTY, NC

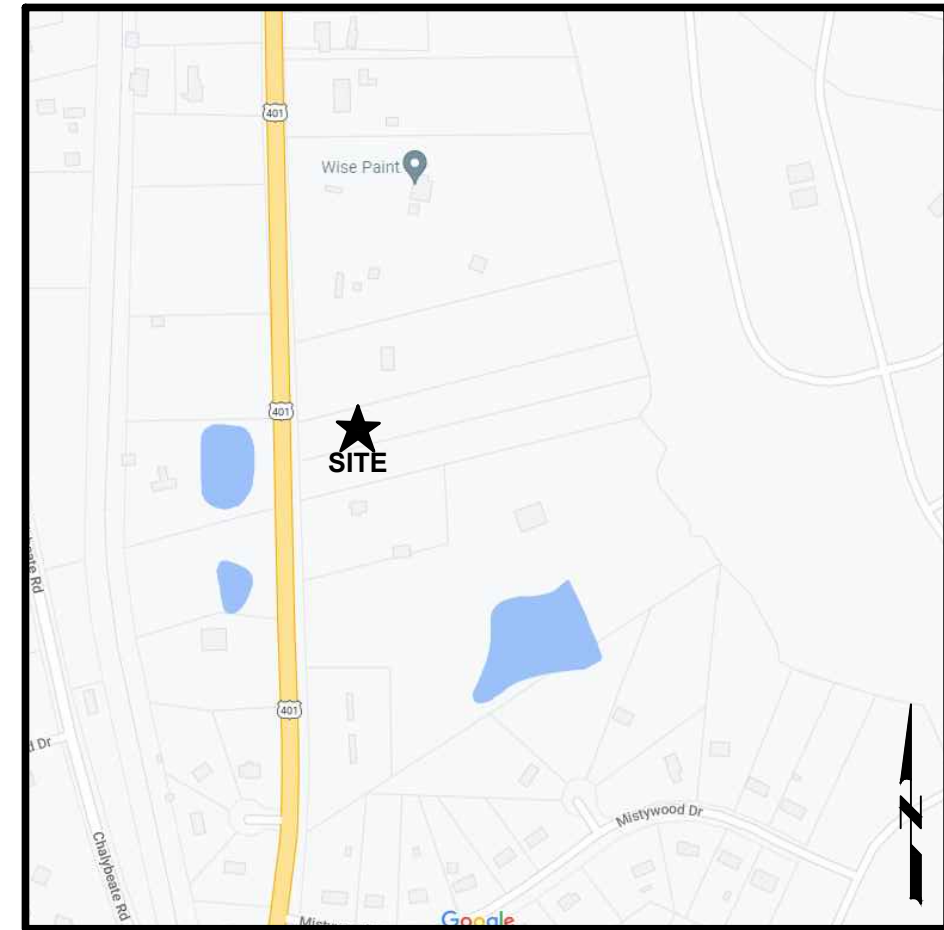
PIN# 0653-68-0029.000

SCHEDULE OF DRAWINGS:

| | |
|-------|---------------------|
| C-100 | COVER SHEET |
| C-101 | OVERALL SITE LAYOUT |
| C-102 | DRAINFIELD LAYOUT |
| C-103 | NOTES |
| D-101 | DETAILS 1 OF 3 |
| D-102 | DETAILS 2 OF 3 |
| D-103 | DETAILS 3 OF 3 |



VICINITY MAP



LOCATION MAP

501 CASCADE POINTE LANE, SUITE 103
CARY, NORTH CAROLINA 27513
P. O. BOX 129
MORRISVILLE, NORTH CAROLINA 27560
TEL: (919) 467-1239 FAX: (919) 319-6510

MacCONNELL
& Associates, P. C.



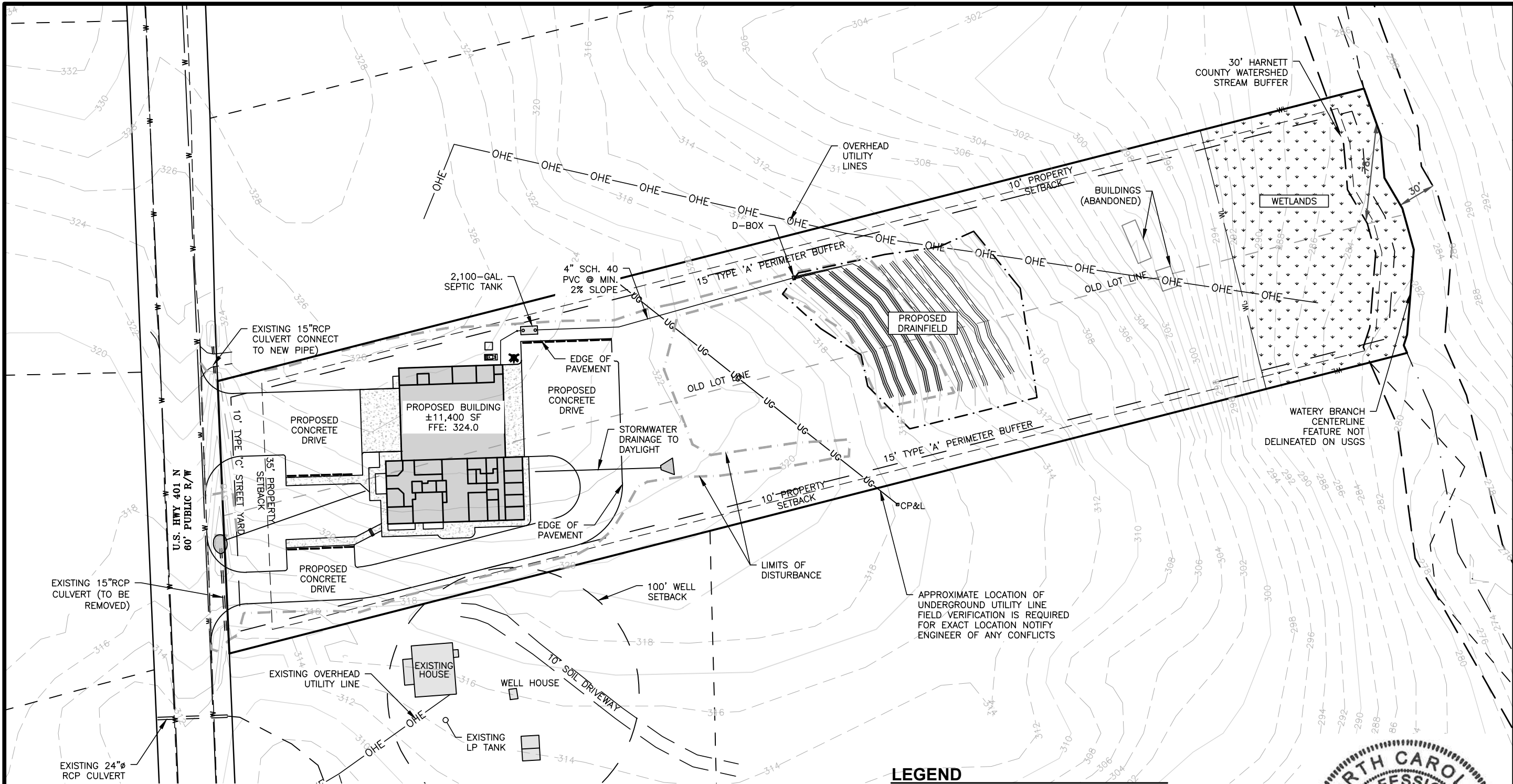
BY: CAC, HGM
JOB #: A21303.00
DATE: 03/04/2022

BOBBITT DESIGN BUILD, INC.
NW HARNETT FIRE STATION 3
US HWY 401 N
CONVENTIONAL GRAVITY SYSTEM
HARNETT COUNTY, NC

COVER SHEET

C-100



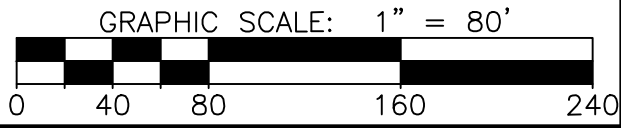


NOTES

1. PARCELS TAKEN FROM HARNETT COUNTY GIS. TOPO TAKEN FROM NC FRIS. SITE PLAN INFORMATION PROVIDED BY BOBBITT DESIGN BUILD, INC. SOIL INFORMATION PROVIDED BY MARLIN SEPTIC SERVICES.
2. KEEP TANKS AND DRAIN LINES A MINIMUM OF 10' OFF OF PROPERTY LINES.
3. KEEP SUPPLY LINES, PRESSURE MANIFOLD, FORCE MAIN A MINIMUM OF 5' OFF OF PROPERTY LINES.
4. INSTALL DRAINLINES ON CONTOUR WITH A MAXIMUM TRENCH DEPTH OF 30".

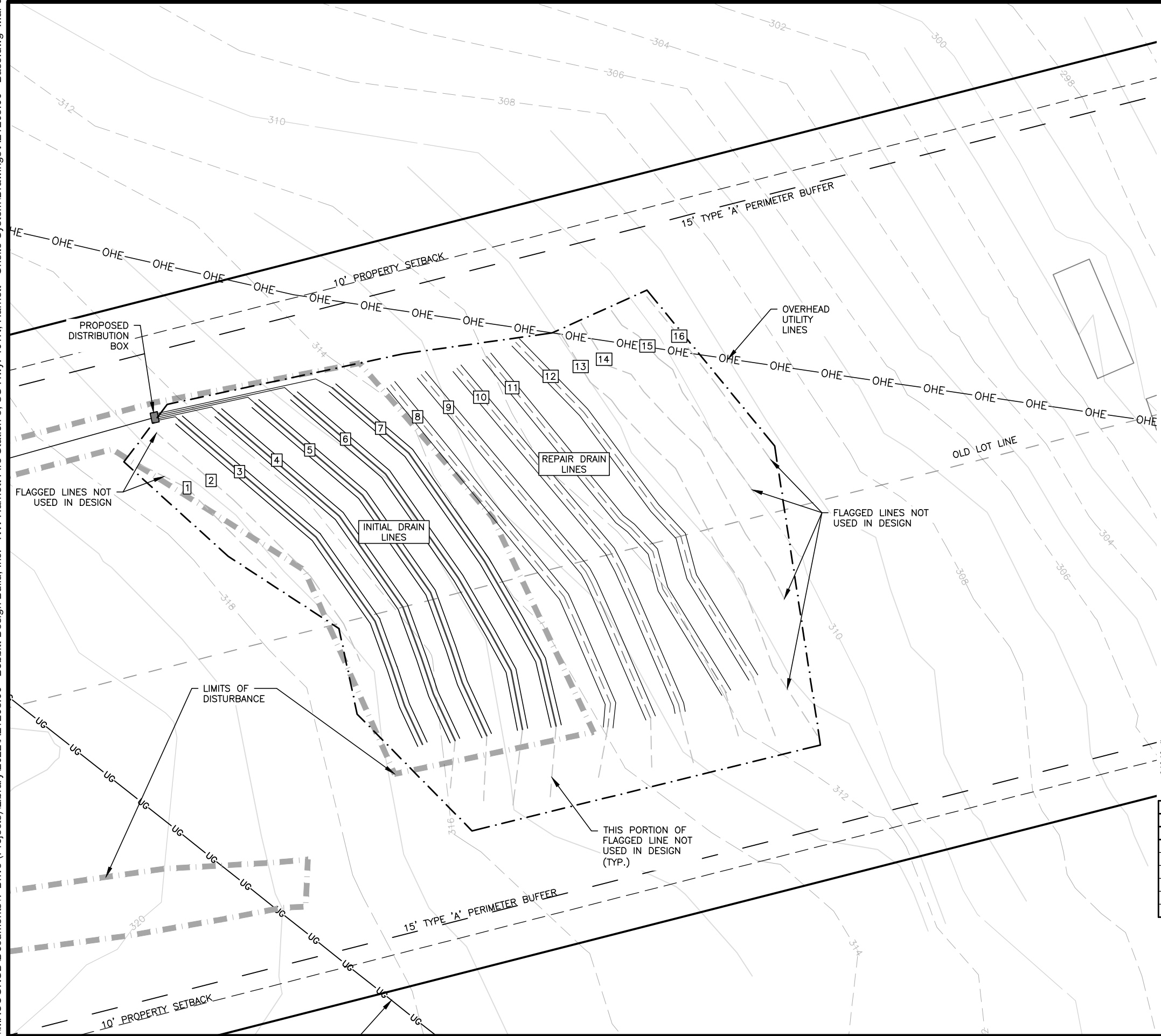
LEGEND

| | |
|--------|--------------------------------------|
| --- | ADJACENT BOUNDARY |
| — | BOUNDARY (PROPERTY) |
| --- | CONTOURS - INDEX |
| --- | CONTOURS - INTERMEDIATE |
| ==== | PROPOSED DRAIN LINES/TRENCHES |
| ==== | PROPOSED REPAIR DRAIN LINES/TRENCHES |
| --- | DRAIN LINES NOT USED |
| --- | SETBACKS |
| — FM — | FORCE MAIN |
| — W — | WATER LINE |
| — CO — | CLEAN OUT |



| | | |
|---|--|-------------------------------------|
| BOBBITT DESIGN BUILD, INC. NW HARNETT FIRE STATION 3 US HWY 401 N | | OVERALL SITE LAYOUT C-101 |
| BY: CAC, HGM JOB #: A21303.00 DATE: 03/04/2022 | CONVENTIONAL GRAVITY SYSTEM HARNETT COUNTY, NC | |
| 501 CASCADE POINTE LANE, SUITE 103 CARY, NORTH CAROLINA 27513 P. O. BOX 129 MORRISVILLE, NORTH CAROLINA 27560 TEL: (919) 467-1239 FAX: (919) 319-6510 | | |
| MacCONNELL & Associates, P. C. | | |





LEGEND

- - - - - ADJACENT BOUNDARY
- BOUNDARY (PROPERTY)
- - - - - CONTOURS - INDEX
- - - - - CONTOURS - INTERMEDIATE
- =====
===== PROPOSED DRAIN LINES/TRENCHES
- =====
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- - - - - DRAIN LINES NOT USED
- - - - - SETBACKS
- FM — FORCE MAIN
- W — WATER LINE
- CO CLEAN OUT

NOTES

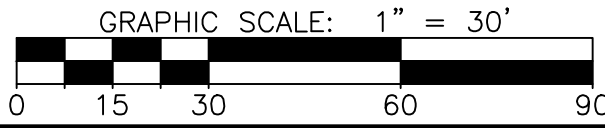
1. PARCELS TAKEN FROM HARNETT COUNTY GIS. TOPO TAKEN FROM NC FRIS. SITE PLAN INFORMATION PROVIDED BY BOBBITT DESIGN BUILD, INC. SOIL INFORMATION PROVIDED BY THOMAS J. BOYCE, LSS.
2. KEEP TANKS AND DRAIN LINES A MINIMUM OF 10' OFF OF PROPERTY LINES.
3. KEEP SUPPLY LINES AND D-BOX A MINIMUM OF 5' OFF OF PROPERTY LINES.
4. INSTALL DRAINLINES ON CONTOUR WITH A MAXIMUM TRENCH DEPTH OF 30".

| DRAIN LINE SEGMENTS (INITIAL) | | | | |
|-------------------------------|------------|-------------|----------------|-------------------------|
| LINE # | FLAG COLOR | LENGTH | EXISTING GRADE | TRENCH BOTTOM DEPTH* |
| 3 | PURPLE | 120' | 316.3' | 30" BELOW EGS (±313.8') |
| 4 | GREEN | 120' | 315.8' | 30" BELOW EGS (±313.3') |
| 5 | PINK | 120' | 315.3' | 30" BELOW EGS (±312.8') |
| 6 | PURPLE | 120' | 314.8' | 30" BELOW EGS (±312.3') |
| 7 | GREEN | 120' | 314.4' | 30" BELOW EGS (±311.9') |
| TOTALS | | 600' | | |

| DRAIN LINE SEGMENTS (REPAIR) | | | | |
|------------------------------|------------|-------------|----------------|-------------------------|
| LINE # | FLAG COLOR | LENGTH | EXISTING GRADE | TRENCH BOTTOM DEPTH* |
| 8 | PINK | 120' | 313.8' | 30" BELOW EGS (±311.3') |
| 9 | PURPLE | 120' | 313.3' | 30" BELOW EGS (±310.8') |
| 10 | GREEN | 120' | 312.7' | 30" BELOW EGS (±310.2') |
| 11 | PINK | 120' | 312.0 | 30" BELOW EGS (±309.5') |
| 12 | PURPLE | 120' | 311.6' | 30" BELOW EGS (±309.1') |
| TOTALS | | 600' | | |

*DEPTH FROM EXISTING GROUND SURFACE. PROVIDE MIN. 12" SEPARATION FROM SEASONAL SOIL WETNESS.

| UNUSED DRAIN LINES | | |
|--------------------|--------|--------|
| LINE # | FLAG | LENGTH |
| 1 | GREEN | 60' |
| 2 | PINK | 92' |
| 13 | GREEN | 148' |
| 14 | PINK | 110' |
| 15 | PURPLE | 80' |
| 16 | GREEN | 58' |



| | | |
|---|--------------------------|------------------|
| BOBBITT DESIGN BUILD, INC. NW HARNETT FIRE STATION 3 US HWY 401 N | DRAINFIELD LAYOUT | C-102 |
| BY: CAC, HGM | JOB #: A21303.00 | DATE: 03/04/2022 |
| 501 CASCADE POINTE LANE, SUITE 103 CARY, NORTH CAROLINA 27513 P. O. BOX 129 MORRISVILLE, NORTH CAROLINA 27560 TEL: (919) 467-1239 FAX: (919) 319-6510 | | |
| MacCONNELL & Associates, P. C. | | |
| CONVENTIONAL GRAVITY SYSTEM HARNETT COUNTY, NC | | |

MAINTENANCE SCHEDULE

| ITEM | FREQUENCY | TASK |
|-------------------|-----------------------|--|
| WATER CONSUMPTION | MONTHLY | RECORD TOTAL GALLONS USED FROM METER AT POTABLE WATER SUPPLY SOURCE. PUMP OUT ACCUMULATED GREASE AND DISPOSE OF IN A STATE-PERMITTED MANNER/FACILITY. |
| SEPTIC TANKS | WEEKLY | CHECK EFFLUENT FILTERS AND CLEAN AS REQ'D. |
| | MONTHLY | CHECK FOR SOLIDS ACCUMULATION, BLOCKAGES, AND BAFFLE AND/OR EFFLUENT FILTER DAMAGE. CHECK FOR IN/EXFILTRATION OF LIQUID. |
| DISPOSAL FIELDS | 12 MONTHS OR AS REQ'D | PUMP OUT ACCUMULATED SOLIDS AND DISPOSE OF IN A STATE-PERMITTED MANNER/FACILITY. |
| | MONTHLY OR AS REQ'D | MOW VEGETATIVE COVER. CHECK FOR EROSION OR SURFACING OR PONDING OF EFFLUENT. |
| | MONTHLY | WATER LEVELS IN THE FIELD TRENCH OBSERVATION PORTS SHOULD BE INSPECTED/RECORDED. |

NOTES

- DRAWINGS BASED ON SITE SKETCH BY MARLIN WASTEWATER SERVICES, HARNETT COUNTY GIS AND SITE PLAN BY BOBBITT DESIGN BUILD, INC.
- THE CONTRACTOR IS REQUIRED TO VERIFY ALL DIMENSIONS, ELEVATIONS, AND UTILITIES BEFORE BEGINNING ANY CONSTRUCTION.
- CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE SOIL EROSION AND SEDIMENTATION CONTROL REQUIREMENTS OF THE COUNTY AND STATE.
- CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE OSHA, NCDOT, AND SAFETY REQUIREMENTS OF THE COUNTY AND STATE.
- CONTRACTOR IS RESPONSIBLE FOR REPAIRING ALL CONSTRUCTION DAMAGE EXPEDITIOUSLY AND AT NO ADDITIONAL COST TO THE OWNER.
- FOUR OR SIX-INCH DIAMETER CORRUGATED PLASTIC TUBING SHALL COMPLY WITH ASTM F405 AND G.S. 150B-21.6.
- NITRIFICATION TRENCH SHALL FOLLOW THE CONTOUR OF THE GROUND.
- SURFACE WATER RUNOFF AND PONDING SHALL BE PROHIBITED AT ALL TIME.
- SOIL COVER SHALL BE PLACED OVER A NITRIFICATION FIELD ONLY AFTER PROPER PREPARATION OF THE ORIGINAL GROUND SURFACE. THE TYPE OF SOIL COVER SHALL BE APPROVED BY THE LOCAL HEALTH DEPARTMENT.
- ALL SERVICE ACCESS OPENINGS WILL BE A MINIMUM OF 24 INCHES UNLESS OTHERWISE SHOWN.
- ALL JOINTS (MID-SEAM, TOP-SEAM) SHALL BE SEALED USING CONCRETE SEALANTS BUTYL SEALANT # CS-102 MEETING ASTM C-990.
- TANKS SHALL BE LEAK-TESTED PRIOR TO SYSTEM START UP BY APPLYING A VACUUM OF 5-INCHES OF MERCURY WITH RISER ASSEMBLIES IN PLACE OR A 24-HOUR STATIC WATER TEST, IN ACCORDANCE WITH ASTM STANDARDS
- ALL PIPE PENETRATIONS THROUGH PRECAST CONCRETE TANKS SHALL BE PRESS-SEAL CAST-A-SEAL 402 RUBBER BOOTS OR EQUAL AND GROUTED.
- ANY CHANGES TO TANK LAYOUT AND INVERTS MAY BE ADJUSTED AS NECESSARY TO COMPLY WITH ACTUAL FIELD CONDITIONS UPON APPROVAL BY THE ENGINEER.
- CONTRACTOR SHALL NOTIFY THE ENGINEER WHEN TANK INSTALLATION WILL OCCUR SO FIELD INSPECTION CAN TAKE PLACE.
- CONTRACTOR SHALL DIVERT SURFACE WATER FROM ALL TANK AREAS. (SEPTIC TANKS, ETC.)
- VEGETATIVE COVER SHALL BE ESTABLISHED IMMEDIATELY AFTER FIELD INSTALLATION.
- ALL COMPONENTS TO BE ACCESSIBLE AT GRADE WITHOUT ENTERING INTO THE RISER/TANK.
- CONTRACTOR MAY USE LARGER TANK WITH ENGINEER'S APPROVAL. PUMP TANK DOSE VOLUME, ETC. WILL NEED TO BE ADJUSTED.
- PRE-CAST CONCRETE SEPTIC TANK DIMENSIONS SHOWN ARE BASED ON DAVID BRANTLEY & SONS. OTHER MANUFACTURERS ARE ACCEPTABLE, PROVIDED THEIR PRODUCTS COMPLY WITH APPLICABLE NCDENR-DEH RULES AND HAVE BEEN ASSIGNED A STATE APPROVAL NUMBER.
- CONCRETE SHALL HAVE A MINIMUM 4,500 PSI AT 28 DAYS. CONCRETE SHALL BE WATERPROOFED WITH BITUMINOUS MASTIC OR OTHER APPROVED COATING SYSTEM.
- EXCAVATE AREA FOR SEPTIC TANKS AND PUMP TANKS TO FIRM EARTH. LEVEL ON STONE. TANKS SHALL BE CAREFULLY BACKFILLED TO MAXIMUM 95% DENSITY. BACK FILL SHALL DIRECT WATER AWAY FROM ACCESS RISERS. IF MORE THAN 5 FEET OF COVER IS PROPOSED, CONSULT ENGINEER AND TANK MANUFACTURER TO DEVELOP STRUCTURAL AMENDMENTS.
- FIELD VERIFY ACCESS RISERS BEFORE ORDERING.
- BALL AND CHECK VALVES SHALL BE RATED AT A MIN. OF 235 PSI.

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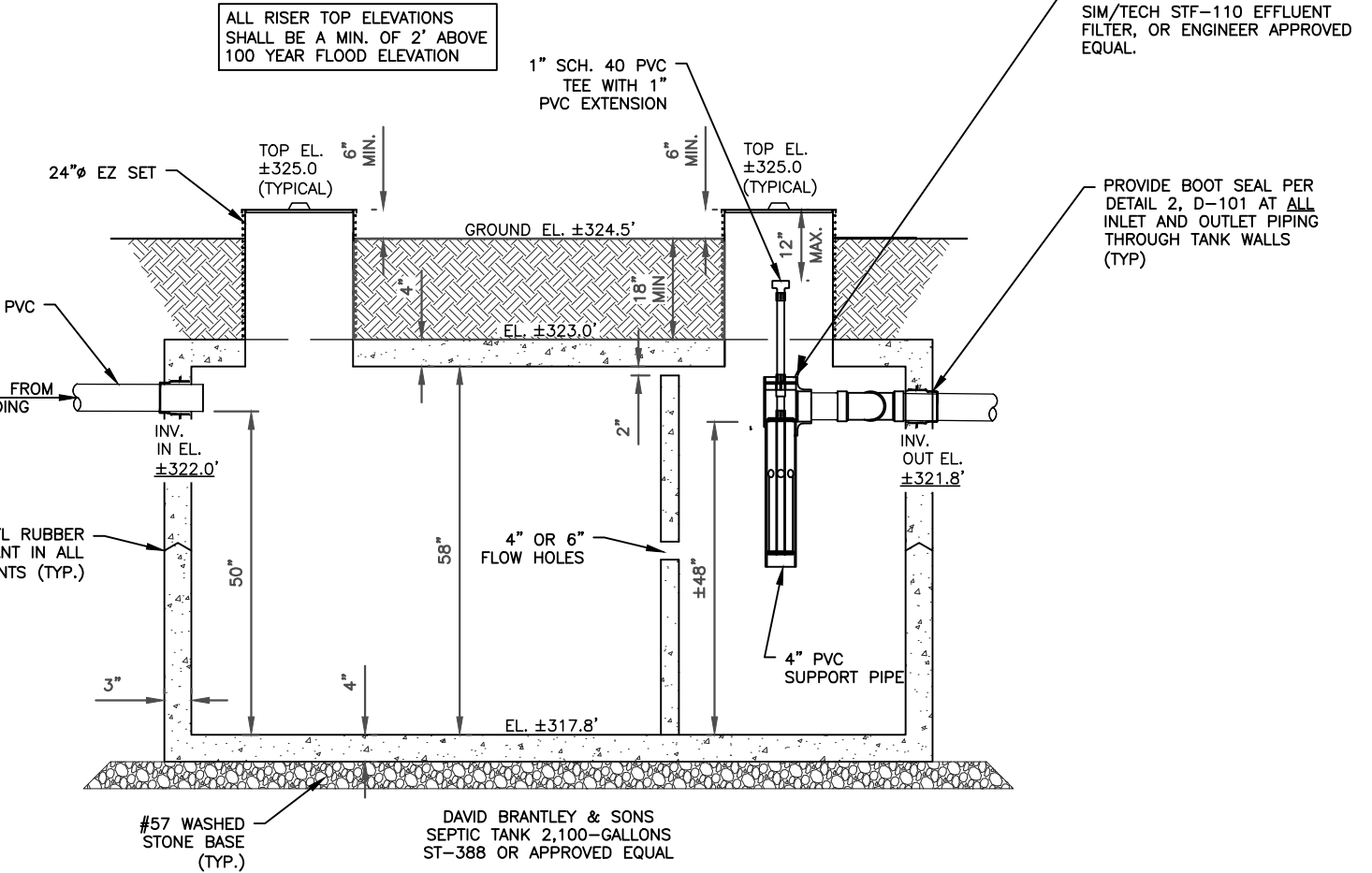
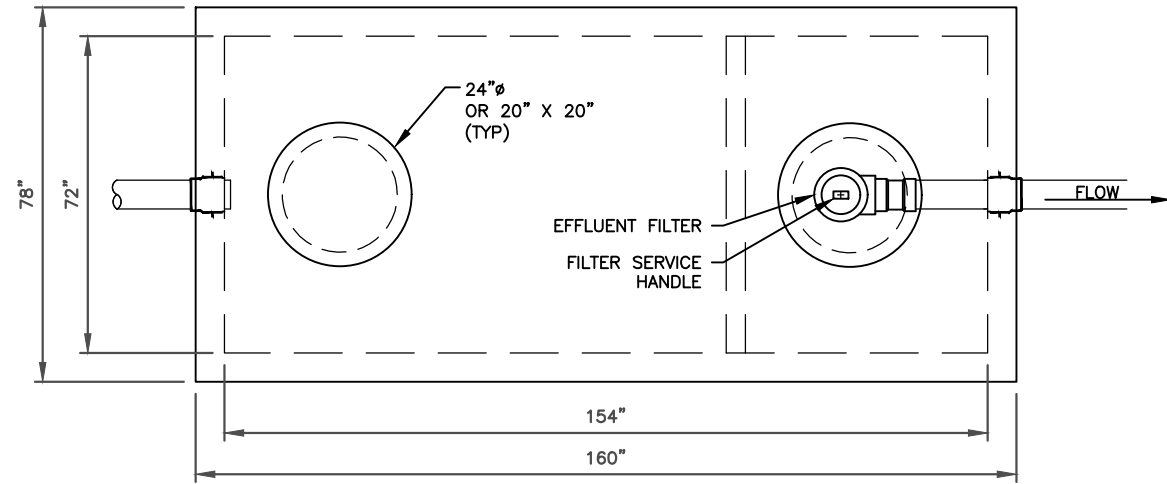
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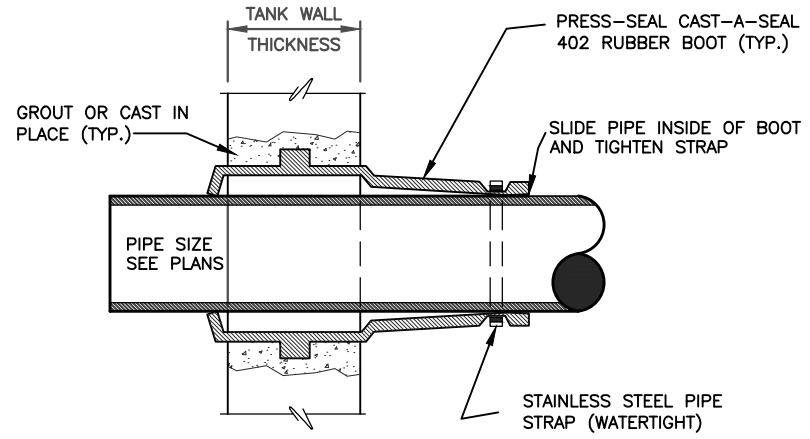
CONVENTIONAL GRAVITY SYSTEM
 HARNETT COUNTY, NC

NOTES

C-103



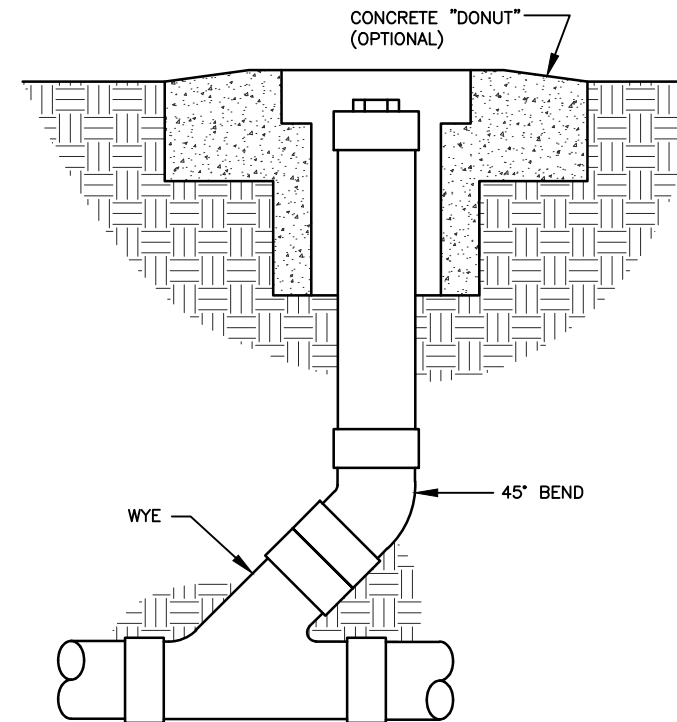
1 SEPTIC TANK
D-101 NTS



2 PIPE THRU TANK PENETRATIONS
D-101 NTS

NOTE:

1. USE BOOT SEAL ON ALL INLET AND OUTLET PIPING THROUGH SEPTIC TANK AND PUMP TANK WALLS.



NOTE:

1. PIPING TO BE SCH. 40 PVC.
2. SEE SITE PLAN FOR PIPE SIZE.

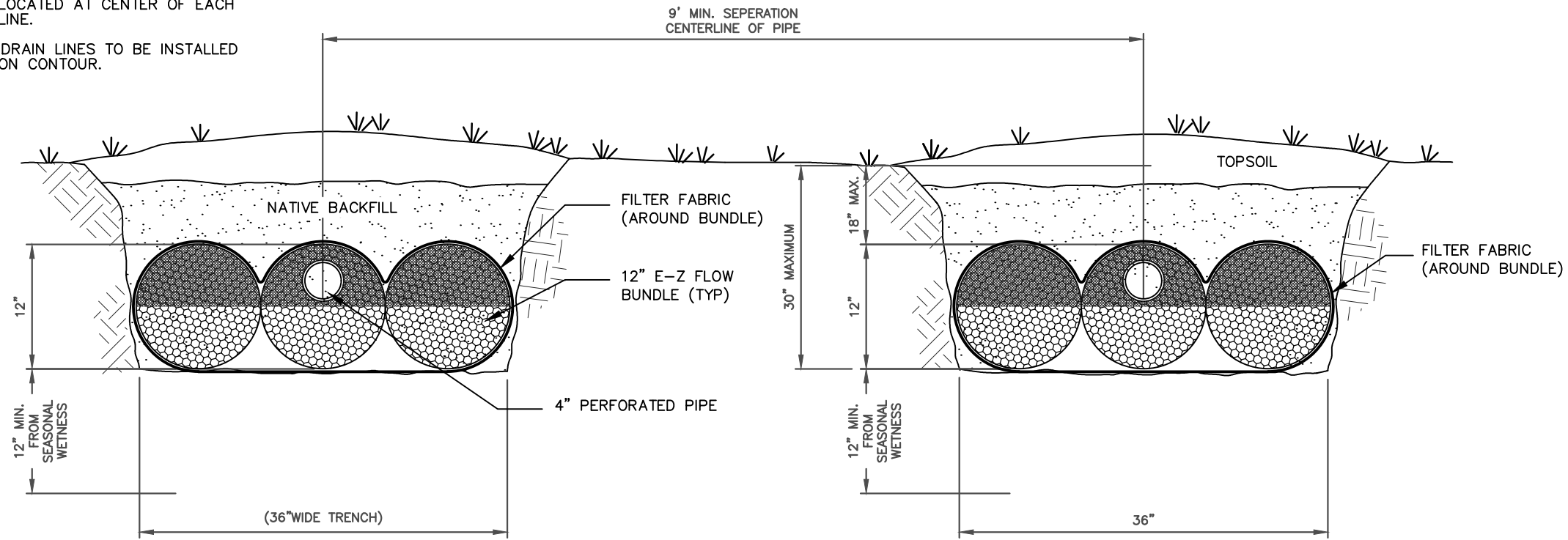
3 GRAVITY CLEANOUT
D-101 NTS



| | | | |
|---|-------------------------|--|--|
| BOBBITT DESIGN BUILD, INC. NW HARNETT FIRE STATION 3 US HWY 401 N | | DETAILS - 1 OF 3 | |
| CONVENTIONAL GRAVITY SYSTEM | | D-101 | |
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NOTE:

1. TRENCH INSPECTION PORT LOCATED AT CENTER OF EACH LINE.
2. DRAIN LINES TO BE INSTALLED ON CONTOUR.



1
D-102 **EZ FLOW TYPICAL TRENCH DETAIL**
NTS

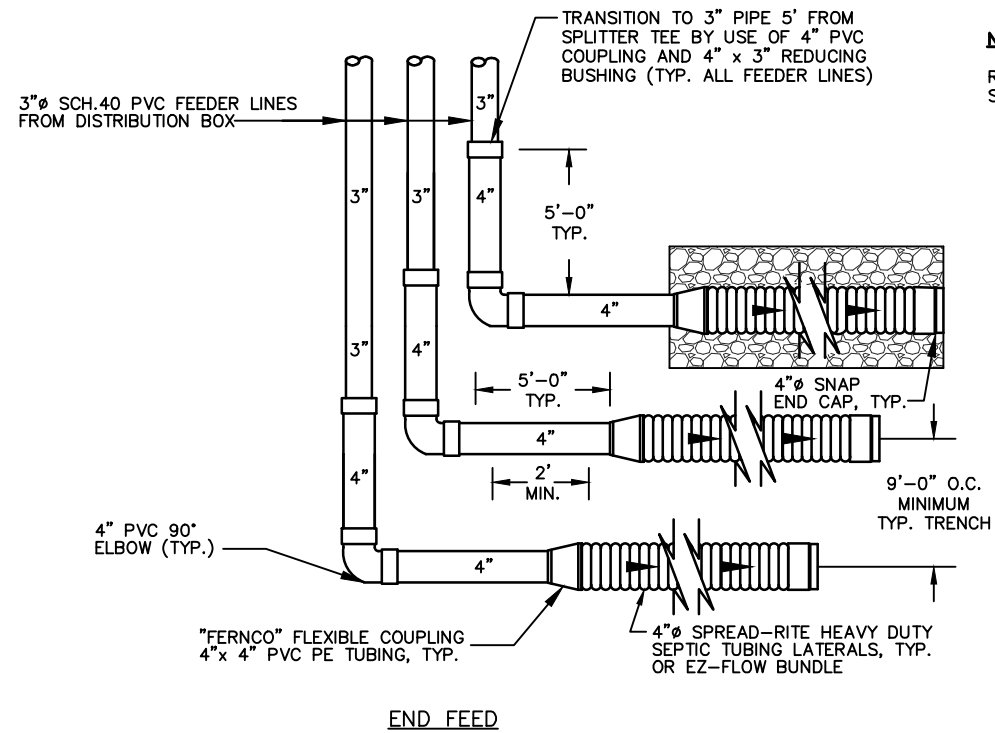


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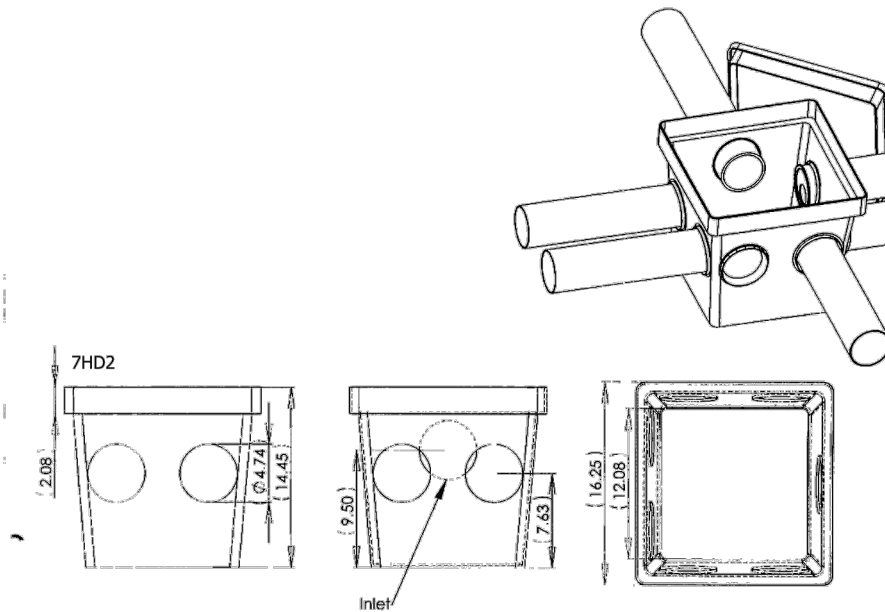
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HARNETT COUNTY, NC

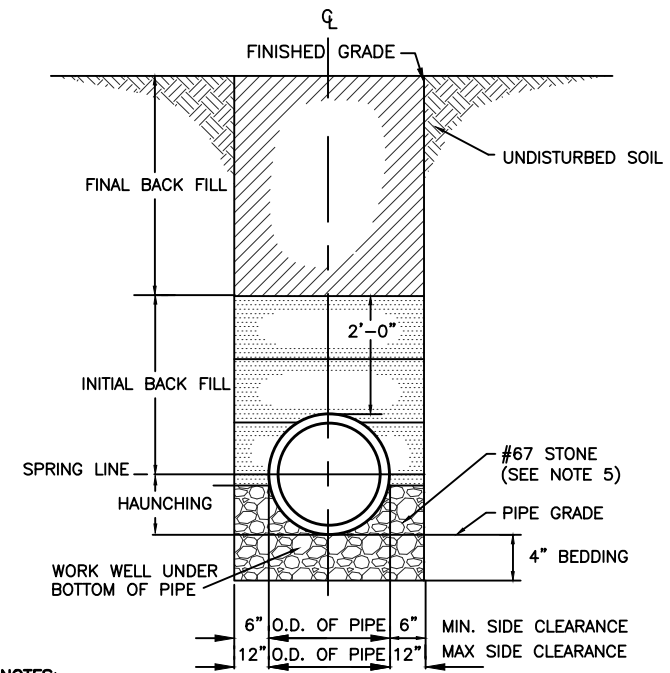


NOTE:
REPAIR SHALL USE CHAMBERS
SEE DETAIL 2, D-102.

1
D-103 NTS
LATERAL PLAN VIEW

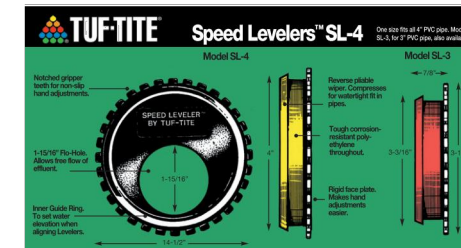


3
D-103 NTS
TUF-TITE DISTRIBUTION BOX- MODEL 7HD2



- NOTES:**
- FOR TRENCHES REQUIRING SHORING AND BRACING, DIMENSIONS SHALL BE TAKEN FROM THE INSIDE FACE OF THE SHORING AND THE BRACING.
 - NO ROCKS OR BOULDERS 4" OR LARGER TO BE USED IN INITIAL BACKFILL.
 - ALL BACK FILL MATERIAL SHALL BE SUITABLE NATIVE MATERIAL.
 - BACK FILL SHALL BE TAMPED IN 6" LAYERS IN TRAFFIC AREAS, 12" IN NON-TRAFFIC AREAS.
 - STONE BEDDING TO BE USED IF ROCK IS ENCOUNTERED.

2
D-103 NTS
GRAVITY SEWER INSTALLATION DETAIL



- HOW TO SET SPEED LEVELERS**
- Insert a Speed Leveler into each outlet pipe inside the Distribution Box. Rotate each Leveler until the Flange Hole is at the 12 o'clock position.
 - Start filling the Distribution Box with water. Stop when the water level reaches the "Water Guide Ring" of the highest Speed Leveler.
 - Rotate all the Speed Levelers until each of the Flange Holes is aligned just above the water level. Slowly add more water to see if it enters all the Flange Holes simultaneously. Make fine-tune adjustments if necessary.
 - You can alternate fields, or wet-tulled lines anytime. Simply rotate the Leveler on the appropriate pipe until the Flange Hole is at the 12 o'clock position to stop the flow.



4
D-103 NTS
TUF-TITE SPEED LEVELERS



BOBBITT DESIGN BUILD, INC.
NW HARNETT FIRE STATION 3
US HWY 401 N

CONVENTIONAL GRAVITY SYSTEM
HARNETT COUNTY, NC

DETAILS - 3 OF 3
D-103

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3/14/2022