

I. NARRATIVE:

BK & ASSOCIATES INTENDS TO CONSTRUCT A 9,921 SF MIXED USE FACILITY CONTAINING COMMERCIAL AND RESIDENTIAL USES. THE CONSTRUCTION WILL INCLUDE PARKING, DRAINAGE AND STORMWATER MANAGEMENT FACILITIES, A SEPTIC SYSTEM WITH TERTIARY TREATMENT AND LPP DRAINFIELD DISPOSAL. THE SITE IS LOCATED ON 0.31 ACRES LOCATED AT 4413 SOUTH CROATAN HIGHWAY IN NAGS HEAD, NORTH CAROLINA. APPROXIMATELY 0.35 ACRES OF THE SITE ARE TO BE DISTURBED. CONSTRUCTION IS ANTICIPATED TO BEGIN IN THE FALL OF 2022.

THE SITE IS LEVEL WITH SANDY SOILS. THE SITE IS MOSTLY GRASSED WITH SOME SHRUB VEGETATION ALONG THE EAST SITE OF THE SITE. A THIN LAYER OF BURIED GRAVEL LIES BEHIND MUSH OF THE GRASSED AREAS AS IT WAS FORMERLY AN OVERFLOW PARKING LOT.

DISTURBED AREAS ARE TO BE STABILIZED WITH TEMPORARY/PERMANENT VEGETATION ACCORDING TO THE SEQUENCE OF CONSTRUCTION.

II. SOILS DESCRIPTION:

SOIL TYPES AS MAPPED IN THE SOIL SURVEY OF DARE COUNTY:

NEWHAN FINE SAND (NeC)

III. CONSTRUCTION SEQUENCE:

- OBTAIN SITE PLAN APPROVAL
- OBTAIN ALL NECESSARY ENVIRONMENTAL PERMITS
- FLAG OR STAKE WORK LIMITS
- HOLD PRE-CONSTRUCTION MEETING (SEE NOTE 1)

PHASE ONE:

- INSTALL SILT FENCING
- INSTALL CONSTRUCTION FENCING AND ENTRANCE
- CLEAR LOT OF EXISTING VEGETATION AS SHOWN

PHASE TWO:

- PLACE FILL MATERIALS
- COMMENCE CONSTRUCTION OF NEW BUILDING
- ROUGH GRADE STORMWATER MANAGEMENT BASIN AND INSTALL PORTIONS OF THE DRAINAGE SYSTEM AS NEEDED
- INSTALL CONCRETE PAVEMENT TEST FOR LEAKAGE
- INSTALL WATER AND FIRE SERVICES
- INSTALL LPP DRAINFIELD AND COMPLETE TESTING OF SEPTIC SYSTEM
- INSTALL REMAINDER OF DRAINAGE AND NEW PAVEMENT
- SEED, FERTILIZE AND WATER DISTURBED AREA TO ACHIEVE PERMANENT STABILIZATION

IV. SEDIMENTATION AND EROSION CONTROL NOTES:

1. PRE-CONSTRUCTION CONFERENCE:
PRIOR TO ANY LAND DISTURBING ACTIVITIES, THE CONTRACTOR SHALL WALK THE SITE WITH THE OWNER'S REPRESENTATIVE AND A REPRESENTATIVE OF THE TOWN OF NAGS HEAD TO IDENTIFY AND MARK ANY SPECIFIC ELEMENTS WHICH ARE TO BE PROTECTED. TREES SHALL BE PROTECTED IN ACCORDANCE WITH THE NORTH CAROLINA EROSION AND SEDIMENTATION CONTROL HANDBOOK.

2. INSTALLATION OF EROSION CONTROL MEASURES:
PRIOR TO COMMENCEMENT OF ANY LAND DISTURBING ACTIVITIES, ALL EROSION AND SEDIMENTATION CONTROL MEASURES IDENTIFIED ON THIS PLAN SHALL BE INSTALLED IN ACCORDANCE WITH THE PROJECT PLANS AND SPECIFICATIONS AND ALL PERMIT CONDITIONS.

3. UTILITIES:
PRIOR TO THE COMMENCEMENT OF ANY EXCAVATION, THE CONTRACTOR SHALL HAVE THE APPROPRIATE UNDERGROUND UTILITIES LOCATED. CONTACT NC911 AT 811 OR 800-632-4949. UTILITIES SHOWN ARE TAKEN FROM EXISTING RECORDS, FIELD OBSERVATIONS AND/OR UTILITY LOCATING SERVICE AND ARE NOT GUARANTEED TO BE ACCURATE OR COMPLETE.

4. ACCESS TO SITE:
ALL CONSTRUCTION TRAFFIC SHALL UTILIZE THE CONSTRUCTION ENTRANCE AS DESIGNATED ON THIS PLAN.

5. LIMITS OF DISTURBANCE:
THE CONTRACTOR SHALL ENSURE THAT AREAS OUTSIDE OF THE LIMITS OF LAND DISTURBING AS WELL AS EXISTING IMPROVEMENTS SPECIFICALLY NOTED TO REMAIN ARE NOT ADVERSELY IMPACTED BY ANY CLEARING ACTIVITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR AND/OR REPLACEMENT OF ITEMS DAMAGED OUTSIDE THE LIMITS OF DISTURBANCE OR OTHERWISE NOTED TO REMAIN.

6. STABILIZATION:
EXPOSED SWALES, DITCHES, OR OTHER SLOPES STEEPER THAN 3(H):1(V) SHALL BE STABILIZED WITH A TEMPORARY OR PERMANENT GROUND COVER WITHIN 7 CALENDAR DAYS. ALL OTHER EXPOSED EARTHEN AREAS SHALL BE STABILIZED WITH A TEMPORARY OR PERMANENT GROUND COVER WITHIN 14 CALENDAR DAYS OF THE COMPLETION OF ANY PHASE OF GRADING.

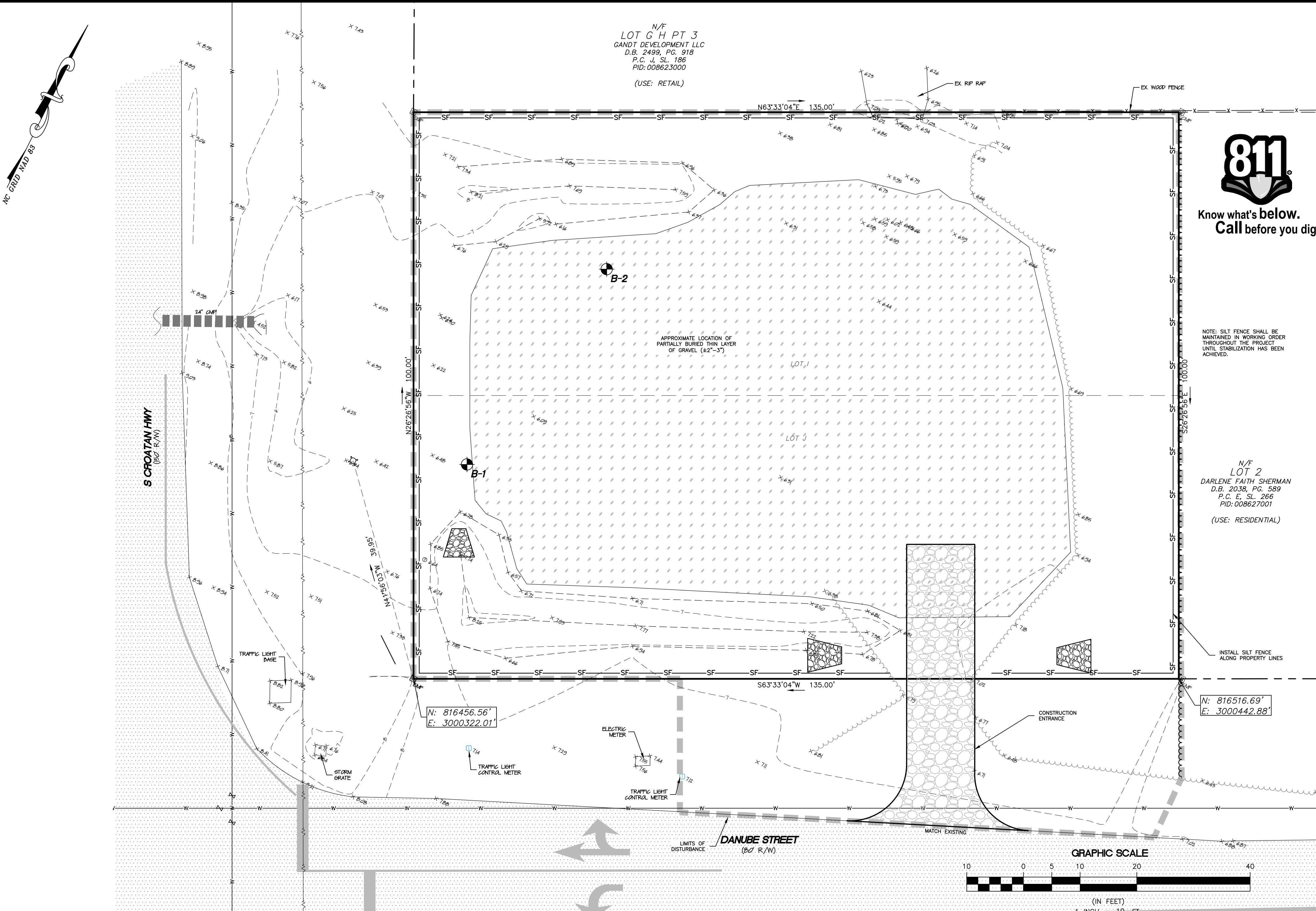
7. INSPECTIONS REQUIRED:
SOIL EROSION AND SEDIMENTATION CONTROLS SHALL BE INSPECTED, MAINTAINED AND REPAIRED AS NECESSARY BY THE CONTRACTOR. THE SITE SHALL BE INSPECTED WEEKLY AND AFTER ANY RAINFALL EVENT EQUAL OR GREATER THAN 0.5 INCHES OVER A 24 HOUR PERIOD.

8. CORRECTIVE MEASURES:
ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION UNTIL WORK IS COMPLETE AND ALL DISTURBED AREAS ARE PERMANENTLY STABILIZED. IF EXCESSIVE WIND, EROSION OR STORM WATER RUNOFF DEVELOPS DURING TIME OF CONSTRUCTION IN ANY LOCATION ON THE PROJECT SITE, ADDITIONAL SAND OR SILT FENCE SHALL BE INSTALLED AS DIRECTED BY ENGINEER, SEE SAND OR SILT FENCE DETAIL.

9. DEBRIS REMOVAL:
ALL CLEARING DEBRIS SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR AND DISPOSED OF IN A LAWFUL MANNER. NO BURNING OF DEBRIS ON SITE IS PERMITTED. NO ON-SITE BURNING IS PERMITTED UNLESS OTHERWISE APPROVED BY THE LOCAL FIRE MARSHALL, MUNICIPAL AGENCY OF JURISDICTION AND THE OWNER.

10. EXCAVATION AND EMBANKMENT:
ANY OFF-SITE MATERIAL BROUGHT ONTO THE SITE TO BE USED FOR GRADING FILL SHALL OBTAIN FROM A PERMITTED BORROW PIT. FILL SHALL CONFORM TO PROJECT SPECIFICATIONS AND GEOTECHNICAL REPORT. NO BORROW IS PERMITTED FROM THE SITE.

11. EXISTING INFORMATION:
THE EXISTING SURVEY AND SITE TOPOGRAPHIC INFORMATION SHOWN IS BASED UPON SURVEY INFORMATION PROVIDED BY J.H. MILLER, JR. LAND SURVEYING ON FEBRUARY 11, 2022



Know what's below.
Call before you dig.

NOTE: SILT FENCE SHALL BE
MAINTAINED IN WORKING ORDER
THROUGHOUT THE PROJECT
UNTIL STABILIZATION HAS BEEN
ACHIEVED.

100% EROSION CONTROL
SEAL
128572
2022-02-22
J. MORAN

N/F
LOT 2
DARLENE FAITH SHERMAN
D.B. 2038, PG. 589
P.C. E, SL. 266
PID: 008627001
(USE: RESIDENTIAL)

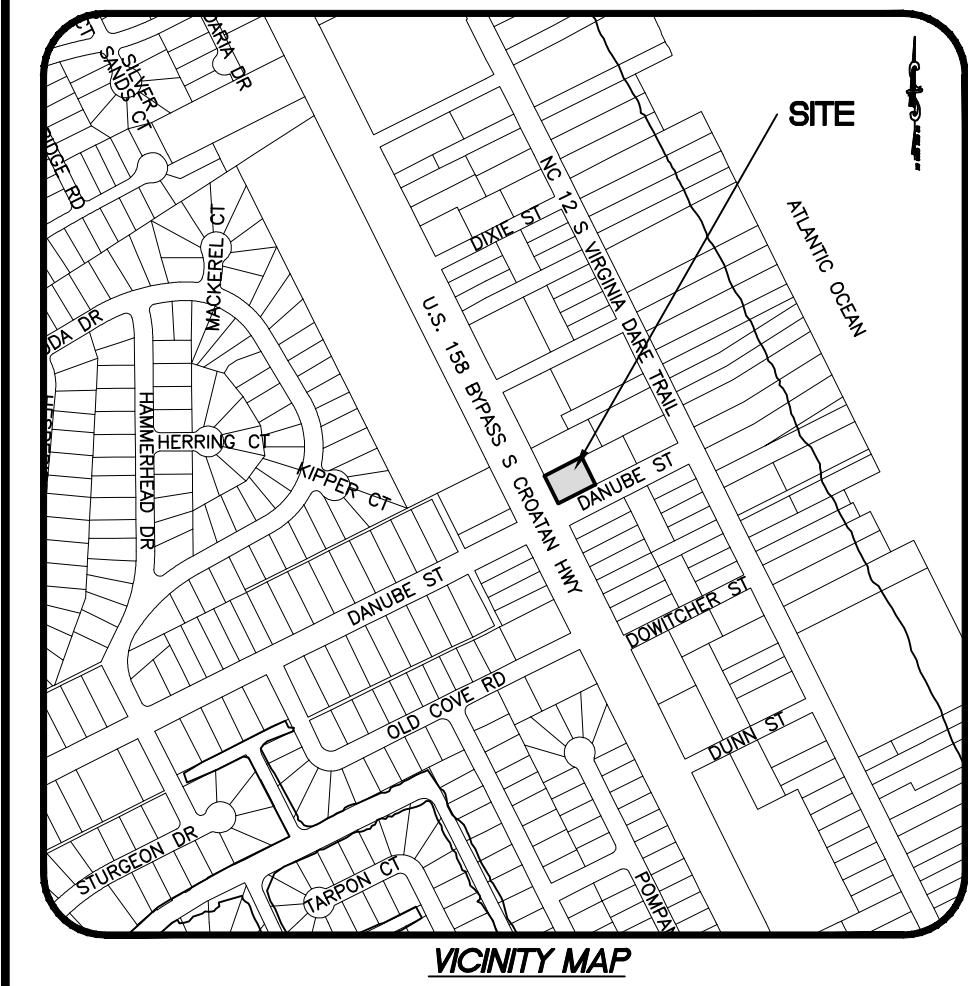
REVISIONS

NO. DATE DESCRIPTION PER REC COMMENTS

1077/20/22

REVISIONS

NO. DATE DESCRIPTION PER REC COMMENTS

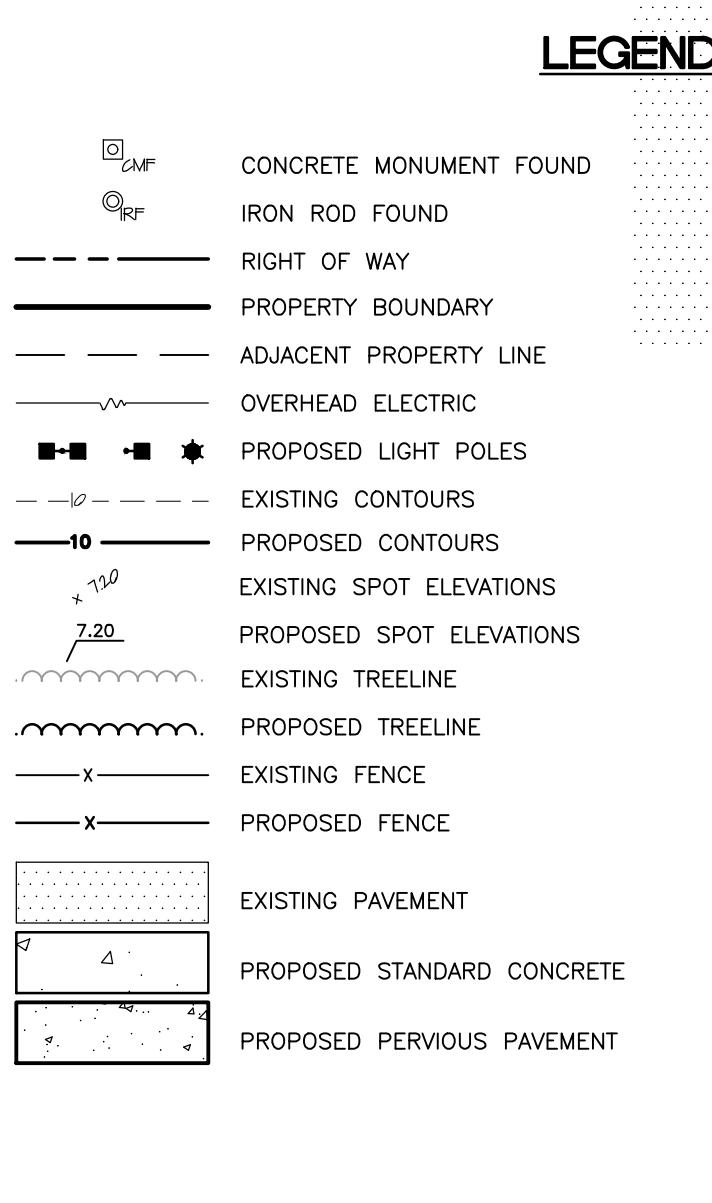


811

Know what's below.
Call before you dig.

SITE PLAN NOTES:

1. OWNER: BK ASSOCIATES
C/O HARRY S. BAWA
441 RIVERGATE DRIVE
RICHMOND, VA 23238
2. THE OWNER INTENDS TO CONSTRUCT A 9,921 SF, 3-STORY COMMERCIAL / MIXED USE STRUCTURE OVER PARKING. THE FIRST FLOOR WILL CONTAIN TWO UNITS TO BE UTILIZED FOR ANY USE WHICH IS ALLOWED IN C-2 ZONING UNDER "MIXED USE DEVELOPMENT" THAT REQUIRES NO MORE THAN 8 PARKING SPACES AND 150 GALLONS PER DAY FOR SEPTIC SYSTEM CAPACITY (AND OTHERWISE MEETS BUILDING AND ANY ZONING CODES). THE SECOND AND THIRD FLOOR WILL EACH CONTAIN TWO (2) APARTMENTS, EACH WITH TWO-BEDROOM (TOTAL OF FOUR APARTMENTS).
3. THE PROPERTY IS LOTS I & J, BLOCK C1, ROANOKE SOUND SHORES, RESUBDIVISION, SECTION 3, M.B. 2, PGS 114, RECORDED IN D.B. 2066, PG 216.
DARE COUNTY PIN# 0801 09 06 3533, DARE CO. PARCEL ID: 029172000
PROPERTY ADDRESS: 4413 S CROATAN HIGHWAY, NAGS HEAD, NORTH CAROLINA
4. THE SITE IS LOCATED IN FIRM ZONE X, FIRM MAP NUMBER 3730080100K, EFFECTIVE JUNE 19, 2020. (SUBJECT TO CHANGE BY FEMA)
5. ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES UNLESS OTHERWISE SPECIFIED. ELEVATIONS SHOWN ARE HEREON PER NAVD88.
6. AREAS SHOWN ARE BY COORDINATE METHOD.
7. EXISTING FEATURES AND SURVEY INFORMATION PROVIDED BY J. H. MILLER LAND SURVEYING
8. THERE ARE NO DELINEATED WETLANDS ON THE PROJECT SITE.
9. THE PROPERTY IS ZONED C-2 AND MIXED-USE DEVELOPMENT IS A SPECIAL USE.
10. PARKING REQUIREMENTS:
COMMERCIAL / OFFICE = 7 SPACES
MULTIFAMILY = (2 SPACES / DWELLING) X 4 DWELLINGS = 8 SPACES
REDUCTION = 1 PARKING SPACE PER BIKE RACK = 15 SPACES
(REQUIRED SPECIAL USE APPROVAL) = (<1) SPACE
TOTAL REQUIRED PARKING PROVIDED PARKING = 14 SPACES
11. SETBACKS:
FRONT: 15' (ARTICLE 10.90.2.1.1)
SIDE: 5' (ARTICLE 8.2.1)
SIDE (CORNER): 15' (ARTICLE 8.6.3.4)
REAR: 25' (ARTICLE 8.2.1)
ACCESSORY STRUCTURES: 5' (ARTICLE 8.6.3.5.1)
SETBACKS EXCLUDE OUTERMOST 3' OF EAVES, GUTTERS, UNCOVERED HANDICAP RAMPS AND UNCOVERED STEPS (ARTICLE 8.3.6.3.1)
12. LOT COVERAGE:
55% (ARTICLE 8.2.1 - DISTRICT DEVELOPMENT STANDARDS / PRIMARY ZONING DISTRICTS)
200 SF MAX COVERAGE MAY BE EXCLUDED IF ONE OR MORE BIKE RACKS ARE PROVIDED (ARTICLE 8.6.6.7.4 - DISTRICT DEVELOPMENT STANDARDS / APPLICATION OF DIMENSIONAL REQUIREMENTS)
13. BUILDING HEIGHT:
MAX ALLOWABLE = 42' IF BUILDING USES 8/12 ROOF PITCH (ARTICLE 8.6.4.2), EXCLUSIONS APPLY.
14. MIXED USE DEVELOPMENT:
RESIDENTIAL COMPONENT SHALL NOT EXCEED 66% OF THE TOTAL GROSS FLOOR AREA OF A BUILDING CONTAINING 3 HABITABLE FLOORS (ARTICLE 7.3.5.2)
15. LOT AREA = 13,500 SF; ALLOWABLE COVERAGE 55% (7425.00 SF)
TOTAL FLOOR AREA: 9,921 SF
RESIDENTIAL FLOOR AREA: 6,281 SF (63.3%)
16. LOT AREA = 13,500 SF; ALLOWABLE COVERAGE 55% (7425.00 SF)
COVERAGE IS AS FOLLOWS:
BUILDING 3,640.00 SF
CONCRETE-STANDARD 1,705.44 SF
CONCRETE-PERMEABLE 947.72 SF
DUMPSTER PAD 80.00 SF
SIDEWALK 58.50 SF
PROPOSED COVERAGE 6,431.14 SF (47.64%)
BIKE RACK - 20 SF (BIKE RACKS ARE EXCLUDED WHEN 20 SF OR LESS)
POROUS CONCRETE 1,414.50 * 0.67 = 947.72 SF
17. THE STORMWATER MANAGEMENT IS DESIGNED TO MANAGE RUNOFF FROM 4.3" OF RAINFALL THROUGH THE USE OF INFILTRATION SWALES ALONG THE PERIMETER AND THE USE OF PERMEABLE PAVEMENT WITHIN UNCOVERED PORTIONS OF THE PARKING LOT.
18. SILT FENCE TO BE INSTALLED ON SITE AS SHOWN ON EROSION CONTROL/GRADING PLAN.
19. THE OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL BUFFERING. ALL REQUIRED LANDSCAPING AND BUFFER AREAS SHALL BE MAINTAINED IN GOOD CONDITION SO AS TO PREVENT HEAVY AND UNORDERLY APPEARANCE AND SHALL BE LEFT FREE FROM REFUSE AND DEBRIS. THIS INCLUDES, BUT IS NOT LIMITED TO, THE REPLACEMENT OF PLANTS DAMAGED BY INSECTS, DISEASE, VEHICULAR TRAFFIC AND VANDALISM.
20. ALL NEW UTILITIES ARE TO BE PLACED UNDERGROUND.
21. UPON COMPLETION, A CERTIFIED AS-BUILT SURVEY SHALL BE PREPARED BY A LICENSED SURVEYOR AND PROVIDED TO THE TOWN AND ENGINEER. THE AS-BUILT SURVEY SHALL ALSO INCLUDE DETAILED TOPOGRAPHY OF THE STORMWATER MANAGEMENT SYSTEM INCLUDING BASINS, SWALES AND PIPES.



LEGEND

LANDSCAPING, BUFFERING AND VEGETATION PRESERVATION
BUFFERYARDS SHALL CONTAIN 3 TREES, 15 SHRUBS AND 30 ORNAMENTAL GRASSES OR HERBACEOUS PLANTS PER EVERY 100 FEET (ARTICLE 10.93.2.1)
GENERAL:
- AT A MINIMUM, 50% OF THE NUMBER OF PLANTS SHALL BE LOCALLY ADAPTED EVERGREEN SPECIES (ARTICLE 10.93.2.4)
- TREES SHALL BE A MINIMUM OF 5' HEIGHT AT TIME OF PLANTING WITHIN THE COMMERCIAL TRANSITIONAL BUFFER AND 3' IN HEIGHT AND 1" DIAMETER (MEASURED AT 18" ABOVE GRADE) IN OTHER LOCATIONS.
- SHRUBS SHALL BE A MINIMUM OF 18" HEIGHT AT TIME OF PLANTING, 50% OF THESE SHALL BE SPECIES THAT ARE EXPECTED TO REACH A HEIGHT OF 5' WITHIN THREE YEARS

COMMERCIAL TRANSITIONAL PROTECTIVE YARDS:
- SHALL BE AT LEAST 10' IN WIDTH CONSIST OF TWO ROWS OF THE REQUIRED BUFFERYARD (ARTICLE 1.93.2.1.1). TREES AND SHRUBS SHALL BE A MINIMUM OF 5' AT TIME OF PLANTING (ARTICLE 10.93.3.2.3) AND ORNAMENTAL GRASSES OR HERBACEOUS PLANTS ARE NOT REQUIRED (ARTICLE 10.93.3.2.4)

BUILDINGS ADJACENT TO STREET FRONTE:
- PLANTINGS ALONG BUILDING WALLS ADJACENT TO STREET FRONT SHALL BE AS SHOWN ON THIS PLAN

INTERIOR PARKING LOTS LANDSCAPING:
- EXTERIOR PARKING AREA (NON-COVERED) IS 1,250 SF WHICH REQUIRES A PARKING LOT AREA OF AT LEAST 125 SF (PROVIDED).

VEGETATION PRESERVATION / PLANTING REQUIREMENTS:
- THE SITE WAS PREVIOUSLY CLEARED AND IS MOSTLY GRASSED. THE EASTERN EDGE DOES HAS SOME EXISTING VEGETATION, BUT THIS WILL NOT MEET THE REQUIRED COMMERCIAL TRANSITIONAL BUFFER, THEREFORE, PLANS INCLUDE PLANTING A MINIMUM OF 15% OF THE TOTAL LOT AREA (2,025 SF).
- NEW LANDSCAPING INCLUDES 7 TREES (@ 100 SF/TREE) AND 32 SHRUBS (@ 50 SF/SHRUB) FOR A TOTAL OF 2,300 SF. THIS EXCLUDES BUILDING FOUNDATION LANDSCAPING.



TREES
(RECOMMENDED - JAPANESE BLACK PINE, RED BAY WILD OLIVE, CREPE MYRTLE)

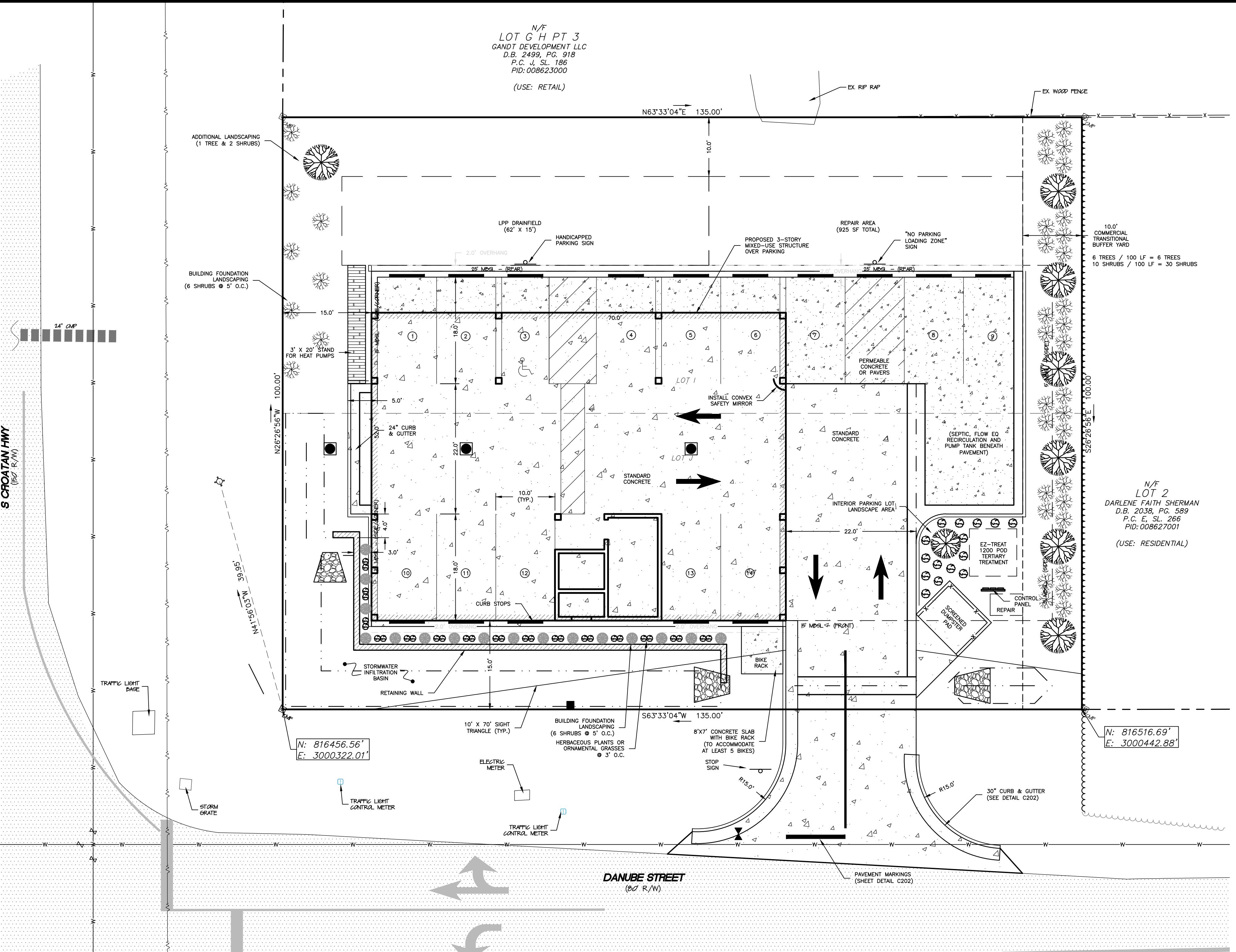


SHRUBS
(RECOMMENDED - JAPANESE PITOSPORUM, NORTHERN BAYBERRY, YEDDO HAWTHORNE, OLEANDER, DWARF WILLOW)



ORNAMENTAL GRASSES OR HERBACEOUS PLANTS (<30" TALL)
(RECOMMENDED - SEASIDE GOLDEN ROD, BLANKET FLOWER, CYPRESS LAVENDER COTTON, BUTTERFLY WEED, PURPLE CONEFLOWER)

NOTE: A MINIMUM OF 50% OF THE BUFFER PLANTS SHALL BE LOCALLY ADAPTED EVERGREEN.



**FINAL DRAWING
NOT FOR
CONSTRUCTION**

SITE PLAN AND LANDSCAPING PLAN BK ASSOCIATES 4413 S CROATAN HIGHWAY

NORTH CAROLINA
DALE COUNTY
NAGS HEAD TOWNSHIP
NAGS HEAD

DATE: 06/14/2022
SURVEYOR: SEE NOTES
DESIGNED: M.M.
DRAWN: K.C.A.
CHECKED: M.M.
FILE: 08621A
SCALE: 1" = 10'
C201
PROJ. NO. 08621A

GRADING NOTES:

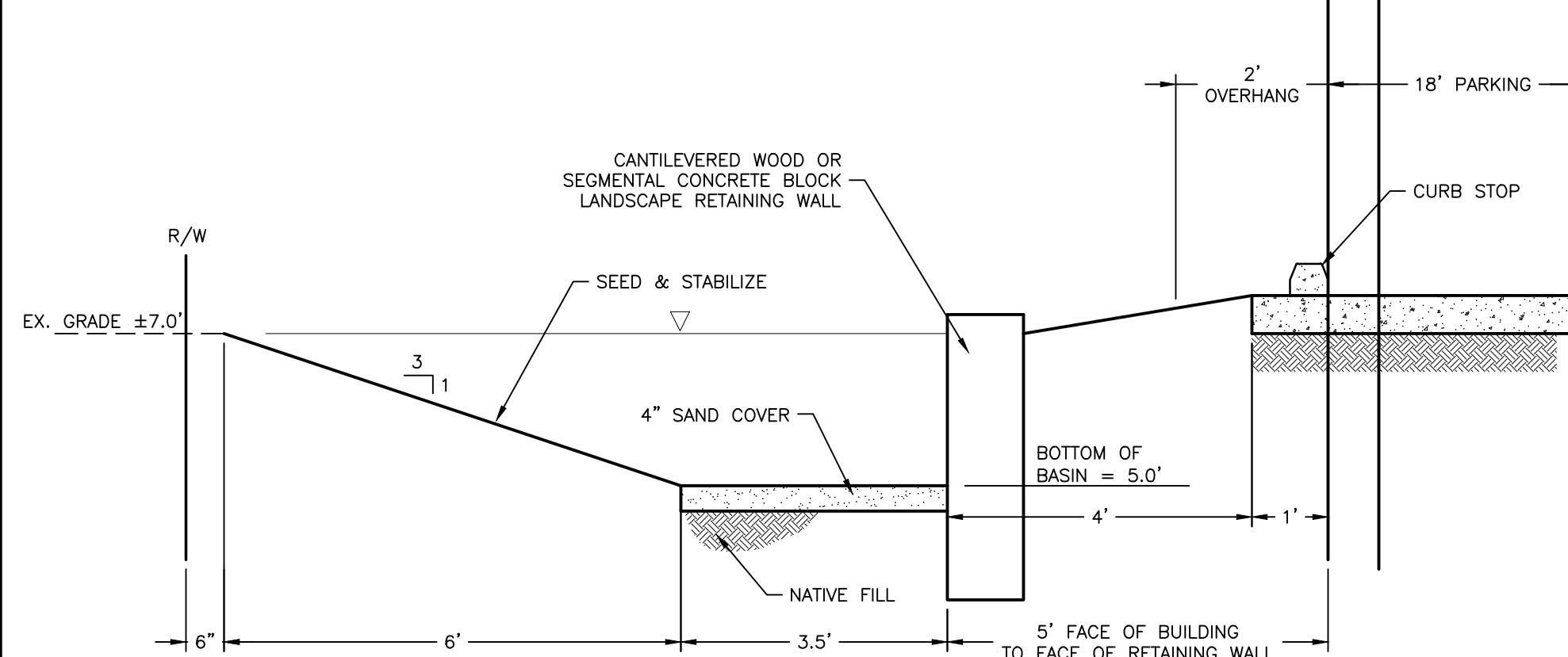
1. ALL CONSTRUCTION TRAFFIC SHALL UTILIZE THE CONSTRUCTION ENTRANCE AS DESIGNATED.
2. PRIOR TO COMMENCEMENT OF ANY LAND DISTURBING ACTIVITIES, ALL EROSION AND SEDIMENTATION CONTROL MEASURES IDENTIFIED ON THIS PLAN SHALL BE INSTALLED IN ACCORDANCE WITH THE EROSION CONTROL PLAN.
3. THE CONTRACTOR SHALL ENSURE THAT AREAS OUTSIDE OF THE LIMITS OF LAND DISTURBANCE AS WELL AS TREES SPECIFICALLY NOTED FOR PROTECTION ARE NOT ADVERSELY IMPACTED BY ANY CLEARING ACTIVITIES.
4. PRIOR TO FILLING THE SITE, THE CONTRACTOR SHALL STRIP AND STOCKPILE TOPSOIL IN ACCORDANCE WITH GEOTECHNICAL REPORTS AT THE LOCATION INDICATED. AREAS WHICH ARE TO BE FILLED SHALL BE RAISED IN COMPACTED SEQUENTIAL LIFTS NOT TO EXCEED 8 INCHES IN DEPTH. FILL MATERIAL SHALL BE CLEAN, WELL GRADED SAND, FILL LOCATED BEHIND PAVEMENT SHALL BE COMPACTED PER GEOTECHNICAL REPORT. TOPSOIL STOCKPILED CAN BE USED ON SITE FOR REGRADE UPON COMPLETION OF FILL AND USED WITHIN STORMWATER TREATMENT AREA.
5. LIMITS OF SLOPES AND GRADING SHALL BE IN ACCORDANCE WITH THE LIMITS SHOWN HEREON.
6. EXISTING TOPOGRAPHY HAS BEEN PROVIDED BY SURVEY ISSUED BY J.H. MILLER, JR. LAND SURVEYING, DATED FEBRUARY 10, 2022 AND IS BASED UPON NAVD 1988.

DRAINAGE NOTES:

1. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL CONTACT NC ONE CALL (811) TO LOCATE UNDERGROUND UTILITIES.
2. ALL STORM SEWERS SHALL BE PLACED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. STORM SEWERS SHALL BE SMOOTH INTERIOR, DOUBLE WALLED HDPE WITH GASKETED CONNECTIONS UNLESS OTHERWISE NOTED.
3. DROP INLETS AND DRAINAGE STRUCTURES SHALL BE CONSTRUCTED PER NC DOT 840.
4. END SECTIONS SHALL BE PROVIDED WITH OUTLET PROTECTION (SEE DETAIL ON THIS SHEET).
5. INSTALLATION OF STORMWATER MANAGEMENT MEASURES SHALL BE IN ACCORDANCE WITH THIS PLAN AND REQUIREMENTS STIPULATED BY THE DIVISION OF WATER QUALITY STORMWATER PERMIT.
6. SEE SITE PLAN NOTES FOR AS-BUILT REQUIREMENTS. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL SUBMIT A CERTIFIED AS-BUILT SURVEY. THE SURVEY SHALL INCLUDE ALL SITE IMPROVEMENTS AND STORMWATER MANAGEMENT FEATURES WITH ELEVATIONS.

STORMWATER MANAGEMENT MAINTENANCE NOTES:

1. UPON ACCEPTANCE BY THE OWNER, IT IS THE OWNER'S RESPONSIBILITY TO PROVIDE NECESSARY MAINTENANCE SO THAT THE STORMWATER SYSTEM WILL FUNCTION AS INTENDED.
2. AFTER EVERY RUNOFF PRODUCING RAINFALL EVENT AND AT LEAST MONTHLY, INSPECT THE STORMWATER MANAGEMENT POND FOR EROSION, TRASH ACCUMULATION, VEGETATIVE COVER, AND GENERAL CONDITION. ALSO INSPECT THE INFLOW STRUCTURES, OUTLET STRUCTURE, RIP-RAP AND BASIN FOR OBSTRUCTION OR DETERIORATION. REMOVE ANY BLOCKAGE AND REPAIR THE STRUCTURE TO APPROVED DESIGN SPECIFICATIONS.
3. REPAIR ERODED AREA IMMEDIATELY, RE-SEED AS NECESSARY TO MAINTAIN ADEQUATE VEGETATIVE COVER, REMOVE TRASH AS NEEDED.
4. CHECK FOR SEDIMENTATION WITHIN THE BASIN ANNUALLY. IF DEPOSITION OF MATERIAL IS OBSERVED WITHIN THE SYSTEM, REESTABLISH DESIGN GRADES AS INDICATED ON APPROVED SITE PLAN. INSPECT BASIN WALLS AND STRUCTURES TO ENSURE THAT THEY ARE MAINTAINED AT THEIR DESIGN ELEVATIONS. IF EROSION OCCURS, REESTABLISH DESIGN ELEVATIONS AS INDICATED ON APPROVED SITE PLAN.



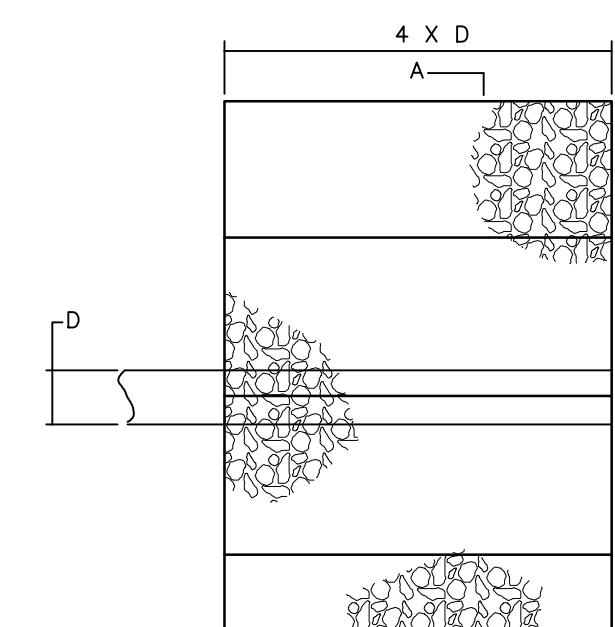
NOTES:

1. BASIN GRADING SHALL BE PERFORMED AND PROTECTED, LIMITING COMPACTION FROM CONSTRUCTION EQUIPMENT AND OTHER SOURCES AS MUCH AS POSSIBLE.
2. UPON COMPLETION OF BASIN GRADING, THE LIMITS SHALL BE PROTECTED FROM RUNOFF OF SILT AND OTHER MATERIAL.
3. IN THE EVENT RUNOFF TO BASIN IS NOT PREVENTED, THE ENTIRE BASIN SHALL BE TILLED TO RESTORE INFILTRATIVE CAPABILITIES.
4. STABILIZATION OF BASIN SHALL BE PERFORMED AS SOON AS POSSIBLE. IF BASIN BECOMES FLOODED PRIOR TO ESTABLISHMENT OF GRASS, IT SHALL BE RE-SEEDED UNTIL GRASS IS ESTABLISHED.
5. DO NOT PLACE SOD ALONG BOTTOM OF BASIN UNLESS APPROVED BY THE ENGINEER.

INFILTRATION BASIN

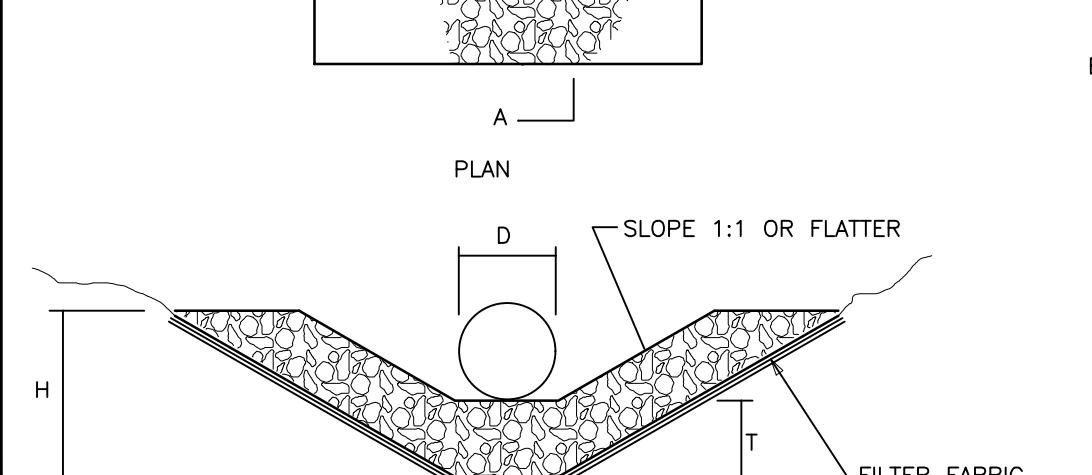
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4 X D



| D | OUTLET W/DITCH | | | OUTLET W/O DITCH | | | | | | |
|-----|----------------|------|----------------|------------------|----------------|------|----------------|------|----|----|
| | CLASS B RIPRAP | TONS | CLASS I RIPRAP | TONS | CLASS B RIPRAP | TONS | CLASS I RIPRAP | TONS | | |
| 12" | 2 | 5 | 5 | 2 | 5 | 1 | 4 | 2 | 1 | 4 |
| 15" | 2 | 7 | 7 | 3 | 7 | 1 | 5 | 3 | 2 | 6 |
| 18" | 3 | 10 | 9 | 4 | 10 | 2 | 7 | 4 | 2 | 8 |
| 24" | 5 | 14 | 15 | 7 | 15 | 3 | 11 | 7 | 4 | 12 |
| 30" | 8 | 21 | 21 | 11 | 22 | 5 | 16 | 11 | 7 | 17 |
| 36" | 11 | 28 | 29 | 15 | 30 | 7 | 22 | 16 | 10 | 23 |
| 42" | 15 | 37 | 39 | 20 | 39 | 10 | 28 | 22 | 13 | 30 |
| 48" | — | 49 | 26 | 50 | — | — | 28 | 17 | 38 | |
| 54" | — | 60 | 33 | 62 | — | — | 36 | 21 | 47 | |
| 60" | — | 73 | 40 | 75 | — | — | 44 | 26 | 56 | |
| 66" | — | 87 | 48 | 89 | — | — | 54 | 32 | 67 | |
| 72" | — | 102 | 57 | 104 | — | — | 64 | 38 | 78 | |

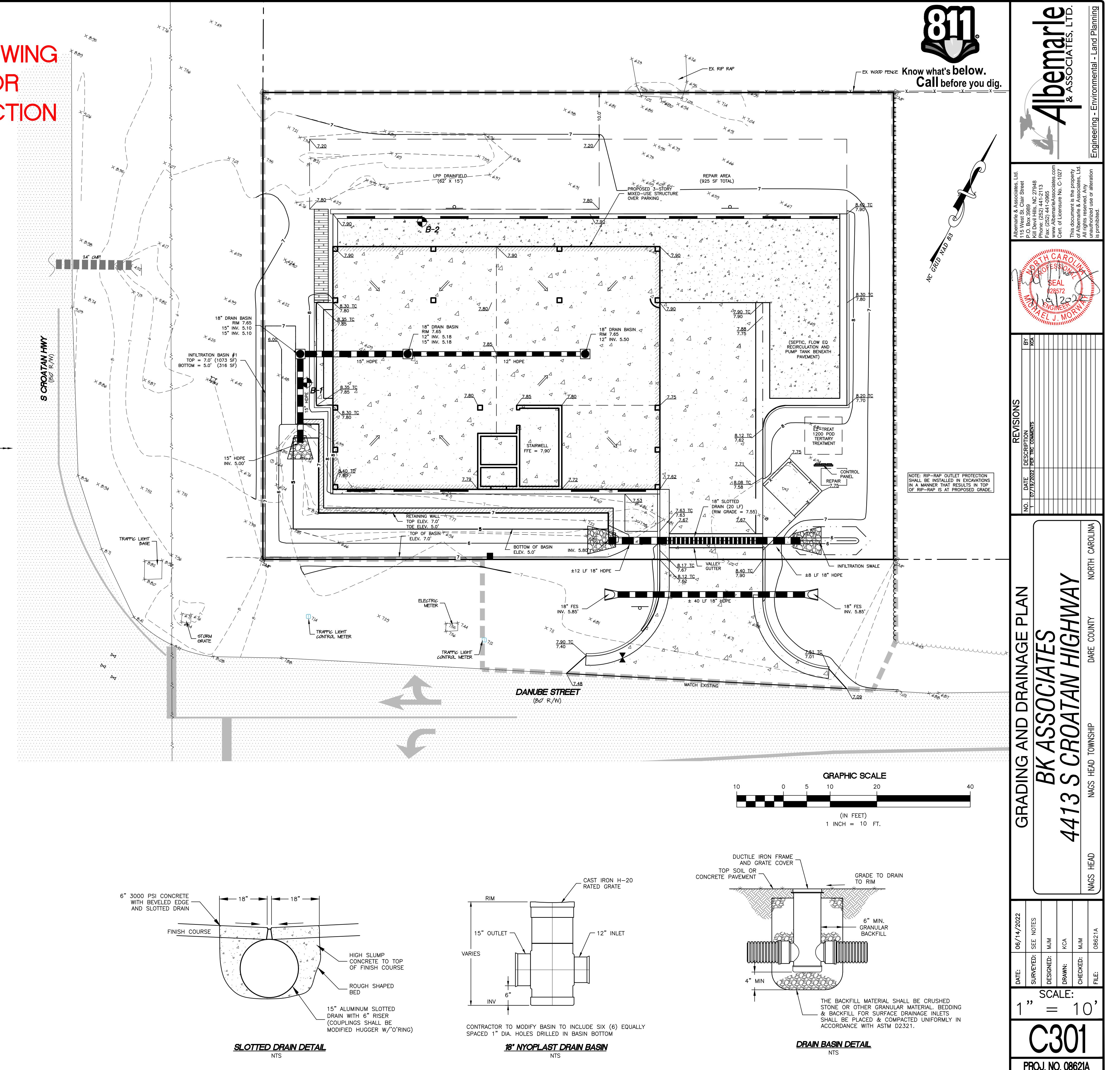
NOTE:
FOR CALCULATION PURPOSES
CLASS B RIPRAP = 100 LBS./FT
CLASS I RIPRAP = 105 LBS./FT



H = RIPRAP TO TOP OF PIPE (MAX. H = D + T)
T = 15" CLASS I RIPRAP, UNLESS OTHERWISE SHOWN ON PLANS
T = 12" CLASS B RIPRAP, UNLESS OTHERWISE SHOWN ON PLANS

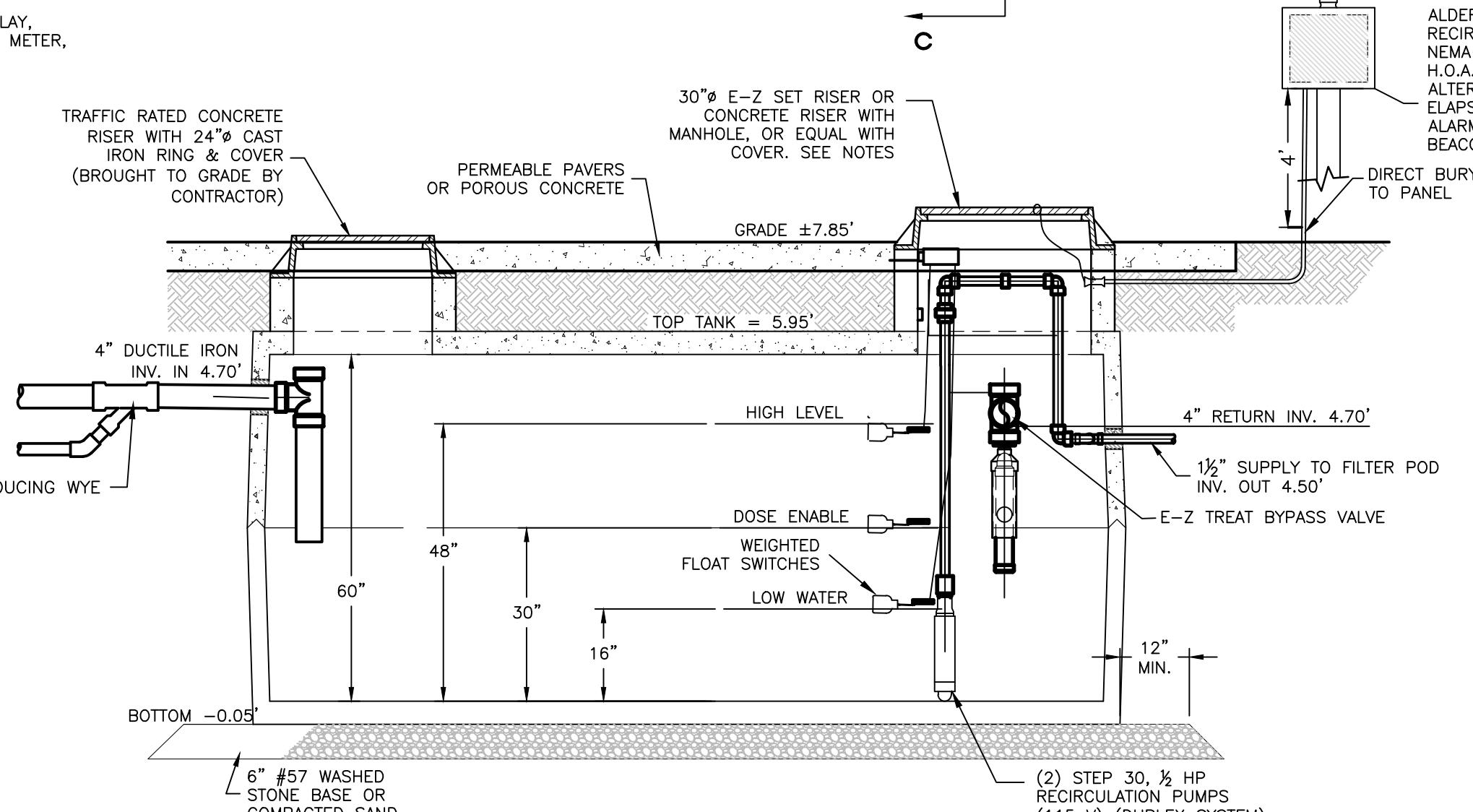
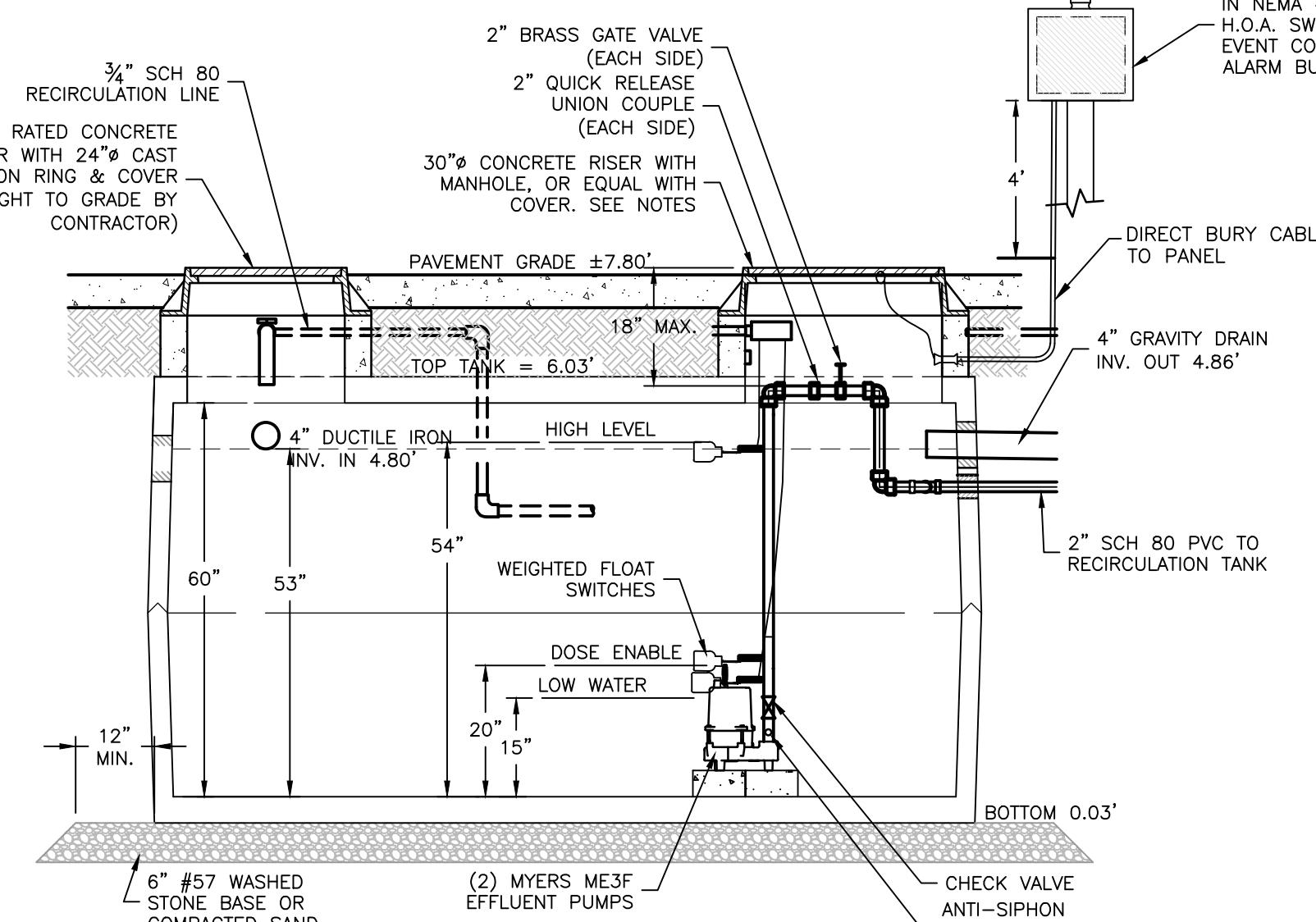
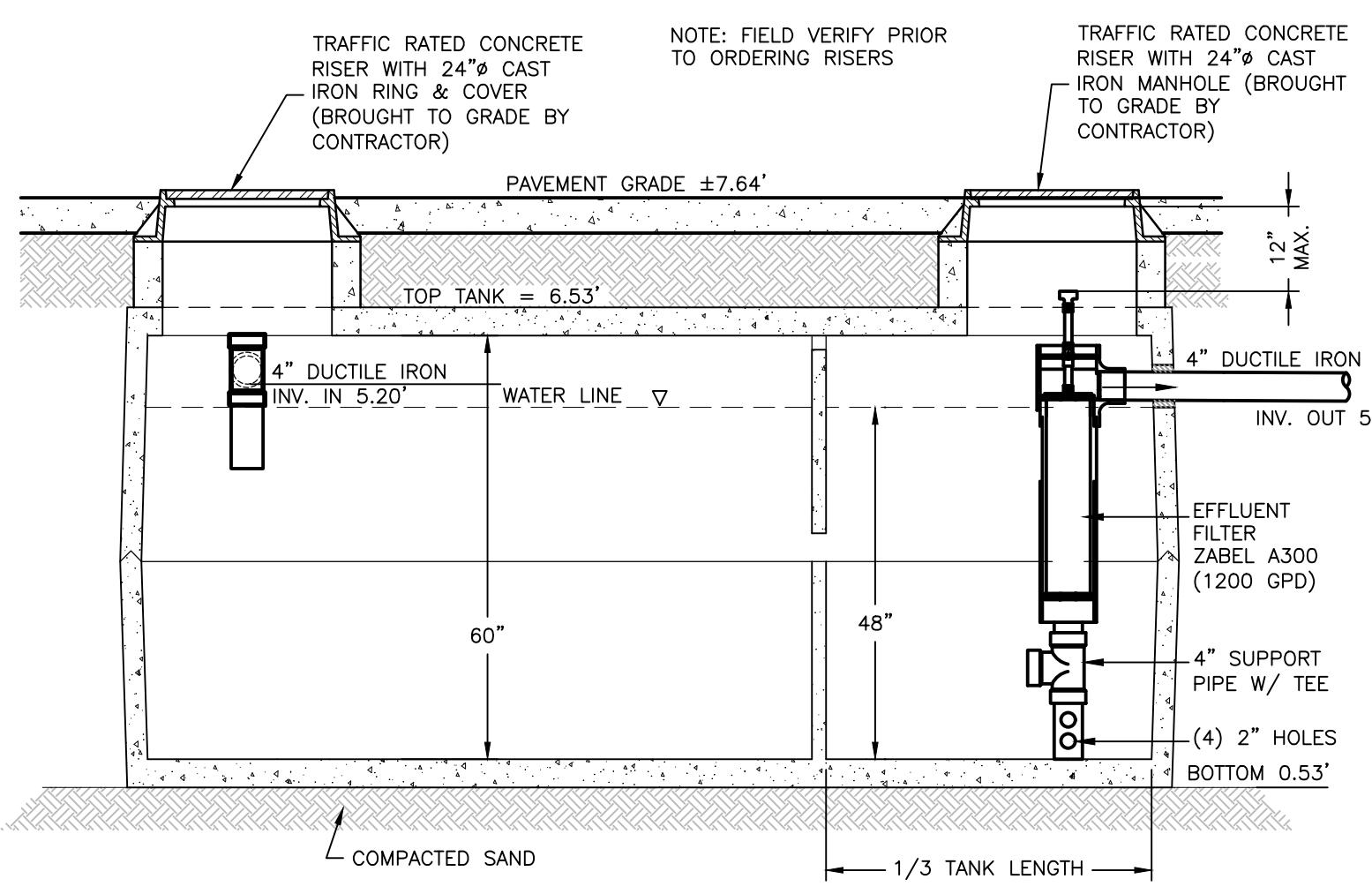
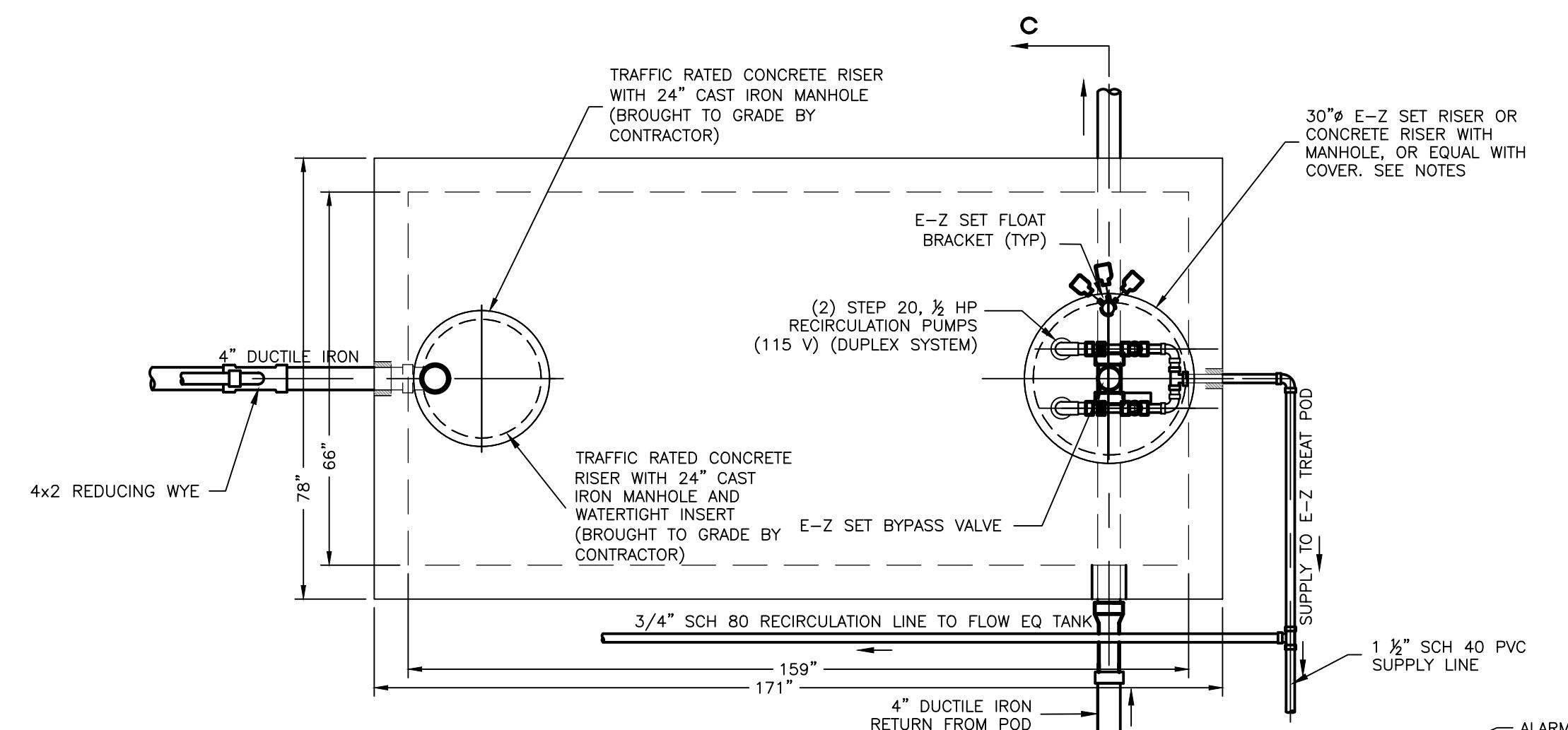
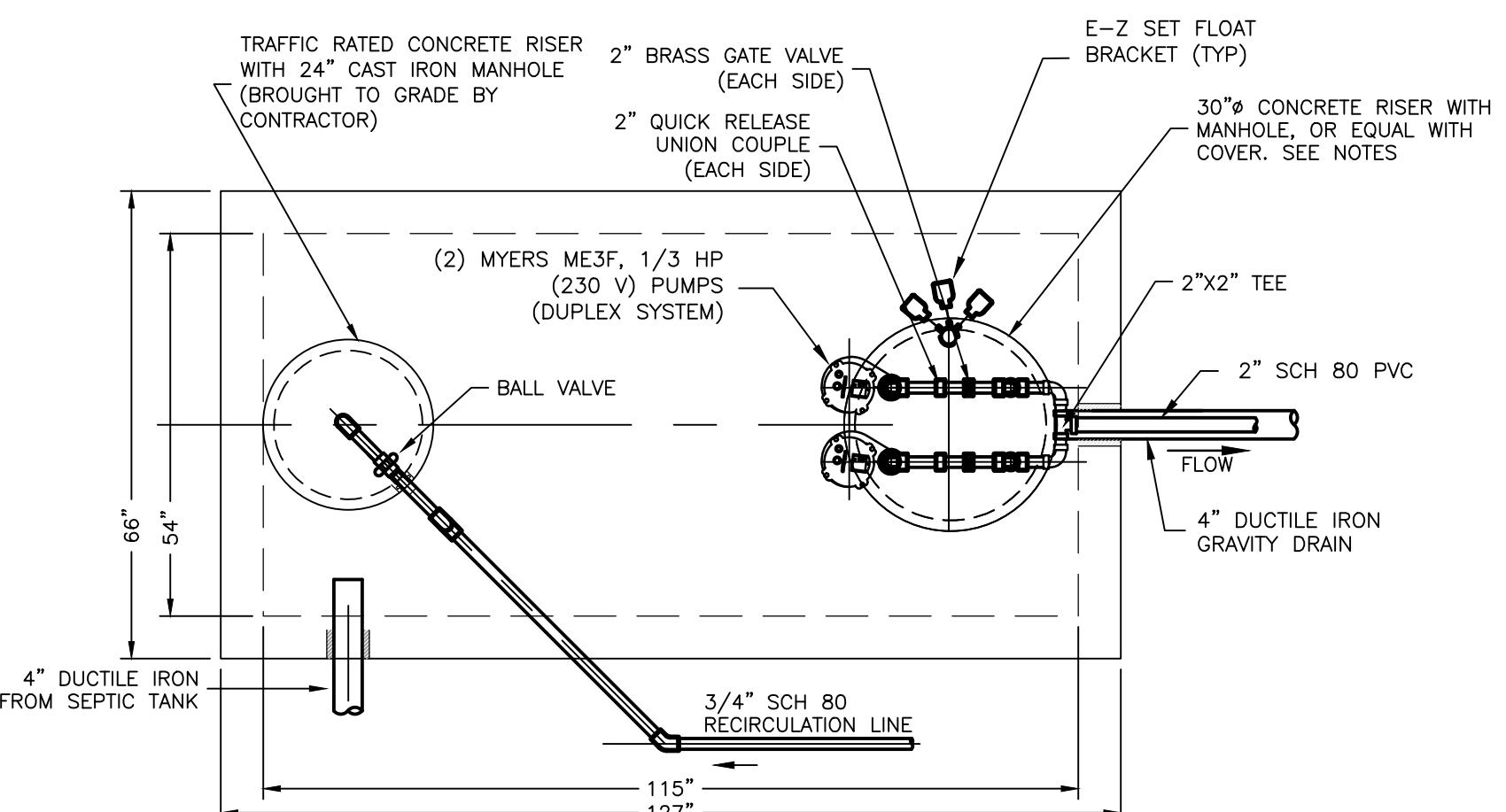
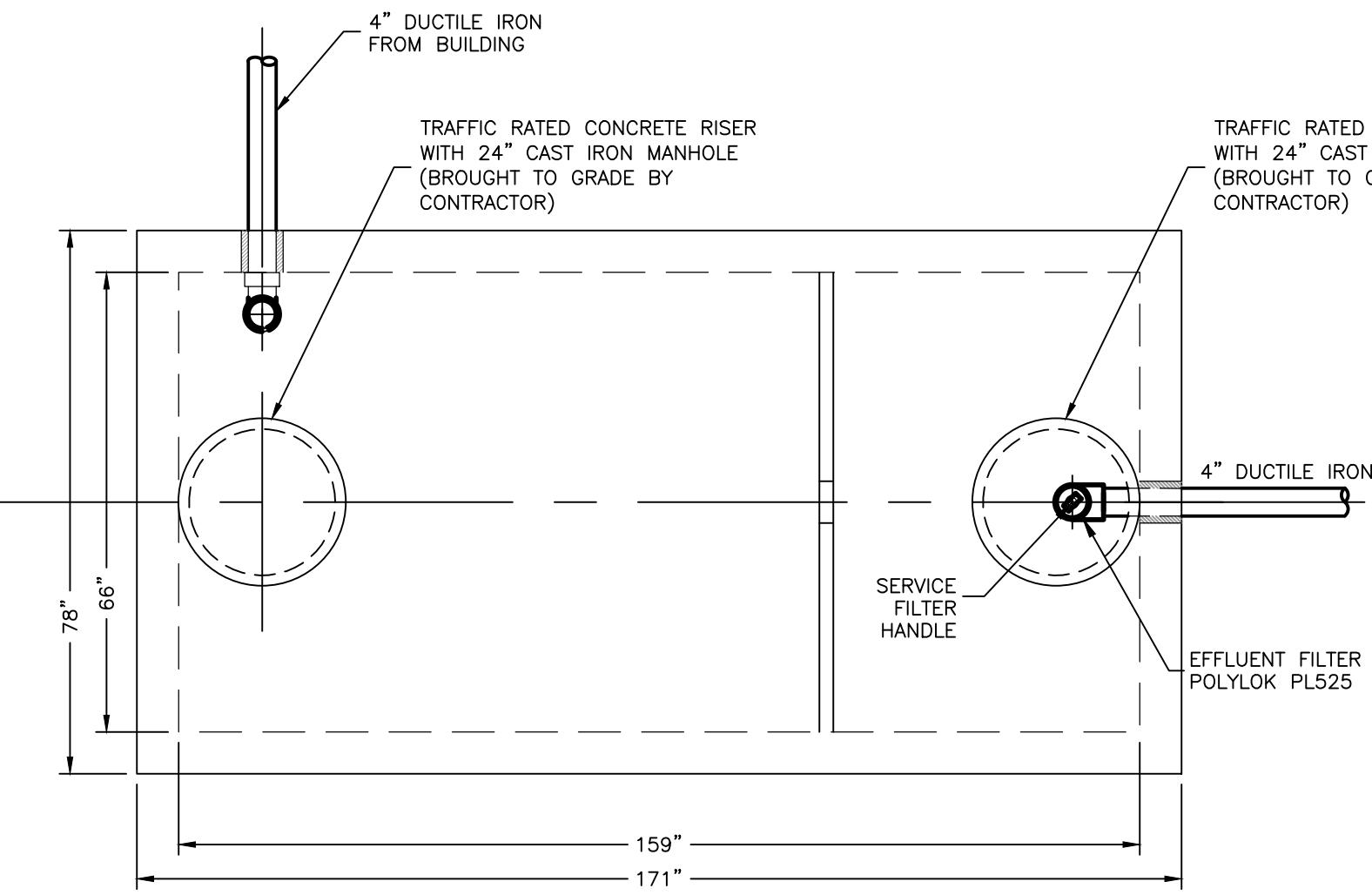
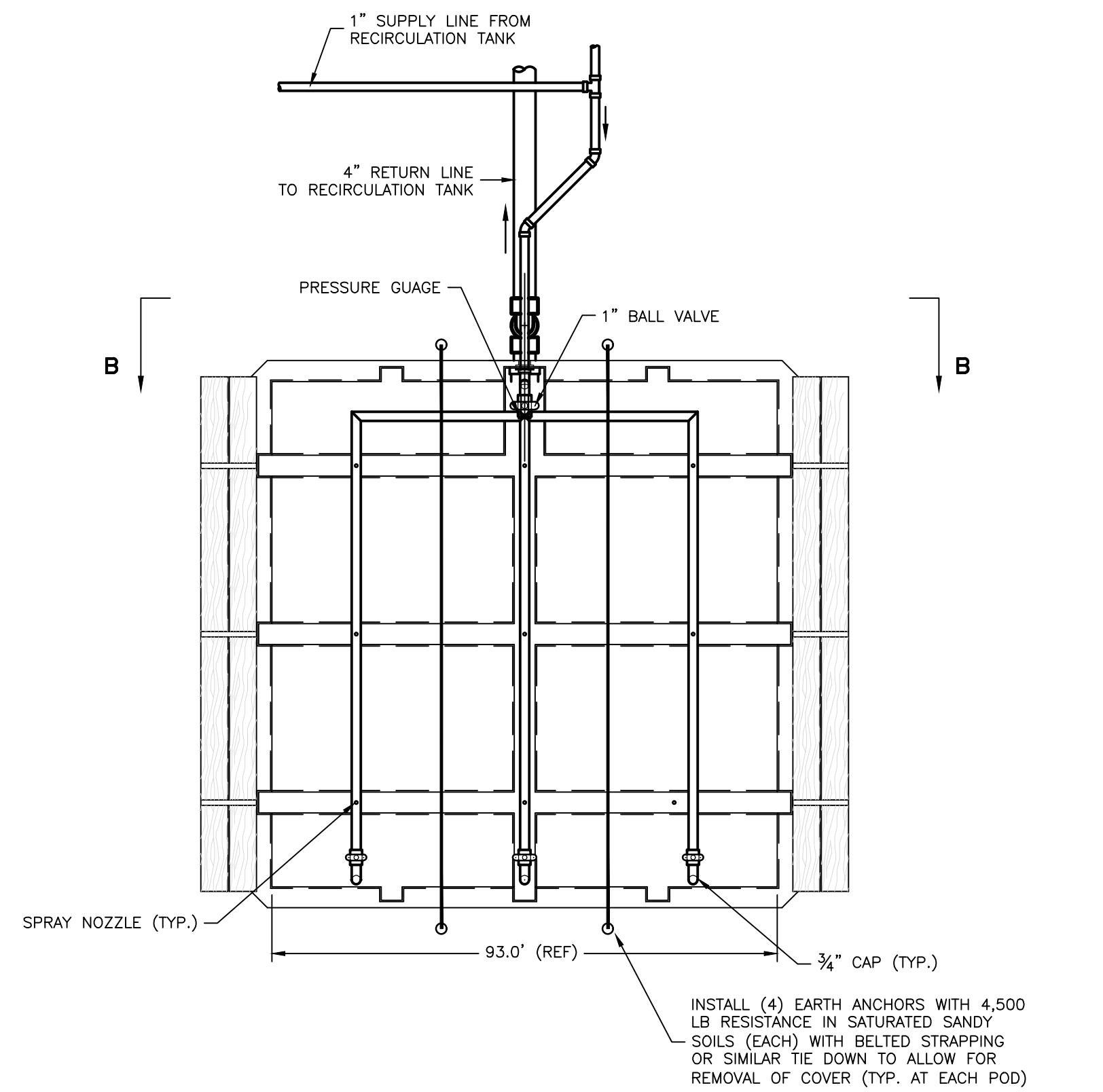
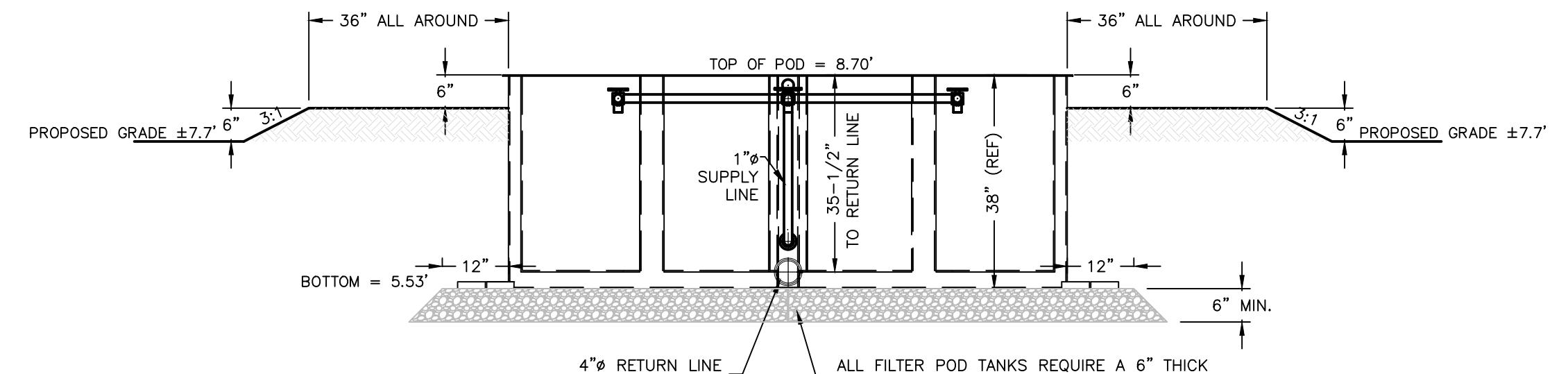
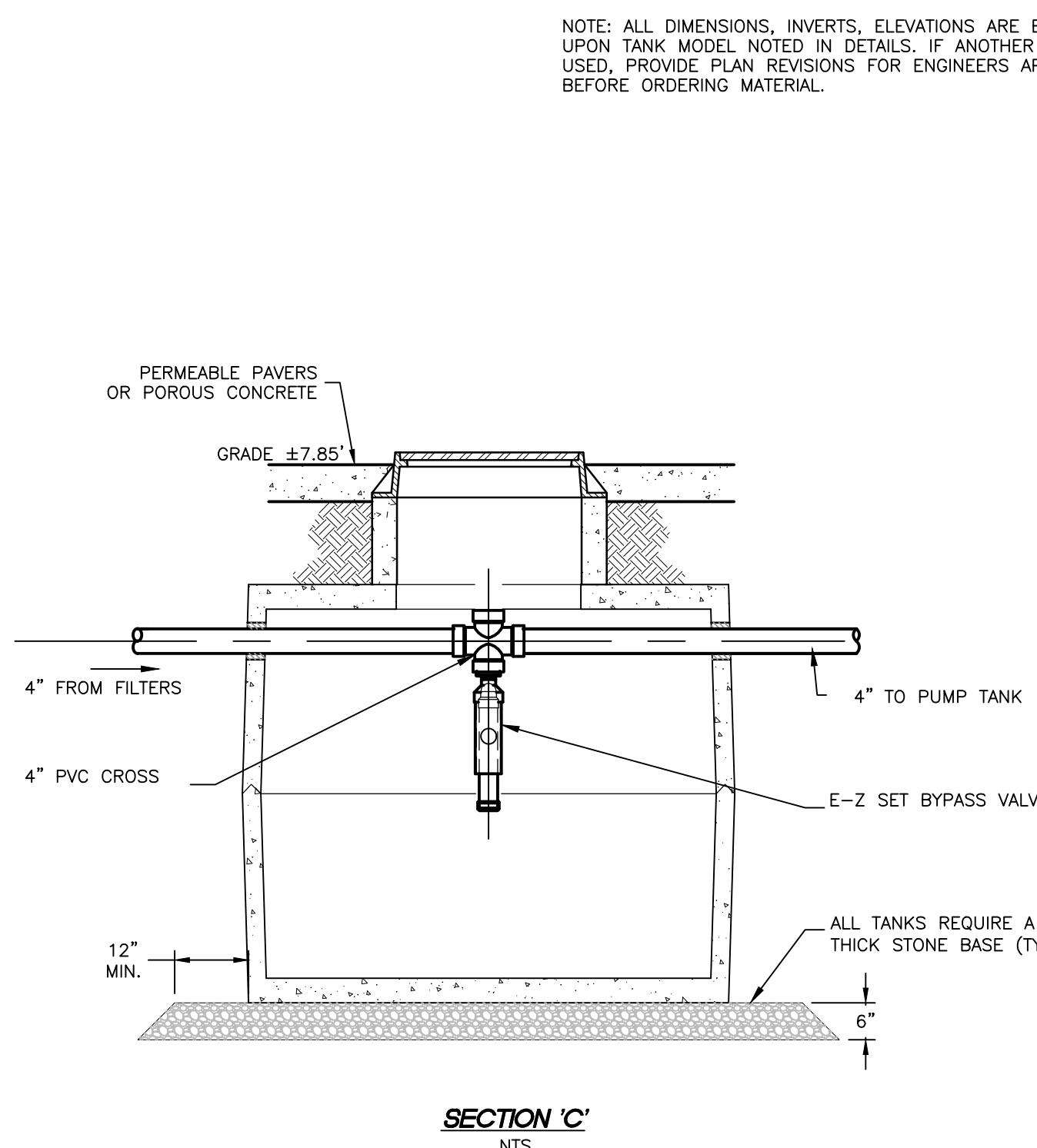
**NC DOT 876.02
RIPRAP OUTLET DETAIL**

NTS



FINAL DRAWING NOT FOR CONSTRUCTION

NOTE: ALL DIMENSIONS, INVERTS, ELEVATIONS ARE BASED UPON TANK MODEL NOTED IN DETAILS. IF ANOTHER TANK IS USED, PROVIDE PLAN REVISIONS FOR ENGINEERS APPROVAL BEFORE ORDERING MATERIAL.



WASTEWATER TREATMENT DETAILS

BK ASSOCIATES

4413 S CROATAN HIGHWAY

NORTH CAROLINA

DALE COUNTY

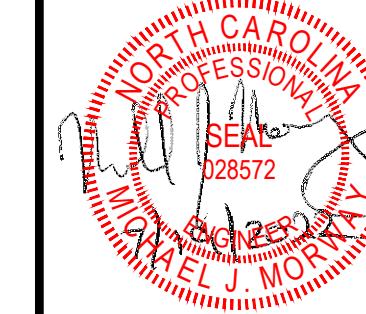
NORTH CAROLINA

DATE: 07/15/2022
SURVEYED: SEE NOTES
DESIGNED: M.M.
DRAWN: K.C.A.
CHECKED: M.M.
FILE: 08621A

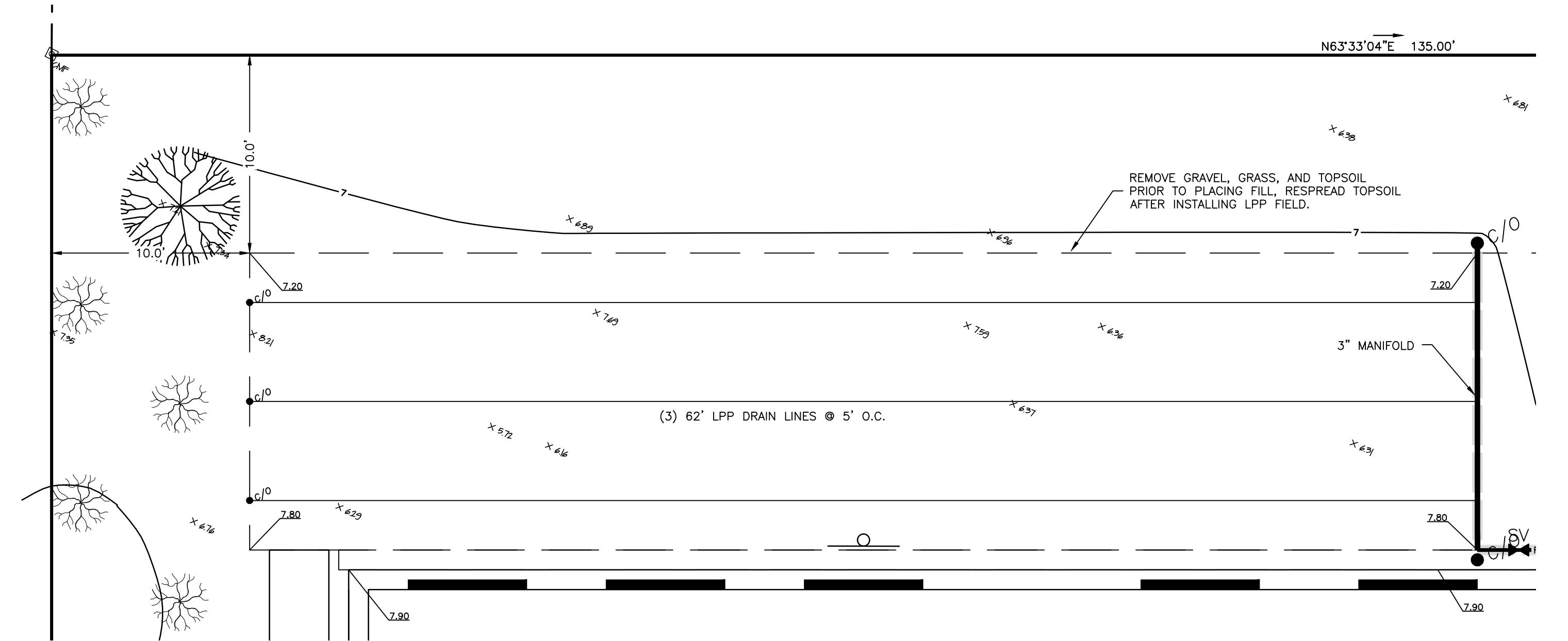
SCALE: AS SHOWN
C402
PROJ. NO. 08621A

Albemarle
& ASSOCIATES, LTD.
Engineering - Environmental - Land Planning

Albemarle & Associates, Ltd.
115 West St. Clair Street
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C-72048
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FINAL DRAWING NOT FOR CONSTRUCTION

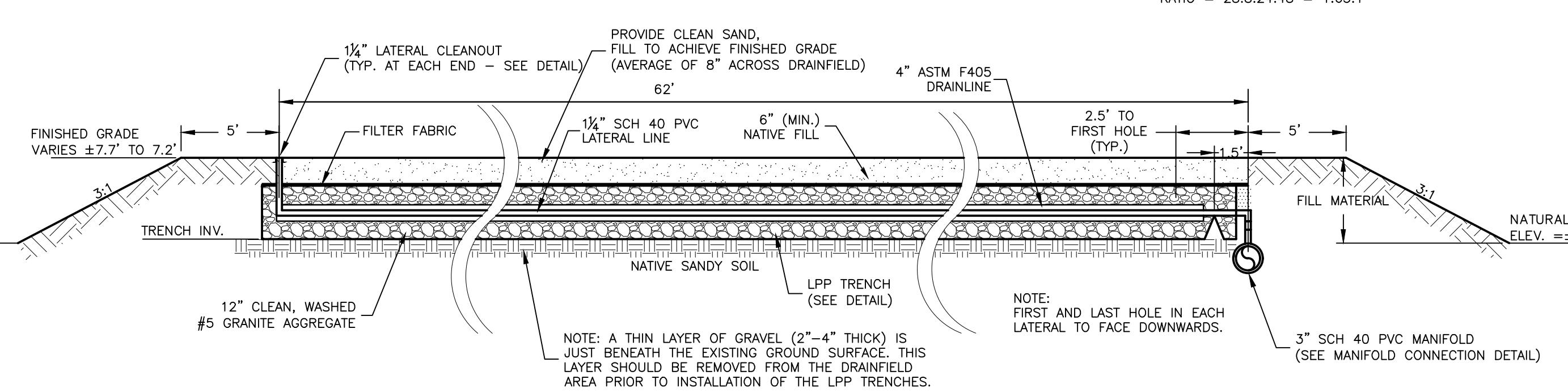


WASTEWATER TREATMENT NOTES:

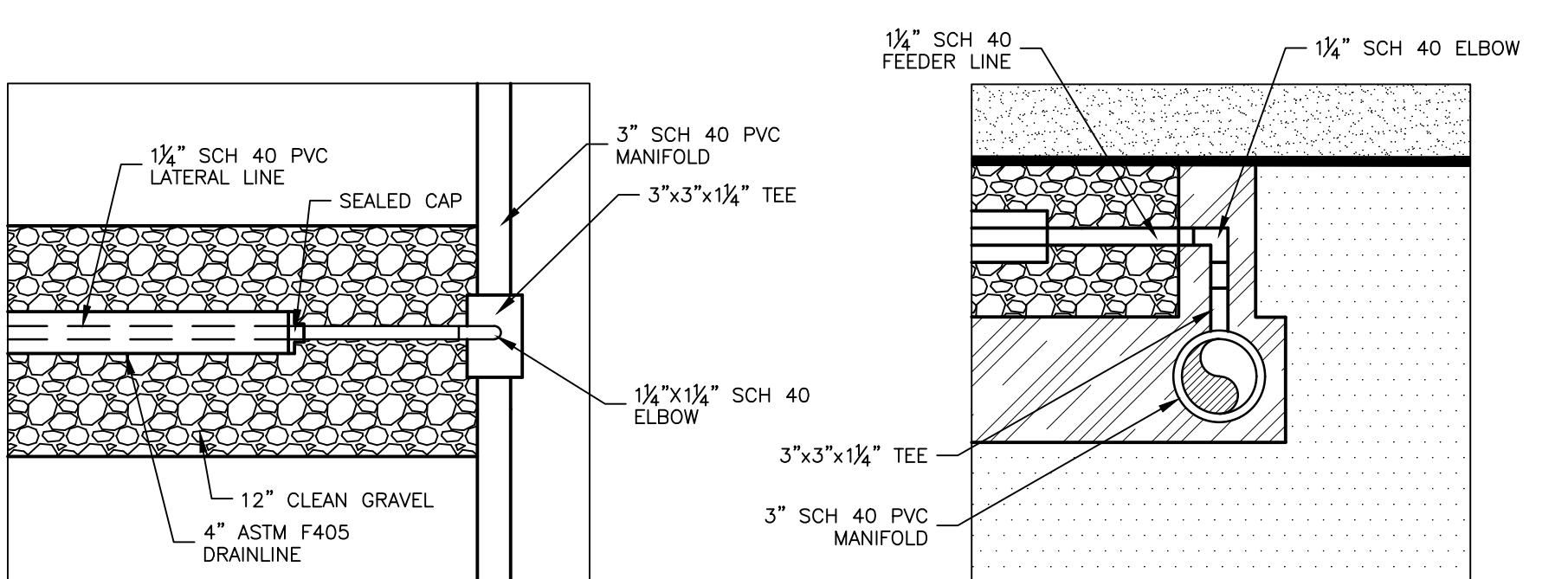
- OWNER: BK ASSOCIATES
441 RIVERGATE DR
RICHMOND, VA 23238
- THE PROPOSED PROJECT IS THE CONSTRUCTION 3-STORY (OVER PARKING) 9,921 SF MIX-USE FACILITY WITH FOUR (4) TWO BEDROOM APARTMENTS ABOVE. THE FIRST FLOOR WILL CONTAIN 2 SEPARATED OFFICES.
- THE DESIGN FLOW IS 1,110 GPD. BASED UPON THE FOLLOWING:
(4-2 BEDROOM APARTMENTS)(120 GPD/BEDROOM) = 960 GPD
(6 EMPLOYEES)(25 GPD/SEAT) = 150 GPD
TOTAL REQUIRED = 1,110 GPD (MIN.)
- THE PROPOSED L.T.A.R. OF 1.2 GPD/SF FOR THE PROJECT IS BASED UPON A DISPOSAL FIELD THAT IS 930 SF. THERE IS 186 LINEAR FEET OF DRAIN LINE.
- SYSTEM SHALL BE CONSTRUCTED IN ACCORDANCE WITH SEWAGE RULES SECTION 15 NCAC 18A-1900 CURRENT EDITION.
- THE ENGINEER SHALL INSPECT SYSTEM INSTALLATION.
- LPP FIELDS ARE TO OPERATE @ 3.0' PRESSURE HEAD AT ENDS OF LATERALS.
- ALL DISTURBED SOIL SHALL BE STABILIZED AS SOON AS POSSIBLE BY GRADING AND SEEDING.
- ALL MANHOLE RISERS SHALL BE WATERTIGHT, CONFORM TO NORTH CAROLINA CODE 15A NCAC 18A-1954, AND BROUGHT TO FINISHED GRADE BY CONTRACTOR, UNLESS OTHERWISE NOTED.
- ALL TANK INLETS AND OUTLETS SHALL BE FITTED WITH PRECAST BOOTS.
- ALL TANK DIMENSIONS INCLUDING INLET/OUTLET LOCATIONS AND INVERT ELEVATIONS SHALL BE FIELD VERIFIED PRIOR TO INSTALLATION.
- ALL DISPOSAL FIELD FILL MATERIAL SHALL COME FROM A RE-APPROVED SOURCE.
- NO MODIFICATIONS TO THIS PLAN SHALL BE MADE WITHOUT THE PRIOR APPROVAL OF THE ENGINEER AND DARE COUNTY HEALTH DEPARTMENT.
- AS-BUILT PLANS ARE REQUIRED TO BE SUBMITTED TO THE ENGINEER UPON COMPLETION OF THE WORK.
- REFER TO SPECIFICATION AND DESIGN CALCULATION MANUAL FOR ADDITIONAL INFORMATION.

LPP DRAINFIELD NOTES:

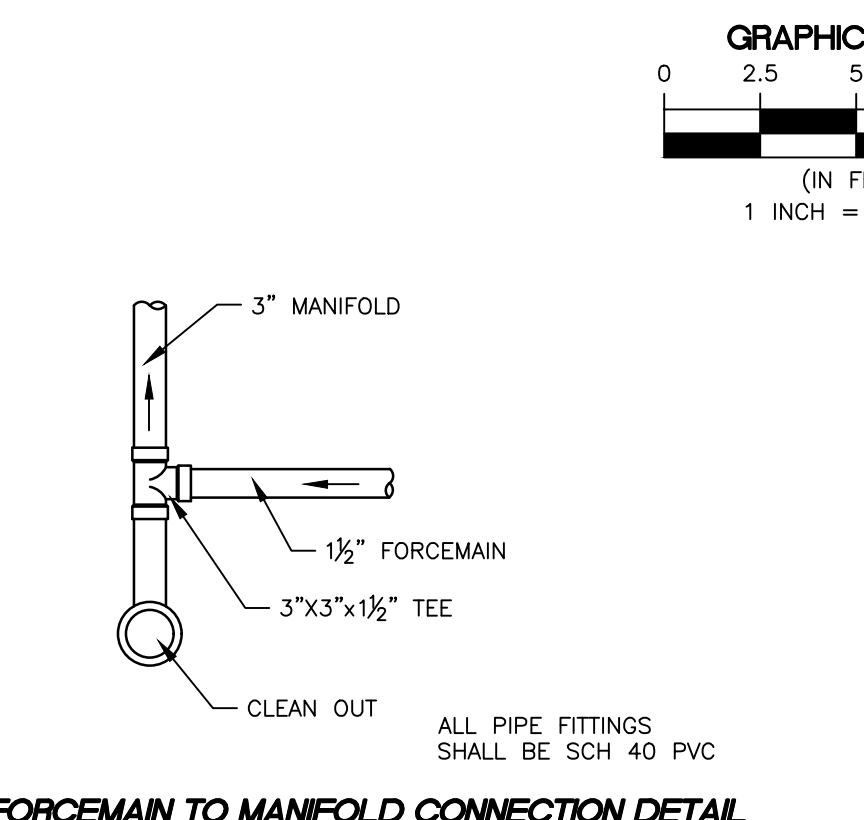
- THIS PLAN DETAILS THE INSTALLATION OF THE LPP DRAINFIELD. THE DRAINFIELD CONSISTS OF (3) 62' LPP DRAINLINES, $\frac{1}{4}$ " LINES AND A 3" MANIFOLD.
- SYSTEM SHALL BE CONSTRUCTED IN ACCORDANCE WITH SEWAGE RULES SECTION 15 NCAC 18A-1900 CURRENT EDITION.
- LPP FIELDS ARE TO OPERATE @ 3.0' PRESSURE HEAD AT ENDS OF LATERALS.
- ALL DISPOSAL FIELD FILL MATERIAL SHALL COME FROM A PRE-APPROVED SOURCE.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND SHALL NOTIFY NC-ONE-CALL PRIOR TO CONSTRUCTION (2 WORKING DAYS).
- HORIZONTAL AND VERTICAL ORIENTATION OF EXISTING UNDERGROUND UTILITIES ARE NOT KNOWN. THE CONTRACTOR SHALL FIELD VERIFY LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- THE CONTRACTOR SHALL SUBMIT A LIST OF MATERIALS FOR APPROVAL TO THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- ROUTINE INSPECTIONS DURING CONSTRUCTION WILL BE PROVIDED BY THE ENGINEER AND DARE COUNTY HEALTH DEPARTMENT. THESE INSPECTIONS DO NOT EXEMPT THE CONTRACTOR FROM HIS OBLIGATION AND RESPONSIBILITY FOR CONSTRUCTING THE SYSTEM IN STRICT ACCORDANCE WITH THE PROJECT PLANS AND SPECIFICATIONS.
- THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LAWS, ORDINANCES, RULES, REGULATIONS AND ORDERS OF ANY AGENCY HAVING JURISDICTION. HE SHALL ERECT AND MAINTAIN, AS REQUIRED BY THE CONDITIONS AND PROGRESS OF THE WORK, ALL NECESSARY SAFEGUARDS FOR SAFETY AND PROTECTION.
- NO MODIFICATIONS TO THIS PLAN SHALL BE MADE WITHOUT THE PRIOR APPROVAL OF THE ENGINEER AND LOCAL HEALTH DEPARTMENT. ANY FIELD CHANGES TO THE PLANS SHALL BE APPROVED BY THE ENGINEER AND LOCAL HEALTH DEPARTMENT AND SHALL BE ACCURATELY INDICATED ON THE AS-BUILT DRAWINGS.
- ALL COMPONENTS OF THE SYSTEM SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH THE CONTRACT DRAWINGS, SPECIFICATIONS, AND THESE PLANS. AFTER TESTING IS COMPLETED AND ALL COMPONENTS OF THE WASTEWATER SYSTEM ARE ACCEPTED BY THE OWNER, THE CONTRACTOR SHALL SUBMIT AS-BUILT DRAWINGS TO THE COUNTY HEALTH DEPARTMENT FOR APPROVAL. CHANGES NEEDED DURING INSPECTION OF THE AS-BUILT FACILITIES SHALL BE CORRECTED BY THE CONTRACTOR WITHIN 30 DAYS IF NECESSARY.
- THE CONTRACTOR SHALL REPAIR ALL DISTURBED AREAS TO A CONDITON THAT IS EQUAL TO THOSE EXISTING PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. OWNER RESERVES THE RIGHT TO STOP WORK IF AND WHEN, IN THE SOLE OPINION OF THE OWNER, CLEANUP, RESTORATION OR PUBLIC SAFETY ARE NOT BEING PERFORMED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. ALL DISTURBED SOIL SHALL BE GRADED TO DRAIN AND STABILIZED AS SOON AS POSSIBLE.



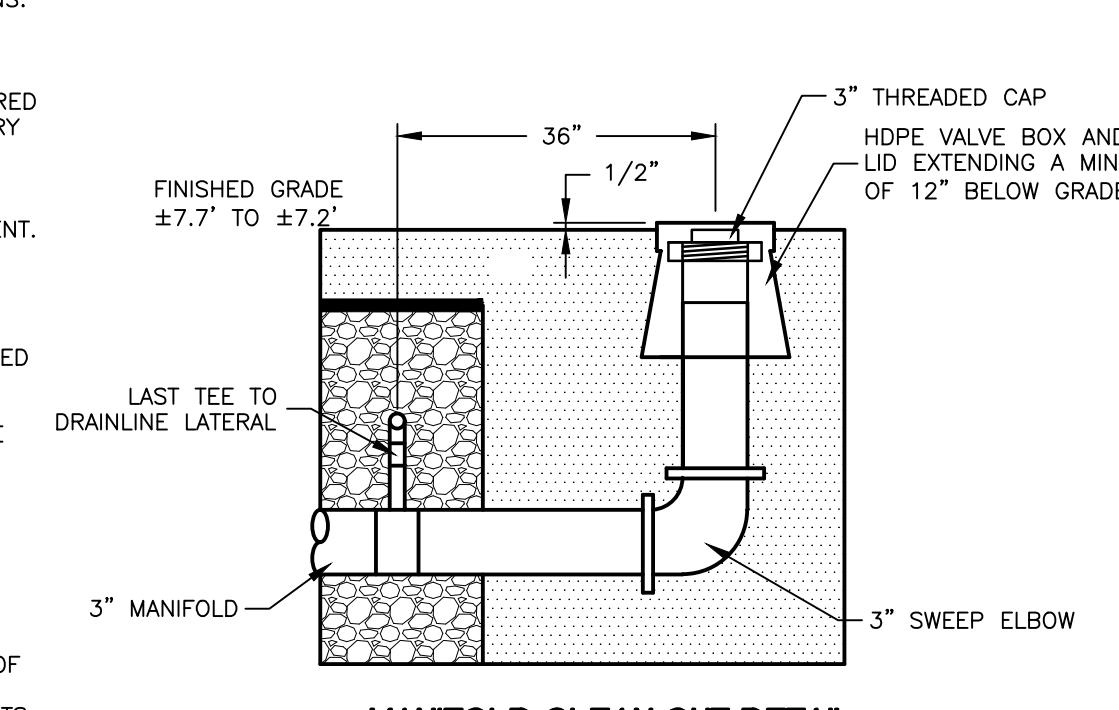
LPP DRAINFIELD CROSS SECTION
NTS



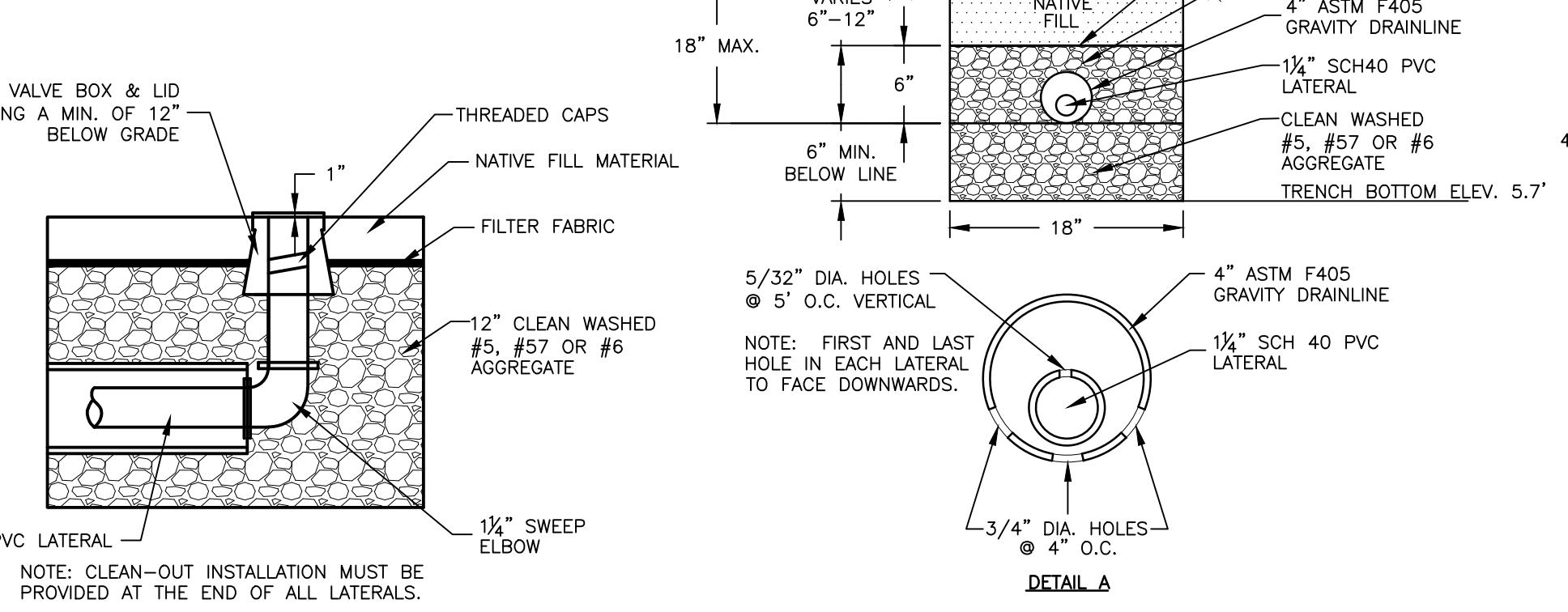
SINGLE FEED MANIFOLD SECTION
NTS



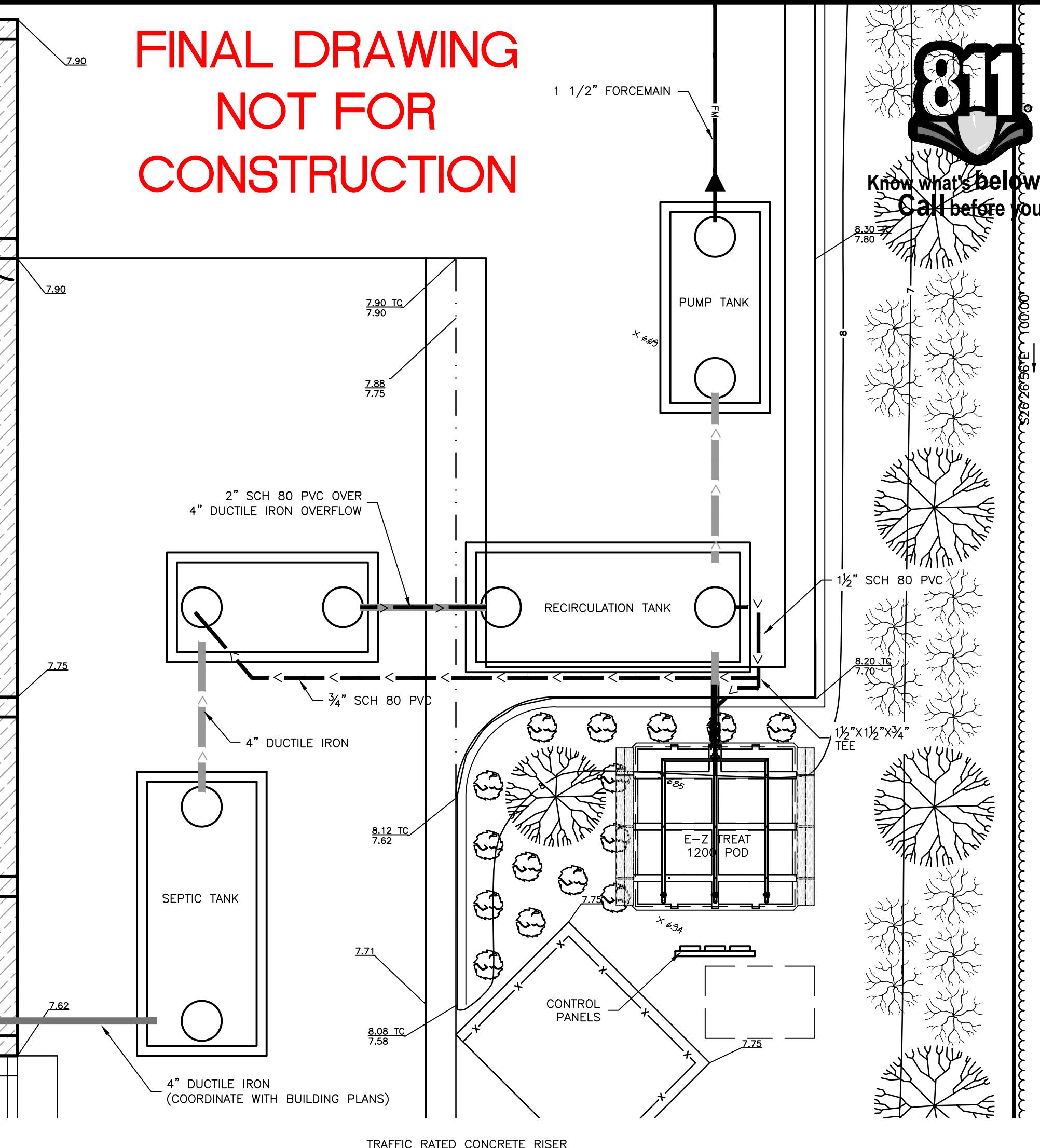
FORCEMAIN TO MANIFOLD CONNECTION DETAIL
NTS



MANIFOLD CLEAN OUT DETAIL
NTS

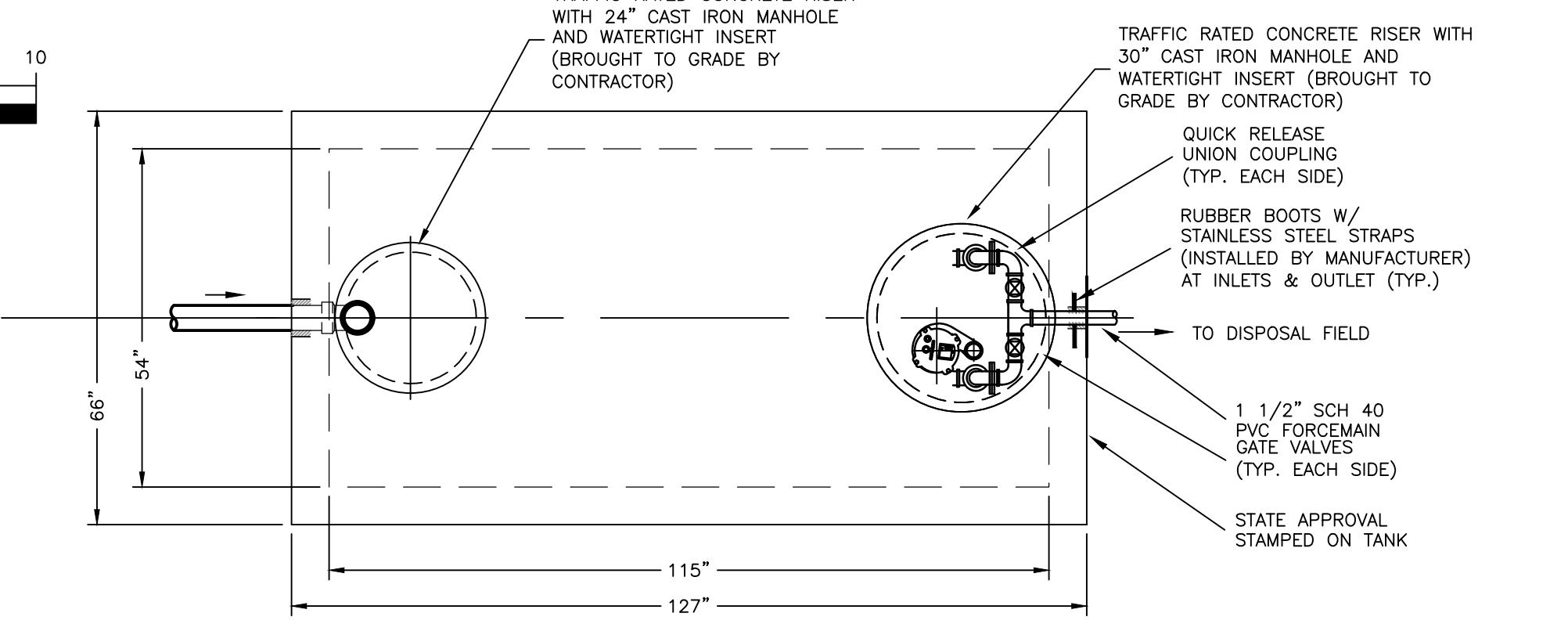


LPP LATERAL CLEAN OUT DETAIL
NTS



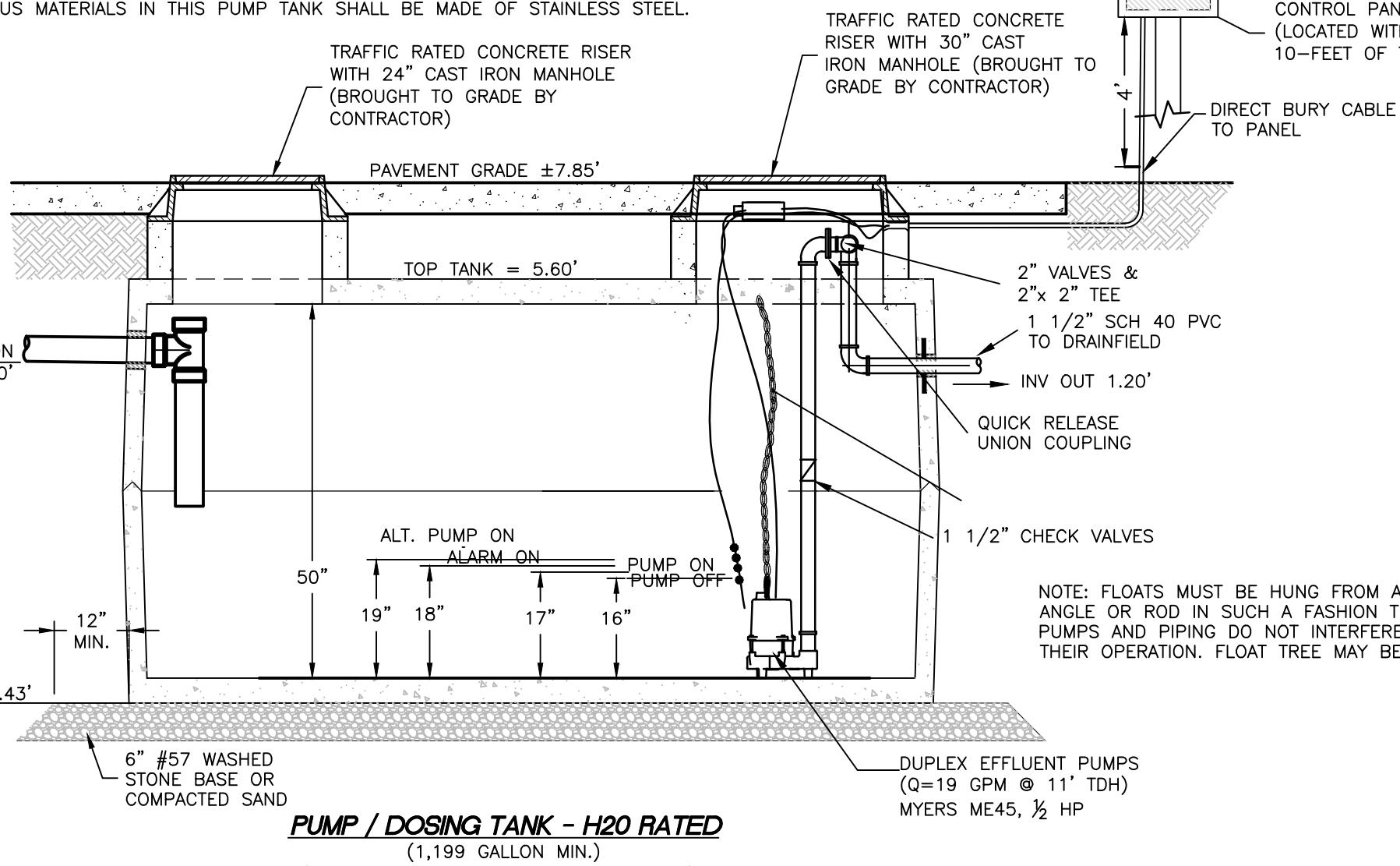
WASTEWATER TREATMENT DETAILS
4413 S CROATAN HIGHWAY

DATE: 07/15/2022 SURVEYED: SEE NOTES
DESIGNED: M.M. DRAWN: KCA
CHECKED: M.M. FILE: 08621A
SCALE: AS SHOWN
PROJ. NO. 08621A
C403

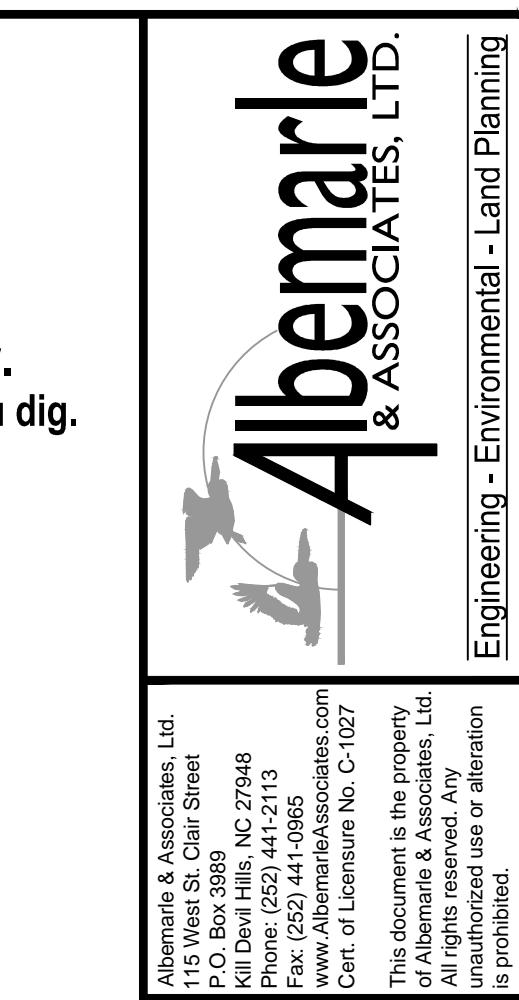


*CONTROL PANEL FOR DOSING PUMPS SHALL BE ALDERSON 8115X IN A NEW 4X ENCLOSURE WITH WIRES CONVEYED TO IT THROUGH WATERPROOF & GAS PROOF CONDUIT. CONTROL PANEL SHALL INCLUDE ELAPSED TIME METER AND EVENT COUNTER AND HIGH WATER ALARM WITH LATCHING LIGHT AND BELL. PANEL AND PUMP SHALL BE COORDINATED WITH INCOMING ELECTRICAL SOURCE. CONTROL PANEL SHALL BE LOCATED ABOVE 100 YEAR FLOOD ELEVATION. A SEPARATE POWER SUPPLY MUST BE PROVIDED FOR THE ALARM SYSTEM.

ALL FERROUS MATERIALS IN THIS PUMP TANK SHALL BE MADE OF STAINLESS STEEL.



PUMP / DOSING TANK - H2O RATED
(1,199 GALLON MIN.)
(GARNERS PT-332 1,250 GALLON SHOWN)



| REVISIONS | |
|----------------|---------------------------|
| NO. 07/15/2022 | DESCRIPTION: TORN SECTION |



DATE: 07/15/2022 SURVEYED: SEE NOTES
DESIGNED: M.M. DRAWN: KCA
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WAGS HEAD TOWNSHIP
NAGS HEAD
DARE COUNTY
NORTH CAROLINA