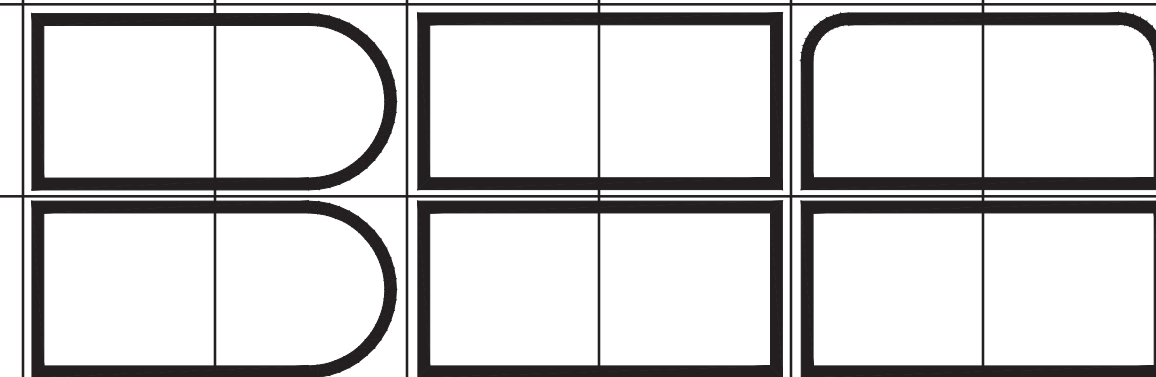


PROPOSED: MONROE FIRE PROTECTION DISTRICT FIRE STATION 26 SEPTIC SYSTEM

478 E CHAMBERS PIKE,
BLOOMINGTON, IN. 47404

UTILITY CONTACT INFORMATION

| | | |
|---|---|--|
| GAS VECTREN 205 S. MADISON ST. BLOOMINGTON, IN 47401 DOUG ANDERSON (812)330-4009 | WATER WASHINGTON TWP. WATER CORP. 1100 E. CHAMBERS PIKE BLOOMINGTON, IN 47408 PH: (812)332-3230 | ELECTRIC DUKE ENERGY 1619 W. DEFFENBAUGH ROAD KOKOMO, INDIANA 46902 JIM SHIELDS (317)375-2071 |
| TELEPHONE AT&T P.O. BOX 56 BLOOMINGTON, IN 47402 BRENT McCABE (812)334-4521 | CABLE TELEVISION COMCAST 2450 SOUTH HENDERSON STREET BLOOMINGTON, IN 47404 SCOTT TEMPLETON (812)355-7822 | UNDERGROUND UTILITY LOCATION INDIANA UNDERGROUND PLANT PROTECTION 1-(800)382-5544 |



BYNUM FANYO & ASSOCIATES, INC.
528 North Walnut Street
Bloomington, Indiana 47404 (812) 332-8030

SHEET INDEX

| SHEET NO. | SHEET NO. |
|-------------|-----------------------|
| C101 | SITE PLAN & DETAILS |
| C201 & C202 | SEPTIC SYSTEM DETAILS |

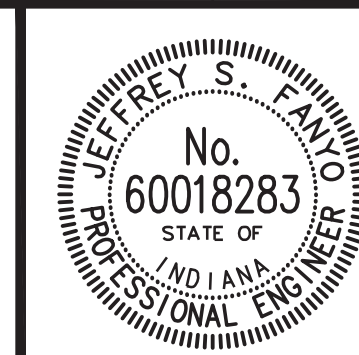


VICINITY/LOCATION MAP
SCALE: 1"=1,000'



architecture
civil engineering
planning

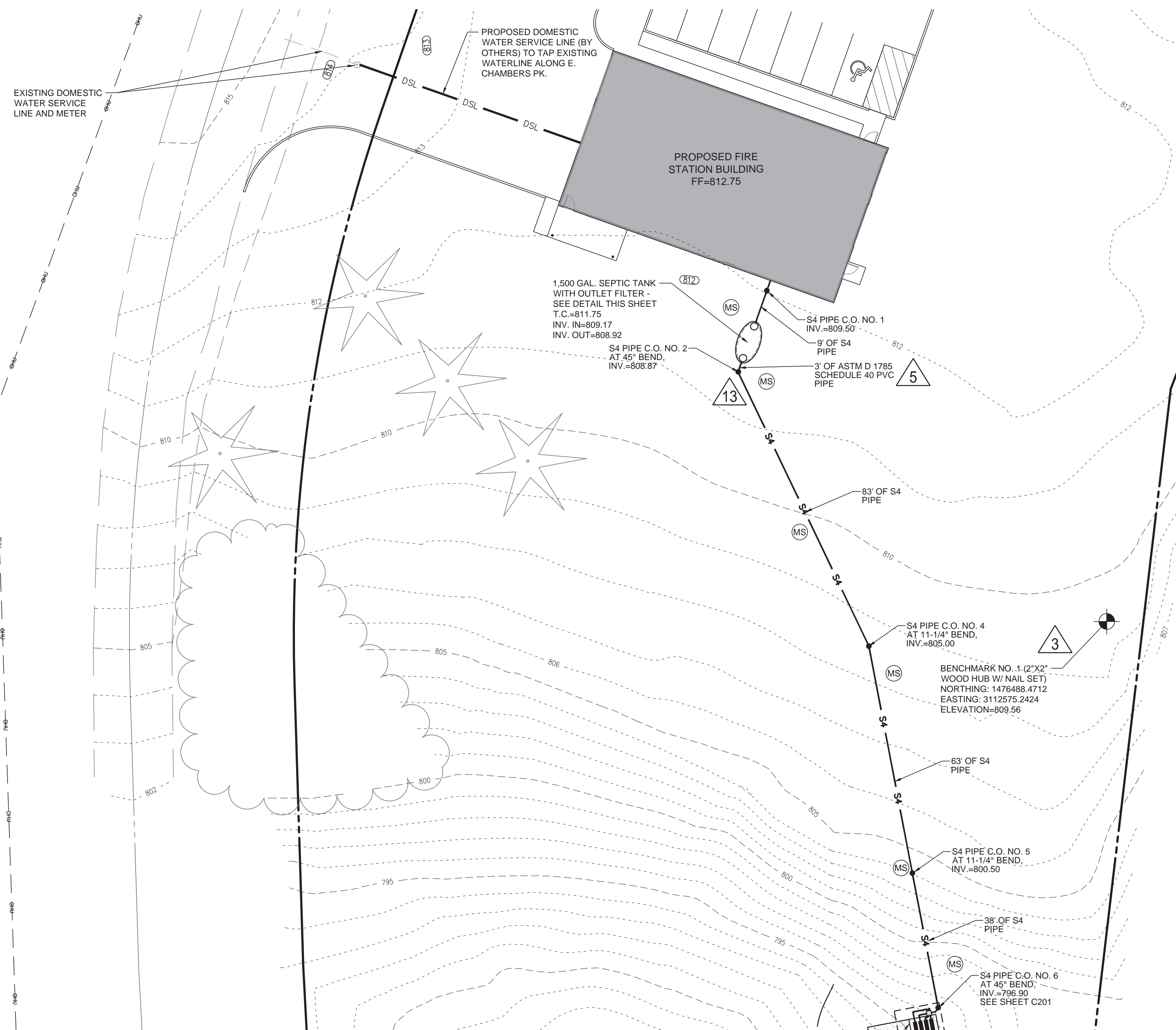
OWNER/DEVELOPER:
WASHINGTON TOWNSHIP OF
MONROE COUNTY
7974 N FOX HOLLOW RD.,
BLOOMINGTON, IN. 47408



Certified By:
Jeffrey S. Fanyo
JEFFREY S. FANYO, P.E.
IND. REG. NO. 60018283

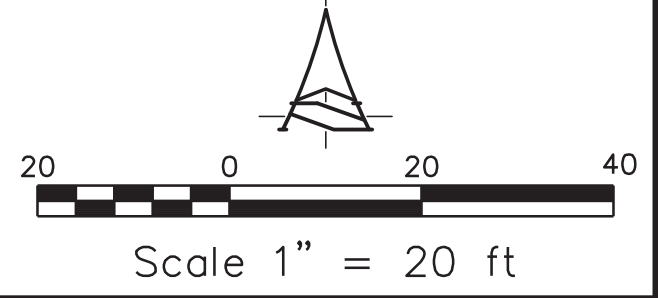
Revisions
07-24-24 - STATE COMMENTS
SEE LISTING OF REVISIONS ON SHEET C101.

MONROE FIRE PROTECTION
FIRE STATION 26 SEPTIC SYSTEM
PROJECT NO. 402353



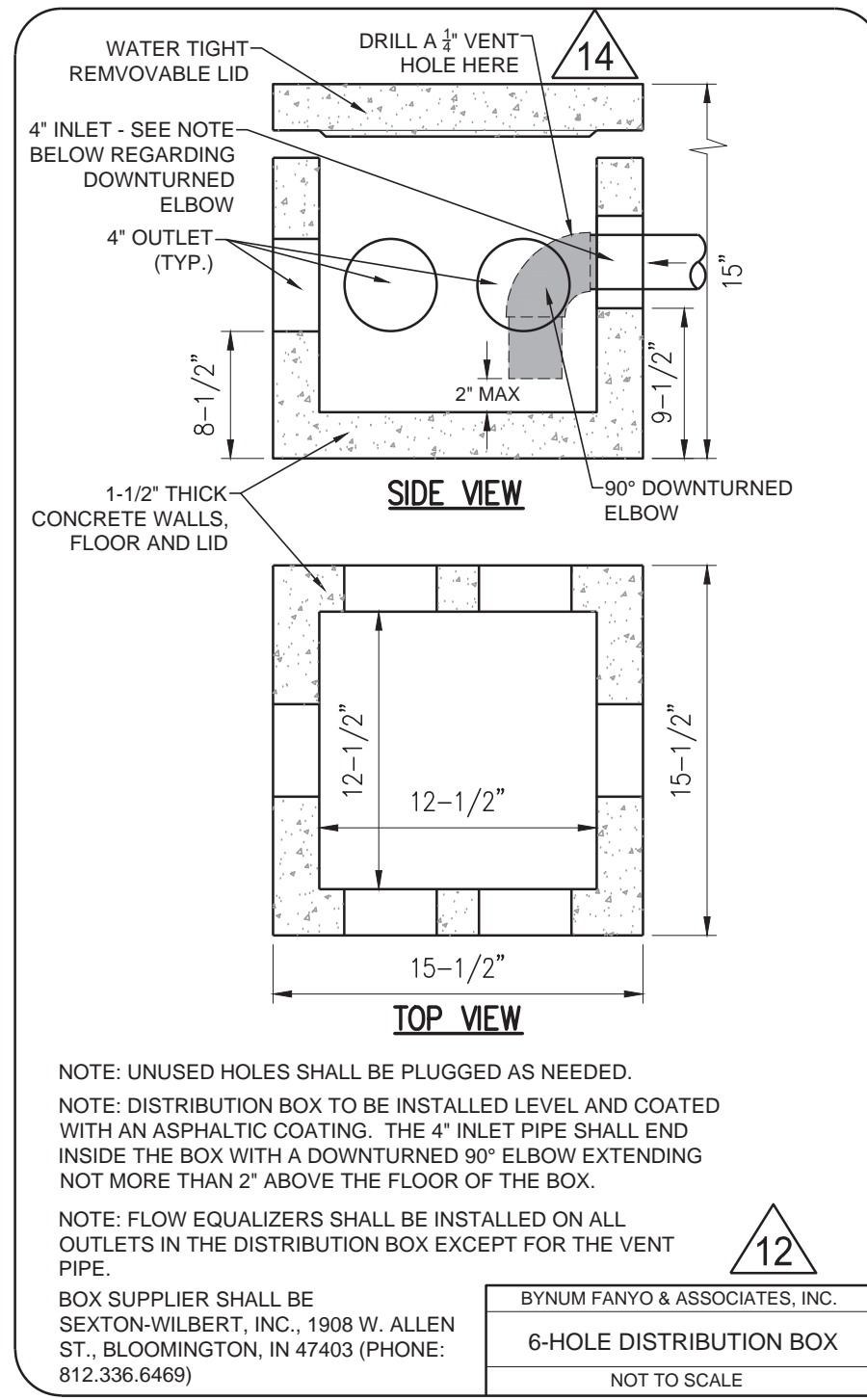
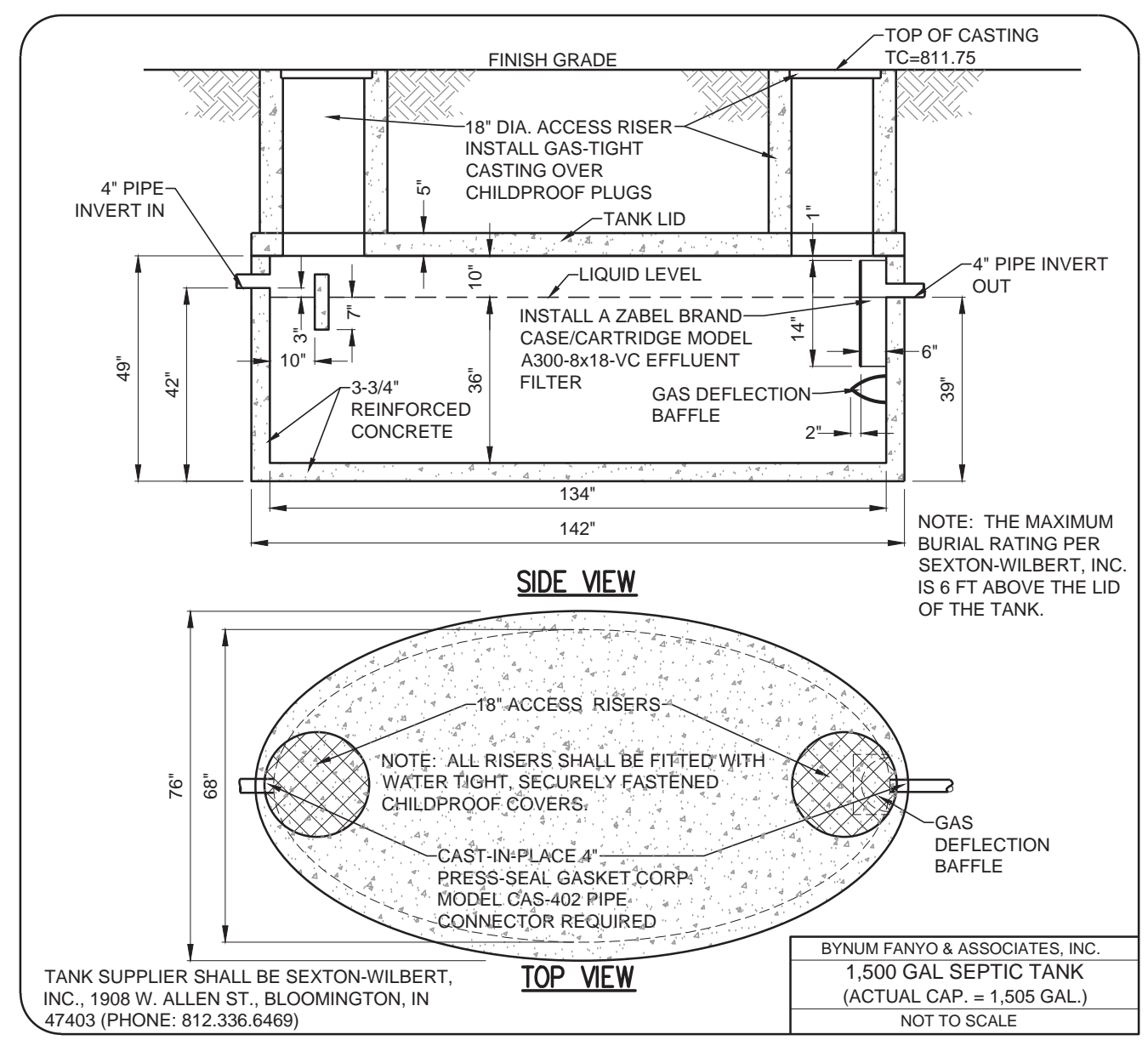
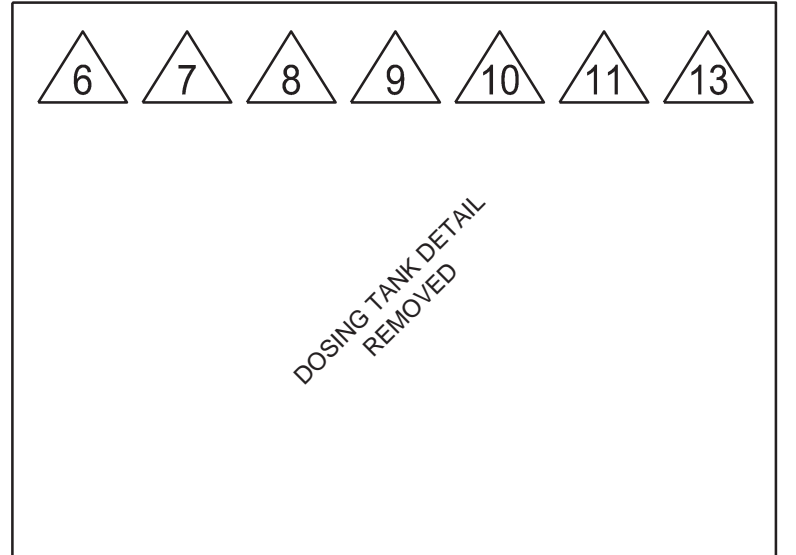
NOTES:
 A PRE-CONSTRUCTION CONFERENCE WILL BE REQUIRED WITH THE ISDOH PRIOR TO BEGINNING ANY CONSTRUCTION.
 AN OPERATING PERMIT WILL BE REQUIRED FOR THE LIFE OF THE SYSTEM. THE OWNER MUST NOTIFY ISDOH UPON COMPLETION OF THE PROJECT SO THAT ONE MAY BE ISSUED. A SIGNED OPERATION AND MAINTENANCE AGREEMENT IS REQUIRED PRIOR TO PROJECT APPROVAL AND MUST BE IN EFFECT FOR THE LIFE OF THE SYSTEM.
 SIGNS OF MINOR SHALLOW (4"-8") COMPACTION WAS FOUND AT SAMPLE SITE 'E2' DURING THE ONSITE SOIL EVALUATION. THE PLANS CALL FOR THE PROPOSED BED AREA TO BE CUT 14" TO 16-12" BELOW NATURAL GRADE WHICH SHOULD REMOVE THE COMPACTED SOILS. HOWEVER, SOIL REMEDIATION WILL STILL BE REQUIRED IN THE SOIL ABSORPTION FIELD AREA. SEE REMEDIATION NOTES ON C201.
 PER THE ONLINE INDIANA WATER-WELL LOCATION MAP ACCESSED THROUGH THE INDIANA DEPT. OF NATURAL RESOURCES WATER WELLS DATABASE THERE ARE NO WATER WELLS LOCATED WITHIN 300 FT OF ANY PART OF THE PROPOSED OSS SYSTEM COMPONENTS. THE CLOSEST WATER WELL IS LOCATED OFFSITE APPROXIMATELY 1,370 FT SOUTH OF THE PROPOSED SAF.
 THERE ARE NO REGULATED 100 YEAR FLOODPLAINS, FLOODWAYS OR FLOOD FRINGES ON OR IMMEDIATELY ADJACENT TO THE PROPERTY. SEE INDIANA DEPT. OF NATURAL RESOURCES FARA REPORT DATED 4-29-24. SEE LEFT-HAND SIDE OF SHEET C202 FOR LETTER AND MAP FROM THE IDNR.
 PER INDIANA GEOLOGICAL & WATER SURVEY RECORDS THERE ARE NO KNOWN GEOTHERMAL WELLS LOCATED ON THE PROPERTY OR WITHIN 300 FT OF THE OSS SYSTEM. PER THE OWNER THERE ARE NO KNOWN WATER OR GEOTHERMAL WELLS LOCATED ON THE PROPERTY.
 PER THE LAND OWNER THERE WILL NOT BE A WATER SOFTENER INSTALLED AS PART OF THIS PROJECT.
 WASTEWATER FROM WASHING FIRE TRUCKS IS NOT PERMITTED AND THEREFORE CANNOT DISCHARGE TO THE GROUND SURFACE OR TO THE ON-SITE SEWAGE SYSTEM.

| Project Pipe Table | | | | | | |
|---|-------------------|---------------|-----------|-----|----------|------------------|
| Pipe Location | Total Length (ft) | Diameter (in) | Slope (%) | SDR | Schedule | ASTM Designation |
| Between Cleanout No. 1 and Septic Tank | 9 | 4 | 3.67 | 35 | - | D 3034-08 |
| Between Septic Tank and Cleanout No. 2 | 3 | 4 | 1.67 | - | 40 | D 1785 |
| Between Cleanout No. 2 and Cleanout No. 4 | 83 | 4 | 1.97 | 35 | - | D 3034-08 |
| Between Cleanout No. 4 and Cleanout No. 5 | 63 | 4 | 7.14 | 35 | - | D 3034-08 |
| Between Cleanout No. 5 and Cleanout No. 6 | 38 | 4 | 9.47 | 35 | - | D 3034-08 |
| Between Cleanout No. 6 and Distribution Box | 2 | 4 | 1.50 | 35 | - | D 3034-08 |
| Presby AES Pipe | 280 | 12 | 0.00 | - | - | - |

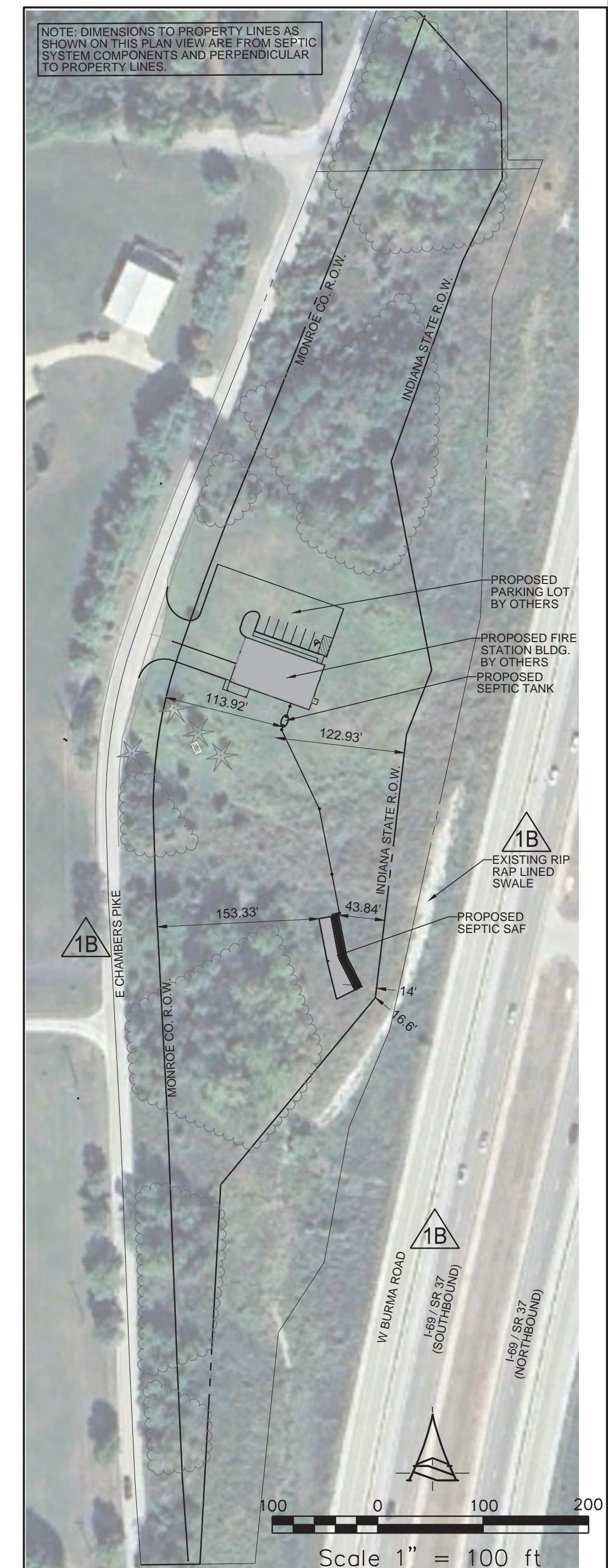


THE FOLLOWING REVISIONS PER THE INDIANA STATE DEPT. OF HEALTH PLAN REVIEW DATED 7.24.24. THE NUMBERS BELOW CORRESPOND WITH DELTA REVISION TRIANGLES ON THE LISTED SHEETS.

- SHEET C101 - SITE PLAN AND DETAILS**
- Added this listing to the plan sheet.
 - Roadways east and west of the absorption field are now labeled in the overall map at the right edge of the sheet.
 - Added Benchmark No. 1 along the east property line.
 - Modified regulated floodplain note to refer to email and map from the IDNR on C202.
 - Changed pipe type between the septic tank and Cleanout No. 2 from ASTM D 3034 to 1785. See the site plan view on the left side of the sheet as well as the 'Project Pipe Table' near the bottom of the sheet.
- 6-11 & 13. The dosing tank, its detail and all other references to it have been removed. Cleanout No. 3 was removed. Adjacent pipe lengths changed accordingly between Cleanout Nos. 2 and 4 both in site plan view and the 'Project Pipe Table'.
- The distribution box callouts, detail and all references have been changed to a 6-hole box.
 - The 'Project Pipe Table' now calls for 280 ft of Presby pipe.
 - Added note after discussion with the Fire Chief stating that wastewater from washing fire trucks is not permitted and therefore cannot discharge to the ground surface or to the on-site sewage system.
- SHEET C201 - SEPTIC SYSTEM DETAILS**
- Included 2 additional soil samples near the south end of the absorption field where shown in the 'Grading' view.
 - The distribution box callouts, detail and all references have been changed to a 6-hole box.
 - The distribution box detail now calls for an air vent hole at the top of the elbow.
 - The 'Schematic' plan and 'Section A-A' now call for 280 ft of Presby pipe. The resulting bed width changed from 6 ft wide to 7.5 ft and lower bed existing grade/bed elevations changed accordingly.
- SHEET C202 - SEPTIC SYSTEM DETAILS CONTINUED**
- Added email and map from the IDNR indicating that there are no jurisdictional streams near the project address.



| GENERAL LEGEND | |
|----------------|--|
| --- 610 --- | EXISTING GRADE CONTOUR |
| - - - - - | EXISTING FENCE |
| △ B | SOIL SAMPLE LOCATION AND LETTER DESIGNATION (SAMPLE DATE: 4/18/24) |
| --- 610 --- | PROPOSED GRADE CONTOUR |
| XXXXX | PROPOSED SPOT GRADE ELEVATION |
| FL > | PROPOSED FLOWLINE |
| ELEC | ELECTRIC SUPPLY ROUTE FROM BUILDING TO REMOTE ALARM PANEL |
| S4 | PROPOSED 4" SDR 35 PVC (ASTM-D 3034-08) GRAVITY SEWER PIPE |
| SF | PROPOSED SILT FENCE |
| W | PROPOSED PRIVATE PRESSURE WATERLINE BY OTHERS |
| C.O. | PROPOSED CLEAN-OUT |
| INV. | PROPOSED PIPE INVERT |
| MS | MULCH SEEDING |



NOTE TO CONTRACTOR
 CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS & DEPTHS AND NOTIFY ENGINEER OF ANY INACCURACIES IN LOCATION OR ELEVATION OR ANY CONFLICTS PRIOR TO & AFTER ANY EXCAVATION. NO PAYMENT SHALL BE MADE TO CONTRACTOR FOR UTILITY DESTRUCTION OR UNDERGROUND CHANGES REQUIRED DUE TO CONFLICTING ELEVATIONS.

revisions:
 REVISION NOS. 1A-16 DATED 7.24.24. SEE THIS SHEET FOR LISTING.

ARCHITECTURE
 CIVIL ENGINEERING
 PLANNING

BYNUM FANYO & ASSOCIATES, INC.
 528 north walnut street
 (812) 332-8030

60018283
 STATE OF INDIANA
 PROFESSIONAL ENGINEER

certified by *JBT*

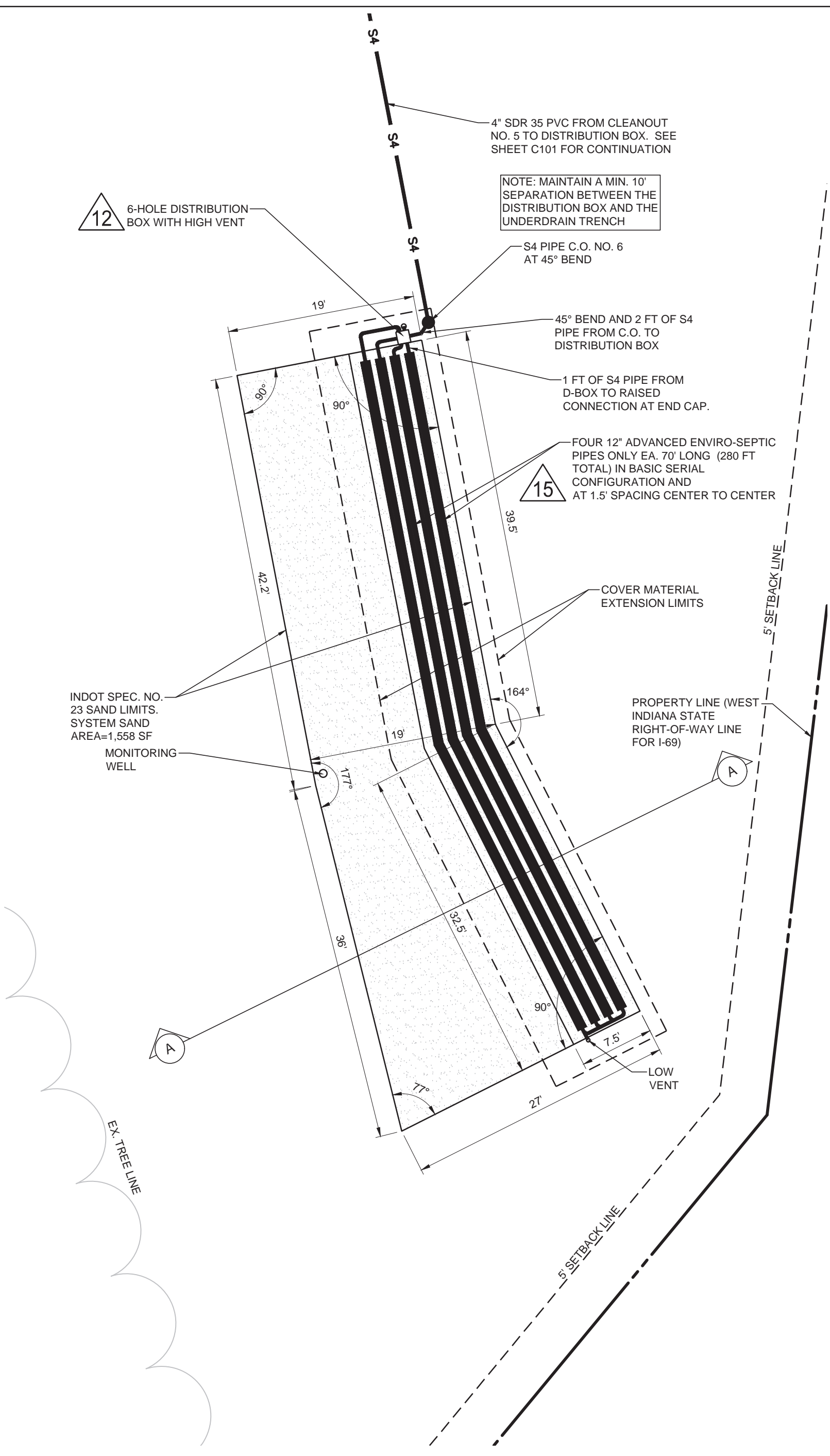
PROPOSED
 MONROE FIRE PROTECTION DISTRICT
 FIRE STATION 26 SEPTIC SYSTEM
 478 E CHAMBERS PIKE IDOH PROJ. NO. 5323337
 BLOOMINGTON, INDIANA 47404

title: SITE PLAN & DETAILS

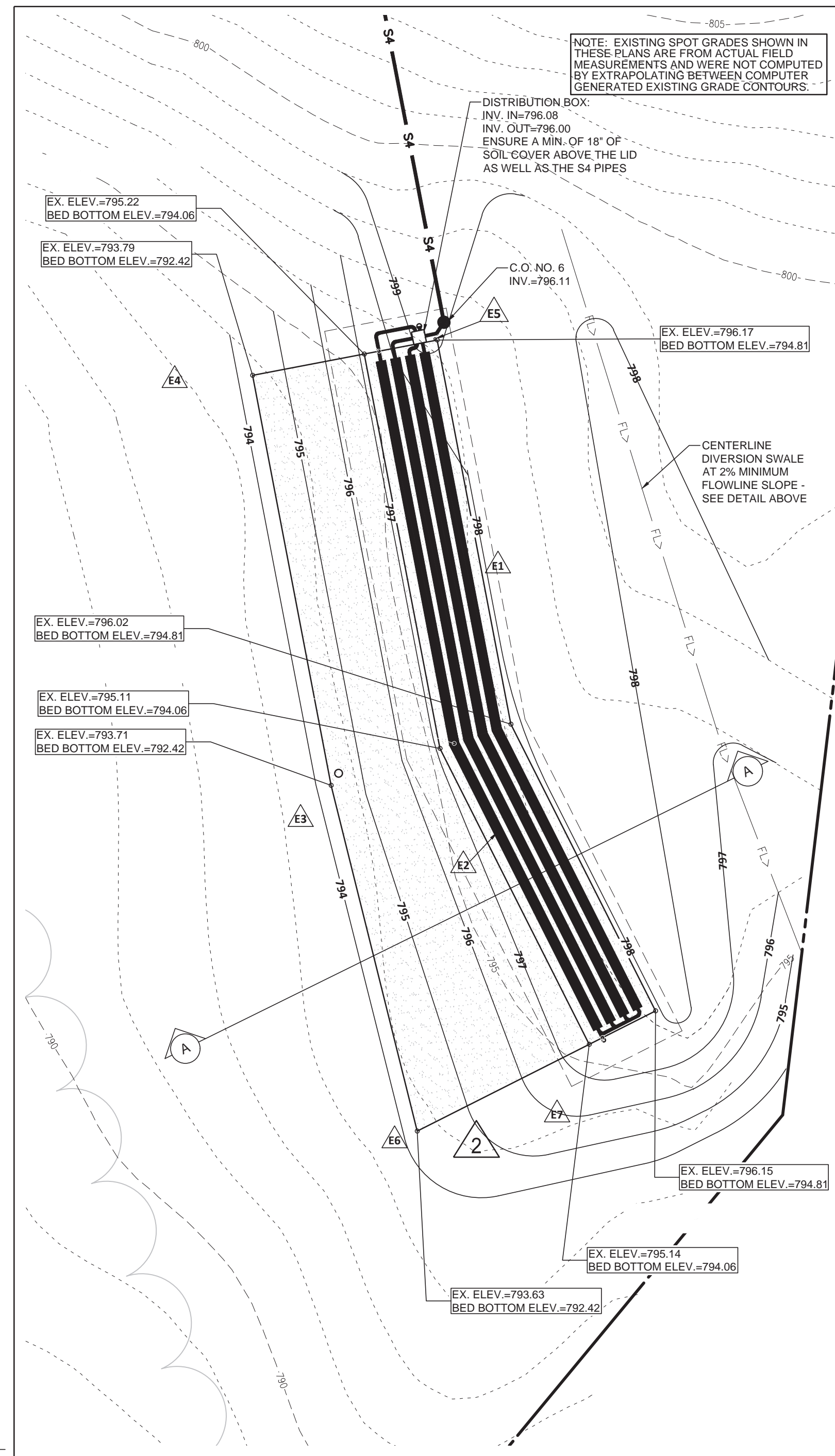
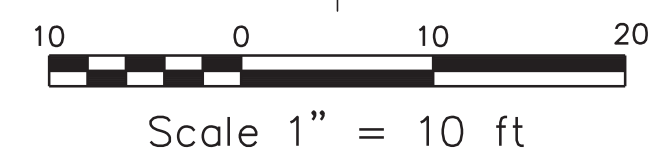
designed by: JBT
 drawn by: JBT
 checked by: JSF
 sheet no: C101
 project no.: 402353

GENERAL LEGEND

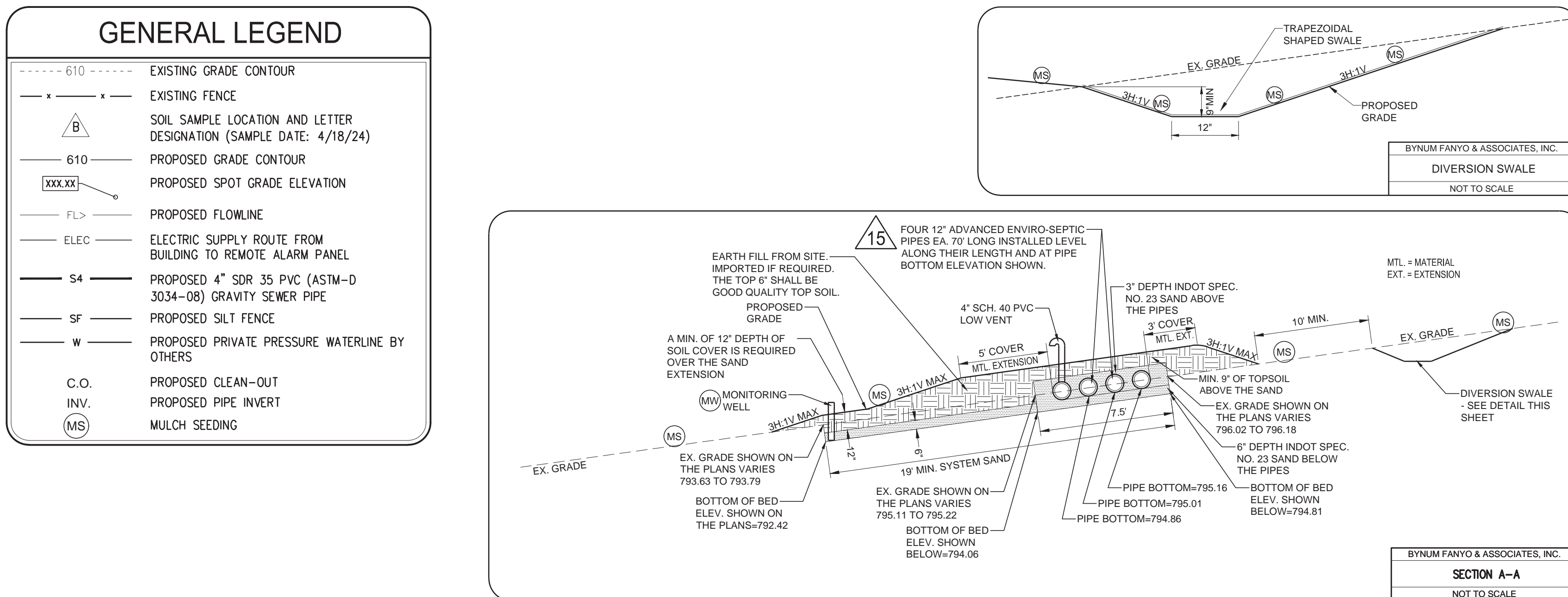
| | |
|--------|--|
| --- | EXISTING GRADE CONTOUR |
| - - - | EXISTING FENCE |
| △ | SOIL SAMPLE LOCATION AND LETTER DESIGNATION (SAMPLE DATE: 4/18/24) |
| --- | PROPOSED GRADE CONTOUR |
| XXXXXX | PROPOSED SPOT GRADE ELEVATION |
| FL > | PROPOSED FLOWLINE |
| ELEC | ELECTRIC SUPPLY ROUTE FROM BUILDING TO REMOTE ALARM PANEL |
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SCHMATIC

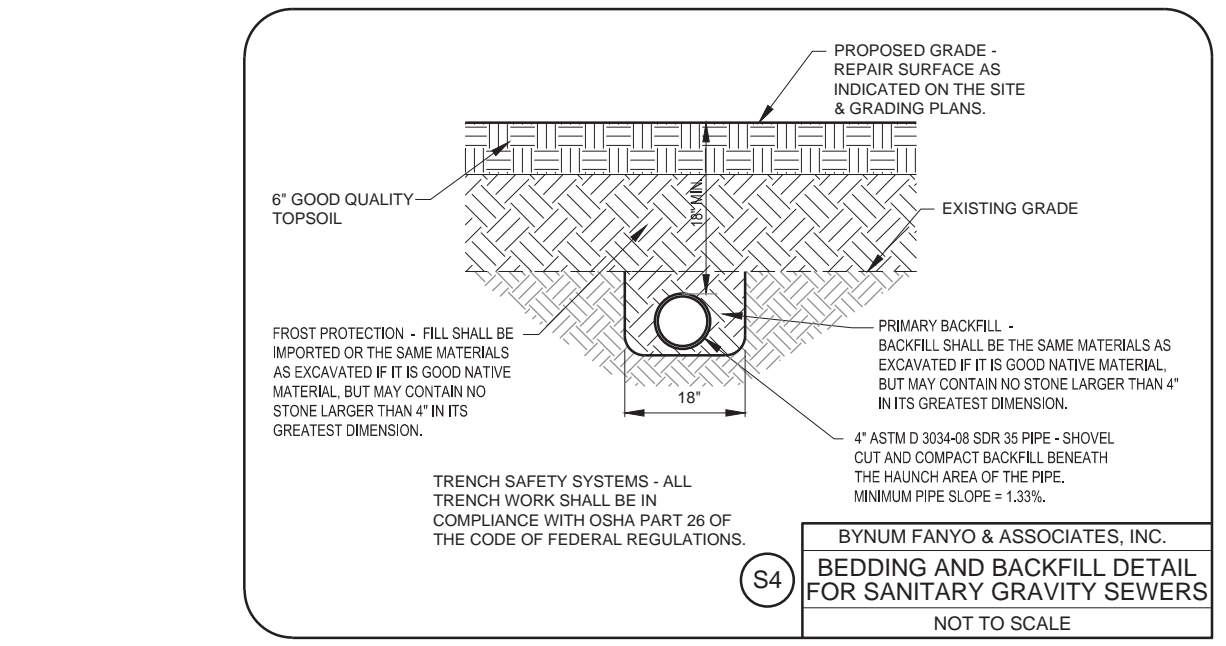


GRADING



ABBREVIATION TABLE

| | |
|------------|--|
| APPROX. | APPROXIMATE |
| BLDG. | BUILDING |
| C.O. | CLEANOUT |
| DISCH. | DISCHARGE |
| E | EAST |
| EP | EDGE OF PAVEMENT |
| EX | EXISTING |
| EXIST. | EXISTING |
| FF or F.F. | FINISH OR FINISHED FLOOR |
| FG | FINISH GRADE |
| FH | FINISH GRADE HIGH SIDE OF RETAINING WALL |
| FGL | FINISH GRADE LOW SIDE OF RETAINING WALL |
| FP | FINISH PAVEMENT |
| INV. | INVERT |
| N | NORTH |
| NE | NORTHEAST |
| NO. | NUMBER |
| NW | NORTHWEST |
| S | SOUTH |
| S.B.L. | SECTBACK LINE |
| SCHED. | SCHEDULE |
| SHT. | SHEET |
| STR. | STRUCTURE |
| SW | SOUTHWEST |
| T.B.R. | TO BE REMOVED |
| TC | TOP OF CASTING AT FLOWLINE |
| TR.U. | TO REMAIN UNDISTURBED |
| TW | TOP OF WALL |
| Typ. | TYPICAL |

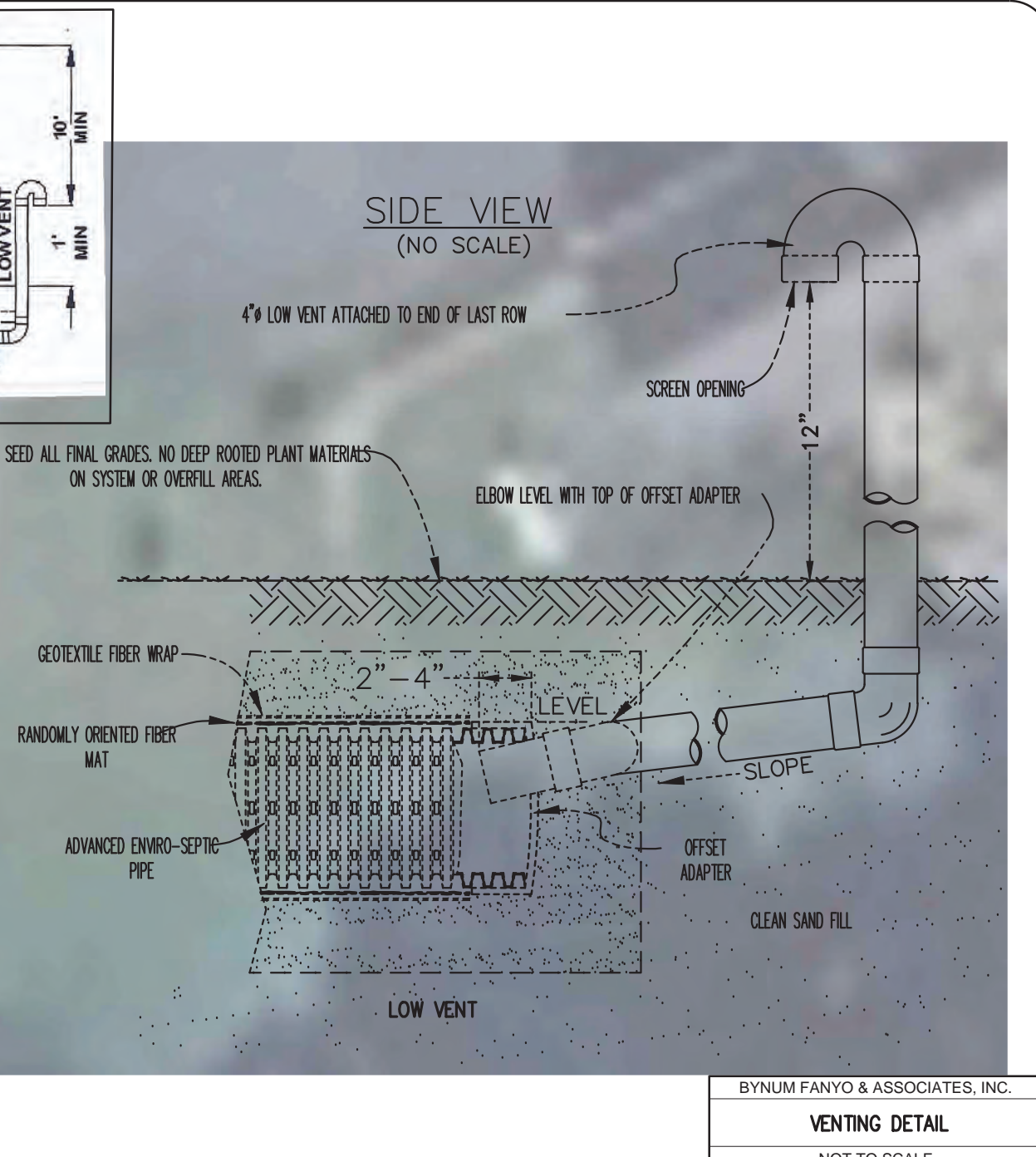


COMPACTION REMEDIATION NOTES

- Identify the Boundaries of Soil Compaction / Evaluate Site**
 - All soils descriptions shall be provided by an IRSS soil scientist.
 - Transects shall be used to characterize the extent of compaction. Descriptions along a transect shall come from borings or pits on a 10 - 25 foot spacing. A minimum of 2 pits shall be used. Pits may be hand dug with a minimum width of 18 inches and a depth at least 6 inches deeper than the depth of compaction. All pit and boring descriptions shall be done to a depth 6 inches deeper than the depth of compaction.
- Remediation by Subsoiling:**
 - At the time of subsoiling and/or chisel plowing the soil shall be dry enough that its plastic limit will not be exceeded.
 - When the soil compaction extends no more than 10 inches below existing grade, a chisel plow shall be used to break up the compaction. The chisel plow shall work along the contours of the site at a depth 2 inches deeper than the greatest depth of compaction identified.
 - When the soil compaction extends more than 10 inches below existing grade, a subsoiler and a chisel plow shall be used to break up the compaction.
 - The subsoiler will be used first and shall work at a depth 2 inches deeper than the greatest depth of compaction. Its first pass shall be perpendicular to the slope and its second pass along the contours of the site.
 - The site shall be plowed using a chisel plow parallel to the contour of the site to a depth of seven (7) to fourteen (14) inches. If the site is suitable for a subsurface trench system (based on 410 IAC 6-8-2 and the provisions of this document), and if the subsoiler has sufficiently broken up the compaction, plowing with a chisel plow is not necessary.
 - The area subsoiled and plowed using a chisel plow must include the dispersal area if the same limiting conditions exist in the dispersal area.
- Evaluate After Remediation**
 - On sites with more than 10 inches of compaction, a soil scientist shall describe the condition of the previously described compacted layer after subsoiling and before chisel plowing to ensure that compaction has been amended.
 - A minimum of 3 pits shall be used. Pits may be hand dug with a minimum size of 18 inches horizontally. All pits and descriptions shall be done to a depth 6 inches deeper than the greatest depth of compaction previously identified. All pits and descriptions shall be done after the 2 subsoiling passes and before the chisel plowing. Pits shall be placed so the soil between grooves left by subsoiler shanks can be evaluated.
 - After the soil has been evaluated by the soil scientist, and if the compacted soil has been amended, the site shall be chisel plowed parallel to the contours of the site at a depth of approximately 7-8 inches.
 - The soil scientist shall describe the color, texture and size of clods in inches or mm. The description shall extend from the surface to a depth 6 inches deeper than the greatest depth of previously identified compaction.
 - Clod size must average less than 4 inches or 100 mm for the compacted soil to be considered amended.

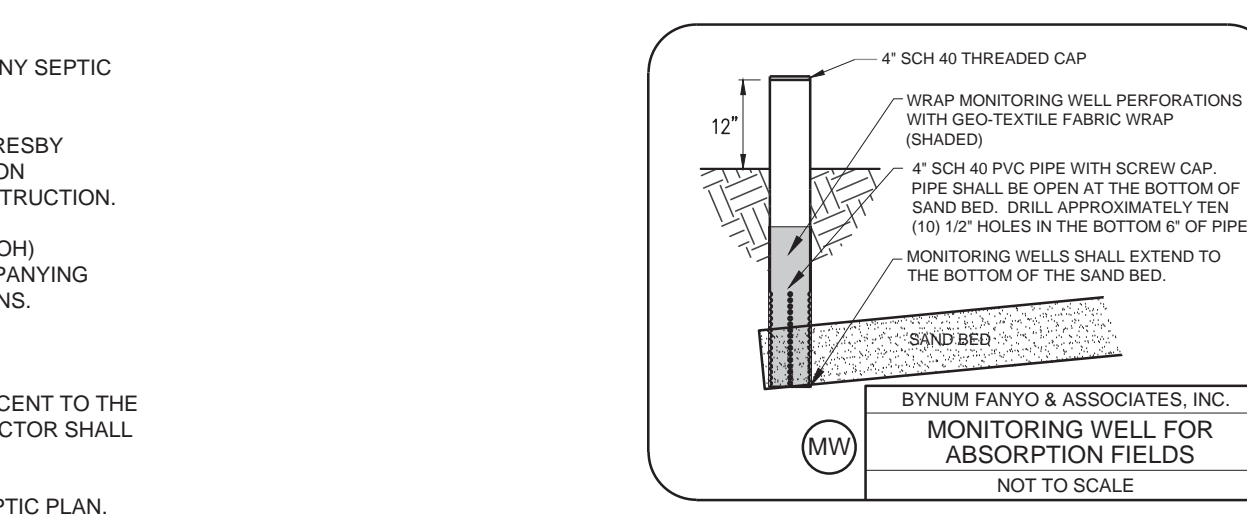
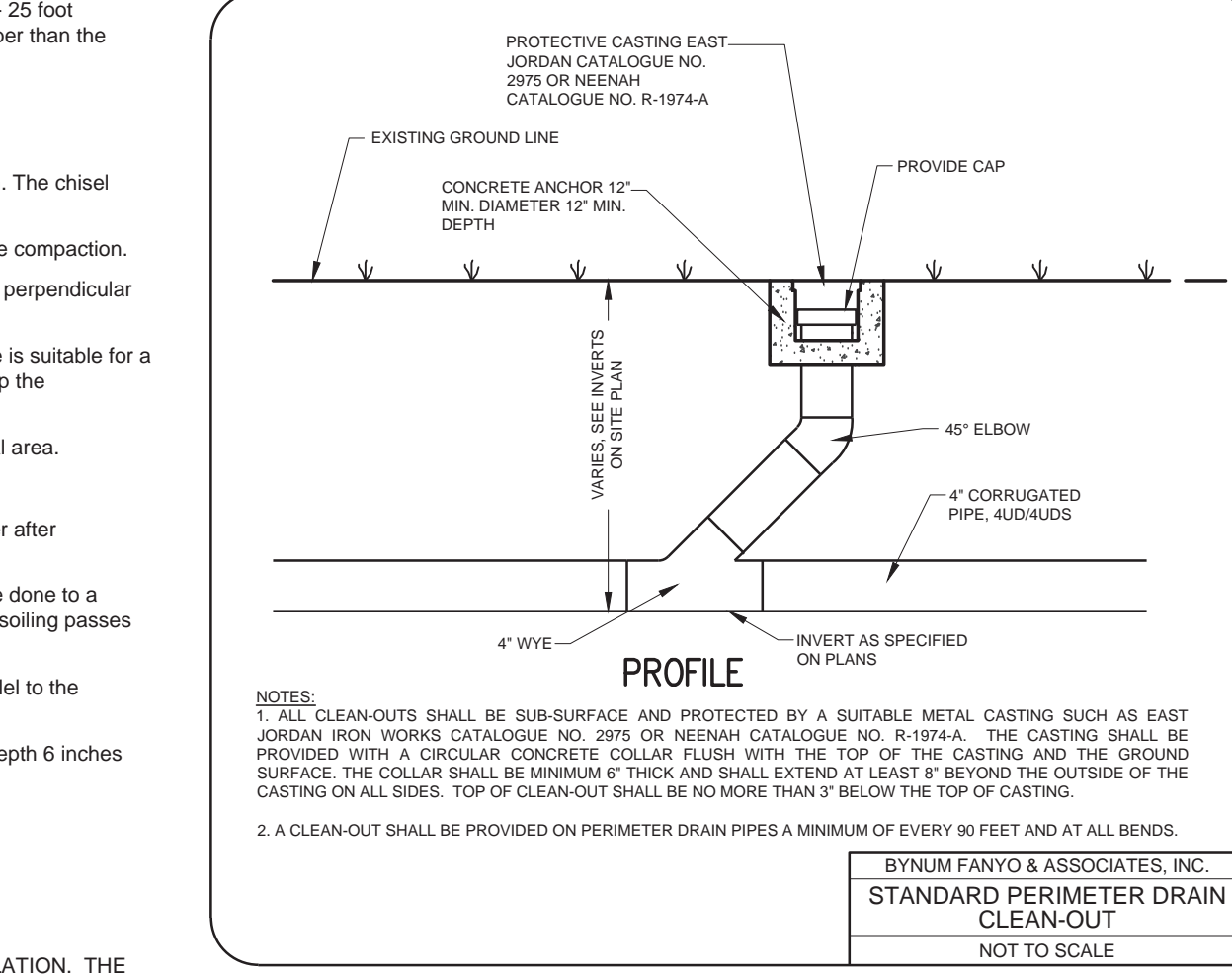
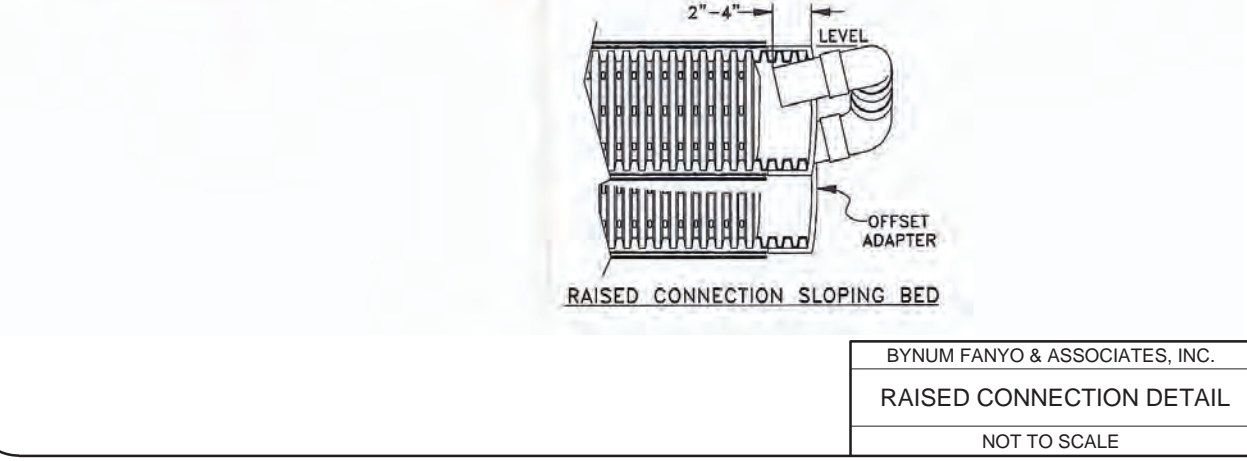
GENERAL SEPTIC SYSTEM NOTES

- PROTECT THE SITE OF THE PROPOSED ABSORPTION FIELD FROM COMPACTING, GRADING OR FILLING PRIOR TO INSTALLATION. THE AREA MUST BE TEMPORARILY ISOLATED BY FENCING OR OTHER MEANS. OTHERWISE, DISTURBANCE OF THE SITE MAY RENDER THE AREA USELESS AND POSSIBLY RESULT IN REVOCATION OF THE CONSTRUCTION PERMIT.
- CONTRACTOR SHALL CONTACT THE MONROE CO. HEALTH DEPARTMENT AT (812)348-2542 AT LEAST 15 DAYS PRIOR TO ANY SEPTIC CONSTRUCTION TO ARRANGE A PRE-CONSTRUCTION MEETING AT THE SITE.
- SEPTIC SYSTEMS SHALL BE CONSTRUCTED BY A MONROE COUNTY HEALTH DEPARTMENT APPROVED AND CERTIFIED PRESBY ADVANCED ENVIRO-SEPTIC INSTALLER. CONTACT PRESBY ENVIRONMENTAL AT (800)473-5288 EXT. 22 FOR THE CERTIFICATION PROCEDURES. SEPTIC CONSTRUCTION WILL BE INSPECTED BY THE MONROE COUNTY HEALTH DEPARTMENT DURING CONSTRUCTION.
- ALL WORK IS TO BE IN ACCORDANCE WITH ALL STATE AND LOCAL REGULATIONS. THE INDIANA DEPT. OF HEALTH'S (ISDOH) COMMERCIAL ON-SITE SEWAGE SYSTEMS RULE 410 IAC 6-10-1 AS WELL AS THE ISDOH TECHNICAL DATA SHEET AND ACCOMPANYING LITERATURE DATED FEBRUARY 29, 2024 AND MAY 21, 2024 (IDOH PROJECT NO. 5323337) ARE HEREBY A PART OF THESE PLANS.
- ALL PERMITS ARE TO BE OBTAINED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
- CONTRACTOR SHALL NOTIFY AND COOPERATE WITH ALL UTILITY COMPANIES OR FIRMS HAVING FACILITIES ON OR ADJACENT TO THE SITE BEFORE DISTURBING, ALTERING, REMOVING, RELOCATION, ADJUSTING, OR CONNECTING TO SAID FACILITIES. CONTRACTOR SHALL PAY ALL COSTS IN CONNECTION WITH ALTERATION OF OR RELOCATION OF THE FACILITY.
- BEFORE ANY MACHINE WORK IS DONE, CONTRACTOR SHALL STAKE OUT AND MARK THE ITEMS ESTABLISHED IN THE SEPTIC PLAN. CONTROL POINTS SHALL BE PRESERVED AT ALL TIMES DURING THE COURSE OF CONSTRUCTION.
- NEW CONTOURS SHOWN ARE TOP OF TOPSOIL IN AREAS TO BE SEED.
- ALL DISTURBED AREAS SHALL BE MULCH SEED IMMEDIATELY UPON COMPLETION OF ALL EARTH DISTURBING ACTIVITIES.
- PRESBY BRAND ADVANCED ENVIRO-SEPTIC PIPES SHALL BE INSTALLED LEVEL ALONG THEIR LENGTH.
- TANKS SHALL BE PLACED ON SOLID GRADE TO ALLEVIATE SETTLING. AN 8" LAYER OF COMPACTED SAND IS RECOMMENDED AS BEDDING. BACKFILL AROUND THE TANKS SHALL BE DONE SO AS TO MINIMIZE SETTLING WITHOUT HARMING THE CONCRETE WALLS OF THE TANKS. ALL TANK SURFACES, CONNECTIONS AND ACCESSES SHALL BE ADEQUATELY SEALED TO PREVENT GROUND AND SURFACE WATER INFILTRATION INTO THE SYSTEM. THEY SHALL ALSO HAVE GAS-TIGHT, SAFELY SECURED ACCESS RISERS EXTENDING TO THE GROUND SURFACE.



Installation Notes for Raised Connections:

- Insert PVC a minimum of 2 in. and a maximum of 4 in. into the offset adapters. Inserting the PVC more than 4 in. could cut off the flow of air through the system. If the PVC does not extend at least 2 in. into the offset adapter, they may become dislodged during backfilling.
- Install the Raised Connection so that the top of the 90° elbow is level with the top of the of Enviro-Septic® pipe as shown in the drawings below.
- Pack sand under and around the raised connection to prevent movement, settling or shifting. Take care during backfilling procedures not to dislodge the Raised Connections.



NOTE TO CONTRACTOR

CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS & DEPTHS AND NOTIFY ENGINEER OF ANY INACCURACIES IN LOCATION OR ELEVATION OR ANY CONFLICTS PRIOR TO & AFTER ANY EXCAVATION. NO PAYMENT SHALL BE MADE TO CONTRACTOR FOR UTILITY DESTRUCTION OR UNDERGROUND CHANGES REQUIRED DUE TO CONFLICTING ELEVATIONS.

revisions:
 REVISION NOS. 1A-16 DATED 7.24.24. SEE SHEET C101 FOR LISTING.

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 BYNUM FANYO & ASSOCIATES, INC.
 528 north walnut street
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 bloomington, indiana
 (812) 332-2990 (Fax)

PROFESSIONAL ENGINEER
 No. 60018283
 STATE OF INDIANA
 05.21.24
 certified by *JST*

PROPOSED
 MONROE FIRE PROTECTION DISTRICT
 FIRE STATION 26 SEPTIC SYSTEM
 478 E CHAMBERS PIKE
 BLOOMINGTON, INDIANA 47404
 IDOH PROJ. NO. 5323337

title: SEPTIC SYSTEM DETAILS

designed by: JBT
 drawn by: JBT
 checked by: JSF
 sheet no: C201
 project no.: 402353



DNR Indiana Department of Natural Resources

1 inch = 1,000 feet
0 500 1,000 Feet

Drainage less than 1 square mile
NHD Streams 1 sq mi 1-10
DNR Best Available
Not Mapped

INDIANA DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WATER

Date: 8/5/2024

From: Ring, Cameron P <CPRing@dnr.IN.gov>
Sent: Monday, August 5, 2024 3:22 PM
To: Daniel Butler <dbutler@bynumfanyo.com>
Subject: 478 E Chambers Pike FARA Correspondence

Hello Daniel,

To follow up on our phone call last week, attached above is a map that shows that the area we discussed near 478 E Chambers Pike in Bloomington. There are no jurisdictional streams, streams with a drainage area greater than a square mile, near the 478 E Chambers Pike site and it is not within a floodway therefore no permit would be required from Indiana DNR Division of Water. Please let us know if you have any further questions about IDNR jurisdiction or permitting requirements.

Thanks,

For questions about whether a project needs a permit from the DNR Division of Water and the Indiana Department of Environmental Management's stream and wetland programs, please submit a Waterways Inquiry Request via the online tool at waterways.IN.gov.

You should not construe this to be a local building permit, or a waiver of any local building or zoning ordinance. Additionally, this does not relieve you of the responsibility of obtaining permits, approvals, easements, etc. as required by other federal, state and local agencies.

Thank you for this opportunity to be of assistance. If you have any further questions, please submit them via email to water_inquiry@dnr.IN.gov or call our Technical Services Section at (317) 232-4160 or toll-free at (877) 925-3755 and choose Option 1. Please do not respond directly to this email.

Cameron Ring

Technical Services Section
Indiana Department of Natural Resources
Division of Water
402 West Washington Street, Room W264
Indianapolis, IN 46204
Phone: (877) 928-3755 Option 1
Email: water_inquiry@dnr.IN.gov

(MS) PRACTICE 3.12 PERMANENT SEEDING

REQUIREMENTS **Site and seedbed preparation:** Graded, and lime and fertilizer applied.
Plant Species: Selected on the basis of soil type, soil pH, region of the state, time of year, and planned use of the area to be seeded (see Exhibit 3.12-C).
Mulch: Clean grain, straw, hay, wood, fibre, etc., to protect seedbed and encourage plant growth. The mulch may need to be anchored to reduce removal by wind or water, or erosion control blankets may be considered.

APPLICATION (Exhibit 3.12-B, C, and D)
Permanently seed all final grade areas (e.g., landscape berms, drainage swales, erosion control structures, etc.) as each is completed and all areas where additional work is not scheduled for a period of more than a year.

SITE PREPARATION:
1. Install practices needed to control erosion, sedimentation, and runoff prior to seeding. These include temporary and permanent diversions, sediment traps and basins, silt fences, and straw bale dams (Practices 3.21, 3.22, 3.32, 3.33, 3.34, and 3.35).
2. Grade the site, and fill in depressions that can collect water.
3. Add topsoil to achieve needed depth for establishment of vegetation (Practice 3.02).

SEEDING PREPARATION:
1. Test soil to determine pH and nutrient levels. (Contact your county SWCD or Cooperative Extension office for assistance and soils information, including available soil testing services.)
2. If soil pH is unsuitable for the species to be seeded, apply lime according to test recommendations.
3. Fertilize as recommended by the soil test. If testing was not done, consider applying 400-600 lbs./acre of 12-12-12 analysis, or equivalent, fertilizer.
4. Till the soil to obtain a uniform seedbed, working the fertilizer and lime into the soil 2-4 in. deep with a disk or rake operated across the slope (Exhibit 3.12-B).

SEEDING:
Optimum seeding dates are Mar. 1-May 10 and Aug. 10-Sept. 30. Permanent seeding done between May 10 and Aug. 10 may need to be irrigated. As an alternative, use temporary seeding (Practice 3.11) until the preferred date for permanent seeding.
1. Select a seeding mixture and rate from Exhibit 3.12-C, based on site conditions, soil pH, intended land use, and expected level of maintenance.
2. Apply seed uniformly with a drill or cultipacker-seeder (Exhibit 3.12-D) or by broadcasting, and cover to a depth of 1/4-1/2 in.
3. If drilling or broadcasting, firm the seedbed with a roller or cultipacker.
4. Mulch all seeded areas (Practice 3.15). Consider using erosion blankets on sloping areas (Practice 3.17). (NOTE: If seeding is done with a hydroseeder, fertilizer and mulch can be applied with the seed in a slurry mixture.)

Exhibit 3.12-C. Permanent Seeding Recommendations

This table provides several seeding options. Additional seed species and mixtures are available commercially. When selecting a mixture, consider site conditions, including soil properties (e.g., soil pH and drainage), slope aspect and the tolerance of each species to shade and droughtiness.

| Seed species and mixtures | Rate per acre | Optimum soil pH |
|---------------------------|---------------|-----------------|
| 1. Perennial ryegrass | 35 to 50 lbs. | 5.6 to 7.0 |
| + white or ladino clover* | 1 to 2 lbs. | |
| 2. Kentucky bluegrass | 20 lbs. | 5.5 to 7.5 |
| + switchgrass | 3 lbs. | |
| + timothy | 4 lbs. | |
| + perennial ryegrass | 10 lbs. | |
| + white or ladino clover* | 1 to 2 lbs. | |
| 3. Perennial ryegrass | 15 to 30 lbs. | 5.6 to 7.0 |
| + prairie switch grass | 15 to 30 lbs. | |
| + prairie switch grass | 35 to 50 lbs. | 5.5 to 7.5 |
| + ladino or white clover* | 1 to 2 lbs. | |

| SEEDING MIXTURES FOR STEEP BANKS AND CUTS, LOW MAINTENANCE AREAS (NOT MOWED) | Rate per acre | Optimum soil pH |
|--|---------------|-----------------|
| 2. Prairie switch grass | 35 to 50 lbs. | 5.5 to 7.5 |
| + white or ladino clover* | 1 to 2 lbs. | |
| 3. Prairie switch grass | 35 to 50 lbs. | 5.5 to 7.5 |
| + red clover* | 10 to 20 lbs. | |
| (Recommended north of US 40) | | |
| 4. Orchardgrass | 20 to 30 lbs. | 5.6 to 7.0 |
| + red clover* | 10 to 20 lbs. | |
| + ladino clover* | 1 to 2 lbs. | |

| SEEDING MIXTURES FOR LAWNS AND HIGH MAINTENANCE AREAS | Rate per acre | Optimum soil pH |
|---|-----------------|-----------------|
| 1. Bluegrass | 105 to 150 lbs. | 5.5 to 7.0 |
| 2. Perennial ryegrass (turf-type) | 45 to 60 lbs. | 5.6 to 7.0 |
| + bluegrass | 70 to 90 lbs. | |
| 3. Prairie switch grass (turf-type) | 130 to 107 lbs. | 5.5 to 7.5 |
| + bluegrass | 20 to 30 lbs. | |

| SEEDING MIXTURES FOR CHANNELS AND AREAS OF CONCENTRATED FLOW | Rate per acre | Optimum soil pH |
|--|-----------------|-----------------|
| 1. Perennial ryegrass | 100 to 150 lbs. | 5.6 to 7.0 |
| + white or ladino clover* | 1 to 2 lbs. | |
| 2. Kentucky bluegrass | 20 lbs. | 5.5 to 7.5 |
| + switchgrass | 3 lbs. | |
| + timothy | 4 lbs. | |
| + perennial ryegrass | 10 lbs. | |
| + white or ladino clover* | 1 to 2 lbs. | |
| 3. Prairie switch grass | 100 to 150 lbs. | 5.5 to 7.5 |
| + ladino or white clover* | 1 to 2 lbs. | |
| 4. Prairie switch grass | 100 to 150 lbs. | 5.5 to 7.5 |
| + Perennial ryegrass | 15 to 20 lbs. | |
| + Kentucky bluegrass | 15 to 20 lbs. | |

* For best results: (a) legume seed should be inoculated; (b) seeding mixtures containing legumes should preferably be spring-seeded, although the grass may be fall-seeded and the legume frost-seeded (Practice 3.13); and (c) if legumes are fall-seeded, do so in early fall.

NOTE: An oat or wheat companion or nurse crop may be used with any of the above permanent seeding mixtures. If so, it is best to seed during the fall seeding period, especially after Sept. 15, and at the following rates: spring oats-1.4 to 3/4 bu./acre; wheat-no more than 1/2 bu./acre.

MAINTENANCE

- Inspect periodically, especially after storm events, until the stand is successfully established. (Characteristics of a successful stand include: vigorous dark green or bluish-green seedlings; uniform density with nurse plants, legumes, and grasses well inter-mixed; green leaves; and the perennials remaining green throughout the summer, at least at the plant base.)
- Plan to add fertilizer the following growing season according to soil test recommendations.
- Repair damaged, bare or sparse areas by filling any gullies, re-fertilizing, over- or re-seeding, and mulching.
- If plant cover is sparse or patchy, review the plant materials chosen, soil fertility, moisture condition, and mulching; then repair the affected area either by over-seeding or by re-seeding and mulching after re-preparing the seedbed.
- If vegetation fails to grow, consider soil testing to determine acidity or nutrient deficiency problems. (Contact your SWCD or Cooperative Extension office for assistance.)
- If additional fertilization is needed to get a satisfactory stand, do so according to soil test recommendations.

(SF) PRACTICE 3.74 SILT FENCE (SEDIMENT FENCE)

PURPOSE
To retain sediment from small, sloping disturbed areas by reducing the velocity of sheet flow.
(NOTE: Silt fence captures sediment by ponding water to allow deposition, not by filtration. Although the practice usually works best in conjunction with temporary basins, traps, or diversions, it can be sufficiently effective to be used alone. A silt fence is not recommended for use as a diversion; nor is it to be used across a stream, channel or anywhere that concentrated flow is anticipated.)

REQUIREMENTS (Exhibit 3.74-B and C)
Drainage Area: Limited to 1/4 acre per 100 ft. of fence; further restricted by slope steepness (see Exhibit 3.74-B).
Location: Fence nearly level, approximately following the land contour, and at least 10 ft. from toe of slope to provide a broad, shallow sediment pool.
Trench: 8 in. minimum depth, full-bottom or V-shaped, filled with compacted soil or gravel to bury lower portion of support wire and/or fence fabric.
Support posts: 2 x 2-in. hardwood posts (if used) or steel fence posts set at least 1 ft. deep.* (Steel posts should protrude for fastening fabric.)
Spacing of posts: 8 ft. maximum if fence supported by wire, 6 ft. for extra-strength fabric without wire backing.
Fence height: High enough so depth of impounded water does not exceed 1 1/2 ft. at any point along fence line.
Support wire (optional): 14 gauge, 6 in. wire fence (needed if using standard-strength fabric).
Fence fabric: Woven or non-woven geotextile fabric with specified filtering efficiency and tensile strength (see Exhibit 3.74-C) and containing UV inhibitors and stabilizers to ensure 6-mo. minimum life at temperatures 0°-120°F.

| Land slope | Max. distance above fence | |
|---------------|---------------------------|------------------|
| | Woven fabric | Non-woven fabric |
| Less than 2% | 100 ft. | 75 ft. |
| 2 to 5% | 75 ft. | 50 ft. |
| 5 to 10% | 50 ft. | 25 ft. |
| 10 to 20% | 25 ft. | 15 ft. |
| More than 20% | 15 ft. | |

Exhibit 3.74-C. Specifications Minimums for Silt Fence Fabric.

| Physical Property | Woven Fabric | Non-woven fabric |
|-------------------------------------|----------------------|----------------------|
| Filtering efficiency | 85% | 85% |
| Tensile strength at 20% elongation: | | |
| Standard strength | 30lbs./linear in. | 50lbs./linear in. |
| Extra strength | 70lbs./linear in. | 70lbs./linear in. |
| Slurry flow rate | 0.3 gal./min./sq.ft. | 4.5 gal./min./sq.ft. |
| Water flow rate | 15 gal./min./sq.ft. | 220 gal./min./sq.ft. |
| UV resistance | 70% | 85% |

Outlet (optional): To allow for safe storm flow bypass without overtopping fence. Placed along fence line to limit water depth to 1 1/2 ft. maximum; crest-1 ft. high maximum; weir width-4 ft. maximum; splash pad-5 ft. wide, 3 ft. long, 1 ft. thick minimum.

INSTALLATION

SITE PREPARATION:
1. Plan for the fence to be at least 10 ft. from the toe of the slope to provide a sediment storage area.
2. Provide access to the area if sediment cleanup will be needed.

OUTLET CONSTRUCTION (OPTIONAL)
1. Determine the appropriate location for a reinforced, stabilized bypass flow outlet.
2. Set the outlet elevation so that water depth cannot exceed 1 1/2 ft. at the lowest point along the fence line.
3. Locate the outlet weir support posts no more than 4 ft. apart, and install a horizontal brace between them. (Weir height should be no more than 1 ft. and water depth no more than 1 1/2 ft. anywhere else along the fence.)
4. Excavate the foundation for the outlet splash pad to mimims of 1 ft. deep, 5 ft. wide and 5 ft. long on level grade.
5. Fill the excavated foundation with INDOT CA No. 1 stone, being careful that the finished surface blends with the surrounding area, allowing no overlap.
6. Stabilize the area around the pad.

OUTLET CONSTRUCTION (OPTIONAL)
1. Along the entire intended fence line, dig an 8 in. deep flat-bottomed or V-shaped trench.
2. On the downslope side of the trench, drive the wood or steel support posts at least 1 ft. into the ground, spacing them no more than 8 ft. apart if the fence is supported by wire or 6 ft. if extra strength fabric is used without support wire. Adjust spacing, if necessary, to ensure that posts are set at the low points along the fence line. (NOTE: If the fence has pre-attached posts or stakes, drive them deep enough so the fabric is satisfactory in the trench as described in step 6.)
3. Fasten support wire fence to the upslope side of the posts, extending it 8 in. into the trench.
4. Run a continuous length of geotextile fabric in front of the support wire and posts avoiding joints, particularly at low points in the fence line.
5. If a joint is necessary, roll the overlap to the nearest post with a lat. Place the bottom 1 ft. of fabric in the 8 in. deep trench, extending the remaining 4 in. toward the upslope side.
6. Backfill the trench with compacted earth or gravel.
NOTE: If using a pre-poked commercial silt fence rather than constructing one, follow the manufacturer's installation instructions.

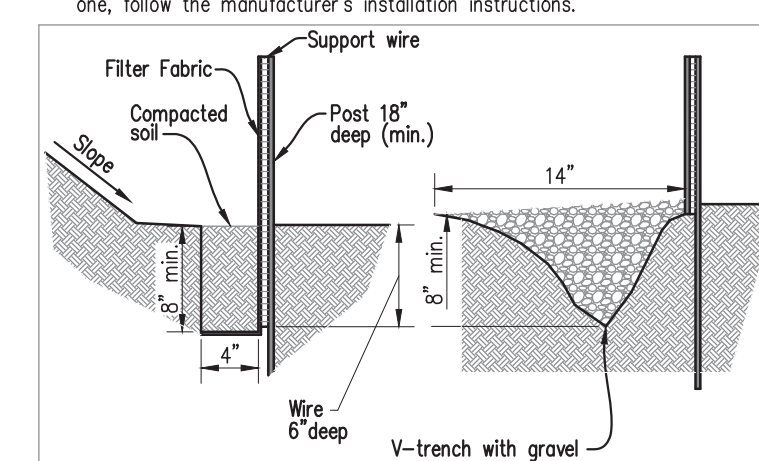
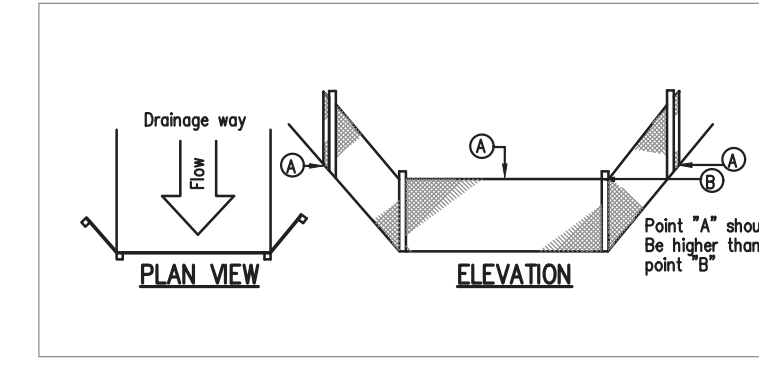


Exhibit 3.74-E. Detailed example of silt fence installation.



MAINTENANCE

- Inspect the silt fence periodically and after each storm event.
- If fence fabric tears, starts to decompose or in any way becomes ineffective, replace the affected portion immediately.
- Remove deposited sediment when it reaches half the height of the fence at its lowest point or is causing the fabric to bulge.
- Take care to avoid undermining the fence during clean out.
- After the contributing area has been stabilized, remove the fence and sediment deposits, bring the disturbed area to grade, and stabilize.

NOTE TO CONTRACTOR

CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS & DEPTHS AND NOTIFY ENGINEER OF ANY INACCURACIES IN LOCATION OR ELEVATION OR ANY CONFLICTS PRIOR TO & AFTER ANY EXCAVATION. NO PAYMENT SHALL BE MADE TO CONTRACTOR FOR UTILITY DESTRUCTION OR UNDERGROUND CHANGES REQUIRED DUE TO CONFLICTING ELEVATIONS.

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05.21.24

certified by *[Signature]*

PROPOSED
MONROE FIRE PROTECTION DISTRICT
FIRE STATION 26 SEPTIC SYSTEM
478 E CHAMBERS PIKE
BLOOMINGTON, INDIANA 47404

title: SEPTIC SYSTEM
DETAILS CONTINUED

designed by: JBT
drawn by: JBT
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project no.: 402353