CONTACT LIST

OWNER/DEVELOPER

EASTSIDE COMMUNITY CHURCH
10132 HARRISBURG RD
CHARLOTTE, NC 28215
ALEX BAREFOOT
TELE: (704) 340-3262

SITE CONTRACTOR

SONSHINE CONSTRUCTION, INC.
9110 HOOD RD.
CHARLOTTE, NC 28215
STEVE FARNIE, PROJECT MANGER
TELE: (704) 560-4449
E-MAIL: steve.farnie@gmail.com

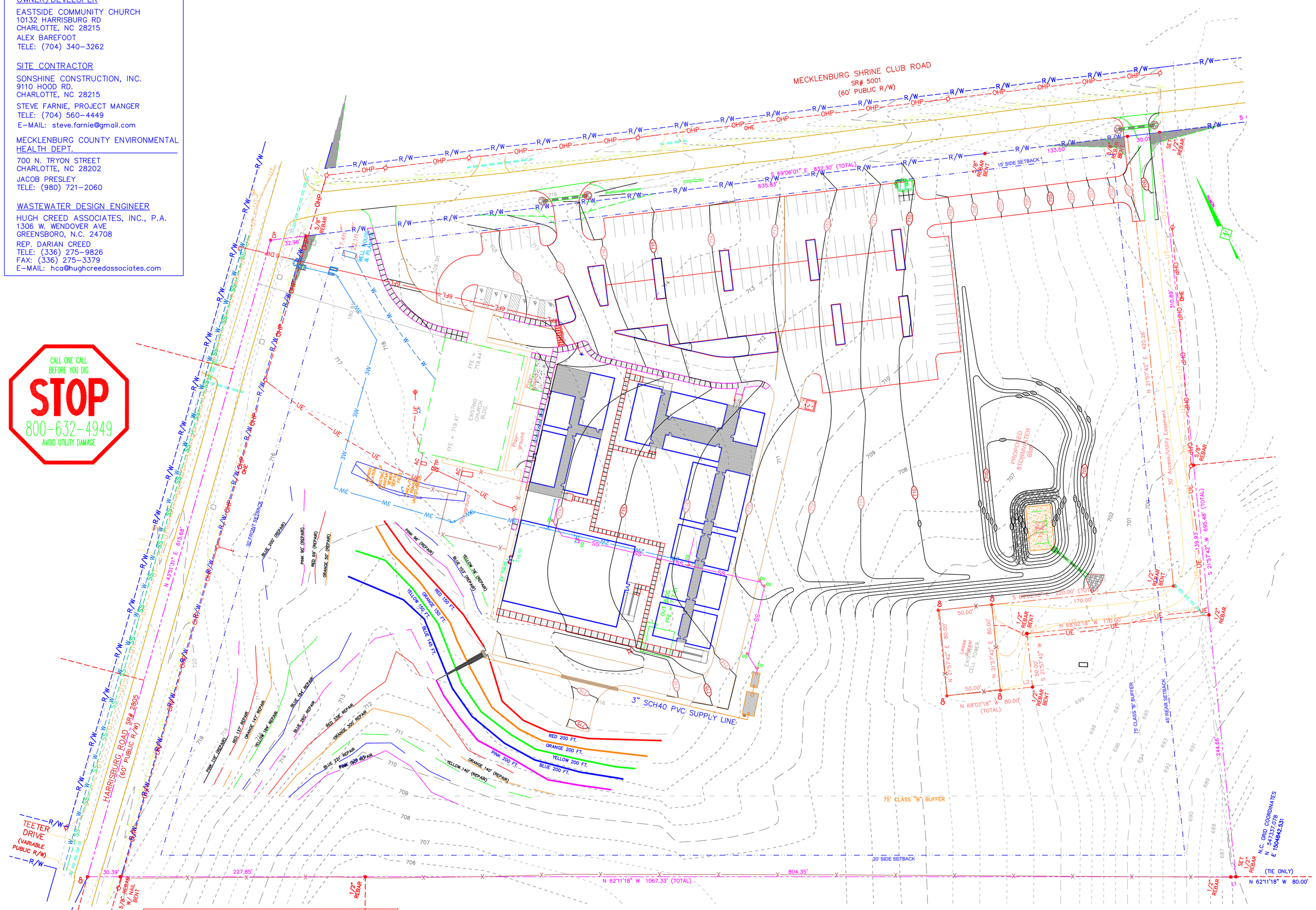
MECKLENBURG COUNTY ENVIRONMENTAL HEALTH DEPT.

700 N. TRYON STREET
CHARLOTTE, NC 28202
JACOB PRESLEY
TELE: (980) 721-2060

WASTEWATER DESIGN ENGINEER

HUGH CREED ASSOCIATES, INC., P.A.
1306 W. WENDOVER AVE
GREENSBORO, N.C. 24708
REP. DARIAN CREED
TELE: (336) 275-9826
FAX: (336) 275-3379
E-MAIL: hca@hughcreedassociates.com

CALL ONE CALL BEFORE YOU DIG
STOP
800-632-4949
AVOID UTILITY DAMAGE



GROUND ABSORPTION FIELD SITE PREPARATION

1) ALL SITE PREPARATION STEPS, INCLUDING CLEARING AND STUMP REMOVAL SHALL BE COMPLETED UNDER THE DIRECT SUPERVISION OF THE LOCAL COUNTY HEALTH DEPARTMENT AND THE APPLICANT'S SOILS CONSULTANT.
2) PRIOR TO ANY SITE CLEARING ACTIVITIES, THE CONTRACTOR SHALL SCHEDULE A SITE MEETING WITH THE OWNER, LOCAL COUNTY HEALTH DEPARTMENT, APPLICANTS SOILS CONSULTANT, AND PROJECT ENGINEER TO IDENTIFY THE SITE CLEARING LIMITS, AND DICUSS PROPER CLEARING METHODS FOR THE GROUND ABSORPTION FIELDS.
3) FOR PROPER FUNCTION OF THE GROUND ABSORPTION FIELD IT IS IMPERATIVE THAT IT IS NOT DAMAGED DURING THE CLEARING PHASE. IT SHALL BE RESPONSIBILITY OF THE CONTRACTOR TO FULLY INFORM HIMSELF, AND IMPLEMENT, PROPER STEPS AND PROCEDURES FOR CLEARING GROUND ABSORPTION FIELDS.
   a) CLEARING ACTIVITIES SHALL ONLY BE PREFORMED DURING DRY CONDITIONS.
   b) THE CONTRACTOR SHALL ONLY CLEAR ENOUGH OF THE SITE TO INSTALL THE REQUIRED EROSION CONTROL MEASURES.
   c) ALL TREES, STUMPS, AND DEBRIS ARE TO BE REMOVED FROM THE SITE. WHEN CLEARING THE SITE, THE CONTRACTOR SHALL TAKE SPECIAL CARE NOT TO ALTER THE NATURAL GRADES OF THE AREA. AT NO POINT SHOULD ANY GRADING ACTIVIES TAKE PLACE.
   d) TREE STUMPS SHALL BE EXCAVATED WITH SPECIAL CARE, SO AS NOT TO CREATE LARGE HOLES. ONLY THE MAIN STUMP IS TO BE REMOVED. ALL SOIL ATTACHED TO BE STUMP IS TO BE REMOVED. ALL SOIL ATTACHED TO THE STUMP IS TO BE REMOVED AND USED AS BACKFILL.
   e) THE CLEARING EQUIPMENT SHALL BE OF THE WIDE WHEEL OR TRACK TYPE, SO AS NOT TO COMPACT SOIL OR CREATE RUTS.
   f) WHILE REMOVING TREES, THE CLEARING EQUIPMENT PATHS SHALL BE ALTERED SO AS NOT TO EXCESSIVELY COMPACT SOIL.
   g) AFTER ALL TREES, STUMPS, AND DEBRIS HAVE BEEN REMOVED FROM THE ABSORPTION FIELD AREA, THE CONTRACTOR SHALL SMOOTH FIELD SURFACE TO BLEND WITH THE WITH THE NATURAL GROUND CONTOURS. AT NO POINT SHOULD ANY GRADING OR EARTH MOVE ACTIVITIES TAKE PLACE.
   h) THE CONTRACTOR SHALL CONSULT WITH THE LOCAL COUNTY HEALTH DEPARTMENT FOR ANY ADDITIONAL PRECAUTIONS OR REQUIREMENTS.
   i) AFTER THE ABSORPTION FIELD HAS BEEN COMPLETED THE WASTEWATER INSTALLER SHALL LAYOUT THE DRAINFIELD AND CALL FOR NECESSARY INSPECTIONS.

CONSTRUCTION SEQUENCE

1) FIVE (5) DAYS PRIOR TO BEGINNING WORK THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING TO DISCUSS THE SCOPE AND SCHEDULE OF THE PROJECT. THE FOLLOWING INDIVIDUALS ARE TO BE CONTACTED TO ATTEND:
   OWNER – ALEX BAREFOOT, PRINCIPAL (704-340-3262)
   CONTRACTOR – STEVE FARNIE, (704-560-4449)
   MECKLENBURG COUNTY HEALTH DEPARTMENT – (704) 336-5100
   SEPTIC SYSTEM DESIGNER – DARIAN CREED (336-669-9190)
2) INSTALL EROSION CONTROL AS NECESSARY (DESIGN BY OTHERS)
3) VERIFY ALL SITE GRADES AND ELEVATIONS FROM EXISTING STRUCTURES AND PROPOSED STRUCTURES TO INSURE PROPER DRAINAGE. MAKE ALL NECESSARY ADJUSTMENT AS REQUIRED FOR PROPER OPERATION.
4) CLEAR AND GRADE SITE.
5) LAYOUT THE PROPOSED DRAINFIELD LINES FOR THE INITIAL SYSTEM AND CALL THE MECKLENBURG COUNTY ENVIRONMENTAL HEALTH DEPARTMENT FOR AN INSPECTION AND APPROVAL.
6) INSTALL WASTEWATER TREATMENT AND DISPOSAL SYSTEM IMPROVEMENTS. CALL FOR ALL REQUIRED INSPECTIONS DURING INSTALLATION.
7) LANDSCAPE, SEED AND MULCH ALL DISTURBED AREAS.
8) SCHEDULE SYSTEM START-UP MEETING WITH PREVIOUS CONTACTS.
9) AFTER ALL SEEDED AREAS ARE ESTABLISHED (80% MIN. COVERAGE) REMOVE SILT FENCE, STONE, AND ANY OTHER DEBRIS. SMOOTH REMAINING DISTURBED

NOTE TO WASTEWATER DISPOSAL SYSTEM INSTALLER

IT SHALL BE THE RESPONSIBILITY OF THE WASTEWATER DISPOSAL SYSTEM INSTALLER TO VERIFY THE SITE SANITARY SEWER DISTRIBUTION ELEVATIONS TO ENSURE SUFFICIENT GRADE TO THE WASTEWATER DISPOSAL SYSTEM. THE INSTALLER SHALL ADJUST THE ELEVATIONS OF THE WASTEWATER DISPOSAL SYSTEM AS NECESSARY FOR PROPER OPERATION.

SANITARY SEWER, STORM SEWER, FORCEMAIN CROSSINGS AND SEPERATIONS

1) WHENEVER POSSIBLE, SEWER SHOULD BE LAID AT LEAST 10' HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATER MAIN. IF THIS SPACING IS NOT POSSIBLE, DUCTILE IRON PIPE IS REQUIRED.
2) WHEN SANITARY SEWER CROSSES STORM SEWER, ALLOW 1' OF VERTICAL SEPARATION BETWEEN PIPES. IF THIS CANNOT BE MET, DUCTILE IRON SANITARY SEWER, 10' EACH SIDE OF OF STORM SEWER WILL BE REQUIRED FOR STORM SEWERS 24" AND LARGER, WHERE CLEARANCE ABOVE SANITARY SEWER IS LESS THAN 1', CONCRETE PIERS ON EACH SIDE OF SANITARY SEWER TO SUPPORT STORM SEWER WILL BE REQUIRED IN ADDITION TO DUCTILE IRON PIPE.
3) WHENEVER IT IS NECESSARY FOR A WATER LINE TO CROSS ABOVE THE SEWER LINE AND A VERTICAL SEPARATION OF 18" CANNOT BE MAINTAINED, THEN THE SEWER LINE SHALL BE DUCTILE IRON PIPE 10' EACH SIDE OF THE WATER LINE. WHENEVER A SEWER LINE CROSSES ABOVE A WATER LINE, THE WATER AND SEWER LINE MUST BE DUCTILE IRON PIPE 10' EACH SIDE OF THE CROSSING.

NOTE TO WASTEWATER DISPOSAL SYSTEM INSTALLER

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THE CONTRACTOR SHALL NOTE THAT THESE DRAWINGS ARE SCHEMATIC IN NATURE AND DO NOT SHOW EVERY OFFSET, TRANSITION, FITTING, ECT., THAT MAY BE REQUIRED FOR A COMPLETE WORKING SYSTEM.

NOTES

1) THE WASTEWATER SYSTEM INSTALLER IS RESPONSIBLE FOR COORINATION OF ALL TRADES AND SUBCONTRACTORS. THE INSTALLATION CONTRACTOR IS SHALL ALSO BE RESPONSIBLE FOR VERIFYING ALL EXISTING SITE CONDITIONS INCLUDING DIMENSIONS, ELEVATIONS, AND LOCATIONS OF ALL EXISTING AND PROPOSED CONDITIONS AND UTILITIES.
2) THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH ALL EROSION AND SEDIMENTATION CONTROL REQUREMENTS. ALL AREAS DISTURBED DURING THE INSTALLATION OF THE WASTEWATER SYSTEM SHALL BE SEEDED AND MULCH WITHIN 48 HOURS OF COMPLETION.
3) THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH ALL STATE AND LOCAL CODES, INCLUDING BUT NOT LIMITED TO, NCDHHS-DPH, LOCAL COUNTY HEALTH DEPARTMENT, NCDOT, NC BUILDING CODE, AMERICAN SOCIETY FOR TESTING MATERIALS (ASTM), RULES AND REGULATIONS OF THE NC DEPARTMENT OF AGRICULTURE, AND NC EROSION CONTROL STANDARDS.
4) THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ALL DAMAGES HIS ORGANIZATION CAUSES TO THE OWNERS PROPERTY DURING THE PERFORMANCE OF THE INSTALLATION.
5) ALL STORAGE OF MATERIALS AND EQUIPMENT ON THE SITE SHALL BE APPROVED BY THE OWNER.
6) THE INSTALLATION OF THE WASTEWATER SYSTEM SHALL COMPLY WITH ALL RULES AND REGULATION SET FORTH BY NCDHHS ON-SITE WASTEWATER BRANCH AND LOCAL COUNTY HEALTH DEPARTMENT.

NORTH CAROLINA PROFESSIONAL SEAL 10727 ENGINEER NORRIS Z. CLAYTON

10-12-18

REV. 10-17-18

OVERALL SITE PLAN
PROPOSED WASTE WATER IMPROVEMENTS

BACK CREEK CHRISTIAN ACADEMY
10132 HARRISBURG ROAD
MECKLENBURG COUNTY
CHARLOTTE, NORTH CAROLINA

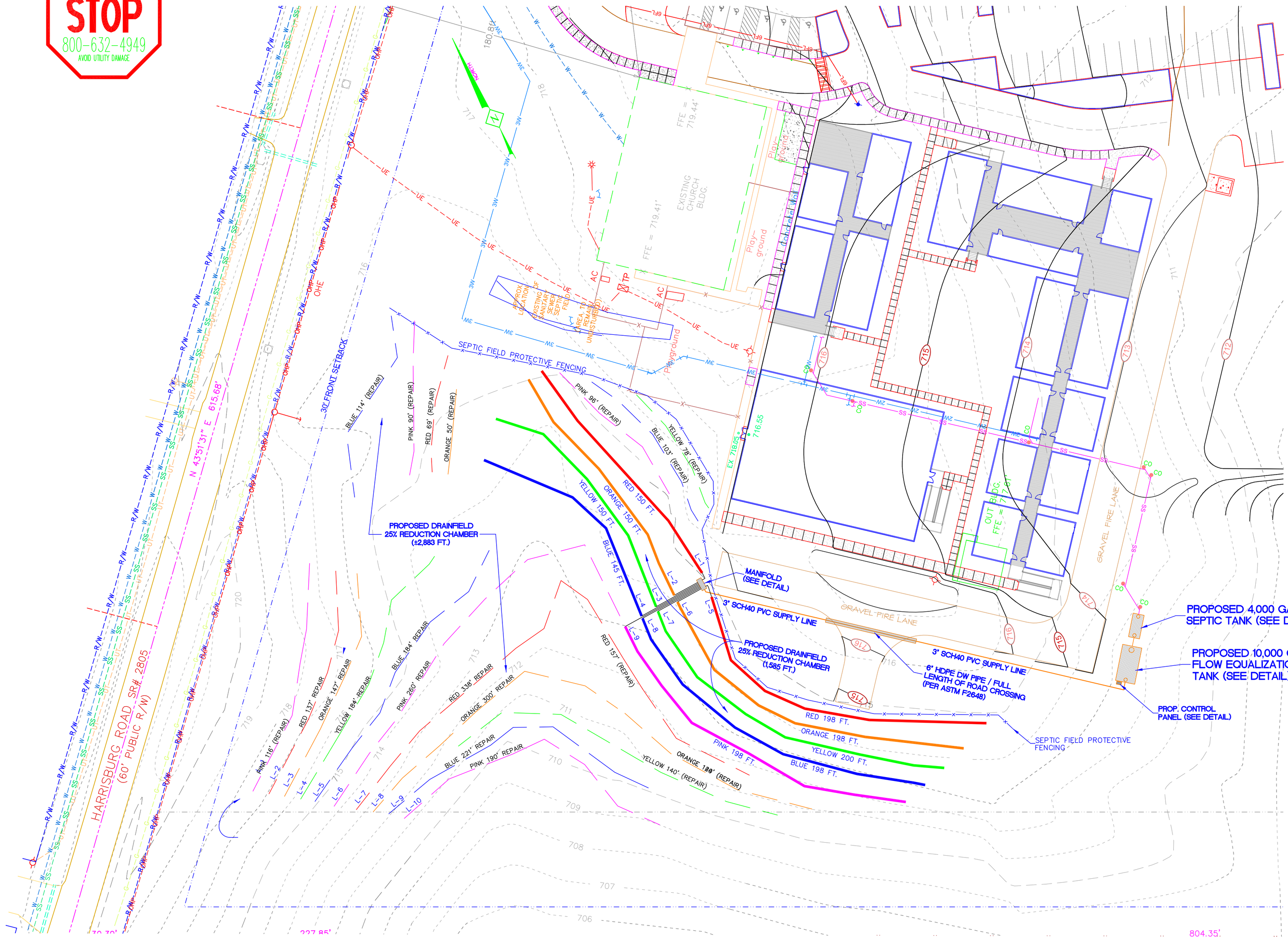
DATE: OCT. 12, 2018 | SCALE: 1"=50' (0, 25, 50, 100) | SHEET: 1 OF 4

HUGH CREED ASSOCIATES, INC., P.A.
CONSULTING ENGINEERS AND LAND SURVEYORS

P.O. BOX 9623
1306 W. WENDOVER AVE.
GREENSBORO, N.C. 27408
FIRM LICENSE #C-0551
PHONE: (336) 275-9826
OR (336) 275-8084
FAX: (336) 275-3379
E-MAIL: HCA@HUGHCREEDASSOCIATES.COM

PROJECTS\BACK CREED CHRISTIAN ACADEMY\BACK CREED DWG\WORKING DRAWING CAD: P DWG: ?

CALL ONE CALL
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STOP
800-632-4949
AVOID UTILITY DAMAGE



PRIOR TO THE INSTALLATION OF ANY NITRIFICATION LINES (DRAIN LINES) THE CONTRACTOR SHALL THE LAYOUT THE NEW LINES AND CALL MECKLENBURG COUNTY HEALTH DEPT. FOR AN INSPECTION (704-336-5100)

GROUND ABSORPTION FIELD SITE PREPARATION

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REV. 10-17-18

NORTH CAROLINA PROFESSIONAL SEAL 10727 ENGINEER NORRIS Z. CLAYTON

10-12-18

SEPTIC SYSTEM PLAN
PROPOSED WASTE WATER IMPROVEMENTS

BACK CREEK CHRISTIAN ACADEMY
10132 HARRISBURG ROAD
MECKLENBURG COUNTY
CHARLOTTE, NORTH CAROLINA

DATE: OCT. 12, 2018 | SCALE: 1"=30' (0, 15, 30, 60) | SHEET: 2 OF 4

HUGH CREED ASSOCIATES, INC., P.A.
CONSULTING ENGINEERS AND LAND SURVEYORS
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FIRM LICENSE #C-0551 E-MAIL: HCA@HUGHCREEDASSOCIATES.COM

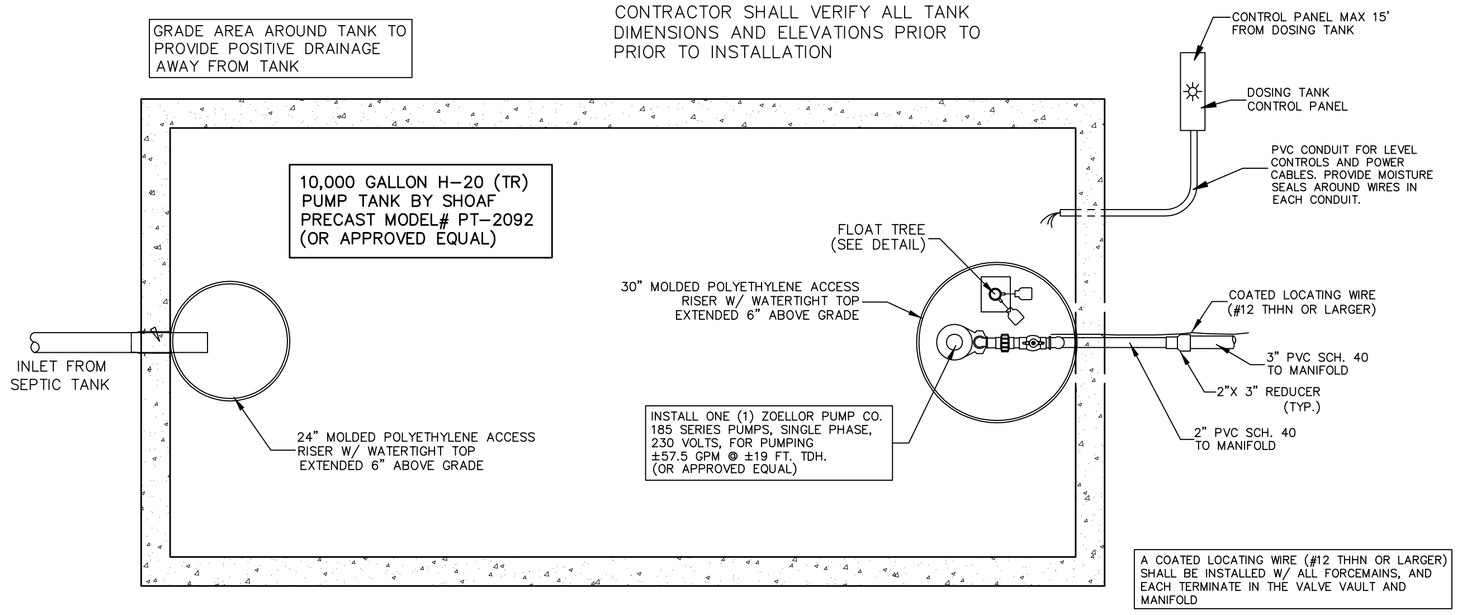
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CAD: ? DWR: ?

CALL ONE CALL BEFORE YOU DIG
STOP
800-632-4949
AVOID UTILITY DAMAGE

THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE EXISTING POWER AVAILABLE PRIOR TO ORDERING PUMPS AND CONTROL PANEL.

NOTE:
ACTUAL DEPTH OF TANKS UNKNOWN. CONTRACTOR SHALL VERIFY DEPTH OF TANKS PRIOR TO INSTALLATION. IF TANKS ARE 36" OR MORE BELOW FINISH GRADE TRAFFIC RATED TANKS ARE REQUIRED.

NO ELECTRICAL SPLICES OR JUNCTION BOXES CAN BE MADE INSIDE THE PUMP TANK.

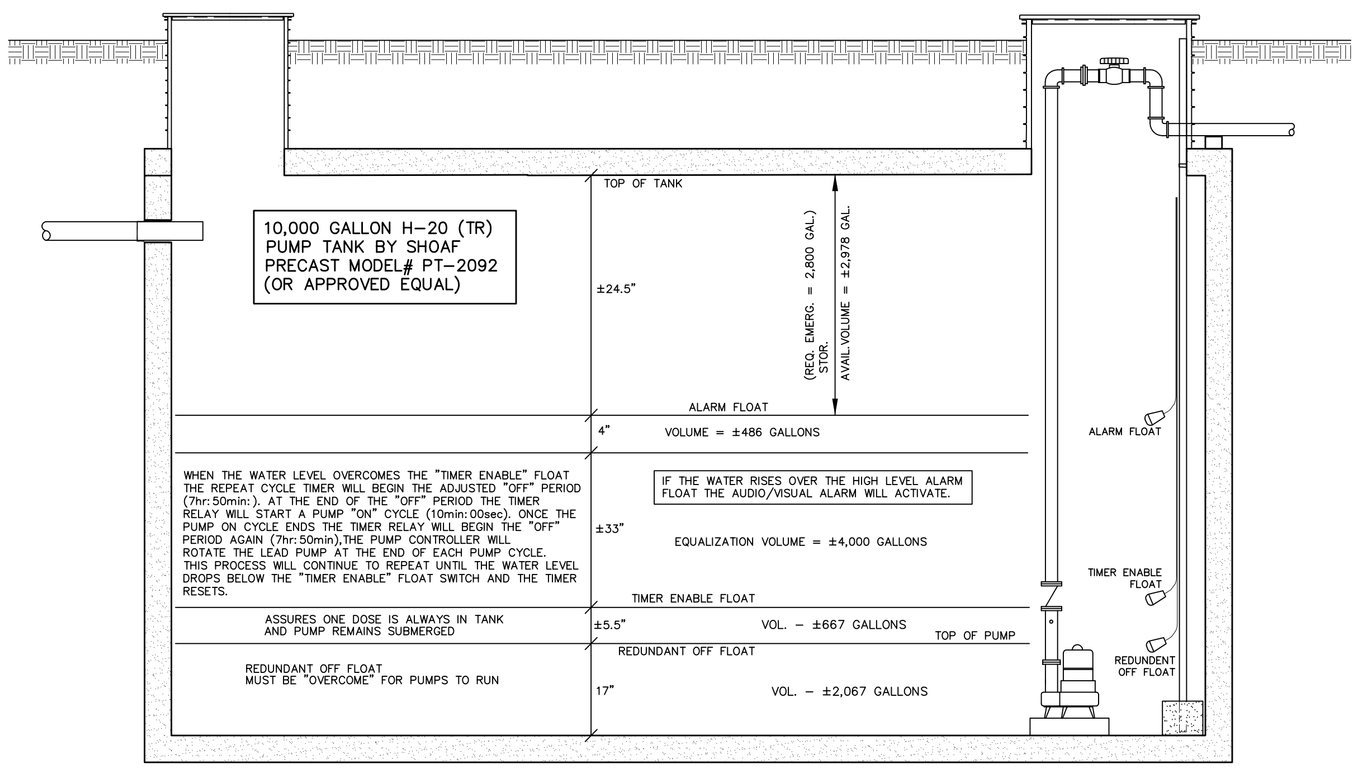


DOSING PUMP TANK – PLAN VIEW
NTS

NOTE TO WASTEWATER DISPOSAL SYSTEM INSTALLER
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PRIOR TO ORDERING GREASE TRAPS THE CONTRACTOR SHALL CONTACT THE TANK MANUFACTURE TO DISCUSS THE TANKS DESIGNS AND ENSURE THAT ALL OPENING ARE AS INDICATED ON THE DRAWING. THE CONTARCTOR SHALL SUPPLY CUT SHEETS TO THE PROJECT ENGINEER FOR ALL TANKS BEING INSTALLED W/ THE PROJECT.

THE CONTRACTOR SHALL NOTE THAT THESE DRAWINGS ARE SCHEMATIC IN NATURE AND DO NOT SHOW EVERY OFFSET, TRANSITION, FITTING, ECT., THAT MAY BE REQUIRED FOR A COMPLETE WORKING SYSTEM.

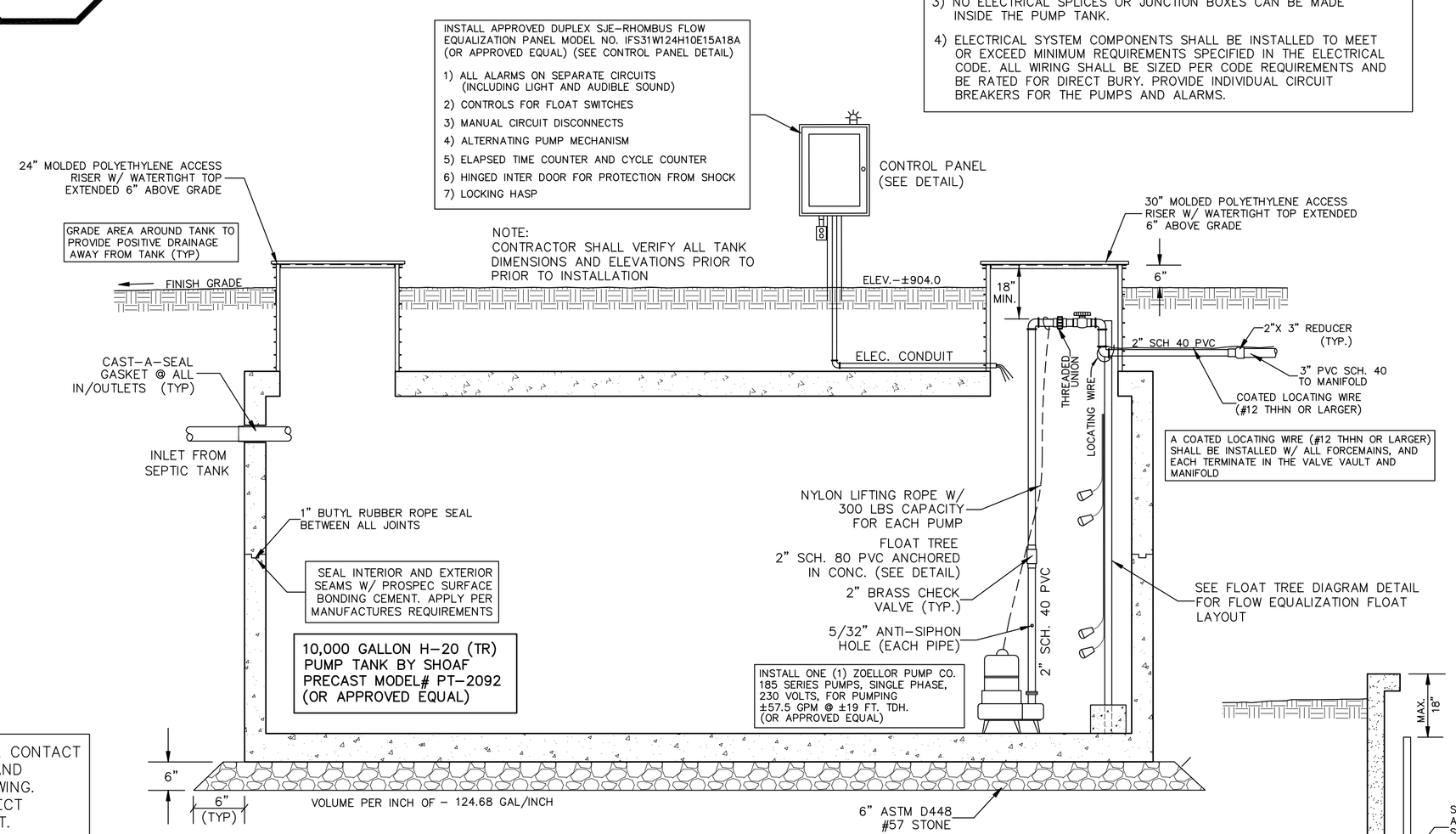


VOLUME PER INCH OF – 121.56 GAL/INCH

FLOW EQUALIZATION PUMP TANK FLOAT DIAGRAM
NOT TO SCALE

NOTE TO WASTEWATER DISPOSAL SYSTEM INSTALLER
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NOTES
1) ALL PIPE CONNECTIONS AT STRUCTUES SHALL BE MADE USING A WATERTIGHT RUBBER SEAL. SEALS MAY BE EXPANSION TYPE INSERTED IN SMOOTH CAST OR CORED OPENING OR SLEEVE TYPE INSTALLED ON PIPE AND GROUTED IN PLACE.
2) ALL SUPPORT BOLTS, WASHERS, BRACKETS USED IN THE SEPTIC TANK, PUMP TANK, OR GREASE INTRECEPTORS SHALL BE STAINLESS STEEL.
3) NO ELECTRICAL SPLICES OR JUNCTION BOXES CAN BE MADE INSIDE THE PUMP TANK.
4) ELECTRICAL SYSTEM COMPONENTS SHALL BE INSTALLED TO MEET OR EXCEED MINIMUM REQUIREMENTS SPECIFIED IN THE ELECTRICAL CODE. ALL WIRING SHALL BE SIZED PER CODE REQUIREMENTS AND BE RATED FOR DIRECT BURY. PROVIDE INDIVIDUAL CIRCUIT BREAKERS FOR THE PUMPS AND ALARMS.

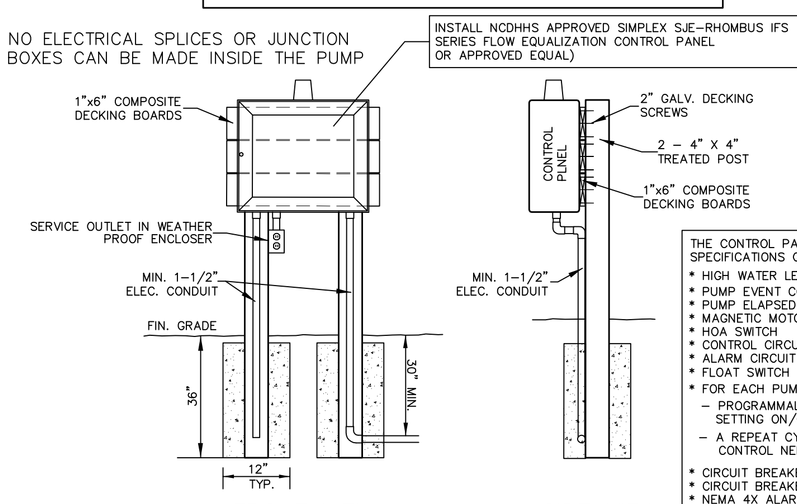


DOSING PUMP TANK – SECTION VIEW
NTS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE EXISTING POWER AVAILABLE PRIOR TO ORDERING PUMPS AND CONTROL PANEL.

NO ELECTRICAL SPLICES OR JUNCTION BOXES CAN BE MADE INSIDE THE PUMP

INSTALL NCDHHS APPROVED SIMPLEX SJE-RHOMBUS IFS SERIES FLOW EQUALIZATION CONTROL PANEL OR APPROVED EQUAL)

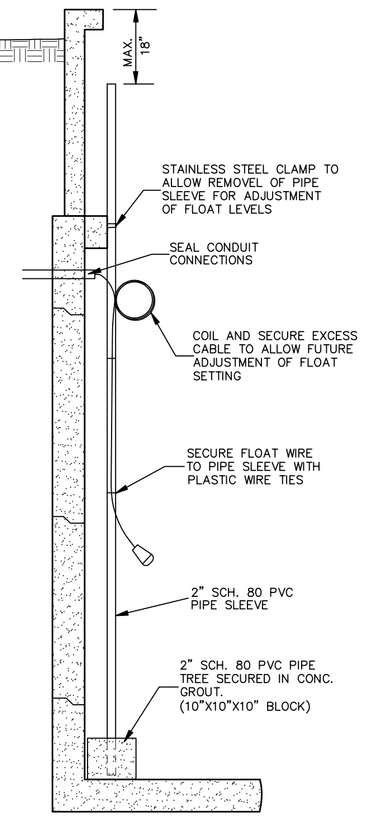


FRONT VIEW SIDE VIEW

CONTROL PANEL DETAIL
NOT TO SCALE

THE CONTROL PANEL SHALL MEET THE REQUIREMENTS AND SPECIFICATIONS OF NCDHHS.
* HIGH WATER LEVEL ALARM EVENT COUNTER
* PUMP EVENT COUNTER
* PUMP ELAPSED TIME METER
* MAGNETIC MOTOR CONTACTOR
* HOA SWITCH
* CONTROL CIRCUIT FUSE
* ALARM CIRCUIT FUSE
* FLOAT SWITCH TERMINAL BLOCK
* FOR EACH PUMP, EITHER A:
  – PROGRAMMALBE TIMER W/ VARIABLE CONTROLS FOR SETTING ON/OFF TIMES FROM .05 TO 30 HOURS, OR
  – A REPEAT CYCLE TIMER THAT AFFORD THE AMOUNT OF CONTROL NEEDED FOR PUMP RUN TIME AND OFF TIME.
* CIRCUIT BREAKER FOR EACH PUMP
* CIRCUIT BREAKER FOR THE ALARM/CONTROL CIRCUIT
* NEMA 4X ALARM STROBE BEACON
* NEMA 4X ALARM HORN (83 DEB. @ 3' MIN. W/AUTO RESET
* NEMA 4X EXTERIOR HORN TEST/ NORMAL/ SILENCE SWITCH
* GROUND LUG
* 2 LOCKABLE HASPS
* PUMP RUN LIGHT

NOTE:
ELECTRICAL SYSTEM COMPONENTS SHALL BE INSTALLED TO MEET OR EXCEED MINIMUM REQUIREMENTS SPECIFIED IN THE ELECTRICAL CODE. ALL WIRING SHALL BE SIZED PER CODE REQUIREMENTS AND BE RATED FOR DIRECT BURY. PROVIDE INDIVIDUAL CIRCUIT BREAKERS FOR THE PUMP AND ALARM.



FLOAT TREE DETAIL
NOT TO SCALE

NORTH CAROLINA PROFESSIONAL SEAL 10727 ENGINEER NORRIS Z. CLAYTON

10-12-18

REV. 10-17-18

DETAIL SHEET #1
PROPOSED WASTE WATER IMPROVEMENTS

BACK CREEK CHRISTIAN ACADEMY
10132 HARRISBURG ROAD
MECKLENBURG COUNTY
CHARLOTTE, NORTH CAROLINA

DATE: OCT. 12, 2018 | SCALE: NONE | SHEET: 3 OF 4

HUGH CREED ASSOCIATES, INC., P.A.
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P.O. BOX 9623
1306 W. WENDOVER AVE.
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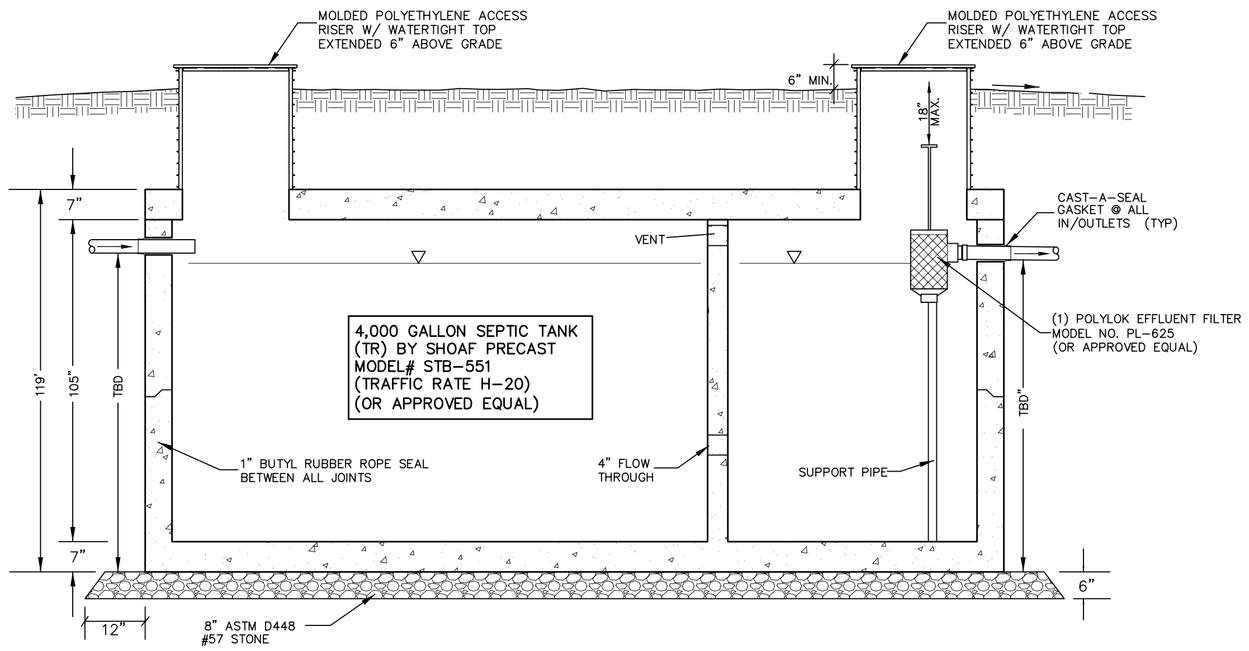
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DATE: ? DWN: ?

NOTE:
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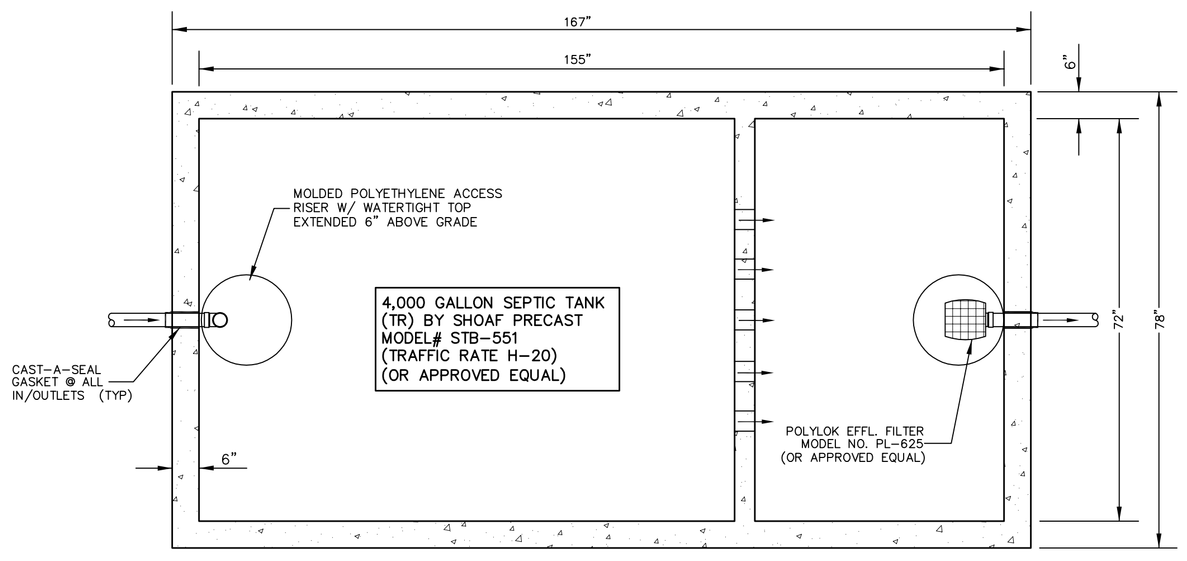
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CALL ONE CALL BEFORE YOU DIG
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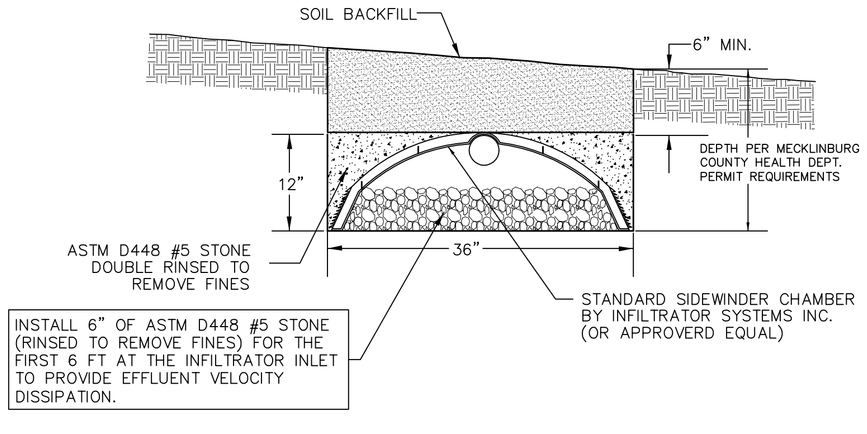
NOTE:
CONTRACTOR SHALL VERIFY ALL TANK DIMENSIONS AND ELEVATIONS PRIOR TO INSTALLATION



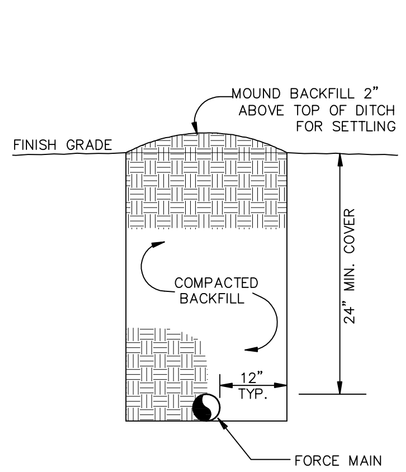
SEPTIC TANK – SECTION VIEW
NOT TO SCALE



PLAN VIEW – SEPTIC TANK
NOT TO SCALE



CHAMBER ABSORPTION TRENCH CROSS-SECTION
NOT TO SCALE



TYPICAL FORCE MAIN TRENCH
N.T.S.

WASTEWATER DISPOSAL SYSTEM CALCULATIONS
FOR
BACK CREEK CHRISTIAN ACADEMY
MECKLENBURG COUNTY, NORTH CAROLINA

PROPOSED ENROLLMENT – 280 STUDENTS
DRAINFIELD DESIGN FLOW – 9.0 GPD/STD.
TANKAGE DESIGN FLOW – 10.0 GPD/STD.
LTAR – 0.3 GPD/S.F.

DESIGN NOTE:
THE PROPOSED SYSTEM DESIGN TYPE WILL BE FLOW EQUALIZATION.

DAY	ATTENDANCE	DAILY FLOW (GPD)
MONDAY	280 STUDENTS	2,520
TUESDAY	280 STUDENTS	2,520
WEDNESDAY	280 STUDENTS	2,520
THURSDAY	280 STUDENTS	2,520
FRIDAY	280 STUDENTS	2,520
SATURDAY	0	0
SUNDAY	0	0
TOTAL WEEKLY FLOW		12,600 GAL

EQUALIZATION CYCLE IS ONE (1) WEEK (7-DAYS)

EQUALIZIED DAILY FLOW = 12,600 GPD ÷ 7 DAYS = 1,800 GPD

FLOW BALANCE

DAY	FLOW IN	FLOW OUT	RESIDUAL
MONDAY	2,520	1,800	720
TUESDAY	2,520	1,800	1,440
WEDNESDAY	2,520	1,800	2,160
THURSDAY	2,520	1,800	2,880
FRIDAY	2,520	1,800	3,600
SATURDAY	0	1,800	1,800
SUNDAY	0	1,800	0
	12,600	12,600	0

THE DRAIN FIELD SHALL BE DESIGNED FOR A DAILY FLOW OF 1,800 GPD

REQUIRED SEPTIC TANK
Q= 280 STUDENTS X 10 GPD/STUDENT = 2,800 GPD

SEPTIC TANK SIZE = 0.75(2,800 gpd) + 1,125 = 3,225 GAL.

USE DELLINGER 4,000 GALLON SEPTIC TANK (MODEL: STB-551 (H-20)

REQUIRED GREASE TRAP
THERE WILL NOT BE A KITCHEN IN THE FACILITY PER THE OWNER
* NO GREASE TRAP REQUIRED

DRAINFIELD REQUIREMENTS
REQUIRED LENGTH = 1,800 GPD / 0.30 GPD/SF / 3 FT (TRENCH WIDTH) = 2,000 L.F. OF DRAINFIELD

W/ 25% REDUCTION FOR CHAMBER SYSTEM

REQUIRED LENGTH = 2,000 LT. X .75 = 1,500 FT. OF DRAINFIELD

MANIFOLD LAYOUTS

TAP LAYOUT FOR MANIFOLDS DESIGN TYPE – FLOW EQUALIZATION			DOSE – 667 GALLONS MANIFOLD HEAD–2.0 FT	
LINE #	LENGTH (FT)	TAP SIZE/TYPE	TAP FLOW (GAL/MIN.)	FLOW / LINERAR FOOT (GPM/LF)
L–1	150	1/2" SCH 80	5.48	0.0365
L–2	150	1/2" SCH 80	5.48	0.0365
L–3	150	1/2" SCH 80	5.48	0.0365
L–4	145	1/2" SCH 80	5.48	0.0377
L–5	198	1/2" SCH 40	7.11	0.0359
L–6	198	1/2" SCH 40	7.11	0.0359
L–7	198	1/2" SCH 40	7.11	0.0359
L–8	198	1/2" SCH 40	7.11	0.0359
L–9	198	1/2" SCH 40	7.11	0.0359
TOTALS	1,585		±57.5 GPM	

REQUIRED PUMP DESIGN FLOW = 57.5 GPM

PUMP TANK REQUIREMENTS: (RULE .1952 (C) (1) (D)
USE SHOAF PRECAST 10,000 GALLON PUMP TANK (PT-2092)
ASSUME PUMP HEIGTH @ 17" AND TANKAGE VOLUME @ 121.56 GAL/IN.
DOSE = 2,000 GAL / 3 DOSES PER DAY = 667 GALLONS

PUMP SUBMERGENCE VOLUME (17"):	2,067 GALLONS
DOSE VOLUME (5.5"):	667 GALLONS
FLOW EQULATION VOLUME (33"):	4,000 GALLONS
24–HOUR EMERG. STORAGE VOL. (23"):	2,800 GALLONS
PRE–ALARM LEVEL – 4"	486 GALLONS
TOTAL REQUIRED PUMP TANK VOLUME – 10,020 GALLONS	
* ACTUAL STORAGE AVAIL. – 10,210 GALLONS (SEE CUT SHEET)	

PUMP DESIGN
FORCE MAIN – 3" SCH 40 PVC
LENGTH OF SUPPLY LINE – 275 FT.
PUMP DESIGN FLOW – 57.5 GPM

DOSING PUMP TDH CALCULATIONS

① MANIFOLD HEAD PRESSURE (H_p) = 2.0 FT.

② STATIC HEAD (H_s) = 13 FT.

FRICTION LOSS THROUGH 3" SUPPLY LINE

LENGTH OF SUPPLY MAIN – 275 FT.

FRICTION LOSS/100 FT OF PIPE – ±0.90 FT/100 FT OF PIPE
VELOCITY – ±2.6 FT./SEC. (SCOURING VELOCITY > 2.0 FPS)

FRICTION LOSS W/ PIPE LENGTH = 275 FT X 0.90 FT/100 FT = ±2.5 FT.

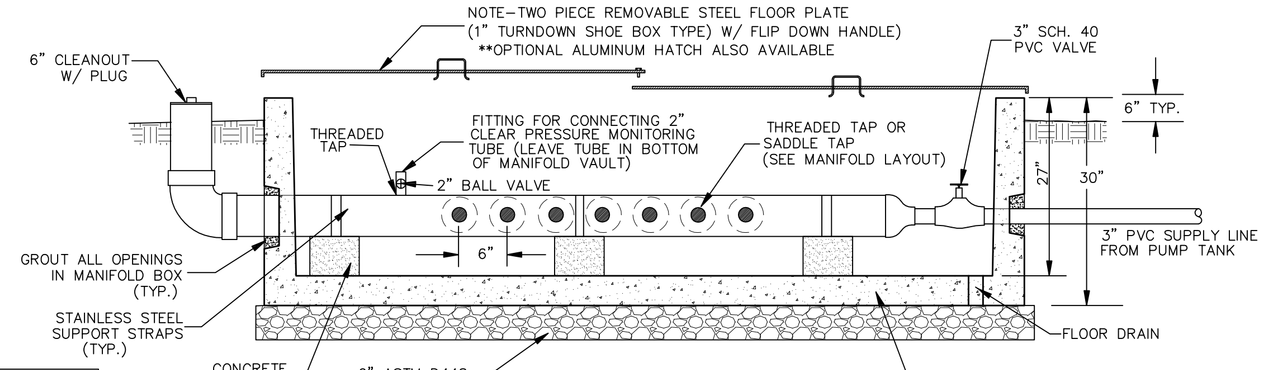
FRICTION LOSS W/ FITTINGS = 2.5 FT. X 25% = ±1.0 FT.

③ FRICTION LOSS = ±4 FT.

TOTAL DYNAMIC HEAD (H_f) = 2.0 FT + 13 FT + 4 FT

TOTAL DYNAMIC HEAD (H_f) = ±19 FT.

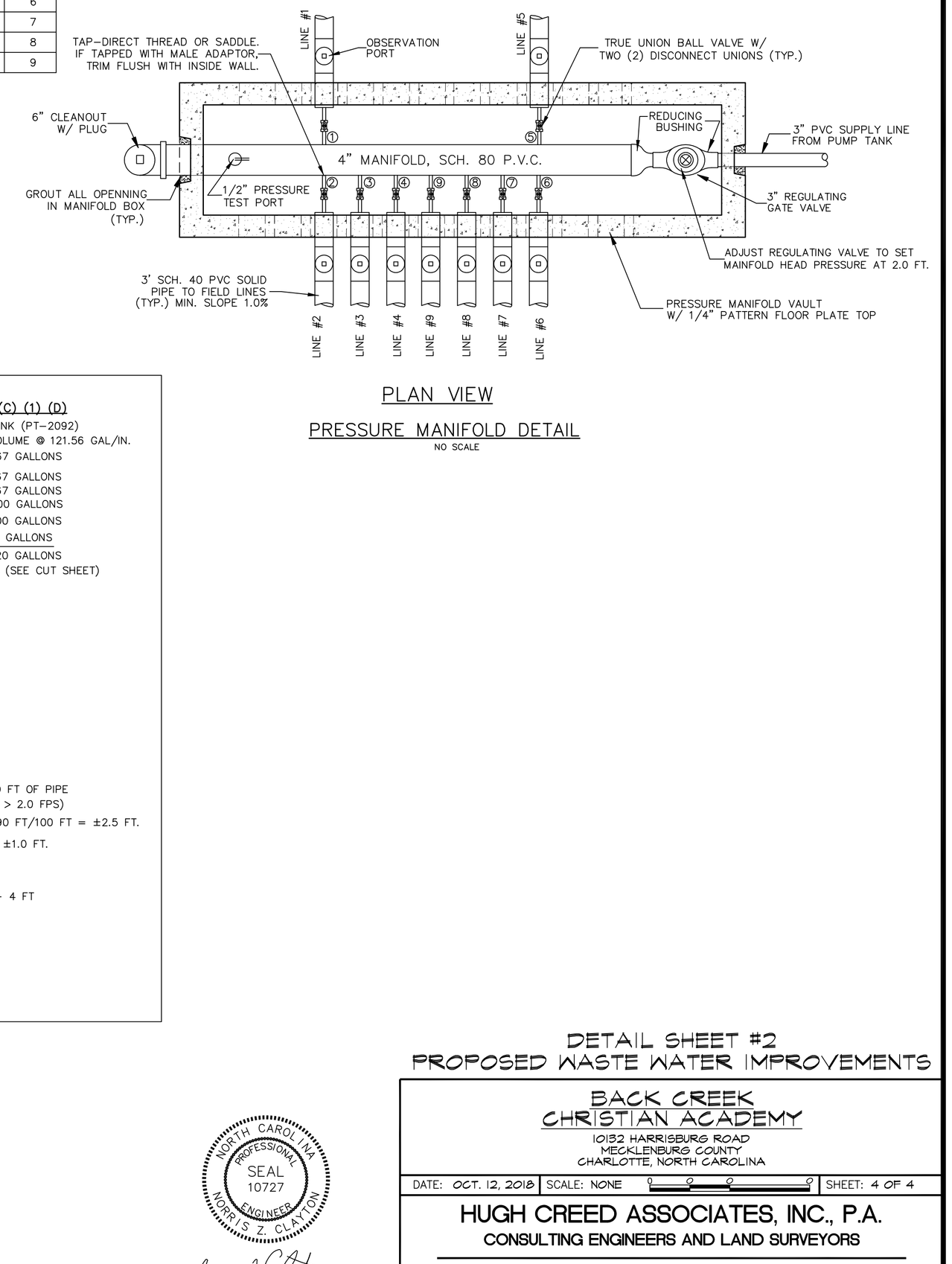
INSTALL ONE (1) ZOELLOR PUMP CO. MODEL 185 PUMP, SINGLE PHASE, 230 VOLTS, FOR PUMPING ±57.5 GPM @ ±19 FT. TDH. (OR APPROVED EQUAL)



SECTION VIEW "A" – "A"

TYPICAL MANIFOLD LAYOUT	
TAP SIZE /TYPE	TAP #
1/2" / SCH.80	1
1/2" / SCH.80	2
1/2" / SCH.80	3
1/2" / SCH.80	4
1/2" / SCH.40	5
1/2" / SCH.40	6
1/2" / SCH.40	7
1/2" / SCH.40	8
1/2" / SCH.40	9

THIS IS A TYPICAL MANIFOLD DETAIL. ACTUAL MANIFOLD LAYOUT MAY VARY BASED ON LOCATION. SEE SITE DRAWING PRIOR TO CONSTRUCTING MANIFOLDS.



PLAN VIEW

PRESSURE MANIFOLD DETAIL
NO SCALE

REV. 10–17–18

NORTH CAROLINA PROFESSIONAL SEAL 10727 ENGINEER NORRIS Z. CLAYTON

10–12–18

DETAIL SHEET #2
PROPOSED WASTE WATER IMPROVEMENTS

BACK CREEK CHRISTIAN ACADEMY
10132 HARRISBURG ROAD
MECKLENBURG COUNTY
CHARLOTTE, NORTH CAROLINA

DATE: OCT. 12, 2018 | SCALE: NONE | SHEET: 4 OF 4

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J:\PROJECTS 2005\BACK CREED CHRISTIAN ACADEMY\BACK CREEK\DWG\WORKING DRAWING CAB: ? DWR: ?