

SOILS LEGEND			
SYMBOL	NAME/DESCRIPTION	GROUP	"K" FACTOR
GaC	GAILA LOAM, 8 TO 15 PERCENT SLOPES	B	0.55
GhB	GLENELG-URBAN LAND COMPLEX, 0 TO 8 PERCENT SLOPES	B	-
GmB	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES	C/D	0.37
MaD	MAJOR LOAM, 15 TO 25 PERCENT SLOPES	B	0.28

NOTES:
1) SOIL INFORMATION HAS BEEN TAKEN FROM THE UNITED STATES DEPARTMENT OF AGRICULTURE; NATURAL RESOURCES CONSERVATION SERVICE; WEB SOIL SURVEY.
2) HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR "K" GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT.

EXISTING SEPTIC SYSTEM DESIGN SPECIFICATIONS

- CHURCH:** TANK SIZE: 1 TANK AT 1,500 GAL
SYSTEM WAS CERTIFIED BY FYOCK SEPTIC SERVICE, INC. ON 10-15-2021; PASSED
TANK WAS PUMPED DURING CERTIFICATION.
- RESIDENTIAL CARE FACILITY:** TANK SIZE: 2 TANKS AT 1,500 GAL
SYSTEM WAS CERTIFIED BY FYOCK SEPTIC SERVICE, INC. ON 10-15-2021; PASSED
TANK WAS PUMPED DURING CERTIFICATION.

PROPOSED SEPTIC SYSTEM DESIGN SPECIFICATIONS

- RESIDENTIAL CARE FACILITY:** 100 GPD PER BED (5 BEDS)
15 GPD PER EMPLOYEE (2 EMPLOYEES)
(5 BEDS X 100 GPD) + (2 EMPLOYEES X 15 GPD)
500 GPD + 30 GPD = 530 GPD
- CHURCH:** 3 GPD PER SEAT (247 SEATS)
3 GPD X 247 SEATS = 741 GPD
- TOTAL:** 1,271 GPD

SEPTIC SYSTEM TRENCH TRENCH DESIGN SPECIFICATIONS

- INITIAL SYSTEM FOR RESIDENTIAL CARE FACILITY ONLY:**
 - APPLICATION RATE: 1.2
 - EFFECTIVE AREA BEGINNING DEPTH: 6.0'
 - BOTTOM MAXIMUM DEPTH: 8.0'

- DESIGN FLOW: 530 GPD
- SQUARE FOOTAGE OF DRAIN FIELD REQUIRED:
DESIGN FLOW (530 GPD) / APPLICATION RATE (1.2) = 442 SF
- SIDEWALL REDUCTION CREDIT:
TRENCH WIDTH (W) = 3.0'
TRENCH EFFECTIVE DEPTH (D) = 2.0'
(W+2) / (W+1+2D) X 100 = 60%
- LINEAR LENGTH OF TRENCH REQUIRED:
DRAIN FIELD SQUARE FOOTAGE (442 SF) X SIDEWALL REDUCTION CREDIT (60%) / TRENCH WIDTH (3.0') = 93'
- LINEAR LENGTH OF TRENCH PROVIDED = 100'
- FOUR TRENCHES AT 50 LF EACH
- EXISTING GROUND: TRENCH 1-1: 474.1
INVERT: TRENCH 1-1: 472.1
EXISTING GROUND: TRENCH 1-2: 473.3
INVERT: TRENCH 1-2: 471.3

- IF THE EXISTING 50 LF TRENCH IS DETERMINED TO BE FUNCTIONING PROPERLY AT THE TIME OF TRENCH INSTALLATION, TRENCH 1-2 IS NOT REQUIRED.

- FIRST REPLACEMENT SYSTEM:**
 - APPLICATION RATE: 0.8
 - EFFECTIVE AREA BEGINNING DEPTH: 4.0'
 - BOTTOM MAXIMUM DEPTH: 8.0'

- DESIGN FLOW: 1,271 GPD
- SQUARE FOOTAGE OF DRAIN FIELD REQUIRED:
DESIGN FLOW (1,271 GPD) / APPLICATION RATE (0.8) = 1,589 SF
- SIDEWALL REDUCTION CREDIT:
TRENCH WIDTH (W) = 3.0'
TRENCH EFFECTIVE DEPTH (D) = 4.0'
(W+2) / (W+1+2D) X 100 = 42%
- LINEAR LENGTH OF TRENCH REQUIRED:
DRAIN FIELD SQUARE FOOTAGE (1,589 SF) X SIDEWALL REDUCTION CREDIT (42%) / TRENCH WIDTH (3.0') = 223'
- LINEAR LENGTH OF TRENCH PROVIDED = 224'
- FOUR TRENCHES AT 56 LF EACH
- EXISTING GROUND: TRENCH R1-1: 478.2
INVERT: TRENCH R1-1: 476.2
EXISTING GROUND: TRENCH R1-2: 477.6
INVERT: TRENCH R1-2: 475.6
EXISTING GROUND: TRENCH R1-3: 477.0
INVERT: TRENCH R1-3: 475.0
EXISTING GROUND: TRENCH R1-4: 476.4
INVERT: TRENCH R1-4: 474.4

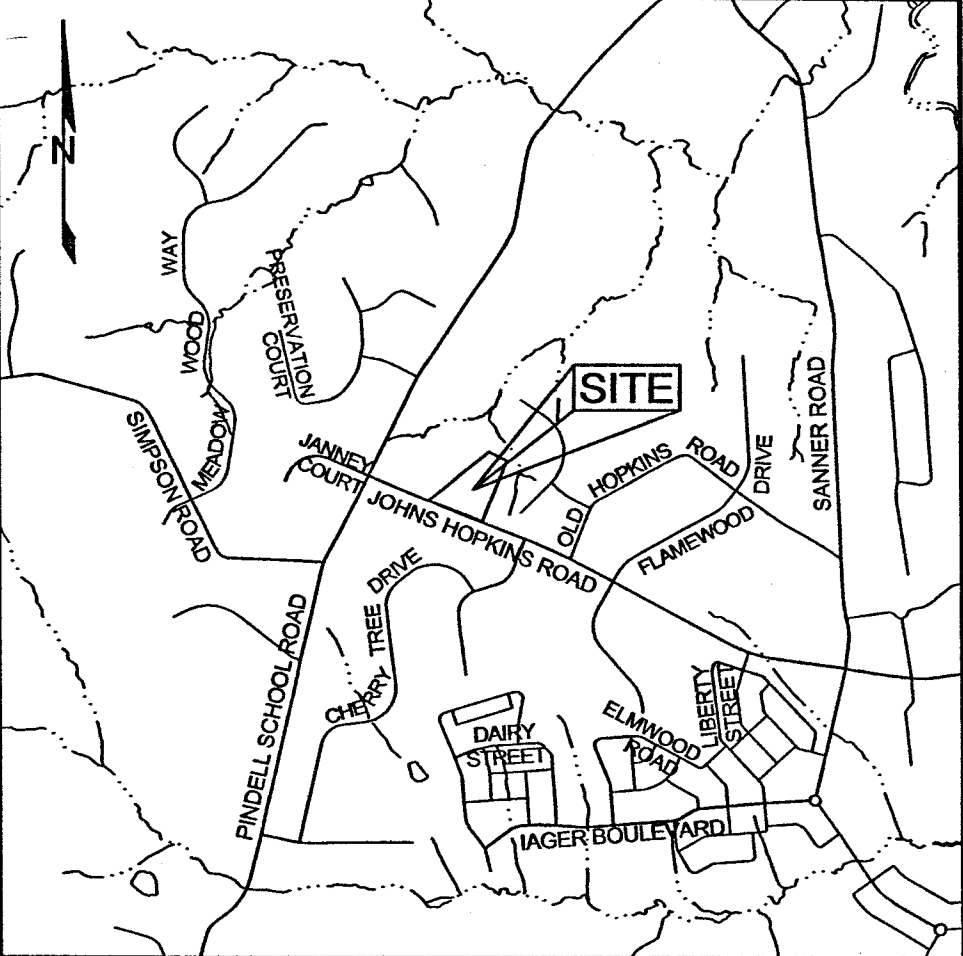
- SECOND AND THIRD REPLACEMENT SYSTEM:**
 - APPLICATION RATE: 1.2
 - EFFECTIVE AREA BEGINNING DEPTH: 4.0'
 - BOTTOM MAXIMUM DEPTH: 8.0'

- DESIGN FLOW: 1,271 GPD
- SQUARE FOOTAGE OF DRAIN FIELD REQUIRED:
DESIGN FLOW (1,271 GPD) / APPLICATION RATE (1.2) = 1,060 SF
- SIDEWALL REDUCTION CREDIT:
TRENCH WIDTH (W) = 3.0'
TRENCH EFFECTIVE DEPTH (D) = 4.0'
(W+2) / (W+1+2D) X 100 = 42%
- LINEAR LENGTH OF TRENCH REQUIRED:
DRAIN FIELD SQUARE FOOTAGE (1,060 SF) X SIDEWALL REDUCTION CREDIT (42%) / TRENCH WIDTH (3.0') = 149'
- LINEAR LENGTH OF TRENCH PROVIDED = 150'
- THREE TRENCHES AT 50 LF EACH
- EXISTING GROUND: TRENCH R2-1: 475.5
INVERT: TRENCH R2-1: 473.5
EXISTING GROUND: TRENCH R2-2: 474.7
INVERT: TRENCH R2-2: 472.7
EXISTING GROUND: TRENCH R2-3: 473.2
INVERT: TRENCH R2-3: 471.2
EXISTING GROUND: TRENCH R3-1: 469.8
INVERT: TRENCH R3-1: 467.8
EXISTING GROUND: TRENCH R3-2: 469.8
INVERT: TRENCH R3-2: 467.8
EXISTING GROUND: TRENCH R3-3: 469.4
INVERT: TRENCH R3-3: 467.4



LEGEND

- EXISTING 2FT FIELD RUN CONTOUR
- EXISTING 10FT FIELD RUN CONTOUR
- EXISTING 2FT GIS CONTOUR
- EXISTING 10FT GIS CONTOUR
- PROPOSED 10FT CONTOUR
- EXISTING PERCOLATION TEST HOLE (PASSED)
- EXISTING SEPTIC CLEANOUT
- PROPOSED SEPTIC CLEANOUT
- EXISTING STORM DRAIN CLEANOUT
- EXISTING TREE
- EXISTING UTILITY POLE
- EXISTING ELECTRIC METER
- EXISTING ELECTRIC TRANSFORMER
- EXISTING POST
- EXISTING FIRE PIT
- PROPOSED SEWAGE DISPOSAL AREA
- PROPOSED WELL BOX
- STEEP SLOPES (25% - 100%)
- EXISTING RETAINING WALL
- EXISTING TREELINE
- SOIL BOUNDARY
- FLOODPLAIN BOUNDARY
- STREAM CENTERLINE
- 100' STREAM BUFFER
- LIMIT OF WETLAND
- WETLAND BUFFER
- EXISTING UNDERGROUND ELECTRIC
- EXISTING OVERHEAD ELECTRIC
- EXISTING PRIVACY FENCE

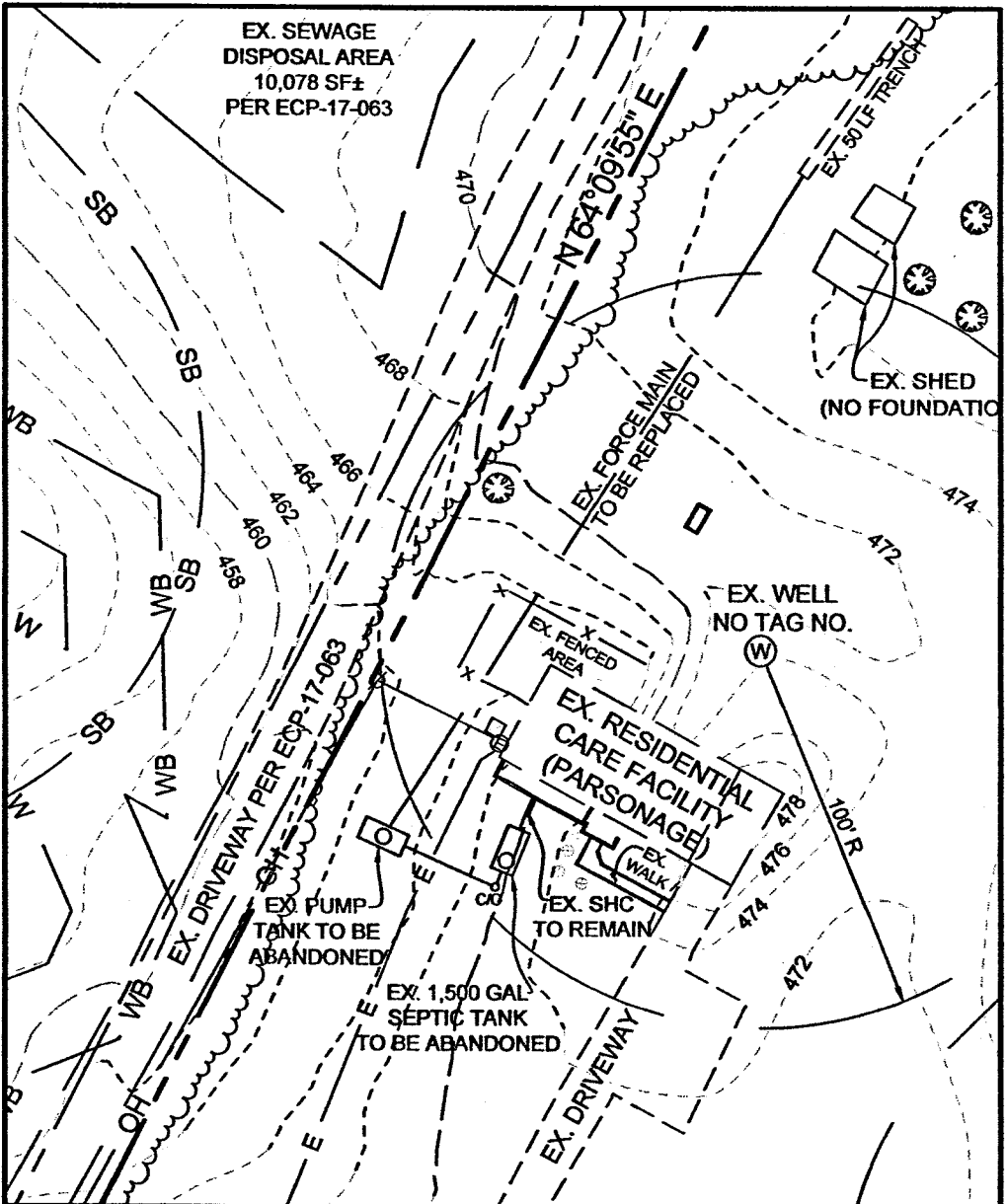


VICINITY MAP

SCALE: 1"=200'

GENERAL NOTES

- SUBJECT PROPERTY ZONED RR-DEO PER 10-06-2013 COMPREHENSIVE ZONING PLAN.
- PROPERTY ADDRESSES:
ROLLING HILLS BAPTIST CHURCH: 11510 JOHNS HOPKINS ROAD, CLARKSVILLE MARYLAND 21029
LA CASA DE ROSA RESIDENTIAL CARE FACILITY: 11520 JOHNS HOPKINS ROAD, CLARKSVILLE, MD 21029
- DEED REFERENCE: LIBER: 531 FOLIO: 502
- PROJECT ACREAGE: PARCEL 337: 6.501 AC±
- PREVIOUS HOWARD COUNTY FILE NUMBERS: SDP-75-044
- PRIVATE WATER AND PRIVATE SEWER WILL BE USED WITHIN THIS SITE.
- THIS AREA DESIGNATES A PRIVATE SEWAGE DISPOSAL AREA OF AT LEAST 10,000 SF AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL (COMAR 26.04.03). IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED. THIS SEWAGE DISPOSAL AREA SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWAGE AREA. RECORDATION OF A MODIFIED SEWAGE AREA SHALL NOT BE NECESSARY.
- THE BOUNDARY SHOWN HEREON IS BASED ON A BOUNDARY SURVEY PREPARED BY SEG LAND SURVEYING, LLC IN SEPTEMBER OF 2022.
- THE EXISTING TOPOGRAPHY SHOWN WITHIN THE DEVELOPED AREA IS BASED ON A FIELD RUN TOPOGRAPHIC SURVEY PREPARED BY SEG LAND SURVEYING, LLC IN MAY OF 2023. TOPOGRAPHY OUTSIDE THE DEVELOPED AREA IS BASED ON HOWARD COUNTY GIS FLOW IN 2016.
- THE SOILS SHOWN HAVE BEEN TAKEN FROM THE US DEPARTMENT OF AGRICULTURE, NATURAL RESOURCE CONSERVATION SERVICE, WEB SOIL SURVEY WEBSITE. HOWARD COUNTY SOILS GRID 17, SUB-GRID 156.
- THE LOT SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP, WIDTH AND LOT AREA AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT.
- THE WELL (NO TAG, & HO-95-1635) HAS BEEN FIELD LOCATED AND IS ACCURATELY SHOWN.
- ALL EXISTING WELLS, SEPTIC SYSTEMS AND SEWAGE DISPOSAL AREA WITHIN 100 FEET OF THE PROPERTY BOUNDARIES AND ALL EXISTING AND PROPOSED WELLS THAT ARE LOCATED WITHIN 200 FEET DOWN-GRADIENT OF EXISTING OR PROPOSED SEPTIC SYSTEMS AND SEWAGE DISPOSAL AREA HAVE BEEN FIELD LOCATED.
- ANY CHANGE TO THE LOCATIONS OR DEPTHS TO ANY COMPONENTS MUST BE APPROVED BY THE ENGINEER AND THE HOWARD COUNTY HEALTH DEPARTMENT PRIOR TO INSTALLATION. A REVISED SITE PLAN MAY BE REQUIRED.
- THE MAXIMUM EARTH COVER OVER THE TANK IS 3 FEET. GREATER EARTH COVER WILL REQUIRE A HEAVY LOAD BEARING TANK.
- ELECTRICAL WORK FOR THE INSTALLATION MUST BE PERFORMED BY A LICENSED ELECTRICIAN.
- TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO HISTORIC STRUCTURES OR CEMETERIES WITHIN THE PROJECT BOUNDARY.
- CONTRACTOR TO TEST PIT TO VERIFY ALL INVERT LOCATIONS AND NOTIFY ENGINEER OF ANY CHANGES TO THE INSTALLATION OF THE NEW SYSTEM.
- REPLACEMENT SYSTEMS SERVING THE COMBINED CHURCH AND ASSISTED LIVING USES SHALL BE EQUIPPED WITH A BAT UNIT AND LOW PRESSURE DOSE DRAINFIELD DUE TO DOWNGRADE NEIGHBORING WELL AND NONRESIDENTIAL WASTE.



DEMOLITION PLAN VIEW

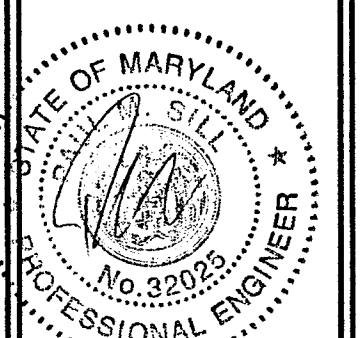
SCALE: 1"=50'

ONSITE SEWAGE DISPOSAL SYSTEM DESIGN PLAN

ROLLING HILLS BAPTIST CHURCH
AND
LA CASA DE ROSA
RESIDENTIAL CARE FACILITY

TAX MAP 41 GRID 9
5TH ELECTION DISTRICT

PARCEL 337
HOWARD COUNTY, MARYLAND



SILL ENGINEERING GROUP, LLC
16005 Frederick Road, 2nd Floor
Woodbine, Maryland 21797
Phone: 443.325.5076
Fax: 410.696.2022
Email: info@sillengineering.com
Civil Engineering for Land Development

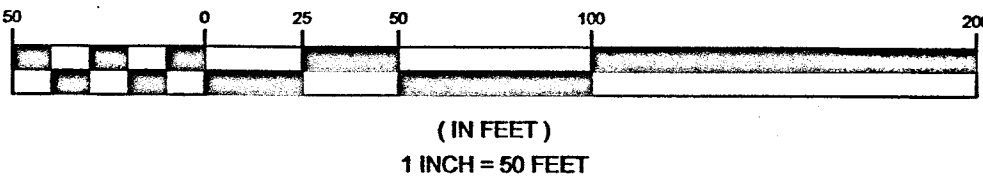
DESIGN BY: PS
DRAWN BY: AC
CHECKED BY: PS
SCALE: AS SHOWN
DATE: OCTOBER 16, 2023
PROJECT #: 21-102
SHEET #: 1 of 2

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 32023, EXPIRATION DATE JUNE 30, 2025

THE EXISTING SEPTIC SYSTEM SERVING THE PARSONAGE MUST BE UPGRADED PRIOR TO BUILDING PERMIT APPROVAL

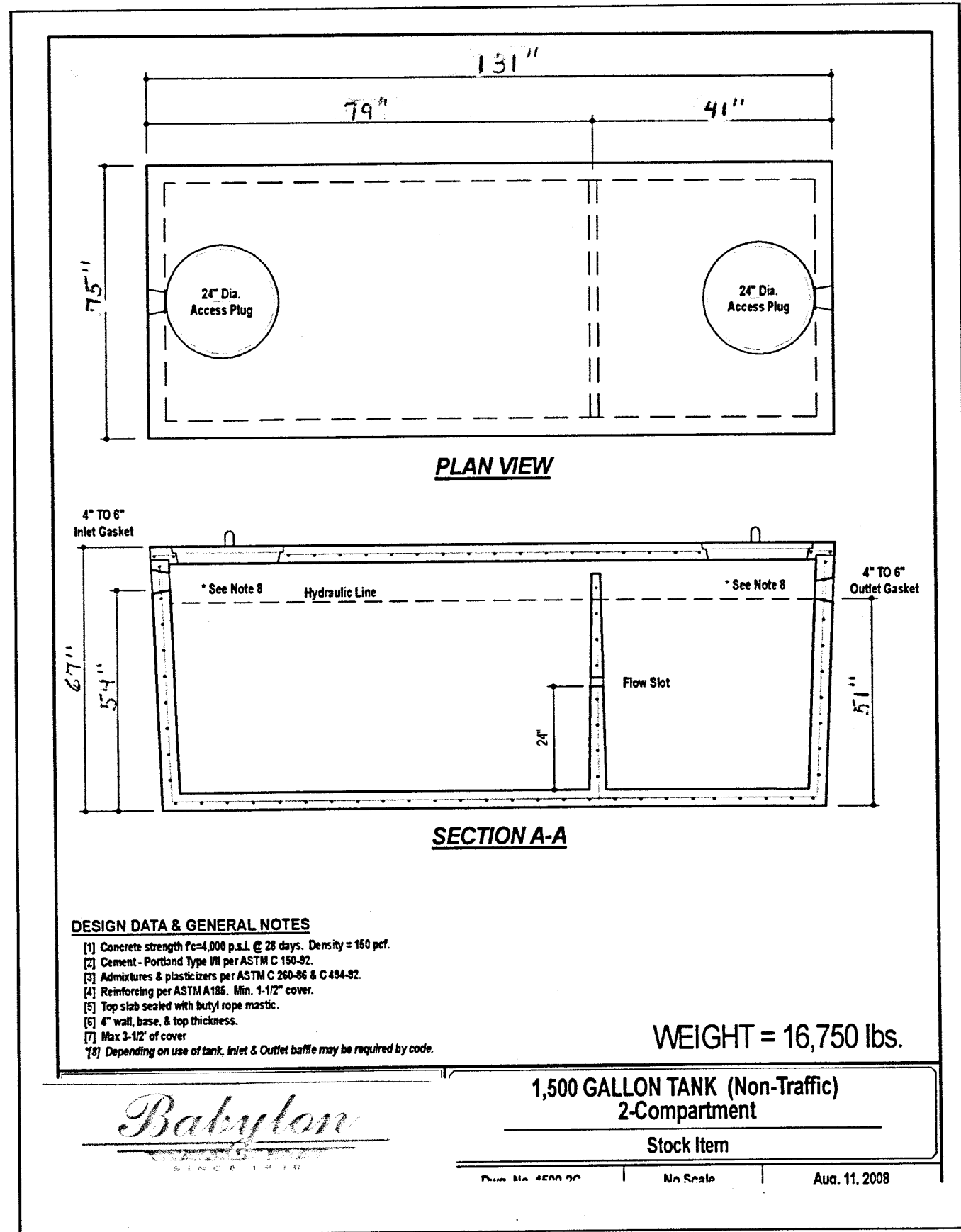
OWNER/DEVELOPER
ROLLING HILLS BAPTIST CHURCH
11510 JOHNS HOPKINS ROAD
CLARKSVILLE, MARYLAND 21029

GRAPHIC SCALE



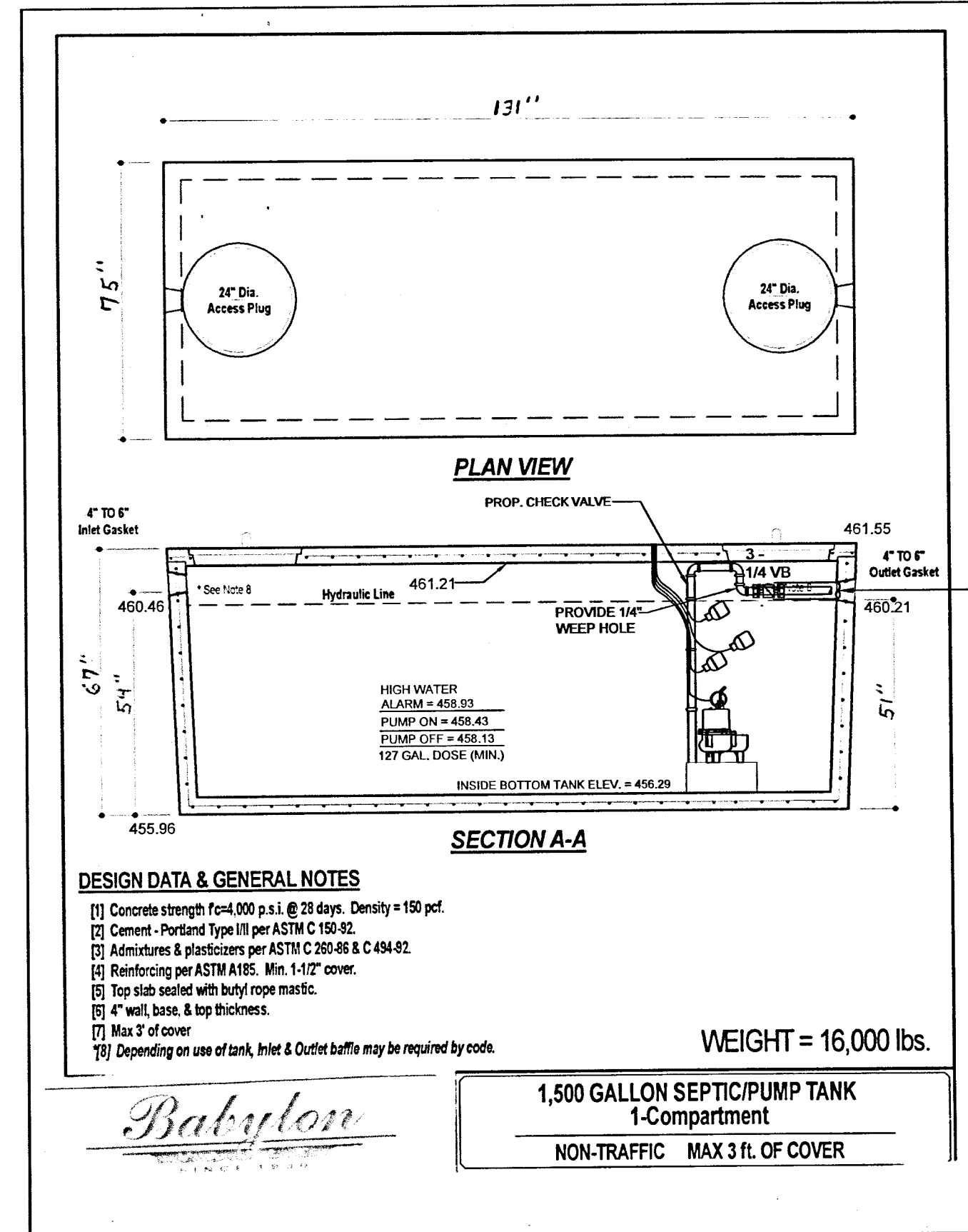
PLAN VIEW

SCALE: 1"=50'



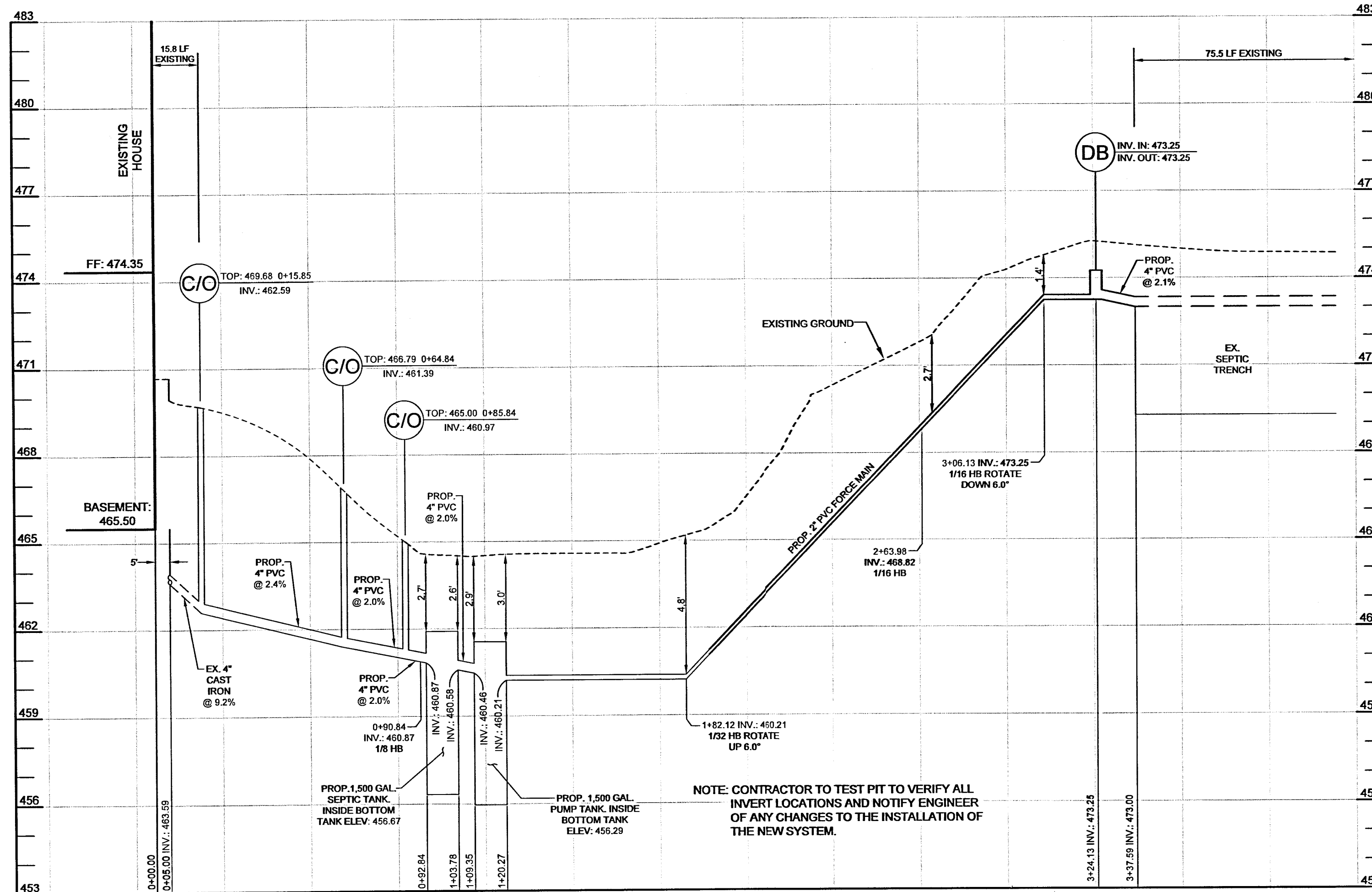
PROPOSED 1,500-GALLON SEPTIC TANK DETAIL

NOT TO SCALE



PROPOSED 1,500-GALLON PUMP TANK DETAIL

NOT TO SCALE



FORCE MAIN PROFILE

HORIZONTAL SCALE: 1"=30'

VERTICAL SCALE: 1"=3'

PUMPING SYSTEM DESIGN

- DOSE CALCULATIONS:
 - DESIGN FLOW: 530 GPD
 - FORCE MAIN: 217.08'
 - VOLUME OF 2.0" PIPE: 17.40 GALLONS PER 100'
 - DOSE TO BE THE LARGER OF:
 - 16TH THE DESIGN FLOW: 16 X 530 GALLONS = 88.33 GALLONS
 - VOLUME OF FORCE MAIN: 37.77 GALLONS
 - MINIMUM DOSE = 88.33 + 37.77 = 126.10 GALLONS. USE 127 GALLONS
- PUMP DESIGN:
 - PUMP FLOW REQUIRED: 26.74 GPM USE 27 GPM
 - DOSE AMOUNT: 127 GALLONS
 - PUMP RUN TIME: 4.75 MINUTES
 - STATIC HEAD (SEE PROFILE FOR DETAIL): 473.25 - 458.13 = 15.12'
- PIPE LENGTHS:
 - 2.0" FORCE MAIN: 217.08'

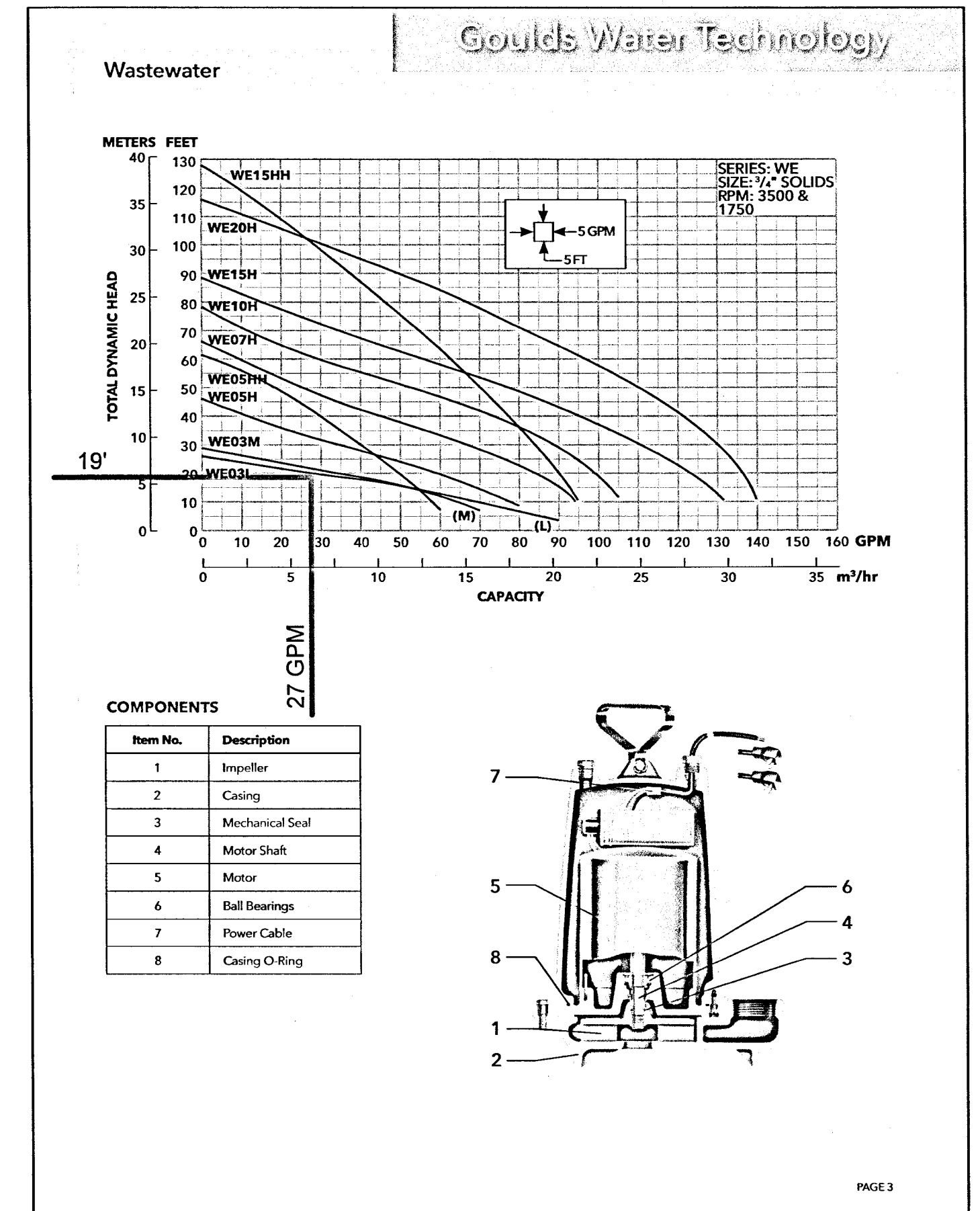
FRICTION HEAD CALCULATION (TABLE 4.3)

- FLOW AT 2.0" PIPE (FORCE MAIN) = 27 GPM
- FRICTION LOSS PER 100' (TABLE 4.4) OF 2.0" SCHEDULE 40 PLASTIC PIPE: 1.28
- TOTAL EQUIVALENT LENGTH OF 2.0" FM AND APPURTENANCES = 217.08' + 69.35' = 286.43/100 = 2.87 X 1.28 = 3.67'
- TOTAL FRICTION HEAD = 3.67'
- TOTAL DYNAMIC HEAD = STATIC HEAD + FRICTION HEAD = 15.12' + 3.67' = 18.79' (USE 19')

PUMP CHAMBER DESIGN

- FOR PUMP TANK DIMENSIONS AND DETAIL, SEE DETAIL THIS SHEET.
- CROSS SECTIONAL AREA OF TANK: 57.2288 CF PER ONE VERTICAL FOOT
- PUMP HEIGHT: 16'
- PUMP CHAMBER ELEVATIONS:
 - PROPOSED GRADE AT TOP OF TANK (AT INLET): 464.49
 - TOP OF PUMP TANK (INTERIOR): 461.21
 - PUMP CHAMBER INVERT IN: 450.46
 - HIGH WATER ALARM: 458.92
 - PUMP ON: 458.42
 - PUMP OFF: 458.12
 - BOTTOM INSIDE SLAB OF TANK: 456.29
- PUMP CHAMBER VOLUMES:
 - INVERT IN TO HIGH WATER ALARM: 88.1324 CF OR 659.29 GALLONS
 - PUMP ON TO PUMP OFF: 17.1686 CF OR 128.43 GALLONS
 - EXCESS VOLUME ABOVE HIGH WATER ALARM: 131.0540 CF OR 980.35 GALLONS
- DESIGN BASED ON:
 - GOULDS WEIRAL PUMP OR EQUIVALENT
 - BABYLON VAULT 1,500-GALLON SEPTIC TANK OR EQUIVALENT
 - BABYLON VAULT 1,500-GALLON PUMP TANK OR EQUIVALENT

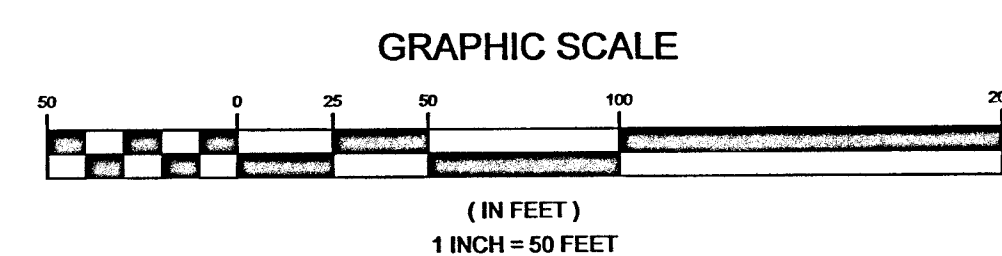
PIPE	2.0" FORCE MAIN	3.0" MANIFOLD	1.5" LATERAL
1/4 BEND (90°)	3 @ 7.0' = 21.0'	-	-
1/8 BEND (45°)	-	-	-
1/16 BEND (22.5°)	2 @ 2.0' = 4.0'	-	-
1/32 BEND (11.25°)	1 @ 1.0' = 1.0'	-	-
GATE VALVE	-	-	-
STANDARD TEE	-	-	-
RUN TEE	-	-	-
CROSS	-	-	-
REDUCER	-	-	-
COUPLINGS	14 @ 3.0' = 42.0'	-	-
QUICK CONNECT/DISCONNECT	1 @ 1.35' = 1.35'	-	-
TOTAL EQUIVALENT LENGTH OF PIPE	69.35'	-	-



OSDS NOTES

- ANY CHANGE TO THE LOCATIONS OR DEPTHS TO ANY COMPONENTS MUST BE APPROVED BY THE ENGINEER AND THE HOWARD COUNTY HEALTH DEPARTMENT PRIOR TO INSTALLATION. A REVISED OSDS SITE PLAN MAY BE REQUIRED.
- DOSE TO BE 127 GALLONS ON A PUMP RUN TIME OF 4.25 MINUTES ON DEMAND.
- PUMP TO BE A GOULDS WE03L OR EQUIVALENT.

NO.	DESCRIPTION	DATE
2	REVISED SEPTIC TANK LOCATION AND FIST PROPOSED CLEAN-OUT	5/3/2024
1	REVISED PUMP TANK LOCATION TO AVOID EXISTING ELECTRIC UTILITY AND UPDATED PUMP CALCULATIONS	3/20/2024
REVISIONS		

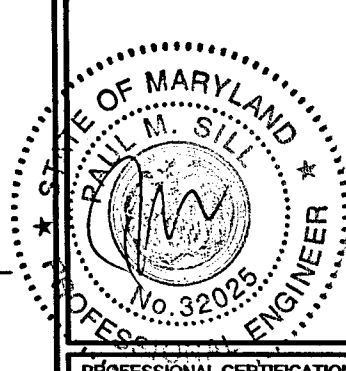


OWNER/DEVELOPER

ROLLING HILLS BAPTIST CHURCH

11510 JOHN HOPKINS ROAD

CLARKSVILLE, MARYLAND 21029



SILL ENGINEERING GROUP, LLC

16005 Frederick Road, 2nd Floor

Woodbine, Maryland 21797

Phone: 410.325.5076

Fax: 410.696.2022

Email: info@sillengineering.com

Civil Engineering for Land Development

DESIGN BY: PS

DRAWN BY: AC

CHECKED BY: PS

SCALE: AS SHOWN

DATE: MAY 7, 2024

PROJECT #: 21-102

SHEET #: 2 of 2

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 32025, EXPIRATION DATE JUNE 20, 2025.

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- LINEAR LENGTH OF TRENCH PROVIDED = 100'
- TWO TRENCHES AT 50 LF EACH *

- IF THE EXISTING 50 LF TRENCH IS DETERMINED TO BE FUNCTIONING PROPERLY AT THE TIME OF TRENCH INSTALLATION, TRENCH 1-2 IS NOT REQUIRED.**

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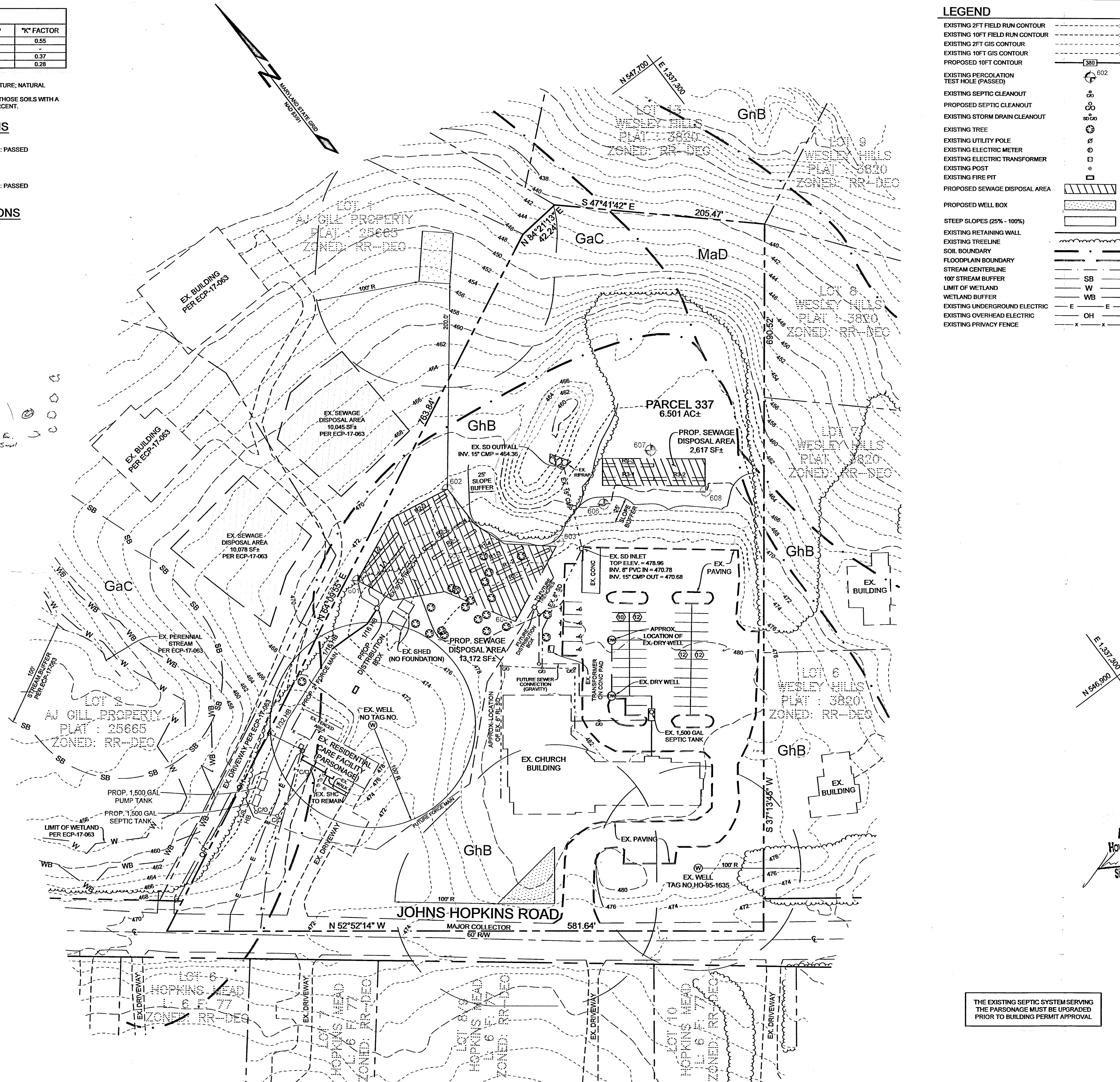
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- THREE TRENCHES AT 50 LF EACH *

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- INVERT:** TRENCH R1-1: 476.2
- EXISTING GROUND:** TRENCH R1-2: 477.5
- INVERT:** TRENCH R1-2: 475.6
- EXISTING GROUND:** TRENCH R1-3: 477.0
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NO.	DESCRIPTION	DATE
2	REVISED SEPTIC TANK LOCATION AND FIST PROPOSED CLEAN-OUT	5/3/2024
1	REVISED PUMP TANK LOCATION TO AVOID EXISTING ELECTRIC UTILITY	3/20/2024
REVISIONS		



LEGEND

EXISTING 2FT FIELD RUN CONTOUR
EXISTING 10FT FIELD RUN CONTOUR
EXISTING 2FT GIS CONTOUR
EXISTING 10FT GIS CONTOUR
PROPOSED 10FT CONTOUR

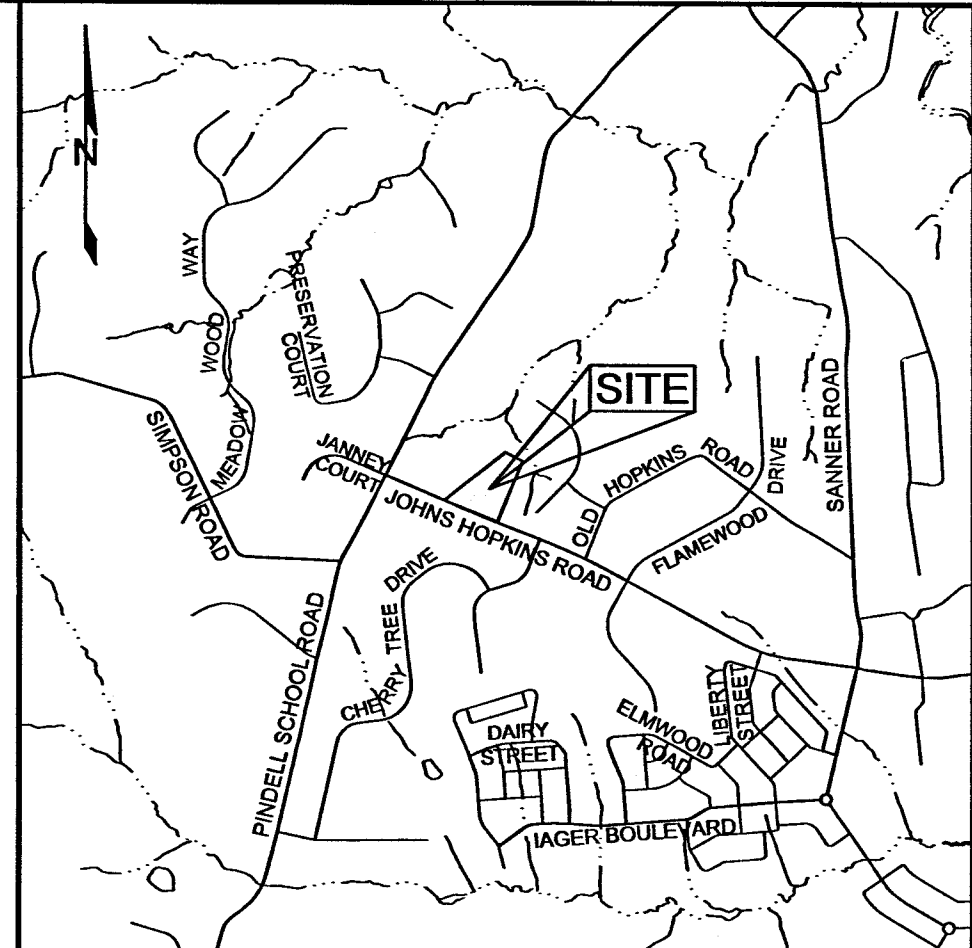
EXISTING PERCOLATION TEST HOLE (PASSED)
EXISTING SEPTIC CLEANOUT
PROPOSED SEPTIC CLEANOUT
EXISTING STORM DRAIN CLEANOUT

EXISTING TREE
EXISTING UTILITY POLE
EXISTING ELECTRIC METER
EXISTING ELECTRIC TRANSFORMER
EXISTING POST
EXISTING FIRE PIT
PROPOSED SEWAGE DISPOSAL AREA

PROPOSED WELL BOX

STEEP SLOPES (25% - 100%)
EXISTING RETAINING WALL
EXISTING TREELINE
SOIL BOUNDARY
FLOODPLAIN BOUNDARY
STREAM CENTERLINE
100' STREAM BUFFER
LIMIT OF WETLAND
WETLAND BUFFER
EXISTING UNDERGROUND ELECTRIC
EXISTING OVERHEAD ELECTRIC
EXISTING PRIVACY FENCE

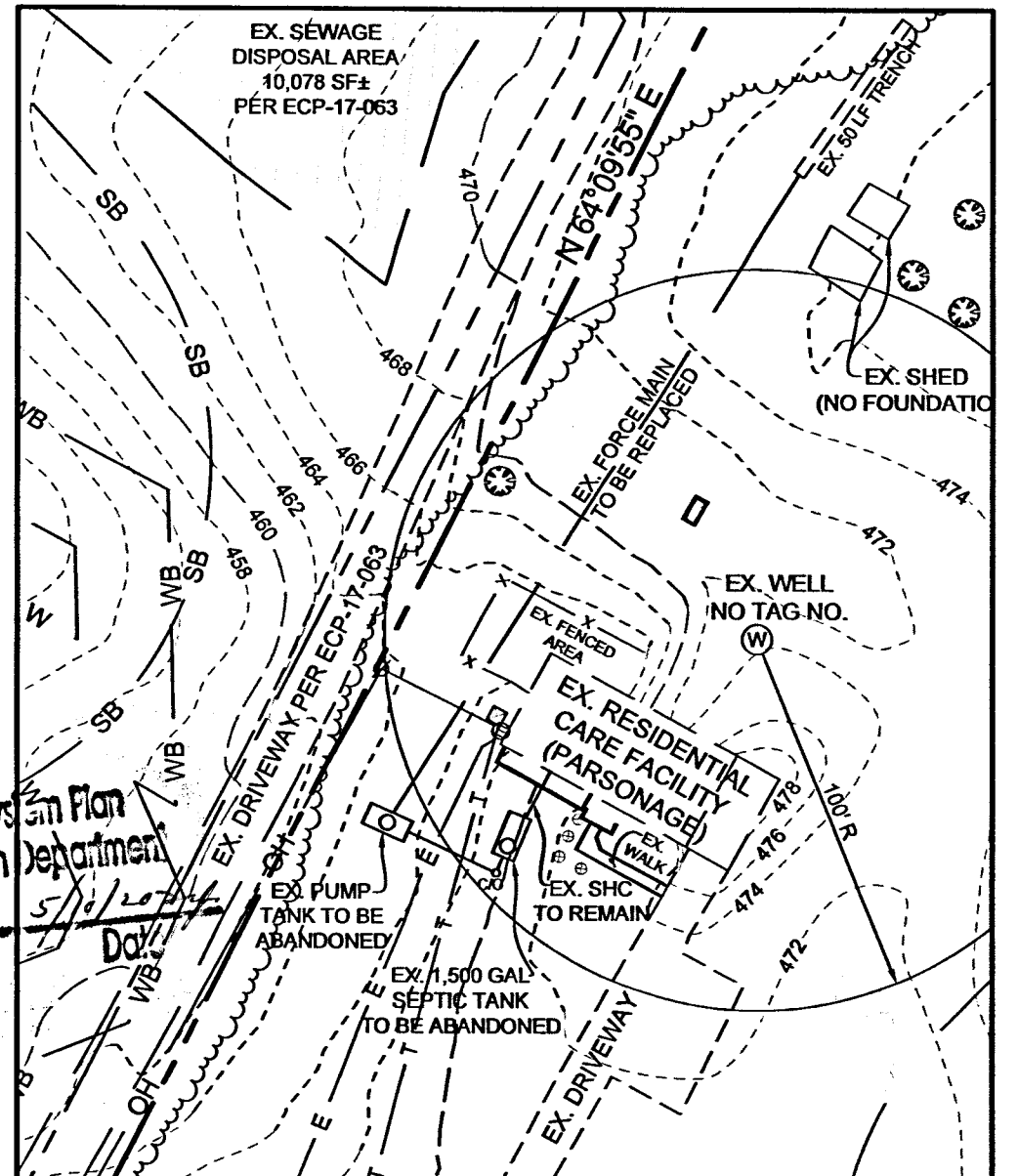
SB
W
WB
E
OH
x



VICINITY MAP
SCALE: 1"=200'

GENERAL NOTES

- SUBJECT PROPERTY ZONED RR-DEO PER 10-06-2013 COMPREHENSIVE ZONING PLAN.
- PROPERTY ADDRESSES:
 - ROLLING HILLS BAPTIST CHURCH: 11510 JOHNS HOPKINS ROAD, CLARKSVILLE MARYLAND 21029
 - LA CASA DE ROSA RESIDENTIAL CARE FACILITY: 11520 JOHNS HOPKINS ROAD, CLARKSVILLE, MD 21029
- DEED REFERENCE: LIBER: 531 FOLIO: 502
- PROJECT ACREAGE: PARCEL 337: 6.501 AC±
- PREVIOUS HOWARD COUNTY FILE NUMBERS: SDP-75-044
- PRIVATE WATER AND PRIVATE SEWER WILL BE USED WITHIN THIS SITE.
- THIS AREA DESIGNATES A PRIVATE SEWAGE DISPOSAL AREA OF AT LEAST 10,000 SF AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL (COMAR 26.04.03). IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED. THIS SEWAGE DISPOSAL AREA SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWAGE AREA. RECORDATION OF A MODIFIED SEWAGE AREA SHALL NOT BE NECESSARY.
- THE BOUNDARY SHOWN HEREON IS BASED ON A BOUNDARY SURVEY PREPARED BY SEG LAND SURVEYING, LLC IN SEPTEMBER OF 2022.
- THE EXISTING TOPOGRAPHY SHOWN WITHIN THE DEVELOPED AREA IS BASED ON A FIELD RUN TOPOGRAPHIC SURVEY PREPARED BY SEG LAND SURVEYING, LLC IN MAY OF 2023. TOPOGRAPHY OUTSIDE THE DEVELOP AREA IS BASED ON HOWARD COUNTY GIS FLOW IN 2018.
- THE SOILS SHOWN HAVE BEEN TAKEN FROM THE US DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE, WEB SOIL SURVEY WEBSITE. HOWARD COUNTY SOILS GRID 17, SUB-GRID 15B.
- THE LOT SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP, WIDTH AND LOT AREA AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT.
- THE WELL (NO TAG, & HO-95-1635) HAS BEEN FIELD LOCATED AND IS ACCURATELY SHOWN.
- ALL EXISTING WELLS, SEPTIC SYSTEMS AND SEWAGE DISPOSAL AREA WITHIN 100 FEET OF THE PROPERTY BOUNDARIES AND ALL EXISTING AND PROPOSED WELLS THAT ARE LOCATED WITHIN 200 FEET DOWN GRADIENT OF EXISTING OR PROPOSED SEPTIC SYSTEMS AND SEWAGE DISPOSAL AREA HAVE BEEN FIELD LOCATED.
- ANY CHANGE TO THE LOCATIONS OR DEPTHS TO ANY COMPONENTS MUST BE APPROVED BY THE ENGINEER AND THE HOWARD COUNTY HEALTH DEPARTMENT PRIOR TO INSTALLATION. A REVISED SITE PLAN MAY BE REQUIRED.
- THE MAXIMUM EARTH COVER OVER THE TANK IS 3 FEET. GREATER EARTH COVER WILL REQUIRE A HEAVY LOAD BEARING TANK.
- ELECTRICAL WORK FOR THE INSTALLATION MUST BE PERFORMED BY A LICENSED ELECTRICIAN.
- TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO HISTORIC STRUCTURES OR CEMETERIES WITHIN THE PROJECT BOUNDARY.
- CONTRACTOR TO TEST PIT TO VERIFY ALL INVERT LOCATIONS AND NOTIFY ENGINEER OF ANY CHANGES TO THE INSTALLATION OF THE NEW SYSTEM.
- REPLACEMENT SYSTEMS SERVING THE COMBINED CHURCH AND ASSISTED LIVING USES SHALL BE EQUIPPED WITH A BAT UNIT AND LOW PRESSURE DOSE DRAINFIELD DUE TO DOWNGRADE NEIGHBORING WELL AND NONRESIDENTIAL WASTE.



DEMOLITION PLAN VIEW
SCALE: 1"=50'

THE EXISTING SEPTIC SYSTEM SERVING THE PARSONAGE MUST BE UPGRADED PRIOR TO BUILDING PERMIT APPROVAL.

OWNER/DEVELOPER
ROLLING HILLS BAPTIST CHURCH
CLARKSVILLE, MARYLAND 21029

REVISED ONSITE SEWAGE DISPOSAL SYSTEM DESIGN PLAN

ROLLING HILLS BAPTIST CHURCH
AND
LA CASA DE ROSA
RESIDENTIAL CARE FACILITY

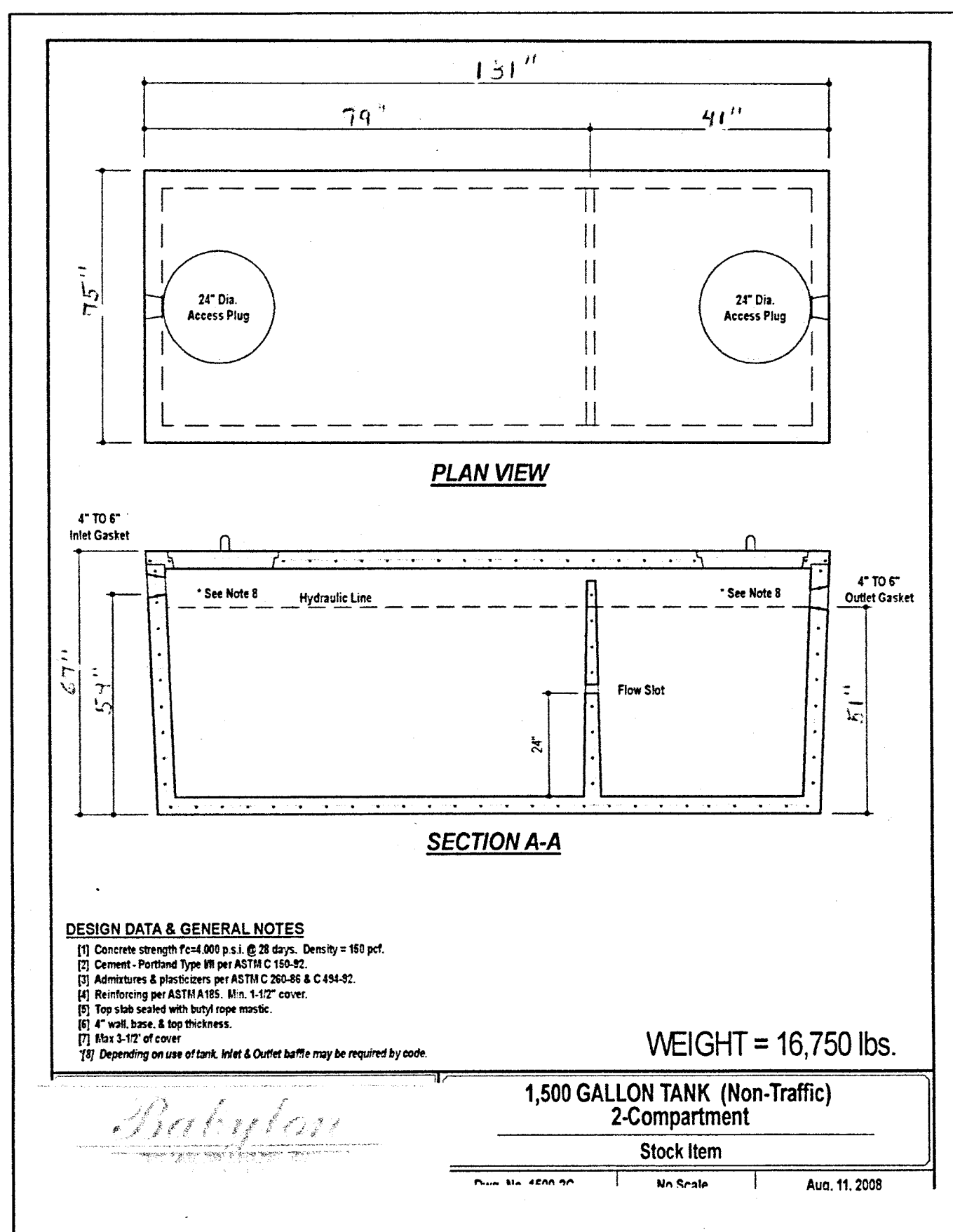
TAX MAP 41 GRID 9
5TH ELECTION DISTRICT

PARCEL 337
HOWARD COUNTY, MARYLAND

DESIGN BY: PS
DRAWN BY: AC
CHECKED BY: PS
SCALE: AS SHOWN
DATE: MAY 7, 2024
PROJECT #: 21-102
SHEET #: 1 of 2

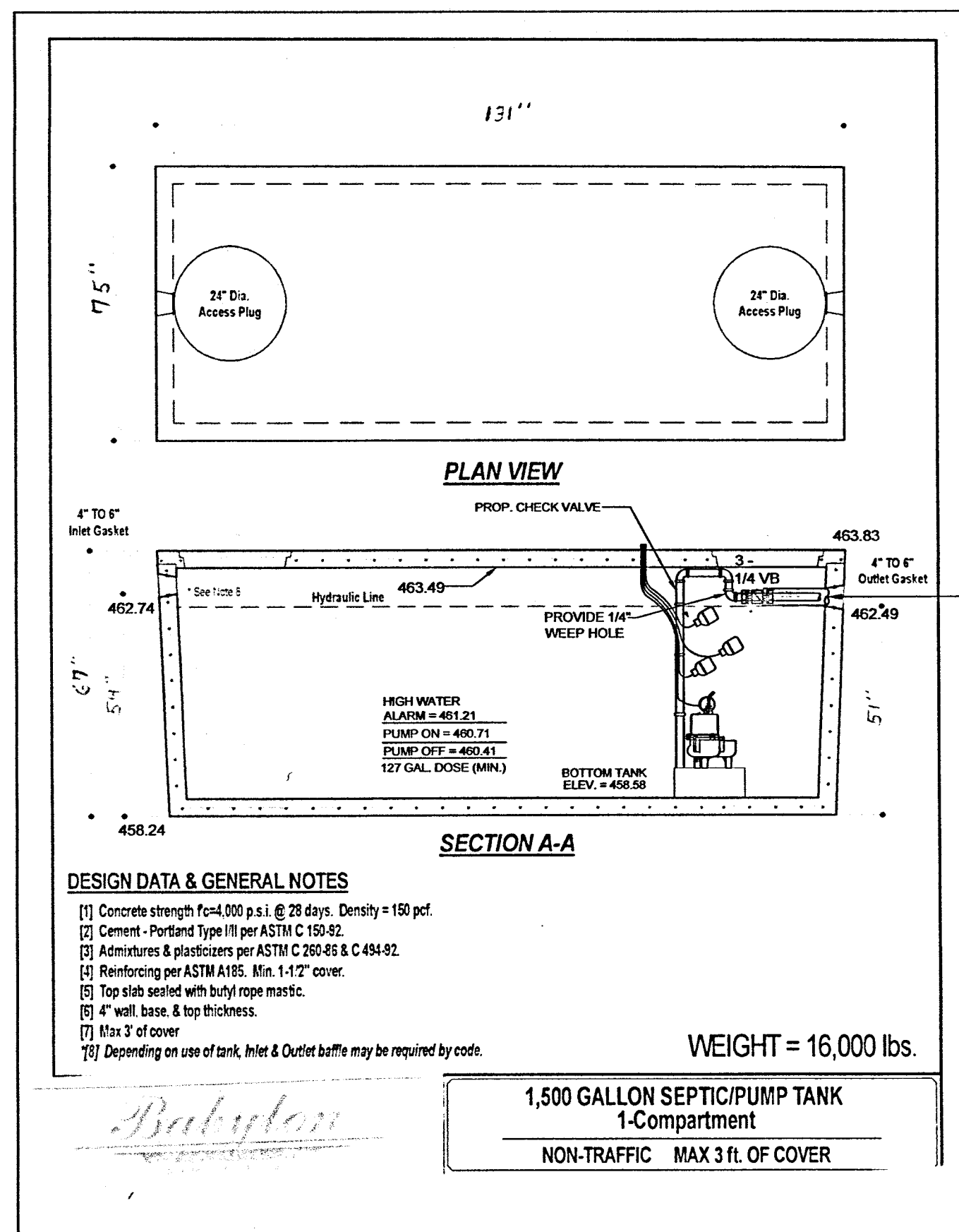
SILL ENGINEERING GROUP, LLC
16005 Frederick Road, 2nd Floor
Woodbine, Maryland 21797
Phone: 443.325.5076
Fax: 410.696.2022
Email: info@sillengineering.com
Civil Engineering for Land Development

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DAILY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 30205, EXPIRATION DATE: JUNE 30, 2025.



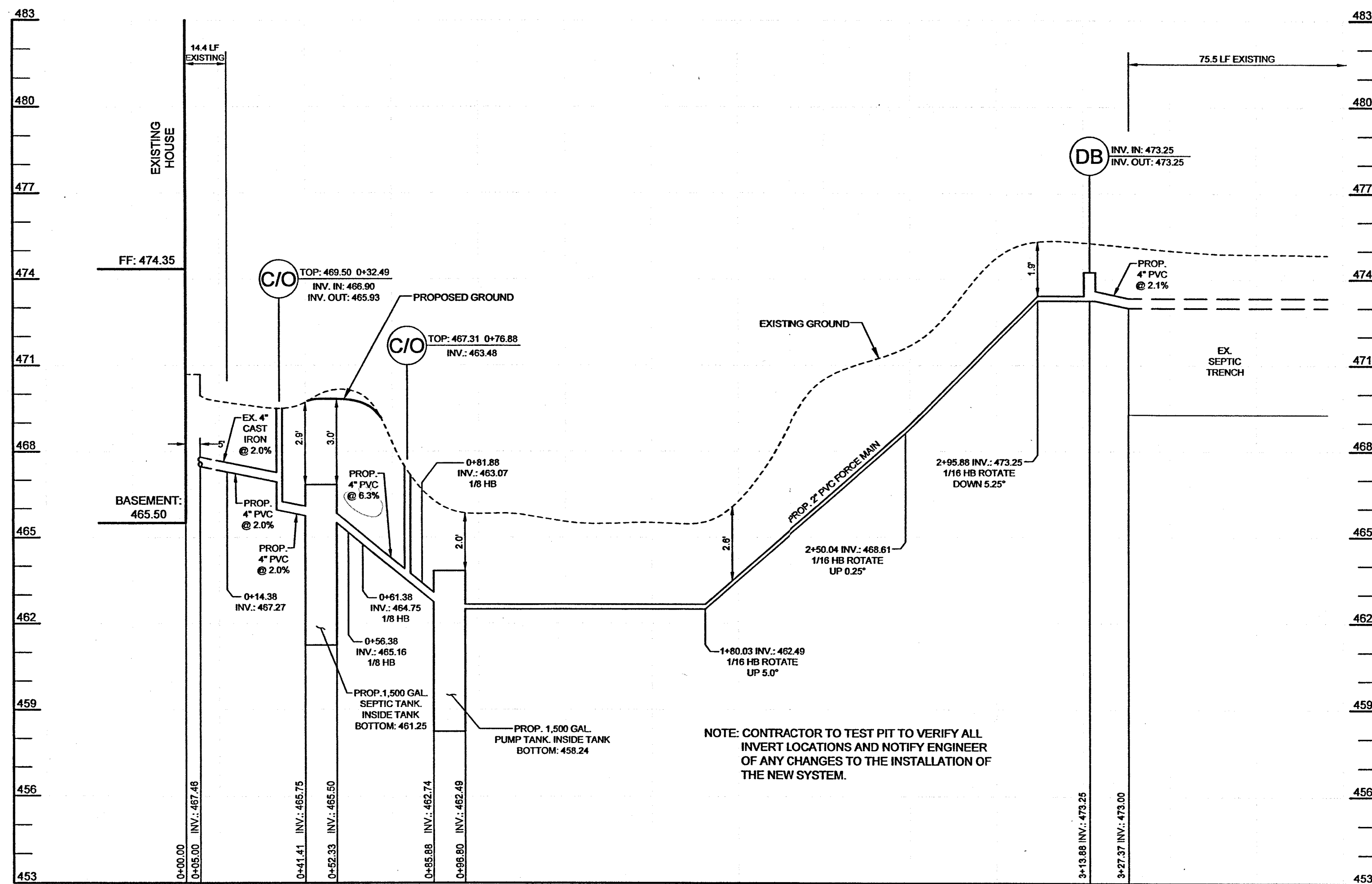
PROPOSED 1,500-GALLON SEPTIC TANK DETAIL

NOT TO SCALE



PROPOSED 1,500-GALLON PUMP TANK DETAIL

NOT TO SCALE



FORCE MAIN PROFILE

HORIZONTAL SCALE: 1"=30'
VERTICAL SCALE: 1"=3'

PUMPING SYSTEM DESIGN

- DOSE CALCULATIONS:**
 - DESIGN FLOW: 530 GPD
 - FORCE MAIN: 217.08'
 - VOLUME OF 2.0" PIPE: 17.40 GALLONS PER 100'
 - DOSE TO BE THE LARGER OF:
 - 1/10TH THE DESIGN FLOW: 1/6 X 530 GALLONS = 88.33 GALLONS
 - VOLUME OF FORCE MAIN: 37.77 GALLONS
 - MINIMUM DOSE = 88.33 + 37.77 = 126.10 GALLONS. USE 127 GALLONS
- PUMP DESIGN:**
 - PUMP FLOW REQUIRED: 29.88 GPM USE 30 GPM
 - DOSE AMOUNT: 127 GALLONS
 - PUMP RUN TIME: 4.25 MINUTES
 - STATIC HEAD (SEE PROFILE FOR DETAIL): 473.25 - 460.41 = 12.84'
- PIPE LENGTHS:**
 - 2.0" FORCE MAIN: 217.08'

FRICTION HEAD CALCULATION (TABLE 4.3)

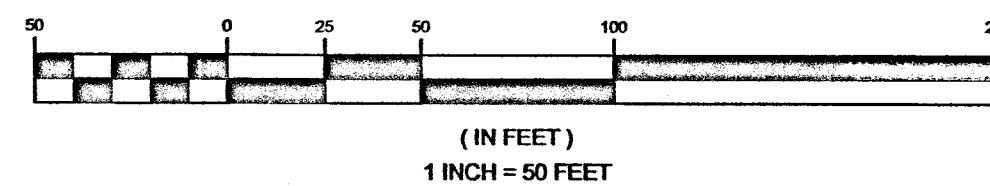
- FLOW AT 2.0" PIPE (FORCE MAIN) = 30 GPM
- FRICTION LOSS PER 100' (TABLE 4.4) OF 2.0" SCHEDULE 40 PLASTIC PIPE: 1.54
- TOTAL EQUIVALENT LENGTH OF 2.0" FM AND APPURTENANCES = 217.08' + 70.35' = 287.43/100 = 2.87 X 1.54 = 4.42'
- TOTAL FRICTION HEAD = 4.42'
- TOTAL DYNAMIC HEAD = STATIC HEAD + FRICTION HEAD = 12.84' + 4.42' = 17.26' (USE 18')

PUMP CHAMBER DESIGN

- FOR PUMP TANK DIMENSIONS AND DETAIL, SEE DETAIL THIS SHEET.
- CROSS SECTIONAL AREA OF TANK: 57.195 SF PER ONE VERTICAL FOOT
- PUMP HEIGHT: 18"
- PUMP CHAMBER ELEVATIONS:**
 - PROPOSED GRADE AT TOP OF TANK (AT INLET): 466.29
 - TOP OF PUMP TANK (INTERIOR): 463.49
 - PUMP CHAMBER INVERT IN: 462.74
 - HIGH WATER ALARM: 461.21
 - PUMP ON: 460.71
 - PUMP OFF: 460.41
 - BOTTOM INSIDE SLAB OF TANK: 458.58
- PUMP CHAMBER VOLUMES:**
 - INVERT IN TO HIGH WATER ALARM: 87.5094 CF OR 654.608 GALLONS
 - PUMP ON TO PUMP OFF: 17.1585 CF OR 128.35 GALLONS
 - EXCESS VOLUME ABOVE HIGH WATER ALARM: 130.4046 CF OR 975.49 GALLONS
- DESIGN BASED ON:**
 - GOULDS WE303L PUMP OR EQUIVALENT
 - BABYLON VAULT 1,500-GALLON SEPTIC TANK OR EQUIVALENT
 - BABYLON VAULT 1,500-GALLON PUMP TANK OR EQUIVALENT

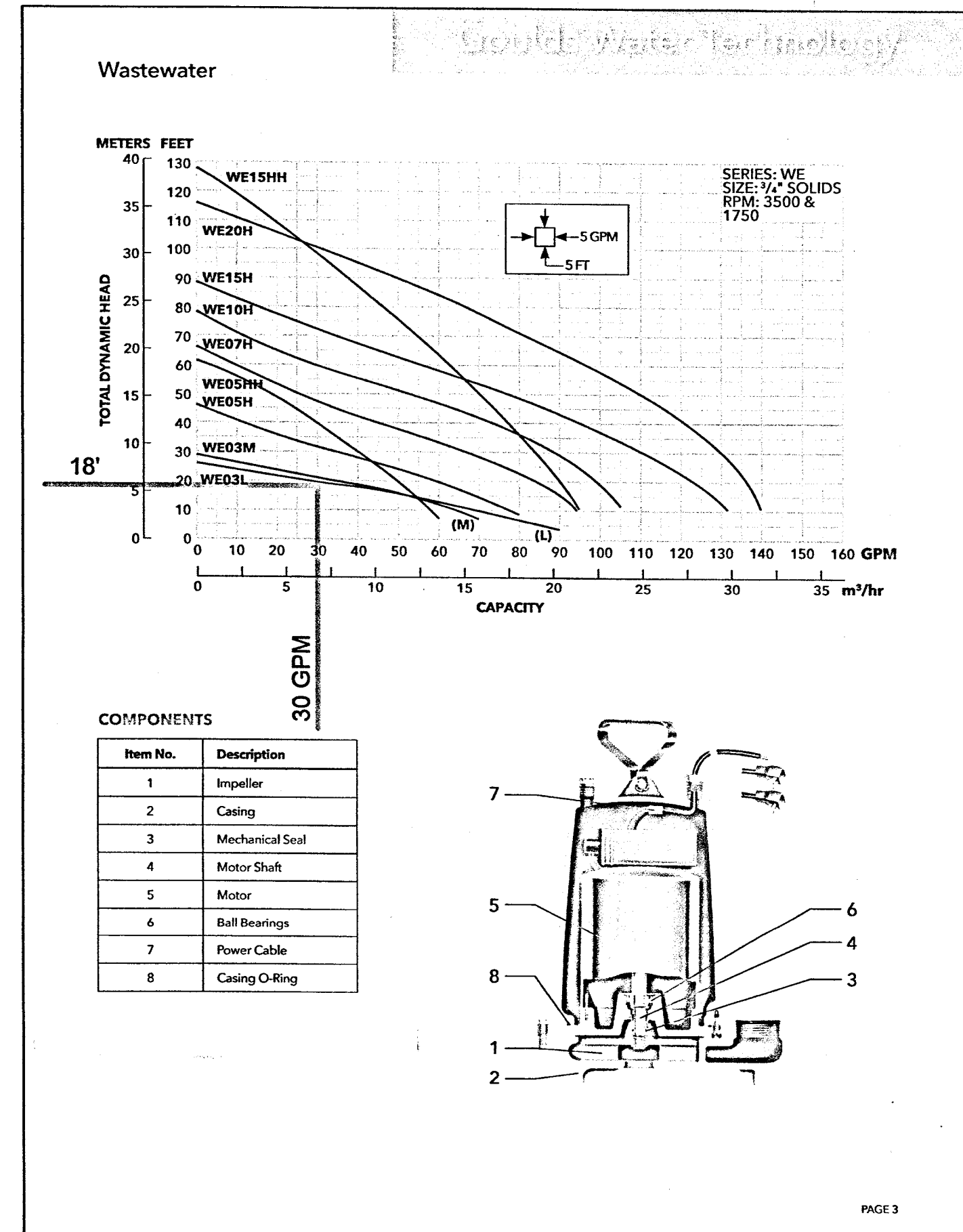
PIPE	2.0" FORCE MAIN	3.0" MANIFOLD	1.5" LATERAL
1/4 BEND (90°)	3 @ 7.0' = 21.0'	-	-
1/8 BEND (45°)	-	-	-
1/16 BEND (22.5°)	3 @ 2.0' = 6.0'	-	-
1/32 BEND (11.25°)	-	-	-
GATE VALVE	-	-	-
STANDARD TEE	-	-	-
RUN TEE	-	-	-
CROSS	-	-	-
REDUCER	-	-	-
COUPLINGS	14 @ 3.0' = 42.0'	-	-
QUICK CONNECT/DISCONNECT	1 @ 1.35' = 1.35'	-	-
TOTAL EQUIVALENT LENGTH OF PIPE	70.35'	-	-

GRAPHIC SCALE



THE EXISTING SEPTIC SYSTEM SERVING THE PARSONAGE MUST BE UPGRADED PRIOR TO BUILDING PERMIT APPROVAL.

OWNER/DEVELOPER
ROLLING HILLS BAPTIST CHURCH
11510 JOHNS HOPKINS ROAD
CLARKSVILLE, MARYLAND 21029



OSDS NOTES

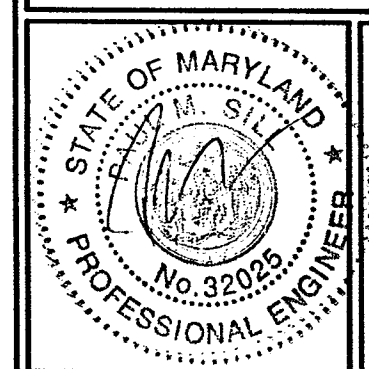
- ANY CHANGE TO THE LOCATIONS OR DEPTHS TO ANY COMPONENTS MUST BE APPROVED BY THE ENGINEER AND THE HOWARD COUNTY HEALTH DEPARTMENT PRIOR TO INSTALLATION. A REVISED OSDS SITE PLAN MAY BE REQUIRED.
- DOSE TO BE 127 GALLONS ON A PUMP RUN TIME OF 4.25 MINUTES ON DEMAND.
- PUMP TO BE A GOULDS WE03L OR EQUIVALENT.

ONSITE SEWAGE DISPOSAL PROFILE AND DETAILS

ROLLING HILLS BAPTIST CHURCH
AND
LA CASA DE ROSA
RESIDENTIAL CARE FACILITY

TAX MAP 41 GRID 9
5TH ELECTION DISTRICT

PARCEL 337
HOWARD COUNTY, MARYLAND



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Phone: 410.325.5076
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Email: info@sillengineering.com
Civil Engineering for Land Development

DESIGN BY: PS
DRAWN BY: AC
CHECKED BY: PS
SCALE: AS SHOWN
DATE: OCTOBER 16, 2023
PROJECT #: 21-102
SHEET #: 2 of 2

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 32024, EXPIRATION DATE JUNE 30, 2025