

# FIRST BAPTIST CHURCH OF GUILFORD SITE DEVELOPMENT PLAN

## GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
- THE CONTRACTOR IS TO NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE DAYS BEFORE STARTING WORK ON THESE DRAWINGS:
  - MISS UTILITY: 1-800-257-7777
  - C & P TELEPHONE COMPANY: 725-9976
  - HOWARD COUNTY BUREAU OF UTILITIES: 313-2366
  - AT&T CABLE LOCATION DIVISION: 393-3553
  - B.G.&E. CO. CONTRACTOR SERVICES: 850-4620
  - B.G.&E. CO. UNDERGROUND DAMAGE CONTROL: 787-4520
  - STATE HIGHWAY ADMINISTRATION: 531-5533
- SITE ANALYSIS:
  - TOTAL AREA OF PARCELS 227 AND 9 : 9.06 AC±
  - AREA OF PARCEL 227: 4.22 AC±
  - AREA OF PARCEL 9 : 4.84 AC±
  - AREA TO BE DEDICATED TO HOWARD COUNTY FOR THE PURPOSES OF A PUBLIC RIGHT-OF-WAY: 0.36 AC±
  - NET AREA: 8.70 AC± - **PAR. A**
  - PRESENT ZONING : R-SI
  - USE OF STRUCTURE : CHURCH AND RELIGIOUS COMPLEX
  - BUILDING AREA : EXIST. CHURCH : 5047 SF±
  - PROP. CHURCH : 27153 SF±
- EXISTING BUILDING COVERAGE ON SITE: 5047 SF±
- PROPOSED BUILDING COVERAGE ON SITE: 0.74 AC (32,242 SF) OR 8.5% OF GROSS AREA
- PAVED PARKING LOT AREA ON SITE: 4.38 AC OR 50.93% OF GROSS AREA
- AREA OF LANDSCAPE ISLAND: 0.28 AC = 12516.5 SF
- DISTURBED AREA = 8.63 AC
- CUT = 12000 CY
- FILL = 12000 CY
- PROJECT BACKGROUND:
  - LOCATION : COLUMBIA, MD.; TAX MAP 42, PARCELS 227 & 9
  - ZONING : RSI
  - SECTION/AREA : N/A
  - SITE AREA: 8.53 AC±
  - DPZ REFERENCES: BA-03-02C&V, SDP-80-120, F-05-19A.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO START OF WORK.
- ANY DAMAGE TO PUBLIC RIGHT-OF-WAYS, PAVING, OR EXISTING UTILITIES WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
- EXISTING UTILITIES LOCATED FROM ROAD CONSTRUCTION PLANS, FIELD SURVEYS AND AVAILABLE RECORD DRAWINGS. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN FOR THE CONTRACTOR'S INFORMATION. CONTRACTOR SHALL LOCATE EXISTING UTILITIES WELL IN ADVANCE OF CONSTRUCTION ACTIVITIES AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
- ALL REINFORCED CONCRETE FOR STORM DRAIN STRUCTURES SHALL HAVE A MINIMUM OF 28 DAYS STRENGTH OF 3,500 P.S.I.
- TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNING SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- ESTIMATES OF EARTHWORK QUANTITIES ARE PROVIDED SOLELY FOR THE PURPOSE OF CALCULATING FEES.
- SOIL COMPACTION SPECIFICATIONS, REQUIREMENTS, METHODS AND MATERIALS ARE TO BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL ENGINEER. GEOTECHNICAL ENGINEER TO CONFIRM ACCEPTABILITY OF PROPOSED PAVING SECTION, BASED ON SOILS TEST.
- ALL STORM DRAIN PIPE BEDDING SHALL BE CLASS 'C'.
- COORDINATES AND ELEVATIONS ARE BASED ON THE FOLLOWING HOWARD COUNTY MONUMENTS:
  - 42E4 N 544,850.922 E 1,359,466.467 EL. 337.610
  - 42E3 N 546,528.833 E 1,357,894.405 EL. 306.522
- A NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT.
- EXISTING TOPOGRAPHY IS FROM A TOPOGRAPHIC SURVEY PERFORMED BY A COMBINATION OF HICKS ENGINEERING CO., INC. DATED FEB. 1995 AND SUPPLEMENTED BY A FIELD SURVEY BY VOGEL & ASSOCIATES, INC. DATED NOVEMBER 1996 AND NOVEMBER 1998.
- ALL ON-SITE PAVING TO BE P-2 PAVING UNLESS OTHERWISE NOTED. ALL PUBLIC ROAD PAVING TO BE P-3 PAVING.
- ALL CURB AND GUTTER TO BE HOWARD COUNTY STANDARD CONCRETE DETAIL 3.01 UNLESS OTHERWISE SPECIFIED.
- CONTRACTOR RESPONSIBLE TO CONSTRUCT ALL HANDICAP PARKING AND HANDICAP ACCESS IN ACCORDANCE WITH CURRENT ADA REQUIREMENTS.
- WHERE DRAINAGE FLOWS AWAY FROM CURB, CONTRACTOR TO REVERSE THE GUTTER PAN.
- PUBLIC WATER AVAILABLE ALONG OAKLAND MILLS ROAD (12" WATER) CONTRACT NO. 609-W&S.
- PUBLIC SEWER AVAILABLE ALONG GUILFORD ROAD (8" SEWER) CONTRACT NO. 609-S.
- STORMWATER MANAGEMENT IS PROVIDED BY A COMBINATION OF UNDERGROUND PIPE DETENTION SYSTEM (Cp) AND SAND FILTER (Wq) AND BIORETENTION (Wq) FACILITIES. ALL FACILITIES TO BE PRIVATELY OWNED AND MAINTAINED BY THE FIRST BAPTIST CHURCH OF GUILFORD.
- ALL EXTERIOR LIGHTING SHALL CONFORM TO THE REQUIREMENTS OF ZONING REGULATIONS SECTION 13.4.
- ALL ELEVATIONS ARE TO FLOWLINE UNLESS OTHERWISE NOTED.
- ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPING MANUAL.
- ANY EXISTING STREET TREES DAMAGED OR DESTROYED DURING CONSTRUCTION WILL BE REPLACED BY THE CONTRACTOR.
- GEOTECHNICAL REPORT PREPARED BY FROEHLING & ROBERTSON, INC. DATED NOVEMBER 1996
- IN ACCORDANCE WITH SECTION 16.1202 OF HOWARD COUNTY CODE AND FOREST CONSERVATION MANUAL, THE FOREST CONSERVATION OBLIGATION OF FOR THIS PLAN HAS BEEN MET BY THE CREATION OF A 0.52 ACRE ON-SITE RETENTION EASEMENT AND A FEE-IN-LIEU PAYMENT OF \$39,639.60 TO THE HOWARD COUNTY FOREST CONSERVATION FUND FOR THE 1.82 ACRES OF REQUIRED REFORESTATION.
- PERIMETER LANDSCAPING IN ACCORDANCE WITH SECTION 16.124 OF HOWARD COUNTY CODE AND LANDSCAPING MANUAL. SHALL BE PROVIDED AS SHOWN ON APPROVED LANDSCAPING PLAN. FINANCIAL SURETY IN THE AMOUNT OF \$49,830.00 FOR 81 SHADE TREES, 40 EVERGREEN TREES AND 331 SHRUBS, HAS BEEN POSTED WITH THE DEVELOPER'S AGREEMENT.
- THERE ARE NO EXISTING STREAMS, WETLANDS, THEIR BUFFERS AND FLOOD PLAIN AREAS LOCATED ON THIS SITE IN ACCORDANCE WITH AN ENVIRONMENTAL STUDY BY EXPLORATION RESEARCH ON JULY 20, 2004.
- NO CEMETERIES EXIST ON THIS SITE.
- THE PROPOSED SWM IS FOR THE ULTIMATE CONDITIONS; HOWEVER, DUE TO MEASURED IMPERVIOUS AREAS ANY ADDITIONAL DEVELOPMENT WILL REQUIRE THE RE-EVALUATION OF SWM REQUIREMENT BY FIRST BAPTIST CHURCH.
- AN APEX TRAFFIC STUDY WAS PREPARED BY THE TRAFFIC GROUP DATED MAY 20, 2004.
- THIS PLAN IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION REGULATIONS.
- RELATED ZONING CASE, BA-03-02C&V, DENIED NOVEMBER 14, 2003, FOR A CONDITIONAL USE FOR THE EXPANSION OF A STRUCTURE USED PRIMARILY FOR RELIGIOUS ACTIVITIES AND A VARIANCE TO REDUCE THE 39' FRONT OR SIDE SETBACK FROM FROM AN ARTERIAL OR COLLECTOR PUBLIC STREET RIGHT-OF-WAY TO 30.6' IN AN R-12 (RESIDENTIAL SINGLE) ZONED DISTRICT, FILED PURSUANT TO SECTIONS 131.1.38 AND 130.B.2 OF THE HOWARD COUNTY ZONING REGULATIONS. (AN APPROVED CONDITIONAL USE ZONING CASE IS NO LONGER REQUIRED FOR A RELIGIOUS FACILITY ON THIS SITE BECAUSE IT WAS REZONED FROM R-12 TO R-SI PER THE 02/02/04 COMPREHENSIVE ZONING PLAN.)
- THE RELOCATION OF THE EXISTING UTILITY POLES ARE TO BE COMPLETED BY THE UTILITY COMPANY AT OWNERS EXPENSE.

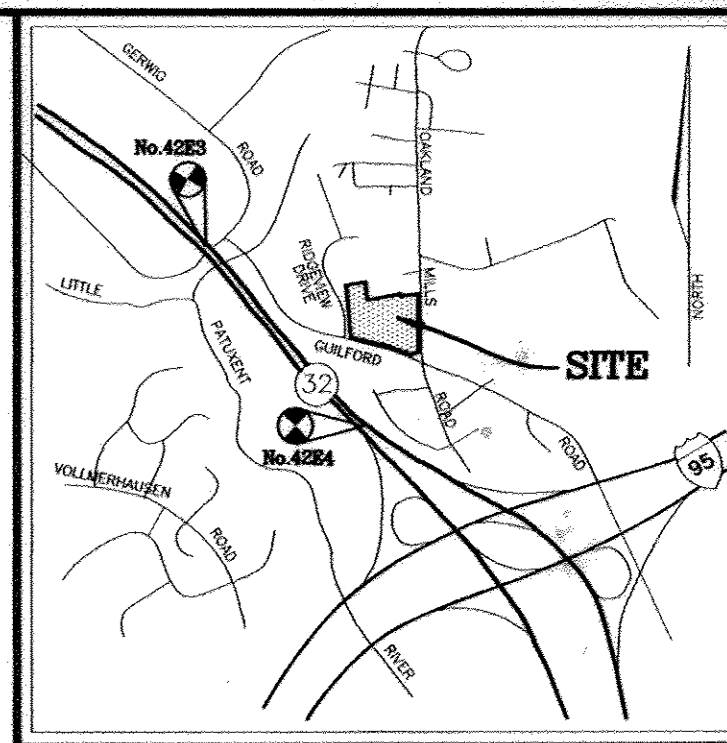
**LEGEND**

EXISTING CONTOUR  
PROPOSED CONTOUR  
SPOT ELEVATION  
DIRECTION OF FLOW  
EXISTING TREES TO REMAIN

**BENCHMARKS**

HOWARD COUNTY CONTROL TRAVERSE NO. 42E3  
N 546528.833 E 1357894.405 ELEV. 306.552

HOWARD COUNTY CONTROL TRAVERSE NO. 42E4  
N 544850.922 E 1359466.467 ELEV. 337.610



**PARKING TABULATION**

REQUIRED

BENCH SEATING : 24,000 INCHES OF BENCH @ 24 INCHES PER SEAT  
= 1000 BENCH SEATS

TOTAL SEATING : 1000 SEATS

1 SPACE PER 3 SEATS = 333 SPACES REQUIRED

HANDICAP REQUIRED : 8 HANDICAP SPACES

VAN ACCESSIBLE REQUIRED : 2 HANDICAP SPACES

TOTAL PARKING SPACES REQUIRED: 335 SPACES

TOTAL PARKING SPACES PROVIDED:

500 REGULAR SPACES

14 REGULAR HANDICAP SPACES, 6 VAN ACCESSIBLE SPACE

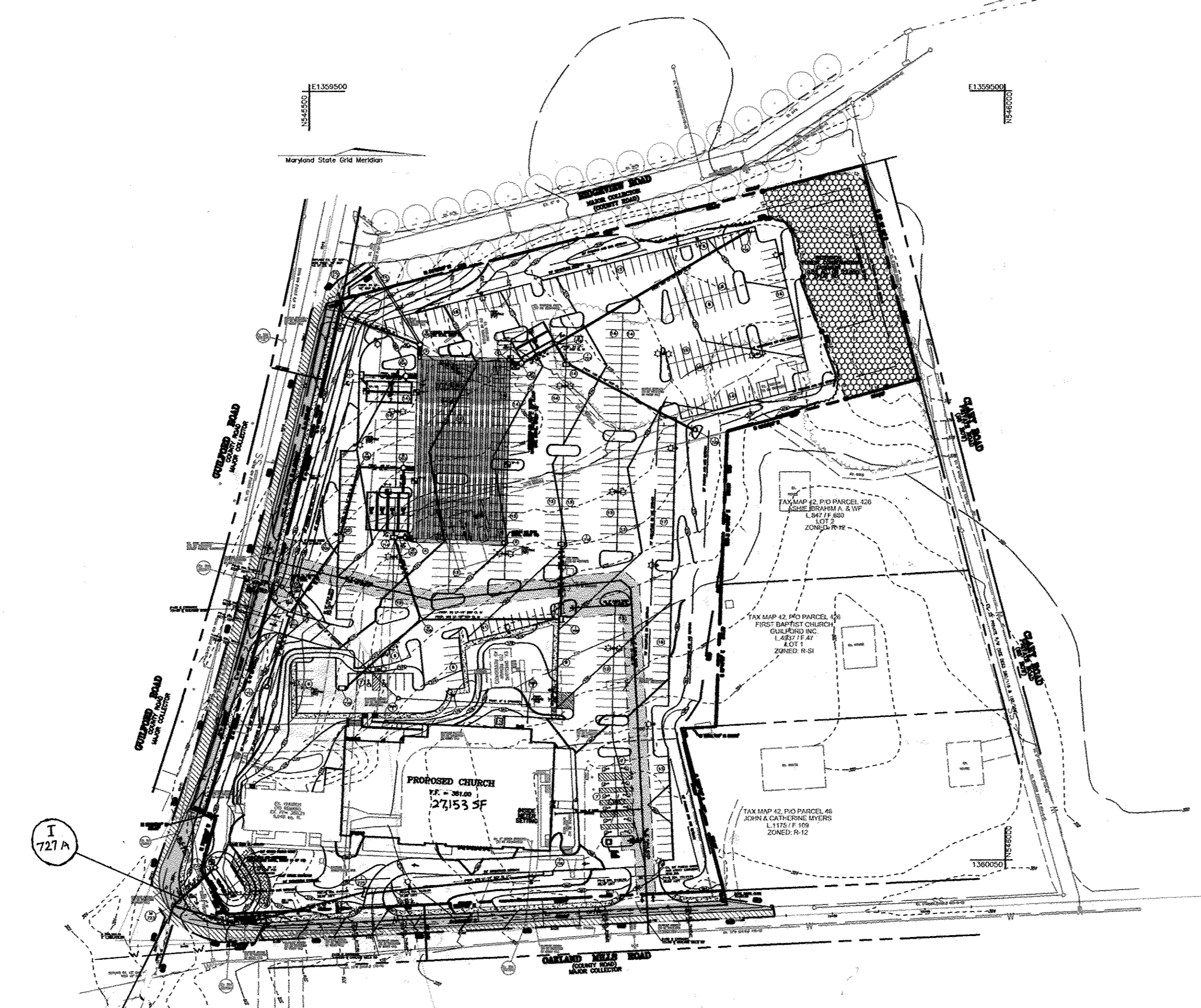
3 REGULAR SPACES FOR EXISTING DWELLING

4 BUS SPACES

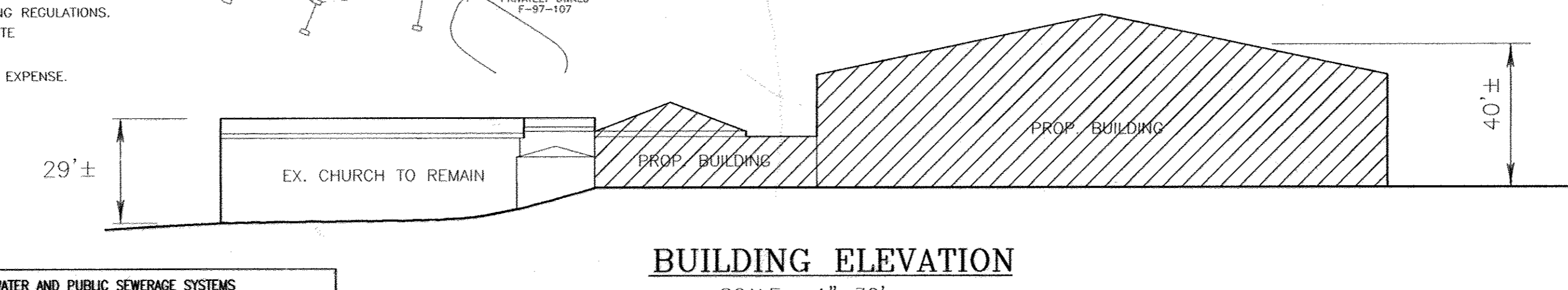
TOTAL PARKING SPACES PROVIDED (EXCLUDING BUS SPACES): 517 SPACES

**SHEET INDEX**

DESCRIPTION	SHEET NO.
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**LOCATION MAP**  
SCALE : 1"=100'



**BUILDING ELEVATION**  
SCALE : 1"=30'



**AS-BUILT CERTIFICATION**

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE AS-BUILT PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOSING OF THE UNDERGROUND SWM FACILITY.

ROBERT H. VOGEL, PE  
NO. 16193  
DATE 12/22/17

NO AS-BUILT INFORMATION THIS SHEET

NO.	REVISION	DATE
6	REVISE ROOF LEADERS, ADD SUMP PUMP AND UPDATE ASSOCIATED STORM DRAIN PROFILES	01/24/2010
5	REVISE STAIRS TO LOWER ENTRY OF PROPOSED BUILDING	11-20-07
4	ADD STAIRS TO EXISTING BUILDING	11-20-07

**ADDRESS CHART**

LOT/PARCEL# A  
STREET ADDRESS 7504 OAKLAND MILLS ROAD

**PERMIT INFORMATION CHART**

SUBDIVISION NAME	SECTION/AREA	PARCEL NUMBER
N/A	N/A	A

PLAT NO. 17917  
BLOCK NO. 16  
ZONE RSI  
TAX/ZONE 42  
ELECT. DIST. 6TH  
CENSUS TR. 6067.03

WATER CODE: E14  
SEWER CODE: 5200400

**OWNER/DEVELOPER**  
FIRST BAPTIST CHURCH OF GUILFORD  
7504 OAKLAND MILLS RD  
COLUMBIA, MD 21046  
410-792-7096

NO.	REVISION	DATE
4	REVISE STORM WATER MANAGEMENT FACILITY AND ASSOCIATED STORM DRAIN	10/10/07
3	Add Church Entrance, Revise SHTS 2, 4, 7, 8, 13	8/11/06
2	REVISE SD ACROSS OAKLAND MILLS ROAD	6/30/06
1	Revise parking count, SHC to building 2, bioretention area, associated grading and paving changes	6/30/06

**SITE DEVELOPMENT PLAN  
COVER SHEET**

**FIRST BAPTIST CHURCH  
OF GUILFORD**

TAX MAP 42 BLOCK 16 6TH ELECTION DISTRICT  
T.M. PARCELS 9 & 227  
PARCEL A  
HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL  
ENGINEERING, INC.**

ENGINEERS • SURVEYORS • PLANNERS

8407 MAIN STREET  
ELLICOTT CITY, MD 21043  
TEL: 410.461.7666  
FAX: 410.461.8961

DESIGN BY: RHV  
DRAWN BY: MAN/DZ  
CHECKED BY: RHV  
DATE: SEPTEMBER 2005  
SCALE: AS SHOWN  
W.O. NO.: 04-67

1 SHEET OF 20

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

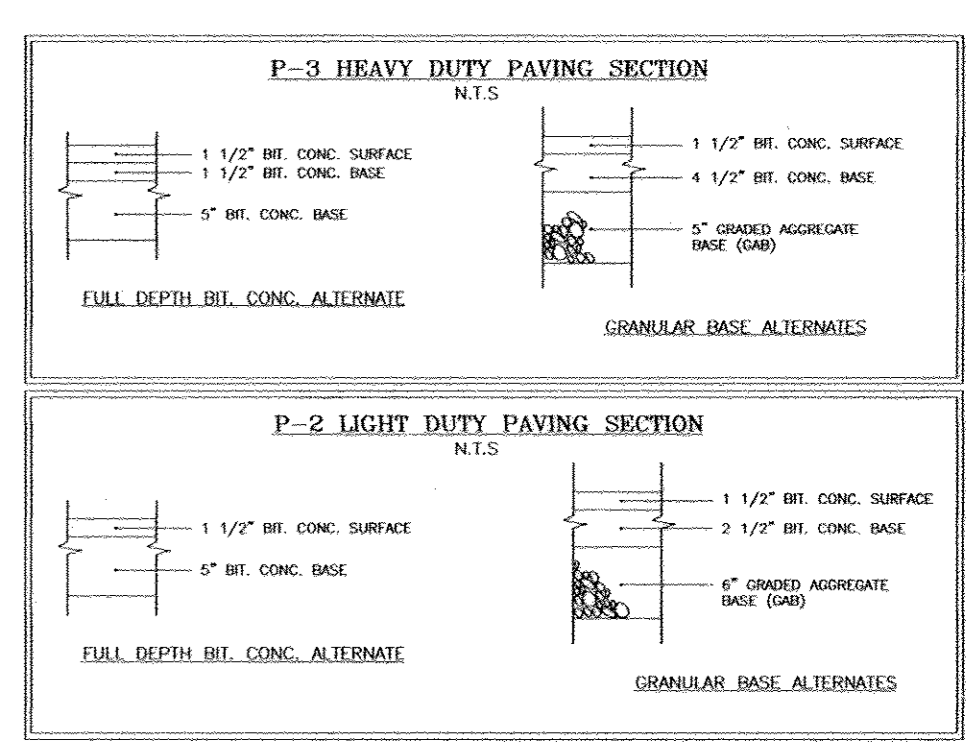
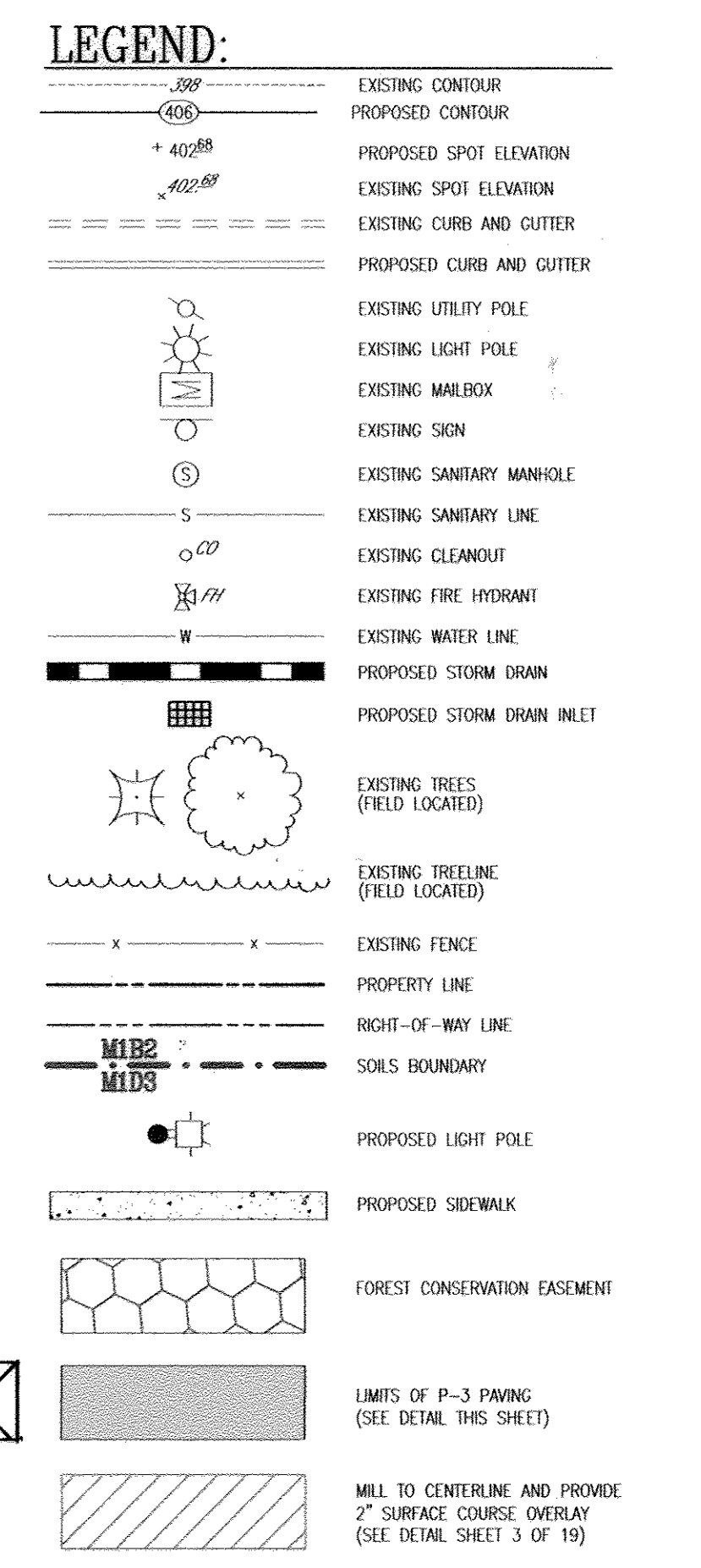
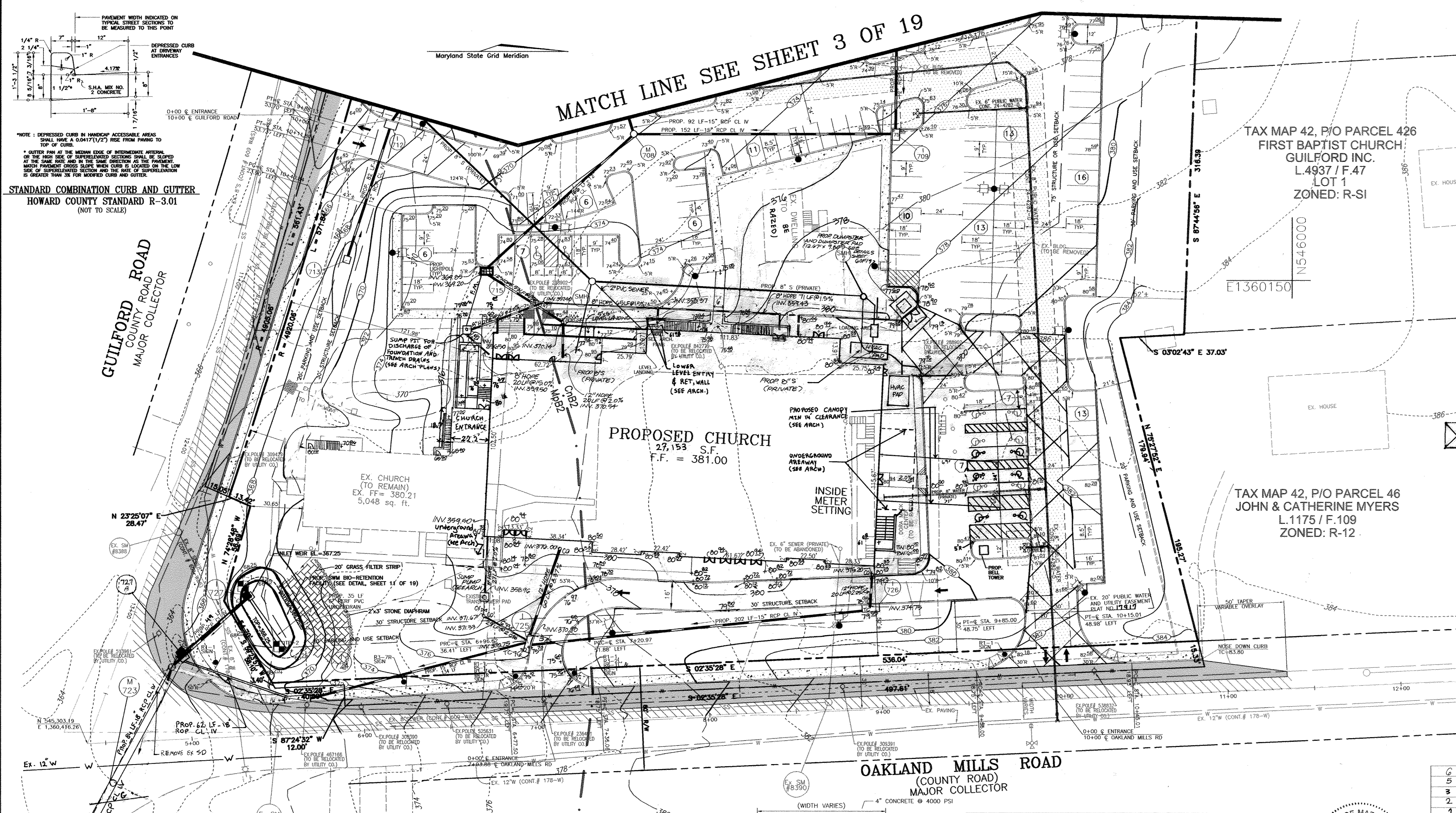
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
DATE 9/10/05

CHIEF, DIVISION OF LAND DEVELOPMENT  
DATE 1/10/06

DIRECTOR  
DATE 1/10/06

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS

ROBERT H. VOGEL  
COUNTY HEALTH OFFICER  
HOWARD COUNTY HEALTH DEPARTMENT  
DATE 10/4/05



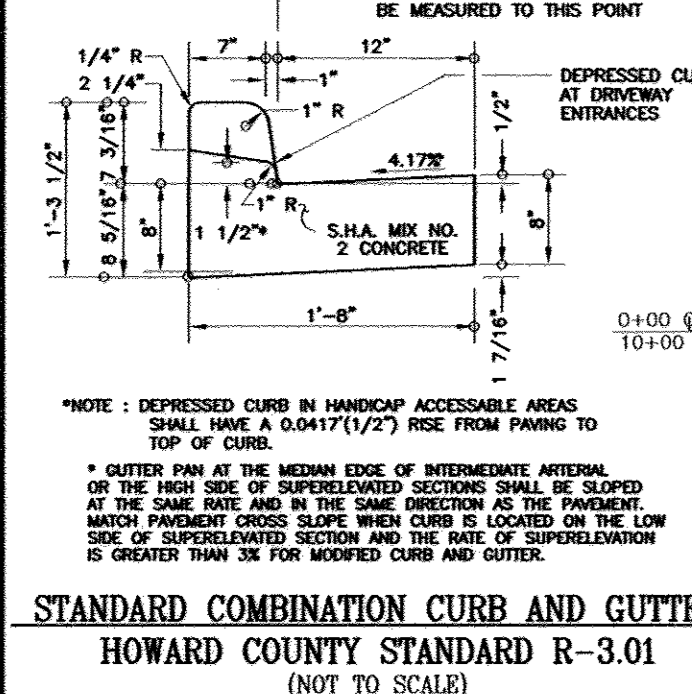
**OWNER/DEVELOPER**  
 FIRST BAPTIST CHURCH OF GUILFORD  
 7504 OAKLAND MILLS RD  
 COLUMBIA, MD 21046  
 410-792-7096

NO.	REVISION	DATE
6	REVISE ROOF LEADERS AND SWM TANK AND UPDATE ASSOCIATED STORM DRAIN PROFILES	8/24/10
5	REVISE STAIRS TO LOWER ENTRY OF PROPOSED BUILDING AND STAIRS TO EX. BUILDING	11/24/07
3	ADD NEW CHURCH ENTRANCE, REVISE STAIRS AND ADD STAIRS CANOPY, ADD ROOF LEADER TRUNK LINE & SUMP PIT	10/10/06
2	REVISE SD FROM 1724 & 1727 TO EX. SD	8/1/06
1	ADD MECHANICAL AREAWAYS, CANOPY, HVAC PADS, LOWER LEVEL ENTRY, RELOCATE DUMPSTER & SHIFT HC SPACES & P-3 PAVING-SEWER	6/30/06

**SITE DEVELOPMENT PLAN**  
**SITE LAYOUT PLAN**  
**FIRST BAPTIST CHURCH OF GUILFORD**  
 TAX MAP 42 BLOCK 16  
 6TH ELECTION DISTRICT  
 PARCEL A  
 HOWARD COUNTY, MARYLAND

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DESIGN BY: RHV  
 DRAWN BY: MMH/DZ  
 CHECKED BY: RHV  
 DATE: SEPTEMBER 2005  
 SCALE: AS SHOWN  
 W.O. NO.: 04-67  
 2 SHEET OF 20



STANDARD COMBINATION CURB AND GUTTER  
 HOWARD COUNTY STANDARD R-3.01  
 (NOT TO SCALE)

MATCH LINE SEE SHEET 3 OF 19

PROPOSED CHURCH  
 27,153 S.F.  
 F.F. = 381.00

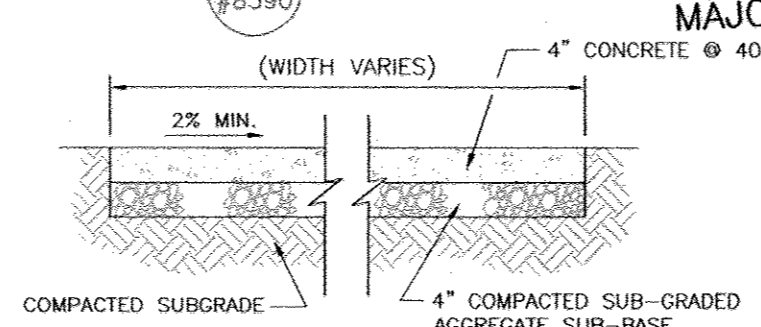
TAX MAP 42, P/O PARCEL 426  
 FIRST BAPTIST CHURCH  
 GUILFORD INC.  
 L.4937 / F.47  
 LOT 1  
 ZONED: R-SI

TAX MAP 42, P/O PARCEL 46  
 JOHN & CATHERINE MYERS  
 L.1175 / F.109  
 ZONED: R-12

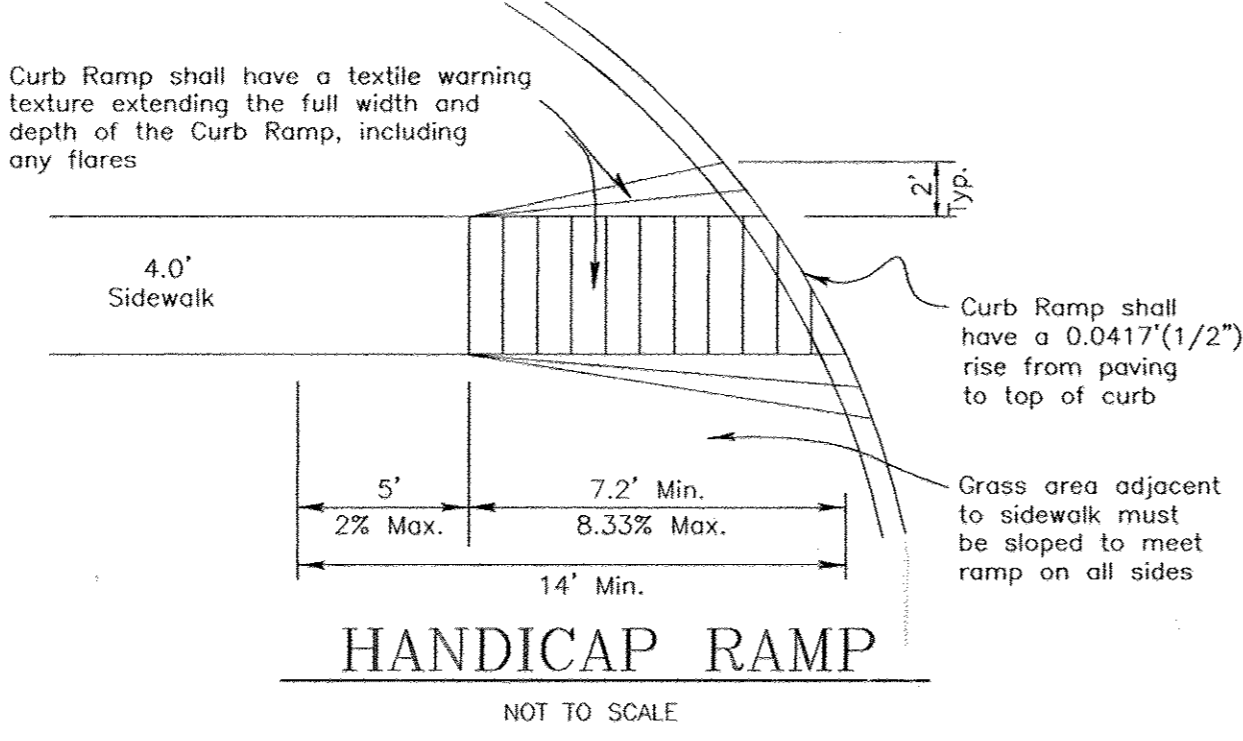
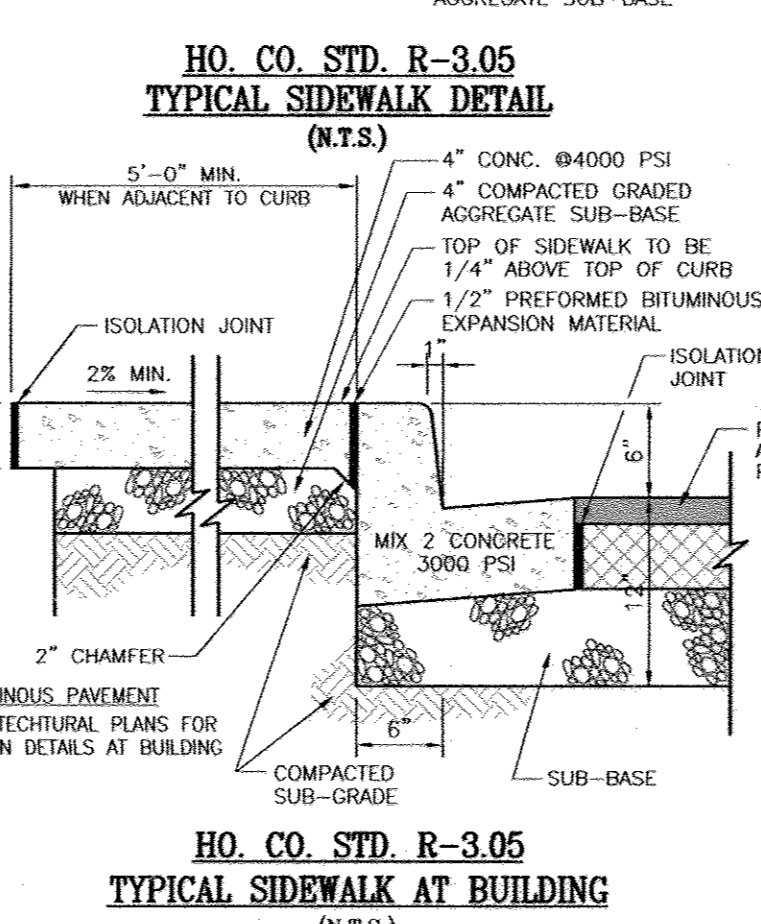
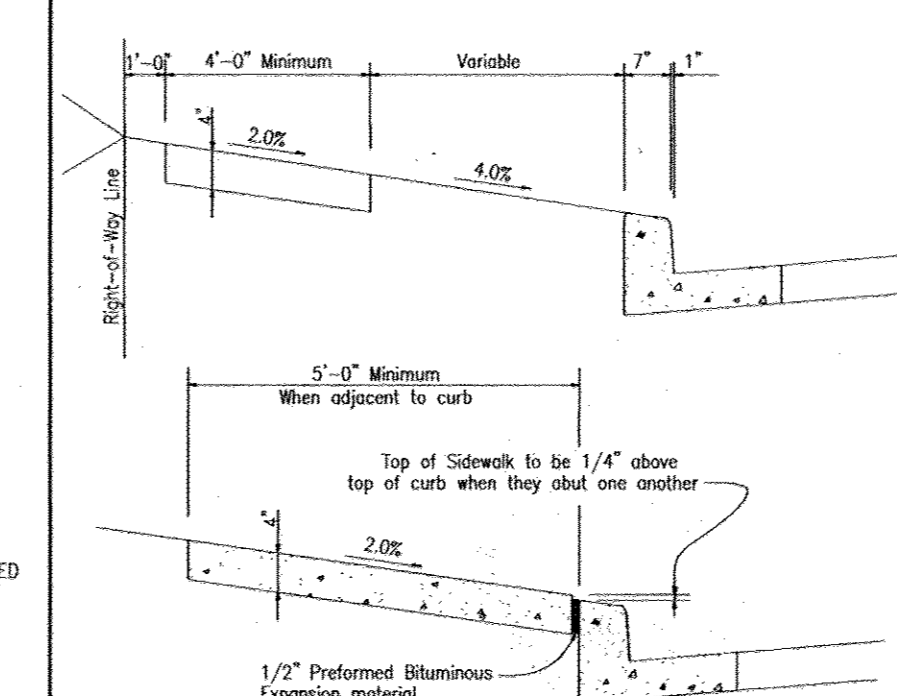
**SIGNAGE LOCATION CHART**

DWG. NO.	STREET NAME	STATION	OFFSET	FIXTURE/POLE TYPE
2 OF 19	OAKLAND MILLS ROAD	9+67	27' LEFT	R1-1 "STOP"
3 OF 19	GUILFORD ROAD	9+64	27' LEFT	R1-1 "STOP"
2 OF 19	OAKLAND MILLS ROAD	6+83	27' LEFT	R1-1 "STOP" WITH R3-2L MOUNTED BELOW "NO LEFT TURN"

PLAN SCALE: 1"=30'



CONCRETE SIDEWALK  
 HOWARD COUNTY STANDARD DETAIL R3.05



NOTE: ALL SWM FACILITIES SHOWN ON THIS PLAN TO BE PRIVATELY OWNED AND MAINTAINED BY THE FIRST BAPTIST CHURCH OF GUILFORD

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DIRECTOR

K:\Projects\04-67\eng\dwg\SDP\002.dwg, 9/12/2005 10:42:58 AM

SUMMARY TABLE AREA 1, 2, 2A, 3					
AREA	REQUIREMENT	VOLUME REQUIREMENT W/O CREDITS	CREDITS	VOLUME REQUIREMENT AFTER CREDITS	NOTES
1	WATER QUALITY VOLUME WQV	0.3267 AC-FT.	N/A	0.6775 AC. FT.	PROVIDED IN BAY FILTER
2	RECHARGE VOLUME REV	0.0650 AC-FT.	N/A	0.0650 AC-FT.	PROVIDED BELOW GROWEL TRENCH

SUMMARY TABLE AREA 4					
AREA	REQUIREMENT	VOLUME REQUIREMENT W/O CREDITS	CREDITS	VOLUME REQUIREMENT AFTER CREDITS	NOTES (GUILFORD ROAD R/W)
1	WATER QUALITY VOLUME WQV	0.0760 AC-FT.	N/A	0.0760 AC-FT.	CAN NOT BE TREATED
2	RECHARGE VOLUME REV	0.0152 AC-FT.	N/A	0.0152 AC-FT.	CAN NOT BE TREATED

SUMMARY TABLE AREA 5					
AREA	REQUIREMENT	VOLUME REQUIREMENT W/O CREDITS	CREDITS	VOLUME REQUIREMENT AFTER CREDITS	NOTES
1	WATER QUALITY VOLUME WQV	0.244 AC. IMPERVIOUS	0.17 AC. IMPERVIOUS REDUCTION	0.006 AC. FT.	PROVIDED IN BIORETENTION REMAINDER OF REQUIRED 20%
2	RECHARGE VOLUME REV	N/A	N/A	N/A	REDEVELOPMENT

SIGNAGE LOCATION CHART				
DWG. NO.	STREET NAME	STATION	OFFSET	FIXTURE/POLE TYPE
2 OF 19	OAKLAND MILLS ROAD	9+67	27' LEFT	R1-1 "STOP"
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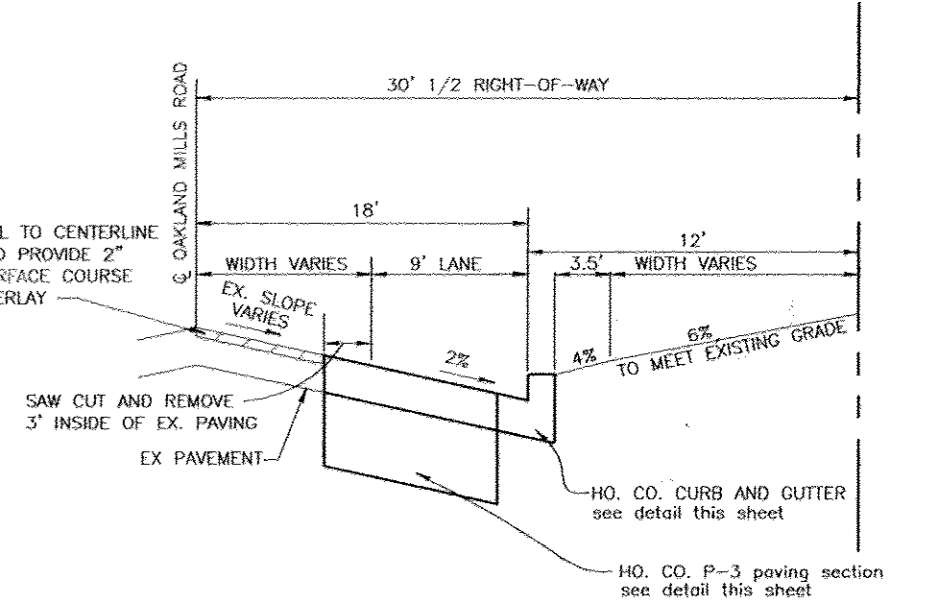
SUMMARY TABLE					
REQUIREMENT	VOLUME REQUIREMENT W/O CREDITS	CREDITS	VOLUME REQUIREMENT AFTER CREDITS	NOTES	
CHANNEL PROTECTION VOLUME CPV	0.5965 AC-FT.	N/A	0.5965 AC-FT.	PROVIDED IN UNDERGROUND PIPE	
AREA	EX. 1-YR	EX. 10-YR	DEV. 1-YR	DEV. 10-YR	
1	4.19 CFS	18.86 CFS	0.28 CFS	13.99 CFS	
1A	N/A	N/A	0.79 CFS	3.16 CFS	
1+1A	N/A	N/A	0.98 CFS	14.58 CFS	
2	2.71 CFS	8.02 CFS	3.24 CFS	8.45 CFS	
3	0.88 CFS	2.75 CFS	0.45 CFS	1.83 CFS	

LINE TABLE			
COURSE	BEARING	DISTANCE	
L1	S 12°30'40" E	91.52'	
L2	S 21°37'11" W	21.11'	
L3	S 75°07'17" W	220.11'	
L4	N 14°05'43" W	81.86'	
L5	N 75°58'07" E	35.72'	
L6	N 85°31'17" E	46.80'	
L7	N 71°47'11" E	55.01'	
L8	N 83°26'01" E	59.89'	
L9	N 53°43'49" E	29.04'	
L10	N 11°22'08" E	17.01'	
L11	N 75°41'25" E	30.00'	

LINE TABLE			
COURSE	BEARING	DISTANCE	
L1	S 43°39'32" W	19.57'	
L2	N 46°20'28" W	20.00'	
L3	N 43°39'32" E	8.85'	
L4	N 74°32'31" E	22.89'	

**LEGEND:**

- EXISTING CONTOUR
- PROPOSED SPOT ELEVATION
- EXISTING SPOT ELEVATION
- EXISTING CURB AND GUTTER
- PROPOSED CURB AND GUTTER
- EXISTING LIGHT POLE
- PROPOSED LIGHT POLE
- EXISTING UTILITY POLE
- EXISTING MAILBOX
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANDOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN INLET
- EXISTING TREES (FIELD LOCATED)
- EXISTING TREELINE (FIELD LOCATED)
- EXISTING FENCE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- SOILS BOUNDARY
- PROPOSED LIGHT POLE
- PROPOSED SIDEWALK
- FOREST CONSERVATION EASEMENT
- LIMITS OF P-3 PAVING (SEE DETAIL SHEET 2 OF 19)
- MILL TO CENTERLINE AND PROVIDE 2" SURFACE COURSE OVERLAY (SEE DETAIL THIS SHEET)



**OWNER/DEVELOPER**  
 FIRST BAPTIST CHURCH OF GUILFORD  
 7504 OAKLAND MILLS RD  
 COLUMBIA, MD 21046  
 410-792-7096

NO.	REVISION	DATE
4	REVISE STORMWATER MANAGEMENT FACILITY AND ASSOCIATED STORM DRAIN-REPLACEMENT SHEET	10/18/07

**SITE DEVELOPMENT PLAN**  
**REVISÉ**  
**SITE LAYOUT PLAN**  
**FIRST BAPTIST CHURCH OF GUILFORD**  
**PARCEL A**  
 TAX MAP 42 BLOCK 16 6TH ELECTION DISTRICT  
 PARCEL 227 & 9 HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL ENGINEERING, INC.**  
 ENGINEERS • SURVEYORS • PLANNERS  
 8407 MAIN STREET  
 ELLICOTT CITY, MD 21043  
 TEL: 410-461-7666  
 FAX: 410-461-8961

DESIGN BY: RHV  
 DRAWN BY: MAN/DZ  
 CHECKED BY: RHV  
 DATE: SEPTEMBER 2005  
 SCALE: AS SHOWN  
 W.D. NO.: 04-67

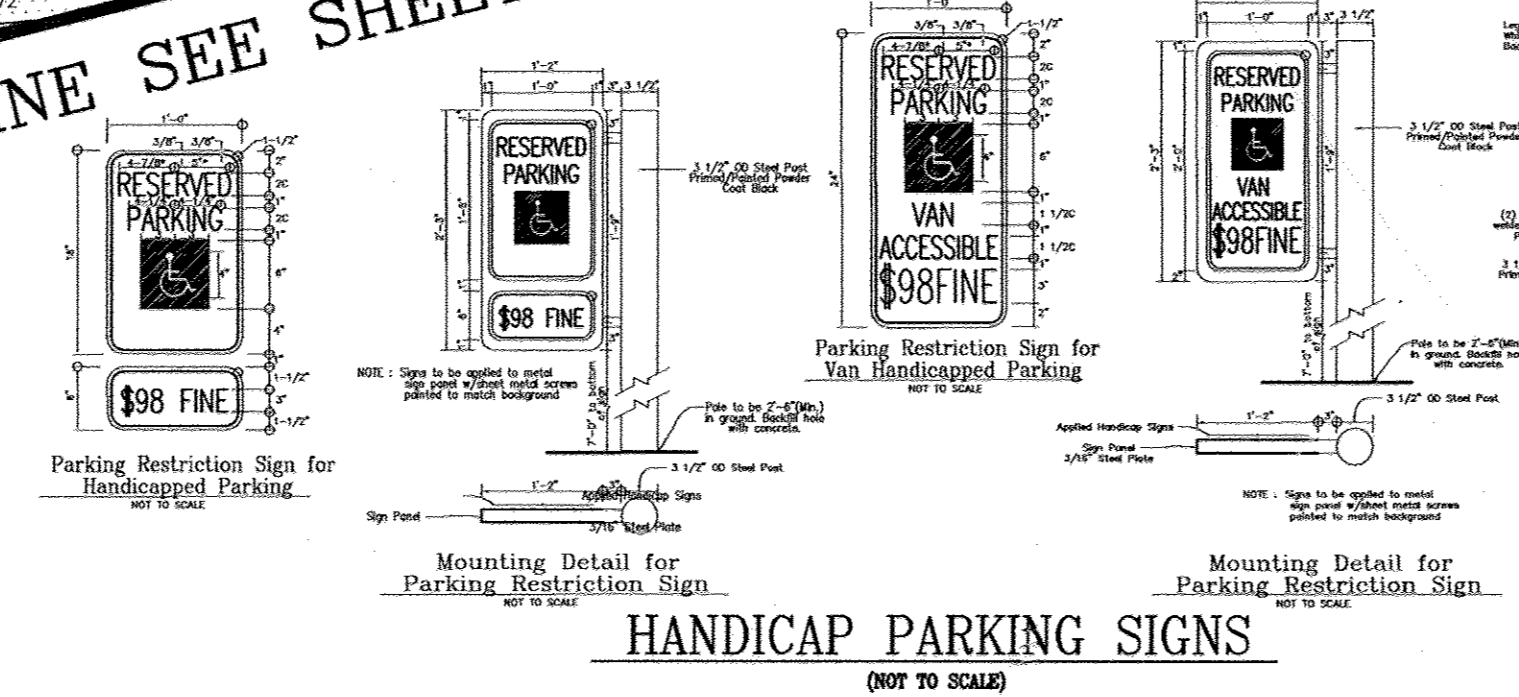
**REPLACEMENT SHEET**  
 3 SHEET OF 20

NOTE: ALL SWM FACILITIES SHOWN ON THIS PLAN TO BE PRIVATELY OWNED AND MAINTAINED BY THE FIRST BAPTIST CHURCH OF GUILFORD

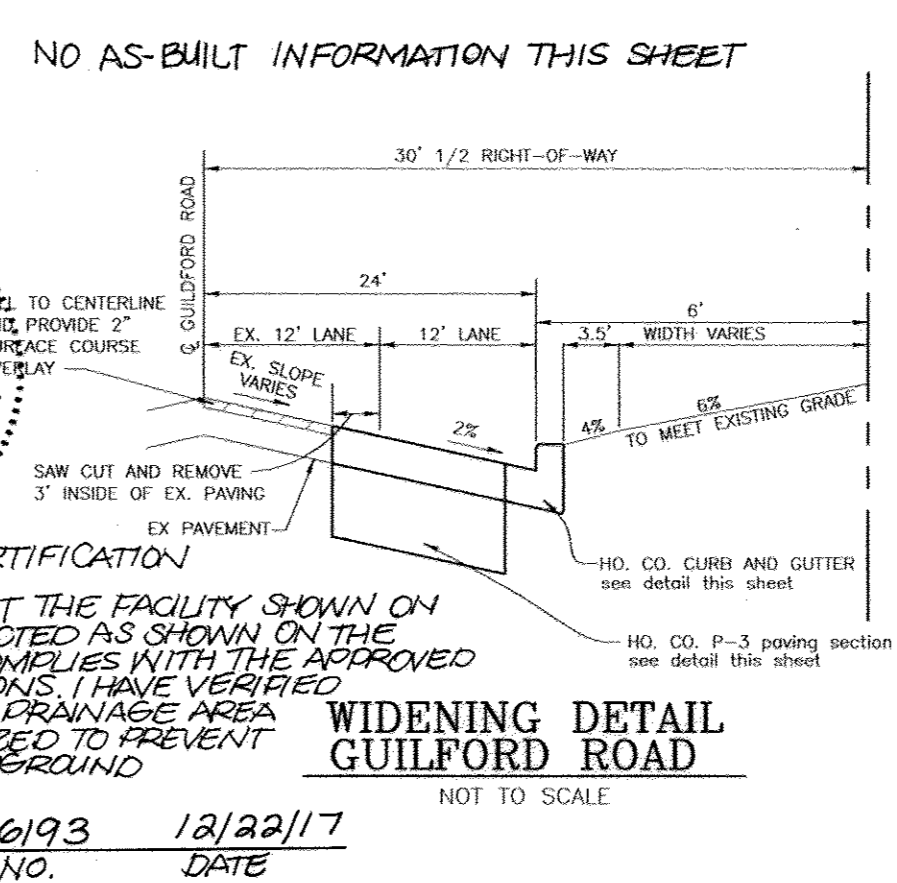
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 [Signature] 10/20/07  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 [Signature] 11/1/07  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 [Signature] 11/2/07  
 DIRECTOR

MATCH LINE SEE SHEET 2 OF 19

PLAN SCALE: 1"=30'



AS-BUILT CERTIFICATION  
 I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THE PLAN WAS CONSTRUCTED AS SHOWN ON THE AS-BUILT PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOSING OF THE UNDERGROUND SWM FACILITY.  
 10/93 12/22/17  
 ROBERT H. VOGEL, P.E. NO. DATE



LEGEND:

- EXISTING 2' CONTOUR
EXISTING 10' CONTOUR
PROP. TEMP. 2' CONTOUR
PROP. TEMP. 10' CONTOUR
PROP. FINAL 2' CONTOUR
PROP. FINAL 10' CONTOUR
PROPOSED SPOT ELEVATION
EXISTING SPOT ELEVATION
EXISTING CURB AND GUTTER
PROPOSED CURB AND GUTTER
EXISTING UTILITY POLE
EXISTING LIGHT POLE
EXISTING MAILBOX
EXISTING SIGN
EXISTING SANITARY MANHOLE
EXISTING SANITARY LINE
EXISTING CLEANOUT
EXISTING FIRE HYDRANT
EXISTING WATER LINE
PROPOSED STORM DRAIN
PROPOSED STORM DRAIN INLET
EXISTING TREES (FIELD LOCATED)
EXISTING TREELINE (FIELD LOCATED)
EXISTING FENCE
PROPERTY LINE
RIGHT-OF-WAY LINE
SOILS BOUNDARY
PROPOSED LIGHT POLE
PROPOSED SIDEWALK
FOREST CONSERVATION EASEMENT

SEDIMENT TRAP #1
TRAP NO.: 1
TRAP TYPE: PIPE UTILITY ST-1
EXISTING DRAINAGE AREA: 2.86 AC.
PROPOSED DRAINAGE AREA: 2.29 AC.
WET STORAGE REQUIRED: 5148 CF
WET STORAGE PROVIDED: 5246 CF
DRY STORAGE REQUIRED: 5148 CF
DRY STORAGE PROVIDED: 5711 CF
BOTTOM DIMENSIONS: 7'x13'
BOTTOM ELEVATION: 360.00
RISER CREST ELEVATION: 365.00
WEIR LENGTH: 6.33'
WEIR ELEVATION: 363.30
DRY STORAGE ELEVATION: 365.00
TOTAL STORAGE DEPTH: 5.0'
TOP OF EMBANKMENT: 367.00
CLEANOUT ELEVATION: 361.65
SIDE SLOPES: 2:1
OUTFALL CONDITION: EX. STORM DRAIN SYSTEM BARREL: 15" RCP
RISER: TYPE 'D' INLET-OPEN 4 SIDES

OWNER/DEVELOPER
FIRST BAPTIST CHURCH OF GUILFORD
7504 OAKLAND MILLS RD
COLUMBIA, MD 21046
410-727-7096

Table with 3 columns: NO., REVISION, DATE. Contains revision history for the plan.

Professional Engineer seal for Robert H. Vogel, PE, No. 16193. Includes project title 'SITE DEVELOPMENT PLAN SEDIMENT AND EROSION CONTROL PLAN' and contact information for Robert H. Vogel Engineering, Inc.

MATCH LINE SEE SHEET 5 OF 19

PROPOSED CHURCH
27,153 S.F.
F.F. = 381.00

INLET THROAT TO BE KEPT CLEAR AND FUNCTIONING

PLAN
SCALE: 1"=30'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION
CHIEF, DIVISION OF LAND DEVELOPMENT
DIRECTOR

REVIEWED FOR HOWARD S.C.D. & MEETS TECHNICAL REQUIREMENTS.
BY THE DEVELOPER: Jim Meyer, 9-22-05
BY THE ENGINEER: Robert H. Vogel, 12/22/17

7. I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL...
SIGNATURE OF DEVELOPER: Jim Meyer, DATE: 9-22-05

7. I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS...
SIGNATURE OF ENGINEER: Robert H. Vogel, P.E., DATE: 12/22/17

AS-BUILT CERTIFICATION
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE AS-BUILT PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS...
NO AS-BUILT INFORMATION THIS SHEET

E1359500  
N545500

E1359500  
N546000

Maryland State Grid Meridian

RIDGEVIEW ROAD  
MAJOR COLLECTOR  
(COUNTY ROAD)

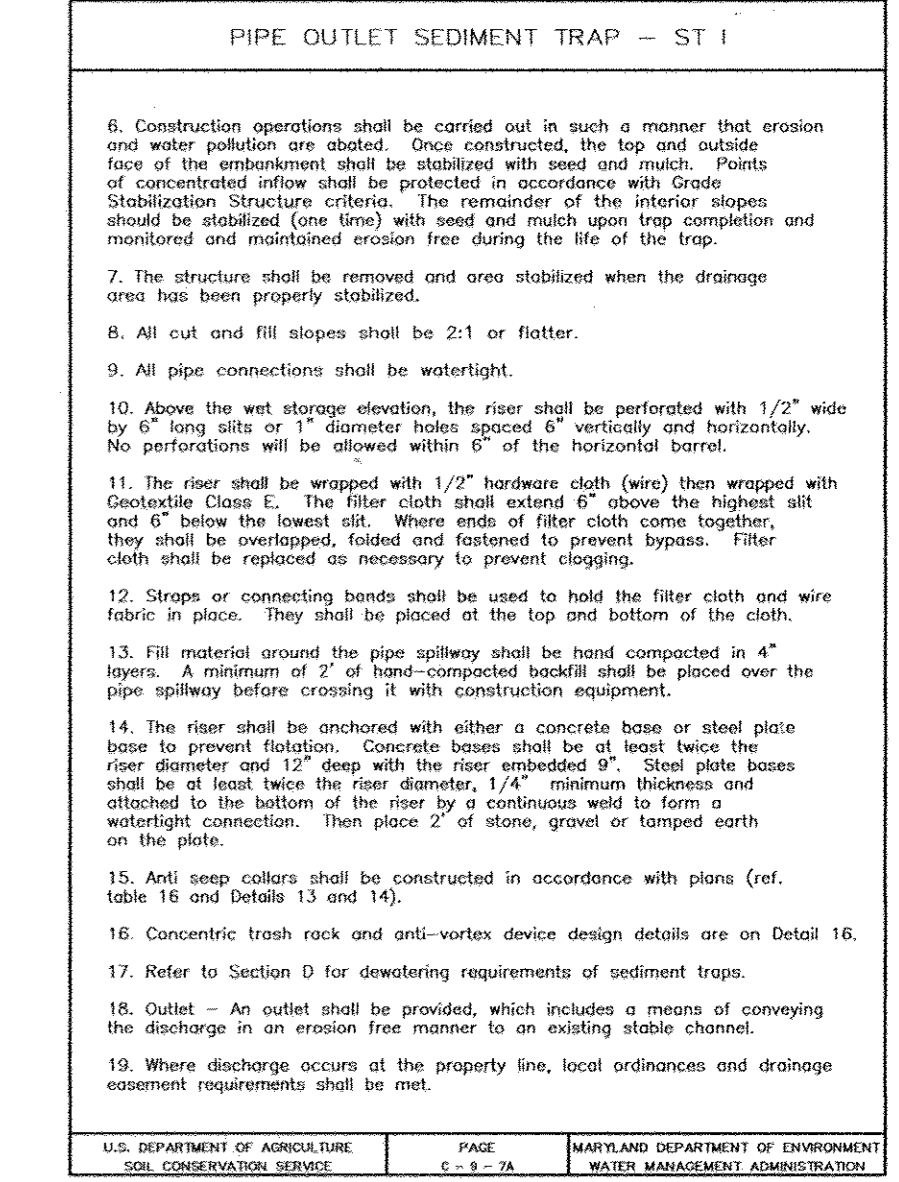
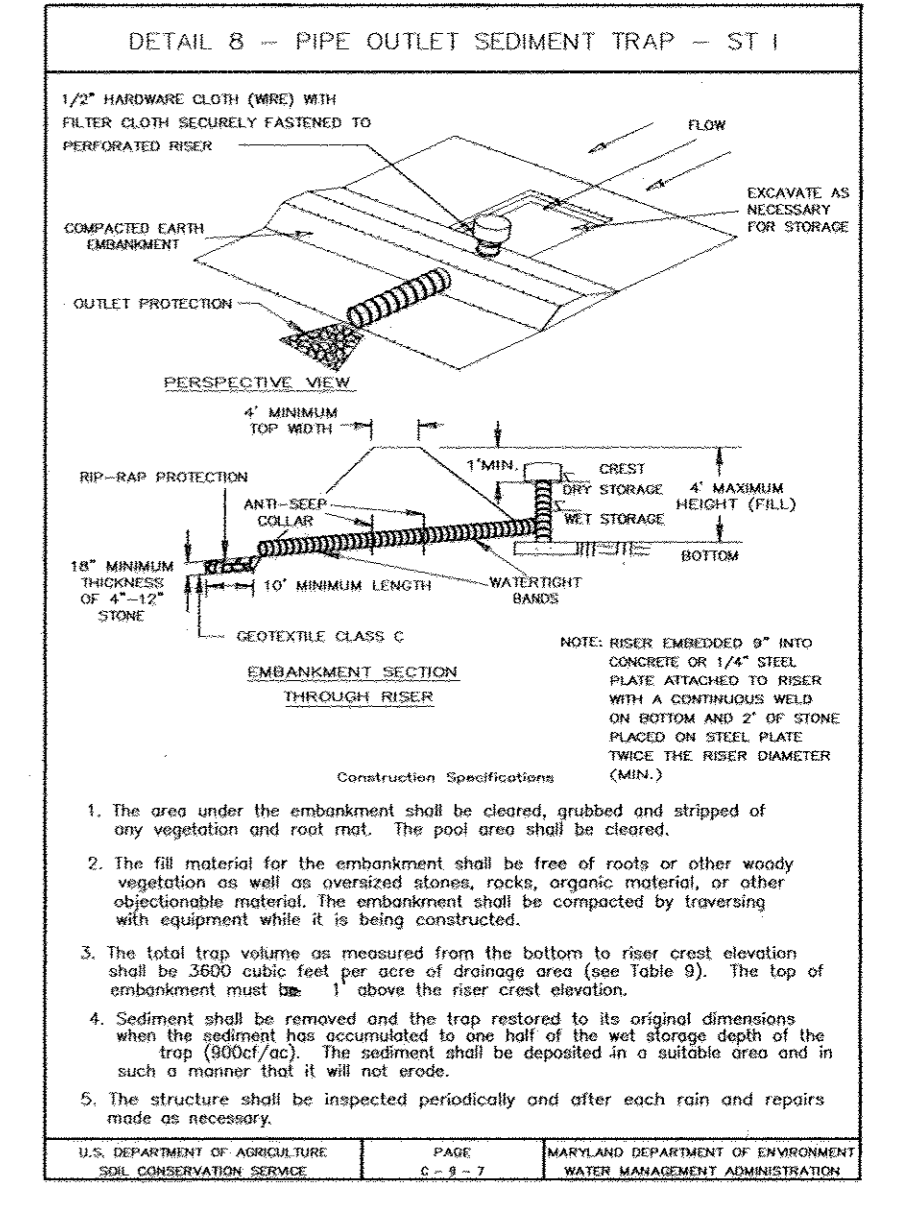
CLEANWATER  
ED-A2  
RETENTION  
FOREST CONSERVATION  
EASEMENT  
0.52 AC. OR 22,800  
(PLAT NO.)

SEDIMENT BASIN #2  
GUILFORD ROAD  
COUNTY ROAD  
MAJOR COLLECTOR

CONNECT 18" RCP  
TO MH 718 AFTER  
REMOVAL OF  
TEMPORARY PIPE

TAX MAP 42, P/O PARCEL 426  
ASHIE IBRAHIM A. & WF  
L.847 / F.680  
LOT 2  
ZONED: R-12

MATCH LINE SEE SHEET 4 OF 19



OWNER/DEVELOPER  
FIRST BAPTIST CHURCH OF GUILFORD  
7504 OAKLAND MILLS RD  
COLUMBIA, MD 21046  
410-792-7096

NO.	REVISION	DATE
4	REVISE STORMWATER MANAGEMENT FACILITY AND ASSOCIATED STORM DRAIN - REPLACEMENT SHEET	10/10/07

SITE DEVELOPMENT PLAN  
SEDIMENT AND EROSION CONTROL PLAN  
FIRST BAPTIST CHURCH OF GUILFORD  
PARCELA  
TAX MAP 42, BLOCK 16, PARCEL 227 & 9  
6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL ENGINEERS, INC.**  
ENGINEERS • SURVEYORS • PLANNERS  
8407 MAIN STREET, ELLICOTT CITY, MD 21043  
TEL: 410.461.7666 FAX: 410.461.8961

DESIGN BY: RHV  
DRAWN BY: MAN/DZ  
CHECKED BY: RHV  
DATE: SEPTEMBER 2005  
SCALE: AS SHOWN  
W.O. NO.: 04-67  
REPLACEMENT SHEET  
5 SHEET OF 20

NOTE: ALL SWM FACILITIES SHOWN ON THIS PLAN TO BE PRIVATELY OWNED AND MAINTAINED BY THE FIRST BAPTIST CHURCH OF GUILFORD

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

10/20/07  
11/10/07  
11/21/07

CHIEF, DEVELOPMENT ENGINEERING DIVISION  
CHIEF, DIVISION OF LAND DEVELOPMENT  
DIRECTOR

REVIEWED FOR HOWARD S.C.D. & MEETS TECHNICAL REQUIREMENTS

HOWARD S.C.D.

10/20/07  
11/10/07  
11/21/07

HOWARD S.C.D.

BY THE DEVELOPER:

1. I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERSON ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

10-12-07  
DATE

BY THE ENGINEER:

1. I HEREBY CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

10/17/07  
DATE



AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THE PLAN WAS CONSTRUCTED AS SHOWN ON THE AS-BUILT PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.

16193  
NO. DATE  
ROBERT H. VOGEL, P.E. 12/21/17

NO AS-BUILT INFORMATION THIS SHEET

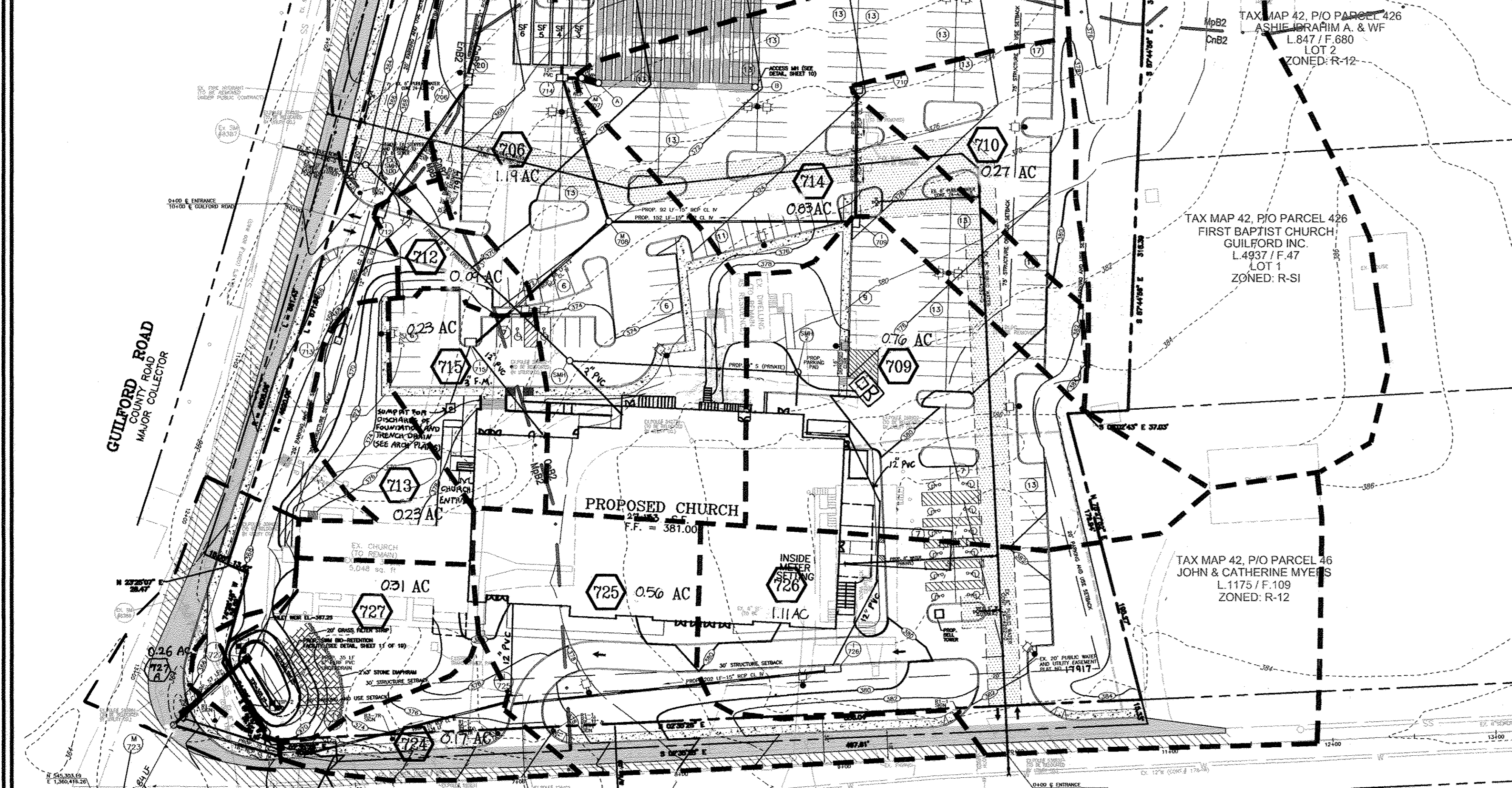
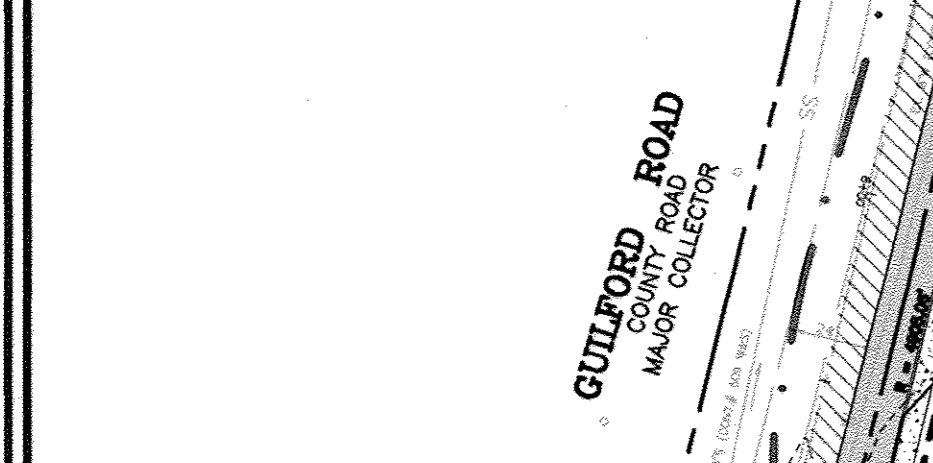
SEDIMENT BASIN

PROP. D.A. =	8.1 AC.
REQ. VOL. =	29,160 CF.
DRY VOL. =	14,580 CF.
WET VOL. =	14,580 CF.
TOP OF EMBANKMENT =	363.50
WEIR CREST EL. =	360.10
WET EL. STORAGE EL. =	358.10
DRY STORAGE EL. =	360.10
SIDE SLOPE =	3:1
BOTTOM OF TRAP =	357.00
CLEANOUT EL. =	357.90
WEIR WIDTH =	21" RISER (5.5')
Q2 GRADED =	9.72 CIS



AS-BUILT CERTIFICATION  
 I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THE PLAN WAS CONSTRUCTED AS SHOWN ON THE AS-BUILT PLAN AND CONFORMS WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOSING OF THE UNDERGROUND SWIM FACILITY.

ROBERT H. VOGEL, P.E.  
 NO. 16193  
 DATE 12/22/17



REVISIONS:

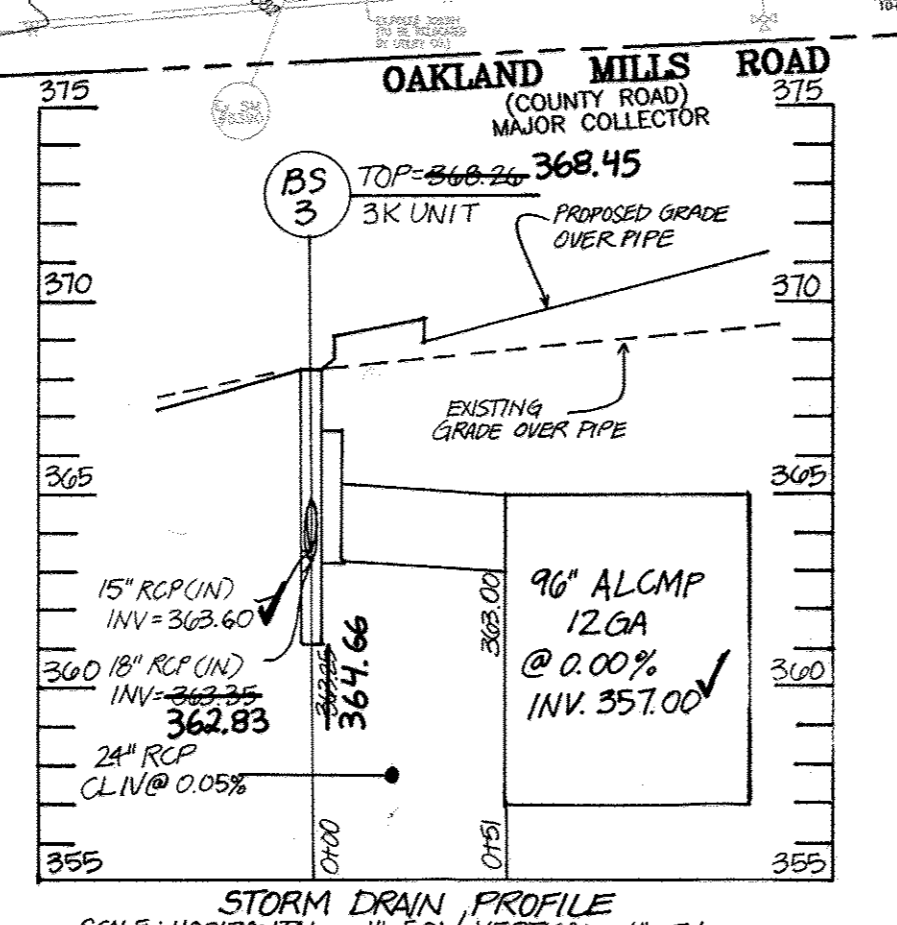
NO.	REVISION	DATE
G	REVISE ROOF LEADERS, ADD SUMP PUMP AND UPDATE ASSOCIATED STORM DRAIN PROFILES	8/24/2007
1	REVISE M701, M 723, I 727 A	8/11/06
2	REVISE 727 TO R. ELEV, ADD CANNON, HYVAC, LOWER LEVEL ENTRY	6/30/06

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE 9/16/05

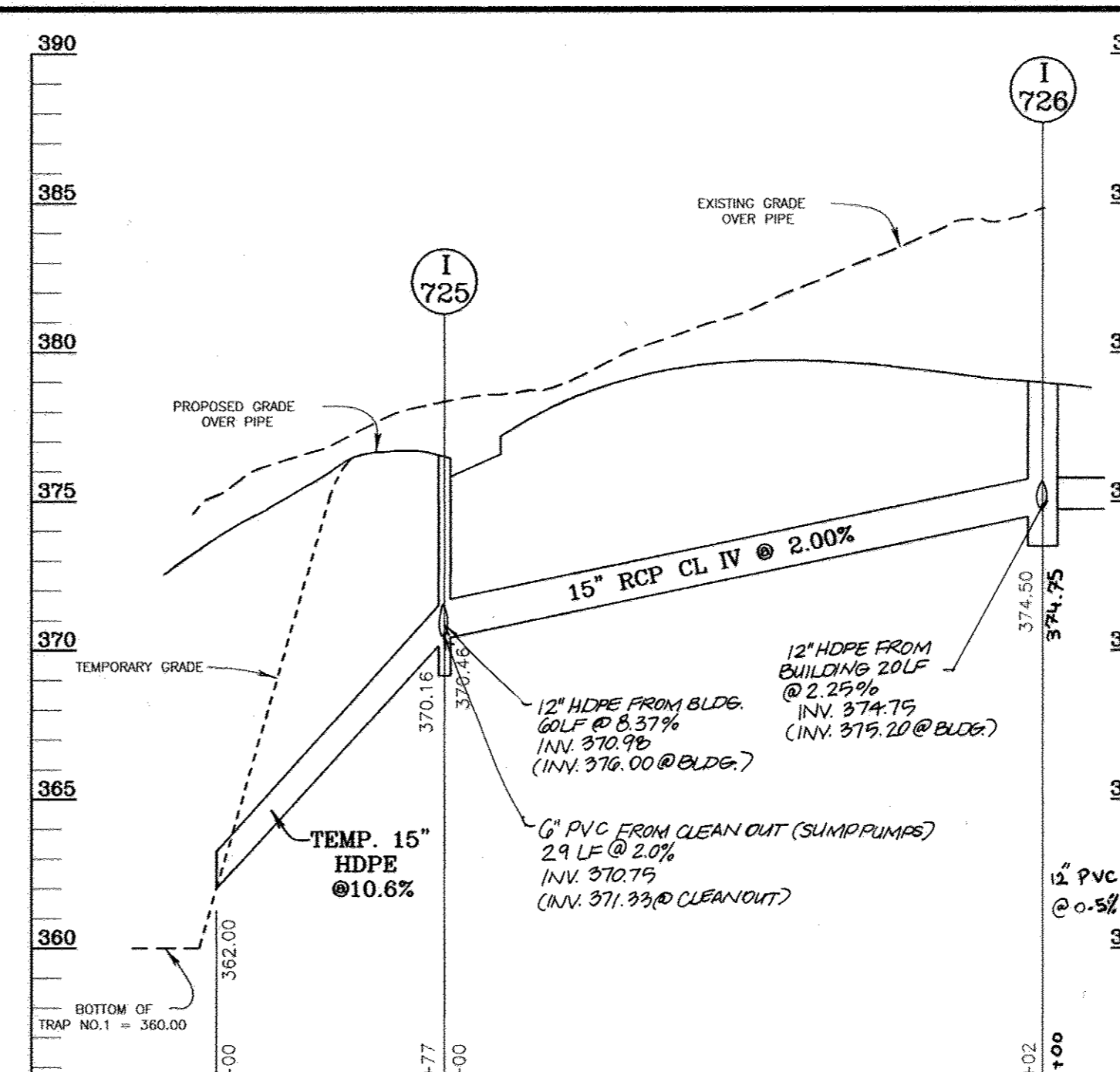
CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE 1/10/06

DIRECTOR  
 DATE 1/1/06

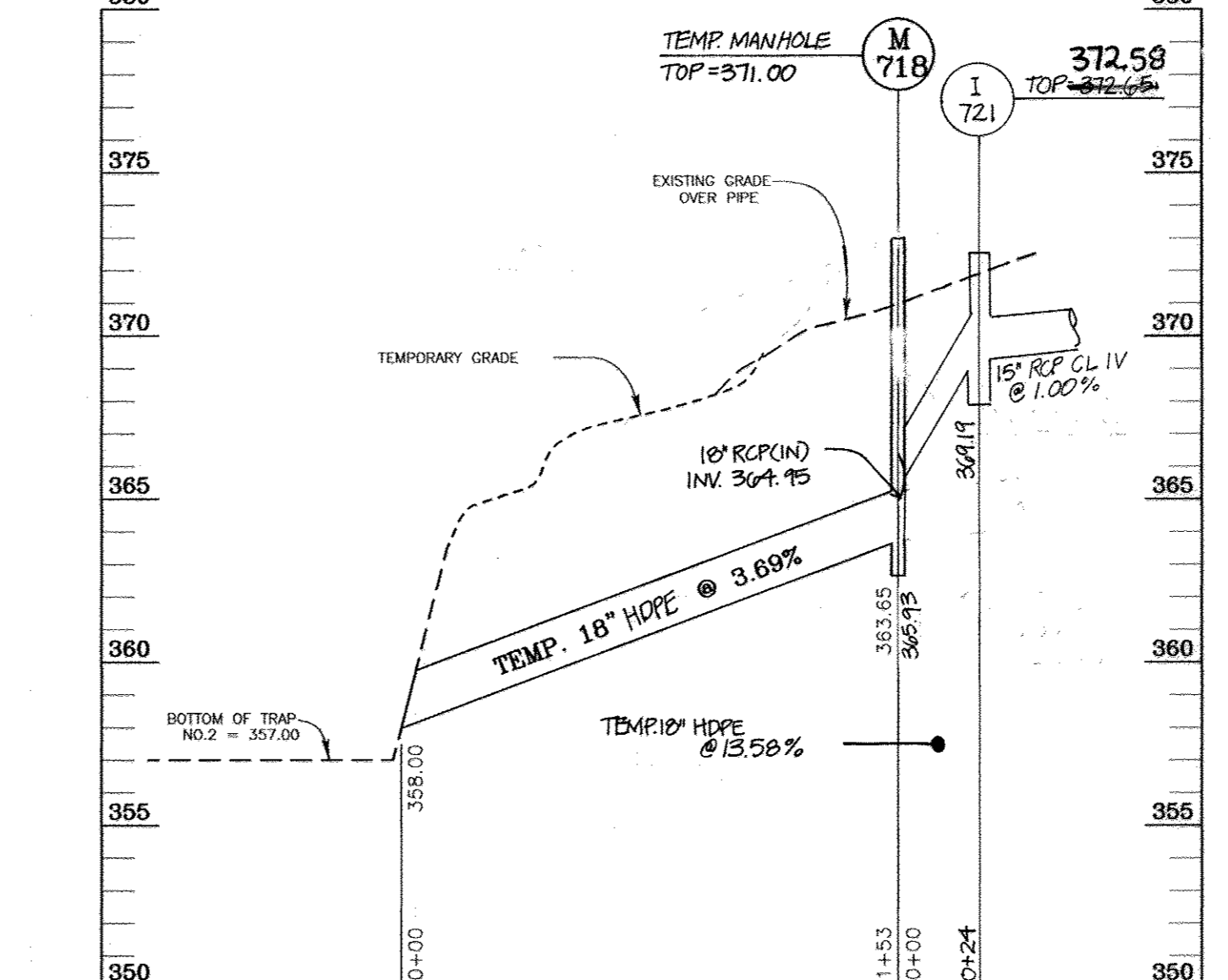


PIPE SUMMARY

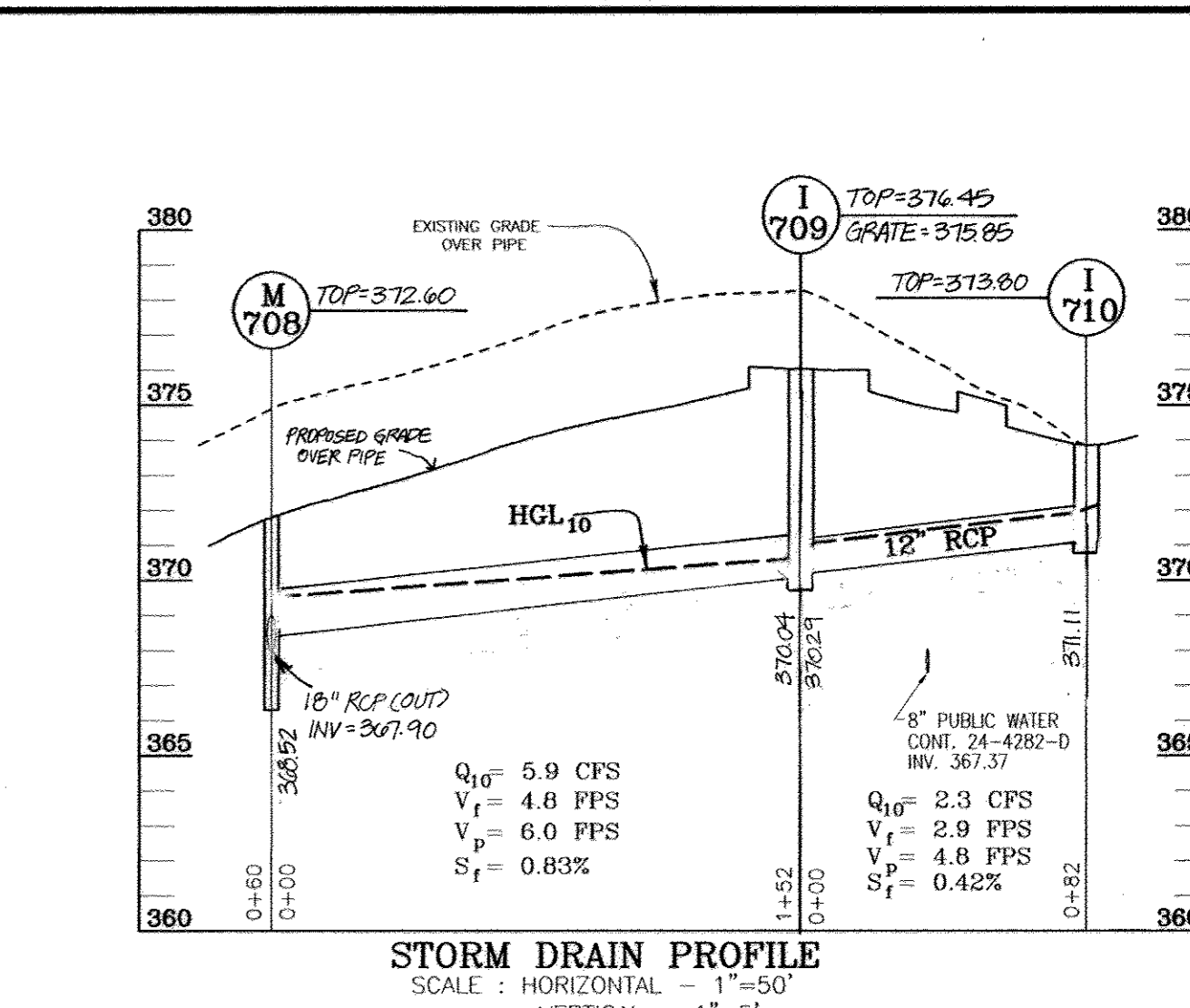
SIZE	TYPE	LENGTH
8"	DIP (WATER)	150'
8"	DIP (SAN.)	313'
12"	RCP CLASS IV	262'
15"	RCP CLASS III	134'
15"	RCP CLASS IV	976'
18"	RCP CLASS IV	789'
18"	ALCMP	41'
24"	ALCMP	112'
8"	PVC	97'
6"	PERF. PVC	35'
8"	PERF. PVC	150'
12"	PVC	365'
90"	ALCMP GA 12	900'



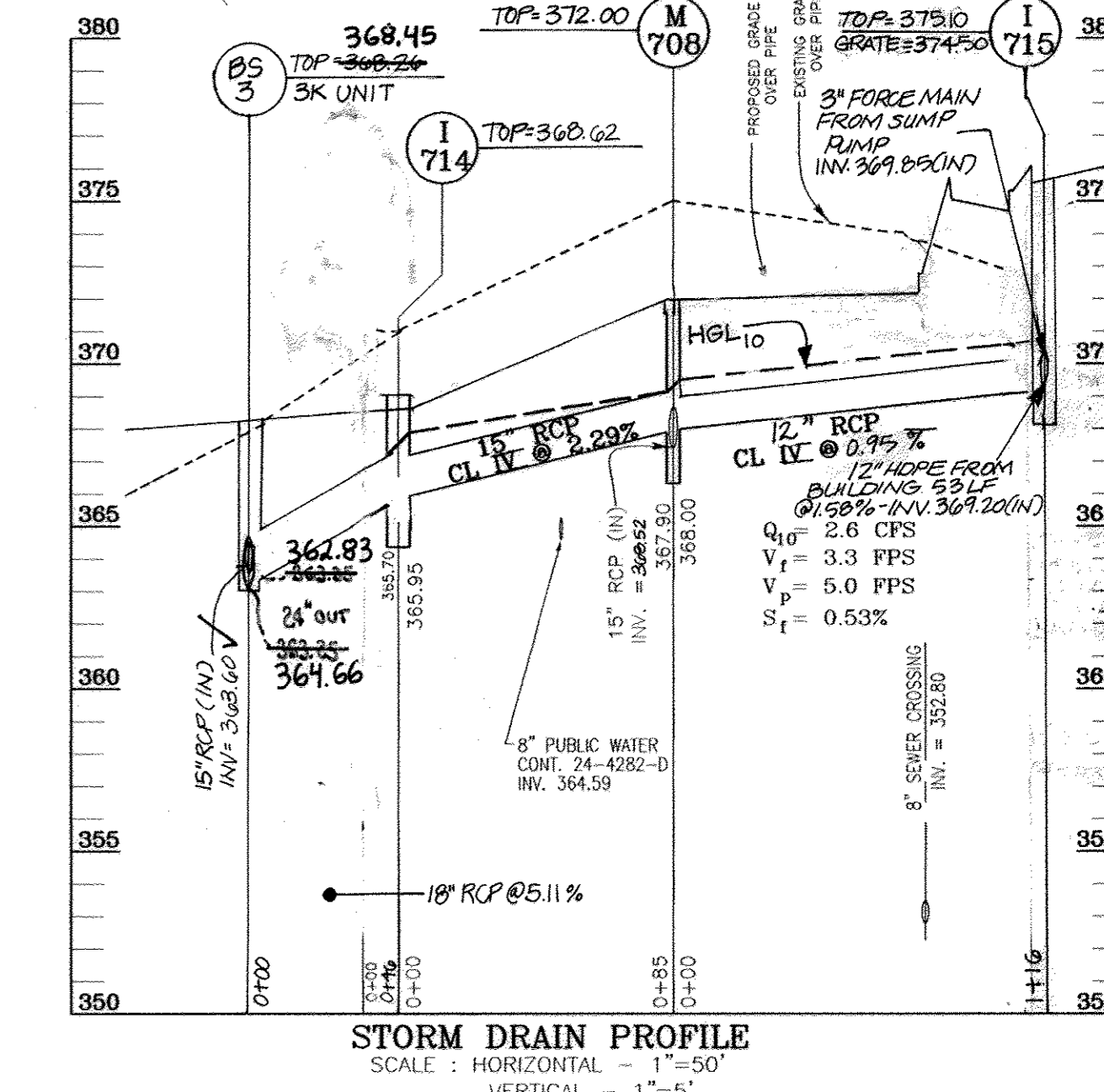
TEMPORARY PIPE PROFILE FOR SEDIMENT TRAP NO.1 @ I-725  
 SCALE: HORIZONTAL - 1"=50'  
 VERTICAL - 1"=5'



TEMPORARY PIPE PROFILE FOR SEDIMENT BASIN NO.2 @ I-718  
 SCALE: HORIZONTAL - 1"=50'  
 VERTICAL - 1"=5'



STORM DRAIN PROFILE  
 SCALE: HORIZONTAL - 1"=50'  
 VERTICAL - 1"=5'



STORM DRAIN PROFILE  
 SCALE: HORIZONTAL - 1"=50'  
 VERTICAL - 1"=5'

OWNER/DEVELOPER  
 FIRST BAPTIST CHURCH OF GUILFORD  
 7504 OAKLAND MILLS RD  
 COLUMBIA, MD 21046  
 410-792-7096

STRUCTURE SCHEDULE

NO.	TYPE	LOCATION	TOP ELEV.	INV. IN	INV. OUT	REMARKS
701	4' SHALLOW PRECAST MANHOLE		362.20	358.03	357.93	DET. GS.12
703	STD. PRECAST MANHOLE		361.51	354.49	354.30	DET. GS.11
704	STD. PRECAST MANHOLE		360.00	355.85	355.60	DET. GS.11
705	4' STANDARD PRECAST MANHOLE		360.03	351.50	351.50	DET. GS.11
706	DOUBLE 'S' COMBINATION INLET		367.11	364.21	364.21	DET. SD4.34
708	4' SHALLOW PRECAST MANHOLE		372.00	368.00	367.90	DET. GS.12
709	DOUBLE 'S' COMBINATION INLET		370.45	370.29	370.04	DET. SD4.34
710	DOUBLE 'S' INLET		373.00	-	371.11	DET. SD4.23
711	DOUBLE 'S' COMBINATION INLET		373.00	-	364.32	DET. SD4.34
712	DOUBLE 'S' COMBINATION INLET		369.34	361.30	361.05	DET. SD4.34
713	PRECAST STANDARD TYPE 'D' INLET		367.00	-	363.30	DET. SD4.39
714	DOUBLE 'S' INLET		368.02	365.95	365.70	DET. SD4.23
715	DOUBLE 'S' COMBINATION INLET		373.10	369.85	369.10	DET. SD4.34
718	4' STANDARD PRECAST MANHOLE		371.00	366.36	366.05	DET. GS.11
719	DOUBLE 'S' COMBINATION INLET		370.00	-	361.05	DET. SD4.34
721	DOUBLE 'S' INLET		372.65	369.44	369.19	DET. SD4.23
722	PRECAST STANDARD TYPE 'D' INLET		375.90	-	371.00	DET. SD4.39
723	4' STANDARD PRECAST MANHOLE		364.25	360.91	358.52	DET. GS.12
724	PRECAST RECT. COG-15 INLET		368.71	365.02	362.49	MD-374.51
725	PRECAST A-10 INLET (WIDTH=3'-6" O/O)		376.51	370.78	370.16	DET. SD4.41
726	PRECAST A-10 INLET (WIDTH=3'-6" O/O)		379.00	374.50	374.50	DET. SD4.41
727	PRECAST STANDARD TYPE 'D' INLET		367.94	362.31	362.34	DET. SD4.39
727A	'S' INLET		363.85	362.07	361.35	WEIR 367.00

REVISIONS:

NO.	REVISION	DATE
4	REVISE STORMWATER MANAGEMENT FACILITY AND ASSOCIATED STORM DRAIN	10/18/07
3	REVISE PROFILE PIPE, STRUCTURE SCHEDULE FOR I 715, I 726, I 725	10/6/06
2	REVISE M701, M 723, I 727 A	8/11/06
1	REVISE 727 TO R. ELEV, ADD CANNON, HYVAC, LOWER LEVEL ENTRY	6/30/06

SITE DEVELOPMENT PLAN  
 STORM DRAIN DRAINAGE AREA MAP  
 AND STORM DRAIN PROFILES  
 FIRST BAPTIST CHURCH  
 OF GUILFORD

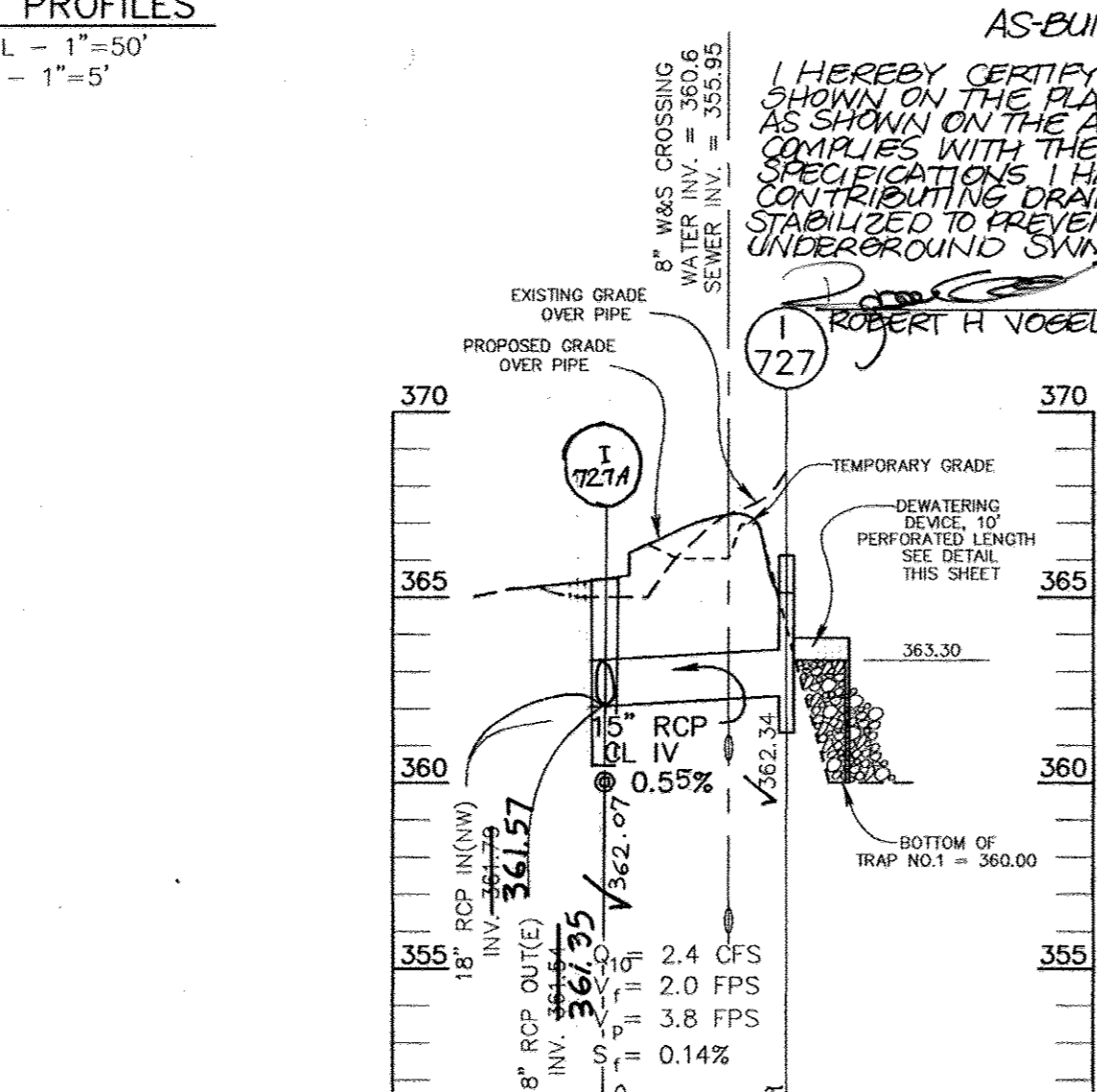
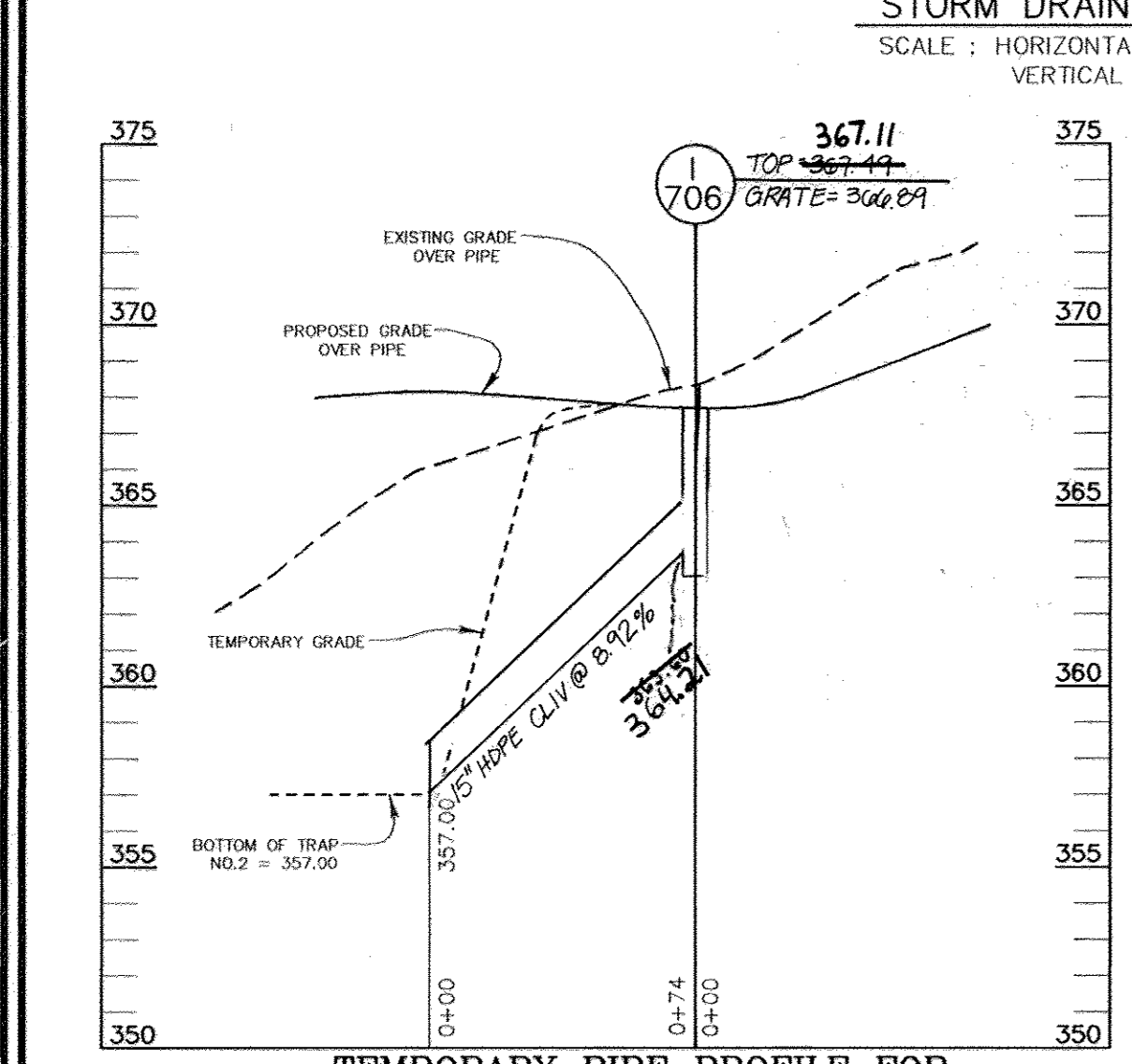
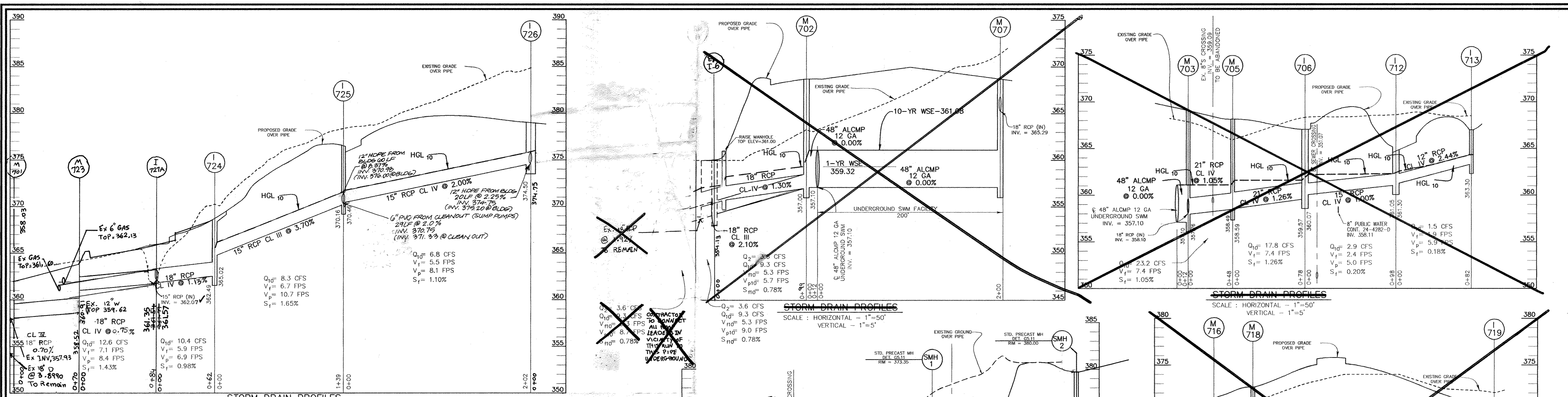
TAX MAP 42 BLOCK 16 PARCEL A  
 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL**  
 ENGINEERS • SURVEYORS • PLANNERS

8407 MAIN STREET TEL: 410.461.7566  
 ELLICOTT CITY, MD 21043 FAX: 410.461.8961

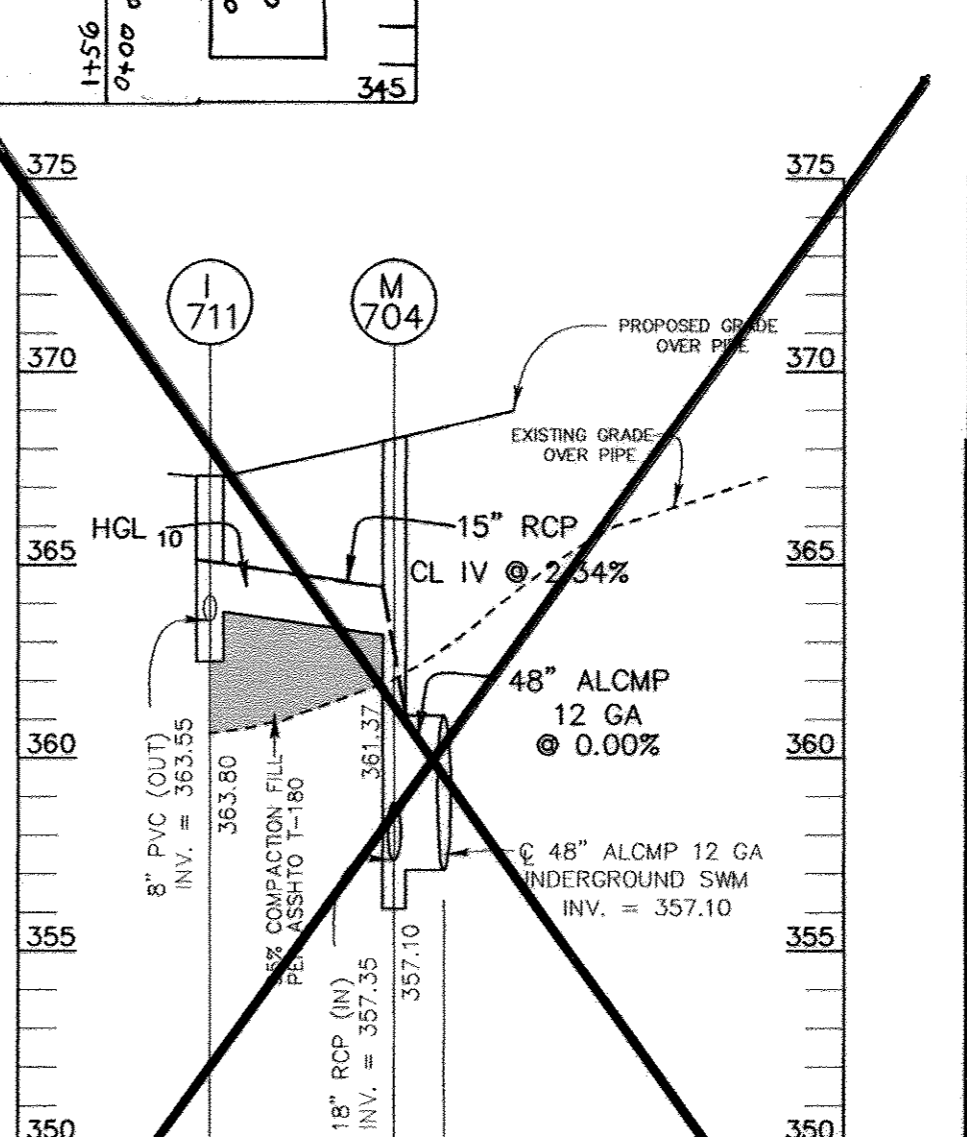
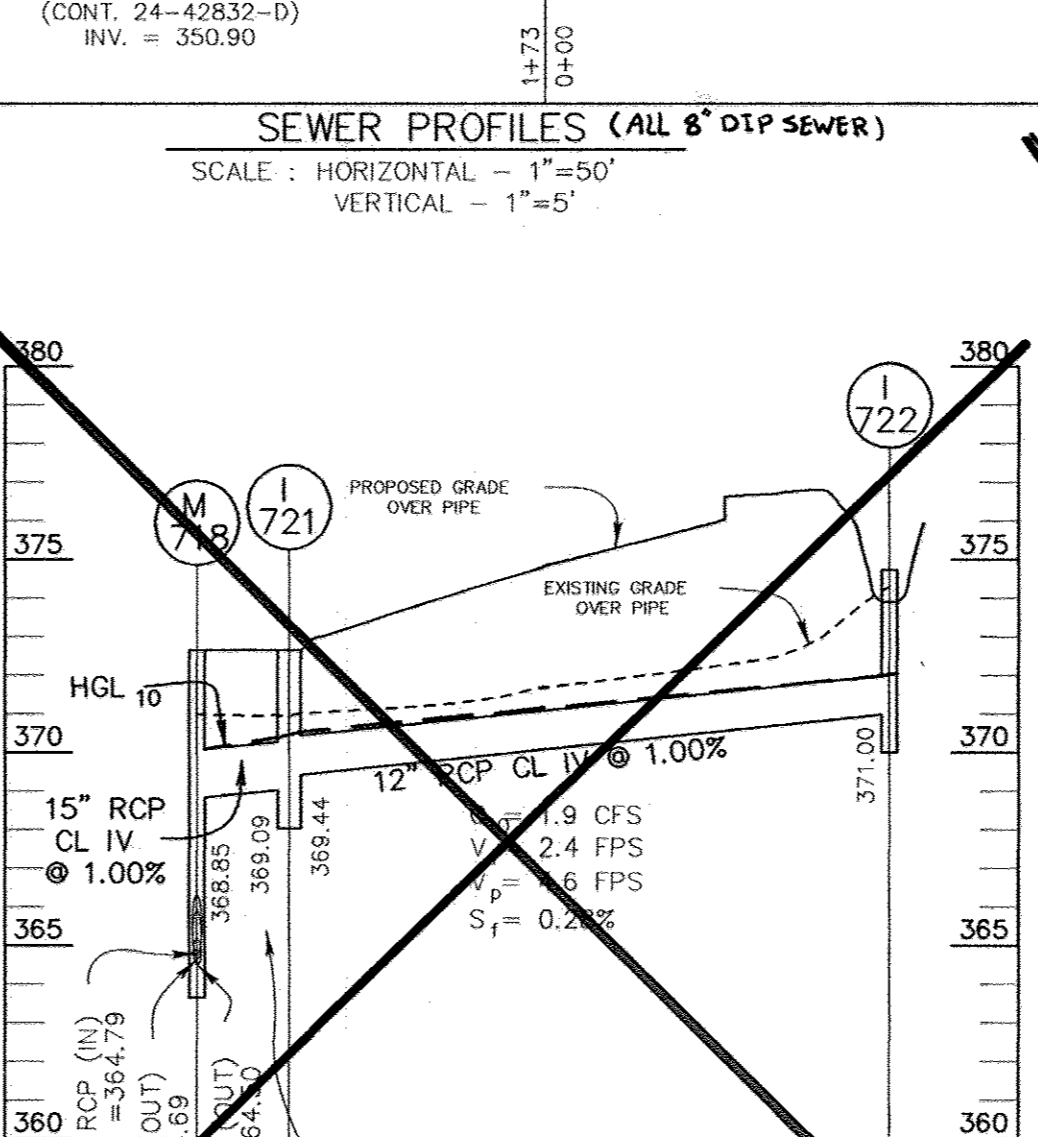
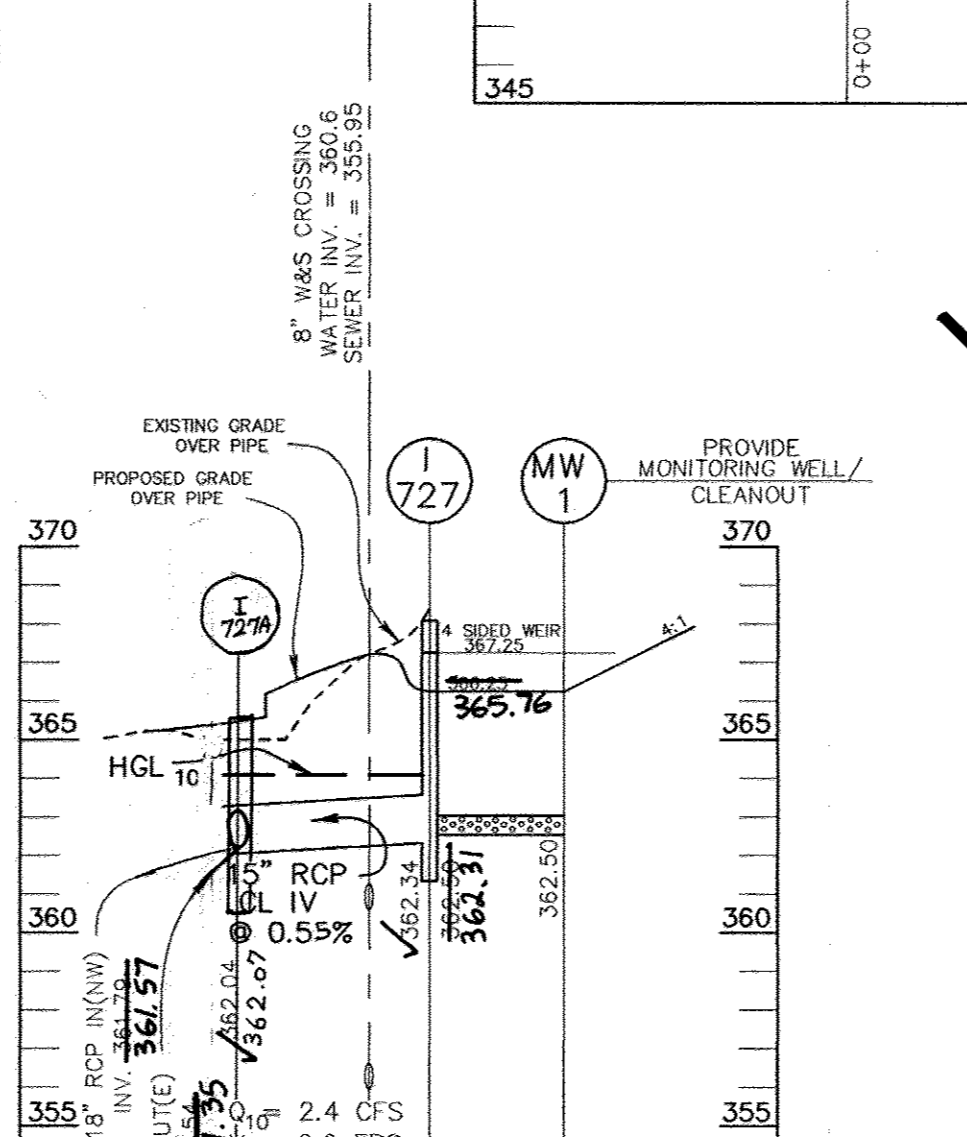
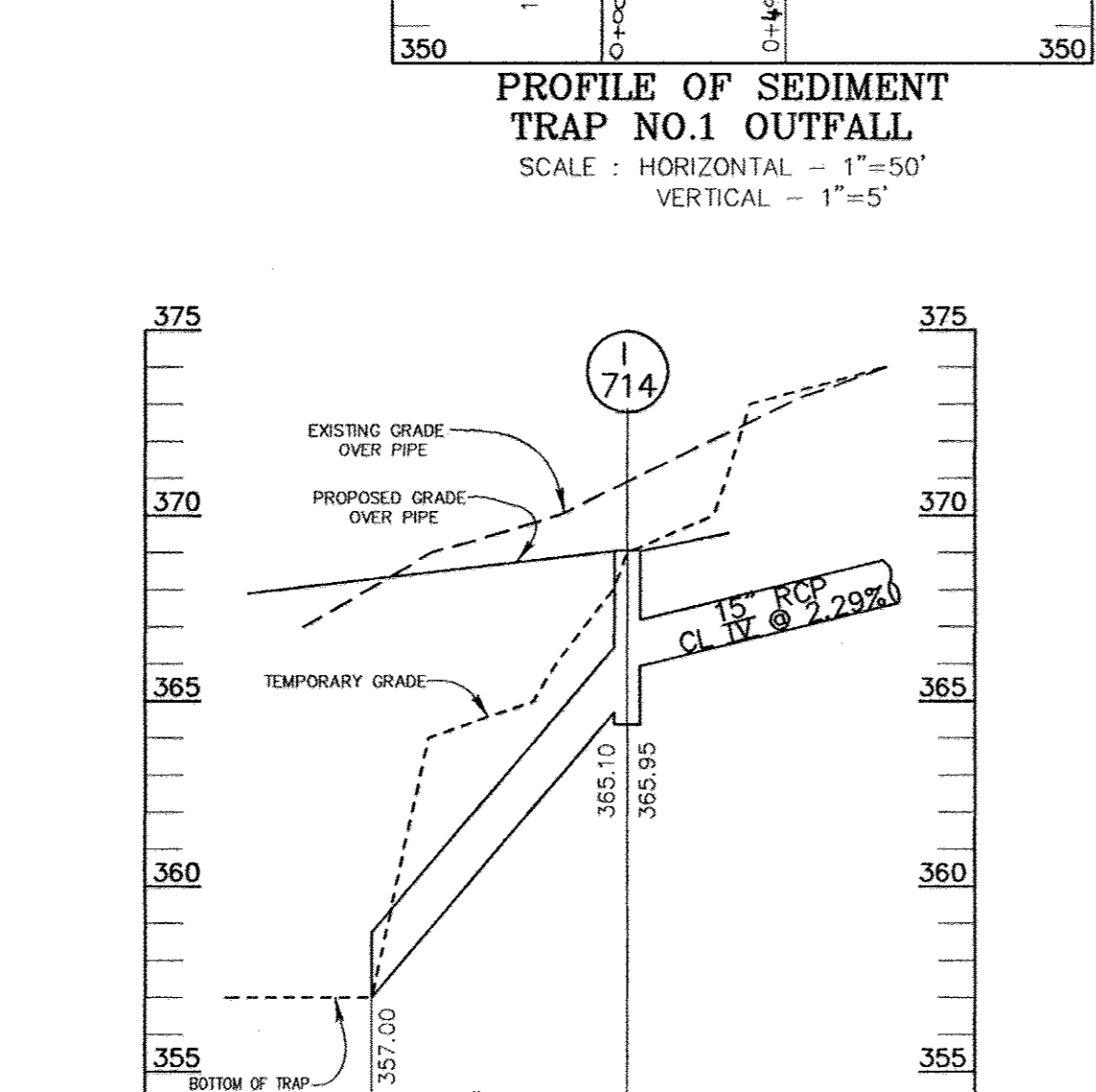
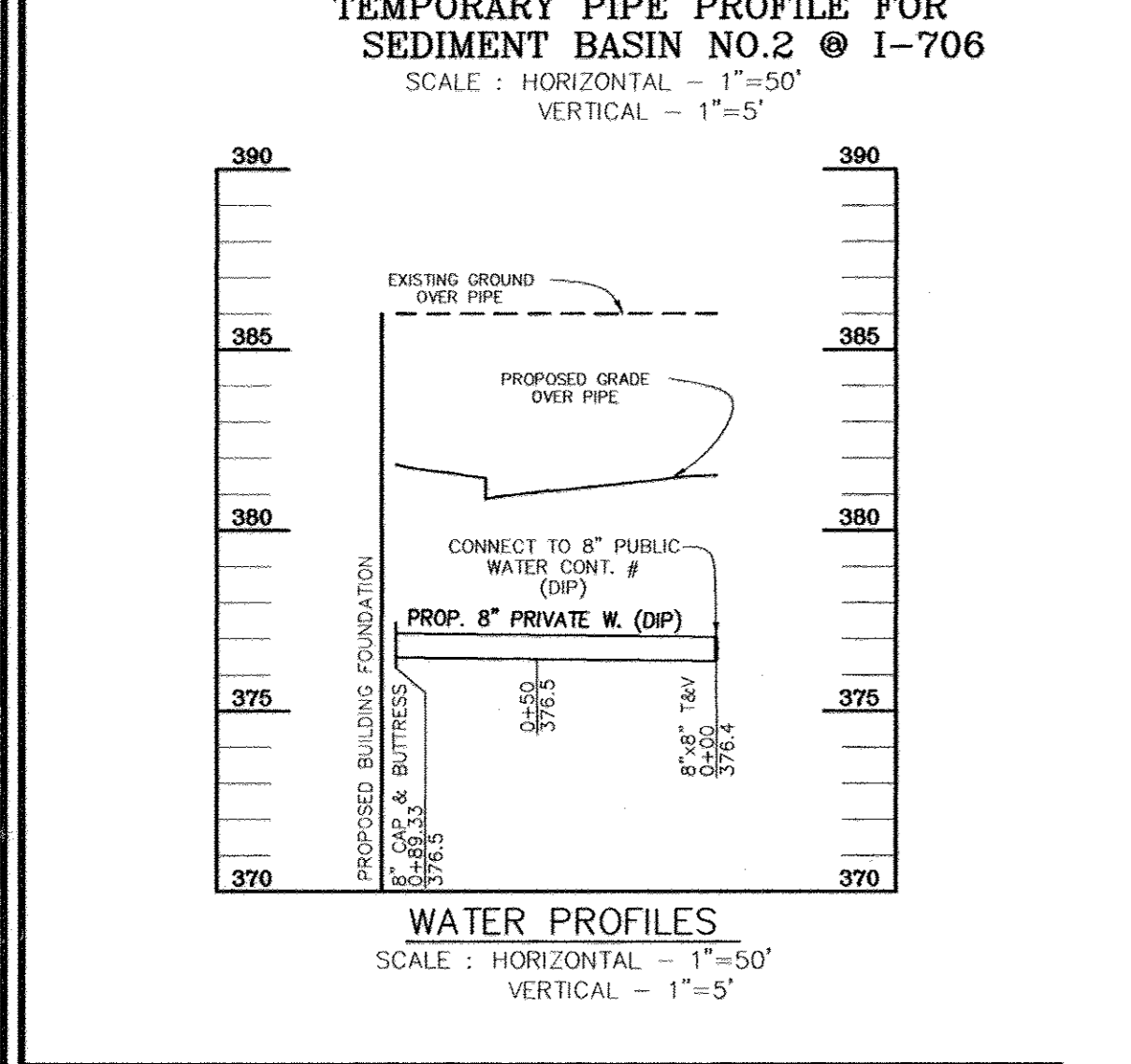
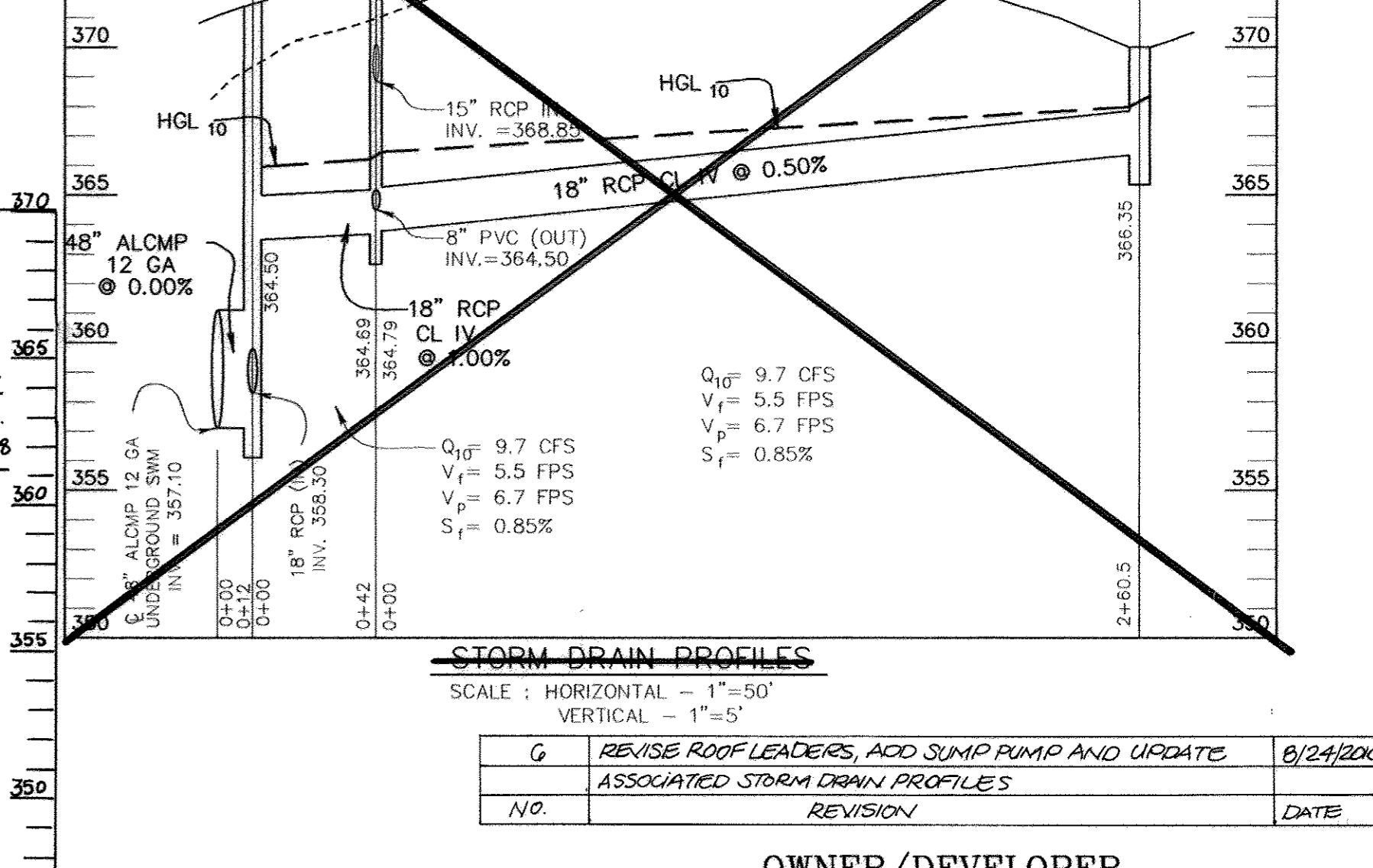
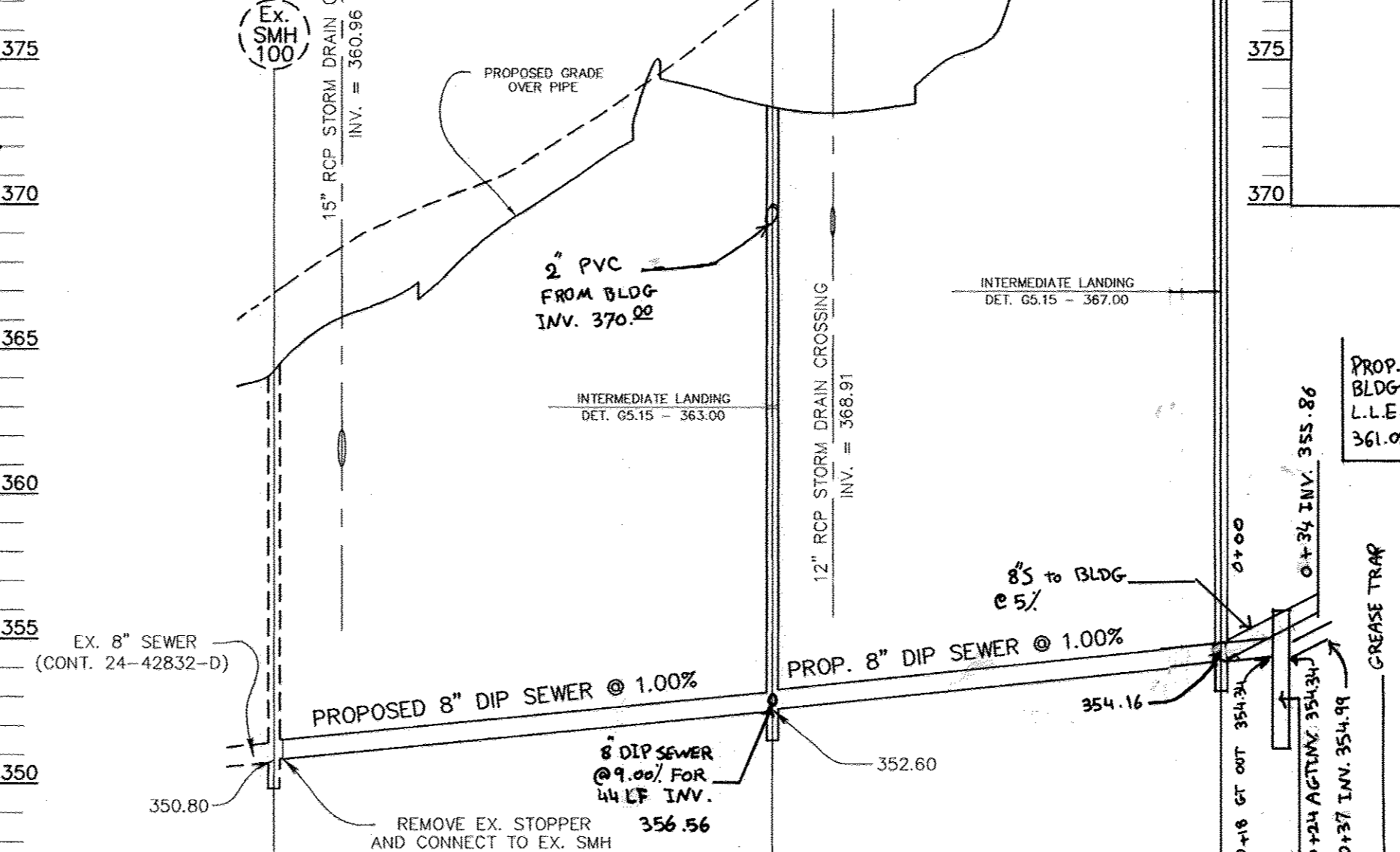
DESIGN BY: RHV  
 DRAWN BY: MAN/DZ  
 CHECKED BY: RHV  
 DATE: SEPTEMBER 2005  
 SCALE: 1"=50'  
 W.O. NO.: 04-67

7 SHEET OF 20



**AS-BUILT CERTIFICATION**  
 I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THE PLAN WAS CONSTRUCTED AS SHOWN ON THE AS-BUILT PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT EROSION OF THE UNDERGROUND SWM FACILITY.

16193 12/22/17  
 ROBERT H. VOGEL, PE  
 STATE OF MARYLAND  
 PROFESSIONAL ENGINEER  
 No. 16193



NO.	REVISION	DATE
4	REVISE STORMWATER MANAGEMENT FACILITY AND ASSOCIATED STORM DRAIN	10/10/07
3	REVISE PROFILE FOR I 725, I 726	10/16/06
2	REVISE M703, M 723, I 727A, EX 16 PROFILES	8/11/06
1	REVISE SEWER PROFILE	6/30/06

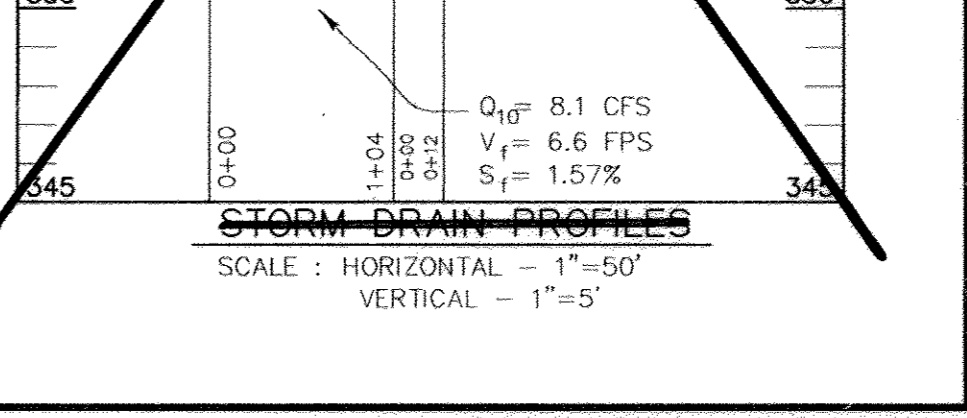
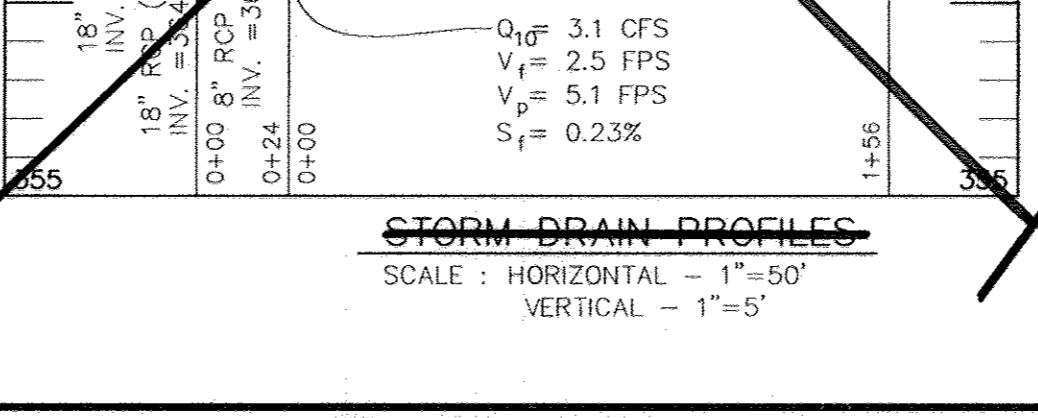
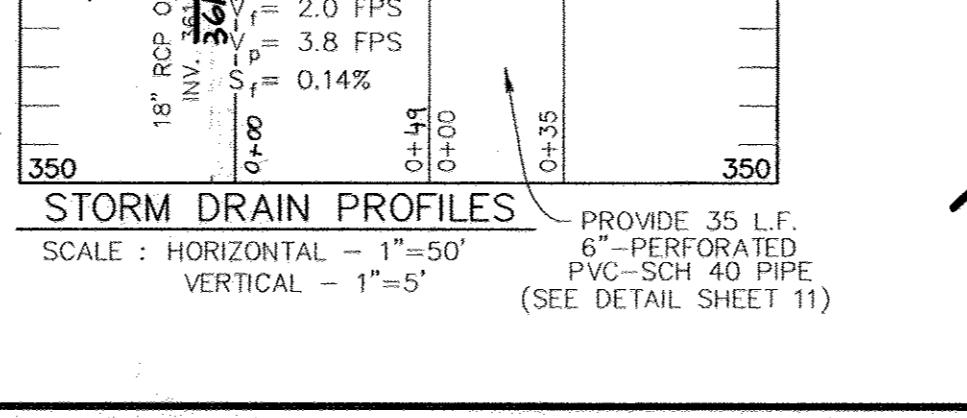
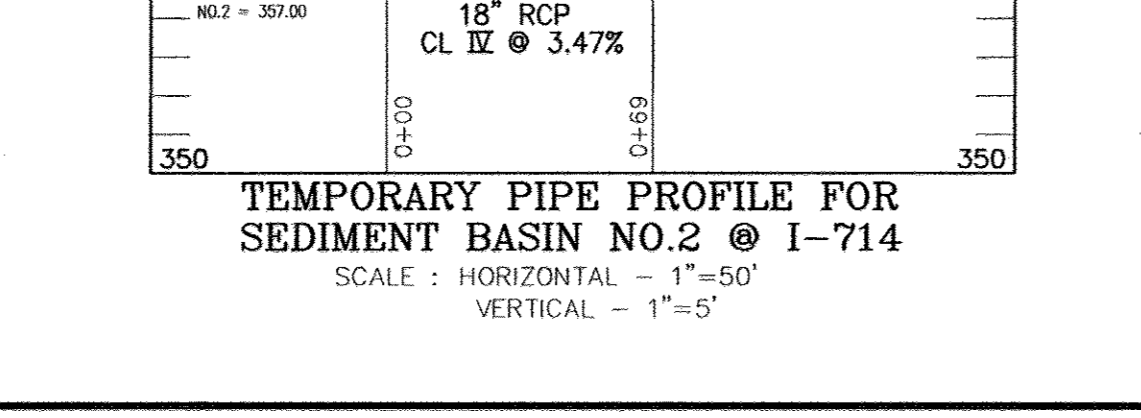
**SITE DEVELOPMENT PLAN**  
**UTILITY PROFILES**  
**FIRST BAPTIST CHURCH OF GUILFORD**

TAX MAP 42 BLOCK 16 6TH ELECTION DISTRICT PARCEL A HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL ENGINEERING, INC.**  
 ENGINEERS • SURVEYORS • PLANNERS  
 8407 MAIN STREET ELLICOTT CITY, MD 21043 TEL: 410.461.7666 FAX: 410.461.8961

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

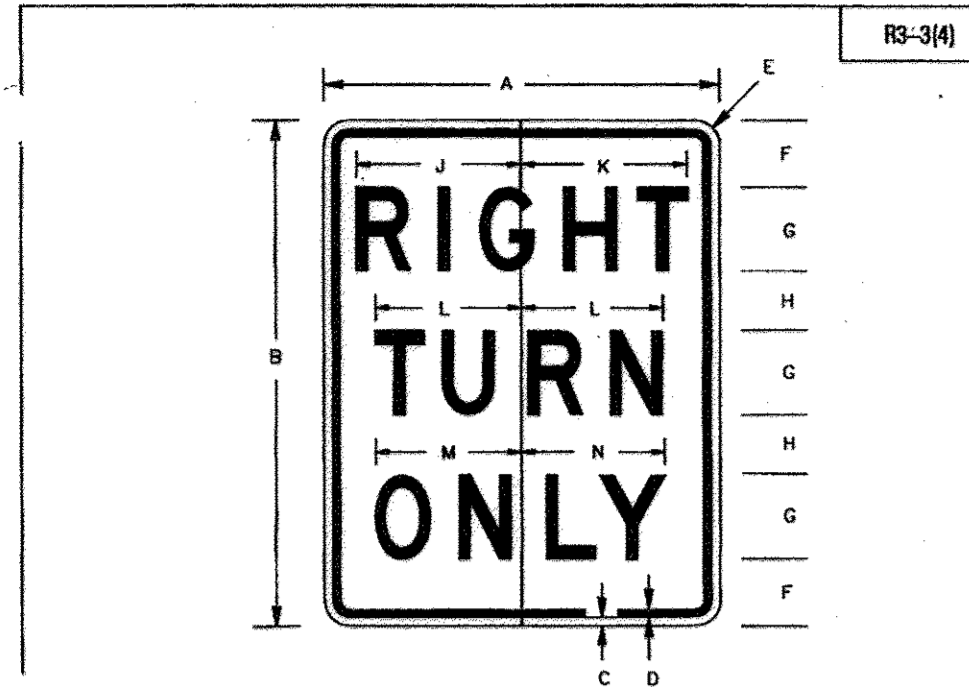
9/26/05  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 1/16/06  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 1/11/06  
 DIRECTOR



DESIGN BY: RHV  
 DRAWN BY: MAN/DZ  
 CHECKED BY: RHV  
 DATE: SEPTEMBER 2005  
 SCALE: AS SHOWN  
 W.O. NO.: 04-67

8 SHEET OF 20



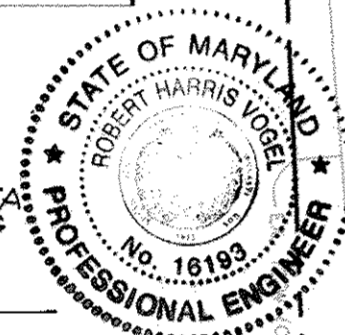


SIGN SIZE	DIMENSIONS (INCHES)												
	A	B	C	D	E	F	G	H	J	K	L	M	N
STD	24	36	12	12	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2

REFERENCES		COLORS	
MUTCD SECTION 6E-02	MUTCD SUPPLEMENT - 2B-15	LEGEND	BLACK
		BACKGROUND	WHITE

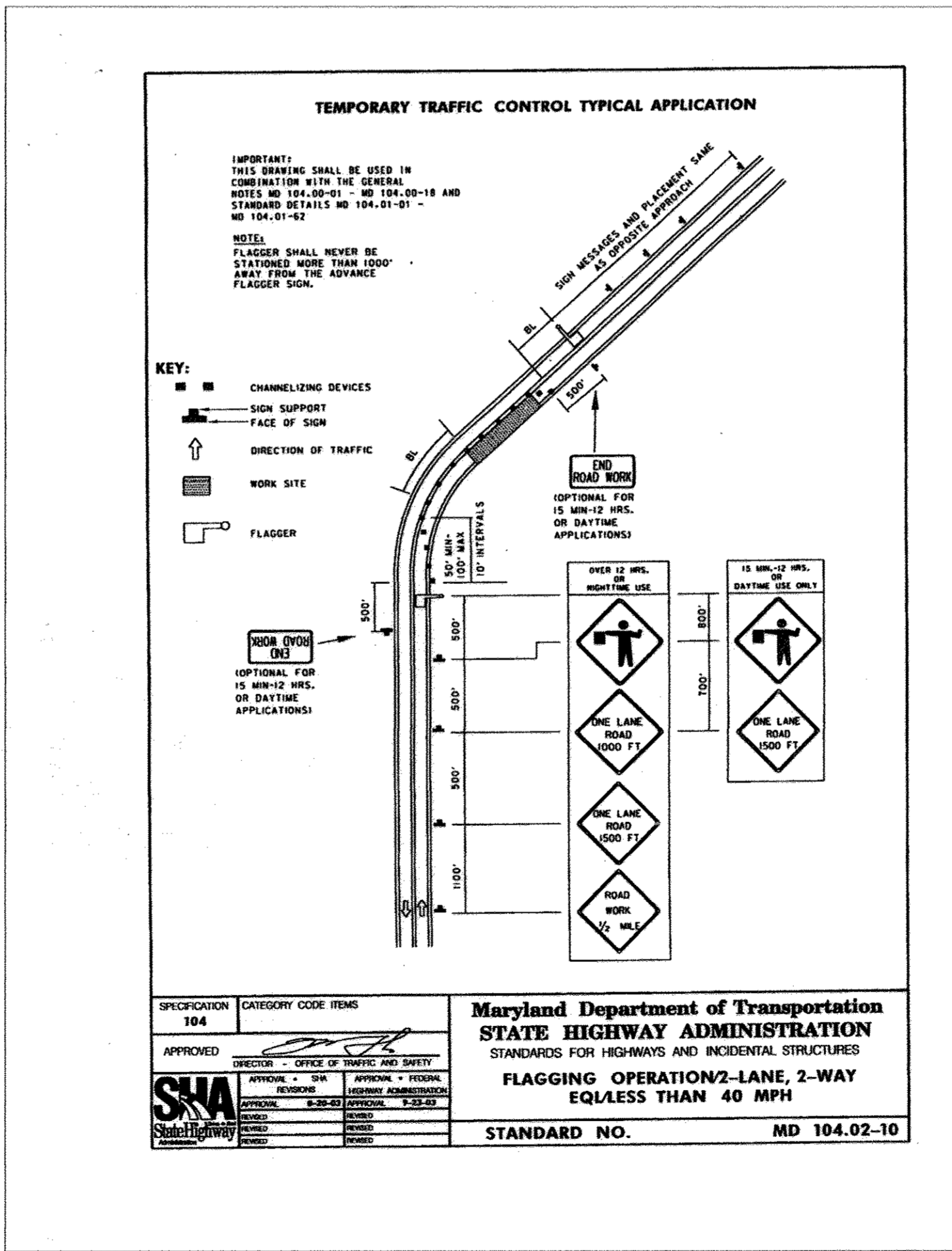
APPROVED	DIRECTOR	DATE	APPROVAL	SECTION	DATE	STANDARD NO.
						MD 104.02-10

**AS-BUILT CERTIFICATION**  
 I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THE PLAN WAS CONSTRUCTED AS SHOWN ON THE AS-BUILT PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DIMENSIONS ARE SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SIGN FACILITY.  
 DATE: 12/22/17  
 ROBERT H. VOGEL, PE  
 NO AS-BUILT INFORMATION THIS SHEET



OAKLAND MILLS ROAD  
 (COUNTY ROAD)  
 MAJOR COLLECTOR

PROPOSED CHURCH  
 F.F. = 381.00  
 INSIDE METER SETTING



APPROVED	DIRECTOR	DATE	APPROVAL	SECTION	DATE	STANDARD NO.
						MD 104.02-10

- NOTES:**
- ALL SIGN AND PAVEMENT MARKING LOCATIONS SHALL BE APPROVED BY COUNTY TRAFFIC ENGINEER (410-313-5752) PRIOR TO ANY INSTALLATIONS.
  - ALL WHITE LINES SHOWN ARE 5" WIDE.
  - DASHED LINES ARE "PUPPY TRACKS" 2' LINE/6' SPACES/2' LINE, ETC.
  - STOP BARS, RIGHT ARROWS, AND "ONLY'S" SHALL BE INSTALLED AS HEAT APPLIED PRE-FORMED TAPE OR THERMOPLASTIC.
  - SIGN POSTS: ALL SIGN POST USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) - 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.

NO.	REVISION	DATE

**SITE DEVELOPMENT PLAN  
 PAVEMENT MARKING  
 AND SIGNAGE PLAN  
 FIRST BAPTIST CHURCH  
 OF GUILFORD**

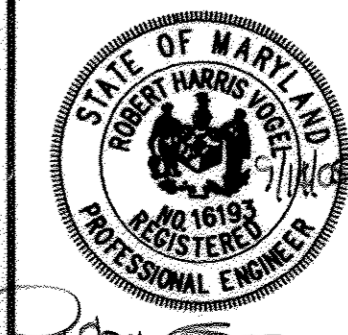
TAX MAP 42 BLOCK 16  
 6TH ELECTION DISTRICT

PARCEL A  
 HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL  
 ENGINEERING, INC.**  
 ENGINEERS • SURVEYORS • PLANNERS

8407 MAIN STREET  
 ELLICOTT CITY, MD 21043

TEL: 410.461.7666  
 FAX: 410.461.8961



DESIGN BY:	RHV
DRAWN BY:	MAN/DZ
CHECKED BY:	RHV
DATE:	SEPTEMBER 2005
SCALE:	AS SHOWN
W.O. NO.:	04-67

9 SHEET OF 20

APPROVED:	HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE: 9/20/16
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE: 1/10/06
DIRECTOR	DATE: 1/1/06

PLAN  
 SCALE: 1"=30'



**Appendix B.3. Construction Specifications for Sand Filters, Bioretention and Open Channels**

**Specifications for Bioretention**

**1. Material Specifications**

The allowable materials to be used in bioretention area are detailed in Table B.3.2.

**2. Planting Soil**

The soil shall be a uniform mix, free of stones, stumps, roots or other similar objects larger than two inches. No other materials or substances shall be mixed or dumped within the bioretention area that may be harmful to plant growth, or prove a hindrance to the planting or maintenance operations. The planting soil shall be free of Bermuda grass, Quackgrass, Johnson grass, or other noxious weeds as specified under COMAR 15.08.01.05.

The planting soil shall be tested and shall meet the following criteria:

- pH range 5.2 - 7.0
- organic matter 1.5 - 4% (by weight)
- magnesium 35 lb/ac
- phosphorus (phosphate) 75 lb/ac
- potassium (potash - K2O) 85 lb/ac
- soluble salts nit to exceed 500 ppm

All bioretention areas shall have a minimum of one test. Each test shall consist of both the standard soil test for pH, phosphorus, and potassium and additional test of organic matter, and soluble salts. A textural analysis shall be performed for each location where the top soil was excavated.

Since different lab calibrate their testing equipment differently, all testing results shall come from the same testing facility.

Should the pH fall out of the acceptable range, it may be modified (higher) with lime or (lower) with iron sulfate plus sulfur.

**3. Compaction**

It is very important to minimize compaction of both the base of the bioretention area and the required backfill. When possible, use hoses to remove original soil. If bioretention areas are excavated using loader, the contractor should use wide track or marsh track equipment, or light equipment with turf type tire. Use of equipment with narrow tracks or narrow tires, rubber tires with large lugs, or high pressure tires will cause excessive compaction resulting in reduced infiltration rates and is not acceptable. Compaction will significantly contribute to design failure.

Compaction can be alleviated at the base of the bioretention facility by using a primary tilling operation such as chisel plow, ripper, or subsoiler. These tilling operations are to restructure the soil profile through the 12 inch compaction zone. Substitute methods must be approved by the engineer. Rototillers typically do not till deep enough to reduce the effects of compaction from heavy equipment.

Rototill 2 to 3 inches of sand into the base of the bioretention facility before backfilling the required sand layer. Pump any ponded water before preparing (rototilling) base.

When backfilling the topsoil over the sand layer, first place 3 to 4 inches of topsoil over the sand, then rototill the sand/topsoil to create a gradation zone. Backfill the remainder of the topsoil to final grade.

When backfilling the bioretention facility, place soil in lifts 12" to 18". Do not use heavy equipment within the bioretention basin. Heavy equipment can be used around the perimeter of the basin to supply soils and sand. Grade bioretention materials with light equipment such as a compact loader or a dozer/loader with marsh tracks.

**4. Plant Material**

Refer to Plant List on sheet 23 of 26 for plant material in the bioretention areas.

**5. Plant Installation**

Mulch should be placed to a uniform thickness of 2" to 3". Shredded hardwood mulch is the only accepted mulch. Pine mulch and wood chips will float and move to the perimeter of the bioretention area during a storm event and are not acceptable. Shredded mulch must be well aged (6 to 12 months) for acceptance.

Root stock of the plant material shall be kept moist during transport and on-site storage. The plant root ball should be planted so 1/8th of the ball is above final grade surface. The diameter of the planting pit shall be at least six inches larger than the diameter of the planting ball. Set and maintain the plant straight during the entire planting process.

Trees shall be braced using 2" by 2" stakes only as necessary and for the first growing season only. Stakes are to be equally spaced on the outside of the tree ball.

Grasses and legume seed should be drilled into the soil to a depth of at least one inch. Grass and legume plugs shall be planted following the non-grass ground cover planting specifications.

The topsoil specifications provide enough organic material to adequately supply nutrients from natural cycling. The primary function of the bioretention structure is to improve water quality. Adding fertilizers, nutrients, or at a minimum, impedes this goal. Only add fertilizer if wood chips or mulch are used to amend the soil. Rototill urea fertilizer at a rate of 2 pounds of nitrogen per 1000 square feet.

**6. Underdrains**

Underdrains are to be placed on a 3'-0" wide section filter cloth. Pipe is placed next, followed by the gravel bedding. The ends of underdrain pipes not terminating in an observation well shall be capped.

The main collector pipe for underdrain systems shall be constructed at a minimum slope of 0.5%. Observation well and/or clean-out pipes must be provided (one minimum per every 1000 square feet of surface area).

**7. Miscellaneous**

The bioretention facility may not be constructed until all contributing drainage area has been stabilized.

**TABLE B.3.2 MATERIALS SPECIFICATIONS FOR BIORETENTION**

MATERIAL	SPECIFICATION	SIZE	NOTES
PLANTINGS	SEE APPENDIX A, TABLE A.4	N/A	PLANTINGS ARE SITE-SPECIFIC
PLANTING SOIL (2.5' TO 4' DEEP)	SAND 35-60% SILT 30-55% CLAY 10-25%	N/A	USDA SOIL TYPES LOAMY SAND, SANDY LOAM OR LOAM
MULCH	SHREDDED HARDWOOD		AGED 6 MONTHS, MINIMUM
PEA GRAVEL DIAPHRAGM AND CURTAIN DRAIN	PEA GRAVEL: ASTM-D-448 ORNAMENTAL STONE: WASHED COBBLES	PEA GRAVEL: NO. 6 STONE: 2" TO 5"	
GEOTEXTILE	CLASS "C" - APPARENT OPENING SIZE (ASTM-D-4751), GRAB TENSILE STRENGTH (ASTM-D-4632), PUNCTURE RESISTANCE (ASTM-D-4833)	N/A	FOR USE AS NECESSARY BENEATH UNDERDRAINS ONLY
UNDERDRAIN GRAVEL	AASHTO M-43	0.375" TO 0.75"	
UNDERDRAIN PIPING	F 758, TYPE PS 28 OR AASHTO M-278	4" TO 6" RIGID SCHEDULE 40 PVC OR SDR35	3/8" PERF. @ 6" ON CENTER, 4 HOLES PER ROW; MINIMUM OF 3" OF GRAVEL OVER PIPES; NOT NECESSARY UNDERNEATH PIPES
POURED IN PLACE CONCRETE (IF REQUIRED)	MSHA MIX NO. 3; F'c=3500 PSI @ 28 DAYS, NORMAL WEIGHT, AIR-ENTRAINED; REINFORCING TO MEET ASTM-615-60	N/A	ON-SITE TESTING OF POURED-IN-PLACE CONCRETE REQUIRED: 28 DAY STRENGTH AND SLUMP TEST; ALL CONCRETE DESIGN (CAST-IN-PLACE OR PRE-CAST) NOT USING PREVIOUSLY APPROVED STATE OR LOCAL STANDARDS REQUIRES DESIGN DRAWINGS SEALED AND APPROVED BY A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE OF MARYLAND - DESIGN TO INCLUDE MEETING ACI CODE 350R/89; VERTICAL LOADING [H-10 OR H-20]; ALLOWABLE HORIZONTAL LOADING (BASED ON SOIL PRESSURES); AND ANALYSIS OF POTENTIAL CRACKING
SAND (1' DEEP)	AASHTO-M-6 OR ASTM-C-33	0.02" TO 0.04"	SAND SUBSTITUTIONS SUCH AS DIABASE AND GRAYSTONE #10 ARE NOT ACCEPTABLE. NO CALCIUM CARBONATED OR DOLOMITIC SAND SUBSTITUTIONS ARE ACCEPTABLE. NO "ROCK DUST" CAN BE USED FOR SAND.

NOTE: ALL SWM FACILITIES SHOWN ON THIS PLAN TO BE PRIVATELY OWNED AND MAINTAINED BY THE FIRST BAPTIST CHURCH OF GUILFORD

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE 9/26/06  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE 1/19/06  
 DIRECTOR  
 DATE 2/1/06

REVIEWED FOR HOWARD S.C.D. & MEETS TECHNICAL REQUIREMENTS.

BY THE DEVELOPER:  
 Jim Murray  
 USA-NATURAL RESOURCES CONSERVATION SERVICE  
 DATE 9-22-05  
 THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
 John D. [Signature]  
 HOWARD S.C.D.  
 DATE 9-22-05

BY THE ENGINEER:

I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.  
 Robert H. Vogel, P.E.  
 DATE 1/19/06

**BIORETENTION AREA #1 PLANTING DETAIL**

KEY	QTY	BOTANICAL NAME/Common Name	SIZE	REMARKS
(X)	4	CLADRASTIS LUTEA 'SWEETSHADE' SWEETSHADE YELLOWWOOD	1 1/2"-2" CAL	B & B
(●)	16	ILEX GLABRA COMPACTA DWARF INKBERRY	3 GALLON	CONT
(●)	14	RHODODENDRON HY. 'GLACIER' OR 'WHITE ROSEBUD' GLACIER OR WHITE ROSEBUD HYBRID AZALEA	3 GALLON	CONT
(■)	669	LIRIOPE MUSCARI 'MAJESTIC' MAJESTIC LILY TURF	2" POT	1' O.C.

**BIORETENTION PLANTING REQUIREMENTS**

AREA	STEMS REQUIRED	STEMS PROVIDED
1007 SF	23	33

BIORETENTION AREAS ARE LANDSCAPED BASED ON A MINIMUM DENSITY OF 1000 STEMS PER PLANTED ACRE (.0229 STEMS PER SQUARE FOOT).

**SWM SYSTEM SPECIFICATIONS**

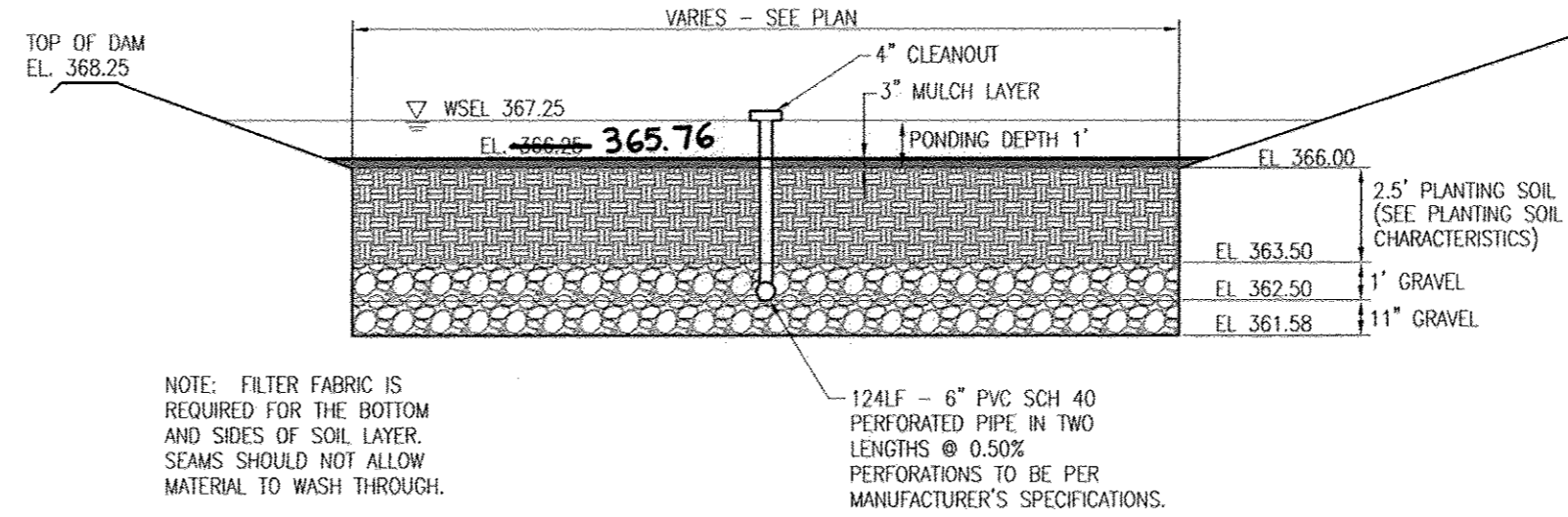
**PIPE MATERIALS**  
 ALL PIPE SHALL BE OF SIZE AND GAUGE SHOWN ON PLANS. PIPE SHALL BE 2-2/3"x1/2" CORRUGATIONS, LOCK SEAM, ALUMINIZED TYPE 2 COATED PER AASHTO M-274-87. PIPE SHALL HAVE A MINIMUM OF 2 RE-ROLLED CORRUGATIONS EACH END AND SHALL BE JOINED WITH A 1 1/2" HUGGER TYPE BAND, O-RING GASKETS AND TC40 JOINT SEALANT.

**FITTINGS**  
 SHALL BE SHOP FABRICATED AND ALL CUTS TO BE FULLY WELDED FOR THE FULL PERIPHERY. PIPE MANUFACTURERS SHALL DETERMINE TYPE OF FITTING ARRANGEMENT BASED ON BEST LAYOUT, PRACTICAL SHIPPING LOADS, ETC.

**SHOP DRAWINGS AND JOINT INSTALLATION GUIDE**  
 SHALL BE SUBMITTED TO THE ENGINEER BY THE PIPE SUPPLIER FOR REVIEW AND APPROVAL.

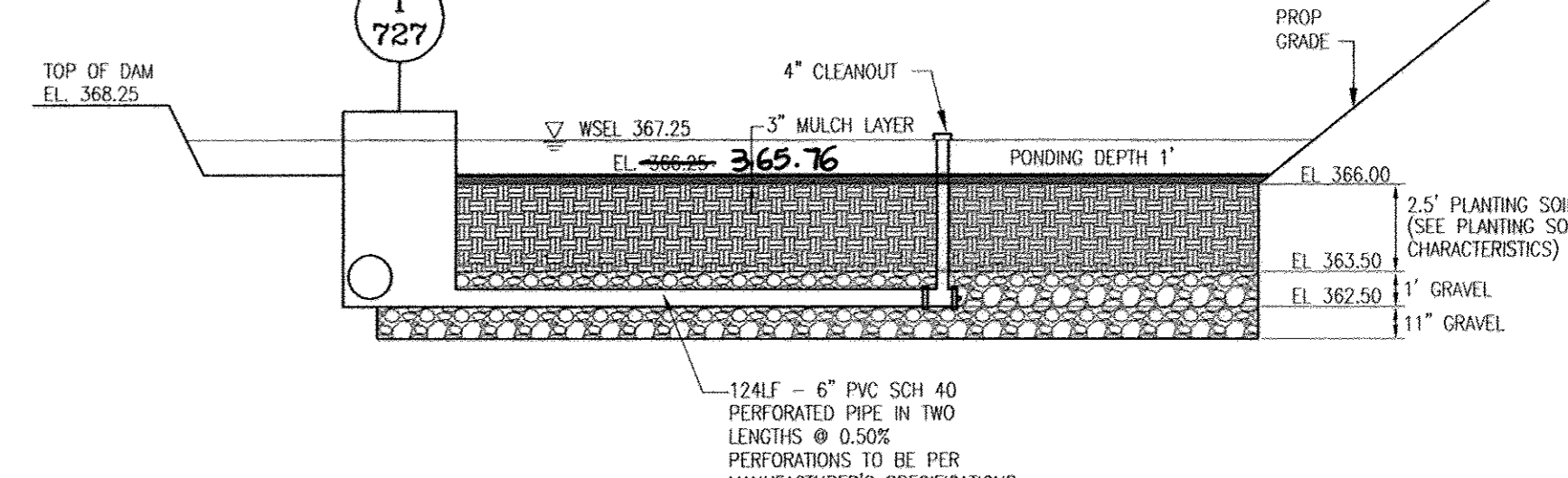
**GAUGE**  
 ALL STORMWATER MANAGEMENT PIPE TO BE GAUGE 12.

**BACKFILL AND BEDDING**  
 OF STORMWATER RETENTION SYSTEM SHALL CONFORM TO THE NATIONAL CORRUGATED STEEL PIPE ASSOCIATION INSTALLATION MANUAL AND MANUFACTURERS' SPECIFICATIONS. CARE SHALL BE TAKEN BY THE CONTRACTOR TO PROTECT PIPE FROM OFF HIGHWAY EQUIPMENT LOADS UNTIL FINAL COVER AND PAVING IS IN PLACE.



**SECTION B-B - BIORETENTION AREA #1**

SCALE: 1"=5'

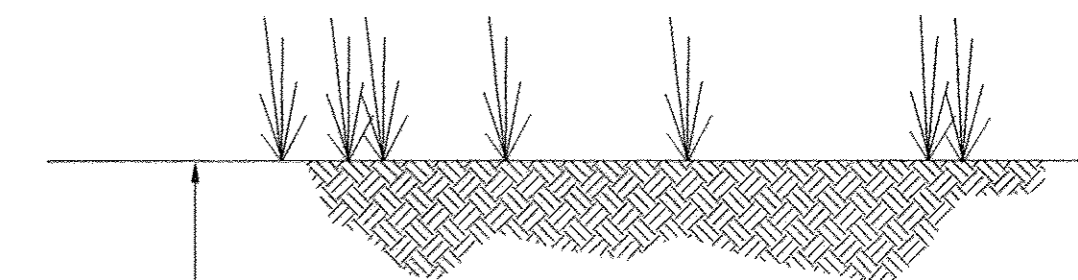


**SECTION A-A - BIORETENTION AREA #1**

SCALE: 1"=5'

**OPERATION AND MAINTENANCE SCHEDULE FOR BIORETENTION AREAS**

- annual maintenance of plant material, mulch layer and soil layer is required. maintenance of mulch and soil is limited to correcting areas of erosion or wash out, any mulch replacement shall be done in the spring, plant material shall be checked for disease and insect infestation and maintenance will address dead material and pruning.
- schedule of plant inspection will be twice a year in spring and fall. this inspection will include removal of dead and diseased vegetation considered beyond treatment, treatment of all deficient stakes and wires.
- mulch shall be inspected each spring, remove previous mulch layer before applying new layer once every 2 to 3 years.
- soil erosion to be addressed on an as needed basis, with a minimum of once per month and after heavy storm events.



**UNDERDRAIN DETAIL 6" P.V.C. SCH 40**

NOT TO SCALE

**OWNER/DEVELOPER**

FIRST BAPTIST CHURCH OF GUILFORD  
 7504 OAKLAND MILLS RD  
 COLUMBIA, MD 21046  
 410-792-7096

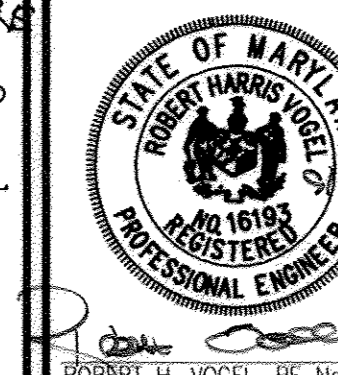
NO.	REVISION	DATE
1	REVISE INLET WEIR CREST ELEV. & STEM COUNT	6/30/06

**SITE DEVELOPMENT PLAN SWM AND BIORETENTION NOTES & DETAILS**

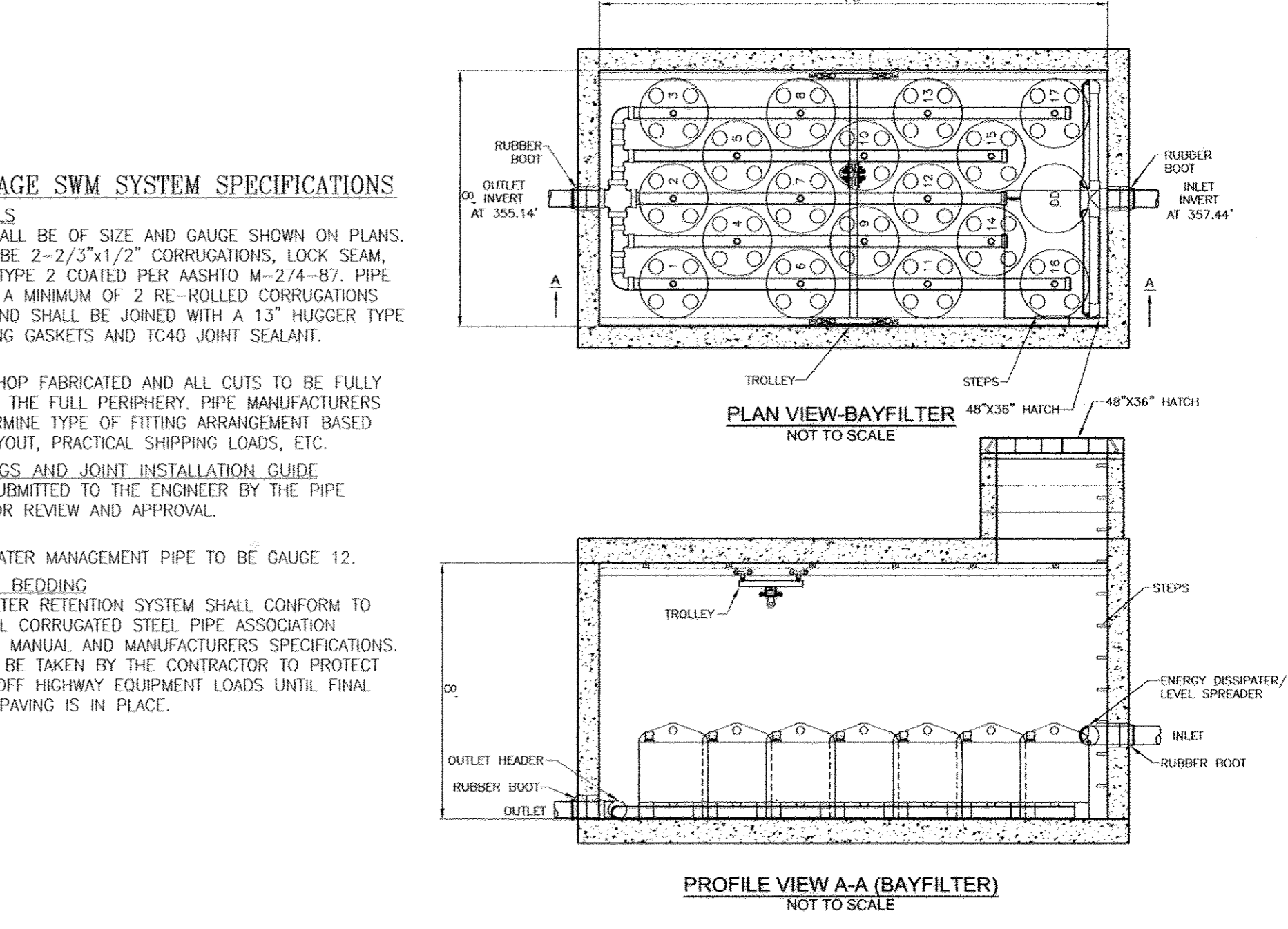
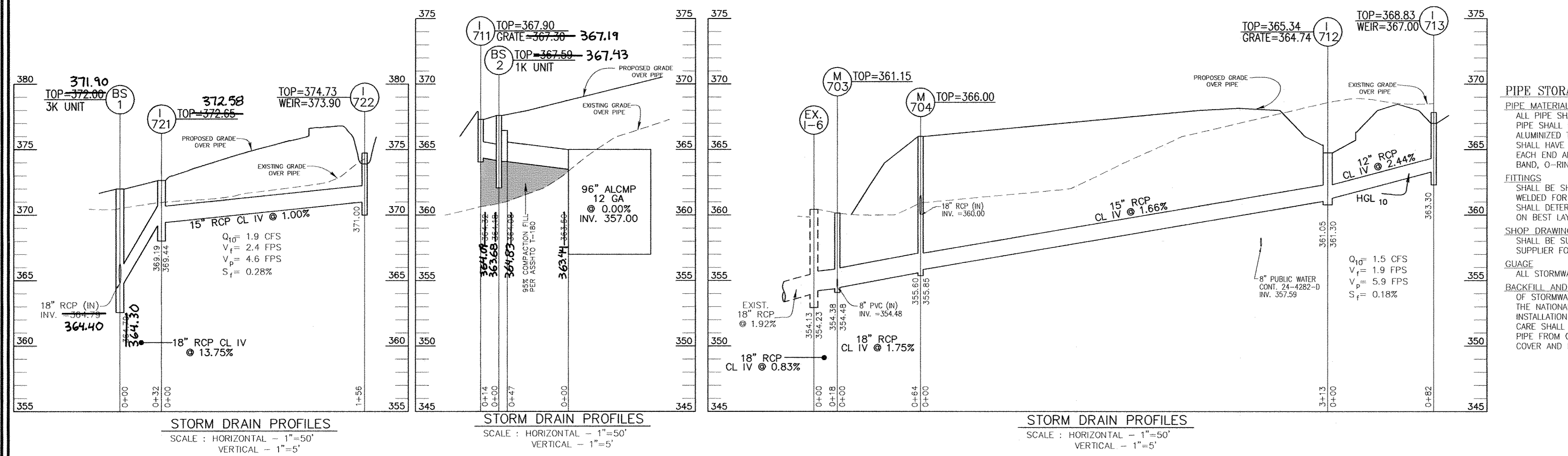
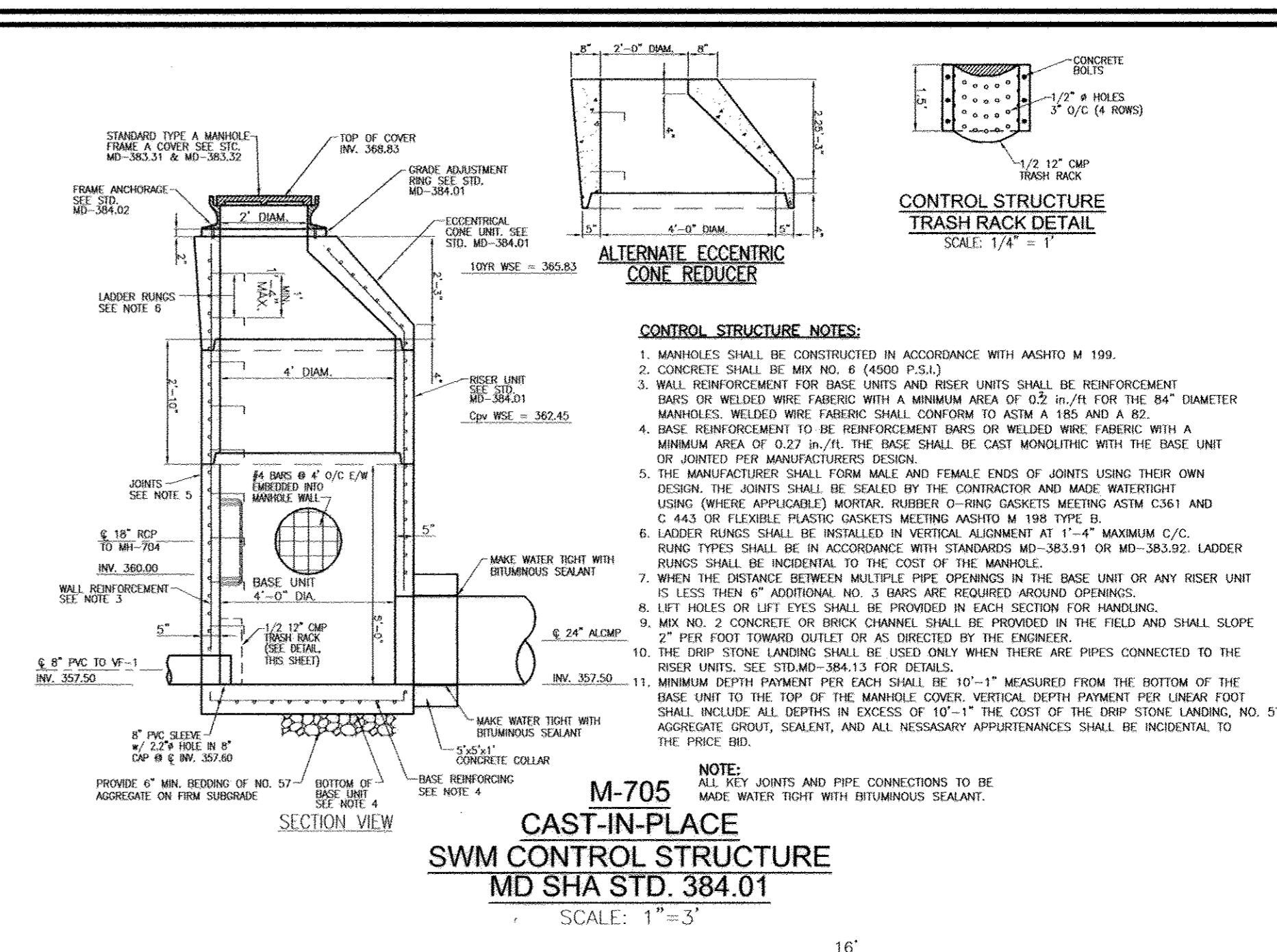
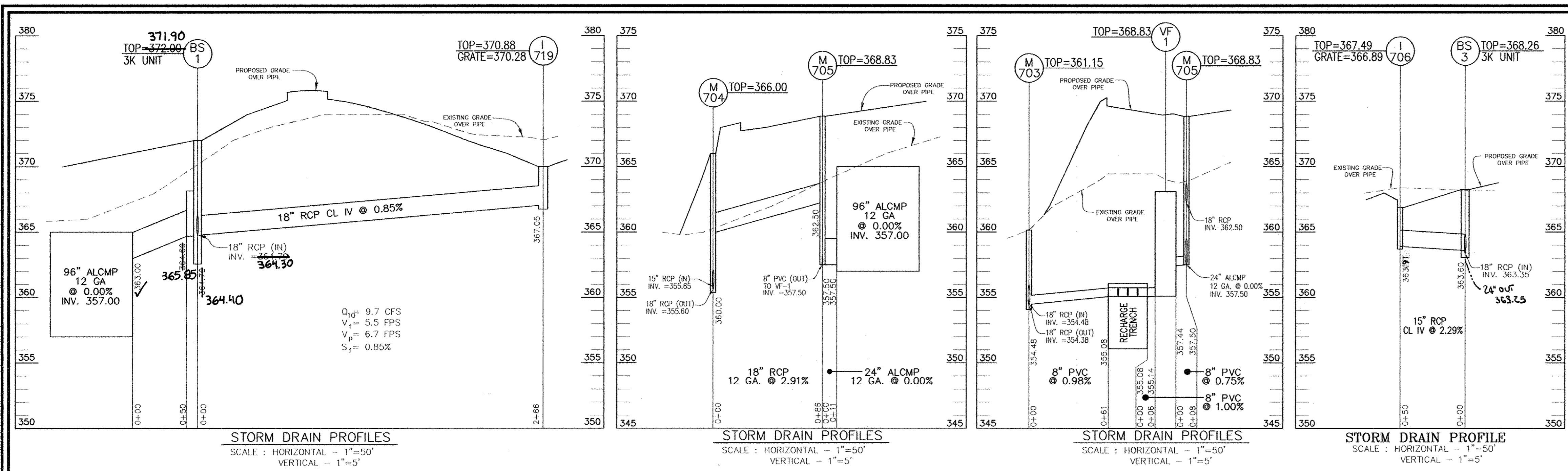
TAX MAP 42 BLOCK 16 6TH ELECTION DISTRICT PARCEL A HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL ENGINEERS & SURVEYORS, INC.**  
 8407 MAIN STREET ELLICOTT CITY, MD 21043 TEL: 410-461-7666 FAX: 410-461-8961

DESIGN BY: RHV  
 DRAWN BY: MAN/DZ  
 CHECKED BY: RHV  
 DATE: SEPTEMBER 2005  
 SCALE: AS SHOWN  
 W.D. NO.: 04-67  
 11 SHEET OF 20



AS-BUILT DECEMBER 2017



**Maintenance of the BayFilter™ System**

The BayFilter™ system requires periodic maintenance to continue operating at the design efficiency. The maintenance process comprises the removal and replacement of each BayFilter™ cartridge and the cleaning of the vault or manhole with a vacuum truck. BayFilter™ maintenance should be performed by a BayFilter™ Technologies, Inc. certified maintenance contractor.

The maintenance cycle of the BayFilter™ system will be determined by the actual solids load on the filter. The system should be periodically monitored to determine if an operating anomaly. Since contractor records can be variable, it is possible that the maintenance cycle could be more or less than the projected duration.

When a BayFilter™ system is first installed, it is recommended that it be inspected every 90 (ninety) days. When the filter system exhibits flow below design levels the system should be maintained. Filter cartridge replacement should also be considered when sediment levels are at or above the level of the collector pipe to the manifold. Please contact the BayFilter™ Technologies, Inc. Engineering Department for maintenance cycle estimations or assistance at 1.800.229.7263.

**Maintenance Procedures**

- Remove the manhole covers and open all access ladders.
- Before entering the system make sure the air in safe per OSHA Standards or use a breathing apparatus. Use the O<sub>2</sub>, high CO<sub>2</sub> or other applicable warning devices per regulatory requirements.
- Using a vacuum truck remove any liquid and sediments that can be removed prior to entry.
- Using a small lift or the boom of the vacuum truck, remove the used cartridges by lifting them out.
- Any cartridges that cannot be lifted should be slid along the floor to a location where they can be lifted by a boom lift.
- When all cartridges are removed, remove the balance of the solids and water; then loosen the manhole clamps on the Fresno coverings for the manifold and remove the drain pipes as well. Carefully open the manifold and clean the floor removing the balance of the collected solids.
- Clean the manifold pipes, inspect, and reinstall.
- Install the exchange cartridges and close all covers.
- The used cartridges must be sent back to BayFilter™ Technologies, Inc. for exchange/recycling and credits on undamaged units.

**Installation of Precast Vault BayFilter™**

- Contact utility locators to mark any nearby underground utilities and make sure it is safe to excavate.
- Reference the site plan and make out the location of the BayFilter™ vault.
- Excavate the hole, providing any shoring and shoring necessary to comply with all federal, state and local safety regulations.
- Level the subgrade to the proper elevation. Verify the elevation against the manhole dimensions, the invert elevation, and the site plans. Adjust the base aggregate, if necessary.
- Have the soil bearing capacity verified by a licensed engineer for the required load-bearing capacity. On solid subgrade, set the first section of the BayFilter™ precast vault.
- Check the level and elevation of the first section to ensure it is correct before adding any more sections.
- If additional sections are required, add a weight seal to the first section of the BayFilter™ vault. Set additional sections of the vault, adding a weight seal to each pipe.
- Install the PVC outlet manifold and outlet chamber system.
- Install the PVC outlet pipe in BayFilter™ vault.
- Install the inlet pipe to the BayFilter™ vault.
- Install the energy dissipator/level spreader at the inlet pipe.
- After the unit is installed, remove any accumulated sediment or debris from the vault and install the BayFilter™ cartridges.

**BayFilter™ Detailed Operating Sequence**

The cycle operation of a BayFilter™ is as follows:

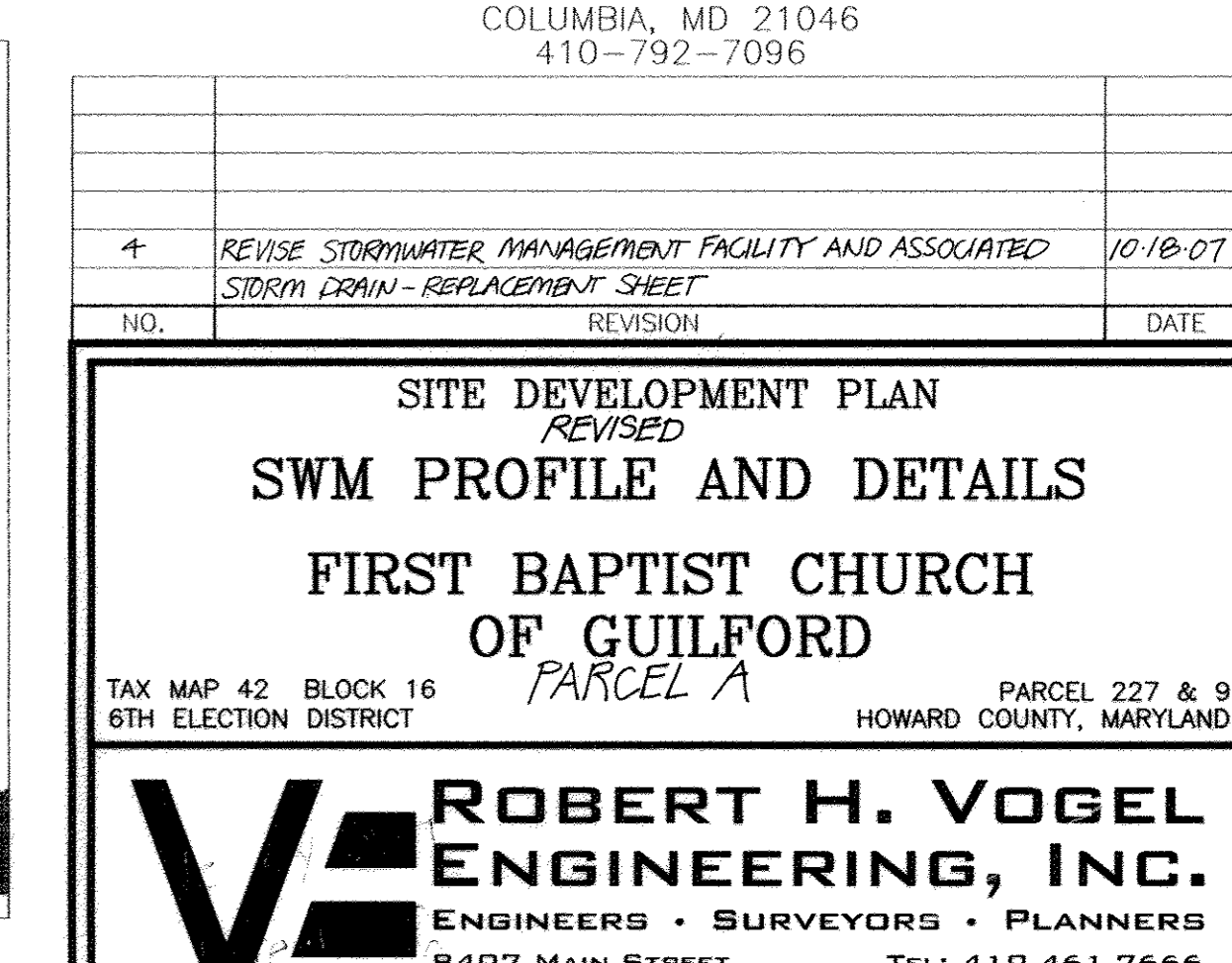
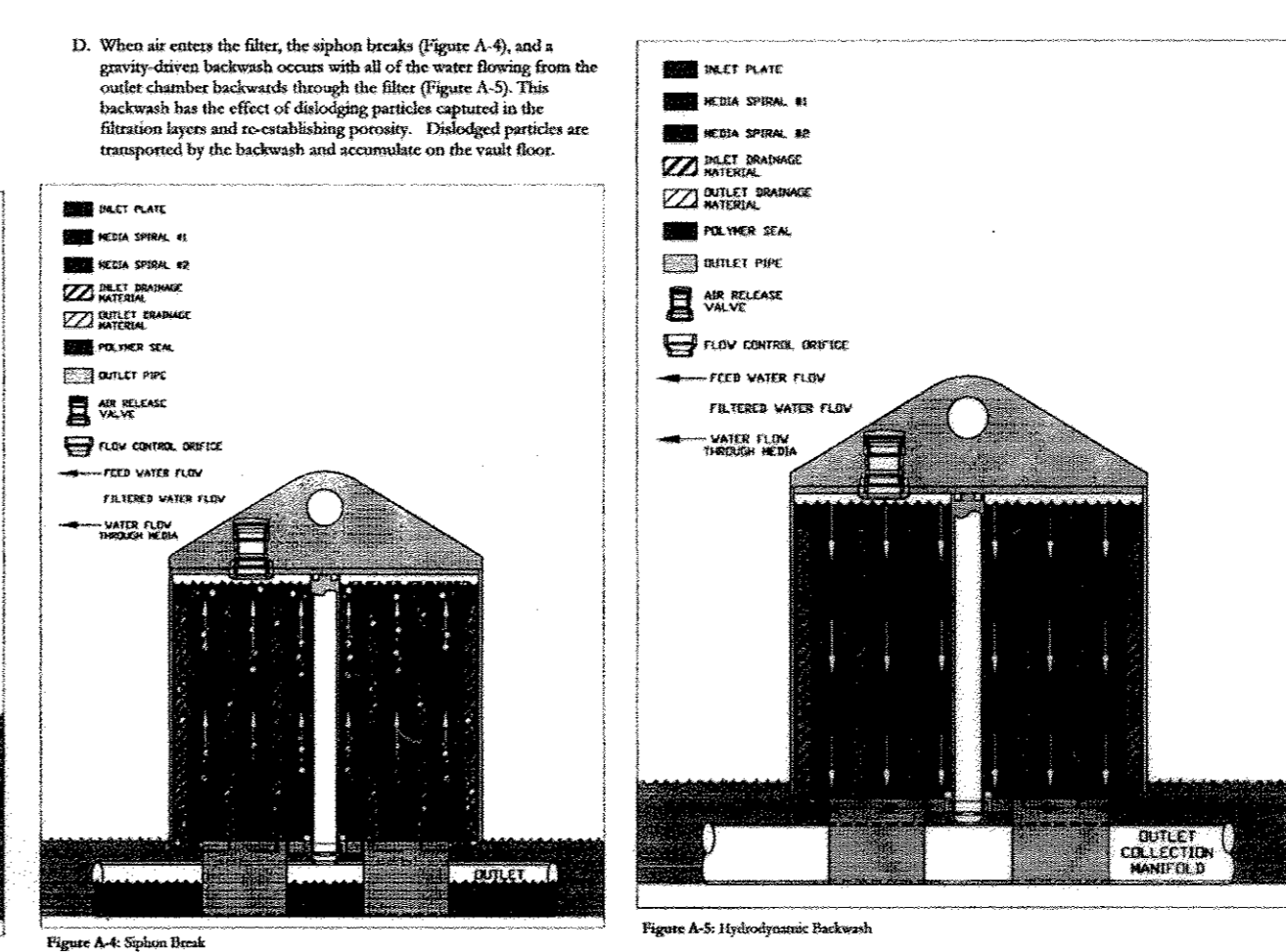
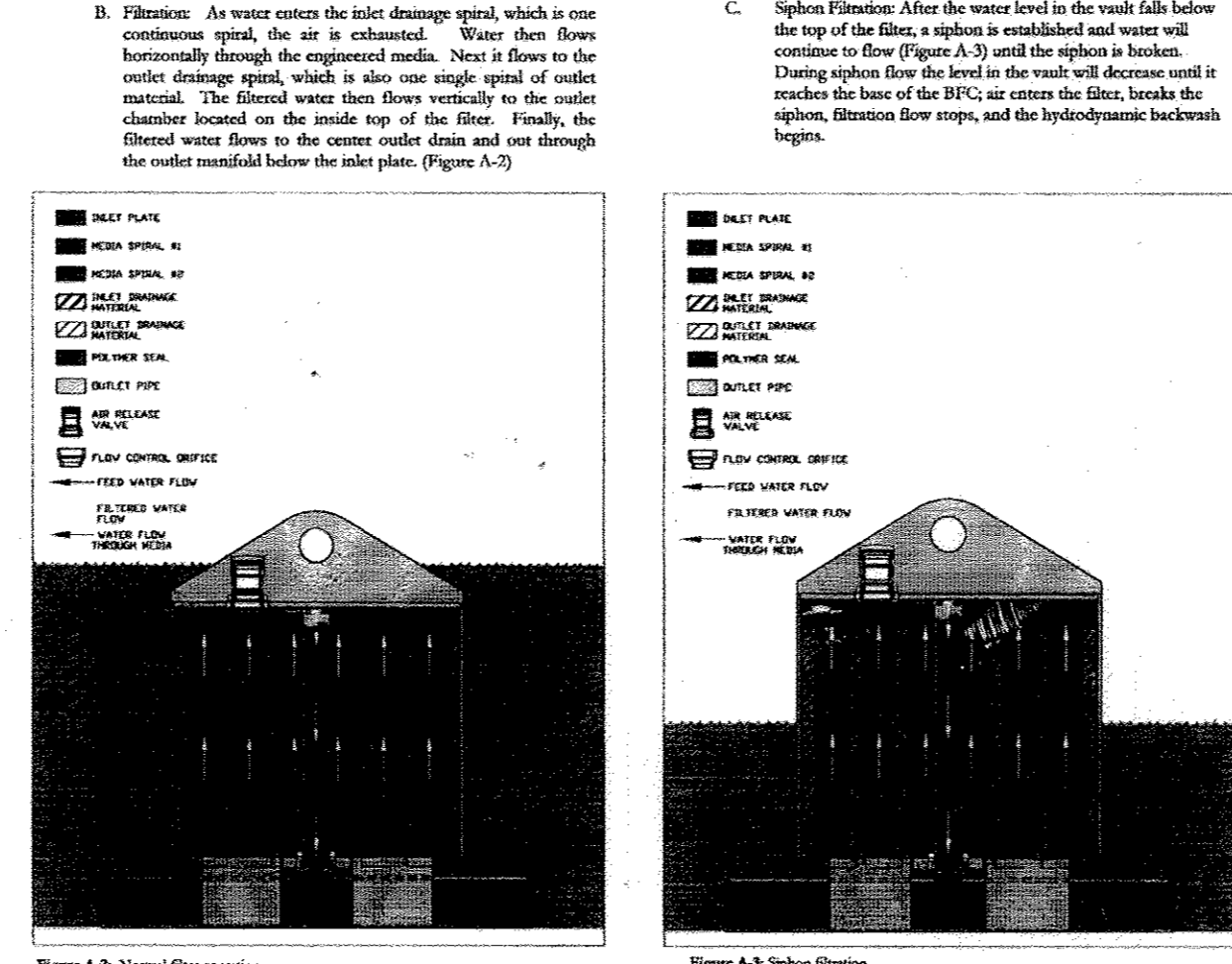
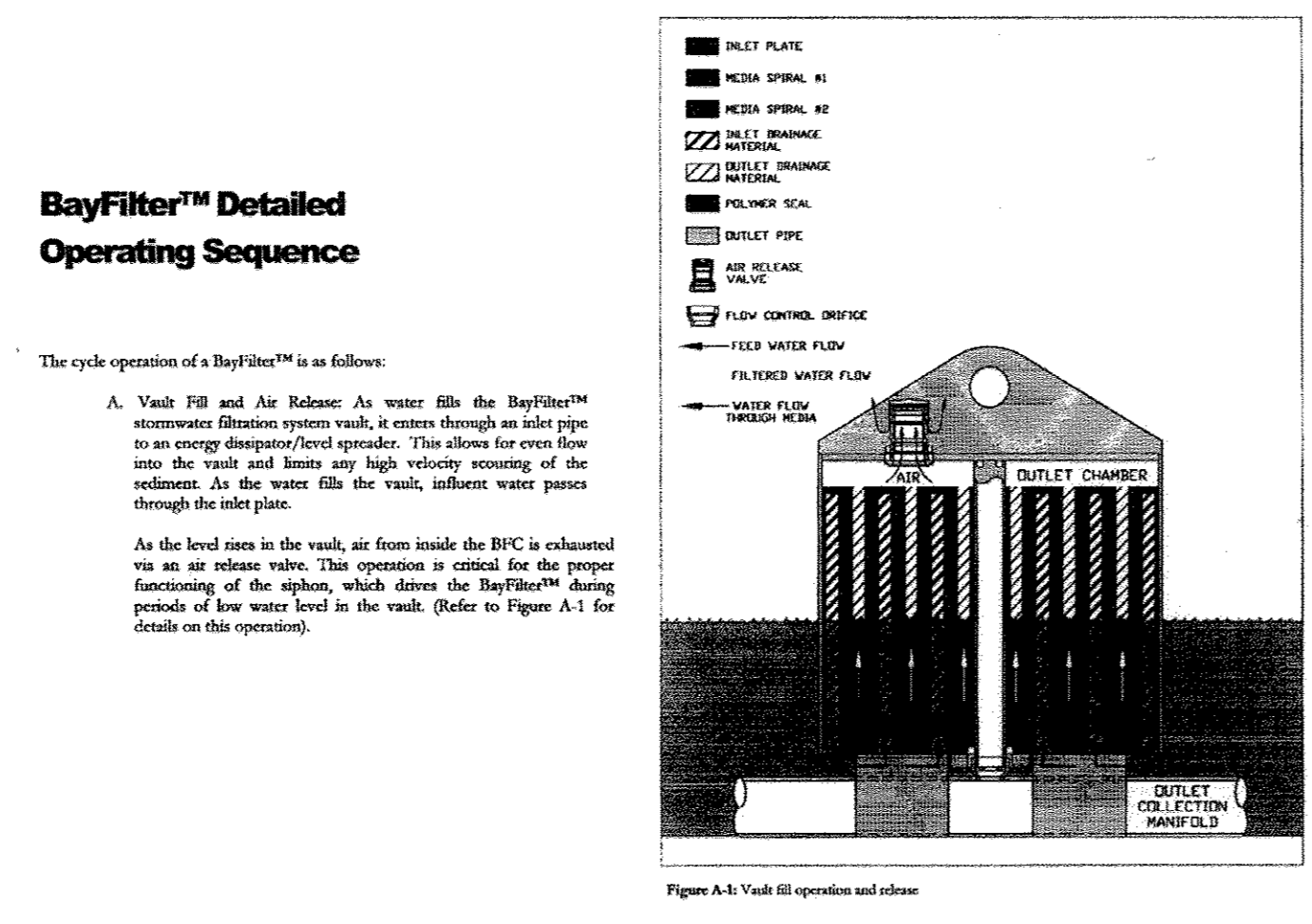
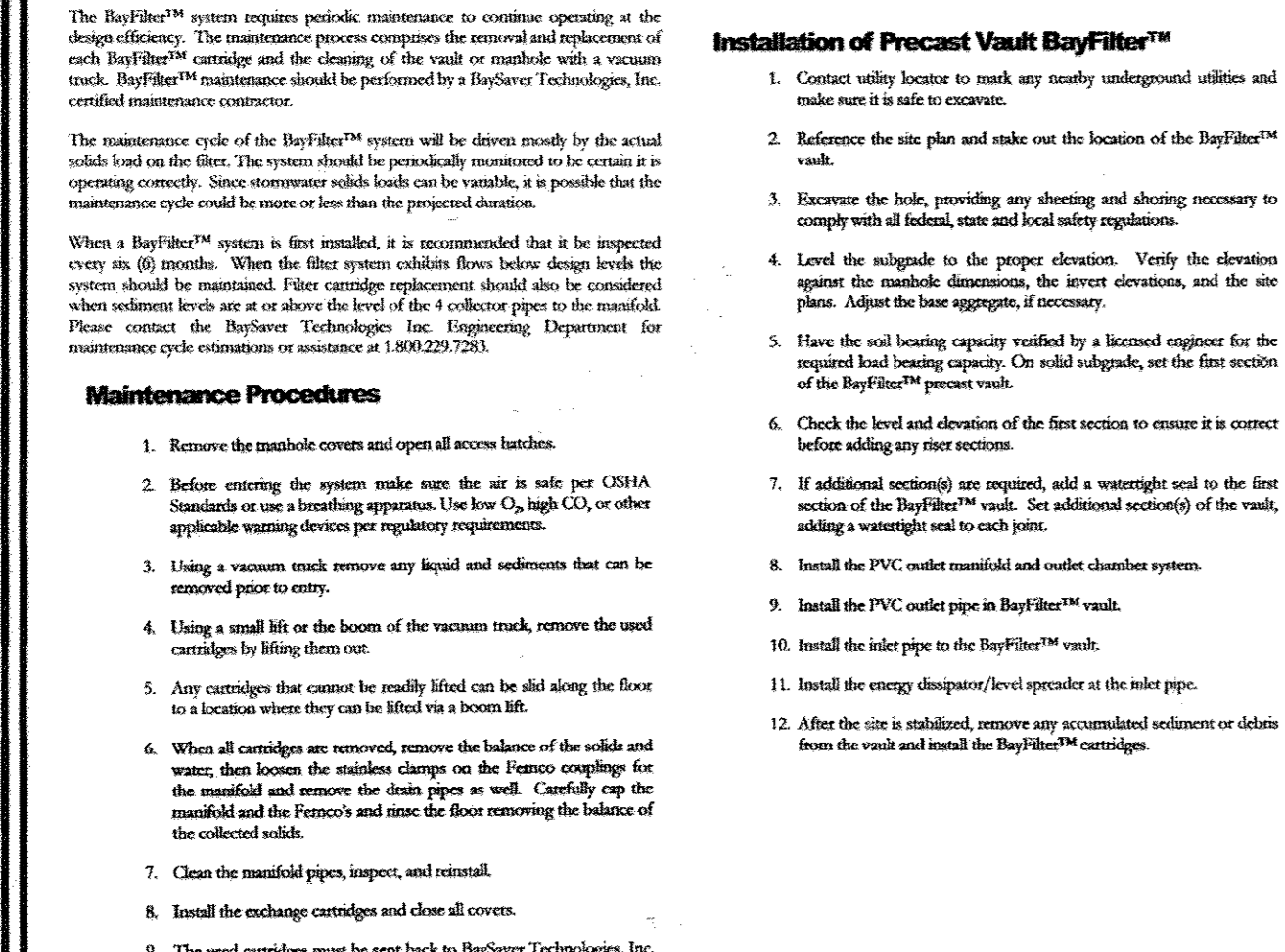
- Vault Fill and Air Release:** As water fills the BayFilter™ stormwater filtration system vault, it enters through an inlet pipe to an energy dissipator/level spreader. This allows for even flow into the vault and limits any high velocity scouring of the sediment. As the water fills the vault, infiltrate water passes through the inlet pipe.
- As the level rises in the vault, air from inside the BVC is exhausted via an air release valve. This operation is critical for the proper functioning of the siphon, which drives the BayFilter™ during periods of low water level in the vault. (Refer to Figure A-1 for details on this operation.)**

**BayFilter™ Detailed Operating Sequence (continued)**

- Filtration:** As water enters the inlet drainage spiral, which is one continuous spiral, the air is exhausted. Water then flows horizontally through the engineered media. Next it flows to the outlet drainage spiral, which is also one single spiral of outlet material. The filtered water then flows vertically to the outlet chamber located on the inside top of the filter. Finally, the filtered water flows to the center outlet drain and out through the outlet manifold below the inlet pipe. (Figure A-2)

- Siphon Filtration:** After the water level in the vault falls below the top of the filter, a siphon is established and water will continue to flow (Figure A-3) until the siphon is broken. During siphon flow the level in the vault will decrease until it reaches the base of the BVC, air enters the filter, breaks the outlet chamber backwash through the filter (Figure A-3). This backwash has the effect of dislodging particles captured in the filtration layers and re-establishing porosity. Dislodged particles are transported by the backwash and accumulate on the vault floor.

- When air enters the filter, the siphon breaks (Figure A-4), and a gravity-driven backwash occurs with all of the water flowing from the outlet chamber backwash through the filter (Figure A-5). This backwash has the effect of dislodging particles captured in the filtration layers and re-establishing porosity. Dislodged particles are transported by the backwash and accumulate on the vault floor.**



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

10/20/07

11/1/07

11/2/07

REVIEWED FOR HOWARD S.C.D. & MEETS TECHNICAL REQUIREMENTS.

BY THE DEVELOPER:

7/16 CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT PROPOSED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

10-12-07

BY THE ENGINEER:

1 CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

10/17/07

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE AS-BUILT PLAN AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOSING OF THE UNDERGROUND SINK FACILITY.

10/19/07

10/22/17

ROBERT H. VOGEL, P.E.

**OWNER/DEVELOPER**  
FIRST BAPTIST CHURCH OF GUILFORD  
7504 OAKLAND MILLS RD  
COLUMBIA, MD 21046  
410-792-7096

NO. 4  
REVISE STORMWATER MANAGEMENT FACILITY AND ASSOCIATED STORM DRAIN - REPLACEMENT SHEET  
10/18/07

**SITE DEVELOPMENT PLAN**  
REVISED  
**SWM PROFILE AND DETAILS**

**FIRST BAPTIST CHURCH OF GUILFORD**  
PARCEL A

TAX MAP 42 BLOCK 16  
6TH ELECTION DISTRICT

PARCEL 227 & 9  
HOWARD COUNTY, MARYLAND

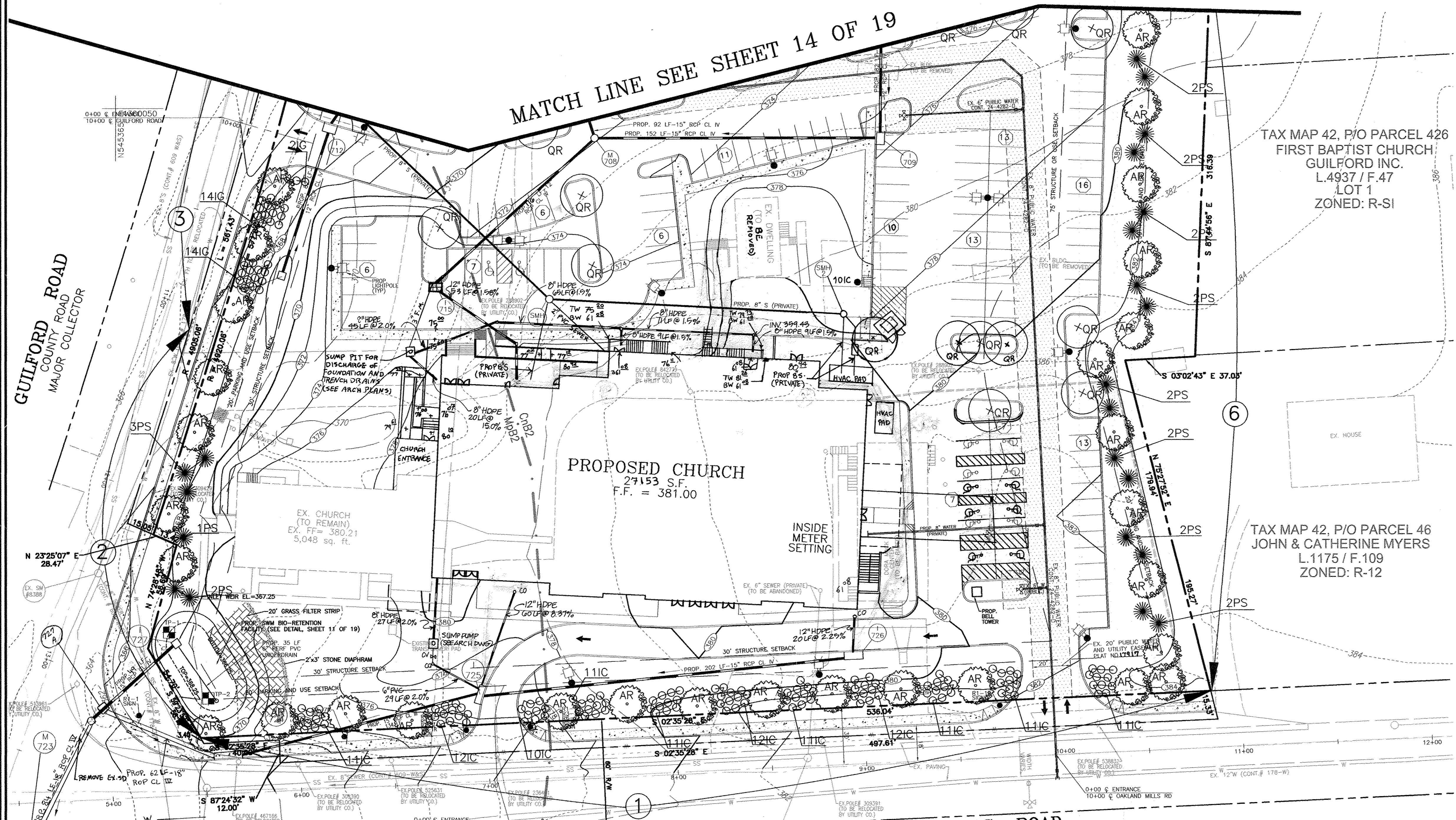
**ROBERT H. VOGEL ENGINEERING, INC.**  
ENGINEERS • SURVEYORS • PLANNERS  
8407 MAIN STREET  
ELICOTT CITY, MD 21043  
TEL: 410.461.7666  
FAX: 410.461.8961

DESIGN BY: RHV  
DRAWN BY: MAN/DZ  
CHECKED BY: RHV  
DATE: SEPTEMBER 2005  
SCALE: AS SHOWN  
W.O. NO.: 04-67

REPLACEMENT SHEET  
12 SHEET OF 20

MATCH LINE SEE SHEET 14 OF 19

GUILFORD ROAD  
COUNTY ROAD  
MAJOR COLLECTOR

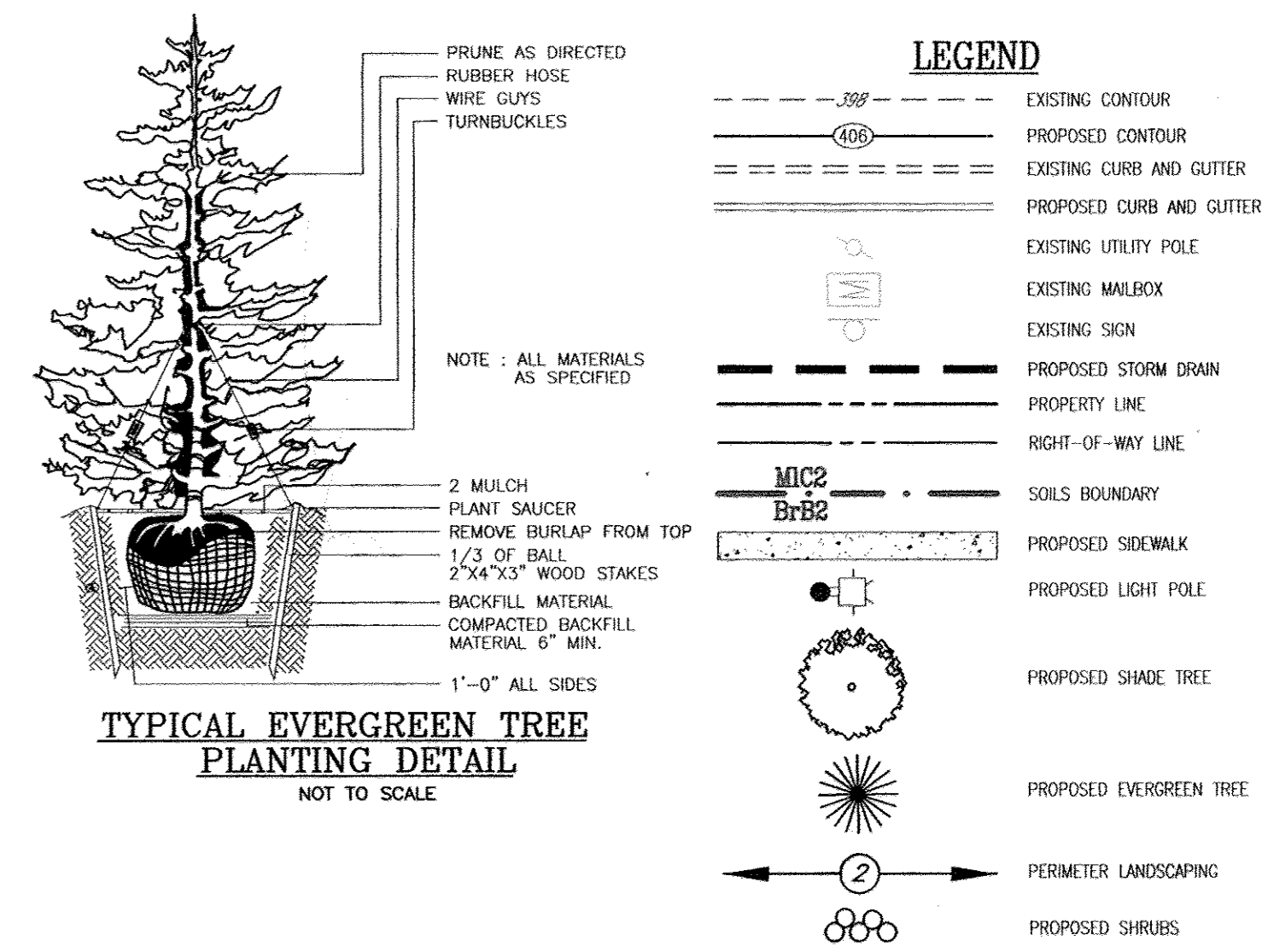
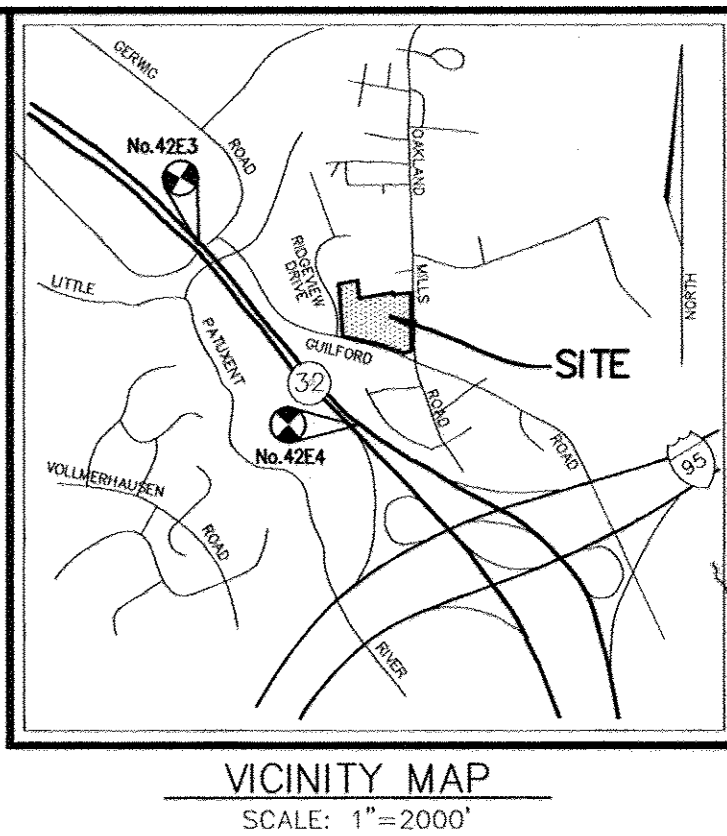
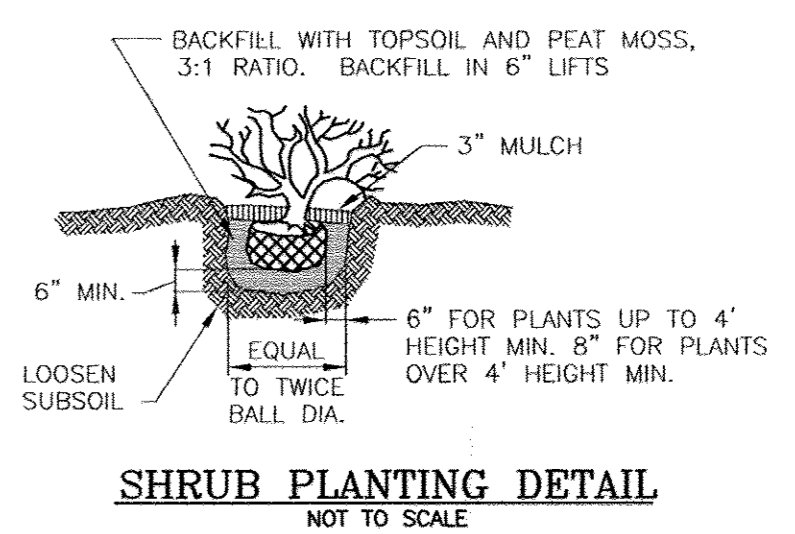


TAX MAP 42, P/O PARCEL 426  
FIRST BAPTIST CHURCH  
GUILFORD INC.  
L.4937 / F.47  
LOT 1  
ZONED: R-SI

TAX MAP 42, P/O PARCEL 46  
JOHN & CATHERINE MYERS  
L.1175 / F.109  
ZONED: R-12

PROPOSED CHURCH  
27153 S.F.  
F.F. = 381.00

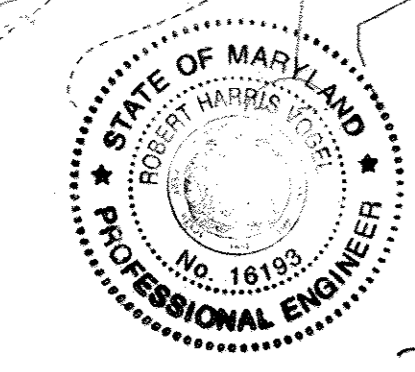
OAKLAND MILLS ROAD  
(COUNTY ROAD)  
MAJOR COLLECTOR



- GENERAL NOTES:
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. THE REQUIRED PARKING AND PERIMETER LANDSCAPING WILL BE BONDED PER THIS SUBMISSION.
  - FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$49,830.00 FOR THE REQUIRED 41 SHADE TREES, 40 EVERGREEN TREES, AND 331 SHRUBS.

- LANDSCAPE SCHEDULE NOTES:
- ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT ANS SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH LCAWM PLANTING SPECIFICATIONS.
  - MAINTENANCE TO INCLUDE MONITORING AND HAND WATERING AS NEEDED FOR THE FIRST TWO GROWING SEASONS TO ESTABLISH WOODY PLANTS. SPECIALIZED PLANTING AREAS INCLUDING FOUNDATION PLANTING OR ANNUAL BEDS MAY REQUIRE REGULAR HAND WATERING OR IRRIGATION.
  - CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
  - CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLAN DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.
  - FINAL LOCATION OF PLANT MATERIAL MAY NEED TO VARY TO MEET FINAL FIELD CONDITIONS. TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SWALES.

NO.	REVISION	DATE
6	REVISE ROOF LEADERS, ADD SUMP PUMP, AND UPDATE ASSOCIATED STORM DRAIN PROFILES	01/24/06
3	ADD ROOF LEADER TRUNK LINES & SUMP PIT	10/16/06
2	REVISE SD FROM I724 & I727 TO EX SD	8/1/06
1	ADD LOWER LEVEL ENTRY, HVAC PROS, CAMODY, REVISE LOCATION OF SEWER, HC SOURCE & DUMPSTER, REVISE PLANTINGS @ DUMPSTER & SCHEDULE	6/30/06



AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE AS-BUILT PLANS AND COMPLIES WITH THE AS-BUILT PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.

ROBERT H. VOGEL, P.E.  
10/23/12/22/17  
DATE

PLAN SCALE: 1"=30'

SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	SOIL GROUP
ChB2	CHILLUM-FAIRFAX LOAMS, 1 TO 5 PERCENT SLOPES, MODERATELY ERODED	B
ChD3	CHILLUM-FAIRFAX LOAMS, 5 TO 15 PERCENT SLOPES, SEVERELY ERODED	B
EnB2	ELSNBORO LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	B
MpB2	MONTALTO SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	C
MpC2	MONTALTO SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	C

NOTE: BASED ON HOWARD SOIL SURVEY, MAP NUMBER 30

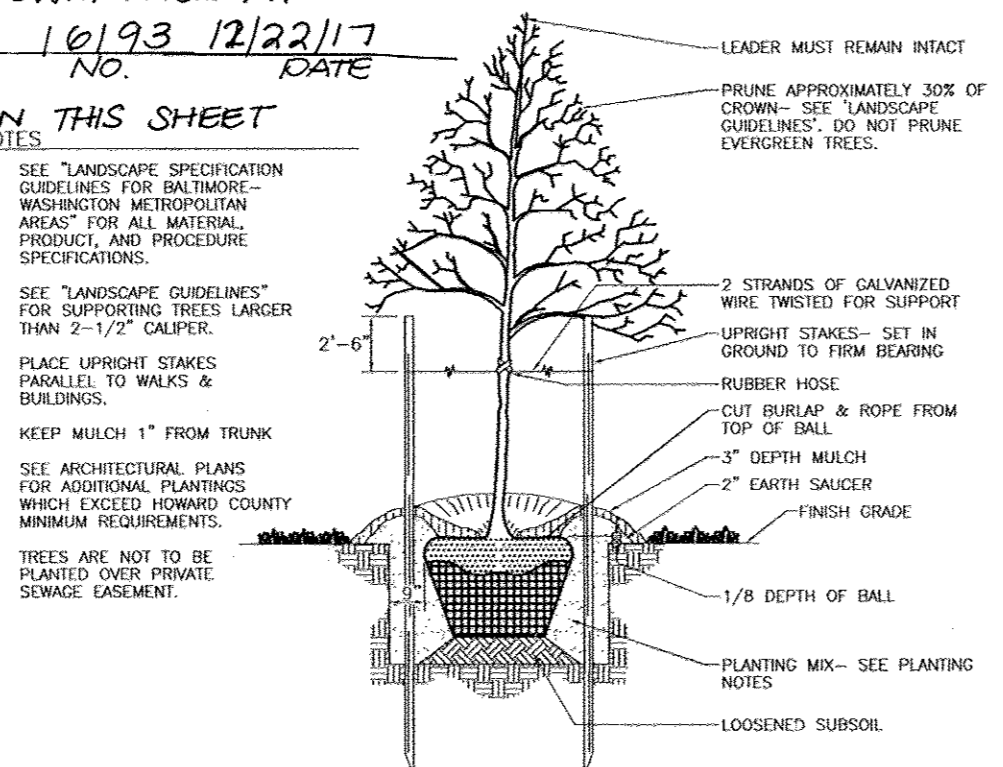
SCHEDULE B  
PARKING LOT INTERNAL LANDSCAPING

ITEM	QUANTITY	REMARKS
Number of parking spaces	517	
Number of trees and islands required	26	
Number of trees and islands provided		
Shade Trees	26	
Other Trees (2:1 Substitution)		

SCHEDULE A  
PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT TO ROADWAYS				ADJACENT TO PERIMETER PROPERTIES		
	1	2	3	4	5	6	7
Perimeter/Frontage Designation	E	B	E	C	E	C	
Linear Feet of Roadway	491	233	464	596	237	749	
Credit for Existing Vegetation (Yes, No, Linear Feet Describe below if needed)	No	No	No	No	No	No	
Credit for Wall, Fence or Berm (Yes, No, Linear Feet Describe below if needed)	No	No	No	Yes #230	Yes #237	Yes #63	
Number of Plants Required	1:40	12	1:50	5	1:40	12	1:40
Shade Trees			1:40	6			1:20
Evergreen Trees	1:4	123		1:4	116	1:4	92
Shrubs							
Number of Plants Provided	12		5	12	9		17
Shade Trees							34
Evergreen Trees							
Other Trees (2:1 Substitution)							
Shrubs (10:1 Substitution)	123			116			92

\*EXISTING WOODS TO REMAIN



TREE PLANTING AND STAKING  
DECIDUOUS TREES UP TO 2-1/2" CALIBER  
NOT TO SCALE

NOTE: ALL SWM FACILITIES SHOWN ON THIS PLAN TO BE PRIVATELY OWNED AND MAINTAINED BY THE FIRST BAPTIST CHURCH OF GUILFORD

DEVELOPER'S/BUILDER'S CERTIFICATE

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A CERTIFICATION OF LANDSCAPE INSTALLATION ACCOMPANIED BY AN EXECUTED ONE (1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

SIGNATURE OF DEVELOPER: [Signature]  
DATE: 11-06

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION: [Signature]  
DATE: 9/16/06

CHIEF, DIVISION OF LAND DEVELOPMENT: [Signature]  
DATE: 1/10/06

DIRECTOR: [Signature]  
DATE: 1/1/06

SITE DEVELOPMENT PLAN  
LANDSCAPE PLAN  
FIRST BAPTIST CHURCH  
OF GUILFORD

TAX MAP 42 BLOCK 16  
6TH ELECTION DISTRICT

PARCEL A  
HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL  
ENGINEERS • SURVEYORS • PLANNERS

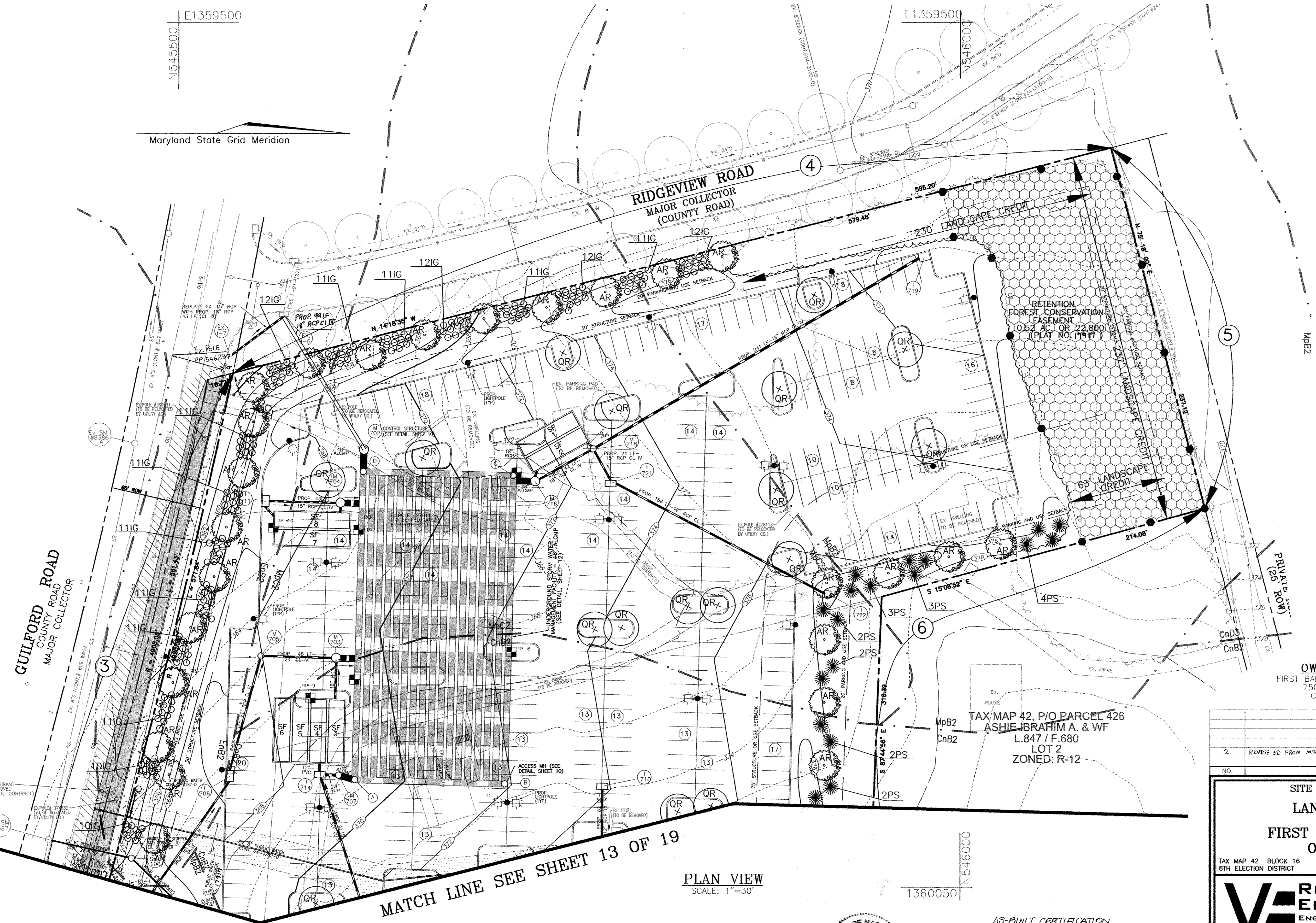
8407 MAIN STREET  
ELICOTT CITY, MD 21043  
TEL: 410.461.2665  
FAX: 410.461.8961

DESIGN BY: RHV  
DRAWN BY: MAN/DZ  
CHECKED BY: RHV  
DATE: SEPTEMBER 2005  
SCALE: AS SHOWN  
W.D. NO.: 04-67

13 SHEET OF 20

AS-BUILT DECEMBER 2017 SDP-05-11

Maryland State Grid Meridian



MATCH LINE SEE SHEET 13 OF 19

PLAN VIEW  
SCALE: 1" = 30'

1360050

OWNER/DEVELOPER  
FIRST BAPTIST CHURCH OF GUILFORD  
7504 OAKLAND MILLS RD  
COLUMBIA, MD 21046  
410-792-7096

TAX MAP 42, P/O PARCEL 426  
ASHIE IBRAHIM A. & WF  
LOT 2  
ZONED: R-12

NO.	REVISION	DATE
2	REVISE SD FROM M702 TO EX I6	8/1/06

SITE DEVELOPMENT PLAN  
LANDSCAPE PLAN  
FIRST BAPTIST CHURCH  
OF GUILFORD  
TAX MAP 42 BLOCK 16 PARCEL A  
6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL ENGINEERING, INC.**  
ENGINEERS • SURVEYORS • PLANNERS  
8407 MAIN STREET ELICOTT CITY, MD 21043 TEL: 410.461.7666 FAX: 410.461.8961

DESIGN BY: RHV  
DRAWN BY: MAN/DZ  
CHECKED BY: RHV  
DATE: SEPTEMBER 2005  
SCALE: AS SHOWN  
W.O. NO.: 04-87

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
DATE: 9/26/05  
CHIEF, DIVISION OF LAND DEVELOPMENT  
DATE: 1/10/06  
DIRECTOR  
DATE: 1/10/06

DEVELOPER'S/BUILDER'S CERTIFICATE  
I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE (1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.  
SIGNATURE OF DEVELOPER: [Signature]  
DATE: 12/14/05

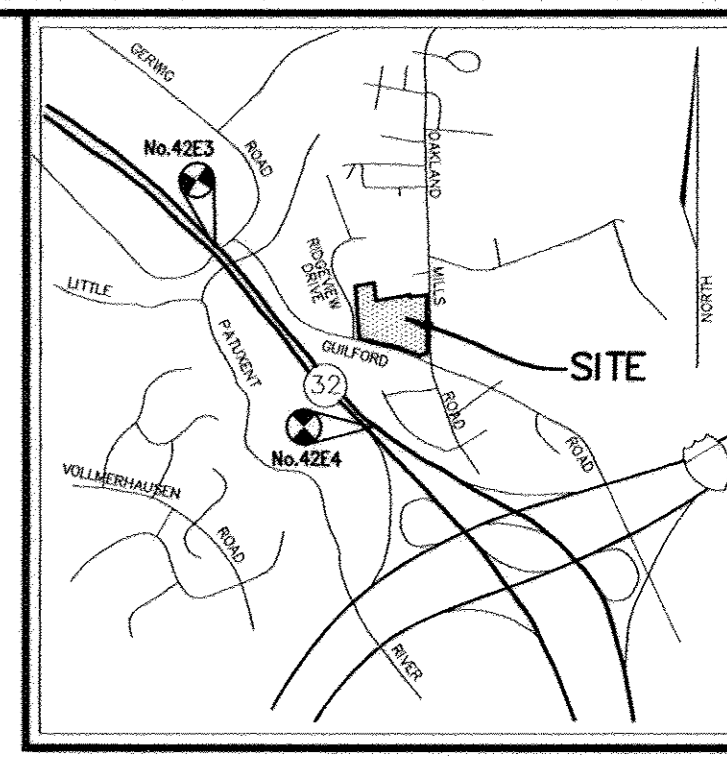
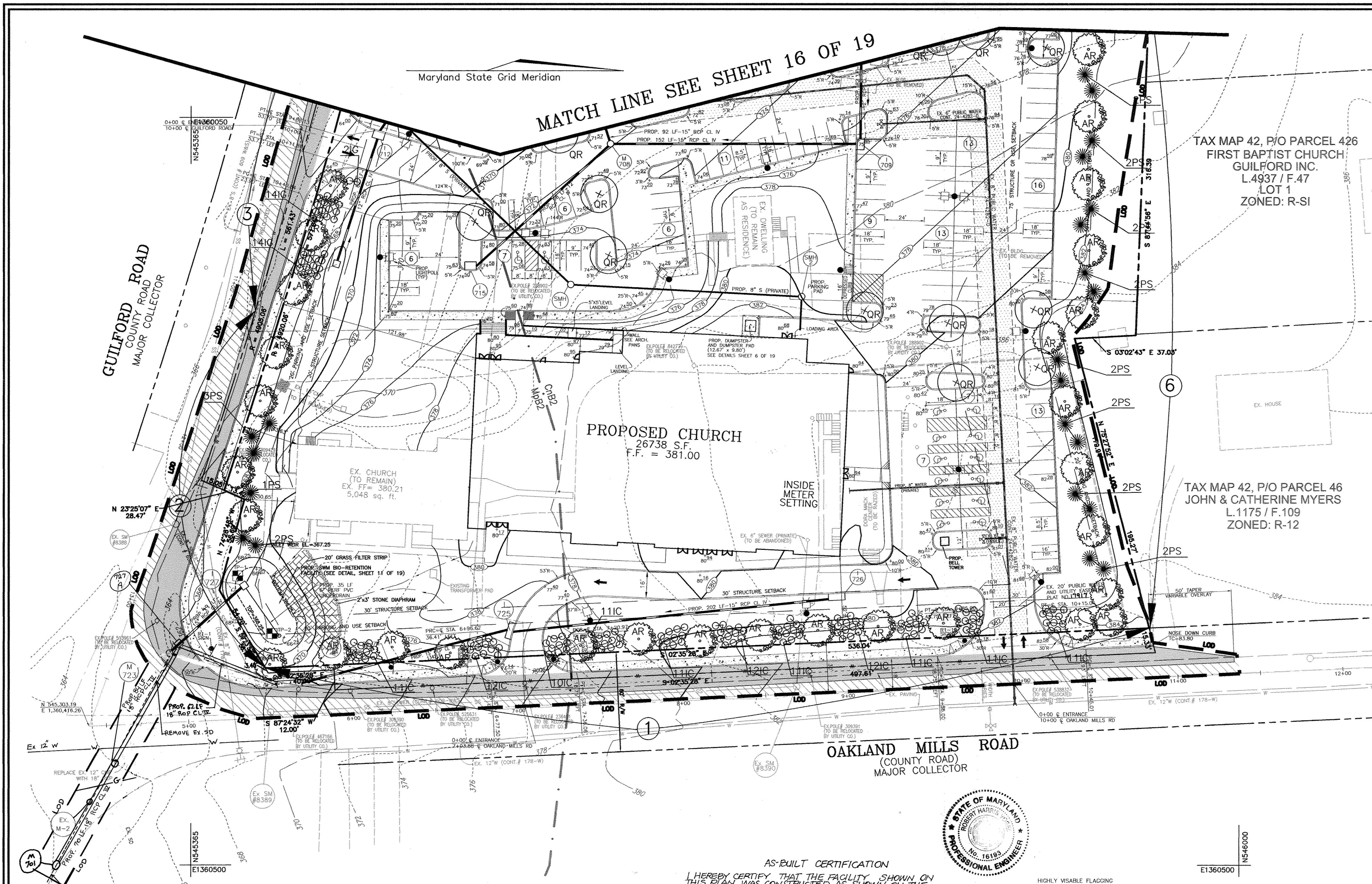


AS-BUILT CERTIFICATION  
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE AS-BUILT PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.  
ROBERT H. VOGEL, P.E.  
NO. 16193 DATE 12/14/05  
NO AS-BUILT INFORMATION THIS SHEET

14 SHEET OF 20

AS-BUILT DECEMBER 2017 SDP-05-11

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**LEGEND:**

	EXISTING CONTOUR
	PROPOSED CONTOUR
	PROPOSED SPOT ELEVATION
	EXISTING CURB AND GUTTER
	PROPOSED CURB AND GUTTER
	EXISTING UTILITY POLE
	EXISTING LIGHT POLE
	EXISTING MAILBOX
	EXISTING SIGN
	EXISTING SANITARY MANHOLE
	EXISTING SANITARY LINE
	EXISTING CLEANOUT
	EXISTING FIRE HYDRANT
	EXISTING WATER LINE
	PROPOSED STORM DRAIN
	PROPOSED STORM DRAIN INLET
	EXISTING TREES (FIELD LOCATED)
	EXISTING TREE LINE (FIELD LOCATED)
	EXISTING FENCE
	PROPERTY LINE
	RIGHT-OF-WAY LINE
	SOILS BOUNDARY
	PROPOSED LIGHT POLE
	PROPOSED SIDEWALK
	FOREST CONSERVATION EASEMENT

**OWNER/DEVELOPER**  
 FIRST BAPTIST CHURCH OF GUILFORD  
 7504 OAKLAND MILLS RD  
 COLUMBIA, MD 21046  
 410-792-7096

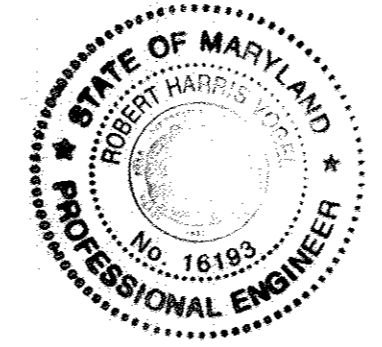
NO.	REVISION	DATE
2	REVISE SD FROM I 724 & I 727 TO EX 3D	8/1/06

**SITE DEVELOPMENT PLAN**  
**FOREST CONSERVATION PLAN**  
**FIRST BAPTIST CHURCH OF GUILFORD**  
 TAX MAP 42 BLOCK 16  
 6TH ELECTION DISTRICT  
 PARCEL A  
 HOWARD COUNTY, MARYLAND

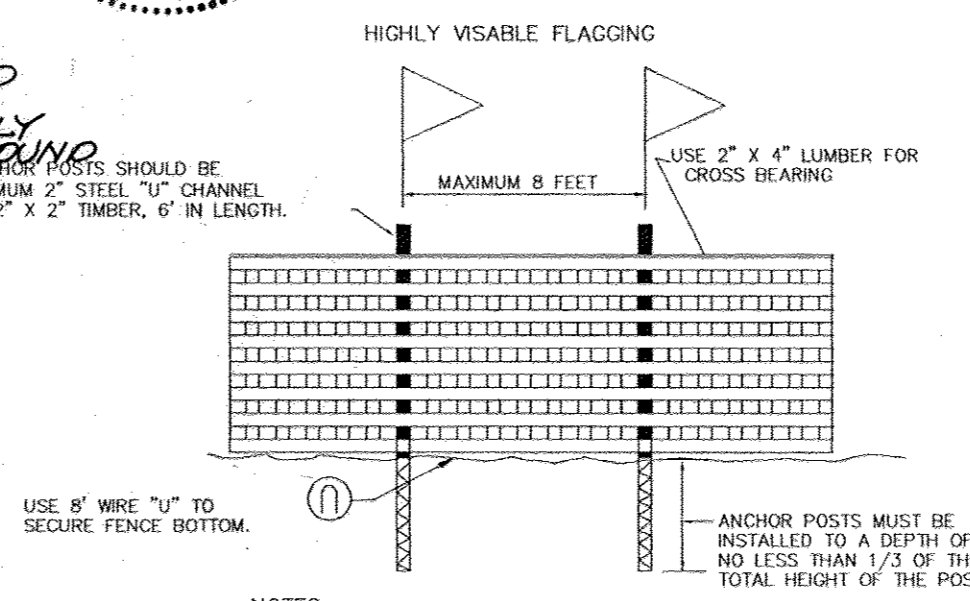
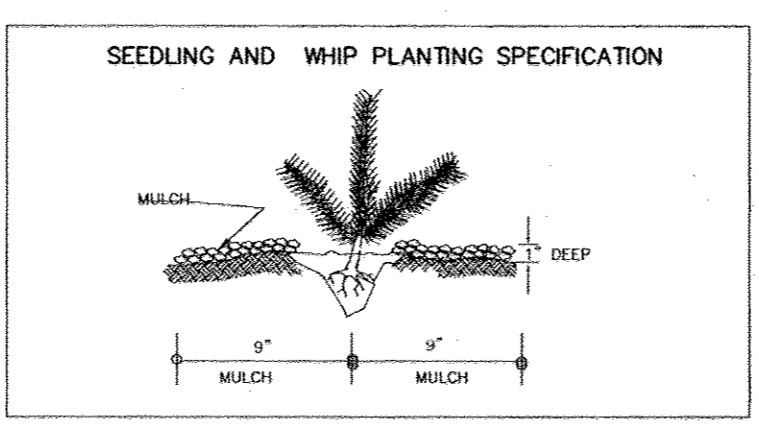
**ROBERT H. VOGEL ENGINEERING, INC.**  
 ENGINEERS • SURVEYORS • PLANNERS  
 8407 MAIN STREET  
 ELLICOTT CITY, MD 21043  
 TEL: 410-461-7666  
 FAX: 410-461-8961

DESIGN BY: RHV  
 DRAWN BY: MAH/DZ  
 CHECKED BY: LJT  
 DATE: SEPTEMBER 2005  
 SCALE: AS SHOWN  
 W.O. NO.: 04-67  
 15 SHEET OF 20  
 LARRY THOMPSON  
 DNR QUALIFIED PROFESSIONAL

**AS-BUILT CERTIFICATION**  
 I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE AS-BUILT PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWIM FACILITY.  
 16193 12/22/17  
 ROBERT H. VOGEL, RE No. DATE  
 NO AS-BUILT INFORMATION THIS SHEET



<p><b>FOREST CONSERVATION AREA</b>          DO NOT DISTURB          MACHINERY, DUMPING OR STORAGE OF ANY MATERIALS IS PROHIBITED          VIOLATORS ARE SUBJECT TO FINES AS IMPOSED BY THE MARYLAND FOREST CONSERVATION ACT OF 1991</p>	<p><b>SPECIMEN TREE</b>          DO NOT REMOVE          MACHINERY, DUMPING OR STORAGE OF ANY MATERIALS IS PROHIBITED          VIOLATORS ARE SUBJECT TO FINES AS IMPOSED BY THE MARYLAND FOREST CONSERVATION ACT OF 1991</p>
---	---



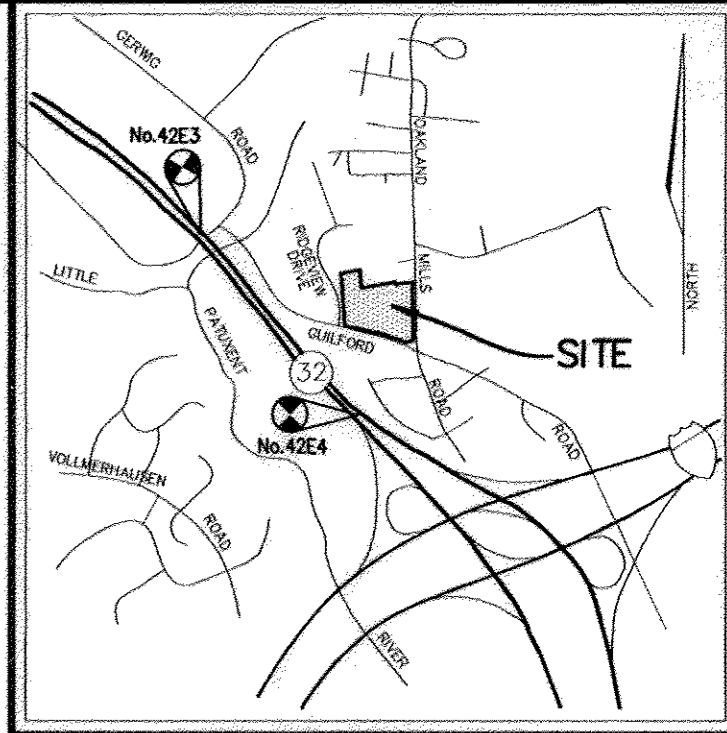
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE: 8/26/05  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE: 1/10/06  
 DIRECTOR  
 DATE: 1/10/06

**Note:**  
 1. Bottom of signs to be higher than top of tree protection fence.  
 2. Signs to be placed approximately 50-100' feet apart. Conditions on site affecting visibility may warrant placing signs closer or farther apart.  
 3. Attachment of signs to trees is prohibited.

Maryland State Grid Meridian

RIDGEVIEW ROAD  
MAJOR COLLECTOR  
(COUNTY ROAD)

GUILFORD ROAD  
COUNTY ROAD  
MAJOR COLLECTOR



VICINITY MAP  
SCALE: 1"=2000'

LEGEND:

- - - - - EXISTING CONTOUR
- - - - - PROPOSED CONTOUR
- + 402.85 PROPOSED SPOT ELEVATION
- x 402.85 EXISTING SPOT ELEVATION
- ===== EXISTING CURB AND GUTTER
- ===== PROPOSED CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- ===== PROPOSED STORM DRAIN
- ===== PROPOSED STORM DRAIN INLET
- EXISTING TREES (FIELD LOCATED)
- EXISTING TREELINE (FIELD LOCATED)
- EXISTING FENCE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- MIB2 MIB8 SOILS BOUNDARY
- PROPOSED LIGHT POLE
- PROPOSED SIDEWALK
- ===== FOREST CONSERVATION EASEMENT

OWNER/DEVELOPER  
FIRST BAPTIST CHURCH OF GUILFORD  
7504 OAKLAND MILLS RD  
COLUMBIA, MD 21046  
410-792-7096

FOREST CONSERVATION WORKSHEET

NET TRACT AREA:  
 A. TOTAL TRACT AREA = 9.06 AC  
 B. AREA WITHIN 100 YEAR FLOODPLAIN = 0.00 AC  
 C. LOD FROM SDP-03-129 = 0.58 AC  
 D. NET TRACT AREA = 8.51 AC

LAND USE CATEGORY (FROM TABLE 3.2.1, PAGE 40, MANUAL)  
 INPUT THE NUMBER "1" UNDER THE APPROPRIATE LAND USE ZONING, AND LIMIT TO ONLY ONE ENTRY.

ARA	MDR	IDA	HDR	MPD	CIA
0	0	1	0	0	0

E. AFFOREST THRESHOLD = 15% X D = 1.28 AC  
 F. CONSERVATION THRESHOLD = 20% X D = 1.70 AC

EXISTING FOREST COVER:  
 G. EXISTING FOREST COVER (EXCLUDING FLOODPLAIN) = 1.43 AC  
 H. AREA OF FOREST ABOVE AFFORESTATION THRESHOLD = 0.15 AC  
 I. AREA OF FOREST ABOVE CONSERVATION THRESHOLD = 0.00 AC

BREAK EVEN POINT: (1.43)  
 J. FOREST RETENTION WITH NO MITIGATION REQUIRED = 0.00 AC  
 K. CLEARING PERMITTED WITHOUT MITIGATION = 0.00 AC

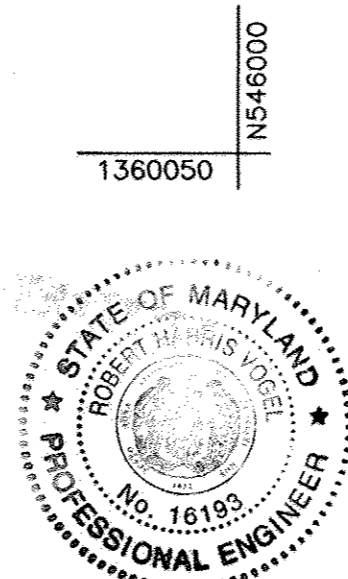
PROPOSED FOREST CLEARING:  
 L. TOTAL AREA OF FOREST TO BE CLEARED = 0.91 AC  
 M. TOTAL AREA OF FOREST TO BE RETAINED = 0.52 AC

PLANTING REQUIREMENTS:  
 N. REFORESTATION FOR CLEARING ABOVE CONSERVATION THRESHOLD = 0.00 AC  
 O. CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD = 0.00 AC  
 P. TOTAL REFORESTATION REQUIRED = 1.82 AC  
 Q. TOTAL AFFORESTATION REQUIRED = 0.00 AC  
 T. TOTAL REFORESTATION AND AFFORESTATION REQUIRED = 1.82 AC

THE FOREST CONSERVATION OBLIGATION FOR THIS PLAN HAS BEEN MET BY THE CREATION OF A 0.52 ACRE ONSITE RETENTION EASEMENT AND A FEE-IN-LIEU PAYMENT OF \$39,639.60 TO THE HO. CO. FOREST CONSERVATION FUND FOR THE 1.82 ACRES OF REQUIRED REFORESTATION.  
 SURETY IN THE AMOUNT OF \$4,530 FOR THE 0.52 ACRE ONSITE RETENTION EASEMENT HAS BEEN POSTED AS A PART OF THE DEVELOPER'S AGREEMENT.

MATCH LINE SEE SHEET 15 OF 19

PLAN VIEW  
SCALE: 1"=30'



AS-BUILT CERTIFICATION  
 I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE AS-BUILT PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.  
 10/93 12/22/17  
 ROBERT H. VOGEL, P.E. No. DATE  
 NO AS-BUILT INFORMATION THIS SHEET

NOTE: ALL SWM FACILITIES SHOWN ON THIS PLAN TO BE PRIVATELY OWNED AND MAINTAINED BY THE FIRST BAPTIST CHURCH OF GUILFORD

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

\_\_\_\_\_  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 1/10/16

\_\_\_\_\_  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE 1/10/16

\_\_\_\_\_  
 DIRECTOR DATE 1/10/16

NO.	REVISION	DATE
2	REVISE SD FROM M 70.2 TO EX-16	8/11/06

SITE DEVELOPMENT PLAN  
 FOREST CONSERVATION PLAN  
 FIRST BAPTIST CHURCH OF GUILFORD  
 TAX MAP 42, BLOCK 16, PARCEL A  
 6TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL ENGINEERS, INC.**  
 ENGINEERS • SURVEYORS • PLANNERS  
 8407 MAIN STREET, ELLICOTT CITY, MD 21043  
 TEL: 410.461.7666 FAX: 410.461.8951

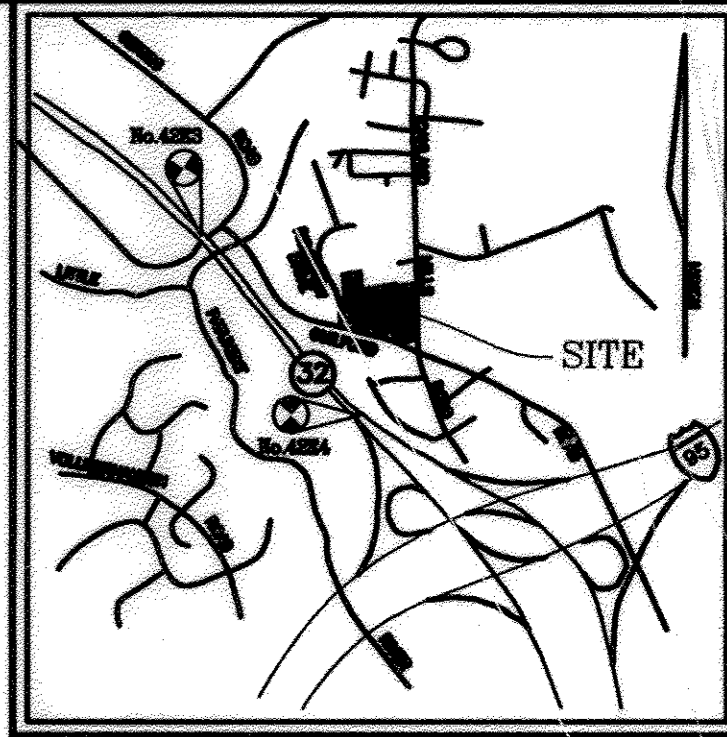
DESIGN BY: RHV  
 DRAWN BY: MAN/DZ  
 CHECKED BY: LJT  
 DATE: SEPTEMBER 2009  
 SCALE: AS SHOWN  
 W.O. NO.: 04-67

16 SHEET OF 20

AS-BUILT DECEMBER 2017 SDP-05-11

K:\Projects\04-67\ENGR\eng\SDP\CDP16.dwg, 9/12/2009 1:10:42 AM





VICINITY MAP  
SCALE: 1"=2000'

**DRAWING NOTES:**

- ① REFER TO CUSTOM LIGHTING CONTROL PANEL ON SHEET E-2.
- ② PROVIDE HANDHOLES AS REQUIRED. REFER TO DETAIL THIS SHEET.
- ③ EX. POWER PANEL. REFER TO POWER RISER DIAGRAM ON SHEET E-2.
- ④ PROVIDE BANNER ARM ASSEMBLY.

**GENERAL NOTES:**

1. COORDINATE ROUTING OF ALL CONDUIT WITH SITE PHASING.

**ELECTRICAL LEGEND**  
(MOUNTING HEIGHTS ARE TO CENTERLINE OF DEVICES UNLESS OTHERWISE NOTED.)

**LIGHTING**  
 HID LIGHTING FIXTURE - SINGLE, TWIN - POLE MOUNTED

**SWITCHES**

PHOTOCELL - CABINET MOUNTED

**POWER**

PANELBOARD - M.H. 6"-6" AFF TO TOP OF PANEL  
 GFCI RECEPTACLE - NEMA 5-20R  
 HANDHOLE - REFER TO DETAIL THIS SHEET

**CONDUIT**

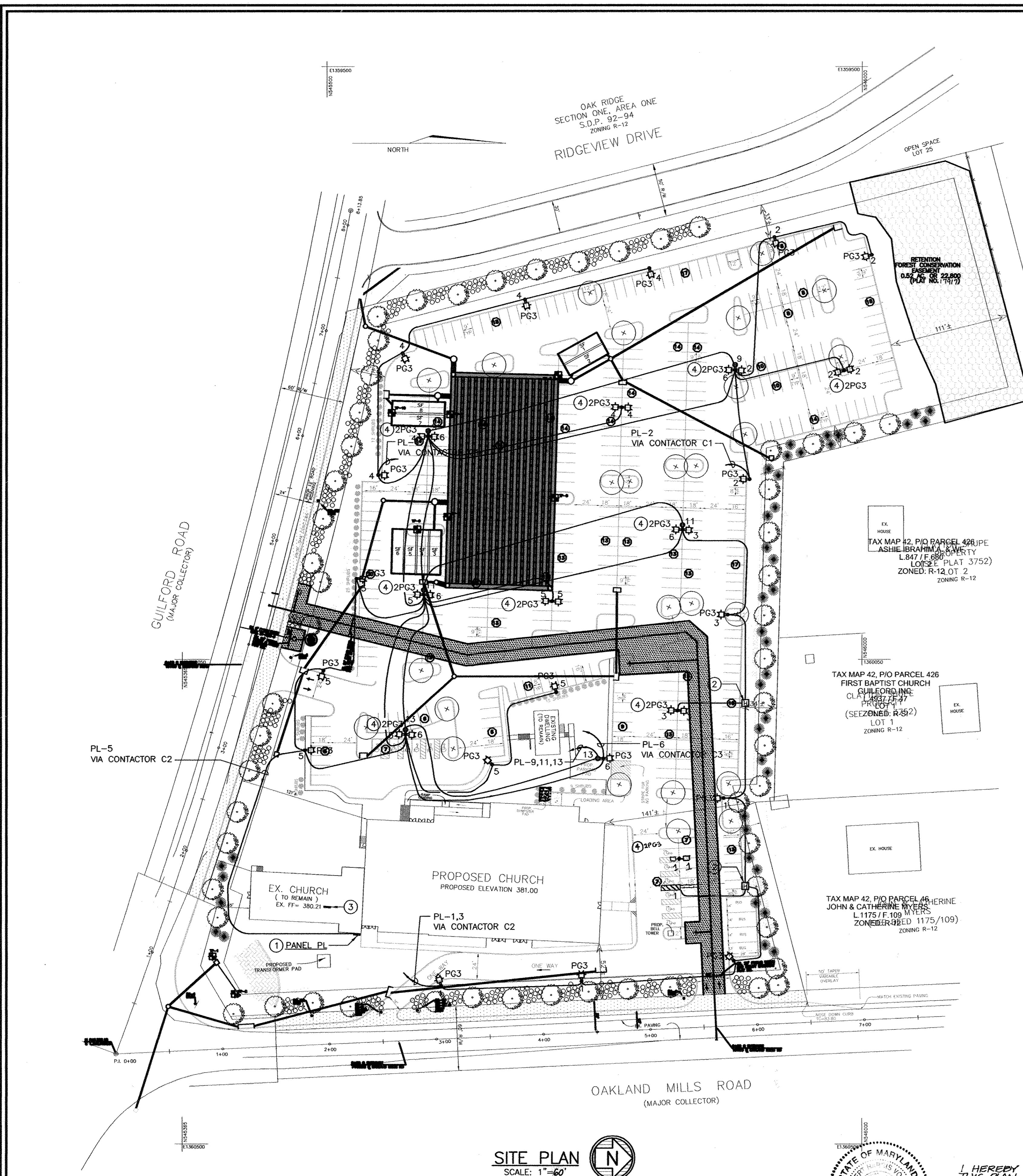
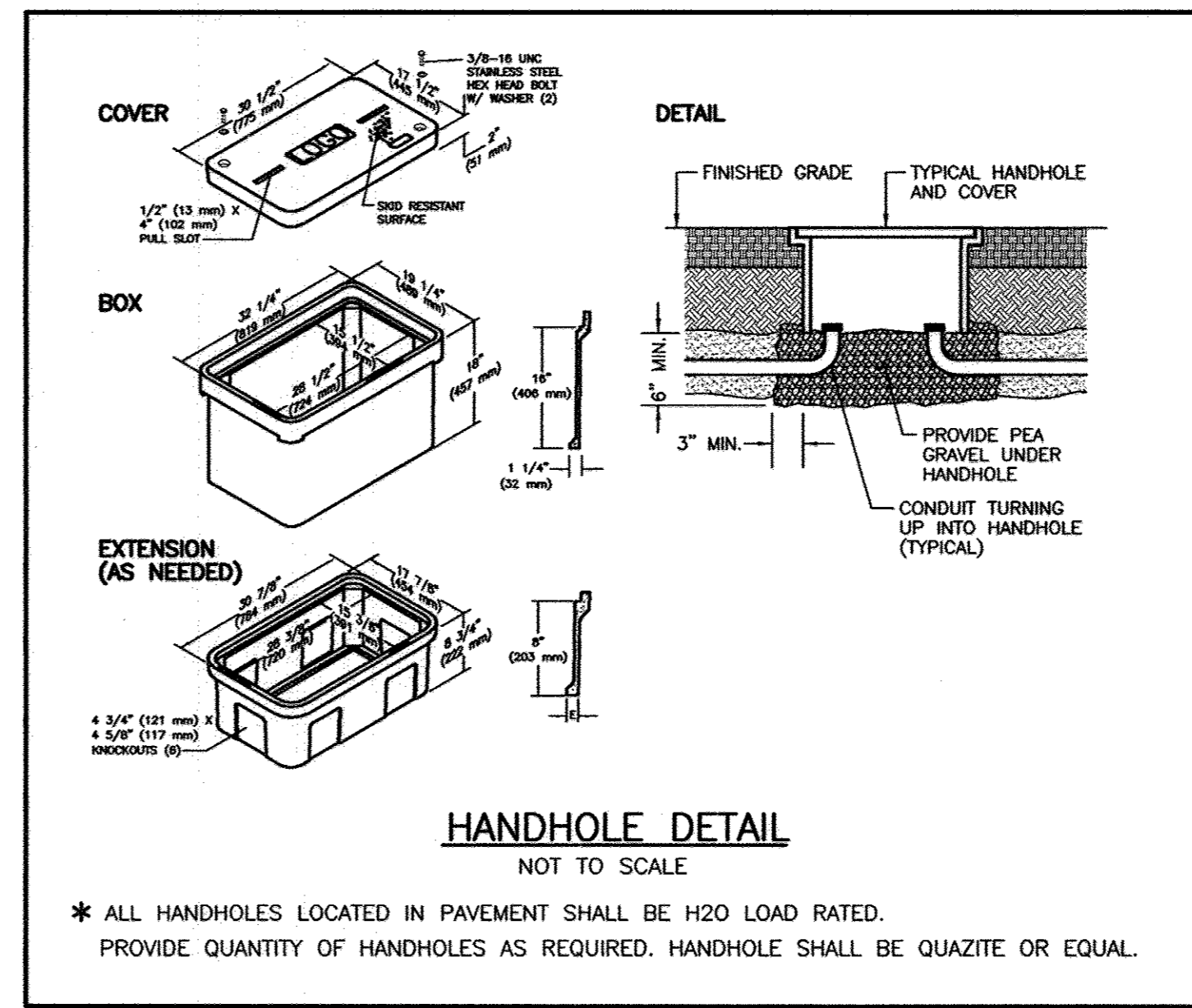
HOME RUN TO PANELBOARD  
 UNDERGROUND CONDUIT AND WIRE

**MISCELLANEOUS**

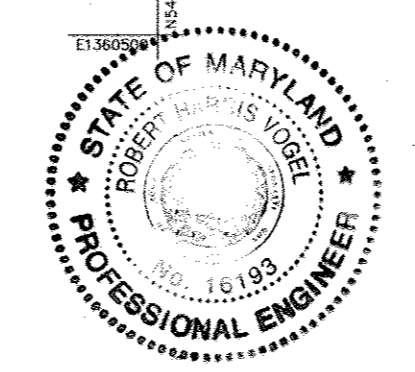
① DENOTES REFERENCE TO DRAWING NOTE

**ABBREVIATIONS:**

- A AMP, AMPERE, AMPERES
- AFG ABOVE FINISHED GRADE
- C CONDUIT
- CB CIRCUIT BREAKER
- CKT CIRCUIT
- DWG DRAWING
- ETR EXISTING TO REMAIN
- EX EXISTING
- GRD GROUND
- GW GROUND WIRE
- KVA KILO VOLT AMPERES
- KW KILO WATT AMPERES
- LTG LIGHTING
- MCB MAIN CIRCUIT BREAKER
- MFGR MANUFACTURER
- MH MOUNTING HEIGHT OR MANHOLE
- MLO MAIN LUGS ONLY
- MTD MOUNTED
- P POLE, POLES
- PNL PANEL
- RX REMOVE EXISTING
- RGS RIGID GALVANIZED STEEL
- TYP TYPICAL
- UG UNDERGROUND
- UNON UNLESS OTHERWISE NOTED
- V VOLT, VOLTS
- WP WEATHERPROOF
- W WIRE, WIRES
- W/ WITH
- Ø PHASE
- XFMR TRANSFORMER



**SITE PLAN**  
SCALE: 1"=60'



**AS-BUILT CERTIFICATION**  
 I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE AS-BUILT PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT LOGGING OF UNDERGROUND SWIM FACILITY.  
 16193 12/22/17  
 ROBERT H. VOGEL, P.E. NO. DATE  
 NO AS-BUILT INFORMATION THIS SHEET

**ATTORNEY**  
 JAMES L. ROUSE  
 2516 N. CHARLES STREET  
 BALTIMORE, MARYLAND 21218  
 (410) 366-6664

**OWNER/PETITIONER**  
 THE FIRST BAPTIST CHURCH OF GUILFORD  
 7504 OAKLAND MILLS ROAD  
 COLUMBIA, MARYLAND 21046

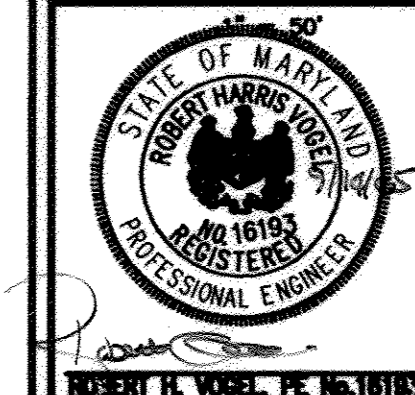
**ARCHITECT AND PLANNER**  
 SRR & ASSOCIATES, PC  
 2605 BANISTER ROAD, SUITE # A-110  
 BALTIMORE, MARYLAND 21215  
 (410) 367-1857

NO.	REVISION	DATE
1	RELOCATE LIGHT POLE	6/30/06

**SITE DEVELOPMENT PLAN**  
**SITE LIGHTING PLAN**  
**FIRST BAPTIST CHURCH OF GUILFORD**  
 TAX MAP 42, BLOCK 16, PARCEL A  
 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL ENGINEERING, INC.**  
 ENGINEERS • SURVEYORS • PLANNERS  
 8407 MAIN STREET TEL: 410.461.7666  
 ELLICOTT CITY, MD 21043 FAX: 410.461.8961

DESIGN BY: RVN  
 DRAWN BY: MW/DZ  
 CHECKED BY: RVN  
 DATE: SEPTEMBER 2006  
 SCALE: 1"=60'  
 W.O. NO.: 04-67



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APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION 9/20/05  
 CHIEF, DIVISION OF LAND DEVELOPMENT 1/10/06  
 DIRECTOR 1/10/06

## LIGHTING FIXTURE SCHEDULE

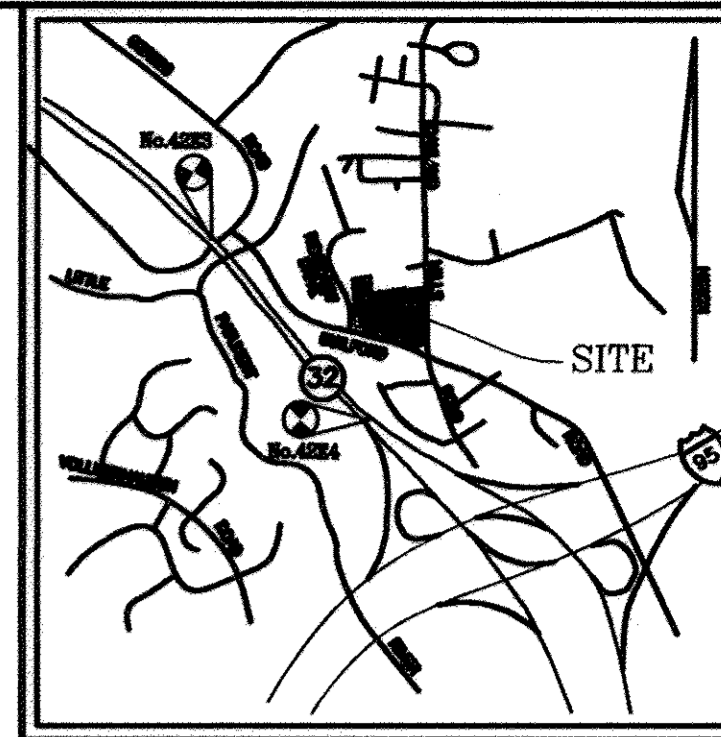
TYPE	DESCRIPTION	VOLTS	LAMPS	MOUNTING	MANUFACTURER	REMARKS
P	POLE MOUNTED HID CUT-OFF FIXTURE W/ CAST ALUMINUM HOUSING, CAST ALUMINUM DOOR WITH TEMPERED GLASS LENS, SPECULAR ANODIZED ALUMINUM REFLECTOR, IES TYPE III DISTRIBUTION AND TEXTURED BRONZE POWDERCOAT FINISH	208	(1)250W MH	POLE	GARDCO MODEL NO G18-3XL-250MH-208-BRP OR APPROVED EQUAL	PROVIDE BREAKAWAY BANNER ARM ASSEMBLY FOR 5" POLE WITH TWIN 18" BY 36" BANNERS WHERE INDICATED. PROVIDE NUMBER OF LUMINAIRES PER POLE AS INDICATED ON SITE PLAN. PROVIDE ALL REQUIRED ARMS AND MOUNTING HARDWARE.
	6" WIDE, 0.250" THICK, 25' HIGH SQUARE STRAIGHT STEEL POLE WITH TEXTURED BRONZE POLYESTER POWDERCOAT FINISH TO MATCH TYPE 'P' FIXTURES.				LUMEC MODEL NO SPS6V-25 OR APPROVED EQUAL	REFER TO POLE BASE DETAIL
	18" DOUBLE BREAK-AWAY BANNER ARM WITH SAFETY CABLE, STEEL 1 1/16" DIAMETER ARM AND FITTER FOR SQUARE POLE WITH TEXTURED BRONZE POLYESTER POWDERCOAT FINISH TO MATCH TYPE 'P' FIXTURES.				LUMEC MODEL NO BABD18 OR APPROVED EQUAL	PROVIDE ALL REQUIRED FITTERS AND MOUNTING HARDWARE

**LIGHTING NOTES:**

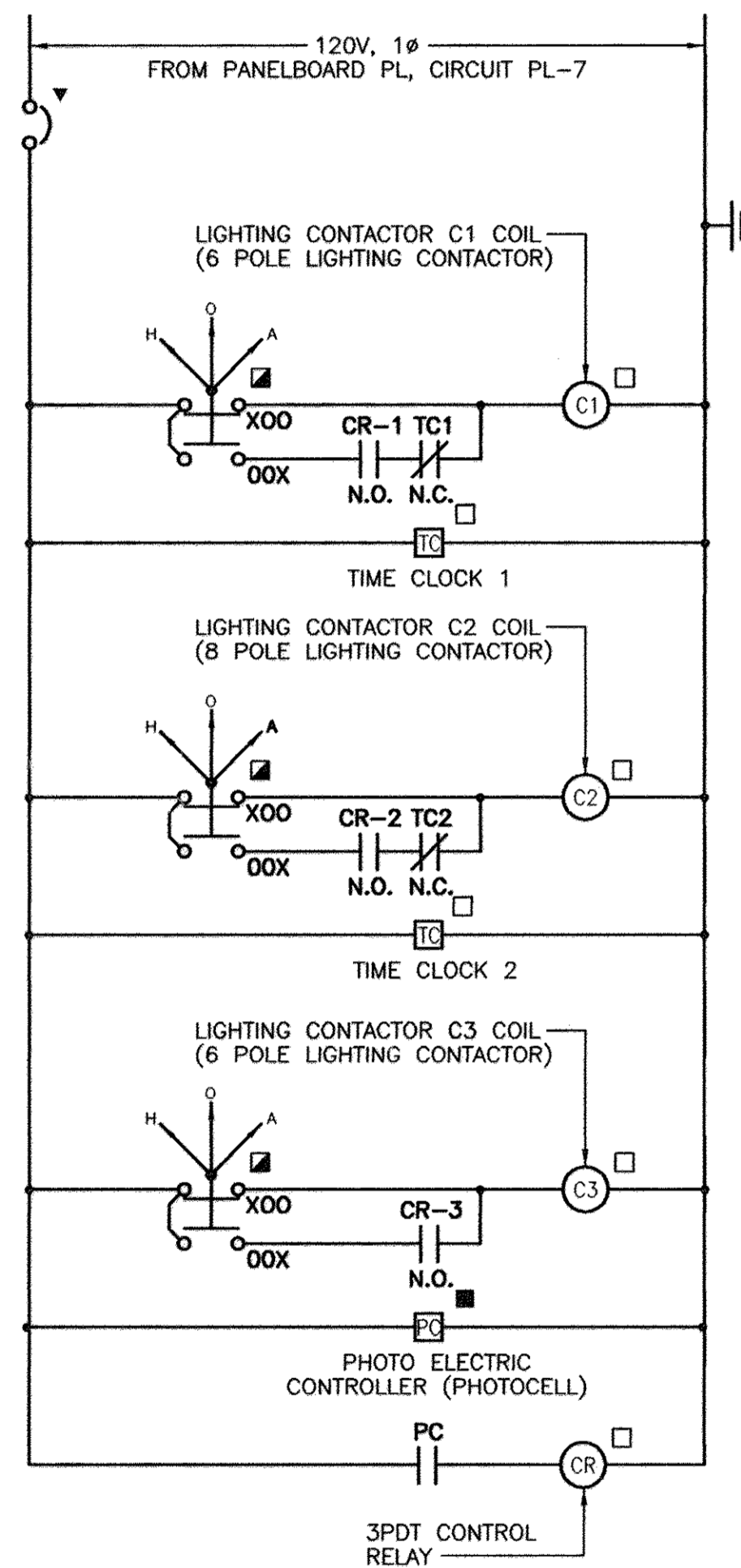
- PROVIDE LAMPS FOR ALL FIXTURES.
- PROVIDE NUMBER OF LUMINAIRES PER POLE AS INDICATED ON PLANS AND PROVIDE ALL REQUIRED ARMS AND MOUNTING HARDWARE.

PANEL PL		VOLTAGE: 208/120V, 3Ø, 4W		MOUNTING: SURFACE					
100 AMPERE FRAME		60 AMPERE MAIN CIRCUIT BREAKER		NEMA 4 ENCLOSURE LOCATION: OUTSIDE EX CHURCH					
		100% RATED NEUTRAL BUS		22,000 A.I.C.					
CONN KVA	CKT	DESCRIPTION	CIRCUIT BREAKER P   TRIP	CIRCUIT WIRING NO   SIZE   GND   C	DESCRIPTION	CIRCUIT BREAKER P   TRIP	CIRCUIT WIRING NO   SIZE   GND   C	CONN KVA	
1.8	1	SITE LIGHTING	2 20 3	4 4 2"	2	20 3	4 4 2"	1.8	
1.8	3	SITE LIGHTING	2 20 3	4 4 2"	4	20 3	4 4 2"	2.1	
1.8	5	SITE LIGHTING	2 20 3	4 4 2"	6	20 3	4 4 2"	1.8	
0.2	7	LIGHTING CONTACTORS	2 20 3	12 12 3/4"	8	RECEPTACLE	1 20 2	12 12 3/4"	0.2
1.0	9	POLE RECEPTACLES	1 20 2	10 10 1"	10	SPARE	1 20		
1.0	11	POLE RECEPTACLES	1 20 2	10 10 1"	12	SPARE	1 20		
1.0	13	POLE RECEPTACLES	1 20 2	10 10 1"	14	SPARE	1 20		
	15	SPACE	1 20		16	SPACE	1		
	17	SPACE	1 20		18	SPACE	1		
	19	SPACE	1 20		20	SPACE	1		
	21	SPACE	1 20		22	SPACE	1		
	23	SPACE	1 20		24	SPACE	1		

TOTAL CONNECTED LOAD: 14.5 KVA



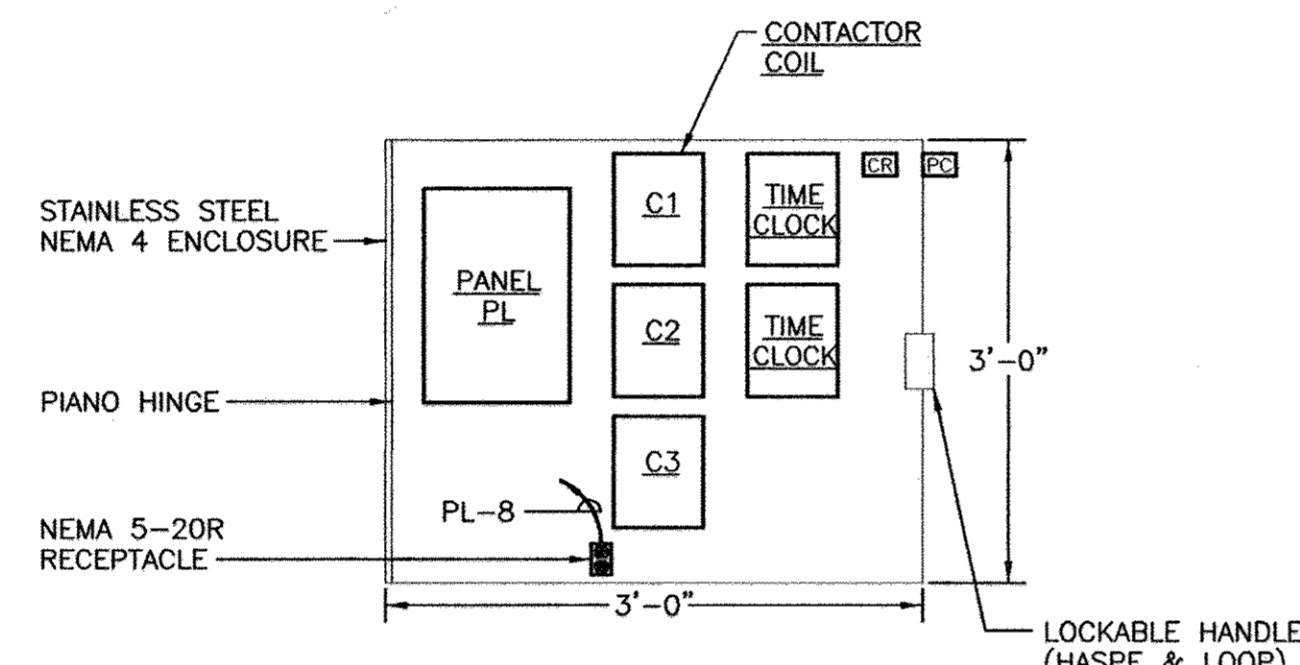
VICINITY MAP  
SCALE: 1"=200'



**LEGEND:**

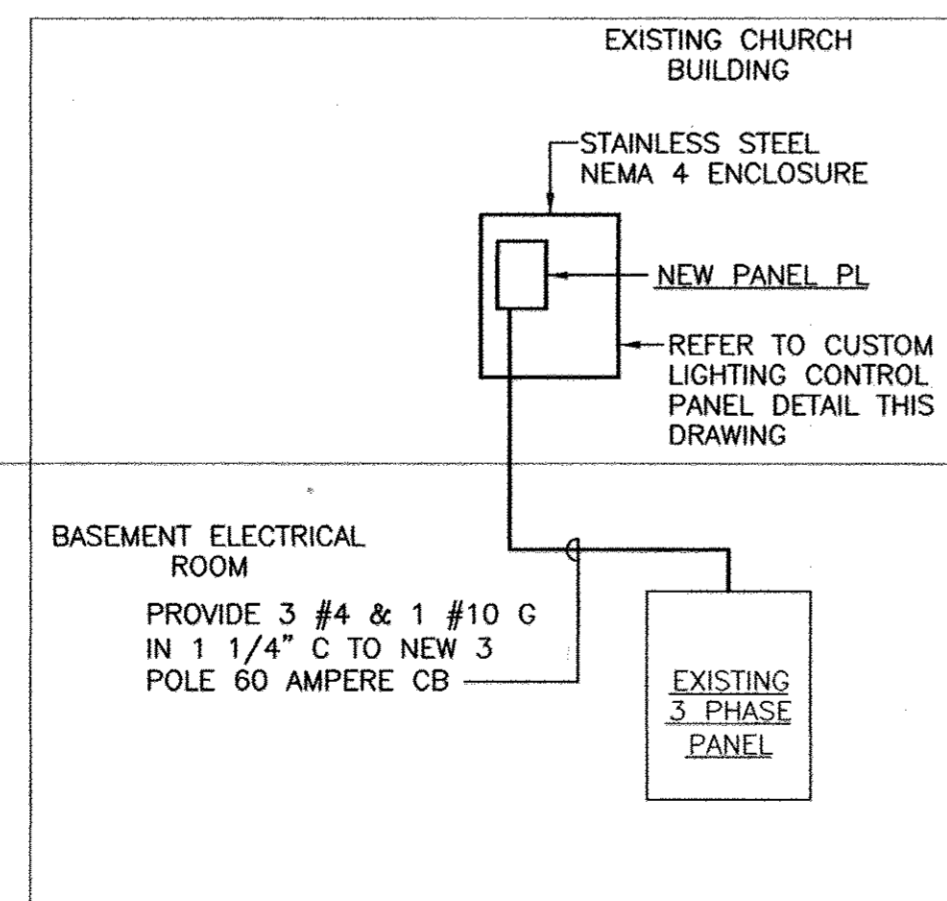
- ▼ CIRCUIT BREAKER AT PANEL PL
- MOUNT ON FRONT OF PANEL PL
- IN CUSTOM LIGHTING CONTROL PANEL
- MOUNT ON SIDE OF CUSTOM LIGHTING CONTROL PANEL

**LIGHTING CONTROL DIAGRAM**  
NOT TO SCALE

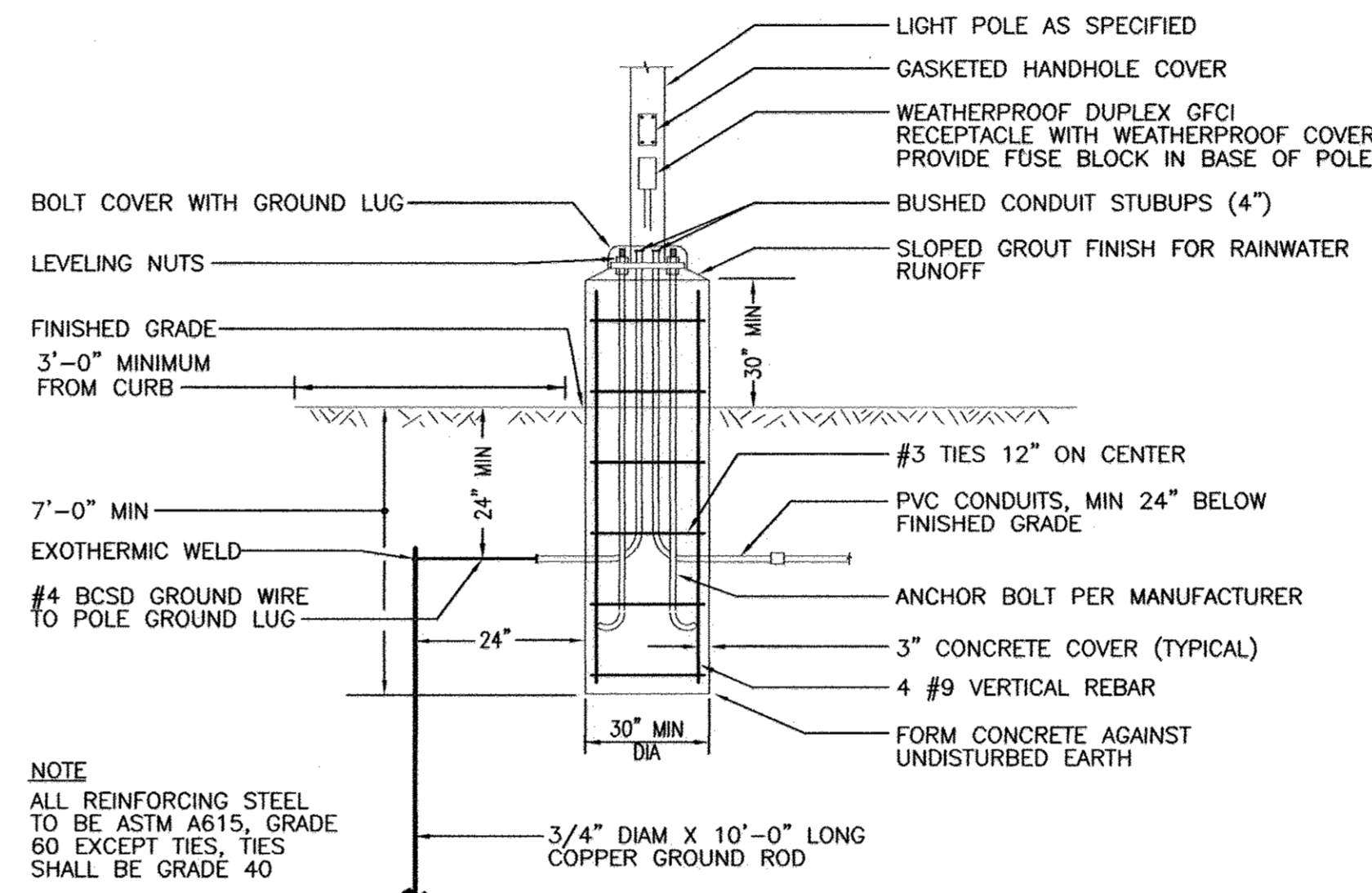


**CUSTOM LIGHTING CONTROL PANEL**  
NOT TO SCALE

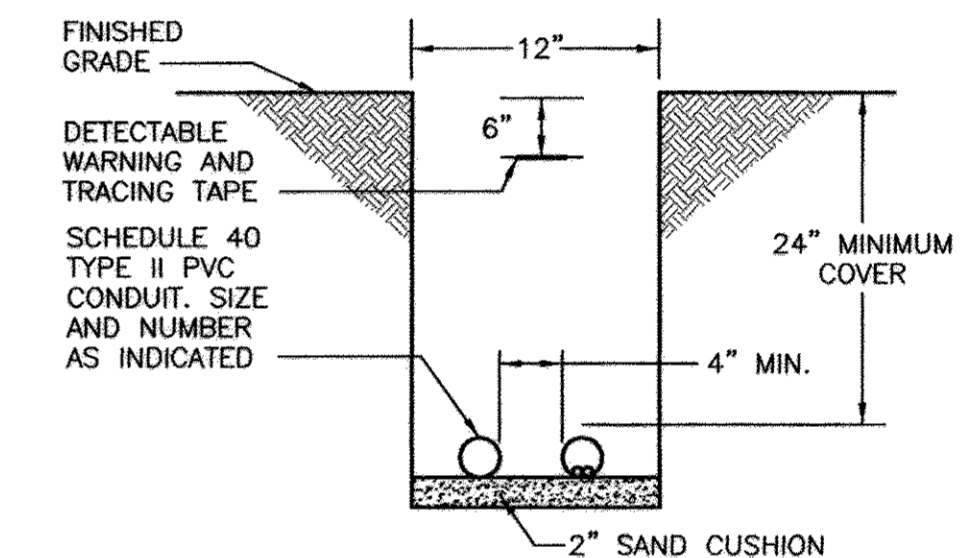
NOTE: REFER TO LIGHTING CONTROL DIAGRAM FOR CONNECTIONS



**POWER RISER DIAGRAM**  
NOT TO SCALE



**PARKING AREA - ELEVATED POLE BASE**  
NOT TO SCALE



**LIGHTING/RECEPTACLE CONDUITS**  
NOT TO SCALE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE: 9/26/17

CHIEF, DIVISION OF LAND DEVELOPMENT DATE: 9/16/16

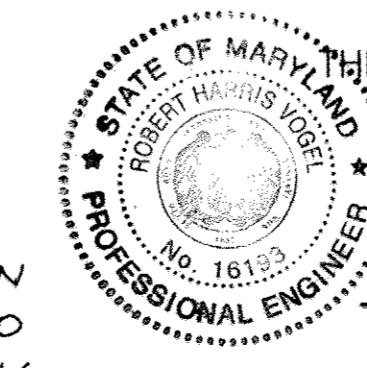
DIRECTOR DATE: 1/10/16

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE AS-BUILT PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOSING OF THE UNDERGROUND SWM FACILITY.

ROBERT H. VOGEL, P.E. NO. 16193 DATE 12/22/17

NO AS-BUILT INFORMATION THIS SHEET



**ARCHITECT AND PLANNER**

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BALTIMORE, MARYLAND 21215  
(410) 367-1857

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JAMES L. ROUSE  
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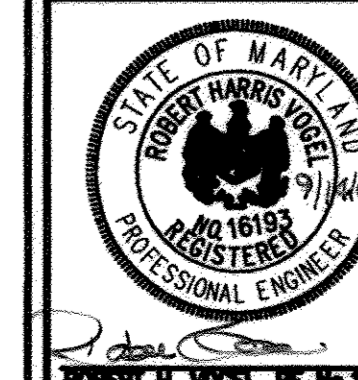
**OWNER/PETITIONER**  
FIRST BAPTIST CHURCH OF GUILFORD  
7504 OAKLAND MILLS ROAD  
COLUMBIA, MARYLAND 21046

NO.	REVISION	DATE

**SITE DEVELOPMENT PLAN**  
LIGHTING DETAILS,  
SCHEDULES & DIAGRAMS  
FIRST BAPTIST CHURCH  
OF GUILFORD

TAX MAP 42, BLOCK 16, PARCEL A  
6TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL**  
**ENGINEERING, INC.**  
ENGINEERS • SURVEYORS • PLANNERS  
8407 MAIN STREET, ELLICOTT CITY, MD 21043  
TEL: 410.461.7666 FAX: 410.461.8961



DESIGN BY: RRV  
DRAWN BY: MMH/DZ  
CHECKED BY: RRV  
DATE: SEPTEMBER 2008  
SCALE: AS SHOWN  
W.O. NO.: 04-67

18 SHEET OF 20

AS-BUILT DECEMBER 2017

SECTION 16010  
GENERAL ELECTRICAL REQUIREMENTS

PART 1 - RELATED DOCUMENTS  
1.1 GENERAL:

PROVIDE ALL LABOR, MATERIALS, EQUIPMENT AND SERVICES NECESSARY FOR AND INCIDENTAL TO THE COMPLETE INSTALLATION AND OPERATION OF ALL ELECTRICAL WORK.

ALL WORK UNDER THIS DIVISION IS SUBJECT TO THE GENERAL CONDITIONS AND SPECIAL REQUIREMENTS FOR THE ENTIRE CONTRACT.

CONFORM TO REQUIREMENTS OF ALL RULES, REGULATIONS, AND CODES OF LOCAL, STATE, AND FEDERAL AUTHORITIES HAVING JURISDICTION. CONFORM TO THE NATIONAL ELECTRICAL CODE AND NECA - STANDARDS OF INSTALLATION.

THE CONTRACT DRAWINGS ARE GENERALLY DIAGRAMMATIC AND ALL OFFSETS, BENDS, FITTINGS, AND ACCESSORIES ARE NOT NECESSARILY SHOWN. PROVIDE ALL SUCH ITEMS AS MAY BE REQUIRED TO FIT THE WORK TO THE CONDITIONS.

1.2 PERMITS AND FEES:

OBTAIN, PAY FOR, AND DELIVER ALL PERMITS, CERTIFICATES OF INSPECTION, ETC., REQUIRED BY THE AUTHORITIES HAVING JURISDICTION. DELIVER CERTIFICATES TO THE OWNER PRIOR TO FINAL ACCEPTANCE OF THE WORK.

PART 2 - PRODUCTS

2.1 MATERIAL AND EQUIPMENT:

MATERIAL AND EQUIPMENT INSTALLED AS A PART OF THE PERMANENT INSTALLATION SHALL BE NEW, UNLESS OTHERWISE INDICATED OR SPECIFIED, AND SHALL BE APPROVED BY THE UNDERWRITERS' LABORATORIES, INC., FOR INSTALLATION IN EACH PARTICULAR CASE WHERE STANDARDS HAVE BEEN ESTABLISHED.

2.2 SUBMITTALS, REVIEW, AND ACCEPTANCE:

PREPARE AND SUBMIT SHOP DRAWINGS AND/OR DIAGRAMS FOR LISTED ITEMS, TO INCLUDE PLANS, ELEVATIONS, SECTIONS, MOUNTING DETAILS OF COMPONENT PARTS, POINT-TO-POINT INTERCONNECTION DIAGRAMS, AND ANY OTHER INFORMATION NECESSARY TO SHOW THE FABRICATION AND CONNECTION OF THE COMPLETE ITEM OR SYSTEM.

EQUIPMENT, MATERIAL, INSTALLATION, WORKMANSHIP AND ARRANGEMENT OF WORK ARE SUBJECT TO REVIEW AND ACCEPTANCE. NO SUBSTITUTION SHALL BE PERMITTED AFTER ACCEPTANCE OF EQUIPMENT OR MATERIALS EXCEPT WHERE SUCH SUBSTITUTION IS CONSIDERED BY THE ENGINEER TO BE IN THE BEST INTEREST OF THE OWNER.

PART 3 - EXECUTION

3.1 SUPERVISION AND COORDINATION:

PROVIDE COMPLETE SUPERVISION, DIRECTION, SCHEDULING AND COORDINATION OF ALL WORK UNDER THE CONTRACT, INCLUDING THAT OF SUBCONTRACTORS. BE RESPONSIBLE FOR ALL WORK AND MAKE ALL SUBCONTRACTORS, SUPPLIERS AND MANUFACTURERS FULLY AWARE OF ALL REQUIREMENTS OF THE CONTRACT.

3.2 GUARANTEE:

GUARANTEE THE COMPLETE ELECTRICAL SYSTEM FREE FROM ALL MECHANICAL AND ELECTRICAL DEFECTS FOR THE PERIOD OF TWO YEARS BEGINNING FROM THE DAY OF FINAL ACCEPTANCE OF THE WORK BY THE OWNER. ALSO DURING THE GUARANTEE PERIOD, BE RESPONSIBLE FOR THE PROPER ADJUSTMENTS OF ALL SYSTEMS, EQUIPMENT AND APPARATUS INSTALLED AND DO ALL WORK NECESSARY TO ENSURE EFFICIENT AND PROPER FUNCTIONING OF THE SYSTEMS AND EQUIPMENT. UPON RECEIPT OF NOTICE FROM THE OWNER OF FAILURE OF ANY PART OF THE ELECTRICAL INSTALLATION DURING THE GUARANTEE PERIOD, NEW REPLACEMENT PARTS SHALL BE FURNISHED AND INSTALLED PROMPTLY AT NO COST.

END OF SECTION

SECTION 16100  
BASIC MATERIALS AND METHODS

PART 1 - GENERAL

1.1 STORAGE AND PROTECTION OF EQUIPMENT:

ALL ELECTRICAL EQUIPMENT TO BE USED IN THE CONSTRUCTION SHALL BE PROPERLY STORED AND PROTECTED. ALL EQUIPMENT SHALL BE STORED UNDER COVER.

PROTECT ELECTRICAL EQUIPMENT AND MATERIALS AGAINST DAMAGE CAUSED BY INSTALLATION OF ANY BUILDING SYSTEMS.

EQUIPMENT DAMAGED AS A RESULT OF THE ABOVE CONDITIONS SHALL BE PROPERLY REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE, IF, IN THE OPINION OF THE ENGINEER, THE

EQUIPMENT HAS BEEN DAMAGED TO SUCH AN EXTENT IT CANNOT OPERATE PROPERLY AFTER REPAIRS ARE MADE.

1.2 PENETRATION OF WATERPROOF CONSTRUCTION:

COORDINATE THE WORK TO MINIMIZE PENETRATION OF WATERPROOF CONSTRUCTION, INCLUDING ROOFS, EXTERIOR WALLS AND INTERIOR WATERPROOF CONSTRUCTION. WHERE SUCH PENETRATIONS ARE NECESSARY, PROVIDE NECESSARY CURBS, SLEEVES, SHIELDS, FLASHINGS, FITTINGS AND CAULKING TO MAKE THE PENETRATIONS ABSOLUTELY WATERTIGHT.

1.3 PENETRATION OF FIRE-RATED CONSTRUCTION:

ALL AREAS IN AND AROUND CONDUITS PASSING THROUGH FIRE-RATED, FIRE-RESISTANT OR FIRE-STOPPED WALLS, CEILINGS, PARTITIONS AND FLOORS SHALL BE SEALED WITH A FIRE RESISTIVE MATERIAL. FIRE RESISTIVE MATERIAL SHALL BE A UL 1479 LISTED, TWO PART, RTV SILICONE ELASTOMER EXPANDING FOAM. FOAM SHALL FLOW INTO THE CAVITY TO BE SEALED AND EXPAND TO 3-4 TIMES ORIGINAL VOLUME. FOAM SHALL BE DOW CORNING FIRE STOP FOAM, OR EQUAL, AND SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

FOR SMALL VOIDS (LESS THAN 1") AND AREAS WHERE FOAM WILL NOT FLOW PROPERLY, A FIRE RESISTIVE SEALANT MATERIAL MAY BE USED. SEALANT SHALL BE A UL 11479 LISTED, ONE PART, RTV SILICONE ELASTOMER WHICH IS APPLIED WITH A CAULKING GUN. SEALANT SHALL BE DOW CORNING FIRE STOP SEALANT, OR EQUAL, APPLIED PER MANUFACTURER'S RECOMMENDATIONS.

1.4 OPERATION OF EQUIPMENT:

LUBRICATE, CLEAN, ADJUST AND TEST ALL EQUIPMENT AND LIGHT FIXTURES IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS PRIOR TO OPERATION.

1.5 TESTING AND ADJUSTMENT:

PERFORM ALL TESTS WHICH ARE SPECIFIED OR REQUIRED TO DEMONSTRATE THAT WORK IS INSTALLED AND OPERATING PROPERLY. WHERE FORMAL TESTS ARE REQUIRED, GIVE PROPER NOTICES AND PERFORM ALL NECESSARY PRELIMINARY TESTS TO ASSURE THAT THE WORK IS COMPLETE ON READY FOR FINAL TEST. ON ALL CIRCUITS, 600 VOLTS OR LESS, PROVIDE CIRCUITS THAT ARE FREE FROM GROUND FAULTS, SHORT CIRCUITS AND OPEN CIRCUITS.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION 9/16/13  
CHIEF, DIVISION OF LAND DEVELOPMENT 11/16/16  
DIRECTOR 1/11/16

PART 2 - PRODUCTS

2.1 CONDUIT AND FITTINGS:

GENERAL:

INSTALL ALL BUILDING WIRING IN RACEWAYS AS INDICATED. MINIMUM CONDUIT SIZE SHALL BE 3/4-INCH. INSTALL ALL CONDUIT CONCEALED WHERE POSSIBLE.

SUPPORT ALL CONDUIT NOT EMBEDDED IN CONCRETE OR MASONRY SO THAT STRAIN IS NOT TRANSMITTED TO OUTLET BOXES AND PULL BOXES, ETC. SUPPORTS TO BE SUFFICIENTLY RIGID TO PREVENT DISTORTION OF CONDUITS DURING WIRE PULLING.

IN AREAS WITH NO CEILING, INSTALL CONDUITS AS CLOSE TO STRUCTURE AS POSSIBLE.

SUPPORT ALL CONDUIT NOT EMBEDDED IN CONCRETE OR MASONRY SO THAT STRAIN IS NOT TRANSMITTED TO OUTLET BOXES AND PULL BOXES, ETC. SUPPORTS TO BE SUFFICIENTLY RIGID TO PREVENT DISTORTION OF CONDUITS DURING WIRE PULLING.

CONDUITS:

PROVIDE HOT-DIP GALVANIZED, RIGID STEEL CONDUIT, GALVANIZED INTERMEDIATE METAL CONDUIT (IMC) FOR CONCEALED WORK ABOVE SUSPENDED CEILINGS AND WITHIN INTERIOR PARTITIONS. MAXIMUM EMT SIZE PERMITTED IS TWO INCHES. PROVIDE PVC CONDUIT FOR EXTERIOR EXPOSED AND DIRECT BURIED APPLICATIONS.

ALUMINUM CONDUIT IS PROHIBITED IN ANY LOCATION.

FITTINGS:

ALL FITTINGS TO MATCH CONDUIT MATERIAL AND TO BE SUITABLE FOR THE PURPOSE INTENDED.

PROVIDE COMPOUND FILLED SEALING FITTINGS FOR HAZARDOUS LOCATIONS FOR CONDUITS PASSING FROM INTERIOR TO EXTERIOR, AND AT THE INTERFACE OF WIDELY DIFFERENT SPACE TEMPERATURES SUCH AS REFRIGERATION OR COLD STORAGE ROOMS, AND FOR VERMIN PROOFING AT FOOD PREPARATION AREAS.

PROVIDE EXPANSION FITTINGS WITH BONDING JUMPERS WHERE CONDUITS CROSS EXPANSION JOINTS OR WHERE OTHERWISE REQUIRED TO COMPENSATE FOR THERMAL EXPANSION AND CONTRACTION.

INSTALLATION:

KEEP ALL CONDUITS MINIMUM 6 INCHES AWAY FROM FLUES, STEAM PIPES, HOT WATER PIPES OR OTHER HOT SURFACES ABOVE 90 DEGREES F.

INSTALL EXPOSED CONDUITS PARALLEL AND PERPENDICULAR TO WALLS, STRUCTURAL MEMBERS, CEILINGS AND INTERIOR SURFACES; INSTALL PLUMB.

PROVIDE A NYLON PULL LINE IN EACH CONDUIT TO BE LEFT EMPTY.

WHERE EXPOSED CONDUIT IS INSTALLED ON WATER BEARING WALLS AND WALLS BELOW GRADE, PROVIDE STAND-OFF BRACKETS TO MAINTAIN A MINIMUM 1/2-INCH AIR SPACE BETWEEN THE CONDUIT AND THE MOUNTING SURFACE.

SUPPORTS:

ALL PARTS AND HARDWARE USED FOR SUPPORT OF EQUIPMENT, CONDUITS, AND FITTINGS SHALL BE GALVANIZED FOR DRY LOCATIONS AND GALVANIZED WITH PVC BONDED ALUMINUM OR PVC FOR EXTERIOR, DAMP, OR WET LOCATIONS. PROVIDE GALVANIZED FASTENERS FOR DRY LOCATIONS AND STAINLESS STEEL (326 GRADE MINIMUM) FOR EXTERIOR, DAMP, OR WET LOCATIONS.

SUPPORT SINGLE RUNS OF SUSPENDED FEEDER CONDUIT WITH "KINDORF" C-149 OR C-150 ADJUSTABLE HANGERS, OR EQUAL, USING 3/8-INCH RODS FOR CONDUITS UP TO 2 INCH AND 1/2-INCH RODS FOR CONDUITS LARGER THAN 2 INCHES. SUPPORT GROUPS OF SUSPENDED CONDUITS RUN IN PARALLEL ON TRAPEZE HANGERS CONSTRUCTED OF "KINDORF" CHANNELS WITH C-149 CONDUIT STRAPS, OR EQUAL, AND SUSPENDED WITH 1/2-INCH HANGER RODS.

SUPPORT SURFACE RUNS OF CONDUIT USING ONE HOLE PIPE STRAPS OR TWO HOLE PIPE STRAPS. STRAP SPACING MAXIMUM 6 FEET ON CENTERS. FASTEN PIPE STRAPS AND HANGERS TO CONCRETE USING INSERTS OR EXPANSION BOLTS AND TO HOLLOW MASONRY USING TOGGLE BOLTS. SUPPORTS FOR PVC-COATED CONDUITS TO HAVE PVC BONDED COATING.

2.2 OUTLET BOXES AND WIRE TROUGHS:

SMALL BOXES SHALL BE GALVANIZED STEEL FOR GENERAL USE, CAST ALUMINUM FOR WET LOCATIONS. LARGE BOXES AND TROUGHS SHALL BE GALVANIZED STEEL FOR GENERAL USE, CAST ALUMINUM OR PVC FOR EXPOSED EXTERIOR USE, CAST ALUMINUM OR REINFORCED FIBERGLASS FOR UNDERGROUND USE. COVERS SHALL MATCH BOXES OR BE AS INDICATED. BOXES AND CONDUIT FITTINGS FOR EXTERIOR USE SHALL HAVE GASKETED COVER PLATES.

JUNCTION AND PULL BOXES SHALL BE FURNISHED AND INSTALLED AS SHOWN OR WHERE REQUIRED TO FACILITATE PULLING OF WIRES OR CABLES. SUCH BOXES SHALL BE INSTALLED IN ACCESSIBLE LOCATIONS.

2.3 WIRES AND CABLES:

BUILDING WIRE, UNLESS OTHERWISE INDICATED, SHALL BE 600 VOLT, TYPE THWN OR THHN FOR #8 AWG AND SMALLER, TYPE THWN OR THHW FOR #6 AWG AND LARGER FOR INTERIOR USE, AND TYPE THW OR THWN INSULATION FOR UNDERGROUND OR EXTERIOR INSTALLATIONS. CONDUCTORS SHALL BE SIZED AND RUN AS INDICATED. CONDUCTORS SHALL BE SOFT DRAWN COPPER OF NOT LESS THAN 98% CONDUCTIVITY.

MINIMUM WIRE SIZE SHALL BE #12 AWG. ALL WIRE #8 AND LARGER SHALL BE STRANDED. BUILDING WIRE SHALL BE COLOR CODED AS FOLLOWS: PHASE A (BLACK), PHASE B (RED), PHASE C (BLUE), NEUTRAL (WHITE), GROUND (GREEN).

WIRING FOR GENERAL 15 AND 20 AMP 120 VOLT BRANCH CIRCUIT WORK SHALL BE AS FOLLOWS UNLESS OTHERWISE INDICATED:

Table with 2 columns: HOME RUN LENGTH AND WIRE SIZE, CIRCUIT LENGTH AND WIRE SIZE. Rows include 0-60 FT = #12, 60-100 FT = #10, 100 FT & UP = #8, 0-100 FT = #12, 0-100 FT = #12.

CIRCUIT LENGTH AS GIVEN ABOVE SHALL BE THE WIRE LENGTH BETWEEN THE FIRST AND LAST OUTLET ON THE CIRCUIT. HOME RUN LENGTH AS GIVEN ABOVE SHALL BE THE WIRE LENGTH BETWEEN THE FIRST OUTLET AND THE PANELBOARD. THE NEUTRAL CONDUCTOR IN A RUN SHALL BE THE SAME SIZE AS THE LARGEST PHASE CONDUCTOR.

2.3 SPLICING - 600 VOLTS AND BELOW:

ACCESSIBLE CONNECTORS WITH THERMOPLASTIC OR RUBBER COVERS OR WRAPPED WITH INSULATING TAPE.

2.5 LOW VOLTAGE FUSES (0-600 VOLTS):

LINKS WITH FUSING ALLOY SOLDERED TO LINKS WITH UL CLASS L LABEL FOR 601-6000 AMPERES. DUAL ELEMENT CURRENT LIMITING TIME DELAY TYPE WITH UL CLASS RK-1 LABEL FOR 600 AMPERES AND LESS. PROVIDE 10% SPARE FUSES IN WALL-MOUNTED CABINET.

2.8 WIRING DEVICES:

ALL DEVICES SHALL BE OF THE SAME MANUFACTURER. DEVICES SHALL BE ARROW-HART, LEVITON, HUBBELL OR EQUAL.

WALL SWITCHES: TOGGLE SWITCHES SHALL BE OF THE SILENT MECHANICAL TYPE RATED 20 AMPERE, 120/277 VOLT. SINGLE POLE SWITCHES SHALL BE ARROW-HART #991-1 OR EQUAL. THREE AND FOUR-WAY SWITCHES SHALL BE OF THE SAME MANUFACTURER AND GRADE.

PART 3 - EXECUTION

3.1 CUTTING AND PATCHING:

PROVIDE ALL CUTTING AND PATCHING NECESSARY FOR THE INSTALLATION OF THE ELECTRICAL WORK. ANY DAMAGE DONE TO THE WORK ALREADY IN PLACE BY REASON OF THIS WORK SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE BY QUALIFIED PERSONNEL EXPERIENCED IN SUCH WORK. PATCHING SHALL BE UNIFORM IN APPEARANCE AND SHALL MATCH WITH THE SURROUNDING SURFACE. DO NOT CUT STRUCTURAL MEMBERS WITHOUT APPROVAL BY STRUCTURAL ENGINEER.

3.2 PROVISION FOR ACCESS:

PROVIDE ADEQUATE ACCESS TO ALL EQUIPMENT, JUNCTION BOXES, SWITCHES, CONTROLS AND OTHER DEVICES. WHERE ACCESS DOORS ARE NECESSARY, PROVIDE MANUFACTURED STEEL DOOR ASSEMBLIES CONSISTING OF HINGED DOOR, FLUSH SCREWDRIVER CAMLOCKS AND FRAME, DESIGNED FOR THE PARTICULAR WALL OR CEILING CONSTRUCTION. PROPERLY SIZE AND LOCATE EACH DOOR DOORS SHALL BE MILCOR METAL ACCESS DOORS BY INLAND-RYERSON OR EQUAL.

END OF SECTION

SECTION 16400  
SERVICE AND DISTRIBUTION

PART 1 - GENERAL

1.1 DESCRIPTION OF SERVICE:

ELECTRICAL SERVICE TO THE FACILITY IS EXISTING TO REMAIN. PROVIDE MODIFICATIONS AND EXTENSIONS AS INDICATED.

1.2 GROUNDING:

GROUNDING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE AND AS HEREINAFTER SPECIFIED AND/OR INDICATED ON THE DRAWINGS.

PROVIDE GROUND FOR SECONDARY SERVICE NEUTRAL, AND ALL RACEWAYS, DEVICES, AND UTILIZATION EQUIPMENT PERMANENTLY AND EFFECTIVELY. CONTINUITY OF RIGID STEEL RACEWAYS SHALL BE ENSURED BY DOUBLE LOCKNUTS. ALL GROUNDED NEUTRAL CONDUCTORS SHALL BE CONTINUOUSLY IDENTIFIED. ALL GROUNDING AND BONDING CONNECTIONS SHALL BE SOLDERLESS. GROUND FITTINGS AT WATER SYSTEM CONNECTIONS SHALL HAVE RIGID CLAMP JAWS.

PROVIDE INSULATED GROUNDING CONDUCTORS FOR FEEDERS AND BRANCH CIRCUIT WIRING AS CALLED FOR ON THE PLANS. PROVIDE GROUNDING BLOCKS, TERMINALS, ETC., FOR CONNECTION OF GROUNDING WIRES IN ALL DISTRIBUTION EQUIPMENT, OUTLETS, JUNCTION BOXES, AND UTILIZATION EQUIPMENT.

1.3 LIGHTING CONTROL CABINET

PROVIDE A CUSTOM LIGHTING CONTROL CABINET BY A SPECIALTY PANEL OR FABRICATOR, SUCH AS RETRO ELECTRIC CO. OR EL-TEX INDUSTRIES OR APPROVED EQUAL.

PROVIDE CUSTOM LIGHTING CONTROL CABINET HOUSING THE POWER DISTRIBUTION AND CONTROL EQUIPMENT. THE EQUIPMENT CABINET SHALL BE COMPLETELY INSTALLED AND PRE-WIRED BY THE FABRICATOR BEFORE SHIPMENT TO THE CONTRACTOR. THE LIGHTING CONTROL CABINET SHALL BE COMPLETE WITH ALL HINGES, HANDLES, PANELBOARDS, RECEPTACLE, TIME CLOCK, CONTACTOR, PHOTOCELLS, SUPPORTS, CHANNELS AND REQUIRED ACCESSORIES.

1.4 PANELBOARD  
PROVIDE SQUARE "D" TYPE NQOD PANELBOARD OR APPROVED EQUAL.

1.5 TIMECLOCK  
PROVIDE INTERMATIC 7-DAY TIMECLOCK OR APPROVED EQUAL.

1.6 LIGHTING CONTACTORS  
PROVIDE SQUARE "D" ELECTRICALLY OPERATED, MECHANICALLY HELD LIGHTING CONTACTOR OR APPROVED EQUAL.

1.7 PHOTOCELL  
PROVIDE OUTDOOR SEALED SOLID STATE PHOTOELECTRIC RELAY BY INTERMATIC OR APPROVED EQUAL.

END OF SECTION

PART 1 - GENERAL

1.1 GENERAL:

PROVIDE ALL LIGHTING FIXTURES COMPLETE AND READY FOR OPERATION. ALL FIXTURES SHALL BE UL LISTED WITH UL LISTED WIRING. FIXTURE TYPES SHALL BE AS SCHEDULED ON THE DRAWINGS.

PART 2 - PRODUCTS

2.1 LAMPS:

METAL HALIDE LAMPS SHALL BE PHOSPHOR COATED, AND FLUORESCENT LAMPS SHALL BE T-8 "WHITE" AS INDICATED. ALL FIXTURES SHALL BE PROVIDED WITH LAMPS. LAMPS SHALL BE MANUFACTURED BY GENERAL ELECTRIC, PHILLIPS, OR OSRAM-SYLVANIA. ALL LAMPS SHALL BE BY ONE MANUFACTURER.

2.2 BALLASTS:

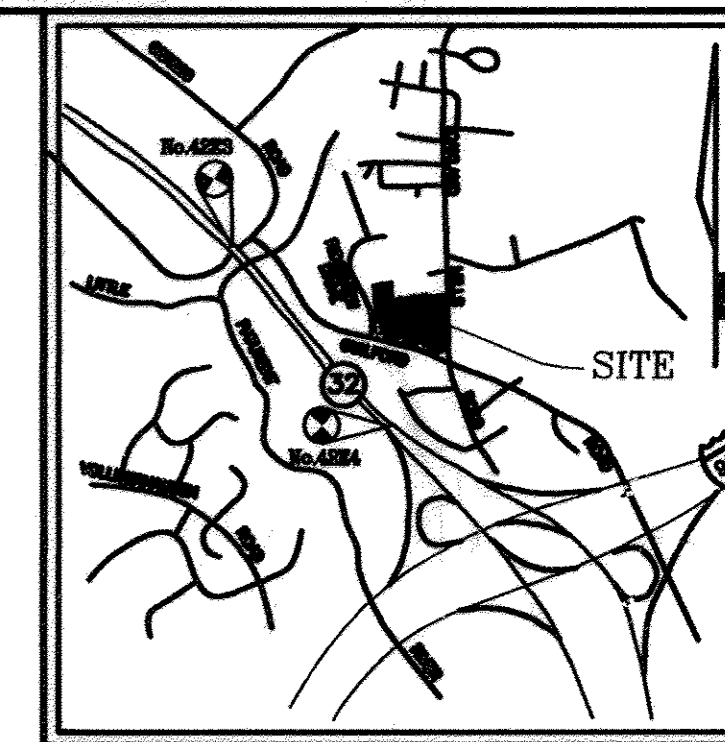
HID BALLASTS SHALL BE CONSTANT WATTAGE TYPE, HIGH POWER FACTOR. ALL BALLASTS FOR OUTDOOR USE SHALL BE OF THE LOW TEMPERATURE TYPE, SUITABLE FOR STARTING AT 0 DEGREES F.

PART 3 - EXECUTION

3.1 INSTALLATION AND COORDINATION:

CLEAN ALL INSTALLED FIXTURES AND REPLACE BURNED-OUT LAMPS AND NOISY BALLASTS BEFORE FINAL OWNER ACCEPTANCE. AIM ALL ADJUSTABLE FIXTURES AS DIRECTED BY THE ARCHITECT.

SECTION 16500  
LIGHTING



VICINITY MAP  
SCALE: 1"=2000'

Table with 3 columns: NO., REVISION, DATE. Contains revision history information.

SITE DEVELOPMENT PLAN  
ELECTRICAL SPECIFICATIONS  
FIRST BAPTIST CHURCH  
OF GUILFORD

TAX MAP 42 BLOCK 16 PARCEL A  
6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERS, INC. ENGINEERS • SURVEYORS • PLANNERS  
8407 MAIN STREET ELLICOTT CITY, MD 21043 TEL: 410.461.7666 FAX: 410.461.8951

DESIGN BY: RHY  
DRAWN BY: MAN/DZ  
CHECKED BY: RHY  
DATE: SEPTEMBER 2009  
SCALE: AS SHOWN  
W.D. NO.: 04-57  
19 SHEET OF 20

ATTORNEY

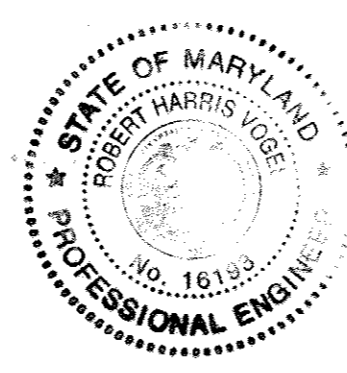
JAMES L. ROUSE  
2516 N. CHARLES STREET  
BALTIMORE, MARYLAND 21218  
(410) 366-6664

OWNER/PETITIONER

THE FIRST BAPTIST CHURCH OF GUILFORD  
7504 OAKLAND MILLS ROAD  
COLUMBIA, MARYLAND 21046

ARCHITECT AND PLANNER

SRR & ASSOCIATES, PC  
2605 BANISTER ROAD, SUITE # A-110  
BALTIMORE, MARYLAND 21215  
(410) 367-1857



AS-BUILT CERTIFICATION  
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE AS-BUILT PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOSING OF THE UNDERGROUND SANITARY FACILITY.  
16193 12/22/17  
ROBERT H. VOGEL, P.E. NO. DATE  
NO AS-BUILT INFORMATION THIS SHEET

Construction

BaySaver Separation Systems are installed as part of the stormwater treatment system. The BaySaver Separator Unit and the system inlet pipe are grouted into the primary manhole using standard storm drain connections.

Important Note: The pipes extending down from the separator unit interfere with compaction of the backfill material. For this reason, the area below the separator unit must be backfilled with flowable fill to 2" minimum stone.

Installation Instructions

- 1. Contact utility locator to mark underground utilities and to make certain it is safe to excavate.
2. Reference the BaySaver Standard Detail Sheet to determine the location of the BaySaver Separator System.

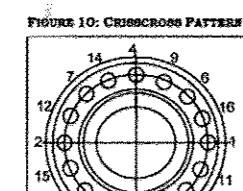


TABLE 6: APPROPRIATE TORQUE MEASUREMENTS. Table with columns for BaySaver Separator Unit Size (1/2K, 1K, 3K, 5K, 10K) and Torque (30 ft. lbs., 30 ft. lbs., 30 ft. lbs., 30 ft. lbs., 30 ft. lbs.).

TABLE 6: BAYSAVER SEPARATOR SYSTEM FOOTPRINT MEASUREMENTS. Table with columns for BaySaver Separator Unit Size, Footprint Width, and Footprint Length.

TABLE 7: BAYSAVER SEPARATOR SYSTEM CENTER LINE OFFSETS. Table with columns for BaySaver Separator Unit Size, Downstream Offset, and Center Line Offset.

Inspection and Maintenance

- 12. Check the level of both the primary and storage manhole bases and correct level if needed before adding additional risers.
13. Add water tight seal (either mastic rope or rubber gasket) to the base of each manhole.

Inspection and Cleaning Cycle: Periodic inspection is necessary to determine the need for and frequency of maintenance. You should begin inspecting as soon as construction is complete.

Measuring Sediment Depth: You can determine the sediment depth by lowering a pole into the manhole until it hits the sediment and measuring the distance from the bottom of the pole to the water line mark on the pole.

- 14. Set riser section on the base of each structure.
15. Add additional riser sections as previously described, until structures reach grade.
16. Be sure to install water tight seals.

Maintenance Instructions

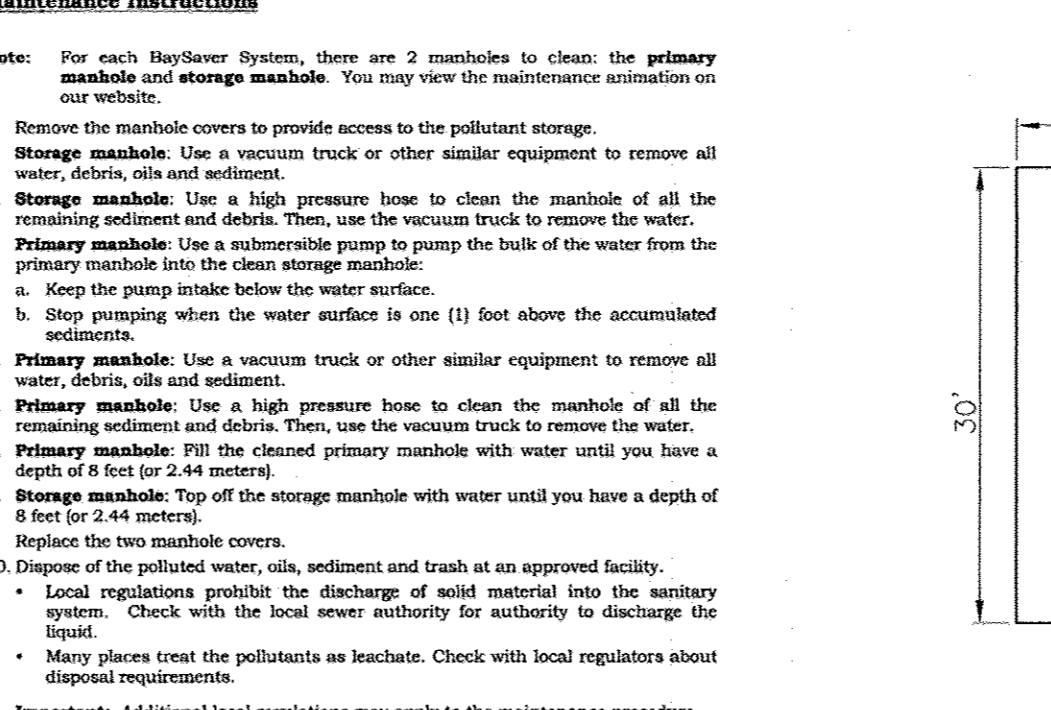
- Note: For each BaySaver System, there are 2 manholes to clean: the primary manhole and storage manhole.
1. Remove the manhole covers to provide access to the pollutant storage.

Important: Additional local regulations may apply to the maintenance procedure. Check with local regulators who have disposal requirements.

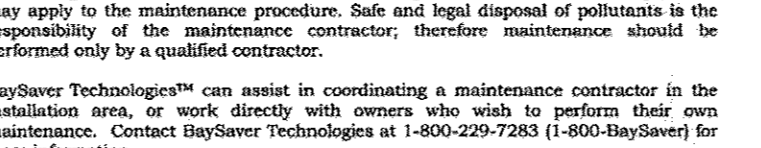
Summary: You can access the pollutants through the 2 manhole covers. You can see the entire floor/sump area of each manhole from the surface.

- 17. Align the inlet and outlet holes in the storage manhole such that they will be 90 degrees on center to the separator unit.
18. Once the inlet and outlet for the primary and storage manholes are properly aligned back fill to the bottom of the inlet and outlet of the storage manhole.

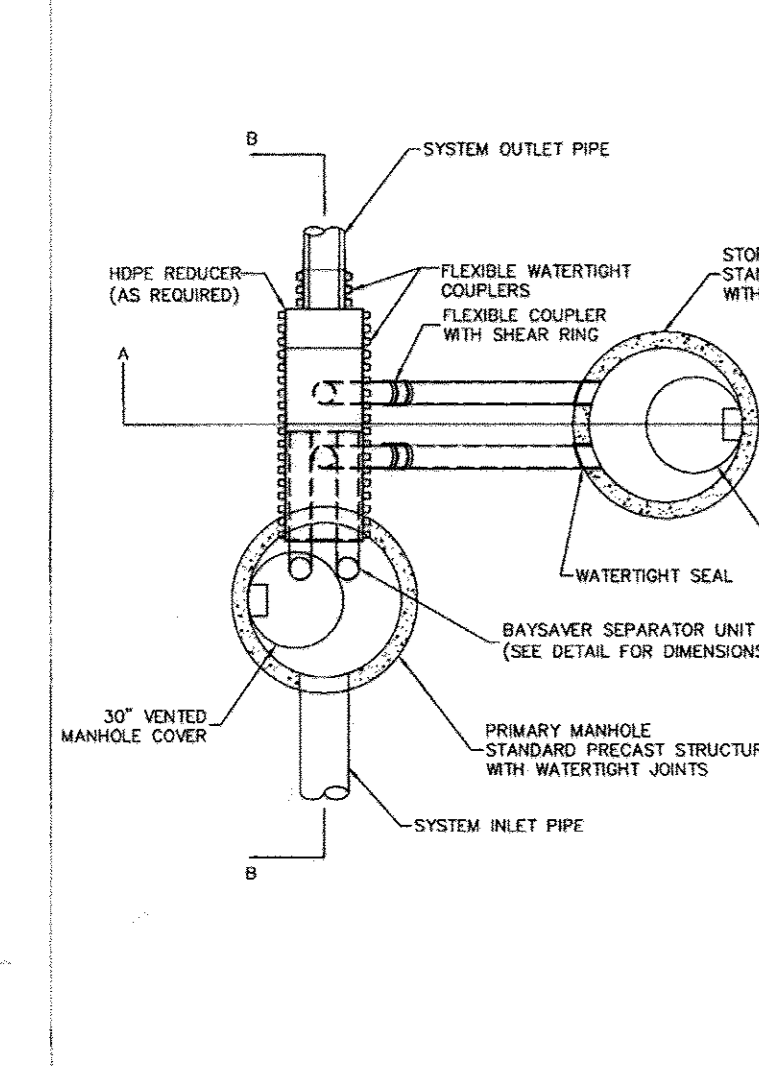
Rev TRENCH - PLAN VIEW NOT TO SCALE



Rev TRENCH - SECTION NOT TO SCALE

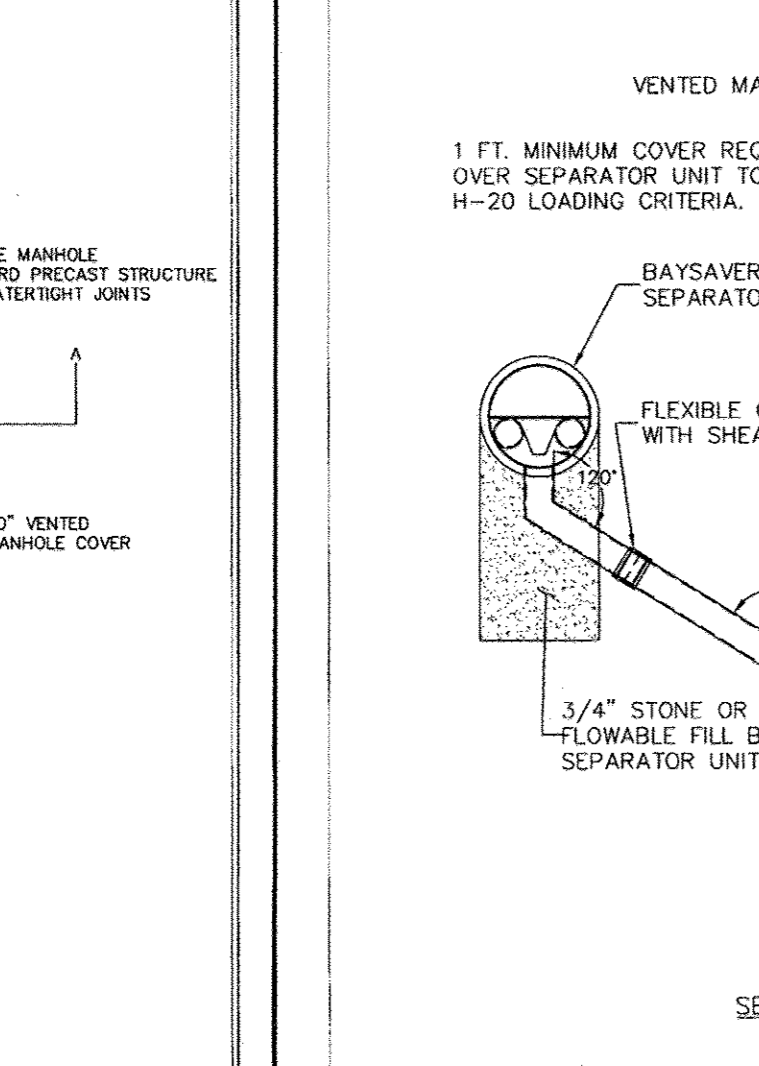


BAYSAVER SEPARATION SYSTEMS PROTECTED BY U.S. PATENT #5746911



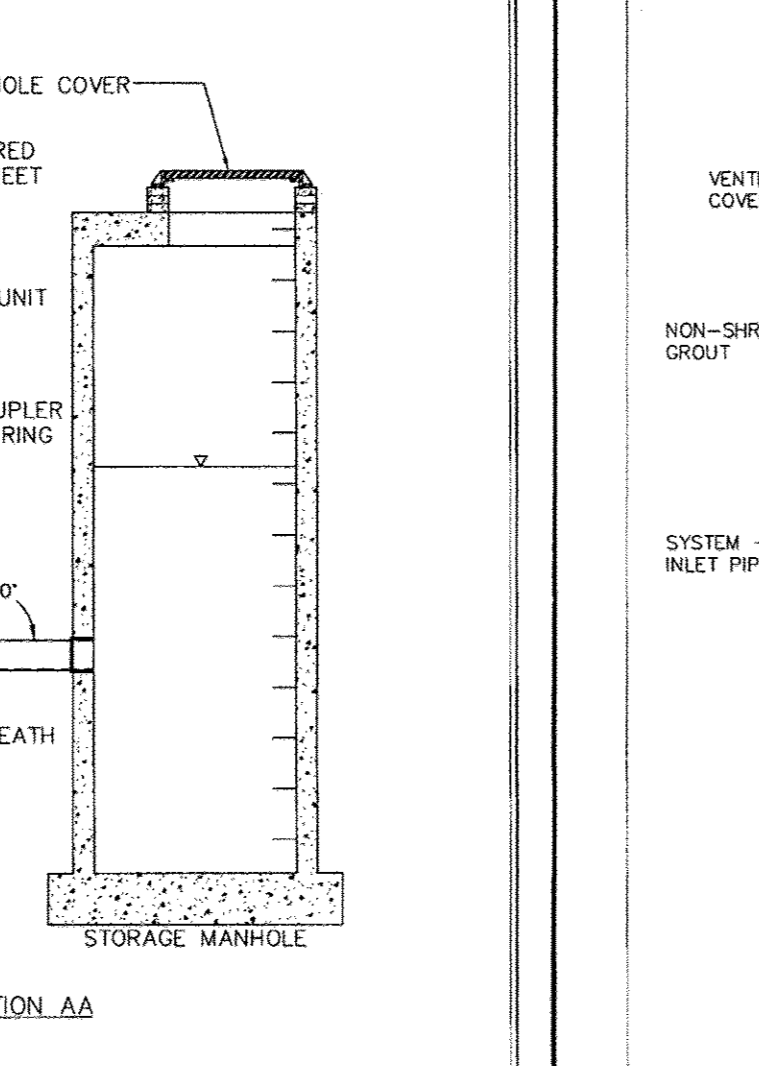
BAYSAYER SYSTEM PLAN VIEW. DESIGNED: TEP, DRAWN: PTT, CHECKED: ATM, DATE: 5/7/03, SCALE: N.T.S., SHEET: 1 OF 3.

BAYSAVER SEPARATION SYSTEMS PROTECTED BY U.S. PATENT #5746911



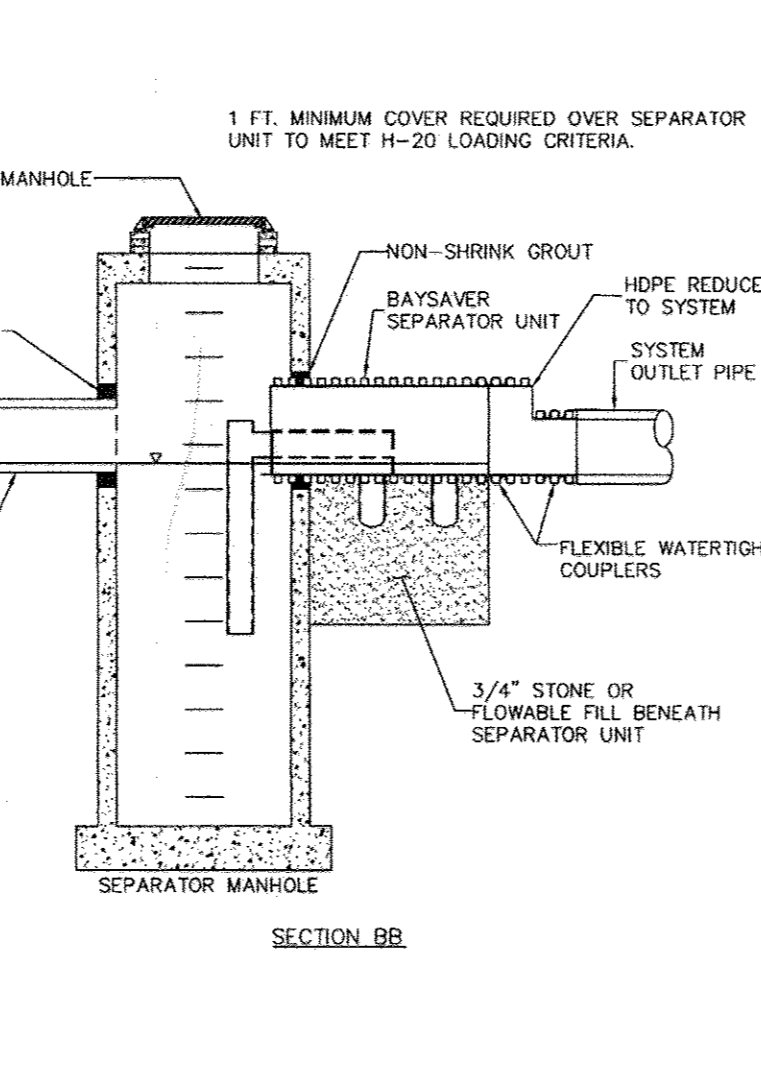
BAYSAYER SYSTEM SECTION A-A. DESIGNED: TEP, DRAWN: PTT, CHECKED: ATM, DATE: 5/7/03, SCALE: N.T.S., SHEET: 2 OF 3.

BAYSAVER SEPARATION SYSTEMS PROTECTED BY U.S. PATENT #5746911



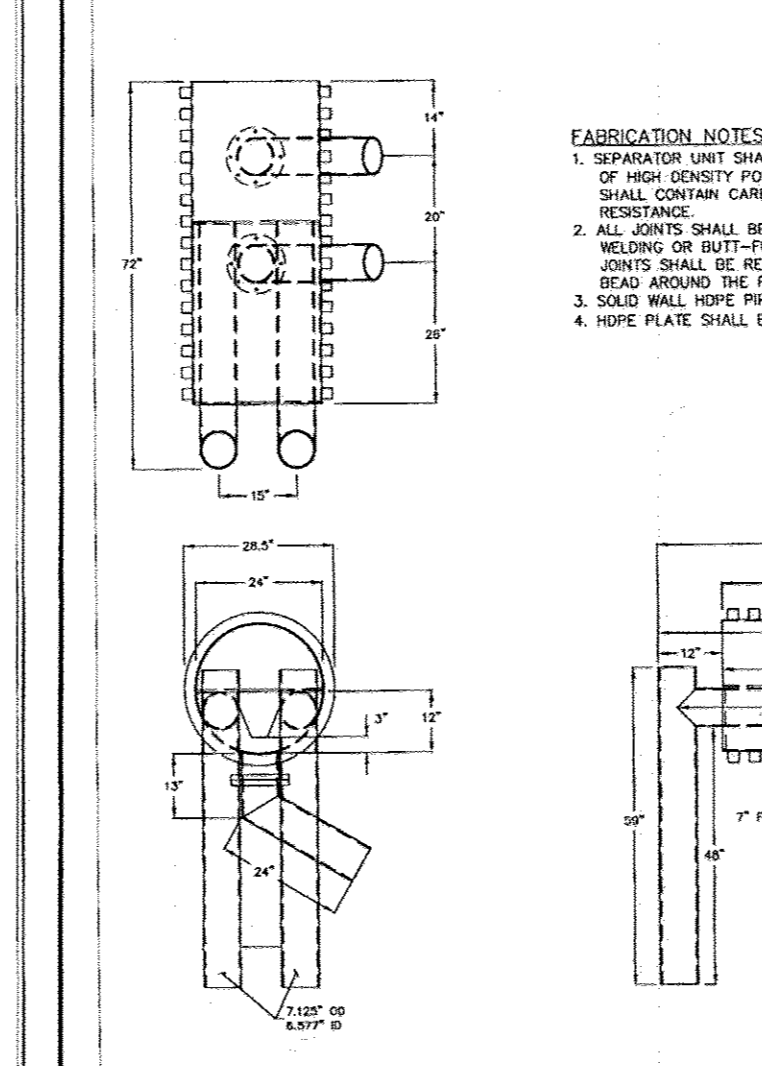
BAYSAYER SYSTEM SECTION B-B. DESIGNED: TEP, DRAWN: PTT, CHECKED: ATM, DATE: 5/7/03, SCALE: N.T.S., SHEET: 3 OF 3.

BAYSAVER SEPARATION SYSTEMS PROTECTED BY U.S. PATENT #5746911



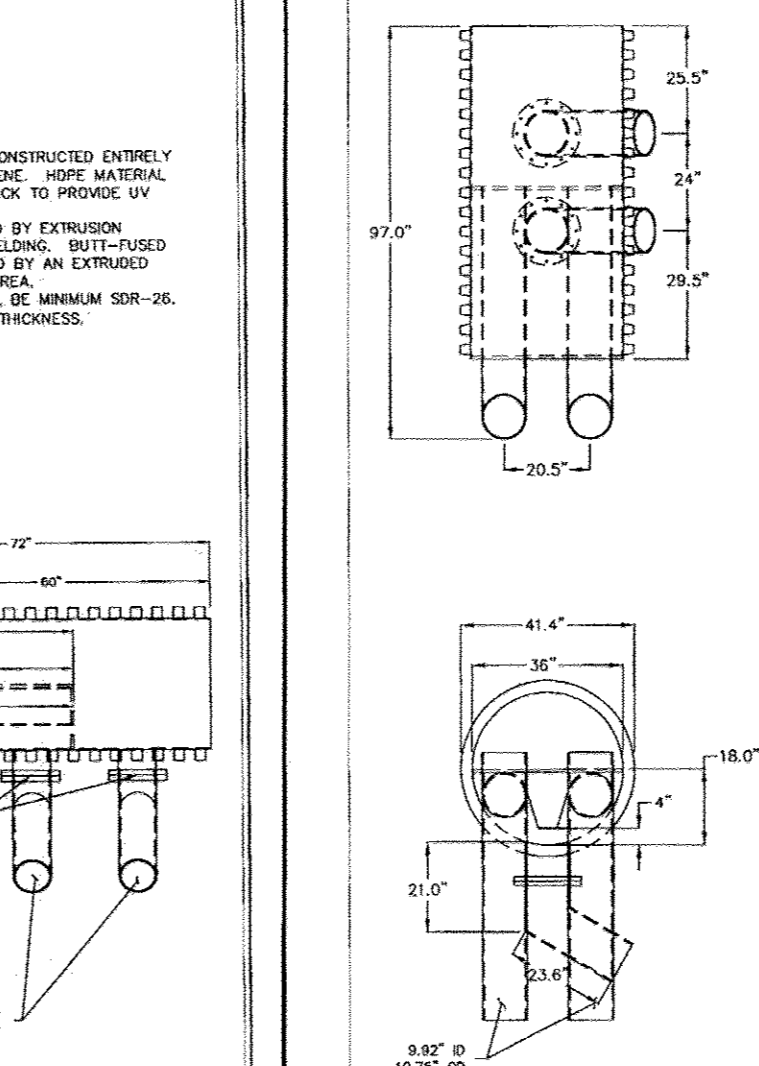
1K SEPARATOR UNIT. DESIGNED: TEP, DRAWN: PTT, CHECKED: ATM, DATE: 5/7/03, SCALE: N.T.S., SHEET: 1 OF 2.

BAYSAVER SEPARATION SYSTEMS PROTECTED BY U.S. PATENT #5746911



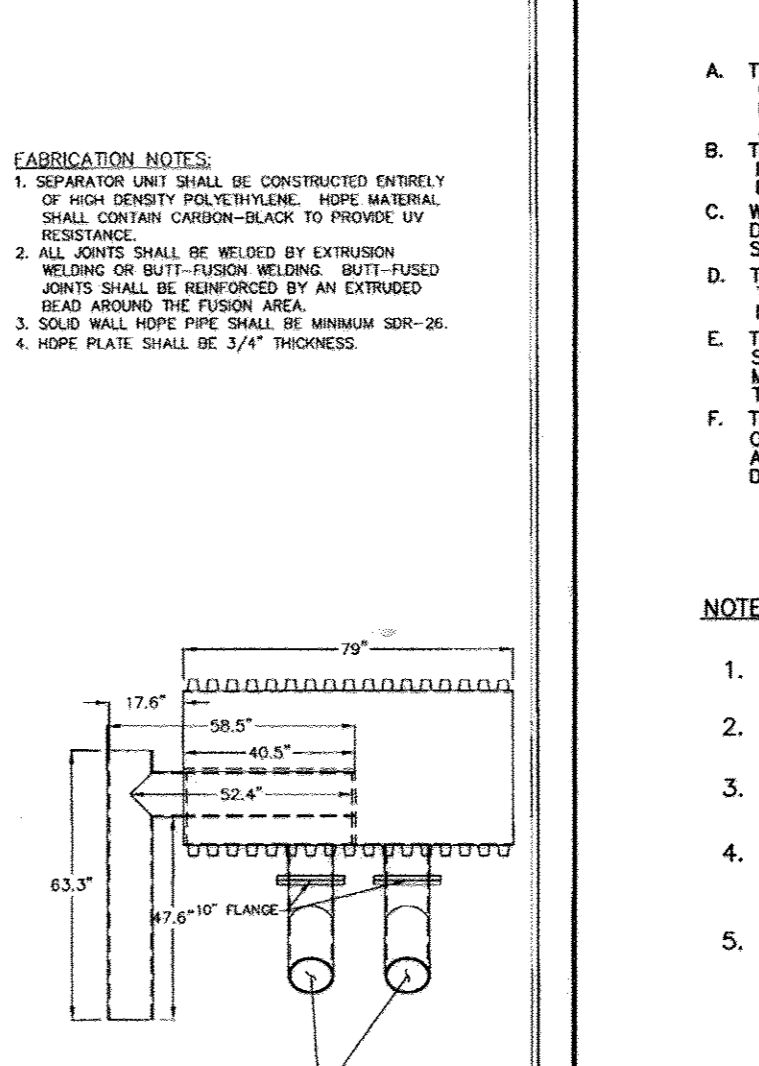
3K SEPARATOR UNIT. DESIGNED: TEP, DRAWN: PTT, CHECKED: ATM, DATE: 5/7/03, SCALE: N.T.S., SHEET: 1 OF 2.

BAYSAVER SEPARATION SYSTEMS PROTECTED BY U.S. PATENT #5746911



UNDERGROUND SWMF TYPICAL SECTION. SCALE: 1"=5'.

BAYSAVER SEPARATION SYSTEMS PROTECTED BY U.S. PATENT #5746911



UNDERGROUND STORMWATER MANAGEMENT FACILITY. SCALE: 1"=20'.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED UNDERGROUND FACILITIES

- A. THE UNDERGROUND STORMWATER MANAGEMENT FACILITY IS PRIVATELY OWNED AND IT SHALL BE THE RESPONSIBILITY OF THE OWNER TO PERIODICALLY INSPECT AND CLEAN THE FACILITY TO MAINTAIN ITS OPERATION AND FUNCTION.
B. THE UNDERGROUND STORMWATER MANAGEMENT FACILITY SHALL BE INSPECTED YEARLY AT A MINIMUM AND AFTER ESPECIALLY SEVERE STORM EVENTS.

AS-BUILT CERTIFICATION

NOTE: CONTRACTOR SHALL ENSURE THAT THE S.W.M. FACILITY IS WATER TIGHT.
1. ALL PIPE CONNECTIONS AT STRUCTURES SHALL BE CEMENTED TO ENSURE WATER TIGHT CONNECTION.

OWNER/DEVELOPER: FIRST BAPTIST CHURCH OF GUILFORD, 7504 OAKLAND MILLS RD, COLUMBIA, MD 21046, 410-792-7096.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING. Chief, Development Engineering Division: 10/30/07. Chief, Division of Land Development: 11/1/07.

REMOVED FOR HOWARD S.C.D. & MEETS TECHNICAL REQUIREMENTS. BY THE DEVELOPER: 10-12-07.

BY THE ENGINEER: 10/17/07.

NOTE: DEBRIS IS TO BE KEPT OUT OF STORMWATER MANAGEMENT FACILITIES DURING AND AFTER CONSTRUCTION.

DESIGN BY: RHV, DRAWN BY: MAN/DZ, CHECKED BY: RHV, DATE: SEPTEMBER 2005, SCALE: AS SHOWN, W.O. NO.: 04-67.