

GENERAL CONSTRUCTION NOTES

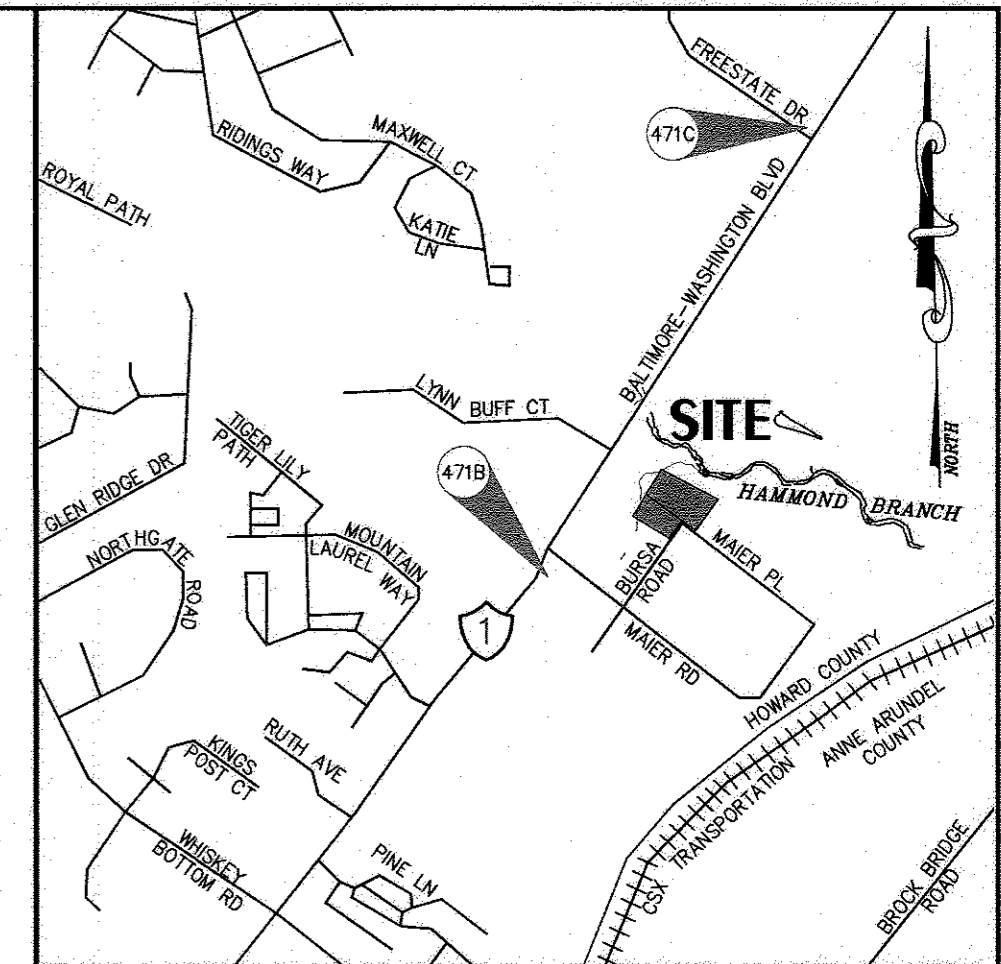
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
- ALL SPOT ELEVATIONS ALONG CURB LINE ARE TO THE BOTTOM OF CURB UNLESS OTHERWISE NOTED.
- THE EXISTING TOPOGRAPHY IS TAKEN FROM AERIAL SURVEY WITH TWO FOOT CONTOUR INTERVALS PREPARED BY WINGS AERIAL MAPPING CO., INC. IN JUNE, 2006 AND SUPPLEMENTED BY KCW FIELD RUN TOPOGRAPHY.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENTS #471C AND #471B WERE USED FOR THIS PROJECT.
- WATER IS PUBLIC. HOWARD COUNTY CONTRACT NO. 24-4047-D. DRAINAGE AREA: LITTLE PATUXENT.
- SEWER IS PUBLIC. HOWARD COUNTY CONTRACT NO. 24-4047-D. DRAINAGE AREA: LITTLE PATUXENT.
- EXISTING UTILITIES SHOWN ON THESE PLANS ARE BASED UPON OBSERVABLE FIELD INFORMATION, PREVIOUS CONSTRUCTION DRAWINGS FOR THE SITE, THE BEST AVAILABLE INFORMATION FROM THE UTILITY COMPANIES AND HOWARD COUNTY, THE DEVELOPER AND ENGINEER DO NOT WARRANT OR GUARANTEE THE COMPLETENESS OR THE CORRECTNESS OF THIS EXISTING UTILITY INFORMATION. THE CONTRACTOR SHALL VERIFY ALL SUCH INFORMATION TO HIS OWN SATISFACTION.
- CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO SUPPORT AND PROTECT ALL EXISTING UTILITIES WHEN WORKING ADJACENT TO OR CROSSING EXISTING UTILITIES. ANY DAMAGE TO EXISTING FACILITIES SHALL BE REPAIRED OR REPLACED AT CONTRACTOR'S EXPENSE.
- "FULL TRENCH COMPACTION" TO 95% OF AASHTO T-180 DENSITY SHALL BE USED FOR ALL UTILITY CONSTRUCTION.
- CONTRACTOR SHALL ADHERE TO ALL FEDERAL, STATE AND COUNTY HEALTH, SAFETY, AND ENVIRONMENTAL REGULATIONS.
- ALL EXCESS EXCAVATION AND OTHER UNSUITABLE MATERIAL SHALL BE REMOVED FROM THIS SITE TO AN AREA WITH AN APPROVED SEDIMENT CONTROL PLAN AND PERMIT.
- SIGN POST: 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 A 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.

VICTORY TEMPLE - LAUREL

SITE DEVELOPMENT PLAN

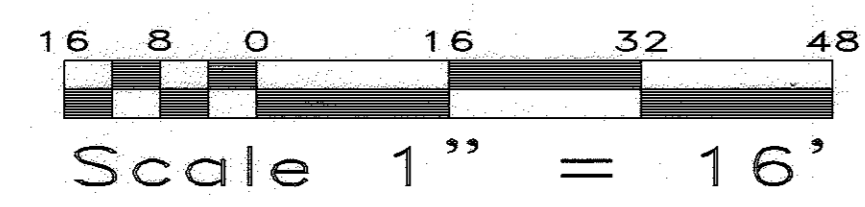
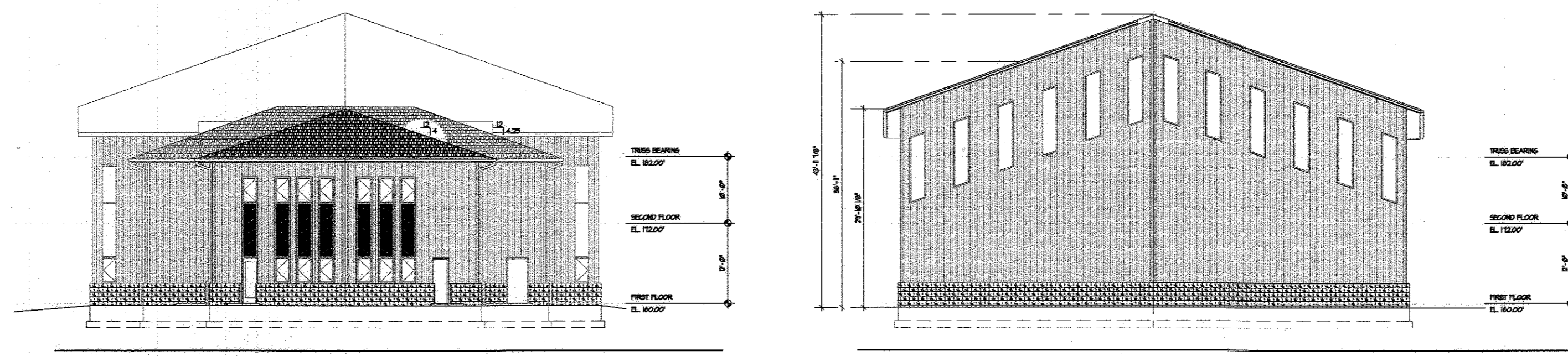
SDP - 12 - 007

HOWARD COUNTY, MARYLAND



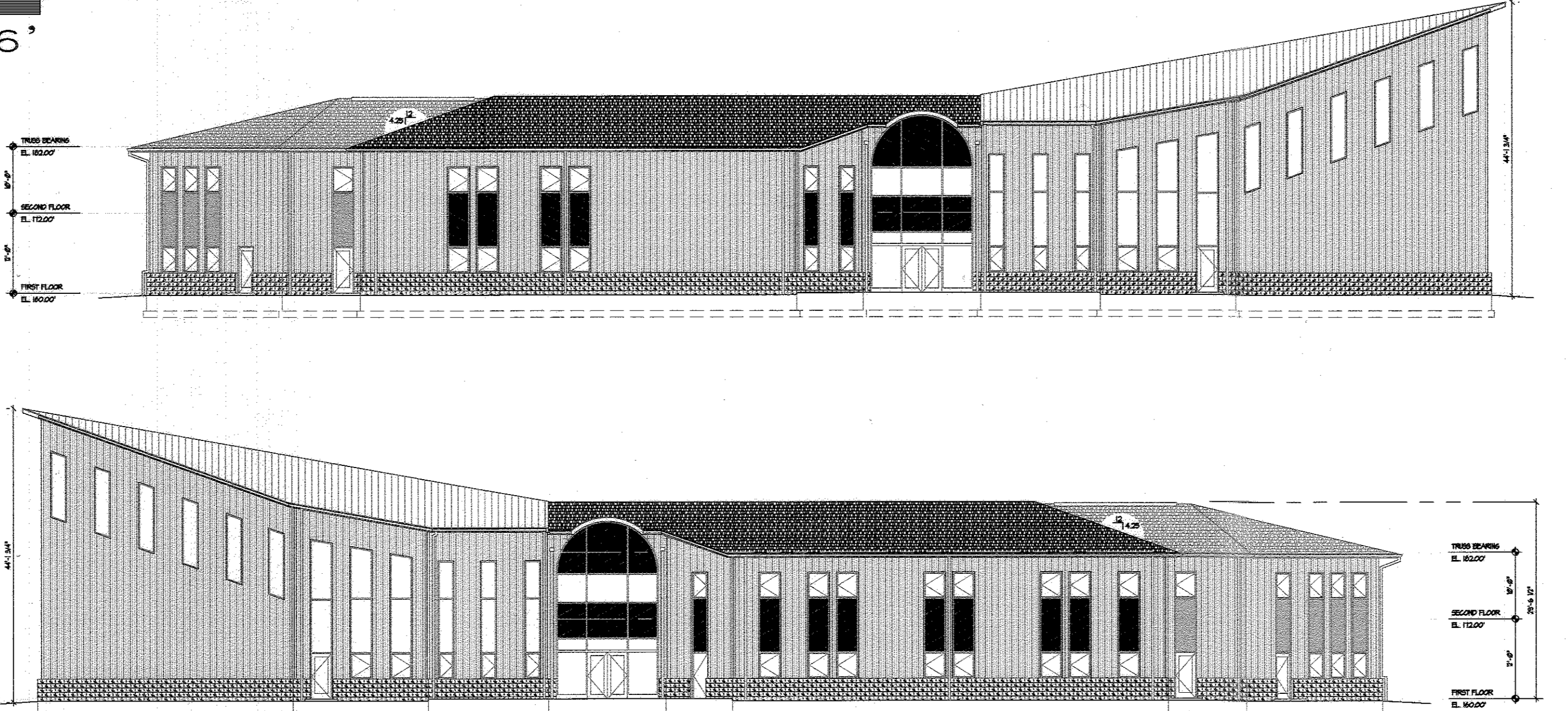
BENCHMARKS
 HOWARD CO. HUB NO. 471C, EL. 189.05
 N 532036.885 E 1362819.058
 A BRASS DISC (1" TO 2" BELOW TERRAIN SURFACE) SET ON TOP OF CONCRETE CYLINDRIC BASE.
 HOWARD CO. HUB NO. 471B, EL. 180.71
 N 529701.579 E 1361469.758
 3/4" IRON ROD WITH STAMPED ALUMINUM CAP.

VICINITY MAP SCALE: 1"=1000'
GENERAL NOTES ADC 5169-H1, J1



SITE ANALYSIS DATA SHEET

A. TOTAL SITE AREA:	1.9434 ac.	84,655 S.F.
B. TOTAL WETLANDS AREA:	0.1707 ac.	7,437 S.F.
C. TOTAL FLOODPLAIN AREA:	0.4552 ac.	19,828 S.F.
D. TOTAL FORESTED AREA:	1.5611 ac.	68,000 S.F.
E. TOTAL STEEP SLOPES (> 15%):	0.3903 ac.	17,000 S.F.
F. TOTAL STREAM BUFFER AREA:	0.2571 ac.	11,200 S.F.
G. LIMIT OF DISTURBED AREA:	1.3200 ac.	57,500 S.F.
LOD WITHIN PAR. A (PLAT #16329):	0.86 ac.	37,500 S.F.
LOD WITHIN PAR. B-6 (PLAT #14092):	0.46 ac.	20,000 S.F.
H. PROPOSED USES FOR SITE AND STRUCTURES:	CHURCH, PERMITTED BY RIGHT PER ZONING REGULATION SECTION 127.2.B.22.	
I. OPEN SPACE ON SITE:	N/A	
J. PROPOSED IMPERVIOUS AREA:	0.9642 ac. = 42,000 S.F., INCLUDING	
PERVIOUS PAVEMENT AREA:	0.1175 ac. = 5,120 S.F.	
IMPERVIOUS PAVEMENT AREA:	0.6122 ac. = 26,666 S.F.	
BUILDING AREA:	0.2345 ac. = 10,214 S.F. (AFTER PHASE II)	
	0.1106 ac. = 5,168 S.F. (AFTER PHASE I) $\Delta + 658$ S.F. (TEMP. TRAILER) = $= 5,726$ S.F. Δ	
K. BUILDING COVERAGE OF SITE:	0.2345 ac. = 10,214 S.F. (12.1%)	
L. PRESENT ZONING DESIGNATION:	CE-CL1, CORRIDOR EMPLOYMENT DISTRICT - CONTINUING LIGHT INDUSTRIAL OVERLAY DISTRICT	
M. GROSS FLOOR AREA:	10,214 (1st FLR) + 6,030 (2nd FLR) = 16,244 S.F. (TWO STORY)	
SANCTUARY AREA:	4,008 S.F.	
N. PROPOSED NUMBER OF SEATS:	200	
O. NUMBER OF PARKING SPACES REQUIRED:	200/3=67 SPACES (1.0 SPACES PER 3 SEATS)	
NUMBER OF PARKING SPACES PROVIDED:	69 SPACES (ON SITE), INCLUDING 4 H/C SPACES	



- LIST OF ADDITIONAL DRAWINGS**
- 3A OF 19 SITE DEVELOPMENT PLAN - PHASE II Δ
 - 6A OF 19 SEDIMENT CONTROL DETAILS I Δ
 - 17A OF 19 LANDSCAPE/HARDSCAPE PLAN - PHASE II Δ
- LIST OF DRAWINGS**
- 1 OF 19 TITLE SHEET Δ
 - 2 OF 19 EXISTING CONDITIONS PLAN Δ
 - 3 OF 19 SITE DEVELOPMENT PLAN - PHASE I Δ
 - 4 OF 19 GRADING PLAN Δ
 - 5 OF 19 SEDIMENT CONTROL PLAN Δ
 - 6 OF 19 SEDIMENT CONTROL DETAILS I Δ
 - 7 OF 19 SWM ESD PLAN/DEVELOPED CONDITIONS DA MAP Δ
 - 8 OF 19 SWM MICRO-BIORETENTION PLAN Δ
 - 9 OF 19 SWM RAINWATER HARVESTING SYSTEM PLAN Δ
 - 10 OF 19 SWM PERVIOUS PAVEMENT I Δ
 - 11 OF 19 SWM PERVIOUS PAVEMENT II Δ
 - 12 OF 19 SWM SANDFILTERS PLAN Δ
 - 13 OF 19 CONSTRUCTION PROFILES I Δ
 - 14 OF 19 CONSTRUCTION PROFILES II Δ
 - 15 OF 19 UTILITY DETAILS Δ
 - 16 OF 19 CONSTRUCTION DETAILS Δ
 - 17 OF 19 LANDSCAPE/HARDSCAPE PLAN - PHASE I Δ
 - 18 OF 19 RETAINING WALL PLAN, ELEVATION AND SECTIONS Δ
 - 19 OF 19 RETAINING WALL SPECIFICATIONS AND DETAILS Δ

- 27. PHASE II NOTE:** AFTER 05-01-2015 AN ALTERNATIVE COMPLIANCE REQUEST WILL HAVE TO BE SUBMITTED, REVIEWED AND APPROVED TO REACTIVATE THE SDP IN ORDER TO OBTAIN BUILDING PERMITS FOR PHASE II
- EXISTING 50' STRUCTURE AND USE SETBACKS PER PLATS #14092 AND # 16329: THESE SETBACKS WILL BE ELIMINATED DURING SITE DEVELOPMENT PLAN VIA NEW PLAT F-13-024 (PLAT #22114).
 - ADEQUATE PUBLIC FACILITIES ORDINANCE AND TRAFFIC STUDY: THE APF ROAD TEST AND TRAFFIC STUDY ARE NOT REQUIRED FOR THIS PROJECT, BECAUSE THERE WILL BE NO PEAK HOUR TRAFFIC BASED ON THE USE OF THE PROPERTY AS CHURCH. THERE WILL BE NO DAYCARE PROGRAM AT THE CHURCH.
 - LANDSCAPE PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL.
 - FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$4,470.00 FOR 12 SHADE TREES, 2 EVERGREEN TREES AND 19 SHRUBS (SEE SHEET 17 OF 19).
 - ALL OUTDOOR LIGHTING SHALL COMPLY WITH THE REQUIREMENTS OF ZONING SECTION 134.
 - FINAL BUILDING DESIGN WILL BE SUBJECT TO RELEVANT BUILDING AND FIRE CODES IN EFFECT AT THE TIME OF BUILDING PERMIT APPLICATION. BUILDING DESIGN AND ARCHITECTURAL DETAILS WILL BE CONSISTENT WITH THE GENERAL INFORMATION PROVIDED HEREIN. ANY SUBSTANTIVE BUILDING DESIGN OR ARCHITECTURAL DETAILS PROPOSED THAT ARE NOT CONSISTENT WITH THESE GENERAL FEATURES WILL BE SUBMITTED TO HOWARD COUNTY FOR ADMINISTRATIVE, ARCHITECTURAL REVIEW AND APPROVAL PRIOR TO BUILDING PERMIT APPLICATION.
 - A KNOX BOX HAS BEEN LOCATED ON THE FRONT OF THE BUILDING. THE BOX SHALL BE ELECTRONICALLY SUPERVISED TO NOTIFY THE OWNER THAT IT IS BEING ACCESSSED (INTEGRATED WITH THE FIRE ALARM SYSTEM).
 - PARKING NOTES:
 - THERE WILL BE NO DAYCARE PROGRAM AT THE CHURCH.
 - SERVICES THAT ROUTINELY REQUIRE SEATING BEYOND THE AMOUNT ESTIMATED FOR THE PARKING CALCULATIONS SHALL FIND ADDITIONAL MEANS FOR OFF-SITE PARKING THROUGH PARKING AGREEMENTS OR AMENDMENTS TO THIS SDP.
 - TEMPORARY TRAILER NOTES:
 - THE USE FOR THE TEMPORARY TRAILER IS OFFICE.
 - THE TRAILER IS TEMPORARY AND SHALL BE REMOVED FROM THE SITE WHEN PHASE II CONSTRUCTION BEGINS.
 - FOR TEMP TRAILER FLOOR PLAN AND ELEVATIONS SEE SHEET 14 OF 19.
 - FOR TEMP TRAILER LANDSCAPING SEE SHEET 17 OF 19.

PURPOSE OF REVISED SITE DEVELOPMENT PLAN:

- TO SHOW THAT THE PROJECT WILL BE BUILT IN TWO PHASES
- UPDATE SEDIMENT CONTROL PLAN TO 2011 MDE ESC SPECS.

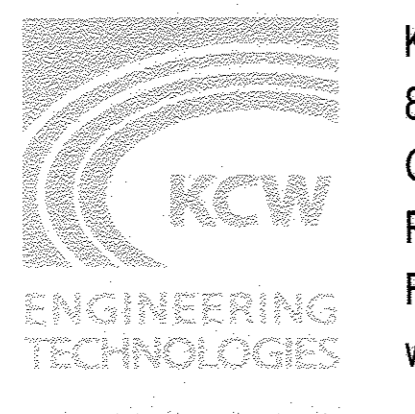
PURPOSE OF REVISED SDP:

- TO SHOW TEMP TRAILER FOR PH. I
- TO REVISE PLANT LIST ON LANDSCAPE PLANS WITH DEER RESISTANT PLANTS
- TO ADD PHASE II NOTE

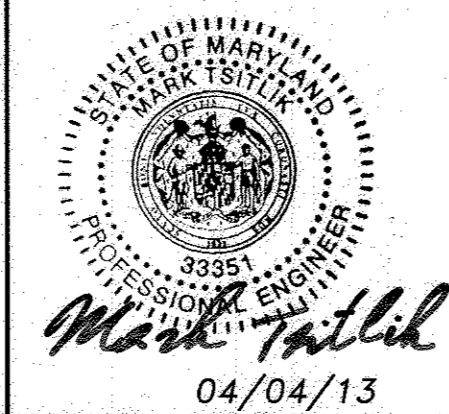
ADDRESS CHART			
Parcel #	Street Address	Section/Area	Parcel #
540	9100 BURSA ROAD, LAUREL, MD 20723		
PERMIT INFORMATION CHART			
Subdivision Name	Grid #	Zoning	Section/Area
VICTORY TEMPLE - LAUREL	23	CE-CL1	818 - A
Plot #	Grid #	Election District	Parcel #
23	23	6th	6069.02
Map Code	W - C-04	Sewer Code:	S - 7100400

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division: *4/28/13*
 Chief, Division of Land Development: *4/30/13*
 Director: *5/1/13*



KCW Engineering Technologies, Inc.
 810 Landmark Drive, Suite 215
 Glen Burnie, MD 21061
 Phone: 410.768.7700
 Fax: 410.768.0200
 www.kcw-et.com



Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 33351. Expiration Date 06-30-2018.

REVISIONS

NO	DATE	DESCRIPTION
1	03-06-14	SHOW TWO-PHASE CONSTRUCTION
2	05-05-17	SHOW TEMP TRAILER FOR PHASE I, ADD PHASE II NOTE

OWNER:
 THE REDEEMED CHRISTIAN CHURCH OF GOD, INC.
 (VICTORY TEMPLE) LAUREL, MARYLAND
 13701 OLD ANNAPOLIS ROAD
 BOWIE, MD 20720
 Attn: Margaret Adeyokunnu, Pastor
 Tele: (301) 352-0707
 Fax: (301) 352-3339

OWNER'S REPRESENTATIVE/ DEVELOPER:
 TLI DESIGNGROUP INC.
 3308 DORCHESTER ROAD
 BALTIMORE, MD 21215
 Attn: Taiwo Iluyomade, President
 Toll Free/Fax/Voice mail:
 (1-866) 616-1497
 Mobile: (443) 831-6703

KCW J.O.: 2080018
 SCALE: AS SHOWN
 DESIGNED: MT
 DRAWN: MT
 CHECKED: KCA
 DATE: APRIL 4, 2013
 DRAWING NO.
1 OF 19

TITLE SHEET

VICTORY TEMPLE - LAUREL

WORSHIP CENTER

9100 BURSA ROAD

SDP-12-007
 TAX MAP 47, GRID 23
 PARCEL 540 (PARCEL A, PLAT # 22114)

W&S CONTRACT No. 24-4047-D
 ZONING: CE-CL1
 ELECTION DISTRICT - 6
 HOWARD COUNTY, MARYLAND

SDP - 12 - 007



LEGEND

EXISTING CONTOURS	---144---	EX. PUBLIC STORMWATER MANAGEMENT NATURAL CONSERVATION CREDIT EASEMENT	
PROPOSED CONTOURS	---164---	PUBLIC 100-YR FLOODPLAIN, DRAINAGE AND UTILITY EASEMENT	
PROPERTY LINE	---	LIMIT OF WETLANDS	
LIMIT OF DISTURBANCE	---L.O.D.---	EX. PUBLIC FOREST CONSERVATION EASEMENT	
WETLANDS	---W---	15% ≤ SLOPE ≤ 24.99%	
EX. 25' WETLAND BUFFER	---WB---	25% ≤ SLOPE	
100 YEAR FLOODPLAIN DRAINAGE & UTILITY EASEMENT	---FP---	EX. TREE (DECIDUOUS)	
STREAM LINE	---	EXISTING WOODS	
SOILS LINE	---BcC3 D4e2---	EX. FH	
EX. FOREST CONSERVATION EASEMENT	---FCE---	EX. GAS VALVE	
50' STREAM BUFFER	---SB---	EX. STREET LIGHT	
		EX. STORM DRAIN INLET	
		EX. CLEANOUT	
		EX. SIGN	
		EX. SANITARY SEWER MANHOLE	
		EX. STORM DRAIN MANHOLE	
		EX. UTILITY POLE	
		EX. WATER METER	
		EX. ELECTRICAL JUNCTION BOX	
		EX. TELEPHONE	
		EX. WATER VALVE	

12/18/11
FOREST CONSERVATION WORKSHEET
 VERSION 1.0
 (Enter in Yellow Cells)

NET TRACT AREA:

A. Total tract area.....	0.46
B. Area within 100 year floodplain.....	0.00
C. Area to remain in agricultural production.....	0.00
D. Net tract area.....	0.46

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. Afforestation Threshold..... 15% x D = 0.07
 F. Conservation Threshold..... 20% x D = 0.09

EXISTING FOREST COVER:

G. Existing forest cover (excluding floodplain).....	0.00
H. Area of forest above afforestation threshold.....	0.00
I. Area of forest above conservation threshold.....	0.00

BREAK EVEN POINT:

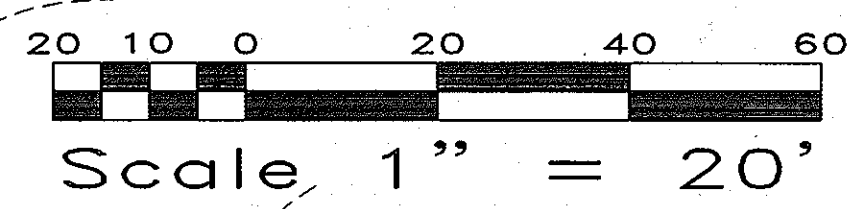
J. Forest retention above threshold with no mitigation.....	0.00
K. Clearing permitted without mitigation.....	0.00

PROPOSED FOREST CLEARING:

L. Total area of forest to be cleared.....	0.00
M. Total area of forest to be retained.....	0.00

PLANTING REQUIREMENTS:

N. Reforestation for clearing above conservation threshold.....	0.00	1.0	1.0
P. Reforestation for clearing below conservation threshold.....	0.00		
Q. Credit for retention above conservation threshold.....	0.00		
R. Total reforestation required.....	0.00		
S. Total afforestation required.....	0.07	1.0	1.0
T. Total reforestation and afforestation required.....	0.07		



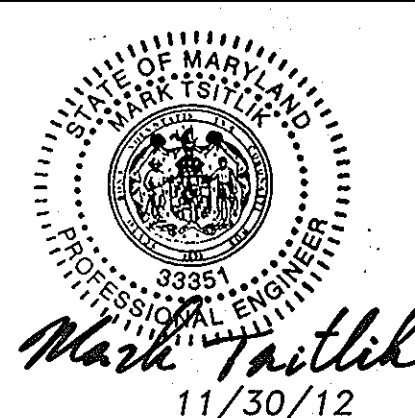
APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature] 4/23/13
 Chief, Development Engineering Division
 Date

[Signature] 4/30/13
 Chief, Division of Land Development
 Date

[Signature] 5/1/13
 Director
 Date

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Professional Certification.
 I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
 License No. 33351.
 Expiration Date 06-30-2014.

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 (1-866) 616-1497
 Mobile: (443) 831-6703

KCW J.O.: 2080018
 SCALE: 1" = 20'
 DESIGNED: MT
 DRAWN: MT
 CHECKED: KCA
 DATE: NOV, 30, 2012
 DRAWING NO.
2 OF 19

EXISTING CONDITIONS PLAN

VICTORY TEMPLE - LAUREL
WORSHIP CENTER
 9100 BURSA ROAD

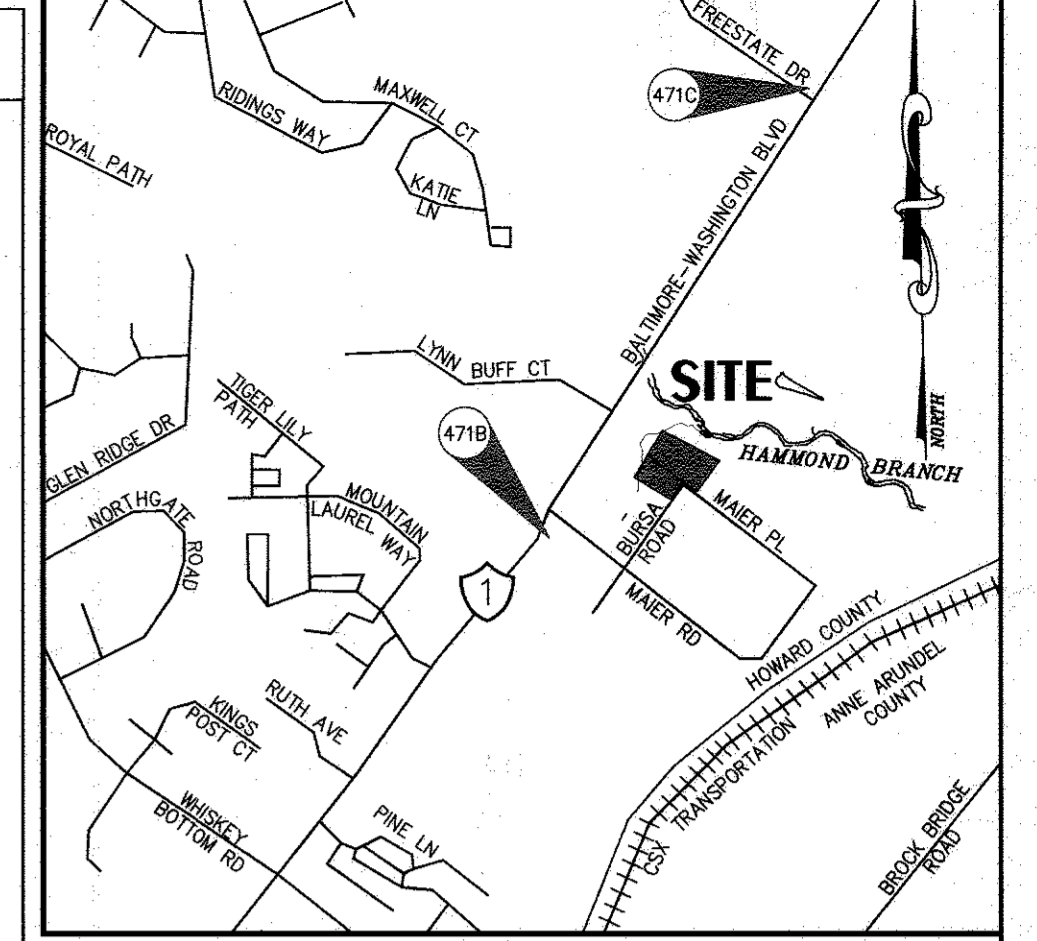
SDP-12-007
 TAX MAP 47, GRID 23
 PARCEL 540 (PARCEL A, PLAT # 22114)

W&S CONTRACT No. 24-4047-D
 ZONING: CE-CL1
 ELECTION DISTRICT - 6
 HOWARD COUNTY, MARYLAND



LEGEND

- EXISTING CONTOURS --- 144 ---
- PROPOSED CONTOURS --- 164 ---
- PROPERTY LINE - - - - -
- LIMIT OF DISTURBANCE - L.O.D. - - - - -
- WETLANDS W
- EX. 25' WETLAND BUFFER WB
- 100 YEAR FLOODPLAIN DRAINAGE & UTILITY EASEMENT FP
- STREAM LINE - - - - -
- SOILS LINE - - - - -
- EX. FOREST CONSERVATION EASEMENT FCE
- 50' STREAM BUFFER SB
- ROOF DRAIN RD
- PROP. GUARDRAIL - - - - -
- PROP. FENCE - X - - - - -
- EX. PUBLIC STORMWATER MANAGEMENT NATURAL CONSERVATION CREDIT EASEMENT
- PROP. PERVIOUS PAVEMENT
- PROP. CONCRETE
- PROPOSED BITUMINOUS CONCRETE PAVING
- PROPOSED REINFORCED CONCRETE APRON
- 100-YR FLOODPLAIN DRAINAGE AND UTILITY EASEMENT
- LIMIT OF WETLANDS
- EX. PUBLIC FOREST CONSERVATION EASEMENT
- PROPOSED LIMIT OF CLEARING
- EX. TREE (DECIDUOUS)
- EXISTING WOODS
- EX. FH
- EX. GAS VALVE
- EX. STREET LIGHT
- EX. STORM DRAIN INLET
- EX. CLEANOUT
- EX. SIGN
- EX. SANITARY SEWER MANHOLE
- EX. STORM DRAIN MANHOLE
- EX. UTILITY POLE
- EX. WATER METER
- EX. WATER VALVE
- PROP. SD MANHOLE
- PROP. PRIVATE STREET LIGHT
- PROP. WALL MOUNTED LIGHT FIXTURE (TYP.)
- PROP. SD INLET
- PROP. FIRE DEPT. SIAMESE CONNECTION
- PROP. STOP SIGN * (R 1-1)
- PROP. PUBLIC STREET LIGHT ** (TO BE INSTALLED BY HOWARD COUNTY)
- PROP. KNOX BOX
- PROP. SAN. CO
- DOUBLE 5" YELLOW PAINT MARKINGS CENTERED ON ROADWAY
- PUPPY TRACKS (5" YELLOW PAINT) CENTERED IN ROADWAY (2/6" SPACE/2/6" SPACE...)



VICINITY MAP
SCALE: 1"=1000'

PUBLIC 100-YEAR FLOODPLAIN, DRAINAGE AND UTILITY EASEMENT

PARCEL 540A - PUBLIC 100-YEAR FLOODPLAIN DRAINAGE AND UTILITY EASEMENT

SYMBOL	BEARING	DISTANCE	ELEV. (AT BEGINNING)
1.	N 80°37'05"W	51.92'	148.99
	N 62°19'19"W	38.33'	150.00
	S 31°22'55"W	31.35'	144.23
2.	S 51°23'27"E	19.70'	149.56
3.	S 40°43'23"E	76.08'	149.22
4.	S 21°59'22"E	76.93'	148.05
5.	S 69°24'47"E	49.12'	148.00
6.	S 50°49'04"E	52.78'	147.38
	N 36°03'44"E	86.92'	147.11
	N 62°19'19"W	261.86'	145.02

PARCEL 848, B-6 - PUBLIC 100-YEAR FLOODPLAIN DRAINAGE AND UTILITY EASEMENT

7.	S 41°59'07"E	34.84'	154.21
8.	S 39°45'51"E	16.51'	156.10
9.	S 26°17'51"E	14.24'	156.20
10.	S 14°28'10"E	44.20'	156.28
11.	S 10°54'34"E	24.06'	157.05
12.	S 21°36'04"E	23.25'	157.62
13.	N 22°41'41"E	6.57'	158.85
	N 59°13'54"W	68.40'	158.98
	N 31°29'26"E	133.69'	156.26
	N 00°36'13"E	11.77'	153.74

* SIGN POST: 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 A 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.

** 250 WATT HPS VAPOR SAG FIXTURES MOUNTED AT 30' ON A BRONZE FIBERGLASS POLE USING A 12' ARM.

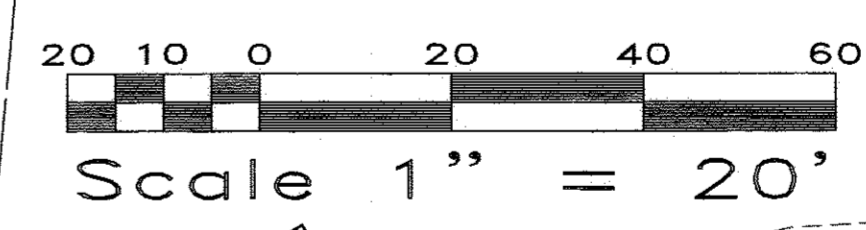
PRIVATE LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	LENSE/LOUVER	MOUNTING	VOLTS	LAMP DATA		MANUFACTURER & CATALOG NO.
S1	POLE TOP HID FIXTURE MOUNTED AT 25'	GLASS	N/A	208	1	250	250W MH SIMKAR CORPORATION # PFM-6-8-25-MT
S2	WALL MOUNTED EXTERIOR HID WALL PACK	GLASS	WS# 20'-0"	120	1	400	400W MH SIMKAR CORPORATION # WSL0840

MOUNTING: WS# - WALL MTD., SURFACE, # FEET A.F.F.

PUBLIC STREET LIGHTING SCHEDULE

COORDINATES	STREET	DESCRIPTION
N 529,952.98 E 1,362,212.98	MAIER PLACE	250 WATT HPS VAPOR SAG FIXTURE MOUNTED AT 30' ON A BRONZE FIBERGLASS POLE USING A 12' ARM.
N 529,955.41 E 1,362,146.49	BURSA ROAD	250 WATT HPS VAPOR SAG FIXTURE MOUNTED AT 30' ON A BRONZE FIBERGLASS POLE USING A 12' ARM.



REVISIONS

NO.	DATE	DESCRIPTION
03-06-14		SHOW TWO-PHASE CONSTRUCTION.
05-05-17		SHOW TEMP. TRAILER FOR PH. I

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chad Eubank 4/3/14
Chief, Development Engineering Division
Date

Kathleen Quirk 4/04/14
Chief, Division of Land Development
Date

Mark A. Cogle 4/4/14
Director
Date

KCW
ENGINEERING TECHNOLOGIES

KCW Engineering Technologies, Inc.
810 Landmark Drive, Suite 215
Glen Burnie, MD 21061
Phone: 410.768.7700
Fax: 410.768.0200
www.kcw-et.com

OWNER:
THE REDEEMED CHRISTIAN CHURCH OF GOD, INC.
13701 ANNAPOLIS ROAD
BOWIE, MD 20720
Attn: Margaret Adeyokunnu, Pastor
Tele: (301) 352-0707
Fax: (301) 352-3339

OWNER'S REPRESENTATIVE/ DEVELOPER:
TLI DESIGNGROUP INC.
3308 DORCHESTER ROAD
BALTIMORE, MD 21215
Attn: Taiwo Iliyomade, President
Toll Free/Fax/Voice mail:
(1-866) 616-1497
Mobile: (443) 831-6703

KCW J.O.: 2080018
SCALE: 1" = 20'
DESIGNED: MT
DRAWN: MT
CHECKED: KCA
DATE: MARCH 6, 2014
DRAWING NO.
3 OF 19

SITE DEVELOPMENT PLAN - PHASE I

VICTORY TEMPLE - LAUREL
WORSHIP CENTER
9100 BURSA ROAD

SDP-12-007
TAX MAP 47, GRID 23
PARCEL 540 (PARCEL A, PLAT #22114)

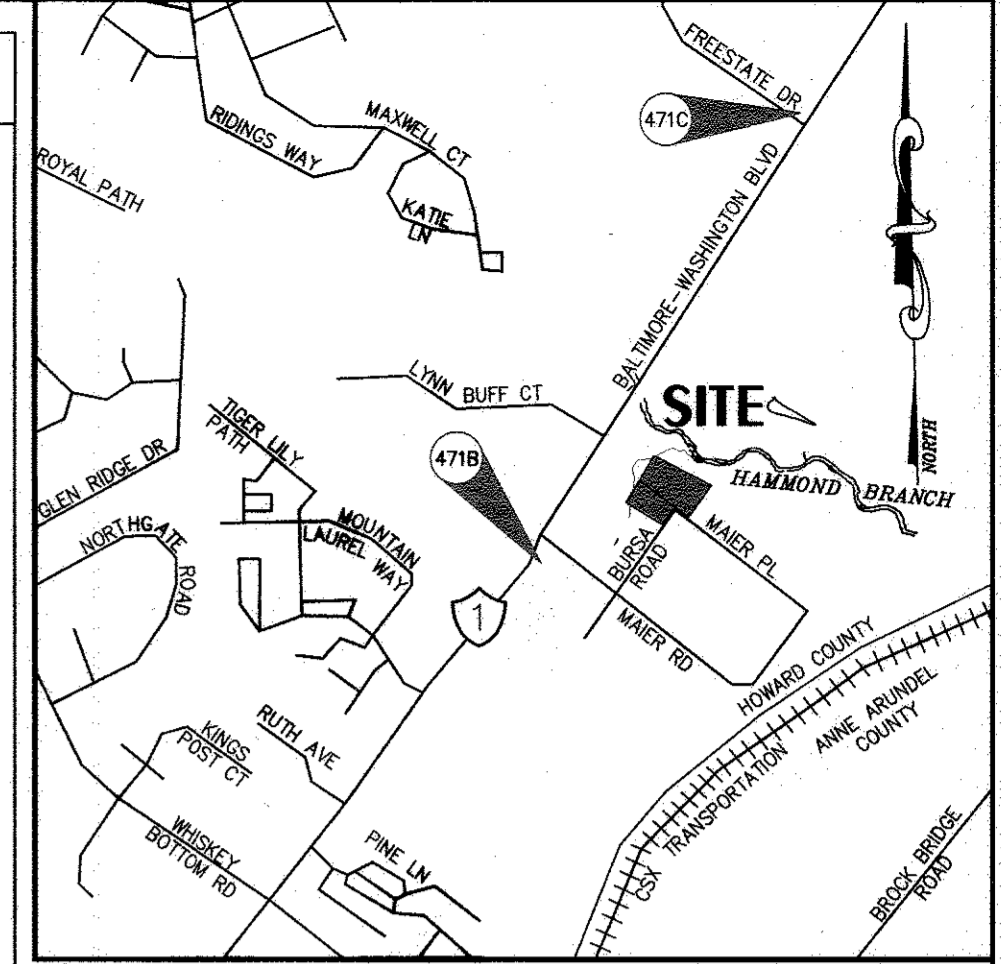
W&S CONTRACT No. 24-4047-D
ZONING: CE-CU
ELECTION DISTRICT - 6
HOWARD COUNTY, MARYLAND

SDP-12-007

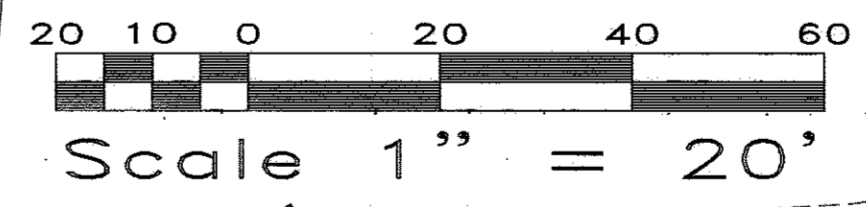
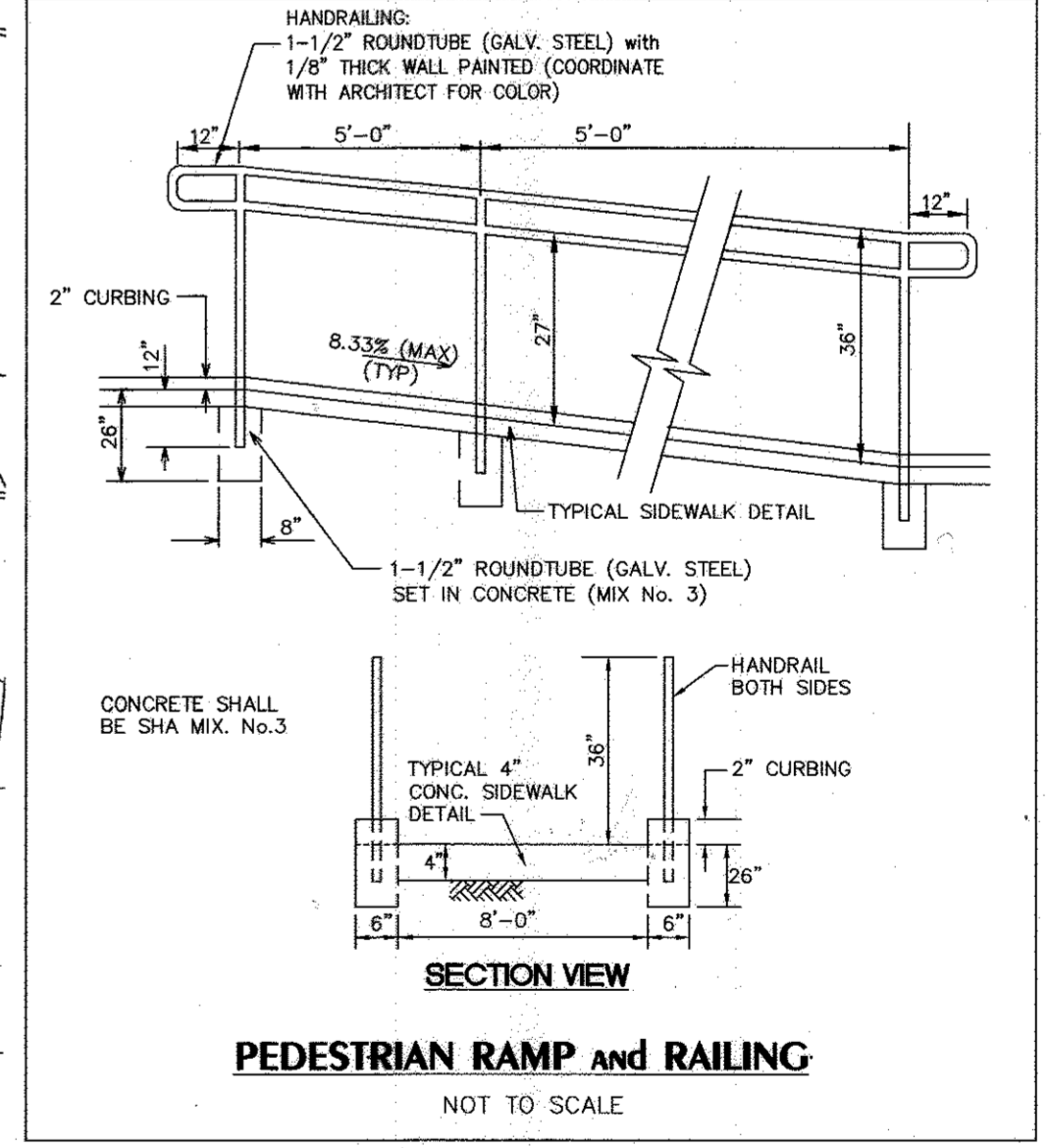


LEGEND

- EXISTING CONTOURS ---144---
- PROPOSED CONTOURS ---164---
- PROPERTY LINE ---164---
- LIMIT OF DISTURBANCE ---L.O.D.---
- WETLANDS ---W---
- EX. 25' WETLAND BUFFER ---WB---
- 100 YEAR FLOODPLAIN DRAINAGE & UTILITY EASEMENT ---FP---
- STREAM LINE ---B.C.S.---
- SOILS LINE ---B.C.S.---
- EX. FOREST CONSERVATION EASEMENT ---FCE---
- 50' STREAM BUFFER ---SB---
- ROOF DRAIN ---RD---
- PROP. GUARDRAIL ---G---
- PROP. FENCE ---X---
- EX. PUBLIC STORMWATER MANAGEMENT NATURAL CONSERVATION CREDIT EASEMENT
- PROP. PERVIOUS PAVEMENT
- PROP. CONCRETE
- PROP. CONC. PAVERS
- PROPOSED BITUMINOUS CONCRETE PAVING
- PROPOSED REINFORCED CONCRETE APRON
- 100-YR FLOODPLAIN DRAINAGE AND UTILITY EASEMENT
- LIMIT OF WETLANDS
- EX. PUBLIC FOREST CONSERVATION EASEMENT
- PROPOSED LIMIT OF CLEARING
- EX. TREE (DECIDUOUS)
- EXISTING WOODS
- EX. FH
- EX. GAS VALVE
- EX. STREET LIGHT
- EX. STORM DRAIN INLET
- EX. CLEANOUT
- EX. SIGN
- EX. SANITARY SEWER MANHOLE
- EX. STORM DRAIN MANHOLE
- EX. UTILITY POLE
- EX. WATER METER
- EX. WATER VALVE
- PROP. SD MANHOLE
- PROP. PRIVATE STREET LIGHT
- PROP. WALL MOUNTED LIGHT FIXTURE (TYP.)
- PROP. SD INLET
- PROP. FIRE DEPT. SIAMESE CONNECTION
- PROP. STOP SIGN * (R 1-1)
- PROP. PUBLIC STREET LIGHT ** (TO BE INSTALLED BY HOWARD COUNTY)
- PROP. KNOX BOX
- PROP. SAN. CO
- DOUBLE 5" YELLOW PAINT MARKINGS CENTERED ON ROADWAY
- PUPPY TRACKS (5" YELLOW PAINT) CENTERED IN ROADWAY (2' 6" SPACE/2' 6" SPACE...)



VICINITY MAP
SCALE: 1"=1000'



PHASE II NOTE:
FOR PHASE II BUILDING CONSTRUCTION SEE PHASE II NOTE # 27 ON TITLE SHEET 1 OF 19.

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 33351. Expiration Date 06-30-2018.

NO.	DATE	DESCRIPTION
03-06-14		SHOW TWO-PHASE CONSTRUCTION.
05-05-17		ADD PHASE II NOTE

OWNER:
THE REDEEMED CHRISTIAN CHURCH OF GOD, INC.
13701 ANNAPOLIS ROAD
BOWIE, MD 20720
Attn: Margaret Adeyokunnu, Pastor
Tele: (301) 352-0700
Fax: (301) 352-3339

OWNER'S REPRESENTATIVE/ DEVELOPER:
TLI DESIGNGROUP INC.
3308 DORCHESTER ROAD
BALTIMORE, MD 21215
Attn: Taiwo Iluyomade, President
Toll Free/Fax/Voice mail:
(1-866) 616-1497
Mobile: (443) 831-6703

KCW J.O.: 2080018
SCALE: 1" = 20'
DESIGNED: MT
DRAWN: MT
CHECKED: KCA
DATE: MARCH 6, 2014
DRAWING NO.
3A OF 19

SITE DEVELOPMENT PLAN - PHASE II

VICTORY TEMPLE - LAUREL WORSHIP CENTER
9100 BURSA ROAD

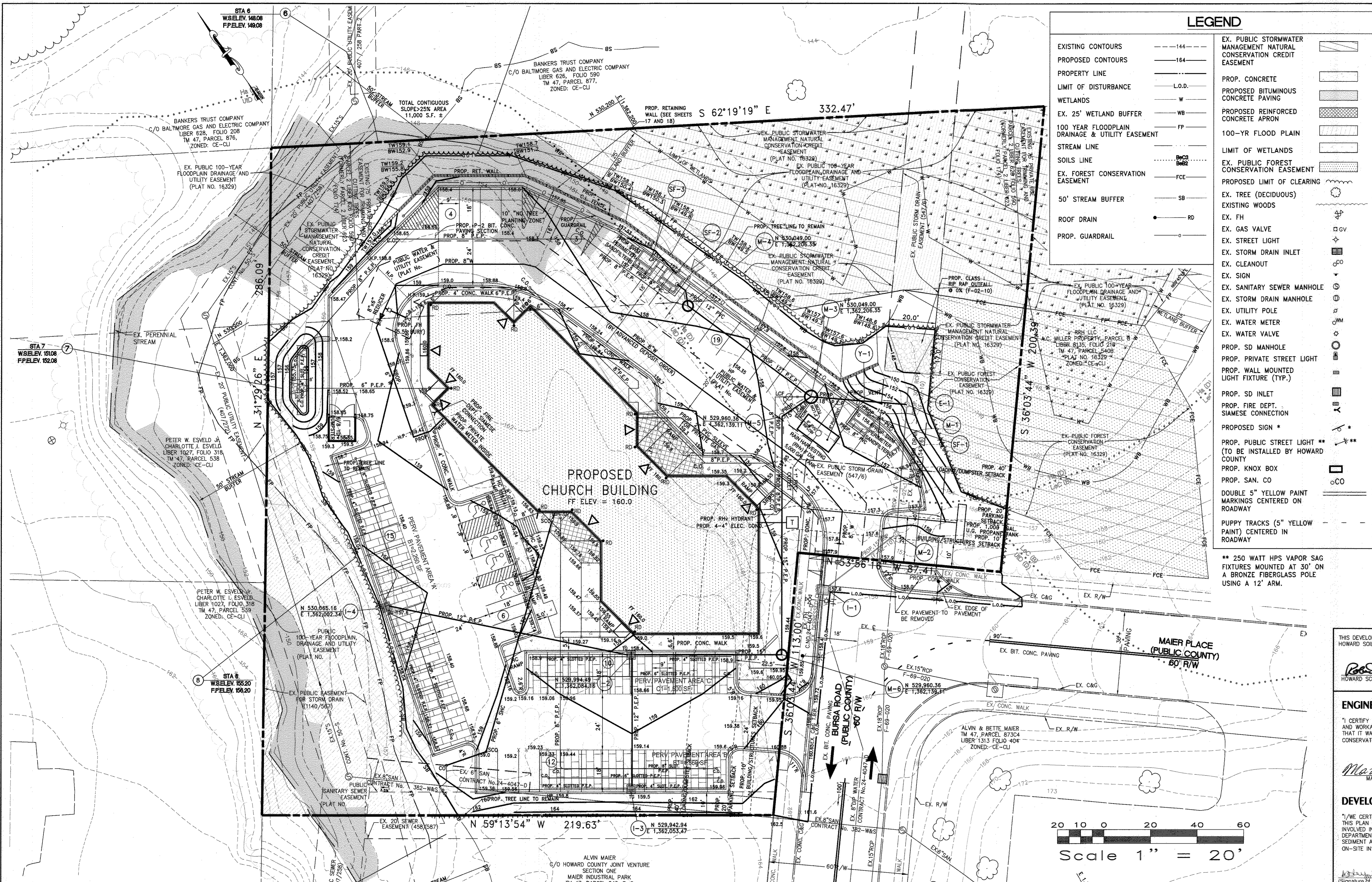
SDP-12-007
TAX MAP 47, GRID 23
PARCEL 540 (PARCEL A, PLAT #22114)
W&S CONTRACT No. 24-4047-D
ZONING: CE-CL1
ELECTION DISTRICT - 6
HOWARD COUNTY, MARYLAND

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Phil Edman 4/8/14
Chief, Development Engineering Division Date
Kathleen 4/04/14
Chief, Division of Land Development Date
David M. Cagle 4/14/14
Director Date

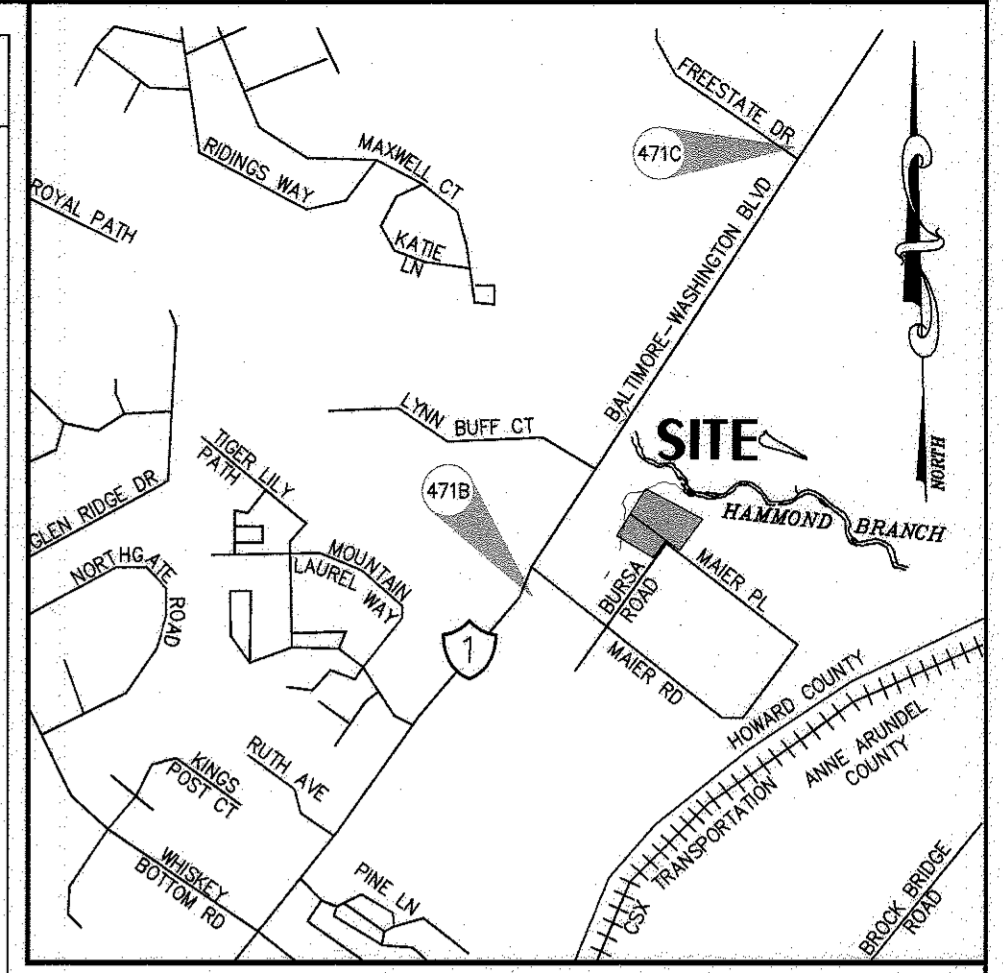
KCW Engineering Technologies, Inc.
810 Landmark Drive, Suite 215
Glen Burnie, MD 21061
Phone: 410.768.7700
Fax: 410.768.0200
www.kcw-et.com

Mark Walker
03/06/14



LEGEND

- EXISTING CONTOURS --- 144 ---
- PROPOSED CONTOURS --- 164 ---
- PROPERTY LINE - - - - -
- LIMIT OF DISTURBANCE L.O.D. - - - - -
- WETLANDS W - - - - -
- EX. 25' WETLAND BUFFER WB - - - - -
- 100 YEAR FLOODPLAIN DRAINAGE & UTILITY EASEMENT FP - - - - -
- STREAM LINE - - - - -
- SOILS LINE - - - - -
- EX. FOREST CONSERVATION EASEMENT FCE - - - - -
- 50' STREAM BUFFER SB - - - - -
- ROOF DRAIN RD - - - - -
- PROP. GUARDRAIL - - - - -
- EX. PUBLIC STORMWATER MANAGEMENT NATURAL CONSERVATION CREDIT EASEMENT
- PROP. CONCRETE
- PROPOSED BITUMINOUS CONCRETE PAVING
- PROPOSED REINFORCED CONCRETE APRON
- 100-YR FLOOD PLAIN
- LIMIT OF WETLANDS
- EX. PUBLIC FOREST CONSERVATION EASEMENT
- PROPOSED LIMIT OF CLEARING
- EX. TREE (DECIDUOUS)
- EXISTING WOODS
- EX. FH
- EX. GAS VALVE
- EX. STREET LIGHT
- EX. STORM DRAIN INLET
- EX. CLEANOUT
- EX. SIGN
- EX. SANITARY SEWER MANHOLE
- EX. STORM DRAIN MANHOLE
- EX. UTILITY POLE
- EX. WATER METER
- EX. WATER VALVE
- PROP. SD MANHOLE
- PROP. PRIVATE STREET LIGHT
- PROP. WALL MOUNTED LIGHT FIXTURE (TYP.)
- PROP. SD INLET
- PROP. FIRE DEPT. SIAMESE CONNECTION
- PROPOSED SIGN *
- PROP. PUBLIC STREET LIGHT ** (TO BE INSTALLED BY HOWARD COUNTY)
- PROP. KNOX BOX
- PROP. SAN. CO
- DOUBLE 5" YELLOW PAINT MARKINGS CENTERED ON ROADWAY
- PUPPY TRACKS (5" YELLOW PAINT) CENTERED IN ROADWAY



VICINITY MAP
SCALE: 1" = 1000'

PHASE II NOTE:
FOR PHASE II BUILDING CONSTRUCTION SEE PHASE II NOTE # 27 ON TITLE SHEET 1 OF 19.

LIMIT OF DISTURBANCE
1.32 Ac. / 57,500 S.F.

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

Robert S. ... 10/1/12
HOWARD SCD DATE

ENGINEER'S CERTIFICATE:
I 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.

Mark Tshlik 10-01-12
MARK TSHLIK, P.E. DATE

DEVELOPER'S CERTIFICATE:
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 PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

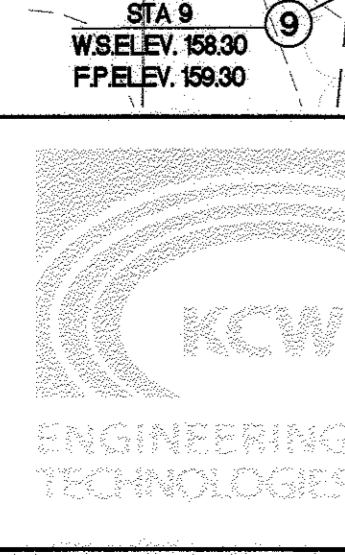
Margaret Adeyokunnu 4-29-11
(Signature of Property Owner/Agent) (Print Name of Owner/Agent) (Date)

APPROVED: DEPARTMENT OF PLANNING AND ZONING

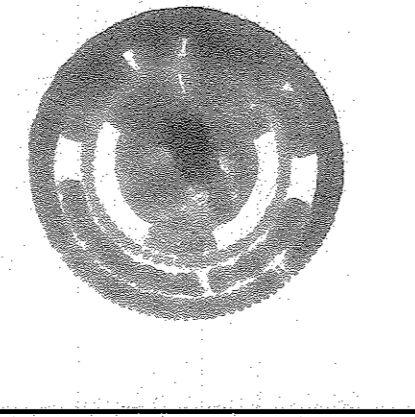
Mark Tshlik 4/23/12
Chief, Development Engineering Division Date

Kurt Seinhorn 4/30/13
Chief, Division of Land Development Date

David ... 5/1/12
Director Date



KCW Engineering Technologies, Inc.
810 Landmark Drive, Suite 215
Glen Burnie, MD 21061
Phone: 410.768.7700
Fax: 410.768.0200
www.kcw-et.com



Professional Certification.
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License No. 33351
Expiration Date 06-30-2016

Mark Tshlik 10-01-12

OWNER:
THE REDEEMED CHRISTIAN CHURCH OF GOD, INC.
13701 ANNAPOLIS ROAD
BOWIE, MD 20720
Attn: Margaret Adeyokunnu, Pastor
Tele: (301) 352-0707
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KCW J.O.: 2080018
SCALE: 1" = 20'
DESIGNED: MT
DRAWN: MT
CHECKED: KCA
DATE: OCTOBER 1, 2012
DRAWING NO.
4 OF 19

GRADING PLAN

VICTORY TEMPLE - LAUREL WORSHIP CENTER
9100 BURSA ROAD

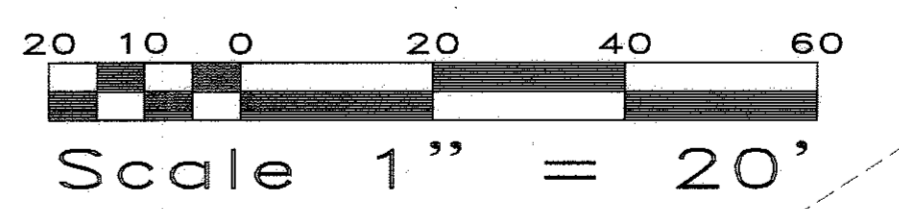
SDP-12-007
TAX MAP 47, GRID 23
PARCEL 540 (PARCEL A, PLAT #22114)

W&S CONTRACT No. 24-4047-D
ZONING: CE-CL1
ELECTION DISTRICT - 6
HOWARD COUNTY, MARYLAND

SDP-12-007

REVISIONS

No.	DATE	DESCRIPTION
1	05-05-17	ADD PHASE II NOTE



2011 VEGETATIVE STABILIZATION

B-4 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

Definition
Using vegetation as cover to protect exposed soil from erosion.

Purpose
To promote the establishment of vegetation on exposed soil.

Conditions Where Practice Applies
On all disturbed areas not stabilized by other methods. This specification is divided into sections on incremental stabilization; soil preparation, soil amendments and topsoiling; seeding and mulching; temporary stabilization; and permanent stabilization.

Effects on Water Quality and Quantity
Stabilization practices are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and runoff to downstream areas.

Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration, percolation, and groundwater recharge. Over time, vegetation will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth.

Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone.

Sediment control practices must remain in place during grading, seeded preparation, seeding, mulching, and vegetative establishment.

Adequate Vegetative Establishment
Inspected areas for vegetative establishment and make necessary repairs, replacements, and reseedings within the planting season.

- Adequate vegetative stabilization requires 95 percent groundcover.
- If an area has less than 40 percent groundcover, restabilize following the original recommendations for lime, fertilizer, seeded preparation, and seeding.
- If an area has between 40 and 94 percent groundcover, over-seed and fertilize using half of the rates originally specified.
- Maintenance fertilizer rates for permanent seeding are shown in Table B.6.

B-4-1 STANDARDS AND SPECIFICATIONS FOR INCREMENTAL STABILIZATION

Definition
Establishment of vegetative cover on cut and fill slopes.

Purpose
To provide timely vegetative cover on cut and fill slopes as work progresses.

Conditions Where Practice Applies
Any cut or fill slope greater than 15 feet in height. This practice also applies to stockpiles.

Criteria
A. Incremental Stabilization - Cut Slopes

- Excavate and stabilize cut slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all cut slopes as the work progresses.
- Construction sequence example (Refer to Figure B.1):
 - Construct and stabilize all temporary swales or dikes that will be used to convey runoff around the excavation.
 - Perform Phase 1 excavation, prepare seedbed, and stabilize.
 - Perform Phase 2 excavation, prepare seedbed, and stabilize. Overseed Phase 1 areas as necessary.
 - Perform final phase excavation, prepare seedbed, and stabilize. Overseed previously seeded areas as necessary.

Note: Once excavation has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.

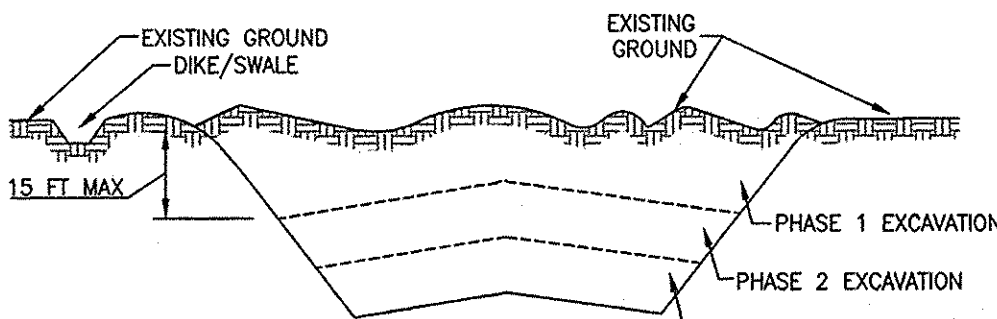


Figure B.1: Incremental Stabilization - Cut

B. Incremental Stabilization - Fill Slopes

- Construct and stabilize fill slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all slopes as the work progresses.
- Stabilize slopes immediately when the vertical height of a lift reaches 15 feet, or when the grading operation ceases as prescribed in the plans.
- At the end of each day, install temporary water conveyance practice(s), as necessary, to intercept surface runoff and convey it down the slope in a non-erosive manner.
- Construction sequence example (Refer to Figure B.2):
 - Construct and stabilize all temporary swales or dikes that will be used to divert runoff around the fill. Construct silt fence on low side of fill unless other methods shown on the plans address this area.
 - At the end of each day, install temporary water conveyance practice(s), as necessary, to intercept surface runoff and convey it down the slope in a non-erosive manner.
 - Place Phase 1 fill, prepare seedbed, and stabilize.
 - Place Phase 2 fill, prepare seedbed, and stabilize.
 - Place final phase fill, prepare seedbed, and stabilize. Overseed previously seeded areas as necessary.

Note: Once the placement of fill has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.

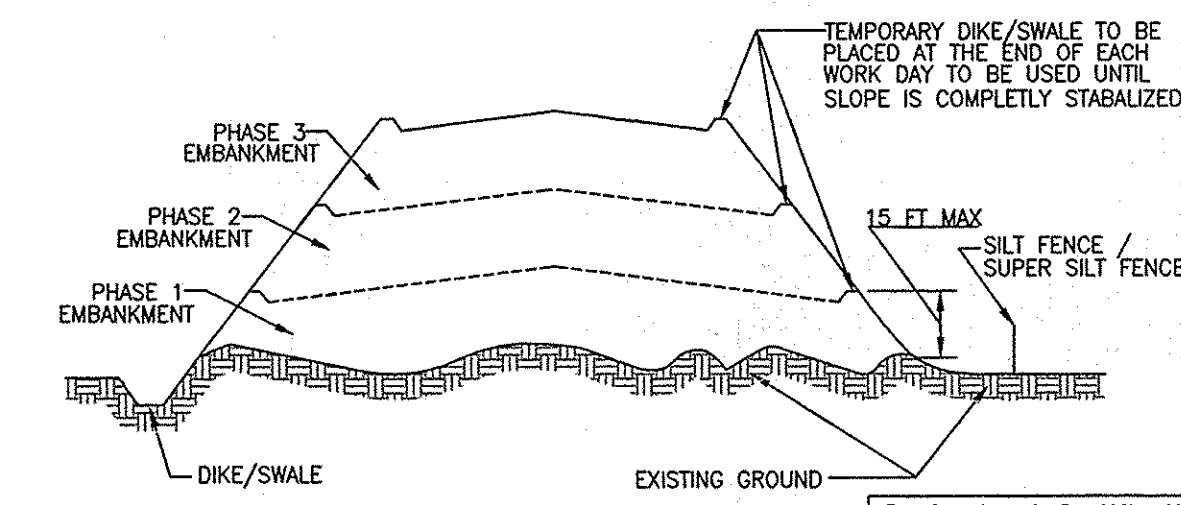


Figure B.2: Incremental Stabilization - Fill

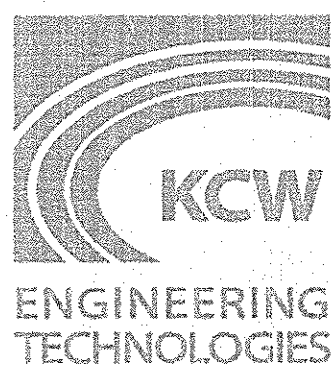
APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division Date

Chief, Division of Land Development Date

Director Date

Professional Certification.
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License No. 33351.
Expiration Date 06-30-2014.



KCW Engineering Technologies, Inc.
810 Landmark Drive, Suite 215
Glen Burnie, MD 21061
Phone: 410.768.7700
Fax: 410.768.0200
www.kcw-et.com



B-4-2 STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

Definition
The process of preparing the soils to sustain adequate vegetative stabilization.

Purpose
To provide a suitable soil medium for vegetative growth.

Conditions Where Practice Applies
Where vegetative stabilization is to be established.

Criteria
A. Soil Preparation

- Temporary Stabilization
 - Seeded preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened, it must not be rolled or dragged smooth but left in the roughened condition. Slopes 3:1 or flatter are to be tracked with ridges running parallel to the contour of the slope.
 - Apply fertilizer as prescribed on the plans.
 - Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable means.

- Permanent Stabilization
 - A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
 - Soil pH between 6.0 and 7.0.
 - Soluble salts less than 500 parts per million (ppm).
 - Soil contains less than 40 percent clay (but greater than 30 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception: if loess/lime will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.
 - Soil contains 1.5 percent minimum organic matter by weight.
 - Soil contains sufficient pore space to permit adequate root penetration.
 - Application of amendments or topsoil is required if on-site soils do not meet the above conditions.
 - Soil contains less than 40 percent clay (but greater than 30 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception: if loess/lime will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.
 - Soil contains sufficient pore space to permit adequate root penetration.
 - Application of amendments or topsoil is required if on-site soils do not meet the above conditions.
 - Soil contains less than 40 percent clay (but greater than 30 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception: if loess/lime will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.
 - Soil contains sufficient pore space to permit adequate root penetration.

- Topsoiling
 - Topsoil is placed over prepared subsoil prior to establishment of permanent vegetation. The purpose is to provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

- Topsoil salvaged from an existing site may be used provided it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-NRCS.

- Topsoiling is limited to areas having 2:1 or flatter slopes where:
 - The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
 - The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
 - The original soil to be vegetated contains material toxic to plant growth.
 - The soil is so acidic that treatment with limestone is not feasible.

- Areas having slopes steeper than 2:1 require special consideration and design.

- Topsoil Specifications: Soil to be used as topsoil must meet the following criteria:
 - Topsoil must be a loam, sandy loam, clay loam, silt loam, sandy clay loam, or loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Topsoil must not be a mixture of contrasting textured subsoils and must contain less than 5 percent by volume of cinders, stones, slag, coarse fragments, gravel, sticks, rocks, trash, or other materials larger than 1 1/2 inches in diameter.
 - Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nut sedge, poison ivy, thistle, or others as specified.
 - Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.

- Topsoil Application
 - Erosion and sediment control practices must be maintained when applying topsoil.
 - Uniformly distribute topsoil in a 5 to 8 inch layer and lightly compact to a minimum thickness of 4 inches. Spreading is to be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations must be corrected in order to prevent the formation of depressions or water pockets.
 - Topsoil must not be placed if the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seeded preparation.

- Soil Amendments (Fertilizer and Lime Specifications)
 - Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
 - Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers must all be delivered to the site fully labeled according to the applicable laws and must bear the name, trade name or trademark and warranty of the producer.
 - Lime materials must be ground limestone (hydrated or burnt lime may be substituted except when hydroseeding) which contains at least 90 percent total oxides (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent will pass through a #100 mesh sieve and 98 to 100 percent will pass through a #200 mesh sieve.
 - Lime and fertilizer are to be evenly distributed and incorporated into the top 3 to 5 inches of soil by disking or other suitable means.
 - Where the subsoil is either highly acidic or composed of heavy clays, spread ground limestone at the rate of 4 to 8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil.

- Soil Amendments (Fertilizer and Lime Specifications)
 - Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
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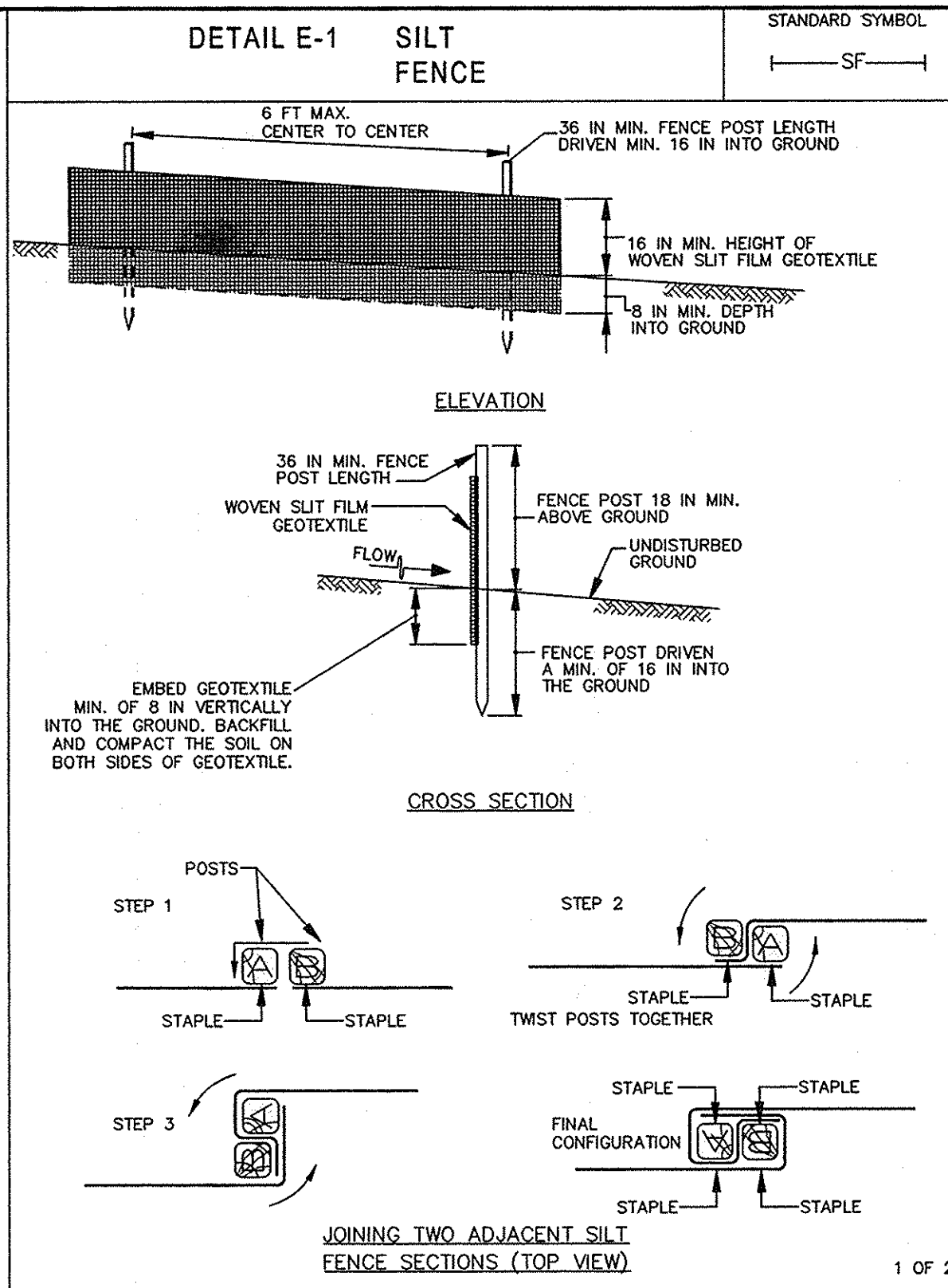
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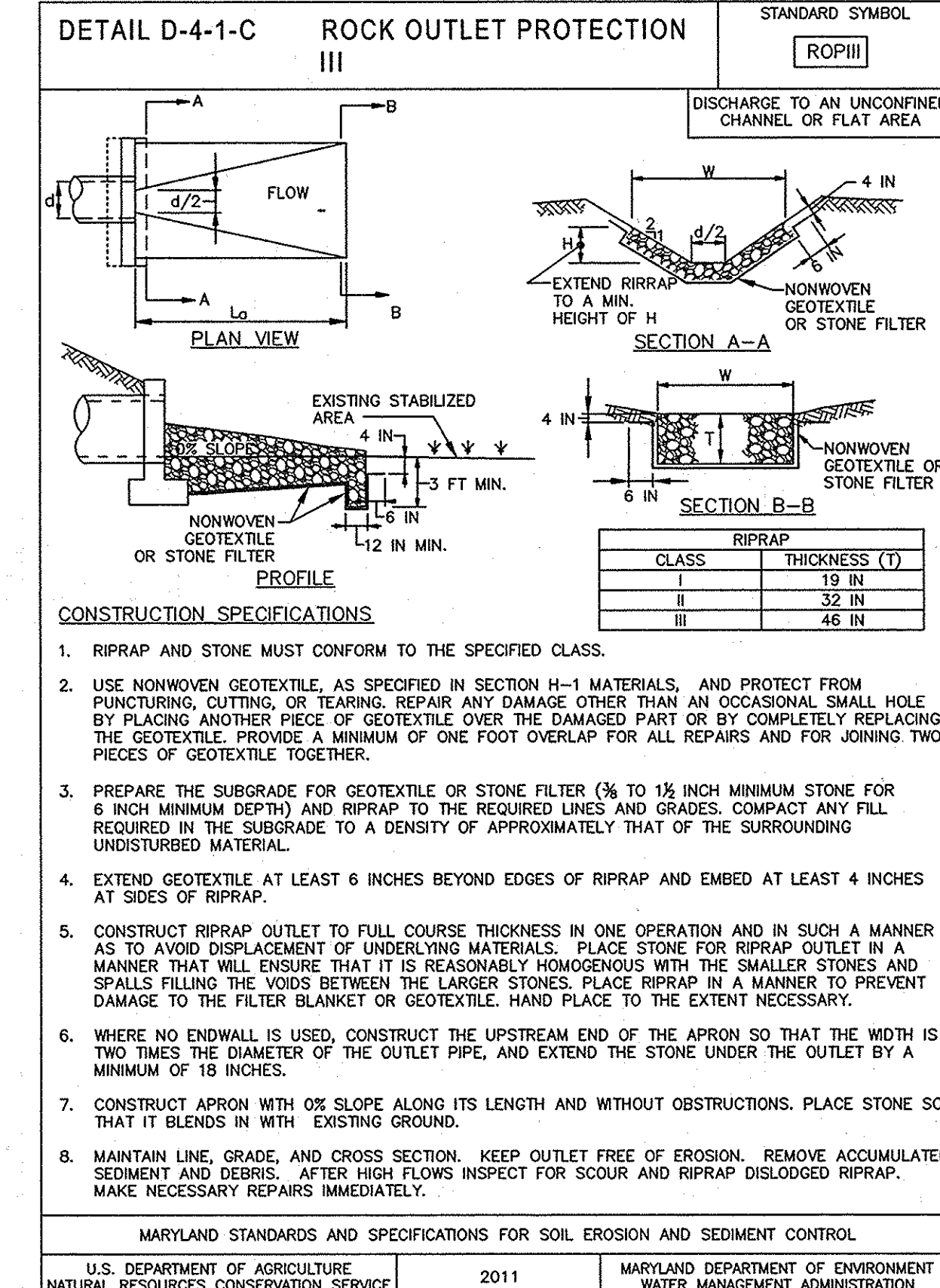
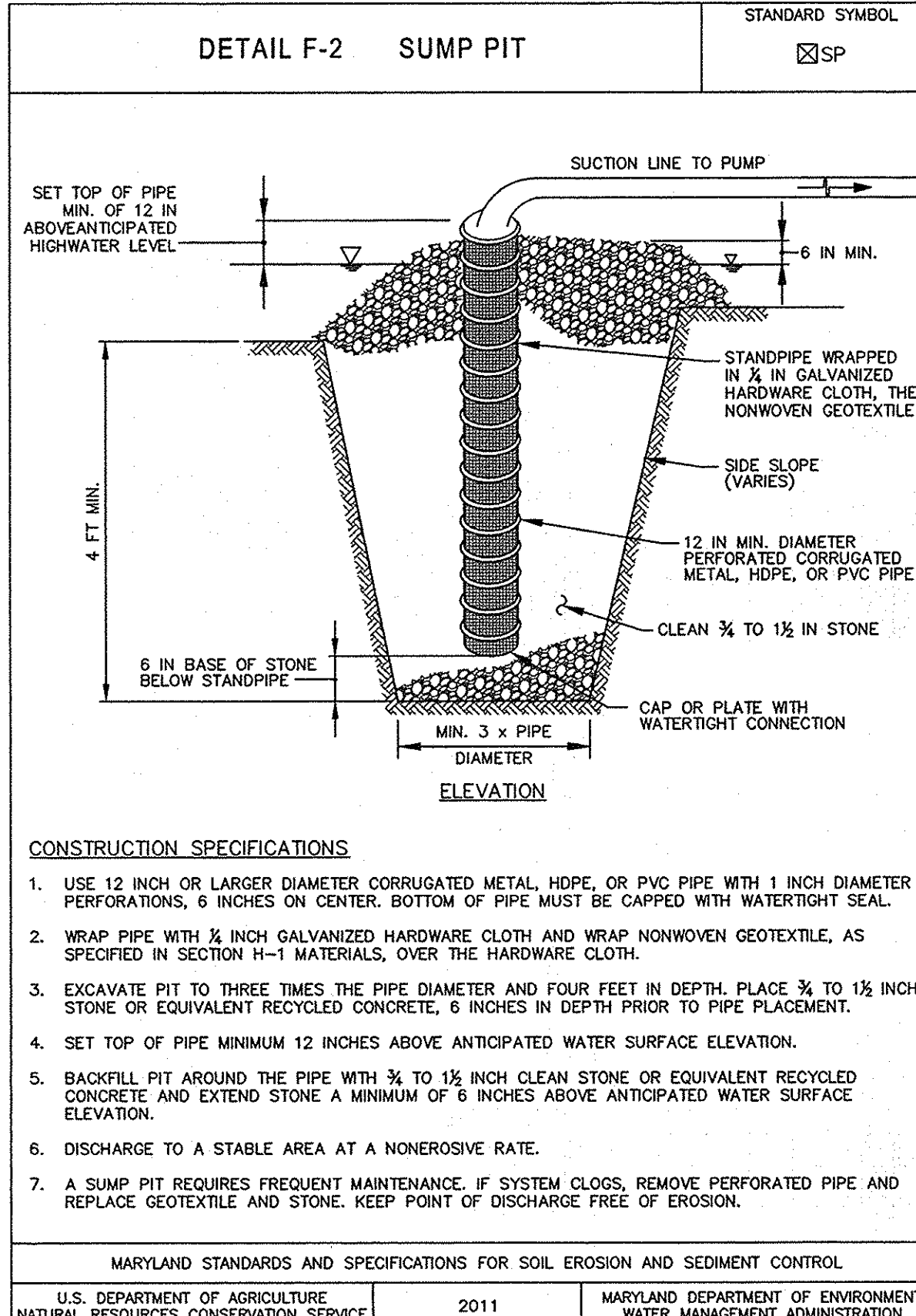
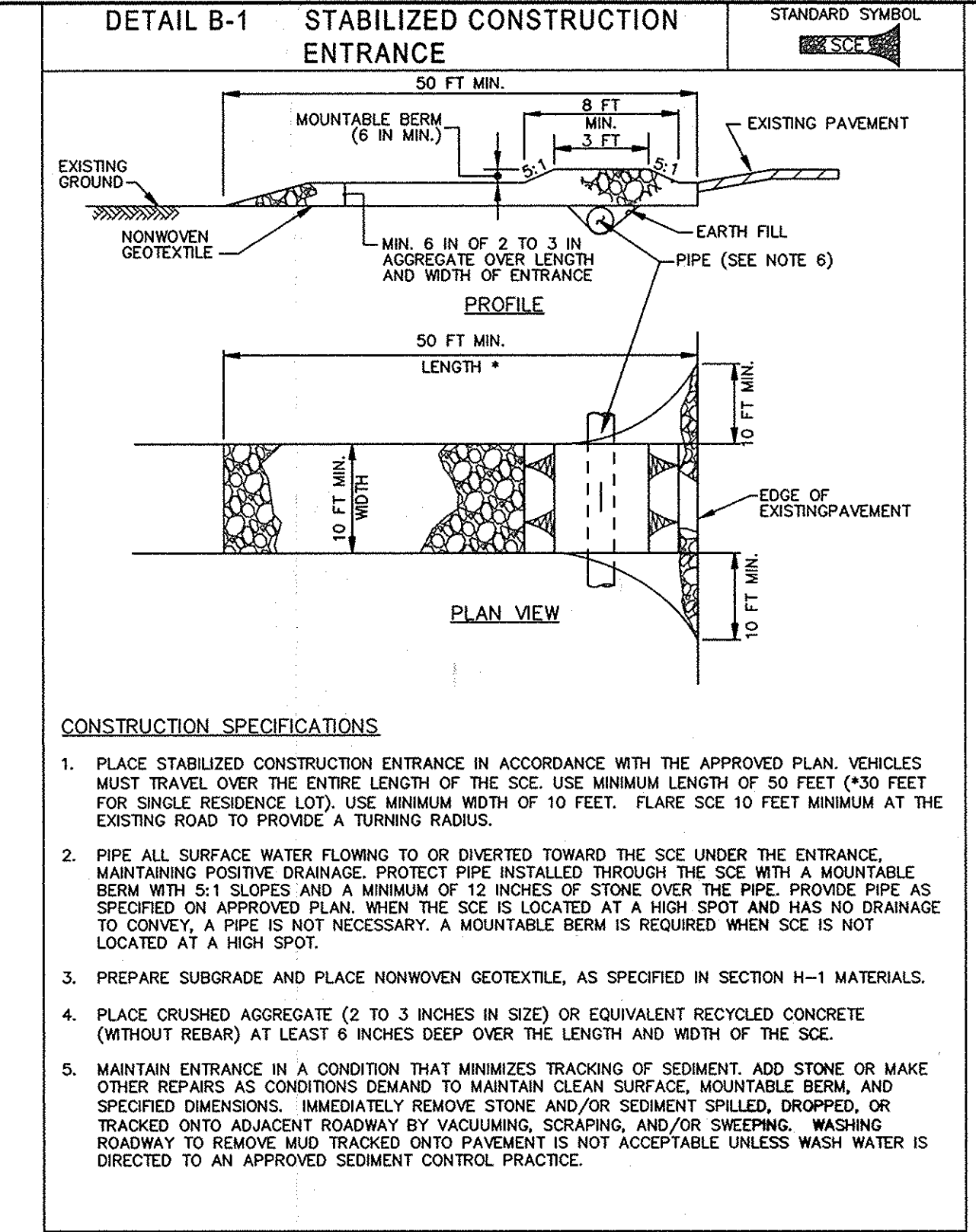
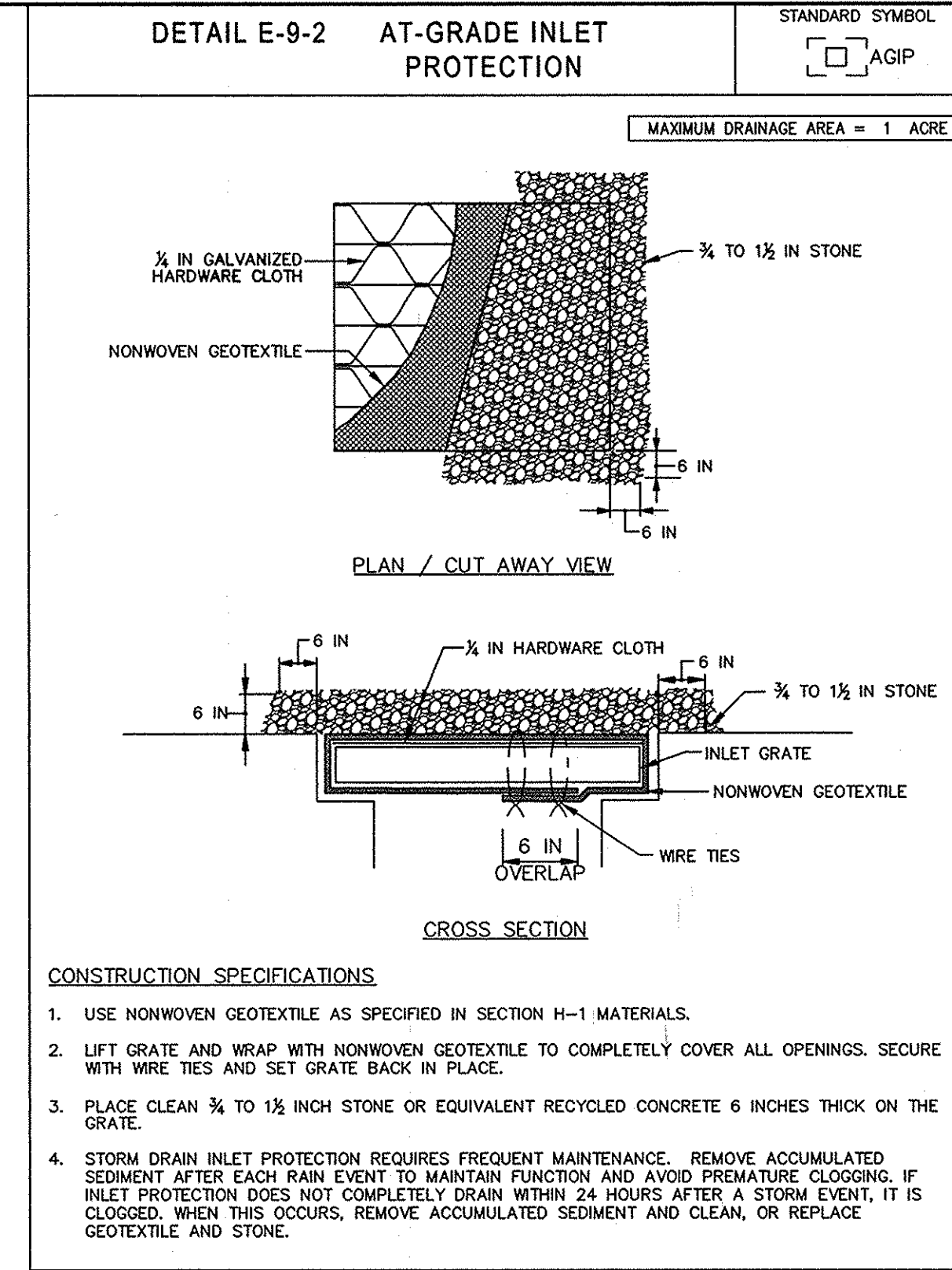
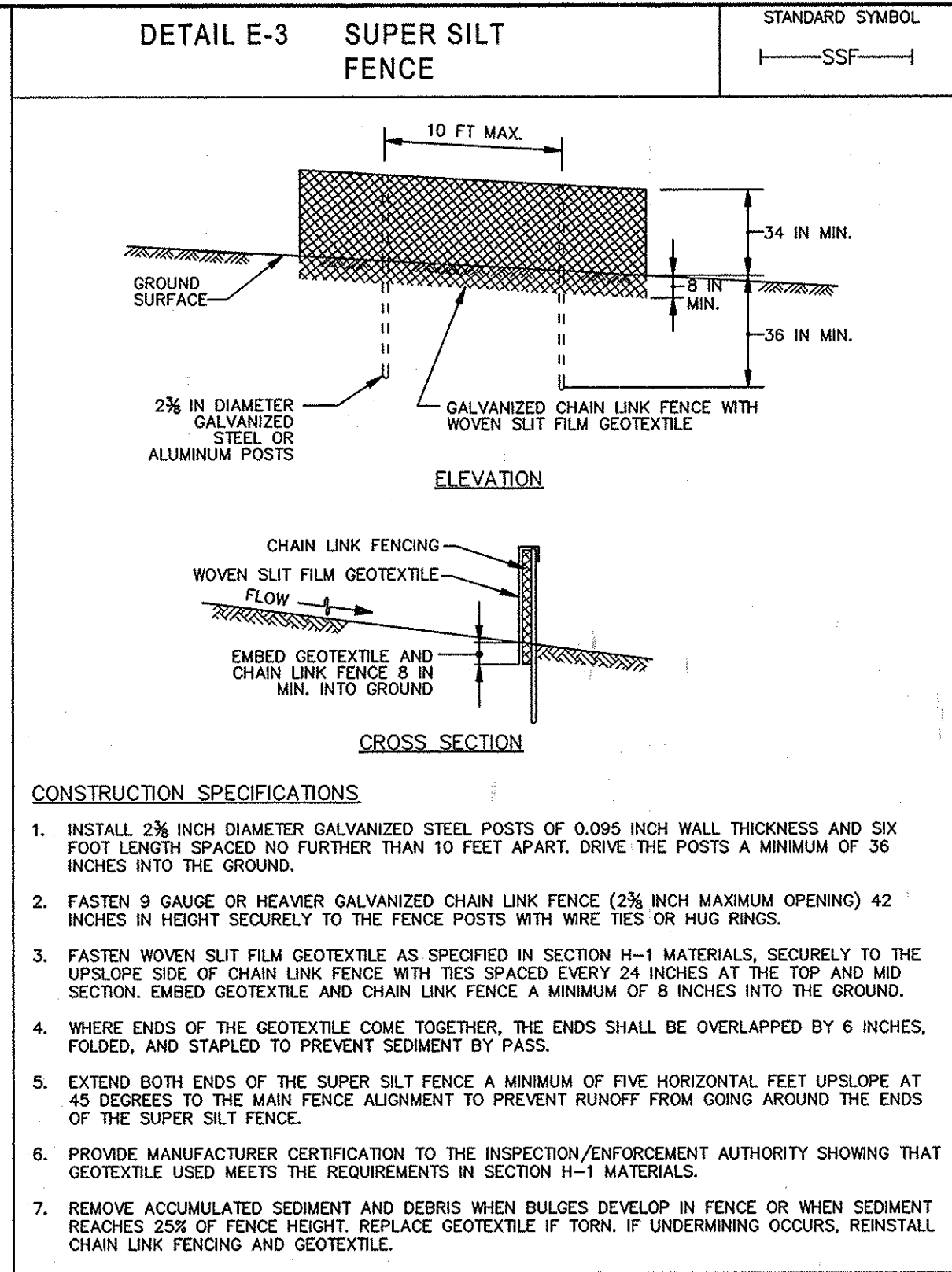


DETAIL E-1 SILT FENCE

CONSTRUCTION SPECIFICATIONS

- USE WOOD POSTS 1 1/4 x 1 1/4 x 1/2 INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
- USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
- USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
- PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
- EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
- WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
- EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
- REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



ROP III SIZING

NO.	LENGTH	WIDTH	WIDTH/2	CLASS	d ₅₀ STONE	T
1	17'	19.5'	9.75'	I	9.5"	19"

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chad Edwards 4.3.14
Chief, Development Engineering Division Date

Kurt Sheehy 4/29/14
Chief, Division of Land Development Date

Janice M. Lege 4/14/14
Director Date

Professional Certification.
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 33351. Expiration Date 06-30-2014.

KCW Engineering Technologies, Inc.
810 Landmark Drive, Suite 215
Glen Burnie, MD 21061
Phone: 410.768.7700
Fax: 410.768.0200
www.kcw-et.com

Mark Tstlik
03/06/14

REVISIONS

NO.	DATE	DESCRIPTION
1	03-06-14	SHOW TWO-PHASE CONSTRUCTION, UPDATE TO 2011 MDE ESC SPECS

OWNER:
THE REDEEMED CHRISTIAN CHURCH OF GOD, INC.
13701 ANNAPOLIS ROAD
BOWIE, MD 20720

Attn: Margaret Adeyokunnu, Pastor
Tele: (301) 352-0707
Fax: (301) 352-3339

OWNER'S REPRESENTATIVE:
TLI DESIGNGROUP INC.
3308 DORCHESTER ROAD
BALTIMORE, MD 21215

Attn: Taiwo Iloyomade, President
Toll Free/Fax/Voice mail:
(1-866) 616-1497
Mobile: (443) 831-6703

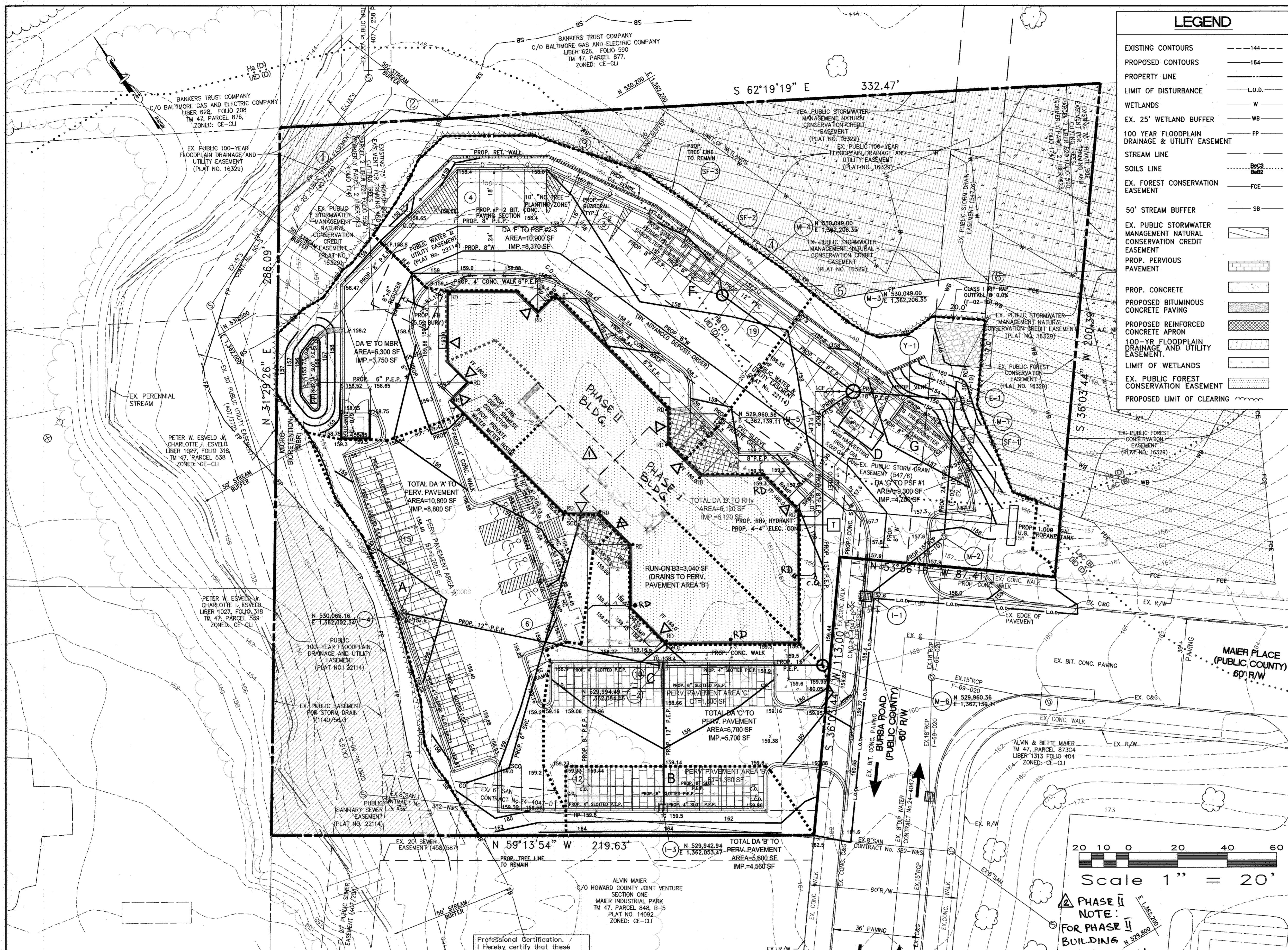
KCW J.O.: 2080018
SCALE: AS SHOWN
DESIGNED: MT
DRAWN: MT
CHECKED: KCA
DATE: MARCH 6, 2014
DRAWING NO. 6A OF 19

SEDIMENT CONTROL DETAILS II

VICTORY TEMPLE - LAUREL WORSHIP CENTER
9100 BURSA ROAD

SDP-12-007
TAX MAP 47, GRID 23
PARCEL 540 (PARCEL A, PLAT #22114)

W&S CONTRACT No. 24-4047-D
ZONING: CE-CL1
ELECTION DISTRICT - 6
HOWARD COUNTY, MARYLAND



LEGEND

- EXISTING CONTOURS --- 144 ---
- PROPOSED CONTOURS --- 164 ---
- PROPERTY LINE ---
- LIMIT OF DISTURBANCE --- L.O.D. ---
- WETLANDS --- W ---
- EX. 25' WETLAND BUFFER --- WB ---
- 100 YEAR FLOODPLAIN DRAINAGE & UTILITY EASEMENT --- FP ---
- STREAM LINE ---
- SOILS LINE ---
- EX. FOREST CONSERVATION EASEMENT --- FCE ---
- 50' STREAM BUFFER --- SB ---
- EX. PUBLIC STORMWATER MANAGEMENT NATURAL CONSERVATION CREDIT EASEMENT ---
- PROP. PERVIOUS PAVEMENT ---
- PROP. CONCRETE PROPOSED BITUMINOUS CONCRETE PAVING ---
- PROPOSED REINFORCED CONCRETE APRON ---
- 100-YR FLOODPLAIN DRAINAGE AND UTILITY EASEMENT ---
- LIMIT OF WETLANDS ---
- EX. PUBLIC FOREST CONSERVATION EASEMENT ---
- PROPOSED LIMIT OF CLEARING ---

STORMWATER MANAGEMENT SUMMARY TABLE

STORMWATER MANAGEMENT DESIGN DATA

CATEGORY	REQUIRED	PROVIDED	NOTES
TARGET Pe	1.8"	1.8"	SEE NOTE 1.
ENVIRONMENTAL SITE DESIGN (ESDv)	6,100 CF	6,144 CF	SEE NOTE 1.
RECHARGE VOLUME (Rev)	237 CF or 2,920 SF	237 CF	SEE NOTE 2.
CHANNEL PROTECTION (Cpv)	SEE NOTE 3.	SEE NOTE 3.	SEE NOTE 3.

NOTE 1: TARGET Pe AND ESDv ARE PROVIDED BY A COMBINATION OF MICRO-SCALE PRACTICES (MICRO-BIORETENTION, RAINWATER HARVESTING), ALTERNATIVE SURFACES (PERVIOUS PAVEMENTS), AND BMPs (PERIMETER SAND FILTERS).

NOTE 2: Rev IS PROVIDED IN STONE-FILLED RESERVOIR DIRECTLY BELOW PERVIOUS PAVEMENT AREA 'A' UNDERDRAIN SYSTEM.

NOTE 3: Cpv IS SATISFIED, BECAUSE THE REQUIRED ESDv HAS BEEN PROVIDED.

SDP DESIGN ASSESSMENT

SUMMARY OF THE PRACTICES USED

PRACTICE	DRAINAGE AREA	IMPERVIOUS AREA TREATED	VOLUME (ESDv)
MICRO-BIORETENTION	'E'	3,750 SF	414 CF
PERVIOUS PAVEMENT AREA 'A' WITH 24" STONE STORAGE	'A'	8,800 SF	1,659 CF
PERVIOUS PAVEMENT AREA 'B' WITH 24" STONE STORAGE	'B'	4,560 SF	998 CF
PERVIOUS PAVEMENT AREA 'C' WITH 24" STONE STORAGE	'C'	5,700 SF	1,101 CF
RAINWATER HARVESTING (WESTERN)	'D'	6,120 SF	665 CF
PERIMETER SAND FILTERS	'F'	8,370 SF	853 CF
PERIMETER SAND FILTERS	'G'	4,700 SF	454 CF
TOTAL		6,144 CF	6,100 CF
		ESDv REQUIRED	6,100 CF

DESIGN NARRATIVE

Project Description

It is proposed to develop two vacant parcels of land in the Maier Industrial Park with a worship center and associated parking, hardscape and landscaping. Total site area of both parcels is 1.94 acres. The parcels, A.C. Miller Property, Parcel 'A' and Maier Industrial Property, Parcel B-6 are zoned CE-CL1 and located at the intersection of Maier Place and Bursa Road within existing business park along Baltimore Washington Boulevard (U.S. RTE 1). The property is a subject to Route 1 Manual. The Route 1 Manual goal is to achieve intensive urban-looking development. DPZ Director's endorsement of Design Advisory Panel (DAP) 2010-05-26 recommendations has been received for proposed development.

Existing Site Conditions

Surrounding land uses include undeveloped section of the business park to the south, industrial use section to the east, a parcel owned by BGE associated with their transmission lines to the north, and the auto repair facility to the west.

On the north side the site is surrounded by Hammond Branch (a tributary to Little Patuxent River) with associated floodplain and wetlands. On the west side the site is surrounded by meandering ephemeral stream with associated floodplain, a tributary to Hammond Branch. Currently the site is predominately wooded and slopes down toward an ephemeral stream and Hammond Branch floodplain. All soils on site are 100% HSG 'D'.

The site area has been a subject to a previous design and review process through DPZ. Existing wetlands, floodplains, stream buffers and forest conservation areas have been delineated, approved and recorded during Subdivision of A.C. Miller Property (F-02-010), plots # 16229 through 16332, recorded 11/20/03. Additional floodplain has been delineated and technically approved during Site Development Plan for Singh Property (SDP-07-022).

Proposed Development

It is proposed to locate new development away from environmentally sensitive areas. The proposed Limit of Disturbance is 1.32 acres and doesn't include any disturbance within wetlands, wetland buffers, floodplains and stream buffers. It is proposed to locate building with associated parking centrally as close to existing Bursa Road and Maier Place as possible, as is consistent with Route 1 Manual. It is proposed to construct retaining wall along the north side of development to bring the site up out of the low land and allow for circulation and parking at the rear of the building.

SWM Design Criteria

In accordance with Howard County's Stormwater Management criteria, it is required to provide Environmental Site Design (ESDv) and Recharge Volume (Rev) for the development of this site. The concept for how these criteria would be addressed was discussed during two pre-submittal meetings with Charles Dammers and James Witmer of Howard County's Development Engineering Division. In those meetings it was determined the best approach for meeting ESD to the MEP in a way most suited for the unique specifics of the property and it's developed conditions. The results of this coordination have been incorporated into the current design for SWM ESD, are as follows:

- Environmental Site Design will be provided by a combination of: the micro-scale practices (Micro-Bioretenion, Rainwater Harvesting), alternative surfaces (Pervious Pavements), and use of more traditional BMPs (Perimeter Sandfilters) throughout the site.
- Recharge Volume (Rev) will be provided in stone-filled reservoir directly below Pervious Pavement Area 'B' underdrain system.
- Channel Protection Volume (Cpv) is satisfied, because the required ESDv has been provided.

Consequently, Environmental Concept Plan and associated SWM ESD to MEP Report have been approved by Howard County DPZ.

SDP ESD Options

On the North side of the development it is proposed to provide Micro-Bioretenion practice (Drainage Area 'E') located just above 50 feet wooded stream buffer. Overflow from this facility drains via sheeloff down toward ephemeral stream. Principal outfall from this and some other SWM facilities will be directed to the previously approved (F-02-10) public storm drain system located within an existing public storm drain easement (547/6) on site.

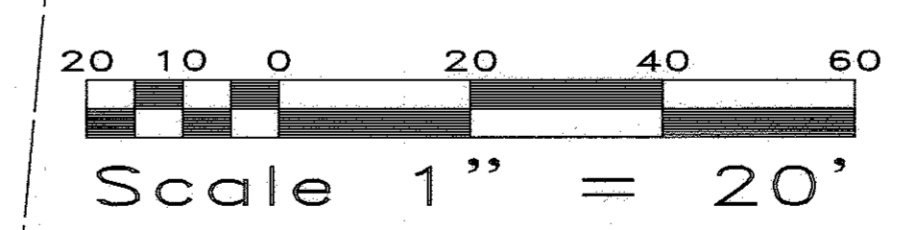
On the South and West sides of the development it is proposed to provide three separate areas of Pervious Pavement (Drainage Areas 'A', 'B' and 'C') under parking spaces. Due to hydrologic classification of existing soils underdrains and overdrains will be provided to dewater unfiltered water. 12" subbase has been designed to ensure sufficient "treeboard" within the section. Additional 24" of stone storage will be provided to treat run-on.

The runoff from the eastern part of the roof will be directed to an underground Rainwater Harvesting cistern (Drainage Area 'D') under driveway and parking on the east side of the building. The cistern is expected to be 8' diameter 5,000 gallon cistern. It is proposed to provide Large Cascade Filter for first flush diversion. It is proposed to dewater 27% +/- of the cistern slowly thru low flow opening after each rain event and thus providing a benefit to the wetlands downstream. The other 73% +/- of the rainwater storage will be used to water landscaping between the rains and during drought periods.

On the East side of the proposed development near proposed retaining wall a series of Perimeter Sandfilters (Drainage Areas 'F' and 'G') shall be used to provide remaining ESDv. The immediate area is in fill and it is undesirable to create additional hydrostatic pressure against the wall using micro-scale practice. It was determined that perimeter sandfilter is most suitable practice for this location. For Drainage Area 'F' it is proposed to provide two interconnected pre-cast units. The principal outfall from these units is via daylighted pipe on the opposite side of the proposed retaining wall, just above the wetland buffer.

Reduction of impervious area was accomplished through better site design (providing 2-story building with smaller footprint) and through the use of alternative surfaces (Pervious Pavements on south and west sides).

Erosion and Sediment Control Plan has been integrated into SWM strategy. Sequence of Construction lists all SWM facilities and steps necessary to prevent them from contamination by the sediment laden runoff and over compaction.



PHASE II NOTE:
FOR PHASE II BUILDINGS SEE PHASE II NOTE #27 ON TITLE SHEET 10f19.

LIMIT OF DISTURBANCE
1.32 Ac. / 57,500 S.F.

OWNER'S REPRESENTATIVE/ DEVELOPER:
TLI DESIGNGROUP INC.
3308 DORCHESTER ROAD
BALTIMORE, MD 21215
Attn: Taiwo Ilyomade, President
Toll Free/Fax/Voice mail:
(1-866) 616-1497
Mobile: (443) 831-6703

KCW J.O.: 2080018
SCALE: 1" = 20'
DESIGNED: MT
DRAWN: MT
CHECKED: KCA
DATE: NOV. 30, 2012
DRAWING NO.
7 OF 19

SWM ESD PLAN/DEVELOPED CONDITIONS DRAINAGE AREA MAP

VICTORY TEMPLE - LAUREL WORSHIP CENTER
9100 BURSA ROAD

SDP-12-007
TAX MAP 47, GRID 23
PARCEL 540 (PARCEL A, PLAT # 22114)

W&S CONTRACT No. 24-4047-D
ZONING: CE-CL1
ELECTION DISTRICT - 6
HOWARD COUNTY, MARYLAND

SDP-12-007

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division 4/28/13
Chief, Division of Land Development 4/30/13
Director 5/1/12

KCW ENGINEERING TECHNOLOGIES, INC.
810 Landmark Drive, Suite 215
Glen Burnie, MD 21061
Phone: 410.768.7700
Fax: 410.768.0200
www.kcw-et.com

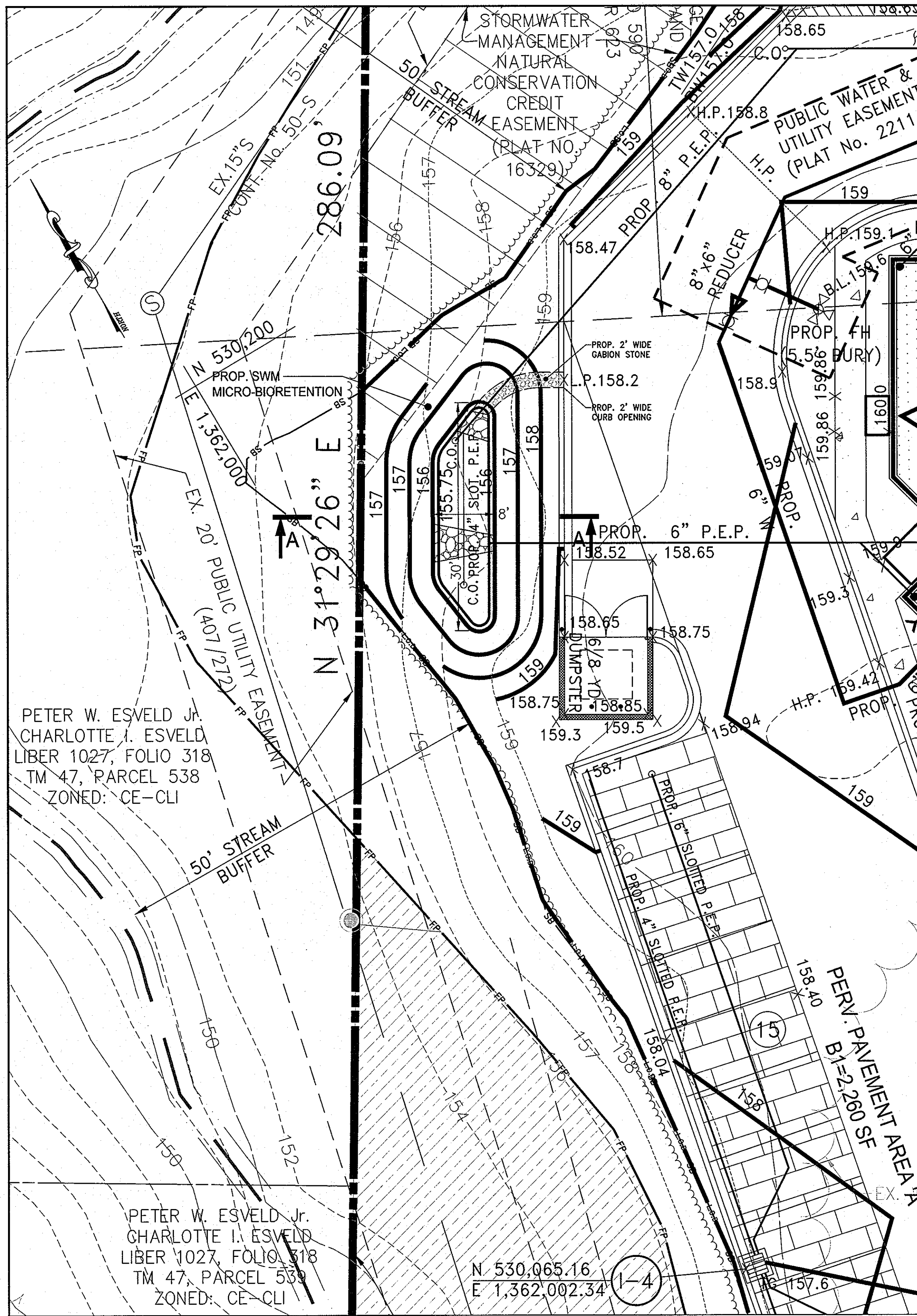


REVISIONS

NO.	DATE	DESCRIPTION
1	03-06-14	SHOW TWO-PHASE CONSTRUCTION.
2	05-05-17	ADD PHASE II NOTE

OWNER:
THE REDEEMED CHRISTIAN CHURCH OF GOD, INC.
13701 ANNAPOLIS ROAD
BOWIE, MD 20720
Attn: Margaret Adeyokunnu, Pastor
Tele: (301) 352-0707
Fax: (301) 352-3339

Professional Certification, I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 33351. Expiration Date 06-30-2017.



SWM MICRO-BIORETENTION PLAN SCALE: 1"=10'

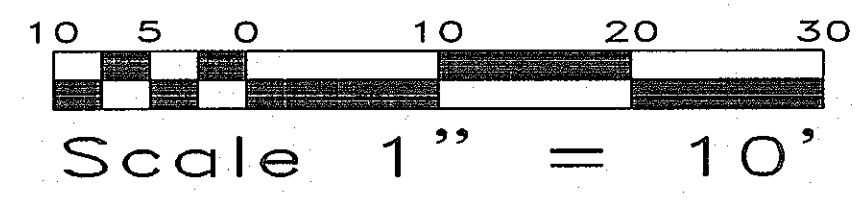
LANDSCAPING NOTE:
FOR MICRO-BIORETENTION PLANTING PLAN AND PLANTING DETAILS
SEE LANDSCAPE/HARDSCAPE PLAN, SHEET 17 OF 18.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division *[Signature]* 4/23/13 Date

Chief, Division of Land Development *[Signature]* 4/23/13 Date

Director *[Signature]* 5/1/13 Date



KCW Engineering Technologies, Inc.
810 Landmark Drive, Suite 215
Glen Burnie, MD 21061
Phone: 410.768.7700
Fax: 410.768.0200
www.kcw-et.com

Professional Certification.
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License No. 33351.
Expiration Date 06-30-2014.

[Signature]
11/30/12

OWNER:
THE REDEEMED CHRISTIAN CHURCH OF GOD, INC.
13701 ANNAPOLIS ROAD
BOWIE, MD 20720.

Attn: Margaret Adeyokunnu, Pastor
Tele: (301) 352-0707
Fax: (301) 352-3339

OWNER'S REPRESENTATIVE/ DEVELOPER:
TLI DESIGNGROUP INC.
3308 DORCHESTER ROAD
BALTIMORE, MD 21215

Attn: Taiwo Iloyamide, President

Toll Free/Fax/Voice mail:
(1-866) 616-1497
Mobile: (443) 831-6703

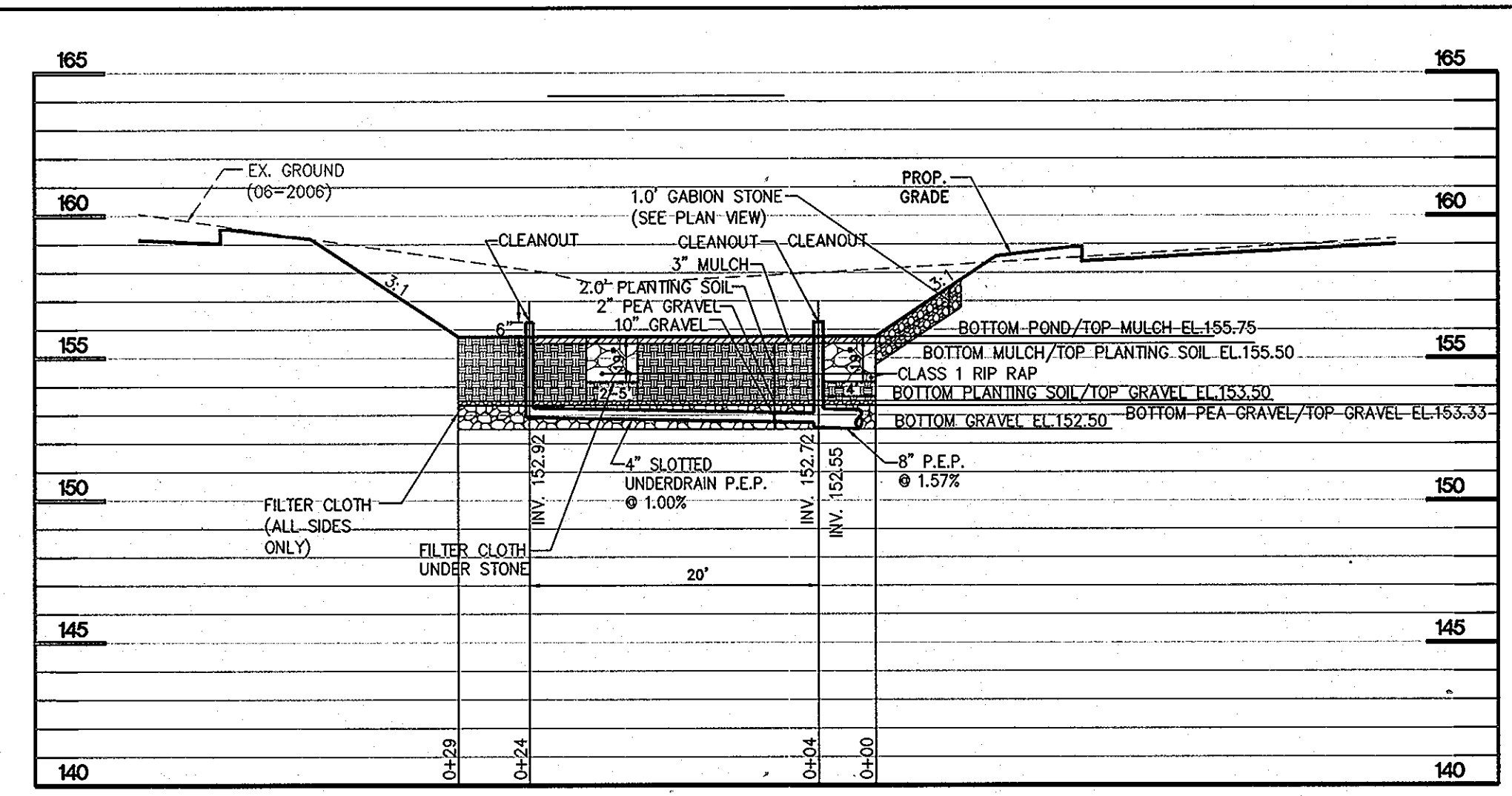
KCW J.O.: 2080018
SCALE: AS SHOWN
DESIGNED: MT
DRAWN: MT
CHECKED: KCA
DATE: NOV. 30, 2012
DRAWING NO.
8 OF 19

SWM MICRO-BIORETENTION PLAN

VICTORY TEMPLE - LAUREL
WORSHIP CENTER
9100 BURSA ROAD

W&S CONTRACT No. 24-4047-D
ZONING: CE-CL1
ELECTION DISTRICT - 6
HOWARD COUNTY, MARYLAND

SDP-12-007
TAX MAP 47, GRID 23
PARCEL 540 (PARCEL A, PLAT # 22114)



SWM MICRO-BIORETENTION PROFILE SCALE: 1"=10' (Horiz.) 1"=5' (Vert.)

B.4.C Specifications for Micro-Bioretenation.

1. Material Specifications
The allowable materials to be used in these practices are detailed in Table B.4.1.

2. Filtering Media or 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 micro-bioretenation practice 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:
- Soil Component - Loamy Sand or Sandy Loam (USDA Soil Textural Classification)
- Organic Content - Minimum 10% by dry weight (ASTM D 2974). In general, this can be met with a mixture of loamy sand (60%-65%) and compost (35% to 40%) or sandy loam (30%), coarse sand (30%), and compost (40%).
- Clay Content - Media shall have a clay content of less than 5%.
- pH Range - Should be between 5.5 - 7.0. Amendments (e.g., lime, iron sulfate plus sulfur) may be mixed into the soil to increase or decrease pH.

There shall be at least one soil test per project. Each test shall consist of both the standard soil test for pH, and additional tests of organic matter, and soluble salts. A textural analysis is required from the site stockpiled topsoil. If topsoil is imported, then a texture analysis shall be performed for each location where the topsoil was excavated.

3. Compaction
It is very important to minimize compaction of both the base of the bioretention practices and the required backfill. When possible, use excavation hoers to remove original soil. If practices are excavated using a loader, the contractor should use wide track or marsh track equipment, or light equipment with turf type tires. 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 a 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 optional 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
Recommended plant material for micro-bioretenation practices can be found in Appendix A, Section A.2.3.

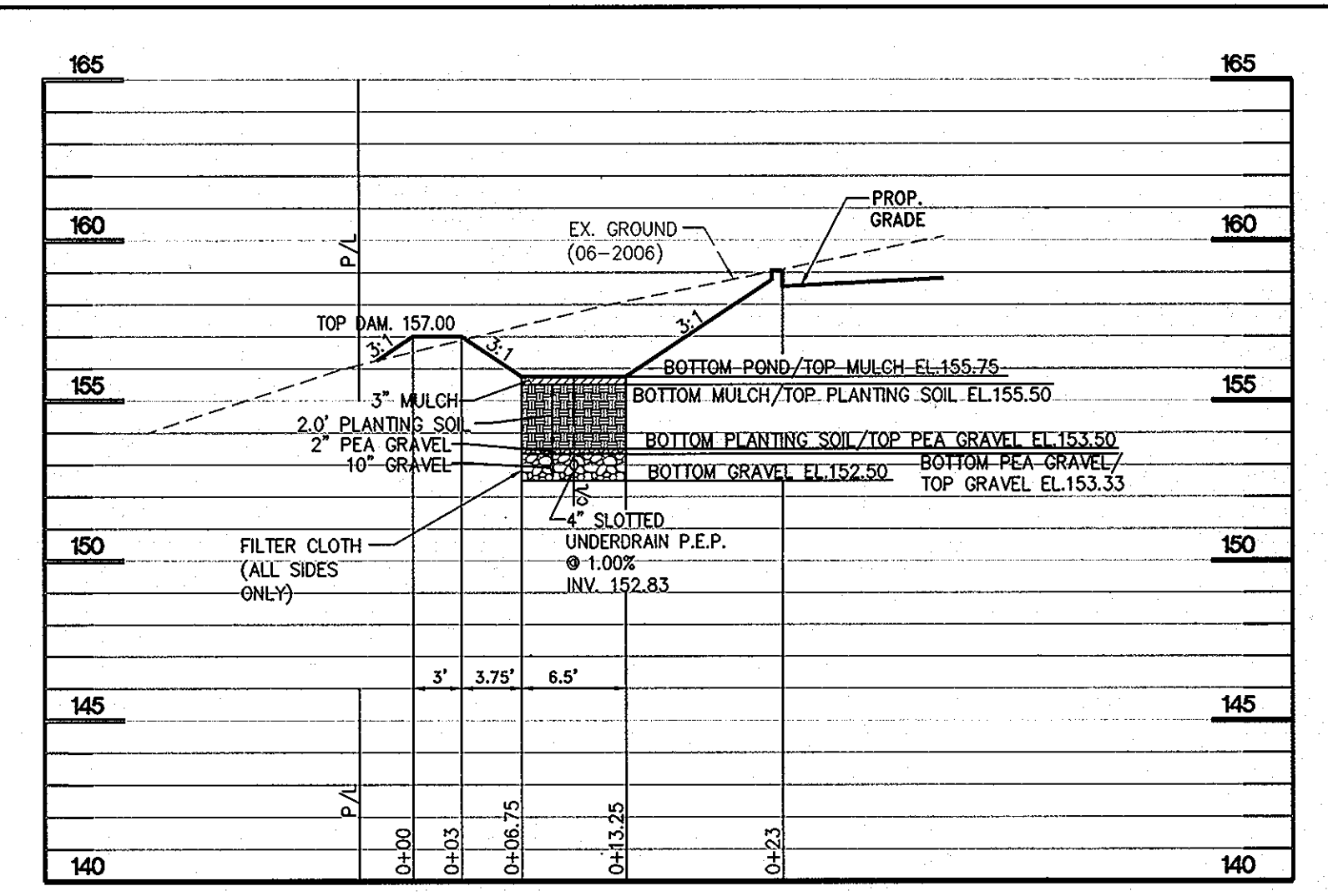
5. Plant Installation
Compost is a better organic material source, is less likely to float, and should be placed in the invert and other low areas. Mulch should be placed in surrounding to a uniform thickness of 2" to 3". Shredded or chipped hardwood mulch is the only accepted mulch. Pine mulch and wood 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.

Rootstock 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. Thoroughly water ground bed cover after installation.

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 defeats, 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 per 1000 square feet.



SWM MICRO-BIORETENTION SECTION A-A SCALE: 1"=10' (Horiz.) 1"=5' (Vert.)

B.4.C Specifications for Micro-Bioretenation.

6. Underdrains
Underdrains should meet the following criteria:
- Pipe - Should be 4" to 6" diameter, slotted or perforated rigid plastic pipe (ASTM F 758, Type PS 28, AASHTO-M-278, or AASHTO-M-252, Type S) in a gravel layer. The preferred material is slotted, 4" rigid pipe (e.g., PVC or HDPE).
- Perforations - If perforated pipe is used, perforations should be 3/4" diameter located 6" on center with a minimum of four holes per row. Pipe should be wrapped with a 1/2" (No. 4 or 4x4) galvanized hardware cloth.
- Gravel - The gravel layer (No. 57 stone preferred) shall be at least 3" thick above and below the underdrain.
- The main collector pipe shall be at a minimum 0.5% slope.
- A rigid, non-perforated observation well must be provided (one per every 1,000 square feet) to provide a clean-out port and monitor performance of the filter.
- A 4" layer of pea gravel (3/4" to 1/2" stone) shall be located between the filter media and underdrain to prevent migration of fines into the underdrain. This layer may be considered part of the filter bed when bed thickness exceeds 24".

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

Table B.4.1 Materials Specifications for Micro-Bioretenation, Rain Gardens & Landscape Infiltration-

Material	Specification	Size	Notes
Plantings	see Appendix A, Table A.4	n/a	plantings are site-specific (See Plant List below)
Planting soil (2" to 4" deep)	loamy sand (60 - 65%) & compost (35 - 40%) or sandy loam (30%), coarse sand (30%) & compost (40%)	n/a	USDA soil types loamy sand or sandy loam; clay content < 5%
Organic content	Min. 10% by dry weight (ASTM D 2974)		
Mulch	shredded hardwood		aged 6 months, minimum; no pine or wood chips
Pea gravel diaphragm	pea gravel: ASTM-D-448	NO. 5 OR NO. 9 (1/8" TO 3/8")	
Curtain drain	ornamental stone: washed cobbles	stone: 2" to 5"	
Geotextile	n/a	n/a	PE Type 1 nonwoven (Mini-180 N or approved equal)
Gravel (underdrains and infiltration berms)	AASHTO M-43	NO. 57 OR NO. 6 AGGREGATE (3/8" to 3/4")	
Underdrain piping	4" to 6" rigid polyethylene pipe or 4" to 6" rigid polypropylene pipe or 4" to 6" rigid polybutylene pipe	4" to 6" rigid polyethylene-40 PVC or 4" to 6" rigid polypropylene-40 PP or 4" to 6" rigid polybutylene-40 PB	Slotted or perforated pipe; 3/8" perf @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipes; not necessary underdrain pipes. Perforated pipe shall be wrapped with 1/4 inch galvanized hardware cloth
Poured in place concrete (if required)	MISHA 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 350.R/89, vertical loading (H-10 or H-20); allowable horizontal loading (based on soil pressure); and analysis of potential cracking
Sand	AASHTO-M-6 or ASTM-C-33	0.02" to 0.04"	Sand substitutions such as Diabase and Graystone (AASHTO) #10 are not acceptable. No calcium carbonated or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.

SWM MICRO-BIORETENTION PLANT LIST

KEY	QTY	BOTANICAL NAME COMMON NAME	SIZE	COND	REMARKS
	1	ACER RUBRUM 'RED SUNSET' RED SUNSET RED MAPLE	2 1/2" - 3" CAL.	B & B	FULL, HEAVY SPECIMEN, HEADED TO 6 FT.
	9	ITEA VIRGINICA 'LITTLE HENRY' LITTLE HENRY SWEETSPIRE	24" - 30" HT.	#5	3'-6" O.C., STAGGERED
	8	PANICUM VIRGATUM 'HEAVY METAL' HEAVY METAL SWITCHGRASS		#3	4' O.C., STAGGERED
A	26	MONARDA DIDYMA 'PETITE DELIGHT' PETITE DELIGHT BEE BALM		1 QT. POTS	18" O.C., STAGGERED
B	35	IRIS VERSICOLOR BLUE FLAG IRIS		1 QT. POTS	18" O.C., STAGGERED
C	16	ASCLEPIAS INCARNATA SWAMP MILKWEED		1 QT. POTS	24" O.C., STAGGERED

Construction Criteria:

The following items should be addressed during construction of projects with micro-bioretenation:

Erosion and Sediment Control: Micro-bioretenation practices should not be constructed until the contributing drainage area is stabilized. If this is impractical, runoff from disturbed areas shall be diverted away and no sediment control practices shall be used near the proposed location.

Soil Compaction: Excavation should be conducted in dry conditions with equipment located outside of the practice to minimize bottom and sidewall compaction. Only lightweight, low ground-contact equipment should be used within micro-bioretenation practices and the bottom scarified before installing underdrains and filtering media.

Underdrain Installation: Gravel for the underdrain system should be clean, washed, and free of fines. Underdrain pipes should be checked to ensure that both the material and perforations meet specifications. The upstream ends of the underdrain pipe should be capped prior to installation.

Filter Media Installation: Bioretention soils may be mixed on-site before placement. However, soils should not be placed under saturated conditions. The filter media should be placed and graded using excavators or backhoes operating adjacent to the practice and be placed in horizontal layers (12 inches per lift maximum). Proper compaction of the media will occur naturally. Spraying or sprinkling water on each lift until saturated may quicken setting times.

Landscape Installation: The optimum planting time is during the Fall. Spring planting is also acceptable but may require watering.

Inspection:

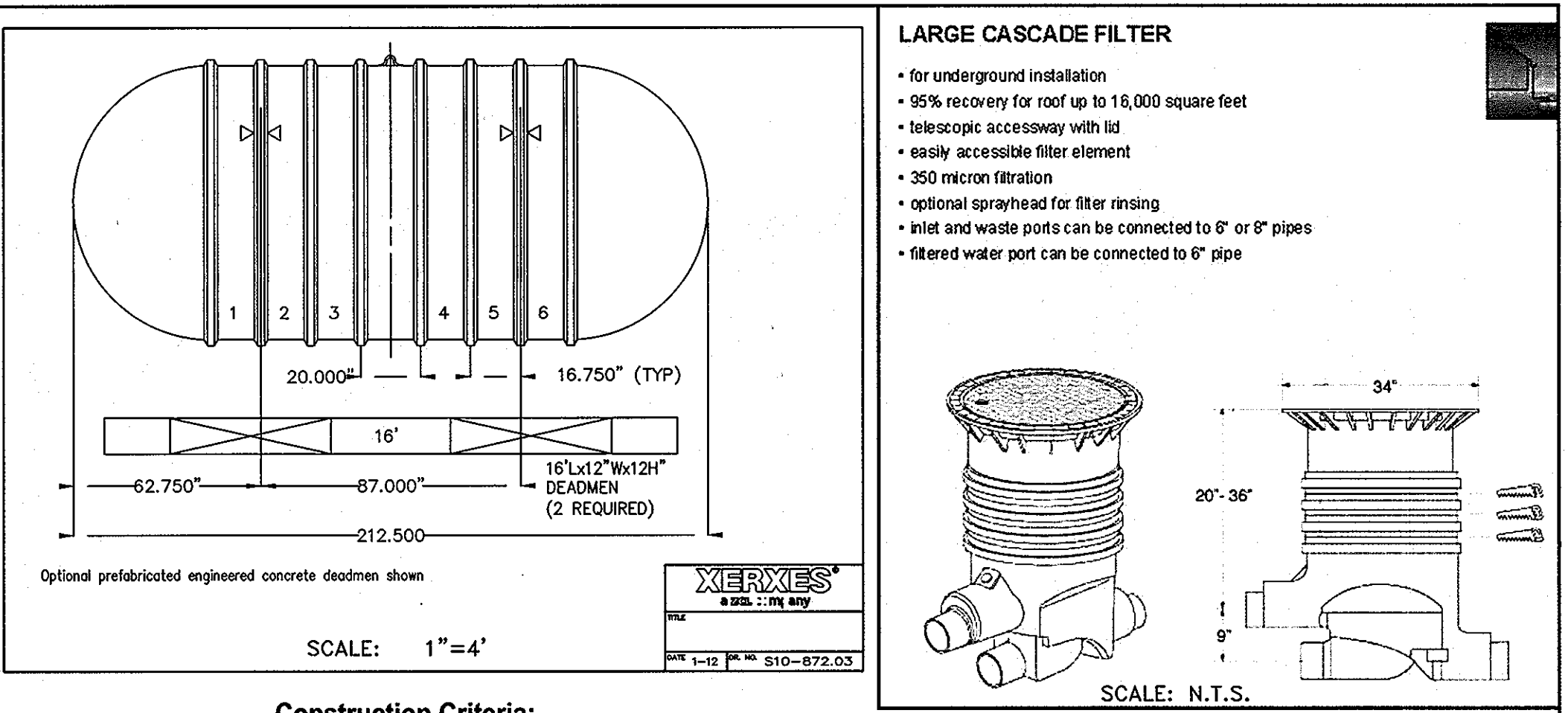
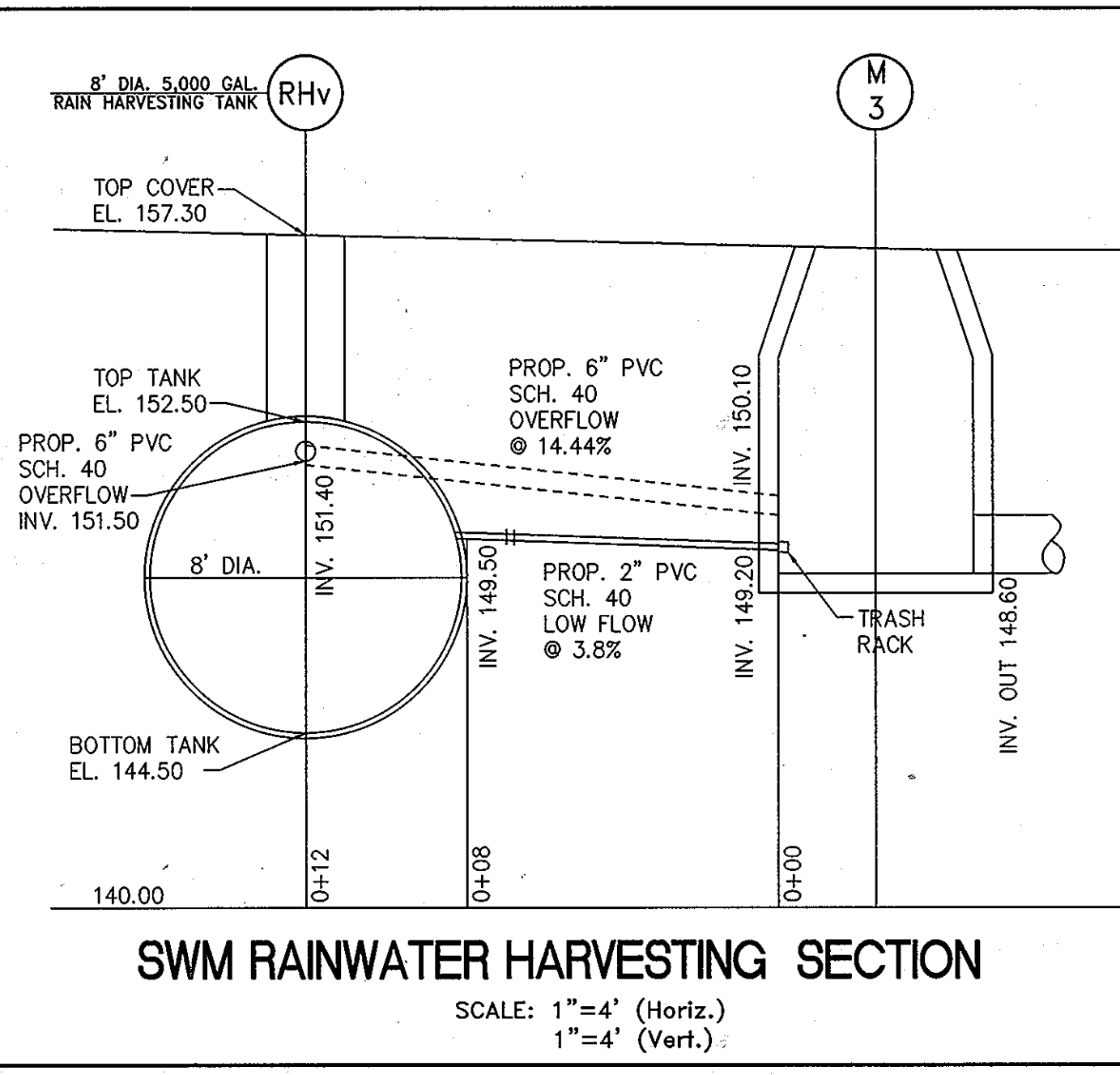
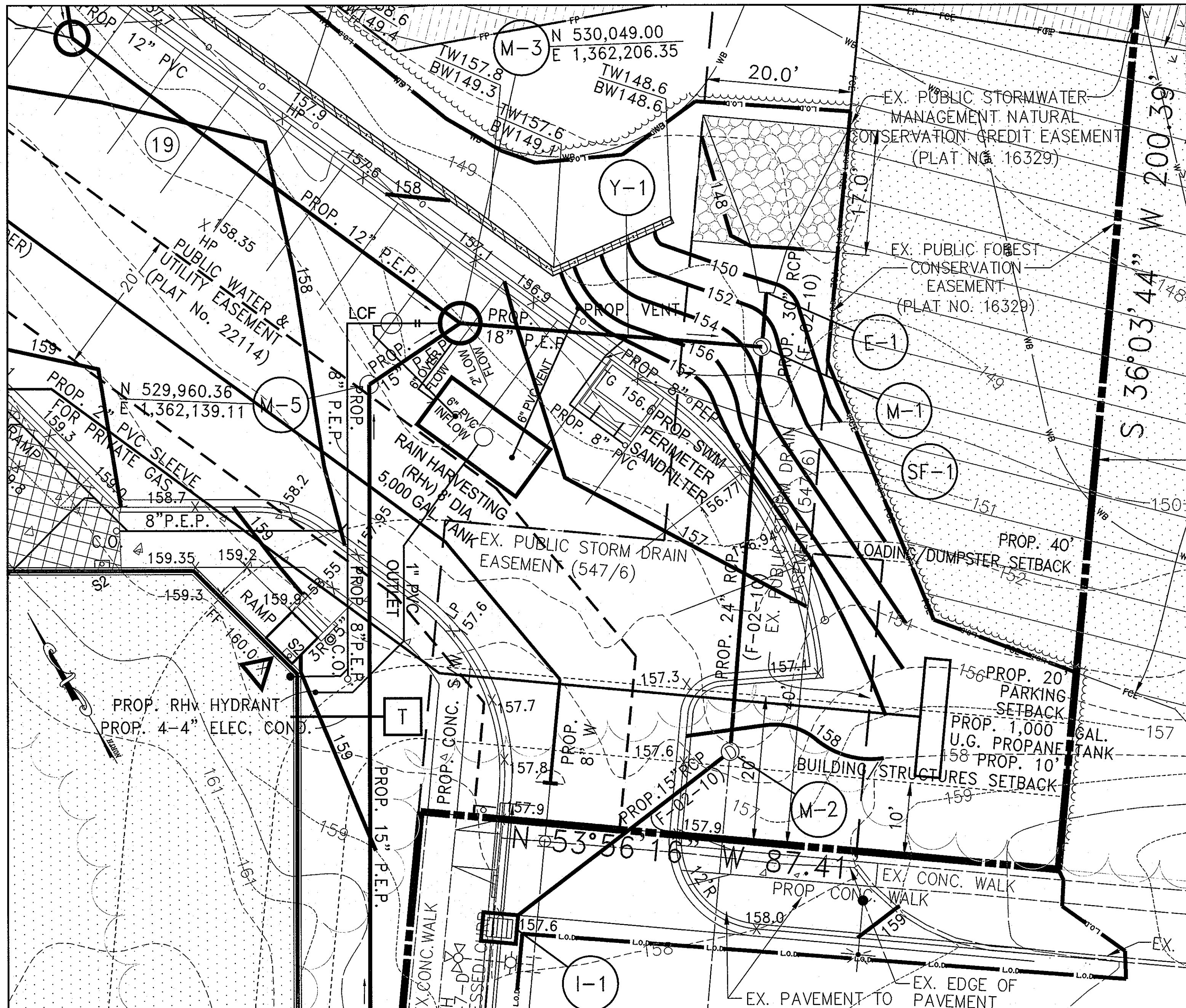
Regular inspections shall be made during the following stages of construction:
During excavation to subgrade and placement and backfill of underdrain systems.
During placement of filter media.
During construction of appurtenant conveyance.
Upon completion of final grading and establishment of permanent stabilization.

Maintenance Criteria:

The following items should be addressed to ensure proper maintenance and long-term performance of micro-bioretenation practices:
Privately owned practices shall have a maintenance plan and shall be protected by easement, deed restriction, ordinance, or other legal measures preventing its neglect, adverse alteration, and removal.
The top few inches of filter media should be removed and replaced when water ponds for more than 48 hours. Silts and sediment should be removed from the surface of the filter bed when accumulation exceeds one inch.
Where practices are used to treat areas with higher concentrations of heavy metals (e.g., parking lots, roads), mulch should be replaced annually. Otherwise, the top two to three inches should be replaced as necessary.
Occasional pruning and replacement of dead vegetation is necessary. If specific plants are not surviving, more appropriate species should be used. Watering may be required during prolonged dry periods.

STANDARD HOWARD COUNTY OPERATION AND MAINTENANCE SCHEDULE FOR MICRO-BIORETENTION (M-6)

- The Owner shall maintain the plant material, mulch layer and soil layer annually. 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. Acceptable replacement plant material is limited to the following: 2000 Maryland Stormwater Design Manual Volume II, Table A.4.1 and 2.
- The Owner shall perform a plant in the spring and in the fall of each year. During the inspection, the Owner shall remove dead and diseased vegetation considered beyond treatment, replace dead plant material with acceptable replacement plant material, treat diseased trees and shrubs, and replace all deficient stakes and wires.
- The Owner shall inspect the mulch each spring. The mulch shall be replaced every two to three years. The previous mulch layer shall be removed before the new layer is applied.
- The Owner shall correct soil erosion on an as needed basis, with a minimum of once per month and after each heavy storm.



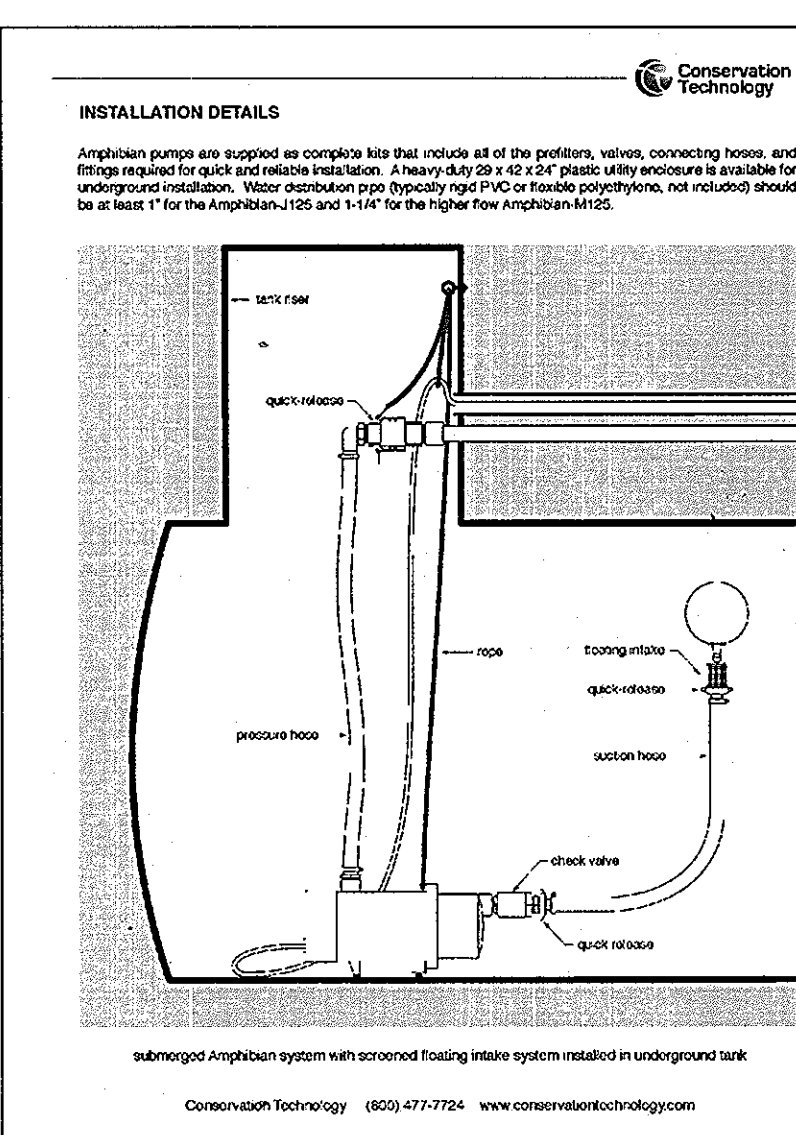
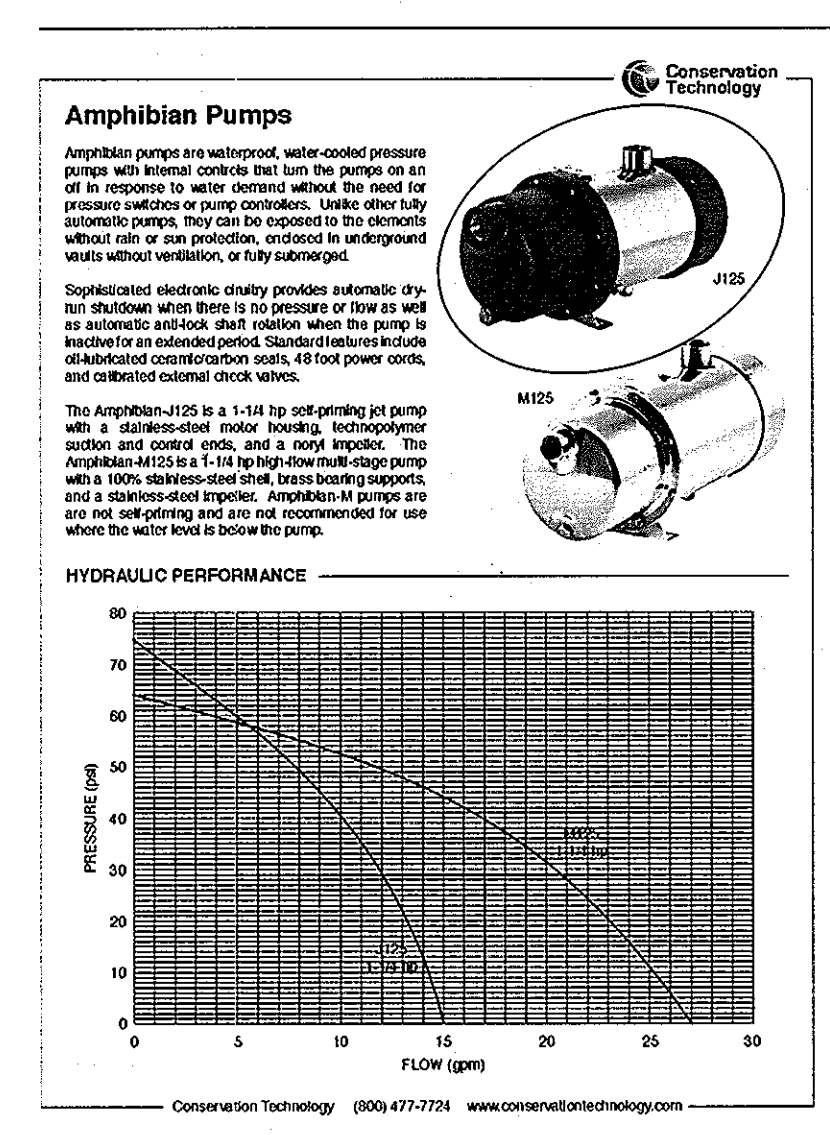
Construction Criteria:

The following should be addressed during construction of projects with rainwater harvesting systems:

Site Disturbance: Underground storage tanks shall be placed on or in native soils. If placement on fill material is necessary, a geotechnical analysis may be required by the approving authority.

Storage Tanks:
Storage tanks shall be designed to be watertight and all materials should be sealed with a water safe, non-toxic substance. Storage tanks shall be protected from direct sunlight and shall be opaque to prevent the growth of algae. The top of underground tanks shall be beneath the frost line. Cisterns may be ordered from a manufacturer or constructed on-site. Typical materials used to construct cisterns are fiberglass, wood, metal, or reinforced concrete.

Pressurization: Depending on the use of stored water, pressurization may be required. To add pressure, a pump or pressure tank can be used.



Inspection:

Prior to operation, certification shall be required that the constructed system meets the conditions specified on the approved plans. Additionally, certification regarding the water tightness of the underground storage tank shall be required after its installation.

Maintenance Criteria:

The following items should be addressed to ensure proper maintenance and long-term performance of rainwater harvesting systems:

Privately owned practices shall have a maintenance plan and shall be protected by easement, deed restriction, ordinance, or other legal measures preventing its neglect, adverse alteration, and removal.

Access shall be provided for cleaning, inspection, and maintenance in all cisterns.

Leaf screens, gutters, and downspouts should be cleaned to prevent clogging. Built-up debris can also foster bacterial growth in gutters and downspouts.

Storage tank lids and mosquito screens should be inspected and cleaned.

Damaged components should be replaced as needed.

To avoid freezing of components, above ground systems should be disconnected, drained, and cleaned at the start of the Winter season.

Underground system connections should be checked for frozen lines and ice blockages during Winter.

SWM RAINWATER HARVESTING (RHV) UNDERGROUND TANK PLAN SCALE: 1"=10'

FRP Water Tank Guide Specifications 9/1/10
Guide Specifications - Single and Double Wall Tanks for Water Conservation Use

Short Form
The contractor shall provide a single-wall or double wall fiberglass reinforced plastic (FRP) water tank as shown on the drawings. The tank size, fittings and accessories shall be as shown on the drawings. The fiberglass water tank shall be manufactured by Xerxes Corporation.

Long Form
Part I: General
1.01 Quality Assurance
A. Acceptable Manufacturer: Xerxes Corporation
B. Governing Standards, as applicable:
1. Tank manufacturer shall be in the business of manufacturing tanks with materials conforming to the requirements of ANSIAWWA D120-02 Thermosetting Fiberglass-Reinforced Plastic Tanks.
2. Tank manufacturer shall be listed by NSF under NSF/ANSI Standard 61
3. Tank manufacturer shall be in the business of manufacturing tanks with materials conforming to the requirements of ANSIAWWA D120-02 Thermosetting Fiberglass-Reinforced Plastic Tanks.
4. American Society for Testing and Materials (ASTM) Standards:
a. ASTM D883: Standard Terminology Related to Plastics
5. Shop Drawings
a. The manufacturer shall supply to engineer, contractor, and / or owner, a complete set of scale drawings detailing dimensions of heights, diameter, elevations to invert, pipe sizes and any other necessary details.

6. Calculations
a. The manufacturer (upon request) shall supply the engineer, contractor, and / or owner buoyancy calculations assuming a fully flooded excavation with an installed empty tank.
b. The sizing and construction of this tank shall be consistent with industry protocols and shall comply with the applicable regulations.

Part II: Products
2.01 Fiberglass Underground water storage tanks
A. Loading Conditions - water tank shall meet the following design criteria:
1. Internal Load - All tanks shall be designed to withstand a 5-psig air-pressure test with 5:1 safety factor. Maximum test pressure is 5 psig.
2. Surface Loads - Water tank shall withstand surface H-20 and HS-20 axle loads when properly installed according to manufacturer's current Installation Manual and Operating Guidelines.
3. External Hydrostatic Pressure and Burial Depth - tank shall be capable of being buried in ground with 7' of overburden over the top of the tank, the hole fully flooded, and maintain a safety factor of 5:1 against general buckling.
4. Tank shall support accessory equipment - such as access openings, risers, internal pump platform, drop/fill tubes, submersible pumps, manways, manway extensions, collar risers, FRP or PVC inlet/outlet piping, and ladders when installed according to tank manufacturer's current Installation Manual and Operating Guidelines.
5. Buried tanks shall be manufactured with integral trapezoidal ribs for structural integrity.

B. Product Storage
1. Tank shall be capable of handling liquids with specific gravity up to 1.1.
2. Tank shall be vented to atmospheric pressure.
3. Tank shall be capable of handling water for domestic use at ambient temperature.

C. Materials
1. Tank shall be manufactured with 100% premium resin (Terephthalic polyester or highly cross-linked isophthalic polyester resins), and chopped glass. No fillers or extenders will be used.
2. No General, Orthophthalic, or odd lot resin will be used.
3. All associated internal mounting hardware shall be rustproof.

D. Water Tank Dimensions and Capability
1. Tank shall have nominal working capacity of 5,000 gallons.
2. Tank shall have nominal outside diameter of 8 feet.
3. Tank shall weight shall be approximately _____ pounds.

E. Interstitial Space (Double-Wall Applications)
1. Tank shall have a space between the primary and secondary walls to allow for the free flow and containment of leaked product from the primary tank. The space also allows the insertion of a monitoring device through a monitoring fitting.
2. Each interstitial space monitor fitting shall consist of a 4" NPT fitting.

2.02 Accessories
A. Manway & Access Openings
1. All water tanks shall require at least one access or manway opening.
2. All access openings shall be FRP and a minimum of 24" (based on drawing)
3. All manway openings shall be FRP, flanged, and a minimum of 22" (based on drawing), complete with gaskets, bolts, and covers.
4. Location(s) are shown on submittal drawing.
5. Optional access risers shall be FRP or PVC and provided by the tank manufacturer
6. Optional manway extensions shall be FRP and provided by tank manufacturer

B. Internal Piping
1. All internal piping shall supplied by tank manufacturer
2. Location is shown on submittal drawings.

D. Piping/Fittings
1. All PVC piping shall be a minimum of SCH40
2. All tanks shall be equipped with factory-installed smoothing inlet and overflow piping
3. All FRP nozzles shall be flat-faced, flanged (gusseted when needed), and conform to ANSI B16.5 150# bolting pattern
4. All threaded fittings shall be constructed of FRP, carbon steel or 304 Stainless Steel

E. Lifting Lugs
1. All Tanks shall have lifting lug(s) that are capable of withstanding weight of tank with a safety factor of at least 2:1.

F. Optional Suction/Fill tubes
1. Suction/Fill tubes shall be a minimum of PVC SCH 40 or FRP
2. Suction/Fill tubes must be factory installed
3. Suction/Fill tubes shall terminate 4 inches above the bottom of tank
4. Location shall be as shown on submittal drawings.

G. Optional Anchoring
1. Straps shall be FRP anchor straps as supplied by tank manufacturer.
2. Number and location of straps shall be shown on submittal drawings.
3. Deadman shall be pre-manufactured and supplied by the tank manufacturer.

H. Optional Ladders
1. FRP ladders shall be supplied by tank manufacturer.

I. Optional Pump Platforms
1. FRP pump platforms shall be supplied by tank manufacturer.

Part III: Testing and Installation
3.01 Testing
A. Tank shall be tested according to the Xerxes Installation Manual and Operating Guidelines for Fiberglass Underground Storage Tanks in effect at time of installation.
3.02 Installation
A. Tank shall be installed according to the Xerxes Installation Manual and Operating Guidelines for Fiberglass Underground Storage Tanks in effect at time of installation.
B. Contractor shall be trained by the tank manufacturer, the state or other approved agency.
3.03 Operation and Maintenance
A. Tank should be set up on a regular clean out schedule and best management practices according to local jurisdictions.

Part IV: Warranty
4.01 Warranty
A. Warranty shall be manufacturer's Limited Warranty for Underground Water Tanks in effect at time of purchase.

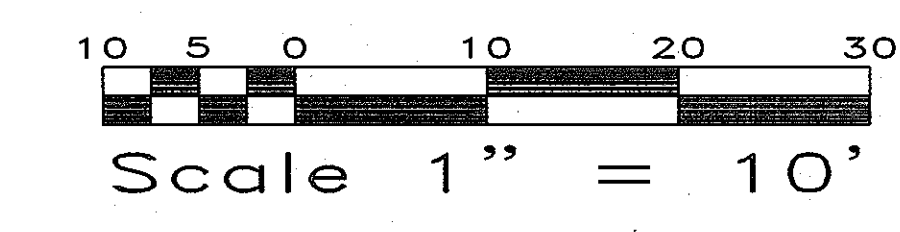
CONTRACTOR NOTES:

1) SINGLE-WALL FIBERGLASS UNDERGROUND TANK TO BE BY XERXES CORPORATION OR APPROVED EQUAL.

2) CONTRACTOR SHALL FURNISH SHOP DRAWINGS FOR ALL TANK AND PUMP APPURTENANCES TO ENGINEER FOR REVIEW AND APPROVAL.

STANDARD HOWARD COUNTY OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED Rainwater Harvesting (M-1)

- The Owner shall empty barrels on a monthly basis and clean barrel with a hose.
- The Owner shall verify integrity of leaf screens, gutters, downspouts, spigots, and mosquito screens, and clean and remove any debris.
- The Owner shall replace damaged components as needed.
- The Owner shall disconnect the barrel prior to winter, or allow the barrel to drain by bottom spigot during the winter season.

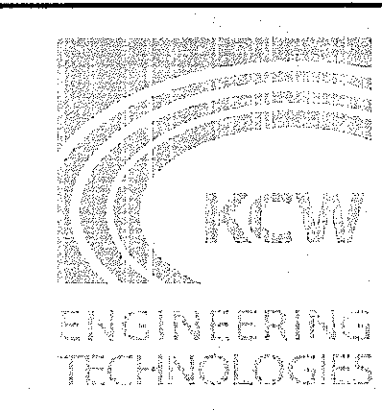


APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature] 4/23/13
Chief, Development Engineering Division Date

[Signature] 4/30/13
Chief, Division of Land Development Date

[Signature] 5/1/13
Director Date



KCW Engineering Technologies, Inc.
810 Landmark Drive, Suite 215
Glen Burnie, MD 21061
Phone: 410.768.7700
Fax: 410.768.0200
www.kcw-et.com



Professional Certification.
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License No. 33351.
Expiration Date 06-30-2014.

OWNER:
THE REDEEMED CHRISTIAN CHURCH OF GOD, INC.
13701 ANNAPOLIS ROAD
BOWIE, MD 20720

Attn: Margaret Adeyokunnu, Pastor
Tele: (301) 352-0707
Fax: (301) 352-3339

OWNER'S REPRESENTATIVE/ DEVELOPER:
TLI DESIGNGROUP INC.
3308 DORCHESTER ROAD
BALTIMORE, MD 21215

Attn: Taiwo Ilyuyamide, President

Toll Free/Fax/Voice mail:
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Mobile: (443) 831-6703

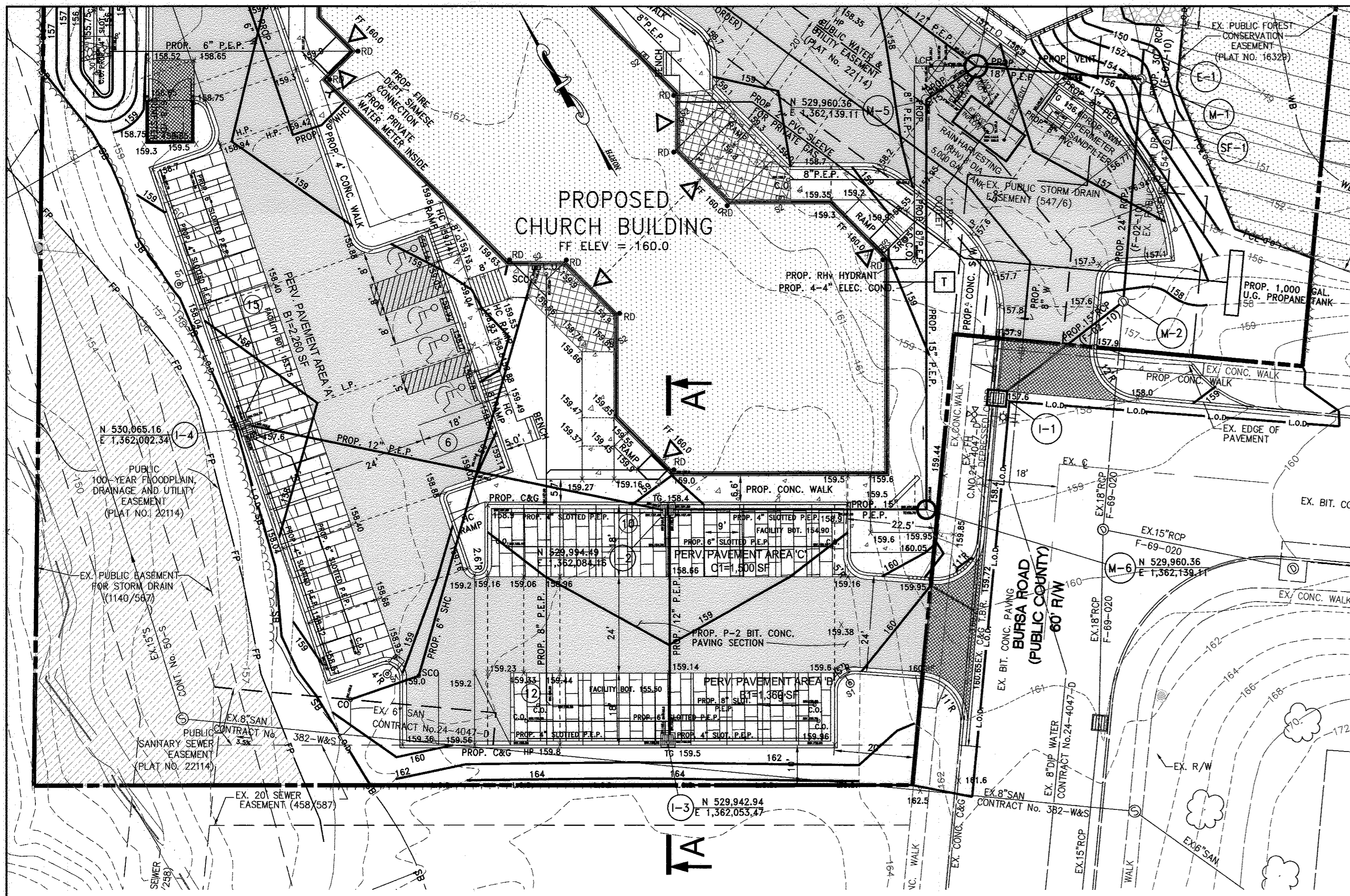
KCW J.O.: 2080018
SCALE: AS SHOWN
DESIGNED: MT
DRAWN: MT
CHECKED: KCA
DATE: NOV. 30, 2012
DRAWING NO. 9 OF 19

SWM RAINWATER HARVESTING SYSTEM PLAN

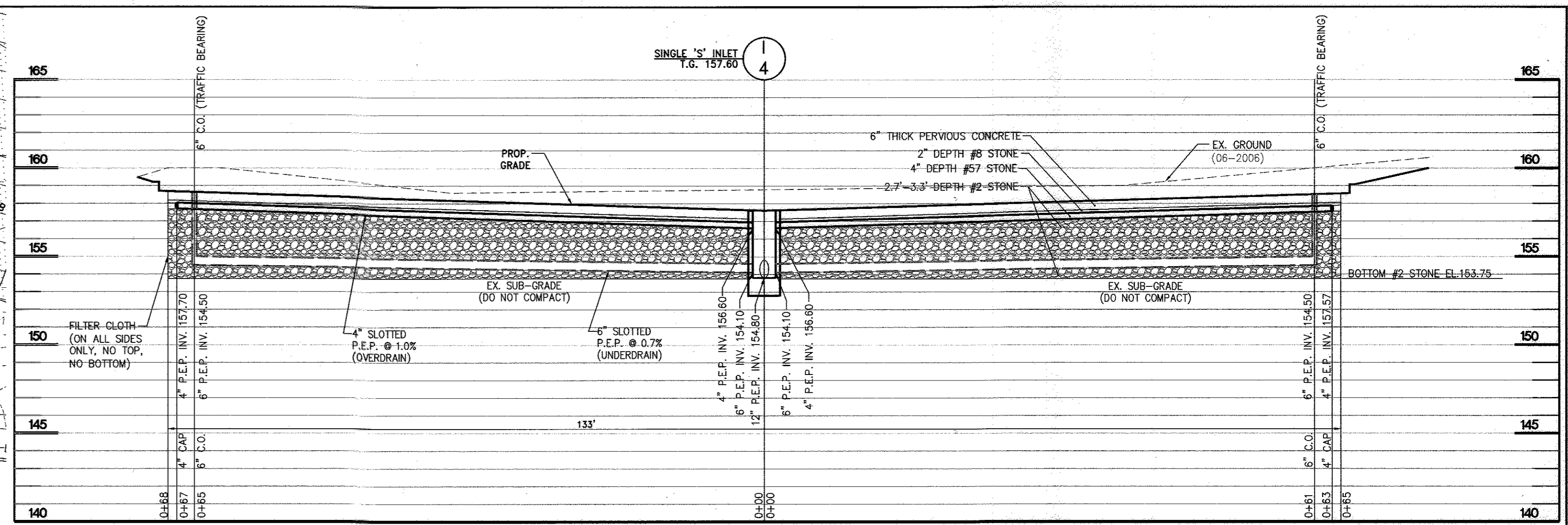
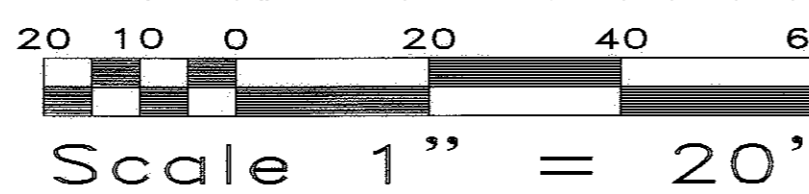
VICTORY TEMPLE - LAUREL WORSHIP CENTER
9100 BURSA ROAD

W&S CONTRACT No. 24-4047-D
ZONING: CE-CL1
ELECTION DISTRICT - 6
HOWARD COUNTY, MARYLAND

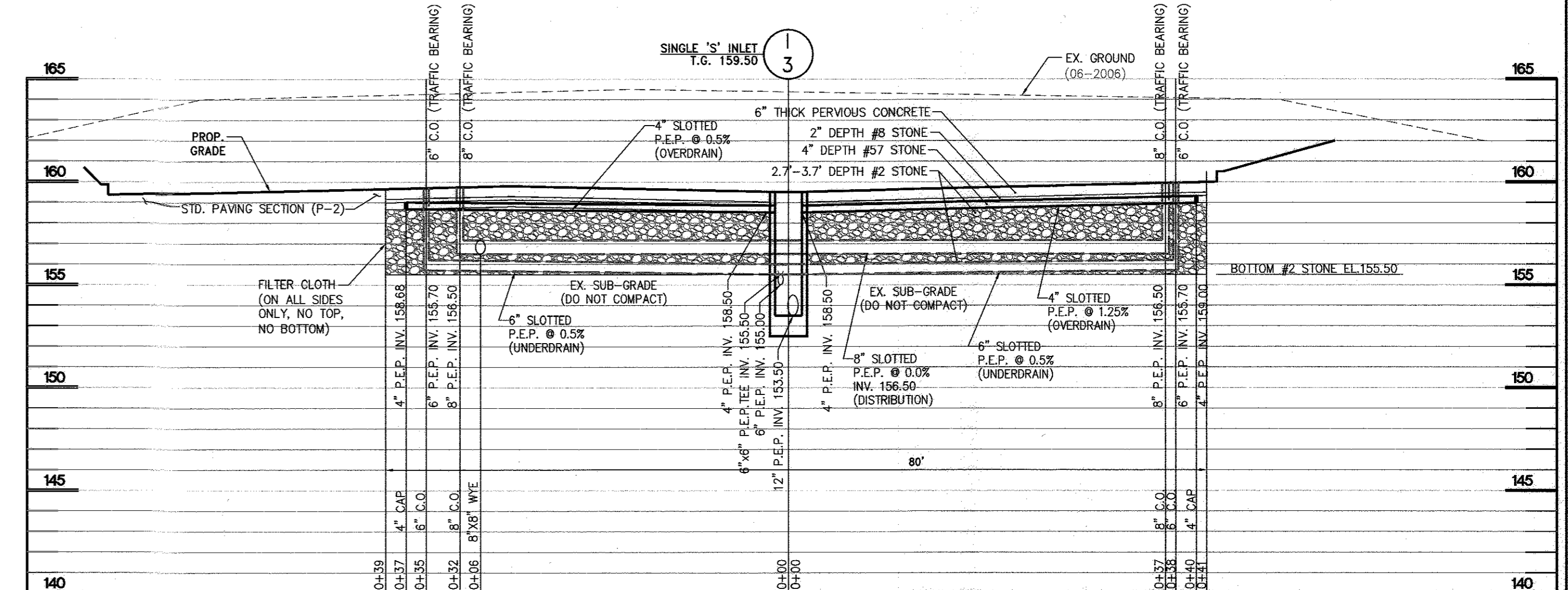
SDP-12-007
TAX MAP 47, GRID 23
PARCEL 540 (PARCEL A, PLAT # 22114)



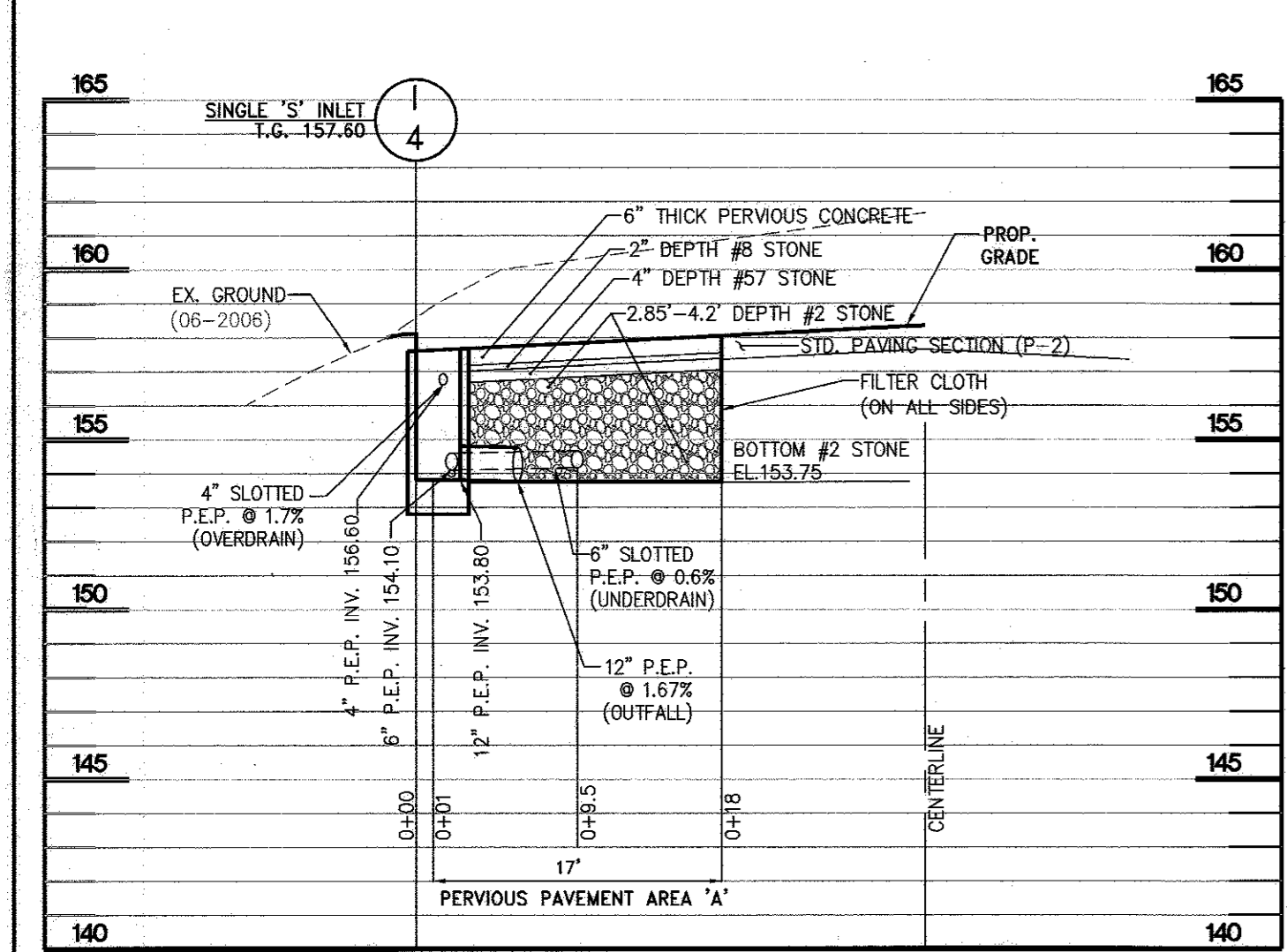
PERVIOUS PAVEMENT AREAS PLAN SCALE: 1"=20'



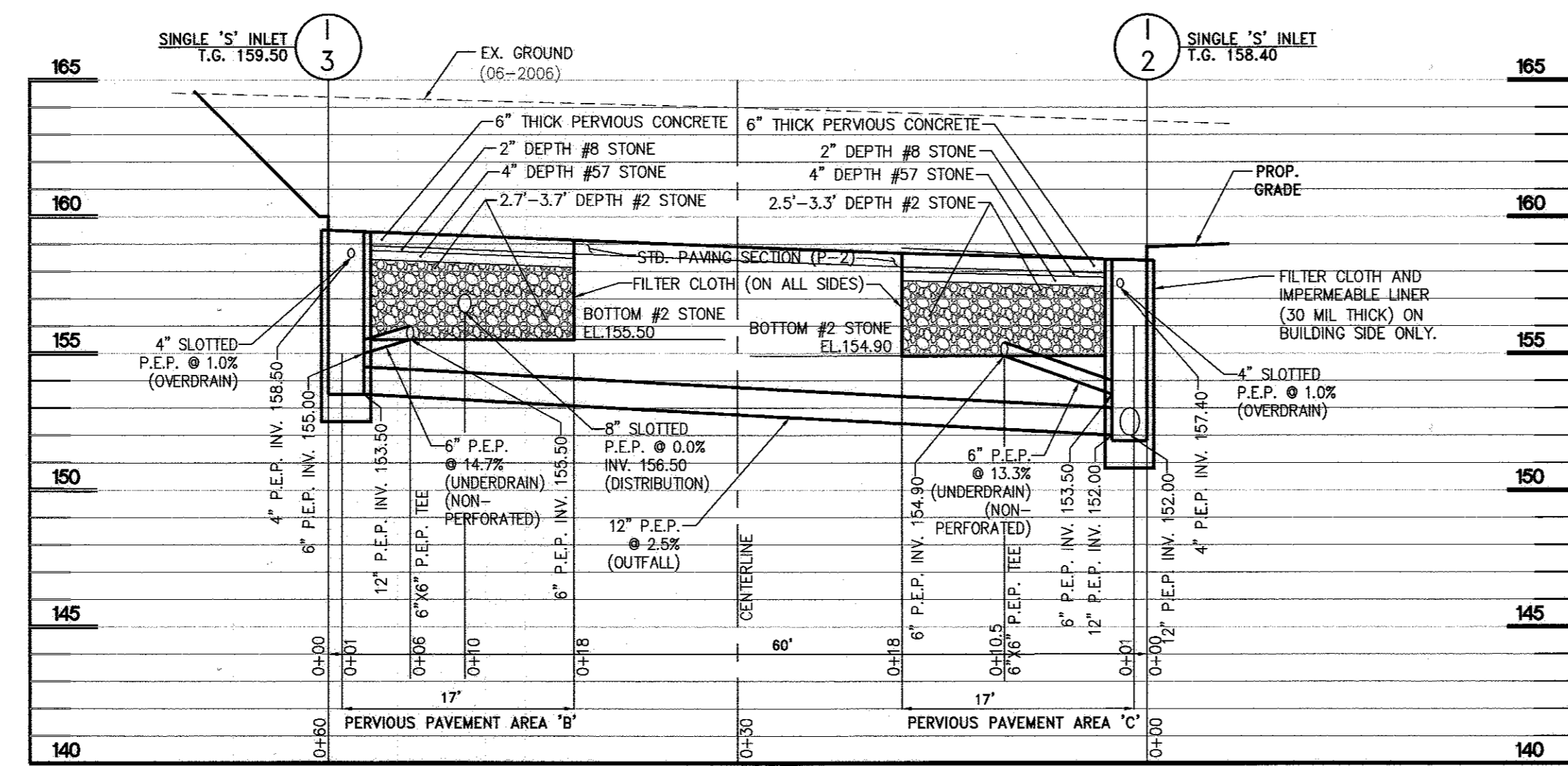
PERVIOUS PAVEMENT AREA 'A' PROFILE SCALE: 1"=10' (Horiz.) 1"=5' (Vert.)



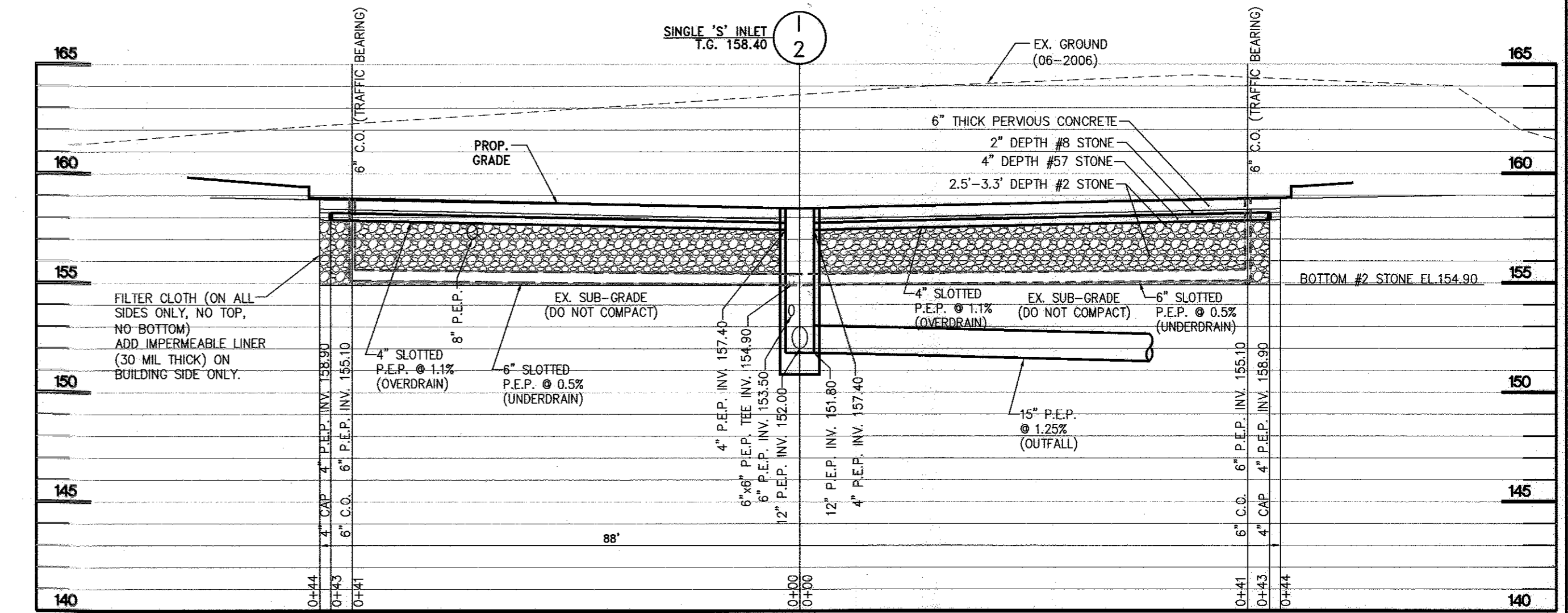
PERVIOUS PAVEMENT AREA 'B' PROFILE SCALE: 1"=10' (Horiz.) 1"=5' (Vert.)



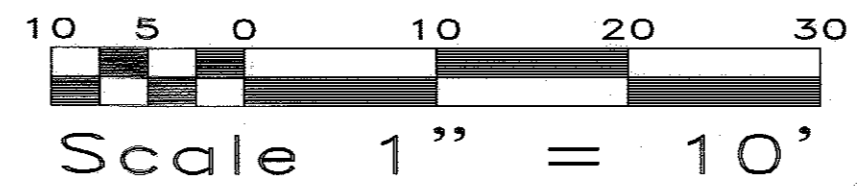
PERVIOUS PAVEMENT AREA 'A' SECTION SCALE: 1"=10' (Horiz.) 1"=5' (Vert.)



PERVIOUS PAVEMENT AREAS 'B' AND 'C' SECTION A-A SCALE: 1"=10' (Horiz.) 1"=5' (Vert.)



PERVIOUS PAVEMENT AREA 'C' PROFILE SCALE: 1"=10' (Horiz.) 1"=5' (Vert.)



APPROVED: DEPARTMENT OF PLANNING AND ZONING

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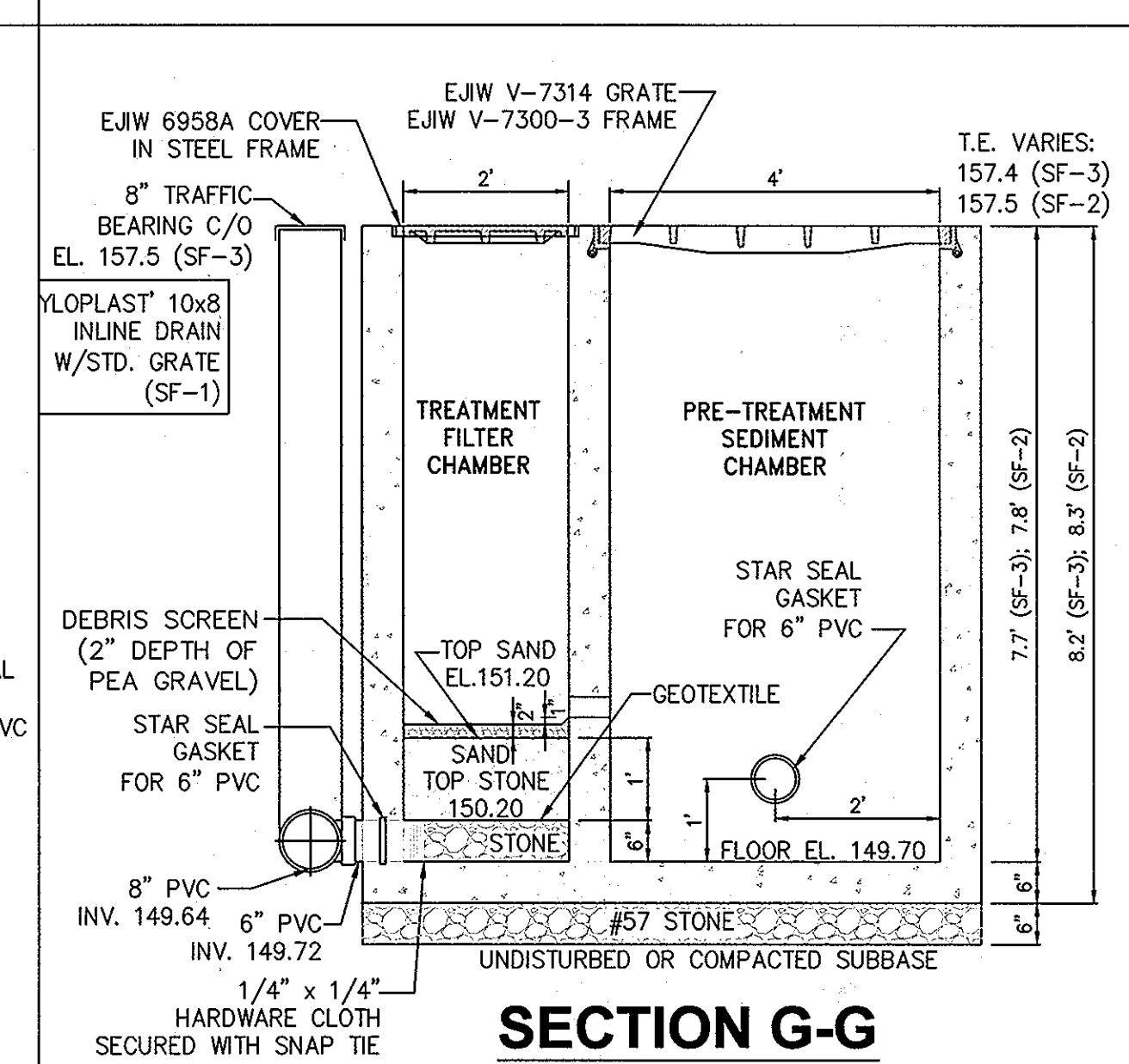
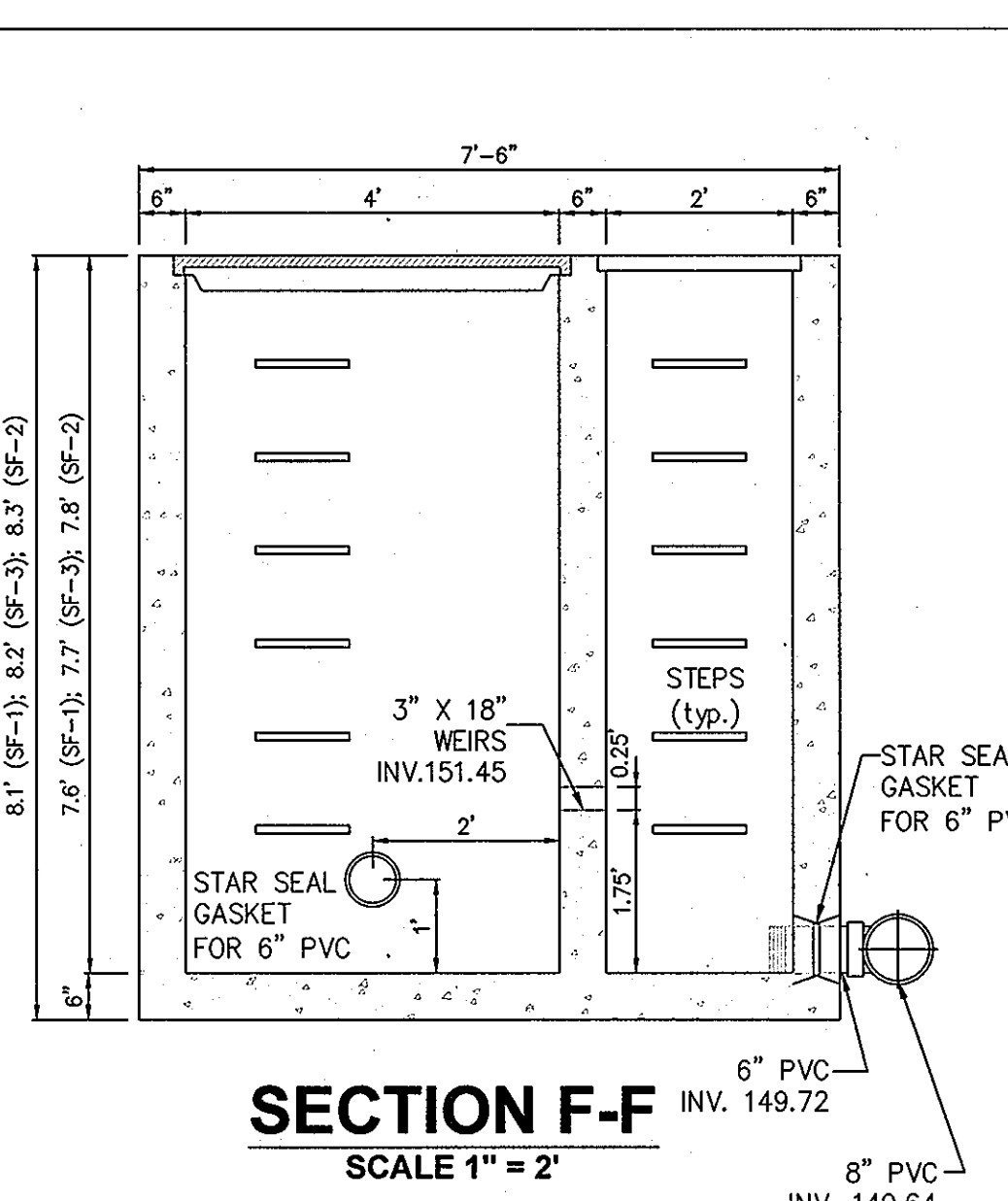
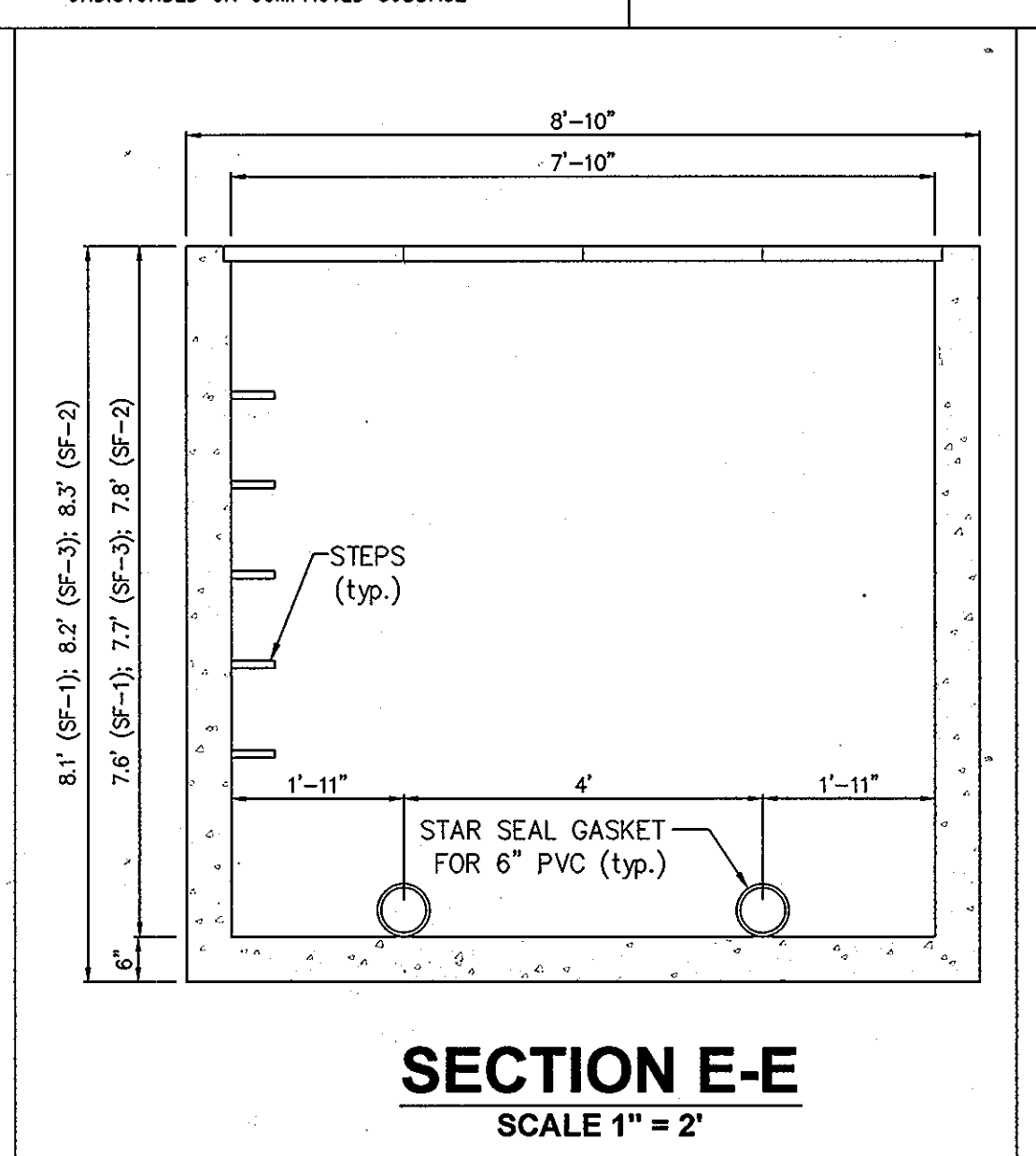
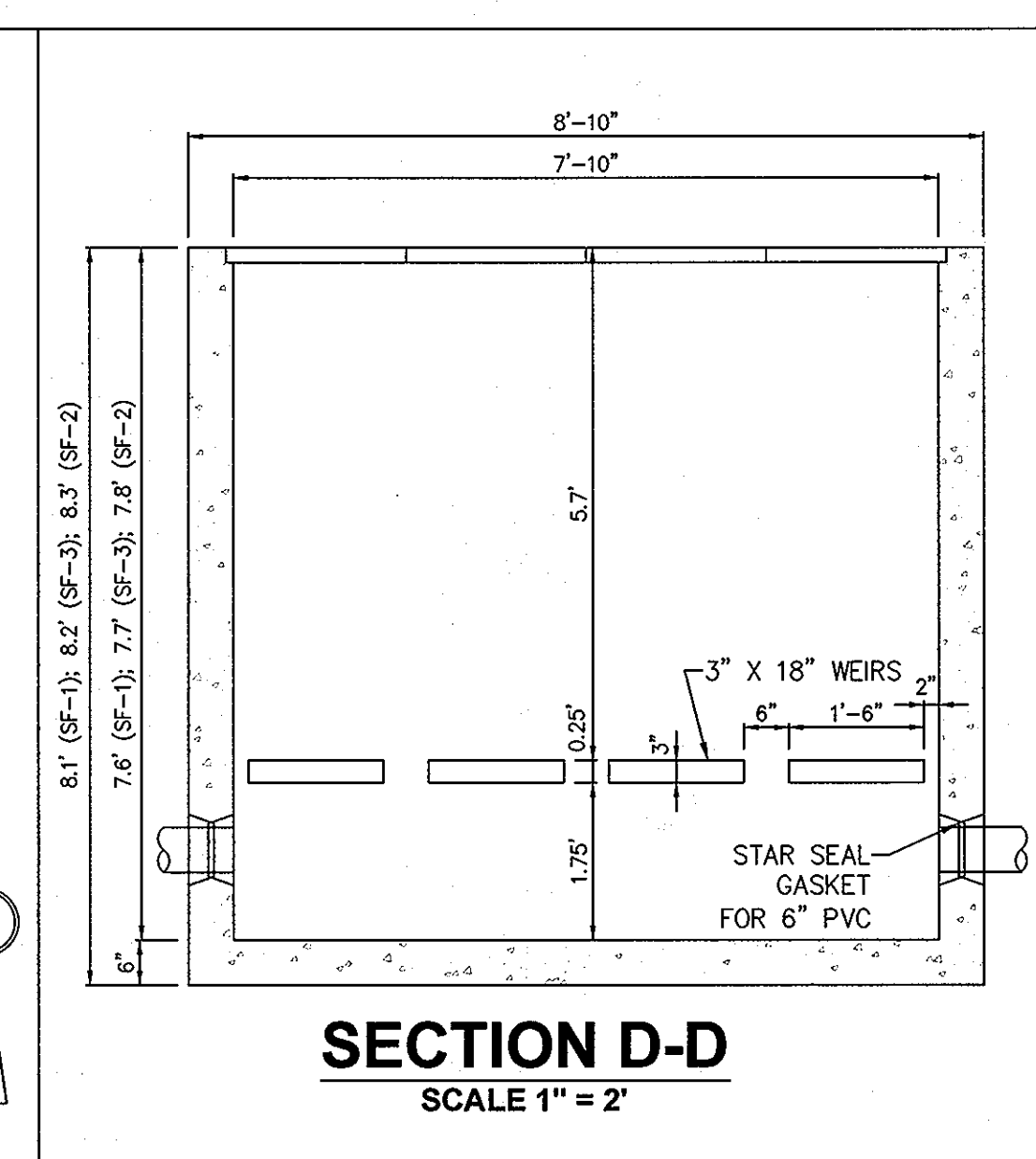
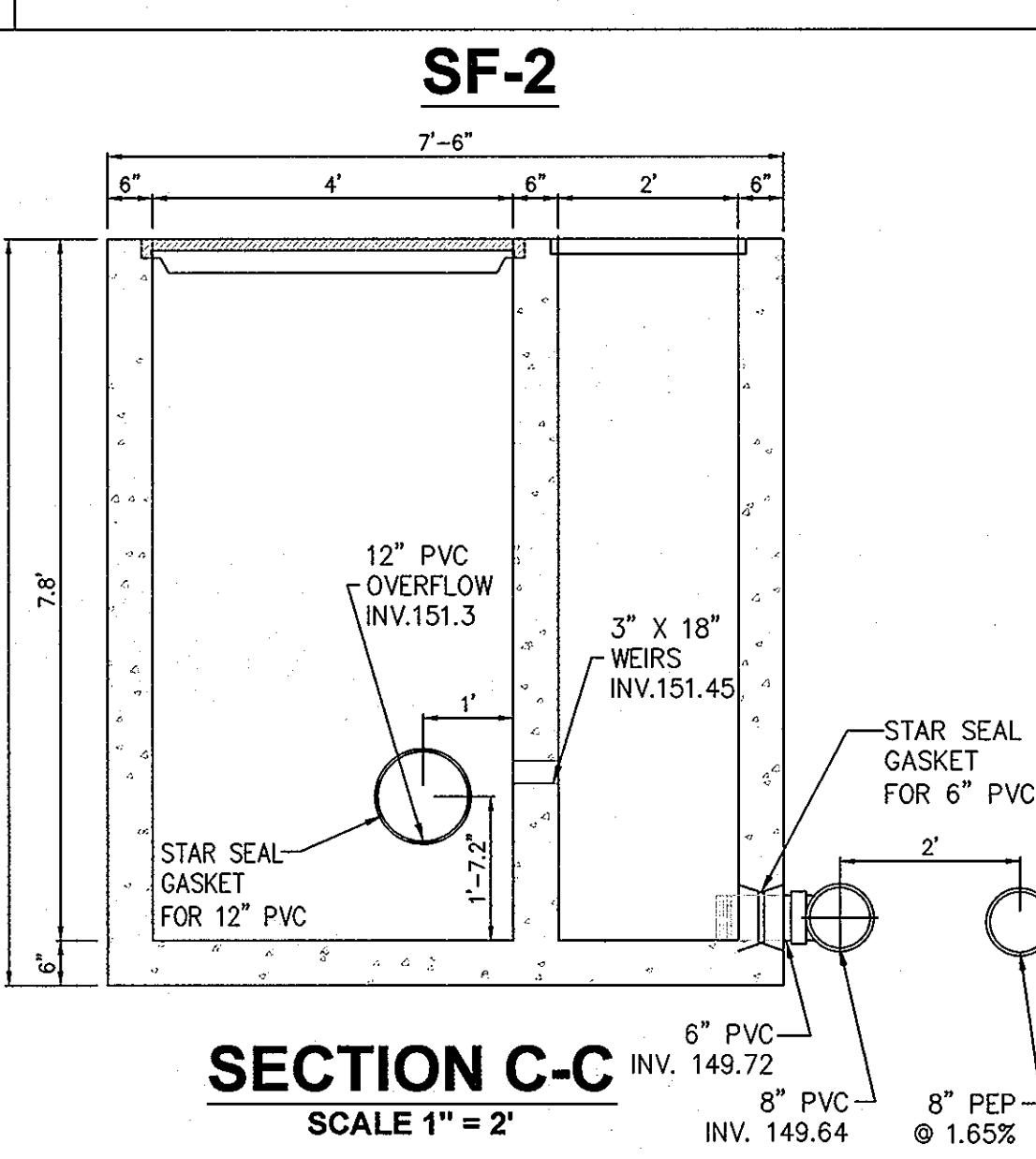
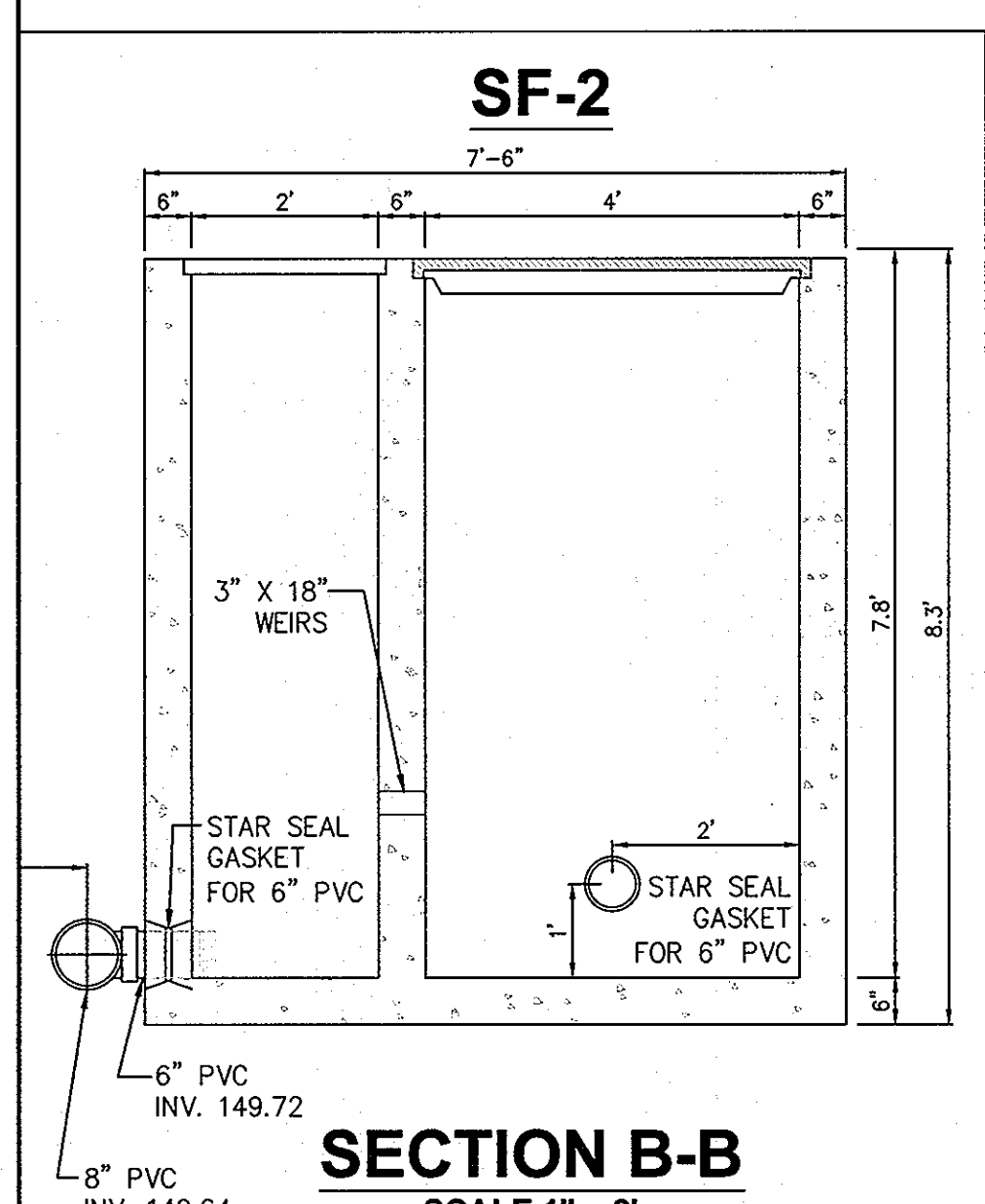
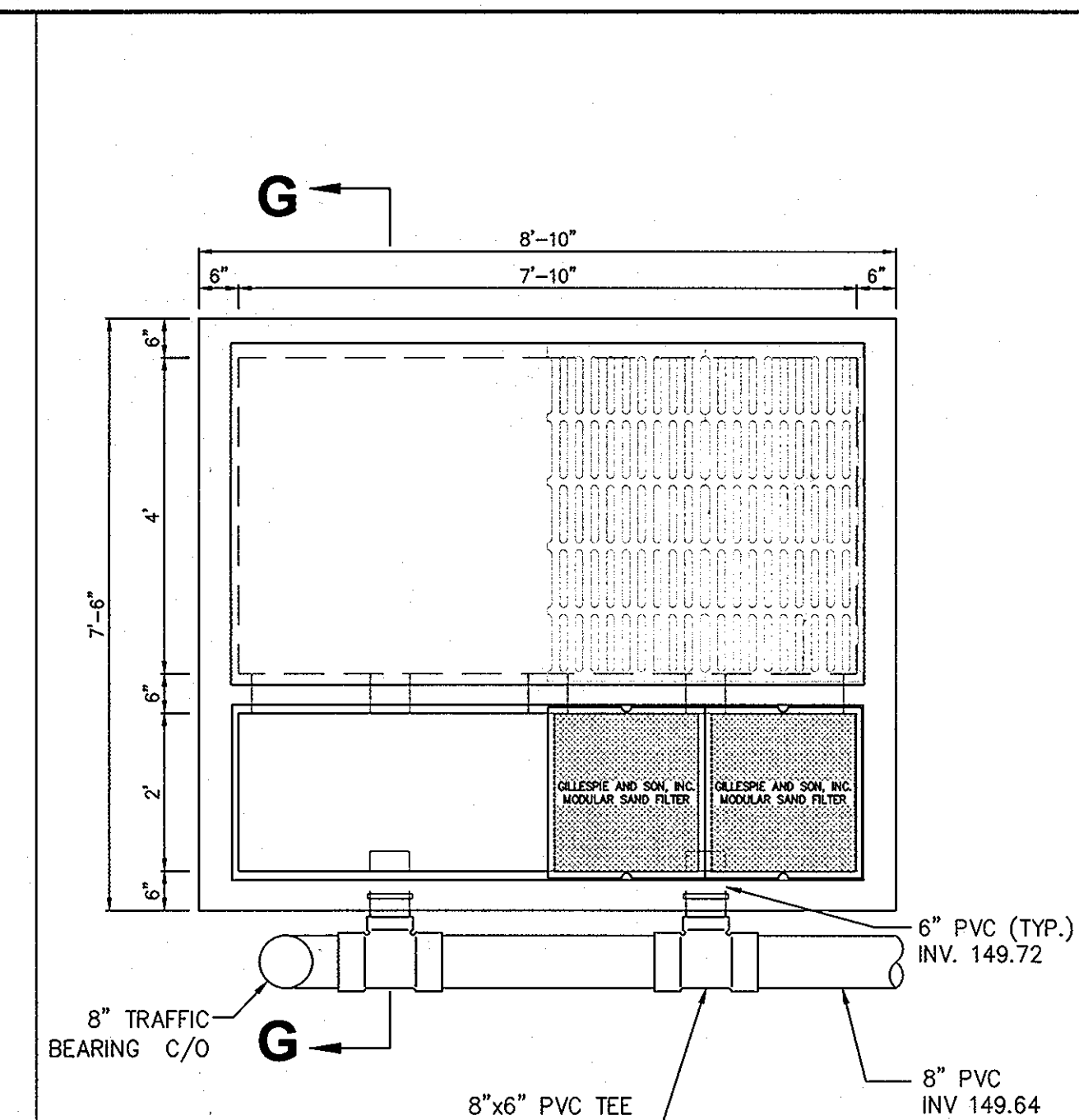
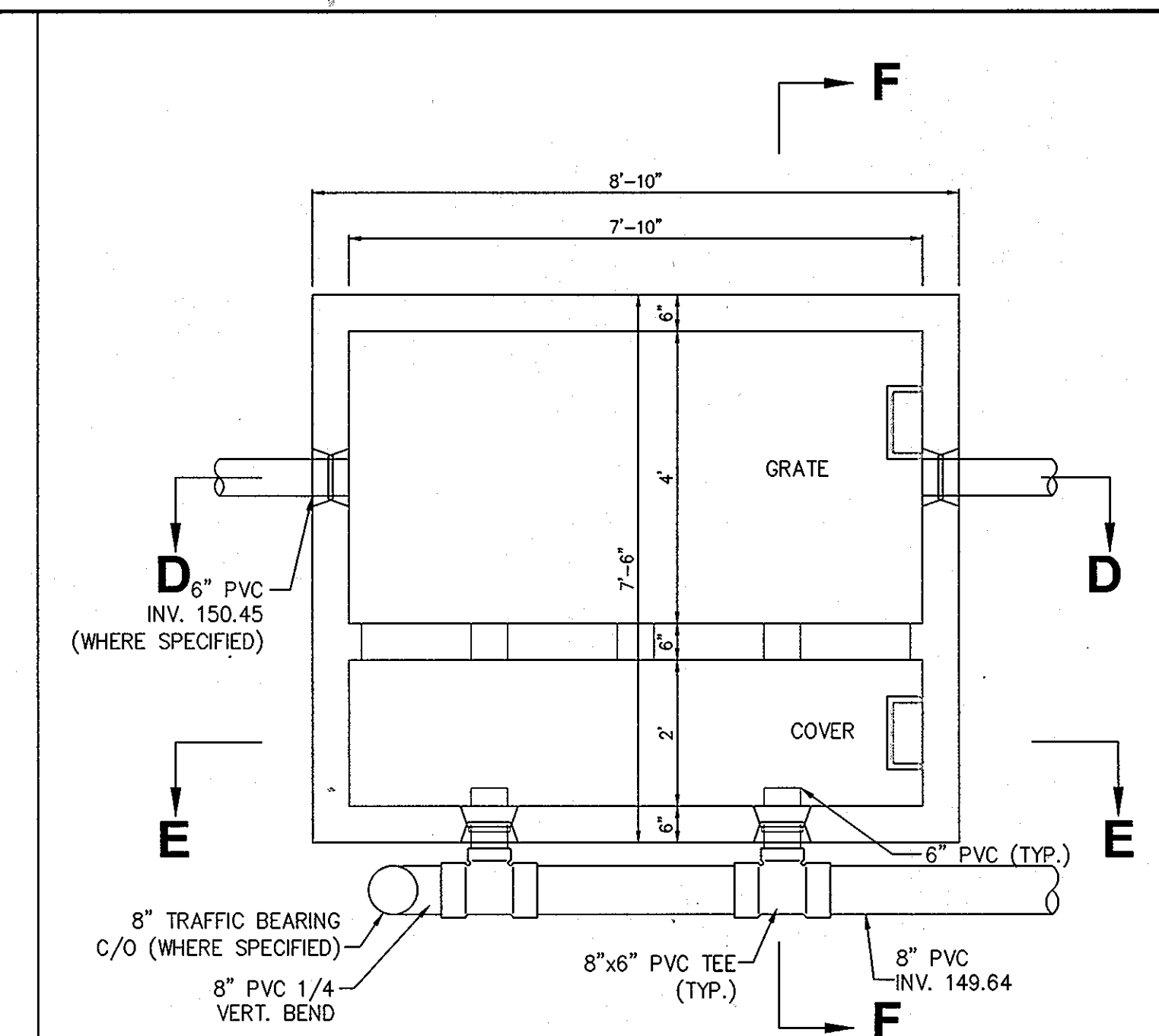
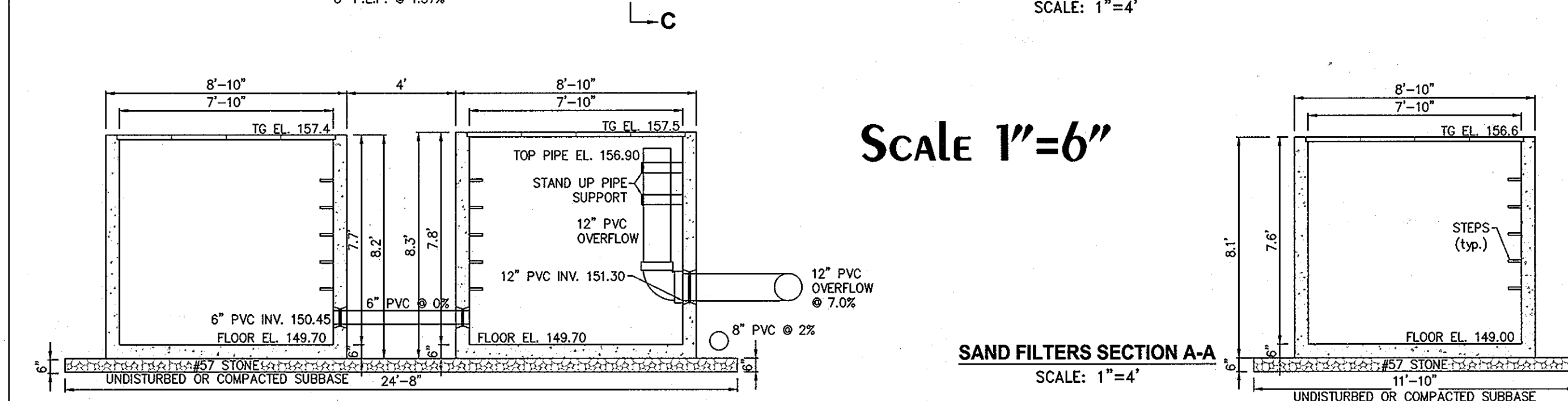
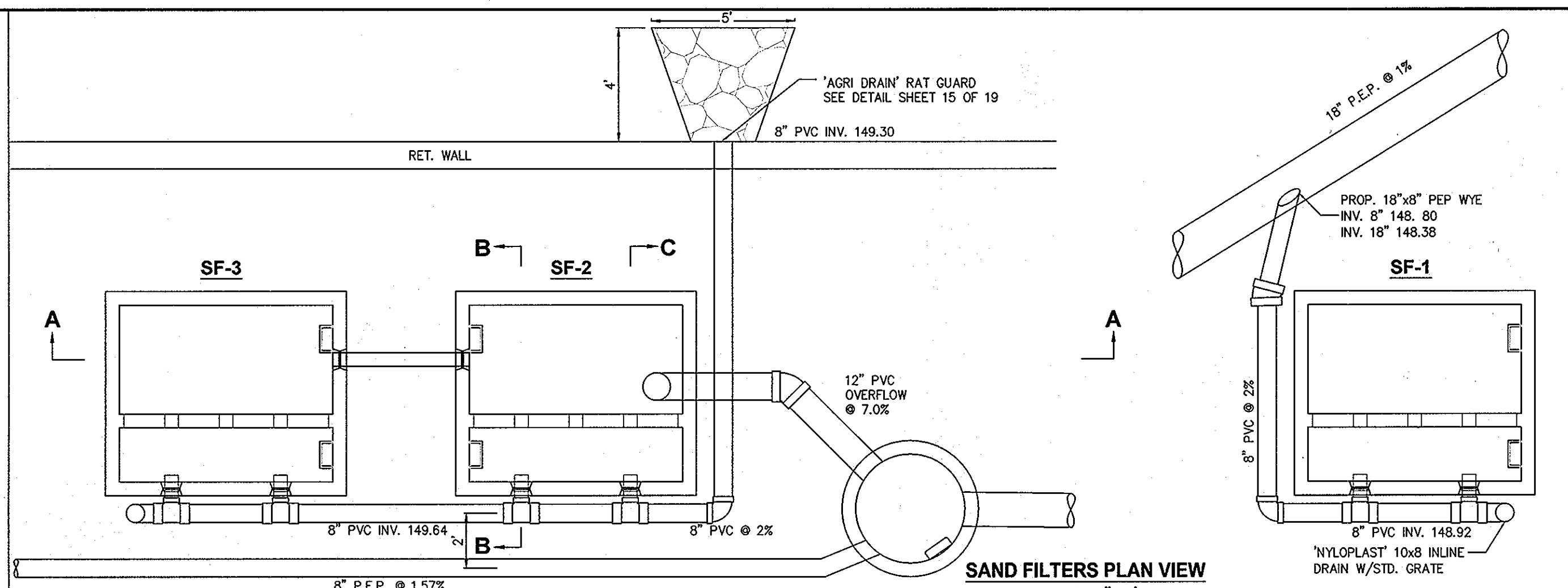
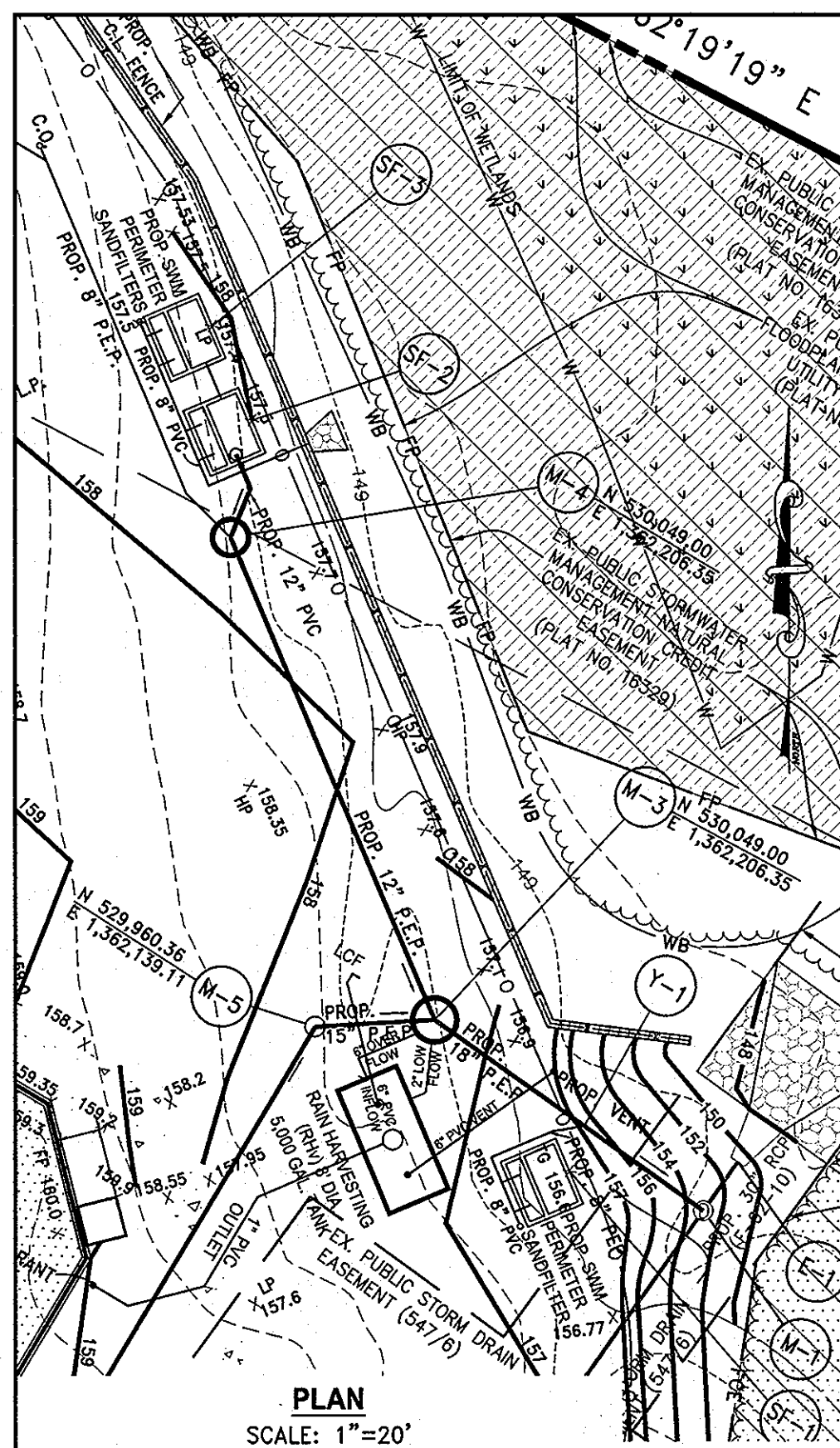
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DRAWING NO.
10 OF 19

SWM PERVIOUS PAVEMENT I

**VICTORY TEMPLE - LAUREL
WORSHIP CENTER**
9100 BURSA ROAD

SDP-12-007
TAX MAP 47, GRID 23
PARCEL 540 (PARCEL A, PLAT # 22114)

W&S CONTRACT No. 24-4047-D
ZONING: CE-CL1
ELECTION DISTRICT - 6
HOWARD COUNTY, MARYLAND



SAND FILTER SPECIFICATIONS

- DESIGN: SAND FILTER SHALL BE PRE-FABRICATED CONCRETE STRUCTURE AS DESIGNED AND MANUFACTURED BY GILLESPIE PRE-CAST, LLC (ATTN: MICHAEL IACONA, 1-800-638-6884) OR APPROVED EQUAL. THE PRE-CAST MANUFACTURER SHALL PROVIDE DESIGN SHOP DRAWINGS CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED IN MARYLAND. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS MEETING VOLUME DIMENSIONS SPECIFIED HEREON FOR APPROVAL OF OWNER AND ENGINEER (KCW Engineering Technologies, Inc.) PRIOR TO FABRICATION OF UNIT.
- WHEEL LOADING: AASHTO HS20-44
- MATERIALS:
 - SAND: CLEAN CONCRETE SAND per AASHTO M-6 or ASTM C-33.
 - CONCRETE: 4000 PSI MIN.
 - REINFORCING STEEL: GRADE 60 per ASTM A615
 - FILTER DRAIN PIPE: 6" AND 8" DIAMETER POLY-VINYL CHLORIDE (PVC), SCHEDULE 40.
 - OVERFLOW PIPE: 12" DIAMETER POLY-VINYL CHLORIDE (PVC), SCHEDULE 40.
 - GEOTEXTILE FABRIC: MUST MAINTAIN 125 gpm/ft FLOW RATE. (MIRAFI 140N OR EQUAL).
 - GRAVEL: per AASHTO M-43, No. 57.
 - INLETS: TRAFFIC BEARING STORM DRAIN INLET GRATES (H-20 LOADING).
 - SOLID COVERS: TRAFFIC BEARING SOLID COVERS (H-20 LOADING).
 - STEPS: ALL MANHOLE AND INLET OPENINGS SHALL HAVE INSTALLED 10" MINIMUM WIDTH STEPS AT 12" ON CENTER.
- TESTING: SAND FILTER SHALL BE WATER-TIGHT AND TESTED PRIOR TO PLACING FILTER MEDIA. ENTRANCES AND EXITS SHOULD BE PLUGGED AND THE SYSTEM COMPLETELY FILLED WITH WATER TO DEMONSTRATE WATER TIGHTNESS. WATER TIGHTNESS MEANS NO LEAKAGE FOR A PERIOD OF 8 HOURS. ALL OVERFLOW WEIRS AND SLOTS SHALL BE FIELD-TESTED TO INSURE UNIFORM DISTRIBUTION OF FLOWS.
- CONSTRUCTION NOTES:
 - ACCESS TO SAND FILTER SHALL BE THROUGH ENTRANCE OF THE PARKING LOT.
 - ALL OPENINGS TO SAND FILTER SHALL BE PROTECTED WITH APPROPRIATE SEDIMENT CONTROL MEASURES DURING CONSTRUCTION. SAND FILTER TO BE CLEANED FROM ANY SEDIMENT PRIOR TO FILTER MEDIA INSTALLATION.
 - SAND FILTER STRUCTURE AND FILTER BEDS SHALL BE INSTALLED LEVEL.

MATERIAL LIST BY GILLESPIE PRE-CAST, LLC

CONCRETE MIX MUST REACH 4500 PSI AT 28 DAYS.
REINFORCING TO BE MIN. TWO MATS OF 4" X 4" W4/W4 MESH.
SUPPORT FRAMES FOR GRATES AND COVERS SHALL BE RUST PROOF PAINTED STEEL ANGLE CAST IN PLACE.
GRATES SHALL BE 26" X 24" X 1 1/2" CAST IRON (EAST JORDAN 6958 TYPE "M-2" OR EQUAL), BLACK POWDER COATED.
SOLID COVERS SHALL BE 26" X 24" X 1 1/2" CAST IRON (EAST JORDAN 6958 TYPE "A" OR EQUAL), BLACK POWDER COATED.
UNDER DRAIN PIPING AND INTER CONNECTING PIPING BETWEEN TANKS SHALL BE PVC SCHEDULE 40.
PIPING GASKETS SHALL BE COMPATIBLE WITH PVC SCHEDULE 40 PIPE (STAR SEAL OR EQUAL).
FILTER BED SUPPORT STONE SHALL BE 3/4" WASHED STONE (NO. 57 OR EQUAL) - 16 CU. FT. PER MODULE.
FILTER SAND SHALL BE CONCRETE SAND (AASHTO M6, C-33 OR EQUAL) - 16 CU. FT. PER MODULE.
AN UNDERBEDDING OF THE TANKS USING 6" OF #57 STONE ON UNDISTURBED OR COMPACTED BASE IS RECOMMENDED.

NOTES:

- SAND FILTER DESIGNED FOR H-20 TRAFFIC
- CONCRETE: 4500 PSI (MDSHA MIX #8)
- JOINTS TO BE SEALED WATER TIGHT WITH CONSAL CS-102 SEALANT.
- PIPING, SAND, STONE, AND GEOTEXTILE TO BE SUPPLIED AND INSTALLED IN FIELD BY CONTRACTOR.

STANDARD HOWARD COUNTY OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED UNDERGROUND STORMWATER FILTRATION SYSTEMS (F-2 AND F-3)

- The Owner shall clean and repair the sediment chamber outlet devices when draw-down times within the chamber exceed thirty-six (36) hours.
- The Owner shall remove debris and litter as necessary to ensure proper operation of the system.
- The Owner shall remove sediment from the sedimentation chamber when it accumulates to a depth of six (6) inches. Vegetation within the sediment chamber shall be maintained to a maximum height of eighteen (18) inches.
- When water ponds on the surface of the filter bed for more than seventy-two (72) hours, the Owner shall replace the top few inches of discolored material with fresh material. Proper cleaning and disposal of the removed materials and liquid must be followed by the Owner.
- The Owner shall maintain a log book shall be maintained to determine the rate at which the facility drains.
- The maintenance log book shall be available to Howard County for inspection to insure compliance with operation and maintenance criteria.
- Once the performance characteristics of the infiltration system have been verified, the monitoring schedule can be reduced to an annual basis unless the performance data indicates that a more frequent schedule is required.

MAINTENANCE NOTES

- THE SEDIMENT CHAMBER OUTLET DEVICES SHALL BE CLEANED AND REPAIRED WHEN DRAWDOWN TIMES WITHIN THE CHAMBER EXCEED 36 HOURS. TRASH AND DEBRIS SHALL BE REMOVED AS NECESSARY.
- SEDIMENT SHOULD BE CLEANED OUT OF THE SEDIMENT CHAMBER WHEN IT ACCUMULATES TO A DEPTH OF MORE THAN SIX INCHES (6").
- WHEN THE FILTERING CAPACITY OF THE SAND FILTER DIMINISHES AND WATER PONDS ON THE SURFACE OF THE FILTER BED FOR MORE THAN 72 HOURS, THE TOP FEW INCHES OF DISCOLORED SAND SHALL BE REMOVED AND REPLACED WITH FRESH SAND. THE REMOVED SEDIMENTS SHALL BE DISPOSED OF AT AN APPROVED DISPOSAL SITE. SILT AND SEDIMENT SHOULD BE REMOVED FROM THE FILTER BED WHEN ACCUMULATION EXCEEDS ONE INCH (1").
- ALL MAINTENANCE SHALL BE PERFORMED BY THE OWNER OR BY THE OWNER'S REPRESENTATIVE AT THE OWNER'S EXPENSE.

INSPECTION PROCEDURES

THE FOLLOWING INSPECTIONS ARE REQUIRED DURING CONSTRUCTION. ADDITIONAL INSPECTIONS MAY BE REQUIRED AND NOTED BY THE INSPECTOR.

- PRECONSTRUCTION MEETING: AN OPPORTUNITY TO REVIEW SITE PLANS, DISCUSS THE PURPOSE OF THE FACILITY AND TO ANSWER QUESTIONS REGARDING CONSTRUCTION AND/OR INSPECTION PROCEDURES.
- CONSTRUCTION INSPECTION(S) WILL BE MADE DURING THE CONSTRUCTION OF THE FACILITY TO ENSURE ACCORDANCE WITH THE PLANS. SPECIFIC INSPECTION REQUIREMENTS WILL BE DETERMINED AT THE PRECONSTRUCTION MEETING.
- FINAL INSPECTION: A FINAL CHECK WILL BE MADE TO CHECK DESIGN DIMENSIONS.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature] 4/22/13
Chief, Development Engineering Division Date

[Signature] 4/30/13
Chief, Division of Land Development Date

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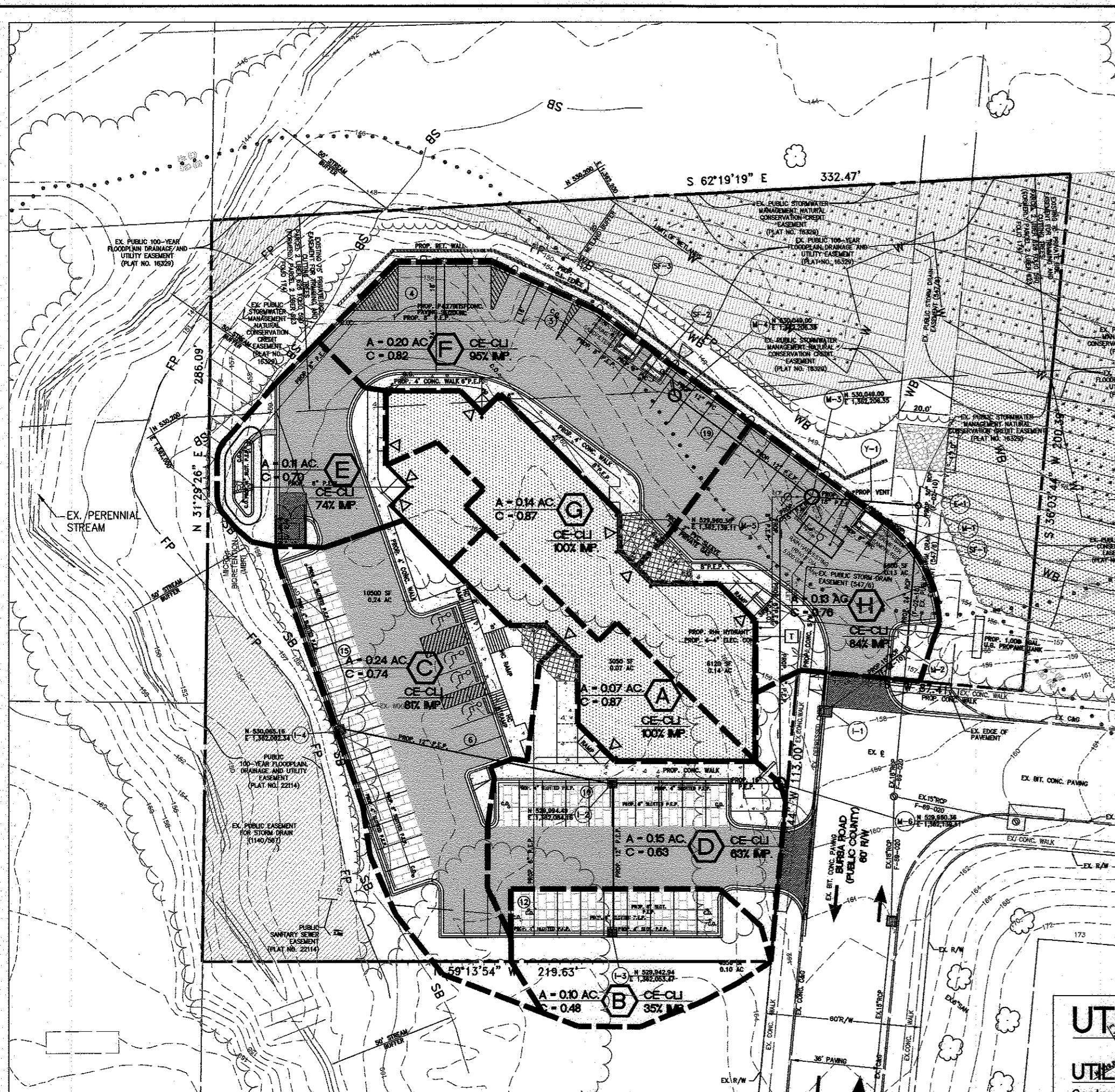
SWM SANDFILTERS PLAN

VICTORY TEMPLE - LAUREL WORSHIP CENTER
9100 BURSA ROAD

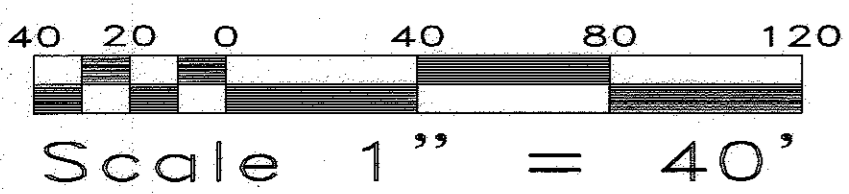
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ZONING: CE-CL1
ELECTION DISTRICT - 6
HOWARD COUNTY, MARYLAND

SDP-12-007



STORM DRAIN DRAINAGE AREA MAP
Scale: 1" = 40'



STORM DRAIN STRUCTURE SCHEDULE					
NO.	TYPE	STD. DETAIL	INV. IN	INV. OUT	TOP ELEV.
I-2	SINGLE 'S' GRATE INLET	D-4.22	4"-157.40 4"-157.40 6"-153.50 12"-152.00 12"-152.00	151.80	TG158.4
I-3	SINGLE 'S' GRATE INLET	D-4.22	4"-158.50 4"-158.50 6"-155.00 6"-155.00	153.50	TG159.5
I-4	SINGLE 'S' GRATE INLET	D-4.22	4"-156.60 4"-156.60 6"-154.10 6"-154.10	153.80	TG157.6
M-3	5' STD. PRE-CAST MANHOLE	G-5.13	6"-150.10 6"-150.10 12"-148.70 15"-148.80	148.60	TE157.26
M-4	4' STD. PRE-CAST MANHOLE	G-5.12	8"-149.44 12"-150.44	149.24	TE157.70
M-5	30" NYLOPLAST DRAIN BASIN* WITH SOLID GRATE		15"-149.30	149.10	TE157.74
M-6	4' STD. PRE-CAST MANHOLE	G-5.12	15"-151.00	150.80	TE159.70

* OR APPROVED EQUAL.

STORM DRAIN PIPE SCHEDULE

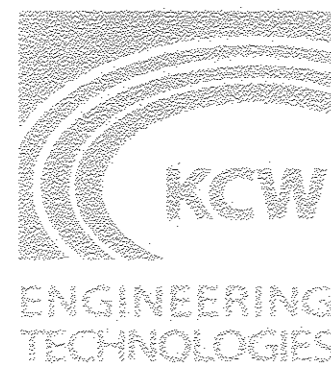
PIPE MATERIAL	PIPE SIZE	PIPE LENGTH	PIPE MATERIAL	PIPE SIZE	PIPE LENGTH
POLY-VINYL CHLORIDE (PVC) PIPE, SCHEDULE 40 per ASTM D-1785	6"	40 L.F.	HIGH DENSITY POLYETHYLENE (PEP) PIPE, SMOOTH LINED per AASHTO M252, SLOTTED	4"	300 L.F.
POLY-VINYL CHLORIDE (PVC) PIPE, SCHEDULE 40 per ASTM D-1785	8"	65 L.F.	HIGH DENSITY POLYETHYLENE (PEP) PIPE, SMOOTH LINED per AASHTO M252, SLOTTED	6"	285 L.F.
POLY-VINYL CHLORIDE (PVC) PIPE, SCHEDULE 40 per ASTM D-1785	12"	15 L.F.	HIGH DENSITY POLYETHYLENE (PEP) PIPE, SMOOTH LINED per AASHTO M252	6"	210 L.F.
			HIGH DENSITY POLYETHYLENE (PEP) PIPE, SMOOTH LINED per AASHTO M252, SLOTTED	8"	70 L.F.
			HIGH DENSITY POLYETHYLENE (PEP) PIPE, SMOOTH LINED per AASHTO M252	8"	490 L.F.
			HIGH DENSITY POLYETHYLENE (PEP) PIPE, SMOOTH LINED per AASHTO M294	12"	230 L.F.
			HIGH DENSITY POLYETHYLENE (PEP) PIPE, SMOOTH LINED per AASHTO M294	15"	180 L.F.
			HIGH DENSITY POLYETHYLENE (PEP) PIPE, SMOOTH LINED per AASHTO M294	18"	40 L.F.

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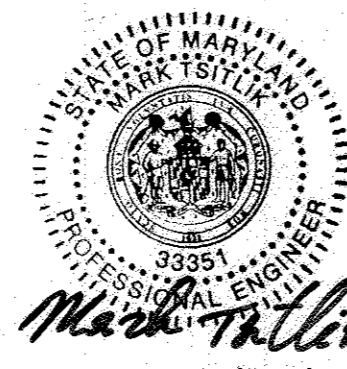
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Date: 4/30/13

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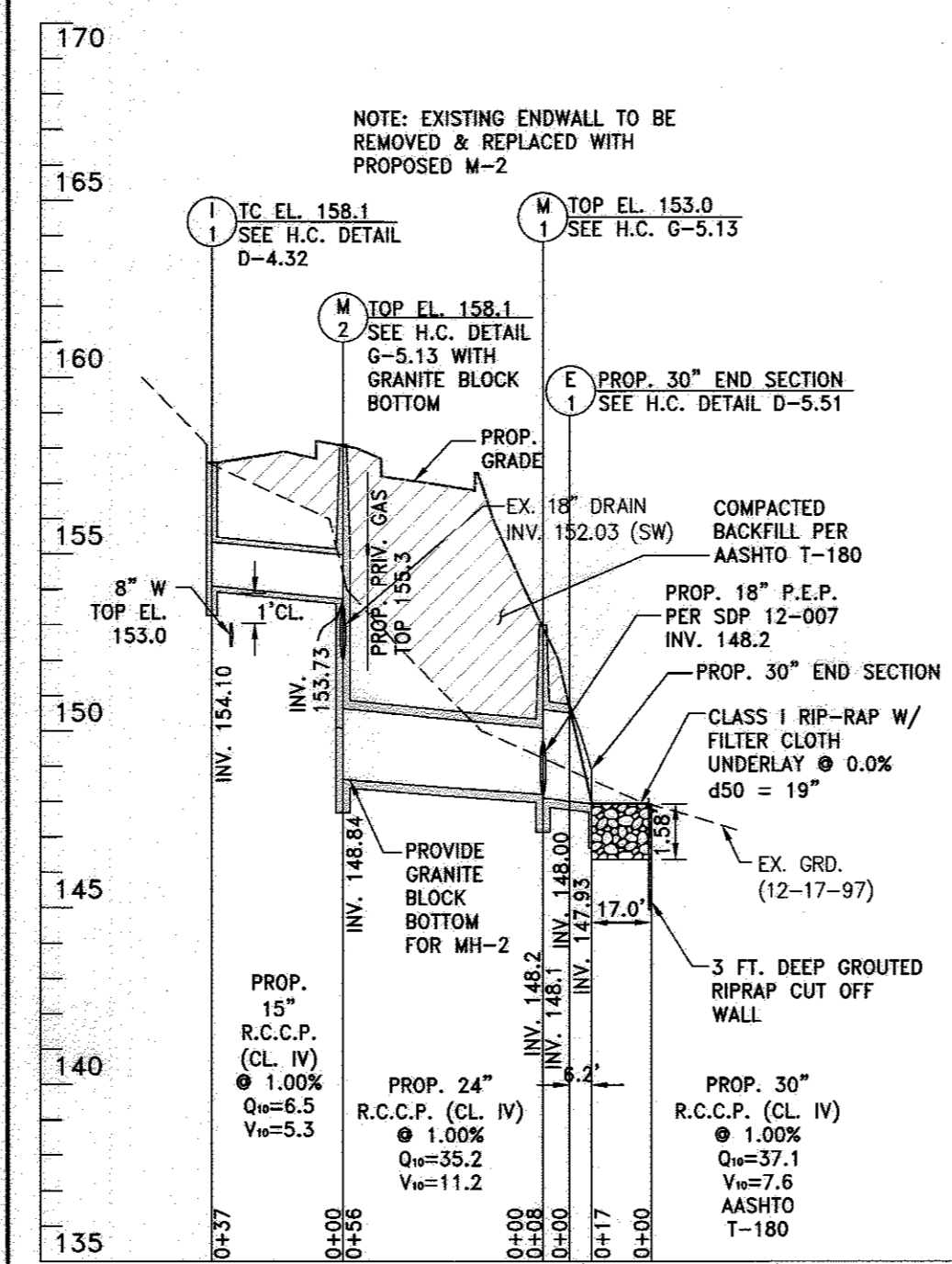
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CONSTRUCTION PROFILES I
VICTORY TEMPLE - LAUREL
WORSHIP CENTER
9100 BURSA ROAD
SDP-12-007
TAX MAP 47, GRID 23
PARCEL 540 (PAR. A, PLAT # 22114)

W&S CONTRACT No. 24-4047-D
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ELECTION DISTRICT - 6
HOWARD COUNTY, MARYLAND

SDP-12-007



STORM DRAIN PROFILE
SCALE: HOR. 1" = 50'; VERT. 1" = 5'

PER F-02-10
(PUBLIC)

STRUCTURE SCHEDULE				
No.	TYPE	TOP ELEV.	INV. OUT	DETAIL/REMARK
I-1	5' COMB. INLET	TG157.6	154.10	D-4.32
M-1	5' STD. MANHOLE	153.0	148.10	G-5.13
M-2	5' STD. MANHOLE	158.1	148.84	G-5.13
E-1	30" END SECTION	147.93	D-5.51	

PIPE SCHEDULE		
SIZE	TYPE	L.F.
15"	R.C.C.P. CL. IV	37
24"	R.C.C.P. CL. IV	56
30"	R.C.C.P. CL. IV	8

UTILITY NOTES

UTILITY SCOPE OF WORK

Contractor shall furnish all materials and labor necessary for abandonment, construction and modification to storm drains, water service and sanitary sewer. Utility contractor shall obtain all necessary permits from Howard County.

SANITARY SEWER

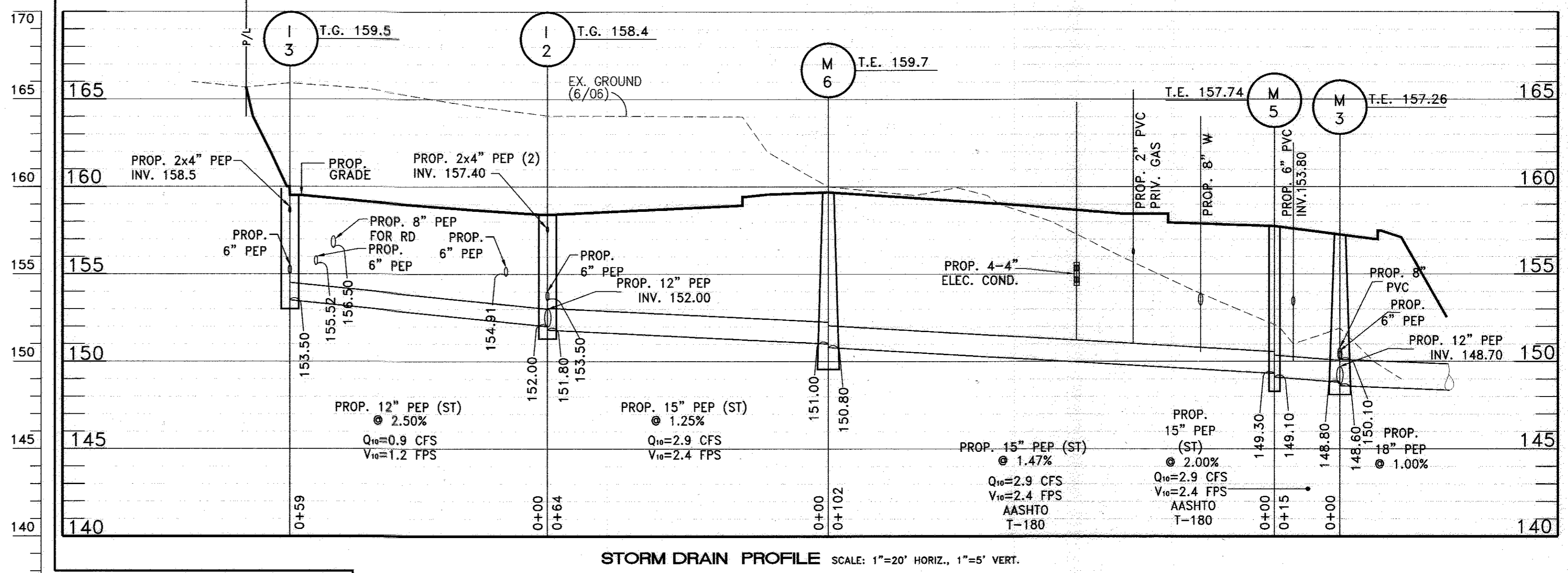
- P.V.C. (Poly-Vinyl Chloride) pipe SCH 40.
- Clean-out: P.V.C. per Building Code criteria

WATER SERVICE

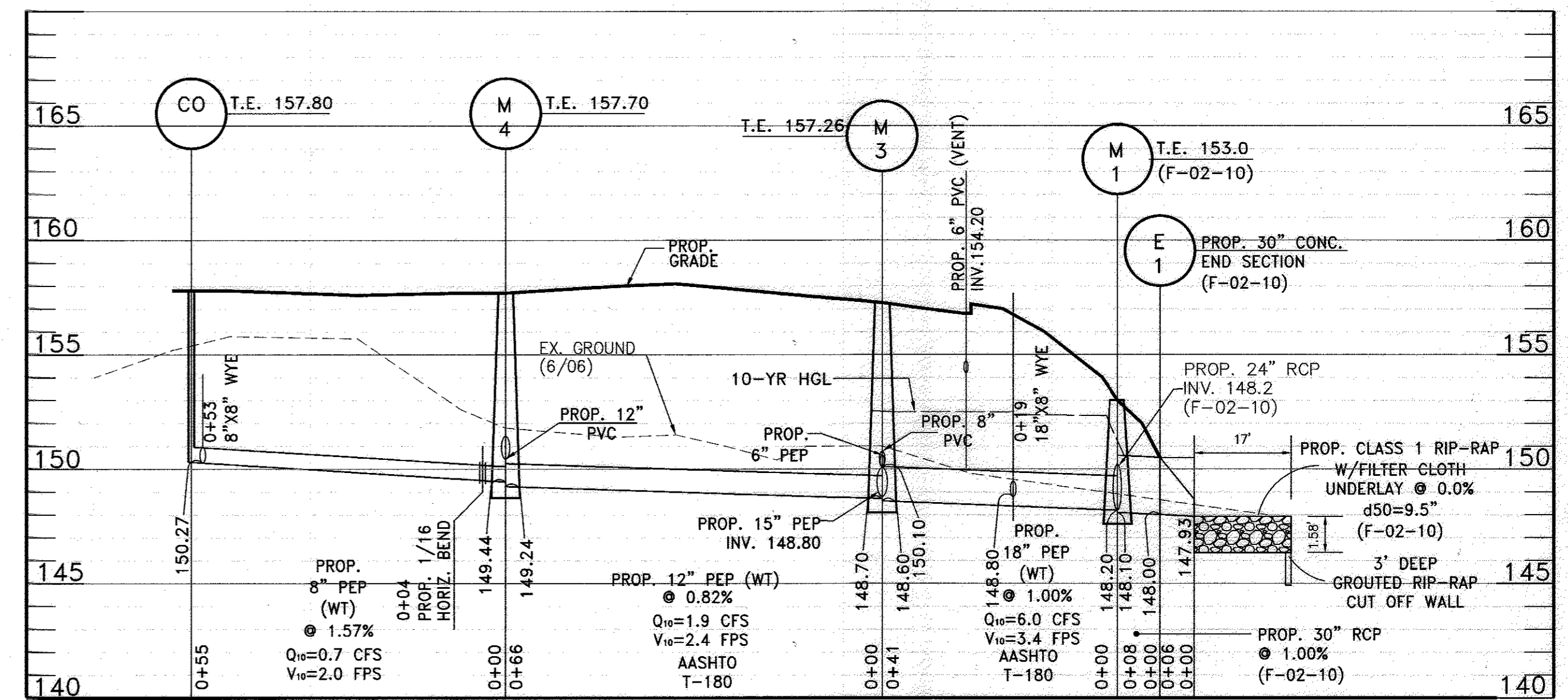
- 6" and 8" diameter water pipe shall be Class 52 Ductile Iron Pipe (D.I.P.) and appurtenances in accordance with Howard County specifications.

STORM DRAINS

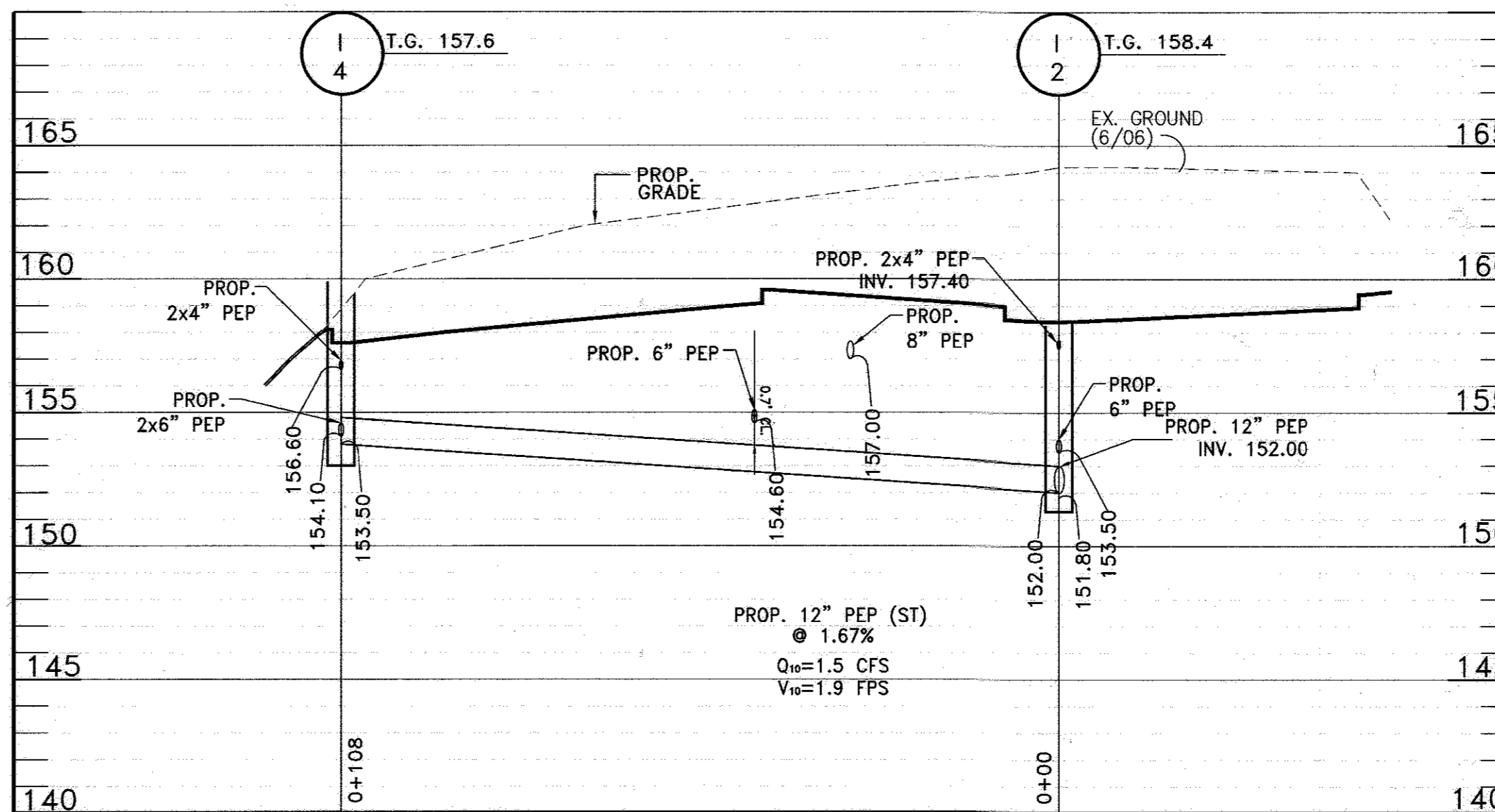
- 6", 8" and 10" diameter PVC drains and fittings shall be Poly-Vinyl Chloride (PVC) pipe, Schedule 40, and fittings with solvent-cement joints per ASTM D2665.
- 4", 6", 8" and 10" diameter P.E.P. storm drain pipes and fittings shall be high density polyethylene (H.D.P.E.) smooth wall interior pipe per ASTM D-3350 and A.A.S.H.T.O. M-252, Type S. All joints to be solitight (ST) or watertight (WT).
- 12", 15" and 18" diameter P.E.P. storm drain pipes and fittings shall be high density polyethylene (H.D.P.E.) smooth wall interior pipe per ASTM D-3350 and A.A.S.H.T.O. M-294, Type S. All joints to be solitight (ST) or watertight (WT) as shown on profiles.
- Inlets:
Type 'S' single inlet per Howard County detail D-4.22 with Reticular Grate.
- Manholes:
Standard Precast Manhole per Howard County details G-5.12, G-5.13.
30" "Nyloplast" Drain Basin with solid grate.
- All storm drains shall be constructed per profiles on this sheet.



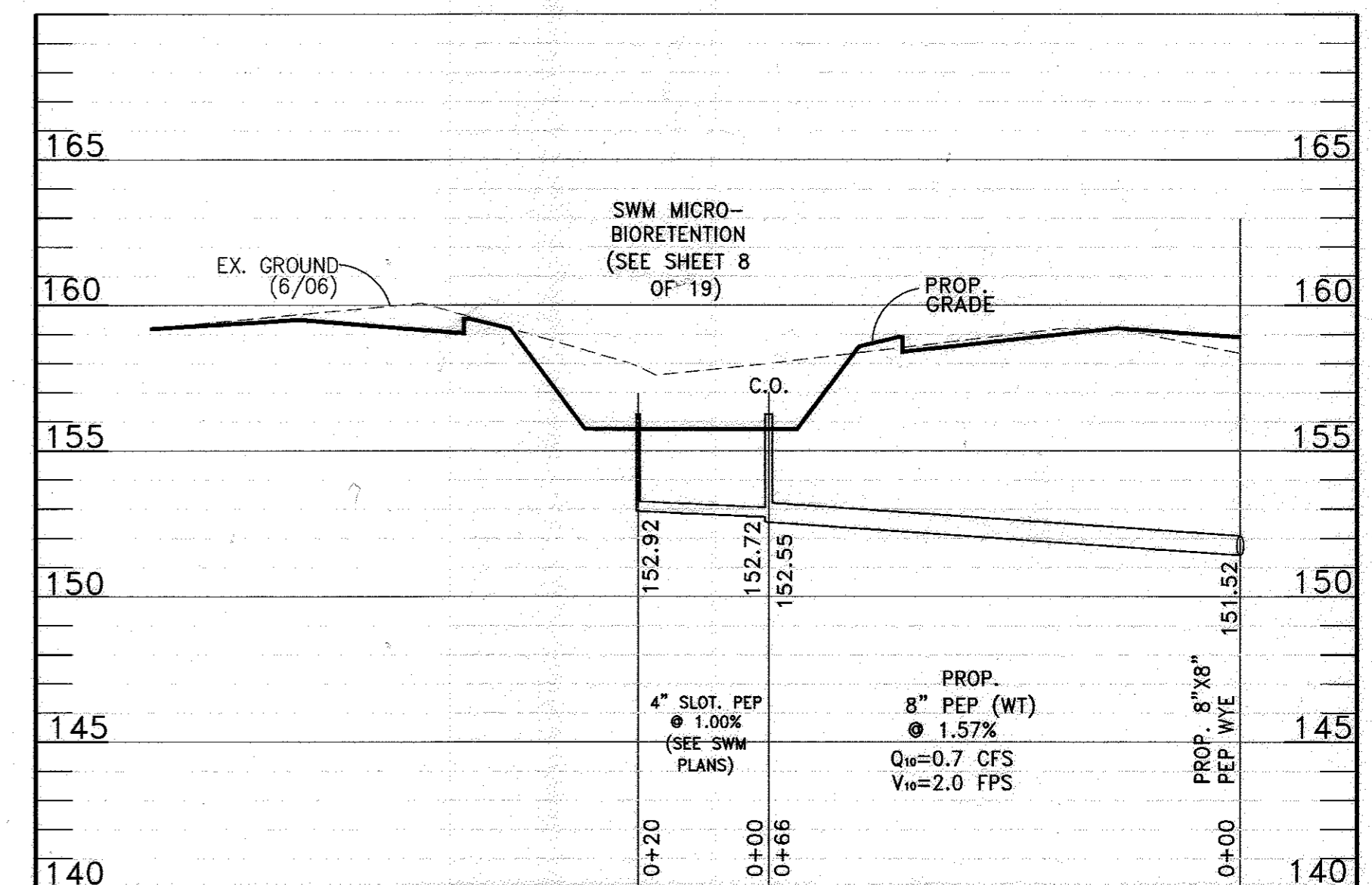
STORM DRAIN PROFILE SCALE: 1"=20' HORIZ., 1"=5' VERT.



STORM DRAIN PROFILE SCALE: 1"=20' HORIZ., 1"=5' VERT.



STORM DRAIN PROFILE SCALE: 1"=20' HORIZ., 1"=5' VERT.



STORM DRAIN PROFILE SCALE: 1"=20' HORIZ., 1"=5' VERT.

BORING LOG
GEOLAB, INC.
 Report No.: 8/20/2009
 Client: The Redeemed Church of God, Victory Temple - Laurel, Maryland
 Project: Proposed Church Building, Victory Temple, 9100 Bursa Road, Laurel, MD
 Date: 8/20/2009
 Location: See Boring Location Plan
 Boring Log: 109-072
 Type of Boring: Hollow-stem Auger
 Issue: 08/11/09
 Company: 08/11/09
 Other: Free State Drilling, Inc.

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	Temp. (F)	Depth (ft)	Remarks
124.4	0.0	Forest litter with root (organic) matter and vegetable soil		3.0	Groundwater encountered during drilling at depth of 14.7 feet.
124.4	3.0	Tan fine to coarse SAND with some silt and little gravel, damp, medium dense (SM)	5, 12, 13	7.4	At completion, boring dry to cave-in depth of 11.4 feet.
124.4	7.4	Tan and gray fine to coarse SAND with some gravel and some silt, damp, dense (SA)	12, 18, 19	8.0	After 24 hours, boring again dry to cave-in depth.
124.4	11.4	Tan and pink to gray and off-white silty fine SAND, moist, medium dense to loose (SM)	4, 6, 7	12.5	Partial bag sample - 1.0 to 5.0 feet.
124.4	12.5				
124.4	15.0				
124.4	17.5				
124.4	20.0				
124.4	22.5				
124.4	25.0				
124.4	27.5				
124.4	30.0				
124.4	32.5				
124.4	35.0				
124.4	37.5				
124.4	40.0				
124.4	42.5				
124.4	45.0				
124.4	47.5				
124.4	50.0				
124.4	52.5				
124.4	55.0				
124.4	57.5				
124.4	60.0				
124.4	62.5				
124.4	65.0				
124.4	67.5				
124.4	70.0				
124.4	72.5				
124.4	75.0				
124.4	77.5				
124.4	80.0				
124.4	82.5				
124.4	85.0				
124.4	87.5				
124.4	90.0				
124.4	92.5				
124.4	95.0				
124.4	97.5				
124.4	100.0				
124.4	102.5				
124.4	105.0				
124.4	107.5				
124.4	110.0				
124.4	112.5				
124.4	115.0				
124.4	117.5				
124.4	120.0				
124.4	122.5				
124.4	125.0				
124.4	127.5				
124.4	130.0				
124.4	132.5				
124.4	135.0				
124.4	137.5				
124.4	140.0				
124.4	142.5				
124.4	145.0				
124.4	147.5				
124.4	150.0				
124.4	152.5				
124.4	155.0				
124.4	157.5				
124.4	160.0				
124.4	162.5				
124.4	165.0				
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124.4	170.0				
124.4	172.5				
124.4	175.0				
124.4	177.5				
124.4	180.0				
124.4	182.5				
124.4	185.0				
124.4	187.5				
124.4	190.0				
124.4	192.5				
124.4	195.0				
124.4	197.5				
124.4	200.0				
124.4	202.5				
124.4	205.0				
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124.4	230.0				
124.4	232.5				
124.4	235.0				
124.4	237.5				
124.4	240.0				
124.4	242.5				
124.4	245.0				
124.4	247.5				
124.4	250.0				
124.4	252.5				
124.4	255.0				
124.4	257.5				
124.4	260.0				
124.4	262.5				
124.4	265.0				
124.4	267.5				
124.4	270.0				
124.4	272.5				
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124.4	582.5				
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124.4	587.5				
124.4	590.0				
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124.4	600.0				
124.4	602.5				
124.4	605.0				
124.4	607.5				
124.4	610.0				

RS2875.203 LEADS

TORQUE STRENGTH RATING-5,500 FT-LB
ULTIMATE CAPACITY* (TENSION/COMPRESSION) 49 KIP
*BASED ON A TORQUE FACTOR (K_T)=9

NOTES:
1. HOT DIP GALVANIZED PER ASTM A153--(LATEST REVISION) C278-4510 ONLY.
2. LEAD EFFECTIVE AND PILOT POINT LENGTHS ARE NOMINAL.
3. PIPE SHAFT MATERIAL 2.0" NOMINAL, SCHEDULE 40 WALL THICKNESS PER ASTM A500 GRADE B.
4. DRIVE PLATE SCREWS PIPE SHAFT DOWN TO ROCK MANUFACTURER TO HAVE IN EFFECT INDUSTRY RECOGNIZED WRITTEN QUALITY CONTROL FOR ALL MATERIALS AND MANUFACTURING PROCESSES.
5. ALL WELDING TO BE DONE BY WELDERS CERTIFIED UNDER SECTION 5 OF THE AWS CODE D1.1.
6. FOR ADDITIONAL PIPE SHAFT LENGTH, REFER TO DRAWING SA278-4500 LIFT PIPE EXTENSIONS.

CATALOG NUMBER	DESCRIPTION
CE78-4510	RS2875.203 LEAD, 36" L
CE78-4510NG	RS2875.203 LEAD, 36" L, NON-GALV

2-7/8" O.D. SCH. 40 (LOSS WALL)
HOLES TO ACCEPT 3/4" DIA. BOLTS

CHANGE: HUBBELL POWER SYSTEMS
RS2875.203
PILE LEAD
SA278-4510
REV. CHANGE
DATE

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS

WATER METER
3", 4", 6", 8" & 10"
Inside Installed Fire/Domestic

Detail W-3.44

NOTES:
1. MINIMUM CLEARANCE BETWEEN SHOWER CURB AND EXTERIOR WALL OF BUILDING.
2. FOR CHANGING WATER SERVICE SEE PREVIOUS COVER WATER VETER SETTING.
3. A DRAINAGE "X" SHALL BE PER ARCHITECTURE.

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS

SEWER HOUSE CONNECTION
Drop
Types "A" and "B"

Detail S-2.12

NOTES:
1. CONCRETE FLOOR SHALL INCLUDE THE COST OF FINISHING AND/OR FILL SCHEDULE AS ON COVER AND SHALL BE FINISHED TO MATCH EXISTING FLOOR FINISH.
2. FOR TYPE "A" DROP HOUSE CONNECTION, SEE DETAIL S-2.13.
3. FOR TYPE "B" DROP HOUSE CONNECTION, SEE DETAIL S-2.14.
4. FOR CONCRETE SHALL BE THE SAME PIPE MATERIAL AS THE MAIN.

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS

PRECAST MANHOLE
Standard and Shallow
5'-0" for 27" to 36" Pipe

Detail G-5.13

NOTES:
1. USE GENERAL NOTES APPLICABLE TO ALL PRECAST MANHOLES ON DETAIL G-5.11.
2. FOR PIPE SIZES 24" AND SMALLER USE DETAIL G-5.11.
3. WHERE "X" IS LESS THAN 4.5" USE SHALLOW MANHOLE.
4. NORMAL AND NOT OTHERWISE NOTED IS 4" MINIMUM COVER CONNECTION (SEE DETAIL S-1.13 FOR DROP CONNECTION).

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS

PRECAST MANHOLE
Standard and Shallow
4'-0" for 24" Pipe and Smaller

Detail G-5.12

NOTES:
1. USE GENERAL NOTES APPLICABLE TO ALL PRECAST MANHOLES ON DETAIL G-5.11.
2. FOR PIPE SIZES 24" AND SMALLER USE DETAIL G-5.11.
3. WHERE "X" IS LESS THAN 4.5" USE SHALLOW MANHOLE.
4. NORMAL AND NOT OTHERWISE NOTED IS 4" MINIMUM COVER CONNECTION (SEE DETAIL S-1.13 FOR DROP CONNECTION).

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS

FIRE HYDRANT
Settings

Detail W-1.11

NOTES:
1. FINISH GRADE SHALL BE 1/2" OF FINISH ABOVE FINISH GRADE.
2. FINISH GRADE SHALL BE 1/2" OF FINISH ABOVE FINISH GRADE.
3. FINISH GRADE SHALL BE 1/2" OF FINISH ABOVE FINISH GRADE.

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS

SLAB REINFORCING
SHALLOW PRECAST MANHOLE

Detail G-5.13

NOTES:
1. USE GENERAL NOTES APPLICABLE TO ALL PRECAST MANHOLES ON DETAIL G-5.11.
2. FOR PIPE SIZES 24" AND SMALLER USE DETAIL G-5.11.
3. WHERE "X" IS LESS THAN 4.5" USE SHALLOW MANHOLE.
4. NORMAL AND NOT OTHERWISE NOTED IS 4" MINIMUM COVER CONNECTION (SEE DETAIL S-1.13 FOR DROP CONNECTION).

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS

STANDARD PRECAST MANHOLE
Standard and Shallow
4'-0" for 24" Pipe and Smaller

Detail G-5.12

NOTES:
1. USE GENERAL NOTES APPLICABLE TO ALL PRECAST MANHOLES ON DETAIL G-5.11.
2. FOR PIPE SIZES 24" AND SMALLER USE DETAIL G-5.11.
3. WHERE "X" IS LESS THAN 4.5" USE SHALLOW MANHOLE.
4. NORMAL AND NOT OTHERWISE NOTED IS 4" MINIMUM COVER CONNECTION (SEE DETAIL S-1.13 FOR DROP CONNECTION).

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS

TYPE "S" INLET

Detail D-4.22

NOTES:
1. FINISH GRADE SHALL BE 1/2" OF FINISH ABOVE FINISH GRADE.
2. FINISH GRADE SHALL BE 1/2" OF FINISH ABOVE FINISH GRADE.
3. FINISH GRADE SHALL BE 1/2" OF FINISH ABOVE FINISH GRADE.

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS

WATER METER
1 1/2" & 2"
Setting with Partial Sprinkler

Detail W-3.26

NOTES:
1. MINIMUM OF 6" BETWEEN METER AND WALL.
2. METER MUST BE INSTALLED BY HOWARD COUNTY CONTRACTOR AND INSTALLED BY CONTRACTOR.
3. FINISH GRADE SHALL BE 1/2" OF FINISH ABOVE FINISH GRADE.

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS

WATER METER
1 1/2" & 2"
Setting with Partial Sprinkler

Detail W-3.26

NOTES:
1. MINIMUM OF 6" BETWEEN METER AND WALL.
2. METER MUST BE INSTALLED BY HOWARD COUNTY CONTRACTOR AND INSTALLED BY CONTRACTOR.
3. FINISH GRADE SHALL BE 1/2" OF FINISH ABOVE FINISH GRADE.

Agri Drain

Agri Drain Rat Guards™

Rat Guard, Stainless Steel

Rat Guard, Mild Steel

Rat Guard, Band Type

FOR SAND FILTERS
8" PVC
OUTFALL

FOR RETAINING WALL DRAINS

Item #	Description	Unit Price
8004	4" Rat Guard	\$579
8006	6" Rat Guard	\$679
8008T	8" Rat Guard Type	\$839
8008	8" Rat Guard	\$839
8010	10" Rat Guard	\$1039
8012T	12" Rat Guard Type	\$1239
8012	12" Rat Guard	\$1239
8014T	14" Rat Guard Type	\$1439
8014	14" Rat Guard	\$1439
8016T	16" Rat Guard Type	\$1639
8016	16" Rat Guard	\$1639
8018T	18" Rat Guard Type	\$1839
8018	18" Rat Guard	\$1839
8020T	20" Rat Guard Type	\$2039
8020	20" Rat Guard	\$2039
8022	22" Rat Guard	\$2239
8024	24" Rat Guard	\$2439
8026	26" Rat Guard	\$2639
8028	28" Rat Guard	\$2839
8030	30" Rat Guard	\$3039
8032	32" Rat Guard	\$3239
8034	34" Rat Guard	\$3439
8036	36" Rat Guard	\$3639
8038	38" Rat Guard	\$3839
8040	40" Rat Guard	\$4039
8042	42" Rat Guard	\$4239
8044	44" Rat Guard	\$4439
8046	46" Rat Guard	\$4639
8048	48" Rat Guard	\$4839
8050	50" Rat Guard	\$5039
8052	52" Rat Guard	\$5239
8054	54" Rat Guard	\$5439
8056	56" Rat Guard	\$5639
8058	58" Rat Guard	\$5839
8060	60" Rat Guard	\$6039

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS

7" FRAME AND COVER
CAST IRON

Detail G-8.01

NOTES:
1. ALL VALVE BOXES SHALL BE THE SHALLOW TYPE IN FINISHED AREAS.
2. FOR 24" VALVE BOXES USE 1/2" MIN. HATCH.
3. ALL VALVE BOXES SHALL BE MAINTAINED "WATER" AND ALL SEWER VALVE BOXES SHALL BE MAINTAINED "DRAIN".
4. EXISTING VALVE BOX AND ASSURANCE SHALL BE CHECKED FOR CLASS 35 MANHOLES.
5. HOLES/CRACKS SHALL BE REPAIRED.
6. FOR BOXES APPROXIMATE 34" TO 44" BOTTOM SECTION-1/2".
7. FOR BOXES APPROXIMATE 34" TO 44" BOTTOM SECTION-1/2".
8. WEARABLE WEIGHT PER BOX-100 LBS.
9. BOTTOM SECTION SHALL REST ON VALVE BOXES.

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND BRIDGES

TRAFFIC BARRIER W BEAM
END SECTIONS

STANDARD NO. MD 605.20

NOTES:
1. WOOD OFFSET BLOCKS SHALL BE USED ON ALL NEW CONSTRUCTION AND WHEN THE EXISTING TRAFFIC BARRIER WITH WOOD OFFSET BLOCKS IS TO BE REPAIRED OR REPLACED.
2. THE OPERATING AND THE OFFICE IS TO BE MAINTAINED WITH A MINIMUM OF 1/2" PRODUCTION BEING MET.
3. THE OPERATING AND THE OFFICE IS TO BE MAINTAINED WITH A MINIMUM OF 1/2" PRODUCTION BEING MET.
4. THE OPERATING AND THE OFFICE IS TO BE MAINTAINED WITH A MINIMUM OF 1/2" PRODUCTION BEING MET.
5. THE OPERATING AND THE OFFICE IS TO BE MAINTAINED WITH A MINIMUM OF 1/2" PRODUCTION BEING MET.
6. THE OPERATING AND THE OFFICE IS TO BE MAINTAINED WITH A MINIMUM OF 1/2" PRODUCTION BEING MET.

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND BRIDGES

TRAFFIC BARRIER W BEAM
WITH WOOD OFFSET BLOCK

STANDARD NO. MD 605.21

NOTES:
1. WOOD OFFSET BLOCKS SHALL BE USED ON ALL NEW CONSTRUCTION AND WHEN THE EXISTING TRAFFIC BARRIER WITH WOOD OFFSET BLOCKS IS TO BE REPAIRED OR REPLACED.
2. THE OPERATING AND THE OFFICE IS TO BE MAINTAINED WITH A MINIMUM OF 1/2" PRODUCTION BEING MET.
3. THE OPERATING AND THE OFFICE IS TO BE MAINTAINED WITH A MINIMUM OF 1/2" PRODUCTION BEING MET.
4. THE OPERATING AND THE OFFICE IS TO BE MAINTAINED WITH A MINIMUM OF 1/2" PRODUCTION BEING MET.
5. THE OPERATING AND THE OFFICE IS TO BE MAINTAINED WITH A MINIMUM OF 1/2" PRODUCTION BEING MET.
6. THE OPERATING AND THE OFFICE IS TO BE MAINTAINED WITH A MINIMUM OF 1/2" PRODUCTION BEING MET.

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND BRIDGES

TRAFFIC BARRIER W BEAM
SINGLE FACE

STANDARD NO. MD 605.22

NOTES:
1. WOOD ELEMENTS ARE FURNISHED SHAP CURVED, CORNER OR CONVEX TO MATCH BETWEEN PG. 61 & 605.21.
2. BARRED REINFORCING SHALL BE 1/2" OR 3/4" DIAMETER.
3. FOR COMPLETE OFFSET BLOCKS SEE NOTE 1 ON PG. 605.21.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division
4/23/13

Chief, Division of Land Development
4/30/13

Director
5/1/13

KCW Engineering Technologies, Inc.
810 Landmark Drive, Suite 215
Glen Burnie, MD 21061
Phone: 410.768.7700
Fax: 410.768.0200
www.kcw-et.com

Professional Certification.
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License No. 33351.
Expiration Date 06-30-2014.

11/30/12

OWNER:
THE REDEEMED CHRISTIAN CHURCH OF GOD, INC.
13701 ANNAPOLIS ROAD
BOWIE, MD 20720.

Attn: Margaret Adeyokunnu, Pastor
Tele: (301) 352-0707
Fax: (301) 352-3339

OWNER'S REPRESENTATIVE/ DEVELOPER:
TLJ DESIGNGROUP INC.
3308 DORCHESTER ROAD
BALTIMORE, MD 21215

Attn: Taiwo Ilyomade, President
Toll Free/Fax/Voice mail:
(1-866) 616-1497
Mobile: (443) 831-6703

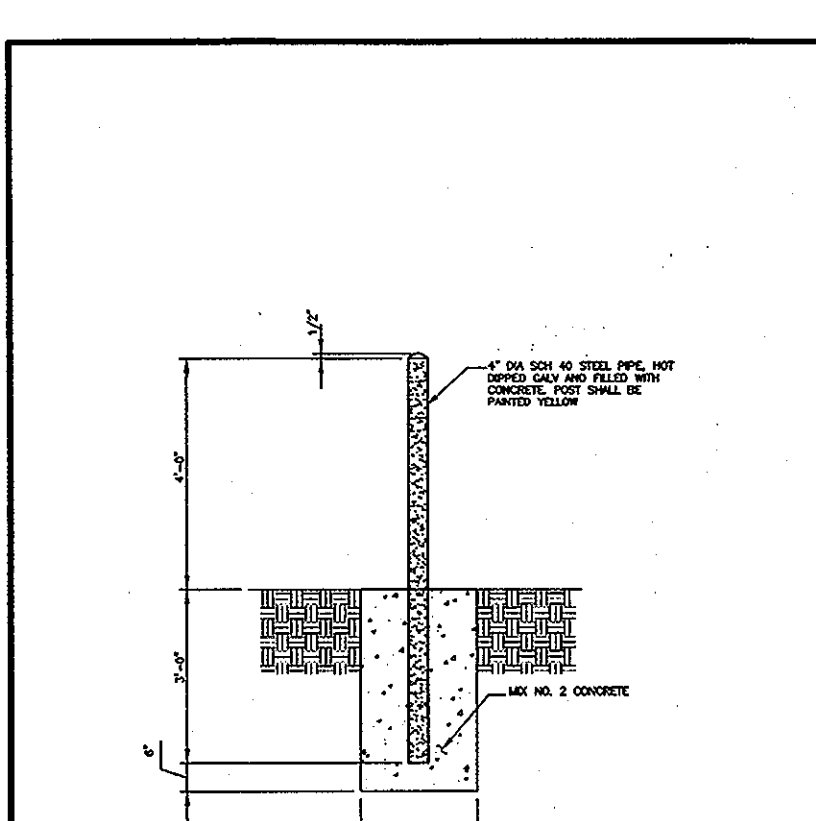
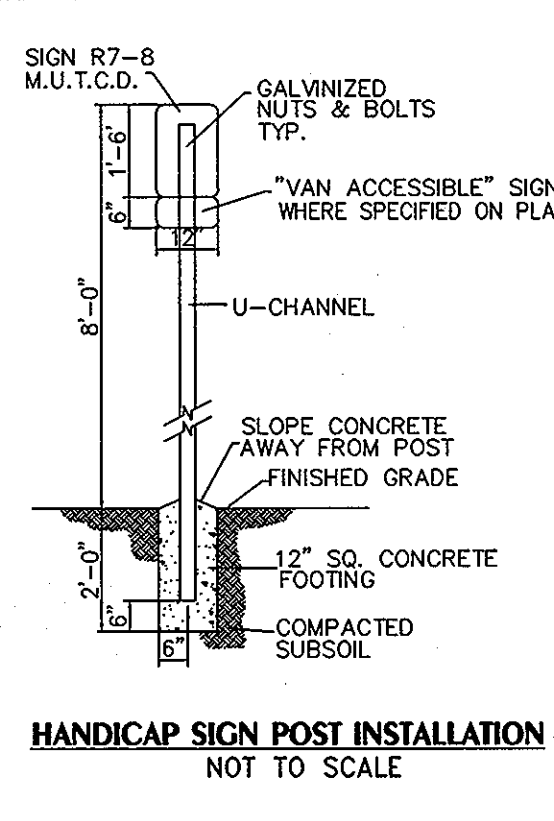
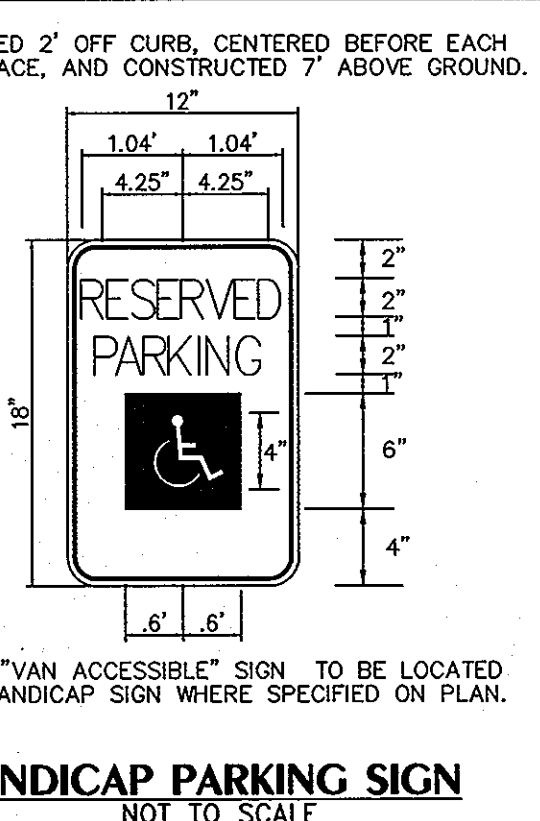
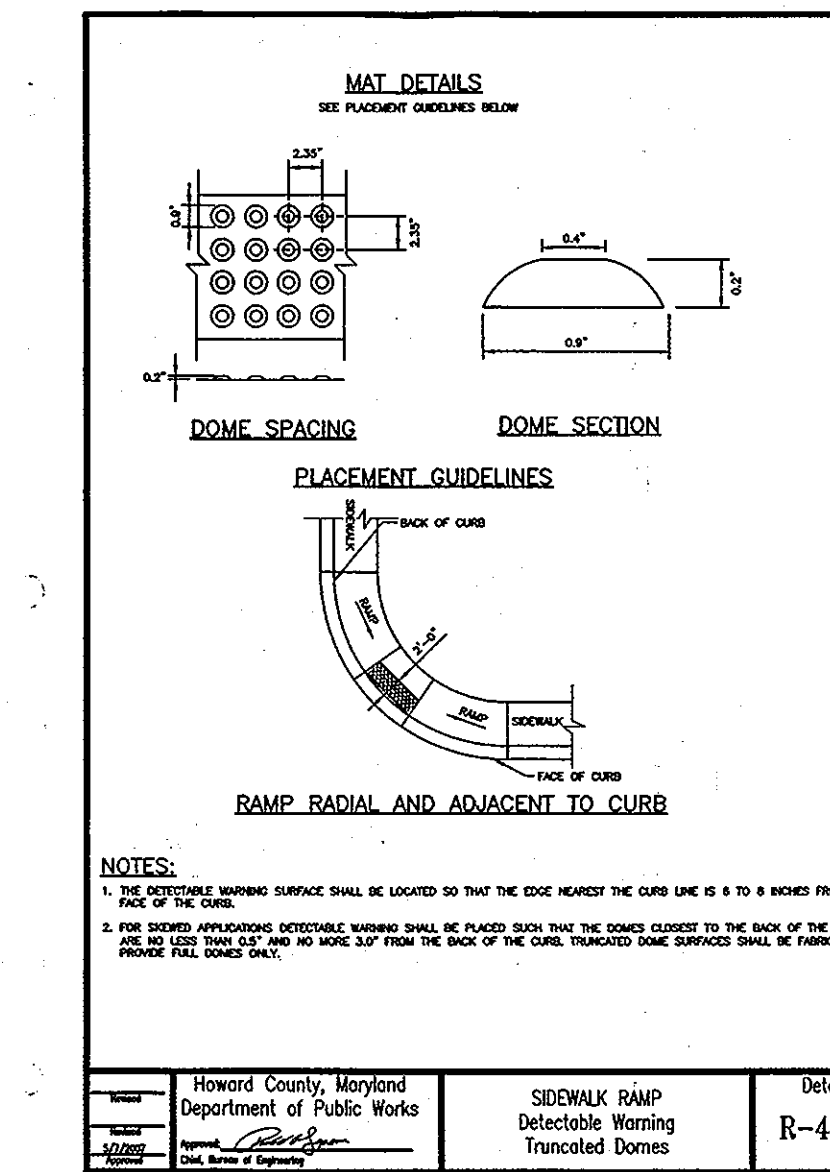
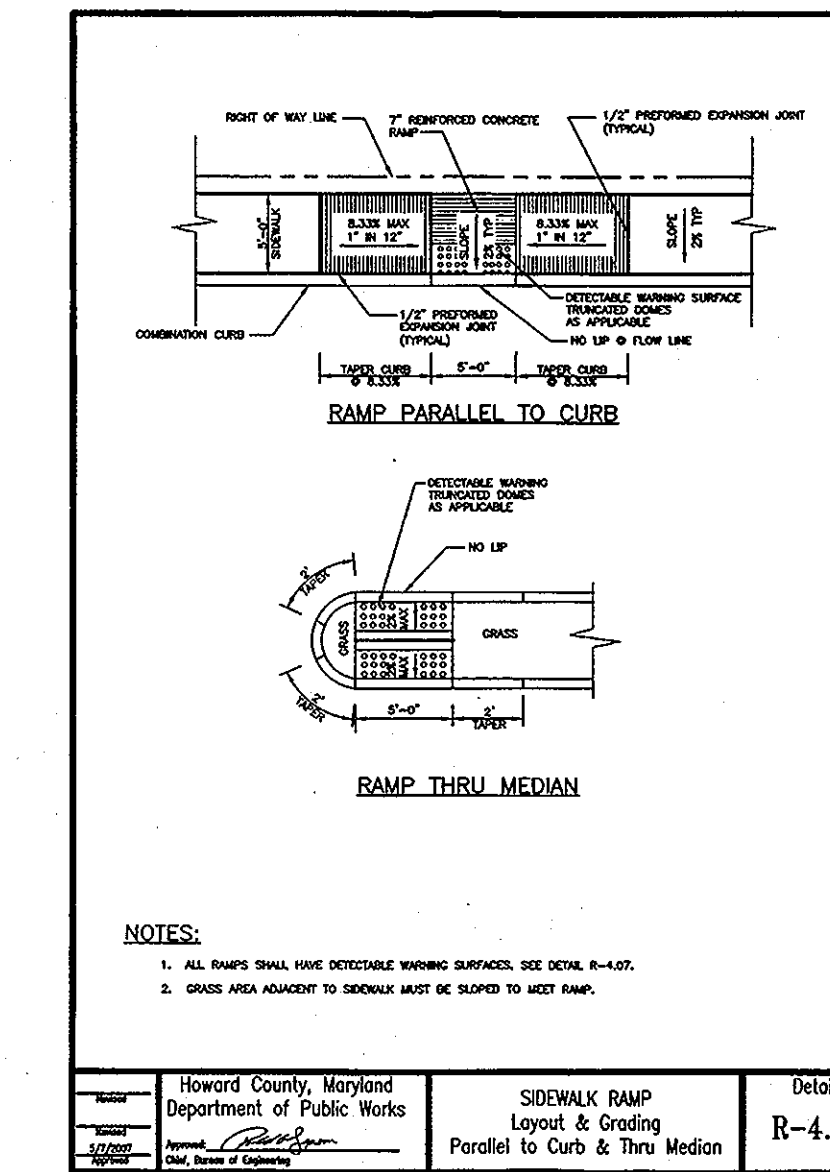
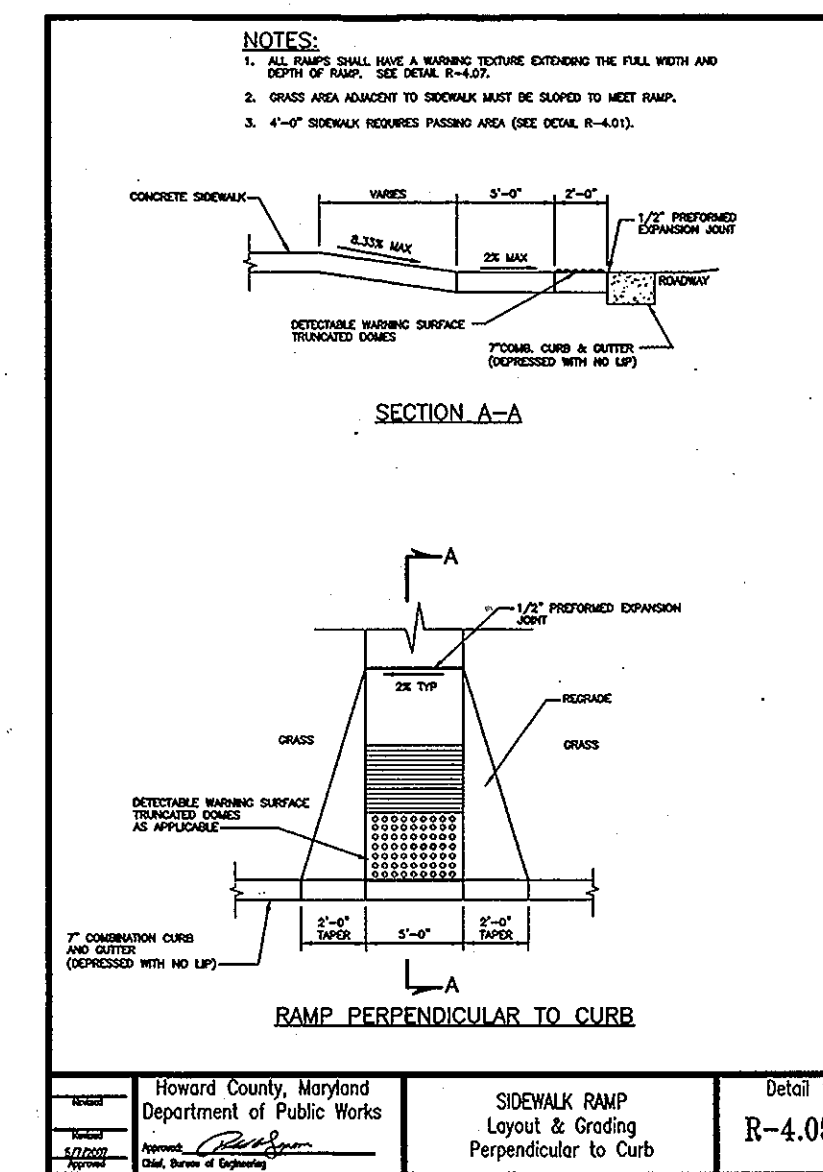
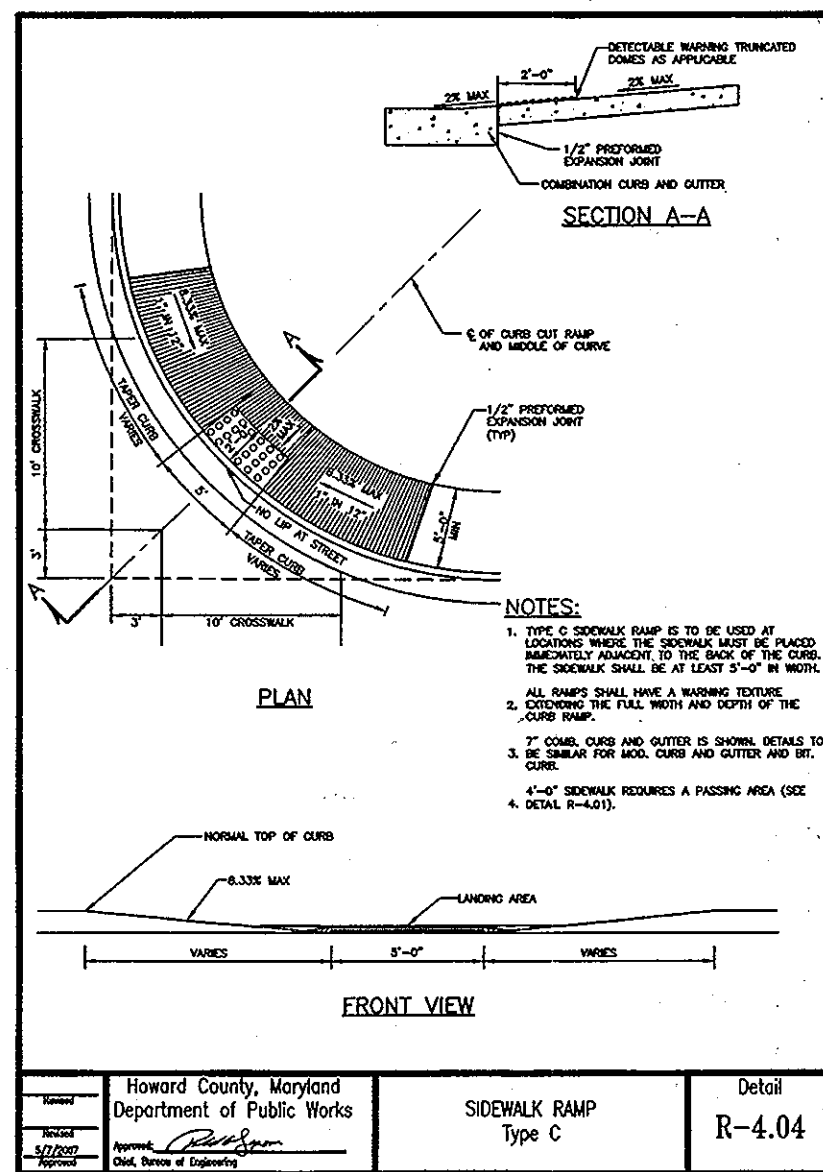
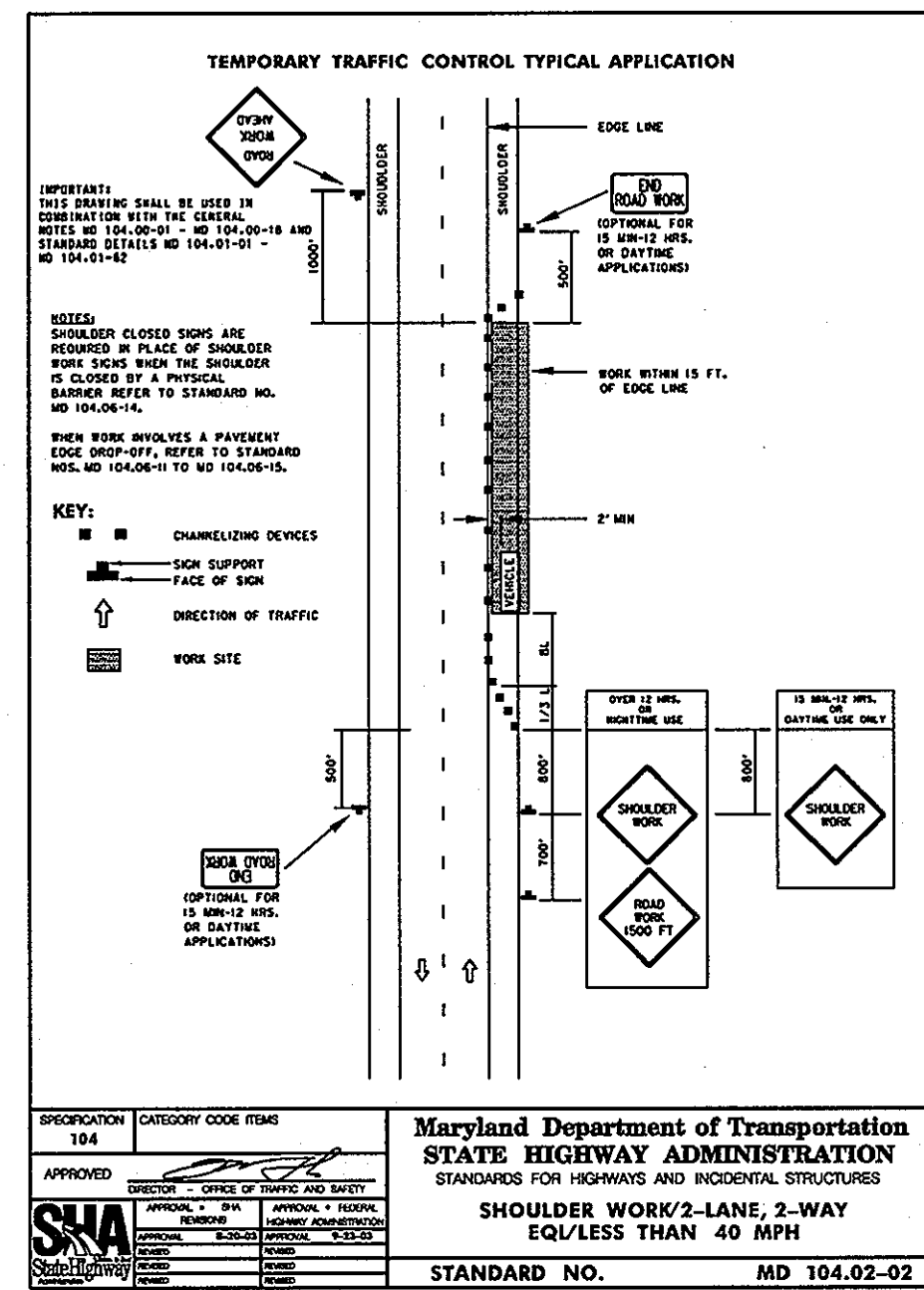
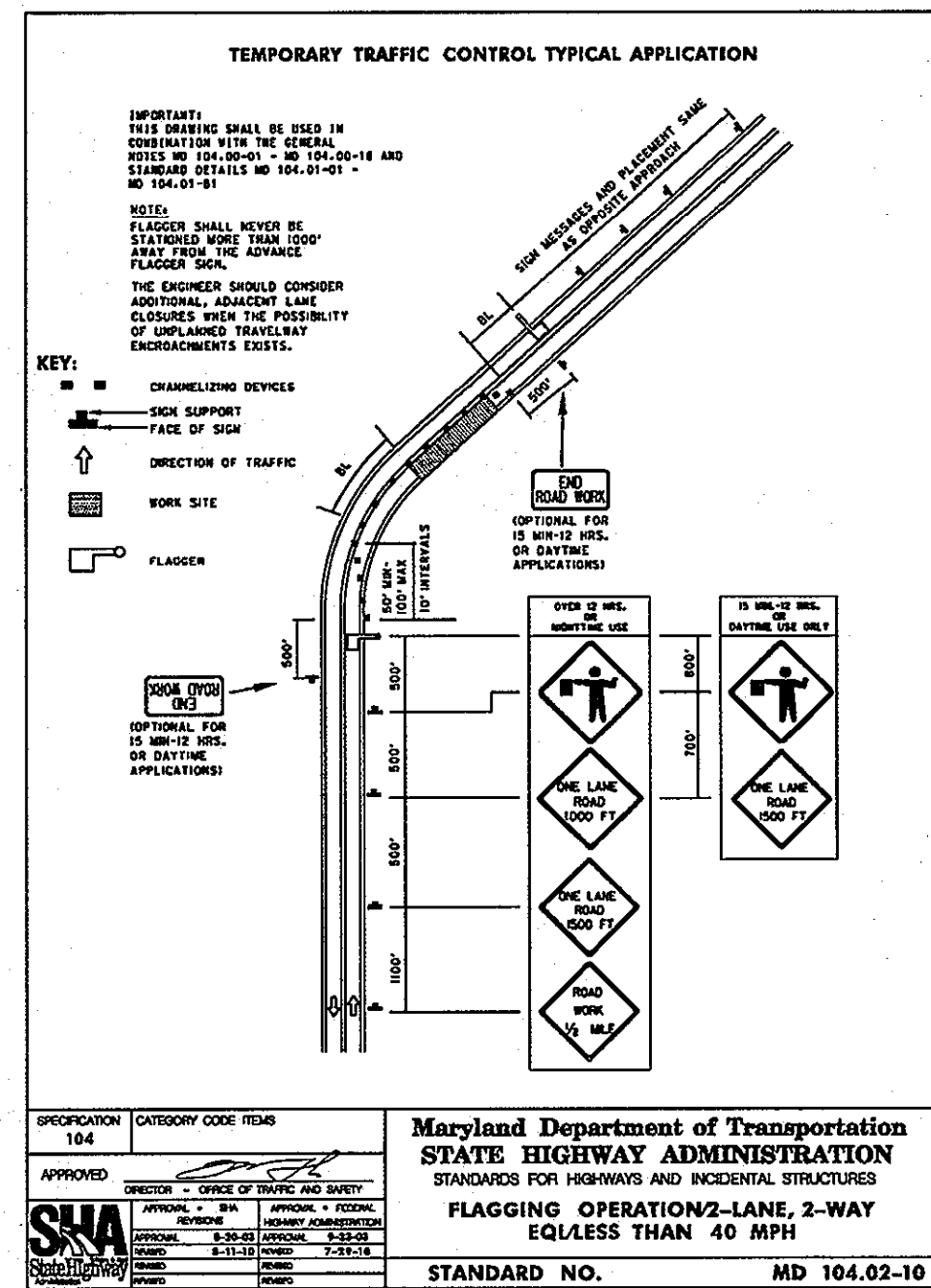
UTILITY DETAILS

VICTORY TEMPLE - LAUREL
WORSHIP CENTER
9100 BURSA ROAD

SDP-12-007
TAX MAP 47, GRID 23
PARCEL 540 (PARCEL A, PLAT # 22114)

W&S CONTRACT No. 24-4047-D
ZONING: CSE-CL1
ELECTION DISTRICT - 6
HOWARD COUNTY, MARYLAND

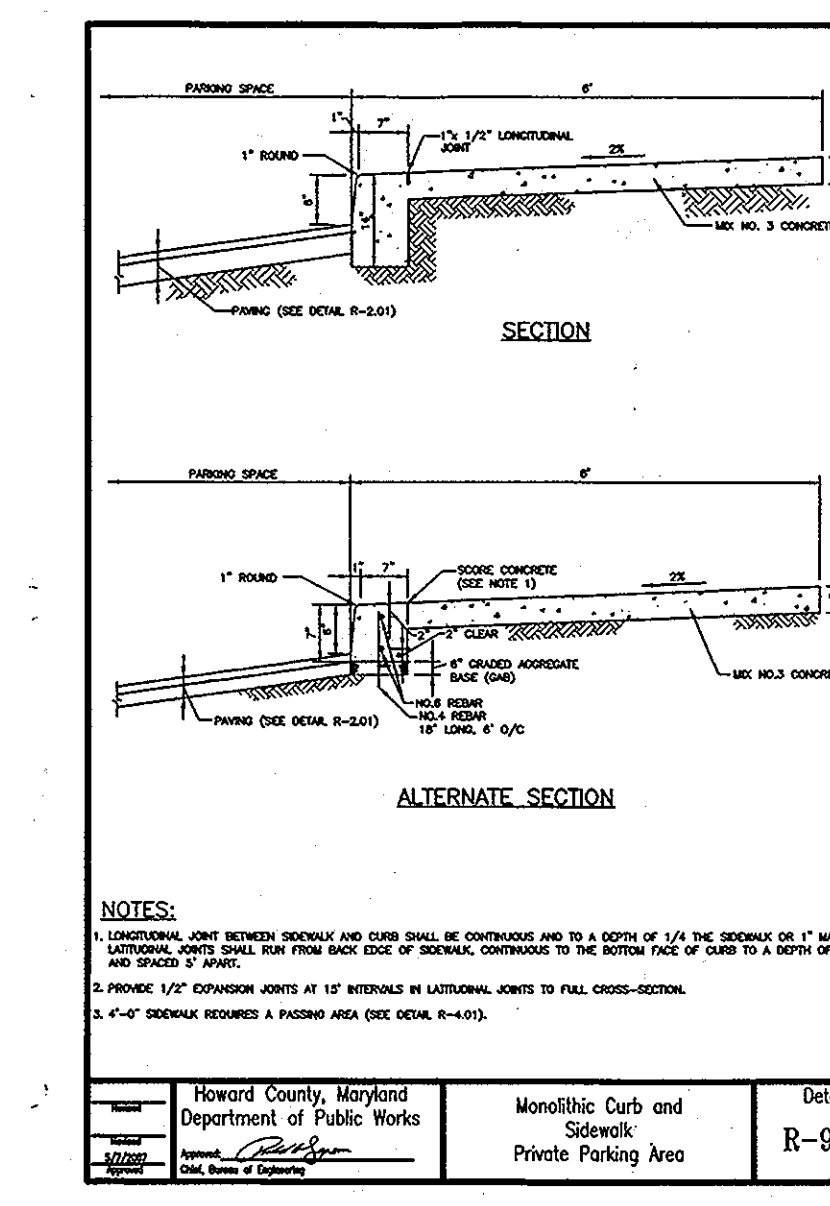
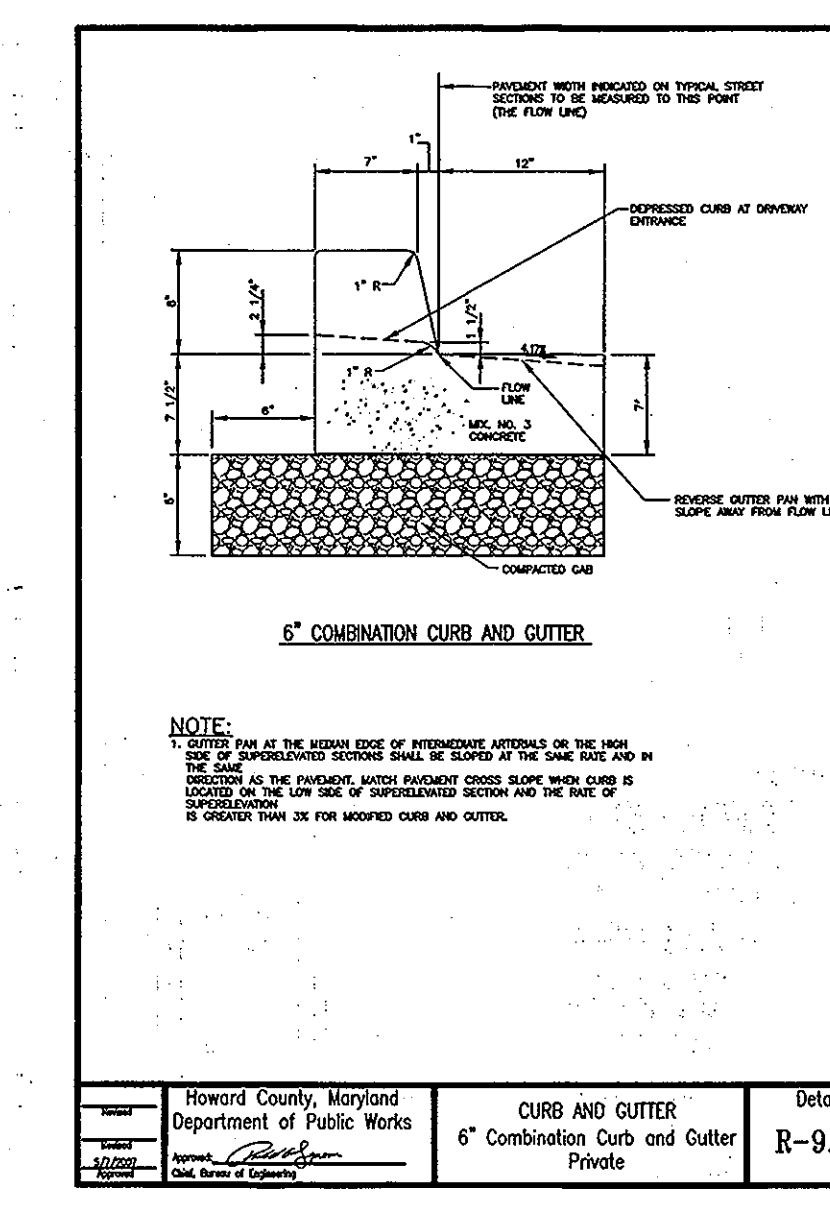
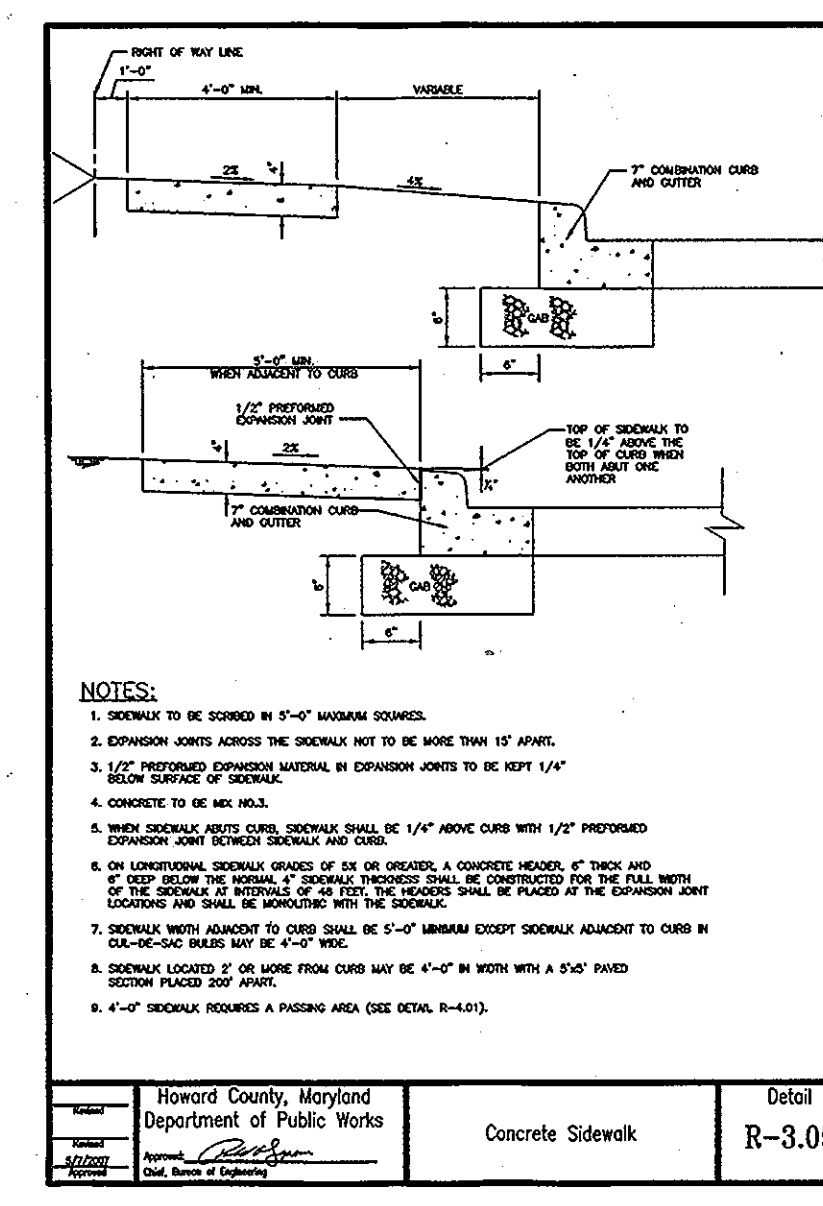
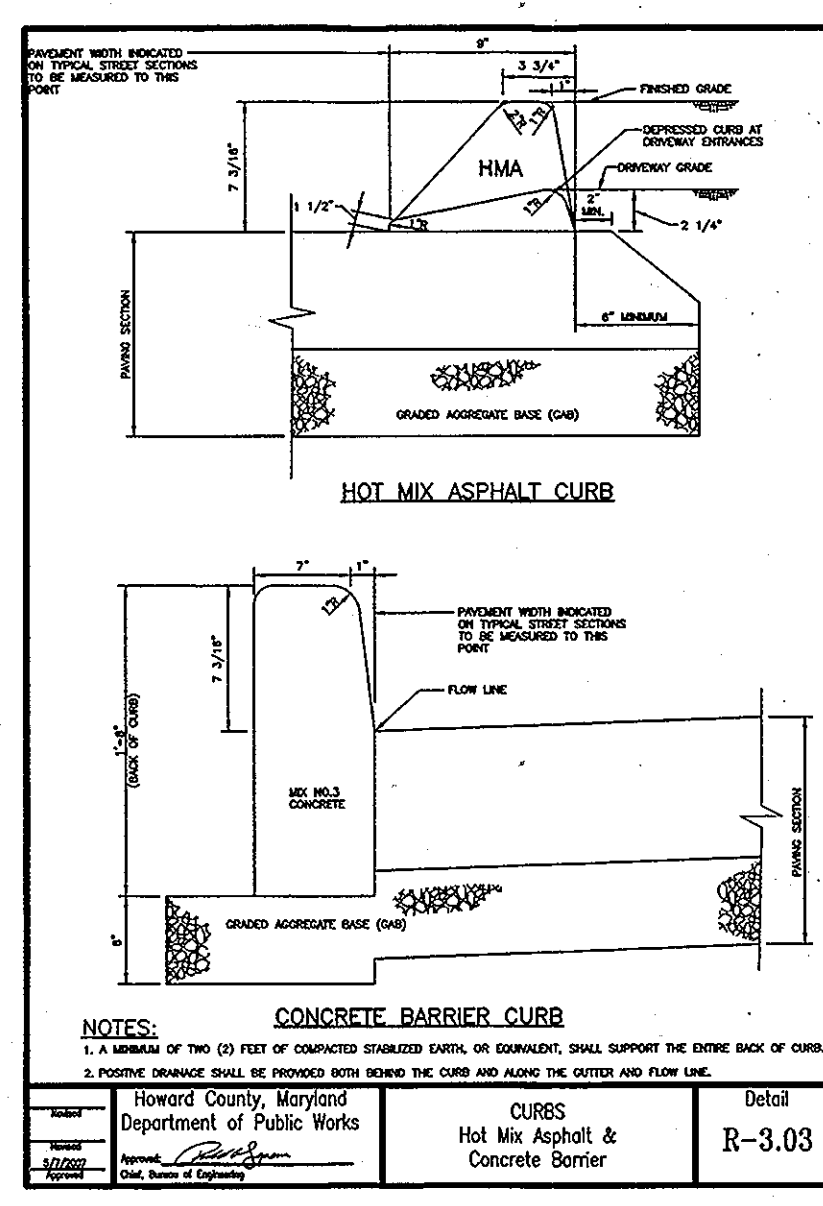
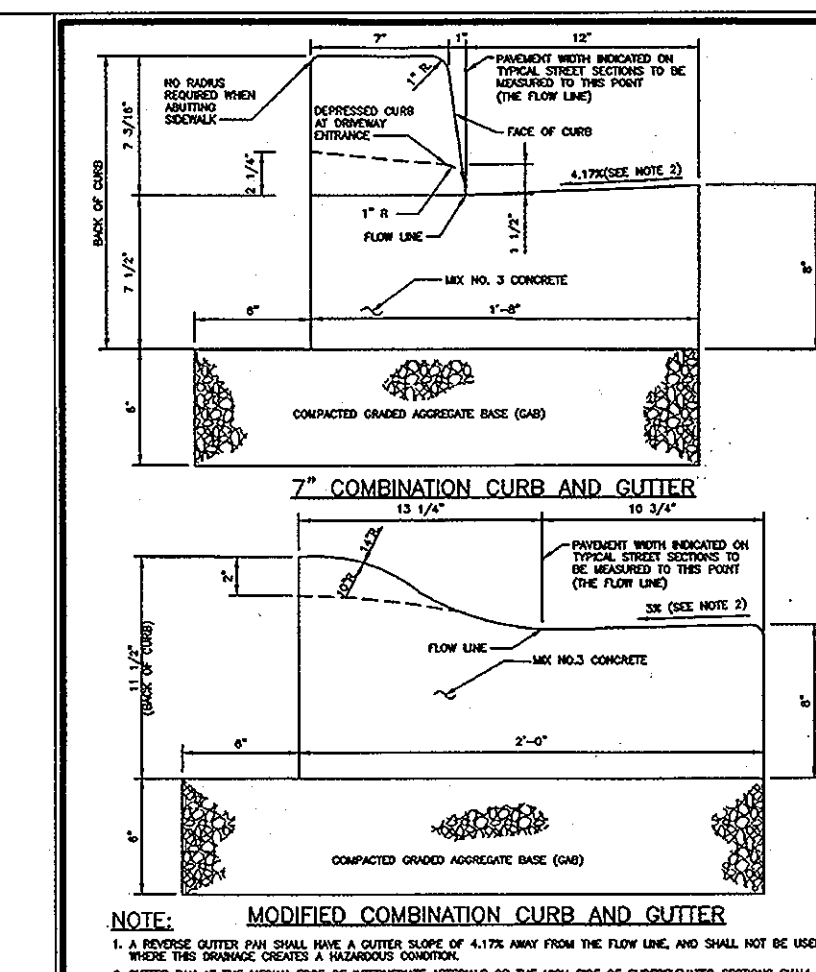
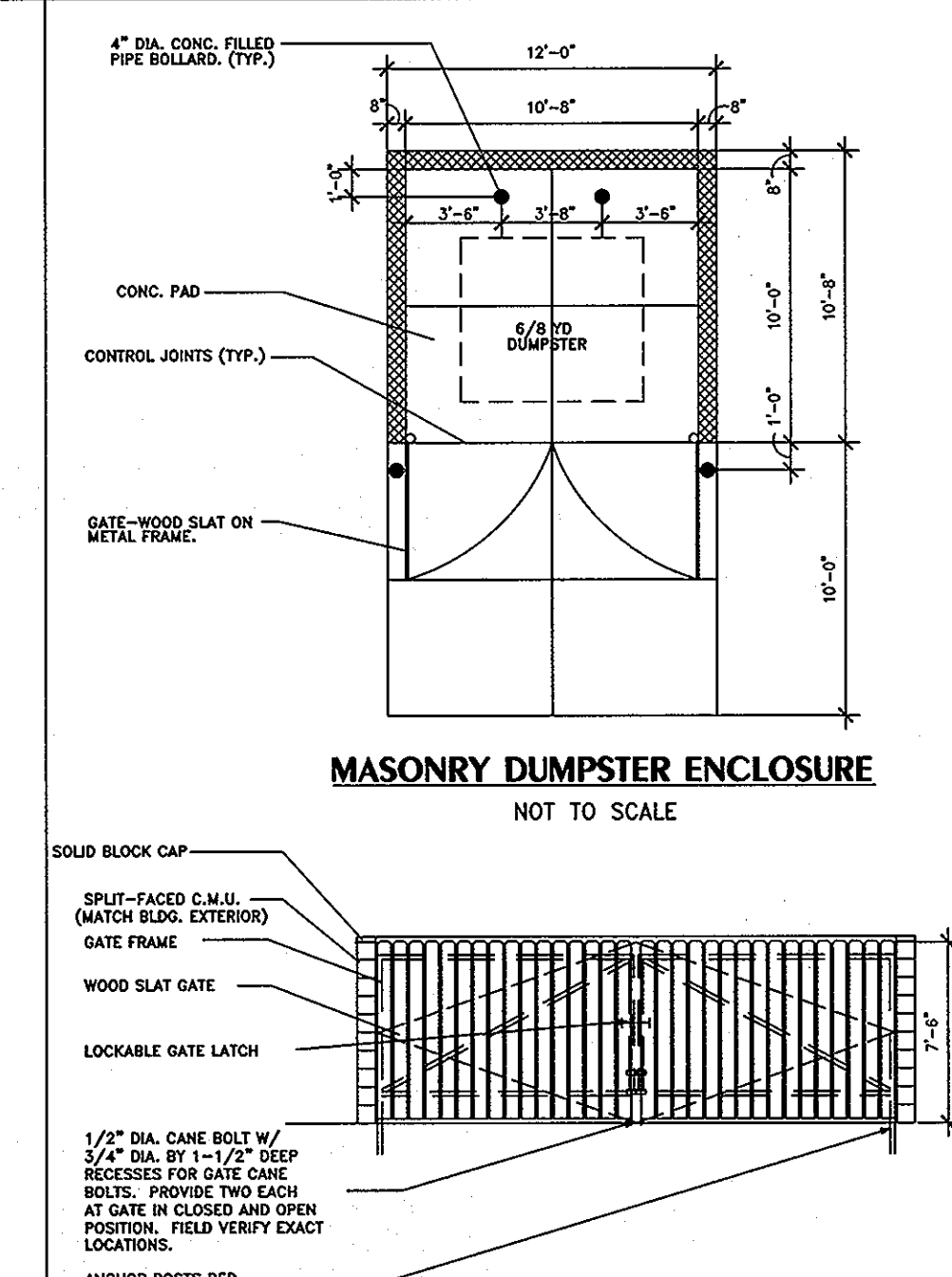
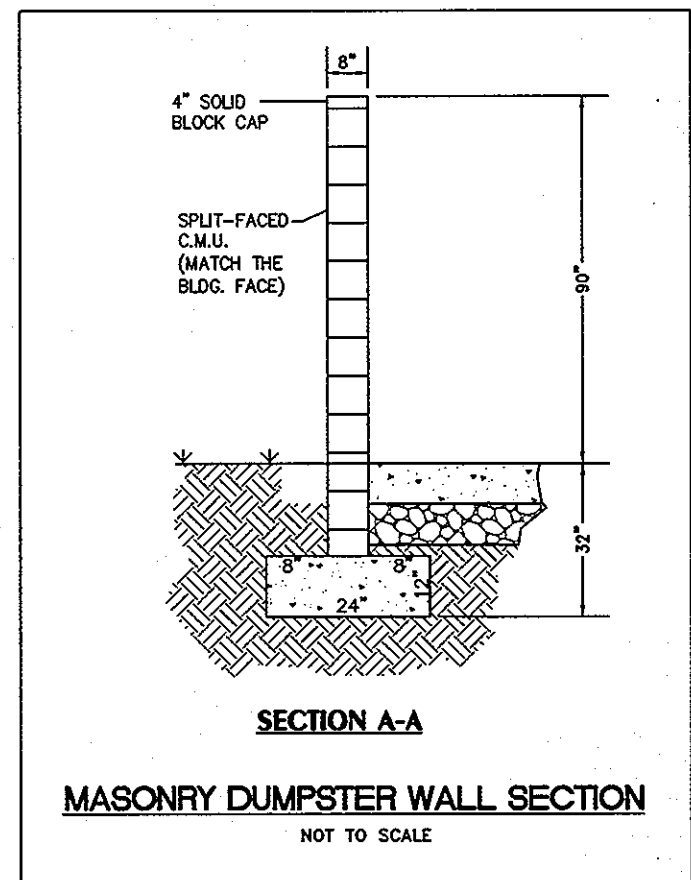
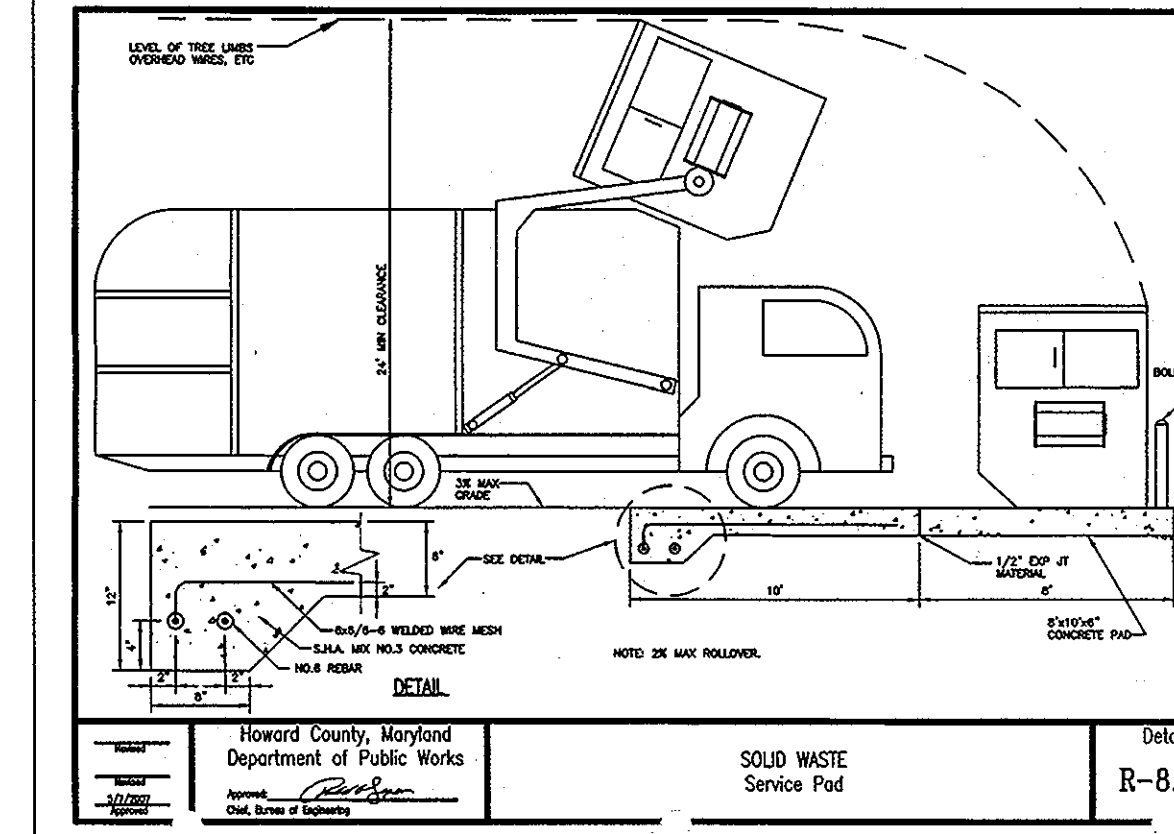
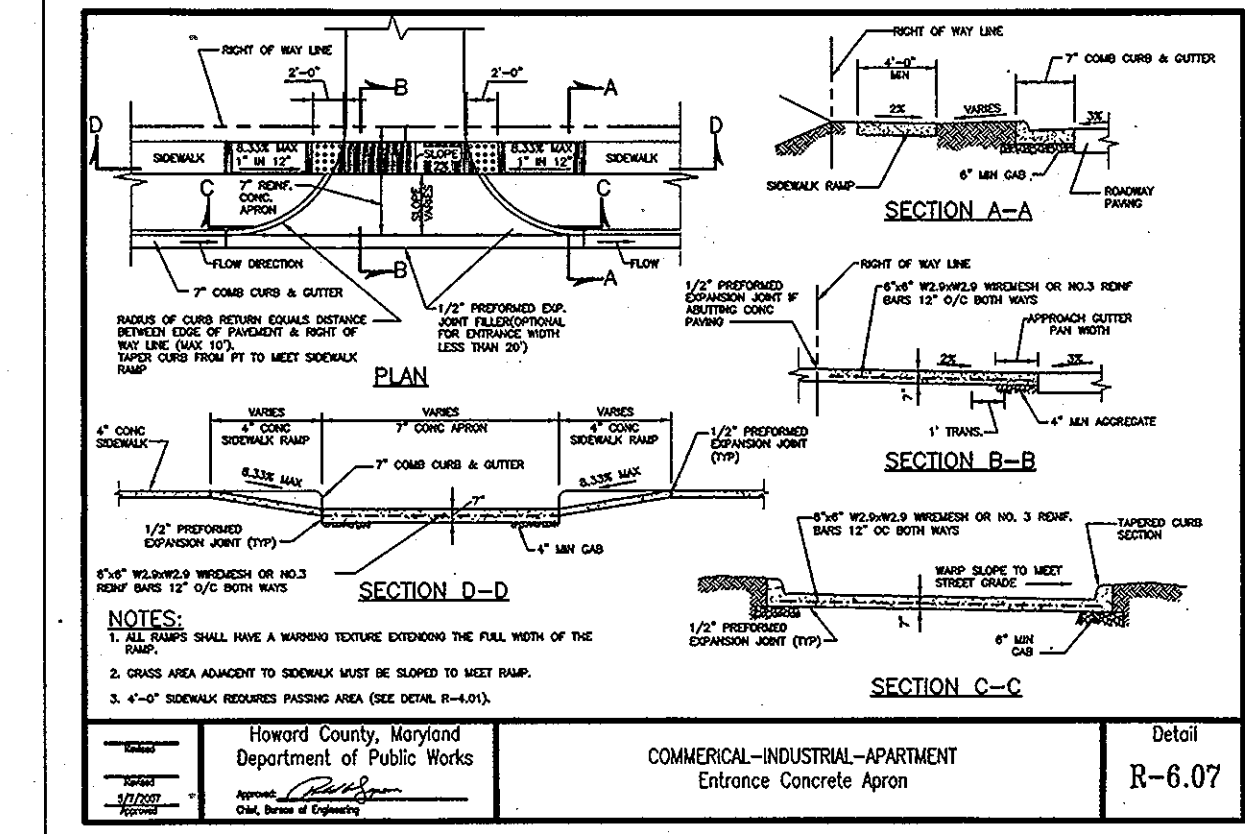
SDP-12-007



PAVING SECTIONS
P-1 to P-4

SECTION	ROAD AND STREET CLASSIFICATION	PAVEMENT MATERIALS (INCHES)	3 TO 4'	4 TO 6'	6 TO 12'	12 TO 18'	18 TO 24'	24 TO 30'	30 TO 42'
P-1	PARKING LOT AND HIGH-RESIDENTIAL	1.5" ASPHALT	1.2	1.5	1.5	1.5	1.5	1.5	1.5
P-2	PARKING LOT AND HIGH-RESIDENTIAL WITH NO MORE THAN 10' SPACING PER FOOT	1.5" ASPHALT	1.2	1.5	1.5	1.5	1.5	1.5	1.5
P-3	PARKING LOT AND HIGH-RESIDENTIAL WITH NO MORE THAN 10' SPACING PER FOOT	1.5" ASPHALT	1.2	1.5	1.5	1.5	1.5	1.5	1.5
P-4	PARKING LOT AND HIGH-RESIDENTIAL WITH NO MORE THAN 10' SPACING PER FOOT	1.5" ASPHALT	1.2	1.5	1.5	1.5	1.5	1.5	1.5

Detail R-2.01



APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature] 4/23/13
Chief, Development Engineering Division

[Signature] 4/30/13
Chief, Division of Land Development

[Signature] 5/1/13
Director

KCW Engineering Technologies, Inc.
810 Landmark Drive, Suite 215
Glen Burnie, MD 21061
Phone: 410.768.7700
Fax: 410.768.0200
www.kcw-et.com

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 33351. Expiration Date 06-30-2014.

[Signature]
11/30/12

OWNER:
THE REDEEMED CHRISTIAN CHURCH OF GOD, INC.
13701 ANNAPOLIS ROAD
BOWIE, MD 20720

Attn: Margaret Adeyokunnu, Pastor
Tele: (301) 352-0707
Fax: (301) 352-3339

OWNER'S REPRESENTATIVE/ DEVELOPER:
TLI DESIGNGROUP INC.
3308 DORCHESTER ROAD
BALTIMORE, MD 21215

Attn: Taiwo Iloyomade, President
Toll Free/Fax/Voice mail:
(1-866) 616-1497
Mobile: (443) 831-6703

KCW J.O.: 2080018
SCALE: AS SHOWN
DESIGNED: MT
DRAWN: MT
CHECKED: KCA
DATE: NOV. 30, 2012
DRAWING NO. 16 OF 19

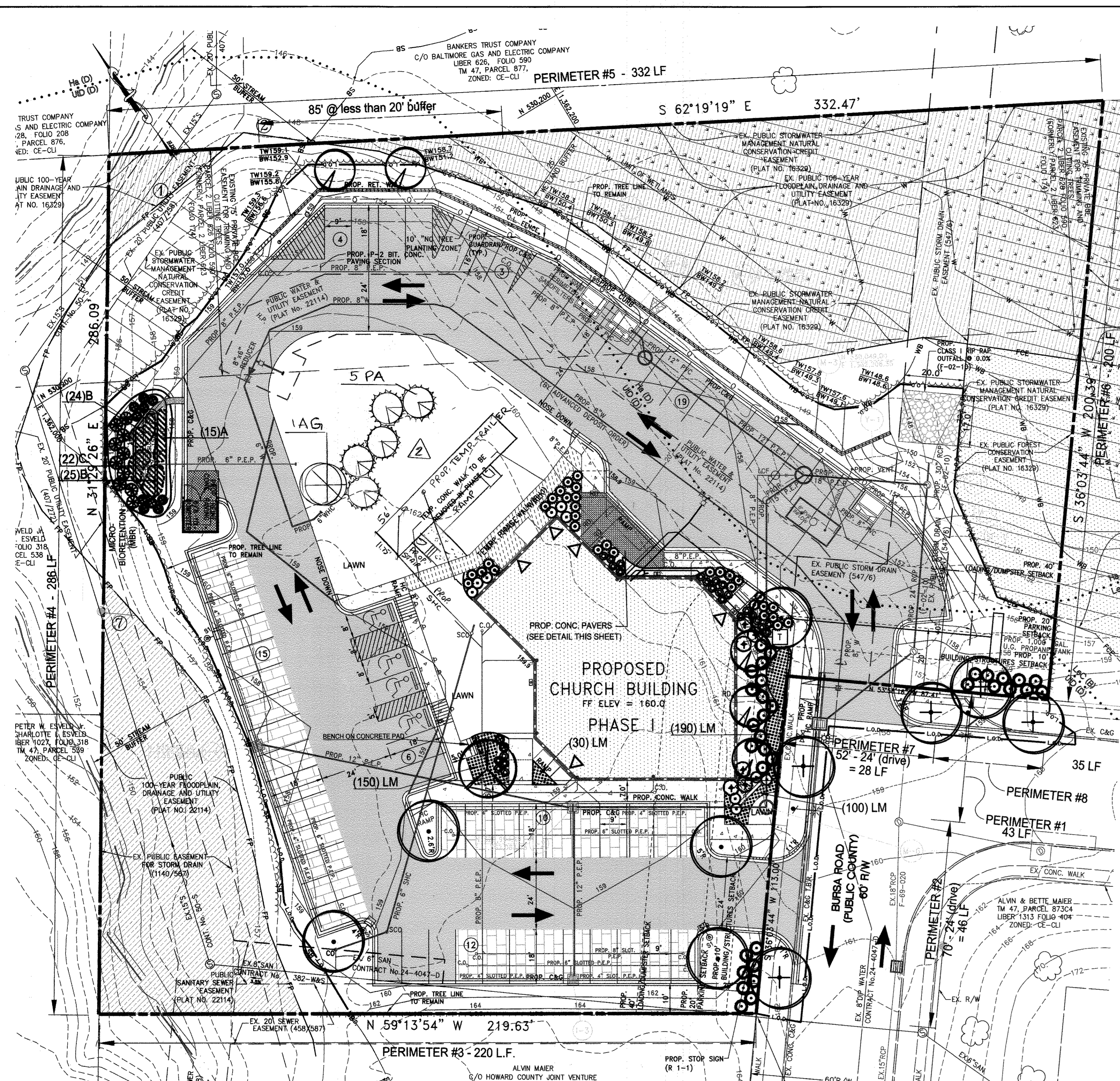
CONSTRUCTION DETAILS

VICTORY TEMPLE - LAUREL
WORSHIP CENTER
9100 BURSA ROAD

SDP-12-007
TAX MAP 47, GRID 23
PARCEL 540 (PARCEL A, PLAT # 22114)

W&S CONTRACT NO. 24-4047-D
ZONING: CE-CL1
ELECTION DISTRICT - 6
HOWARD COUNTY, MARYLAND

SDP-12-007



PERIMETER LANDSCAPE EDGE

Category	Adjacent to Roadways	Adjacent to Perimeter Properties						
Perimeter Number	1	2	3	4	5	6	7	8
Land Use	Non Residential	Parking	Non Residential	Non Residential	Non Residential	Non Residential	Parking	Non Residential
Orientation / Adjacent Land Use	Front / Side	N/A	Non Residential	Non Residential	Non Residential	Non Residential	N/A	Front / Side
Landscape Type	'B'	'E'	'A'	'A'	'A'	'A'	'E'	'B'
Linear Feet of Roadway Frontage/Perimeter	43 LF.	46' LF.	220 LF.	286 LF.	332 LF.	200 LF.	28 LF.	35' LF.
Credit for Existing Vegetation (Yes, No, Linear Feet) (Describe below if needed)			YES 85 LF.	YES 266 LF.	YES 247 LF.	YES 175 LF.		
Credit for Wall, Fence or Berm (Yes, No, Linear Feet) (Describe below if needed)								
Number of Plants Required								
Shade Trees	1	1	3	1	1		1	1
Evergreen Trees	1							1
Shrubs		12					7	
Number of Plants Provided								
Shade Trees		1	3*	1			1*	1
Evergreen Trees					2			
Other Trees (2:1 substitution)								
Shrubs (10:1 substitution)		5	12				7*	10

PARKING LOT INTERNAL LANDSCAPING

Number of Parking Spaces	69
Number of Trees Required (1/20 SPACES)	3
Number of Trees Provided (Shade Trees)	3
Other Trees (2:1 substitution)	
Internal Islands Required	3
Internal Islands Provided (Min. 200 SF.)	3

STREET TREES

200 LF Street Frontage @ 1 Tree / 40 LF = (5) Shade Trees Required.
 (4) Shade Trees provided along frontage.
 (1) Shade Tree relocated within an internal island at first parking lot. Note: frontages limited due to inlet and street light locations.

NOTE:
 AT THE TIME OF PLANT INSTALLATION, ALL SHRUBS AND TREES LISTED AND APPROVED ON THE LANDSCAPE PLAN, SHALL COMPLY WITH THE PROPER HEIGHT REQUIREMENT IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATIONS OF THE REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THE APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO THE APPLICABLE PLANS.

THE OWNER, TENANT, AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING, INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.

PERIMETER #1: SUBSTITUTED (3) ORNAMENTAL TREES @ 2:1 = 1.5 + (3) SHRUBS @ 10:1 = .5 (TOTAL 2) FOR 1 SHADE TREE AND 1 EVERGREEN TREE.
 PERIMETER #3: CANNOT BE PLANTED DUE TO EXISTING SEWER EASEMENT.
 PERIMETER #5: SUBSTITUTED (2) ORNAMENTAL TREES @ 2:1 DUE TO RESTRICTIONS WITHIN BGE EASEMENT
 PERIMETER #7: CANNOT BE PLANTED DUE TO EXISTING PUBLIC STORM DRAIN EASEMENT. (1) SHADE TREE + (7) SHRUBS HAVE BEEN RELOCATED TO THE SE CORNER OF THE BUILDING IN THE VICINITY OF PERIMETER #7.
 PERIMETER #8: SUBSTITUTED (10) SHRUBS @ 10:1 FOR 1 EVERGREEN TREE.

PHASE 1 PLANT LIST

KEY	QTY	BOTANICAL NAME COMMON NAME	SIZE	COND	REMARKS
(+)	1	ACER RUBRUM 'RED SUNSET' RED SUNSET RED MAPLE	2 1/2'-3' CAL.	B & B	FULL HEAVY SPECIMEN, HEADED TO 6' HT.
(+)	1	BETULA NIGRA 'HERITAGE' HERITAGE RIVER BIRCH	10'-12' HT	B & B	FULL HEAVY SPECIMEN, 3 STEMS, HEADED TO 6' HT.
(+)	5	GLEDITSIA TRIACANTHOS 'SHADEMASTER' SHADEMASTER HONEY LOCUST	2 1/2'-3' CAL.	B & B	FULL HEAVY SPECIMEN, HEADED TO 6' HT.
(+)	4	ULMUS AMERICANA 'VALLEY FORGE' VALLEY FORGE AMERICAN ELM	2 1/2'-3' CAL.	B & B	FULL HEAVY SPECIMEN, HEADED TO 6' HT.
(+)	5	AMELANCHIER GRANDIFLORA 'AUTUMN BRILLIANCE' AUTUMN BRILLIANCE SERVICEBERRY	8'-10' HT.	B & B	FULL HEAVY, MULTI-STEMMED MATCHED
(+)	33	BUXUS MICRO 'GREEN VELVET' GREEN VELVET BOXWOOD	18"-24" HT.	#3	4" O.C., STAGGERED
(+)	6	HYDRANGEA QUERCIFOLIA 'PEE WEE' PEE WEE OAKLEAF HYDRANGEA	30"-38" HT.	#5	5" O.C.
(+)	12	ITEA VIRGINICA 'LITTLE HENRY' LITTLE HENRY SWEETSPICE	24"-30" HT.	#5	3'-6" O.C., STAGGERED
(+)	32	JUNIPERUS CHINENSIS 'SARGENTII' SARGENT JUNIPER	18"-24" SPD.	#3	4" O.C., STAGGERED
(+)	25	NANDINA DOMESTICA 'HARBOUR DWARF' HARBOUR DWARF NANDINA	18"-24" HT.	#3	2'-6" O.C., STAGGERED
(+)	10	ROSA 'KNOCK OUT' RED KNOCK OUT ROSE	24"-30" HT.	#5	4" O.C., STAGGERED
(+)	10	PANICUM VIRGATUM 'HEAVY METAL' HEAVY METAL SWITCHGRASS	#3	#3	4" O.C., STAGGERED
(+)	470	LIRIOPE MUSCARI 'VAREGATA' VAREGATED LILY-TURF	4" POTS	12" O.C., STAGGERED	
(+)	15	MONARDA DIDYMA 'PETITE DELIGHT' PETITE DELIGHT BEE BALM	1 QT. POTS	18" O.C., STAGGERED	
(+)	49	IRIS VERSICOLOR BLUE FLAG IRIS	1 QT. POTS	18" O.C., STAGGERED	
(+)	22	ASCLEPIAS INCARNATA SWAMP MILKWEED	1 QT. POTS	24" O.C., STAGGERED	
(+)	5	PICEA ABIES 'NORWAY SPRUCE' NORWAY SPRUCE	6'-7' HT.	B & B	3 SPACE 10' O.C. STAGGER
(+)	1	ACER GLABRUM 'FLAME AMUR MAPLE' FLAME AMUR MAPLE	1 3/4'-2' CAL	B & B	AS SHOWN

LEGEND

- EXISTING CONTOURS: ---144---
- PROPOSED CONTOURS: ---164---
- PROPERTY LINE: ————
- LIMIT OF DISTURBANCE: L.O.D.
- WETLANDS: W
- 25' WETLAND BUFFER: WB
- 100 YEAR FLOODPLAIN DRAINAGE AND UTILITY EASEMENT: FP
- STREAM LINE: ————
- SOILS LINE: ---C-2---
- FOREST CONSERVATION EASEMENT: FCE
- STREAM BUFFER: SB
- ROOF DRAIN: RD
- EXISTING WOODS: [Symbol]
- PROPOSED LIMIT OF CLEARING: [Symbol]

PARKING AND LANDSCAPING

PROPOSED USE: CHURCH BUILDING WITH 200 SEATS

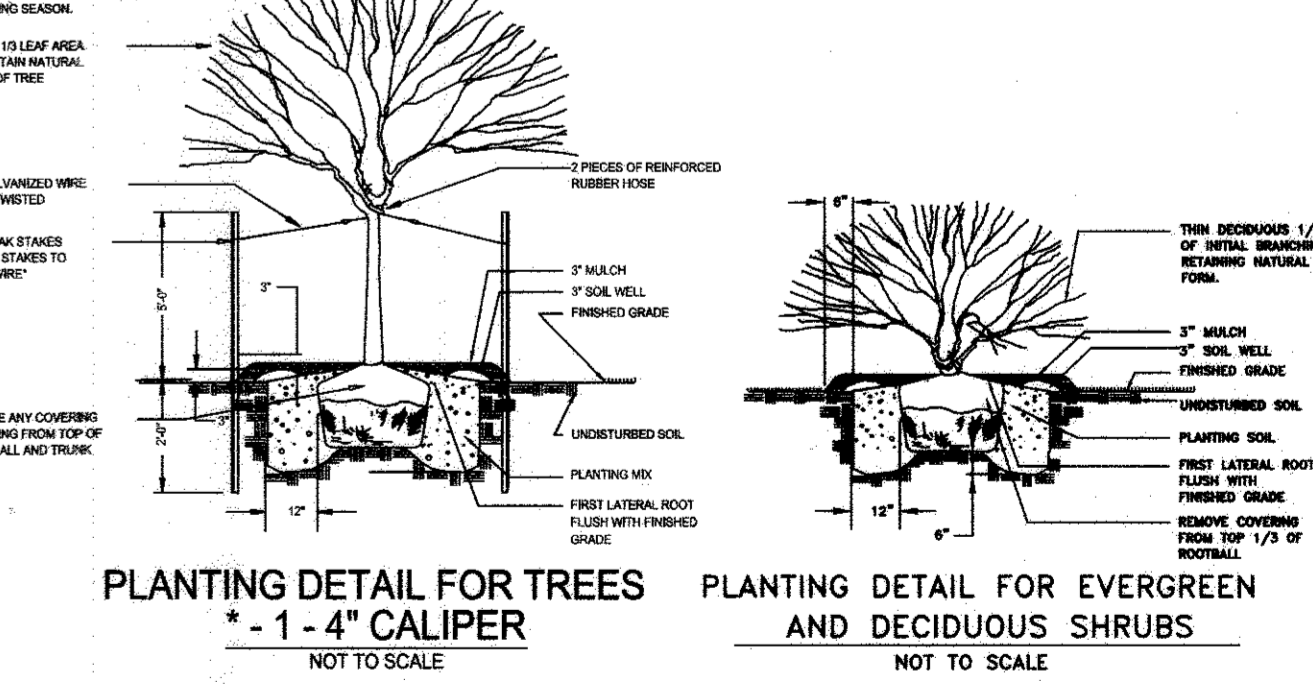
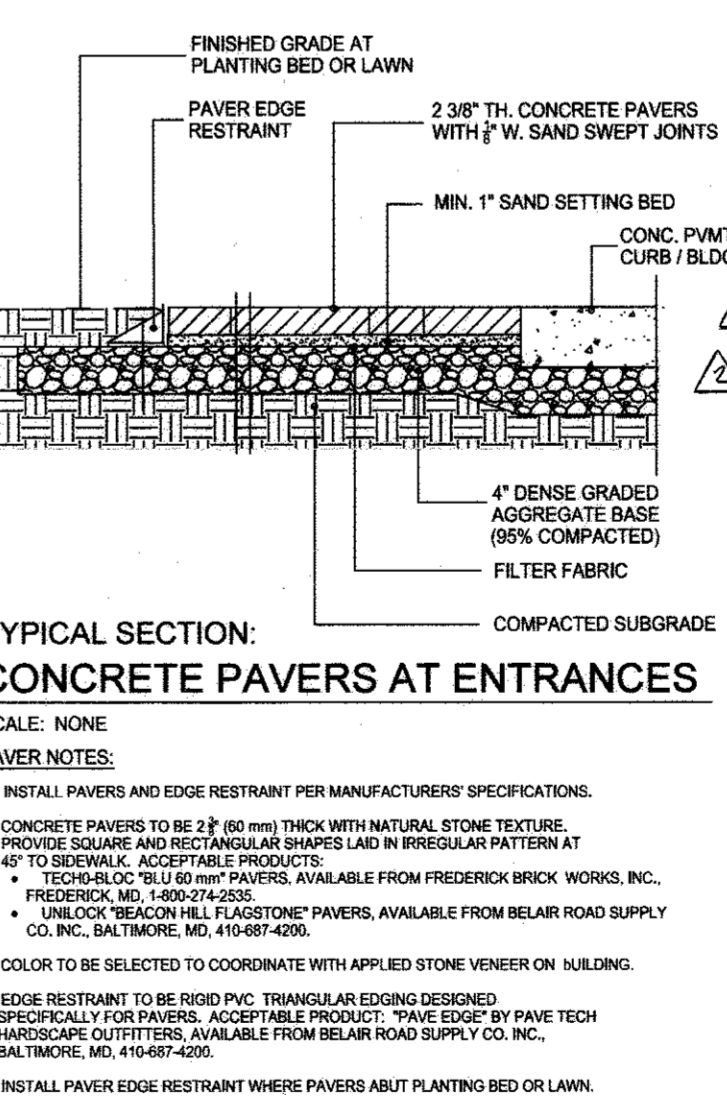
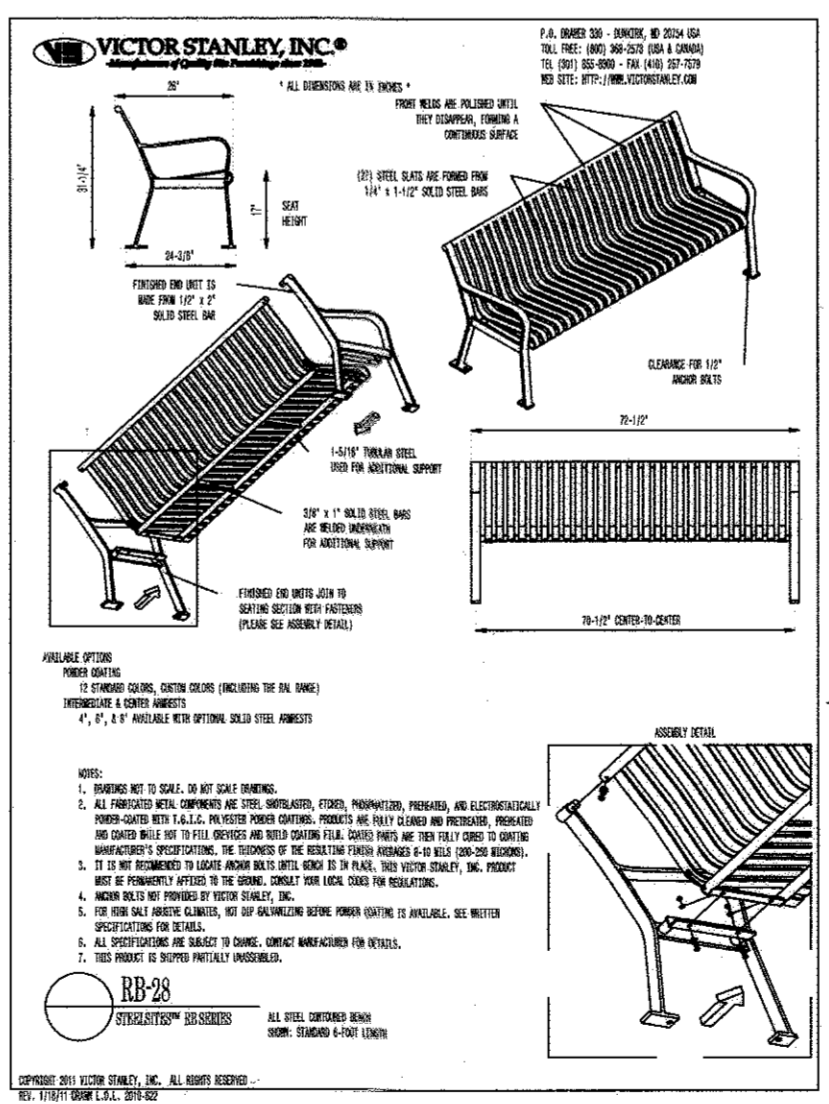
PARKING STANDARDS: 1.0 SPACES / 3 SEATS
REQUIRED PARKING: 67 SPACES
PROVIDED PARKING: 69 SPACES
 INCLUDING 4 HANDICAPPED SPACES

PARKING SETBACKS: CORRIDOR - EMPLOYMENT ZONING DISTRICT ROUTE 1 MANUAL
 SETBACK TO PUBLIC ROADWAYS: 20 FT.
 SIDE/REAR SETBACK: 10 FT.
 LOADING SPACE SETBACK: 40 FT.

PERIMETER LANDSCAPING STANDARD: 'E' TYPE
PROVIDED PERIMETER LANDSCAPING: 'E' TYPE (MINIMUM)

INTERIOR LANDSCAPING STANDARDS: 1 LANDSCAPE ISLAND / 20 SPACES; 12 FT. WIDE (MIN) AND 200 G.S.F. OF PLANTING AREA; NO MORE THAN 24 SPACES IN A ROW

REQUIRED INTERIOR LANDSCAPING: 3 LANDSCAPE ISLANDS
PROVIDED INTERIOR LANDSCAPING: 3 LANDSCAPE ISLANDS



Scale 1" = 20'

APPROVED: DEPARTMENT OF PLANNING AND ZONING

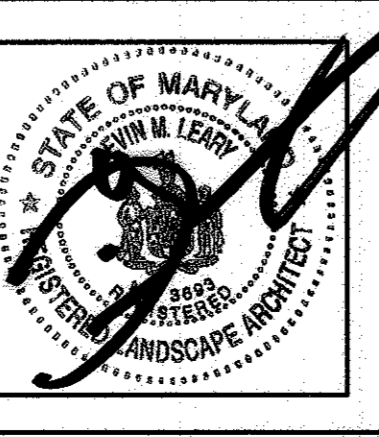
Chief, Development Engineering Division: *Chad Edwards* 4-3-14
 Chief, Division of Land Development: *Kurt Schulman* 4/6/14
 Director: *Frank J. Leight* 4/4/14

LANDSCAPE SURETY NOTE:
 THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF:
 (12) SHADE TREES @ \$300 EACH = \$3,600.00
 (2) EVERGREEN TREES @ \$150 EACH = \$300.00
 (19) SHRUBS @ \$30 EACH = \$570.00
 TOTAL: \$4,470.00
 STREET TREE SURETY:
 (5) SHADE TREES @ \$300 EACH = \$1,500.00

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 year guarantee of plant materials, will be submitted to the Department of Planning and Zoning.
M. Adeyokunnu 3-18-14
 DEVELOPER/BUILDER DATE

PLANTING NOTES:
 1. CONTRACTOR IS TO NOTIFY MISS UTILITY A MINIMUM OF 72 HOURS PRIOR TO DIGGING. TELEPHONE: 1-800-257-7777.
 2. THE LANDSCAPE ARCHITECT IS TO BE NOTIFIED 48 HOURS BEFORE PLANTING BEGINS. THE LOCATION OF ALL PLANT MATERIAL IS TO BE APPROVED IN THE FIELD BY THE LANDSCAPE ARCHITECT.
 3. NO TREE OR SHRUB PLANTING PITS ARE TO BE LEFT OPEN OR UNATTENDED.
 4. SHRUBS ARE TO BE GROUPED INTO MULCHED BEDS. BEDS ARE TO BE EDGED AND THE GRASS IS TO BE KILLED OR REMOVED PRIOR TO MULCHING.

KCW Engineering Technologies, Inc.
 810 Landmark Drive, Suite 215
 Glen Burnie, MD 21061
 Phone: 410.768.7700
 Fax: 410.768.0200
 www.kcw-et.com



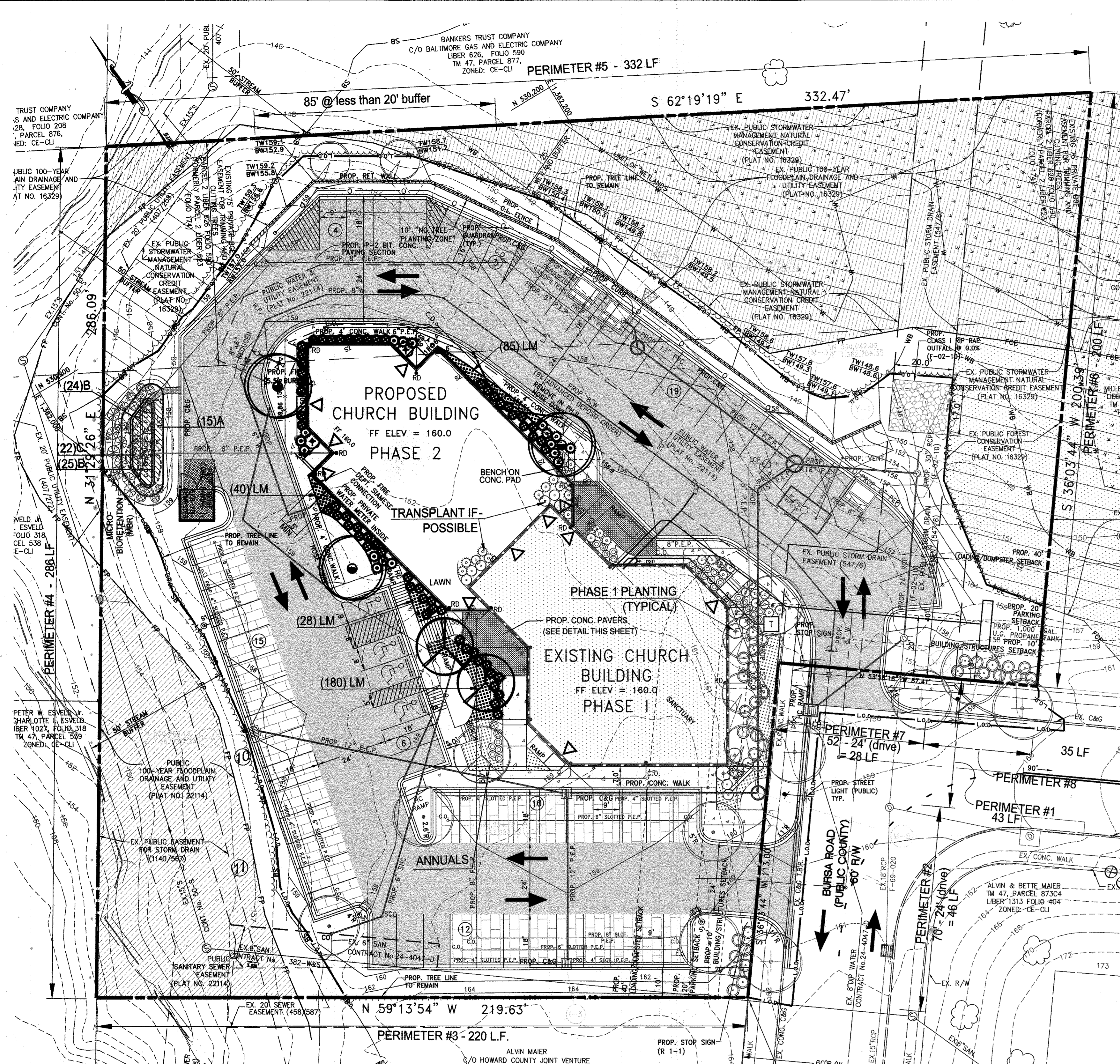
PREPARED BY:
 HUMAN & ROHDE, INC.
 LANDSCAPE ARCHITECTS
 512 VIRGINIA AVENUE
 TOWSON, MARYLAND 21286
 PHONE: (410) 825-3885
 FAX: (410) 825-3887

OWNER:
 THE REDEEMED CHRISTIAN CHURCH OF GOD, INC.
 13701 ANNAPOLIS ROAD
 BOWIE, MD 20720
 Attn: Margaret Adeyokunnu, Pastor
 Tele: (301) 352-0707
 Fax: (301) 352-3339

OWNER'S REPRESENTATIVE/ DEVELOPER:
 TLI DESIGNGROUP INC.
 3308 DORCHESTER ROAD
 BALTIMORE, MD 21215
 Attn: Taiwo Iloyomade, President
 Toll Free/Fax/Voice mail:
 (1-866) 616-1497
 Mobile: (443) 831-6703

KCW J.O.: 2080018
 SCALE: 1" = 20'
 DESIGNED: DML
 DRAWN: DML
 CHECKED: JCR
 DATE: FEB. 10, 2014
 DRAWING NO.
 17 OF 19

PHASE 1 LANDSCAPE / HARDSCAPE PLAN
VICTORY TEMPLE - LAUREL
WORSHIP CENTER
 9100 BURSA ROAD
 SDP-12-007
 TAX MAP 47, GRID 23
 PARCEL 540 (PARCEL A, PLAT #22114)
 W&S CONTRACT No. 24-4047-D
 ZONING: CE-CLJ
 ELECTION DISTRICT - 6
 HOWARD COUNTY, MARYLAND



PERIMETER LANDSCAPE EDGE

Category	Adjacent to Roadways	Adjacent to Perimeter Properties							
		1	2	3	4	5	6	7	8
Perimeter Number		1	2	3	4	5	6	7	8
Land Use	Non Residential	Parking	Non Residential	Non Residential	Non Residential	Non Residential	Parking	Non Residential	
Orientation / Adjacent Land Use	Front / Side	N/A	Non Residential	Non Residential	Non Residential	Non Residential	N/A	Front / Side	
Landscape Type	'B'	'E'	'A'	'A'	'A'	'A'	'E'	'B'	
Linear Feet of Roadway Frontage/Perimeter	43 LF.	48 LF.	220 LF.	286 LF.	332 LF.	200 LF.	28 LF.	35 LF.	
Credit for Existing Vegetation (Yes, No, Linear Feet) (Describe below if needed)		YES 65 LF.	YES 266 LF.	YES 247 LF.	YES 175 LF.				
Credit for Wall, Fence or Berm (Yes, No, Linear Feet) (Describe below if needed)									
Number of Plants Required									
Shade Trees	1	1	3	1	1	1	1	1	
Evergreen Trees	1								1
Shrubs		12							
Number of Plants Provided									
Shade Trees		1	3*	1			1*	1	
Evergreen Trees									
Other Trees (2:1 substitution)		3			2				
Shrubs (10:1 substitution)		5	12					7*	10
(Describe plant substitution credits below if needed)				*SEE NOTE BELOW	EX. VEG. CREDIT	EX. VEG. CREDIT	EX. VEG. CREDIT	*SEE NOTE BELOW	

PARKING LOT INTERNAL LANDSCAPING

Number of Parking Spaces	69
Number of Trees Required (1 / 20 SPACES)	3
Number of Trees Provided	3
Shade Trees	3
Other Trees (2:1 substitution)	
Internal Islands Required	3
Internal Islands Provided (Min. 200 SF.)	3

STREET TREES

200 LF Street Frontage @ 1 Tree / 40 LF = (5) Shade Trees Required.
 - (4) Shade Trees provided along frontage.
 - (1) Shade Tree relocated within an internal island at first parking lot.
 Note: frontage limited due to inlet and street light locations.

NOTE:
 AT THE TIME OF PLANT INSTALLATION, ALL SHRUBS AND TREES LISTED AND APPROVED ON THE LANDSCAPE PLAN, SHALL COMPLY WITH THE PROPER HEIGHT REQUIREMENT IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATIONS OF THE REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THE APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO THE APPLICABLE PLANS.

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PERIMETER #1: SUBSTITUTED (3) ORNAMENTAL TREES @ 2.1 = 1.5 * (5) SHRUBS @ 10:1 = 5 (TOTAL 2) FOR 1 SHADE TREE AND 1 EVERGREEN TREE.
 PERIMETER #3: *CANNOT BE PLANTED DUE TO EXISTING SEWER EASEMENT.
 (3) SHADE TREES HAVE BEEN PLANTED ON THE N & E SIDE OF THE BUILDING AND PARKING LOT TO OFFSET THE REQUIREMENT.
 PERIMETER #5: SUBSTITUTED (2) ORNAMENTAL TREES @ 2:1 DUE TO RESTRICTIONS WITHIN BGE EASEMENT
 PERIMETER #7: *CANNOT BE PLANTED DUE TO EXISTING PUBLIC STORM DRAIN EASEMENT. (1) SHADE TREE + (7) SHRUBS HAVE BEEN RELOCATED TO THE SE CORNER OF THE BUILDING IN THE VICINITY OF PERIMETER #7.
 PERIMETER #8: SUBSTITUTED (10) SHRUBS @ 10:1 FOR 1 EVERGREEN TREE.

LEGEND

- EXISTING CONTOURS --- 144 ---
- PROPOSED CONTOURS --- 154 ---
- PROPERTY LINE --- ---
- LIMIT OF DISTURBANCE --- L.O.D. ---
- WETLANDS --- W ---
- 25' WETLAND BUFFER --- WB ---
- 100 YEAR FLOODPLAIN DRAINAGE AND UTILITY EASEMENT --- FP ---
- STREAM LINE --- ---
- SOILS LINE --- ---
- FOREST CONSERVATION EASEMENT --- FCE ---
- STREAM BUFFER --- SB ---
- ROOF DRAIN --- RD ---
- EXISTING WOODS --- ---
- PROPOSED LIMIT OF CLEARING --- ---

PARKING AND LANDSCAPING

PROPOSED USE: CHURCH BUILDING WITH 200 SEATS
 PARKING STANDARDS: 1.0 SPACES / 3 SEATS
 PROVIDED PARKING: 67 SPACES
 REQUIRED PARKING: 69 SPACES
 INCLUDING 4 HANDICAPPED SPACES

PARKING SETBACKS: CORRIDOR - EMPLOYMENT ZONING DISTRICT ROUTE 1 MANUAL
 SETBACK TO PUBLIC ROADWAYS: 20 FT.
 SIDE/REAR SETBACK: 10 FT.
 LOADING SPACE SETBACK: 40 FT.

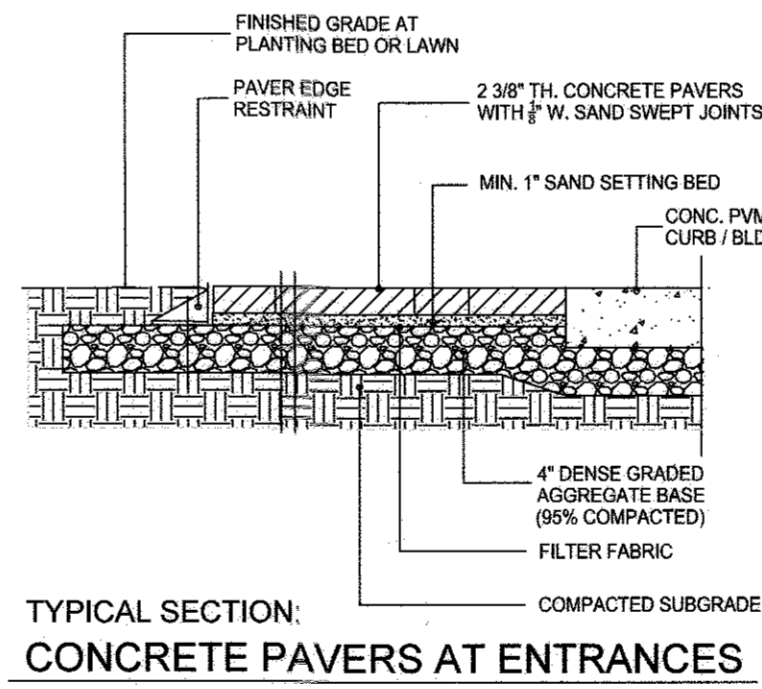
PERIMETER LANDSCAPING STANDARD: 'E' TYPE
 PROVIDED PERIMETER LANDSCAPING: 'E' TYPE (MINIMUM)

INTERIOR LANDSCAPING STANDARDS:
 1 LANDSCAPE ISLAND / 20 SPACES;
 12 FT. WIDE (MIN) AND
 200 G.S.F. OF PLANTING AREA;
 NO MORE THAN 24 SPACES IN A ROW

REQUIRED INTERIOR LANDSCAPING: 3 LANDSCAPE ISLANDS
 PROVIDED INTERIOR LANDSCAPING: 3 LANDSCAPE ISLANDS

PHASE 2 PLANT LIST

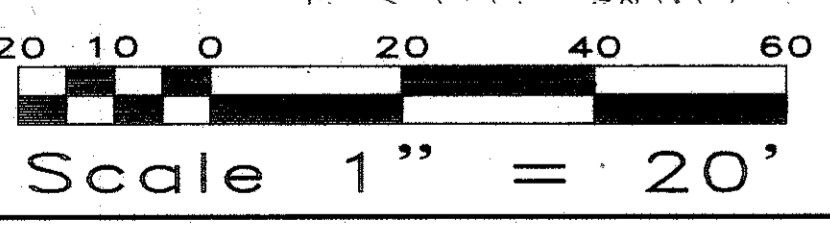
KEY	QTY	BOTANICAL NAME COMMON NAME	SIZE	COND	REMARKS
⊙	3	ACER SACCHARUM 'GREEN MOUNTAIN' GREEN MOUNTAIN SUGAR MAPLE	2 1/2"-3" CAL.	B & B	FULL HEAVY SPECIMEN, HEADED TO 6 FT.
⊙	2	BETULA NIGRA 'HERITAGE' HERITAGE RIVER BIRCH	10-12" HT.	B & B	FULL HEAVY SPECIMEN, 3-4 FEET
⊕	2	HYDRANGEA QUERCIFOLIA 'PEE WEE' PEE WEE OAKLEAF HYDRANGEA	30"-36" HT.	#5	5" O.C.
⊕	48	ITEA VIRGINICA 'LITTLE HENRY' LITTLE HENRY ITEA	18"-24" HT.	#3	3" O.C., STAGGERED
⊕	17	JUNIPERUS CHINENSIS 'SARGENTII' SARGENT JUNIPER	18"-24" SPD.	#3	4" O.C., STAGGERED
⊕	11	BUXUS MICRO GREEN VELVET	18"-21" HT.	#3	4" O.C., STAGGERED
⊕	333	LIRIOPE MUSCARI 'VAREGATA' VAREGATED LILLY-TURF		4" POTS	12" O.C., STAGGERED



SCALE: NONE
 PAVER NOTES:
 1. INSTALL PAVERS AND EDGE RESTRAINT PER MANUFACTURER'S SPECIFICATIONS.
 2. CONCRETE PAVERS TO BE 2" (60 mm) THICK WITH NATURAL STONE TEXTURE. PROVIDE SQUARE AND RECTANGULAR SHAPERS. LAY IN REGULAR PATTERN AT 48" TO SUBGRADE. ACCEPTABLE PRODUCTS:
 • TESCOBLOCK "TESSO" PAVERS, AVAILABLE FROM FREDERICK BROCK WORKS, INC., FREDERICK, MD. 1480-274-2320.
 • UNILOCK "TESORO HILL" PAVERS, AVAILABLE FROM BELAIR ROAD SUPPLY CO., INC., BALTIMORE, MD. 410-681-4200.
 3. COLOR TO BE SELECTED TO COORDINATE WITH APPLIED STONE VENEER ON BUILDING.
 4. EDGE RESTRAINT TO BE RIBBED PVC TRIANGULAR EDGING DESIGNED SPECIFICALLY FOR PAVERS. ACCEPTABLE PRODUCTS: "PAVE EDGE" BY HAVI TECH HARDSCAPE OUTLETTERS, AVAILABLE FROM BELAIR ROAD SUPPLY CO., INC., BALTIMORE, MD. 410-681-4200.
 5. INSTALL PAVER EDGE RESTRAINT WHERE PAVERS ADJUT PLANTING BED OR LAWN.

REVISIONS

No.	DATE	DESCRIPTION
1	05-05-17	CHANGED PLANT MATERIAL



LANDSCAPE SURETY NOTE:
 THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 18.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF:

DEVELOPER'S / BUILDER'S CERTIFICATE
 I/We certify that the landscaping shown on this plan will be done according to the plan, Section 18.124 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 year guarantee of plant materials, will be submitted to the Department of Planning and Zoning.

- PLANTING NOTES:**
- CONTRACTOR IS TO NOTIFY MISS UTILITY A MINIMUM OF 72 HOURS PRIOR TO DIGGING. TELEPHONE: 1-800-297-7777.
 - THE LANDSCAPE ARCHITECT IS TO BE NOTIFIED 48 HOURS BEFORE PLANTING BEGINS. THE LOCATION OF ALL PLANT MATERIAL IS TO BE APPROVED IN THE FIELD BY THE LANDSCAPE ARCHITECT.
 - NO TREE OR SHRUB PLANTING PITS ARE TO BE LEFT OPEN OR UNATTENDED.
 - SHRUBS ARE TO BE GROUPED INTO MULCHED BEDS. BEDS ARE TO BE EDGED AND THE GRASS IS TO BE KILLED OR REMOVED PRIOR TO MULCHING.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division: *Chad Edman* 4-3-14
 Chief, Division of Land Development: *Keith Studebaker* 4-01-14
 Director: *Frank M. Coyle* 4/1/14

KCW ENGINEERING TECHNOLOGIES
 810 Landmark Drive, Suite 215
 Glen Burnie, MD 21061
 Phone: 410.768.7700
 Fax: 410.768.0200
 www.kcw-et.com

PREPARED BY:
 HUMAN & ROHDE, INC.
 LANDSCAPE ARCHITECTS
 512 VIRGINIA AVENUE
 TOWSON, MARYLAND 21286
 PHONE: (410) 825-3885
 FAX: (410) 825-3887

OWNER:
 THE REDEEMED CHRISTIAN CHURCH OF GOD, INC.
 13701 ANNAPOLIS ROAD
 BOWIE, MD 20720
 Attn: Margaret Adeyokunnu, Pastor
 Tele: (301) 352-0707
 Fax: (301) 352-3339

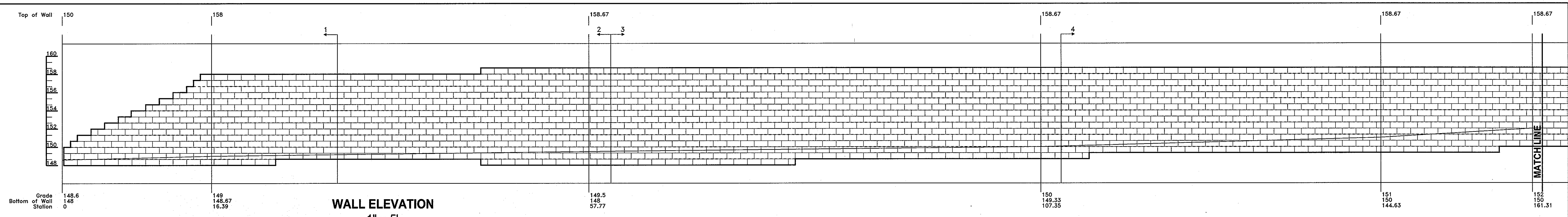
OWNER'S REPRESENTATIVE/ DEVELOPER:
 TLI DESIGNGROUP INC.
 3308 DORCHESTER ROAD
 BALTIMORE, MD 21215
 Attn: Taiwo Iliyomade, President
 Toll Free/Fax/Voice mail:
 (1-866) 616-1497
 Mobile: (443) 831-6703

KCW J.O.: 2080018
 SCALE: 1" = 20'
 DESIGNED: MT
 DRAWN: MT
 CHECKED: KCA
 DATE: FEB. 10, 2014
 DRAWING NO.
 17A OF 19

PHASE 2 LANDSCAPE / HARDSCAPE PLAN
VICTORY TEMPLE - LAUREL WORSHIP CENTER
 9100 BURSA ROAD

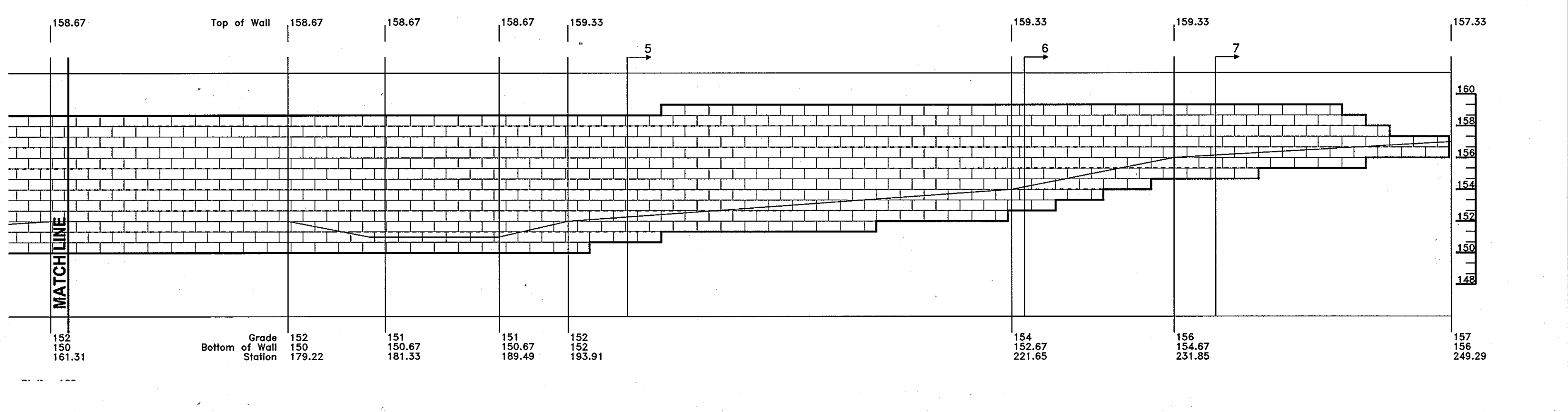
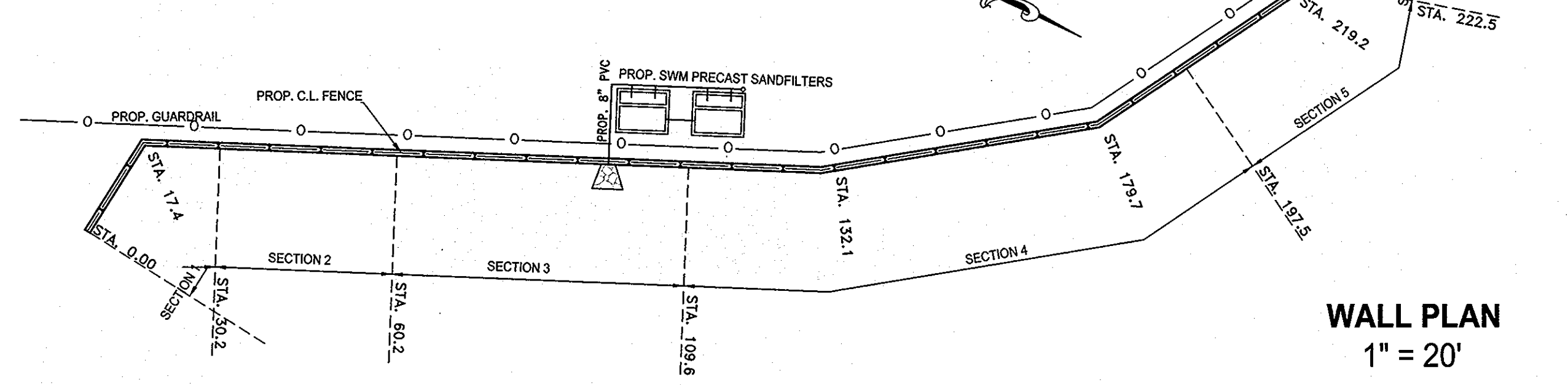
SDP-12-007
 TAX MAP 47, GRID 23
 PARCEL 540 (PARCEL A, PLAT #22114)

W&S CONTRACT No. 24-4047-D
 ZONING: CE-CL
 ELECTION DISTRICT - 6
 HOWARD COUNTY, MARYLAND



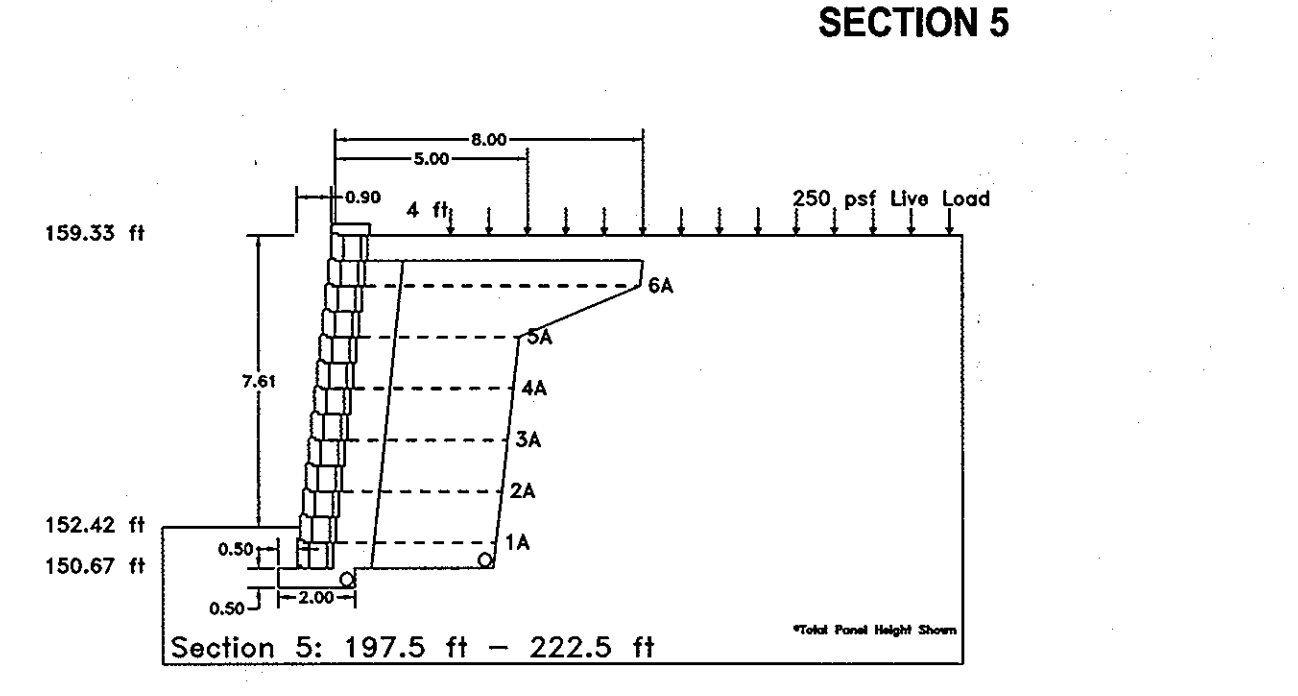
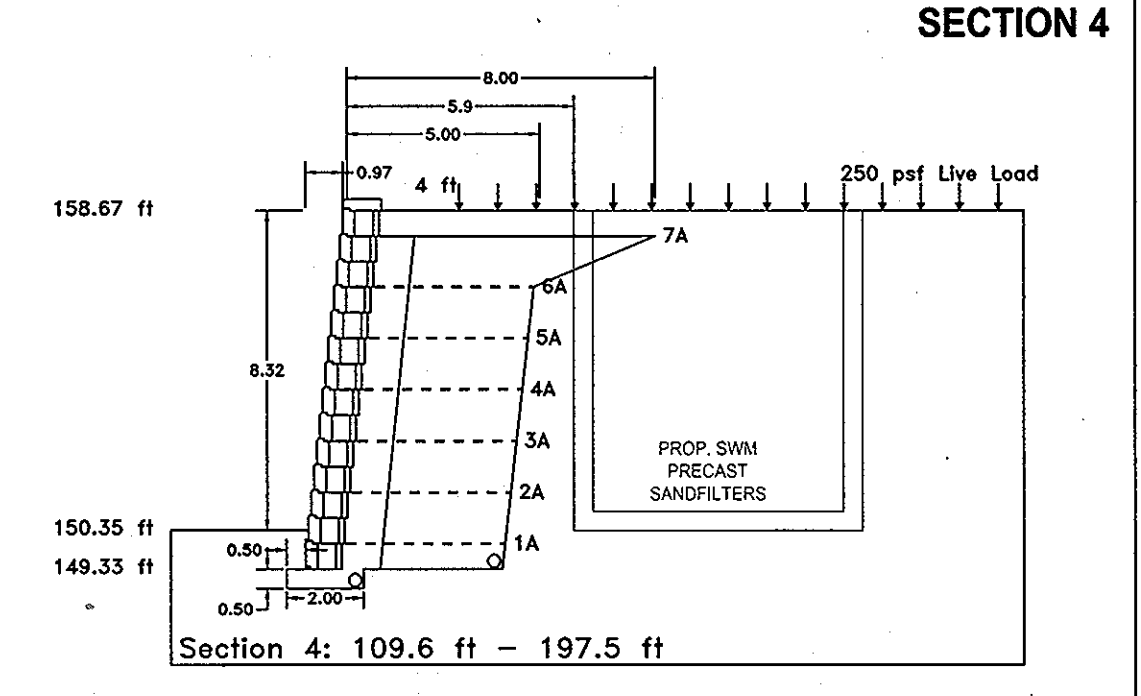
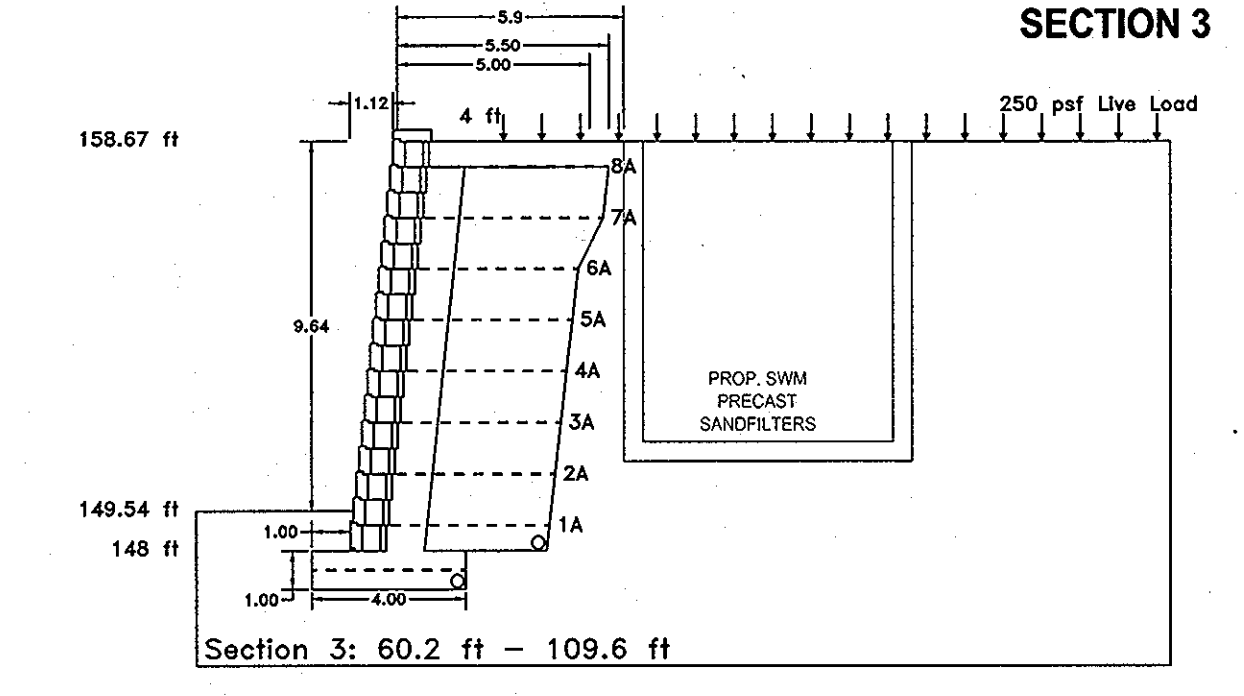
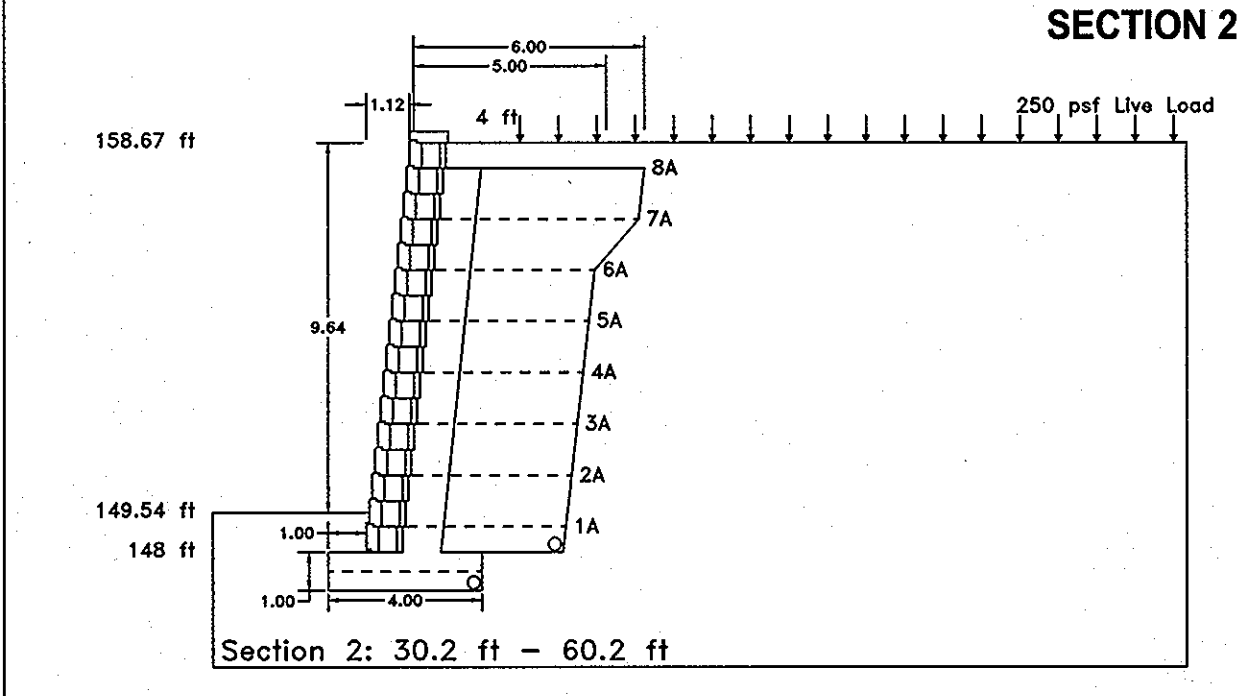
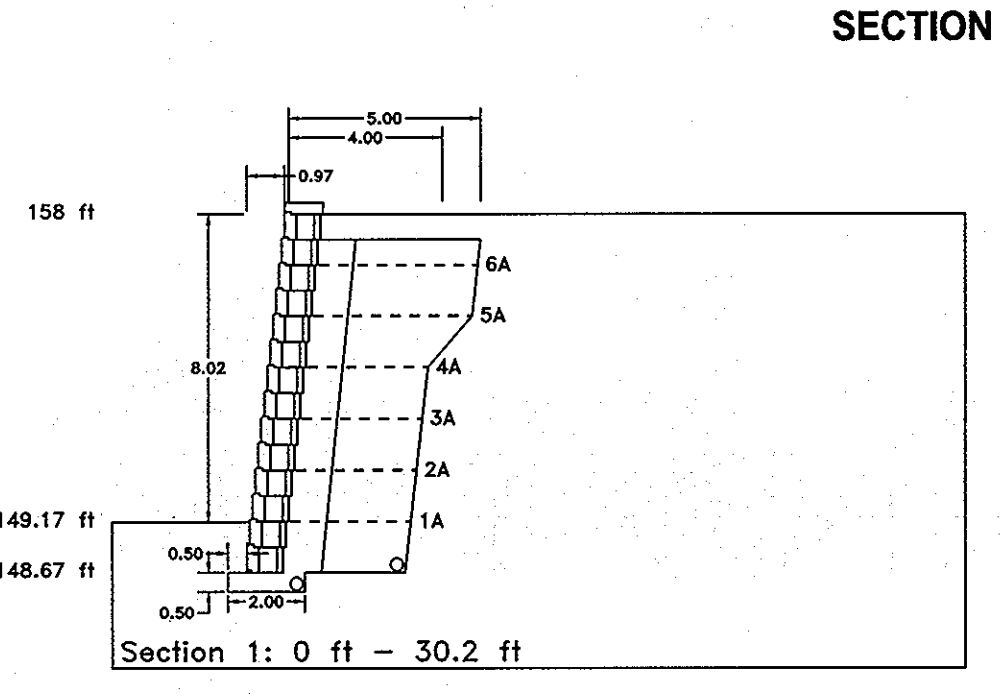
Section	1	2	3	4	5	6	7
Top	158	158.67	158.67	158.67	158.67	159.33	159.33
Bottom	148.67	148	148	149.33	150.67	152.67	154.67
Section Cut	30.18	60.18	60.18	120.34	199.33	222.46	234.46
Station End	30.18	60.18	109.58	197.54	222.46	234.46	249.29

GRADING NOTE:
FOR GRADING AROUND THE RETAINING WALL
SEE GRADING PLAN, SHEET 4 OF 19.



WALL SECTIONS
1" = 5'

--- A --- Strata SG 200
--- B --- Strata SG 350
--- C --- Strata SG 500



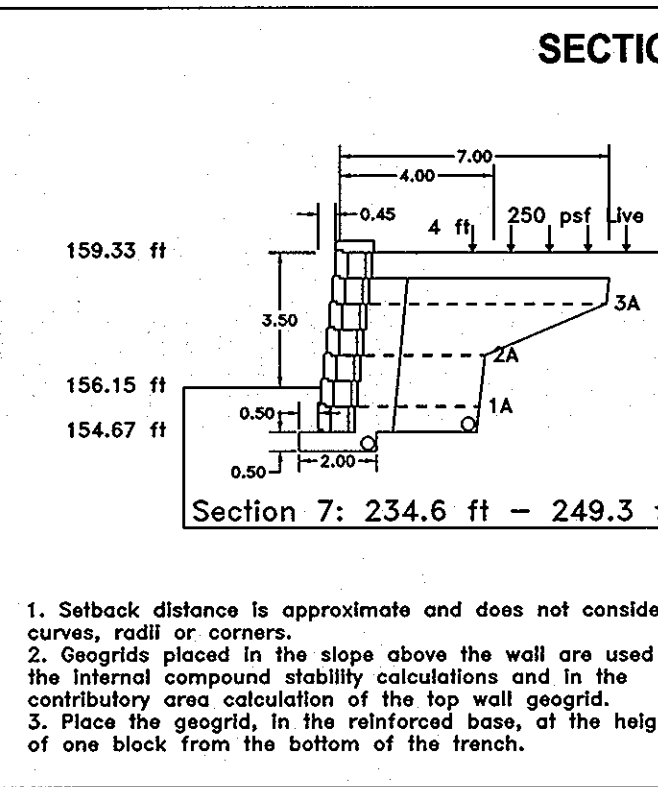
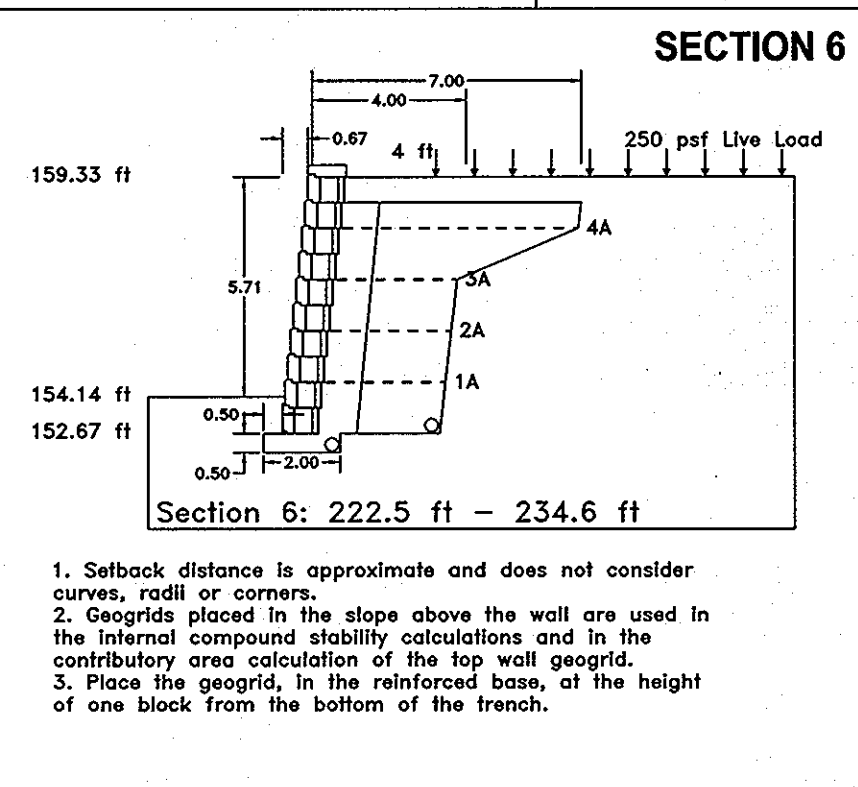
1. Setback distance is approximate and does not consider curves, radii or corners.
2. Geogrids placed in the slope above the wall are used in the internal compound stability calculations and in the contributory area calculation of the top wall geogrid.
3. Place the geogrid, in the reinforced base, at the height of one block from the bottom of the trench.

1. Setback distance is approximate and does not consider curves, radii or corners.
2. Geogrids placed in the slope above the wall are used in the internal compound stability calculations and in the contributory area calculation of the top wall geogrid.
3. Place the geogrid, in the reinforced base, at the height of one block from the bottom of the trench.
4. Leveling pad 4 feet wide and 1 foot deep. Block set 1 foot from toe.

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2. Geogrids placed in the slope above the wall are used in the internal compound stability calculations and in the contributory area calculation of the top wall geogrid.
3. Place the geogrid, in the reinforced base, at the height of one block from the bottom of the trench.
4. Leveling pad 4 feet wide and 1 foot deep. Block set 1 foot from toe.
5. SANDFILTER NOTE: The top grid will be terminated even with the sandfilter structures and extended in between the structures.

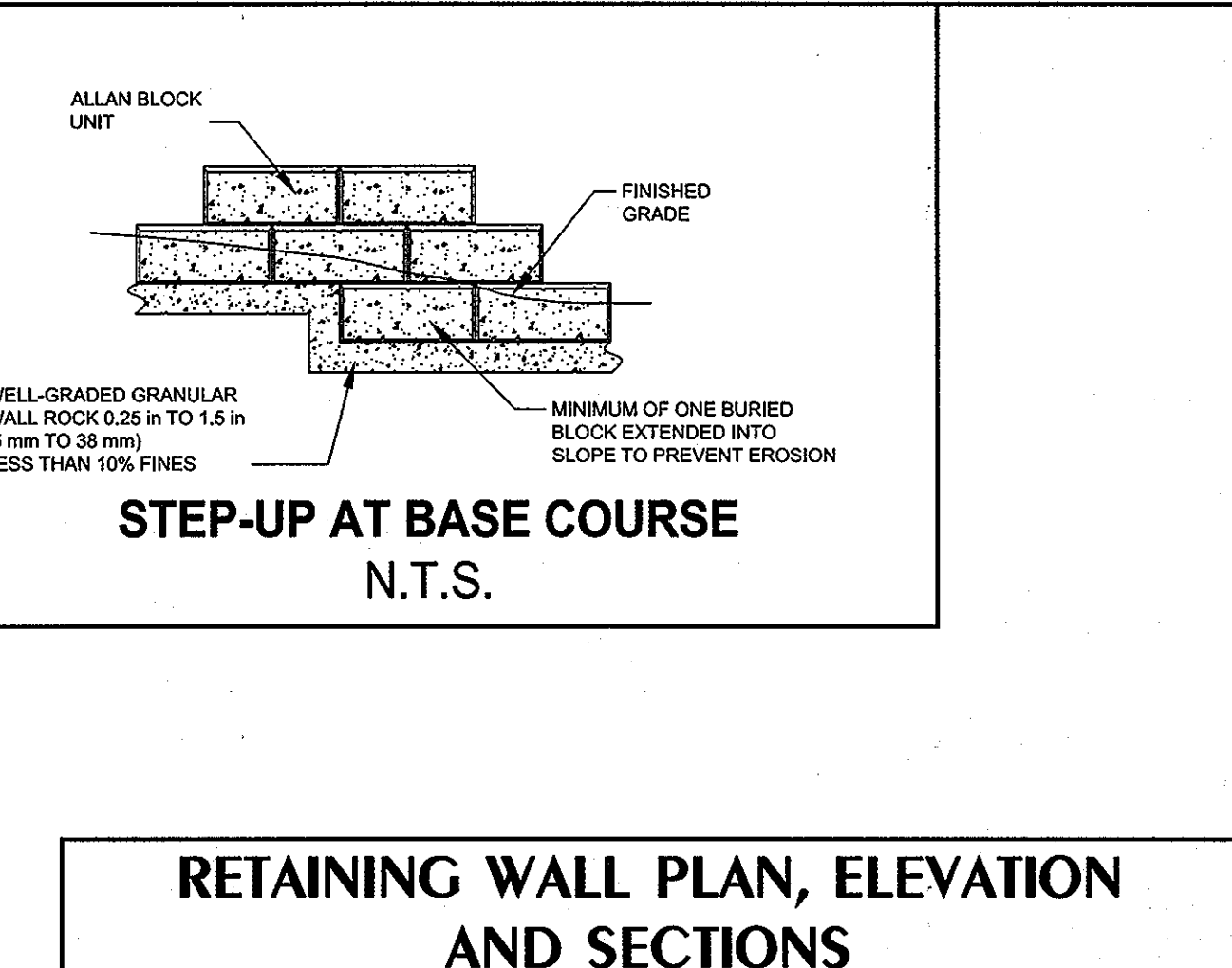
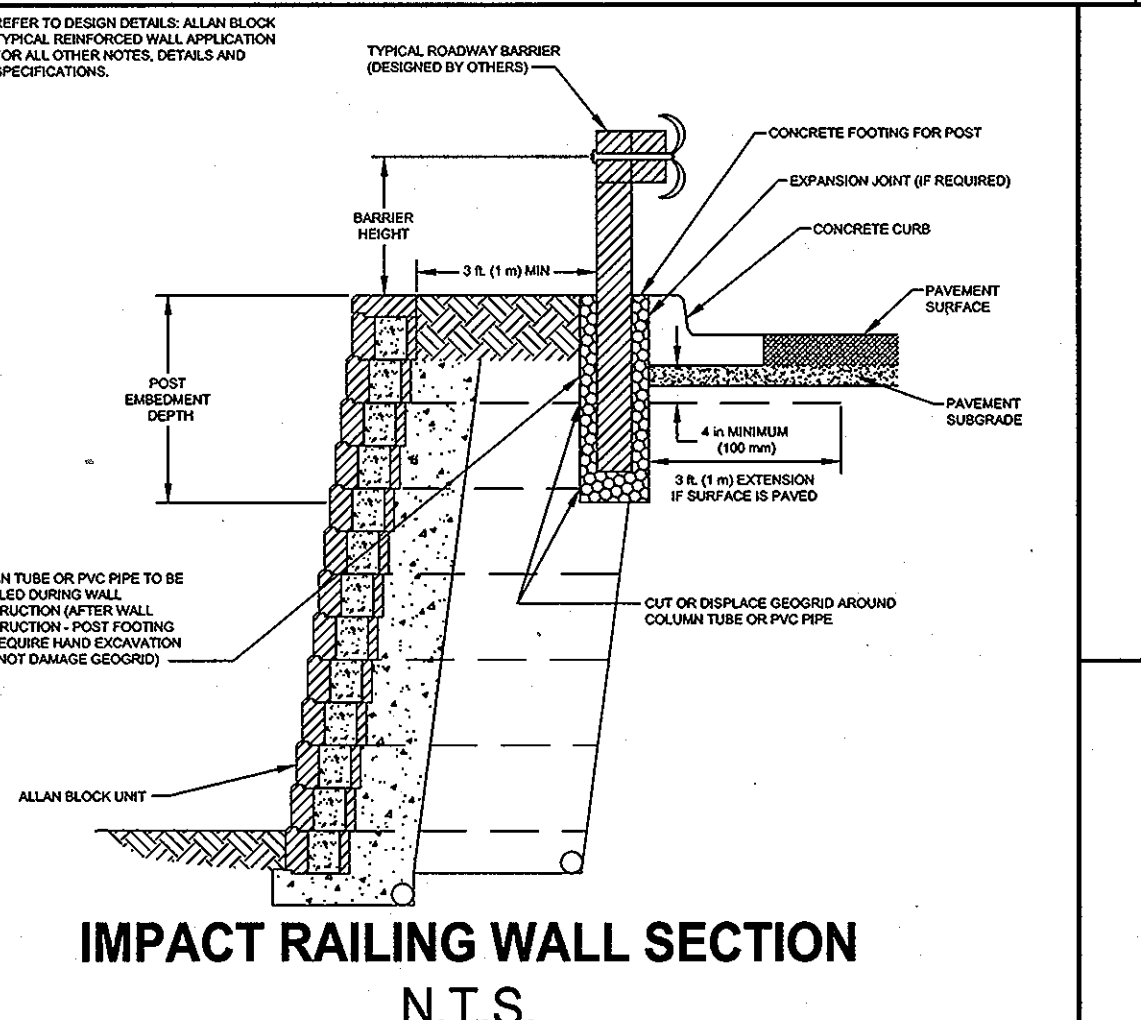
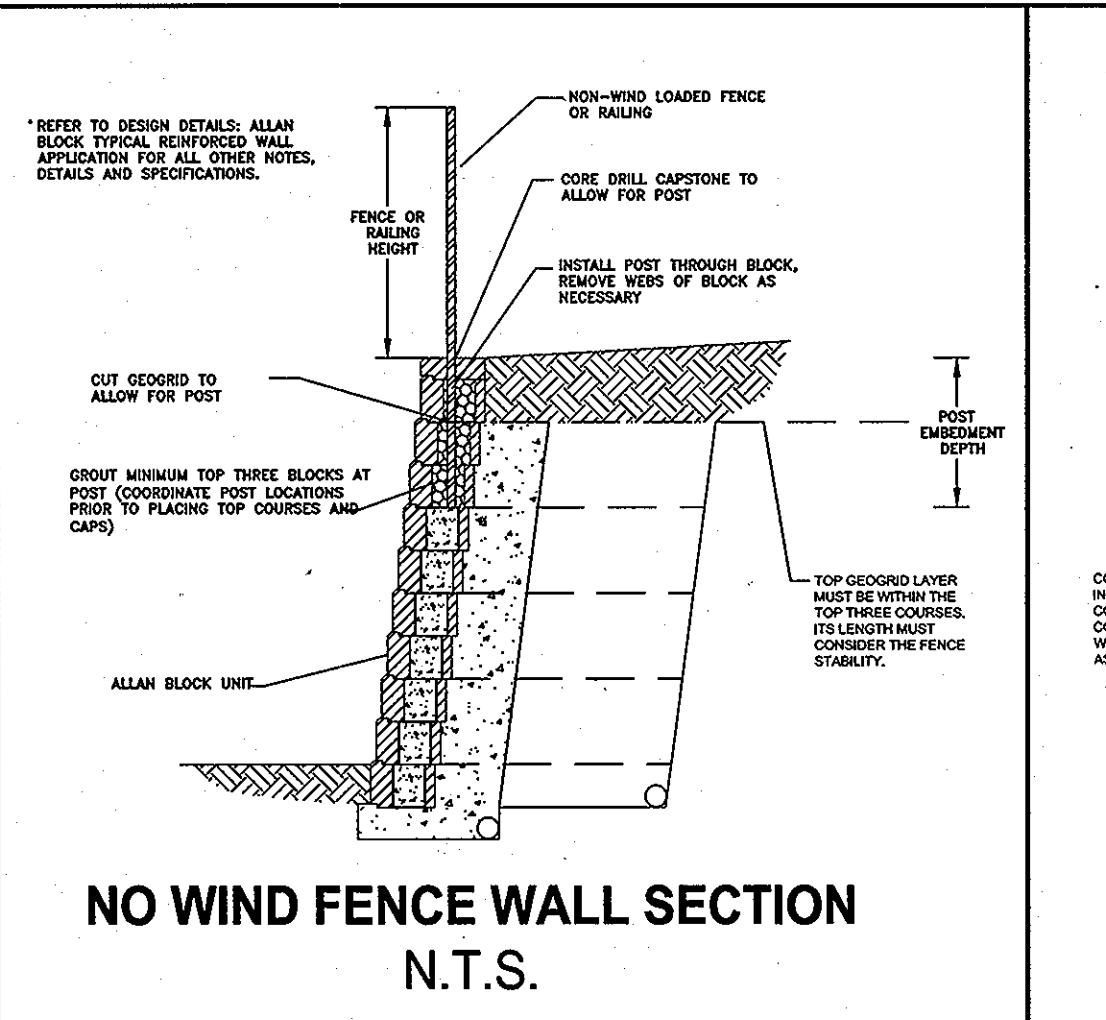
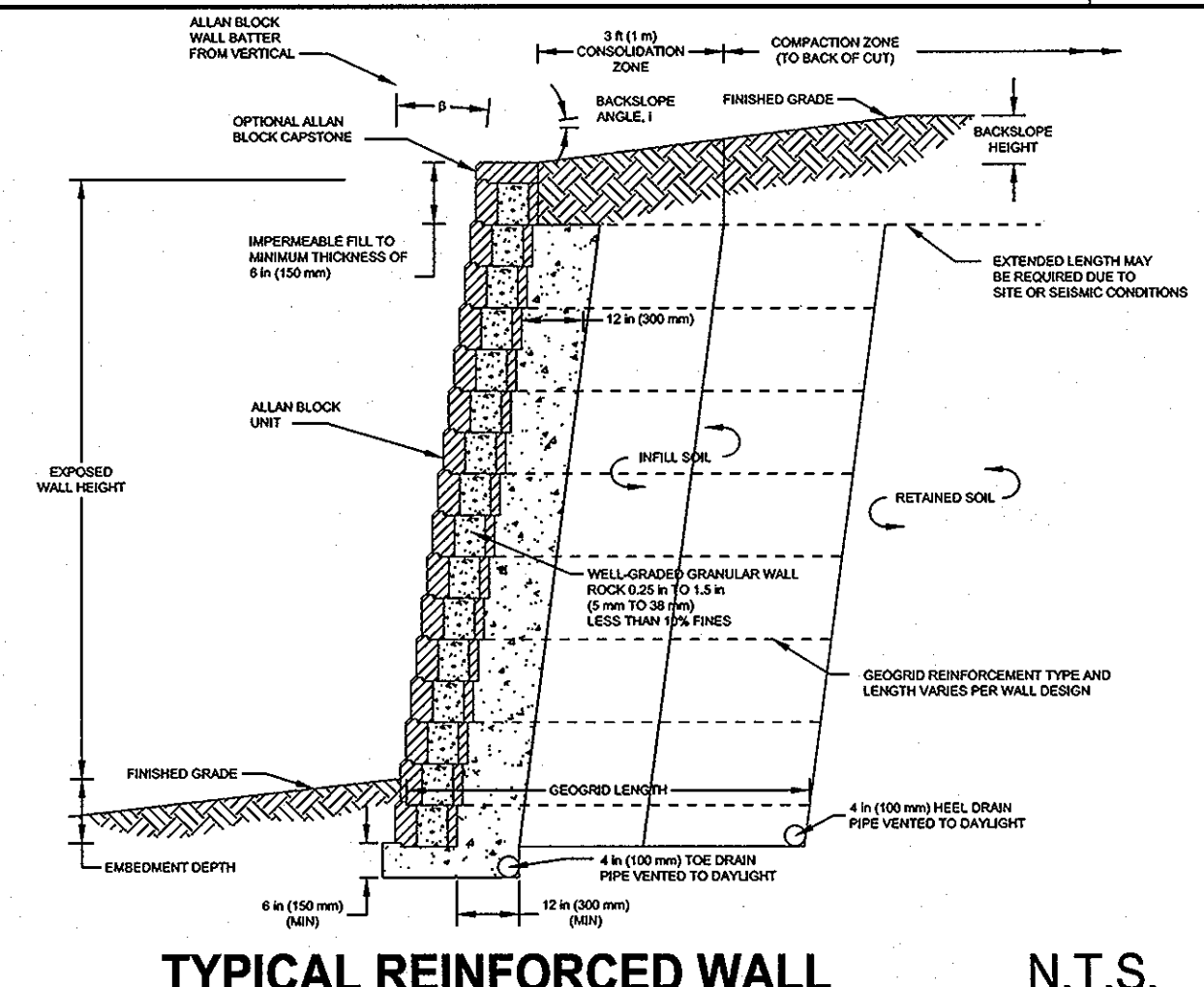
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APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature] 4/23/13
Chief, Development Engineering Division Date

[Signature] 4/30/13
Chief, Division of Land Development Date

[Signature] 5/1/13
Director Date

geolab
Geolab, Inc.
8980 State Route 108
Columbia, Maryland 21045
410-772-2220

[Professional Seal]
Professional Certification.
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License No. 18182.
Expiration Date 03-12-2013.

[Signature]
G. Matthew Norris
11/30/12

OWNER:
THE REDEEMED CHRISTIAN CHURCH OF GOD, INC.
(VICTORY TEMPLE) LAUREL, MARYLAND
13701 ANNAPOLIS ROAD
BOWIE, MD 20720
Attn: Margaret Adeyokunnu, Pastor
Tele: (301) 352-0707
Fax: (301) 352-3339

OWNER'S REPRESENTATIVE/DEVELOPER:
TLI DESIGNGROUP INC.
3308 DORCHESTER ROAD
BALTIMORE, MD 21215
Attn: Taiwo Iloyomada, President
Toll Free/Fax/Voice mail:
(1-866) 616-1497
Mobile: (443) 831-6703

KCW J.O.: 2080018
SCALE: AS SHOWN
DESIGNED: GMN
DRAWN: GMN
CHECKED: GMN
DATE: NOV. 30, 2012
DRAWING NO.
18 OF 19

RETAINING WALL PLAN, ELEVATION AND SECTIONS

VICTORY TEMPLE - LAUREL WORSHIP CENTER
9100 BURSA ROAD

SDP-12-007
TAX MAP 47, GRID 23
PARCEL 540 (PARCEL A, PLAT # 22114)

W&S CONTRACT No. 24-4047-D
ZONING: CE-CL1
ELECTION DISTRICT - 6
HOWARD COUNTY, MARYLAND

