SITE DEVELOPMENT PLAN

HERCULES FENCE OFFICE AND WAREHOUSE FACILITY

at 8580 MISSION ROAD

PARCEL 78

6th ELECTION DISTRICT

JESSUP, MARYLAND 20794

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOL. IV "STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION" FOR WORK IN THE COUNTY RIGHT-OF-WAY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.

2. 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 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF HIGHWAYS AT (410) 313-2450 AT LEAST FIVE (5) WORKING DAYS BEFORE ANY OPEN CUT OF ANY COUNTY ROAD OR BORING/JACKING OPERATION IN COUNTY ROADS FOR LAYING WATER AND SEWER MAINS.

3. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.

4. TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND THE STATE HIGHWAY ADMINISTRATION (SHA). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.

5. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE PER HOWARD COUNTY RECORDS.

6. PUBLIC SEWER TO THE PROPOSED BUILDING WILL BE PROVIDED IN ACCORDANCE WITH SECTION 18,122B OF THE HOWARD COUNTY CODE. PUBLIC SEWER ALLOCATION WILL BE GRANTED AT THE TIME OF ISSUANCE OF THE BUILDING PERMIT IF CAPACITY IS AVAILABLE AT THAT TIME.

7. THIS SITE IS LOCATED IN THE DORSEY RUN WATERSHED.

8. ALL FILL AREAS SHALL BE COMPACTED TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED AND VERIFIED IN ACCORDANCE WITH AASHTO T-180--STANDARD.

9. CONTRACTOR SHALL MAINTAIN ALL SEDIMENT CONTROL DEVICES WITHIN THE LIMITS OF THE SITE DURING CONSTRUCTION OF THE SITE IMPROVEMENTS. CONTRACTOR SHALL PROVIDE ADDITIONAL EROSION AND SEDIMENTATION CONTROL MEASURES AS MAY BE NECESSARY DURING CONSTRUCTION AND/OR BY GOVERNING AGENCIES.

10. PER FEMA MAP# 2400440039B AND FEMA MAP# 2400440040B DATED DECEMBER 04, 1986, THIS SITE IS NOT LOCATED WITHIN THE 100 YR FLOODPLAIN. IN ACCORDANCE WITH CHAPTER 6 OF THE HOWARD COUNTY DESIGN MANUAL, DUE TO THE LARGE AMOUNT OF DRAINAGE TO A DITCH ON THE ADJACENT PROPERTY THE 100 YEAR WSEL REACHES THIS PROPERTY. THESE LIMITS HAVE BEEN SHOWN. THEREFORE A FLOODPLAIN STUDY FOR THIS PROJECT WAS PREPARED BY christopher consultants, ltd. IN JULY 2008 AND APPROVED ON 10/14/2008 BY THE HOWARD COUNTY DEVELOPMENT ENGINEER DIVISION.

11. THERE ARE EXISTING WETLANDS ON SITE AS DETERMINED BY christopher consultants, ltd. IN A REPORT DATED JUNE 25, 2007.

12. THERE ARE STEEP SLOPES, BUT NO HIGHLY ERODIBLE SOILS ON THIS SITE.

13. THERE ARE NO KNOWN CEMETERIES OR BURIAL GROUNDS ON THIS SITE. HOWEVER, UPON DISCOVERY OF ANY EVIDENCE OF BURIAL OR GRAVES, THE DEVELOPER WILL BE SUBJECT TO SECTION 16.1305 OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.

14. THE SUBJECT PROPERTY IS ZONED M-1 PER THE COMPREHENSIVE ZONING PLAN (02/02/2004.) AND THE COMP LITE ZONING REGULATION AMENDMENTS EFFECTIVE JULY 28, 2006.

15. THE TOPOGRAPHY AND SITE BOUNDARY WERE PREPARED BY christopher consultants, ON APPROXIMATELY MAY 2007. THE EXISTING TOPOGRAPHY IS BASED ON A FIELD RUN SURVEY WITH TWO FOOT CONTOURS WAS PREPARED BY christopher consultants, ltd. MAY 2007.

16. THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. MONUMENT NUMBERS 421A AND 0080 WERE USED FOR THIS PROJECT (NAD 83/91.)

17. ALL EXISTING UNDERGROUND UTILITIES TO BE FIELD VERIFIED. UTILITIES CONTRACTOR SHALL VERIFY THE SIZE AND LOCATIONS OF ALL UNDERGROUND UTILITIES AND TEST PIT ALL UTILITIES, INCLUDING PROPOSED TIE IN LOCATIONS, AT LEAST 5 DAYS PRIOR TO STARTING ANY WORK ON THESE DRAWINGS. DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER IN ADVANCE OF CONSTRUCTION START.

18. WATER IS PRIVATE. PERMITS FOR SUCH INTERIM SYSTEMS BEAR NOTICE REGARDING THE INTERIM NATURE OF THE PERMIT AND STATING THAT CONNECTION TO A FUTURE PUBLIC COMMUNITY SYSTEM SHALL BE MADE WITHIN ONE YEAR AFTER THE PUBLIC COMMUNITY SYSTEM BECOMES AVAILABLE. AT THIS TIME, THE WATER WELL NEEDS TO BE PROPERLY ABANDONED (BY A LICENSED WELL DRILLER) AND DOCUMENTATION SUBMITTED TO THE HEALTH DEPARTMENT.

19. SEWER IS PUBLIC. REFER TO CAPITAL PROJECT NO. S-6230, CONTRACT NO. 20-3940 PREPARED BY KCI IN DECEMBER, 2000 FOR MORE INFORMATION.

20. THE CONTRACTOR SHALL INSURE THAT CURRENT AS BUILT RECORDS ARE MAINTAINED DURING CONSTRUCTION. UPON COMPLETION OF CONSTRUCTION, CERTIFIED (i.e. P.E. STAMPED) AS-BUILT DRAWINGS SHALL BE SUBMITTED TO THE OWNER.

21. THE SITE IS SUBJECT TO DEVELOPMENT CRITERIA FOR STORMWATER MANAGEMENT. THE DEVELOPMENT INCLUDES WATER QUALITY MANAGEMENT FOR 4.68 AC (BASED ON ZONING) OF IMPERVIOUS AREA, WHICH WILL BE PROVIDED IN A POCKET POND (P-5). RECHARGE WILL BE PROVIDED IN THE FACILITY IN ACCORDANCE WITH THE 2000 MDE DESIGN REQUIREMENTS. CHANNEL PROTECTION WILL BE PROVIDED IN THE POND. PORTIONS OF THE SITE (THE DRIVEWAY) WILL BE TREATED USING NON-ROOF TOP DISCONECTIONS. THE FACILITY WILL BE PRIVATELY OWNED AND MAINTAINED.

22. THIS PROJECT COMPLIES WITH THE FOREST CONSERVATION REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE WITH A TOTAL OBLIGATION OF 1.11 ACRES. THIS REQUIREMENT WILL BE SATISFIED WITH A FEE-IN-LIEU PAYMENT OF $36,264.00, OR $0.75/SQ. FT.

23. THE LANDSCAPE PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE, AND THE LANDSCAPE MANUAL.

24. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL WITH 46 SHADE TREES, 43 EVERGREEN TREES, 53 SHRUBS AND 1,103 LINEAR FEET OF SOLID FENCE PROVIDED WITH LANDSCAPE SURETY IN THE AMOUNT OF $32,870.00 WITH THE DPW DEVELOPER'S AGREEMENT. LANDSCAPE SURETY IS BASED ON THE NUMBER OF REQUIRED PLANTS AND FENCING PER THE LANDSCAPE MANUAL (46 SHADE TREES x $300.00 EA., 43 EVG. TREES x $150.00 EA., 53 SHRUBS x $30.00 EA AND $10.00 PER LINEAR FOOT FOR FENCING.

25. ASSOCIATED PLANS: LISTED UNDER 8580 MISSION ROAD PROPERTY.

- -A DESIGN MANUAL WAIVER TO HO. CO. DESIGN MANUAL VOLUME III, SECTION 2.9c TO ALLOW A GRAVEL STORAGE YARD IN LIEU OF THE ASPHALT PAVEMENT WAS APPROVED BY DED ON DECEMBER 3, 2007.
- -A DESIGN MANUAL WAIVER TO HO. CO. DESIGN MANUAL VOLUME I, SECTION 5.2.4.1, TO WAIVE THE 25' SETBACK FROM THE TOE OF THE EMBANKMENT TO THE PROPERTY LINE AND SECTION 5.2.7A.4 TO WAIVE THE POND DRAIN REQUIREMENT WAS APPROVED BY DED ON OCTOBER 2008.
- -WAIVER PETITION: WP-08-67 WAS APPROVED BY DLD ON 4-17-08 TO WAIVE SECTION 16.116(a)(1),TO ALLOW GRADING, REMOVAL OF VEGETATIVE COVER AND TREES, PAVING AND NEW STRUCTURES WITHIN 25' OF WETLANDS.
- -ADMINISTRATIVE ADJUSTMENT: AA-08-001 WAS APPROVED BY THE DEPARTMENT OF PLANNING ANDZONING ON MARCH 10, 2008 TO REDUCE THE 100 FOOT SETBACK FROM A RESIDENTIAL DISTRICT TO 80 FEET FOROUTDOOR STORAGE, TO REDUCE THE 50 FOOT STRUCTURE AND USE SETBACK FROM I-95 TO 40 FEET FOR DRIVEWAY AND OUTDOOR STORAGE, TO REDUCE THE 50 FOOT STRUCTURE AND USE SETBACK FROM MISSION ROAD TO 40 FEET FOR AN OUTDOOR STORAGE AREA, AND TO REDUCE THE 30 FOOT PARKING AND FENCE USESETBACK FROM MISSION ROAD TO 24 FEET FOR PARKING SPACES.

26. THE EXISTING DWELLING ON SITE WILL BE DEMOLISHED.

27. UNLESS OTHERWISE NOTED, DIMENSIONS FROM CURB ARE MEASURED AT FACE OF CURB.

28. ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.

29. CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE (5) WORKING DAYS PRIOR TO STARTING ON THESE PLANS:
- -MISS UTILITY 1-800-257-7777
- -HOWARD COUNTY DPWT, BUREAU OF UTILITIES (410) 313-4900
- -BALTIMORE GAS AND ELECTRIC COMPANY CONTRACTOR SERVICES (410)850-4620
- -BALTIMORE GAS AND ELECTRIC COMPANY UNDERGROUND DAMAGE CONTROL (410)787-9068
- -VERIZON 1-800-446-5266

30. CONTRACTOR SHALL REMOVE TREES, STUMPS AND ROOTS AS NECESSARY TO GRADE THE SITE AND COMPLETE ANY REQUIRED EXCAVATIONS.

31. christopher consultants, ltd. SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION, MEANS, METHODS, TECHNIQUES, OR PROCEDURES, UTILIZED BY THE CONTRACTOR , NOR FOR THE SAFETY OF PUBLIC OR CONTRACTOR'S EMPLOYEES, OR FOR THE FAILURE OF THE CONTRACTOR TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND STANDARD CONSTRUCTION PRACTICES.

32. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES WHICH ARE TO REMAIN FREE FROM DAMAGE AND MAINTAIN UNINTERRUPTED SERVICE TO ALL USERS. ANY DAMAGE INCURRED DUE TO THE CONTRACTOR'S OR SUBCONTRACTOR'S ACTIONS SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.

33. SCALING OF THESE PLANS IS DISCOURAGED UNLESS DIRECTED BY THE ENGINEER. IN THE EVENT OF A DISCREPANCY BETWEEN THE SCALED AND THE FIGURED DIMENSIONS, THE FIGURED DIMENSIONS SHALL BE HELD.

34. T.B.R. = TO BE REMOVED

35. PROVIDE SIGNAGE ON THE BUILDING AND AT THE STREET IDENTIFYING THE BUILDING ADDRESS; IDENTIFY EACH SEPARATE SUITE BY LETTER.

36. ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT 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.

37. PER HOWARD COUNTY BUILDING CODE SECTION 904.1.1 ALL BUILDINGS IN EXCESS OF 5,000 SF IN SIZE WILL HAVE A COMPLETE AUTOMATIC FIRE PROTECTION SPRINKLER SYSTEM DESIGNED IN ACCORDANCE WITH NFPA #13.

38. A KNOX BOX FOR FIRE DEPARTMENT ACCESS IS REQUIRED TO BE PLACED ON THE FRONT OF THE BUILDING AND AT EACH GATE. IT SHALL BE PLACED TO THE RIGHT OF THE MAIN ENTRANCE APPROXIMATELY 4-5' IN HEIGHT AND NO MORE THAN 6' LATERALLY FROM THE DOOR. THE BOX SHALL BE ELECTRONICALLY SUPERVISED TO NOTIFY THE OWNER THAT IT IS BEING ACCESSED.

39. TREES WITH MATURE HEIGHTS GREATER THAN 25' SHALL NOT BE PLANTED WITHIN 20' OF EITHER SIDE OF THE UTILITY POLE LINES. TREES WITH MATURE HEIGHTS GREATER THAN 40' SHALL NOT BE PLACED WITHIN 45' OF THE UTILITY POLE LINES. TREES PLANTED OR RETAINED TO COMPLY WITH THE FOREST CONSERVATION PLAN OR OTHER PERPETUAL EASEMENT REQUIREMENTS SHALL MET THE ABOVE CONDITIONS. BGE SHALL HAVE THE PERPETUAL RIGHT TO TRIM OR REMOVE ANY PROTECTED TRESS IF IN THE SOLE OPINION OF BGE, THE TREE OR TREES ARE ENDANGERING THE OVERHEAD ELECTRIC FACILITIES.

40. NO GRADING, REMOVAL OF VEGETATION COVER OR TREES, PAVING AND/OR NEW STRUCTURES SHALL BE PERMITTED WITHIN THE EXISTING WETLANDS AND WETLAND BUFFERS, EXCEPT TO THE LIMITS APPROVED BY MDE UNDER WETLAND PERMIT #200765656 / 07-NT-3407 AND HOWARD COUNTY WAIVER PETITION WP-08-067 APPROVED ON APRIL 17, 2008.

41. THIS SDP IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS PER COUNCIL BILL NO. 45-2003 AND THE AMENDED ZONING REGULATIONS PER COUNCIL BILL NO. 75-2003, DEVELOPMENT OR CONSTRUCTION ON THIS PROPERTY MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN, WAIVER PETITION APPLICATION OR BUILDING PERMIT APPLICATIONS.

42. ALL EXTERIOR LIGHT FIXTURES SHALL BE ORIENTED TO DIRECT LIGHT INWARDS AND DOWNWARDS ON-SITE AWAY FROM ALL ADJOINING PUBLIC ROADS AND RESIDENTIAL USE PROPERTIES IN ACCORDANCE WITH SECTION 134 OF THE HOWARD COUNTY ZONING REGULATIONS.

43. A TRAFFIC IMPACT ANALYSIS WAS PREPARED FOR THIS PROJECT BY STREET TRAFFIC STUDIES, LTD. ON SEPTEMBER 10, 2007.

44. WAIVER PETITION: WP-09-029 WAS APPROVED ON 9/26/2008 AND 10/23/2008 TO WAIVE SECTIONS 16.155 (a)(1)(i) & 16.103 (i)(2)(i) TO ALLOW MASS GRADING OF THE SITE, INSTALLATION OF SEDIMENT CONTROL, BUILDING PAD, 44 cont. and installation of storm system and swm facility prior to approval of this SDP.

GENERAL NOTES cont.

18. ~~ALTERNATIVE~~ Compliance to Design Manual Volume I, Section 5.2.6.D.1.a.1 which requires a 12' wide level area surrounding the facility and turn-around area for access and maintenance was approved on 7/6/09 by Development Engineering.

SITE ANALYSIS DATA CHART

1. GENERAL SITE DATA
   - A. PRESENT ZONING: M-1
   - B. SITE AREA: ±5.5 ACRES
   - C. PROPOSED USE OF SITE OR STRUCTURE(S): OFFICE SPACE AND WAREHOUSE
   - D. PROPOSED WATER AND SEWER SYSTEMS: PUBLIC SEWER AND PRIVATE WATER.
   - E. PROPOSED NUMBER OF BUILDINGS: ONE (1)
   - F. PROPOSED BUILDING TABULATION:
     - WAREHOUSE: 12,000 SF
     - OFFICE: 2,000 SF
     - MEZZANINE: 2,000 SF (USE: OFFICE)
     - TOTAL: 16,000 SF
2. AREA TABULATION
   - a. TOTAL PROJECT AREA: 5.5 AC.±
   - b. AREA OF THIS PLAN SUBMISSION: 5.5 AC±
   - c. LIMIT OF DISTURBED AREA: 4.09 AC.±
3. PARKING SPACE DATA
   - a. NUMBER OF PARKING SPACES REQUIRED BY ZONING REGULATIONS AND CRITERIA: 20 SPACES
     - WAREHOUSE 0.5 SP/1000 SF — 12,000 SF = 6 SPACES
     - OFFICE 3.3 SP/1000 SF — 2000 SF = 7 SPACES
     - MEZZANINE 3.3 SP/1000 SF — 2000 SF = 7 SPACES
     - 20 TOTAL SPACES
   - b. TOTAL NUMBER OF PARKING SPACES PROVIDED ON-SITE: 40
   - c. NUMBER OF HANDICAP PARKING SPACES PROVIDED: 2 SPACES (INCLUDED IN PARKING SPACES PROVIDED)
   - d. NO CHANGE IN USE(S) OR THE SQUARE FOOT OF USE(S) IS PERMITTED WITHOUT COMPLIANCE WITH THE PARKING REQUIREMENTS OF ZONING SECTION 133 AND APPROVAL BY THE DPZ.
   - e. TWO LOADING SPACE HAVE BEEN PROVIDED IN ACCORDANCE WITH SECTION 133.F OF THE ZONING REGULATIONS.

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.

ROBERT C. EITEL, P.E. PE#16108 — 9/29/11 DATE

STATE OF MARYLAND — ROBERT CHARLES EITEL — No. 16108 REGISTERED — PROFESSIONAL ENGINEER

MARYLAND STATE PLANE

NAD 83/91

BENCHMARK

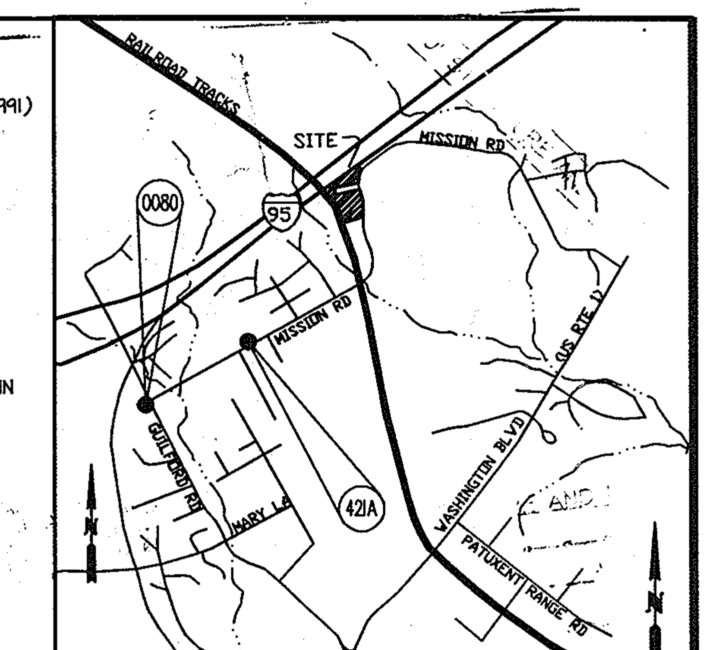
HORIZONTAL: MARYLAND NAD83 (ADJ 1991)
VERTICAL: NAVD88
GEODETIC SURVEY CONTROL: 421A
NORTHING: 543390.414
EASTING: 1364912.66
ELEVATION: 312.012

GEODETIC SURVEY CONTROL: 0080
NORTHING: 542366.914
EASTING: 1363075.97
ELEVATION: 282.392

DESCRIPTIONS:
STAMPED DISC SET ON 3' DEEP COLUMN OF CONCRETE

ADDRESS CHART

PARCEL NO.	ADDRESS
78	8580 MISSION ROAD



VICINITY MAP ADC# 20703123
SCALE 1"=2000'

HOWARD COUNTY MAP PAGE 20 – GRID E-2

APPROVED: FOR PRIVATE INTERIM WATER WELL AND PUBLIC SEWAGE

for Peter Beilenson — 1/27/2009
COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT — DATE

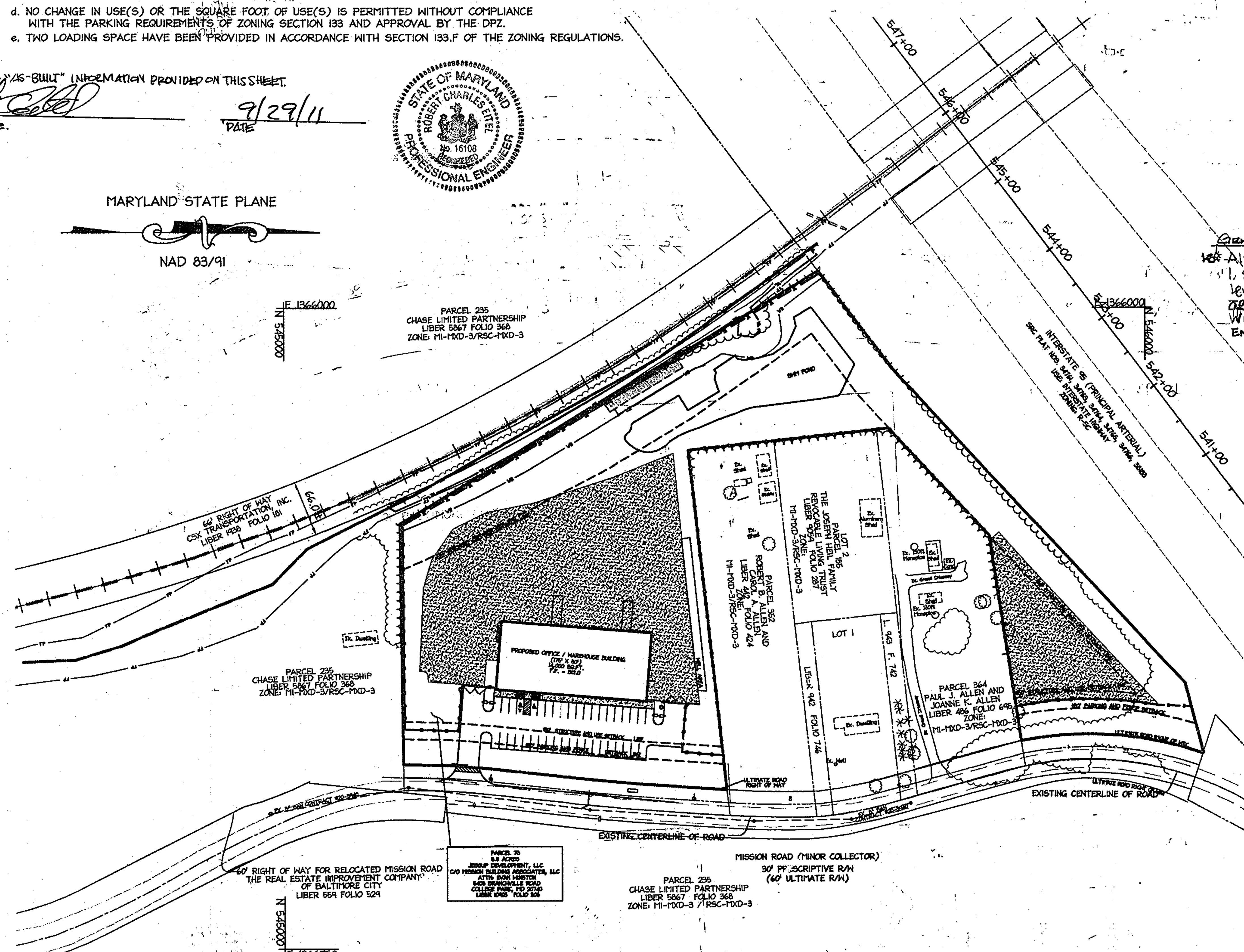
PROFESSIONAL CERTIFICATION

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.

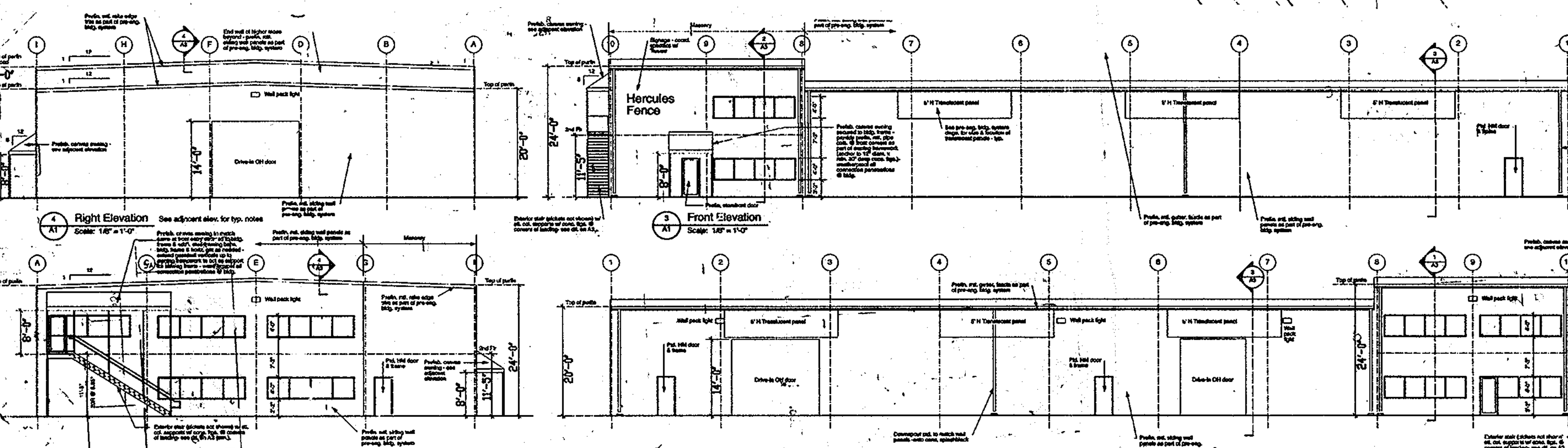
SIGNATURE OF ENGINEER — 12.12.08 DATE

JOHN M. HOUSEHOLDER
MD LICENSE NUMBER: 29907
EXPIRATION DATE: 1-27-2010

TYPE OF BUILDING: WAREHOUSE/OFFICE BUILDING
NO. OF LOTS / PARCELS / UNITS: 1 / 1 / 1
NO. OF WATER HOUSE CONNECTIONS: 0
NO. OF SEWER HOUSE CONNECTIONS: 1
AREA OF COMMERICIAL LOT / PARCEL: ± 5.5 ACRES
SEWER SHED: DORSEY RUN
PUMPING STATION: DORSEY RUN



OVERALL SITE PLAN
SCALE: 1" = 100'



FRONT, SIDE AND REAR BUILDING ELEVATIONS
NOT TO SCALE
(ARCHITECTURE PER JAMES LLOYD ARCHITECTS P.A.)

SHEET INDEX

NO.	TITLE
1	COVER SHEET
2	EXISTING CONDITIONS & DEMOLITION PLAN
3	SITE LAYOUT PLAN
4	GRADING & UTILITY
5	SITE NOTES AND DETAILS
6	UTILITY PROFILES AND DETAILS
7	BORING LOCATION AND EROSION & SEDIMENT CONTROL PLAN
8	EROSION & SEDIMENT CONTROL NOTES
9	STORMWATER MANAGEMENT NOTES AND DETAILS
10	SITE AND STORMWATER MANAGEMENT NOTES & DETAILS
11	STORMWATER MAGAGEMENT NOTES & BORING LOGS
12	LANDSCAPE PLAN
13	LANDSCAPE DETAILS
14	FOREST CONSERVATION PLAN
15	WELL LOCATION PLAN
16	MAINTENANCE OF TRAFFIC PLAN

DEVELOPER'S CERTIFICATE

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

SIGNATURE OF DEVELOPER — 11/26/08 DATE
EVAN WINSTON — 8/10/09
PRINT NAME BELOW SIGNATURE

ENGINEER'S CERTIFICATE

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

SIGNATURE OF ENGINEER — 12.12.08 DATE
JOHN HOUSEHOLDER, P.E.
PRINT NAME BELOW SIGNATURE

12.12.08
DATE

STATE OF MARYLAND — JOHN M. HOUSEHOLDER — No. 29907 REGISTERED — PROFESSIONAL ENGINEER

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division	1.5.9 Date
Chief, Division of Land Development	1/29/09 Date
Director DPZ	1/29/09 Date

Date	No.	Revision Description
8/4/09	1	RED LINE REVISION TO GRADING

HERCULES FENCE at 8580 MISSION ROAD

OWNER / DEVELOPER
JESSUP DEVELOPMENT, LLC
MISSION BUILDING ASSOCIATES LLC
CONTACT: EVAN WINSTON
5408 BRANCHVILLE ROAD
COLLEGE PARK, MARYLAND 20740
PHONE: (301) 441-1600
FAX: (301) 441-8600

christopher consultants
engineering · surveying · land planning
christopher consultants, ltd.
7172 columbia gateway drive (suite 100) · columbia, md. 21046-2990
410.872.8690 · metro 301.881.0148 · fax 410.872.8693

PERMIT INFORMATION CHART

PROJECT NAME	LOT/PARCEL NO.			CENSUS TRACT
8580 MISSION ROAD	PARCEL 78			6069.01
DEED REF. L. 10905, F. 308	GRID NO. 18	ZONE M-1	TAX MAP 42	ELECTION DISTRICT 6TH
WATER CODE E06			SEWER CODE 2243	

TITLE: AS-BUILT
COVER SHEET

DESIGN: KWS	SCALE: AS SHOWN	PROJECT: 075501.00
DRAWN: DAM	DATE: OCTOBER 2008	
CHECKED: ENJ	APPROVED: JMH	1 OF 16

SDP-08-44

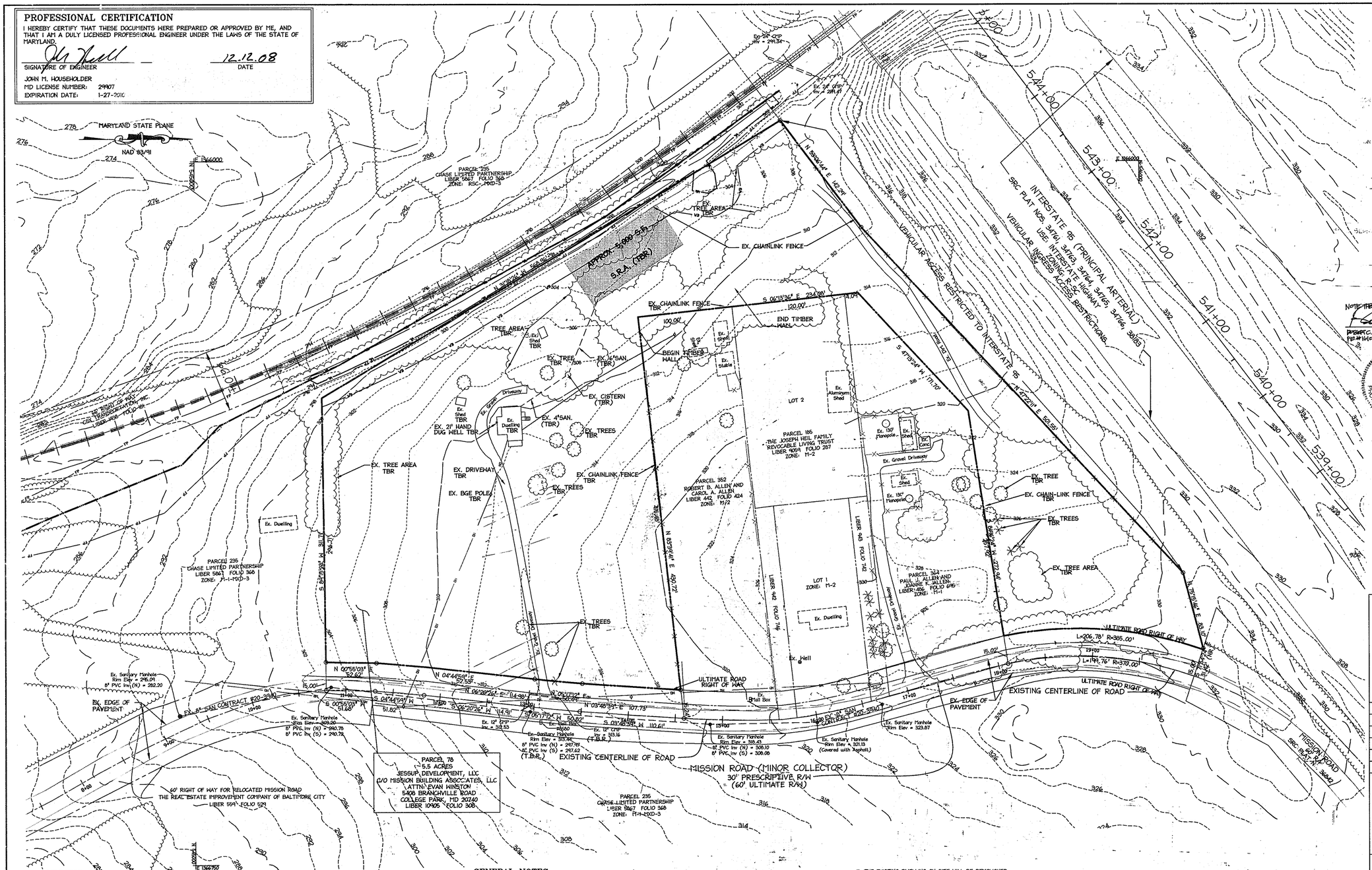
MDC-747(SDP)

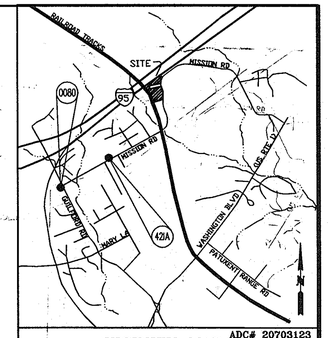
PROFESSIONAL CERTIFICATION

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.

SIGNATURE OF ENGINEER — DATE: 12.12.08

JOHN M. HOUSEHOLDER
MD LICENSE NUMBER: 29907
EXPIRATION DATE: 1-27-2010





VICINITY MAP ADC# 20703123
SCALE 1"=2000'

HOWARD COUNTY MAP PAGE 20 – GRID E-2

NOTE: ITEMS NO "AS BUILT" INFORMATION PROVIDED ON THIS SHEET.

PRESTON C. WEBB, P.E. — 9/29/11 DATE

STATE OF MARYLAND — PRESTON C. WEBB — No. 16109 — REGISTERED PROFESSIONAL ENGINEER

LEGEND

EXISTING CONTOURS	300	TO BE REMOVED	TBR
EXISTING STORM DRAIN	12" RCP	TREELINE	
EXISTING SANITARY SEWER	EX. 8" SAN.	PROPOSED RIGHT OF WAY LINE	
EXISTING WATER	EX. 6" WATER	EXISTING TREES	
BUILDING RESTRICTION LINES		WETLANDS	WL
EXISTING TRANSFORMER		WETLANDS BUFFER	WB
EXISTING TRANSFORMER		FLOODPLAIN	FP
EXISTING MAILBOX		APPROX. SEPTIC RESERVE AREA (T.P.R.)	
EXISTING FENCE POST			
EXISTING FENCE	Y		
PROPERTY LINE			

GENERAL NOTES

1. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS PRIOR TO COMMENCING ANY LAND DISTURBANCE ACTIVITIES.

2. AN ONSITE PRE CONSTRUCTION MEETING WITH INSPECTOR IS RECOMMENDED AT LEAST 48 HRS PRIOR TO STARTING ANY WORK. PLEASE CONTACT THE HOWARD COUNTY DEPARTMENT OF LICENSES AND INSPECTIONS AT 410-313-2455 TO SCHEDULE THE MEETING.

3. 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 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF HIGHWAYS AT (410) 313-2450 AT LEAST FIVE (5) WORKING DAYS BEFORE ANY OPEN CUT OF ANY COUNTY ROAD OR BORING/JACKING OPERATION IN COUNTY ROADS FOR LAYING WATER AND SEWER MAINS.

4. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.

5. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE PER HOWARD COUNTY RECORDS.

6. CONTRACTOR SHALL MAINTAIN ALL SEDIMENT CONTROL DEVICES WITHIN THE LIMITS OF THE SITE DURING CONSTRUCTION OF THE SITE IMPROVEMENTS. CONTRACTOR SHALL PROVIDE ADDITIONAL EROSION AND SEDIMENTATION CONTROL MEASURES AS MAY BE NECESSARY DURING CONSTRUCTION AND/OR BY GOVERNING AGENCIES.

7. THERE ARE NO KNOWN CEMETERIES OR BURIAL GROUNDS ON THIS SITE. HOWEVER, UPON DISCOVERY OF ANY EVIDENCE OF BURIAL OR GRAVES, THE DEVELOPER WILL BE SUBJECT TO SECTION 16.1305 OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.

8. THE TOPOGRAPHY AND SITE BOUNDARY WERE PREPARED BY christopher consultants, ltd. ON APPROXIMATELY MAY 2007.

9. THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLAN COORDINATE SYSTEM. MONUMENT NUMBERS 421A AND 0080 WERE USED FOR THIS PROJECT (NAD 83/91.)

10. ALL EXISTING UNDERGROUND UTILITIES TO BE FIELD VERIFIED. UTILITIES CONTRACTOR SHALL VERIFY THE SIZE AND LOCATIONS OF ALL UNDERGROUND UTILITIES AND TEST PIT ALL UTILITIES, INCLUDING PROPOSED TIE IN LOCATIONS, AT LEAST 5 DAYS PRIOR TO STARTING ANY WORK ON THESE DRAWINGS. DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER IN ADVANCE OF CONSTRUCTION START.

11. THE EXISTING DWELLING ON SITE WILL BE DEMOLISHED.

12. UNLESS OTHERWISE NOTED, DIMENSIONS FROM CURB ARE MEASURED AT FACE OF CURB.

13. ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.

14. CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE (5) WORKING DAYS PRIOR TO STARTING ON THESE PLANS:
- "MISS UTILITY 1-800-257-7777
- HOWARD COUNTY DPWT, BUREAU OF UTILITIES (410) 313-4900
- BALTIMORE GAS AND ELECTRIC COMPANY CONTRACTOR SERVICES (410)850-4620
- BALTIMORE GAS AND ELECTRIC COMPANY UNDERGROUND DAMAGE CONTROL (410)787-4068
- VERIZON 1-800-446-5266

15. christopher consultants, ltd. SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION, MEANS, METHODS, TECHNIQUES, OR PROCEDURES, UTILIZED BY THE CONTRACTOR, NOR FOR THE SAFETY OF PUBLIC OR CONTRACTOR'S EMPLOYEES, OR FOR THE FAILURE OF THE CONTRACTOR TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND STANDARD CONSTRUCTION PRACTICES.

16. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES WHICH ARE TO REMAIN FREE FROM DAMAGE AND MAINTAIN UNINTERRUPTED SERVICE TO ALL USERS. ANY DAMAGE INCURRED DUE TO THE CONTRACTOR'S OR SUBCONTRACTOR'S ACTIONS SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.

17. SCALING OF THESE PLANS IS DISCOURAGED UNLESS DIRECTED BY THE ENGINEER. IN THE EVENT OF A DISCREPANCY BETWEEN THE SCALED AND THE FIGURED DIMENSIONS, THE FIGURED DIMENSIONS SHALL BE HELD.

18. T.B.R. = TO BE REMOVED

19. RELOCATION OF THE BGE POLE IN THE MISSION RD RIGHT-OF-WAY WILL BE DONE BY OTHERS.

20. THE CONTRACTOR SHALL MAINTAIN DOCUMENTATION OF THE PROPER ABANDONMENT/ SEALING OF THE EX. WELL (BY A LICENSED WELL DRILLER) AND THE SEPTIC SYSTEM. THE SEPTIC SYSTEM IS TO BE ABANDONED IN ACCORDANCE WITH THE COUNTY AND STATE REGULATIONS.

21. NO GRADING, REMOVAL OF VEGETATION COVER OR TREES, PAVING AND/OR NEW STRUCTURES SHALL BE PERMITTED WITHIN THE EXISTING WETLANDS AND WETLAND BUFFERS, EXCEPT TO THE LIMITS APPROVED BY MDE UNDER WETLAND PERMIT #200765656 / 07-NT-3407 AND HOWARD COUNTY WAIVER PETITION WP-08-067 APPROVED ON APRIL 17, 2008.

12.12.08
DATE

STATE OF MARYLAND — JOHN M. HOUSEHOLDER — No. 29907 — REGISTERED PROFESSIONAL ENGINEER

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division	Date 1-5-9
Chief, Division of Land Development	Date 1/29/09
Director, DEPZ	Date 1/29/09

Date	No.	Revision Description

HERCULES FENCE at 8580 MISSION ROAD

OWNER / DEVELOPER
JESSUP DEVELOPMENT, LLC
MISSION BUILDING ASSOCIATES LLC
CONTACT: EVAN WINSTON
5408 BRANCHVILLE ROAD
COLLEGE PARK, MARYLAND 20740
PHONE: (301) 441-1600
FAX: (301) 441-8600

christopher consultants
engineering · surveying · land planning
christopher consultants, ltd.
7172 columbia gateway drive (suite 100) · columbia, md. 21046-2990
410.312.6810 · 410.312.6749 · fax 410.312.8883

PERMIT INFORMATION CHART			
PROJECT NAME: 8580 MISSION ROAD	LOT/PARCEL NO.: PARCEL 78		CENSUS TRACT: 6069.01
DEED REF.: L. 10905, F. 308	GRID NO.: 18	ZONE: M-1	TAX MAP: 42
ELECTION DISTRICT: 6TH			
WATER CODE: E06		SEWER CODE: 2243	

TITLE: EXISTING CONDITIONS & DEMOLITION PLAN — AS-BUILT

DESIGN: KWS	SCALE: 1" = 50'	PROJECT: 075501.00
DRAWN: DAM	DATE: OCTOBER 2008	2 OF 16
CHECKED: EMJ	APPROVED: JMH	

MDC-747(SDP)

SDP-08-44

LUMINAIRE SCHEDULE

Symbol	Label	Qty	Catalog Number	Description	Lamp	Lumens	LLF
	TWIN	2	2 λ AU1 400 MH (VOLT) III LG PM AS4 (COLOR)	PAPPI LIGHTING AURAFORM TWIN POLE MOUNTED LUMINAIRE WITH SEGMENTED REFLECTOR AND FLAT FULLY SHIELDED	ONE 400W ED28 CLEAR METAL-HELIDE LAMP.	32000	0.75
	SINGLE	2		150 WATT HPS VAPOR FIXTURE MOUNTED ON A 30' FIBERGLASS POLE WITH A 12' ARM, ARM PERPENDICULAR TO MISSION ROAD	150W HPS MISSION RD STATIONING 11+78.07 14+16.25	 OFFSET EX. CENTERLINE 23.13' OFFSET WEST 22.28' OFFSET WEST	

NOTES:

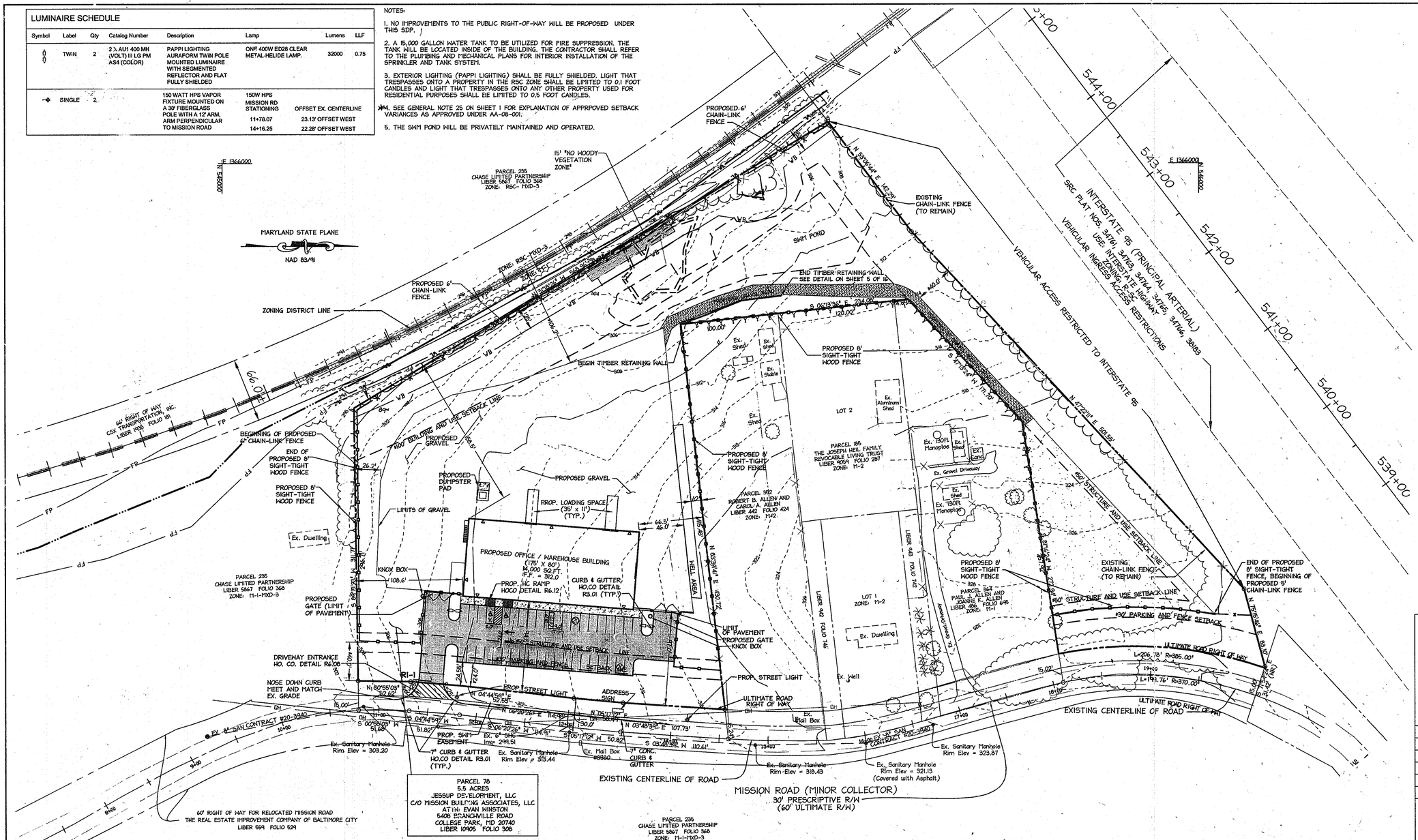
1. NO IMPROVEMENTS TO THE PUBLIC RIGHT-OF-WAY WILL BE PROPOSED UNDER THIS SDP.

2. A 15,000 GALLON WATER TANK TO BE UTILIZED FOR FIRE SUPPRESSION. THE TANK WILL BE LOCATED INSIDE OF THE BUILDING. THE CONTRACTOR SHALL REFER TO THE PLUMBING AND MECHANICAL PLANS FOR INTERIOR INSTALLATION OF THE SPRINKLER AND TANK SYSTEM.

3. EXTERIOR LIGHTING (PAPPI LIGHTING) SHALL BE FULLY SHIELDED. LIGHT THAT TRESPASSES ONTO A PROPERTY IN THE RSC ZONE SHALL BE LIMITED TO 0.1 FOOT CANDLES AND LIGHT THAT TRESPASSES ONTO ANY OTHER PROPERTY USED FOR RESIDENTIAL PURPOSES SHALL BE LIMITED TO 0.5 FOOT CANDLES.

4. SEE GENERAL NOTE 25 ON SHEET 1 FOR EXPLANATION OF APPRPOVED SETBACK VARIANCES AS APPROVED UNDER AA-08-001.

5. THE SWM POND WILL BE PRIVATELY MAINTAINED AND OPERATED.



DRIVEWAY ENTRANCE #1
SCALE: 1" = 20'

FILLET TABLE

			STATIONING	OFFSET EX. CENTERLINE	ELEVATION	NOTES
DRIVEWAY ENTRANCE #1	FILLET #1 RADIUS = 25'	PT	0+09.22	35.38' OFFSET SOUTH	308.02	BEGIN DRIVEWAY ENTRANCE CONSTRUCTION
		POC	0+17.19	18.63' OFFSET SOUTH	308.78	
		PC	0+34.50	11.98' OFFSET SOUTH	------	MEET AND MATCH EX. GRADE
	FILLET #2 RADIUS = 25'	PC	0+36.32	12.00' OFFSET NORTH	308.78	
		POC	0+18.86	18.88' OFFSET NORTH	308.44	
		PT	0+11.64	36.90' OFFSET NORTH	308.28	END DRIVEWAY ENTRANCE CONSTRUCTION

LEGEND

- EXISTING CONTOURS — 324 —
- EXISTING STORM DRAIN — EX. 12" RCP —
- EXISTING SANITARY SEWER — EX. 8" SAN —
- EXISTING FENCE — X —
- PROPERTY LINE
- EXISTING TREELINE
- PROPOSED SETBACK LINES
- WETLANDS — WL —
- WETLANDS BUFFER — WB —
- FLOODPLAIN — FP —
- PROPOSED TREELINE
- PROPOSED CROSS WALK FOR HANDICAP ACCESS
- PROPOSED SIDEWALK HATCH
- ZONING DISTRICT DIVISION LINE
- PROPOSED CHAINLINK FENCE — X — X — X —
- PROPOSED SIGHT TIGHT FENCE
- GRAVEL STORAGE YARD
- P-3 PAVING SECTION
- P-4 PAVING SECTION
- HANDICAP SPACE (VAN AGGESSIBLE) W/ PARKING COUNT
- PROPOSED STOP SIGN (30"x30") R1-1
- PROPOSED STOP BAR
- PROPOSED LIGHT
- PROPOSED STREET LIGHT
- DIRECTIONAL TRAFFIC FLOW ARROWS
- FILLET PROFILE NUMBER
- CURB FILLET IDENTIFIER
- WETLAND AREA APPROVED TO BE IMPACTED BY MDE PERMIT NO. 200765656 AND WP-08-67
- DOOR LOCATIONS
- PROPOSED SWM POND LIMITS
- PROPOSED SWM EASEMENT

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.

ROBERT C. VETTEL, P.E.
PE #46108
9/29/11
DATE

STATE OF MARYLAND
ROBERT CHARLES VETTEL
No. 46108
REGISTERED
PROFESSIONAL ENGINEER

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.

SIGNATURE OF ENGINEER — DATE: 12.12.08

JOHN M. HOUSEHOLDER
MD LICENSE NUMBER: 29907
EXPIRATION DATE: 1-27-2010

12.12.08
DATE

STATE OF MARYLAND
JOHN M. HOUSEHOLDER
No. 29907
REGISTERED
PROFESSIONAL ENGINEER

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 1-5-9
Chief, Division of Land Development — Date 1/29/09
Director, DEP — Date 1/29/09

Date	No.	Revision Description

HERCULES FENCE at 8580 MISSION ROAD

OWNER / DEVELOPER
MS: JESSUP DEVELOPMENT, LLC
MISSION BUILDING ASSOCIATES LLC
CONTACT: EVAN WINSTON
CO: 5408 BRANCHVILLE ROAD
COLLEGE PARK, MARYLAND 20740
PHONE: (301) 441-1500
FAX: (301) 441-8500

christopher consultants
engineering · surveying · land planning
Christopher consultants, ltd
7172 columbia gateway drive (suite 100) · columbia, md. 21046-2990
410.872.9690 · metro 301.881.6148 · fax 410.872.9693

PERMIT INFORMATION CHART

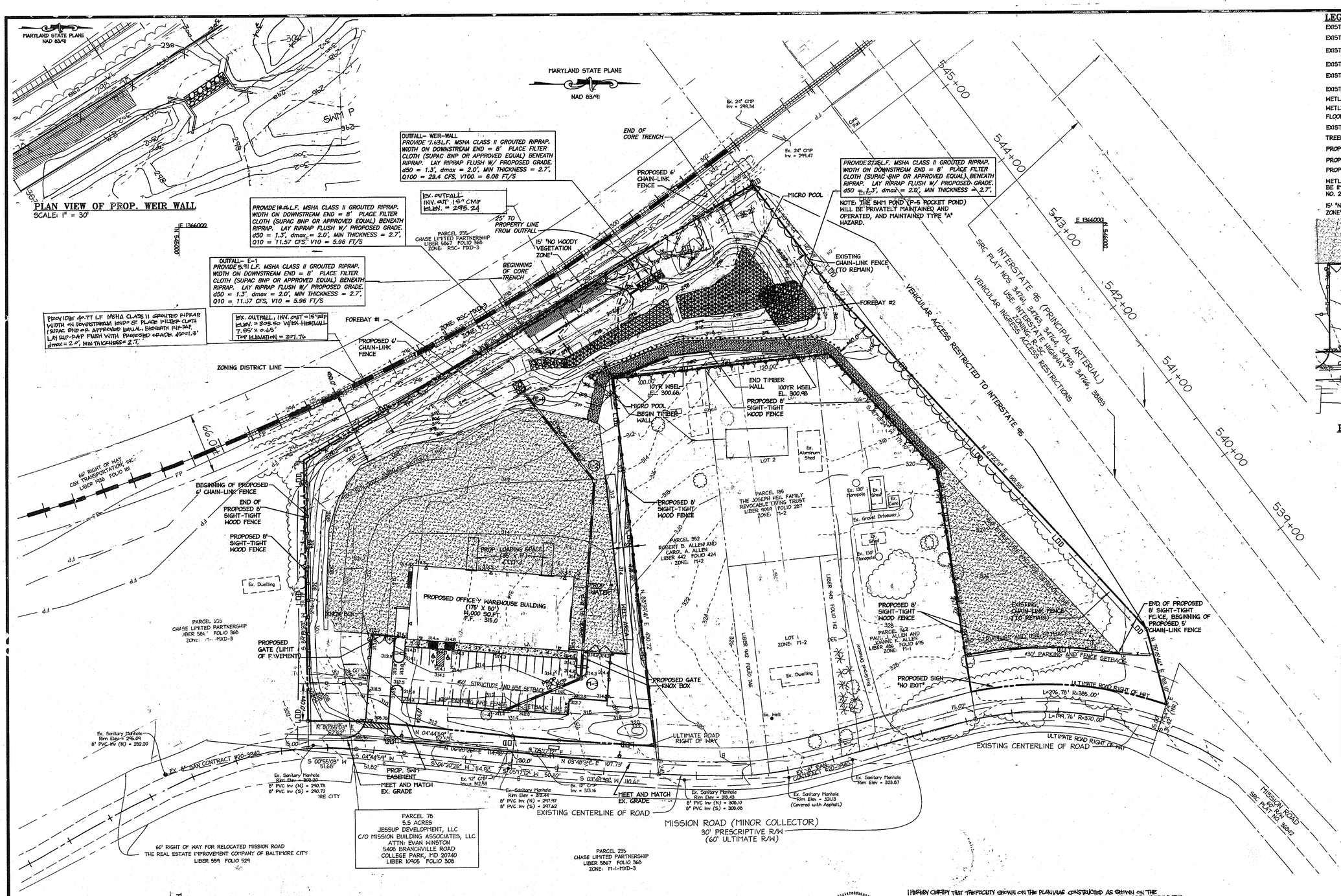
PROJECT NAME	LOT/PARCEL NO.	CENSUS TRACT
8580 MISSION ROAD	PARCEL 78	6069.01

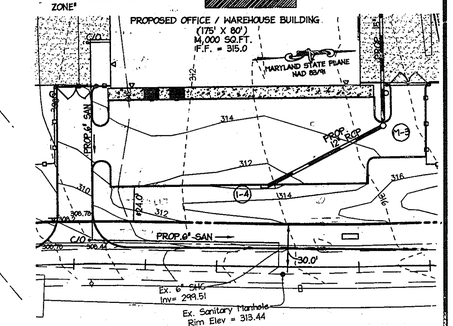
DEED REF.	GRID NO.	ZONE	TAX MAP	ELECTION DISTRICT
L. 10905, F. 308	18	M-1	42	6TH

WATER CODE	SEWER CODE
E06	2243

TITLE: AS BUILT
SITE LAYOUT PLAN

DESIGN: KWS	SCALE: 1" = 50'	PROJECT: 075501.00
DRAWN: DAM	DATE: OCTOBER 2008	
CHECKED: ENJ	APPROVED: JMH	3 OF 16





PLAN VIEW OF PROP. 6" SANITARY SEWER

SCALE: 1" = 50'

LEGEND

EXISTING CONTOURS	318
EXISTING STORMDRAIN	EX. 12" RCP
EXISTING SANITARY SEWER	EX. 8" SAN
EXISTING WATER	EX. 6" WATER
EXISTING TRANSFORMER	EXISTING MAILBOX
EXISTING SIGN	EXISTING FENCE POST
WETLANDS	WL
WETLANDS BUFFER	WB
FLOODPLAIN	FP
EXISTING FENCE	X
TREELINE	
PROPERTY LINE	
PROPOSED SANITARY SEWER	
PROPOSED STORMDRAIN	PROP. 15" RCP
WETLAND AREA APPROVED TO BE IMPACTED BY MDE PERMIT NO. 200765656 AND WP-08-67	
15' NO WOODY VEGETATION ZONE	

NOTES:

1. FOR PAVEMENT TYPES AND DETAILS SEE SHEET 7.
2. THE USE OF THE WELL IS TEMPORARY UPON THE EXTENSION OF THE WATERLINE IN MISSION ROAD. THE SITE WILL BE CONVERTED TO PUBLIC WATER.
3. A 15,000 GALLON TANK WILL BE CONSTRUCTED / INSTALLED INSIDE THE BUILDING FOR FIRE SUPPERSION. CONTRACTOR TO COORDINATE WITH MECHANICAL ENGINEER AND/OR OWNER FOR MORE INFORMATION.
4. GRADING, REMOVAL OF VEGETATION COVER OR TREES, PAVING AND/OR NEW STRUCTURES SHALL BE PERMITTED WITHIN THE EXISTING WETLANDS AND WETLANDS BUFFERS TO THE LIMITS AUTHORIZED UNDER WETLANDS PERMIT #200765656/07-NT-3407 AND HOWARD COUNTY WAIVER PETITION WP-08-067.
5. THE LIMIT OF DISTURBANCE SHALL NOT ENCROACH THE PROPERTY LINE. THE LIMIT OF DISTURBANCE IS SHOWN OUTSIDE OF THE PROPERTY FOR CLARITY PURPOSES ONLY.
6. THE SWM POND (P-5 POCKET POND) WILL BE PRIVATELY MAINTAINED AND OPERATED, AND MAINTAINED TYPE 'A' HAZARD.
7. THE 15' NON-WOODY ZONE IS FROM CONTOUR 298 TOWARDS THE PROPERTY LINE.

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.

SIGNATURE OF ENGINEER — DATE 8.11.09

JOHN M. HOUSEHOLDER
MD LICENSE NUMBER: 29907
EXPIRATION DATE: 1-27-2010

STATE OF MARYLAND — JOHN M. HOUSEHOLDER — No. 29907 — REGISTERED PROFESSIONAL ENGINEER

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

ROBERT C. WITH, P.E. — DATE 9/28/11
PE #16108

STATE OF MARYLAND — ROBERT C. WITH — No. 16108 — REGISTERED PROFESSIONAL ENGINEER

FILLET TABLE

			STATIONING	OFFSET EX. CENTERLINE	ELEVATION	NOTES
DRIVEWAY ENTRANCE #1	FILLET #1 RADIUS = 25'	PT	0+09.22	35.38' OFFSET SOUTH	308.02	BEGIN DRIVEWAY ENTRANCE CONSTRUCTION
		POC	0+17.19	18.63' OFFSET SOUTH	305.78	
		PC	0+34.50	11.98' OFFSET SOUTH	------	MEET AND MATCH EX. GRADE
	FILLET #2 RADIUS = 25'	PC	0+36.32	12.00' OFFSET NORTH	308.78	
		POC	0+18.88	18.88' OFFSET NORTH	308.44	
		PT	0+11.64	36.90' OFFSET NORTH	308.28	END DRIVEWAY ENTRANCE CONSTRUCTION

8.11.09
DATE

STATE OF MARYLAND — JOHN M. HOUSEHOLDER — No. 29907 — REGISTERED PROFESSIONAL ENGINEER

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 8/25/09
Chief, Division of Land Development — Date 8-26-09
Director DEP — Date 8/26/09

Date	No.	Revision Description
8.4.09	1	RED LINE REVISION TO GRADING

HERCULES FENCE at 8580 MISSION ROAD

OWNER / DEVELOPER
JESSUP DEVELOPMENT, LLC
MISSION BUILDING ASSOCIATES LLC
CONTACT: EVAN WINSTON
5408 BRANCHVILLE ROAD
COLLEGE PARK, MARYLAND 20740
PHONE: (301) 441-1600
FAX: (301) 441-8600

christopher consultants
engineering · surveying · land planning
christopher consultants, ltd.
7172 columbia gateway drive (suite 100) · columbia, md. 21046-2990
410.872.8550 · metro 301.861.0146 · fax 410.872.8560

PERMIT INFORMATION CHART

PROJECT NAME	LOT/PARCEL NO.	CENSUS TRACT
8580 MISSION ROAD	PARCEL 78	6069.01

DEED REF.	GRID NO.	ZONE	TAX MAP	ELECTION DISTRICT
L. 10905, F. 308	18	M-1	42	6TH

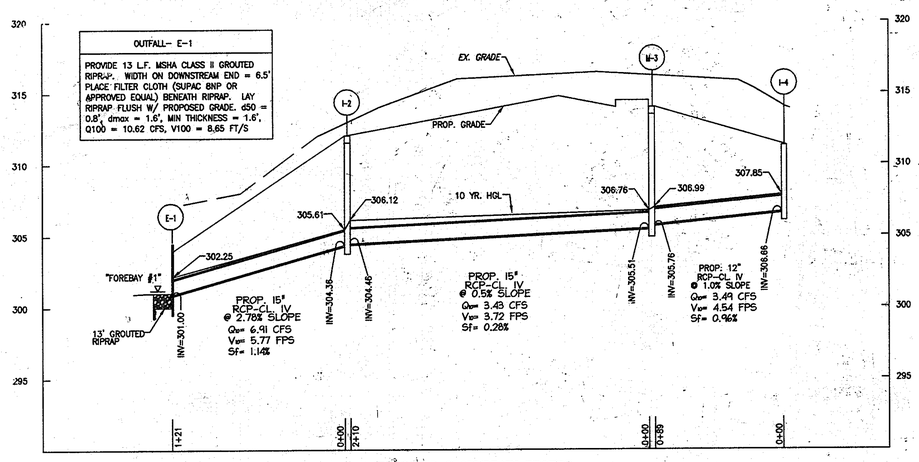
WATER CODE	SEWER CODE
E06	2243

TITLE: REVISED / AS-BUILT GRADING & UTILITY PLAN

DESIGN: KWS	SCALE: 1" = 50'	PROJECT: 075501.00
DRAWN: DAM	DATE: AUGUST 2009	4 OF 16
CHECKED: ENJ	APPROVED: JMH	

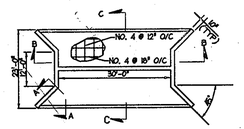
MDC-747(SDP)

SDP-08-44

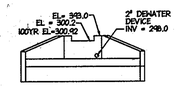


PROPOSED STORMDRAIN PROFILE
I-4 TO E-1

SCALE: 1:5 V
1:50 H



PLAN



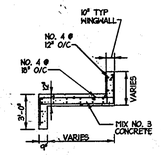
FRONT ELEVATION

NOTES:

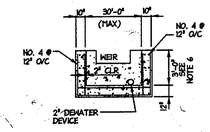
1. ALL EXPOSED EDGES TO HAVE 3/4" x 3/4" CHAMFER OR AS DIRECTED.
2. CONCRETE SHALL BE SHA MIX NO. 3 (f'c'=3500 PSI @ 28 DAYS).
3. REINFORCING STEEL SHALL BE ASTM A615 GRADE 60.
4. QUANTITIES IN TABLE FOR ESTIMATING ONLY.
5. WEIR CONTROL SECTION SHALL BE SIZED FOR APPROPRIATE CONTROL OF DISCHARGE RATES (WEIR SHOWN IS FOR ILLUSTRATION PURPOSES ONLY.)
6. MAXIMUM WALL HEIGHT IS 3', HIGHER WALLS REQUIRE SPECIAL DESIGN.

VOL. CONC. (CY)	STEEL (LBS)
2.9	200

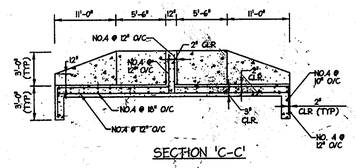
#VALUES SHOWN ARE APPROXIMATE FOR THE MAXIMUM SIZE OF THE STRUCTURE.



SECTION 'A-A'



SECTION 'B-B'



SECTION 'C-C'

WEIR WALL
SWM CONTROL STRUCTURE
N.T.S.

SEWER GENERAL NOTES

1. APPROXIMATE LOCATION OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN UNINTERRUPTED SUPPLY. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
2. TOPOGRAPHIC FIELD SURVEYS WERE PERFORMED DURING MAY, 2007 BY christopher consultants.
3. ALL HORIZONTAL CONTROLS ARE BASED ON MARYLAND STATE COORDINATES, NAD 83/91
4. ALL VERTICAL CONTROLS ARE BASED ON NAVD 88.
5. ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS, UNLESS OTHERWISE NOTED ON THE PLANS.
6. CLEAR ALL UTILITIES BY A MINIMUM OF 12". CLEAR ALL POLES BY 5'-0" MINIMUM OR TUNNEL AS REQUIRED. THE OWNER HAS CONTACTED THE UTILITY COMPANIES AND HAS MADE ARRANGEMENTS FOR BRACING OF POLES AS SHOWN ON THE DRAWINGS. IN THE EVENT THE CONTRACTOR'S WORK REQUIRES THE BRACING OF ADDITIONAL POLES, ANY COST INCURRED BY THE OWNER FOR BRACING OF ADDITIONAL POLES OR DAMAGES SHALL BE DEDUCTED FROM MONEY OWED THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF THE POLES.
7. FOR DETAILS NOT SHOWN ON THE DRAWINGS, AND FOR MATERIALS AND CONSTRUCTION METHODS USE HOWARD COUNTY DESIGN MANUAL: VOLUME IV, STANDARD SPECIFICATIONS AND DETAIL FOR CONSTRUCTION (LATEST EDITION). THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB.
8. WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL AT THE LOCATION OF THE TEST PIT. A NOTE OR NOTES CONTAINING THE RESULTS OF THE TEST PIT OR PITS IS INCLUDED ON THE DRAWINGS. EXISTING UTILITIES IN THE VICINITY OF THE PROPOSED WORK FOR WHICH TEST PITS HAVE NOT BEEN DUG SHALL BE LOCATED BY THE CONTRACTOR TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS AT HIS OWN EXPENSE.
9. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE (5) WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:

STATE HIGHWAY ADMINISTRATION	410-531-5533
BGE CONTRACTOR SERVICES	410-850-4620
BGE UNDER GROUND DAMAGE CONTROL	410-291-4607
MISS UTILITY	1-800-257-7777
COLONIAL PIPELINE CO.	410-544-4120
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF UTILITIES	410-313-4900
BELL ATLANTIC	1-800-446-5266

10. TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO THE MAXIMUM EXTENT. TREES AND SHRUBS LOCATED WITHIN THE CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.
11. THE CONTRACTOR SHALL REMOVE TREES, STUMPS AND ROOTS ALONG LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE MAIN.
12. THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410) 313-2450 AT LEAST FIVE (5) WORKING DAYS BEFORE ANY OPEN CUT OF ANY COUNTY ROAD OR BORING/JACKING OPERATION IN ANY COUNTY ROADS FOR LAYING WATER/SEWER MAINS OR HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH DPW REQUIREMENTS PER SECTION 18.114 (a) OF THE HOWARD COUNTY CODE.

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.

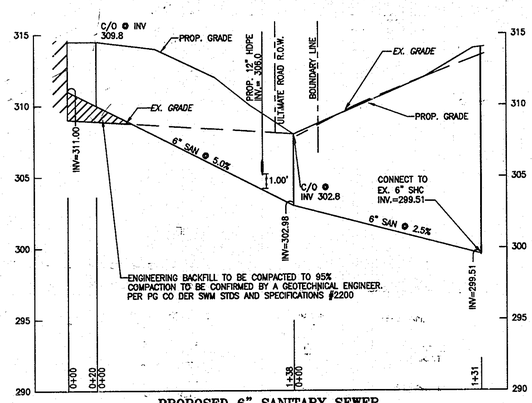
SIGNATURE OF ENGINEER — DATE 8.11.09

JOHN M. HOUSEHOLDER
MD LICENSE NUMBER: 24907
EXPIRATION DATE: 1-27-2010

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division	Date 8/25/09
Chief, Division of Land Development	Date 8-26-09
Director, DEP	Date 8/28/09

Date	No.	Revision Description
8.4.09	1	RED LINE REVISION TO GRADING



PROPOSED 6" SANITARY SEWER

SCALE: 1:5 V
1:50 H

STRUCTURE SCHEDULE

NO.	TYPE	WIDTH DIAM.	(RPE) INV. ELEV.	AS-BUILT INV. ELE.	ELEV. TOP	STANDARD DETAIL
E-1	TYPE 'C' ENDWALL	15"	301.00		304.00	SD-5.21
I-2	YARD INLET	4- FT	304.36		312.00	SD-4.14
M-3	STD. PPRECAST MANHOLE	4- FT	305.51		314.20	G-5.12
I-4	A-5	2'-6"	306.66		311.40	SD-4.02
	WEIR WALL		298.00		301.00	REFER TO DETAIL ON THIS SHEET

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET

ROBERT C. LITH, P.E.
PE#16108

8/28/11
DATE

STATE OF MARYLAND — ROBERT CHARLES LITH — No. 16108 — REGISTERED PROFESSIONAL ENGINEER

STORM DRAIN SUMMARY TABLE

SIZE	TYPE	LENGTH
12"	R.C.P. CL-IV	89'
15"	R.C.P. CL-IV	331'
	TOTAL	420'

PIPE SCHEDULE

FROM	TO	PIPE SIZE	LENGTH
I-4	M-3	12" RCP CL.IV	89'
M-3	I-2	15" RCP CL.IV	210'
I-2	E-1	15" RCP CL.IV	121'

SEWER SUMMARY TABLE

ITEM	QUANTITES ESTIMATED	AS-BUILT ITEMS	AS-BUILT QUANTITES
6" SAN PVC PIPE	289 LF		

8.11.09
DATE

STATE OF MARYLAND — JOHN M. HOUSEHOLDER — No. 24907 — REGISTERED PROFESSIONAL ENGINEER

HERCULES FENCE at 8580 MISSION ROAD

OWNER / DEVELOPER
JESSUP DEVELOPMENT, LLC
MISSION BUILDING ASSOCIATES LLC
CONTACT: EVAN WINSTON
5408 BRANCHVILLE ROAD
COLLEGE PARK, MARYLAND 20740
PHONE: (301) 441-1500
FAX: (301) 441-8500

christopher consultants
engineering · surveying · land planning
christopher consultants, ltd.
7172 columbia gateway drive (suite 100) · columbia, md. 21046-2990
410.872.8660 · metro 301.881.2149 · fax 410.872.8663

PERMIT INFORMATION CHART

PROJECT NAME	LOT/PARCEL NO.	CENSUS TRACT
8580 MISSION ROAD	PARCEL 78	6069.01

DEED REF.	GRID NO.	ZONE	TAX MAP	ELECTION DISTRICT
L. 10905, F. 308	18	M-1	42	6TH

WATER CODE: E06 — SEWER CODE: 9243

TITLE: REVISED AS-BUILT
UTILITY PROFILES AND DETAILS

DESIGN: KWS	SCALE: AS SHOWN	PROJECT: 075501.00
DRAWN: DAM	DATE: AUGUST 2009	
CHECKED: ENJ	APPROVED: JMH	16 OF 16

MDC-747(SDP)

SDP-08-44

NOTES:

1. SUPER SILT FENCE AND LIMIT OF DISTURBANCE ARE SHOWN OUTSIDE THE PROPERTY LINE FOR DISPLAY PURPOSE ONLY. ALL WORK WITH THE EXCEPTION OF RIGHT-OF-WAY IMPROVEMENTS IS TO BE DONE ON SITE.

2. SILT FENCE IS TO BE INSTALLED ALONG THE SOUTHWESTERN L.O.D. AT THE DISCRETION OF THE SEDIMENT CONTROL INSPECTOR.

3. ALL FENCING SHALL BE INSTALLED WITH A "J" HOOK CONFIGURATION AT APPROXIMATELY 35-FOOT INTERVALS.

4. LIMIT OF DISTURBANCE SHALL INCLUDE ALL RIGHT OF WAY IMPROVEMENTS ON MISSION ROAD. LIMIT OF DISTURBANCE SHALL BE MAINTAINED ON THE LIMITS ON THE PROPERTY AND SHALL NOT EXCEED PROPERTY LIMITS.

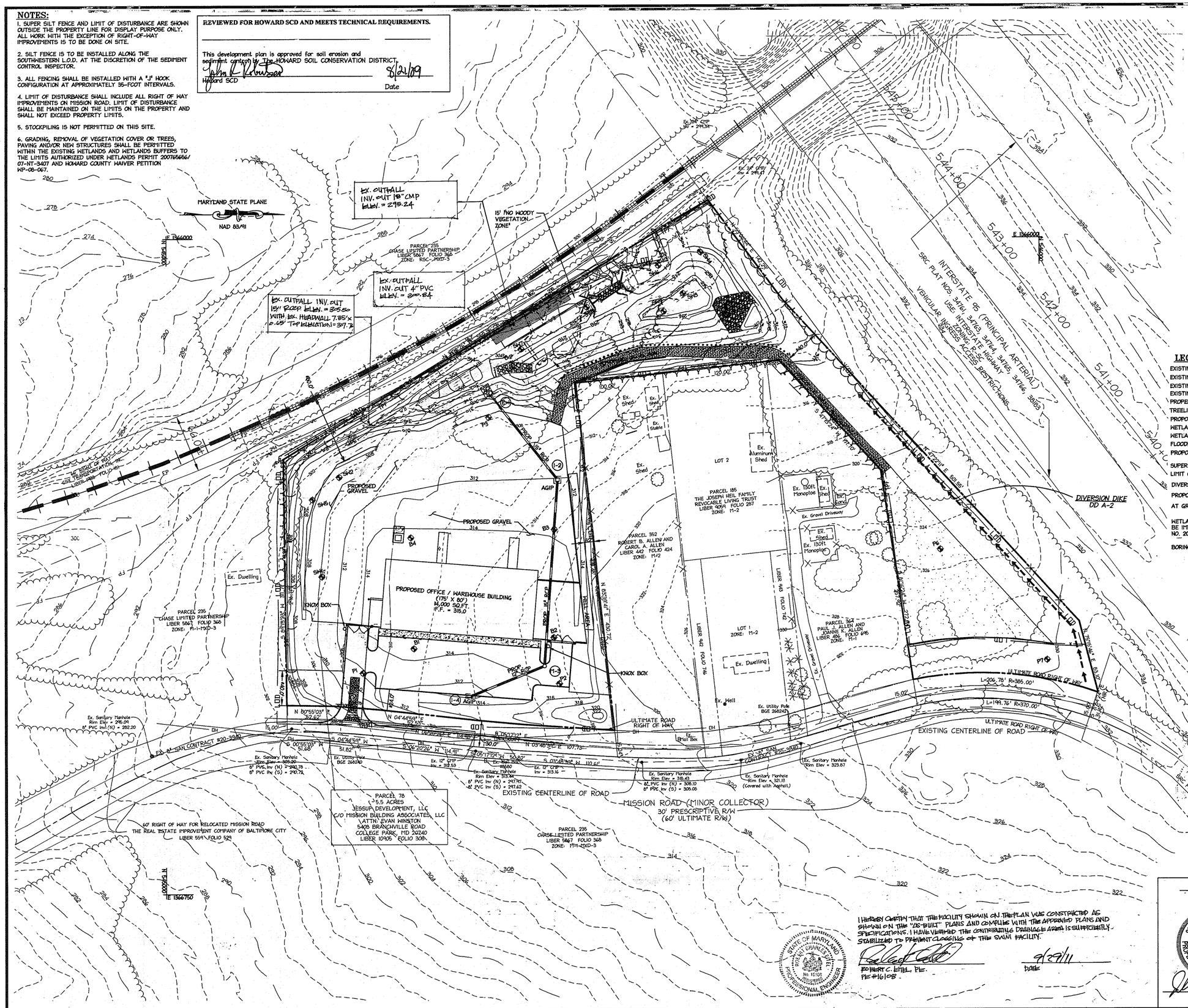
5. STOCKPILING IS NOT PERMITTED ON THIS SITE.

6. GRADING, REMOVAL OF VEGETATION COVER OR TREES, PAVING AND/OR NEW STRUCTURES SHALL BE PERMITTED WITHIN THE EXISTING WETLANDS AND WETLANDS BUFFERS TO THE LIMITS AUTHORIZED UNDER WETLANDS PERMIT 200765656/ 07-NT-3407 AND HOWARD COUNTY WAIVER PETITION WP-08-067.

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS.

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

Howard SCD — Date 8/21/09



DEVELOPER'S CERTIFICATE

"I/We certify that all development and construction will be done according to this plan, and that any 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 this project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."

Signature of Developer — Date 8/11/09

Evan Winston, Manager
Print name below signature

ENGINEER'S CERTIFICATE

I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

Signature of Engineer — Date 8.11.09

JOHN HOUSEHOLDER, P.E.
Print name below signature

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.

SIGNATURE OF ENGINEER — DATE 8.11.09

JOHN M. HOUSEHOLDER
MD LICENSE NUMBER: 29907
EXPIRATION DATE: 1-27-2010

LEGEND

EXISTING CONTOURS	324
EXISTING STORMDRAIN	EX. 12" RCP
EXISTING SANITARY SEWER	EX. 8" SAN
EXISTING FENCE	X
PROPERTY LINE	
TREELINE	
PROPOSED SETBACK LINES	
WETLANDS	WL
WETLANDS BUFFER	WB
FLOODPLAIN	FP
PROPOSED SIDEWALK HATCH	
SUPER SILTFENCE	SSF
LIMIT OF DISTURBANCE	LOD
DIVERSION DIKE	
PROPOSED CONTOUR	418
AT GRADE INLET PROTECTION	AGIP
WETLAND AREA APPROVED TO BE IMPACTED BY MDE PERMIT NO. 200765656 AND WP-08-67	
BORING LOCATION	5/46

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 8/25/09

Chief, Division of Land Development — Date 8-26-09

Director, DPZ — Date 8/26/09

Date	No.	Revision Description
8.4.09	1	RED LINE REVISION TO GRADING

HERCULES FENCE at 8580 MISSION ROAD

OWNER / DEVELOPER:
JESSUP DEVELOPMENT, LLC
MISSION BUILDING ASSOCIATES LLC
CONTACT: EVAN WINSTON
5406 BRANCHVILLE ROAD
COLLEGE PARK, MARYLAND 20740
PHONE: (301) 441-1600
FAX: (301) 441-8600

christopher consultants
engineering · surveying · land planning
christopher consultants, ltd.
7172 columbia gateway drive suite 100, columbia, md. 21046-2990
410.872.8180 · www.301.881.0145 · fax 410.872.8183

PERMIT INFORMATION CHART

PROJECT NAME	LOT/PARCEL NO.	CENSUS TRACT
8580 MISSION ROAD	PARCEL 78	6069.01

DEED REF.	GRID NO.	ZONE	TAX MAP	ELECTION DISTRICT
L. 10905, F. 308	18	M-1	42	6TH

WATER CODE	SEWER CODE
E06	2243

TITLE: REVISED AS-BUILT
BORING LOCATION AND EROSION AND SEDIMENT CONTROL PLAN

DESIGN: KWS	SCALE: 1" = 50'	PROJECT: 075501.00
DRAWN: DAM	DATE: AUGUST 2009	7 OF 16
CHECKED: ENJ	APPROVED: JMH	

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

ROBERT C. LETTEL, P.E.
PE #16108

9/29/11
DATE

STATE OF MARYLAND ROBERT CHARLES LETTEL No. 16108 PROFESSIONAL ENGINEER

8.11.09
DATE

STATE OF MARYLAND JOHN M. HOUSEHOLDER No. 29907 REGISTERED PROFESSIONAL ENGINEER

MDC-747(SDP)

SDP-08-44

19.0 Standards and Specifications
For Land Grading

Definitions

Reshaping of the existing land surface in accordance with a plan as determined by engineering survey and layout.

Purpose

The purpose of a land grading specification is to provide for erosion control and vegetative establishment on those areas where the existing land surface is to be reshaped by grading according to plan

Design Criteria

The grading plan should be based upon the incorporation of building designs and street layouts that fit and utilize existing topography and desirable natural surrounding to avoid extreme grade modifications. Information submitted must provide sufficient topographic surveys and soil investigations to determine limitations that must be imposed on the grading operation related to slope stability, effect on adjacent properties and drainage patterns, measured for drainage and water removal and vegetative treatment, etc.

Many counties have regulations and design procedures already established for land grading and cut and fill slopes. Where these requirements exist, they should be followed. The plan must show existing and proposed contours of the area(s) to be graded. The plan shall also include practices for erosion control, slope stabilization, safe disposal of runoff water and drainage, such as waterways, lined ditches, reverse slope benches (including grade and cross-section), grade stabilization structures, retaining walls, and surface and subsurface drains. The plan shall also include phasing of these practices. The following shall be incorporated into the plan:

1. Provisions shall be made to safety conduct surface runoff to storm drains, protected outlets or to stable water courses to insure that surface runoff will not damage slopes or other graded areas.

2. Cut and fill slopes that are to be stabilized with grasses shall not be steeper then 2:1. (Where the slope id to be mowed the slope should be no steeper then 3:1: 4:1 is preferred because of safety factors related to mowing steep slopes.

3. Reverse benches shall be provided whenever the vertical interval (height) of any 2:1slopes exceeds 20 feet; for 3:1 slopes it shall be increased to 30 feet and for 4:1 to 40 feet. Benches shall be located to divide the slopes face as equally as possible and shall convey the water to a stable outlet. Soils, seeps, rock outcrops, etc., shall also be taken into consideration when designing benches.

a. Benches shall be a minimum of six-feet wide to provide ease of maintenance.

b. Benches shall be designed with a reverse slope of 6:1 of flatter to the toe of the upper slope and with a minimum of one foot in depth. Bench gradient to the outlet shall be between 2 percent and 3 percent, unless accompanied by appropriate design and computations.

c. The flow length within a bench shall not exceed 800' unless accompanied by appropriate design and computations. For flow channel stabilization see temporary swales.

4. Surface water shall be diverted from the face of all cut and/or fill slopes by the use of earth dikes, ditches and swales or conveyed downslope by the use of a designated structure, except where:

a. The face of the slope is or shall be stabilized and the face of all graded slopes shall be protected for surface runoff until they are stabilized.

b. The face of the slope shall not be subjected to any concentrated slows of surface water such as from natural drainways, graded swales, downspouts, etc.

c. The face of the slope will be protected by special erosion control materials, to include, but not limited to: approved vegetative stabilization practices (see section G), rip-rap or other approved stabilization methods.

5. Cut slopes occurring in ripable rock shall be serrated as shown on the following diagram. These serrations shall be made with conventional equipment as the excavation is made. Each step or serration shall be constructed on the contour and will have steps cut as nominal two-foot intervals with nominal three-foot horizontal shelves. These steps will vary depending on the slope ratio or the cut slope. The nominal slope line is 1:1. These steps will weather and act to hold moisture, lime, fertilizer and seed thus producing a much quicker and longer lived vegetative cover and better slope stabilization. Over land flow shall be diverted from the top of all serrated cut slopes and carried to a suitable outlet.

6. Surface drainage shall be provided where necessary to intercept seepage that would otherwise adversely affect slope stability or create excessively wet site conditions.

7. Slopes shall not be created to close to property lines as the endanger adjoining properties without adequately protecting such properties against sediment, erosion, slippage, settlement, subsidence or other related damages.

8. Fill material shall be free of brush, rubbish, rocks, logs, stumps, building debris, and other objectionable material. It should be free of stones over two (2) inches in diameter where compacted by hand or mechanical tempers over eight (8) inches in diameter where compacted by rollers or other equipment. Frozen material shall not be placed in the fill nor shall the fill material be placed on a frozen foundation.

9. Stockpiles, borrow areas and spoil shall be shown on the plans and shall be subjected to the provisions of the Standard and Specifications.

All disturbed areas shall be stabilized structurally or vegetatively in compliance with 20.0 Standards and Specifications for Vegetative Stabilization.

21.0 Standard and Specifications
For Topsoil

Definitions

Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.

Purpose

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.

Conditions Where Practice Applies
This practice is limited to areas having 2:1 or flatter slopes where:

a. The texture of the exposed subsoil/parent material in not adequate to produce vegetative growth.

b. 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.

c. The original soil to be vegetated contains materials toxic to plant growth

d. The soil is so acidic that treatment with limestone is not feasible.

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

SIGNATURE OF ENGINEER — DATE 12.12.08

JOHN M. HOUSEHOLDER
MD LICENSE NUMBER: 29907
EXPIRATION DATE: 1-27-2010

For the purpose of these Standards and Specification, areas having slopes steeper that 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper that 2:1 shall have the appropriate stabilization shown on the plans.

Construction and Material Specifications

Topsoil salvaged from the existing site may be used provided that 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-SCS in cooperation with Maryland Agricultural Experimental Station.

Topsoil Specifications - Soil to be used as topsoil must meet the following:

i. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall bot be a mixture of contrastinf textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials large than 1 ½" in diameter.

ii. Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, Johnsongrass, nutsedge, poison ivy, thistle, or other as specified.

iii. Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread to the rate of 4-8 tons/acre (200-400 pounds per 1,000sqare feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked in to the soil in conjunction with tillage operations as described in the following procedures.

For sites having disturbed areas under 5 acres:

Place topsoil (if required) and apply soil amendments as specified in 20.0 vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

For sites having disturbed areas over 5 acres:

On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:

a. pH for topsoil shall be between 6.0 and 7.5. If tested soil demonstrates a pH of less the 6.0, sufficient lime shall be prescribed to raise pH to 6.5 or higher.

b. Organic content of topsoil shall be not less then 1.5 percent by weight.

c. Topsoil having soluble salt content grater then 500 parts per million shall not be used.

d. No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 day min.) to permit dissipation of phyto-toxic materials.

Note: Topsoil substitutes or amendments as recommended be a qualified agronomist or soil scientist approved by the appropriate approval authority, may be used in lieu of natural topsoil.

Place topsoil (if required) and apply soil amendments as specified on 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

Topsoil Application

When topsoiling, maintain needed erosion and sediment control practiced such as diversions, Grade Stabilization Structures, Earth Dikes, Slope Silt Fences and Sediment Traps and Basins.

Grades in the areas to be topsoiled, which have been previously established, shall be maintained, albeit 4" - 8" higher in elevation.

Topsoil shall be uniformy distributed in a 4" - 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall 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 shall be corrected in order to prevent the formation of depressions or water pockets.

Topsoil shall not be place while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil id excessively wet in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

Alternative for Permanent Seeding - Instead of applying the full amounts of like and commercial fertilizer, composted sludge and amendments mat be applied as specified below:

Composted Sludge Materials for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:

a. Composted sludge shall be supplied by, or originated from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.

b. Composted sludge shall contain as least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a pH of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.

c. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.

Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/3 the normal lime application rate.

References: Guideline Specifications, Soil Preparation and Sodding. MD-VA, Pub #1, Cooperative Extention Service, University of Maryland and Virginia Polytechnic Institutes. Revised 1973.

30.0 Dust Control

Definition

Controlling dust blowing and movement on construction sites and roads.

Purpose

To prevent blowing and movement of dust from exposed soil surfaces, reduce on and off-site damage, health hazards, and improve traffic safety.

Conditions Where Practice Applies

This practice is applicable to areas subject to dust blowing and movement where in and off-site damage is likely without treatment.

Specifications

Temporary Methods

1. Mulches - See standards for vegetative stabilization with mulches only. Mulch should be crimped or tacked to prevent blowing.

2. Vegetative Cover - See standards for temporary vegetative cover.

3. Tillage - To roughen surface and bring clods to the surface. This is an emergency measure which should be used before soil blowing starts. Begin plowing on windward side of site. Chisel-type plows spaced about 12" apart, spring-toothed harrows, and similar plows are examples of equipment whicj may produce the desired effect.

4. Irrigation - This is generally done as an emergency treatment. Site is sprinkled with water until the surface is moist. Repeat as needed. At no time should the site be irrigated to the point that runoff begins to flow.

5. Barriers - Soild board fences, silt fences, snow fences, burlap fences, staw bales, and similar materials can be used to control air currents and soil blowing. Barriers placed at right angles to prevailing currents at intervals of about 10 times their height are effective in controlling soil blowing.
6. Calcium Chloride - Apply at rates that will keep surface moist. May need retreatment.

Permanent Methods

1. Permanent Vegetation - See standards for permanent vegetative cover, and permanent stabilization with sod. Existing trees or large shrubs may afford valuable protection if left in place.

2. Topsoil - Covering with less erosive materials. See Standards for topsoilding.

3. Stone - Cover surface with crushed stone or coarse gravel.

References

1. Agriculture Handbook 346. Wind Erosion Forces in the United State and Their Use in Predicting Soil Loss.

2. Agriculture Information Bulletin 354. How to Control Wind Erosion, USDA - ARS.

PERMANENT SEEDING NOTES

Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.

Seedbed Preparation: Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.

Soil Amendments: In lieu of soil test recommendations, use one of the following schedules:
1. Preferred--Apply 2 tons/acre dolomitic limestone (92 lbs/1000 sq, ft.) and 600 lbs/acre 10-10-10
fertilizer (14 lbs/1000 sq, ft.) before seeding. Harrow or disk into upper three inches of soil.
At time of seeding apply 400 lbs/acre 30-0-0 urea form fertilizer (9 lbs/1000 sq, ft.)
2. Acceptable--Apply 2 tons/acre dolomitic limestone (92 lbs/1000 sq, ft.) and 1000 lbs/acre 10-10-10
fertilizer (23 lbs/1000 sq, ft.) before seeding. Harrow or disk into upper three inches of soil.

Seeding -- For the periods March 1 -- April 30, and August 1 -- October 15, seed with 60 lbs/acre (1.4 lbs/1000 sq, ft.) of Kentucky 31 Tall Fescue. For the period May 1 -- July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs/acre (.05 lbs/1000 sq, ft.) of weeping lovegrass. During the period of October 16 -- February 28, protect site by:
Option 1 - Two tons per acre of well anchored straw mulch and seed as soon as possible in the spring.
Option 2 - Use sod. Option 3 -- Seed with 60 lbs/acre Kentucky 30 Tall Fescue and mulch with
2 tons/acre well anchored straw.

Mulching -- Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sq, ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq, ft.) of emulsified asphalt on flat areas. On slope 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq, ft.) for anchoring.

Maintenance -- Inspect all seeding areas and make needed repairs, replacements and reseedings.

TEMPORARY SEEDING NOTES.

Apply to graded or cleared areas likely to be re-disturbed where a short-term vegetative cover is needed.

Seedbed preparation: -- Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.

Soil Amendments: -- Apply 600 lbs/acre 10-10-10 fertilizer (14 lbs/1000 sq, ft.).

Seeding: -- For periods March 1 -- April 30 and from August 15 -- October 15, seed with 2-1/2 bushel per acre of annual rye (3.2 lbs/1000 sq, ft.). For the period May 1 -- August 14, seed with 3 lbs/acre of weeping lovegrass (.07 lbs/1000 sq, ft.). For the period November 16 -- February 28 protect the site by applying 2 tons/acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

Mulching: -- Apply 1-1/2 to 2 tons/acre (70 to 90 lbs/1000 sq, ft.) of unrotted weed-free, small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal. per acre (5 gal/1000 sq, ft.) of emulsified asphalt on flat areas. On slope 8 ft. or higher, use 348 gal. per acre (8 gal/1000 sq, ft.) for anchoring.

Refer to the 1994 Maryland Standards and Specification for Soil Erosion and Sediment Control for additional rates and methods not covered.

DEVELOPER'S CERTIFICATE

"I/We certify that all development and construction will be done according to this plan, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."

Signature of Developer — Date 11/25/08

EVAN WINSTON, MANAGER
Print name below signature

ENGINEER'S CERTIFICATE

I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

Signature of Engineer — Date 12.12.08

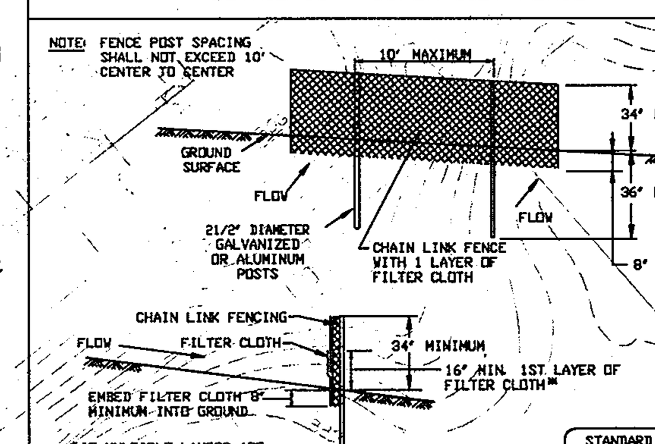
JOHN HOUSEHOLDER, P.E.
Print name below signature

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS.

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

Howard SCD — Date 12/22/08

DETAIL 33 - SUPER SILT FENCE



Construction Specifications

1. Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6' fence shall be used, substituting 42" fabric and 6' length posts.

2. Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence.

3. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.

4. Filter cloth shall be embedded a minimum of 8" into the ground.

5. When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.

6. Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height

7. Filter cloth shall be fastened securely to each fence post with wire ties or staples at top and mid section and shall meet the following requirements for Geotextile Class F:

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal/ft²/minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE H - 26 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

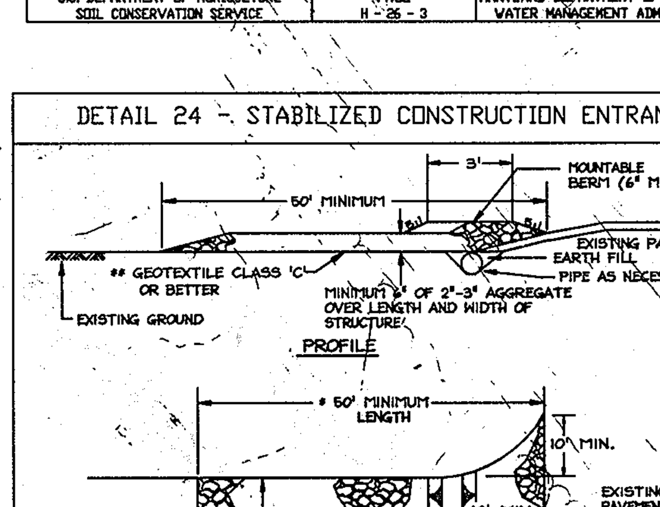
SUPER SILT FENCE

Design Criteria

Slope	Slope Steepness	Slope Length (maximum)	Silt Fence Length (maximum)
0 - 10%	0 - 10:1	Unlimited	Unlimited
10 - 20%	10:1 - 5:1	200 feet	1,500 feet
20 - 33%	5:1 - 3:1	100 feet	1,000 feet
33 - 50%	3:1 - 2:1	100 feet	500 feet
50% +	2:1 +	50 feet	250 feet

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE H - 26 - 3A	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE



1. Length - minimum of 50' (*30' for single residence lot).

2. Width - 10' minimum, should be flared at the existing road to provide a turning radius.

3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. **The plan approval authority may not require single family residences to use geotextile.

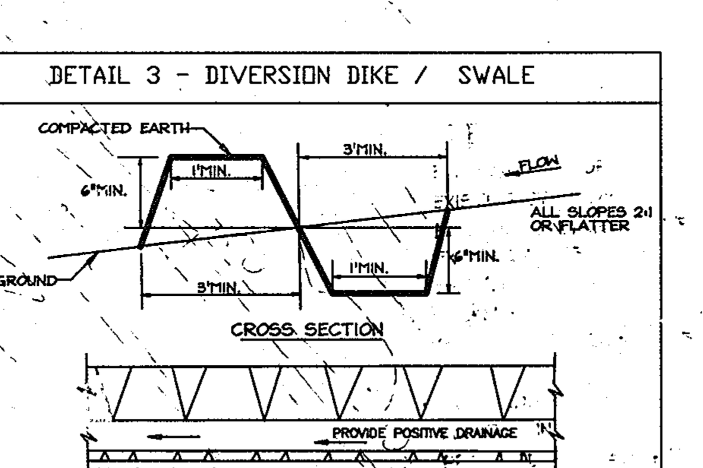
4. Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.

5. Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.

6. Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE F - 17 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 3 - DIVERSION DIKE / SWALE



PD/S-1 SEED AND MULCH (DRAINING 1 ACRE)
PD/S-2 SEED AND COVER WITH SOIL STABILIZATION MATTING OR LINE WITH SOD (DRAINING BETWEEN 1 AND 2 ACRES)

STANDARD SYMBOL PD/S-1

Construction Specifications

1. All perimeter dike/swales shall have an uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.

2. Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.

3. Runoff diverted from an undisturbed area shall outlet into an undisturbed stabilized area at a non-erosive velocity.

4. The swale shall be excavated or shaped to line, grade, and cross-section as required to meet the criteria specified in the standard.

5. Fill shall be compacted by earth moving equipment.

6. Stabilization with seed and mulch or as specified of the area disturbed by the dike and swale shall be completed within 7 days upon removal.

7. Inspection and required maintenance shall be provided after each rain event.

Note: The maximum drainage area for this practice is 2 acres.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE A - 3 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

HOWARD COUNTY SOIL CONSERVATION DISTRICT STANDARD SEDIMENT CONTROL NOTES

1. A minimum of 48 hours notice must be given to the Howard County Department of Inspections, Licenses and Permits, Sediment Control Division prior to the start of any construction (410-313-1855).

2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the most current MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL and revisions thereto.

3. Following initial soil disturbance or re-disturbance, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.

4. All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol I, Chapter 12 of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.

5. All disturbed areas must be stabilized within the time period specific above in accordance with the 1995 MARYLAND STANDARD AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seeding (Sec. 51), sod (Sec. 54), temporary seeding (Sec. 50) and mulching (Section 52). Temporary stabilization with mulch along can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.

6. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained by the Howard County Sediment Control Inspector.

7. Site Analysis:
Total Area of Site 5.5 Acres
Area Disturbed 4.09 Acres (includes Mission Road)
Area to be roofed or paved 3.72 Acres (includes Mission Road)
Area to be vegetatively stabilized 1.78 Acres
Total Cut 4100 Cu. Yds.
Total Fill 2500 Cu. Yds.
Offsite waste/borrow area location: To Be Determined

8. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.

9. Additional sediment control must be provided, if deemed necessary by the Howard County Sediment Control Inspector.

10. On all site with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.

11. Trenches for the construction of utilities is limited to three pipe lengths or that which shall be back-filled and stabilized any construction as shown on these plans by the end of each work day, whichever is shorter.

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
ROBERT C. EITEL, P.E.
PE #16108
9/29/11
DATE

STATE OF MARYLAND — ROBERT CHARLES EITEL — No. 16108 — REGISTERED PROFESSIONAL ENGINEER

12.12.08
DATE

STATE OF MARYLAND — JOHN M. HOUSEHOLDER — No. 29907 — REGISTERED PROFESSIONAL ENGINEER

SEQUENCE OF CONSTRUCTION

1. The contractor is responsible for obtaining all required permits prior to commencing any land disturbance activities. (1 day)

2. An on-site preconstruction meeting shall be conducted with the contractor and the Howard County Inspector at least 48 hours prior to the start of construction. Contact the Howard County Department of Inspections, Licenses and Permits at (410) 313-1880 to schedule. (1 day)

3. Install tree protection fence as shown on the Forest Conservation Plan (2 days).

4. Clear and grub for and install the perimeter sediment control devices including super silt fence, diversion dike, and the stabilized construction entrance (2 days)

5. Begin rough grading the site including the SWM Pond. (5 days).

6. Install Sewer House and Water House Connections. (15 days).

7. Complete all base grading, SWM Facilities and utility construction. (7 days)

8. Construct building and install other utilities (roof leaders). Install stormdrain from downstream to upstream. As soon as inlets are constructed, install At-Grade Inlet Protection. (90 days).

9. Begin curb, gutter and driveway construction and entrance from Mission Road. (5 days)

10. Base paving and install the remainder of the driveway entrance (5 days).

11. Complete all other onsite improvements. (5 days)

12. Stabilize all disturbed area and complete pond once base paving is complete. (2 days)

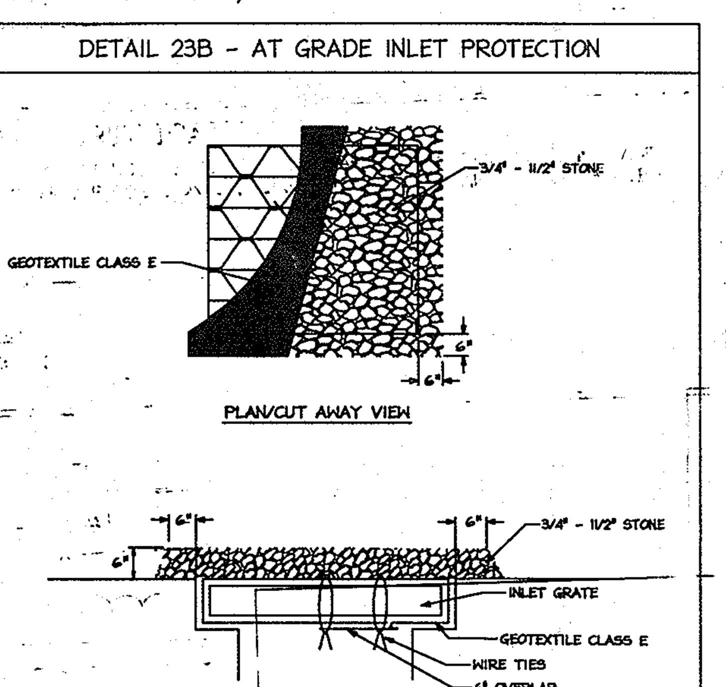
13. Surface pave all roadways and parking areas (2 days).

14. Stabilize all remaining disturbed areas (1 day).

15. With the permission of the Sediment Control Inspector remove sediment control devices. (4 days).

Total Construction Time: 143 days

DETAIL 23B - AT GRADE INLET PROTECTION



Construction Specifications

1. Lift grate and wrap with Geotextile Class E to completely cover all openings, then set grate back in place.

2. Place 3/4" to 11/2" stone, 4"-6" thick on the grate to secure the fabric and provide additional filtration.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E - 16 - 5A	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 6.5.9
Chief, Division of Land Development — Date 7/29/09
Director — Date 7/29/09

Date	No.	Revision Description

HERCULES FENCE at 8580 MISSION ROAD

OWNER / DEVELOPER
JESSUP DEVELOPMENT, LLC
MISSION BUILDING ASSOCIATES LLC
CONTACT: EVAN WINSTON
5408 BRANCHVILLE ROAD
COLLEGE PARK, MARYLAND 20740
PHONE: (301) 441-1600
FAX: (301) 441-8600

christopher consultants
engineering · surveying · land planning
©christopher consultants, ltd.
7172 columbia gateway drive (suite 100) · columbia, md. 21046-2990
410.872.8690 · metro 301.881.0148 · fax 410.872.8693

PERMIT INFORMATION CHART

PROJECT NAME 8580 MISSION ROAD		LOT/PARCEL NO. PARCEL 78		CENSUS TRACT 6069.01
DEED REF. L. 10905, F. 308	GRID NO. 18	ZONE M-1	TAX MAP 42	ELECTION DISTRICT 6TH
WATER CODE E06			SEWER CODE 2243	

TITLE: AS-BUILT
EROSION AND SEDIMENT CONTROL NOTES & DETAILS

DESIGN: KWS	SCALE: AS SHOWN	PROJECT: 075501.00
DRAWN: DAM	DATE: OCTOBER 2008	8 OF 16
CHECKED: ENJ	APPROVED: JMH	

SDP-08-44

MDC-747(SDP)

PROFESSIONAL CERTIFICATION

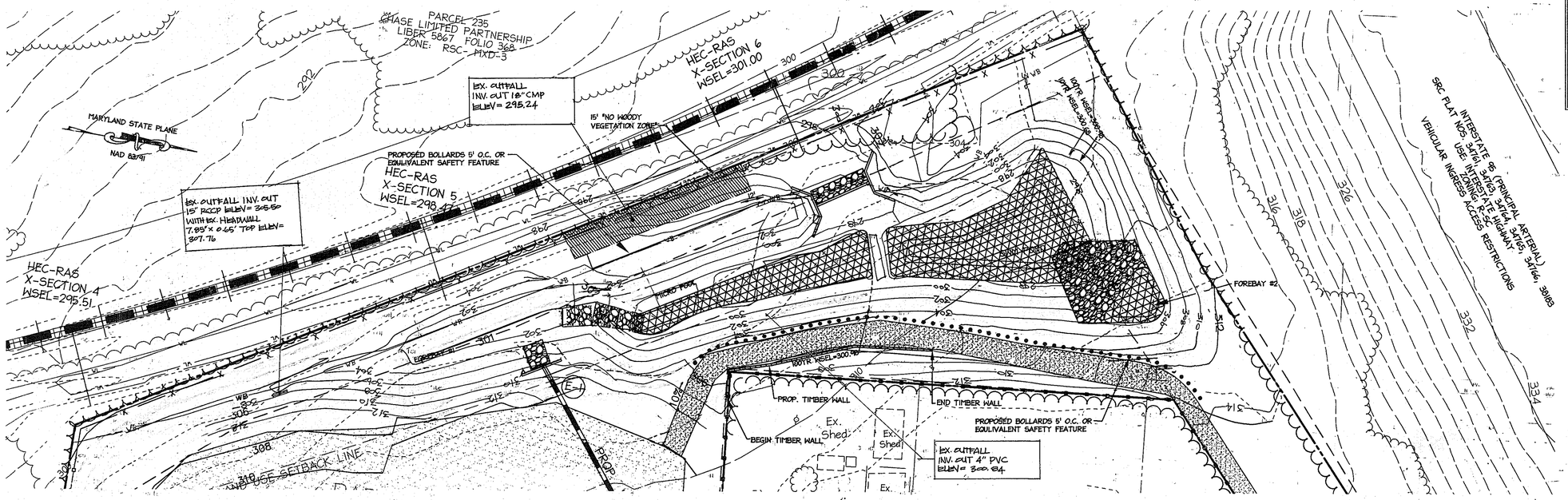
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

SIGNATURE OF ENGINEER — DATE: 8.11.09

JOHN M. HOUSEWOLDER
MD LICENSE NUMBER: 29907
EXPIRATION DATE: 1-27-2010

NOTE:

1. THE SWM POND (P-5 POCKET POND) WILL BE PRIVATELY MAINTAINED AND OPERATED, AND MAINTAINED TYPE "A" HAZARD.



PROPOSED STORMWATER MANAGEMENT POND

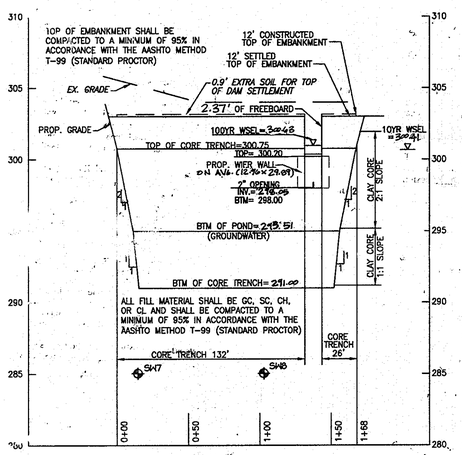
SCALE: 1" = 30'

REQUIREMENT SUMMARY TABLE

Requirement	Amount Required	Amount provided	Location /Notes
Water Quality			
SP 1	0.35 ac-ft (95%)	0.418 ac-ft	SWM Pond
SP3	0.019 ac-ft (5%)	0.019 ac-ft	Non roof top disconnection credit
Sp4	0	0	None provided 100% pervious. This area will never be developed due to setback and environmental constraints.
Total	0.37 ac-ft	0.437 ac-ft	
Channel Protection			
SP 1, 4	0.53	0.592	SWM pond
SP3	N/A	0	less than 2 cfs leaving from this point
Total	0.53 ac-ft	0.592 ac-ft	

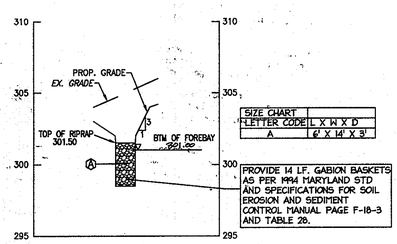
Study Point	Area (acres)	RCN	TC (hr)	1 Yr cfs	10Yr cfs	100 Yr cfs	Notes
Existing Conditions							
Sp#1	2.05	66	0.17	0.86	4.64	8.86	Sheet flow to Parcel 235
Sp#2	6.56	66	0.18	2.04	14.58	27.91	Area to Ditch along CSX tracks
Total leaving the site				2.71	19.22	36.77	**Total leaving the site**
Proposed Conditions							
Sp#1 -Total	7.98	83	0.1	13.85	37.82	(62.5)	Will be comeyed to the SWM Pond via Storm drain
Total to Pond (inflow)				13.85	37.82	58.44	provides Wqv and Cpv for Sp1
WSEL				300.18	300.68	300.92	
Total to Pond (outflow)				0.85	34.61	58.47	provides Wqv and Cpv for Sp1
WSEL				299.92	300.44	300.68	
SP#3	0.26	93	0.1	0.7	1.68	2.32	non roof top disconnection credit
SP#4	0.44	92	0.1	1.24	2.72	3.94	No WQv provided 0% impervious
Total				1.38	38.42	62.11	Area to Ditch along CSX tracks (SP's 1 and 4)
Total leaving from the site				2.02	37.08	65.25	**Total leaving from the site**

Notes: In the proposed conditions the RCN for onsite was based on 88% impervious coverage. For offsite areas assumed 28% based on zoning



EMBANKMENT PROFILE ALONG SWM POND

SCALE: 1:5 V 1:50 H

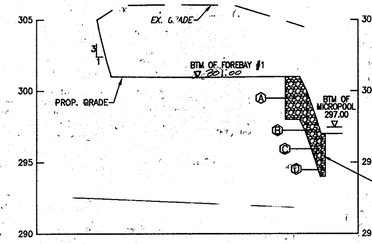


SIZE CHART	
LETTER CODE	L X W X D
A	6' X 14' X 3'

PROVIDE 14 LF. GABION BASKETS AS PER 1994 MARYLAND STD AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL MANUAL PAGE F-18-3 AND TABLE 28.

FOREBAY #1 PROFILE SECTION A-A

SCALE: 1:5 V 1:50 H



SIZE CHART	
LETTER CODE	L X W X D
A	15' X 12' X 3'
B	6' X 10' X 3'
C	3' X 9' X 3'
D	3' X 8' X 3'

PROVIDE 27 LF. GABION BASKETS AS PER 1994 MARYLAND STD AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL MANUAL PAGE F-18-3 AND TABLE 28.

FOREBAY #1 PROFILE SECTION B-B

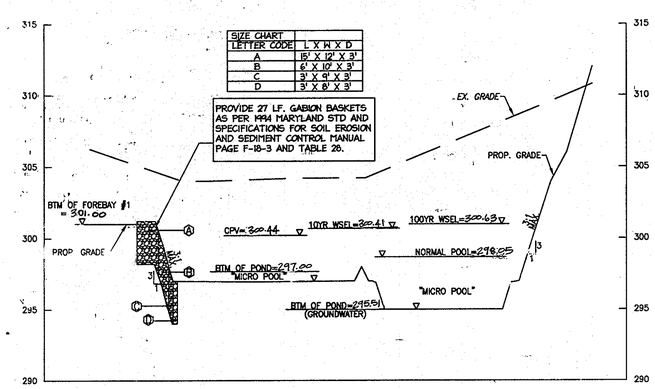
SCALE: 1:5 V 1:50 H

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

ROBERT C. LITTEL, P.E.
PE #16108

9/29/09
DATE

STATE OF MARYLAND ROBERT C. LITTEL No. 16108 REGISTERED PROFESSIONAL ENGINEER

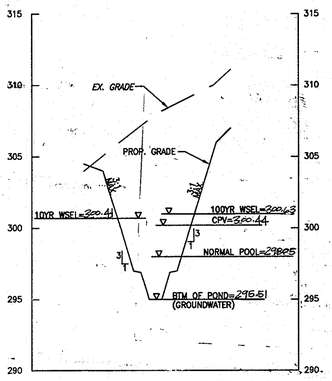


SIZE CHART	
LETTER CODE	L X W X D
A	12' X 12' X 3'
B	6' X 10' X 3'
C	3' X 9' X 3'
D	3' X 8' X 3'

PROVIDE 27 LF. GABION BASKETS AS PER 1994 MARYLAND STD AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL MANUAL PAGE F-18-3 AND TABLE 28.

SWM POND PROFILE SECTION C-C

SCALE: 1:5 V 1:50 H

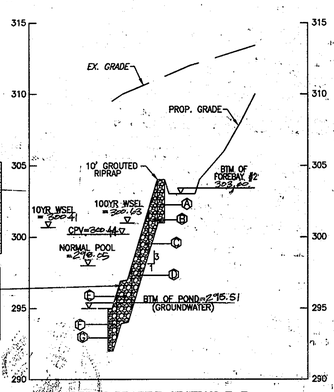


SIZE CHART	
LETTER CODE	L X W X D
A	6' X 44' X 3'
B	6' X 52' X 3'
C	6' X 44' X 3'
D	6' X 35' X 3'
E	11' X 30' X 3'
F	3' X 24' X 3'
G	3' X 18' X 3'

PROVIDE 41 LF. GABION BASKETS AS PER 1994 MARYLAND STD AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL MANUAL PAGE F-18-3 AND TABLE 28.

SWM POND PROFILE SECTION D-D

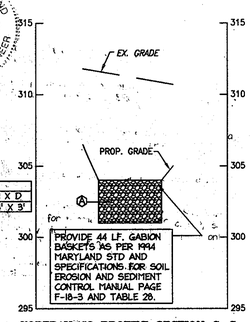
SCALE: 1:5 V 1:50 H



FOREBAY PROFILE SECTION F-F

SCALE: 1:5 V 1:50 H

SIZE CHART	
LETTER CODE	L X W X D
A	6' X 44' X 3'



PROVIDE 44 LF. GABION BASKETS AS PER 1994 MARYLAND STD AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL MANUAL PAGE F-18-3 AND TABLE 28.

FOREBAY #2 PROFILE SECTION G-G

SCALE: 1:5 V 1:50 H

8.11.09
DATE

STATE OF MARYLAND JOHN M. HOUSEWOLDER No. 29907 REGISTERED PROFESSIONAL ENGINEER

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 8/25/09

Chief, Division of Land Development — Date 8-26-09

Director, DEP — Date 8/26/09

Date	No.	Revision Description
8.4.09	1	RED LINE REVISION TO GRADING

HERCULES FENCE at 8580 MISSION ROAD

OWNER / DEVELOPER
JESSUP DEVELOPMENT, LLC
MISSION BUILDING ASSOCIATES LLC
CONTACT: EVAN WINSTON
5408 BRANCHVILLE ROAD
COLLEGE PARK, MARYLAND 20740
PHONE: (301) 441-1600
FAX: (301) 441-8600

christopher consultants
engineering · surveying · land planning
christopher consultants, ltd. — 7172 columbia gateway drive (suite 100) · columbia, md. 21046-2990 — 410.872.8080 · metro 301.881.0140 · fax 410.872.8093

PERMIT INFORMATION CHART

PROJECT NAME	LOT/PARCEL NO.	CENSUS TRACT
8580 MISSION ROAD	PARCEL 78	6069.01

DEED REF.	GRID NO.	ZONE	TAX MAP	ELECTION DISTRICT
L. 10905, F. 308	18	M-1	42	6TH

WATER CODE	SEWER CODE
E06	2243

TITLE: ~~REVISED~~ AS-BUILT
STORMWATER MANAGEMENT NOTES AND PROFILES

DESIGN: KWS	SCALE: AS SHOWN	PROJECT: 075501.00
DRAWN: DAM	DATE: AUGUST 2009	9 OF 16
CHECKED: ENJ	APPROVED: JMH	

MDC-747(SDP)

SDP-08-44

CONSTRUCTION SPECIFICATIONS

THESE SPECIFICATIONS ARE APPROPRIATE TO ALL PONDS WITHIN THE SCOPE OF THE STANDARDS FOR PRACTICE MD-378. ALL REFERENCE TO ASTM AND AASHTO SPECIFICATIONS APPLY TO THE MOST RECENT VERSION.

SITE PREPARATION
AREAS DESIGNATED TO BORROW AREAS, EMBANKMENT, STRUCTURAL WORKS SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL. ALL TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIALS SHALL BE REMOVED. CHANNEL BANKS AND SHARP BREAKS SHALL BE SLOPED TO NO STEEPER THAN 1:1. ALL TREES SHALL BE CLEARED AND GRUBBED WITHIN 15 FEET OF THE TOE OF THE EMBANKMENT.

AREAS TO BE COVERED BY THE RESERVOIR WILL BE CLEARED FOR ALL TREES, BRUSH, LOGS, FENCES, RUBBISH AND OTHER OBJECTIONABLE MATERIALS UNLESS OTHERWISE DESIGNATED ON THE PLANS. TREES, BRUSH AND STUMPS SHALL BE CUT APPROXIMATELY LEVEL WITH GROUND SURFACE. FOR DRY STORMWATER MANAGEMENT PONDS, A MINIMUM OF A 25-FOOT RADIUS AROUND THE INLET STRUCTURE SHALL BE CLEARED.

ALL CLEARED AND GRUBBED MATERIALS SHALL BE DISPOSED OF OUTSIDE AND BELOW THE LIMITS OF THE DAM AND RESERVOIR AS DIRECTED BY THE OWNER OR HIS REPRESENTATIVE. WHEN SPECIFIED, A SUFFICIENT QUANTITY OF TOPSOIL WILL BE STOCKPILED IN A SUITABLE LOCATION FOR THE USE ON THE EMBANKMENT AND OTHER DESIGNATED AREAS.

EARTH FILL
MATERIAL - THE FILL MATERIAL SHALL BE TAKEN FORM APPROVED DESIGNATED BORROW AREAS. IT SHALL BE FREE OF ROOTS, STUMPS, WOOD, RUBBISH, STONES GREATER THAN 6", FROZEN OR OTHER OBJECTIONABLE MATERIALS. FILL MATERIALS FOR THE CENTER OF THE EMBANKMENT, AND CUT OFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CH, OR CL AND MUST HAVE AT LEASE 30 PASSING THE #200 SIEVE. CONSIDERATION MAY BE GIVEN TO THE USE OF OTHER MATERIALS IN THE EMBANKMENT IF DESIGNATED BY A GEOTECHNICAL ENGINEER. SUCH SPECIAL DESIGNS MUST HAVE CONSTRUCTION SUPERVISED BY A GEOTECHNICAL ENGINEER.

EMBANKMENT CORE - THE CORE SHALL BE PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS. THE TOP WIDTH OF THE CORE SHALL BE A MINIMUM OF FOUR FEET. THE HEIGHT SHALL EXTEND UP TO AT LEAST THE 10-YEAR WATER ELEVATION OR AS SHOWN ON THE PLANS. THE SIDE SLOPES SHALL BE 1 TO 1 OR FLATTER. THE CORE SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TEMPERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY. IN ADDITION, THE CORE SHALL BE PLACED CONCURRENTLY WITH THE OUTER SHELL OF THE EMBANKMENT.

MATERIALS USED IN THE OUTER SHELL OF THE EMBANKMENT MUST HAVE THE CAPABILITY TO SUPPORT VEGETATION OF THE QUALITY REQUIRED TO PREVENT EROSION OF THE EMBANKMENT.

PLACEMENT - AREAS ON WHICH FILL IS TO BE PLACED SHALL BE SCARIFIED PRIOR TO PLACEMENT OF FILL. FILL MATERIALS SHALL BE PLACED IN MAXIMUM 8-INCH THICK (BEFORE COMPACTION) LAYERS WHICH ARE TO BE CONTINUOUS OVER THE ENTIRE LENGTH OF THE FILL. THE MOST PERMEABLE BORROW MATERIAL SHALL BE PLACED IN THE DOWNSTREAM PORTIONS OF THE EMBANKMENT. THE PRINCIPAL SPILLWAY MUST BE INSTALLED CONCURRENTLY WITH FILL PLACEMENT AND NOT EXCAVATED INTO THE EMBANKMENT.

COMPACTION - THE MOVEMENT OF THE HAULING AND SPREADING EQUIPMENT OVER THE FILL SHALL BE CONTROLLED SO THAT THE ENTIRE SURFACE OF EACH LIFT SHALL BE TRAVERSED BY NOT LESS THAN ONE THREAD TRACK OF HEAVY EQUIPMENT OR COMPACTION SHALL BE ACHIEVED BY A MINIMUM OF FOUR COMPLETE PASSES OF A SHEEPFOOT, RUBBER TIRED OR VIBRATORY ROLLER. FILL MATERIAL SHALL BE CONTAINED SUFFICIENT MOISTURE SUCH THAT THE REQUIRED DEGREE OF COMPACTION WILL BE OBTAINED WITH THE EQUIPMENT USED. THE FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SO THAT IF FORMED INTO A BALL IT WILL NOT CRUMBLE, YET NOT BE SO WET THAT WATER CAN BE SQUEEZED OUT.

WHEN REQUIRED BY THE REVIEWING AGENCY THE MINIMUM REQUIRED DENSITY SHALL NOT BE LESS THAN 95 % OF MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT WITHIN +/- 2 OF THE OPTIMUM. EACH LAYER OF FILL SHALL BE COMPACTED AS NECESSARY TO OBTAIN THAT DENSITY, AND IS TO BE CERTIFIED BY THE ENGINEER AT THE TIME ON CONSTRUCTION. ALL COMPACTION IS TO BE DETERMINED BY AASHTO METHOD T-99 (STANDARD PROCTOR).

CUT-OFF TRENCH - THE CUT-OFF TRENCH SHALL BE EXCAVATED INTO IMPERVIOUS MATERIAL ALONG OR PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS. THE BOTTOM WIDTH OF THE TRENCH SHALL BE GOVERNED BY THE EQUIPMENT USED FOR EXCAVATION, WITH THE MINIMUM WIDTH BEING FOUR FEET. THE DEPTH SHALL BE AT LEAST FOUR FEET BELOW EXISTING GRADE OR AS SHOWN ON THE PLANS. THE SIDE SLOPES OF THE TRENCH SHALL BE 1 TO 1 OR FLATTER. THE BACKFILL SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS OR HAND TEMPERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY.

STRUCTURE BACKFILL
BACKFILL ADJACENT TO PIPES OR STRUCTURES SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE ADJOINING FILL MATERIAL. THE FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED FOUR INCHES IN THICKNESS AND COMPACTED BY HAND TEMPERS OR OTHER MANUALLY DIRECTED COMPACTIONS EQUIPMENT. THE MATERIAL NEEDS TO FILL COMPLETELY ALL SPACES UNDER AND ADJACENT TO THE PIPE. AT NO TIME DURING THE BACKFILLING OPERATION SHALL DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN FOUR FEET, MEASURED HORIZONTALLY, TO ANY PART OF A STRUCTURE. UNDER NO CIRCUMSTANCED SHALL EQUIPMENT BE DRIVEN OVER AND PART OF A CONCRETE STRUCTURE OR PIPE, UNLESS THERE IS A COMPACTED FILL OF 24" OR GREATER OVER THE STRUCTURE PIPE.

STRUCTURE BACKFILL MAY BE FLOWABLE FILL MEETING THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 313 AS MODIFIED. THE MIXTURE SHALL HAVE A 100-200 PSI; 28 DAY UNCONFINED COMPRESSIVE STRENGTH. THE FLOWABLE FILL SHALL HAVE A MINIMUM PH OF 4.0 AND A MINIMUM RESISTIVITY OF 2,000 OHM-CM. MATERIALS SHALL BE PLACED SUCH THAT A MINIMUM OF 6" (MEASURED PERPENDICULAR TO THE OUTSIDE OF THE PIPE) OF FLOWABLE FILL SHALL BE UNDER (BEDDING), OVER AND, ON THE SIDES OF THE PIPE. IT ONLY NEEDS TO EXTEND UP TO THE SPRING LINE FOR RIGID CONDUITS. AVERAGE SLUMP OF THE FILL SHALL BE 7" TO ASSURE FLOWABILITY OF THE MATERIAL. ADEQUATE MEASURES SHALL BE TAKEN (SAND BAGS, ETC.) TO PREVENT FLOATING OF PIPE. WHEN USING FLOWABLE FILL, ALL METAL PIPE SHALL BE BITUMINOUS COATED. ANY ADJOINING SOIL FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT THE EXCEED FOUR INCHES IN THICKNESS AND COMPACTED BY HAND TEMPERS OR OTHER MANUALLY DIRECTED COMPACTION EQUIPMENT. THE MATERIAL SHALL COMPLETELY FILL ALL VOIDS ADJACENT TO THE FLOWABLE FILL ZONE. AT NO TIME DURING THE BACKFILLING OPERATION SHALL DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN FOUR FEET, MEASURED HORIZONTALLY, TO ANY PART OF A STRUCTURE. UNDER NO CIRCUMSTANCES SHALL EQUIPMENT BE DRIVEN OVER ANY PART OF A STRUCTURE OR PIPE UNLESS THERE IS A COMPACTED FILL OF 24" OR GREATER OVER THE STRUCTURE OR PIPE. BACKFILL MATERIAL OUTSIDE THE STRUCTURAL BACKFILL (FLOWABLE FILL) ZONE SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED OF THE CORE OF THE EMBANKMENT OR OTHER EMBANKMENT MATERIALS.

PIPE CONDUITS
ALL PIPES SHALL BE CIRCULAR IN CROSS SECTION.

CORRUGATED METAL PIPE - ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR CORRUGATED METAL PIPE:

1. MATERIALS - (POLYMER COATED STEEL PIPE) - STEEL PIPE WITH POLYMERIC COATING SHALL HAVE A MINIMUM COATING THICKNESS OF 0.01 INCH (10 MIL) ON BOTH SIDES OF THE PIPE. THIS PIPE AND IT APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-196 OR M-211 WITH WATERTIGHT COUPLING BANDS OR FLANGES. ALUMINUM PIPE WHEN USED WITH FLOWABLE FILL OR WHEN SOIL AND/OR WATER CONDITIONS WARRANT INCREASED DURABILITY, SHALL BE FULLY BITUMINOUS COATED PER REQUIREMENTS OF AASHTO SPECIFICATIONS M-190 TYPE A. ALUMINUM SURFACES THAT ARE TO BE IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH ONE COAT OF ZINC CHROMATE PRIMER OR TWO COATS OF ASPHALT. HOT DIP GALVANIZED BOLTS MAY BE USED FOR CONNECTIONS. THE PH OF THE SURROUNDING SOILS SHALL BE BETWEEN 4 AND 9.

2. COUPLING BANDS, ANTI-STEEP COLLARS, END SECTIONS, ETC., MUST BE COMPOSED OF THE SAME MATERIAL AND COATINGS AS THE PIPE. METALS MUST BE INSULATED FOR DISSIMILAR MATERIALS WITH USE OF RUBBER OR PLASTIC INSULATING MATERIALS AT LEAST 24 MILS IN THICKNESS.

3. CONNECTIONS - ALL CONNECTORS WITH PIPES MUST BE COMPLETELY WATERTIGHT. THE DRAINPIPE MUST BARREL CONNECTION TO THE RISER SHALL BE WELDED ALL AROUND WHEN THE PIPE AND RISER ARE METAL. ANTI-STEEP COLLARS SHALL BE CONNECTED TO THE PIPE IN SUCH A MANNER AS TO BE COMPLETELY WATERTIGHT. DIMPLE BANDS ARE NOT CONSIDERED TO BE WATERTIGHT.

ALL CONNECTIONS SHALL USE A RUBBER OR NEOPRENE GASKET WHEN JOINING PIPE SECTIONS. THE END OF EACH PIPE SHALL BE RE-ROLLED AN ADEQUATE NUMBER IF CORRUGATIONS TO ACCOMMODATE THE BANDWIDTH. THE FOLLOWING TYPE CONNECTIONS ARE ACCEPTABLE FOR PIPES LESS THAN 24 INCHES IN DIAMETER: FLANGES ON BOTH ENDS OF THE PIPE WITH A CIRCULAR 3/8 INCH CLOSED CELL NEOPRENE GASKET, PRE-PUNCHED TO THE FLANGE BOLT CIRCLE, SANDWICHED BETWEEN ADJACENT FLANGES; A 12-INCH WIDE STANDARD LAP TYPE BAND WITH 12-INCH BY3/8-INCH THICK CLOSED CELL CIRCULAR NEOPRENE; AND A 12-INCH WIDE HUGGER TYPE BAND WITH O-RING GASKETS HAVING A MINIMUM DIAMETER OF ? INCH GREATER THAN THE CORRUGATION DEPTH. PIPES 24 INCHES IN DIAMETER AND LARGER SHALL BE CONNECTED BY A 24 INCH LONG ANNULAR CORRUGATED BAND USING A MINIMUM OF 4 (FOUR) RODS AND LUGS, 2 ON EACH CONNECTING PIPE END. A 24-INCH WIDE BY 3/8-INCH THICK CLOSED CELL CIRCULAR NEOPRENE GASKET WILL BE INSTALLED WITH 12 INCHES ON THE END OF EACH PIPE. FLANGED JOINTS WITH 3/8 INCH CLOSED CELL GASKETS THE FULL WIDTH OF THE FLANGE IS ALSO ACCEPTABLE.

HELICALLY CORRUGATED PIPE SHALL HAVE EITHER CONTINUOUSLY WELDED SEAMS OR HAVE LOCK SEAMS WITH INTERNAL CAULKING OR A NEOPRENE BEAD.

4. BEDDING - THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK OR SOFT, SPONGY OR OTHER UNSUITABLE SOIL IN ENCOUNTERED, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.

5. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL"

6. OTHER DETAILS (ANTI-STEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

REINFORCED CONCRETE PIPE - ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR REINFORCED CONCRETE PIPE.

1. MATERIALS - REINFORCED CONCRETE PIPE SHALL HAVE BELL AND SPIGOT JOINTS WITH RUBBER GASKETS AND SHALL EQUAL OR EXCEED ASTM C-361.

2. BEDDING - REINFORCED CONCRETE PIPE CONDUITS SHALL BE LAID IN A CONCRETE BEDDING/ CRADLE FOR THEIR ENTIRE LENGTH. THIS BEDDING / CRADLE SHALL CONSIST OF HIGH SLUMP CONCRETE PLACED UNDER THE PIPE AT LEAST 50% OF ITS OUT-SIDE DIAMETER WITH A MINIMUM THICKNESS OF 6 INCHES. WHERE A CONCRETE CRADLE IS NOT NEEDED FOR STRUCTURAL REASONS, FLOWABLE FILL MAY BE USED AS DESCRIBED IN THE "STRUCTURE BACKFILL" SECTION OF THIS STANDARD. GRAVEL BEDDING IS NOT PERMITTED.

3. LAYING PIPE - BELL AND-SPIGOT PIPE SHALL BE PLACED WITH THE BELL END UPSTREAM. JOINTS SHALL BE MADE IN ACCORDANCE WITH RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL. AFTER THE JOINTS ARE SEALED FOR THE ENTIRE LINE, THE BEDDING SHALL BE PLACED SO THAT ALL SPACES UNDER THE PIPE ARE FILLED. CARE SHALL BE EXERCISED TO PREVENT ANY DEVIATION FORM THE ORIGINAL LINE AND GRADE OF THE PIPE. THE FIRST JOINT MUST BE LOCATED WITHIN 4 FEET FROM THE RISER.

4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL"

5. OTHER DETAILS (ANTI-STEEP COLLARS, VALVES ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

PLASTIC PIPE - THE FOLLOWING CRITERIA SHALL APPLY FOR PLASTIC PIPE:

1. MATERIALS - PVC PIPE SHALL BE PVC-1120 OR PVC-1220 CONFORMING TO ASTM D-1785 OR ASTM D2241. CORRUGATED HIGH DENSITY POLYETHYLENE (HDPE) PIPE, COUPLINGS AND FITTINGS SHALL CONFORM TO THE FOLLOWING: 4" - 10" INCH PIPE SHALL MEET THE REQUIREMENTS OF AASHTO M252 TYPE S, AND 12" - 24" INCH PIPE SHALL MEET THE REQUIREMENTS OF AASHTO M294

2. JOINTS AND CONNECTIONS TO ANTI-STEEP COLLARS SHALL BE COMPLETELY WATERTIGHT

3. BEDDING - THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK OR SOFT SPONGY OR OTHER UNSTABLE SOIL IN ENCOUNTERED, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.

4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL"

5. OTHER DETAILS (ANTI-STEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

POLYVINYL CHLORIDE (PVC) PIPE - ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR POLYVINYL CHLORIDE (PVC) PIPE:

1. MATERIALS - PVC PIPE SHALL BE PVC-1120 OR PVC-1220 CONFORMING TO ASTM D-1785 OR ASTM D-2241.

2. JOINTS AND CONNECTIONS TO ANTI-SEEP COLLARS SHALL BE COMPLETELY WATERTIGHT.

3. BEDDING - THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK OR SOFT, SPONGY OR OTHER UNSUITABLE SOIL IS ENCOUNTERED, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.

4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILLING."

5. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

ROCK RIPRAP
ROCK RIPRAP SHALL BE PLACED TO THE REQUIRED THICKNESS IN ONE OPERATION. THE ROCK SHALL BE DELIVERED AND PLACED IN A MANNER THAT WILL INSURE THAT RIPRAP IN PLACE SHALL BE REASONABLY HOMOGENEOUS WITH THE LARGER ROCKS UNIFORMLY DISTRIBUTED AND FIRMLY IN CONTACT ONE TO ANOTHER WITH THE SMALL ROCKS FILLING THE VOIDS BETWEEN THE LARGER ROCKS. FILTER CLOTH SHALL BE PLACED UNDER RIPRAP AND SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 919.12.

DRAINAGE DIAPHRAGMS - WHEN A DRAINAGE DIAPHRAGM IS USED, A REGISTERED PROFESSIONAL ENGINEER WILL SUPERVISE THE DESIGN AND CONSTRUCTION INSPECTION.

CONCRETE
CONCRETE SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION MATERIALS, SECTION 414, MIX NO. 3.

NOTES:

1. ANTI-SEEP COLLARS SHALL BE PLACED A MINIMUM OF 2.0 FT. FROM PIPE JOINTS.

2. THE FIRST JOINT WHILE LAYING MUST BE LOCATED WITH 4.0 FT. FROM THE RISER.

3. ALL ANTI-SEEP COLLARS AND PIPE CONNECTION WITH RISER STRUCTURE SHALL BE WATERTIGHT.

4. FILL MATERIAL FOR THE CENTER OF THE EMBANKMENT AND CUT OFF TRENCH SHALL CONFORM TO UNIFORM SOIL CLASSIFICATION GC, SC, CH OR CL.

5. OFF-SITE BORROW OR SPOIL AREAS MUST HAVE AN APPROVED AND ACTIVE SEDIMENT CONTROL PLAN.

STABILIZATION
ALL BORROW AREAS SHALL BE GRADED TO PROVIDE PROPER DRAINAGE AND LEFT IN A SIGHTLY CONDITION. ALL EXPOSED SURFACES OF THE EMBANKMENT, SPILLWAY, SPOIL AND BORROW AREAS, AND BERMS SHALL BE STABILIZED BY SEEDING, LIMING, FERTILIZING AND MULCHING IN ACCORDANCE WITH THE NATURAL RESOURCE CONSERVATION SERVICE STANDARDS AND SPECIFICATIONS FOR CRITICAL AREA PLANTING (MD-342) OR AS SHOWN ON THE ACCOMPANYING DRAWINGS.

EROSION AND SEDIMENT CONTROL
CONSTRUCTION OPERATIONS WILL BE CARRIED OUT IN SUCH A MANNER THAT EROSION WILL BE CONTROLLED AND WATER AND AIR POLLUTION MINIMIZED. STATE AND LOCAL LAWS CONCERNING POLLUTION ABATEMENT WILL BE FOLLOWED. CONSTRUCTION PLANS SHALL DETAIL EROSION AND SEDIMENT CONTROL MEASURES.

ROCK RIPRAP SHALL MEET THE REQUIREMENT OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION MATERIALS, SECTION 311.

GEOTEXTILE SHALL BE PLACED UNDER ALL RIPRAP AND SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION MATERIALS, SECTION 921.09, CLASS C

CARE OF WATER DURING CONSTRUCTION
ALL WORK ON PERMANENT STRUCTURES SHALL BE CARRIED OUT IN AREAS FREE FROM WATER. THE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN ALL TEMPORARY DIKES, LEVEES, COFFERDAMS, DRAINAGE CHANNELS AND STREAMS DIVERSIONS NECESSARY TO PROTECT THE AREAS TO BE OCCUPIED BY THE PERMANENT WORKS. THE CONTRACTOR SHALL ALSO FURNISH, INSTALL, OPERATE, AND MAINTAIN ALL NECESSARY PUMPING AND OTHER PARTS OF THE WORK FREE FROM WATER AND FOR MAINTAINING THE EXCAVATIONS, FOUNDATION, AND OTHER PARTS OF THE WORK FREE FROM WATER AS REQUIRED OR DIRECTED BY THE ENGINEER FOR CONSTRUCTING EACH ART OF THE WORK.... AFTER HAVING SERVED THEIR PURPOSE, ALL TEMPORARY PROTECTIVE WORKS SHALL BE REMOVED OR LEVELED AND GRADED TO THE EXTENT REQUIRED TO PREVENT OBSTRUCTION IN ANY DEGREE WHATSOEVER OF THE FLOW OF WATER TO THE SPILLWAY OR OUTLET WORKS AND SO AS NOT TO INTERFERE IN ANY WAY WITH THE OPERATION OR MAINTENANCE OF THE STRUCTURE. STREAM DIVERSIONS SHALL BE MAINTAINED UNTIL FULL FLOW CAN BE PASSED THROUGH THE PERMANENT WORKS. THE REMOVAL OF WATER FROM THE REQUIRED EXCAVATION AND THE FOUNDATION SHALL BE ACCOMPLISHED IN A MANNER AND TO THE EXTENT THAT WILL MAINTAIN STABILITY OF THE EXCAVATED SLOPES AND BOTTOM REQUIRED EXCAVATIONS AND WILL ALLOW SATISFACTORY PERFORMANCE OF ALL CONSTRUCTED OPERATIONS. DURING THE PLACING AND COMPACTING OF MATERIAL IN REQUIRED EXCAVATIONS BEING REFILLED SHALL BE MAINTAINED BELOW THE BOTTOM OF THE EXCAVATION AT SUCH LOCATIONS WHICH MAY REQUIRE DRAINING THE WATER SUMPS FROM WHICH THE WATER SHALL BE PUMPED.

INSPECTION SCHELDULE AND NOTES

1. REFER TO THE HOWARD COUNTY DESIGN MANUAL I, SECTION 5.4.2. FOR ALL INSPECTION GUIDELINES.
2. THE DEVELOPER SHALL NOTIFY THE COUNTY AT LEAST 48 HOURS BEFORE COMMENCING ANY WORK IN CONJUNCTION WITH THE STORMWATER MANAGEMENT PLAN AND UPON COMPLETION OF THE FACILITIES.
3. INSPECTORS SHALL BE CONDUCTED BY THE DEPARTMENT OF PUBLIC WORKS OR ITS AUTHORIZED REPRESENTATIVE. WRITTEN REPORTS SHALL BE MADE OF THE PERIODIC INSPECTIONS NECESSARY DURING CONSTRUCTION OF STORMWATER MANAGEMENT SYSTEMS TO ENSURE COMPLIANCE.
4. A MINIMUM, REGULAR INSPECTIONS SHALL BE MADE AND DOCUMENTED AT THE FOLLOWING STAGES OF CONSTRUCTION:
   A. UPON COMPLETION OF EXCAVATION TO SUB-FOUNDATION AND WHEN REQUIRED, INSTALLATION OF STRUCTURAL SUPPORTS OR REINFORCEMENT FOR STRUCTURES, INCLUDING BUT NOT LIMITED TO CORE TRENCHES FOR STRUCTURAL EMBANKMENTS, INLET AND OUTLET STRUCTURES, ANTI-SEEP COLLARS OR FILTER DIAPHRAGMS, WATERTIGHT CONNECTORS ON PIPES AND TRENCHES FOR ENCLOSED STORM DRAIN FACILITIES;
   B. DURING PLACEMENT OF STRUCTURAL FILL, CONCRETE AND INSTALLATION OF PIPING AND CATCH BASINS;
   C. DURING BACKFILL OF FOUNDATION AND TRENCHES;
   *MICRO POOL
   D. DURING EMBANKMENT CONSTRUCTION
   E. UPON REMOVAL OF ANY TEMPORARY SEDIMENT CONTROL FEATURE OR DEVICES;
   F. UPON COMPLETION OF FINAL GRADING AND ESTABLISHMENT OF PERMANENT STABILIZATION

TEST BORING LOGS

VATC — 9231 Rumsey Road, Columbia, MD 21045, Phone: (410) 381-0232, Fax: (410) 381-0247 — TEST BORING LOG

Client: Hercules Fence Facility; Project Name: Mission Road Property; Project Location: 8580 Mission Road, Jessup, Howard County, MD; Job #: 009.35471.0001; Drawn by: J. Demuren; Approved by: W. Tucker. Hammer Wt. 140 lbs.; Hammer Drop 30 in.; Spoon Sampler OD 2 in.; Boring Method HSA.

Boring P-3 — Date Started 8/31/07, Date Completed 8/31/07, Driller Larry Cisler, Field Professional J. Demuren. Surface elevation 307.7 feet msl.

Depth/Elev.	Soil Classification	Sample	N (blows)	Moisture %
	6" TOPSOIL			
1.0	MEDIUM DENSE to DENSE, tan and brown, silty fine to medium SAND (SM), trace gravel and quartz, moist	1 SPT	8-16-19	6.6
		2 SPT	13-12-9	18.7
		3 SPT	6-9-10	20.1
6.0	MEDIUM STIFF, brown, sandy SILT (ML), moist			
7.5	MEDIUM STIFF, red-brown, gray and olive, sandy CLAY (CH), moist	4 SPT	6-4-6	
10.0 / 297.7	BORING TERMINATED AT 10 FEET BELOW GROUND SURFACE			

Cave Depth 2.5 ft. Page 1 of 1

Boring P-4 — Date Started 8/31/07, Date Completed 8/31/07, Driller Larry Cisler, Field Professional J. Demuren.

Depth/Elev.	Soil Classification	Sample	N (blows)	Moisture %
	6" TOPSOIL			
1.0	MEDIUM DENSE, tan fine grained SAND (SM), trace to little gravel and quartz, little silt, moist	1 SPT	9-12-14	2.2
		2 SPT	13-13-17	3.7
5.0 / 302.0	MEDIUM DENSE, tan sandy GRAVEL (GM), trace quartz, little to some silt, moist	3 SPT	8-18-22	5.6
7.5	STIFF, orange, brown and gray, CLAY (CH) trace to little fine sand, moist	4 SPT	3-5-5	
10.0 / 297.0	BORING TERMINATED AT 10 FEET BELOW GROUND SURFACE			

Page 1 of 1

Boring P-5 — Date Started 8/30/07, Date Completed 8/30/07, Driller Larry Cisler, Field Professional J. Demuren. Surface elevation 310.8 feet msl.

Depth/Elev.	Soil Classification	Sample	N (blows)	Moisture %
	6" TOPSOIL			
1.0 / 309.8	MEDIUM DENSE, brown silty fine to medium grained SAND (SM), moist	1 SPT	6-10-8	8.7
3.0 / 307.8	LOOSE, gray and olive brown, medium grained clayey SAND (SC), trace organics, moist	2 SPT	4-3-6	12.6
		3 SPT	3-3-6	18.1
7.5 / 303.4	STIFF, orange brown sandy CLAY (CL), little to some gravel, moist	4 SPT	3-5-8	
10.0 / 300.8	BORING TERMINATED AT 10 FEET BELOW GROUND SURFACE			

Cave Depth 5.0 ft. Page 1 of 1

Boring SWM-4 — Date Started 8/30/07, Date Completed 8/30/07, Driller Larry Cisler, Field Professional J. Demuren. Surface elevation 305.6 feet msl.

Depth/Elev.	Soil Classification	Sample	N (blows)	Moisture %
	6" TOPSOIL			
1.0	LOOSE, tan and brown, silty fine to medium grained SAND (SM), trace clay, moist	1 SPT	4-4-6	9.5
		2 SPT	3-4-5	12.8
4.5 / 302.1	MEDIUM STIFF, tan brown, fine to medium grained sandy SILT (ML), moist	3 SPT	6-3-4	31.0
8.0 / 298.6	MEDIUM STIFF, brown and dark brown, fine silty CLAY (CL), trace sand, moist	4 SPT	3-4-5	
10.0 / 296.6	BORING TERMINATED AT 10 FEET BELOW GROUND SURFACE			

Cave Depth 4.5 ft. Page 1 of 1

Boring SWM-6 — Date Started 8/30/07, Date Completed 8/30/07, Driller Larry Cisler, Field Professional J. Demuren. Surface elevation 304.5 feet msl.

Depth/Elev.	Soil Classification	Sample	N (blows)
	6" TOPSOIL		
1.0 / 303.5	LOOSE to MEDIUM DENSE, brown medium to coarse grained clayey SAND (SC), moist	1 SPT	3-2-3
		2 SPT	3-4-6
6.0 / 298.5	MEDIUM STIFF, white gray and red brown, SILTY CLAY (CL), moist	3 SPT	7-4-3
7.5 / 297.0	Medium stiff, olive brown silty CLAY (CH), moist	4 SPT	1-2-3
10.0 / 294.5	BORING TERMINATED AT 10 FEET BELOW GROUND SURFACE		

Cave Depth 4.0 ft. Page 1 of 1

Boring SWM-7 — Date Started 1/21/07, Date Completed 1/21/07, Driller Free State, Field Professional W. Tucker. Surface elevation 303.6 feet msl.

Depth/Elev.	Soil Classification	Sample	N (blows)
	6" TOPSOIL		
1.0 / 302.6	STIFF, tan, white-gray, olive-brown and red-brown, fine sandy SILT (ML) trace to little clay, trace fine to medium gravel, trace organics, moist	1 SPT	3-6-9
		2 SPT	4-6-7
		3 SPT	6-10-11
		4 SPT	4-5-6
10.0 / 293.6	MEDIUM STIFF to STIFF, Green-gray and light brown, fine sandy SILT (ML), moist	5 SPT	3-5-9
		6 SPT	3-4-6
20.0 / 283.6	BORING TERMINATED AT 20 FEET BELOW GROUND SURFACE		

Cave Depth 19.0 ft. Page 1 of 1

Boring SWM-9 — Date Started 1/21/07, Date Completed 1/21/07, Driller Free State, Field Professional W. Tucker. Surface elevation 310.6 feet msl.

Depth/Elev.	Soil Classification	Sample	N (blows)
	6" TOPSOIL		
1.0 / 309.6	LOOSE, brown, medium to coarse SAND (SM), trace to little silt, little to some gravel, moist	1 SPT	3-4-6
3.5 / 307.1	MEDIUM STIFF to STIFF, white-gray and tan-brown, CLAY (CL), trace sand and organics, moist	2 SPT	2-4-5
6.0 / 304.6	MEDIUM STIFF, tan-brown silty CLAY (CH), moist	3 SPT	3-5-7
		4 SPT	3-5-7
12.0 / 298.6	MEDIUM STIFF to STIFF, dark gray, SILT (ML), trace to little fine sand, moist	5 SPT	2-4-5
		6 SPT	3-5-9
20.0 / 290.6	BORING TERMINATED AT 20 FEET BELOW GROUND SURFACE		

At Completion (open hole) 15.0 ft. Cave Depth 19.0 ft. Page 1 of 1

Boring SWM-8 — Date Started 1/21/07, Date Completed 1/21/07, Driller Free State, Field Professional W. Tucker. Surface elevation 305.2 feet msl.

Depth/Elev.	Soil Classification	Sample	N (blows)
	4" TOPSOIL		
1.0 / 304.2	LOOSE, brown, clayey SAND (SC), little to some quartz gravel, moist	1 SPT	5-3-6
3.5 / 301.7	MEDIUM DENSE, brown and red-brown, medium to coarse SAND (SC), trace to little clay, moist	2 SPT	20-12
6.0 / 299.2	MEDIUM STIFF to STIFF, white and tan, CLAY (ML), trace sand, moist	3 SPT	6-5-5
		4 SPT	6-6-5
13.5 / 291.7	MEDIUM STIFF to VERY STIFF, blue-gray, fine sandy SILT (ML), moist	5 SPT	2-4-5
18.0 / 287.2	MEDIUM DENSE, green gray, silty fine SAND (SM), moist	6 SPT	6-9-16
20.0 / 285.2	BORING TERMINATED AT 20 FEET BELOW GROUND SURFACE		

Cave Depth 19.0 ft. Page 1 of 1

Sample Type: SS - Driven Split Spoon; ST - Pressed Shelby Tube; CA - Continuous Flight Auger; RC - Rock Core; CU - Cuttings; CT - Continuous Tube. Boring Method: HSA - Hollow Stem Augers; CFA - Continuous Flight Augers; DC - Driving Casing; MD - Mud Drilling.

OPERATION ON MAINTENANCE SCHEDULE

IN GENERAL, OPERATION TIMES ARE REQUIRED FOR THE FOLLOWING MAJOR AREAS: SUPPORT DATA, INSPECTIONS, AND EMERGENCY PROCEDURES. THE MAINTENANCE ITEMS REQUIRED COVER THE FOLLOWING MAJOR AREAS: EMBANKMENT, RESERVOIR, SPILLWAY AND OUTLET WORKS.

OPERATIONS

I. SUPPORT DATA
A. BACKGROUND INFORMATION -THE OWNER SHOULD MAINTAIN A COMPLETE UP-TO-DATE "AS-BUILT" PLAN AND DESIGN SPECIFICATIONS FOR THE DAM. ALSO A COPY OF THE COMPLETED SMALL POND SUMMARY SHEET (MD-14) SHOULD BE AVAILABLE.
B. RECORD KEEPING -WRITTEN RECORDS OF MAINTENANCE AND OBSERVATIONS SHOULD BE KEPT. PHOTOGRAPHS ARE VALUABLE FOR RECORDING OBSERVATIONS AND CHANGES.

II. INSPECTIONS
A. INSPECTION GUIDELINES -OWNERS ARE TO MAKE A VISUAL INSPECTION AT LEAST TWICE A YEAR. ONE IN THE SUMMER AFTER MOWING, AND ONCE IN THE WINTER WHEN THE VEGETATIVE COVER IS DORMANT. INSPECTIONS ARE TO BE MADE AFTER EXTREME RAINFALL EVENTS. OWNERS ARE ENCOURAGED TO HAVE AN INSPECTION BY A REGISTERED PROFESSIONAL ENGINEER AT LEAST ONCE EVERY 5 YEARS.
B. DAM INSPECTION CHECKLIST -SHALL BE INCLUDED AS PART OF THE OPERATION AND MAINTENANCE PLAN AND COMPLETED AT LEAST ANNUALLY. SEE APPENDIX A OF SCS MD STANDARDS AND SPECIFICATIONS POND (CODE 378) FOR THE CHECK LIST.

III. EMERGENCY PROCEDURES
A. SURVEILLANCE -INSPECT DAILY OR MORE OFTEN UNDER ADVERSE CONDITIONS OF HEAVY OR EXTENDED RAINFALL, FLASH FLOOD WARNINGS OR SNOW MELT. INSPECT FOR OVERTOPPING FAILURES, PIPING OR SEEPAGE FAILURES, AND STRUCTURAL FAILURES. IF ANY OF THE FOLLOWING CONDITIONS ARE NOTED, EMERGENCY PROCEDURES ARE WARRANTED: MUDDY WATER IS FLOWING FROM THE DOWNSTREAM SLOPE OR TOE; CRACKS OR DEPRESSIONS ARE FORMING ON THE EMBANKMENT; OR FLOOD FLOW OVER TOP OF THE EMBANKMENT IS IMMINENT.
B. MITIGATION -PROVIDE FOR LOWERING THE RESERVOIR OR SAND BAGGING BEFORE OVER TOPPING. ACTION TO BE TAKEN FOR PIPING INCLUDES LOWERING THE POOL AND ATTEMPTING TO PLUG THE UPSTREAM END WITH SUITABLE MATERIAL.
C. NOTIFICATION -TIME PERMITTING CONSULT A PROFESSIONAL ENGINEER EXPERIENCED IN DAM DESIGN AND OPERATION TO DETERMINE THE EXTENT OF DAMAGES AND NECESSARY REPAIRS. BEFORE MAJOR REPAIRS CONTACT PRINCE GEORGES SOIL CONSERVATION DISTRICT OR MARYLAND DAM SAFETY DIVISION FOR APPROVAL. IN THE CASE OF ANTICIPATED DAM FAILURE, THE LOCAL FIRE AND RESCUE OR POLICE DEPARTMENT SHOULD BE NOTIFIED REGARDING THE POTENTIAL EMERGENCY. THE ULTIMATE RESPONSIBILITY FOR IMPLEMENTATION OF A WARNING PLAN THAT INCLUDES THE DANGER REACH RESTS WITH THE DAM OWNER.

IV. EMBANKMENT
A. VEGETATION -PROPER VEGETATION IS REQUIRED ON EARTH DAMS. THE PROPER SELECTION OF GRASSES, SEEDING RATES, PLANTING DATES AND VEGETATION MAINTENANCE IS AVAILABLE IN MD SCS STANDARDS AND SPECIFICATIONS FOR CRITICAL AREA PLANNING (MD-342) OR THE MD STANDARDS AND SPECIFICATIONS FOR SEDIMENT AND EROSION CONTROL.
B. TREES AND BRUSH -TREES AND BRUSH WILL NOT BE ALLOWED ON THE EMBANKMENT. TREES THAT HAVE BEEN ALLOWED TO GROW ON THE DAM SHALL BE REMOVED. STUMPS LESS THAN 8 INCHES IN DIAMETER CAN BE LEFT IN PLACE IF TREATED WITH A SILVICIDE. FOR TREES GREATER THAN 8 INCHES IN DIAMETER, ALL WOODY MATERIAL SHOULD BE REMOVED TO ABOUT 30 INCHES BELOW THE GROUND SURFACE.
C. MOWING AND BRUSH REMOVAL -MOWING IS NECESSARY TO CONTROL THE ESTABLISHMENT AT WOODY GROWTH AND TO MAINTAIN THE VEGETATIVE COVER. THE EMBANKMENT, A 25 FOOT WIDE BUFFER STRIP ADJACENT TO THE TOE, UPSTREAM AND DOWNSTREAM OF THE EMBANKMENT, AND THE AREA WITHIN 50 FEET OF THE CONTROL STRUCTURES NEEDS TO BE MOWED. MOWING SHALL BE DONE AT LEAST ONCE PER YEAR (MID TO LATE SUMMER) BUT MAY BE DONE MORE OFTEN AS DESIRED.
D. EROSION AND SLOPE PROTECTION -THE RATE OF EROSION IS DIRECTLY RELATED TO THE LACK OF VEGETATION. PROMPT REPAIR OF ERODED AREAS ARE REQUIRED. VEGETATION SHOULD BE INSPECTED IN THE EARLY SPRING AND LATE SUMMER AND ANY BARE OR ERODED AREAS REPAIRED AND RESEEDED. PROBLEM EROSION AREAS OF PEDESTRIAN TRAFFIC OR ABUTMENT CONTACTS SHOULD BE CONTROLLED WITH FILTER CLOTH AND ROCK RIP RAP. THE UPSTREAM FACE OF A DAM CAN BE PROTECTED FROM WAVE EROSION BY THE SAME METHOD.
E. SEEPAGE -MUST BE CONTROLLED IN QUANTITY AND VELOCITY TO MINIMIZE DAMAGE TO THE DAM. REGULAR MONITORING TO DETECT WET AREAS, "SPRING" FLOW, "PIPING" AND "BOILS" ON THE DOWNSTREAM EMBANKMENT SHOULD BE DONE. EXCESSIVE SEEPAGE PRESSURE CAN THREATEN THE DOWNSTREAM SLOPE STABILITY. SEEPAGE FLOW WHICH IS MUDDIED BY SOIL IS EVIDENCE OF "PIPING" AND "BOILS". WHEN THIS OCCURS, COMPLETE FAILURE MAY HAPPEN WITHIN HOURS AND PROFESSIONAL ADVICE SHOULD BE OBTAINED IMMEDIATELY. TYPICAL METHODS SHOULD BE USED TO CONTROL THE QUANTITY OF SEEPAGE ARE INSTALLATION OF AN UPSTREAM BLANKET, OR THE INSTALLATION OF DRAINAGE TRENCHES OR DRAINS. ALL OF THESE DESIGNS MUST BE APPROVED BY PGSCD BEFORE INSTALLATIONS.
F. STABILITY -LARGE CRACKS, SLIDES, SLOUGHING AND EXCESSIVE SETTLEMENT ARE SIGNS OF EMBANKMENT DISTRESS AND INDICATE THAT REMEDIAL WORK IS REQUIRED. SOIL ADDED TO RESTORE AN EMBANKMENT MUST BE PROPERTY "KEYED" INTO THE BASE MATERIAL. REPAIR OF THESE CONDITIONS ARE NOT CONSIDERED ROUTINE MAINTENANCE AND MUST BE APPROVED BY PGSCD.
G. RODENT -CONTROL OF RODENTS SUCH AS BEAVER, GROUNDHOG AND MUSKRAT BURROWS SERVE AS PATHWAYS FOR SEEPAGE. BEAVERS MAY PLUG THE SPILL WAY AND RAISE THE POOL LEVEL. RODENT REMOVAL AND ELIMINATION OF BURROWS IS REQUIRED WHERE ENCOUNTERED.
H. CREST OF DAM -SHOULD BE GRADED TO DIRECT ALL SURFACE DRAINAGE INTO IMPOUNDMENT. WHERE ACCESS ROADS CROSS THE DAM ANY RUTS THAT DEVELOP SHOULD BE REPAIRED AS SOON AS POSSIBLE.

V. SPILLWAY AND OUTLET WORKS
A. CONDUITS -ALL CONDUITS SHOULD BE INSPECTED THOROUGHLY ONCE A YEAR. INSPECT FOR IMPROPER ALIGNMENT (SAGGING), ELONGATION AND DISPLACEMENT AT JOINTS, CRACKS, LEAKS, SURFACE WEAR, LOSS OF PROTECTIVE COATINGS, CORROSION AND BLOCKAGE.
B. TRASH RACKS -THE TRASH RACK UNIT SHOULD BE CHECKED PERIODICALLY AND ESPECIALLY AFTER STORM EVENTS. ACCUMULATED DEBRIS SHOULD BE REMOVED AND MAINTENANCE PERFORMED IF NECESSARY. UNDER NO CIRCUMSTANCES SHOULD THE TRASH RACK BE REMOVED FOR AN EXTENDED PERIOD. ANNUAL MAINTENANCE FOR CORROSION PROTECTION SHOULD BE PROVIDED.
C. CONCRETE -SURFACES SHOULD BE INSPECTED FOR CRACKING, SPALLING, DISPLACEMENT OR MOVEMENT, AND DETERIORATION BY WEATHERING, CHEMICAL REACTIONS OR LEACHING. EXTENSIVE CRACKING, SLAB OR WALL MOVEMENT, LARGE AREAS OF EXPOSED REINFORCING STEEL AND SEVERE UNDERMINING REQUIRE PROFESSIONAL ADVICE AND PGSCD APPROVAL BEFORE REPAIRS CAN BE MADE. MINOR REPAIRS OF PATCHING, GROUTING, AND COATINGS CAN BE PERFORMED DURING ROUTINE MAINTENANCE.
D. VEGETATED EARTH SPILLWAYS -AN EMERGENCY SPILLWAY IS DESIGNED TO PASS INFREQUENT LARGE FLOOD FLOWS AROUND THE DAM TO PREVENT OVER TOPPING. THE VEGETATIVE COVER SHOULD BE MAINTAINED THE SAME AS THE EMBANKMENT TO PROVIDE A VIGOROUS GRASS COVER. PROMPT REPAIR OF EROSION DAMAGE AND REMOVAL OF FLOW OBSTRUCTIONS IS REQUIRED.
E. OUTLET -EROSION AT THE SPILLWAY OUTLET IS A COMMON MAINTENANCE PROBLEM. SEVERE UNDERMINING, DISPLACEMENT OR PIPES AND DAM FAILURE CAN OCCUR. OFTEN THE OUTLET IS ADEQUATE FOR NORMAL FLOW BUT NOT FOR EXTREME STORM FLOWS. PERIODICALLY, AND ESPECIALLY AFTER STORM EVENTS, THE STILLING BASIN, PLUNGE POOL, OR RIP RAP ENERGY DISSAPTOR SHOULD BE INSPECTED. PROVIDE PROMPT REPAIR OF DAMAGES.
F. DRAINS / MECHANICAL EQUIPMENT -DRAINS SHOULD ALWAYS BE OPERABLE TO PROVIDE DRAW DOWN IN THE CASE OF AN EMERGENCY OR FOR NECESSARY REPAIRS. THE GATE OR VALVE CONTROLLING THE DRAIN SHOULD BE OPERATED FULLY AT LEAST ONCE EACH YEAR OR AS RECOMMENDED BY THE MANUFACTURER. IT SHOULD BE INSPECTED AND ALL APPROPRIATE PARTS LUBRICATED AND REPAIRED BEFORE OPERATIONS. ANNUAL MAINTENANCE OF METAL OPERATING MECHANISMS SHOULD BE PERFORMED BY KEEPING PARTS GREASED OR PAINTED TO PREVENT CORROSION. ALL EQUIPMENT CONTROLS SHOULD BE CHECKED FOR PROPER SECURITY TO PREVENT VANDALISM.

VI. RESERVOIR
A. POOL LEVEL -WHEN IT IS NECESSARY TO DRAW DOWN THE POOL LEVEL IT SHOULD BE DONE GRADUALLY OVER A PERIOD OF TIME TO PREVENT SLOPE FAILURES. AN ANNUAL INSPECTION OF THE LAKE PERIMETER SHOULD BE DONE. POTENTIALLY DAMAGING FALLEN TREES, DEBRIS AND SEDIMENTS SHOULD BE REMOVED. PERIODIC REMOVAL OF FLOATING DEBRIS TO PREVENT CLOGGING OF THE SPILLWAYS SHOULD BE DONE. DURING EXTENDED PERIODS OF SEVERE FREEZING WEATHER INSPECTION FOR ICE DAMAGE OR ICE FORMATION AT THE SPILLWAYS AND OUTLETS SHOULD BE PERFORMED.

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET

ROBERT C. EITEL, P.E.
PE# 16108 — DATE 9/29/11

STATE OF MARYLAND — ROBERT CHARLES EITEL — No. 16108 — REGISTERED PROFESSIONAL ENGINEER

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.

SIGNATURE OF ENGINEER — DATE 12-12-08
JOHN M. HOUSEHOLDER
MD LICENSE NUMBER: 29907
EXPIRATION DATE: 1-27-2010

12.12.08 DATE

STATE OF MARYLAND — JOHN M. HOUSEHOLDER — No. 29907 — REGISTERED PROFESSIONAL ENGINEER

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division	Date 1.5.9
Chief, Division of Land Development	Date 1/29/09
Director, DEP	Date 1/29/09

Date	No.	Revision Description

HERCULES FENCE at 8580 MISSION ROAD

OWNER / DEVELOPER
JESSUP DEVELOPMENT, LLC
MISSION BUILDING ASSOCIATES LLC
CONTACT: EVAN WINSTON
5408 BRANCHVILLE ROAD
COLLEGE PARK, MARYLAND 20740
PHONE: (301) 441-1600
FAX: (301) 441-8600

christopher consultants
engineering · surveying · land planning
christopher consultants, ltd.
7172 columbia gateway drive (suite 100) · columbia, md. 21046-2990
410.872.8690 · metro 301.881.0148 · fax 410.872.8693

PERMIT INFORMATION CHART

PROJECT NAME	LOT/PARCEL NO.	CENSUS TRACT
8580 MISSION ROAD	PARCEL 78	6069.01

DEED REF.	GRID NO.	ZONE	TAX MAP	ELECTION DISTRICT
L. 10905, F. 308	18	M-1	42	6TH

WATER CODE	SEWER CODE
E06	2243

TITLE: AS-BUILT
STORMWATER MANAGEMENT NOTES & BORING LOGS

DESIGN: KWS	SCALE: AS SHOWN	PROJECT: 075501.00
DRAWN: DAM	DATE: OCTOBER 2008	11 OF 16
CHECKED: ENJ	APPROVED: JMH	

SDP-08-44

MDC-747(SDP)

PLANT LIST:

SYMBOL	LATIN NAME	COMMON NAME	QUANTITY	SIZE	REMARKS
AB	Acer Buergeranum	Trident Maple	7	10 -12' Ht.	B&B
BN	Betula Nigra	'Heritage' River Birch	4	10 -12' Ht.	B&B
PO	Platanus Occidentalis	Sycamore	13	2½" - 3" caliper	B&B
QP	Quercus Phellos	Willow Oak	13	2½" - 3" caliper	B&B
ZS	Zelkova Serrata 'Green Vase'	Japanese Zelkova	3	2½" - 3" caliper	B&B
AR	Acer Rubrum 'Red Sunset'	'Red Sunset' Maple	7	2½" - 3" caliper	B&B
IN	Ilex x 'Nellie Stevens'	Nellie Stevens Holly	25	8' - 10' ht.	B&B
IO	Ilex Opaca	American Holly	10	8' - 10' ht.	B&B
PS	Pinus Strobus	White Pine	10	8' - 10' ht.	B&B

LEGEND

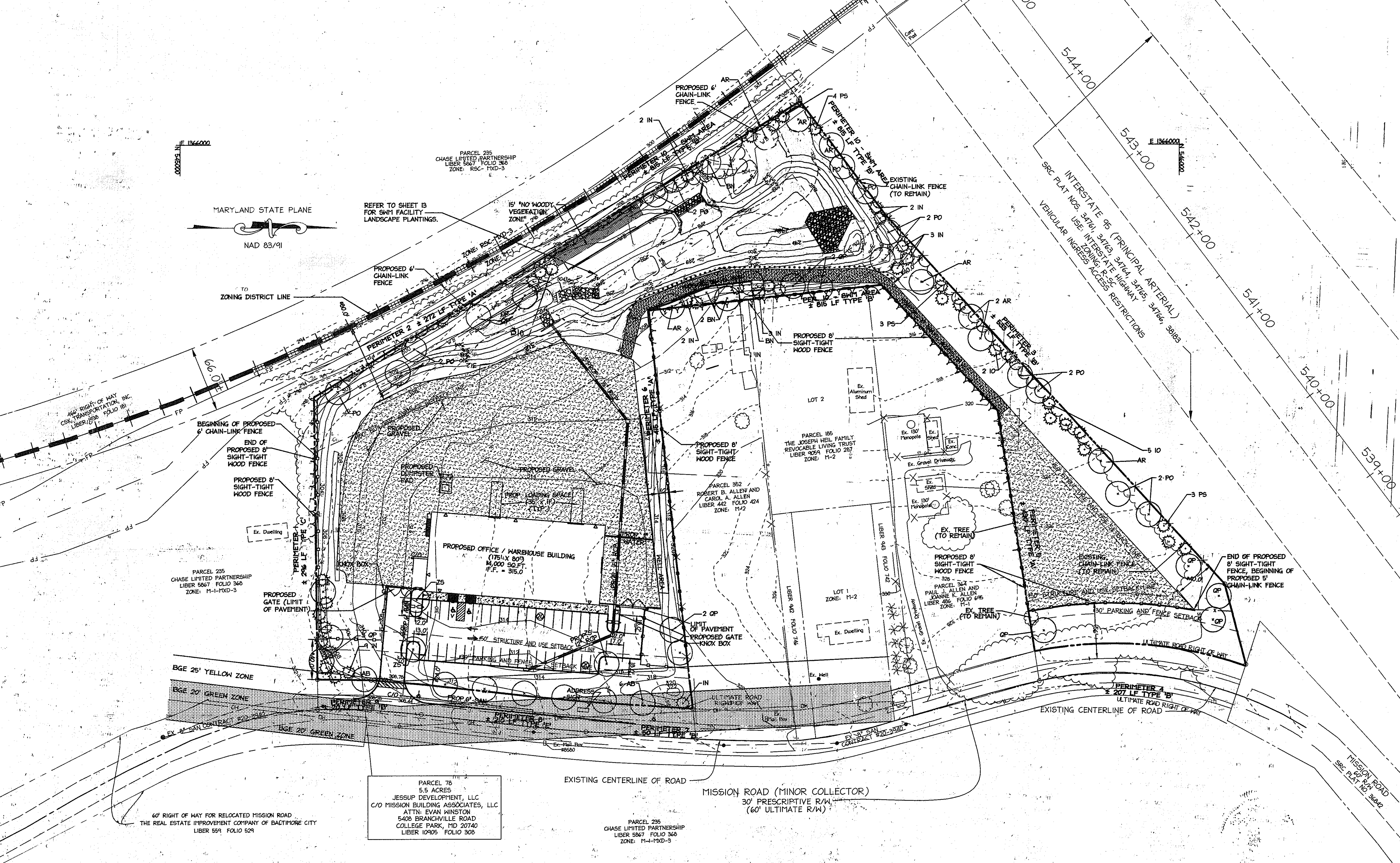
PROPOSED SHADE TREE

PROPOSED EVERGREEN TREE

PROPOSED ORNAMENTAL TREE

PROPOSED SHRUB

*SEE GENERAL NOTE 25 ON PAGE 1 FOR EXPLANATION OF APPROVED SETBACK VARIANCE AA-08-01



STATE OF MARYLAND ROBERT CHARLES EITEL No. 16108 REGISTERED PROFESSIONAL ENGINEER

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

ROBERT C. EITEL, P.E.
PE #16108 — DATE 9/29/11

8.11.09
DATE

LANDSCAPE ARCHITECT 3444 LESHANDA N. GIBBS STATE OF MARYLAND

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division	Date 8/25/09
Chief, Division of Land Development	Date 8-26-09
Director, DEP.	Date 8/26/09

Date	No.	Revision Description
8.4.09	1	RED LINE REVISION TO GRADING

HERCULES FENCE at 8580 MISSION ROAD

OWNER / DEVELOPER
JESSUP DEVELOPMENT, LLC
MISSION BUILDING ASSOCIATES LLC
CONTACT: EVAN WINSTON
5408 BRANCHVILLE ROAD
COLLEGE PARK, MARYLAND 20740
PHONE: (301) 441-1600
FAX: (301) 441-8600

christopher consultants
engineering · surveying · land planning
christopher consultants, ltd.
7172 columbia gateway drive (suite 100) · columbia, md. 21046-2990
410.872.8690 · metro 301.881.0148 · fax 410.872.8693

PERMIT INFORMATION CHART

PROJECT NAME	LOT/PARCEL NO.	CENSUS TRACT
8580 MISSION ROAD	PARCEL 78	6069.01

DEED REF.	GRID NO.	ZONE	TAX MAP	ELECTION DISTRICT
L. 10905, F. 308	18	M-1	42	6TH

WATER CODE	SEWER CODE
E06	2243

TITLE: REVISED AS-BUILT LANDSCAPE PLAN

DESIGN: CRH	SCALE: 1" = 50'	PROJECT: 075501.00
DRAWN: CRH	DATE: AUGUST 2009	12 of 16
CHECKED: LNG	APPROVED: JMH	

SDP-08-44

MDC 747 (SDP)

SCHEDULE A
PERIMETER LANDSCAPE EDGE

CATEGORY	ADJ. TO PERIMETER PROP.				ADJACENT TO ROADWAYS					
PERIMETER	P 1	P 2	P 5	P 6	P 3	P 4	P 7	P 8	P 9	TOTAL
LANDSCAPE TYPE 'A' L.F. OF PER.		272 LF.	430 LF.	415 LF.						
LANDSCAPE TYPE 'B' L.F. OF PER.					533 LF.	207 LF.	150 LF.		70 LF.	
LANDSCAPE TYPE 'C' L.F. OF PER.	296 LF.									
LANDSCAPE TYPE 'E' L.F. OF PER.								210 LF.		
CREDIT FOR EX. VEG. BELOW IF NEEDED	N/A	N/A	YES, 1 EXISTING EVER-GREEN	N/A	N/A	N/A	N/A	N/A	N/A	
CREDIT FOR WALL, FENCE, OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED) EIGHT-FOOT DECORATIVE BOARD ON BOARD FENCE	YES 163 LF	N/A	YES 374 LF	YES 359 LF	N/A	YES 207 LF	N/A	N/A	N/A	1103 LF
NO. OF PLANTS REQ. SHADE TREES / EVG. TREES / SHRUBS	3 / 7 / 0	5 / 0 / 0	1 / 0 / 0	1 / 0 / 0	11 / 13 / 0	0 / 0 / 0	1 / 1 / 0	5 / 0 / 53	1 / 2 / 0	28 / 23 / 53
NO. OF PLANTS PROV. SHADE TREES / EVG. TREES / OTHER TREES / SHRUBS	3 / 7 / 0 / 0	5 / 0 / 0 / 0	1 / 0 / 0 / 0	1 / 0 / 0 / 0	11 / 13 / 0 / 0	0 / 0 / 0 / 0	1 / 1 / 0 / 0	5 / 0 / 0 / 59	1 / 2 / 0 / 0	28 / 23 / 0 / 59

GENERAL PLANTING NOTES

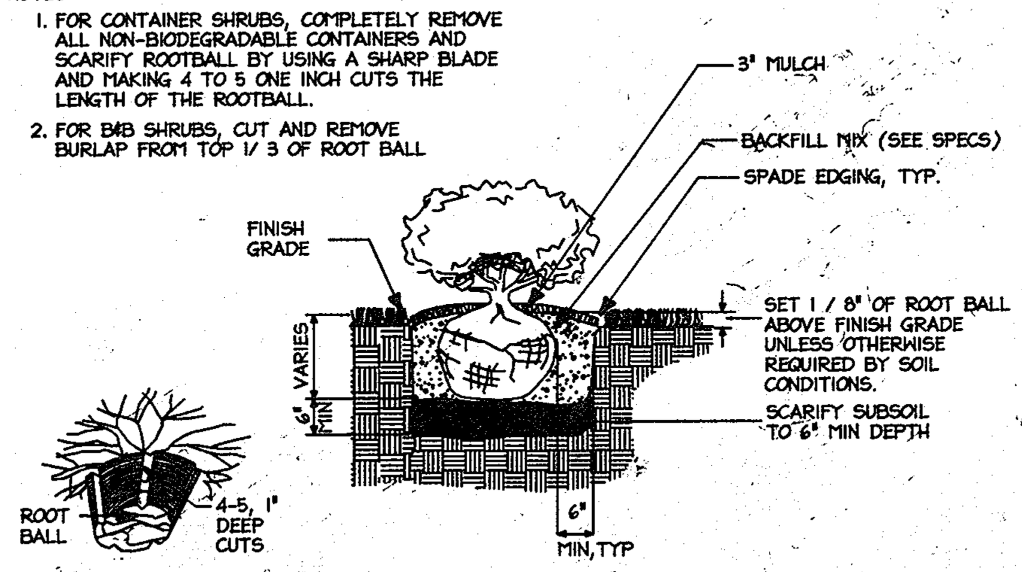
1. ALL PLANT MATERIAL TO MEET A.A.N. STANDARDS.
2. LANDSCAPING CONTRACTOR TO FOLLOW LANDSCAPE SPECIFICATION GUIDELINES FOR BALTIMORE WASHINGTON METRO AREA APPROVED BY LCAMW.
3. NO SUBSTITUTIONS TO BE MADE WITHOUT CONSENT OF LANDSCAPE ARCHITECT OR OWNER.
4. IN THE EVENT OF VARIATION BETWEEN QUANTITIES SHOWN ON THE PLANT LIST AND THE PLANS, THE PLANS SHALL CONTROL. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL PLANT QUANTITIES PRIOR TO THE COMMENCEMENT OF WORK. SOD QUANTITY TAKE-OFFS ARE THE RESPONSIBILITY OF THE CONTRACTOR. ALL DISCREPANCIES SHALL BE REPORTED TO THE LANDSCAPE ARCHITECT FOR CLARIFICATION PRIOR TO BIDDING. THE CONTRACTOR SHALL FURNISH PLANT MATERIAL IN SIZES AS SPECIFIED IN THE PLANT LIST.
5. ALL BEDS TO BE TOPPED WITH THREE INCHES OF HARDWOOD MULCH.
6. LANDSCAPE CONTRACTOR TO VERIFY LOCATION OF UTILITIES WITH OWNERS BEFORE PLANTING.
7. LANDSCAPE ARCHITECT/OWNER SHALL SELECT, VERIFY AND/OR APPROVE ALL PLANT MATERIAL. AT OWNER'S DISCRETION, SPECIMEN AND OTHER PLANT MATERIAL WILL BE SELECTED.
8. LANDSCAPE CONTRACTOR SHALL COORDINATE PLANT BED FILLING OPERATIONS AND PLANT MATERIAL INSTALLATION WITH WITH GENERAL CONTRACTOR AND UTILITIES CONTRACTOR. AT THE TIME OF FINAL INSPECTION WITH ACCEPTANCE, ALL ELECTRIC, WATER, DRAINAGE, AND FOUNTAIN UTILITIES, AS WELL AS ALL PLANT MATERIALS, SHALL REMAIN UNDAMAGED. LIKEWISE, LANDSCAPE CONTRACTOR AND UTILITIES CONTRACTOR SHALL COORDINATE EFFORTS TO ENSURE THAT SURFACE UTILITIES ARE AT THE PROPER ELEVATION RELATIVE TO FINAL GRADES.
9. CONTRACTOR SHALL NOTIFY MISS UTILITY 72 HOURS PRIOR TO CONSTRUCTION.
10. THE OWNER, TENANT, AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENTANCE 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.
11. TOPSOIL MIX
   A. PLANTING MIX SHALL BE PREPARED AT APPROVED ON-SITE STAGING AREA USING APPROVED ON-SITE EXISTING SOIL. MIX MINIMUM QUANTITIES OF 20 CUBIC YARDS OR SUFFICIENT MIX FOR ENTIRE JOB IF LESS THAN 20 CUBIC YARDS IS REQUIRED.
   B. THOROUGHLY MIXED IN THE FOLLOWING PROPORTIONS FOR TREE AND SHRUB PLANTING MIX:
      .5 CY EXISTING SOIL
      .2 CY SHARP SAND
      .3 CY WOOD RESIDUALS
      4.5 LBS TREBLE SUPERPHOSPHATE
      5 LBS DOLMONITE LIMESTONE (ELIMINATE FOR ACID LOVING PLANTS)
   C. FOR BED PLANTING, SHRUBS AND GROUNDCOVER SPACES 24 INCHES OR CLOSER, INCORPORATE THE FOLLOWING INGREDIENTS PER 20 SF AND INCORPORATE INTO TOP 8 INCHES OF EXISTING SOILS BY ROTOTILLING OR SIMILAR METHOD OF INCORPORATION.
      .2 CY SHARP SAND
      .3 CY ORGANIC MATERIAL
      4.5 LBS TREBLE SUPERPHOSPHATE
      5 LBS DOLMONITE LIMESTONE (ELIMINATE FOR ACID LOVING PLANTS)
12. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL WITH 46 SHADE TREES, 43 EVERGREEN TREES, 53 SHRUBS AND 1,103 LINEAR FEET OF SOLID FENCE PROVIDED WITH LANDSCAPE SURETY IN THE AMOUNT OF $32,870.00 WITH THE DPW DEVELOPER'S AGREEMENT. LANDSCAPE SURETY IS BASED ON THE NUMBER OF REQUIRED PLANTS AND FENCING PER THE LANDSCAPE MANUAL (46 SHADE TREES x $300.00 EA., 43 EVG. TREES x $150.00 EA., 53 SHRUBS x $30.00 EA AND $10.00 PER LINEAR FOOT FOR FENCING.
13. 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.

DEVELOPER'S/BUILDER'S CERTIFICATE

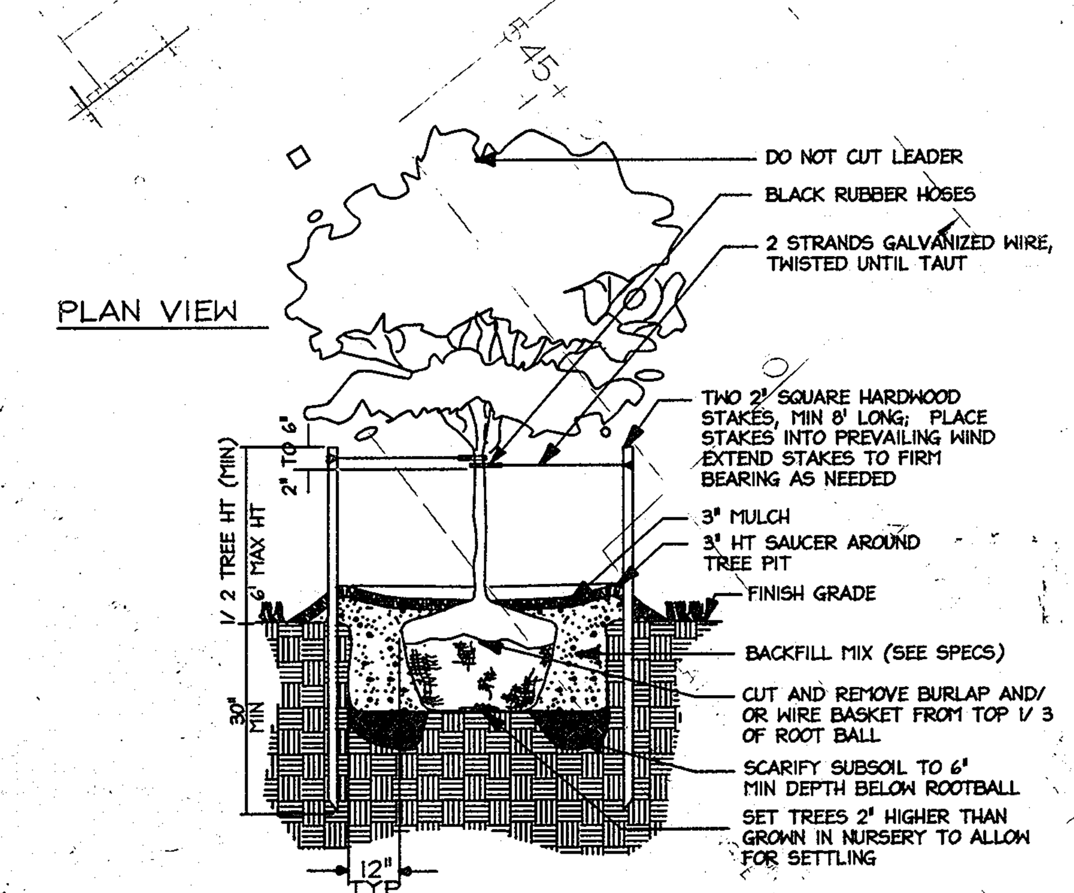
I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPING MANUAL. I/WE FURTHER CERTIFY THAT UPON TREES COMPLETION, A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE-YEAR GUARANTEE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

NAME — DATE 8/10/09

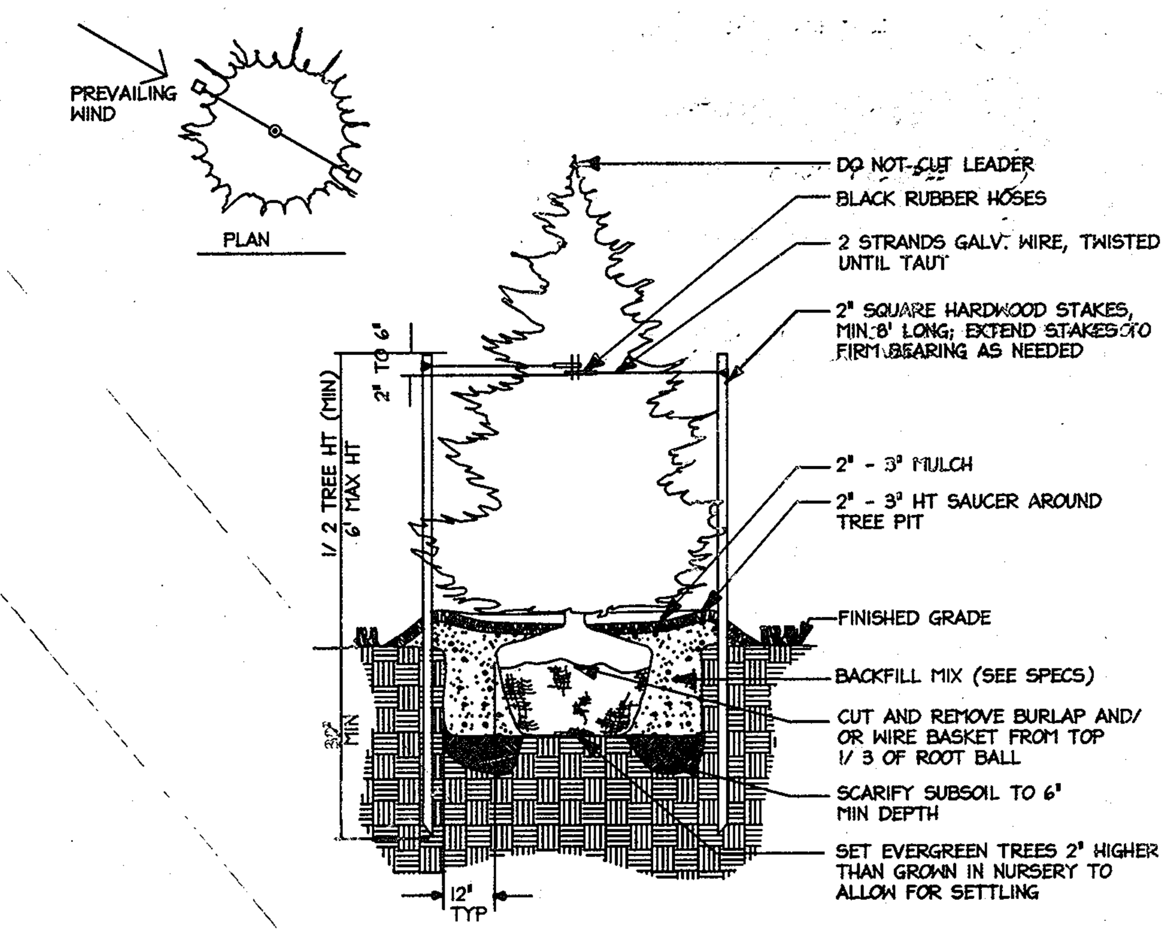
NOTES:
1. FOR CONTAINER SHRUBS, COMPLETELY REMOVE ALL NON-BIODEGRADABLE CONTAINERS AND SCARIFY ROOTBALL BY USING A SHARP BLADE AND MAKING 4 TO 5 ONE INCH CUTS THE LENGTH OF THE ROOTBALL.
2. FOR B&B SHRUBS, CUT AND REMOVE BURLAP FROM TOP 1/3 OF ROOT BALL



(A) **Shrub Bed Planting Detail**
Not To Scale



(B) **Tree Planting Detail**
Not To Scale



(C) **Evergreen Tree Planting Detail**
Not To Scale

SCHEDULE D
STORMWATER MANAGEMENT AREA LANDSCAPING

LINEAR FEET OF PERIMETER	815 L.F. (P-10)
NUMBER OF TREES REQUIRED SHADE TREES EVERGREEN TREES	16 SHADE TREES 20 EVERGREEN TREES
CREDIT FOR EXISTING VEGETATION (NO, YES AND %)	NO
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	NO
NUMBER OF TREES PROVIDED. SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTION)	16 SHADE TREES 20 EVERGREEN TREES -----

SCHEDULE B
PARKING LOT INTERNAL LANDSCAPING

NUMBER OF PARKING SPACES	40
INTERNAL ISLANDS REQUIRED (1 ISLAND/ 20 PARKING SPACES)	2
INTERNAL ISLANDS PROVIDED (200 SQ. FT./ISLAND)	3
NUMBER OF TREES REQUIRED (1 SHADE TREE/ 20 PARKING SPACES)	2
NUMBER OF TREES PROVIDED SHADE TREES OTHER TREES (2:1 SUBSTITUTION)	4 0

PLANT LIST-STORMWATER MANAGEMENT POND

ZONE 1 (12"-36" DEPTH BELOW NORMAL POOL ELEVATION)

QUANTITY	LATIN NAME	COMMON NAME	SPACING	REMARKS
87	POTAMOGETON PERFOLIATUS	REDHEAD GRASS	36" O.C.	OBL
87	SAGITTARIA FALCATA	DEEPWATER DUCK POTATO	36" O.C.	OBL
87	VALLISNERIA AMERICANA	WILD CELERY	36" O.C.	OBL

ZONE 2 (0"-12" DEPTH BELOW NORMAL POOL ELEVATION)

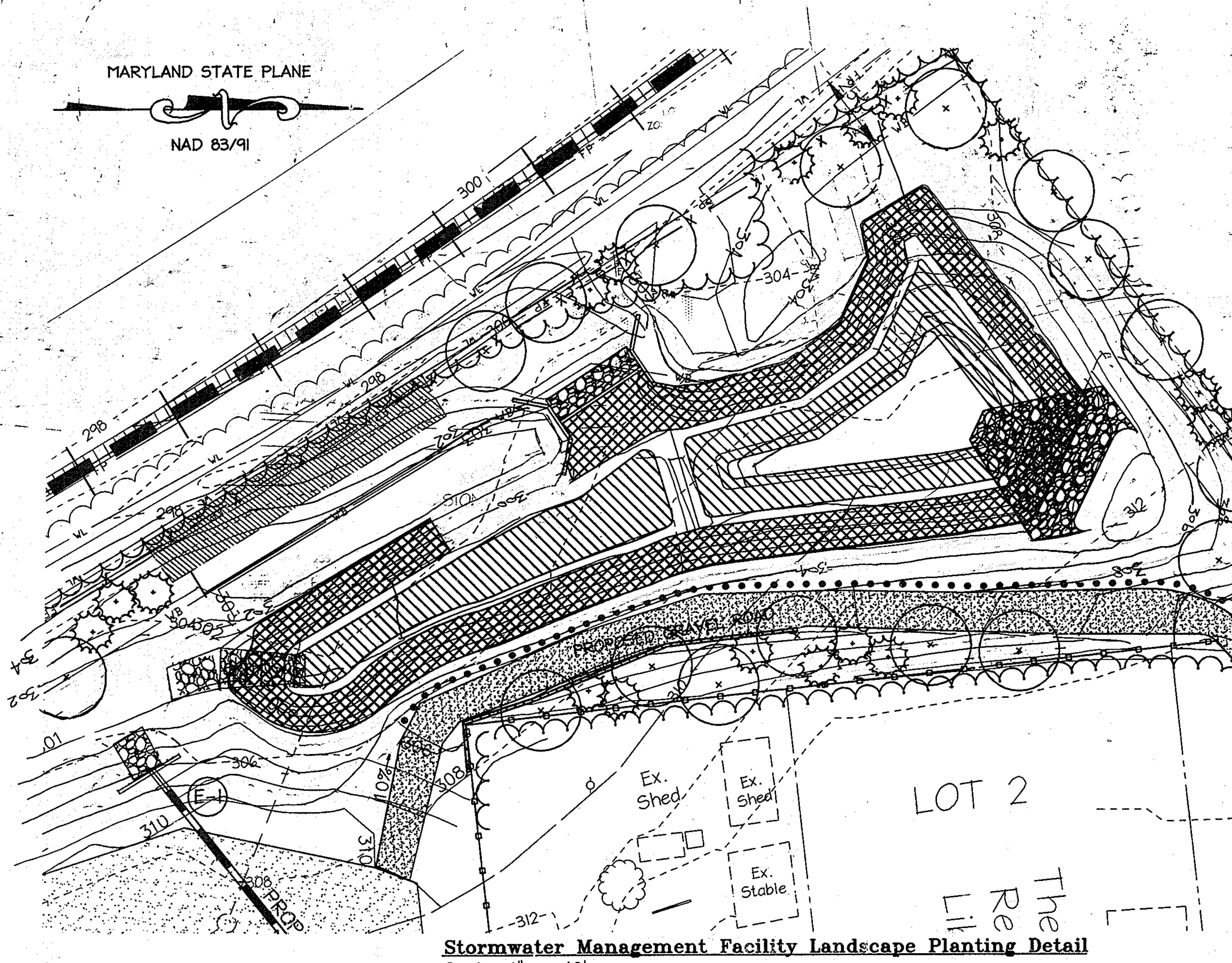
QUANTITY	LATIN NAME	COMMON NAME	SPACING	REMARKS
278	LOBELIA CARDINALIS	CARDINAL FLOWER	36" O.C.	FACW+
278	SAGITTARIA LATIFOLIA	DUCK POTATO	36" O.C.	OBL

ZONE 3 & 4 (0"-36" ELEVATION ABOVE NORMAL POOL ELEVATION)

QUANTITY	LATIN NAME	COMMON NAME	SPACING	REMARKS
300	RUDBECKIA HIRTA	BLACK EYED SUSAN	36" O.C.	OBL
300	ASTER NOVAR-ANGLIAE	NEW ENGLAND ASTER	36" O.C.	FACW
300	ECHINACEA PURPUREA	PURPLE CONEFLOWER	36" O.C.	OBL

LEGEND

- ZONE 1 WATER QUALITY PLANTINGS
- ZONE 2 WATER QUALITY PLANTINGS
- ZONE 3 & 4 WATER QUALITY PLANTINGS



Stormwater Management Facility Landscape Planting Detail
Scale: 1" = 40'

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

ROBERT C. EITEL, P.E. — 9/29/11 DATE
PE #16108

STATE OF MARYLAND — ROBERT CHARLES EITEL — No. 16108 — REGISTERED — PROFESSIONAL ENGINEER

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division	Date 8/25/09
Chief, Division of Land Development	Date 8-26-09
Director, DEP	Date 8/26/09

Date	No.	Revision Description
8.4.09	1	RED LINE REVISION TO GRADING

HERCULES FENCE at 8580 MISSION ROAD

OWNER / DEVELOPER
JESSUP DEVELOPMENT, LLC
MISSION BUILDING ASSOCIATES LLC
CONTACT: EVAN WINSTON
5408 BRANCHVILLE ROAD
COLLEGE PARK, MARYLAND 20740
PHONE: (301) 441-1600
FAX: (301) 441-8600

christopher consultants
engineering · surveying · land planning
christopher consultants, ltd.
7172 columbia gateway drive (suite 100) · columbia, md. 21046-2990
410.872.8690 · metro 301.881.0148 · fax 410.872.8693

8.11.09 DATE

LANDSCAPE ARCHITECT 3444 — LESHANDA N. GIBBS — STATE OF MARYLAND

PERMIT INFORMATION CHART

PROJECT NAME	LOT/PARCEL NO.	CENSUS TRACT
8580 MISSION ROAD	PARCEL 78	6069.01

DEED REF.	GRID NO.	ZONE	TAX MAP	ELECTION DISTRICT
L. 10905, F. 308	18	M-1	42	6TH

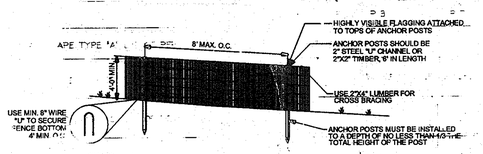
WATER CODE	SEWER CODE
E06	2243

TITLE: REVISED AS-BUILT LANDSCAPE DETAILS

DESIGN: CRH	SCALE: NOT TO SCALE	PROJECT: 075501.00
DRAWN: CRH	DATE: AUGUST 2009	13 of 16
CHECKED: LNG	APPROVED: JMH	

SDP-08-44

MDC-747(SDP)



NOTES:
1. BLAZE ORANGE OR BLUE PLASTIC MESH FENCE FOR FOREST PROTECTION DEVICE, ONLY.
2. BOUNDARIES OF RETENTIONS AREA WILL BE ESTABLISHED AS PART OF THE FOREST CONSERVATION PLAN REVIEW PROCESS.
3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
4. AVOID DAMAGE TO CRITICAL ROOT ZONE. DO NOT DAMAGE OR SEVER LARGE ROOTS WHEN INSTALLING POSTS.
5. PROTECTION SIGNS ARE REQUIRED.
6. DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

SOURCE: Adapted from Prince George's County, Maryland: Woodland Conservation Manual and Forest Conservation Manual, 1991.

Tree Protection Fence

Not To Scale

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

ROBERT C. LITTLE, P.E.
PE#16108

9/29/11
DATE

STATE OF MARYLAND ROBERT C. LITTLE No. 16108 PROFESSIONAL ENGINEER

GOALS & OBJECTIVES

THE GOAL OF THIS PLAN IS TO ADDRESS THE FOREST CONSERVATION ACT AND ANY REFORESTATION/AFFORESTATION THAT MAY BE REQUIRED FOR THE DEVELOPMENT OF PARCEL 78. THIS PROJECT PROPOSES SITE CLEARING TO ALLOW FOR DEVELOPMENT OF THE EXISTING PARCEL IN ACCORDANCE WITH THE ZONING CODE.

FOREST CONSERVATION NOTES

1. TOTAL FORESTED AREA ON SITE = 0.28 AC
2. FOREST CLEARING PROPOSED = 0.28 AC
3. ON-SITE RETENTION = NOT POSSIBLE
4. ON-SITE AFFORESTATION = NOT FEASIBLE BASED ON THE COMMERCIAL SITE DESIGN SHOWN ON THESE PLANS, AND THE LACK OF ON-SITE PRIORITY PLANTING AREAS.
5. TOTAL REFORESTATION REQUIRED = 0.56 AC
6. TOTAL AFFORESTATION REQUIRED = 0.55 AC
7. TOTAL FOREST CONSERVATION REQUIRED = 1.11 AC
8. THE FOREST CONSERVATION OBLIGATION OF 1.11 AC./48,351.6 SQ. FT. OF AFFORESTATION AND REFORESTATION FOR THIS PLAN HAS BEEN MET BY THE FEE-IN-LIEU PAYMENT OF $36,264.00 ($0.75 / SQ. FT.) TO THE HOWARD COUNTY FOREST CONSERVATION FUND.

FOREST CONSERVATION CALCULATIONS

BASIC SITE DATA	ACRES
GROSS SITE AREA	5.50
AREA WITHIN 100 YEAR FLOODPLAIN	0.00
AREA WITHIN PRESCRIPTIVE R.O.W. (MISSION ROAD)	0.00
NET TRACT AREA	5.50
LAND USE CATEGORY	C-1-A

INFORMATION FOR CALCULATIONS	
A. NET TRACT AREA	5.50
B. REFORESTATION THRESHOLD (15% X A)	0.80
C. AFFORESTATION MINIMUM (15% X A)	0.80
D. EXISTING FOREST ON NET TRACT AREA	0.28
E. FOREST AREAS TO BE CLEARED	0.28
F. FOREST AREAS TO BE RETAINED	0.00

AFFORESTATION CALCULATIONS	
A. NET TRACT AREA	5.50
B. AFFORESTATION THRESHOLD (15% X A)	0.80
C. EXISTING FOREST ON NET TRACT AREA	0.28
D. FOREST AREAS TO BE CLEARED	0.28
E. FOREST AREAS TO BE RETAINED	0.00

FOREST CONSERVATION REQUIREMENTS	
TOTAL REFORESTATION REQUIRED (F x ½)+(Gx2)	0.56
TOTAL AFFORESTATION REQUIRED (15% X A)	0.55
TOTAL FOREST CONSERVATION REQUIRED	1.11
FEE-IN-LIEU @ $.75 PER SQ. FT. = $36,264.00	1.11

NOTES:

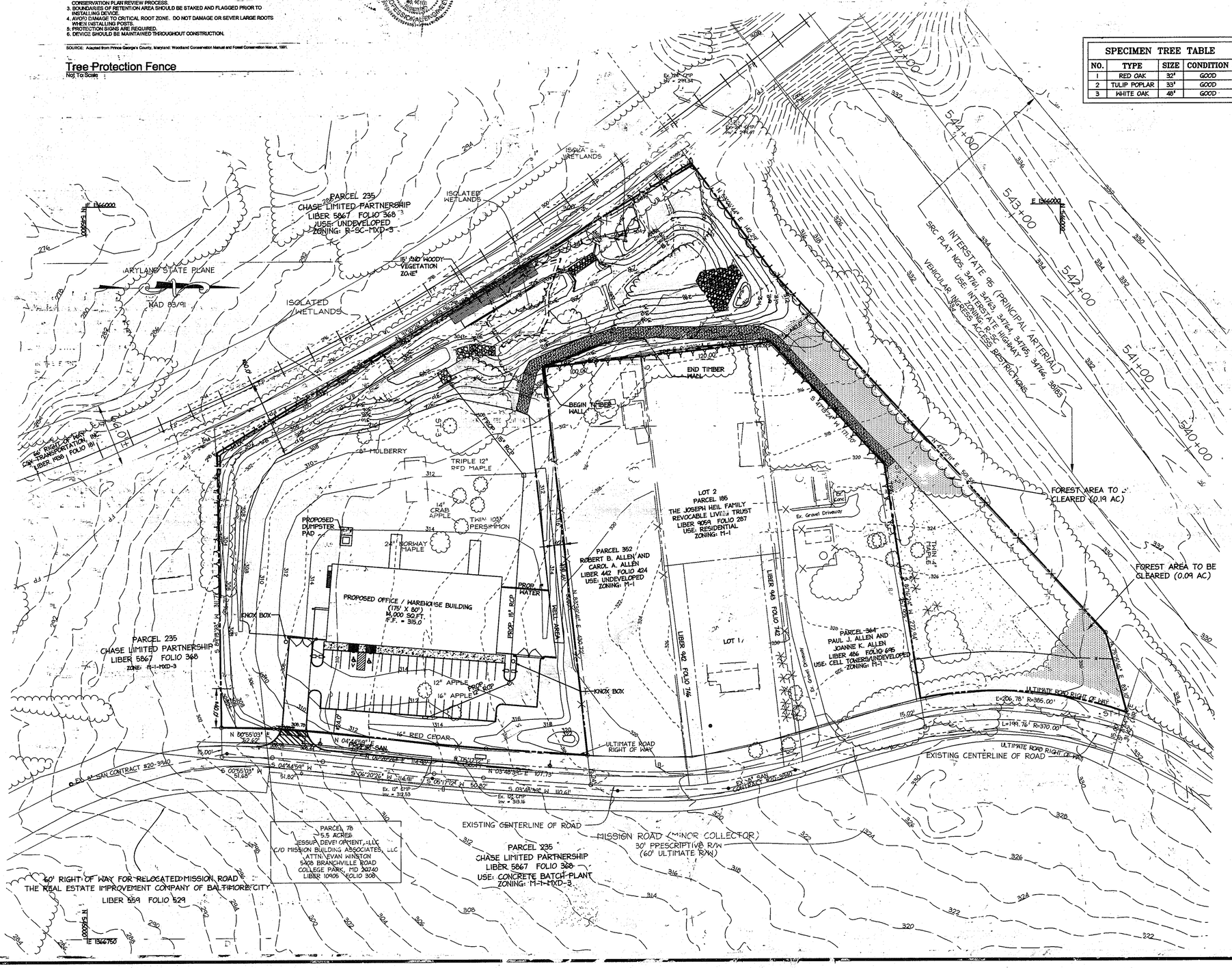
1. LIMIT OF DISTURBANCE SHOWN GRAPHICALLY FOR CLARITY. ACTUAL LIMIT OF DISTURBANCE SHALL BE JUST OUTSIDE OF SEDIMENT CONTROLS AND SHALL BE LOCATED ON THE PROPERTY IN QUESTION.
2. THERE ARE NO STEEP SLOPES ON THE PROPERTY WITH A CHANGE OF 10 VERTICAL FEET OR GREATER, NOR ARE THERE AREAS GREATER THAN 20,000 SQUARE FEET.

SPECIMEN TREE TABLE

NO.	TYPE	SIZE	CONDITION	DISPOSITION
1	RED OAK	32"	GOOD	TO BE REMOVED
2	TULIP POPLAR	33"	GOOD	TO BE REMOVED
3	WHITE OAK	48"	GOOD	TO BE REMOVED

LEGEND

- EXISTING TREELINE
- PROPOSED TREELINES (LIMIT OF DISTURBANCE)
- 302 EX. CONTOUR
- 302 PROPOSED CONTOUR
- FOREST CLEARING AREA
- TPF TREE PROTECTION FENCE
- ST-3 SPECIMEN TREE
- WETLAND AREA APPROVED TO BE IMPACTED BY MDE PERMIT NO. 2007656656 AND WP-08-67



APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division	Date 8/25/09
Chief, Division of Land Development	Date 8-26-09
Director, DEP	Date 8/26/09

Date	No.	Revision Description
8.4.09	1	RED LINE REVISION TO GRADING

HERCULES FENCE at 8580 MISSION ROAD

OWNER / DEVELOPER
JESSUP DEVELOPMENT, LLC
MISSION BUILDING ASSOCIATES LLC
CONTACT: EVAN WINSTON
5408 BRANCHVILLE ROAD
COLLEGE PARK, MARYLAND 20740
PHONE: (301) 441-1500
FAX: (301) 441-8600

christopher consultants
engineering · surveying · land planning
christopher consultants, ltd.
7172 columbia gateway drive (suite 100) · columbia, md. 21046-2590
410.872.8800 · metro 301.881.0140 · fax 410.872.8820

PERMIT INFORMATION CHART

PROJECT NAME	LOT/PARCEL NO.	CENSUS TRACT
8580 MISSION ROAD	PARCEL 78	6069.01

DEED REF.	FOLIO NO.	ZONE	TAX MAP	ELECTION DISTRICT
L. 10905, F. 308	18	M-1	42	6TH

WATER CODE	SEWER CODE
E06	2243

8/11/09
DATE

JIM HESS
COMAR QUALIFIED FOREST PROFESSIONAL

TITLE: REVISED AS-BUILT
FOREST CONSERVATION PLAN

DESIGN: KWS	SCALE: 1"=50'	PROJECT: 075301.00
DRAWN: DAM	DATE: AUGUST 2009	14 OF 16
CHECKED: ENJ	APPROVED: JMH	

MDC 74 (SDP)

SDP-08-44

NOTES:

1. THIS SITE WILL HAVE PRIVATE WATER AND PUBLIC SEWER SERVICE.

2. TOPOGRAPHY SHOWN HERON WAS FIELD RUN BY christopher consultants, ltd. ON MAY 2007.

3. ALL WELLS SHALL BE DRILLED PRIOR TO OBTAINING THE BUILDING PERMIT. IT WILL NOT BE CONSIDERED GOVERNMENTAL DELAY IF THE WELL DRILLING HOLDS UP HEALTH DEPARTMENT APPROVAL OF THE BUILDING PERMIT.

4. ALL BUILDINGS SHOWN COMPLY WITH THE MINIMUM BUILDING RESTRICTION REGULATIONS.

5. THE PROPOSED WELL WILL BE TEMPORARLY USED UNTIL THE WATERLINE IS EXTENDED ALONG MISSION ROAD. AT THAT TIME THE SITE WILL BE CONVERTED TO PUBLIC WATER.

6. A 15,000 GALLON HOLDING TANK WILL BE UTILIZED FOR FIRE SUPPRESSION. THE TANK WILL BE LOCATED INSIDE THE BUILDING. THE CONTRACTOR IS TO CONTACT THE MECHANICAL ENGINEER AND/OR OWNER TO COORDINATE AND FOR MORE INFORMATION.

7. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.

8. RESEARCH WAS CONDUCTED AT THE HEALTH DEPARTMENT TO OBTAIN ALL INFORMATION ABOUT WELLS AND SEPTIC SYSTEMS WITHIN 100 FEET OF THE PROPERTY LINES. THE SITE WAS ORIGINALLY DEVELOPED IN 1938 PRIOR TO THE CREATION OF THE COUNTY HEALTH DEPARTMENT. ALL ATTEMPS HAVE BEEN MADE TO IDENTIFY WELL AND SEPTIC SYSTEMS IN THE AREA.

9. THE CONTRACTOR SHALL NOTIFY THE HOWARD COUNTY DPW/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT 410-313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.

10. PERMITS FOR SUCH INTERIM SYSTEMS BEAR NOTICE REGARDING THE INTERIM NATURE OF THE PERMIT AND STATING THAT CONNECTION TO A FUTURE PUBLIC COMMUNITY SYSTEM SHALL BE MADE WITHIN ONE YEAR AFTER THE PUBLIC COMMUNITY SYSTEM BECOMES AVAILABLE.

PROFESSIONAL CERTIFICATION

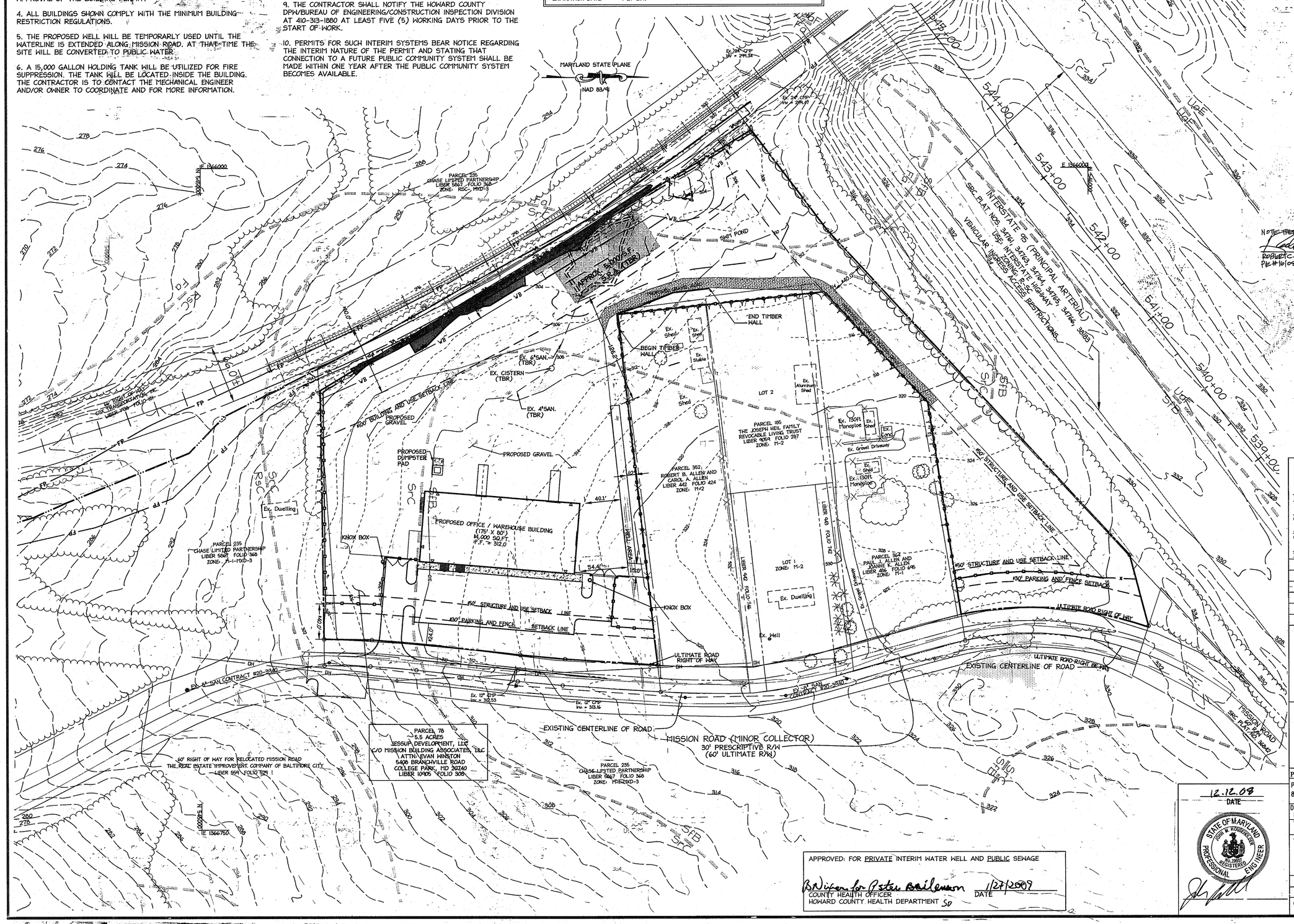
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

SIGNATURE OF ENGINEER — DATE

JOHN M. HOUSEHOLDER
MD LICENSE NUMBER: 29907
EXPIRATION DATE: 1-27-2010

LEGEND

EXISTING CONTOURS — 324
EXISTING STORM DRAIN — EX. 12" RCP
EXISTING SANITARY SEWER — EX. 8" SAN
EXISTING FENCE — X
PROPERTY LINE
EXISTING TREELINE
PROPOSED SETBACK LINES
WETLANDS — WL
WETLANDS BUFFER — WB
FLOODPLAIN — FP
PROPOSED TREELINE
STEEP SLOPE 15%-25%
STEEP SLOPE 25%+
SOILS LINE — SfB SfC SrC
PROPOSED SWM POND LIMITS
WETLAND AREA APPROVED TO BE IMPACTED BY MDE PERMIT NO. 200765656 AND WP-08-67



NOTE: THIS IS NO "AS BUILT" INFORMATION PROVIDED ON THIS SHEET.

ROBERT C. LITTLE, P.E.
PE#16108

9/29/11
DATE

STATE OF MARYLAND — ROBERT CHARLES LITTLE — No. 16108 — REGISTERED PROFESSIONAL ENGINEER

APPROVED: FOR PRIVATE INTERIM WATER WELL AND PUBLIC SEWAGE

B Nixon for Peter Beilenson — 1/27/2009
COUNTY HEALTH OFFICER — DATE
HOWARD COUNTY HEALTH DEPARTMENT SD

12.12.08
DATE

STATE OF MARYLAND — JOHN M. HOUSEHOLDER — No. 29907 — REGISTERED PROFESSIONAL ENGINEER

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 1.5.09
Chief, Division of Land Development — Date 1/29/09
Director, DEPZ — Date 1/29/09

Date	No.	Revision Description

HERCULES FENCE at 8580 MISSION ROAD

OWNER / DEVELOPER
JESSUP DEVELOPMENT, LLC
MISSION BUILDING ASSOCIATES LLC
CONTACT: EVAN WINSTON
5408 BRANCHVILLE ROAD
COLLEGE PARK, MARYLAND 20740
PHONE: (301) 441-1600
FAX: (301) 441-8500

christopher consultants
engineering · surveying · land planning
christopher consultants, ltd.
7172 columbia gateway drive (suite 100) · columbia, md. 21046-2990
410.872.6865 · metro 301.831.9140 · fax 410.872.9663

PERMIT INFORMATION CHART

PROJECT NAME	LOT/PARCEL NO.	CENSUS TRACT
8580 MISSION ROAD	PARCEL 78	6069.01

DEED, REF.	GRID NO.	ZONE	TAX MAP	ELECTION DISTRICT
L. 10905, F. 308	18	M-1	42	6TH

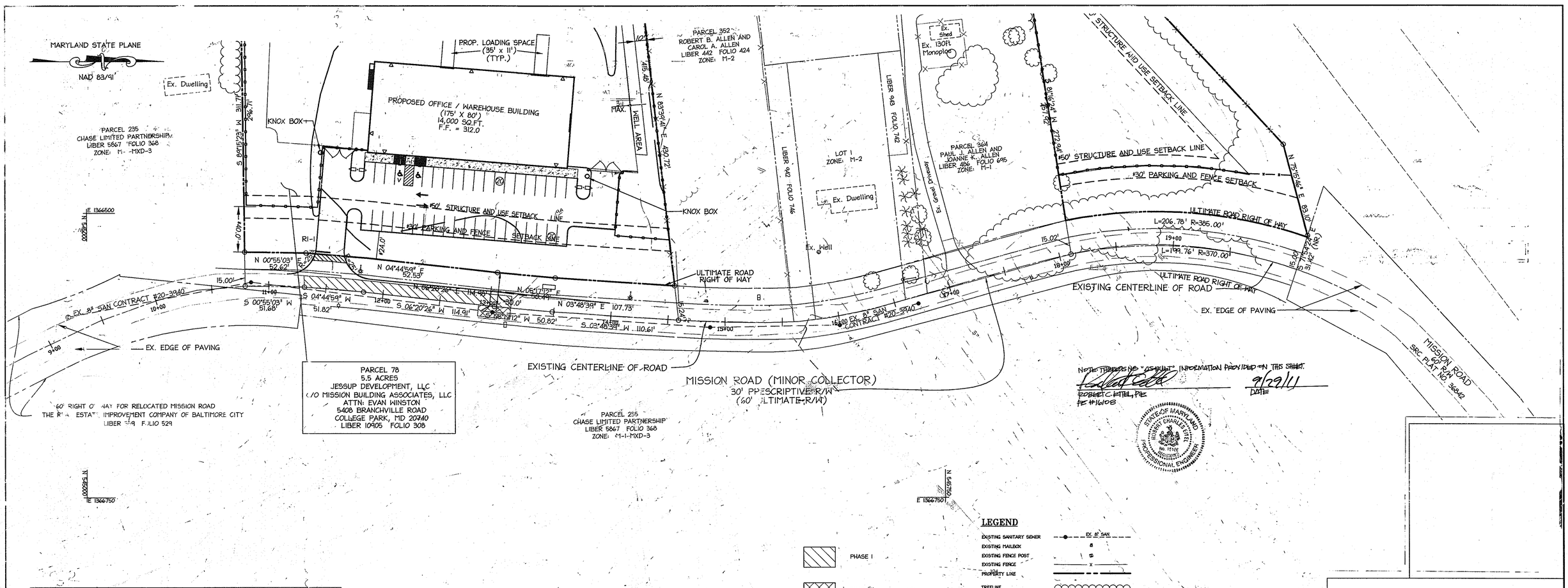
WATER CODE	SEWER CODE
EOS	2243

TITLE: AS-BUILT
WELL LOCATION PLAN

DESIGN: KWS	SCALE: 1" = 50'	PROJECT: 075501.00
DRAWN: DAM	DATE: OCTOBER 2008	15 of 16
CHECKED: ENJ	APPROVED: JMH	

SDP-08-44

MDC-747(SDP)



NOTE: THERE IS NO "AS BUILT" INFORMATION PROVIDED ON THIS SHEET.

ROBERT C. LITTEL, PE
PE #16108

9/29/11
DATE

STATE OF MARYLAND
ROBERT C. LITTEL
No. 16108
REGISTERED PROFESSIONAL ENGINEER

LEGEND

EXISTING SANITARY SEWER	EX. 8" SAN
EXISTING MAILBOX	
EXISTING FENCE POST	
EXISTING FENCE	X
PROPERTY LINE	
TREELINE	
HANDICAP PARKING SPACE	
CROSS WALK FOR HANDICAP ACCESS	
PROPOSED SIDEWALK HATCH	
DIRECTIONAL TRAFFIC FLOW ARROWS	
PROPOSED LIGHT	
PROPOSED STREET LIGHT	

PHASE I

PHASE II

GENERAL NOTES:

1) ALL PHASING ON THIS PLAN IS SUGGESTED AND SHALL BE CONFIRMED WITH HOWARD COUNTY DPW&T

2) ALL TEMPORARY TRAFFIC CONTROL DEVICES AND METHODS SHALL BE IN ACCORDANCE WITH THE 2003 MUTCD STANDARDS, MD.S.H.A. STANDARDS, AND HOWARD COUNTY DPW&T STANDARDS.

3) IF STEEL PLATES ARE UTILIZED TO TEMPORARILY RESTORE THE ROAD, THEN STEEL PLATE WARNING SIGNS SHALL BE INSTALLED ON ALL APPROACHES.

PHASE I- LANE CLOSURE WORK

EASTBOUND MISSION ROAD
8" SHC TO SANITARY MAIN AND
EXTENSION TO CENTERLINE OF MISSION ROAD

PHASE II- LANE CLOSURE WORK

WESTBOUND MISSION ROAD-EXTEND PROPOSED 8" SHC PAST RIGHT OF WAY.

* FLAGGING OPERATION CAN ONLY BE DONE DURING OFF-PEAK HOURS OF 9 AM TO 3 PM. ROAD WAY SHOULD BE FULLY RESTORED AT THE END OF EACH WORK DAY.

PRIVATE INTERIM WATER WELL | PUBLIC SEWAGE

DATE

PROFESSIONAL CERTIFICATION

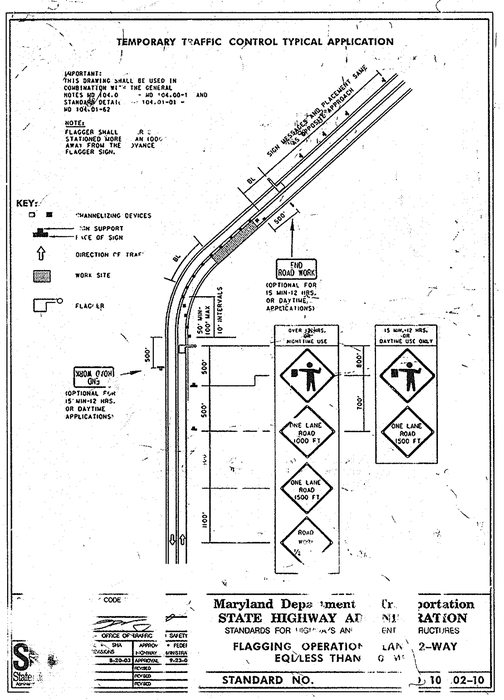
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

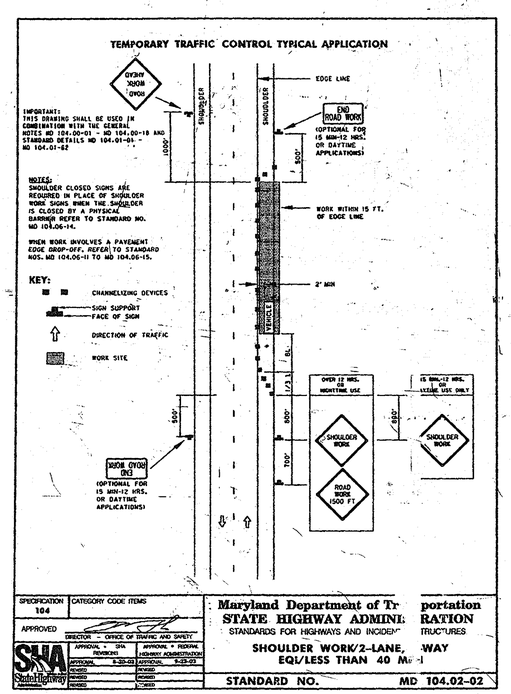
SIGNATURE OF ENGINEER — DATE 12-12-08

JOHN M. HOUSEHOLDER
MD LICENSE NUMBER: 24907
EXPIRATION DATE: 1-27-2010

12-12-08
DATE

STATE OF MARYLAND
JOHN M. HOUSEHOLDER
No. 24907
REGISTERED PROFESSIONAL ENGINEER





APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 1-5-09

Chief, Division of Land Development — Date 1/29/09

Director, DEPZ — Date 1/29/09

Date	No.	Revision Description

HERCULES FENCE at 8580 MISSION ROAD

OWNER / DEVELOPER
JESSUP DEVELOPMENT, LLC
MISSION BUILDING ASSOCIATES LLC
CONTACT: EVAN WINSTON
5408 BRANCHVILLE ROAD
COLLEGE PARK, MARYLAND 20740
PHONE: (301) 441-1600
FAX: (301) 441-8600

christopher consultants
engineering · surveying · land planning
christopher consultants, ltd.
7172 columbia gateway drive (suite 100) columbia, md 21046-2990
410.872.9580 · main 301.881.0140 · fax 410.872.9583

PERMIT INFORMATION CHART

PROJECT NAME: 8580 MISSION ROAD	LOT/PARCEL NO. PARCEL 78		CENSUS TRACT 6069.01
DEED REF: L. 10905 F. 308	GRID NO. 18	ZONE M-1	TAX MAP 42	ELECTION DISTRICT 6TH
WATER CODE E06			SEWER CODE 2243

TITLE: AS-BUILT MAINTENANCE OF TRAFFIC PLAN

DESIGN: KWS	SCALE: 1" = 40'	PROJECT: 075501.00
DRAWN: DAM	DATE: OCTOBER 2008	16 OF 16
CHECKED: ENJ	APPROVED: JMH	