MEL'S LIQUOR
7915 WATERLOO ROAD
TWO-STORY RETAIL/RESTAURANT CARRY-OUT BUILDING
L.10188/F.162

SITE DEVELOPMENT PLAN

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY STANDARDS AND SPECIFICATIONS. ALL WORK AND MATERIALS SHALL COMPLY WITH O.S.H.A. STANDARDS.
2. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
3. THE CONTRACTOR IS TO NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE DAYS BEFORE STARTING WORK ON THESE DRAWINGS:

MISS UTILITY	1-800-257-7777
VERIZON:	1-800-743-0033
BUREAU OF UTILITIES:	410-313-4900
AT&T:	1-800-252-1133
B.G.&E. (CONSTRUCTION SERVICES):	410-637-8713
B.G.&E. (EMERGENCY):	410-685-0123
STATE HIGHWAY ADMINISTRATION:	410-531-5533
COLONIAL PIPELINE CO.:	410-795-1390

4. SITE ANALYSIS:
   - TOTAL PROJECT AREA: 0.5822 AC.
   - PRESENT ZONING: B-1
   - USE OF STRUCTURE: TWO-STORY RETAIL/RESTAURANT CARRY-OUT BUILDING
   - TOTAL BUILDING COVERAGE: 4,117 SF (0.0945 AC. OR 16.23% OF GROSS AREA)
   - PAVED PARKING LOT/AREA ON SITE: 13,684 SF. (0.3141 AC. OR 59.95% OF GROSS AREA)
   - AREA OF LANDSCAPE ISLAND: 622 SF (0.0143 AC. OR 2.46% OF GROSS AREA)
   - LIMIT OF DISTURBED AREA: 0.60 AC
   - CUT: 1384 CY FILL: 1100 CY
5. PROJECT BACKGROUND:
   - LOCATION: JESSUP, MD.; TAX MAP 43, PARCEL 248.
   - ZONING : B-1
   - SUBDIVISION : JESSUP
   - SECTION/AREA : N/A
   - SITE AREA : 0.5822 AC.
   - DEED/PLAT REFERENCES : L.10188/F.162
   - DPZ REFERENCES : BA-93-039N&V, ECP-14-044, BA-13-017V
6. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/ CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO START OF WORK.
7. ANY DAMAGE TO PUBLIC RIGHT-OF-WAY, PAVING, OR EXISTING UTILITIES WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
8. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY, PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
9. EXISTING UTILITIES LOCATED FROM ROAD CONSTRUCTION PLANS, FIELD SURVEYS, PUBLIC WATER AND AND SEWER EXTENSION PLANS AND AVAILABLE RECORD DRAWINGS. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN FOR THE CONTRACTORS INFORMATION. CONTRACTOR SHALL LOCATE EXISTING UTILITIES WELL IN ADVANCE OF CONSTRUCTION ACTIVITIES AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
10. ALL REINFORCED CONCRETE FOR STORM DRAIN STRUCTURES SHALL HAVE A MINIMUM OF 28 DAYS STRENGTH OF 3,500 P.S.I.
11. TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MDMUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
12. ESTIMATES OF EARTHWORK QUANTITIES ARE PROVIDED SOLELY FOR THE PURPOSE OF CALCULATING FEES.
13. SOIL COMPACTION SPECIFICATIONS, REQUIREMENTS, METHODS AND MATERIALS ARE TO BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL ENGINEER. GEOTECHNICAL ENGINEER TO CONFIRM ACCEPTABILITY OF PROPOSED PAVING SECTION, BASED ON SOIL TEST PRIOR TO CONSTRUCTION.
14. THE COORDINATES SHOWN HEREON ARE BASED UPON HOWARD COUNTY GEODETIC CONTROL, WHICH IS BASED UPON THE MARYLAND STATE PLANE SYSTEM. HOWARD COUNTY MONUMENT NOS. 43HB AND 43HC WERE USED FOR THIS PROJECT.
15. THE PROPERTY LINES SHOWN HEREON IS BASED ON A FIELD-RUN BOUNDARY SURVEY PERFORMED BY ROBERT H. VOGEL ENGINEERING, INC. DATED DECEMBER 12, 2012
16. THE EXISTING TOPOGRAPHY SHOWN HEREON IS TAKEN FROM A FIELD RUN SURVEY BY ROBERT H. VOGEL ENGINEERING, INC., AND WAS PERFORMED ON OCTOBER 26, 2012.
17. GEOTECHNICAL REPORT PREPARED BY HILLIS-CARNES; DATED MARCH 10, 2014.
18. THE GEOTECHNICAL ENGINEER TO CONFIRM PAVING SECTION PRIOR TO CONSTRUCTION. ALL PAVING TO BE MINIMUM HOWARD COUNTY STANDARD DETAIL P-2, UNLESS OTHERWISE NOTED.
19. ALL CURB AND GUTTER TO BE HOWARD COUNTY STANDARD DETAIL 3.01 UNLESS OTHERWISE NOTED.
20. WHERE DRAINAGE FLOWS AWAY FROM CURB, CONTRACTOR TO REVERSE THE GUTTER PAN.
21. ALL ELEVATIONS ARE TO FLOWLINE/BOTTOM OF CURB UNLESS OTHERWISE NOTED.
22. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
23. CONTRACTOR RESPONSIBLE FOR CONSTRUCTING ALL HANDICAP RAMPS AND HANDICAP ACCESS IN ACCORDANCE WITH CURRENT ADA REQUIREMENTS.
24. PUBLIC WATER AVAILABLE THROUGH CONTRACT NO. 24-4399.
    PUBLIC SEWER AVAILABLE THROUGH CONTRACT NO. 24-4399.
25. TRAFFIC ANALYSIS PREPARED BY THE TRAFFIC GROUP, DATED MARCH 4, 2014; APPROVED 04/18/14.
26. THE SUBJECT PROPERTY IS ZONED B-1 PER THE 10/06/2013 COMPREHENSIVE ZONING PLAN.
27. THERE ARE NO WETLANDS, STREAMS, STEEP SLOPES, SPECIMEN TREES, OR 100-YEAR FLOODPLAIN LOCATED ON SITE.
28. A NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT.
29. ALL REINFORCED CONCRETE FOR STORM DRAIN STRUCTURES SHALL HAVE A MINIMUM OF 28 DAYS STRENGTH OF 3500 P.S.I.
30. ALL STORMDRAIN PIPE BEDDING IS TO BE CLASS 'C', AS REQUIRED BY AASHTO-180..
31. THE PROPOSED BUILDING TO HAVE ROOF LEADERS WHICH EMPTY INTO STORM DRAIN SYSTEM.
32. PERIMETER, SWM AND PARKING LOT LANDSCAPING SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL. SURETY IN THE AMOUNT OF $7,650 FOR SHRUBS, 11 EVERGREENS AND 17 SHADE TREES SHALL BE PROVIDED WITH THE DEVELOPERS AGREEMENT FOR THIS SITE DEVELOPMENT PLAN, SDP-14-064.
33. ANY EXISTING STREET TREES DAMAGED OR DESTROYED DURING CONSTRUCTION WILL BE REPLACED BY THE CONTRACTOR.
34. THIS PROJECT IS EXEMPT FROM THE FOREST CONSERVATION REQUIREMENTS PER SECTION 16.1202(b)(i) OF THE HOWARD COUNTY CODE BECAUSE THIS PROPERTY IS LESS THAN 40,000 SF IN SIZE.
35. THIS PROJECT IS SUBJECT TO COMPLIANCE WITH THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. 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/ GRADING PERMIT APPLICATIONS.
36. EXISTING WATERLOO ROAD IS CLASSIFIED AS A MINOR ARTERIAL ROAD; OLD JESSUP ROAD IS CLASSIFIED AS A LOCAL ROAD; DORSEY RUN ROAD IS CLASSIFIED AS A MAJOR COLLECTOR.
37. ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) - 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
38. THIS BUILDING WILL HAVE AN AUTOMATIC FIRE PROTECTION SPRINKLER SYSTEM.
39. ALL EXTERIOR LIGHTING TO COMPLY WITH THE REQUIREMENTS FOUND IN ZONING SECTION 134 OF THE HOWARD COUNTY ZONING REGULATIONS. (DETAILS ON SHEET 8)
40. A KNOX BOX IS REQUIRED TO BE PLACED ON THE FRONT OF THE BUILDING. IT SHALL BE PLACED TO THE RIGHT OF THE MAIN ENTRANCE AT A RANGE OF 4-5' IN HEIGHT AND NO MORE THAN 6' LATERALLY FROM THE DOOR. IT'S LOCATION IS SHOWN ON THESE PLANS. THE BOX SHALL BE ELECTRONICALLY SUPERVISED TO NOTIFY THE OWNER THAT IT IS BEING ACCESSED (INTEGRATED WITH THE FIRE ALARM SYSTEM).
41. BG&E HAS REVIEWED AND APPROVED THE PROPOSED LANDSCAPING.
42. LANDSCAPING NOT PERMITTED WITHIN 7-1/2' OF EACH SIDE OF THE FIRE DEPARTMENT CONNECTION. PROVIDE A CLEAR UNOBSTRUCTED ACCESS PATH TO THE FIRE DEPARTMENT CONNECTION. NFPA-1 13.1.4
43. FIRE LANES SHOULD BE PROVIDED IN THIS SITE TO ALLOW EMERGENCY VEHICLE ACCESS. EITHER FIRE LANE SIGNAGE SHOULD BE INSTALLED, OR THE CURBS SHOULD BE PAINTED IN RED AND STENCILED TO IDENTIFY THE ROAD AS A FIRE LANE.
44. STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (2006), SECTION 5.5.A. A MINIMUM OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
45. THERE ARE NO BURIAL GROUNDS, CEMETERIES, OR HISTORIC STRUCTURES LOCATED ON THIS PROPERTY.
46. TRASH COLLECTION AND RECYCLABLES TO BE PRIVATE.
47. SIGNAGE HAS BEEN PROVIDED ON THE BUILDING IDENTIFYING THE BUILDING ADDRESS.
48. THIS PROJECT IS SUBJECT TO BA-13-014V; APPROVED JANUARY 9, 2014; TO REDUCE THE STRUCTURE, USE AND PARKING PUBLIC SETBACK FROM A PUBLIC RIGHT-OF-WAY AS FOLLOWS:
    - FROM OLD JESSUP ROAD: TO 11.5' FOR A BUILDING, 19.0' FOR A WALL, AND 10.58' FOR A TRASH RECEPTACLE
    - FROM FUTURE MD-175 ROW: TO 4.1' FOR A BUILDING, MINUS 0.9' FOR A SIDEWALK, MINUS 44.07' FOR PARKING
    - FROM DORSEY RUN ROAD ROW: TO 25' FOR A WALL, 28.5 FEET FOR A TRASH RECEPTACLE

    PROVIDED, HOWEVER, THAT:
    1. THE VARIANCES SHALL APPLY ONLY TO THE USES AND STRUCTURES DESCRIBED ON PETITIONER'S EXHIBIT #1 AND NOT TO ANY OTHER ACTIVITIES, USES, STRUCTURES, OR ADDITION ON THE PROPERTY.
    2. THE PETITIONER SHALL OBTAIN ALL REQUIRED PERMITS.
49. HEALTH DEPARTMENT APPROVAL OF THIS SITE DEVELOPMENT PLAN DOES NOT ENSURE APPROVAL OF BUILDING PERMIT APPLICATIONS ASSOCIATED WITH THIS PLAN. PLANS FOR CERTAIN FACILITIES TO BE CONSTRUCTED ~~OR~~ WITHIN THE LIMITS DESCRIBED BY THIS PLAN WILL REQUIRE REVIEW AND APPROVAL BY THE HEALTH DEPARTMENT. SUCH FACILITIES MAY INCLUDE, BUT NOT LIMITED TO, THOSE WHICH HAVE SWIMMING POOLS, OR THAT SELL PREPARED OR PACKAGED FOODS, OR THAT MAY HAVE EQUIPMENT THAT EMITS RADIATION.
50. STORMWATER MANAGEMENT FOR THIS PROJECT IS BEING PROVIDED BY ENVIRONMENTAL SITE DESIGN UTILIZING MICRO-BIORETENTION (M-6) FACILITIES TO ACCOMMODATE THE TOTAL ESD VOLUME REQUIRED. SWM FACILITIES TO BE PRIVATELY OWNED AND MAINTAINED.
51. TWO STAIRS ARE SHOWN ON THE SOUTH END OF THE BUILDING. THE STAIRS AT THE FRONT OF THE BUILDING ARE 9.75'L x 5'W. WITH 6 RISERS AND IS LOCATED 17.64' (AT IT'S CLOSEST POINT) FROM THE PROPERTY LINE ALONG OLD JESSUP ROAD. THE STAIRS AT THE REAR OF THE BUILDING ARE 9.75'L x 4.75' WIDE WITH 6 RISERS AND IS LOCATED 7.53' (AT IT'S CLOSEST POINT) FROM THE PROPERTY LINE ALONG OLD JESSUP ROAD. THE VARIANCE GRANTED BY BA-13-17V ALLOWED THE SETBACK FOR THE BUILDING RELATIVE TO OLD JESSUP ROAD TO BE REDUCED TO 11.5 FEET PER SECTION 128.0.A.I.C OF THE ZONING REGULATIONS. THE STEPS ARE ACCEPTABLE WITHOUT AN ADDITIONAL VARIANCE, AS THE STAIRS DO NOT ENCROACH INTO THIS REDUCED SETBACK BY MORE THAN 4 FEET.

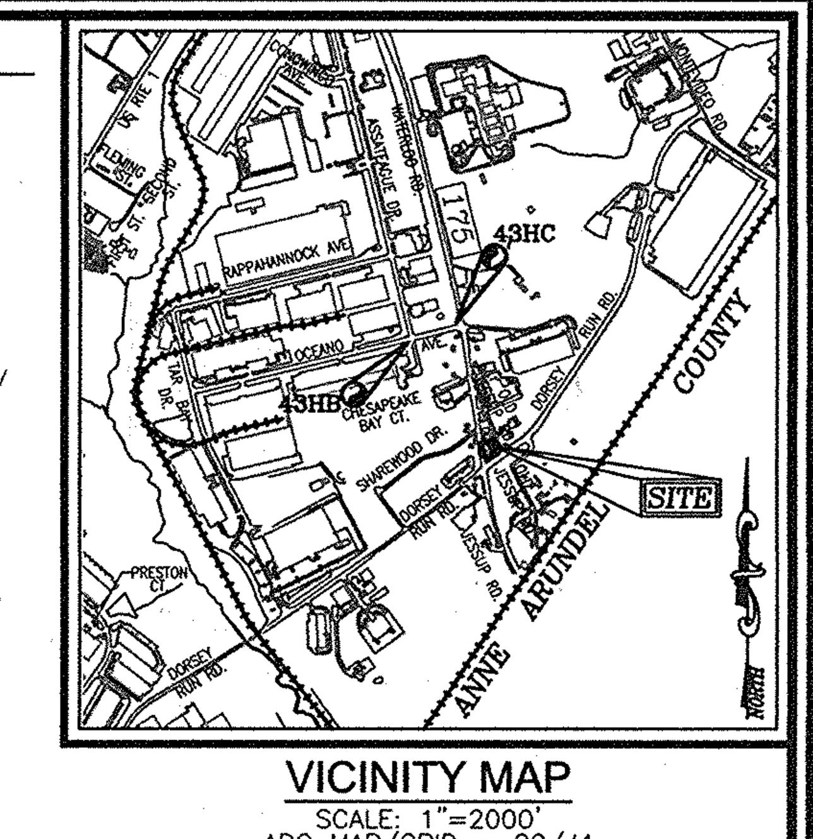
BENCHMARKS

HOWARD COUNTY BENCHMARK 43HC
N 543386.1639 E 1374935.8379 ELEV.: 225.925'

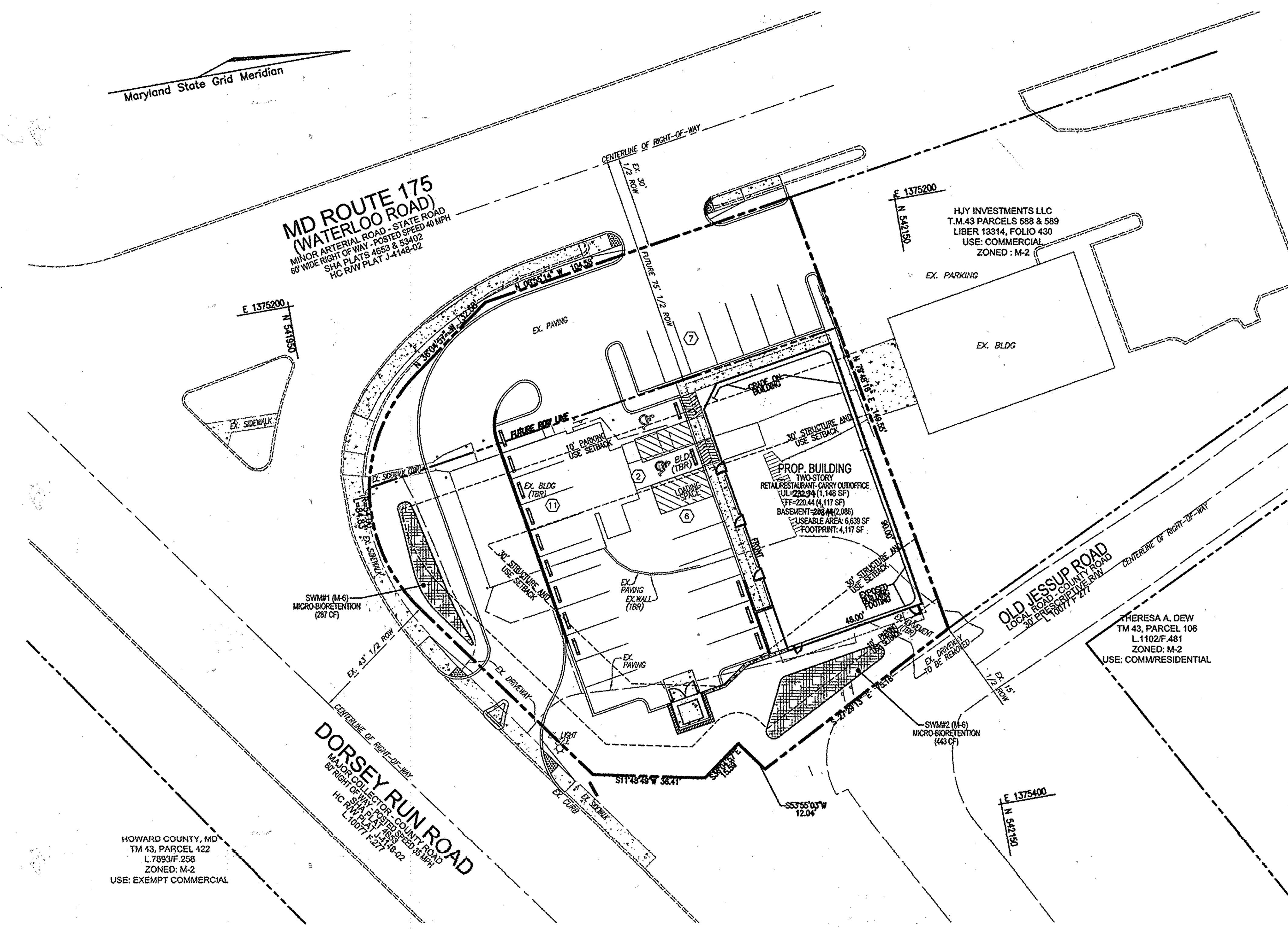
HOWARD COUNTY BENCHMARK HB
N 543166.729 E 1374425.0243 ELEV.: 251.622'

LEGEND:

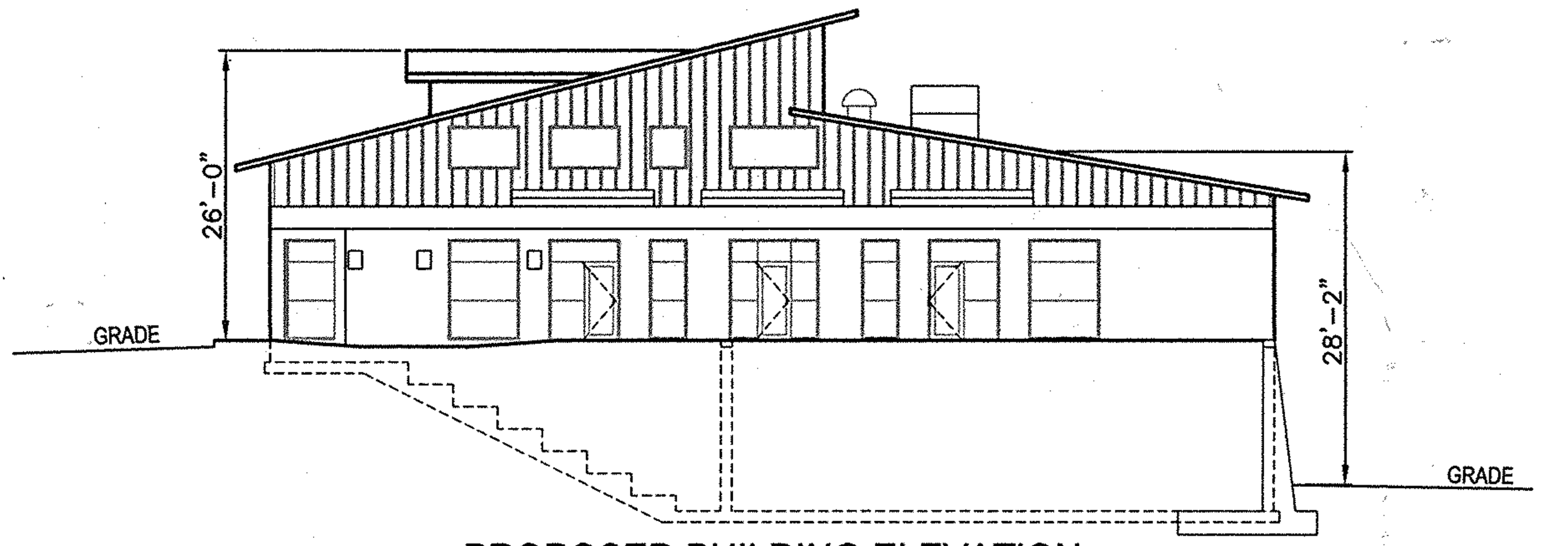
- EXISTING CURB AND GUTTER
- PROPOSED CURB AND GUTTER
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- PROPOSED SIDEWALK
- 20' PUBLIC WATER AND UTILITY EASEMENT
- PROP. MICRO BIORETENTION AREA (M-6)



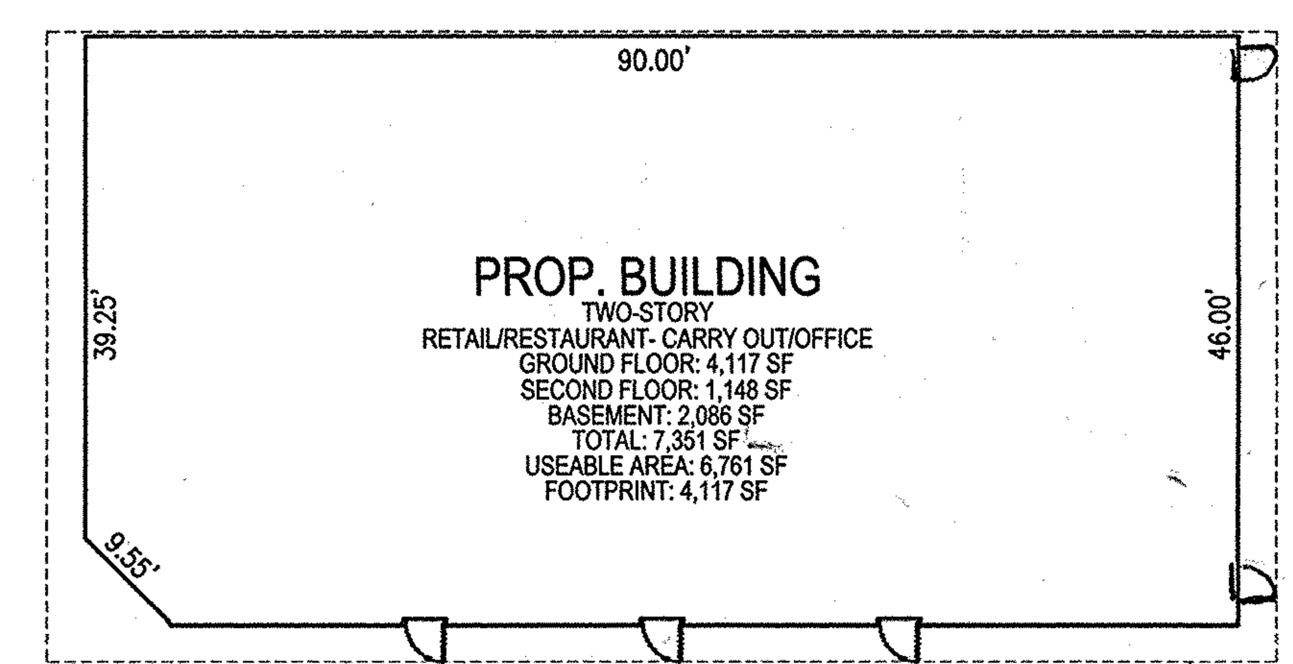
VICINITY MAP
SCALE: 1"=2000'
ADC MAP/GRID = 20/J4



LOCATION PLAN
SCALE: 1"= 30'



PROPOSED BUILDING ELEVATION
(SOUTH - FACING DORSEY RUN ROAD)
26.0' MEAN HEIGHT
NOT TO SCALE



PROPOSED BUILDING FOOTPRINT
NOT TO SCALE
TYPICAL BUILDING ELEVATION
(DIMENSIONS SHOWN ON SHEET 2 FROM BUILDING TO PROPERTY LINES ARE DIMENSIONED FROM FIRST FLOOR WALLS.)

OWNER/DEVELOPER
JAGDAMBE, LLC.
6804 CREEKWOOD CT.
CLARKSVILLE, MD 21029-1746
410-903-7898
C/O NARESH KUMAR

SHA NOTICE TO CONTRACTOR:

THE FOLLOWING STANDARDS (CONSTRUCTION AND TEMPORARY TRAFFICE CONTROL) ARE REQUIRED FOR THIS PROJECT:
A) MD 104.03.02 - SHOULDER WORK /MULTILANE UNDIV. EQL/LESS THAN 40 MPH
B) MD 104.03-06 - RIGHT LANE CLOSURE/MULTILANE UNDIV. EQL/LESS THAN 40 MPH
C) MD 104.03-08 - PARTIAL ROADWAY CLOSURE/MULTLANE UNDIV. EQL/LESS THAN 40 MPH
D) MD 620.02 - STANDARD TYPE A CONCRETE CURB AND COMBINATION CONCRETE CURB AND GUTTER
E) MD 578.01 - REPAIRING PAVEMENT OPENINGS FOR UTILITY TRENCHES
F) FOR ADA RAMP DETAIL, SEE SHEET 2 OF THIS PLAN SET.

FOR ALL STANDARDS REFERRED TO ON THE PLANS THE CONTRACTOR MUST GO TO THE BOOK OF STANDARDS WHICH WILL HAVE THE MOST CURRENT VERSION. THE BOOK OF STANDARDS CAN BE MAY BE ACCESSED AT:
http://apps.roads.maryland.gov/businesswithsha/bizstdsspecs/desmanualstdpub/publicationsonline/ohd/bookstd/index.asp

ALL ITEMS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT VERSION OF THE REFERENCED STANDARD AT THE TIME OF CONSTRUCTION.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[signature] CHIEF, DEVELOPMENT ENGINEERING DIVISION NY	12-15-14 DATE
[signature] CHIEF, DIVISION OF LAND DEVELOPMENT	1-05-15 DATE
[signature] DIRECTOR	1/5/15 DATE

PARKING TABULATION

PROPOSED BUILDING (USEABLE AREA)	
BASEMENT (STORAGE)	2,086 SF
GROUND LEVEL (RETAIL/RESTAURANT CARRY-OUT)	3,527 SF
UPPER LEVEL (OFFICE)	1,148 SF
TOTAL BUILDING AREA (USEABLE AREA):	6,761 SF
PARKING SPACES REQUIRED (BASED ON USEABLE AREA)	
RETAIL (2,373 SF @ 5 SPACES/1000 SF)	12 SPACES
RESTAURANT CARRY-OUT (1,154 SF @ 6 SPACES/1000 SF)	7 SPACES
OFFICE (1,148 SF @ 3.3 SPACES/1000 SF)	4 SPACES
STORAGE	0 SPACES
TOTAL PARKING REQUIRED:	23 SPACES
TOTAL PARKING PROVIDED:	26 SPACES (INCLUDING 2 HC SPACES)

APPROVED : FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS

BWilson for Maura Rossman 12/23/2014
COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT
DATE

SHEET INDEX

NO AS-BUILT INFORMATION THIS SHEET

ADDRESS CHART

LOT NO.	STREET ADDRESS
BUILDING A	7915 WATERLOO ROAD

PERMIT INFORMATION CHART

SUBDIVISION NAME			SECTION/AREA	LOTS/PARCEL #	
JESSUP			N/A	248	
PLAT # OR L/F	BLOCK NO.	ZONE	TAX MAP No.	ELECT. DIST.	CENSUS TR.
L.10188/F.162	21	B-1	43	1ST	6012.02
WATER CODE: B01			SEWER CODE: 302000		

NO.	REVISION	DATE

SITE DEVELOPMENT PLAN

COVER SHEET

MEL'S LIQUOR
7915 WATERLOO ROAD
TWO-STORY RETAIL/RESTAURANT CARRY-OUT BUILDING
ZONED: B-1
L.10188/F.162

TAX MAP 43 BLOCK 21 — PARCEL 248
1ST ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

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

STATE OF MARYLAND ROBERT H. VOGEL No. 16193 PROFESSIONAL ENGINEER 11/13/14
ROBERT H. VOGEL, PE No.16193

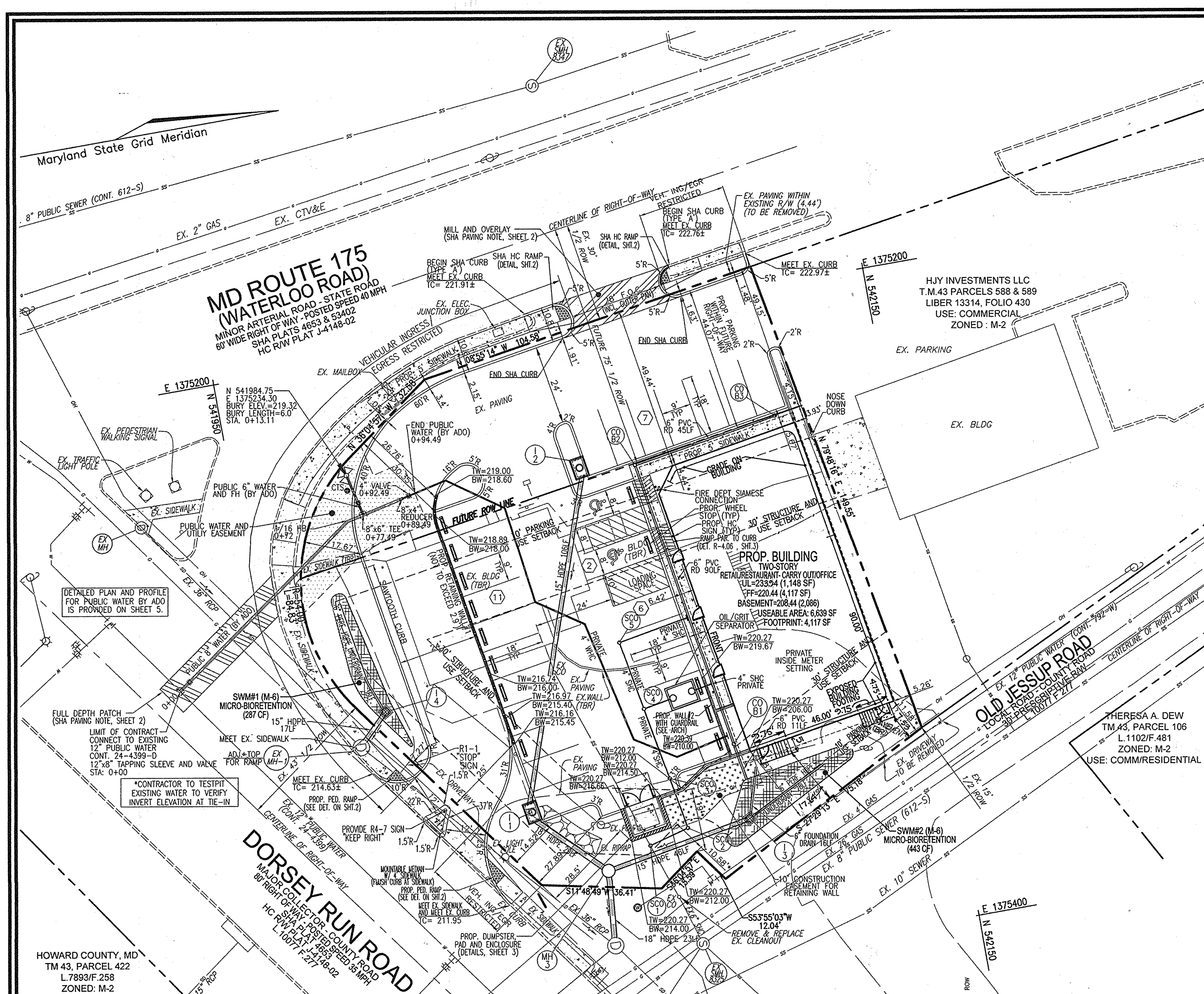
DESIGN BY:	DZE
DRAWN BY:	JER/CF/DZE
CHECKED BY:	RHV
DATE:	NOVEMBER 2014
SCALE:	AS SHOWN
W.O. NO.:	12-60

PROFESSIONAL CERTIFICATE

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2016

AS-BUILT 10·30·15

SDP-14-064

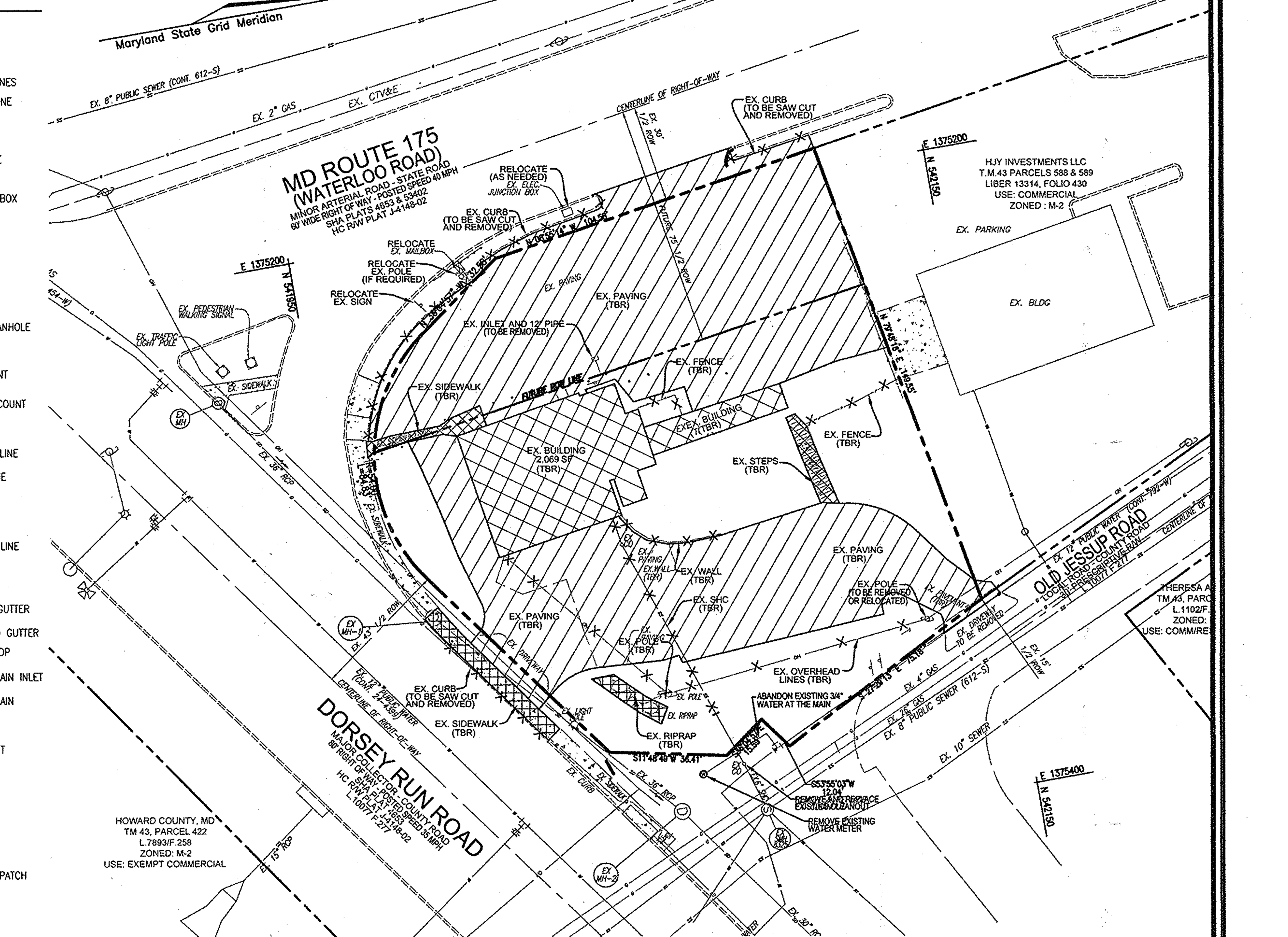


SITE LAYOUT PLAN

* FOR SETBACK REDUCTIONS, SEE NOTE #40, SHEET 1.
SCALE: 1"= 20'

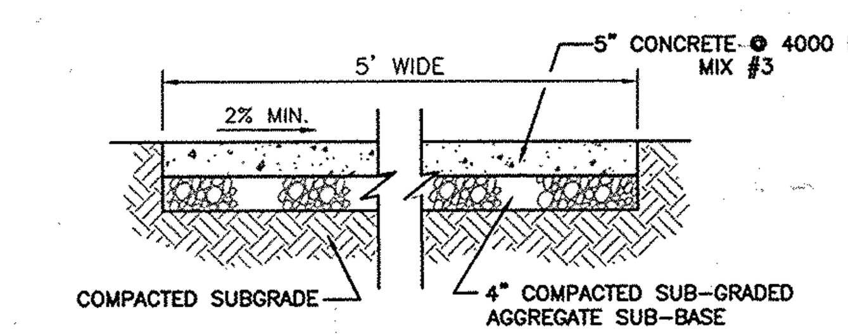
LEGEND:

- PROPOSED CONTOUR
- EXISTING CONTOUR
- EXISTING OVERHEAD LINES
- EXISTING WATERLINE LINE
- EXISTING GAS LINE
- EXISTING GUARD RAIL
- EXISTING METAL FENCE
- EXISTING WOOD FENCE
- EXISTING ELECTRICAL BOX
- EXISTING POLE
- EXISTING LIGHT POLE WITH CONCRETE BASE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- PROPOSED PARKING COUNT
- PROPOSED TEST PIT
- PROPOSED SANITARY LINE
- PROPOSED WATER LINE
- EXISTING FENCE
- PROPERTY LINE
- ADJACENT PROPERTY LINE
- RIGHT-OF-WAY LINE
- PROPOSED SIDEWALK
- EXISTING CURB AND GUTTER
- PROPOSED CURB AND GUTTER
- PROPOSED WHEEL STOP
- PROPOSED STORM DRAIN INLET
- PROPOSED STORM DRAIN
- 20' PUBLIC WATER AND UTILITY EASEMENT
- PROP. MICRO BIORETENTION AREA (M-6)
- MILL AND OVERLAY PAVING
- FULL DEPTH PAVING PATCH



DEMOLITION PLAN

SCALE: 1"= 20'

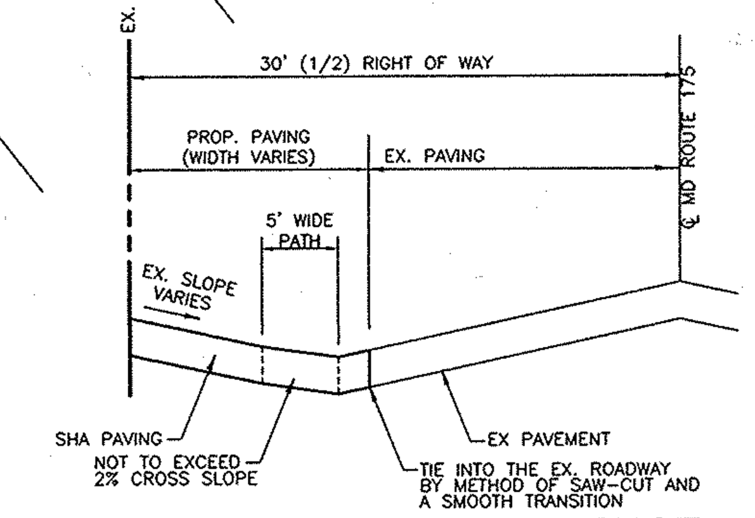


NOTE:

1. SIDEWALK TO BE SCORED EVERY 5 FEET.
2. EXPANSIONS JOINTS TO BE PLACED EVERY 15 FEET.

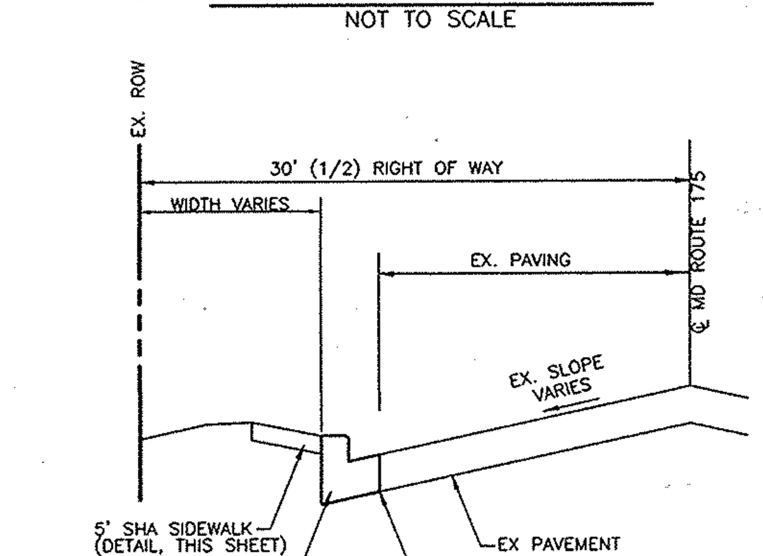
SHA SIDEWALK DETAIL

NOT TO SCALE



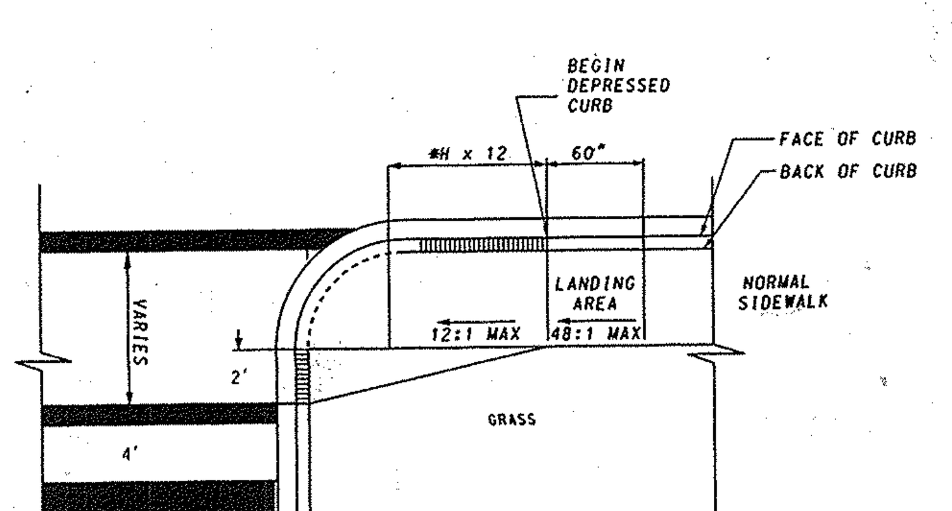
MD ROUTE 175 ENTRANCE CENTERLINE TYPICAL SECTION

NOT TO SCALE



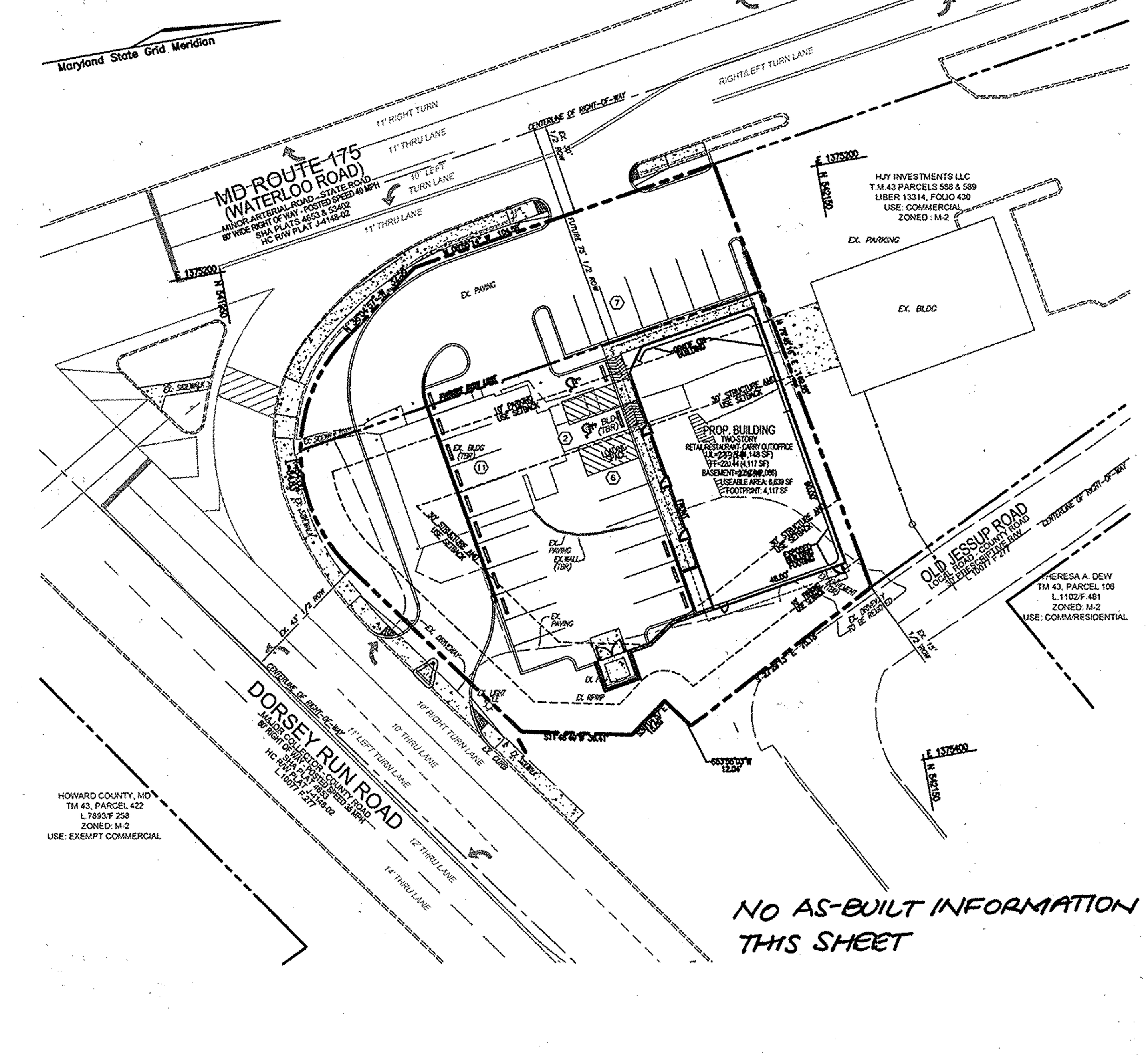
MD ROUTE 175 ENTRANCE IMPROVEMENTS CROSS SECTION

NOT TO SCALE



PEDESTRIAN RAMP WATERLOO ROAD AND DORSEY RUN ROAD ENTRANCES

NOT TO SCALE



NO AS-BUILT INFORMATION THIS SHEET

EXISTING ROAD STRIPING

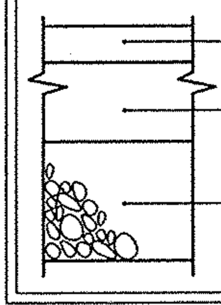
SCALE: 1"= 40'

SHA PAVING NOTE:

1. THE UTILITY CONNECTION FOR THE 8" WATER CONNECTION WILL NEED TO BE PATCHED WITH FULL DEPTH HEAVY DUTY PAVING SECTION (THIS SHEET, DORSEY RUN ROAD).
2. ANY DISTURBED MARKINGS WILL NEED TO BE REPLACED IN KIND AS REQUIRED AND SHALL USE MATERIALS TO MATCH EXISTING MARKINGS.
3. MILL TO A DEPTH OF 2", WEDGE AND RESURFACE FOR CROSS SLOPE TRANSITION FOR THE ENTRANCE MODIFCATION ALONG MD 175.

DORSEY RUN ROAD (SHA) PAVING SECTION

N.T.S



2" HOT MIX ASPHALT SUPERPAVE 12.5 MM FOR SURFACE PG 64-22, LEVEL 2

6" HOT MIX ASPHALT SUPERPAVE 19.0 MM FOR BASE, PG 64-22, LEVEL 2 (2 - 3" LIFTS)

12" BASE COURSE USING GRADED AGGREGATE (2 - 6" LIFTS)

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 12.15.14
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 1.05.15
DIRECTOR	DATE 1/5/15

OWNER/DEVELOPER
JAGDAMBE, LLC.
6804 CREEKWOOD CT.
CLARKSVILLE, MD 21029-1746
410-903-7898
C/O NARESH KUMAR

NO.	REVISION	DATE

SITE DEVELOPMENT PLAN

SITE LAYOUT PLAN AND DEMOLITION PLAN

MEL'S LIQUOR

7915 WATERLOO ROAD
TWO-STORY RETAIL/RESTAURANT CARRY-OUT BUILDING
ZONED: B-1
TAX MAP 43 BLOCK 21 — L.10188/F.162 — PARCEL 248
1ST ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

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TEL: 410.461.7666
FAX: 410.461.8961

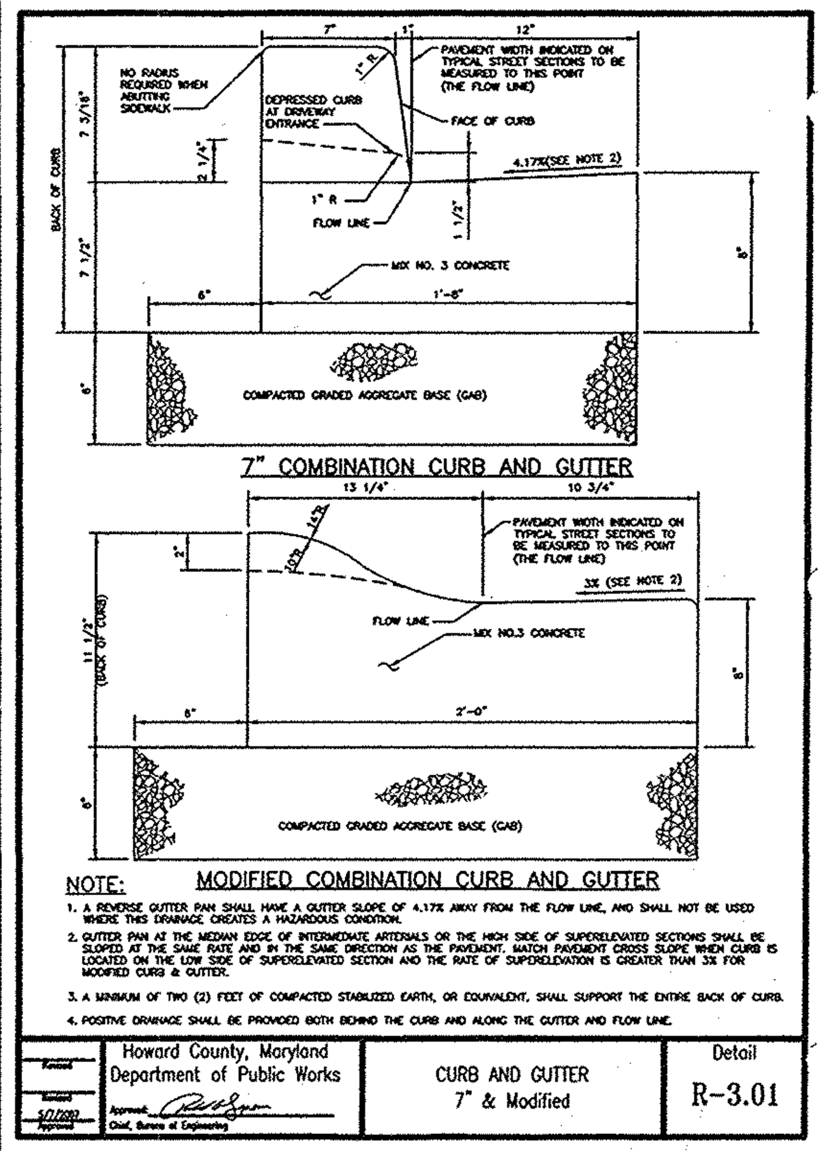
STATE OF MARYLAND — ROBERT HARRIS VOGEL — No. 16193 — PROFESSIONAL ENGINEER
ROBERT H. VOGEL, PE No.16193

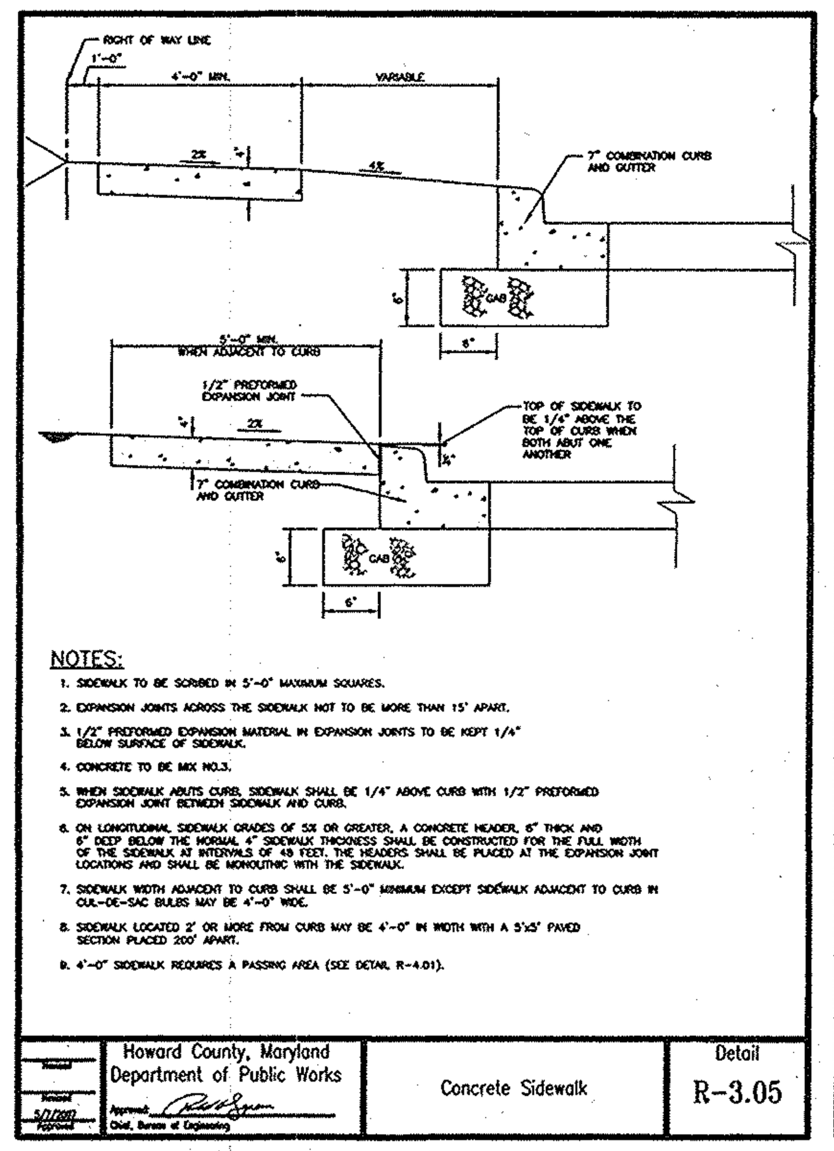
DESIGN BY:	DZE
DRAWN BY:	JER/CF/DZE
CHECKED BY:	RHV
DATE:	NOVEMBER 2014
SCALE:	AS SHOWN
W.O. NO.:	12-60

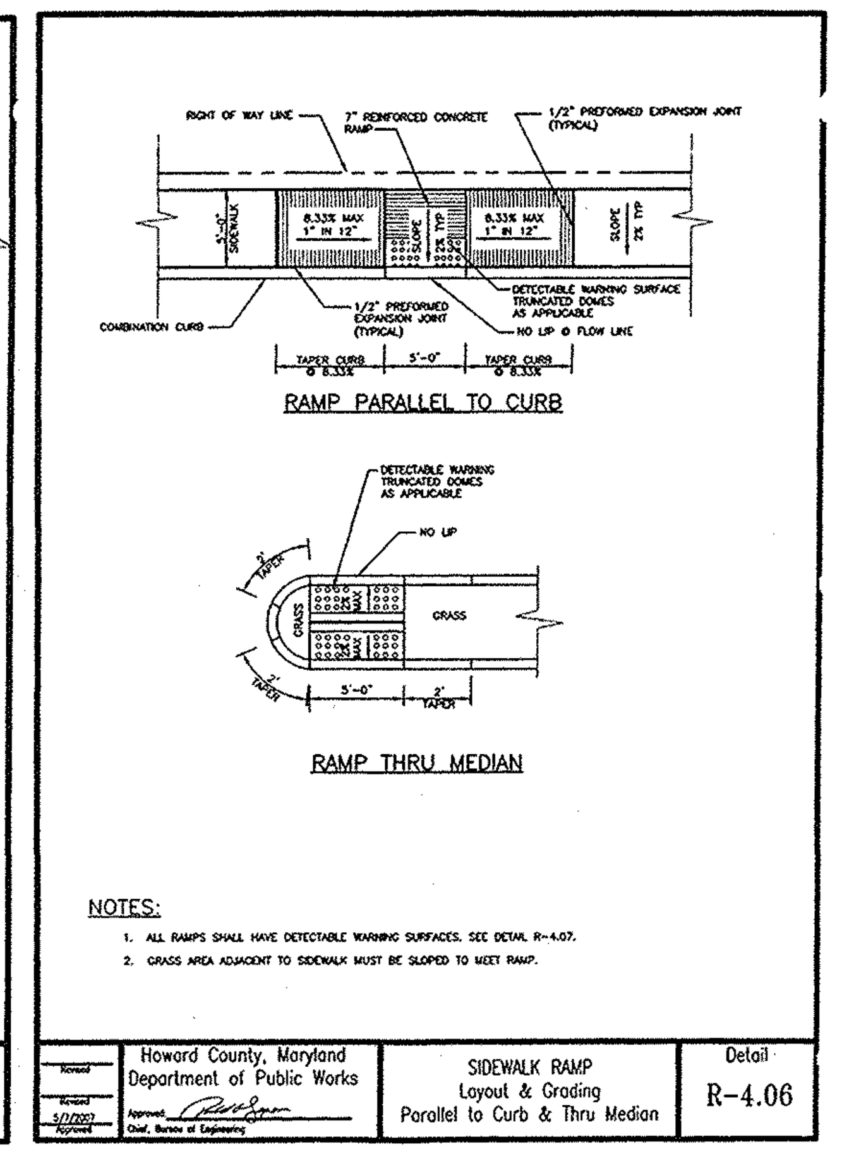
PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2016

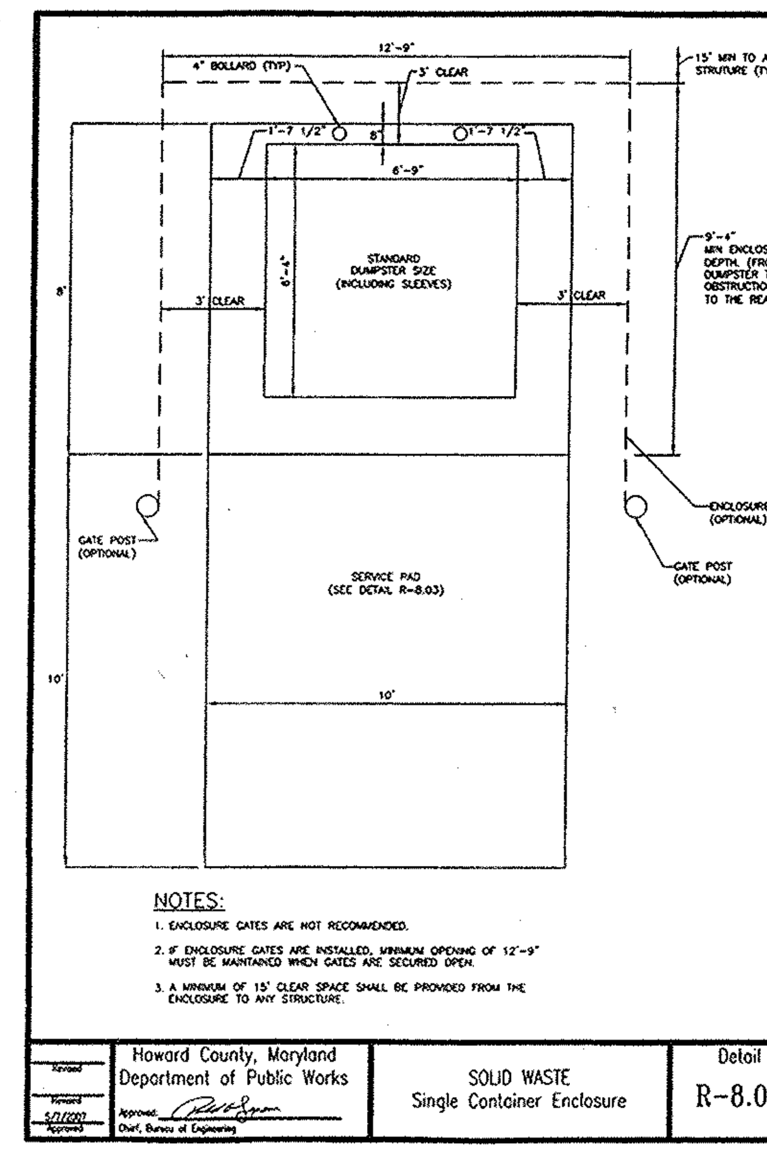
SDP-14-064

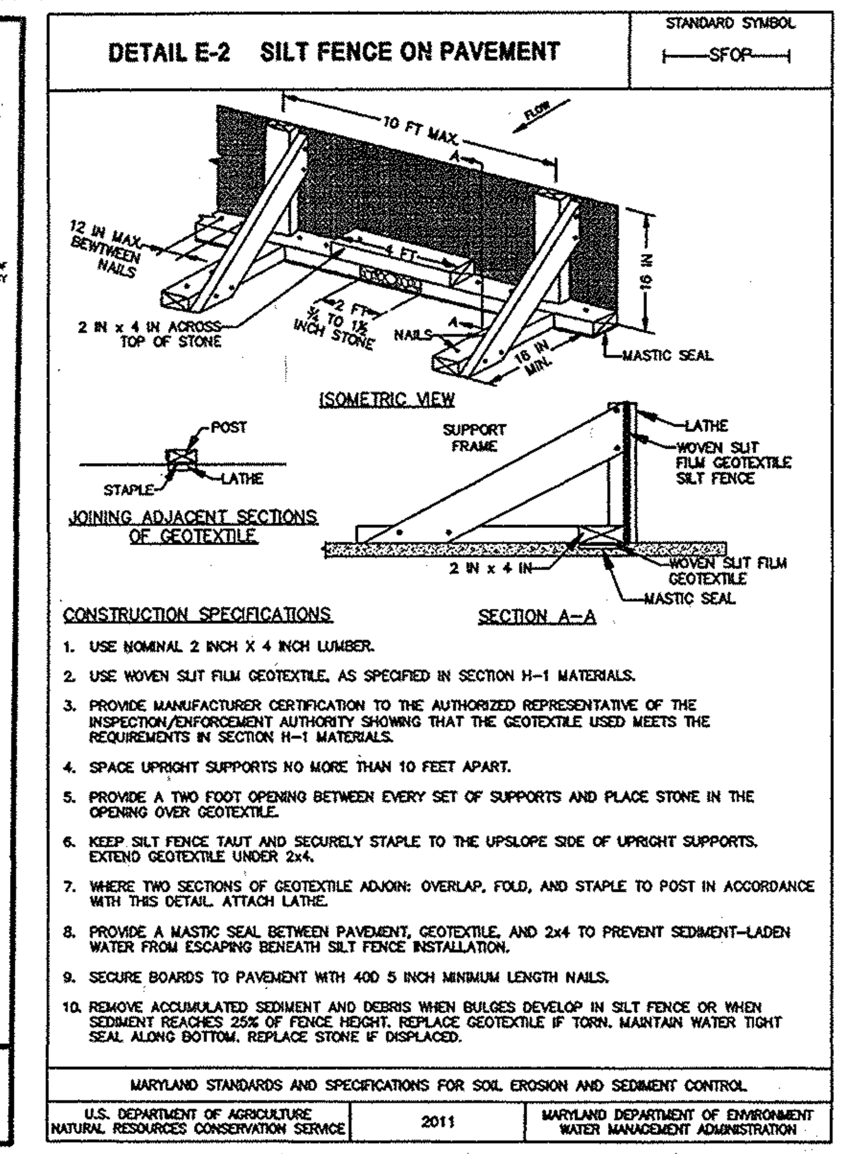
AS-BUILT 10·30·15

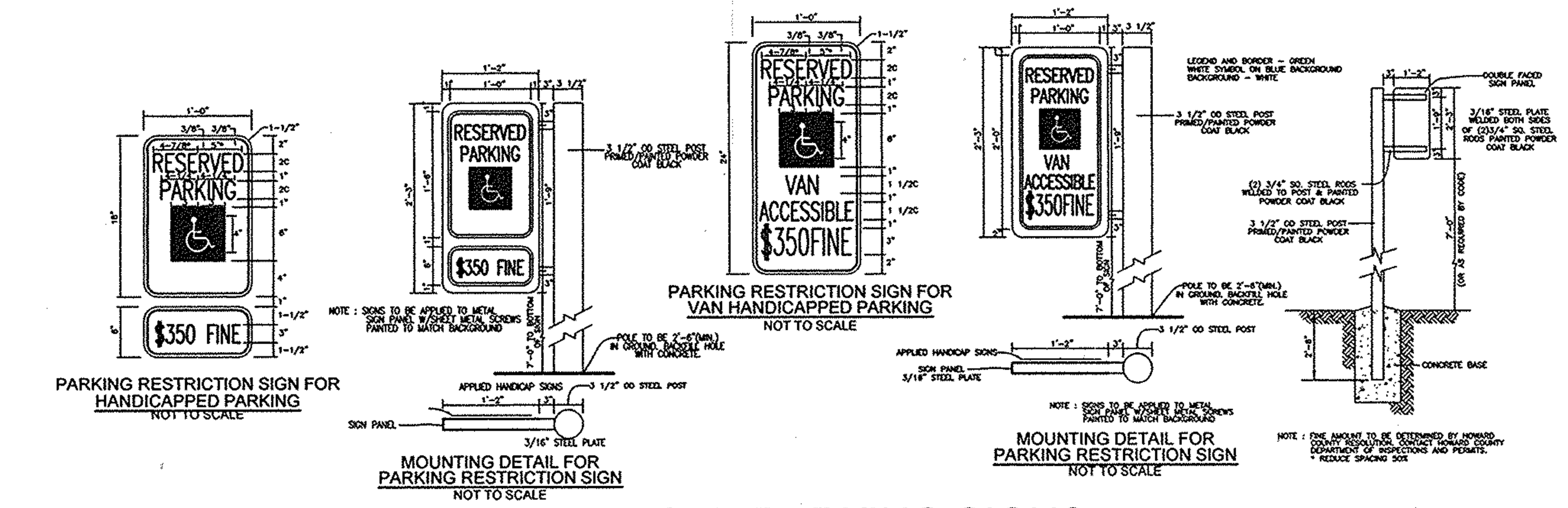






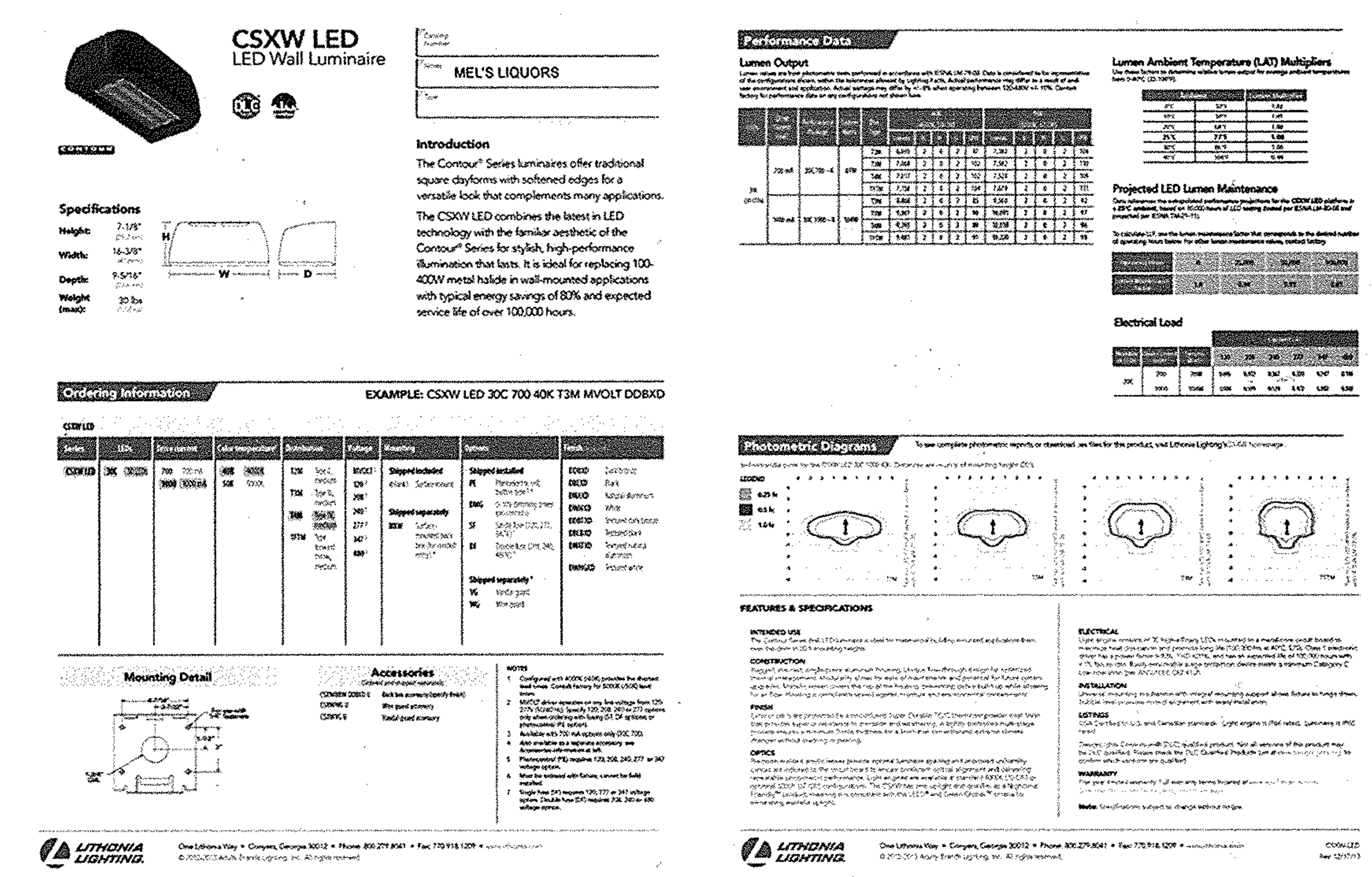






HANDICAP PARKING SIGNS

(NOT TO SCALE)



LIGHTING DETAILS

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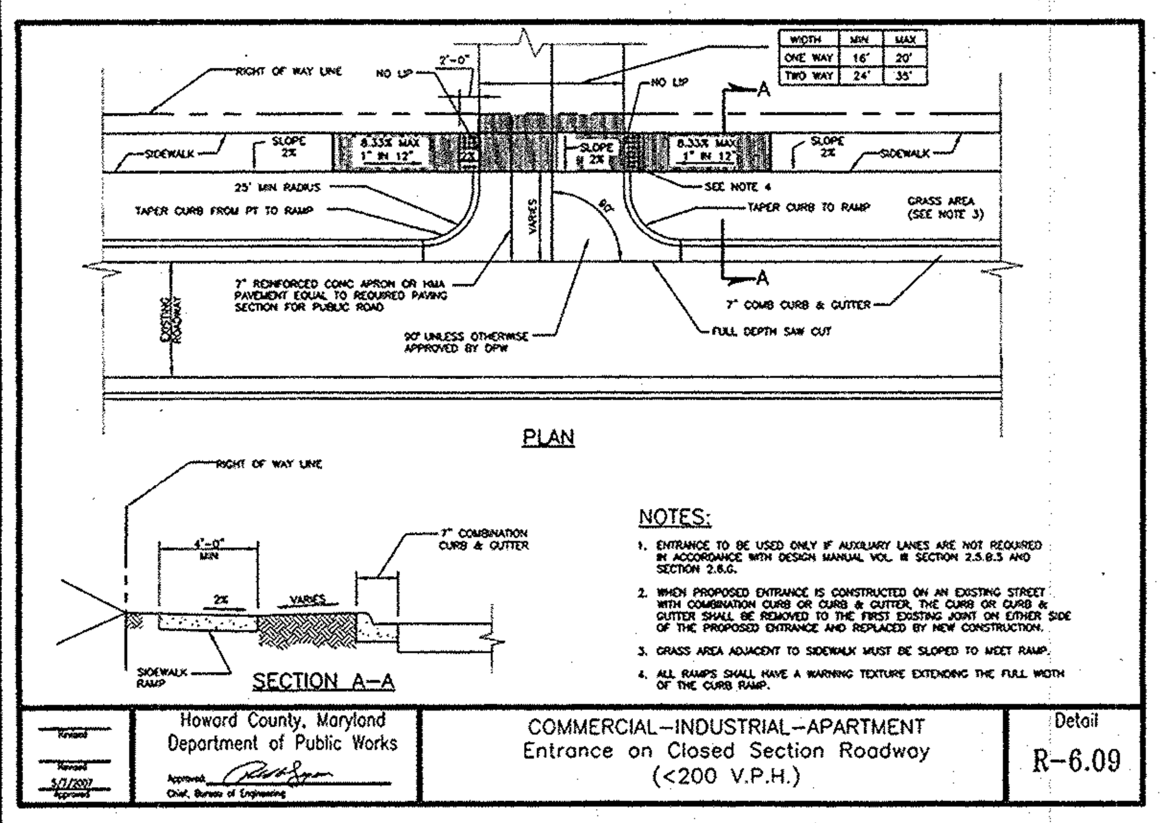


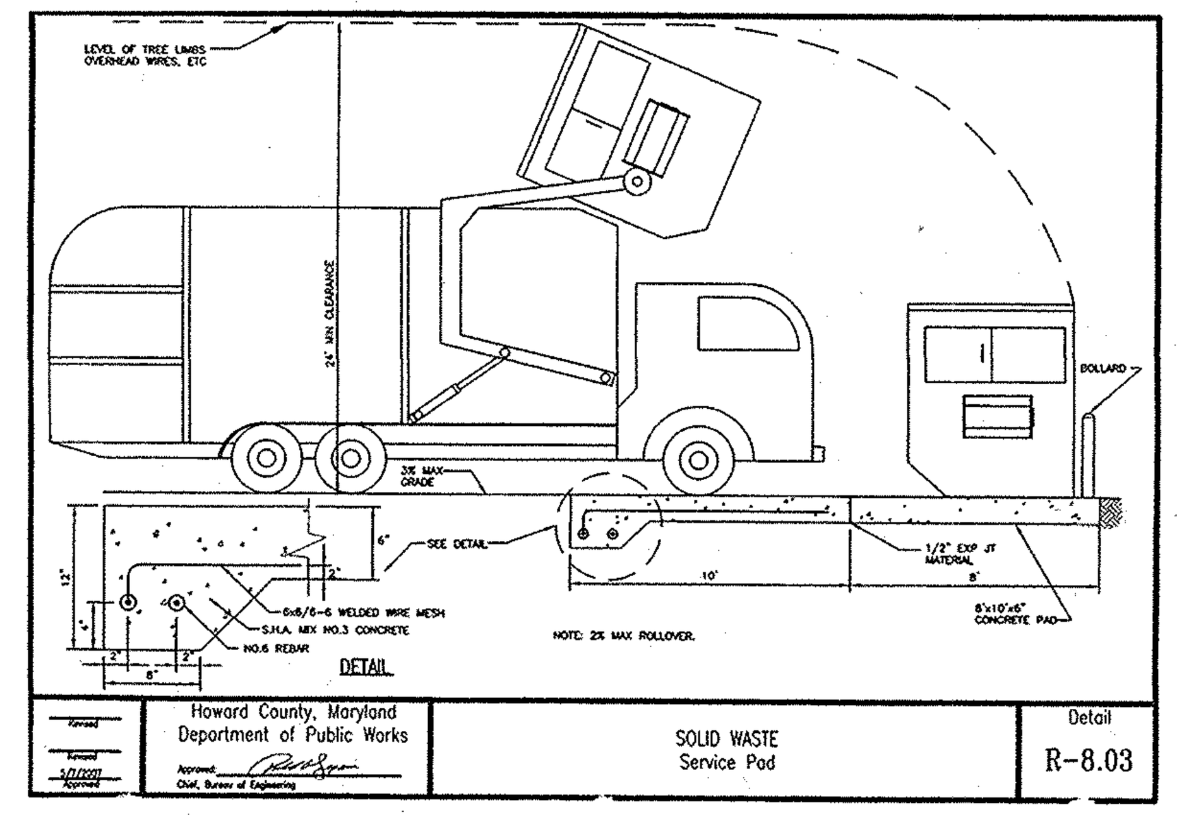
SECTION NUMBER	ROAD AND STREET CLASSIFICATION	CALIFORNIA BEARING RATIO (CBR) / PAVEMENT MATERIAL (INCHES)	MIN HMA WITH CAB 3 TO <5	5 TO <7	≥ 7	HMA WITH CONSTANT CAB 3 TO <5	5 TO <7	≥ 7
P-1	PARKING BAYS: RESIDENTIAL AND NON-RESIDENTIAL; PARKING DRIVE AISLES: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 2 HEAVY TRUCKS PER DAY	HMA SUPERPAVE FINAL SURFACE 9.5 MM, PG 64-22, LEVEL 1 (ESAL)	1.5	1.5	[illegible]	1.5	1.5	1.5
		HMA SUPERPAVE INTERMEDIATE SURFACE (NA)	NA	NA	NA	NA	NA	NA
		HMA SUPERPAVE BASE 19.0 MM, PG 64-22, LEVEL 1 (ESAL)	2.0	2.0	2.0	3.5	3.0	2.5
		GRADED AGGREGATE BASE (GAB)	8.5	7.0	[illegible]	[illegible]	4.0	4.0
P-2	PARKING DRIVE AISLES: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY; LOCAL ROADS: ACESS PLACE, ACCESS STREET; CUL-DE-SACS: RESIDENTIAL	HMA SUPERPAVE FINAL SURFACE 9.5 MM, PG 64-22, LEVEL 1 (ESAL)	1.5	1.5	1.5	1.5	1.5	1.5
		HMA SUPERPAVE INTERMEDIATE SURFACE 9.5 MM, PG 64-22, LEVEL 1 (ESAL)	1.0	1.0	1.0	1.0	1.0	1.0
		HMA SUPERPAVE BASE 19.0 MM, PG 64-22, LEVEL 1 (ESAL)	2.0	2.0	2.0	3.5	2.0	2.0
		GRADED AGGREGATE BASE (GAB)	8.0	4.0	3.0	4.0	4.0	4.0
P-3	PARKING DRIVE AISLES: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN [illegible] HEAVY TRUCKS PER DAY; LOCAL ROADS: ACCESS PLACE, ACCESS STREET; CUL-DE-SACS: NON-RESIDENTIAL; MINOR COLLECTORS: RESIDENTIAL	HMA SUPERPAVE FINAL SURFACE 9.5 MM, PG 64-22, LEVEL 1 (ESAL)	1.5	1.5	1.5	[illegible]	[illegible]	1.5
		HMA SUPERPAVE INTERMEDIATE SURFACE 9.5 MM, PG 64-22, LEVEL 1 (ESAL)	[illegible]	1.0	1.0	1.0	1.0	1.0
		HMA SUPERPAVE BASE 19.0 MM, PG 64-22, LEVEL 1 (ESAL)	3.0	3.0	3.0	4.5	3.0	3.0
		GRADED AGGREGATE BASE (GAB)	[illegible]	[illegible]	3.0	6.0	6.0	6.0
P-4	MINOR COLLECTORS: NON-RESIDENTIAL; MAJOR COLLECTORS	HMA SUPERPAVE FINAL SURFACE 12.5 MM, PG 64-22, LEVEL 2 (LOW ESAL)	2.0	2.0	2.0	[illegible]	[illegible]	2.0
		HMA SUPERPAVE INTERMEDIATE SURFACE 12.5 MM, PG 64-22, LEVEL 2	2.0	2.0	2.0	2.0	2.0	2.0
		HMA SUPERPAVE BASE 19.0 MM, PG 64-22, LEVEL 2	4.0	4.0	3.0	6.0	5.0	5.0
		GRADED AGGREGATE BASE (GAB)	13.0	[illegible]	[illegible]	6.0	6.0	6.0

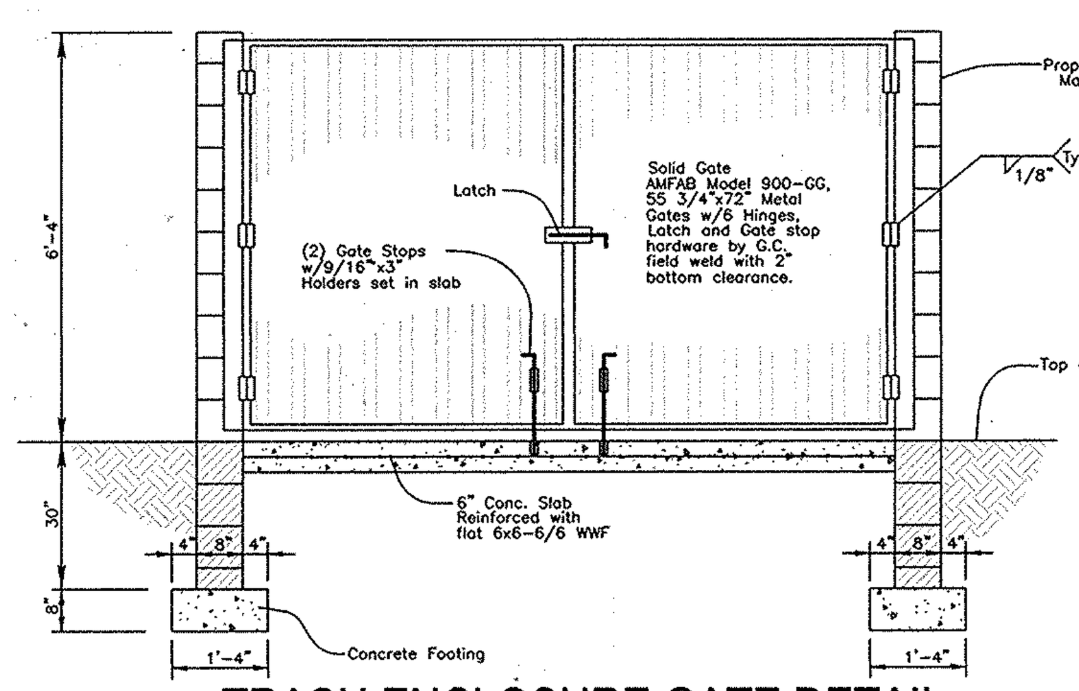
Notes:
1) HEAVY TRUCKS ARE DEFINED AS THOSE WITH SIX (6) WHEELS OR MORE INCLUDING GARBAGE TRUCKS.
2) HMA SUPERPAVE LAYERS SHALL BE PLACED IN APPROPRIATE COMPACTED LIFT THICKNESS: 19.0 MM BASE (2.0" MIN TO 4.0" MAX), 12.5 MM SURFACE (1.5" MIN TO 3.0" MAX), AND 9.5 MM SURFACE (1.0" MIN TO 2.0" MAX)
3) GRADED AGGREGATE BASE (GAB) TO BE PLACED AND COMPACTED IN 6" MAX COMPACTED THICKNESS LAYERS.
4) THE INTERMEDIATE SURFACE COURSE LAYER MUST BE PLACED WITHIN 2 WEEKS OF PLACEMENT OF BASE COURSE, AND IS REQUIRED PRIOR TO SUBSTANTIAL COMPLETION INSPECTION AND BOND REDUCTION.
5) IN LIEU OF PLACING THE INTERMEDIATE SURFACE COURSE LAYER FOR COMMERCIAL/INDUSTRIAL ENTRANCE APRONS WITHIN THE COUNTY RIGHT-OF-WAY WHERE AUXILIARY LANES ARE NOT REQUIRED, THE THICKNESS OF THE INTERMEDIATE PAVEMENT LAYER CAN BE ADDED TO THE REQUIRED THICKNESS OF THE BASE ASPHALT LAYER.
6) THE CONSTRUCTION DRAWINGS SHALL SHOW THE PAVING SECTION, ROAD CLASSIFICATION AND CBR VALUE FOR EACH ROADWAY

HMA SUPERPAVE FINAL SURFACE
HMA SUPERPAVE INTERMEDIATE SURFACE
HMA SUPERPAVE BASE
GRADED AGGREGATE BASE (GAB)

Howard County, Maryland Department of Public Works | PAVING SECTIONS P-1 to P-4 | Detail R-2.01

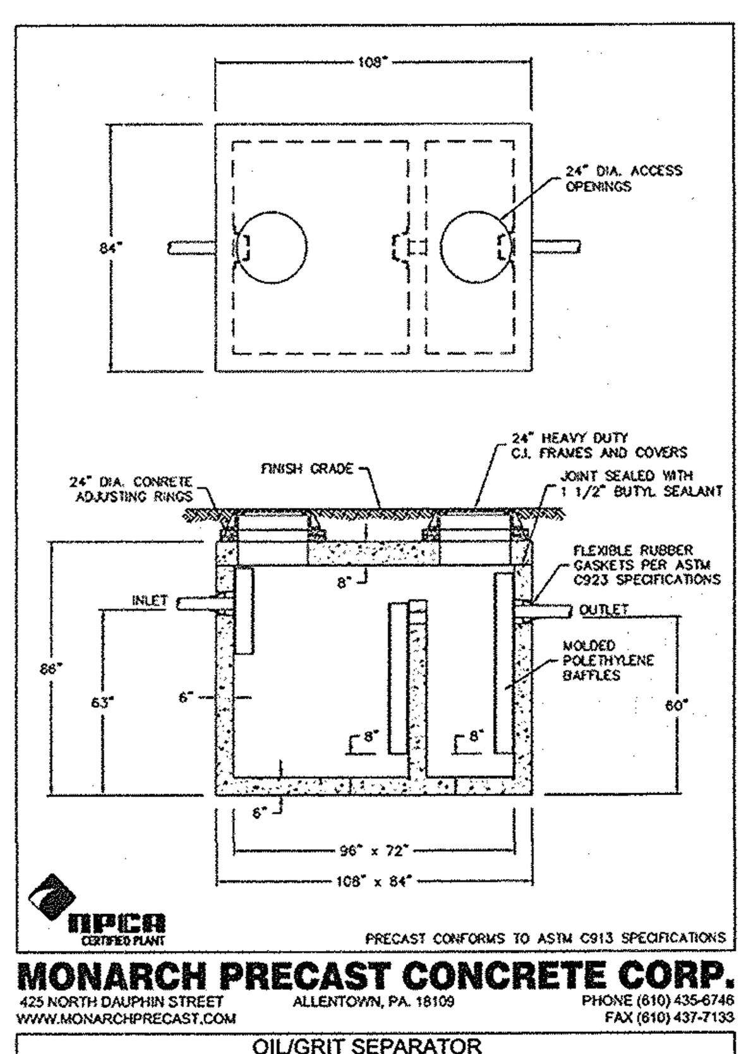
NOTE: PAVING SECTIONS ARE TO BE VERIFIED AND APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO CONSTRUCTION.

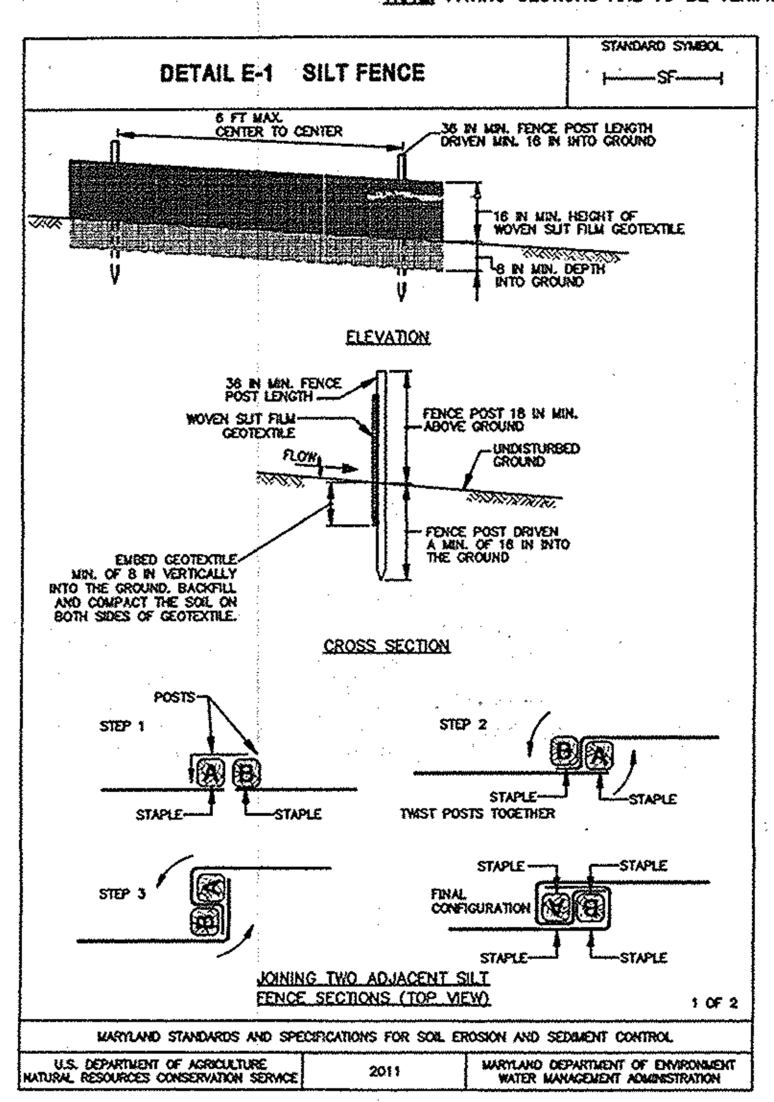


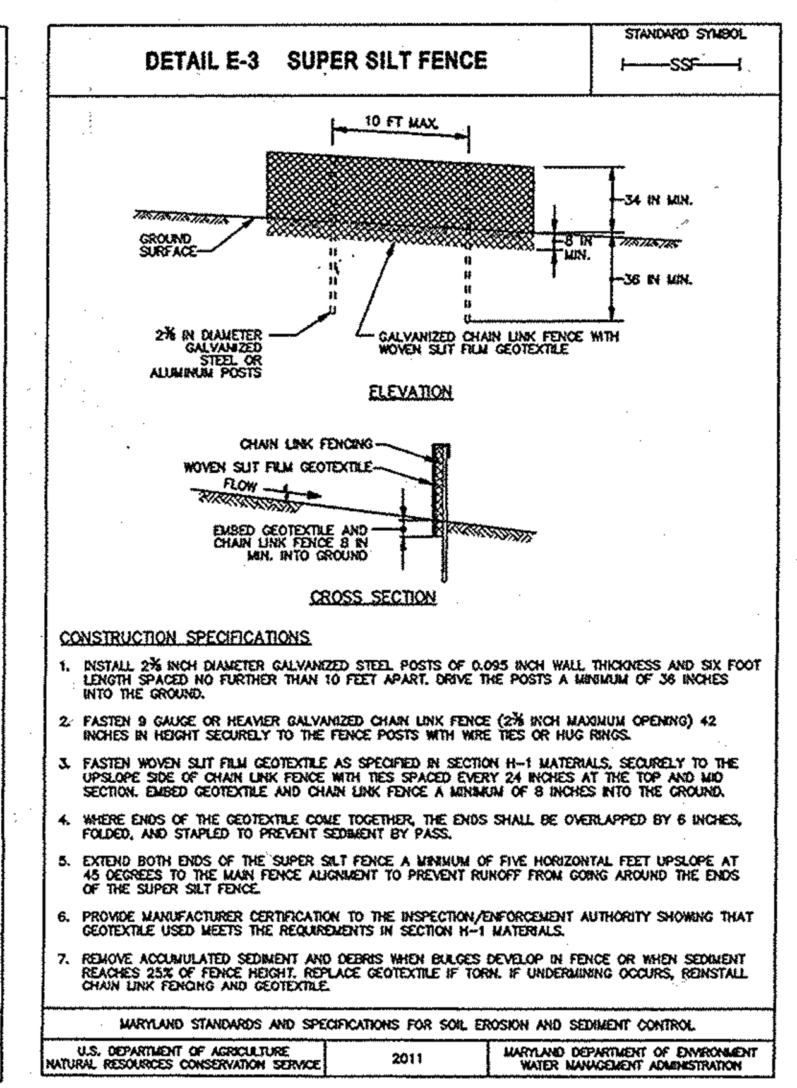


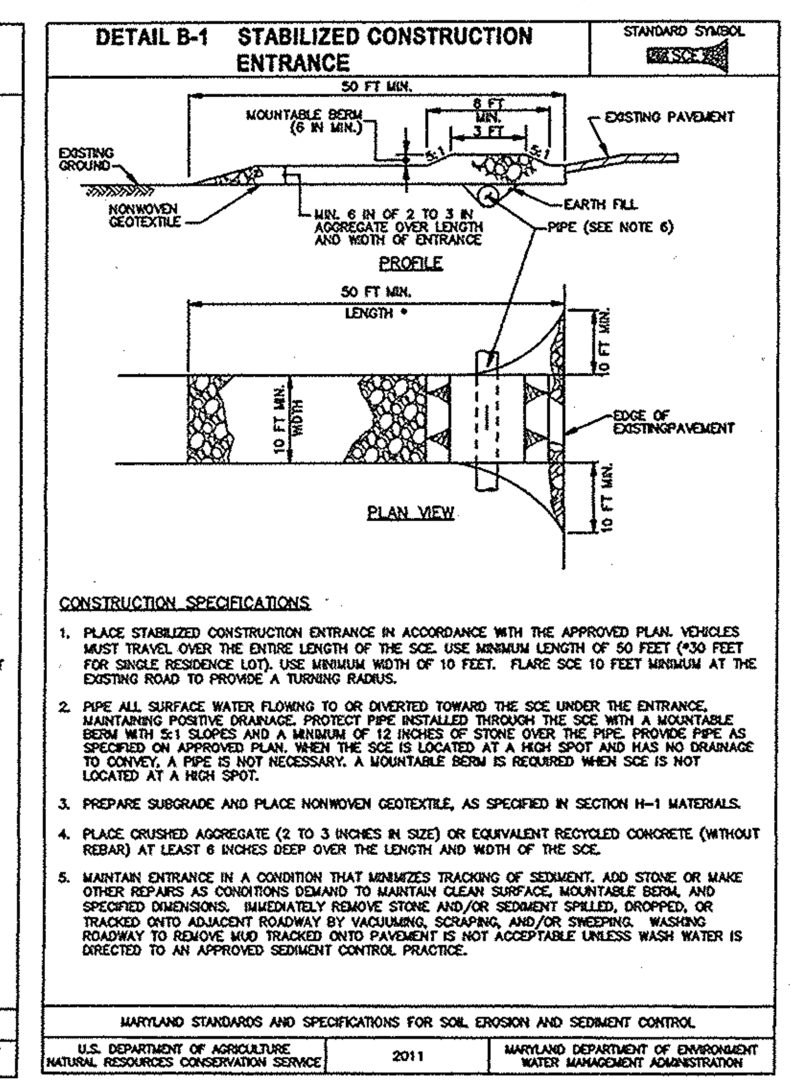
TRASH ENCLOSURE GATE DETAIL

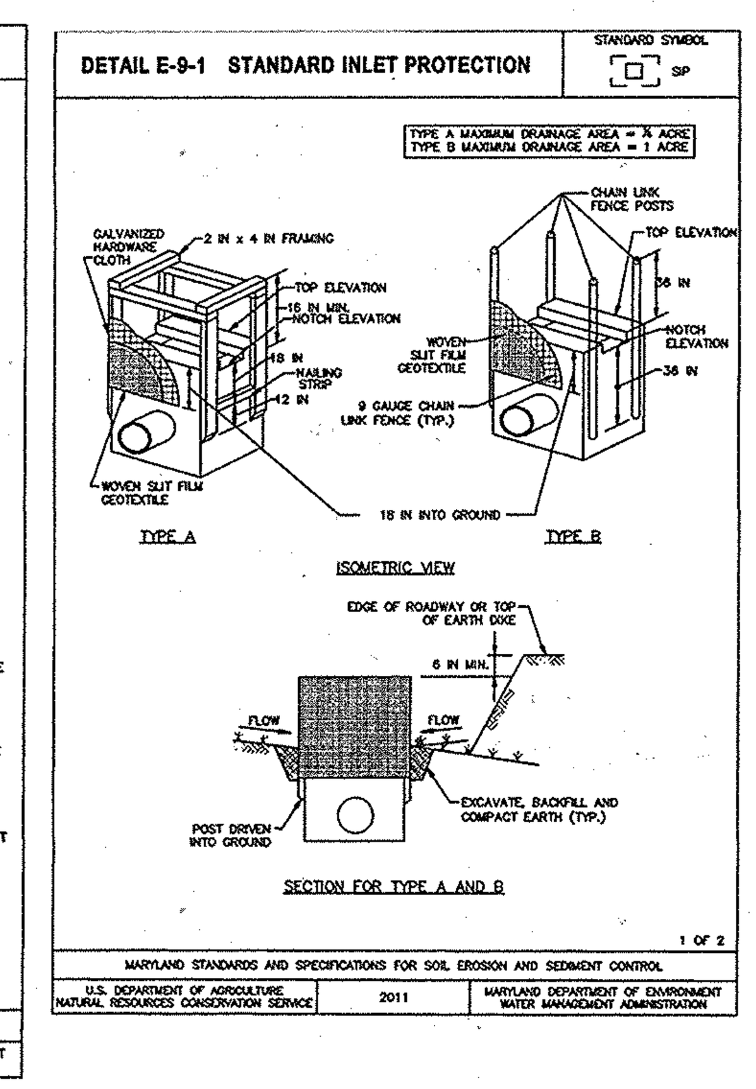
NO SCALE

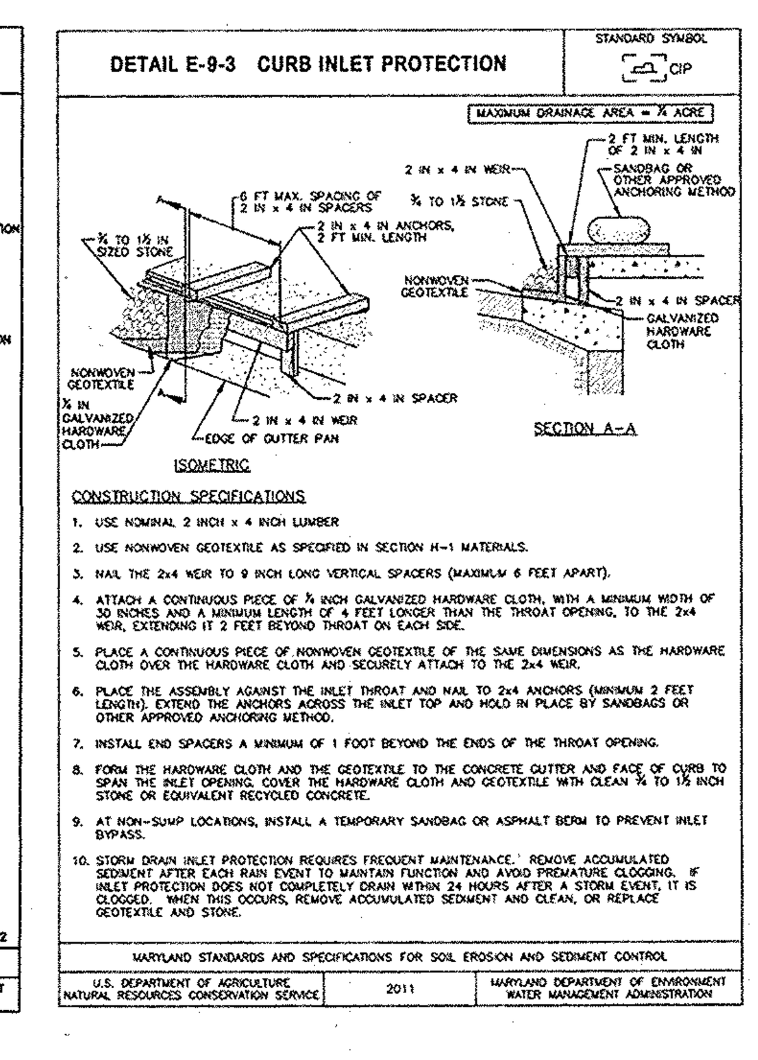












DETAIL E-1 SILT FENCE

STANDARD SYMBOL SF

CONSTRUCTION SPECIFICATIONS

1. USE WOOD POSTS 1¾ X 1¾ ± ⅛ INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
3. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
4. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
5. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
7. EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
8. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

H-5 STANDARDS AND SPECIFICATIONS

FOR

DUST CONTROL

Definition

Controlling the suspension of dust particles from construction activities.

Purpose

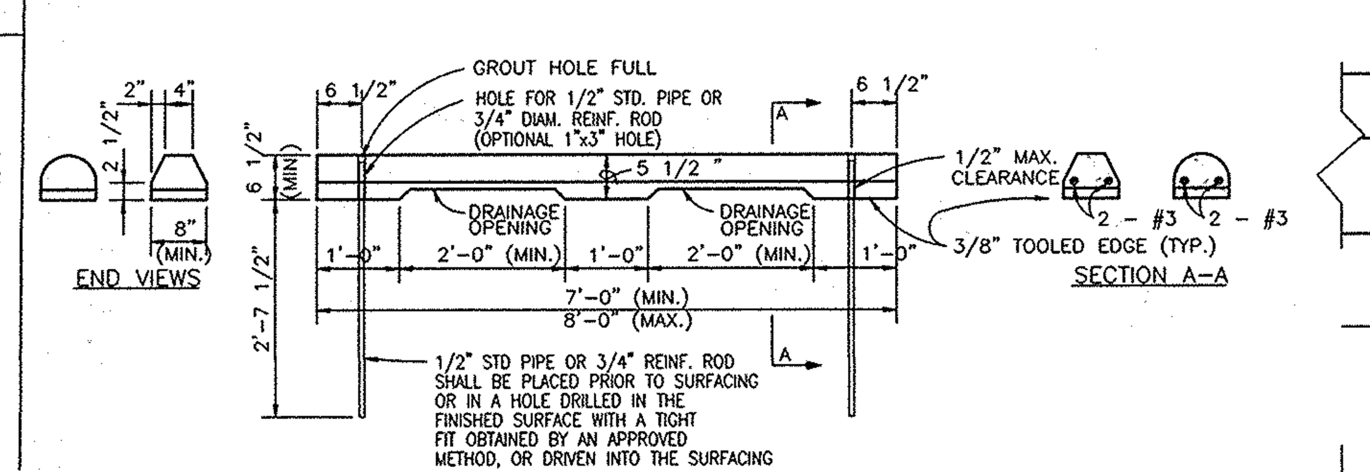
To prevent blowing and movement of dust from exposed soil surfaces to reduce on and off-site damage including health and traffic hazards.

Conditions Where Practice Applies

Areas subject to dust blowing and movement where on and off-site damage is likely without treatment.

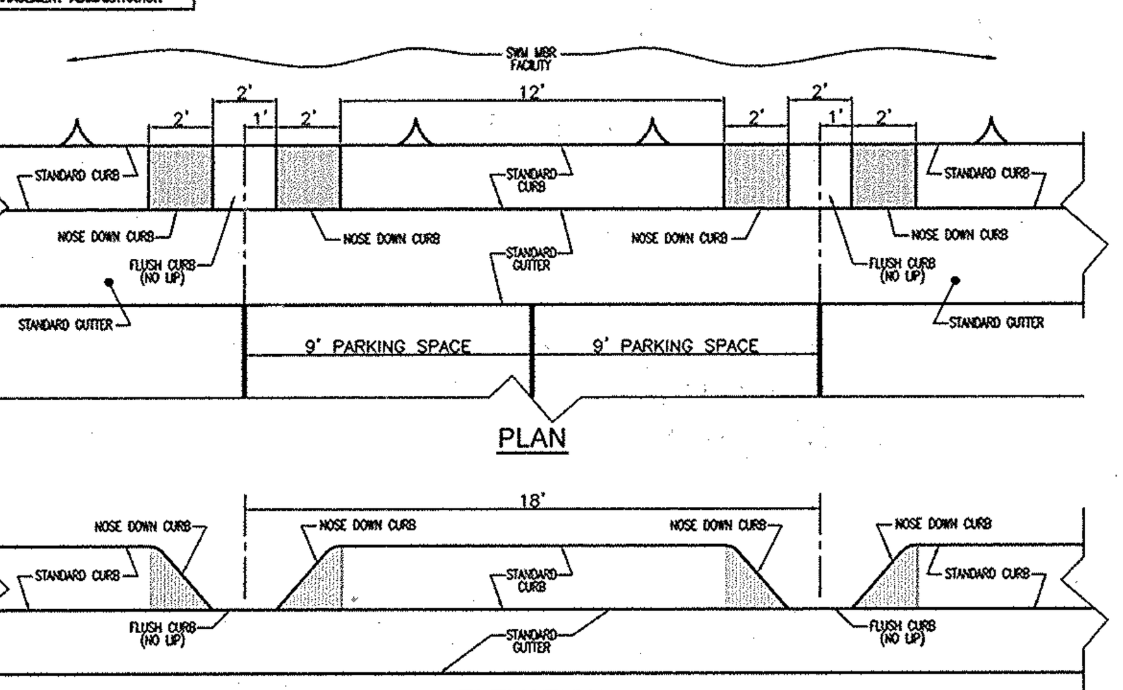
Specifications

1. Mulches: See Section B-4-2 Soil Preparation, Topsoiling, and Soil Amendments, Section B-4-3 Seeding and Mulching, and Section B-4-4 Temporary Stabilization. Mulch must be anchored to prevent blowing.
2. Vegetative Cover: See Section B-4-4 Temporary Stabilization.
3. Tillage: Till to roughen surface and bring clods to the surface. Begin plowing on windward side of site. Chisel-type plows spaced about 12 inches apart, spring-toothed harrows, and similar plows are examples of equipment that may produce the desired effect.
4. Irrigation: Sprinkle site with water until the surface is moist. Repeat as needed. The site must not be irrigated to the point that runoff occurs.
5. Barriers: Solid board fences, silt fences, snow fences, burlap fences, straw bales, and similar material can be used to control air currents and soil blowing.
6. Chemical Treatment: Use of chemical treatment requires approval by the appropriate plan review authority.



PRECAST CONCRETE WHEEL STOP DETAILS

NOT TO SCALE



STAGGERED SWM CURB DETAIL ADJACENT TO MICRO-BIORETENTION

NOT TO SCALE

SEQUENCE OF CONSTRUCTION

1. OBTAIN HOWARD COUNTY GRADING PERMIT. (WEEK 1)
2. NOTIFY HOWARD COUNTY AT LEAST 48 HOURS PRIOR TO START OF CONSTRUCTION. (WEEK 1)
3. CONDUCT A PRE-CONSTRUCTION MEETING WITH THE SEDIMENT CONTROL INSPECTOR PRIOR TO ANY LAND DISTURBANCE. (WEEK 1)
4. INSTALL STABILIZED CONSTRUCTION ENTRANCE WITH MOUNTABLE BERM. (WEEK 2)
5. CLEARING AND GRUBBING AS NECESSARY FOR THE INSTALLATION OF PERIMETER CONTROLS. (2 DAYS)
6. INSTALL ALL PERIMETER CONTROLS INCLUDING SILT FENCE, AND SUPER SILT FENCE, AS INDICATED ON PLANS. (WEEK 2)
6. WITH APPROVAL OF SEDIMENT CONTROL INSPECTOR, CLEAR AND GRUB REMAINDER OF SITE. (WEEK 3)
7. BEGIN SITE GRADING AND UTILITY CONSTRUCTION. PROVIDE INLET PROTECTION AS AS SHOWN ON THESE PLANS (6 WEEKS)
8. BEGIN BUILDING CONSTRUCTION. (8 WEEKS)
9. BEGIN CONSTRUCTION OF MICRO-BIORETENTION FACILITIES. AFTER STORM DRAIN IS COMPLETE FINE GRADE AS REQUIRED TO DIRECT RUNOFF TO INLETS. (2 WEEK)
10. WITH INSPECTOR'S APPROVAL, BEGIN INSTALLATION OF CURB AND GUTTER AND ON-SITE BASE COURSE PAVING. (3 WEEKS)
11. COMPLETE UTILITY CONSTRUCTION.
12. COMPLETE ALL CURB & GUTTER CONSTRUCTION. (1 WEEK)
13. COMPLETE ALL BASE COURSE PAVEMENT CONSTRUCTION. (1 WEEK)
14. COMPLETE BUILDING CONSTRUCTION. (1 WEEK)
15. CONSTRUCT SURFACE COURSE PAVING AND SIDEWALKS. (1 WEEK)
16. WITH THE INSPECTOR'S APPROVALM, FINE GRADE AND STABILIZE ALL AREAS OF PARCEL INCLUDING ANY EXPOSED EARTH AREAS OUTSIDE THE LOD. REMOVE ALL TRASH JUNK AND DEBRIS FROM ENTIRE PARCEL. (1 WEEK)
17. INSTALL SITE AND MICRO-BIORETENTION LANDSCAPING. (WEEK 15)
18. FLUSH STORM DRAIN SYSTEM AND REMOVE ALL REMAINING SEDIMENT CONTROLS AFTER RECIEVING APPROVAL FROM THE SEDIMENT CONTROL INSPECTOR. STABILIZE ALL REMAINING DISTURBED AREAS.

NOTES:

1. DURING GRADING AND AFTER EACH RAINFALL, CONTRACTOR WILL INSPECT AND PROVIDE NECESSARY MAINTENANCE TO THE SEDIMENT CONTROL MEASURES ON THIS PLAN.
2. FOLLOWING INITIAL SOIL DISTURBANCES OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
   A. THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND
   B. SEVEN (7) CALENDAR DAYS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

HOWARD 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, (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) 3 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1, B) 7 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
4. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. B-4-5), TEMPORARY SEEDING (SEC. B-4-4) AND MULCHING (SEC. B-4-3). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
5. 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 FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
6. SITE ANALYSIS:

TOTAL SITE AREA	0.58 ACRES
AREA DISTURBED	0.60 ACRES
AREA TO BE ROOFED OR PAVED	0.41 ACRES
AREA TO BE VEGETATIVELY STABILIZED	0.19 ACRES
TOTAL CUT	1,384 CY*
TOTAL FILL	1,100 CY*
OFFSITE WASTE/BORROW LOCATION	ON-SITE **

7. ANY SEDIMENT CONTROL PRACTICE THAT IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
8. ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
9. ON ALL SITES 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.
10. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN BE BACK FILLED AND STABILIZED BY THE END OF EACH WORKDAY, WHICHEVER IS SHORTER.
11. ANY CHANGES OR REVISIONS TO THE SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE PLAN APPROVAL AUTHORITY PRIOR TO PROCEEDING WITH CONSTRUCTION.
12. A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 AC. PER GRADING UNIT) AT A TIME. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE ENFORCEMENT AUTHORITY. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE APPROVAL AUTHORITY, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.

* ESTIMATE ONLY. CONTRACTOR SHALL VERIFY QUANTITIES TO HIS OWN SATISFACTION.
**TO BE DETERMINED BY CONTRACTOR, WITH PRE-APPROVAL OF THE SEDIMENT CONTROL INSPECTOR; WITH AN APPROVED AND ACTIVE GRADING PERMIT.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 12.15.14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 1-05-15

DIRECTOR — DATE 1/5/15

BY THE DEVELOPER:

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

SIGNATURE OF DEVELOPER — DATE 11/10/14

BY THE ENGINEER:

"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 11/15/14

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

HOWARD S.C.D. — DATE 12/9/14

OWNER/DEVELOPER

JAGDAMBE, LLC.
6804 CREEKWOOD CT.
CLARKSVILLE, MD 21029-1746
410-903-7898
C/O NARESH KUMAR

NO.	REVISION	DATE

SITE DEVELOPMENT PLAN

SITE DETAILS; SEDIMENT AND EROSION CONTROL NOTES AND DETAILS

MEL'S LIQUOR

7915 WATERLOO ROAD
TWO-STORY RETAIL/RESTAURANT CARRY-OUT BUILDING
ZONED: B-1

TAX MAP 43 BLOCK 21 — L.10188/F.162 — PARCEL 248
1ST ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

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

STATE OF MARYLAND — ROBERT HARRIS VOGEL — No. 16193 — PROFESSIONAL ENGINEER

ROBERT H. VOGEL, PE No.16193

DESIGN BY:	DZE
DRAWN BY:	JER/CF/DZE
CHECKED BY:	RHV
DATE:	NOVEMBER 2014
SCALE:	AS SHOWN
W.O. NO.:	12-60

PROFESSIONAL CERTIFICATE

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2016

SDP-14-064

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

DEFINITION
THE PROCESS OF PREPARING THE SOILS TO SUSTAIN ADEQUATE VEGETATIVE STABILIZATION.

PURPOSE
TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.

CONDITIONS WHERE PRACTICE APPLIES
WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED.

CRITERIA
A. SOIL PREPARATION
1. TEMPORARY STABILIZATION
A. SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISCHARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.
B. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.
C. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
2. PERMANENT STABILIZATION
A. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
I. SOIL PH BETWEEN 6.0 AND 7.0.
II. SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).
III. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.
IV. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
V. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
B. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.
C. GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES.
D. APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.
E. MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

B. TOPSOILING
1. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCEM HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.
2. TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-NRCS.
3. TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
A. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS 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 MATERIAL TOXIC TO PLANT GROWTH.
D. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
4. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.
5. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:
A. TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1½ INCHES IN DIAMETER.
B. TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
C. TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.
6. TOPSOIL APPLICATION
A. EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL.
B. UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESS OF 4 INCHES. SPREADING IS TO BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS MUST BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
C. TOPSOIL MUST NOT BE PLACED IF THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

C. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)
1. SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OF 5 ACRES OR MORE. SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED PRIVATE OR COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.
2. FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.
3. LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING) WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIEVE. 4. LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
5. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

B-4-4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION

DEFINITION
TO STABILIZE DISTURBED SOILS WITH VEGETATION FOR UP TO 6 MONTHS.

PURPOSE
TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURBED SOILS.

CONDITIONS WHERE PRACTICE APPLIES
EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR A PERIOD OF 6 MONTHS OR LESS. FOR LONGER DURATION OF TIME, PERMANENT STABILIZATION PRACTICES ARE REQUIRED.

CRITERIA
1. SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE 8.1 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3), AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW ALONG WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE PLAN AND COMPLETED, THEN TABLE 8.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON THE PLAN.
2. FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.
3. WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON, APPLY SEED AND MULCH OR STRAW MULCH ALONE AS PRESCRIBED IN SECTION B-4-3.A.1.B AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

TEMPORARY SEEDING SUMMARY

HARDINESS ZONE (FROM FIGURE B.3): ZONE 6b SEED MIXTURE (FROM TABLE B.1):					FELIZER RATE (10-20-20)	LIME RATE
NO	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS		
1	COOL SEASON ANNUAL RYEGRASS OR EQUAL	40 LB / AC	MAR 1 TO MAY 15 AUG 1 TO OCT 15	0.5 IN.	436 LB/AC (10 LB PER 1000 SF)	2 TONS/AC (90 LB PER 1000 SF)
2	WARM SEASON FOXTAIL MILLET OR EQUAL	30 LB / AC	MAY 16 TO JUL 31	0.5 IN.		

B-4-3 STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING

DEFINITION
THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER.

PURPOSE
TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION.

CONDITIONS WHERE PRACTICE APPLIES
TO THE SURFACE OF ALL PERIMETER CONTROLS, SLOPES, AND ANY DISTURBED AREA NOT UNDER ACTIVE GRADING.

CRITERIA
A. SEEDING
1. SPECIFICATIONS
A. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED. SEED TAGS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING RATE.
B. MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS FROZEN. THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAWS.
C. INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS MUST NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANTS AS DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 TO 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.
D. SOD OR SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.
2. APPLICATION
A. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.
I. INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE 8.1, PERMANENT SEEDING TABLE 8.3, OR SITE-SPECIFIC SEEDING SUMMARIES.
II. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. ROLL THE SEEDED AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.
B. DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.
I. CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDBED MUST BE FIRM AFTER PLANTING.
II. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
C. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER).
I. IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE TOTAL OF SOLUBLE NITROGEN; P205 (PHOSPHOROUS), 200 POUNDS PER ACRE; K20 (POTASSIUM), 200 POUNDS PER ACRE.
II. LIME: USE ONLY GROUND AGRICULTURAL LIMESTONE (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING). NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING.
III. MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.
IV. WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.

B. MULCHING
1. MULCH MATERIALS (IN ORDER OF PREFERENCE)
A. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, LYE, OAT, OR BARLEY AND REASONABLY BRIGHT IN COLOR. STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW AND NOT MUSTY, MOLDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY.
NOTE: USE ONLY STERILE STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.
B. WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.
I. WCFM IS TO BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY.
II. WCFM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.
III. WCFM MATERIALS ARE TO BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL MUST FORM A BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.
IV. WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.
V. WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 10 MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6 PERCENT MAXIMUM AND WATER HOLDING CAPACITY OF 90 PERCENT MINIMUM.
2. APPLICATION
A. APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.
B. WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE TO A UNIFORM LOOSE DEPTH OF 1 TO 2 INCHES. APPLY MULCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. WHEN USING A MULCH ANCHORING TOOL, INCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE.
C. WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 1500 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
3. ANCHORING
A. PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON THE SIZE OF THE AREA AND EROSION HAZARD:
I. A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF 2 INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, THIS PRACTICE SHOULD FOLLOW THE CONTOUR.
II. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER AT A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
III. SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70, PETROSET, TERRA TAX II, TERRA TACK AR OR OTHER APPROVED EQUAL MAY BE USED. FOLLOW APPLICATION RATES AS SPECIFIED BY THE MANUFACTURER. APPLICATION OF LIQUID BINDERS NEEDS TO BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. USE OF ASPHALT BINDERS IS STRICTLY PROHIBITED.
IV. LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG.

B-4-8 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA

DEFINITION
A MOUND OR PILE OF SOIL PROTECTED BY APPROPRIATELY DESIGNED EROSION AND SEDIMENT CONTROL MEASURES.

PURPOSE
TO PROVIDE A DESIGNATED LOCATION FOR THE TEMPORARY STORAGE OF SOIL THAT CONTROLS THE POTENTIAL FOR EROSION, SEDIMENTATION, AND CHANGES TO DRAINAGE PATTERNS.

CONDITIONS WHERE PRACTICE APPLIES
STOCKPILE AREAS ARE UTILIZED WHEN IT IS NECESSARY TO SALVAGE AND STORE SOIL FOR LATER USE.

CRITERIA
1. THE STOCKPILE LOCATION AND ALL RELATED SEDIMENT CONTROL PRACTICES MUST BE CLEARLY INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN.
2. THE FOOTPRINT OF THE STOCKPILE MUST BE SIZED TO ACCOMMODATE THE ANTICIPATED VOLUME OF MATERIAL AND BASED ON A SIDE SLOPE RATIO NO STEEPER THAN 2:1. BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.
3. RUNOFF FROM THE STOCKPILE AREA MUST DRAIN TO A SUITABLE SEDIMENT CONTROL PRACTICE.
4. ACCESS THE STOCKPILE AREA FROM THE UPGRADE SIDE.
5. CLEAR WATER RUNOFF INTO THE STOCKPILE AREA MUST BE MINIMIZED BY USE OF A DIVERSION DEVICE SUCH AS AN EARTH DIKE, TEMPORARY SWALE OR DIVERSION FENCE. PROVISIONS MUST BE MADE FOR DISCHARGING CONCENTRATED FLOW IN A NON-EROSIVE MANNER.
6. WHERE RUNOFF CONCENTRATES ALONG THE TOE OF THE STOCKPILE FILL, AN APPROPRIATE EROSION/SEDIMENT CONTROL PRACTICE MUST BE USED TO INTERCEPT THE DISCHARGE.
7. STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/7 DAY STABILIZATION REQUIREMENT AS WELL AS STANDARD B-4-1 INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY STABILIZATION.
8. IF THE STOCKPILE IS LOCATED ON AN IMPERVIOUS SURFACE, A LINER SHOULD BE PROVIDED BELOW THE STOCKPILE TO FACILITATE CLEANUP. STOCKPILES CONTAINING CONTAMINATED MATERIAL MUST BE COVERED WITH IMPERMEABLE SHEETING.

MAINTENANCE
THE STOCKPILE AREA MUST CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. SIDE SLOPES MUST BE MAINTAINED AT NO STEEPER THAN A 2:1 RATIO. THE STOCKPILE AREA MUST BE KEPT FREE OF EROSION. IF THE VERTICAL HEIGHT OF A STOCKPILE EXCEEDS 20 FEET FOR 2:1 SLOPES, 30 FEET FOR 3:1 SLOPES, OR 40 FEET FOR 4:1 SLOPES, BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.

B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

DEFINITION
TO STABILIZE DISTURBED SOILS WITH PERMANENT VEGETATION.

PURPOSE
TO USE LONG-LIVED PERENNIAL GRASSES AND LEGUMES TO ESTABLISH PERMANENT GROUND COVER ON DISTURBED SOILS.

CONDITIONS WHERE PRACTICE APPLIES
EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR 6 MONTHS OR MORE.

CRITERIA
A. SEED MIXTURES
1. GENERAL USE
A. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE 8.3 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE 8.3) AND BASED ON THE SITE CONDITION OR PURPOSE FOUND ON TABLE 8.2. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
B. ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD OFFICE GUIDE, SECTION 342 - CRITICAL AREA PLANTING.
C. FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY.
D. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FORM FERTILIZER (46-0-0) AT 3-1/2 POUNDS PER 1000 SQUARE FEET (150 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY.
2. TURFGRASS MIXTURES
A. AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.
B. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
I. KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS SEEDING RATE: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
II. KENTUCKY BLUEGRASS/PERENNIAL RYE: FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYEGRASS CULTIVARS/CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
III. TALL FESCUE/KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN DROUGHT PRONE AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEMENT IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES; CERTIFIED TALL FESCUE CULTIVARS 95 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 0 TO 5 PERCENT. SEEDING RATE: 5 TO 8 POUNDS PER 1000 SQUARE FEET. ONE OR MORE CULTIVARS MAY BE BLENDED.
IV. KENTUCKY BLUEGRASS/FINE FESCUE: SHADE MIXTURE: FOR USE IN AREAS WITH SHADE IN BLUEGRASS LAWNS. FOR ESTABLISHMENT IN HIGH QUALITY, INTENSIVELY MANAGED TURF AREA. MIXTURE INCLUDES; CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30 TO 40 PERCENT AND CERTIFIED FINE FESCUE AND 60 TO 70 PERCENT. SEEDING RATE: 1½ TO 3 POUNDS PER 1000 SQUARE FEET.
NOTES:
SELECT TURFGRASS VARIETIES FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY MEMO #77, "TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND".
CHOOSE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY. THE CERTIFICATION PROGRAM OF THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEED SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION AND ASSURES A PURE GENETIC LINE.
C. IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES
WESTEM MD: MARCH 15 TO JUNE 1, AUGUST 1 TO OCTOBER 1 (HARDINESS ZONES: 5B, 6A)
CENTRAL MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONE: 6B)
SOUTHERN MD, EASTERN SHORE: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONES: 7A, 7B)
D. TILL AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES, LEVEL AND RAKE THE AREAS TO PREPARE A PROPER SEEDBED. REMOVE STONES AND DEBRIS OVER 1½ INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY.
E. IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH (1/2 TO 1 INCH EVERY 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASONS, OR ON ADVERSE SITES.

PERMANENT SEEDING SUMMARY

HARDINESS ZONE (FROM FIGURE B.3): ZONE 6b SEED MIXTURE (FROM TABLE B.3): 9					FELIZER RATE (10-20-20)			LIME RATE
NO	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	N	P_2O_5	K_2O	
1	COOL SEASON TALL FESCUE & KENTUCKY BLUEGRASS OR EQUAL	T.F. 60 LB / AC K.B. 40 LB / AC	MAR 1 TO MAY 15 AUG 15 TO OCT 15	1/4-1/2 IN.	45 LB/AC (1 LB PER 1000 SF)	90 LB/AC (2 LB PER 1000 SF)	90 LB/AC (2 LB PER 1000 SF)	2 TONS/AC (90 LB PER 1000 SF)

B. SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER).
1. GENERAL SPECIFICATIONS
A. CLASS OF TURFGRASS SOD MUST BE MARYLAND STATE CERTIFIED. SOD LABELS MUST BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR.
B. SOD MUST BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4 INCH, PLUS OR MINUS ¼ INCH, AT THE TIME OF CUTTING. MEASUREMENT FOR THICKNESS MUST EXCLUDE TOP GROWTH AND THATCH. BROKEN PADS AND TOM OR UNEVEN ENDS WILL NOT BE ACCEPTABLE.
C. STANDARD SIZE SECTIONS OF SOD MUST BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION.
D. SOD MUST NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.
E. SOD MUST BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPLANTED WITHIN THIS PERIOD MUST BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION.
2. SOD INSTALLATION
A. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGHTLY IRRIGATE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE SOD.
B. LAY THE FIRST ROW OF SOD IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO IT AND TIGHTLY WEDGED AGAINST EACH OTHER. STAGGER LATERAL JOINTS TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.
C. WHEREVER POSSIBLE, LAY SOD WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERING JOINTS. ROLL AND TAMP, PEG OR OTHERWISE SECURE THE SOD TO PREVENT SLIPPAGE ON SLOPES. ENSURE SOLID CONTACT EXISTS BETWEEN SOD ROOTS AND THE UNDERLYING SOIL SURFACE.
D. WATER THE SOD IMMEDIATELY FOLLOWING ROLLING AND TAMPING UNTIL THE UNDERSIDE OF THE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. COMPLETE THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOD WITHIN EIGHT HOURS.
3. SOD MAINTENANCE
A. IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR AS OFTEN AND SUFFICIENTLY AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES. WATER SOD DURING THE HEAT OF THE DAY TO PREVENT WILTING.
B. AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT.
C. DO NOT MOW UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN 1/3 OF THE GRASS LEAF MUST BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. MAINTAIN A GRASS HEIGHT OF AT LEAST 3 INCHES UNLESS OTHERWISE SPECIFIED.

Table B.1: Temporary Seeding for Site Stabilization

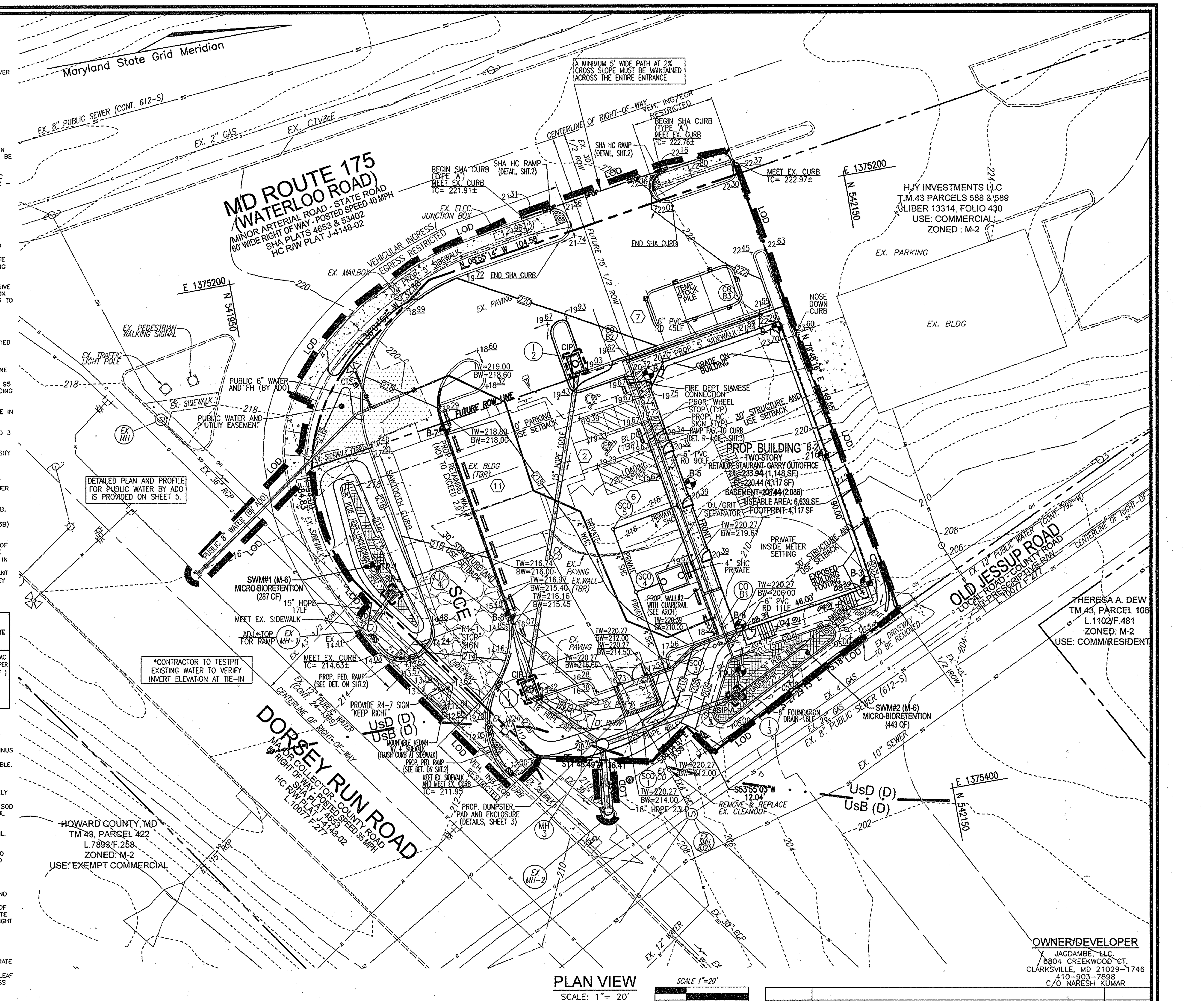
Plant Species	Seeding Rate [1] lb/ac	Seeding Rate [1] lb/1000 ft²	Seeding Depth [2] (inches)	Recommended Seeding Dates by Plant Hardiness Zone [3]: 5b and 6a	6b	7a and 7b	FELIZER RATE (10-20-20)	LIME RATE
Cool-Season Grasses								
Annual Ryegrass (*Lolium perenne ssp. multiflorum*)	40	1.0	0.5	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30	436 LB/AC (10 LB PER 1000 SF)	2 TONS/AC (90 LB PER 1000 SF)
Barley (*Hordeum vulgare*)	96	2.2	1.0	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30		
Oats (*Avena sativa*)	72	1.7	1.0	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30		
Wheat (*Triticum aestivum*)	120	2.8	1.0	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30		
Cereal Rye (*Secale cereale*)	112	2.8	1.0	Mar 15 to May 31; Aug 1 to Oct 31	Mar 1 to May 15; Aug 1 to Nov 15	Feb 15 to Apr 30; Aug 15 to Dec 15		
Warm-Season Grasses								
Foxtail Millet (*Setaria italica*)	30	0.7	0.5	Jun 1 to Jul 31	May 16 to Jul 31	May 1 to Aug 14		
Pearl Millet (*Pennisetum glaucum*)	20	0.5	0.5	Jun 1 to Jul 31	May 16 to Jul 31	May 1 to Aug 14		

NOTES:
1/ Seeding rates for the warm-season grasses are in pounds of Pure Live Seed (PLS). Actual planting rates shall be adjusted to reflect percent seed germination and purity, as tested. Adjustments are usually not needed for the cool-season grasses.

Seeding rates listed above are for temporary seedings, when planted alone. When planted as a nurse crop with permanent seed mixes, use 1/3 of the seeding rate listed above for barley, oats, and wheat. For smaller-seeded grasses (annual ryegrass, pearl millet, foxtail millet), do not exceed more than 5% (by weight) of the overall permanent seeding mix. Cereal rye generally should not be used as a nurse crop, unless planting will occur in very late fall beyond the seeding dates for other temporary seedings. Cereal rye has allelopathic properties that inhibit the germination and growth of other plants. If it must be used as a nurse crop, seed at 1/3 of the rate listed above.

Oats are the recommended nurse crop for warm-season grasses.

2/ For sandy soils, plant seeds at twice the depth listed above.
3/ The planting dates listed are averages for each Zone and may require adjustment to reflect local conditions, especially near the boundaries of the zone.



OWNER/DEVELOPER
JAGDAMBE, LLC.
6804 CREEKWOOD CT.
CLARKSVILLE, MD 21029-1746
410-903-7898
C/O NARESH KUMAR

PLAN VIEW
SCALE: 1"= 20'

SCALE 1"=20'
10' 0' 20'

LEGEND:

Symbol	Description	Symbol	Description
218	PROPOSED CONTOUR		PROPERTY LINE
218	EXISTING CONTOUR		ADJACENT PROPERTY LINE
OH	EXISTING OVERHEAD LINES		RIGHT-OF-WAY LINE
W	EXISTING WATERLINE LINE		PROPOSED SIDEWALK
G	EXISTING GAS LINE		EXISTING CURB AND GUTTER
	EXISTING GUARD RAIL		PROPOSED CURB AND GUTTER
X	EXISTING METAL FENCE		PROPOSED WHEEL STOP
//	EXISTING WOOD FENCE		PROPOSED STORM DRAIN INLET
	EXISTING ELECTRICAL BOX		PROPOSED STORM DRAIN
	EXISTING POLE	SF	SILT FENCE
	EXISTING LIGHT POLE WITH CONCRETE BASE	SFOP	SILT FENCE ON PAVEMENT
	EXISTING MAILBOX	SSF	SUPER SILT FENCE
	EXISTING SIGN	LOD	LIMIT OF DISTURBANCE
S	EXISTING SANITARY MANHOLE	CIP	CURB INLET PROTECTION
CO	EXISTING CLEANOUT	SIP	STANDARD INLET PROTECTION
FH	EXISTING FIRE HYDRANT	SCE	STABILIZED CONSTRUCTION ENTRANCE
11	PROPOSED PARKING COUNT		20' PUBLIC WATER AND UTILITY EASEMENT
B-5	PROPOSED TEST PIT		PROP. MICRO BIORETENTION AREA (M-6)
	PROPOSED SANITARY LINE		
	PROPOSED WATER LINE		
M1B2 / M1D3	SOILS BOUNDARY		
X	EXISTING FENCE		

NO.	REVISION	DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 12-15-14
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 1-05-15
DIRECTOR	DATE 1/5/15

BY THE DEVELOPER:

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

SIGNATURE OF DEVELOPER — DATE 11/10/14

BY THE ENGINEER:

"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 11/15/14

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

HOWARD S.C.D. — DATE 12/9/14

SITE DEVELOPMENT PLAN

GRADING, SEDIMENT AND EROSION CONTROL PLAN AND NOTES

MEL'S LIQUOR

7915 WATERLOO ROAD
TWO-STORY RETAIL/RESTAURANT CARRY-OUT BUILDING
ZONED: B-1

TAX MAP 43 BLOCK 21 — L.10188/F.162 — PARCEL 248
1ST ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
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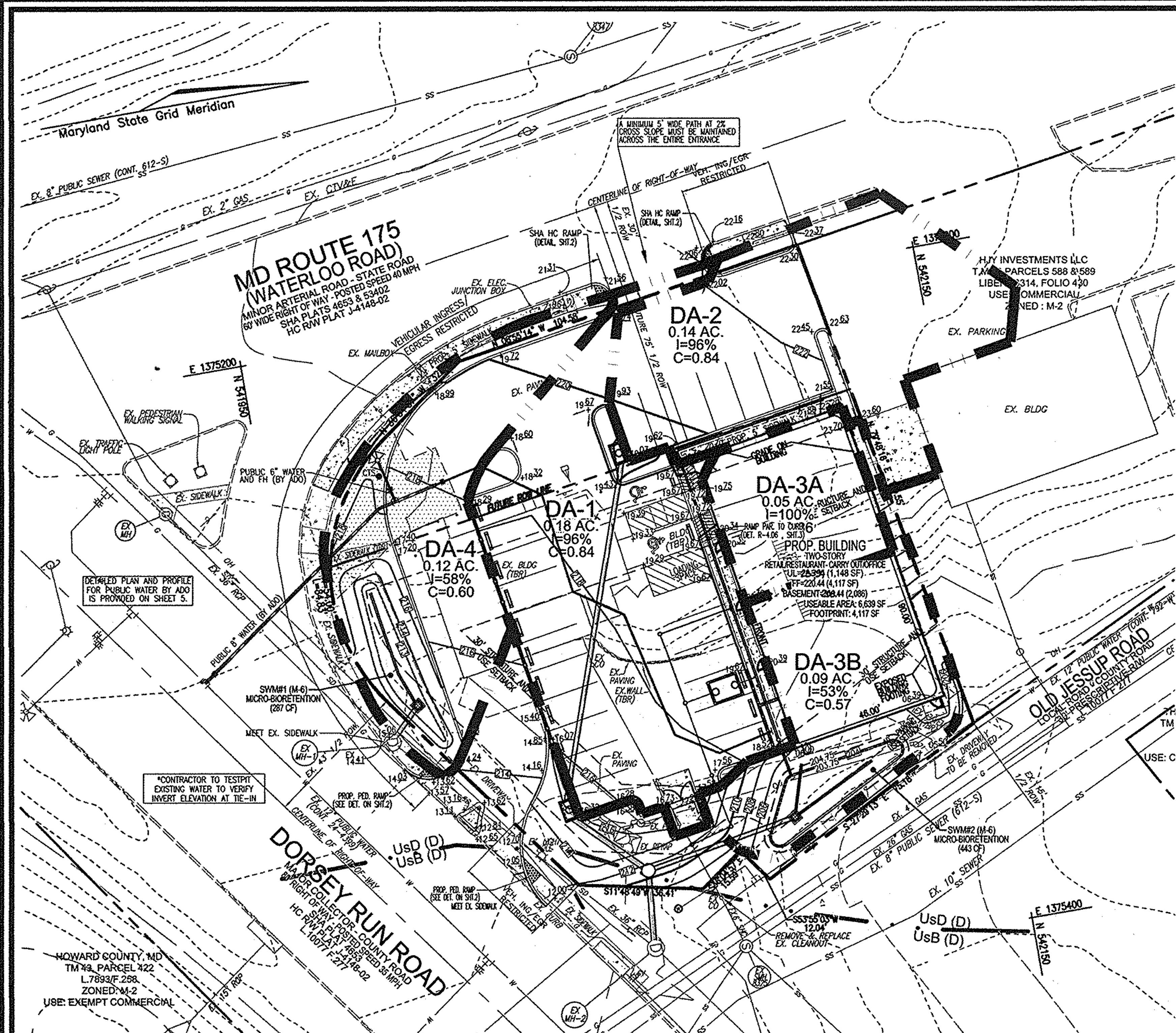
TEL: 410.461.7666
FAX: 410.461.8961

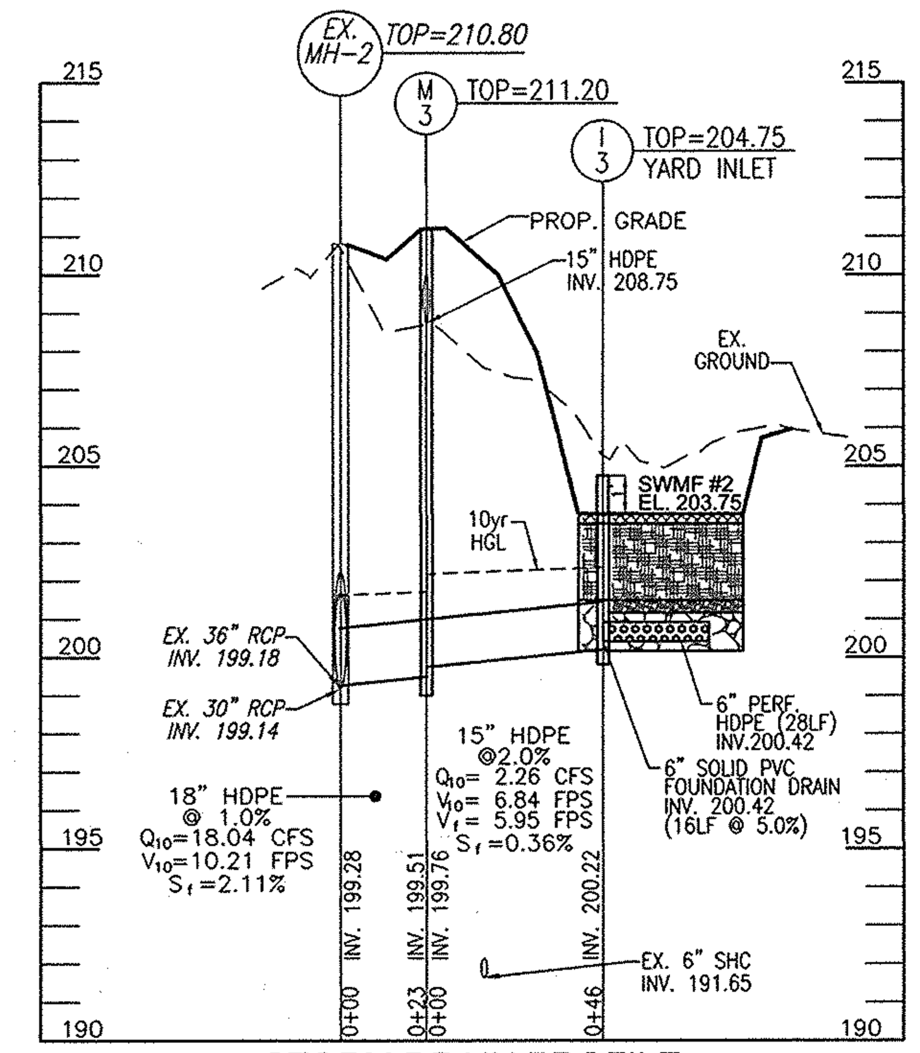
STATE OF MARYLAND — ROBERT HARRIS VOGEL — No. 16193 — PROFESSIONAL ENGINEER
ROBERT H. VOGEL, PE No.16193

DESIGN BY:	DZE
DRAWN BY:	JER/CF/DZE
CHECKED BY:	RHV
DATE:	NOVEMBER 2014
SCALE:	AS SHOWN
W.O. NO.:	12-60

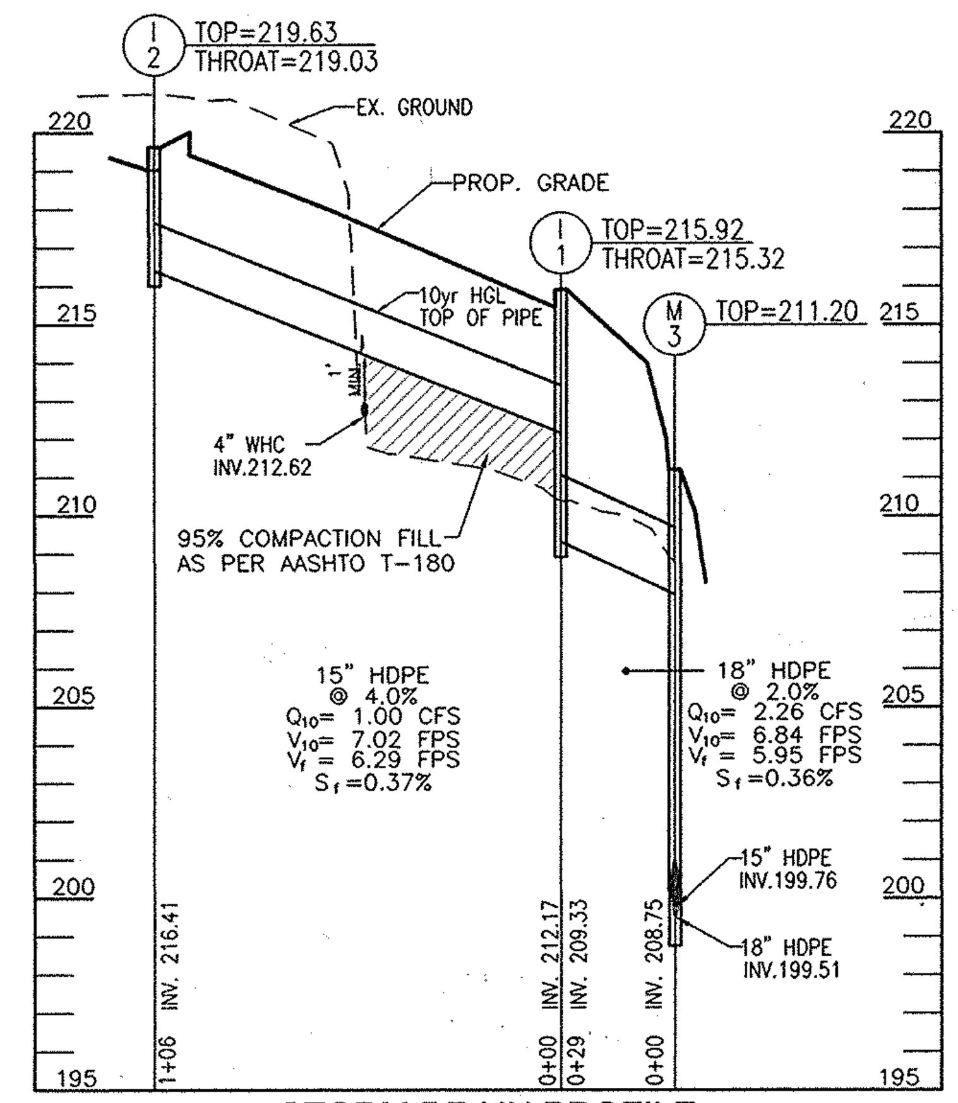
PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2016



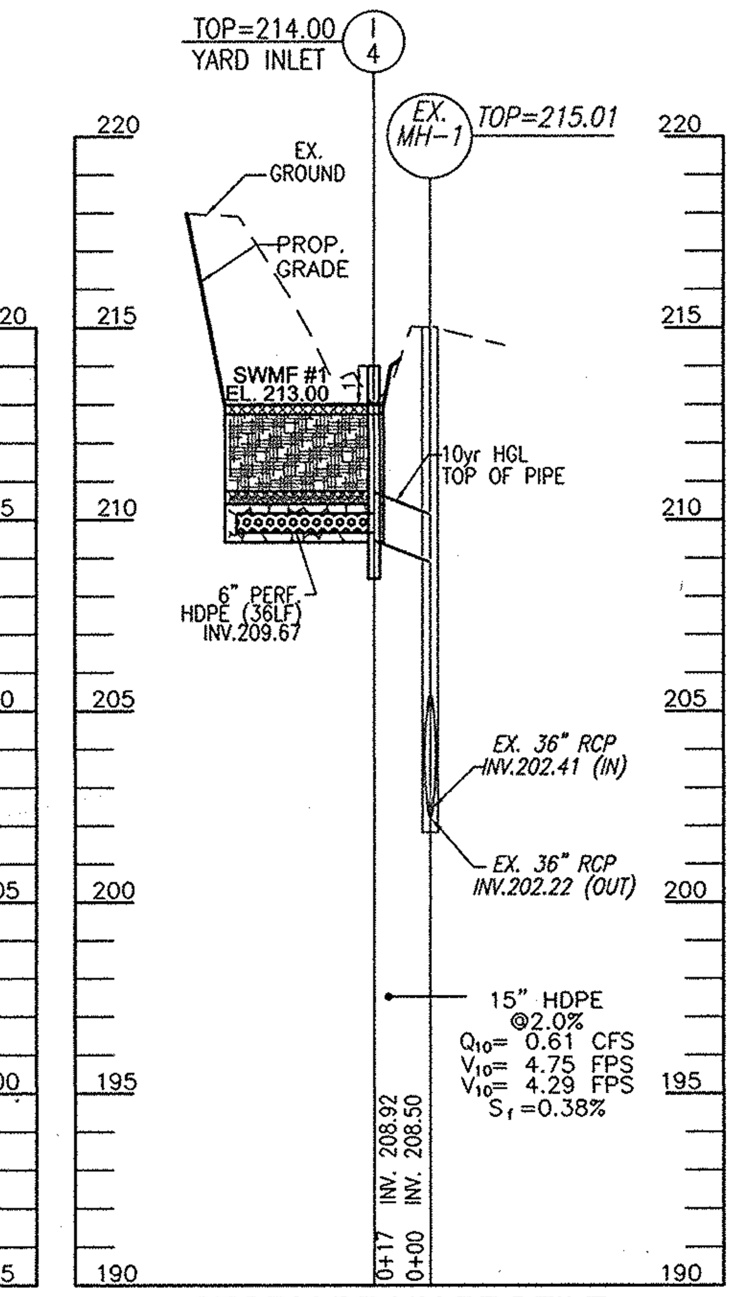
STORM DRAIN DRAINAGE AREA MAP
SCALE: 1" = 30'



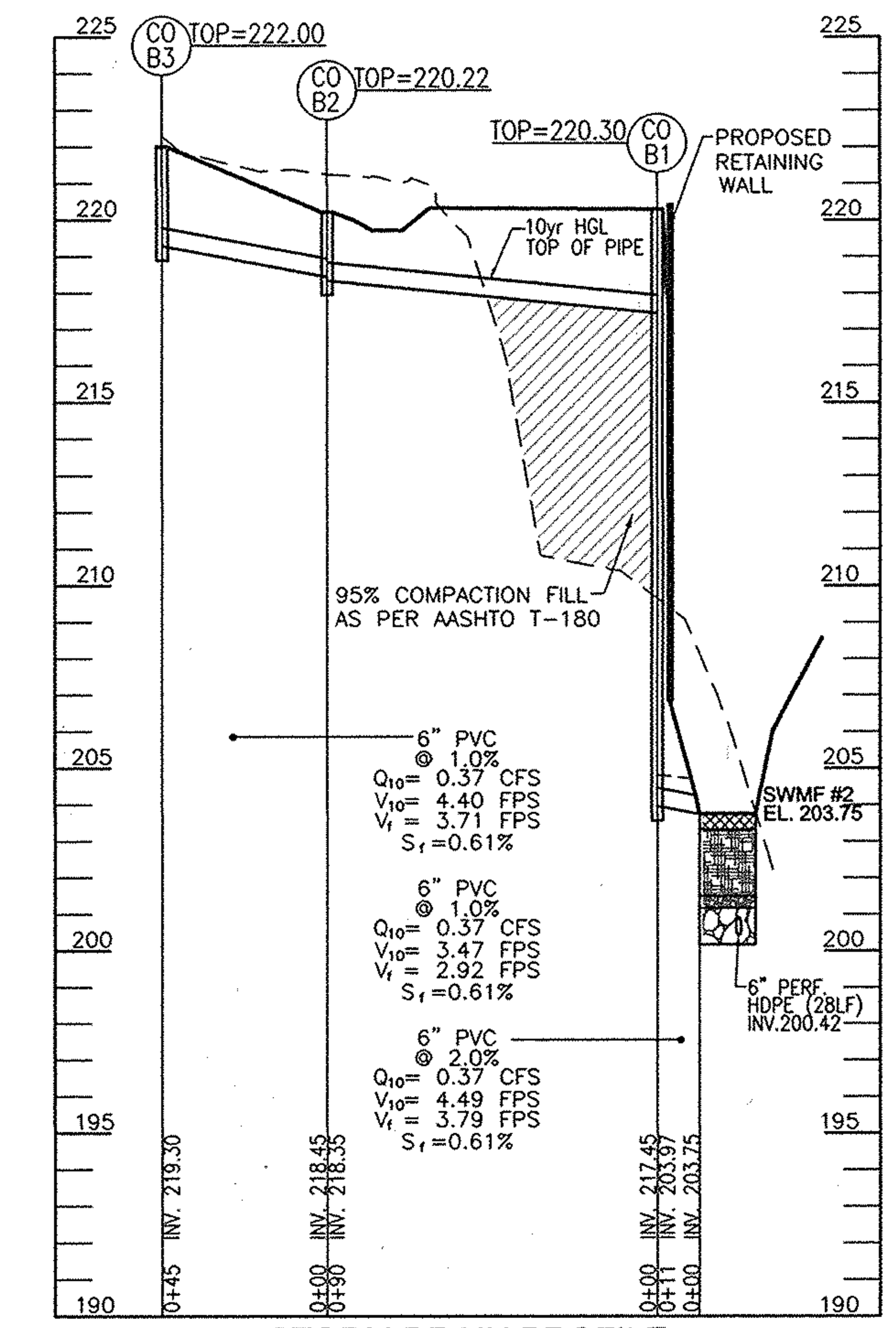
STORM DRAIN PROFILE
SCALE : HORIZONTAL – 1"=50'
VERTICAL – 1"=5'



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



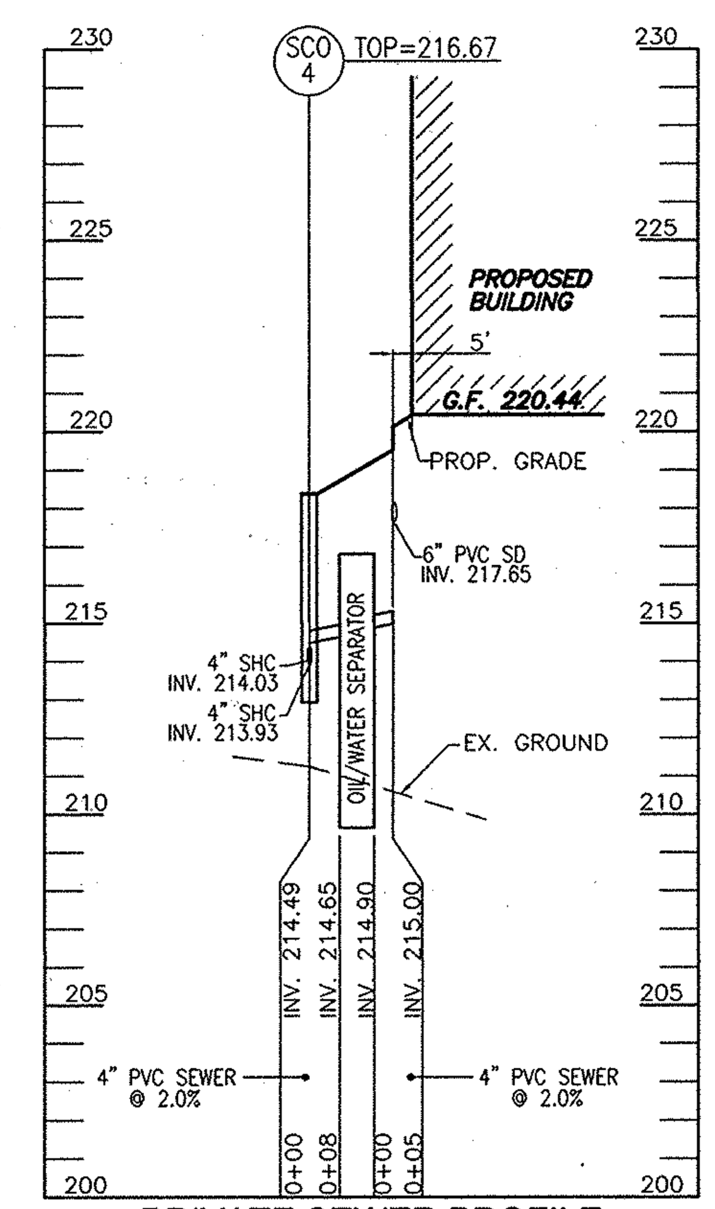
STORM DRAIN PROFILE
SCALE : HORIZONTAL – 1"=50'
VERTICAL – 1"=5'



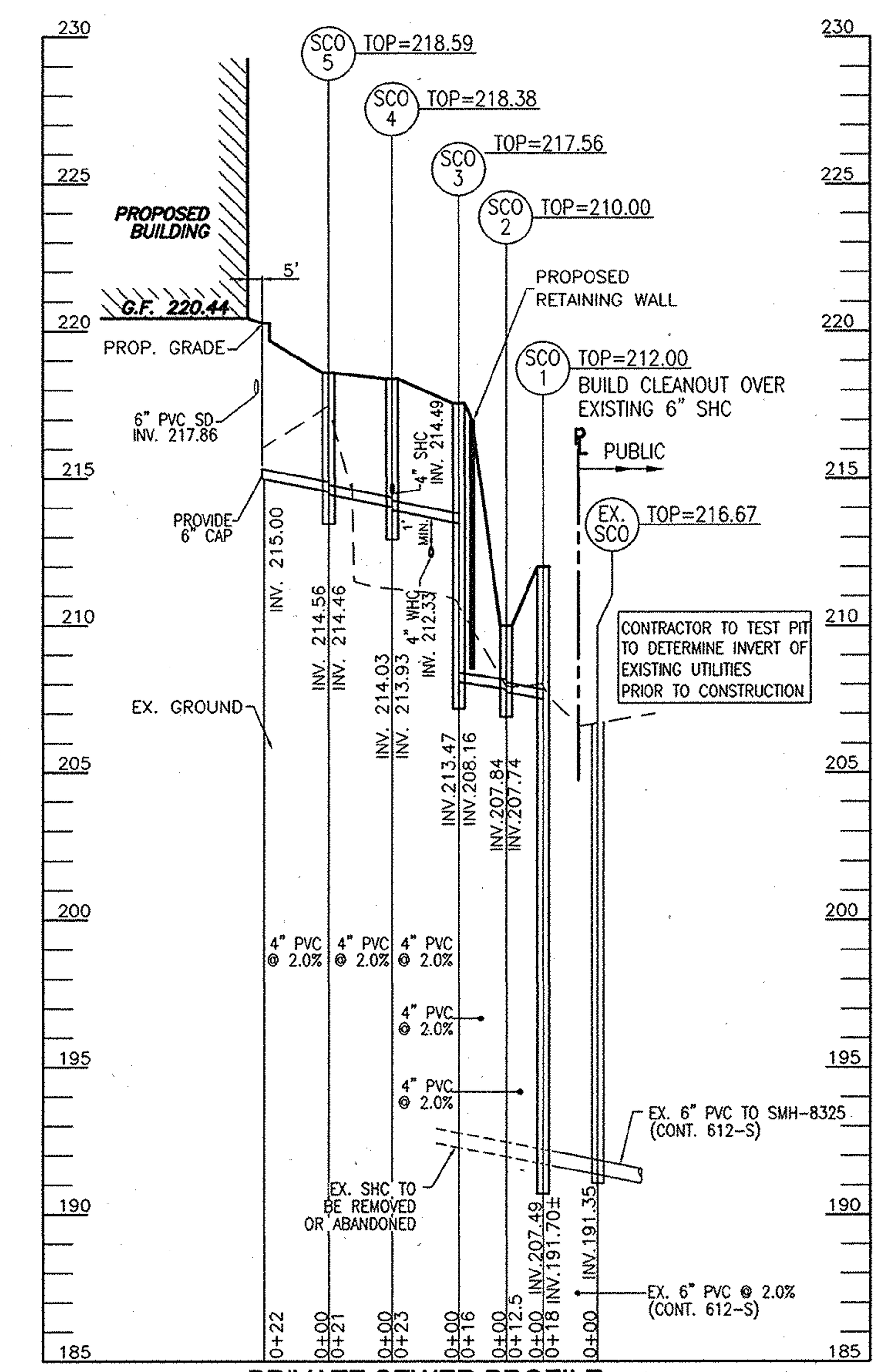
STORM DRAIN PROFILE
SCALE : HORIZONTAL – 1"=50'
VERTICAL – 1"=5'

LEGEND:

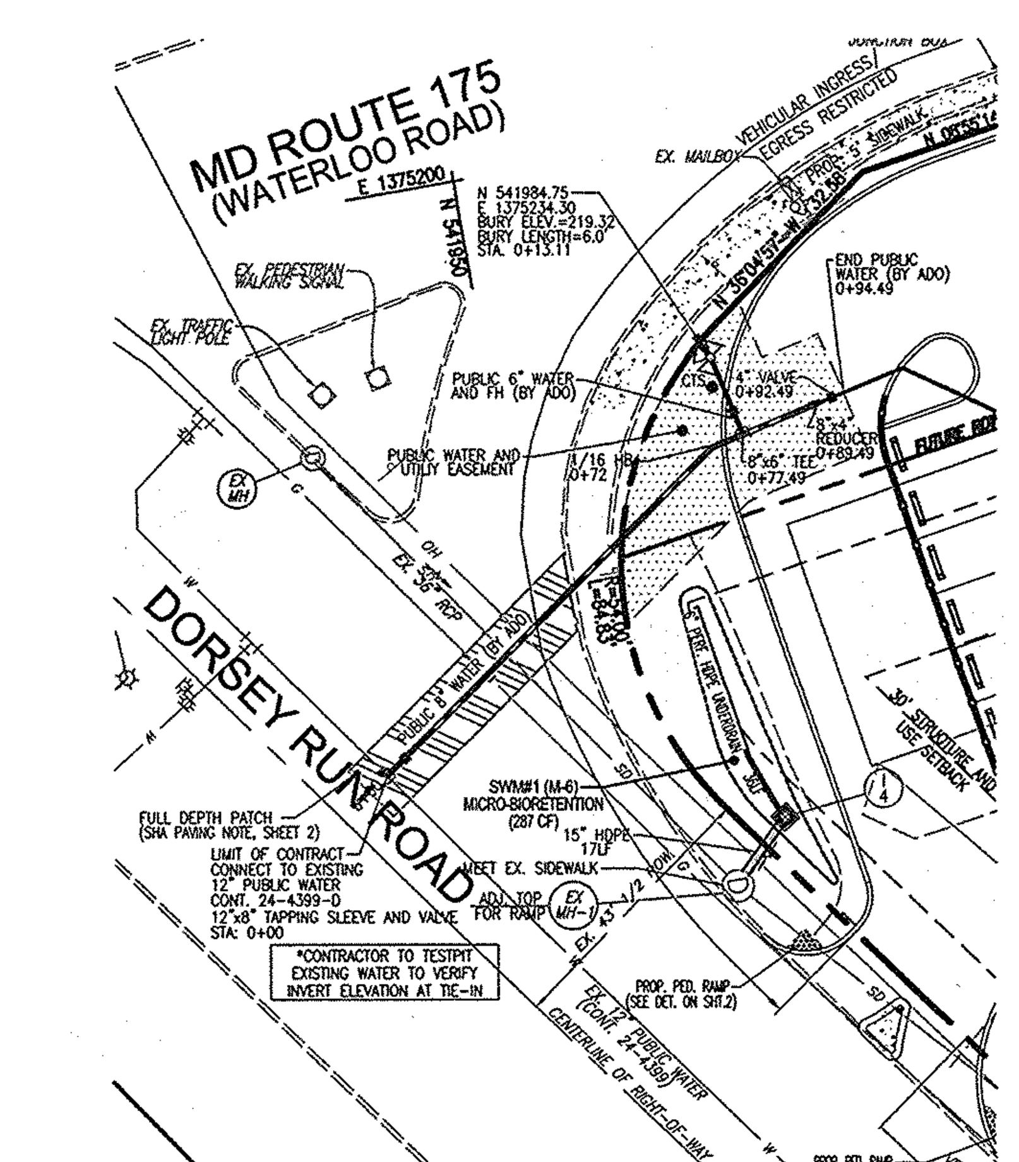
- PROPOSED CONTOUR
- EXISTING CONTOUR
- EXISTING OVERHEAD LINES
- EXISTING WATERLINE LINE
- EXISTING GAS LINE
- EXISTING GUARD RAIL
- EXISTING METAL FENCE
- EXISTING WOOD FENCE
- EXISTING ELECTRICAL BOX
- EXISTING POLE
- EXISTING LIGHT POLE WITH CONCRETE BASE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- PROPOSED PARKING COUNT
- B-5 PROPOSED TEST PIT
- PROPOSED SANITARY LINE
- PROPOSED WATER LINE
- M1B2 / M1D3 SOILS BOUNDARY
- EXISTING FENCE
- PROPERTY LINE
- ADJACENT PROPERTY LINE
- RIGHT-OF-WAY LINE
- PROPOSED SIDEWALK
- EXISTING CURB AND GUTTER
- PROPOSED CURB AND GUTTER
- PROPOSED WHEEL STOP
- PROPOSED STORM DRAIN INLET
- PROPOSED STORM DRAIN
- STORM DRAIN DRAINAGE DIVIDE



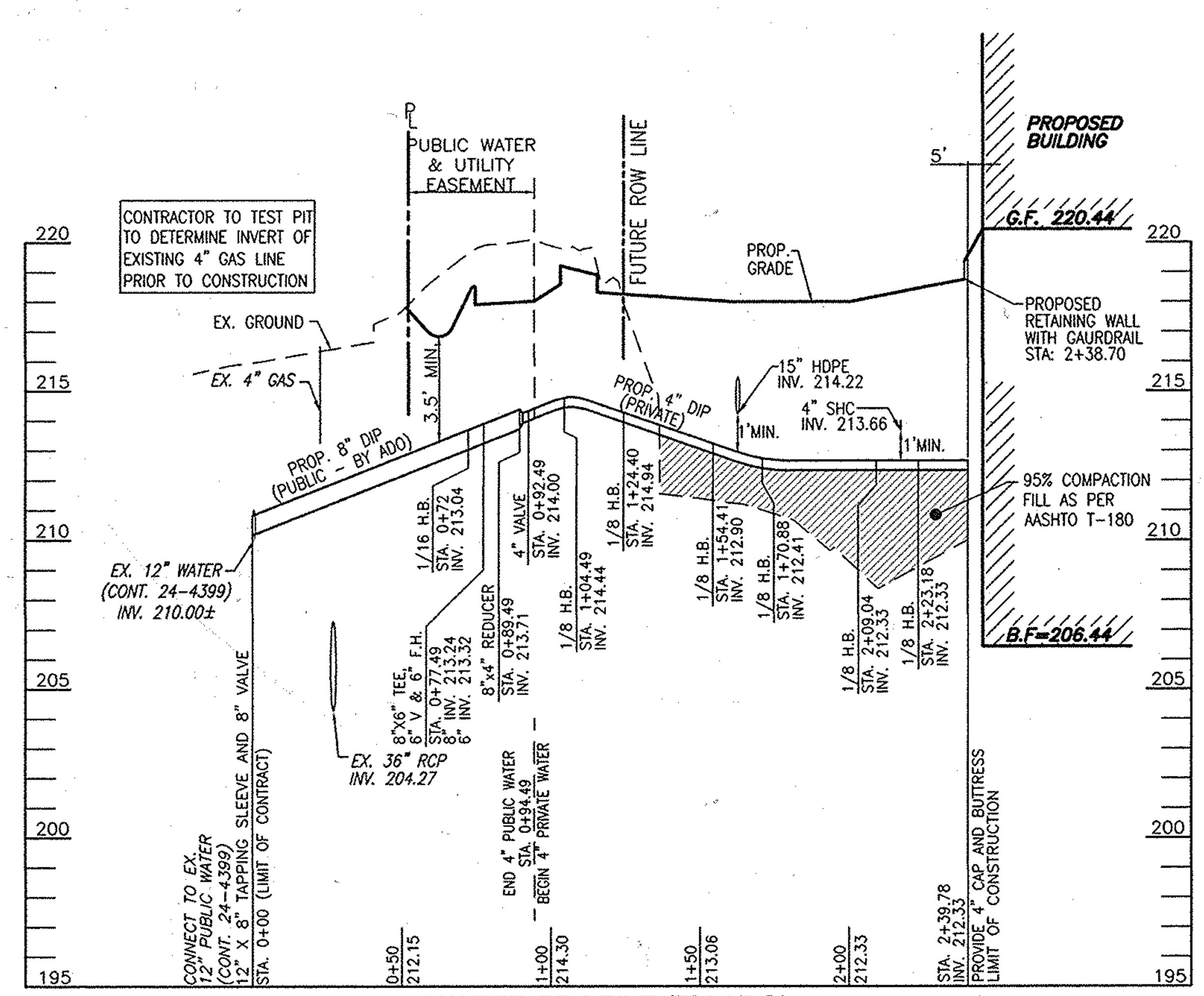
PRIVATE SEWER PROFILE
SCALE : HORIZONTAL – 1"=50'
VERTICAL – 1"=5'



PRIVATE SEWER PROFILE
SCALE : HORIZONTAL – 1"=50'
VERTICAL – 1"=5'



PUBLIC WATER PLAN (BY ADO)
SCALE: 1" = 30'



WATER PROFILE (BY ADO)
SCALE : HORIZONTAL – 1"=50'
VERTICAL – 1"=5'

PIPE SCHEDULE

SIZE	TYPE	LENGTH
4"	WHC	131 LF
4"	PVC–SEWER	95 LF
6"	PVC SD	146 LF
6"	PERF HDPE (SWM)	64 LF
15"	HDPE	169 LF
18"	HDPE	52 LF

WATER MAIN LOCATION CHART

PROP. WATER MAIN 'A'

WL STA.	APPURTENANCE
WL STA. 0+00.00	CONNECT TO EX. 12" PUBLIC WATER CONTRACT 24–4399–D WITH 12"x8" TAPPING SLEEVE AND 8" VALVE
WL STA. 0+72.00	8"–1/16 HORIZONTAL BEND
WL STA. 0+77.49	8"x6" TEE, 6" VALVE; AND 6" FIRE HYDRANT
WL STA. 0+89.49	8"x4" REDUCER
WL STA. 0+92.49	4" VALVE
WL STA. 1+04.49	4"–1/8 HORIZONTAL BEND
WL STA. 1+24.40	4"–1/8 HORIZONTAL BEND
WL STA. 1+54.41	4"–1/8 HORIZONTAL BEND
WL STA. 1+70.88	4"–1/8 HORIZONTAL BEND
WL STA. 2+0+.04	4"–1/8 HORIZONTAL BEND
WL STA. 2+23.18	4"–1/8 HORIZONTAL BEND
WL STA. 2+39.78	4" CAP AND BUTTRESS

ADO WATER NOTE:

1. EXISTING 3/4" WHC TO BE ABANDONED AT THE MAIN. EXISTING WATER AND VAULT TO BE REMOVED.
2. TRACER WIRE AND CONTINUITY TEST STATIONS SHALL BE INSTALLED ON ALL DIP AND PVC WATER MAINS IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL.

STRUCTURE SCHEDULE

NO.	TYPE	LOCATION	TOP ELEV.	THROAT ELEV.	INV. IN	INV. OUT	COMMENTS
I–1	TYPE 'A–5' INLET	N 542023.6 E 1375344.9	215.92	215.32	212.17	209.33	HO. CO. STD SD–4.01
I–2	TYPE 'A–5' INLET	N 542054.7 E 1375244.5	219.63	219.03	–	212.58	HO. CO. STD SD–4.01
I–3	YARD INLET	N 542086.8 E 1375358.7	204.75	–	200.42	200.22	HO. CO. STD SD–4.14
I–4	YARD INLET	N 541983.8 E 1375307.2	214.00	–	–	208.92	HO. CO. STD SD–4.14
MH–3	4'–0" STANDARD PRECAST MANHOLE	N 542041.8 E 1375366.7	211.20	–	208.75 199.76	199.51	HO. CO. STD. G–5.12
CO–B1	CLEANOUT	N 542086.0 E 1375335.6	220.30	–	203.75	203.97	HO. CO. STD. S–2.22
CO–B2	CLEANOUT	N 542071.4 E 1375246.7	220.22	–	218.45	218.35	HO. CO. STD. S–2.22
CO–B3	CLEANOUT	N 542115.7 E 1375239.4	222.00	–	–	219.30	HO. CO. STD. S–2.22
SCO–1	CLEANOUT	N 542055.6 E 1375361.5	212.00	–	207.50	191.70	HO. CO. STD. S–2.22
SCO–2	CLEANOUT	N 542067.8 E 1375358.2	210.00	–	207.84	207.74	HO. CO. STD. S–2.22
SCO–3	CLEANOUT	N 542065.0 E 1375342.4	217.56	–	213.47	208.16	HO. CO. STD. S–2.22
SCO–4	CLEANOUT	N 542061.0 E 1375320.2	218.38	–	214.03 214.49	213.93	HO. CO. STD. S–2.22
SCO–5	CLEANOUT	N 542057.2 E 1375299.0	218.59	–	214.56	214.56	HO. CO. STD. S–2.22

NOTE : 1. TOP ELEVATIONS ARE AT CENTER TOP OF HEADPIECE FOR TYPE 'A–10', CENTER TOP OF MANHOLE FOR TYPE 'D' INLET, AND TOP OF MANHOLE COVER FOR PRECAST MANHOLES.
2. FOR TOP SLAB SLOPES SEE GRADING PLAN.
3. SEE ARCHITECTURAL PLANS FOR DOWNSPOUT AND ROOF DRAIN DETAILS.
4. ALL CUSTOM AND NON–STANDARD STRUCTURES TO BE DESIGNED BY A QUALIFIED STRUCTURAL ENGINEER.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 12-15-14
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 1-05-15
DIRECTOR — DATE 1/5/15

OWNER/DEVELOPER
JAGDAMBE, LLC.
6804 CREEKWOOD CT.
CLARKSVILLE, MD 21029–1746
410–903–7898
C/O NARESH KUMAR

NO.	REVISION	DATE

SITE DEVELOPMENT PLAN

STORM DRAIN DRAINAGE AREA MAP UTILITY PROFILES AND ADO WATER PLAN

MEL'S LIQUOR

7915 WATERLOO ROAD
TWO-STORY RETAIL/RESTAURANT CARRY-OUT BUILDING
ZONED: B-1
TAX MAP 43 BLOCK 21 — L.10188/F.162 — PARCEL 248
1ST ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

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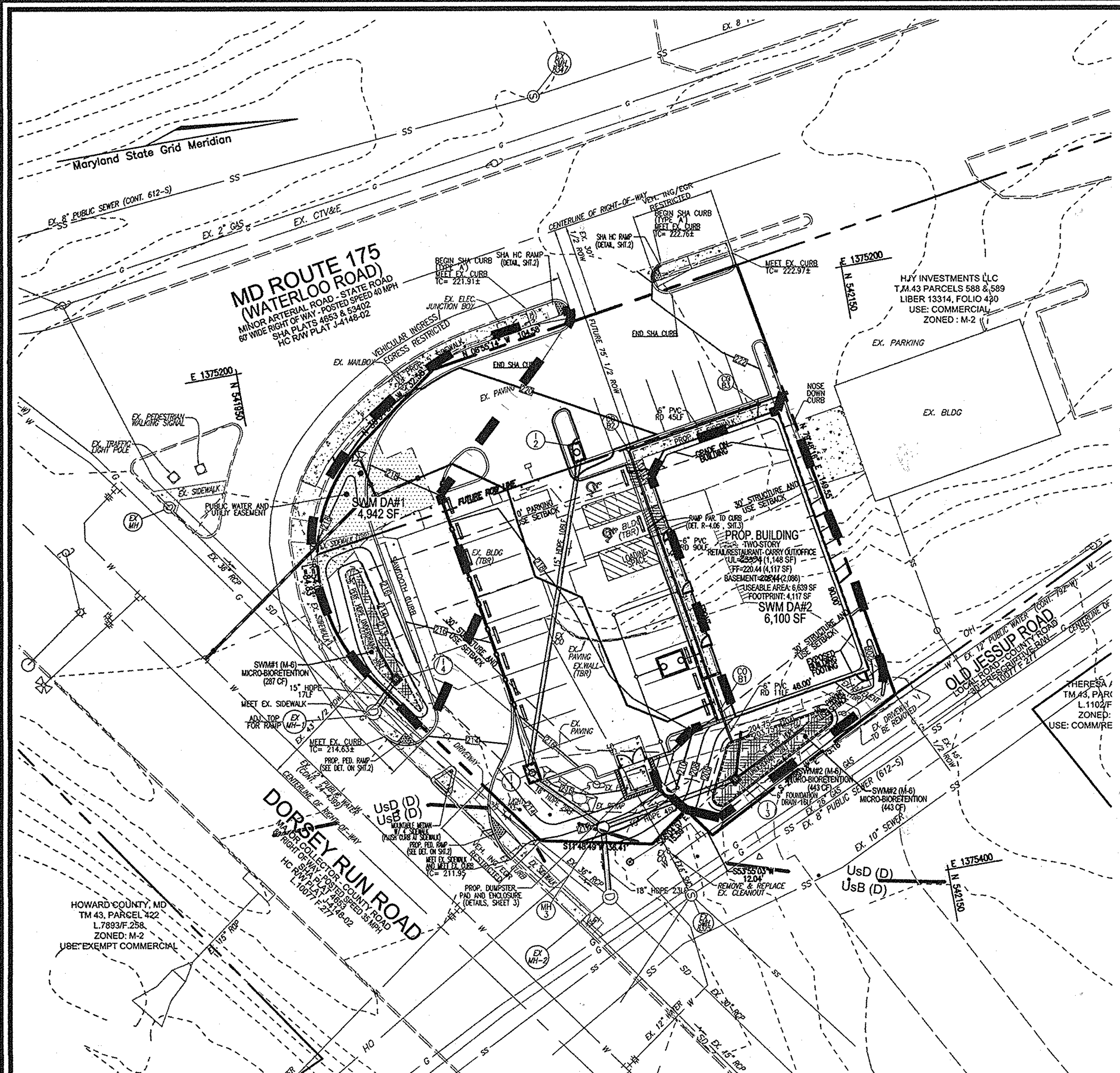
STATE OF MARYLAND ROBERT HARRIS VOGEL No. 16193 PROFESSIONAL ENGINEER
ROBERT H. VOGEL, PE No.16193

DESIGN BY: DZE
DRAWN BY: JER/CF/DZE
CHECKED BY: RHV
DATE: NOVEMBER 2014
SCALE: AS SHOWN
W.O. NO.: 12–60

PROFESSIONAL CERTIFICATE

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09–27–2016

SDP-14-064



SWM DRAINAGE AREA MAP

SCALE: 1"= 30'

APPENDIX B.4.C SPECIFICATIONS FOR MICRO-BIORETENTION. RAIN GARDEN, LANDSCAPE INFILTRATION & INFILTRATION BERMS

1. MATERIAL SPECIFICATIONS

THE ALLOWABLE MATERIALS TO BE USED IN THESE PRACTICES ARE DETAILED IN TABLE B.4.1.

2. FILTERING MEDIA OR PLANTING SOIL

THE SOIL SHALL BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED OR DUMPED WITHIN THE MICRO-BIORETENTION PRACTICE THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVE A HINDRANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE FREE OF BERMUDA GRASS, QUACKGRASS, JOHNSON GRASS, OR OTHER NOXIOUS WEEDS AS SPECIFIED UNDER COMAR 15.08.01.05.

THE PLANTING SOIL SHALL BE TESTED AND SHALL MEET THE FOLLOWING CRITERIA:

- SOIL COMPONENT – LOAMY SAND OR SANDY LOAM (USDA SOIL TEXTURAL CLASSIFICATION).
- ORGANIC CONTEN – MINIMUM 10% BY DRY WEIGHT (ASTM D 2974). IN GENERAL, THIS CAN BE MET WITH A MIXTURE OF LOAMY SAND (60%-65%) AND COMPOST (35% TO 40%) OR SANDY LOAM (30%), COARSE SAND (30%), AND COMPOST (40%).
- CLAY CONTENT – MEDIA SHALL HAVE A CLAY CONTENT OF LESS THAN 5%.
- PH RANGE – SHOULD BE BETWEEN 5.5 – 7.0. AMENDMENTS (E.G., LIME, IRON SULFATE PLUS SULFUR) MAY BE MIXED IN TO THE SOIL TO INCREASE OR DECREASE PH.

THERE SHALL BE AT LEAST ONE SOIL TEST PER PROJECT. EACH TEST SHALL CONSIST OF BOTH THE STANDARD SOIL TEST FOR PH, AND ADDITIONAL TESTS OF ORGANIC MATTER, AND SOLUBLE SALTS. A TEXTURAL ANALYSIS IS REQUIRED FROM THE SITE STOCKPILED TOPSOIL. IF TOPSOIL IS IMPORTED, THEN A TEXTURE ANALYSIS SHALL BE PERFORMED FOR EACH LOCATION WHERE THE TOPSOIL WAS EXCAVATED.

3. COMPACTION

IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF BIORETENTION PRACTICES AND THE REQUIRED BACKFILL. WHEN POSSIBLE, USE EXCAVATION HOES TO REMOVE ORIGINAL SOIL. IF PRACTICES ARE EXCAVATED USING LOADER, THE CONTRACTOR SHOULD USE WIDE TRACK OR MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TYPE TIRES. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS, OR HIGH-PRESSURE TIRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND IS NOT ACCEPTABLE. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE.

COMPACTION CAN BE ALLEVIATED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS CHISEL PLOW, RIPPER, OR SUBSOILER. THESE TILLING OPERATIONS ARE TO REFRACTURE THE SOIL PROFILE THROUGH THE 12 INCH COMPACTION ZONE. SUBSTITUTE METHODS MUST BE APPROVED BY THE ENGINEER. ROTOTILLERS TYPICALLY DO NOT TILL DEEP ENOUGH TO REDUCE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT.

ROTOTILL 2 TO 3 INCHES OF SAND INTO THE BASE OF THE BIORETENION FACILITY BEFORE BACKFILLING THE OPTIONAL SAND LAYER. PUMP ANY PONDED WATER BEFORE PREPARING (ROTOTILLING) BASE.

WHEN BACKFILLING THE TOPSOIL OVER THE SAND LAYER, FIRST PLACE 3 TO 4 INCHES OF TOPSOIL OVER THE SAND, THEN ROTOTILL THE SAND/TOPSOIL TO CREATE A GRADATION ZONE. BACKFILL THE REMAINDER OF THE TOPSOIL TO FINAL GRADE.

WHEN BACKFILLING THE BIORETENTION FACILITY, PLACE SOIL IN LIFTS 12" TO 18". DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SOILS AND SAND. GRADE BIORETENTION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS.

4. PLANT MATERIAL

RECOMMENDED PLANT MATERIAL FOR MICRO-BIORETENTION PRACTICES CAN BE FOUND IN APPENDIX A, SECTION A.2.3.

5. PLANT INSTALLATION

COMPOST IS A BETTER ORGANIC MATERIAL SOURCE, IS LESS LIKELY TO FLOAT, AND SHOULD BE PLACED IN THE INVERT AND OTHER LOW AREAS. MULCH SHOULD BE PLACED IN SURROUNDING TO A UNIFORM THICKNESS OF 2" TO 3". SHREDDED OR CHIPPED HARDWOOD MULCH IS THE ONLY ACCEPTED MULCH. PINE MULCH AND WOOD CHIPS WILL FLOAT AND MOVE TO THE PERIMETER OF THE BIORETENTION AREA DURING A STORM EVENT AND ARE NOT ACCEPTABLE. SHREDDED MULCH MUST BE WELL AGED (6 TO 12 MONTHS) FOR ACCEPTANCE.

ROOTSTOCK OF THE PLANT MATERIAL SHALL BE KEPT MOIST DURING TRANSPORT AND ON-SITE STORAGE. THE PLANT ROOT BALL SHOULD BE PLANTED SO 1/8TH OF THE BALL IS ABOVE FINAL GRADE SURFACE. THE DIAMETER OF THE PLANTING PIT SHALL BE AT LEAST SIX INCHES LARGER THAN THE DIAMETER OF THE PLANTING BALL. SET AND MAINTAIN THE PLANT STRAIGHT DURING THE ENTIRE PLANTING PROCESS. THOROUGHLY WATER GROUND BED COVER AFTER INSTALLATION. TREES SHALL BE BRACED USING 2" BY 2" STAKES ONLY AS NECESSARY AND FOR THE FIRST GROWING SEASON ONLY. STAKES ARE TO BE EQUALLY SPACED ON THE OUTSIDE OF THE TREE BALL.

GRASSES AND LEGUME SEED SHOULD BE DRILLED INTO THE SOIL TO A DEPTH OF AT LEAST ONE INCH. GRASS AND LEGUME PLUGS SHALL BE PLANTED FOLLOWING THE NON-GRASS GROUND COVER PLANTING SPECIFICATIONS.

THE TOPSOIL SPECIFICATIONS PROVIDE ENOUGH ORGANIC MATERIAL TO ADEQUATELY SUPPLY NUTRIENTS FROM NATURAL CYCLING. THE PRIMARY FUNCTION OF THE BIORETENTION STRUCTURE IS TO IMPROVE WATER QUALITY. ADDING FERTILIZERS DEFEATS, OR AT A MINIMUM, IMPEDES THIS GOAL. ONLY ADD FERTILIZER IF WOOD CHIPS OR MULCH ARE USED TO AMEND THE SOIL. ROTOTILL UREA FERTILIZER AT A RATE OF 2 POUNDS PER 1000 SQUARE FEET.

6. UNDERDRAINS

UNDERDRAINS SHOULD MEET THE FOLLOWING CRITERIA:

- PIPE – SHOULD BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTMF 758, TYPE PS 28, OR AASHTO-M-278) IN A GRAVEL LAYER. THE PREFERRED MATERIAL IS SLOTTED, 4" RIGID PIPE (E.G., PVC OF HDPE).
- PERFORATIONS – IF PERFORATED PIPE IS USED, PERFORATIONS SHOULD BE 3/8" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW. PIPE SHALL BE WRAPPED WITH A 1/4" (NO. 4 OR 4x4) GALVANIZED HARDWARE CLOTH.
- GRAVEL – THE GRAVEL LAYER (NO. 57 STONE PREFERRED) SHALL BE AT LEAST 3" THICK ABOVE AND BELOW THE UNDERDRAIN.
- THE MAIN COLLECTOR PIPE SHALL BE AT A MINIMUM 0.5% SLOPE.
- A RIGID, NON-PERFORATED OBSERVATION WELL MUST BE PROVIDED (ONE PER EVERY 1,0000 SQUARE FEET) TO PROVIDE A CLEAN-OUT PORT AND MONITOR PERFORMANCE OF THE FILTER.
- A 4" LAYER OF PEA GRAVEL (1/8" TO 3/8" STONE) SHALL BE LOCATED BETWEEN THE FILTER MEDIA AND UNDERDRAIN TO PREVENT MIGRATION OF FINES IN TO THE UNDERDRAIN. THIS LAYER MAY BE CONSIDERED PART OF THE FILTER BED WHEN BED THICKNESS EXCEEDS 24".

THIS MAIN COLLECTOR PIPE FOR UNDERDRAIN SYSTEMS SHALL BE CONSTRUCTED AT A MINIMUM SLOPE OF 0.5%. OBSERVATION WELLS AND/OR CLEAN-OUT PIPES MUST BE PROVIDED (ONE MINIMUM PER EVERY 1000 SQUARE FEET OF SURFACE AREA).

7. MISCELLANEOUS

THESE PRACTICES MAY NOT BE CONSTRUCTED UNTIL ALL CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.

OPERATION AND MAINTENANCE SCHEDULE FOR LANSCAPE INFILTRATION (M-3), MICRO-BIORETENTION (M-6), RAIN GARDENS (M-7), BIORETENTION SWALE (M-8), AND ENHANCED FILTERS (M-9)

1. THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULTCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUME II, TABLE A.4.1 AND 2.

2. THE OWNER SHALL PERFORM A PLANT IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL, TREAT DISEASED TREES AND SHRUBS, AND REPLACE ALL DEFICIENT STAKES AND WIRES.

3. THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER IS APPLIED.

4. THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

Appendix B.4. Construction Specifications for Environmental Site Design Practices

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

Material	Specification	Size	Notes
Plantings	see Appendix A, Table A.4	n/a	plantings are site-specific
Planting soil [2' to 4' deep]	loamy sand (60 - 65%) & compost (35 – 40%) or sandy loam (30%), coarse sand (30%) & compost (40%)	n/a	USDA soil types loamy sand or sandy loam; clay content < 5%
Organic content	Min. 10% by dry weight (ASTM D 2974)		
Mulch	shredded hardwood		aged 6 months, minimum; no pine or wood chips
Pea gravel diaphragm	pea gravel: ASTM-D-448	NO. 8 OR NO. 9 (1/8" TO 3/8")	
Curtain drain	ornamental stone: washed cobbles	stone: 2" to 5"	
Geotextile		n/a	PE Type 1 nonwoven
Gravel (underdrains and infiltration berms)	AASHTO M-43	NO. 57 OR NO. 6 AGGREGATE (3/8" to 3/4")	
Underdrain piping	F 758, Type PS 28 or AASHTO M-278	4" to 6" rigid schedule 40 PVC or SDR35	Slotted or perforated pipe; 3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipes; not necessary underneath pipes. Perforated pipe shall be wrapped with ¼-inch galvanized hardware cloth
Poured in place concrete (if required)	MSHA Mix No. 3; f'c = 3500 psi @ 28 days, normal weight, air-entrained; reinforcing to meet ASTM-615-60	n/a	on-site testing of poured-in-place concrete required: 28 day strength and slump test; all concrete design (cast-in-place or pre-cast) *not using previously approved State or local standards* requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland - design to include meeting ACI Code 350.R/89; vertical loading [H-10 or H-20]; allowable horizontal loading (based on soil pressures); and analysis of potential cracking
Sand	AASHTO-M-6 or ASTM-C-33	0.02" to 0.04"	Sand substitutions such as Diabase and Graystone (**AASHTO**) #10 are not acceptable. No calcium carbonated or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.

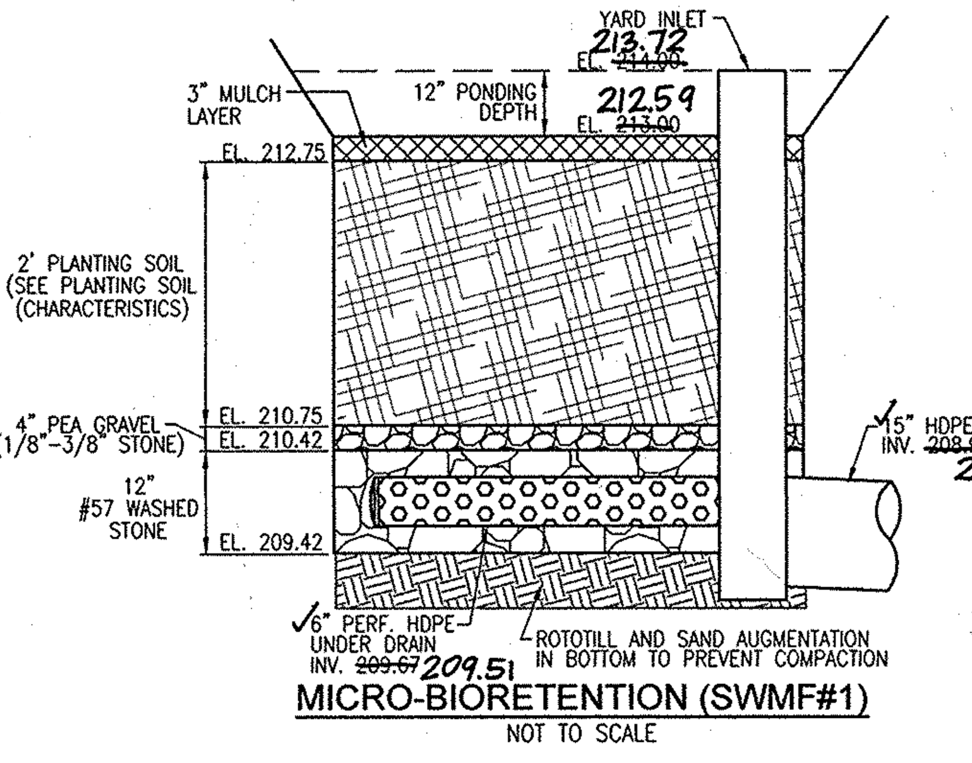
AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

[signature] 10193 10.30.15

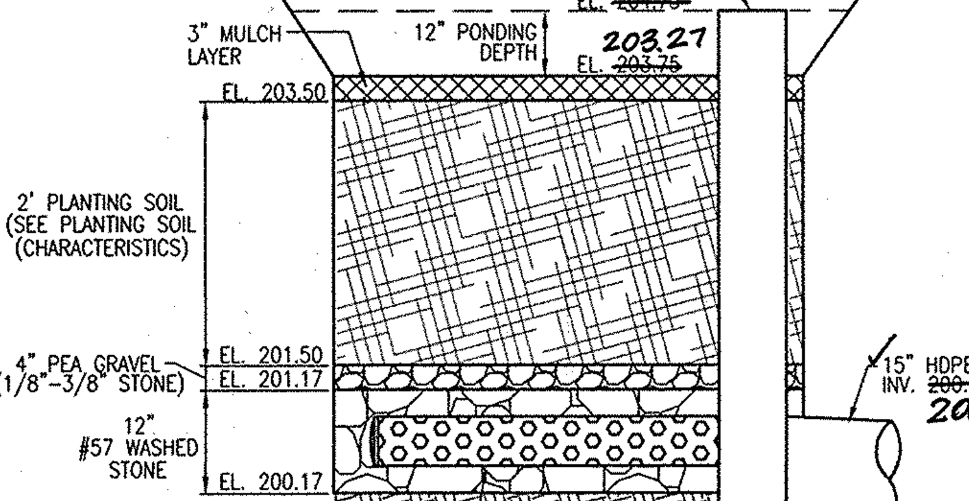
ROBERT H. VOGEL, P.E. NO. DATE

STATE OF MARYLAND · ROBERT HARRIS VOGEL · No. 16193 · PROFESSIONAL ENGINEER



MICRO-BIORETENTION (SWMF#1)

NOT TO SCALE



MICRO-BIORETENTION (SWMF#2)

NOT TO SCALE

MICROBIORETENTION NOTES:

1. ONLY THE SIDES OF MICROBIORETENTION ARE TO BE WRAPPED IN FILTER FABRIC. FILTER FABRIC BETWEEN LAYER OR AT THE BOTTOM OF THE MICROBIORETNTION WILL CAUSE THE MBR TO FAIL, AND THERFORE SHALL NOT BE INSTALLED.
2. WRAP THE PERFORATED MBR UNDERDRAIN PIPE WITH 1/4" MESH (4x4) OR SMALLER GALVANIZED HARDWARE CLOTH.

DRAINAGE AREA #	AREA TREATED	FACILITY NUMBER	ENVIRONMENTAL SITE DESIGN PRACTICE: PERMEABLE PAVEMENT	ADD UNDER PERM. PAVE	LANDSCAPE INFILTRATION	PERVIOUS SIDEWALK	BIO SWALE	GRAVEL TRENCH	MICRO BIO RETENTION	ADD UNDER MICRO BIO	ESDv VOLUME
1	4942	SWM#1	0	0	0	0	0	0	0	287	287
		SUBTOTAL 1	0	0	0	0	0	0	0	287	287
2	6100	SWM#2	0	0	0	0	0	0	0	443	443
		SUBTOTAL 1	0	0	0	0	0	0	0	443	443
		TOTALS:	0	0	0	0	0	0	0	730	730

TOTAL AREA 11042 SF
0.25 AC

TOTAL ESDv PROVIDED: 730

Pe= 2.00
ESDv=(PexRvxA)/12
Rv=0.05+0.009xI
V min=1.0" rainfall (1.0xRvxA)/12
Vmax= 1yr rainfall=2.6" (2.6xRvxA)/12

DA	% IMPERV	Rv	DA	ESDv REQ	MINIMUM VOLUME	MAXIMUM VOLUME	VOLUME PROVIDED *
1	59	0.58	0.11	479	240	623	287
2	68	0.67	0.14	676	338	879	443
	TOTAL ESDv BY SUBAREA			1156			730

* Provided Volume is less than ESDv Require because Bio-retention utilized in each subarea at the rate of 75%.

SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	GROUP	ERODIBLE
UsD	URBAN LAND- SASSAFRAS-BELTSVILLE COMPLEX, 5 TO 15 PERCENT SLOPES	D	YES

LEGEND:

Symbol	Description	Symbol	Description
218	PROPOSED CONTOUR		EXISTING ELECTRICAL BOX
218	EXISTING CONTOUR		EXISTING POLE
	EXISTING OVERHEAD LINES		EXISTING LIGHT POLE WITH CONCRETE BASE
	EXISTING WATERLINE LINE		EXISTING MAILBOX
	EXISTING GAS LINE		EXISTING SIGN
	EXISTING GUARD RAIL	S	EXISTING SANITARY MANHOLE
X	EXISTING METAL FENCE	CO	EXISTING CLEANOUT
//	EXISTING WOOD FENCE	FH	EXISTING FIRE HYDRANT
B-5	PROPOSED TEST PIT	11	PROPOSED PARKING COUNT
	PROPOSED SANITARY LINE		PROPOSED WHEEL STOP
	PROPOSED WATER LINE		PROPOSED STORM DRAIN INLET
M1B2 / M1D3	SOILS BOUNDARY		
X	EXISTING FENCE		
	PROPERTY LINE		
	ADJACENT PROPERTY LINE		
	RIGHT-OF-WAY LINE		
	PROPOSED SIDEWALK		
	EXISTING CURB AND GUTTER		
	PROPOSED CURB AND GUTTER		
	PROPOSED STORM DRAIN		
	SWM DRAINAGE DIVIDE		

GEOTECHNICAL EVALUATIONS AND RECOMMENDATIONS:

OUR FINDINGS SUGGEST THAT THE SITE CAN BE DEVELOPED FOR THE PROPOSED STRUCTURE UTILIZING CONVENTIONAL SPREAD FOOTINGS SUPPORTED ON NATURAL SOILS OR NEWLY PLACED ENGINEERED FILL AND GROUND-SUPPORTED SLAB CONSTRUCTION. FOOTINGS AND FLOOR SLABS SHOULD NOT BE CONSTRUCTED ON OR OVER ANY EXISTING FILL MATERIALS UNLESS THEY ARE SPECIFICALLY APPROVED FOR USE BY THE GEOTECHNICAL ENGINEER OR HIS DESIGNATED REPRESENTATIVE IN THE FIELD DURING CONSTRUCTION. SPECIAL CONSIDERATION SHOULD BE GIVEN TO THE PROPER MONITORING OF FILL OPERATIONS, FOOTING EXCAVATIONS, AND CONCRETE PLACEMENT IN ALL STRUCTURAL AREAS.

THE FOLLOWING RECOMMENDATIONS HAVE BEEN DEVELOPED ON THE BASIS OF THE PREVIOUSLY DESCRIBED PROJECT CHARACTERISTICS AND SUBSURFACE CONDITIONS. IF THERE ARE ANY CHANGES TO THE PROJECT CHARACTERISTICS OR IF DIFFERENT SUBSURFACE CONDITIONS ARE ENCOUNTERED DURING CONSTRUCTION, HCEA SHOULD BE CONSULTED SO THAT THE RECOMMENDATIONS OF THIS REPORT CAN BE REVIEWED AND REVISED, IF NECESSARY.

GENERAL SITE PREPARATION

ALL EXISTING STRUCTURES (INCLUDING ALL ABOVE AND BELOW GROUND CONSTRUCTION) WITHIN THE AREAS TO BE DEVELOPED SHOULD BE REMOVED PRIOR TO THE INITIATION OF NEW CONSTRUCTION. WE SUGGEST THAT ALL AVAILABLE INFORMATION REGARDING THE EXISTING UTILITIES AT THE SITES BE REVIEWED PRIOR TO CONSTRUCTION.

REMOVAL SHOULD INCLUDE ALL UNDERGROUND PIPES, UTILITIES, AND UNDERGROUND STRUCTURES THAT MIGHT INTERFERE WITH THE NEW CONSTRUCTION. IF ABANDONED UNDERGROUND UTILITIES ARE TO BE REMOVED PRIOR TO THE INITIATION OF CONSTRUCTION, PROVISIONS SHOULD BE MADE IN THE CONSTRUCTION SPECIFICATIONS AND BUDGET TO RESTORE THE SUBGRADE TO STABLE CONDITION. RESTORATION SHOULD INCLUDE BACKFILLING AND COMPACTION OF THE EXCAVATION AREAS.

AFTER THE INITIAL STRIPPING PROCESS IS COMPLETED, AREAS OF THE SITE TO RECEIVE FILL, OR AREAS OF THE SITE AT-GRADE WHERE STRUCTURES WILL BE LOCATED, SHOULD BE PROOFROLLED. THE PROOFROLLING OPERATIONS SHOULD BE PERFORMED USING A 20-TON, FULLY-LOADED DUMP TRUCK OR ANOTHER PNEUMATIC-TIRE VEHICLE OF SIMILAR SIZE AND WEIGHT. THE PURPOSE OF THE PROOFROLLING WILL BE TO LOCATE ANY NEAR-SURFACE POCKETS OF SOFT OR LOOSE SOILS REQUIRING UNDERCUTTING. A GEOTECHNICAL ENGINEER OR EXPERIENCED SOILS INSPECTOR SHOULD WITNESS THE PROOFROLLING OPERATIONS AND SHOULD DETERMINE WHICH AREAS NEED FURTHER UNDERCUTTING AND/OR STABILIZATION.

SINCE THE SIZE OF THE BORINGS TAKEN IS SMALL IN COMPARISON TO THE AREAL EXTENT OF THE SITE, IT IS RECOMMENDED THAT TEST PITS BE PERFORMED AT THE SITE. THESE TEST PITS SHOULD BE EXCAVATED TO DETERMINE THE PRESENCE, COMPOSITION AND CONSISTENCY OF THE FILL MATERIALS. ADDITIONAL RECOMMENDATIONS BASED ON THE ADDITIONAL SUBSURFACE INFORMATION CAN BE MADE AFTER THE TEST PITS HAVE BEEN COMPLETED, IF NECESSARY. IT WOULD BE DESIRABLE TO ESTABLISH A CONTINGENCY FUND IN THE CONSTRUCTION BUDGET TO COVER THE COSTS ASSOCIATED WITH ANY REQUIRED REMEDIATION OF EXISTING FILL MATERIALS.

FILL SELECTION, PLACEMENT AND COMPACTION

ALL MATERIAL TO BE USED AS FILL OR BACKFILL SHOULD BE INSPECTED, TESTED AND APPROVED BY THE GEOTECHNICAL ENGINEER. IN GENERAL, THE ON-SITE SOILS WHICH ARE FREE FROM ORGANIC AND OTHER DELETERIOUS COMPONENTS CAN BE RE-USED AS GENERAL SITE FILL. MATERIALS SUITABLE FOR VARIOUS CONSTRUCTION PURPOSES CAN BE IDENTIFIED BY AN EXPERIENCED SOILS INSPECTOR DURING GRADING OPERATIONS.

MOISTURE CONDITIONING (THAT IS, WETTING OR DRYING) OF THE SOILS SHOULD BE ANTICIPATED TO ACHIEVE PROPER COMPACTION. THE MOISTURE CONTENTS OF THE SOILS SHOULD BE CONTROLLED PROPERLY TO AVOID EXTENSIVE CONSTRUCTION DELAYS. IF IMPORTED FILL MATERIAL IS REQUIRED, THOSE MATERIALS SHOULD HAVE UNIFIED SOIL CLASSIFICATIONS OF SM OR BETTER. CARE SHOULD BE EXERCISED DURING THE GRADING OPERATIONS AT THE SITE. THE TRAFFIC OF HEAVY EQUIPMENT, INCLUDING HEAVY CONSTRUCTION EQUIPMENT, COULD CREATE PUMPING AND A GENERAL DETERIORATION THESE SOILS IF CONDUCTED IN THE PRESENCE OF WATER. AGAIN, THE GRADING SHOULD THEREFORE, IF AT ALL POSSIBLE, BE CARRIED OUT DURING A DRY SEASON. THIS SHOULD MINIMIZE THESE POTENTIAL PROBLEMS, ALTHOUGH THEY MAY NOT BE ELIMINATED. IF SUCH PROBLEMS ARISE, THE GEOTECHNICAL ENGINEER SHOULD BE CONSULTED FOR AN EVALUATION OF THE CONDITIONS.

ALL FILL SHOULD BE PLACED IN RELATIVELY HORIZONTAL 8-INCH (MAXIMUM) LOOSE LIFTS AND SHOULD BE COMPACTED TO A MINIMUM OF 95 PERCENT OF THE STANDARD PROCTOR (ASTM D-698) MAXIMUM DRY DENSITY. FILL MATERIALS IN LANDSCAPE AND OTHER NON-STRUCTURAL AREAS SHOULD BE COMPACTED TO AT LEAST 90 PERCENT OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY IF SIGNIFICANT SUBSIDENCE OF THE FILL UNDER ITS OWN WEIGHT IS TO BE AVOIDED. FIELD MOISTURE CONTENTS SHOULD BE MAINTAINED WITHIN 2 PERCENTAGE POINTS OF THE OPTIMUM MOISTURE CONTENT IN ORDER TO PROVIDE ADEQUATE COMPACTION.

STRUCTURAL FILL SHOULD EXTEND A MINIMUM OF TEN FEET BEYOND BUILDING LINES WHERE FLOOR SLABS ARE TO BE CONSTRUCTED ON THE FILL. FILL SLOPES NO STEEPER THAN 2(H):1(V), OR FLATTER, SHOULD BE USED. NEW FILLS SHOULD BE PROPERLY BENCHED INTO EXISTING SLOPES. A SUFFICIENT NUMBER OF IN-PLACE DENSITY TESTS SHOULD BE PERFORMED BY AN EXPERIENCED ENGINEERING TECHNICIAN ON A FULL-TIME BASIS TO VERIFY THAT THE PROPER DEGREE OF COMPACTION IS BEING OBTAINED.

FOUNDATIONS

OUR FINDINGS INDICATE THAT THE PROPOSED STRUCTURE CAN BE SUPPORTED ON SPREAD FOOTINGS BEARING ON FIRM NATURAL SOILS, ON NEW ENGINEERED FILL PLACED OVER NATURAL SOILS OR ON A COMBINATION THEREOF. FOUNDATIONS SHOULD NOT BE SUPPORTED ON OR OVER ANY EXISTING FILL MATERIALS UNLESS THE FILL MATERIALS ARE SPECIFICALLY OBSERVED, TESTED AND APPROVED BY THE GEOTECHNICAL ENGINEER OR HIS DESIGNATED REPRESENTATIVE IN THE FIELD DURING CONSTRUCTION. IF FOUNDATIONS ARE CONSTRUCTED ON OR OVER MAN-PLACED FILL MATERIALS (EVEN WHERE SURFICIAL MATERIALS ARE APPROVED IN THE FIELD BY THE ENGINEER), THE OWNER MUST REALIZE THAT THERE IS RISK INVOLVED AND THAT FUTURE MAINTENANCE AND/OR REPAIR OF THE STRUCTURE MAY BE REQUIRED. AS STATED PREVIOUSLY, IT WOULD BE DESIRABLE TO ESTABLISH A CONTINGENCY FUND IN THE CONSTRUCTION BUDGET TO COVER THE COSTS ASSOCIATED WITH ANY REQUIRED REMEDIATION OF EXISTING FILL MATERIALS.

BASED ON THE MAXIMUM STRUCTURAL LOADS, THE MAXIMUM ALLOWABLE SETTLEMENT, AND THE GENERAL SOIL CONDITIONS WHICH WERE ENCOUNTERED, IT IS OUR JUDGMENT THAT A DESIGN NET ALLOWABLE SOIL BEARING PRESSURE OF 1,500 LBS/SQ FT WILL BE AVAILABLE FOR PROPORTIONING FOOTINGS IN FIRM SOILS.

ALL FOOTING EXCAVATIONS SHOULD BE INSPECTED BY A GEOTECHNICAL ENGINEER OR EXPERIENCED SOILS INSPECTOR PRIOR TO THE PLACEMENT OF CONCRETE. THE PURPOSE OF THE INSPECTION WOULD BE TO VERIFY THAT THE EXPOSED MATERIALS WILL BE CAPABLE OF SUPPORTING THE DESIGN BEARING PRESSURE. DUE TO THE PREVIOUS GRADING/CONSTRUCTION WORK THAT HAS OCCURRED AT THE SITE, THIS INSPECTION SHOULD BE MORE STRINGENT THAN THAT FOR A TYPICAL NEW CONSTRUCTION PROJECT. INSPECTIONS SHOULD INCLUDE BEARING TESTS PERFORMED AT A CLOSER SPACING AND DEEPER HAND AUGERING TO IDENTIFY PROBLEM AREAS, IF PRESENT.

IF SOFT OR LOOSE POCKETS ARE ENCOUNTERED IN THE FOOTING EXCAVATIONS, THE UNSUITABLE MATERIALS SHOULD BE REMOVED AND THE FOOTINGS SHOULD BE LOCATED AT A LOWER ELEVATION. ALTERNATIVELY, THE UNSUITABLE MATERIALS COULD BE UNDERCUT AND REPLACED WITH EITHER NEW FILL PLACED AND COMPACTED IN ACCORDANCE WITH THE RECOMMENDATIONS OF SECTIONS 5.1 AND 5.2 OF THIS REPORT OR WITH LEAN (2000 PSI) CONCRETE. PARTICULAR ATTENTION SHOULD BE PAID TO THE VICINITIES OF BORINGS B-1 AND B-4 WHERE RELATIVELY LOOSE MATERIALS WERE ENCOUNTERED NEAR ANTICIPATED FOUNDATION BEARING LEVELS.

IN ALL AREAS WHERE FOUNDATIONS WILL BE SUPPORTED ON STRUCTURAL FILL, THE STRUCTURAL FILL SHOULD EXTEND A SUFFICIENT DISTANCE LATERALLY BEYOND THE PERIMETERS OF FOOTINGS. FOR DESIGN PURPOSES, PLANS SHOULD REFLECT STRUCTURAL FILL EXTENDING A MINIMUM DISTANCE OF 9 INCHES LATERALLY BEYOND A FOOTING PERIMETER FOR EACH LINEAR FT OF STRUCTURAL FILL BELOW THE BEARING LEVEL.

TO PRECLUDE PUNCHING SHEAR FAILURES, WALL FOOTINGS SHOULD BE AT LEAST 16 INCHES WIDE AND COLUMN FOOTINGS SHOULD BE AT LEAST 24 INCHES WIDE. IT IS RECOMMENDED THAT WALL FOOTINGS BE PROVIDED WITH LONGITUDINAL REINFORCEMENT. SUCH REINFORCEMENT WOULD PROVIDE THE FOOTINGS WITH GREATER BENDING CAPACITY THAT SHOULD ALLOW THEM TO SPAN ACROSS ANY LOCALIZED WEAK ZONES THAT MAY GO UNDETECTED DURING CONSTRUCTION. SINCE A NET SOIL PRESSURE IS SPECIFIED, THE WEIGHTS OF THE FOOTING CONCRETE AND BACKFILL NEED NOT BE ADDED TO THE STRUCTURAL LOADS WHEN PROPORTIONING THE FOOTINGS.

EXTERIOR FOOTINGS AND FOOTINGS IN UNHEATED AREAS SHOULD BE LOCATED AT DEPTHS OF AT LEAST 2.5 FT BELOW FINAL EXTERIOR GRADES SO AS TO PROVIDE ADEQUATE PROTECTION FROM FROST HEAVE. IF THE STRUCTURE IS TO BE CONSTRUCTED DURING THE WINTER MONTHS OR IF THE BUILDING INTERIOR WILL LIKELY BE SUBJECTED TO FREEZING TEMPERATURES AFTER FOOTING CONSTRUCTION, THEN ALL FOOTINGS SHOULD BE PROVIDED WITH ADEQUATE FROST COVER PROTECTION. OTHERWISE, INTERIOR FOOTINGS CAN BE LOCATED ON SUITABLE MATERIALS AT NOMINAL DEPTHS BELOW FINISHED FLOOR GRADE.

GROUND-SUPPORTED SLABS

FLOOR SLABS SHOULD BE SUPPORTED ON APPROVED, FIRM NATURAL SOILS, OR ON NEW COMPACTED FILL. THE SLAB SUBGRADE SHOULD BE PREPARED IN ACCORDANCE WITH THE PROCEDURES OUTLINED IN SECTIONS 5.1 AND 5.2 OF THIS REPORT. IN PARTICULAR, THE SLAB SUBGRADE SHOULD BE HEAVILY PROOFROLLED TO DELINEATE ANY SOFT OR LOOSE AREAS REQUIRING UNDERCUTTING AND/OR STABILIZATION.

IT IS RECOMMENDED THAT THE SLAB BE DIRECTLY SUPPORTED ON A MINIMUM 4-INCH LAYER OF CLEAN GRANULAR MATERIALS SUCH AS WASHED SAND, CLEAN SAND AND GRAVEL, OR SCREENED, CRUSHED STONE. A SUITABLE MOISTURE/VAPOR BARRIER (THAT IS, POLYETHYLENE SHEETING) SHOULD ALSO BE PROVIDED. THESE PROCEDURES WILL PROVIDE A MOISTURE BREAK THAT WILL HELP TO PREVENT CAPILLARY RISE, DAMPNESS OF THE FLOOR SLABS AND ALSO HELP TO CURE THE SLAB CONCRETE. IT IS ALSO RECOMMEND THAT CONSTRUCTION JOINTS ON THE SLAB SURFACE AND ISOLATION JOINTS BETWEEN THE SLAB AND STRUCTURAL WALLS BE PROVIDED (SUCH THAT THE SLAB WOULD BE GROUND-SUPPORTED).

ON MOST PROJECTS, THERE IS A SIGNIFICANT TIME LAG BETWEEN INITIAL GRADING AND A POINT WHEN THE CONTRACTOR IS READY TO POUR THE SLABS-ON-GRADE. ENVIRONMENTAL CONDITIONS AND CONSTRUCTION TRAFFIC OFTEN DISTURB THE SUBGRADE SOILS. PROVISIONS SHOULD BE MADE IN THE CONSTRUCTION SPECIFICATIONS FOR THE RESTORATION OF THE SUBGRADE SOILS TO A STABLE CONDITION PRIOR TO THE PLACEMENT OF THE CONCRETE FOR THE FLOOR SLABS.

GROUNDWATER AND DRAINAGE

GROUNDWATER LEVELS WERE MONITORED IN THE OPEN BOREHOLES. THE SHALLOWEST GROUNDWATER ENCOUNTERED IN THE BORINGS WAS LOCATED AT A DEPTH OF 6+ FT BELOW EXISTING SITE GRADES. THEREFORE, MAJOR GROUNDWATER-RELATED PROBLEMS ARE TYPICALLY NOT ANTICIPATED DURING THE BUILDING CONSTRUCTION.

ANY WATER INFILTRATION RESULTING FROM PRECIPITATION, SURFACE RUN-OFF, OR PERCHED WATER SHOULD BE ABLE TO BE CONTROLLED BY MEANS OF SUMP PITS AND PUMPS, OR BY GRAVITY DITCHING PROCEDURES. IF ANY CONDITIONS ARE ENCOUNTERED WHICH CANNOT BE HANDLED IN SUCH A MANNER, THIS OFFICE SHOULD BE CONSULTED.

ADEQUATE DRAINAGE SHOULD BE PROVIDED AT THE SITE TO MINIMIZE ANY INCREASES IN THE MOISTURE CONTENTS OF THE FOUNDATION SOILS. ALL PAVEMENT OR PARKING AREAS SHOULD BE SLOPED AWAY FROM THE STRUCTURES TO PREVENT THE PONDING OF WATER.

BELOW-GRADE AND RETAINING WALLS

THE MAGNITUDE OF LATERAL EARTH PRESSURE AGAINST SUBSURFACE WALLS IS DEPENDENT ON THE TYPE OF BACKFILL SOIL, DRAINAGE PROVISIONS, AND WHETHER THE WALLS ARE PERMITTED TO YIELD DURING AND/OR AFTER PLACEMENT OF THE BACKFILL. IF THE WALLS ARE DESIGNED AS FREE-STANDING WALLS WITH UNRESTRICTED ROTATION AT THE TOP, THEN AN EQUIVALENT FLUID PRESSURE DISTRIBUTION CONSIDERING AN EQUIVALENT FLUID WEIGHT OF 45 LBS/FT CAN BE USED FOR DESIGN PURPOSES. FOR WALLS THAT ARE DESIGNED SUCH THAT MOVEMENT OF THE TOP OF THE WALL IS PROHIBITED, AN EQUIVALENT FLUID PRESSURE DISTRIBUTION CONSIDERING AN EQUIVALENT FLUID WEIGHT OF 60 LBS/FT SHOULD BE USED FOR DESIGN PURPOSES. ANY SURCHARGE LOADINGS MUST ALSO BE CONSIDERED IN THE WALL DESIGNS.

GENERALLY, BACKFILL MATERIALS BEHIND THE WALLS SHOULD CONSIST OF GRANULAR SOILS HAVING CLASSIFICATIONS OF SM OR BETTER. BECAUSE OF A POTENTIAL FOR SWELLING, COHESIVE MATERIALS SHOULD NOT BE USED AS WALL BACKFILL EXCEPT, PERHAPS, IN THE UPPER MOST 1 FT WHERE A RELATIVELY IMPERMEABLE LAYER WILL BE DESIRABLE IN ORDER TO MINIMIZE THE INFILTRATION OF THE SUBSURFACE DRAINAGE INTO THE GRANULAR BACKFILL BEHIND THE WALL. IT IS CONSIDERED ESSENTIAL THAT ALL BACKFILL MATERIALS BE INSPECTED AND APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO THEIR USE.

WALL BACKFILL MATERIALS SHOULD BE COMPACTED TO DRY DENSITIES ON THE ORDER OF 95 PERCENT OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY. WE WISH TO POINT OUT THAT IT MAY BE NECESSARY TO USE SMALLER WALK-BEHIND COMPACTION EQUIPMENT NEAR THE WALLS TO ATTAIN THE PROPER COMPACTION BUT TO AVOID DAMAGING THE WALLS. ALSO, THE WALLS SHOULD BE PROPERLY BRACED DURING BACKFILLING OPERATIONS.

AN ADEQUATE DRAINAGE SYSTEM SHOULD BE PROVIDED BEHIND WALLS SUCH THAT ANY SURFACE INFILTRATION OR GROUNDWATER IS INTERCEPTED AND DISPOSED. OTHERWISE, HYDROSTATIC PRESSURES SHOULD ALSO BE CONSIDERED IN THE WALL DESIGN.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[signature] 12-15-14
CHIEF, DEVELOPMENT ENGINEERING DIVISION NY DATE

[signature] 1-05-15
CHIEF, DIVISION OF LAND DEVELOPMENT BB DATE

[signature] 1/5/15
DIRECTOR DATE

OWNER/DEVELOPER
JAGDAMBE, LLC.
6804 CREEKWOOD CT.
CLARKSVILLE, MD 21029-1746
410-903-7898
C/O NARESH KUMAR

NO.	REVISION	DATE

SITE DEVELOPMENT PLAN

SWM DRAINAGE AREA MAP, SWM NOTES AND DETAILS; SOILS MAP

MEL'S LIQUOR

7915 WATERLOO ROAD
TWO-STORY RETAIL/RESTAURANT CARRY-OUT BUILDING
ZONED: B-1
TAX MAP 43 BLOCK 21 L.10188/F.162 PARCEL 248
1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

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

STATE OF MARYLAND · ROBERT HARRIS VOGEL · No. 16193 · PROFESSIONAL ENGINEER
ROBERT H. VOGEL, PE No.16193

DESIGN BY: DZE
DRAWN BY: JER/CF/DZE
CHECKED BY: RHV
DATE: NOVEMBER 2014
SCALE: AS SHOWN
W.O. NO.: 12-60

PROFESSIONAL CERTIFICATE

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2016

SHEET 6 OF 8

SDP-14-064

AS-BUILT 10.30.15

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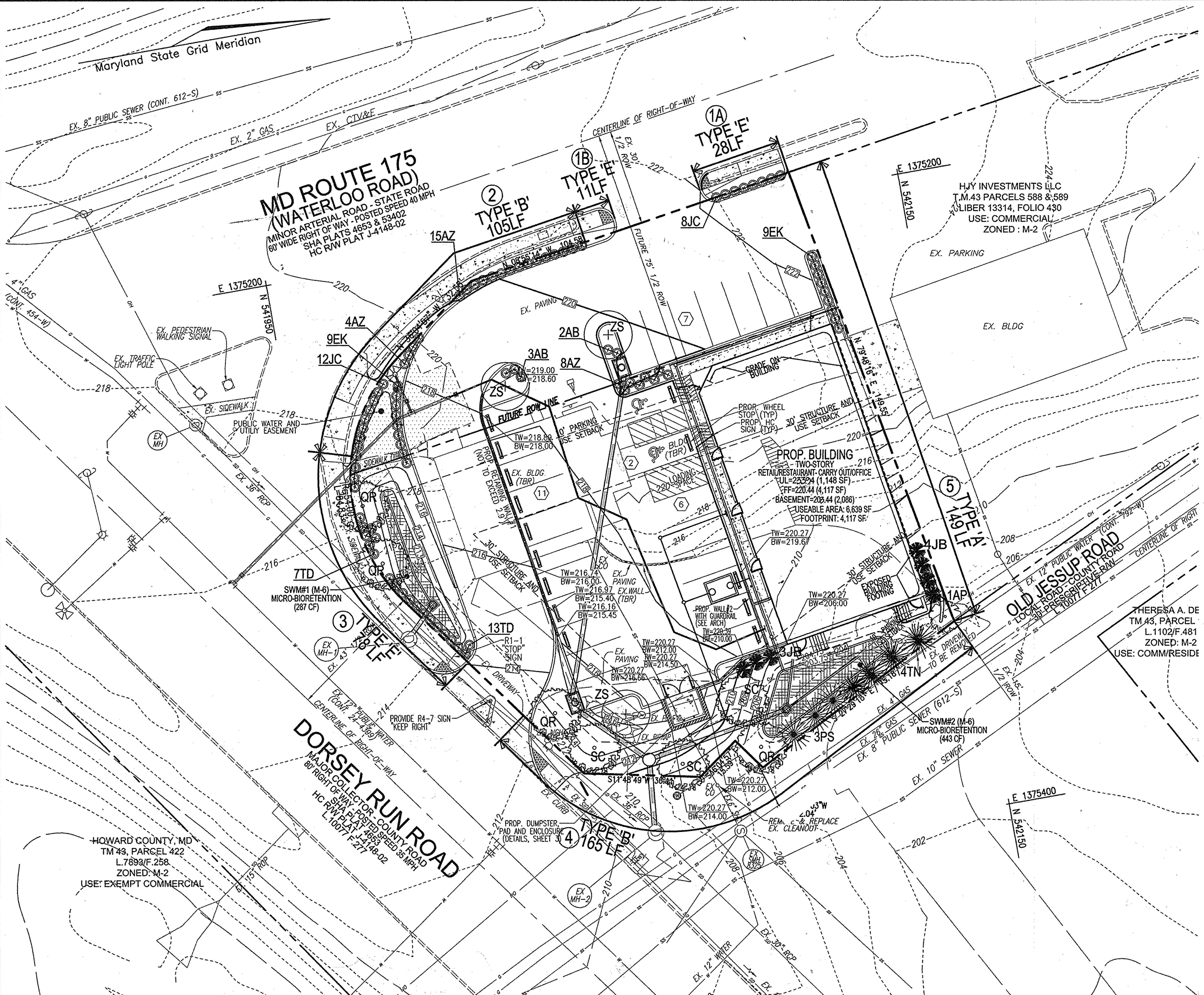
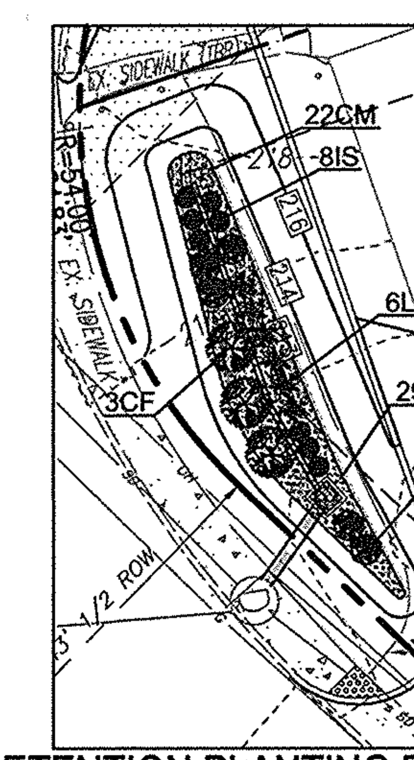


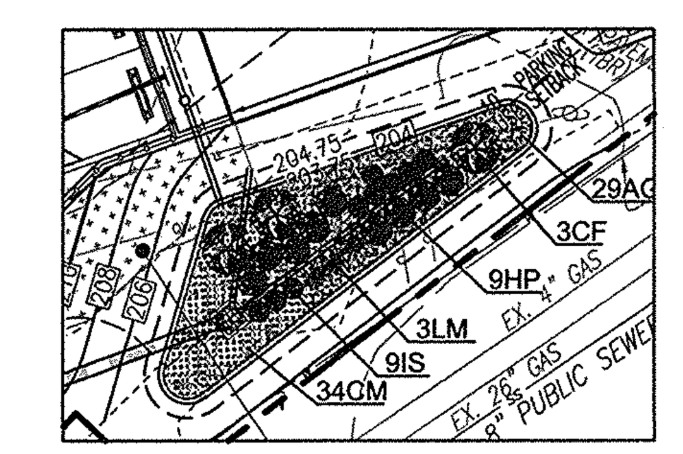
LANDSCAPE PLAN

SCALE: 1"= 20'



BIORETENTION PLANTING PLAN (SWM #1)

SCALE: 1"= 20'



BIORETENTION PLANTING PLAN (SWM #2)

SCALE: 1"= 20'

BIORETENTION PLANTING SCHEDULE				
KEY	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
IS	20	IRIS SIBERICA 'BENNERUP BLUE' BENNERUP BLUE SIBERIAN	1 GALLON	18" O.C.
HP	12	HEMEROCALLIS X 'PRAIRIE BLUE EYES' PRAIRIE BLUE EYES DAYLILY	1 GALLON	30" O.C.
LM	9	LIRIOPE MUSCARI 'BIG BLUE' BIG BLUE LILYTURF	4' HT	SPECIMIN QUALITY STRAIGHT LEADER
CF	6	CORNUS SERICEA 'FLAVIRAMEA' YELLOW TWIGGED DOGWOOD	4' HT	SPECIMIN QUALITY STRAIGHT LEADER
CM	56	CONVALLARIA MAJALIS LILY-OF-THE-VALLEY	1 QT.	12" O.C.
AG	74	ACORUS GRAMINEUS 'OGON' GOLDEN VARIEGATED SWEET FLAG	1 QT.	12" O.C.

SCHEDULE D : STORMWATER MANAGEMENT AREA LANDSCAPING		
	SWM#1	SWM#2
LINEAR FEET OF PERIMETER	108 LF	104 LF
CREDIT FOR EXISTING VEGETATION (NO, YES AND LINEAR FEET)	NO	NO
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	YES, 100%*	YES, 100%*
NUMBER OF TREES REQUIRED SHADE TREES EVERGREEN TREES	(B BUFFER) 0 SHADE TREES 0 EVERGREEN TREES	(B BUFFER) 0 SHADE TREES 0 EVERGREEN TREES
NUMBER OF TREES PROVIDED SHADE TREES EVERGREEN TREES	SEE BIORETENTION PLANT LIST*	

*SURETY FOR BIORETENTION PROVIDED IN THE DED COST ESTIMATE

BIORETENTION PLANTING REQUIREMENTS			
MBR	AREA	STEMS REQUIRED	STEMS PROVIDED
1	287 SF	7	22
2	443 SF	10	25

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

SCHEDULE B PARKING LOT INTERNAL LANDSCAPING	
NUMBER OF PARKING SPACES	27
NUMBER OF TREES REQUIRED (1/20 SPACES)	2
NUMBER OF TREES PROVIDED SHADE TREES OTHER TREES (2:1 SUBSTITUTION) SHRUBS (10:1 SUBSTITUTION)	2 – –

LANDSCAPE SCHEDULE				
KEY	QUAN.	BOTANICAL NAME	SIZE	CAT
QR	4	QUERCUS RUBRA NORTHERN RED OAK	2 1/2"-3" CAL.	B & B
SC	3	PRUNUS SARGENTII SARGENT CHERRY	2 1/2"-3" CAL.	B & B
ZS	3	ZELCOVA SERRATA 'VILLAGE GREEN' VILLAGE GREEN JAPANESE ZELCOVA	2 1/2"-3" CAL.	B & B
AP	1	ACER PALMATUM 'BLOODGOOD' BLOODGOOD JAPANESE RED MAPLE	4'-6' HT. (MAX. HEIGHT=25')	B & B
PS	4	PINUS STROBUS EASTERN WHITE PINE	6'-8' HT.	B & B
TN	6	THUJA OCCIDENTALIS 'NIGRA' NIGRA ARBORVITAE	4'-5' HT. (MAX. HEIGHT=20')	B & B
AB	5	AZALEA 'BLAAW'S PINK' BLAAW'S PINK AZALEA	18"-24" SPREAD	B & B
EK	18	EUONYMUS KIAUTSCHOVICUS 'MANHATTAN' MANHATTAN EUONYMUS	2 1/2" -3" HT.	B & B
TD	20	TAXUS MEDIA 'DENSIFORMIS' DENSIFORMIS YEW	2 1/2" -3" HT.	B & B
JC	12	JUNIPERUS CHINENSIS 'SARGENTI' SARGENT JUNIPER	2 1/2" -3" HT.	B & B
AZ	27	AZALEA 'GUMPO WHITE' GUMPO WHITE AZALEA	18"-24" SPREAD	B & B

SCHEDULE 'A' PERIMETER LANDSCAPE EDGE								
CATEGORY	ADJACENT TO PERIMETER PROPERTIES AND ROADWAYS						ADJACENT TO DUMPSTER	TOTAL
PERIMETER/FRONTAGE DESIGNATION LANDSCAPE TYPE	1A E	1B E	2 B	3 E	4 B	5 A	6 D	
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	28'	11'	105'	78'	165'	145'	29'	
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO	NO	NO	NO	
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO	NO	NO	NO	
NUMBER OF PLANTS REQUIRED SHADE TREES EVERGREEN TREES SHRUBS	1:40 1 – 1:4 7	1:40 1 – 1:4 3	1:50 3 1:40 3 –	1:40 2 – 1:4 20	1:50 4 1:40 5 –	1:60 3 – –	1:60 1 1:10 3 –	15 11 30
NUMBER OF PLANTS PROVIDED SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTION) SHRUBS (10:1 SUBSTITUTION)	0* – – 17*	0** – – 13**	0*** 0*** – 40***	2 – – 20	4 7*** – –	1**** – 4**** –	1 3 – –	8 10 4 90
DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)								

*SUBSTITUTE 1 SHADE TREE FOR 10 SHRUBS IN PERIMETER 1A.
**SUBSTITUTE 1 SHADE TREE FOR 10 SHRUBS IN PERIMETER 1B.
***SUBSTITUTE 3 SHADE TREE FOR 30 SHRUBS IN PERIMETER 2; SUBSTITUTE 1 EVERGREEN TREE FOR 10 SHRUBS IN PERIMETER 2; 2 EVERGREEN FROM PERIMETER 2 PLANTED IN PERMETER 4.
****SUBSTITUTE 2 SHADE TREE FOR 4 EVERGREENS IN PERIMETER 5.

LEGEND:

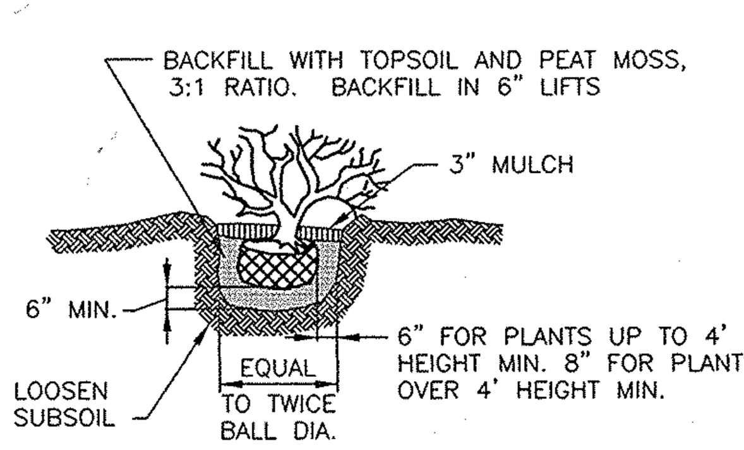
- PROPOSED CONTOUR
- EXISTING CONTOUR
- EXISTING OVERHEAD LINES
- EXISTING WATERLINE LINE
- EXISTING GAS LINE
- EXISTING GUARD RAIL
- EXISTING METAL FENCE
- EXISTING WOOD FENCE
- EXISTING ELECTRICAL BOX
- EXISTING POLE
- EXISTING LIGHT POLE WITH CONCRETE BASE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- PROPOSED PARKING COUNT
- PROPOSED TEST PIT
- PROPOSED SANITARY LINE
- PROPOSED WATER LINE
- SOILS BOUNDARY
- EXISTING FENCE
- PROPERTY LINE
- ADJACENT PROPERTY LINE
- RIGHT-OF-WAY LINE
- PROPOSED SIDEWALK
- EXISTING CURB AND GUTTER
- PROPOSED CURB AND GUTTER
- PROPOSED WHEEL STOP
- PROPOSED STORM DRAIN INLET
- PROPOSED STORM DRAIN
- PROPOSED SHADE TREE
- PROPOSED EVERGREEN TREE
- PROPOSED SHRUBS
- LANDSCAPE PERIMETER
- PROP. MICRO BIORETENTION AREA (M-6)

GENERAL NOTES:

1. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. THE REQUIRED PARKING AND PERIMETER LANDSCAPING WILL BE BONDED PER THIS SUBMISSION.
2. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF $7,650.00 FOR THE REQUIRED 17 SHADE TREES, 11 EVERGREEN TREES, AND 30 SHRUBS.

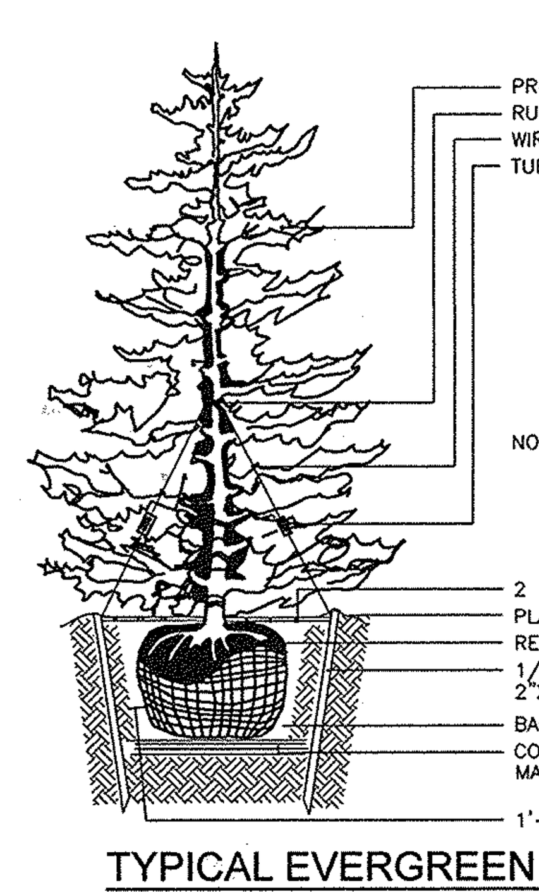
LANDSCAPE SCHEDULE NOTE:

1. ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT AAN SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH HRD PLANTING SPECIFICATIONS.
2. CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
3. FINAL LOCATION OF PLANT MATERIAL MAY NEED TO VARY TO MEET FINAL FIELD CONDITIONS. TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SWALES.
4. CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLAN DIFFERS FROMLANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.



SHRUB PLANTING DETAIL

NOT TO SCALE

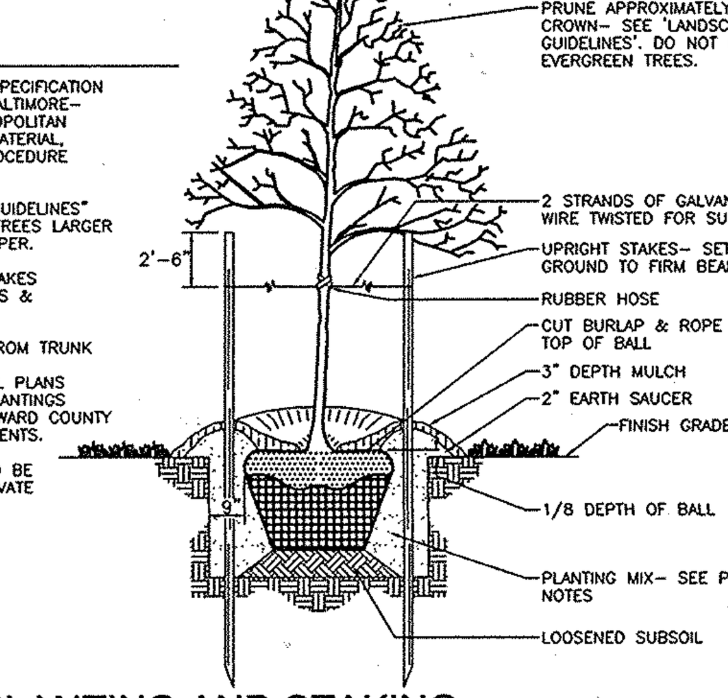


TYPICAL EVERGREEN TREE PLANTING DETAIL

NOT TO SCALE

NOTES

1. SEE "LANDSCAPE SPECIFICATION GUIDELINES FOR BALTIMORE-WASHINGTON METROPOLITAN AREAS" FOR ALL MATERIAL, PRODUCT, AND PROCEDURE SPECIFICATIONS.
2. SEE "LANDSCAPE GUIDELINES" FOR SUPPORTING TREES LARGER THAN 2-1/2" CALIPER.
3. PLACE UPRIGHT STAKES PARALLEL TO WALKS & BUILDINGS.
4. KEEP MULCH 1" FROM TRUNK
5. SEE ARCHITECTURAL PLANS FOR ADDITIONAL PLANTINGS WHICH EXCEED HOWARD COUNTY MINIMUM REQUIREMENTS.
6. TREES ARE NOT TO BE PLANTED OVER PRIVATE SEWAGE EASEMENT.



TREE PLANTING AND STAKING

DECIDUOUS TREES UP TO 2-1/2" CALIPER — NOT TO SCALE

NO AS-BUILT INFORMATION THIS SHEET

SHA LANDSCAPE NOTES

LANDSCAPE CONSTRUCTION WITHIN THE RIGHT OF WAY OF THE MARYLAND STATE HIGHWAY ADMINISTRATION (SHA) SHALL CONFORM TO THESE NOTES.

SHA STANDARD SPECIFICATIONS
LANDSCAPE CONSTRUCTION SHALL CONFORM TO SECTIONS 701 THROUGH 716 AND LANDSCAPE MATERIALS SHALL CONFORM TO SECTION 920 OF THE SHA 2008 STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, INCLUDING ALL REVISIONS OR SUPPLEMENTS, AND AS SPECIFIED IN THESE NOTES. THESE REQUIREMENTS SHALL SUPERSEDE ALL OTHER SPECIFICATIONS FOR WORK WITHIN THE SHA RIGHT OF WAY.

EROSION & SEDIMENT CONTROL MANAGER
SOIL DISTURBANCE SUCH AS GRADING, EXCAVATION, SOIL PLACEMENT OR OTHER ACTIVITIES THAT INVOLVE SOIL DISTURBANCE WITHIN THE SHA RIGHT OF WAY SHALL BE SUPERVISED BY AN EROSION AND SEDIMENT CONTROL MANAGER WITH A VALID SHA 'YELLOW CARD' IN CONFORMANCE WITH SHA 2008 SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS AND ANY APPLICABLE EROSION AND SEDIMENT CONTROL PERMIT.

TEMPORARY STABILIZATION
TEMPORARY STABILIZATION SHALL BE INSTALLED IN CONFORMANCE WITH SECTION 704 TO ENSURE THAT AREAS OF SOIL DISTURBANCE ARE PROTECTED FROM RAINFALL AND FLOWING WATER UNTIL PERMANENT STABILIZATION IS INSTALLED.
1. TEMPORARY MULCH, EITHER AS TEMPORARY STRAW MULCH OR TEMPORARY MATTING MULCH, SHALL BE INSTALLED AT THE END OF EACH WORKING DAY TO PROVIDE 'SAME DAY STABILIZATION' UNLESS OTHER APPROVED STABILIZATION IS INSTALLED.
2. TEMPORARY STRAW MULCH SHALL BE INSTALLED ON AREAS AND SLOPES FLATTER THAN 4:1; TEMPORARY MATTING MULCH SHALL BE APPLIED ON SLOPES 4:1 AND STEEPER, AND TO AREAS WITHIN CHANNELS.
3. TEMPORARY SEED SHALL BE INSTALLED IN LIEU OF TEMPORARY MULCH WHEN SOIL REDISTURBANCE IS EXPECTED MORE THAN 30 DAYS AFTER SOIL DISTURBANCE. THE REQUIRED APPLICATION RATE OF 20-16-12 FERTILIZER SHALL BE REDUCED TO 200 LBS PER ACRE. 7.1

ROADWAY PAVEMENT REMOVAL
AREAS OF ROADWAY PAVEMENT REMOVAL SHALL BE EXCAVATED TO REMOVE PAVEMENTS, AGGREGATE BASE, AND COMPACTED SOIL TO A MINIMUM DEPTH OF 10 INCHES BELOW THE PAVEMENT SURFACE, OR AS NECESSARY TO REMOVE ALL UNSUITABLE MATERIALS FOR LANDSCAPING. THE EXCAVATED AREAS SHALL BE RESTORED WITH SUBSOIL AND TOPSOIL AS PART OF SOIL RESTORATION.

EXCAVATION AND DEBRIS REMOVAL
DEBRIS RELATED TO THE DEMOLITION OF SIDEWALKS, DRIVEWAYS, CURBS, TREES, STUMPS, ROOTS, FENCING, PIPES, AND OTHER MATERIALS THAT MAY INTERFERE WITH LANDSCAPE INSTALLATION OR FUTURE MAINTENANCE WITHIN THE SHA RIGHT OF WAY SHALL BE EXCAVATED AS NECESSARY FOR THEIR COMPLETE REMOVAL AND DISPOSAL.

SOIL RESTORATION
AREAS OF PAVEMENT REMOVAL, EXCAVATION OR DRILLING IN LANDSCAPED AREAS SHALL REMOVE EXCAVATED DEBRIS AND RESTORE THE SUBGRADE WITH APPROVED SUBSOIL AND TOPSOIL PLACED IN CONFORMANCE WITH SECTION 701 OF THE SHA STANDARD SPECIFICATIONS.
1. A LAYER OF APPROVED TOPSOIL AT LEAST 4 INCH DEPTH SHALL BE PLACED ON ALL DISTURBED AREAS FLATTER THAN 2:1 AND IN ALL CHANNELS PRIOR TO SEEDING, SODDING OR OTHER LANDSCAPING, UNLESS OTHERWISE SPECIFIED.
2. A LAYER OF APPROVED TOPSOIL AT LEAST 2 INCH DEPTH SHALL BE PLACED ON ALL DISTURBED AREAS 2:1 AND STEEPER PRIOR TO SEEDING, SODDING OR OTHER LANDSCAPING, UNLESS OTHERWISE SPECIFIED.
3. BIORETENTION SOIL MIX (BSM) SHALL BE INSTALLED IN CONFORMANCE WITH THE PLANS AND PERTINENT SPECIFICATIONS.

TURFGRASS SOD ESTABLISHMENT
TURFGRASS SOD ESTABLISHMENT SHALL BE PERFORMED IN ALL DISTURBED AREAS OF THE SHA RIGHT OF WAY, OR WITHIN THE AREAS INDICATED IN THE PLANS, IN CONFORMANCE WITH SECTION 708 OF THE SHA STANDARD SPECIFICATIONS. THE REQUIRED APPLICATION RATE OF 20-16-12 FERTILIZER SHALL BE REDUCED TO 200 LBS PER ACRE, AND NO FERTILIZER SHALL BE APPLIED FROM NOV. 15 TO MAR. 1.

SOIL STABILIZATION MATTING
SOIL STABILIZATION MATTING SHALL BE INSTALLED IN CONFORMANCE WITH SECTION 709 OF THE SHA STANDARD SPECIFICATIONS, IN CONJUNCTION WITH TURFGRASS ESTABLISHMENT PER SECTION 705 AS FOLLOWS:
1. AREAS FLATTER THAN 6:1. TYPE A OR TYPE E MATTING MAY BE INSTALLED IN LIEU OF STRAW MULCH AND HYDROMULCH BINDER.
2. AREAS STEEPER THAN 6:1 AND FLATTER THAN 4:1. TYPE A OR TYPE E MATTING SHALL BE INSTALLED IN LIEU OF STRAW MULCH AND HYDROMULCH BINDER.
3. CHANNELS, STORMWATER MANAGEMENT FACILITIES, AND SLOPES 4:1 AND STEEPER. TYPE A SOIL STABILIZATION MATTING SHALL BE INSTALLED IN LIEU OF STRAW MULCH AND HYDROMULCH BINDER.

OWNER/DEVELOPER
JAGDAMBE, LLC.
6804 CREEKWOOD CT.
CLARKSVILLE, MD 21029-1746
410-903-7898
C/O NARESH KUMAR

NO.	REVISION	DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 12.15.14
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 1-05-15
DIRECTOR	DATE 1/5/15

DEVELOPER'S/BUILDER'S CERTIFICATE

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

SIGNATURE OF DEVELOPER — DATE 11/10/14

SITE DEVELOPMENT PLAN

LANDSCAPE PLAN

MEL'S LIQUOR

7915 WATERLOO ROAD
TWO-STORY RETAIL/RESTAURANT CARRY-OUT BUILDING
ZONED: B-1
L.10188/F.162

TAX MAP 43 BLOCK 21
1ST ELECTION DISTRICT

PARCEL 248
HOWARD COUNTY, MARYLAND

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

STATE OF MARYLAND — ROBERT HARRIS VOGEL — PROFESSIONAL ENGINEER — 11/15/14
ROBERT H. VOGEL, PE No.16193

DESIGN BY:	DZE
DRAWN BY:	JER/CF/DZE
CHECKED BY:	RHV
DATE:	NOVEMBER 2014
SCALE:	AS SHOWN
W.O. NO.:	12-60

PROFESSIONAL CERTIFICATE

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2016

AS-BUILT 10.30.15

SDP-14-064

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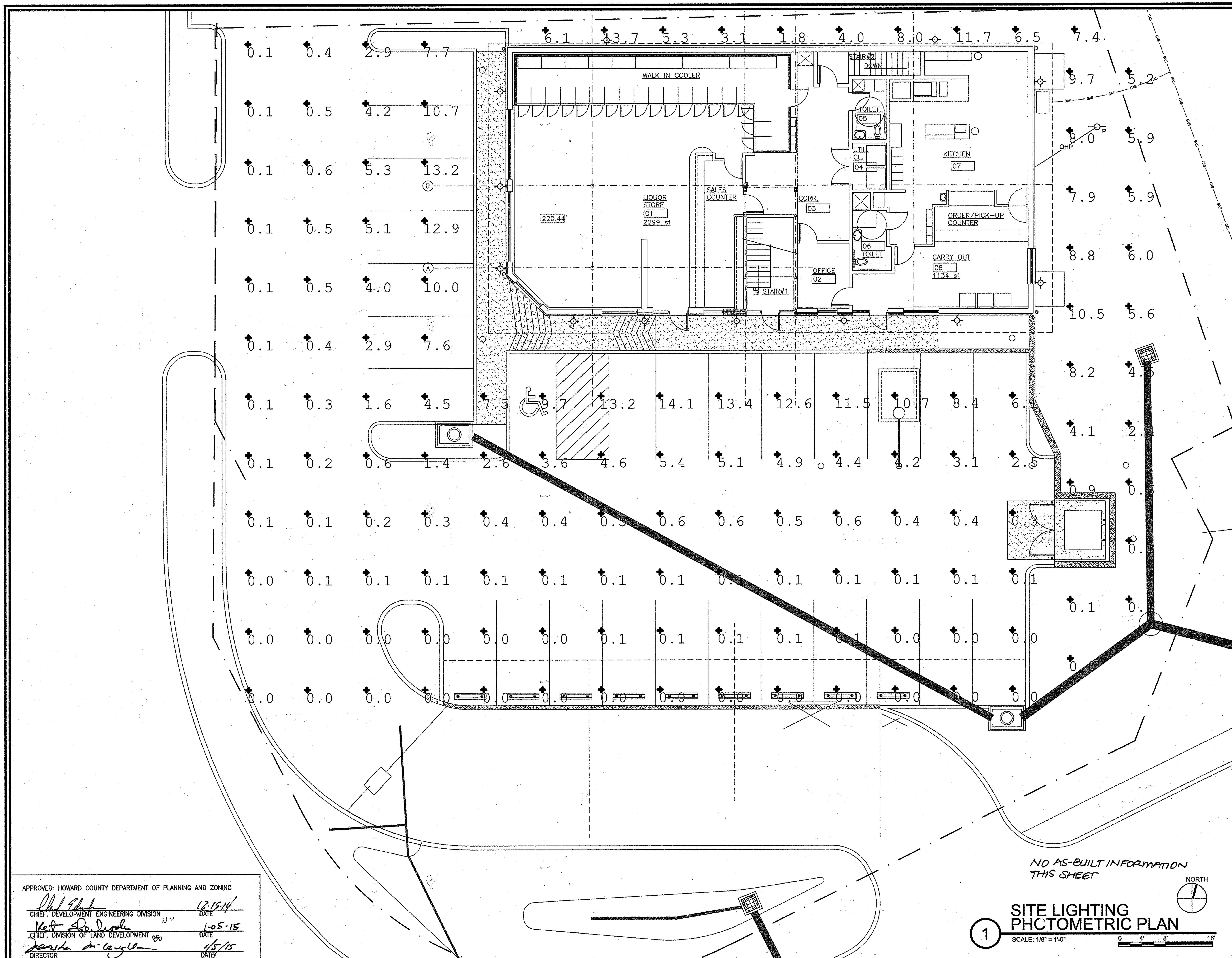

NO AS-BUILT INFORMATION THIS SHEET

SITE LIGHTING PHOTOMETRIC PLAN

1 SCALE: 1/8" = 1'-0" 0 4' 8' 16'

GENERAL SHEET NOTES

1. REFER TO SHEET 3 FOR LIGHTING DETAILS.

SYMBOL LEGEND

SYMBOL	DESCRIPTION
REFERENCE AND LINE SYMBOLS	
—/\/—	BREAK, STRAIGHT: TO BREAK PARTS OF DRAWING.
∽	BREAK, ROUND.
MATCH LINE SEE XX/X-XXX	MATCH LINE INDICATOR: CENTER, EXTRA WIDE LINE.
———	NEW LINE: MEDIUM LINE.
- - - - -	HIDDEN FEATURES LINE: HIDDEN, THIN LINE.
———	EXISTING TO REMAIN LINE: THIN LINE.
— — — —	DEMOLITION LINE: DASHED, MEDIUM LINE.
— — —	PROPERTY LINE: DASHED, WIDE LINE.
— · —	CONTRACT LIMIT LINE: DASHDOT, WIDE LINE.
LIGHT FIXTURE SYMBOLS	
⌖	WALL MOUNTED FIXTURE.

SPECTRUM ENGINEERS
7033 Cradlerock Farm, Suite 100
Columbia, Maryland 21045
800-678-7077
www.spectrum-engineers.com

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JAGDAMBE, LLC.
6804 CREEKWOOD CT.
CLARKSVILLE, MD 21029-1746
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SITE DEVELOPMENT PLAN

SITE LIGHTING PHOTOMETRIC PLAN

MEL'S LIQUOR

7915 WATERLOO ROAD
TWO-STORY RETAIL/RESTAURANT CARRY-OUT BUILDING
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FAX: 410.461.8961

STATE OF MARYLAND CARLTON A. GETZ No. 37060 PROFESSIONAL ENGINEER 11/14/2014
CARLTON A. GETZ, PE No. 37060

DESIGN BY: EXY
DRAWN BY: EXY
CHECKED BY: CAG
DATE: SEPT. 2014
SCALE: 1/8" = 1'-0"
W.O. NO.: 12-60

PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 37060 EXPIRATION DATE: 04-20-2015

8 SHEET OF 8

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 12.15.14
NY
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 1-05-15
BB
DIRECTOR — DATE 1/5/15

AS-BUILT 10·30·15

SDP-14-064