#### SHEET INDEX DESCRIPTION TITLE SHEET SEDIMENT & EROSION CONTROL AND GRADING PLAN SITE DEVELOPMENT PLAN AND DIMENSION PLAN SEDIMENT CONTROL NOTES AND DETAILS SOIL AND STORM DRAINAGE AREA MAP PRIVATE STORM DRAIN PROFILES AND MICRO-BIORETENTION DETAILS WHO AND SHO PROFILES AND AMENTIY FURNITURE DETAILS 8 WATER QUALITY FACILITY #3 AND STORM DRAIN CONNECTION TO SWMF #1 PLANS PARKING GARAGE AND FENCING DETAILS ROOF DRAIN MANIFOLD DESIGN AND LANDSCAPE DRAIN DETAILS

### **GENERAL NOTES:**

THIS PLAN IS SUBJECT TO COUNTY COUNCIL BILL 45-2003, THE AMENDED 5th EDITION SUBDIVISION REGULATIONS,

LANDSCAPE PLAN

- THE SUBJECT PROPERTY IS ZONED CAC-CLI PER THE 2/2/04 COMPREHENSIVE ZONING PLAN AND THE "COMP LITE" ZONING AMENDMENTS EFFECTIVE 7/28/06.
- STORM DRAIN REPORT AND STORMWATER MANAGEMENT REPORTS PROVIDED BY MILDENBERG, BOENDER & ASSOC., INC. APPROVED AS PART OF THIS PLAN SUBMISSION AND F-08-013 (12/22/2008) RESPECTIVELY. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF WETLANDS, STREAM(S) OR THEIR REQUIRED BUFFERS, FLOOD PLAIN AND FOREST CONSERVATION EASEMENT AREAS
- UNLESS A WAIVER HAS BEEN GRANTED. TOPOGRAPHIC INFORMATION IS BASED ON AERIAL RUN TOPOGRAPHY PERFORMED BY WINGS TOPOGRAPHY INC. ON OR ABOUT APRIL 2005, COMPLIMENTED WITH FIELD RUN TOPOGRAPHY PERFORMED BY MILDENBERG, BOENDER AND ASSOC. ON OR ABOUT JUNE 2007. EXISTING CONTOURS SHOWN PER APPROVED GP-08-24, F-08-013, SDP-08-046, SDP-08-078.
- COORDINATES BASED ON NAD'83 MARYLAND COORDINATES SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL
- STATIONS NO. 37GD, 43A1, AND 43BC: STA. 37GD N 553,237.2140 E 1,372,353.6000 EL.290.95 STA. 43BC N 549,592.0910 E 1,375,466.6200 EL.214.87
- BOUNDARY INFORMATION IS BASED ON A FIELD RUN MONUMENTED BOUNDARY SURVEY PERFORMED ON OR ABOUT FEBRUARY, 2002 BY MILDENBERG, BOENDER AND ASSOCIATES, INC.
- THE NOISE STUDY WAS PREPARED BY MILDENBERG, BOENDER AND ASSOCIATES ON OR ABOUT FEBRUARY 2008. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE
- O THE FINANCIAL SURFITY FOR THE REQUIRED LANDSCAPING SHALL BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$69,513.00 FOR 115 SHADE TREES, 20 EVERGREENS/ ORNAMENTALS, AND 1076.1 LF OF WALL AND FENCING.
- 1. BASED ON AVAILABLE COUNTY DATA, NO HISTORIC STRUCTURES OR BURIAL GROUNDS EXIST ON SITE.
- 12. SOILS DATA BASED ON HOWARD COUNTY SOIL SURVEY DATED 1968, SHEET 20. 13. PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT. PUBLIC WATER AND SEWER WILL BE UTILIZED.
- PUBLIC WATER AND SEWER CONTRACT NO. 14-4707-D. 4. THERE ARE NO STRUCTURES WITHIN THE LOD OF PHASE 3 and 4 TO BE REMOVED.
- 15. NO STEEP SLOPES EXIST ON SITE.
- 16. THE FOREST CONSERVATION REQUIREMENTS WERE SATISFIED UNDER SDP-08-046 AND F-09-007.
- 17. TRAFFIC DEVICES, MARKING AND SIGNING SHALL BE IN ACCORDANCE WITH LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ASPHALT. 18. 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 GUAGE)-3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED IN TOP OF EACH POST. 9. STORMWATER MANAGEMENT REQUIREMENTS WERE SATISFIED UNDER F-08-013, IN ACCORDANCE WITH THE 2000 MARYLAND SWM DESIGN MANUAL. SWM IS BEING PROVIDED VIA PRIVATELY OWNED & MAINTAINED UNDERGROUND STORMWATER MANAGEMENT FACILITY.
- ). WP-06-114 WAS APPROVED ON AUGUST 28, 2006 WAINING SECTION 16.119(f) OF THE SUBDIVISION REGULATIONS. THE APPROVAL WAS SUBJECT TO THE FOLLOWING CONDITIONS: 1. THE PROPOSED ROAD AND ACCESS IMPROVEMENTS WILL REQUIRE AN ACCESS PERMIT ISSUED BY THE STATE ENGINEERING
- ACCESS PERMITS DIVISION. THE DEVELOPER MUST MEET ALL TERMS AND CONDITIONS OF THE ACCESS PERMIT. WP-07-052 WAS APPROVED ON MAY 8, 2007 WAIMING SECTION 16.116(a)(1) AND 16.116(a)(2)(iv) OF THE SUBDIVISION REGULATIONS. THE APPROVAL IS SUBJECT TO THE FOLLOWING:

  1. UNDERGROUND SWM IN THE CURRENT LOCATION OF THE EXISTING SWM POND WILL BE INSTALLED AS NECESSARY. THE
- UNDERGROUND FACILITY WILL BE DESIGNED AND SUBMITTED FOR REVIEW AT THE PRELIMINARY, FINAL AND SITE 2. LIMITS OF DISTURBANCE WILL BE THE MINIMUM NECESSARY TO INSTALL THE IMPROVEMENTS AND SHALL NOT EXCEED THE DISTURBANCE SHOWN ON THE WAIVER PETITION EXHIBIT SUBMITTED ON 4/4/07. DISTURBANCE IS LIMITED AS FOLLOWS:

  AREA 1 - 1600 SQ.FT. OF WETLAND DISTURBANCE AND 7500 SQ.FT. OF WETLAND BUFFER
  - AREA 2 18750 SQ.FT. OF WETLAND DISTURBANCE AND 19500 SQ.FT. OF WETLAND BUFFER
- AREA 3 30000 SQ.FT. OF WETLAND DISTURBANCE, 35250 SQ.FT. OF WETLAND BUFFER DISTURBANCE AND 62250 SQ.FT. OF STREAM BUFFER DISTURBANCE
- 3. ALL NECESSARY STATE AND LOCAL PERMITS WILL BE OBTAINED PRIOR TO ANY GRADING AND/OR CONSTRUCTION 4. SUPER SILT FENCING SHALL BE INSTALLED ALONG THE ENTIRE LOD FOR THE SIDEWALK IMPROVEMENTS FOR AREA 1 PRIOR O THE COMMENCEMENT OF ANY CONSTRUCTION OR GRADING ACTIVITY AND SHALL REMAIN IN PLACE FOR THE
- DURATION OF CONSTRUCTION. THE GREENSPACE/OPEN AREA IN THE NORTHEASTERN PORTION OF THE SITE SHALL BE INCREASED BY A MINIMUM OF 20,150 SQUARE FEET (THE AREA OF WETLAND AND WETLAND BUFFER DISTURBANCE ALONG U.S. ROUTE 1 THAT IS ABOVE AND BEYOND THE NECESSARY DISTURBANCE FOR ROUTE 1 ROAD IMPROVEMENTS). BUILDING #43, ITS ACCESS AND OTHER IMPERVIOUS AREAS INCLUDING SIDEWALKS SHALL BE RELOCATED AND/OR REDESIGNED TO ALLOW FOR THIS
- ADDITIONAL GREEN SPACE. THIS AREA SHALL BE USED TO ADDRESS A PORTION OF THE SITES FOREST CONSERVATION WP-07-129 WAS APPROVED ON JULY 24, 2007, WAIVING SECTION 16.144(f) REQUIRING PRELIMINARY PLAN SUBMISSION. THE APPROVAL IS SUBJECT TO THE FOLLOWING: 1. THE ENTIRE PUBLIC ROAD SYSTEM MUST BE DESIGNED WITH THE NEXT SUBMITTED FINAL PLAT AND PLAN FOR THE STORMWATER MANAGEMENT MUST BE DESIGNED FOR ALL PUBLIC IMPROVEMENTS WITH THE NEXT SUBMITTED FINAL PLAT AND PLAN FOR THE PROPERTY.
- PRELIMINARY WATER AND SEWER PLANS MUST BE SUBMITTED PRIOR TO OR CONCURRENTLY WITH THE NEXT SUBMITTED 23. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA
- STANDARDS AND SPECIFICATIONS AS APPLICABLE. 4. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK. 5. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- 26. ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED. 27. MIHUS WILL BE PROVIDED IN ACCORDANCE WITH THE ZONING REGULATIONS. MIHUS REQUIRED 23.6%(REDUCED AS A RESULT OF A
- PORTION OF THE PROPERTY INITIALLY ZONED COMMERCIAL)x299 UNITS = 71 MIHU'S.
- 29. THE 65dBA NOISE CONTOUR LINE DRAWN ON THIS DEVELOPMENT PLAN IS ADVISORY AS REQUIRED BY THE HOWARD COUNTY DESIGN MANUAL, CHAPTER 5, REVISED FEBRUARY 1992, AND CANNOT BE CONSIDERED TO EXACTLY LOCATE THE 65dBA NOISE EXPOSURE. THE 65dBA NOISE LINE WAS ESTABLISHED BY HOWARD COUNTY TO ALERT DEVELOPERS, BUILDERS AND FUTURE RESIDENTS THAT AREAS
- BEYOND THIS THRESHOLD MAY EXCEED GENERALLY ACCEPTED NOISE LEVELS ESTABLISHED BY THE U.S. DEPARTMENT OF HOUSING AND 30. LIGHT TRESPASS ONTO ANY PROPERTY ZONED OR USED FOR RESIDENTIAL PURPOSES SHALL NOT EXCEED 0.5 FOOT CANDLES 31. STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL, VOLUME III (1993) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS (JUNE 1993)". A MINIMUM
- SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE. WP-08-020 WAS APPROVED ON OCTOBER 3, 2007, WAIVING SECTION 16.155 (APPLICABILITY) WHICH REQUIRED THE SUBMISSION OF SITE DEVELOPMENT PLAN FOR NEW OR EXPANDED NONRESIDENTIAL DEVELOPMENT AND NEW RESIDENTIAL DEVELOPMENT INCLUDING SINGLE-FAMILY
- ATTACHED, APARTMENT AND MOBILE HOME RESIDENTIAL DEVELOPMENT. APPROVAL IS SUBJECT TO THE FOLLOWING: 1. HSCD MUST APPROVE THE ASSOCIATED GRADING PERMIT. 2. THE APPLICANT AND HIS CONSULTANT MUST SCHEDULE A MEETING WITH ALL APPLICABLE COUNTY AND STATE AGENCIES TO ADDRESS THE COMMENTS FOR F-08-013 ISSUED IN THE DEPARTMENT OF PLANNING AND ZONING'S LETTER DATED SEPTEMBER 27, 2007.
- 33. EXISTING UTILITIES BASED ON FIELD RUN SURVEY PERFORMED BY MILDENBERG, BOENDER AND ASSOC, ON OR ABOUT JUNE 2007. 34. THERE IS NO FLOOD PLAIN WITHIN THE LOD OF THIS PLAN. 35. THE WETLAND DELINEATION STUDY FOR THIS PROJECT WAS PREPARED BY ECO-SCIENCE PROFESSIONAL, INC. DATED MAY 15, 2007.
- THERE ARE NO WETLANDS WITHIN THE LOD OF THIS PLAN. 6. THE APPO STUDY FOR THIS PROJECT WAS PREPARED BY THE TRAFFIC GROUP DATED NOVEMBER 2006. APPROVED UNDER S-06-010
- ON JUNE 2007. NO APFO STUDY IS REQUIRED FOR THIS PROJECT. 7. PER SECTION 127.5.D.4 OF THE 2006 ZONING REGULATIONS THE FOLLOWING SETBACKS ARE REQUIRED AND ABIDED BY: A. MINIMUM SETBACKS FROM THE PUBLIC STREET RIGHT-OF-WAY 1. PRINCIPAL STRUCTURES AND AMENITY AREAS
  2. ALL OTHER STRUCTURES AND USES
- FROM ROUTE 1 (INTERMEDIATE ARTERIAL)

  1. PRINCIPAL STRUCTURES
- 2. ALL OTHER STRUCTURE AND USES (EXCEPT SURF, PARK.)
  3. SURFACE PARKING
  8. MINIMUM SETBACKS FROM VICINAL PROPERTIES

- 1. FROM RESIDENTIAL DISTRICTS:

  A. NON RESIDENTIAL STRUCTURES AND ASSOCIATED USES
  30 FEET
  B. STRUCTURES CONTAINING RESIDENCES AND ASSOCIATED USES
  20 FEET
  2. FROM ALL OTHER ZONING DISTRICT:
  ALL STRUCTURES AND USES 0 FEET
  3. IF A RESIDENTIAL DISTRICT IS SEPARATED FROM THE CAC DISTRICT BY A PUBLIC STREET RIGHT OF WAY, ONLY THE SETBACKS FROM A PUBLIC STREET RIGHT OF WAY SHALL APPLY.

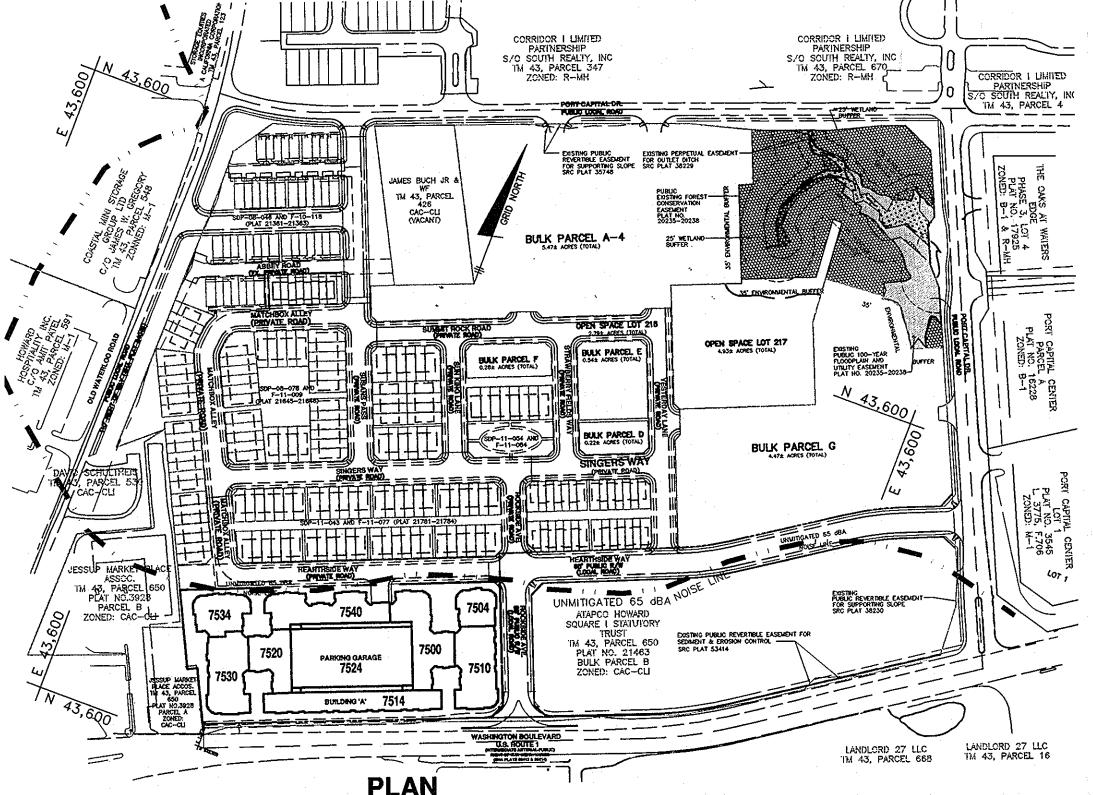
  C. NAXIMUM STRUCTURE SETBACK FROM PUBLIC STREET RIGHT OF WAY
  1. AS PROMDED IN THE ROUTE 1 MANUAL, THE BUILDING FACADE CLOSEST TO A PUBLIC STREET SHOULD BE LOCATED NO MORE THAN 10 FEET FROM THE EDGE OF THE PUBLIC STREET RIGHT OF WAY UNLESS TOPOGRAPHY, UTILITIES OR OTHER PHYSICAL CONSTITUINTS MAKE A GREATER SETBACK NECESSARY.
  THIS 10-FOOT SETBACK MAY BE INCREASED WITHOUT A VARIANCE IN ACCORDANCE WITH THE ROUTE 1 MANUAL.

1		
	APPROVED FOR PUBLIC WATER AND SEWERAGE SYS HOWARD COUNTY HEALTH DEPARTMENT	TEM
	Britar for Maure Royaman,	10/31/2012.
	APPROVED: HOWARD COUNTY DEPARTMENT OF PLAN	INING AND ZONING
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# SITE DEVELOPMENT PLAN

HOWARD SQUARE
PHASE 3 & 4, PARCEL C APARTMENT BUILDING



### GENERAL NOTES CONT'D:

- 38. WP-11-017 WAS APPROVED IN AUGUST 27, 2010, WAIVING SECTION 16.156 (g)(2) WHICH ESTABLISHES TIMELINES FOR SUBMISSION OF REVISED PLANS AND SECTION 16.1104(b) WHICH OUTLINES THE PHASING PROCESS AND THE ESTABLISHMENT OF THE PHASING SCHEDULE AND ASSOCIATED MILESTONES.
- APPROVAL IS SUBJECT TO THE FOLLOWING: 1. THE DEVELOPER MUST SUBMIT REVISED PLANS IN ASSOCIATION WITH SDP-08-078 FOR THE REMAINING 105 UNITS ON OR BEFORE MAY 14, 2011 2. THE DEVELOPER MUST SUBMIT THE NEXT PHASE FOR 73 UNITS (DESIGNATED PHASE 3 IN DEPARTMENT OF PLANNING AND ZONING'S LETTER OF MAY 27, 2008) ON OR BEFORE SEPTEMBER 30, 2011. 3. REVISED PLANS WILL BE SUBMITTED TO ALL SRC AGENCIES FOR REVIEW.
- 39. WP-11-067 WAS APPROVED ON NOVEMBER 23, 2010, WAIVING SECTION 16.120(C)(4) WHICH REQUIRES THAT SINGLE-FAMILY-ATTACHED LOTS HAVE A MINIMUM 15 FOOT FRONTAGE ON A PUBLIC ROAD WHICH MAY BE APPROVED PROVIDED THEY FRONT ON A COMMONLY OWNED AREA CONTAINING A PARKING AREA OR PRIVATE ROAD NOT EXCEEDING 200 FOOT LENGTH. APPROVAL IS SUBJECT TO THE FOLLOWING:

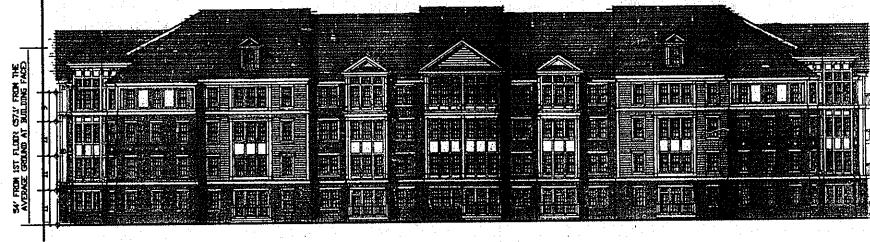
  1. F-11-009 MUST BE RECORDED PRIOR TO FINAL SIGNATURE APPROVAL
- 2. A HOMEOWNER'S ASSOCIATION WILL BE CREATED THAT WILL BE THE REPRESENTATIVE PARTY FOR THE MAINTENANCE OF THE PRIVATE ROADS AND STORMWATER CONVEYANCE & MANAGEMENT FACILITIES. WATER & SEWER SHALL BE PUBLIC AND MAINTAINED FOR EACH UNIT WITHIN THE RECORDED PUBLIC EASEMENT. 40. THE MIHU OBLIGATION OF SEVENTY-ONE (71) UNITS FOR HOWARD SQUARE, PHASE 3 AND 4, PARCEL C APARTMENT BUILDING IS ADDRESSED BY AN AGREEMENT RECORDED IN LIBER 14283/FOLIO 429 FOR THIRTY-EIGHT (38) UNITS

PROVIDED AND LOCATED WITHIN THE DEEP FALLS PROPERTY AND AN AGREEMENT RECORDED IN LIBER 14314/FOLIO

- 159 FOR THIRTY-THREE (33) UNITS PROVIDED AND LOCATED WITHIN THE BEECHCREST PROPERTY. 41. A WAIVER PETITION (WP-11-165) WAS APPROVED ON MAY 9, 2011 TO SECTION 16.120(C)(4) TO ALLOW FOR PRIVATE ROADS SUBJECT TO THE FOLLOWING: 1. A HOME OWNER'S ASSOCIATION FOR EACH PHASE OF THE HOWARD SQUARE PROJECT WILL BE CREATED THAT WILL BE THE RESPONSIBLE PARTY FOR THE MAINTENANCE OF THE PRIVATE ROADS AND STORMWATER CONVEYANCE AND MANAGEMENT FACILITIES. WATER AND SEWER SHALL BE PUBLIC AND MAINTAINED FOR EACH UNIT WITHIN A RECORDED
- 42. PARKING IS BEING PROVIDED WITHIN THE INTERNAL PARKING GARAGE AT 1.8 SPACES/UNIT PER THE APPROVED PARKING STUDY. A PARKING STUDY PROVIDED BY THE TRAFFIC GROUP DATED SEPTEMBER 23, 2011 PROVIDES JUSTIFICATION FOR THE ADJUSTMENT OF THE PARKING REQUIREMENT FROM 2.3 SPACES/UNIT TO 1.8 SPACES/UNIT. THIS STUDY INCLUDED
- 43. KNOX BOX SHALL BE PLACED ON THE FRONT OF ALL BUILDINGS NO MORE THAN 6' TO THE RIGHT OF THE MAIN ENTRANCE AT A HEIGHT OF 4-5'. IT SHALL BE ELECTRONICALLY SUPERVISED TO NOTIFY THE OWNER THAT IT IS BEING ACCESSED (INTEGRATED WITH THE FIRE ALARM SYSTEM).
- 44. THE 65 dBA NOISE CONTOUR LINE DRAWN ON THIS PLAT IS ADVISORY AS REQUIRED BY THE HOWARD COUNTY DESIGN MANUAL, CHAPTER 5, REVISED FEBRUARY, 1992 AND CANNOT BE CONSIDERED TO EXACTLY LOCATE THE 65 dBA NOISE EXPOSURE. THE 65 dBA NOISE LINE WAS ESTABLISHED BY HOWARD COUNTY TO ALERT DEVELOPERS, BUILDERS AND FUTURE RESIDENTS THAT AREAS BEYOND THIS THRESHOLD MAY EXCEED GENERALLY ACCEPTED NOISE LEVELS ESTABLISHED BY THE U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT.
- 45. ALL ROOF DRAINS AND LANDSCAPE DRAINS SHALL MAINTAIN A MINIMUM 0.5% SLOPE AND BE SIZED APPROPRIATELY.
- 46. THERE ARE CEMETERIES LOCATED ON THIS SITE.
- 47. THE PROPOSED BUILDING WILL BE UTILIZING AN AUTOMATED SPRINKLER SYSTEM FOR FIRE PROTECTION. 48. THE USE OF ALL PARKING (RESIDENT, GUEST AND SWIMMING POOL USERS) SHALL BE CONTROLLED AND MANAGED BY THE PROPERTY MANAGEMENT COMPANY AND/OR THE HOA AND THEY (AND NOT THE COUNTY) SHALL RESPOND TO AND RESOLVE ANY PARKING INADEQUACIES SHOULD THEY ARISE.
- 49. THE PROVIDED PARKING, PARKING LAYOUT, AND ADA ACCESS WILL BE PROVIDED IN DETAIL AND IN ACCORDANCE WITH THE REQUIREMENTS SPECIFIED IN THESE PLANS AS PART OF THE BUILDING PERMIT PLANS.
- 50. THE BUILDING SITS BACK 8.6' FROM THE BUILDING RESTRICTION LINE AND THEREFORE, IN ACCORDANCE WITH SECT. 127.5(D)(2)(a)(1) THE PERMITTED HEIGHT IS 59.3' SINCE IT HAS AN INTEGRATED GARAGE. THE ACTUAL HEIGHT OF THE BUILDING BASED ON THE AVERAGE ELEVATION AROUND THE BUILDING IS 57.1'(54' FROM THE FIRST FLOOR). ADDITIONALLY, SINCE THE GARAGE SITS BACK MORE THAN 20' FROM THE BUILDING RESTRICTION LINE IN ACCORDANCE WITH THE SAME
- SECTION THE PERMITTED HEIGHT IS 65'(MAX HEIGHT) AND THE ACTUAL GARAGE HEIGHT IS 60.3'. 51. A WAIVER PETITION (WP-12-142) WAS APPROVED ON APRIL 10, 2012 TO WAIVE SECTION 16.156(G)(2) WITH THE CONDITION THAT THE DEVELOPER SUBMIT THE REVISED PLANS ON OR BEFORE JUNE 9, 2012.
- 52. THE PLANNING DIRECTOR HAS APPROVED LANDSCAPING FOR SDP-12-018 AS SHOWN ON SHEETS 11 AND 12 53. SWM IS ADDRESSED BY A MICO-BIORETENTION FACILITY LOCATED ON PARCEL 'C'.



### US ROUTE 1 ELEVATION



#### **ROCKSIDE ELEVATION** SCALE: 1"=30"

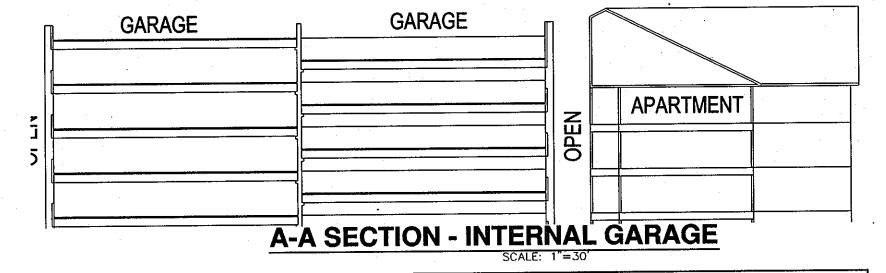
SCALE: 1"=200'

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					Impervious		ESDvin		Af		ES	Dν	R	ev
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To	als	7,724	4,630		0	576			759	634	49	49		

T				٠.	Allocations	Required			Antici	pated		Credit	/Allocatio	ns Rem	aining	
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		5/17/2008	5/14/2011	0	0	70	70	Ö	42	15	57	163		0		9%
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	Phase Sect. 1 Sect. 3 na Sect. A Sect. B 3 4 5 6 7 8 9	Sect. 1         2008           Sect. 3         2010           na         2011           Sect. A         2012           Sect. B         2012           3         2013           4         2014           5         2015           6         2016           7         2017           8         2018	Sect. 1         2008           Sect. 3         2010         5/17/2008           na         2011         na           Sect. A         2012         12/31/2009           Sect. B         2012         12/31/2010           4         2014         10/31/2011           5         2015         3/31/2013           6         2016         12/31/2013           7         2017         12/31/2014           8         2018         3/31/2016	Phase Year Deadlines Adjustments  Sect. 1 2008 Sect. 3 2010 5/17/2008 5/14/2011 na 2011 na na Sect. A 2012 12/31/2009 5/14/2011 Sect. B 2012 12/31/2009 5/14/2011 3 2013 12/31/2010 9/30/2011 4 2014 10/31/2011 5 2015 3/31/2013 6 2016 12/31/2013 7 2017 12/31/2014 8 2018 3/31/2016 9 2019 3/31/2017	Phase         Year         Deadlines         Adjustments         Credit Units           Sect. 1         2008         206           Sect. 3         2010         5/17/2008         5/14/2011         0           na         2011         na         na         0           Sect. A         2012         12/31/2009         5/14/2011         0           Sect. 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A         2012         12/31/2009         5/14/2011         0         0         0         0         0         0           Sect. B         2012         12/31/2009         5/14/2011         0	Phase         Year         Deadlines         Adjustments         Credit Units         Standard Units         MIHU         Total Units         Units           Sect. 1         2008         206         0         0         206         43°           Sect. 3         2010         5/17/2008         5/14/2011         0         0         70         70         0           na         2011         na         na         0         22         22         3         2012         12/31/2010         9/30/2011         0         0         0         0         73         73         93         4         2014         10/31/2011         0         10         32         42         0         0         114         0 <td>Phase         Year         Deadlines         Adjustments         Credit Units         Standard Units         MIHU         Total Units         Units         Units           Sect. 1         2008         206         0         0         206     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     56         0         14         56         0	Phase         Year         Deadlines         Adjustments         Credit Units         Standard Units         MIHU         Total Units         Units         Units         MIHU         Units         Credits           Sect. 1         2008         206         0         0         206         43*         0         0         43         163           Sect. 3         2010         5/17/2008         5/14/2011         0         0         70         70         0         42         15         57         163           na         2011         na         na         0         163         0         163         0 <td< td=""><td>Phase Year Deadlines Adjustments Credit Units Standard Units MIHU Total Units Units Units MIHU Units Credits MIHU  Sect. 1 2008</td><td>Phase Year Deadlines Adjustments Credit Units Standard Units MIHU Total Units Units Units Units MIHU Units Credits MIHU Units MIHU Units Credits MIHU Units MIHU Units Credits MIHU Units Credits MIHU 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1. PLEASE NOTE THAT PHASE 1 SECTION 1 UTILIZED 43 CREDIT UNITS OF WHICH 11 ARE PROPOSED AS MIHU. PROJECTED ALLOCATION USE MAY VARY AS THE PROJECT PROCEEDS

3. THE TOTAL NUMBER OF STANDARD AND MINU ALLOCATIONS ARE POOLED TOGETHER AND SINCE 11 CREDIT UNITS WERE USED FOR MINU'S IT CREATED AN 11 UNIT DEFICIT IN THE PROVIDED MIHU COLUMN AND AN 11 UNIT EXCESS IN THE STD. UNIT COLUMN.



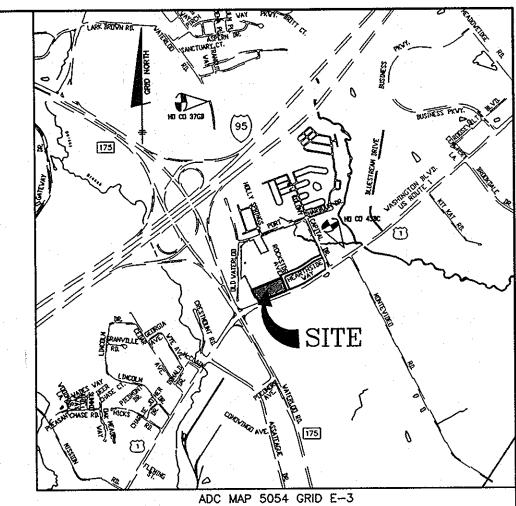
Comm	ercia	1		S-06-010 Outline	Currently Anticipated
Phase	Year	Deadlines	Adjustments	Commercial (SF)	Commercial (SF)
1 - Sect. 1	2008				n/a
1 - Sect. 3	2010	5/17/2008	8/14/2010	84000	n/a
na	2011	na	na	Ö	n/a
2	2012	12/31/2009	5/14/2011	16800	n/a
3	2013	12/31/2010	9/30/2011	36900	n/a
4	2014	10/31/2011		17300	n/a
5	2015	3/31/2013		37200	n/a
6	2016	12/31/2013		10800	n/a
7*	2017	12/31/2014		26700	156600
8	2018	3/31/2016		26400	61750
9	2019	3/31/2017		24000	61750
			Totals	280100	280100

NOTES:
1. AFTER COMPLETION OF 50% OF THE RESIDENTIAL COMPONENT, SDP APPROVAL MUST BE
GRANTED AND CONSTRUCTION MUST BEGIN ON A MINIMUM OF 25% OF THE REQUIRED COMMERCIAL
GRANTED AND CONSTRUCTION MOST BEGIN ON A MINIMUM OF 25% OF THE RECONSTRUCTION MOST BEGIN ON A MINIMUM OF 25% OF THE RECONSTRUCTION MOST BEGIN ON A MINIMUM OF 25% OF THE RECONSTRUCTION OF THE PROPERTY OF THE
COMPONENT. NO RESIDENTIAL BUILDING PERMITS WILL BE ISSUED UNTIL THIS REQUIREMENT HAS
BEEN SATISFACTORILY ADDRESSED.
2. THE 84,000 SF INDICATED IN PHASE 1 SECT. 3 WAS ASSOCIATED WITH A HOTEL SDP-08-062
WHICH WAS VOIDED ON JULY 8, 2008.

Sections	Parcel (Area)	Total Area (AC)	Amenity Area Regired (AC)	Amenity Area Provided (AC)	Proposed Amenity
Phase 1 Section 1 (SDP-08-048)		2.91	0.29	0.33	Tot Lots and Benches
Phase 1 Section 3A (SDP-08-078)		4.28	0.43	0.55	Tot Lots , Benches and Picnic Area
Phase 2 Section A (SDP-11-043)	A	3.80	0.38	0.00	N/A*
Phase 2 Section B (SDP-11-054)	31.46AC	10.53	1.05	5.28	Park with Benches, Playfield, Environmental Area Path and Picnic Area
Remaining Sections		9.94	0.99 c	0.00	N/A*
Phase 3 &4 (SDP-12-018)	C 4.18AC	4.18	0.42	0.00	0.41 AC. of Amenity Exclusively for Apartmen
Phase 5	B 5.46AC	5.46	0.55	0.00	N/A*
Right-of-Way	ROW	2.08	0.21	N/A	N/A*
Total		43.2	4.3	6.2	

#### - INDICATES THAT AMENITY REQUIREMENT IS BEING MET BY THE COLLECTIVE AREA PROVIDED THROUGHOUT THE DEVELOPMENT PERMIT INFORMATION CHART

SUBDIVISION NAME:			SECTION/	'AREA:	PARCEL:
HOWARI	D SQUAR	E	PHASE	3 and 4	PARCEL 'C'
PLAT:	BLOCK No.	ZONE:	TAX MAP:	ELECTION DISTRICT	CENSUS TRACT
2146321466	3&9	CAC-CLI	43	1	6069.01



	1/0
SITE ANALYSIS DATA CHART	ADC MAP 5054 GRID E-3 VICINITY MAP  SCALE : 1'=2000'
A.) TOTAL PROJECT AREA	4.18± AC.
B.) AREA OF THIS PLAN SUBMISSION	4.18± AC.
C.) APPROXIMATE LIMIT OF DISTURBANCE	4.18± AC.
D.) PRESENT ZONING:	CAC-CLI
E.) PROPOSED USE OF SITE:	APARTMENT BUILDING 92,560 SF/FLOOR = 370,240 TOTAL SF
F.) TOTAL NUMBER OF UNITS AVAILABLE PER ALLOCATION TABLE THIS SHEET	299
G.) TOTAL NUMBER OF UNITS PROPOSED	299 TOTAL 1ST - 69 UNITS 2ND - 76 UNITS 3RD - 77 UNITS 4TH - 77 UNITS
H.) MAXIMUM NUMBER OF EMPLOYEES PER USE	.N/A
I.) NUMBER OF PARKING SPACES REQUIRED BY HO. CO. ZONING REGULATIONS (2/UNIT + 30%)	688
J.) NUMBER OF PARKING SPACES PROVIDED_ PARKING NEEDS STUDY DATED OCTOBER 12, 2011 AND FOR USING 1.8 SPACES/ UNIT (1.8 X 299 = 539)* ADA PARKING SPACES	APPROVED ON NOVEMBER 18, 2011
K.) AMENTIY AREA REQUIRED (10%)  AMENITY AREA PROVIDED WITH THIS PLAN	.0.42 AC. (10% OF 4.18 AC. OR AREA OF SU .0.00 AC. (6.2 AC. OF AMENITY PROVIDED EL

SDP-92-079, WP-92-165 WP-93-044, WP-93-094, L.) APPLICABLE DPZ FILE REFERENCES: WP-07-129, F-09-007, F-08-013 SDP-08-046, SDP-08-078, F-09-053, WP-10-140, F-10-118, WP-11-017, WP-11-067, F-11-009, F-11-077, WP-11-165, F-11-076, F-11-084,

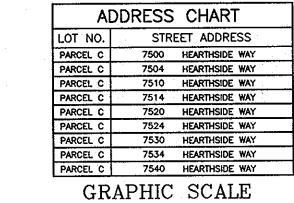
October 12, 2011.

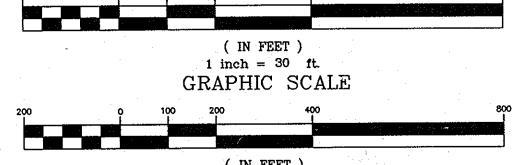
SDP-11-043,SDP-11-054, WP-12-142 M.) PROPOSED WATER AND SEWER SYSTEMS: X PUBLIC \_\_\_ PRIVATE \* The Parking Needs Study was approved based on the following considerations:

1. The submitted apartment unit parking space requirement reduction request and parking needs study submitted on

2. The parking needs study has determined that 1.8 parking spaces per apartment unit was adequate for other 3. The owner of the apartment complex will manage and respond to any parking inadequacies should they arise. 4. The apartment units will be able to use or share parking spaces provided for the onsite swimming pool that is to be used by all Howard Square residents and their guests. The use of the common/shared parking areas shall be controlled and managed by the property management company and/or the HOA, whichever is applicable and shall respond to and resolve any parking inadequacies should they arise.

#### BUILDING CONSTRUCTION MATERIALS SHALL BE USED TO REDUCE THE INTERIOR SOUND TO 45 DBA





( IN FEET ) 1 inch = 200 ft.

1 4-5-13 REVISED ALLOCATION CHART REVISION DATE **BENCHMARK** ENGINEERS A LAND SURVEYORS A PLANNERS

ENGINEERING, INC. 8480 BALTIMORE NATIONAL PIKE A SUITE 418 A ELUCOTT CITY, MARYLAND 21043 (P) 410-465-6105 (F) 410-465-6644 60 THOMAS JOHNSON DRIVE A FREDERICK, MARYLAND 21702 (P) 301-371-3505 (F) 301-371-3508 WWW.BEI-CIVILENGINEERING.COM

CHECK:BFC

DRAFT:BFC

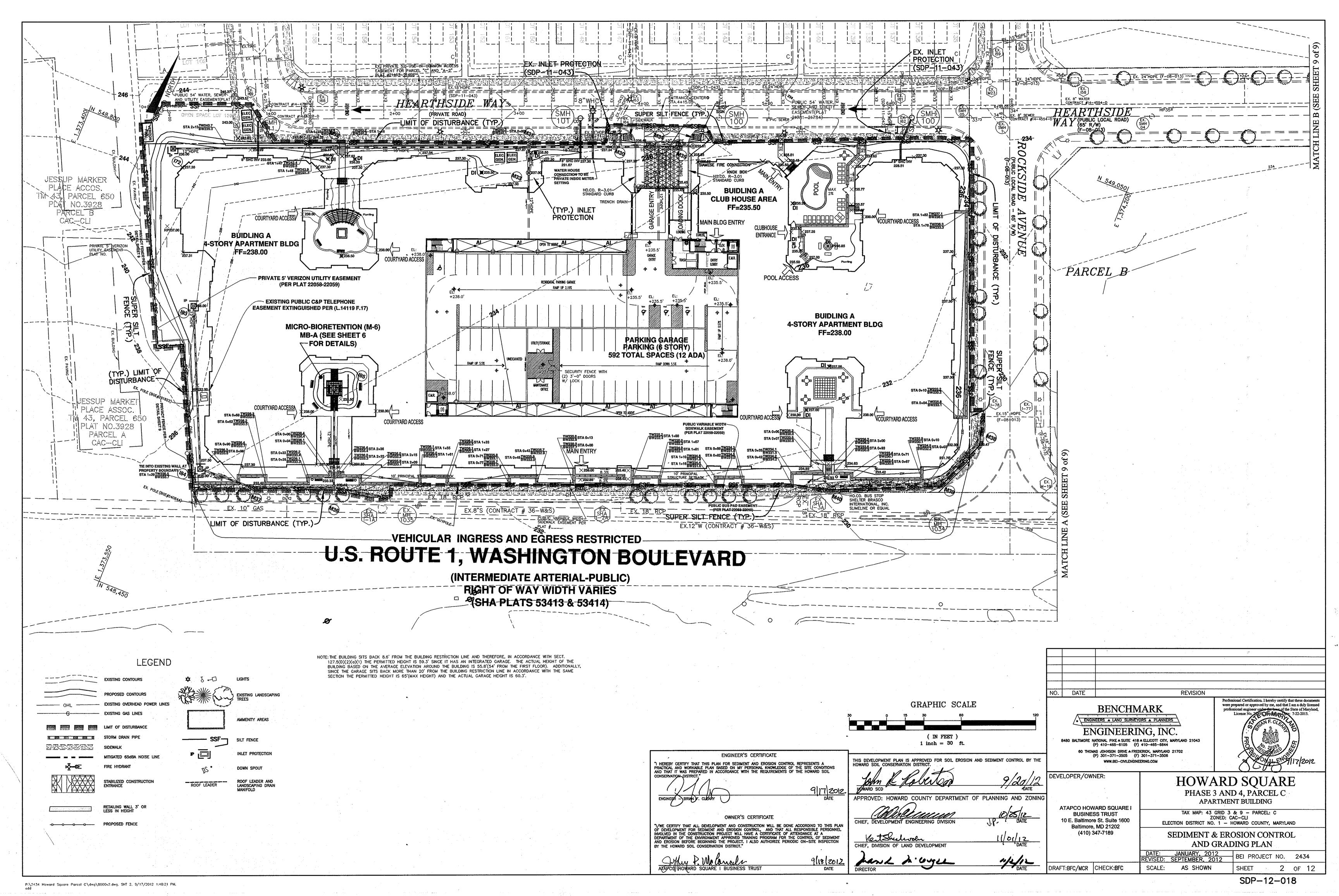
were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 28559, Expiration Date. 7-22-2013.

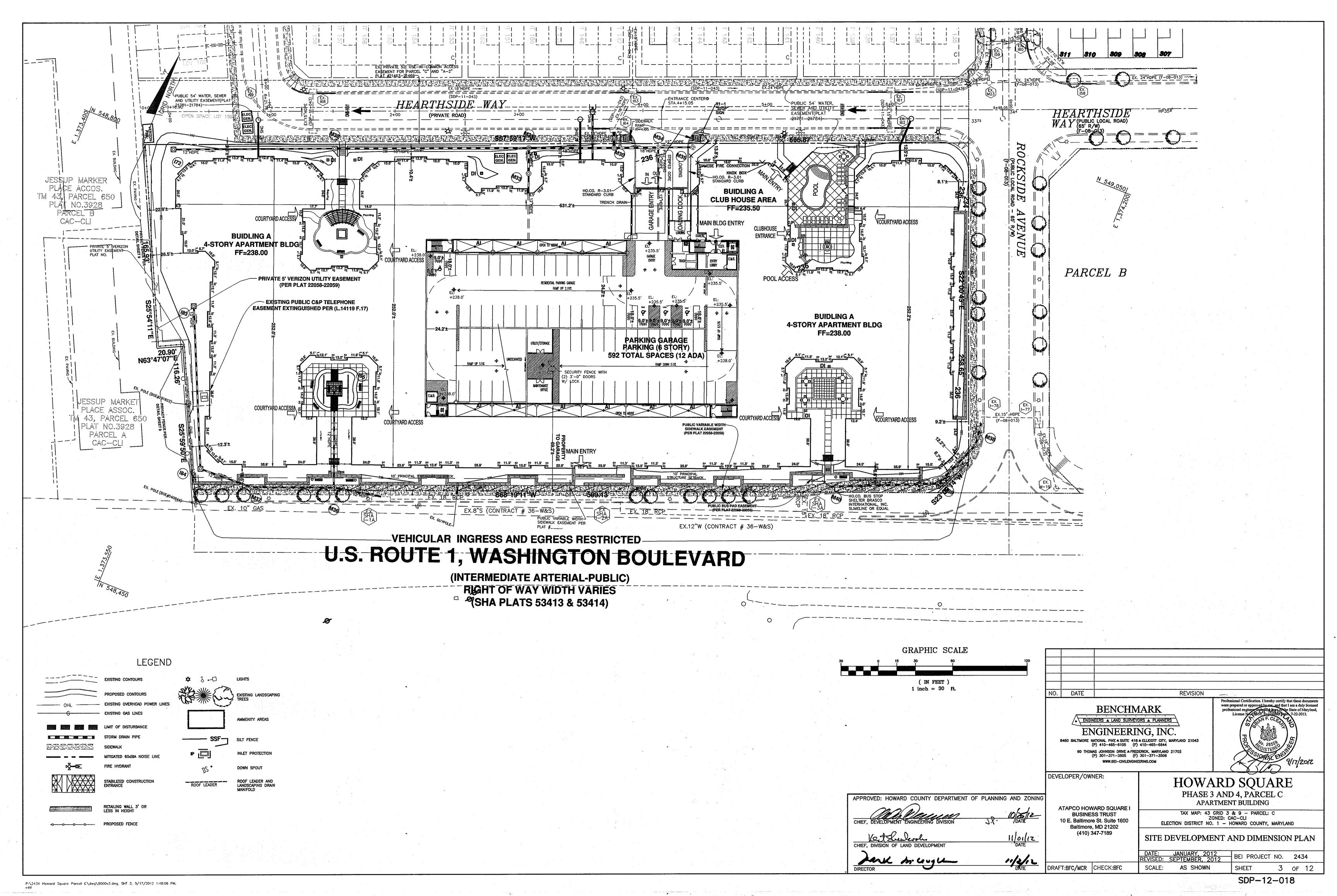
DEVELOPER/OWNER: **HOWARD SQUARE** PHASE 3 AND 4, PARCEL C APARTMENT BUILDING ATAPCO HOWARD SQUARE I TAX MAP: 43 GRID 3 & 9 - PARCEL: C STATUTORY TRUST ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND 10 E. Baltimore St. Suite 1600 Baltimore, MD 21202 (410) 347-7189

TITLE SHEET BEI PROJECT NO. 2434

SCALE:

SDP-12-018





#### SEDIMENT CONTROL NOTES A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY

- DEPARTMENT OF INSPECTIONS AND PERMITS SEDIMENT CONTROL DIVISION PRIOR D THE START OF ANY CONSTRUCTION. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE
- 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1, B) 14 DAYS AS TO ALL OTHER DISTURBED

OR GRADED AREAS ON THE PROJECT SITE

- ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE,
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDINGS (SEC. 51) SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50) AND MULCHING (SEC. 52) TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE COMMITTION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS: TOTAL AREA OF SITE: \_\_\_\_\_ ACRES. AREA TO BE ROOFED OR PAVED ACRES AREA TO BE VEGITATIVELY STABILIZED: ACRES TOTAL CUT: o. Cu. Yds. TOTAL WASTE/BORROW AREA LOCATION: STOCKPILING NOT PERMITED WITHIN THE LIMITS OF THIS SOP
- THESE QUANTITIES ARE FOR PERMIT PURPOSES ONLY CONTRACTOR IS REQUIRED TO PROVIDE HIS OWN QUANTITY MEASUREMENTS. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE
- ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- 10. 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 APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES ARE LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN BE BACK FILLED AND STABILIZED WITHIN ONE
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO IDENTIFY AN OFF-SITE SPOIL AREA WITH AN APPROVED SEDIMENT & EROSION CONTROL PLAN AND PERMIT

#### 30.0 DUST CONTROL

Controlling dust blowing and movement on construction sites and roads.

To prevent blowing and movement of dust from exposed soil surfaces, reduce on and off—site damage, health hazards, and improve traffic safety. Conditions Where Practice Applies

off-site damage is likely without treatmen

Temporary Methods

1. Mulches — See standards for vegetative stabilization with mulches only. Mulch

This practice is applicable to areas subject to dust blowing and movement where on and

- 2. Vegetative Cover See standards for temporary vegetative cover. Tillage — To roughen surface and bring clods to the surface. This is an emergency measure which should be used before soil blowing starts. Begin plowing on windward side of site. Chisel—type plows spaced about 12" apart, pring—toothed harrows, and similiar plows are examples of equipment which
- Irrigation This is generally done as an emergency treatment. Site is sprinkled with water until the surface is moist. Repeat as needed. At no time should the site be irrigated to the point that runoff begins to flow.
- Barriers Solid board fences, silt fences, snow fences, burlap fences, straw bales, and similiar material can be used to control air currents and soil blowing Barriers placed at right angles to prevailing currents at intervals of about 10 times their height are effective in controlling soil blowing.
- 6. Calcium Chloride Apply at rates that will keep surface moist. May need
- Permanent Methods

  1. Permanent Vegetation See standards for permanent vegetative cover, and permanent stabilization with sod. Existing trees or large shrubs may afford
- valuable protection if left in place. 2. Topsoiling — Covering with less erosive soil materials. See standards for
- Stone Cover surface with crushed stone or coarse gravel.
- 1. Agriculture Handbook 346. Wind Erosion Forces in the United States and Their Use in Predicting Soil Loss. 2. Agriculture Information Bulletin 354. How to Control Wind Erosion, USDA-ARS.

#### 21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL **Definition**

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

To provide a suitable medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil

#### Conditions Where Practice Applies

- This practice is limited to areas having 2:1 or flatter slopes where: a. The texture of the exposed subsoil/parent material is not adequate to produce
- 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. II. For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have the appropriate stabilization shown on the plans.

#### Construction and Material Specifications

- Topsoll salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoll to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey Topsoil Specifications - Soil to be used as topsoil must meet the following:
- Topsoil shall be a loam, sandy loam, clay loam, slit loam, sandy clay loam, loamy sand.
   Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 ½"
- ii. Topsoil must be free of plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nutsedge, poison ivy, thistle, or others as specified.
- iii. Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tiliage operations as described in the
- III. For sites having disturbed areas under 5 acres:
- i. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization — Section I — Vegetative Stabilization Methods and Materials. IV. For sites having disturbed areas over 5 acres:
- On soil meeting topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
- a. pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
- b. Organic content of topsoil shall be not less than 1.5 percent by weight.
- c. Topsoil having soluble salt content greater than 500 parts per million shall not be used. d. No sad or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min. ) to
- Topsoll substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in iteu of natural topsoil.

permit dissipation of phyto—toxic materials.

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

#### V. Topsoil Application

### When topsoiling, maintain needed erosion and sediment control practices such as diversion, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins

ii. Grades on the greas to be topsoiled, which have been previously established, shall be maintained

- iii.Topsoii shall be uniformly distributed in a 4" 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation
- iv. Topsoil shall not be placed while 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. G-21-2
- VI. Alternative for Permanent Seeding Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:
- i. Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribed amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:
- a. Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.
- b. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a pH of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use. c. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.
- iv. Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000
- References: Guideline Specifications, Soil Preparation and Sodding. MD-VA, Pub. #1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes. Revised 1973.

#### **B-4-5 STANDARDS AND SPECIFICATIONS**

Definition

#### PERMANENT STABILIZATION

To stabilize disturbed soils with permanent vegetation

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

#### 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 B.3) and based on the site condition or purpose found on Table B.2. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding
- 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 Guild, Section 342 - Critical Area Planting.
- c For sites having disturbed areas over 5 acres, use and show the rates recommended by the iv. When hydroseeding do not incorporate seed into the soil soil testing agency.
- d For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 ½ 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
- 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. mended 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 35 percent 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 thre cky Bluegrass Cultivars with each ranging from 10 to 35 percent of the total mixture
- 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, 000 square feet. One or more cultivars may be blended.
- iv. Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in ncludes Certified Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rate: 1 ½ to 3 pounds per 1000 square feet.

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, Turi 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

- Western 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)
- 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 1 1/2 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 not
- especially true when seedings are made late in the planting season, in abnormally dry or hot

#### B. Sod: to provide quick cover on disturbed areas (2:1 grade or flatter).

#### 1. General Specifications

- job foreman and inspector
- b. Sod must be machine cut at a uniform soil thickness of % inch, plus or minus ¼ inch, at the time of cutting. Measurement for thickness must exclude top growth and thatch. Broken pads
- 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
- 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
- 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.
- 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.

- 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
- b. After the first week, sod watering is required as necessary to maintain adequate moisture
- by the initial cutting or subsequent cuttings. Maintain a grass height of at least 3 inches unless

### **B-4-3 STANDARDS AND SPECIFICATIONS**

#### <u>FOR</u>

#### SEEDING AND MULCHING

Definition

### The application of seed and mulch to establish vegetative cover

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

#### A. Seeding 1. Specification:

- 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 indication on the container. Add fresh inoculants as direct 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
- 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

#### 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 B.1,
- Permanent Seeding Table B.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

Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer)

- 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
- 14 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
- 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;  $P_2O_5$  (phosphorous), 200 pounds per acre: K<sub>2</sub>O (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.

#### B. Mulching 1. Mulch Materials (in order of preference)

- a. Straw consisting of thoroughly threshed wheat, rye, 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 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
- 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 and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.

iii. WCFM materials are to be manufactured and processed in such a manner that the wood

iv. WCFM material must not contain elements or compounds at concentration levels that will v. WCFM must conform to the following physical requirements: fiver length of approximately 0 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.

- 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
- 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.

- a. Perform mulch anchoring immediately following application of much to minimize loss by wind or water. This may be done by one of the following methods (Listed by preference), depending
- 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.
- ііі. Synthetic binders such as Acrylic DLR (Agro-Tack), DCA-70, Petroset, Тепа Тах II, Тепа 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 vind catches mulch, such as in valleys and on crests of banks. Use of asphalt binders is
- iv. Lightweight plastic netting may be stapled over mulch according to manufacture recommendations. Netting is usually available in rolls 4 to 15 feet wide and 300 to 3,000 **B-4-4 STANDARDS AND SPECIFICATIONS**

TEMPORARY STABLIZATION

To stabilize disturbed soils with vegetation for up to 6 months.

### 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.

#### 1. Select one or more of the species or seed mixtures listed in Table B.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 B.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.

NOTE: SEDIMENT CONTROL MEASURES UNDER SDP-12-043 WILL BE UTILIZED.

### SEQUENCE OF CONSTRUCTION

1. OBTAIN GRADING PERMIT. (1 DAY) 2. PROVIDE SSF ALONG THE LOD AS SHOWN. UPON APPROVAL BY THE S&E CONTROL INSPECTOR BRING SITE TO GRADE (30 DAYS) 3. CONSTRUCT STORM DRAIN, UTILITIES. PROPOSED STORM DRAINS & STRUCTURES AND WATER QUALITY #3 (BY JUNE 30. 2013) TO

BE CONSTRUCTED AND TIED INTO THE EX. STORM DRAIN INFRASTRUCTURE AS SHOWN ON THESE PLANS. (60 DAYS).

- 4. BASE PAVE ROADS/ACCESS AS SHOWN (15 DAYS)
- 7. UPON APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT CONTROL DEVICES, FINALIZE GRADING AND STABILIZE REMAINING DISTURBED AREAS (3 DAYS).

#### DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE BERM (6" MIN.) STING PAVEMENT EARTH FILL \*\* GEDTEXTILE CLASS 'C'----- PIPE AS NECESSAR OR BETTER MINIMUM 6' OF 2'-3' AGGREGATE OVER LENGTH AND WIDTH OF -EXISTING GROUND STRUCTUR PROFILE \_\_\_\_\_ × 50' MINIMUM---

1. Length - minimum of 50' (\*30' for single residence lot) 2. Width - 10' minimum, should be flared at the existing road to provide a turning

3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior

to placing stone. \*\*The plan approval authority may not require single family

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

5. Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5.1 slopes and a minimum of 6' of stone over the pipe. Pipe he to be sized according to the drainage. When the SCE is located at a high spot and

DETAIL 23C - CURB INLET PROTECTION (COG OR COS INLETS) OF 2" X 4"

2" X 4" SPACER 2" X 4" WEIR

MAX. DRAINAGE AREA = 1/4 ACRE

Construction Specifications 4') to the 2" x 4" weir (measuring throat length plus 2') as shown on the standard

3. Securely nail the 2" X 4" weir to a 9" long vertical spacer to be located between the weir and the inlet face (max. 4' apart). 4. Place the assembly against the inlet throat and nail (minimum 2' lengths of 2" x 4" to the top of the weir at spacer locations). These 2" x 4" anchors shall extend across the inlet top and be held in place by sandbags or alternate weight

against the face of the curb on both sides of the inlet. Place clean 3/4 " x 1 1/2 " stone over the wire mesh and geotextile in such a manner to prevent water from 7. This type of protection must be inspected frequently and the filter cloth

8. Assure that storm flow does not bypass the inlet by installing a temporary

earth or asphalt dike to direct the flow to the inlet.

U.S. DEPARTMENT OF AGRICULTURE PAGE
E - 16 - 58

PLAN/CUT AWAY VIEW AGIP

SHALL NOT EXCEED 10 CENTER TO CENTER 34" MINIMUM GROUND ' " MINIMUM FLOW 21/2' DIAMETER GALVANIZED OR ALUMINUM CHAIN LINK FENCING-FILTER CLOTH-EMBED FILTER CLOTH 8'-STANDARD SYMBO \*IF MULTIPLE LAYERS ARE REQUIRED TO ATTAIN 424 . Fencing shall be 42' in height and constructed in accordance with the atest Maryland State Highway Details for Chain Link Fencing. The specification or a 6' fence shall be used, substituting 42' fabric and 6' length . Chain link fence shall be fastened securely to the fence posts with wire ties. he lower tension wire, brace and truss rods, drive anchors and post caps are not

DETAIL 33 - SUPER SILT FENCE

10' MAXIMUM

3. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24' at the top and mid section. 4. Filter cloth shall be embedded a minimum of 8' into the ground. 5. When two sections of filter cloth adjoin each other, they shall be overlapped . Maintenance shall be performed as needed and silt buildups removed when "bulges . Filter cloth shall be fastened securely to each fence post with wire ties o taples at top and mid section and shall meet the following requirements for Geotextile Class F: Testi MSMT 509 Tensile Strength Tensile Modulus 20 lbs/in (min.) Test: MSMT 509

0.3 gat/ft\*/minute (max.)

DETAIL 23B - AT GRADE INLET PROTECTION

Testo MSMT 328

Test: MSMT 32

equired except on the ends of the fence.

Filtering Efficiency 75% (min.)

Flow Rate

GEDTEXTILE CLASS E -

SOIL CONSERVATION SERVICE

MARYLAND DEPARTMENT OF ENVIRONMENT U.S. DEPARTMENT OF AGRICULTURE WATER MANAGEMENT ADMINISTRATION SOIL CONSERVATION SERVICE MARYLAND DEPARTMENT OF ENVIRONMEN WATER MANAGEMENT ADMINISTRATION DETAIL 23A - STANDARD INLET PROTECTION EDGE OF ROADVAY OR TO OF EARTH DIKE

SUPER SILT FENCE

Stope Length

Unlimited

200 feet

100 feet

50 feet

Silt Fence Length

Unlimited

1,500 feet

500 feet

250 fee

EXCAVATE, BACKFILL AND

STANDARD SYMBOL

(maximum)

Design Criteria

Steepness

0 - 10:1

10:1 - 5:1

3 1 - 2 1

2:1+

0 - 10%

10 - 20%

GEOTEXTILE CLASS E MAX. DRAINAGE AREA = 1/4 ACRE

> 1. Excavate completely around the inlet to a depth of 18' below the 2. Drive the 2' x 4' construction oracle lumber posts 1' into the ground at each corner of the inlet. Place nail strips between the posts on the ends of the inlet. Assemble the top portion of the 2' x 4' frame using the overlap joint shown on Detail 23A. The top of the frame (weir) must be 6' below adjacent roadways where flooding and safety issues may arise.

4. Stretch the Geotextile Class E tightly over the wire mesh with the geotextile extending from the top of the frame to 18' below the inlet notch elevation. Fasten the geotextile firmly to the frame. The ends of the geotextile must meet at a post, be overlapped and

5. Backfill around the inlet in compacted 6' layers until the layer of earth is level with the notch elevation on the ends and top elevation on the sides. 6. If the Inlet Is not In a sump, construct a compacted earth dike

across the ditch line directly below it. The top of the earth dike should be at least 6' higher than the top of the frame. 7. The structure must be inspected periodically and after each

rain and the geotextile replaced when it becomes clogged. MARYLAND DEPARTMENT OF ENVIRONMENT U.S. DEPARTMENT OF AGRICULTURE WATER MANAGEMENT ADMINISTRATION SOIL CONSERVATION SERVICE

LEED DOCUMENTATION 1. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE THAT PROPER DOCUMENTATION IS MAINTAINED TO PROVIDE EVIDENCE IN ACCORDANCE WITH THE CURRENT LEED CERTIFICATION REQUIREMENTS.

> 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 NO. OWNER'S CERTIFICATE "I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT 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 Deffry P. Mc Canada 9/18/2012 atápco///woward square i business trust THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE DATE APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

panch di ungle

ENGINEER'S CERTIFICATE

DATE REVISION BENCHMARK ENGINEERS A LAND SURVEYORS A PLANNERS ENGINEERING, INC. 8480 BALTIMORE NATIONAL PIKE A SUITE 418 A ELLICOTT CITY, MARYLAND 21043 (P) 410-485-8105 (F) 410-485-8644 30 THOMAS JOHNSON DRIVE & FREDERICK, MARYLAND 21702 (P) 301-371-3505 (F) 301-371-3506 WWW.BEI-CIMLENGINEERING.COM

ATAPCO HOWARD SQUARE! **BUSINESS TRUST** 10 E. Baltimore St. Suite 1600 Baltimore, MD 21202 (410) 347-7189

CHECK:BFC

PHASE 3 AND 4, PARCEL C APARTMENT BUILDING TAX MAP: 43 GRID 3 & 9 - PARCEL: C

SEDIMENT & EROSION CONTROL **NOTES AND DETAILS** 

4 of 12

##SCE##

has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6' minimum will be required. 6. Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance U.S. DEPARTMENT OF AGRICULTURE PAGE MARYLAND DEPARTMENT OF ENVIRONMEN SOIL CONSERVATION SERVICE F - 17 - 3 WATER MANAGEMENT ADMINISTRATION

> ~ 2" X 4" ANCHORS 2" X 4" WEIR -3/4 "-1 1/2 "-STONE C FILTER CLOTH -

1. Attach a continuous piece of wire mesh (30" minimum width by throat length plus 2. Place a continuous piece of Geotextile Class E the same dimensions as the wire mesh over the wire mesh and securely attach it to the 2° x 4° well

5. The assembly shall be placed so that the end spacers are a minimum 1' beyond both ends of the throat opening. 6. Form the 1/2 " x 1/2 " wire mesh and the geotextile fabric to the concrete gutter and

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

provide additional filtration

SOIL CONSERVATION SERVICE

MARYLAND DEPARTMENT OF ENVIRONMENT U.S. DEPARTMENT OF AGRICULTURE

WATER MANAGEMENT ADMINISTRATION

-GEOTEXTILE CLASS E MAX. DRAINAGE AREA = 1/4 ACRE

2. Place 3/4' to 11/2' stone, 4'-6' thick on the grate to secure the fabric and

----TOP ELEVATION -NOTCH ELEVAT Construction Specifications

3. Stretch the  $1/2' \times 1/2'$  wire mesh tightly around the frame and fasten securely. The ends must meet and overlap at a

folded, then fastened down.

MARYLAND DEPARTMENT OF ENVIRONMEN WATER MANAGEMENT ADMINISTRATION

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. 28569 Expiration Date: 7-22-2013. NF. CLE

**DEVELOPER/OWNER:** 

ZONED: CAC-CLI ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND

BEI PROJECT NO. 2434

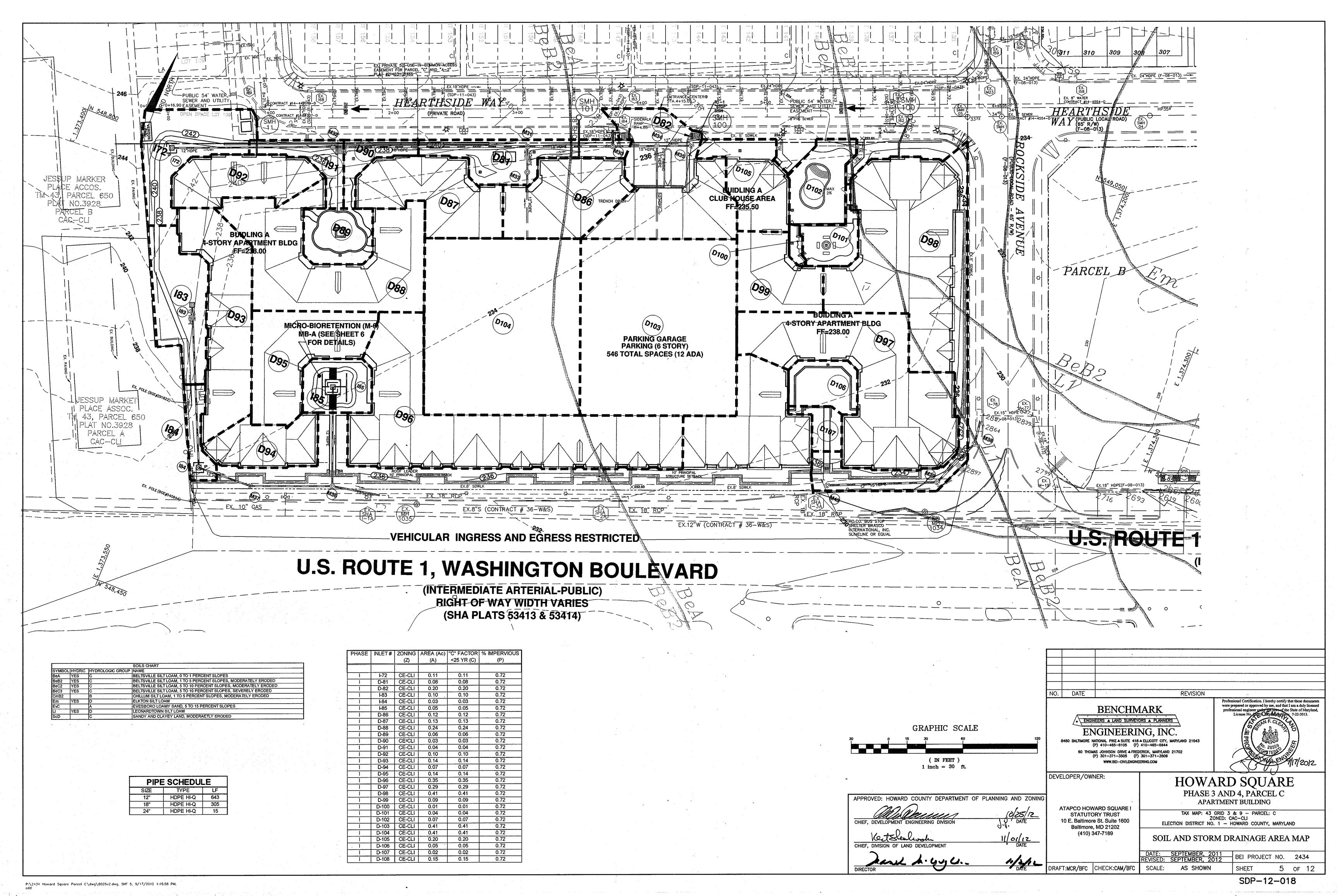
SDP-12-018

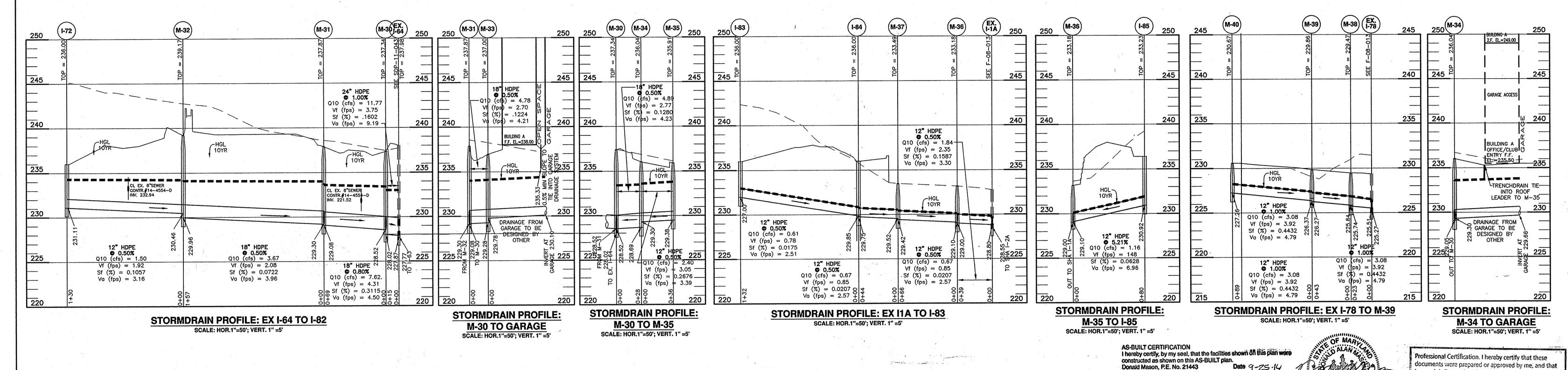
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Summary. The Summary is to be placed on the plan.

- sites which will receive a medium to high level of maintenance
- Certified Kentucky Bluegrass Cultivars 0 to 5 percent. Seeding Rate: 5 to 8 pounds per Bluegrass lawns. For establishment in high quality, intensively managed turf area. Mixture
- Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15 (Hardiness Zones: 7a, 7b)
- a. Class of turfgrass must be Maryland State Certified. Sod labels must be made available to the

- 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
- Do not mow until the sod is firmly rooted. No more than 1/3 of the grass leaf must be removed
- 5. CONSTRUCT PROPOSED DWELLINGS/STRUCTURES. (180 DAYS) 6. SEED AND MULCH ALL REMAINING DISTURBED AREAS (2 DAYS)





		<b>S1</b>	RUCTURE	TABLE				
NUMBER	TYPE	LOCATION	INVE	RTIN	INVERT OUT	TOP ELEV.	HO. CO. STD. DETAIL	MAINTENANC
			INLETS		.,	. ,		:
1-72	YARD	N 548,796.69, E 1,373,474.38		· - ·	231.11	236.00	D-4.14	PRIVATE
1-83	YARD	N 548,836.81, E 1,373,593.72	230.34(M-30)	-	230.09	238.00	D-4.14	PRIVATE
1-84	YARD	N 548,564.55, E 1,373,591.58	229.85(1-83)	-	229.75	236.00	D-4.14	PRIVATE
I-85	D-INLET	N 548,684.55, E 1,373,537.36	-	-	230.92	236.67	D-4.10	PRIVATE
I			MANHOLES			1 44 1 4		
M-30	4' DIA	N 548,930.29, E 1,373,803.63	228.52(M-31)	228.52(M-31)	228.02	237.34	G-5.12	PRIVATE
M-31	4' DIA	N 548,904.50, E 1,373,739.80	229.30(M-32,M-33)	-	229.08	237.87	G-5.12	PRIVATE
M-32	4' DIA	N 548,845.82, E 1,373,594.57	230.46(I-72)		229.96	239.17	G-5.12	PRIVATE
M-33	4' DIA	N 548,885.08, E 1,373,747.52	229.78(GARAGE)	-	229.28	237.00	G-5.12	PRIVATE
M-34	4' DIA	N 548,943.86, E 1,373,836.51	229.30(M-35)	-	228.69	236.04	G-5.12	PRIVATE
M-35	4' DIA	N 548,954.47, E 1,373,862.21	-	-	229.38	235.91	G-5.12	PRIVATE
M-36	4' DIA	N 548,590.63, E 1,373,696.95	229.10(M-37)	-	229.00	233.18	G-5.12	PRIVATE
M-37	4' DIA	N 548,566.13, E 1,373,635.63	229.52(I-84)	-	229.42	233.49	G-5.12	PRIVATE
M-38	4' DIA	N 548,815.54, E 1,374,164.38	225.84(M-39)	-	225.74	229.47	G-5.12	PRIVATE
M-39	4' DIA	N 548,775.40, E 1,374,148.06	226.27(M-40)	· <del>-</del>	226.37	229.86	G-5.12	PRIVATE
M-40	4' DIA	N 548,740.08, E 1,374,066.91	-	_	227.26	230.67	G-5.12	PRIVATE

STRUCTURE LOCATION FOR MANHOLES IS AT THE CENTER OF THE MANHOLE RIM. STRUCTURE LOCATION FOR INLETS IS AT THE CENTER OF THE INLET FACE. STRUCTURE LOCATION FOR THE END-SECTIONS IS AT THE MIDPOINT OF THE END OF THE STRUCTURE PRECAST STRUCTURES MEETING HS-20 LOADING MAY BE USED.

#### OPERATION & MAINTENANCE SCHEDULE FOR MICRO-BIORETENTION

1. ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH-OUT. ANY REPLACEMENT OF MULCH SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE & INSECT

2. SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN THE SPRING AND FALL. THIS INSPECTION WILL INCLUDE; REMOVAL OF DEAD & DISEASED VEGETATION CONSIDERED BEYOND TREATMENT; TREATMENT OF ALL DISEASED TREES & SHRUBS; AND REPLACEMENT OF ALL DEFICIENT STAKES & WIRES. 3. MULCH SHALL BE INSPECTED EACH SPRING. REMOVE THE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 TO 3 YEARS.

*,	EVERT 2 TO 5 TEARS.			
SOIL EROSION	TO BE ADDRESSED ON AN AS-NEEDED BASIS, WITH STORM EVENTS.	A MINIMUM OF ONCE PER MONTH		
	'A'			
	SHEET FLOW (INFLOW)		, A,	
	3:1(TYP.)	6"GRAVEL DIAPRAGHM (AROUND BOTTOM PERIMETER)	MICRO-BIORETENTION PLANTINGS (TYP.) SEE NOTE THIS SHEET	
		MIN. 2" MULCH LAYER	4*PVC CAP	
		SOIL	The street of th	4" PERF. PVC O.B. PIPE (WRAP W/FILTER FABRIC 
		PLANTING SOIL (DEPTH VARIES)	3° OF #2 STONE BETWEEN FILTER MEDIA AND GRAVEL JACKET	FILTER FABRIC
	SEE TYPICAL SECTION? (1) (2) (2) (1) (1)			3" MIN. CLR.  4" PVC PIPE UNDERDRAIN
		MIN. 10" GRAVEL  4" PVC PIPE  UNDERDRAIN		COLLECTION SYSTEM (SLOPE VARIES
	3:1(TYP.)	COLLECTION SYSTEM (TO BE PERFORATED WITHIN AREA	FACILITY Rev DEPTH BOT. ELEV. a 0.28' 231.64	

TYPICAL MICRO-BIORETENTION BMP DETAILS

NOT TO SCALE

TYPICAL SECTION

4" PVC PIPE UNDERDRAIN-

VARIES) TO BE PERFORATED

WITHIN AREA OF BMP

COLLECTION SYSTEM (SLOPE

TYPICAL PROFILE

UNDERDRAIN, OVERFLOW AND OUTFALL NOTES

1. THE LAST CLEAN-OUT LOCATION WITHIN EACH MICRO-BIORETENTION FACILITY SHALL BE FITTED WITH A

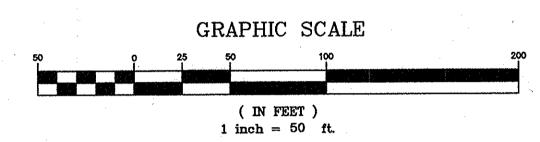
NON-CLOGGING SURFACE DRAIN (EXAMPLE: 4" ABS ROOF DRAIN W/CAST ALUMINUM DOME) AT THE POND SURFACE ELEVATION INDICATED IN THE CORRESPONDING TABLE ELEV. 2.

3. THE UNDER-DRAIN AND PIPE TO OUTFALL SHALL BE INSTALL TO A MINIMUM DEPTH 2' BELOW

FINISHED GRADE AND SHALL MAINTAIN A MINIMUM 1% SLOPE AND MAINTAIN A MINIMUM OF 1' OF

2. THE PVC WITHIN THE FACILITY SHALL BE PERFORATED.

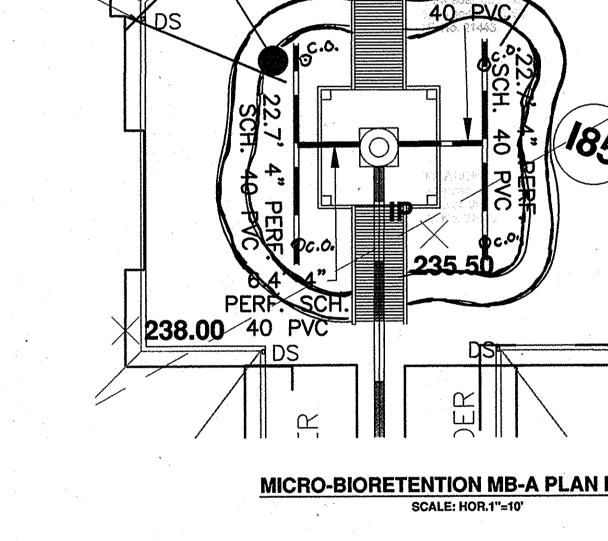
SEPARATION AT ALL CROSSINGS.



DOWNSPOUTS TO DISCHARGE INTO MICRO-BIO RETENTION AT ELEVATION 236.65

MAIERIALS	AND SPECIFIC	AHONS FO	OR (M-6) MICRO-BIORETENTION
MATERIAL	SPECIFICATION	SIZE	NOTES:
PLANTINGS (IF REQUIRED)	SEE APPENDIX A; TABLE A.4	N/A	PLANTINGS ARE SITE SPECIFIC
PLANTING SOIL (2.0' TO 4.0' DEEP)	LOAMY SAND (60-65%) & COMPOST (35-40%) OR LOAMY SAND (30%) COARSE SAND (30%) & COMPOST (35-40%)	N/A	USDA SOIL TYPES: LOAMY SAND, SANDY LOAM; CLAY CONTENT <5
ORGANIC CONTENT	MIN. 10% BY DRY WEIGHT (ASTM D2974)	N/A	
MULCH	SHREDDED HARDWOOD	N/A	AGED 6 MONTHS, MINIMUM
PEA GRAVEL DIAPHRAGM	PEA GRAVEL: ASTM D-448	#8 OR #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 & BERMS)	AASHTO M-43	#57 OR #6 AGGREGATE (3/8" TO 3/4")	#8 STONE
UNDERDRAIN PIPING	F758, TYPE PS28 OR AASHTO M-278	4" TO 6" RIGID SCH.40 PVC OR SDR35	SLOTTED OR PERFORATED: 3/8" PERFS. © 6" O/C, 4 HOLES PER ROW; MINIMUM OF 3" OF GRAVEL OVER PIPES, NOT NECESSARY UNDERNEATH PIPES. PERFORATED PIPE SHALL BE WRAPPED WITH 1/4" GALVANIZED HARDWIRE CLOTH
POURED-IN-PLACE CONC. (IF REQUIRED)	MSHA MIX NO.3; f'c=3500psi @ 28 DAYS, NORMAL WEIGHT, AIR ENTRAINED; REINFORCING TO MEET ASTM 615-60	N/A	ON-SITE TESTING OF POURED-IN-PLACE CONC. REQUIRED; 28 DAY STRENGTH TEST AND SLUMP TEST: ALL CONC. DESIGN (CAST -IN-PLACE OF PRE-CAST) NOT USING PREVIOUSLY APPROVED STATE OR LOCAL STANDARDS REQUIRES DESIGN DRAWINGS SEALED AND APPROVED BY A PROFESSIONAL STRUCTURAL ENGINER LICENSED IN THE STATE OF MARYLAND DESIGN TO INCLUDE MEETING ACI CODE 350.R/89: VERTICAL LOADING (H-10 of H-20) ALLOWABLE HORIZONTAL LOADING (BASED ON SOIL PRESSURES); AND ANALYSIS OF POTENTIAL CRACKING
SAND (1.0' DEEP)	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

TOTAL SF 584



MICRO-BIORETENTION MB-A PLAN DETAIL

PERE-SCH

documents were prepared or approved by me, and that t am a duly licensed professional engineer under the laws of the State of Maryland. License No. 21443 Expiration Date: 12-21-14

#### MICRO-BIORETENTION (M-6) PLANTING DATA

1. PLANTINGS WITHIN THE PONDING AREA OF THE RAIN GARDEN ARE TO BE OF A MEDIUM TO HIGH WATER TOLERANCE SUGGESTED SPECIES: CREEPING BUGLEWEED (AJUGA REPTANS)
COMMON PERIWINKLE (VINCA MINOR) LILY-TURF (LIRIOPE, SP.)

2. PLANTINGS ALONG THE PERIMETER (BERM) AREA OF THE RAIN GARDEN ARE TO BE OF A LOW TO MEDIUM WATER TOLERANCE SUGGESTED SPECIES: (PERENNIALS/ANNUALS) IRIS (IRIS VERSICOLÒR) DAYLILY (HEMEROCALLIS SP.) WHITE GLORY (ASTIBLE SP.)

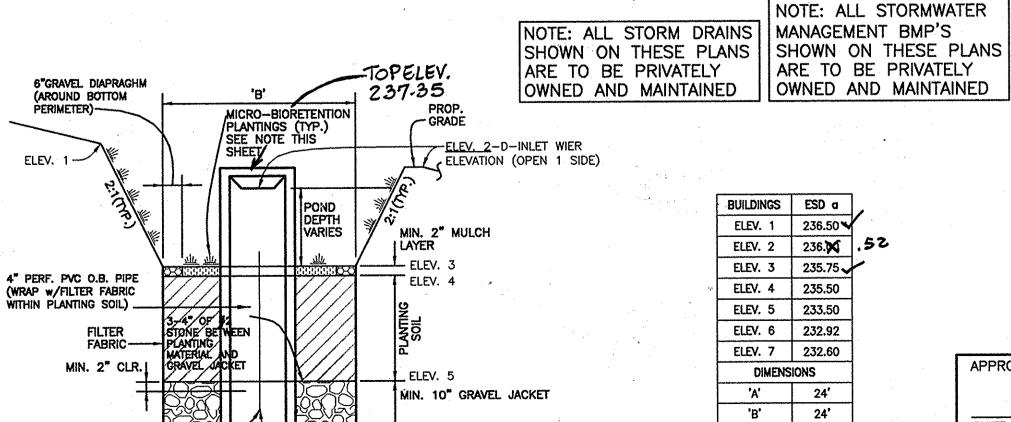
3. AVOID PLANTINGS WITH EXCESSIVE ROOT MASS IN POND AREA OF THE RAIN GARDEN NEAR O.B. PIPE AND UNDERDRAIN.

#### MICRO-BIORETENTION LANDSCAPE DATA

HYDROLOGIC ZONE 3 - REGULARLY INUNDATED SHORELINE FRINGE

(HIGH MARSH) HYDROLOGIC CONDITION - 0" TO 1'-0" DEEP HARDINESS - TEMPERATE ZONE 6b (-5° TO 0°) SEE SHEET \_ FOR SEQUENCE OF CONSTRUCTION

NOTE: REFER TO MDE 2000 MD STORMWATER DESIGN MANUAL VOLUMES 1 & 2 FOR LANDSCAPE CONTRACTOR RESPONSIBILITIES, PRACTICES AND



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING Mik (Milliam) 11/01/12

MICRO-BIORETENTION PLANTING TABLES MICRO-BIORETENTION - a VINCA MINOR (COMMON AJUSTA REPTAN S (CREEPING BUGLEWEED) IRIS VERSICOLOR (IRIS) HEMEROCALLIS SP (DAYLILY) ACER RUBRUM (RED MAPLE)

DEVELOPER/OWNER: ATAPCO HOWARD SQUARE I STATUTORY TRUST 10 E. Baltimore St. Suite 1600 Baltimore, MD 21202 (410) 347-7189 DRAFT:BFC

DATE REVISION Professional Certification. I hereby certify that these document were prepared or approved by me, and that I am a duly license **BENCHMARK** ENGINEERS & LAND SURVEYORS & PLANNERS

MAINTENANCE DUTIES

ENGINEERING, INC. 8480 BALTIMORE NATIONAL PIKE & SUITE 418 & ELLICOTT CITY, MARYLAND 21043 (P) 410-465-6105 (F) 410-465-6644 60 THOMAS JOHNSON DRIVE A FREDERICK, MARYLAND 21702 (P) 301-371-3505 (F) 301-371-3508

WWW.BEI-CIVILENGINEERING.COM

CHECK:BFC

238.00

**HOWARD SQUARE** PHASE 3 AND 4, PARCEL C

> APARTMENT BUILDING TAX MAP: 43 GRID 3 & 9 - PARCEL: C ZONED: CAC-CLI

ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND PRIVATE STORM DRAIN PROFILES AND PRIVATE MICRO-BIORETENTION FACILITY DETAILS

DATE: SEPTEMBER, 2011

EVISED: SEPTEMBER, 2012

BEI PROJECT NO. 2434 SCALE: AS SHOWN SHEET 6 of 12 AS-BUILT

SDP=12-018

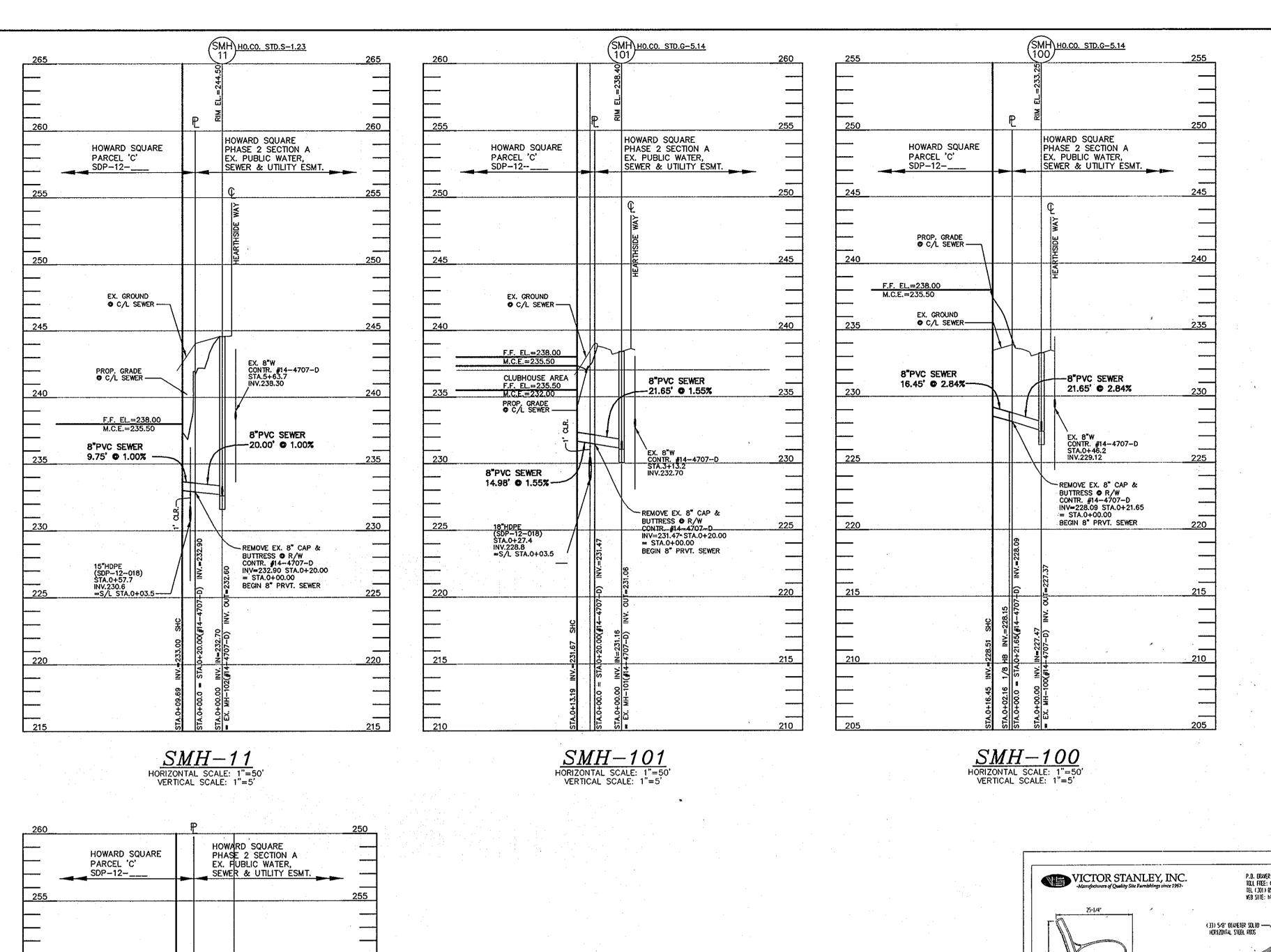
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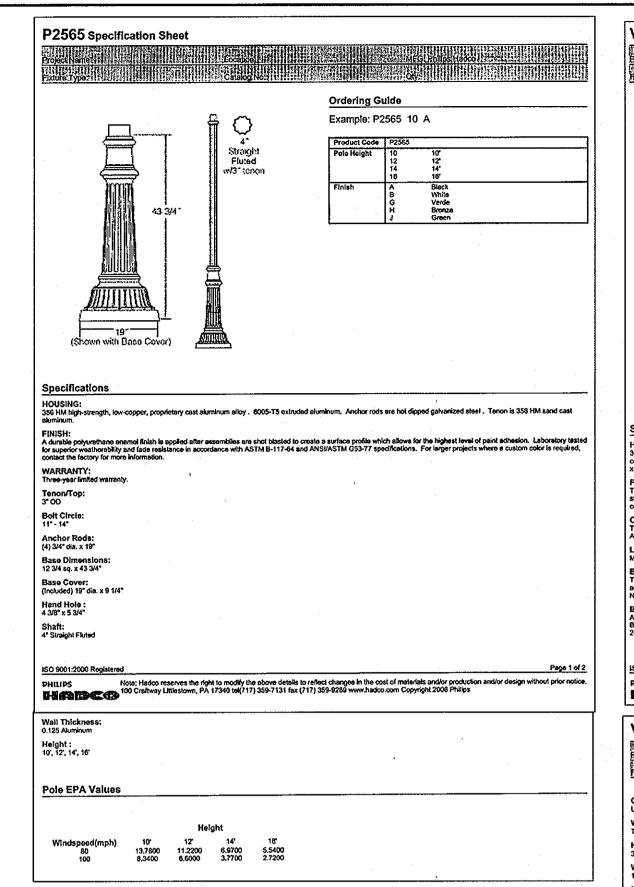
MICRO-BIORETENTION

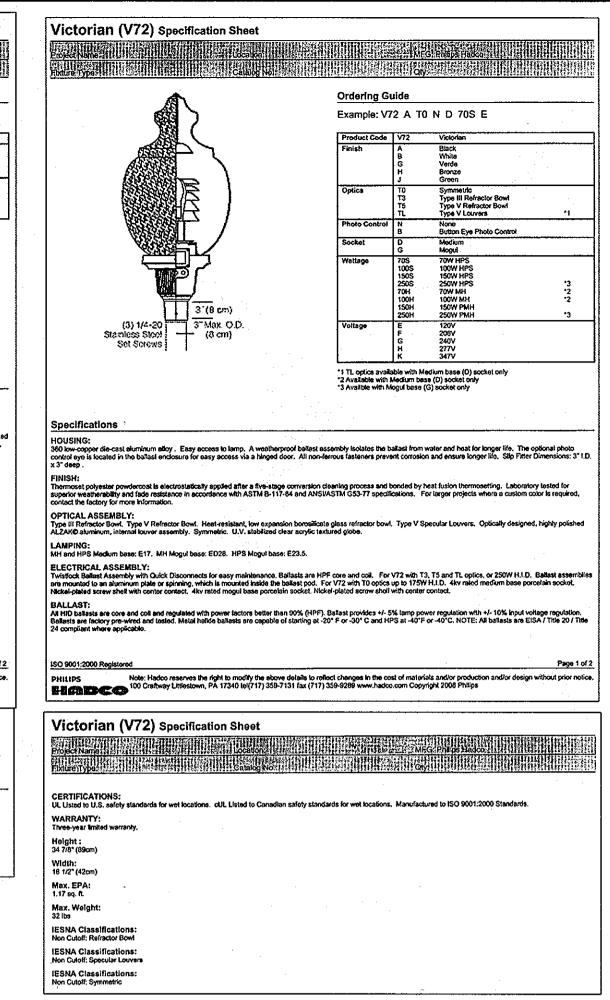
PLANTINGS (TYP.) SEE NOTE THIS SHEET —

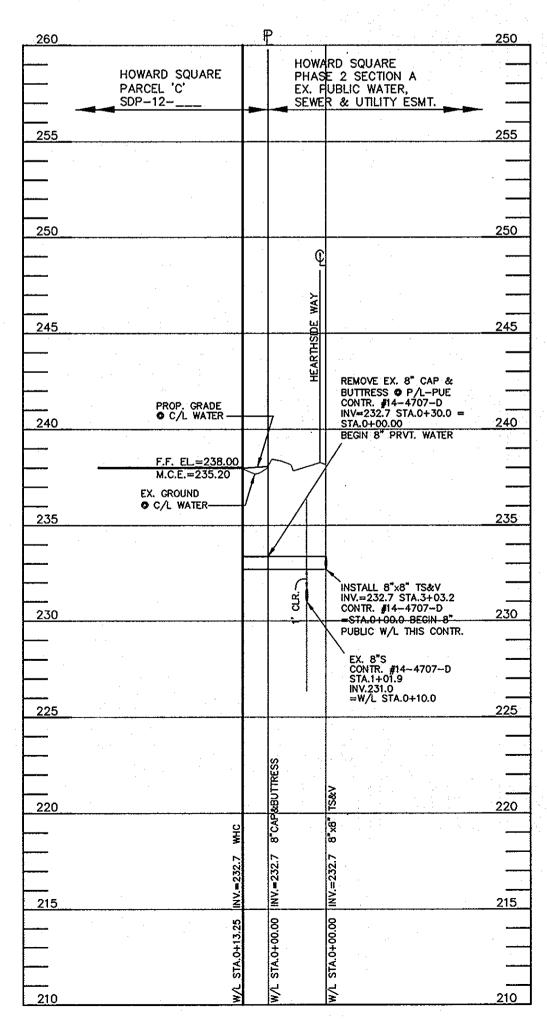
J 2:1 SPILLWAY

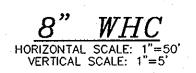
(TYP.)



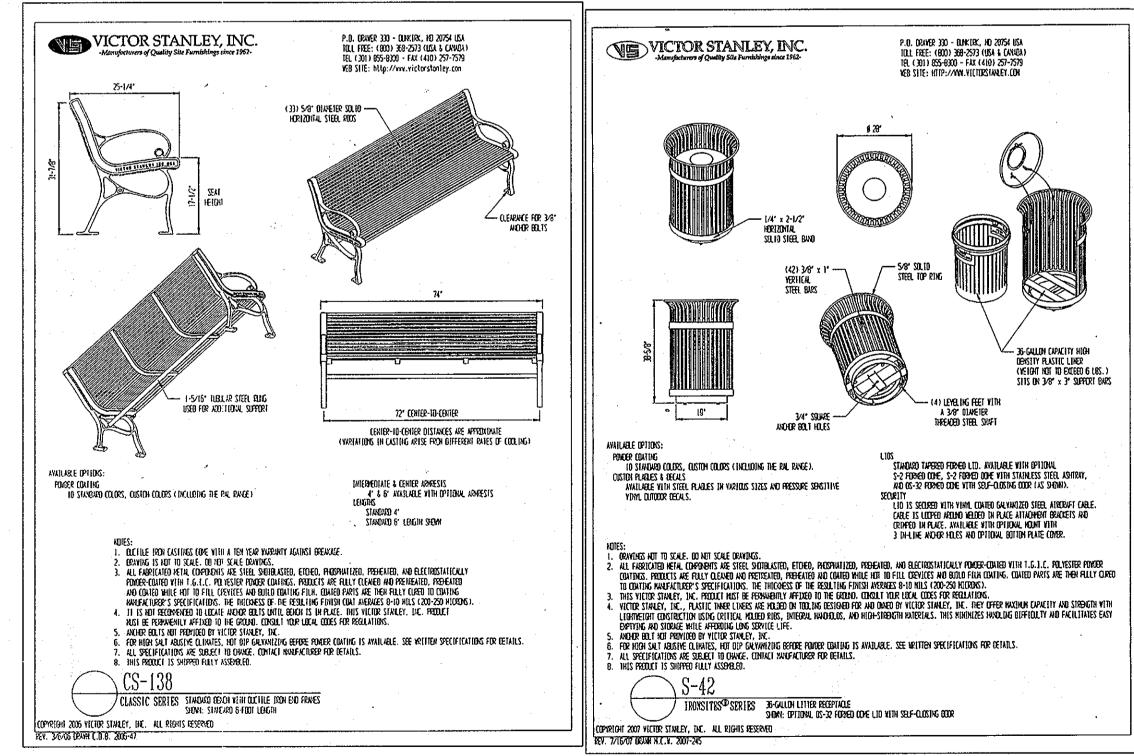








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2.0

4.0

CALIFORNIA BEARING RATIO (CBR) 3 to <5 5 to <7

PAVEMENT MATERIAL (INCHES)

HMA SUPERPAVE FINAL SURFACE 9.5 MM PG 64-22, LEVEL 1 (LOW ESAL)

HMA SUPERPAVE INTERMEDIATE SURFACE 9.5 MM PG 64-22, LEVEL 1 (LOW ESAL)

HMA SUPERPAVE BASE 9.0 MM PG 64-22, LEVEL 1 (LOW ESAL)

GRADED AGGREGATE BASE (GAB)

PAVING SPECIFICATIONS (HO.CO. STD R-2.01)

ROAD AND STREET CLASSIFICATION

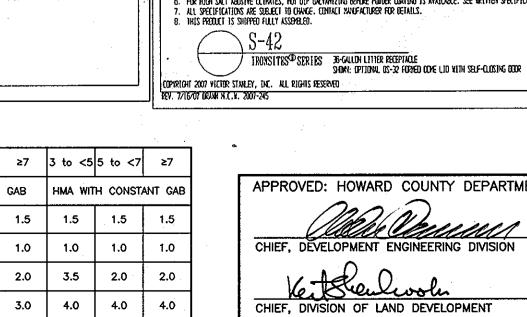
PARKING DRIVE AISLES: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY

LOCAL ROADS: ACCESS PLACE, ACCESS STREET

CUL-DE-SAC:

RESIDENTIAL

NUMBER



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING CHIEF, DEVELOPMENT ENGINEERING DIVISION CHIEF, DIVISION OF LAND DEVELOPMENT pench Lugar DRAFT:MCR/BFC CHECK:BFC

3/4° \$9URE ---

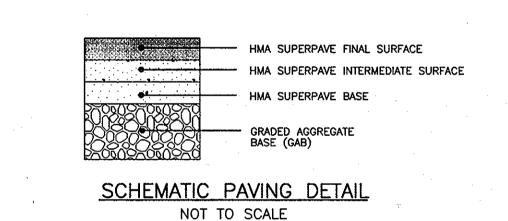
P.O. DRAWER 330 - DANKIEK, HD 20754 USA TOLL FREE: (800) 369-2573 (USA & CANDA) TRL (301) 855-8300 - FAX (410) 257-7579 NEB STIE: HTTP://WW.YICTURSTANLEY.COH

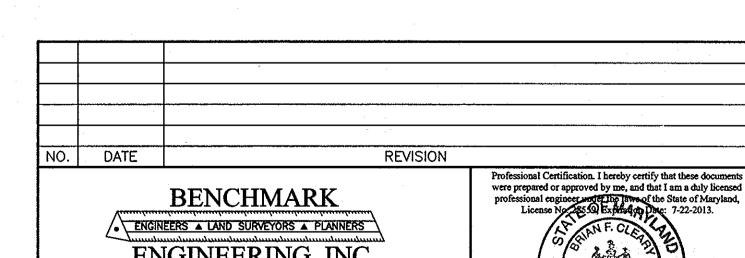
- 36-GATTAN CANYCLLA HIGH

OSTAGORO TAPERED FERSED LED. AVAILABLE VITH OPTIONAL
S-2 FORSED CODE, S-2 FORSED CODE VITH STAINLESS STEEL ASHRAY,
NO GS-32 FORSED CODE VITH SEAF-OLOSING COOR (AS SHOWN).

LID IS SECURED WITH VIHAL CONTED GREVANIZED STEEL ATROPUST CARLE.

CARE IS COTTED ACUSO MEDEO IN PLACE ATTACHEST BRACKETS AND CROPEO IN PLACE, AVAILABLE WITH OPTIONAL MOINT WITH 3 DI-Line and-or holes and optional bottom plate cover.





ENGINEERING, INC. 8480 BALTIMORE NATIONAL PIKE A SUITE 418 A ELLICOTT CITY, MARYLAND 21043 (P) 410-465-6105 (F) 410-465-8644 60 THOMAS JOHNSON DRIVE ▲ FREDERICK, MARYLAND 21702 (P) 301-371-3505 (F) 301-371-3506

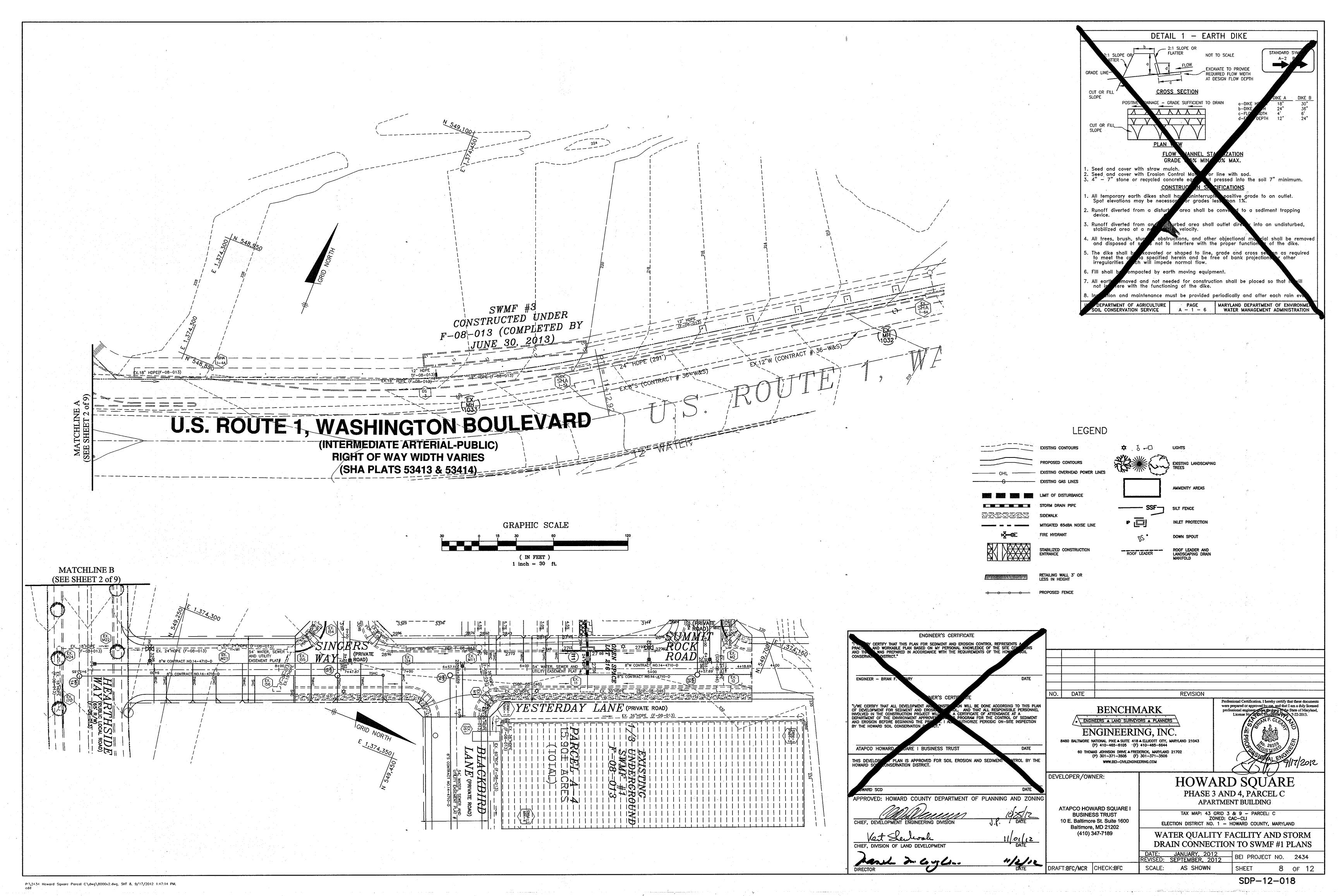
WWW.BEI-CIVILENGINEERING.COM

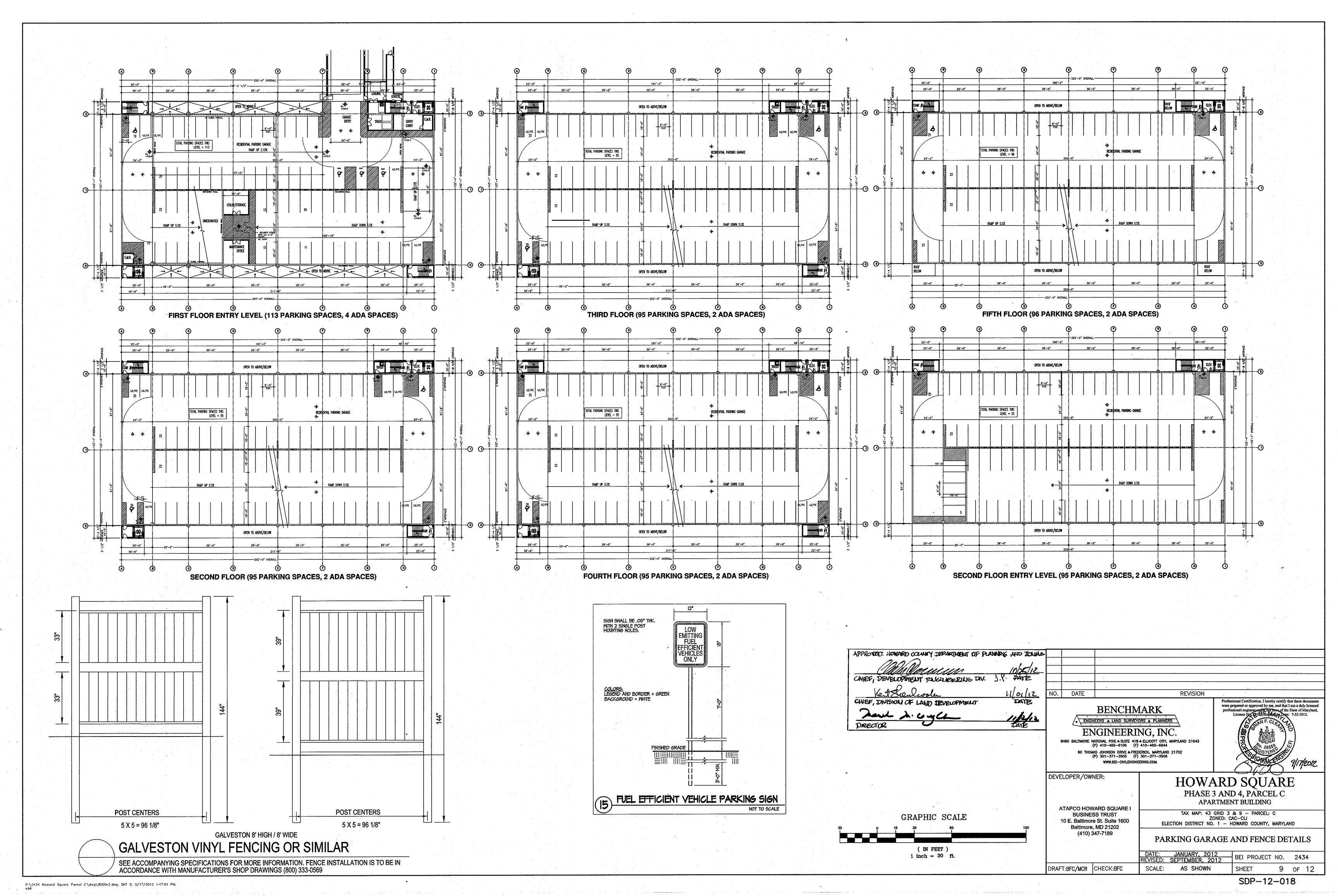
SCALE:

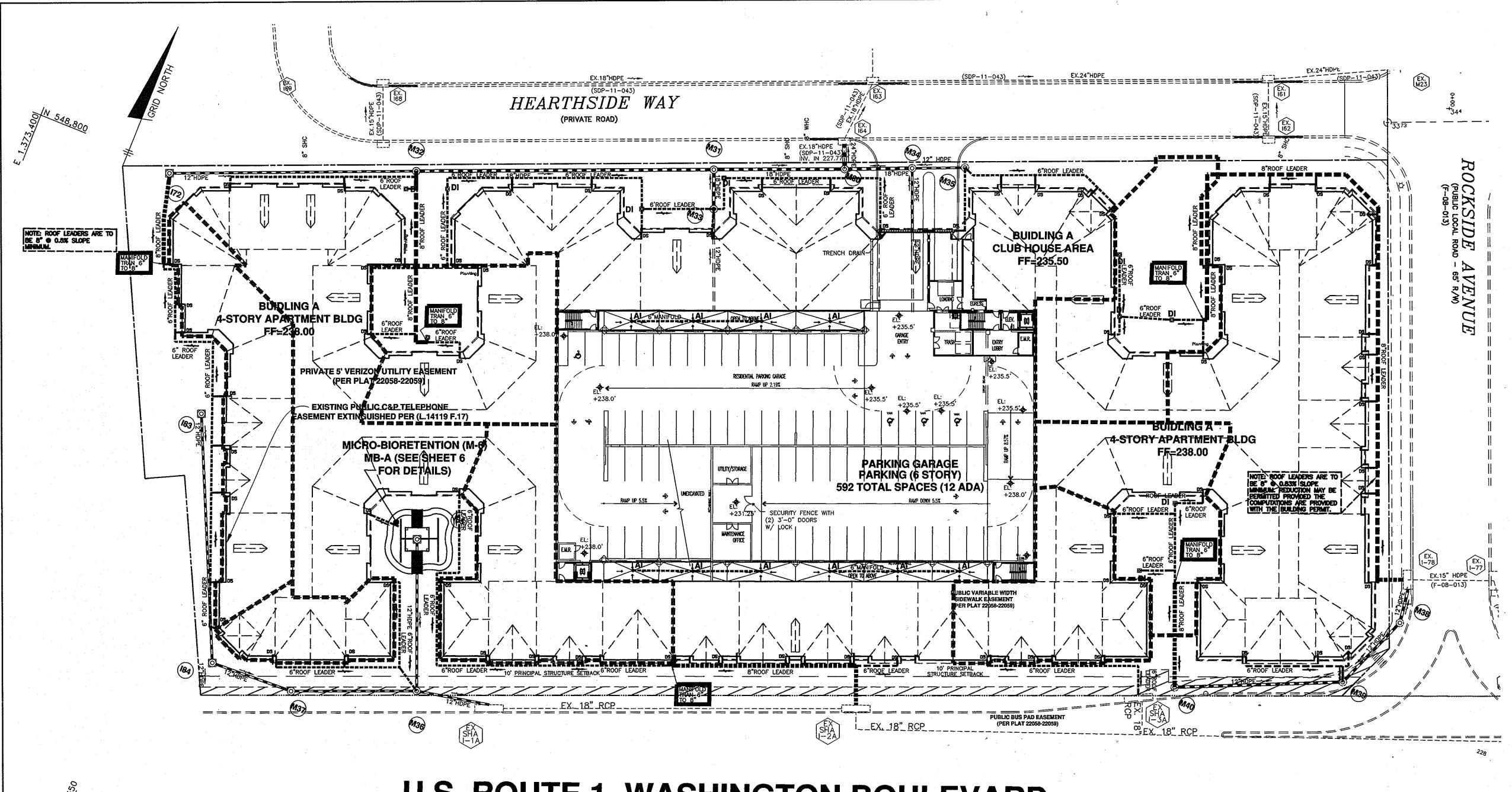
DEVELOPER/OWNER: **HOWARD SQUARE** PHASE 3 AND 4, PARCEL C APARTMENT BUILDING ATAPCO HOWARD SQUARE I TAX MAP: 43 GRID 3 & 9 - PARCEL: C ZONED: CAC-CLI BUSINESS TRUST 10 E. Baltimore St. Suite 1600 ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND Baltimore, MD 21202 (410) 347-7189 WHC AND SHC PROFILES AND AMENITY

**FURNITURE DETAILS** BEI PROJECT NO. 2434

> AS SHOWN SHEET 7 of 12





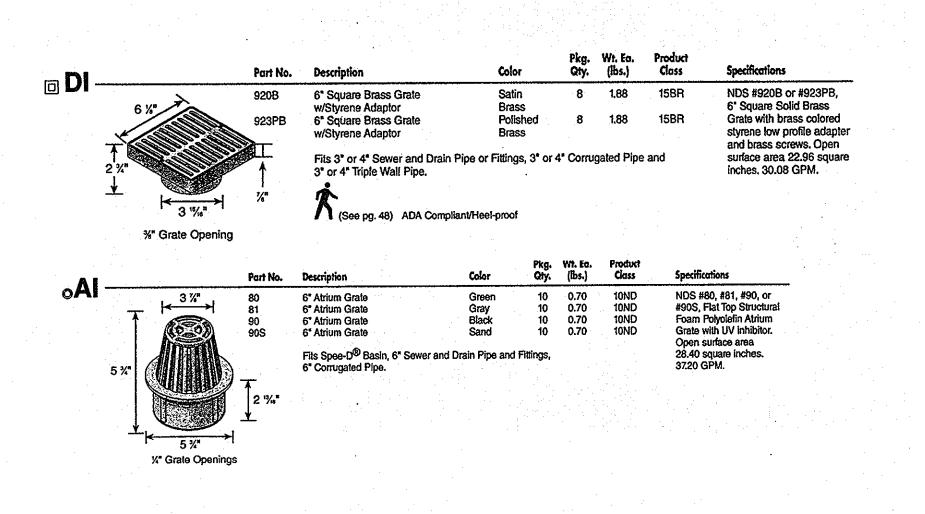


#### <u>NOTES</u>

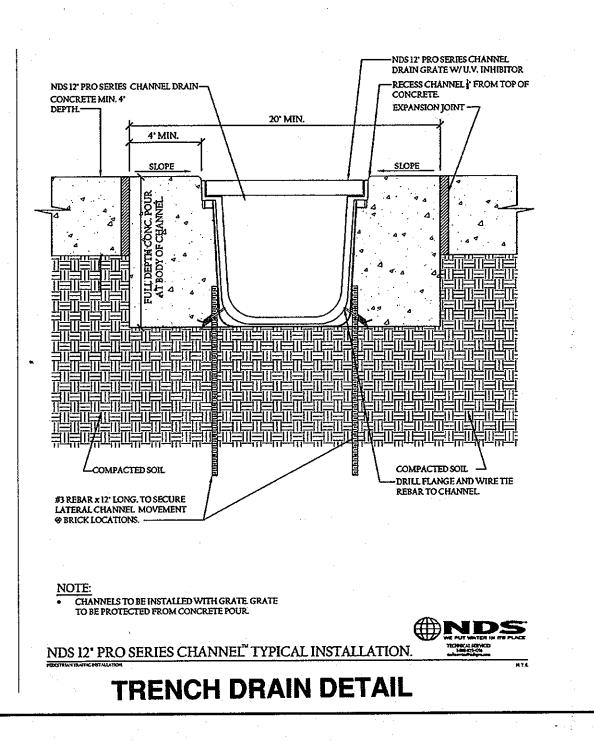
- 1. ALL MANIFOLDS SHALL MANTAIN A MINIMUM 0.5% SLOPE UNLESS NOTED OTHERWISE.
- 3. INLETS AS SPECIFIED OR EQUAL.
  4. ATRIUM DRAINS WITHIN THE OPEN SPACE BETWEEN THE GARAGE AND THE APARTMENT BUILDING TO BE CONNECTED TO THE DRIANAGE SYSTEM FOR THE GARAGE AND TIED INTO THE APPROPRIATE CONNECTION LINE DIVIDING THE GARAGE DRAINAGE AREA IN 2 APPROXIMATELY

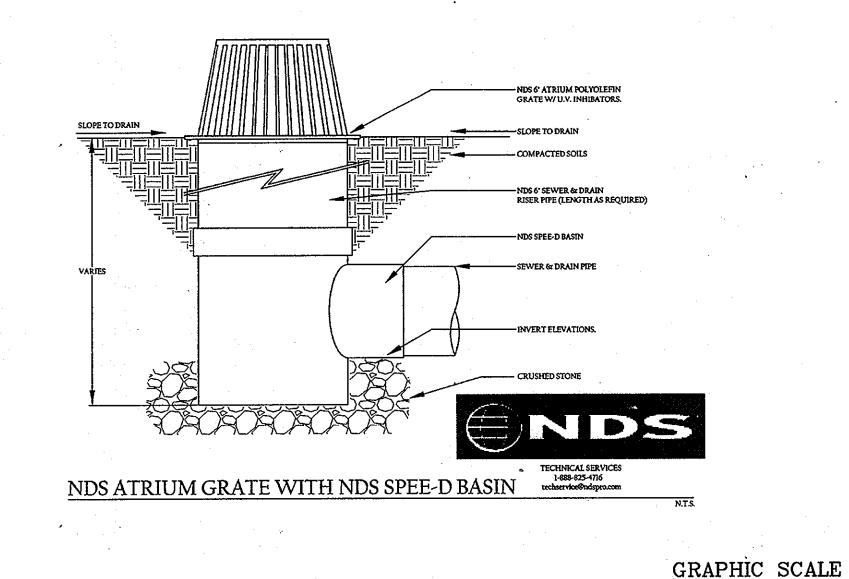
## U.S. ROUTE 1, WASHINGTON BOULEVARD

(INTERMEDIATE ARTERIAL-PUBLIC)
RIGHT OF WAY WIDTH VARIES
(SHA PLATS 53413 & 53414)

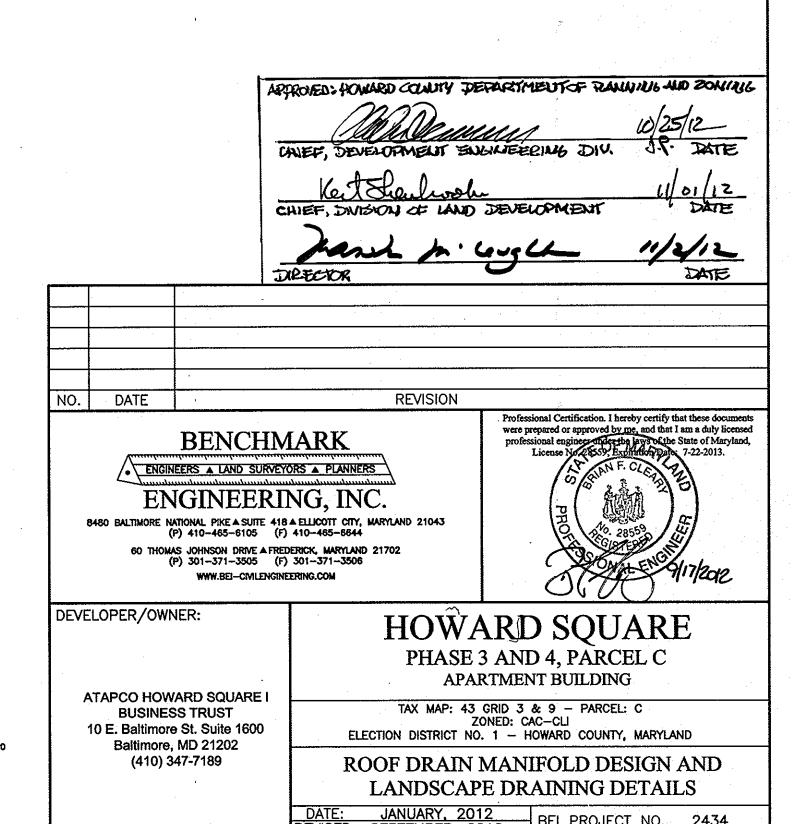


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1 inch = 30 ft.



SCALE:

DRAFT:BFC/MCR CHECK:BFC

SDP-12-018

10 of 12

