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**GENERAL NOTES:**

- THIS PLAN IS SUBJECT TO COUNTY COUNCIL BILL 45-2003, THE AMENDED 5th EDITION SUBDIVISION REGULATIONS, EFFECTIVE OCTOBER 2, 2003.
- THE SUBJECT PROPERTY IS ZONED CAC-CL PER THE 10/6/13 COMPREHENSIVE ZONING REGULATIONS.
- STORM DRAIN REPORT AND STORMWATER MANAGEMENT PROVIDED BY MILDBERG, 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, STREAMS OR OTHER REQUIRED BUFFERS, FLOOD PLAIN AND FOREST CONSERVATION EASEMENT AREAS.
- TOPOGRAPHIC INFORMATION IS BASED ON AERIAL RUN TOPOGRAPHY PERFORMED BY WINGS TOPOGRAPHY INC. ON OR ABOUT APRIL 2003, COMPLIMENTED WITH FIELD RUN TOPOGRAPHY PERFORMED BY MILDBERG, BOENDER AND ASSOC. ON OR ABOUT APRIL 2007 AND BENCHMARK ENGINEERING ON OR ABOUT AUGUST, 2014. EXISTING CONTOURS SHOWN PER APPROVED SDP-08-076, SDP-08-076, SDP-08-076.
- COORDINATES BASED ON NAD83 MARYLAND COORDINATES SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 3700, 4341, AND 4382. STA. 3700 N 1372.553.6000 E 1.372.553.6000 L 290.95 STA. 4382 N 549.592.0910 E 1.375.466.8200 L 214.87
- BOUNDARY INFORMATION IS BASED ON A FIELD RUN MONUMENTED BOUNDARY SURVEY PERFORMED ON OR ABOUT FEBRUARY, 2002 BY MILDBERG, BOENDER AND ASSOCIATES, INC.
- THE NOISE STUDY WAS PREPARED BY MILDBERG, 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 AND LANDSCAPE MANUAL.
- THE FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING SHALL BE POSTED AS PART OF THE DEVELOPER'S IN THE AMOUNT OF \$24,300.00 FOR 42 SHADE TREES & 78 EVERGREEN TREES; \$24,900.00 FOR 83 INTERNAL LANDSCAPE TREES; AND IN THE AMOUNT OF \$5,100.00 FOR 27 PRIVATE STREET TREES; FOR A TOTAL AMOUNT OF \$54,300.00
- BASED ON AVAILABLE COUNTY DATA, NO HISTORIC STRUCTURES OR BURIAL GROUNDS EXIST ON SITE.
- SOILS DATA BASED ON HOWARD COUNTY SOIL SURVEY DATED 1958, SHEET 20.
- PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT. PUBLIC WATER AND SEWER WILL BE UTILIZED. PUBLIC WATER AND SEWER CONTRACT NO. 14-4554-D, 14-4554-D, 14-4710-D AND 14-4848-D.
- THERE ARE NO STRUCTURES WITHIN THE L.O.D. OF PHASE 7 TO BE REMOVED.
- NO STEEP SLOPES EXIST ON SITE.
- THE FOREST CONSERVATION REQUIREMENTS WERE SATISFIED UNDER SDP-08-046 AND F-09-007.
- STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL (VOLUME II (2008) SECTION 5.4.1) AND AS ADOPTED BY ORDINANCES FOR STREETS IN RESIDENTIAL DEVELOPMENTS (JUNE 1993). A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
- TRAFFIC CONTROL DEVICES:
  - THE R1-1 ("STOP") SIGN AND THE STREET NAME SIGN(S) ASSEMBLY FOR THIS DEVELOPMENT MUST BE INSTALLED BEFORE THE ROAD PAVING IS COMPLETED.
  - THE TRAFFIC CONTROL DEVICES LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MUST BE FIELD APPROVED BY HOWARD COUNTY TRAFFIC DIVISION (410-313-2430) PRIOR TO THE INSTALLATION OF ANY OF THE TRAFFIC CONTROL DEVICES.
  - ALL TRAFFIC CONTROL DEVICES AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUMUTOD).
  - ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL PERFORATED (QUICK PUNCH), SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) - 3" LONG. THE ANCHOR SHALL NOT EXTEND MORE THAN TWO "QUICK PUNCH" HOLES ABOVE GROUND LEVEL. A GALVANIZED STEEL POLL CAP SHALL BE MOUNTED ON TOP OF EACH POST.
- WP-06-114 WAS APPROVED ON AUGUST 28, 2006 WAIVING SECTION 16.119(f) OF THE SUBDIVISION REGULATIONS. THE APPROVAL WAS SUBJECT TO THE FOLLOWING CONDITIONS:
  - 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 WAIVING SECTION 16.116(a)(1) AND 16.116(a)(2)(iv) OF THE SUBDIVISION REGULATIONS. THE APPROVAL IS SUBJECT TO THE FOLLOWING:
  - 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 DEVELOPMENT PLAN STAGES.
  - 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 7000 SQ.FT. OF WETLAND BUFFER DISTURBANCE. AREA 2 - 18750 SQ.FT. OF WETLAND DISTURBANCE AND 19500 SQ.FT. OF WETLAND BUFFER DISTURBANCE. AREA 3 - 30000 SQ.FT. OF WETLAND DISTURBANCE, 32500 SQ.FT. OF WETLAND BUFFER DISTURBANCE AND 52250 SQ.FT. OF STREAM BUFFER DISTURBANCE.
  - ALL NECESSARY STATE AND LOCAL PERMITS WILL BE OBTAINED PRIOR TO ANY GRADING AND/OR CONSTRUCTION ACTIVITY.
  - SUPERIOR FENCING SHALL BE INSTALLED ALONG THE ENTIRE LOE FOR THE SIDEWALK IMPROVEMENTS FOR AREA 1 PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION OR GROUND 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 DISTURBANCE ZONE FOR ROUTE 1 ROAD IMPROVEMENTS). BUILDING #43, ITS ACCESS AND OTHER IMPROVEMENTS INCLUDING SIDEWALKS SHALL BE RELOCATED AND/OR REDESIGNED TO ALLOW FOR THIS ADDITIONAL GREENSPACE. THIS AREA SHALL BE USED TO ADDRESS A PORTION OF THE SITES FOREST CONSERVATION OBLIGATION.
- WP-07-128 WAS APPROVED ON JULY 24, 2007, WAIVING SECTION 16.144(f) REQUIRING PRELIMINARY PLAN SUBMISSION. THE APPROVAL IS SUBJECT TO THE FOLLOWING:
  - THE ENTIRE PUBLIC ROAD SYSTEM MUST BE DESIGNED WITH THE NEXT SUBMITTED FINAL PLAN AND PLAN FOR THE PROPERTY.
  - STORMWATER MANAGEMENT MUST BE DESIGNED FOR ALL PUBLIC IMPROVEMENTS WITH THE NEXT SUBMITTED FINAL PLAN AND PLAN FOR THE PROPERTY.
  - PRELIMINARY WATER AND SEWER PLANS MUST BE SUBMITTED PRIOR TO OR CONCURRENTLY WITH THE NEXT SUBMITTED FINAL PLAN AND PLAN FOR THE PROPERTY.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS AS APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
- MHUA WILL BE PROVIDED IN ACCORDANCE WITH THE ZONING REGULATIONS, MHUA REQUIRED 23.6% (REDUCED AS A RESULT OF A PORTION OF THE PROPERTY INITIALLY ZONED COMMERCIAL) 83 UNITS = 20 MHU'S.
- TRASH REMOVAL WILL BE PUBLIC PICK UP.
- OVERFLOW PARKING WILL BE ON-STREET PARKING IN ACCORDANCE WITH DESIGN MANUAL VOLUME 3, SECTION 2.9.B, TABLE 2.11.
- THE 658A NOISE CONTOUR LINE DRAWN ON THIS DEVELOPMENT PLAN IS ADVISORY AS REQUIRED BY THE HOWARD COUNTY DESIGN MANUAL, CHAPTER 5, REVISED DECEMBER 2007. THE 658A NOISE CONTOUR LINE CANNOT BE CONSIDERED TO EXACTLY LOCATE THE 658A NOISE EXPOSURE. THE 658A 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.
- LIGHT TRESPASS ON ANY PROPERTY ZONED OR USED FOR RESIDENTIAL PURPOSES SHALL NOT EXCEED 0.5 FOOT CANDLES.
- WP-06-020 WAS APPROVED ON OCTOBER 3, 2007, WAIVING SECTION 16.155 (APPLICABILITY) WHICH REQUIRED THE SUBMISSION OF THE 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:
  - HSCD MUST APPROVE THE ASSOCIATED GRADING PERMIT.
  - 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.
- EXISTING UTILITIES BASED ON FIELD RUN SURVEY PERFORMED BY MILDBERG, BOENDER AND ASSOC. ON OR ABOUT JUNE 2007.
- THERE IS NO FLOOD PLAIN WITHIN THE L.O.D. OF THIS PLAN.
- PER SECTION 127.5.D.4 OF THE 2013 ZONING REGULATIONS THE FOLLOWING SETBACKS ARE REQUIRED AND ADDED BY:
  - MINIMUM SETBACKS FROM THE PUBLIC STREET RIGHT-OF-WAY
    - ALL STRUCTURES AND USES (EXCEPT SURFACE PARKING) FROM OTHER PUBLIC R.O.W. (NOT ROUTE 1 OR I-95) 0 FEET
    - SURFACE PARKING 10 FEET FROM OTHER PUBLIC R.O.W.
  - MINIMUM SETBACKS FROM VICINAL PROPERTIES
    - FROM RESIDENTIAL DISTRICTS:
      - RESIDENTIAL STRUCTURES AND ASSOCIATED USES 30 FEET
      - STRUCTURES CONTAINING RESIDENCES AND ASSOCIATED USES 20 FEET
    - FROM ALL OTHER ZONING DISTRICTS:
      - ALL STRUCTURES AND USES 0 FEET
      - IF A RESIDENTIAL DISTRICT IS SEPARATED FROM THE CAC DISTRICT BY A PUBLIC STREET RIGHT OF WAY, ONLY SETBACKS FROM A PUBLIC STREET RIGHT OF WAY SHALL APPLY.
  - CUMULATIVE STRUCTURE SETBACKS FROM PUBLIC STREET RIGHT-OF-WAY
    - AS PROVIDED IN THE ROUTE 1 MANUAL, THE BUILDING FACADE SHOULD APPLY 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 CONSTRAINTS MAKE A GREATER SETBACK NECESSARY. THIS 10-FOOT SETBACK MAY BE INCREASED WITHOUT A VARIANCE IN ACCORDANCE WITH THE ROUTE 1 MANUAL.
- STORMWATER MANAGEMENT REQUIREMENTS WERE SATISFIED UNDER F-08-013, IN ACCORDANCE WITH THE 2000 MARYLAND SWM DESIGN MANUAL. SWM IS BEING PROVIDED AS PRIVATELY OWNED & MAINTAINED UNDERGROUND STORMWATER MANAGEMENT FACILITY.
- THE WETLAND DELINEATION STUDY FOR THIS PROJECT WAS PREPARED BY ECO-SCIENCE PROFESSIONAL, INC. DATED MAY 15, 2007. THERE ARE NO WETLANDS WITHIN THE L.O.D. OF THIS PLAN.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

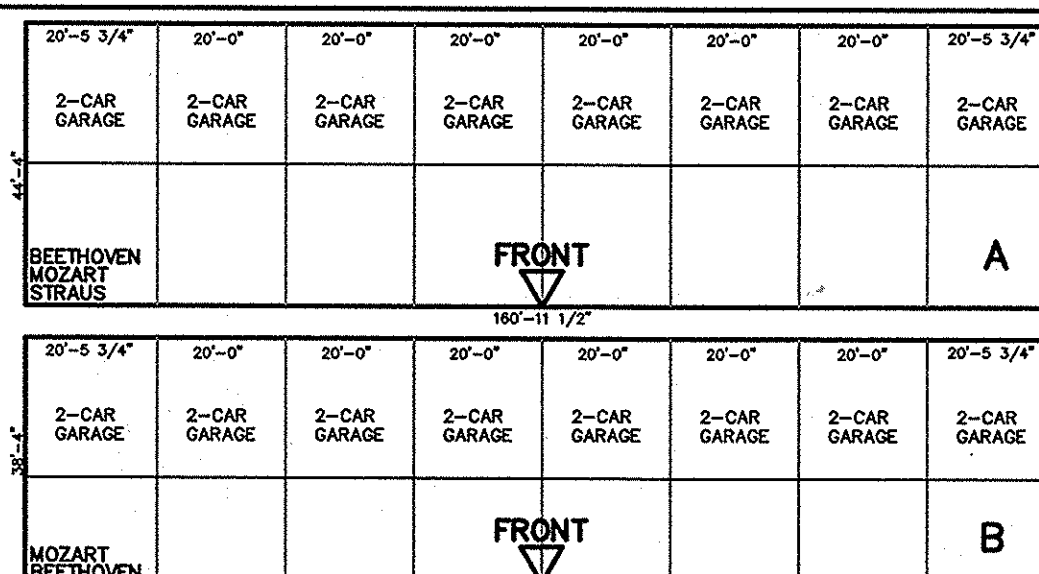
Cliff P... 5-11-16 DATE  
 Chief, Development Engineering Division

V... 5-12-16 DATE  
 Chief, Division of Land Development

W... 5-17-16 DATE  
 Director

**NOTE:**

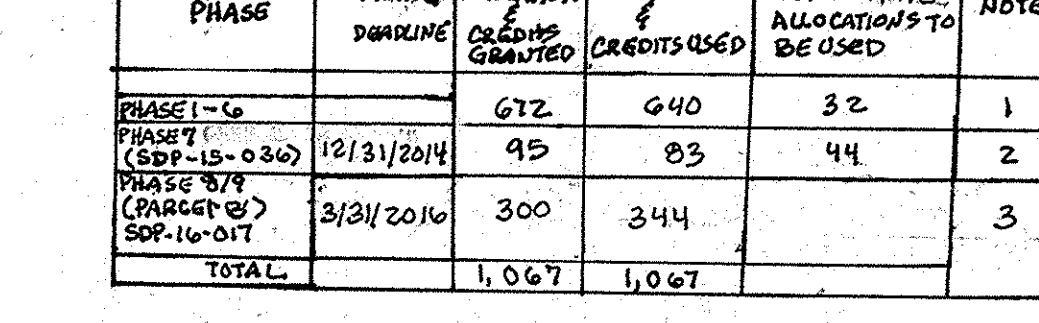
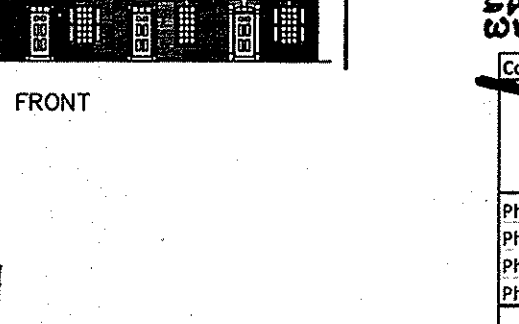
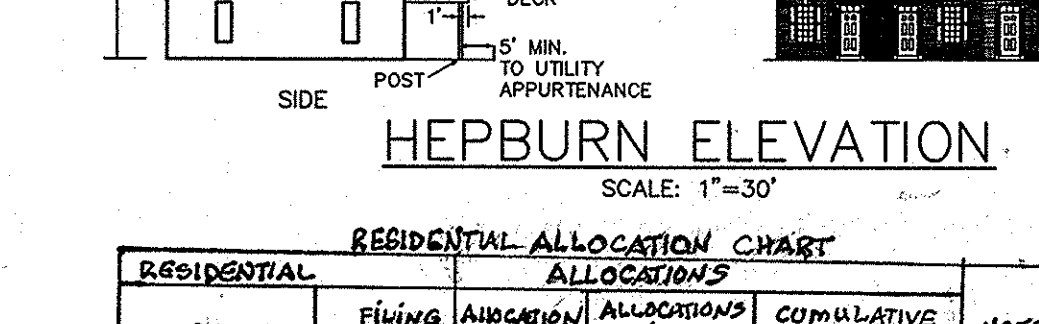
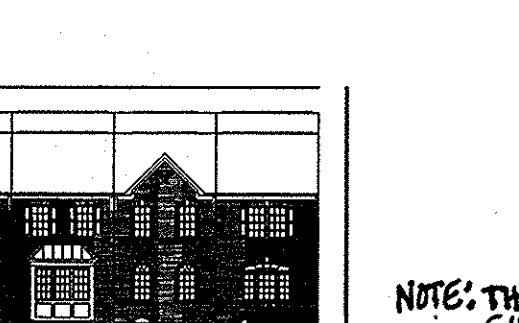
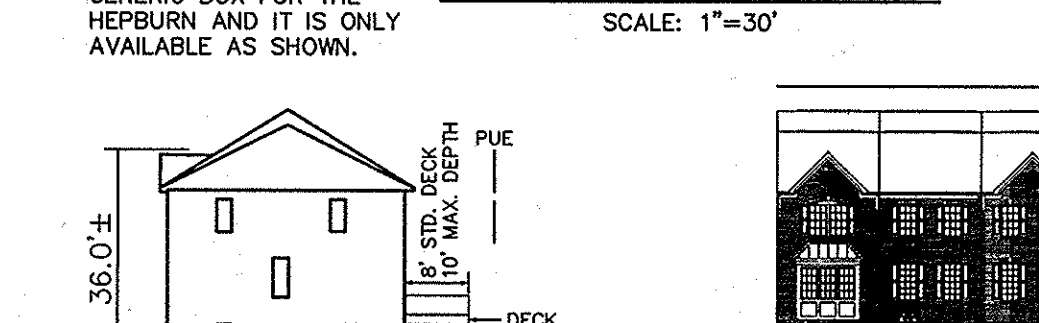
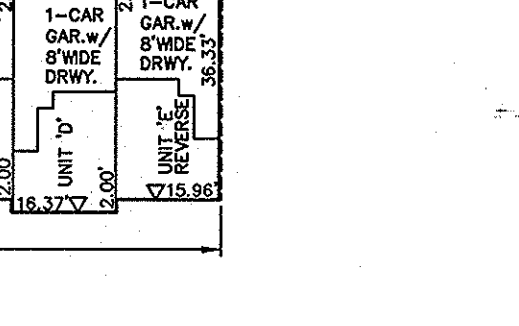
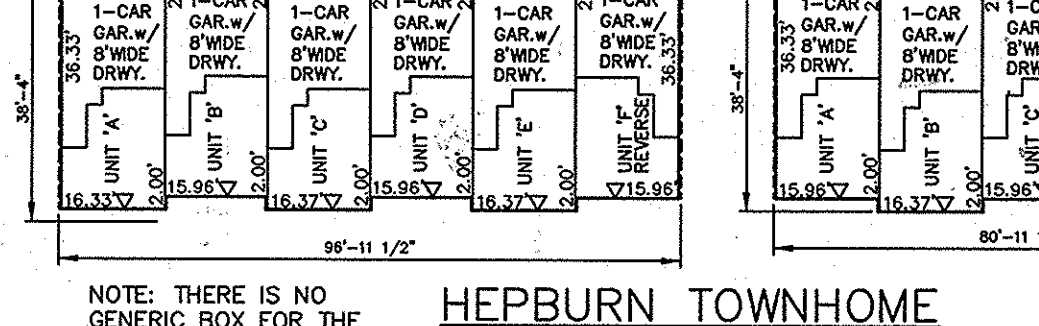
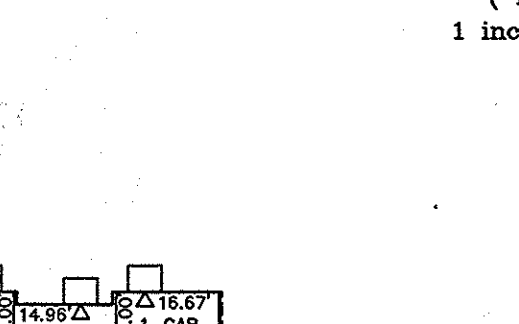
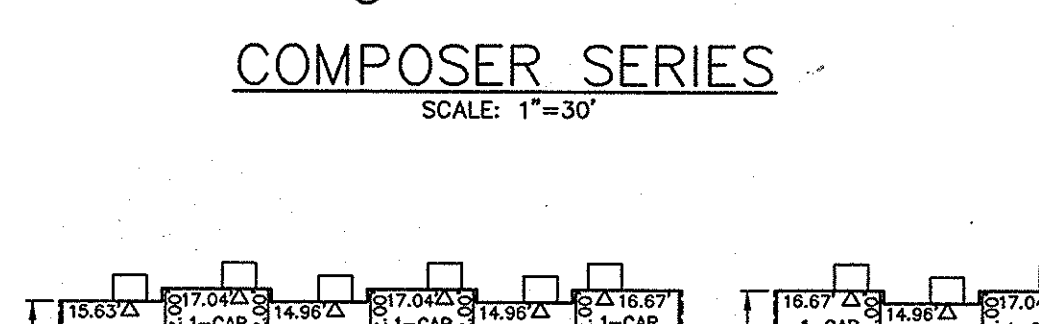
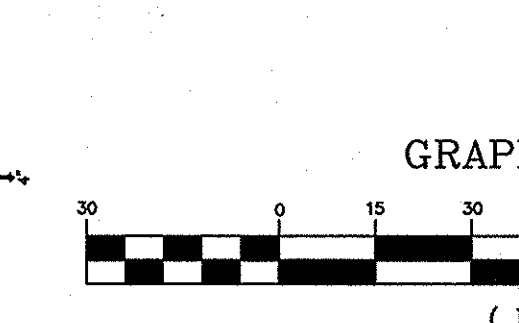
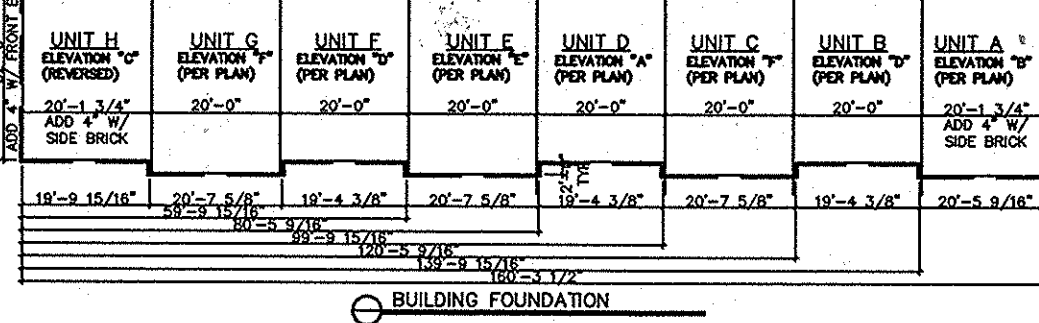
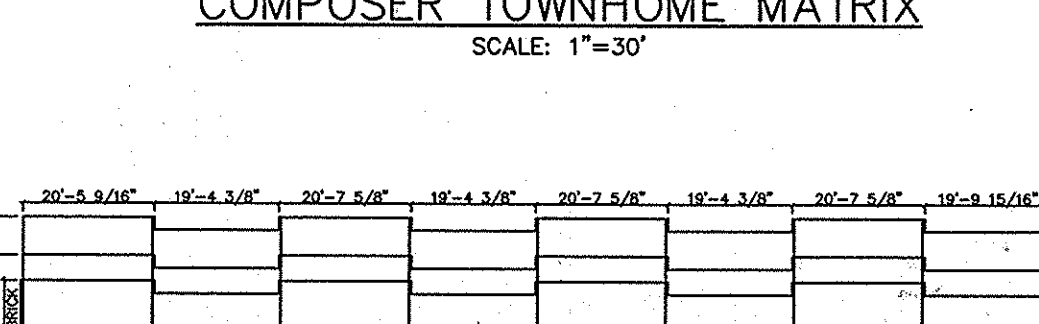
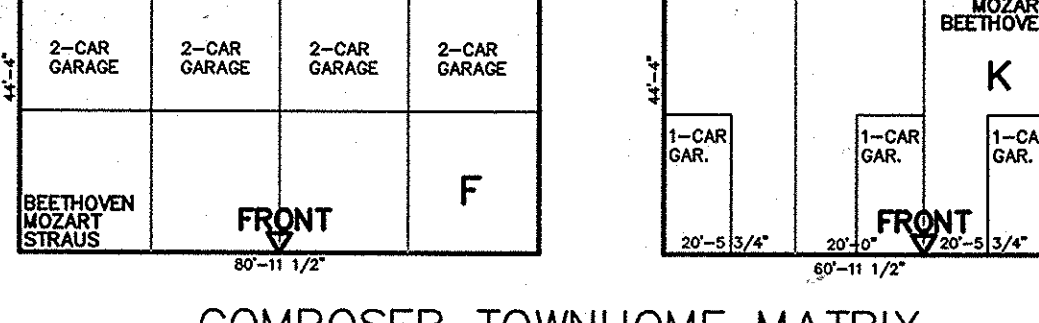
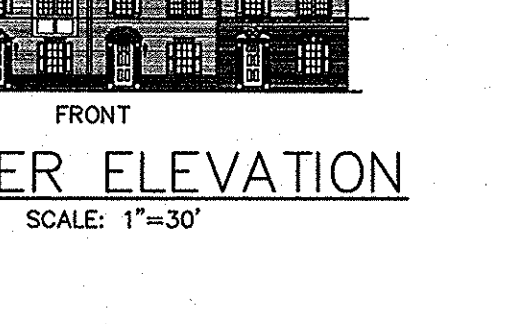
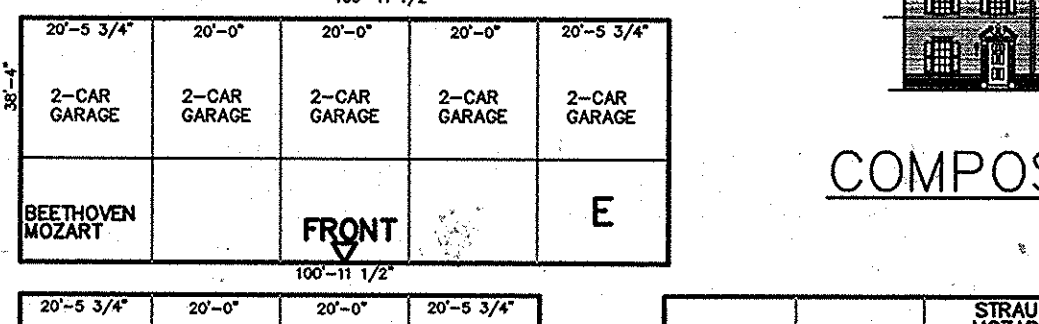
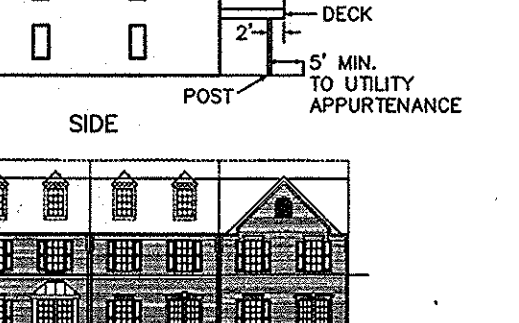
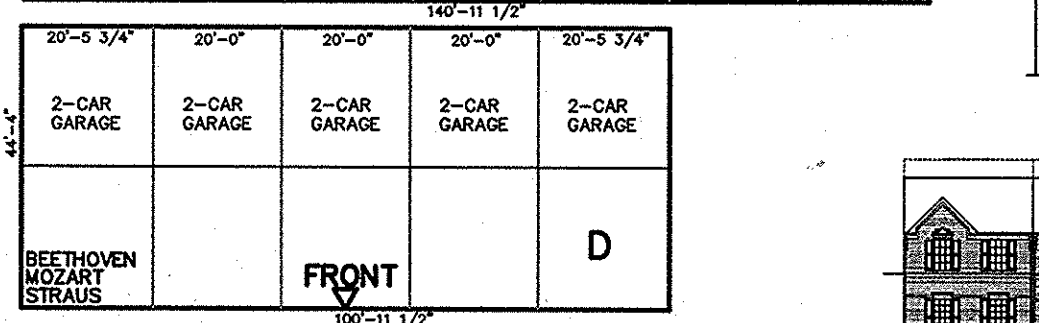
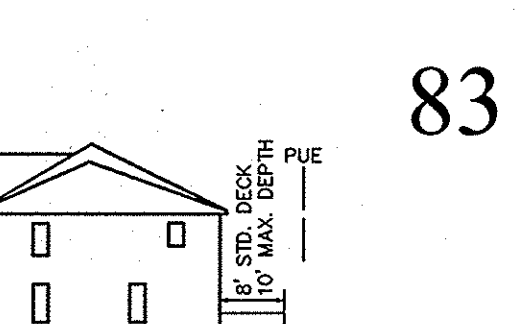
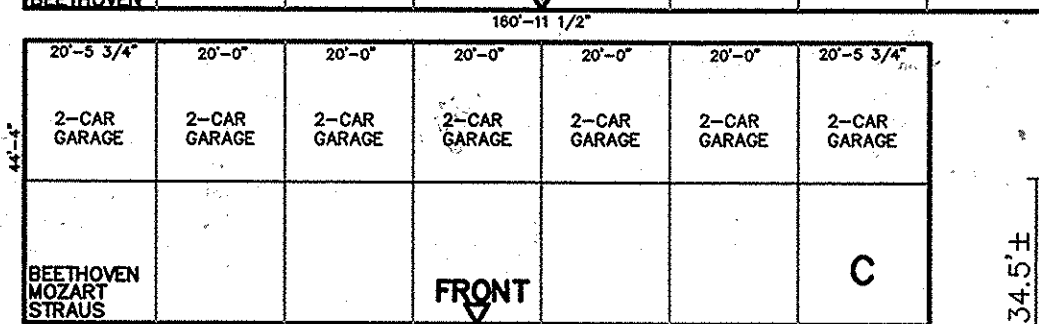
- OF THE 672 ALLOCATIONS GRANTED, 206 WERE CREDITS FROM THE EXISTING MOBILE HOME SUBDIVISION. WERE USED IN PHASE 1-G AND THEREFORE THERE ARE 32 REMAINING TO CARRY FORWARD.
- 83 OF THE 95 ALLOCATIONS GRANTED WERE USED IN PHASE 7, THEREFORE, 12 HAVE BEEN CARRIED FORWARD TO PHASE 8/9 (PARCEL 'B') WHICH GIVES A CUMULATIVE AMOUNT OF 44 UNITS TO BE USED IN PHASE 8/9 (PARCEL 'B').
- PHASE 8 AND 9 HAVE BEEN COMBINED INTO SDP-16-017 TO CREATE WHAT IS KNOWN AS PARCEL 'B'. FILING DEADLINE DATES FOR PHASE 8 AND 9 ARE 3/31/16 AND 3/31/17 RESPECTIVELY. SINCE BOTH PHASES ARE COMBINED, PHASE 9 FILING DATE HAS ALREADY BEEN COMPLIED WITH.



**MNU CHART**

PHASE	MNU'S REQ'D	MNU'S PROVIDED ALTERNATIVE COMPLIANCE
PHASE 1-G	151	154
PHASE 7	81	85
PHASE 8/9 (PARCEL 'B')	81	78
<b>TOTAL</b>	<b>232</b>	<b>252</b>

THE MNU REQUIREMENT FOR THIS PROJECT IS CALCULATED USING 23.6% PER THE APPROVED SDP-08-046.



**RESIDENTIAL ALLOCATION CHART**

PHASE	FILING DEADLINE	ALLOCATIONS GRANTED	ALLOCATIONS & CREDITS USED	CUMULATIVE ALLOCATIONS TO BE USED	NOTES
PHASE 1-G		672	640	32	1
PHASE 7	12/31/2014	81	83	44	2
PHASE 8/9 (PARCEL 'B')	3/31/2016	150	152	44	2
PHASE 9 (SDP-16-017)	3/31/17	150	150	98.88%	2, 3
<b>TOTAL</b>		<b>1,067</b>	<b>1,067</b>		

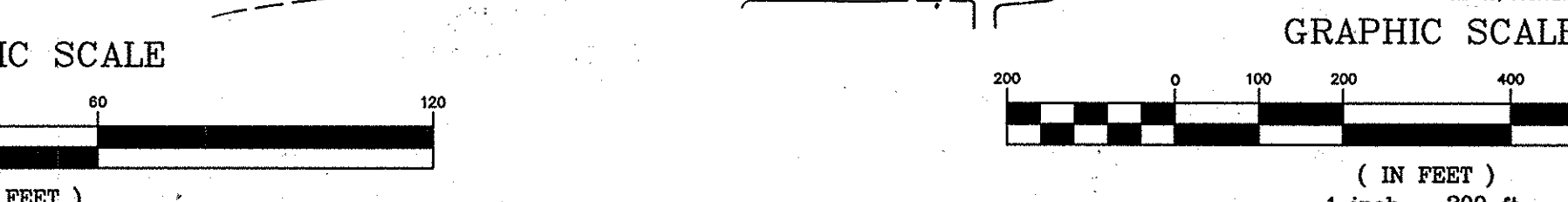
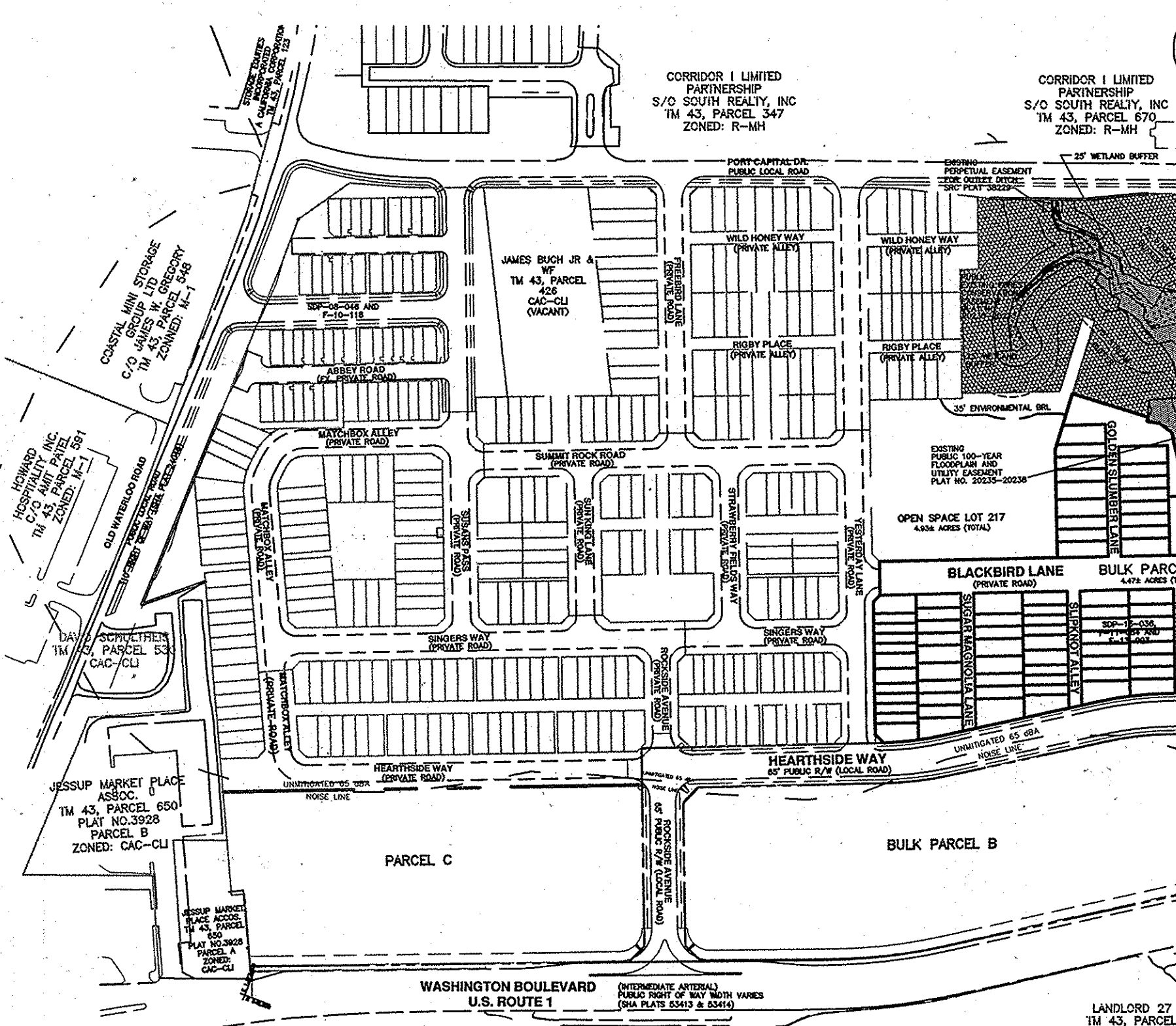
# SITE DEVELOPMENT PLAN

# HOWARD SQUARE

## PHASE 7

### 83 TOWNHOUSE UNITS ON FEE-SIMPLE LOTS

NOTE: PER COUNCIL BILL 2-2016 (CEA-150) EFFECTIVE JULY 2, 2016, BUILDING PERMITS ARE ALLOWED FOR UP TO 6 MONTHS OF COMMERCIAL CONSTRUCTION, INCLUDING THIS SDP (PHASE 7). THERE ARE 83 OF 223 RESIDENTIAL UNITS WHICH IS 60% OF THE 101 RESIDENTIAL UNITS ALLOWED IN THE HOWARD SQUARE DEVELOPMENT. THEREFORE, BUILDING PERMITS FOR PHASE 7 SHALL BE GRANTED FOR THE COMMERCIAL DEVELOPMENT COMPONENT SHALL BE PROVIDED UNDER SDP-16-017 (PARCEL 'B') OF THE HOWARD SQUARE DEVELOPMENT.



NO BUILDING PERMITS WILL BE ISSUED FOR PHASE 7 (SDP-16-017) UNTIL CONSTRUCTION OF THE COMMERCIAL COMPONENT FOR THE HOWARD SQUARE PROJECT (PARCEL 'B') IS APPROVED AND CONSTRUCTION OF THE COMMERCIAL FOUNDATION(S) HAS COMMENCED.

**AMENITY TABLE**

Sections	Parcel (Area)	Total Area (AC)	Amenity Area Required (AC)	Amenity Area Provided (AC)	Proposed Amenity
Phase 1 Section 1 (SDP-08-046)		2.91	0.29	0.33	Tot Lots and Benches
Phase 1 Section 3A (SDP-08-078)		4.28	0.43	0.65	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)		10.53	1.05	5.28	Park with Benches, Playground, Environmental Area Path and Picnic Area
Phase 6 (SDP-14-043)		5.47	0.55	0.00	N/A*
Phase 7 (SDP-15-026)		4.47	0.45	0.00	N/A*
Phase 3, 4 & 5 (SDP-12-019)	C - 4.18AC	4.18	0.42	0.00	0.41 AC of Amenity Exclusively for Apartment
Phase 8 & 9 (SDP-16-017)	B - 5.46 AC	5.46	0.54	0.00	0.25 AC of Amenity Exclusively for Apartment
Public Street Right-of-Way		2.08	0.21	N/A*	N/A*
<b>Total</b>		<b>41.11</b>	<b>43.2</b>	<b>4.3</b>	<b>6.16</b>

**ADDRESS CHART**

LOT NO.	STREET ADDRESS	LOT NO.	STREET ADDRESS
348	7221 YESTERDAY LANE	388	7416 SLIPKNOT ALLEY
349	7223 YESTERDAY LANE	389	7418 SLIPKNOT ALLEY
350	7225 YESTERDAY LANE	390	7414 SLIPKNOT ALLEY
351	7227 YESTERDAY LANE	391	7412 SLIPKNOT ALLEY
352	7229 YESTERDAY LANE	392	7410 SLIPKNOT ALLEY
353	7231 YESTERDAY LANE	393	7408 SLIPKNOT ALLEY
354	7233 YESTERDAY LANE	394	7406 SLIPKNOT ALLEY
355	7235 YESTERDAY LANE	395	7404 SLIPKNOT ALLEY
356	7237 YESTERDAY LANE	396	7501 GARCIA PLACE
357	7241 YESTERDAY LANE	397	7503 GARCIA PLACE
358	7245 YESTERDAY LANE	398	7505 GARCIA PLACE
359	7249 YESTERDAY LANE	399	7507 GARCIA PLACE
360	7203 SUGAR MAGNOLIA LANE	400	7509 GARCIA PLACE
361	7205 SUGAR MAGNOLIA LANE	401	7511 GARCIA PLACE
362	7207 SUGAR MAGNOLIA LANE	402	7513 GARCIA PLACE
363	7209 SUGAR MAGNOLIA LANE	403	7515 GARCIA PLACE
364	7211 SUGAR MAGNOLIA LANE	404	7517 GARCIA PLACE
365	7213 SUGAR MAGNOLIA LANE	405	7519 GARCIA PLACE
366	7215 SUGAR MAGNOLIA LANE	406	7521 GARCIA PLACE
367	7217 SUGAR MAGNOLIA LANE	407	7523 GARCIA PLACE
368	7219 SUGAR MAGNOLIA LANE	408	7525 GARCIA PLACE
369	7223 SUGAR MAGNOLIA LANE	409	7506 GARCIA PLACE
370	7220 SUGAR MAGNOLIA LANE	410	7504 GARCIA PLACE
371	7218 SUGAR MAGNOLIA LANE	411	7608 GOLDEN SLUMBER LANE
372	7216 SUGAR MAGNOLIA LANE	412	7607 GOLDEN SLUMBER LANE
373	7214 SUGAR MAGNOLIA LANE	413	7606 GOLDEN SLUMBER LANE
374	7210 SUGAR MAGNOLIA LANE	414	7611 GOLDEN SLUMBER LANE
375	7208 SUGAR MAGNOLIA LANE	415	7615 GOLDEN SLUMBER LANE
376	7206 SUGAR MAGNOLIA LANE	416	7610 GOLDEN SLUMBER LANE
377	7204 SUGAR MAGNOLIA LANE	417	7619 GOLDEN SLUMBER LANE
378	7403 SLIPKNOT ALLEY	418	7621 GOLDEN SLUMBER LANE
379	7405 SLIPKNOT ALLEY	419	7623 GOLDEN SLUMBER LANE
380	7407 SLIPKNOT ALLEY	420	7616 GOLDEN SLUMBER LANE
381	7409 SLIPKNOT ALLEY	421	7618 GOLDEN SLUMBER LANE
382	7411 SLIPKNOT ALLEY	422	7614 GOLDEN SLUMBER LANE
383	7415 SLIPKNOT ALLEY	423	7612 GOLDEN SLUMBER LANE
384	7417 SLIPKNOT ALLEY	424	7610 GOLDEN SLUMBER LANE
385	7419 SLIPKNOT ALLEY	425	7608 GOLDEN SLUMBER LANE
386	7421 SLIPKNOT ALLEY	426	7606 GOLDEN SLUMBER LANE
387	7423 SLIPKNOT ALLEY	427	7604 GOLDEN SLUMBER LANE
		428	7702 BLACKBIRD LANE
		430	7702 BLACKBIRD LANE

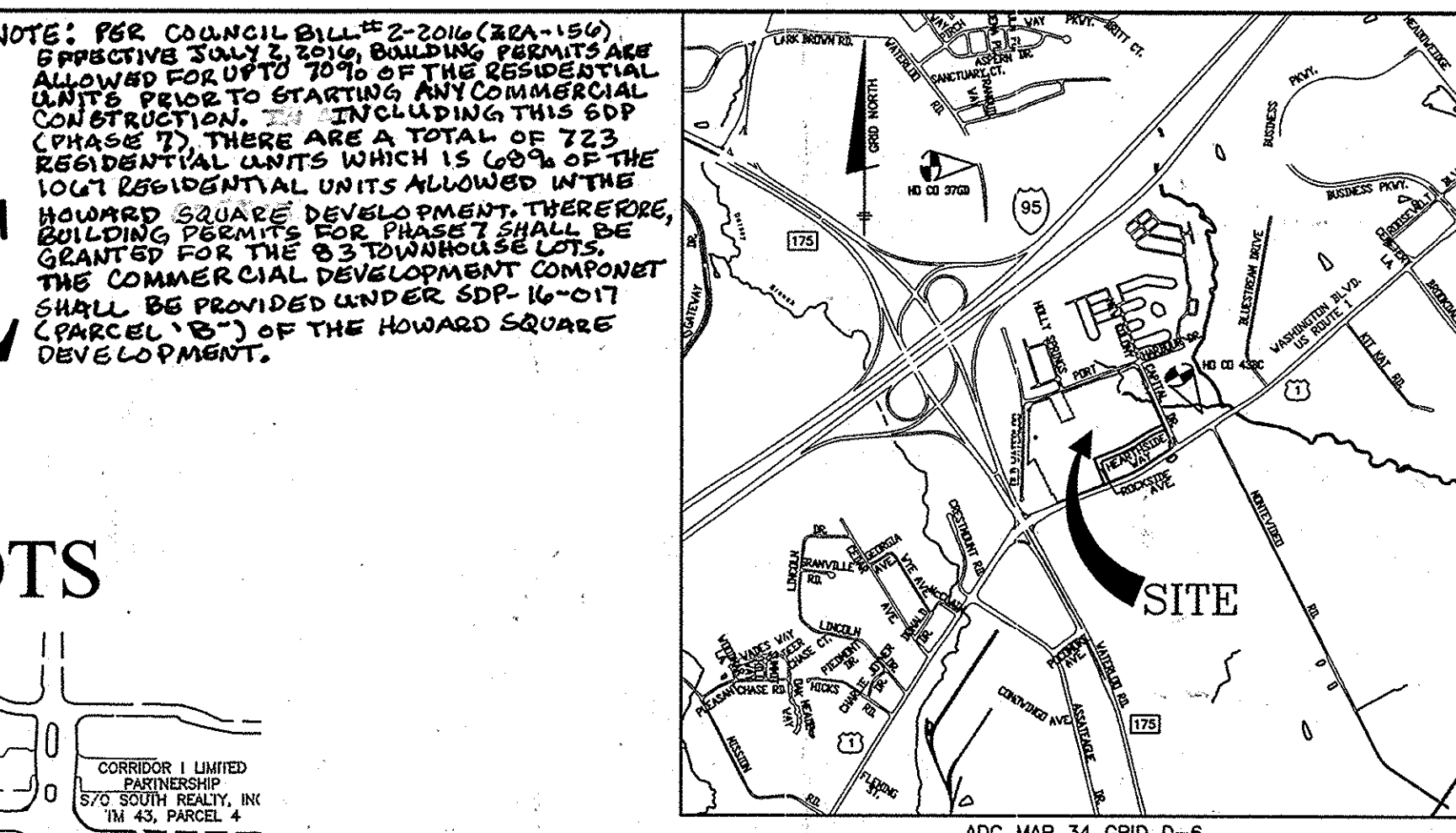
**PERMIT INFORMATION CHART**

Phase	Filing Deadline	Residential Units Submitted/Allocated	% of total Allocated	Original 0-6/2000 Outline	Current 0-6/2000 Outline	Provided / Anticipated	Notes
Phase 3-5		672	63.20%	243,000	203,000	0	2
Phase 6 (SDP-14-043)	12/31/2014	81	67.76%	26,200	46,680	PHASE 6 & 5	1
Phase 8 (SDP-16-017)	3/31/2016	150	84.82%	26,400	70,400	70,400	1.2
Phase 9 (SDP-16-017)	3/31/17	150	98.88%	24,000	0	70,400	2.3
<b>Total</b>		<b>1,067</b>	<b>1,065</b>	<b>320,100</b>	<b>320,100</b>		

\*INDICATES THAT AMENITY REQUIREMENT IS BEING MET BY THE COLLECTIVE AREA PROVIDED THROUGHOUT THE DEVELOPMENT.

NOTE: THE COMMERCIAL DEVELOPMENT REQUIRED UNDER THE CAC-CL ZONE SHALL BE PROVIDED ON PARCEL 'B' (SDP-16-017) IN ACCORDANCE WITH COUNCIL BILL 2-2016 (CEA-150) EFFECTIVE JULY 2, 2016.

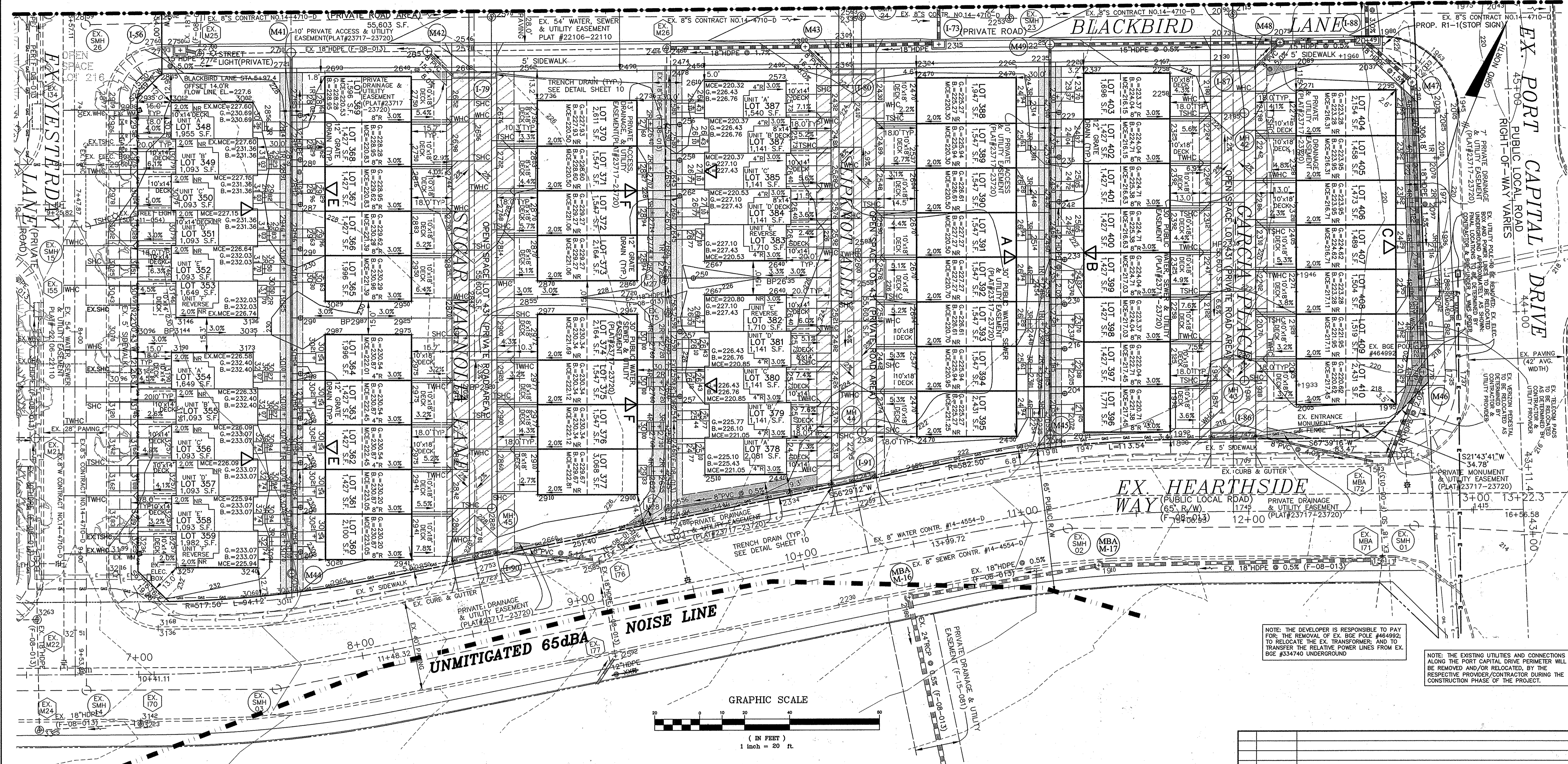
3) PER THE PLANNING DIRECTOR'S BASED ON A LOCAL TOTAL PROJECT UNITS PROPOSED, 7.5% OF REQUIRED COMMERCIAL UNITS SHALL BE 70,420 S.F. OF COMMERCIAL FOOTAGE HAS YET BEEN CONSTRUCTED UNDER THE "HOWARD SQUARE" PROJECT. THE 80% MAXIMUM THRESHOLD LIMIT ON RESIDENTIAL UNITS HAS ALREADY BEEN MET (AT PHASE 6 SDP-14-043). BASED ON THE CURRENT CAC CODE REQUIREMENTS, THE COUNTY CANNOT ALLOW THE ISSUANCE OF ANY BUILDING PERMIT OR ANY TYPE OF CONSTRUCTION RELATED TO PHASE 7 (83 TOWNHOUSES) OR THE 283 APARTMENTS UNDER PHASE 8 (SDP-16-017) UNTIL BUILDING PERMITS HAVE BEEN OBTAINED AND CONSTRUCTION OF THE ACTUAL FOUNDATION HAS BEGIN ON THE ENTIRE 70,420 S.F. OF REQUIRED COMMERCIAL (OR THE APPLICANT PUBLISHES A REDUCTION TO MODIFY THIS NOTE AND THE COMMERCIAL CONSTRUCTION REQUIREMENTS BASED ON THE APPROVAL OF 2016-156 TO ALLOW A FEE-IN-PAYMENT CONTRIBUTION). GRADING PERMITS MAY BE OBTAINED FOR INITIAL GRADING OF THE 83 TOWNHOUSES, BUT NOT BUILDING PERMITS.



**SITE ANALYSIS DATA CHART**

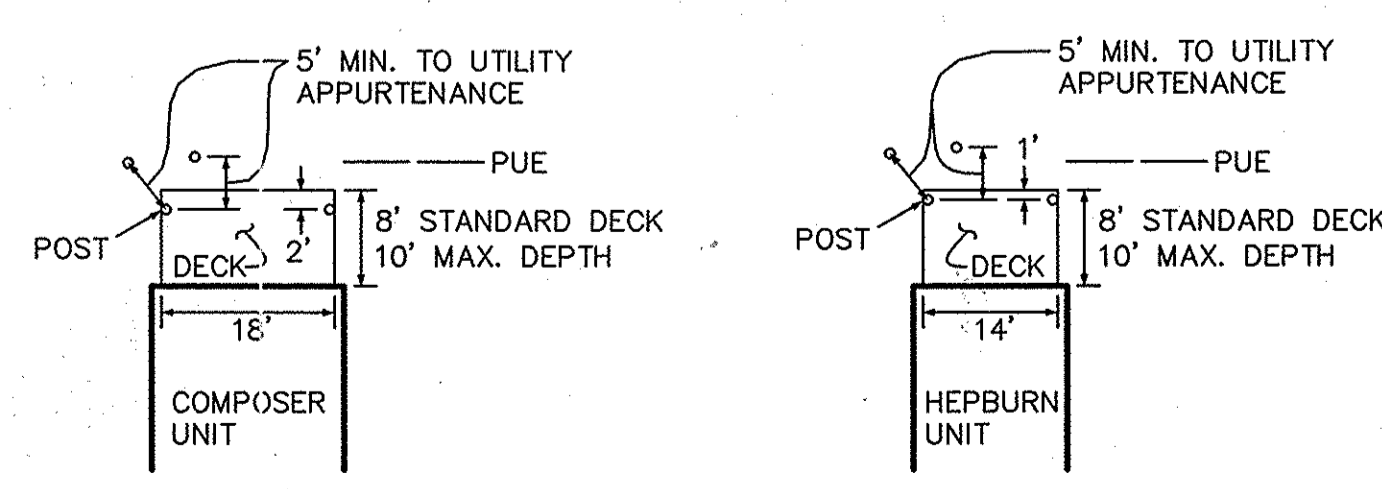
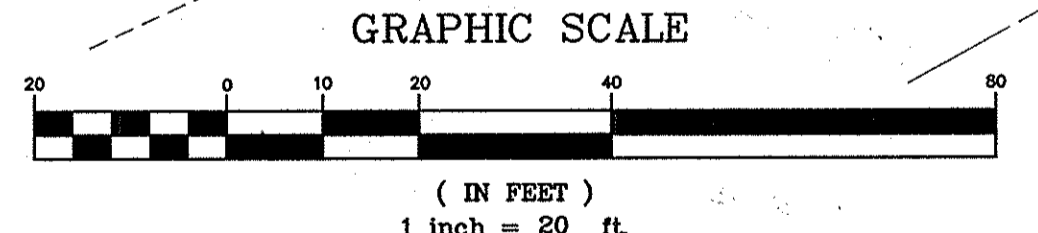
A) TOTAL PROJECT AREA	4.472 AC.
B) AREA OF THIS PLAN SUBMISSION	4.472 AC.
C) APPROXIMATE LIMIT OF DISTURBANCE	4.82 AC.
D) PRESENT ZONING	CAC-CL
E) PROPOSED USE OF SITE	RESIDENTIAL SINGLE FAMILY ATTACHED UNITS
F) TOTAL NUMBER OF UNITS ALLOWED AS SHOWN ON FINAL PLANS	83
G) TOTAL NUMBER OF UNITS PROPOSED	83
H) MAXIMUM NUMBER OF EMPLOYERS PER USE	N/A
I) NUMBER OF PARKING SPACES REQUIRED BY HO. CO. ZONING REGULATIONS (2/UNIT + 30%)	191
J) NUMBER OF PARKING SPACES PROVIDED	191 (166 (2 SPACES/UNIT) + 25 (ON-STREET WITHIN PHASE 8))
K) AMENITY AREA REQUIRED (10%)	0.44 AC. (10% OF 4.47 AC. OR AREA OF SUBDIVISION)
L) OPEN SPACE PROVIDED WITH THIS PHASE	1.28 AC. (AMENITY PROVIDED IN PREVIOUS SECTIONS SEE TABLE THIS SHEET.)
M) APPLICABLE DPZ REFERENCES:	SDP-02-076, WP-02-165, WP-03-044, WP-03-094, WP-04-047, WP-06-114, WP-07-052, S-06-010, WP-07-129, F-08-013, SDP-08-046, SDP-08-076, F-08-013, 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, SDP-11-043, F-





NOTE: THE DEVELOPER IS RESPONSIBLE TO PAY FOR THE REMOVAL OF EX. BGE POLE #464992; TO RELOCATE THE EX. TRANSFORMER; AND TO TRANSFER THE RELATIVE POWER LINES FROM EX. BGE #334740 UNDERGROUND

NOTE: THE EXISTING UTILITIES AND CONNECTIONS ALONG THE PORT CAPITAL DRIVE PERIMETER WILL BE REMOVED AND/OR RELOCATED, BY THE RESPECTIVE PROVIDER/CONTRACTOR DURING THE CONSTRUCTION PHASE OF THE PROJECT.



**LEGEND**

EXISTING CONTOURS	FIRE HYDRANT
PROPOSED CONTOURS	EXISTING 100YR FLOODPLAIN
EXISTING OVERHEAD POWER LINES	EXISTING FOREST CONSERVATION EASEMENT
EXISTING GAS LINES	LIGHTS
EXISTING TREELINE	PRIVATE ACCESS EASEMENT
PROPOSED TREELINE	PUBLIC WATER, SEWER AND UTILITY EASEMENT
EXISTING STREAM	PRIVATE STORM DRAIN AND UTILITY EASEMENT
LIMIT OF WETLANDS	
STORM DRAIN PIPE	
SIDEWALK	
MITIGATED 65dBA NOISE LINE	
FRONT OF UNIT	
EXISTING LANDSCAPING TREES	

NOTE: THE SITE WORK TO REMOVE THE EXISTING UTILITY CONNECTIONS ALONG YESTERDAY LANE WILL BE PERFORMED UNDER CONTR. #14-4907-D.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division: *JP* 5-11-16 DATE

Chief, Division of Land Development: *5-17-16* DATE

Director: *5-17-17* DATE

NO.	DATE	REVISION

**BENCHMARK ENGINEERING, INC.**  
 ENGINEERS & LAND SURVEYORS & PLANNERS  
 8490 BALTIMORE NATIONAL PIKE  
 SUITE 315  
 ELLICOTT CITY, MARYLAND 21143  
 (P) 410-462-6105 (F) 410-465-8644  
 WWW.BEG-CAVEENGINEERING.COM

**HOWARD SQUARE PHASE 7**  
 LOTS 348 THRU 430 AND OPEN SPACE LOT 431 PER F-15-062  
 (A RESUBDIVISION OF BULK PARCEL LOT G PER F-11-084)  
 83 TOWNHOUSE UNITS ON FEE-SIMPLE LOTS

ATAPCO HOWARD SQUARE II STATUTORY TRUST  
 1 South St. Suite 2800  
 Baltimore, MD 21202  
 (410) 347-7189

TAX MAP: 43 / GRIDS 3 & 9 / PARCEL: 657 (A-4) (F-11-084)  
 ZONED: CAC-CL1  
 ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND

**SITE DEVELOPMENT GRADING PLAN**



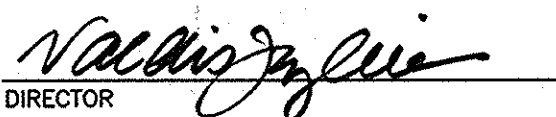
DATE: DECEMBER, 2014  
 REVISION: MAY, 2016  
 SCALE: AS SHOWN

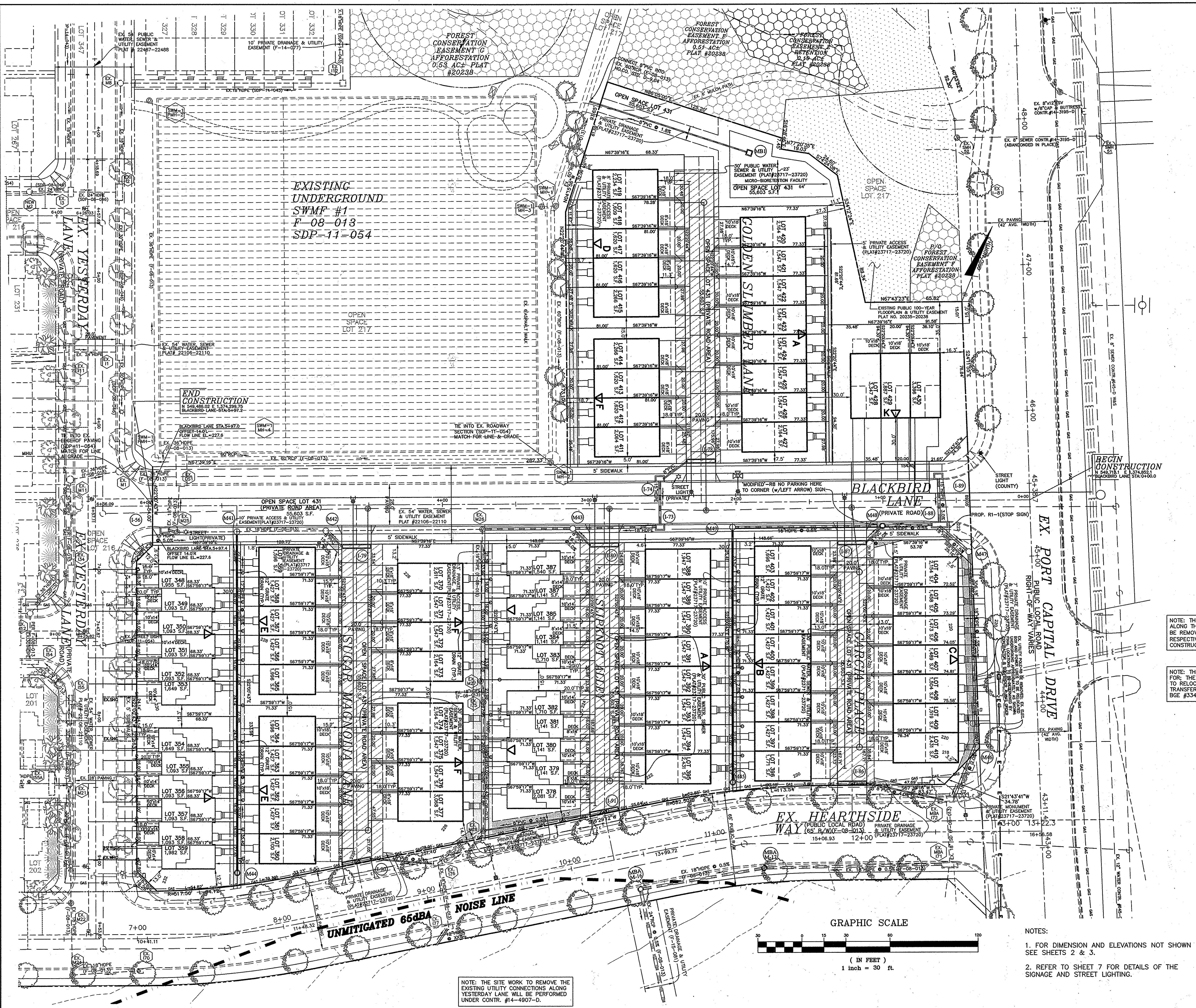
BEI PROJECT NO. 2337  
 SHEET 2 OF 11





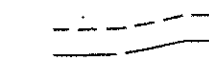
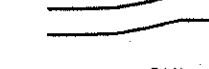

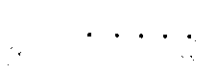

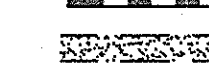


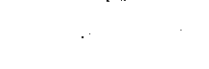




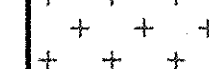



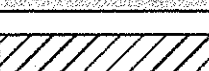



 5-11-16  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION JP DATE  
 5-17-16  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE  
 5-17-16  
 DIRECTOR DATE



**EXISTING UNDERGROUND SWMF #1**  
**F-08-013**  
**SDP-11-054**

LEGEND

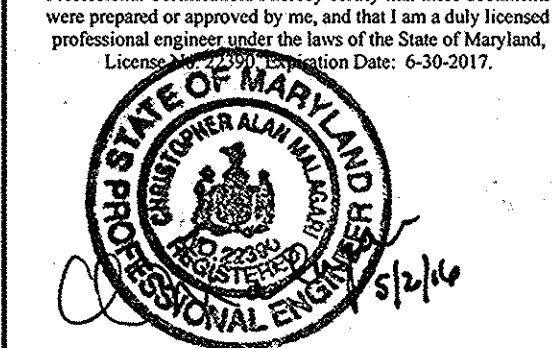
-  EXISTING CONTOURS
-  PROPOSED CONTOURS
-  EXISTING GAS LINES
-  EXISTING TREELINE
-  PROPOSED TREELINE
-  EXISTING STREAM
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-  LIGHTS
-  PRIVATE ACCESS EASEMENT
-  PUBLIC WATER, SEWER AND UTILITY EASEMENT
-  PRIVATE STORM DRAIN AND UTILITY EASEMENT

NOTE: THE EXISTING UTILITIES AND CONNECTIONS ALONG THE PORT CAPITAL DRIVE PERIMETER WILL BE REMOVED AND/OR RELOCATED, BY THE RESPECTIVE PROVIDER/CONTRACTOR DURING THE CONSTRUCTION PHASE OF THE PROJECT.

NOTE: THE DEVELOPER IS RESPONSIBLE TO PAY FOR: THE REMOVAL OF EX. BGE POLE #464992; TO RELOCATE THE EX. TRANSFORMER; AND TO TRANSFER THE RELATIVE POWER LINES FROM EX. BGE #334740 UNDERGROUND

NO.	DATE	REVISION

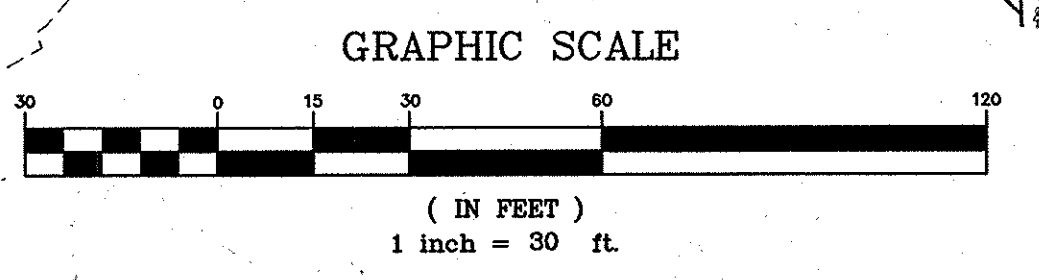
**BENCHMARK**  
 ENGINEERS & LAND SURVEYORS & PLANNERS  
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 6490 BALTIMORE NATIONAL PIKE  
 SUITE 310  
 ELLICOTT CITY, MARYLAND 21043  
 (P) 410-465-6105 (F) 410-465-8644  
 WWW.BE-CIVLENGINEERING.COM



DEVELOPER/OWNER:  
 ATAPCO HOWARD SQUARE II  
 STATUTORY TRUST  
 1 South St. Suite 2800  
 Baltimore, MD 21202  
 (410) 347-7189

**HOWARD SQUARE**  
 PHASE 7  
 LOTS 348 THRU 430 AND OPEN SPACE LOT 431 PER F-15-062  
 (A RESUBDIVISION OF BULK PARCEL G PER F-11-084)  
 83 TOWNHOUSE UNITS ON FEE-SIMPLE LOTS  
 TAX MAP: 43 / GRIDS 3 & 9 / PARCEL: 657 (A-4) (F-11-084)  
 ZONED: CAC-CU  
 ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND  
**DIMENSION PLAN**  
 DATE: DECEMBER, 2014  
 REVISED: MAY, 2016  
 SCALE: AS SHOWN  
 BEI PROJECT NO. 2337  
 SHEET 4 OF 11

- NOTES:
- FOR DIMENSION AND ELEVATIONS NOT SHOWN SEE SHEETS 2 & 3.
  - REFER TO SHEET 7 FOR DETAILS OF THE SIGNAGE AND STREET LIGHTING.



NOTE: THE SITE WORK TO REMOVE THE EXISTING UTILITY CONNECTIONS ALONG YESTERDAY LANE WILL BE PERFORMED UNDER CONTR. #14-4907-D.







**B-4 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION**

Using vegetation as cover to protect exposed soil from erosion.

To promote the establishment of vegetation on exposed soil.

On all disturbed areas not stabilized by other methods, this application is divided into sections on incremental stabilization, soil preparation, soil amendments and topsoiling, seeding and mulching, temporary stabilization and permanent stabilization.

Effects on Water Quality and Quantity

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

Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration, percolation, and groundwater recharge. Over time, vegetation will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth. Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plans will also help protect groundwater supplies by stabilizing those substances present within the root zone.

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

Adequate Vegetative Establishment

Inspect seeded areas for vegetative establishment and make necessary repairs, replacements, and reseedings within the planting season.

1. Adequate vegetative stabilization requires 95 percent groundcover.

2. If an area has less than 40 percent groundcover, reestablish using the original recommendations for time, fertilizer, seedbed preparation, and seeding.

3. If an area has between 40 and 94 percent groundcover, over-seed and fertilize using half of the rates originally specified.

4. Maintenance fertilizer rates for permanent seeding are shown in Table B.6.

**B-4-1 STANDARDS AND SPECIFICATIONS FOR INCREMENTAL STABILIZATION**

Establishment of vegetative cover on cut and fill slopes.

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

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

A. Incremental Stabilization - Cut Slopes

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

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

B. Incremental Stabilization - Fill Slopes

- Construct and stabilize fill slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all fill slopes as the work progresses.
- Stabilize slopes immediately when the vertical height of a lift reaches 15 feet, or when the grading operation ceases as prescribed above.
- At the end of each day, install temporary water conveyance practice(s), as necessary, to intercept surface runoff and convey it down and away from the excavation.
- Construction sequence (Refer to Figure B.2):
  - Construct and stabilize all temporary easements or dikes that will be used to divert runoff around the fill.
  - Construct and stabilize fill slopes in increments not to exceed 15 feet in height.
  - Place Phase 1 fill, prepare seedbed, and stabilize.
  - Place Phase 2 fill, prepare seedbed, and stabilize.
  - Place final phase fill, prepare seedbed, and stabilize. Overseed previously seeded areas as necessary.

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

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

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

To provide a suitable soil medium for vegetative growth.

Where vegetative stabilization is to be established:

A. Soil Preparation

- Temporary Stabilization
  - Seedbed preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened, it must be rolled or dragged smooth but left in the roughened condition. Slopes 3:1 or flatter are to be topsoiled with topsoil in conjunction with ridge running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seeded areas should be unnecessary on newly disturbed areas.
  - Permanent Stabilization
    - A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
      - Soil pH between 6.0 and 7.0.
      - Soluble salts less than 500 parts per million (ppm).
      - Soil contains less than 40 percent clay but 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 covercrop will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.
      - Soil contains 1.5 percent minimum organic matter by weight.
      - Soil contains sufficient pore space to permit adequate root penetration.
    - Application of amendments or topsoil is required if on-site soils do not meet the above conditions.
    - Graded areas must be maintained in a true and even grade as indicated on the approved plan, then scarified or otherwise broken to a depth of 3 to 5 inches.
    - Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.
    - 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 stumps 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. Seeded areas should be unnecessary on newly disturbed areas.

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

The application of seed and mulch to establish vegetative cover.

To protect disturbed soils from erosion during and at the end of construction.

To the surface of all perimeter contours, slopes, and any disturbed area not under active grading.

A. Seeding

- All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to 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 rates.
- Match alone may be applied between the fall and spring seeding dates only if the ground is frozen. The appropriate seeding method must be applied when the ground is frozen.
- Inoculants: The inoculant for 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 inoculants as cool as possible until use. Temperatures above 75 to 90 degrees Fahrenheit can weaken bacteria and make the inoculants less effective.
- Soil 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/10 in) to permit dissipation of phytotoxic materials.

2. Application

- Drill Seeding: This includes use of conventional drill or broadcast spreaders.
  - Incorporate seed into the soil at the rates prescribed on Temporary Seeding Table B.5. Permanent Seeding Table B.6, or site-specific seeding summaries.
  - 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.
- Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
  - Cultipacker seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seeded must be firm after planting.
  - Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.
- Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer).
  - 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; P2O5 (phosphorus), 200 pounds per acre; K2O (potassium), 200 pounds per acre.
  - Lime: Use only ground agricultural limestone (up to 3 tons per acre may be applied if hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
  - Mix seed and fertilizer on site and seed immediately and without interruption.
  - When hydroseeding do not incorporate seed into the soil.

B. Mulching

- Mulch Materials (in order of preference):
  - 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 moist, muddy, caked, decayed, or excessively dusty. Note: Use only sterile straw mulch in areas where one species of grass is desired.
  - Wood Cellulose Fiber Mulch (WCFFM) consisting of specially prepared wood cellulose processed into a uniform fibrous form. WCFFM is to be of good green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
  - WCFFM, including dye, must contain no germination or growth inhibiting factors.
  - WCFFM 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 not settle. Certified Perennial Ryegrass/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 15 pounds per 1000 square feet.
  - 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 and Certified Kentucky Bluegrass Cultivars 0.5 to 1.0 percent. Seeding Rate: 5 to 6 pounds per 1000 square feet. One or more cultivars may be blended. Kentucky Bluegrass/Perennial Ryegrass: 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: 1 to 2 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.
  - Ideal times of Seeding for Turf Grass Mixtures: Western MD: March 15 to June 1, August 1 to October 1 (Hardness Zones: 6b, 6c) Central MD: March 1 to May 15, August 15 to October 15 (Hardness Zones: 6b) Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15
- WCFFM 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, with content of 1.0 percent maximum and water holding capacity of 90 percent.

**B-4-4 STANDARDS AND SPECIFICATIONS FOR DUST CONTROL**

Controlling the suspension of dust particles from construction activities.

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 Practices Apply

- Mulching: 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.
- Vegetative Cover: See Section B-4-4 Temporary Stabilization.
- Grading: 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 other equipment, are examples of equipment that may produce the desired effect.
- Inspection: Sprinkle site with water until the surface is moist. Repeat as needed. The site must not be regraded to the point that runoff occurs.
- Barriers: Solid board fences, all fences, snow fences, burlap fences, straw bales, and similar material can be used to control air currents and soil blowing.
- Chemical Treatment: Use of chemical treatment requires approval by the appropriate plan review authority.

**Table B.1: Temporary Seeding for Site Stabilization**

Plant Species	Seeding Rate 1/	Seeding Depth 2/	Recommended Seeding Dates by Plant Hardiness Zone 3/	
			5b and 6a	7a and 7b
Cool-Season Grasses				
Annual Ryegrass (Lolium perenne ssp.)	40	1.0	0.5	0.5
Muliflorum	40	1.0	0.5	0.5
Barley (Hordeum vulgare)	96	2.2	1.0	1.0
Oats (Avena sativa)	72	1.7	1.0	1.0
Wheat (Triticum aestivum)	120	2.8	1.0	1.0
Cereal Rye (Secale cereale)	112	2.8	1.0	1.0
Warm-Season Grasses				
Foxtail Millet (Setaria italica)	30	0.7	0.5	0.5
Pearl Millet (Penisetum glaucum)	20	0.5	0.5	0.5

Notes:

- 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 1/2 of the seeding rate listed above for barley, oats, and wheat. For small seeded grasses (annual ryegrass, pearl millet, foxtail millet), do not exceed more than 5% (by weight) of the total permanent seeding mix.
- Cereal rye generally should not be used as a nurse crop, unless planting will occur 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.
- For sandy soils, plant seeds at twice the depth listed above.
- The planting dates listed are averages for each Zone and may require adjustment to reflect local conditions, especially near the boundaries of the zone.

**B-4-3 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION**

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

To use fast growing vegetation that provides cover on disturbed soils.

Exposed soils where ground cover is required 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 species or mixtures listed in Table B.3 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 the seed is not 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.

3. Soil tests are not required for Temporary Seeding.

4. 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.

**B-4-4 STANDARDS AND SPECIFICATIONS FOR 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.

Exposed soils where ground cover is required for 6 months or more.

A. Seed Mixtures

- General Use
  - Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3), and enter them on the site condition or purpose found on Table B.2. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The Summary is to be placed on the plan.
  - Additional species or mixtures for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or recreational treatment may be found in USDA-NRCS Technical Field Guide, Section 2-12 - Critical Site Stabilization.
  - For sites having disturbed areas over 5 acres, use and show the rates recommended by the soil testing agency.
  - For sites having low maintenance, apply use 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.
- Turfgrass Mixtures
  - Areas where turfgrasses may be desired include lawns, parks, playgrounds, and commercial sites where a medium to high level of maintenance is required.
  - 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. This is to be placed on the plan.
  - Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive management. Mixture includes 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.
  - Kentucky Bluegrass/Perennial Ryegrass: Full Sun Mixture: For use in full sun areas where rapid establishment is necessary and where turf will receive medium to intensive management. Certified Perennial Ryegrass/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 15 percent of the total mixture by weight.
  - 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 and Certified Kentucky Bluegrass Cultivars 0.5 to 1.0 percent. Seeding Rate: 5 to 6 pounds per 1000 square feet. One or more cultivars may be blended. Kentucky Bluegrass/Perennial Ryegrass: 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: 1 to 2 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.
  - Ideal times of Seeding for Turf Grass Mixtures: Western MD: March 15 to June 1, August 1 to October 1 (Hardness Zones: 6b, 6c) Central MD: March 1 to May 15, August 15 to October 15 (Hardness Zones: 6b) Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15

**B-4-5 STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS**

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

To provide a suitable soil medium for vegetative growth.

Where vegetative stabilization is to be established:

A. Soil Preparation

- Temporary Stabilization
  - Seedbed preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened, it must be rolled or dragged smooth but left in the roughened condition. Slopes 3:1 or flatter are to be topsoiled with topsoil in conjunction with ridge running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seeded areas should be unnecessary on newly disturbed areas.
  - Permanent Stabilization
    - A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
      - Soil pH between 6.0 and 7.0.
      - Soluble salts less than 500 parts per million (ppm).
      - Soil contains less than 40 percent clay but 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 covercrop will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.
      - Soil contains 1.5 percent minimum organic matter by weight.
      - Soil contains sufficient pore space to permit adequate root penetration.
    - Application of amendments or topsoil is required if on-site soils do not meet the above conditions.
    - Graded areas must be maintained in a true and even grade as indicated on the approved plan, then scarified or otherwise broken to a depth of 3 to 5 inches.
    - Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.
    - 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 stumps 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. Seeded areas should be unnecessary on newly disturbed areas.

**B-4-6 STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING**

The application of seed and mulch to establish vegetative cover.

To protect disturbed soils from erosion during and at the end of construction.

To the surface of all perimeter contours, slopes, and any disturbed area not under active grading.

A. Seeding

- All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to 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 rates.
- Match alone may be applied between the fall and spring seeding dates only if the ground is frozen. The appropriate seeding method must be applied when the ground is frozen.
- Inoculants: The inoculant for 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 inoculants as cool as possible until use. Temperatures above 75 to 90 degrees Fahrenheit can weaken bacteria and make the inoculants less effective.
- Soil 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/10 in) to permit dissipation of phytotoxic materials.

2. Application

- Drill Seeding: This includes use of conventional drill or broadcast spreaders.
  - Incorporate seed into the soil at the rates prescribed on Temporary Seeding Table B.5. Permanent Seeding Table B.6, or site-specific seeding summaries.
  - 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.
- Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
  - Cultipacker seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seeded must be firm after planting.
  - Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.
- Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer).
  - 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; P2O5 (phosphorus), 200 pounds per acre; K2O (potassium), 200 pounds per acre.
  - Lime: Use only ground agricultural limestone (up to 3 tons per acre may be applied if hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
  - Mix seed and fertilizer on site and seed immediately and without interruption.
  - When hydroseeding do not incorporate seed into the soil.

B. Mulching

- Mulch Materials (in order of preference):
  - 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 moist, muddy, caked, decayed, or excessively dusty. Note: Use only sterile straw mulch in areas where one species of grass is desired.
  - Wood Cellulose Fiber Mulch (WCFFM) consisting of specially prepared wood cellulose processed into a uniform fibrous form. WCFFM is to be of good green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
  - WCFFM, including dye, must contain no germination or growth inhibiting factors.
  - WCFFM 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 not settle. Certified Perennial Ryegrass/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 15 pounds per 1000 square feet.
  - 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 and Certified Kentucky Bluegrass Cultivars 0.5 to 1.0 percent. Seeding Rate: 5 to 6 pounds per 1000 square feet. One or more cultivars may be blended. Kentucky Bluegrass/Perennial Ryegrass: 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: 1 to 2 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.
  - Ideal times of Seeding for Turf Grass Mixtures: Western MD: March 15 to June 1, August 1 to October 1 (Hardness Zones: 6b, 6c) Central MD: March 1 to May 15, August 15 to October 15 (Hardness Zones: 6b) Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15
- WCFFM 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, with content of 1.0 percent maximum and water holding capacity of 90 percent.

**B-4-7 STANDARDS AND SPECIFICATIONS FOR DUST CONTROL**

Controlling the suspension of dust particles from construction activities.

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 Practices Apply

- Mulching: 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.
- Vegetative Cover: See Section B-4-4 Temporary Stabilization.
- Grading: 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 other equipment, are examples of equipment that may produce the desired effect.
- Inspection: Sprinkle site with water until the surface is moist. Repeat as needed. The site must not be regraded to the point that runoff occurs.
- Barriers: Solid board fences, all fences, snow fences, burlap fences, straw bales, and similar material can be used to control air currents and soil blowing.
- Chemical Treatment: Use of chemical treatment requires approval by the appropriate plan review authority.

**Table B.1: Temporary Seeding for Site Stabilization**

Plant Species	Seeding Rate 1/	Seeding Depth 2/	Recommended Seeding Dates by Plant Hardiness Zone 3/	
			5b and 6a	7a and 7b
Cool-Season Grasses				
Annual Ryegrass (Lolium perenne ssp.)	40	1.0	0.5	0.5
Muliflorum	40	1.0	0.5	0.5
Barley (Hordeum vulgare)	96	2.2	1.0	1.0
Oats (Avena sativa)	72	1.7	1.0	1.0
Wheat (Triticum aestivum)	120	2.8	1.0	1.0
Cereal Rye (Secale cereale)	112	2.8	1.0	1.0
Warm-Season Grasses				
Foxtail Millet (Setaria italica)	30	0.7	0.5	0.5
Pearl Millet (Penisetum glaucum)	20	0.5	0.5	0.5

Notes:

- 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 1/2 of the seeding rate listed above for barley, oats, and wheat. For small seeded grasses (annual ryegrass, pearl millet, foxtail millet), do not exceed more than 5% (by weight) of the total permanent seeding mix.
- Cereal rye generally should not be used as a nurse crop, unless planting will occur 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.
- For sandy soils, plant seeds at twice the depth listed above.
- The planting dates listed are averages for each Zone and may require adjustment to reflect local conditions, especially near the boundaries of the zone.

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- Oats are the recommended nurse crop for warm-season grasses.
- For sandy soils, plant seeds at twice the depth listed above.
- The planting dates listed are averages for each Zone and may require adjustment to reflect local conditions, especially near the boundaries of the zone.

**SEDIMENT CONTROL NOTES**

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTION, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION, (311-1855).
- 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 SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL", REVISIONS THERETO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RESTORATION, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN 14 (FOURTEEN) CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERMETER SLOPES AND ALL SLOPES GREATER THAN 3:1, (B) SEVEN (7) DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- 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 SEEDINGS (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.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMITS FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:
 

TOTAL AREA OF SITE (THIS SUBMISSION)	4.47	ACRES
AREA DISTURBED	3.8	ACRES
AREA TO BE ROOFED OR PAVED	3.1	ACRES
AREA TO BE VEGETATIVELY STABILIZED	1.7	ACRES
TOTAL CUT	—	CY**
TOTAL FILL	6850	CY**
OFFSITE WASTE/BORROW AREA LOCATION	*	

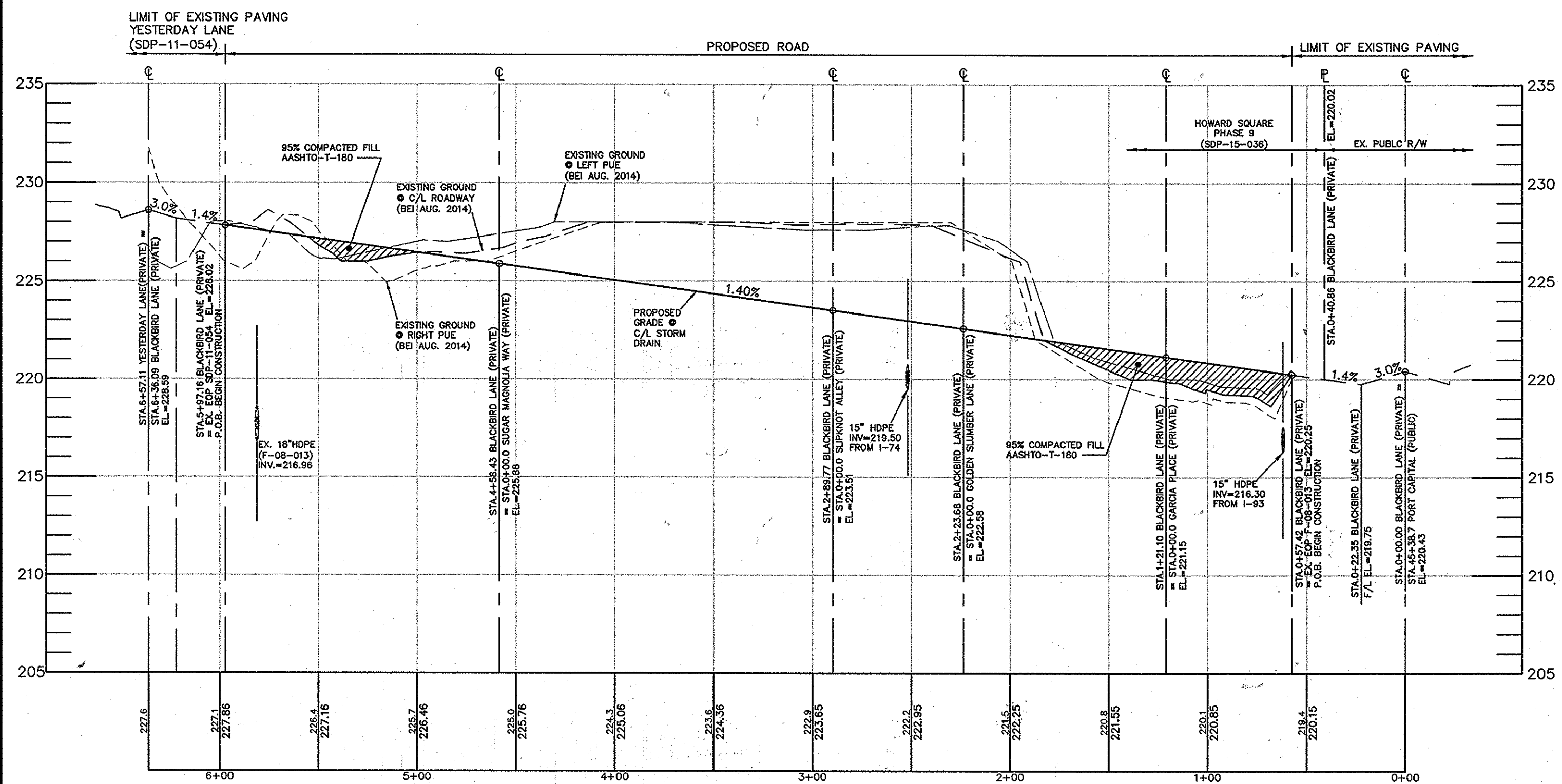
\* IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO IDENTIFY THE SPILL/BORROW SITE AND NOTIFY AND GAIN APPROVAL FROM THE SEDIMENT CONTROL INSPECTOR OF THE SITE AND ITS GRADING PERMIT NUMBER AT THE TIME OF CONSTRUCTION.

\*\* TOTAL CUT/FILL QUANTITIES ARE APPROXIMATE AND ARE SHOWN FOR SEDIMENT CONTROL PURPOSES. CONTRACTORS TO ESTABLISH THEIR OWN QUANTITIES FOR BUILDING AND CONSTRUCTION.

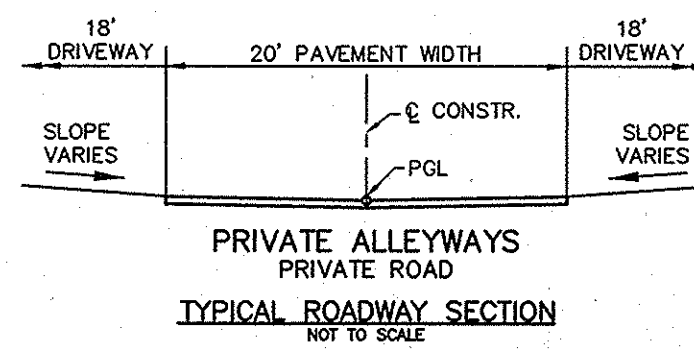
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY IS REQUIRED PRIOR TO THE START OF CONSTRUCTION. INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING, OR OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN BE BACK FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.
- ANY CHANGES OR REVISIONS TO THE SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE PLAN APPROVAL AUTHORITY PRIOR TO PROCEEDING WITH CONSTRUCTION.
- A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM DISTURBED 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.
- ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.

NOTE: THE AREAS OF ESD IMPLEMENTATION SHALL HAVE LIMITED ACCESS FROM HEAVY CONSTRUCTION

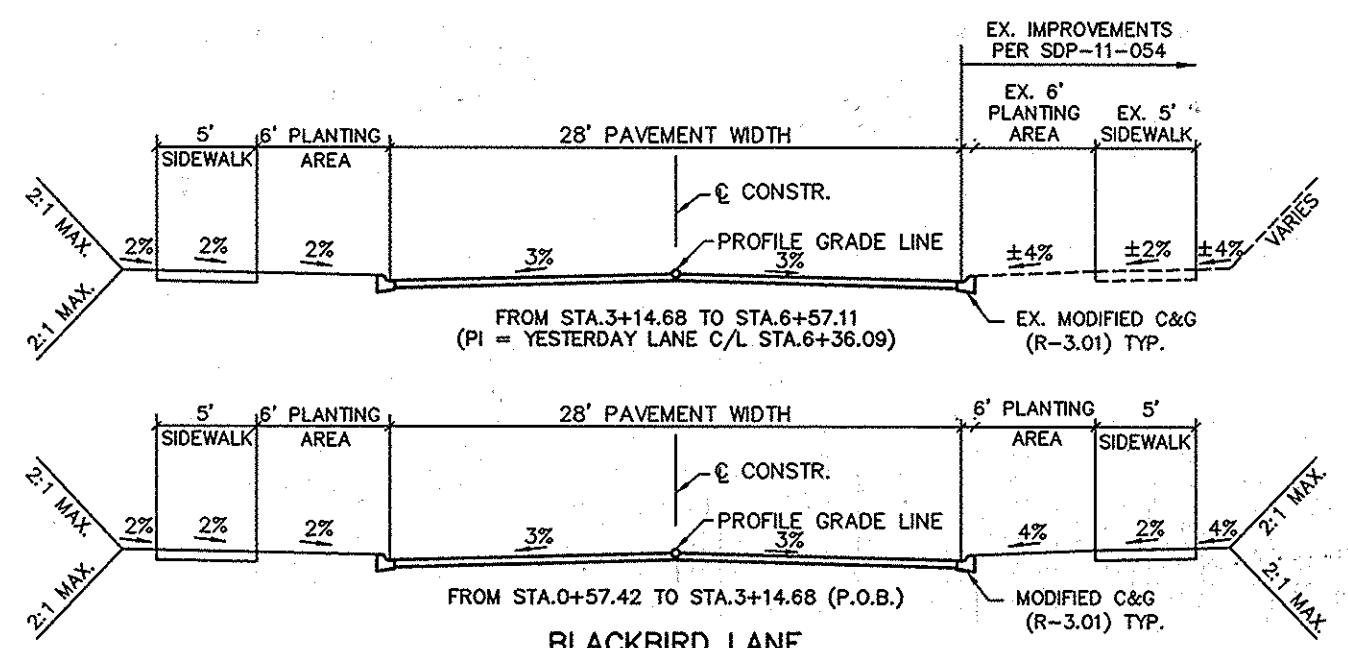




**BLACKBIRD LANE (PRIVATE) PROFILE**  
 HORIZONTAL SCALE: 1"=50'  
 VERTICAL SCALE: 1"=5'

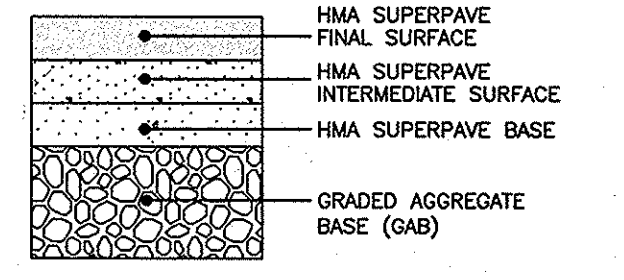


STREET LIGHT SCHEDULE		
SYMBOL	DESCRIPTION	LOCATION
	150-WATT HPS VAPOR "ACORN" POST TOP FIXTURE MOUNTED ON A 14" BLACK FLUORID FIBERGLASS POLE WITH A SHROUD	BLACKBIRD LANE STA.2+39.0 18.0' LT(PRIVATE) BLACKBIRD LANE STA.5+74.5 18.0' RT(PRIVATE)
	85-WATT (LED-150) "ACORN" MAPLE LAMPI POST TOP FIXTURE MOUNTED ON 12" BLACK FIBERGLASS POLE WITH A SHROUD	BLACKBIRD LANE STA.0+33.2 32.3' RT(COUNTY)



SECTION NUMBER	ROAD AND STREET CLASSIFICATION	CALIFORNIA BEARING RATIO (CBR)						
		3 to <5	5 to <7	7	3 to <5	5 to <7	7	
P-2	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	PAVEMENT MATERIAL (INCHES)						
		HMA SUPERPAVE FINAL SURFACE	1.5	1.5	1.5	1.5	1.5	1.5
		HMA SUPERPAVE INTERMEDIATE SURFACE	1.0	1.0	1.0	1.0	1.0	1.0
		HMA SUPERPAVE BASE	2.0	2.0	3.5	2.0	2.0	2.0
		GRADED AGGREGATE BASE (GAB)						
		8.0	4.0	3.0	4.0	4.0	4.0	

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



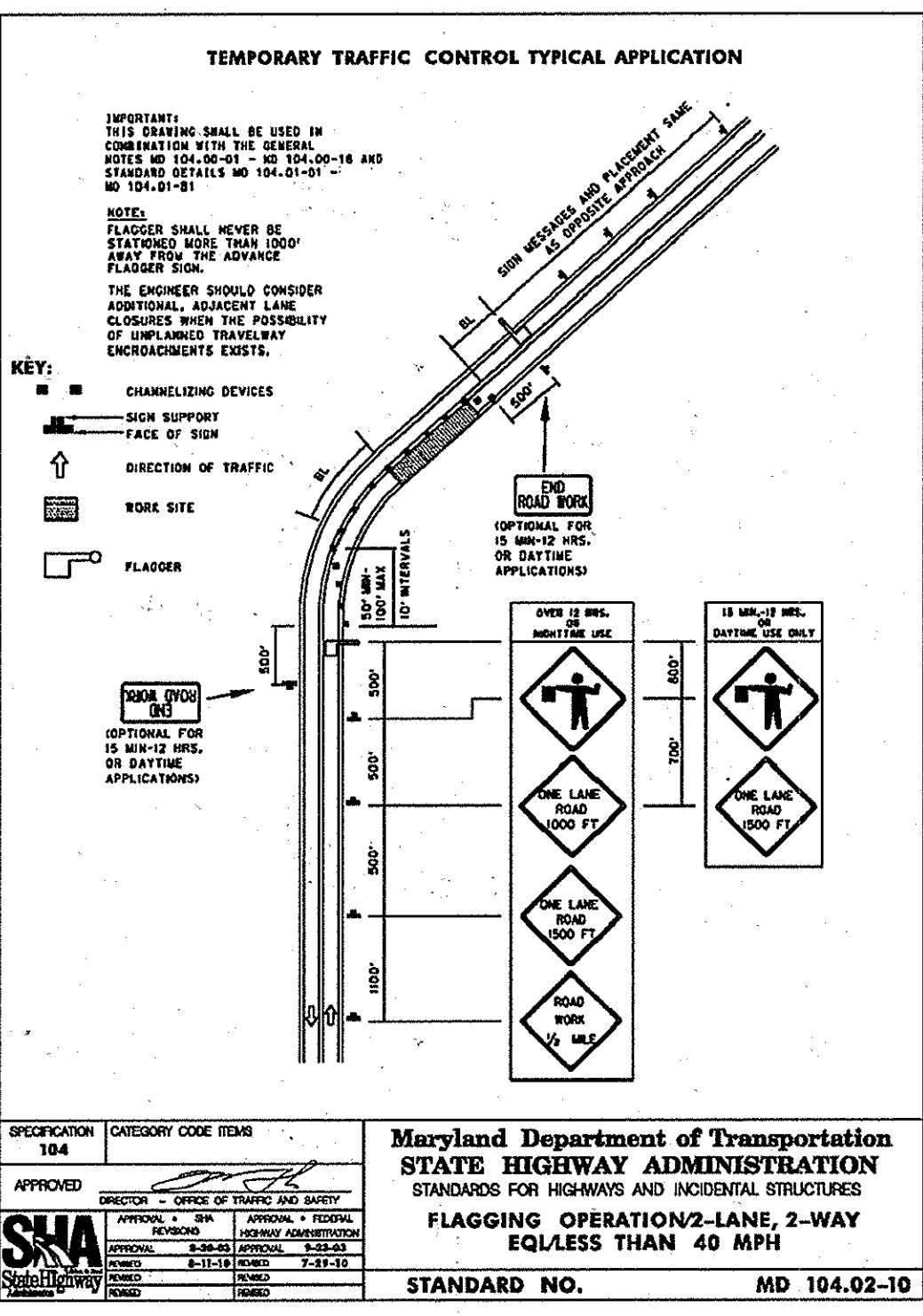
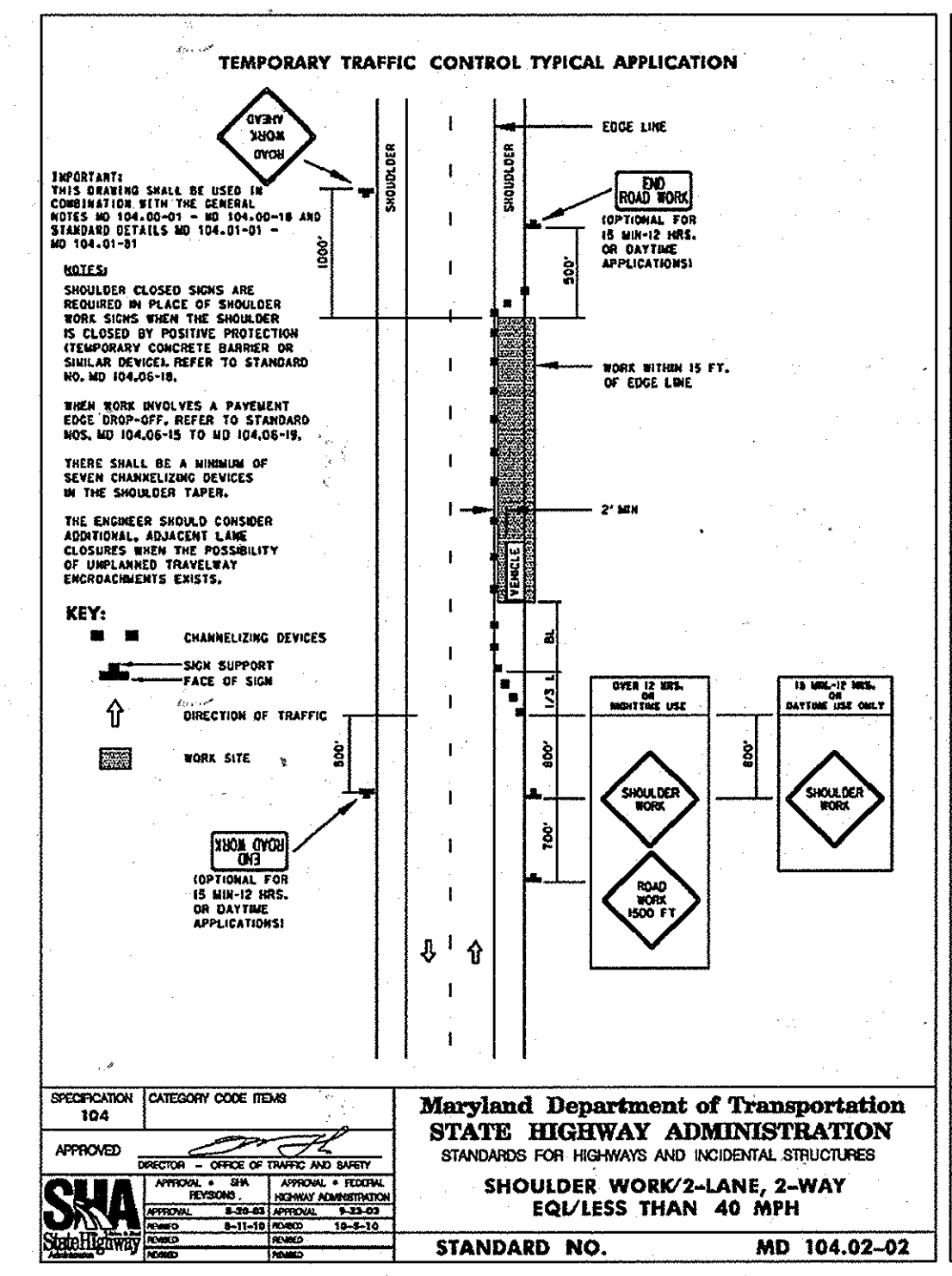
SCHMATIC PAVING DETAIL  
NOT TO SCALE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

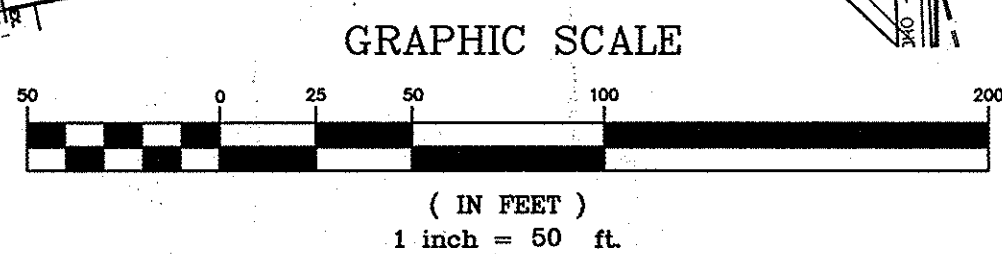
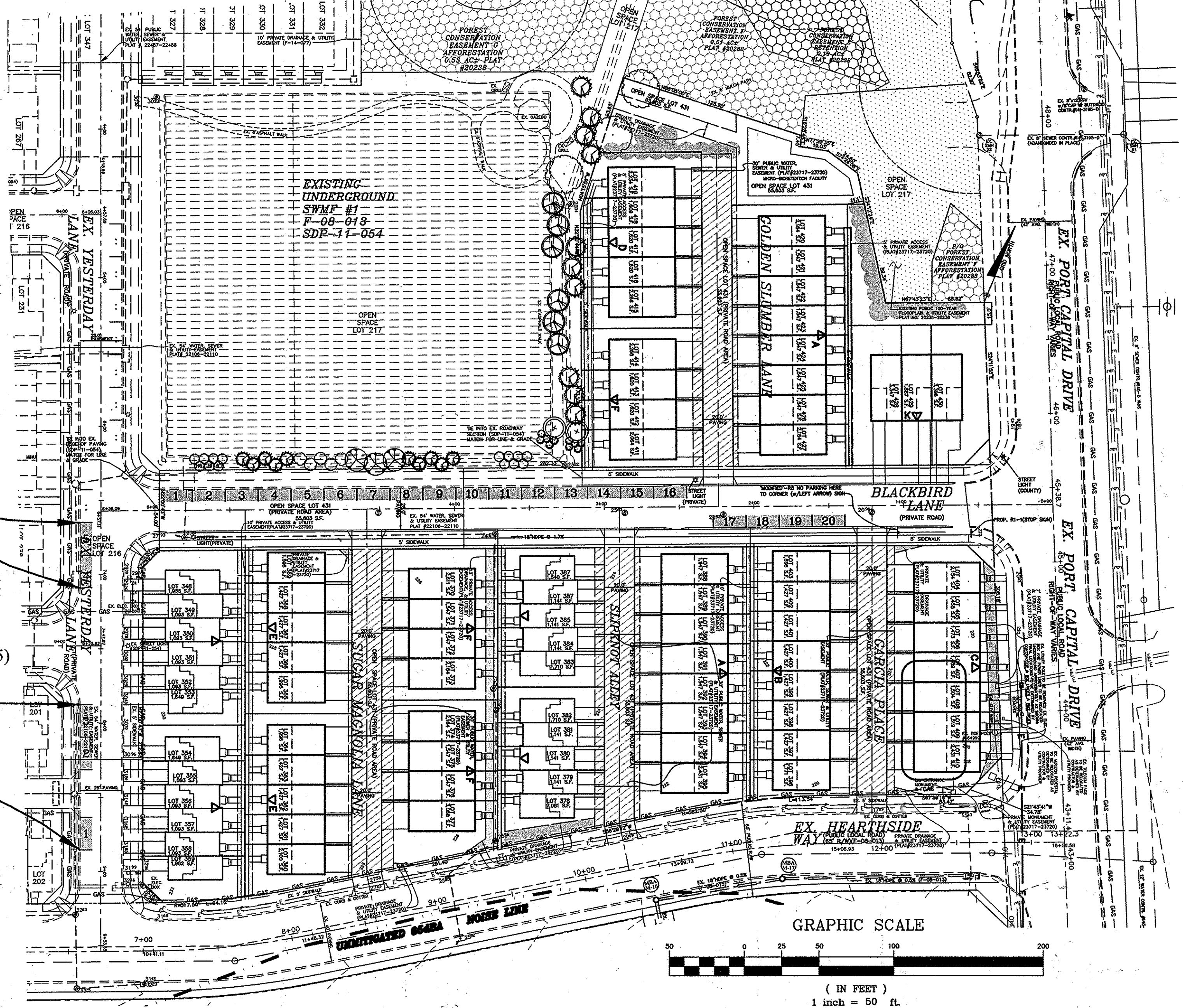
*Chad Johnson* 5-11-16  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Kat Sclafani* 5-17-16  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Waldemar Joffe* 5-17-16  
 DIRECTOR DATE



MAINTENANCE OF TRAFFIC (MOT) PLAN



ON-STREET PARKING EXHIBIT  
SCALE: 1"=50'

**PARKING COMPUTATIONS:**  
 53 UNITS X 2 SPACES/UNIT = 106 SPACES PROVIDED IN GARAGE AND ONE IN DRIVEWAY.

**OVERFLOW REQUIREMENT:**  
 83 UNITS X 2.50 = 191 SPACES. PROVIDED BY WIDENING STREET TO 28' WIDE TO INCORPORATE PARKING = \*25 SPACES.

**TOTAL PARKING PROVIDED:**  
 \*20 ON-STREET + 166 ON-LOT = 186 SPACES.

**NUMBER OF PARKING SPACES PROVIDED:**  
 +20 (ON-STREET WITHIN PHASE 9)  
 +5 (TRANSFERRED FROM PHASE 28 SDP-11-054 VIA REDLINES APPROVED 5/11/2015 AND 9/11/15)  
 +191 (166 (2 SPACES/UNIT) + 25 (TRANSFERRED FROM PHASE 28 SDP-11-054 VIA REDLINES APPROVED 5/11/2015 AND 9/11/15))

NO.	DATE	REVISION

**BENCHMARK ENGINEERING, INC.**  
 ENGINEERS & LAND SURVEYORS & PLANNERS  
 8400 BALTIMORE NATIONAL PIKE, SUITE 315  
 ELLICOTT CITY, MARYLAND 21043  
 (P) 410-465-6105 (F) 410-465-6644  
 WWW.BEI-CVLENGINEERING.COM

**HOWARD SQUARE PHASE 7**  
 LOTS 348 THRU 430 AND OPEN SPACE LOT 431 PER F-15-062  
 (A RESUBDIVISION OF BULK PARCEL G PER F-11-084)  
 83 TOWNHOUSE UNITS ON FEE-SIMPLE LOTS

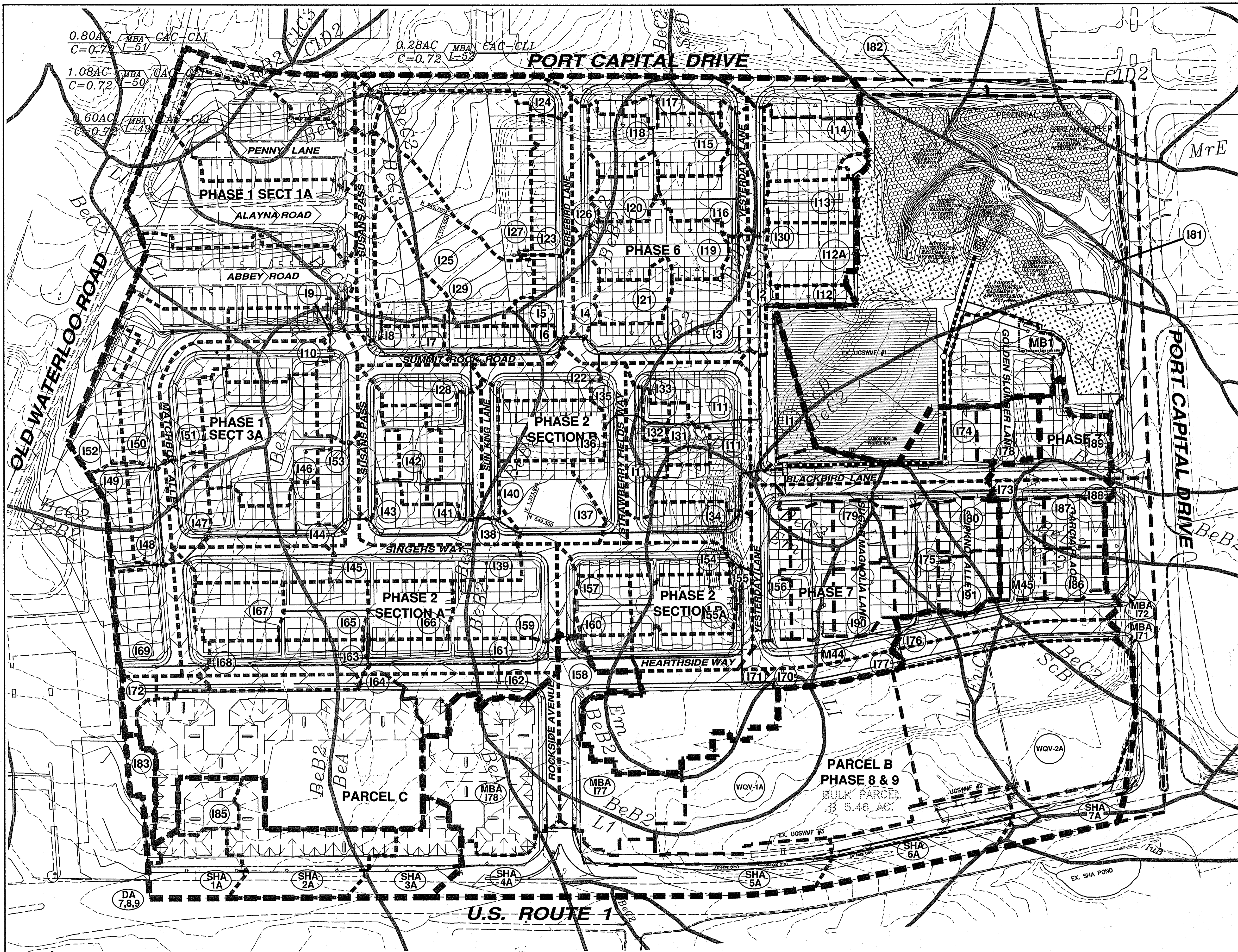
TAX MAP: 43 / GRIDS 3 & 9 / PARCEL: 657 (A-4) (F-11-084)  
 ZONED: CAC-CL1  
 ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND

**PRIVATE ROAD PROFILES, PARKING PLAN, NOTES AND DETAILS**

DATE: DECEMBER, 2014  
 REVISED: MAY, 2016  
 SCALE: AS SHOWN

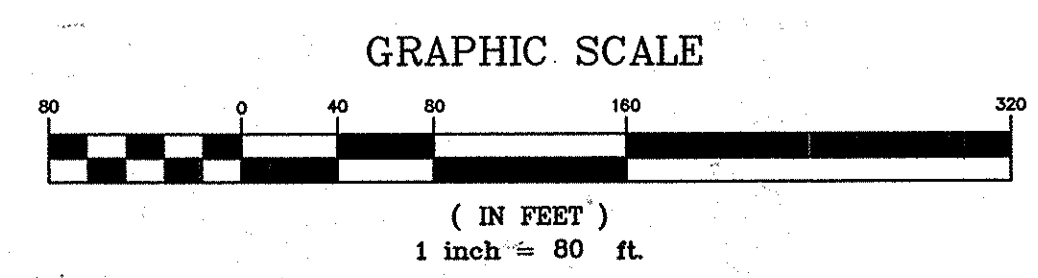
BEI PROJECT NO. 2337  
 SHEET 7 OF 11





AREA AND "C" FACTOR TABULATION									
PROJECT:	HOWARD SQUARE		DATE: 8/10/2015		BY: DBI/MCR/EDD				
PHASE	INLET #	ZONING	SUBAREA (B)	AREA (A)	"C" FACTOR (C) >= 25	"C" FACTOR (C) < 25	% IMPERVIOUS (P) >= 25	% IMPERVIOUS (P) < 25	
11		CAC-CL1		0.80	0.51				55.2
EX 12		CAC-CL1		0.13	0.78				84.6
EX 13		CAC-CL1		0.88	0.55				79.0
14		CAC-CL1		0.13	0.74				91.9
15		CAC-CL1		0.23	0.51				77.2
NEW 16		CAC-CL1		0.26	0.55				79.8
17		CAC-CL1		0.28	0.68				88.3
18		CAC-CL1		0.24	0.82				97.1
19		CAC-CL1		0.20	0.61				82.5
110		CAC-CL1		0.22	0.57				83.9
111		CAC-CL1		0.66	0.51				77.7
112		CAC-CL1		0.09	0.30				65.0
112A		CAC-CL1		0.32	0.33				65.0
113A		CAC-CL1		0.03	0.30				65.0
113		CAC-CL1		0.22	0.30				65.0
114		CAC-CL1		0.34	0.30				65.0
115		CAC-CL1		0.46	0.33				65.0
116		CAC-CL1		0.34	0.52				77.4
117		CAC-CL1		0.33	0.66				87.3
118		CAC-CL1		0.04	0.33				65.0
119		CAC-CL1		0.46	0.33				65.0
120		CAC-CL1		0.18	0.33				65.0
121		CAC-CL1		0.20	0.33				65.0
122		CAC-CL1		0.25	0.63				84.6
123		CAC-CL1		0.35	0.54				79.0
124		CAC-CL1		0.25	0.75				93.0
125		CAC-CL1		0.86	0.33				65.0
126		CAC-CL1		0.16	0.76				93.4
127		CAC-CL1		1.03	0.33				65.0
128		CAC-CL1		0.61	0.33				65.0
EX 129		CAC-CL1		0.34	0.33				65.0
130		CAC-CL1		0.15	0.82				97.7
131		CAC-CL1		0.13	0.31				65.0
132		CAC-CL1		0.08	0.30				65.0
133		CAC-CL1		0.20	0.67				87.8
134		CAC-CL1		0.25	0.61				83.2
135		CAC-CL1		0.33	0.64				85.2
136		CAC-CL1		0.38	0.33				65.0
137		CAC-CL1		0.44	0.43				71.4
138		CAC-CL1		0.35	0.62				84
139		CAC-CL1		0.62	0.59				81.9
140		CAC-CL1		0.13	0.86				100
141		CAC-CL1		0.32	0.55				79.2
142		CAC-CL1		0.23	0.33				65
143		CAC-CL1		0.23	0.65				86.3
144		CAC-CL1		0.36	0.54				78.6
145		CAC-CL1		0.30	0.60				82.5
146		CAC-CL1		0.80	0.33				65
147		CAC-CL1		0.21	0.61				83.3
148		CAC-CL1		0.23	0.55				77.4
149		CAC-CL1		0.17	0.33				65
150		CAC-CL1		0.62	0.51				78.4
151		CAC-CL1		0.80	0.60				83.1
152		CAC-CL1		0.29	0.33				65
153		CAC-CL1		0.24	0.62				84.0
154		CAC-CL1		0.31	0.59				81.9
155		CAC-CL1		0.55	0.53				78.4
156		CAC-CL1		0.34	0.61				83.5
157		CAC-CL1		0.30	0.33				65.0
158		CAC-CL1		0.15	0.61				83.7
159		CAC-CL1		0.45	0.47				74.3
160		CAC-CL1		0.08	0.86				100.0
161		CAC-CL1		0.39	0.60				82.9
162		CAC-CL1		0.15	0.86				100.0
163		CAC-CL1		0.33	0.59				82.0
164		CAC-CL1		0.16	0.86				100.0
165		CAC-CL1		0.29	0.33				65.0
166		CAC-CL1		0.29	0.33				65.0
167		CAC-CL1		0.29	0.33				65.0
168		CAC-CL1		0.15	0.75				93.0
169		CAC-CL1		0.40	0.54				79.0
170		CAC-CL1		0.00	0.00				0.0
PARCEL B									
171		CAC-CL1		0.03	0.86				100.0
7	171	CAC-CL1		2.19	0.72				85.0
7	174	CAC-CL1		0.26	0.60	0.66			89.2
7	EX 175	CAC-CL1		0.54	0.56	0.65			79.9
7	EX 176	CAC-CL1		0.30	0.20	0.39			65.0
7	EX 177	CAC-CL1		0.24	0.76	0.85			92.7
7	EX 178	CAC-CL1		0.15	0.86	0.96			100.0
7	M-44	CAC-CL1		0.34	0.35	0.44			65.0
7	191	CAC-CL1		0.20	0.20	0.39			65.0
7	190	CAC-CL1		0.22	0.36	0.45			65.0
7	179	CAC-CL1		0.22	0.33	0.42			65.0
7	180	CAC-CL1		0.19	0.32	0.41			65.0
7	178	CAC-CL1		0.22	0.33	0.42			65.0
7	186	CAC-CL1		0.18	0.33	0.42			65.0
7	187	CAC-CL1		0.18	0.33	0.42			65.0
7	188	CAC-CL1		0.14	0.33	0.42			65.0
7	189	CAC-CL1		0.36	0.33	0.42			65.0
F-08-013	MBA 1-71	CAC-CL1		0.26	0.86	0.96			100.0
F-08-013	MBA 1-72	CAC-CL1		0.33	0.75	0.85			92.6
F-08-013	ME	CAC-CL1		0.50	0.33	0.42			65.0
F-08-013	WQV#2-A	CAC-CL1		1.91	0.71	0.89			85.0
7	ROOF	CAC-CL1		0.10	0.86	0.96			100.0
7	M-45	CAC-CL1		0.27	0.33	0.42			65.0
F-08-013	181	CAC-CL1		0.46	0.86	0.96			100.0
F-08-013	182	CAC-CL1		0.74	0.74	0.89			93.6
PARCEL B	WQV#2-B	CAC-CL1		1.84	0.72	0.89			85.0
F-08-013	MBA 1-76	CAC-CL1		1.07	0.86	0.90			100.0
F-08-013	MBA 1-77	CAC-CL1		0.78	0.86	0.90			100.0
F-08-013	EX SHA 1-A	CAC-CL1		0.82	0.93	0.94			97.1
F-08-013	EX SHA 1-B	CAC-CL1		0.49	0.81	0.94			95.1
F-08-013	EX SHA 1-C	CAC-CL1		0.58	0.80	0.93			93.8
F-08-013	EX WQV#3	CAC-CL1		2.48	0.79	0.91			91.2
F-08-013	DA-7.8,9	CAC-CL1		1.66	0.77	0.91			90.0

MAP SYMBOL	SOIL TYPE	MAPPING UNIT
BeA	C	BELTSVILLE SILT LOAM - 0 TO 1 PERCENT SLOPES
BeB2	C	BELTSVILLE SILT LOAM - 1 TO 5 PERCENT SLOPES - MODERATELY ERODED
BeC2	C	BELTSVILLE SILT LOAM - 5 TO 10 PERCENT SLOPES - MODERATELY ERODED
BeC3	C	BELTSVILLE SILT LOAM - 5 TO 10 PERCENT SLOPES - SEVERELY ERODED
CmB2	B	CHILLIUM SILT LOAM - 1 TO 5 PERCENT SLOPES - MODERATELY ERODED
Em	D	ELKTON SILT LOAM
ExC	A	EVERSOOK LOAMY SAND - 5 TO 10 PERCENT SLOPES
LuB	D	LUKA LOAM LOCAL ALLUVIUM - 1 TO 5 PERCENT SLOPES - MODERATELY ERODED
L1	D	LEONARDTOWN SILT LOAM
ScB	C	SANDY AND CLAYEY LAND - GENTLY SLOPING
ScD	C	SANDY AND CLAYEY LAND - MODERATELY ERODED



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*David Clarke* 5-11-16  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION JR DATE

*Victoria J. Dwyer* 5-17-16  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Walter J. Joffe* 5-17-16  
 DIRECTOR DATE

NO.	DATE	REVISION

Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 20090 Registration Date: 6-30-2017.

**BENCHMARK ENGINEERING, INC.**  
 ENGINEERS & LAND SURVEYORS & PLANNERS  
 8480 BALTIMORE NATIONAL PIKE SUITE 315  
 ELLICOTT CITY, MARYLAND 21043  
 (P) 410-465-6105 (F) 410-465-6644  
 WWW.BEI-CIVILENGINEERING.COM

**HOWARD SQUARE PHASE 7**  
 LOTS 348 THRU 430 AND OPEN SPACE LOT 431 PER F-15-062  
 (A RESUBDIVISION OF BULK PARCEL G PER F-11-084)  
 83 TOWNHOUSE UNITS ON FEE-SIMPLE LOTS

ATAPCO HOWARD SQUARE II STATUTORY TRUST  
 1 South St. Suite 2800  
 Baltimore, MD 21202  
 (410) 347-7189

TAX MAP: 43 / GRIDS 3 & 9 / PARCEL: 657 (A-4) (F-11-084)  
 ZONED: CAC-CL1  
 ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND

**SOILS AND STORM DRAINAGE AREA MAP**

DATE: DECEMBER, 2014  
 REVISED: MARCH, 2016  
 SCALE: AS SHOWN

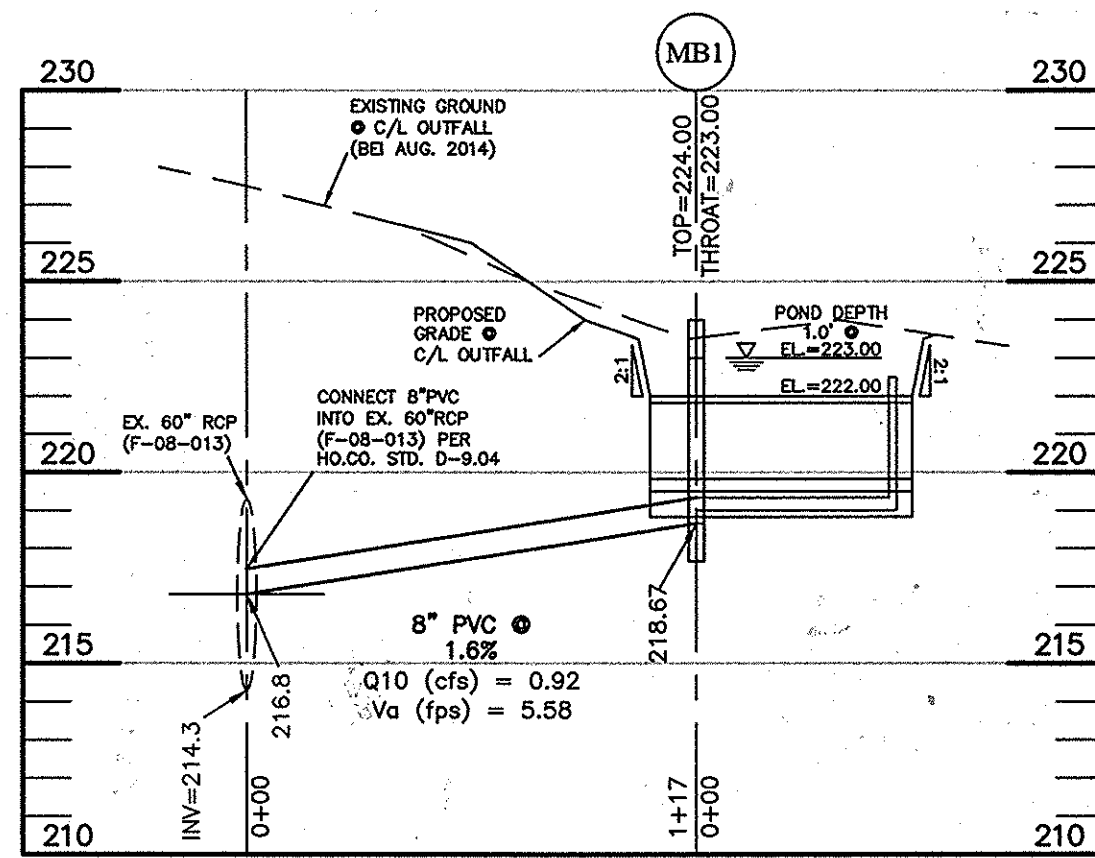
BEI PROJECT NO. 2337  
 SHEET 8 OF 11

DRAFT:MCR/EDD CHECK:CAM

SDP-15-036



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% SAND & COMPOST (35-40%)) OR LOAMY SAND (30% COMPOST SAND (30% SAND & 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")	
GEOTEXTILE	N/A	N/A	PE TYPE 1 - NONWOVEN
GRAVEL (UNDERDRAINS & BERMS)	ASHTO M-43	#57 OR #6 AGGREGATE (3/8" TO 3/4")	#8 STONE
UNDERDRAIN PIPING	F758, TYPE PS28 OR ASHTO M-278	4" TO 6" RIGID SCHEDULE 40 PVC OR SDR35	SLOTTED OR PERFORATED: 3/8" PERFS. @ 6" O/C. 4 HOLES PER UNDERDRAIN PIPE. PERFORATED PIPE SHALL BE WRAPPED WITH 1/4" GALVANIZED HARDWARE CLOTH
POURED-IN-PLACE CONC. (IF REQUIRED)	MSHA MIX NO. 3; Fc=3000psi @ 28 DAYS, NORMAL WEIGHT, AIR ENTRAINED; REINFORCING TO MEET ASTM 615-90	N/A	ON-SITE TESTING OF POURED-IN-PLACE CONC. REQUIRED: 28 DAY STRENGTH TEST AND SLUMP TEST; ALL CONC. 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 REQUIREMENTS (VERTICAL LOADING (10-10 or 10-20) ALLOWABLE HORIZONTAL LOADING (BASED ON SOIL PRESSURES); AND ANALYSIS OF POTENTIAL CRACKING
SAND (1.0' DEEP)	ASHTO M-6 OR ASTM C-33	0.02" TO 0.04"	SAND SUBSTITUTIONS SUCH AS DIABASE AND GRANITONE (ASHTO #10 ARE NOT ACCEPTABLE. NO CALCIUM CARBONATED OR AQUEOUS SAND SUBSTITUTIONS ARE ACCEPTABLE. NO "ROCK DUST" CAN BE USED FOR SAND



**MB-1 OUTFALL PROFILE**  
HORIZONTAL SCALE: 1"=50'  
VERTICAL SCALE: 1"=5'

**MICRO-BIORETENTION (M-6) PLANTING TABLE**

Micro-Bioretenation	Quantity
VINCA MINOR (Common Periwinkle)	191
AJUSTA REPTANS (Creeping Bupleweed)	168
IRIS VERSICOLOR (Iris)	90
HERMERCALLIS SP (Daylily)	56
ACER RUBRUM (Red Sunset Red Maple)	2

**MICRO-BIORETENTION (M-6) DESIGN TABLE**

Micro-Bioretenation	(M-6)
Elevation 1	223.50
Elevation 2	223.00
Elevation 3	222.00
Elevation 4	221.83
Elevation 5	219.83
Elevation 6	219.50
Elevation 7	219.00
Elevation 8	218.83
Surface Area (sf)	1690.00

**OPERATION & MAINTENANCE SCHEDULE FOR (M-6) MICRO-BIORETENTION**

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

**MICRO-BIORETENTION (M-6) CONSTRUCTION SPECIFICATIONS**

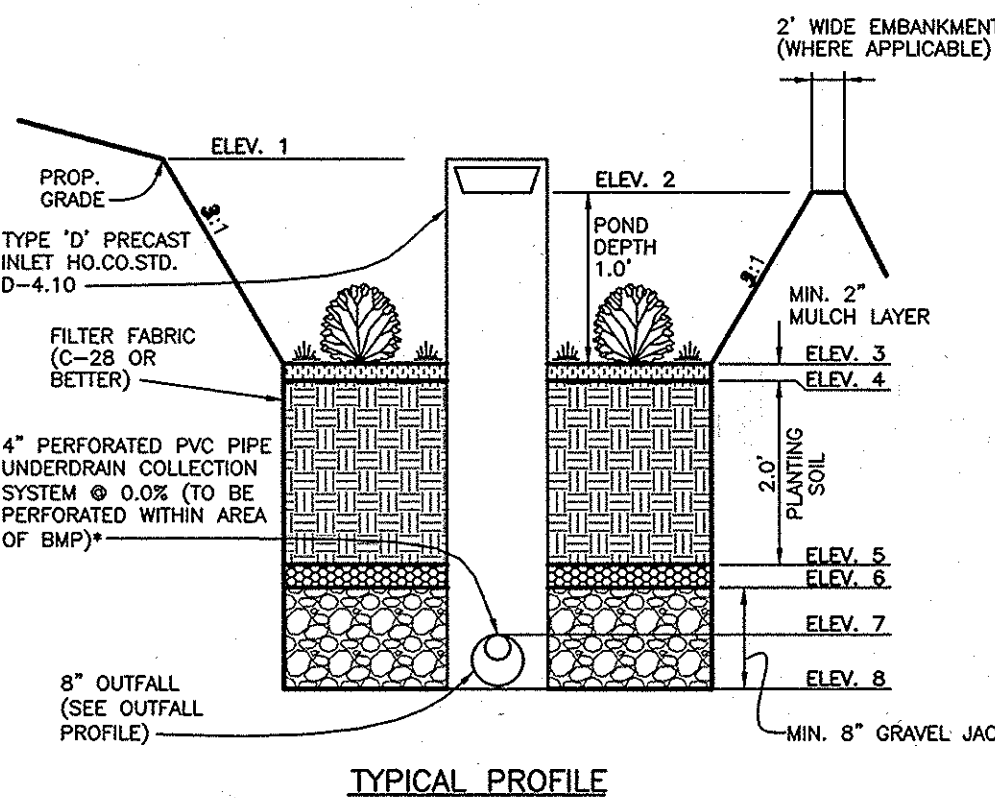
- THE SUBGRADE FOR ALL BIORETENTION COMPONENTS SHALL BE PREPARED TO THE REQUIRED LINES AND GRADES. ANY FILL REQUIRED IN THE SUBGRADE SHALL BE COMPACTED TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL. EMBANKMENTS SHALL BE PREPARED BY STRIPPING TOPSOIL AND ANY OTHER UNSUITABLE MATERIALS FROM THE AREAS, AND BE COMPACTED TO A MINIMUM OF 95% OF MAXIMUM DRY DENSITY REFERENCED TO AASHTO T-99 (STANDARD PROCTOR).
- THE ROCK OR GRAVEL SHALL CONFORM TO THE SPECIFIED GRADING LIMITS WHEN INSTALLED RESPECTIVELY IN THE RIP-RAP OR FILTER.
- GEOTEXTILE CLASS C28 OR BETTER SHALL BE PROTECTED FROM PUNCHING, CUTTING, OR TEARING. ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE SHALL BE PREPARED BY PLACING ANOTHER PIECE OF GEOTEXTILE FABRIC OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE FABRIC. ALL OVERLAPS WHETHER FOR REPAIRS OR FOR JOINING TWO PIECES OF GEOTEXTILE FABRIC SHALL BE A MINIMUM OF ONE FOOT.
- STONE FOR THE RIP-RAP OR LEVEL SPREADERS MAY BE PLACED BY EQUIPMENT. THEY SHALL BE CONSTRUCTED TO THE FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. THE STONE FOR THE RIP-RAP OR LEVEL SPREADERS SHALL BE DELIVERED AND PLACED IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENEOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. STONE SHALL BE PLACED IN A MANNER TO PREVENT DAMAGE TO THE FILTER BLANKET OR GEOTEXTILE FABRIC. HAND PLACEMENT WILL BE REQUIRED TO THE EXTENT NECESSARY TO PREVENT DAMAGE TO THE PERMANENT WORKS.
- THE STONE LINER SHALL BE PLACED SO THAT IT BLENDS IN WITH THE EXISTING GROUND. IF THE STONE IS PLACED TOO HIGH THEN THE FLOW WILL BE FORCED OUT OF THE CHANNEL AND SCOUR ADJACENT TO THE STONE WILL OCCUR.

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

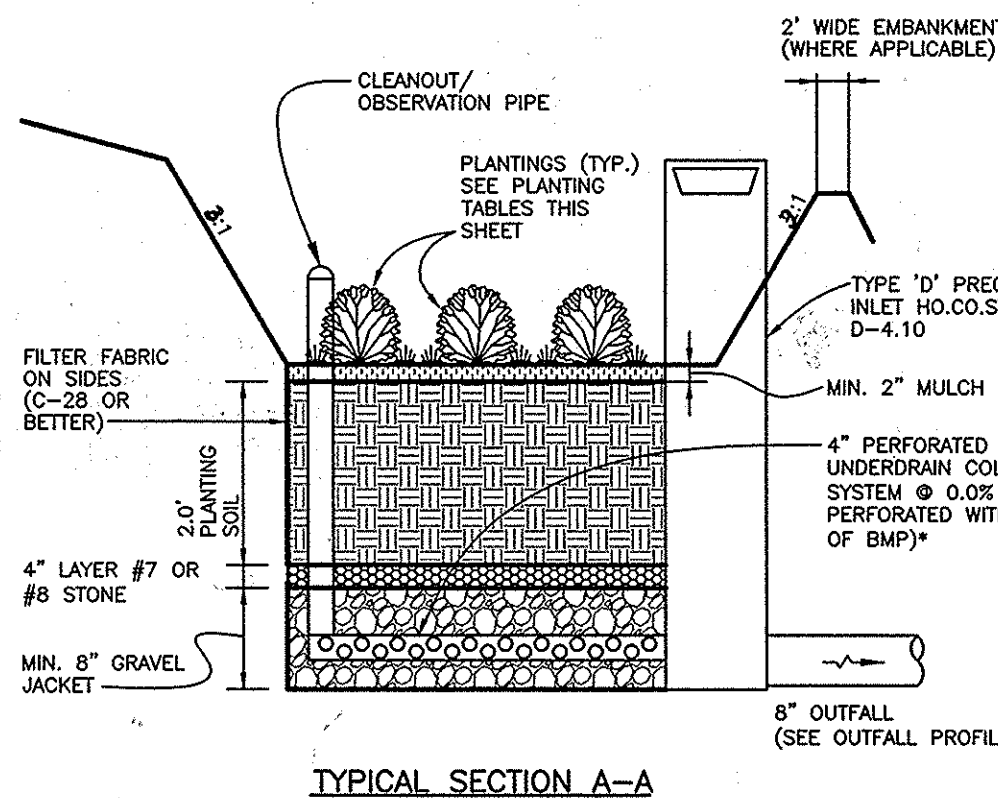
- PLANTINGS WITHIN THE PONDING AREA OF THE LS INFILTRATION ARE TO BE OF A MEDIUM TO HIGH WATER TOLERANCE  
SUGGESTED SPECIES: CREEPING BUPLEWEED (AJUSTA REPTANS) IRIS VERSICOLOR (VINCA MINOR) LILY-TURF (LIRIOPE SP.)
- PLANTINGS ALONG THE PERIMETER (BERM) AREA OF THE LS INFILTRATION ARE TO BE OF A LOW TO MEDIUM WATER TOLERANCE  
SUGGESTED SPECIES: PERENNIALS/ANNUALS IRIS VERSICOLOR (DAYLILY (HEMERCALLIS SP.) WHITE GLOZY (ASTILE SP.)

**MICRO-BIORETENTION (M-6) LANDSCAPE DATA**

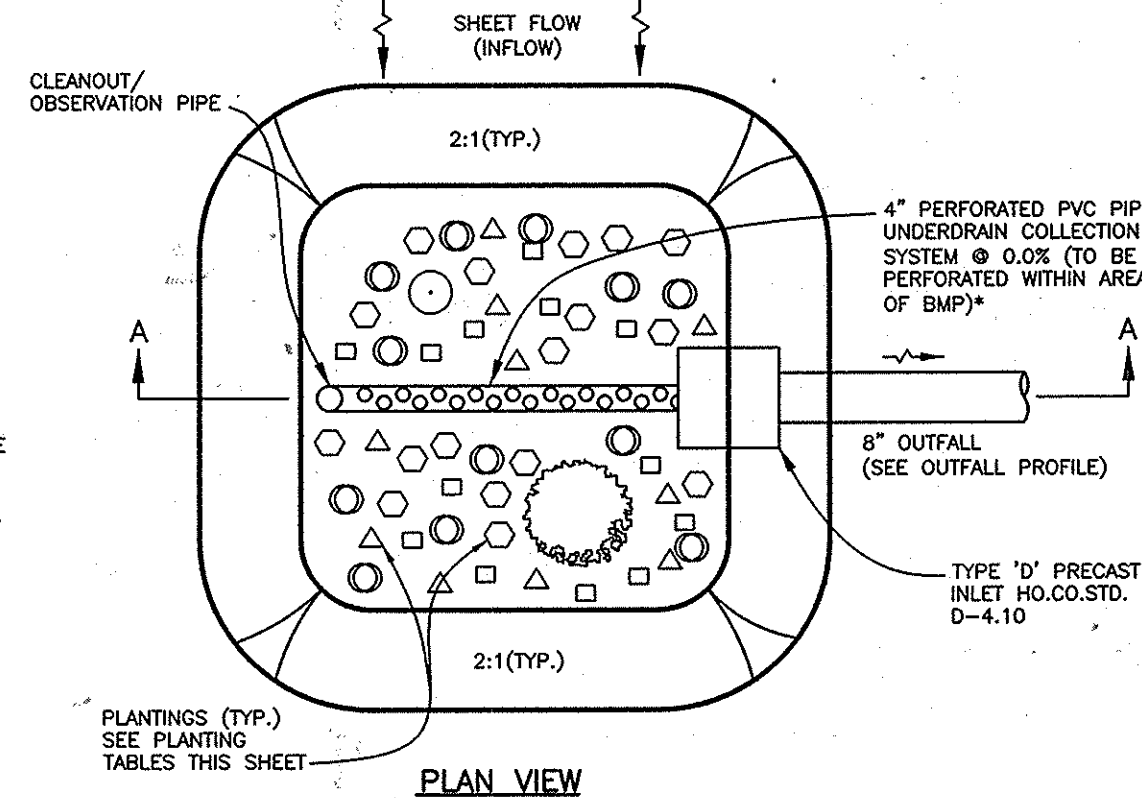
HYDROLOGIC ZONE 3 - REGULARLY INUNDED SHORELINE FRINGE (HIGH MARSH)  
HYDROLOGIC CONDITION - 0' TO 1'-0" DEEP HARDNESS - TEMPERATE ZONE S5 (-5' TO 0') SEE SHEET - FOR SEQUENCE OF CONSTRUCTION  
NOTE: REFER TO MDE 2000 MD STORMWATER DESIGN MANUAL VOLUMES 1 & 2 FOR LANDSCAPE CONTRACTOR RESPONSIBILITIES, PRACTICES AND MAINTENANCE DUTIES



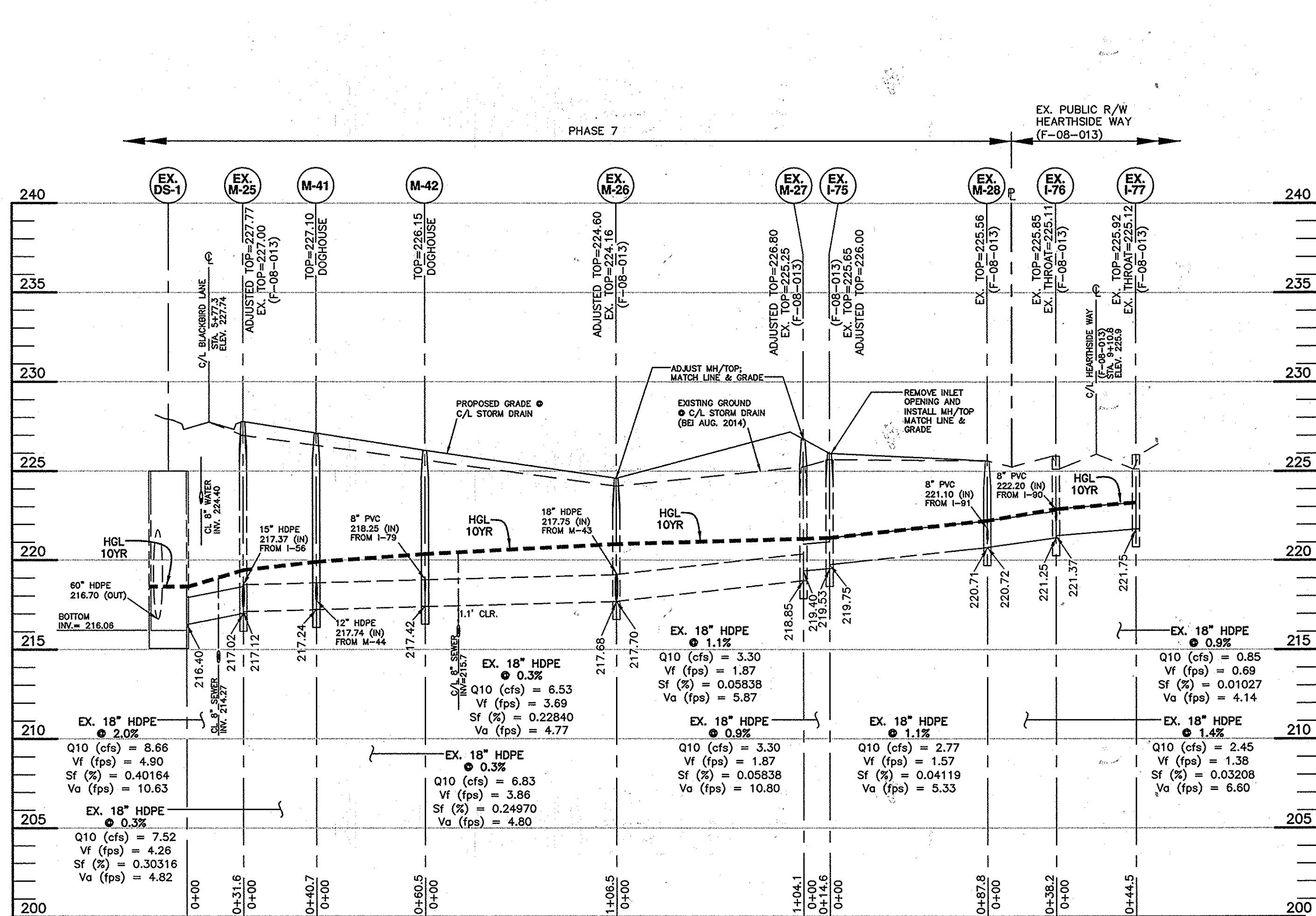
TYPICAL PROFILE



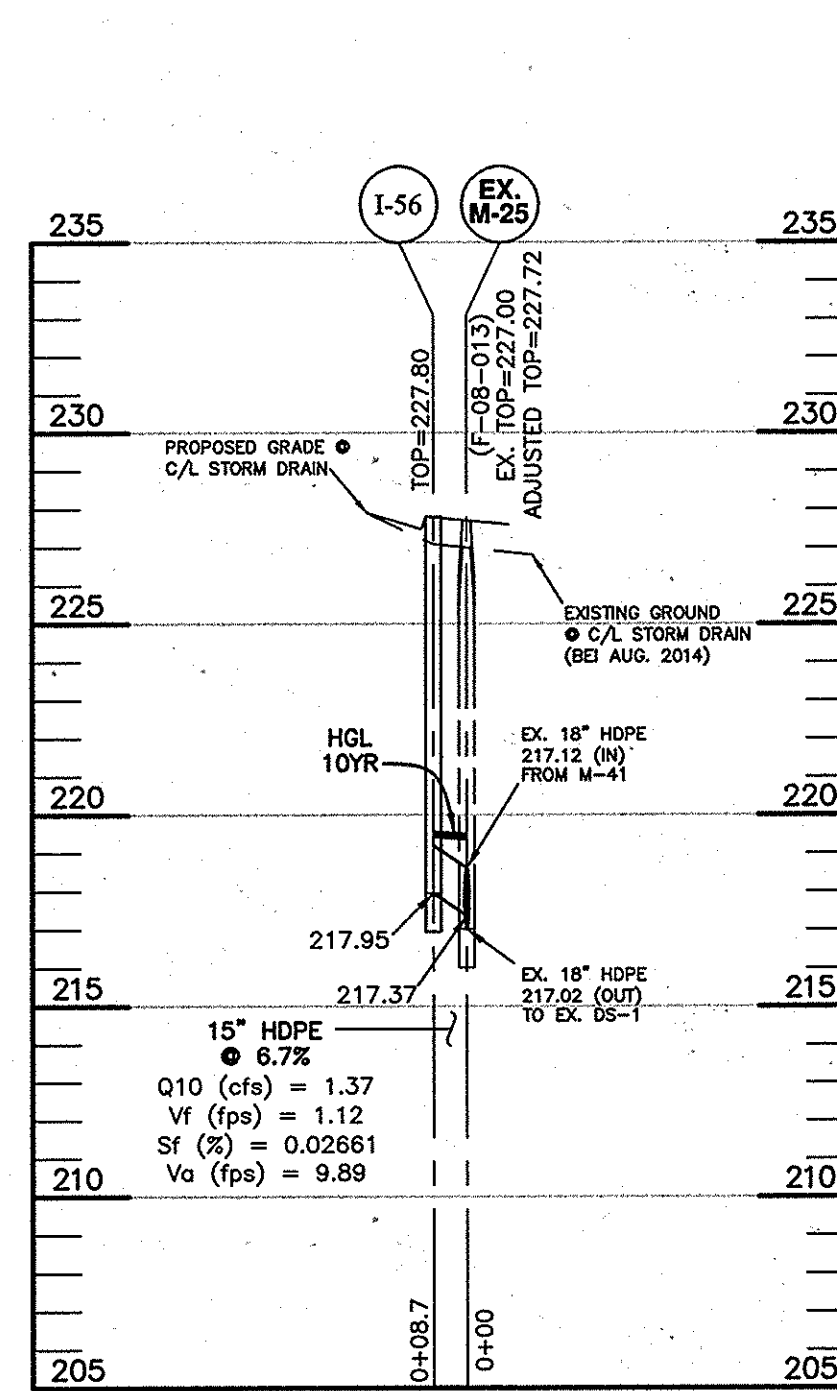
TYPICAL MICRO-BIORETENTION (M-6) DETAILS  
NOT TO SCALE



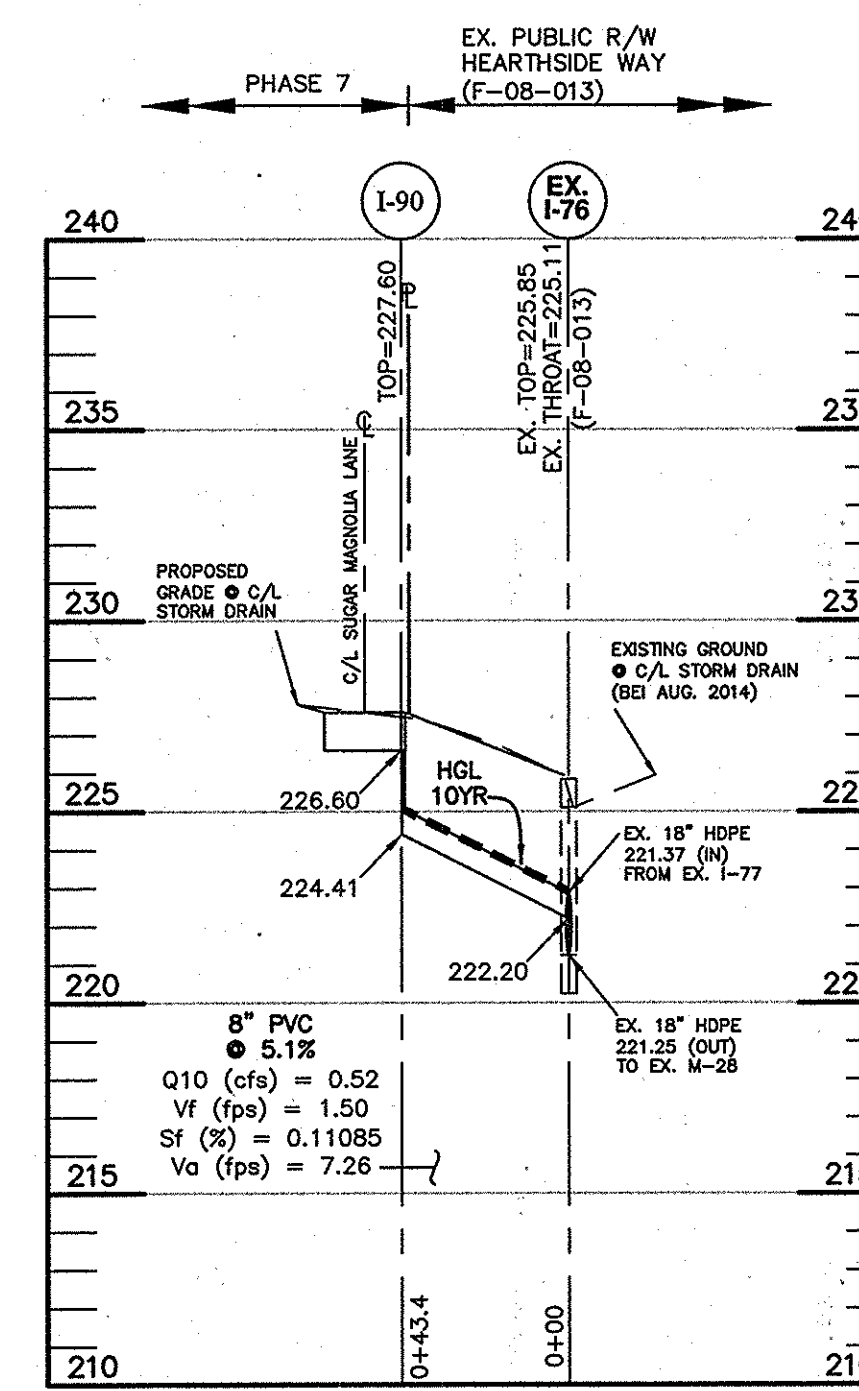
PLAN VIEW



**EX. I-77 TO EX. DS-1**  
HORIZONTAL SCALE: 1"=50'  
VERTICAL SCALE: 1"=5'

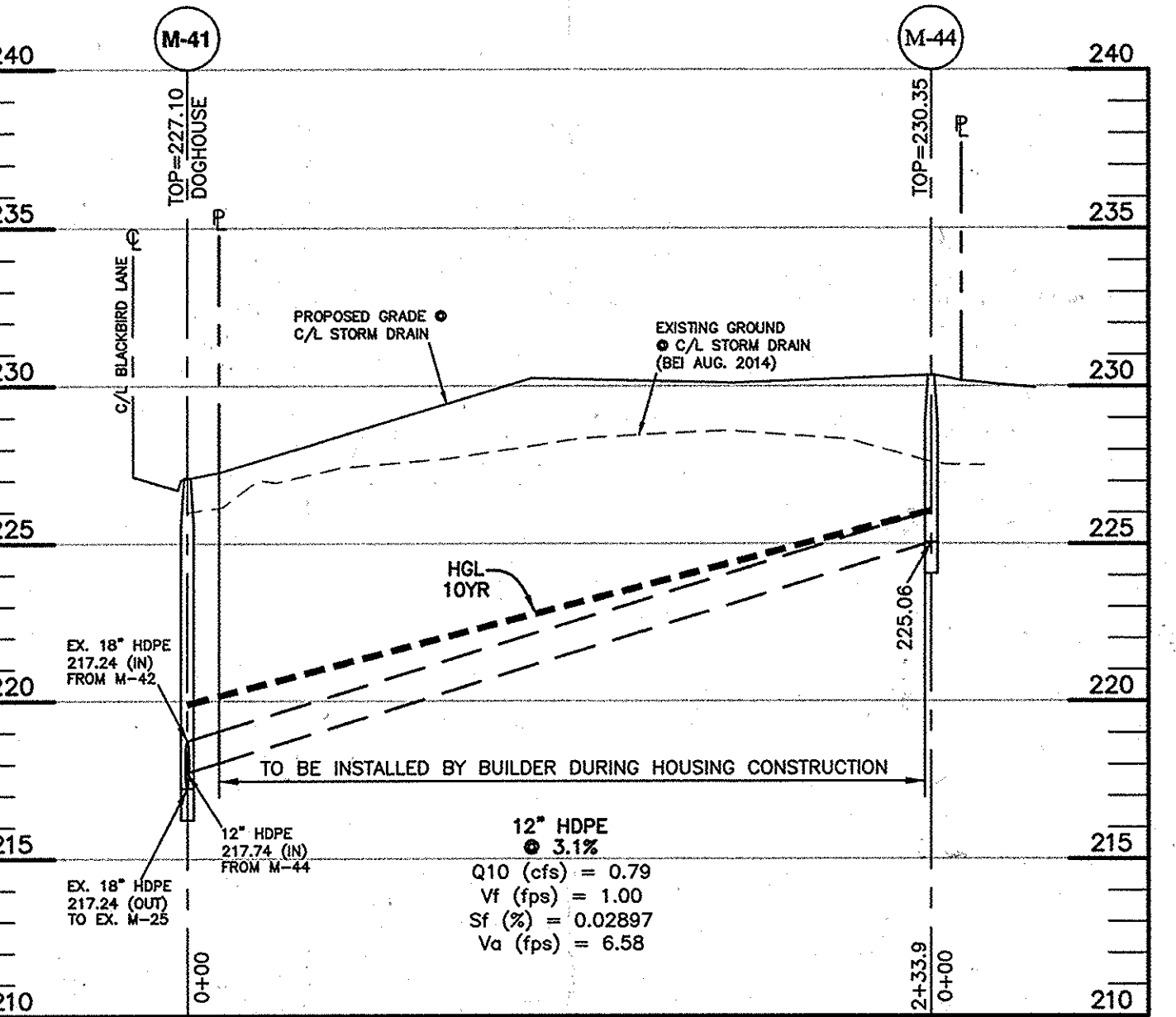


**I-56 TO EX. M-25**  
HORIZONTAL SCALE: 1"=50'  
VERTICAL SCALE: 1"=5'



**I-81 TO EX. I-76**  
HORIZONTAL SCALE: 1"=50'  
VERTICAL SCALE: 1"=5'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*[Signature]* 5-11-16  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION JR DATE  
*[Signature]* 5-17-16  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE  
*[Signature]* 5-17-16  
 DIRECTOR DATE



**M-41 TO M-44 (YARD DRAINS LOTS 348-369)**  
HORIZONTAL SCALE: 1"=50'  
VERTICAL SCALE: 1"=5'

NO.	DATE	REVISION

**BENCHMARK ENGINEERING, INC.**  
 8480 BALTIMORE NATIONAL PIKE SUITE 315  
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 (P) 410-465-6105 (F) 410-465-6644  
 WWW.BE-ONLINEENGINEERING.COM

**HOWARD SQUARE PHASE 7**  
 LOTS 348 THRU 430 AND OPEN SPACE LOT 431 PER F-15-062  
 (A RESUBDIVISION OF BULK PARCEL G PER F-11-084)  
 83 TOWNHOUSE UNITS ON FEE-SIMPLE LOTS

ATAPCO HOWARD SQUARE II STATUTORY TRUST  
 1 South St. Suite 2800 Baltimore, MD 21202 (410) 347-7189

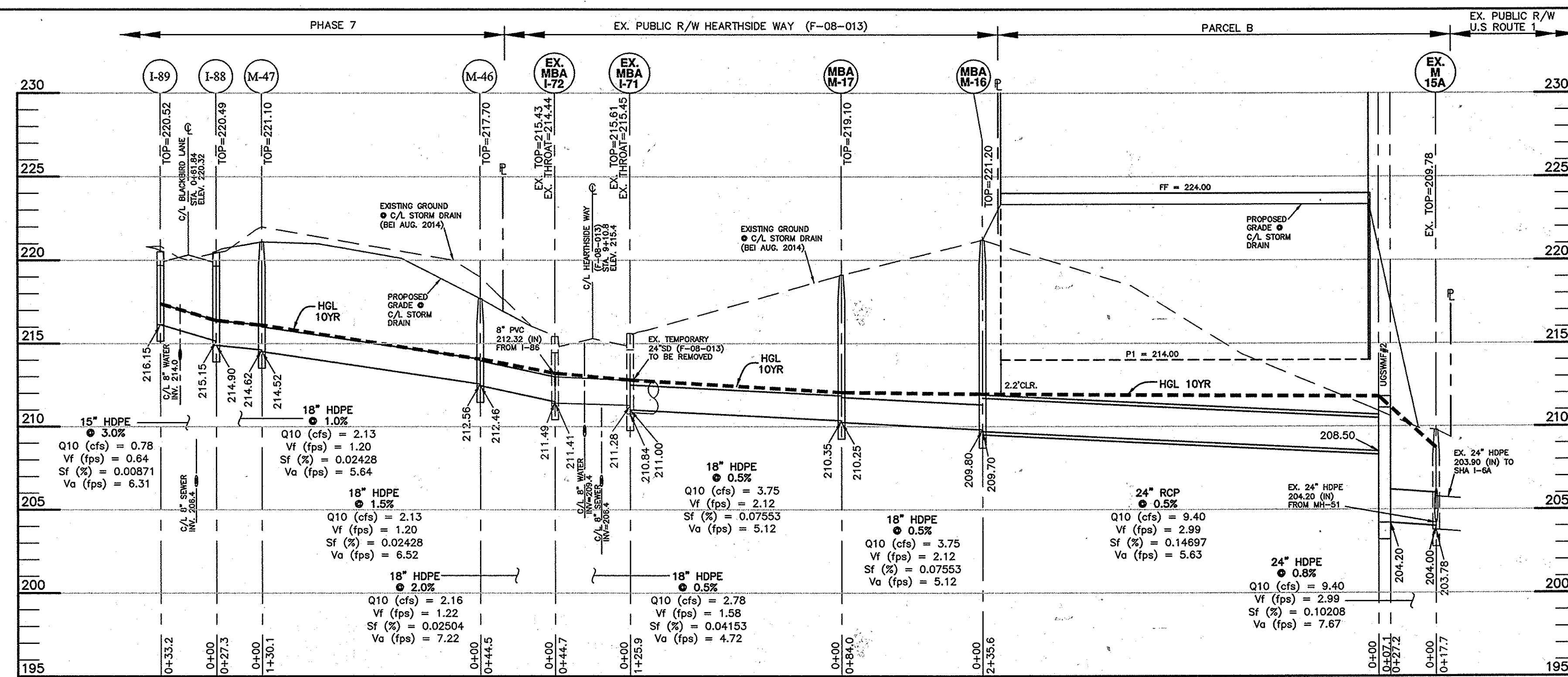
TAX MAP: 43 / GRIDS 3 & 9 / PARCEL: 657 (A-4) (F-11-084)  
 ZONED: CAC-CL1 ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND

**PRIVATE STORM DRAIN PROFILES**

DATE: DECEMBER, 2014 BEI PROJECT NO.: 2337  
 REVISED: MARCH, 2016  
 SCALE: AS SHOWN SHEET 9 OF 11

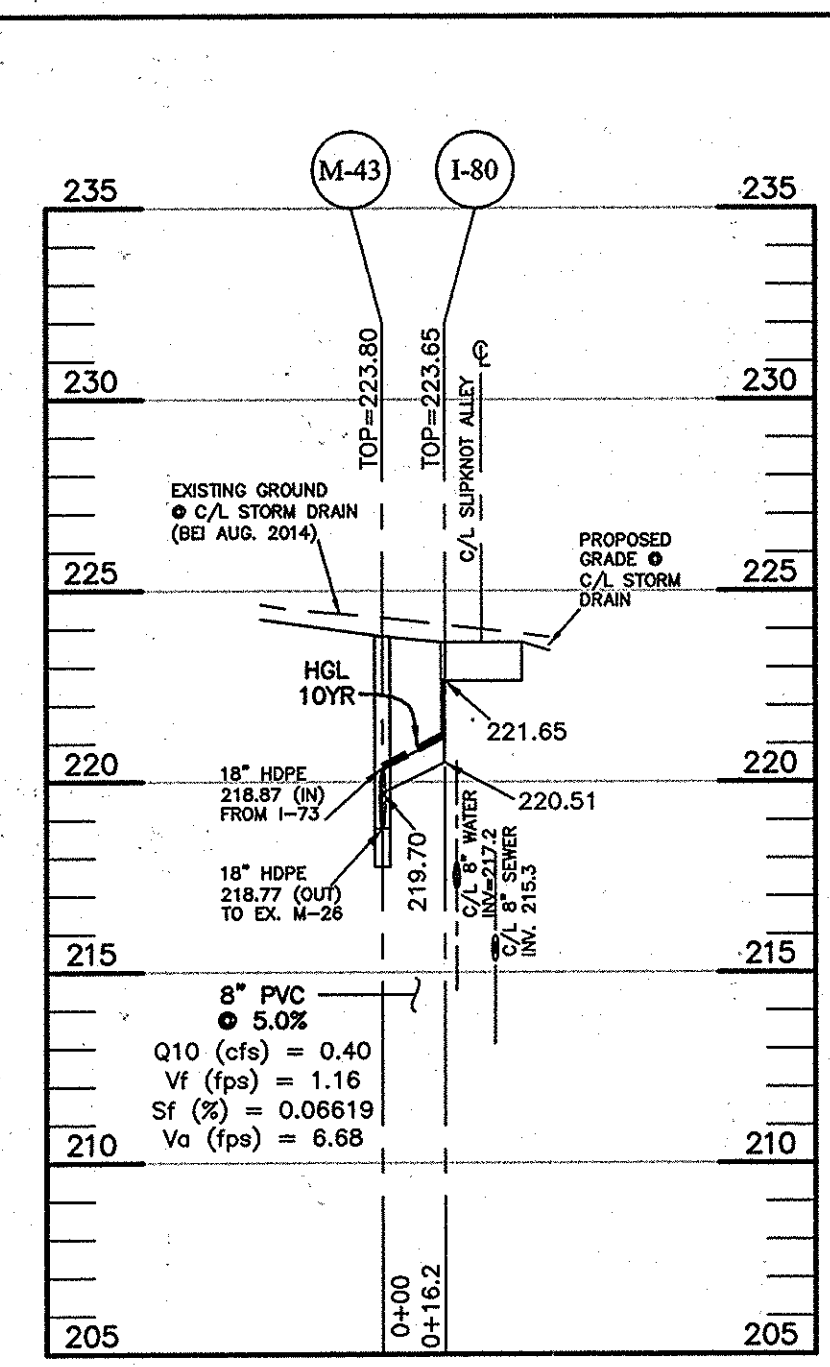
DEVELOPER/OWNER: ATAPCO HOWARD SQUARE II STATUTORY TRUST  
 CHECK: CAM





I-89 TO EX. SHA I-6A (FUTURE PARCEL B)

HORIZONTAL SCALE: 1"=50'  
VERTICAL SCALE: 1"=5'

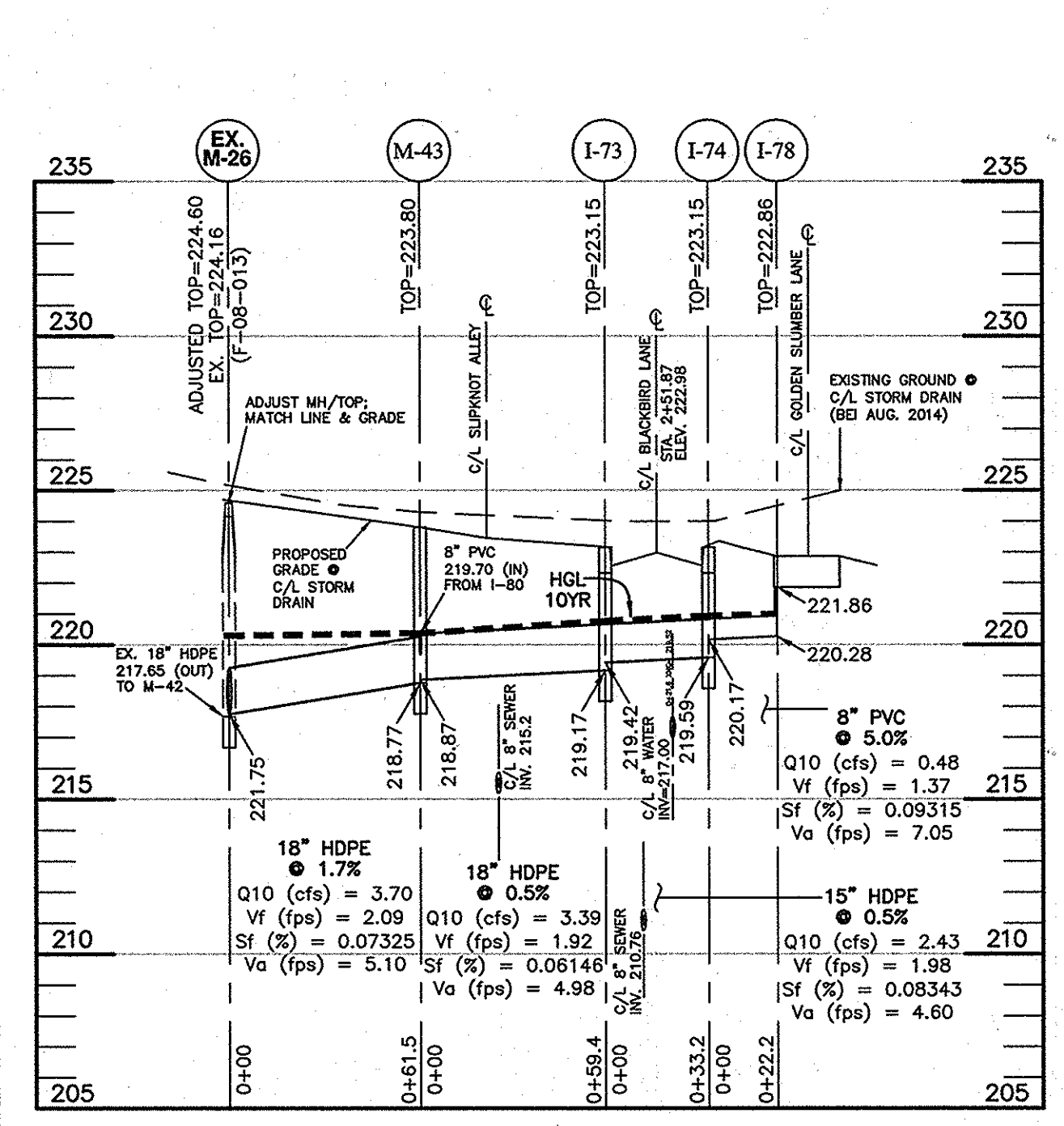


I-80 TO M-43

HORIZONTAL SCALE: 1"=50'  
VERTICAL SCALE: 1"=5'

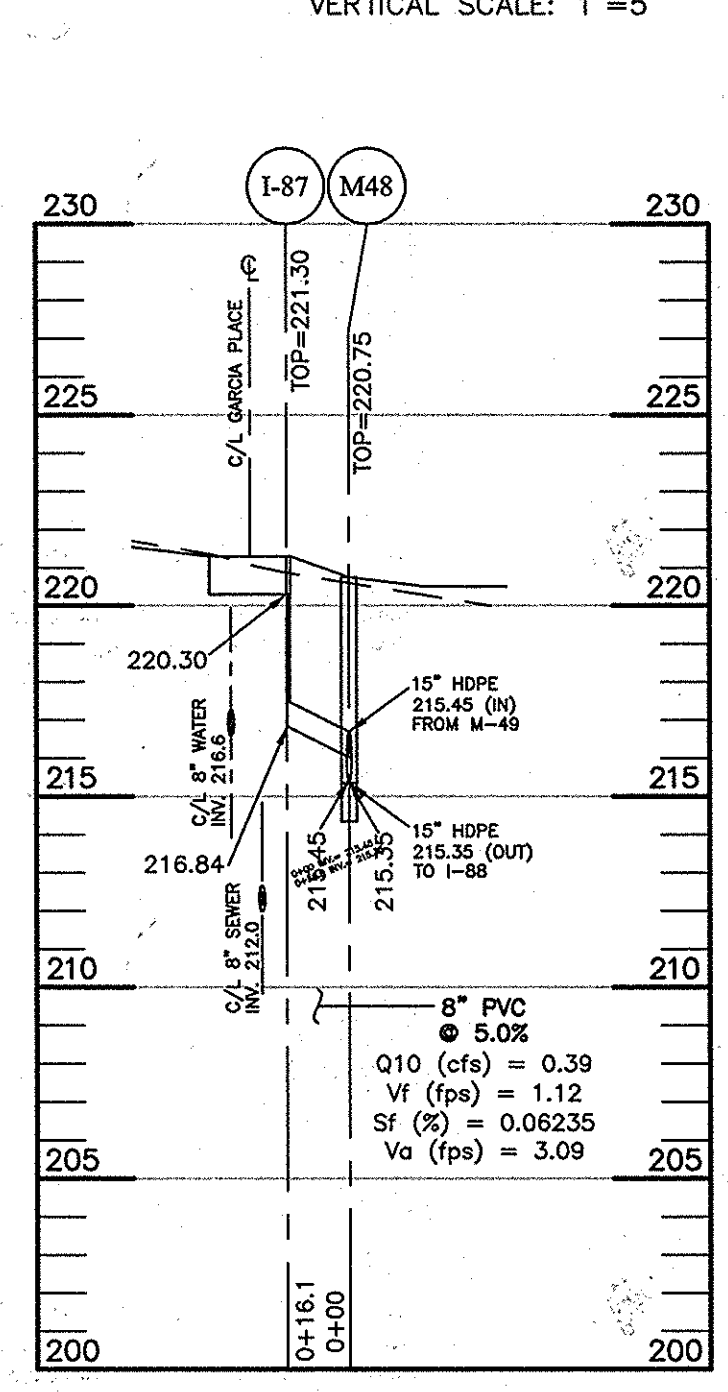
STRUCTURE TABLE											
NUMBER	TYPE	LOCATION	INVERT IN	INVERT OUT	TOP ELEV.	HO. CO. STD. DETAIL	MAINTENANCE	NOTES			
<b>INLETS</b>											
I-56	A-5	6+89.07 Blackbird Lane; offset 14.43' left	-	-	217.95	227.72	D-4.01 or D-4.02	PRIVATE	PHASE 7		
EX. MBA I-71	A-10	12+59.62 Blackbird Lane; offset 22.69' right	211.28	-	210.84	215.61	D-4.03 or D-4.04	PRIVATE	F-08-013		
EX. MBA I-72	A-10	12+57.47 Blackbird Lane; offset 22.49' left	211.49 (M-46)	212.32 (I-86)	211.41	215.43	D-4.03 or D-4.04	PRIVATE	F-08-013		
I-73	A-5	2+51.87 Blackbird Lane; offset 16.60' left	219.42 (I-74)	-	219.17	223.15	D-4.01 or D-4.02	PRIVATE	PHASE 7		
I-74	A-5	2+51.87 Blackbird Lane; offset 16.60' right	220.17 (I-89)	-	219.59	223.15	D-4.01 or D-4.02	PRIVATE	PHASE 7		
EX. I-75	YARD	N 549.445 S 89 E 1.374 558.76	219.75 (M-26)	-	219.63 (M-27)	226.00	D-4.14	PRIVATE	F-08-013		
EX. I-76	A-5	9+11.55 Blackbird Lane; offset 22.02' left	221.97 (I-77)	220.20 (I-90)	225.85	226.00	D-4.01 or D-4.02	PRIVATE	F-08-013		
I-92 (EX. I-77)	TRENCH	9+10.07 Blackbird Lane; offset 22.43' right	-	-	EX. 221.75	225.66	N/A	PRIVATE	PARCEL B		
I-78	TRENCH	2+23.68 Blackbird Lane; offset 28.20' right	-	-	220.28	222.86	N/A	PRIVATE	PHASE 7		
I-79	TRENCH	4+58.43 Blackbird Lane; offset 28.50' left	-	-	219.46	226.02	N/A	PRIVATE	PHASE 7		
I-80	TRENCH	2+89.77 Blackbird Lane; offset 16.60' left	-	-	220.51	223.65	N/A	PRIVATE	PHASE 7		
I-86	TRENCH	11+83.21 Blackbird Lane; offset 34.00' left	-	-	214.77	217.47	N/A	PRIVATE	PHASE 7		
I-87	TRENCH	1+21.10 Blackbird Lane; offset 28.50' left	-	-	216.84	221.30	N/A	PRIVATE	PHASE 7		
I-88	A-10	0+61.54 Blackbird Lane; offset 16.60' left	215.15 (I-89)	215.15 (M-48)	214.90	220.49	D-4.03 or D-4.04	PRIVATE	PHASE 7		
I-89	A-5	0+62.14 Blackbird Lane; offset 16.60' right	-	-	216.15	220.52	D-4.01 or D-4.02	PRIVATE	PHASE 7		
I-90	TRENCH	8+57.45 Blackbird Lane; offset 34.0' left	-	-	224.41	227.60	D-4.14	PRIVATE	PHASE 7		
I-91	TRENCH	10+29.58 Blackbird Lane; offset 34.0' left	-	-	221.47	222.47	D-4.14	PRIVATE	PHASE 7		
<b>MANHOLES</b>											
EX. M-24	4" DIA	9+88.59 Blackbird Lane; offset 23.10' right	223.37	-	223.26	233.25	G-5.12	PRIVATE	F-08-013		
EX. M-25	4" DIA	6+80.49 Blackbird Lane; offset 18.19' left	217.12 (M-41)	217.37 (I-56)	217.02	227.72	G-5.12	PRIVATE	F-08-013		
EX. M-26	4" DIA	3+72.85 Blackbird Lane; offset 17.24' left	217.75 (M-43)	217.70 (EX. M-27)	217.68	224.60	G-5.12	PRIVATE	F-08-013		
EX. M-27	4" DIA	N 549.445 S 89 E 1.374 551.68	219.40 (EX. I-75)	-	218.95	226.80	G-5.12	PRIVATE	F-08-013		
EX. M-28	4" DIA	9+46.29 Blackbird Lane; offset 37.61' left	220.71 (I-91)	221.10 (I-91)	220.71	225.58	G-5.12	PRIVATE	F-08-013		
M-41	4" DIA	6+39.76 Blackbird Lane; offset 18.32' left	217.14 (M-44)	217.24 (M-42)	217.24	227.10	G-5.14	PRIVATE	DOGHOUSE		
M-42	4" DIA	4+79.36 Blackbird Lane; offset 17.73' left	217.42 (EX. M-26)	218.25 (I-79)	217.42	226.15	G-5.14	PRIVATE	DOGHOUSE		
M-43	4" DIA	3+11.33 Blackbird Lane; offset 17.10' left	218.87 (I-73)	219.70 (I-80)	218.77	223.80	G-5.12	PRIVATE	PHASE 7		
M-44	4" DIA	7+73.42 Blackbird Lane; offset 41.14' left	-	-	225.06	230.35	G-5.12	PRIVATE	PHASE 7		
M-45	4" DIA	11+15.93 Blackbird Lane; offset 38.67' left	-	-	217.10	220.00	G-5.12	PRIVATE	PHASE 7		
M-46	4" DIA	12+78.14 Blackbird Lane; offset 61.90' left	-	-	212.96	217.70	G-5.12	PRIVATE	PHASE 7		
M-47	4" DIA	5+39.76 Blackbird Lane; offset 35.32' left	214.82	-	214.52	221.10	G-5.12	PRIVATE	PHASE 7		
M-48	4" DIA	1+00.04 Blackbird Lane; offset 17.10' left	215.45	-	215.35	220.75	G-5.12	PRIVATE	PHASE 7		
M-49	4" DIA	2+02.44 Blackbird Lane; offset 17.10' left	216.23	-	215.98	222.25	G-5.12	PRIVATE	PHASE 7		
MBA M-16	4" DIA	10+43.28 Blackbird Lane; offset 23.10' left	209.80	-	209.70	221.20	G-5.12	PRIVATE	F-08-013		
MBA M-17	4" DIA	11+31.48 Blackbird Lane; offset 22.21' left	210.35	-	210.25	219.10	G-5.12	PRIVATE	F-08-013		
<b>STRUCTURES</b>											
DS-1	CUSTOM	5+77.3 Blackbird Lane; offset 24.0' right	216.7 (38")	216.4 (16")	216.7 (60")	227.62	CUSTOM	PRIVATE			
MB-1	YARD	N 549.138 S 89 E 1.374 633.8260	218.83 (PVC)	-	218.67	224.00	D-4.14	PRIVATE	MB-1		

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.



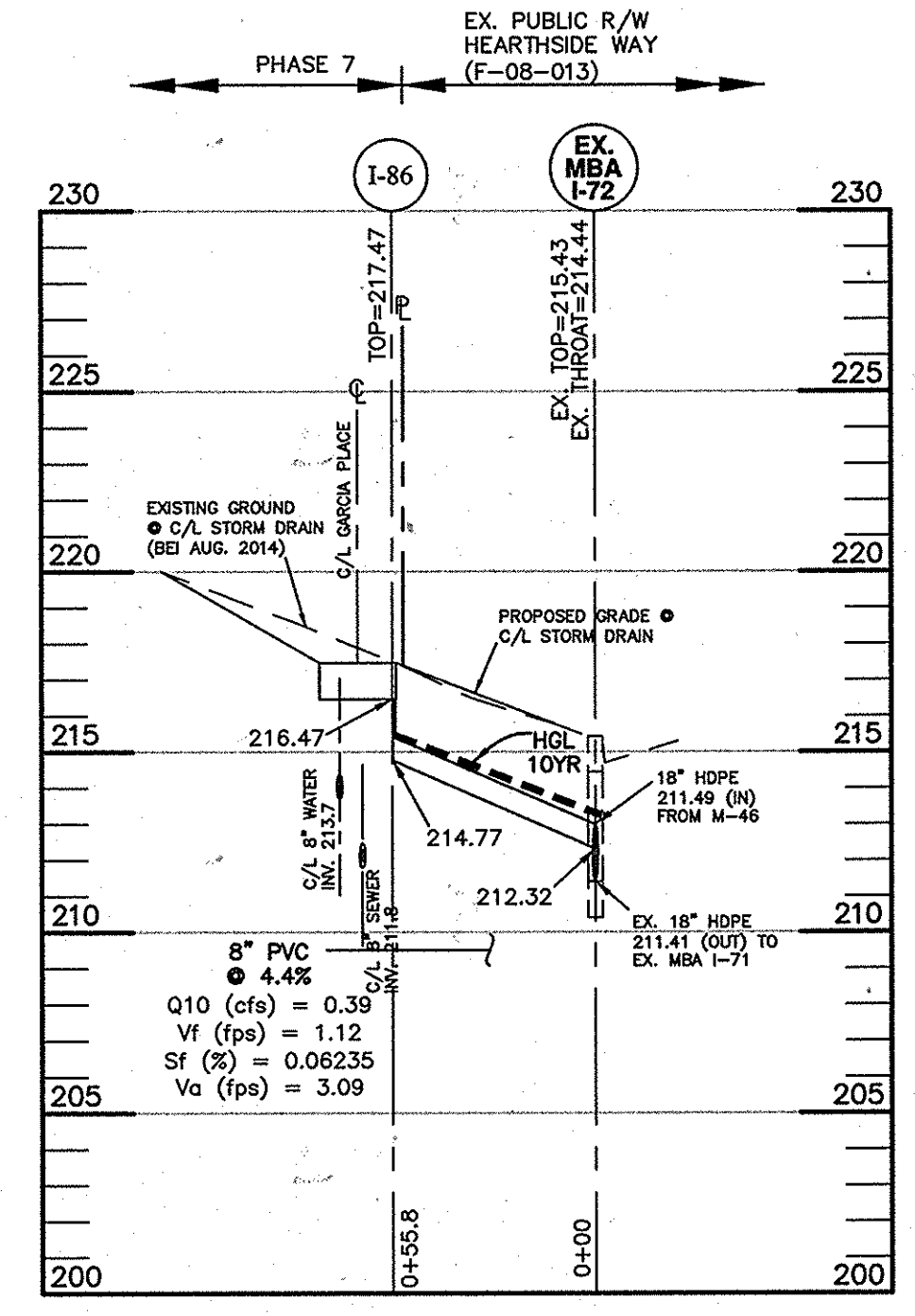
I-78 TO EX. M-26

HORIZONTAL SCALE: 1"=50'  
VERTICAL SCALE: 1"=5'



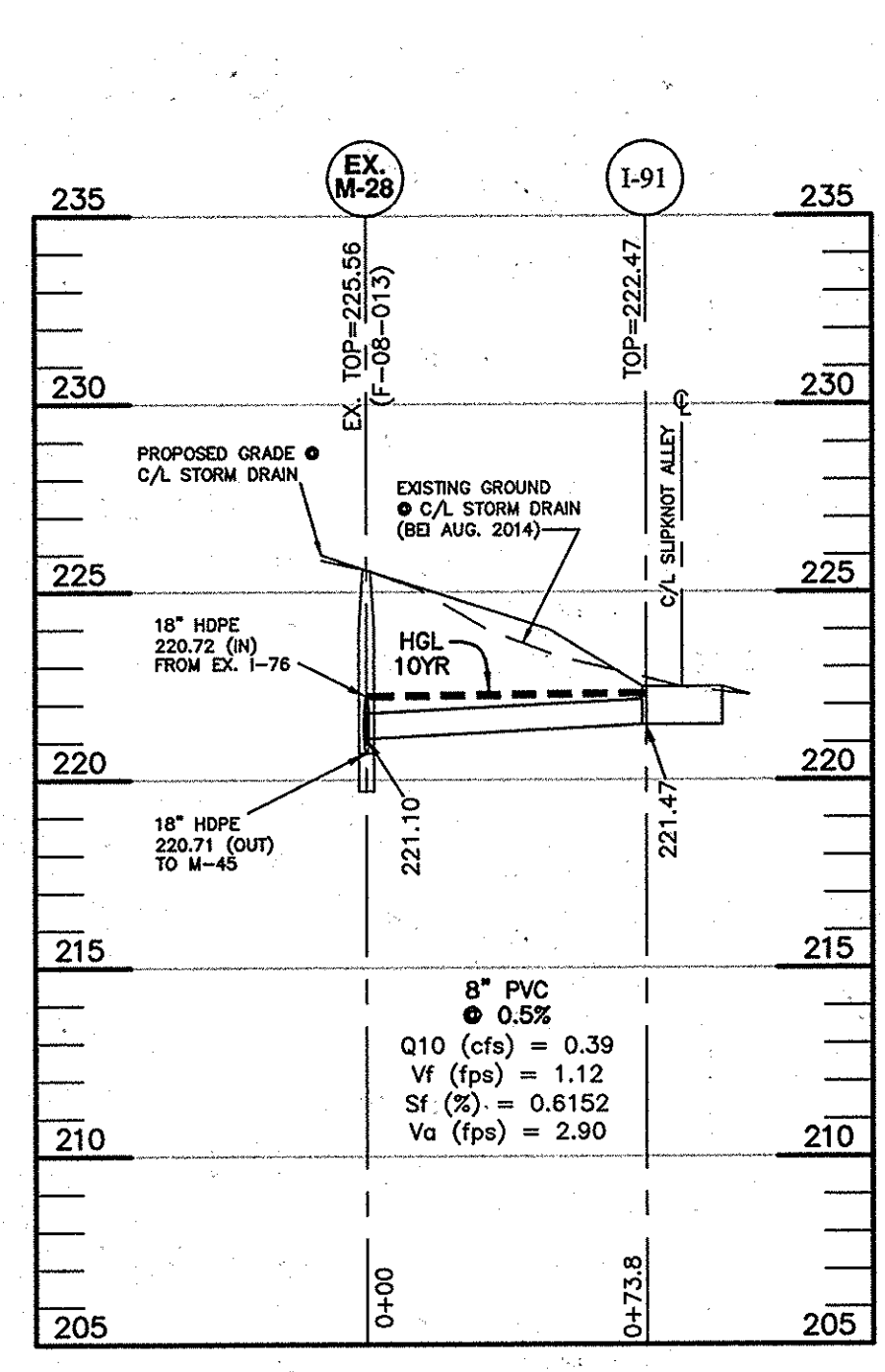
I-87 TO M-48

HORIZONTAL SCALE: 1"=50'  
VERTICAL SCALE: 1"=5'



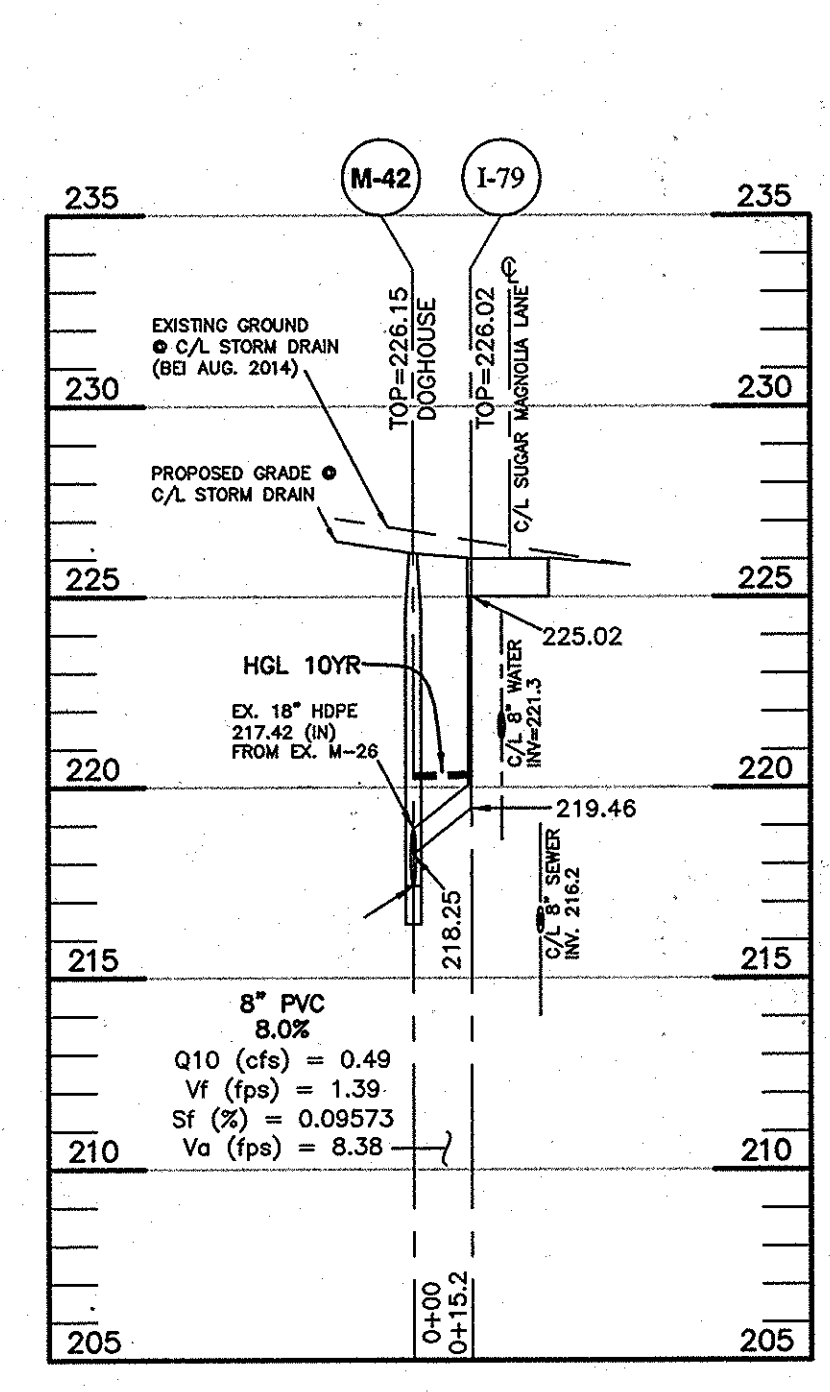
I-86 TO EX. MBA I-72

HORIZONTAL SCALE: 1"=50'  
VERTICAL SCALE: 1"=5'



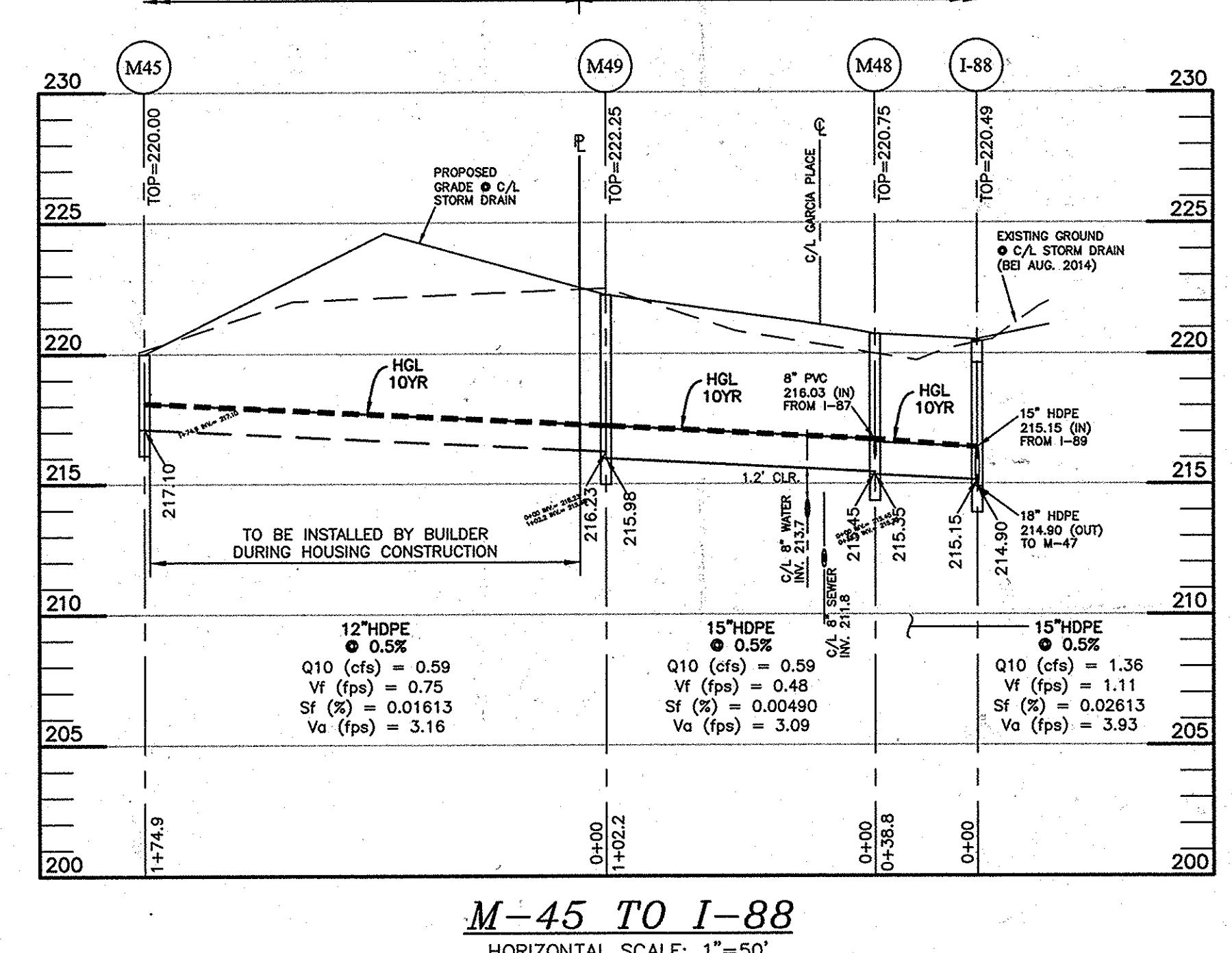
I-91 TO EX. M-28

HORIZONTAL SCALE: 1"=50'  
VERTICAL SCALE: 1"=5'



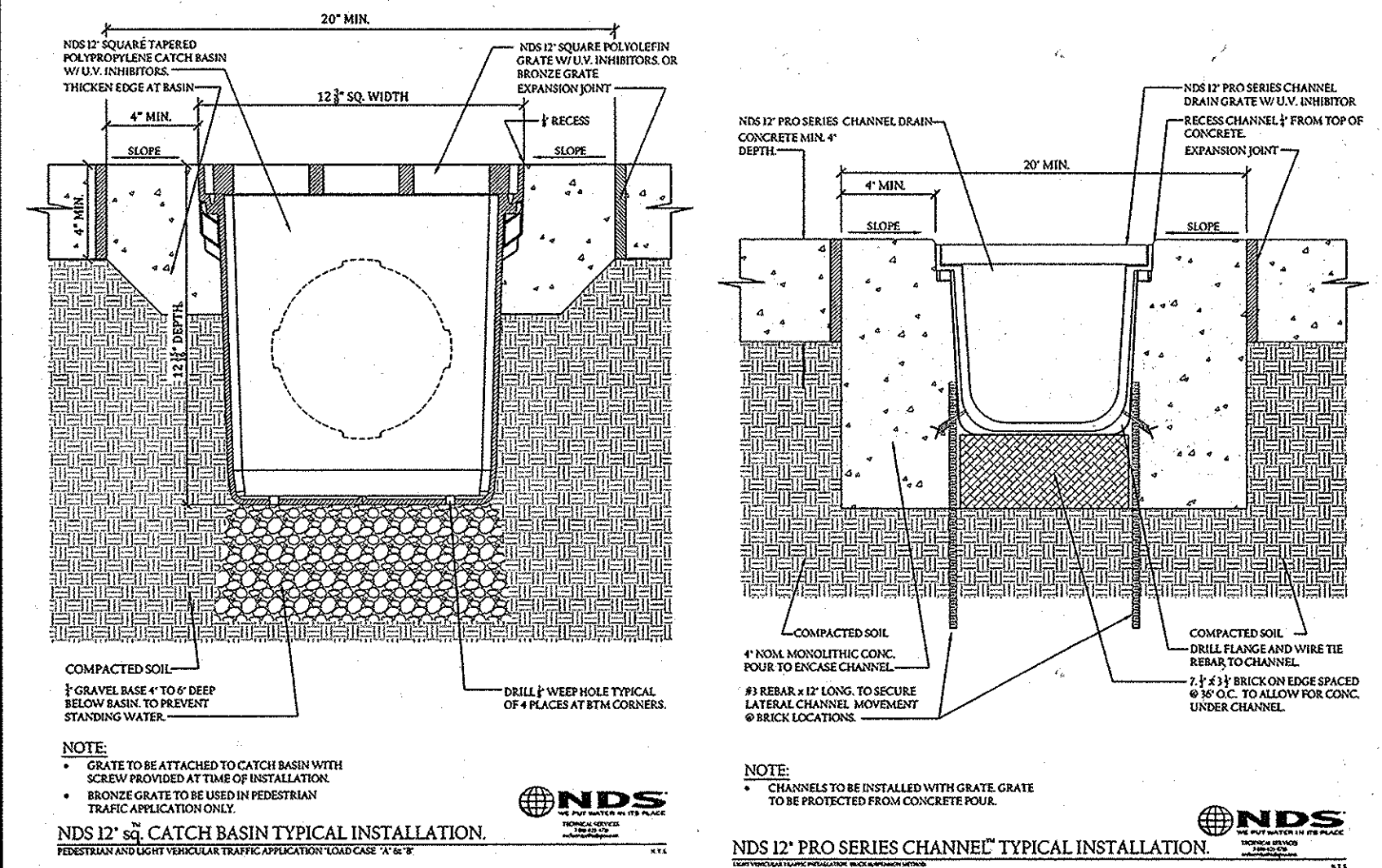
I-79 TO M-42

HORIZONTAL SCALE: 1"=50'  
VERTICAL SCALE: 1"=5'



M-45 TO I-88

HORIZONTAL SCALE: 1"=50'  
VERTICAL SCALE: 1"=5'



SIZE	TYPE	LENGTH (L.F.)	MAINTENANCE
12"	HDPEP (SMOOTH LINED)	410	PRIVATE
15"	HDPEP (SMOOTH LINED)	189	PRIVATE
18"	HDPEP (SMOOTH LINED)	448	PRIVATE
8"	PVC	249	PRIVATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 5-11-16  
CHIEF, DEVELOPMENT ENGINEERING DIVISION JP DATE

*[Signature]* 5-17-16  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*[Signature]* 5-17-16  
DIRECTOR DATE

NO. DATE REVISION

**BENCHMARK ENGINEERS & LAND SURVEYORS & PLANNERS**  
8480 BALTIMORE NATIONAL PIKE  
SUITE 315  
ELLCOTT CITY, MARYLAND 21043  
(P) 410-485-6105 (F) 410-485-6844  
WWW.BE-CVLENGINEERING.COM

DEVELOPER/OWNER: ATAPCO HOWARD SQUARE II STATUTORY TRUST 1 South St. Suite 2800 Baltimore, MD 21202 (410) 347-7189

**HOWARD SQUARE PHASE 7**  
LOTS 348 THRU 430 AND OPEN SPACE LOT 431 PER F-15-062  
(A RESUBDIVISION OF BULK PARCEL G PER F-11-084)  
83 TOWNHOUSE UNITS ON FEE-SIMPLE LOTS

TAX MAP: 43 / GRIDS 3 & 9 / PARCEL: 657 (A-4) (F-11-084)  
ZONED: CAC-CJ  
ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND

**PRIVATE STORM DRAIN PROFILES**

DATE: DECEMBER, 2014  
REVISED: MARCH, 2016  
SCALE: AS SHOWN

PROFESSIONAL CERTIFICATION: I hereby certify that these documents were prepared or supervised and that I am a duly licensed professional engineer of the State of Maryland, License No. 17116, expires 6-30-2017.

BEI PROJECT NO. 2337  
SHEET 10 OF 11



