RESIDENTIAL SITE DEVELOPMENT PLAN
VILLAGES AT TURF VALLEY
PHASE 2, SECTION 2
LOTS 210 thru 257 AND OPEN SPACE LOTS 258 thru 260

GENERAL NOTES

1.) THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.

.) BOUNDARY IS BASED ON RECORD PLAT NO 23351-23355

3.) THE EXISTING TOPOGRAPHY SHOWN ON THESE LOTS IS BASED MASS GRADES AS SHOWN ON APPROVED F-08-084.

4.) THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS. 16E1 AND 0012 WERE USED FOR THIS PROJECT.

5.) WATER IS PUBLIC. THE CONTRACT NUMBER IS 24-4549-D AND 24-4663-D.

6.) SEWER IS PUBLIC. THE CONTRACT NUMBER IS 24-4549-D AND 24-4663-D.

7.) THIS PROJECT IS LOCATED WITHIN THE METROPOLITAN DISTRICT. THE DRAINAGE AREA IS THE LITTLE PATUXENT.

8.) EXISTING UTILITIES SHOWN ARE BASED ON CONTRACT DRAWINGS, AERIAL AND FIELD SURVEYED LOCATIONS.

9.) THERE ARE NO WETLANDS, STREAMS, OR THEIR REQUIRED BUFFERS, 100-YEAR FLOODPLAIN OR 25% OR GREATER STEEP SLOPES THAT ARE AT LEAST 20,000 S.F. OF CONTIGUOUS AREA LOCATED ON THESE LOTS.

10.) TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO BURIAL GROUNDS, CEMETERIES OR HISTORIC STRUCTURES LOCATED ON THIS SITE.

11.) STORMWATER MANAGEMENT QUALITY AND QUANTITY CONTROL WAS PROVIDED WITHIN (P-1) EXTENDED DETENTION FACILITY WITH MICROPOOL #3 AND #4, (P-5) POCKET POND #5 AND RECHARGE CHAMBER #4 CONSTRUCTED UNDER F-08-084. THE PONDS ARE PRIVATELY OWNED AND JOINTLY MAINTAINED. THE RECHARGE CHAMBERS ARE PRIVATELY OWNED AND PRIVATELY MAINTAINED.

12.) A NOISE STUDY WAS PREPARED BY HUSH ACOUSTICS IN JULY, 2014. THE 65 dBA NOISE CONTOUR LINE DRAWN ON THIS SUBDIVISION PLAN IS ADVISORY AS REQUIRED BY THE HOWARD COUNTY DESIGN MANUAL, CHAPTER 5, REVISED FEBRUARY, 1992 AND CANNOT BE CONSIDERED TO EXACTLY LOCATE THE 65 dBA NOISE EXPOSURE. THE 65 dBA NOISE LINE WAS ESTABLISHED BY HOWARD COUNTY TO ALERT DEVELOPERS, BUILDERS AND FUTURE RESIDENTS THAT AREAS BEYOND THIS THRESHOLD MAY EXCEED GENERALLY ACCEPTED NOISE LEVELS ESTABLISHED BY THE U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT.

13.) THE SUBJECT PROPERTY IS ZONED PGCC PER THE 10-6-2013 COMPREHENSIVE ZONING PLAN.

14.) DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWINGMINIMUM REQUIREMENTS:

- A) WIDTH – 12' (16' SERVING MORE THAN ONE RESIDENCE).
- B) SURFACE – 6" OF COMPACT CRUSHER RUN BASE WITH TAR AND CHIP COATING (1-½" MIN.).
- C) GEOMETRY – MAX. 15% GRADE, MAX. 10% GRADE CHANGE & MIN. 45' TURNING RADIUS.
- D) STRUCTURES(CULVERTS/BRIDGES) – CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOAD)
- E) DRAINAGE ELEMENTS – CAPABLE OF SAFELY PASSING 100 YEAR FLOODPLAIN WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY.
- F) STRUCTURE CLEARANCES – MINIMUM 12 FEET.
- G) MAINTENANCE – SUFFICIENT TO INSURE ALL WEATHER USE.

15.) LANDSCAPING WAS PROVIDED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL UNDER F-08-084. FINANCIAL SURETY IN THE AMOUNT OF $600.00 FOR THE REQUIRED LANDSCAPING SHALL BE POSTED AS PART OF THE GRADING PERMIT UNDER THIS SITE DEVELOPMENT PLAN.

16.) FOREST CONSERVATION FOR VILLAGES AT TURF VALLEY, PHASE 2, SECTION 2 WAS PROVIDED UNDER VILLAGES AT TURF VALLEY, PHASE 2, SECTION 1 (F-08-084). THERE ARE NO FOREST CONSERVATION EASEMENTS WITHIN VILLAGES AT TURF VALLEY, PHASE 2, SECTION 2.

17.) THIS SUBDIVISION IS SUBJECT TO SECTION 18.122B OF THE HOWARD COUNTY CODE. PUBLIC WATER AND/OR SEWER SERVICE HAS BEEN GRANTED UNDER THE TERMS AND PROVISIONS, THEREOF, EFFECTIVE APRIL 13, 2010, ON WHICH DATE DEVELOPER AGREEMENT #24-4549-D WAS FILED AND ACCEPTED AND OCTOBER 15, 2014, ON WHICH DATE DEVELOPER AGREEMENT #24-4663-D WAS FILED AND ACCEPTED.

18.) THIS PROJECT IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE ZONING REGULATIONS EFFECTIVE APRIL 13, 2004. PER SECTION 126(H)(1) AND THE TURF VALLEY MULTI-USE SUBDISTRICT FDP, THIRD AMENDMENT, PLANNING BOARD APPROVAL OF THIS SITE DEVELOPMENT PLAN IS REQUIRED.

19.) THIS PROJECT IS SUBJECT TO THE TRAFFIC STUDY PREPARED BY THE TRAFFIC GROUP, INC. UNDER S-86-13, UPDATED IN MARCH 2004.

20.) THE VILLAGES AT TURF VALLEY SUBDIVISION (PHASES 1-4) CONSTITUTED 241 TOTAL UNITS, WHICH MET THE SKETCH PLAN MILESTONE DATE OF JANUARY 1, 2001 THROUGH JUNE 30, 2002 FOR BOTH PHASE IVA (131 UNITS) & IVB (110 UNITS) AS ESTABLISHED BY THE REVISED PHASING PLAN DATED JUNE 21, 2000. UNDER P-06-013, 42 CONDOMINIUM UNITS THAT WERE APPROVED WERE USED FOR OAKMONT AT TURF VALLEY (F-02-082). THESE 42 CONDOMINIUM UNITS WERE NOT PREVIOUSLY INCLUDED WITH THE OAKMONT AT TURF VALLEY (F-02-82) PLANS. IN ORDER TO RECEIVE BUILDING ALLOCATIONS, THESE 42 CONDOMINIUM UNITS WERE SHOWN AND APPROVED ON THE PRELIMINARY PLAN FOR THE VILLAGES AT TURF VALLEY (P-06-013). THE SECOND AMENDMENT TO THE TURF VALLEY MULTI-USE FINAL DEVELOPMENT PLAN WAS RECORDED ON NOVEMBER 30, 2007, INCREASING THE PROJECTED UNITS IN THE OAKMONT AT TURF VALLEY AREA FROM 150 TO 200. AS A RESULT, THOSE 42 UNITS ARE NO LONGER A PART OF THE VILLAGES AT TURF VALLEY WHICH LEAVES UNIT TOTAL AT 199. HOWEVER, WITH THE APPROVAL OF WP-08-009 AN ADDITIONAL 21 UNITS WERE ADDED TO THE VILLAGES AT TURF VALLEY. THE FINAL UNIT TOTAL FOR THIS SUBDIVISION COMES TO 220.

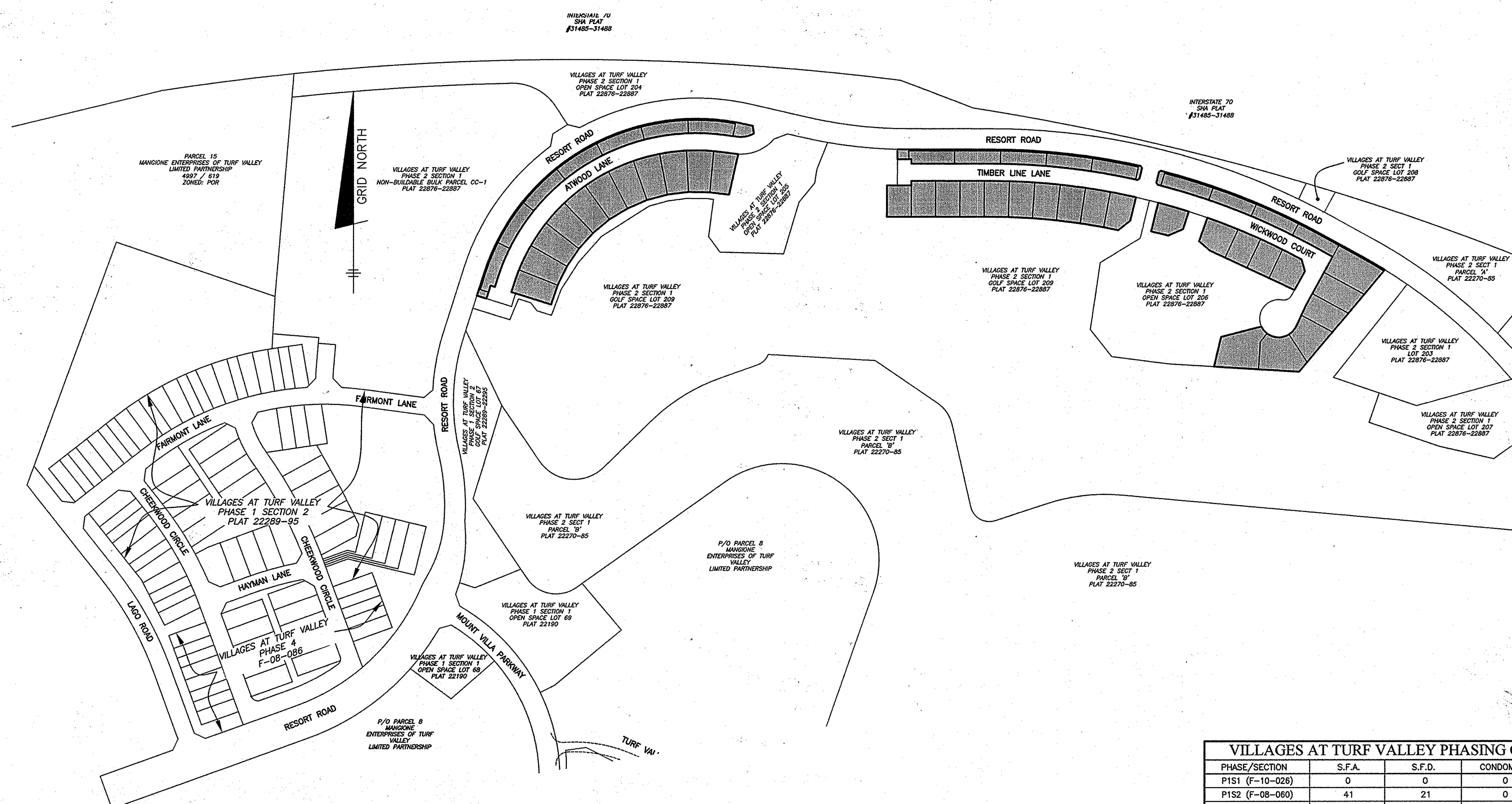
21.) PRIOR TO GRADING PERMIT APPLICATION, THE PROJECT SHALL COMPLY WITH THE REQUIREMENTS OF SECTION 16.129 THE HOWARD COUNTY CODE.

22.) ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE DEVELOPER'S EXPENSE.

23.) FOR DRIVEWAY ENTRANCE DETAILS REFER TO THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD DETAIL R-6.03 AND R-6.05.

24.) IN ACCORDANCE WITH SECTION 128 OF THE HOWARD COUNTY ZONING REGULATIONS, BAY WINDOWS, CHIMNEYS OR EXTERIOR STAIRWAYS NOT MORE THAN 16 FEET IN WIDTH MAY PROJECT NOT MORE THAN 4 FEET INTO ANY SETBACKS, PORCHES OR DECKS, OPEN OR ENCLOSED MAY PROJECT NOT MORE THAN 10 FEET INTO THE FRONT OR REAR YARD SETBACK (APPLIES FOR RESIDENTIAL SDP'S).

25.) THE SETBACKS AND LOT SIZES INDICATED ON THIS SITE DEVELOPMENT PLAN FOR LOTS 210-216, 228-232, AND 253-257 WERE APPROVED BY THE PLANNING BOARD ON APRIL 9, 2015. THE APPROVAL ALLOWED FOR THE REDUCTION FOR THE FRONT SETBACK FROM 20 FEET (RESIDENTIAL FROM A LOCAL STREET WITH A 50' RIGHT-OF-WAY) DOWN TO 8 FEET, THE REAR SETBACK FROM 30 FEET (RESIDENTIAL FROM A COLLECTOR STREET WITH A 60' RIGHT-OF-WAY) DOWN TO 6 FEET, AND THE LOT SIZE FROM 6,000 SF DOWN TO 4,800 SF.

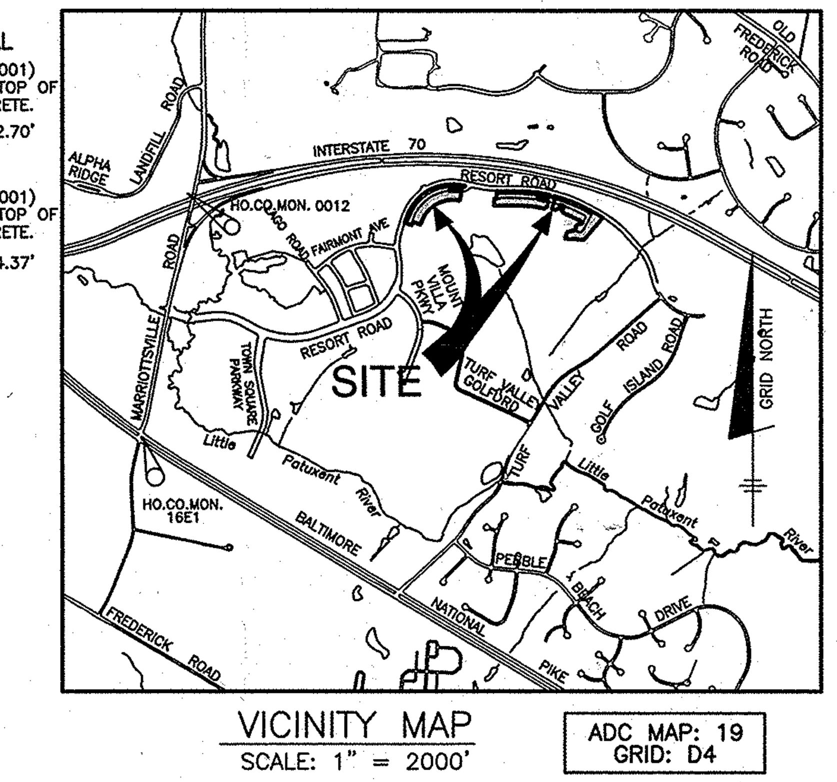


1 inch = 200 ft.

BENCHMARKS
NAD'83 HORIZONTAL

HO. CO. #16E1 (AKA: 3438001)
STAMPED BRASS DISK SET ON TOP OF A 3ft DEEP COLUMN OF CONCRETE.
N 593250.960' E 1340192.70'
ELEVATION: 463.981'

HO. CO. #0012 (AKA: 3439001)
STAMPED BRASS DISK SET ON TOP OF A 3ft DEEP COLUMN OF CONCRETE.
N 596502.760' E 1340864.37'
ELEVATION: 486.298'



VICINITY MAP
SCALE: 1" = 2000'

ADC MAP: 19
GRID: D4

ADDRESS CHART		
LOT	STREET ADDRESS	
210	10911	ATWOOD LANE
211	10917	ATWOOD LANE
212	10923	ATWOOD LANE
213	10929	ATWOOD LANE
214	10935	ATWOOD LANE
215	10941	ATWOOD LANE
216	10947	ATWOOD LANE
217	10950	ATWOOD LANE
218	10946	ATWOOD LANE
219	10942	ATWOOD LANE
220	10938	ATWOOD LANE
221	10934	ATWOOD LANE
222	10930	ATWOOD LANE
223	10926	ATWOOD LANE
224	10922	ATWOOD LANE
225	10918	ATWOOD LANE
226	10914	ATWOOD LANE
227	10910	ATWOOD LANE
228	10811	TIMBER LINE LANE
229	10819	TIMBER LINE LANE
230	10827	TIMBER LINE LANE
231	10835	TIMBER LINE LANE
232	10843	TIMBER LINE LANE
233	10846	TIMBER LINE LANE
234	10842	TIMBER LINE LANE
235	10838	TIMBER LINE LANE
236	10834	TIMBER LINE LANE
237	10830	TIMBER LINE LANE
238	10826	TIMBER LINE LANE
239	10822	TIMBER LINE LANE
240	10818	TIMBER LINE LANE
241	10814	TIMBER LINE LANE
242	10810	TIMBER LINE LANE
243	10740	WICKWOOD COURT
244	10712	WICKWOOD COURT
245	10716	WICKWOOD COURT
246	10720	WICKWOOD COURT
247	10724	WICKWOOD COURT
248	10748	WICKWOOD COURT
249	10747	WICKWOOD COURT
250	10743	WICKWOOD COURT
251	10739	WICKWOOD COURT
252	10735	WICKWOOD COURT
253	10731	WICKWOOD COURT
254	10723	WICKWOOD COURT
255	10717	WICKWOOD COURT
256	10711	WICKWOOD COURT
257	10705	WICKWOOD COURT

VILLAGES AT TURF VALLEY PHASING CHART				
PHASE/SECTION	S.F.A.	S.F.D.	CONDOMINIUM	TOTAL
P1S1 (F-10-026)	0	0	0	0
P1S2 (F-08-060)	41	21	0	62
P1S3 (F-15-076)	6	0	0	6
P2S1 (F-08-084)	0	0	44 *	44
P2S2 (F-10-078)	0	48	0	48
P4 (F-08-086)	15	8	0	23
P5 (F-15-079)	36	0	0	36
MAINT SHOP (SDP-08-096)	0	0	1 (Access. Apt.)	1
TOTAL	98	77	45	220

* FUTURE CONDO BUILDING ON LOT 203

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.

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS

B.Wilson for Maura Rossman 5/26/2015
COUNTY HEALTH OFFICER H.O. DATE
HOWARD COUNTY HEALTH DEPARTMENT

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chad Edmondson 5-29-15
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Kent Sheubrooks 6-09-15
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Marsha McLaughlin 6/10/15
DIRECTOR DATE

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 04/09/2015

BULK REGULATIONS:

PERMITTED USES : ALL USES AS PER TURF VALLEY PGCC DISTRICT, MULTI-USE SUBDISTRICT FINAL DEVELOPMENT PLAN, THIRD AMENDMENT, PLATS 21029-21031. (46 USES OUTLINED FROM RESIDENTIAL USES TO SPECIALTY STORES)

PERMITTED HEIGHT : SINGLE-FAMILY DETACHED – 34 FEET
OTHER – 15 FEET
ACCESSORY STRUCTURES – 15 FEET

MAXIMUM DENSITY FOR TOTAL PGCC DISTRICT IS 2.0 DWELLING UNITS PER ACRE.

MINIMUM LOT SIZE REQUIREMENTS :
SINGLE FAMILY DETACHED 6,000 SQ.FT.
EXCEPT ZERO LOT LINE DWELLINGS 4,000 SQ.FT.

MINIMUM LOT WIDTH AT BUILDING RESTRICTION LINE:
SINGLE FAMILY DETACHED 50 FEET
EXCEPT ZERO LOT LINE DWELLINGS 40 FEET

MAXIMUM BUILDING LENGTH FOR RESIDENTIAL STRUCTURE = 120 FEET, UNLESS APPROVED BY PLANNING BOARD TO A MAXIMUM OF 300 FEET.

PERMITTED SETBACKS:
FROM ARTERIAL ROADS:
RESIDENTIAL STRUCTURES____50 FEET
ACCESSORY USES____30 FEET

FROM COLLECTORS AND LOCAL STREETS:
RESIDENTIAL STRUCTURES ____30 FEET FROM A 60 FT. ROW
____20 FEET FROM A 50 FT. ROW
ACCESSORY USES____10 FEET
FROM NON-PGCC ADJACENT PROPERTIES:
FROM RESIDENTIAL DISTRICTS____75 FEET
FROM ALL OTHER DISTRICTS____30 FEET
FROM LOT LINES WITHIN PGCC MULTI-USE SUBDISTRICT
SINGLE FAMILY DETACHED – SIDE____7.5 FEET
ZERO LOT LINE AND ALL OTHER USES – SIDE____0 FEET
A MINIMUM OF 10 FEET MUST BE PROVIDED BETWEEN STRUCTURES
RESIDENTIAL – REAR____20 FEET

SITE ANALYSIS DATA CHART

A.) TOTAL PROJECT AREA____8.11 acres
B.) AREA OF PLAN SUBMISSION____8.11 acres
C.) LIMIT OF DISTURBED AREA____8.57 acres
D.) PRESENT ZONING:____PGCC (MULTI-USE SUBDISTRICT)
E.) PROPOSED USE OF SITE:____RESIDENTIAL SINGLE FAMILY DETACHED
F.) FLOOR SPACE ON EACH LEVEL OF BLDG PER USE____N/A
G.) TOTAL NUMBER OF UNITS ALLOWED AS SHOWN ON FINAL PLAT(S)____48
H.) TOTAL NUMBER OF UNITS PROPOSED____48
I.) MAXIMUM NUMBER OF EMPLOYEES, TENANTS ON SITE PER USE____N/A
J.) NUMBER OF PARKING SPACES REQUIRED BY HO. CO. ZONING REGS AND/OR FDP CRITERIA____120 (48 UNITS x 2.5)
K.) NUMBER OF PARKING SPACES PROVIDED ONSITE (INCLUDES HANDICAPPED SPACES)____192 (2 FOR EACH GARAGE AND 2 FOR EACH DRIVEWAY)
L.) OPEN SPACE ON-SITE____0.32 AC. (RECORDED UNDER PLAT 23351-55
M.) AREA OF RECREATIONAL OPEN SPACE REQUIRED____N/A
AREA OF RECREATIONAL OPEN SPACE PROVIDED____N/A
N.) BUILDING COVERAGE OF SITE____N/A
PERCENTAGE OF GROSS AREA____N/A
O.) APPLICABLE DPZ FILE REFERENCES:____S-03-01, WP-05-074, WP-08-009 S-86-13, P-06-13, F-08-060, F-08-084, F-09-022, WP-09-004, WP-09-211 F-10-026, WP-10-159, WP-11-168 WP-12-129, F-08-086, F-10-078, WP-13-054, WP-13-164

SHEET INDEX	
SHEET	TITLE
1	TITLE SHEET
2	HOUSE TYPES AND GENERIC BOXES
3-4	SITE DEVELOPMENT & GRADING PLAN
5	SITE DEVELOPMENT, GRADING AND LANDSCAPE PLAN
6-8	SEDIMENT AND EROSION CONTROL PLAN
9	SEDIMENT & EROSION CONTROL NOTES AND DETAILS
10	RETAINING WALL PLAN AND CONSTRUCTION DETAILS

PERMIT INFORMATION CHART					
SUBDIVISION NAME:			SECTION/AREA:	LOT/PARCEL #	
VILLAGES AT TURF VALLEY			PHASE 2 SECTION 2	LOTS 210 thru 257	
PLAT No.	GRID No.	ZONE	TAX MAP NO	ELECTION DISTRICT	CENSUS TRACT
23351-55	11	PGCC-2	16	3rd	6030.00

NO.	DATE	REVISION

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

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 22390, Expiration Date: 6-30-2015.
STATE OF MARYLAND — CHRISTOPHER ALAN MALAGARI — PROFESSIONAL ENGINEER
4/2/15

OWNER:
MANGIONE ENTERPRISES OF TURF VALLEY, LIMITED PARTNERSHIP
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

BUILDER:
NV HOMES
9720 PATUXENT WOODS DRIVE
COLUMBIA, MARYLAND 21045
410-379-3391

VILLAGES AT TURF VALLEY
PHASE 2, SECTION 2
LOTS 210 thru 257 and OPEN SPACE LOTS 258 thru 260;
A RESUBDIVISION OF VILLAGES AT TURF VALLEY, PHASE 2, SECTION 1
NON-BUILDABLE BULK PARCELS 'DD-1', 'EE-1' AND 'FF-1'

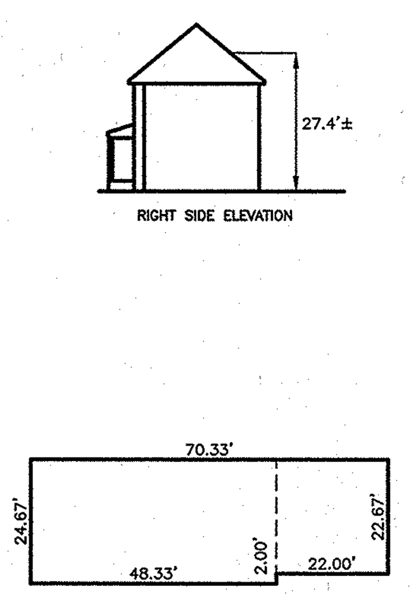
TAX MAP: 16, PARCEL: 401, GRID: 10
TAX MAP: 16, PARCEL: P/O 8, GRID: 17
ELECTION DISTRICT NO. 3 - HOWARD COUNTY, MARYLAND - ZONED: PGCC

SITE DEVELOPMENT PLAN
TITLE SHEET

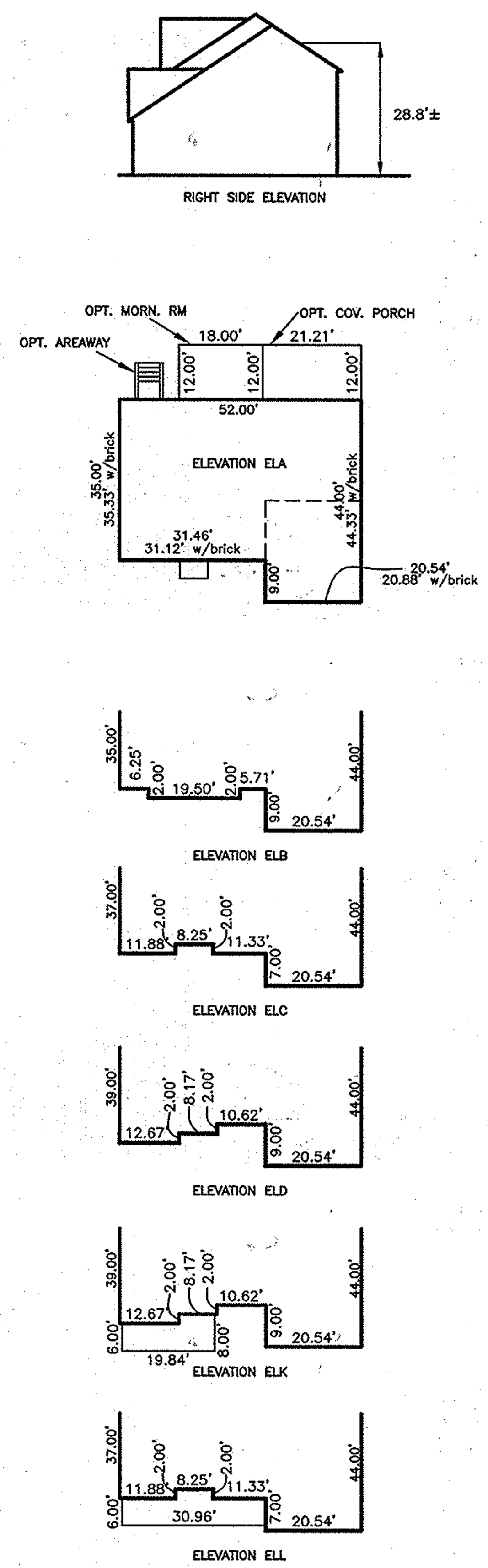
DATE: APRIL, 2015 | BEI PROJECT NO. 2554
SCALE: AS SHOWN | SHEET 1 OF 10

SDP-15-014

J:\2554 Turf Valley P2S2\dwg\8001.dwg, 4/20/2015 9:05:02 PM



NORWOOD
SCALE: 1"=30'



EMPRESS II v00
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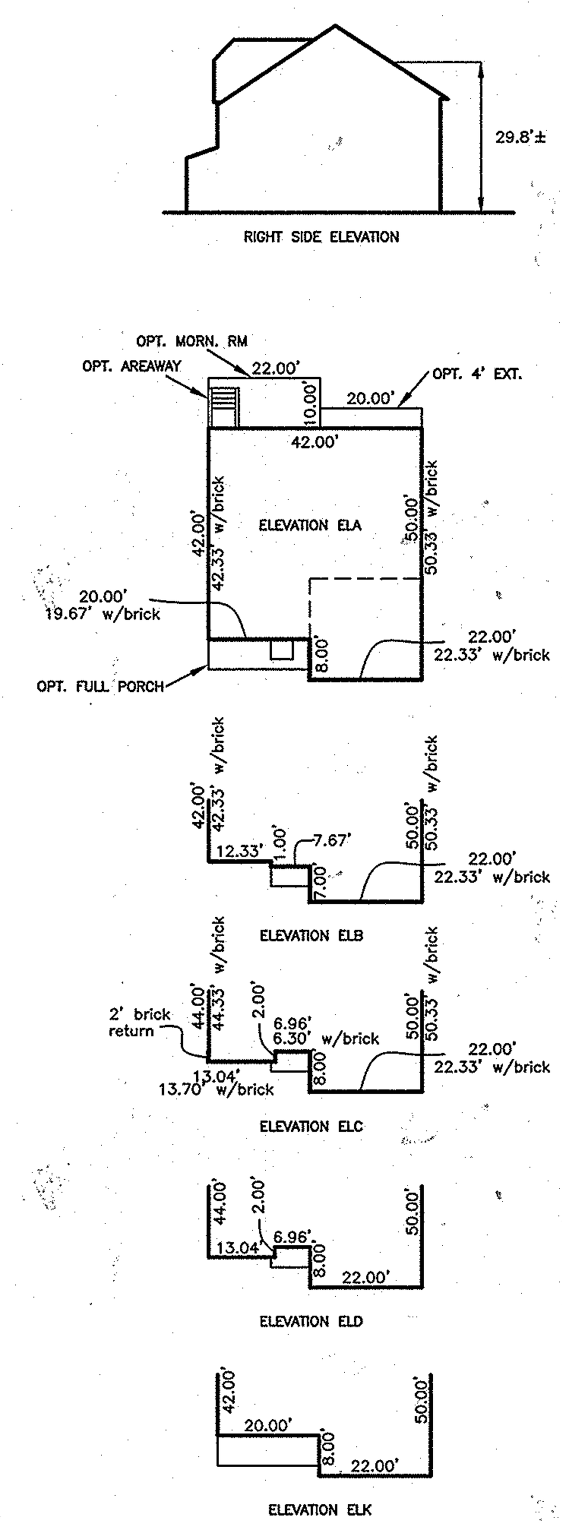
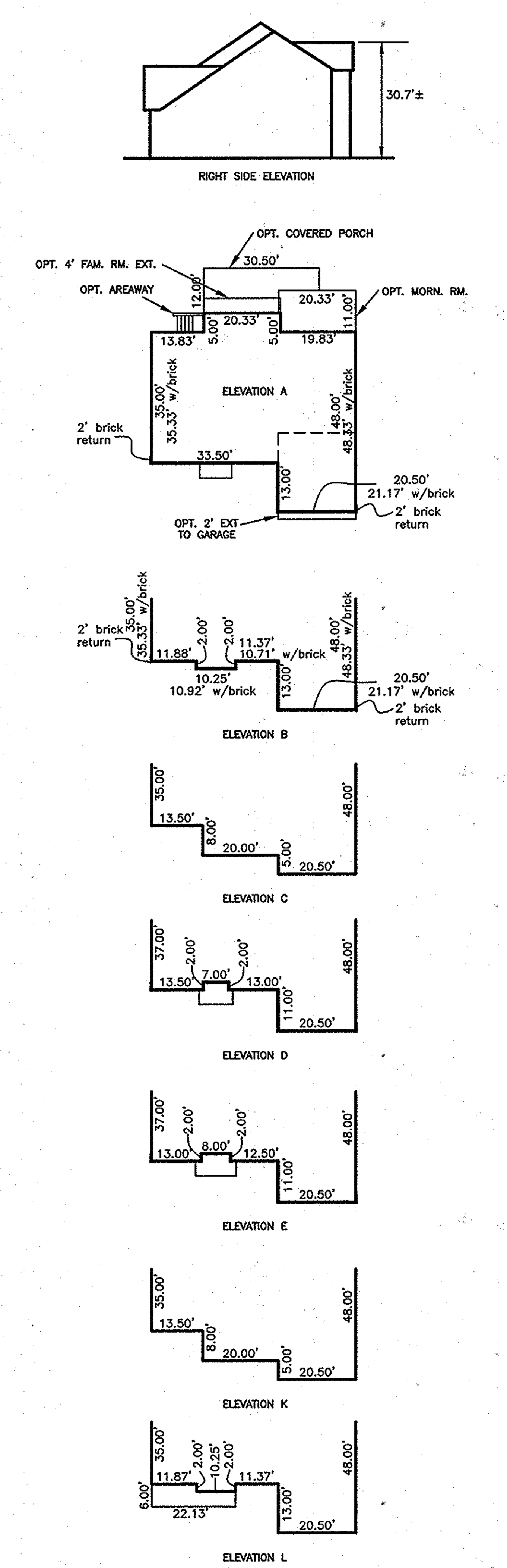


ROOSEVELT v19
SCALE: 1"=30'



REMINGTON PLACE II
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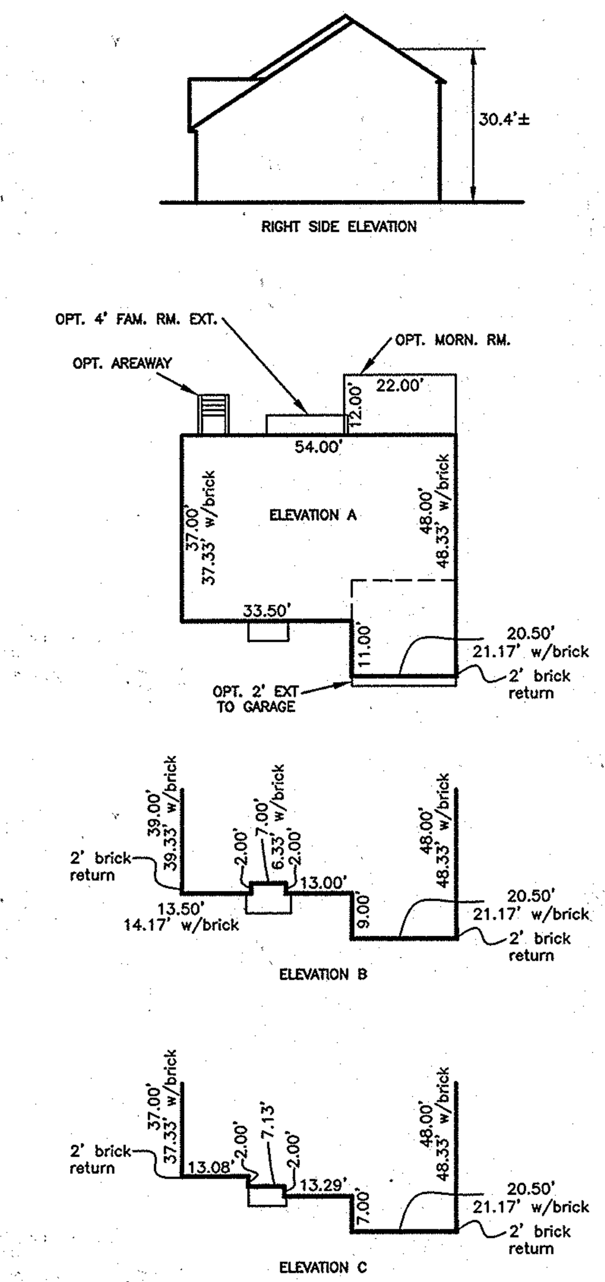
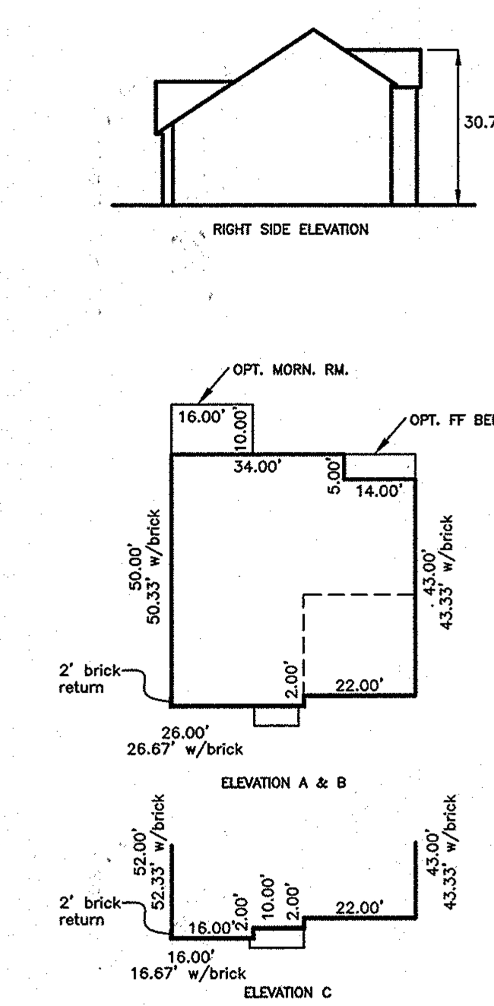
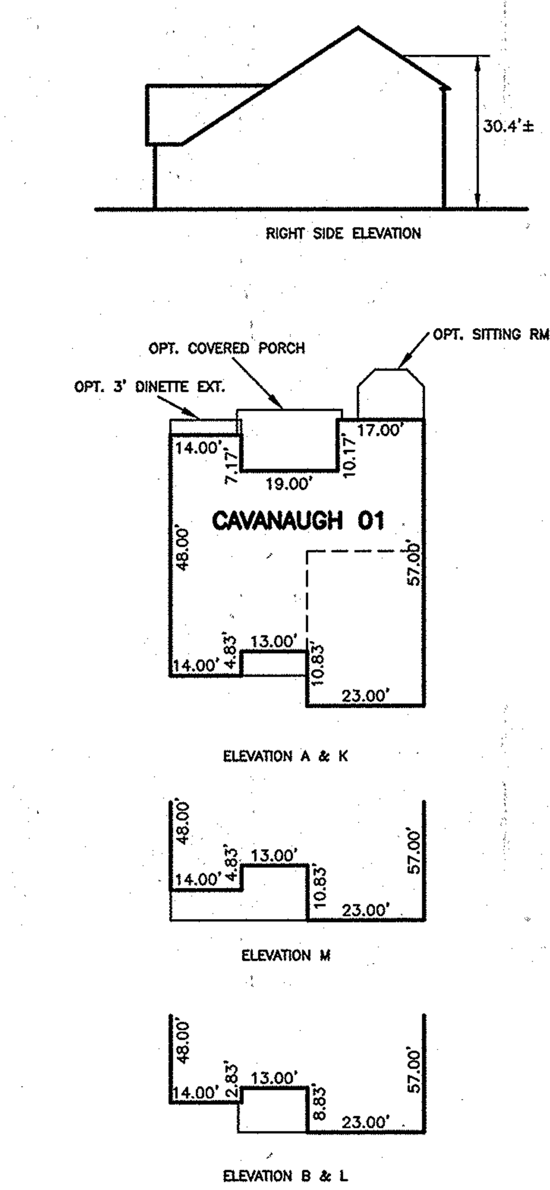


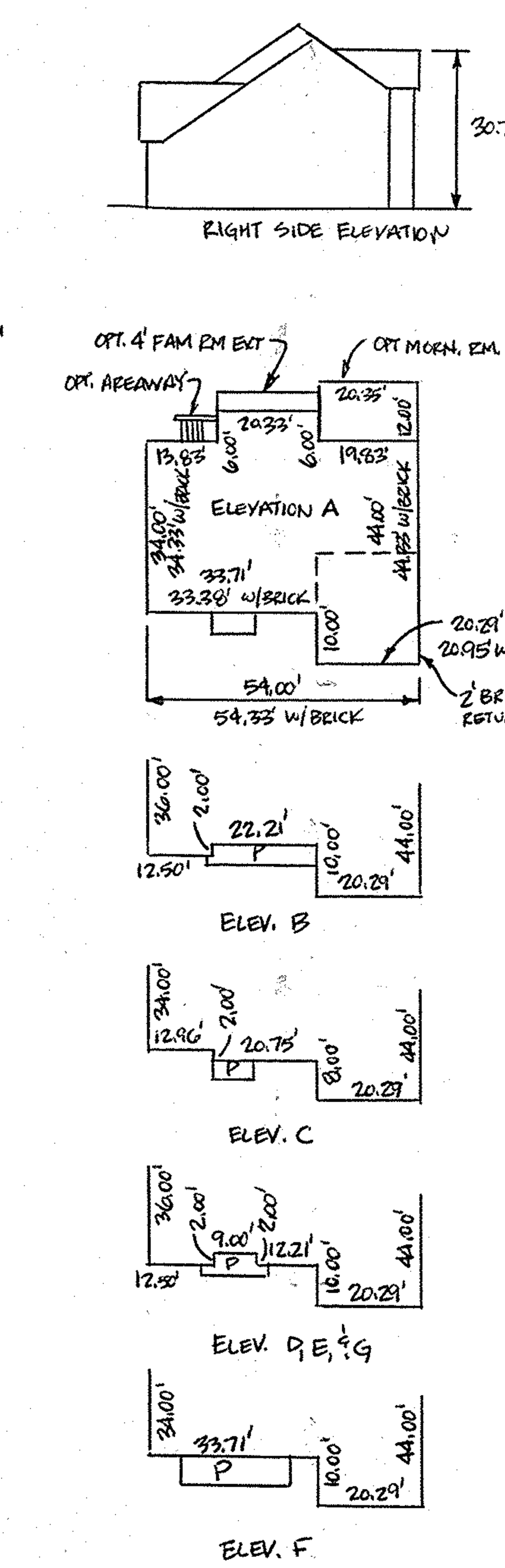
CHAPEL HILL II
SCALE: 1"=30'



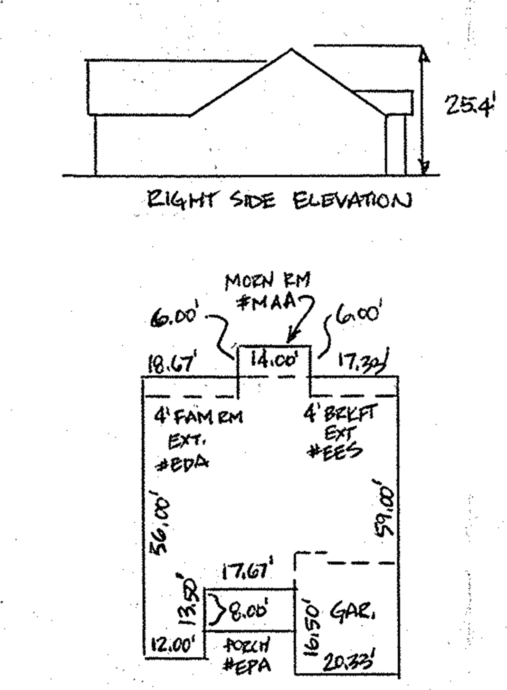
KENNEDY 00
SCALE: 1"=30'



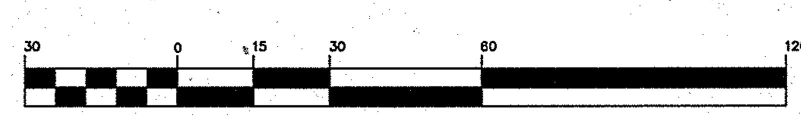
CAVANAUGH 01
SCALE: 1"=30'



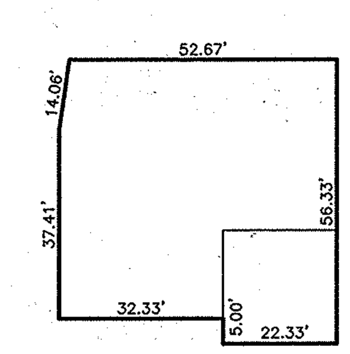
REMINGTON PLACE 19
SCALE: 1"=30'



SEABROOK V.3
SCALE 1"=30'



1 inch = 30 ft.



BOX 'A'
SCALE: 1"=30'

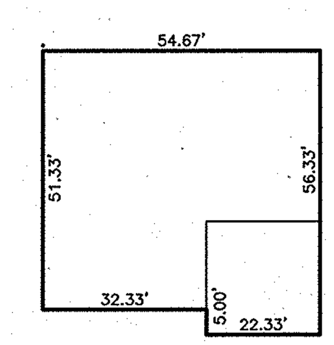
EMPRESS
ALL ELEVATIONS
MORN ROOM
COVERED PORCH

ROOSEVELT V19
ALL ELEVATIONS

CHAPEL HILL II
ALL ELEVATIONS
2' GAR EXT
4' FAM EXT

KENNEDY 00
ELEV A & B
FF BEDROOM

REMINGTON PLACE 19
ALL ELEVATIONS
4' FAM. ROOM
MORN. ROOM



BOX 'B'
SCALE: 1"=30'

EMPRESS
ALL ELEVATIONS
MORN ROOM
COVERED PORCH

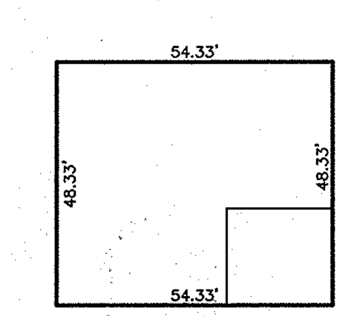
ROOSEVELT V19
ALL ELEVATIONS
4' FAM EXT.

REMINGTON PLACE II
ALL ELEVATIONS
2' GAR EXT.

CHAPEL HILL II
ALL ELEVATIONS
2' GAR EXT
4' FAM EXT

KENNEDY 00
ELEV A & B
FF BEDROOM

REMINGTON PLACE 19
ALL ELEVATIONS



BOX 'C'
SCALE: 1"=30'

EMPRESS
ALL ELEVATIONS

CHAPEL HILL II
ELEV A ONLY

NOTE: HOUSE TYPES AND OPTIONS LISTED BELOW EACH BOX ARE WHAT WILL FIT WITHIN THE GENERIC BOX. ITEMS NOT LISTED WILL NOT FIT WITHIN THE GENERIC BOX (BUT MAY FIT ON THE LOT).

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[signature]	5·29·15
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
[signature]	6-09-15
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
[signature]	6/10/15
DIRECTOR	DATE

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 04/09/2015

NO.	DATE	REVISION
1	10-7-2015	ADD REMINGTON PLACE 19 AND UPDATE GENERIC BOXES. INFO. ADD SEABROOK HOUSE TYPE

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

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 22390, Expiration Date: 6-30-2015.

STATE OF MARYLAND — CHRISTOPHER ALAN MALAGARI — NO. 22390 — REGISTERED — PROFESSIONAL ENGINEER
4/21/15

OWNER:
MANGIONE ENTERPRISES OF
TURF VALLEY, LIMITED PARTNERSHIP
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

BUILDER:
NV HOMES
9720 PATUXENT WOODS DRIVE
COLUMBIA, MARYLAND 21045
410-379-3391

VILLAGES AT TURF VALLEY
PHASE 2, SECTION 2

LOTS 210 thru 257 and OPEN SPACE LOTS 258 thru 260;
A RESUBDIVISION OF VILLAGES AT TURF VALLEY, PHASE 2, SECTION 1
NON-BUILDABLE BULK PARCELS 'DD-1', 'EE-1' AND 'FF-1'

TAX MAP: 16, PARCEL: 401, GRID: 10
TAX MAP: 16, PARCEL: P/O 8, GRID: 17
ELECTION DISTRICT NO. 3 - HOWARD COUNTY, MARYLAND - ZONED: PGCC

SITE DEVELOPMENT PLAN
HOUSE TYPES AND GENERIC BOXES

DATE:	APRIL, 2015	BEI PROJECT NO.	2554
SCALE:	AS SHOWN	SHEET	2 OF 10

SDP-15-014

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LEGEND

- EXISTING TOPO FROM F-08-084
- LIMIT OF SUBMISSION
- EXISTING STREAM
- EXISTING WETLANDS
- FOREST CONSERVATION EASEMENT
- EXISTING STREET LIGHT POLES
- WOB — INDICATES A WALK-OUT BASEMENT
- I.G. — INDICATES AN IN-GROUND BASEMENT
- BRL — INDICATES BUILDING RESTRICTION LINE
- EXISTING ON-SITE EASEMENTS
- EX. WHC — EXISTING WATER HOUSE CONNECTION
- EX. SHC — EXISTING SEWER HOUSE CONNECTION
- STREET TREE LOCATIONS PER F-08-084 AND F-10-078
- EXISTING SIDEWALK CONSTRUCTED UNDER F-08-084 AND F-10-078
- 65dBA NOISE CONTOUR – UNMITIGATED
- 65dBA NOISE CONTOUR – MITIGATED

NOISE WALL NOTES:

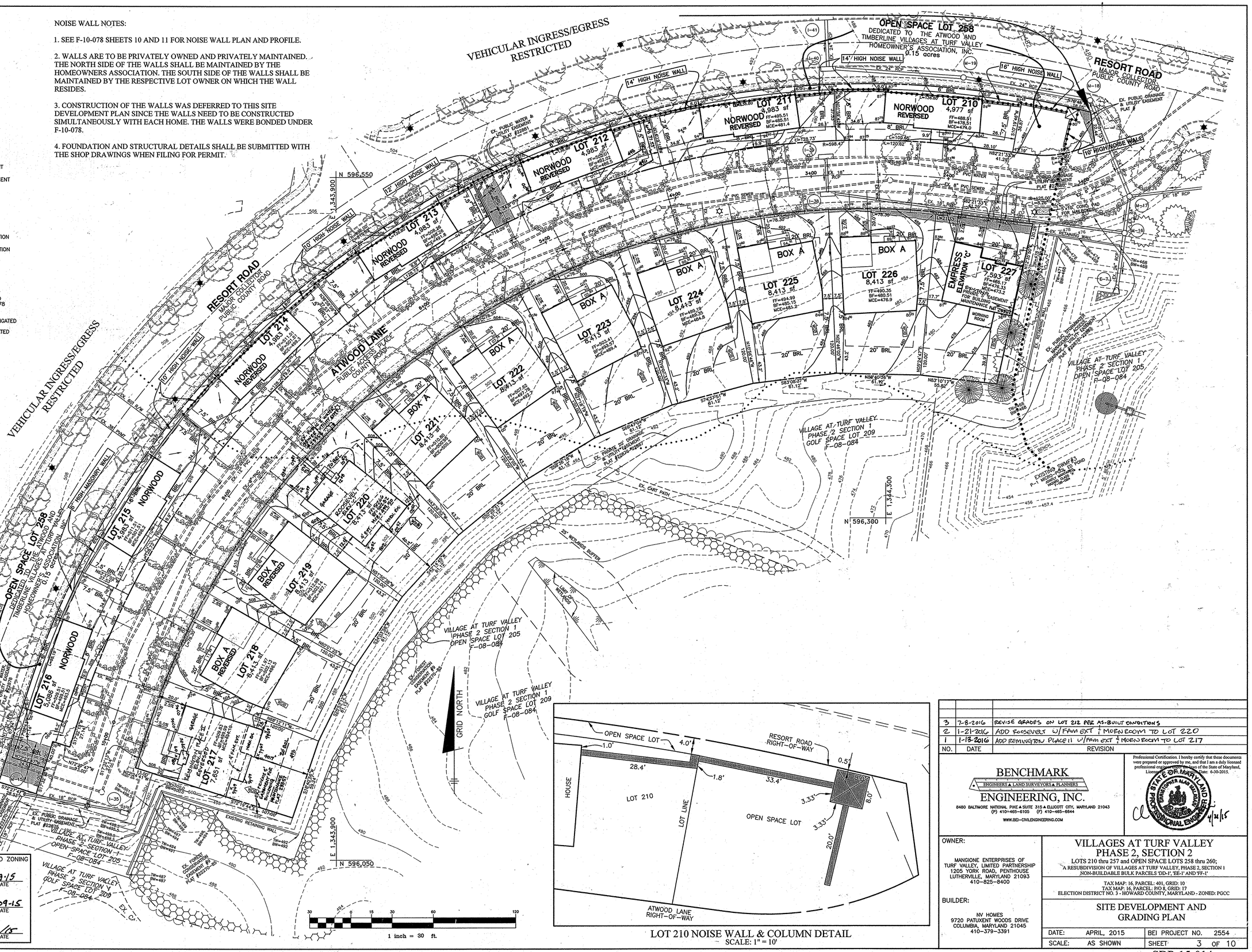
1. SEE F-10-078 SHEETS 10 AND 11 FOR NOISE WALL PLAN AND PROFILE.

2. WALLS ARE TO BE PRIVATELY OWNED AND PRIVATELY MAINTAINED. THE NORTH SIDE OF THE WALLS SHALL BE MAINTAINED BY THE HOMEOWNERS ASSOCIATION. THE SOUTH SIDE OF THE WALLS SHALL BE MAINTAINED BY THE RESPECTIVE LOT OWNER ON WHICH THE WALL RESIDES.

3. CONSTRUCTION OF THE WALLS WAS DEFERRED TO THIS SITE DEVELOPMENT PLAN SINCE THE WALLS NEED TO BE CONSTRUCTED SIMULTANEOUSLY WITH EACH HOME. THE WALLS WERE BONDED UNDER F-10-078.

4. FOUNDATION AND STRUCTURAL DETAILS SHALL BE SUBMITTED WITH THE SHOP DRAWINGS WHEN FILING FOR PERMIT.

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 04/09/2015



LOT 210 NOISE WALL & COLUMN DETAIL
SCALE: 1" = 10'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	5-29-15 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	6-09-15 DATE
DIRECTOR	6/10/15 DATE

NO.	DATE	REVISION
3	7-8-2016	REVISE GRADES ON LOT 212 PER AS-BUILT CONDITIONS
2	1-21-2016	ADD ROOSEVELT W/FAM EXT & MORN ROOM TO LOT 220
1	1-13-2016	ADD REMINGTON PLACE II W/FAM EXT & MORN ROOM TO LOT 217

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

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 20,876, Expiration Date: 6-30-2015.

STATE OF MARYLAND — CHRISTOPHER ALAN HALLMAN — REGISTERED PROFESSIONAL ENGINEER
4/21/15

OWNER:
MANGIONE ENTERPRISES OF TURF VALLEY, LIMITED PARTNERSHIP
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

BUILDER:
NV HOMES
9720 PATUXENT WOODS DRIVE
COLUMBIA, MARYLAND 21045
410-379-3391

VILLAGES AT TURF VALLEY PHASE 2, SECTION 2

LOTS 210 thru 257 and OPEN SPACE LOTS 258 thru 260;
A RESUBDIVISION OF VILLAGES AT TURF VALLEY, PHASE 2, SECTION 1
NON-BUILDABLE BULK PARCELS 'DD-1', 'EE-1' AND 'FF-1'

TAX MAP: 16, PARCEL: 401, GRID: 10
TAX MAP: 16, PARCEL: P/O 8, GRID: 17
ELECTION DISTRICT NO. 3 - HOWARD COUNTY, MARYLAND - ZONED: PGCC

SITE DEVELOPMENT AND GRADING PLAN

DATE:	APRIL, 2015	BEI PROJECT NO.	2554
SCALE:	AS SHOWN	SHEET	3 OF 10

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SDP-15-014

LEGEND

- EXISTING TOPO FROM F-08-084
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- EXISTING WETLANDS
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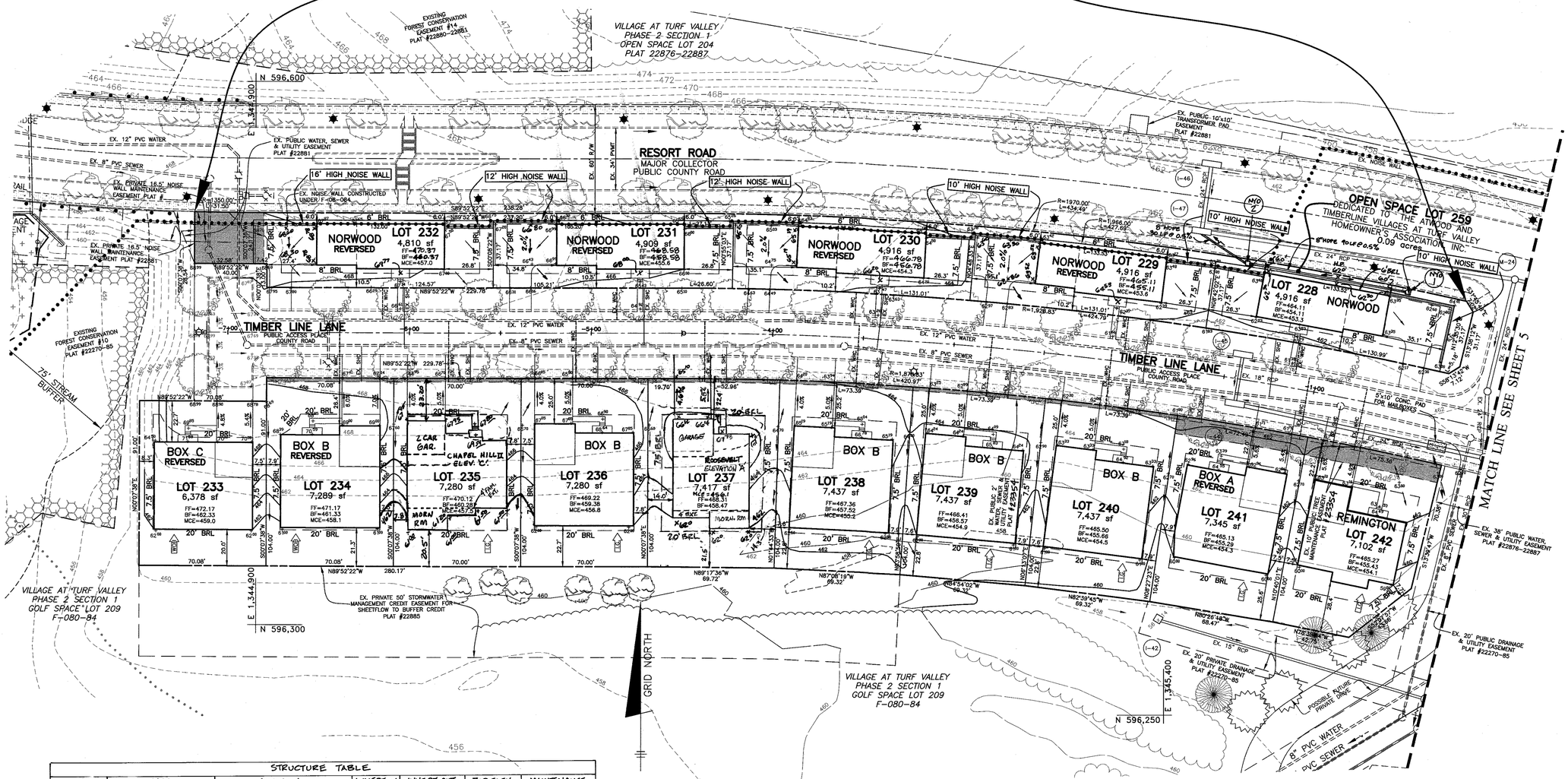
- 65dBA NOISE CONTOUR – UNMITIGATED
- 65dBA NOISE CONTOUR – MITIGATED

VEHICULAR INGRESS/EGRESS RESTRICTED



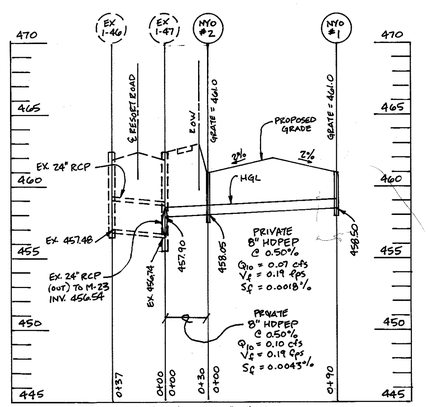
30 0 15 30 60 120

1 inch = 30 ft.

STRUCTURE TABLE

STRUCTURE	TYPE	LOCATION	INVERT IN	INVERT OUT	TOP ELEV.	MAINTENANCE
NYO#1	NYOPLAST 10" DRAIN BASIN	N 596483.09 E 1345534.53	—	458.50	461.00	PRIVATE
NYO#2	NYOPLAST 10" DRAIN BASIN	N 596499.93 E 1345496.10	458.05	458.05	461.00	PRIVATE

STRUCTURE LOCATION FOR INLET IS AT THE CENTER OF THE GRATE.



SCALE: 1"=50' HORIZ, 1"=5' VERT.

NOISE WALL NOTES:

1. SEE F-10-078 SHEETS 10 AND 11 FOR NOISE WALL PLAN AND PROFILE.

2. WALLS ARE TO BE PRIVATELY OWNED AND PRIVATELY MAINTAINED. THE NORTH SIDE OF THE WALLS SHALL BE MAINTAINED BY THE HOMEOWNERS ASSOCIATION. THE SOUTH SIDE OF THE WALLS SHALL BE MAINTAINED BY THE RESPECTIVE LOT OWNER ON WHICH THE WALL RESIDES.

3. CONSTRUCTION OF THE WALLS WAS DEFERRED TO THIS SITE DEVELOPMENT PLAN SINCE THE WALLS NEED TO BE CONSTRUCTED SIMULTANEOUSLY WITH EACH HOME. THE WALLS WERE BONDED UNDER F-10-078.

4. FOUNDATION AND STRUCTURAL DETAILS SHALL BE SUBMITTED WITH THE SHOP DRAWINGS WHEN FILING FOR PERMIT.

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 04/09/2015

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 5.29.15
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 6.09.15
DIRECTOR	DATE 6/9/15

NO.	DATE	REVISION
4	9-8-2016	ADD PRIVATE STORM DRAIN BEHIND LOT 228. ADD PROFILE AND STRUCTURE SCHEDULE.
3	8-5-2016	REVISE FIRST FLOOR ELEVATIONS OF LOTS 229-232. ADJUST PAD GRADES ACCORDINGLY
2	4-4-16	SHOW CHAPEL HILL II W/MORN RM & 4' EXT. ON LOT 236 & SHOW MISSING 1' CONTOUR ON 234 & 235
1	3-16-16	SHOW ROOSEVELT W/MORNING RM. & 4' EXT ON LOT 237

BENCHMARK ENGINEERING, INC.
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WWW.BEI-CIVILENGINEERING.COM

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License Number: 21706, Expiration Date: 6-30-2015
STATE OF MARYLAND — GEORGE WARNER ALAN HALLMAN — 21706 — PROFESSIONAL ENGINEER — 4/21/15

OWNER:
MANGIONE ENTERPRISES OF TURF VALLEY, LIMITED PARTNERSHIP
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

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VILLAGES AT TURF VALLEY PHASE 2, SECTION 2

LOTS 210 thru 257 and OPEN SPACE LOTS 258 thru 260;
A RESUBDIVISION OF VILLAGES AT TURF VALLEY, PHASE 2, SECTION 1
NON-BUILDABLE BULK PARCELS 'DD-1', 'EE-1' AND 'FF-1'

TAX MAP: 16, PARCEL: 401, GRID: 10
TAX MAP: 16, PARCEL: P/O 8, GRID: 17
ELECTION DISTRICT NO. 3 - HOWARD COUNTY, MARYLAND - ZONED: PGCC

SITE DEVELOPMENT AND GRADING PLAN

DATE: APRIL, 2015 | BEI PROJECT NO. 2554
SCALE: AS SHOWN | SHEET 4 OF 10

SDP-15-014

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SCHEDULE A
PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT TO ROADWAY LOT 247
LANDSCAPE TYPE	B – MODERATE 1:50 shade 1:40 evergreen
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	62 LF
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO
NUMBER OF PLANTS REQUIRED SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTE) SHRUBS	62 LF 1 2 0 0
NUMBER OF PLANTS PROVIDED SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTE) SHRUBS (10:1 SUBSTITUTE)	1 2 0 0

NOISE WALL NOTES:

1. SEE F-10-078 SHEETS 10 AND 11 FOR NOISE WALL PLAN AND PROFILE.

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4. FOUNDATION AND STRUCTURAL DETAILS SHALL BE SUBMITTED WITH THE SHOP DRAWINGS WHEN FILING FOR PERMIT.

LANDSCAPE NOTES:

1. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL.

2. AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS HEREWITH LISTED AND APPROVED FOR THIS SITE, SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THIS APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO APPLICABLE PLANS AND CERTIFICATIONS.

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

4. FINANCIAL SURETY IN THE AMOUNT OF $800.00 FOR THE REQUIRED PERIMETER LANDSCAPING SHALL BE POSTED AS PART OF THE GRADING PERMIT UNDER THIS SITE DEVELOPMENT PLAN.

PERIMETER LANSCAPE PLANTING LIST

SYMBOL	QUANTITY	NAME	REMARKS	DESCRIPTION
⊕	1	TILIA CORDATA 'GREENSPIRE' (Greenspire Littleleaf Linden)	2.5" – 3"cal.	SHADE TREE TO BE PLANTED ON LOT 247 PROVIDED BY THE BUILDER
	2	ILEX OPACA (American Holly)	5'–6' HEIGHT	EVERGREEN TREE TO BE PLANTED ON LOT 247 PROVIDED BY THE BUILDER

LEGEND

- EXISTING TOPO FROM F-08-084
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- EXISTING STREAM
- EXISTING WETLANDS
- FOREST CONSERVATION EASEMENT
- EXISTING STREET LIGHT POLES
- W.O.B. INDICATES A WALK-OUT BASEMENT
- I.G. INDICATES AN IN-GROUND BASEMENT
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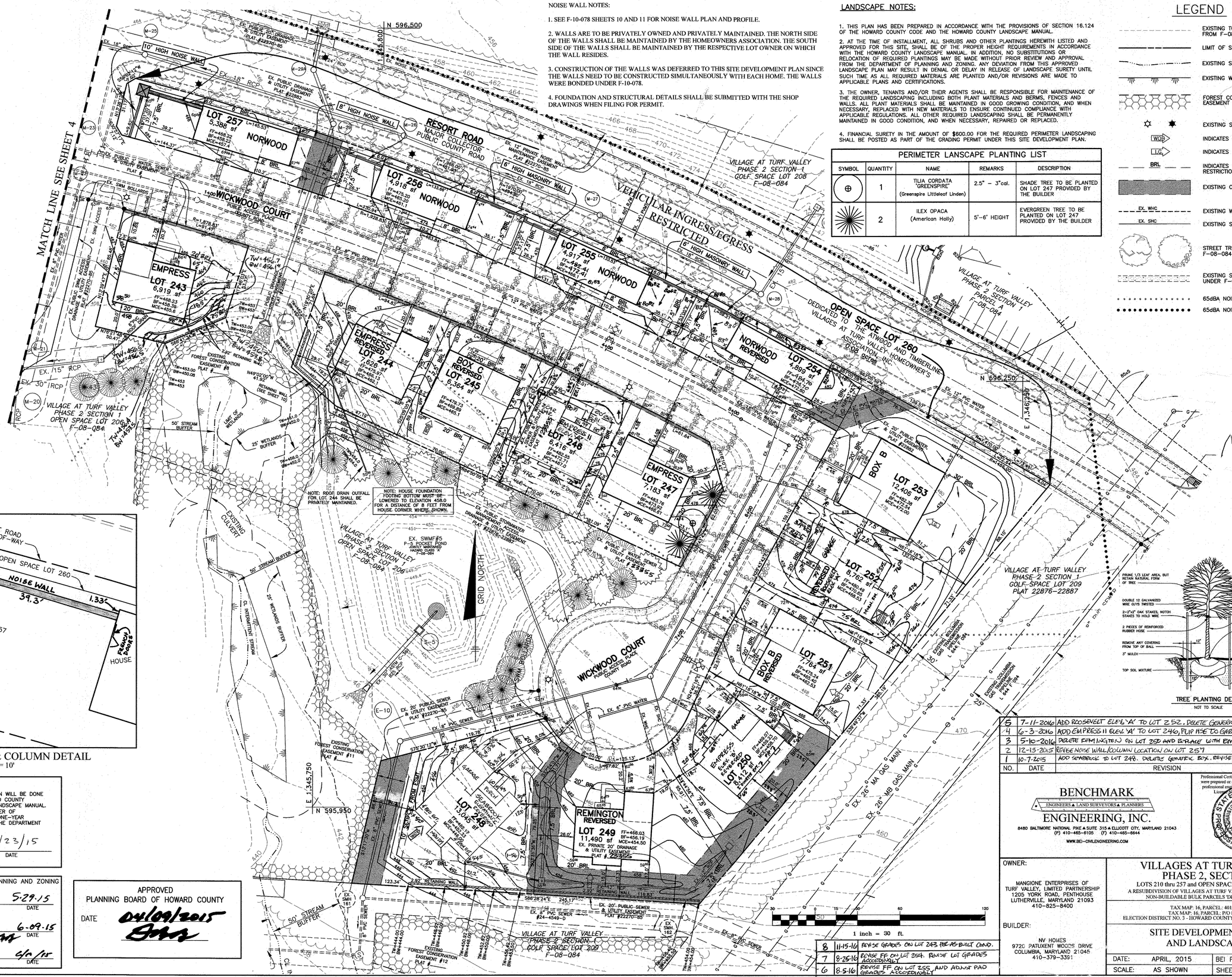

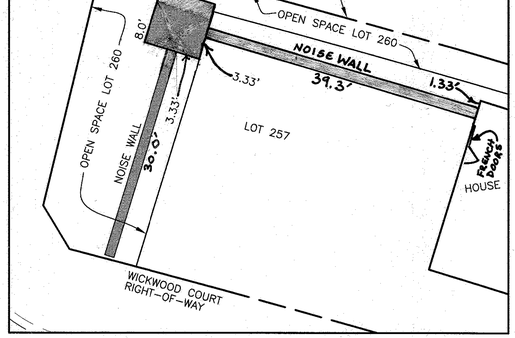

LOT 257 NOISE WALL & COLUMN DETAIL
SCALE: 1" = 10'

TREE PLANTING DETAIL
NOT TO SCALE

BUILDER'S CERTIFICATE

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

BUILDER — DATE 4/23/15

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5.29.15
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6-09-15
DIRECTOR — DATE 6/9/15

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 06/09/2015

NO.	DATE	REVISION
8	11-15-16	REVISE GRADES ON LOT 243 PER AS-BUILT COND.
7	8-25-16	REVISE FF ON LOT 254. REVISE LOT GRADES ACCORDINGLY
6	8-5-16	REVISE FF ON LOT 255 AND ADJUST PAD GRADES ACCORDINGLY
5	7-11-2016	ADD ROOSEVELT ELEV. 'A' TO LOT 252. DELETE GENERIC BOX, REVISE GRADES
4	6-3-2016	ADD EMPRESS II ELEV 'A' TO LOT 246, FLIP HSE TO GARAGE RIGHT
3	5-10-2016	DELETE REMINGTON ON LOT 250 AND REPLACE WITH EMPRESS ELEV 'B' W/DIMETTE EXT.
2	12-15-2015	REVISE NOISE WALL/COLUMN LOCATION ON LOT 257
1	10-7-2015	ADD SEABROOK TO LOT 248. DELETE GENERIC BOX. REVISE GRADES.

BENCHMARK
ENGINEERING, INC.
ENGINEERS & LAND SURVEYORS & PLANNERS
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(P) 410-465-6105 (F) 410-465-6644
WWW.BEI-CIVILENGINEERING.COM

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 21609, Expiration Date: 6-30-2015.

STATE OF MARYLAND — CHRISTOPHER ALAN MILLARD — 21609 — REGISTERED PROFESSIONAL ENGINEER — 4/24/15

OWNER:
MANGIONE ENTERPRISES OF TURF VALLEY, LIMITED PARTNERSHIP
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

BUILDER:
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VILLAGES AT TURF VALLEY
PHASE 2, SECTION 2

LOTS 210 thru 257 and OPEN SPACE LOTS 258 thru 260;
A RESUBDIVISION OF VILLAGES AT TURF VALLEY, PHASE 2, SECTION 1
NON-BUILDABLE BULK PARCELS 'DD-1', 'EE-1' AND 'FF-1'

TAX MAP: 16, PARCEL: 401, GRID: 10
TAX MAP: 16, PARCEL: P/O 8, GRID: 17
ELECTION DISTRICT NO. 3 - HOWARD COUNTY, MARYLAND - ZONED: PGCC

SITE DEVELOPMENT, GRADING AND LANDSCAPE PLAN

DATE:	APRIL, 2015	BEI PROJECT NO.	2554
SCALE:	AS SHOWN	SHEET	5 OF 10

SDP-15-014

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Table B.1: Temporary Seeding for Site Stabilization

Plant Species	Seeding Rate 1/ lb/ac	Seeding Rate 1/ lb/1000 ft2	Seeding Depth 2/ (inches)	Recommended Seeding Dates by Plant Hardiness Zone 3/ 5b and 6a	6b	7a and 7b
Cool-Season Grasses						
Annual Ryegrass (Lolium perenne ssp. Multiflorum	40	1.0	0.5		Mar 1 to May 15; Aug 1 to Oct 31	
Barley (Hordeum vulgare)	96	2.2	1.0		Mar 1 to May 15; Aug 1 to Oct 31	
Oats (Avena sativa)	72	1.7	1.0		Mar 1 to May 15; Aug 1 to Oct 31	
Wheat (Triticum aestivum)	120	2.8	1.0		Mar 1 to May 15; Aug 1 to Oct 31	
Cereal Rye (Secale cereale)	112	2.8	1.0		Mar 1 to May 15; Aug 1 to Nov 15	
Warm-Season Grasses						
Foxtail Millet (Serataria italica)	30	0.7	0.5		May 16 to Jul 31	
Pearl Millet (Pennisetum glaucum	20	0.5	0.5		May 16 to Jul 31	

Notes:

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

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

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

2/ For sandy soils, plant seeds at twice the depth listed above.

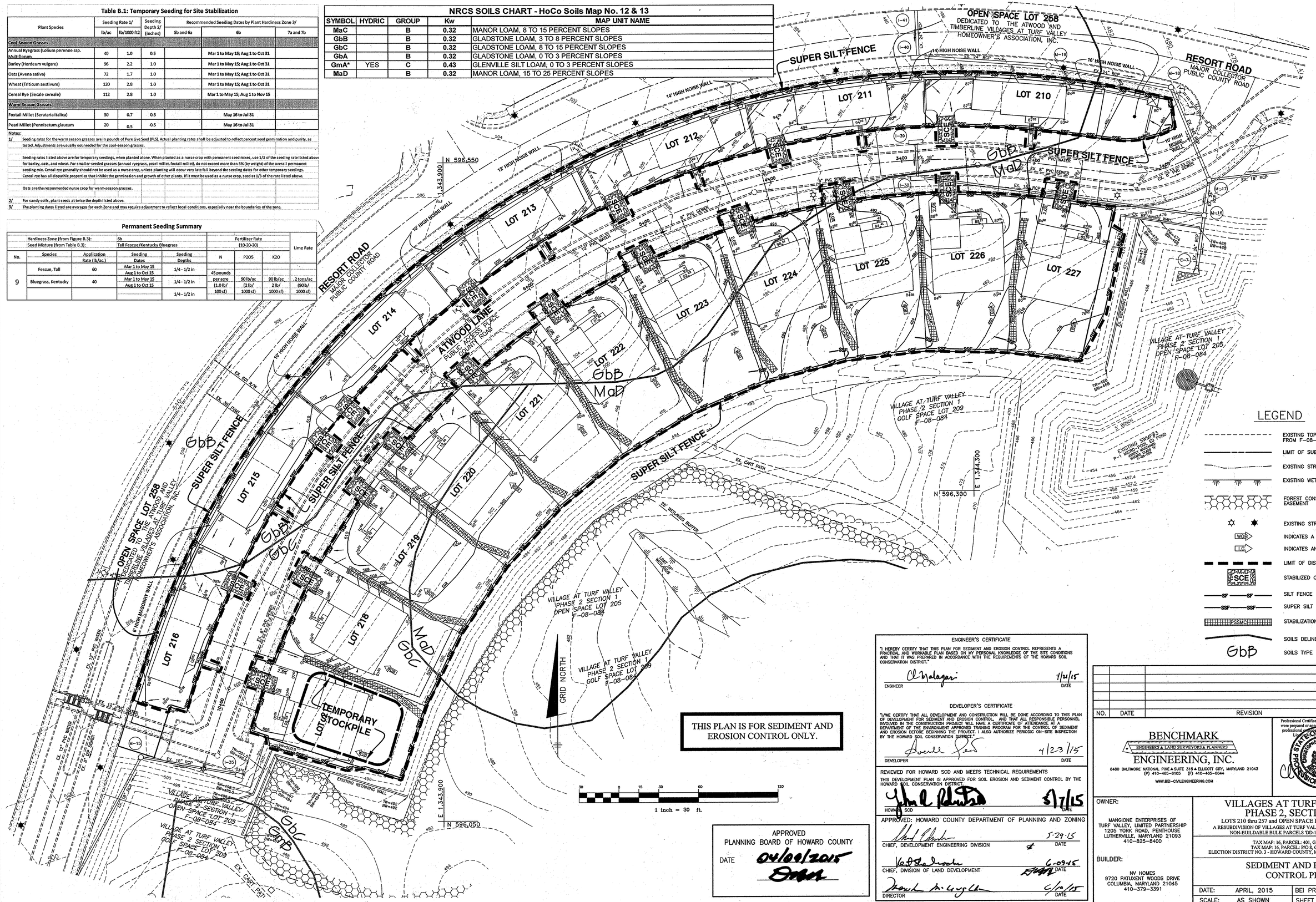
3/ The planting dates listed are averages for each Zone and may require adjustment to reflect local conditions, especially near the boundaries of the zone.

Permanent Seeding Summary

Hardiness Zone (from Figure B.3):			6b		Fertilizer Rate (10-20-20)			Lime Rate
Seed Misture (from Table B.3):			Tall Fescue/Kentucky Bluegrass					
No.	Species	Application Rate (lb/ac.)	Seeding Dates	Seeding Depths	N	P2O5	K2O	
9	Fescue, Tall	60	Mar 1 to May 15 Aug 1 to Oct 15	1/4 - 1/2 in	45 pounds per acre (1.0 lb/ 100 sf)	90 lb/ac (2 lb/ 1000 sf)	90 lb/ac 2 lb/ 1000 sf)	2 tons/ac (90lb/ 1000 sf)
	Bluegrass, Kentucky	40	Mar 1 to May 15 Aug 1 to Oct 15	1/4 - 1/2 in				
				1/4 - 1/2 in				

NRCS SOILS CHART - HoCo Soils Map No. 12 & 13

SYMBOL	HYDRIC	GROUP	Kw	MAP UNIT NAME
MaC		B	0.32	MANOR LOAM, 8 TO 15 PERCENT SLOPES
GbB		B	0.32	GLADSTONE LOAM, 3 TO 8 PERCENT SLOPES
GbC		B	0.32	GLADSTONE LOAM, 8 TO 15 PERCENT SLOPES
GbA		B	0.32	GLADSTONE LOAM, 0 TO 3 PERCENT SLOPES
GmA*	YES	C	0.43	GLENVILLE SILT LOAM, 0 TO 3 PERCENT SLOPES
MaD		B	0.32	MANOR LOAM, 15 TO 25 PERCENT SLOPES



LEGEND

- EXISTING TOPO FROM F-08-084
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- FOREST CONSERVATION EASEMENT
- EXISTING STREET LIGHT POLES
- WOB — INDICATES A WALK-OUT BASEMENT
- I.G. — INDICATES AN IN-GROUND BASEMENT
- LIMIT OF DISTURBANCE
- SCE — STABILIZED CONSTRUCTION ENTRANCE
- SF — SILT FENCE
- SSF — SUPER SILT FENCE
- PSSMC — STABILIZATION MATTING
- SOILS DELINEATION LINE
- GbB — SOILS TYPE

THIS PLAN IS FOR SEDIMENT AND EROSION CONTROL ONLY.

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 04/09/2015

ENGINEER'S CERTIFICATE

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

ENGINEER — DATE 4/2/15

DEVELOPER'S CERTIFICATE

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

DEVELOPER — DATE 4/23/15

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

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

HOWARD SCD — DATE 5/7/15

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5.29.15

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6-09-15

DIRECTOR — DATE 6/10/15

NO.	DATE	REVISION

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
ENGINEERING, INC.
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(P) 410-465-6105 (F) 410-465-6644
WWW.BEI-CIVILENGINEERING.COM

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 21431, Expiration Date: 6-30-2015.

STATE OF MARYLAND — CHRISTOPHER ALAN HALLMAN — 21431 — PROFESSIONAL ENGINEER — 4/21/15

OWNER:
MANGIONE ENTERPRISES OF TURF VALLEY, LIMITED PARTNERSHIP
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
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BUILDER:
NV HOMES
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410-379-3391

VILLAGES AT TURF VALLEY PHASE 2, SECTION 2

LOTS 210 thru 257 and OPEN SPACE LOTS 258 thru 260;
A RESUBDIVISION OF VILLAGES AT TURF VALLEY, PHASE 2, SECTION 1
NON-BUILDABLE BULK PARCELS 'DD-1', 'EE-1' AND 'FF-1'

TAX MAP: 16, PARCEL: 401, GRID: 10
TAX MAP: 16, PARCEL: PO 8, GRID: 17
ELECTION DISTRICT NO. 3 - HOWARD COUNTY, MARYLAND - ZONED: PGCC

SEDIMENT AND EROSION CONTROL PLAN

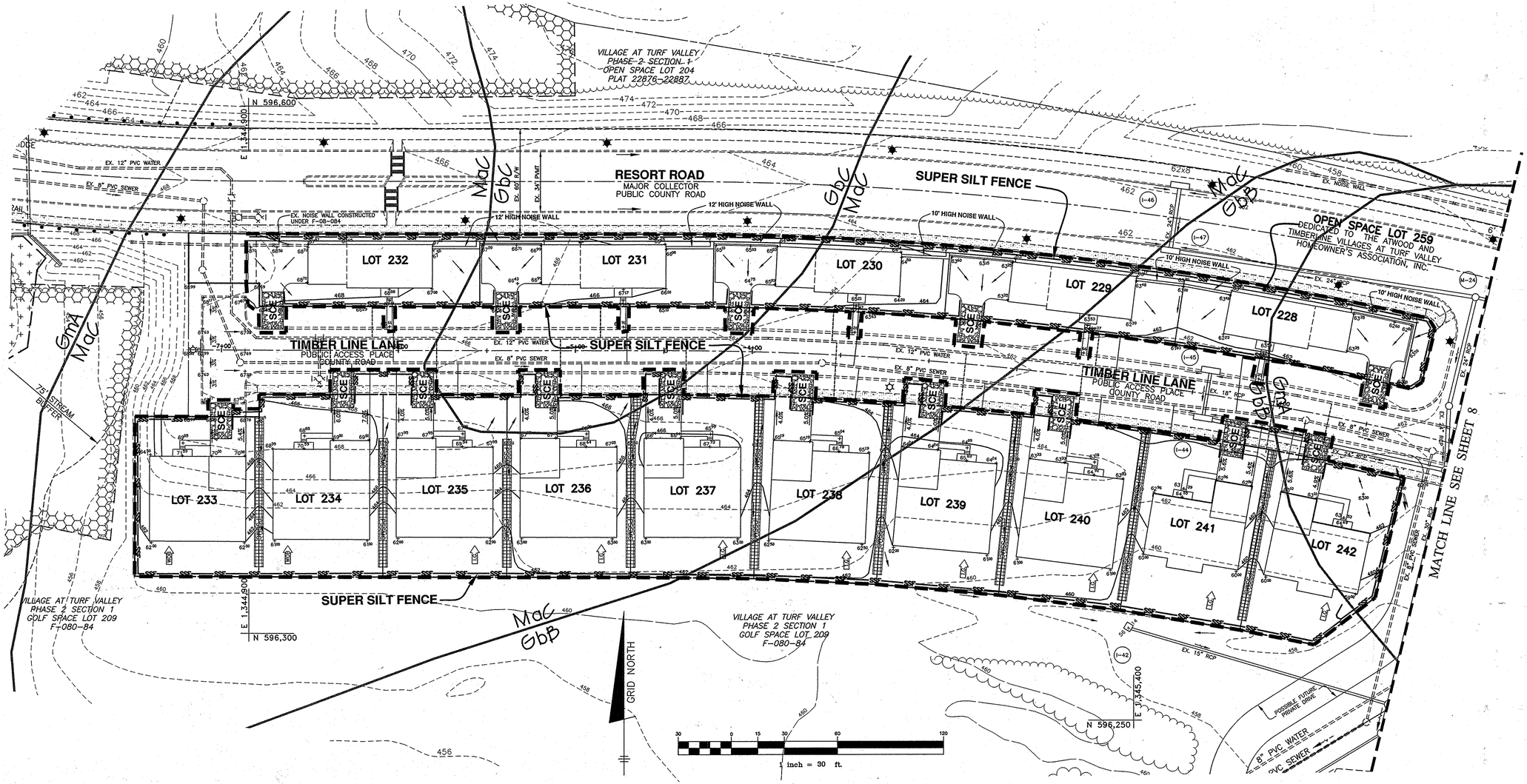
DATE:	APRIL, 2015	BEI PROJECT NO.	2554
SCALE:	AS SHOWN	SHEET	6 OF 10

SDP-15-014

J:\2554 Turf Valley P2S2\dwg\6023.dwg, 4/20/2015 9:26:41 PM

LEGEND

- EXISTING TOPO FROM F-08-084
- LIMIT OF SUBMISSION
- EXISTING STREAM
- EXISTING WETLANDS
- FOREST CONSERVATION EASEMENT
- EXISTING STREET LIGHT POLES
- WOB — INDICATES A WALK-OUT BASEMENT
- I.G. — INDICATES AN IN-GROUND BASEMENT
- LIMIT OF DISTURBANCE
- SCE — STABILIZED CONSTRUCTION ENTRANCE
- SF — SILT FENCE
- SSF — SUPER SILT FENCE
- SSMC — STABILIZATION MATTING
- SOILS DELINEATION LINE
- GbB — SOILS TYPE
- AGIP — AT GRADE INLET PROTECTION
- SFD — DIVERSION FENCE



ENGINEER'S CERTIFICATE

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

C. Malagari — ENGINEER — 4/21/15 DATE

DEVELOPER'S CERTIFICATE

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

Averell Lee — DEVELOPER — 4/23/15 DATE

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

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

HOWARD SCD — 5/7/15 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 5.29.15 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — 6-09-15 DATE

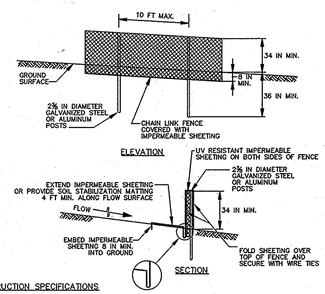
DIRECTOR — 6/9/15 DATE

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 04/09/2015

DETAIL C-9 DIVERSION FENCE

STANDARD SYMBOL — DF

MAXIMUM DRAINAGE AREA = 2 ACRES



CONSTRUCTION SPECIFICATIONS

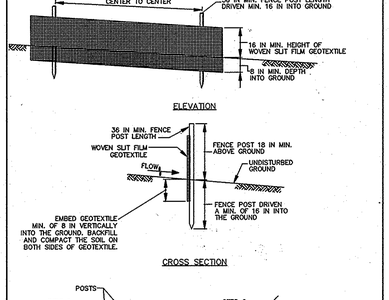
1. USE 42 INCH HIGH, 9 GAUGE OR THICKER CHAIN LINK FENCING (2⅜ INCH MAXIMUM OPENING).
2. USE 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. THE POSTS DO NOT NEED TO BE SET IN CONCRETE.
3. FASTEN CHAIN LINK FENCE SECURELY TO THE FENCE POSTS WITH WIRE TIES.
4. SECURE 10 MIL OR THICKER UV RESISTANT, IMPERMEABLE SHEETING TO CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT TOP, MID SECTION, AND BELOW GROUND SURFACE.
5. EXTEND SHEETING A MINIMUM OF 4 FEET ALONG FLOW SURFACE AND EMBED END A MINIMUM OF 8 INCHES INTO GROUND. SOIL STABILIZATION MATTING MAY BE USED IN LIEU OF IMPERMEABLE SHEETING ALONG FLOW SURFACE.
6. WHEN TWO SECTIONS OF SHEETING ADJOIN EACH OTHER, OVERLAP BY 6 INCHES AND FOLD WITH SEAM FACING DOWNGRADE.
7. KEEP FLOW SURFACE ALONG DIVERSION FENCE AND POINT OF DISCHARGE FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE. REPLACE IMPERMEABLE SHEETING IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-1 SILT FENCE

STANDARD SYMBOL — SF



JOINING TWO ADJACENT SILT FENCE SECTIONS (TOP VIEW)

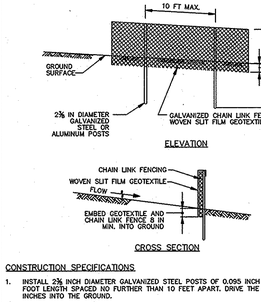
1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-3 SUPER SILT FENCE

STANDARD SYMBOL — SSF



CONSTRUCTION SPECIFICATIONS

1. INSTALL 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2⅜ INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HOG RINGS.
3. FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
5. EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
6. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
7. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

THIS PLAN IS FOR SEDIMENT AND EROSION CONTROL ONLY.

NO.	DATE	REVISION

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

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 22509, Expiration Date: 6-30-2015.

STATE OF MARYLAND — ROBERT ALAN MALAGARI — 22509 — REGISTERED PROFESSIONAL ENGINEER — 4/21/15

OWNER:

MANGIONE ENTERPRISES OF TURF VALLEY, LIMITED PARTNERSHIP
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

BUILDER:

NV HOMES
9720 PATUXENT WOODS DRIVE
COLUMBIA, MARYLAND 21045
410-379-3391

VILLAGES AT TURF VALLEY PHASE 2, SECTION 2

LOTS 210 thru 257 and OPEN SPACE LOTS 258 thru 260;
A RESUBDIVISION OF VILLAGES AT TURF VALLEY, PHASE 2, SECTION 1
NON-BUILDABLE BULK PARCELS 'DD-1', 'EE-1' AND 'FF-1'

TAX MAP: 16, PARCEL: 401, GRID: 10
TAX MAP: 16, PARCEL: P/O 8, GRID: 17
ELECTION DISTRICT NO. 3 - HOWARD COUNTY, MARYLAND - ZONED: PGCC

SEDIMENT AND EROSION CONTROL PLAN

DATE: APRIL, 2015	BEI PROJECT NO. 2554
SCALE: AS SHOWN	SHEET 7 OF 10

SDP-15-014

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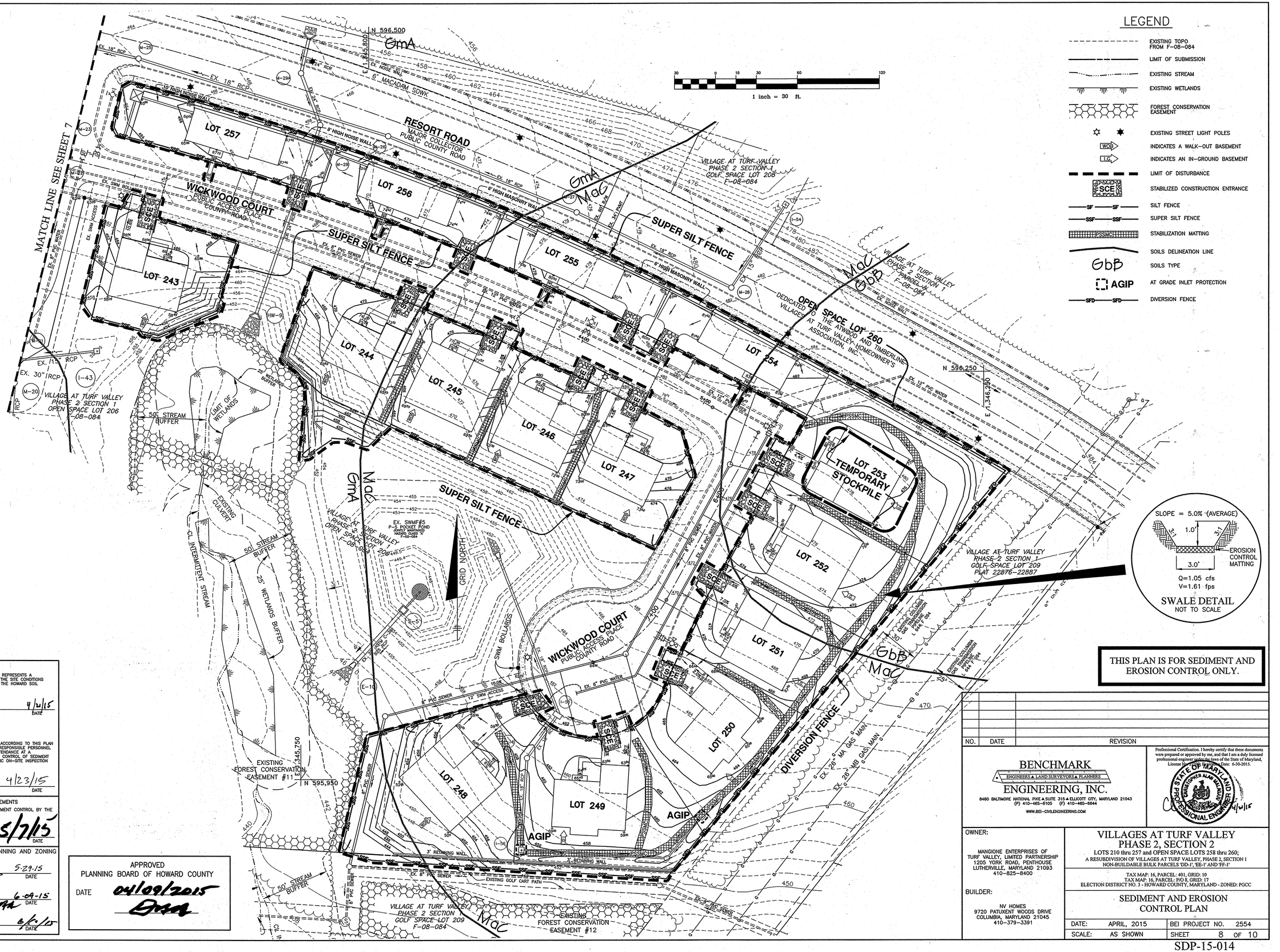

ENGINEER'S CERTIFICATE

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

Ch Malagari — 4/24/15
ENGINEER — DATE

DEVELOPER'S CERTIFICATE

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

Arnold Poots — 4/23/15
DEVELOPER — DATE

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

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

John L Robertson — 5/7/15
HOWARD SCD — DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 5.29.15 — DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — 6-09-15 — DATE

DIRECTOR — 6/5/15 — DATE

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 04/09/2015

NO.	DATE	REVISION

BENCHMARK
ENGINEERING, INC.
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 315 ▲ ELLICOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6844
WWW.BEI-CIVILENGINEERING.COM

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 21431, Expiration Date: 6-30-2015.

CHRISTOPHER ALAN MALAGARI — STATE OF MARYLAND — PROFESSIONAL ENGINEER
4/24/15

OWNER:
MANGIONE ENTERPRISES OF TURF VALLEY, LIMITED PARTNERSHIP
1205 YORK ROAD, PENTHOUSE
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VILLAGES AT TURF VALLEY
PHASE 2, SECTION 2

LOTS 210 thru 257 and OPEN SPACE LOTS 258 thru 260;
A RESUBDIVISION OF VILLAGES AT TURF VALLEY, PHASE 2, SECTION 1
NON-BUILDABLE BULK PARCELS 'DD-1', 'EE-1' AND 'FF-1'

TAX MAP: 16, PARCEL: 401, GRID: 10
TAX MAP: 16, PARCEL: P/O 8, GRID: 17
ELECTION DISTRICT NO. 3 - HOWARD COUNTY, MARYLAND - ZONED: PGCC

SEDIMENT AND EROSION CONTROL PLAN

DATE:	APRIL, 2015	BEI PROJECT NO.	2554
SCALE:	AS SHOWN	SHEET	8 OF 10

SDP-15-014

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B-4 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

Definition

Using vegetation as cover to protect exposed soil from erosion.

Purpose

To promote the establishment of vegetation on exposed soil.

Conditions Where Practice Applies

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

Effects on Water Quality and Quantity

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

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

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

Sediment control practices must remain in place during grading, 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, restabilize following the original recommendations for lime, 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

Definition

Establishment of vegetative cover on cut and fill slopes.

Purpose

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

Conditions Where Practice Applies

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

Criteria

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

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

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

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

Figure B.

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 04/09/2015

ENGINEER'S CERTIFICATE

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ENGINEER 4/21/15 DATE

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DEVELOPER 4/23/15 DATE

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

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

HOWARD SCD 5/7/15 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION 5.29.15 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT 6.09.15 DATE

DIRECTOR 6/10/15 DATE

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

Definition

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

Purpose

To provide a suitable soil medium for vegetative growth.

Conditions Where Practice Applies

Where vegetative stabilization is to be established.

Criteria

A. Soil Preparation
  1. Temporary Stabilization
     a. Seedbed preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened, it must not be rolled or dragged smooth but left in the roughened condition. Slopes 3:1 or flatter are to be tracked with ridges running parallel to the contour of the slope.
     b. Apply fertilizer and lime as prescribed on the plans.
     c. Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable means.
  2. Permanent Stabilization
     a. A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
        i. Soil pH between 6.0 and 7.0.
        ii. Soluble salts less than 500 parts per million (ppm).
        iii. Soil contains less than 40 percent clay but enough fine grained material (greater than 30 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception: if lovegrass will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.
        iv. Soil contains 1.5 percent minimum organic matter by weight.
        v. Soil contains sufficient pore space to permit adequate root penetration.
     b. Application of amendments or topsoil is required if on-site soils do not meet the above conditions.
     c. Graded areas must be maintained in a true and even grade as specified on the approved plan, then scarified or otherwise loosened to a depth of 3 to 5 inches.
     d. Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.
     e. Mix soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Rake lawn areas to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site conditions will not permit normal seedbed preparation. Track slopes 3:1 or flatter with tracked equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seedbed loosening may be unnecessary on newly disturbed areas.

B. Topsoiling
  1. Topsoil is placed over prepared subsoil prior to establishment of permanent vegetation. The purpose is to provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.
  2. Topsoil salvaged from an existing site may be used provided it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-NRCS.
  3. Topsoiling is limited to areas having 2:1 or flatter slopes where:
     a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
     b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
     c. The original soil to be vegetated contains material toxic to plant growth.
     d. The soil is so acidic that treatment with limestone is not feasible.
  4. Areas having slopes steeper than 2:1 require special consideration and design.
  5. Topsoil Specifications: Soil to be used as topsoil must meet the following criteria:
     a. Topsoil must be a loam, sandy loam, clay loam, silt loam, sandy clay loam, or loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Topsoil must not be a mixture of contrasting textured subsoils and must contain less than 5 percent by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1½ inches in diameter.
     b. Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nut sedge, poison ivy, thistle, or others as specified.
     c. Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.
  6. Topsoil Application
     a. Erosion and sediment control practices must be maintained when applying topsoil.
     b. Uniformly distribute topsoil in a 5 to 8 inch layer and lightly compact to a minimum thickness of 4 inches. Spreading is to be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations must be corrected in order to prevent the formation of depressions or water pockets.
     c. Topsoil must not be placed if the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

C. Soil Amendments (Fertilizer and Lime Specifications)
  1. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
  2. Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers must all be delivered to the site fully labeled according to the applicable laws and must bear the name, trade name or trademark and warranty of the producer.
  3. Lime materials must be ground limestone (hydrated or burnt lime may be substituted except when hydroseeding) which contains at least 50 percent total oxides (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent will pass through a #100 mesh sieve and 98 to 100 percent will pass through a #20 mesh sieve.
  4. Lime and fertilizer are to be evenly distributed and incorporated into the top 3 to 5 inches of soil by disking or other suitable means.
  5. Where the subsoil is either highly acidic or composed of heavy clays, spread ground limestone at the rate of 4 to 8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil.

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

Definition

The application of seed and mulch to establish vegetative cover.

Purpose

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

Conditions Where Practice Applies

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

Criteria

A. Seeding
  1. Specifications
     a. All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project. Refer to Table B.4 regarding the quality of seed. Seed tags must be available upon request to the inspector to verify type of seed and seeding rate.
     b. Mulch alone may be applied between the fall and spring seeding dates only if the ground is frozen. The appropriate seeding mixture must be applied when the ground thaws.
     c. Inoculants: The inoculant for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less effective.
     d. Sod or seed must not be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.
  2. Application
     a. Dry Seeding: This includes use of conventional drop or broadcast spreaders.
        i. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries.
        ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with a weighted roller to provide good seed to soil contact.
     b. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
        i. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.
        ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.
     c. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer).
        i. If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P2O5 (phosphorous), 200 pounds per acre; K2O (potassium), 200 pounds per acre.
        ii. Lime: Use only ground agricultural limestone (up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
        iii. Mix seed and fertilizer on site and seed immediately and without interruption.
        iv. When hydroseeding do not incorporate seed into the soil.

B. Mulching
  1. Mulch Materials (in order of preference)
     a. Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law and not musty, moldy, caked, decayed, or excessively dusty. Note: Use only sterile straw mulch in areas where one species of grass is desired.
     b. Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state.
        i. WCFM is to be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
        ii. WCFM, including dye, must contain no germination or growth inhibiting factors.
        iii. WCFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material must form a blotter-like ground cover, on application, having moisture absorption and percolation properties and must cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
        iv. WCFM material must not contain elements or compounds at concentration levels that will be phyto-toxic.
        v. WCFM must conform to the following physical requirements: fiber length of approximately 10 millimeters, diameter approximately 1 millimeter, pH range of 4.0 to 8.5, ash content of 1.6 percent maximum and water holding capacity of 90 percent minimum.
  2. Application
     a. Apply mulch to all seeded areas immediately after seeding.
     b. When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a uniform loose depth of 1 to 2 inches. Apply mulch to achieve a uniform distribution and depth so that the soil surface is not exposed. When using a mulch anchoring tool, increase the application rate to 2.5 tons per acre.
     c. Wood cellulose fiber used as mulch must be applied at a net dry weight of 1500 pounds per acre. Mix the wood cellulose fiber with water to attain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
  3. Anchoring
     a. Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon the size of the area and erosion hazard:
        i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of 2 inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should follow the contour.
        ii. Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. Mix the wood cellulose fiber with water at a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
        iii. Synthetic binders such as Acrylic DLR (Agro-Tack), DCA-70, Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used. Follow application rates as specified by the manufacturer. Application of liquid binders needs to be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. Use of asphalt binders is strictly prohibited.
        iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations. Netting is usually available in rolls 4 to 15 feet wide and 300 to 3,000 feet long.

B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

Definition

To stabilize disturbed soils with permanent vegetation.

Purpose

To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils.

Conditions Where Practice Applies

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

Criteria

A. Seed Mixtures
1. General Use
   a. Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site condition or purpose found on Table B.2. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The Summary is to be placed on the plan.
   b. Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-NRCS Technical Field Office Guild, Section 342 - Critical Area Planting.
   c. For sites having disturbed areas over 5 acres, use and show the rates recommended by the soil testing agency.
   d. For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 ½ pounds per 1000 square feet (150 pounds per acre) at the time of seeding in addition to the soil amendments shown in the Permanent Seeding Summary.
2. Turfgrass Mixtures
   a. Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance.
   b. Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.
      i. Kentucky Bluegrass: Full sun Mixture: For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and Eastern Shore. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rate: 1.5 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky Bluegrass Cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
      ii. Kentucky Bluegrass/Perennial Rye: Full Sun Mixture: For use in full sun areas where rapid establishment is necessary and when turf will receive medium to intensive management. Certified Perennial Ryegrass Cultivars/Certified Kentucky Bluegrass Seeding Rate: 2 pounds mixture per 1000 square feet. Choose a minimum of three Kentucky Bluegrass Cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
      iii. Tall Fescue/Kentucky Bluegrass: Full Sun Mixture: For use in drought prone areas and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes; Certified Tall Fescue Cultivars 95 to 100 percent, Certified Kentucky Bluegrass Cultivars 0 to 5 percent. Seeding Rate: 5 to 8 pounds per 1000 square feet. One or more cultivars may be blended.
      iv. Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in Bluegrass lawns. For establishment in high quality, intensively managed turf area. Mixture includes Certified Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rate: 1 ½ to 3 pounds per 1000 square feet.

      Notes: Select turfgrass varieties from those listed in the most current University of Maryland Publication, Agronomy Memo #77, "Turfgrass Cultivar Recommendations for Maryland" Choose certified material. Certified material is the best guarantee of cultivar purity. The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of consumer protection and assures a pure genetic line.
   c. Ideal Times of Seeding for Turf Grass Mixtures
      Western MD: March 15 to June 1, August 1 to October 1 (Hardiness Zones: 5b, 6a)
      Central MD: March 1 to May 15, August 15 to October 15 (Hardiness Zone: 6b)
      Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15 (Hardiness Zones: 7a, 7b)
   d. Till areas to receive seed by disking or other approved methods to a depth of 2 to 4 inches, level and rake the areas to prepare a proper seedbed. Remove stones and debris over 1 ½ inches in diameter. The resulting seedbed must be in such condition that future mowing of grasses will pose no difficulty.
   e. If soil moisture is deficient, supply new seedings with adequate water for plant growth (½ to 1 inch every 3 to 4 days depending on soil texture) until they are firmly established. This is not especially true when seedings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

B. Sod: to provide quick cover on disturbed areas (2:1 grade or flatter).
1. General Specifications
   a. Class of turfgrass must be Maryland State Certified. Sod labels must be made available to the job foreman and inspector.
   b. Sod must be machine cut at a uniform soil thickness of ¾ inch, plus or minus ¼ inch, at the time of cutting. Measurement for thickness must exclude top growth and thatch. Broken pads and torn or uneven ends will not be acceptable.
   c. Standard size sections of sod must be strong enough to support their own weight and retain their size and shape when suspended vertically with a firm grasp on the upper 10 percent of the section.
   d. Sod must not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.
   e. Sod must be harvested, delivered, and installed within a period of 36 hours. Sod not transplanted within this period must be approved by an agronomist or soil scientist prior to its installation.
2. Sod Installation
   a. During periods of excessively high temperature or in areas having dry subsoil, lightly irrigate the subsoil immediately prior to laying the sod.
   b. Lay the first row of sod in a straight line with subsequent rows placed parallel to it and tightly wedged against each other. Stagger lateral joints to promote more uniform growth and strength. Ensure that sod is not stretched or overlapped and that all joints are butted tight in order to prevent voids which would cause air drying of the roots.
   c. Wherever possible, lay sod with the long edges parallel to the contour and with staggering joints. Roll and tamp, peg or otherwise secure the sod to prevent slippage on slopes. Ensure solid contact exists between sod roots and the underlying soil surface.
   d. Water the sod immediately following rolling and tamping until the underside of the new sod pad and soil surface below the sod are thoroughly wet. Complete the operations of laying, tamping and irrigating for any piece of sod within eight hours.
3. Sod Maintenance
   a. In the absence of adequate rainfall, water daily during the first week or as often and sufficiently as necessary to maintain moist soil to a depth of 4 inches. Water sod during the heat of the day to prevent wilting.
   b. After the first week, sod watering is required as necessary to maintain adequate moisture content.
   c. Do not mow until the sod is firmly rooted. No more than 1/3 of the grass leaf must be removed by the initial cutting or subsequent cuttings. Maintain a grass height of at least 3 inches unless otherwise specified.

B-4-4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABLIZATION

Definition

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

Purpose

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

Conditions Where Practice Applies

Exposed soils where ground cover is needed for a period of 6 months or less. For longer duration of time, permanent stabilization practices are required.

Criteria

1. Select one or more of the species or seed mixtures listed in Table B.1 for the appropriate Plant Hardiness Zone (from Figure B.3), and enter them in the Temporary Seeding Summary below along with application rates, seeding dates and seeding depths. If this Summary is not put on the plan and completed, then Table B.1 plus fertilizer and lime rates must be put on the plan.
2. For sites having soil tests performed, use and show the recommended rates by the testing agency. Soil tests are not required for Temporary Seeding.
3. When stabilization is required outside of a seeding season, apply seed and mulch or straw mulch alone as prescribed in Section B-4-3.A.1.b and maintain until the next seeding season.

B-4-8 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA

Definition

A mound or pile of soil protected by appropriately designed erosion and sediment control measures.

Purpose

To provide a designated location for the temporary storage of soil that controls the potential for erosion, sedimentation, and changes to drainage patterns.

Conditions Where Practice Applies

Stockpile areas are utilized when it is necessary to salvage and store soil for later use.

Criteria

1. The stockpile location and all related sediment control practices must be clearly indicated on the erosion and sediment control plan.
2. The footprint of the stockpile must be sized to accommodate the anticipated volume of material and based on a side slope ratio no steeper than 2:1. Benching must be provided in accordance with Section B-3 Land Grading.
3. Runoff from the stockpile area must drain to a suitable sediment control practice.
4. Access the stockpile area from the upgrade side.
5. Clear water runoff into the stockpile area must be minimized by use of a diversion device such as an earth dike, temporary swale or diversion fence. Provisions must be made for discharging concentrated flow in a non-erosive manner.
6. Where runoff concentrates along the toe of the stockpile fill, an appropriate erosion/sediment control practice must be used to intercept the discharge.
7. Stockpiles must be stabilized in accordance with the 3/7 day stabilization requirement as well as Standard B-4-1 Incremental Stabilization and Standard B-4-4 Temporary Stabilization.
8. If the stockpile is located on an impervious surface, a liner should be provided below the stockpile to facilitate cleanup. Stockpiles containing contaminated material must be covered with impermeable sheeting.

Maintenance

The stockpile area must continuously meet the requirements for Adequate Vegetative Establishment in accordance with Section B-4 Vegetative Stabilization. Side slopes must be maintained at no steeper than a 2:1 ratio. The stockpile area must be kept free of erosion. If the vertical height of a stockpile exceeds 20 feet for 2:1 slopes, 30 feet for 3:1 slopes, or 40 feet for 4:1 slopes, benching must be provided in accordance with Section B-3 Land Grading.

H-5 STANDARDS AND SPECIFICATIONS FOR DUST CONTROL

Definition

Controlling the suspension of dust particles from construction activities.

Purpose

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

Conditions Where Practice Applies

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

Specifications

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

HOWARD SOIL CONSERVATION DISTRICT STANDARD SEDIMENT CONTROL NOTES

1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855).

2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.

3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 3 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1, B) 7 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

4. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. B-4-5), TEMPORARY SEEDING (SEC. B-4-4) AND MULCHING (SEC. B-4-3). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.

5. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

6. SITE ANALYSIS:

TOTAL AREA OF SITE:	8.11	ACRES
AREA DISTURBED:	8.57	ACRES
AREA TO BE ROOFED OR PAVED:	4.00	ACRES
AREA TO BE VEGETATIVELY STABILIZED:	4.57	ACRES
TOTAL CUT:	17,777 *	CY
TOTAL FILL:	17,777 *	CY
OFFSITE WASTE/BORROW LOCATION:	SITE WITH APPROVED SDP AND ACTIVE GRADING PERMIT	

7. ANY SEDIMENT CONTROL PRACTICE THAT IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.

8. ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

9. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.

10. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY, WHICHEVER IS SHORTER.

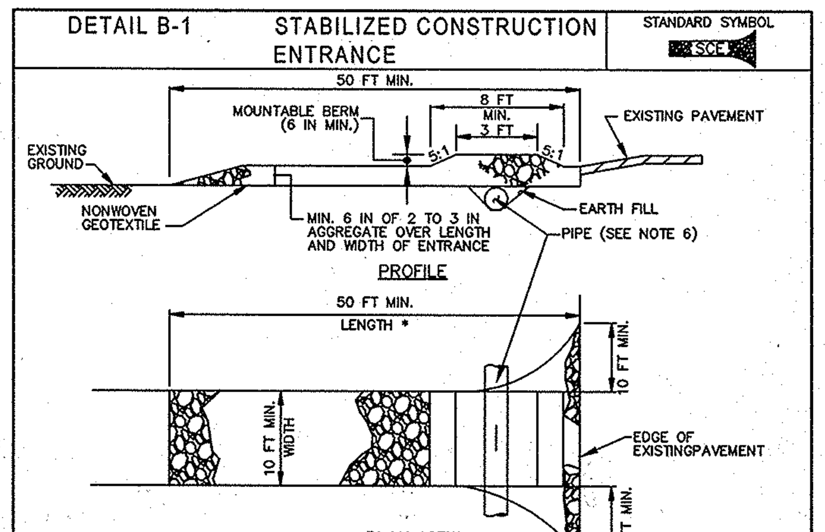
11. ANY CHANGES OR REVISIONS TO THE SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE PLAN APPROVAL AUTHORITY PRIOR TO PROCEEDING WITH CONSTRUCTION.

12. A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 ACRES 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.

*CUT/FILL NUMBERS ARE FOR SEDIMENT CONTROL PURPOSES ONLY. CONTRACTOR TO VERIFY.

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL: SCE



CONSTRUCTION SPECIFICATIONS

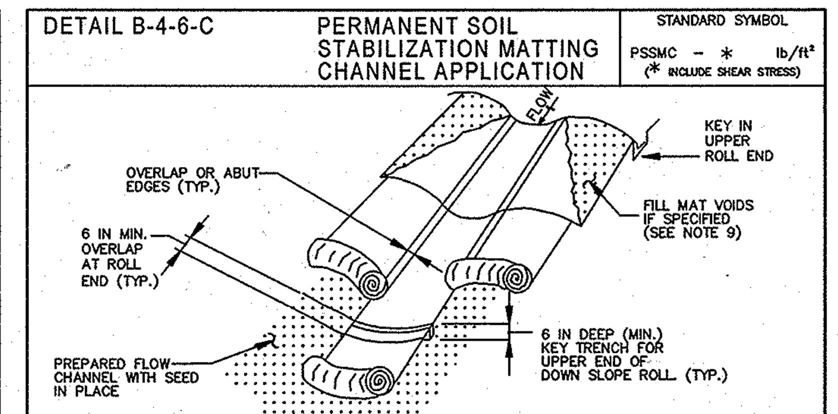
1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
2. PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
5. MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL B-4-6-C PERMANENT SOIL STABILIZATION MATTING CHANNEL APPLICATION

STANDARD SYMBOL: PSSMC – * lb/ft² (* INCLUDE SHEAR STRESS)



CONSTRUCTION SPECIFICATIONS

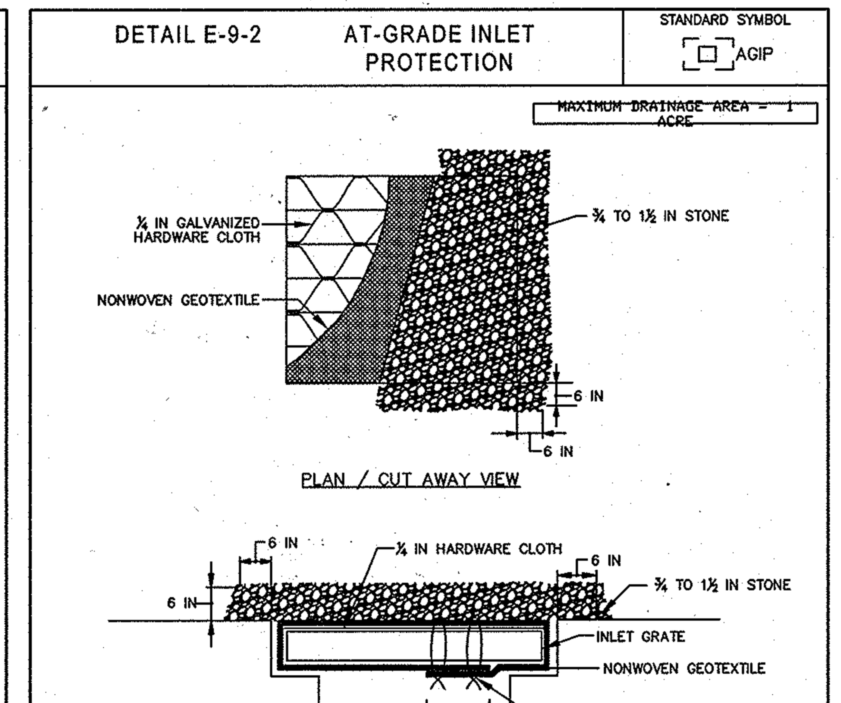
1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE PERMANENT SOIL STABILIZATION MATTING MADE OF OPEN WEAVE SYNTHETIC, NON-DEGRADABLE FIBERS OR ELEMENTS OF UNIFORM THICKNESS AND DISTRIBUTION THROUGHOUT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES OR WOOD STAKES. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1 ½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPE AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS, UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
5. UNROLL MATTING IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL CENTER LINE. WORK FROM CENTER OF CHANNEL OUTWARD WHEN PLACING ROLLS. LAY MATTING SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. OVERLAP OR ABUT EDGES OF MATTING ROLLS PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE NEXT DOWNSTREAM MAT.
7. KEY IN THE TOP OF SLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. IF SPECIFIED BY THE DESIGNER OR MANUFACTURER AND DEPENDING ON THE TYPE OF MAT BEING INSTALLED, ONCE THE MATTING IS KEYED AND STAPLED IN PLACE, FILL THE MAT VOIDS WITH TOP SOIL OR GRANULAR MATERIAL AND LIGHTLY COMPACT OR ROLL TO MAXIMIZE SOIL/MAT CONTACT WITHOUT CRUSHING MAT.
10. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-9-2 AT-GRADE INLET PROTECTION

STANDARD SYMBOL: AGIP



CONSTRUCTION SPECIFICATIONS

1. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
2. LIFT GRATE AND WRAP WITH NONWOVEN GEOTEXTILE TO COMPLETELY COVER ALL OPENINGS. SECURE WITH WIRE TIES AND SET GRATE BACK IN PLACE.
3. PLACE CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE 6 INCHES THICK ON THE GRATE.
4. STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

SEQUENCE OF CONSTRUCTION

NOTIFY SEDIMENT CONTROL DIVISION 48 HOURS PRIOR TO START OF WORK

PER LOT HOUSE CONSTRUCTION FOR SINGLE FAMILY DETACHED UNITS

1. Obtain building/grading permit. (day 1)

2. Hold on-site preconstruction meeting. (day 2)

3. Install perimeter controls (i.e. super silt fences around lot stick and SCE). (day 3)

4. Excavate for house foundation (and noise wall foundation if applicable), rough grade and stabilize in accordance with the temporary seedbed notes (day 4-10)

5. Pour house footers and foundation (and noise wall if applicable) and backfill. (day 11-15).

6. Install water and sewer house connections up to house, backfill and construct driveway. (day 16-20).

7. Finish house construction [framing, walls and roof (and noise wall, if applicable)]. (day 21-80).

6. Final grade lot and stabilize in accordance with the permanent seedbed notes. (day 81-85)

7. Upon approval from the Howard County sediment control inspector, remove sediment control devices and stabilize any remaining disturbed areas (day 86-90)

NO.	DATE	REVISION

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

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. 22390 Expiration Date: 6-30-2015.

STATE OF MARYLAND — CHRISTOPHER ALAN MALAGARI — NO. 22390 — REGISTERED — PROFESSIONAL ENGINEER
4/21/15

OWNER:
MANGIONE ENTERPRISES OF TURF VALLEY, LIMITED PARTNERSHIP
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

BUILDER:
NV HOMES
9720 PATUXENT WOODS DRIVE
COLUMBIA, MARYLAND 21045
410-379-3391

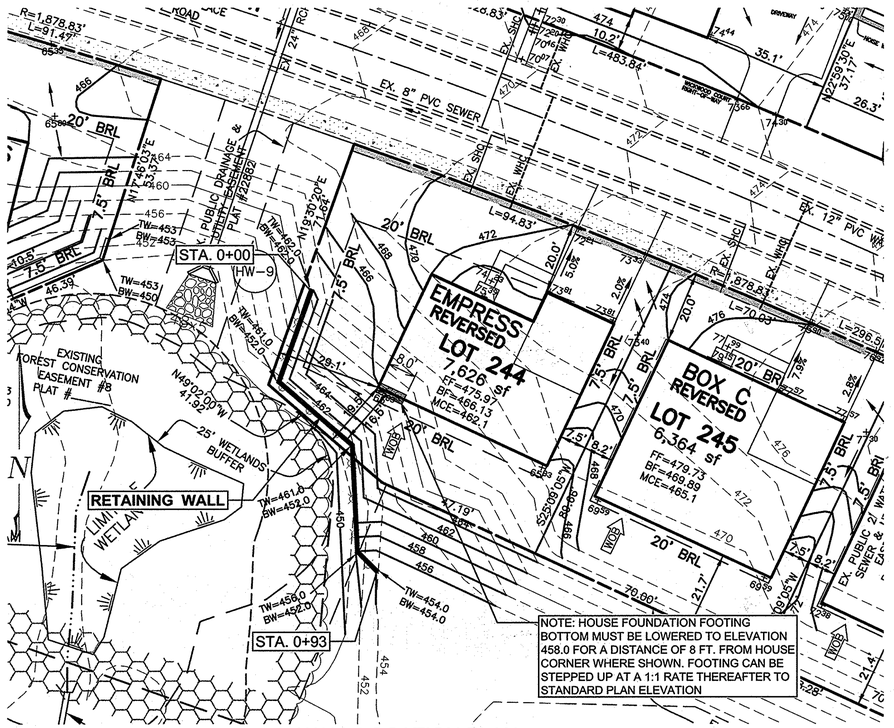
VILLAGES AT TURF VALLEY
PHASE 2, SECTION 2
LOTS 210 thru 257 and OPEN SPACE LOTS 258 thru 260;
A RESUBDIVISION OF VILLAGES AT TURF VALLEY, PHASE 2, SECTION 1
NON-BUILDABLE BULK PARCELS 'DD-1', 'EE-1' AND 'FF-1'

TAX MAP: 16, PARCEL: 401, GRID: 10
TAX MAP: 16, PARCEL: P/O 8, GRID: 17
ELECTION DISTRICT NO. 3 - HOWARD COUNTY, MARYLAND - ZONED: PGCC

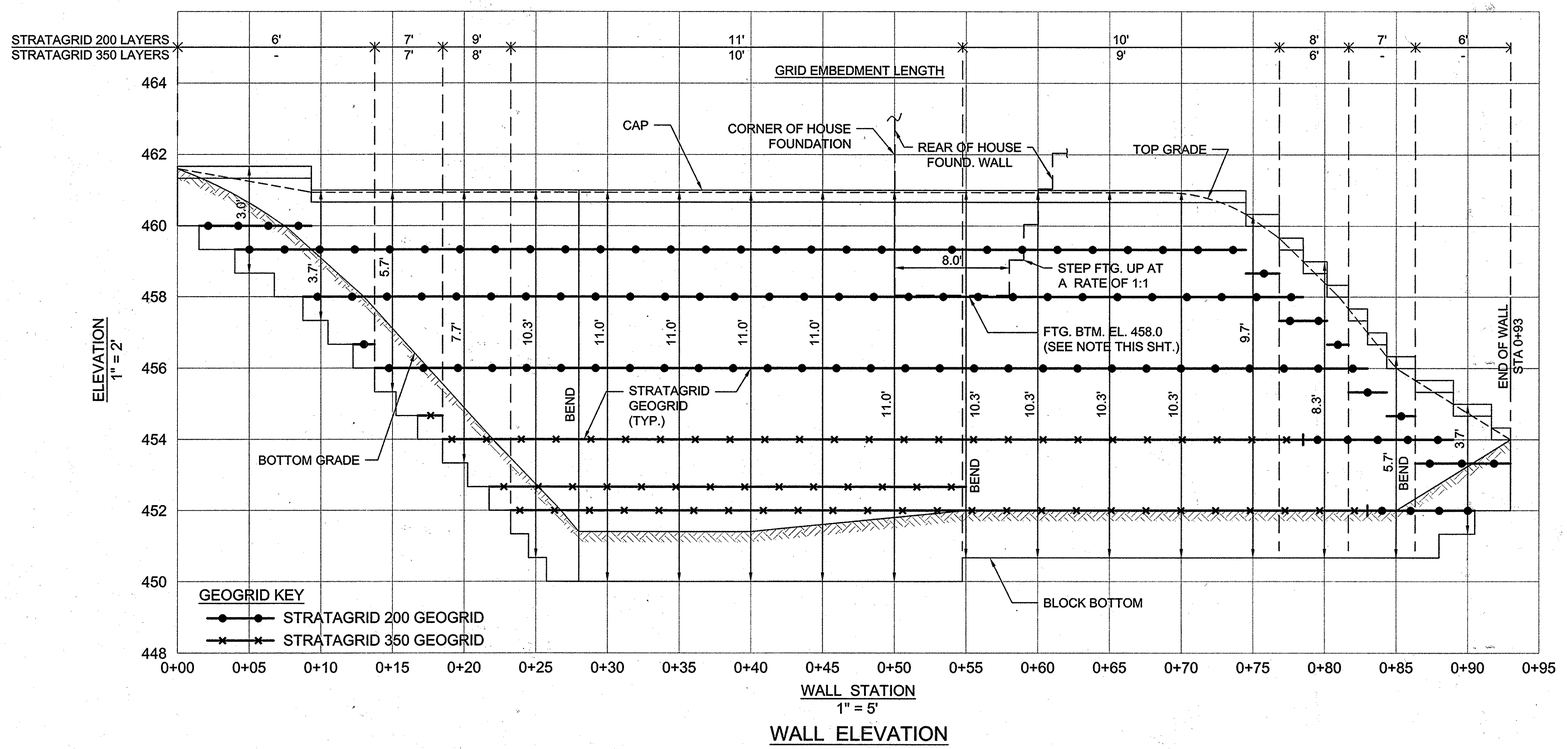
SEDIMENT AND EROSION CONTROL NOTES AND DETAILS

DATE:	APRIL, 2015	BEI PROJECT NO.	2554
SCALE:	NONE	SHEET	9 OF 10

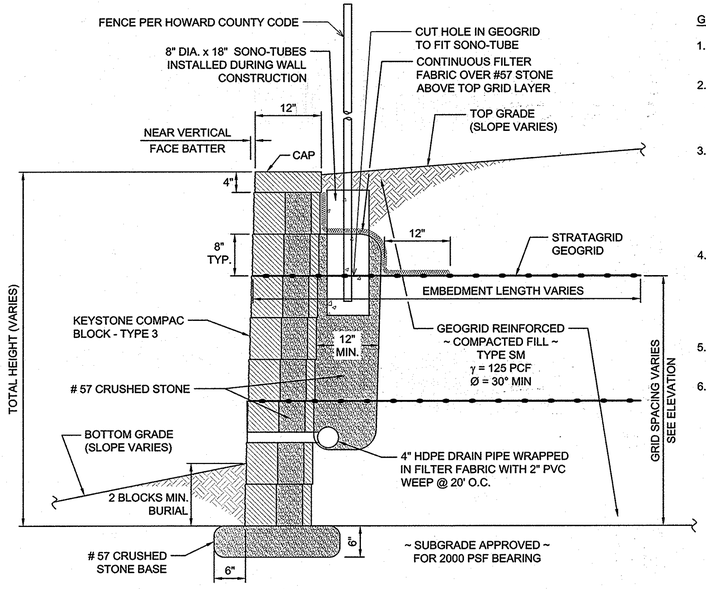
SDP-15-014



WALL LOCATION PLAN
1" = 20'



WALL ELEVATION



TYPICAL WALL SECTION
N.T.S.

GENERAL NOTES:

1. No trees shall be planted within 10 feet of the top of the retaining wall.
2. Retaining walls shall only be constructed under the observation of a registered professional engineer and a (NICET, WACEL, or equiv.) certified soils technician.
3. The required bearing pressure beneath the wall system shall be verified in the field by a certified soils technician. Testing documentation must be provided to the Howard County Inspector prior to start of construction. The required bearing test shall be the Dynamic Cone Penetrometer test ASTM STP-399.
4. The suitability of fill material shall be confirmed by the on-site soils technician. Each 8" lift must be compacted to a minimum 95% standard proctor density and the testing report shall be made available to the Howard County Inspector upon completion of construction.
5. Walls shall not be constructed on uncertified fill materials.
6. Walls shall not be constructed within a Howard County right-of-way or easement.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5-29-15

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6-09-15

DIRECTOR — DATE 6/10/15

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 06/10/2015

SPECIFICATIONS

MODULAR CONCRETE BLOCK RETAINING WALL

PART 1: GENERAL

1.01 Description

A. Work shall consist of furnishing and construction of a Modular Retaining Wall System in accordance with these specifications and in reasonably close conformity with the lines, grades, design, and dimensions shown on the plans.

B. Work includes preparing foundation soil, furnishing and installing leveling pad, unit drainage fill and backfill to the lines and grades shown on the construction drawings.

C. Work includes furnishing and installing geogrid soil reinforcement of the type, size, location, and lengths designated on the construction drawings.

1.02 Delivery, Storage and Handling

A. Contractor shall check all materials upon delivery to assure that the proper type, grade, color, and certification has been received.

B. Contractor shall protect all materials from damage due to job site conditions and in accordance with manufacturer's recommendations. Damaged materials shall not be incorporated into the work.

PART 2: PRODUCTS

2.01 Modular Concrete Retaining Wall Units

A. Modular concrete units shall conform to the following architectural requirements:

face color - color may be specified by the Owner.

face finish - sculptured rock face in angular tri-planer or flat configuration. Other face finishes will not be allowed without written approval of Owner.

bond configuration - running with bonds nominally located at midpoint vertically adjacent units, in both straight and curved alignments.

exposed surfaces of units shall be free of chips, cracks or other imperfections when viewed from a distance of 10 feet under diffused lighting.

B. Modular concrete materials shall conform to the requirements of ASTM C1372 - Standard Specifications for Segmental Retaining Wall Units.

C. Modular concrete units shall conform to the following structural and geometric requirements measured in accordance with appropriate references:

compressive strength = 3000 psi minimum; absorption = 8% maximum (6% in northern states) for standard weight aggregates;

dimensional tolerances = ±1/8" from nominal unit dimensions not including rough split face, ±1/16"

unit height - top and bottom planes; unit size - 8" (H) x 18" (W) x 12 (D) minimum;

unit weight - 75 lbs/unit minimum for standard weight aggregates;

inter-unit shear strength - 1000 plf minimum at 2 psi normal pressure; at 2 psi normal force.

geogrid/unit peak connection strength - 1000 plf minimum

D. Modular concrete units shall conform to the following constructability requirements:

vertical setback = 1/8"± per course (near vertical) or 1"+ per course per the design; alignment and grid positioning mechanism - fiberglass pins, two per unit minimum;

maximum horizontal gap between erected units shall be - 1/2 inch.

2.02 Shear Connectors

A. Shear connectors shall be 1/2 inch diameter thermoset isopthalic polyester resin-protruded fiberglass reinforcement rods or equivalent to provide connection between vertically and horizontally adjacent units. Strength of shear connectors between vertical adjacent units shall be applicable over a design temperature of 10 degrees F to + 100 degrees F. B. Shear connectors shall be capable of holding the geogrid in the proper design position during grid pre-tensioning and backfilling.

2.03 Base Leveling Pad Material

A. Material shall consist of a compacted #57 crushed stone base as shown on the construction drawings.

2.04 Unit Drainage Fill

A. Unit drainage fill shall consist of #57crushed stone

2.05 Reinforced Backfill

A. Reinforced backfill shall type SM, be free of debris and meet the following gradation tested in accordance with ASTM D-422 and meet other properties shown on the plan:

Sieve Size	Percent Passing
2 inch	100-75
3/4 inch	100-75
No. 40	0-60
No. 200	0-35

Plasticity Index (PI) <10 and Liquid Limit <35 per ASTM D-4318.

B. Material can be site excavated soils where the above requirements can be met. Unsuitable soils for backfill (high plastic clays or organic soils) shall not be used in the reinforced soil mass.

2.06 Geogrid Soil Reinforcement

A. Geosynthetic reinforcement shall consist of geogrids manufactured specifically for soil reinforcement applications and shall be manufactured from high tenacity polyester yarn.

2.07 Drainage Pipe

A. The drainage pipe shall be perforated corrugated HDPE pipe manufactured in accordance with ASTM D-1248.

PART 3 EXECUTION

3.01 Excavation

A. Contractor shall excavate to the lines and grades shown on the construction drawings. Owner's representative shall be responsible for inspecting and approving the excavation prior to placement of leveling material or fill soils.

3.02 Base Leveling Pad

A. Leveling pad material shall be placed to the lines and grades shown on the construction drawings, to a minimum thickness of 6 inches and extend laterally a minimum of 6" in front and behind the modular wall unit.

B. Leveling pad shall be prepared to insure full contact to the base surface of the concrete units.

3.03 Modular Unit Installation

A. First course of units shall be placed on the leveling pad at the appropriate line and grade. Alignment and level shall be checked in all directions and insure that all units are in full contact with the base and properly seated.

B. Place the front of units side-by-side. Do not leave gaps between adjacent units. Layout of corners and curves shall be in accordance with manufacturer's recommendations.

C. Install shear/connecting devices per manufacturer's recommendations.

D. Place and compact drainage fill within and behind wall units. Place and compact backfill soil behind drainage fill. Follow wall erection and drainage fill closely with structure backfill.

E. Maximum stacked vertical height of wall units, prior to unit drainage fill and backfill placement and compaction, shall not exceed three courses.

3.04 Structural Geogrid Installation

A. Geogrid shall be oriented with the highest strength axis perpendicular to the wall alignment.

B. Geogrid reinforcement shall be placed at the strengths, lengths, and elevations shown on the construction design drawings or as directed by the Engineer.

C. The geogrid shall be laid horizontally on compacted backfill and attached to the modular wall units. Place the next course of modular concrete units over the geogrid. The geogrid shall be pulled taut, and anchored prior to backfill placement on the geogrid.

D. Geogrid reinforcements shall be continuous throughout their embedment lengths and placed side-by-side to provide 100% coverage at each level. Spliced connections between shorter pieces of geogrid or gaps between adjacent pieces of geogrid are not permitted.

3.05 Reinforced Backfill Placement

A. Reinforced backfill shall be placed, spread, and compacted in such a manner that minimizes the development of slack in the geogrid and installation damage.

B. Reinforced backfill shall be placed and compacted in lifts not to exceed 6 inches where hand compaction is used, or 8 - 10 inches where heavy compaction equipment is used. Lift thickness shall be decreased to achieve the required density as required.

C. Reinforced backfill shall be compacted to 95% of the maximum density as determined by ASTM D698. The moisture content of the backfill material prior to and during compaction shall be uniformly distributed throughout each layer and shall be + 3% to - 3% of optimum.

D. Only lightweight hand-operated equipment shall be allowed within 3 feet from the tail of the modular concrete unit.

E. Tracked construction equipment shall not be operated directly upon the geogrid reinforcement. A minimum fill thickness of 6 inches is required prior to operation of tracked vehicles over the geogrid. Tracked vehicle turning should be kept to a minimum to prevent tracks from displacing the fill and damaging the geogrid.

F. Rubber tired equipment may pass over geogrid reinforcement at slow speeds, less than 10 MPH. Sudden braking and sharp turning shall be avoided.

G. At the end of each day's operation, the Contractor shall slope the last lift of reinforced backfill away from the wall units to direct runoff away from wall face. The Contractor shall not allow surface runoff from adjacent areas to enter the wall construction site.

3.06 Cap Installation

A. Cap units shall be glued to underlying units with an all-weather adhesive recommended by the manufacturer.

3.07 Field Quality Control

A. The Owner shall engage inspection and testing services, including independent laboratories, to provide quality assurance and testing services during construction.

B. As a minimum, quality assurance testing should include foundation soil inspection, soil and backfill testing, verification of design parameters, and observation of construction for general compliance with design drawings and specifications.

NO.	DATE	REVISION

HILLIS-CARNES
ENGINEERING ASSOCIATES
10975 Guilford Road, Suite A Annapolis Junction, Maryland
(410) 880-4788 WWW.HCEA.COM Fax: (410) 880-4098

Professional Certification: I hereby certify that these plans 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. 14434, Expiration Date: 05/13/17.

STATE OF MARYLAND — RICHARD W. STUMP — No. 14434 — PROFESSIONAL ENGINEER

OWNER:
MANGIONE ENTERPRISES OF TURF VALLEY, LIMITED PARTNERSHIP
1205 YORK ROAD, PENTHOUSE
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NON-BUILDABLE BULK PARCELS 'DD-1', 'EE-1' AND 'FF-1'

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ELECTION DISTRICT NO. 3 - HOWARD COUNTY, MARYLAND - ZONED: PGCC

RETAINING WALL PLAN AND CONSTRUCTION DETAILS

DATE:	APRIL, 2015	HCEA PROJECT NO. 14452-A	
SCALE:	AS SHOWN	SHEET	10 OF 10

SDP-15-014