COMMERCIAL SITE DEVELOPMENT PLAN

TOWN SQUARE AT TURF VALLEY

PARCELS 'J1' & 'J2' AND OPEN SPACE LOTS 4 & 5

TURF VALLEY PROFESSIONAL BUILDINGS

GENERAL NOTES

1. THE SUBJECT PROPERTY IS ZONED PGCC PER THE 2-2-04 COMPREHENSIVE ZONING PLAN AND THE COMP LITE ZONING REGULATION AMENDMENTS EFFECTIVE 7-28-2006.

2. THIS PROJECT IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE ZONING REGULATIONS EFFECTIVE APRIL 13, 2004.

3. BOUNDARY IS BASED ON RECORD PLAT ENTITLED, "TURF VALLEY PROFESSIONAL BUILDINGS" PLAT NOS. 18696-18698, PREPARED BY MILDENBERG, BOENDER AND ASSOCIATES, INC. AND RECORDED ON DECEMBER 15, 2006.

4. EXISTING TOPOGRAPHY SHOWN HEREON IS BASED ON AERIAL TOPOGRAPHIC SURVEY PERFORMED BY WINGS AERIAL MAPPING CO., INC. FLOWN ON OR ABOUT JANUARY, 2006.

5. 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.

6. EXISTING UTILITIES SHOWN HAVE BEEN TAKEN FROM F-02-074, CONTRACT DRAWINGS #14-3724-D, #24-4048-D, 24-3447-D AND FIELD SURVEYED LOCATIONS. IF NECESSARY, CONTRACTOR SHALL ADJUST ANY OR ALL STRUCTURE TOP ELEVATIONS TO MATCH SDP GRADES.

7. STORMWATER MANAGEMENT FOR THIS SITE WAS PREVIOUSLY PROVIDED BY THE EXISTING EXTENDED DETENTION POND UNDER F-02-074. FOR THIS DEVELOPMENT, THAT POND IS BEING UTILIZED BUT HAS BEEN MODIFIED TO ACCOMODATE A HIGHER CURVE NUMBER BASED ON COMMERCIAL ZONING. THIS POND REMAINS UNDER THE STORMWATER MANAGEMENT REQUIREMENTS IN EFFECT PRIOR TO THE ADOPTION OF THE MDE 2000 MANUAL. QUALITY AND QUANTITY CONTROL FOR THE REMAINDER OF THE SITE IS BEING PROVIDED IN SWMF #2 (EXTENDED DETENTION WITH MICROPOOL) AND RECHARGE CHAMBER #1. THIS POND IS IN CONFORMANCE WITH THE MDE 2000 STORMWATER MANAGEMENT REGULATIONS. POND #1 IS PRIVATELY OWNED AND PRIVATELY MAINTAINED. POND #2 IS PRIVATELY OWNED AND JOINTLY MAINTAINED.

8. THE GEOTECHNICAL REPORT WAS PREPARE BY HILLIS-CARNES ENGINEERING ASSOCIATES, INC. ON OCTOBER 26, 2009.

9. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF WETLANDS, STREAM, OR THEIR REQUIRED BUFFERS.

10. THERE IS NO 100-YEAR FLOODPLAIN LOCATED ON WITHIN THE BOUNDARIES OF TOWN SQUARE AT TURF VALLEY.

11. THERE ARE NO EXISTING STRUCTURES LOCATED ON THIS SITE.

12. THERE ARE NO CEMETERIES OR HISTORICAL STRUCTURED LOCATED ON THIS SITE.

13. A NOISE STUDY IS NOT REQUIRED FOR TOWN SQUARE AT TURF VALLEY.

14. THIS PROJECT IS SUBJECT TO THE TRAFFIC STUDY PREPARED BY THE TRAFFIC GROUP, INC. WHICH WAS UPDATED JANUARY 7, 2005, AUGUST 11, 2006, AND LETTER DATED 11-9-2009. IT WAS APPROVED ON 12-10-2009.

15. THIS SITE IS LOCATED WITHIN THE METROPOLITAN DISTRICT..

16. WATER IS PUBLIC. THE CONTRACT NUMBER IS 44-4653-D. THE DRAINAGE AREA IS "LITTLE PATUXENT".

17. SEWER IS PUBLIC. THE CONTRACT NUMBER IS 24-3447-D. THE DRAINAGE AREA IS "LITTLE PATUXENT".

18. THIS PROJECT IS EXEMPT FROM HOWARD COUNTY FOREST CONSERVATION REQUIREMENTS UNDER SECTION 16.1202(b)(1)(iv) OF THE COUNTY CODE SINCE IT IS A PLANNED UNIT DEVELOPMENT WHICH HAD PRELIMINARY DEVELOPMENT PLAN APPROVAL AND 50% OR MORE OF THE LAND WAS RECORDED AND SUBSTANTIALLY DEVELOPED BEFORE DECEMBER 31, 1992.

19. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT IN THE AMOUNT OF $30,210.00 ($20,100.00 FOR 67 SHADE TREES, $9,150.00 FOR 61 EVERGREEN TREES, AND $960.00 FOR 32 SHRUBS).

20. HOWARD COUNTY FILE NUMBERS: S-86-013 (368), S-00-018, P-00-006, F-02-074, WP-12-129

21. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS CONSTRUCTION INSPECTION DIVISION AT (410)313-1880 AT LEAST FIVE(5) WORKING DAYS PRIOR TO THE START OF WORK.

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

23. ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.

24. STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (1993) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS (JUNE 1993)." A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREETLIGHT AND ANY TREE.

25. ALL EXTERIOR LIGHTING SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL VOLUME III (1993), ZONING SECTION 134 AND AS SHOWN ON THESE PLANS. ALL EXTERIOR LIGHT FIXTURES SHALL BE ORIENTED TO DIRECT LIGHT INWARDS AND DOWNWARDS ON-SITE AWAY FROM ALL ADJOINING RESIDENTIAL PROPERTIES AND PUBLIC ROADS IN ACCORDANCE WITH SECTION 134 OF THE HOWARD COUNTY ZONING REGULATIONS.

26. ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-½" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) – 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.

27. TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNAGE SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

28. TRASH COLLECTION SHALL BE PROVIDED PRIVATELY.

29. PRIVATE ROAD 'A' AS SHOWN ON THIS SITE DEVELOPMENT PLAN SHALL BE A PRIVATE ROAD. HOWEVER, IT IS INTENDED TO BE DEDICATED TO HOWARD COUNTY AS A PUBLIC ROAD IN THE FUTURE. IT HAS BEEN DESIGNED PER DESIGN MANUAL VOLUME III STANDARDS AS A MAJOR COLLECTOR.

30. OPEN SPACE FOR THIS SUBDIVISION WAS PREVIOUSLY PROVIDED UNDER F-02-074.
TOTAL AREA OF SUBDIVISION: 68.97 +/- ACRES.
OPEN SPACE REQUIRED: 15% OF 68.97 ACRES OR 10.35 ACRES.
OPEN SPACE PROVIDED: 24.33 ACRES (PARCELS K, L, N, O, & P) 13.98 ACRES OF WHICH IS TO BE CREDITED TOWARD FUTURE REQUIREMENTS.

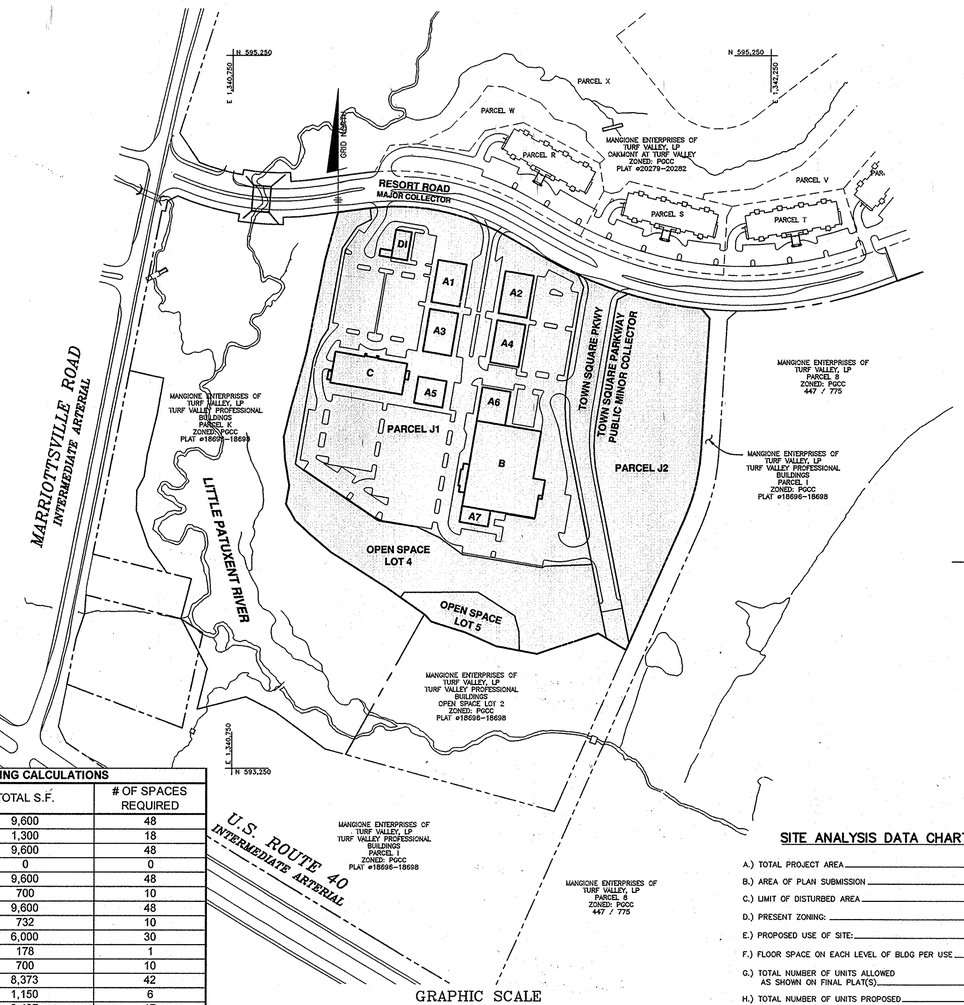
31. THIS SITE COMPLIES WITH THE HOWARD COUNTY GREEN BUILDINGS LAW SET FORTH UNDER TITLE 3. SUBTITLE 10 OF THE HOWARD COUNTY CODE AND SECTION 3.1005(A) OF THE CODE. REGISTRATION WITH THE U.S. GREEN BUILDING COUNCIL AND THE APPLICABLE LEED REGISTRATION FEE WAS PAID ON 11-6-2009. THE LEED NEW CONSTRUCTION CHECKLIST WAS PREPARED, SIGNED AND DATED BY THE PROJECT LEED ACCREDITED PROFESSIONAL AND WAS RECEIVED BY DPZ ON 11-6-2009. BUILDING 'C' IS TENTATIVELY CERTIFIED BY LEED WITH THE MINIMUM REQUIRED CERTIFIED LEVEL RATING.

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

33. KNOX BOX SHALL BE PLACED ON THE FRONT OF ALL BUILDINGS NO MORE THAN 6' TO THE RIGHT OF THE MAIN ENTRANCE AT A HEIGHT OF 4-5'. IT SHALL BE ELECTRONICALLY SUPERVISED TO NOTIFY THE OWNER THAT IT IS BEING ACCESSED (INTEGRATED WITH THE FIRE ALARM SYSTEM).

34. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.

35. REDEVELOPMENT OF GOLF COURSE FEATURES ASSOCIATED WITH THIS PROJECT WILL BE OVERSEEN BY HOWARD COUNTY HEALTH DEPARTMENT FOR COMPLIANCE WITH SECTION 16.129. IF ANY "FILL" IS IMPORTED AS PART OF THE GRADING/DEVELOPMENT PROCESS, THAT FILL CANNOT BE FROM ANY PRIOR GOLF COURSE FEATURE UNLESS TESTED AND APPROVED UNDER THE PROVISIONS OF SECTION 16.129.

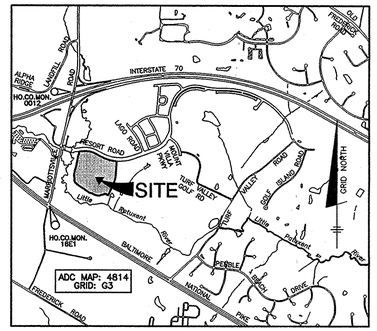


GRAPHIC SCALE

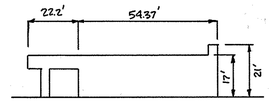
200 0 100 200 400 800

(IN FEET)
1 inch = 200 ft.

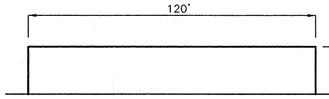
BENCHMARKS NAD'83 HORIZONTAL
HO. CO. #16E1 (AKA: 3438001) STAMPED BRASS DISK SET ON TOP OF A 3' DEEP COLUMN OF CONCRETE. N 593250.960' E 1340192.70' ELEVATION: 463.981'
HO. CO. #0012 (AKA: 3439001) STAMPED BRASS DISK SET ON TOP OF A 3' DEEP COLUMN OF CONCRETE. N 596502.760' E 1340864.37' ELEVATION: 486.298'



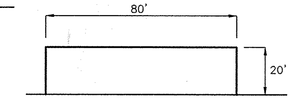
VICINITY MAP
SCALE: 1" = 2000'



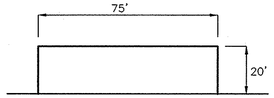
BUILDING D1
LEFT SIDE ELEVATION



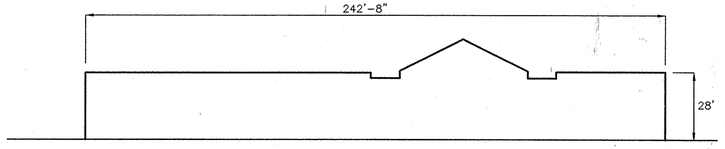
BUILDINGS A1, A2, A3 & A4
FRONT ELEVATION



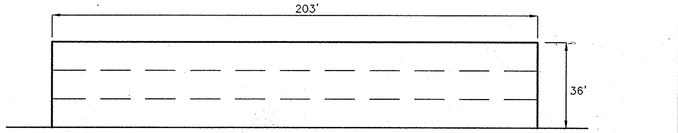
BUILDINGS A7
FRONT ELEVATION



BUILDINGS A5 & A6
FRONT ELEVATION



BUILDINGS B (HARRIS TEETER)
FRONT ELEVATION



BUILDING C
FRONT ELEVATION (3-STORY)

BULK REGULATIONS:

PERMITTED USES: ALL USES AS PER TURF VALLEY PGCC DISTRICT, MULTI-USE SUBDISTRICT FINAL DEVELOPMENT PLAN, SECOND AMENDMENT, PLATS 19578-19580. (46 USES OUTLINED FROM RESIDENTIAL USES TO SPECIALTY STORES)

PROPOSED USE: COMMERCIAL

PERMITTED HEIGHT: COMMERCIAL: 120 FEET
ACCESSORY STRUCTURES: 15 FEET
OTHER: 15 FEET

PERMITTED SETBACKS :

FROM ARTERIAL ROADS:
RESIDENTIAL STRUCTURES: 50 FEET
NON-RESIDENTIAL STRUCTURES: 30 FEET
ACCESSORY USES: 30 FEET
PARKING: 25 FEET

FROM LOT LINES WITHIN PGCC MULTI-USE SUBDISTRICT:
ZERO LOT LINE AND ALL OTHER USES – SIDE – 0 FEET
A MINIMUM OF 15 FEET MUST BE PROVIDED BETWEEN STRUCTURES
RESIDENTIAL –REAR – 20 FEET

FROM COLLECTORS AND LOCAL STREETS:
RESIDENTIAL AND NON-RESIDENTIAL STRUCTURES
30 FEET FROM A 60 FT. ROW
20 FEET FROM A 50 FT. ROW

FROM NON-PGCC ADJACENT PROPERTIES:
FROM RESIDENTIAL DISTRICTS 75 FEET
FROM ALL OTHER DISTRICTS 30 FEET

ADDRESS CHART		
BUILDING	STREET ADDRESS	
A1	11105	RESORT ROAD
A2	11089	RESORT ROAD
A3	11099	RESORT ROAD
A4	11085	RESORT ROAD
A5	11095	RESORT ROAD
A6	11079	RESORT ROAD
B	11075	RESORT ROAD
C	11115	RESORT ROAD
D1	11125	RESORT ROAD
A7	11071	RESORT ROAD

PARKING CALCULATIONS		
BUILDING	TOTAL S.F.	# OF SPACES REQUIRED
A1	9,600	48
A1 outdoor dining	1,300	18
A2	9,600	48
A2 outdoor dining	0	0
A3	9,600	48
A3 outdoor dining	700	10
A4	9,600	48
A4 outdoor dining	732	10
A5	6,000	30
A5 mezzanine	178	1
A5 outdoor dining	700	10
A6	8,373	42
A6 mezzanine	1,150	6
A7	3,427	17
B	48,808	244
C (medical)	17,600	88
C (office)	35,200	176
D1	3,647	19
TOTAL PARKING REQUIRED*		863
TOTAL PARKING PROVIDED**		794

***Shared parking analysis reduces the number of required spaces to 617**

Above chart based on 5 spaces per 1,000 s.f. of building space for shopping centers per Section 133.D.4.n of Zoning Regulations Building C is calculated as a stand alone medical building which also required 5 spaces per 1,000 s.f.

HANDICAPPED PARKING CALCULATIONS		
C (medical)	10% of total spaces per Federal ADA Manual Sect. 4.1.2(5)(d)	9
rest of center	(2% of total with 501-1000 spaces per Maryland ADA Manual Sect. 4.1.2(5)(a)	14
TOTAL HANDICAP PARKING REQUIRED		23
TOTAL HANDICAP PARKING PROVIDED		33

SHEET INDEX	
NO.	DESCRIPTION
1	TITLE SHEET
2A,2B,3-5	SITE DEVELOPMENT AND GRADING PLAN
6	ROAD PROFILE AND DETAILS
7	STORM DRAIN DRAINAGE AREA MAP
8-10	STORM DRAIN PROFILES
11-12A	STORMWATER MANAGEMENT DETAILS
13-14	SEWER PROFILES
15-16	LANDSCAPE PLAN
17-18	SEDIMENT AND EROSION CONTROL PLANS
19	SEDIMENT AND EROSION CONTROL NOTES AND DETAILS
20	SOILS BORING PLAN AND DETAIL SHEET
21	SHOPPING CENTER LIGHTING PLAN
22	ROAD 'A' INTERIM STREET LIGHT AND STRIPING PLAN FOR STOP CONTROL
22A	ROAD 'A' ULTIMATE STREET LIGHT AND STRIPING PLAN FOR SIGNALIZATION
23-28	RETAINING WALL PLANS
29	ROOF LEADER MANIFOLD DETAILS

SITE ANALYSIS DATA CHART

A.) TOTAL PROJECT AREA ____ 25.67 AC.

B.) AREA OF PLAN SUBMISSION ____ 25.67 AC.

C.) LIMIT OF DISTURBED AREA ____ 21.50 AC.

D.) PRESENT ZONING: ____ PGCC (MULTI-USE SUBDISTRICT)

E.) PROPOSED USE OF SITE: ____ COMMERCIAL

F.) FLOOR SPACE ON EACH LEVEL OF BLDG PER USE ____ N/A

G.) TOTAL NUMBER OF UNITS ALLOWED AS SHOWN ON FINAL PLAT(S) ____ N/A

H.) TOTAL NUMBER OF UNITS PROPOSED ____ N/A

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 ____ SEE PARKING CALCS THIS SHEET

K.) NUMBER OF PARKING SPACES PROVIDED ONSITE (INCLUDES HANDICAPPED SPACES) ____ SEE PARKING CALCS THIS SHEET

L.) OPEN SPACE ON-SITE ____ SEE GENERAL NOTE 30

M.) AREA OF RECREATIONAL OPEN SPACE REQUIRED ____ N/A
AREA OF RECREATIONAL OPEN SPACE PROVIDED ____ N/A

N.) BUILDING COVERAGE OF SITE ____ 161,408 S.F.
PERCENTAGE OF GROSS AREA ____ 14.43%

O.) APPLICABLE DPZ FILE REFERENCES: ____ S-86-13 (PB368), S-00-018 P-00-006, F-02-074, WP-12-129

PERMIT INFORMATION CHART					
SUBDIVISION NAME: TURF VALLEY PROFESSIONAL BUILDINGS			SECTION/AREA: NA		LOT/PARCEL #: PARCELS J1 & J2 O.S. LOTS 4&5
PLAT No. OR L/F	GRID No.	ZONE	TAX MAP NO	ELECTION DISTRICT	CENSUS TRACT
22078-22079	10	PGCC	16	3	6030

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 1/24/13

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 1/24/13

DIRECTOR — DATE 1/24/13

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 4/15/10

UPDATE SHEET INDEX FOR SHEETS 2A&2B

NO.	DATE	REVISION
8	9-10-2014	REVISE PARKING CALCS BASED ON REVISED BLDG D1 S.F. ADD NEW BLDG D1 ELEVATION
7	7-9-2013	REVISE TOTAL PARKING PROVIDED IN PARKING CALCULATIONS TO '794'
6	1-11-2013	show R/W and parcels per plat 22079 in plan view, revise parking calculations.
5	9-7-2012	add sheet 12A to sheet index. Add ownership/maintenance to Gen Note 7.
4	3-26-2012	revise Sheet Index to add sheet 29, revise Total Parking provided.
3	12-2-2011	revise BLDG 'D2' to 'A7' and revise square footage and parking requirement.
2	9-21-2011	revise parking calculation based on revised BLDG 'A6' area. Revise height of bldgs A1-A4.
1	5-31-2011	revise parking calculation based on revised BLDG 'B' area. Revise 'N' in Site Analysis Chart

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 418 ▲ ELLICOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6644
60 THOMAS JOHNSON DRIVE ▲ FREDERICK, MARYLAND 21702
(P) 301-371-3505 (F) 301-371-3506
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. 21559, Expiration Date: 7-22-2013.

STATE OF MARYLAND — BRIAN F. CLEARY — 21559 — REGISTERED PROFESSIONAL ENGINEER — 1/3/2013

OWNER:

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

DEVELOPER:

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

TOWN SQUARE AT TURF VALLEY

(CERTIFIED LEVEL RATED GREEN BUILDING PROJECT)
PARCELS 'J1' & 'J2' AND OPEN SPACE LOTS 4 & 5
TURF VALLEY PROFESSIONAL BUILDINGS
PLAT NOS. 22078-22079

TAX MAP: 16 – GRID: 10 – PARCEL: P/O 8 & 50
ZONED: PGCC (MULTI-USE SUBDISTRICT)
ELECTION DISTRICT NO. 3 – HOWARD COUNTY, MARYLAND

REVISED TITLE SHEET

DATE: APRIL, 2010 — BEI PROJECT NO. 2208

SCALE: AS SHOWN — SHEET 1 OF 29

SDP-10-027

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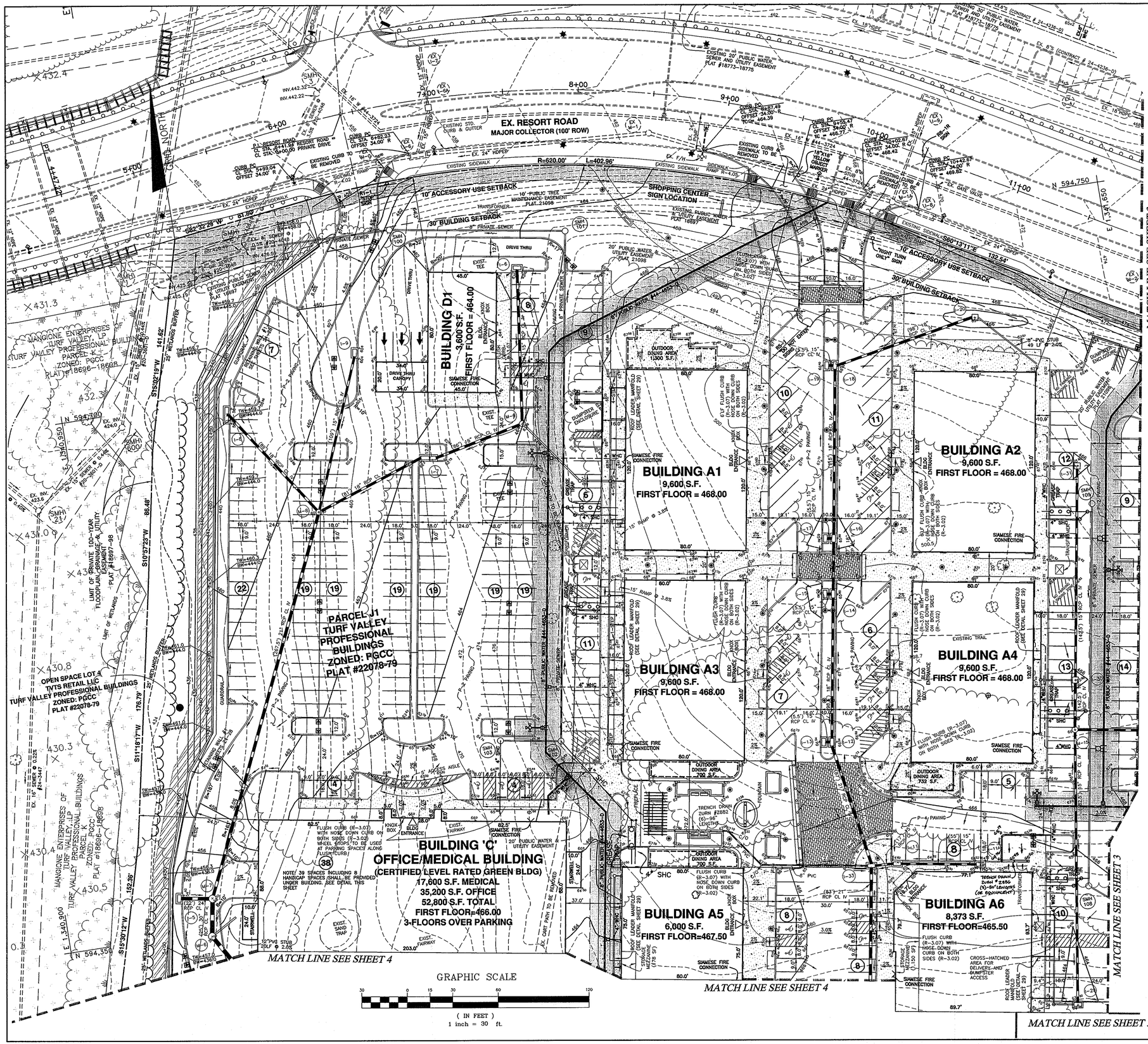

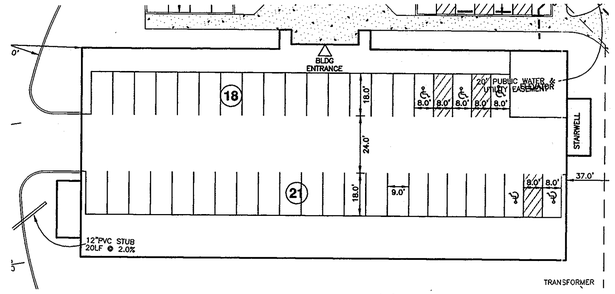

PARKING BELOW BUILDING 'C' DETAIL

LEGEND

- EXISTING CONTOURS AERIAL JAN. 2006
- EXISTING BRUSH
- EXISTING TREELINE
- PROPOSED TREELINE
- EXISTING STREAM
- LIMIT OF WETLANDS
- LIMIT OF SUBMISSION
- (10) PARKING SPACE COUNT
- STORM DRAIN PIPE
- SIDEWALK
- EXISTING STREET LIGHTS ALONG RESORT ROAD.
- INTERNAL PARKING LOT LIGHT POLES
- FIRE HYDRANT
- 10' CONSTRUCTION/MAINTENANCE STRIP FOR RETAINING WALL
- EXISTING 100YR FLOODPLAIN

NOTES:

1. ALL CURBING TO BE STANDARD 7" COMBINATION CURB AND GUTTER (HO.CO.STD.R-3.01) UNLESS OTHERWISE STATED.
2. ALL SPOT ELEVATION SHOWN WITHIN PARKING LOT ARE FLOWLINE/PAVEMENT ELEVATIONS.
3. ALL CURB FILLETS ARE 3' RADIUS UNLESS OTHERWISE STATED.
4. INSIDE METER SETTINGS SHALL BE USED FOR THE WATER.

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 4/15/10

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 1/16/13
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 1/24/13
DIRECTOR — DATE 1/24/13

NO.	DATE	REVISION
6	7-9-2013	ADD CONCRETE PIERS BY ELIMINATING 2 PARKING SPACES AT BUILDING A6 AND ADD TRENCH DRAIN.
5	1-11-2013	show plaza design, revised sidewalks, grading, parking spaces, WHC's for A2&A4, add I-11A.
4	3-26-2012	add roof leader manifolds, show transormer locations, add shopping center sign location.
3	12-21-2011	revise main entrance location on BLDG A6. revise parking spaces and grades in that location.
2	9-21-2011	revise grading along fronts of A1 A2 A3 A4 A5 A6 to be continuous elevation. revise A6 dimensions and area. revise I-10, I-11, I-29. add I-33. relocate WHC's for A1-A6.
1	5-31-2011	revise storm drain from M-15 to I-29. revise grading in parking lot behind bldg A6

BENCHMARK
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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. 21585, Expiration Date: 7-22-2013.

STATE OF MARYLAND — BRIAN F. CLEARY — NO. 21585 — REGISTERED PROFESSIONAL ENGINEER — 1/10/2013

OWNER:
MANGIONE ENTERPRISES OF TURF VALLEY, LP
1205 YORK ROAD, PENTHOUSE
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410-825-8400

DEVELOPER:
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TOWN SQUARE AT TURF VALLEY

(CERTIFIED LEVEL RATED GREEN BUILDING PROJECT)
PARCELS 'J1' & 'J2' AND OPEN SPACE LOTS 4 & 5
TURF VALLEY PROFESSIONAL BUILDINGS
PLAT NOS. 22078-22079

TAX MAP: 16 – GRID: 10 – PARCEL: P/O 8 & 50
ZONED: PGCC (MULTI-USE SUBDISTRICT)
ELECTION DISTRICT NO. 3 – HOWARD COUNTY, MARYLAND

REVISED
SITE DEVELOPMENT AND GRADING PLAN

DATE: APRIL, 2010 | BEI PROJECT NO. 2208
SCALE: AS SHOWN | SHEET 2 OF 29

SDP-10-027

P:\2208 Town Square at Turf Valley\dwg_CURRENT\8021_s02-05.dwg, 1/10/2013 3:34:58 PM

EX. RESORT ROAD
MAJOR COLLECTOR (100' ROW)

BUILDING D1
3,647 S.F.
FLOOR = 463.40

BUILDING A1
9,600 S.F.
FIRST FLOOR = 468.00

BUILDING A2
9,600 S.F.
FIRST FLOOR = 468.00

BUILDING A3
9,600 S.F.
FIRST FLOOR = 468.00

BUILDING A4
9,600 S.F.
FIRST FLOOR = 468.00

BUILDING A5
6,000 S.F.
FIRST FLOOR=467.50

BUILDING A6
8,373 S.F.
FIRST FLOOR=465.50

BUILDING 'C'
OFFICE/MEDICAL BUILDING
(CERTIFIED LEVEL RATED GREEN BLDG)
17,600 S.F. MEDICAL
35,200 S.F. OFFICE
52,800 S.F. TOTAL
FIRST FLOOR=466.00
3-FLOORS OVER PARKING

PARCEL J1
TURF VALLEY PROFESSIONAL BUILDINGS
ZONED: PGCC
PLAT #22078-79

MANGIONE ENTERPRISES OF TURF VALLEY, LP
TURF VALLEY PROFESSIONAL BUILDINGS
PARCEL K
ZONED: PGCC
PLAT #18696-18698

OPEN SPACE LOT 4
TMTS RETAIL LLC
TURF VALLEY PROFESSIONAL BUILDINGS
ZONED: PGCC
PLAT #22078-79

SHOPPING CENTER SIGN LOCATION

10' ACCESSORY USE SETBACK

30' BUILDING SETBACK

R=620.00' L=402.96'

MATCH LINE SEE SHEET 3

MATCH LINE SEE SHEET 4

MATCH LINE SEE SHEET 5

1 inch = 30 ft.

PARKING BELOW BUILDING 'C' DETAIL

HANDICAP PARKING DETAIL FOR BUILDING D1
SCALE: 1"=10'

LEGEND

- EXISTING CONTOURS AERIAL JAN. 2006
- EXISTING BRUSH
- EXISTING TREELINE
- PROPOSED TREELINE
- EXISTING STREAM
- LIMIT OF WETLANDS
- LIMIT OF SUBMISSION
- PARKING SPACE COUNT
- STORM DRAIN PIPE
- SIDEWALK
- EXISTING STREET LIGHTS ALONG RESORT ROAD.
- INTERNAL PARKING LOT LIGHT POLES
- FIRE HYDRANT
- 10' CONSTRUCTION/MAINTENANCE STRIP FOR RETAINING WALL
- EXISTING 100YR FLOODPLAIN

NOTES:

1. ALL CURBING TO BE STANDARD 7" COMBINATION CURB AND GUTTER (HO.CO.STD.R-3.01) UNLESS OTHERWISE STATED.
2. ALL SPOT ELEVATION SHOWN WITHIN PARKING LOT ARE FLOWLINE/PAVEMENT ELEVATIONS.
3. ALL CURB FILLETS ARE 3' RADIUS UNLESS OTHERWISE STATED.
4. INSIDE METER SETTINGS SHALL BE USED FOR THE WATER.

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 04/15/2010

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9.17.14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-24-14

DIRECTOR — DATE 9/24/14

NO.	DATE	REVISION
7	9-10-2014	revise existing curb lines along Resort Road stations 4+00 to 8+00. revise Building D1 footprint and associated grading, curb, and storm drain, & utilities
6	7-9-2013	add concrete area by eliminating 2 parking spaces at Building A-6 and add trench drain
5	1-11-2013	show plaza design, revised sidewalks, grading, parking spaces, WHC's for A2&A4, add I-11A.
4	3-26-2012	add roof leader manifolds, show transormer locations, add shopping center sign location.
3	12-21-2011	revise main entrance location on BLDG A6. revise parking spaces and grades in that location.
2	9-21-2011	revise grading along fronts of A1 A2 A3 A4 A5 A6 to be continuous elevation. revise A6 dimensions and area. revise I-10, I-11, I-29, add I-33, relocate WHC's for A1-A6.
1	5-31-2011	revise storm drain from M-15 to I-29. revise grading in parking lot behind bldg A6

THIS MYLAR REPLACES SHEET PREVIOUSLY SIGNED ON 1-24-2013

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 418 ▲ 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. 10968, Expiration Date: 6-30-2015.

STATE OF MARYLAND — CHRISTOPHER ALAN MALAY — 10968 — REGISTERED PROFESSIONAL ENGINEER — 9-11-14

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

DEVELOPER:
MANGIONE ENTERPRISES OF TURF VALLEY, LP
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

TOWN SQUARE AT TURF VALLEY

(CERTIFIED LEVEL RATED GREEN BUILDING PROJECT)
PARCELS 'J1' & 'J2' AND OPEN SPACE LOTS 4 & 5
TURF VALLEY PROFESSIONAL BUILDINGS
PLAT NOS. 22078-22079

TAX MAP: 16 — GRID: 10 — PARCEL: P/O 8 & 50
ZONED: PGCC (MULTI-USE SUBDISTRICT)
ELECTION DISTRICT NO. 3 — HOWARD COUNTY, MARYLAND

REVISED
SITE DEVELOPMENT AND GRADING PLAN

DATE: APRIL, 2010 — BEI PROJECT NO. 2208
SCALE: AS SHOWN — SHEET 28 OF 29

SDP-10-027

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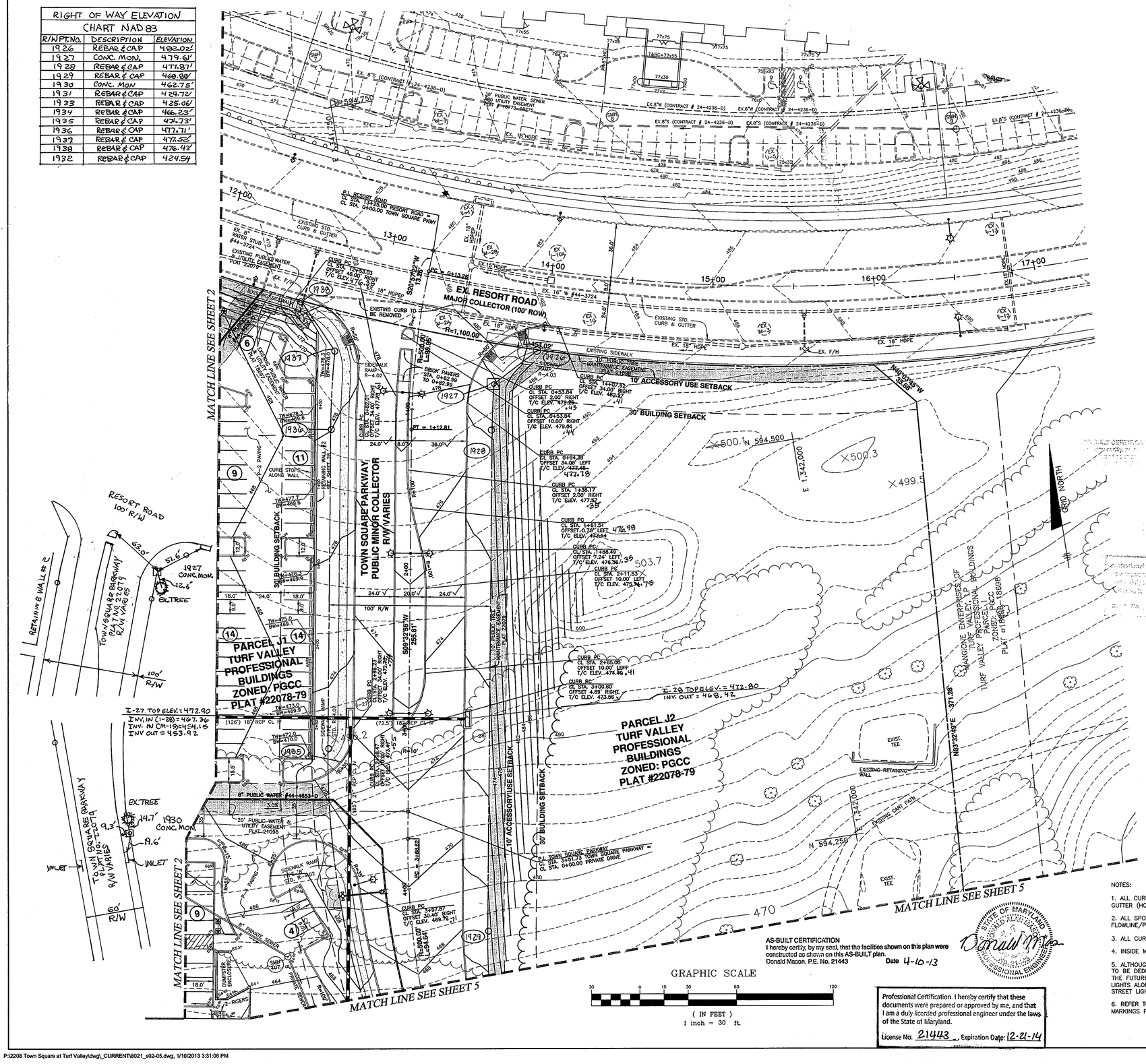
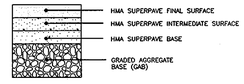
RIGHT OF WAY ELEVATION CHART NAD 83		
R/W PT. NO.	DESCRIPTION	ELEVATION
1926	REBAR & CAP	482.02'
1927	CONC. MON.	479.61'
1928	REBAR & CAP	477.87'
1929	REBAR & CAP	460.98'
1930	CONC. MON	462.75'
1931	REBAR & CAP	424.72'
1933	REBAR & CAP	425.06'
1934	REBAR & CAP	466.23'
1935	REBAR & CAP	471.73'
1936	REBAR & CAP	477.11'
1937	REBAR & CAP	471.52'
1938	REBAR & CAP	476.43'
1932	REBAR & CAP	424.54'





SECTION NUMBER	ROAD AND STREET CLASSIFICATION	CALIFORNIA BEARING RATIO (CBR)	3 TO <5	5 TO <7	≥7	3 TO <5	5 TO <7	≥7
		PAVEMENT MATERIAL (INCHES)	MIN HMA WITH GAB			HMA WITH CONSTANT GAB		
P-2	PARKING DRIVE AISLES: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY LOCAL ROADS: ACCESS PLACE, ACCESS STREET CUL-DE-SAC: RESIDENTIAL	HMA SUPERPAVE FINAL SURFACE 9.5 MM PG 64-22, LEVEL 1 (LOW ESAL)	1.5	1.5	1.5	1.5	1.5	1.5
		HMA SUPERPAVE INTERMEDIATE SURFACE 9.5 MM PG 64-22, LEVEL 1 (LOW ESAL)	1.0	1.0	1.0	1.0	1.0	1.0
		HMA SUPERPAVE BASE 19.0 MM PG 64-22, LEVEL 1 (LOW ESAL)	2.0	2.0	2.0	3.5	2.0	2.0
		GRADED AGGREGATE BASE (GAB)	8.0	4.0	3.0	4.0	4.0	4.0

P-2 PAVING DETAIL

SECTION NUMBER	ROAD AND STREET CLASSIFICATION	CALIFORNIA BEARING RATIO (CBR)	3 TO <5	5 TO <7	≥7	3 TO <5	5 TO <7	≥7
		PAVEMENT MATERIAL (INCHES)	MIN HMA WITH GAB			HMA WITH CONSTANT GAB		
P-4	MINOR COLLECTORS: NON-RESIDENTIAL MAJOR COLLECTORS	HMA SUPERPAVE FINAL SURFACE 12.5 MM PG 64-22, LEVEL 2 (LOW ESAL)	2.0	2.0	2.0	2.0	2.0	2.0
		HMA SUPERPAVE INTERMEDIATE SURFACE 12.5 MM PG 64-22, LEVEL 2 (LOW ESAL)	2.0	2.0	2.0	2.0	2.0	2.0
		HMA SUPERPAVE BASE 19.0 MM PG 64-22, LEVEL 2 (LOW ESAL)	4.0	4.0	3.0	6.0	5.0	3.0
		GRADED AGGREGATE BASE (GAB)	13.0	7.0	4.0	6.0	6.0	6.0

P-4 PAVING DETAIL

CENTER LINE CURVE DATA							
STREET NAME	STATION	RADIUS	ARC	DELTA	TANGENT	CHORD	
TOWN SQUARE ROAD 'A' PARKWAY	0+13.86 TO 1+12.81	500.00'	99.55'	11°24'26"	49.94'	S15°15'09"W	99.38'
	3+68.62 TO 5+47.99	500.00'	179.38'	20°33'18"	90.66'	S00°43'43"E	178.42'

CENTERLINE CONTROL DATA			
STREET NAME	STATION	NORTH	EAST
TOWN SQUARE ROAD 'A' PARKWAY	0+00.00	594651.8233	1341798.3013
	0+13.86	594639.4388	1341793.5582
	1+12.81	594543.5580	1341767.4135
	3+68.62	594291.2944	1941724.9773
	5+47.99	594112.8930	1341727.2458
	9+75.00	593693.7386	1341808.7668

LEGEND

- EXISTING CONTOURS AERIAL JAN. 2006
- EXISTING BRUSH
- EXISTING TREELINE
- PROPOSED TREELINE
- EXISTING STREAM
- LIMIT OF WETLANDS
- LIMIT OF SUBMISSION
- (10) PARKING SPACE COUNT
- STORM DRAIN PIPE
- SIDEWALK
- EXISTING STREET LIGHTS ALONG RESORT ROAD.
- INTERNAL PARKING LOT LIGHT POLES
- STREET LIGHTS
- FIRE HYDRANT

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 4/15/10

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 1/16/13

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 1/24/13

DIRECTOR — DATE 1/24/13

NO.	DATE	REVISION
4	1-11-2013	show R/W dedication, parcels and BRLs per plat 22079, add dumpster for A6.
3	3-26-2012	revise radius of western edge of loading zone exit across form the 4 parking spaces to be 15'
2	9-21-2011	add 4 parking spaces behind fire hydrant by SMH107
1	5-31-2011	revise median island in Road 'A' at entrance to shopping center.

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
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60 THOMAS JOHNSON DRIVE ▲ FREDERICK, MARYLAND 21702
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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 No. 21443, Expiration Date: 12-21-14.

STATE OF MARYLAND — BRIAN E. CLEARY — No. 21443 — REGISTERED PROFESSIONAL ENGINEER — 1/10/2013

AS-BUILT CERTIFICATION
I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this AS-BUILT plan.
Donald Macon, P.E. No. 21443 Date 4-10-13

STATE OF MARYLAND — DONALD ALAN MACON — No. 21443 — PROFESSIONAL ENGINEER

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

NOTES:

1. ALL CURBING TO BE STANDARD 7" COMBINATION CURB AND GUTTER (HO.CO.STD.R-3.01) UNLESS OTHERWISE STATED.
2. ALL SPOT ELEVATION SHOWN WITHIN PARKING LOT ARE FLOWLINE/PAVEMENT ELEVATIONS.
3. ALL CURB FILLETS ARE 3' RADIUS UNLESS OTHERWISE STATED.
4. INSIDE METER SETTINGS SHALL BE USED FOR THE WATER.
5. ALTHOUGH ROAD 'A' WILL BE PRIVATE INITIALLY, IT IS INTENDED TO BE DEDICATED TO HOWARD COUNTY AS A PUBLIC ROAD IN THE FUTURE (SEE GENERAL NOTE 29 ON SHEET 1). THE STREET LIGHTS ALONG ROAD 'A' SHALL BE TREATED AS FUTURE PUBLIC STREET LIGHTS AND THUS PAID FOR BY THE DEVELOPER.
6. REFER TO SHEET 22 FOR SIGNAGE, LIGHTING AND PAVEMENT MARKINGS FOR ROAD 'A'.

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

DEVELOPER:
MANGIONE ENTERPRISES OF TURF VALLEY, LP
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

TOWN SQUARE AT TURF VALLEY
(CERTIFIED LEVEL RATED GREEN BUILDING PROJECT)
PARCELS 'J1' & 'J2' AND OPEN SPACE LOTS 4 & 5
TURF VALLEY PROFESSIONAL BUILDINGS
PLAT NOS. 22078-22079

TAX MAP: 16 – GRID: 10 – PARCEL: P/O 8
ZONED: PGCC (MULTI-USE SUBDISTRICT)
ELECTION DISTRICT NO. 3 – HOWARD COUNTY, MARYLAND

REVISED SITE DEVELOPMENT AND GRADING PLAN

DATE:	APRIL, 2010	BEI PROJECT NO.	2208
SCALE:	AS SHOWN	SHEET	3 OF 29

AS-BUILT

SDP-10-027

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AS-BUILT CERTIFICATION
I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this AS-BUILT plan.
Donald Mason, P.E. No. 21443 Date 10-28-13

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. 21443 Expiration Date: 12-21-14

STUDY POINT #1

1-Year Discharge Comparison Table for

Existing 1-year Discharge	Developed 1-year Discharge	Notes
107.26 cfs	107.37 cfs	Developed is 0.11 cfs greater than existing

SUMMARY TABLE
GENERAL STORAGE REQUIREMENTS FOR
DRAINAGE AREA 3A

Pond #1 Summary Table	Existing under F-02-74	Proposed under this SDP
2-yr discharge	0.19 cfs	0.28 cfs
10-yr discharge	4.68 cfs	3.91 cfs
100-yr discharge	45.34 cfs	57.00 cfs
2-yr WSEL	430.88	430.19
10-yr WSEL	432.03	430.87
100-yr WSEL	432.49	432.45
Drainage Area	10.7 acres	10.68 acres
RCN	80	92
TC	0.20 Hr	0.10 Hr
Lag Time	>29.5 hours	43.8 hours

SWMF #1 was designed as an Extended Detention Facility under F-02-074 based on old SWM prior to the 2000 MDE guidelines. It has been modified to handle the increase in runoff due to the increase in impervious area from "Industrial" to "Commercial" under this SDP.

SUMMARY TABLE
GENERAL STORAGE REQUIREMENTS FOR
DRAINAGE AREA 3B

Requirement	Volume Required	Notes
Water Quality Volume (WQv)	0.5060 ac-ft 22040 cf	Provided in Pond #2
Recharge Volume (REv)	1.64 acres 5708 cf	Provided in offline recharge chamber in Pond #2
Channel Protection Volume (CPv)	0.6954 ac-ft 30292 cf	Provided in Pond #2
Overbank Flood Protection Volume (Qp)	NA	not required for this area
Extreme Flood Volume (Qf)	NA	not required for this area

SWMF #2 (P-1 Micro-Pool Extended Detention Pond) and an offline recharge chamber are being provided to address the requirement for this drainage area.

STUDY POINT #2

1-Year Discharge Comparison Table for

Existing 1-year Discharge	Developed 1-year Discharge	Notes
0.44 cfs	0.22 cfs	Developed is less than existing

SUMMARY TABLE
GENERAL STORAGE REQUIREMENTS FOR
DRAINAGE AREA 4

Requirement	Volume Required	Notes
Water Quality Volume (WQv)	0.0657 ac-ft 2861 cf	No new impervious
Recharge Volume (REv)	0.02 acres 744 cf	No new impervious
Channel Protection Volume (CPv)	0.0000 0	not required for this area
Overbank Flood Protection Volume (Qp)	NA	not required for this area
Extreme Flood Volume (Qf)	NA	not required for this area

A facility is not required for this drainage area as no new impervious areas are proposed.

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 4/15/10

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 1/16/13
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 1/24/13
DIRECTOR	DATE 1/24/13

NOTES:

1. ALL CURBING TO BE STANDARD 7" COMBINATION CURB AND GUTTER (HO.CO.STD.R-3.01) UNLESS OTHERWISE STATED.
2. ALL SPOT ELEVATION SHOWN WITHIN PARKING LOT ARE FLOWLINE/PAVEMENT ELEVATIONS.
3. ALL CURB FILLETS ARE 3' RADIUS UNLESS OTHERWISE STATED.
4. INSIDE METER SETTINGS SHALL BE USED FOR THE WATER.

LEGEND

- EXISTING CONTOURS AERIAL JAN. 2006
- EXISTING BRUSH
- EXISTING TREELINE
- PROPOSED TREELINE
- EXISTING STREAM
- LIMIT OF WETLANDS
- LIMIT OF SUBMISSION
- (10) PARKING SPACE COUNT
- STORM DRAIN PIPE
- SIDEWALK
- INTERNAL PARKING LOT LIGHT POLES
- FIRE HYDRANT
- 10' CONSTRUCTION/MAINTENANCE STRIP FOR RETAINING WALL
- EXISTING 100YR FLOODPLAIN

NO.	DATE	REVISION
6	7-9-2013	ADD GREASE TRAP FOR BUILDING A7
5	1-11-2013	add dumpster south of bldg C, revise sdwk area SE of A5.
4	3-26-2012	delete drive-thru for BLDG A7. add transformers. add roof manifold for BLDG A5.
3	12-2-2011	revise building 'D2' to 'A7'. revise square footage. revise drive thru canopy.
2	8-29-2011	revise front hardscape and front canopy drain manifolds of Building 'B'. add manifold detail.
1	5-31-2011	revise front hardscape and area of Building 'B', handicap spaces, and match line.

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 418 ▲ ELLICOTT CITY, MARYLAND 21043
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60 THOMAS JOHNSON DRIVE ▲ FREDERICK, MARYLAND 21702
(P) 301-371-3505 (F) 301-371-3506
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. 28559, Expiration Date: 7-22-2013.
1/10/2013

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

DEVELOPER:
MANGIONE ENTERPRISES OF
TURF VALLEY, LP
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
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TOWN SQUARE AT TURF VALLEY
(CERTIFIED LEVEL RATED GREEN BUILDING PROJECT)
PARCELS 'J1' & 'J2' AND OPEN SPACE LOTS 4 & 5
TURF VALLEY PROFESSIONAL BUILDINGS
PLAT NOS. 22078-22079

TAX MAP: 16 – GRID: 10 – PARCEL: P/O 8 & 50
ZONED: PGCC (MULTI-USE SUBDISTRICT)
ELECTION DISTRICT NO. 3 – HOWARD COUNTY, MARYLAND

REVISED
SITE DEVELOPMENT AND GRADING PLAN

DATE: APRIL, 2010	BEI PROJECT NO. 2208
SCALE: AS SHOWN	SHEET 4 OF 29

P:\2208 Town Square at Turf Valley\dwg_CURRENT\8021_s02-05.dwg, 1/10/2013 3:33:06 PM

AS-BUILT

SDP-10-027

MATCH LINE SEE SHEET 2

MATCH LINE SEE SHEET 3

MATCH LINE SEE SHEET 4

MATCH LINE SEE SHEET 4

BUILDING B
HARRIS TEETER
TOTAL GROSS FLOOR AREA = 48,808 S.F.
TOTAL BUILDING AREA = 50,288 S.F.
FIRST FLOOR = 466.00

PARCEL J1
TURF VALLEY PROFESSIONAL BUILDINGS
ZONED: PGCC
PLAT #22078-79

PARCEL J2
TURF VALLEY PROFESSIONAL BUILDINGS
ZONED: PGCC
PLAT #22078-79

TOWN SQUARE PARKWAY
PUBLIC MINOR COLLECTOR
R/W VARIES

*SEE SHEET 4 FOR SWM SUMMARY TABLE.

OPEN SPACE LOT 5
TURF VALLEY PROPERTY OWNERS ASSOCIATION
TURF VALLEY PROFESSIONAL BUILDINGS
ZONED: PGCC
PLAT #22078-79

OPEN SPACE LOT 4
TVTS RETAIL LLC
TURF VALLEY PROFESSIONAL BUILDINGS
ZONED: PGCC
PLAT #22078-79

MANGIONE ENTERPRISES OF TURF VALLEY, LP
TURF VALLEY PROFESSIONAL BUILDINGS
OPEN SPACE LOT 2
ZONED: PGCC
PLAT #18696-18698

MANGIONE ENTERPRISES OF TURF VALLEY, LP
TURF VALLEY PROFESSIONAL BUILDINGS
ZONED: PGCC
PLAT #18696-18698

SWM FACILITY #2
P-1 MICRO-POOL ED POND
PRIVATELY MAINTAINED
HAZARD CLASS 'A'

RECHARGE CHAMBER 45'X65'XD

B-15 B-16 B-17 B-18 B-19

NOTES:

1. ALL CURBING TO BE STANDARD 7" COMBINATION CURB AND GUTTER (HO.CO.STD.R-3.01) UNLESS OTHERWISE STATED.
2. ALL SPOT ELEVATION SHOWN WITHIN PARKING LOT ARE FLOWLINE/PAVEMENT ELEVATIONS.
3. ALL CURB FILLETS ARE 3' RADIUS UNLESS OTHERWISE STATED.
4. INSIDE METER SETTINGS SHALL BE USED FOR THE WATER.
5. ALTHOUGH ROAD 'A' WILL BE PRIVATE INITIALLY, IT IS INTENDED TO BE DEDICATED TO HOWARD COUNTY AS A PUBLIC ROAD IN THE FUTURE (SEE GENERAL NOTE 29 ON SHEET 1). THE STREET LIGHTS ALONG ROAD 'A' SHALL BE TREATED AS FUTURE PUBLIC STREET LIGHTS AND THUS PAID FOR BY THE DEVELOPER.
6. REFER TO SHEET 22 FOR SIGNAGE, LIGHTING AND PAVEMENT MARKINGS FOR ROAD 'A'.

LEGEND

- EXISTING CONTOURS AERIAL JAN. 2006
- EXISTING BRUSH
- EXISTING TREELINE
- PROPOSED TREELINE
- EXISTING STREAM
- LIMIT OF WETLANDS
- LIMIT OF SUBMISSION
- (10) PARKING SPACE COUNT
- STORM DRAIN PIPE
- SIDEWALK
- INTERNAL PARKING LOT LIGHT POLES
- FIRE HYDRANT
- 10' CONSTRUCTION/MAINTENANCE STRIP FOR RETAINING WALL
- EXISTING 100YR FLOODPLAIN

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 4/15/10

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 1/16/13

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 1/24/13

DIRECTOR — DATE 1/24/13

AS-BUILT CERTIFICATION
I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this AS-BUILT plan.
Donald Mason, P.E. No. 21443
SWM FACILITIES AS-BUILT Date 4-10-13 10-1-13

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. 21443 Expiration Date: 12-21-14

GRAPHIC SCALE
(IN FEET)
1 inch = 30 ft.

NO.	DATE	REVISION
4	1-11-2013	show R/w dedication and parcel lines per plat 22079. revise FH location.
3	3-26-2012	delete drive-thru for BLDG A7. add tranformers. add roof manifold for A7.
2	9-21-2011	revise roof drain manifolds for Bldg 'B' and add detail. add truck striping in loading dock. add stand-by generator in rear of Bldg 'B'.
1	5-31-2011	revise match line, utilities and parking behind Building 'B'.

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
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 No. 21443, Expiration Date: 7-22-2013.

STATE OF MARYLAND — BRIAN F. CLEARY — No. 21443 — REGISTERED PROFESSIONAL ENGINEER — 1/10/2013

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

DEVELOPER:
MANGIONE ENTERPRISES OF TURF VALLEY, LP
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

TOWN SQUARE AT TURF VALLEY

(CERTIFIED LEVEL RATED GREEN BUILDING PROJECT)
PARCELS 'J1' & 'J2' AND OPEN SPACE LOTS 4 & 5
TURF VALLEY PROFESSIONAL BUILDINGS
PLAT NOS. 22078-22079

TAX MAP: 16 — GRID: 10 — PARCEL: P/O 8 & 50
ZONED: PGCC (MULTI-USE SUBDISTRICT)
ELECTION DISTRICT NO. 3 — HOWARD COUNTY, MARYLAND

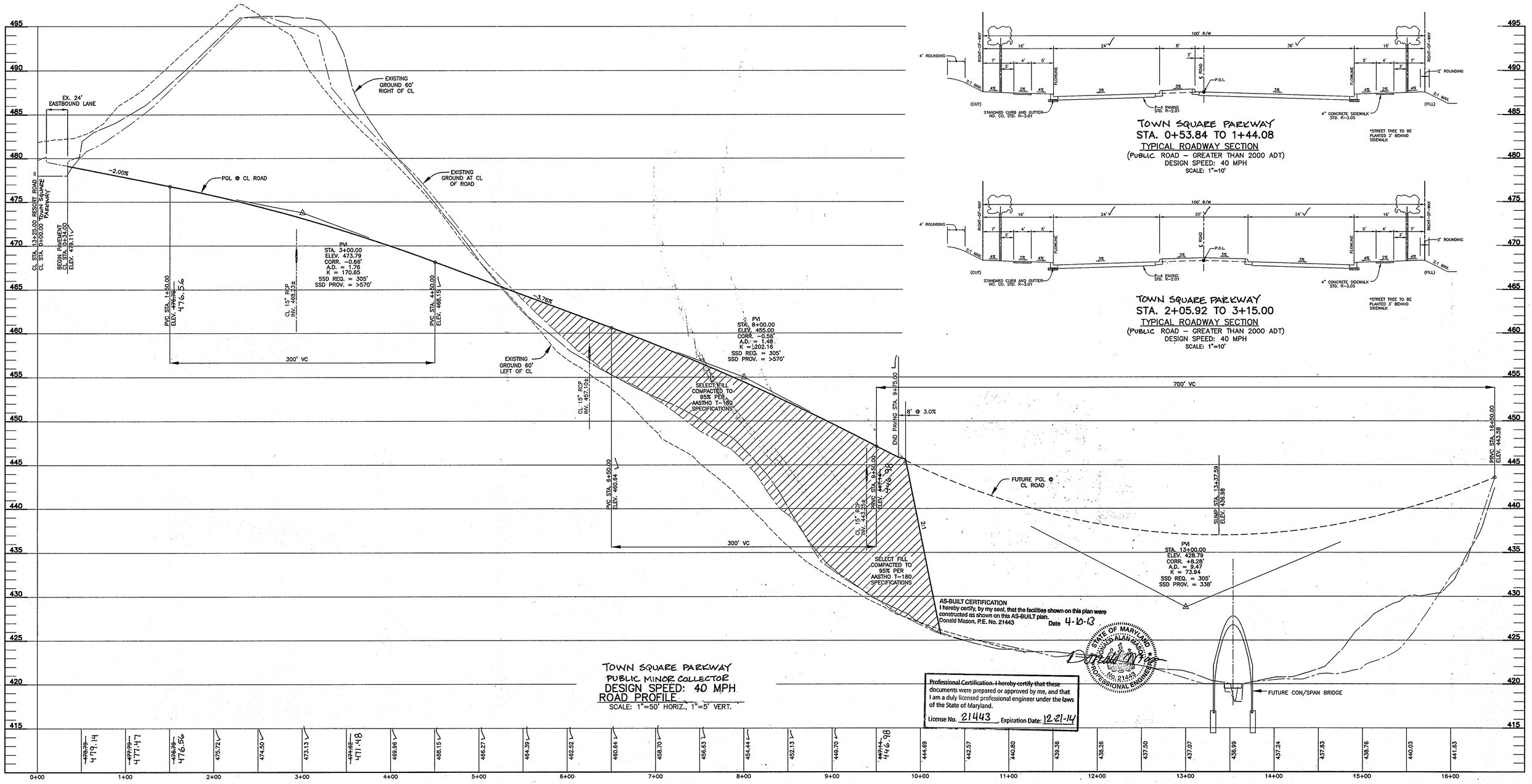
REVISED SITE DEVELOPMENT AND GRADING PLAN

DATE:	APRIL, 2010	BEI PROJECT NO.	2208
SCALE:	AS SHOWN	SHEET	5 OF 29

AS-BUILT

SDP-10-027

P:\2208 Town Square at Turf Valley\dwg_CURRENT\8021_s02-05.dwg, 1/10/2013 3:33:46 PM



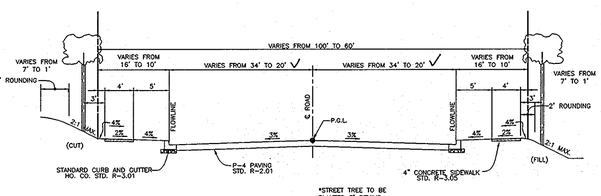
TOWN SQUARE PARKWAY
PUBLIC MINOR COLLECTOR
DESIGN SPEED: 40 MPH
ROAD PROFILE
SCALE: 1"=50' HORIZ., 1"=5' VERT.

TOWN SQUARE PARKWAY
STA. 0+53.84 TO 1+44.08
TYPICAL ROADWAY SECTION
(PUBLIC ROAD – GREATER THAN 2000 ADT)
DESIGN SPEED: 40 MPH
SCALE: 1"=10'

*STREET TREE TO BE PLANTED 3' BEHIND SIDEWALK

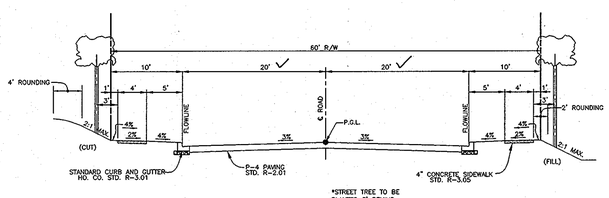
TOWN SQUARE PARKWAY
STA. 2+05.92 TO 3+15.00
TYPICAL ROADWAY SECTION
(PUBLIC ROAD – GREATER THAN 2000 ADT)
DESIGN SPEED: 40 MPH
SCALE: 1"=10'

*STREET TREE TO BE PLANTED 3' BEHIND SIDEWALK



TOWN SQUARE PARKWAY
STA. 3+15.00 TO 5+87.87
TYPICAL ROADWAY SECTION
(PUBLIC ROAD – GREATER THAN 2000 ADT)
DESIGN SPEED: 40 MPH
SCALE: 1"=10'

*STREET TREE TO BE PLANTED 3' BEHIND SIDEWALK



TOWN SQUARE PARKWAY
STA. 5+87.87 TO END
TYPICAL ROADWAY SECTION
(PUBLIC ROAD – GREATER THAN 2000 ADT)
DESIGN SPEED: 40 MPH
SCALE: 1"=10'

*STREET TREE TO BE PLANTED 3' BEHIND SIDEWALK

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 4/15/10

APPROVED: DEPARTMENT OF ~~PUBLIC WORKS~~ PLANNING & ZONING
Marsha S. Butler 5/3/10
~~CHIEF, BUREAU OF HIGHWAYS~~ DIRECTOR DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Kent Sheubrooks 4/21/10
CHIEF, DIVISION OF LAND DEVELOPMENT DATE
Robert J. Lazdowski 4/20/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

NO.	DATE	REVISION
2	1-11-2013	REVISE ROAD 'A' TO BE TOWN SQUARE PARKWAY AND A PUBLIC ROAD
1	4-10-2012	REVISE TOTAL SHEET COUNT IN TITLE BLOCK

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 418
ELLICOTT CITY, MARYLAND 21043
PHONE: 410-465-6105 FAX: 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. 28258, Expiration Date: 7-22-2011.
STATE OF MARYLAND BRIAN F. CLEARY REG. NO. 28258 PROFESSIONAL ENGINEER
4/14/2010

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

DEVELOPER:
MANGIONE ENTERPRISES OF TURF VALLEY, LP
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

TOWN SQUARE AT TURF VALLEY
(CERTIFIED LEVEL RATED GREEN BUILDING PROJECT)
PARCELS 'J' & 'K' AND OPEN SPACE LOTS 4 & 5
TURF VALLEY PROFESSIONAL BUILDINGS
PLAT NOS: 22078 - 22079

TAX MAP: 16 – GRID: 10 – PARCEL: P/O 8 & 50
ZONED: PGCC (MULTI-USE SUBDISTRICT)
ELECTION DISTRICT NO. 3 – HOWARD COUNTY, MARYLAND

ROAD PROFILE AND DETAILS

DATE:	APRIL, 2010	BEI PROJECT NO.	2208
SCALE:	AS SHOWN	SHEET	6 OF 29

AS-BUILT

SDP-10-027

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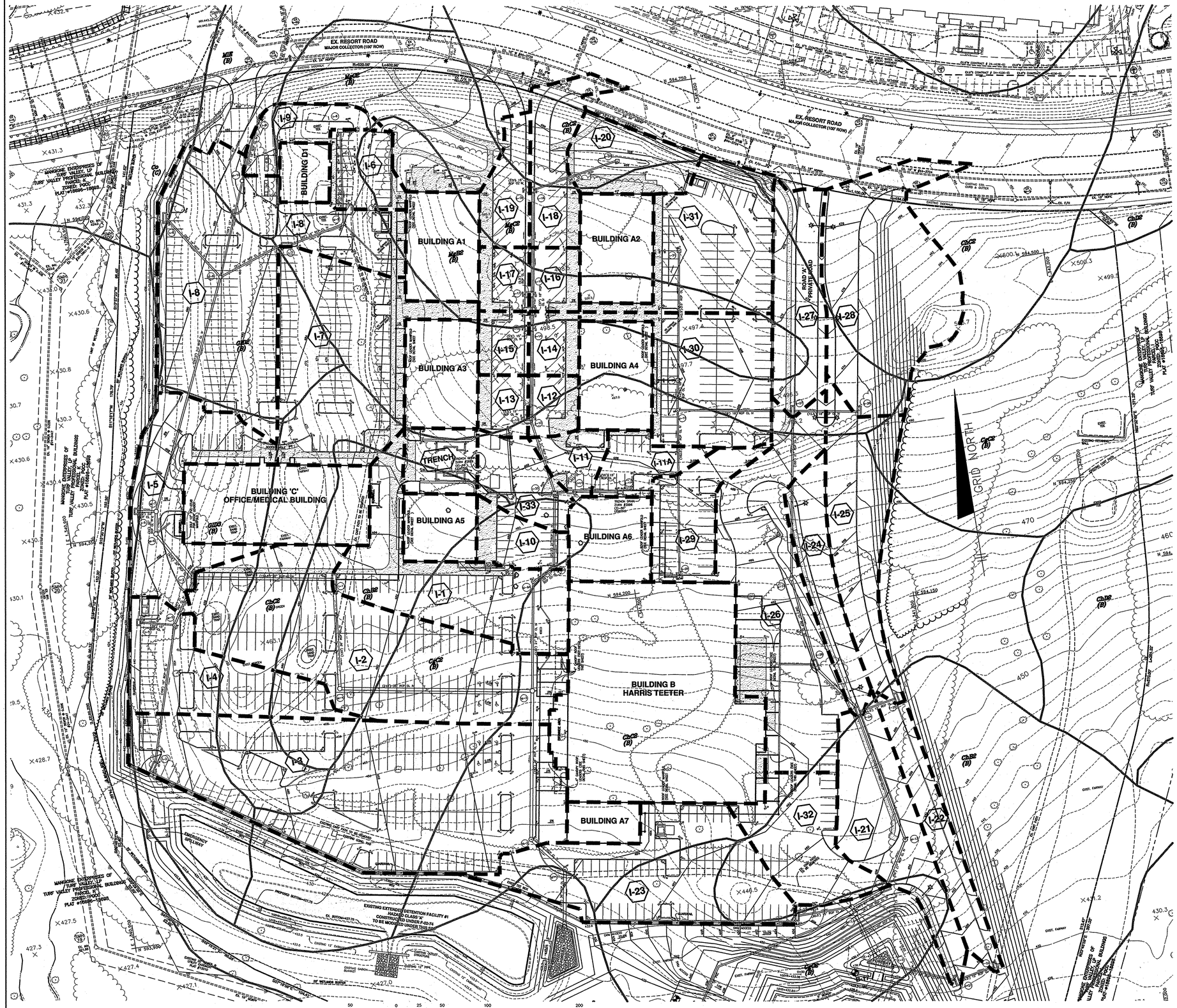

SOILS CHART - SOIL SURVEY HOWARD COUNTY, MARYLAND, ISSUED JULY, 1968 PAGES 9 AND 15			
SYMBOL	HYDRIC	HYDROLOGIC GROUP	NAME
CgC2		B	CHESTER GRAVELLY SILT LOAM, 8 TO 15 PERCENT MODERATELY ERODED
ChB2		B	CHESTER SILT LOAM, 3 TO 8 PERCENT, MODERATELY ERODED
ChC2		B	CHESTER SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
ChD2		B	CHESTER SILT LOAM, 15 TO 25 PERCENT SLOPES, MODERATELY ERODED
Co	YES	C	CODORUS SILT LOAM
Cs		B	COMUS SILT LOAM
GlD2		B	GLENELG LOAM, 15 TO 25 PERCENT SLOPES, MODERATELY ERODED
GlD3		B	GLENELG LOAM, 15 TO 25 PERCENT SLOPES, SEVERLY ERODED
Hs	YES	D	HATBORO SILT LOAM
MgB2		B	MANOR GRAVELLY LOAM, 3 TO 8 PERCENT, MODERATELY ERODED
MgC2		B	MANOR GRAVELLY LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
MlE		B	MANOR LOAM, 25 TO 45 PERCENT SLOPES

DRAINAGE AREA	ZONING (Z)	AREA (Ac) (A)	"C" FACTOR <25 YR (C)	% IMPERVIOUS (P)
I-1	PGCC	0.68	0.72	85
I-2	PGCC	1.05	0.72	85
I-3	PGCC	1.44	0.72	85
I-4	PGCC	0.39	0.72	85
I-5	PGCC	0.45	0.72	85
I-6	PGCC	0.13	0.72	85
I-7	PGCC	0.73	0.72	85
I-8	PGCC	1.03	0.72	85
I-9	PGCC	0.13	0.72	85
I-10	PGCC	0.13	0.72	85
I-11	PGCC	0.09	0.72	85
I-12	PGCC	0.08	0.72	85
I-13	PGCC	0.08	0.72	85
I-14	PGCC	0.09	0.72	85
I-15	PGCC	0.09	0.72	85
I-16	PGCC	0.09	0.72	85
I-17	PGCC	0.09	0.72	85
I-18	PGCC	0.23	0.72	85
I-19	PGCC	0.15	0.72	85
I-20	PGCC	0.21	0.72	85
I-21	PGCC	0.41	0.72	85
I-22	PGCC	0.21	0.72	85
I-23	PGCC	0.74	0.72	85
I-24	PGCC	0.22	0.72	85
I-25	PGCC	0.41	0.72	85
I-26	PGCC	0.76	0.72	85
I-27	PGCC	0.31	0.72	85
I-28	PGCC	0.72	0.72	85
I-29	PGCC	0.26	0.72	85
I-30	PGCC	0.46	0.72	85
I-31	PGCC	0.48	0.72	85
I-32	PGCC	0.32	0.72	85
I-33	PGCC	0.17	0.72	85
ROOF 'B'	PGCC	1.22	0.86	100
ROOF 'C'	PGCC	0.41	0.86	100
ROOF 'A1'	PGCC	0.22	0.86	100
ROOF 'A2'	PGCC	0.22	0.86	100
ROOF 'A3'	PGCC	0.22	0.86	100
ROOF 'A4'	PGCC	0.22	0.86	100
ROOF 'A5'	PGCC	0.14	0.86	100
ROOF 'A6'	PGCC	0.19	0.86	100
ROOF 'A7'	PGCC	0.08	0.86	100
ROOF 'D1'	PGCC	0.08	0.86	100
I-11A	PGCC	0.14	0.72	85
Trench Drain	PGCC	0.12	0.72	85

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 04/15/2010

THIS MYLAR REPLACES SHEET PREVIOUSLY SIGNED ON 4-24-12

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9.17.14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9/24/14

DIRECTOR — DATE 9/24/14

NO.	DATE	REVISION
5	9-10-2014	revise BLDG D1; revise associated curb and grading and storm drain (relocate I-9, add I-6B, move I-6); update summary table.
4	1-11-2013	add trench drain and I-11A. revise drainage areas accordingly. update chart.
3	4-10-2012	revise drainage areas based on roof leader manifold design. revise chart. delete drive-thru at bldg A7 and add parking. show additional parking behind bldg A6.
2	9-21-2011	add I-33, revise drainage area for I-10 and I-33
1	5-31-2011	revise I-29 location and associated parking lot grading behind bldg "A6"

BENCHMARK
ENGINEERING, INC.
ENGINEERS & LAND SURVEYORS & PLANNERS
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 418 ▲ 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. 21431, Expiration Date: 6-30-2015.

STATE OF MARYLAND — CHRISTOPHER ALAN MUSSER — REG. NO. 21431 — PROFESSIONAL ENGINEER — 9-11-14

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

DEVELOPER:
MANGIONE ENTERPRISES OF
TURF VALLEY, LP
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

TOWN SQUARE AT TURF VALLEY

(CERTIFIED LEVEL RATED GREEN BUILDING PROJECT)
PARCELS 'I1' & 'I2' AND OPEN SPACE LOTS 4 & 5
TURF VALLEY PROFESSIONAL BUILDINGS
PLAT NOS. 22078-22079

TAX MAP: 16 – GRID: 10 – PARCEL: P/O 8 & 50
ZONED: PGCC (MULTI-USE SUBDISTRICT)
ELECTION DISTRICT NO. 3 – HOWARD COUNTY, MARYLAND

REVISED
STORM DRAIN DRAINAGE AREA MAP

DATE: APRIL, 2010	BEI PROJECT NO. 2208
SCALE: AS SHOWN	SHEET 7 OF 29

SDP-10-027

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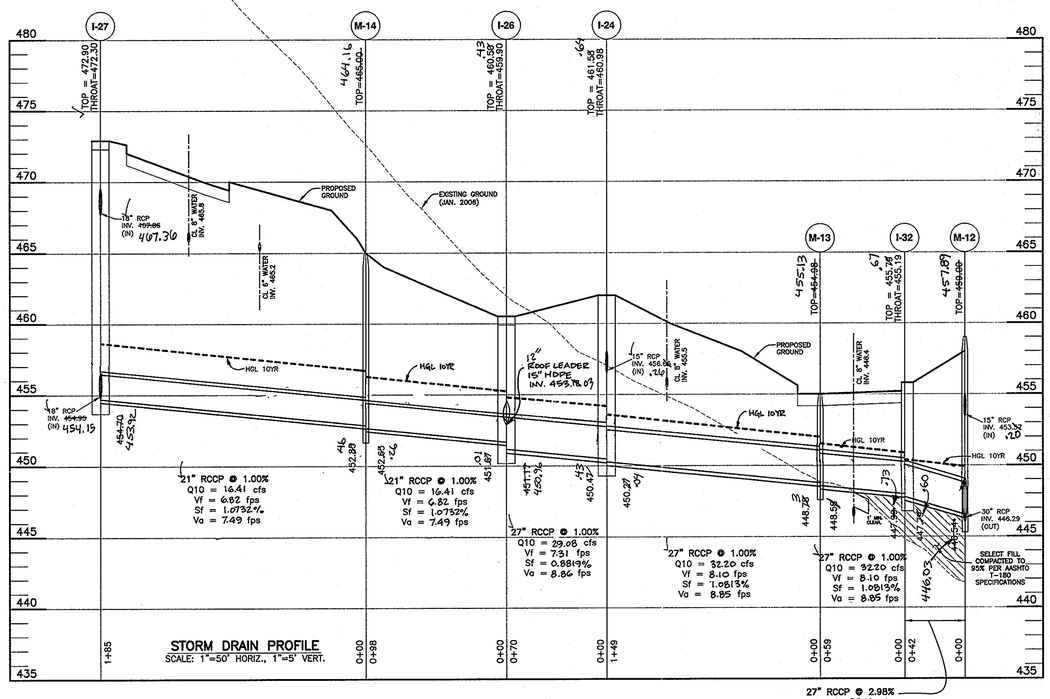
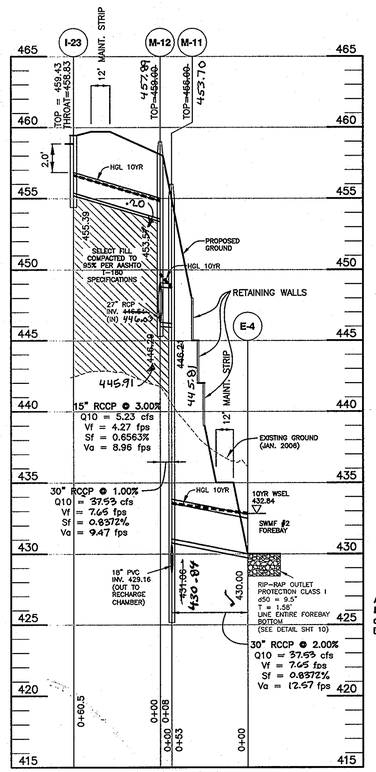
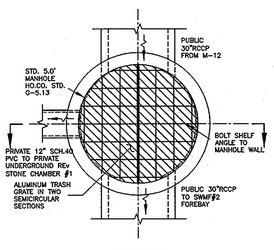
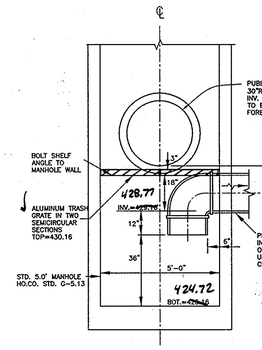








NOTES:

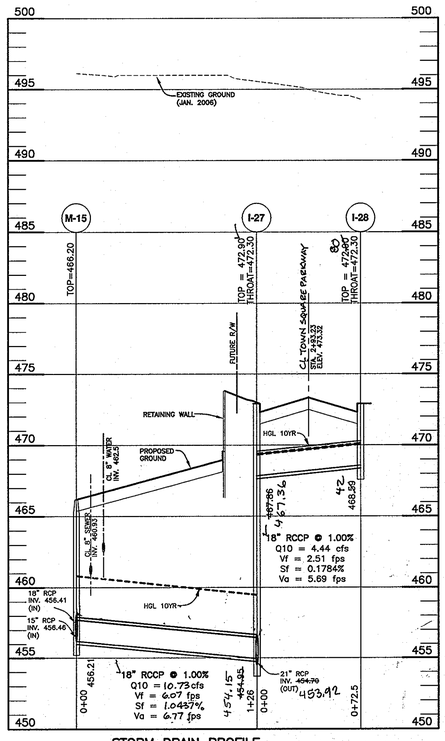
1. THIS STRUCTURE CONFORMS TO MDE APPENDIX D-8; DETAIL 6 AND HO. CO. STD. DETAIL G-5.13
2. DIVERSION STRUCTURE SHALL BE PRIVATELY OWNED AND MAINTAINED

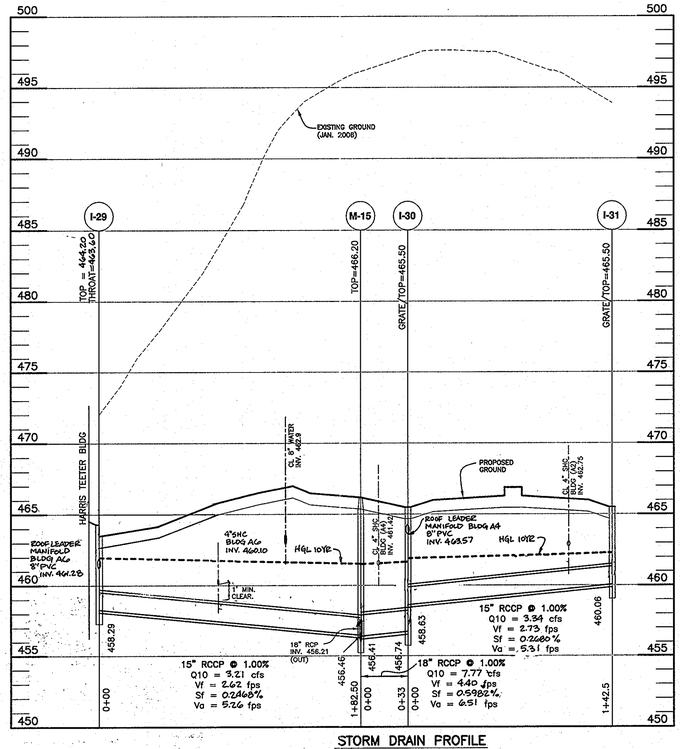
DIVERSION STRUCTURE (M-11)
SCALE: 1" = 3'

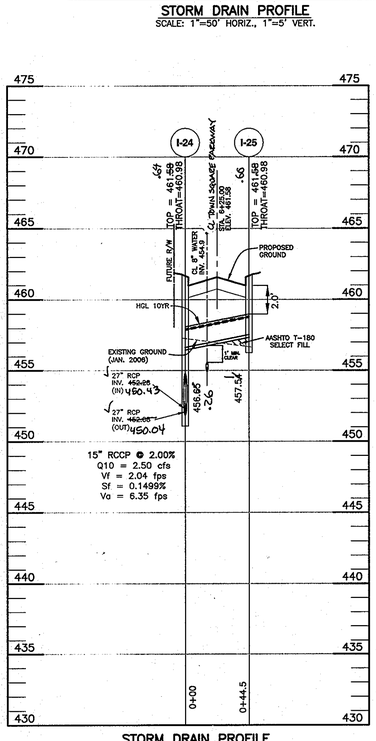
AS-BUILT CERTIFICATION
I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this AS-BUILT plan.
Donald Mason, P.E. No. 21443 - Date 4-10-13
10-28-13 DIVERSION STRUCTURE M-11

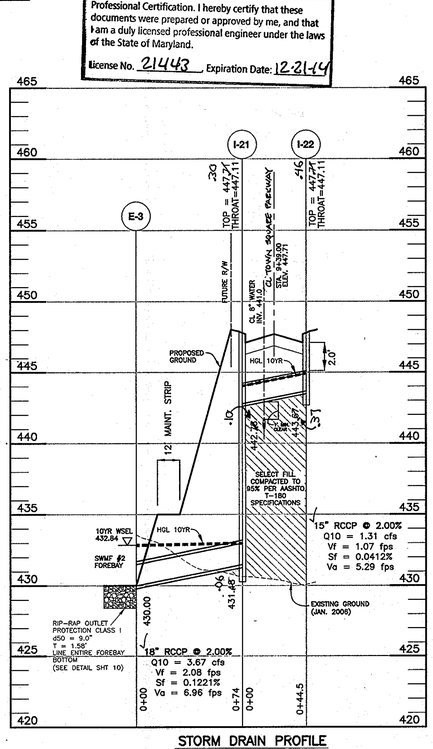
STATE OF MARYLAND · DONALD ALAN MASON · No. 21443 · PROFESSIONAL ENGINEER

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









APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 4/15/10

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 6/28/11

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6/30/11

DIRECTOR — DATE 6/30/11

NO.	DATE	REVISION
4	1-11-2013	REVISE ROAD 'A' REFERENCES TO TOWN SQUARE FREEWAY. REVISE TITLE BLOCK
3	4-10-2012	REVISE COMPS AND HGL BASED ON ROOF MANIFOLD DESIGN.
2	9-21-2011	ADD ROOF LEADER, INVEET @ I-26. REVISE THROAT/TOP ELEVATIONS OF I-29.
1	5-31-2011	revise storm drain run from I-32 to I-29 and from M-15 to I-31. update crossings.

BENCHMARK
ENGINEERING, INC.
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 418 ▲ ELLICOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6644
60 THOMAS JOHNSON DRIVE ▲ FREDERICK, MARYLAND 21702
(P) 301-371-3505 (F) 301-371-3506
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. 28566, Expiration Date: 7-22-2011.
STATE OF MARYLAND · BRIAN F. CLEARY · No. 28566 · REGISTERED PROFESSIONAL ENGINEER
6/11/2011

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

DEVELOPER:
MANGIONE ENTERPRISES OF TURF VALLEY, LP
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

TOWN SQUARE AT TURF VALLEY
(CERTIFIED LEVEL RATED) GREEN BUILDING PROJECT)
PARCELS 'J1' & 'J2' AND OPEN SPACE LOTS 4, 2 & 5
TURF VALLEY PROFESSIONAL BUILDINGS
PLAT NOS. 22078-22079

TAX MAP: 16 - GRID: 10 - PARCEL: P/O 8
ZONED: POCC (MULTI-USE SUBDISTRICT)
ELECTION DISTRICT NO. 3 - HOWARD COUNTY, MARYLAND

REVISED STORM DRAIN PROFILES AND DETAILS

DATE:	APRIL, 2010	BEI PROJECT NO.	2208
SCALE:	AS SHOWN	SHEET	8 OF 29

AS-BUILT

SDP-10-027

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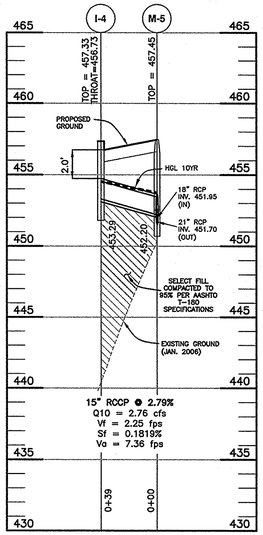
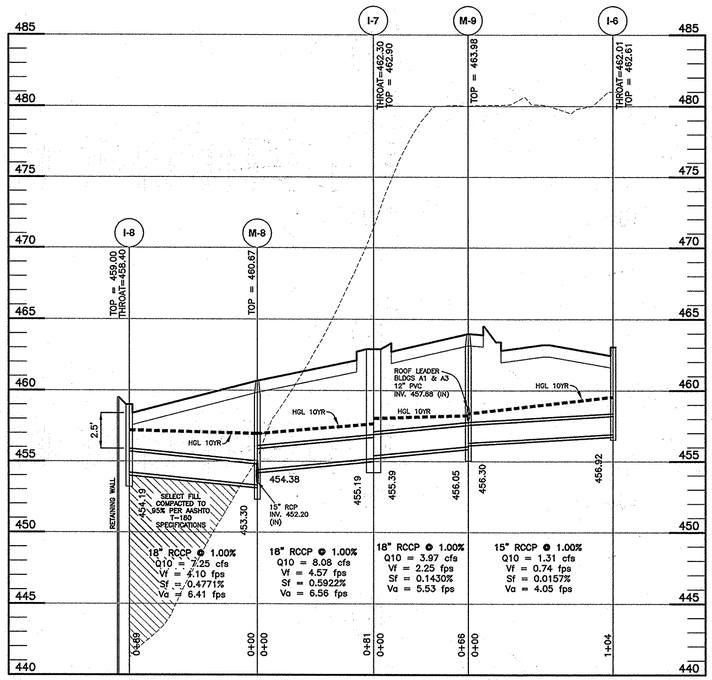
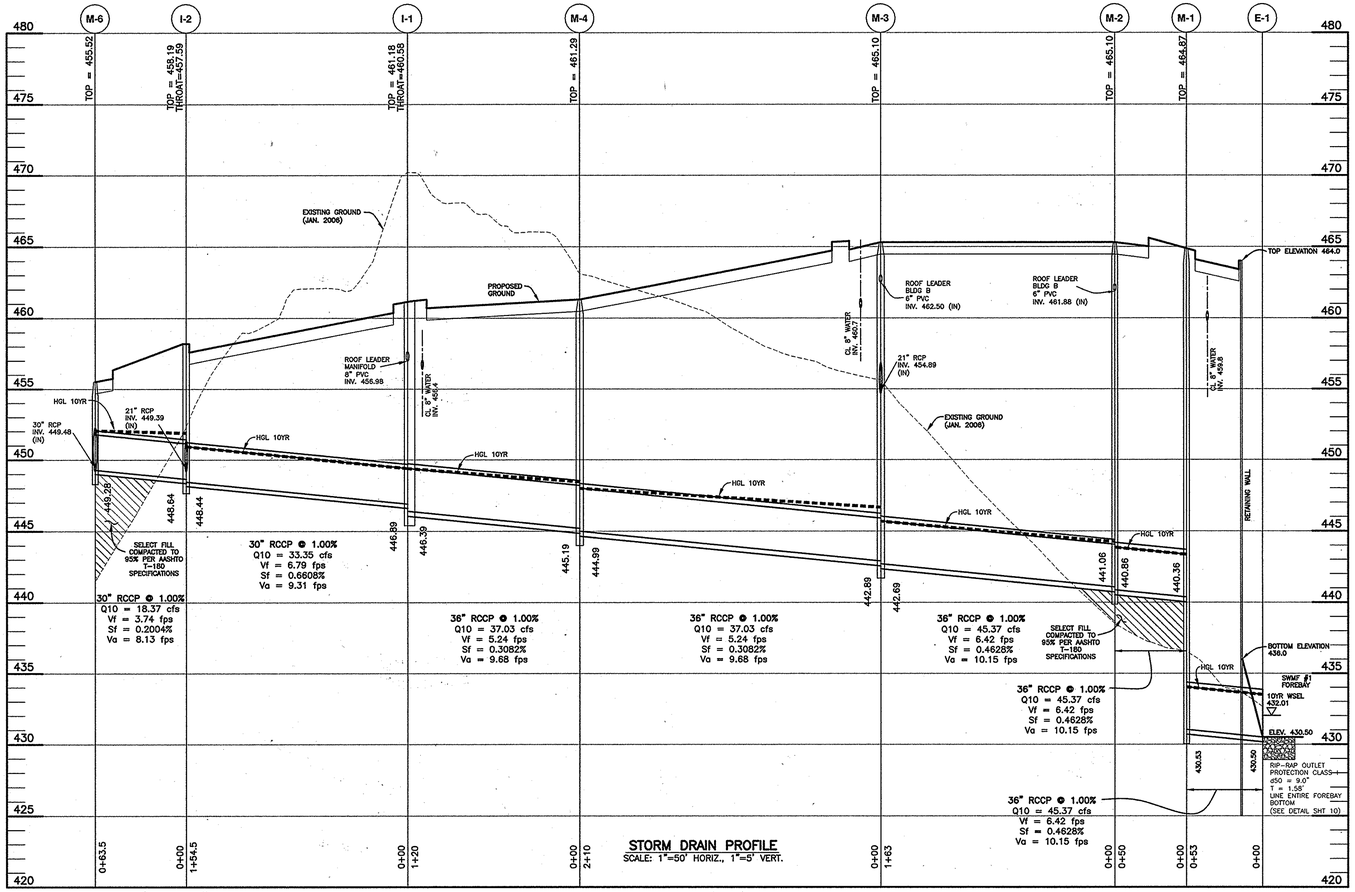
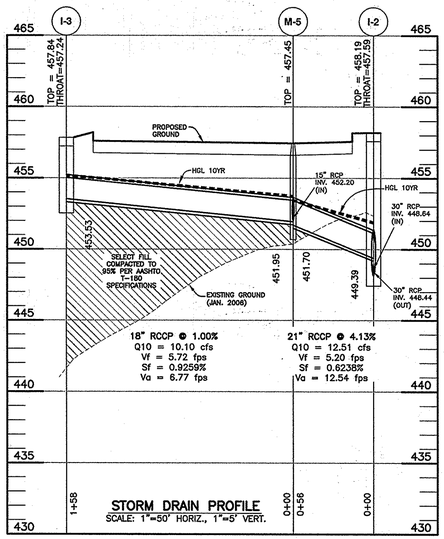


STORM DRAIN PROFILE
SCALE: 1"=50' HORIZ., 1"=5' VERT.

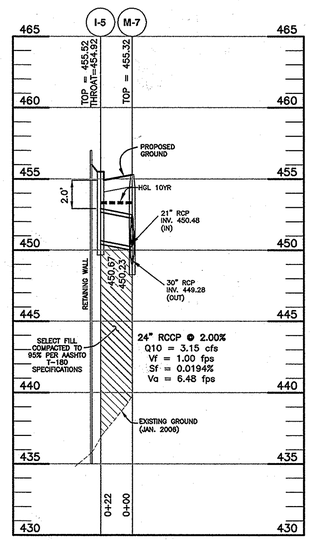




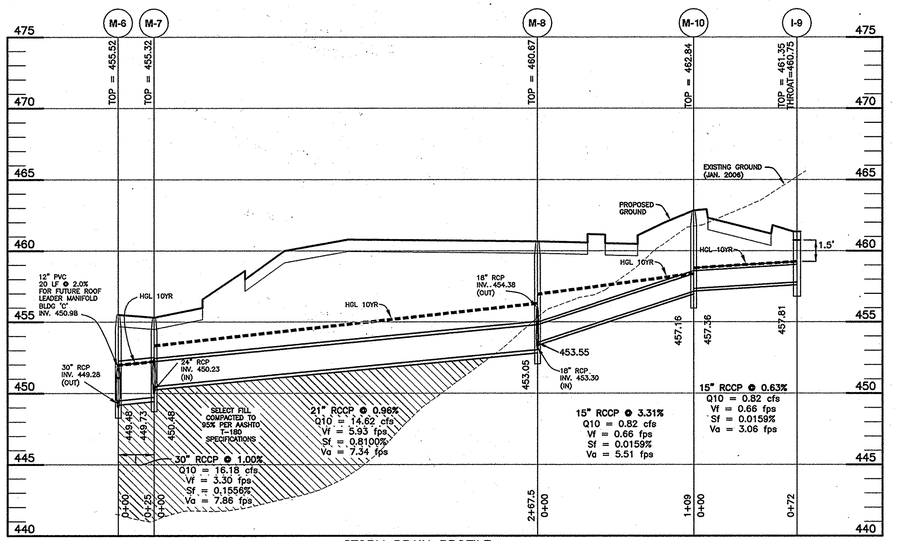
STORM DRAIN PROFILE
SCALE: 1"=50' HORIZ., 1"=5' VERT.



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



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



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

THIS MYLAR REPLACES SHEET PREVIOUSLY SIGNED ON 5-3-2010

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9.17.14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-24-14

DIRECTOR — DATE 9/24/14

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 04/15/2010

NO.	DATE	REVISION
5	9-10-2014	revise profiles from M-8 to I-9 and from M-8 to I-6. revise comps down to E-1.
4	1-11-2013	revise comps from I-1 to E-1. revise title block.
3	4-10-2012	revise comps and HGL based on roof manifold design. add manifold inverts at M-6,M-9 &I-1
2	9-21-2011	add 6" roof drain manifold inverts at M-2 and M-3
1	5-31-2011	revise top of M-2 AND M-3. revise storm drain from M-8 to I-6.

BENCHMARK
ENGINEERING, INC.
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 418 ▲ ELLICOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6644
WWW.BD-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. 21508, Expiration Date: 6-30-2015.

STATE OF MARYLAND — CHRISTOPHER ALAN KELLAM — REG. NO. 21508 — PROFESSIONAL ENGINEER — 9-11-14

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

DEVELOPER:
MANGIONE ENTERPRISES OF TURF VALLEY, LP
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

TOWN SQUARE AT TURF VALLEY

(CERTIFIED LEVEL RATED GREEN BUILDING PROJECT)
PARCELS 'J1' & 'J2' AND OPEN SPACE LOTS 4 & 5
TURF VALLEY PROFESSIONAL BUILDINGS
PLAT NOS. 22078-22079

TAX MAP: 16 – GRID: 10 – PARCEL: P/O 8 & 50
ZONED: POCC (MULTI-USE SUBDISTRICT)
ELECTION DISTRICT NO. 3 – HOWARD COUNTY, MARYLAND

REVISED
STORM DRAIN PROFILES AND DETAILS

DATE:	APRIL, 2010	BEI PROJECT NO.	2208
SCALE:	AS SHOWN	SHEET	9 OF 29

SDP-10-027

P:\2208 Town Square at Turf Valley\dwg_CURRENT\8044_s08-10.dwg, 9/11/2014 2:45:27 PM

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

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

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

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

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

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

STRUCTURE TABLE

NUMBER	TYPE	LOCATION	INVERT IN		INVERT OUT	TOP ELEV.	THROAT ELEV	HO. CO. STD. DETAIL	MAINTENANCE
			INLETS						
I-1	A-10	N 594266.1310 E 1341180.6610	446.89	-	446.39	461.18	460.58	D-4.03 & D-4.04	PRIVATE
I-2	A-10	N 594291.7611 E 1341028.3017	448.64 (M-6)	449.39 (M-5)	448.44	458.19	457.59	D-4.03 & D-4.04	PRIVATE
I-3	A-10	N 594092.4438 E 1340952.3631	-	-	453.53	457.84	457.24	D-4.03 & D-4.04	PRIVATE
I-4	A-5	N 594252.7511 E 1340961.8090	-	-	453.29	457.33	456.73	D-4.01 & D-4.02	PRIVATE
I-5	A-5	N 594374.1608 E 1340978.5224	-	-	450.67	455.52	454.92	D-4.01 & D-4.02	PRIVATE
I-6	A-5	N 594752.3166 E 1341262.3465	-	-	457.34	463.80	463.20	D-4.01 & D-4.02	PRIVATE
I-7	A-10	N 594636.6151 E 1341184.5751	455.39	-	455.19	462.90	462.30	D-4.03 & D-4.04	PRIVATE
I-8	A-10	N 594687.9311 E 1341060.3670	-	-	454.19	459.00	458.40	D-4.03 & D-4.04	PRIVATE
I-9	A-5	N 594715.3549 E 1341150.1605	-	-	457.16	461.20	460.60	D-4.01 & D-4.02	PRIVATE
I-10	A-5	N 594247.5239 E 1341417.8609	456.61	-	456.43	465.06	464.46	D-4.01 & D-4.02	PRIVATE
I-11	A-5	N 594324.5814 E 1341448.0625	-	-	460.76	465.20	464.60	D-4.01 & D-4.02	PRIVATE
I-12	A-5	N 594409.2381 E 1341420.2204	463.10 (I-13)	457.91 (I-14)	457.66	467.14	466.54	D-4.01 & D-4.02	PRIVATE
I-13	A-5	N 594410.8970 E 1341410.3590	-	-	463.10	467.14	466.54	D-4.01 & D-4.02	PRIVATE
I-14	A-5	N 594506.5065 E 1341436.5831	461.01 (I-15)	458.61 (I-16)	458.41	466.10	465.50	D-4.01 & D-4.02	PRIVATE
I-15	A-5	N 594508.1654 E 1341426.7216	-	-	461.06	466.10	465.50	D-4.01 & D-4.02	PRIVATE
I-16	A-5	N 594542.9938 E 1341442.7210	461.01 (I-17)	459.18 (I-18)	458.98	466.10	465.50	D-4.01 & D-4.02	PRIVATE
I-17	A-5	N 594544.6527 E 1341432.8596	-	-	461.06	466.10	465.50	D-4.01 & D-4.02	PRIVATE
I-18	A-5	N 594656.4004 E 1341461.7985	462.91 (I-19)	460.58 (I-20)	460.33	467.00	466.40	D-4.01 & D-4.02	PRIVATE
I-19	A-5	N 594658.0593 E 1341451.9370	-	-	462.96	467.00	466.40	D-4.01 & D-4.02	PRIVATE
I-20	D	N 594673.7805 E 1341555.9081	-	-	461.56	465.00	NA	D-4.10 & D-4.11	PRIVATE
I-21	A-10	Road 'A' sta. 9+39.00 - Offset 20' right	442.78.10	-	431.4806	447.7130	447.11	D-4.03 & D-4.04	PRIVATE
I-22	A-10	Road 'A' sta. 9+39.00 - Offset 20' left	-	-	443.6737	447.7146	447.11	D-4.03 & D-4.04	PRIVATE
I-23	A-10	N 593823.0002 E 1341616.6337	.3	.26	455.39	459.43	458.83	D-4.03 & D-4.04	PRIVATE
I-24	A-10	Road 'A' sta. 6+25.00 - Offset 20' right	450.4 (I-26)	456.65 (I-25)	450.27.04	461.5864	460.98	D-4.03 & D-4.04	PRIVATE
I-25	A-10	Road 'A' sta. 6+25.00 - Offset 20' left	-	-	457.541	461.5860	460.98	D-4.03 & D-4.04	PRIVATE
I-26	A-10	N 594091.1727 E 1341680.5333	451.2710	453.03	451.170.96	460.5043	459.90	D-4.03 & D-4.04	PRIVATE
I-27	A-10	Road 'A' sta. 2+93.23 - Offset 34' right .36	467.86 (I-28)	454.96 (M-15)	454.703.92	472.90	472.30	D-4.03 & D-4.04	PRIVATE
I-28	A-10	Road 'A' sta. 2+93.23 - Offset 34' left	-	.15	468.59.42	472.9080	472.30	D-4.03 & D-4.04	PRIVATE
I-29	A-5	N 594212.9466 E 1341551.0705	-	-	458.29	464.20	463.60	D-4.01 & D-4.02	PRIVATE
I-30	S	N 594425.0551 E 1341583.2026	458.63	-	456.74	465.50	NA	D-4.22	PRIVATE
I-31	S	N 594565.5806 E 1341606.8420	455.67	-	460.06	465.50	NA	D-4.22	PRIVATE
I-32	A-10	N 593838.2093 E 1341718.5258	~~447.99~~	-	447.79.60	455.7967	455.19	D-4.03 & D-4.04	PRIVATE
			MANHOLES						
M-1	5' DIA	N 593912.6929 E 1341376.5220	440.36	-	430.53	464.87	NA	G-5.13	PRIVATE
M-2	5' DIA	N 593951.1785 E 1341345.1930	441.06	-	440.86	465.10	NA	G-5.13	PRIVATE
M-3	5' DIA	N 594112.2101 E 1341372.2820	442.89 (M-4)	454.89 (M-9A)	442.69	465.10	NA	G-5.13	PRIVATE
M-4	5' DIA	N 594147.0657 E 1341165.0819	445.19	-	444.99	461.29	NA	G-5.13	PRIVATE
M-5	4' DIA	N 594244.1389 E 1340997.9347	452.20 (I-4)	451.95 (I-3)	451.70	457.45	NA	G-5.12	PRIVATE
M-6	5' DIA	N 594346.2193 E 1340993.7572	449.48	-	449.28	455.52	NA	G-5.13	PRIVATE
M-7	5' DIA	N 594370.8995 E 1340997.9089	450.48 (M-8)	450.23 (I-5)	449.73	455.32	NA	G-5.13	PRIVATE
M-8	4' DIA	N 594614.7136 E 1341107.9611	453.55 (I-9)	454.38 (I-7)	453.05	460.67	NA	G-5.12	PRIVATE
M-9	4' DIA	N 594651.4916 E 1341249.7012	456.30	-	456.05	463.98	NA	G-5.12	PRIVATE
M-9A	4' DIA	N 594230.5474 E 1341392.1889	456.29	-	456.09	465.30	NA	G-5.12	PRIVATE
			5.81	-					
M-11	SEE DETAIL SHT 8	N 593815.0068 E 1341681.7461	~~446.21~~	-.03	431.06	~~456.09~~ 3.70	NA	G-5.13	PRIVATE
M-12	5' DIA	N 593822.8079 E 1341679.4514 .20	453.57 (I-23)	446.54 (I-32)	~~446.29~~ 5.91	~~459.00~~ 7.89	NA	G-5.13	PRIVATE
M-13	5' DIA	Road 'A' sta. 7+74.13 - Offset 22.25' RIGHT	448.7873	-	448.587	~~454.98~~ 5.13	NA	G-5.13	PRIVATE
M-14	4' DIA	Road 'A' sta. 4+69.43 - Offset 47.34' RIGHT	452.8646	-	452.6526	~~465.00~~ 4.16	NA	G-5.12	PRIVATE
M-15	4' DIA	N 594392.5123 E 1341577.7282	456.46 (I-29)	456.41 (I-30)	456.21	466.20	NA	G-5.12	PRIVATE
			END SECTIONS						
E-1	36" CONC.	N 593860.2359 E 1341367.7129	-	-	430.50	-	NA	D-5.51	PRIVATE
E-2	42" CONC.	N 593624.8525 E 1341586.0345	-	-	424.50	-	NA	D-5.51	PRIVATE
E-3	18" CONC.	N 593752.1725 E 1341712.7195	-	-	430.00	-	NA	D-5.51	PRIVATE
E-4	30" CONC.	N 593764.4138 E 1341696.6277	-	-	430.00	-	NA	D-5.51	PRIVATE
			STRUCTURES						
S-1	SEE SWM	N 593673.6738 E 1341618.2639	432.40 (WEIR)	425.00 (6")	425.00	435.00	NA	SEE SWM DETAILS	PRIVATE

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

I-33	A-5	N 594321.4847 E 1341430.3027	460.59 (15")	457.22 (21")	457.02	465.28	464.68	D-4.01 & D-4.02	PRIVATE
I-11A	A-5	N 594315.4988 E 1341502.0548	—	—	461.51	465.12	464.52	D-4.01 & D-4.02	PRIVATE

PIPE SCHEDULE

SIZE	TYPE	LENGTH (L.F.)	MAINTENANCE
15"	RCCP CLASS IV	821	PRIVATE
18"	RCCP CLASS IV	1048	PRIVATE
21"	RCCP CLASS IV	920	PRIVATE
24"	RCCP CLASS IV	22	PRIVATE
27"	RCCP CLASS IV	320	PRIVATE
30"	RCCP CLASS IV	304	PRIVATE
36"	RCCP CLASS IV	596	PRIVATE
42"	ASTM C-361 B-25	55	PRIVATE
18"	PVC	235	PRIVATE
6"	PVC	22	PRIVATE
8"	PVC	107	PRIVATE

CONSTRUCTION SPECIFICATIONS

1. THE SUBGRADE FOR THE FILTER, RIP-RAP, OR GABION SHALL BE PREPARED TO THE REQUIRED LINES AND GRADES. ANY FILL REQUIRED IN THE SUBGRADE SHALL BE COMPACTED TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.

2. THE ROCK OR GRAVEL SHALL CONFORM TO THE SPECIFIED GRADING LIMITS WHEN INSTALLED RESPECTIVELY IN THE RIP-RAP OR FILTER.

3. GEOTEXTILE CLASS C28 OR BETTER SHALL BE PROTECTED FROM PUNCHING, CUTTING, OR TEARING. ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE SHALL BE PREPARED BY PLACING ANOTHER PIECE OF GEOTEXTILE FABRIC OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE FABRIC. ALL OVERLAPS WHETHER FOR REPAIRS OR FOR JOINING TWO PIECES OF GEOTEXTILE FABRIC SHALL BE A MINIMUM OF ONE FOOT.

4. STONE FOR THE RIP-RAP OR GABION OUTLETS MAY BE PLACED BY EQUIPMENT. THEY SHALL BE CONSTRUCTED TO THE FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. THE STONE FOR HE RIP-RAP OR GABION OUTLETS SHALL BE DELIVERED AND PLACED IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. RIP-RAP SHALL BE PLACED IN A MANNER TO PREVENT DAMAGE TO THE FILTER BLANKET OR GEOTEXTILE FABRIC. HAND PLACEMENT WILL BE REQUIRED TO THE EXTENT NECESSARY TO PREVENT DAMAGE TO THE PERMANENT WORKS.

5. THE STONE SHALL BE PLACED SO THAT IT BLENDS IN WITH THE EXISTING GROUND. IF THE STONE IS PLACED TOO HIGH THEN THE FLOW WILL BE FORCED OUT OF THE CHANNEL AND SCOUR ADJACENT TO THE STONE WILL OCCUR.

SECTION

PLAN

STRUCTURE	D-50	LENGTH (L)	WIDTH (W)	THICKNESS (T)	SHA CLASS
E-1	9.0"	FOREBAY	FOREBAY	1.58'	I
E-2	9.5"	23' @ 0%	26.5'	1.58'	I
E-3	9.0"	FOREBAY	FOREBAY	1.58'	I
E-4	9.5"	FOREBAY	FOREBAY	1.58'	I

OUTLET PROTECTION DETAIL
NOT TO SCALE

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 4/15/10

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/29/10
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/3/10
DIRECTOR — DATE 5/3/10

AS-BUILT CERTIFICATION
I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this AS-BUILT plan.
Donald Mason, P.E. No. 21443 Date 4-10-13

STATE OF MARYLAND DONALD ALAN MASON No. 21443 PROFESSIONAL ENGINEER

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

NO.	DATE	REVISION
5	1-11-2013	REVISE PROFILE FROM I-33 TO I-11 TO INCLUDE I-11A & TRENCH DRAIN. REVISE TITLE BLOCK
4	4-10-2012	REVISE COMPS & HGL BASED ON ROOF MANIFOLD DESIGN. REVISE I-18 TO I-20 TO BE 18"RCP
3	12-2-2011	REVISE THROAT AND RIM ELEVATIONS OF I-10 AND I-33.
2	9-21-2011	REVISE I-10, I-11, I-29, I-33 IN STRUCTURE SCHEDULE. DELETE M-10. REVISE PROFILES TO REFLECT ADDITION OF I-33 AND DELETION OF M-10.
1	5-31-2011	REVISE PIPE SCHED & STRUCTURE SCHED FOR I-6, I-7, I-24, I-26, I-27, I-29, I-30, I-31, I-32, M-2, M-3, M-8, M-9, M-13, M-14, M-15

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 418 ▲ ELLICOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6644
60 THOMAS JOHNSON DRIVE ▲ FREDERICK, MARYLAND 21702
(P) 301-371-3505 (F) 301-371-3506
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. 28559, Expiration Date: 7-22-2011.
STATE OF MARYLAND BRIAN F. CLEARY No. 28559 REGISTERED PROFESSIONAL ENGINEER 4/4/2010

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

DEVELOPER:
MANGIONE ENTERPRISES OF TURF VALLEY, LP
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

TOWN SQUARE AT TURF VALLEY
(CERTIFIED LEVEL RATED GREEN BUILDING PROJECT)
PARCELS 'J1' & 'J2' AND OPEN SPACE LOTS 4 & 5
TURF VALLEY PROFESSIONAL BUILDINGS
PLAT NOS. 22078-22079

TAX MAP: 16 – GRID: 10 – PARCEL: P/O 8 & 50
ZONED: PGCC (MULTI-USE SUBDISTRICT)
ELECTION DISTRICT NO. 3 – HOWARD COUNTY, MARYLAND

STORM DRAIN PROFILES AND DETAILS

DATE: APRIL, 2010 — BEI PROJECT NO. 2208
SCALE: AS SHOWN — SHEET 10 OF 29

SDP-10-027

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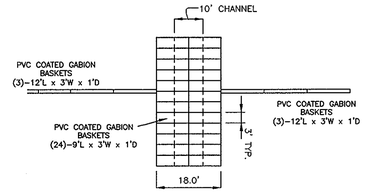
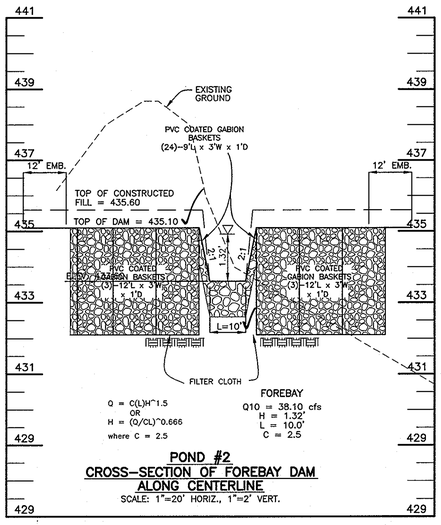
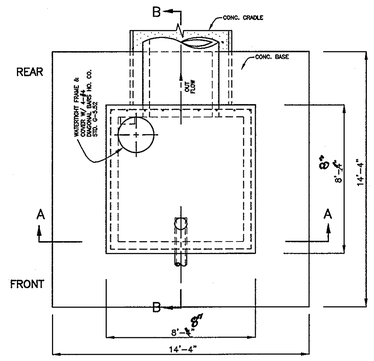


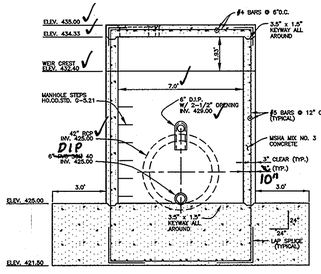
GABION BASKET LAYOUT
NOT TO SCALE



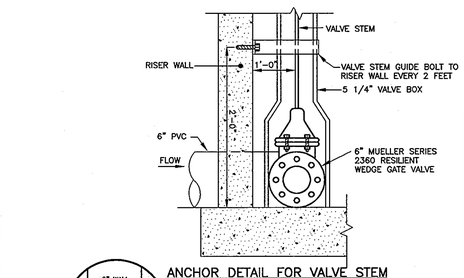
POND #2
CROSS-SECTION OF FOREBAY DAM ALONG CENTERLINE
SCALE: 1"=20' HORIZ., 1"=2' VERT.



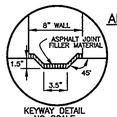
PLAN



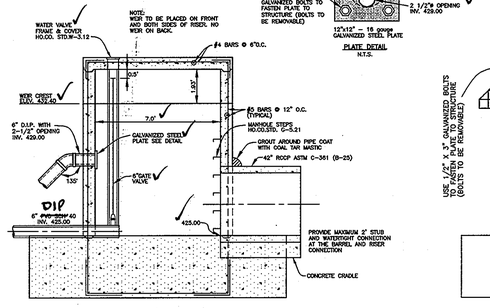
SECTION A-A
FRONT VIEW



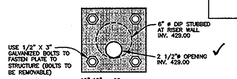
ANCHOR DETAIL FOR VALVE STEM
NOT TO SCALE



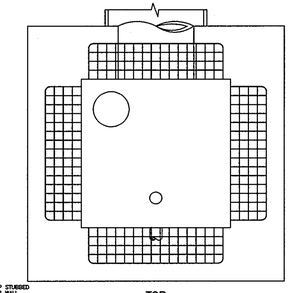
KEYWAY DETAIL
NO SCALE



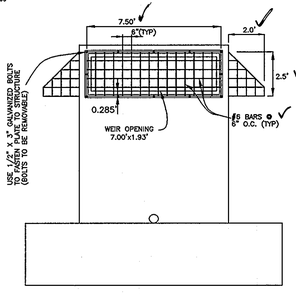
SECTION B-B
FRONT VIEW



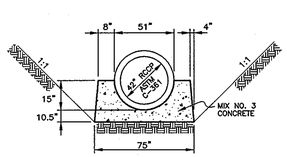
CONTROL STRUCTURE
SCALE: 1" = 4'



TOP



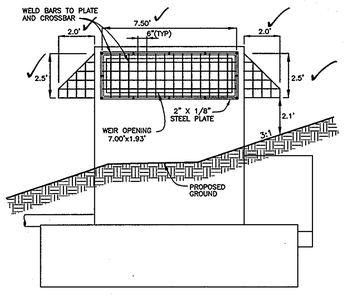
FRONT ELEVATION



SCS TR-46 TYPE A-2
CONCRETE CRADLE
NOT TO SCALE

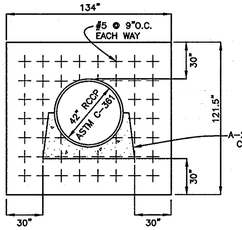
NOTES:

1. TRASH RACK SHALL BE GALVANIZED AFTER FABRICATION.
2. TRASH RACK SHALL BE PAINTED BATTLESHIP GRAY.
3. TRASH RACK TO BE INSTALLED UPON CONVERSION TO SWM POND.

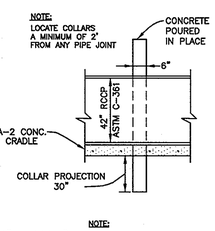


SIDE ELEVATION

TRASH RACK DETAIL
SCALE: 1" = 4'



COLLAR SIZE: 134" X 121.5"
ANTI-SEEP COLLAR
NOT TO SCALE



NOTE:
ASPHALT JOINT FILLER IS TO BE USED BETWEEN ALL CONCRETE SURFACES EXCEPT BETWEEN PIPE AND CRADLE.

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. 21443 Expiration Date: 12-21-14

AS-BUILT CERTIFICATION

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

ENGINEER — Donald Alan Mason — LIC. NO. 21443 — 10-28-13

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ONSITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ONSITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND/OR TESTS DEEMED SUFFICIENT AND APPROPRIATE BY COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES AN ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

DEVELOPER — DATE 4/14/10

BY THE ENGINEER:

"I/WE CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

ENGINEER — BRIAN F. CLEARY — 4/14/2010 DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT — 9/27/10 DATE

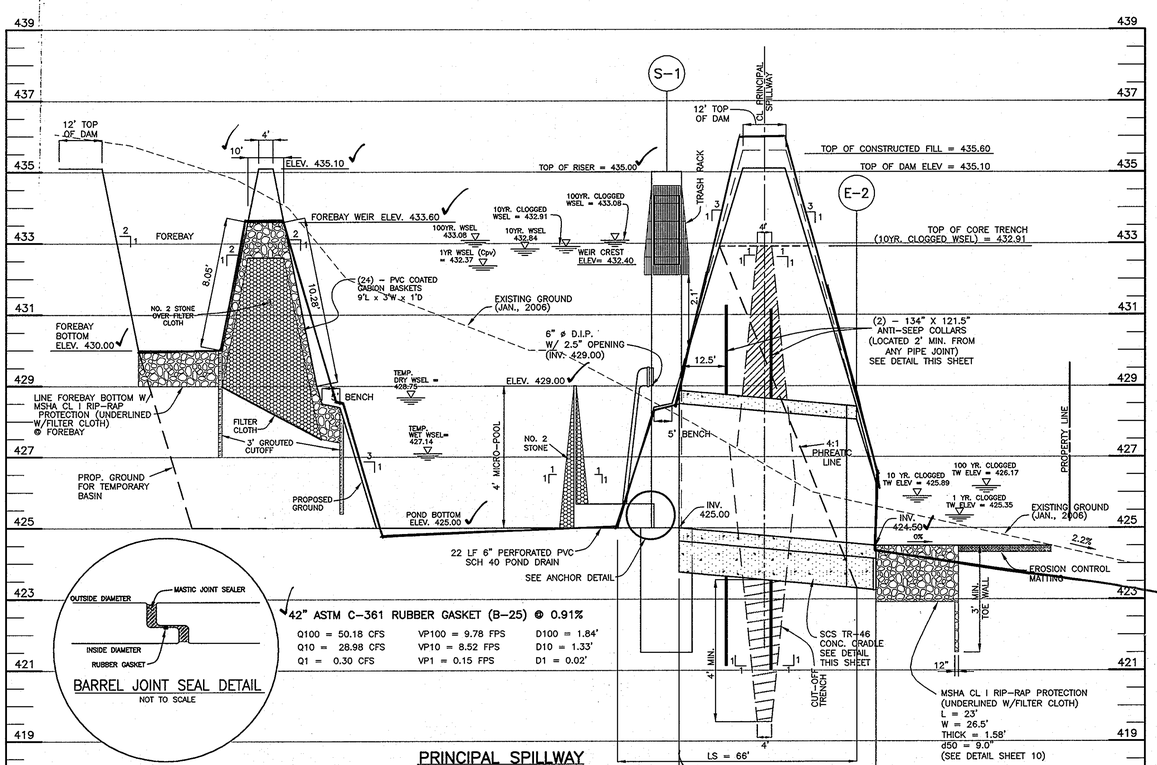
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 4/29/10 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — 5/3/10 DATE

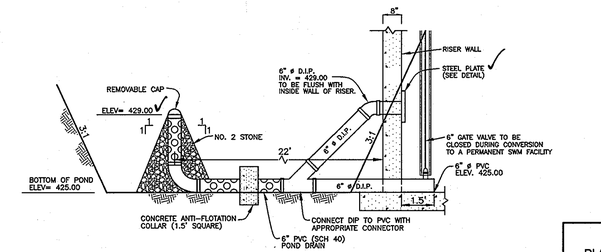
DIRECTOR — 5/3/10 DATE

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 4/15/10

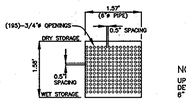


BARREL JOINT SEAL DETAIL
NOT TO SCALE

PRINCIPAL SPILLWAY
(SECTION A-A)
SCALE: 1"=20' HORIZ., 1"=2' VERT.

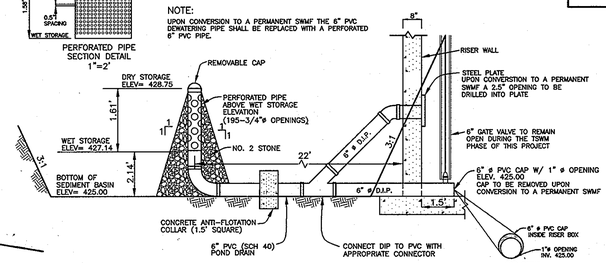


6" DEWATERING PIPE DETAIL AND
PERMANENT EXTENDED DETENTION CONTROL ORIFICE
NOT TO SCALE



PERFORATED PIPE SECTION DETAIL
1"=2'

NOTE:
UPON CONVERSION TO A PERMANENT SWMF THE 6" PVC DEWATERING PIPE SHALL BE REPLACED WITH A PERFORATED 6" PVC PIPE.



CONSTRUCTION SPECIFICATIONS:

1. PERFORATIONS IN THE DRAW-DOWN DEVICE MAY NOT EXTEND INTO THE WET STORAGE.
2. THE TOTAL AREA OF THE PERFORATIONS MUST BE GREATER THAN 2 TIMES THE AREA OF THE INTERNAL ORIFICE.
3. THE PERFORATED PORTION OF THE DRAW-DOWN DEVICE SHALL BE WRAPPED WITH A HARDWARE CLOTH AND GEOTEXTILE FABRIC. THE GEOTEXTILE FABRIC SHALL MEET THE SPECIFICATIONS FOR GEOTEXTILE CLASS E.
4. PROVIDE SUPPORT OF DRAW-DOWN DEVICE TO PREVENT SAGGING AND FLOTATION, AN ACCEPTABLE PREVENTATIVE MEASURE IS TO STAKE BOTH SIDE OF DRAW-DOWN DEVICE WITH 1" STEEL ANGLE OR 1"x4" SQUARE OR 2" ROUND WOODEN POSTS SET 3' MINIMUM INTO THE GROUND THEN JOINING THEM TO THE DEVICE BY WRAPPING WITH 12 GUAGE MINIMUM WIRE.

SEE SHEET 19 FOR MDE STANDARD DETAIL

BASIN #2
6" TEMPORARY SWM
VERTICAL DRAW-DOWN DEVICE
NOT TO SCALE

NO.	DATE	REVISION
2	1-11-2013	REVISE TITLE BLOCK
1	4-10-2012	REVISE SHEET NUMBER IN TITLE BLOCK

BENCHMARK
ENGINEERS & LAND SURVEYORS & PLANNERS
ENGINEERING, INC.
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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. 21443, Expiration Date: 7-22-2011.
BRIAN F. CLEARY — No. 21443 — REGISTERED PROFESSIONAL ENGINEER — STATE OF MARYLAND
4/14/2010

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

DEVELOPER:
MANGIONE ENTERPRISES OF TURF VALLEY, LP
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

TOWN SQUARE AT TURF VALLEY
(CERTIFIED LEVEL RATED GREEN BUILDING PROJECT)
PARCELS 31 & 32 AND OPEN SPACE LOTS 4 & 5
TURF VALLEY PROFESSIONAL BUILDINGS
PLAT NOS. 22078-22079

TAX MAP: 16 — GRID: 10 — PARCEL: P/O 8 & 50
ZONED: PGCC (MULTI-USE SUBDISTRICT)
ELECTION DISTRICT NO. 3 — HOWARD COUNTY, MARYLAND

STORMWATER MANAGEMENT DETAILS
POND #2

DATE: APRIL, 2010 — BEI PROJECT NO. 2208
SCALE: AS SHOWN — SHEET 11 OF 29

AS-BUILT

SDP-10-027

P:\2208 Town Square at Turf Valley\dwg\8024_s11-12.dwg, 4/13/2010 5:53:42 PM

CONSTRUCTION SPECIFICATIONS

These specifications are appropriate to all ponds within the scope of the Standard for practice MD-378. All references to ASTM and AASHTO specifications apply to the most recent version.

Site Preparation

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped to topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped to no steeper than 1:1. All trees shall be cleared and grubbed within 15 feet of the toe of the embankment.

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush, and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of a 25-foot radius around the inlet structure shall be cleared.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

Earth Fill

Material – The fill material shall be taken from approved designated borrow areas. If shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable material. Fill material for the center of the embankment, and cut off trench shall conform to Unified Soil Classification GC, SC, CH, or CL and must have at least 30% passing the #200 sieve. Consideration may be given to the use of other materials in the embankment if designed by a geotechnical engineer. Such special designs must have construction supervised by a geotechnical engineer.

Materials used in the outer shell of the embankment must have the capability to support vegetation of the quality required to prevent erosion of the embankment.

Placement – Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8 inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement and not excavated into the embankment.

Compaction – the movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of heavy equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained with teh equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble, yet not be so wet that water can be squeezed out.

When required by the reviewing agency the minimum required density shall not be less than 95% of maximum dry density with a moisture content within ± 2% of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99 (Standard Proctor).

Cut Off Trench – The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall be a least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability.

Embankment Core – The core shall be parallel to the centerline of the embankment as shown on the plans. The top width of the cores shall be a minimum of four feet. The height shall extend up to at least the 10 year water elevation or as shown on the plans. The side slopes shall be 1 to 1 or flatter. The core shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability. In addition, the core shall be placed concurrently with the outer shell of the embankment.

Structure Backfill

Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pipe.

Structure backfill may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 313 as modified. The mixture shall have a 100-200 psi, 28 day unconfined compressive strength. The flowable fill shall have a minimum pH of 4.0 and a minimum resistivity of 2,000 ohm-cm. Material shall be placed such that a minimum of 6" (measured perpendicular to the outside of the pipe) of flowable fill shall be under (bedding), over and, on the sided of the pipe. It only needs to extend up to the spring line for rigid conduits. Average slump of the fill shall be 7" to assure flowability of the material. Adequate measures shall be taken (sand bags, etc.) to prevent floating the pipe. When using flowable fill, all metal pipe shall be bituminous coated. Any adjoining soil fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material shall completely fill all voids adjacent to the flowable fill zone. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a structure or pipe unless there is a compacted fill of 24" or greater over the structure or pipe. Backfill material outside the structural backfill (flowable fill) zone shall be of the type and quality conforming to that specified for the core of the embankment or other embankment materials.

Pipe Conduits

All pipes shall be circular in cross section

Corrugated Metal Pipe – all of the following criteria shall apply for corrugated metal pipe:

1. Materials – (Polymer Coated steel pipe) – Steel pipes with polymeric coatings shall bove a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. This pipe and its appurtenances shall conform to the requirements of AASHTO Specifications M-245 & M-246 with watertight coupling bands or flanges.

Maerials – (Aluminum Coated Steel Pipe) – This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with watertight coupling bands or flanges. Aluminum Coated Steel Pipe, when used with flowable fill or when soil and/or water conditions warrant the need for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt.

Materials – (Aluminum Pipe) – This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-196 or M-211 with watertight coupling bands or flanges. Aluminum Pipe, when used with flowable fill or when soil and/or water conditions warrant for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Aluminum surfaces that are to be contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

2. Coupling bands, anti-seep collars, end sections, etc., must be composed of the same material and coatings as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 mils in thickness.

3. Connections – All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are metal. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight. Dimple bands are not considered to be watertight.

All connection shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled an adequate number of corrugations to accommodate the bandwidth. The following type connections are acceptable for pipes less than 24 inches in diameter: flanges on both ends of the pipe with a circular 3/8 inch closed cell neoprene gasket; prepunched to the flange bolt circle, sandwiched between adjacent flanges; a 12-inch wide standard lap type band with 12-inch wide by 3/8-inch thick closed cell circular neoprene gasket; and a 12-inch wide hugger type band with o-ring gaskets having a minimum diameter of 1/2 inch greater than the corrugation depth. Pipes 24 inches in diameter and larger shall be connected by a 24 inch long annular corrugated band using a minimum of 4 (four) rods and lugs, 2 on each connecting pipe end. A 24-inch wide by 3/8-inch thick closed cell circular neoprene gasket will be installed with 12 inches on the end of each pipe. Flanged joints with 3/8 inch closed cell gaskets the full width of the flange is also acceptable.

Helically corrugated pipe shall have either continuously welded seams or have lock seams with internal caulking or a neoprene bead.

4. Bedding – The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

5. Backfilling shall conform to "Structure Backfill".

6. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Reinforced Concrete Pipe – All of the following criteria shall apply for reinforced concrete pipe:

1. Materials – Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM C-361.

2. Bedding – Reinforced concrete pipe conduits shall be laid in a concrete bedding/cradle for their entire length. This bedding/cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 50% of its outside diameter with a minimum thickness of 6 inches. Where a concrete cradle is not needed for structural reasons, flowable fill may be used a described in the "Structure Backfill" section of this standard. Gravel bedding is not permitted.

3. Laying pipe – Bell and spigot pipe shall be places with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 4 feet from the riser.

4. Backfilling shall conform to "Structure Backfill".

5. Other details (anti-seep collars, valves, etc.) shall be shown on the drawings.

Plastic Pipe – The following criteria shall apply for plastic pipe:

1. Materials – PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241. Corrugated High Density Polyethylene (HDPE) pipe, couplings and fittings shall conform to the following: 4" – 10" inch pipe shall meet the requirements of AASHTO M252 Type S, and 12" through 24" inch shall meet the requirements of AASHTO M294 Type S.

2. Joints and connections to anti-seep collars shall be completely watertight.

3. Bedding – The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

4. Backfilling shall conform to "Structure Backfill".

5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Drainage Diaphragms – When a drainage diaphragm is used, a registered professional engineer will supervise the design and construction inspection.

Concrete

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 414, Mix No. 3.

Rock Riprap

Rock riprap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 311.

Geotextile shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 921.09, Class C.

Care of Water during Construction

All work on permanent structures shall be carried out in areas free from water. The contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works. The contractor shall also furnish, install, operate, and maintain all necessary pumping and other equipment required for removal of water from various parts of the work and for maintaining the excavations, foundation, and other parts of the work free from water as required or directed by the engineer for constructing each part of the work. After having served their purpose, all temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level at the location being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water sumps from which the water shall be pumped.

Stabilization

All borrow areas shall be graded to provide proper drainage and left in a sightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Natural Resources Conservation Service Standards and Specifications for Critical Area Planting (MD-342) or as shown on the accompanying drawings.

Erosion and Sediment Control

Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures.

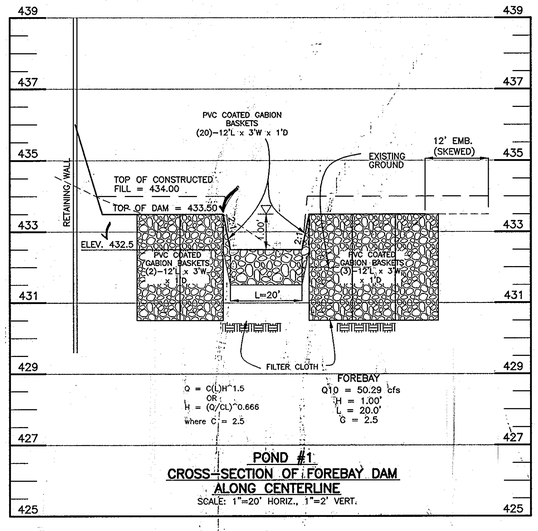
GEOTECHNICAL ENGINEER RECOMMENDATIONS:

EMBANKMENT AND CUT-OFF TRENCH CONSTRUCTION

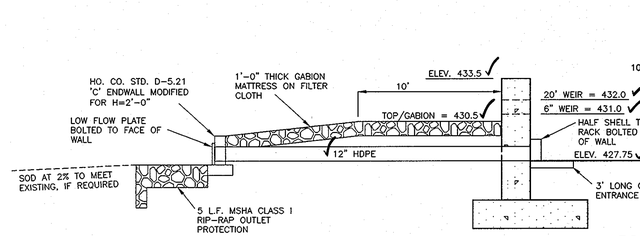
THE AREAS OF THE PROPOSED SWM FACILITIES SHOULD BE STRIPPED OF TOPSOIL AND ANY OTHER UNSUITABLE MATERIALS FROM THE EMBANKMENT OR STRUCTURE AREAS IN ACCORDANCE WITH SOIL CONSERVATION GUIDELINES. AFTER STRIPPING OPERATIONS HAVE BEEN COMPLETED, THE EXPOSED SUBGRADE MATERIALS SHOULD BE PROOFROLLED WITH A LOADED DUMP TRUCK OR SIMILAR EQUIPMENT IN THE PRESENCE OF A GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE. FOR AREAS THAT ARE NOT ACCESSIBLE TO A DUMP TRUCK, THE EXPOSED MATERIALS SHOULD BE OBSERVED AND TESTED BY A GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE UTILIZING A DYNAMIC CONE PENETROMETER. ANY EXCESSIVELY SOFT OR LOOSE MATERIALS IDENTIFIED BY PROOFROLLING OR PENETROMETER TESTING SHOULD BE EXCAVATED TO SUITABLE FIRM SOIL, AND THEN GRADES RE-ESTABLISHED BY BACKFILLING WITH SUITABLE SOIL.

A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER SHOULD BE PRESENT TO MONITOR PLACEMENT AND COMPACTION OF FILL FOR THE EMBANKMENT AND CUT-OFF TRENCH. IN ACCORDANCE WITH NRCS-MD CODE NO. 378 POND STANDARDS/SPECIFICATIONS, SOILS CONSIDERED SUITABLE FOR THE CENTER OF EMBANKMENT AND CUTOFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CH, OR CL AND MUST HAVE AT LEAST 30% PASSING THE #200 SIEVE.

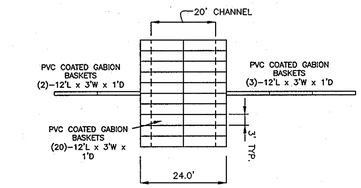
IT IS OUR PROFESSIONAL OPINION THAT IN ADDITION TO THE SOIL MATERIALS DESCRIBED ABOVE, A FINE-GRAINED SOIL (INCLUDING SILTOM.) WITH A PLASTICITY INDEX OF 10 OR MORE SHOULD BE UTILIZED FOR THE CENTER OF THE EMBANKMENT AND CORE TRENCH. ALL FILL MATERIALS MUST BE PLACED AND COMPACTED IN ACCORDANCE WITH NRCS-MD CODE NO. 378 SPECIFICATIONS.



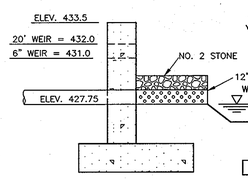
POND #1
CROSS-SECTION OF FOREBAY DAM ALONG CENTERLINE
SCALE: 1"=20' HORIZ., 1"=2' VERT.



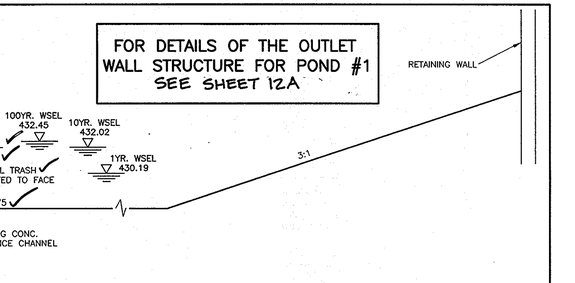
POND #1
OUTLET STRUCTURE DETAIL
SCALE: 1"=5'



POND #1
GABION BASKET LAYOUT
NOT TO SCALE



BASIN #1
TEMPORARY HORIZONTAL DRAW-DOWN DETAIL
SCALE: 1"=5'



LOW FLOW PLATE DETAIL
N.T.S.

FOR DETAILS OF THE OUTLET WALL STRUCTURE FOR POND #1 SEE SHEET 12A

SEE SHEET 19 FOR MDE STANDARD DETAIL

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. 21443, Expiration Date: 12-21-13

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND JOINTLY MAINTAINED STORMWATER PONDS (P-1 THROUGH P-5) POND #2

ROUTINE MAINTENANCE (BY H.O.A.):

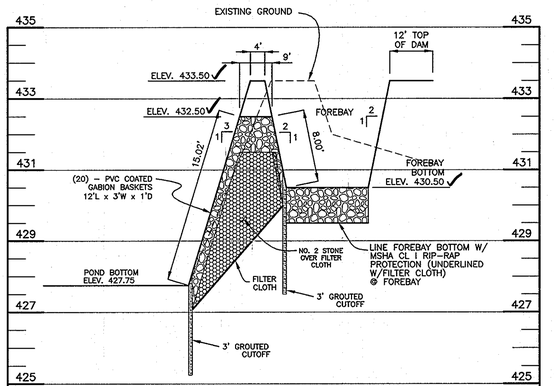
1. FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHALL BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE POND IS FUNCTIONING PROPERLY.
2. TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF TWO (2) TIMES PER YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES AND MAINTENANCE ACCESS SHALL BE MOWED AS NEEDED.
3. DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
4. VISIBLE SIGNS OF EROSION IN THE POND AS WELL AS THE RIP-RAP OR GABION OUTLET AREA SHALL BE REPAIRED AS SOON AS IT IS NOTICED.

NON-ROUTINE MAINTENANCE (BY HOWARD COUNTY):

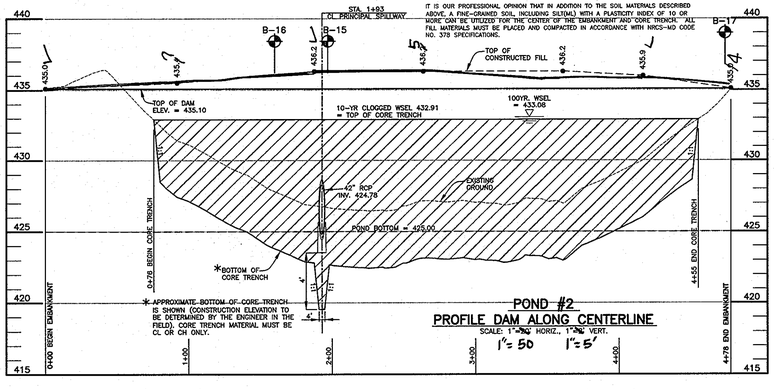
1. STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, THE RISER, AND THE PIPES SHALL BE REPAIRED UPON THE DETECTION OF ANY DAMAGE. THE COMPONENTS SHALL BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.
2. SEDIMENTS SHALL BE REMOVED FROM THE POND, AND FOREBAY, NO LATER THAN WHEN THE CAPACITY OF THE POND, OR FOREBAY, IS HALF FULL OF SEDIMENT, OR, WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, UPON APPROVAL FROM THE DEPARTMENT OF PUBLIC WORKS.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORMWATER RECHARGE TRENCHES

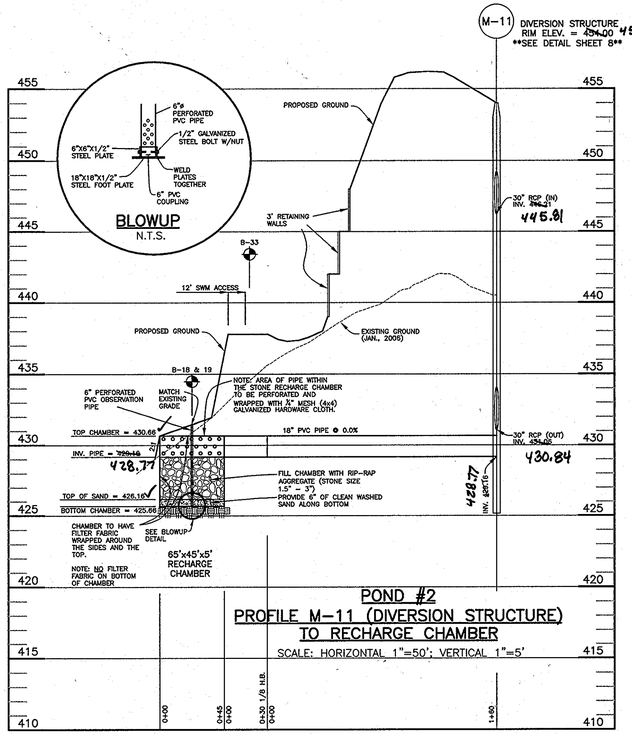
1. THE MONITORING WELLS AND STRUCTURES SHALL BE INSPECTED ON A QUARTERLY BASIS AND AFTER EVERY LARGE STORM EVENT.
2. WATER LEVELS AND SEDIMENT BUILD UP IN THE MONITORING WELLS SHALL BE RECORDED OVER A PERIOD OF SEVERAL DAYS TO INSURE TRENCH DRAINAGE.
3. A LOGBOOK SHALL BE MAINTAINED TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
4. WHEN THE FACILITY BECOMES CLOGGED SO THAT IT DOES NOT DRAIN DOWN WITHIN THE 72 HOUR TIME PERIOD, CORRECTIVE ACTION SHALL BE TAKEN.
5. THE MAINTENANCE LOGBOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.
6. ONCE THE PERFORMANCE CHARACTERISTICS OF THE INFILTRATION FACILITY HAVE BEEN VERIFIED, THE MONITORING SCHEDULE CAN BE REDUCED TO AN ANNUAL BASIS UNLESS THE PERFORMANCE DATA INDICATES THAT A MORE FREQUENT SCHEDULE IS REQUIRED.



POND #1
PROFILE THRU FOREBAY DAM
SCALE: 1"=20' HORIZ., 1"=2' VERT.



POND #2
PROFILE DAM ALONG CENTERLINE
SCALE: HORIZ. 1"=50', VERT. 1"=5'



POND #2
PROFILE M-11 (DIVERSION STRUCTURE) TO RECHARGE CHAMBER
SCALE: HORIZONTAL 1"=50'; VERTICAL 1"=5'

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 4/15/10

AS-BUILT CERTIFICATION

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

ENGINEER – Donald Alan Mangione – PE NO. 21443 – DATE 10-28-13

CERTIFY MEANS TO STATE OR DECLARE AN HONEST OPINION BASED UPON ONSITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONSISTENT WITH GOOD CONSTRUCTION. THE ONSITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE BY COMMONLY ACCEPTED ENGINEERING STANDARDS AND PRACTICES. IT DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES AN ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

DEVELOPER – 4/14/10 DATE

BY THE ENGINEER:

"I/WE CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

ENGINEER – BRIAN F. CLEARY – 4/14/2010 DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT – 4/21/10 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION – 4/29/10 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT – 5/3/10 DATE

DIRECTOR – 5/3/10 DATE

NO.	DATE	REVISION
3	1-11-2013	REVISE TITLE BLOCK
2	9-7-2012	REVISE LOCATION OF POND #1 DETAILS IN NOTE, ADD "POND #2" TO JOINT MAINT. CHART.
1	4-10-2012	REVISE SHEET NUMBER IN TITLE BLOCK

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 418 ▲ ELLICOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6644
60 THOMAS JOHNSON DRIVE ▲ FREDERICK, MARYLAND 21702
(P) 301-371-3505 (F) 301-371-3506
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. 21506, Expiration Date: 7-22-2011. BRIAN F. CLEARY – 4/14/2010

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

DEVELOPER:
MANGIONE ENTERPRISES OF TURF VALLEY, LP
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

TOWN SQUARE AT TURF VALLEY

(CERTIFIED LEVEL RATED GREEN BUILDING PROJECT)
PARCELS 'J' & '32' AND OPEN SPACE LOTS 4 & 5
TURF VALLEY PROFESSIONAL BUILDINGS
PLAT NOS. 22078-22079

TAX MAP: 16 – GRID: 10 – PARCEL: P/O 8 & 50
ZONED: PGCC (MULTI-USE SUBDISTRICT)
ELECTION DISTRICT NO. 3 – HOWARD COUNTY, MARYLAND

STORMWATER MANAGEMENT DETAILS POND #1 AND POND #2

DATE: APRIL, 2010 | BEI PROJECT NO. 2208
SCALE: AS SHOWN | SHEET 12 OF 29

AS-BUILT

SDP-10-027

P:\2208 Town Square at Turf Valley\dwg\8024_s11-12.dwg, 4/13/2010 5:54:57 PM

POND#1 SPECIFICATIONS

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

SITE PREPARATION

AREAS DESIGNATED FOR BORROW AREAS, EMBANKMENT, AND STRUCTURAL WORKS SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL. ALL TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED. CHANNEL BANKS AND SHARP BREAKS SHALL BE SLOPED TO NO STEEPER THAN 1:1

AREAS TO BE COVERED BY THE RESERVOIR WILL BE CLEARED OF ALL TREES; BRUSH, LOGS, RUBBISH AND OTHER OBJECTIONABLE MATERIAL UNLESS OTHERWISE DESIGNATED TO THE PLANS. TREES, BRUSH AND STUMPS SHALL BE CUT APPROXIMATELY LEVEL WITH THE GROUND SURFACE. FOR DRY STORMWATER MANAGEMENT PONDS, A MINIMUM OF A 50 FOOT RADIUS AROUND THE INLET STRUCTURE SHALL BE CLEARED.

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

EARTH FILL

MATERIAL- THE FILL MATERIAL SHALL BE TAKEN FROM APPROVED DESIGNATED BORROW AREAS. IT SHALL BE FREE OF ROOTS, STUMPS, WOOD, RUBBISH, STONES GREATER THAN 6". FROZEN OR OTHER OBJECTIONABLE MATERIALS. FILL MATERIAL FOR THE CENTER OF THE EMBANKMENT AND CUT OFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CH, OR CL. CONSIDERATION MAY BE GIVEN TO THE USE OF OTHER MATERIALS IN THE EMBANKMENT IF DESIGN AND CONSTRUCTION ARE SUPERVISED BY A GEOTECHNICAL ENGINEER.

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

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

WHERE A MINIMUM REQUIRED DENSITY IS SPECIFIED, IT SHALL NOT BE LESS 95% OF MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT WITHIN+- 2% OF THE OPTIMUM. EACH LAYER OF FILL SHALL BE COMPACTED AS NECESSARY TO OBTAIN THAT DENSITY, AND IS TO BE CERTIFIED BY THE ENGINEER AT THE TIME OF CONSTRUCTION. ALL COMPACTION IS TO BE DETERMINED BY AASHTO METHOD T-99

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

STRUCTURE BACKFILL

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

PIPE CONDUITS

ALL PIPES SHALL BE CIRCULAR IN CROSS SECTION.

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

1. MATERIALS- (STEEL PIPE)- THIS PIPE AND ITS APPURTENANCE SHALL BE GALVANIZED AND FULLY BITUMINOUS COATED AND SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-190 TYPE A WITH WATERTIGHT COUPLING BANDS. ANY BITUMINOUS COATING DAMAGED OR OTHERWISE REMOVED SHALL BE REPLACED WITH COLD APPLIED BITUMINOUS COATING COMPOUND. STEEL PIPES WITH POLYMERIC COATINGS SHALL HAVE A MINIMUM COATING THICKNESS OF 0.01 INCH (10 MIL) ON BOTH SIDES OF THE PIPE. THE FOLLOWING COATINGS OR AN APPROVED EQUAL MAY BE USED: NEXON, PLASTI-COTE, BLAC-KLAD, AND SETH-GU-LOY. COATED CORRUGATED STEEL PIPE SHALL MEET THE REQUIREMENTS OF AASHTO M-245 AND M-246.

MATERIALS- (ALUMINUM COATED STEEL PIPE)- THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-274 WITH WATERTIGHT COUPLING BANDS OR FLANGES. ANY ALUMINUM COATING DAMAGED OF OTHERWISE REMOVED SHALL BE REPLACED WITH COLD APPLIED BITUMINOUS COATING COMPOUND.

MATERIALS-(ALUMINUM PIPE)- THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-196 OR M-211 WITH WATERTIGHT COUPLINGS BANDS OR FLANGES. ALUMINUM SURFACES THAT ARE TO BE IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH ONE COAT OF ZINC CHROMATE PRIMER. HOT DIP GALVANIZED BOLTS MAY BE USED FOR CONNECTIONS. THE pH OF THE SURROUNDING SOILS SHALL BE BETWEEN 4 AND 9.

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

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

ALL CONNECTIONS SHALL USE A RUBBER OR NEOPRENE GASKET WHEN JOINING PIPE SECTIONS. THE END OF EACH PIPE SHALL BE ROLLED AND ADEQUATE NUMBER OF CORRUGATIONS TO ACCOMMODATE THE BAND WIDTH. THE FOLLOWING TYPE CONNECTIONS ARE ACCEPTABLE FOR PIPE LESS THAN 24" IN DIAMETER: FLANGES ON BOTH ENDS OF THE PIPE, A 12" WIDE STANDARD LAP TYPE BAND WITH 12" WIDE 8"x 3/8" THICK CLOSED CELL CIRCULAR NEOPRENE GASKET; AND A 12" WIDE HUGGER TYPE BAND WITH O-RING GASKETS HAVING MINIMUM DIAMETER OF 1/2" GREATER THAN THE CORRUGATION DEPTH. PIPES 24" IN DIAMETER AND LARGER SHALL BE CONNECTED BY A 24" LONG ANNULAR CORRUGATED BAND USING RODS AND LUGS, A 12" WIDE 8"x 3/8" THICK CLOSED CELL CIRCULAR NEOPRENE GASKET MILL BE INSTALLED ON THE END OF EACH PIPE FOR A TOTAL OF 24".

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

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

5. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL."

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

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

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

2. BEDDING- ALL REINFORCED CONCRETE PIPE CONDUITS SHALL BE LAID IN A CONCRETE BEDDING FOR THEIR ENTIRE LENGTH. THIS BEDDING SHALL CONSIST OF HIGH SLUMP CONCRETE PLACED UNDER THE PIPE AND UP THE SIDES OF THE PIPE AT LEAST 10% OF ITS OUTSIDE DIAMETER WITH A MINIMUM THICKNESS OF 3 INCHES, OR AS SHOWN ON THE DRAWINGS.

3. LAYING PIPE- BELL AND SPIGOT PIPE SHALL BE PLACED WITH THE BELL END UPSTREAM. JOINTS SHALL BE MADE IN ACCORDANCE WITH RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL. AFTER THE JOINTS ARE SEALED FOR THE ENTIRE LINE, THE BEDDING SHALL BE PLACED SO THAT ALL SPACES UNDER THE PIPE ARE FILLED. CARE SHALL BE EXERCISED TO PREVENT ANY DEVIATION FROM THE ORIGINAL LINE AND GRADE OF THE PIPE. THE FIRST JOINT MUST BE LOCATED WITHIN 2 FEET FROM THE RISER.

4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL."

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

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

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

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

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

4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL."

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

CONCRETE

CONCRETE SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 905.

THE RIPRAP SHALL BE PLACED TO THE REQUIRED THICKNESS IN ONE OPERATION. THE ROCK SHALL BE DELIVERED AND PLACED IN A MANNER THAT WILL ENSURE THE RIPRAP IN PLACE SHALL BE REASONABLY HOMOGENOUS WITH THE LARGER ROCKS UNIFORMLY DISTRIBUTED AND FIRMLY IN CONTACT ONE TO ANOTHER WITH THE SMALLER ROCKS FILLING THE VOIDS BETWEEN THE LARGER ROCKS. FILTER CLOTH SHALL BE PLACED UNDER ALL RIPRAP AND SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 918.12.

CARE OF WATER DURING CONSTRUCTION

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

STABILIZATION

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

EROSION AND SEDIMENT CONTROL

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

SWM POND MAINTENANCE REQUIREMENTS (PRIVATE):

a. SILT SHALL BE REMOVED WHEN ACCUMULATION EXCEEDS SIX (6) INCHES IN BASINS WITHOUT FOREBAYS. IN BASIN WITH FOREBAYS, SILT SHALL BE REMOVED WHEN THE ACCUMULATION EXCEEDS FOUR (4) INCHES IN THE FOREBAY.

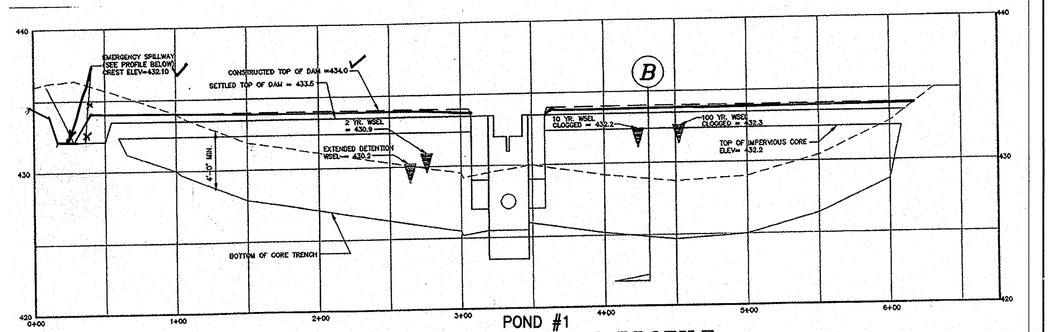
b. ACCUMULATED PAPER, TRASH AND DEBRIS SHALL BE REMOVED AS NECESSARY.

c. VEGETATION GROWING ON THE EMBANKMENT TOP AND FACES IS NOT ALLOWED TO EXCEED 18 INCHES IN HEIGHT AT ANY TIME.

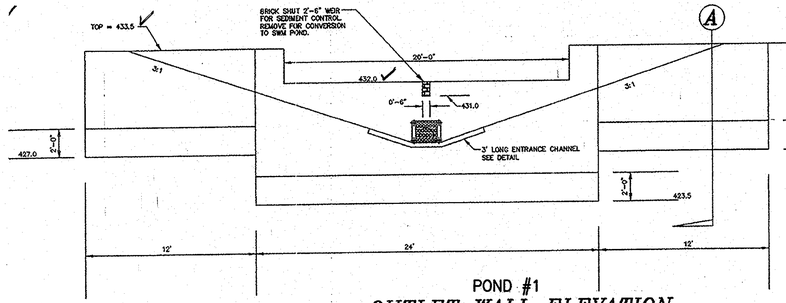
d. ANNUAL INSPECTION AND REPAIR, IF REQUIRED, OF THE STRUCTURE SHALL BE PERFORMED.

OPERATION, MAINTENANCE AND INSPECTION (PRIVATE):

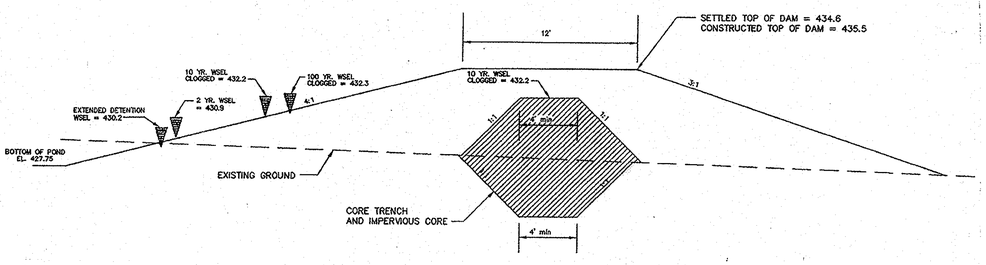
INSPECTION OF THE POND(S) SHOWN HEREON SHALL BY PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA. SCS "STANDARDS AND SPECIFICATIONS FOR PONDS" (MD-378). THE POND OWNER(S) AND THE HEIRS ARDS AND SUCCESSORS OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION AND MAINTENANCE THEREOF. THE POND OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATIONS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.



POND #1
CENTERLINE DAM PROFILE
SCALE: HOR. 1"=50'
VER. 1"=5'



POND #1
OUTLET WALL ELEVATION
SCALE: 1"=5'



POND #1 *SECTION* (B)
SCALE: 1" = 5'

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. 21443 Expiration Date: 12-21-14

AS-BUILT CERTIFICATION

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

Donald Mason — ENGINEER — NO. 21443 — DATE 10-28-13

STATE OF MARYLAND · DONALD ALAN MASON · 21443 · REGISTERED PROFESSIONAL ENGINEER

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ONSITE INSPECTIONS AND MATERIAL TESTS FOR WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ONSITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE BY COMMONLY ACCEPTED ENGINEERING STANDARDS AND PRACTICES. THIS DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES AN ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

Louis Mangione — DEVELOPER — 9-26-12 DATE

BY THE ENGINEER:

"I/WE CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

ENGINEER BRIAN F. CLEARY — 9/7/2012 DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT — 10/3/12 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

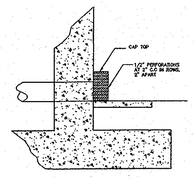
CHIEF, DEVELOPMENT ENGINEERING DIVISION — 10/10/12 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — 10/22/12 DATE

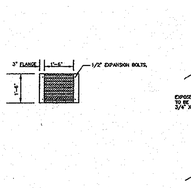
DIRECTOR — 10/22/12 DATE

GENERAL NOTES:

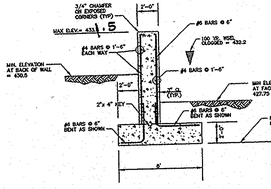
1. CONCRETE SHALL BE MSHA MIX NO. 3 (f'c = 3,500 PSI)
2. REINFORCING SHALL BE Fy = 60,000 PSI, EPOXY COATED
3. ALL WORK SHALL CONFORM TO THE LATEST STANDARDS AND SPECIFICATIONS OF MSHA.
4. ALL FILL UNDER FOOTERS OF PROPOSED STRUCTURE SHALL BE COMPACTED TO 95% OF AASHTO T-99, AS CERTIFIED BY AN ON-SITE GEO-TECHNICAL ENGINEER.
5. MINIMUM ALLOWABLE BEARING PRESSURE OF 2,500 PSF SHALL BE VERIFIED BY ON SITE GEO-TECHNICAL ENGINEER.
6. ALL RE-BAR SPLICES SHALL BE 24 INCH LAP SPLICES OR EQUIVALENT.
7. PROVIDE ELASTOMERIC SPLIT FACE BLOCK NO. 150 OR EQUIVALENT FORM LINERS ON ALL EXPOSED FACES OF CONCRETE WALL.
8. PROVIDE MSHA STANDARD STEPPED FOOTINGS PER MSHA STD. RW(8.08)-83-155.



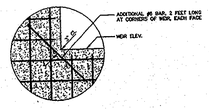
POND #1
HALF SHELL TRASHRACK
N.T.S.



POND #1
CONSTRUCTION JOINT DETAIL
N.T.S.



POND #1 *WALL SECTION* (A)
N.T.S.



CORNER DETAIL POND #1
N.T.S.

POND #1
ENTRANCE CHANNEL DETAIL
SCALE: 1"=5'

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 4/15/10

NO.	DATE	REVISION
2	1-11-2013	REVISE TITLE BLOCK
1	9-7-2012	NEWLY ADDED SHEET TO ADD POND #1 DETAILS AND NOTES FROM F-02-074.

BENCHMARK
ENGINEERS A LAND SURVEYORS A PLANNERS
ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 416 ▲ ELLICOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6644
60 THOMAS JOHNSON DRIVE ▲ FREDERICK, MARYLAND 21702
(P) 301-371-3505 (F) 301-371-3506
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. 21443, Expiration Date: 7-22-2013.
STATE OF MARYLAND · BRIAN F. CLEARY · 21443 · REGISTERED PROFESSIONAL ENGINEER
9/7/2012

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

DEVELOPER:
MANGIONE ENTERPRISES OF TURF VALLEY, LP
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

TOWN SQUARE AT TURF VALLEY
(CERTIFIED LEVEL RATED GREEN BUILDING PROJECT)
PARCELS 'J1 & J2' AND OPEN SPACE LOTS 4 & 5
TURF VALLEY PROFESSIONAL BUILDINGS
PLAT NOS. 22078-22079

TAX MAP: 16 – GRID: 10 – PARCEL: P/O 8 & 50
ZONED: PGCC (MULTI-USE SUBDISTRICT)
ELECTION DISTRICT NO. 3 – HOWARD COUNTY, MARYLAND

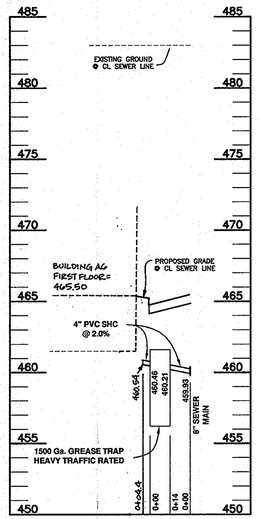
STORMWATER MANAGEMENT DETAILS POND #1

DATE: SEPTEMBER, 2012	BEI PROJECT NO. 2208
SCALE: AS SHOWN	SHEET 12A OF 29

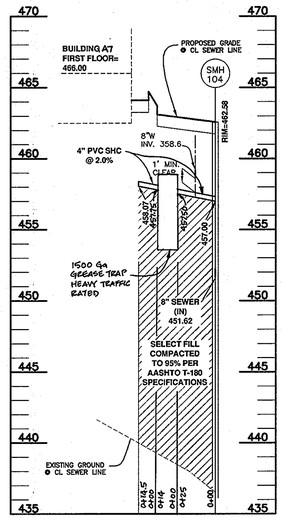
AS-BUILT

SDP-10-027

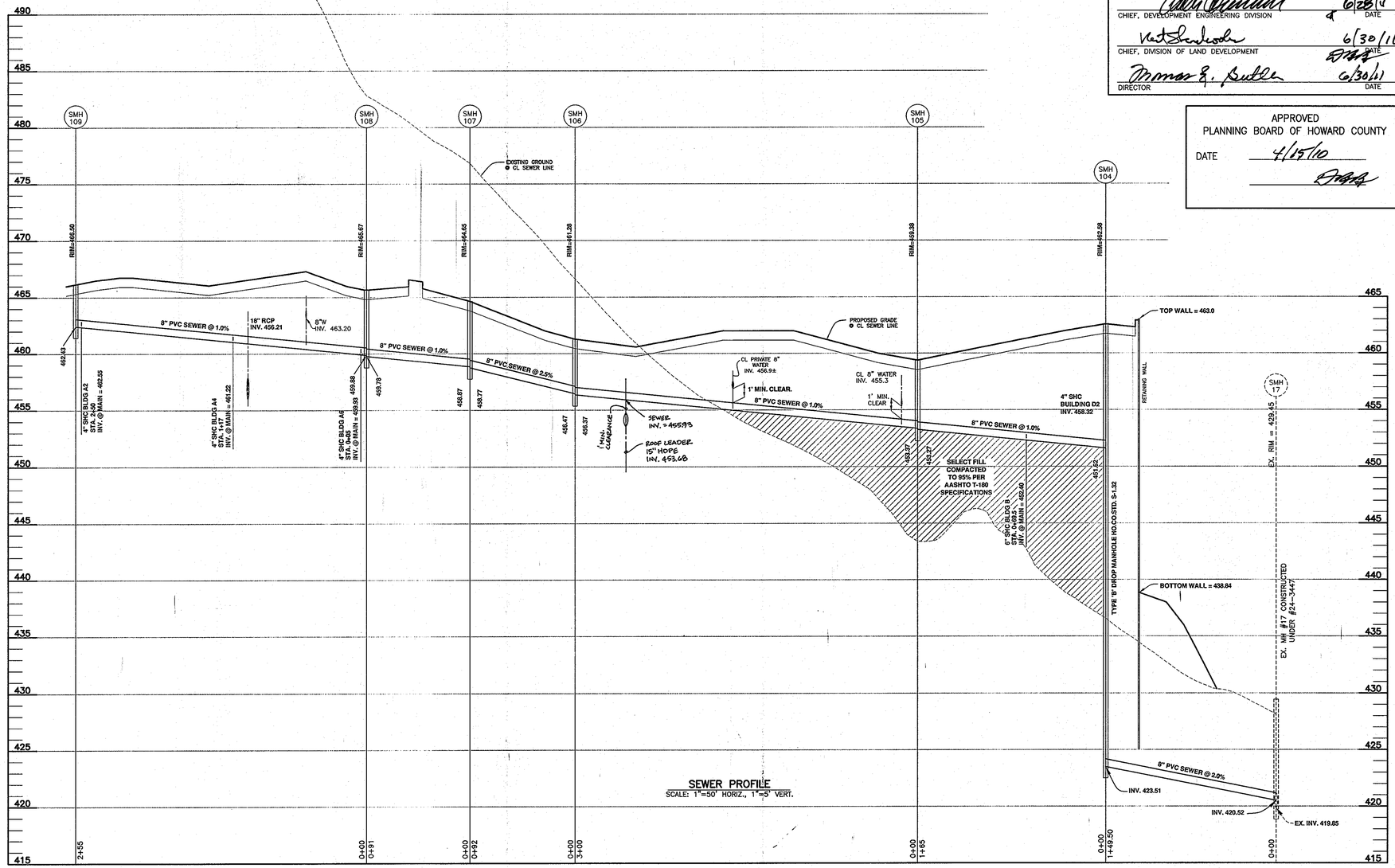
P:\2208 Town Square at Turf Valley\dwg_CURRENT\8024_s11-12.dwg, 9/7/2012 8:20:51 AM



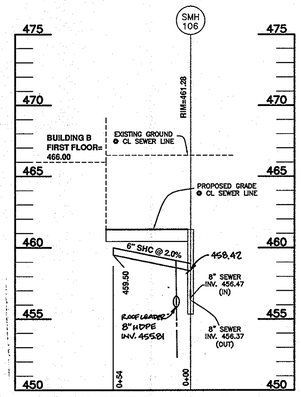
SHC PROFILE – BLDG A6
SCALE: 1"=50' HORIZ., 1"=5' VERT.



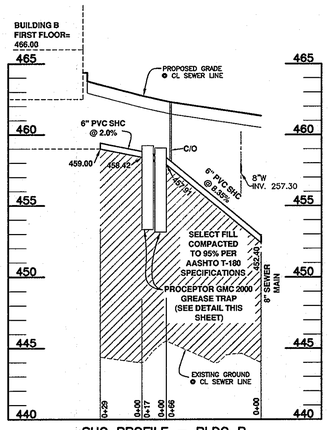
SHC PROFILE – BLDG A7
SCALE: 1"=50' HORIZ., 1"=5' VERT.



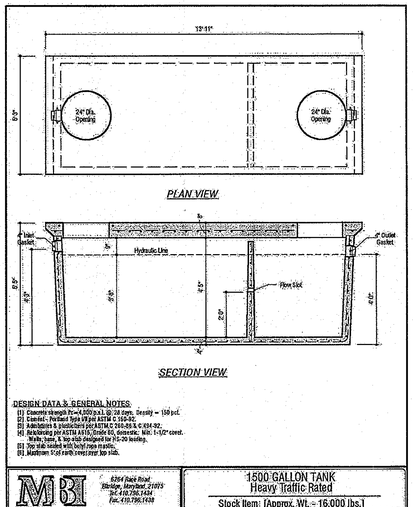
SEWER PROFILE
SCALE: 1"=50' HORIZ., 1"=5' VERT.



6" SHC PROFILE – BLDG B
SCALE: 1"=50' HORIZ., 1"=5' VERT.

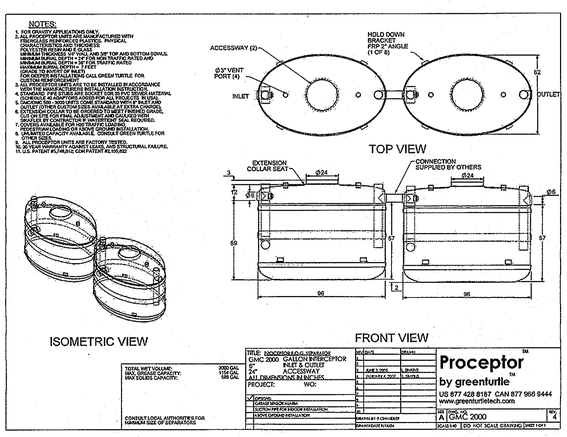


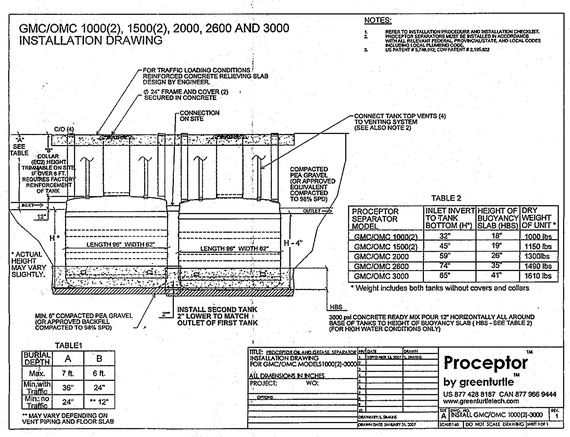
SHC PROFILE – BLDG B
SCALE: 1"=50' HORIZ., 1"=5' VERT.



DESIGN DATA & GENERAL NOTES:
(1) Concrete strength f'c=4,000 p.s.i. @ 28 days. Density = 150 pcf.
(2) Steel rebar - Portland Type I/II per ASTM C 150-94.
(3) Admixtures & plasticizers per ASTM C 260-86 & C 494-92.
(4) Reinforcing per ASTM A615, Grade 60, domestic. Min. 1-1/2" cover.
Walls, base, & top slab designed for HS-20 loading.
(5) Top slab loaded with both type materials.
(6) Maximum 10 pcf earth pressure per slab.

MBI Mayer Bros., Inc.	8364 Back Road Bladen, Maryland 21825 Tel. 410.746.5434 Fax. 410.746.5438 www.mayerbrosincorp.com	1500 GALLON TANK Heavy Traffic Rated Stock Item: [Approx. Wt. = 16,000 lbs.]
	Dwg. No. 1500TR	No Scale
		Jan. 3, 2000





APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 6/28/11

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6/30/11

DIRECTOR — DATE 6/30/11

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 4/15/10

NO.	DATE	REVISION
6	7-9-2013	ADD GREASE TRAP ALONG SHC FOR BUILDING A7
5	1-11-2013	REVISE TITLE BLOCK
4	4-10-2012	REVISE SHEET NUMBER IN TITLE BLOCK
3	12-2-2011	REVISE BLDG 'D2' TO 'A7' ON SHC PROFILE
2	9-21-2011	ADD ROOF LEADER CROSSINGS. REVISE BLDG A6 FIRST FLOOR AND GRADES.
1	5-31-2011	REVISE SHC PROFILE TO BUILDING 'B'; ADD PROFILE FOR 6" SHC TO BLDG 'B'

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 418 ▲ ELLICOTT CITY, MARYLAND 21043
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60 THOMAS JOHNSON DRIVE ▲ FREDERICK, MARYLAND 21702
(P) 301-371-3505 (F) 301-371-3506
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. 28559, Expiration Date: 7-22-2011.

STATE OF MARYLAND — BRIAN F. CLEARY — No. 28559 — REGISTERED PROFESSIONAL ENGINEER — 6/1/2011

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

DEVELOPER:
MANGIONE ENTERPRISES OF TURF VALLEY, LP
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

TOWN SQUARE AT TURF VALLEY

(CERTIFIED LEVEL RATED GREEN BUILDING PROJECT)
PARCELS '31' & '32' AND OPEN SPACE LOTS 4 & 5
TURF VALLEY PROFESSIONAL BUILDINGS
PLAT NOS. 22078-22079

TAX MAP: 16 – GRID: 10 – PARCEL: P/O 8 & 50
ZONED: PGCC (MULTI-USE SUBDISTRICT)
ELECTION DISTRICT NO. 3 – HOWARD COUNTY, MARYLAND

REVISED SEWER PROFILES AND DETAILS

DATE: APRIL, 2010 — BEI PROJECT NO. 2208
SCALE: AS SHOWN — SHEET 13 OF 29

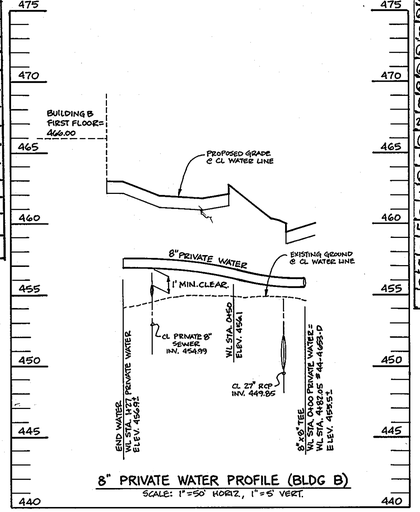
SDP-10-027

P:\2208 Town Square at Turf Valley\dwg\Redline\Revised-8047_s13-14.dwg, 5/28/2011 12:24:12 PM

6" VALVE on 6" W TO BUILDING A-2	
6" VALVE TO SMH 109	25'
6" VALVE to F.H. (STA. 1+77.77)	21.5'
F.H. (STA 1+77.7) to 6" F.H. VALVE	6.5'
F.H. 6" VALVE to SMH 109	45.5'
F.H. (STA 1+77.7) to SMH 109	47.5'
6" VALVE on 6" W to BUILDING A-4	
6" V to SDMH	22.5'
6" V to 8" VALVE (STA 0+45.8)	36'
6" V to F.H. (STA. 0+02.0)	525'
8" VALVE STA 0+45.8 on 8" WATER	
8" VALVE to SMH 108	55.5'
8" VALVE to 6" F.H. V @ STA 0.02	43.5'
8" VALVE to S.D. MH	52.5'
8" VALVE to F.H. STA 0+02	44.5'
FIRE HYDRANT @ STA 0+02	
F.H. to F.H. VALVE	7.5'
F.H. to 6" VALVE to BUILDING 'B'	12.5'
6" F.H. VALVE to 6" VALVE to BUILDING 'B'	7.5'
6" VALVE (BUILDING B) to SMH 108	57'
6" F.H. VALVE to SMH 108	63'
F.H. to SMH 100	68.5'

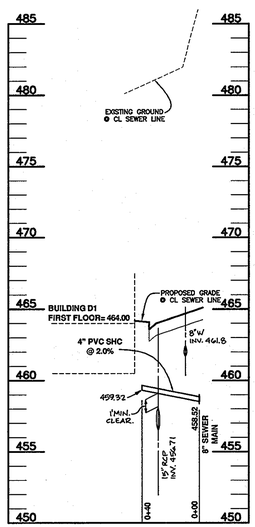
FIRE HYDRANT @ STA. 2+12 ROAD 'A'	
F.H. to 6" F.H. VALVE	25'
F.H. to S MH 107	50.5'
F.H. to SD MH-14	74'
6" F.H. VALVE to SMH 107	68.5'
6" F.H. VALVE to SDMH-14	79.0'
8" WATER to BUILDING B	
8" VALVE to S.D. INLET I-24	38.5'
8" VALVE to S.D. INLET MH I-25	47'
8" x 8" TEE @ STA 6+08.3 ⇄ 0+00	
8" VALVE 6+08.3 to S.D. MH M-13	24.2'
8" VALVE 0+00 to S.D MH M-13	21.0'
8" V to 8" V	3.5'
8" V (0+00) to F.H.	71.8'
8" V (6+08.3) to F.H.	74.8'
FIRE HYDRANT @ 8" x 6" TEE STA 0+70±	
F.H. to 6" F.H. VALVE	21.2'
F.H. to SD MH 13	58.0'
F.H. to SD MH 12	59.7'
6" F.H.V. to SD MH 13	60'
6" F.H.V. to SDMH 12	41'

TOWN SQUARE @ TURF VALLEY AS-BUILTS 44-4653-D	
6" WATER VALVE 6" W to BUILDING 'B'	
6" VALVE to SMH 104	18.0'
6" VALVE to SMH 105	159.0'
6" VALVE to SDMH 1	87.1'
F.H. @ 8" x 6" TEE STA. 5+20.2	
F.H. to 6" F.H. VALVE	10'
F.H. to SDMH-2	49.4'
6" F.H. VALVE to SDMH-2	45.0'
SDMH 2 to 6" F.H.V.	12.7'
F.H. @ 8" x 6" TEE STA 7+49.3	
F.H. to 6" F.H. VALVE	7.7'
F.H. to S.D. MH-9A	29.4'
6" F.H. VALVE to SDMH-9A	36.7'
6" F.H. VALVE to INLET COVER I-10	58'
F.H. to INLET F & COVER I-10	54'

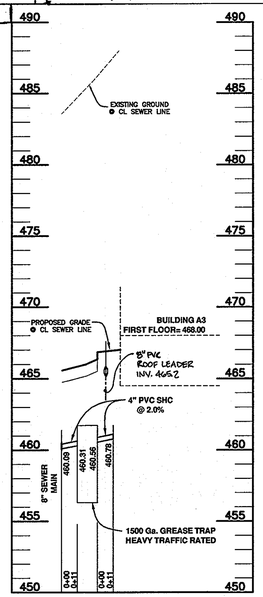


8" PRIVATE WATER PROFILE (BLDG B)
SCALE: 1"=50' HORIZ., 1"=5' VERT.

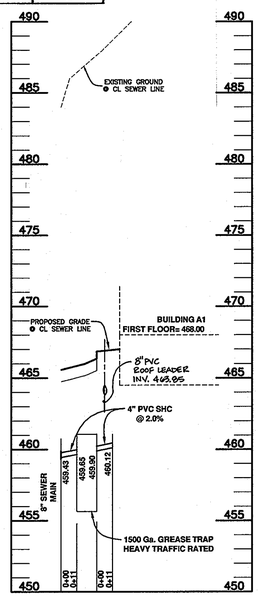
TOWN SQUARE @ TURF VALLEY - AS BUILTS FOR WATERLINE		
6" VALVE AT STA. 9+44.9 (F.H. VALVE):		
6.5' to F.H.	8.5 to TEST STA.	68.5 to 8" V @ STA. 8+74
8" VALVE AT STA. 8+74.4 / 6+84.6:		
68.5' to 6" V @ STA. 9+44	63' to 6" V to BUILDING A5	68.5' to F.H. @ STA. 9+44
6" VALVE to BUILDING A5:		
63' to 8" V @ STA. 8+74	89.5' to F.H. @ STA. 9+44	56' to SHC @ BUILDING A5
8" VALVE to BUILDING C:		
24' to SMH-102	35.5' to 6" F.H. VALVE	40' to F.H.
6" VALVE at STA. 4+60.0 (F.H. VALVE):		
9' to F.H.	35' to 8" V to BUILDING C	27.5' to 6" V to BUILDING A3
6" VALVE to BUILDING A3:		
27.5' to 6" F.H. VALVE	29' to F.H.	37' to SMH-102
6" VALVE to BUILDING A1:		
4' to 6" F.H. VALVE	12.5' to F.H.	40.5' to WHC @ BUILDING A1
6" VALVE at STA. 2+77.0 (F.H. VALVE):		
4' to 6" V to BUILDING A4	9.5' to F.H.	50.5' to 6" VALVE @ BUILDING A4
6" VALVE to BUILDING D1:		
51' to F.H.	50.5' to 6" F.H. VALVE	8.5' to WHC @ BUILDING D1



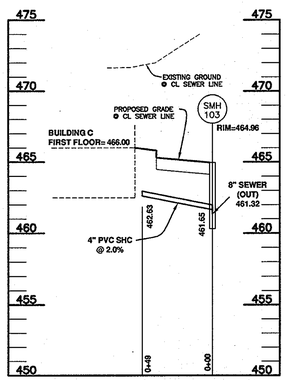
SHC PROFILE – BLDG D1
SCALE: 1"=50' HORIZ., 1"=5' VERT.



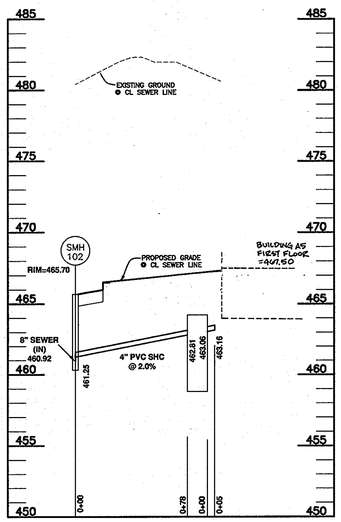
SHC PROFILE – BLDG A3
SCALE: 1"=50' HORIZ., 1"=5' VERT.



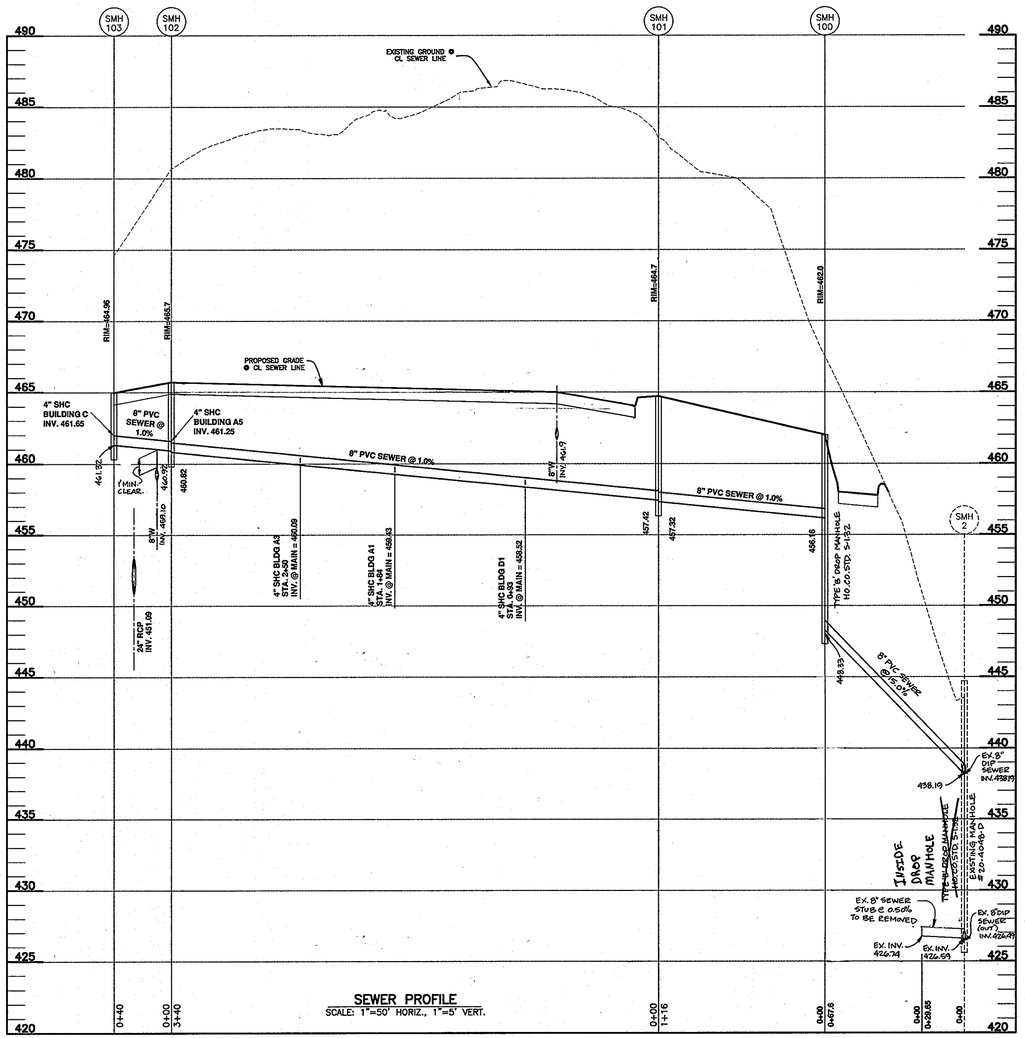
SHC PROFILE – BLDG A1
SCALE: 1"=50' HORIZ., 1"=5' VERT.



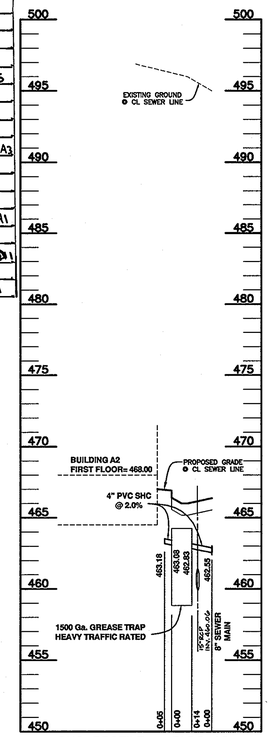
SHC PROFILE – BLDG C
SCALE: 1"=50' HORIZ., 1"=5' VERT.



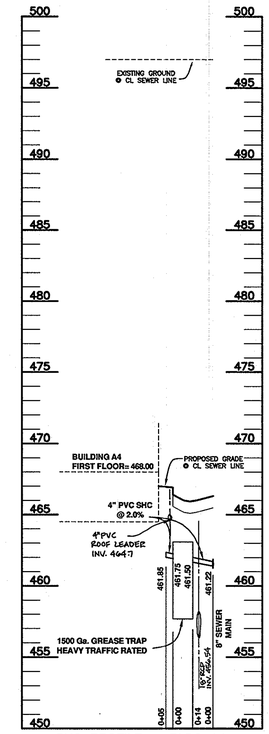
SHC PROFILE – BLDG A5
SCALE: 1"=50' HORIZ., 1"=5' VERT.



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



SHC PROFILE – BLDG A2
SCALE: 1"=50' HORIZ., 1"=5' VERT.



SHC PROFILE – BLDG A4
SCALE: 1"=50' HORIZ., 1"=5' VERT.

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 4/15/10

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/23/10

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/3/10

DIRECTOR — DATE 5/3/10

NO.	DATE	REVISION
5	1-11-2013	REVISE TITLE BLOCK
4	7-10-2012	AS-BUILT
3	4-10-2012	ADD ROOF LEADER CROSSING FOR BLDGS A1, A3, A4
2	9-21-2011	REVISE FF OF BLDG A5
1	5-31-2011	ADD 8" PRIVATE WHC PROFILE, UPDATE UTILITY CROSSING ON SEWER PROFILES. REVISE SEWER FROM SMH100 TO EX. SMH 2.

BENCHMARK
ENGINEERING, INC.
ENGINEERS & LAND SURVEYORS & PLANNERS
8480 BALTIMORE NATIONAL PIKE & SUITE 416 & ELLICOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6644
60 THOMAS JOHNSON DRIVE & FREDERICK, MARYLAND 21702
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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 No. 21659, Expiration Date: 7-22-2011.

BRIAN F. CLEARY — No. 21659 — REGISTERED PROFESSIONAL ENGINEER — STATE OF MARYLAND

4/14/2010

OWNER:

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

DEVELOPER:

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

TOWN SQUARE AT TURF VALLEY

(CERTIFIED LEVEL RATED GREEN BUILDING PROJECT)
PARCELS 31 & 32, AND OPEN SPACE LOTS 485
TURF VALLEY PROFESSIONAL BUILDINGS
PLAT NOS. 22078-22079

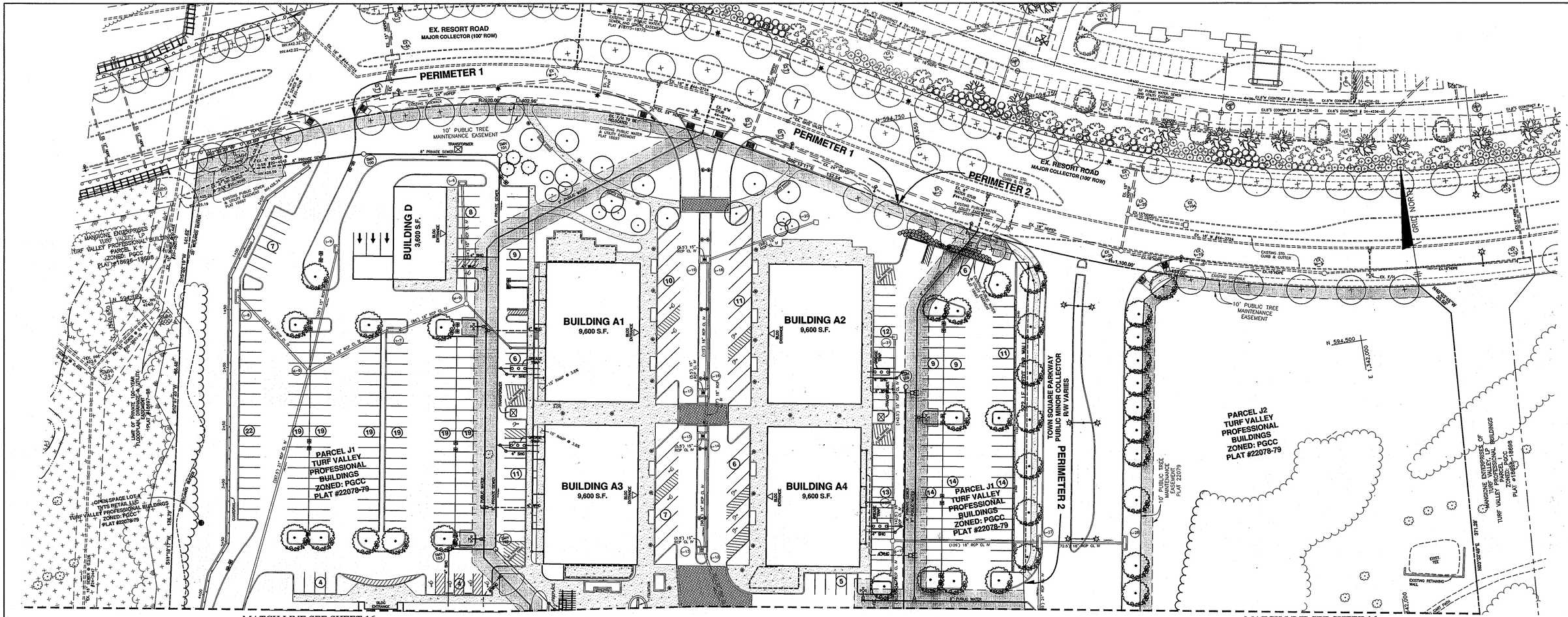
TAX MAP: 16 – GRID: 10 – PARCEL: P/O 8 & 50
ZONED: POCC (MULTI-USE SUBDISTRICT)
ELECTION DISTRICT NO. 3 – HOWARD COUNTY, MARYLAND

SEWER PROFILES AND DETAILS

DATE:	APRIL, 2010	BEI PROJECT NO.	2208
SCALE:	AS SHOWN	SHEET	14 OF 29

SDP-10-027

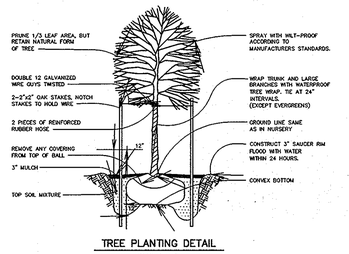
P:\2208 Town Square at Turf Valley\dwg\8047_s13-14.dwg, 4/13/2010 4:57:22 PM



GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.



TREE PLANTING DETAIL
NOT TO SCALE

STREET TREE SCHEDULE			
ROAD NAME	PERIMETER	TREES REQ.	SIZE
TOWN SQUARE PARKWAY	1816'	45	LARGE

STREET TREE PLANTING LIST				
SYMBOL	QUANTITY	NAME	REMARKS	DESCRIPTION
	45	TILIA CORDATA 'GREENSPIRE' (Greenspire Littleleaf Linden)	2 1/2" -3" cal.	TO BE PLANTED ALONG TOWN SQUARE PARKWAY

STREET TREES TO BE PROVIDED BY THE DEVELOPER.

EXISTING STREET TREE (ACER RUBRUM) PLANTED UNDER F-02-074 & F-02-082.

LANDSCAPE PLANTING LIST				
SYMBOL	QUANTITY	NAME	REMARKS	DESCRIPTION
	41	TILIA CORDATA 'GREENSPIRE' (Greenspire Littleleaf Linden)	2.5" -3" cal. 10'-12' HT.	SHADE TREES LOCATED WITHIN LANDSCAPED ISLANDS TO BE PROVIDED BY THE DEVELOPER
	10	ACER RUBRUM 'RED SUNSET' RED SUNSET RED MAPLE	3.0" -3.5" cal. 12'-14' HT.	SHADE TREES ALONG PERIMETER TO BE PROVIDED BY THE DEVELOPER
	7	PLATANUS X ACERFOLIA 'BLOODGOOD' BLOODGOOD LONDON PLANE	2.5" -3" cal. 10'-12' HT.	SHADE TREES ALONG PERIMETER TO BE PROVIDED BY THE DEVELOPER
	29	ILEX X 'NELLIE R STEVENS' NELLIE R STEVENS HOLLY	8'-10' HT. B&B, FULL	EVERGREENS PLANTED ALONG PERIMETER. TO BE PROVIDED BY THE DEVELOPER
	15	PICEA ABIES NORWAY SPRUCE	8'-10' HT. B&B, FULL	EVERGREENS PLANTED ALONG PERIMETER. TO BE PROVIDED BY THE DEVELOPER
	41	MALUS SARGENTII SARGENT CRAB APPLE	7' HT. B&B, FULL	ORNAMENTAL TREES ALONG PERIMETER TO BE PROVIDED BY THE DEVELOPER
	62	VIBURNUM CARLESSI KOREANSPICE VIBURNUM	24"-30" HT. FULL, 36" O.C.	SHRUBS PLANTED ALONG PERIMETER. TO BE PROVIDED BY THE DEVELOPER
	8	ILEX X 'NELLIE R STEVENS' NELLIE R STEVENS HOLLY	8'-10' HT. B&B, FULL	EVERGREEN TREES ALONG SWMF PERIMETER TO BE PROVIDED BY THE DEVELOPER
	6	QUERCUS PHELLOS WILLOW OAK	2.5" -3" cal. 10'-12' HT.	SHADE TREES ALONG SWMF PERIMETER TO BE PROVIDED BY THE DEVELOPER

LANDSCAPE NOTES:

1. STREET TREES ALONG ROAD 'A' TO BE LOCATED 3 FEET BEHIND SIDEWALK. STREET TREES MAY NOT BE PLANTED WITHIN 5 FEET OF A DRAIN INLET, 5 FEET OF AN OPEN SPACE ACCESS STRIP, OR 10 FEET OF A DRIVEWAY.
2. SEE TREE PLANTING DETAIL – THIS SHEET.
3. 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.
4. 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.
5. 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.
6. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT IN THE AMOUNT OF **$30,210.00** ($20,100.00 FOR 67 SHADE TREES, $9,150.00 FOR 61 EVERGREENS, AND $960.00FOR 32 SHRUBS)

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 4/15/10

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 1/16/13

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 1/24/13

DIRECTOR — DATE 1/24/13

SCHEDULE A PERIMETER LANDSCAPE EDGE					
CATEGORY	NON-RES SIDE TO ROADWAY ⟨1⟩	PARKING TO ROADWAY ⟨2⟩	NON-RES REAR-LOAD TO ROADWAY ⟨3⟩		TOTALS
LANDSCAPE TYPE	B 1:50 shade 1:40 evergreen	E 1:40 shade 1:4 shrubs	D 1:60 shade 1:10 evergreen		
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	479'	398'	401'		
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	NO		
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	YES, WALL 272'	NO		
NUMBER OF PLANTS REQUIRED					
SHADE TREES	10	3	7		20
EVERGREEN TREES	12	–	41		53
OTHER TREES (2:1 SUBSTITUTE)	–	–	–		–
SHRUBS	–	32	–		32
NUMBER OF PLANTS PROVIDED					
SHADE TREES	10	0	7		17
EVERGREEN TREES	12	–	41		53
OTHER TREES (2:1 SUBSTITUTE)	–	–	–		–
SHRUBS	–	62 *	–		62

*30 SHRUBS WERE SUBSTITUTED FOR THE REQUIRED 3 SHADE TREES

SCHEDULE B PARKING LOT INTERNAL LANDSCAPING	
NUMBER OF PARKING SPACES	796
NUMBER OF TREES REQUIRED	40 1/20 SPACES
NUMBER OF TREES PROVIDED	
SHADE TREES	41
SMALL DECIDUOUS OR EVERGREEN TREES (2:1 RATIO)	0

SCHEDULE D SWM AREA LANDSCAPING		
	SWMF1	SWMF2
LINEAR FEET OF PERIMETER	575'	438'
BUFFER TYPE	"B" 1:50 shade 1:40 evergreen	"B" 1:50 shade 1:40 evergreen
CREDIT FOR EXISTING VEGETATION (NO, YES AND %)	NO	NO
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	YES, WALL 575'	YES, WALL 138'
NUMBER OF TREES REQUIRED	0 L.F.	300 L.F.
SHADE TREES	0	6
EVERGREEN TREES	0	8
NUMBER OF TREES PROVIDED		
SHADE TREES	0	6
EVERGREEN TREES	0	8

DEVELOPER'S/BUILDER'S CERTIFICATE

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION 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.

LOUIS MANGIONE — DATE 1/11/2013

NO.	DATE	REVISION
2	1-11-2013	update tree species and locations. show R/W dedication and parcels per plat 22078-79.
1	3-26-2012	ADD TRANSFORMERS AND ROOF LEADER MANIFOLDS

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 418 ▲ ELLICOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6644
60 THOMAS JOHNSON DRIVE ▲ FREDERICK, MARYLAND 21702
(P) 301-371-3505 (F) 301-371-3506
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. 22858, Expiration Date: 7-22-2012.

BRIAN F. CLEARY — STATE OF MARYLAND — No. 22858 — REGISTERED PROFESSIONAL ENGINEER — 1/10/2013

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

DEVELOPER:
MANGIONE ENTERPRISES OF TURF VALLEY, LP
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND ,21093
410-825-8400

TOWN SQUARE AT TURF VALLEY

(CERTIFIED LEVEL RATED GREEN BUILDING PROJECT)
PARCELS 'J1' & 'J2' AND OPEN SPACE LOTS 4 & 5
TURF VALLEY PROFESSIONAL BUILDINGS
PLAT NOS. 22078-22079

TAX MAP: 16 – GRID: 10 – PARCEL: P/O 8 & 50
ZONED: PGCC (MULTI-USE SUBDISTRICT)
ELECTION DISTRICT NO. 3 – HOWARD COUNTY, MARYLAND

REVISED LANDSCAPE PLAN

DATE: APRIL, 2010 | BEI PROJECT NO. 2208
SCALE: AS SHOWN | SHEET 15 OF 29

SDP-10-027

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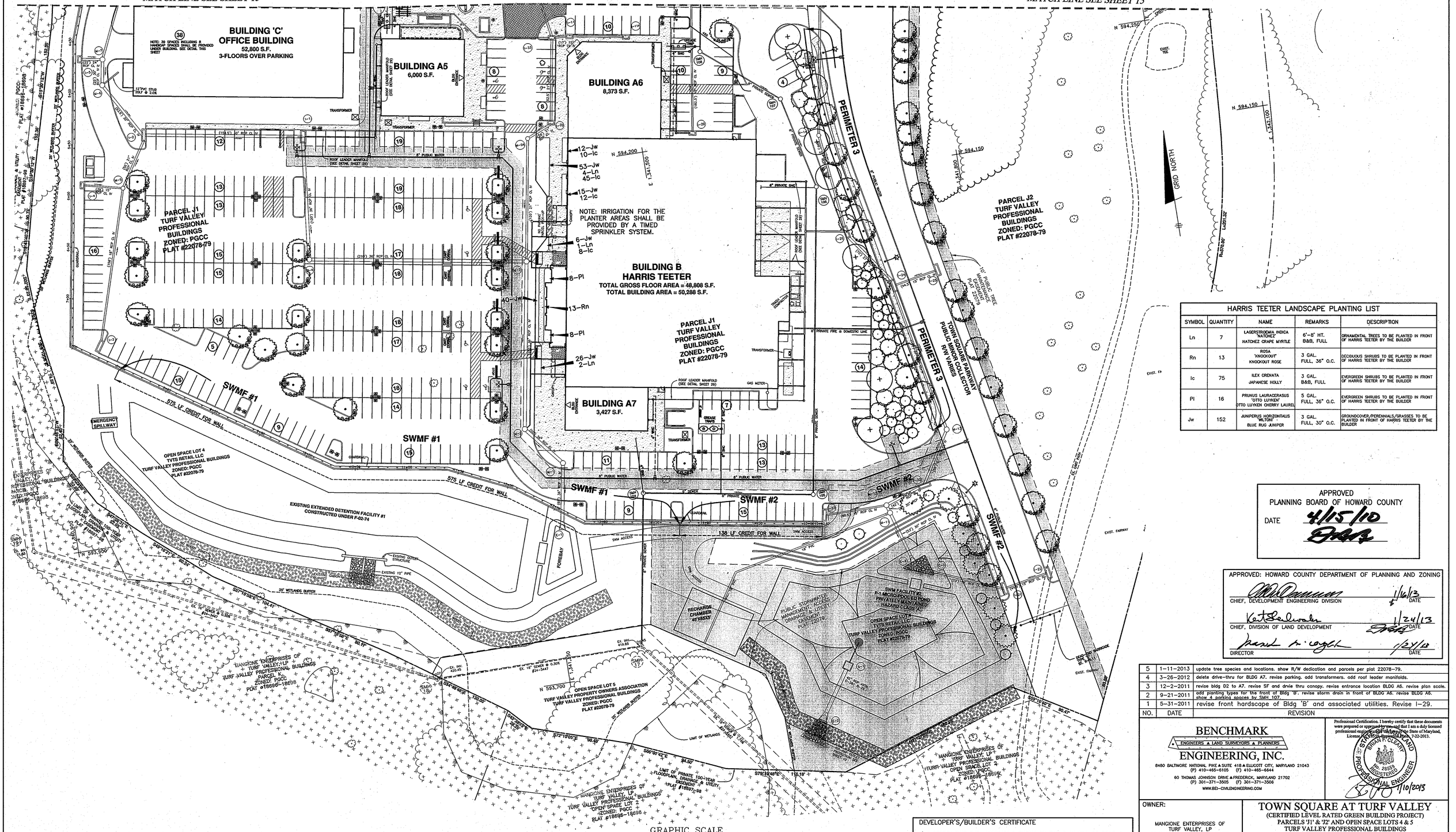
MATCH LINE SEE SHEET 15

MATCH LINE SEE SHEET 15



HARRIS TEETER LANDSCAPE PLANTING LIST				
SYMBOL	QUANTITY	NAME	REMARKS	DESCRIPTION
Ln	7	LAGERSTROEMIA INDICA 'NATCHEZ' NATCHEZ CRAPE MYRTLE	6'-8' HT. B&B, FULL	ORNAMENTAL TREES TO BE PLANTED IN FRONT OF HARRIS TEETER BY THE BUILDER
Rn	13	ROSA 'KNOCKOUT' KNOCKOUT ROSE	3 GAL. FULL, 36" O.C.	DECIDUOUS SHRUBS TO BE PLANTED IN FRONT OF HARRIS TEETER BY THE BUILDER
Ic	75	ILEX CRENATA JAPANESE HOLLY	3 GAL. B&B, FULL	EVERGREEN SHRUBS TO BE PLANTED IN FRONT OF HARRIS TEETER BY THE BUILDER
Pl	16	PRUNUS LAURACERASUS 'OTTO LUYKEN' OTTO LUYKEN CHERRY LAUREL	5 GAL. FULL, 36" O.C.	EVERGREEN SHRUBS TO BE PLANTED IN FRONT OF HARRIS TEETER BY THE BUILDER
Jw	152	JUNIPERUS HORIZONTALIS 'WILTONI' BLUE RUG JUNIPER	3 GAL. FULL, 30" O.C.	GROUNDCOVER/PERENNIALS/GRASSES TO BE PLANTED IN FRONT OF HARRIS TEETER BY THE BUILDER

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 4/15/10

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 1/6/13 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — 1/24/13 DATE

DIRECTOR — 1/24/13 DATE

NO.	DATE	REVISION
5	1-11-2013	update tree species and locations. show R/W dedication and parcels per plat 22078-79.
4	3-26-2012	delete drive-thru for BLDG A7. revise parking. add transformers. add roof leader manifolds.
3	12-2-2011	revise bldg D2 to A7. revise SF and drvie thru canopy. revise entrance location BLDG A6. revise plan scale.
2	9-21-2011	add planting types for the front of Bldg 'B'. revise storm drain in front of BLDG A6. revise BLDG A6. show 4 parking spaces by SMH 107.
1	5-31-2011	revise front hardscape of Bldg 'B' and associated utilities. Revise I-29.

DEVELOPER'S/BUILDER'S CERTIFICATE

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION 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.

LOUIS MANGIONE — 1/11/2013 DATE

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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 No. 21393, Expiration Date, 7-22-2013.

BRIAN F. CLEARY — STATE OF MARYLAND — No. 21393 — REGISTERED PROFESSIONAL ENGINEER — 1/10/2013

OWNER:

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

DEVELOPER:

MANGIONE ENTERPRISES OF TURF VALLEY, LP
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LUTHERVILLE, MARYLAND 21093
410-825-8400

TOWN SQUARE AT TURF VALLEY

(CERTIFIED LEVEL RATED GREEN BUILDING PROJECT)
PARCELS 'J1' & 'J2' AND OPEN SPACE LOTS 4 & 5
TURF VALLEY PROFESSIONAL BUILDINGS
PLAT NOS. 22078-22079

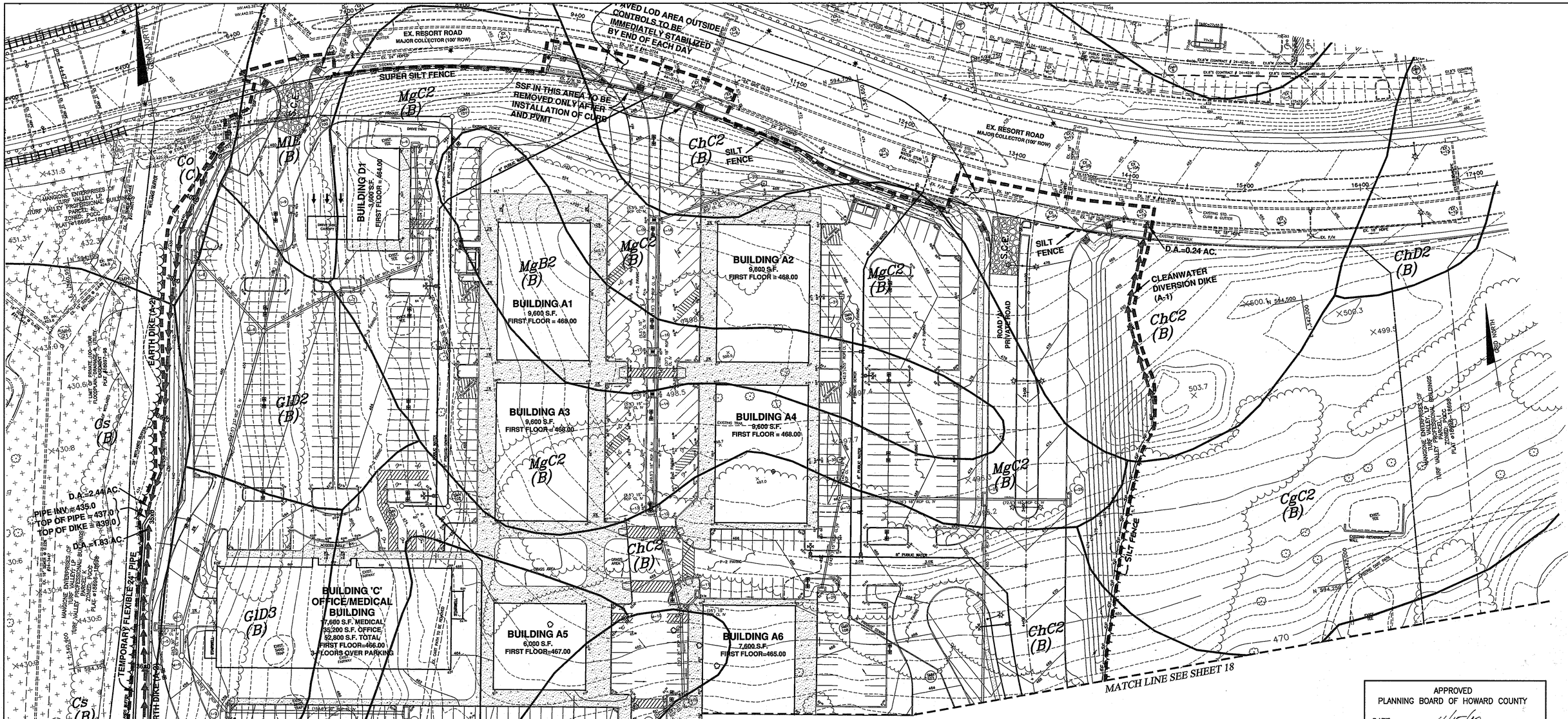
TAX MAP: 16 — GRID: 10 — PARCEL: P/O 8 & 50
ZONED: PGCC (MULTI-USE SUBDISTRICT)
ELECTION DISTRICT NO. 3 — HOWARD COUNTY, MARYLAND

REVISED LANDSCAPE PLAN

DATE: APRIL, 2010 — BEI PROJECT NO. 2208
SCALE: AS SHOWN — SHEET 16 OF 29

SDP-10-027

P:\2208 Town Square at Turf Valley\dwg_CURRENT\8022_s15-16.dwg, 1/10/2013 3:39:18 PM



GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)

1 inch = 40 ft.

THIS PLAN IS FOR SEDIMENT AND EROSION CONTROL ONLY

SOILS CHART - SOIL SURVEY HOWARD COUNTY, MARYLAND, ISSUED JULY, 1968 PAGES 9 AND 15

SYMBOL	HYDRIC	HYDROLOGIC GROUP	NAME
CgC2		B	CHESTER GRAVELLY SILT LOAM, 8 TO 15 PERCENT MODERATELY ERODED
ChB2		B	CHESTER SILT LOAM, 3 TO 8 PERCENT, MODERATELY ERODED
ChC2		B	CHESTER SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
ChD2		B	CHESTER SILT LOAM, 15 TO 25 PERCENT SLOPES, MODERATELY ERODED
Co	YES	C	CODORUS SILT LOAM
Cs		B	COMUS SILT LOAM
GlD2		B	GLENELG LOAM, 15 TO 25 PERCENT SLOPES, MODERATELY ERODED
GlD3		B	GLENELG LOAM, 15 TO 25 PERCENT SLOPES, SEVERLY ERODED
Ha	YES	D	HATBORO SILT LOAM
MgB2		B	MANOR GRAVELLY LOAM, 3 TO 8 PERCENT, MODERATELY ERODED
MgC2		B	MANOR GRAVELLY LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
MlE		B	MANOR LOAM, 25 TO 45 PERCENT SLOPES

LEGEND

- EXISTING CONTOURS AERIAL JAN. 2006
- EXISTING BRUSH
- EXISTING TREELINE
- EXISTING 100YR FLOODPLAIN
- PROPOSED TREELINE
- EXISTING STREAM
- LIMIT OF WETLANDS
- LIMIT OF SUBMISSION
- LIMIT OF DISTURBANCE
- SF — SILT FENCE, SUPER SILT FENCE
- SSF
- TF — TF — TREE PROTECTION FENCE
- S.C.E. — STABILIZED CONSTRUCTION ENTRANCE
- EARTH DIKE
- EROSION CONTROL MATTING
- CgC2 (B) — SOILS TYPE
- SOILS DELINEATION LINE

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 – BRIAN F. CLEARY — DATE 4/14/2010

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 4/14/10

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

HOWARD SCD — DATE 4/23/10

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/23/10

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/3/10

DIRECTOR — DATE 5/3/10

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 4/15/10

NO.	DATE	REVISION
2	1-11-2013	REVISE TITLE BLOCK
1	4-10-2012	REVISE SHEET NUMBER

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
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(P) 301-371-3505 (F) 301-371-3506
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. 28539, Expiration Date: 7-22-2011.

STATE OF MARYLAND — BRIAN F. CLEARY — No. 28539 — REGISTERED PROFESSIONAL ENGINEER — 4/14/2010

OWNER:

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

DEVELOPER:

MANGIONE ENTERPRISES OF TURF VALLEY, LP
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TOWN SQUARE AT TURF VALLEY

(CERTIFIED LEVEL RATED GREEN BUILDING PROJECT)
PARCELS '31' & '32' AND OPEN SPACE LOTS 435
TURF VALLEY PROFESSIONAL BUILDINGS
PLAT NOS. 20078-20079

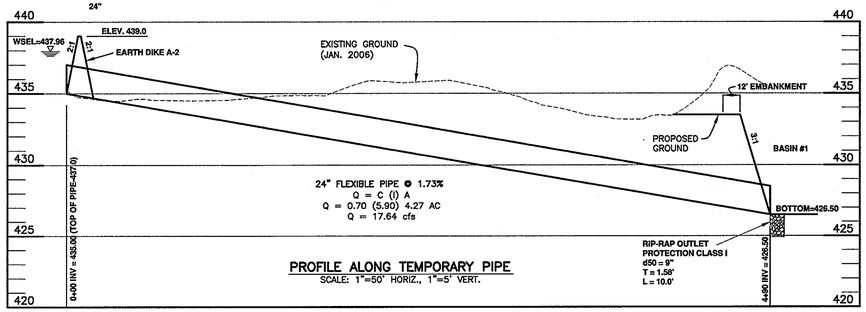
TAX MAP: 16 – GRID: 10 – PARCEL: P/O 8 & 50
ZONED: POCC (MULTI-USE SUBDISTRICT)
ELECTION DISTRICT NO. 3 – HOWARD COUNTY, MARYLAND

SEDIMENT AND EROSION CONTROL PLAN

DATE:	APRIL, 2010	BEI PROJECT NO.	2208
SCALE:	AS SHOWN	SHEET	17 OF 29

SDP-10-027

P:\2208 Town Square at Turf Valley\dwg\8023_s17-19.dwg, 4/13/2010 5:35:52 PM



PROFILE ALONG TEMPORARY PIPE
SCALE: 1"=50' HORIZ., 1"=5' VERT.

MATCH LINE SEE SHEET 17

MATCH LINE SEE SHEET 17

BUILDING B
HARRIS TEETER
48,000 S.F.
FIRST FLOOR = 466.00

BUILDING D2
3,600 S.F.
FIRST FLOOR = 466.00

MOUNTABLE BERM

TEMPORARY SEDIMENT BASIN #1

TEMPORARY SEDIMENT BASIN #2

SOST #1

EARTH DIKE (A-1)

EARTH DIKE (A-2)

EARTH DIKE (A-3)

CLEANWATER DIVERSION DIKE (A-2)

SILT FENCE

SUPER SILT FENCE

GABION INFLOW PROTECTION

TEPORARY STOCKPILE

EROSION CONTROL MATTING

D.A.=0.46 AC.

D.A.=0.30 AC.

D.A.=0.30 AC.

D.A.=1.82 AC.

D.A.=1.3 AC.

EXISTING EXTENDED DETENTION FACILITY CONSTRUCTED UNDER F-02-74 TO BE MODIFIED UNDER THIS SDP

EXISTING GAS PATH TO BE ABANDONED

EXISTING GAS PATH

MANGIONE ENTERPRISES OF TURF VALLEY, LP
TURF VALLEY PROFESSIONAL BUILDINGS
PARCEL 'K'
ZONED: PGCC
PLAT #18698-18699

MANGIONE ENTERPRISES OF TURF VALLEY, LP
TURF VALLEY PROFESSIONAL BUILDINGS
OPEN SPACE LOT 3
ZONED: PGCC
PLAT #18698-18699

MANGIONE ENTERPRISES OF TURF VALLEY, LP
TURF VALLEY PROFESSIONAL BUILDINGS
OPEN SPACE LOT 2
ZONED: PGCC
PLAT #18698-18699

MANGIONE ENTERPRISES OF TURF VALLEY, LP
TURF VALLEY PROFESSIONAL BUILDINGS
OPEN-SPACE LOT 2
ZONED: PGCC
PLAT #18698-18699

LIMIT OF WETLANDS (SHEET 17)
PER PLAT #18697-98

LIMIT OF 100-YEAR FLOODPLAIN, DRAINAGE & UTILITY EASEMENT PER PLAT #18697-98

SOST #1	
TYPE	ST-II
EXISTING D.A.	1.4 AC.
PROPOSED D.A.	0.4 AC.
STORAGE REQUIRED	WET 2,220 CF DRY 2,520 CF
STORAGE PROVIDED	WET 8,994 CF DRY 9,157 CF
WET STORAGE ELEV.	451.00
DRY STORAGE ELEV.	493.00
EMBANKMENT ELEVATION	494.00
EMBANKMENT WIDTH	4 FEET
WEIR CREST ELEVATION	493.00
WEIR CREST LENGTH	4 FEET
CLEANOUT ELEVATION	429.17
BOTTOM ELEVATION	428.40
BOTTOM DIMENSION	20' 40'

LEGEND

- EXISTING CONTOURS
- EXISTING BRUSH
- EXISTING TREELINE
- EXISTING 100YR FLOODPLAIN
- PROPOSED TREELINE
- EXISTING STREAM
- LIMIT OF WETLANDS
- LIMIT OF SUBDIVISION
- LIMIT OF DISTURBANCE
- SSF SUPER SILT FENCE
- TPF TREE PROTECTION FENCE
- S.C.E. STABILIZED CONSTRUCTION ENTRANCE
- EARTH DIKE
- EROSION CONTROL MATTING
- CgC2 (B) SOILS TYPE
- SOILS DELINEATION LINE

SEDIMENT BASIN #1 DATA	
EXISTING D.A.	4.53 ac.
PROPOSED D.A.	10.68 ac.
STORAGE REQUIRED	WET 19,244 cf DRY 19,244 cf
STORAGE PROVIDED	WET 19,244 cf DRY 19,244 cf
EMBANKMENT ELEVATION	433.50
RISER CREST ELEVATION	432.00
CLEANOUT ELEVATION	427.13
BOTTOM ELEVATION	426.50
WET STORAGE ELEVATION	427.53
DRY STORAGE ELEVATION	428.40
Q1 PRE-DEVELOPMENT	0.24 cfs
Q1 NEWLY GRADED	0.24 cfs

SEDIMENT BASIN #2 DATA	
EXISTING D.A.	0.78 ac.
PROPOSED D.A.	7.45 ac.
STORAGE REQUIRED	WET 13,410 CF DRY 13,410
STORAGE PROVIDED	WET 13,410 DRY 13,410
EMBANKMENT ELEVATION	435.10
RISER CREST ELEVATION	432.40
CLEANOUT ELEVATION	428.16
BOTTOM ELEVATION	425.00
WET STORAGE ELEVATION	427.14
DRY STORAGE ELEVATION	428.75
Q1 PRE-DEVELOPMENT	0.08 cfs
Q1 NEWLY GRADED	0.05 cfs

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

DEVELOPER — DATE 4/14/10

BY THE ENGINEER:

"I/WE CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

ENGINEER – BRIAN F. CLEARY — DATE 4/14/2010

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT — DATE 4/22/10

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/23/10

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/3/10

DIRECTOR — DATE 5/3/10

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 4/25/10

AS-BUILT CERTIFICATION

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

ENGINEER — PE NO. — DATE

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ONSITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ONSITE INSPECTIONS AND MATERIAL TESTS ARE, THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE BY COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES AN ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

THIS PLAN IS FOR SEDIMENT AND EROSION CONTROL ONLY

NO.	DATE	REVISION
2.	1-11-2013	REVISE TITLE BLOCK
1	4-10-2012	REVISE SHEET NUMBER

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 416 ▲ ELLICOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6644
60 THOMAS JOHNSON DRIVE ▲ FREDERICK, MARYLAND 21702
(P) 301-371-3505 (F) 301-371-3506
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. 25929, Expiration Date: 7-22-2011.

STATE OF MARYLAND — BRIAN F. CLEARY — NO. 25929 — REGISTERED PROFESSIONAL ENGINEER — 4/14/2010

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

DEVELOPER:
MANGIONE ENTERPRISES OF TURF VALLEY, LP
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

TOWN SQUARE AT TURF VALLEY
(CERTIFIED LEVEL RATED GREEN BUILDING PROJECT)
PARCELS 'J' & 'J2' AND OPEN SPACE LOTS 4 & 5
TURF VALLEY PROFESSIONAL BUILDINGS
PLAT NOS. 22078-22079

TAX MAP: 16 – GRID: 10 – PARCEL: P/O 8 & 50
ZONED: PGCC (MULTI-USE SUBDISTRICT)
ELECTION DISTRICT NO. 3 – HOWARD COUNTY, MARYLAND

SEDIMENT AND EROSION CONTROL PLAN

DATE: APRIL, 2010 — BEI PROJECT NO. 2208
SCALE: AS SHOWN — SHEET 18 OF 29

SDP-10-027

P:\2208 Town Square at Turf Valley\dwg\8023_s17-19.dwg, 4/13/2010 5:36:52 PM

DETAIL 30 – EROSION CONTROL MATTING

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DETAIL 30 – EROSION CONTROL MATTING

Construction Specifications

1. Key-in the matting by placing the top ends of the matting in a narrow trench, 6" in depth. Backfill the trench and tamp firmly to conform to the channel cross-section. Secure with a row of staples about 4" down slope from the trench. Spacing between staples is 6".

2. Staple the 4" overlap in the channel center using an 18" spacing between staples.

3. Before stapling the outer edges of the matting, make sure the matting is smooth and in firm contact with the soil.

4. Staples shall be placed 2' apart with 4 rows for each strip, 2 outer rows, and 2 alternating rows down the center.

5. Where one roll of matting ends and another begins, the end of the top strip shall overlap the upper end of the lower strip by 4", shiplap fashion. Reinforce the overlap with a double row of staples spaced 6" apart in a staggered pattern on either side.

6. The discharge end of the matting liner should be similarly secured with 2 double rows of staples.

Note: If flow will enter from the edge of the matting then the area effected by the flow must be keyed-in.

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Construction Specifications

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

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

3. Surface Water – all surface water flowing to or diverted toward temporary trap shall maintain positive drainage. Diversion dike shall be protected with a mountable berm with 5:1 slopes and minimum of 6" of stone, with a minimum top width of 3'.

4. Location – A mountable berm shall be located at every point of access along diversion dike, where construction traffic crosses dike.

MOUNTABLE BERM DETAIL

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

ADAPTED FROM PRINCE GEORGE'S COUNTY, MARYLAND. WOODLAND CONSERVATION MANUAL AND FOREST CONSERVATION MANUAL, 1991.

PLASTIC MESH TREE PROTECTION FENCE

DETAIL 18 – SEDIMENT BASIN BAFFLES

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DETAIL 6 – GABION INFLOW PROTECTION

Construction Specifications

1. Gabion inflow protection shall be constructed of 9' x 3' x 9" gabion baskets forming a trapezoidal cross section 1' deep, with 2:1 side slopes, and a 3' bottom width.
2. Geotextile Class C shall be installed under all gabion baskets.
3. The stone used to fill the gabion baskets shall be 4" – 7".
4. Gabions shall be installed in accordance with manufacturers recommendations.
5. Gabion Inflow Protection shall be used where concentrated flow is present on slopes steeper than 4:1.

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DETAIL 20A – REMOVABLE PUMPING STATION

Construction Specifications

1. The outer pipe should be 48" dia. or shall, in any case, be at least 4" greater in diameter than the center pipe. The outer pipe shall be wrapped with 1/2" hardware cloth to prevent backfill material from entering the perforations.
2. After installing the outer pipe, backfill around outer pipe with 2" aggregate or clean gravel.
3. The inside stand pipe (center pipe) should be constructed by perforating a corrugated or PVC pipe between 12" and 36" in diameter. The perforations shall be 1/2" X 6" slits or 1" diameter holes 6" on center. The center pipe shall be wrapped with 1/2" hardware cloth first, then wrapped again with Geotextile Class C.
4. The center pipe should extend 12" to 18" above the anticipated water surface elevation or riser crest elevation when dewatering a basin.

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DETAIL 1 – EARTH DIKE

	DIKE A	DIKE B
a–DIKE HEIGHT	18"	30"
b–DIKE WIDTH	24"	36"
c–FLOW WIDTH	4'	6'
d–FLOW DEPTH	12"	24"

FLOW CHANNEL STABILIZATION
GRADE 0.5% MIN. 10% MAX.

1. Seed and cover with straw mulch.
2. Seed and cover with Erosion Control Matting or line with sod.
3. 4" – 7" stone or recycled concrete equivalent pressed into the soil 7" minimum.

CONSTRUCTION SPECIFICATIONS

1. All temporary earth dikes shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.
2. Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.
3. Runoff diverted from an undisturbed area shall outlet directly into an undisturbed, stabilized area at a non-erosive velocity.
4. All trees, brush, stumps, obstructions, and other objectional material shall be removed and disposed of so as not to interfere with the proper functioning of the dike.
5. The dike shall be excavated or shaped to line, grade and cross section as required to meet the criteria specified herein and be free of bank projections or other irregularities which will impede normal flow.
6. Fill shall be compacted by earth moving equipment.
7. All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the dike.
8. Inspection and maintenance must be provided periodically and after each rain event.

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SEDIMENT CONTROL NOTES

1. A MINIMUM OF 24 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTION, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION, (313–1850).

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 SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL", REVISIONS THERETO.

3. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1, B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

4. ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.

5. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDINGS (SEC. 51) SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50) AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.

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

7. SITE ANALYSIS:

TOTAL AREA OF SITE	25.7	ACRES
AREA DISTURBED	21.5	ACRES
AREA TO BE ROOFED OR PAVED	11.6	ACRES
AREA TO BE VEGETATIVELY STABILIZED	9.6	ACRES
TOTAL CUT	185,054	CY
TOTAL FILL	75,001	CY
OFFSITE WASTE AREA LOCATION	A SITE WITH AN ACTIVE GRADING PERMIT	

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

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

10. ON ALL 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.

11. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN BE BACK FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

TEMPORARY SEEDBED PREPARATIONS

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT–TERM VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: APPLY 600 LBS PER ACRE 10–10–10 FERTILIZER (14 LBS/1000 SQ FT).

SEEDING: FOR PERIOD MARCH 1 THROUGH APRIL 30 AND FROM AUGUST 15 THROUGH NOVEMBER 15, SEED WITH 2–1/2 BUSHELS PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ FT). FOR THE PERIOD MAY 1 THROUGH AUGUST 14, SEED WITH 3 LBS PER ACRE OF WEEPING LOVEGRASS (.07 LBS/1000 SQ FT). FOR THE PERIOD NOVEMBER 16 THROUGH FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOD.

MULCHING: APPLY 1–1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ FT) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ FT) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES, 8 FT. OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ FT) FOR ANCHORING.

REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

PERMANENT SEEDBED PREPARATIONS

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ON OF THE FOLLOWING SCHEDULES:

1. PREFERRED – APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ FT) AND 600 LBS PER ACRE 10–10–10 FERTILIZER (14 LBS/1000 SQ FT) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS PER ACRE 30–0–0– UREAFORM FERTILIZER (9 LBS/1000 SQ FT).

2. ACCEPTABLE – APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ FT) AND 1000 LBS PER ACRE 10–10–10 FERTILIZER (23 LBS/1000 SQ FT) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL.

SEEDING: FOR THE PERIODS MARCH 1 THROUGH APRIL 30 AND AUGUST 1 THROUGH OCTOBER 15, SEED WITH 60 LBS PER ACRE (1.4 LBS/1000 SQ FT) OF KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS PER ACRE (.05 LBS/1000 SQ FT) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THROUGH FEBRUARY 28, PROTECT SITE BY: OPTION (1) 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (2) USE SOD. OPTION (3) SEED WITH 60 LBS PER ACRE OF KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS PER ACRE OF WELL ANCHORED STRAW.

MULCHING: APPLY 1–1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ FT) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ FT) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ FT) FOR ANCHORING.

MAINTENANCE: INSPECT ALL SEEDED AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

DETAIL 24 – STABILIZED CONSTRUCTION ENTRANCE

Construction Specifications

1. Length – minimum of 50' (*30' for single residence lot).
2. Width– 10' minimum, should be flared at the existing road to provide a turning radius.
3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. **The plan approval authority may not require single family residence to use geotextile.
4. Stone – crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
5. Surface Water – all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mounted berg with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
6. Location.– A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

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TOPSOIL SPECIFICATIONS

I. Topsoil salvaged from the existing site may be used provided that it meets that standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA–SCS in cooperation with Maryland Agricultural Experimental Station.

II. Topsoil Specifications – Soil to be used as topsoil must meet the following:

i. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting texture subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1–1/2" in diameter.

ii. Topsoil must be free of plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nutsedge, poison ivy, thistle, or others as specified.

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

III. For sites having disturbed areas under 5 acres:

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

IV. For sites having disturbed areas over 5 acres:

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

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

b. Organic content or topsoil shall be not less than 1.5 percent by weight.

c. Topsoil having soluble salt content greater than 500 parts per million shall not be used.

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

Note: 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.

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

V. Topsoil Application

i. When topsoiling, maintain needed erosion and sediment control practices such as diversions, grade stabilization structures, earth dikes, slope silt fence and sediment traps and basins.

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

iii. Topsoil shall be uniformly distributed in a 4" – 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.

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

VI. Alternative for Permanent Seeding – Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:

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

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

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

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

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

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

DETAIL 4 – PIPE SLOPE DRAIN

Table 6 Design Criteria for Pipe Slope Drain

Size	Pipe/Tubing Diameter (D) in	Maximum Drainage Area (Acres)
PSD–12	12	0.5
PSD–18	18	1.5
PSD–21	21	2.5
PSD–24	24	3.5
PSD–24 (2)	24	5.0

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PIPE SLOPE DRAIN

Construction Specifications – Pipe Slope Drain

1. The Pipe Slope Drain (PSD) shall have a slope of 3 percent or steeper.

2. The top of the earth dike over the inlet pipe shall be at least 2 times the pipe diameter measured at the invert of the pipe.

3. Flexible tubing is preferred. However, corrugated metal pipe or equivalent PVC pipe can be used. All connections shall be watertight. pipe.

4. A flared end section shall be attached to the inlet end of pipe with a watertight connection. Filter cloth shall be placed under the inlet of the pipe slope drain and shall extend out 5' from the inlet. The filter cloth shall be "keyed in" on all sides. pipe.

5. The Pipe Slope Drain shall be securely anchored to the slope by staking at the grommets provided. Spacing for anchors shall be as provided by manufacturer's specification. In no case shall less than two (2) anchors be provided, equally spaced along the length of pipe. These details should be provided by pipe suppliers. pipe.

6. The soil around and under the pipe and end section shall be hand tamped in 4 inch lifts to the top of the earth dike.

7. All pipe connections shall be watertight.

8. Whenever possible where a PSD drains an unstabilized area, it shall outlet into a sediment trap or basin. If this is not possible then the slope drain will discharge into a stable conveyance that leads to a sediment trap or basin. When discharging into a trap or basin the PSD shall discharge at the same elevation as the wet pool elevation. The discharge from the PSD must be as far away from the sediment control outlet as possible.

9. When the drainage area is stabilized, the PSD shall discharge onto a stabilized area at a non-erosive velocity.

10. Inspection and any required maintenance shall be performed periodically and after each rain event.

11. The inlet must be kept open at all times.

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DETAIL 22 – SILT FENCE

CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 11/2" x 11/2" square (minimum) cut, or 13/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighing not less than 1.00 pond per linear foot.

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

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

3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.

4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E – 15 – 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 33 – SUPER SILT FENCE

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

SUPER SILT FENCE

CONSTRUCTION SPECIFICATIONS

1. Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6' fence shall be used, substituting 42" fabric and 6' length posts.
2. Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence.
3. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.
4. Filter cloth shall be embedded a minimum of 8" into the ground.
5. When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.
6. Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height
7. Filter cloth shall be fastened securely to each fence post with wire ties or staples at top and mid section and shall meet the following requirements for Geotextile Class F:

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

SUPER SILT FENCE DESIGN CRITERIA

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

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

30.0 DUST CONTROL

Definition

Controlling dust blowing and movement on construction sites and roads.

Purpose

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

Conditions Where Practice Applies

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

Specifications

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

Permanent Methods
1. Permanent Vegetation – See standards for permanent vegetative cover, and permanent stabilization with sod. Existing trees or large shrubs may afford valuable protection if left in place.
2. Topsoiling – Covering with less erosive soil materials. See standards for topsoiling.
3. Stone – Cover surface with crushed stone or coarse gravel.

References
1. Agriculture Handbook 346. Wind Erosion Forces in the United States and Their Use in Predicting Soil Loss.
2. Agriculture Information Bulletin 354. How to Control Wind Erosion, USDA–ARS.

DETAIL 9 – STONE OUTLET SEDIMENT TRAP – ST II

CONSTRUCTION SPECIFICATIONS

1. Area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.
2. The fill material for the embankment shall be free of roots and other woody vegetation as well as over–sized stones, rocks, organic material or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed.
3. All cut and fill slopes shall be 2:1 or flatter.
4. The stone used in the outlet shall be small rip–rap 4" to 7" in size with a 1' thick layer of 3/4" to 11/2" washed aggregate placed on the upstream face of the outlet. Stone facing shall be an necessary to prevent clogging. Geotextile Class C may be substituted for the stone facing by placing it on the inside face of the stone outlet.
5. Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to one half of the wet storage depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C – 9 – 10	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

STONE OUTLET SEDIMENT TRAP – ST II

CONSTRUCTION SPECIFICATIONS

6. The structure shall be inspected periodically and after each rain and repairs made as needed.
7. Construction of traps shall be carried out in such a manner that sediment pollution is abated. Once constructed, the top and outside face of the embankment shall be stabilized with seed and mulch. Points of concentration inflow shall be protected in accordance with grade stabilization structure criteria. The remainder of the interior slopes should be stabilized (one time) with seed and mulch upon trap completion and monitored and maintained erosion free during the life of the trap.
8. The Structure shall be dewatered by approved methods, removed and the area stabilized when the drainage area has been properly stabilized.
9. Refer to Section D for specifications concerning trap dewatering.
10. Minimum trap depth shall be measured from the weir elevation.
11. The elevation of the top if any dike directing water into the trap must equal or exceed the elevation of the trap embankment.
12. Geotextile Class C shall be placed over the bottom and sides of the outlet channel prior to the placement of stone. Sections of filter cloth must overlap at least 1' with the section nearest the entrance placed on top. The filter cloth shall be embedded at least 6" into existing ground at the entrance of the outlet channel.
13. Outlet – An outlet shall be provided, including a means of conveying the discharge in an erosion free manner to an existing stable channel.

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BASIN DRAWDOWN SCHEMATIC VERTICAL DRAW–DOWN DEVICE

Construction Specifications

1. Perforations in the draw–down device may not extend into the wet storage.
2. The total area of the perforations must be greater than 2 times the area of the internal orifice.
3. The perforated portion of the draw–down device shall be wrapped with 1/2" hardware cloth and geotextile fabric. The geotextile fabric shall meet the specifications for Geotextile Class E.
4. Provide support of draw–down device to prevent sagging and floatation. An acceptable preventative measure is to stake both sides of draw–down device with 1" steel angle, or 1" by 4" square or 2" round wooden posts set 3' minimum into the ground then joining them to the device by wrapping with 12 gauge minimum wire.

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BASIN DRAWDOWN SCHEMATIC HORIZONTAL DRAW–DOWN DEVICE

Construction Specifications

1. The total area of the perforations must be greater than 2 times the area of the internal orifice.
2. The perforated portion of the draw–down device shall be wrapped with 1/2" hardware cloth and geotextile fabric. The geotextile fabric shall meet the specifications for Geotextile Class E.
3. Provide support of draw–down device to prevent sagging and floatation. An acceptable preventative measure is to stake both sides of draw–down device with 1" steel angle, or 1" by 4" square or 2" round wooden posts set 3' minimum into the ground then joining them to the device by wrapping with 12 gauge minimum wire.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C – 10 – 29	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

APPROVED
PLANNING BOARD OF HOWARD COUNTY

DATE 4/15/10

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 – BRIAN F. CLEARY — 4/24/2010 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."

DEVELOPER — 4/23/10 DATE

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

HOWARD SCD — 4/27/10 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 4/29/10 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — 5/3/10 DATE

DIRECTOR — 5/3/10 DATE

SEQUENCE OF CONSTRUCTION

NOTIFY SEDIMENT CONTROL DIVISION 48 HOURS PRIOR TO START OF CONSTRUCTION

1. OBTAIN GRADING PERMIT. (DAY 1)

2. INSTALL STABILIZED CONSTRUCTION ENTRANCES, TREE PROTECTION FENCES AND SUPER SILT FENCES. (DAY 2–12)

3. INSTALL SEDIMENT BASIN #2 AND INSTALL AND COMPLETE BASIN #1 AS APPROVED UNDER F–02–074. (DAY 13–60)

4. INSTALL EARTH DIKES, TEMPORARY PIPE, AND ANY REMAINING SEDIMENT CONTROL DEVICES. (DAY 61–63)

5. UPON APPROVAL OF THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, BRING ROAD BEDS AND PARKING LOT TO SUBGRADE. CONSTRUCT RETAINING WALL IN INCREMENTS SIMULTANEOUSLY WITH GRADING OF PARKING LOT. STABILIZE SLOPES IN ACCORDANCE WITH TEMPORARY SEEDBED NOTES. UTILIZE DUST CONTROL METHODS. NO MORE THAN 20 AC. MAY BE UNSTABILIZED AT ANY TIME. (DAY 64–74)

6. UPON APPROVAL OF THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, INSTALL STORM DRAINS, WATER MAINS, SEWER MAINS AND SWALES. DO NOT INSTALL DIVERSION PIPE TO RECHARGE CHAMBER AT THIS TIME. (DAY 75–100)

7. PAVE ROADWAY AND PARKING LOTS. (DAY 101–108)

8. STABILIZE DISTURBED AREAS IN ACCORDANCE WITH THE PERMANENT SEEDBED NOTES. (DAY 109–112)

9. CONSTRUCT RECHARGE CHAMBER AND DIVERSION PIPE FROM M–11 TO CHAMBER. (DAY 113–118)

10. UPON APPROVAL OF THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT CONTROL DEVICES, AND STABILIZED DISTURBED AREAS IN ACCORDANCE WITH THE PERMANENT SEEDBED NOTES. CONVERT BASINS TO PERMANENT FACILITY CONFIGURATION. ONCE CONVERSION IS COMPLETE AS–BUILTS SHALL BE PERFORMED. (DAY 119–125)

NO.	DATE	REVISION
2	1-11-2013	REVISE TITLE BLOCK
1	4-10-2012	REVISE SHEET NUMBER

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
ENGINEERING, INC.
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(P) 301–371–3505 (F) 301–371–3506
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. 28559, ~~Expiration~~ Date: 7-22-2011.

STATE OF MARYLAND — BRIAN F. CLEARY — No. 28559 REGISTERED — PROFESSIONAL ENGINEER — 4/24/2010

OWNER:
MANGIONE ENTERPRISES OF TURF VALLEY, LP
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410–825–8400

DEVELOPER:
MANGIONE ENTERPRISES OF TURF VALLEY, LP
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410–825–8400

TOWN SQUARE AT TURF VALLEY
(CERTIFIED LEVEL RATED GREEN BUILDING PROJECT)
PARCELS '31' & '32' AND OPEN SPACE LOTS 4&5
TURF VALLEY PROFESSIONAL BUILDINGS
PLAT NOS. 22078-22079

TAX MAP: 16 – GRID: 10 – PARCEL: P/O 8 & 50
ZONED: PGCC (MULTI–USE SUBDISTRICT)
ELECTION DISTRICT NO. 3 – HOWARD COUNTY, MARYLAND

SEDIMENT AND EROSION CONTROL NOTES AND DETAILS

DATE:	APRIL, 2010	BEI PROJECT NO.	2208
SCALE:	AS SHOWN	SHEET	19 OF 29

SDP–10–027

P:\2208 Town Square at Turf Valley\dwg\8023_s17-19.dwg, 4/23/2010 4:18:31 PM

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.

RECORD OF SOIL EXPLORATION

Project Name: Town Square at Turf Valley — Boring No.: B-15
Location: Howard County, Maryland — Job #: 09793A

SAMPLER — Datum: topo — Hammer Wt.: 140 lbs. — Hole Diameter: 5" — Foreman: L. Smith
Surf. Elev.: 428.5 Ft. — Hammer Drop: 30 in. — Rock Core Diameter: — Inspector:
Date Started: 10/22/09 — Pipe Size: 2 in. — Boring Method: HSA — Date Completed: 10/22/09

Elevation/ Depth	Soil Symbols/ Sample Conditions	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	SPT Blows/Foot N	SPT Blows/Foot Curve (10 30 50)
0	D	Brown, moist, soft, fine sandy SILT (ML; FILL)	Topsoil-5"	11"		1-2-3	5	
435			No groundwater encountered while drilling.					
2.5	D	Light brown and light grey, moist, loose, silty clayey SAND (SM-SC)		14"		4-4-5	9	
432.5								
5	D	Brown, damp, very loose to loose, micaceous silty SAND to sandy SILT (SM-ML)		15"		3-3-4	7	
430								
7.5	D			12"		2-2-2	4	
427.5								
10	D			16"		1-0-1	1	
425								
12.5	D			14		2-1-2	3	
422.5		Bottom of Boring at 13.5'						
15								

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE

SAMPLE CONDITIONS: S - SOIL; R - ROCK

	Ground Water	Cave In Depth
AT COMPLETION	Dry ft.	8.5 ft.
AFTER 24 HRS.	4.2 ft.	6.5 ft.
AFTER ___ HRS.	ft.	ft.

BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING

STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.

RECORD OF SOIL EXPLORATION

Project Name: Town Square at Turf Valley — Boring No.: B-16
Location: Howard County, Maryland — Job #: 09793A

SAMPLER — Datum: topo — Hammer Wt.: 140 lbs. — Hole Diameter: 5" — Foreman: L. Smith
Surf. Elev.: 429.5 Ft. — Hammer Drop: 30 in. — Rock Core Diameter: — Inspector:
Date Started: 10/22/09 — Pipe Size: 2 in. — Boring Method: HSA — Date Completed: 10/22/09

Elevation/ Depth	Soil Symbols/ Sample Conditions	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	SPT Blows/Foot N	SPT Blows/Foot Curve (10 30 50)
0	D	Brown, moist, very loose, silty SAND, some gravel (SM; FILL)	Topsoil-4"	11"		2-2-2	4	
427.5			No groundwater encountered while drilling.					
2.5	D	Light brown, moist, medium stiff, micaceous SILT, trace fine sand and clay (ML)		18"		4-4-6	10	
425								
5	D	Light brown, moist, very loose to loose, silty fine to very fine SAND (SM)		18"		4-4-6	10	
422.5								
7.5	D			12"		2-2-2.2	4	
420		Bottom of Boring at 10.0'						
10								
417.5								
12.5								
415								
15								

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE

SAMPLE CONDITIONS: S - SOIL; R - ROCK

	Ground Water	Cave In Depth
AT COMPLETION	Dry ft.	6.5 ft.
AFTER 24 HRS.	Dry ft.	6.5 ft.
AFTER ___ HRS.	ft.	ft.

BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING

STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.

RECORD OF SOIL EXPLORATION

Project Name: Town Square at Turf Valley — Boring No.: B-17
Location: Howard County, Maryland — Job #: 09793A

SAMPLER — Datum: topo — Hammer Wt.: 140 lbs. — Hole Diameter: 5" — Foreman: L. Smith
Surf. Elev.: 438.0 Ft. — Hammer Drop: 30 in. — Rock Core Diameter: — Inspector:
Date Started: 10/22/09 — Pipe Size: 2 in. — Boring Method: HSA — Date Completed: 10/22/09

Elevation/ Depth	Soil Symbols/ Sample Conditions	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	SPT Blows/Foot N	SPT Blows/Foot Curve (10 30 50)
0	D	Brown, moist, loose, silty fine SAND (SM; FILL)	Topsoil-4"	4"		2-2-3	5	
437.5			No groundwater encountered while drilling.					
2.5	D	Brown, moist, medium stiff, micaceous sandy SILT (ML)		12"		3-4-6	10	
435								
5	D	Light brown, moist, medium dense, micaceous silty SAND, some gravel (SM)		18"		4-6-6	12	
432.5								
7.5	D	Light brown, moist, soft, micaceous SILT, trace very fine sand (ML)		13"		2-2-3-3	5	
430		Bottom of Boring at 10.0'						
10								
427.5								
12.5								
425								
15								

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE

SAMPLE CONDITIONS: S - SOIL; R - ROCK

	Ground Water	Cave In Depth
AT COMPLETION	Dry ft.	6.0 ft.
AFTER 24 HRS.	Dry ft.	6.0 ft.
AFTER ___ HRS.	ft.	ft.

BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING

STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.

RECORD OF SOIL EXPLORATION

Project Name: Town Square at Turf Valley — Boring No.: B-18
Location: Howard County, Maryland — Job #: 09793A

SAMPLER — Datum: topo — Hammer Wt.: 140 lbs. — Hole Diameter: 5" — Foreman: L. Smith
Surf. Elev.: 431.0 Ft. — Hammer Drop: 30 in. — Rock Core Diameter: — Inspector:
Date Started: 10/22/09 — Pipe Size: 2 in. — Boring Method: HSA — Date Completed: 10/22/09

Elevation/ Depth	Soil Symbols/ Sample Conditions	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	SPT Blows/Foot N	SPT Blows/Foot Curve (10 30 50)
0	D	Brown, moist, very loose, silty fine SAND (SM; FILL)	Topsoil-5"	5"		2-2-2	4	
430								
2.5	D	Light brown, damp, loose, micaceous silty SAND, some gravel, trace clay (SM)		18"		3-4-4	8	
427.5								
5	D	Brown, damp, medium dense, micaceous silty SAND to sandy SILT, some to no gravel (SM-ML)		18"		5-7-5	12	
425								
7.5	D			15"		7-4-8	12	
423.5								
10	D	Tan, wet, very dense, micaceous silty SAND, some gravel (SM; Decomposed ROCK) Bottom of Boring at 10.4'	Groundwater encountered at 8.5' while drilling.	5"		50/5"	100+	50/5"
420								
12.5								
417.5								
15								

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE

SAMPLE CONDITIONS: S - SOIL; R - ROCK

	Ground Water	Cave In Depth
AT COMPLETION	8.0 ft.	8.5 ft.
AFTER 24 HRS.	7.3 ft.	8.5 ft.
AFTER ___ HRS.	ft.	ft.

BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING

STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.

RECORD OF SOIL EXPLORATION

Project Name: Town Square at Turf Valley — Boring No.: B-19
Location: Howard County, Maryland — Job #: 09793A

SAMPLER — Datum: topo — Hammer Wt.: 140 lbs. — Hole Diameter: 5" — Foreman: L. Smith
Surf. Elev.: 430.5 Ft. — Hammer Drop: 30 in. — Rock Core Diameter: — Inspector:
Date Started: 10/22/09 — Pipe Size: 2 in. — Boring Method: HSA — Date Completed: 10/22/09

Elevation/ Depth	Soil Symbols/ Sample Conditions	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	SPT Blows/Foot N	SPT Blows/Foot Curve (10 30 50)
0	D	Brown, moist, very loose, silty fine SAND (SM; FILL)	Topsoil-5"	6"		2-2-2	4	
430								
2.5	D	Light brown, moist, medium dense, micaceous silty SAND, some rock fragments (SM)		12"		7-6-7	13	
427.5								
5	D	Tan, dry, medium dense, silty SAND and GRAVEL (SM-SM)		13"		8-13-13	26	
425								
7.5	D	Light brown, wet, very dense, micaceous silty SAND, some gravel (SM; Decomposed ROCK)		3"		50/6"	100+	50/6"
423								
10		Auger refusal and bottom of Boring at 10.5'	Groundwater encountered at 10.0' while drilling.	4"		50/4"	100+	50/4"
420								
12.5								
417.5								
15								

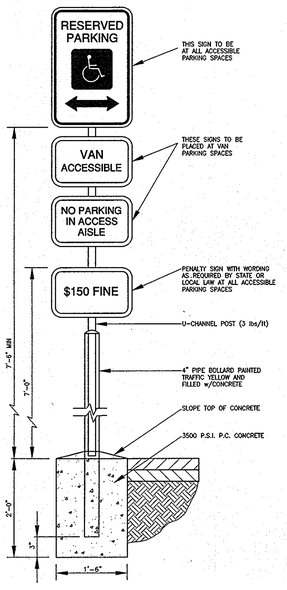
SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE

SAMPLE CONDITIONS: S - SOIL; R - ROCK

	Ground Water	Cave In Depth
AT COMPLETION	7.0 ft.	8.6 ft.
AFTER 24 HRS.	8.0 ft.	8.7 ft.
AFTER ___ HRS.	ft.	ft.

BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING

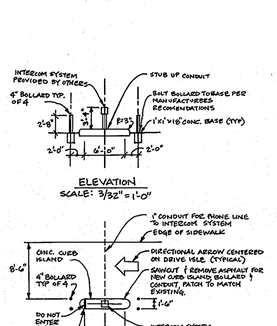
STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS.



POLE MOUNTED DETAIL

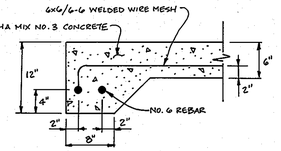
HANDICAP PARKING SIGN DETAIL

NOT TO SCALE



HOME SHOPPING EXPRESS ISLAND DETAIL

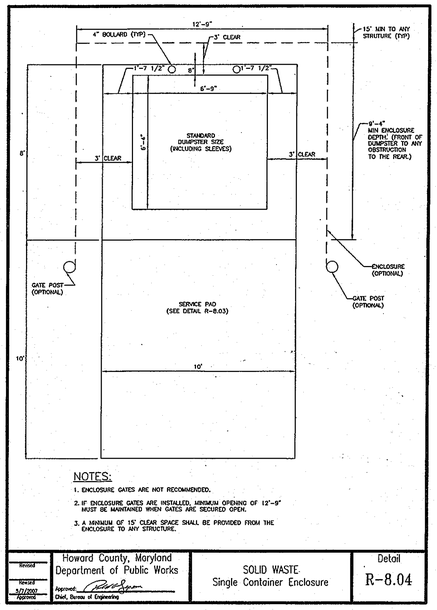
NOT TO SCALE



1. JOINTS TO BE PLACED (IN FEET) NO MORE THAN 2-3 TIMES SLAB THICKNESS (IN INCHES).
2. JOINTS TO BE CUT TO 25% OF THE THICKNESS OF THE SLAB.

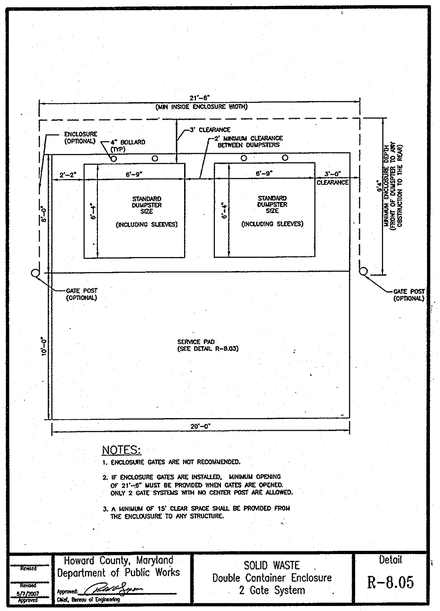
CONCRETE PAD DETAIL

NOT TO SCALE



NOTES:
1. ENCLOSURE GATES ARE NOT RECOMMENDED.
2. IF ENCLOSURE GATES ARE INSTALLED, MINIMUM OPENING OF 12'-9" MUST BE MAINTAINED WHEN GATES ARE SECURED OPEN.
3. A MINIMUM OF 15' CLEAR SPACE SHALL BE PROVIDED FROM THE ENCLOSURE TO ANY STRUCTURE.

Revised	Howard County, Maryland Department of Public Works	SOLID WASTE Single Container Enclosure	Detail R-8.04
Revised 5/7/2007 Approved	Approved: Chief, Bureau of Engineering		



NOTES:
1. ENCLOSURE GATES ARE NOT RECOMMENDED.
2. IF ENCLOSURE GATES ARE INSTALLED, MINIMUM OPENING OF 21'-8" MUST BE PROVIDED WHEN GATES ARE OPENED. ONLY 2 GATE SYSTEMS WITH NO CENTER POST ARE ALLOWED.
3. A MINIMUM OF 15' CLEAR SPACE SHALL BE PROVIDED FROM THE ENCLOSURE TO ANY STRUCTURE.

Revised	Howard County, Maryland Department of Public Works	SOLID WASTE Double Container Enclosure 2 Gate System	Detail R-8.05
Revised 5/7/2007 Approved	Approved: Chief, Bureau of Engineering		

APPROVED: DEPARTMENT OF ~~PUBLIC WORKS~~ PLANNING & ZONING

Thomas E. Liddle — 4/3/10
~~CHIEF, BUREAU OF ENGINEERING~~ DIRECTOR — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Kent Sheubrooks — 5/3/10
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

Chad Edmondson — 4/29/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

APPROVED:
PLANNING BOARD OF HOWARD COUNTY

DATE 4/15/10

NO.	DATE	REVISION
4	1-11-2013	REVISE TITLE BLOCK
3	4-10-2012	REVISE SHEET NUMBER
2	9-21-2011	DELETE PARKING LOT LIGHT DETAIL
1	5-31-2011	ADD HOME SHOPPING EXPRESS ISLAND DETAIL AND CONCRETE PAD DETAIL.

BENCHMARK ENGINEERING, INC.
ENGINEERS & LAND SURVEYORS & PLANNERS
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 418 ▲ ELLICOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6644
60 THOMAS JOHNSON DRIVE ▲ FREDERICK, MARYLAND 21702
(P) 301-371-3505 (F) 301-371-3506
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. 28559, Expiration Date: 7-22-2011.

STATE OF MARYLAND — BRIAN F. CLEARY — 28559 — REGISTERED PROFESSIONAL ENGINEER — 4/13/2010

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

DEVELOPER:
MANGIONE ENTERPRISES OF TURF VALLEY, LP
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

TOWN SQUARE AT TURF VALLEY

(CERTIFIED LEVEL RATED GREEN BUILDING PROJECT)
PARCELS 'J1' & 'J2' AND OPEN SPACE LOTS 485
TURF VALLEY PROFESSIONAL BUILDINGS
PLAT NOS. 22078-22079

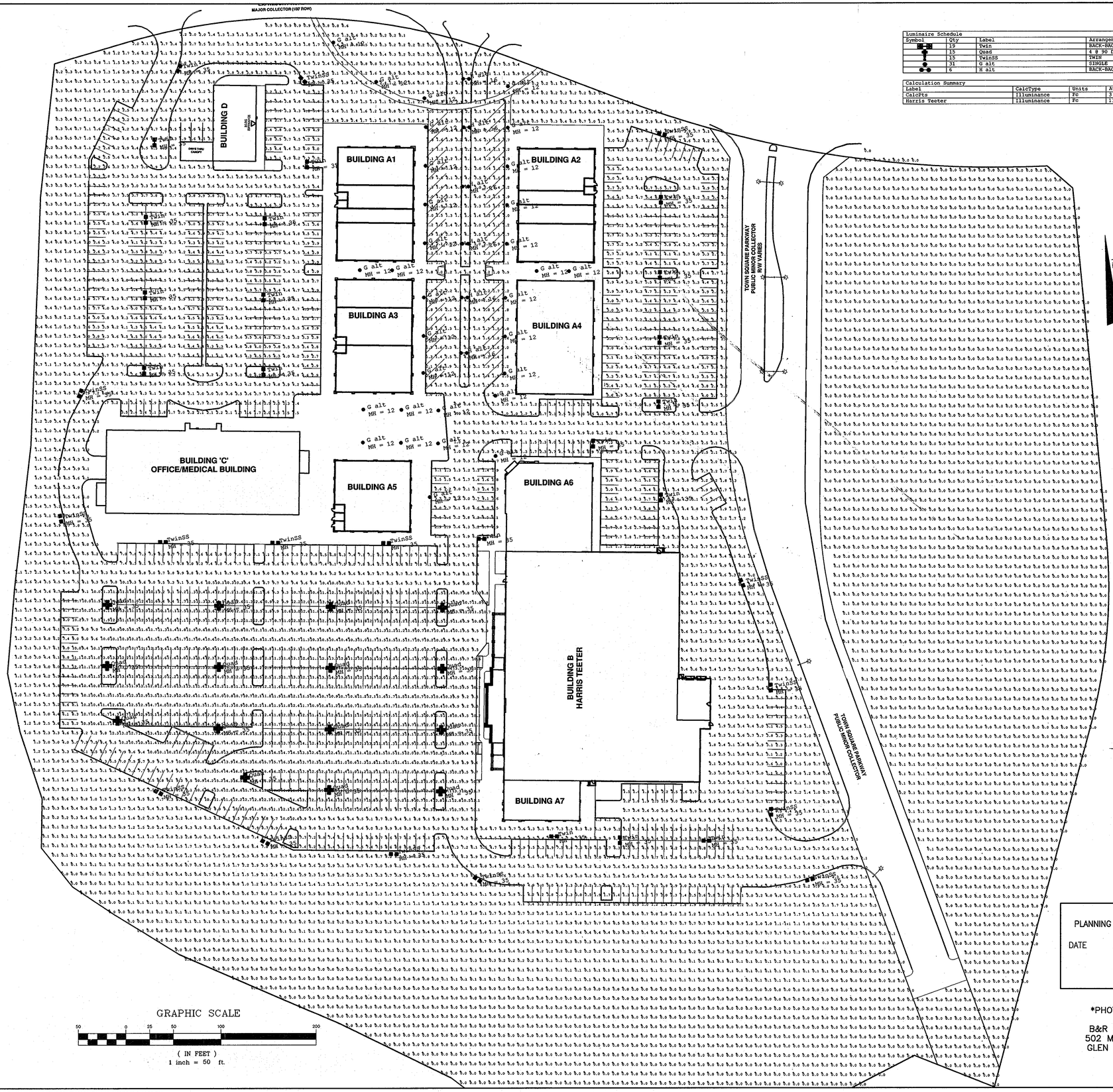
TAX MAP: 16 — GRID: 10 — PARCEL: P/O 8 & 50
ZONED: PGCC (MULTI-USE SUBDISTRICT)
ELECTION DISTRICT NO. 3 — HOWARD COUNTY, MARYLAND

SOILS BORING PLAN AND DETAIL SHEET

DATE: APRIL, 2010 — BEI PROJECT NO. 2208
SCALE: AS SHOWN — SHEET 20 OF 29

SDP-10-027

P:\2208 Town Square at Turf Valley\dwg\8033_s20.dwg, 4/13/2010 5:07:14 PM



Luminaire Schedule							
Symbol	Qty	Label	Arrangement	Lumens	LLF	Description
	19	Twin	BACK-BACK	40000	0.800	ECA18-3H-400MH
	15	Quad	4 @ 90 DEGREES TT	40000	0.800	ECA18-3H-400MH
	15	TwinSS	TWIN	40000	0.800	ECA18-3H-400MH
	31	G alt	SINGLE	6200	0.750	CS-105-P4-RD-A-R5-D-70H
	6	H alt	BACK-BACK	14000	0.750	CS-105-P4-RD-A-R5-D-150H

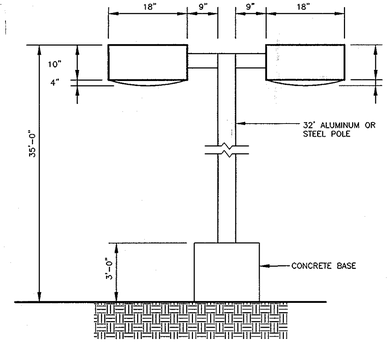
Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
CalcPts	Illuminance	Fc	3.11	18.4	0.0	N.A.	N.A.
Harris Teeter	Illuminance	Fc	11.72	18.4	7.6	1.54	2.42

STREET LIGHT ALONG ROAD 'A'

NOTES:

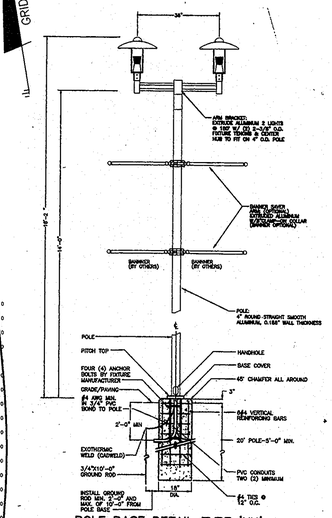
1. THE STREET LIGHTS ALONG TOWN SQUARE PARKWAY SHALL BE TREATED AS PUBLIC STREET LIGHTS AND THUS PAID FOR BY THE DEVELOPER.

2. REFER TO SHEET 22 FOR ROAD 'A' STREET LIGHTING PLACEMENT AND TYPE.



ECA18-3H-400MH LIGHTING DETAIL
NOT TO SCALE

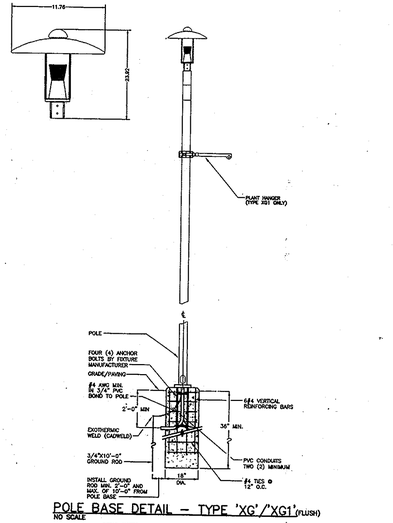
GRID NORTH



POLE BASE DETAIL TYPE 'XH' (FLUSH)
NO SCALE

GENERAL NOTES

1. CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 3000 PSI IN 28 DAYS.
2. REINFORCING STEEL SHALL BE ASTM A-615 GRADE 60.
3. ALL REINFORCING STEEL SHALL HAVE A MINIMUM COVER OF 3".
4. CONTRACTOR SHALL PROVIDE IN-LINE FUSING IN THE BASE OF EACH POLE. BUSSMAN TYPE HEB FUSE HOLDERS WITH TYPE KTK FUSES



POLE BASE DETAIL – TYPE 'XG'/'XG1' (FLUSH)
NO SCALE

GENERAL NOTES

1. CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 3000 PSI IN 28 DAYS.
2. REINFORCING STEEL SHALL BE ASTM A-615 GRADE 60.
3. ALL REINFORCING STEEL SHALL HAVE A MINIMUM COVER OF 3".
4. CONTRACTOR SHALL PROVIDE IN-LINE FUSING IN THE BASE OF EACH POLE. BUSSMAN TYPE HEB FUSE HOLDERS WITH TYPE KTK FUSES

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 1/16/13

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 1/24/13

DIRECTOR — DATE 1/24/13

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 4/15/10

*PHOTOMETRICS DESIGNED BY:

B&R CONSTRUCTION SERVICES.
502 McCORMICK DRIVE, SUITE M
GLEN BERNIE, MARYLAND 21061
410-761-9600

NO.	DATE	REVISION
3	1-11-2013	revised photometric plan based on new light pole locations and type.
2	4-10-2012	revise sheet number
1	9-21-2011	revised photometric plan based on 8-foot candle minimum.

BENCHMARK
ENGINEERING, INC.
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
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(P) 410-465-6105 (F) 410-465-6644
60 THOMAS JOHNSON DRIVE ▲ FREDERICK, MARYLAND 21702
(P) 301-371-3505 (F) 301-371-3506
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. 20555, Expiration Date 7-22-2013.

BRIAN F. CLEARY — REG. 20555 — REGISTERED PROFESSIONAL ENGINEER — STATE OF MARYLAND — 1/10/2013

OWNER:

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

DEVELOPER:

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

TOWN SQUARE AT TURF VALLEY

(CERTIFIED LEVEL RATED GREEN BUILDING PROJECT)
PARCEL 'F' AND OPEN SPACE LOT 3 OF
TURF VALLEY PROFESSIONAL BUILDINGS
PLAT NOS. 18696-18698

TAX MAP: 16 – GRID: 10 – PARCEL: P/O 8 & 50
ZONED: PGCC (MULTI-USE SUBDISTRICT)
ELECTION DISTRICT NO. 3 – HOWARD COUNTY, MARYLAND

REVISED SHOPPING CENTER LIGHTING PLAN

DATE:	APRIL, 2010	BEI PROJECT NO.	2208
SCALE:	AS SHOWN	SHEET	21 OF 29

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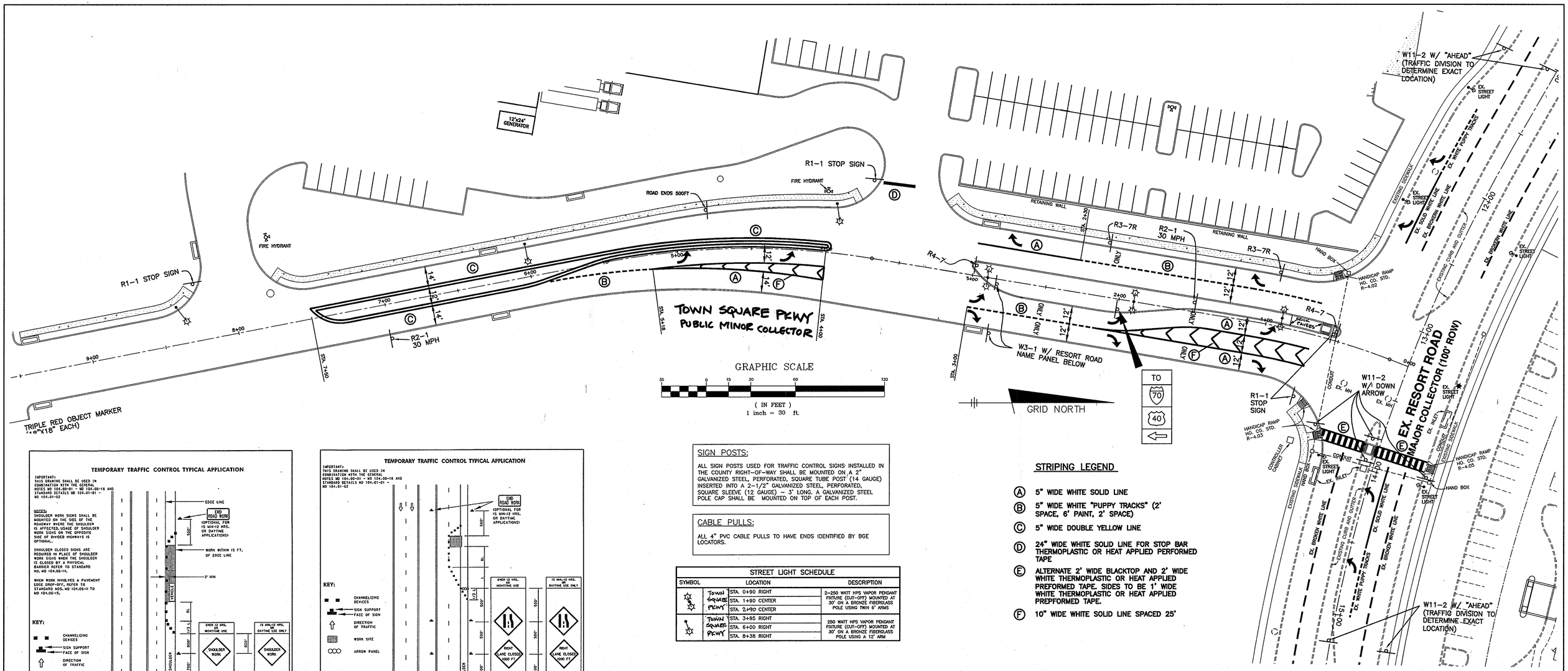
SDP-10-027



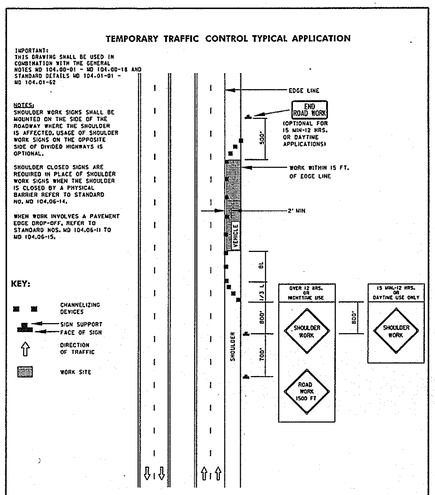
TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES NO 104.00-01 - NO 104.00-18 AND STANDARD DETAILS NO 104.01-01 - NO 104.01-02

NOTES:
SHOULDER WORK SIGNS SHALL BE MOUNTED ON THE SIDE OF THE ROADWAY WHERE THE SHOULDER IS AFFECTED. USAGE OF SHOULDER WORK SIGNS ON THE OPPOSITE SIDE OF DIVIDED HIGHWAYS IS OPTIONAL.

SHOULDER CLOSED SIGNS ARE REQUIRED IN PLACE OF SHOULDER WORK SIGNS WHEN THE SHOULDER IS CLOSED BY A PHYSICAL BARRIER REFER TO STANDARD NO. MD 104.06-14.

WHEN WORK INVOLVES A PAVEMENT EDGE DROP-OFF, REFER TO STANDARD NOS. MD 104.06-11 TO MD 104.06-13.



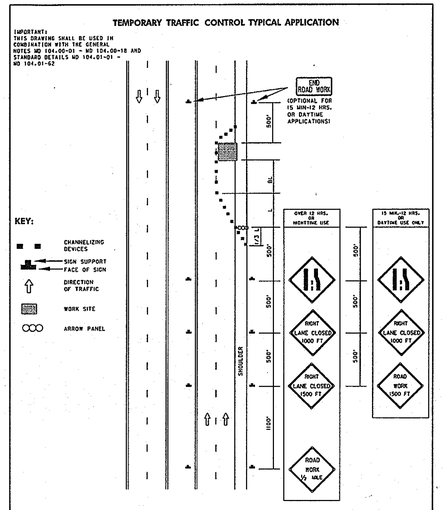
SPECIFICATION 104	CATEGORY CODE ITEMS
APPROVED	DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

SHA State Highway Administration	APPROVAL + SHA REVISIONS	APPROVAL + FEDERAL HIGHWAY ADMINISTRATION
APPROVAL	8-30-05	9-23-05
REVISED		
REVISED		
REVISED		

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
SHOULDER WORK/DIVIDED UNCON. EQL/LESS THAN 40 MPH
STANDARD NO. MD 104.04-02

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE GENERAL NOTES NO 104.00-01 - NO 104.00-18 AND STANDARD DETAILS NO 104.01-01 - NO 104.01-02



SPECIFICATION 104	CATEGORY CODE ITEMS
APPROVED	DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

SHA State Highway Administration	APPROVAL + SHA REVISIONS	APPROVAL + FEDERAL HIGHWAY ADMINISTRATION
APPROVAL	8-30-05	9-23-05
REVISED		
REVISED		
REVISED		

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
RIGHT LANE CLOSURE /DIVIDED UNCON. EQL/LESS THAN 40 MPH
STANDARD NO. MD 104.04-06

SIGN POSTS:

ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE SLEEVE (12 GAUGE) – 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.

CABLE PULLS:

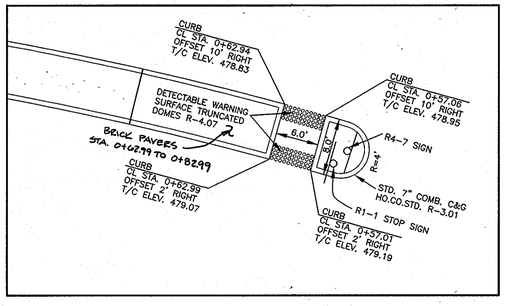
ALL 4" PVC CABLE PULLS TO HAVE ENDS IDENTIFIED BY BGE LOCATORS.

STREET LIGHT SCHEDULE

SYMBOL	LOCATION	DESCRIPTION
TOWN SQUARE PKWY	STA. 0+90 RIGHT	2-250 WATT HPS VAPOR PENDANT FIXTURE (CUT-OFF) MOUNTED AT 30' ON A BRONZE FIBERGLASS POLE USING TWIN 6' ARMS
	STA. 1+90 CENTER	
	STA. 2+90 CENTER	
TOWN SQUARE PKWY	STA. 3+95 RIGHT	250 WATT HPS VAPOR PENDANT FIXTURE (CUT-OFF) MOUNTED AT 30' ON A BRONZE FIBERGLASS POLE USING A 12' ARM
	STA. 6+00 RIGHT	
	STA. 8+38 RIGHT	

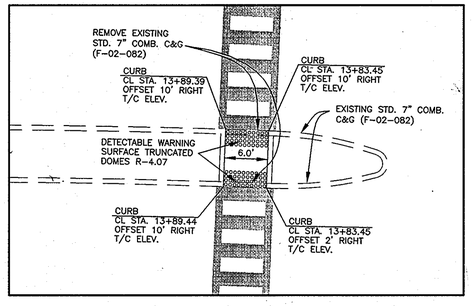
STRIPING LEGEND

- (A) 5" WIDE WHITE SOLID LINE
- (B) 5" WIDE WHITE "PUPPY TRACKS" (2' SPACE, 6' PAINT, 2' SPACE)
- (C) 5" WIDE DOUBLE YELLOW LINE
- (D) 24" WIDE WHITE SOLID LINE FOR STOP BAR THERMOPLASTIC OR HEAT APPLIED PERFORMED TAPE
- (E) ALTERNATE 2' WIDE BLACKTOP AND 2' WIDE WHITE THERMOPLASTIC OR HEAT APPLIED PREFORMED TAPE. SIDES TO BE 1' WIDE WHITE THERMOPLASTIC OR HEAT APPLIED PREPFORMED TAPE.
- (F) 10" WIDE WHITE SOLID LINE SPACED 25'



PEDESTRIAN ISLAND WITHIN ROAD 'A' DETAIL

GRAPHIC SCALE
10 0 5 10 20 40
(IN FEET)
1 inch = 10 ft.



PEDESTRIAN ISLAND WITHIN RESORT ROAD

GRAPHIC SCALE
10 0 5 10 20 40
(IN FEET)
1 inch = 10 ft.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/29/10
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/3/10
DIRECTOR — DATE 5/3/10

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 4/15/10

NO.	DATE	REVISION
3	1-11-2013	REVISE ROAD 'A' TO TOWN SQUARE PARKWAY, REVISE TITLE BLOCK
2	4-10-2012	REVISE SHEET NUMBER
1	5-31-2011	REVISE ISLAND IN ROAD 'A' AT STATION 3+00.

BENCHMARK
ENGINEERS & LAND SURVEYORS & PLANNERS
ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 418 ▲ ELLICOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6644
60 THOMAS JOHNSON DRIVE ▲ FREDERICK, MARYLAND 21702
(P) 301-371-3505 (F) 301-371-3506
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. 28539, Expiration Date: 7-22-2011.

STATE OF MARYLAND — BRIAN F. CLEARY — No. 28539 — REGISTERED PROFESSIONAL ENGINEER — 4/14/2010

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

DEVELOPER:
MANGIONE ENTERPRISES OF TURF VALLEY, LP
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

TOWN SQUARE AT TURF VALLEY
(CERTIFIED LEVEL RATED GREEN BUILDING PROJECT)
PARCELS 31 & 32 AND OPEN SPACE LOTS 4 & 5
TURF VALLEY PROFESSIONAL BUILDINGS
PLAT NOS. 22078 - 22079

TAX MAP: 16 – GRID: 10 – PARCEL: P/O 8 & 50
ZONED: PGCC (MULTI-USE SUBDISTRICT)
ELECTION DISTRICT NO. 3 – HOWARD COUNTY, MARYLAND

ROAD 'A' INTERIM STREET LIGHT AND STRIPING PLAN FOR STOP CONTROL

DATE:	APRIL, 2010	BEI PROJECT NO.	2208
SCALE:	AS SHOWN	SHEET	22 OF 29

SDP-10-027

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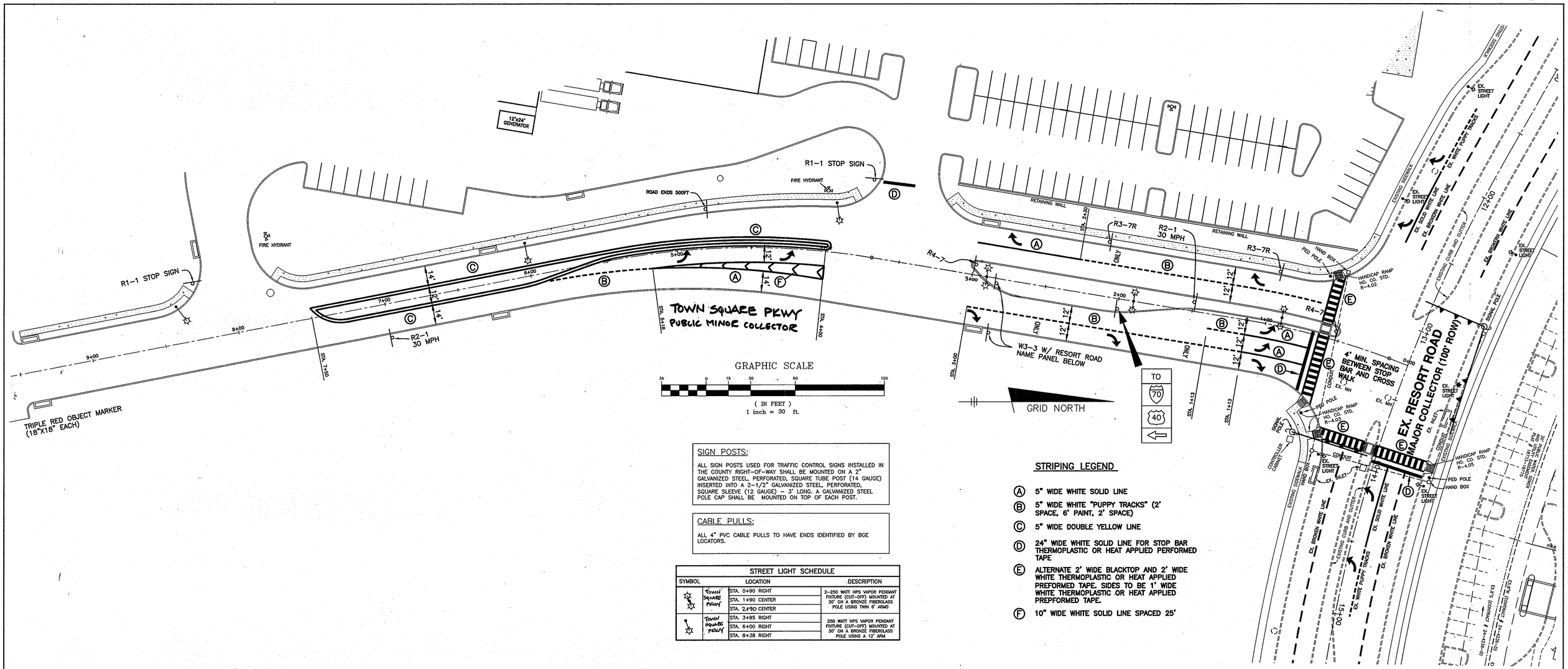


GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

SIGN POSTS:

ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE SLEEVE (12 GAUGE) - 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.

CABLE PULLS:

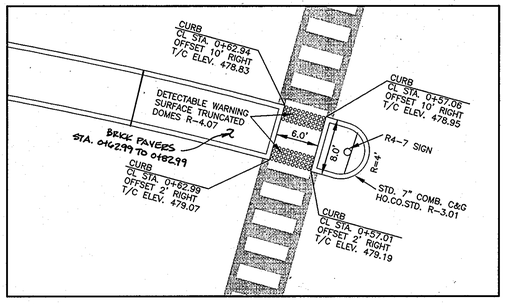
ALL 4" PVC CABLE PULLS TO HAVE ENDS IDENTIFIED BY BGE LOCATORS.

STREET LIGHT SCHEDULE

SYMBOL		LOCATION	DESCRIPTION
☼	TOWN SQUARE PKWY	STA. 0+90 RIGHT	2-250 WATT HPS VAPOR PENDANT FIXTURE (CUT-OFF) MOUNTED AT 30' ON A BRONZE FIBERGLASS POLE USING TWIN 6' ARMS
		STA. 1+90 CENTER	
		STA. 2+90 CENTER	
☼	TOWN SQUARE PKWY	STA. 3+95 RIGHT	250 WATT HPS VAPOR PENDANT FIXTURE (CUT-OFF) MOUNTED AT 30' ON A BRONZE FIBERGLASS POLE USING A 12' ARM
		STA. 6+00 RIGHT	
		STA. 8+38 RIGHT	

STRIPING LEGEND

- (A) 5" WIDE WHITE SOLID LINE
- (B) 5" WIDE WHITE "PUPPY TRACKS" (2' SPACE, 6' PAINT, 2' SPACE)
- (C) 5" WIDE DOUBLE YELLOW LINE
- (D) 24" WIDE WHITE SOLID LINE FOR STOP BAR THERMOPLASTIC OR HEAT APPLIED PERFORMED TAPE
- (E) ALTERNATE 2' WIDE BLACKTOP AND 2' WIDE WHITE THERMOPLASTIC OR HEAT APPLIED PREFORMED TAPE. SIDES TO BE 1' WIDE WHITE THERMOPLASTIC OR HEAT APPLIED PREPFORMED TAPE.
- (F) 10" WIDE WHITE SOLID LINE SPACED 25'

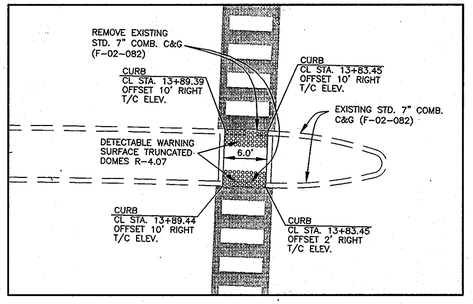


PEDESTRIAN ISLAND WITHIN ROAD 'A' DETAIL

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.



PEDESTRIAN ISLAND WITHIN RESORT ROAD

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/20/10

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/3/10

DIRECTOR — DATE 5/3/10

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 4/15/10

NO.	DATE	REVISION
3	1-11-2013	REVISE ROAD 'A' TO TOWN SQUARE PKWY. REVISE TITLE BLOCK
2	4-10-2012	REVISE SHEET NUMBER
1	5-31-2011	REVISE ISLAND IN ROAD 'A' AT STATION 3+00

BENCHMARK
ENGINEERS & LAND SURVEYORS & PLANNERS
ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE & SUITE 418 A ELLICOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6644
60 THOMAS JOHNSON DRIVE & FREDERICK, MARYLAND 21702
(P) 301-371-3505 (F) 301-371-3506
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. 22858, Expiration Date: 7-22-2011.

STATE OF MARYLAND — BRIAN F. CLEARY — PROFESSIONAL ENGINEER — 22858 — 7-22-2011

4/14/2010

OWNER:

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

DEVELOPER:

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

TOWN SQUARE AT TURF VALLEY

(CERTIFIED LEVEL RATED GREEN BUILDING PROJECT)
PARCELS J1 & J2 AND OPEN SPACE LOTS 4 & 5
TURF VALLEY PROFESSIONAL BUILDINGS
PLAT NOS. 22078-22079

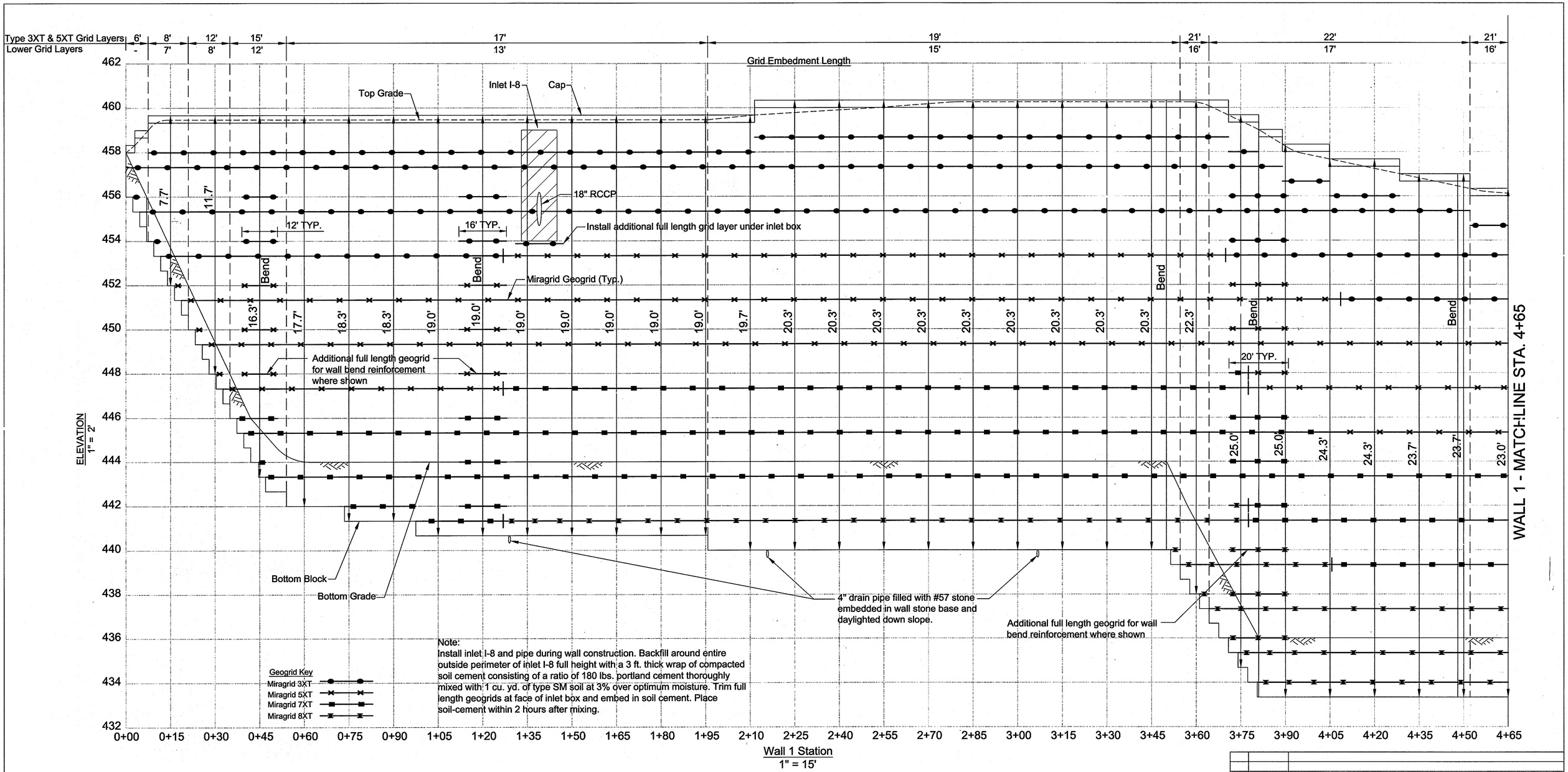
TAX MAP: 16 - GRID: 10 - PARCEL: P/O 8 & 50
ZONED: PGCC (MULTI-USE SUBDISTRICT)
ELECTION DISTRICT NO. 3 - HOWARD COUNTY, MARYLAND

ROAD 'A' ULTIMATE STREET LIGHT AND STRIPING PLAN WITH SIGNALIZATION

DATE:	APRIL, 2010	BEI PROJECT NO.	2208
SCALE:	AS SHOWN	SHEET	22A OF 29

SDP-10-027

P:\2208 Town Square at Turf Valley\dwg\8017_s22A.dwg, 4/13/2010 5:11:36 PM



Note:
Install inlet I-8 and pipe during wall construction. Backfill around entire outside perimeter of inlet I-8 full height with a 3 ft. thick wrap of compacted soil cement consisting of a ratio of 180 lbs. portland cement thoroughly mixed with 1 cu. yd. of type SM soil at 3% over optimum moisture. Trim full length geogrids at face of inlet box and embed in soil cement. Place soil-cement within 2 hours after mixing.

NO.	DATE	REVISION
2	1-11-2013	REVISE TITLE BLOCK
1	4-10-2012	REVISE SHEET NUMBER

HILLIS-CARNES
ENGINEERING ASSOCIATES
10975 Guilford Road, Suite A
(410) 880-4788
Annapolis Junction, MD
Fax: (410) 880-4098

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. 14434, Expiration Date: 05-13-2011.

STATE OF MARYLAND
RICHARD W. STUDENT
No. 14434
PROFESSIONAL ENGINEER

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

DEVELOPER:
MANGIONE ENTERPRISES OF TURF VALLEY, LP
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

TOWN SQUARE AT TURF VALLEY
(CERTIFIED LEVEL RATED GREEN BUILDING PROJECT)
PARCELS '31' & '32' AND OPEN SPACE LOTS 4 & 5
TURF VALLEY PROFESSIONAL BUILDINGS
PLAT NOS. 22078-22079

TAX MAP: 16 – GRID: 10 – PARCEL: P/O 8 & 50
ZONED: PGCC (MULTI-USE SUBDISTRICT)
ELECTION DISTRICT NO. 3 – HOWARD COUNTY, MARYLAND

WALL 1 ELEVATION - STA. 0+00 TO 4+65

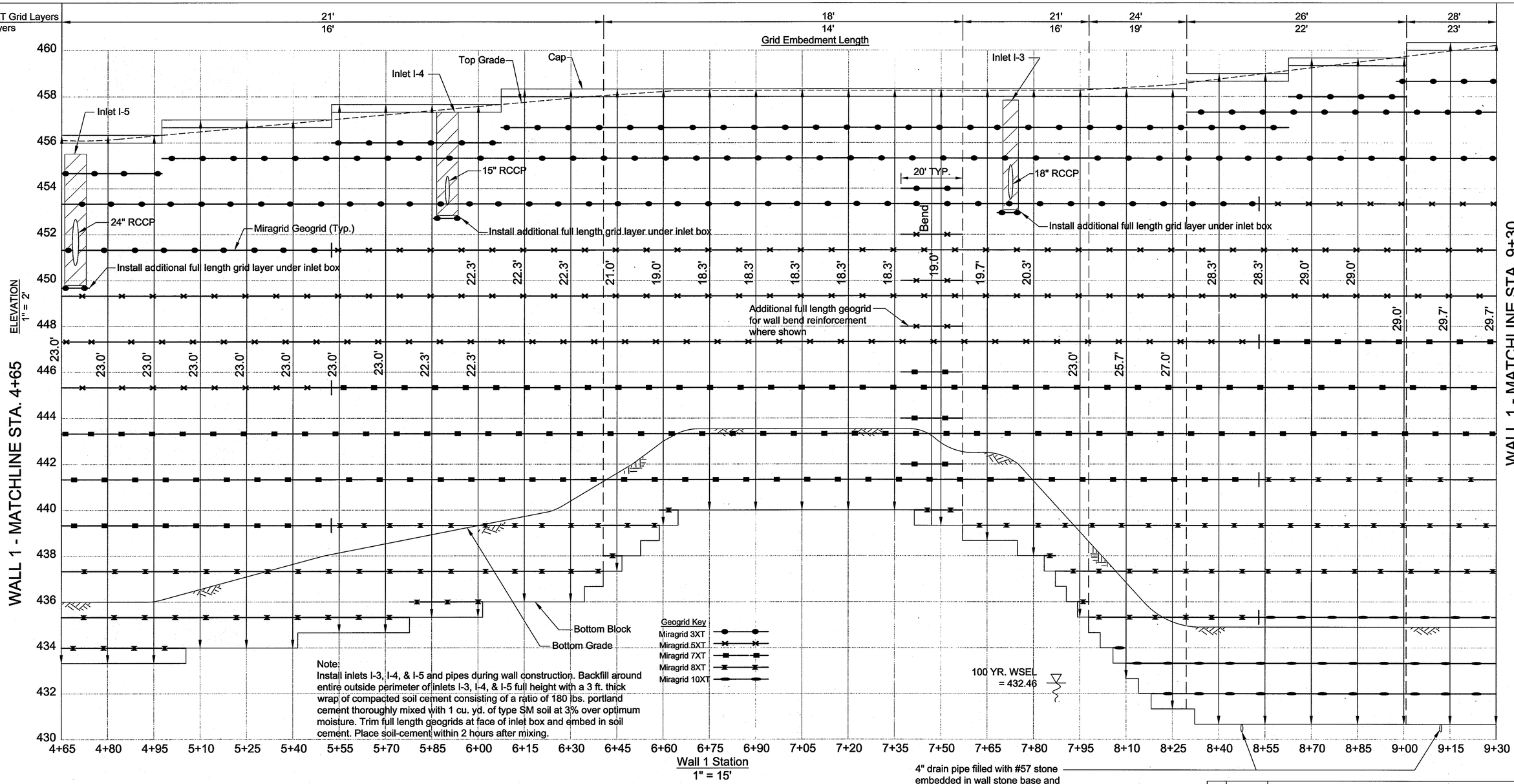
DATE:	APRIL, 2010	HCEA PROJECT NO.	08209-D
SCALE:	AS SHOWN	SHEET	23 OF 29

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	4/29/10 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	5/3/10 DATE
DIRECTOR	5/3/10 DATE

APPROVED:
PLANNING BOARD OF HOWARD COUNTY
DATE 4/15/10

SDP-10-027



Note:
Install inlets I-3, I-4, & I-5 and pipes during wall construction. Backfill around entire outside perimeter of inlets I-3, I-4, & I-5 full height with a 3 ft. thick wrap of compacted soil cement consisting of a ratio of 180 lbs. portland cement thoroughly mixed with 1 cu. yd. of type SM soil at 3% over optimum moisture. Trim full length geogrids at face of inlet box and embed in soil cement. Place soil-cement within 2 hours after mixing.

4" drain pipe filled with #57 stone embedded in wall stone base and daylighted down slope.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/26/10

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/3/10

DIRECTOR — DATE 5/3/10

APPROVED:
PLANNING BOARD OF HOWARD COUNTY
DATE 4/15/10

NO.	DATE	REVISION
2	1-11-2013	REVISE TITLE BLOCK.
1	4-10-2012	REVISE SHEET NUMBER.

HILLIS-CARNES
ENGINEERING ASSOCIATES
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STATE OF MARYLAND — RICHARD W. STORM — No. 14434 — PROFESSIONAL ENGINEER

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DEVELOPER:
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LUTHERVILLE, MARYLAND 21093
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TOWN SQUARE AT TURF VALLEY

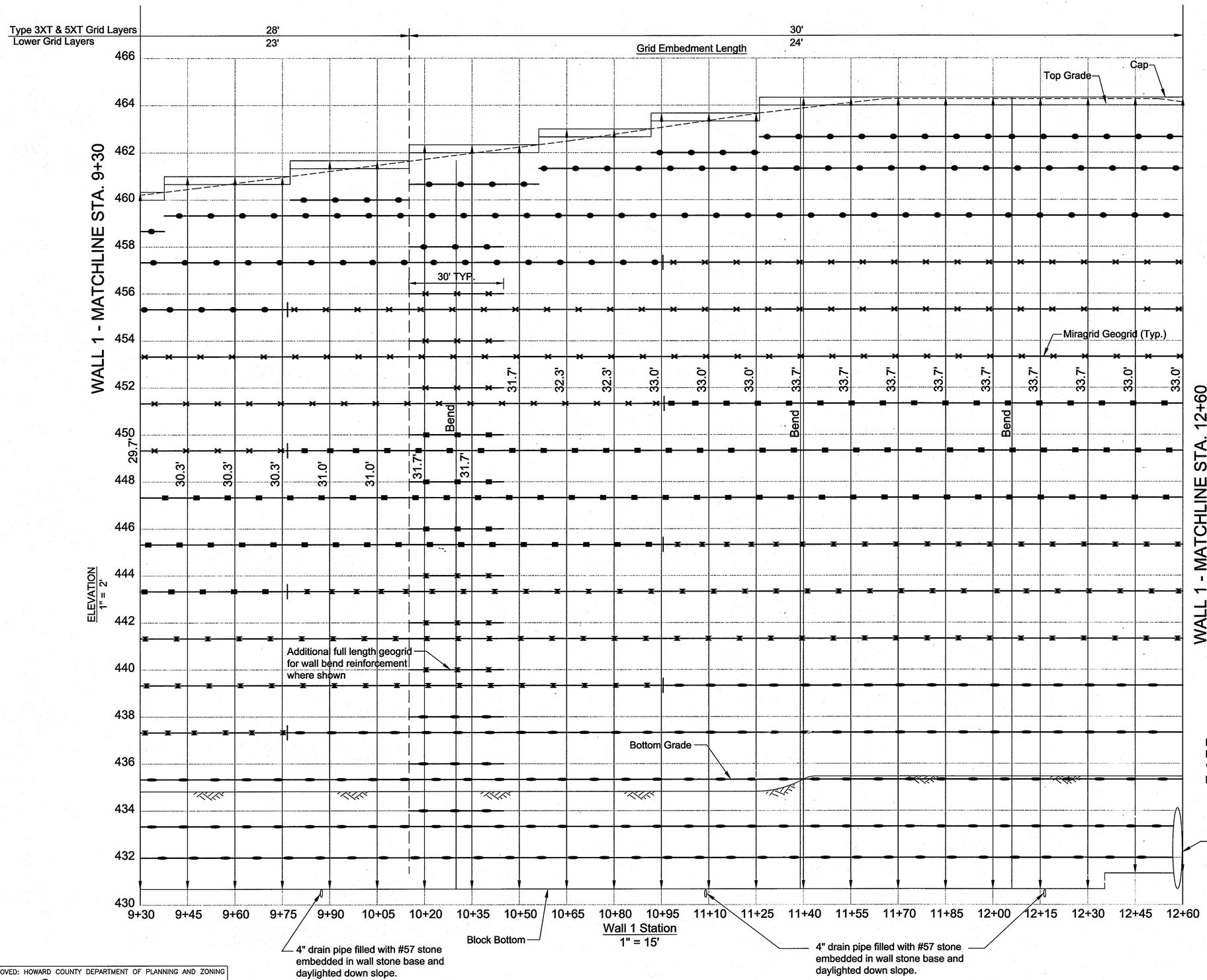
(CERTIFIED LEVEL RATED GREEN BUILDING PROJECT)
PARCELS 'J1' & 'J2' AND OPEN SPACE LOTS 4 & 5
TURF VALLEY PROFESSIONAL BUILDINGS
PLAT NOS. 22078-22079

TAX MAP: 16 — GRID: 10 — PARCEL: P/O 8 & 50
ZONED: PGCC (MULTI-USE SUBDISTRICT)
ELECTION DISTRICT NO. 3 — HOWARD COUNTY, MARYLAND

WALL 1 ELEVATION - STA. 4+65 TO 9+30

DATE:	APRIL, 2010	HCEA PROJECT NO.	08209-D
SCALE:	AS SHOWN	SHEET	24 OF 29

SDP-10-027



Note:
Slope top geogrid layers as needed to allow water line installation above top grid layer without conflict.

Geogrid Key
- Miragrid 3XT
- Miragrid 5XT
- Miragrid 7XT
- Miragrid 8XT
- Miragrid 10XT

Note:
Install pipe during wall construction. Trim block to within 1" of pipe face. Pack block voids around pipe with 2000 psi strength mortar.

NO.	DATE	REVISION
2	1-11-2013	REVISE TITLE BLOCK
1	4-10-2012	REVISE SHEET NUMBER

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/29/10

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/3/10

DIRECTOR — DATE 5/3/10

APPROVED:
PLANNING BOARD OF HOWARD COUNTY
DATE 4/15/10

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

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DEVELOPER:
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TOWN SQUARE AT TURF VALLEY

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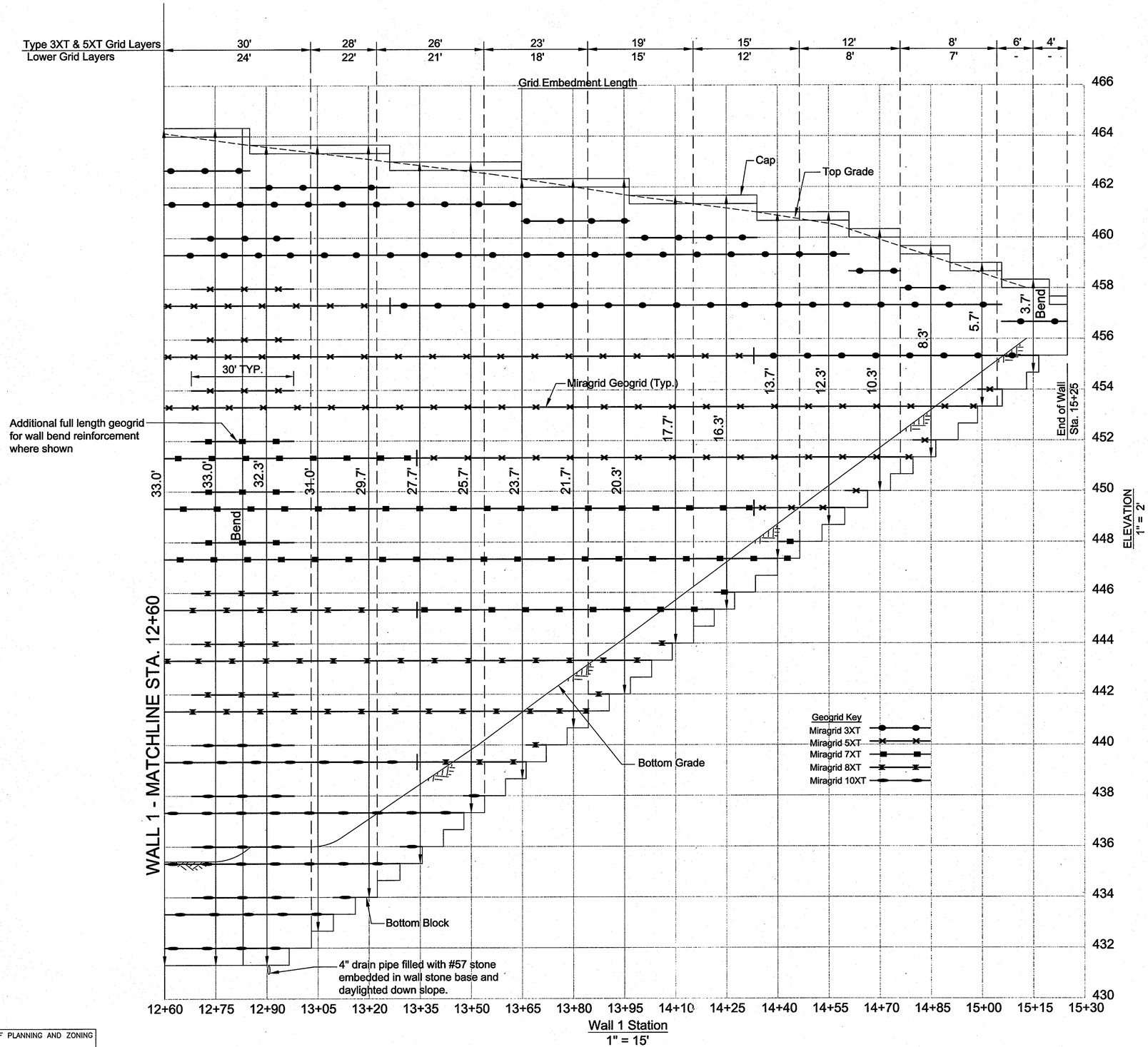
TURF VALLEY PROFESSIONAL BUILDINGS
PLAT NOS. 22078-22079

TAX MAP: 16 - GRID: 10 - PARCEL: P/O 8 & 50
ZONED: PGCC (MULTI-USE SUBDISTRICT)
ELECTION DISTRICT NO. 3 - HOWARD COUNTY, MARYLAND

WALL 1 ELEVATION - STA 9+30 TO 12+60

DATE:	APRIL, 2010	HCEA PROJECT NO.	08209-D
SCALE:	AS SHOWN	SHEET	25 OF 29

SDP-10-027



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/29/10

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/3/10

DIRECTOR — DATE 5/3/10

APPROVED:
PLANNING BOARD OF HOWARD COUNTY
DATE 4/15/10

NO.	DATE	REVISION
2	1-11-2013	REVISE TITLE BLOCK
1	4-10-2012	REVISE SHEET NUMBER

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STATE OF MARYLAND — CRAIG W. STINCHCOMB — No. 14434 — PROFESSIONAL ENGINEER

OWNER:
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410-825-8400

DEVELOPER:
MANGIONE ENTERPRISES OF TURF VALLEY, LP
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

TOWN SQUARE AT TURF VALLEY

(CERTIFIED LEVEL RATED GREEN BUILDING PROJECT)
PARCELS 'S' & 'T' AND OPEN SPACE LOTS 4 & 5
TURF VALLEY PROFESSIONAL BUILDINGS
PLAT NOS. 22078- 22079

TAX MAP: 16 - GRID: 10 - PARCEL: P/O 8 & 50
ZONED: PGCC (MULTI-USE SUBDISTRICT)
ELECTION DISTRICT NO. 3 - HOWARD COUNTY, MARYLAND

WALL 1 ELEVATION - STA. 12+60 TO 15+25

DATE:	APRIL, 2010	HCEA PROJECT NO.	08209-D
SCALE:	AS SHOWN	SHEET	26 OF 29

SDP-10-027

WALL 2 ELEVATION

TYPICAL WALL SECTION
N.T.S

SPECIFICATIONS

KEYSTONE MODULAR CONCRETE BLOCK RETAINING WALL

PART 1: GENERAL

1.01 Description

A. Work shall consist of furnishing and construction of a KEYSTONE 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 - concreta gray - standard manufacturers' color may be specified by the Owner.
face finish - sculptured rock face in angular tri-planer 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 22" (D) minimum;
unit weight - 100 lbs/unit minimum for standard weight aggregates;
inter-unit shear strength - 1000 plf minimum at 2 psi normal pressure;
geogrid/unit peak connection strength - 1000 plf minimum at 2 psi normal force.

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) <15 for walls shorter than 12 ft. and <10 for wall taller than 12ft. and Liquid Limit <40 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 T-99 for walls up to 12 ft. tall and 98% for walls taller than 12 ft. The moisture content of the backfill material prior to and during compaction shall be uniformly distributed throughout each layer and shall be + 2% to - 2% 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.

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. One soil boring shall be required every one hundred feet along the entire length of the wall. Copies of all boring reports shall be provided to the Howard County Inspector Prior to the start of construction.
4. 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.
5. 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.
6. Walls shall not be constructed on uncertified fill materials.
7. Walls shall not be constructed within a Howard Co. right-of-way or easement.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Signature	Date
CHIEF, DEVELOPMENT ENGINEERING DIVISION	4/29/10
CHIEF, DIVISION OF LAND DEVELOPMENT	5/3/10
DIRECTOR	5/3/10

APPROVED:
PLANNING BOARD OF HOWARD COUNTY
DATE 4/15/10

NO.	DATE	REVISION
2	1-11-2013	REVISE TITLE BLOCK
1	4-10-2012	REVISE SHEET NUMBER

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DEVELOPER:
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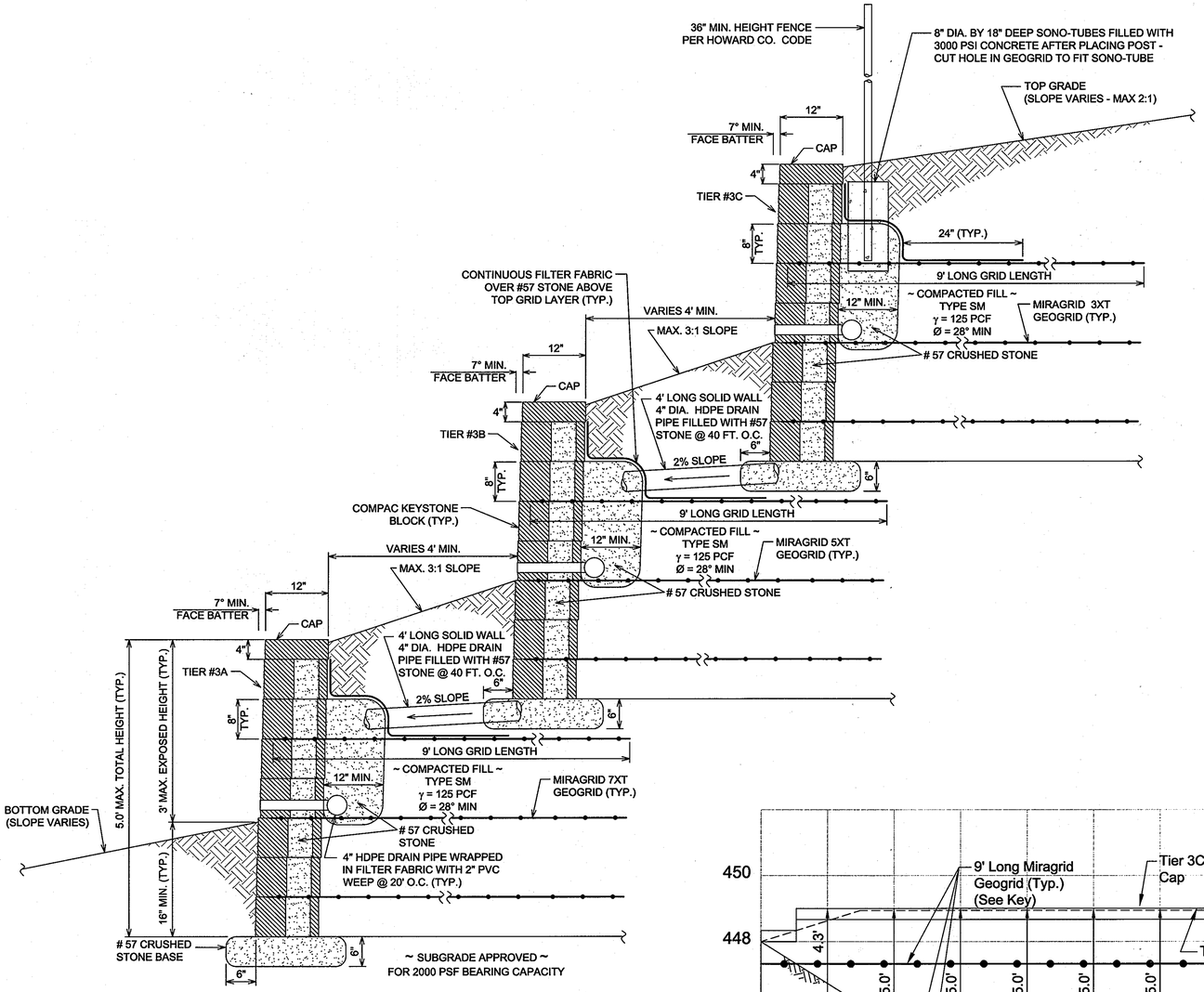
PLAT NOS. 22078-22079

TAX MAP: 16 – GRID: 10 – PARCEL: P/O 8 & 50
ZONED: PGCC (MULTI–USE SUBDISTRICT)
ELECTION DISTRICT NO. 3 – HOWARD COUNTY, MARYLAND

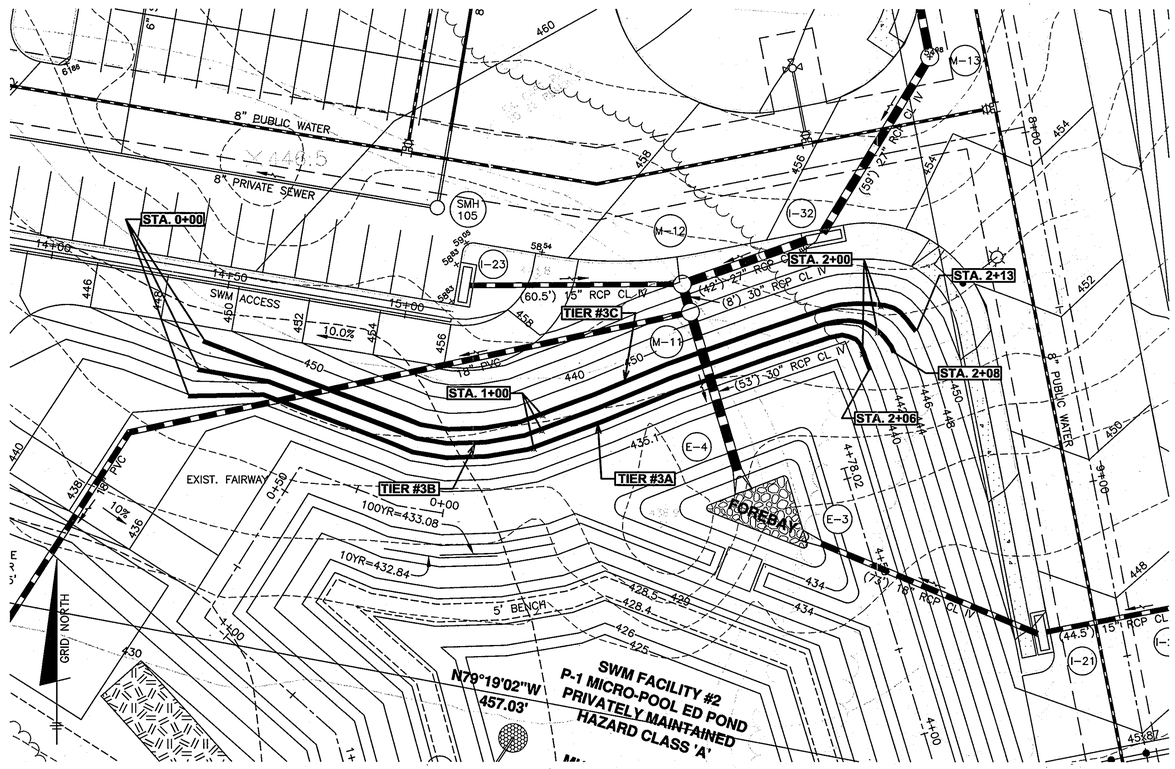
WALL 2 ELEVATION
AND CONSTRUCTION DETAILS

DATE:	APRIL, 2010	HCEA PROJECT NO. 08209–D
SCALE:	AS SHOWN	SHEET 27 OF 29



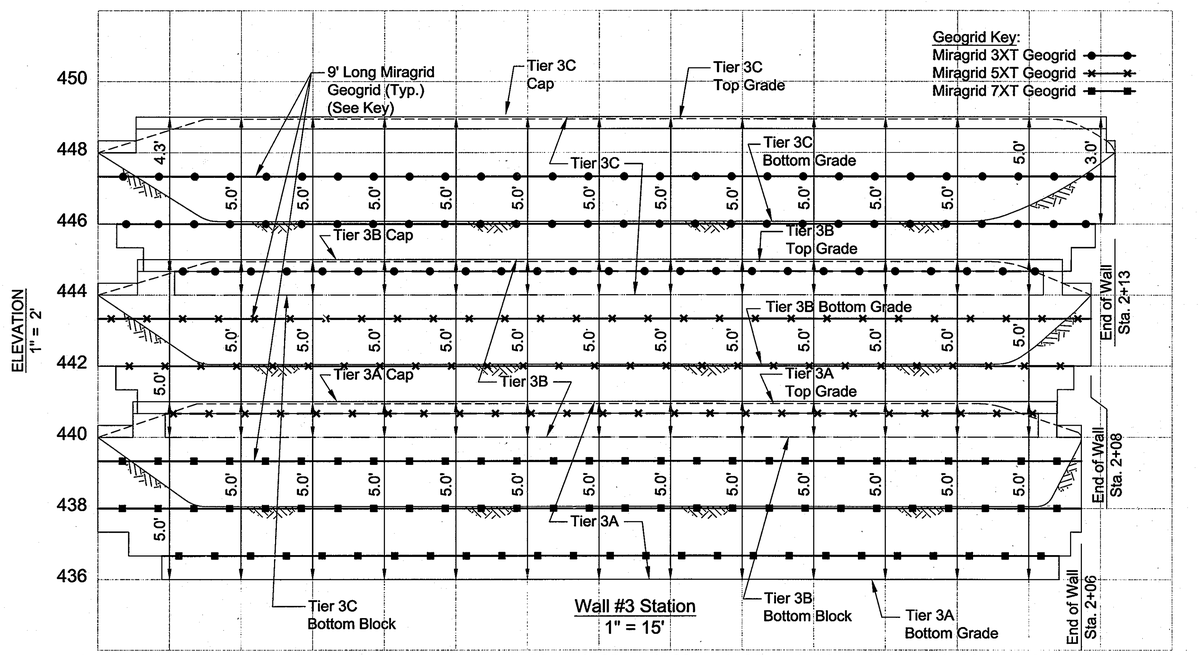
TYPICAL MAX 3' TALL TIERED WALL SECTION

N.T.S



WALL #3 PLAN

1" = 20'



WALL #3 ELEVATION

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	4/29/10 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	5/3/10 DATE
DIRECTOR	5/3/10 DATE

APPROVED:
PLANNING BOARD OF HOWARD COUNTY
DATE 4/15/10

NO.	DATE	REVISION
2	1-11-2013	REVISE TITLE BLOCK
1	4-10-2012	REVISE SHEET NUMBER

HILLIS-CARNES ENGINEERING ASSOCIATES
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STATE OF MARYLAND — ROBERT W. STURGILL — No. 14494 — PROFESSIONAL ENGINEER

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DEVELOPER:
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TOWN SQUARE AT TURF VALLEY

(CERTIFIED LEVEL RATED GREEN BUILDING PROJECT)
PARCELS 31 & 32 AND OPEN SPACE LOTS 4 & 5
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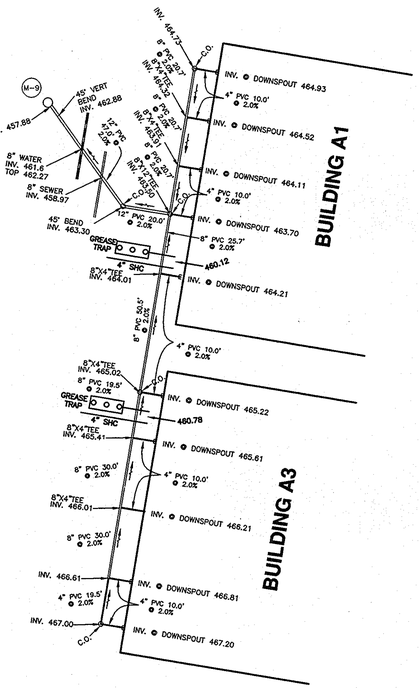
PLAT NOS. 22078-22079

TAX MAP: 16 – GRID: 10 – PARCEL: P/O 8 & 50
ZONED: PGCC (MULTI-USE SUBDISTRICT)
ELECTION DISTRICT NO. 3 – HOWARD COUNTY, MARYLAND

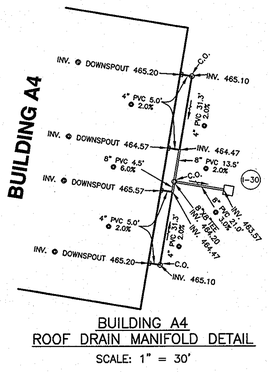
TIERED WALL 3 PLAN AND DETAILS

DATE:	APRIL, 2010	HCEA PROJECT NO.	08209-D
SCALE:	AS SHOWN	SHEET	28 OF 29

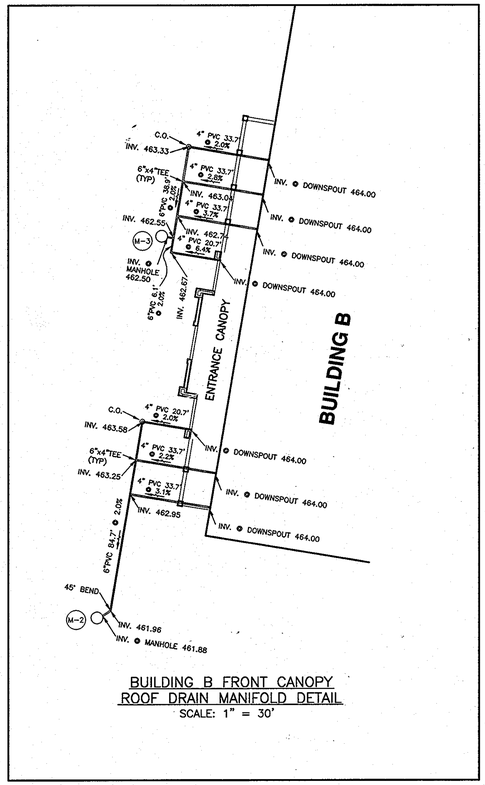
SDP-10-027



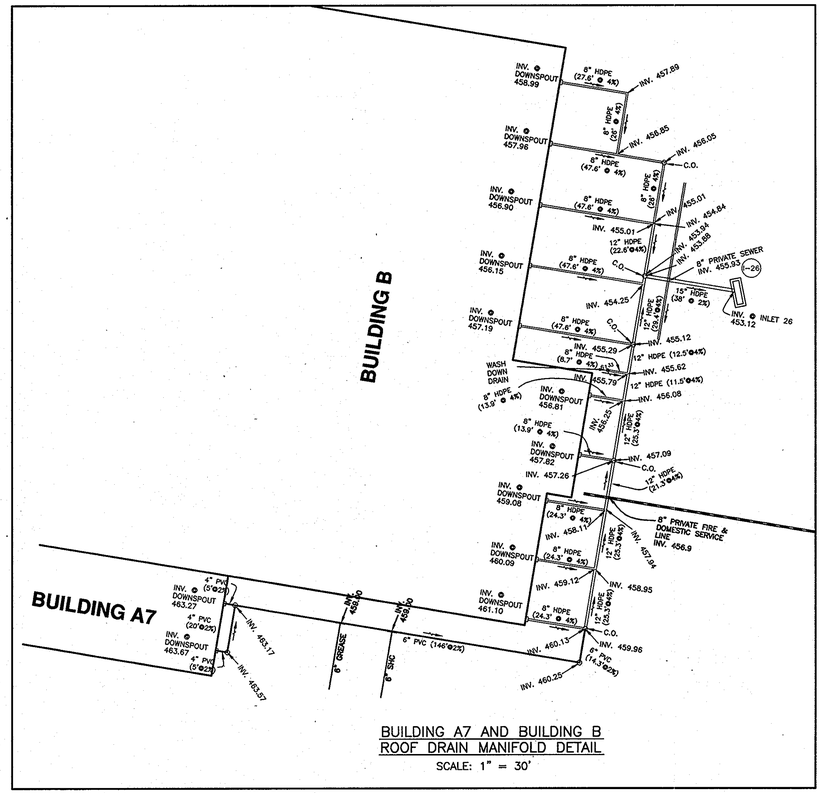
BUILDING A1 & A3
ROOF DRAIN MANIFOLD DETAIL
SCALE: 1" = 30'



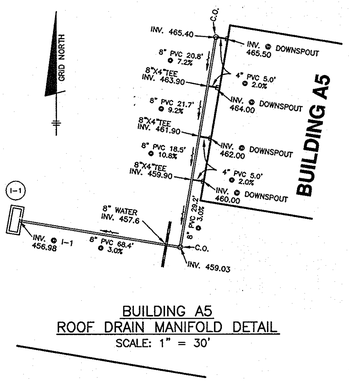
BUILDING A4
ROOF DRAIN MANIFOLD DETAIL
SCALE: 1" = 30'



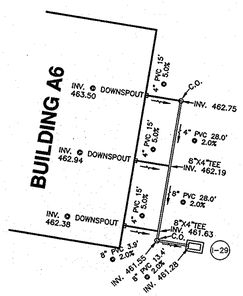
BUILDING B FRONT CANOPY
ROOF DRAIN MANIFOLD DETAIL
SCALE: 1" = 30'



BUILDING A7 AND BUILDING B
ROOF DRAIN MANIFOLD DETAIL
SCALE: 1" = 30'



BUILDING A5
ROOF DRAIN MANIFOLD DETAIL
SCALE: 1" = 30'



BUILDING A6
ROOF DRAIN MANIFOLD DETAIL
SCALE: 1" = 30'

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 4/15/10

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/9/12

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 4/24/12

DIRECTOR — DATE 4/24/12

NO.	DATE	REVISION
1	1-11-2013	REVISE TITLE BLOCK

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(P) 301-371-3505 (F) 301-371-3506
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. 22958, Expiration Date 7-22-2013.

STATE OF MARYLAND — BRIAN F. CLEARY — 22958 — REGISTERED PROFESSIONAL ENGINEER — 4/9/2012

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

DEVELOPER:
MANGIONE ENTERPRISES OF TURF VALLEY, LP
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

TOWN SQUARE AT TURF VALLEY

(CERTIFIED LEVEL RATED GREEN BUILDING PROJECT)
PARCELS 'J1' & 'J2' AND OPEN SPACE LOTS 4 & 5
TURF VALLEY PROFESSIONAL BUILDINGS
PLAT NOS. 22078-22079

TAX MAP: 16 — GRID: 10 — PARCEL: P/O 8 & 50
ZONED: POCC (MULTI-USE SUBDISTRICT)
ELECTION DISTRICT NO. 3 — HOWARD COUNTY, MARYLAND

ROOF MANIFOLD DETAILS

DATE:	MARCH, 2012	BEI PROJECT NO.	2208
SCALE:	AS SHOWN	SHEET	29 OF 29

SDP-10-027

P:\2208 Town Square at Turf Valley\dwg_CURRENT\8021_s02-05.dwg, 4/10/2012 8:39:02 AM