

GENERAL NOTES

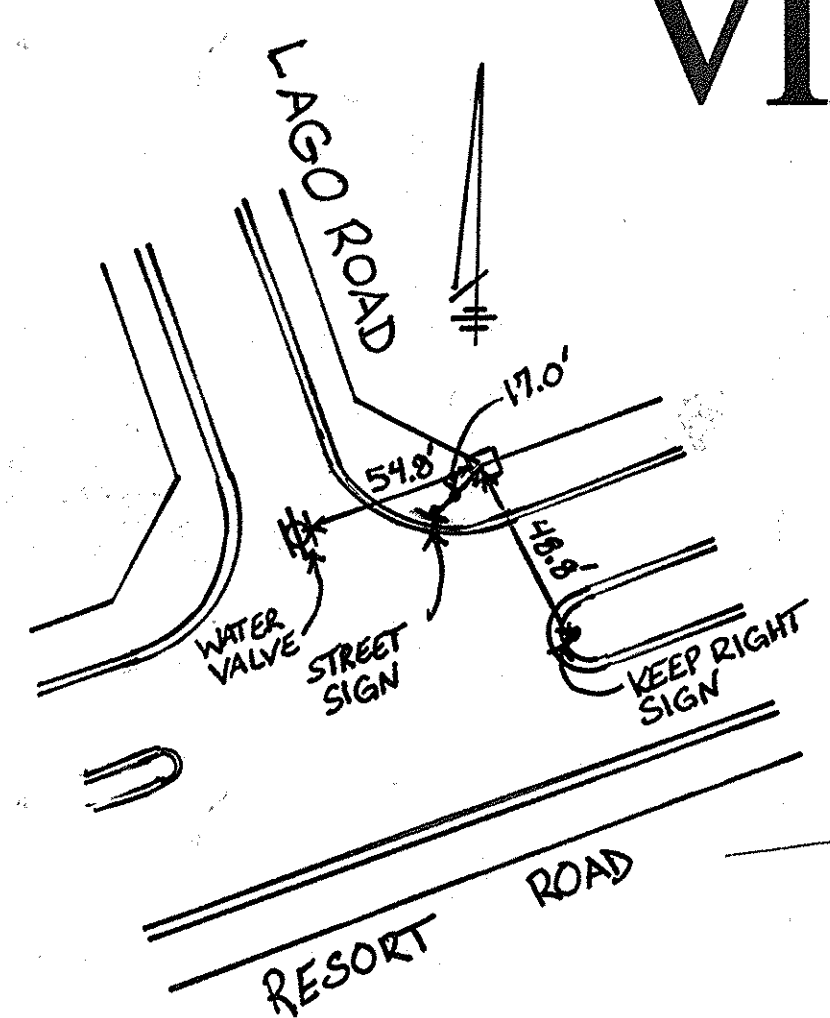
- 1.) THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
- 2.) BOUNDARY IS BASED ON A FIELD RUN MONUMENTED SUBURBAN BOUNDARY SURVEY PERFORMED BY JOHN A. WENZEL IN MARCH, 2006.
- 3.) THE EXISTING TOPOGRAPHY SHOWN ON SITE IS BASED ON AN AERIAL TOPOGRAPHIC SURVEY PERFORMED BY WINGS AERIAL MAPPING CO., INC. IN OR ABOUT JANUARY, 2006.
- 4.) THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM, HOWARD COUNTY MONUMENT NOS. 16E AND 16D WERE USED FOR THIS PROJECT.
- 5.) WATER S PUBLIC. THE CONTRACT NUMBER IS 24-4445-D. THE DRAINAGE AREA IS LITTLE PATUXENT.
- 6.) SEWER S PUBLIC. THE CONTRACT NUMBER IS 24-4445-D. THE DRAINAGE AREA IS LITTLE PATUXENT.
- 7.) STORMWATER MANAGEMENT QUALITY AND QUANTITY CONTROL IS PROVIDED WITHIN THE EXTENDED DETENTION FACILITY WITH MICROPOOL AND THE OFFLINE RECHARGE CHAMBER. THE POND SHALL BE PRIVATELY OWNED AND JOINTLY MAINTAINED. THE RECHARGE CHAMBER SHALL BE PRIVATELY OWNED AND PRIVATELY MAINTAINED.
- 8.) EXISTING UTILITIES SHOWN ARE BASED ON CONTRACT DRAWINGS, AERIAL AND FIELD SURVEYED LOCATIONS.
- 9.) THERE ARE NO WETLANDS OR 100-YEAR FLOODPLAIN LOCATED WITHIN THE BOUNDARIES OF VILLAGES AT TURF VALLEY, PHASE 1, SECTION 1.
- 10.) WETLANDS LOCATIONS SHOWN ARE BASED ON APPROVED STUDIES AS SHOWN ON COMPREHENSIVE SKETCH PLAN OF TURF VALLEY. WETLANDS ARE BASED ON A STUDY CONDUCTED BY EXPLORATION RESEARCH FOR S-86-13 AND VERIFIED BY ECO-ENGINEERING PROFESSIONALS, INC. IN JUNE 2002 AND APRIL 2004 (FOR DEVELOPMENT IN AND AROUND PDS 1, K, L, M, N, O, P, Q, & S).
- 11.) A NOISE STUDY IS NOT REQUIRED FOR VILLAGES AT TURF VALLEY, PHASE 1, SECTION 1.
- 12.) THE GEOTECHNICAL REPORT WAS PREPARED BY HULLIS CARNES ENGINEERING ASSOCIATES, INC. IN MARCH, 2006 AND SUPPLEMENTED IN AUGUST, 2007.
- 13.) THE SUBJECT PROPERTY IS ZONED PGCC PER THE 2-2-2004 COMPREHENSIVE ZONING PLAN AND THE "COMP LITE" ZONING AMENDMENTS EFFECTIVE 7-28-2006.
- 14.) TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO BURIAL GROUNDS, CEMETERIES OR HISTORIC STRUCTURES LOCATED ON THIS SITE.
- 15.) NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF WETLANDS, STREAMS, OR THEIR REQUIRED BUFFERS, 100-YEAR FLOODPLAIN OR 25% OR GREATER STEEP SLOPES THAT ARE AT LEAST 20,000 S.F. OF CONTIGUOUS AREA.
- 16.) THIS PROJECT IS LOCATED WITHIN THE METROPOLITAN DISTRICT.
- 17.) THE LOTS SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP WIDTH AND LOT AREA AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT.
- 18.) LANDSCAPING FOR THIS SUBMISSION IS PROVIDED IN ACCORDANCE WITH A CERTIFIED LANDSCAPE PLAN INCLUDED WITH THIS ROAD CONSTRUCTION PLAN SET IN ACCORDANCE WITH 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 \$9,750.00 (\$6,000.00 FOR 20 SHADE TREES, \$3,750.00 FOR 25 EVERGREENS).
- 19.) THIS PROJECT IS EXEMPT FROM HOWARD COUNTY FOREST CONSERVATION REQUIREMENTS UNDER SECTION 16.120(b)(1)(v) 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.
- 20.) RESERVATION OF PUBLIC UTILITY EASEMENTS
DEVELOPER RESERVES UNTO ITSELF, ITS SUCCESSORS AND ASSIGNS, ALL EASEMENTS SHOWN ON THIS PLAN FOR WATER, SEWER, STORM DRAINAGE, OTHER PUBLIC UTILITIES, LOCATED IN, ON, OVER AND THROUGH OPEN SPACE LOTS 68-69. ANY CONVEYANCES OF THE AFORESAID LOTS/PARCELS SHALL BE SUBJECT TO THE EASEMENTS HEREIN RESERVED, WHETHER OR NOT EXPRESSLY STATED IN THE DEED(S) CONVEYING SAID LOTS/PARCELS. UPON COMPLETION OF THE PUBLIC UTILITIES AND THEIR ACCEPTANCE BY HOWARD COUNTY, THE COUNTY SHALL ACCEPT THE EASEMENTS AND RECORD THE DEED(S) OF EASEMENT IN THE LAND RECORDS OF HOWARD COUNTY.

- 21.) THIS SUBDIVISION IS SUBJECT TO SECTION 10.1422 OF THE HOWARD COUNTY CODE. PUBLIC WATER AND/OR SEWER SERVICE HAS BEEN ORDERED UNDER THE TERMS AND PROVISIONS THEREOF. EFFECTIVE DATE: 11/16/09
- 22.) THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT 410-313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- 23.) THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- 24.) STREET LIGHT PLACEMENT AND 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 FEET SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
- 25.) TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO PLACEMENT OF ANY ASPHALT.
- 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"x2" GALVANIZED STEEL PERFORATED SQUARE TUBE SLEEVE (12 GAUGE)-3" LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
- 27.) THIS PROJECT IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE ZONING REGULATIONS EFFECTIVE APRIL 13, 2004.
- 28.) WP-05-074 A REQUEST TO WAIVE SECTION 16.116(c)(2)(i) TO ALLOW GRADING, REMOVAL OF VEGETATIVE COVER AND TREE, PAVING AND NEW STRUCTURES WITHIN 75 FEET STREAM BUFFER FOR THE PURPOSE OF A RETAINING WALL FOR RESORT ROAD AT STATION 39+00 WAS DENIED ON MARCH 10, 2005. THE REMAINING DISTURBANCES IDENTIFIED ON THESE PLANS BY THEIR ENVIRONMENTAL IMPACT ID NUMBER WERE DEEMED AS NECESSARY BY UPZ DURING THE REVIEW OF 5-03-01.
- 29.) THIS PROJECT IS SUBJECT TO THE TRAFFIC STUDY PREPARED BY THE TRAFFIC GROUP, INC. UNDER S-86-13, AND UPDATED IN MARCH 2004.
- 30.) THE VILLAGES AT TURF VALLEY SUBDIVISION (PHASES 1-4) CONSTITUTED 241 TOTAL UNITS (145 SFA, 35 SFD, AND 61 CONDOMINIUM), WHICH MET THE SKETCH PLAN MILESTONE DATE OF JANUARY 1, 2001 THROUGH JUNE 30, 2002 FOR BOTH PHASE I (A) (131 UNITS) & PHASE II (110 UNITS) AS ESTABLISHED BY THE REVISION PHASING PLAN DATED JUNE 21, 2000. UNDER P-08-013, 42 CONDOMINIUM UNITS THAT WERE APPROVED WERE USED FOR OAKMONT AT TURF VALLEY (F-02-082). THESE 42 CONDOMINIUM UNITS WERE NOT PREVIOUSLY INCLUDED WITH THE OAKMONT AT TURF VALLEY (F-02-082) PLANS. IN ORDER TO RECEIVE BUILDING ALLOCATIONS, THESE 42 CONDOMINIUM UNITS WERE SHOWN AND APPROVED ON THE PRELIMINARY PLAN FOR THE VILLAGES AT TURF VALLEY (F-06-013). THE SECOND AMENDMENT TO THE TURF VALLEY MULTI-USE FINAL DEVELOPMENT PLAN WAS RECORDED ON NOVEMBER 30, 2007. INCREASING THE PROJECTED UNITS IN THE OAKMONT AT TURF VALLEY AREA FROM 150 TO 200, AS A RESULT, THOSE 42 UNITS ARE NO LONGER A PART OF THE VILLAGES AT TURF VALLEY WHICH LEAVES UNIT TOTAL AT 199. HOWEVER, WITH THE APPROVAL OF W-08-009 AN ADDITIONAL 21 UNITS WERE ADDED TO THE VILLAGES AT TURF VALLEY. THE FINAL UNIT TOTAL OF THIS SUBDIVISION COMES TO 220.
- 31.) WP-08-009, A WAIVER PETITION TO SECTION 16.145(c) AND 16.146 (a) WHICH REQUIRES A SUBMISSION OF A SKETCH PLAN AND PRELIMINARY PLAN, RESPECTIVELY TO ALLOW THE ADDITION OF 21 UNITS TO THIS PROJECT WAS APPROVED ON 12-12-2007 WITH THE FOLLOWING CONDITIONS:
 1. PETITIONER SHALL COMPLY WITH ALL RELEVANT PARKING REGULATIONS AT THE TIME OF SITE DEVELOPMENT PLAN SUBMISSION FOR ALL DEVELOPMENT PROPOSED ON LOT 103 OF "VILLAGES AT TURF VALLEY, PHASE 2" (F-08-084).
 2. PETITIONER SHALL COMPLY WITH ALL RELEVANT STORMWATER MANAGEMENT REGULATIONS AT THE TIME OF SITE DEVELOPMENT PLAN SUBMISSION FOR PROPOSED DEVELOPMENT OF LOT 103 OF "VILLAGES AT TURF VALLEY, PHASE 2" (F-08-084).
- 32.) OPEN SPACE DEDICATION FOR LOTS 68 AND 69:
THE OPEN SPACE SHOWN HEREON IS HEREBY DEDICATED TO A PROPERTY OWNERS ASSOCIATION FOR THE RESIDENTS OF THIS SUBDIVISION AND RECORDING REFERENCES OF THE ARTICLES OF INCORPORATION AND RESTRICTIONS ARE SHOWN HEREON.
- 33.) PER HOWARD COUNTY COMMENTS, MOUNT VILLA PARKWAY IS LABELED AS A "PUBLIC ACCESS STREET". HOWEVER, IT HAS BEEN DESIGNED AS A MAJOR COLLECTOR BASED ON PROJECTED FUTURE ADTs.
- 34.) WATER AND SEWER SERVICE TO THESE LOTS WILL BE GRANTED UNDER THE PROVISIONS OF SECTION 16.123 OF THE HOWARD COUNTY CODE.
- 35.) PUBLIC WATER AND SEWAGE ALLOCATION WILL BE GRANTED AT THE TIME OF ISSUANCE OF THE BUILDING PERMIT IF CAPACITY IS AVAILABLE AT THAT TIME.

VILLAGES AT TURF VALLEY

PHASE 1 SECTION 1

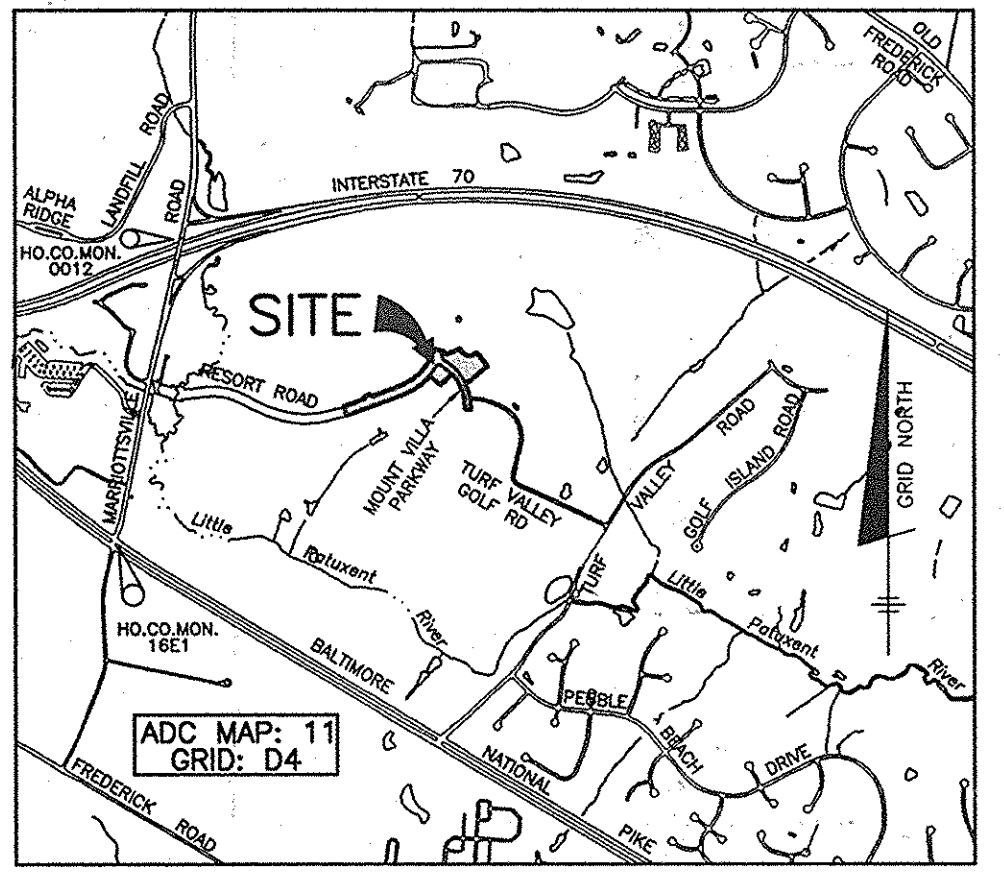
ROADS, STORMWATER MANAGEMENT AND STORM DRAIN CONSTRUCTION PLANS



BENCHMARKS NAD'83 HORIZONTAL

HO. CO. #16E1 (AKA: 3439001)
STAMPED BRASS DISK SET ON TOP OF A 3" DEEP COLUMN OF CONCRETE.
N 593250.960' E 1340192.70'
ELEVATION: 463.981'

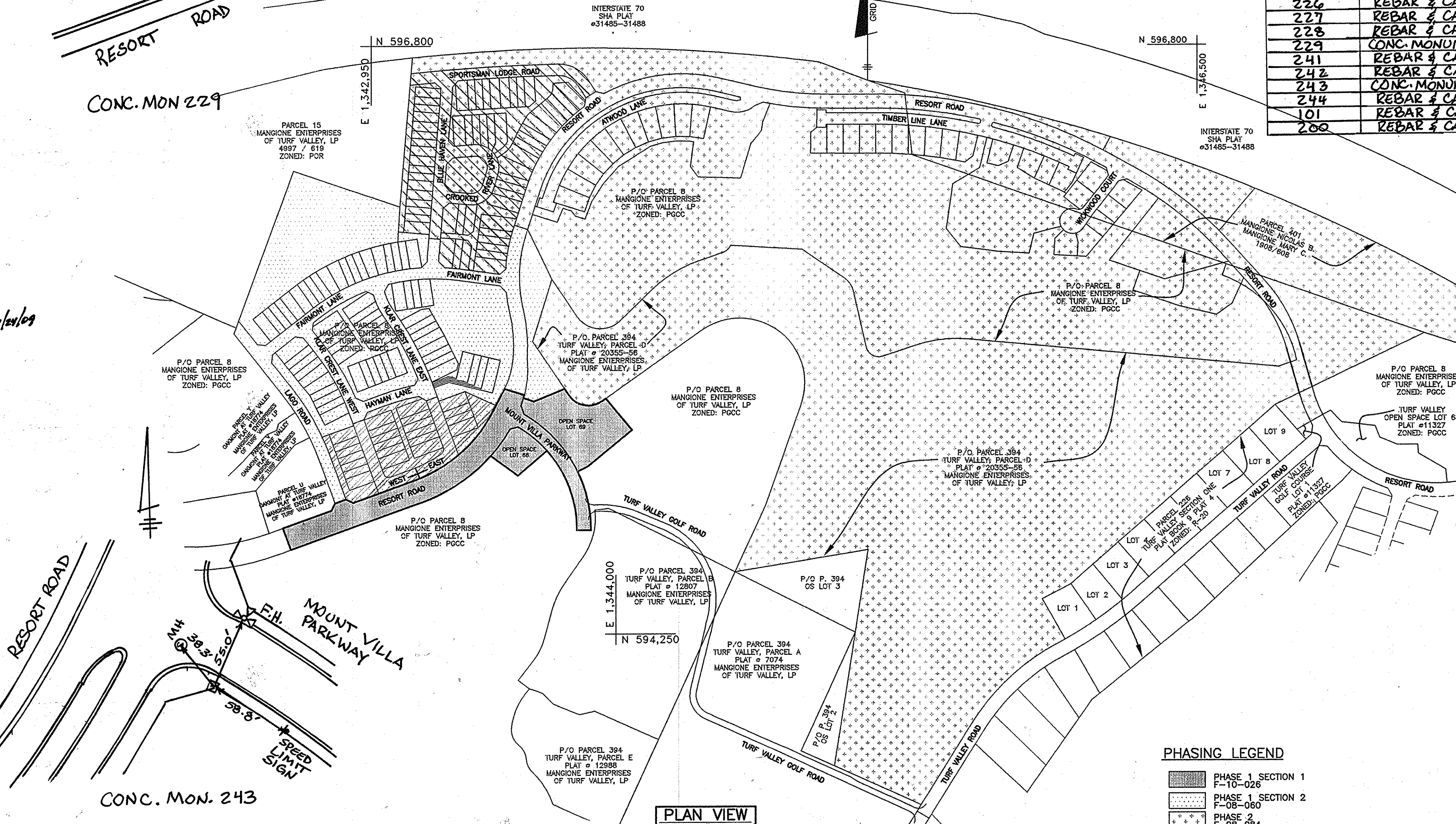
HO. CO. #0012 (AKA: 3439001)
STAMPED BRASS DISK SET ON TOP OF A 3" DEEP COLUMN OF CONCRETE.
N 596502.760' E 1340864.37'
ELEVATION: 486.298'



RIGHT OF WAY ELEVATION CHART

| R/W PT. NO. | DESCRIPTION | ELEV. |
|-------------|----------------|--------|
| 100 | REBAR & CAP | 493.66 |
| 102 | REBAR & CAP | 495.03 |
| 129 | REBAR & CAP | 488.06 |
| 130 | REBAR & CAP | 486.86 |
| 134 | REBAR & CAP | 488.10 |
| 135 | REBAR & CAP | 496.96 |
| 136 | REBAR & CAP | 482.07 |
| 137 | REBAR & CAP | 482.02 |
| 226 | REBAR & CAP | 481.31 |
| 227 | REBAR & CAP | 481.46 |
| 228 | REBAR & CAP | 489.33 |
| 229 | CONC. MONUMENT | 492.00 |
| 241 | REBAR & CAP | 479.45 |
| 242 | REBAR & CAP | 478.80 |
| 243 | CONC. MONUMENT | 480.27 |
| 244 | REBAR & CAP | 481.32 |
| 101 | REBAR & CAP | 494.83 |
| 200 | REBAR & CAP | 494.34 |

- AS-BUILT NOTES:**
- 1) HORIZONTAL DATUM FOR THIS AS-BUILT IS BASED ON THE MARYLAND STATE REFERENCE SYSTEM. NAD 83/AD 07 AS PROJECTED FROM HO. CO. GEODETIC CONTROL STATIONS 16E1 AND CO.12. VERTICAL DATUM FOR THIS AS-BUILT IS NORTH AMERICAN VERTICAL DATUM NAVD 88 AS PROJECTED FROM THE ABOVE MENTIONED HOWARD COUNTY GEODETIC CONTROL STATIONS.
 - 2) THE INSTRUMENTS USED IN PERFORMING THIS AS-BUILT WERE A 5" TOTAL STATION AND PRISM AND RTK GPS.
 - 3) THIS AS-BUILT WAS PERFORMED BY BENCHMARK ENGINEERING INC.



SITE ANALYSIS DATA CHART

GENERAL SITE DATA

- 1.) PRESENT ZONING: PGCC MULTI-USE SUBDISTRICT
- 2.) APPLICABLE DPZ FILE REFERENCES: S-03-01, WP-05-074, WP-08-009, S-86-13, P-06-13, #24-445-D
- 3.) PROPOSED USE OF SITE: RESIDENTIAL
- 4.) PROPOSED WATER AND SEWER SYSTEMS: PUBLIC

AREA TABULATION

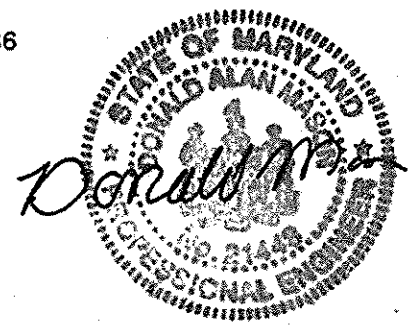
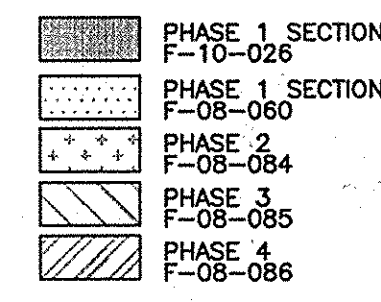
- 1.) GROSS TRACT AREA: 6.25 AC.±
- 2.) AREA WITHIN 100-YEAR FLOODPLAIN: 0.00 AC.±
- 3.) TOTAL AREA OF 25% OR GREATER STEEP SLOPES: 0.12 AC.±
AREA NOT IN FLOODPLAIN (FOR NTA CALC): 0.12 AC.±
- 4.) NET TRACT AREA: 6.13 AC.±
- 5.) TOTAL NUMBER OF LOTS ALLOWED PER ZONING: NA
- 6.) TOTAL NUMBER OF RESIDENTIAL UNITS/LOTS PROPOSED ON THIS SUBMISSION: 0
- 7.) AREA OF BUILDABLE LOTS: NA
AREA OF OPEN SPACE LOTS: 2.58± AC.
AREA OF NON-BUILDABLE BULK PARCELS: 2.58± AC.
AREA OF PUBLIC RIGHT-OF-WAY: 3.67± AC.

OPEN SPACE DATA

OPEN SPACE REQUIRED (50% OF PGCC DISTRICT) (15% OF MULTI-USE SUBDISTRICT)
TOTAL AREA OF THIS PHASE (PHASE 1 SECTION 1): 6.25± AC.
TOTAL AREA OF OPEN SPACE REQUIRED: 0.94± AC.
TOTAL SPACE PROVIDED (41.3%): 2.58± AC.
NON-CREDITED (LESS THAN 35' IN WIDTH): NA
CREDITED: 2.58± AC.±

PHASE 1 SECTION 1 HAS 1.64 ACRES OF OPEN SPACE ABOVE THE REQUIREMENT. THIS ACRES SHALL BE CREDITED TOWARD THE OPEN SPACE OBLIGATION FOR PHASE 1 SECTION 2 (F-08-060).

PHASING LEGEND



AS-BUILT CERTIFICATE
I hereby certify that the data shown on this plan were constructed as shown on the AS-BUILT plan.
Donald Mason, P.E. No. 27949 Date 3-28-14

VILLAGES AT TURF VALLEY PHASING CHART

| PHASE | S.F.A. | S.F.D. | CONDOMINIUM | TOTAL |
|-------------------------|--------|--------|------------------|-------|
| 1 (F-10-026/F-08-060) | 63 | 0 | 0 | 63 |
| 2 (F-08-084) | 0 | 32 | 42 | 74 |
| 3 (F-08-085) | 59 | 0 | 0 | 59 |
| 4 (F-08-086) | 23 | 0 | 0 | 23 |
| MAINT SHOP (SDF-08-086) | 0 | 0 | 1 (Access. Apt.) | 1 |
| TOTAL | 145 | 32 | 43 | 220 |

- 31.) WP-10-09, A REQUEST TO WAIVE SECTION 16.116(b)(1), TO ALLOW TO CONDUCT FILLING AND GRADING IN AREAS CONTAINING REGULATED STEEP SLOPES WAS APPROVED ON 4-11-2010 SUBJECT TO THE FOLLOWING CONDITIONS:
 1. THE PROPOSED PROJECT MUST CONFORM TO THE REQUIREMENTS OF SECTION 16.129 OF THE HOWARD COUNTY CODE IF FILL DIRT FROM PREVIOUS GOLF COURSE FEATURES IS TO BE USED. CONSISTENT WITH THE MARCH 18, 2009 AGREEMENT BETWEEN THE HOWARD COUNTY BUREAU OF ENVIRONMENTAL HEALTH AND THE PETITIONER WITH REGARD TO THE RE-USE OF MATERIAL CONTAINED IN THE NUALAN STOCK PILE IF SUCH DIRT IS TO BE USED, IT MUST BE USED IN CONJUNCTION WITH SOIL COURSE FEATURES TO AVOID ADDITIONAL REGRADING.
 2. IF GOLF COURSE FILL IS TO BE USED, THE HEALTH DEPT. MUST BE NOTIFIED PRIOR TO THE START OF CONSTRUCTION OF MOVEMENT OR DIRT TO BE ALLOCATED ANY CORRELATION TO INSTRUCT.
 3. A NOTE MUST BE ADDED TO ALL PLANS ACCOMPANYING THIS PROJECT STATING "ANY USE OF FILL DIRT FROM GOLF COURSE FEATURES SHALL CONFORM TO HOWARD COUNTY CODE 16-129. THE HOWARD COUNTY BUREAU OF ENVIRONMENTAL HEALTH MUST BE NOTIFIED PRIOR TO MOVEMENT OF GOLF COURSE FILL DIRT."

APPROVED: DEPARTMENT OF PUBLIC WORKS
 With 2. March 11-18-09
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Kent Sheehy 11-24-09
 CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: DEVELOPMENT ENGINEERING DIVISION
 [Signature] 11/26/09
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

BENCHMARK ENGINEERING, INC.
 8480 BALTIMORE NATIONAL PIKE A SUITE 418
 ELKLOFT CITY, MARYLAND 21043
 PHONE: 410-465-6105 FAX: 410-465-6544
 WWW.BE-CIVILENGINEERING.COM

VILLAGES AT TURF VALLEY
 PHASE 1 SECTION 1
 OPEN SPACE LOTS 68 thru 69

TITLE SHEET
 DATE: OCTOBER, 2009 BEI PROJECT NO. 1915
 SCALE: AS SHOWN SHEET 1 OF 13

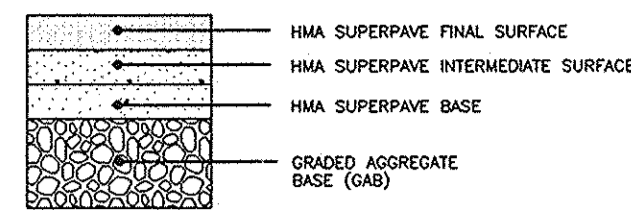
OWNER: MANGIONE ENTERPRISES OF TURF VALLEY, LIMITED PARTNERSHIP
 1205 YORK ROAD, PENTHOUSE LUTHERVILLE, MARYLAND 21093 410-825-8400

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

| CENTER LINE CURVE DATA | | | | | | |
|------------------------|----------------------|---------|---------|-----------|---------|---------------------|
| STREET NAME | STATION | RADIUS | ARC | DELTA | TANGENT | CHORD |
| RESORT | 27+29.45 TO 33+50.00 | 670.00' | 620.55' | 53°04'00" | 334.54' | N43°42'21"E 598.60' |

| ROAD CHART | | | | |
|-----------------------|-----------------|--------------|----------------------|-----------|
| STREET NAME | CLASSIFICATION | DESIGN SPEED | LIMITS | PVMT TYPE |
| RESORT ROAD | MAJOR COLLECTOR | 40 MPH | 21+31.90 TO 33+50.00 | P-4 |
| MOUNT VILLA PKWY | MAJOR COLLECTOR | 40 MPH | 0+00.00 TO 6+05.84 | P-4 |
| TURF VALLEY GOLF ROAD | PRIVATE ROAD | 30 MPH | 8+00.00 TO 11+62.22 | P-2 |

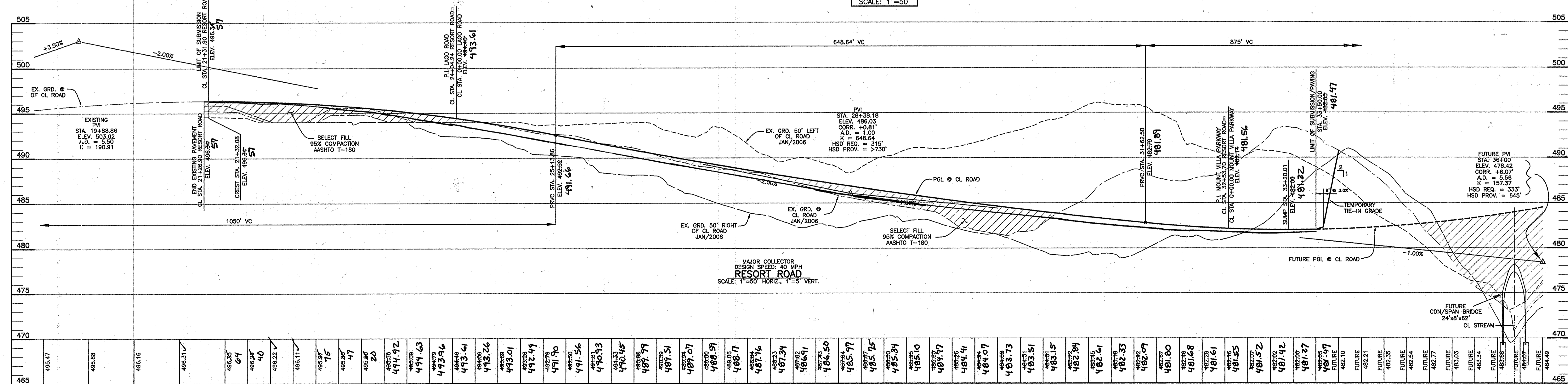
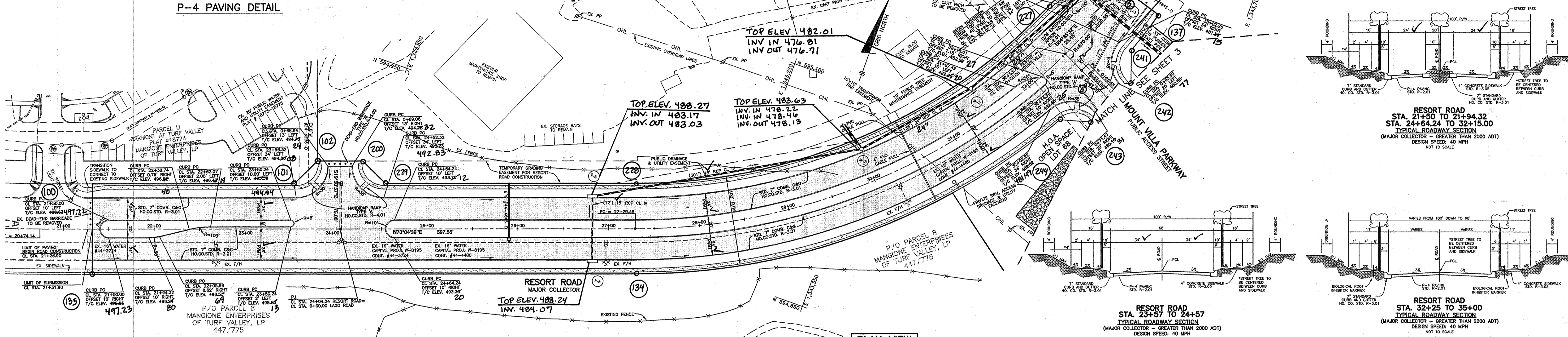
| CENTERLINE CONTROL DATA | | | | |
|-------------------------|----------|-------------|--------------|--|
| STREET NAME | STATION | NORTH | EAST | |
| RESORT ROAD | 21+31.90 | 594664.8904 | 1342585.9258 | |
| RESORT ROAD | 27+29.45 | 594868.5063 | 1343147.7198 | |
| LAGO ROAD | 0+00 | 594757.6884 | 1342841.9636 | |
| MOUNT VILLA PKWY | 0+00 | 595211.5842 | 134526.3930 | |
| MOUNT VILLA PKWY | 0+25.45 | 595200.6636 | 1343549.3837 | |



| SECTION NUMBER | ROAD AND STREET CLASSIFICATION | CALIFORNIA BEARING RATIO (CBR) | | | | | |
|----------------|--------------------------------|--------------------------------|---------|-----|---------|---------|-----|
| | | 3 TO <5 | 5 TO <7 | 7 | 3 TO <5 | 5 TO <7 | 7 |
| P-4 | MINOR COLLECTORS: | MIN HMA WITH GAB | | | | | |
| | NON-RESIDENTIAL | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| | MAJOR COLLECTORS | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| | | 4.0 | 4.0 | 3.0 | 6.0 | 5.0 | 3.0 |
| | | 13.0 | 7.0 | 4.0 | 6.0 | 6.0 | 6.0 |

P-4 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 |
|----------------|--------------------------------|--------------------------------|---------|---------|-----|---------|---------|-----|
| P-4 | MINOR COLLECTORS: | MIN HMA WITH GAB | | | | | | |
| | NON-RESIDENTIAL | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| | MAJOR COLLECTORS | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| | | 4.0 | 4.0 | 3.0 | 6.0 | 5.0 | 3.0 | 3.0 |
| | | 13.0 | 7.0 | 4.0 | 6.0 | 6.0 | 6.0 | 6.0 |

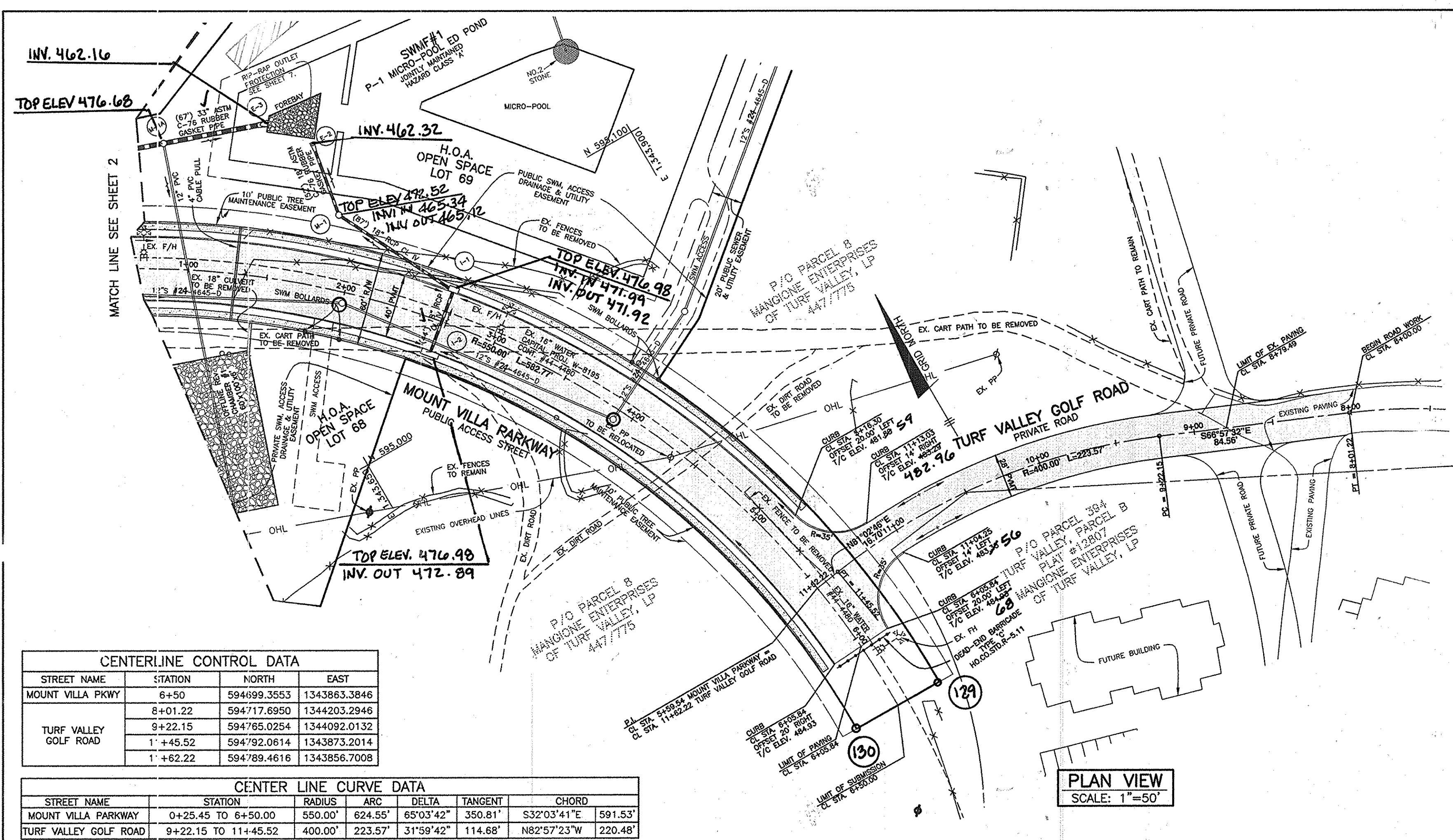


APPROVED: DEPARTMENT OF PUBLIC WORKS
William J. Marshall 11-18-09
 CHIEF, BUREAU OF HIGHWAYS
 APPROVED: DEPARTMENT OF PLANNING AND ZONING
Robert J. ... 11-24-09
 CHIEF, DIVISION OF LAND DEVELOPMENT
... 11/20/09
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

BENCHMARK ENGINEERING, INC.
 8480 BALTIMORE NATIONAL PIKE & SUITE 418
 ELICOTT CITY, MARYLAND 21043
 PHONE: 410-465-6105 FAX: 410-465-6644
 WWW.BEV-ENGINERING.COM
 10/26/09

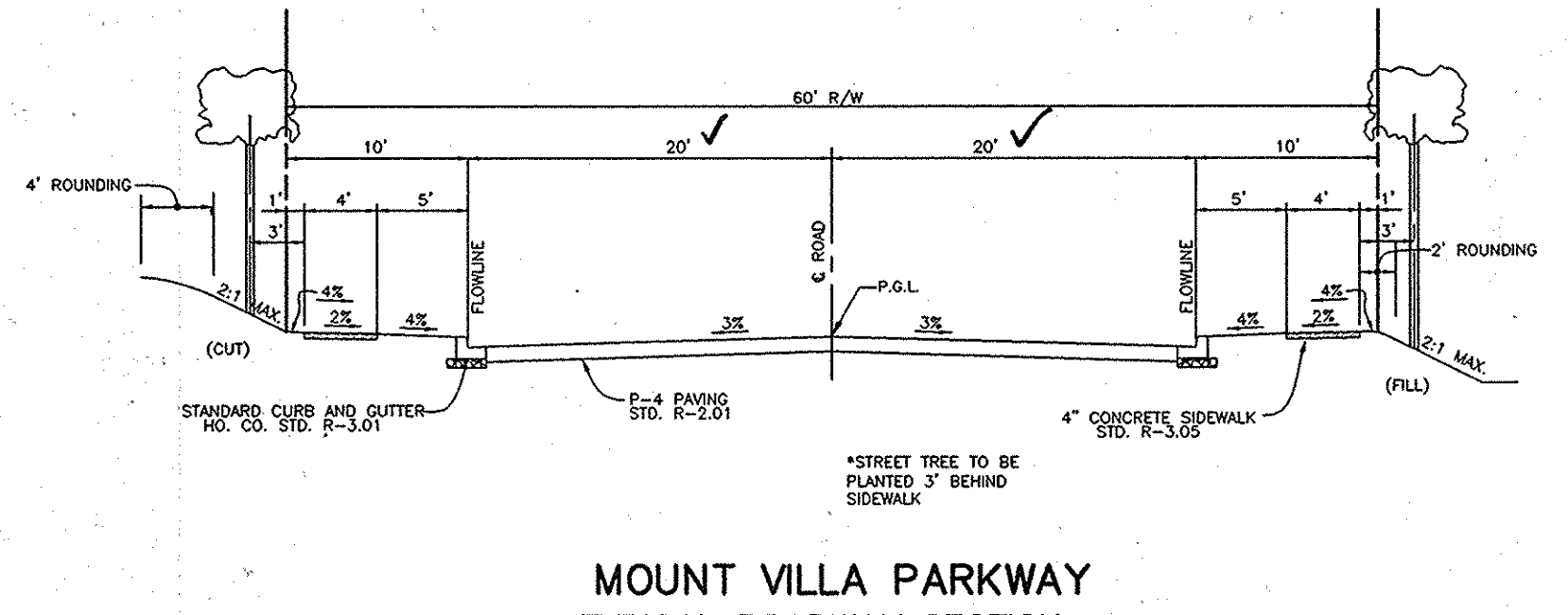
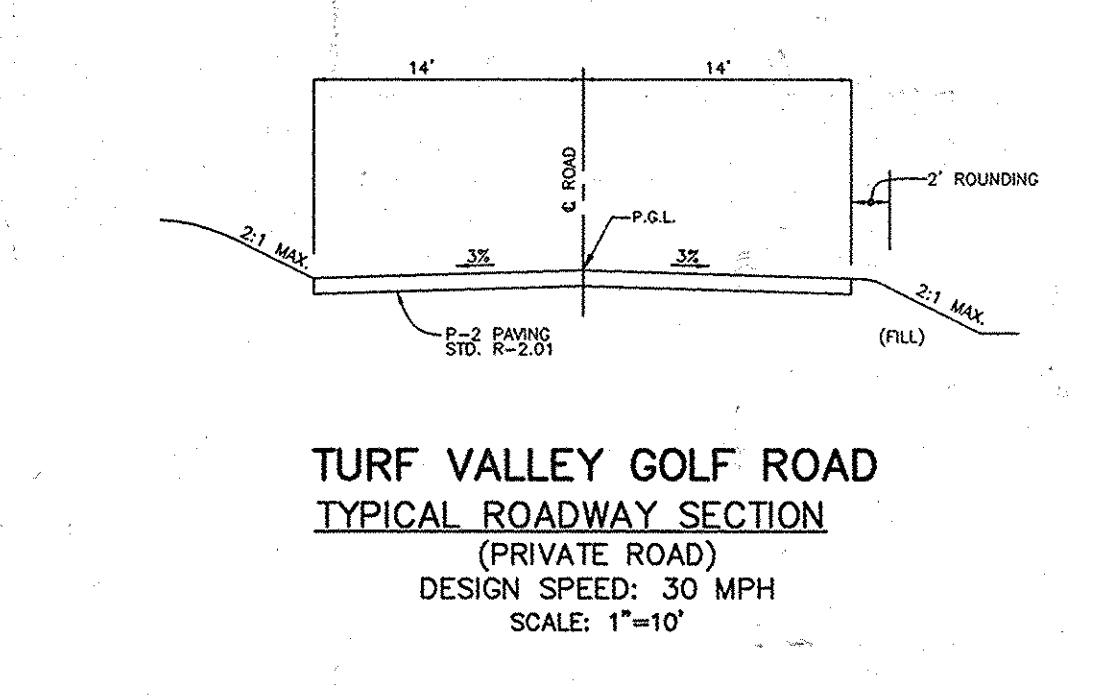
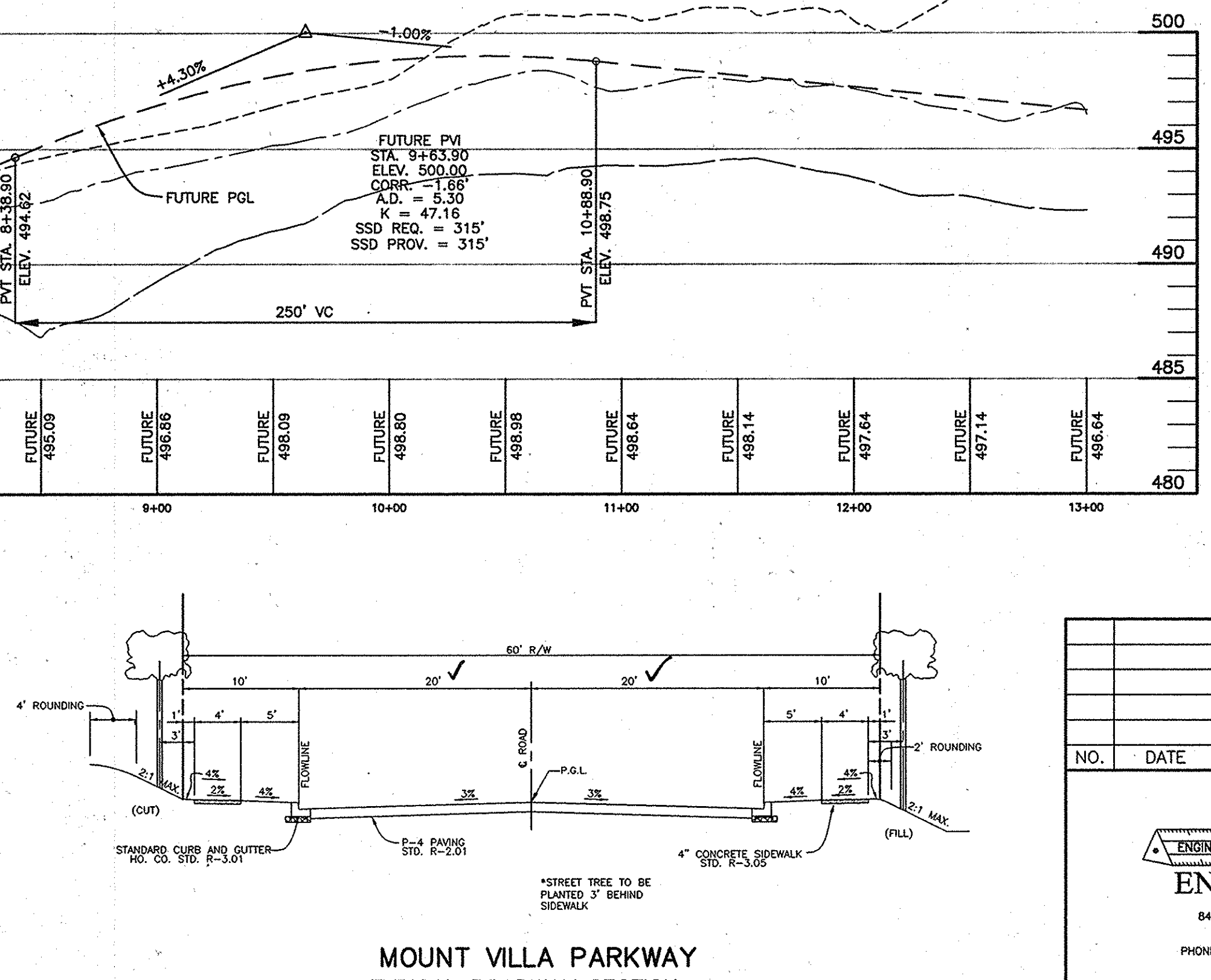
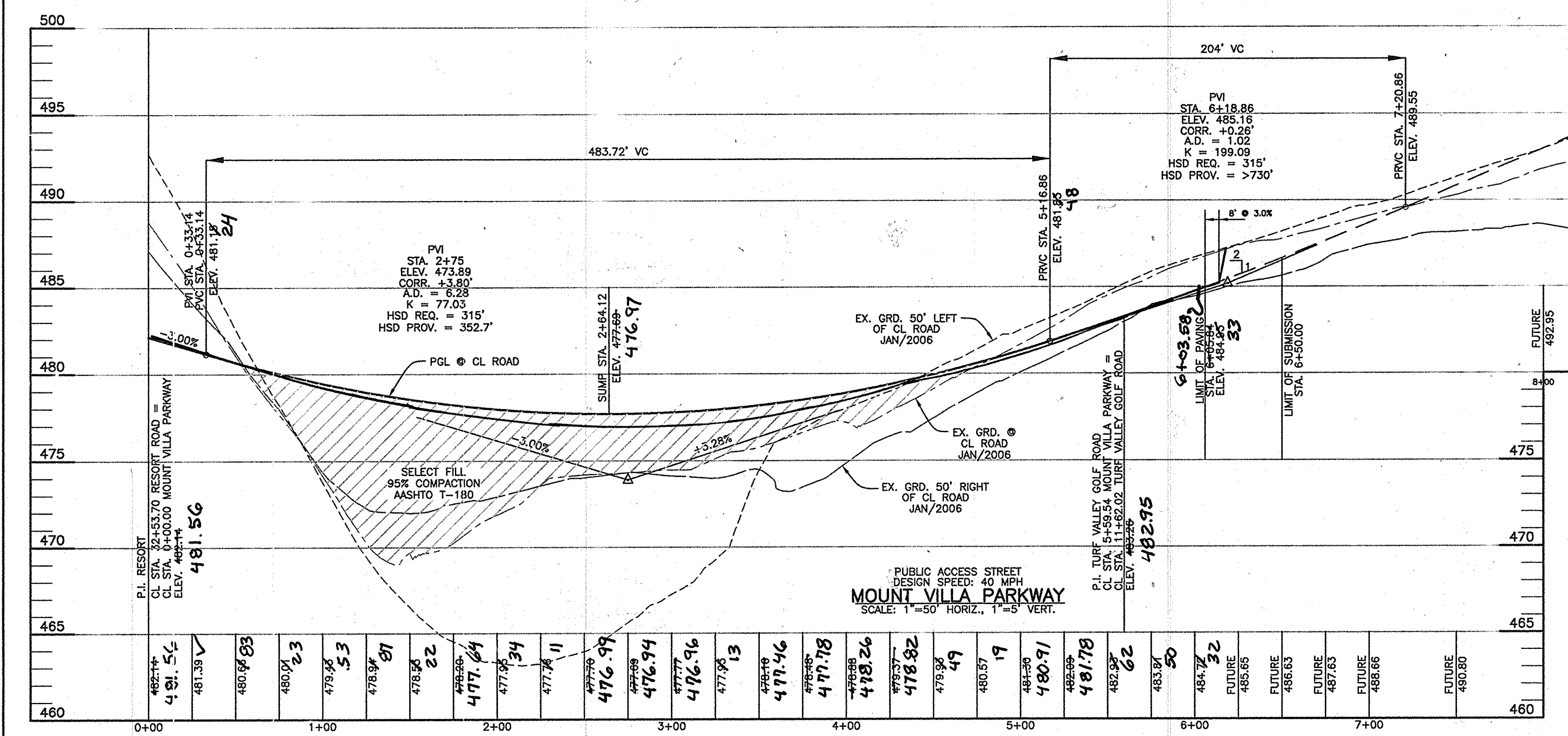
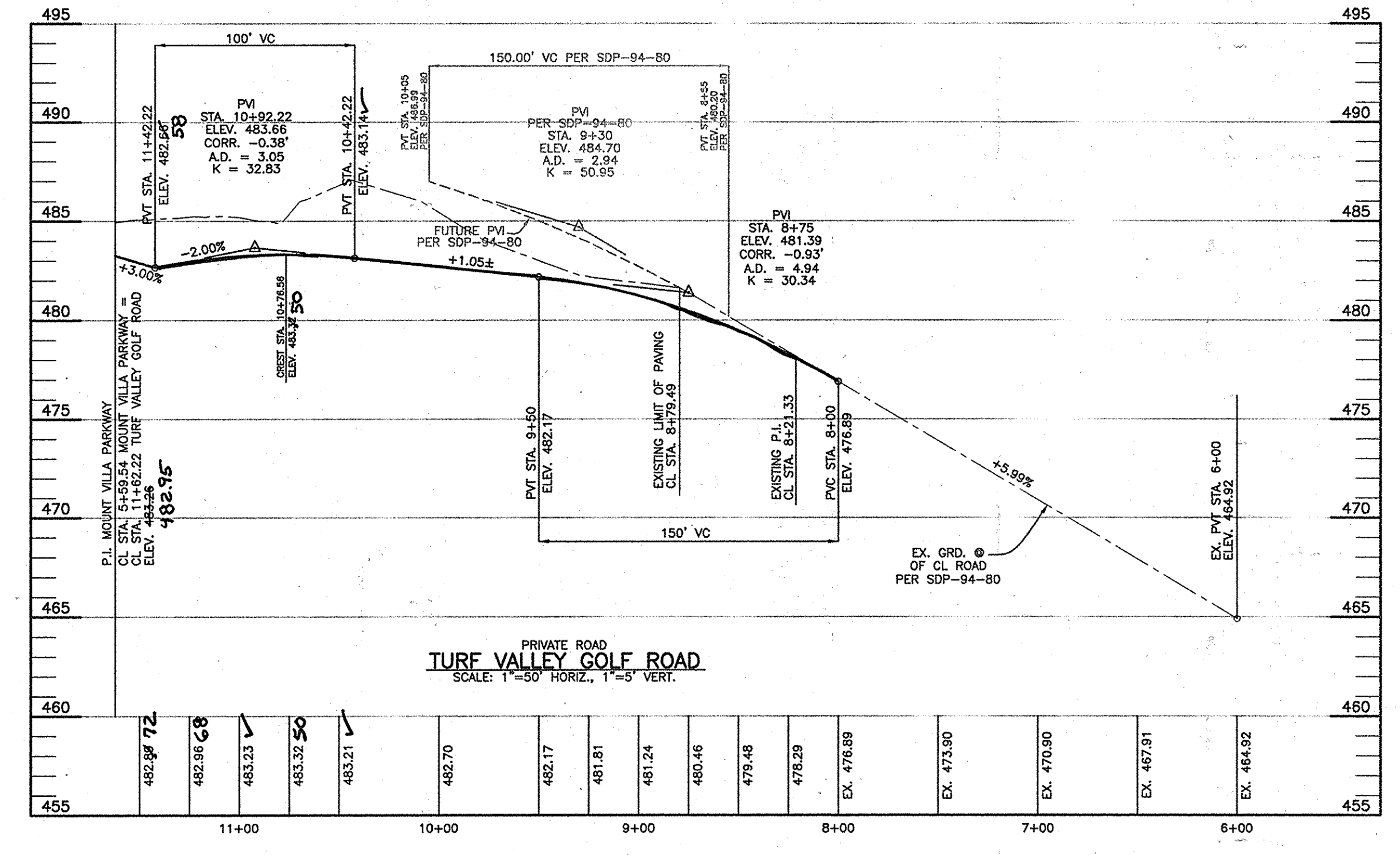
NO. DATE REVISION
 PROFESSIONAL CERTIFICATION: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 21463, Expiration Date: 12-31-2010
Donald M. ...

OWNER: MANGIONE ENTERPRISES OF TURF VALLEY, LIMITED PARTNERSHIP
 1205 YORK ROAD, PENTHOUSE LUTHERVILLE, MARYLAND 21093
 410-825-8400
 DEVELOPER: MANGIONE ENTERPRISES OF TURF VALLEY, LIMITED PARTNERSHIP
 1205 YORK ROAD, PENTHOUSE LUTHERVILLE, MARYLAND 21093
 410-825-8400
VILLAGES AT TURF VALLEY PHASE 1 SECTION 1 OPEN SPACE LOTS 68 thru 69
 TAX MAP: 16 GRID: 11 PARCEL: P/O B
 ZONED: PGCC ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND
ROAD PLAN AND PROFILE RESORT ROAD
 DATE: OCTOBER, 2009 BEI PROJECT NO. 1915
 SCALE: AS SHOWN SHEET 2 OF 13



P-2 PAVING DETAIL

| SECTION NUMBER | ROAD AND STREET CLASSIFICATION | PAVEMENT MATERIAL (INCHES) | CALIFORNIA BEARING RATIO (CBR) | | |
|----------------|--|------------------------------------|--------------------------------|---------|-----|
| | | | 3 TO <5 | 5 TO <7 | >7 |
| P-2 | PARKING DRIVE AISLES: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY LOCAL ROADS: ACCESS PLACE, ACCESS STREET CUL-DE-SAC RESIDENTIAL | HMA SUPERPAVE FINAL SURFACE | 1.5 | 1.5 | 1.5 |
| | | HMA SUPERPAVE INTERMEDIATE SURFACE | 1.0 | 1.0 | 1.0 |
| | | HMA SUPERPAVE BASE | 2.0 | 2.0 | 3.5 |
| | | GRADED AGGREGATE BASE (GAB) | 8.0 | 4.0 | 4.0 |



APPROVED: DEPARTMENT OF PUBLIC WORKS
William J. ... 11-18-09
 CHIEF, BUREAU OF HIGHWAYS
 APPROVED: DEPARTMENT OF PLANNING AND ZONING
Karl ... 11-24-09
 CHIEF, DIVISION OF LAND DEVELOPMENT
... 11/26/09
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

AS-BUILT CERTIFICATION
 I hereby certify that the as-built information shown on this plan was constructed as shown on the AS-BUILT plan.
 Donald ... P.E. No. 21445 Date 3-23-10

BENCHMARK ENGINEERING, INC.
 8480 BALTIMORE NATIONAL PIKE & SUITE 410
 ELICOTT CITY, MARYLAND 21043
 PHONE: 410-465-6165 FAX: 410-465-6644
 WWW.BE-CIVILENGINEERING.COM

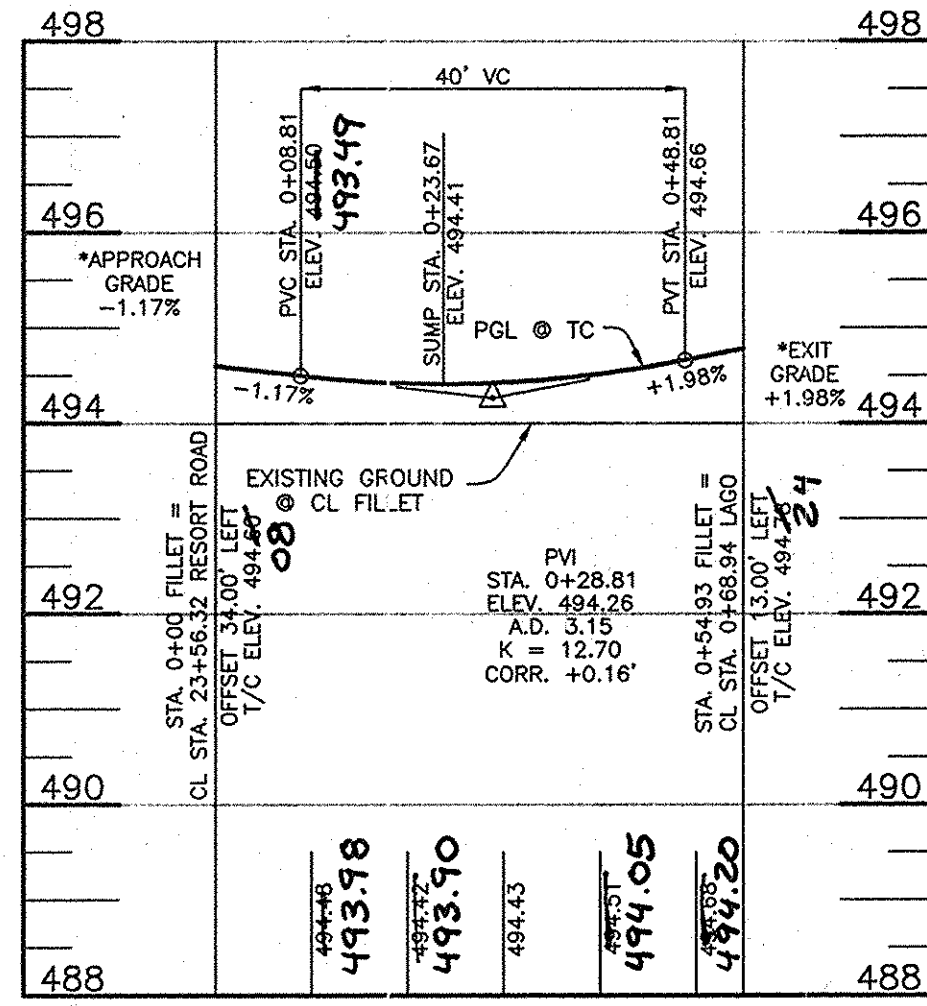
VILLAGES AT TURF VALLEY PHASE 1 SECTION 1
 OPEN SPACE LOTS 68 thru 69

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

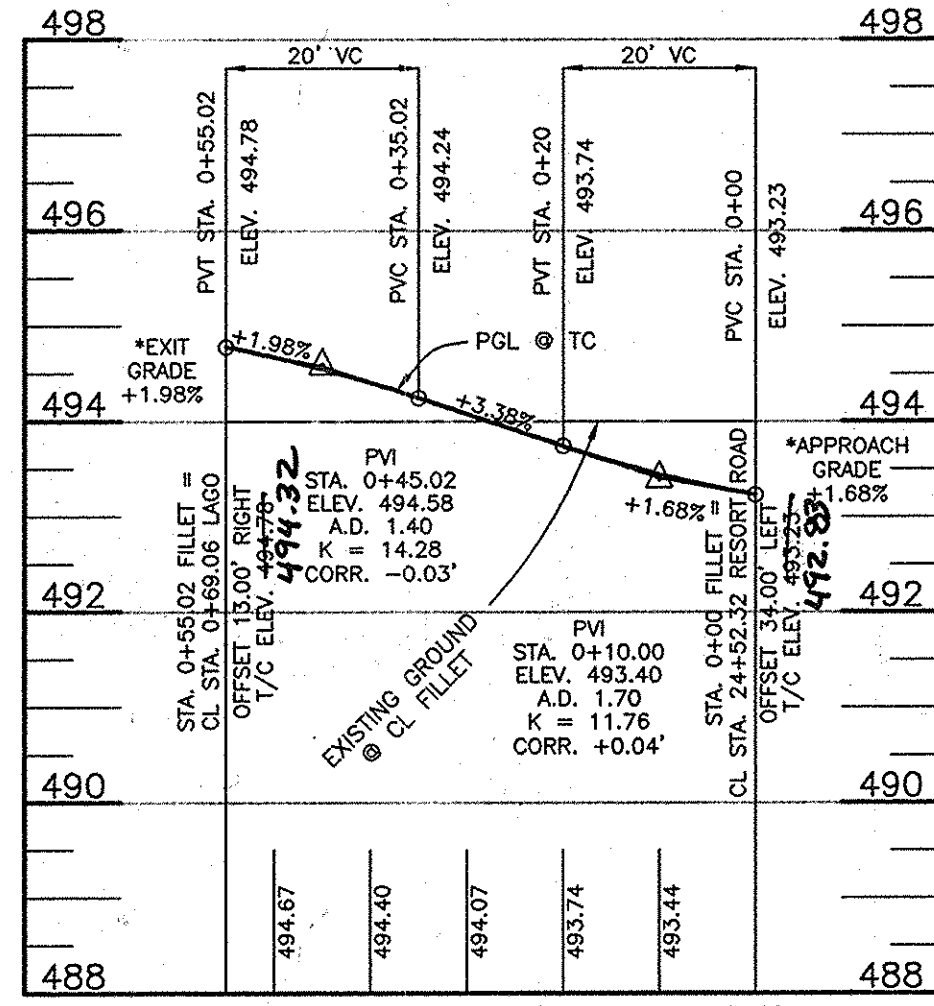
DEVELOPER:
 MANGIONE ENTERPRISES OF TURF VALLEY, LIMITED PARTNERSHIP
 1205 YORK ROAD, PENTHOUSE LUTHERVILLE, MARYLAND 21093 410-825-8400

ROAD PLAN AND PROFILE
 MOUNT VILLA PARKWAY / TURF VALLEY GOLF ROAD

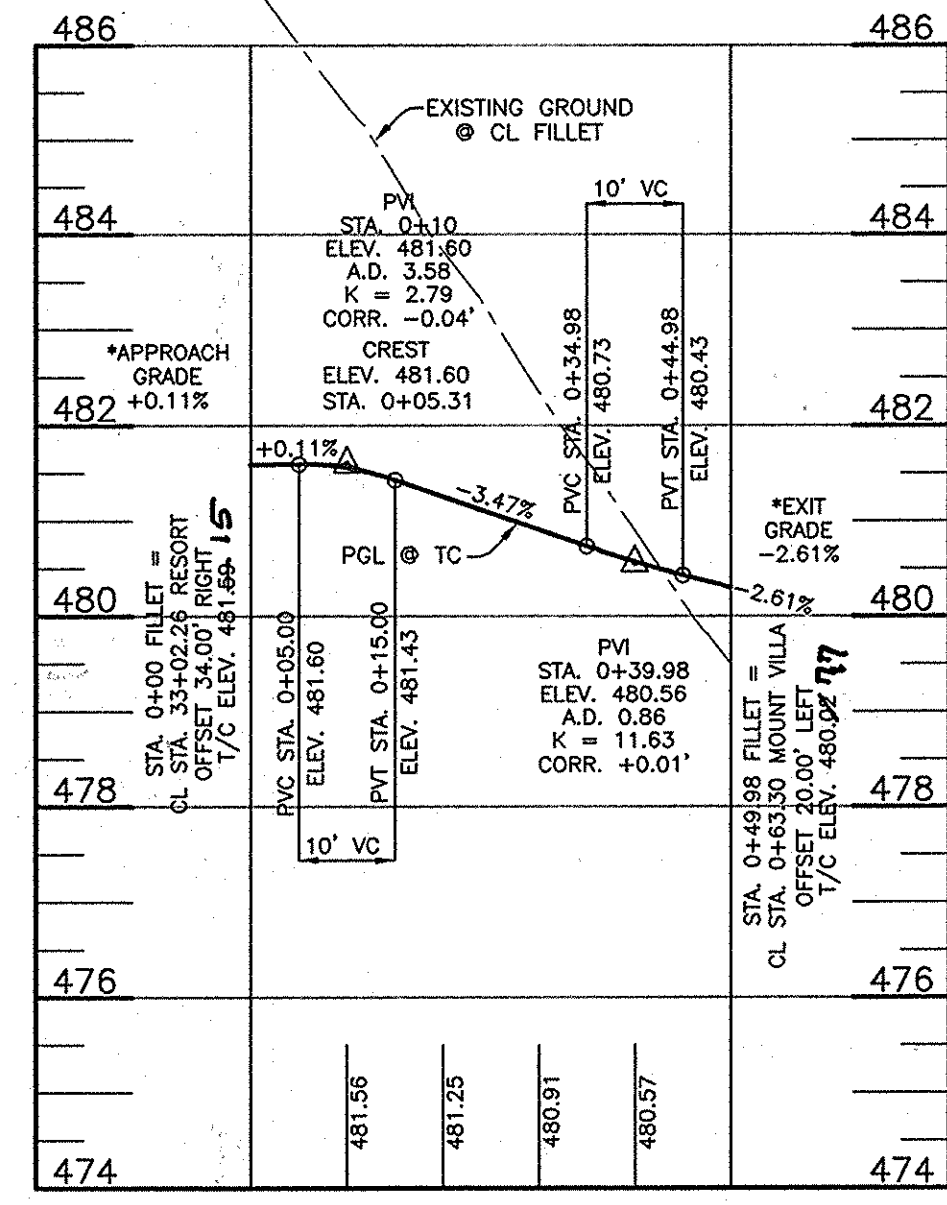
DATE: OCTOBER, 2009 BEI PROJECT NO. 1915
 SCALE: AS SHOWN SHEET: 3 OF 13



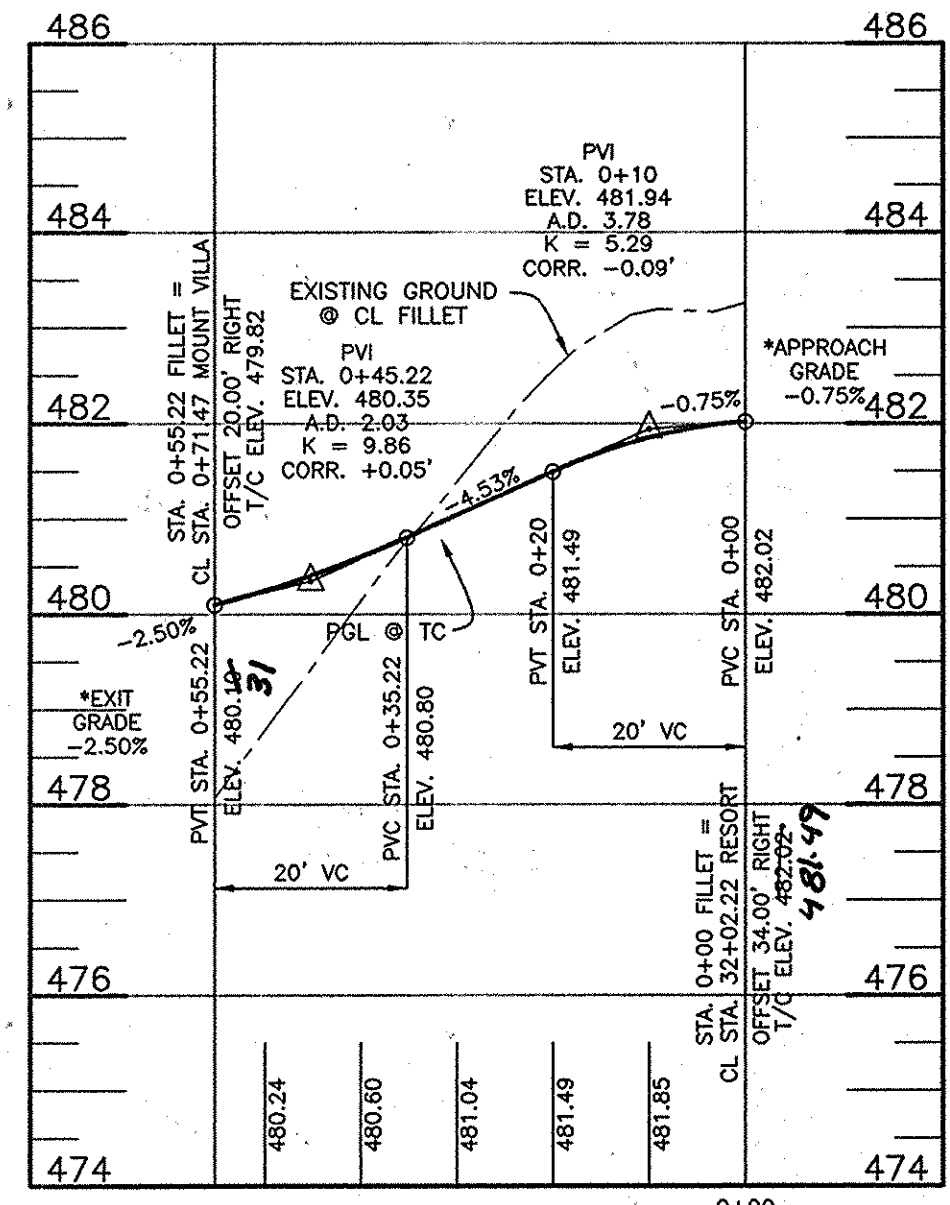
FILLET PROFILE
WEST CORNER
RESORT ROAD/LAGO
SCALE: 1"=20' HORIZ., 1"=2' VERT.



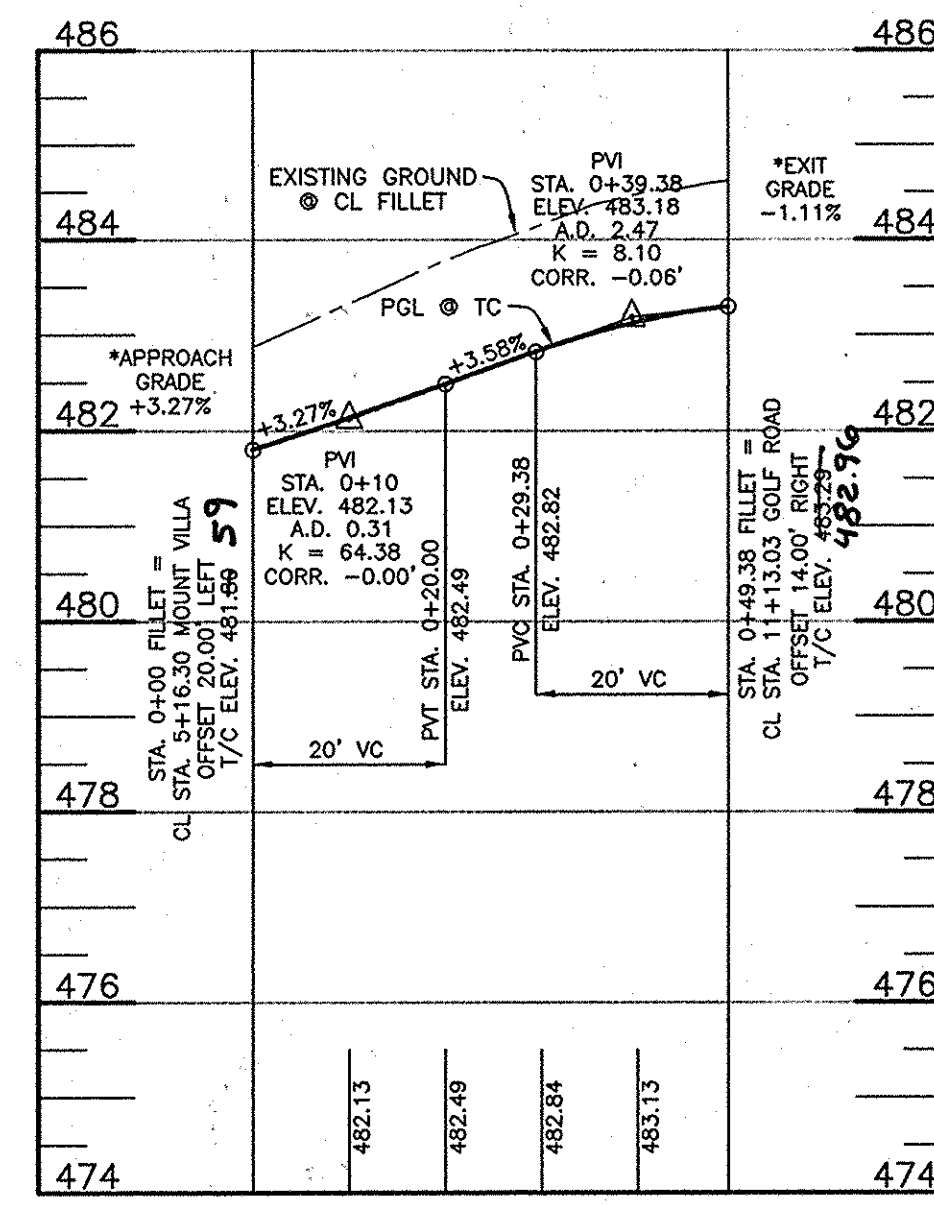
FILLET PROFILE
EAST CORNER
RESORT ROAD/LAGO
SCALE: 1"=20' HORIZ., 1"=2' VERT.



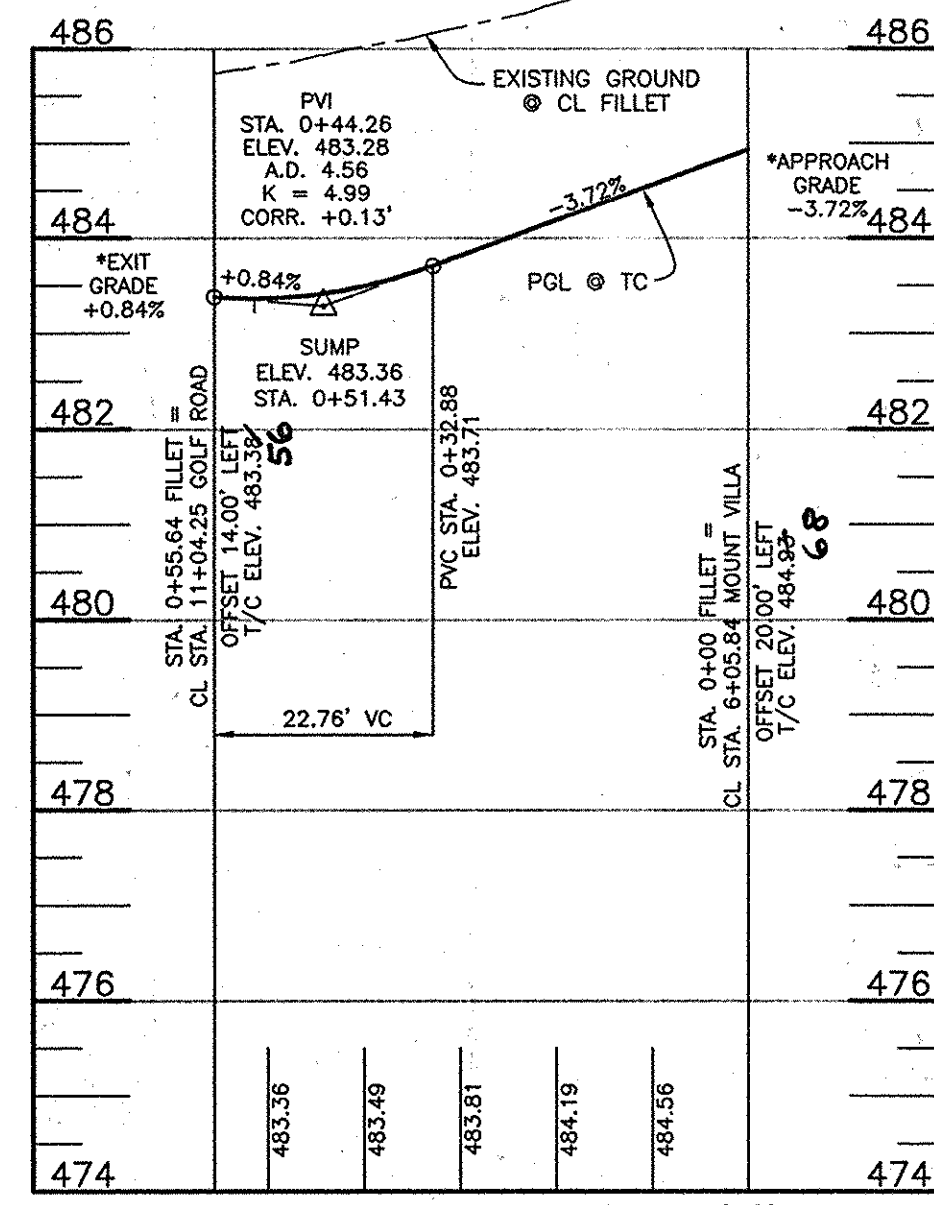
FILLET PROFILE
NORTH CORNER
RESORT ROAD/MOUNT VILLA
SCALE: 1"=20' HORIZ., 1"=2' VERT.



FILLET PROFILE
SOUTH CORNER
RESORT ROAD/MOUNT VILLA
SCALE: 1"=20' HORIZ., 1"=2' VERT.



FILLET PROFILE
NORTH CORNER
MOUNT VILLA/GOLF ROAD
SCALE: 1"=20' HORIZ., 1"=2' VERT.



FILLET PROFILE
SOUTH CORNER
MOUNT VILLA/GOLF ROAD
SCALE: 1"=20' HORIZ., 1"=2' VERT.

APPROVED: DEPARTMENT OF PUBLIC WORKS
William J. McCall 11-18-09
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Vest Shenwood 11-24-09
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

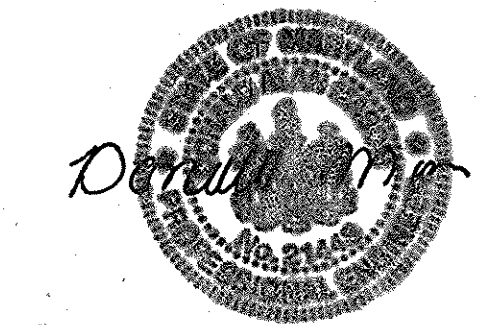
William J. McCall 11/20/09
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

| NO. | DATE | REVISION |
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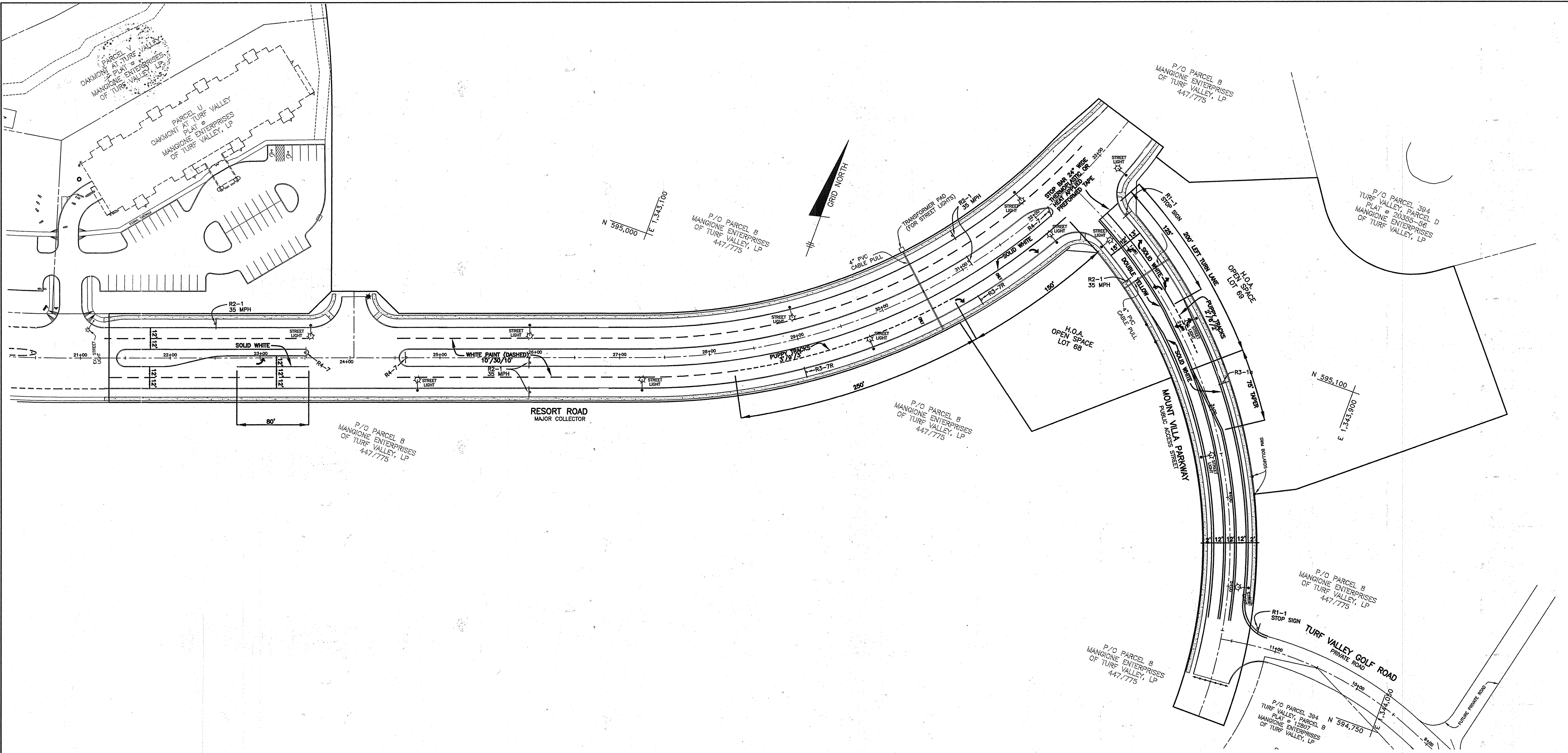
BENCHMARK
ENGINEERS • LAND SURVEYORS • PLANNERS
ENGINEERING, INC.
 8480 BALTIMORE NATIONAL PIKE • SUITE 418
 ELICOTT CITY, MARYLAND 21043
 PHONE: 410-465-6105 FAX: 410-465-6644
 WWW.BE-ONLINEENGINEERING.COM

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. 21448, Expiration Date: 12-31-2010
Donald M. Mason
 PROFESSIONAL ENGINEER
 10/20/09

| | | |
|--|---|---|
| OWNER: MANGIONE ENTERPRISES OF TURF VALLEY, LIMITED PARTNERSHIP 1205 YORK ROAD, PENTHOUSE LUTHERVILLE, MARYLAND 21093 410-825-8400 | VILLAGES AT TURF VALLEY PHASE 1 SECTION 1 OPEN SPACE LOTS 68 thru 69 | TAX MAP: 16 GRID: 11 PARCEL: P/O 8 ZONED: PGCC ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND |
| DEVELOPER: MANGIONE ENTERPRISES OF TURF VALLEY, LIMITED PARTNERSHIP 1205 YORK ROAD, PENTHOUSE LUTHERVILLE, MARYLAND 21093 410-825-8400 | CURB RETURN FILLET PROFILES | |
| DATE: OCTOBER, 2009 | BEI PROJECT NO. 1915 | |
| SCALE: AS SHOWN | SHEET 4 | OF 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. 21448, Expiration Date: 12-31-2010
Donald M. Mason
 PROFESSIONAL ENGINEER
 3/28/16



APPROVED: DEPARTMENT OF PUBLIC WORKS
With 2 initials 11-18-09
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Kent Sheppard 11-28-09
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

John D. ... 11/20/09
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

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 |
| | RESORT ROAD CL STA. 23+56 LEFT | |
| | RESORT ROAD CL STA. 24+75 RIGHT | |
| | RESORT ROAD CL STA. 26+00 LEFT | |
| | RESORT ROAD CL STA. 27+25 RIGHT | |
| | RESORT ROAD CL STA. 29+00 LEFT | |
| | RESORT ROAD CL STA. 29+75 RIGHT | |
| | RESORT ROAD CL STA. 32+00 LEFT | |
| | RESORT ROAD CL STA. 32+00 RIGHT | |
| | RESORT ROAD CL STA. 33+02 RIGHT | |
| | MOUNT VILLA PARKWAY CL STA. 0+75 RIGHT | |
| | MOUNT VILLA PARKWAY CL STA. 2+00 LEFT | |
| | MOUNT VILLA PARKWAY CL STA. 3+50 RIGHT | |
| | MOUNT VILLA PARKWAY CL STA. 5+00 LEFT | |

250 WATT HPS PENDANT FIXTURE (CUTOFF) MOUNTED ON 30" GALVANIZED STEEL POLE USING A 12' ARM

PROFESSIONAL ENGINEER
 Donald Blanton, P.E. No. 21443
 3-28-16

| NO. | DATE | REVISION |
|-----|------|----------|
| | | |
| | | |

BENCHMARK ENGINEERING, INC.
 ENGINEERS & LAND SURVEYORS & PLANNERS
 8480 BALTIMORE NATIONAL PIKE & SUITE 418
 ELLICOTT CITY, MARYLAND 21043
 PHONE: 410-465-6105 FAX: 410-465-6844
 WWW.BE-CHALLENGERING.COM

VILLAGES AT TURF VALLEY
 PHASE 1 SECTION 1
 OPEN SPACE LOTS 68 thru 69

TAX MAP: 16 GRID: 11 PARCEL: P/O 8
 ZONED: PGCC ELECTION DISTRICT NO. 3
 HOWARD COUNTY, MARYLAND

STREET LIGHT, STREET SIGN AND STREET STRIPING PLAN

DATE: OCTOBER, 2009 BEI PROJECT NO. 1915
 SCALE: AS SHOWN SHEET 5 OF 13

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 REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.

Donald Mason
ENGINEER - DONALD A. MASON, P.E. # 21443
DATE: 3-28-16

CERTIFY MEANS TO STATE OR DECLARE UNDER OATH OR SWORN (BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED THROUGHOUT CONSTRUCTION, THE ON-SITE 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.

BY THE DEVELOPER:
I HEREBY 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.

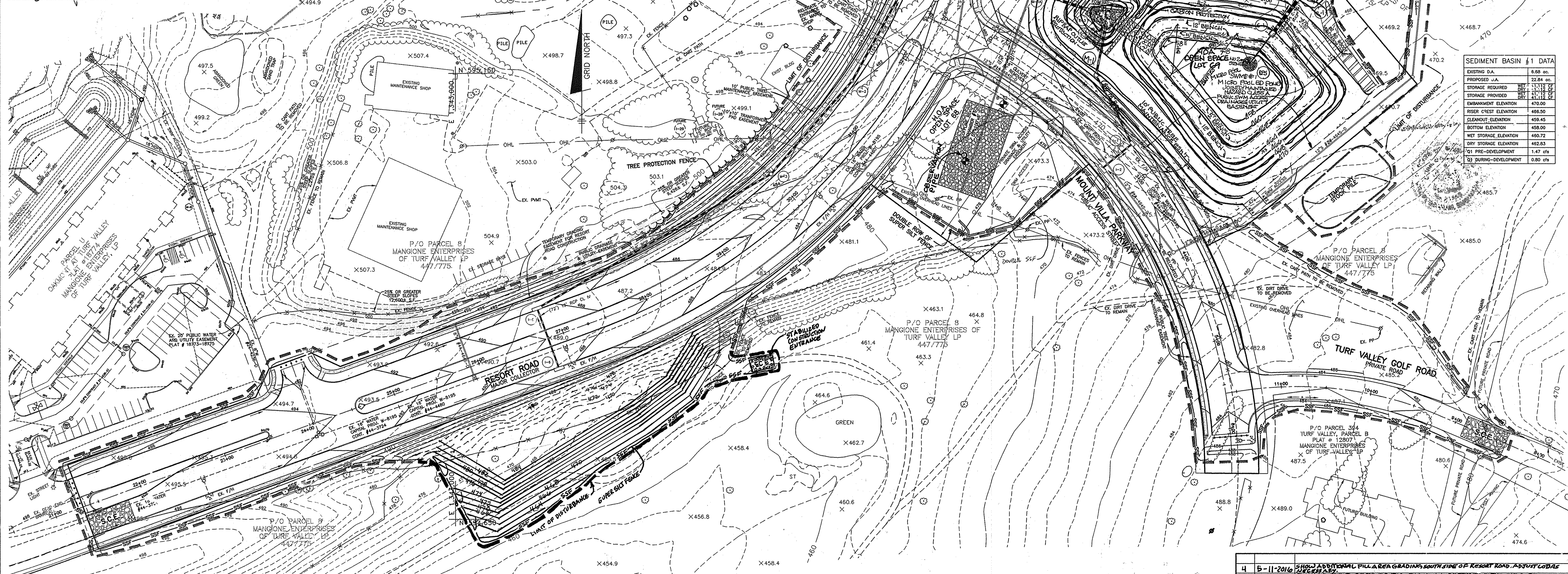
John J. Long
DEVELOPER
DATE: 11/5/09

BY THE ENGINEER:
I HEREBY 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.

Donald Mason
ENGINEER - DONALD A. MASON, P.E. # 21443
DATE: 11/5/09

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

John J. Long
HOWARD SOIL CONSERVATION DISTRICT
DATE: 11/5/09



SEDIMENT BASIN #1 DATA

| | |
|------------------------|--------------|
| EXISTING D.A. | 5.88 ac. |
| PROPOSED J.A. | 22.84 ac. |
| STORAGE REQUIRED | 11,112 cu ft |
| STORAGE PROVIDED | 21,112 cu ft |
| EMBANKMENT ELEVATION | 470.00 |
| RISER CREST ELEVATION | 466.50 |
| CLEANOUT ELEVATION | 459.45 |
| BOTTOM ELEVATION | 458.00 |
| WET STORAGE ELEVATION | 460.72 |
| DRY STORAGE ELEVATION | 462.83 |
| '01 PRE-DEVELOPMENT | 1.47 cfs |
| '03 DURING-DEVELOPMENT | 0.80 cfs |

PLAN VIEW
SCALE: 1" = 50'

NOTE: ANY USE OF FILL DIRT FROM GOLF COURSE FEATURES SHALL CONFORM TO HOWARD COUNTY CODE 16.129. THE HOWARD COUNTY BUREAU OF ENVIRONMENTAL HEALTH MUST BE NOTIFIED PRIOR TO MOVEMENT OF GOLF COURSE FILL DIRT.

GENERAL STORAGE REQUIREMENT SUMMARY TABLES
DRAINAGE AREA 1

| REQUIREMENT | TOTAL VOLUME REQUIRED | PER 1% IMPERVIOUS | PER 10% IMPERVIOUS | PER 15% IMPERVIOUS | NOTES |
|-------------------------------|------------------------------|------------------------------|------------------------------|-----------------------------|---|
| WATER QUALITY VOLUME (WQV) | 2,0408 cu-ft 88,896 cu-ft | 1,2856 cu-ft 55,131 cu-ft | 0.7177 cu-ft 31,261 cu-ft | 0.1344 cu-ft 5,805 cu-ft | PROVIDED IN SWMF #1 AND #2 (EXTENDED DETENTION W/ MICRO-POOL) |
| RECHARGE VOLUME (REV) | 5.77 acres 20,668 cu-ft | 3.75 acres 13,176 cu-ft | 2.22 acres 7,862 cu-ft | 0.04 acres 1,047 cu-ft | PROVIDED IN OFFLINE RECHARGE CHAMBERS #1 AND #2 |
| CHANNEL PROTECTION VOL. (CPV) | | 1,6410 cu-ft 71,483 cu-ft | 0,8579 cu-ft 37,369 cu-ft | 0,2218 cu-ft 9,654 cu-ft | PROVIDED VIA ROUTING OF SWMF #1 AND #2 (EXTENDED DETENTION W/ MICRO-POOL) |

TOTAL VOLUME FOR WQV BASED ON 57.3% IMPERVIOUS WHICH IS ABOVE THE MINIMUM 15.0% REQUIREMENT. VOLUME FOR DA 1A AND 1B BASED ON 23.2% AND 67.1% RESPECTIVELY. VOLUME FOR DA 1C BASED ON 15.0% (MINIMUM REQUIREMENT) EVEN THOUGH IMPERVIOUS IS ONLY 2.6%. THUS, THE COMBINED WQV ENDS UP BEING MORE THAN OVERALL TOTAL.

* NO NEW IMPERVIOUS AREAS BEING CREATED WITHIN DRAINAGE AREA 1C.

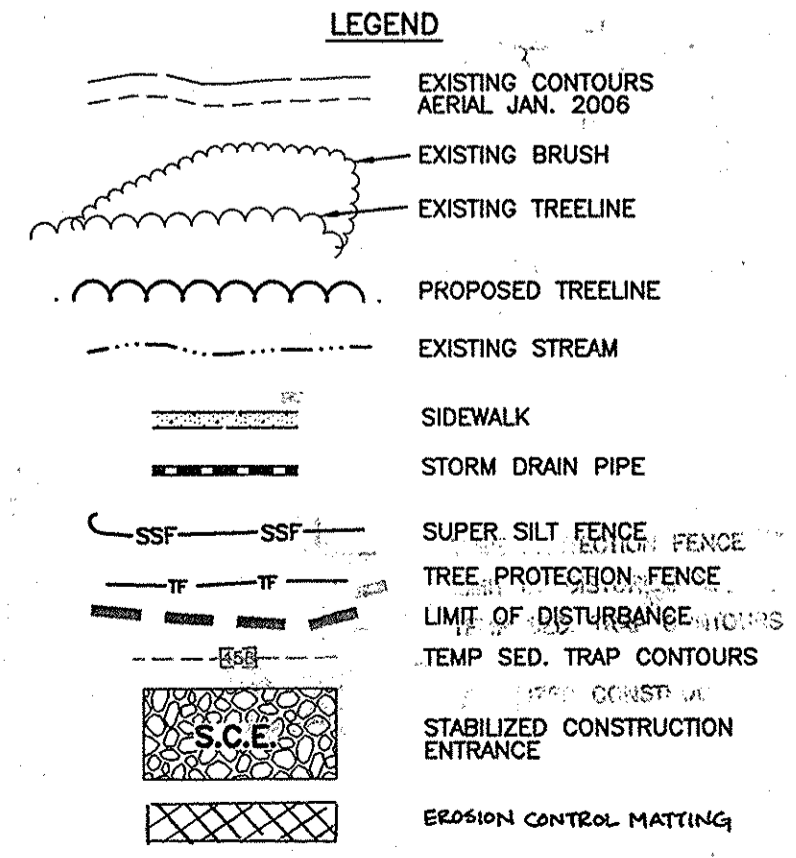
1-YEAR DISCHARGE COMPARISON TABLE

| EXISTING | PROPOSED WITH SWMF | NOTES |
|----------|--------------------|--|
| 7.95 CFS | 4.12 CFS | 1-YR POST-DEVELOPED DISCHARGE AMOUNT IS LESS THAN 1-YR PRE-DEVELOPED DISCHARGE AMOUNT. |

A-PROVED: DEPARTMENT OF PUBLIC WORKS
With 2 copies
CHIEF, BUREAU OF HIGHWAYS
DATE: 11-18-09

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Keith S. ...
CHIEF, DIVISION OF LAND DEVELOPMENT
DATE: 11-24-09

Donald Mason
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 11/26/09



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.
Date: 3-28-16
Donald A. Mason, P.E. No. 21443

| NO. | DATE | REVISION |
|-----|-----------|--|
| 4 | 5-11-2016 | SHOW ADDITIONAL PILL AREA GRADING SOUTH SIDE OF RESORT ROAD, ADJUST COULDS |
| 3 | 3-3-2016 | SHOW AS-BUILT CORRIDORS FOR SWMF #1 OBSERVED IN THE FIELD DEC. 2015 |
| 2 | 5-26-2010 | REVISE 100R / 100R WSELS |
| 1 | 4-21-2010 | REVISE PRINCIPAL SWIFWAY LOCATION |

BENCHMARK ENGINEERING, INC.
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8480 BALTIMORE NATIONAL PIKE & SUITE 418
ELICOTT CITY, MARYLAND 21045
PHONE: 410-465-6105 FAX: 410-465-6644
WWW.BE-CHALLENGERING.COM

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

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

VILLAGES AT TURF VALLEY
P HASE I SECTION 1
OPLN SPACE LOTS 68 thru 69

TAX MAP: 16 GRID: 11
ZONED: PGCC
ELECTION DISTRICT NO. 3
HOWARD COUNTY, MARYLAND

GRADING, SEDIMENT AND EROSION CONTROL PLAN

DATE: OCTOBE, 2009 BEI PROJECT NO. 1915
SCALE: AS SHOWN SHEET 6 OF 13
AS-BUILT SHEET F-10-026

SEDIMENT CONTROL NOTES

TOPSOIL SPECIFICATIONS

30.0 DUST CONTROL

SEQUENCE OF CONSTRUCTION

TABLE B1: TEMPORARY SEEDING FOR SITE STABILIZATION

Table with columns: PLANT SPECIES, SEEDING RATE 1/3 AC, SEEDING RATE 1/6 AC, RECOMMENDED SEEDING DATES BY PLANT HARDINESS ZONE 3/

NOTES:

- 1. SEEDING RATES FOR THE WARM SEASON GRASSES ARE IN POUNDS OF PURE LIVE SEED (PLS). ACTUAL PLANTING RATES SHALL BE ADJUSTED TO REFLECT PERCENT SEED GERMINATION AND PURITY, AS TESTED. ADJUSTMENTS ARE USUALLY NOT NEEDED FOR THE COOL-SEASON GRASSES.

PERMANENT SEEDING SUMMARY

Table with columns: NO., SPECIES, APPLICATION RATE (LBS/AC), SEEDING DATES, SEEDING DEPTH, FERTILIZER RATE, LIME RATE

- 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).

Table with columns: AREA, DISTURBED, TO BE ROOFED OR PAVED, TO BE VEGETATIVELY STABILIZED, TOTAL CUT, TOTAL FILL

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

TEMPORARY SEEDBED PREPARATIONS

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

PERMANENT SEEDBED PREPARATIONS

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

- 1. Topsoil salvaged from the existing site may be used provided that it meets that standards as set forth in these specifications.

Table with columns: AREA, DISTURBED, TO BE ROOFED OR PAVED, TO BE VEGETATIVELY STABILIZED, TOTAL CUT, TOTAL FILL

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

TEMPORARY SEEDBED PREPARATIONS

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

PERMANENT SEEDBED PREPARATIONS

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

- Controlling dust blowing and movement on construction sites and roads.

Table with columns: AREA, DISTURBED, TO BE ROOFED OR PAVED, TO BE VEGETATIVELY STABILIZED, TOTAL CUT, TOTAL FILL

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

CONSTRUCTION SPECIFICATIONS

- 1. THE SUBGRADE FOR THE 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 APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.

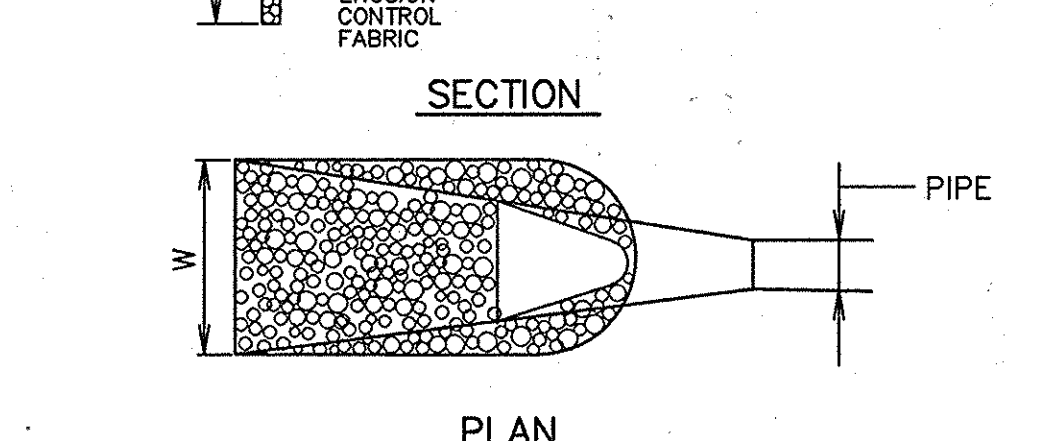


Table with columns: STRUCTURE, D-50, LENGTH (L), WIDTH (W), THICKNESS (T), SHA CLASS

OUTLET PROTECTION DETAIL

NOT TO SCALE

- 1. OBTAIN GRADING PERMIT. (DAY 1)

Table with columns: AREA, DISTURBED, TO BE ROOFED OR PAVED, TO BE VEGETATIVELY STABILIZED, TOTAL CUT, TOTAL FILL

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

CONSTRUCTION SPECIFICATIONS

- 1. THE SUBGRADE FOR THE 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 APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.

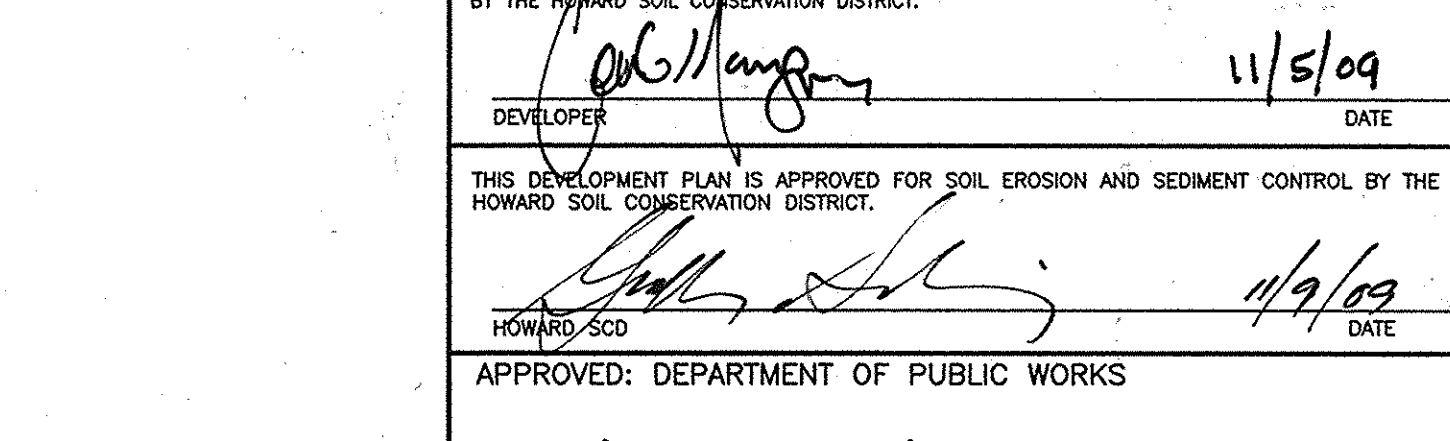
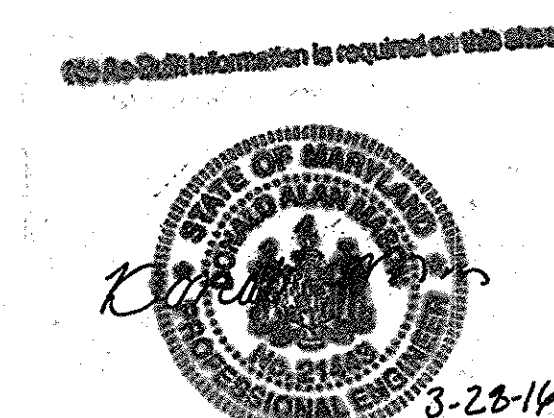


Table with columns: STRUCTURE, D-50, LENGTH (L), WIDTH (W), THICKNESS (T), SHA CLASS

OUTLET PROTECTION DETAIL

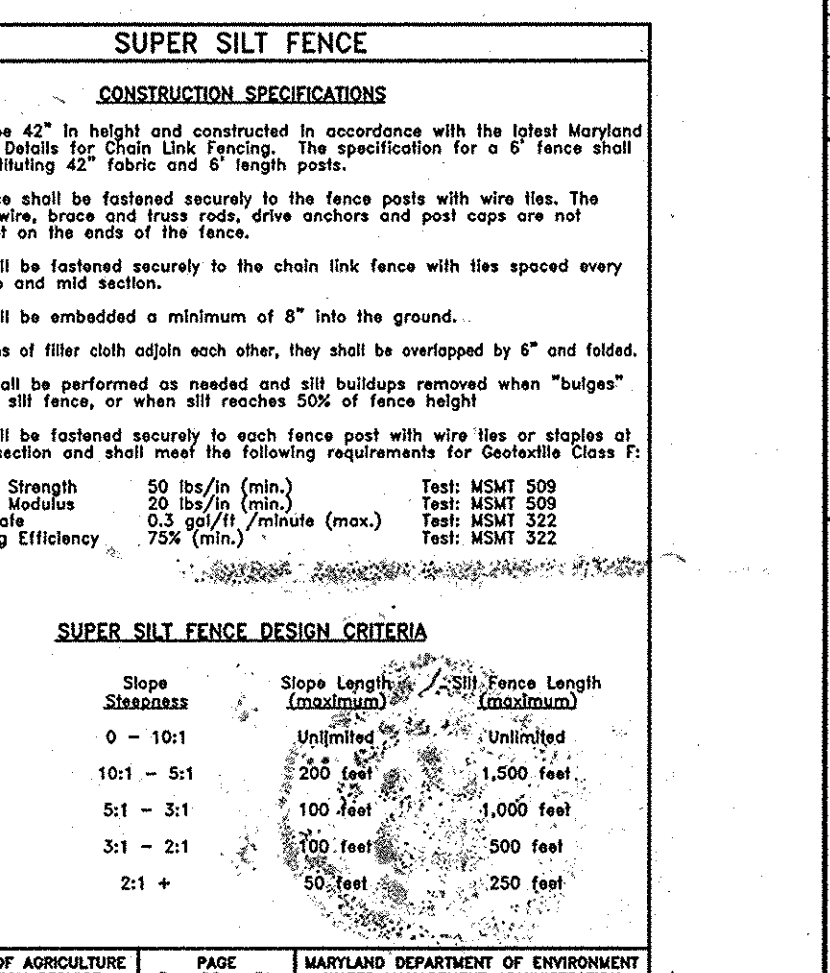
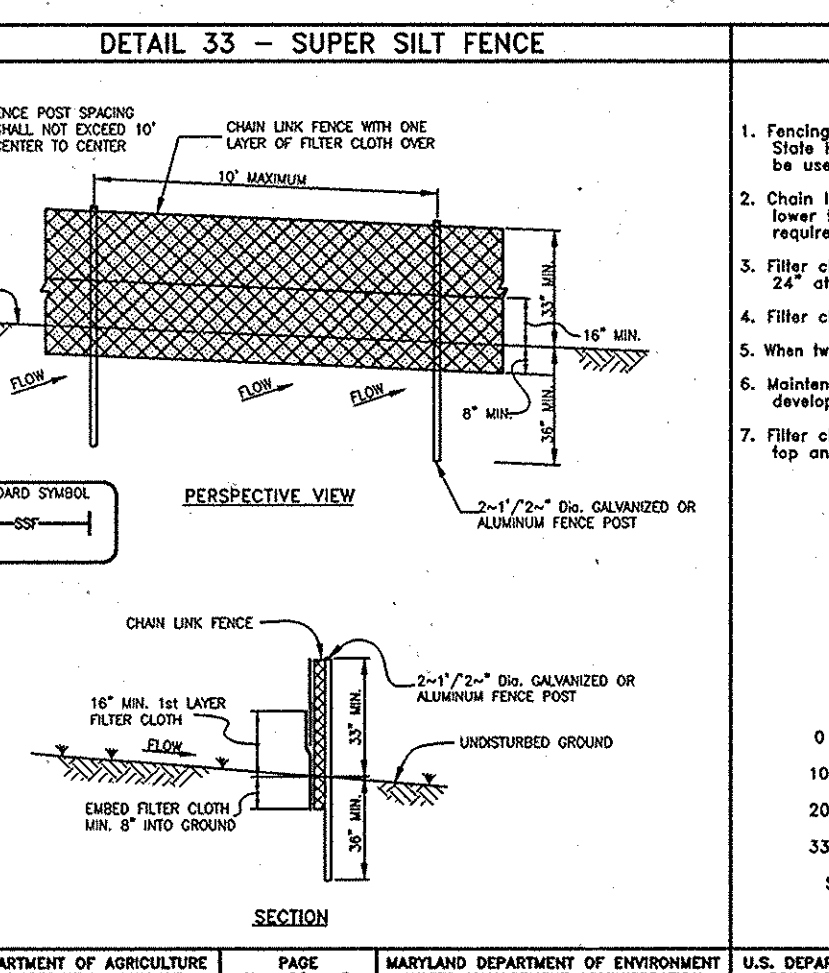
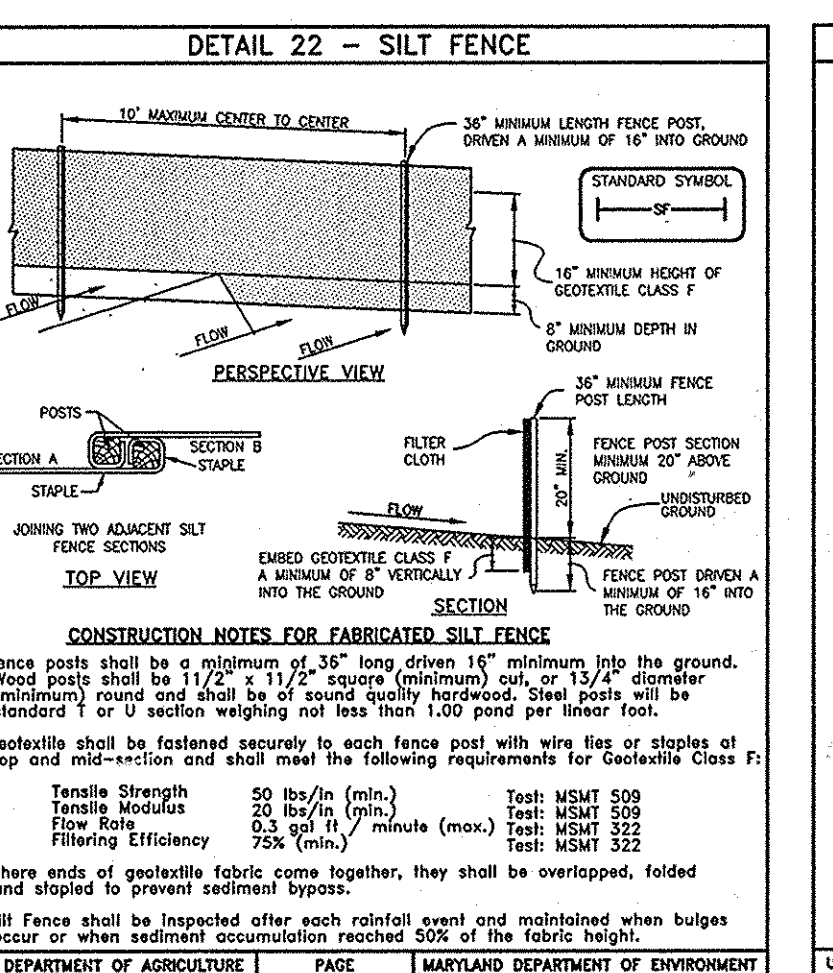
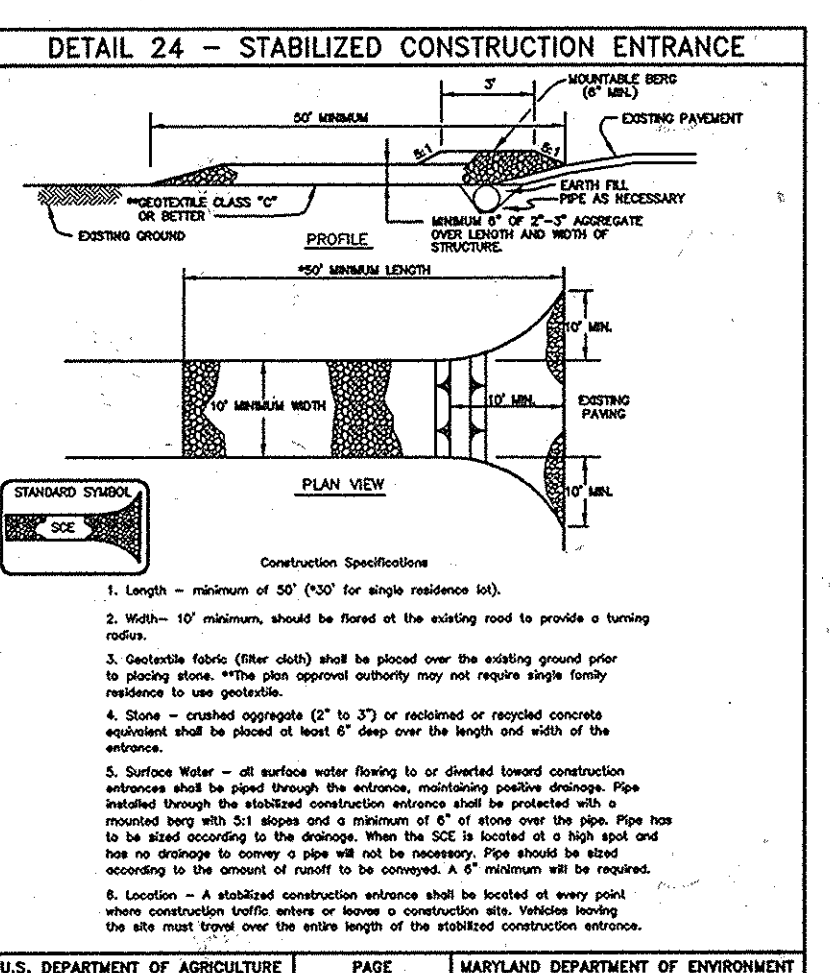
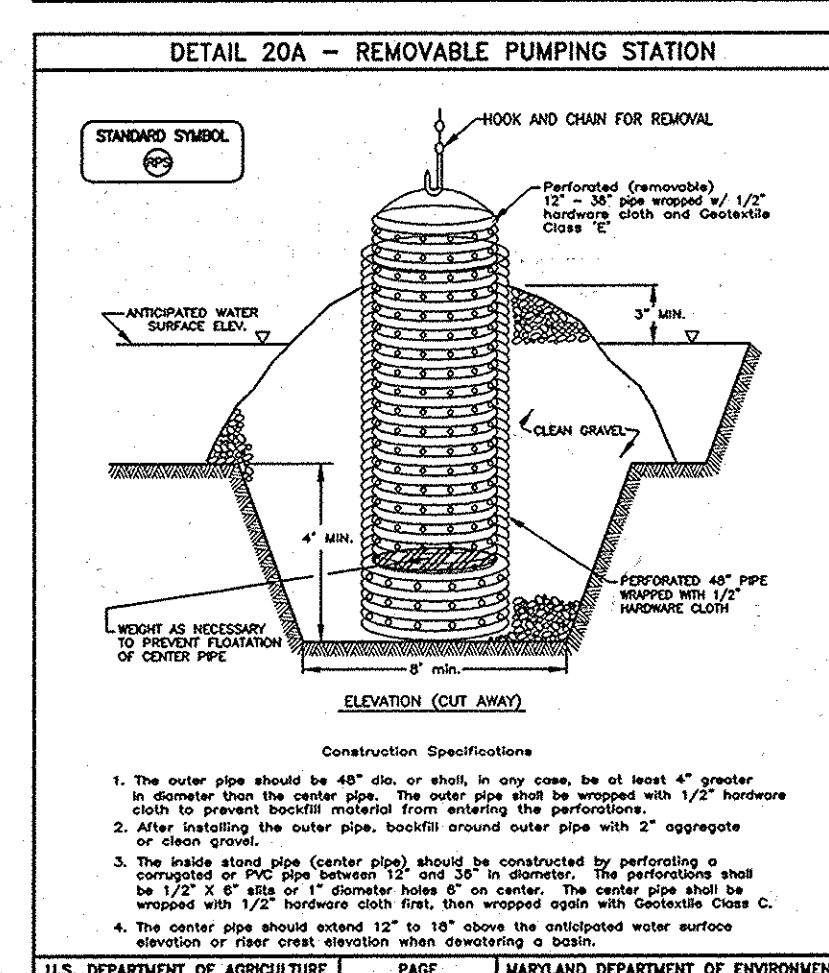
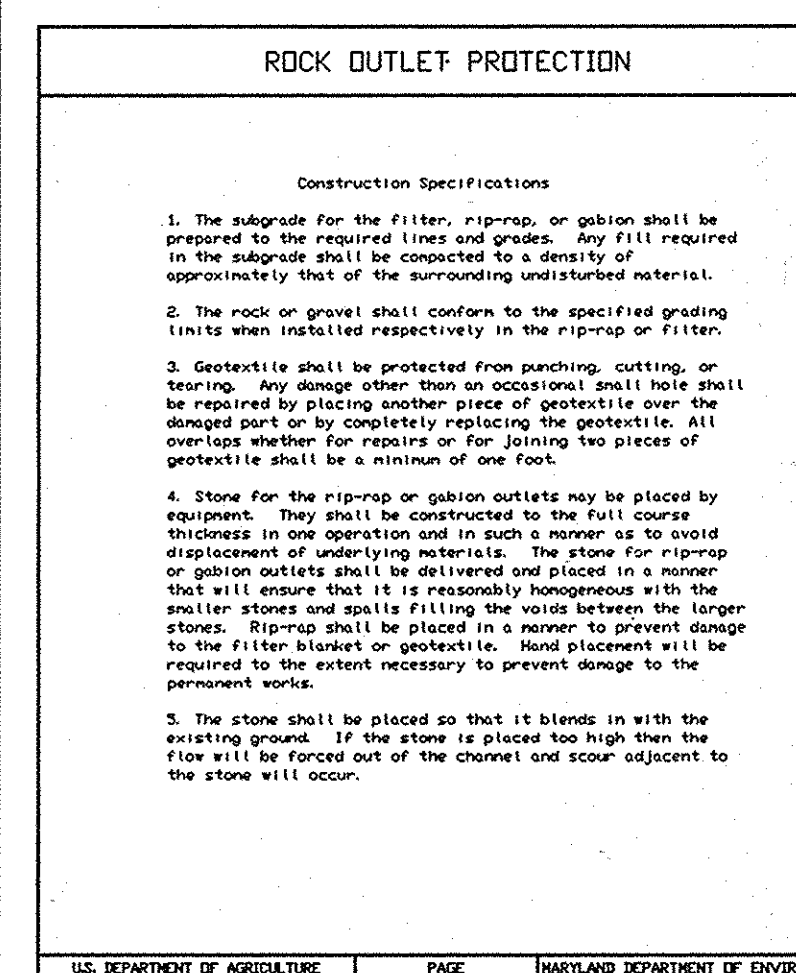
NOT TO SCALE



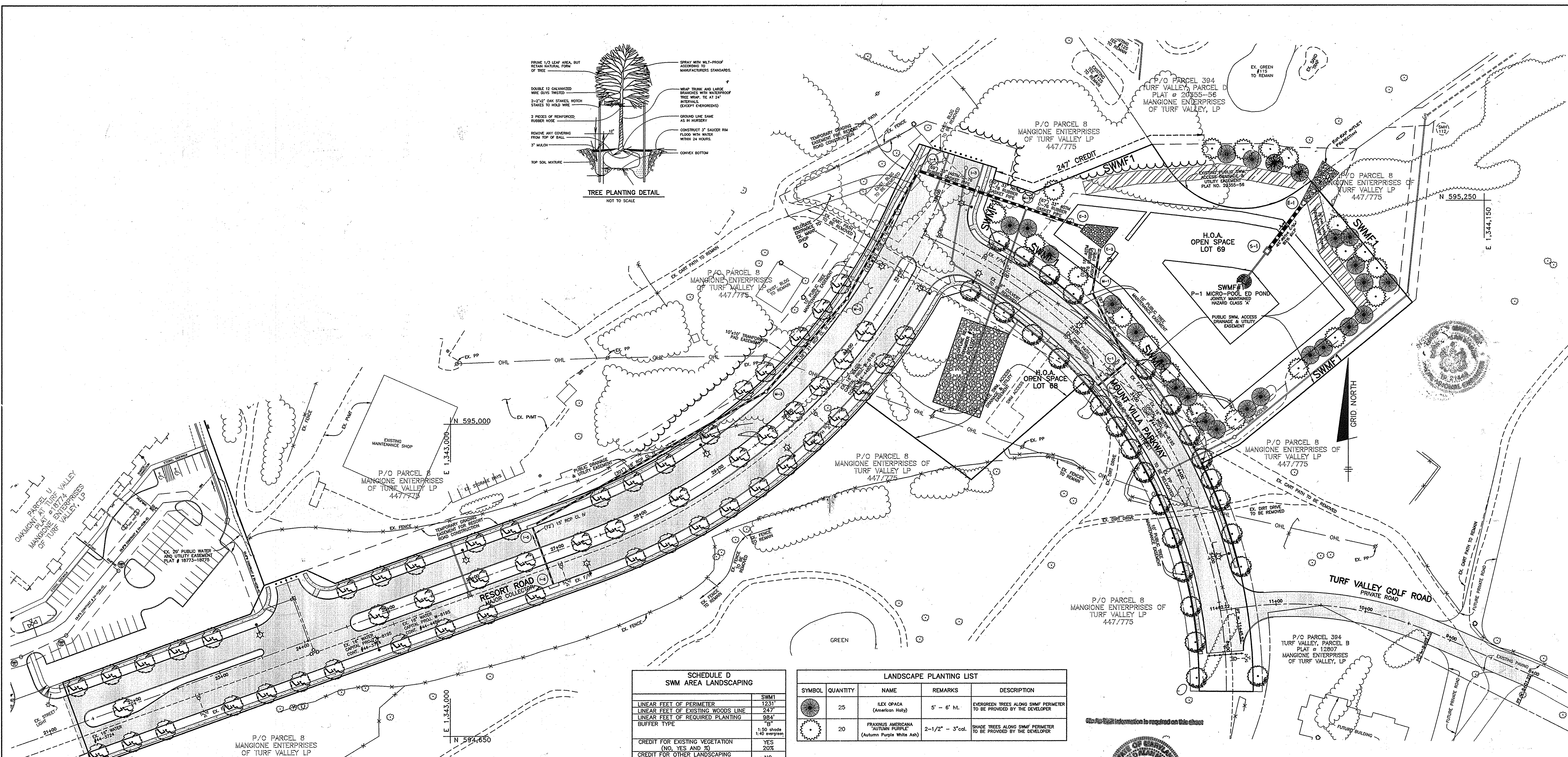
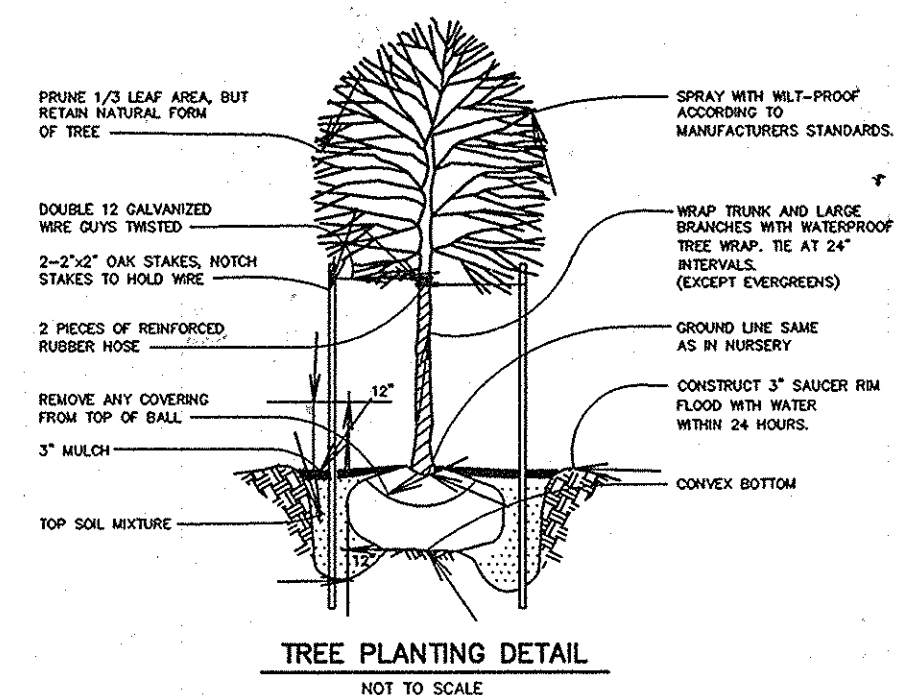
ENGINEER'S CERTIFICATE: I HEREBY CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS...

DEVELOPER'S CERTIFICATE: I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL...

APPROVED: DEPARTMENT OF PUBLIC WORKS, APPROVED: DEPARTMENT OF PLANNING AND ZONING



BENCHMARK ENGINEERING, INC. logo and contact information. VILLAGES AT TURF VALLEY PHASE 1 SECTION 1 OPEN SPACE LOTS 68 thru 69. SEDIMENT AND EROSION CONTROL NOTES AND DETAILS.



| SCHEDULE D SWM AREA LANDSCAPING | |
|--|---------|
| LINEAR FEET OF PERIMETER | 1231' |
| LINEAR FEET OF EXISTING WOODS LINE | 247' |
| LINEAR FEET OF REQUIRED PLANTING BUFFER TYPE | 984' |
| CREDIT FOR EXISTING VEGETATION (NO, YES AND %) | YES 20% |
| CREDIT FOR OTHER LANDSCAPING (NO, YES AND %) | NO |
| NUMBER OF TREES REQUIRED | 20 |
| SHADE TREES | 20 |
| EVERGREEN TREES | 25 |
| NUMBER OF TREES PROVIDED | 20 |
| SHADE TREES | 20 |
| EVERGREEN TREES | 25 |

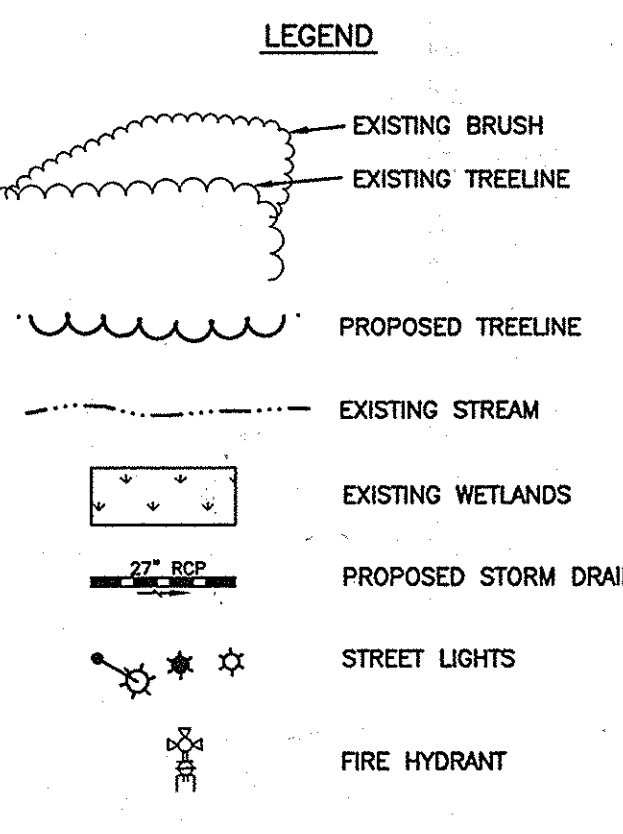
| LANDSCAPE PLANTING LIST | | | | |
|-------------------------|----------|------------------------------------|------------------|--|
| SYMBOL | QUANTITY | NAME | REMARKS | DESCRIPTION |
| | 25 | ILEX OPACA (American Holly) | 5' - 6' H.L. | EVERGREEN TREES ALONG SWMF PERIMETER TO BE PROVIDED BY THE DEVELOPER |
| | 20 | FRAXINUS AMERICANA (Autumn Purple) | 2-1/2" - 3" CAL. | SHADE TREES ALONG SWMF PERIMETER TO BE PROVIDED BY THE DEVELOPER |

| STREET TREE SCHEDULE | | | |
|----------------------|-----------|------------|-------|
| ROAD NAME | PERIMETER | TREES REQ. | SIZE |
| RESORT ROAD | 2227' | 55 | LARGE |
| MOUNT VILLA PARKWAY | 1151' | 28 | LARGE |

| PUBLIC STREET TREE PLANTING LIST | | | | |
|----------------------------------|----------|--|------------------|---|
| SYMBOL | QUANTITY | NAME | REMARKS | DESCRIPTION |
| | 28 | THUJA CORDATA (Greenspire Littleleaf Linden) | 2 1/2" - 3" col. | TO BE PLANTED ALONG MOUNT VILLA PARKWAY |
| | 55 | ACER RUBRUM (October Glory Red Maple) | 2 1/2" - 3" col. | TO BE PLANTED ALONG RESORT ROAD |

LANDSCAPE NOTES:

- STREET TREES TO BE CENTERED BETWEEN THE CURB AND SIDEWALK WHERE THE DISTANCE BETWEEN THE CURB AND SIDEWALK IS 6 FEET OR GREATER. WHEN TREES ARE PLANTED BETWEEN THE SIDEWALK AND CURB, THEY SHALL BE PLACED A MINIMUM OF 30 FEET FROM ALL SIGNS AND INTERSECTIONS. 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.
- SEE TREE PLANTING DETAIL - THIS SHEET.
- 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.
- AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS HEREWIT 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.
- 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.
- FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$9,750.00 (\$6,000.00 FOR 20 SHADE TREES, \$3,750.00 FOR 25 EVERGREENS)



APPROVED: DEPARTMENT OF PUBLIC WORKS
William D. ... 11-18-09
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Kent ... 4-28-09
 CHIEF, DIVISION OF LAND DEVELOPMENT

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 10/26/09
 LOUIS MANGIONE DATE

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. 21448 Expiration Date: 12-31-2016

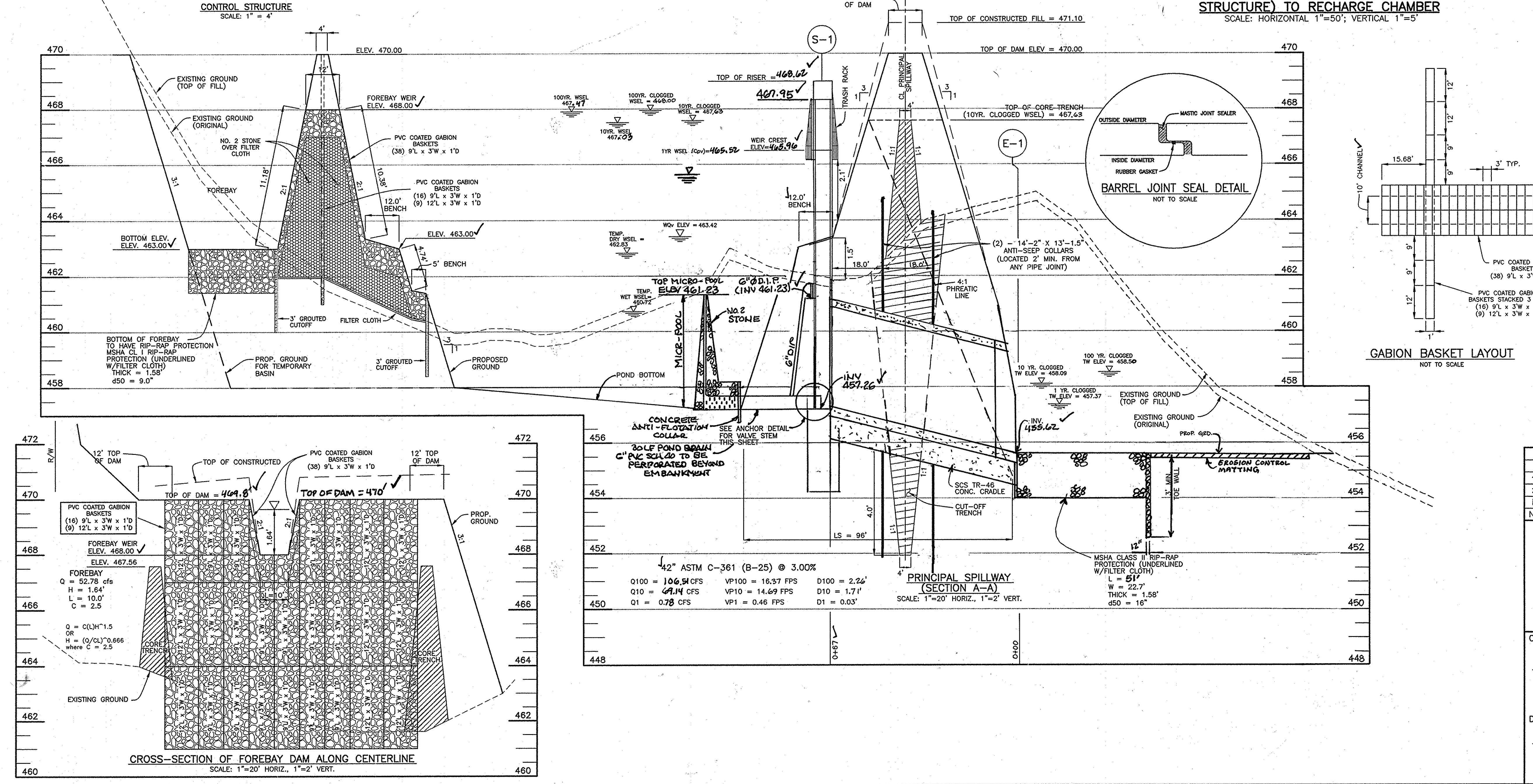
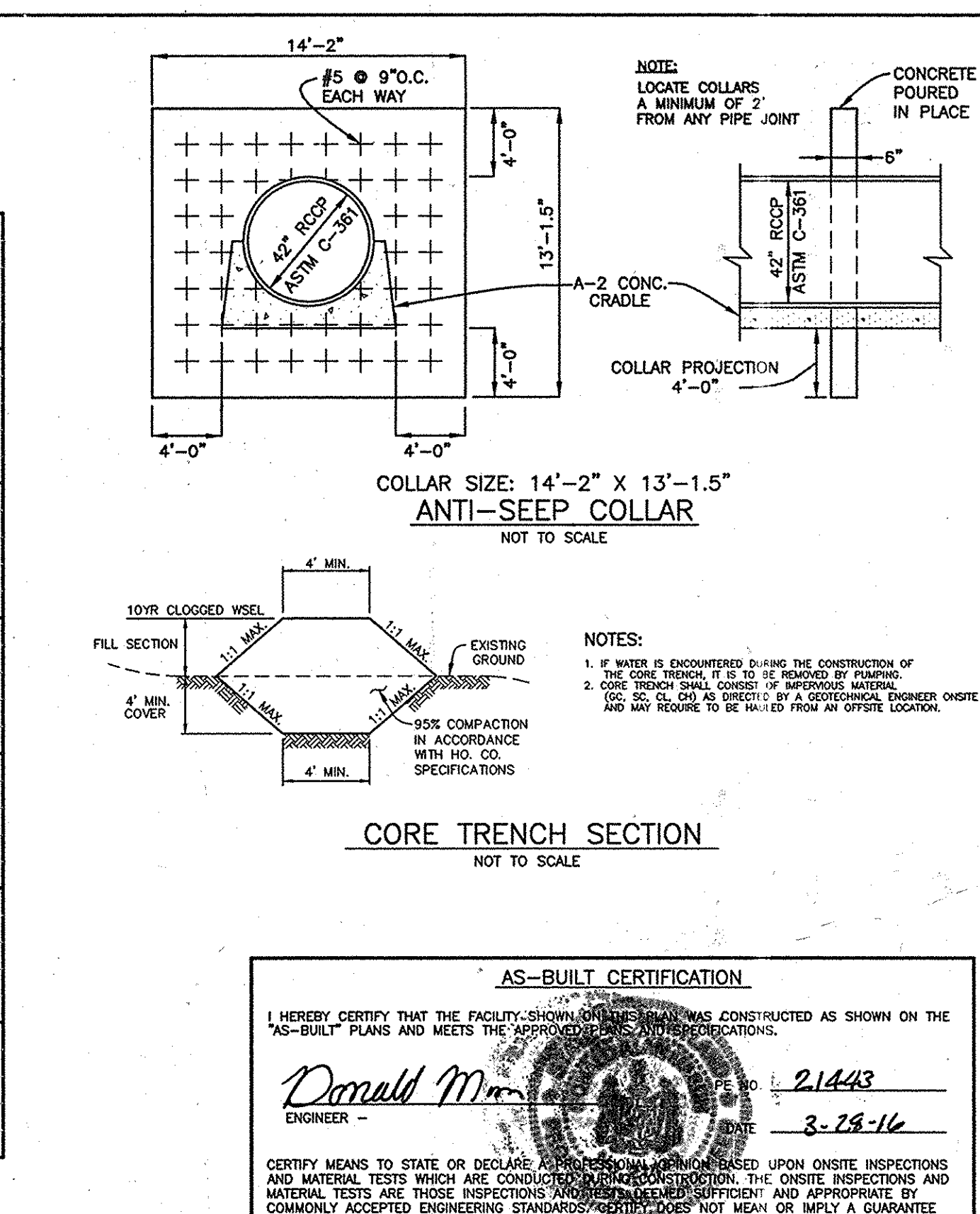
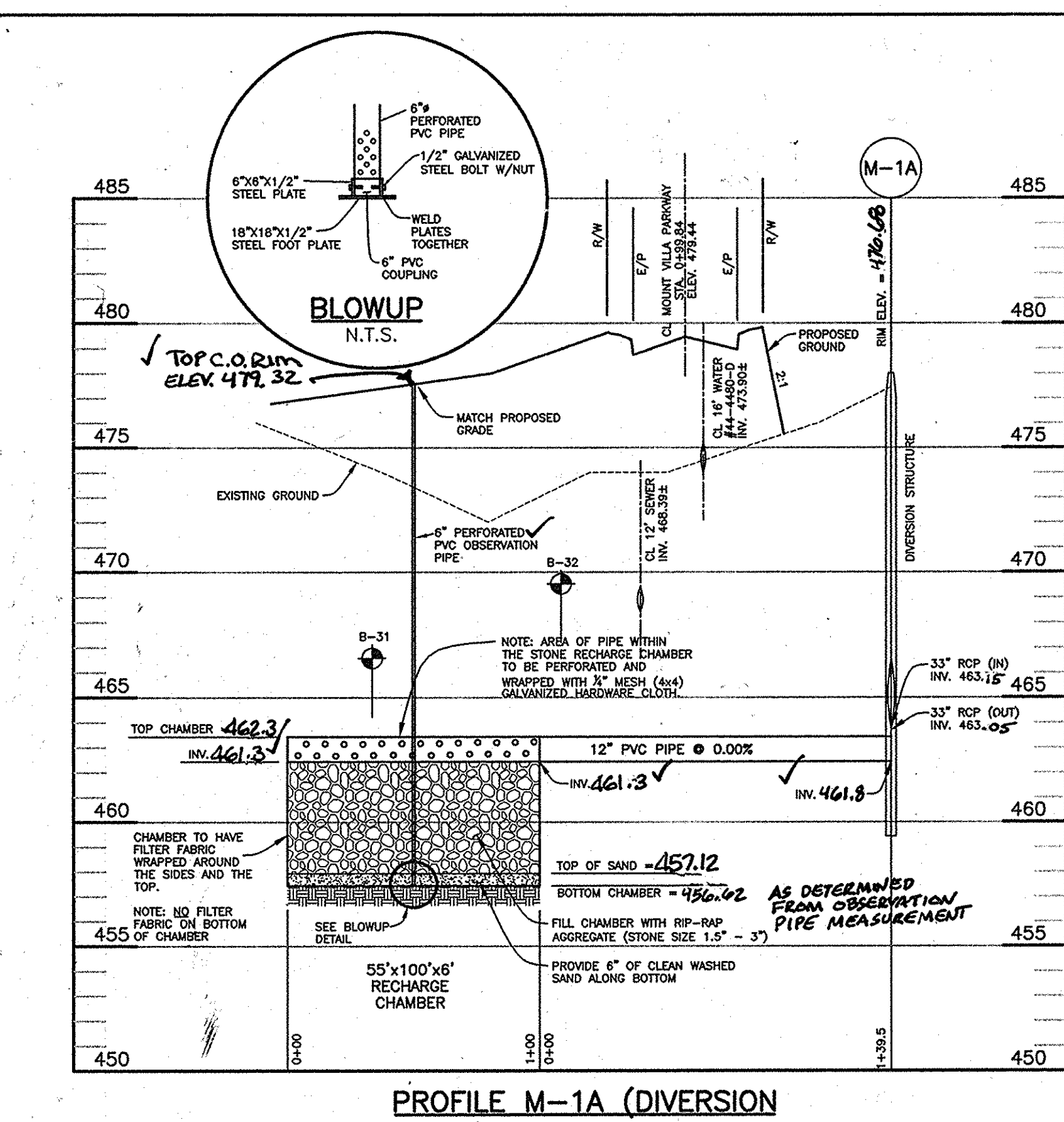
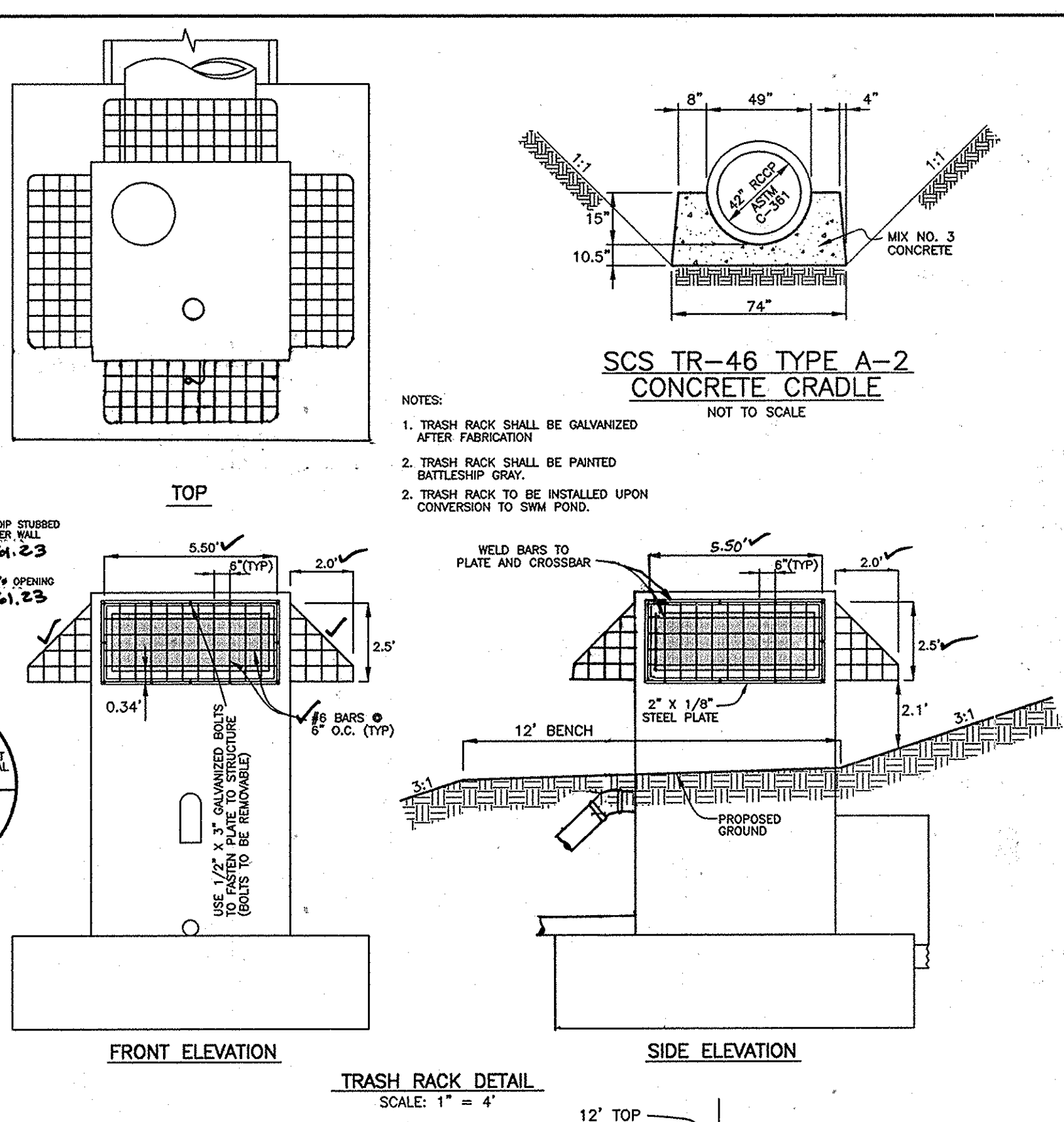
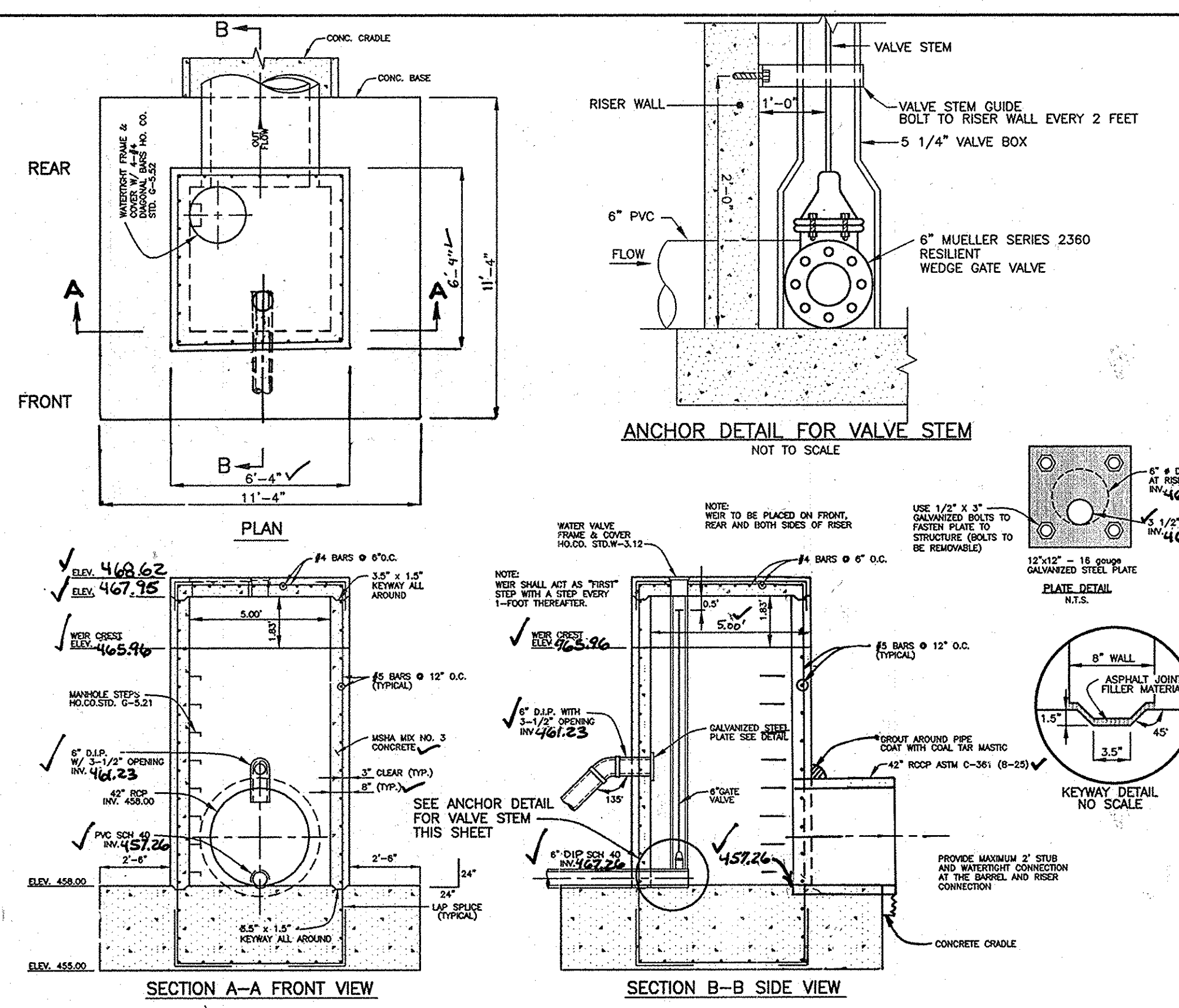
BENCHMARK ENGINEERING, INC.
 8400 BALTIMORE NATIONAL PIKE & SUITE 418
 ELICOTT CITY, MARYLAND 21043
 PHONE: 410-465-6105 FAX: 410-465-6644
 WWW.BE-CIVILENGINEERING.COM

**VILLAGES AT TURF VALLEY
 PHASE 1 SECTION 1
 OPEN SPACE LOTS 68 thru 69**

TAX MAP: 16 GRID: 11 PARCEL: P/O B
 ZONED: PGCC ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND

PERIMETER LANDSCAPE AND STREET TREE PLAN

DATE: OCTOBER, 2009 BEI PROJECT NO. 1915
 SCALE: AS SHOWN SHEET 10 OF 13



AS-BUILT CERTIFICATION

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

Donald M. Mason 21443
ENGINEER - DONALD A. MASON, P.E. # 21443 DATE 10/26/09

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

BY THE DEVELOPER:
John J. ... 10/26/09
DEVELOPER DATE

BY THE ENGINEER:
Donald M. Mason 10/26/09
ENGINEER - DONALD A. MASON, P.E. # 21443 DATE

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

APPROVED: DEPARTMENT OF PUBLIC WORKS
John J. ... 11-18-09
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Neil Sheddman 11-24-09
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

John J. ... 11/20/09
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

| | | |
|-----|-----------|--|
| 3 | 3-3-2010 | REVISE SWM PROFILE PER AS-BUILT ELEVATIONS OBSERVED IN THE FIELD |
| 2 | 5-26-2010 | REVISE DIVER DIVISION TO BE 5'-0" x 5'-0" INSIDE DIMS. REVISE WELLS, TRASH RACK, ACCORDINGLY |
| 1 | 4-21-2010 | REVISE PRINCIPAL SPILLWAY (SECTION A-A) |
| NO. | DATE | REVISION |

BENCHMARK ENGINEERING, INC.
6480 BALTIMORE NATIONAL PIKE & SUITE 418
ELICOTT CITY, MARYLAND 21043
PHONE: 410-465-8165 FAX: 410-465-8844
WWW.BE-CVLENGINEERING.COM

Donald M. Mason 10/26/09

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

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

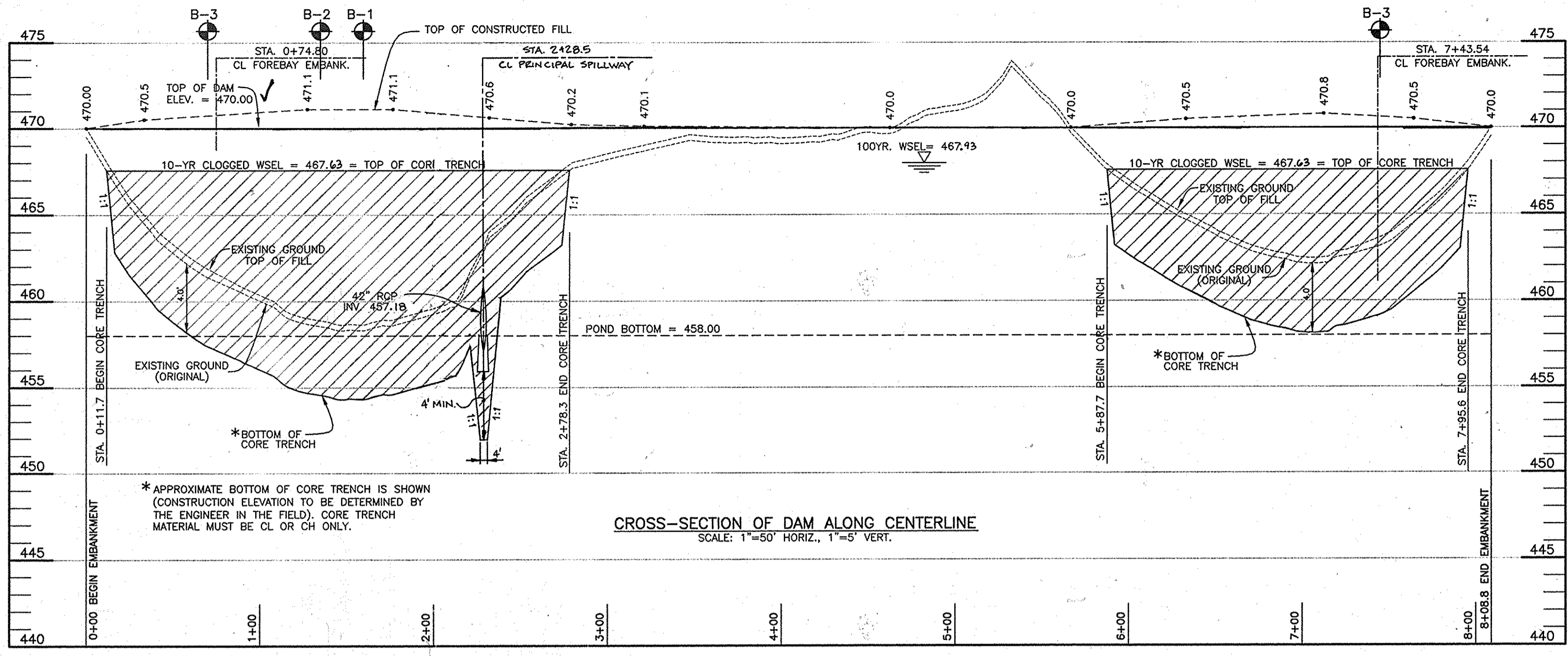
VILLAGES AT TURF VALLEY PHASE 1 SECTION 1 OPEN SPACE LOTS 68 thru 69

TAX MAP: 16 GRID: 11 PARCEL: P/0 8
ZONED: PGCC ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND

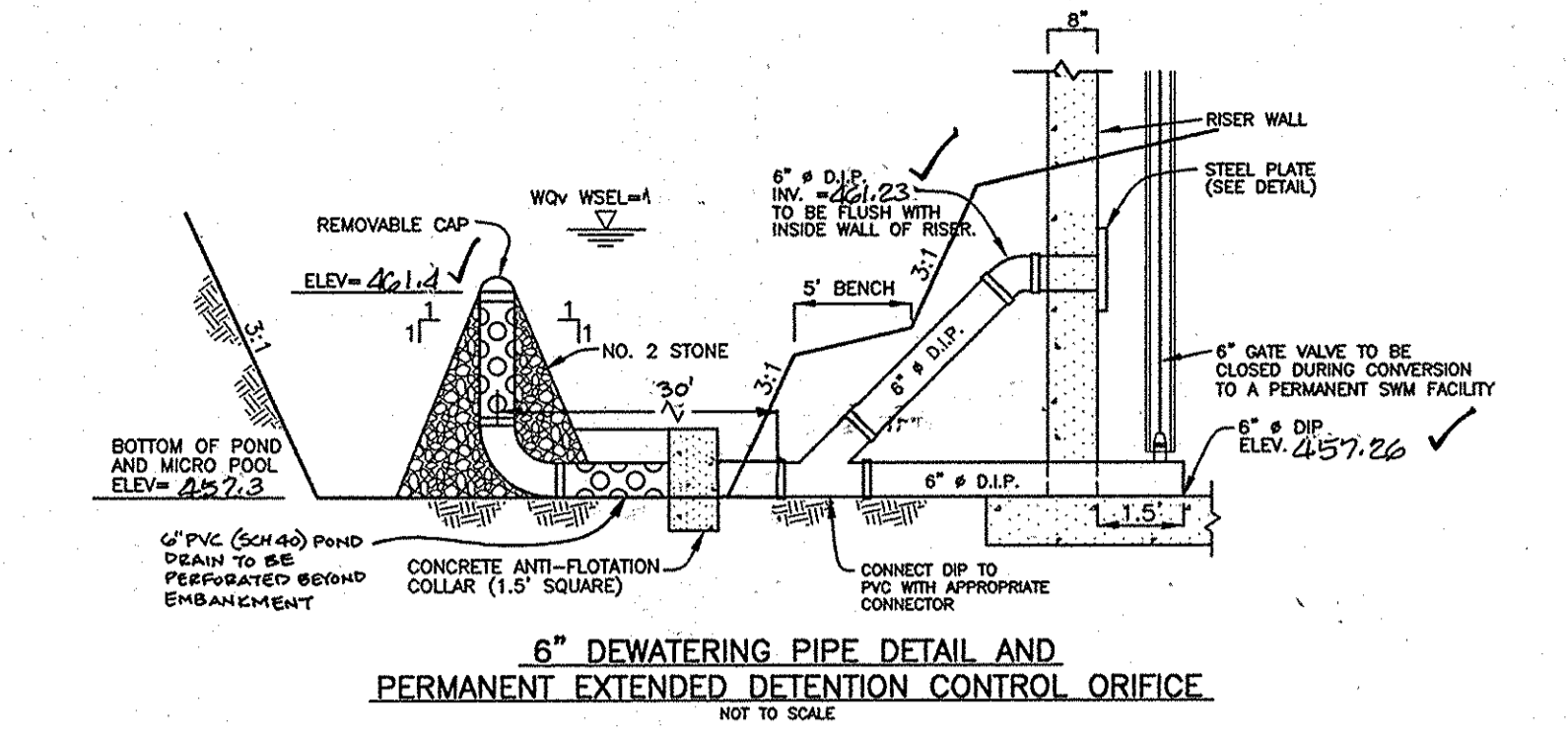
STORMWATER MANAGEMENT DETAILS FACILITY #1

DATE: OCTOBER, 2009 BEI PROJECT NO. 1915
SCALE: AS SHOWN SHEET 11 OF 13

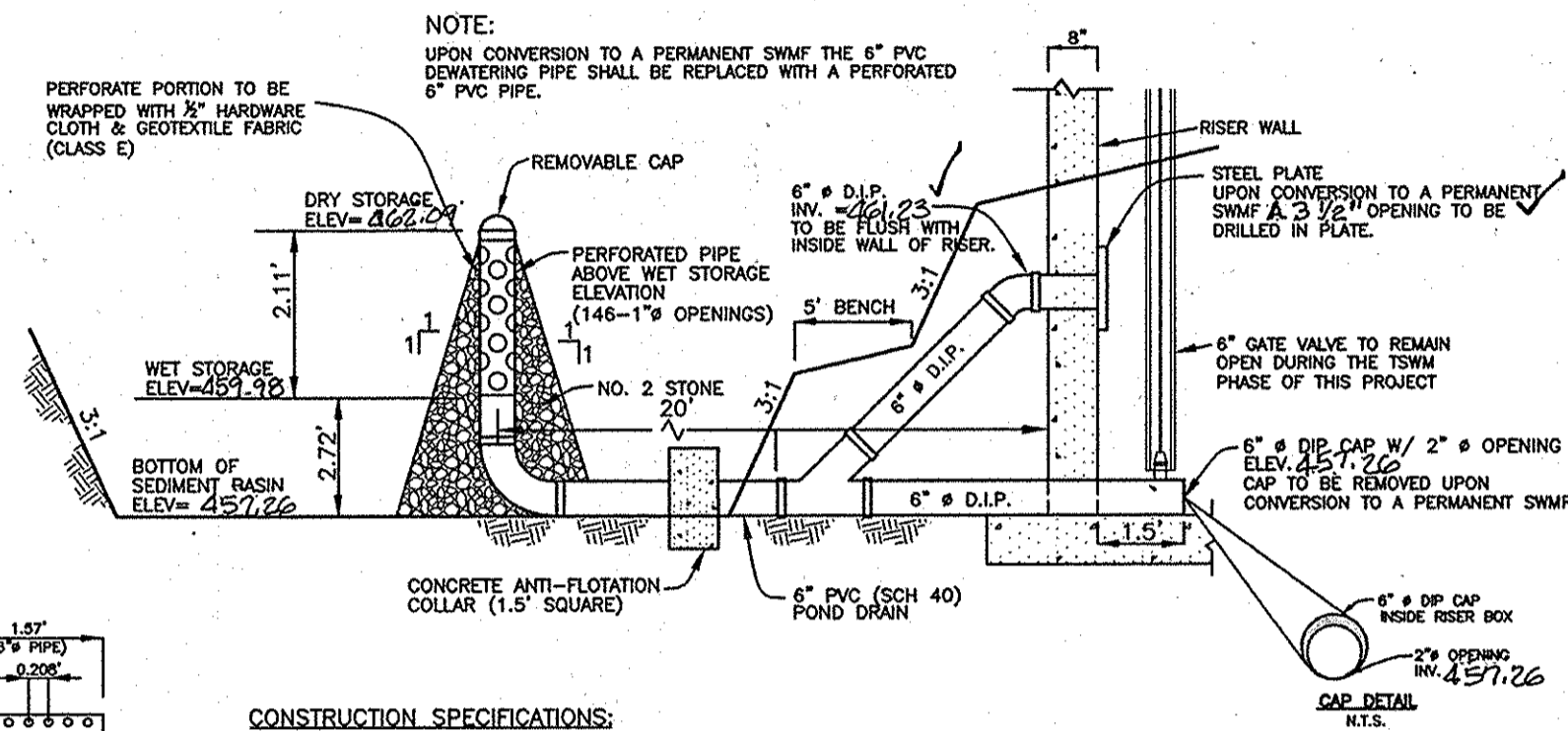
AS-BUILT F-10-026



CROSS-SECTION OF DAM ALONG CENTERLINE
SCALE: 1"=50' HORIZ., 1"=5' VERT.



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



6" BASIN #1 TEMPORARY SWM VERTICAL DRAW-DOWN DEVICE
NOT TO SCALE

OPERATION AND MAINTENANCE SCHEDULE FOR JOINTLY MAINTAINED EXTENDED DETENTION POND
ROUTINE MAINTENANCE TO BE PERFORMED BY H.O.A.:

- FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHALL BE PERFORMED DURING WEATHER TO DETERMINE IF THE POND IS FUNCTIONING PROPERLY.
- TOP 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.
- DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
- 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 TO BE PERFORMED BY HO. CO.:

- 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.
- 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

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

GEOTECHNICAL ENGINEER RECOMMENDATIONS:
EMBANKMENT AND CUT-OFF TRENCH CONSTRUCTION

AREAS OF SWM POND FACILITIES SHOULD BE STRIPPED OF TOPSOIL AND ANY OTHER UNSUITABLE MATERIALS FROM THE EMBANKMENT AND CUT-OFF TRENCH. IN ACCORDANCE WITH MDS-100 CODE NO. 378 POND STANDARDS/SPECIFICATIONS, SOILS CONSIDERED SUITABLE FOR THE CENTER OF EMBANKMENT AND CUT-OFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION OF: SC, CL, OR CL AND MUST BE AT LEAST 5% PASSING THE #200 SIEVE.

IT IS OUR PROFESSIONAL OPINION THAT IN ADDITION TO THE SOIL MATERIALS DESCRIBED ABOVE, A FINE-GRAINED SOIL, INCLUDING SILT/CLAY WITH A PLASTICITY INDEX OF 10 OR MORE CAN BE UTILIZED FOR THE CENTER OF THE EMBANKMENT AND CUT-OFF TRENCH. ALL FILL MATERIALS MUST BE PLACED AND COMPACTED IN ACCORDANCE WITH MDS-100 CODE NO. 378 SPECIFICATIONS.

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

Site Preparation
Area 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.

Area 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. It shall be free of roots, stumps, wood, rubbish, stones greater than 5", 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, CL, 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, and 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.

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 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 steeper. 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 core 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 pas, 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 side 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 material.

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 have 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.
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. 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. 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 on adequate number of corrugations to accommodate the bandwidth. The following pipe 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, pre-punched to the flange bolt circle, sandwiched between adjacent flanges; a 12-inch wide standard top 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 circular corrugated band using a minimum of 4 (four) rods and nuts, 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.

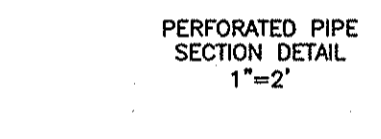
5. Backfilling shall conform to "Structure Backfill".

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-351.
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 to at least 50% of its outside diameter with a minimum thickness of 5 inches. Where a concrete cradle is not needed for structural reasons, flowable fill may be used as described in the "Structure Backfill" section of this standard. Gravel bedding is not permitted.
3. Laying pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with the 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 Ditches - When a drainage ditch is proposed, a registered professional engineer will supervise the design and construction inspection.



CONSTRUCTION SPECIFICATIONS:

- PERFORATIONS IN THE DRAW-DOWN DEVICE MAY NOT EXTEND INTO THE WET STORAGE.
- THE TOTAL AREA OF THE PERFORATIONS MUST BE GREATER THAN 2 TIMES THE AREA OF THE INTERNAL ORIFICE.
- THE PERFORATED PORTION OF THE DRAW-DOWN DEVICE SHALL BE WRAPPED WITH 5\"/>

AS-BUILT CERTIFICATION

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

Donald M. Mason ENGINEER - 21443
DATE: 2-28-16

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL ENGINEER'S OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY PROFESSIONAL ENGINEER ACT AND THE REQUIREMENTS OF THE HOWARD COUNTY PROFESSIONAL ENGINEER ACT. 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:
John Hamner DEVELOPER
DATE: 10/26/09

BY THE ENGINEER:
Donald M. Mason ENGINEER - DONALD A. MASON, P.E. # 21443
DATE: 10/26/09

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD COUNTY PROFESSIONAL ENGINEER ACT.

William J. Mudd CHIEF, BUREAU OF HIGHWAYS
DATE: 11-18-09

W. St. Charles CHIEF, DIVISION OF LAND DEVELOPMENT
DATE: 11-24-09

W. St. Charles CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 11-20-09

APPROVED: DEPARTMENT OF PUBLIC WORKS

APPROVED: DEPARTMENT OF PLANNING AND ZONING

| NO. | DATE | REVISION |
|-----|-----------|--|
| 3 | 9-3-2016 | REVISE PIPE ELEVATIONS PER AS-BUILT ELEVATIONS OBSERVED IN THE FIELD |
| 2 | 5-26-2010 | REVISE 100YR WSEL IN CROSS-SECTION OF DAM |
| 1 | 4-21-2010 | REVISE 6\"/> |

BENCHMARK ENGINEERING, INC.
ENGINEERS & LAND SURVEYORS & PLANNERS
8400 BALTIMORE NATIONAL PIKE & SUITE 418
ELLIOTT CITY, MARYLAND 21443
PHONE: 410-465-6105 FAX: 410-465-6644
WWW.BE-ENGINEERING.COM

Donald M. Mason 10/26/09

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

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

VILLAGES AT TURF VALLEY
PHASE 1 SECTION 1
OPEN SPACE LOTS 68 thru 69

TAX MAP: 16 GRID: 11 PARCEL: P/O B
ZONED: PGCC
ELECTION DISTRICT NO. 3
HOWARD COUNTY, MARYLAND

STORMWATER MANAGEMENT DETAILS
FACILITY #1

DATE: OCTOBER, 2009 BEI PROJECT NO. 1915
SCALE: AS SHOWN SHEET 12 OF 13

AS-BUILT F-10-026

HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

Project Name: Villages at Turf Valley SWM, Location: Howard County, MD, Job #: 06177A, Boring No.: B-1

Date: 3/15/06, Hammer Vt: 140, Rock Core Diameter: 2", Foreman: M. Stamos, Inspector: M. Stamos, Date Started: 3/15/06, Date Completed: 3/15/06

| Elevation/Depth | SOIL STRUC. SAMPLE LOCATION | Description | Boring and Sampling Notes | Rec. | HM | SPT Blows | SPT Blowfoot Curve | |
|-----------------|-----------------------------|--|---------------------------|------|-------|-----------|--------------------|-------|
| | | | | | | | N | Curve |
| 468.0 | | Topsoil 0" | | 11" | 2-3 | 8 | 10 | 50 |
| 467.0 | | No groundwater encountered while drilling | | 10" | 2-4 | 10 | | |
| 466.0 | | Light brown, moist, dense, micaceous silty sand (SM) | | 17" | 20-18 | 27 | | |
| 465.0 | | Bottom of boring @ 5.0' | | | | | | |

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

HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

Project Name: Villages at Turf Valley SWM, Location: Howard County, MD, Job #: 06177A, Boring No.: B-2

Date: 3/15/06, Hammer Vt: 140, Rock Core Diameter: 2", Foreman: M. Stamos, Inspector: M. Stamos, Date Started: 3/15/06, Date Completed: 3/15/06

| Elevation/Depth | SOIL STRUC. SAMPLE LOCATION | Description | Boring and Sampling Notes | Rec. | HM | SPT Blows | SPT Blowfoot Curve | |
|-----------------|-----------------------------|--|---|------|------|-----------|--------------------|-------|
| | | | | | | | N | Curve |
| 468.0 | | Topsoil 0" | | 11" | 2-3 | 5 | 10 | 50 |
| 467.0 | | Light brown, moist, silty, silty clay with roots, mica and rock fragments (ML) | No groundwater encountered while drilling | 17" | 5-10 | 16 | | |
| 466.0 | | Light brown, moist, silty, silty clay with roots, mica and rock fragments (ML) | No groundwater encountered while drilling | 17" | 5-10 | 16 | | |
| 465.0 | | Light brown, moist, silty, silty clay with roots, mica and rock fragments (ML) | No groundwater encountered while drilling | 17" | 5-10 | 16 | | |
| 464.0 | | Light brown and reddish brown, moist, silty, silty clay with roots, mica and rock fragments (ML) | No groundwater encountered while drilling | 17" | 5-10 | 16 | | |
| 463.0 | | Reddish brown, moist, silty, silty clay with roots, mica and rock fragments (ML) | No groundwater encountered while drilling | 17" | 5-10 | 16 | | |
| 462.0 | | Bottom of boring @ 11.5' | | | | | | |

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

HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

Project Name: Villages at Turf Valley SWM, Location: Howard County, MD, Job #: 06177A, Boring No.: B-3

Date: 3/15/06, Hammer Vt: 140, Rock Core Diameter: 2", Foreman: M. Stamos, Inspector: M. Stamos, Date Started: 3/15/06, Date Completed: 3/15/06

| Elevation/Depth | SOIL STRUC. SAMPLE LOCATION | Description | Boring and Sampling Notes | Rec. | HM | SPT Blows | SPT Blowfoot Curve | |
|-----------------|-----------------------------|---|---|------|-------|-----------|--------------------|-------|
| | | | | | | | N | Curve |
| 468.0 | | Topsoil 0" | | 11" | 2-3 | 5 | 10 | 50 |
| 467.0 | | Dark brown, moist, silty, silty clay with roots, mica and rock fragments (ML) | No groundwater encountered while drilling | 17" | 2-4 | 10 | | |
| 466.0 | | Light brown, moist, silty, silty clay with roots, mica and rock fragments (ML) | No groundwater encountered while drilling | 17" | 2-4 | 10 | | |
| 465.0 | | Reddish brown, moist, medium dense to dense, micaceous silty sand, usuc rock fragments (SM) | No groundwater encountered while drilling | 17" | 10-10 | 20 | | |
| 464.0 | | Bottom of boring @ 10.0' | | | | | | |

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

HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

Project Name: Villages at Turf Valley SWM, Location: Howard County, Maryland, Job #: 06177A, Boring No.: B-31

Date: 07/17/2007, Hammer Vt: 140, Rock Core Diameter: 2.25", Foreman: T. Carroll, Inspector: T. Carroll, Date Started: 07/17/2007, Date Completed: 07/17/2007

| Elevation/Depth | SOIL STRUC. SAMPLE LOCATION | Description | Boring and Sampling Notes | Rec. | HM | SPT Blows | SPT Blowfoot Curve | |
|-----------------|-----------------------------|---|---|------|-----|-----------|--------------------|-------|
| | | | | | | | N | Curve |
| 474.50 | | Topsoil 0" | | 11" | 5-8 | 11 | 10 | 50 |
| 473.50 | | Brown, moist, medium dense, micaceous silty sand and gravel, (GM-SM) | No groundwater encountered while drilling | 17" | 6-8 | 21 | | |
| 472.50 | | Light brown, moist, silty, silty clay, trace to no gravel (CL) | No groundwater encountered while drilling | 17" | 5-6 | 9 | | |
| 471.50 | | Light brown, moist, silty, silty clay, trace gravel and mica, (CL-ML) | No groundwater encountered while drilling | 17" | 3-5 | 10 | | |
| 470.50 | | Bottom of boring at 15.0' | | | | | | |

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

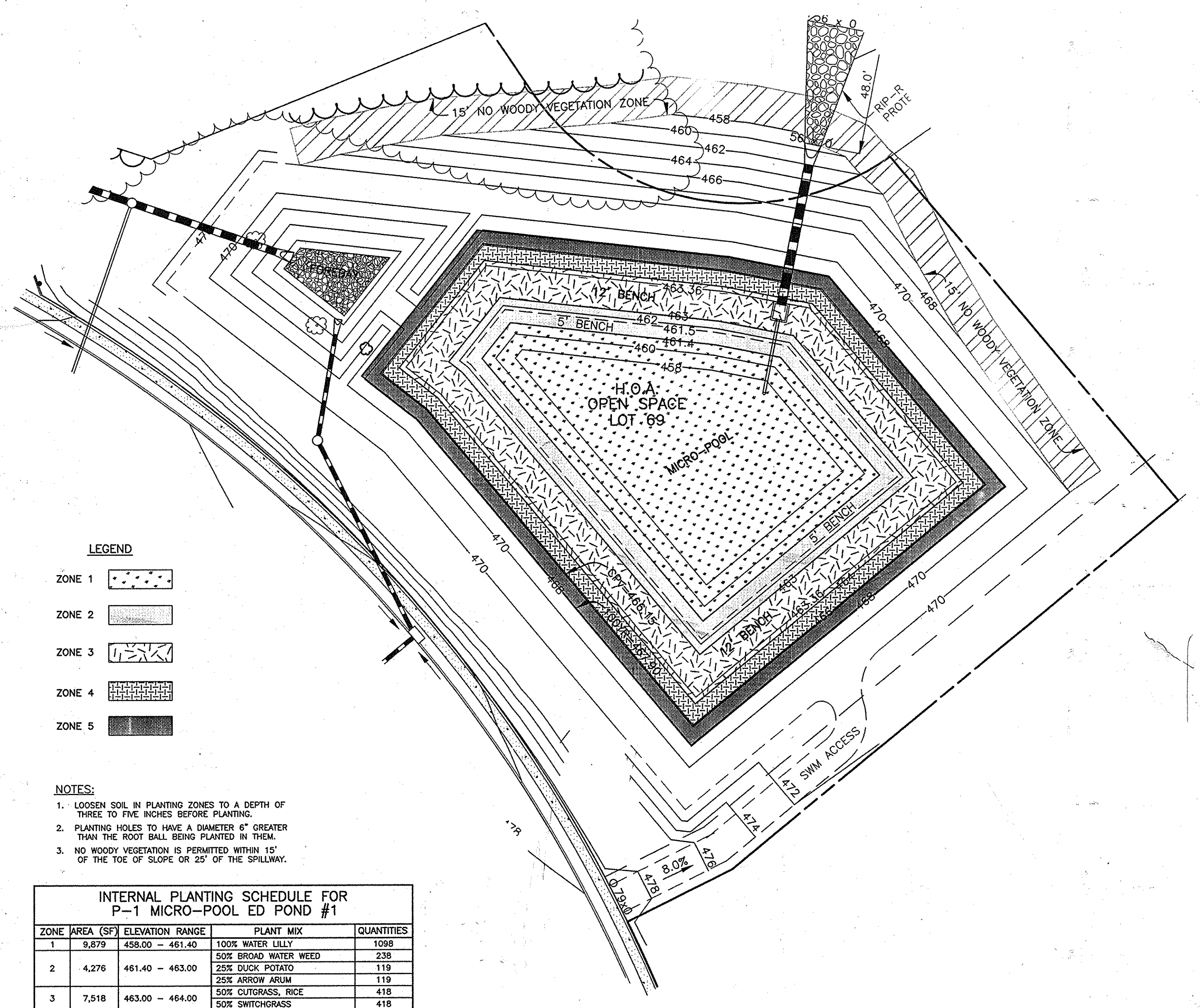
HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

Project Name: Villages at Turf Valley SWM, Location: Howard County, Maryland, Job #: 06177A, Boring No.: B-32

Date: 07/17/2007, Hammer Vt: 140, Rock Core Diameter: 2.25", Foreman: T. Carroll, Inspector: T. Carroll, Date Started: 07/17/2007, Date Completed: 07/17/2007

| Elevation/Depth | SOIL STRUC. SAMPLE LOCATION | Description | Boring and Sampling Notes | Rec. | HM | SPT Blows | SPT Blowfoot Curve | |
|-----------------|-----------------------------|---|---|------|-------|-----------|--------------------|-------|
| | | | | | | | N | Curve |
| 474.50 | | Topsoil 0" | | 11" | 4-8 | 14 | 10 | 50 |
| 473.50 | | Brown, moist, medium dense, micaceous silty sand and gravel, (GM-SM) | No groundwater encountered while drilling | 17" | 24-14 | 20 | | |
| 472.50 | | Light brown, moist, silty, silty clay, trace gravel and mica, (CL-ML) | No groundwater encountered while drilling | 17" | 4-4 | 9 | | |
| 471.50 | | Light brown, moist, silty, silty clay, trace gravel and mica, (CL-ML) | No groundwater encountered while drilling | 17" | 3-4 | 10 | | |
| 470.50 | | Bottom of boring at 15.0' | | | | | | |

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



- LEGEND**
- ZONE 1: [Pattern]
 - ZONE 2: [Pattern]
 - ZONE 3: [Pattern]
 - ZONE 4: [Pattern]
 - ZONE 5: [Pattern]

- NOTES:**
1. LOOSEN SOIL IN PLANTING ZONES TO A DEPTH OF THREE TO FIVE INCHES BEFORE PLANTING.
 2. PLANTING HOLES TO HAVE A DIAMETER 6" GREATER THAN THE ROOT BALL BEING PLANTED IN THEM.
 3. NO WOODY VEGETATION IS PERMITTED WITHIN 15' OF THE TOE OF SLOPE OR 25' OF THE SPILLWAY.

INTERNAL PLANTING SCHEDULE FOR P-1 MICRO-POOL ED POND #1

| ZONE | AREA (SF) | ELEVATION RANGE | PLANT MIX | QUANTITIES |
|------|-----------|-----------------|---|-------------------|
| 1 | 9,879 | 458.00 - 461.40 | 100% WATER LILLY 50% BROAD WATER WEED | 1098 235 |
| 2 | 4,276 | 461.40 - 463.00 | 25% DUCK POTATO 25% ARROW ARUM | 119 119 |
| 3 | 7,518 | 463.00 - 464.00 | 50% CUTGRASS, RICE 50% SWITCHGRASS | 418 418 |
| 4 | 3,860 | 464.00 - 466.18 | (CPV) 25% VIOLETS, COMMON BLUE 25% CONEFLOWER, CUT-LEAF | 214 107 107 |
| 5 | 3,467 | 466.18 - 467.93 | (CPV) (100YR) 75% WITCHGRASS, NEEDLE-LEAF 25% CONEFLOWER, SWEET | 289 96 |
| 6 | 0 | N/A | N/A | 0 |

INTERNAL LANDSCAPING FOR P-1 MICRO-POOL ED POND #1
SCALE: 1" = 30'

ALL PLANTINGS TO BE QUART BULBS AND SPACED AT 3' O.C.

APPROVED: DEPARTMENT OF PUBLIC WORKS
Mike J. [Signature] 11-18-09
CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Walt [Signature] 11-24-09
CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] 11-20-09
CHIEF, DEVELOPMENT ENGINEERING DIVISION

| | |
|---|---|
| <p>2 5-26-2010 REVISE ELEVATION RANGE IN PLANTING SCHEDULE</p> <p>NO. DATE REVISION</p> | |
| <p>BENCHMARK ENGINEERING, INC. 8480 BALTIMORE NATIONAL PIKE & SUITE 418 ELICOTT CITY, MARYLAND 21043 PHONE: 410-465-6105 FAX: 410-465-6644 WWW.BE-CVLENGINEERING.COM</p> | <p>Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer in the State of Maryland, License No. 21446, Expiration Date: 12-31-2009 <i>[Signature]</i> 11/5/09</p> |
| <p>OWNER: MANGIONE ENTERPRISES OF TURF VALLEY, LIMITED PARTNERSHIP 1205 YORK ROAD, PENTHOUSE LUTHERVILLE, MARYLAND 21093 410-825-8400</p> | <p>VILLAGES AT TURF VALLEY PHASE 1 SECTION 1 OPEN SPACE LOTS 68 thru 69</p> <p>TAX MAP: 16 GRID: 11 PARCEL: P/O B ZONED: PGCC ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND</p> |
| <p>DEVELOPER: MANGIONE ENTERPRISES OF TURF VALLEY, LIMITED PARTNERSHIP 1205 YORK ROAD, PENTHOUSE LUTHERVILLE, MARYLAND 21093 410-825-8400</p> | <p>INTERNAL SWMF LANDSCAPING PLAN AND SOIL BORING LOGS</p> <p>DATE: OCTOBER, 2009 BEI PROJECT NO. 1915 SCALE: AS SHOWN SHEET 13 OF 13</p> |