

General Notes

- All construction shall be in accordance with the latest standards and specifications of Howard County by MSHA standards and specifications if applicable.
- The contractor shall notify the Department of Public Works/Bureau of Engineering/Construction Inspection Division at 410-315-1850 at least five (5) working days prior to the start of work.
- The contractor shall notify "Miss Utility" at 1-800-257-7777 at least 48 hours prior to any excavation work being done.
- 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 be in place prior to the placement of any asphalt.
- 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 Lighting in Residential Developments" (June 1995). A minimum 20 feet spacing shall be between the light and any tree.
- The existing topography is taken from low level flight and aerial survey with 2' contour intervals prepared by 301 dated April 8, 2002.
- The coordinates shown hereon are based upon the Howard County Geographic Control which is based upon the Maryland State Plane Coordinate System, Howard County Monitors Nos. 31EA and 37DCA were used for this project.
- The traffic study for this project was prepared by The Traffic Group and was approved on March 25, 2002. AFPO Traffic Analysis is not required for this project. This project is located further than 1/4 mile from the intersection of two major collector roadways.
- Sidewalk ramps shall meet current ADA requirements.
- Project background information:
Subdivision Name: Owens Property - Phase II
Total Area: 59.36 Acres in Phases I and 2
Tax Map: 31
Phase II - Lot/Parcel: 243
Phase II - Area: 27.73 Acres
Phase II - Buildable Lot Area: 18,739+ ACRES
Phase II - Open Space Lot Area: 5,409+ ACRES
Zoning: R-20
Election District: 1
Preliminary Plan Approval Date: 9/20/04
File Numbers: P-03-08, S-02-15, F-04-29
- All sidewalks at intersections to have handicapped ramps. See detail on sheet 5 of 25.
- Street trees shall be planted at least 5' from any lot structure.
- This project complies with the requirements of Section 16.1200 of the Howard County Code for Forest Conservation Development of Phase II of the Owens Property involves the clearing of approximately 8.59 acres of forest, and the retention of approximately 2,800 trees on the net tract area, generating a reforestation obligation of 10.41 acres. A total of 4.0 acres of reforestation will be provided on-site, with the remaining 6.41 acres to be retained off-site (at 2:1 retention ratio) at the Myrtus Property.
- Stormwater Management for this project will be addressed with the installation of one Stormwater Management Facility (wet pond) which will control the runoff per the latest approved Design Standards. Credits are being utilized to meet the stormwater management requirement. Credits used include Natural Area Conservation, Roof-top Disconnections, Open Grass Channels and Sheet Flow to Buffer.
- The Stormwater management pond will be owned by the Owens Property H.O.A. - there will be a public easement (Howard County) on the facility.
- Routine maintenance shall be performed by the Home Owner's Association and non-routine maintenance SHW shall be performed by Howard County, the routine and non-routine schedule is shown on sheet 19 of 25.
- There will be no Howard County services provided on the flag or pipestem lots.
- A 10' x 4' trash pad will be placed at the edge of the County roadway to provide a place for the residents on the Private Access Place to place refuse and recyclable items. The 10' x 4' trash pad to be owned and maintained by the H.O.A.
- Water and sewer extensions for this project will be public, and the site lies within the metropolitan district. The drainage area is the Patapsco Watershed.
- Existing utilities shown are taken from record drawings obtained from Howard County Water & Sewer Contract Nos. 14-3039-D and 14-3076-D.
- Boundary shown hereon is based on field survey by DMW dated September, 2002.
- A wetland report was prepared by DMW dated February, 2002.
- A noise study is not required for this project.
- There are no known cemeteries or grave sites on this property.
- See Howard County Site Inventory H0-190 Cedar Mill for the historic structure on the site, built in 1916, which will be demolished prior to recordation of the plat.
- All existing driveways and existing buildings located within limits of Phase II are to be removed.
- Financial surety for the required landscaping in the amount of \$516,000 must be posted as part of the developer's agreement. (159 shade trees, 26 evergreen trees)
- Financial surety for the Forest Conservation requirements in the amount of \$153,519 must be posted as part of the developer's agreement.
- The Maryland Department of the Environment Tracking Number is 200460572
- Water and Sewer Contract Number 14-4295-D
- 95% compaction in fill areas to be per AASHTO T-150 standards.
- Landing Road is a Scenic Road.
- The path to Ellis Lane between Lots 50 and 51 and on Glynchester Farm Lot 53 will be constructed as part of Owens Phase 2 with the permission of the owner of Glynchester Farm Lot 53.
- BRI's at the Site Development Plan stage shall be designed to conform with the requirements in effect at the time of submission.
- 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 (4" square) inserted into a 2" galvanized steel perforated square tube sleeve (6" diameter) - 3' long. A galvanized steel pole cap shall be mounted on top of each post.

RW PT. NO.	DESCRIPTION	ELEV.
100	REBAR & CAP	404.13
101	REBAR & CAP	407.30
102	X-CUT	407.49
103	REBAR & CAP	413.16
104	REBAR & CAP	414.32
105	CONC. MON.	407.64
106	REBAR & CAP	408.84
107	REBAR & CAP	410.19
108	REBAR & CAP	413.58
109	REBAR & CAP	415.13
110	REBAR & CAP	418.41
111	REBAR & CAP	425.91
112	REBAR & CAP	431.40
113	REBAR & CAP	439.76
114	X-CUT	448.57
115	REBAR & CAP	445.90
118	REBAR & CAP	445.55
119	REBAR & CAP	448.66
120	REBAR & CAP	439.29
121	X-CUT	431.33
122	X-CUT	425.84
123	REBAR & CAP	419.32
124	REBAR & CAP	415.22
125	CONC. MON.	414.83
126	X-CUT	413.24
127	X-CUT	407.92
128	X-CUT	407.14
129	X-CUT	404.04
6	REBAR & CAP	447.93
7	REBAR & CAP	448.07
8	REBAR & CAP	448.65
9	REBAR & CAP	448.74

Final Plan

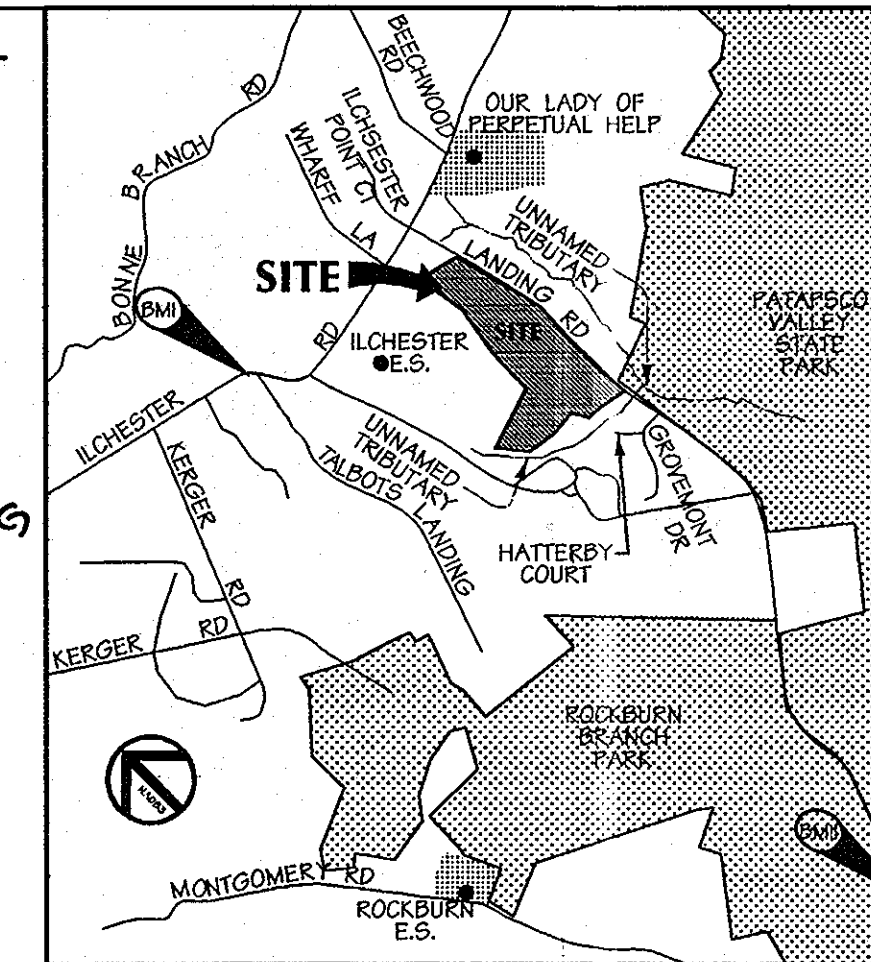
Owens Property - Phase II

Lots 43-97, Open Space Lots 98,99 and 100

Non-Buildable Bulk Parcels 'C' and 'D'

Howard County, Maryland

- AS-BUILT NOTES:**
- HORIZONTAL DATUM FOR THIS AS-BUILT IS BASED ON THE MARYLAND STATE REFERENCE SYSTEM NAD 83 AS PROJECTED FROM HO.CO. GEODETIC CONTROL STATION 31EA AND 37CA. VERTICAL DATUM FOR THIS AS-BUILT IS NORTH AMERICAN VERTICAL DATUM NAVD 88 AS PROJECTED FROM THE ABOVE MENTIONED HO.CO. GEODETIC CONTROL STATIONS.
 - THE INSTRUMENTS USED IN PERFORMING THE AS-BUILT WERE A 5" TOTAL STATION AND PRISM.
 - THIS AS-BUILT WAS PERFORMED BY BENCHMARK ENGINEERING INC.



LOCATION MAP

SCALE: 1" = 2000'

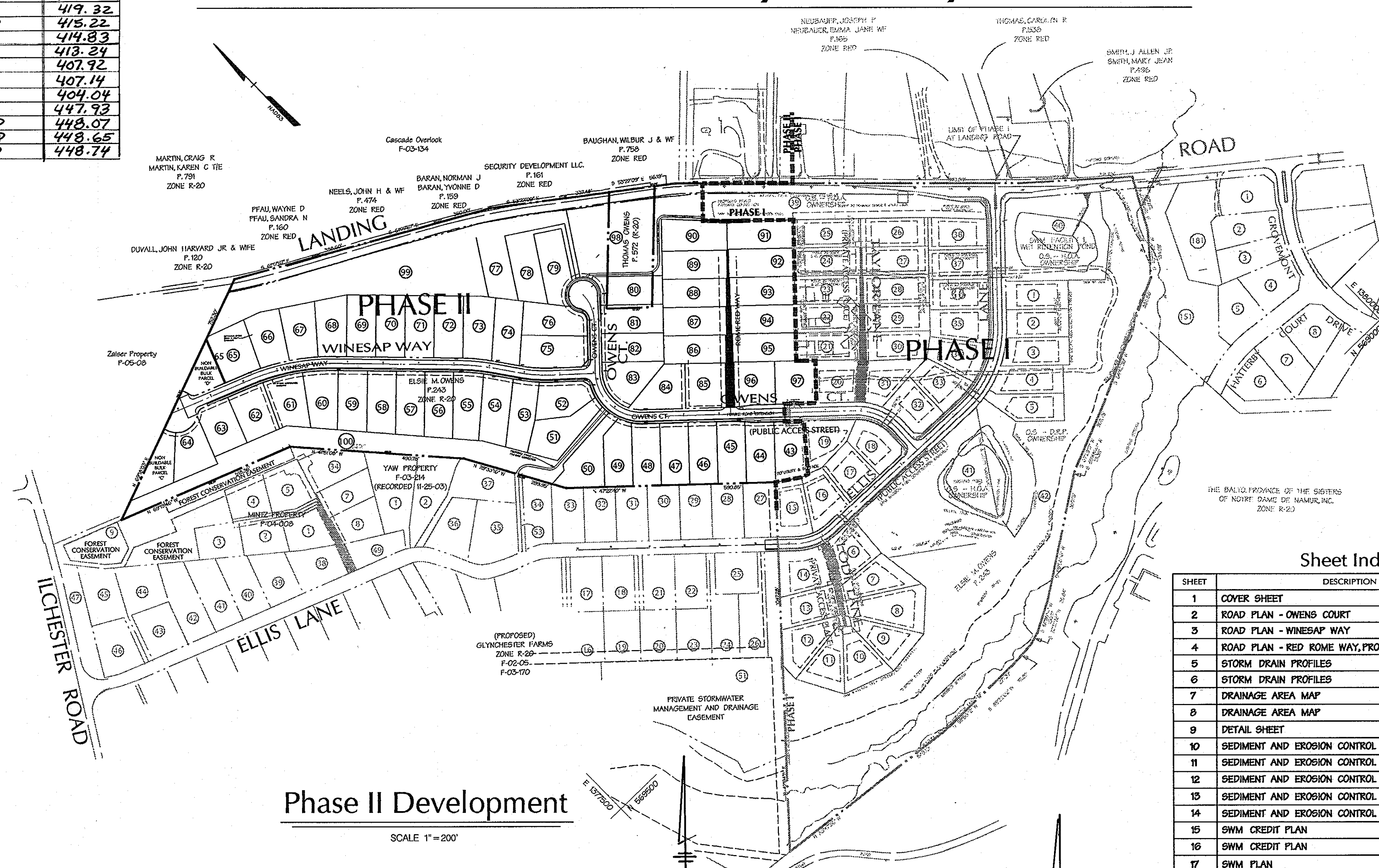
BENCHMARK DESCRIPTION

BMI
#31EA-DISC SET IN CONCRETE
N 569641422
E 574963535
ELEVATION = 468.90
2 FT. SOUTH OF SIDEWALK ON LANCASTER ROAD
4473 FT. FROM GATE IN FENCE ON TRANSMISSION LINE R.O.W.
#37CA-DISC SET IN CONCRETE
N 564231656
E 580740800
ELEVATION = 286.965
204' SOUTH OF CENTERLINE OF LANDING ROAD
25 MILES NORTHWEST ON LANDING ROAD FROM
INTERSECTION OF LANDING ROAD AND MONTGOMERY RD.

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 12-6-13

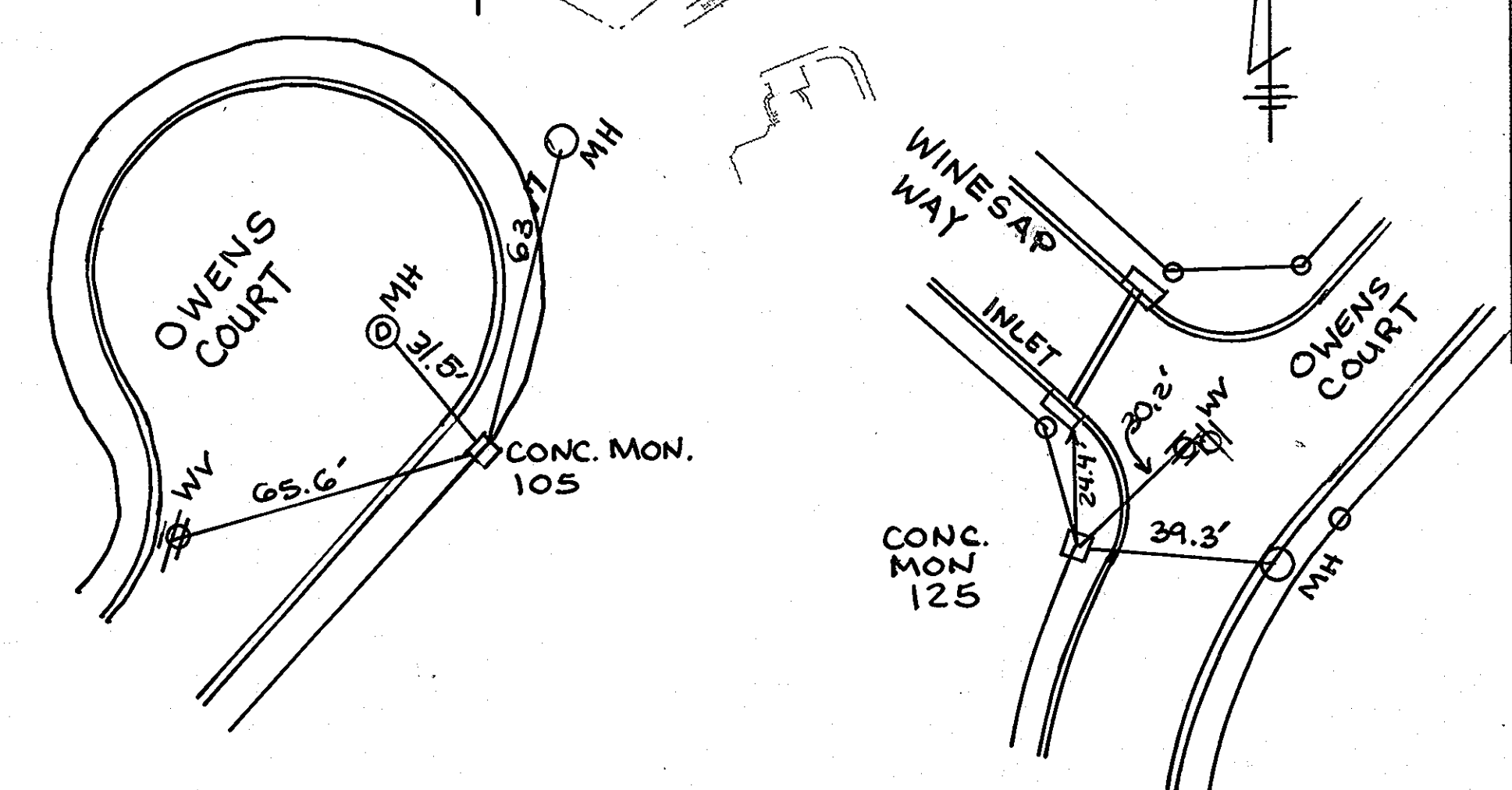


Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License No. 21443, Expiration Date 12-21-14



Phase II Development

SCALE 1" = 200'



Site Analysis Data Chart

1. General Site Data

- Present Zoning: R-20
- Applicable DPZ File References: F-04-29, P-03-08, S-02-15, P-05-08.
- Proposed Use of Site or Structure(s): **SFD RESIDENTIAL**
Proposed Water and Sewer Systems: **X** Public **-** Private

2. Area Tabulation

- Total Area of Site: 27.739 Ac.±
- Approximate Area of 100 Year Floodplain: 0 Acres
- Approximate Area of Steep Slopes (25% or Greater): 0 Acres
- Net Area of Site: 27.739 Acres
- Area of Proposed Building Lots: 19,237 Acres
- Area of Proposed Open Space Lots: 5.409 Acres
- Area of Proposed Public Roads: 2.962 Acres

3. Unit/Lot Tabulation

- Total Number of Residential Units/Lots Allowed for Project by Right: N/A
- Total Number of Residential Units/Lots Proposed on this Submission: 55 SFD
- Density of Project Per Gross Acre: 2.3 LOTS / ACRE
- Total Number of Preservation Parcels Proposed: 0
- Total Number of Open space Lots Proposed: 3
- Total Number of Non - Buildable Bulk Parcels Proposed: 2
- Total Number of Lot/Parcels Proposed: 58

4. Open Space Data

- Minimum Residential Lot Size Selected: 14,000 Square Feet
- Open Space Required: 8.32 Acres (30% of gross area)
- Total Open Space Provided on this Submission: 8.32 Acres (5.48 Ac. Phase II and 2.84 Ac. from excess in Phased I) 30%
- Area of Recreation Open Space Required: 11,000 S.F. (200 S.F./LOT)
- Area of Rec. Open Space Provided on this Submission: An excess area of Recreational Open Space was provided with Owens Property Phase I, F-04-29, (7,600SF required, 107,620SF provided). Phase II requires 11,000SF (55 LOTS x 200SF). This requirement will be met using 11,000SF of the excess. The recreational Open Space is located on Open Space Lot 41, Phase I.

Sheet Index

SHEET	DESCRIPTION
1	COVER SHEET
2	ROAD PLAN - OWENS COURT
3	ROAD PLAN - WINESAP WAY
4	ROAD PLAN - RED ROME WAY, PROFILE AND DETAILS
5	STORM DRAIN PROFILES
6	STORM DRAIN PROFILES
7	DRAINAGE AREA MAP
8	DRAINAGE AREA MAP
9	DETAIL SHEET
10	SEDIMENT AND EROSION CONTROL PLAN
11	SEDIMENT AND EROSION CONTROL PLAN
12	SEDIMENT AND EROSION CONTROL DETAILS
13	SEDIMENT AND EROSION CONTROL DETAILS
14	SEDIMENT AND EROSION CONTROL SPECIFICATIONS
15	SWM CREDIT PLAN
16	SWM CREDIT PLAN
17	SWM PLAN
18	SWM PROFILES
19	SWM DETAILS
20	SWM SPECIFICATIONS AND BORING LOGS
21	LANDSCAPE PLAN
22	LANDSCAPE PLAN
23	SWM POND PLANTING PLAN
24	FOREST CONSERVATION PLAN
25	FOREST CONSERVATION PLAN
26	FOREST CONSERVATION PLAN
27	FOREST CONSERVATION PLAN

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
William E. White 1-15-06
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Cindy Harner 2/9/06
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Donald Mason 12/1/06
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Date	No.	Revision Description

FINAL PLAN OWENS PROPERTY PHASE II

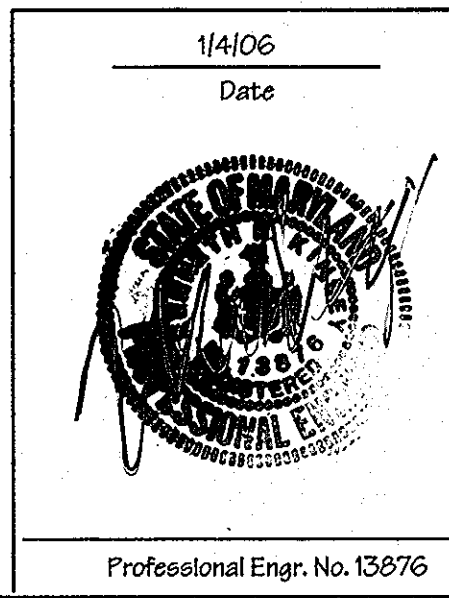
LOTS 43 THRU 97 AND OPEN SPACES LOTS 98,99 AND 100
NON-BUILDABLE BULK PARCELS 'C' AND 'D'
TAX MAP 31 PARCEL 243,1572

OWNER/DEVELOPER:
PATAPSCO LANDING, LLC
c/o James Keely and Co. Inc.
P.O. Box 528
61 E. Fadenia Road
Timonium, MD 21093

DMW
Darr McCune-Walkers, Inc.
300 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax: 296-4705
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

OWENS PROPERTY - PHASE II FINAL PLAN COVER SHEET

Des By	ADL	Scale	AS SHOWN	Proj. No.	01086.D
Drn By	ADL	Date	1/14/06		
Chk By	KRK	Approved			1 of 27



CURVE DATA					
FROM-TO	DELTA	RADIUS	LENGTH TANGENT	CHORD	
1+20.36 - 2+17.15	12°30'42"	443.24'	96.79'	48.59'	N 41°3'07" W 96.60'
2+17.15 - 3+18.12	9°34'50"	600.00'	100.33'	50.28'	N 40°15'11" W 100.21'
7+33.49 - 9+18.44	23°52'07"	600.00'	249.95'	126.82'	N 58°58'40" W 249.15'

STREET LIGHT TABLE	
ROAD STATION & OFFSET	DESCRIPTION
0+28.16/4' RT.	100-WATT HPS VAPOR PREMIER POST-TOP FIXTURE MOUNTED ON A 14' BLACK FIBERGLASS POLE
4+02.14/3' LT.	100-WATT HPS VAPOR PREMIER POST-TOP FIXTURE MOUNTED ON A 14' BLACK FIBERGLASS POLE
8+60.14/5' RT.	100-WATT HPS VAPOR PREMIER POST-TOP FIXTURE MOUNTED ON A 14' BLACK FIBERGLASS POLE

NOTES
 1. TREES, SHRUBS AND OTHER WOODY VEGETATION NOT ALLOWED WITHIN TWENTY-FIVE (25) FEET OF THE RISER STRUCTURE AND NOT ALLOWED WITHIN FIFTEEN (15) FEET OF ANY PORTION OF THE EASEMENT.
 2. SWM FACILITY 2 SHALL BE OWNED BY THE HOME OWNERS ASSOCIATION (HOA). THE HOA SHALL PERFORM MONITOR TRASH REMOVAL MAINTENANCE. ALL OTHER MAINTENANCE SHALL BE PERFORMED BY HOWARD COUNTY. THE SWM EASEMENT IS OWNED BY HOWARD COUNTY.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
William J. Mahan 1-19-06
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Wanda Hammett 2/9/06
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Will Dammann 1/21/06
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Date	No.	Revision Description

FINAL PLAN OWENS PROPERTY PHASE II

LOTS 43 THRU 97 AND OPEN SPACES LOTS 98,99 & 100
 NON-BUILDABLE BULK PARCELS 'C' AND 'D'
 TAX MAP 31 PARCEL 243,572

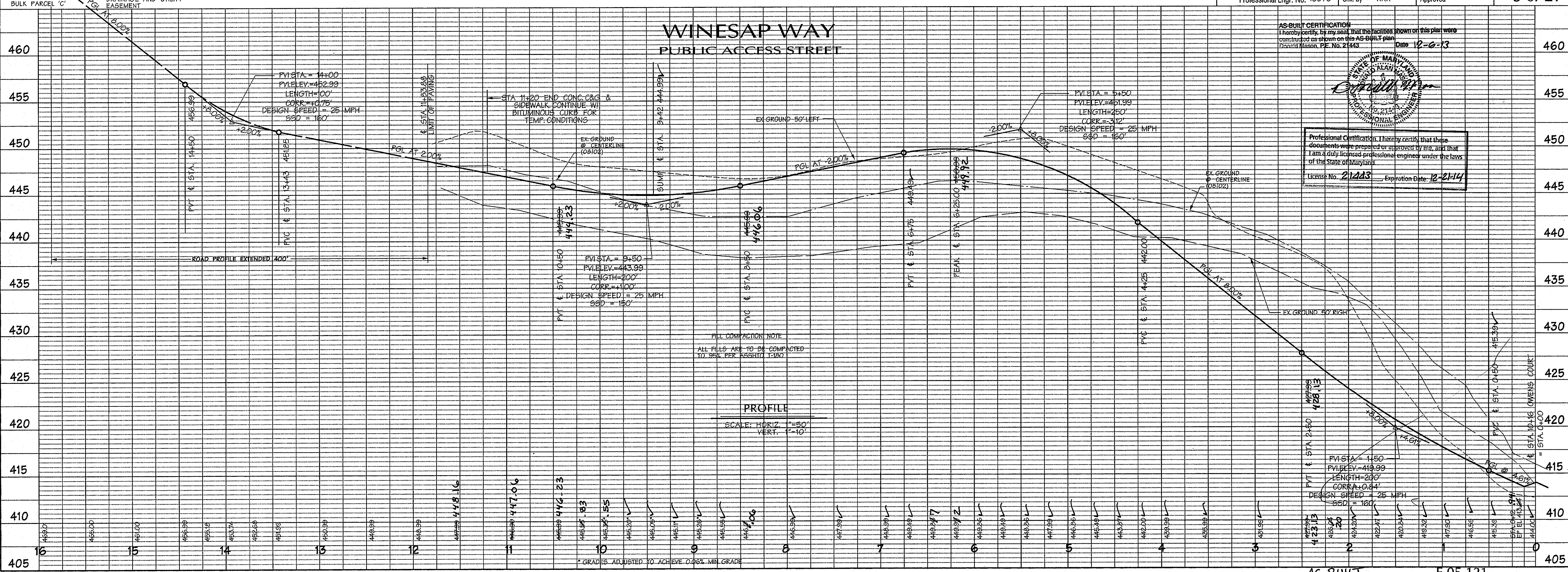
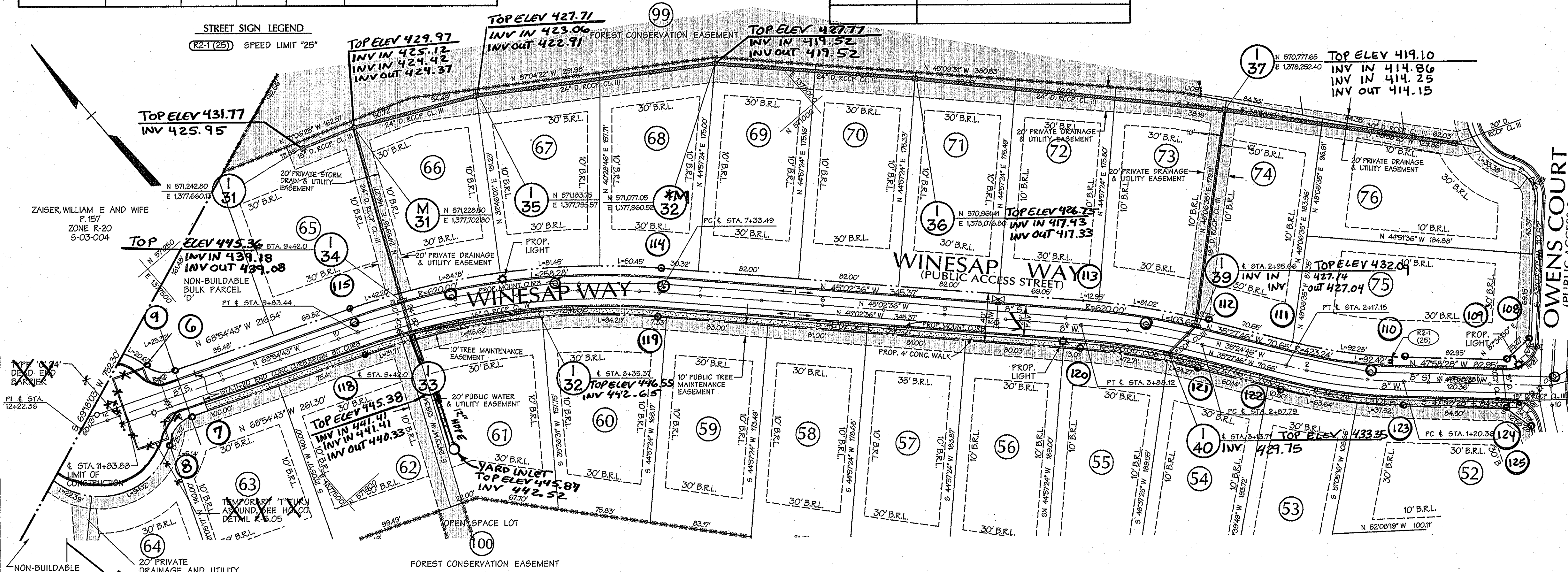
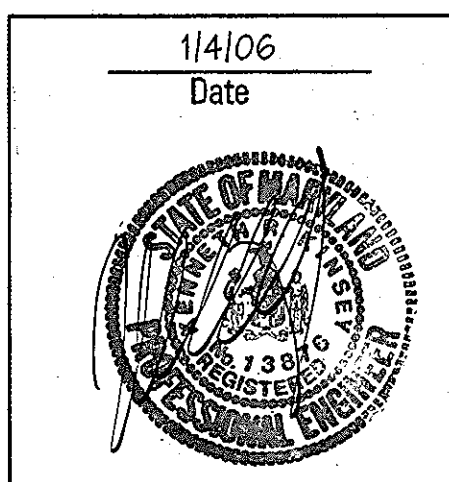
OWNER/DEVELOPER:
 PATAPSCO LANDING, LLC
 c/o James Keely and Co. Inc.
 P.O. Box 528
 61 E. Padonia Road,
 Timonium, MD 21093

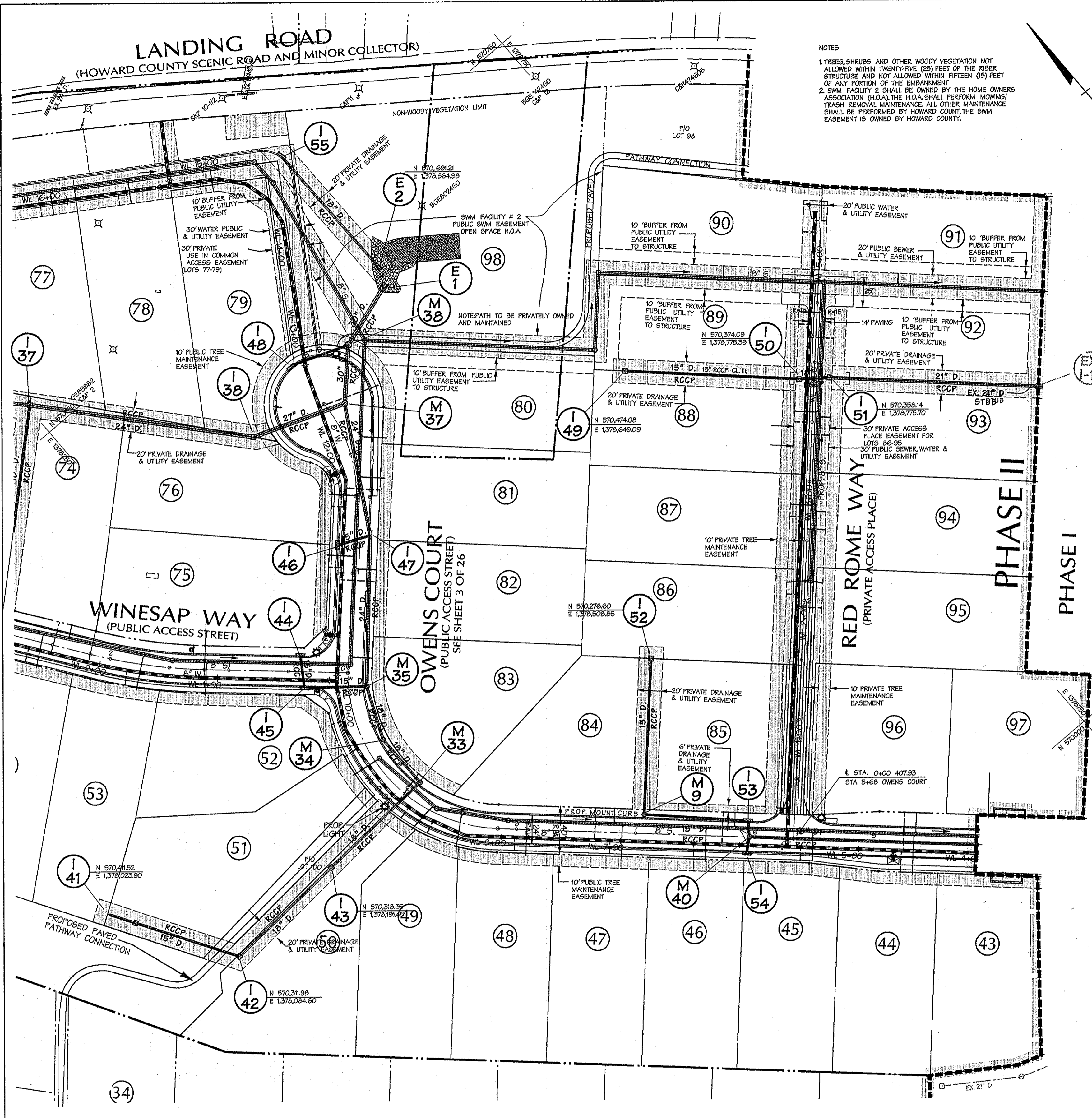
DMW
 Dan McCune/Walkers, Inc.
 300 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 298-3333
 Fax: 298-6708

A Team of Land Planners,
 Landscape Architects,
 Golf Course Architects,
 Engineers, Surveyors &
 Environmental Professionals

TITLE
**ROAD CONSTRUCTION PLAN
WINESAP WAY**

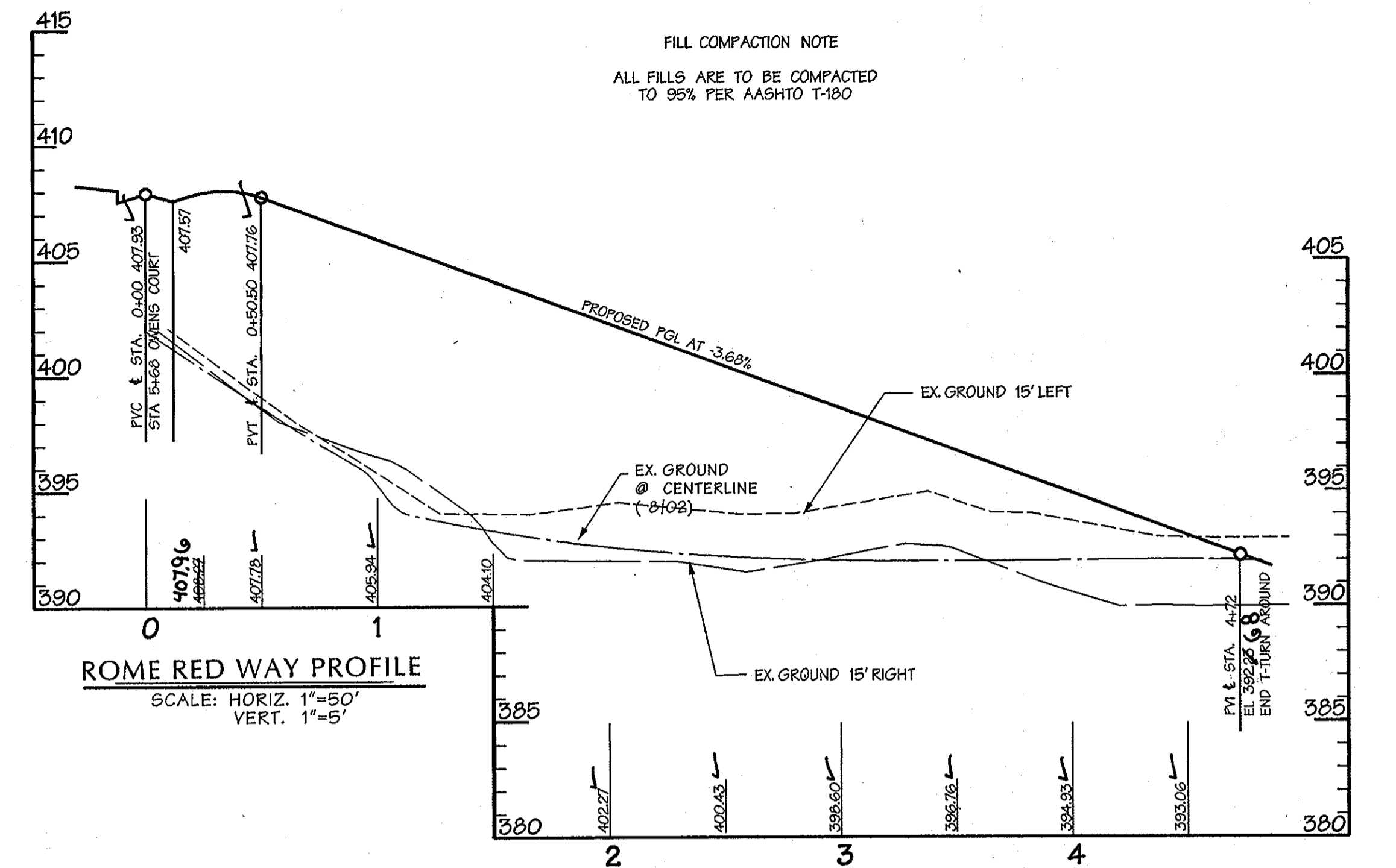
Des. By	KAD	Scale	1" = 50'	Proj. No.	01086.D
Drn. By	WDE	Date	1/4/06	3 of 27	
Chk. By	KRK	Approved			





NOTES
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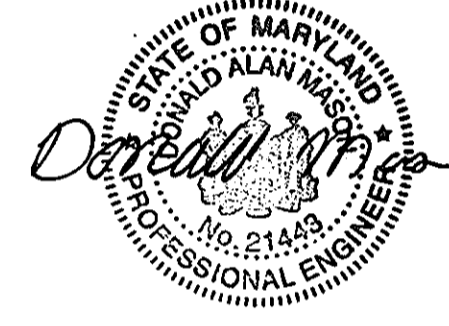
RED ROME WAY & STORM DRAIN LAYOUT
 SCALE: 1" = 50'



FILL COMPACTION NOTE
 ALL FILLS ARE TO BE COMPACTED TO 95% PER AASHTO T-180

ROME RED WAY PROFILE
 SCALE: HORIZ. 1"=50'
 VERT. 1"=5'

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 12-6-13



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

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS	<i>William F. Walker</i>	1-19-06
CHIEF, BUREAU OF HIGHWAYS	MS	DATE
APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING	<i>Chris Dammann</i>	1/27/06
CHIEF, DEVELOPMENT ENGINEERING DIVISION	gm	DATE
<i>Chris Hammett</i>	JH	2/9/06
CHIEF, DIVISION OF LAND DEVELOPMENT		DATE

Date	No.	Revision Description

FINAL PLAN
OWENS PROPERTY
 PHASE II

LOTS 43 THRU 97 AND OPEN SPACES LOTS 98, 99 & 100
 NON-BUILDABLE BULK PARCELS 'C' AND 'D'
 TAX MAP 31 PARCEL 243, 572

OWNER/DEVELOPER:
 PATAPSCO LANDING, LLC
 c/o James Keilty and Co. Inc.
 P.O. Box 528
 61 E. Padonia Road
 Timonium, MD 21093

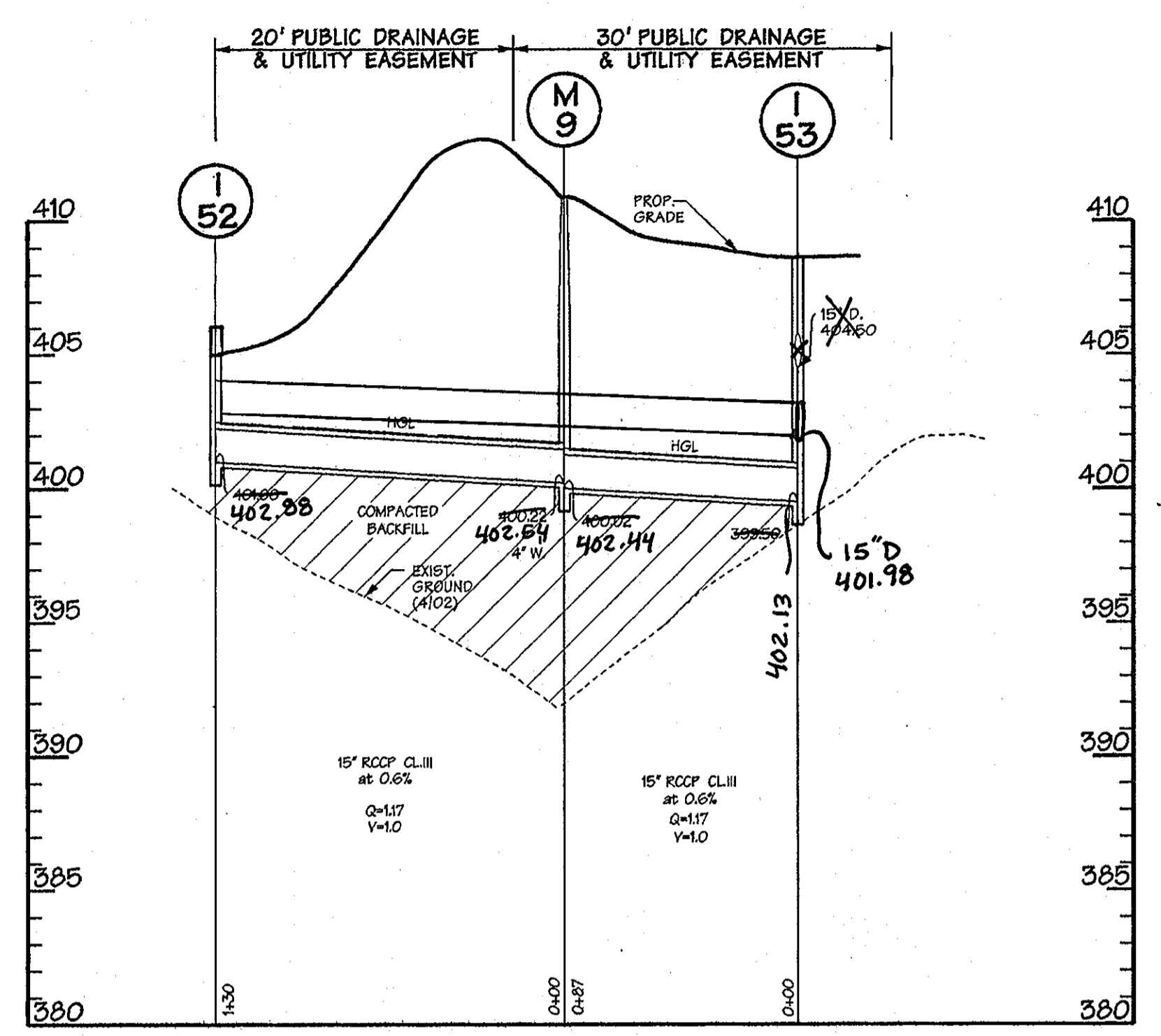
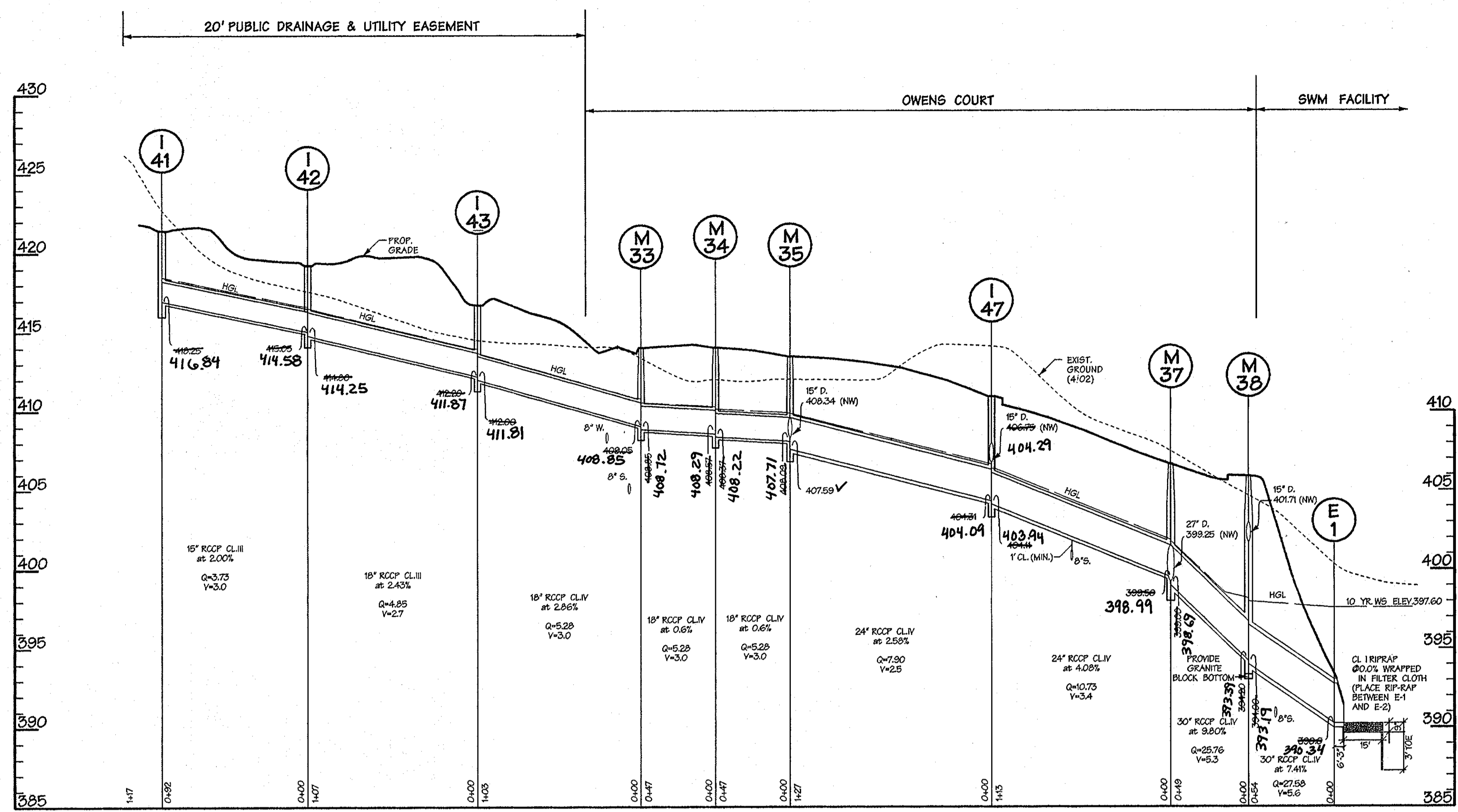
11/10/06
 Date

 Professional Engr. No. 13876
 AS-BUILT

DMW
 Draft-McCune-Walker, Inc.
 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 296-3553
 Fax 296-4706
 A Team of Land Planners,
 Landscape Architects,
 Golf Course Architects,
 Engineers, Surveyors &
 Environmental Professionals

TITLE
ROAD CONSTRUCTION PLAN
 RED ROME WAY, PROFILE AND DETAILS

Des. By	KAD	Scale	AS SHOWN	Proj. No.	01026.D
Drn. By	WDE	Date	11/10/06		
Chk. By	KRK	Approved			4 of 27



INLET SCHEDULE (TOTAL)

NO.	TYPE	INV. OUT	TOP ELEV. (TC)
31	YARD INLET - 'D'	SD-4.39	425.95
32	'A-10' INLET	SD-4.41	442.51
33	'A-10' INLET	SD-4.41	440.55
34	'A-10' INLET	SD-4.41	440.49
35	YARD INLET - 'D'	SD-4.39	422.85
36	YARD INLET - 'D'	SD-4.39	417.04
37	YARD INLET - 'D'	SD-4.39	414.30
38	YARD INLET - 'D'	SD-4.39	399.24
39	'A-10' INLET	SD-4.41	427.25
40	'A-10' INLET	SD-4.41	427.25
41	YARD INLET - 'D'	SD-4.39	414.25
42	YARD INLET - 'D'	SD-4.39	414.25
43	YARD INLET - 'D'	SD-4.39	417.04
44	'A-10' INLET	SD-4.41	440.55
45	'A-10' INLET	SD-4.41	408.70
46	'A-10' INLET	SD-4.41	407.70
47	'A-10' INLET	SD-4.41	407.70
48	'A-10' INLET	SD-4.41	407.70
49	YARD INLET - 'D'	SD-4.39	393.71
50	YARD INLET - 'D'	SD-4.39	390.83
51	YARD INLET - 'D'	SD-4.39	390.83
52	YARD INLET - 'D'	SD-4.39	400.00
53	'A-10' INLET	SD-4.41	404.50
54	'A-10' INLET	SD-4.41	404.50
55	'A-10' INLET	SD-4.41	392.07

NOTE: TOP ELEV. FOR 'D' YARD INLETS IS THROAT OPENING ELEVATION

MANHOLE SCHEDULE (TOTAL)

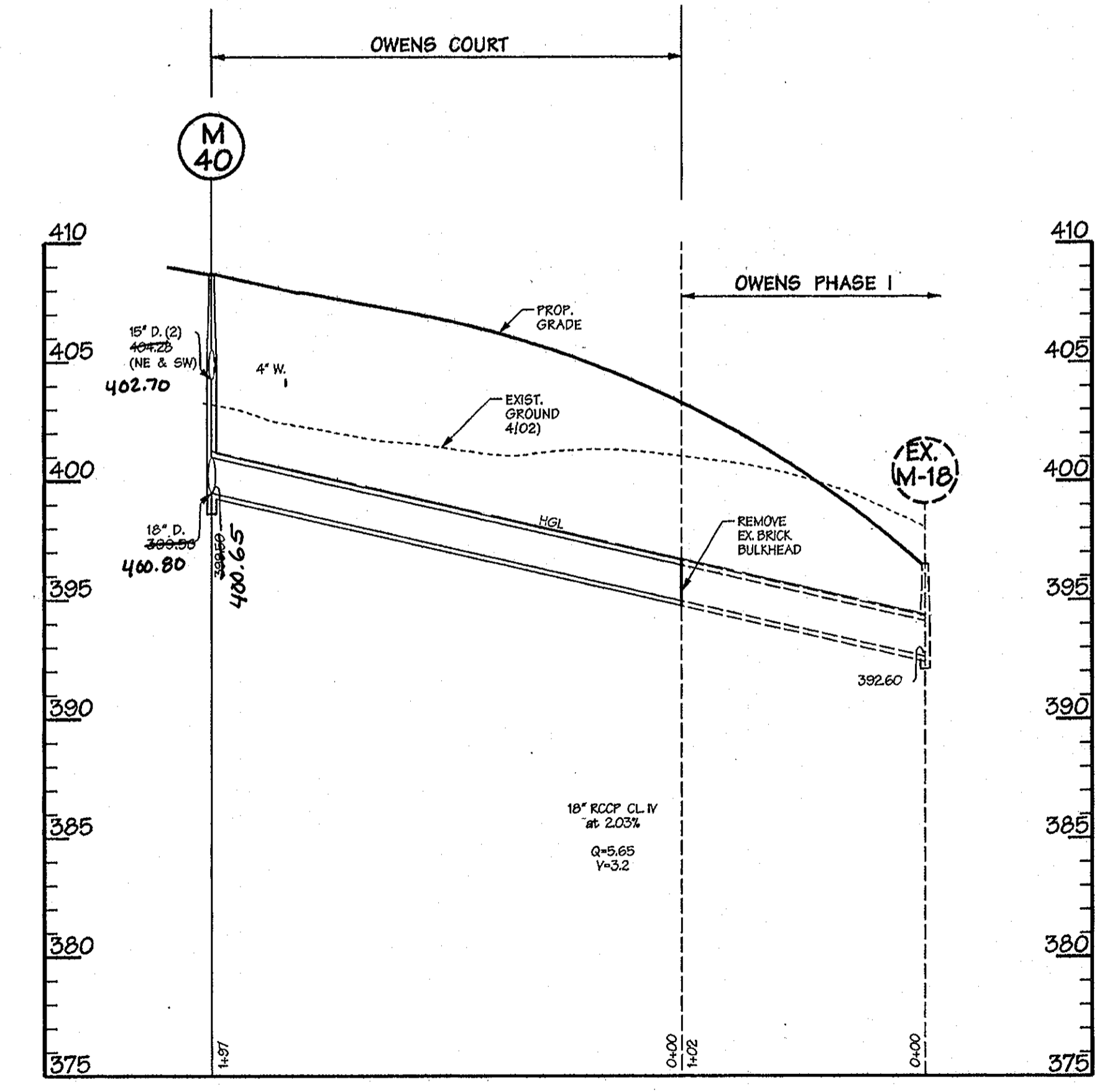
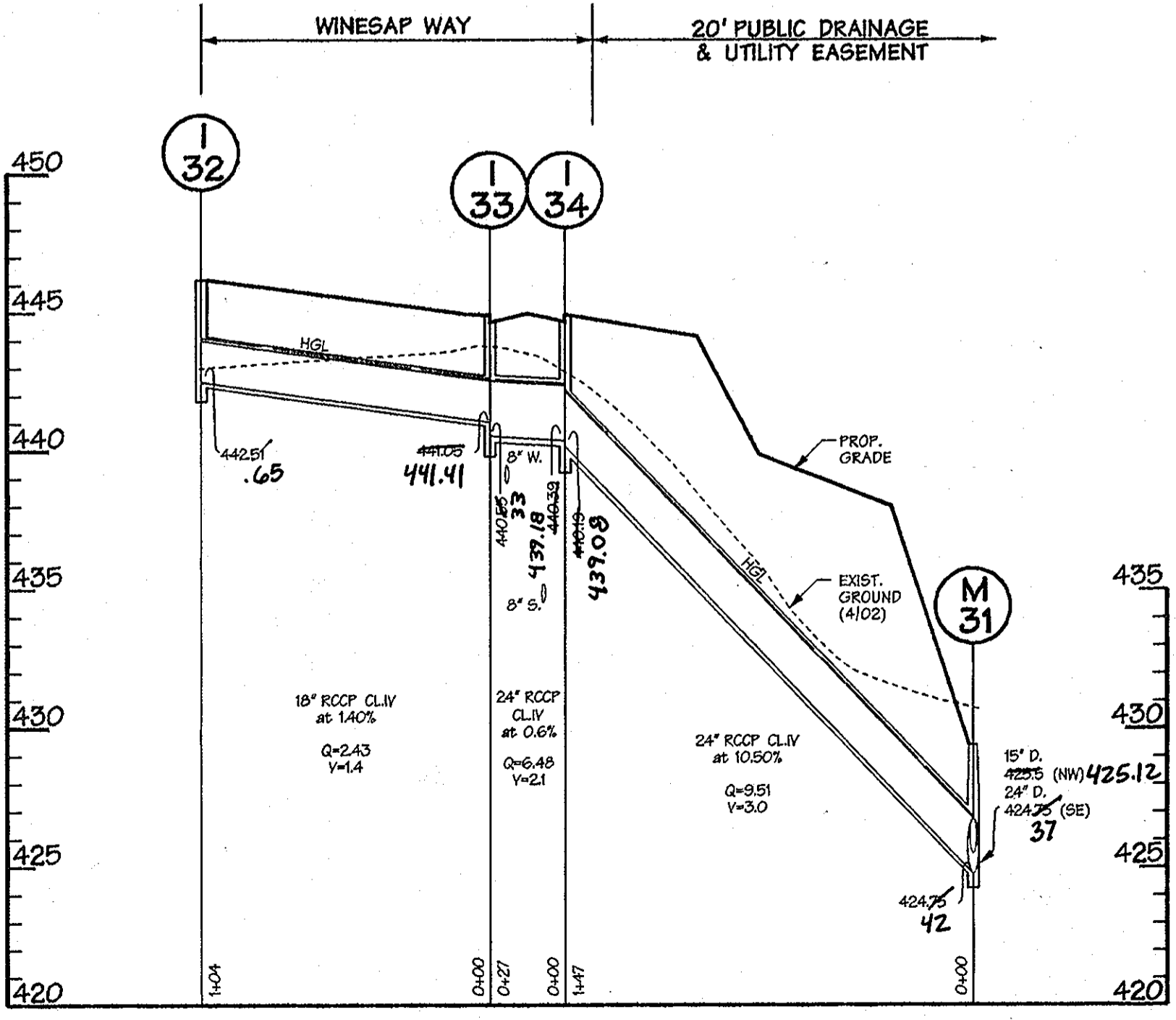
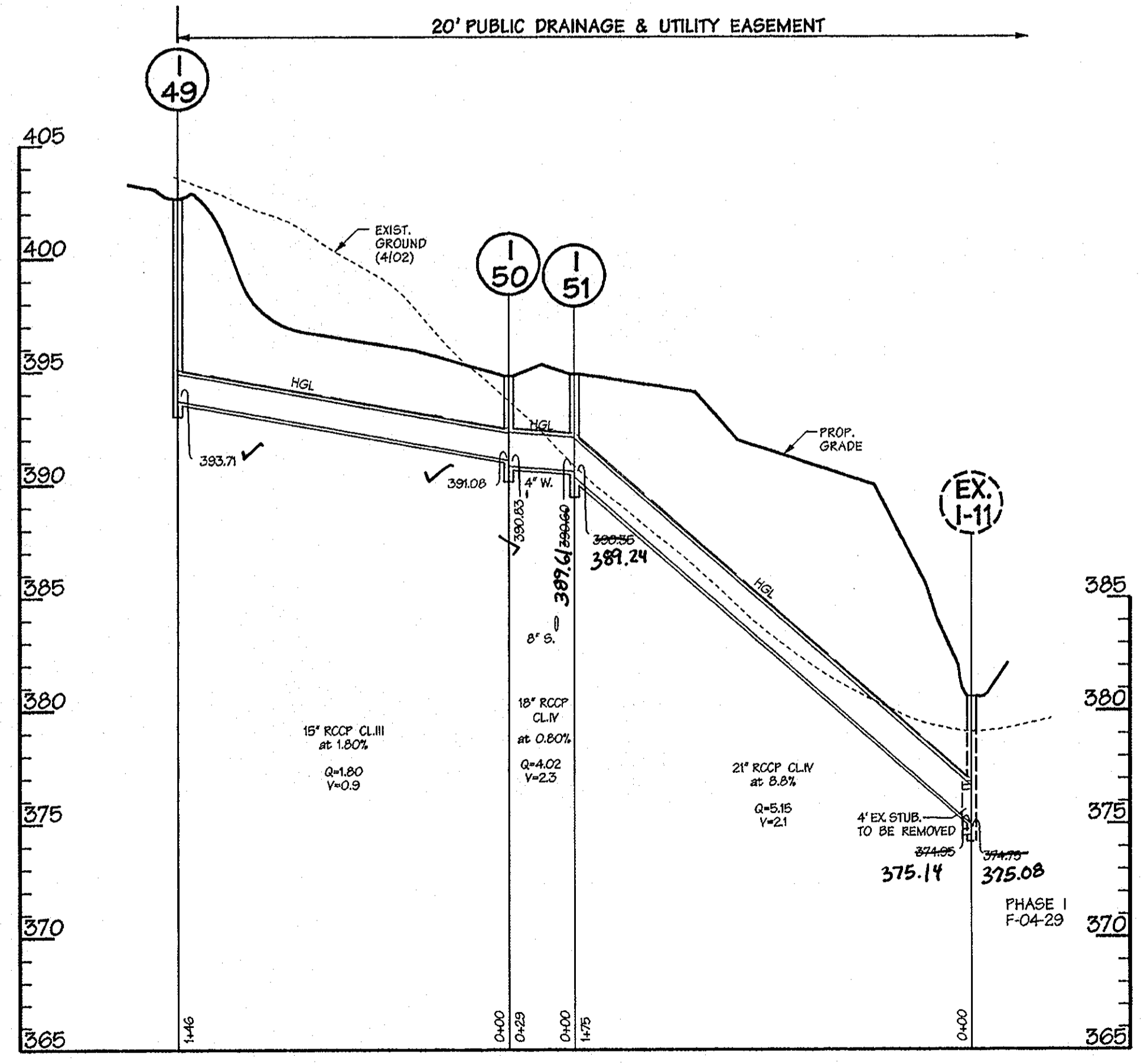
NO.	TYPE	SIZE	INV. OUT	TOP ELEV.
31	STD. G5.12	48"	424.55	429.47
32	STD. G5.12	48"	419.20	429.04
33	STD. G5.12	48"	408.25	414.27
34	STD. G5.12	48"	408.25	414.27
35	STD. G5.12	48"	407.59	414.31
37	STD. G5.13	60"	413.00	406.99
38	STD. G5.13	60"	413.00	406.99
40	STD. G5.12	48"	414.04	408.27
41	STD. G5.12	48"	397.81	407.92
42	STD. G5.12	48"	399.04	404.26
9	STD. G5.12	48"	400.92	410.49

END SECTION SCHEDULE (TOTAL)

NO.	TYPE	SIZE	INV. OUT	TOP ELEV.
1	CONC. END SECTION	SD-5.51	30"	398.0
2	CONC. END SECTION	SD-5.51	18"	388.0

PIPE SCHEDULE (TOTAL)

NO.	TYPE & CLASS	LENGTH
15"	RCCP CL.III	442'
18"	RCCP CL.III	238'
24"	RCCP CL.III	908'
27"	RCCP CL.III	81'
30"	RCCP CL.III	103'
15"	RCCP CL.IV*	168'
18"	RCCP CL.IV*	829'
21"	RCCP CL.IV*	175'
24"	RCCP CL.IV*	471'



*ALL PIPE AT ROAD CROSSINGS OR WITHIN PUBLIC RIGHT OF WAYS TO BE CLASS IV

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
William J. White 1-19-06
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Judy Hammett 2/9/06
 CHIEF, DIVISION OF LAND DEVELOPMENT

John P. ... 1/21/06
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

FINAL PLAN
OWENS PROPERTY
PHASE II
 LOTS 43 THRU 97 AND OPEN SPACES LOTS 98,99 & 100
 NON-BUILDABLE BULK PARCELS 'C' AND 'D'
 TAX MAP 31 PARCEL 243

OWNER/DEVELOPER:
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 c/o James Kelly and Co. Inc.
 P.O. Box 528
 61 E. Padonia Road,
 Timonium, MD 21093

DMW
 Duff McCreary Walker, Inc.
 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 296-3333
 Fax 296-4706

A Team of Land Planners,
 Landscape Architects,
 Engineers, Surveyors &
 Environmental Professionals

AREA: TAX MAP 31 PARCEL 243
 1ST ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

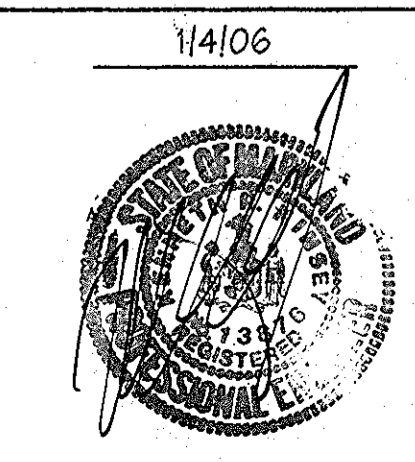
TITLE: **STORM DRAIN PROFILES**

Des. By: Scale: AS SHOWN Proj. No. 01086.D
 Dri. By: Date: 1/4/06
 Chk. By: K.R.K. Approved: 5 of 27

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 12-6-13



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

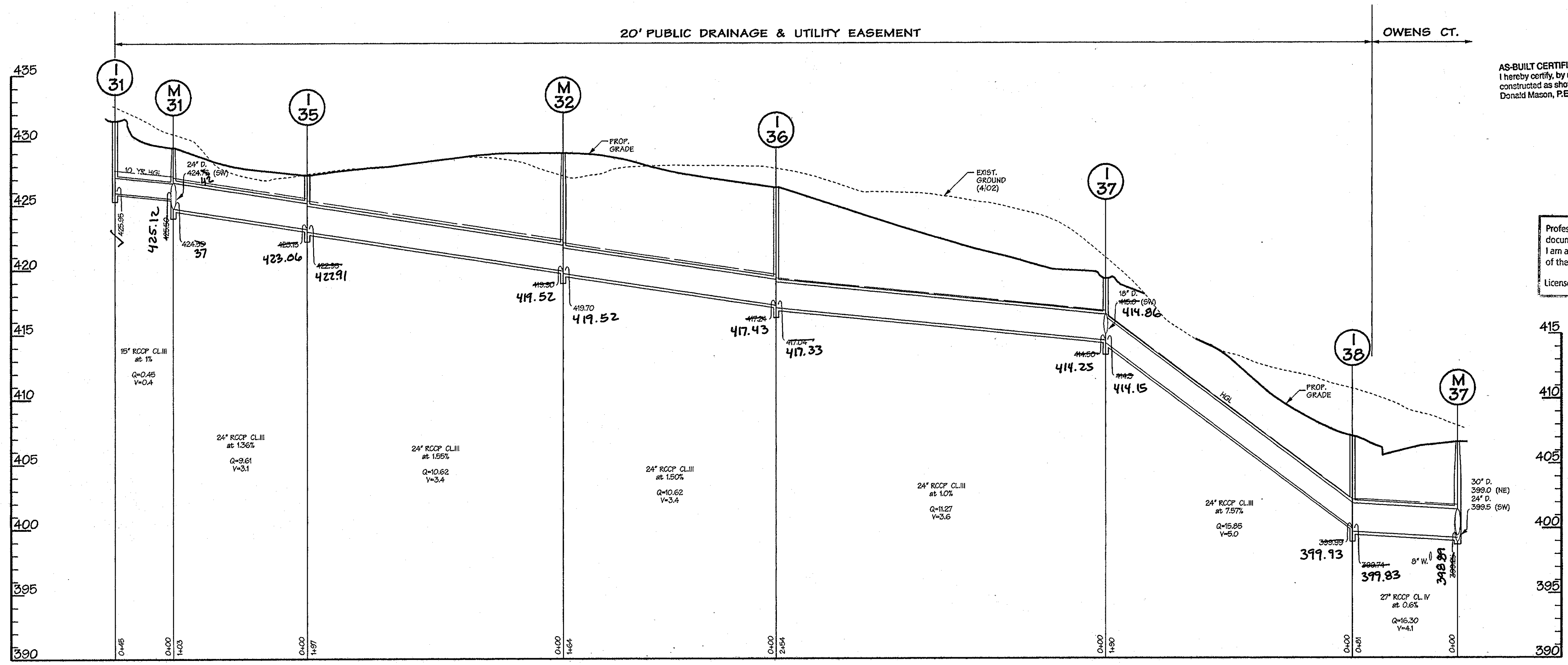
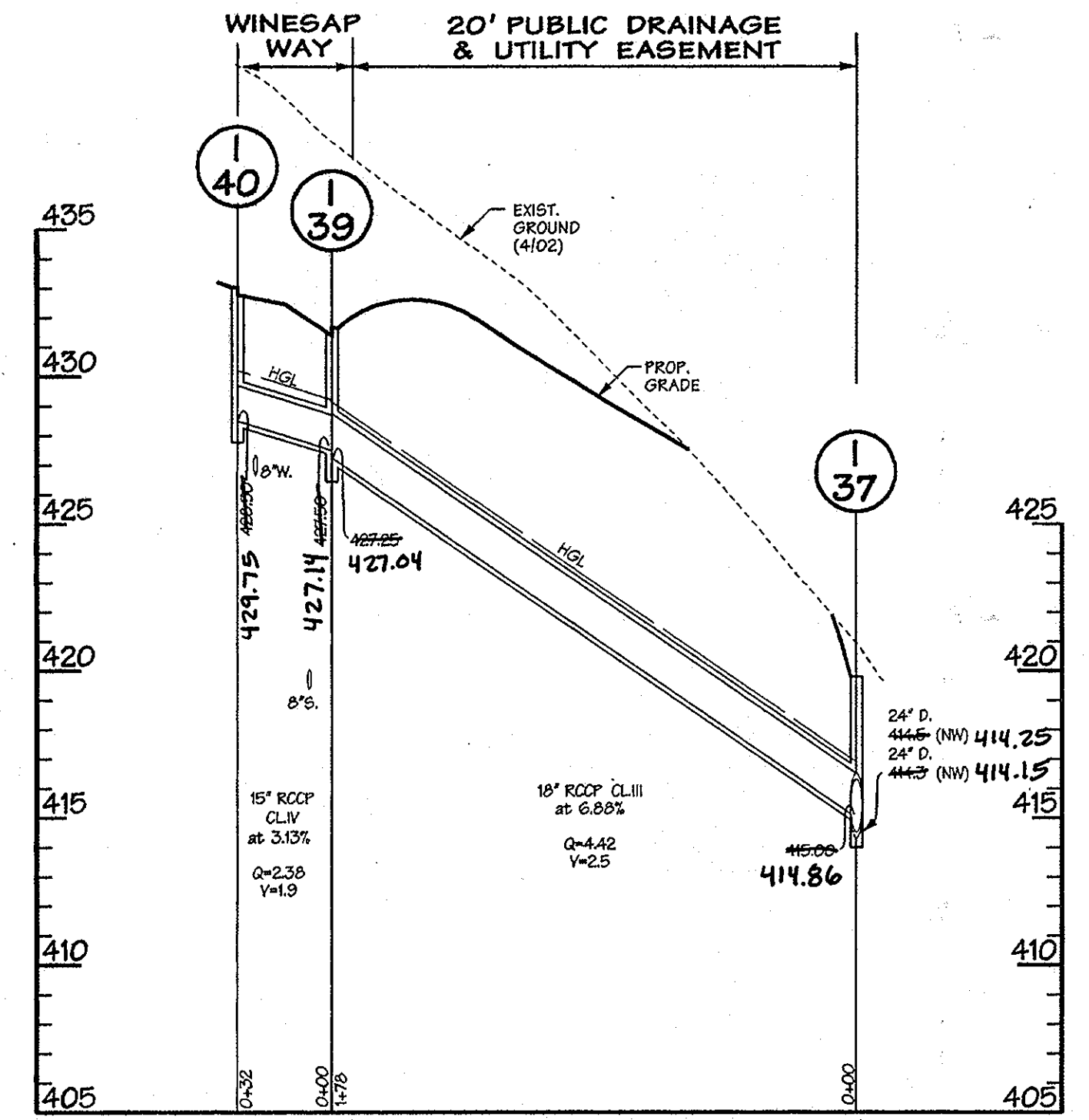
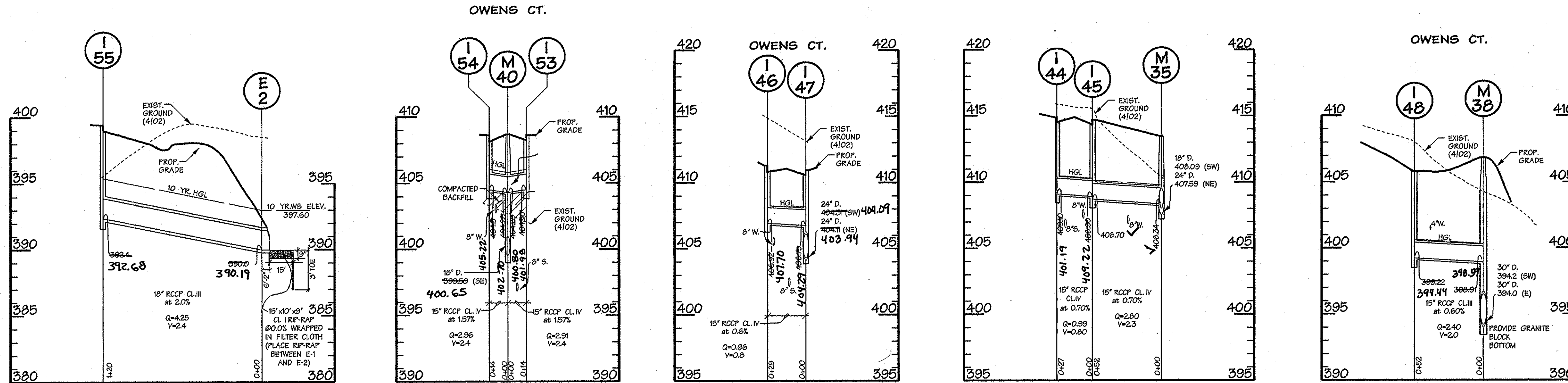


Professional Engr. No. 13876

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

Thu Dec 22 16:45:33 2013/OWENS/PHASE II/01086.D/243

Thu Dec 22 16:45:33 2013/OWENS/PHASE II/01086.D/243



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

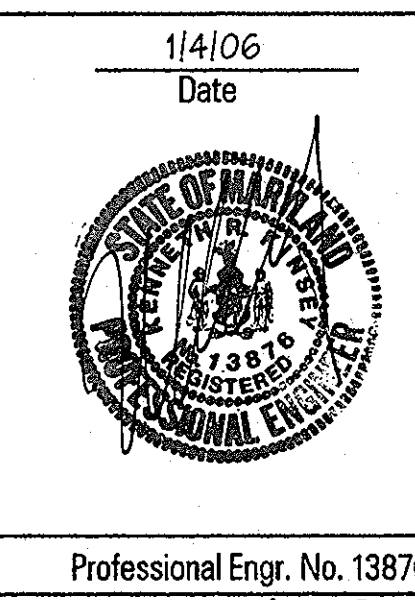
AS-BUILT CERTIFICATION
I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this AS-BUILT plan.
Date 12-6-13
Donald Mason, P.E. No. 21443



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: HOWARD COUNTY DEPT. OF PUBLIC WORKS	
<i>William J. ...</i>	1-19-06
CHIEF, BUREAU OF HIGHWAYS	DATE
APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING	
<i>Christa Hammett</i>	2/9/06
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
<i>...</i>	1/21/06
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE

Date	No.	Revision Description
FINAL PLAN		
OWENS PROPERTY		
PHASE II		
LOTS 43 THRU 57 AND OPEN SPACES LOTS 98,99 & 100 NON-BUILDABLE BULK PARCELS 'C' AND 'D'		
OWNER/ DEVELOPER:		
PATAPSCO LANDING, LLC c/o James Keelby and Co. Inc. P.O. Box 528 61 E. Padonia Road, Timonium, MD 21093		
DMW		
Date 1/4/06		
AREA		
TAX MAP 31 PARCEL 243		
1ST ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND		
TITLE		
STORM DRAIN PROFILES		
Des. By	Scale AS SHOWN	Proj. No. 01086.D
Drn. By	Date 1/4/06	
Chk. By K.R.K.	Approved	6 of 27

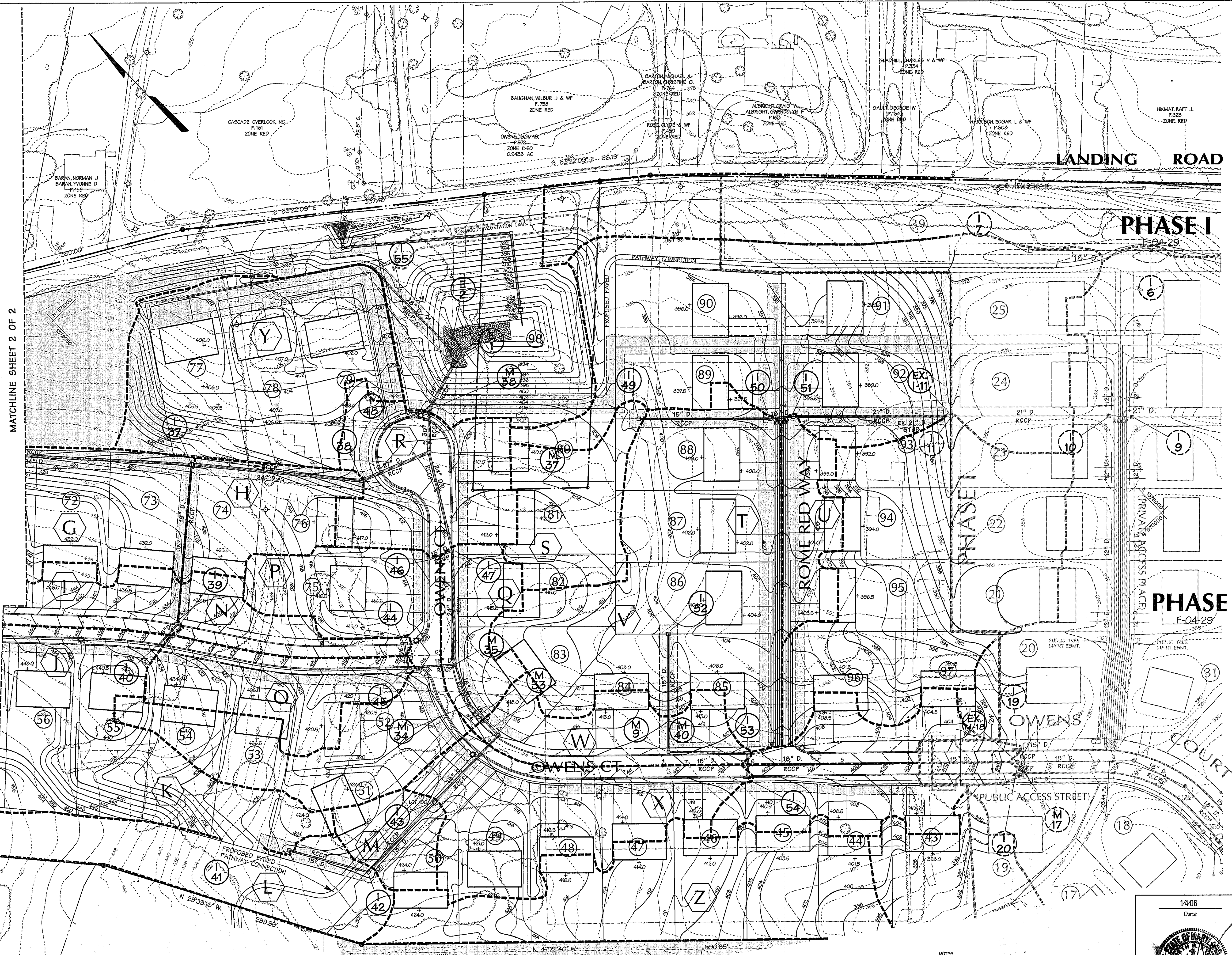


Professional Engr. No. 13876

AS-BUILT

F-05-121

MATCHLINE SHEET 2 OF 2



0.44 Ac.±	H	ZONING= R-20
C=0.31		14 % IMP.
0.23 Ac.±	M	ZONING= R-20
C=0.40		26 % IMP.
0.26 Ac.±	N	ZONING= R-20
C=0.50		50 % IMP.
0.49 Ac.±	O	ZONING= R-20
C=0.50		51 % IMP.
1.17 Ac.±	P	ZONING= R-20
C=0.32		16 % IMP.
0.32 Ac.±	Q	ZONING= R-20
C=0.46		34 % IMP.
0.64 Ac.±	R	ZONING= R-20
C=0.50		40 % IMP.
0.47 Ac.±	S	ZONING= R-20
C=0.31		14 % IMP.
1.23 Ac.±	T	ZONING= R-20
C=0.43		30 % IMP.
0.30 Ac.±	U	ZONING= R-20
C=0.67		63 % IMP.
0.52 Ac.±	V	ZONING= R-20
C=0.34		19 % IMP.
0.46 Ac.±	W	ZONING= R-20
C=0.64		59 % IMP.
0.87 Ac.±	X	ZONING= R-20
C=0.52		42 % IMP.
1.27 Ac.±	Y	ZONING= R-20
C=0.51		41 % IMP.
1.26 Ac.±	Z	ZONING= R-20
C=0.33		17 % IMP.

LEGEND

- HEAD OF STREAM
- STREAM CENTERLINE
- 75' STREAM BUFFER
- WETLAND
- 25' WETLAND BUFFER
- EX. TREELINE
- EX. 5' CONTOUR
- EX. 25' CONTOUR
- EX. STRUCTURE
- PROP. TREELINE
- PROPERTY BOUNDARY
- RIGHT OF WAY LINE
- ROADWAY CENTERLINE
- PROP. LOT NUMBER
- ADJACENT LOT LINE
- PROP. LOT LINE
- BUILDING SETBACK LINE
- DRAINAGE AREA LIMITS
- STRUCTURE NUMBER
- DRAINAGE AREA

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
William F. ... 1-19-06
 CHIEF, BUREAU OF HIGHWAYS 413 DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Janice ... 2/9/06
 CHIEF, DIVISION OF LAND DEVELOPMENT 413 DATE

... 1/21/06
 CHIEF, DEVELOPMENT ENGINEERING DIVISION 413 DATE

Date No. Revision Description

FINAL PLAN
OWENS PROPERTY
PHASE II
 LOTS 43 THRU 97 AND OPEN SPACES LOTS 98, 99 & 100
 NON-BUILDABLE BULK PARCELS 'C' AND 'D'
 TAX MAP 31 PARCEL 243, 572

OWNER /DEVELOPER:
 PATAPSCO LANDING, LLC
 c/o James Keilty and Co. Inc.
 P.O. Box 528
 61 E. Padonia Road
 Timonium, MD 21093

DMW
 Drafting & Construction Services, Inc.
 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 286-3333
 Fax 286-4705

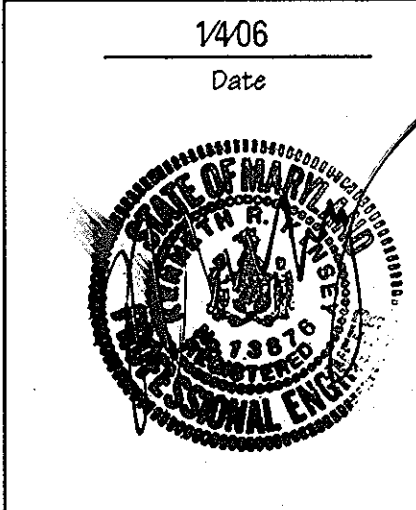
A Team of Land Planners,
 Landscape Architects,
 Engineers, Surveyors &
 Environmental Professionals

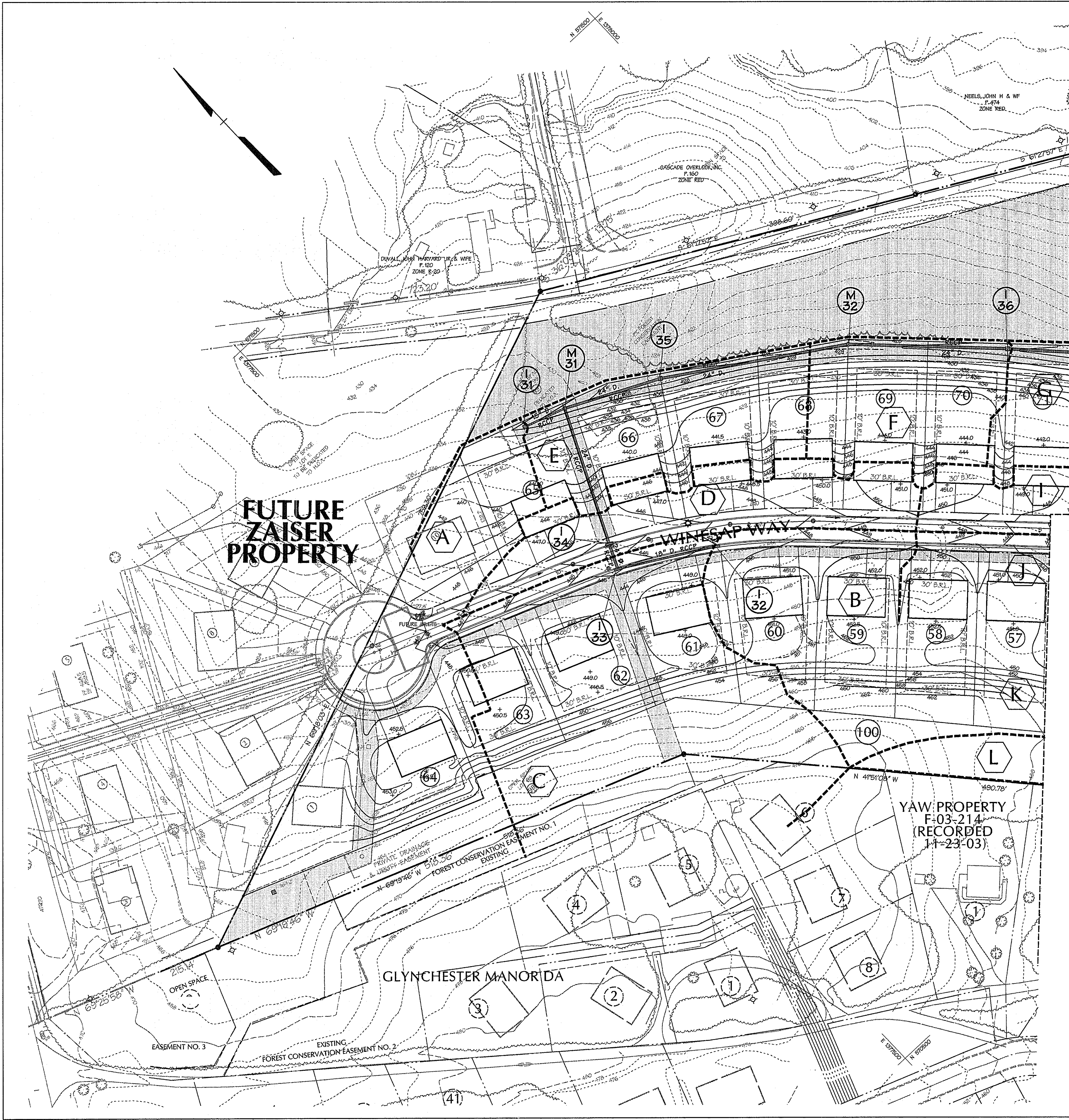
TITLE: **STORM DRAIN DRAINAGE AREA MAP**

Des By: Scale: 1"=50' Proj. No. 01086.D
 Dm By: Date: 1/06
 Chk By: KRK Approved: 7 of 27

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. TREES, SHRUBS AND OTHER WOODY VEGETATION NOT ALLOWED WITHIN TWENTY-FIVE (25) FEET OF THE RISER STRUCTURE AND NOT ALLOWED WITHIN FIFTEEN (15) FEET OF ANY PORTION OF THE EMBANKMENT.
 2. SWM FACILITY 2 SHALL BE OWNED BY THE HOME OWNERS ASSOCIATION (H.O.A.). THE H.O.A. SHALL PERFORM MOWING/ TRASH REMOVAL MAINTENANCE. ALL OTHER MAINTENANCE SHALL BE PERFORMED BY HOWARD COUNTY. THE SWM EASEMENT IS OWNED BY HOWARD COUNTY.





MATCHLINE SHEET 1 OF 2

0.34 Ac.± C=0.20	A	ZONING= R-20 0 % IMP.
0.81 Ac.± C=0.46	B	ZONING= R-20 34 % IMP.
1.80 Ac.± C=0.33	C	ZONING= R-20 17 % IMP.
0.67 Ac.± C=0.66	D	ZONING= R-20 61 % IMP.
0.75 Ac.± C=0.28	E	ZONING= R-20 11 % IMP.
0.60 Ac.± C=0.28	F	ZONING= R-20 11 % IMP.
0.79 Ac.± C=0.29	G	ZONING= R-20 12 % IMP.
0.50 Ac.± C=0.64	I	ZONING= R-20 58 % IMP.
0.53 Ac.± C=0.68	J	ZONING= R-20 64 % IMP.
1.90 Ac.± C=0.30	K	ZONING= R-20 13 % IMP.
0.89 Ac.± C=0.22	L	ZONING= R-20 2 % IMP.

LEGEND

	HEAD OF STREAM
	STREAM CENTERLINE
	75' STREAM BUFFER
	WETLAND
	25' WETLAND BUFFER
	EX. TREELINE
	EX. 5' CONTOUR
	EX. 25' CONTOUR
	EX. STRUCTURE
	PROP. TREELINE
	PROPERTY BOUNDARY
	RIGHT OF WAY LINE
	ROADWAY CENTERLINE
	PROP. LOT NUMBER
	ADJACENT LOT LINE
	PROP. LOT LINE
	BUILDING SETBACK LINE
	DRAINAGE AREA LIMITS
	STRUCTURE NUMBER
	DRAINAGE AREA

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
William F. ... 1-19-06
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
... 2/19/06
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

... 1/27/06
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Date	No.	Revision Description
FINAL PLAN		
OWENS PROPERTY PHASE II		
LOTS 43 THRU 97 AND OPEN SPACES LOTS 98, 99 & 100 NON-BUILDABLE BULK PARCELS 'C' AND 'D' TAX MAP 31 PARCEL 243, 572		
OWNER /DEVELOPER:		
PATAPSCO LANDING, LLC c/o James Keelty and Co. Inc. P.O. Box 528 61 E. Padonia Road Timonium, MD 21093		
DMW David M. Walker, Inc. 200 East Pennsylvania Avenue Towson, Maryland 21286 (410) 286-3333 Fax 286-4705		
TITLE		
STORM DRAIN DRAINAGE AREA MAP		
Des By	Scale 1" = 50'	Proj. No. 01086.D
Drn By	Date 1/4/06	8 of 27
Chk By KRK	Approved	

No As-Built information is required on this sheet



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

1/4/06
Date

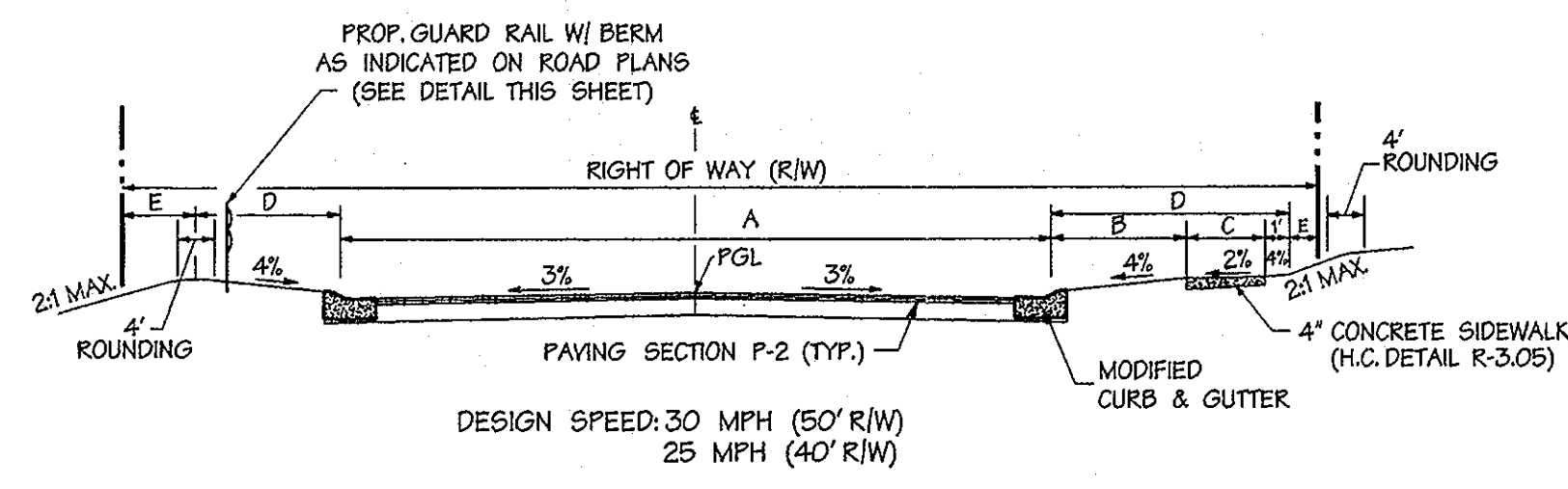
Professional Engr. No. 13876

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 C SHALL BE PROTECTED FROM PUNCHING, CUTTING, OR TEARING. ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE SHALL BE REPAIRED BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. ALL OVERLAPS WHETHER FOR REPAIRS OR FOR JOINING TWO PIECES OF GEOTEXTILE 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 RIP-RAP OR GABION OUTLETS SHALL BE DELIVERED AND PLACED IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENEOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. RIP-RAP SHALL BE PLACED IN A MANNER TO PREVENT DAMAGE TO THE FILTER BLANKET OR GEOTEXTILE. 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.

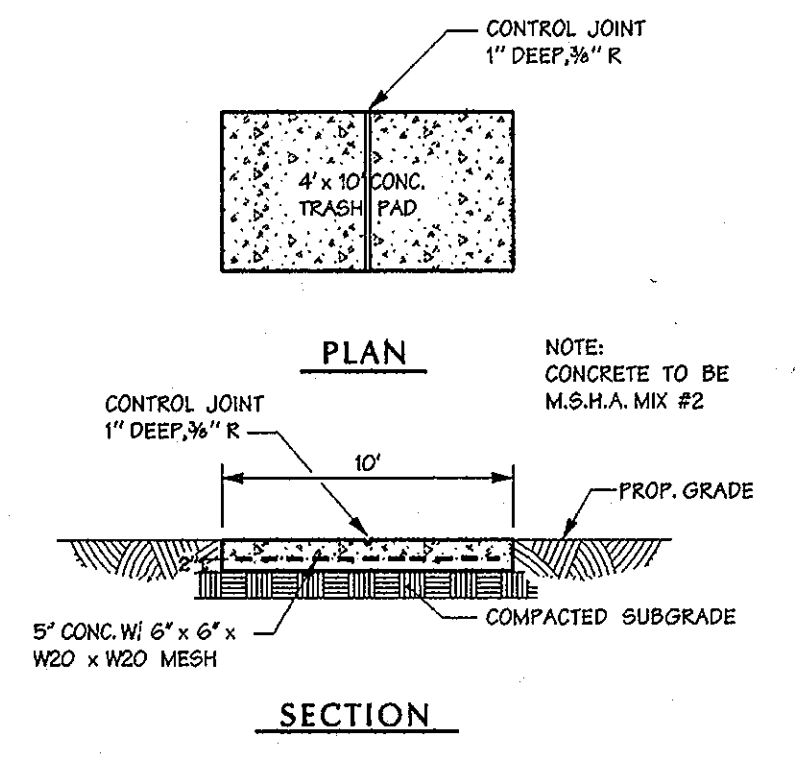
NOTES:

1. DRIVEWAY MUST BE PAVED FROM EDGE OF PUBLIC ROAD TO RIGHT OF WAY LINE USING STANDARD PAVING SECTION P-2 AS SHOWN ON THIS SHEET OR ALTERNATE SECTION EQUAL TO OR BETTER THAN P-2 AS APPROVED BY D.P.W.
2. DRAINAGE CULVERT SHALL BE SIZED FOR A 10 YEAR FREQUENCY STORM AND THE SIZE OF PIPE SHALL BE 18" x 18" ARCH CMP (S.A.14). THE DITCH INVERT SHALL BE LOWERED TO PROVIDE A MIN. DITCH GRADIENT OF 0.5% AND CLEARANCE SHOWN.
3. SWALE FLOW MAY BE PROVIDED OVER DRIVEWAY LOCATED AT OR NEAR THE CREST OF VERTICAL CURVES ON THE PUBLIC ROAD WHERE QUANTITY OF FLOW IS SMALL, AS APPROVED BY D.P.W.
4. THE IN-GRADE OF PRIVATE DRIVEWAY SHALL NOT EXCEED 12%.



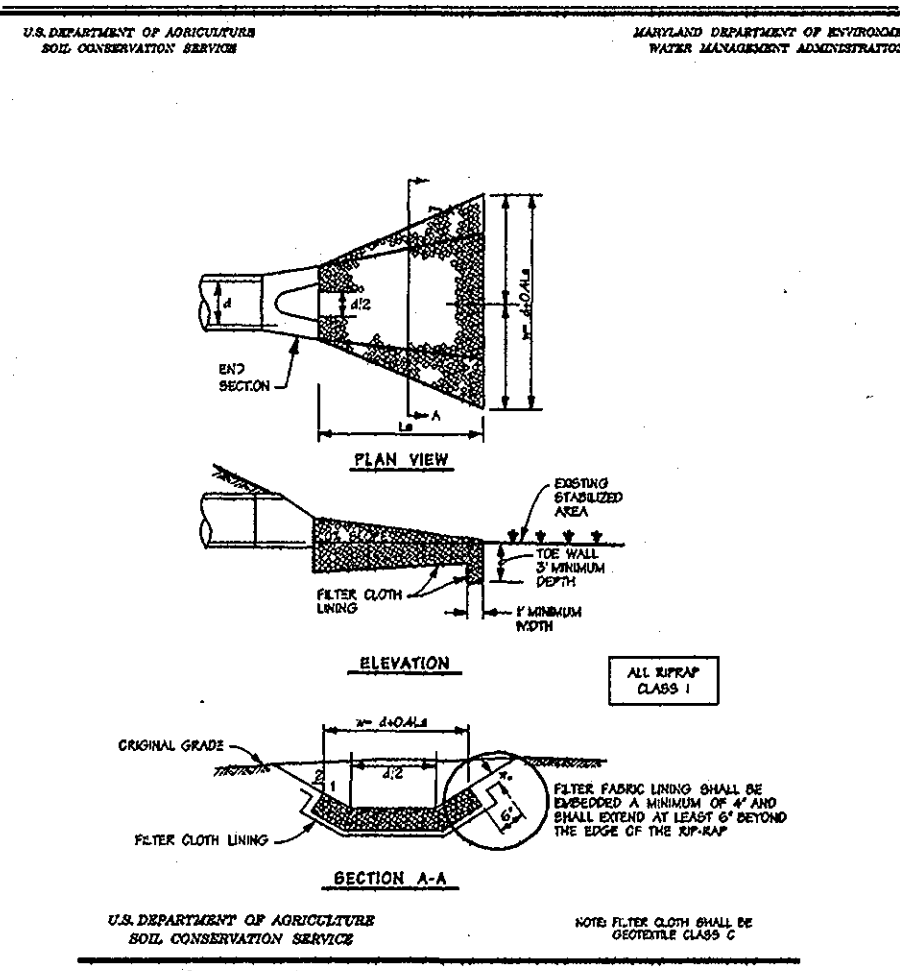
CLASSIFICATION	A	B	C	D	E	R/W	
ACCESS STREET	500 ADT	24'	3'	4'	8'	0	40'
	1000 ADT	24'	7'	4'	12'	1'	50'

WINESAP WAY & OWENS CT. TYPICAL ROAD SECTION
NO SCALE

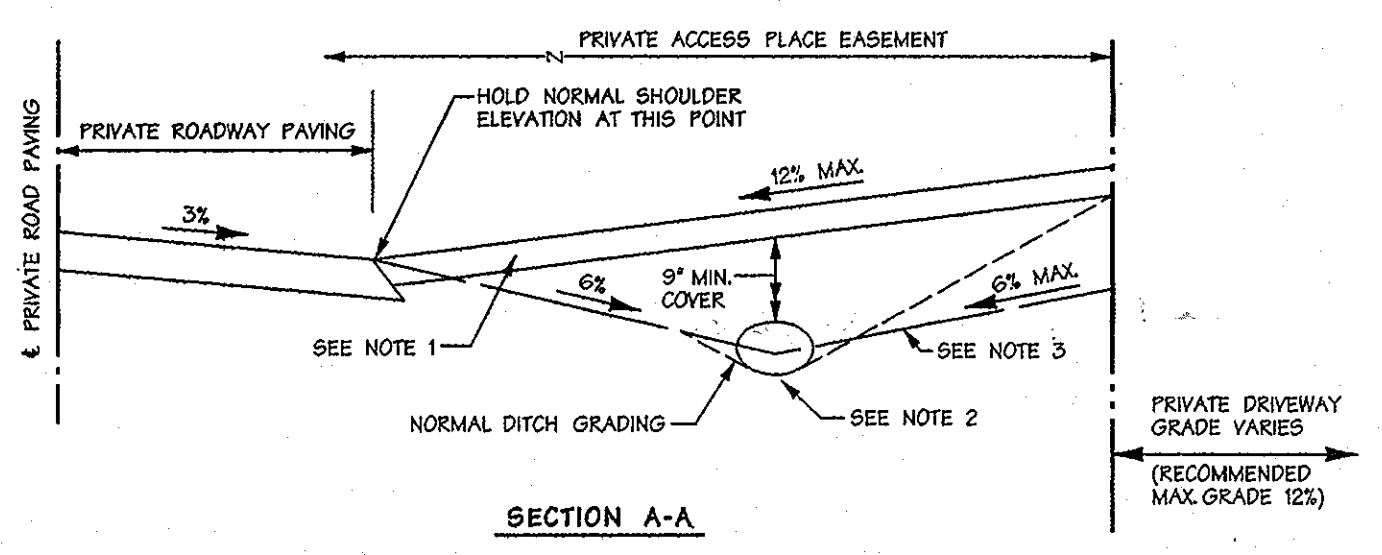
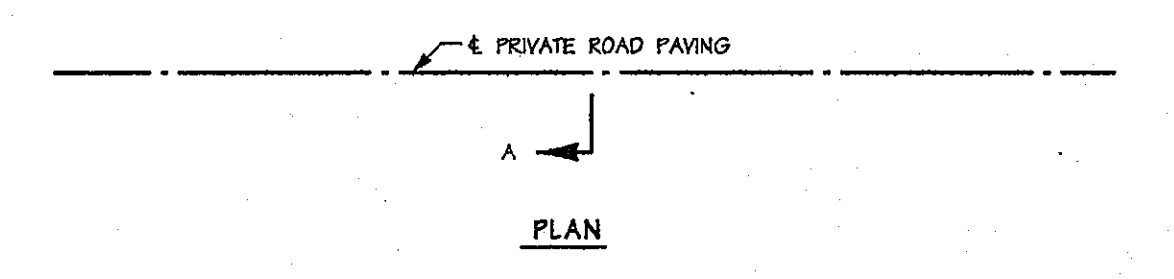
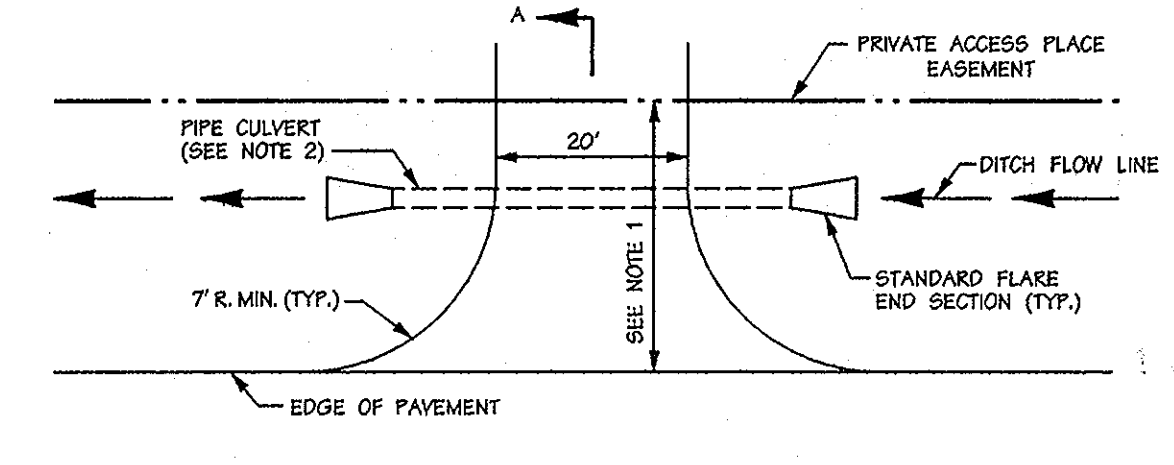


TYPICAL TRASH PAD DETAIL
NO SCALE

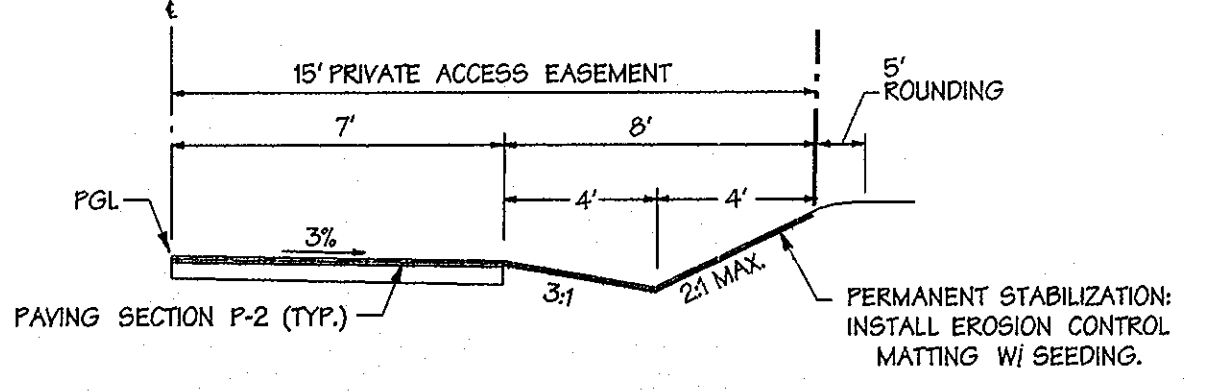
ROCK OUTLET PROTECTION SPECIFICATIONS



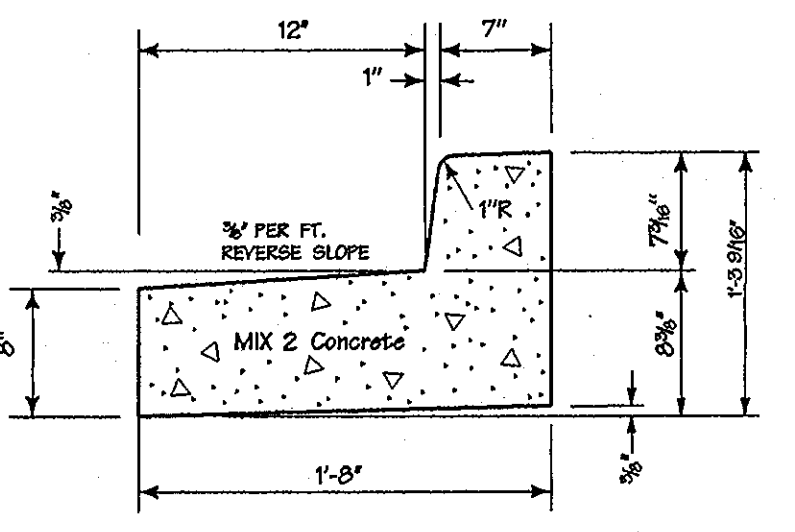
Rock Outlet Protection III Not To Scale



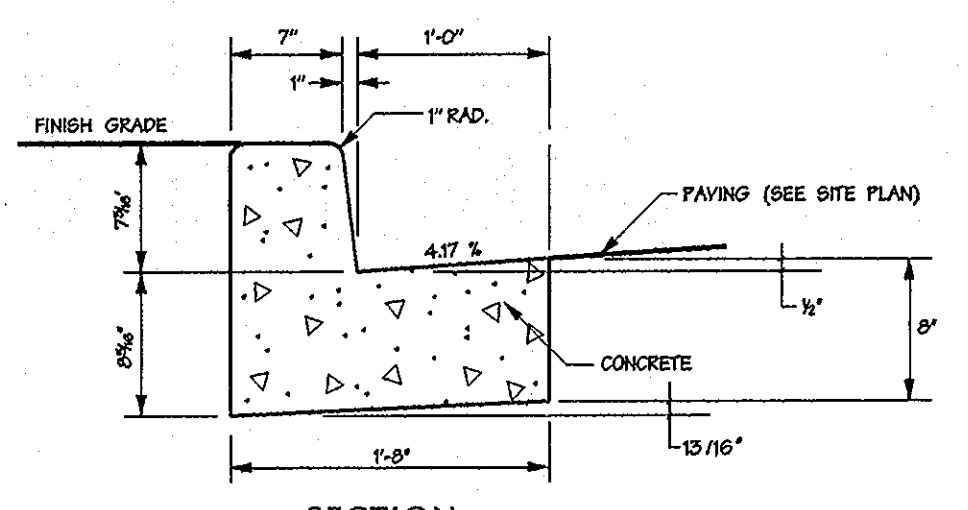
TYPICAL RESIDENTIAL DRIVEWAY ENTRANCE CONNECTION TO OPEN SECTION ROADWAY
NOT TO SCALE



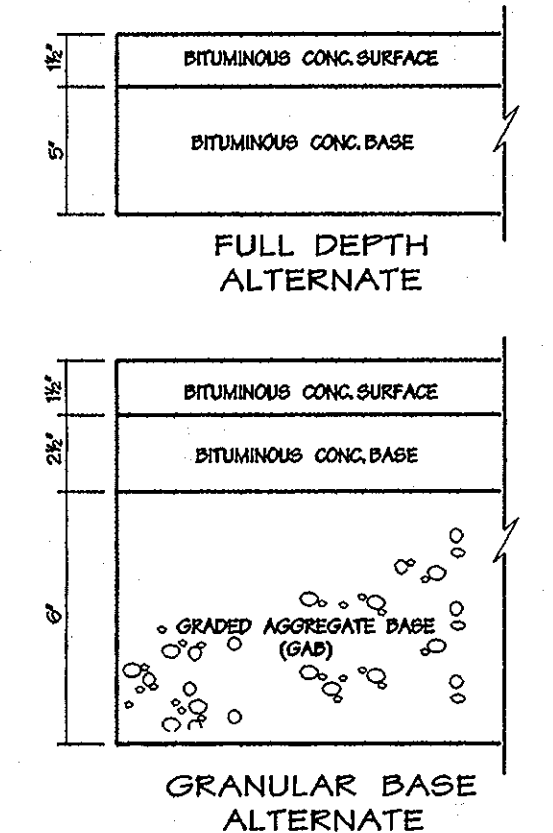
ROME RED WAY PRIVATE ACCESS PLACE TYPICAL HALF ROAD SECTION
NO SCALE



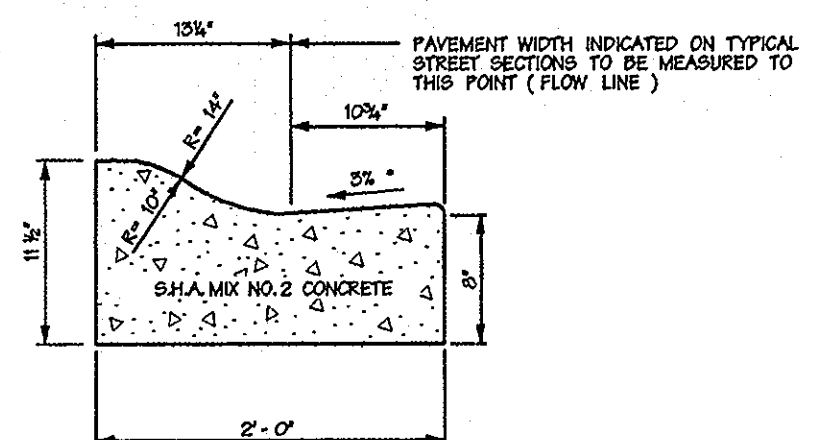
REVERSE 7\"/>



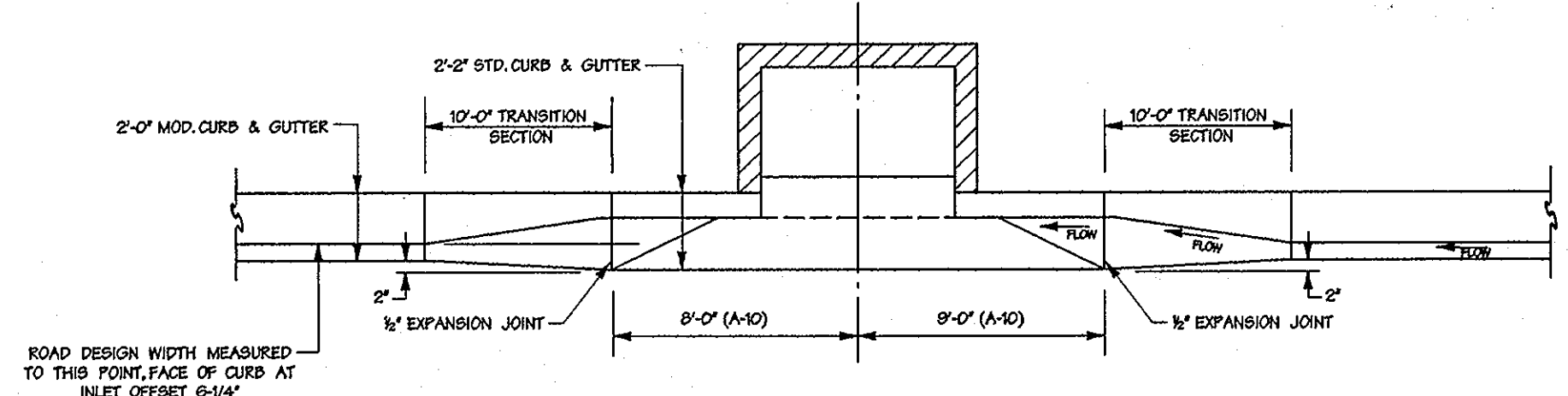
TYPE "A" CURB AND GUTTER R-3.01
NOT TO SCALE



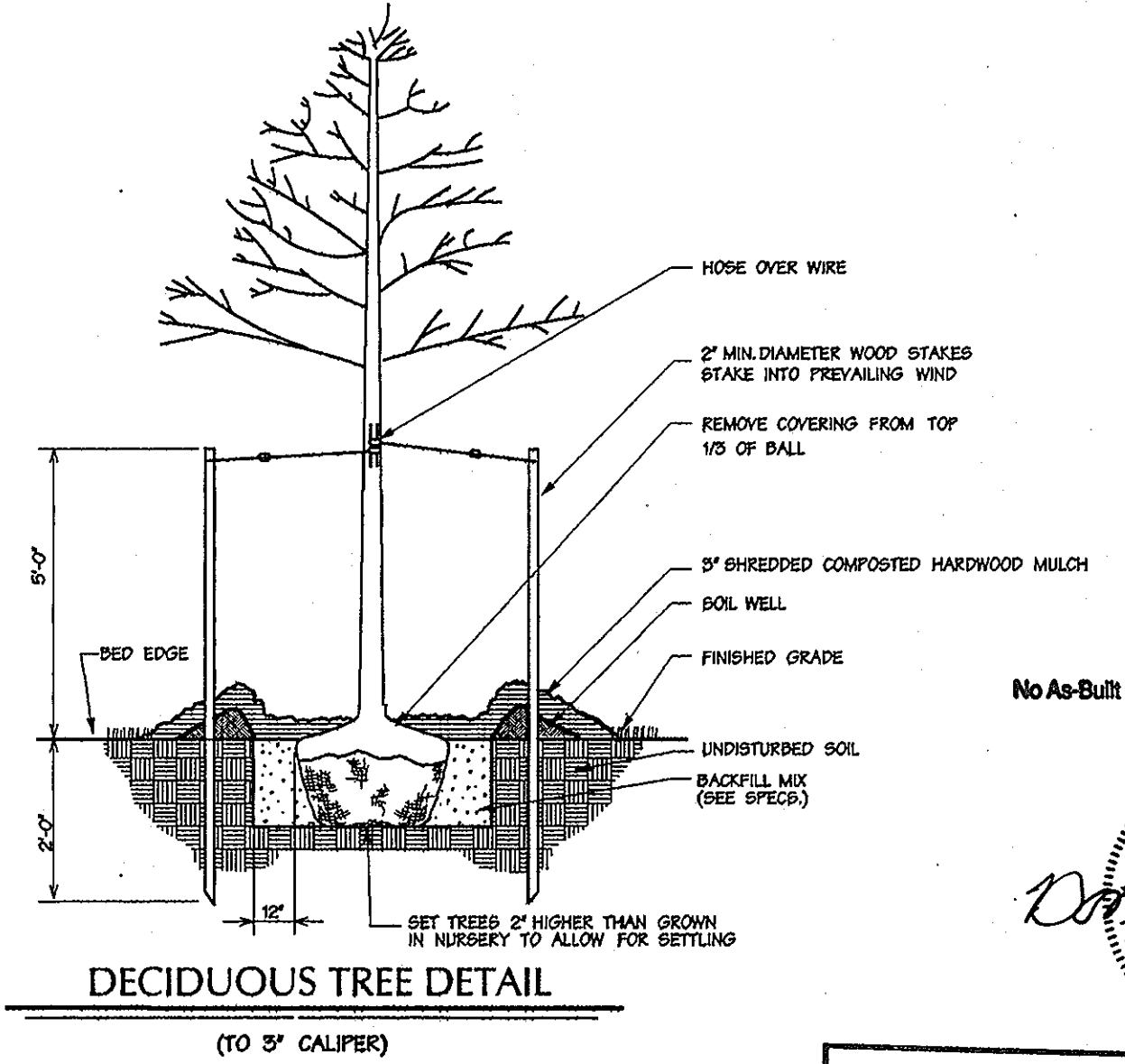
PAVING SECTION P-2 PUBLIC ACCESS STREET
NOT TO SCALE



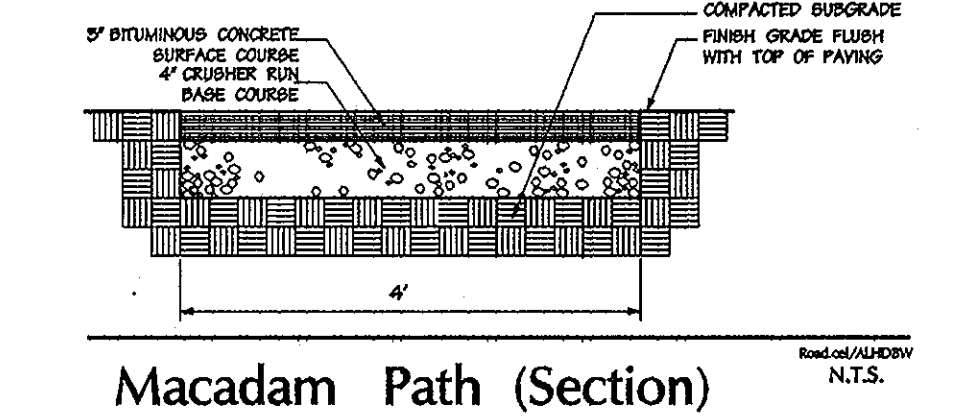
Modified Combination Curb & Gutter R-3.01
NOT TO SCALE



TRANSITION CURB FROM MODIFIED CURB & GUTTER TO STANDARD CURB & GUTTER AT A-10 INLETS
NOT TO SCALE



DECIDUOUS TREE DETAIL
(TO 3\"/>



Macadam Path (Section)
N.T.S.



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: 12-31-14

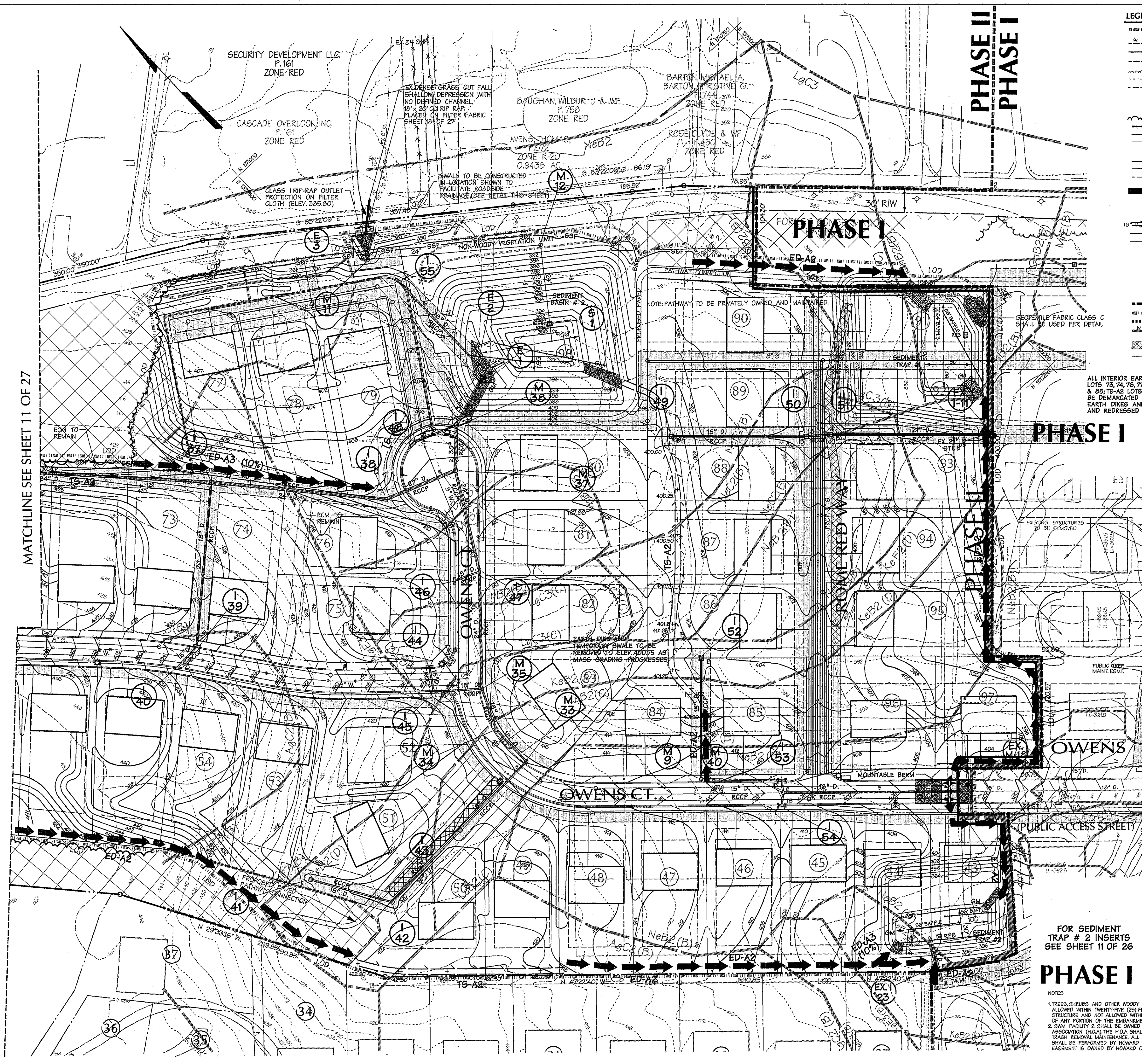
1/408
Date
Professional Engr. No. 13876

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
William F. ... 1-19-06
CHIEF, BUREAU OF HIGHWAYS
APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
David ... 1/27/06
CHIEF, DEVELOPMENT ENGINEERING DIVISION
Candy Hamant 2/9/06
CHIEF, DIVISION OF LAND DEVELOPMENT

Date No. Revision Description
FINAL PLAN
OWENS PROPERTY PHASE II
LOTS 43 THRU 97 AND OPEN SPACES LOTS 98,99 & 100
NON-BUILDABLE BULK PARCELS 'C' AND 'D'
TAX MAP 31 PARCEL 243,572
OWNER /DEVELOPER:
PATAPSCO LANDING, LLC
c/o James Keilty and Co. Inc.
P.O. Box 52B
61 E. Padonia Road.
Timonium, MD 21083

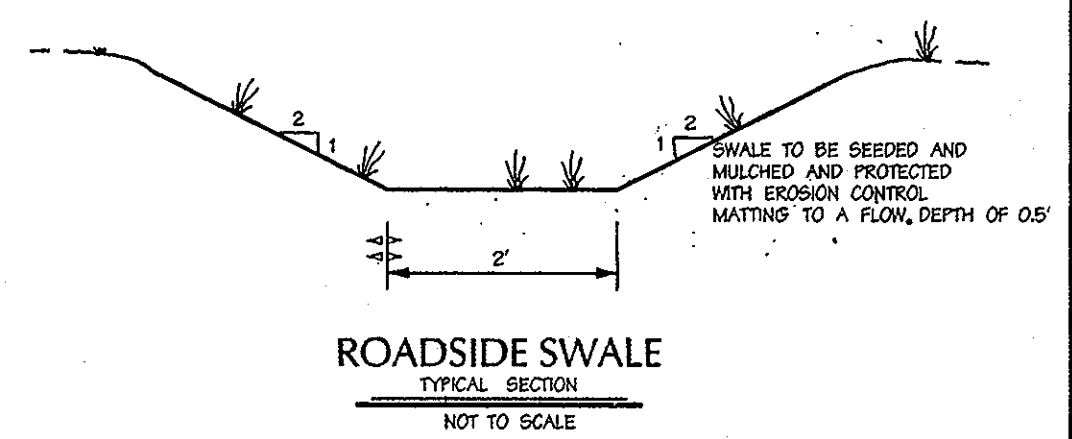
DMW
Darr McCause Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4705
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals
TITLE
ROAD CONSTRUCTION DETAILS
Des By Scale AS SHOWN Proj. No. 01086.D
Dm By Date 1/408
Chk By KRK Approved
9 of 27

MATCHLINE SEE SHEET 11 OF 27



LEGEND

- 75' STREAM BUFFER
- WETLAND
- 25' WETLAND BUFFER
- 100' YR WISE - 1' FREEBOARD (IE FLOODPLAIN EASEMENT)
- EX. TREELINE
- EX. MINOR CONTOUR
- EX. MAJOR CONTOUR
- EX. STRUCTURE
- PROP. TREELINE (IF SHOWN)
- PROPERTY BOUNDARY
- RIGHT OF WAY LINE
- ROADWAY CENTERLINE
- PROP. LOT NUMBER
- ADJACENT LOT LINE
- PROP. LOT LINE
- BUILDING SETBACK LINE
- E.D. (A-2)
- T.S. A-2
- 6BF
- 6F
- GM
- RPS
- REMOVABLE PUMPING STATION
- NON-WOODY VEGETATION ZONE
- LIMIT OF DISTURBANCE (L.O.D.)
- BASE OF EMBANKMENT
- SOIL TYPE DELINEATION LINE
- EROSION CONTROL MATTING
- EXISTING TC PATHS



ENGINEER'S CERTIFICATION:
 I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT 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.

[Signature]
 SIGNATURE OF ENGINEER
 PRINT NAME BELOW SIGNATURE
YOUNG R. KUSEY

REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS

[Signature] 2/2/06
 DATE
 JIM HUGHES
 U.S. NATURAL RESOURCE CONSERVATION SERVICE

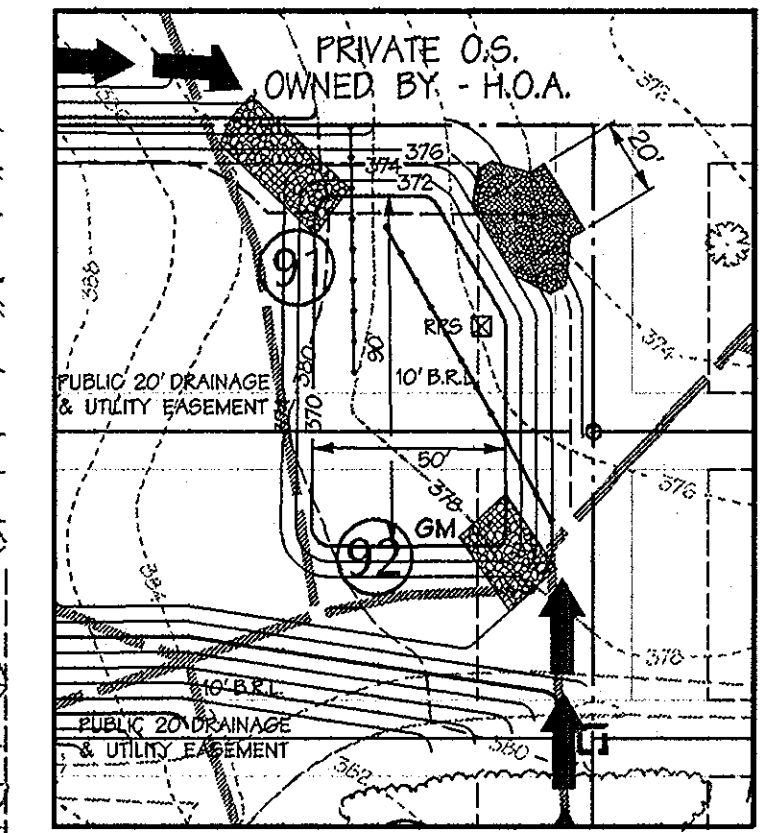
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

[Signature] 2/2/06
 DATE
 HOWARD S.C.D.

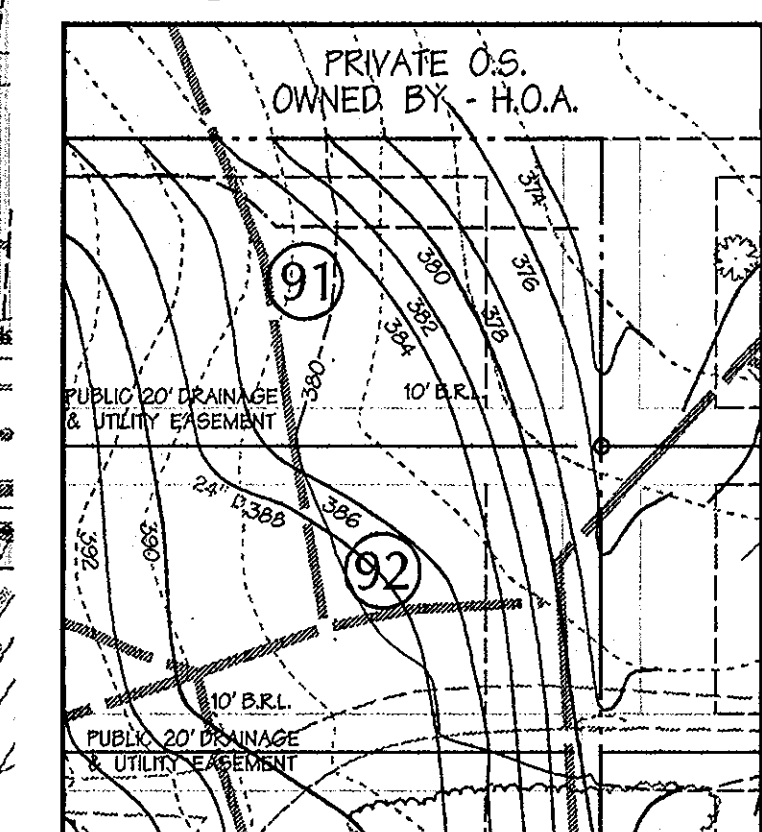
DEVELOPER'S CERTIFICATION:
 I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL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

[Signature] 1/3/06
 DATE
 SIGNATURE OF DEVELOPER
 PRINT NAME BELOW SIGNATURE
MARK E. BUDA

ALL INTERIOR EARTH DIKES AND TEMPORARY SWALES (I.e. ED-A2 LOTS 73, 74, 76, 77, 78, AND 79; IS-A2 CUL-DE-SAC; ED-A2 LOTS 84 & 85; IS-A2 LOTS 80, 81, 82, 83, 84, 85, 86, 87, 88, AND 89) SHALL BE DEMARCATED WITH HIGH VISIBILITY FENCE. THESE INTERIOR EARTH DIKES AND TEMPORARY SWALES SHALL BE INSPECTED AND REDRESSED TO SPECIFICATIONS BY THE END OF EACH DAY.



Inset 1 Existing Conditions at Trap # 1



Inset 2 Ultimate Conditions at Trap # 1

No As-Built Information is required on this sheet

FOR REVISIONS BY BENCHMARK ENGINEERING ONLY

[Signature] 10-30-13
 DATE
 DANIEL M. PATAPSCO
 PROFESSIONAL ENGINEER
 LICENSE NO. 21023, EXPIRATION DATE: 12-21-14

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.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

[Signature] 1-19-06
 DATE
 WALTER Z. WALKER
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

[Signature] 1/2/06
 DATE
 W. D. DUNN
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

[Signature] 2/9/06
 DATE
 CRISTY HARRIS
 CHIEF, DIVISION OF LAND DEVELOPMENT

10-31-13
 DATE
 REVISE CALL OUT FOR EX. CULVERT UNDER LANDGRAB

FINAL PLAN OWENS PROPERTY PHASE II

LOTS 43 THRU 97 AND OPEN SPACES LOTS 98, 99 & 100
 NON-BUILDABLE BULK PARCELS 'C' AND 'D'
 TAX MAP 31 PARCEL 243, 572

OWNER/DEVELOPER:

PATAPSCO LANDING, LLC
 c/o James Keilty and Co. Inc.
 P.O. Box 528
 61 E. Padonia Road.
 Timonium, MD 21093

DMW
 Draft/Mark/Con/Walkers, Inc.
 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 286-3838
 Fax 286-4706

A Team of Land Planners,
 Landscape Architects,
 Golf Course Architects,
 Engineers, Surveyors &
 Environmental Professionals

TITLE
 FINAL GRADING AND
 SEDIMENT & EROSION CONTROL PLAN

Des. By MRT Scale 1"=50' Proj. No. 01086.D
 Dm. By ADL Date 1/4/06
 Chk. By KKK Approved 10 of 27

PHASE I

FOR SEDIMENT TRAP # 2 INSERTS SEE SHEET 11 OF 26

NOTES

- TREES, SHRUBS AND OTHER WOODY VEGETATION NOT ALLOWED WITHIN TWENTY-FIVE (25) FEET OF THE RISER STRUCTURE AND NOT ALLOWED WITHIN FIFTEEN (15) FEET OF ANY PORTION OF THE ENVIRONMENT
- SWM FACILITY 2 SHALL BE OWNED BY THE HOME OWNERS ASSOCIATION (H.O.A.) THE H.O.A. SHALL PERFORM MONTHLY TRASH REMOVAL MAINTENANCE. ALL OTHER MAINTENANCE SHALL BE PERFORMED BY HOWARD COUNTY. THE SWM EASEMENT IS OWNED BY HOWARD COUNTY.

1/4/06
 Date

[Signature]
 PROFESSIONAL ENGR. NO. 13876

LEGEND

- STREAM CENTERLINE
- 75' STREAM BUFFER
- WETLAND
- 25' WETLAND BUFFER
- 100' YR. RISE + 1' FREEBOARD (E-FLOODPLAIN EASEMENT)
- EX. TREELINE
- EX. MINOR CONTOUR
- EX. MAJOR CONTOUR
- EX. STRUCTURE
- PROP. TREELINE (IF SHOWN)
- PROPERTY BOUNDARY
- RIGHT OF WAY LINE
- ROADWAY CENTERLINE
- PROP. LOT NUMBER
- ADJACENT LOT LINE
- PROP. LOT LINE
- BUILDING SETBACK LINE
- NON-WOODY VEGETATION ZONE
- LIMIT OF DISTURBANCE (L.O.D.)
- BASE OF EMBANKMENT
- SOIL TYPE DELINEATION LINE
- E.D. (A-2) EARTH DIKE (E.D.)
- STABILIZED CONSTRUCTION ENTRANCE (SCE)
- TEMPORARY SWALE (T.S.)
- SUPER SILT FENCE
- SILT FENCE
- GABION MATTRESS INFLOW PROTECTION
- ROCK OUTLET PROTECTION TYPE II
- MOUNTABLE BERM
- REMOVABLE PUMPING STATION
- EROSION CONTROL MATTING
- EXISTING TO PATHS

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

Jim Myers/oc 2/2/06 DATE

U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE

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

APPROVED: *[Signature]* 2/2/06 DATE

HOWARD SOIL CONSERVATION DISTRICT

PLAN NUMBER

DEVELOPERS CERTIFICATE:

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 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.

[Signature] 1/13/06 DATE

SIGNATURE OF DEVELOPER
PRINT NAME BELOW SIGNATURE
MARK E. DUDA

ENGINEERS CERTIFICATE:

I 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 NOTICED 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.

[Signature] 1/14/06 DATE

SIGNATURE OF ENGINEER
PRINT NAME BELOW SIGNATURE
KEVIN R. KUSSY

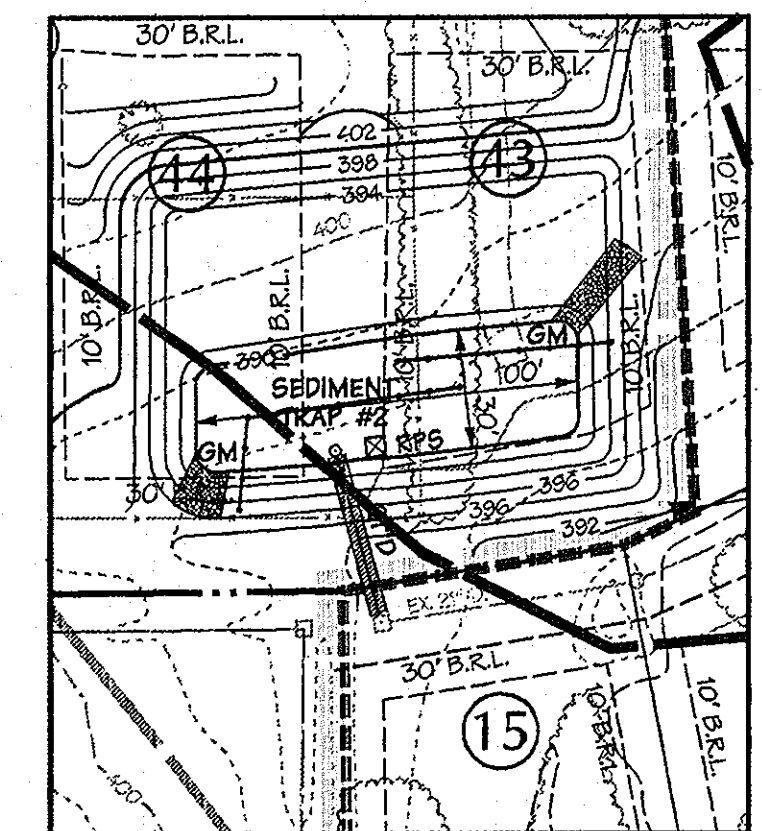
No As-Built information is required on this sheet

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.

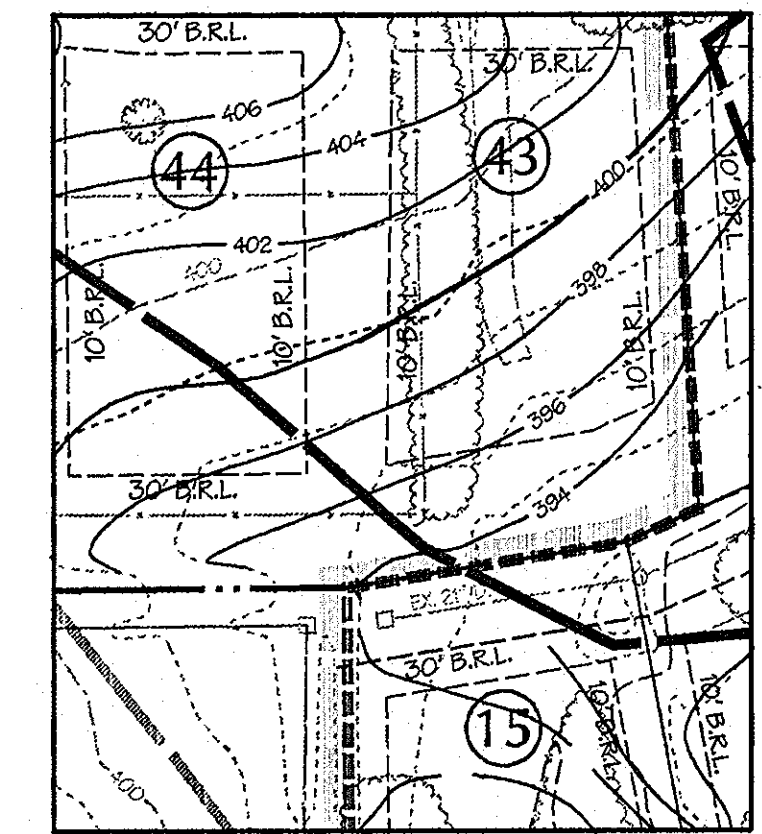
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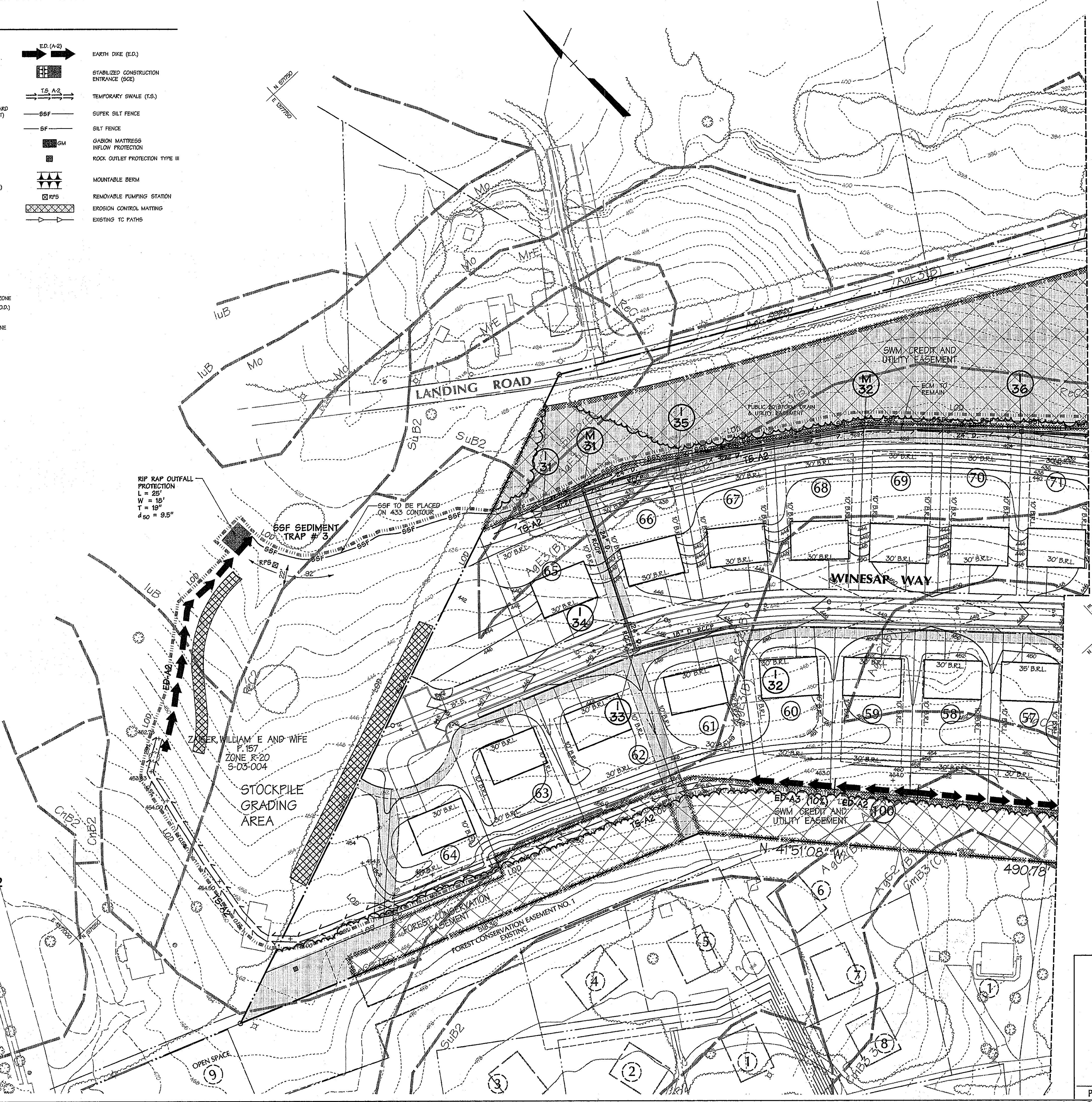
MATCHLINE SEE SHEET 10 OF 27



Inset 1
Existing Conditions at Trap # 2



Inset 2
Ultimate Conditions at Trap # 2



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

William F. White 1-19-06 DATE
CHIEF, BUREAU OF HIGHWAYS 143

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

[Signature] 1/21/06 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION 900

[Signature] 2/9/06 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT SA

Date No. Revision Description

FINAL PLAN
OWENS PROPERTY
PHASE II

LOTS 43 THRU 97 AND OPEN SPACES LOTS 98, 99 & 100
NON-BUILDABLE BULK PARCELS 'C' AND 'D'
TAX MAP 31 PARCEL 243, 372

OWNER/DEVELOPER:

PATAPSCO LANDING, LLC
c/o James Keedy and Co. Inc.
P.O. Box 5225
61 E. Padonia Road
Timonium, MD 21093

1/4/06
Date

Professional Engr. No. 13676

DMW
Duff McCune-Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4706

A Team of Land Planners,
Landscape Architects,
Golf Course Architects,
Engineers, Surveyors &
Environmental Professionals

TITLE: **FINAL GRADING AND SEDIMENT & EROSION CONTROL PLAN**

Des. By	MRT	Scale	1"=50'	Proj. No.	01086.D
Dm. By	ADL	Date	1/4/06	11 of 27	
Chk. By	KRK	Approved			

AS-BUILT

F-05-121

1/4/06/PHASE 1070562422

STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

SECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS

- A. SITE PREPARATION**
- Install erosion and sediment control structures (either temporary or permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins.
 - Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.
 - Schedule required soil tests to determine soil amendment composition and application rates for sites having disturbed area over 5 acres.
- B. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)**
- Soil test must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas over 5 acres. Soil analysis may be performed by the University of Maryland or a recognized commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analysis.
 - Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers shall be delivered to the site fully labeled according to the applicable state fertilizer laws and shall bear the name, trade name or trademark and warranty of the producer.
 - Lime materials shall be ground limestone (hydrated or burnt lime may be substituted) which contains at least 50% total oxides (calcium oxide plus magnesium oxide). Limestone shall be ground to such fineness that at least 50% will pass through a #100 mesh sieve and 98 - 100% will pass through a #200 mesh sieve.
 - Incorporate lime and fertilizer into the top 3 - 5 inches of soil by disking or other suitable means.

- C. SEEDBED PREPARATION**
- TEMPORARY SEEDING**
 - Seedbed preparation shall consist of loosening soil to a depth of 3 inches to 5 inches by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened it should not be rolled or dragged smooth but left in the roughened condition. Sloped areas (greater than 3:1) should be tracked leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.
 - Apply fertilizer and lime as prescribed on the plans.
 - Incorporate lime and fertilizer into the top 3 - 5 inches of soil by disking or other suitable means.
 - PERMANENT SEEDING**
 - Minimum soil conditions required for permanent vegetative establishment:
 - Soil pH shall be between 6.0 and 7.0.
 - Soluble salts shall be less than 500 parts per million (PPM).
 - The soil shall contain less than 40% clay but enough fine grained material (> 30% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if Lovegrass or Serotia Lespedeza is to be planted. Then a sandy soil (< 30% silt plus clay) would be acceptable.
 - Soil shall contain 1.5% minimum organic matter by weight.
 - Soil must contain sufficient pore space to permit adequate root penetration.
 - If these conditions cannot be met by the soils on site, adding topsoil is required in accordance with Section 21 - Standard and Specification for Topsoil.
 - Areas previously graded in conformance with the drawings shall be maintained in a true and even grade, then scarified or otherwise loosened to a depth of 3 - 5 inches to permit bonding of the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil from sliding down a slope.
 - Apply soil amendments as per soil test or as included on the plans.
 - Mix soil amendments into the top 3 - 5 inches of topsoil by disking or other suitable means. Lawn areas should be raked to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Where site conditions will not permit normal seedbed preparation, loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface. On slopes (steeper than 3:1) should be tracked by a dozer leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 1 - 3 inches of soil should be loose and friable. Seedbed loosening may not be necessary on newly disturbed areas.

- D. SEED SPECIFICATIONS**
- All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized seed laboratory. All seed used shall have been tested within the 6 months immediately preceding the date of sowing such material on this job.
 - Inoculant - The inoculant for treating legume seed in the seed mixtures shall be a pure culture of nitrogen-fixing bacteria prepared specifically for the species. Inoculants shall not be used later than the date indicated on the container. Add fresh inoculant as directed on package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75-80 °F. can weaken bacteria and make the inoculant less effective.

- E. METHODS OF SEEDING**
- Hydroseeding:** Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeder, or cultipacker seeder.
 - If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following:
Nitrogen: maximum of 100 pounds per acre total of soluble Nitrogen; P205 (phosphorus): 200 pounds per acre; K20 (potassium): 200 pounds per acre.
 - Lime: Use only ground agricultural limestone, (up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
 - Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.**
 - Dry Seeding:** This includes use of conventional drop or broadcast spreaders.
 - Seed spread dry shall be incorporated into the subsoil at the rates prescribed on the temporary or permanent seeding summaries or tables 25 or 26. The seeded area shall then be rolled with a weighted roller to provide good seed soil contact.
 - Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.

- Drill or cultipacker seeding: Mechanized seeders that apply and cover seed with soil.
 - Cultipacker seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering.
Seedbed must be firm after planting.
 - Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
- MULCH SPECIFICATIONS (IN ORDER OF PREFERENCE)**
 - Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonably bright in color, and shall not be moldy, galled, decayed, or excessively dusty and shall be free of noxious weeds seeds as specified in the Maryland Seed Law.
 - Wood cellulose fiber mulch (WCFM)
 - WCWM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state.
 - WCWM shall be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread layer.
 - WCWM, including dye shall contain no germination or growth inhibiting factors.
 - WCWM materials shall be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material shall form a blotter-like ground cover, on application, having moisture absorption and percolation properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
 - WCWM material shall contain no elements or compounds at concentration levels that will be phytotoxic.
 - WCWM must conform to the following physical requirements:
Fiber length to approximately 10 mm., diameter approximately 1mm., pH range of 4.0 to 8.5, ash content of 1.6% maximum and water holding capacity of 90% minimum.
Note: Only sterile straw mulch should be used in areas where one species of grass is desired.

- G. MULCHING SEEDING AREAS** - Mulch shall be applied to all seeded areas where one species of grass is desired.
- If grading is completed outside of the seeding season, mulch alone shall be applied as prescribed in this section and maintained until the seeding season returns and seeding can be performed in accordance with these specifications.
 - When straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tons per acre. Mulch shall be applied in a uniform loose depth of between 1/2 inches and 2 inches. Mulch applied shall achieve a uniform distribution and depth so that the surface is not exposed. If a mulch anchoring tool is to be used, the rate should be increased to 2.5 tons per acre.
 - Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 pounds per acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
- H. SECURING STRAW MULCH** - Mulch anchoring shall be performed immediately following mulch application to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon size of area and erosion hazard:
- A mulch anchoring tool is a tractor drawn implement design to punch and anchor mulch into the soil surface to a minimum of two (2) inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should be used on the contour if possible.
 - Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 pounds per acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
 - Application of liquid binders should be heavier at the edges where wind catches mulch, such as in valleys or on crest of banks. The remainder of area should appear uniform after binder application. Synthetic binders - such as Acrylic DLR (agro-tack), DCA-70, Petroset, Terra Tax I, Terra Tack AR or other approved equal may be used at rates recommended by the manufacturer to anchor mulch.
 - Lightweight plastic netting may be stapled over the mulch according to manufacturer's recommendations. Netting is usually available in rolls 4' to 15' feet wide and 300 to 3,000 feet long.

SECTION II - TEMPORARY SEEDING

VEGETATION - Annual grass or grain used to provide cover on disturbed areas for up to 12 months. For longer duration of vegetative cover, permanent seedings is required.

Seed Mixture (Hardiness Zone 6B)				Fertilizer Rate (10-10-10)	Lime Rate
No.	Species	Application Rate (Lb./Ac.)	Seeding Dates		
1	Annual Ryegrass	50	2/1 - 4/30 8/15 - 1/11	600 Lbs./Ac. (15 Lbs./1000 Sq.Ft.)	2 Tons/Ac. (100 Lbs./1000 Sq.Ft.)
2	Weeping Lovegrass	4	5/1 - 8/14	1/4" - 1/2"	

SECTION III - PERMANENT SEEDING

Seeding grass and legumes to establish ground cover for a minimum of one year on disturbed areas generally receiving low maintenance.

Seed Mixture No. 3 (Hardiness Zone 6B)				Fertilizer Rate (10-20-20)			Lime Rate
%	Species	Application Rate (Lb./Ac.)	Seeding Dates	N	P205	K20	
85	Rebel II Tall Fescue	125		90 Lb./Ac. (2 Lb./1000 Sq.Ft.)	175 Lb./Ac. (4 Lb./1000 Sq.Ft.)	175 Lb./Ac. (4 Lb./1000 Sq.Ft.)	2 Tons/Ac. (100 Lb./1000 Sq.Ft.)
10	Perennial Ryegrass	15	3/1 - 5/15 8/15 - 1/15	1/4" - 1/2"			
5	Kenblue Kentucky Bluegrass	10					

* For 5-16 through 8-14 add two (2) pounds of Weeping Lovegrass per acre or ten (10) pounds of Millet per acre to seed mixture (i.e. Mix #3 shown).

SECTION IV - SOD

- To provide quick cover on disturbed areas (2:1 grade or flatter)
- A. GENERAL SPECIFICATIONS**
- Class of turfgrass sod shall be Maryland or Virginia State certified or approved. Sod labels shall be made available to the job foreman and inspector.
 - Sod shall be machine cut at a uniform soil thickness of 3/4", plus or minus 1/4", at the time of cutting. Measurement for thickness shall exclude top growth and thatch. Individual pieces of sod shall be cut to the suppliers width length. Maximum allowable deviation from standard widths and lengths shall be 5 percent. Broken pads and torn or uneven ends will not be acceptable.
 - Standard size sections of sod shall be strong enough to support their own weight and retain their size and shape when suspended vertically with a firm grasp on the upper 10 percent of the section.
 - Sod shall not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.
 - Sod shall be harvested, delivered, and installed within a period of 36 hours. Sod not transplanted within this period shall be approved by an agronomist or soil scientist prior to its installation.
- B. SOD INSTALLATION**
- During periods of excessively high temperature or in areas having dry subsoil, the subsoil shall be lightly irrigated immediately prior to laying the sod.
 - The first row of sod shall be laid in a straight line with subsequent rows placed parallel to and tightly wedged against each other. Lateral joints shall be staggered to promote more uniform growth and strength. Ensure that sod is not stretched or overlapped and that all joints are butted tight in order to prevent voids which air drying of the roots.
 - Wherever possible, sod shall be laid with the long edges parallel to the contour and with staggering joints. Sod shall be rolled and tamped, pegged or otherwise secured to prevent slippage on slopes and to ensure solid contact between sod roots and the underlying soil surface.
 - Sod shall be watered immediately following rolling or tamping until the underside of the new sod pad and soil surface below the sod are thoroughly wet. The operations laying, tamping and irrigating for any piece of sod shall be completed within eight hours.
- C. SOD MAINTENANCE**
- In the absence of adequate rainfall, watering shall be performed daily or as often as necessary during the first week after in sufficient quantities to maintain moist soil to a depth of 4 inches. Watering should be done during the heat of the day to prevent wilting.
 - After the first week, sod watering is required as necessary to maintain adequate moisture content.
 - The first mowing of sod should not be attempted until the sod is firmly rooted. No more than 1/3 of the grass leaf should be removed by the initial cutting or subsequent cuttings. Grass height shall be maintained between 2 inches and 3 inches unless otherwise specified.

SECTION V - TURFGRASS ESTABLISHMENT

Areas where turfgrass may be desired may include lawns, parks, playgrounds, and commercial areas which will receive a medium high level of maintenance. Areas to receive seed shall be tilled by disking or other approved methods to a depth of 2 to 4 inches, leveled and raked to prepare a proper seedbed. Stones and debris over 1/2 inches in diameter shall be removed. The resulting seedbed shall be in such condition that future mowing of grasses will pose no difficulty.

Note: Choose certified material. Certified material is the best guarantee of cultivar purity. The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of consumer protection and assures a pure genetic line.

- A. TURFGRASS MIXTURES**
- Kentucky Bluegrass - Full sun mixture** - For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and Eastern Shore. Recommended certified Kentucky Bluegrass cultivars seeding rate: 15 to 20 pounds per 1000 square feet. A minimum of three Bluegrass cultivars should be chosen ranging from a minimum of 10% to a maximum of 35% of the mixture by weight.
 - Kentucky Bluegrass/Perennial Rye - Full sun mixture** - For use in full sun areas where rapid establishment is necessary and when turf will receive medium to intensive management. Certified Perennial Ryegrass cultivars/certified Kentucky Bluegrass seeding rate: 2 pounds mixture per 1000 square feet. A minimum of 3 Kentucky Bluegrass cultivars must be chosen, with each cultivar ranging from 10% to 35% of the mixture by weight.
 - Tall Fescue/Kentucky Bluegrass - Full sun mixture** - For use in drought prone areas and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes: certified Tall Fescue cultivars 95-100%, certified Kentucky Bluegrass cultivars 0 - 5%, seeding rate: 9 to 8 pounds per 1000 square feet. One or more cultivars may be blended.
 - Kentucky Bluegrass/Fine Fescue - Shade mixture** - For use in areas with shade in Bluegrass lawns. For establishment, intensively managed turf area. Mixture includes: certified Kentucky Bluegrass cultivars 30-40% and certified Fine Fescue and 60-70%. Seeding rate: 1 1/2 - 3 pounds per 1000 square feet. A minimum of 3 Kentucky Bluegrass cultivars must be chosen. With each cultivar ranging from a minimum of 10% to a maximum of 35% of the mixture by weight.
- Note: Turfgrass varieties should be selected from those listed in the most current University of Maryland publication, agronomy mimeo number 77, "Turfgrass Cultivar Recommendations for Maryland".

- B. IDEAL TIMES OF SEEDING**
- Western Maryland: March 15 - June 1, August 1 - October 1 (hardiness zones - 5B, 6A).
Central Maryland: March 1 - May 15, August 15 - October 15 (hardiness zone - 6B).
Southern Maryland, Eastern Shore: March 1 - May 15, August 15 - October 15 (hardiness zones - 7A, 7B).

- C. IRRIGATION**
- If soil moisture is different, supply new seedlings with adequate water for plant growth (1/2" - 1" every 3 to 4 days depending on soil texture) until they are firmly established. This is especially true when seedlings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

- D. REPAIRS AND MAINTENANCE**
- Once the vegetation is established, the site shall have 95% groundcover to be considered adequately stabilized.
 - If the stand provides between 40% and 94% ground coverage, re-establish following original lime, fertilizer, seedbed preparation and seeding recommendations.
 - If the stand provides between 40% and 94% ground coverage, overseeding and fertilizing using half of the rates originally applied may be necessary.
 - Maintenance fertilizer rates for permanent seedings are shown in Table 24, for lawns and other medium high maintenance turfgrass areas, refer to the University of Maryland publication "Lawn Care in Maryland" bulletin number 171.

21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL

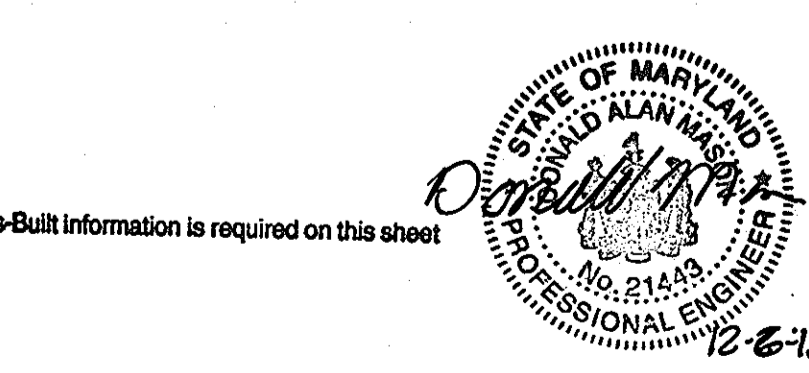
- DEFINITION**
- Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.
- PURPOSE**
- To provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.
- CONDITIONS WHERE PRACTICE APPLIES**
- This practice is limited to areas having 2:1 or flatter slopes where:
 - The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
 - The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish containing supplies of moisture and plant nutrients.
 - The original soil to be vegetated contains material toxic to plant growth.
 - The soil is so acidic that treatment with limestone is not feasible.
 - For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization having slopes steeper than 2:1 shall have the appropriate stabilization shown on the plans.

CONSTRUCTION AND MATERIAL SPECIFICATIONS

- Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SSS in cooperation with Maryland Agricultural Experimental Station.
- Topsoil Specifications - Soil to be used as topsoil must meet the following:
 - 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 textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1-1/2" in diameter.
 - Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, Johnsongrass, nutgrass, poison ivy, thistle, or others as specified.
 - Where the subsoil is either highly acidic or composed of heavy clay, ground limestone shall be applied at the rate of 4-8 tons/acre (200-400 pounds per 1000 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.

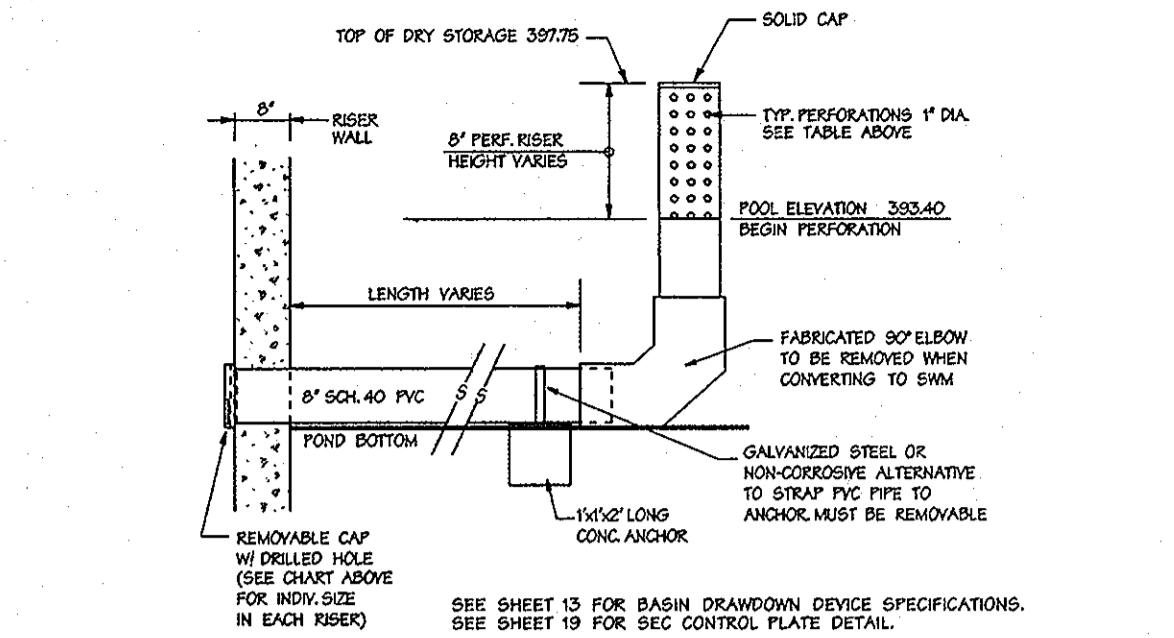
- For sites having disturbed areas under 5 acres:
 - On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
 - pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
 - Organic content of topsoil shall be not less than 1.5 percent by weight.
 - Topsoil having soluble salt content greater than 500 parts per million shall not be used.
 - No soil 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 distribution of phytotoxic materials.
 - Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.
- Topsoil Application
 - 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.
 - Grades on the areas to be topsoiled which have been previously established, shall be maintained, about 4% - 8% higher in elevation.
 - 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 seeding 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.
 - 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.
- 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:
 - Composted Sludge Material for use as a soil conditioner for sites having disturbed 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:
 - 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.
 - 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.
 - Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.
 - Composted sludge shall be amended with a potassium fertilizer applied at a rate of 4 lb./1,000 square feet, and 1/3 the normal lime application rate.

References: Guidelines Specifications, Soil Preparation and Sowing, MD-VA, Pub. #1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes, Revised 1975.



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: 12-31-14

RISER #	LENGTH	WEY POOL ELEV.	PERF. RISER HEIGHT	ORIFICE DRILLED HOLE SIZE	PERFORATION SPACING	PERFORATIONS PER VERT. FT.
BASIN 2	16'	393.40	2.10'	1.0"	SEE DETAIL SHEET 13 FOR PERFORATION SPACING	16



Sediment Control Draw-Down Not to Scale

Sequence of Operations

- Obtain Grading permit, Notify Maryland Department of Environmental and Nontidal Wetlands and Waterways Inspections and Compliance sections at (410)-631-3510 at least five days in advance of beginning any work in streams, 100-year floodplain, nontidal wetlands and wetland buffers. 1 DAY
- Notify HCD Department of Inspections 410-313-1855 at least 48 hours prior to beginning any work. 2 DAYS
- Department of Inspections (410)313-1855 at least 48 hours prior to beginning work. 1 WEEK
- Orange high visibility fence shall be manually installed along the limits of disturbance, where the limit is within 50 feet of forest conservation easement, 100-year floodplain, wetlands buffer or stream buffer. This shall be completed by and inspected at the pre-construction meeting. 1 WEEK
- With permission from the Sediment Control Inspector, clear and grub for and install the Stabilized Construction Entrance Silt Fence (SESF) around the sediment basin as shown on plans. 3 WEEKS
- Clear and grub, install basin and grade swale at the back of lots 65-76. Notify HCD Inspector to gain permission to proceed. 1 WEEK
- Install remainder of Sediment and Erosion Control (SEC) measures including dikes and swales. 1 DAY
- Notify HCD Department of Inspection, upon completion of said installation. 1 WEEK
- With the approval of the sediment control inspector, clear and grub the remainder of the site. 6 WEEKS
- Mass grade site. 2 WEEKS
- Install utilities and curb and gutter. 1 WEEK
- Pave Road. 1 WEEK
- Upon stabilization of site with established vegetation and with the permission of the Sediment Control Inspector, remove sediment control measures and stabilize any areas disturbed by their removal. Convert basin to SWM pond. See sheet 17 for pond conversion detailed plan view, and sheets 18, 19, and 20 for details and specifications. 2 WEEKS

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
 William Z. Walker, Jr. 1-19-06
 CHIEF, BUREAU OF HIGHWAYS H3 DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
 [Signature] 1/27/06
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

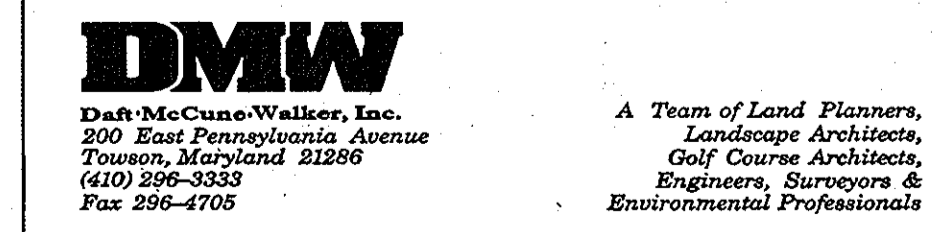
[Signature] 2/9/06
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Date	No.	Revision Description

FINAL PLAN
OWENS PROPERTY
 PHASE II

LOTS 43 THRU 97 AND OPEN SPACES LOTS 98,99 & 100
 NON-BUILDABLE BULK PARCELS 'C' AND 'D'
 TAX MAP 31 PARCEL 243, 572

OWNER/DEVELOPER:
 PATAPSCO LANDING, LLC
 c/o James Keetty and Co. Inc.
 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 P.O. Box 5229
 61 E. Padonia Road.
 Timonium, MD 21093



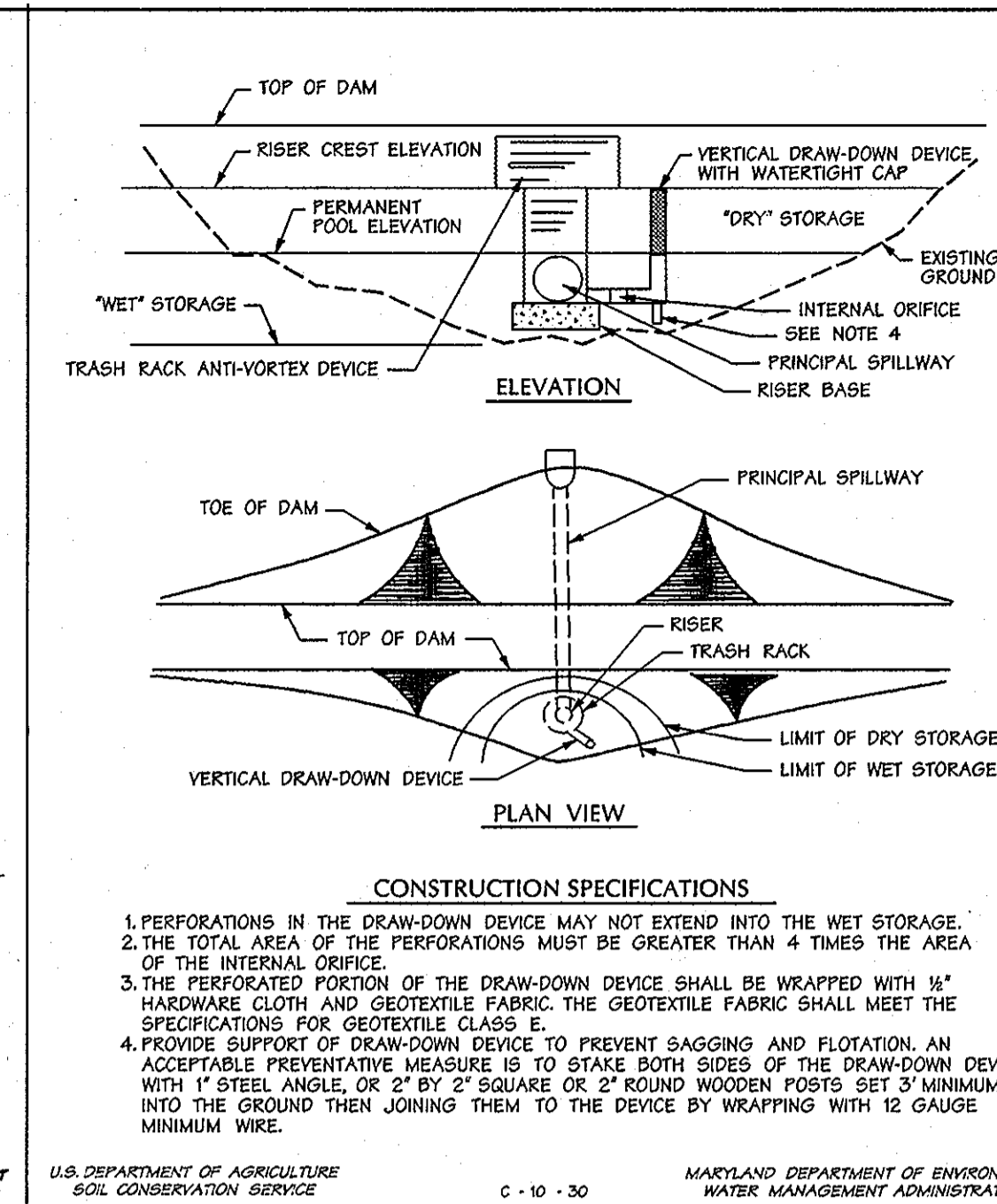
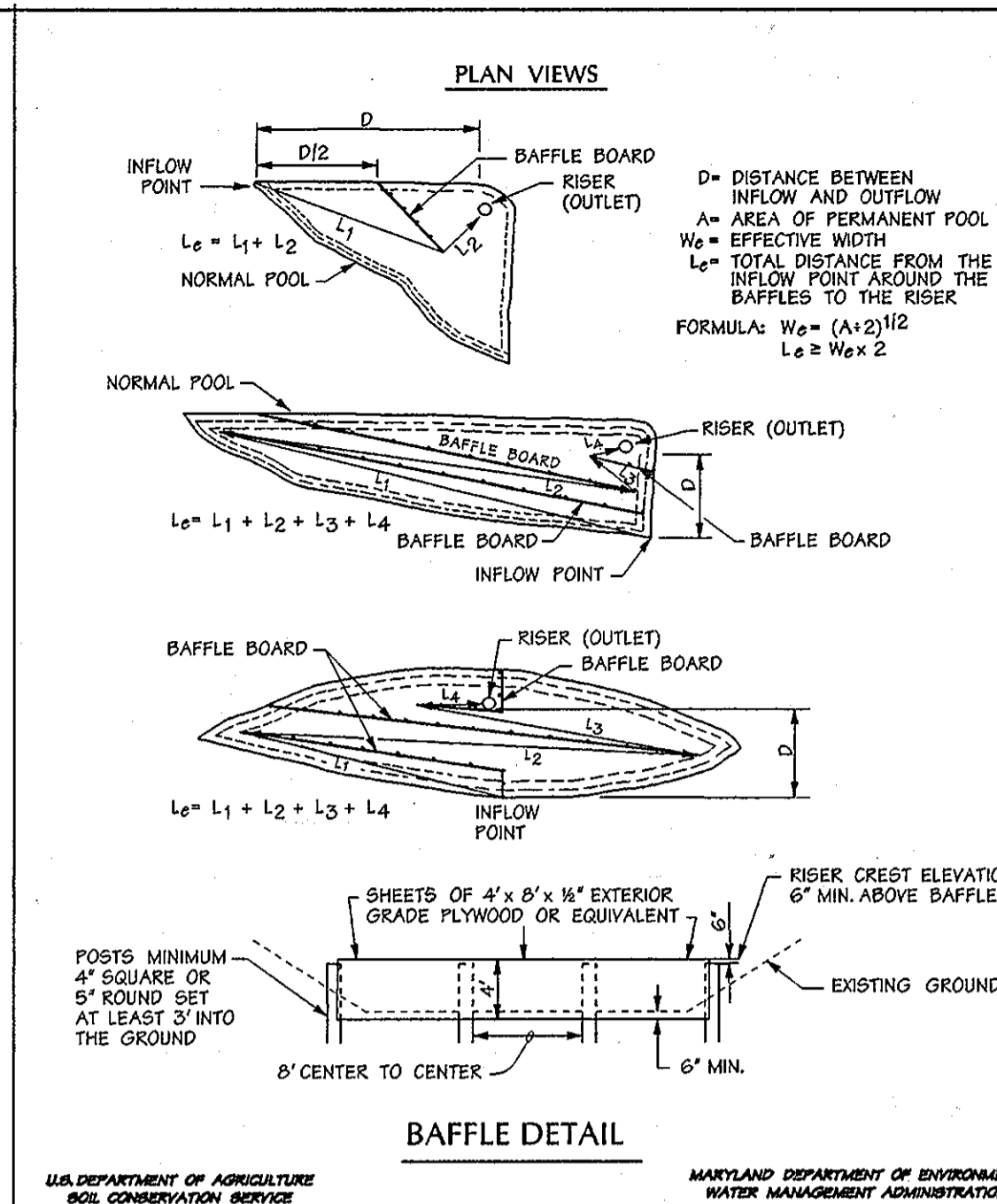
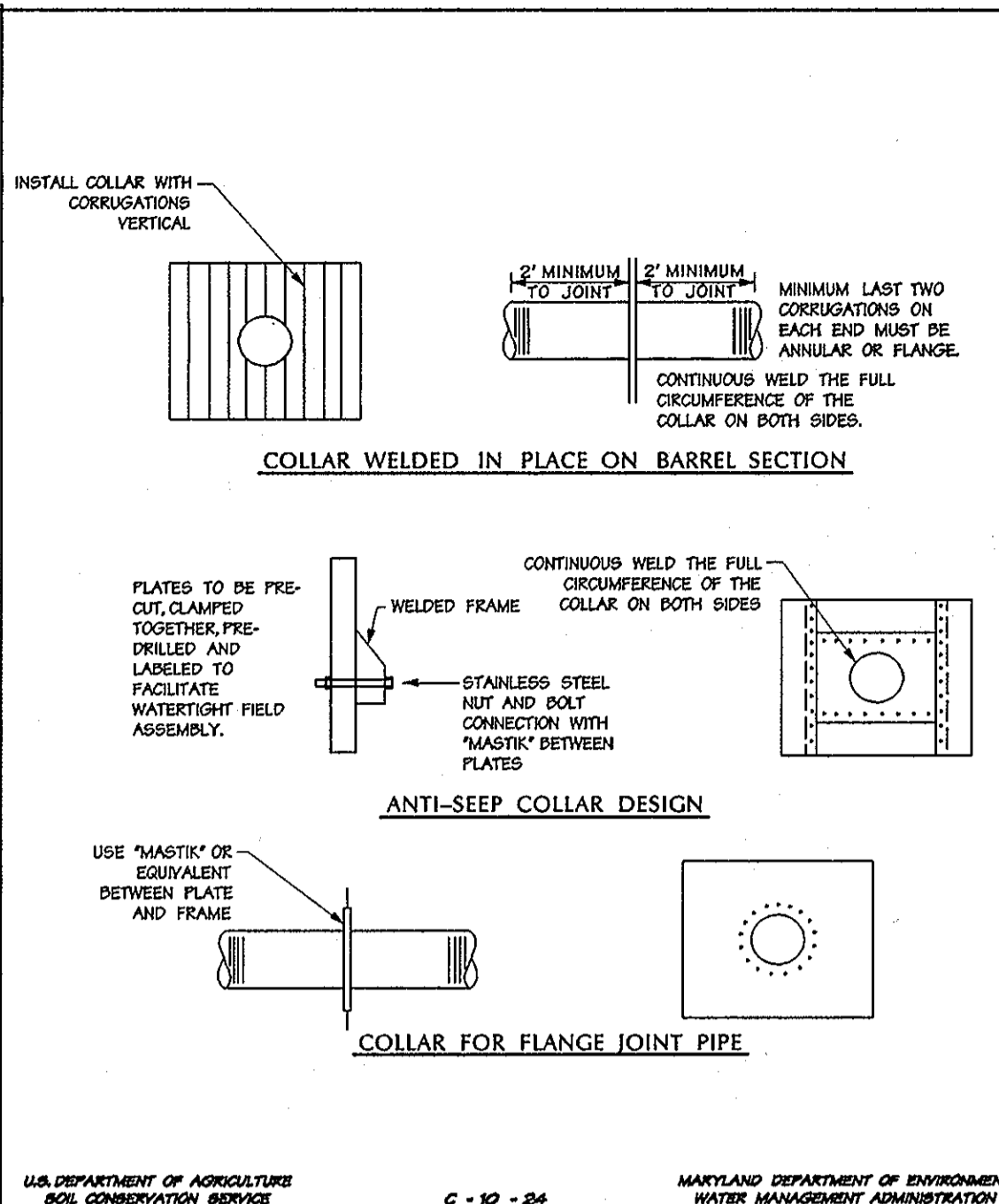
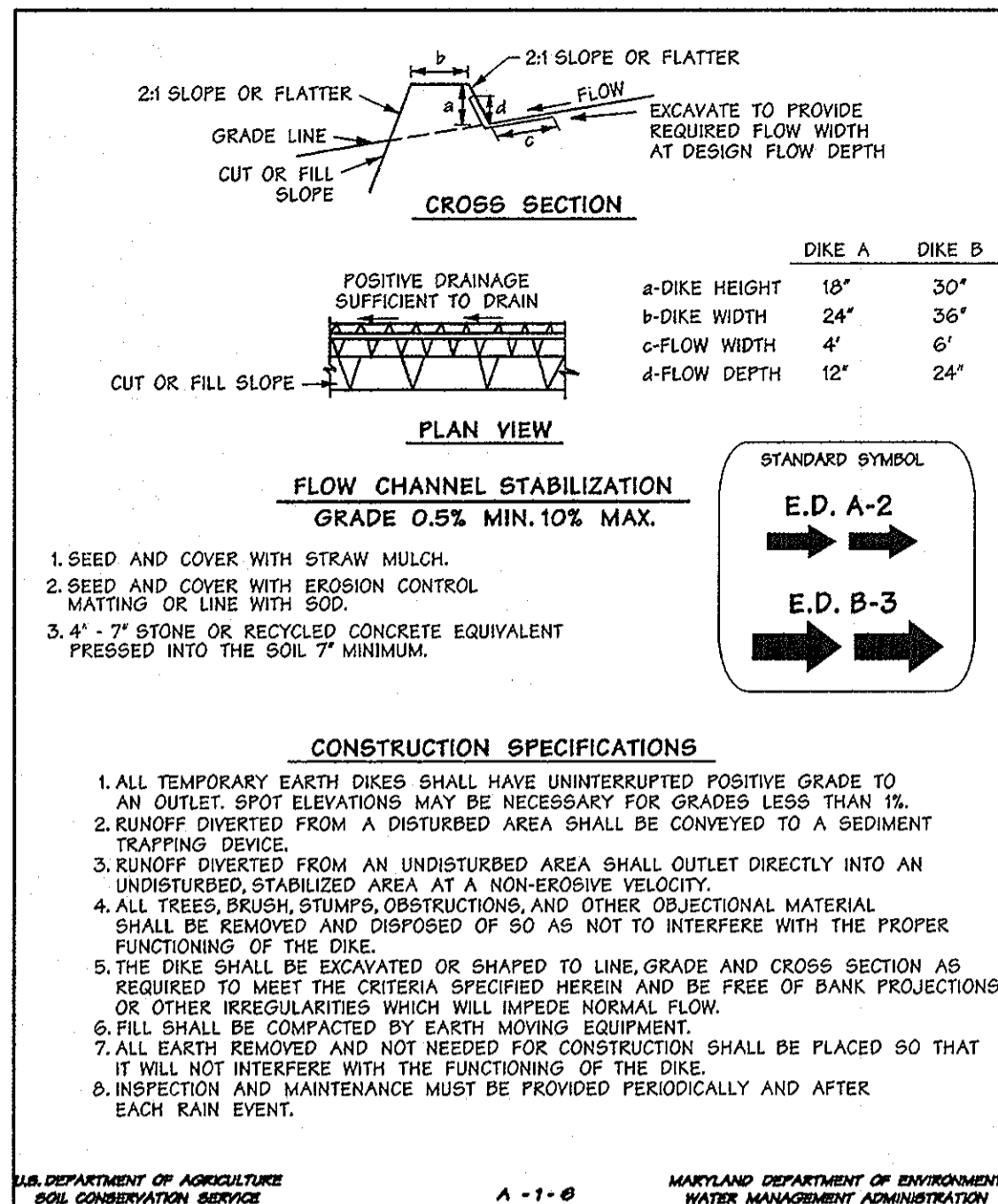
TITLE
FINAL SEDIMENT & EROSION CONTROL SPECIFICATIONS AND DETAILS

Des. By	MRT	Scale	NONE	Proj. No.	01086.D
Drn. By	MRT	Date	1/4/06		
Chk. by	KRK	Approved			12 of 27

DEVELOPER'S CERTIFICATION:
 I, the undersigned, certify that all development and construction will be done according to this plan 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 also authorize periodic on-site inspection by the Howard Soil Conservation District.
 [Signature] 1/3/06
 SIGNATURE OF DEVELOPER
 PRINT NAME BELOW SIGNATURE
 MARK E BLWA

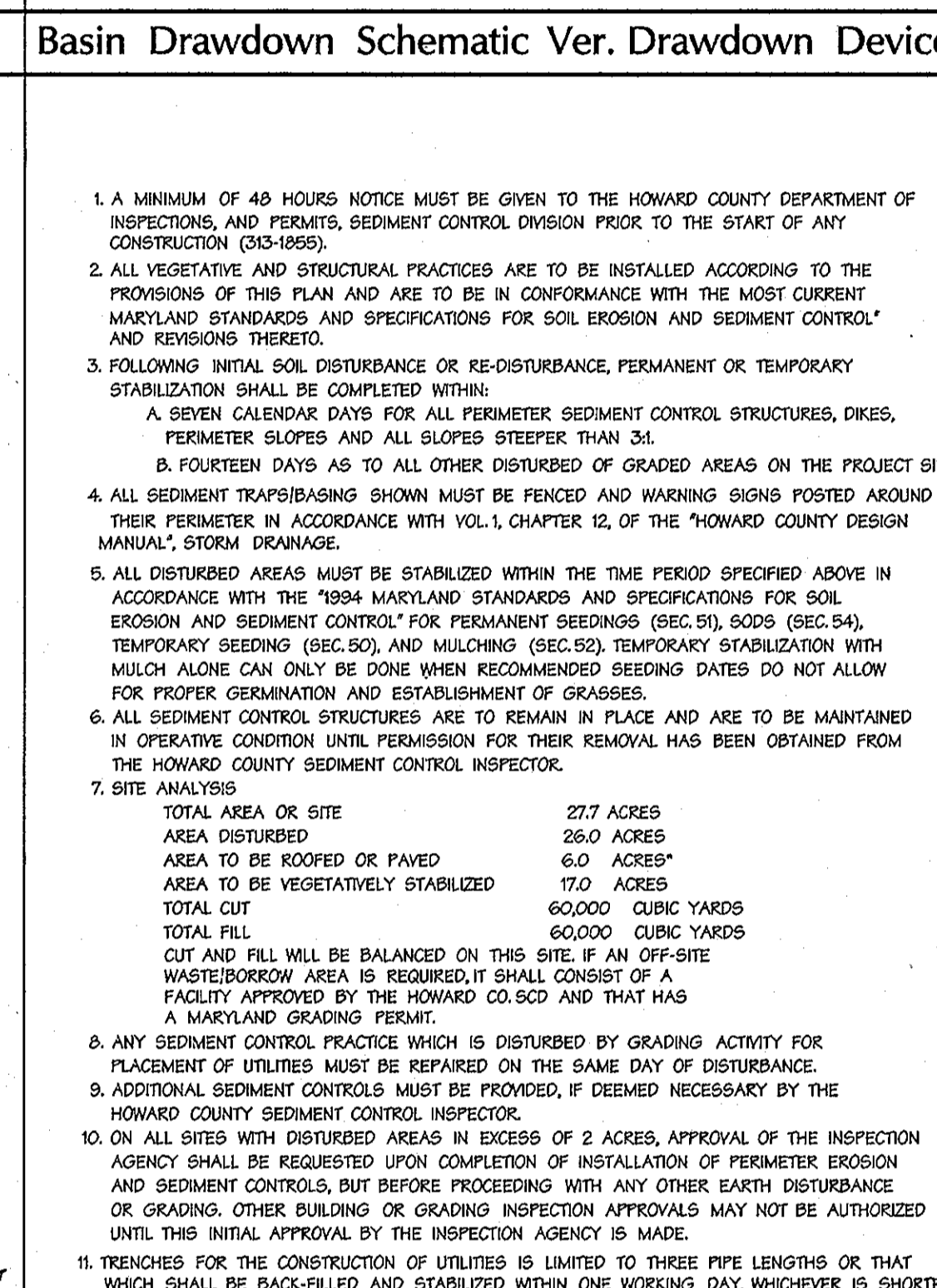
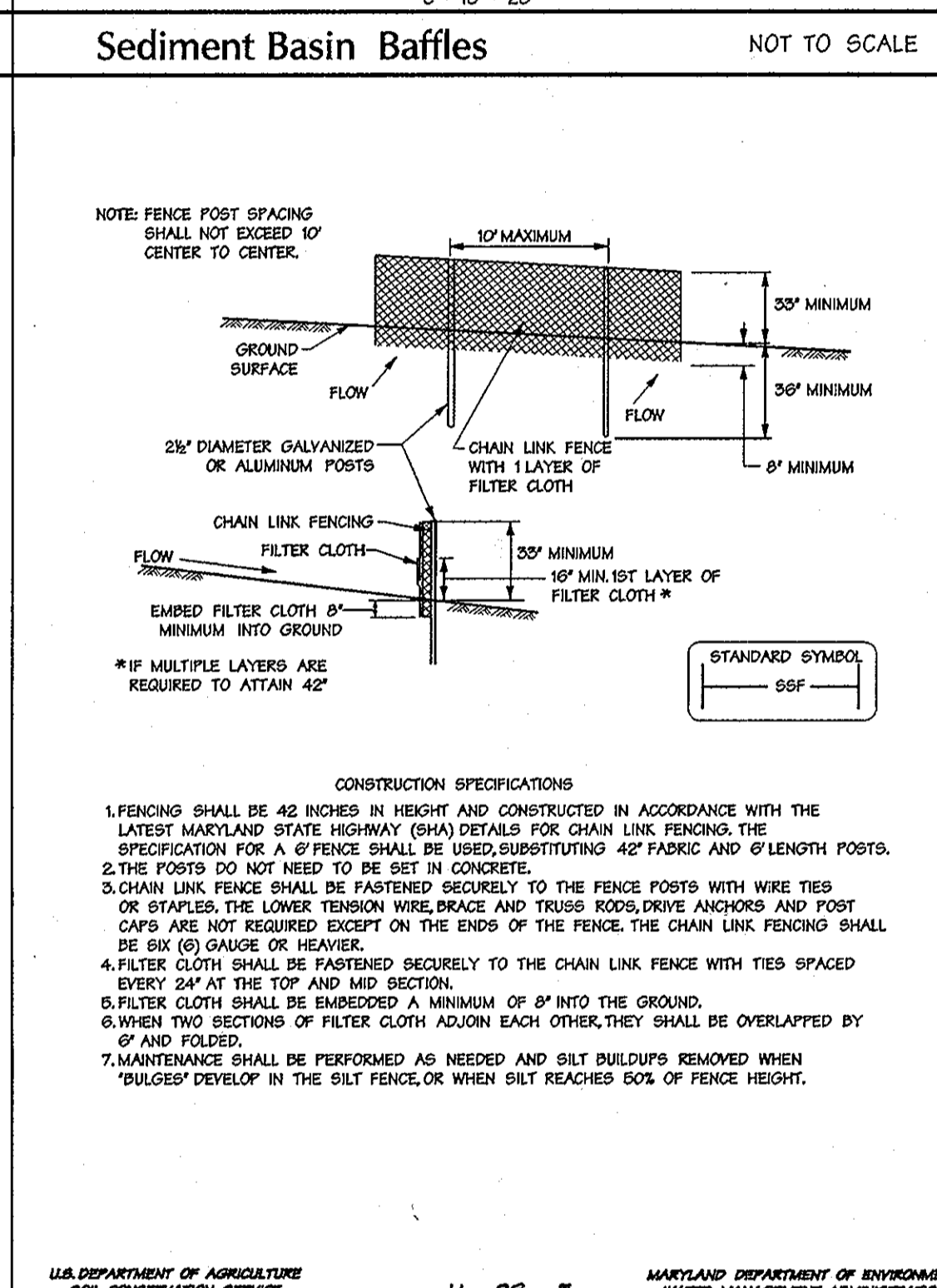
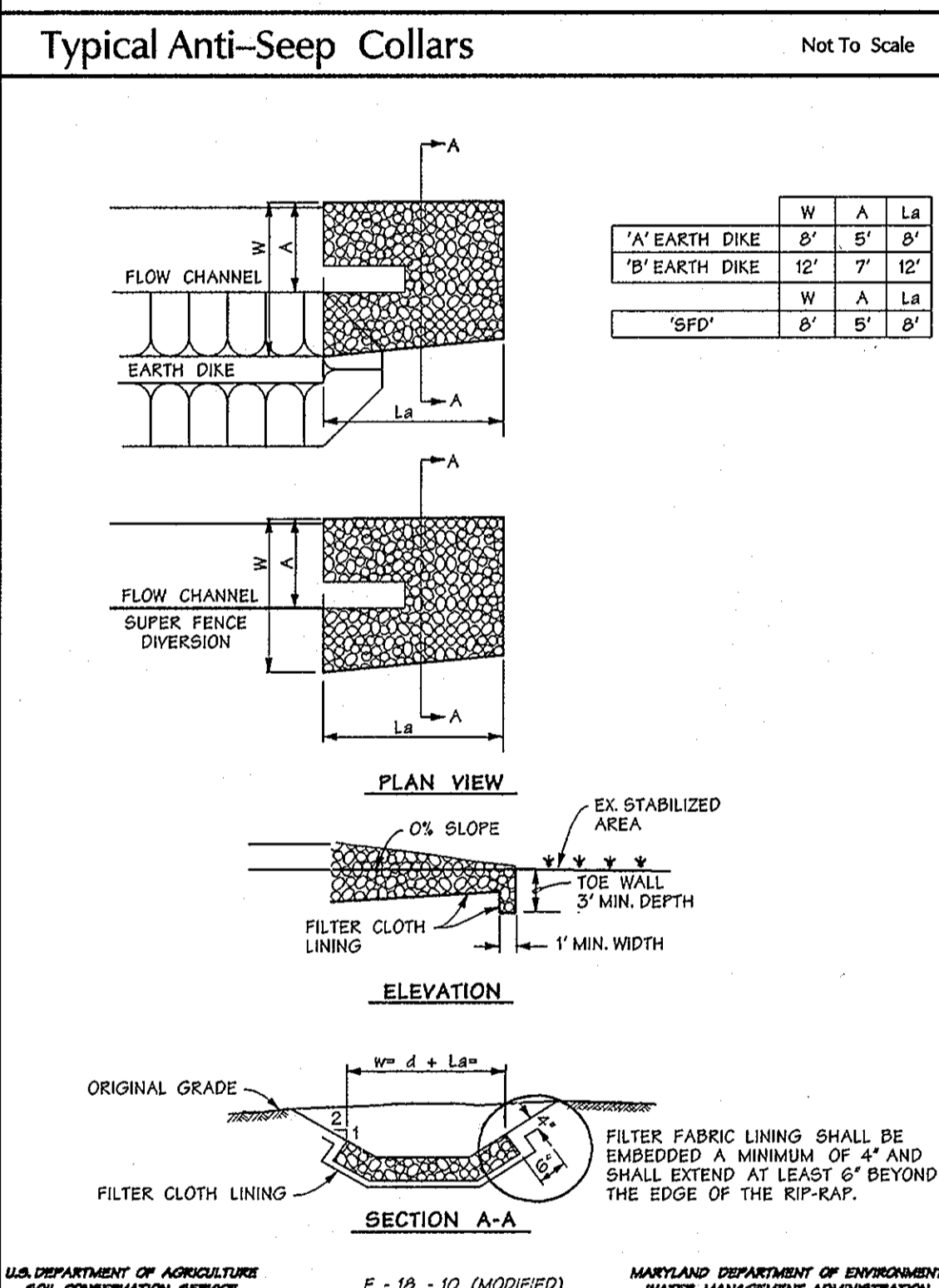
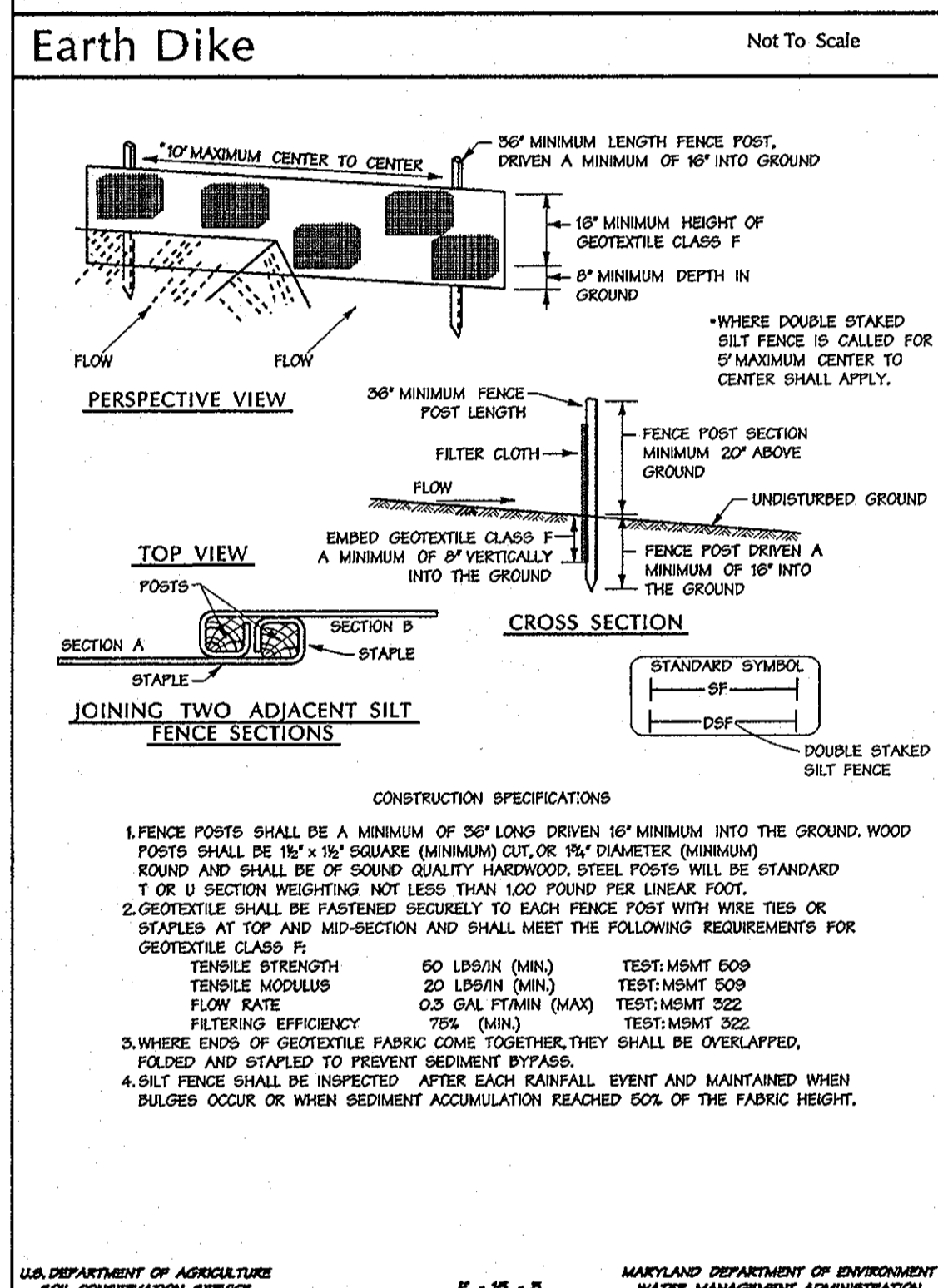
ENGINEER'S CERTIFICATION:
 I, the undersigned, certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.
 [Signature] 2/2/06
 SIGNATURE OF ENGINEER
 PRINT NAME BELOW SIGNATURE
 DONALD R. KARK

REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS
 [Signature] 2/2/06
 U.S. NATURAL RESOURCE CONSERVATION SERVICE DATE
 THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 [Signature] 2/2/06
 HOWARD S.C.D. DATE



BASIN TABLE

BASIN NUMBER	2
EXISTING DRAINAGE AREA: ACRES	13.81
INTERIM DRAINAGE AREA: ACRES	13.02
PROPOSED DRAINAGE AREA: ACRES	14.88
STORAGE REQUIRED: CUBIC FEET	WET 26,784 DRY 26,784 TOTAL 53,568
STORAGE PROVIDED: CUBIC FEET	WET 46,964 DRY 62,299 TOTAL 112,263
EXISTING GROUND ELEVATION	392.50
TOP EMBANKMENT ELEVATION	400.00
EMERGENCY SPILLWAY CREST ELEVATION	398.00
RISER CREST ELEVATION	397.75
WET STORAGE ELEVATION	393.40
CLEANOUT ELEVATION	389.75
BOTTOM ELEVATION	388.00
Q-1 INTO BASIN (C.F.S.)	0.80
Q-1 OUT BARREL (C.F.S.)	0.84
Q-1 OUT EMERGENCY SPILLWAY (C.F.S.)	0.00
TOTAL Q-1 OUT OF BASIN (C.F.S.)	0.84
Q-10 INTO BASIN (C.F.S.)	81.57
Q-10 OUT BARREL (C.F.S.)	32.66
Q-10 OUT EMERGENCY SPILLWAY (C.F.S.)	31.63
TOTAL Q-10 OUT OF BASIN (C.F.S.)	64.29
Q-10 INTO BASIN C.F.S. (CLOGGED)	81.57
Q-10 OUT BARREL C.F.S. (CLOGGED)	32.51
Q-10 OUT EMERGENCY SPILLWAY C.F.S. (CLOGGED)	36.49
TOTAL Q-10 OUT OF BASIN C.F.S. (CLOGGED)	68.00
Q OUT EMERGENCY SPILLWAY	0.00
BASIN DEPTH	WET 5.40' DRY 4.35' TOTAL 9.75'
DESIGN HIGHWATER 1 YEAR	397.59
DESIGN HIGHWATER 10 YEAR	398.80
DESIGN HIGHWATER 10 YEAR (CLOGGED)	398.88
FREEBOARD PROVIDED	1.12'
BARREL DIAMETER	24"
RISER INTERIOR DIMENSIONS	4' x 4'
EMERGENCY SPILLWAY WIDTH	17'
WET STORAGE ZONE ELEVATION	388.00 - 393.40
DRY STORAGE ZONE ELEVATION	393.40 - 397.75
BOTTOM DIMENSIONS	56' x 106'
STORAGE REQUIRED AT CLEANOUT C.F.	13,392
STORAGE PROVIDED AT CLEANOUT C.F.	11,809
DIMENSION FROM CLEANOUT ELEV. TO RISER TOP	8.00'
START DRAWDOWN PERFORATIONS AT ELEV.	393.40
INTERIM SWM REQUIRED	YES
INTERIM SWM PROVIDED	YES



No As-Built information is required on this sheet

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.

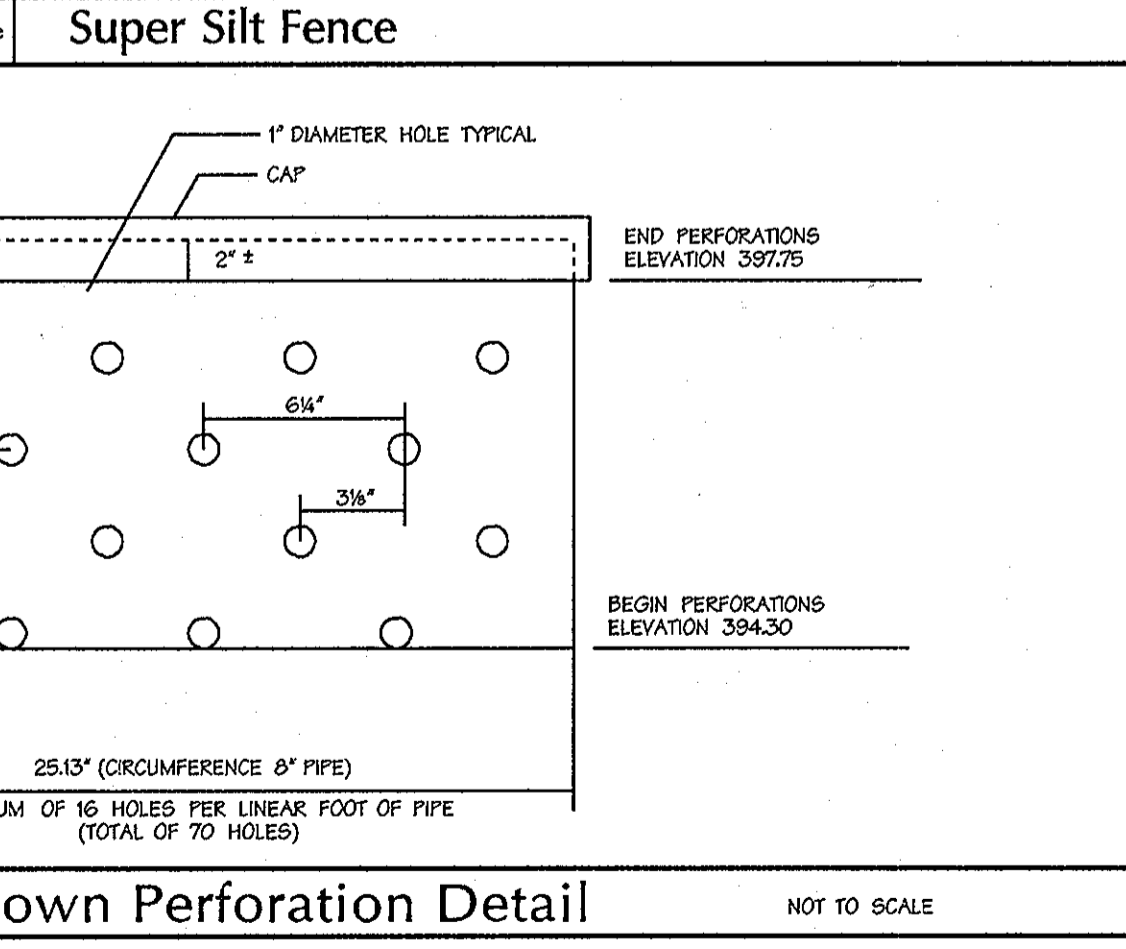
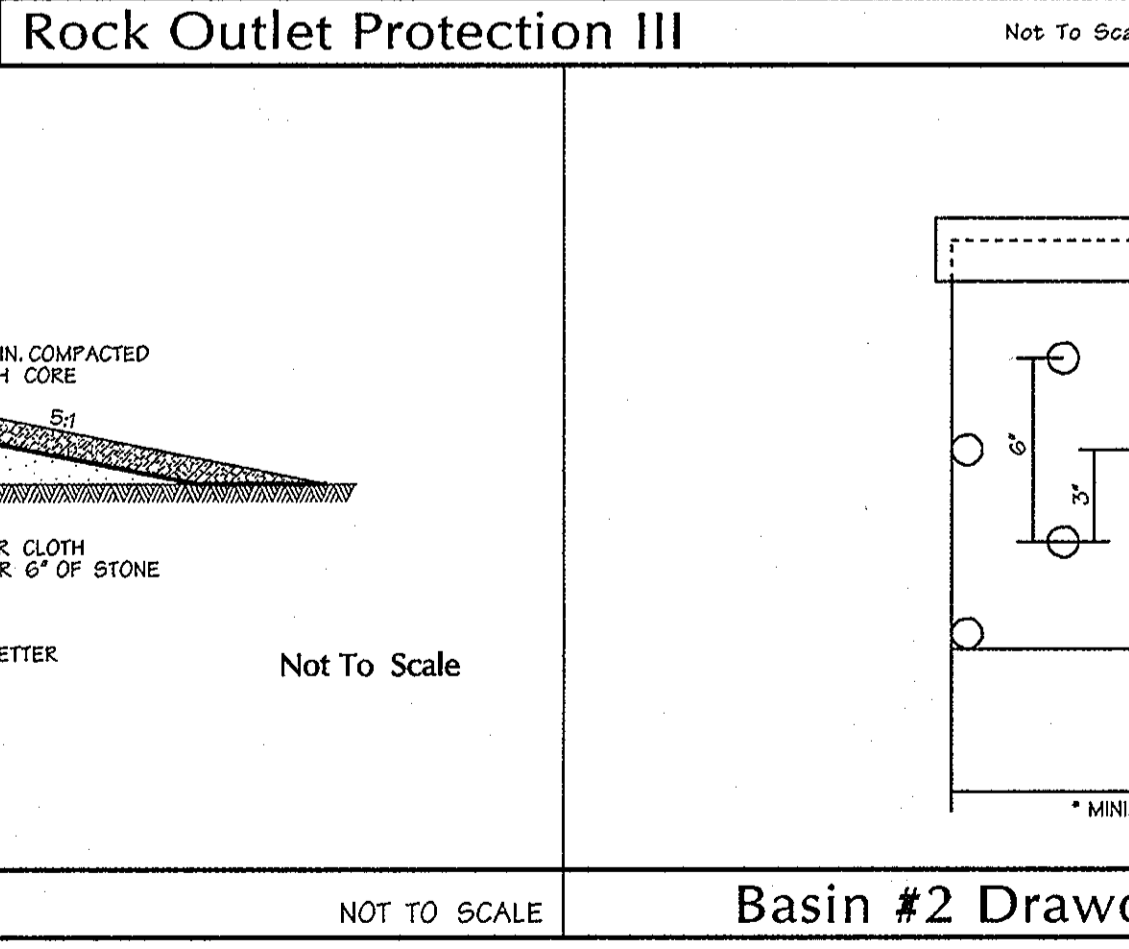
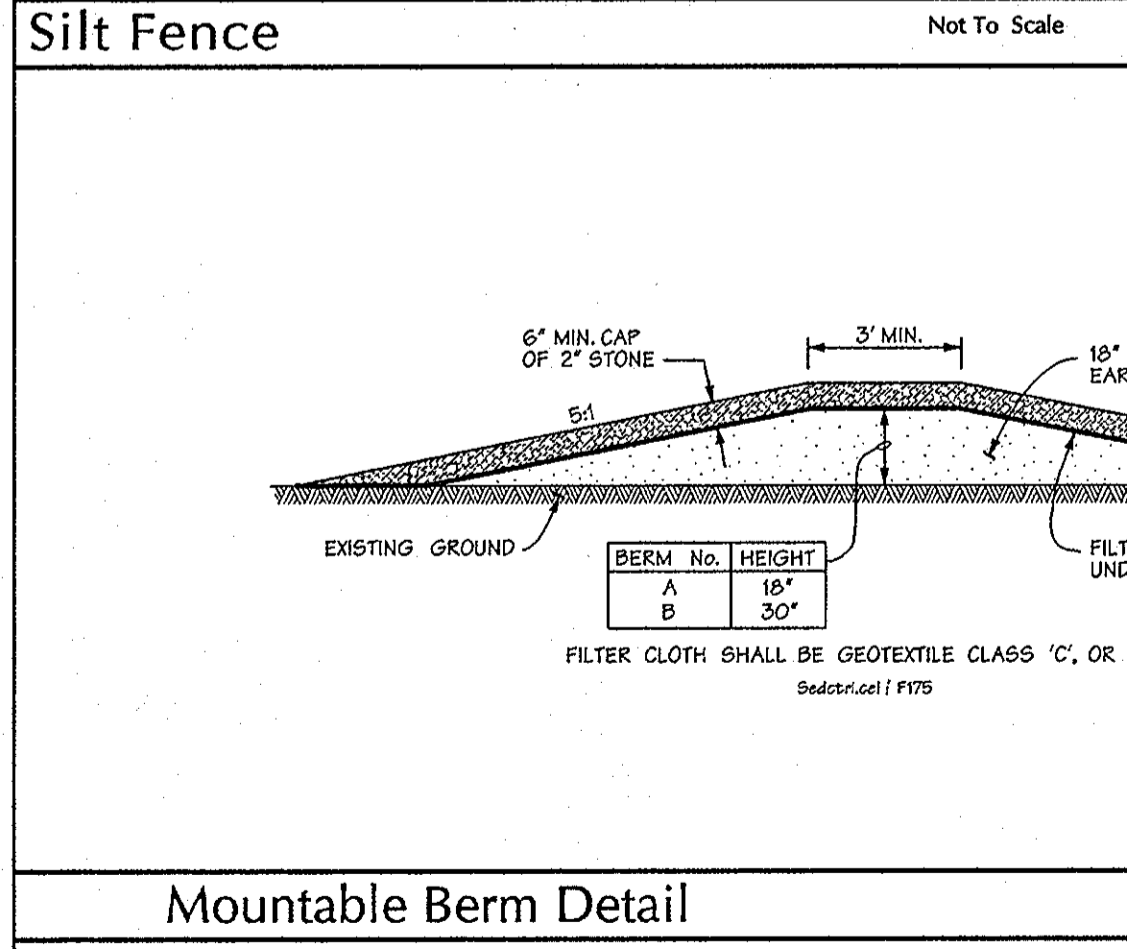
License No. 212433 Expiration Date: 12-31-14

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
with 2. msh
CHIEF, BUREAU OF HIGHWAYS 1-19-06 DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION 1/2/06 DATE

APPROVED: CHIEF, DIVISION OF LAND DEVELOPMENT 2/9/06 DATE

Professional Engineer Seal: STATE OF MARYLAND, DONALD WALKER, PROFESSIONAL ENGINEER, No. 21433, EXPIRES 12-31-14



Sediment Control General Notes

1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (303-1955).
2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THEREOF.
3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
A. SEVEN CALENDAR DAYS FOR ALL PERMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1.
B. FOURTEEN 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 PERMETER 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), SODS (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 OR SITE 27.7 ACRES
AREA DISTURBED 26.0 ACRES
AREA TO BE ROOFED OR PAVED 6.0 ACRES
AREA TO BE VEGETATIVELY STABILIZED 17.0 ACRES
TOTAL FILL 60,000 CUBIC YARDS
TOTAL CUT 60,000 CUBIC YARDS
CUT AND FILL WILL BE BALANCED ON THIS SITE. IF AN OFF-SITE WASTE/BORROW AREA IS REQUIRED, IT SHALL CONSIST OF A FACILITY APPROVED BY THE HOWARD CO SCD AND THAT HAS A MARYLAND 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 CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
10. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERMETER 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 SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

TRAP TABLE

TRAP NUMBER	1	2	3
TRAP TYPE	5T-II	5T-I	56F
EXISTING DRAINAGE AREA: ACRES	4.80	1.39	2.69
INTERIM DRAINAGE AREA: ACRES	5.00	3.31	1.45
PROPOSED DRAINAGE AREA: ACRES	5.00	2.67	1.45
STORAGE REQUIRED: CUBIC FEET	WET 9,000 DRY 9,000 TOTAL 18,000	5,888 5,888 11,916	4,842 4,842 9,684
STORAGE PROVIDED: CUBIC FEET	WET 22,627 DRY 19,850 TOTAL 42,477	7,034 14,951 21,985	4,868 18,225 23,093
EXISTING GROUND ELEVATION	374.40	391.50	433.00
TOP EMBANKMENT ELEVATION	377.50	396.00	435.75
WEIR CREST ELEVATION	376.50	395.00	435.75
WET STORAGE / OUTLET ELEVATION	374.00	392.00	433.00
CLEANOUT ELEVATION	371.00	390.75	432.00
BOTTOM ELEVATION	370.00	390.00	431.00
DEPTH OF CHANNEL (a)	N/A	N/A	N/A
OUTLET WIDTH (b)	20"	N/A	N/A
BOTTOM DIMENSION	50' x 90"	30' x 100"	22' x 92"
TRAP SIDESLOPES	2:1	2:1	2:1
TRAP DEPTH	WET 4.0' DRY 1.5' TOTAL 5.5'	2.1' 1.5' 3.5'	2.0' 2.75' 4.75'
BARREL DIAMETER	N/A	21"	N/A
RISER DIAMETER	N/A	24"	N/A
WET STORAGE ZONE ELEVATION	370.00 - 374.00	390.00 - 392.00	431.00 - 433.00
DRY STORAGE ZONE ELEVATION	374.00 - 375.50	392.00 - 393.50	433.00 - 435.75

DEVELOPER'S CERTIFICATION:
I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN 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/WE ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

Signature: MABEL E. BUDA
DATE: 1/3/06

ENGINEER'S CERTIFICATION:
I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT 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.

Signature: KENNETH R. KILSEY
DATE: 2/2/06

REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS

Signature: [Signature]
DATE: 2/2/06

Signature: [Signature]
DATE: 2/2/06

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

TRAP TABLE

Professional Engineer Seal: STATE OF MARYLAND, DONALD WALKER, PROFESSIONAL ENGINEER, No. 21433, EXPIRES 12-31-14

Professional Engr. No. 13876

AS-BUILT

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
with 2. msh
CHIEF, BUREAU OF HIGHWAYS 1-19-06 DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION 1/2/06 DATE

APPROVED: CHIEF, DIVISION OF LAND DEVELOPMENT 2/9/06 DATE

FINAL PLAN OWENS PROPERTY PHASE II

LOTS 43 THRU 97 AND OPEN SPACES LOTS 98 89 & 100
NON-BUILDABLE BULK PARCELS "C" AND "D"
TAX MAP 31 PARCEL 245, 572

OWNER/DEVELOPER:
PATAPSCO LANDING, LLC
c/o James Keilty and Co. Inc.
P.O. Box 525
61 E. Padonia Road
Timonium, MD 21093.

DMW
Duff-McCune-Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3833
Fax 296-4705

A Team of Land Planners, Landscape Architects, Golf Course Architects, Engineers, Surveyors & Environmental Professionals

FINAL SEDIMENT & EROSION CONTROL DETAILS

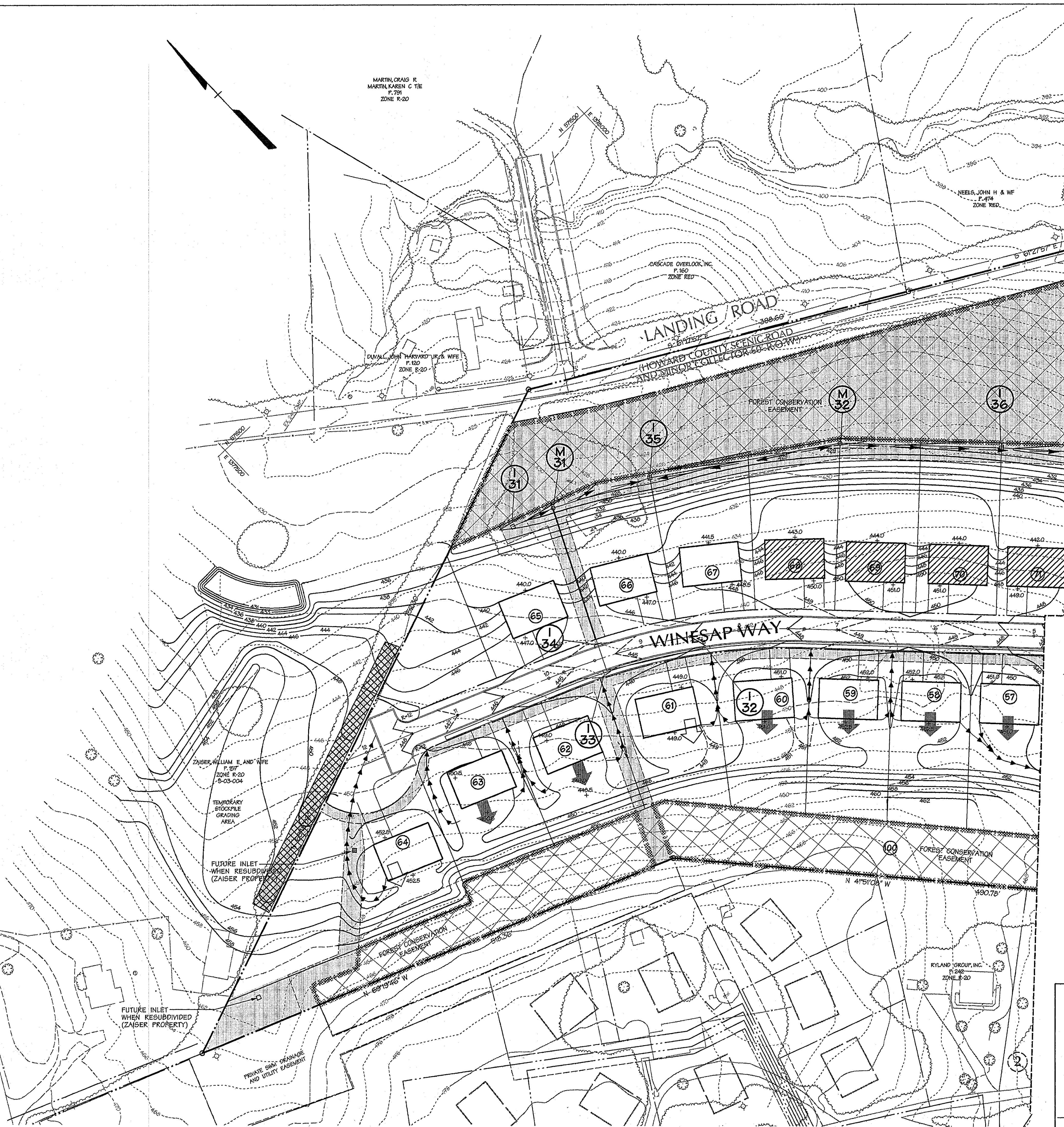
Des. By: MRT Scale: NONE Proj. No.: 01086.D
Dwn. By: MRT Date: 1/4/06
Chk. By: KKK Approved: 13 of 27

LEGEND

- STREAM CENTERLINE
- 75' STREAM BUFFER
- WETLAND
- 25' WETLAND BUFFER
- 100 YR WSE + 1' FREEBOARD (I.E. FLOODPLAIN EASEMENT)
- EX. TREELINE
- EX. MINOR CONTOUR
- EX. MAJOR CONTOUR
- EX. STRUCTURE
- PROP. TREELINE (IF SHOWN)
- PROPERTY BOUNDARY
- RIGHT OF WAY LINE
- ROADWAY CENTERLINE
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROP. LOT NUMBER
- ADJACENT LOT LINE
- PROP. LOT LINE
- PROPOSED PUBLIC DRAINAGE AND UTILITY EASEMENT
- ROOFTOP DISCONNECTION CREDIT (SHEET FLOW ON LOT) QUARTER ROOF, WATER QUALITY AND RCHG. = 0.0130 A₂ IMPERVIOUS
- ROOFTOP DISCONNECTION CREDIT FOR RECHARGE ONLY, HALF ROOF, RECHARGE ONLY = 0.0275 A₂ IMPERVIOUS
- ROOFTOP DISCONNECTION CREDIT FOR RECHARGE ONLY, QUARTER ROOF, RECHARGE ONLY = 0.0130 A₂ IMPERVIOUS
- NON-WOODY VEGETATION ZONE
- ROOFTOP DISCONNECTION CREDIT FLOW PATH
- PORTION OF HOUSE IMPERVIOUS TREATED BY RECHARGE SWALE CREDIT
- SOIL BORING
- GRASS CHANNEL CREDIT
- FOREST CONSERVATION EASEMENT
- PROPOSED BUILDING

NOTES

1. TREES, SHRUBS AND OTHER WOODY VEGETATION NOT ALLOWED WITHIN TWENTY-FIVE (25) FEET OF THE RISER STRUCTURE AND NOT ALLOWED WITHIN FIFTEEN (15) FEET OF ANY PORTION OF THE EMBANKMENT
2. SWM FACILITY 2 SHALL BE OWNED BY THE HOME OWNERS ASSOCIATION (H.O.A.). THE H.O.A. SHALL PERFORM MAINTENANCE TRASH REMOVAL MAINTENANCE. ALL OTHER MAINTENANCE SHALL BE PERFORMED BY HOWARD COUNTY. THE SWM EASEMENT IS OWNED BY HOWARD COUNTY.



MATCHLINE SEE SHEET 15 OF 26

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE _____ DATE _____

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

APPROVED: HOWARD SOIL CONSERVATION DISTRICT _____ DATE _____

PLAN NUMBER _____

DEVELOPERS CERTIFICATE:

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 ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I/WE 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/WE ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

SIGNATURE OF DEVELOPER
PRINT NAME BELOW SIGNATURE
MARK E. BUDA

DATE
1/3/06

ENGINEERS CERTIFICATE:

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.

SIGNATURE OF ENGINEER
PRINT NAME BELOW SIGNATURE
KENNETH R. KINSEY

REG. NO.
13876

DATE
1/4/06



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 As-Built information is required on this sheet

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

WILLIAM F. WALKER
CHIEF, BUREAU OF HIGHWAYS **AW**

DATE
1-19-06

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION **gm**

DATE
1/21/06

CHIEF, DIVISION OF LAND DEVELOPMENT **JF**

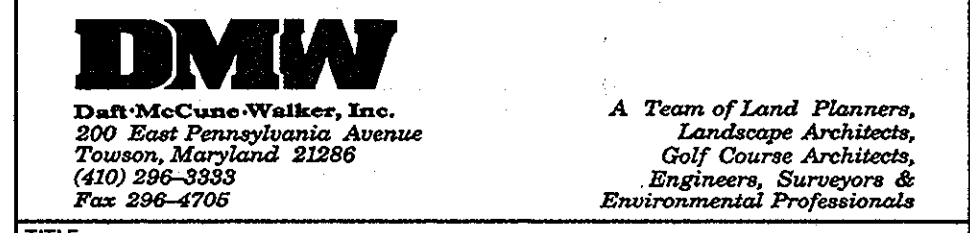
DATE
1/19/06

FINAL PLAN
OWENS PROPERTY
PHASE II

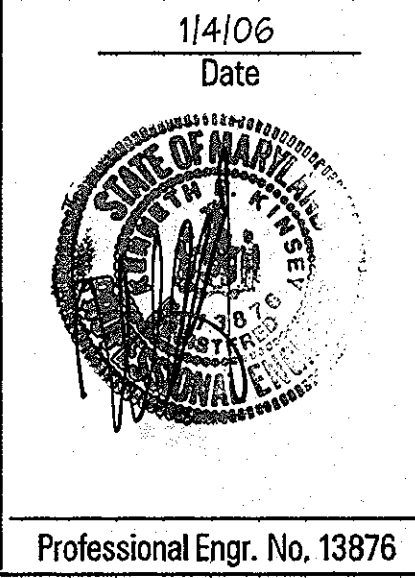
LOTS 43 THRU 97 AND OPEN SPACES LOTS 98-99 & 100
NON-BUILDABLE BULK PARCELS 'C' AND 'D'
TAX MAP 31 PARCEL 243, 572

OWNER/DEVELOPER:

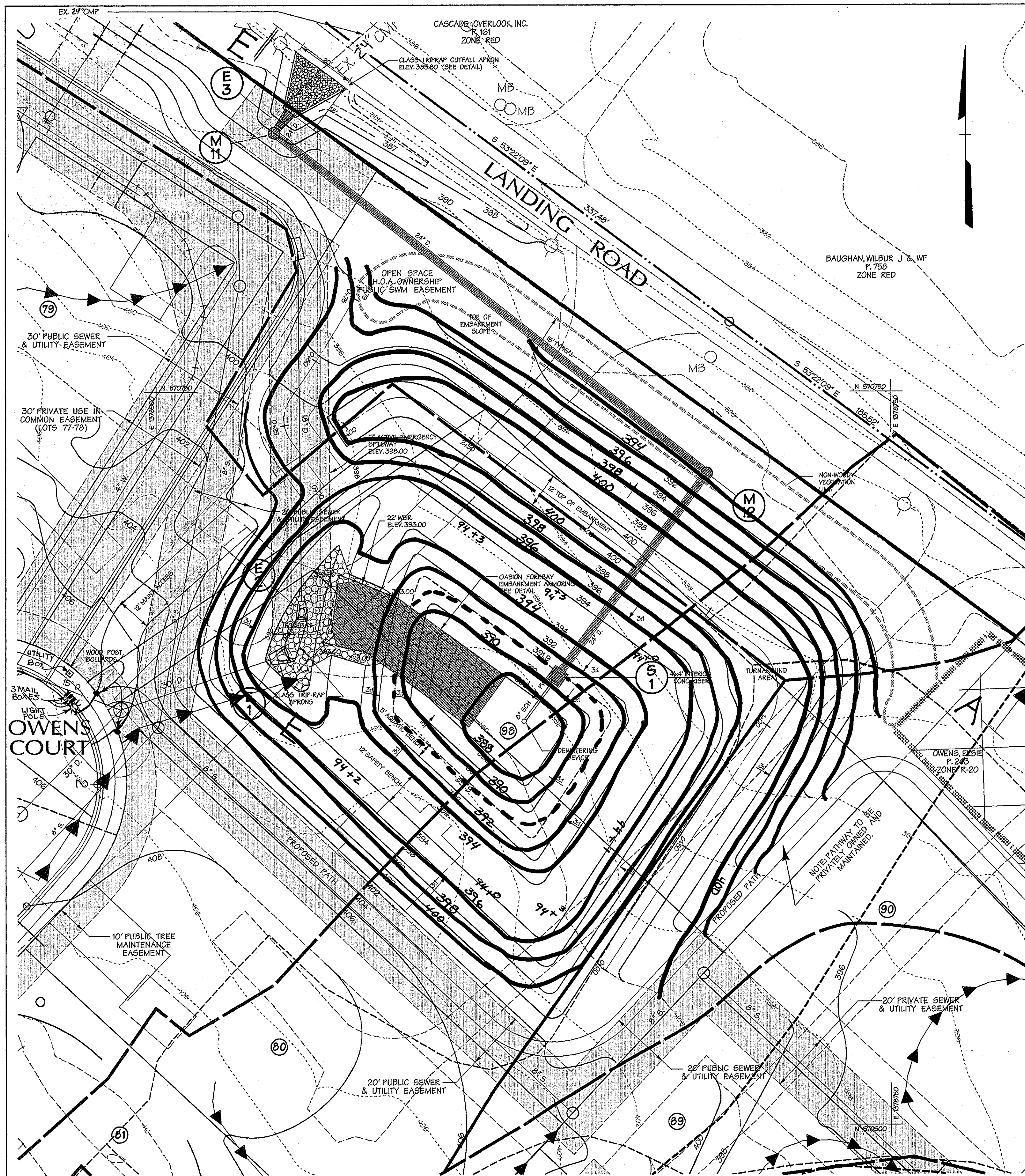
PATAPSCO LANDING, LLC
c/o James Keilty and Co. Inc.
P.O. Box 528
61 E. Padonia Road,
Timonium, MD 21093



TITLE STORMWATER MANAGEMENT CREDIT AREA PLAN			
Des. By	CRW	Scale	1"=50'
Dwn. By	WDE	Date	1/4/06
Chk. By	KRK	Approved	
Proj. No.			01086.D
			16 of 27



Professional Engr. No. 13876



LEGEND

- STREAM CENTERLINE
- - - 75' STREAM BUFFER
- WETLAND
- - - 25' WETLAND BUFFER
- - - 100 YR WSE + 1' FREEBOARD (E. FLOODPLAIN EASEMENT)
- EX TREELINE
- EX MINOR CONTOUR
- EX MAJOR CONTOUR
- EX STRUCTURE
- PROP. TREELINE (IF SHOWN)
- PROPERTY BOUNDARY
- RIGHT OF WAY LINE
- ROADWAY CENTERLINE
- 400
- 380
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROP. LOT NUMBER
- ADJACENT LOT LINE
- PROP. LOT LINE
- PROPOSED PUBLIC DRAINAGE AND UTILITY EASEMENT
- FOREST CONSERVATION EASEMENT
- SWM NATURAL CONSERVATION EASEMENT
- NON-WOODY VEGETATION LIMIT
- B-102
- BORING LOCATION AND NUMBER
- CLASS 1 RIP-RAP
- GABION MATTRESS

NOTES

1. TREES, SHRUBS AND OTHER WOODY VEGETATION NOT ALLOWED WITHIN TWENTY-FIVE (25) FEET OF THE RISER STRUCTURE AND NOT ALLOWED WITHIN FIFTEEN (15) FEET OF ANY PORTION OF THE EMBANKMENT.
2. SWM FACILITY 2 SHALL BE OWNED BY THE HOME OWNERS ASSOCIATION (H.O.A.). THE H.O.A. SHALL PERFORM MOWING/TRASH REMOVAL MAINTENANCE. ALL OTHER MAINTENANCE SHALL BE PERFORMED BY HOWARD COUNTY. THE SWM EASEMENT IS OWNED BY HOWARD COUNTY.

STORMWATER MANAGEMENT FACILITY OPERATION AND MAINTENANCE SCHEDULE

- ROUTINE MAINTENANCE: (HOME OWNERS ASSOCIATION)**
1. FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHALL BE PERFORMED DURING WET WEATHER TO DETERMINE IF FACILITY IS FUNCTIONING PROPERLY.
 2. TOP AND SIDE SLOPES OF 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. VEGETATION SHALL NOT EXCEED 10", NOR SHALL IT BE LESS THAN 4" IN HEIGHT.
 3. DEBRIS & LITTER SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
 4. VISIBLE SIGNS OF EROSION IN THE FACILITY SHALL BE REPAIRED AS SOON AS IT IS NOTICED.
- NON-ROUTINE MAINTENANCE: (HOWARD COUNTY)**
1. STRUCTURAL COMPONENTS OF THE FACILITY 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. SEDIMENT SHALL BE REMOVED FROM FACILITY AND FOREBAY NO LATER THAN WHEN 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.
 3. VISIBLE SIGNS OF EROSION IN THE RIP-RAP OR GABION OUTLET AREA SHALL BE REPAIRED AS SOON AS IT IS NOTICED.

POND 2 DESIGN FLOW SUMMARY PROPOSED CONDITIONS

STRUCTURE TYPE	RETENTION WET POOL
WATER QUALITY TYPE	1
STRUCTURE CLASSIFICATION	0.0289 SQ. MI.
WATERSHED AREA TO FACILITY (SWM)	
LEVEL OF MANAGEMENT REQUIRED	25-YR.
LEVEL OF MANAGEMENT PROVIDED	25-YR.
TOP WIDTH PROVIDED	12'
MAXIMUM HEIGHT OF FILL	8.0'
FREEBOARD REQUIRED	1.0'
FREEBOARD PROVIDED	1.14'
WATER QUALITY VOL. REQ. (Ac-ft)	0.300
WATER QUALITY VOL. WQ PROVIDED (Ac-ft)	0.324
RECHARGE REQUIRED (% AREA METHOD, Req) (Ac)	2.269
RECHARGE PROVIDED (Ac)**	2.200
CHANNEL PROTECTION VOL. CW REQUIRED (Ac-ft)	0.452
CHANNEL PROTECTION VOL. CW PROVIDED (Ac-ft)	0.565
EXISTING 1-YR. STORM Q AT DESIGN POINT (cfs)	175
PROPOSED 1-YR. STORM Q AT DESIGN POINT (cfs)	0.28
EXISTING 10-YR. STORM Q AT DESIGN POINT (cfs)	22.08
PROPOSED 10-YR. STORM Q AT DESIGN POINT (cfs)	15.58
EXISTING 25-YR. STORM Q AT DESIGN POINT (cfs)	27.43
PROPOSED 25-YR. STORM Q AT DESIGN POINT (cfs)	27.27
WQ WATER SURFACE ELEV. - NORMAL POOL	393.40
CW WATER SURFACE ELEV.	395.19
10-YR. WATER SURFACE ELEV.	397.60
25-YR. WATER SURFACE ELEV.	398.01
RISER CREST ELEV.	397.50
100-YR. CLOGGED WATER SURFACE ELEV.	399.0
POND VOLUME BELOW 100-YR. CLOGGED WSE (Ac-ft)**	2.122
FOREBAY VOLUME REQUIRED (Ac-ft)	0.033
FOREBAY VOLUME PROVIDED (Ac-ft)	0.036

* WQ IS PROVIDED IN THE WET-POND PORTION OF THE FACILITY. CW IS PROVIDED IN THE FACILITY (AS MANAGEMENT OF THE 1-YEAR STORM) ABOVE THE WQ STORAGE VOLUME. THE 10-YEAR AND 25-YEAR STORMS ARE MANAGED IN THE FACILITY ABOVE THE WQ STORAGE VOLUME. THE 100-YR. STORM IS PASSED THROUGH THE FACILITY.

** RECHARGE REQUIRED/PROVIDED IS BASED ON ENTIRE SITE (PHASE I AND PHASE II) AND IS TREATED COMPLETELY BY SWM NON-STRUCTURAL CREDITS

*** ABOVE WET POOL ELEVATION

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
William J. Walker 1-19-06
 CHIEF, BUREAU OF HIGHWAYS AS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
Mark E. Buda 1/17/06
 CHIEF, DEVELOPMENT ENGINEERING DIVISION gm DATE

David Kramer 2/9/06
 CHIEF, DIVISION OF LAND DEVELOPMENT JA DATE

Date	No.	Revision Description
10-31-13	2	REVISE CALLOUT FOR EX. CULVERT UNDER LANDING RD
9-28-12	1	RELIGATE 12' SWM ACCESS ROAD BY: B.E.L.

FINAL PLAN OWENS PROPERTY PHASE II

LOTS 43 THRU 97 AND OPEN SPACES LOTS 98, 99 & 100
 NON-BUILDABLE BULK PARCELS 'C' AND 'D'
 TAX MAP 31 PARCEL 243, 572

OWNER/DEVELOPER:
 PATAPSCO LANDING, LLC
 c/o James Keelty and Co. Inc.
 P.O. Box 528
 61 E. Padonia Road,
 Timonium, MD 21093

DMW
 Dan McCona-Walker, Inc.
 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 296-3388
 Fax 296-4706

A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

TITLE STORMWATER MANAGEMENT POND DETAIL PLAN

Des. By	CRW	Scale	1"=20'	Proj. No.	01086.D
Dm. By	WDE	Date	1/4/06		
Chk. By	KRK	Approved			17 of 27

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 12-6-13

FOR REVISIONS BY BENCHMARK ENGINEERING, INC. ONLY
 9-20-13

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

1/4/06
 Date
 Professional Engr. No. 13876

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL LOT CONSTRUCTION SOIL EROSION AND SEDIMENT CONTROL.
Jim Mays 1/16/06
 U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE DATE

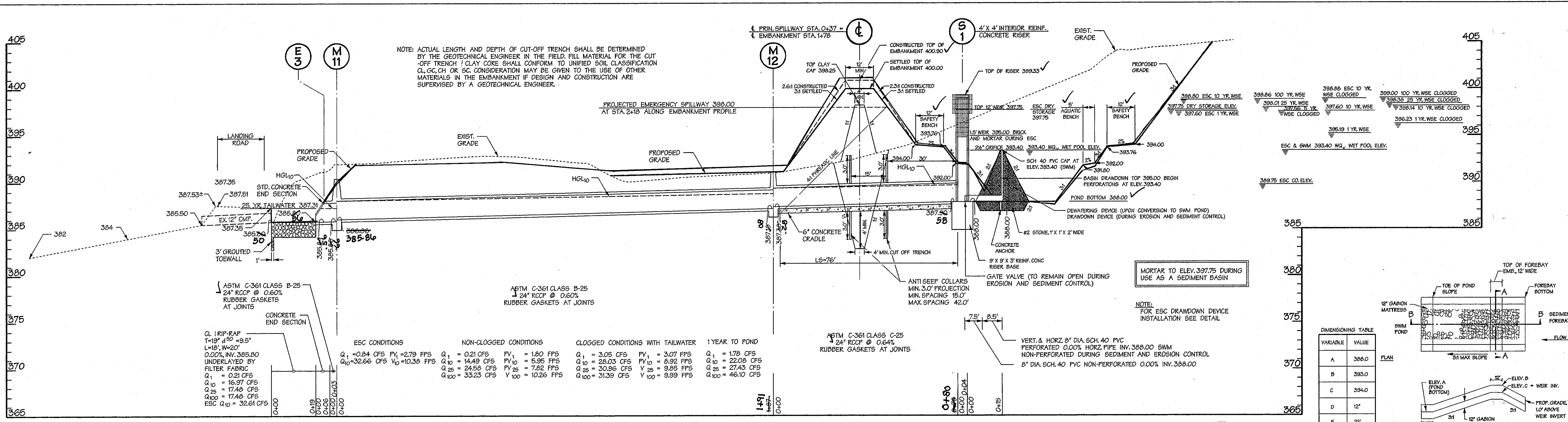
THESE PLANS FOR SMALL LOT CONSTRUCTION SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF HOWARD SOIL CONSERVATION DISTRICT.
Mark E. Buda 2/2/06
 APPROVED: HOWARD SOIL CONSERVATION DISTRICT DATE

DEVELOPERS CERTIFICATE:
 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 ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I/WE HAVE ENGAGED 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/WE ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Mark E. Buda 1/3/06
 SIGNATURE OF DEVELOPER DATE
 MARK E. BUDA

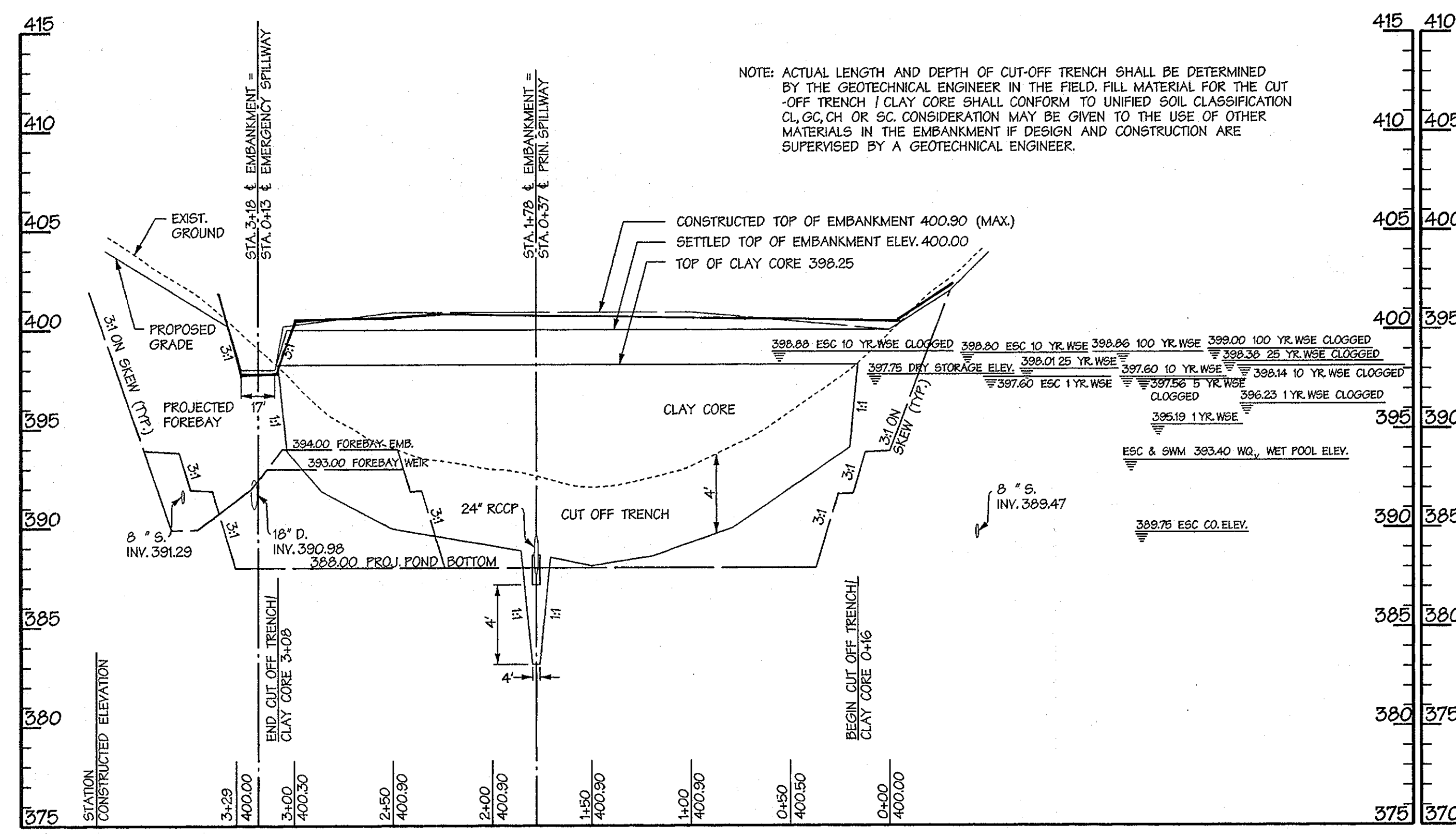
ENGINEERS CERTIFICATE:
 I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE 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.

Edward R. Kowsey 1/4/06
 SIGNATURE OF ENGINEER DATE
 EDWARD R. KOWSEY



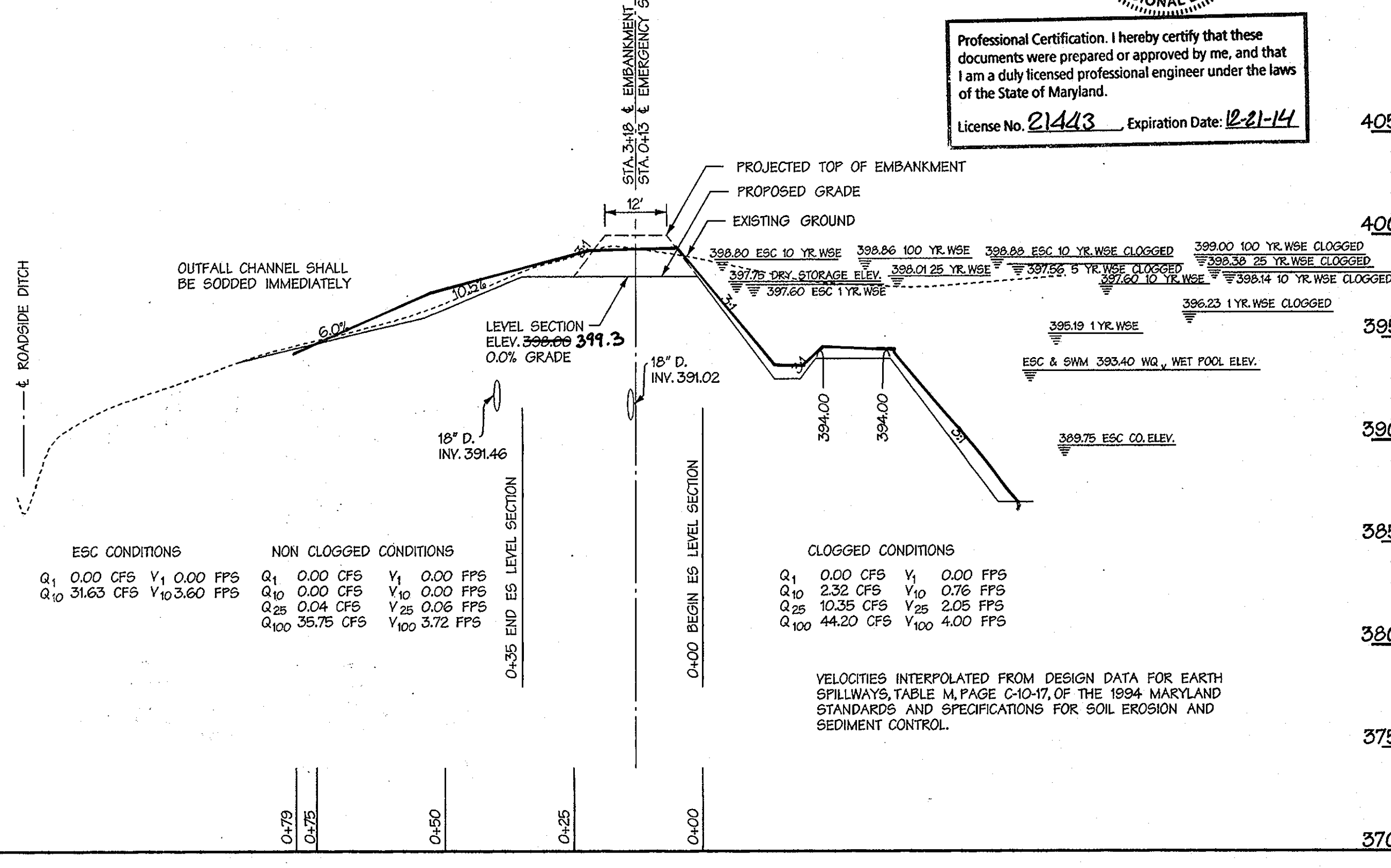
PROFILE THROUGH RISER / BARREL, SWM FACILITY # 2

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'



PROFILE ALONG CENTERLINE OF DAM SWM FACILITY # 2

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



PROFILE THROUGH EMERGENCY SPILLWAY

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE
2/2/06

APPROVED: [Signature]
PLAN NUMBER

DEVELOPERS CERTIFICATE:
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 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.

MARK E. BUON
1/3/06

ENGINEERS CERTIFICATE:
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.

KEVIN R. KIRBY
1/3/06

NOTES
1. TREES, SHRUBS AND OTHER WOODY VEGETATION NOT ALLOWED WITHIN TWENTY-FIVE (25) FEET OF THE RISER STRUCTURE AND NOT ALLOWED WITHIN FIFTEEN (15) FEET OF ANY PORTION OF THE EMBANKMENT
2. SWM FACILITY 2 SHALL BE OWNED BY THE HOME OWNERS ASSOCIATION (H.O.A.). THE H.O.A. SHALL PERFORM MOWING/TRASH REMOVAL MAINTENANCE. ALL OTHER MAINTENANCE SHALL BE PERFORMED BY HOWARD COUNTY. THE SWM EASEMENT IS OWNED BY HOWARD COUNTY.

1/4/06
Date
Professional Engr. No. 13876

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Walter F. [Signature] 1-19-06
CHIEF, BUREAU OF HIGHWAYS AS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
[Signature] 1/2/06
CHIEF, DEVELOPMENT ENGINEERING DIVISION 400 DATE

[Signature] 2/9/06
CHIEF, DIVISION OF LAND DEVELOPMENT JA DATE

DATE NO. REVISION DESCRIPTION

FINAL PLAN
OWENS PROPERTY
PHASE II

LOTS 43 THRU 97 AND OPEN SPACES LOTS 98, 99 & 100
NON-BUILDABLE BULK PARCELS 'C' AND 'D'
TAX MAP 31 PARCEL 243,572

OWNER/DEVELOPER:

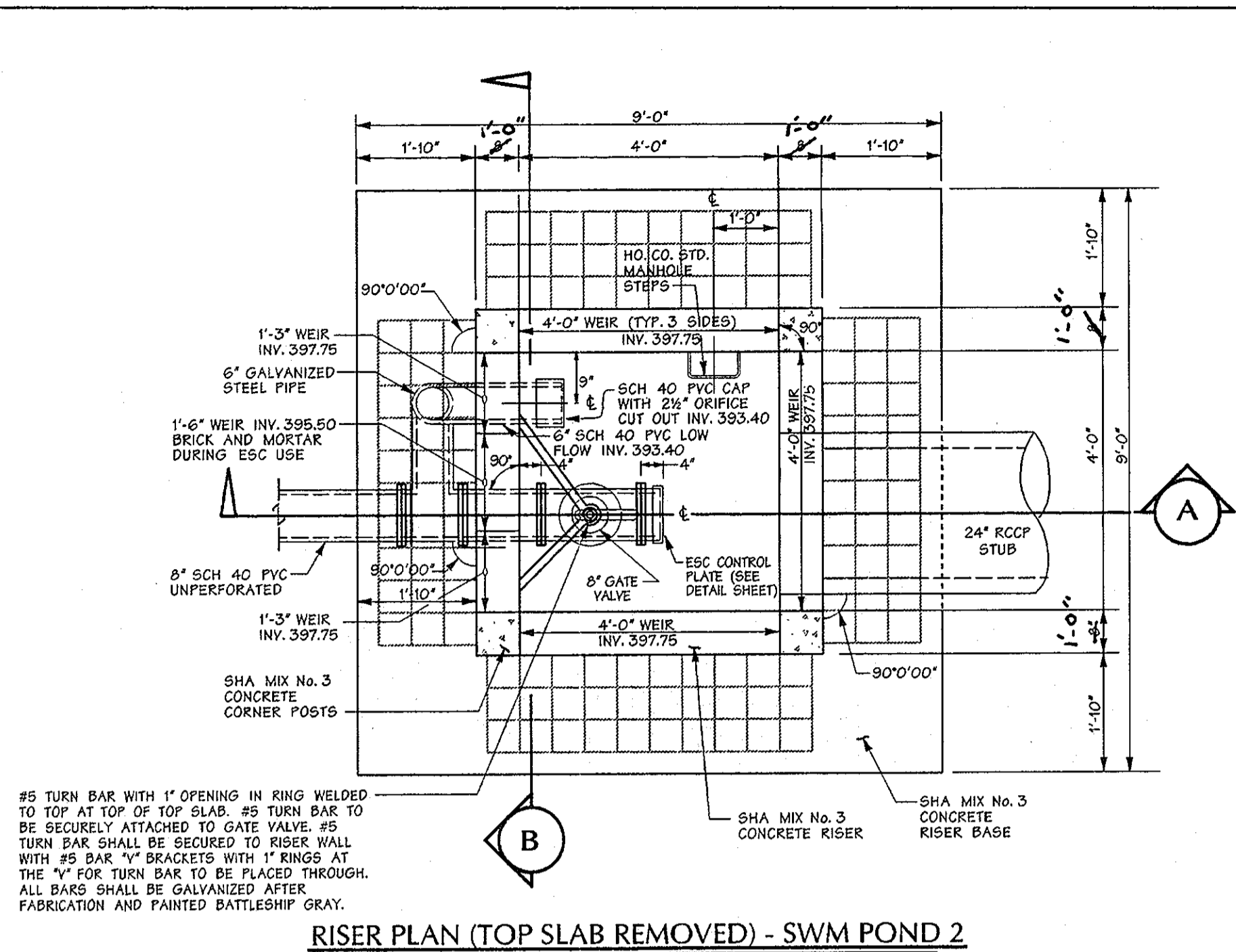
DMW
Dan McCreary-Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4705

A Team of Land Planners,
Landscape Architects,
Engineers, Surveyors &
Environmental Professionals

TITLE
STORMWATER MANAGEMENT PROFILES

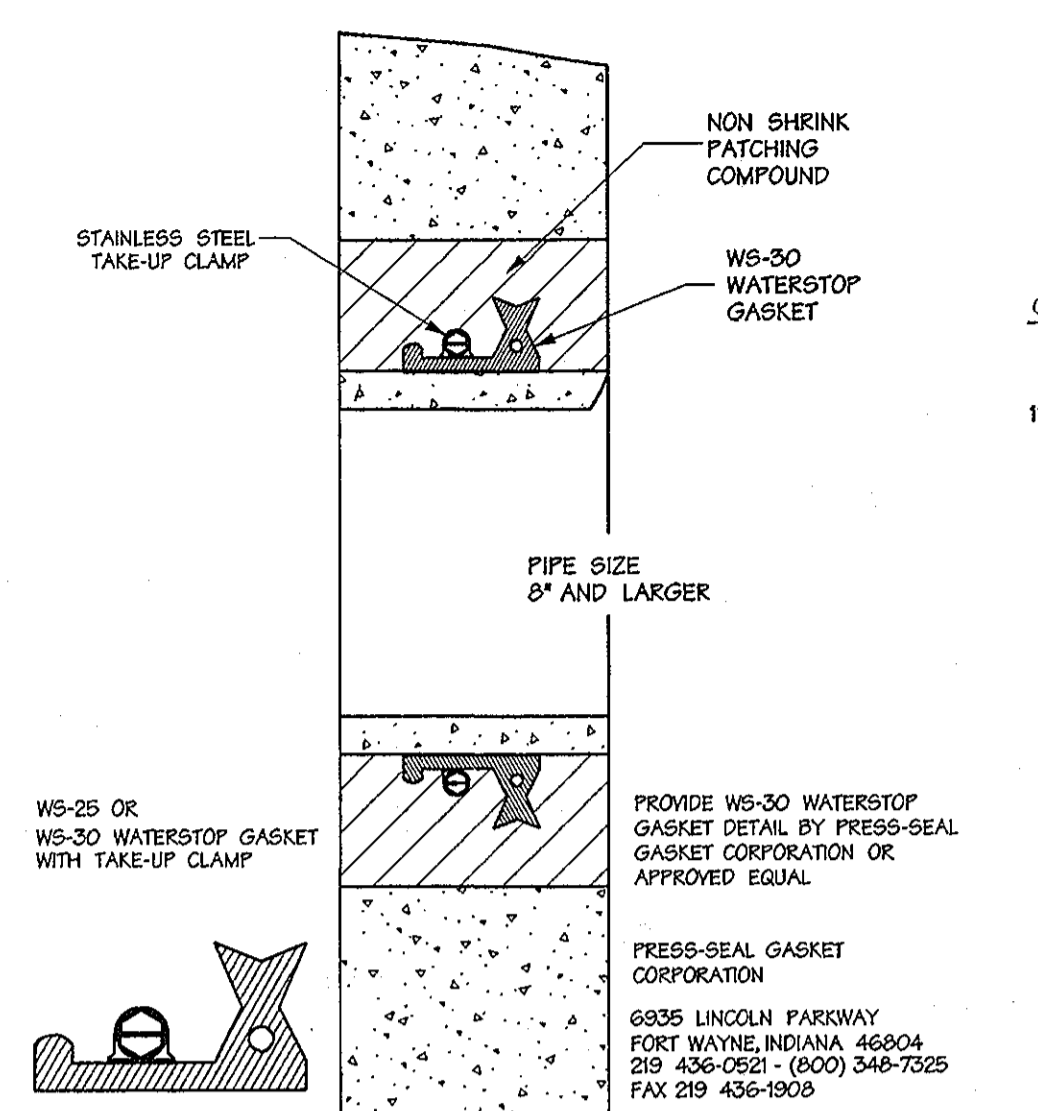
Des. By CRW Scale AS SHOWN Proj. No. 01086.D
Dwn. By WPE Date 1/4/06
Chk. By K.R.K. Approved

18 of 27



RISER PLAN (TOP SLAB REMOVED) - SWM POND 2

Scale: 1/2" = 1'-0"



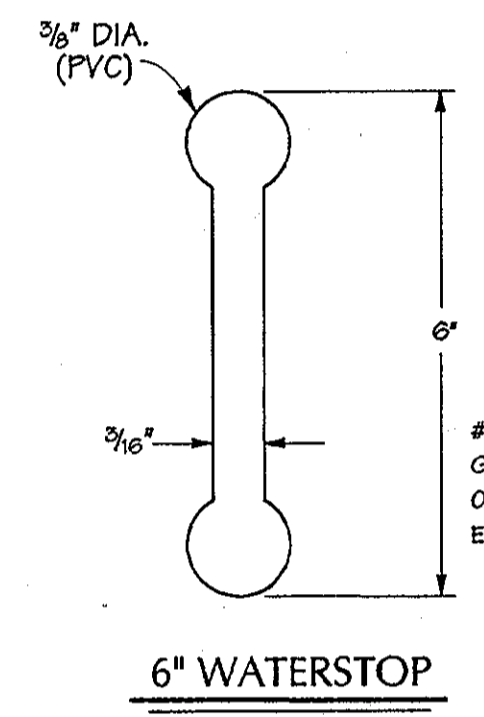
CONCRETE CRADLE DETAIL

NTS

PIPE WATER STOP DETAIL

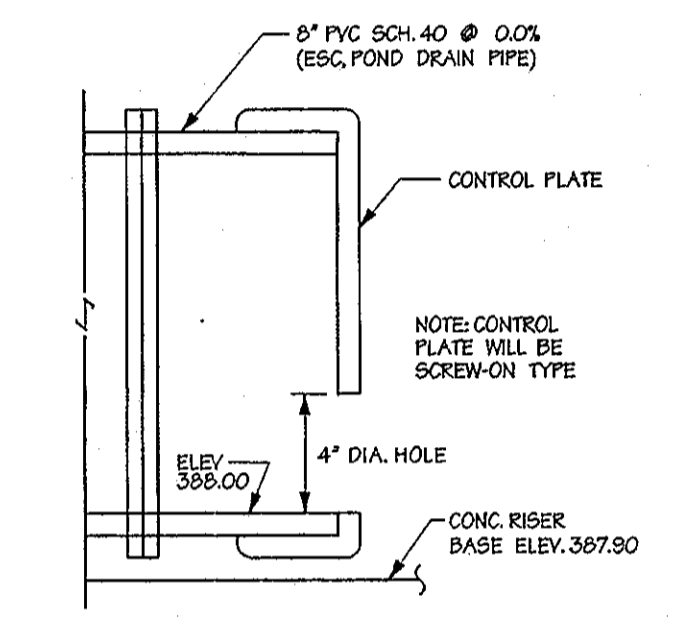
NOT TO SCALE

TRASH RACK DIMENSIONS:
 1) 4" WEIR SIDE 2" C TO C SIDES, 8" C TO C TOP AND BOTTOM
 2) REMAINING SIDES 5" TOP X 2" SIDES X 1" BOTTOM
 X 2" SIDES X 3" BOTTOM X 1" DEEP
 CONSISTS OF #5 BENT BARS @ 6" O.C. TO BE MOUNTED ON RISER AS SHOWN.
 TRASH RACK TO BE WELDED TO 2" L-BRACKET THEN FASTENED TO TOP
 SLAB & WALLS WITH TEN 2" X 6" LG. HEX HEAD GALVANIZED BOLTS. TRASH RACK
 SHALL BE GALVANIZED AFTER FABRICATION AND PAINTED BATTLESHIP GRAY.



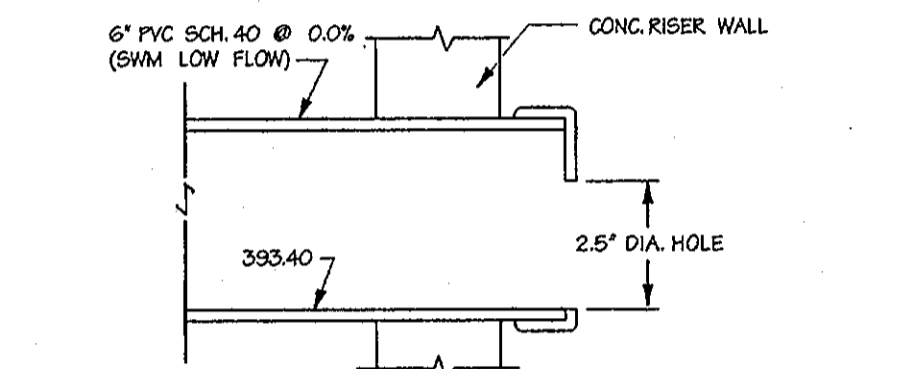
6" WATERSTOP

NOT TO SCALE



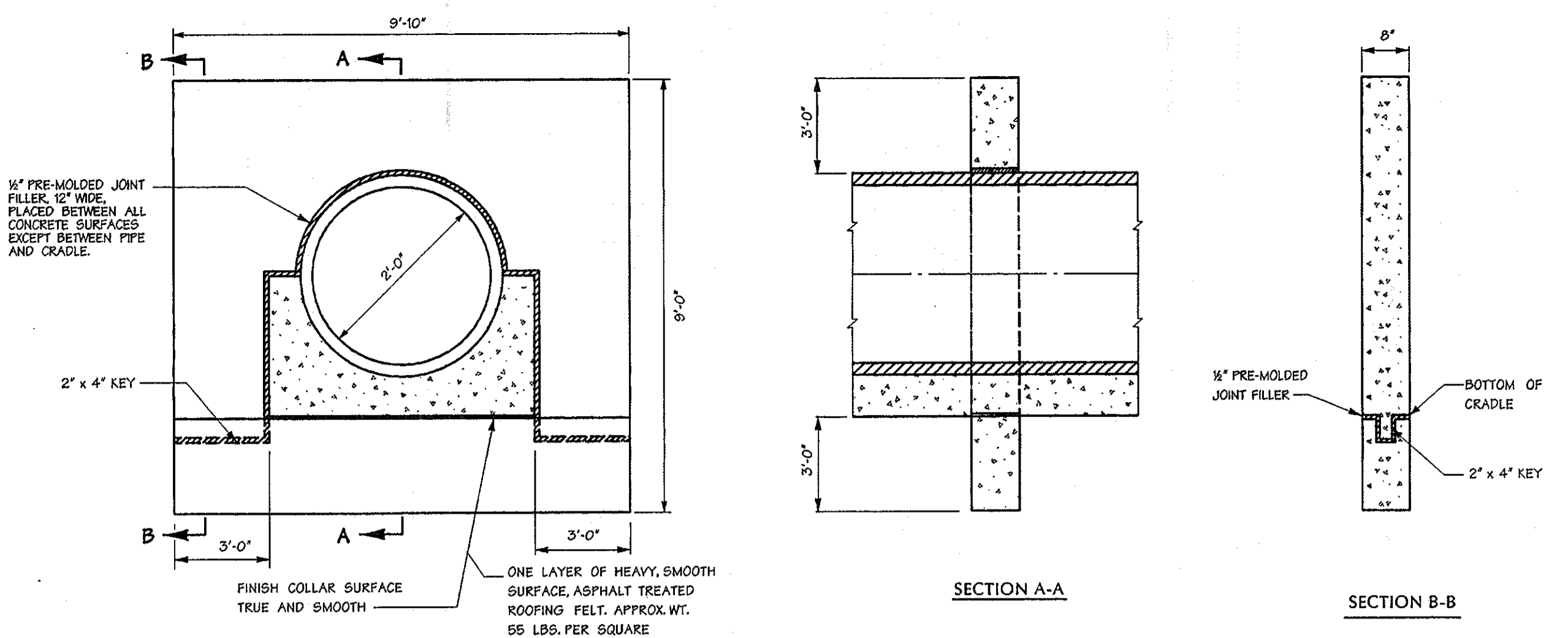
ESC CONTROL PLATE DETAIL

NTS



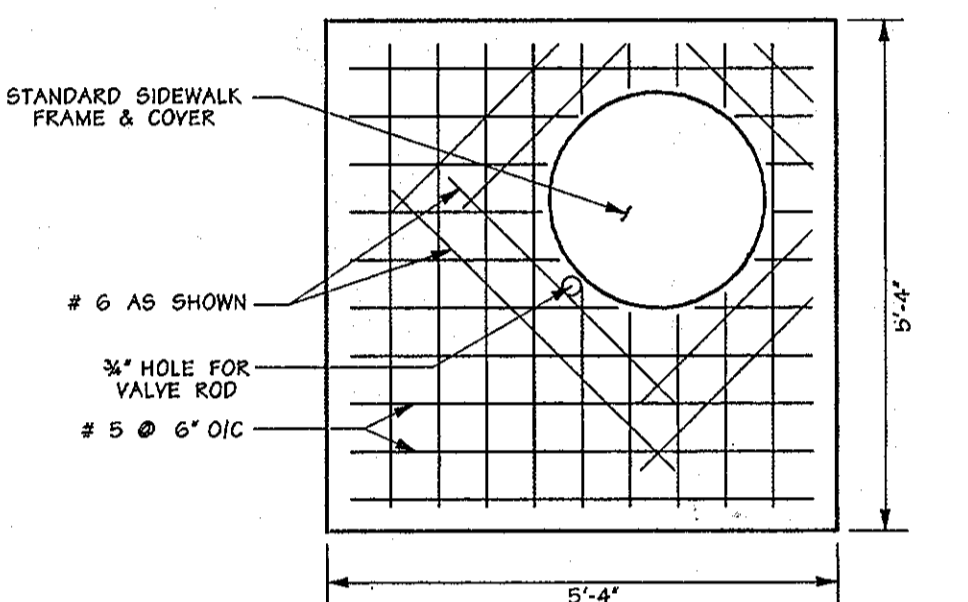
SWM LOW FLOW CONTROL PLATE DETAIL

NTS



ANTI-SEEP COLLAR DETAIL - POND 2

CAST IN PLACE - NOT TO SCALE

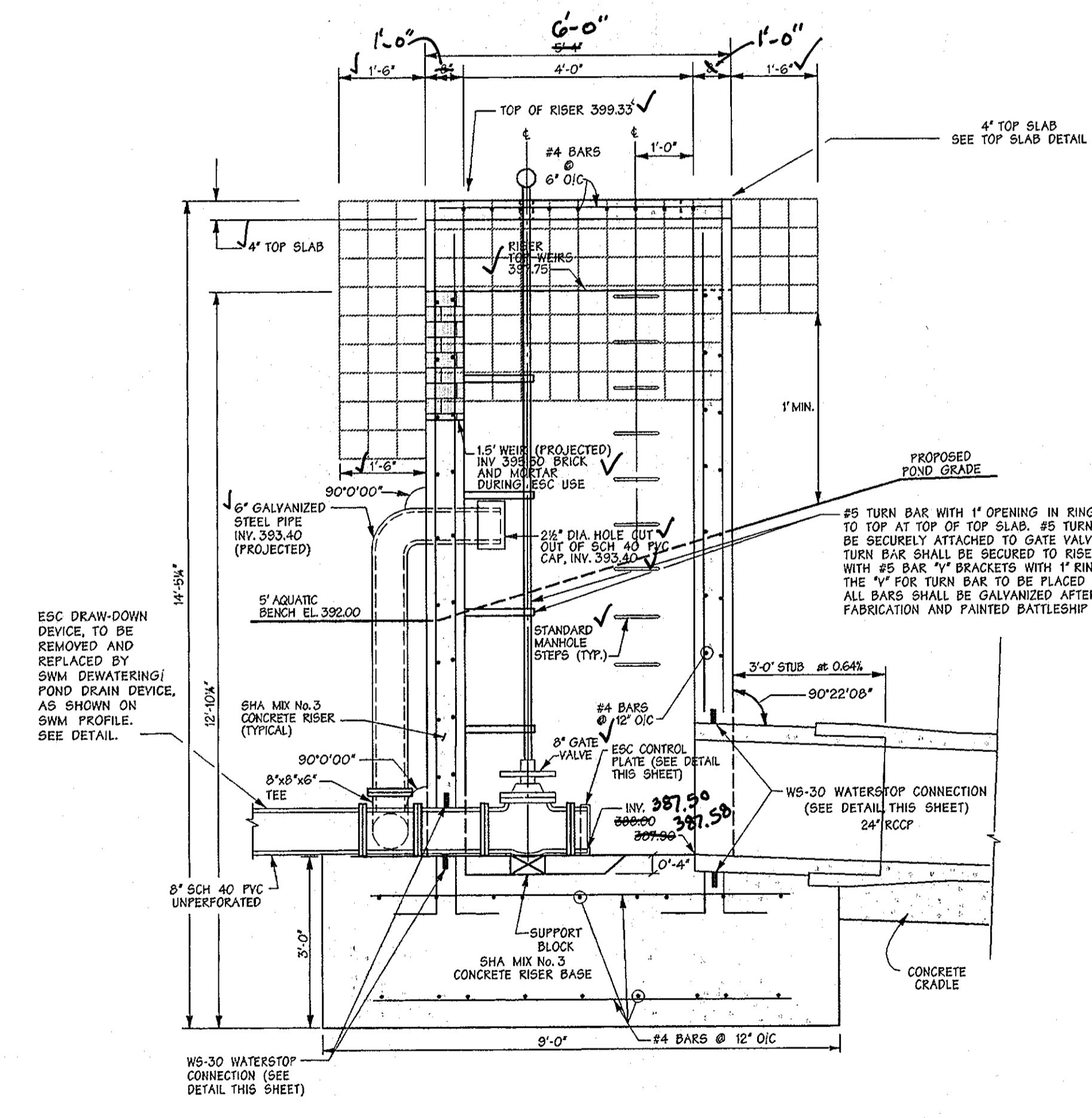


TOP SLAB

Scale: 1/2" = 1'-0"

CAST IN PLACE

- NOTES:
- BOLT TOP SLAB TO RISER WITH (4) 1/2" X 6" LG. HEX. HEAD GALVANIZED BOLTS.
 - THE SIDE OF THE SLAB CLOSEST TO THE FRAME AND COVER WILL LINE UP WITH THE SIDE OF THE RISER WITH STANDARD MANHOLE STEPS.

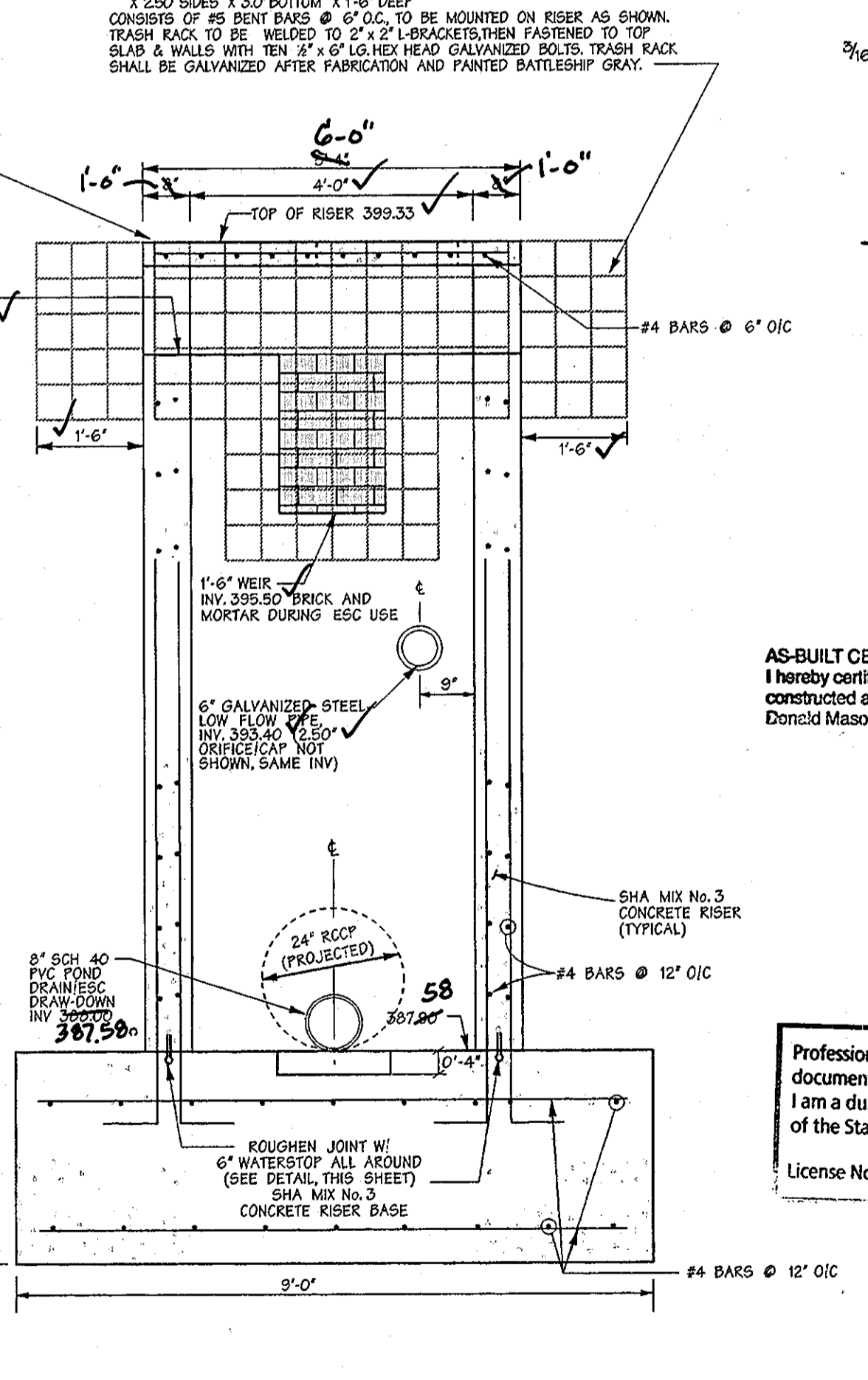


SECTION A

RISER DETAIL FOR SWM POND 2

Scale: 1/2" = 1'-0"

CAST IN PLACE



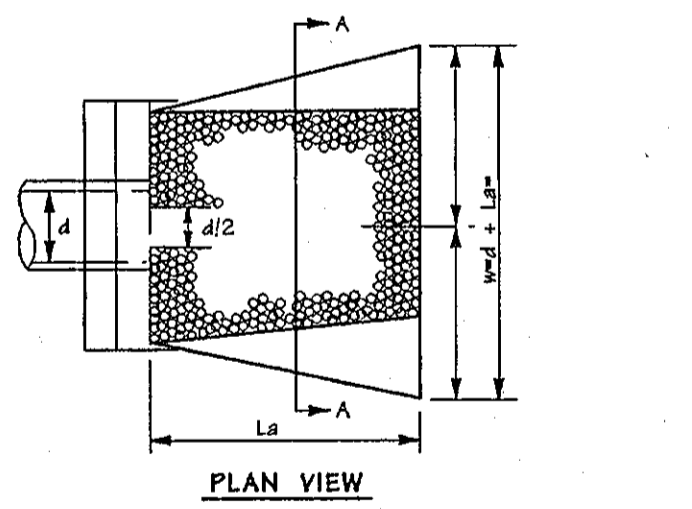
SECTION B

RISER DETAIL FOR SWM POND 2

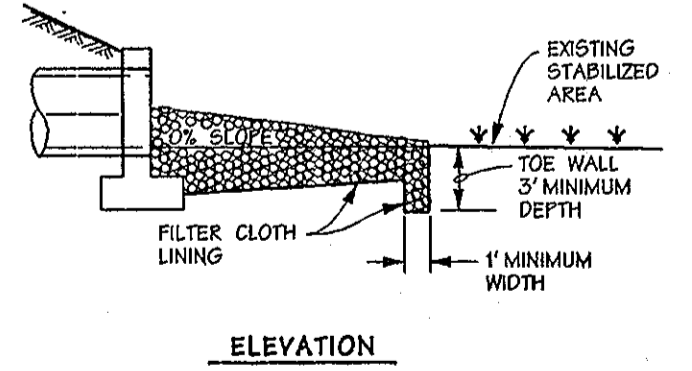
AS-BUILT CERTIFICATION
 I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this AS-BUILT plan.
 Donald Mason, P.E. No. 21443 Date 12-6-13



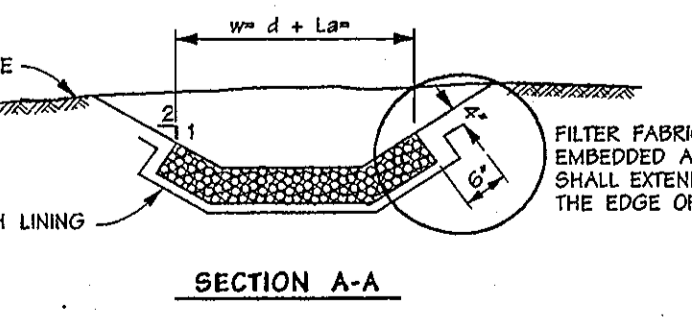
Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
 License No. 21443 Expiration Date: 12-21-14



PLAN VIEW



ELEVATION



SECTION A-A

NOTE: FILTER CLOTH SHALL BE GEOTEXTILE CLASS C

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE F-16-10 (HEAD)
 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
ROCK OUTLET PROTECTION III NOT TO SCALE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.
 U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE
 APPROVED: [Signature] 2/2/06 DATE
 HOWARD SOIL CONSERVATION DISTRICT
 PLAN NUMBER

DEVELOPERS CERTIFICATE:
 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 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.
 SIGNATURE OF DEVELOPER: [Signature] DATE: 1/3/06
 PRINT NAME BELOW SIGNATURE: MARK E. BUON

ENGINEERS CERTIFICATE:
 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.
 SIGNATURE OF ENGINEER: [Signature] REG. NO. 13876 DATE: 1/4/06
 PRINT NAME BELOW SIGNATURE: KENNETH R. KINSEY

1/4/06 Date
 PROFESSIONAL ENGR. NO. 13876

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
 [Signature] 1-19-06 DATE
 CHIEF, BUREAU OF HIGHWAYS
 APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
 [Signature] 1/27/06 DATE
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 [Signature] 2/4/06 DATE
 CHIEF, DIVISION OF LAND DEVELOPMENT

Date	No.	Revision Description

FINAL PLAN
OWENS PROPERTY
 PHASE II
 LOTS 43 THRU 97 AND OPEN SPACES LOTS 98, 99 & 100
 TAX MAP 31 PARCEL 243,572
 OWNER/DEVELOPER:
 PATAPSCO LANDING, LLC
 c/o James Keedy and Co. Inc.
 P.O. Box 528
 61 E. Padonia Road,
 Timonium, MD 21083

DMW
 Draft-McCune-Walkers, Inc.
 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 296-3353
 Fax 296-4705
 A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals
STORMWATER MANAGEMENT DETAILS
 Des. By CRW Scale AS SHOWN Proj. No. 01066.D
 Dwn. By WDE Date 1/4/06
 Chk. By KRK Approved
 19 of 26

**STORMWATER MANAGEMENT POND
GENERAL CONSTRUCTION SPECIFICATIONS**

1. GENERAL
All stormwater management facilities shall be constructed in accordance with Howard County's "Standard Specifications and Details for Construction," (1985) and the N.R.C.S. Maryland "Standards and Specifications for Ponds," (MD-378, 2000).
These specifications are appropriate to all ponds within the scope of the standard practice MD-378. All references to ASTM and AASHTO specifications apply to the most recent version.

2. 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 and shall be piled to a maximum height of 15 feet and shall be removed within 15 days of the top of the embankment.
Areas to be covered by the reservoir will be cleared of all trees, brush, 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.

3. 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 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 be 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 a maximum 24 inch compacted layer. Each layer shall be compacted to 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 - Control the movement of the hauling equipment over the fill so that the entire surface of each lift is compacted to 95% of AASHTO Specification T-99 (or equivalent ASTM Specifications). Fill material must contain enough moisture to yield the required degree of compaction with the equipment used.
When required by the reviewing agency the minimum required density shall not be less than 95% of the 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 cut 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 a 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.
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.

4. 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 4 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 4 feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a 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.

5. REMOVAL AND REPLACEMENT OF DEFECTIVE FILL
Fill placed at densities lower than specified minimum density or at moisture contents outside the specified acceptable range of moisture content or otherwise not conforming to the requirements of the specifications shall be reworked to meet the requirements or removed and replaced by acceptable fill. The bottoms of such excavations shall be finished flat or gently curving and at the sides of such excavations the adjacent sound fill shall be trimmed to a slope not steeper than 3 feet horizontally to 1 foot vertically extending from the bottom of the excavation to the fill surface.

6. PIPE CONDUITS
All pipes shall be circular in cross section. All perforated pipes shall have a minimum of 3.31 square inches of opening per square foot of pipe surface (ex. 30 3/8-inch holes per square foot). Perforations are to be uniformly spaced around the full periphery of the pipe. Any holes blocked or partially blocked by bituminous coating shall be opened prior to installation.
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 purposes, 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 recommendations of the manufacturer of the material. After 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. Connections - All connections (to anti-seep collars, riser, etc.) shall be watertight.
6. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.
PLASTIC PIPE - All of 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 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 M234 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.

7. CONCRETE
Concrete must meet minimum requirements set forth in Maryland State Highway Administration Standard Specifications and Materials, Section 5 (Portland Cement Concrete Mixture), Mix Number 3. Reinforcing steel must be ASTM A615, Grade 60. Steel angles and anchor bars must be ASTM A36.

8. ROCK RIP-RAP
Rock rip-rap shall meet the requirements of the Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 311. Geotextile shall be placed under all rip-rap and shall meet the requirements of the Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 921.09, Class C.

The rip-rap shall be placed to the required thickness in one operation. The rock shall be delivered and placed in a manner that will insure the rip-rap in place shall be reasonably homogeneous with the larger rocks uniformly distributed and firmly in contact one to another with the smaller rocks filling the voids between the larger rocks.

9. 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 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 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 locations being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water to pumps from which the water shall be pumped.

10. STABILIZATION
All borrow areas shall be graded to provide proper drainage and left in a slightly concave. All exposed surfaces of the embankment, spillway, and borrow areas, and berms shall be followed 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.

11. 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.
All disturbed areas shall be controlled by an erosion and sediment control plan which has been approved by the Baltimore County Soil Conservation District (B.C.S.C.D.).

12. SEEDING
Seeding, fertilizing and mulching shall be as follows:
Seed Mix: 50% Kenlus Kentucky Bluegrass
40% Pennlawn Creeping Red Fescue
10% Breaker Redtop
Applied at a rate of 150 pounds per acre.
(or)
Rabel II Tall Fescue (125 pounds per acre)
Fennine Perennial Ryegrass (15 pounds per acre)
Kenlus Kentucky Bluegrass (10 pounds per acre)
(or)
Pennlawn Creeping Red Fescue (70 pounds per acre)
Aurora Hard Fescue (150 pounds per acre)
Common White Clover (6 pounds per acre)
Winter Rye (45 pounds per acre)
Lime: 2 tons per acre Dolomitic Limestone.
Fertilizer: 600 pounds per acre 10-10-10 fertilizer before seeding.
400 pounds per acre 30-0-0 Ureaform Fertilizer at time of seeding.
Mulch: Straw at 4,000 pounds per acre.
Anchoring: Mulching tool or wood cellulose fiber binder at a net dry binder rate of 750 pounds per acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water or at rates recommended by the manufacturer.

13. FILTER CLOTH
All filter cloth shall conform to the 1994 Maryland Standards and Specifications for soil erosion and sediment control, or the latest edition.

14. GABIONS
All gabions shall be PVC coated woven wire baskets. Stone size shall be 4 inches to 7 inches. (Class IV gabions)

15. FENCE
Split rail fencing:
Fencing shall be constructed in accordance with the details on these plans. The split rail fence shall be constructed of locust post and spruce rails, round side out, with post spaced 10 feet on center. The wire fabric shall be 4" x 21" 14 gauge, black and galvanized wire mesh attached to the inside of the fence with stainless steel electrical staples 12 inches on center, each rail, and shall extend 6 inches below finished grade.
Chain link fencing:
Construct fencing in accordance with the State Highway Administration Standard details 630.01 and 630.02. Use specifications for a 6-foot fence substitution with 36" x 42" fabric. The fabric used for the fence and gate must conform to AASHTO Designation M191-74.

16. INSPECTION SCHEDULE
1. Prior notification shall be given to the engineer so that inspections may be made at the following stages:
(1) Upon completion of excavation to subfoundation and where required, installation of structural supports or reinforcement for structures, including but not limited to:
(i) Core trenches for structural embankments.
(ii) Inlet-Outlet Structures and Anti-Seep Structures, watertight connections of pipes and
(iii) Trenches for enclosed storm drainage facilities.
(2) During backfill, reinforcing and concrete, and installation of piping and catch basins.
(3) During backfill of foundations and trenches.
(4) During embankment construction and
(5) Upon completion of final grading and establishment of permanent structures.
No work shall proceed until the engineer inspects and approves the work previously completed.
2. Geotechnical compaction testing of the facility embankment is required. Certification must be provided to the designated engineer in charge of the fill.
3. A copy of all material supply tickets must be given to the designated engineer in charge of the fill.

17. MAINTENANCE SCHEDULE
Routine Maintenance:
1. The facility shall be inspected twice annually, March and September, in accordance with the checklist and requirements contained within USDA, 2. Vegetated cover shall be maintained at all times.
3. Sediment shall be removed from forebays when the depth exceeds 1'.
4. Vegetation on embankment and access bench shall not exceed 18" in height.
5. Top and outside side slope of the embankment shall be mowed a minimum of two (2) times a year, once in June and once in September.
Non-Routine Maintenance:
1. The pond owner(s) and any heirs, 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 indications of distress such as excessive seepage, turbid seepage, sliding or slumping.
2. Rills on the slopes of the dam and washed in the earth spillway shall be filled with suitable material and thoroughly compacted. These areas shall be reseeded or reseeded, limed, and fertilized as needed.
3. Any openings in the berm free of traffic shall be closed. These areas shall be reseeded or reseeded, limed, and fertilized as needed.
4. Trash and debris shall be removed as necessary.
5. Inside slope and maintenance access should be mowed as needed. Care shall be taken not to mow any of the wetland plantings in the vicinity of the 5' safety bench.

18. OPERATION, MAINTENANCE AND INSPECTION
Inspection of ponds shown hereon shall be performed at least twice annually, in accordance with the checklist and requirements contained within USDA, 2. Standards and Specifications for Ponds (MD-378), the pond owner(s) and any heirs, 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.

19. UTILITIES
No utilities may be constructed within/along any MD-378 Embankment.

SOIL BORING LOGS/ REPORT FOR PROPOSED POND (SWM FACILITY 2)

OWENS PROPERTY
SWM Infiltration Study Page 2

1. Location of seasonal high groundwater table.
Groundwater was monitored during drilling and 24 hours after completion of the borings. Groundwater was not encountered within the depths explored in the borings at the time of our subsurface exploration.
An accurate determination of the hydrostatic water table would require the installation of perforated pipes or piezometers which could be monitored over an extended period of time. The actual level of the hydrostatic water table and the amount and level of perched water should be anticipated to fluctuate throughout the year, depending on variations in precipitation, surface run-off, infiltration, site topography, and drainage. Site grading operations at other parts of the site can also influence the level of the groundwater at the stormwater management area significantly. HCEA cannot be responsible for changes in groundwater conditions at the site due to seasonal variation and changes caused by other factors such as grading operations at the site.

2. Subsurface Conditions
The soils encountered in the borings consisted predominantly of silt sand (SM), sandy silt (ML), silty clay (CL) and combinations thereof. The fine-grained materials typically exhibited consistencies in the soft to straggly range. The majority of the more granular materials encountered generally exhibited relative densities in the loose to medium dense range.
In-situ infiltration testing was performed at locations off from four of the boring locations. We must point out that the in-situ infiltration rates obtained have had no factor of safety applied to them. The results of the infiltration tests are as follows:

Boring	Approximate Depth of Test (ft)	Measured In-situ Infiltration Rate (in/hr)
B-4	17.0	0.5
B-5	17.0	0.5
B-101	10.0	0.625
B-102	3.0	1.0

3. Bedrock
Bedrock was not encountered within the depths explored at the boring locations during this study. However, very dense materials were encountered at a depth of 20 to 22 ft in Boring B-101.

OWENS PROPERTY
SWM Infiltration Study Page 3

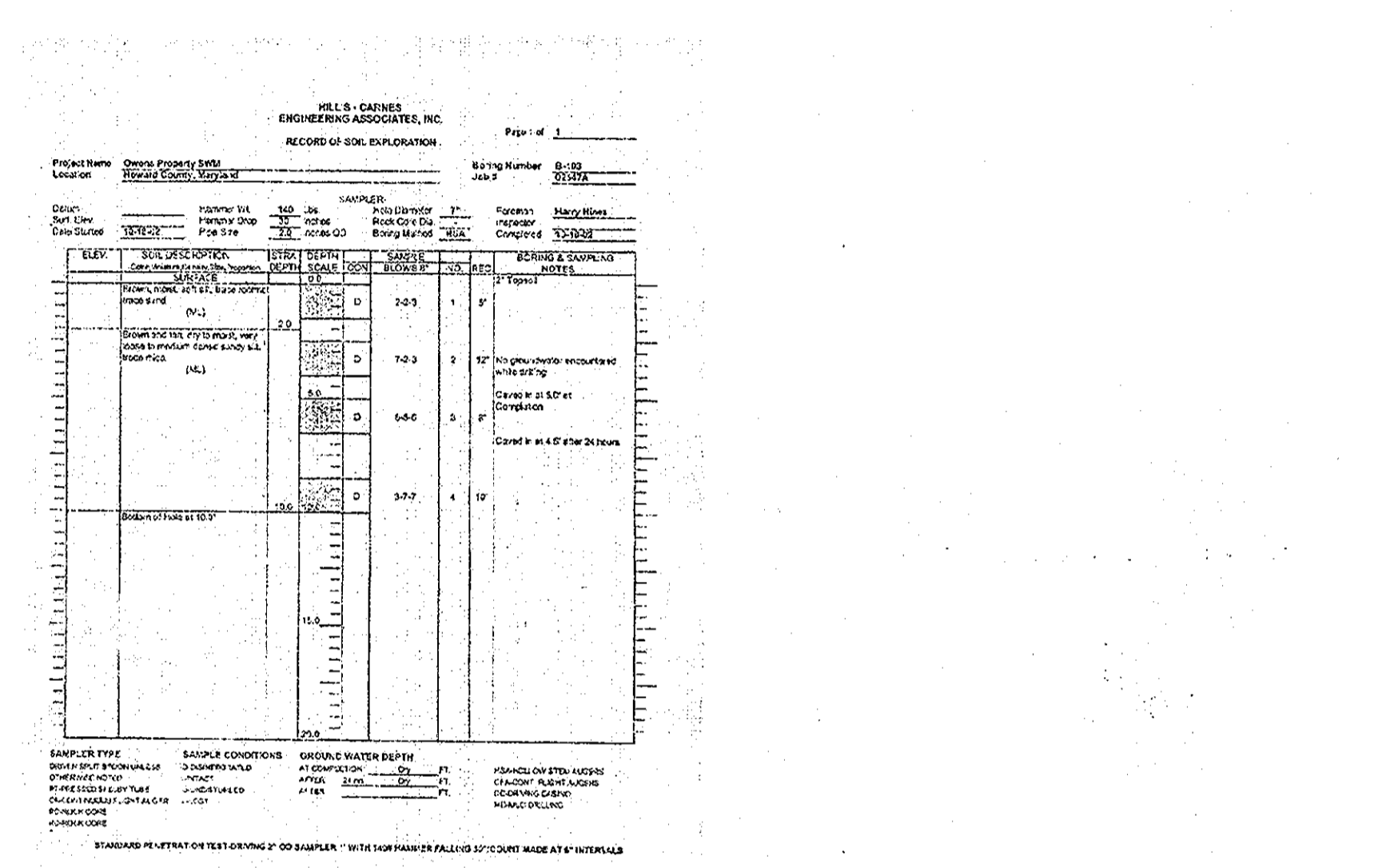
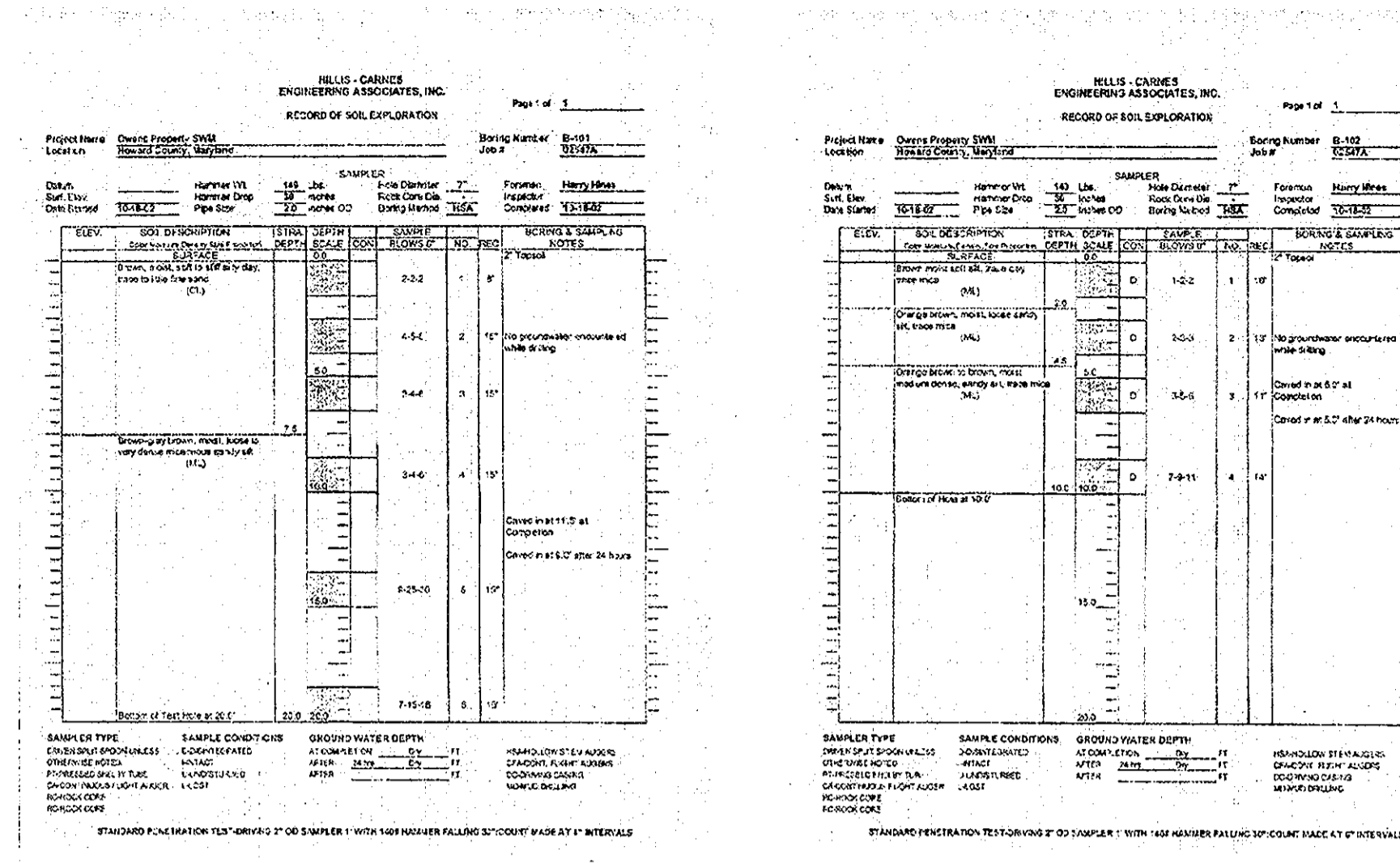
EVALUATION
Based on the State of Maryland's 2000 Maryland Stormwater Design Manual, Volume 1 & II, infiltration basins and trenches are not acceptable practices when an infiltration rate of less than 0.52 inches per hour is obtained. Borehole facilities in areas with peak infiltration rates of less than 0.52 inches per hour require underdrains. Also, the bottom of the facility should be located a minimum of 4 ft above the seasonally high water table and/or bedrock. Additionally, Howard County requires a minimum infiltration rate of 1.02 inches per hour.

Based on the subsurface conditions encountered in the borings, the measured in-situ infiltration rates and the above outlined criteria, infiltration methods of stormwater management are not feasible for the site.

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 protected 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 profiling 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 NRCSS Code No. 378 Pond Standards/Specifications, soils considered suitable for the center of 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.

It is our professional opinion that in addition to the soil materials described above a fine-grained soil, including Silt (ML) with a plasticity index of 10 or more can be utilized for the center of the embankment and core trench. All fill materials must be placed and compacted in accordance with NRCSS Code No. 378 specifications.



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: 12-31-14

ENGINEERS CERTIFICATE:
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/SH/WE 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.

DEVELOPERS CERTIFICATE:
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 ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I/WE 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/WE ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

APPROVED: HOWARD SOIL CONSERVATION DISTRICT
DATE: 1/3/06
SIGNATURE OF DEVELOPER: MARK E. BUDA

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
DATE: 1-19-06
SIGNATURE: [Signature]
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
DATE: 1/10/06
SIGNATURE: [Signature]
CHIEF, DEVELOPMENT ENGINEERING DIVISION

APPROVED: HOWARD COUNTY DEPT. OF LAND DEVELOPMENT
DATE: 3/9/06
SIGNATURE: [Signature]
CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
DATE: 1-19-06
SIGNATURE: [Signature]
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
DATE: 1/10/06
SIGNATURE: [Signature]
CHIEF, DEVELOPMENT ENGINEERING DIVISION

APPROVED: HOWARD COUNTY DEPT. OF LAND DEVELOPMENT
DATE: 3/9/06
SIGNATURE: [Signature]
CHIEF, DIVISION OF LAND DEVELOPMENT

FINAL PLAN
OWENS PROPERTY
PHASE II
LOTS 43 THRU 97 AND OPEN SPACES LOTS 98,99 & 100
NON-BUILDABLE BULK PARCELS 'C' AND 'D'
TAX MAP 51 FAKELZ 243,572

OWNER/DEVELOPER:
PATAPSCO LANDING, LLC
c/o James Keely and Co. Inc.
P.O. Box 528
61 E. Padonia Road.
Timonium, MD 21093

DMW
Dan McCaskey-Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4705
A Team of Land Planners,
Landscape Architects,
Engineers, Surveyors &
Environmental Professionals

TITLE
STORMWATER
MANAGEMENT SPECIFICATIONS AND
BORING LOGS

Des. By	CRW	Scale	AS SHOWN	Proj. No.	01086.D
Dwn. By	WDE	Date	1/4/06		
Chk. By	KRK	Approved			20 of 27

**SCHEDULE D
STORMWATER MANAGEMENT
AREA LANDSCAPING**

FOOD #	1
LINEAR FT OF PERIMETER (TYPE 'A')	877 LF
NUMBER OF TREES REQUIRED	
SHADE TREES @ 150 LF	18
EVERGREEN TREES @ 140 LF	23
CREDIT FOR EXISTING VEGETATION	NA
CREDIT FOR OTHER LANDSCAPING	NA
NUMBER OF TREES PROVIDED	
SHADE TREES	12
EVERGREEN TREES	23
ORNAMENTAL TREES	12

**SCHEDULE A
PERIMETER LANDSCAPE EDGE**

CATEGORY	ADJACENT TO ROADWAYS		ADJACENT TO PERIMETER PROPERTIES	
	F 1	F 2	F 1	F 2
LANDSCAPE TYPE 'A'				
LINEAR FEET OF PERIMETER			1800 LF.	71 LF.
LANDSCAPE TYPE 'B'				
LINEAR FEET OF PERIMETER	715 LF.	119 LF.		
LANDSCAPE TYPE 'C'				
LINEAR FEET OF PERIMETER				
CREDIT FOR EXISTING VEGETATION (DESCRIBE BELOW IF NEEDED)	775 LF.	0 LF.	168 LF.	71 LF.
CREDIT FOR FIRM (DESCRIBE BELOW IF NEEDED)	N/A	N/A	N/A	N/A
NUMBER OF PLANTS REQUIRED				
SHADE TREES	0	2	12	0
EVERGREEN TREES	0	5	0	0
SHRUBS	0	0	0	0
NUMBER OF PLANTS PROVIDED				
SHADE TREES	0	2	6	0
EVERGREEN TREES	0	0	0	0
OTHER TREES (2:1 SUBSTITUTION)	0	0	0	0
SHRUBS (NO:1 SUBSTITUTION)	0	0	0	0
(DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)				

* PERIMETER #4 IS ADJACENT TO ZABER PROPERTY, WHICH WILL BE DEVELOPED BY THE OWNER AND THEREFORE ASSUMED TO BE AN INTERIOR PHASING LINE. INTERIOR TREES WILL BE PROVIDED BY A SEPARATE 1/4" LF. THE DEVELOPER WILL PROVIDE ALL PERIMETER LANDSCAPE OBLIGATIONS WITH THE FINAL PLANS. NOTE: 1/2" STREET TREES SHOWN THIS SHEET.

LEGEND

	STREAM CENTERLINE		PROPERTY BOUNDARY
	75' STREAM BUFFER		RIGHT OF WAY LINE
	WETLAND		ROADWAY CENTERLINE
	30' WETLAND BUFFER		ADJACENT LOT LINE
	100' YR. FLOOD + FLOODWAY (DE FLOODPLAIN)		PROP. LOT LINE
	EL TREE LINE		BUILDING SETBACK LINE
	EL WATER COURSE		SLOPE (2%+ SLOPES)
	AREA OF INTERPOLATED CONTOURS		PROPOSED TREES
	STRUCTURE		NON-WOODY VEGETATION ZONE
	PROP. TREE LINE (IF SHOWN)		LIMIT OF PERFORMANCE (L.O.P.)
			BASE OF EMBANKMENT
			FOREST CONSERVATION EASEMENT LINE

No As-Built information is required on this sheet.

STATE OF MARYLAND
DAVID ALAN WOOD
 No. 21443
 PROFESSIONAL ENGINEER
 12-6-13

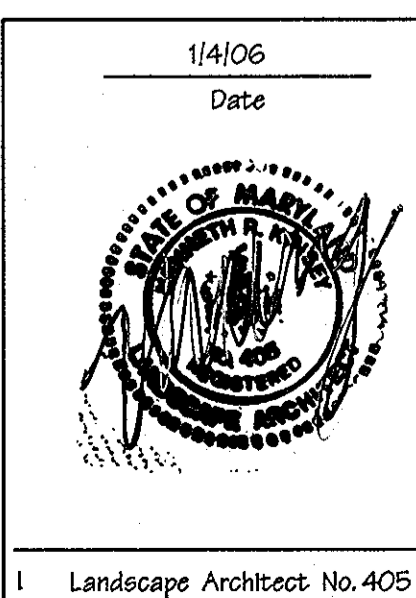
Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
 License No. 21443 Expiration Date: 12-21-14

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
William F. ... 1-19-06
 CHIEF, BUREAU OF HIGHWAYS DATE

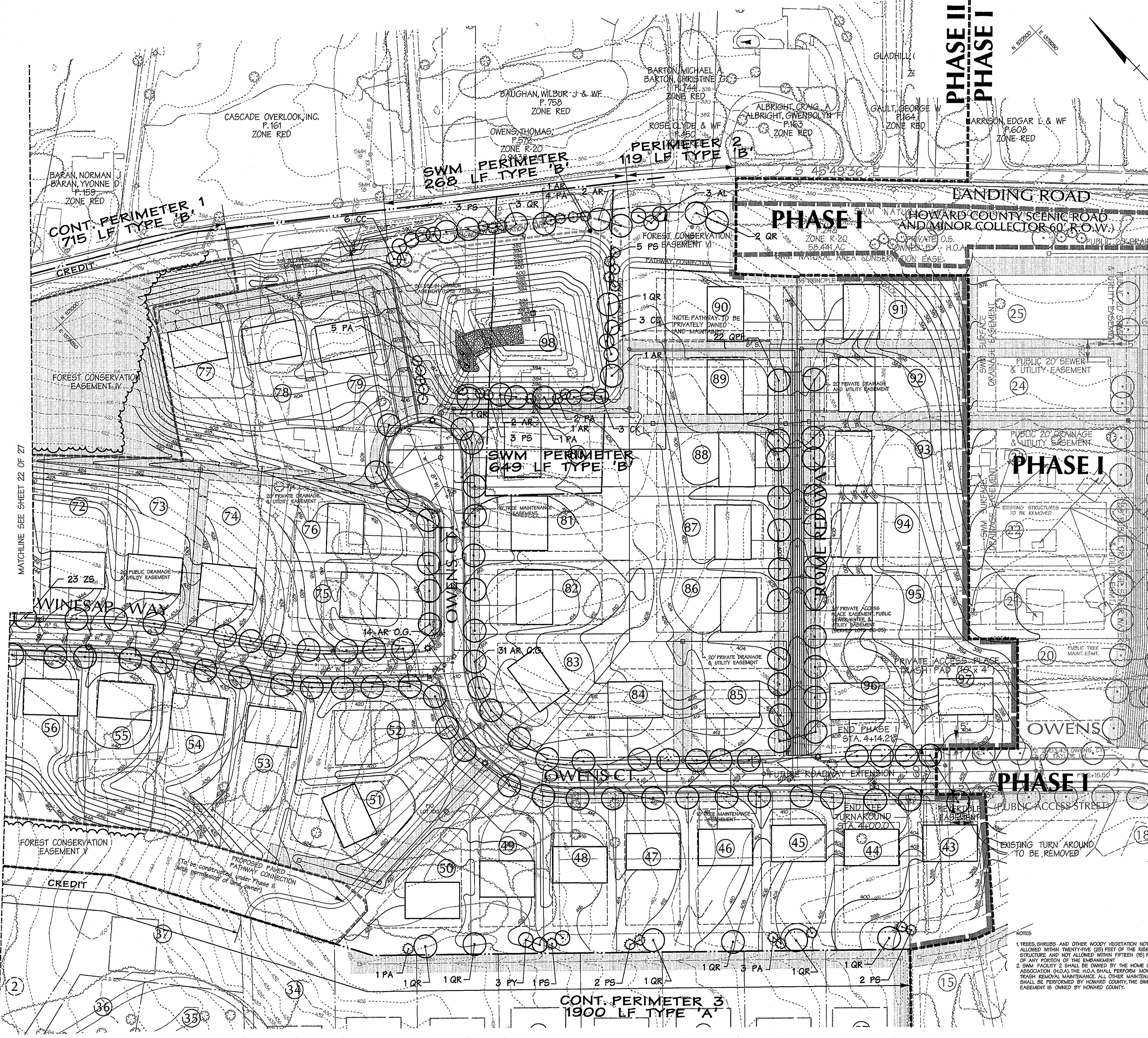
APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Cathy ... 2/9/06
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Robert ... 1/21/06
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Date	No.	Revision Description
		FINAL PLAN OWENS PROPERTY PHASE II
		LOTS 43 THRU 97 AND OPEN SPACES LOTS 98,99 & 100 NON-BUILDABLE BULK PARCELS 'C' AND 'D' TAX MAP 31 PARCEL 243,572
		OWNER/DEVELOPER: PATAPSCO LANDING, LLC c/o James Keely and Co. Inc. P.O. Box 528 61 E. Padonia Road, Timonium, MD 21093
		DMW Dart-McCune-Walker, Inc. 200 East Pennsylvania Avenue Towson, Maryland 21286 (410) 286-3858 Fax 286-4706
		A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals
		TITLE OWENS PROPERTY - PHASE II FINAL LANDSCAPE PLAN
Des By	CRH	Scale 1"=50'
Drn By	CRH	Date 1/14/06
Chk By	KRK	Approved
		Proj. No. 01086.D
		21 of 27



**PHASE II
PHASE I**



NOTES

- TREES, SHRUBS AND OTHER WOODY VEGETATION NOT ALLOWED WITHIN TWENTY-FIVE (25) FEET OF THE RISER STRUCTURE AND NOT ALLOWED WITHIN FIFTEEN (15) FEET OF ANY PORTION OF THE EMBANKMENT
- SWM FACILITY 2 SHALL BE OWNED BY THE HOME OWNERS ASSOCIATION (H.O.A.) THE H.O.A. SHALL PERFORM MOWING, TRASH REMOVAL MAINTENANCE, ALL OTHER MAINTENANCE SHALL BE PERFORMED BY HOWARD COUNTY, THE SWM EASEMENT IS OWNED BY HOWARD COUNTY.

PRIVATE ACCESS PLACE STREET TREE PLANT LIST

QTY	SYM	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
22	QPH	QUERCUS PHELLOES WILLOW OAK	2 1/2" - 3" CAL. B & B	

PUBLIC ROAD STREET TREE PLANT LIST

QTY	SYM	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
45	AR O.G.	ACER RUBRUM OCTOBER GLORY OCTOBER GLORY RED MAPLE	2 1/2" - 3" CAL. B & B	
60	ZB	ZILKHA BEKATA JAPANESE ZILKHA	2 1/2" - 3" CAL. B & B	

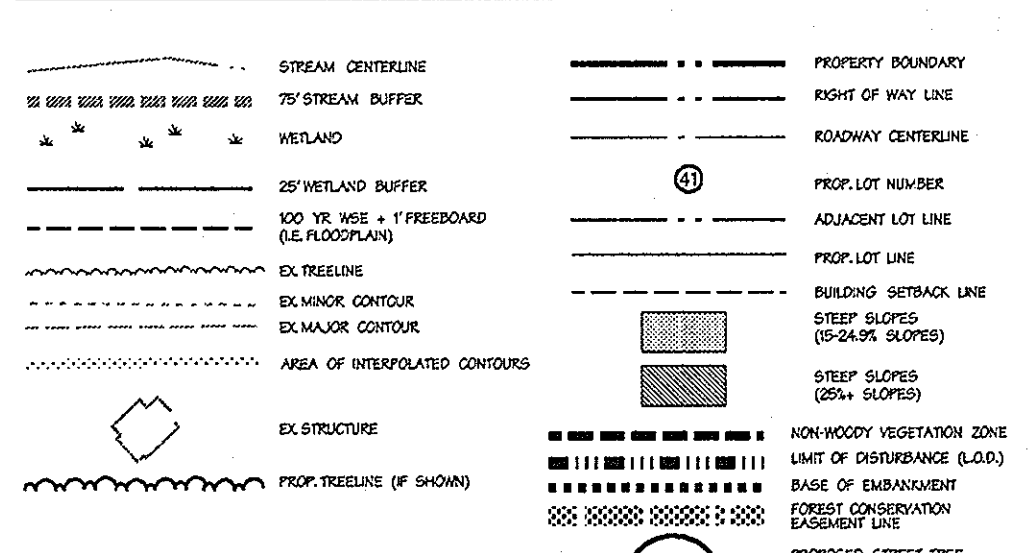
PERIMETER PLANT LIST

QTY	SYM	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
8	QR	QUERCUS RUBRA RED OAK	2 1/2" - 3" CAL. B & B 12-14' HT	FULL HEAD
4	PA	PICEA ABIES NORWAY SPRUCE	6'-8' HT.	B & B
5	PS	PRINUS STROBUS EASTERN WHITE PINE	6'-8' HT.	B & B UNSHARPED
3	AL	AMELANCHIER LAEVIS ALLEGHANY SERVICEBERRY	1 1/2" - 2" CAL. B & B 6' HT	FULL HEAD
3	PY	PRUNUS YUEDINGENSIS YOSHINO CHERRY	1 1/2" - 2" CAL. B & B 6' HT	FULL HEAD

SWM PERIMETER PLANT LIST

QTY	SYM	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
7	AR	ACER RUBRUM 'RED SUNSET' RED SUNSET RED MAPLE	2 1/2" - 3" CAL. B & B	
5	QR	QUERCUS RUBRA RED OAK	2 1/2" - 3" CAL. B & B 12-14' HT	FULL HEAD
12	PA	PICEA ABIES NORWAY SPRUCE	6'-8' HT.	B & B
19	PS	PRINUS STROBUS EASTERN WHITE PINE	6'-8' HT.	B & B UNSHARPED
9	CC	CORONIS CAMPAENSIS EASTERN REDBUD	1 1/2" - 2" CAL. B & B 6' HT	FULL HEAD
3	CK	CORNUS KOUSA KOUSA DOGWOOD	1 1/2" - 2" CAL. B & B 6' HT	FULL HEAD

LEGEND



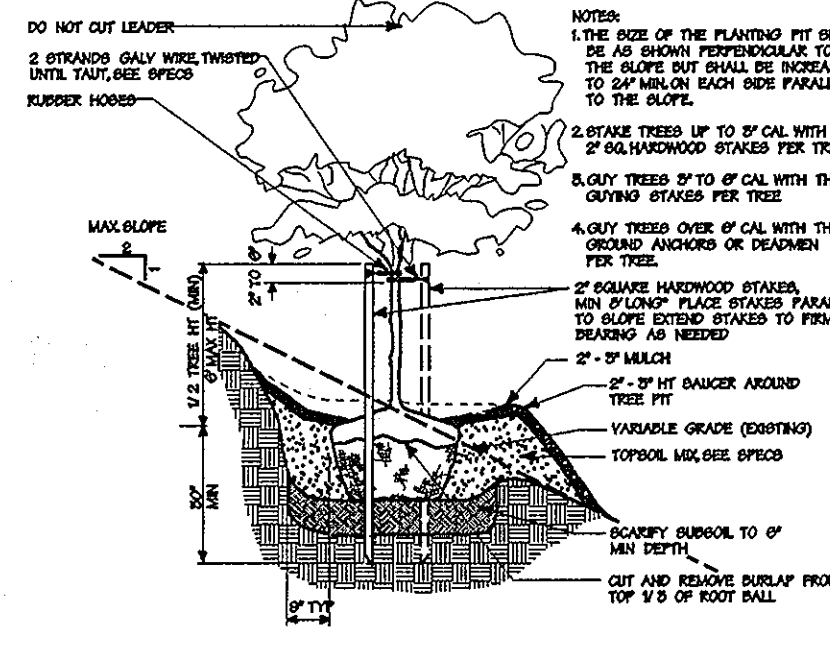
General Planting Notes

- All plant material to meet A.A.N. standards.
- Landscape Contractor to follow landscape specification guidelines for Baltimore Washington Metro area approved by ICANM.
- No substitutions to be made without consent of Landscape Architect or Owner.
- All beds to be topped with three inches of hardwood mulch.
- Landscape Contractor to verify location of utilities with Owner before planting.
- Landscape Architect/Owner shall select, verify and/or approve all plant material. At Owner's discretion, specimen and other plant material will be selected.
- Landscape Contractor shall coordinate plant bed filling operations and plant material installation with General Contractor and Utilities Contractor. At the time of final inspection with acceptance, all electric, water, drainage, and fountain utilities, as well as all plant materials, shall remain undamaged. Likewise, Landscape Contractor and Utilities Contractor shall coordinate efforts to ensure that surface utilities are at the proper elevation relative to final grades.
- Contractor shall notify Miss Utility 72 hours prior to construction.
- The owner, tenant, 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.
- This plan has been prepared in accordance with the provisions of Section 16.124 of the Ho. Co. code. Financial surety for the required landscaping in the amount of \$51,600.00 must be posted as part of the developer's agreement. (159 shade, 26 evergreens).
- Developer's/Builder's Certificate

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. We further certify that upon completion a certification of landscape installation, accompanied by an executed one-year guarantee of plant materials, will be submitted to the Department of Planning and Zoning.

NAME: *Mark G. Burt* DATE: 1/4/06

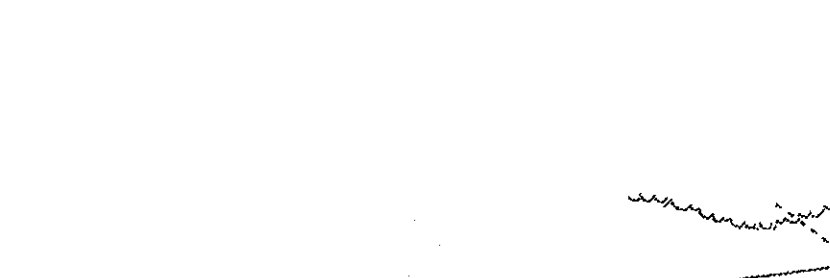
Financial surety for the required landscaping in the amount of \$51,600.00 must be posted as part of the developer's agreement. (159 shade, 26 evergreens).



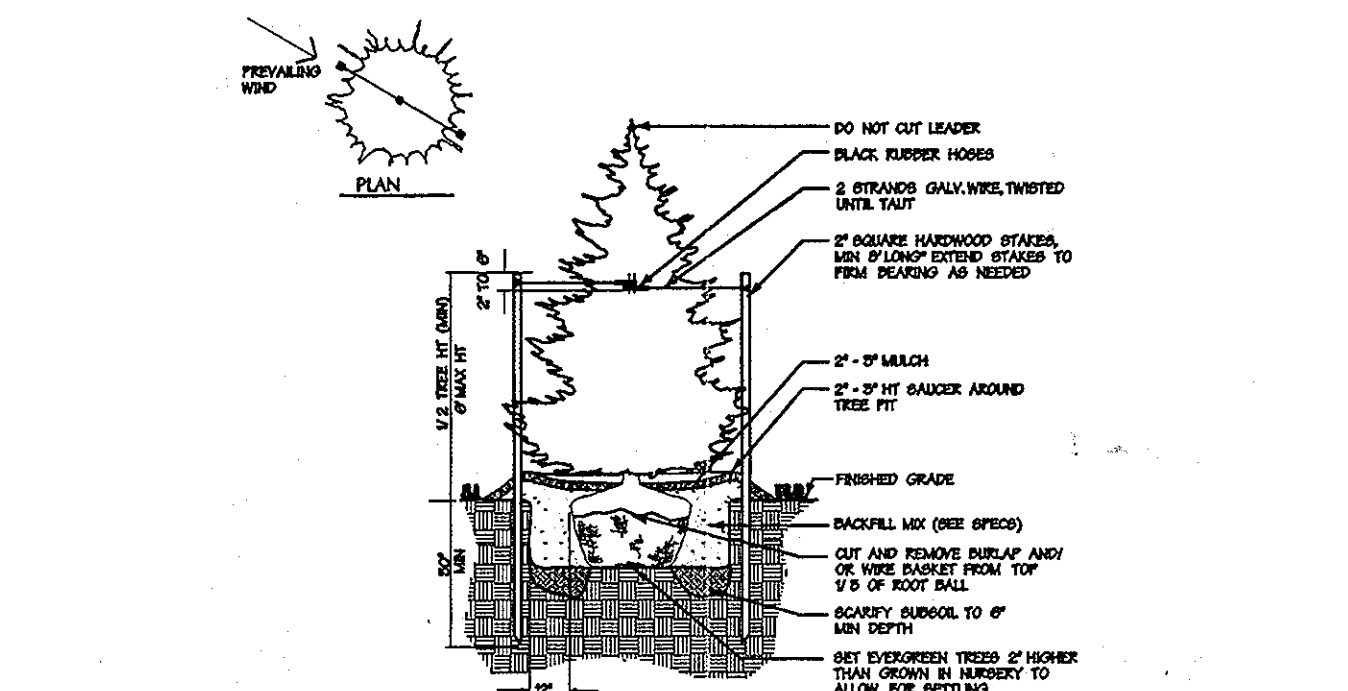
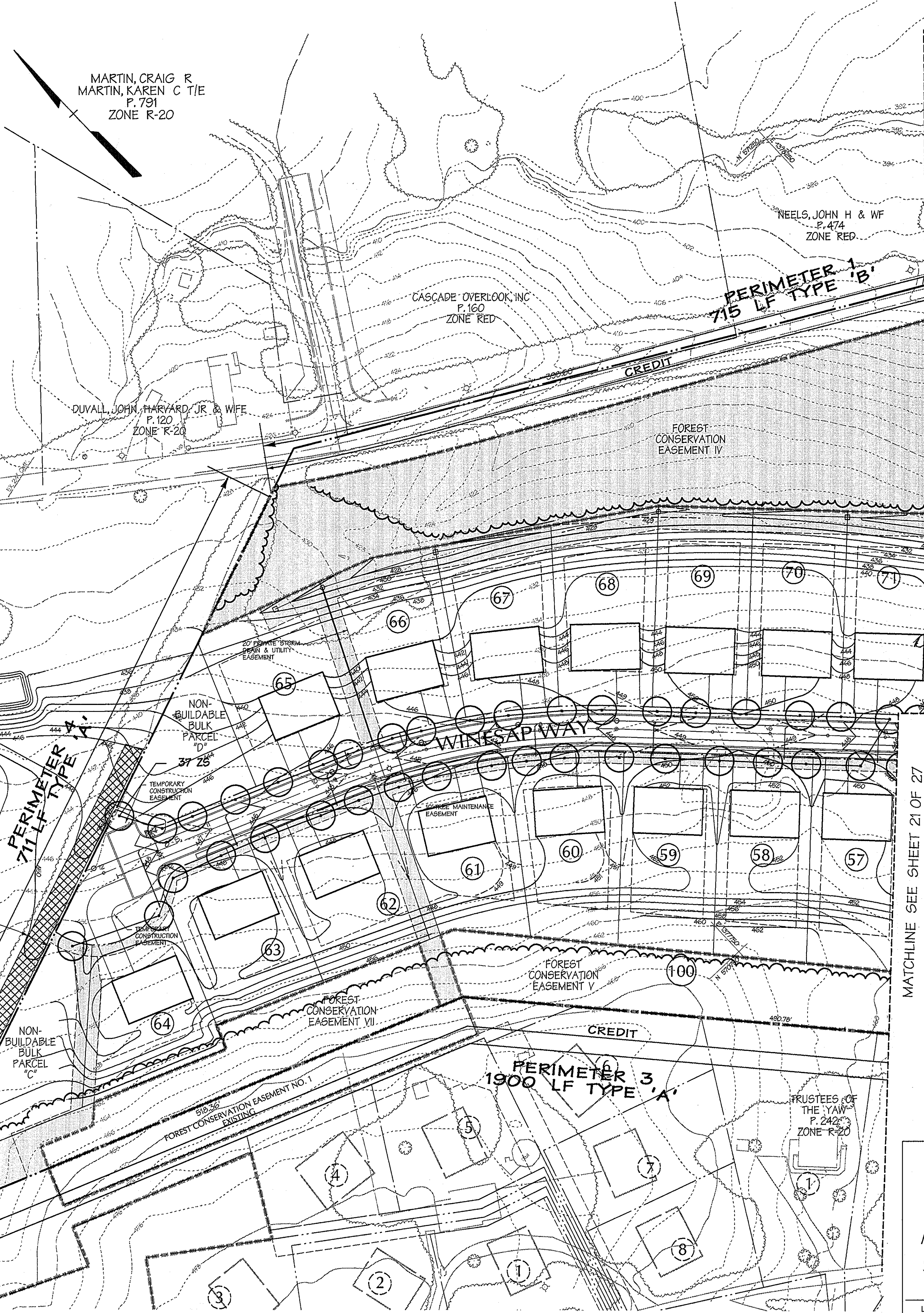
1 Tree Planting on Slope
Not To Scale



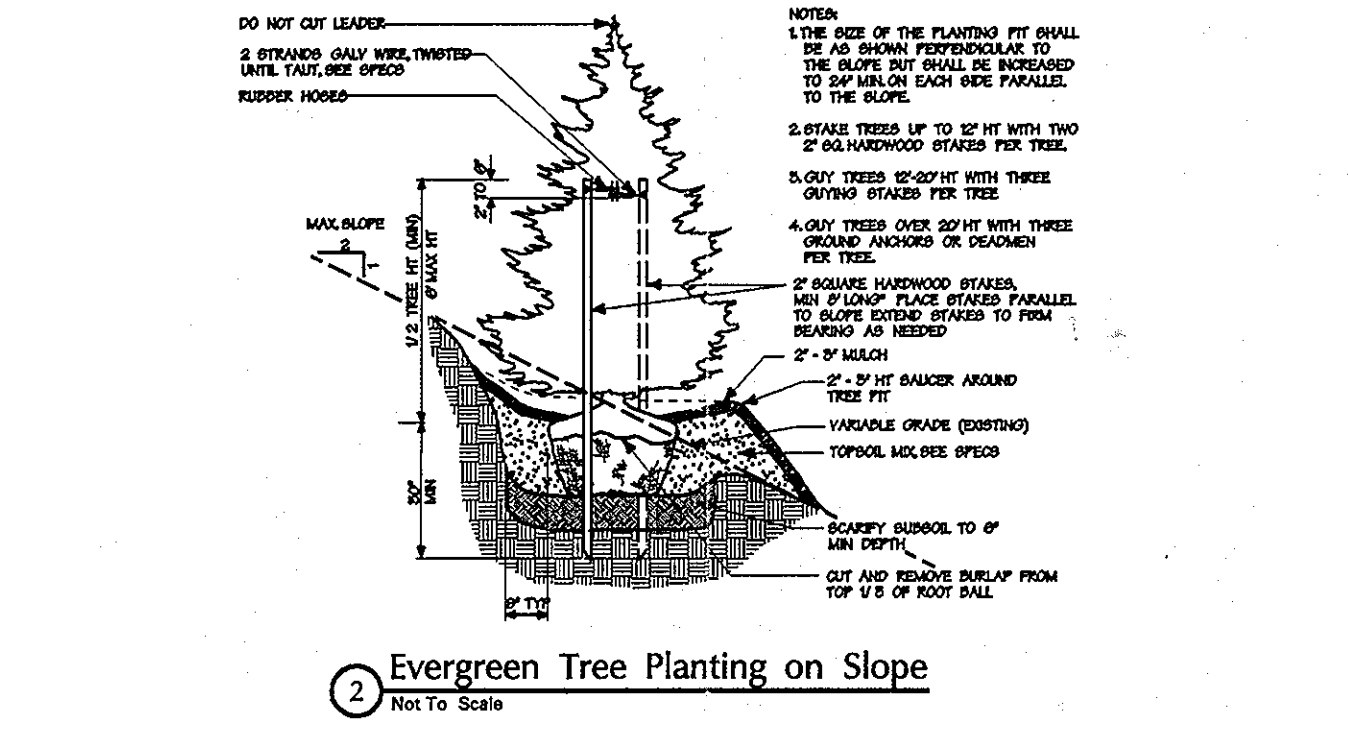
2 Evergreen Tree Planting on Slope
Not To Scale



3 Less Than 3\"/>



4 Evergreen Tree Planting
Not To Scale



5 Less Than 3\"/>

No As-Built information is required on this sheet.

STATE OF MARYLAND
PROFESSIONAL ENGINEER
ALAN M. WALKER
No. 21493
EXPIRES 12-31-14

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. 01203 Expiration Date: 12-31-14

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
William F. ... 1-19-06
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
... 2/9/06
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

... 1/17/06
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

FINAL PLAN
**OWENS PROPERTY
PHASE II**

LOTS 43 THRU 97 AND OPEN SPACES LOTS 88, 99 & 100
NON-BUILDABLE BULK PARCELS 'C' AND 'D'
TAX MAP 31 PARCEL 243,572

OWNER/DEVELOPER:
PATAPSCO LANDING, LLC
c/o James Kealty and Co. Inc.
P.O. Box 523
61 E. Padonia Road,
Timonium, MD 21083

1/4/06
Date

DMW
Daft-McCune-Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3553
Fax 296-4705

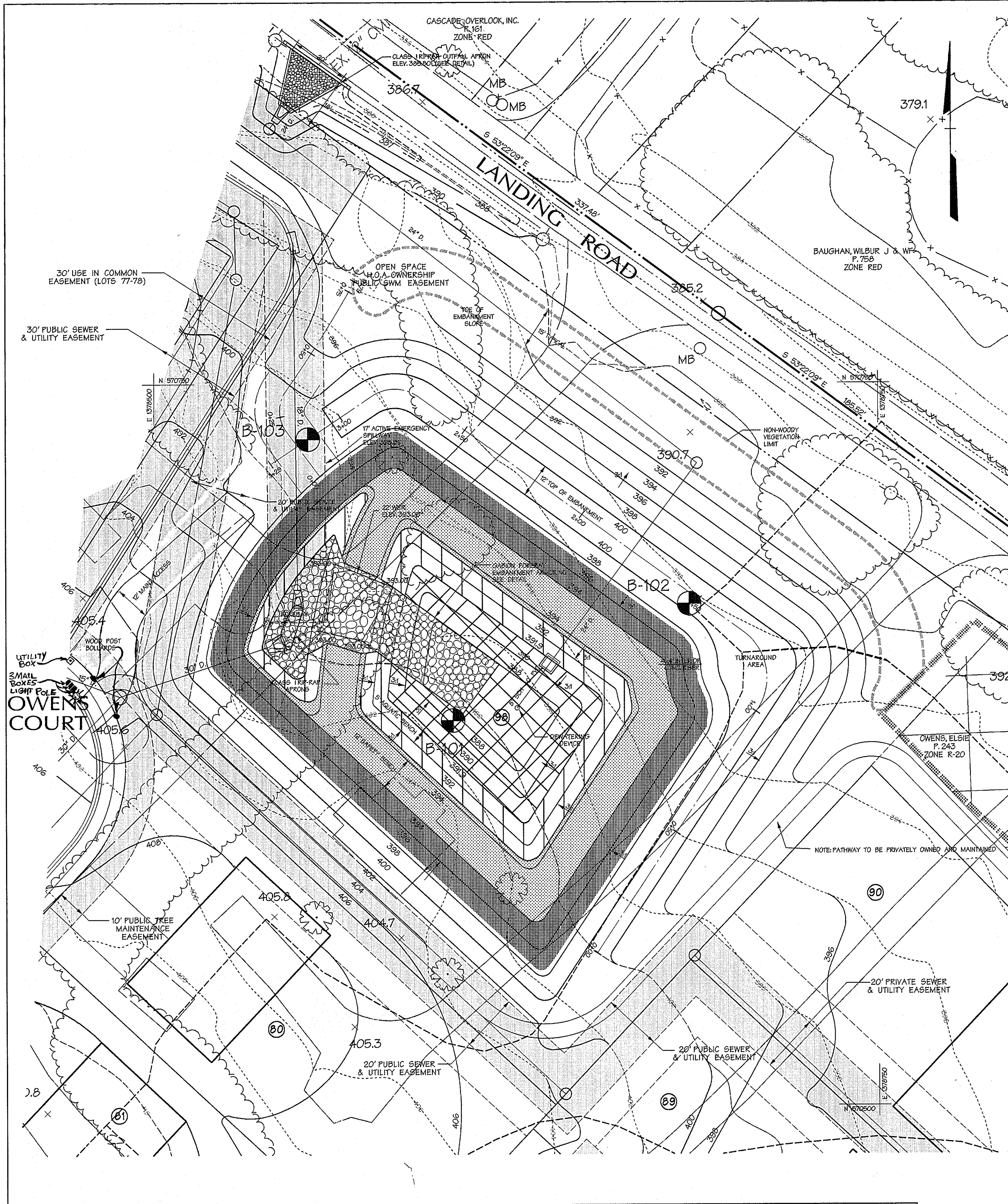
A Team of Land Planners,
Landscape Architects,
Engineers, Surveyors &
Environmental Professionals

TITLE
OWENS PROPERTY - PHASE II
FINAL LANDSCAPE PLAN

Des By: Scale: 1"=50'
Dwn By: ADL Date: 1/4/06
Chk By: KRK Approved: 22 of 27

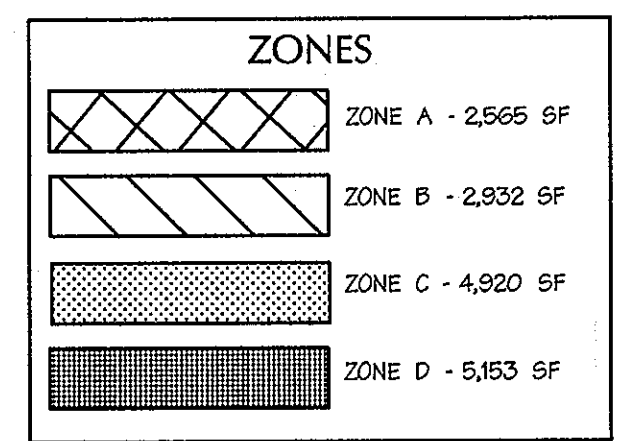
Landscape Architect No. 405
AS-BUILT

MATCHLINE SEE SHEET 21 OF 27



LEGEND

- STREAM CENTERLINE
- 75' STREAM BUFFER
- WETLAND
- 25' WETLAND BUFFER
- 100 YR WSE + 1' FREEBOARD (I.E. FLOODPLAIN EASEMENT)
- ECTREELINE
- ECTMINOR CONTOUR
- ECTMAJOR CONTOUR
- ECTSTRUCTURE
- PROP. TREELINE (F SHOWN)
- PROPERTY BOUNDARY
- RIGHT OF WAY LINE
- ROADWAY CENTERLINE
- 400 PROPOSED MAJOR CONTOUR
- 398 PROPOSED MINOR CONTOUR
- PROP. LOT NUMBER
- ADJACENT LOT LINE
- PROP. LOT LINE
- PROPOSED PUBLIC DRAINAGE AND UTILITY EASEMENT
- FOREST CONSERVATION EASEMENT
- SWM NATURAL CONSERVATION EASEMENT
- NON-WOODY VEGETATION LIMIT
- BORING LOCATION AND NUMBER



Water Quality Planting Plan **

Species	Size	Plant Spacing	Quantity	Remarks
<i>Nuphar lutea</i>	quart container	72'	80	ODL
TOTALS			80	

Species	Size	Plant Spacing	Quantity	Remarks
<i>Sagittaria latifolia</i>	quart container*	36'	125	ODL
<i>Iris versicolor</i>	quart container*	36'	125	ODL
<i>Potamogeton amplifolius</i>	quart container*	36'	125	ODL
TOTALS			375	

Species	Size	Plant Spacing	Quantity	Remarks
<i>Scirpus tabernaemontani</i>	quart container*	36'	150	ODL
<i>Lobelia cardinalis</i>	quart container	36'	150	FACW
<i>Astilbe incarnata</i>	quart container	36'	150	ODL
<i>Panicum virgatum</i>	quart container	36'	150	FAC
<i>Saururus cernuus</i>	quart container*	36'	150	ODL
TOTALS			600	

Species	Size	Plant Spacing	Quantity	Remarks
<i>Panicum virgatum</i>	quart container	36'	400	FAC
TOTALS			400	

* Dormant rhizomes of *Scirpus*, *Iris* and *Saururus*, dormant tubers of *Sagittaria*, and 1 styax bulbe of *Potamogeton* may be substituted if plantings are to be installed during dormant season.

** Alternate species and install in random pattern, distributing each species across the hydro gradient of each planting zone. Single species massings to be avoided.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

William E. Wilbur 1-19-06
 CHIEF, BUREAU OF HIGHWAYS MS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
Mark E. Puzza 1/22/06
 CHIEF, DEVELOPMENT ENGINEERING DIVISION gm DATE

Cindy Hamble 2/9/06
 CHIEF, DIVISION OF LAND DEVELOPMENT JA DATE

Date	No.	Revision Description	BY
9-20-13	1	RELOCATE 12' SWM ACCESS ROAD	BEZ

**FINAL PLAN
 OWENS PROPERTY
 PHASE II**

LOTS 43 THRU 97 AND OPEN SPACES LOTS 98,99 & 100
 NON-BUILDABLE BULK PARCELS 'C' AND 'D'
 TAX MAP 31 PARCEL 243,972

OWNER/DEVELOPER:
 PATAPSCO LANDING, LLC
 c/o James Keely and Co. Inc.
 P.O. Box 528
 61 E. Padonia Road
 Timonium, MD 21093

DMW
 Daft-McCune-Walker, Inc.
 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 298-3333
 Fax 298-4705
 A Team of Land Planners,
 Landscape Architects,
 Engineers, Surveyors &
 Environmental Professionals

**TITLE
 STORMWATER MANAGEMENT
 POND PLANTING PLAN**

Des. By	CRW	Scale	1"=20'	Proj. No.	01086.D
Drn. By	WDE	Date	1/4/06		
Chk. By	KRK	Approved			23 of 27

11/4/06
 Date

 Landscape Architect No. 405
AS-BUILT

No As-Built information is required on this sheet

FOR REVISIONS BY
 BENCHMARK
 ENGINEERING, INC.
 ONLY

Donna M. ...
 PROFESSIONAL ENGINEER
 7-20-13
 License No. 21443, Expiration Date: 12-21-14

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE DATE

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

APPROVED: HOWARD SOIL CONSERVATION DISTRICT DATE

DEVELOPERS CERTIFICATE:
 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 ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I/USAL ENGINEER 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.

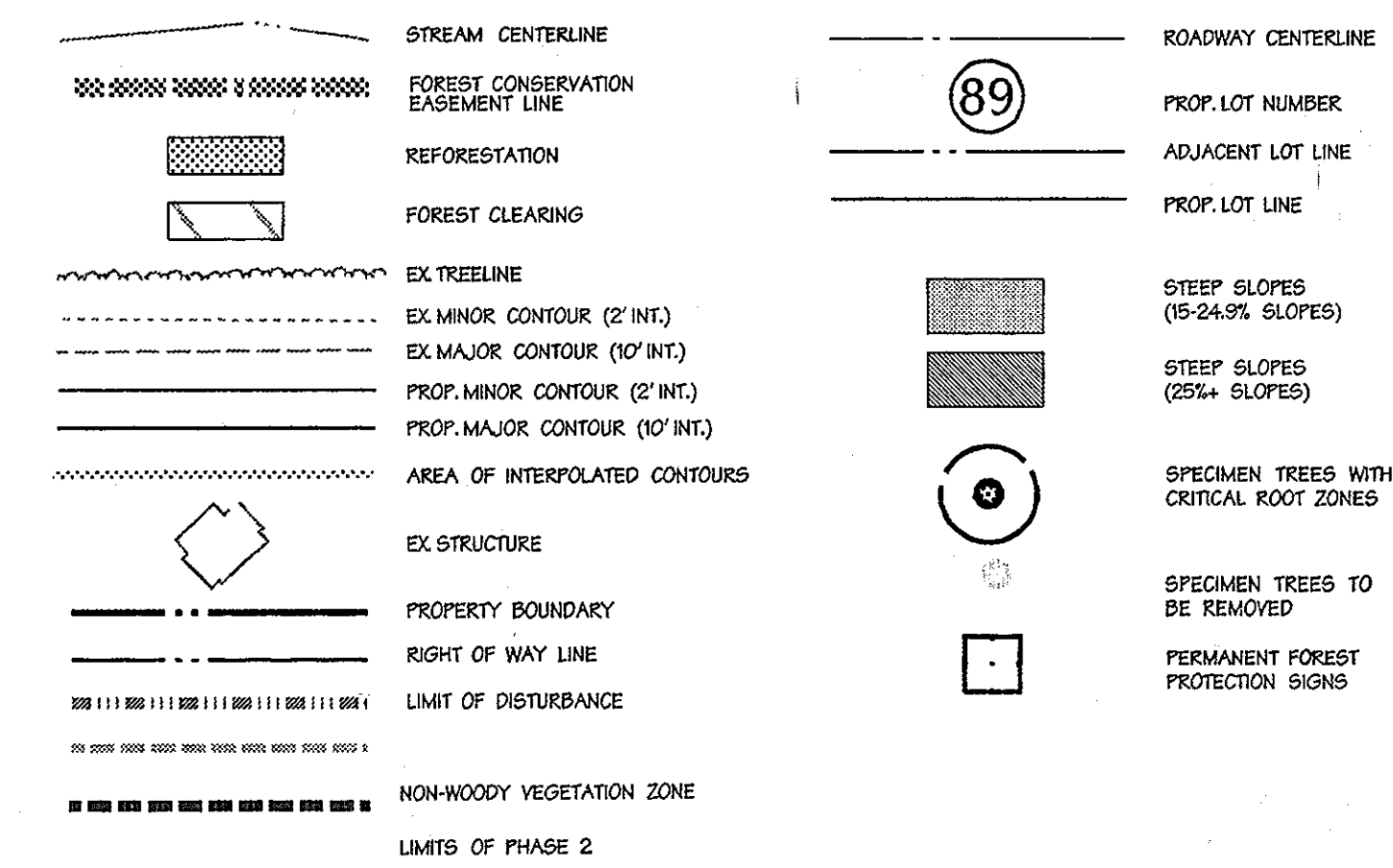
Mark E. Puzza 1/4/06
 SIGNATURE OF DEVELOPER
 FRONT NAME BELOW SIGNATURE DATE

ENGINEERS CERTIFICATE:
 I 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.

Donna M. ... 1/30/06 1/4/06
 SIGNATURE OF ENGINEER
 FRONT NAME BELOW SIGNATURE REG. NO. DATE

PHOTOGRAPHIC REPRODUCTION

LEGEND



SITE DATA:

	PHASE I	PHASE II	TOTAL
GROSS SITE	31.64 AC	27.74 AC	59.42 AC
FLOODPLAIN	4.33 AC	0.0 AC	4.33 AC
NET TRACT AREA	27.31 AC	27.74 AC	55.09 AC
FOREST ON NET TRACT	13.60 AC	11.70 AC	25.30 AC
FOREST CLEARED	8.52 AC	8.99 AC	17.51 AC
FOREST RETAINED	5.08 AC	2.71 AC	7.79 AC

GOALS AND OBJECTIVES

THE GOALS AND OBJECTIVES OF THIS FOREST CONSERVATION PLAN ARE TO IDENTIFY FOREST RESOURCES TO BE RETAINED AND CLEARED UNDER THE DEVELOPMENT OF THE SECOND PHASE OF THE OWENS PROPERTY, AND TO IDENTIFY ON-SITE PLANTING AREAS AND OFF-SITE RETENTION AREAS (ON THE MYRTUE PROPERTY) TO FULLY SATISFY REFORESTATION OBLIGATIONS FOR OWENS PHASE II.

APPROXIMATELY 8.99 ACRES OF EXISTING FOREST WILL BE CLEARED UNDER PHASE II, AND 2.71 ACRES OF FOREST WILL BE RETAINED. THE PHASE II REFORESTATION OBLIGATION IS 7.23 ACRES, WHICH WILL BE SATISFIED THROUGH 112 ACRES OF ON-SITE REFORESTATION PLANTINGS AND 102 ACRES OF OFF-SITE FOREST RETENTION AT THE MYRTUE PROPERTY (SATISFYING A 2:1 OBLIGATION OF 6:1 ACRES).

WHEN EVALUATED WITH OWENS PHASE I, A TOTAL REFORESTATION OBLIGATION OF 10.11 ACRES IS GENERATED. A TOTAL OF 4.0 ACRES OF REFORESTATION WILL BE PROVIDED ON-SITE (112 ACRES AT OWENS II, 2.80 ACRES AT OWENS I), WITH THE REMAINING 6.11 ACRES OBLIGATION TO BE MET OFF-SITE (AT A 2:1 RETENTION RATIO) AT THE MYRTUE PROPERTY, WHERE 12.2 ACRES HAVE BEEN IDENTIFIED FOR PERMANENT FOREST RETENTION SPECIFICALLY FOR THIS PROJECT.

ON-SITE REFORESTATION PLANTINGS WILL CONSIST OF 1" CALIBER STOCK, TO ENCOURAGE RESPECT FOR PLANTINGS AND PROVIDE AESTHETICALLY PLEASING REFORESTATION AREAS. ALL REFORESTATION AND FOREST RETENTION AREAS WILL BE PLACED INTO "NON-DISTURBANCE" FOREST CONSERVATION EASEMENTS (FCE) TO ENSURE LONG-TERM VIABILITY AND SUCCESS OF THE AREAS, AND TO PROTECT THE NATURAL RESOURCES WITHIN THESE AREAS.

No As-Built information is required on this sheet



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: HOWARD COUNTY DEPT. OF PUBLIC WORKS <i>William J. ...</i> 1-19-06 CHIEF, BUREAU OF HIGHWAYS	DATE
APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING <i>Cheryl ...</i> 2/9/06 CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
<i>Chris ...</i> 1/27/06 CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE

Date	No.	Revision Description

**FINAL PLAN
OWENS PROPERTY
PHASE II**

LOTS 43 THRU 97 AND OPEN SPACES LOTS 98,99 & 100
NON-BUILDABLE BULK PARCELS 'C' AND 'D'
TAX MAP 31 PARCEL 243,572

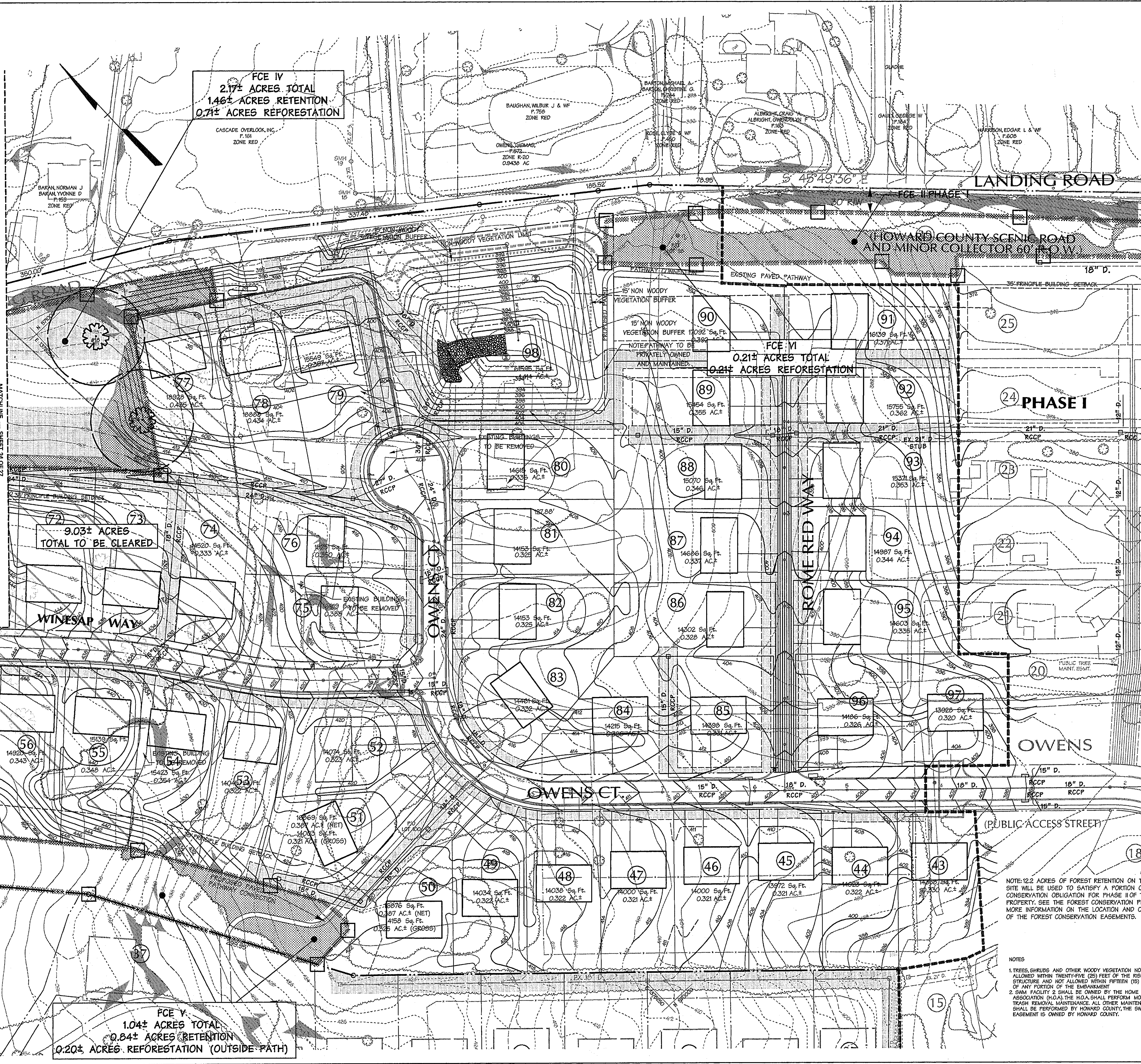
OWNER/DEVELOPER:
PATAPSCO LANDING, LLC
c/o James Kealty and Co. Inc.
P.O. Box 5228
61 E. Padonia Road
Timonium, MD 21093

DMW
Dunn McCune Walker, Inc.
300 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 290-3333
Fax: 296-4708

A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

TITLE: **OWENS PROPERTY - PHASE II
FINAL FOREST
CONSERVATION PLAN**

Des By: ADL/KDE Scales: 1"=50' Proj. No. 01086.D
 Dwn By: ADL/KDE Date: 1/4/06
 Chk By: KRK Approved: **24 of 27**



MATCHLINE - SHEET 24 OF 27

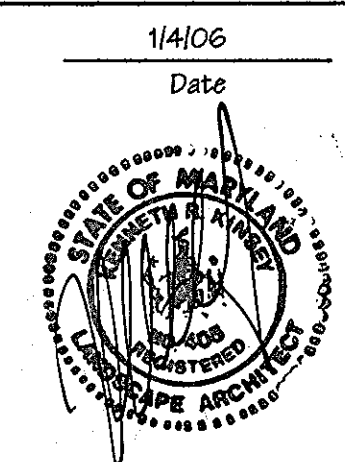
FCE V
1.04± ACRES TOTAL
0.84± ACRES RETENTION
0.20± ACRES REFORESTATION (OUTSIDE PATH)

FCE IV
2.17± ACRES TOTAL
1.46± ACRES RETENTION
0.71± ACRES REFORESTATION

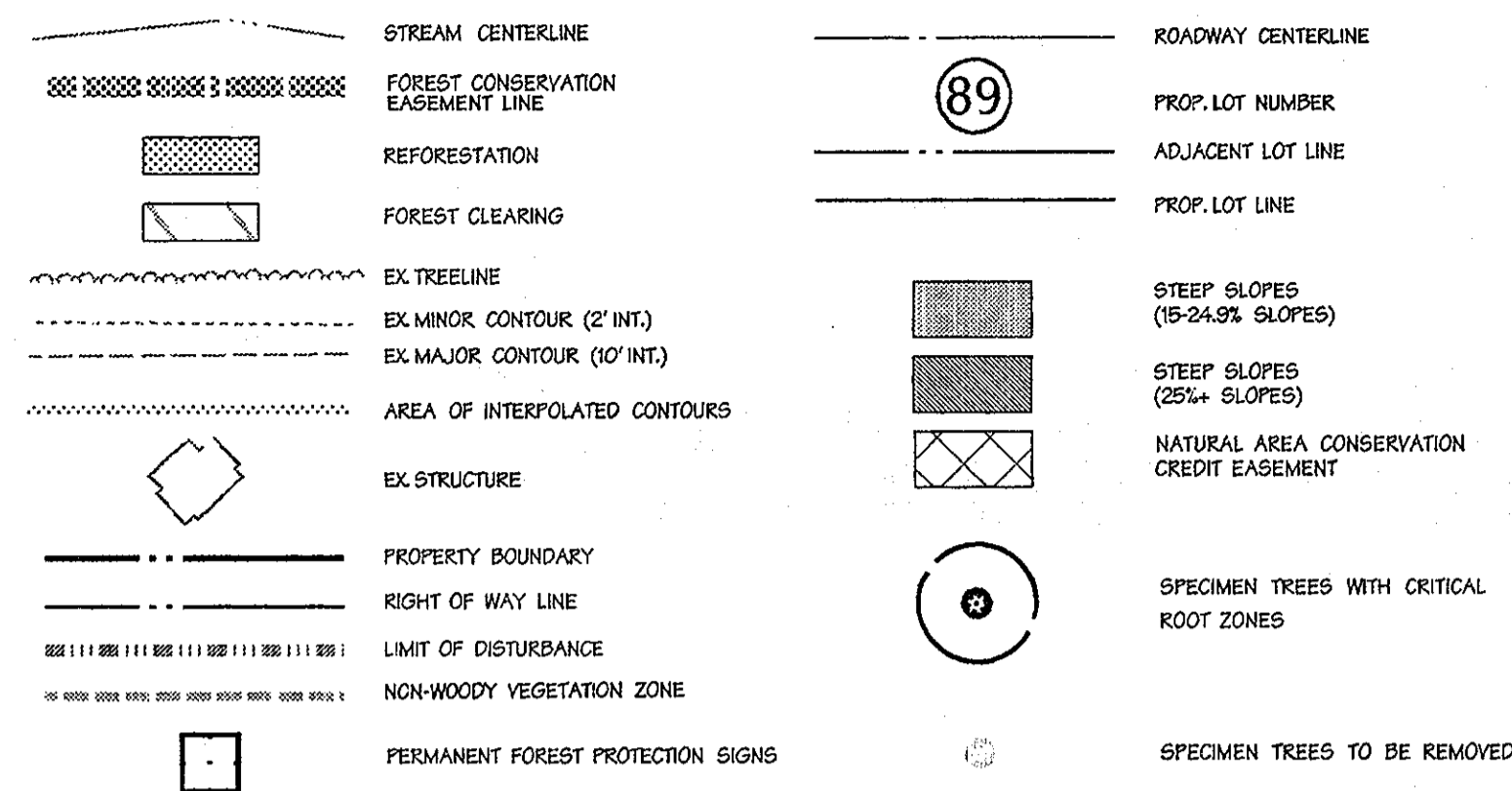
FCE VI
0.21± ACRES TOTAL
0.21± ACRES REFORESTATION

NOTE: 12.2 ACRES OF FOREST RETENTION ON THE MYRTUE SITE WILL BE USED TO SATISFY A PORTION OF THE FOREST CONSERVATION OBLIGATION FOR PHASE II OF THE OWENS PROPERTY. SEE THE FOREST CONSERVATION PLANS FOR MORE INFORMATION ON THE LOCATION AND CONFIGURATION OF THE FOREST CONSERVATION EASEMENTS.

- NOTES**
- TREES, SHRUBS AND OTHER WOODY VEGETATION NOT ALLOWED WITHIN TWENTY-FIVE (25) FEET OF THE RISER STRUCTURE AND NOT ALLOWED WITHIN FIFTEEN (15) FEET OF ANY PORTION OF THE EMBANKMENT
 - SWM FACILITY 2 SHALL BE OWNED BY THE HOME OWNERS ASSOCIATION (HOA). THE HOA SHALL PERFORM MONTHLY TRASH REMOVAL, MAINTENANCE, AND OTHER MAINTENANCE SHALL BE PERFORMED BY HOWARD COUNTY. THE SWM EASEMENT IS OWNED BY HOWARD COUNTY.



LEGEND



PLANT LIST

Trees required = 224 (1.12 acres x 200/tree)

Species	Size	Spacing	Quantity	Light preference	Indicator status	
<i>Acer rubrum</i>	red maple	1" calliper	18' x 18'	50	sun to shade	FAC
<i>Amelanchier laevis</i>	Allegheny serviceberry	1" calliper	18' x 18'	24	sun to shade	FACU
<i>Cornus canadensis</i>	Eastern redbud	1" calliper	18' x 18'	30	sun to shade	FACU
<i>Prunus serotina</i>	black cherry	1" calliper	18' x 18'	50	sun	FACU
<i>Quercus alba</i>	white oak	1" calliper	18' x 18'	30	sun to shade	FACU
<i>Quercus prinus</i>	chestnut oak	1" calliper	18' x 18'	40	sun to shade	UPL
			224			

FOREST CONSERVATION EASEMENT SUMMARY			
Phase I			
FCE #	Total Acreage	Acreage Forest Retention	Acreage Reforestation
1	7.07	5.09	1.99
2	0.63	0.00	0.63
3	0.26	0.00	0.26
Phase II			
FCE #	Total Acreage	Acreage Forest Retention	Acreage Reforestation
4	2.17	1.46	0.71
5	1.04	0.84	0.20
6	0.21	0.00	0.21
7	0.37	0.37	0.00
TOTAL	11.75	7.75	4.00

MARTIN, CRAIG R
MARTIN, KAREN C T/E
P. 791
ZONE R-20

NEELS, JOHN H & WF
P. 474
ZONE RED

CASCADE OVERLOOK, INC
P. 160
ZONE RED

DUVALL, JOHN HARVARD, JR & WIFE
P. 120
ZONE R-20

GRADING STOCKPILE AREA
ZAISER, WILLIAM E AND WIFE
P. 157
ZONE R-20
P-05-08

TRUSTEES OF THE YAW
P. 242
ZONE R-20

FCE VII
0.37± ACRES TOTAL
0.37± ACRES RETENTION
0.00± ACRES REFORESTATION

FCE V CONTINUED
1.04± ACRES TOTAL
0.84± ACRES RETENTION
0.20± ACRES REFORESTATION (OUTSIDE PATH)

9.03± ACRES
TOTAL TO BE CLEARED

FCE IV CONTINUED
2.17± ACRES TOTAL
1.46± ACRES RETENTION
0.71± ACRES REFORESTATION

SPECIMEN TREE CHART

TREE	DESCRIPTION	CONDITION	PROPOSED STATUS
1	42" WHITE OAK	FAIR	TO BE REMOVED
2	51" CHESTNUT OAK	FAIR	TO BE REMOVED
3	30" WHITE OAK	GOOD	TO BE REMOVED
4	30" RED OAK	GOOD	TO BE REMOVED
5	31" TULIP POPLAR	GOOD	TO BE REMOVED
6	38" RED OAK	GOOD	TO BE REMOVED
7	43" CHESTNUT OAK	POOR	TO BE REMOVED
8	30" CHESTNUT OAK	FAIR	TO BE REMOVED
9	33" CHESTNUT OAK	GOOD	TO BE REMOVED
10	40" RED OAK	FAIR	TO BE REMOVED
11	34" RED OAK	FAIR	TO BE REMOVED
12	33" TULIP POPLAR	GOOD	TO BE REMOVED
13	33" BLACK GUM	FAIR	TO BE REMOVED
14	37" TULIP POPLAR	GOOD	TO BE REMOVED
15	36" TULIP POPLAR	GOOD	TO BE REMOVED
16	40" RED OAK	FAIR	TO BE REMOVED
17	44" TULIP POPLAR	FAIR	TO BE REMOVED
18	35" SCARLET OAK	FAIR	TO BE SAVED
19	31" RED OAK	GOOD	TO BE SAVED
20	31" BEECH	GOOD	TO BE SAVED
21	30" WHITE OAK	FAIR	TO BE SAVED
22	30" WHITE OAK	GOOD	TO BE SAVED

No As-Built information is required on this sheet



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: HOWARD COUNTY DEPT. OF PUBLIC WORKS
William T. ... 1-16-06
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
... 2/9/06
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

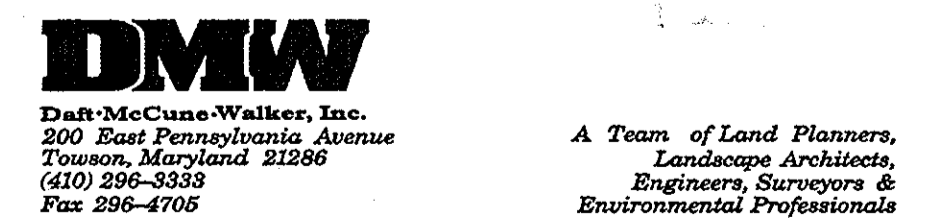
... 1/27/06
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Date	No.	Revision Description

**FINAL PLAN
OWENS PROPERTY
PHASE II**

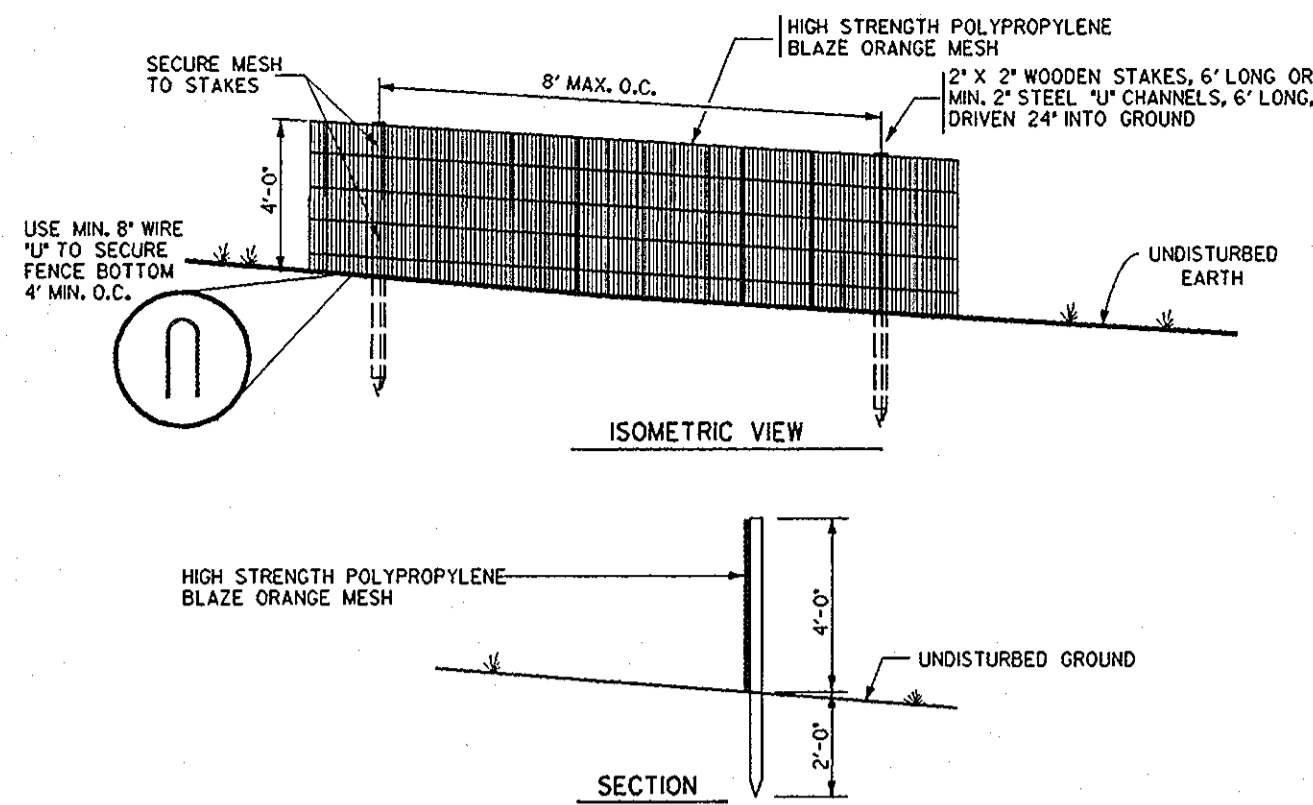
LOTS 43 THRU 97 AND OPEN SPACES LOTS 98, 99 & 100
NON-BUILDABLE BULK PARCELS 'C' AND 'D'
TAX MAP 31 PARCEL 243, 572

OWNER/DEVELOPER:
PATAPSCO LANDING, LLC
c/o James Keilty and Co. Inc.
P.O. Box 522
61 E. Padonia Road
Timonium, MD 21093



**OWENS PROPERTY - PHASE II
FINAL FOREST
CONSERVATION PLAN**

Des By	Scale	Proj. No.
ADL	1"=50'	01086.D
Chk By	Date	
KRK	1/4/06	

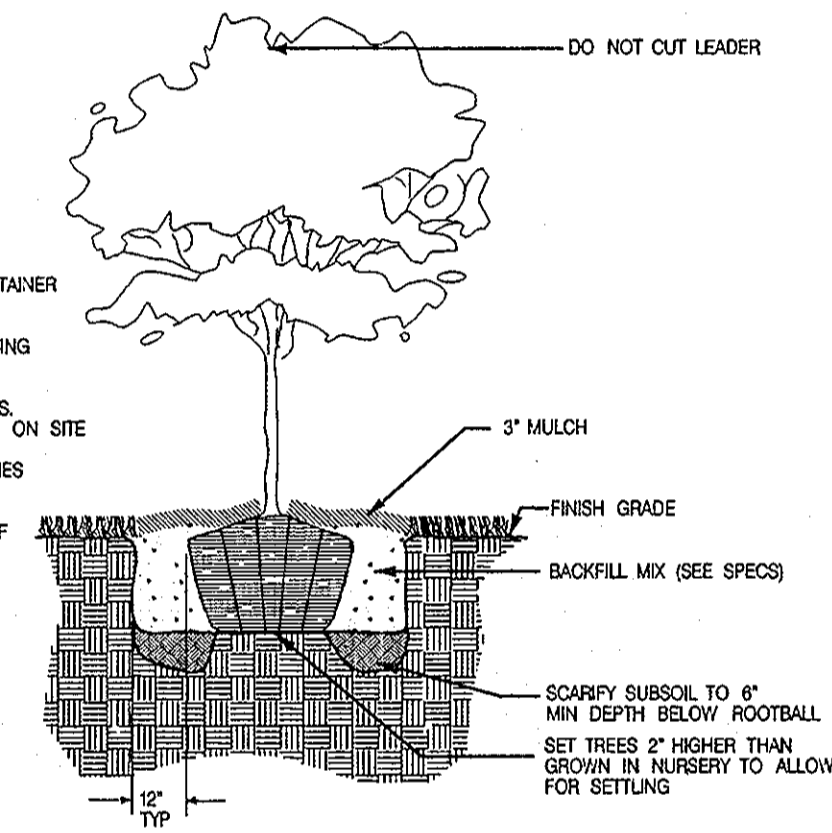


- NOTES:
1. THIS DETAIL IS FOR FOREST PROTECTION DEVICE ONLY.
 2. FOREST RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
 3. BOUNDARIES OF FOREST RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING THE DEVICE.
 4. ROOT DAMAGE SHALL BE AVOIDED.
 5. PROTECTION SIGNAGE MAY ALSO BE USED.
 6. FOREST PROTECTION FENCE SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.

Forest Protection Fence

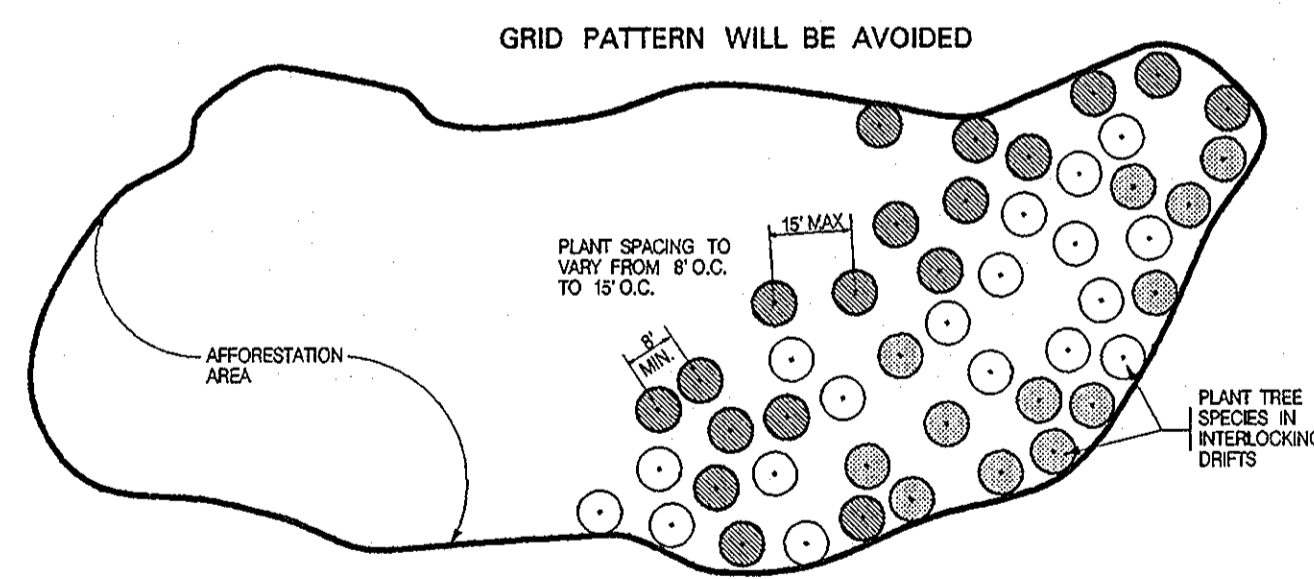
Not To Scale

* WHERE SUPER SILT FENCE (S.S.F.) IS TO BE INSTALLED ADJACENT TO FOREST RETENTION AREAS, ATTACH HIGH VISIBILITY TAPE OR FLAGGING TO THE TOP EDGE OF S.S.F. AT 5' INTERVALS AND USE S.S.F. IN LIEU OF BLAZE ORANGE FENCE. TEMPORARY FOREST PROTECTION SIGNAGE MAY BE ATTACHED TO S.S.F.



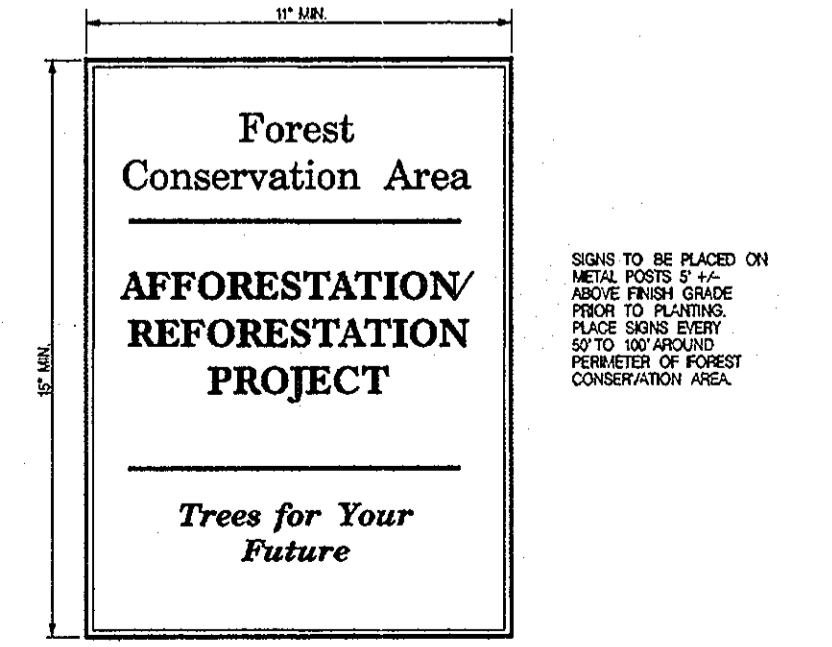
Typical Tree Planting (For container grown)

Not To Scale



Planting Design Schematic

Not To Scale



Permanent Signage

Not To Scale

FOREST CONSERVATION CALCULATIONS-PHASE I AND II COMBINED

BASIC SITE DATA	ACRES (110)
GROSS SITE AREA	59.56
AREA WITHIN 100 YEAR FLOODPLAIN	4.33
AREA WITHIN AGRICULTURAL USE OR PRESERVATION PARCEL (IF APPLICABLE)	0.00
NET TRACT AREA	55.03
LAND USE CATEGORY	RESIDENTIAL

INFORMATION FOR CALCULATIONS	
A. NET TRACT AREA	55.03
B. REFORESTATION THRESHOLD (20% x A)	11.01
C. AFFORESTATION MINIMUM (10% x A)	5.50
D. EXISTING FOREST ON NET TRACT AREA	25.30
E. FOREST AREAS TO BE CLEARED	17.05
F. FOREST AREAS TO BE RETAINED	7.92

REFORESTATION CALCULATIONS	
A. NET TRACT AREA	55.03
B. REFORESTATION THRESHOLD (20% x A)	11.01
C. EXISTING FOREST ON NET TRACT AREA	25.30
D. FOREST AREAS TO BE CLEARED	17.05
E. FOREST AREAS TO BE RETAINED	7.75
F. FOREST AREAS CLEARED ABOVE REFORESTATION THRESHOLD	14.28
G. FOREST AREAS CLEARED BELOW REFORESTATION THRESHOLD	3.27
H. FOREST AREAS RETAINED ABOVE REFORESTATION THRESHOLD	0.00

CLEARING BELOW THE THRESHOLD	
IF FOREST AREAS TO BE RETAINED ARE LESS THAN THE REFORESTATION THRESHOLD (IF F IS GREATER THAN B), THE FOLLOWING CALCULATIONS APPLY:	
REFORESTATION FOR CLEARING ABOVE THRESHOLD	3.57
REFORESTATION FOR CLEARING BELOW THRESHOLD	6.54
TOTAL REFORESTATION REQUIRED	10.11
(F)(1/4) + (G)(2)	0.00
CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD	4.0 ACRES
REFORESTATION PROVIDED ON SITE	12.2 ACRES
RETENTION PROVIDED OFF SITE	

GOALS AND OBJECTIVES
 The goals and objectives of this Forest Conservation Plan are to identify forest resources to be retained and cleared under the development of the second phase of the Owens Property, and to identify on-site planting areas and off-site retention areas (on the Myrtle Property) to fully satisfy reforestation obligations for Owens Phase II.

Approximately 2.44 acres of existing forest will be cleared under Phase II, and 2.67 acres of forest will be retained. The Phase II reforestation obligation is 7.23 acres, which will be satisfied through 1.12 acres of on-site reforestation plantings and 12.2 acres of off-site forest retention at the Myrtle property (satisfying a 2:1 obligation of 6.11 acres).

When evaluated cumulatively with Owens Phase I, a total reforestation obligation of 10.11 acres is generated. A total of 4.0 acres of reforestation will be provided on-site (1.12 acres at Owens II, 2.88 acres at Owens I), with the remaining Owens II 6.1 acre obligation to be met off-site (at a 2:1 retention ratio) at the Myrtle Property, where 12.2 acres have been identified for permanent forest retention specifically for this project.

On-site reforestation plantings will consist of 1" caliper stock to encourage respect for plantings and to provide aesthetically pleasing reforestation areas. All reforestation and forest retention areas will be placed into "non-disturbance" forest conservation easements (FCEs) to ensure long-term viability and success of the areas, and to protect the natural resources within these areas.

FOREST RETENTION
 Tree retention/Soil Protection areas will be delineated with temporary forest protection fencing and retention area signage as appropriate. See forest protection fence and temporary signage Detail prior to the beginning of any construction activity. Attachment of signs to trees is prohibited.

PRECONSTRUCTION MEETING/CONSTRUCTION PERIOD PRACTICES
 Any changes to the plan due to on-site conditions must be approved by the Howard County Department of Planning and Zoning. No grading, excavation, utility placement, sediment and erosion control activities, or vehicular traffic will occur within forest retention areas. Storage of equipment and materials shall not be permitted in the forest retention areas. There will be no burial or disposal of discarded material on-site within the retention area. There will be no open burning within 100 feet of woodlands. Temporary structures including, but not limited to construction trailers, sanitary facilities, etc. shall not be placed within the forest retention areas. Employee parking shall not be permitted in the forest retention areas.

POST CONSTRUCTION MANAGEMENT/MAINTENANCE BY CONTRACTOR
 All dead trees or tree limbs which pose an immediate safety hazard will be felled. Trees dropped within the forest retention area will not be removed. All temporary forest protection structures will be removed after construction and permanent signage will be placed where indicated on the plan. A 2-year Contractor's Maintenance and Monitoring Period shall begin at mobilization. Seventy five percent survivorship must be guaranteed for this period. The site shall be inspected at the end of the two year period to ascertain survivorship and provide for replacement if necessary. The Contractor's maintenance of new planting shall consist of watering, cultivating, weeding, and mulching as necessary to insure survival. Contractor shall protect planting areas and plants at all times against damage of all kinds for duration of maintenance period. Maintenance includes temporary protection barriers and signs as required for protection. If any plants become damaged or injured, because sufficient protection was not provided, treat or replace as directed by Landscape Architect at no additional cost to Owner.

ALL FOREST RETENTION & REFORESTATION AREAS SHOWN ON THIS PLAN TO BE PLACED IN FOREST CONSERVATION EASEMENT

STANDARDS AND SPECIFICATIONS FOR PLANTING

- 1. PLANT MATERIAL SELECTION 1" CALIPER OR GREATER**
 Nursery grown plant materials should meet or exceed the requirements of the American Nurseryman Specifications, i.e. should be typical of the species and variety, have a normal habit of growth, be first quality, sound, vigorous, well-branched, have healthy, well-furnished root systems, and be free of disease, insect pests and mechanical injuries.
- 2. PLANTING SITE PREPARATION**
 Soils shall not be disturbed outside the area necessary for planting individual specimens and the removal of exotic invasive plant material. These areas should be stabilized as shown on the temporary seeding notes on sheet 8.
- 3. PLANTING PERIOD**
 All material shall be planted between September 15 and May 31. Material shall not be installed when ground is frozen.
- 4. PLANT MATERIAL STORAGE**
 Plants should be planted within 24 hours of delivery if possible. Plant material which are left unplanted for more than 24 hours shall be protected from direct sun and weather and kept moist. Nursery stock should not be left unattended for more than two weeks.
- 5. ON-SITE INSPECTION**
 Prior to planting, planting stock shall be inspected by the landscape architect or other qualified professional familiar with this plan. Plant material not conforming to standard nurseryman specifications for size, form, vigor, roots, trunk wounds, insects and disease should be replaced.
- 6. TOPSOIL FOR PLANTING SOIL**
 A. On-site material or imported from same source as topsoil used on site for finish grading.
 1. Uniform composition, free of subsoil, clay lumps, stones, stumps, roots or similar objects larger than 1 inch.
 2. Topsoil must be free of plants or plant parts of bermudagrass, quackgrass, Johnsongrass, nutsedge, poison ivy, Canada thistle, or others as specified.
 3. All topsoil shall be tested by a recognized laboratory for pH and soluble salts. A pH of 4.5 to 7.5 is required. Soluble salts shall not be higher than 500 parts per million.
 7. ADDITIVE FOR BACKFILL SOIL
 A. Wood Residuals:
 1. Source shall be well composted, not chemically treated.
 2. Physical properties - grading:

U.S. Sieve	Dry Weight Percent Passing
3/8"	100
1/2"	90 - 100
No. 8	70 - 100
No. 35	0 - 30

 3. Organic content by ash analysis: 90 - 100 percent dry weight
 4. Chemistry:
 a. Saturation Extract Conductivity (EC) ———— NI - 3.5
 b. Reaction (pH) ———— 3.0 - 5.5
 5. Salinity: Maximum saturation extract conductivity 1.0 millimhos per cm at 25 degrees centigrade.

B. Sand

1. Physical Properties - Grading:

U.S. Sieve	Dry Weight Percent Passing
No. 4	100
No. 10	95 - 100
No. 35	80 - 100
No. 60	65 - 100
No. 100	0 - 50
No. 150	0 - 20
No. 270	0 - 7

2. Chemistry:
 Saturation Extract Conductivity (EC) ———— NI - 3.0
 Sodium Absorption Ratio (SAR) ———— NI - 6.0
 Boron - ppm in saturation extract solution ———— NI - 1.0
 Reaction (pH) ———— 6.0 - 7.5
 Available calcium - sodium acetate extractable - ppm ———— NI - 2000
 dry weight

3. Treble Superphosphate: Commercial product containing 19 to 20 percent available phosphoric acid.

4. MULCH
 A. Shredded long fiber hardwood.
 B. Mulch shall have been shredded within the last six (6) months.

9. LAYOUT AND EXCAVATION OF PLANTING AREAS

A. Plants shall be placed in each zone at random locations shown at spacing as indicated on the plan.
 B. The Landscape Architect or qualified professional will check location of plants in the field and shall adjust to exact position before planting begins.
 C. Subsoil shall not be worked when moisture content is so great that excessive compaction will occur, nor when it is so dry that clods will not readily break. Water shall be applied, if necessary, to bring soil to an optimum moisture content before tilling and planting.
 D. Tree pits shall not be excavated more than 24 hours in advance of planting operation. Tree pits shall be excavated to the following dimensions:

Excavation for	Width	Depth
Canes + 12 in.	Can + 4 in.	Can + 4 in.
Canes + 12 in.	Can + 4 in.	Can + 4 in.
Excavation for	Width	Depth
Shrubs	Ball or Can + 8 in.	Can + 4 in., not less than 12 in.

10. PREPARING PLANT MATERIALS FOR PLANTING
 A. Container stock shall be removed carefully after canes have been cut on two sides with approved cutter. Do not use spade to cut canes. Do not lift or handle container plants by tops, stems or trunks at any time.
 B. Do not bend or handle any plant with wire or rope at any time so as to damage bark or break branches. Lift and handle plants only from bottom of ball.
 C. Balled and burlapped (BBB) plants shall have firm balls of earth. Plants moved with a ball will not be accepted if the balls cracked or broken before or during planting operations. BBB material shall be dug only when dormant. Pre-dug stored BBB material shall be inspected and approved at the storage site.
 D. Do not force roots for bare rooted trees into excavated pits - custom dig pits to receive roots without deformation, during the mixing process.

12. INSTALLATION OF CONTAINERIZED PLANT MATERIAL
 A. Scarify the walls and bottom of all plant pits immediately prior to the placement of plant and backfill mix. The Contractor shall remove all glazing of soil caused by an auger or mechanical hole digger.
 B. Wells around trees and shrubs, after planting is complete, form a soil well 3 inches high around each plant, extending to the outer limit of the plant pit accordance with planting details shown on the Drawings.
 C. Smooth planted areas to conform to specified grades after full settlement as occurred. Contractor shall bear final responsibility for proper surface drainage of planted areas. Any discrepancy in the drawings or specifications, obstructions on the site or prior work done by another party, which Contractor feels precludes establishing proper drainage shall be brought to the attention of the Landscape Architect in writing.
 D. Water all plants immediately again after planting.
 E. Spread mulch in required areas to the compacted depth of 2 inches.
 F. Install tree shelters around new plantings.

GUARANTEE:
 A MINIMUM SURVIVAL RATE OF 75% IS TO BE GUARANTEED BY THE DEVELOPER AT THE END OF THE TWO YEAR MAINTENANCE PERIOD.

- NOTE:
1. THE PRECISE LOCATION OF PLANT MASSINGS WILL BE LOCATED IN THE FIELD BY LANDSCAPE ARCHITECT.
 2. GRID PATTERNS WILL BE AVOIDED
 3. PLANT MATERIAL MAY BE GROUPED IN CLUSTERS OF NO MORE THAN 5 TO 7 INDIVIDUAL PLANTS OF THE SAME SPECIES. PLANTS WILL BE INSTALLED IN A RANDOM FASHION WITHIN SPECIFIED ZONES.
 4. ALL PROPOSED SPECIES ARE TREES. NO SHRUBS SHALL BE PLANTED.

No As-Built information is required on this sheet



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

A SURETY IN THE AMOUNT OF \$23,262 (2.67 ACRES x \$0.20/s.f.) WILL BE REQUIRED FOR ON-SITE FOREST RETENTION FOR PHASE II ONLY. A SURETY IN THE AMOUNT OF \$106,287 (12.2 ACRES x \$0.20/s.f.) WILL BE REQUIRED FOR OFF-SITE FOREST RETENTION AT THE MYRTUE SITE. A SURETY IN THE AMOUNT OF \$ 23,969* (1.12 ACRES x \$0.50/s.f.)* WILL BE REQUIRED FOR ON-SITE REFORESTATION. THE TOTAL SECURITY AMOUNT REQUIRED FOR PHASE II WILL BE \$153,518.00*.

*NOTE: SURETY AMOUNT HAS BEEN REDUCED BY \$425.00 TO OFFSET LANDSCAPING ADDED FOR PERIMETER 2, AS SHOWN BELOW.

OVERSTORY TREES
 2 TREES @ 200 SF CREDIT EACH = 400 SF CREDIT

ORNAMENTAL TREES
 3 TREES @ 150 SF CREDIT EACH = 450 SF CREDIT
 250 TOTAL CREDIT
 x \$0.50 SF CREDIT
 \$425.00 SURETY CREDIT

DATA SOURCES:
 LOCATIONS OF TREELINES, STREAMS, TOPOGRAPHY, EX-STRUCTURES, ETC., DERIVED FROM LOW-LEVEL FLIGHT & AERIAL PHOTO ACQUIRED APRIL 8, 2002
 BOUNDARY SHOWN PER BOUNDARY SURVEY DATED SEPTEMBER, 2002, PREPARED BY DAFT MCGUIRE - WALKER, INC.
 SOILS (IF SHOWN) TAKEN FROM HOWARD COUNTY SOIL SURVEY, 1968.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
 William J. Walker, Chief, BUREAU OF HIGHWAYS, DATE 1-19-04

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
 Candy Stambler, Chief, DIVISION OF LAND DEVELOPMENT, DATE 2/9/06

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
 David Walker, Chief, DEVELOPMENT ENGINEERING DIVISION, DATE 1/21/06

Date	No.	Revision Description

FINAL PLAN
OWENS PROPERTY PHASE II
 LOTS 43 THRU 97 AND OPEN SPACES LOTS 98, 99 & 100
 NON-BUILDABLE BULK PARCELS 'A' AND 'B'
 TAX MAP # 31 PARCEL 243, 572

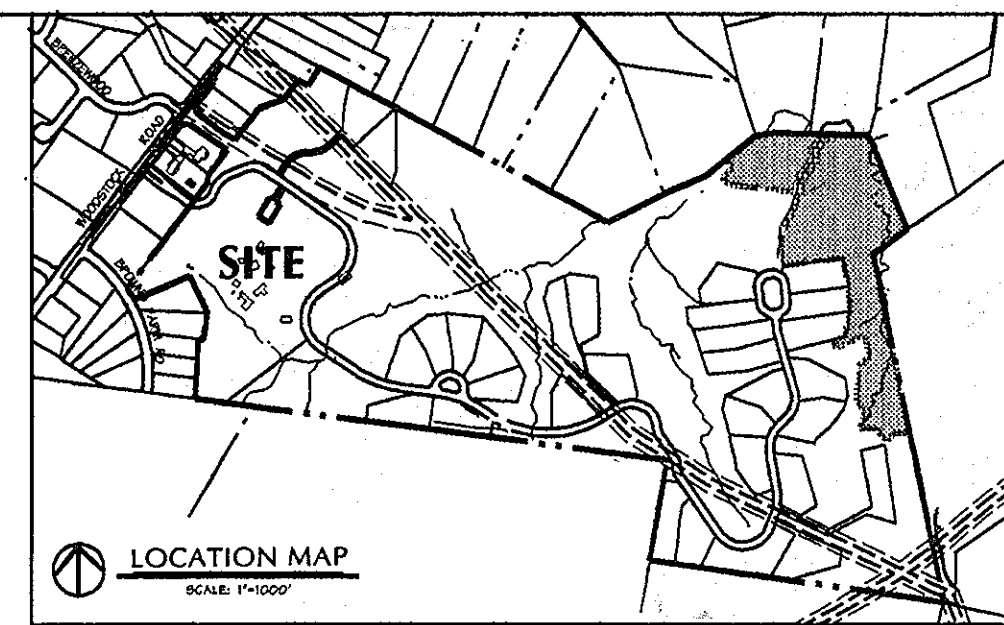
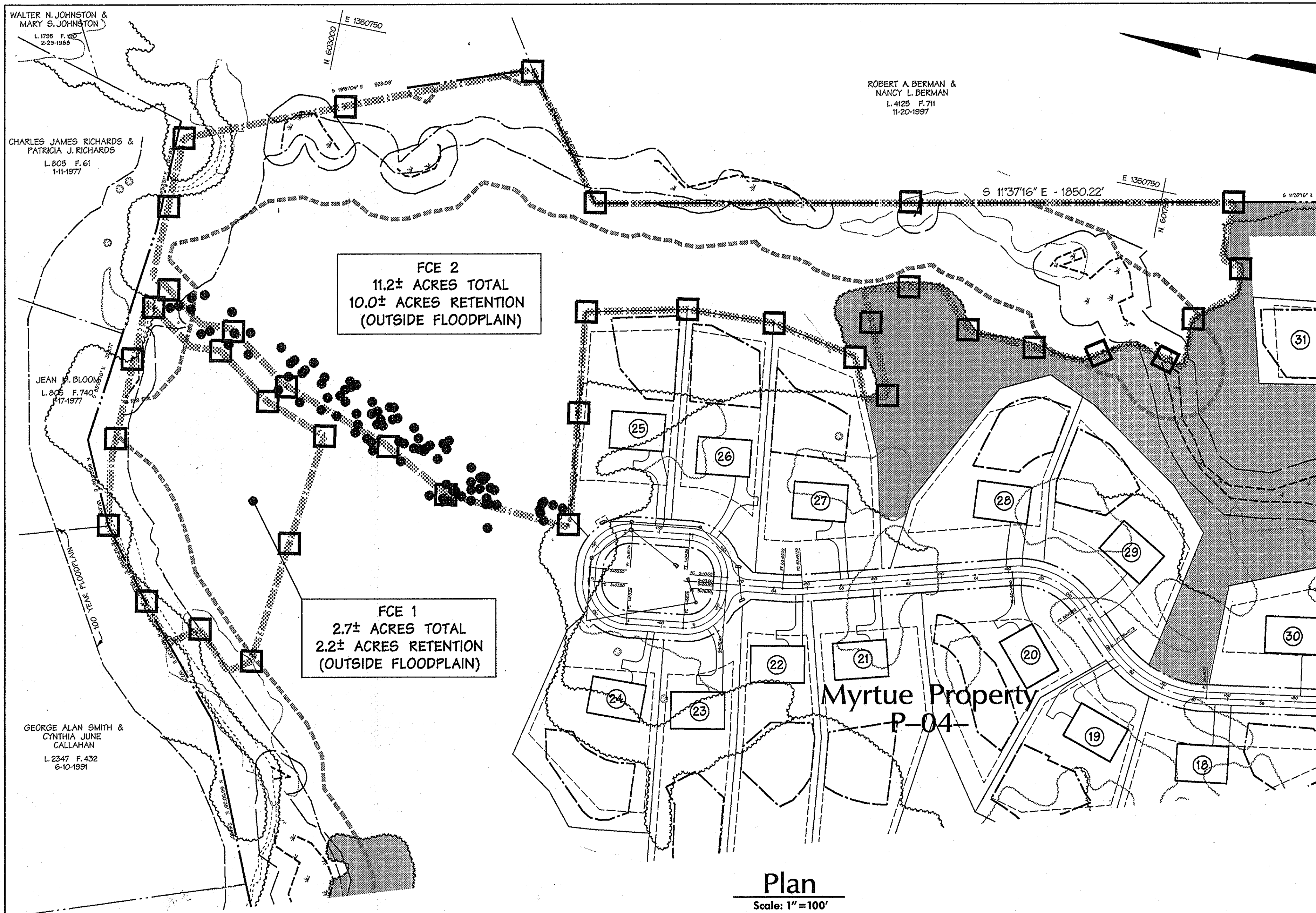
OWNER /DEVELOPER:
 PATAPSCO LANDING, LLC
 c/o James Keelty and Co. Inc.
 P.O. Box 528
 61 E. Padonia Road.
 Timonium, MD 21093

DMW
 Daft McCune Walker, Inc.
 300 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 296-3333
 Fax 296-4705

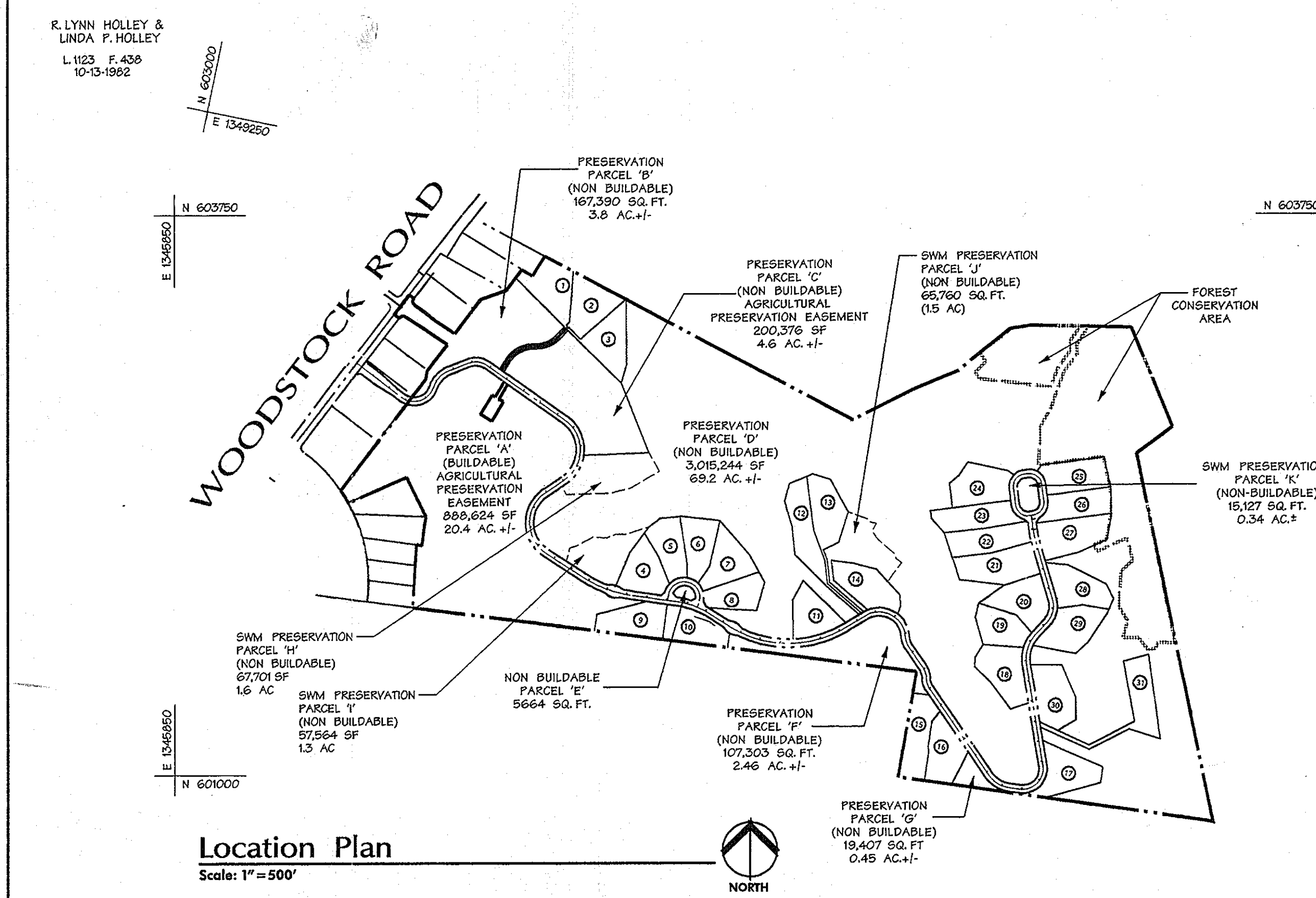
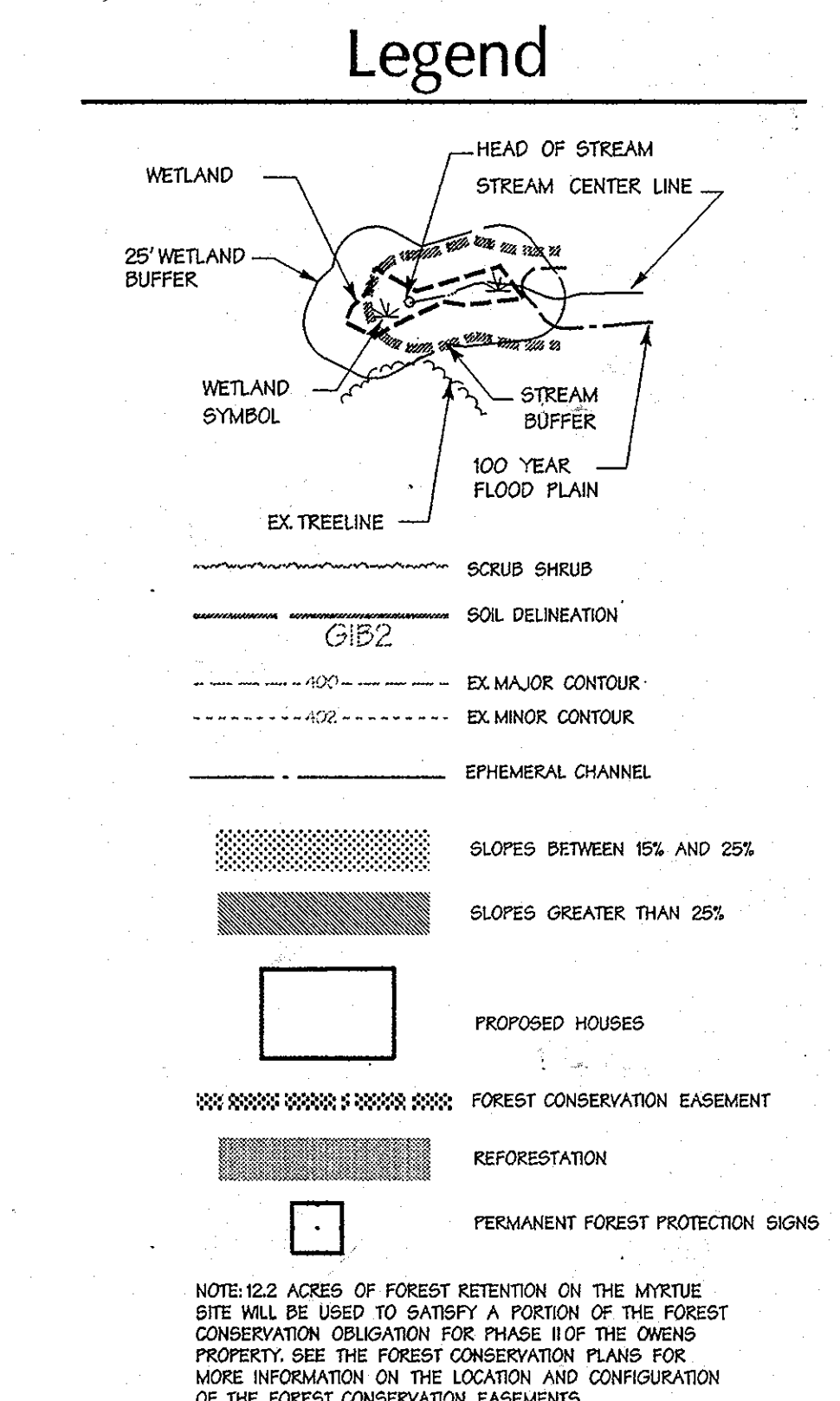
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

TITLE			
FINAL FOREST CONSERVATION NOTES & DETAILS			
Des By	SNH	Scale	1" = 50'
Proj. No.	01086.D		
Drn By		Date	1/4/06
Chk By	KRK	Approved	26 OF 27

AS-BUILT F-05-121



12.2 ACRES OF NON-FLOOD PLAIN FOREST RETAINED ON MYRTUE PROPERTY (MAP 10, GRID 10, P 225) TO PARTIALLY FULFILL THE OWENS PHASE II FOREST CONSERVATION OBLIGATION



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
William F. ... 1-19-06
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
... 4/27/06
CHIEF, DEVELOPMENT ENGINEERING DIVISION

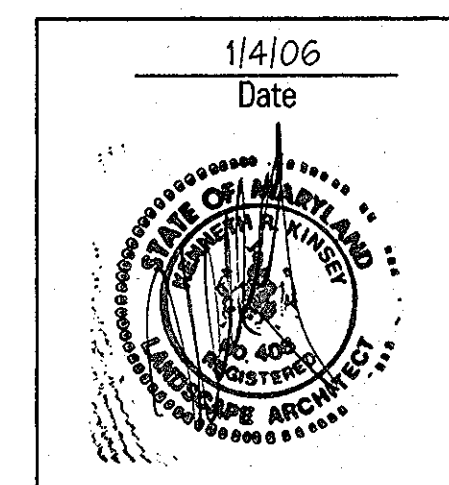
... 2/8/06
CHIEF, DIVISION OF LAND DEVELOPMENT

Date	No.	Revision Description
		FINAL PLAN PHASE II OWENS PROPERTY (MYRTUE PROPERTY SHOWN)
		LOTS 43 THRU 97 AND OPEN SPACES LOTS 98,99 & 100 NON-BUILDABLE BULK PARCELS 'C' AND 'D' TAX MAP 31 PARCELS 243, 572 MYRTUE PROPERTY MAP 10, GRID 10, PARCEL 225
		OWNER/DEVELOPER: PATAPSCO LANDING, LLC c/o James Kaelty and Co. Inc. P.O. Box 528 61 E. Padonia Road. Timonium, MD 21093

No As-Built Information is required on this sheet



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



DATE: 1/14/06		
TITLE: FOREST CONSERVATION PLAN OFFSITE FOREST CONSERVATION AREAS		
Des. By: KAD	Scale: AS SHOWN	Proj. No.: 01086.D
Dm. By: WDE	Date: 1/14/06	27 of 27
Chk. By: K.R.K.	Approved:	

AS-BUILT

F-05-121