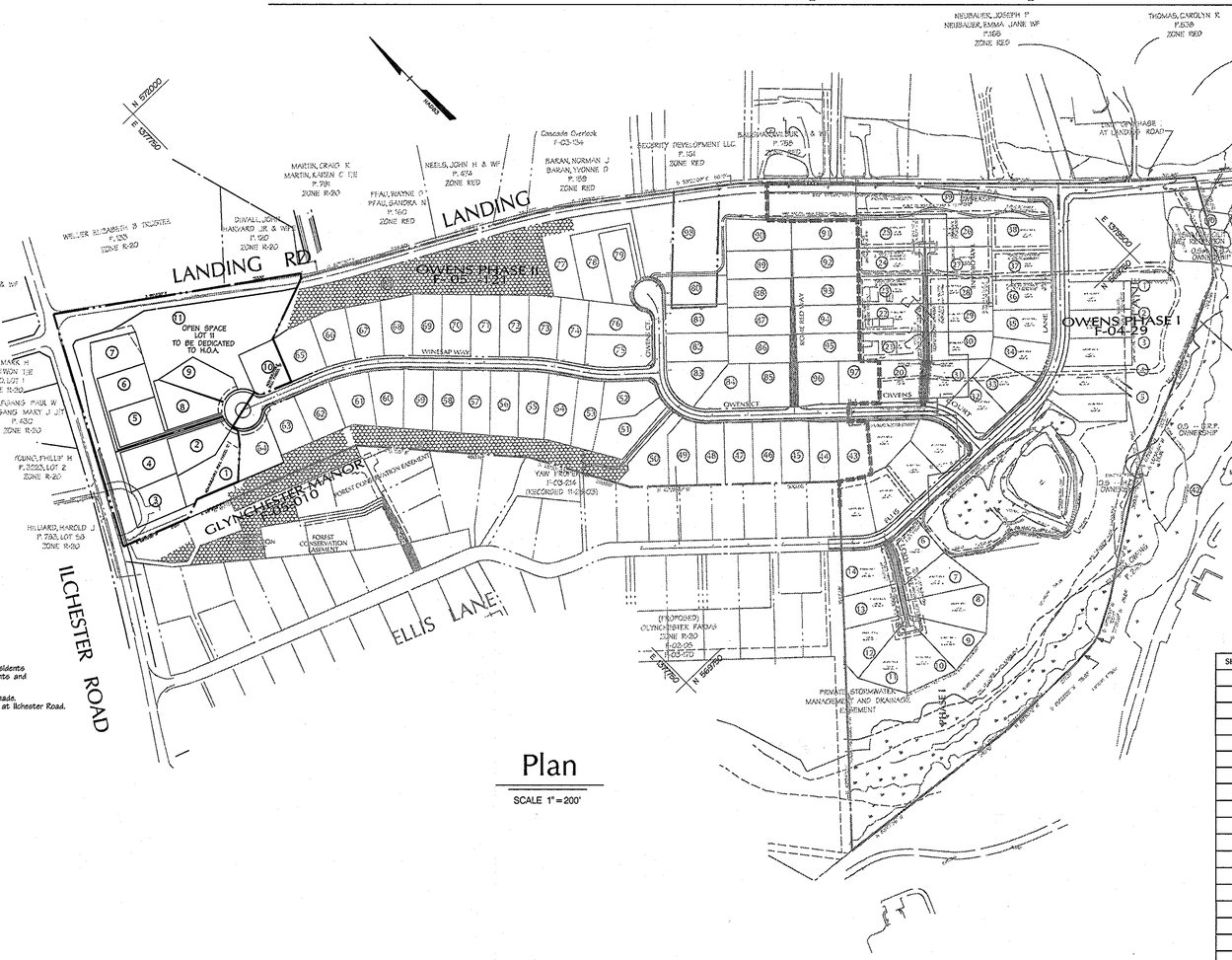
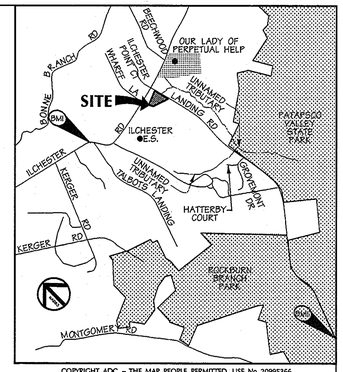
Final Plan
Zaiser Property
Lots 1–10, Open Space Lot 11
A Re–Subdivision Of Non–Buildable Bulk Parcels 'C' and 'D'
Howard County , Maryland

General Notes

1. All construction shall be in accordance with the latest standards and specifications of Howard County plus MSHA standards and specifications if applicable.
2. The contractor shall notify the Department of Public Works/Bureau of Engineering/Construction Inspection division at 410-313-1880 at least five (5) working days prior to the start of work.
3. The contractor shall notify "Miss Utility" at 1-800-257-7777 at least 48 hours prior to any excavation work being done.
4. Traffic control devices, markings and signing shall be in accordance with the latest edition of the Manual of Uniform Traffic Control Devices (MUTCD). All streets and regulatory signs be in place prior to the placement of any asphalt.
5. Street light placement and the type of fixture and pole shall be in accordance with the Howard County Design Manual, Volume III (1993) and as modified by "Guidelines for Street Lights in Residential Developments (June 1993)." A minimum 20 feet spacing shall be between the light and any tree.
6. The existing topography is taken from low level flight and aerial survey with 2' contour intervals prepared by 3DI dated April 6, 2002.
7. The coordinates shown hereon are based upon the Howard County Geodetic Control which is based upon the Maryland State Plane Coordinate System. Howard County Monument Nos. 31EA and 37CA were used for this project.
8. The traffic study for this project was prepared by The Traffic Group and was approved on March 28, 2002. APFO Traffic Analysis is not required for this project. This project is located farther than 1½miles from the intersection of two major collector roadways.
10. Sidewalk ramps shall meet current ADA requirements.
11. Project background information:
    Subdivision Name: Zaiser Property
    Total Area 7.6 Acres (0.6 Ac Non Buildable Bulk Parcels to be re-subdivided)
    Tax Map: 31
    Grid: 10
    Parcel: 157
    Phase II - Lot/Parcel: 157
    Zoning: R-20
    Election District: 1
    Preliminary Plan Approval Date : 8/10/05
    File Numbers: F-03-08, S-02-15, F-04-29, F-05-08
12. Street trees shall be planted at least 5' from any inlet structure.
13. This project complies with Section 16.1200 of the Howard County Code for Forest Conservation. Under this plan, no forest clearing or retention is proposed, and an afforestation obligation of 1.05 acres is generated. This obligation will be met by retaining existing forest acreage on an off-site parcel at a 2:1 ratio in accordance with Howard County regulations, 2.1 acres of existing forest will be permanently retained in a Forest Conservation easement on the Myrtue Property. (F-06-104)
14. Stormwater Management for this project will be addressed with the installation of one Stormwater Management Facility (Dry Extended Detention) which will control the runoff per the latest approved Design Standards. Credits are being utilized to meet the stormwater management requirement. Credits used include Open Grass Channels.
15. The Stormwater management pond will be owned by the Zaiser Property H.O.A. - there will be a public easement (Howard County) on the facility. The pond will be jointly maintained by the H.O.A. and Howard County. The Sand Filter will be owned and maintained by the H.O.A.
16. Routine maintenance shall be performed by the Home Owner's Association, and non-routine maintenance SWM shall performed by Howard County. The routine and non-routine schedule is shown on sheet 7 of 19.
17. Water and sewer extensions for this project will be public, and the site lies within the metropolitan districts. The drainage area is the Patapsco Watershed. Contract # 14-4304-D.
18. Existing utilities shown are taken from record drawings obtained from Howard County Water & Sewer Contract Nos. W-3698-D and 14-3976-D and from field survey. Contractor shall dig test pits by hand 1 week in advance of construction at all crossings and notify engineer if there are any discrepancies.
19. Boundary shown hereon is based on field survey by DMW dated September, 2002.
20. A noise study is not required for this project.
21. There are no known cemeteries or grave sites on this property.
22. See Howard County Site Inventory HO-420 Cider Mill.
23. Financial surety for the required landscaping in the amount of $20,850.00 must be posted as part of the developer's agreement.
24. Financial surety for the Forest Conservation requirements in the amount of $ 18,286 must be posted as part of the developer's agreement. (2.1 Ac. X 0.20 sf for off-site retention)
25. The Maryland Department of the Environment Tracking Number is 200460572
26. 95% compaction in fill areas to be per AASHTO T-180 standards.
27. Landing Road is a Scenic Road.
28. All sign posts used for traffic control signs installed in the County Right of Way shall be mounted on a 2" galvanized steel perforated, square tube post(14 gauge) inserted into 21/2" galvanized steel, perforated, square tube sleeve(12 gauge)- 3' long. A galvanized steel pole cap shall be mounted on top of each post.
29. There is no Floodplain on this site as defined in the Howard County Design Manual.
30. There are no Wetlands on this site.
31. This project is subject to the 5th Edition of the Subdivision and Land Development Regulations and the 1993 Zoning Regulations amended by CB50-2001 (effective 1-8-02).
32. The HOA Open Space shown hereon as Lot 11 are hereby dedicated to a property association for the residents of this subdivision. The Articles of Incorporation have been filed with the State Department of Assessments and Taxation, with the recording
33. The sidewalk on Ilchester Road is to be extended to Landing Road when future road improvements are made. These improvements will include a deceleration lane on Ilchester Road and a realignment of Landing Road at Ilchester Road. These improvements will be made by Howard County.
34. The Right Of Way for part of the cul-de-sac was dedicated under OWENS PROPERTY, Phase II, F-05-121



Plan
SCALE 1" = 200'



COPYRIGHT ADC – THE MAP PEOPLE, PERMITTED USE No. 20995366

LOCATION MAP
SCALE: 1" = 2000'

BENCHMARK
DESCRIPTION

BM1
#31EA-DISC SET IN CONCRETE
N 568941.923
E 1374815.935
ELEVATION = 468.90
2 FT. SOUTH OF SIDEWALK ON ILCHESTER ROAD
±47.1 FT. FROM GATE IN FENCE ON TRANSMISSION LINE R.O.W.

BM2
#37CA-DISC SET IN CONCRETE
N 564321.656
E 1382742.880
ELEVATION = 256.965
20.6' SOUTH OF CENTERLINE OF LANDING ROAD
.25 MILES NORTHWEST ON LANDING ROAD FROM INTERSECTION OF LANDING ROAD AND MONTGOMERY RD.

Sheet Index

DATA SOURCES

BOUNDARY SHOWN PER BOUNDARY SURVEY DATED SEPTEMBER, 2002., PREPARED BY DAFT- McCUNE - WALKER, INC.

SOILS (IF SHOWN) TAKEN FROM HOWARD COUNTY SOIL SURVEY, 1968.

THE EXISTING TOPOGRAPHY IS TAKEN FROM LOW LEVEL FLIGHT AND AREIAL SURVEY WITH 2' CONTOUR INTERVALS PREPARED BY 3DI, DATED APRIL 6, 2002 AND ON-SITE FIELD RUN TOPOGRAPHY BY DMW, INC. DATED SEPTEMBER, 2004.

9/5/06
Date

Professional Engr. No. 14230

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 1-3-07

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT JA — DATE 1/10/07

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 1/9/07

Date	No.	Revision Description

FINAL PLAN

ZAISER PROPERTY

LOTS 1 THRU 10 AND OPEN SPACE LOT 11
AND THE RE-SUB DIVISION OF
NON-BUILDABLE BULK PARCELS 'C' AND 'D'
TAX MAP 31 PARCEL 243, 572

OWNER/DEVELOPER:

Ilchester Farm LLC
c/o James Keelty 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) 296-3333
Fax 296-4705

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

SUBDIVISION NAME		SECTION/AREA		LOT/PARCEL #
ZAISER PROPERTY				157
PLAT# OR L/F	BLOCK #	ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
	10,11,16,17	R-20	31	1	

TITLE

ZAISER PROPERTY
FINAL PLAN
COVER SHEET

Des By		Scale AS SHOWN	Proj. No. 02059.B
Drn By	GMO	Date 9/7/06	1 of 19
Chk By		Approved	

F-06-116

Fri Sep 1 11:42:44 2006 m:\02059\Final\02059.DWG

CURVE DATA

FROM-TO	DELTA	RADIUS	LENGTH	TANGENT	CHORD	
0+00 - 0+38.80	55°34'57"	40.00'	38.80'	21.08'	S 83°17'48" W	37.30'
0+38.80 - 3+03.06	291°09'55"	52.00'	264.25'		N 21°05'17" E	58.78'
3+03.06 - 3+41.86	55°34'57"	40.00'	38.80'	21.08'	S 41°07'15" E	37.30'

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

11-1-13

FOR REVISIONS BY BENCHMARK ENGINEERING INC. ONLY

OWENS PROPERTY
PHASE II
F-05-121

STREET LIGHT LEGEND

▲ 100-WATT HPS VAPOR PREMIER POST-TOP FIXTURE MOUNTED ON A 14' BLACK FIBERGLASS POLE

STREET LIGHT TABLE

ROAD STATION & OFFSET	DESCRIPTION
L.P. STA. 2+10.66 4.82' LT.	100-WATT HPS VAPOR PREMIER POST-TOP FIXTURE MOUNTED ON A 14' BLACK FIBERGLASS POLE

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 1-3-07

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 1/10/07

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 1/9/07

Date	No.	Revision Description	BY
10/30/13	1	CHANGE RCCP TO HDPE	BEI

FINAL PLAN

ZAISER PROPERTY

LOTS 1 THRU 10 AND OPEN SPACE LOT 11
AND THE RE-SUB DIVISION OF
NON-BUILDABLE BULK PARCELS 'C' AND 'D'
TAX MAP 31 PARCEL 243, 572

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

SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL #
ZAISER PROPERTY		157

PLATS OR L/F	BLOCK #	ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
	10,11,16,17	R-20	31	1	

TITLE

ZAISER PROPERTY
FINAL PLAN
WINESAP WAY PROFILE

12-15-06
Date

20784
Professional Engr. No.

Des. By KAD	Scale 1" = 50'	Proj. No. 02059.B
Drn. By GMO	Date 10/25/06	2 of 19
Chk. By	Approved	

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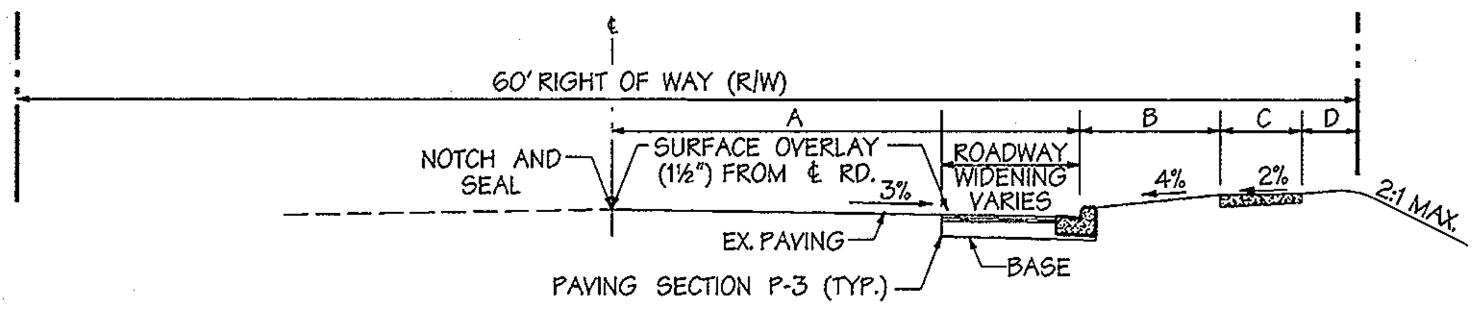
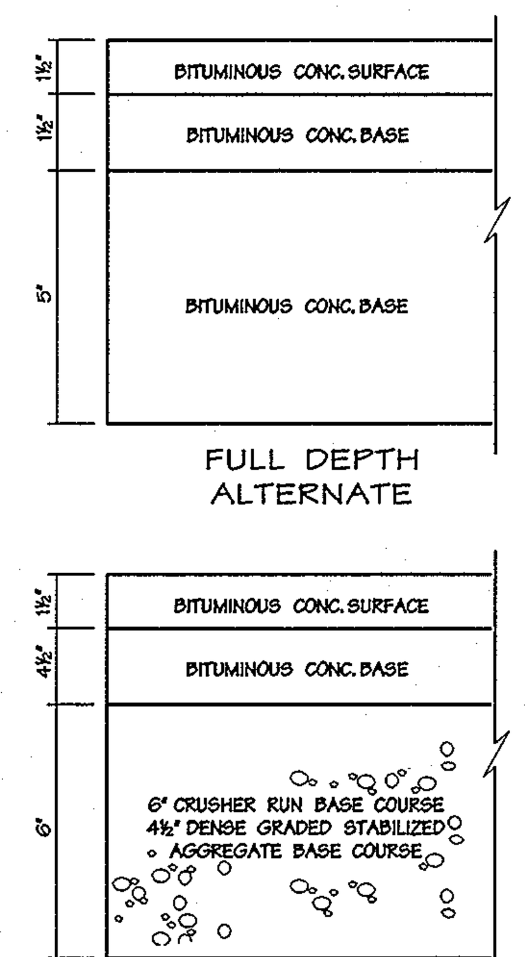


CLASSIFICATION		A	B	C	D	R/W
MINOR COLLECTOR	500 ADT	19' ±	6'	4'	1'	60'

ILCHESTER ROAD TYPICAL ROAD WIDENING SECTION

NOT TO SCALE



PAVING SECTION P-3 MINOR COLLECTOR

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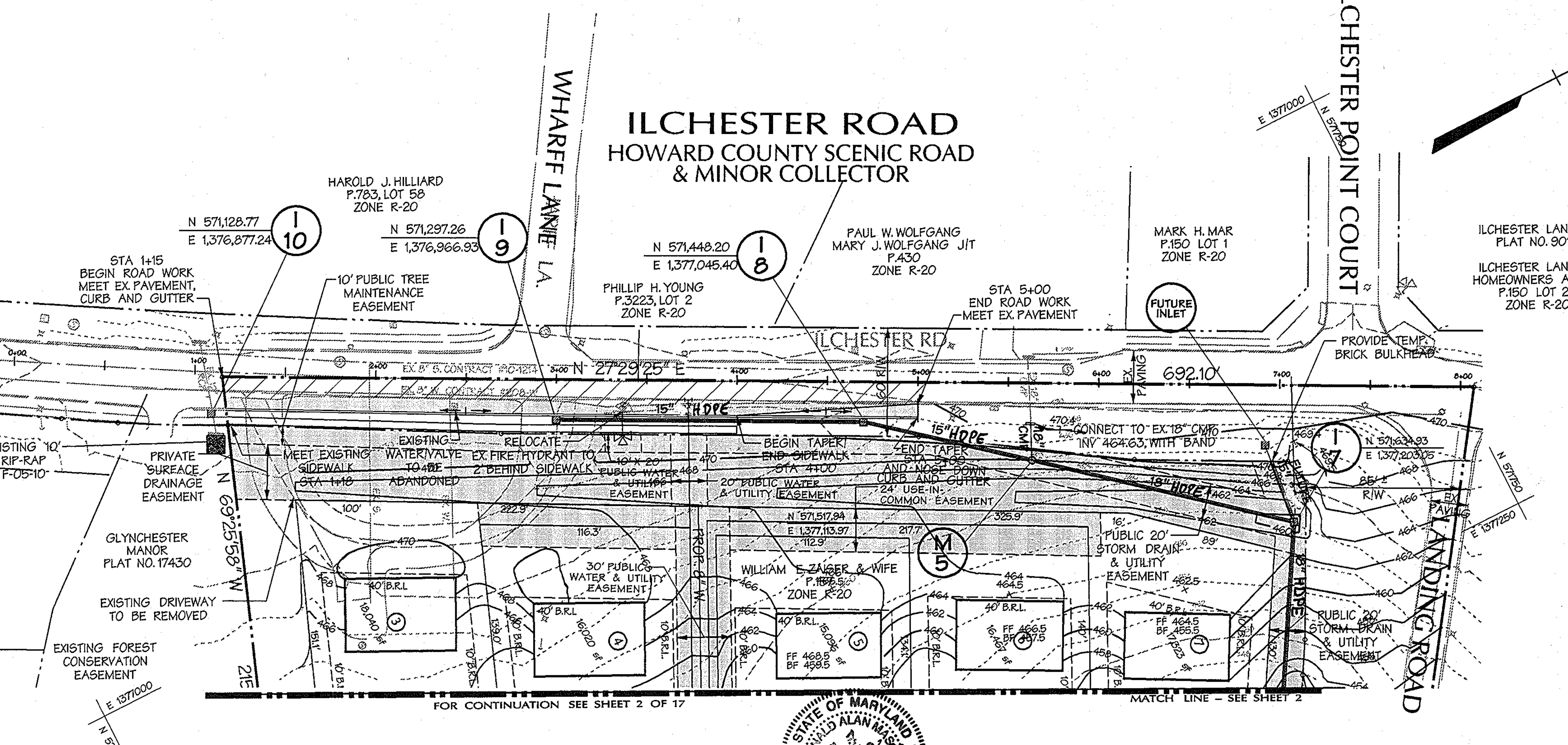

PLAN

SCALE: 1"=50'

DONALD ALAN MASON, STATE OF MARYLAND, PROFESSIONAL ENGINEER, No. 21443 (seal) 11-1-13

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.

License No. 21443 Expiration Date: 12-21-14

FOR REVISIONS BY BENCHMARK ENGINEERING, INC.

LEGEND

(shaded)	FULL DEPTH PAVING (P-3)
(hatched)	1½" RESURFACING, WEDGE & LEVELING COURSE

9/5/06
Date

Professional Engr. No. 14230

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — 1-3-07 DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — 1/10/07 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 1/9/07 DATE

Date	No.	Revision Description
10/31/2013	1	CHANGE RCCP TO HDPE

FINAL PLAN
ZAISER PROPERTY

LOTS 1 THRU 10 AND OPEN SPACE LOT 11
AND THE RE-SUB DIVISION OF
NON-BUILDABLE BULK PARCELS 'C' AND 'D'
TAX MAP 31 PARCEL 243, 572

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SUBDIVISION NAME	SECTION/AREA			LOT/PARCEL #
ZAISER PROPERTY				157
PLAT# OR L/F	BLOCK # 10,11,16,17	ZONE R-20	TAX/ZONE MAP 31	ELECT. DISTRICT 1	CENSUS TRACT

TITLE
ZAISER PROPERTY
FINAL PLAN
ILCHESTER ROAD

Des. By KAD	Scale 1" = 50'	Proj. No. 02059.B
Drn. By GMO	Date 9/7/06	3 of 19
Chk. By	Approved	

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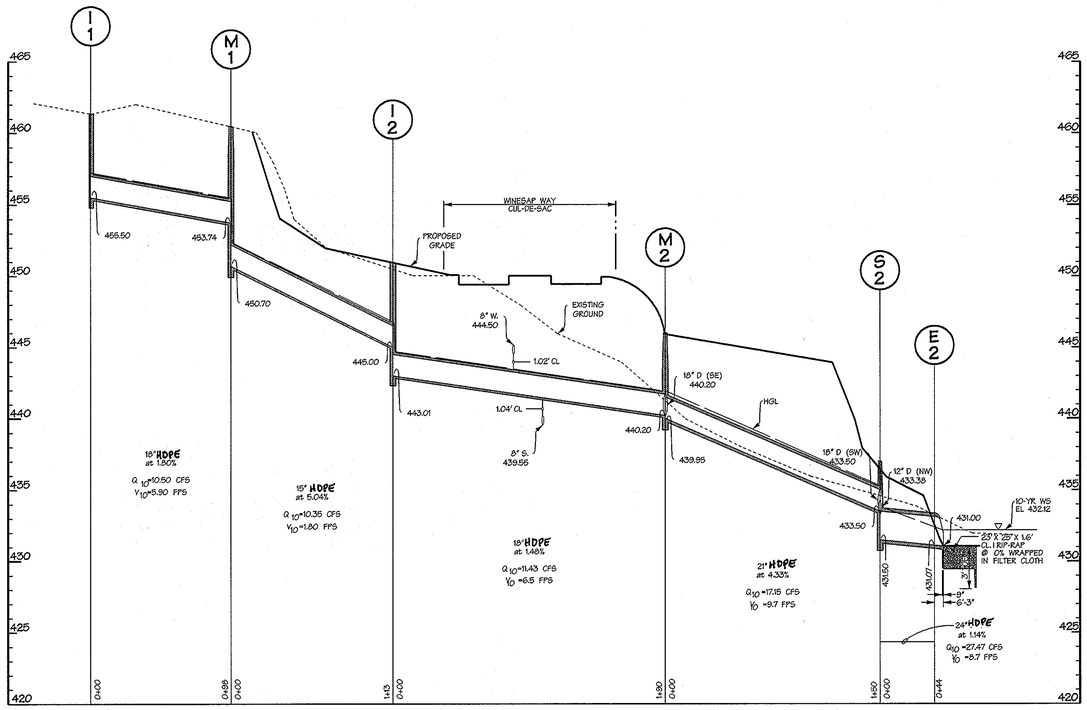
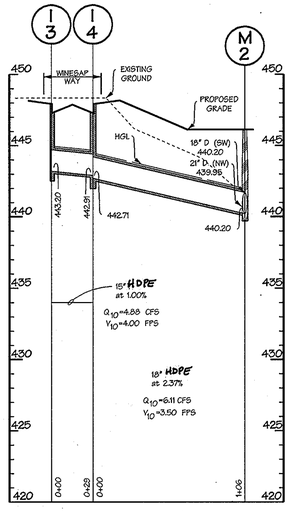
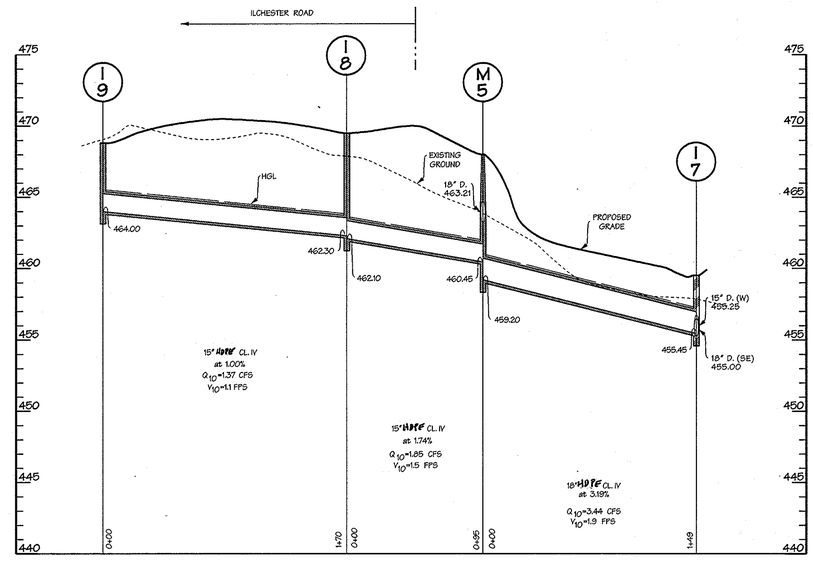
F-06- 116



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





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SCALE: HORZ. 1" = 50'
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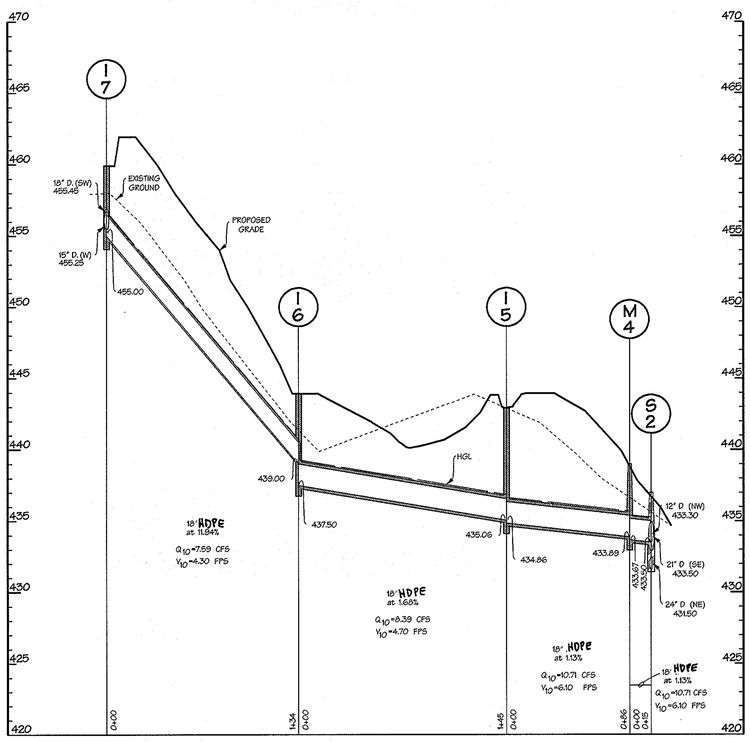

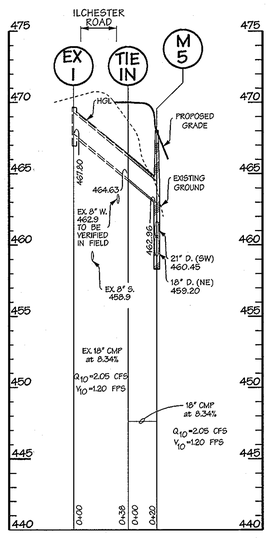

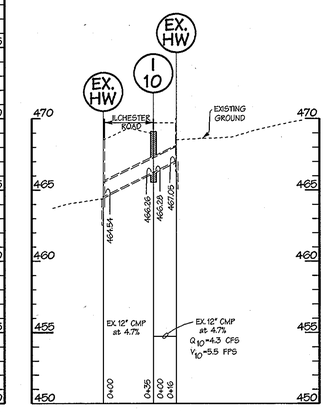

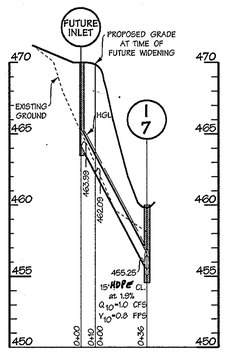

FOR REVISIONS BY BENCHMARK ENGINEERING, INC.

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

10-1-13

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

STRUCTURE SCHEDULE

NO.	TYPE	SIZE	INV. OUT	TOP ELEV.	LOCATION
I-1	TYPE 'D' INLET SD-4.11		455.50	461.50	SEE PLAN
I-2	TYPE 'S' INLET SD-4.22		443.01	451.00	SEE PLAN
I-3	TYPE 'A-5' INLET SD-4.01		443.20	448.00	SEE PLAN
I-4	TYPE 'A-5' INLET SD-4.01		442.71	448.00	SEE PLAN
I-5	TYPE 'D' INLET SD-4.11		434.86	443.00	SEE PLAN
I-6	TYPE 'D' INLET SD-4.11		437.50	444.00	SEE PLAN
I-7	TYPE 'D' INLET SD-4.11		455.00	460.00	SEE PLAN
I-8	TYPE 'A-5' INLET SD-4.01		462.10	470.10	STA 4+70 OFF 22.0' RT
I-9	TYPE 'A-5' INLET SD-4.01		464.00	469.40	STA 3+00 OFF 21.5' RT
I-10	TYPE 'A-5' INLET SD-4.01		466.26	469.10	STA 1+10 OFF 23.0' RT
*S-2	TYPE 'A-10' INLET SD-4.02 MODIFIED		431.50	436.60	SEE PLAN
S-1					
M-1	STD. G-5.12	48"	450.70	460.50	SEE PLAN
M-2	STD. G-5.13	60"	439.95	446.00	SEE PLAN
M-4	STD. G-5.12	48"	433.67	439.00	SEE PLAN
M-5	STD. G-5.12	48"	459.20	468.00	SEE PLAN
E-1	CONCRETE END SECTION SD-5.51	30"	427.50		SEE PLAN
E-2	CONCRETE END SECTION SD-5.51	24"	431.00	433.53	SEE PLAN
E-3	CONCRETE END SECTION SD-5.51	12"	432.00	433.80	SEE PLAN

NOTE: ELEVATION FOR TYPE 'D' INLETS IS THROAT OPENING ELEVATION, TOP OF CURB FOR TYPE 'A-5'
* SEE SHEET 13 FOR STRUCTURE DETAIL

PIPE SCHEDULE

SIZE	TYPE & CLASS	LENGTH
12"	CMP	16'
15"	HDPE CL IV	340'
18"	HDPE CL IV	1,040'
21"	HDPE CL IV	150'
24"	HDPE CL IV	44'
30"	RCCP CL IV	44'
18"	CMP	38'

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 1-3-07

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 1/10/07
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 1/9/07

Date	No.	Revision Description	By
10-31-13	1	CHANGE RCCP TO HDPE	BSE

FINAL PLAN

ZAISER PROPERTY

LOTS 1 THRU 10 AND OPEN SPACE LOT 11
AND THE RE-SUB DIVISION OF
NON-BUILDABLE BULK PARCELS 'C' AND 'D'
TAX MAP 31 PARCEL 243,572

OWNER/DEVELOPER:

Ilchester Farm, LLC
c/o James Keelty 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) 296-3333
Fax 296-4705

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

SUBDIVISION NAME		SECTION/AREA		LOT/PARCEL #
ZAISER PROPERTY				157
PLAT# OR L/F	BLOCK #	ZONE	TAX/ZONE MAP	ELEC. DISTRICT	CENSUS TRACT
	10,11,16,17	R-20	31	1	

TITLE

ZAISER PROPERTY
FINAL PLAN
STORM DRAIN PROFILES

Des. By KAD/CVS	Scale AS SHOWN	Proj. No. 02059.B	
Drn. By GMO	Date 9/7/06	4 of 19	
Chk. By	Approved		

9/5/06
Date

Professional Engr. No. 14230

F-06-116

Tue Sep 5 11:55:05 2006 m:\02059\final\02059.501

1.86 ACRES C=0.40	A	ZONING R-20 %IMP=40
3.49 ACRES C=0.40	B	ZONING R-20 %IMP=40
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0.18 ACRES C=0.40	M	ZONING R-20 %IMP=40

ILCHESTER LANDING HOMEOWNERS ASSOC P. 150, LOT 26 ZONE R-20

WELLER, ELIZABETH B TRUSTEE P. 133 ZONE R-20

MAR, MARK H MAR JIWON T/E P. 150, LOT 1 ZONE R-22

WOLFGANG, PAUL W WOLFGANG MARY J J/T P. 430 ZONE R-20

YOUNG, PHILLIP H P. 3223, LOT 2 ZONE R-20

HILLIARD, HAROLD J P. 783, LOT 58 ZONE R-20

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

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

PFAU, WAYNE D PFAU, SANDRA N P. 160 ZONE RED

LAND DEDICATED TO HOWARD COUNTY, MARYLAND FOR THE PURPOSE OF ROAD WIDENING

PUBLIC STORMWATER MANAGEMENT DRAINAGE + UTILITY EASEMENT

PRIVATE STORM DRAIN MANAGEMENT, DRAINAGE + UTILITY EASEMENT

PROPOSED SWM EXTENDED DETENTION POND

NON WOODY VEGETATION ZONE

ROYAL COACHMAN DR.

CASCADE OVERLOOK F-03-134

OWENS PHASE II F-05-121

GLYNCHESTER MANOR F-05-010

GLYNCHESTER FARM (F-02-05)

ILCHESTER RD

WINESAP WAY

FUTURE INLET

NOTE:
ULTIMATE IMPROVEMENTS TO ILCHESTER ROAD AND LANDING ROAD ARE SHOWN ON THIS PLAN.

LEGEND

- EX. TREELINE
- EX. MINOR CONTOUR (2' INT.)
- EX. MAJOR CONTOUR (10' INT.)
- AREA OF INTERPOLATED CONTOURS
- EX. STRUCTURE
- PROP. TREELINE (IF SHOWN)
- PROPERTY BOUNDARY
- RIGHT OF WAY LINE
- ROADWAY CENTERLINE
- (91) PROP. LOT NUMBER
- ADJACENT LOT LINE
- PROP. LOT LINE
- BUILDING SETBACK LINE
- STOP SIGN
- EX. UTILITY POLE
- PROPOSED LIGHT POLE
- DRAINAGE DIVIDE
- EASEMENT AREAS
- NON WOODY VEGETATION ZONE

10-31-13	1	CHANGE RCCP TO HDPE BEI
Date	No.	Revision Description

FOR REVISIONS BY BENCHMARK ENGINEERING, INC

DONALD ALAN MAGEE No. 21443 PROFESSIONAL ENGINEER 11-1-13

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

9/5/06
Date

Professional Engr. No. 14230

F-06-116

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 1-3-07

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 1/10/07

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 1/9/07

FINAL PLAN

ZAISER PROPERTY

LOTS 1 THRU 10 AND OPEN SPACE LOT 11
AND THE RE-SUB DIVISION OF
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
Daft-McCune-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

SUBDIVISION NAME		SECTION/AREA		LOT/PARCEL #
ZAISER PROPERTY				157
PLAT OR L/F	BLOCK #	ZONE	TAX/ZONE MAP	ELEC. DISTRICT	CENSUS TRACT
	10,11,16,17	R-20	31	1	

TITLE

ZAISER PROPERTY

FINAL PLAN

STORM DRAIN DRAINAGE AREAS

Des. By KAD	Scale 1" = 50'	Proj. No. 02059.B	
Drn. By GMO	Date 9/7/06	5 of 19	
Chk. By	Approved		

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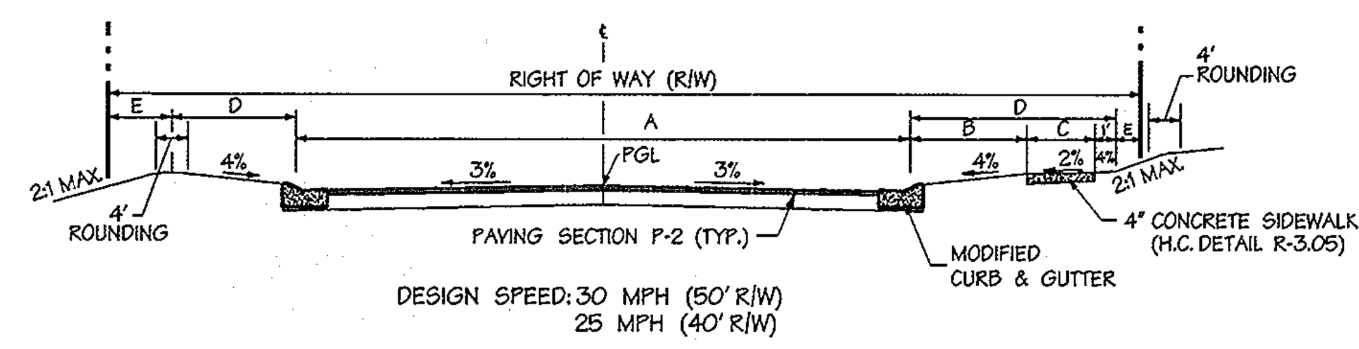
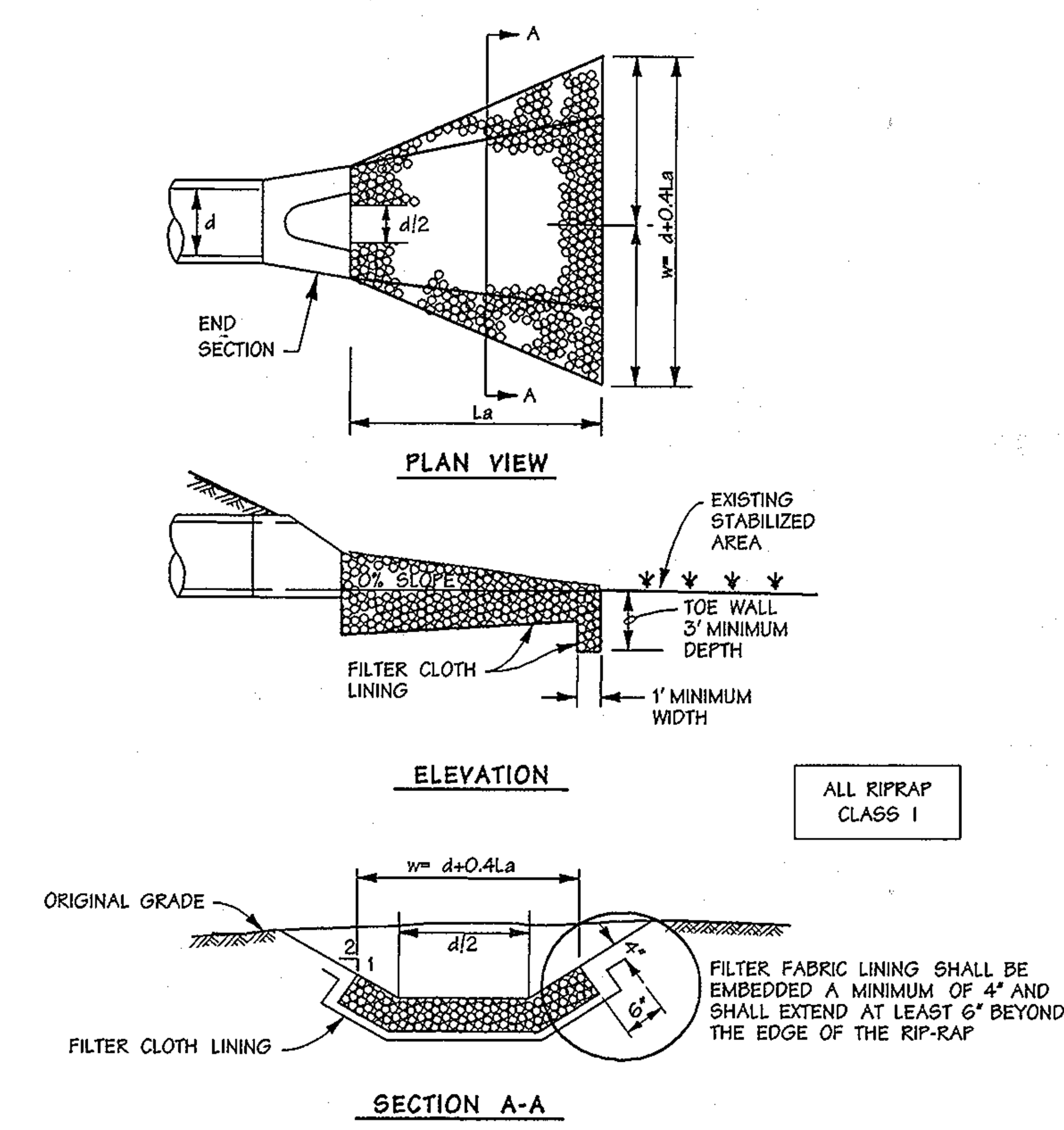


CLASSIFICATION		A	B	C	D	E	R/W
ACCESS STREET	500 ADT	24'	3'	4'	8'	0	40'

WINESAP WAY
TYPICAL ROAD SECTION

NOT TO SCALE



U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

NOTE: FILTER CLOTH SHALL BE GEOTEXTILE CLASS C

ROCK OUTLET PROTECTION III

Not To Scale

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.

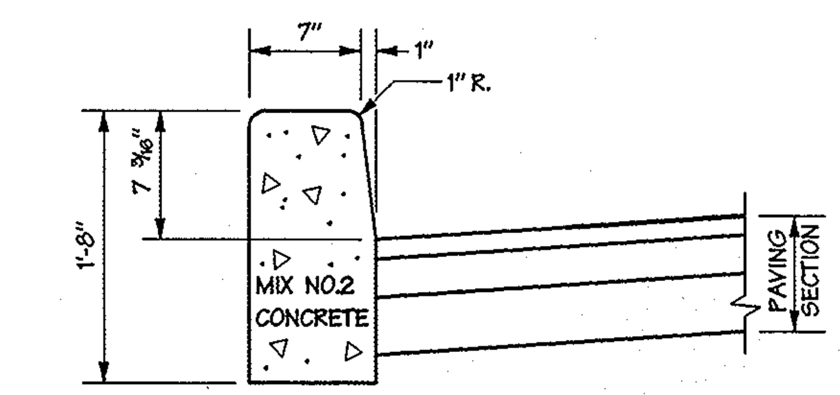
4. STONE FOR THE RIP-RAP OR GABION OUTLETS MAY BE PLACED BY EQUIPMENT. THEY SHALL BE CONSTRUCTED TO THE FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. THE STONE FOR RIP-RAP OR GABION OUTLETS SHALL BE DELIVERED AND PLACED IN A MANNER THAT 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.

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

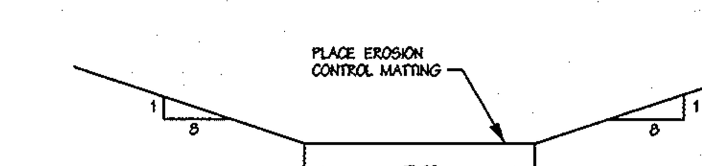
MARYLAND DEPARTMENT OF ENVIRONMENT
WATER MANAGEMENT ADMINISTRATION

ROCK OUTLET PROTECTION SPECIFICATIONS



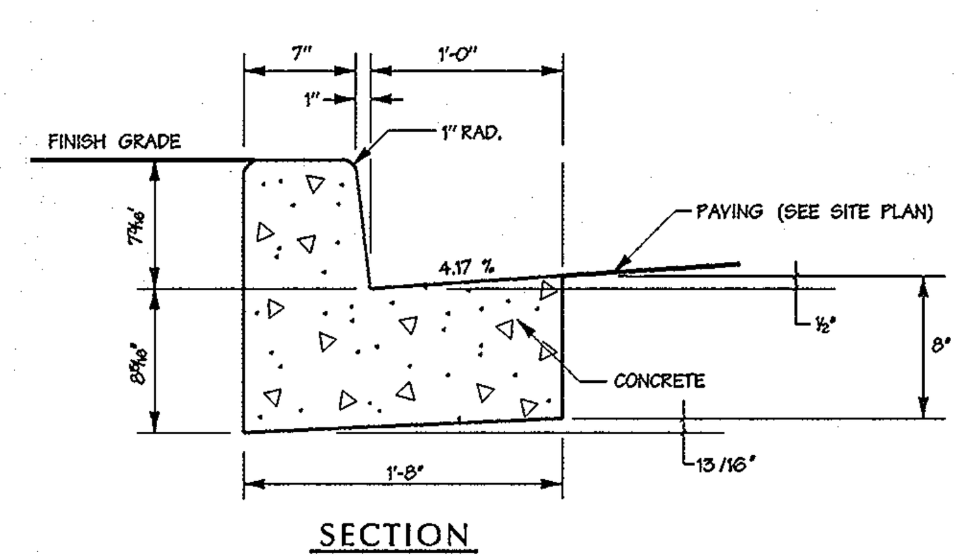
STANDARD BARRIER CURB

NOT TO SCALE



LANDING ROAD
GRASS CHANNEL TYPICAL SECTION

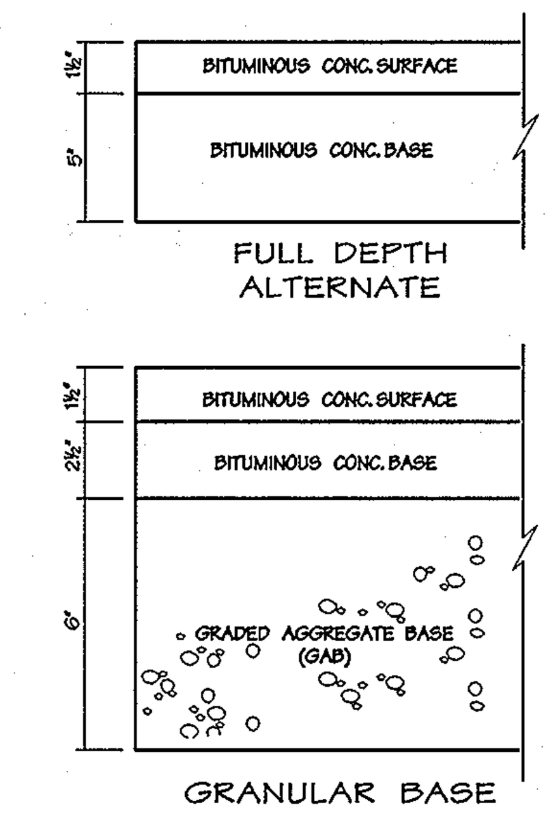
NOT TO SCALE



ILCHESTER ROAD
AND
BARRIER CURB FOR CUL-DE-SAC ISLAND

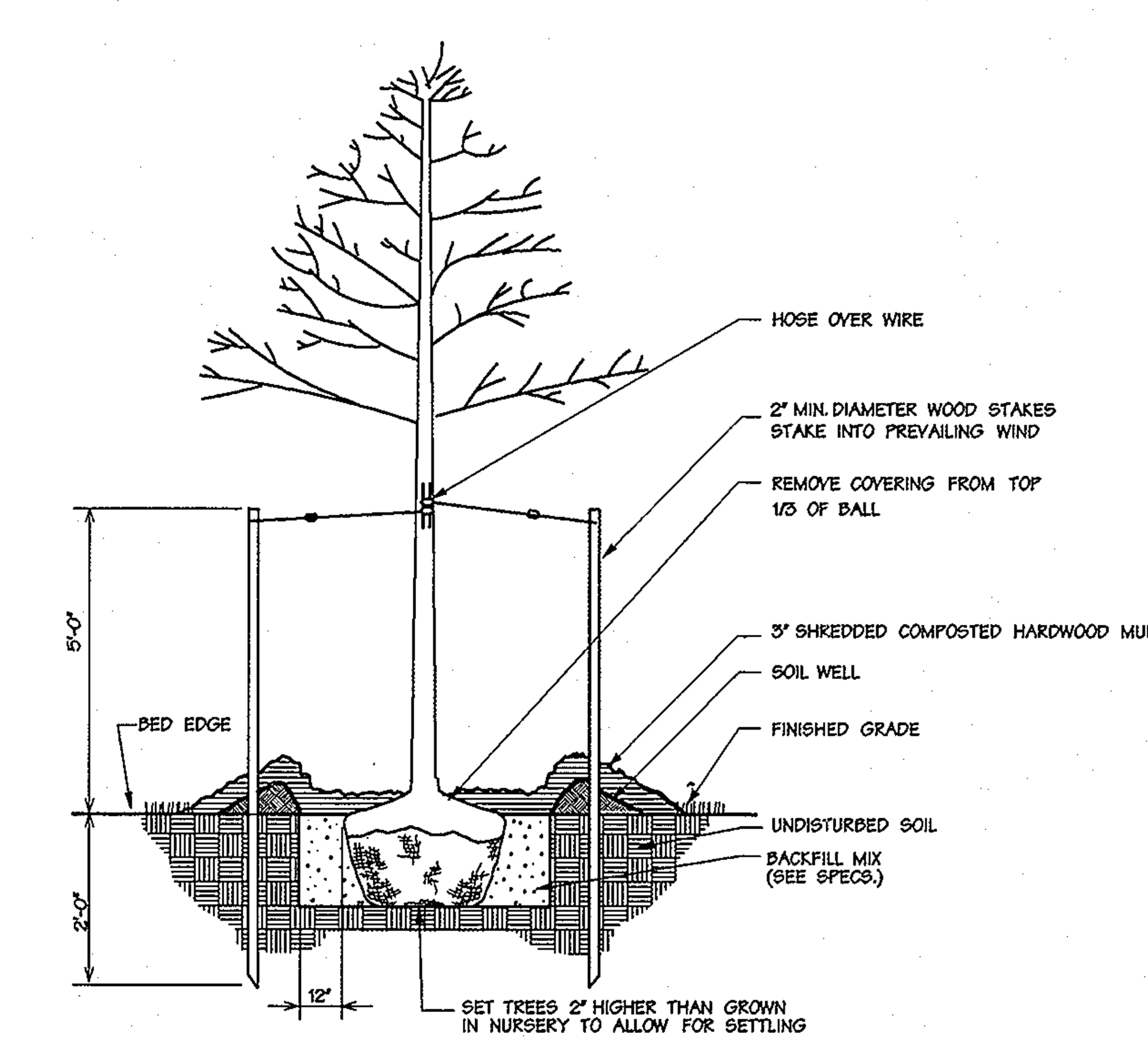
TYPE "A" CURB AND GUTTER R-3.01

NOT TO SCALE



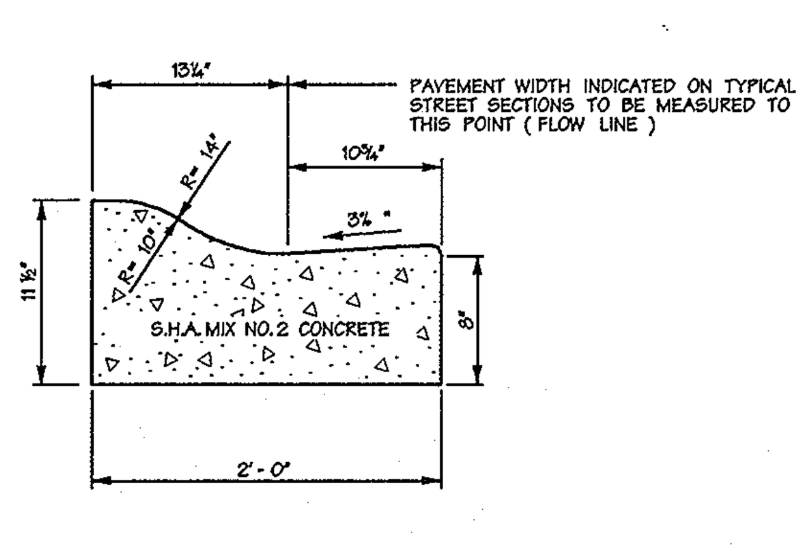
PAVING SECTION P-2
PUBLIC ACCESS STREET

NOT TO SCALE



DECIDUOUS TREE DETAIL

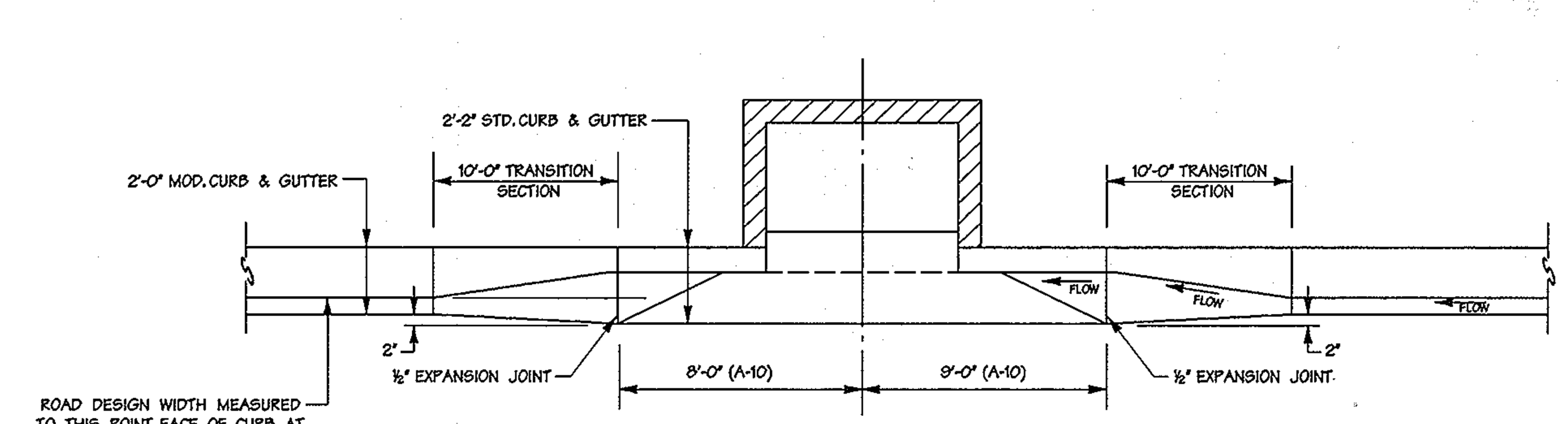
(TO 3" CALIPER)



* GUTTER PAN AT MEDIAN EDGE OF INTERMEDIATE ARTERIALS OR HIGH SIDE OF SUPERELEVATED SECTIONS SHALL BE SLOPED AT SAME RATE AND IN SAME DIRECTION AS PAVEMENT. MATCH PAVEMENT CROSS SLOPE WHEN CURB IS LOCATED ON LOW SIDE OF SUPERELEVATED SECTION AND THE RATE OF SUPER ELEVATION IS GREATER THAN 3% FOR MODIFIED CURB AND GUTTER.

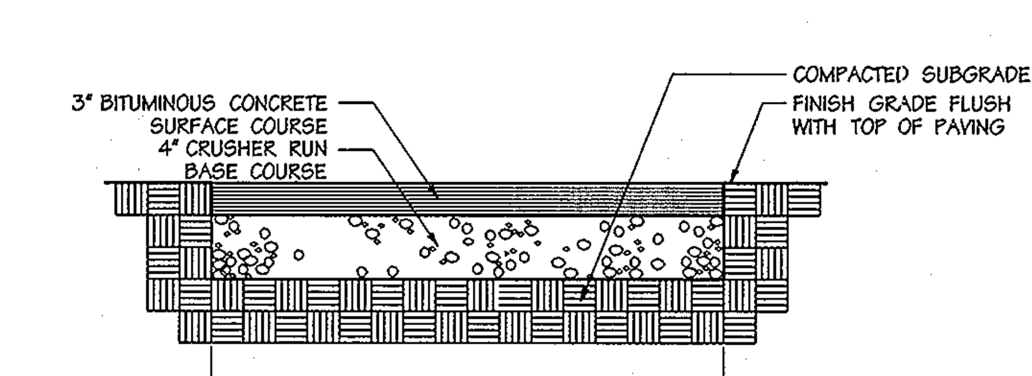
MODIFIED COMBINATION CURB & GUTTER R-3.01

NOT TO SCALE



TRANSITION CURB FROM MODIFIED CURB & GUTTER
TO STANDARD CURB & GUTTER AT A-10 INLETS

NOT TO SCALE



MACADAM PATH (SECTION)

N.T.S.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 1-3-07

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 1/10/07

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 1/9/07

Date	No.	Revision Description

FINAL PLAN

ZAISER PROPERTY

LOTS 1 THRU 10 AND OPEN SPACE LOT 11
AND THE RE-SUB DIVISION OF
NON-BUILDABLE BULK PARCELS 'C' AND 'D'
TAX MAP 31 PARCEL 243, 572

OWNER/DEVELOPER:

Ilchester Farm LLC
c/o James Keelty and Co. Inc.
P.O. Box 528
61 E. Padonia Road.
Timonium, MD 21093

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

9/05/06
Date

Professional Engr. No. 14230

SUBDIVISION NAME			SECTION/AREA		LOT/PARCEL #
ZAISER PROPERTY					157
PLAT# OR L/F	BLOCK #	ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
	10,11,16,17	R-20	31	1	

TITLE

ZAISER PROPERTY
FINAL PLAN
DETAIL SHEET

Des. By KAD	Scale 1" = 50'	Proj. No. 02059.B
Drn. By GMO	Date 6/8/06	6 of 19
Chk. By	Approved	

Tue Sep 5 13:14:12 2006 n:\02059\Final\02059.R3

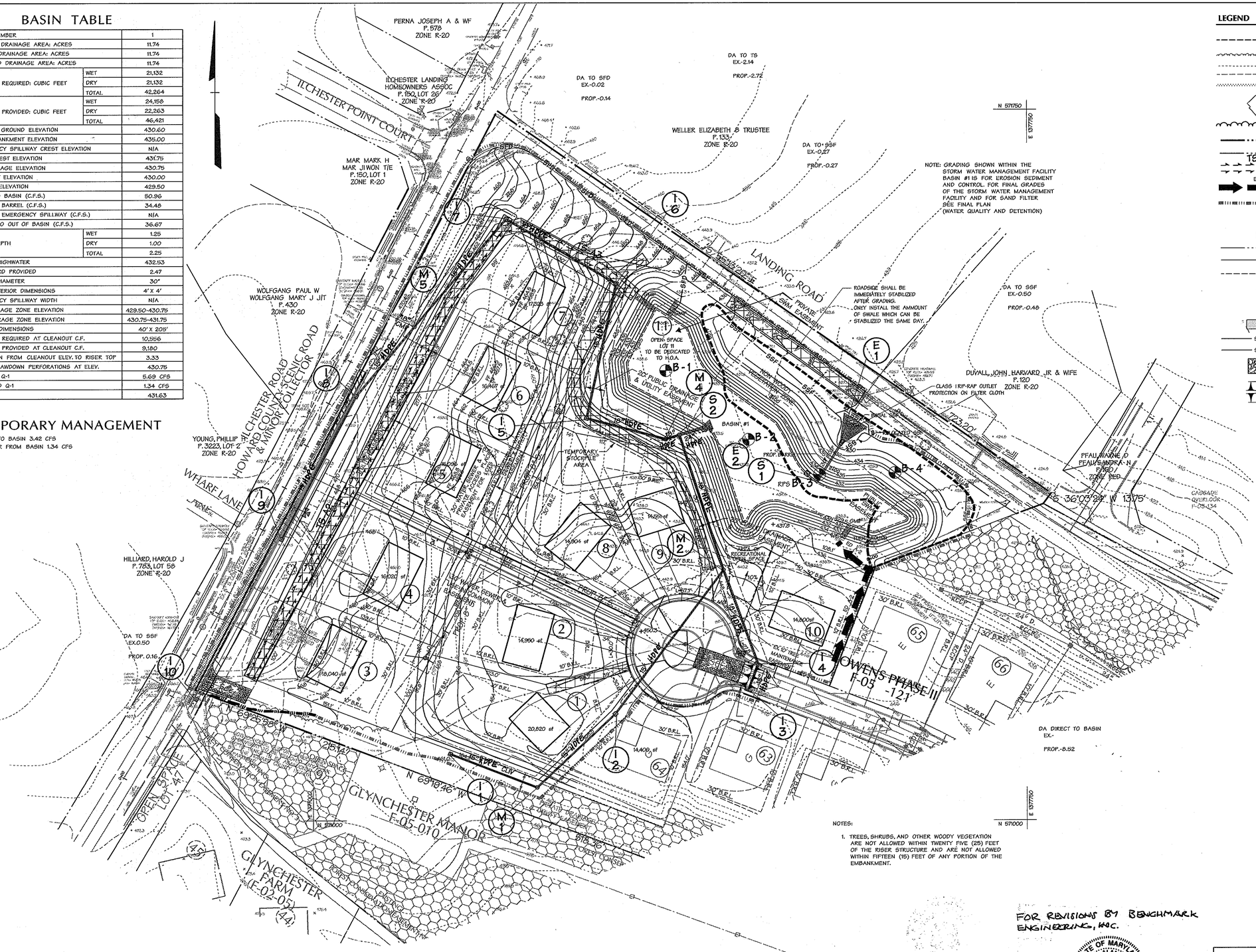
F-06-116

BASIN TABLE

BASIN NUMBER		1
EXISTING DRAINAGE AREA: ACRES		11.74
INTERIM DRAINAGE AREA: ACRES		11.74
PROPOSED DRAINAGE AREA: ACRES		11.74
STORAGE REQUIRED: CUBIC FEET	WET	21,132
	DRY	21,132
	TOTAL	42,264
STORAGE PROVIDED: CUBIC FEET	WET	24,158
	DRY	22,263
	TOTAL	46,421
EXISTING GROUND ELEVATION		430.60
TOP EMBANKMENT ELEVATION		435.00
EMERGENCY SPILLWAY CREST ELEVATION		N/A
RISER CREST ELEVATION		431.75
WET STORAGE ELEVATION		430.75
CLEANOUT ELEVATION		430.00
BOTTOM ELEVATION		429.50
Q-10 INTO BASIN (C.F.S.)		50.96
Q-10 OUT BARREL (C.F.S.)		34.48
Q-10 OUT EMERGENCY SPILLWAY (C.F.S.)		N/A
TOTAL Q-10 OUT OF BASIN (C.F.S.)		36.67
BASIN DEPTH	WET	1.25
	DRY	1.00
	TOTAL	2.25
DESIGN HIGHWATER		432.53
FREEBOARD PROVIDED		2.47
BARREL DIAMETER		30"
RISER INTERIOR DIMENSIONS		4' X 4'
EMERGENCY SPILLWAY WIDTH		N/A
WET STORAGE ZONE ELEVATION		429.50-430.75
DRY STORAGE ZONE ELEVATION		430.75-431.75
BOTTOM DIMENSIONS		40' X 205'
STORAGE REQUIRED AT CLEANOUT C.F.		10,556
STORAGE PROVIDED AT CLEANOUT C.F.		9,180
DIMENSION FROM CLEANOUT ELEV. TO RISER TOP		3.33
START DRAWDOWN PERFORATIONS AT ELEV.		430.75
EXISTING Q-1		5.69 CFS
PROPOSED Q-1		1.34 CFS
WSE Q-1		431.63

TEMPORARY MANAGEMENT

EX. 1 YR TO BASIN 3.42 CFS
PROP. 1 YR FROM BASIN 1.34 CFS



LEGEND

- 100 YR WSE + 1' FREEBOARD (I.E. FLOODPLAIN EASEMENT)
- EX. TREELINE
- EX. MINOR CONTOUR (2' INT.)
- EX. MAJOR CONTOUR (10' INT.)
- AREA OF INTERPOLATED CONTOURS
- EX. STRUCTURE
- PROP. TREELINE (IF SHOWN)
- PROPERTY BOUNDARY
- RIGHT OF WAY LINE
- TS-A2 — TEMPORARY SWALE
- ED A-2 — EARTH DIKE
- LIMIT OF DISTURBANCE
- REMOVABLE PUMPING STATION
- 91 — PROP. LOT NUMBER
- ADJACENT LOT LINE
- PROP. LOT LINE
- BUILDING SETBACK LINE
- STOP SIGN
- EX. UTILITY POLE
- PROPOSED LIGHT POLE
- EASEMENT AREAS
- SSF — SUPER SILT FENCE
- SFD — SILT FENCE DIVERSION
- STABILIZED CONSTRUCTION ENTRANCE
- MOUNTABLE BERM
- GMP — GABION MATTRESS INFLOW PROTECTION
- B-4 — BORING LOCATIONS
- RIP-RAP OUTLET PROTECTION
- EROSION CONTROL MATTING
- 8" W. — EX. WATER
- 8" S. — EX. SEWER
- 24" D. — EX. STORM DRAIN
- 8" W. — PROP. WATER
- 8" S. — PROP. SEWER
- 24" D. — PROP. STORM DRAIN
- BASE OF EMBANKMENT
- NON WOODY VEGETATION ZONE
- EX. CURB AND GUTTER
- PROP. CURB AND GUTTER
- 450 — PROP. MINOR CONTOUR
- 440 — PROP. MAJOR CONTOUR
- ROADWAY CENTERLINE
- SOIL TYPE DELINEATION LINE

NOTES:

1. TREES, SHRUBS, AND OTHER WOODY VEGETATION ARE NOT ALLOWED WITHIN TWENTY FIVE (25) FEET OF THE RISER STRUCTURE AND ARE NOT ALLOWED WITHIN FIFTEEN (15) FEET OF ANY PORTION OF THE EMBANKMENT.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 1-3-07

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 1/4/07

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 1/4/07

Date	No.	Revision Description	
10-31-13	2	CHANGE RCCP TO HDPE	BEI
3-10-2010	1	ADD SCE OFF ILCHESTER ROAD AT LOT 3	

FINAL PLAN

ZAISER PROPERTY

LOTS 1 THRU 10 AND OPEN SPACE LOT 11
AND THE RE-SUB DIVISION OF
NON-BUILDABLE BULK PARCELS 'C' AND 'D'
TAX MAP 31 PARCEL 243,572

OWNER/DEVELOPER:

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Timonium, MD 21093

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

SUBDIVISION NAME		SECTION/AREA		LOT/PARCEL #
ZAISER PROPERTY				157
PLATS OR L/F	BLOCK # / ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
10,11,16,17	R-20	31	1	

TITLE

ZAISER PROPERTY
FINAL PLAN
SEDIMENT AND EROSION CONTROL PLAN

Des. By CRW	Scale 1" = 50'	Proj. No. 02059.B	
Dm. By GMO	Date 10/25/06	7 of 19	
Chk. By	Approved		

Thu Dec 14 15:11:30 2006 N:\02059\Final\02059.SCI

DEVELOPER'S CERTIFICATION:

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

SIGNATURE OF DEVELOPER — DATE 12/15/06
PRINT NAME BELOW SIGNATURE
MARK BUDA

ENGINEER'S CERTIFICATION:

"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.

SIGNATURE OF ENGINEER — DATE 12/15/06
PRINT NAME BELOW SIGNATURE
Charles V. Main II

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

U.S. NATURAL RESOURCE CONSERVATION SERVICE — DATE 12/21/06

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

HOWARD SCD — DATE 12/01/06

STATE OF MARYLAND — BRIAN F. CLEARY — No. 21483 — PROFESSIONAL ENGINEER — 3/10/2010

FOR REV. 1 (3/10/2010) ONLY BY
BENCHMARK ENG. INC.
8480 BALTIMORE NATL PIKE SUITE 418
ELLICOTT CITY, MD 21043
(410) 465-6105

FOR REVISIONS BY BENCHMARK ENGINEERING, INC.

STATE OF MARYLAND — DONALD ALAN MASON — No. 21449 — PROFESSIONAL ENGINEER — 11-1-13

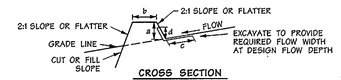
Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License No. 21449 Expiration Date: 12-31-14

12-15-06
Date

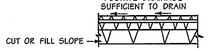
STATE OF MARYLAND — CHARLES V. MAIN II — No. 20784 — PROFESSIONAL ENGINEER

20784
Professional Engr. No.

F-06-116



CROSS SECTION



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

PLAN VIEW

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

STANDARD SYMBOL
E.D. A-2
E.D. B-3

1. SEED AND COVER WITH STRAW MULCH.
2. SEED AND COVER WITH EROSION CONTROL MATTING OR LINE WITH SOD.
3. 4" - 7" STONE OR RECYCLED CONCRETE EQUIVALENT PRESSED INTO THE SOIL 7" MINIMUM.

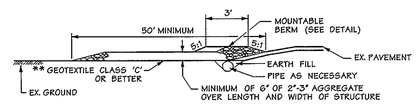
CONSTRUCTION SPECIFICATIONS

1. ALL TEMPORARY EARTH DIKES SHALL HAVE UNINTERRUPTED POSITIVE GRADE TO AN OUTLET. SPOT ELEVATIONS MAY BE NECESSARY FOR GRADES LESS THAN 1%.
2. RUNOFF DIVERTED FROM A DISTURBED AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE.
3. RUNOFF DIVERTED FROM AN UNDISTURBED AREA SHALL OUTLET DIRECTLY INTO AN UNDISTURBED, STABILIZED AREA AT A NON-EROSIVE VELOCITY.
4. ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONAL MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE DIKE.
5. THE DIKE SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN AND BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES WHICH WILL IMPEDE NORMAL FLOW.
6. FILL SHALL BE COMPACTED BY EARTH MOVING EQUIPMENT.
7. ALL EARTH REMOVED AND NOT NEEDED FOR CONSTRUCTION SHALL BE PLACED SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE DIKE.
8. INSPECTION AND MAINTENANCE MUST BE PROVIDED PERIODICALLY AND AFTER EACH RAIN EVENT.

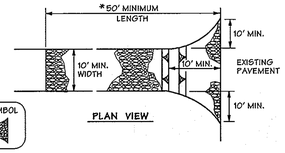
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE — A - 1 - 6 — MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

Earth Dike

Not To Scale



PROFILE



PLAN VIEW

STANDARD SYMBOL
SCE

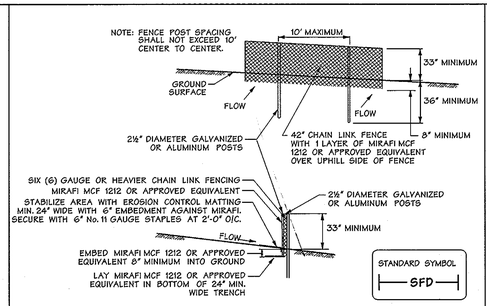
CONSTRUCTION SPECIFICATIONS

1. LENGTH - MINIMUM OF 50' (*30' FOR SINGLE RESIDENCE LOT).
2. WIDTH - 10' MINIMUM, SHOULD BE FLARED AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
3. GEOTEXTILE FABRIC CLASS C (FILTER CLOTH) SHALL BE PLACED OVER THE EXISTING GROUND PRIOR TO PLACING STONE.** THE PLAN APPROVAL AUTHORITY MAY NOT REQUIRE SINGLE FAMILY RESIDENCES TO USE GEOTEXTILE.
4. STONE - CRUSHED AGGREGATE (2" TO 3") OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT SHALL BE PLACED AT LEAST 6" DEEP OVER THE LENGTH AND WIDTH OF THE ENTRANCE.
5. SURFACE WATER - ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED THROUGH THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PIPE INSTALLED THROUGH THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE PROTECTED WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 6" OF STONE OVER THE PIPE. PIPE HAS TO BE SIZED ACCORDING TO THE DRAINAGE. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY A PIPE WILL NOT BE NECESSARY. PIPE SHOULD BE SIZED ACCORDING TO THE AMOUNT OF RUNOFF TO BE CONVEYED. A 6" MINIMUM WILL BE REQUIRED.
6. LOCATION - A STABILIZED CONSTRUCTION ENTRANCE SHALL BE LOCATED AT EVERY POINT WHERE CONSTRUCTION TRAFFIC ENTERS OR LEAVES A CONSTRUCTION SITE. VEHICLES LEAVING THE SITE MUST TRAVEL OVER THE ENTIRE LENGTH OF THE STABILIZED CONSTRUCTION ENTRANCE.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE — F - 17 - 3 — MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

Stabilized Construction Entrance

Not To Scale



STANDARD SYMBOL
SFD

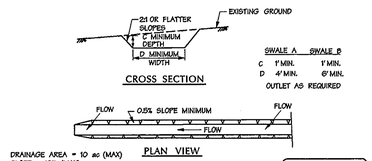
CONSTRUCTION SPECIFICATIONS

1. FENCING SHALL BE 42 INCHES IN HEIGHT AND CONSTRUCTED IN ACCORDANCE WITH THE LATEST MARYLAND STATE HIGHWAY (SHA) DETAILS FOR CHAIN LINK FENCING. THE SPECIFICATION FOR A 6' FENCE SHALL BE USED, SUBSTITUTING 42" FABRIC AND 6' LENGTH POSTS.
2. THE POSTS DO NOT NEED TO BE SET IN CONCRETE.
3. CHAIN LINK FENCE SHALL BE FASTENED SECURELY TO THE FENCE POSTS WITH WIRE TIES OR STAPLES. THE LOWER TENSION WIRE, BRACE OR TRUSS RODS, DRIVE ANCHORS AND POST CAPS ARE NOT REQUIRED EXCEPT ON THE ENDS OF THE FENCE. THE CHAIN LINK FENCING SHALL BE SIX (6) GAUGE OR HEAVIER.
4. MIRAFI MCF 1212 OR APPROVED EQUIVALENT SHALL BE FASTENED SECURELY TO THE CHAIN LINK FENCE WITH TIES SPACED EVERY 24" AT THE TOP AND MID SECTION.
5. MIRAFI MCF 1212 OR APPROVED EQUIVALENT SHALL BE EMBEDDED A MINIMUM OF 8" INTO THE GROUND.
6. WHEN TWO SECTIONS OF MIRAFI MCF 1212 OR APPROVED EQUIVALENT ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6" AND FOLDED.
7. MAINTENANCE SHALL BE PERFORMED AS NEEDED.
8. MAXIMUM FLOW SLOPE 10.0%.
9. MAXIMUM DRAINAGE AREA 5 ACRES.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE — H - 26 - 4 — MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

Super Fence Diversion

Not To Scale



CROSS SECTION

PLAN VIEW

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

STANDARD SYMBOL
A - 2 / B - 3

1. SEED AND COVER WITH STRAW MULCH.
2. SEED AND COVER WITH EROSION CONTROL MATTING OR LINE WITH SOD.
3. 4"-7" STONE OR RECYCLED CONCRETE EQUIVALENT PRESSED INTO SOIL IN A MINIMUM 7"LAYER.

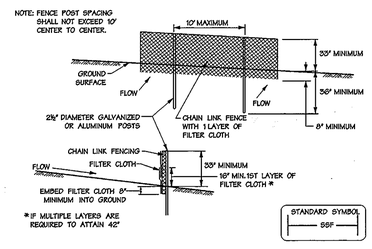
CONSTRUCTION SPECIFICATIONS

1. ALL TEMPORARY SWALES SHALL HAVE UNINTERRUPTED POSITIVE GRADE TO AN OUTLET. SPOT ELEVATIONS MAY BE NECESSARY FOR GRADES LESS THAN 1%
2. RUNOFF DIVERTED FROM A DISTURBED AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE.
3. RUNOFF DIVERTED FROM AN UNDISTURBED AREA SHALL OUTLET DIRECTLY INTO AN UNDISTURBED STABILIZED AREA AT A NON-EROSIVE VELOCITY.
4. ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONAL MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE SWALE.
5. THE SWALE SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN AND BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES WHICH WILL IMPEDE NORMAL FLOW.
6. FILL, IF NECESSARY, SHALL BE COMPACTED BY EARTH MOVING EQUIPMENT.
7. ALL EARTH REMOVED AND NOT NEEDED FOR CONSTRUCTION SHALL BE PLACED SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE SWALE.
8. INSPECTION AND MAINTENANCE MUST BE PROVIDED PERIODICALLY AND AFTER EACH RAIN EVENT.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE — A - 2 - 4 — MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

Temporary Swale

Not To Scale



STANDARD SYMBOL
SGF

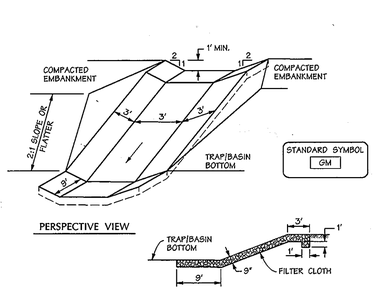
CONSTRUCTION SPECIFICATIONS

1. FENCING SHALL BE 42 INCHES IN HEIGHT AND CONSTRUCTED IN ACCORDANCE WITH THE LATEST MARYLAND STATE HIGHWAY (SHA) DETAILS FOR CHAIN LINK FENCING. THE SPECIFICATION FOR A 6' FENCE SHALL BE USED, SUBSTITUTING 42" FABRIC AND 6' LENGTH POSTS.
2. THE POSTS DO NOT NEED TO BE SET IN CONCRETE.
3. CHAIN LINK FENCE SHALL BE FASTENED SECURELY TO THE FENCE POSTS WITH WIRE TIES OR STAPLES. THE LOWER TENSION WIRE, BRACE AND TRUSS RODS, DRIVE ANCHORS AND POST CAPS ARE NOT REQUIRED EXCEPT ON THE ENDS OF THE FENCE. THE CHAIN LINK FENCING SHALL BE SIX (6) GAUGE OR HEAVIER.
4. FILTER CLOTH SHALL BE FASTENED SECURELY TO THE CHAIN LINK FENCE WITH TIES SPACED EVERY 24" AT THE TOP AND MID SECTION.
5. FILTER CLOTH SHALL BE EMBEDDED A MINIMUM OF 8" INTO THE GROUND.
6. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6" AND FOLDED.
7. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND SILT BUILDUPS REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE, OR WHEN SILT REACHES 50% OF FENCE HEIGHT.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE — H - 26 - 5 — MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

Super Silt Fence

Not To Scale



PROFILE ALONG CENTERLINE

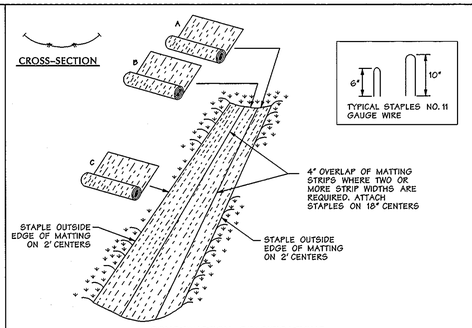
CONSTRUCTION SPECIFICATIONS

1. GABION INFLOW PROTECTION SHALL BE CONSTRUCTED OF 9' x 3' x 9" GABION BASKETS FORMING A TRAPEZOIDAL CROSS SECTION 1' DEEP, WITH 2:1 SIDE SLOPES, AND A 3' BOTTOM WIDTH.
2. GEOTEXTILE CLASS C SHALL BE INSTALLED UNDER ALL GABION BASKETS.
3. THE STONE USED TO FILL THE GABION BASKETS SHALL BE 4" - 7".
4. GABIONS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
5. GABION INFLOW PROTECTION SHALL BE USED WHERE CONCENTRATED FLOW IS PRESENT ON SLOPES STEEPER THAN 4:1.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE — B - 7 - 2 — MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

Gabion Inflow Protection

NOT TO SCALE



CONSTRUCTION SPECIFICATIONS

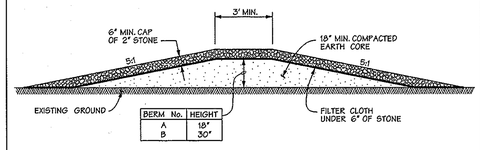
1. KEY-IN THE MATTING BY PLACING THE TOP ENDS OF THE MATTING IN A NARROW TRENCH, 6" IN DEPTH. BACKFILL THE TRENCH AND TAMP FIRMLY TO CONFORM TO THE CHANNEL CROSS-SECTION. SECURE WITH A ROW OF STAPLES ABOUT 4" DOWN SLOPE FROM THE TRENCH. SPACING BETWEEN STAPLES IN 6".
2. STAPLE THE 4" OVERLAP IN THE CHANNEL CENTER USING AN 18" SPACING BETWEEN STAPLES.
3. BEFORE STAPLING THE OUTER EDGES OF THE MATTING, MAKE SURE THE MATTING IS SMOOTH AND IN FIRM CONTACT WITH THE SOIL.
4. STAPLES SHALL BE PLACED 2' APART WITH 4 ROWS FOR EACH STRIP, 2 OUTER ROWS, AND 2 ALTERNATING ROWS DOWN THE CENTER.
5. WHERE ONE ROLL OF MATTING ENDS AND ANOTHER BEGINS, THE END OF THE TOP STRIP SHALL OVERLAP THE UPPER END OF THE LOWER STRIP BY 4", SHIPLAP FASHION. REINFORCE THE OVERLAP WITH A DOUBLE ROW OF STAPLES SPACED 6" APART IN A STAGGERED PATTERN ON EITHER SIDE.
6. THE DISCHARGE END OF THE MATTING LINER SHOULD BE SIMILARLY SECURED WITH 2 DOUBLE ROWS OF STAPLES.

NOTE: IF FLOW WILL ENTER FROM THE EDGE OF THE MATTING THEN THE AREA EFFECTED BY THE FLOW MUST BE KEYED-IN.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE — G-22-2 — MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

Erosion Control Matting

Not To Scale



FILTER CLOTH SHALL BE GEOTEXTILE CLASS 'C', OR BETTER

Mountable Berm Detail

NOT TO SCALE

Sediment Plan

DEVELOPER'S CERTIFICATION:

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

SIGNATURE OF DEVELOPER — DATE 12/13/06
PRINT NAME BELOW SIGNATURE
MARK BUDA

ENGINEER'S CERTIFICATION:

"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.

SIGNATURE OF ENGINEER — Charles V. Main II
PRINT NAME BELOW SIGNATURE
Charles V. Main II

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

U.S. NATURAL RESOURCE CONSERVATION SERVICE — DATE 12/21/06

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

HOWARD S.C.D. — DATE 12/21/06

SEQUENCE OF CONSTRUCTION

1. Obtain Grading Permit.	1 day
2. Notify HCD Department of Inspections (410)313-1855 at least 48 hours prior to beginning work.	1 day
3. If applicable, orange high visibility fence shall be manually installed along the limit 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.	3 days
4. With permission from the sediment control inspector, clear and grub for, install Stabilized Construction Entrances (SCE's).	7 days
5. Clear and grub for sediment and erosion control measures at Basin , including super silt fence and earth dike.	7 days
6. Install Basins and the temporary swale draining to the basin.	7 days
7. Install the remainder of the sediment control measures.	1 day
8. Notify HCD Department of Inspection, upon completion of said installation.	7 days
9. With the approval of the sediment control inspector, clear and grub the remainder of the site.	14 days
10. Grade the site.	45 days
11. Install storm drains, utilities and curb and gutter for roads. Construct road widening improvements along Ilchester Road. Grade permanent swale along Ilchester Road.	4 days
12. Pave Road.	7 days
13. Upon stabilization of the site with established vegetation and with permission of the sediment control inspector, flush storm drain system. Remove sediment control measures as permitted by the sediment control inspector.	14 days
14. Convert Basins to stormwater management (SWM) facility. a. Install forebay sand filter and gabion weir per details. b. Convert the riser. Stabilize disturbed areas in the ponds. c. Stabilize disturbed areas in the ponds.	4 days
15. With the permission of the Sediment Control Inspector, remove sediment control measures and stabilize any areas disturbed by their removal.	

12-15-06
Date

STATE OF MARYLAND — CHARLES VICTOR MAIN II — 20784 — REGISTERED PROFESSIONAL ENGINEER

Charles V. Main II

20784
Professional Engr. No.

F-06-116

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 1-3-07

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 1/10/07

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 1/9/07

Date	No.	Revision Description

FINAL PLAN

ZAISER PROPERTY

LOTS 1 THRU 10 AND OPEN SPACE LOT 11
AND THE RE-SUB DIVISION OF
NON-BUILDABLE BULK PARCELS 'C' AND 'D'
TAX MAP 31 PARCEL 243, 572

OWNER/DEVELOPER:

Ilchester Farm, LLC
c/o James Keelty 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) 296-3333
Fax 296-4705

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

SUBDIVISION NAME		SECTION/AREA		LOT/PARCEL #
ZAISER PROPERTY				157
PLAT OR L/F	BLOCK #	ZONE	TAX/ZONE MAP	ELEC. DISTRICT	CENSUS TRACT
10,11,16,17	R-20	31	1	

TITLE

ZAISER PROPERTY
FINAL PLAN
SEDIMENT AND EROSION CONTROL DETAILS

Des. By KAD	Scale 1" = 50'	Proj. No. 02059.B	
Dm. By GMO	Date 10/25/06	8 of 19	
Chk. By	Approved		

Thu Dec 14 15:52:51 2006
N:\02059\Final\02059.SC2

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.

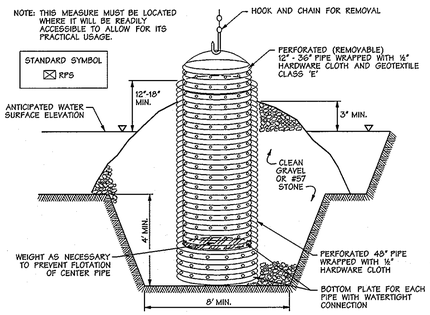
3. GEOTEXTILE CLASS C SHALL BE PROTECTED FROM PUNCHING, CUTTING, OR TEARING. ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE SHALL BE REPAIRED BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. ALL OVERLAPS WHETHER FOR REPAIRS OR FOR JOINING TWO PIECES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

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE — F-18-8A, 9A, 10A — *MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION*

ROCK OUTLET PROTECTION SPECIFICATIONS



ELEVATION (CUT AWAY)

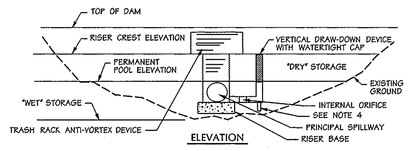
CONSTRUCTION SPECIFICATIONS

1. THE OUTER PIPE SHOULD BE 48" DIAMETER OR SMALL, IN ANY CASE, BE AT LEAST 4" GREATER IN DIAMETER THAN THE CENTER PIPE. THE OUTER PIPE SHALL BE WRAPPED WITH ½" HARDWARE CLOTH TO PREVENT BACKFILL MATERIAL FROM ENTERING THE PERFORATIONS.
2. AFTER INSTALLING THE OUTER PIPE, BACKFILL AROUND OUTER PIPE WITH 2" AGGREGATE OR CLEAN GRAVEL.
3. THE INSIDE STAND PIPE (CENTER PIPE) SHOULD BE CONSTRUCTED BY PERFORATING A CORRUGATED OR PVC PIPE BETWEEN 12" AND 36" IN DIAMETER. THE PERFORATIONS SHALL BE ½" x 6" SLITS OR 1" DIAMETER HOLES 6" ON CENTER. THE CENTER PIPE SHALL BE WRAPPED WITH ½" HARDWARE CLOTH FIRST, THEN WRAPPED AGAIN WITH GEOTEXTILE CLASS E.
4. THE CENTER PIPE SHOULD EXTEND 12" TO 18" ABOVE THE ANTICIPATED WATER SURFACE ELEVATION OR RISER CREST ELEVATION WHEN DEWATERING A BASIN.

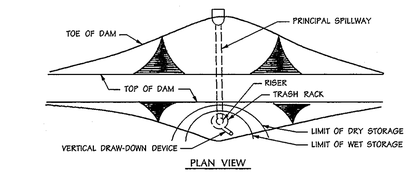
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE — D - 12 - 5 — *MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION*

Removable Pumping Station

NOT TO SCALE



ELEVATION



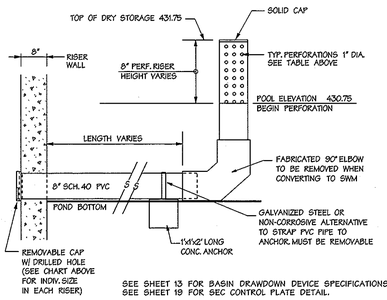
PLAN VIEW

CONSTRUCTION SPECIFICATIONS

1. PERFORATIONS IN THE DRAW-DOWN DEVICE MAY NOT EXTEND INTO THE WET STORAGE.
2. THE TOTAL AREA OF THE PERFORATIONS MUST BE GREATER THAN 4 TIMES THE AREA OF THE INTERNAL ORIFICE.
3. THE PERFORATED PORTION OF THE DRAW-DOWN DEVICE SHALL BE WRAPPED WITH ½" HARDWARE CLOTH AND GEOTEXTILE FABRIC. THE GEOTEXTILE FABRIC SHALL MEET THE SPECIFICATIONS FOR GEOTEXTILE CLASS E.
4. PROVIDE SUPPORT OF DRAW-DOWN DEVICE TO PREVENT SAGGING AND FLOTATION. AN ACCEPTABLE PREVENTATIVE MEASURE IS TO STAKE BOTH SIDES OF THE DRAW-DOWN DEVICE WITH 1" STEEL ANGLE, OR 2" BY 2" SQUARE OR 2" ROUND WOODEN POSTS SET 3' MINIMUM INTO THE GROUND THEN JOINING THEM TO THE DEVICE BY WRAPPING WITH 12 GAUGE MINIMUM WIRE.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE — C - 10 - 30 — *MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION*

Basin Drawdown Schematic Ver. Drawdown Device



SEE SHEET 13 FOR BASIN DRAWDOWN DEVICE SPECIFICATIONS.
SEE SHEET 19 FOR SEC CONTROL PLATE DETAIL.

SEDIMENT CONTROL DRAW-DOWN

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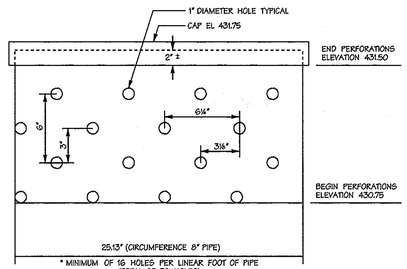
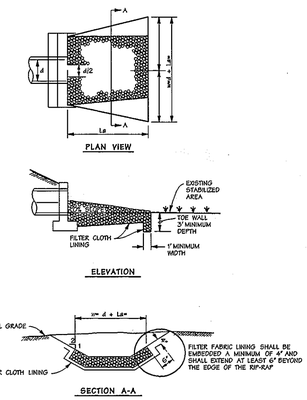


BASIN #2 DRAWDOWN PERFORATION DETAIL



NOTE: FILTER CLOTH SHALL BE GEOTEXTILE CLASS C

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE — F-18-10 (HEAD) — *MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION*

ROCK OUTLET PROTECTION III

NOT TO SCALE

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 (313-1855).
2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" AND REVISIONS THERETO.
3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
   A. SEVEN CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER 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 PERIMETER IN ACCORDANCE WITH VOL.1, CHAPTER 12, OF THE "HOWARD COUNTY DESIGN MANUAL", STORM DRAINAGE.
5. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE "1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" FOR PERMANENT SEEDINGS (SEC. 51), 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 OF SITE	7.6 ACRES
AREA DISTURBED	7.2 ACRES
AREA TO BE ROOFED OR PAVED	1.2 ACRES
AREA TO BE VEGETATIVELY STABILIZED	6.0 ACRES
TOTAL CUT	6,500 CUBIC YARDS
TOTAL FILL	6,500 CUBIC YARDS
OFF-SITE WASTE/BORROW AREA LOCATION	WASTE = 0

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 PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
11. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

Sedctrl.cel / HOGENN

Sediment Control General Notes

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.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE — F-18-8A, 9A, 10A — *MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION*

ROCK OUTLET PROTECTION SPECIFICATIONS

DEVELOPER'S CERTIFICATION:

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

SIGNATURE OF DEVELOPER — 12/15/06 DATE
PRINT NAME BELOW SIGNATURE
MARK BUDA

ENGINEER'S CERTIFICATION:

"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."

Charles V. Main II
SIGNATURE OF ENGINEER
PRINT NAME BELOW SIGNATURE
Charles V. Main II

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

U.S. NATURAL RESOURCE CONSERVATION SERVICE — 12/21/06 DATE

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

HOWARD S.C.D. — 12/21/06 DATE

12-15-06
Date

20784
Professional Engr. No.

F-06-116

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — 1-3-07 DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — 1/10/07 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 1/9/07 DATE

Date	No.	Revision Description

FINAL PLAN

ZAISER PROPERTY

LOTS 1 THRU 10 AND OPEN SPACE LOT 11
AND THE RE-SUB DIVISION OF
NON-BUILDABLE BULK PARCELS 'C' AND 'D'
TAX MAP 31 PARCEL 243, 572

OWNER/DEVELOPER:

Ilchester farm, LLC
c/o James Keelty 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) 296-3333
Fax 296-4705

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

SUBDIVISION NAME		SECTION/AREA		LOT/PARCEL #
ZAISER PROPERTY				187
PLAT# OR L/F	BLOCK # / ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
	10,11,16,17 / R-20	31	1	

TITLE

ZAISER PROPERTY
FINAL PLAN
SEDIMENT AND EROSION CONTROL DETAILS

Des. By KAD	Scale 1" = 50'	Proj. No. 02059.B	
Drn. By GMO	Date 10/25/06	9 of 19	
Chk. By	Approved		

N:\02059\Final\02059.DGN Thu Dec 14 16:26:50 2006

STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

SECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS

A. SITE PREPARATION

I. Install erosion and sediment control structures (either temporary or permanent) such as diversions, grade stabilization structures, berms waterways, or sediment control basins.

II. Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.

III. Schedule required soil test to determine soil amendment composition and application rates for sites having disturbed area over 5 acres.

B. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)

I. 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.

II. 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 warrantee of the producer.

III. Lime materials shall be ground limestone (hydrated or brunt 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 #20 mesh sieve.

IV. Incorporate lime and fertilizer into the top 3 - 5 inches of soil by disking or other suitable means.

C. SEEDBED PREPARATION

I. TEMPORARY SEEDING

A. 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 a 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.

B. Apply fertilizer and lime as prescribed on the plans.

C. Incorporate lime and fertilizer into the top 3 - 5 inches of soil by disking or other suitable means.

II. PERMANENT SEEDING

A. Minimum soil conditions required for permanent vegetative establishment:

1. Soil ph shall be between 6.0 and 7.0.
2. Soluble salts shall be less than 500 parts per million (PPM).
3. 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 Serecia Lespedeza is to be planted. Then a sandy soil (< 30% silt plus clay) would be acceptable.
4. Soil shall contain 1.5% minimum organic matter by weight.
5. Soil must contain sufficient pore space to permit adequate root penetration.
6. 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.

B. 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.

C. Apply soil amendments as per soil test or as included on the plans.

D. 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. Steep 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

I. 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.

Note: Seed tags shall be made available to the inspector to verify type and rate of seed used.

II. 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

I. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeder, or cultipacker seeder.

A. 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 (phosphorous): 200 pounds per acre; K20 (potassium): 200 pounds per acre.

B. 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.

C. Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.

II. Dry Seeding: This includes use of conventional drop or broadcast spreaders.

A. 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 weighed roller to provide good seed soil contact.

B. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.

III. Drill or cultipacker seeding: Mechanized seeders that apply and cover seed with soil.

A. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least ¼ inch of soil covering.

Seedbed must be firm after planting.

B. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.

F. MULCH SPECIFICATIONS (IN ORDER OF PREFERENCE)

I. Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonably bright in color, and shall not be musty, moldy, caked, decayed, or excessively dusty and shall be free of noxious weeds seeds as specified in the Maryland Seed Law.

II. Wood cellulose fiber mulch (WCFM)

A. WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state.

B. WCFM 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 slurry.

C. WCFM, including dye shall contain no germination or growth inhibiting factors.

D. WCFM 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 seedings.

E. WCFM material shall contain no elements or compounds at concentration levels that will be phyto-toxic.

F. WCFM 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 SEEDED AREAS - Mulch shall be applied to all seeded areas immediately after seeding.

I. 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.

II. 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 1inches 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.

III. 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:

I. A mulch anchoring tool is a tractor drawn implement design to punch and anchor mulch into the soil surface 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.

II. 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.

III. 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 II, Terra Tack AR, or other approved equal may be used at rates recommended by the manufacturer to anchor mulch.

IV. 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 seeding is required.

Seed Mixture (Hardiness Zone 7A)					Fertilizer Rate (10-10-10)	Lime Rate
No.	Species	Application Rate (Lb./Ac.)	Seeding Dates	Seeding Depths		
1	Annual Ryegrass	50	2/1 - 4/30 8/15 - 11/1	¼"-½"	600 Lbs./Ac. (15 Lbs./1000 SF)	2 Tons/Ac. (100 Lbs./1000 SF)
2	Weeping Lovegrass	4	5/1 - 8/14	¼"-½"		

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 7A)					** Fertilizer Rate (10-20-20)			** Lime Rate
%	Species	Application Rate (Lb./Ac.)	Seeding * Dates	Seeding Depths	N	P205	K20	
85	Rebel II Tall Fescue	125	3/1 - 5/15 8/15 - 11/15	¼"-½"	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	Pennfine Perennial Ryegrass	15						
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).

** At time of fine grading, fertilizer and lime rates will be based on soil test results; (see section 1.B.1). Copy of recommended rates to be supplied to the Sediment COntrol Inspector.

SECTION IV - SOD

To provide quick cover on disturbed areas (2:1 grade or flatter)

A. GENERAL SPECIFICATIONS

I. 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.

II. Sod shall be machine cut at a uniform soil thickness of ¾", plus or minus¼", 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.

III. 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.

IV. Sod shall not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.

V. 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

I. During periods of excessively high temperature or in areas having dry subsoil, the subsoil shall be lightly irrigated immediately prior to laying the sod.

II. 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.

III. 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.

IV. 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 of laying, tamping and irrigating for any piece of sod shall be completed within eight hours.

C. SOD MAINTENANCE

I. In the absence of adequate rainfall, watering shall be performed daily or as often as necessary during the first week and 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.

II. After the first week, sod watering is required as necessary to maintain adequate moisture content.

III. The first mowing of sod should not be attempted until the sod is firmly rooted. No more than 1/3 of the grass leaf shall be removed by the initial cutting or subsequent cuttings. Grass height shall be maintained between 2 inches and 3 inches unless otherwise specified.

Vegetative Stabilization

SECTION V - TURFGRASS ESTABLISHMENT

Areas where turfgrass may be desired may include lawns, parks, playgrounds, and commercial sites 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 1½inches 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

I. Kentucky Bluegrass - Full sun mixture - For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and Eastern Shore. Recommended certified Kentucky Bluegrass cultivars seeding rate: 1.5 to 2.0 pounds per 1000 square feet. 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.

II. Kentucky Bluegrass/Perennial Rye - Full sun mixture - For use in full sun areas where rapid establishment is necessary and when turf will receive medium to intensive management. Certified Perennial Ryegrass cultivars/certified Kentucky Bluegrass seeding rate: 2 pounds mixture per 1000 square feet. A minimum of 3 Kentucky Bluegrass cultivars must be chosen, with each cultivar ranging from 10% to 35% of the mixture by weight.

III. Tall Fescue/Kentucky Bluegrass - Full sun mixture - For use in drought prone areas and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes; certified Tall Fescue cultivars 95-100%, certified Kentucky Bluegrass cultivars 0 - 5%, seeding rate: 5 to 8 pounds per 1000 square feet. One or more cultivars may be blended.

IV. Kentucky Bluegrass/Fine Fescue - Shade mixture - For use in areas with shade in Bluegrass lawns. For establishment in high quality, intensively managed turf area. Mixture includes; certified Kentucky Bluegrass cultivars 30-40% and certified Fine Fescue and 60-70%. Seeding rate: 1½ - 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 form 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

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

I. Once the vegetation is established, the site shall have 95% groundcover to be considered adequately stabilized.

II. If the stand provides less than 40% ground coverage, re-establish following original lime, fertilizer, seedbed preparation and seeding recommendations.

III. If the stand provides between 40% and 94% ground coverage, overseeding and fertilizing using half of the rates originally applied may be necessary.

IV. 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.

TABLE 28 STONE SIZE

	Size Range	D_{50}	D_{100}	AASHTO	Weight
Number 57 *	3/8" - 1½"	½"	1½"	M-43	N/A
Number 1	2" - 3"	2½"	3"	M-43	N/A
Rip-Rap **	4" - 7"	5½"	7"	N/A	N/A
Class I	N/A	9.5"	15"	N/A	150 Lb. max.
Class II	N/A	16"	24"	N/A	700 Lb. max.
Class III	N/A	23"	34"	N/A	2000 Lb. max.

* This classification is to be used on the inside face of stone outlets and check dams.

** This classification is to be used when ever small rip-rap is required. The State Highway Administration designation for this stone is stone for gabions (905.01.04).

STONE FOR GABION BASKETS

Basket Thickness		Size of individual Stones	
Inches	MM	Inches	MM
6	150	3 - 5	75 - 125
9	225	4 - 7	100 - 175
12	300	4 - 7	100 - 175
18	460	4 - 7	100 - 175
36	910	4 - 12	100 - 300

Note: Recycled concrete equivalent may be substituted for all stone classifications. Recycled concrete equivalent shall be concrete broken into the sizes meeting the appropriate classification, shall contain no steel reinforcement, and shall have a density of 150 pounds per cubic foot.

H - 24 - 1

MATERIALS SPECIFICATIONS

TABLE 27 GEOTEXTILE FABRICS

Class	Apparent Opening Size MM. Max.	Grab Tensile Strength Lb. Min.	Burst Strength PSI. Min.
A	0.30 **	250	500
B	0.60	200	320
C	0.30	200	320
D	0.60	90	145
E	0.30	90	145
F (silt fence)	0.40-0.80 *	90	190

* US Standard sieve CW-02215 ** .50 MM max. for super silt fence

The properties shall be determined in accordance with the following procedures:
- Apparent opening size mamt 323.
- Grab tensile strength ASTMD 1682: 4 x 8" specimen, 1 x 2" clamps, 12" min. strain rate in both principal directions of geotextile fabric.
- Burst strength: ASTMD D 3786.

The fabric shall be inert to commonly encountered chemicals and hydrocarbons, and will be rot and mildew resistant. It shall be manufactured from fibers consisting of long chain synthetic polymers, and composed of a minimum of 85% by weight of polyolephins, polyesters, or polyamides. The geotextile fabric shall resist deterioration from ultraviolet exposure.

In addition, classes A through E shall have a 0.01 cm./sec. minimum permeability when tested in accordance with mamt 507, and an apparent minimum elongation of 20 percent (20%) when tested in accordance with the grab tensile strength requirements listed above.

Silt fence
Class F geotextile fabric for silt fence shall have a 50 lb./in. minimum tensile strength and a 20 lb./in. minimum tensile modules when tested in accordance with mamt 509. The material shall also have a 0.3 gal./ft./min. flow rate and seventy-five percent (75%) minimum filtering efficiency when tested in accordance with mamt 322. Geotextile fabrics used in the construction of silt fence shall resist deterioration from ultraviolet exposure. The fabric shall contain sufficient amounts of ultraviolet ray inhibitors and stabilizers to provide a minimum of 12 months of expected usable construction life at a temperature range of 0° to 120° degrees fahrenheit.

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

I. This practice is limited to areas having 2:1 or flatter slopes where:

a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.

b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.

c. The original soil to be vegetated contains material toxic to plant growth.

d. The soil is so acidic that treatment with limestone is not feasible.

II. For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have the appropriate stabilization shown on the plans.

CONSTRUCTION AND MATERIAL SPECIFICATIONS

I. Topsoil salvages from the existing site may be used provided that is 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-SCS in cooperation with Maryland Agricultural Experimental Station.

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

i. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate 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 1½" in diameter.

ii. Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, Johnsongrass, nutsedge, poison ivy, thistle, or others as specified.

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

II. For sites having disturbed areas under 5 acres:

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

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

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

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

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

Note: Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.

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

V. Topsoil Application

I. When topsoiling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.

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

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

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

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

i. Composted Sludge Material for use as a soil conditioner for sites having 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:

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

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

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

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

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

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 1-3-07

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 1/10/07

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 1/9/07

Date	No.	Revision Description

FINAL PLAN

ZAISER PROPERTY

LOTS 1 THRU 10 AND OPEN SPACE LOT 11
AND THE RE-SUB DIVISION OF
NON-BUILDABLE BULK PARCELS 'C' AND 'D'
TAX MAP 31 PARCEL 243,572

OWNER/DEVELOPER:

Ilchester farm, LLC
c/o James Keelty 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) 296-3333
Fax 296-4705

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

SUBDIVISION NAME			SECTION/AREA		LOT/PARCEL #
ZAISER PROPERTY					157
PLAT# OR L/F	BLOCK #	ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
	10,11,16,17	R-20	31	1	

TITLE **ZAISER PROPERTY**
FINAL PLAN
SEDIMENT AND EROSION CONTROL SPECIFICATIONS

Des. By KAD	Scale 1" = 50'	Proj. No. 02059.B	
Dm. By GMO	Date 9/7/06	10 of 19	
Chk. By	Approved		

9/5/06
Date

Professional Engr. No. 14230

F-06-116

DEVELOPER'S CERTIFICATION:

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

SIGNATURE OF DEVELOPER — DATE 9/5/06
PRINT NAME BELOW SIGNATURE
MARK BUDA

ENGINEER'S CERTIFICATION:

"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."

SIGNATURE OF ENGINEER — DATE 9/5/06
PRINT NAME BELOW SIGNATURE
Jeffrey L. Schaub

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

U.S. NATURAL RESOURCE CONSERVATION SERVICE — DATE 12/21/06

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

HOWARD S.C.D. — DATE 12/21/06

fax Sep 5 10:05 2006

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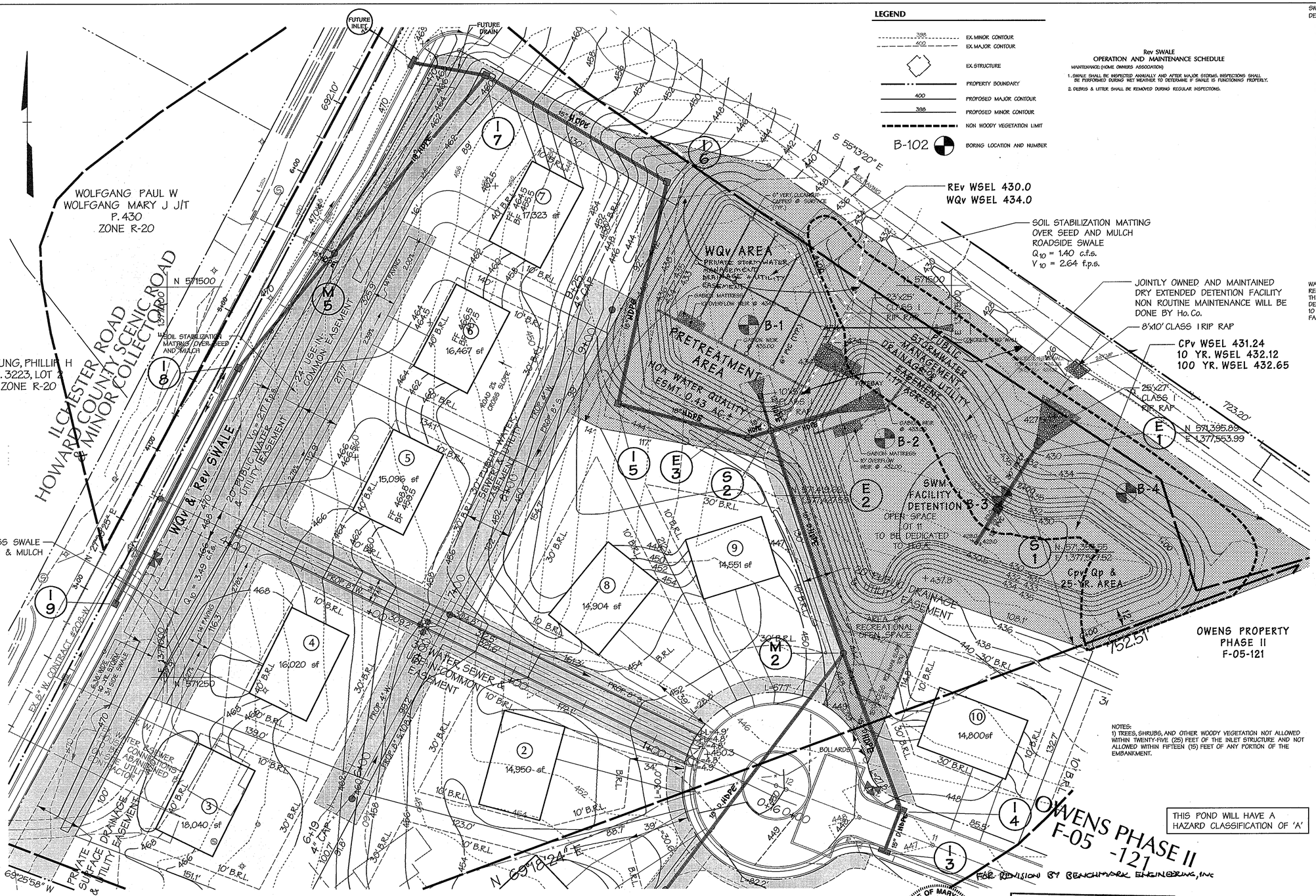


LEGEND

- 398 — EX. MINOR CONTOUR
- 400 — EX. MAJOR CONTOUR
- EX. STRUCTURE
- PROPERTY BOUNDARY
- 400 — PROPOSED MAJOR CONTOUR
- 398 — PROPOSED MINOR CONTOUR
- NON WOODY VEGETATION LIMIT
- B-102 — BORING LOCATION AND NUMBER

Rev SWALE OPERATION AND MAINTENANCE SCHEDULE

MAINTENANCE: (HOME OWNERS ASSOCIATION)

1. SWALE SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHALL BE PERFORMED DURING WET WEATHER TO DETERMINE IF SWALE IS FUNCTIONING PROPERLY.
2. DEBRIS & LITTER SHALL BE REMOVED DURING REGULAR INSPECTIONS.

SWM FACILITY 1 DESIGN FLOW SUMMARY PROPOSED CONDITIONS

Structure Type / Water Quality Type	Extended Detention Pocket Sand Filter and Open Channel Credits
Water Quality Storage Required (WQv) (Ac-ft)	0.19
Water Quality Storage Provided (WQv) (Ac-ft)	0.33
Provided by Open Channel Credits and Pocket Sand Filter	
Recharge Required (Rev) (Ac)	0.04
Recharge Provided (Rev) (Ac)	0.06
Provided by Open Channel Credits and stone storage beneath Pocket Sand Filter	
Channel Protection Required (Cpv) (Ac-ft)	0.37
Channel Protection Provided (Cpv) (Ac-ft)	0.33
Provided by Extended Detention	
1-Yr Pre-development Q (cfs)	5.32
1-Yr Post-Development Q (cfs)	6.96
1-Yr Post-Development Q, Bypass (cfs)	1.09
10-Yr Pre-development Q (cfs)	27.10
10-Yr Post-Development Q (cfs)	29.66
10-Yr Post-Development Q, Bypass (cfs)	4.00
25-Yr Pre-development Q (cfs)	32.36
25-Yr Post-Development Q (cfs)	34.97
25-Yr Post-Development Q, Bypass (cfs)	4.67
100-Yr Pre-development Q (cfs)	50.77
100-Yr Post-Development Q (cfs)	53.32
100-Yr Post-Development Q, Bypass (cfs)	6.85
WQv =	434.01' WSEL
Cpv =	431.24' WSEL
10 YR. =	432.12' WSEL
25 YR. =	432.24' WSEL
100 YR. =	432.65' WSEL

WATER QUALITY IS MET BY OPEN CHANNEL CREDITS AND A PROPOSED SAND FILTER. RECHARGE IS MET BY OPEN CHANNEL CREDITS AND A STONE AREA UNDERNEATH THE PROPOSED SAND FILTER. CHANNEL PROTECTION VOLUME IS MET BY EXTENDED DETENTION OF THE 1-YR STORM IN THE SWM FACILITY. FLOOD PROTECTION OF THE 10 & 25 YEAR STORMS WILL BE PROVIDED BY DETENTION IN THE SWM FACILITY.

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 18". 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 NOTED.

SAND FILTER 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. DEBRIS & LITTER SHALL BE REMOVED DURING REGULAR INSPECTIONS.
3. STRUCTURAL COMPONENTS OF THE FACILITY SUCH AS THE PIPES, GABION MATTRESS AND WEIR SHALL BE REPAIRED UPON THE DETECTION OF ANY DAMAGE. THE COMPONENTS SHALL BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.
4. SEDIMENT SHALL BE REMOVED FROM THE SAND FILTER WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, UPON APPROVAL FROM
5. VISIBLE SIGNS OF EROSION OF THE SAND AND THE GABION MATTRESS AND WEIR SHALL BE REPAIRED AS SOON AS IT IS NOTED.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 1-3-07

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT JA — DATE 1/10/07

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 1/4/07

Date	No.	Revision Description
10-31-13	1	CHANGE RCCP TO HDPE BEI

FINAL PLAN

ZAISER PROPERTY

LOTS 1 THRU 10 AND OPEN SPACE LOT 11
AND THE RE-SUB DIVISION OF
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
Daft-McCune-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

SUBDIVISION NAME		SECTION/AREA		LOT/PARCEL #
ZAISER PROPERTY				157
PLAT# OR L/F	BLOCK # / ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
10,11,16,17	R-20	31	1	

TITLE

ZAISER PROPERTY
FINAL PLAN
STORMWATER MANAGEMENT PLAN

Des. By CRW	Scale 1" = 30'	Proj. No. 02059.B	11 of 19
Dm. By GMO	Date 10/25/06		
Chk. By	Approved		

NOTE: The property downstream of the existing 24" CMP culvert will be subject to current environmental constraints if improvements are proposed. Future development would require establishment of a stream buffer adequate to contain the dam breach flow from the proposed stormwater management facility.

DEVELOPER'S CERTIFICATION:

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

SIGNATURE OF DEVELOPER — DATE 12/19/06
PRINT NAME BELOW SIGNATURE
MARK BUDA

ENGINEER'S CERTIFICATION:

"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.

SIGNATURE OF ENGINEER — DATE
PRINT NAME BELOW SIGNATURE!
Charles V. Main II

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

U.S. NATURAL RESOURCE CONSERVATION SERVICE — DATE 12/21/06

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

HOWARD S.C.D. — DATE 12/21/06

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

STATE OF MARYLAND — DONALD ALAN MAIN — No. 21443 — PROFESSIONAL ENGINEER — 12-1-13

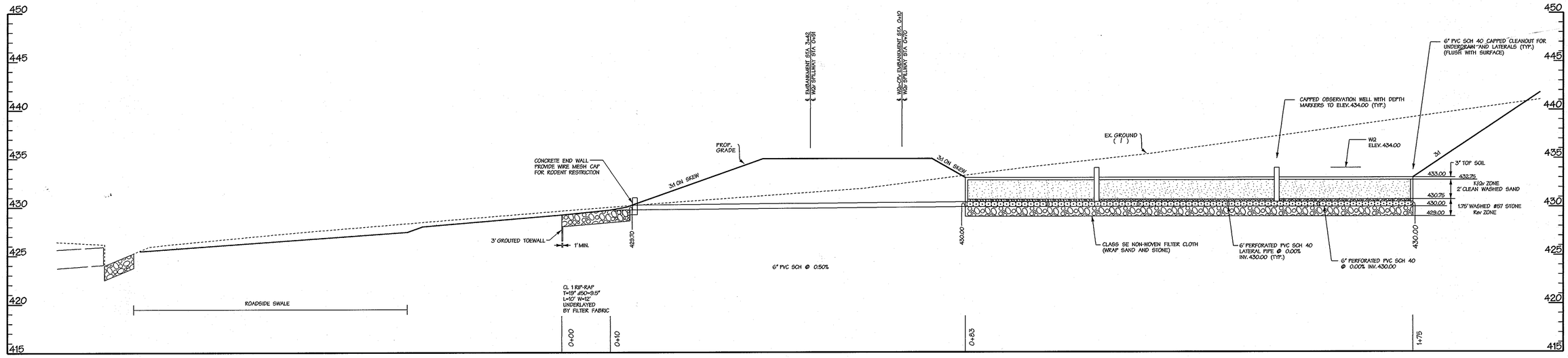
12-15-06 Date

STATE OF MARYLAND — CHARLES VICTOR MAIN II — 20784 — PROFESSIONAL ENGINEER

20784 Professional Engr. No.

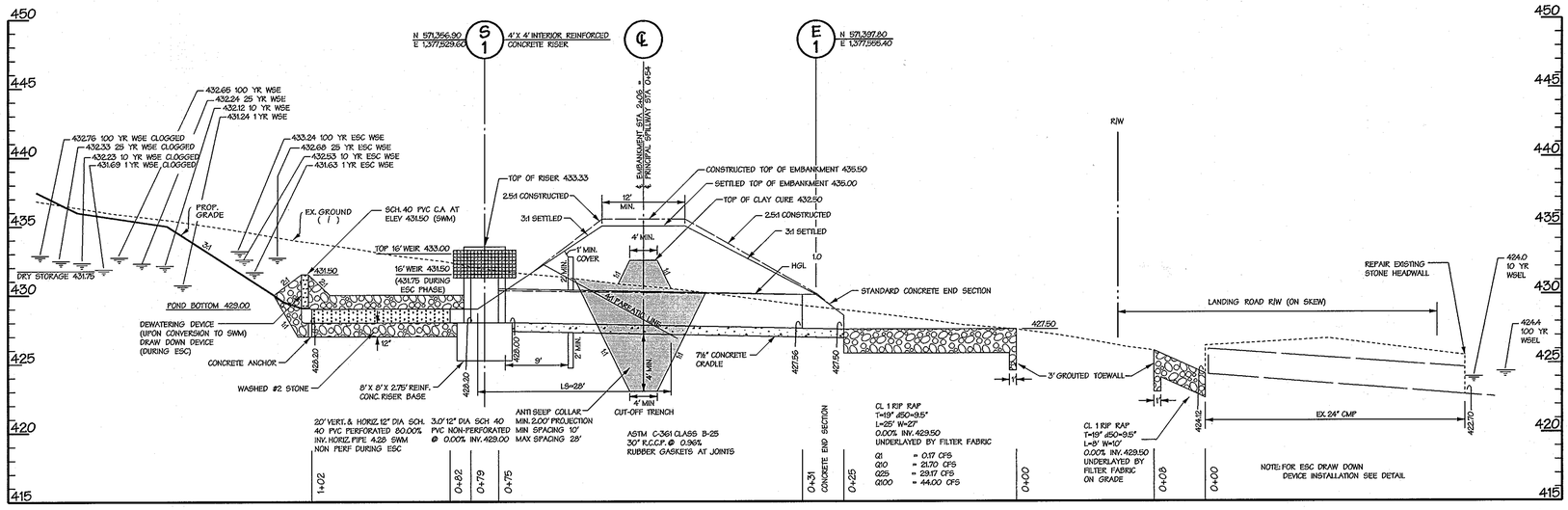
F-06-116

Thu Dec 14 15:13:45 2006 N:\02059\Final\02059.M01



PROFILE ALONG WQv SPILLWAY

SCALE: HORIZ. 1"=10'
VERT. 1"=5'



PROFILE THROUGH RISER AND PRINCIPAL SPILLWAY

SCALE: HORIZ. 1"=10'
VERT. 1"=5'

NOTE: ACTUAL LENGTH AND DEPTH OF CUT-OFF TRENCH SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER IN THE FIELD. FILL MATERIAL FOR THE CUT-OFF TRENCH / CLAY CORE SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION CL, GL, CH, OR SC. CONSIDERATION MAY BE GIVEN TO THE USE OF OTHER MATERIALS IN THE EMBANKMENT IF DESIGN AND CONSTRUCTION ARE SUPERVISED BY A GEOTECHNICAL ENGINEER.

	1 YR		10 YR		25 YR		100 YR	
D/P	EX	PROP	EX	PROP	EX	PROP	EX	PROP
#1	5.32 CFS	1.26 CFS	27.83 CFS	25.47 CFS	33.13 CFS	32.31 CFS	51.00 CFS	43.56 CFS
#2	0.38 CFS	0.27 CFS	1.54 CFS	0.80 CFS	1.80 CFS	0.92 CFS	2.66 CFS	1.30 CFS

DEVELOPER'S CERTIFICATION:

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

SIGNATURE OF DEVELOPER — DATE 12/13/06
PRINT NAME BELOW SIGNATURE
MARK BUDA

ENGINEER'S CERTIFICATION:

"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.

SIGNATURE OF ENGINEER — Charles V. Main II
PRINT NAME BELOW SIGNATURE
Charles V. Main II

THESE PLANS HAVE BEEN REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.
U.S. NATURAL RESOURCE CONSERVATION SERVICE — DATE 12/21/06

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
HOWARD S.C.D. — DATE 12/21/06

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 1-2-07

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 1/10/07
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 1/9/07

Date	No.	Revision Description

FINAL PLAN

ZAISER PROPERTY

LOTS 1 THRU 10 AND OPEN SPACE LOT 11
AND THE RE-SUB DIVISION OF
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
Daft-McCune-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

SUBDIVISION NAME		DISTRICT/AREA		LOT/PARCEL #
ZAISER PROPERTY				157
PLAT# OR L/F	BLOCK #	ZONE	TAX/ZONE MAP	ELEC. DISTRICT	CENSUS TRACT
10,11,16,17		R-20	31	1	

12-15-06
Date

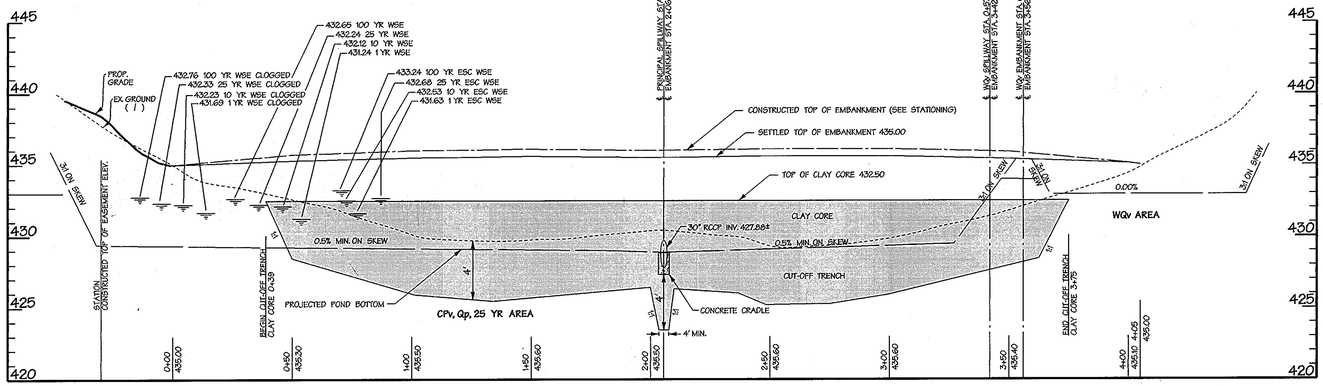
Charles V. Main II
No. 20784
PROFESSIONAL ENGINEER
STATE OF MARYLAND

20784
Professional Engr. No.
F-06-116

TITLE
ZAISER PROPERTY
FINAL PLAN
STORMWATER MANAGEMENT PROFILES

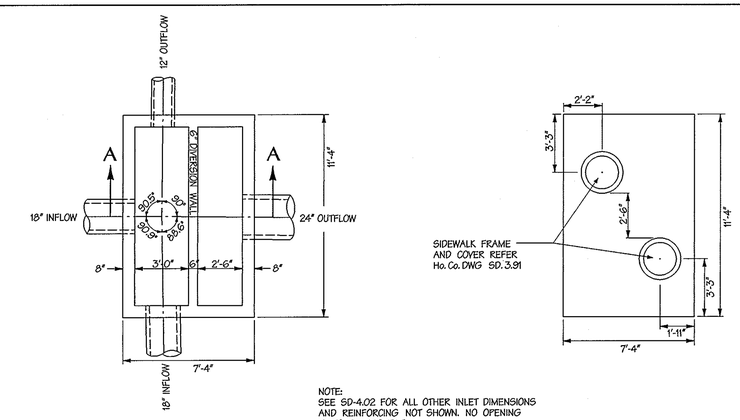
Des. By CRW	Scale 1" = 10'	Proj. No. 02059.B	12 of 19
Dm. By GMO	Date 10/25/06		
Chk. By	Approved		

Thu Dec 14 15:41:11 2006 H:\02059\Final\02059.M02



PROFILE ALONG CENTERLINE OF EMBANKMENT

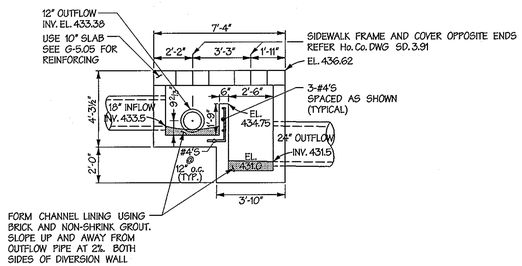
SCALE: HORIZ. 1"=30'
VERT. 1"=5'



PLAN

NOTE:
SEE SD-4.02 FOR ALL OTHER INLET DIMENSIONS AND REINFORCING NOT SHOWN. NO OPENING IS TO BE PROVIDED.

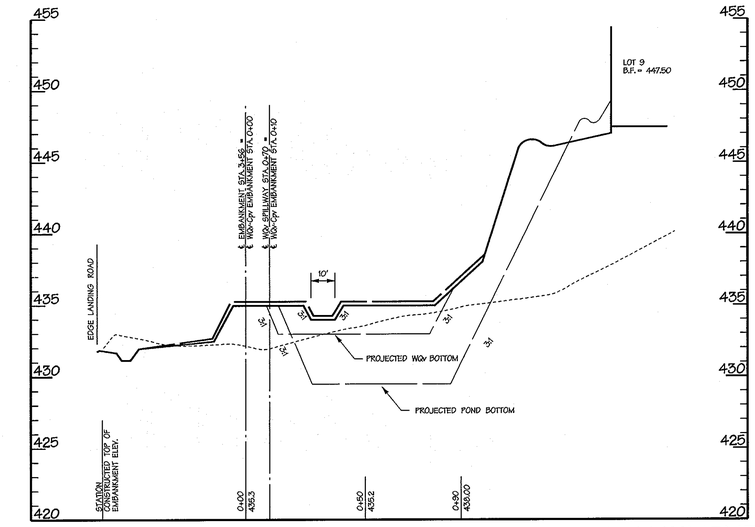
SLAB PLAN



SECTION A-A

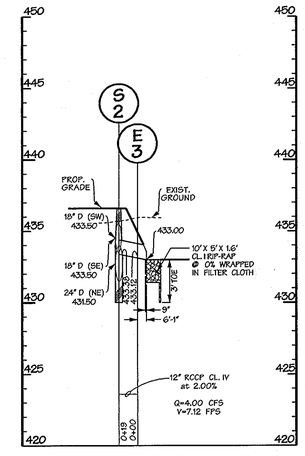
DIVERSION STRUCTURE (S-2) FOR SWM FACILITY TYPE 'A-10' INLET (SD 4.02)

SCALE: ¼" = 1'-0"



PROFILE ALONG CENTERLINE OF WQv-Cpv EMBANKMENT

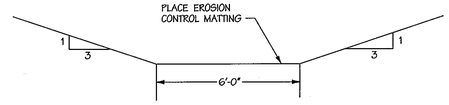
SCALE: HORIZ. 1"=30'
VERT. 1"=5'



STORM DRAIN PROFILE

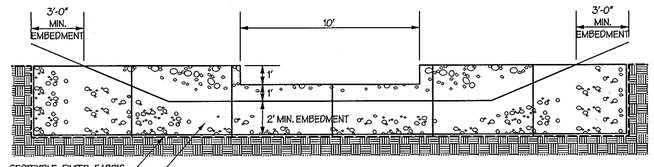
SCALE: HORZ. 1" = 30'
VERT. 1" = 5'

NOTE: SEE SHEET 4 FOR STRUCTURE TABLE



GRASS CHANNEL TYPICAL SECTION

NOT TO SCALE



GABION WEIR DETAIL

NOT TO SCALE

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 1-3-07

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 1/10/07

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 1/9/07

Date	No.	Revision Description

FINAL PLAN

ZAISER PROPERTY

LOTS 1 THRU 10 AND OPEN SPACE LOT 11
AND THE RE-SUB DIVISION OF
NON-BUILDABLE BULK PARCELS 'C' AND 'D'
TAX MAP 31 PARCEL 243, 572

OWNER/DEVELOPER:

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200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4705

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

SUBDIVISION NAME		SECTION/AREA		LOT/PARCEL #
ZAISER PROPERTY				1&7
PLAT OR L/F	BLOCK #	ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
	10,11,16,17	R-20	31	1	

TITLE

ZAISER PROPERTY
FINAL PLAN
STORMWATER MANAGEMENT PROFILES

Des. By CRW	Scale AS SHOWN	Proj. No. 02059.B	
Dm. By GMO	Date 10/25/06	13 of 19	
Chk. By	Approved		

Thu Dec 14 1514:43 2006 N:\02059\Final\02059.MCD

DEVELOPER'S CERTIFICATION:

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

SIGNATURE OF DEVELOPER — DATE 12/15/06
PRINT NAME BELOW SIGNATURE
MARK BUDA

ENGINEER'S CERTIFICATION:

"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.

SIGNATURE OF ENGINEER
PRINT NAME BELOW SIGNATURE
Charles V. Main II

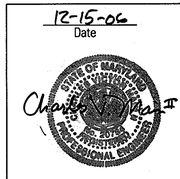
THESE PLANS HAVE BEEN REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

U.S. NATURAL RESOURCE CONSERVATION SERVICE — DATE 12/21/06

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

HOWARD S.C.D. — DATE 12/21/06

12-15-06
Date



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Professional Engr. No.

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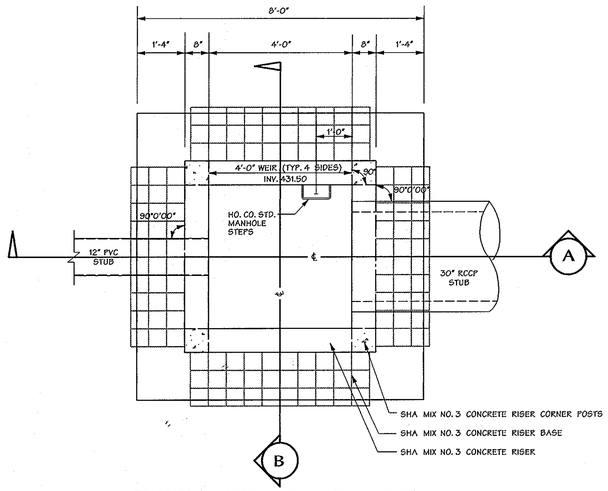
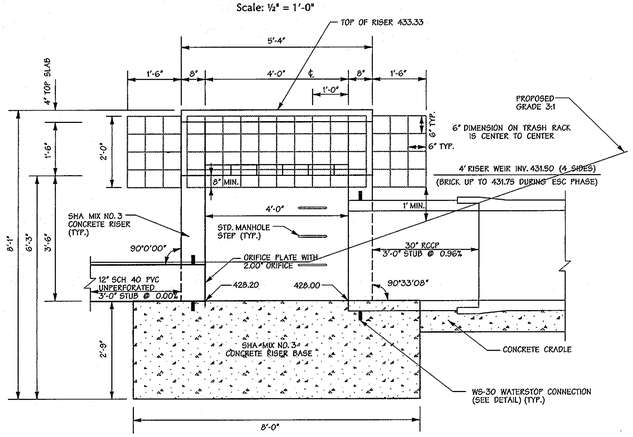


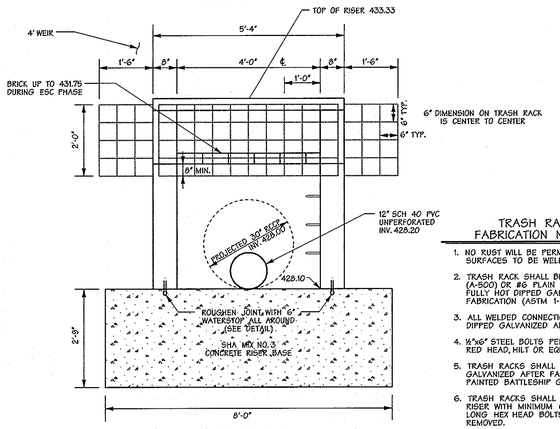
RISER PLAN (TOP SLAB REMOVED) (S-1)

Scale: ½" = 1'-0"



SECTION A-A

Scale: ½" = 1'-0"

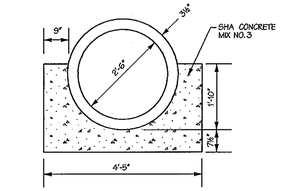


SECTION B-B

Scale: ½" = 1'-0"

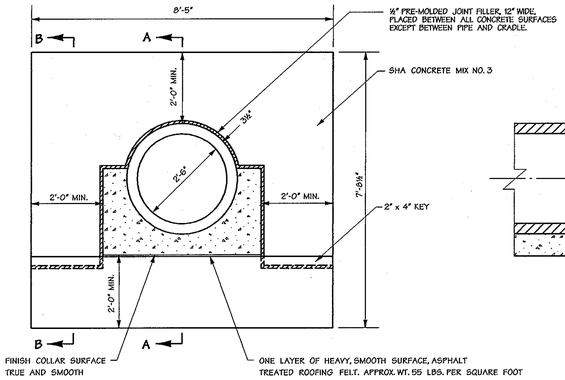
TRASH RACK FABRICATION NOTES

1. NO RUST WILL BE PERMITTED ON SURFACES TO BE WELDED.
2. TRASH RACK SHALL BE 1" X 1" TUBING (A-500) OR #6 PLAIN BAR (ASTM A-36) FULLY HOT DIPPED GALVANIZED AFTER FABRICATION (ASTM 1-123.
3. ALL WELDED CONNECTIONS MUST BE HOT DIPPED GALVANIZED AND SHOP FABRICATED.
4. ½"x6" STEEL BOLTS PER ASTM (A-307) RED HEAD, HILT OR EQUAL.
5. TRASH RACKS SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION AND PAINTED BATTLESHIP GREY.
6. TRASH RACKS SHALL BE BOLTED TO EX. RISER WITH MINIMUM OF 8'-1/2" X 6" LONG HEX HEAD BOLTS SO THAT IT CAN BE REMOVED.

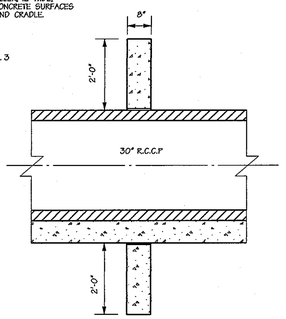


CONCRETE CRADLE DETAIL

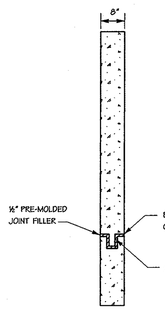
1"=2'-0"



DETAIL SHOWN FOR EARTH FOUNDATION. FOR ROCK FOUNDATION, FOUND BOTTOM OF CRADLE ON ROCK LINE AND KEY COLLAR 6" INTO ROCK.



SECTION A-A



SECTION B-B

ANTI - SEEP COLLAR DETAIL

CAST IN PLACE - 1"=2'-0"

Construction Specifications

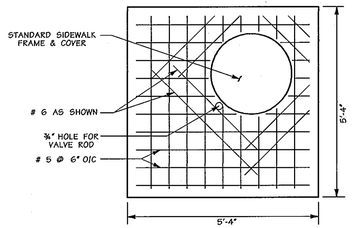
1. The subgrade for the filter, rip-rap, or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.

2. The rock or gravel shall conform to the specified grading limits when installed respectively in the rip-rap or filter.

3. Geotextile 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 blankets 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 occur adjacent to the stone will occur.

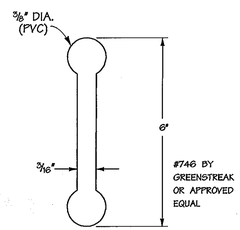


NOTES:

1. BOLT TOP SLAB TO RISER WITH (4) ½" x 6" LG. HEX. HEAD GALVANIZED BOLTS.
2. THE SIDE OF THE SLAB CLOSEST TO THE FRAME AND COVER WILL LINE UP WITH THE SIDE OF THE RISER WITH STANDARD MANHOLE STEPS.

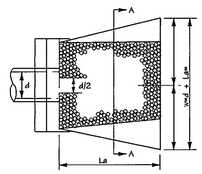
TOP SLAB (S-1)

CAST IN PLACE Scale: ½" = 1'-0"

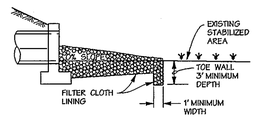


6" WATERSTOP

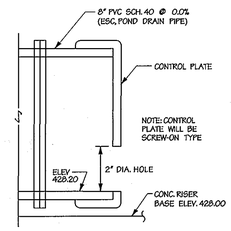
NOT TO SCALE



PLAN VIEW

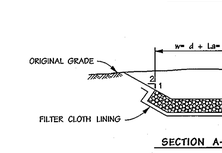


ELEVATION



ESC CONTROL PLATE DETAIL

NOT TO SCALE



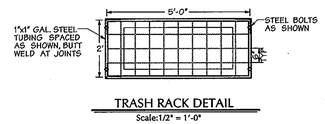
FILTER FABRIC LINING SHALL BE EMBEDDED A MINIMUM OF 4" AND SHALL EXTEND AT LEAST 6' BEYOND THE EDGE OF THE RIP-RAP

SECTION A-A

NOTE: FILTER CLOTH SHALL BE GEOTEXTILE CLASS C

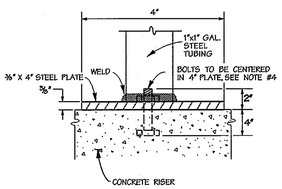
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE F-18-10 (HEAD) *MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION*

ROCK OUTLET PROTECTION III NOT TO SCALE



TRASH RACK DETAIL

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



TRASH RACK WELDING DETAIL

NOT TO SCALE

PIPE WATER STOP DETAIL

NOT TO SCALE

DEVELOPER'S CERTIFICATION:

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

SIGNATURE OF DEVELOPER — DATE 12/15/06

PRINT NAME BELOW SIGNATURE

MARK BUDA

ENGINEER'S CERTIFICATION:

"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.

SIGNATURE OF ENGINEER — Charles V. Main II

PRINT NAME BELOW SIGNATURE

Charles V. Main II

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

U.S. NATURAL RESOURCE CONSERVATION SERVICE — DATE 12/21/06

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

HOWARD S.C.D. — DATE 12/21/06

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 1-3-07

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 1/6/07

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 1/3/07

Date	No.	Revision Description

FINAL PLAN

ZAISER PROPERTY

LOTS 1 THRU 10 AND OPEN SPACE LOT 11
AND THE RE-SUB DIVISION OF
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

Daft-McCune-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

SUBDIVISION NAME		SECTION/AREA		LOT/PARCEL #
ZAISER PROPERTY				157
PLAT OR L/F	BLOCK # / ZONE	TAX/ZONE MAP	ELEC. DISTRICT	CENSUS TRACT
10,11,16,17	R-20	31	1	

TITLE

ZAISER PROPERTY
FINAL PLAN
STORMWATER MANAGEMENT DETAILS

Des. By CRW	Scale AS SHOWN	Proj. No. 02059.B	
Dm. By GMO	Date 10/25/06	14 of 19	
Chk. By	Approved		

12-15-06
Date

Professional Engr. No. 20784

F-06-116

N:\02059\Final\02059.M04 Thu Dec 14 15:55:37 2006

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", (1993) 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. Channel banks and sharp breaks shall be sloped to no steeper than 1:1. All trees shall be cleared and grubbed within 15 feet of the toe of the embankment.

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

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

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 ave construction supervised by a geotechnical engineer.

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

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

COMPACTION - 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 the minimum width being four feet. The depth shall be at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability.

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 concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pipe.

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

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 M294 Type S.
2. Joints and connections to anti-seep collars shall be completely watertight.
3. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.
4. Backfilling shall conform to "Structure Backfill".
5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

7. CONCRETE
Concrete must meet minimum requirements set forth in Maryland State Highway Administration Standard Specifications for Construction and Materials, Section 910 (Portland Cement Concrete Mixtures), 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 of 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 sumps from which the water shall be pumped.

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

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% Kenblue Kentucky Bluegrass
40% Pennlawn Creeping Red Fescue
10% Streaker Redtop
Applied at a rate of 150 pounds per acre.
(or)
Rebel II Tall Fescue (125 pounds per acre)
Pennfine Perennial Ryegrass (15 pounds per acre)
Kenblue Kentucky Bluegrass (10 pounds per acre)
(or)
Pennlawn Creeping Red Fescue (70 pounds per acre)
Aurora Hard Fescue (50 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 ralls, round side out, with post spaced 10 feet on center. The wire fabric shall be 4' x 2", 14 gauge, black vinyl coated welded 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 690.01 and 690.02. Use specifications for a 6-foot fence, substituting 42" fabric and 6'-8" line posts. Construct the gate in accordance with SHA Standard Detail 692.01 with 42" fabric. The fabric used for the fence and gate must conform to AASHTO Designation M181-74.

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 connectors on pipes and
      (iii) Trenches for enclosed storm drainage facilities.
   (2) During placement of structural fill, 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 stabilization.

   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 as-built.
3. A copy of all material supply tickets must be given to the designated engineer in charge of the as-built.

17. OPERATION, MAINTENANCE AND INSPECTION
Inspection of ponds shown herein shall be performed at least twice annually, in accordance with the checklist and requirements contained within USDA, SCS "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.

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

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

Project Name: Zaiser Property SWM — Boring No.: B-1
Location: Howard County, Maryland — Job #: 02256F

SAMPLER — Datum: — Hammer Wt.: 140 lbs. — Hole Diameter: 6 — Foreman: L. Smith
Surf. Elev.: 435.36 Ft. — Hammer Drop: 30 in. — Rock Core Diameter: — Inspector:
Date Started: 11/22/04 — Pipe Size: 2.0 in. — Boring Method: HSA — Date Completed: 11/22/04

Elevation/ Depth	SOIL SYMBOL/ SAMPLE CONDITIONS	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	N	SPT Blows/Foot Curve 10 30 50
435		Dark greyish brown and tan, moist, medium stiff, silty clay, trace organics, with gravel, sand, and rock fragments (CL)	Topsoil 4 inches	10"		1-3-3-5	6	
430		Brown, moist, medium dense, silty sand, with gravel, trace clay (SM)		14"		5-13-14-15	27	
		Orange and Gray, moist to damp, medium dense to loose, silty and clayey fine sand (SM-SC)	No groundwater encountered while drilling.	24"		6-6-7-6	13	
425				12"		2-4-5-5	9	
				24"		2-3-4-6	7	
420		Greyish white and tan, damp, loose, silty coarse sand with gravel, trace clay (SM-GM)	Caved at 3.0 ft at completion.	18"		4-6-5-6	10	
		Bottom of Test Boring at 15.0 ft.						
415								
410								
405								

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE
SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST
AT COMPLETION: GROUND WATER Dry ft.; CAVE IN DEPTH 3.0 ft.
AFTER 24 HRS.: GROUND WATER ___ ft.; CAVE IN DEPTH ___ ft.
AFTER ___ HRS.: GROUND WATER ___ ft.; CAVE IN DEPTH ___ ft.
BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING

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

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

Project Name: Zaiser Property SWM — Boring No.: B-2
Location: Howard County, Maryland — Job #: 02256F

SAMPLER — Datum: — Hammer Wt.: 140 lbs. — Hole Diameter: 6 — Foreman: L. Smith
Surf. Elev.: 432.20 Ft. — Hammer Drop: 30 in. — Rock Core Diameter: — Inspector:
Date Started: 11/22/04 — Pipe Size: 2.0 in. — Boring Method: HSA — Date Completed: 11/22/04

Elevation/ Depth	SOIL SYMBOL/ SAMPLE CONDITIONS	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	N	SPT Blows/Foot Curve 10 30 50
435		Dark brown, moist, soft, silty cl ay to clayey silt, trace fine sand, f trace gravel (CL-ML)	Topsoil 4 inches	14"		2-2-2-2	4	
430		Grayish brown to reddish brow n, moist, medium stiff to stiff, sla ilty silt, trace clay and fine sand (I-ML)		13"		2-3-5-6	8	
				20"		4-5-7-10	13	
425		Dark grey, moist to damp, me dium stiff, silt, trace mica, clay and fine sand (ML)	No groundwater encountered while drilling.	18"		2-3-5-6	9	
				17"		2-3-3-6	6	
420		Dark gray, damp, medium dr nse, silty fine sand to sandy silt (E-ML)	Caved at 2.0 ft at completion.	18"		3-5-6-8	13	
		Bottom of Test Boring at 15.0 ft.						
415								
410								
405								

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE
SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST
AT COMPLETION: GROUND WATER Dry ft.; CAVE IN DEPTH 2.0 ft.
AFTER 24 HRS.: GROUND WATER ___ ft.; CAVE IN DEPTH ___ ft.
AFTER ___ HRS.: GROUND WATER ___ ft.; CAVE IN DEPTH ___ ft.
BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING

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

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

Project Name: Zaiser Property SWM — Boring No.: B-3
Location: Howard County, Maryland — Job #: 02256F

SAMPLER — Datum: — Hammer Wt.: 140 lbs. — Hole Diameter: 6 — Foreman: L. Smith
Surf. Elev.: 431.34 Ft. — Hammer Drop: 30 in. — Rock Core Diameter: — Inspector:
Date Started: 11/22/04 — Pipe Size: 2.0 in. — Boring Method: HSA — Date Completed: 11/22/04

Elevation/ Depth	SOIL SYMBOL/ SAMPLE CONDITIONS	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	N	SPT Blows/Foot Curve 10 30 50
435		Grayish brown, moist, medium stiff, clayey silt, trace fine sand, gravel and organics (ML)	Topsoil 6 inches	18"		2-3-3-7	6	
430		Brown, moist, medium dense, silty sand, trace gravel (SM)		24"		7-10-19-17	29	
		Light brown to brown, damp to moist, medium stiff to stiff, silty clay, trace fine sand, trace mica (CL)	No groundwater encountered while drilling.	20"		4-6-7-10	13	
425				18"		2-3-6-6	9	
		Orange and brown, moist, medium stiff, sandy silt, trace mica and clay (ML)	Caved at 7.0 ft at completion.	17"		2-3-3-6	6	
420		Dark grey, moist, medium dense, silty sand, trace gravel, with mica (SM)		18"		3-5-8-8	13	
		Bottom of Test Boring at 15.0 ft						
415								
410								
405								

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE
SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST
AT COMPLETION: GROUND WATER Dry ft.; CAVE IN DEPTH 7.0 ft.
AFTER 24 HRS.: GROUND WATER ___ ft.; CAVE IN DEPTH ___ ft.
AFTER ___ HRS.: GROUND WATER ___ ft.; CAVE IN DEPTH ___ ft.
BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING

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

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

Project Name: Zaiser Property SWM — Boring No.: B-4
Location: Howard County, Maryland — Job #: 02256F

SAMPLER — Datum: — Hammer Wt.: 140 lbs. — Hole Diameter: 6 — Foreman: L. Smith
Surf. Elev.: 429.16 Ft. — Hammer Drop: 30 in. — Rock Core Diameter: — Inspector:
Date Started: 11/22/04 — Pipe Size: 2.0 in. — Boring Method: HSA — Date Completed: 11/22/04

Elevation/ Depth	SOIL SYMBOL/ SAMPLE CONDITIONS	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	N	SPT Blows/Foot Curve 10 30 50
430		Brown, moist, medium stiff, Clay (CL)	Topsoil 6 inches	15"		2-3-3-5	6	
		Reddish brown and Orange, moist, stiff to very stiff, sandy silt and clay (CL-ML)		18"		7-10-12-14	22	
425		Orange brown, moist, medium dense, silty coarse sand and gravel,with broken quartz fragments (SM-GM)	No groundwater encountered while drilling.	17"		5-6-9-9	15	
				18"		4-5-9-9	14	
420		Orange brown with grayish white, moist to damp, medium dense to dense, silty coarse sand, with gravel, trace coal (SM)	Caved at 10.0 ft at completion.	20"		4-6-9-13	15	
				20"		10-15-25-27	40	
415		Bottom of Test Boring at 15.0 ft.						
410								
405								

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE
SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST
AT COMPLETION: GROUND WATER Dry ft.; CAVE IN DEPTH 10.0 ft.
AFTER 24 HRS.: GROUND WATER ___ ft.; CAVE IN DEPTH ___ ft.
AFTER ___ HRS.: GROUND WATER ___ ft.; CAVE IN DEPTH ___ ft.
BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING

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

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 1-3-07

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 1/10/07
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 1/9/07

Date	No.	Revision Description

FINAL PLAN

ZAISER PROPERTY

LOTS 1 THRU 10 AND OPEN SPACE LOT 11
AND THE RE-SUB DIVISION OF
NON-BUILDABLE BULK PARCELS 'C' AND 'D'
TAX MAP 31 PARCEL 243,572

OWNER/DEVELOPER:

Ilchester farm, LLC
c/o James Keelty and Co. Inc.
P.O. Box 528
61 E. Fadonia Road.
Timonium, MD 21093

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 — 14230 REG. NO. — 9/5/06 DATE
PRINT NAME BELOW SIGNATURE
Jeffrey L. Schmehl

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 — 12/21/06 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 — 12/21/06 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 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 — 9/5/06 DATE
PRINT NAME BELOW SIGNATURE
MARK BUDA

9/5/06 Date

Professional Engr. No. 14230

DMW
Daft-McCune-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

SUBDIVISION NAME		SECTION/AREA		LOT/PARCEL #
ZAISER PROPERTY				157
PLAT# OR L/F	BLOCK #	ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
	10,11,16,17	R-20	31	1	

TITLE: **ZAISER PROPERTY**
FINAL PLAN
SOIL BORINGS

Des. By KAD	Scale NONE	Proj. No. 02059.B	
Dm. By WDE	Date 9/7/06		15 of 19
Chk. By	Approved		

F-06-116

F:\Dsgn 11/3/7/20 2006

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PUBLIC ROAD STREET TREE PLANT LIST

QTY	SYM	BOTANICAL NAME/ COMMON NAME	SIZE	REMARKS
SHADE TREES				
10	AR	ACER RUBRUM 'OCTOBER GLORY' OCTOBER GLORY RED MAPLE	2 1/2" - 3" CAL. 12'-14' HT	B & B
14	ZS	ZELKOVA SERRATA JAPANESE ZELKOVA	2 1/2" - 3" CAL. 12'-14' HT	B & B

PERIMETER PLANT LIST

QTY	SYM	BOTANICAL NAME/ COMMON NAME	SIZE	REMARKS
SHADE TREES				
6	QR	QUERCUS RUBRA RED OAK	2 1/2" - 3" CAL 12'-14' HT	B & B FULL HEAD
EVERGREEN TREES				
4	PS	PINUS STROBUS EASTERN WHITE PINE	6'-8' HT.	B & B UNSHEARED

SWM PERIMETER PLANT LIST

QTY	SYM	BOTANICAL NAME/ COMMON NAME	SIZE	REMARKS
SHADE TREES				
11	AR	ACER RUBRUM 'RED SUNSET' RED SUNSET RED MAPLE	2 1/2" - 3" CAL. 12'-14' HT	B & B
7	QR	QUERCUS RUBRA RED OAK	2 1/2" - 3" CAL. 12'-14' HT	B & B FULL HEAD
EVERGREEN TREES				
14	PA	PICEA ABIES NORWAY SPRUCE	6'-8' HT.	B & B
13	PS	PINUS STROBUS EASTERN WHITE PINE	6'-8' HT.	B & B UNSHEARED
ORNAMENTAL TREES				
6	CC	CERCIS CANADENSIS EASTERN REDBUD	1 1/2" - 2" CAL. 6' HT	B & B FULL HEAD
6	CK	CORNUS KOUSA KOUSA DOGWOOD	1 1/2" - 2" CAL. 6' HT	B & B FULL HEAD

SCHEDULE D STORMWATER MANAGEMENT AREA LANDSCAPING

POND #	1
LINEAR FT OF PERIMETER (TYPE 'B')	1158 LF
NUMBER OF TREES REQUIRED SHADE TREES @ 1/20 L.F. EVERGREEN TREES @ 1/40 L.F.	58 29
CREDIT FOR EXISTING VEGETATION	N/A
CREDIT FOR OTHER LANDSCAPING	N/A
NUMBER OF TREES PROVIDED SHADE TREES EVERGREEN TREES ORNAMENTAL TREES	25 17 16

PERIMETER 2 660 LF REQUIRED NO LANDSCAPING REQUIRED

PERIMETER 1 163 LF TYPE 'B'

PERIMETER 3 188 LF TYPE 'A'

INTERNAL PROPERTY LINE NO LANDSCAPING REQUIRED

FUTURE ROAD RELOCATION IS SHOWN FOR REFERENCE ONLY. THIS AREA WILL ONLY BE GRADED AS SHOWN, NO ROAD IMPROVEMENTS WILL BE CONSTRUCTED. STREET TREES IN THIS AREA HAVE NOT BEEN PROVIDED TO AVOID FUTURE CONSTRUCTION CONFLICTS. STREET TREES WILL BE PROVIDED BY HOWARD COUNTY WHEN LANDING AND ILCHESTER ROAD ARE RECONSTRUCTED

NOTE: GRADING SHOWN WITHIN THE STORM WATER MANAGEMENT FACILITY BASIN #1 IS FOR EROSION SEDIMENT AND CONTROL. FOR FINAL GRADES OF THE STORM WATER MANAGEMENT FACILITY AND FOR SAND FILTER SEE FINAL PLAN (WATER QUALITY AND DETENTION)

NOTES:
1) TREES, SHRUBS, AND OTHER WOODY VEGETATION NOT ALLOWED WITHIN TWENTY-FIVE (25) FEET OF THE INLET STRUCTURE AND NOT ALLOWED WITHIN FIFTEEN (15) FEET OF ANY PORTION OF THE EMBANKMENT.

General Planting Notes

1. All plant material to meet A.A.N. Standards.
2. Landscape Contractor to follow landscape specification guidelines for Baltimore Washington Metro area approved by LCAMW.
3. No substitutions to be made without consent of Landscape Architect or Owner.
4. All beds to be topped with three inches of hardwood mulch.
5. Landscape Contractor to verify location of utilities with Owner before planting.
6. Landscape Architect/Owner shall select, verify and/or approve all plant material. At Owner's discretion, specimen and other plant material will be selected.
7. 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.
8. Contractor shall notify Miss Utility 72 hours prior to construction.
9. 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.
10. 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 $20,850.00 must be posted as part of the developer's agreement. (53 shade, 33 evergreens).
11. Developer's/Builder's Certificate

I/we certify that the landscaping shown on this plan will be done according to the plan, Section 16.124 of the Howard County code and the Howard County Landscape Manual. I/we further certify that upon completion, 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 BUDA DATE 9/5/06

SCHEDULE A PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT to ROADWAYS		ADJACENT to PERIMETER PROPERTIES
LANDSCAPE TYPE "A"			P 3
LINEAR FEET OF PERIMETER			188 LF.
LANDSCAPE TYPE "B"	P 1	P 2*	
LINEAR FEET OF PERIMETER	163 LF.	660 LF.	
LANDSCAPE TYPE "C"			
LINEAR FEET OF PERIMETER			
CREDIT FOR EXISTING VEGETATION (DESCRIBE BELOW IF NEEDED)	N/A	N/A	N/A
CREDIT FOR BERM (DESCRIBE BELOW IF NEEDED)	N/A	N/A	N/A
NUMBER OF PLANTS REQUIRED			
SHADE TREES	3	N/A	3
EVERGREEN TREES	4	N/A	0
SHRUBS	0	N/A	0
NUMBER OF PLANTS PROVIDED			
SHADE TREES	3	0	3
EVERGREEN TREES	4	0	0
OTHER TREES (2 :1 SUBSTITUTION)	0	0	0
SHRUBS (10 :1 SUBSTITUTION) (DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)	0	0	0

* NO LANDSCAPING REQUIRED FOR PERIMETER 2 BECAUSE THE HOUSES FRONT ILCHESTER ROAD.
NOTE: PLANTING ALONG THE BOUNDARY WITH THE OWENS PHASE 2 SUBDIVISION IS NOT REQUIRED BECAUSE THE OWENS 2 PROPERTY IS BEING RESUBDIVIDED WITH ZAISER PROPERTY.
NOTE: STREET TREES WILL BE PROVIDED @ A SPACING OF 1/40 LF.

STREET TREE SCHEDULE

ROAD NAME	LENGTH OF ROAD	# OF TREES REQUIRED (1 PER 40 L.F.)	# OF TREES PROVIDED
LANDING ROAD	**660' (400')	17 (10)	*10
ILCHESTER ROAD	**597' (400')	15 (10)	*10
WINESAP WAY	168'	4	4
TOTAL	**1,425' (968')	36 (24)	*24

NOTE:
LOCATION OF TREES MAY VARY BASED ON EASEMENTS.

* STREET TREES ARE NOT PROVIDED ALONG THE FUTURE LANDING ROAD RELOCATION AREA THAT WILL BE DISTURBED WITH FUTURE CONSTRUCTION.

** STREET TREE LENGTH CALCULATION BASED ON PLANTABLE AREA WHICH WILL NOT BE DISRUPTED BY FUTURE ROAD WIDENING CONSTRUCTION. STREET TREES IN FUTURE ROAD WIDENING AREA WILL BE PROVIDED WITH FUTURE ROAD WIDENING.

LEGEND

- EX. TREELINE
- EX. MINOR CONTOUR (2' INT.)
- EX. MAJOR CONTOUR (10' INT.)
- EX. STRUCTURE
- PROP. TREELINE (IF SHOWN)
- PROPERTY BOUNDARY
- RIGHT OF WAY LINE
- PROP. LOT NUMBER
- NON WOODY VEGETATION ZONE
- EX. DECIDUOUS TREE
- PROP. LOT LINE
- BUILDING SETBACK LINE
- EASEMENT AREAS
- 8" W. PROP. WATER
- 8" S. PROP. SEWER
- 650 PROP. MINOR CONTOUR
- 660 PROP. MAJOR CONTOUR
- PROP. DECIDUOUS TREE
- PROP. FLOWERING TREE
- PROP. EVERGREEN TREE

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 1-3-07

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 1/10/07
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11/9/07

Date	No.	Revision Description

FINAL PLAN

ZAISER PROPERTY

LOTS 1 THRU 10 AND OPEN SPACE LOT 11
AND THE RE-SUB DIVISION OF
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
Daft-McCune-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

9/5/06 Date

LICENSED PROFESSIONAL ENGINEER 21006 JOSEPH PIRRUNG STATE OF MARYLAND

Landscape Architect No. 668

SUBDIVISION NAME		SECTION/AREA		LOT/PARCEL #
ZAISER PROPERTY				157
PLAT# OR L/F	BLOCK # / ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
	10,11,16,17 / R-20	31	1	

TITLE
ZAISER PROPERTY
FINAL PLAN
LANDSCAPE PLAN

Des. By JLT	Scale 1" = 50'	Proj. No. 02059.B	
Drn. By GMO	Date 9/7/06	16 of 19	
Chk. By	Approved		

F-06-116

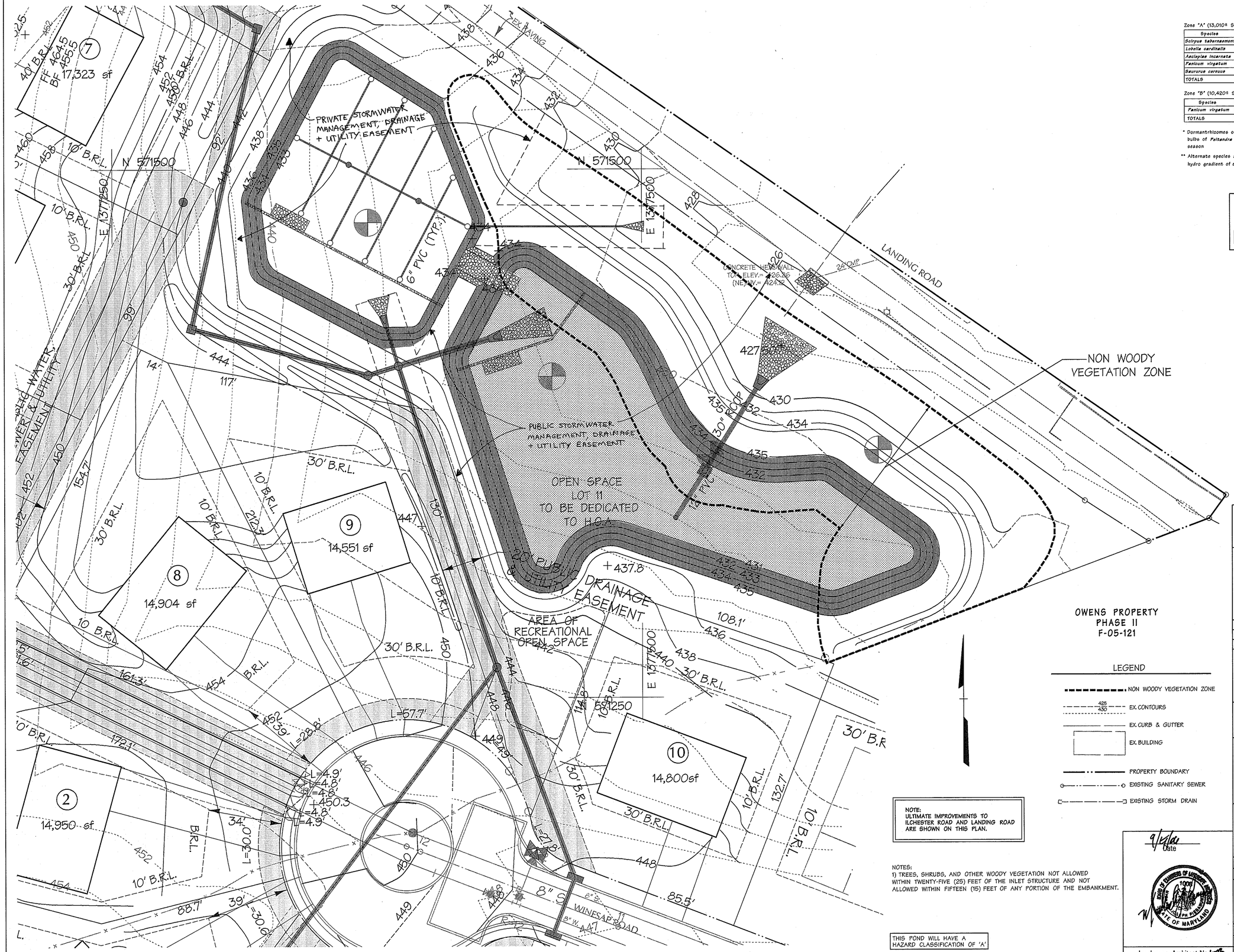
Fri Sep 1 14:47:55 2006 m:\02059\final\02059L01

4 Tree Planting on Slope
Not To Scale

3 Less Than 3" Cal. Tree Planting
Not To Scale

2 Evergreen Tree Planting on Slope
Not To Scale

1 Evergreen Tree Planting
Not To Scale



Water Quality Planting Plan **

Zone "A" (13,010± SF)

Species	Size	Plant Spacing	Quantity	Remarks
Scirpus tabernaemontanii	quart container*	36"	334	OBL
Lobelia cardinalis	quart container	36"	334	FACW
Asclepias incarnata	quart container	36"	334	OBL
Panicum virgatum	quart container	36"	334	FAC
Saururus cernuus	quart container*	36"	334	OBL
TOTALS			1,670	

Zone "B" (10,420± SF)

Species	Size	Plant Spacing	Quantity	Remarks
Panicum virgatum	quart container	36"	1,337	FAC
TOTALS			1,337	

* Dormant rhizomes of *Scirpus*, *Iris* and *Saururus*, dormant tubers of *Sagisteria*, and 1 styca bulbs of *Pelsandra* 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.

ZONES
- ZONE A - 13,010± SF
- ZONE B - 10,420± SF

LEGEND
- NON WOODY VEGETATION ZONE
- 425 / 430 EX. CONTOURS
- EX. CURB & GUTTER
- EX. BUILDING
- PROPERTY BOUNDARY
- EXISTING SANITARY SEWER
- EXISTING STORM DRAIN

NOTE:
ULTIMATE IMPROVEMENTS TO ILCHESTER ROAD AND LANDING ROAD ARE SHOWN ON THIS PLAN.

NOTES:
1) TREES, SHRUBS, AND OTHER WOODY VEGETATION NOT ALLOWED WITHIN TWENTY-FIVE (25) FEET OF THE INLET STRUCTURE AND NOT ALLOWED WITHIN FIFTEEN (15) FEET OF ANY PORTION OF THE EMBANKMENT.

THIS POND WILL HAVE A HAZARD CLASSIFICATION OF 'A'

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 1-7-07

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 1/4/07

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 1/9/07

Date	No.	Revision Description

FINAL PLAN

ZAISER PROPERTY

LOTS 1 THRU 10 AND OPEN SPACE LOT 11
AND THE RE-SUB DIVISION OF
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
Daft-McCune-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

9/7/06 Date

Landscape Architect No. 668

F-06-116

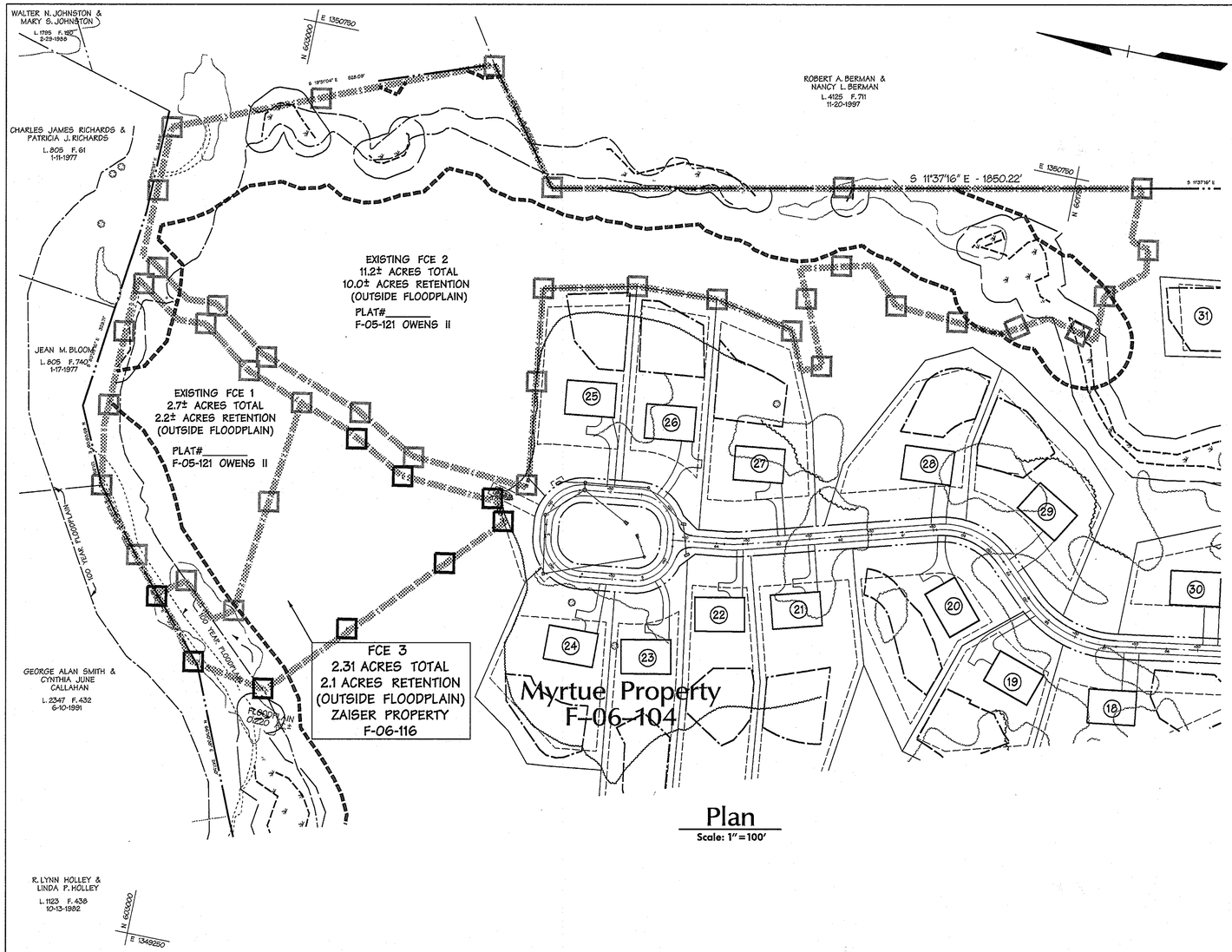
SUBDIVISION NAME	SECTION/AREA		LOT/PARCEL #
ZAISER PROPERTY			157
PLAT# OR L/F	BLOCK # / ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
10,11,16,17	R-20	31	1	

TITLE

ZAISER PROPERTY
FINAL PLAN
STORMWATER MANAGEMENT
POND PLANTING PLAN

Des. By	Scale 1" = 20'	Proj. No. 02059.B
Dm. By GMO	Date 9/7/06	17 of 19
Chk. By	Approved	

Fri Sep 1 14:49:02 2006 n:\02059\Final\02059.L02

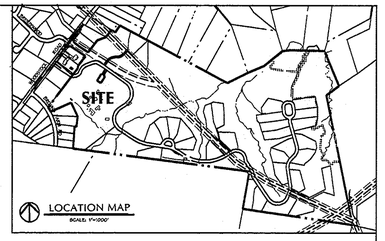


Plan

Scale: 1" = 100'

R. LYNN HOLLEY & LINDA P. HOLLEY
L. 1123 F. 438
10-13-1982

N 603000
E 1348950



2.1 ACRES OF NON-FLOOD PLAIN FOREST RETAINED ON MYRTUE PROPERTY (MAP 10, GRID 10, P 225) TO FULFILL THE ZAISER FOREST CONSERVATION OBLIGATION. THE ZAISER PROPERTY AFFORESTATION OBLIGATION IS MET BY RETENTION AT 2:1 OR 2.127 ACRES.

FOREST CONSERVATION CALCULATIONS

BASIC SITE DATA	ACRES (1/10)
GROSS SITE AREA	7.0
AREA WITHIN 100 YEAR FLOODPLAIN	0.0
AREA WITHIN AGRICULTURAL USE OR PRESERVATION PARCEL (IF APPLICABLE)	0.0
NET TRACT AREA	7.0
LAND USE CATEGORY	SUBURBAN

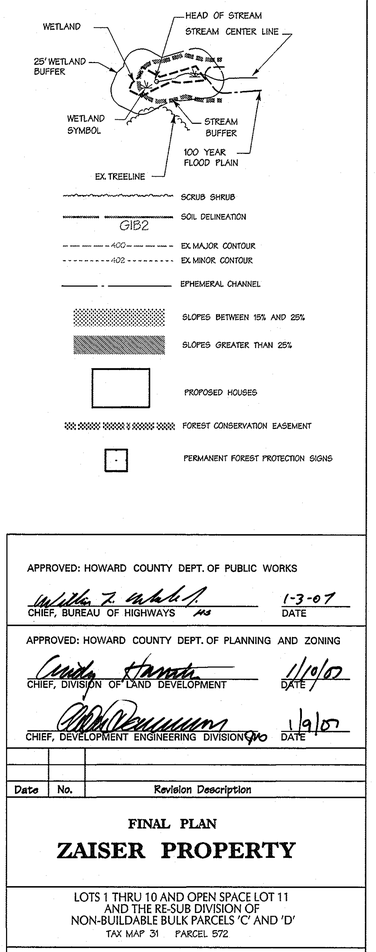
INFORMATION FOR CALCULATIONS	
A. NET TRACT AREA	7.0
B. REFORESTATION THRESHOLD (25% x A)	1.4
C. AFFORESTATION MINIMUM (20% x A)	1.05
D. EXISTING FOREST ON NET TRACT AREA	0.0
E. FOREST AREAS TO BE CLEARED	0.0
F. FOREST AREAS TO BE RETAINED	0.0

AFFORESTATION CALCULATIONS	
A. NET TRACT AREA	7.0
B. AFORESTATION THRESHOLD (15% x A)	1.05
C. EXISTING FOREST ON NET TRACT AREA	0.0
D. FOREST AREAS TO BE CLEARED	0.0
E. FOREST AREAS TO BE RETAINED	0.0
F. AFFORESTATION OBLIGATION	1.05
G. AFFORESTATION PROVIDED ON-SITE	0.0
H. RETENTION PROVIDED OFF-SITE	2.10

The goals and objectives of the Forest Conservation Plan are to satisfy Forest Conservation Act compliance by providing for an afforestation obligation of 1.05 acres for the Zaiser property. The 1.05 acre obligation for this parcel will be satisfied in accordance with Howard County regulations, by off-site retention of existing Forest (2:1 ratio) = 2.10 Acres at the Myrtue property in a recorded Forest Conservation easement, Tax Map 31 Grid 10 Parcel 157- Zaiser Property

Myrtue, Tax Map 10, Grid 24, Parcel 225

Legend



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 1-3-07

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 1/10/07

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 1/9/07

Date	No.	Revision Description

FINAL PLAN

ZAISER PROPERTY

LOTS 1 THRU 10 AND OPEN SPACE LOT 11
AND THE RE-SUB DIVISION OF
NON-BUILDABLE BULK PARCELS 'C' AND 'D'
TAX MAP 31 PARCEL 572

OWNER/DEVELOPER:

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

DMW
Daft-McCune-Walker, Inc.
200 East Pennsylvania Avenue
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SUBDIVISION NAME		SECTION/AREA		LOT/PARCEL #
ZAISER PROPERTY				157
PLAT# OR L/F	BLOCK #	ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
	10,11,16,17	R-20	31	1	

TITLE

FOREST CONSERVATION PLAN

OFFSITE FOREST CONSERVATION AREA

Des. By KAD	Scale 1" = 100'	Proj. No. 02059.B
Drn. By GMO	Date 6/8/06	18 of 19
Chk. By	Approved	

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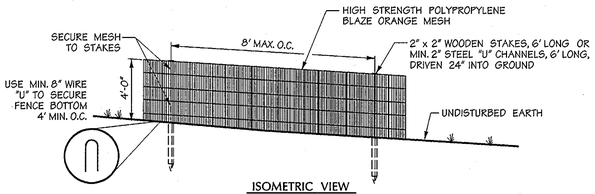
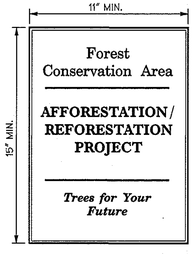


NOTES:
1. THIS DETAIL IS FOR FOREST PROTECTION DEVICE ONLY.
2. FOREST RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
3. BOUNDARIES OF FOREST RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING THE DEVICE.
4. ROOT DAMAGE SHALL BE AVOIDED.
5. PROTECTION SIGNAGE MAY ALSO BE USED.
6. FOREST PROTECTION FENCE SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.
7. INSTALLATION OF FOREST PROTECTION FENCE MUST BE APPROVED BY BALTIMORE COUNTY EIR (410-887-3980) PRIOR TO ISSUANCE OF BUILDING OR GRADING PERMITS.

Enviro.cel / ALFPF

Forest Protection Fence

Not To Scale



SIGNS TO BE PLACED ON METAL POSTS 5'± ABOVE FINISH GRADE PRIOR TO PLANTING. PLACE SIGNS EVERY 100' AROUND PERIMETER OF FOREST CONSERVATION AREA.

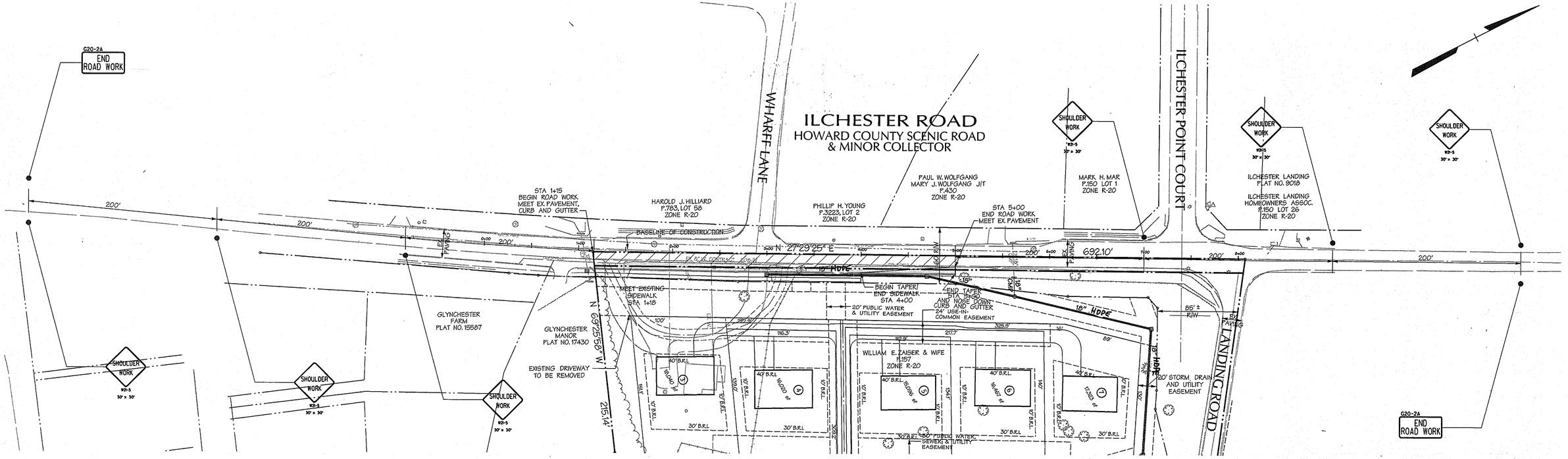
Permanent Signage

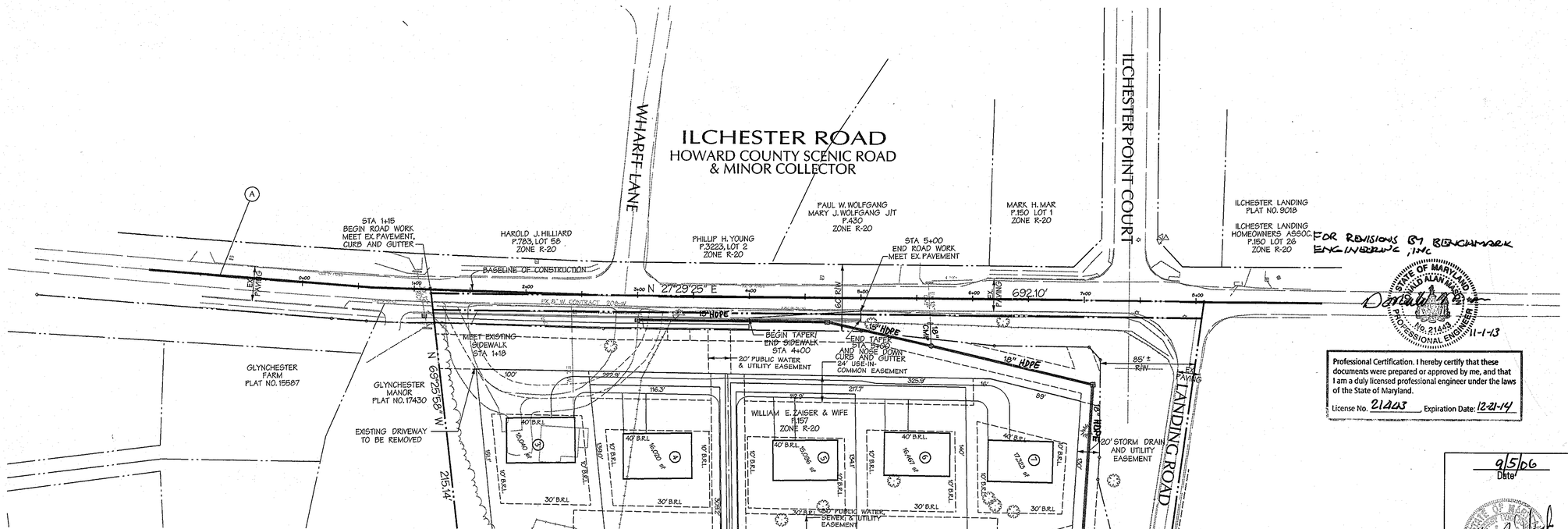
Not To Scale

9/19/06
Date

Landscape Architect No. 1098

F-06-116





STRIPING PLAN

PAVEMENT MARKING LEGEND

A - 5 IN. SOLID DOUBLE YELLOW PAVEMENT MARKING LINE

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 1-3-07

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 1/8/07

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 1/9/07

Date	No.	Revision Description
10-31-13	1	CHANGE RCCP TO HDPE BEE

FINAL PLAN

ZAISER PROPERTY

LOTS 1 THRU 10 AND OPEN SPACE LOT 11
AND THE RE-SUB DIVISION OF
NON-BUILDABLE BULK PARCELS 'C' AND 'D'
TAX MAP 31 PARCEL 243, 572

OWNER/DEVELOPER:

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

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. 21403 Expiration Date: 12-21-14

9/5/06
Date

Professional Engr. No. 14230

DMW
Daft-McCune-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

SUBDIVISION NAME		SECTION/AREA		LOT/PARCEL #
ZAISER PROPERTY				157
PLAT# OR L/F	BLOCK #	ZONE	TAX/ZONE MAP	ELEC. DISTRICT	CENSUS TRACT
	10,11,16,17	R-20	31	1	

TITLE

ILCHESTER ROAD
MAINTENANCE OF TRAFFIC AND PAVEMENT MARKING PLAN

Des. By KAD	Scale 1" = 50'	Proj. No. 02059.B	19 of 19
Drn. By GMO	Date 9/7/06		
Chk. By	Approved		

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F-06-116