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# FINAL ROAD CONSTRUCTION, GRADING AND STORMWATER MANAGEMENT PLANS

## ROCKBURN MANOR

LOTS 1 THRU 22

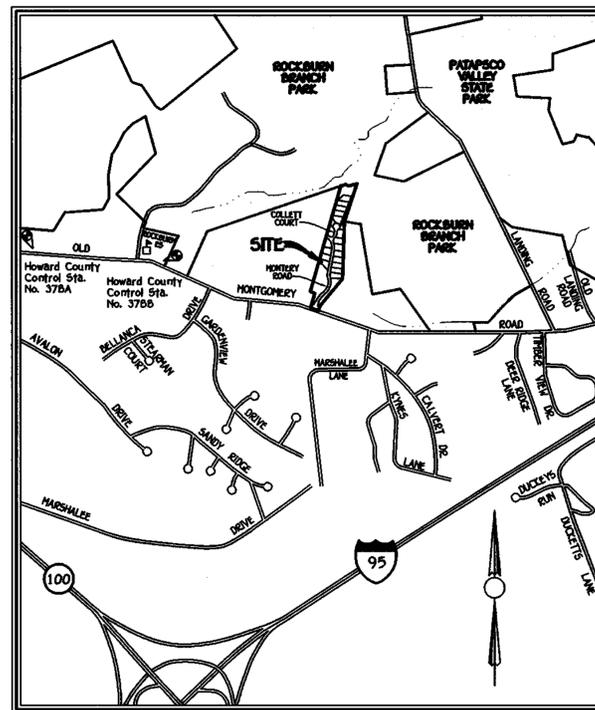
ZONING "R-20"

TAX MAP No: 37 PARCEL No: 56 GRID No: 5

APPROVED: DEPARTMENT OF PUBLIC WORKS	<i>[Signature]</i>	11/15/01
CHIEF, BUREAU OF HIGHWAYS	NS	DATE
APPROVED: DEPARTMENT OF PLANNING AND ZONING	<i>[Signature]</i>	11/14/01
CHIEF, DIVISION OF LAND DEVELOPMENT	NS	DATE
<i>[Signature]</i>		11/16/01
CHIEF, DEVELOPMENT ENGINEERING DIVISION		DATE

STREET LIGHT CHART				
DWG. No.	STREET NAME	STATION	OFF-SET	FIXTURE/POLE TYPE
2	MONTEREY ROAD	0+35	37' RT	150-WATT H.P.S. VAPOR PENDANT FIXTURE (CUTOFF) MOUNTED AT 30' ON A BRONZE FIBERGLASS POLE USING A 15' ARM
2	MONTEREY ROAD	2+10	15' LT	100-WATT "TRADITIONAIRE" H.P.S. VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE
2	MONTEREY ROAD	3+00	15' LT	100-WATT "TRADITIONAIRE" H.P.S. VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE
2	MONTEREY ROAD	5+44	15' LT	100-WATT "TRADITIONAIRE" H.P.S. VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE
2	MONTEREY ROAD	9+10	8' RT	100-WATT "TRADITIONAIRE" H.P.S. VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE
2	COLLETT COURT	0+30	20' LT	100-WATT "TRADITIONAIRE" H.P.S. VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE
2	COLLETT COURT	L.P. STA. 1+20	3' BEHIND CURB	100-WATT "TRADITIONAIRE" H.P.S. VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE

TRAFFIC CONTROL SIGNS				
STREET NAME	STATION	OFFSET	POSTED SIGN	SIGN CODE
MONTEREY ROAD	0+65	23' LT	STOP	R1-1
MONTEREY ROAD	0+42	0' E	KEEP RIGHT	R4-7
MONTEREY ROAD	0+05	0' E	KEEP RIGHT	R4-7
MONTEREY ROAD	2+50	14' RT	SPEED LIMIT 25	R2-1
MONTEREY ROAD	2+50	14' LT	STOP AHEAD	W3-1b
MONTEREY ROAD	8+90	14' RT	ROAD NARROWS	W5-1
MONTEREY ROAD	9+90	14' LT	ROAD NARROWS	W5-1
MONTEREY ROAD	10+00	14' LT	SPEED LIMIT 25	R2-1
COLLETT COURT	0+50	15' LT	STOP	R1-1



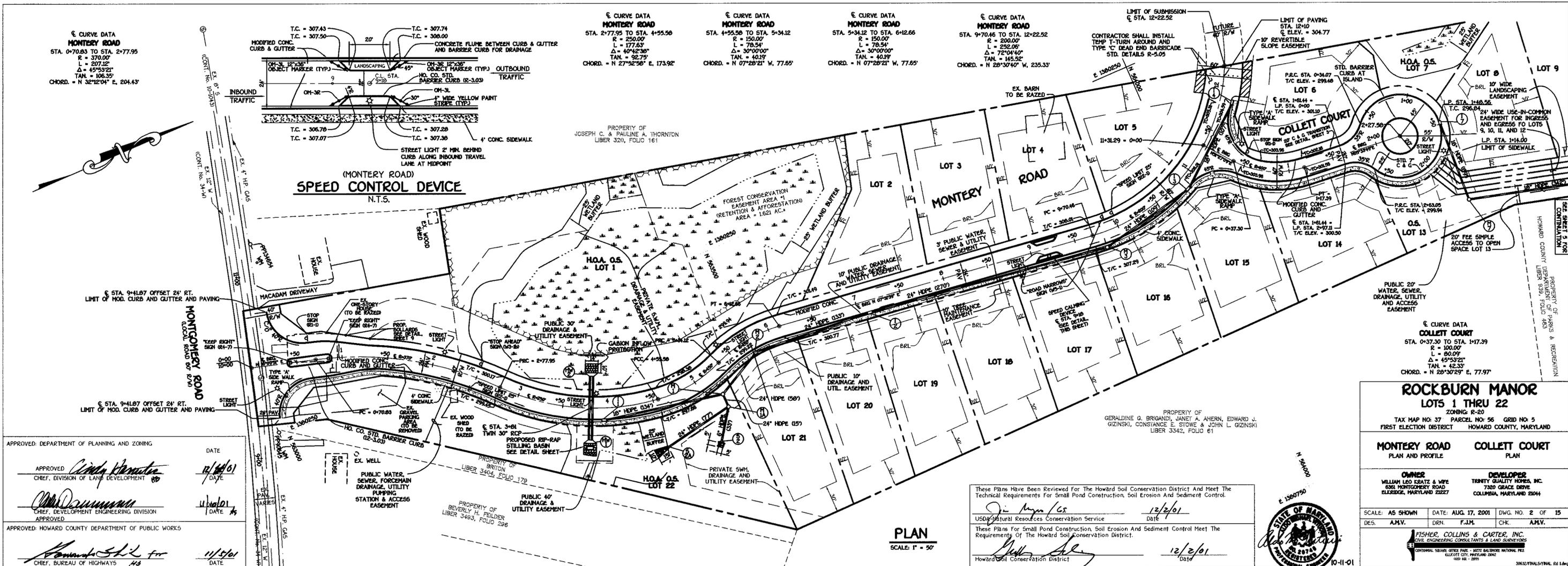
VICINITY MAP  
SCALE 1" = 1200'

### GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS / BUREAU OF ENGINEERING / CONSTRUCTION INSPECTION DIVISION AT (410) 313-1000 AT LEAST 15 WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "M&S UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (1993) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS (JUNE 1993)".  
NOTE: MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
- 2 FOOT CONTOUR TOPOGRAPHY AND EXISTING CONDITIONS BASED ON FIELD RUN TOPOGRAPHY PREPARED BY FCC IN NOVEMBER, 1997.
- THE COORDINATES SHOWN HEREON ARE BASED UPON HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT Nos. 37BA AND 37BB WERE USED FOR THIS PROJECT.  
37BA N 563,779.909  
E 1,376,329.279  
37BB N 563,657.706  
E 1,378,026.624
- WATER IS PUBLIC, CONTRACT No.34-W AND THE WATERSHED AREA IS PATAPSCO
- SEWER IS PUBLIC, CONTRACT No.30-1043 AND THE DRAINAGE AREA IS PATAPSCO
- S.W.M. WILL BE PROVIDED BY PRIVATELY OWNED AND MAINTAINED DETENTION S.W.M. FACILITY ON OPEN SPACE LOT 1 AND THE WATER QUALITY STRUCTURES ON OPEN SPACE LOTS 13 AND 22.
- FLOORPLAN ON THIS SITE IS BASED ON STUDY PREPARED BY FISHER, COLLINS AND CARTER INC. DATED MARCH 1995.
- WETLANDS ON THIS SITE WAS DELINEATED BY EXPLORATION RESEARCH, INC. DATED AUGUST, 1997.
- THE SUBJECT PROPERTY, DUE TO ITS LOCATION, IS EXEMPT FROM HAVING TO PERFORM AN AFFO TRAFFIC ANALYSIS.
- BACKGROUND INFORMATION:  
A. SUBDIVISION NAME: ROCKBURN MANOR (FORMERLY "KRATZ PROPERTY")  
B. TAX MAP No: 37  
C. PARCEL No: 56  
D. ZONING: R-20  
E. ELECTION DISTRICT: FIRST  
F. TOTAL TRACT AREA: 12.12 AC. ±  
G. NO. OF BUILDABLE LOTS: 10  
H. NO. OF OPEN SPACE LOTS: 4  
I. OPEN SPACE REQUIRED: (MIN. LOT SIZE 14,000 SQ. FT.) = 12.12 x 30% = 3.63 AC. ±  
J. OPEN SPACE PROVIDED: 4.484 AC. ±  
K. PRELIMINARY PLAN APPROVAL DATE:  
L. PREVIOUS FILE Nos.: S-98-06, P-99-04
- REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE TO BE PROVIDED AT THE JUNCTION OF THE PIPE / FLAG STEM AND THE ROAD R/W AND NOT ONTO THE PIPE / FLAG STEM DRIVEWAY.
- NO CEMETERIES EXIST ON THE PROPERTY.
- FOREST STAND DELINEATION PROVIDED BY EXPLORATION RESEARCH, INC. DATED AUGUST, 1997.
- MDR TRACKING / PERMIT NUMBER FOR THE S.W.M. FACILITY IS No. 98-NI-0670 / 199960762.
- THE FOREST CONSERVATION OBLIGATION FOR THIS SITE HAS BEEN MET WITH 0.55 ACRES OF FOREST RETENTION AND 1.43 ACRES OF ON-SITE REFORESTATION. THE REMAINING 3.59 ACRES OF OFF-SITE REFORESTATION AREA HAS BEEN PURCHASED FROM THE WINKLER FOREST MITIGATION BANK. THE SURETY OBLIGATION FOR THE ON-SITE AREAS IS \$35,937.80.

## FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

ROAD CLASSIFICATION CHART		
ROAD NAME	CLASSIFICATION	R/W WIDTH
MONTEREY ROAD	PUBLIC ACCESS STREET	40'
COLLETT COURT	PUBLIC ACCESS PLACE	40'



APPROVED: DEPARTMENT OF PLANNING AND ZONING

APPROVED: *Cindy Kemmer*  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE: 10/16/01

APPROVED: *Chris Drummond*  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE: 11/16/01

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

APPROVED: *Howard Skil*  
 CHIEF, BUREAU OF HIGHWAYS  
 DATE: 11/16/01

These Plans Have Been Reviewed For The Howard Soil Conservation District And Meet The Technical Requirements For Small Pond Construction, Soil Erosion And Sediment Control.

*Jim Mays/CS* 12/2/01  
 USDC Natural Resources Conservation Service Date

These Plans For Small Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.

*John A. ...* 12/2/01  
 Howard Soil Conservation District Date

**ROCKBURN MANOR**  
 LOTS 1 THRU 22  
 ZONING R-20  
 TAX MAP NO. 37 PARCEL NO. 56 GRID NO. 5  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**MONTEREY ROAD** PLAN AND PROFILE  
**COLLETT COURT** PLAN

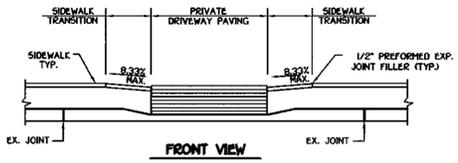
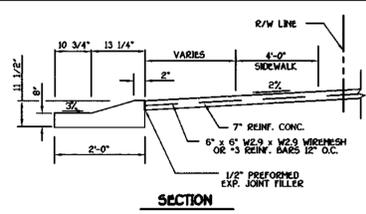
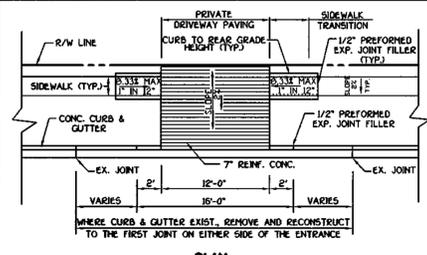
**OWNER:** WILLIAM LEO SZATZ & WIFE  
 8332 MONTEREY ROAD  
 ELLSBURG, MARYLAND 22227

**DEVELOPER:** TRINITY QUALITY HOMES, INC.  
 7320 GRACE DRIVE  
 COLUMBIA, MARYLAND 21044

SCALE: AS SHOWN DATE: AUG. 17, 2001 DWG. NO. 2 OF 15  
 DES. A.M.V. DRN. F.J.M. CHK. A.M.V.

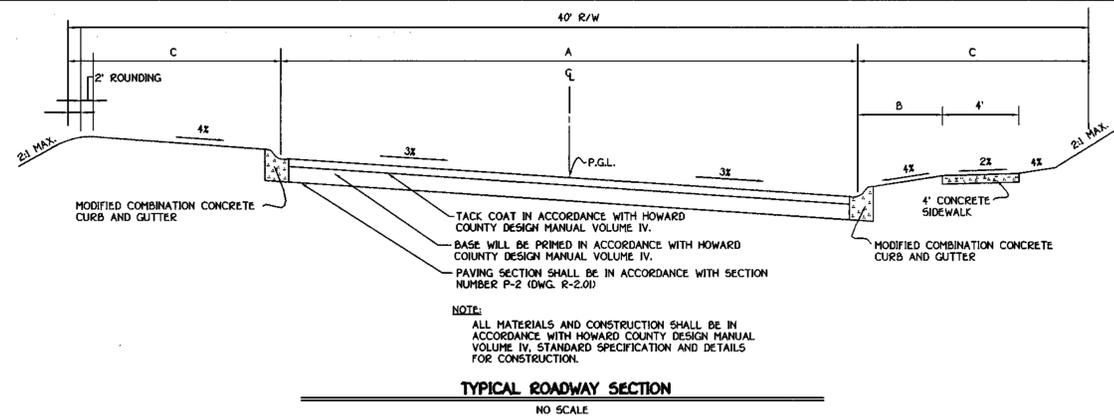
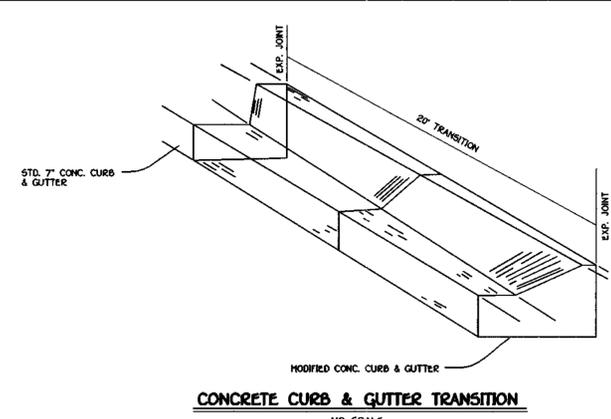
**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 1000 NATIONAL SQUARE OFFICE PARK - 1072 BALBOA DRIVE NATIONAL PLEX  
 BELFLORET CITY, MARYLAND 22022  
 (410) 461-1200





**RESIDENTIAL DRIVEWAY ENTRANCE CLOSED SECTION WITH MODIFIED COMBINATION CURB & GUTTER AND SIDEWALK**

NO SCALE



ROADWAY INFORMATION CHART									
ROAD NAME	CLASSIFICATION	DESIGN SPEED	ZONING	STATION LIMITS	A	B	C	R/W	PAVING SECTION
MONTEY ROAD	PUBLIC ACCESS STREET	25 MPH	R-20	0+00 TO 12+10.00	24'	3'	8'	40'	P-2
COLLETT COURT	PUBLIC ACCESS PLACE	15 MPH	R-20	0+00 TO 2+27.50	20'	5'	10'	40'	P-2

REVISIONS		
NO.	DESCRIPTION	DATE

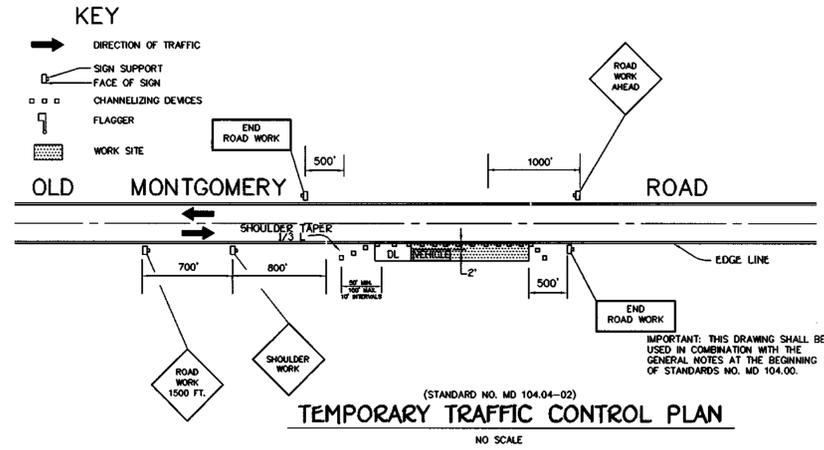
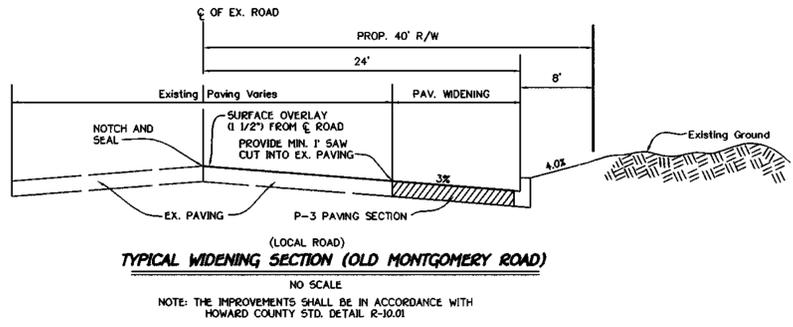
APPROVED: DEPARTMENT OF PLANNING AND ZONING

*Cindy W...* 12/18/01  
CHIEF, DIVISION OF LAND DEVELOPMENT

*...* 11/16/01  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

*Howard Shik...* 11/14/01  
CHIEF, BUREAU OF HIGHWAYS



**ROCKBURN MANOR**  
LOTS 1 THRU 22  
ZONING R-20  
TAX MAP NO: 37 PARCEL NO: 56 GRID NO: 5  
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**COLLETT COURT**  
PROFILE

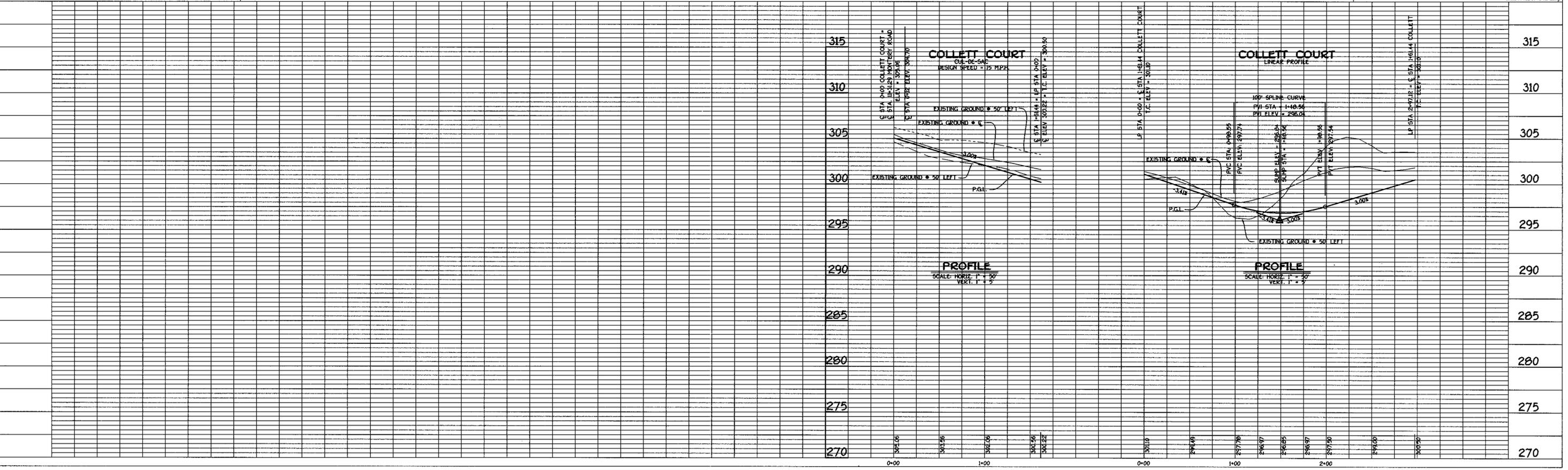
**TYPICAL ROADWAY SECTION**

**OWNER**  
WILLIAM LEO KEATZ & WIFE  
6361 MONTGOMERY ROAD  
ELKBRIDGE, MARYLAND 21227

**DEVELOPER**  
TRINITY QUALITY HOMES, INC.  
7320 GRACE DRIVE  
COLUMBIA, MARYLAND 21044

SCALE: AS SHOWN DATE: SEPT. 14, 2001 DWG. NO. 3 OF 15  
DES. AM.V. DRN. F.J.M. CHK. AM.V.

**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CONTINENTAL SQUARE OFFICE PARK 10721 SAUNDERS NATIONAL PIKE  
ELLSWORTH CITY, MARYLAND 21042  
410-481-2999



By The Developer:  
 "I We Certify That All Development And/Or Construction Will Be Done According To These Plans, And That Any Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of The Environment Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Shall Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District."

*Michael P. Jones* PRES. 10/11/01  
 Signature Of Developer Date  
**M. CHALL DEAN**  
 Printed Name Of Developer

By The Engineer:  
 "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 I Am 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."

*Alfred M. Vitucci* 10-11-01  
 Signature Of Engineer Date  
**ALFRED M. VITUCCI**  
 Printed Name Of Engineer

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.

*John Angelo* 12/2/01  
 USDC Natural Resources Conservation Service Date  
 These Plans For Small Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.  
*John Angelo* 12/2/01  
 Howard Soil Conservation District Date

Approved Department Of Public Works  
*Howard Shick* 11/16/01  
 Chief Bureau Of Highways Date

Approved Department Of Planning And Zoning  
*Andy Roberts* 12/14/01  
 Chief, Division Of Land Development Date

*Mike DeWitt* 11/6/01  
 Chief, Development Engineering Division Date

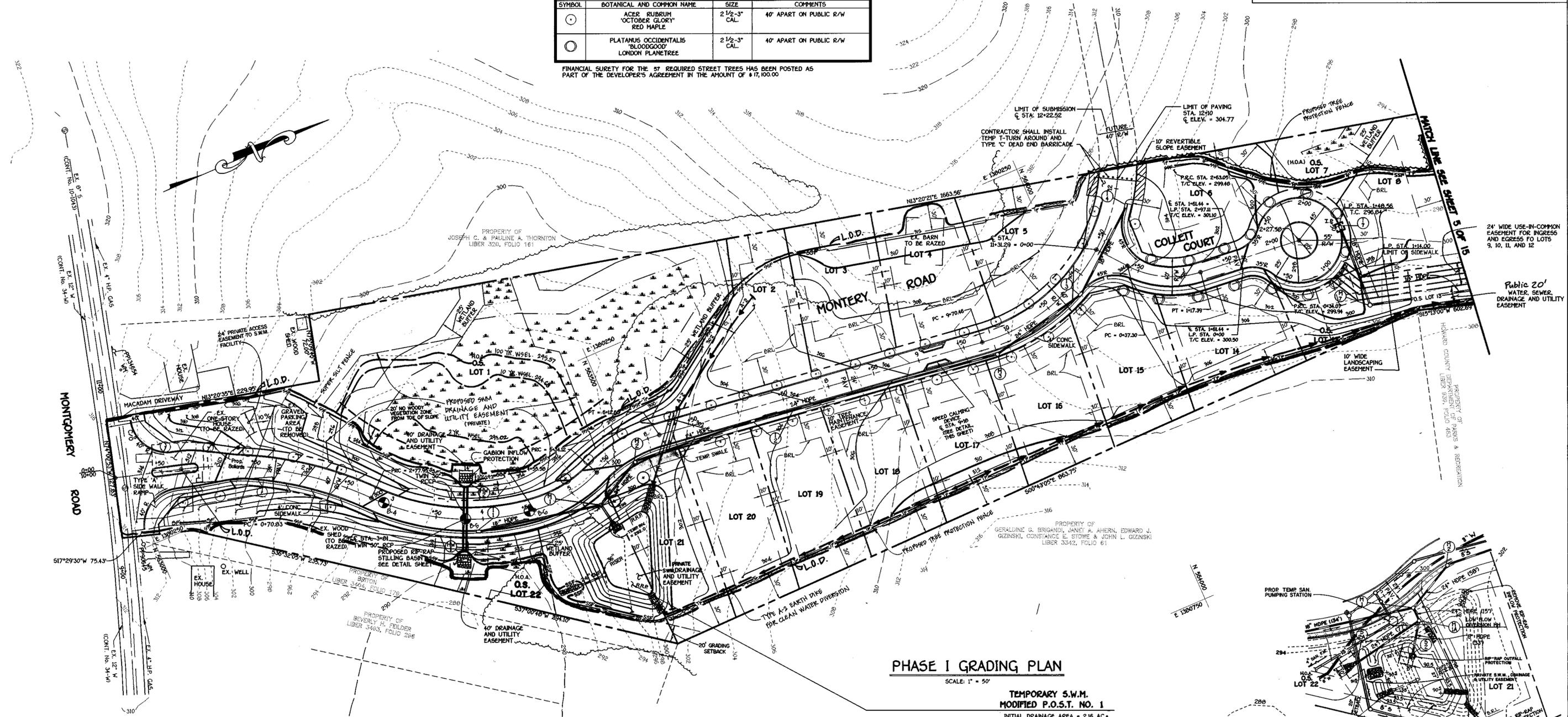
AS-BUILT CERTIFICATION  
 I Herby Certify That The Facility Shown On This Plan Was Constructed As Shown On The "As-Built" Plans And Meets The Approved Plans And Specifications.

Signature \_\_\_\_\_ P.E. No. \_\_\_\_\_  
 Date \_\_\_\_\_

Certify Means To State Or Declare A Professional Opinion Based Upon Onsite Inspections And Material Tests Which Are Conducted During Construction. The Onsite Inspections And Material Tests Are Those Inspections And Tests Deemed Sufficient And Appropriate Commonly Accepted Engineering Standards. Certify Does Not Mean Or Imply A Guarantee By The Engineer Nor Does An Engineer's Certification Relieve Any Other Party From Meeting Requirements Imposed By Contract, Employment, Or Other Means, Including Meeting Commonly Accepted Industry Practices.

STREET TREE SCHEDULE			
SYMBOL	BOTANICAL AND COMMON NAME	SIZE	COMMENTS
○	ACER RUBRUM "OCTOBER GLORY" RED MAPLE	2 1/2"-3" CAL.	40' APART ON PUBLIC R/W
○	PLATANUS OCCIDENTALIS "BLOODGOOD" LONDON PLANETREE	2 1/2"-3" CAL.	40' APART ON PUBLIC R/W

FINANCIAL SURETY FOR THE 57 REQUIRED STREET TREES HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$17,100.00



**PHASE I GRADING PLAN**

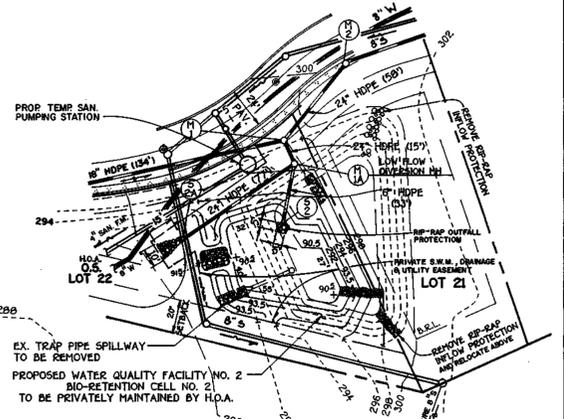
SCALE: 1" = 50'

**TEMPORARY S.W.M. MODIFIED P.O.S.T. NO. 1**

INITIAL DRAINAGE AREA = 2.16 AC.  
 FINAL DRAINAGE AREA = 3.42 AC.  
 STORAGE REQUIRED:  
 WET = 1800 x 3.42 = 6,120 cu. ft.  
 DRY = 1800 x 3.42 = 6,120 cu. ft.  
 STORAGE PROVIDED:  
 WET = 7,065 @ 291.50  
 DRY = 7,065 @ 292.75  
 BOTTOM ELEV. = 290.00  
 STORAGE DEPTH = 2.75'  
 SIDE SLOPES = 2:1  
 TOP OF EMBANKMENT = 296.00  
 CLEAN-OUT ELEV. = 290.75  
 9" LOW FLOW ORIFICE = 292.75  
 RISER CREST ELEV. = 294.50  
 Q2 EXISTING = 2.0 cfs  
 Q2 PROPOSED = 1.7 cfs

**NOTE:**  
 NO STREET TREES TO BE PLANTED ALONG MONTEREY ROAD FROM STA. 2+50 TO STA. 5+00 DUE TO IMPERVIOUS CORE OF S.W.M. EMBANKMENT

**SEDIMENT CONTROL NOTE:**  
 CONTRACTOR SHALL PROVIDE IMMEDIATE (SAME DAY) STABILIZATION OF DISTURBED AREA BETWEEN THE L.O.D. AND S.E.F. BELOW HW-1 AND HW-2 WITH ECV PERMANENT SEED OR SOD.



**PHASE II GRADING PLAN**

SCALE: 1" = 50'

**STREET TREE, GRADING AND SEDIMENT CONTROL PLAN**

**ROCKBURN MANOR**  
 Lots 1 Thru 22

ZONED R-20  
 TAX MAP NO. 37 PARCEL NO. 56 GRID NO. 5  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 DATE: SEPTEMBER 14, 2001  
 SHEET 4 OF 15



**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
 ELLETT CITY, MARYLAND 21042  
 410-461-2299

**OWNER**  
 WILLIAM LEO KRATZ & WIFE  
 6300 MONTGOMERY ROAD  
 ELKBRIDGE, MARYLAND 21027

**DEVELOPER**  
 TRINITY QUALITY HOMES, INC.  
 7520 BRACE DRIVE  
 COLUMBIA, MARYLAND 21044

Approved: Department of Public Works  
*Howard de St. Leger* 11/17/01  
 Chief, Bureau of Highways  
 Date

Approved: Department of Planning and Zoning  
*Wanda Hamada* 12/4/01  
 Chief, Division of Land Development  
 Date

*Michael D. ...* 4/6/01  
 Chief, Development Engineering Division  
 Date

LANDSCAPE SCHEDULE				
QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
35	⊙	ACER RUBRUM "RED SUNSET"	RED SUNSET RED MAPLE	2 1/2"-3"
15	⊖	PINUS STROBUS	WHITE PINE	6'-8' HT.

NOTE: THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED 102 LANDSCAPING TREES HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$24,300.00.

46	⊕	PLATANUS ACERIFOLIA	LONDON PLANETREE	2 1/2"-3"
8	⊗	CUPRESSOPARIS LEYLANDII	LEYLAND CYPRESS	6'-8' HT.

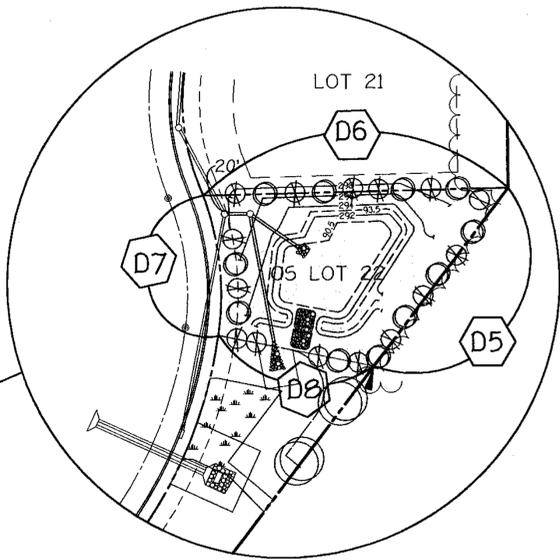
SCHEDULE A PERIMETER LANDSCAPE EDGE								
PERIMETER	CATEGORY (PROPERTIES/ROADWAYS)	LANDSCAPE TYPE	LINEAR FEET OF ROADWAY FRONTAGE PERIMETER	CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	SHADE TREES	EVERGREEN TREES	SHRUBS
A1	ADJACENT TO PERIMETER	A	472'	NO	NO	4	8	-
A2	ADJACENT TO PERIMETER	A	864'	YES 740'	NO	2	-	-
A3	ADJACENT TO PERIMETER	A	499'	YES 170'	NO	6	-	-
A4	ADJACENT TO PERIMETER	A	263'	YES 263'	NO	0	-	-
A5	ADJACENT TO PERIMETER	A	1212'	YES 770'	NO	8	-	-
A6	ADJACENT TO PERIMETER	A	230'	NO	NO	4	-	-

8 EVERGREEN TREES WERE SUBSTITUTED FOR FOUR SHADE TREES

SCHEDULE D S.W.M. AREA LANDSCAPING (FACILITY 2)				
LINEAR FEET OF PERIMETER	D5: 132'	D6: 181'	D7: 85'	D8: 94'
NUMBER OF TREES REQUIRED:				
SHADE TREES	3	4	2	2
EVERGREEN TREES	4	5	3	3
CREDIT FOR EXISTING VEGETATION (NO, YES AND X)	NO	NO	NO	NO
CREDIT FOR OTHER LANDSCAPING (NO, YES AND X)	NO	NO	NO	NO
NUMBER OF TREES PROVIDED:				
SHADE TREES (1:50)	3	4	2	2
EVERGREEN TREES (1:40)	4	5	3	3
OTHER TREES (2:1) SUBSTITUTION	-	-	-	-

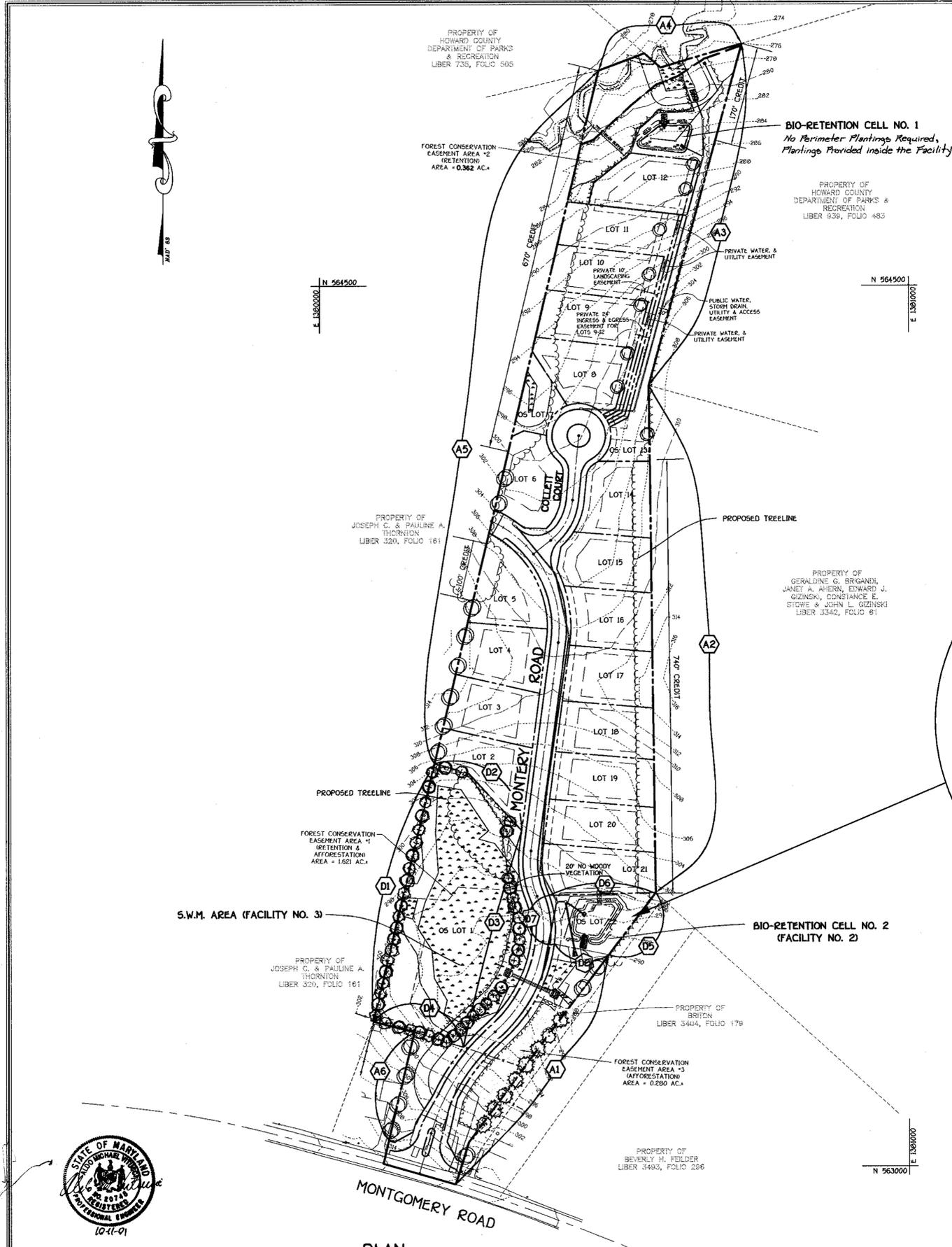
SCHEDULE D S.W.M. AREA LANDSCAPING (FACILITY 3)				
LINEAR FEET OF PERIMETER	D1: 452'	D2: 193'	D3: 410'	D4: 180'
NUMBER OF TREES REQUIRED:				
SHADE TREES	9	1	8	3
EVERGREEN TREES	12	1	10	4
CREDIT FOR EXISTING VEGETATION (NO, YES AND X)	NO	YES, 150'	NO	NO
CREDIT FOR OTHER LANDSCAPING (NO, YES AND X)	NO	NO	NO	NO
NUMBER OF TREES PROVIDED:				
SHADE TREES (1:50)	15	2	14	5
EVERGREEN TREES (1:40)	12	1	10	4
OTHER TREES (2:1) SUBSTITUTION	-	-	-	-

SHADE TREES WERE SUBSTITUTED FOR EVERGREEN TREES



NOTE:  
SEE SHEET 5 FOR  
BIO-RETENTION PLANT  
MATERIALS.

STATE OF MARYLAND  
 PROFESSIONAL ENGINEER  
 No. 16719  
 2/6/04  
 ROBERT H. VOSE, P.E. 10109  
 FOR REVISION NO. 1 ONLY



PLAN  
 SCALE: 1" = 100'

FISHER, COLLINS & CARTER, INC.  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PKE  
 ELLETT CITY, MARYLAND 21114  
 410-418-2000

OWNER  
 WILLIAM LEO KRATZ & WIFE  
 5381 MONTGOMERY ROAD  
 ELDRIDGE, MARYLAND 21127

DEVELOPER  
 TRINITY QUALITY HOMES, INC.  
 7320 GRACE DRIVE  
 COLUMBIA, MARYLAND 21044

NO.	REVISION	DATE
1	REVISE S.W.M. AREA (FACILITY 2) PLANTINGS	2.5.04
	REVISION	DATE

LANDSCAPE PLAN  
**ROCKBURN MANOR**  
 Lots 1 Thru 22  
 ZONED R-20  
 TAX MAP NO. 37 PARCEL NO. 56 GRID NO. 5  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 DATE: SEPTEMBER 14, 2001  
 SHEET 12 OF 15

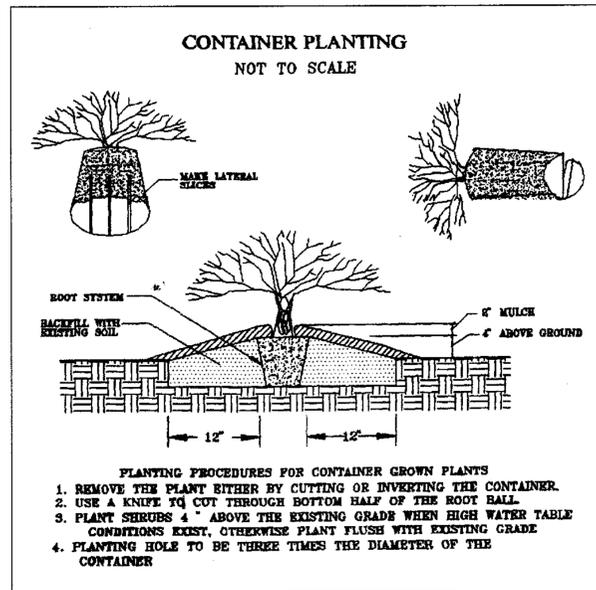
AS-BUILT 10-15-04 F-00-66

FCA#1 TYPE 1 REFORESTATION (1.04 Ac.)						
Qty	Botanical Name	Common Name	Min. Size	Spacing	P.U.	Total P.U.
73	Acer rubrum	Red Maple	1/4" cal.	11' o.c.	2	146
73	Fraxinus pennsylvanica	Green Ash	1/4" cal.	11' o.c.	2	146
73	Nyssa sylvatica	Black Gum	1/4" cal.	11' o.c.	2	146
73	Liquidambar styraciflua	Sweetgum	1/4" cal.	11' o.c.	2	146
73	Quercus palustris	Pin Oak	1/4" cal.	11' o.c.	2	146

Type 1 Planting Units Required: 728  
 Type 1 Planting Units Provided: 730

FCA#1 TYPE 2 REFORESTATION (0.39 Ac.)						
Qty	Botanical Name	Common Name	Min. Size	Spacing	P.U.	Total P.U.
35	Acer rubrum	Red Maple	1/4" cal.	11' o.c.	2	70
35	Fraxinus pennsylvanica	Green Ash	1/4" cal.	11' o.c.	2	70
35	Liquidambar styraciflua	Sweetgum	1/4" cal.	11' o.c.	2	70
32	Quercus palustris	Pin Oak	1/4" cal.	11' o.c.	2	64

Type 2 Planting Units Required FCA#: 273  
 Type 2 Planting Units Provided FCA#: 274



**REFORESTATION AREA MONITORING NOTES**

1. Monthly visits during the first growing season are to assess the success of the plantings and to determine if supplemental watering, pest control or other actions are necessary. Early spring visits will document winter kill and autumn visits will document summer kill.
2. The minimum survival rate shall be 75% of the total number of trees planted per acre at the end of the two year maintenance period. Wild tree seedlings from natural regeneration on the planting site may be counted up to 50% toward the total survival number if they are healthy native species at least 12 inches tall.
3. Survival will be determined by a stratified random sampling of the plantings. The species composition of the sample population should be proportionate to the amount of each species in the entire planting to be sampled.
4. Effective monitoring will assess plant survivability during the first growing season and make recommendations for reinforcement plantings if required at that time.

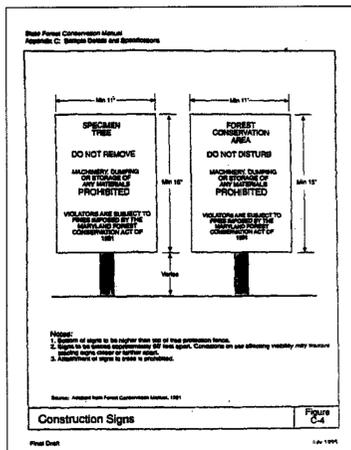
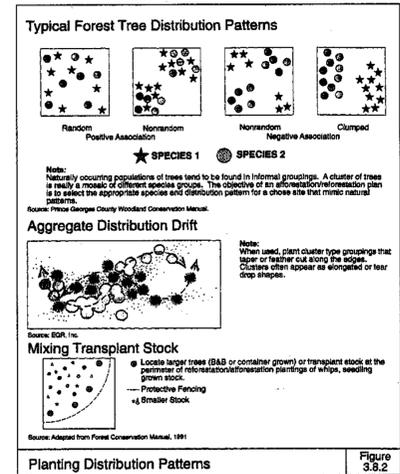
**REFORESTATION PLANTING NOTES**

1. Reforestation areas may be planted as soon as reasonable to do so. Late winter- early spring plantings are preferred. Earliest planting dates will vary from year to year but planting may generally begin as soon as the ground is no longer frozen. Alternate planting dates may be considered as condition warrants.
2. Soil amendments and fertilization recommendations will be made based upon the results of soil analysis for nitrogen, phosphorus, potassium, organic matter content and pH. If required, fertilizer will be provided using a slow release, soluble 16-8-16 analysis designed to last 5-8 years contained in polyethylene perforated bags such as manufactured by ADCO Works, P.O. Box 310 Hollis, N.Y. 11423 or approved equal.
3. Plant materials will be planted in accordance with the Planting Distribution Diagram, Planting Details and plant schedule.
4. Plant material shall be nursery grown and inspected prior to planting. Plants not conforming to the American Standard for Nursery Stock specifications for size, form, vigor, or roots, or due to trunk wounds, breakage, desiccation, insect or disease must be replaced.
5. Planting stock must be protected from desiccation at all times prior to planting. Materials held for planting shall be moistened and placed in cool shaded areas until ready for placement.
6. Newly planted trees may require watering at least once per week during the first growing season depending on rainfall in order to get established. The initial planting operation should allow for watering during installation to completely soak backfill material.
7. Planting holes should be excavated to a minimum diameter of 2.5 to 3 times the diameter of the root ball or container.
8. Mulch shall be applied in accordance with the diagram provided and shall consist of composted, shredded hardwood bark mulch, free of wood alcohol.

Approved: Department Of Public Works  
 Chief Bureau Of Highways *[Signature]* Date *11/16/01*

Approved: Department Of Planning And Zoning  
 Chief, Division Of Land Development *[Signature]* Date *12/13/01*

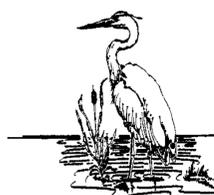
*[Signature]* Date *11/16/01*  
 Chief, Development Engineering Division



SIGN DETAIL: TEMPORARY CONSTRUCTION SIGN

SIGNAGE NOTE: ALL TREE PROTECTION SIGNS SHALL BE PLACED ON ALUMINUM POSTS OR PRESSURE TREATED WOOD POLES. NO ATTACHMENT OF SIGNS TO TREES IS PERMITTED.

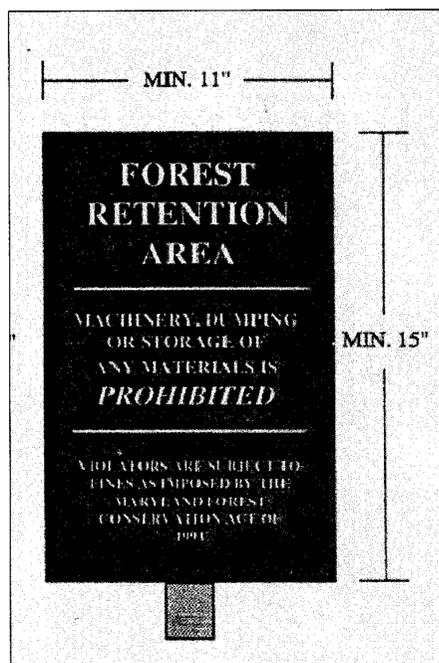
Prepared by:



**EXPLORATION RESEARCH, INC.**  
 ENVIRONMENTAL CONSULTANTS  
 LANDSCAPE ARCHITECTS  
 8818 FOREST STREET  
 BELLOTT CITY, MARYLAND 21045  
 TEL: (410) 750-1100 FAX: (410) 750-1980

Prepared for:

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
 ELICOTT CITY, MARYLAND 21042  
 (410) 451-2853



SIGN DETAIL: PERMANENT SIGN

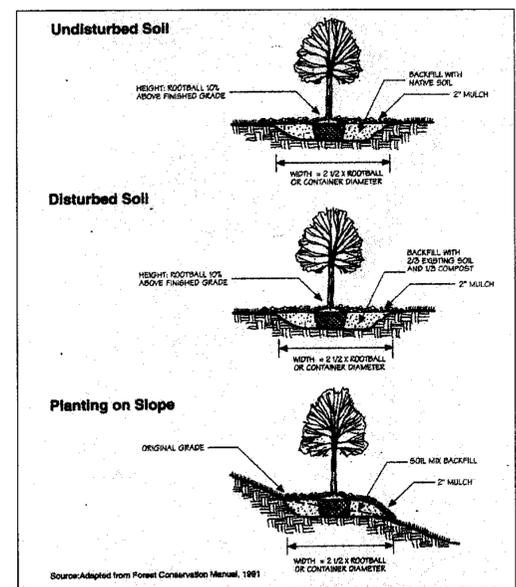
AT LEAST 48 HOURS PRIOR TO DIGGING,  
 CONTACT MISS UTILITY AT 1-800-267-7777

OWNER  
 WILLIAM LEO KRATZ & WIFE  
 6361 MONTGOMERY ROAD  
 ELK RIDGE, MARYLAND 21227

DEVELOPER  
 TRINITY QUALITY HOMES, INC.  
 1320 GRACE DRIVE  
 COLUMBIA, MARYLAND 21044



*[Signature]*  
 02/21/00



TREE PLANTING DETAIL

FINAL FOREST CONSERVATION AND REFORESTATION PLAN  
**ROCKBURN MANOR**  
 Lots 1 Thru 22  
 ZONED R-20  
 TAX MAP NO. 37 PARCEL NO. 58 GRID NO. 5  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 DATE: SEPTEMBER 14, 2001  
 SHEET 15 OF 15

**FOREST CONSERVATION WORKSHEET**

FOREST CONSERVATION NARRATIVE

**PRESERVATION AREA NOTES**

- All proposed activities shall conform to the terms, conditions and schedules of an approved Soil Erosion and Sediment Control Plan.
- Blaze orange plastic fence or silt fence (where applicable) shall be installed along all tree save areas that are within 50 feet of proposed construction activities. The Tree Protective Devices shall be in place at the time of construction activities commence. No protective device shall be installed along tree save areas that are greater than 50 feet from construction activity. The location of all Tree Protective Devices shall be shown on the Soil Erosion and Sediment Control Plan which will be incorporated into this Forest Conservation Plan by reference.

**FOREST MANAGEMENT NOTES**

**PRECONSTRUCTION**  
Conduct a preconstruction meeting with the contractor(s) to review forest protection measures and practices. Consultant to select edge trees to remove as appropriate.

**DURING CONSTRUCTION**  
Provide maintenance to tree protection measures.

Water trees having critical root zone impacts on a bi-weekly basis or as needed.

Monitor conditions of remaining trees for signs of stress (leaf discoloration, leaf drop, insect infestation, etc.)\*

**POST CONSTRUCTION (TWO YEAR MINIMUM)**  
Inspect existing trees around the perimeter of disturbed limits for damage or stress signs from construction, including excessive compaction in the root zone.\*

Evaluate remaining trees for signs of stress and conduct appropriate cultural management: crown reduction, pruning, watering, soil aeration, fertilizing, etc. Remove dead or dying trees and evaluate for hazard trees.\*

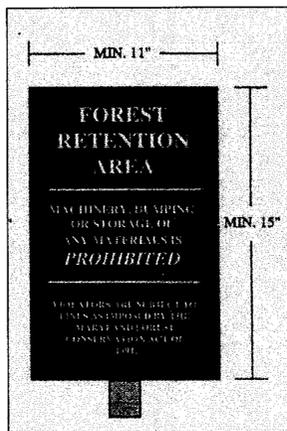
\*A licensed arborist or forester should be retained for these services.

	Acres
<b>Net Tract Area</b>	
A. Total Tract Area	12.11
B. Area Within 100 Year Floodplain	0.27
C. Other deductions	0
D. Net Tract Area	11.84
Zoning Use Category: High Density Residential	
<b>Land Use Category</b>	
E. Afforestation Minimum (15% x D)	1.78
F. Conservation Threshold (20% x D)	2.37
<b>Existing Forest Cover</b>	
G. Existing Forest on Net Tract Area	8.23
H. Forest Area Above Afforestation Threshold	6.45
I. Forest Area Above Conservation Threshold	5.86
<b>Breakeven Point</b>	
J. Forest Retention Above Threshold with no Mitigation	3.54
K. Clearing Permitted without Mitigation	4.69
<b>Proposed Forest Clearing</b>	
L. Forest Areas to be Cleared	7.60
M. Forest Areas to be Retained	0.55
<b>Planting Requirements</b>	
N. Reforestation for Clearing Above Threshold	1.47
P. Reforestation for Clearing Below the Threshold	3.64
Q. Credit for Retention Above Conservation Threshold	0
R. Total Reforestation Required	5.11
S. Total Afforestation Required	0
T. Total Reforestation and Afforestation Requirement	5.11

This Forest Conservation Plan was prepared in accordance with the Howard County Forest Conservation Manual and the 1991 Forest Conservation Act.

The existing site consists of 12.11 acres with 0.267 acres of floodplain. There are 8.23 acres existing forest within the net tract area. Retention areas are prioritized to provide protection for wetlands. Forest proposed to be cleared is 7.60 acres. Existing forest to be placed in protective easement is 0.55 acres. The reforestation requirement is 5.11 acres. Onsite reforestation proposed is 1.43 acres. *Offsite reforestation is proposed to be purchased from the "Winkler Forest Mitigation Bank" for the remaining 3.68 acres of required reforestation.*

Approved: Department Of Public Works  
 Chief Bureau Of Highways *[Signature]* 11/6/01  
 Date  
 Approved: Department Of Planning And Zoning  
 Chief, Division Of Land Development *[Signature]* 12/18/01  
 Date  
 Chief, Development Engineering Division *[Signature]* 11/6/01  
 Date



FOREST CONSERVATION SIGN

Prepared by:

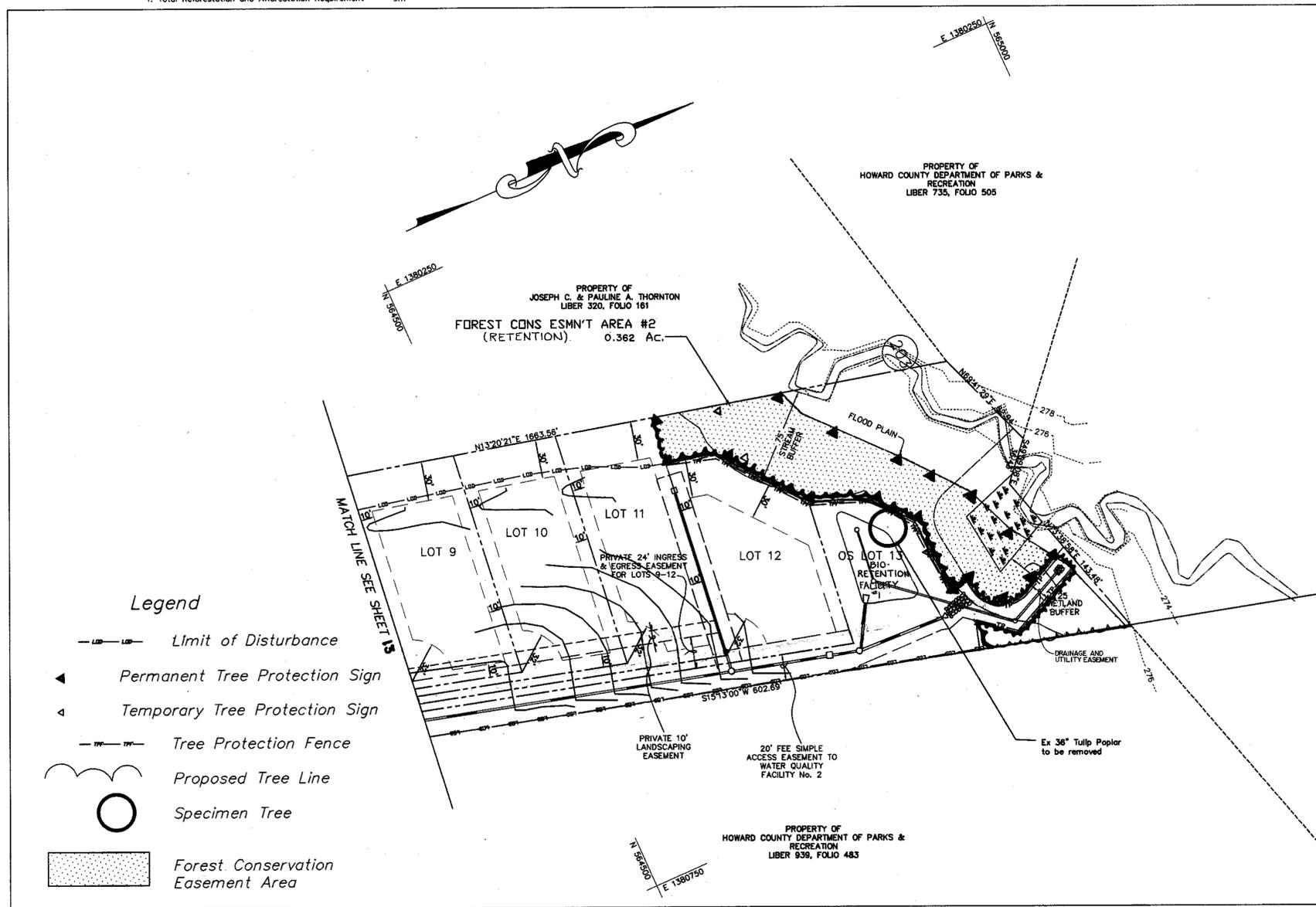


**EXPLORATION RESEARCH, INC.**  
 ENVIRONMENTAL CONSULTANTS  
 LANDSCAPE ARCHITECTS  
 6814 FOUNTAIN STREET  
 BELKNOTT CITY, MARYLAND 21040  
 TEL: (410) 760-1200 FAX: (410) 760-7900

Prepared for:

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTENNIAL SQUARES OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
 ELLICOTT CITY, MARYLAND 21042  
 (410) 481-2000

AT LEAST 48 HOURS PRIOR TO DIGGING,  
 CONTACT MISS UTILITY AT 1-800-257-7777



**Legend**

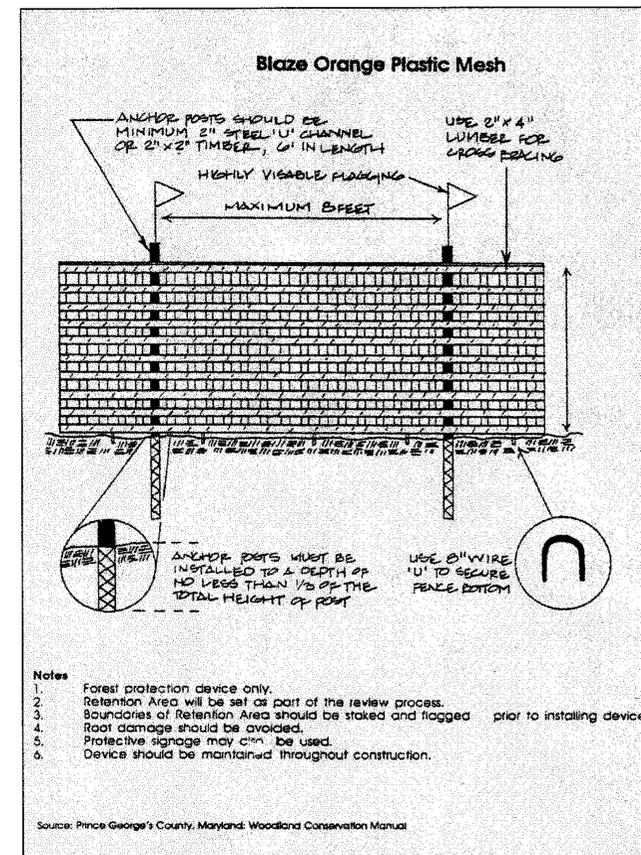
- Limit of Disturbance
- Permanent Tree Protection Sign
- Temporary Tree Protection Sign
- Tree Protection Fence
- Proposed Tree Line
- Specimen Tree
- Forest Conservation Easement Area

SCALE 1" = 50'

**OWNER**  
 WILLIAM LEO KRATZ & WIFE  
 4361 MONTGOMERY ROAD  
 ELKBRIDGE, MARYLAND 21227

**DEVELOPER**  
 TRINITY QUALITY HOMES, INC.  
 7500 GRACE DRIVE  
 COLUMBIA, MARYLAND 21044

Protective fencing shall consist of Tree Protection Fence as shown. Silt fence may be substituted for Tree Protection Fence when required for sediment and erosion control purposes (see approved sediment and erosion control plan)



**TREE PROTECTION FENCE**



**FINAL FOREST CONSERVATION AND REFORESTATION PLAN**

**ROCKBURN MANOR**  
 Lots 1 Thru 22

ZONED R-20  
 TAX MAP NO. 37 PARCEL NO. 56 GRID NO. 5  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 DATE: SEPTEMBER 14, 2001  
 SHEET 14 OF 15

AS-BUILT 10-15-04 F-00-66

**FOREST CONSERVATION EASEMENT AREA SUMMARY**  
 CONS ESMNT AREA #1 1.621 AC. RETENTION + REFORESTATION  
 CONS ESMNT AREA #2 0.362 AC. RETENTION ONLY

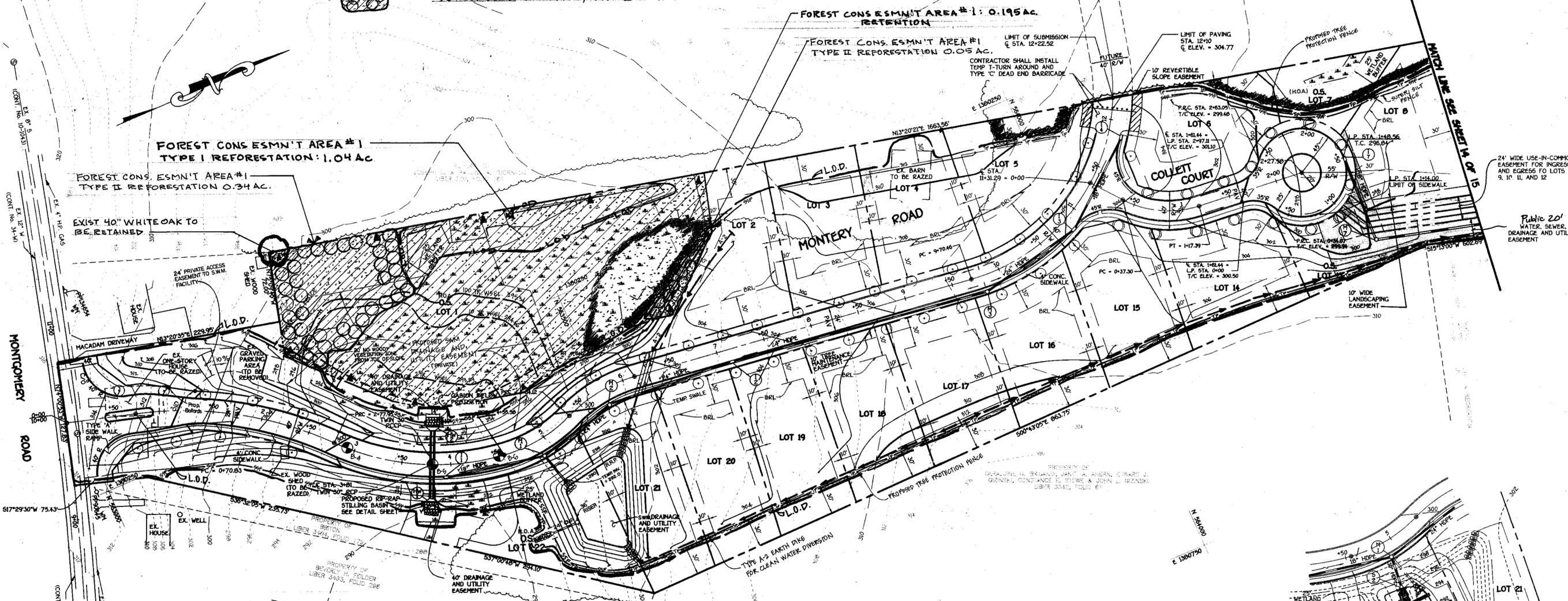
REFORESTATION PROPOSED AREA #1: 1.426 AC.  
 TOTAL REFORESTATION PROPOSED: 1.426 AC.  
 FOR REFORESTATION PLANT TABLES SEE SHEET 15 OF 15.

LEGEND	
— LOD —	LIMIT OF DISTURBANCE
▲	PERMANENT TREE PROTECTION SIGN
△	TEMPORARY TREE PROTECTION SIGN
— TP —	TREE PROTECTION FENCE
—	EXISTING TREE LINE
—	PROPOSED TREELINE
○	SPECIMEN TREE
▨	FOREST CONS. ESMNT AREA
▩	FOREST CONS. ESMNT AREA / REFORESTATION (TYPE I)
▧	FOREST CONS. ESMNT AREA / TYPE II REFORESTATION

Approved: Department Of Public Works  
 Chief, Bureau Of Highways  
 Date: 11/16/01

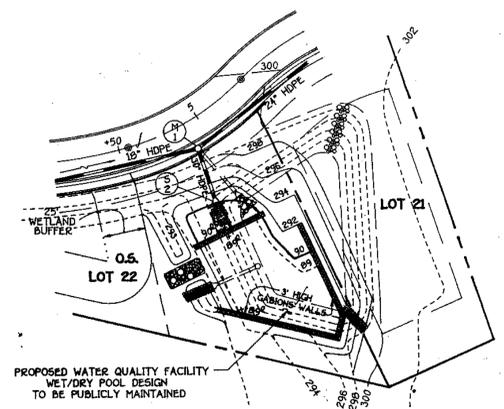
Approved: Department Of Planning And Zoning  
 Chief, Division Of Land Development  
 Date: 12/14/01

Approved: Chief, Development Engineering Division  
 Date: 4/16/01



**PLAN**  
 SCALE: 1" = 50'

**NOTE:**  
 NO STREET TREES TO BE PLANTED  
 ALONG MONTGOMERY ROAD FROM STA.  
 2+50 TO STA. 5+00 DUE TO IMPERVIOUS  
 CORE OF S.W.M. EMBANKMENT



**PHASE II GRADING PLAN**  
 SCALE: 1" = 50'



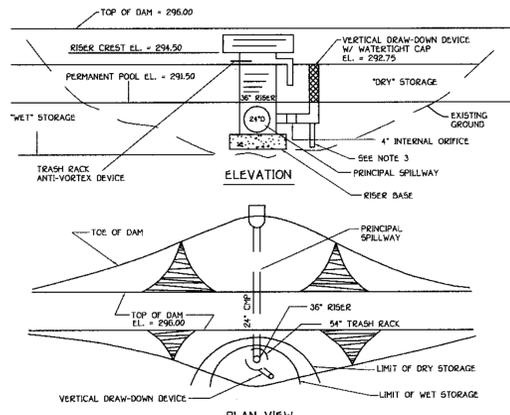
**OWNER:**  
 WILLIAM LEO KEATZ & WIFE  
 6381 MONTGOMERY ROAD  
 ELKBRIDGE, MARYLAND 21027

**DEVELOPER:**  
 TRINITY QUALITY HOMES, INC.  
 7320 GRACE DRIVE  
 COLUMBIA, MARYLAND 21044

**FOREST CONSERVATION PLAN**  
**ROCKBURN MANOR**  
 Lots 1 Thru 22  
 ZONED R-20  
 TAX MAP NO. 37 PARCEL NO. 56 GRID NO. 5  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 DATE: SEPT. 14, 2001  
 SHEET 13 OF 15

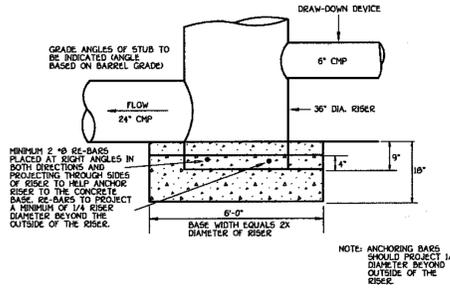
**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE PARK - 5000 BALTIMORE NATIONAL FREE  
 ELKSPRICE CITY, MARYLAND 21051  
 410-381-2000

AS-BUILT 10-15-04 F-00-66



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

**BASIN DRAWDOWN SCHEMATIC  
VERTICAL DRAW-DOWN DEVICE**  
NOT TO SCALE



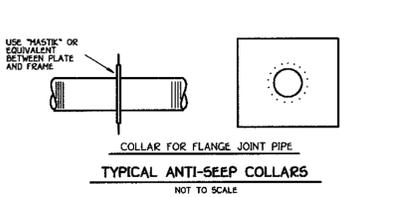
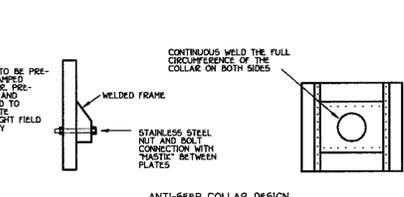
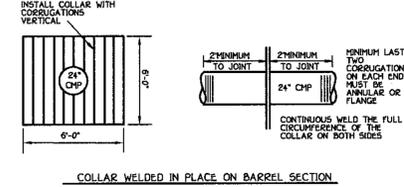
**Construction Specifications**

The riser shall have a base attached with a watertight connection and shall have sufficient weight to prevent flotation of the riser. Two approved bases for risers 10" or less in height are:

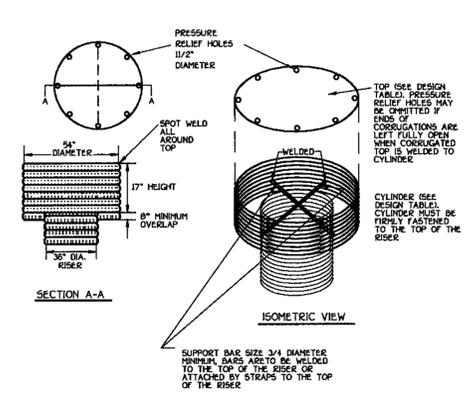
- A concrete base 18" thick with the riser embedded 9" in the base.
- A 1/4" minimum thickness steel plate attached to the riser by a continuous weld around the circumference of the riser to form a watertight connection. The plate shall have 2" of stone, gravel, or compacted earth placed on it to prevent flotation in either case, each side of the square base shall be twice the riser diameter.

Note: For risers greater than ten feet high computations shall be made to design a base which will prevent flotation. The minimum factor of safety shall be 1.20 (downward forces = 1.20 x upward forces).

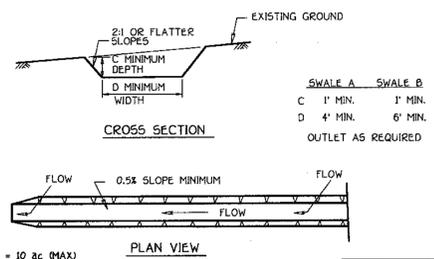
**RISER BASE DETAIL**  
NOT TO SCALE



**TYPICAL ANTI-SEEP COLLARS**  
NOT TO SCALE



**CONCENTRIC TRASH RACK  
AND ANTI-VORTEX DEVICE**  
NOT TO SCALE

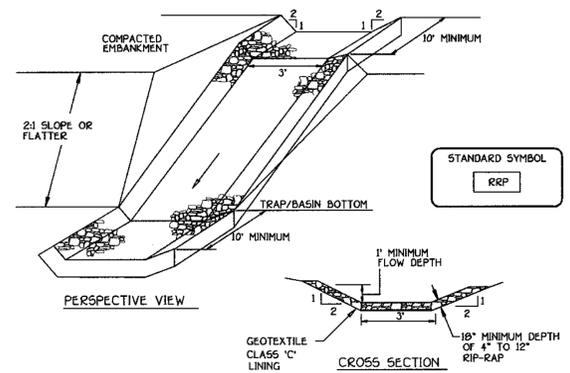


DRAINAGE AREA = 10 ac (MAX)  
SLOPE = 10% (MAX)

- Seed and cover with straw mulch.
- Seed and cover with Erosion Control Matting or line with sod.
- 4" x 7" stone or recycled concrete equivalent pressed into soil in a minimum 7" layer.

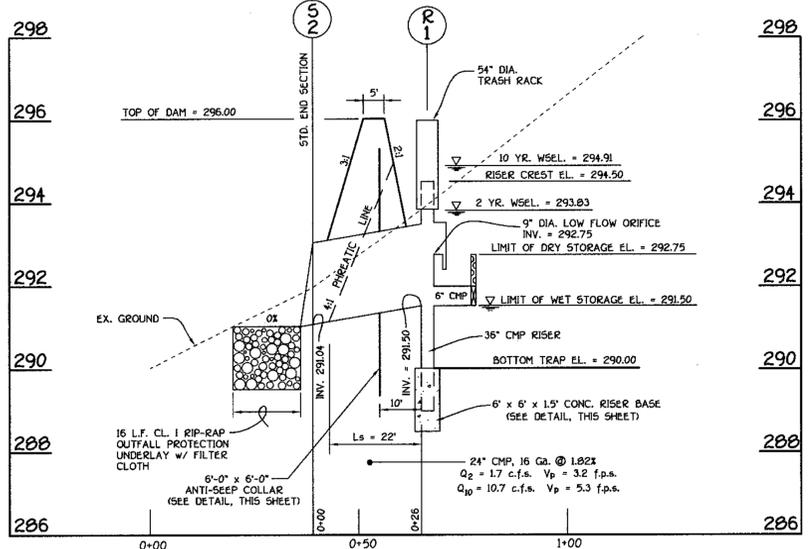
- Construction Specifications**
- All temporary swales shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.
  - Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.
  - Runoff diverted from an undisturbed area shall outlet directly into an undisturbed stabilized area at a non-erosive velocity.
  - 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.
  - 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.
  - Fill, if necessary, shall be compacted by earth moving equipment.
  - All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the swale.
  - Inspection and maintenance must be provided periodically and after each rain event.

**TEMPORARY SWALE**  
NOT TO SCALE



- Construction Specifications**
- Rip-rap lined inflow channels shall be 1' in depth, have a trapezoidal cross section with 2:1 or flatter side slopes and 3' (min) bottom width. The channel shall be lined with 4" to 12" rip-rap to a depth of 18".
  - Filter cloth shall be installed under all rip-rap. Filter cloth shall be Geotextile Class C.
  - Entrance and exit sections shall be installed as shown on the detail section.
  - Rip-rap used for the lining may be recycled for permanent outlet protection if the basin is to be converted to a stormwater management facility.
  - Gabion Inflow Protection may be used in lieu of Rip-rap Inflow Protection.
  - Rip-rap should blend into existing ground.
  - Rip-rap Inflow Protection shall be used where the slope is between 4:1 and 10:1, for slopes flatter than 10:1 use Earth Dike or Temporary Swale lining criteria.

**RIP-RAP INFLOW PROTECTION**  
NOT TO SCALE



**PROFILE ALONG PRINCIPAL SPILLWAY**  
SCALE: HORIZ. 1" = 20'  
VERT. 1" = 2'

**DEVELOPER'S CERTIFICATE**

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND THAT ANY RESPONSIBLE PERSONNEL IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.

SIGNATURE OF DEVELOPER \_\_\_\_\_ DATE \_\_\_\_\_

**ENGINEER'S CERTIFICATE**

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

SIGNATURE OF ENGINEER *Michael J. ...* DATE *10/1/01*

REVIEW FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS. *12/2/01*

U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE *12/2/01*

THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT. *12/2/01*

HOWARD SOIL CONSERVATION DISTRICT *12/4/01*

APPROVED: DEPARTMENT OF PLANNING AND ZONING *11/16/01*

CHIEF, DEVELOPMENT ENGINEERING DIVISION *11/16/01*

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS *11/16/01*

CHIEF, BUREAU OF HIGHWAYS *11/16/01*

**SEDIMENT CONTROL NOTES AND DETAILS**  
**ROCKBURN MANOR**  
Lots 1 Thru 22  
ZONED R-20  
TAX MAP NO. 37 PARCEL NO. 56 GRID NO. 5  
FIRST ELECTION DISTRICT - HOWARD COUNTY, MARYLAND  
DATE: SEPTEMBER 14, 2001  
SHEET 11 OF 15

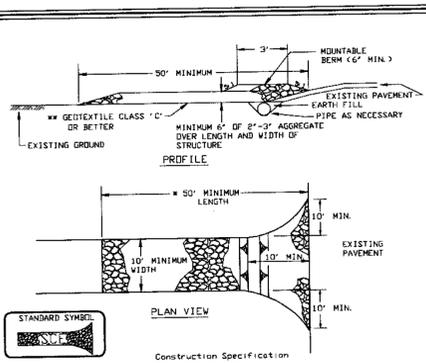
**OWNER**  
WILLIAM LEO KRATZ & WIFE  
6361 MONTGOMERY ROAD  
ELKIDGE, MARYLAND 21227

**DEVELOPER**  
TRINITY QUALITY HORSES, INC.  
7320 GRACE DRIVE  
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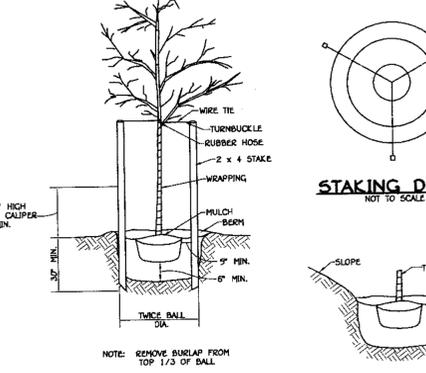
**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTENNIAL SQUARE OFFICE PARK - 10272 BULFINCH NATIONAL PKWY  
ELKROTT CITY, MARYLAND 22924  
410-481-2955

AS-BUILT 10-15-04 F-00-66



- STABILIZED CONSTRUCTION ENTRANCE - 2**  
NOT TO SCALE
- Length - minimum of 50' (40' for single residence lots).
  - Width - 10' minimum, should be flared at the existing road to provide a turning radius.
  - Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. When pipe approval authority may not require single family residences to use geotextile.
  - Stone - crushed aggregate (2" to 3") or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
  - 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 manhole cover with a slope of a minimum of 1/4" per foot over the pipe. Pipe 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 according to the amount of runoff to be conveyed.
  - 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.

**STABILIZED CONSTRUCTION ENTRANCE - 2**  
NOT TO SCALE



**TREE PLANTING**  
NOT TO SCALE

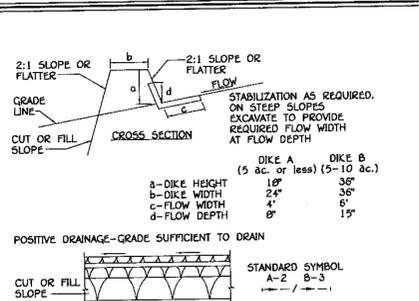
**GRADING FOR PLANTING ON SLOPES**  
NOT TO SCALE

**SEDIMENT CONTROL NOTES**

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (310-1655).
- 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 THERE TO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: 31 DAYS CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DICES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1, 14 DAYS GRADING NECESSARY TO INSTALL STORM DRAINS, SEDIMENT TRAP AND EARTH DICES TO BE PERFORMED PRIOR TO THE START OF THE GRADING TO BE PERFORMED AFTER STORM DRAINS, SEDIMENT TRAP AND EARTH DICES ARE INSTALLED.
- 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.
- 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 SEEDING (SEC. 51), SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50), AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- 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.
- SITE ANALYSIS:
 

TOTAL AREA OF SITE	12.11 ACRES
AREA TO BE ROOFED OR PAVED	9.00 ACRES
AREA TO BE VEGETATIVELY STABILIZED	3.70 ACRES
TOTAL CUT	20,000 CU.YDS.
TOTAL FILL	20,000 CU.YDS.
OFFSITE WASTE/BORROW AREA LOCATION	N/A
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DETERMINED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, 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.
- 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.

**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
1000 WASHINGTON SQUARE, OFFICE PARK - 10072 BALTIMORE NATIONAL FIRE  
ELICOTT CITY, MARYLAND 21042  
410-481-2995



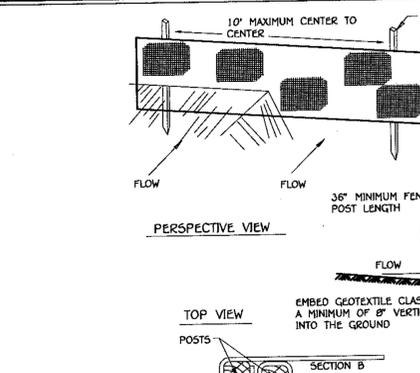
**EARTH DIKE**  
NOT TO SCALE

- ALL DIKES SHALL BE COMPACTED BY EARTH-MOVING EQUIPMENT.
- ALL DIKES SHALL HAVE POSITIVE DRAINAGE TO AN OUTLET.
- TOP WIDTH MAY BE WIDER AND SIDE SLOPES MAY BE FLATTER IF DESIRED TO FACILITATE CROSSING BY CONSTRUCTION TRAFFIC.
- FIELD LOCATION SHOULD BE ADJUSTED AS NEEDED TO UTILIZE A DESIGNATED SAFE OUTLET.
- EARTH DIKES SHALL HAVE AN OUTLET THAT FUNCTIONS WITH A MINIMUM OF EROSION. RUNOFF SHALL BE CONVEYED TO A SEDIMENT BASIN WHERE EITHER THE DIKE CHANNEL OR THE DRAINAGE AREA ABOVE THE DIKE ARE NOT OCCURRINGLY STABILIZED.
- STABILIZATION SHALL BE: (A) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED AND STRAW MULCH OR STRAW MULCH IF NOT IN SEEDING SEASON, (B) FLOW CHANNEL AS PER THE CHART BELOW.

**FLOW CHANNEL STABILIZATION**

TYPE OF TREATMENT	CHANNEL GRADE	DIKE A	DIKE B
1	5-3.0%	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3.1-5.0%	SEED AND STRAW MULCH	SEED USING JUTE, OR EXCESSIVE SOD; 2" STONE
3	5.1-8.0%	SEED WITH JUTE, OR SOD; 2" STONE	LINED RIP-RAP 4"-8"
4	8.1-20%	UNED RIP-RAP 4"-8"	ENGINEERING DESIGN

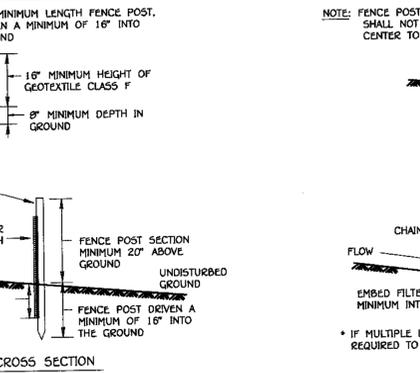
- STONE TO BE 2 INCH STONE, OR RECYCLED CONCRETE EQUIVALENT, IN A LAYER AT LEAST 3 INCHES THICKNESS AND BE PRESSED INTO THE SOIL WITH CONSTRUCTION EQUIPMENT.
  - RIP-RAP TO BE 4-8 INCHES IN A LAYER AT LEAST 8 INCHES THICKNESS AND PRESSED INTO THE SOIL.
  - APPROVED EQUIVALENTS CAN BE SUBSTITUTED FOR ANY OF THE ABOVE MATERIALS.
7. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.



**DETAIL 22 - SILT FENCE**  
NOT TO SCALE

- Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum cut), or 1 3/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pound per linear foot.
- Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:
 

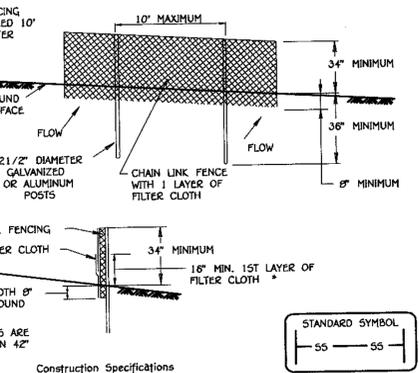
Tensile Strength	80 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft / minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322
- Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
- Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.



**DETAIL 33 - SUPER SILT FENCE**  
NOT TO SCALE

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

Tensile Strength	80 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft / minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322



**DETAIL 33 - SUPER SILT FENCE**  
NOT TO SCALE

- 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 mixtures - Temporary Seeding
 

Seed Mixture (Hardness Zone - 6b)	Application Rate (lb/ac)	Seeding Dates	Seeding Depth	Fertilizer Rate (10-10-10)	Lime Rate
1. BARLEY	122	3/1 - 5/15	1" - 2"	600 lb/ac	2 tons/ac
2. OATS	96	8/15 - 10/15	1" - 2"	(15 lb/1000ft)	(100 lb/1000ft)
3. RYE	140		1" - 2"		
- Seed mixtures - Permanent Seeding
 

Seed Mixture (Hardness Zone - 6b)	Application Rate (lb/ac)	Seeding Dates	Seeding Depth	Fertilizer Rate (10-20-20)	Lime Rate
1. TALL FESCUE (20%)	122	3/1 - 5/15	1" - 2"	90 lb/ac	2 tons/ac
2. PERENNIAL RYE GRASS (10%)	15	8/15 - 10/15	1" - 2"	(20 lb/1000ft)	(100 lb/1000ft)
3. KENTUCKY BLUEGRASS (25%)	122		1" - 2"	175 lb/ac	2 tons/ac
4. TALL FESCUE (20%)	122	3/1 - 5/15	1" - 2"	100 lb/ac	1000 lb

**DEVELOPER'S CERTIFICATE**

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

Signature of Developer: *Neil M. [unclear]* Date: 10/11/01

**ENGINEER'S CERTIFICATE**

I HEREBY CERTIFY THAT THIS PLAN OF DEVELOPMENT AND CONSTRUCTION REPRESENTS A PRACTICABLE AND FEASIBLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.

Signature of Engineer: *[unclear]* Date: 10-11-01

Signature of Engineer: *[unclear]* Date: 12/6/01

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

Signature: *[unclear]* Date: 12/6/01

Signature: *[unclear]* Date: 12/6/01

Signature: *[unclear]* Date: 11/16/01

Signature: *[unclear]* Date: 11/16/01

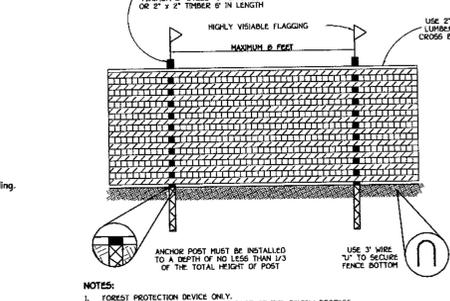
**SEDIMENT CONTROL NOTES AND DETAILS**

**ROCKBURN MANOR**  
LOTS 1 THRU 22

OWNER: WILLIAM LEO KRATZ & WIFE  
6361 MOUNTAINVIEW ROAD, ELK RIDGE, MARYLAND 21227

DEVELOPER: TRINITY QUALITY HOMES, INC.  
7320 GRACE DRIVE, COLUMBIA, MARYLAND 21044

ZONED R-20  
PARCEL NO. 56  
GRID NO. 5  
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
DATE: SEPTEMBER 14, 2001  
SHEET 10 OF 15



**TREE PROTECTION DETAIL**  
NOT TO SCALE

- FOREST PROTECTION DEVICE ONLY.
- RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
- ROOT DAMAGE SHOULD BE AVOIDED.
- ROOT DAMAGE SHOULD BE AVOIDED.
- DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

**STATE OF MARYLAND**  
DEPARTMENT OF NATURAL RESOURCES  
SOIL CONSERVATION DISTRICT

10-11-01

# STORM WATER MANAGEMENT POND CONSTRUCTION SPECIFICATIONS

These specifications are appropriate to all ponds within the scope of the Standard for practice MD-376. All references to ASTM and AASHTO specifications apply to the most recent version.

## Site Preparation

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped to no steeper than 1:1. 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 streambed management ponds, a minimum of a 25-foot radius around the inlet structure shall be cleared of all trees, brush, logs, fences, rubbish and other objectionable material.

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

## EARTH FILL

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

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

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

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

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

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

## Structure Backfill

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

**Structure Backfill** may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 313 as modified. The mixture shall have a 100-200 psi 28 day unconfined compressive strength. The flowable fill shall have a minimum pH of 4.0 and a minimum resistivity of 2000 ohm-cm. Material shall be placed such that a minimum of 6" (measured perpendicular to the outside of the pipe or structure) of flowable fill shall be placed 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 the specified for the core of the embankment or other embankment materials.

## Pipe Conduits

1. Pipes shall be circular in cross section.
2. Reinforced Concrete Pipe - All of the following criteria shall apply for reinforced concrete pipe Reinforced Concrete Pipe:
  1. Material - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM C-361.
  2. Bedding - Reinforced concrete pipe conduits shall be laid in a concrete bedding/cradle for their entire length. This bedding/cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 50% of its outside diameter with a minimum thickness of 6 inches. Where a concrete cradle is not needed for structural reasons, flowable fill may be used 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 the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 4 feet from the riser.
  4. Backfilling shall conform to "Structure Backfill".
  5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

## STORMWATER MANAGEMENT POND MAINTENANCE SCHEDULE

### (PUBLIC FACILITY)

1. ROUTINE MAINTENANCE
  1. Facility shall be inspected annually and after major storms. Inspections should be performed during wet weather to determine if the pond is functioning properly.
  2. Top and side slopes of the embankment shall be mowed a minimum of two (2) times a year, once in September. Other side slopes, the bottom of the pond, and maintenance access should be mowed as needed.
  3. Debris and litter next to the outlet structure shall be removed during regular mowing operations and as needed.
  4. Visible signs of erosion in the pond as well as rip-rap putler area shall be repaired as soon as it is noticed.
2. NON-ROUTINE MAINTENANCE
  1. Structural components of the pond such as the dam, riser structure and the pipes shall be repaired upon the detection of any damage. The components should be inspected during maintenance operations.
  2. Sediment should be removed when its accumulation significantly reduces the design storage, interferes with the function of the riser, when deemed necessary for aesthetic reasons, or when deemed necessary by the Howard County's Department of Public Works.

FISHER, COLLINS & CARTER, INC.  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTRAL SQUARE OFFICE BLDG. 10771 SANDY SPRING NATIONAL PIKE  
ELKLOFT CITY, MARYLAND 21041  
410-461-8999



10-11-01

# STANDARDS 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

1. 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.
2. 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

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

## Plastic Pipe

1. Materials - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241. Corrugated High Density Polyethylene (HDPE) pipe, couplings and fittings shall conform to the following: 4" - 10" inch pipe shall meet the requirements of AASHTO M252 Type 5, and 12" through 24" inch shall meet the requirements of AASHTO M294 Type 5.
2. Joints and connections to anti-seep collars shall be completely watertight.
3. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy, or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.
4. Backfilling shall conform to "Structure Backfill".
5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

## Concrete

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

## Rock Riprap

Rock riprap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 311. Geostyle shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 921.09, Class C.

## Care of Water during Construction

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

## Stabilization

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

## Erosion and Sediment Control

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

## OPERATION AND MAINTENANCE

An operation and maintenance plan in accordance with Local or State Regulations will be provided for all ponds. As a minimum, the dsm inspection checklist located in Appendix A shall be included as part of the operation and maintenance plan and performed at least annually. Written records of maintenance and major repairs needs to be retained in a file. The issuance of a Maintenance and Repair Permit for any repairs or maintenance that involves the modification of the dam or spillway from its original design and specifications is required. A permit is also required for any repairs or reconstruction that involve a substantial portion of the structure. All indicated repairs are to be made as soon as practical.

DESIGN STORM	ALLOWABLE RELEASE RATE	FACILITY INFLOW	FACILITY DISCHARGE	WATER SURFACE ELEVATION	STORAGE VOLUME (AC.F.T.)
2 YEAR	14.4 c.f.s.	25.6 c.f.s.	12.1 c.f.s.	293.29	0.398
10 YEAR	41.5 c.f.s.	61.7 c.f.s.	36.9 c.f.s.	294.66	1.092
100 YEAR	N/A	105.8 c.f.s.	72.8 c.f.s.	295.39	1.648

STRUCTURE CLASSIFICATION: LOW HAZARD, CLASS 'A' POND  
STORAGE - HEIGHT PRODUCT 1649 AC. FT. x 8' = 1318  
WATERSHED AREA TO FACILITY (ACRES): ULTIMATE: 23.6 ACRES  
LEVEL OF MANAGEMENT PROVIDED BY FACILITY: TWO AND TEN YEAR STORMS

## EMBANKMENT AND CUT-OFF TRENCH CONSTRUCTION

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

A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER SHOULD BE PRESENT TO MONITOR PLACEMENT AND COMPACTION OF FILL FOR THE EMBANKMENT AND CUT-OFF TRENCH FOR THE POND STRUCTURES. IN ACCORDANCE WITH MARYLAND SOIL CONSERVATION SPECIFICATION 379 SOILS CONSIDERED SUITABLE FOR THE CENTER OF EMBANKMENT AND CUT-OFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION CC, SC, CH OR CL. ALL FILL MATERIALS MUST BE PLACED AND COMPACTED IN ACCORDANCE WITH MD SCS 379 SPECIFICATIONS. BASED ON THE RESULTS OF OUR SUBSURFACE EXPLORATION IT APPEARS THAT SOILS SUITABLE FOR USE AS CUT-OFF AND CORE TRENCH MATERIALS WILL BE AVAILABLE ON-SITE.

1. 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 present 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 phytotoxic materials.
2. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.

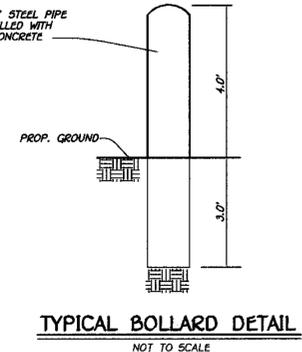
Topsoil Application

1. 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.
2. Grades on the areas to be topsoiled, which have been previously established, shall be maintained, silted 4" - 6" higher in elevation.
3. Topsoil shall be uniformly distributed in a 4" - 6" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that seeding or sodding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or seeding shall be corrected in order to prevent the formation of depressions or water pockets.
4. Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

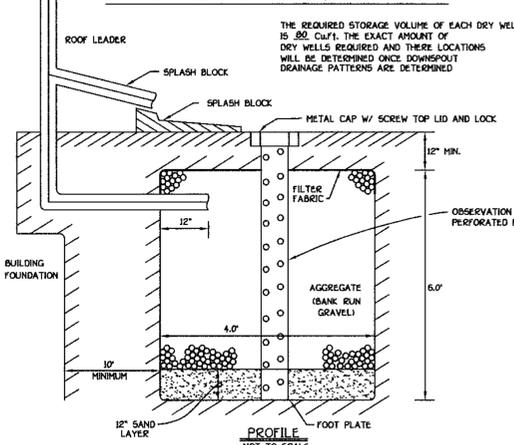
Alternative for Permanent Seeding - Instead of applying the full amount of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:

1. Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 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 26.04.02.
  - 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 amendments 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.
  - d. Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/3 the normal lime application rate.

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



## WATER QUALITY TREATMENT FOR LOTS 2, 3, 6 & 12 TYPICAL DRY WELL CROSS SECTION INFILTRATION MANUAL



## SEQUENCE OF CONSTRUCTION

1. OBTAIN A GRADING PERMIT.
2. NOTIFY MISS UTILITY AT LEAST 48 HOURS BEFORE BEGINNING ANY WORK AT 1-800-257-7777. NOTIFY THE HOWARD COUNTY OFFICE OF CONSTRUCTION/INSPECTION AT 410-315-1330 24 HOURS BEFORE STARTING WORK.
3. CLEAR AND GRUB FOR SEDIMENT CONTROL MEASURES ONLY. INSTALL STABILIZED CONSTRUCTION ENTRANCE. (1 week)
4. INSTALL REMAINING SEDIMENT CONTROL MEASURES, EARTH DIKES, SILT FENCES AND TEMP. P.O.S.T. NO. 1 INDICATED ON THE PLANS. NO BLASTING WILL BE PERMITTED FOR THE EXCAVATION OF THE ROAD/POND EMBANKMENT. WHERE NECESSARY, RIPPING AND JACK HAMMERS SHOULD BE UTILIZED IN THE EXCAVATION OF THE CORE TRENCH. (2 weeks)
5. OBTAIN PERMISSION OF THE SEDIMENT CONTROL INSPECTOR PRIOR TO PROCEED WITH THE INITIAL STAGE OF PHASE I CONSTRUCTION AND STABILIZATION OF THE POND CROSSING AS IT IS TO BE THE STABLE MEANS OF CONSTRUCTION ACCESS TO THE REMAINDER OF THE SITE.
6. UPON A 5-DAY, CLEAR WEATHER NO PRECIPITATION FORECAST FROM THE NATIONAL WEATHER SERVICE, INSTALL THE PROPOSED TWIN 30-INCH RCP BARREL PIPES UNDER THE INITIAL PHASE OF CONSTRUCTION TO ALLOW FOR CLEAN WATER TO TRAVERSE THE SITE. (2weeks) OBTAIN PERMISSION OF THE SEDIMENT CONTROL INSPECTOR TO PROCEED WITH PHASE II OF THE SITE WORK.
7. CLEAR AND GRUB FOR THE REMAINDER OF PHASE I CONSTRUCTION ON THE SITE. (1 week)
8. GRADE THE REMAINING SITE TO PROPOSED SUBGRADE AND INSTALL THE REMAINING STORM SYSTEM. STABILIZE ALL ROADWAY SLOPES IMMEDIATELY UPON COMPLETION OF GRADING AS SHOWN ON THESE PLANS. (4 weeks)
9. THE CONTRACTOR SHALL INSPECT AND PROVIDE NECESSARY MAINTENANCE ON ALL SEDIMENT AND EROSION CONTROL STRUCTURES SHOWN HEREON AFTER EACH RAINFALL AND ON A DAILY BASIS. (1 week)
10. INSTALL BASE COURSE FOR THE PROPOSED ROADS. (1 week)
11. STABILIZE ALL DISTURBED AREAS AND OBTAIN PERMISSION FROM THE SEDIMENT CONTROL INSPECTORS TO PROCEED.
12. APPLY TACK COAT TO SUB-BASE AND LAY SURFACE COURSE. (1 week)
13. WHEN ALL CONTRIBUTING AREAS TO THE SEDIMENT CONTROL DEVICES FOR THE INITIAL GRADING PHASE HAVE BEEN STABILIZED AND WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, THE DEVICE MAY BE REMOVED AND/OR BACK FILLED AND THE REMAINING AREAS BROUGHT TO FINAL GRADE. THIS INCLUDES CONSTRUCTION OF THE QUALITY FACILITY NO. 2 IN THE AREA OF P.O.S.T. NO. 1. STABILIZE ALL REMAINING AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES. (2 weeks)
14. NOTIFY HOWARD COUNTY OFFICE OF INSPECTIONS AND PERMITS FOR A FINAL INSPECTION OF THE COMPLETED PROJECT.

## SEDIMENT CONTROL AND STORMWATER MANAGEMENT DETAILS AND NOTES

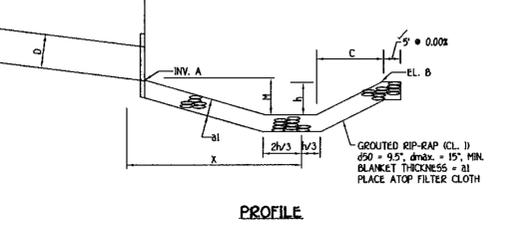
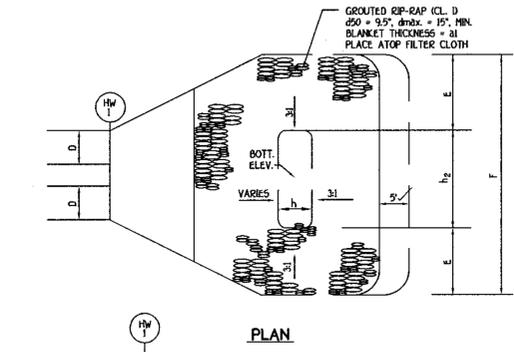
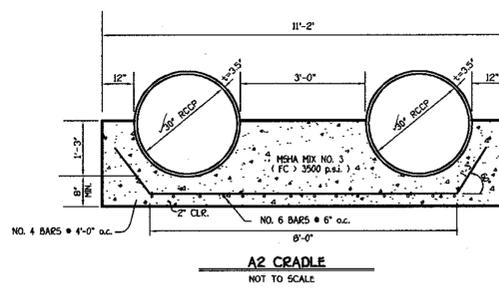
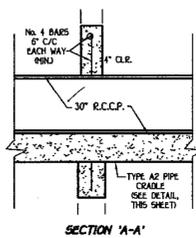
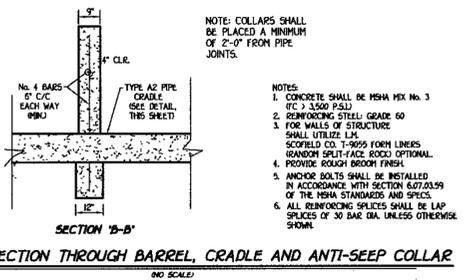
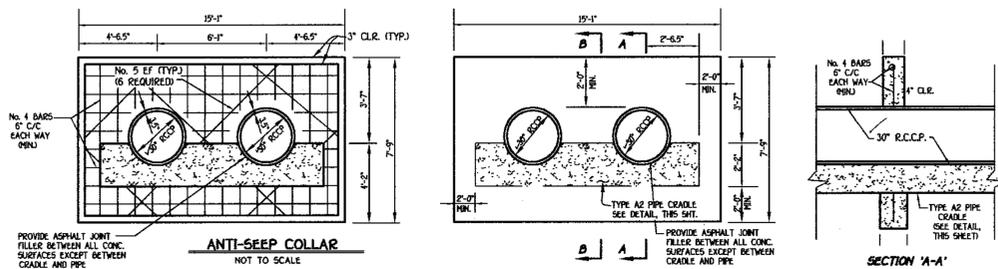
### ROCKBURN MANOR LOTS 1 THRU 22

ZONED R-20  
TAX MAP NO. 37 PARCEL NO. 56 GRID NO. 5  
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
DATE: SEPTEMBER 14, 2001  
SHEET 9 OF 15

OWNER  
WILLIAM LEO KRATZ & WIFE  
6361 MONTGOMERY ROAD  
ELKBRIDGE, MARYLAND 21027

DEVELOPER  
TRINITY QUALITY HOMES, INC.  
7320 GRACE DRIVE  
COLUMBIA, MARYLAND 21044

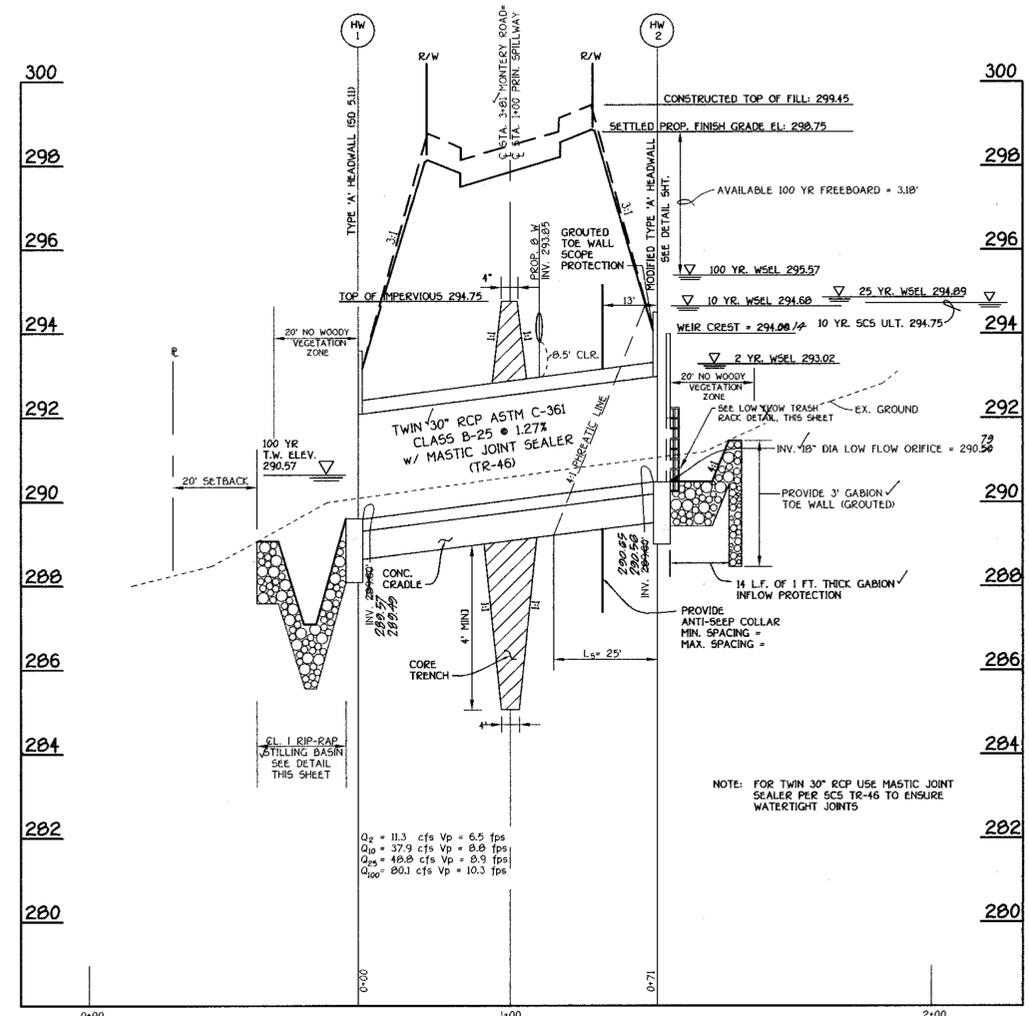
AS-BUILT 10-15-04 F-00-66



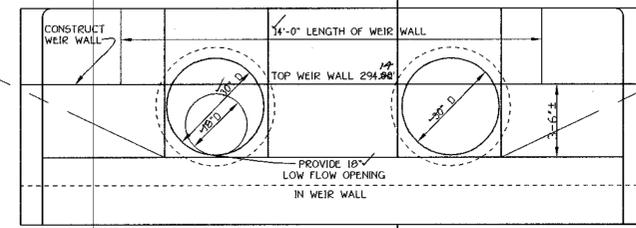
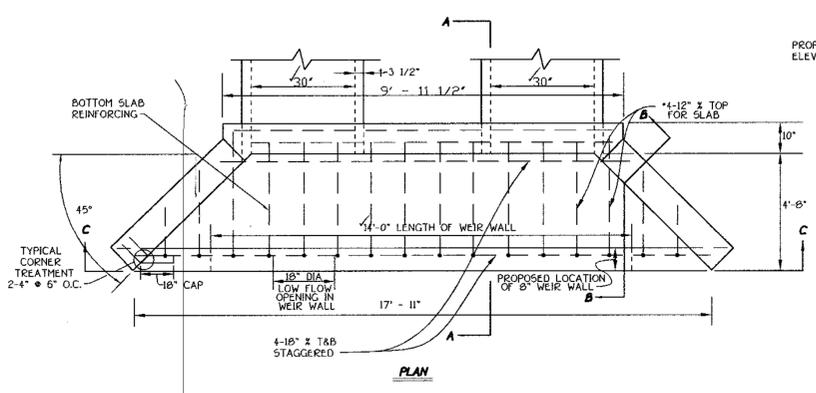
STILLING BASIN OUTFALL DETAIL • HW-1  
NO SCALE

STILLING BASIN DATA*											
STRUCTURE NO.	INV. A	EL. B	C	D	E	F	h	M	a1	x	h2
HW-1	289.60	289.10	6.0'	2.5'	6.0'	18.50'	2.0'	2.5'	2.0'	0.0'	6.50'

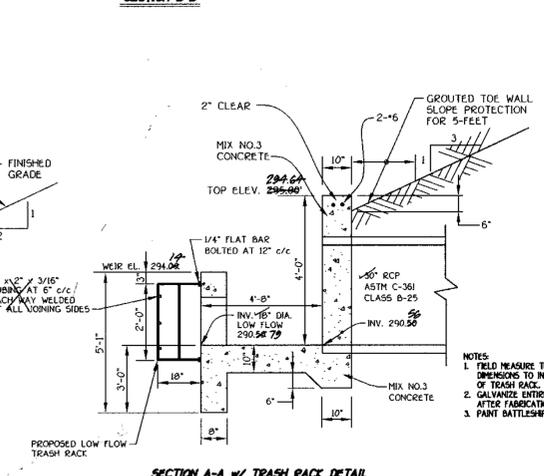
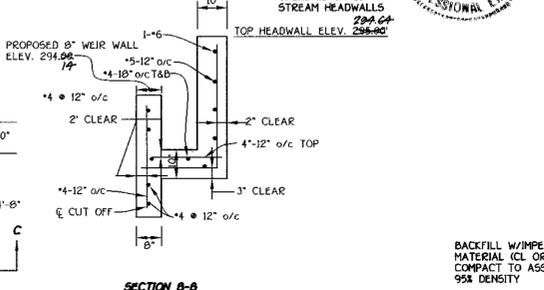
\* Dimensions as per plan



PROFILE ALONG PRINCIPAL SPILLWAY  
SCALE: HORIZ. 1" = 20'  
VERT. 1" = 2'



MODIFIED TYPE 'A' HEADWALL • HW-2  
NO SCALE



By The Developer:  
I/We Certify That All Development And/Or Construction Will Be Done According To These Plans, And That Any Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of The Environment Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Shall Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District.

Signature Of Developer: M.C. HALL PFALLS Date: 10/11/01  
Printed Name Of Developer: M.C. HALL PFALLS

By The Engineer:  
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 Regulations Of The Howard Soil Conservation District. I Have Notified The Developer And 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: APR. M. VITELLI Date: 10-11-01  
Printed Name Of Engineer: APR. M. VITELLI

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.

Signature: Jim Lopez/GS Date: 12/2/01  
USDA Natural Resources Conservation Service

These Plans For Small Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.

Signature: [Signature] Date: 12/2/01  
Howard Soil Conservation District

Signature: [Signature] Date: 11/1/01  
Approved Department Of Public Works  
Chief, Bureau Of Highways

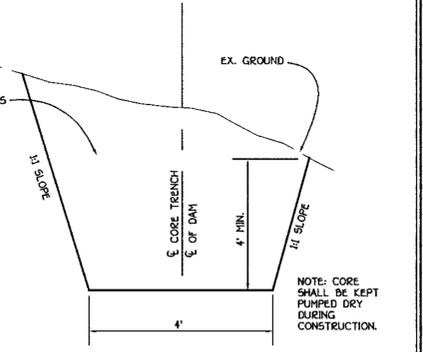
Signature: [Signature] Date: 12/4/01  
Approved Department Of Planning And Zoning  
Chief, Division Of Land Development

Signature: [Signature] Date: 11/6/01  
Chief, Development Engineering Division

AS-BUILT CERTIFICATION  
I Herby Certify That The Facility Shown On This Plan Was Constructed As Shown On The "As-Built" Plans And Meets The Approved Plans And Specifications.

Signature: [Signature] Date: 1/30/04  
P.E. No. 1815/04

Certify Means To State Or Declare A Professional Opinion Based Upon Onsite Inspections And Material Tests Which Are Conducted During Construction. The Onsite Inspections And Material Tests Are Those Inspections And Tests Deemed Sufficient And Appropriate Commonly Accepted Engineering Standards. Certify Does Not Mean Or Imply A Guarantee By The Engineer Nor Does An Engineer's Certification Relieve Any Other Party From Meeting Requirements Imposed By Contract, Employment, Or Other Means, Including Meeting Commonly Accepted Industry Practices.



CORE TRENCH DETAIL  
NOT TO SCALE

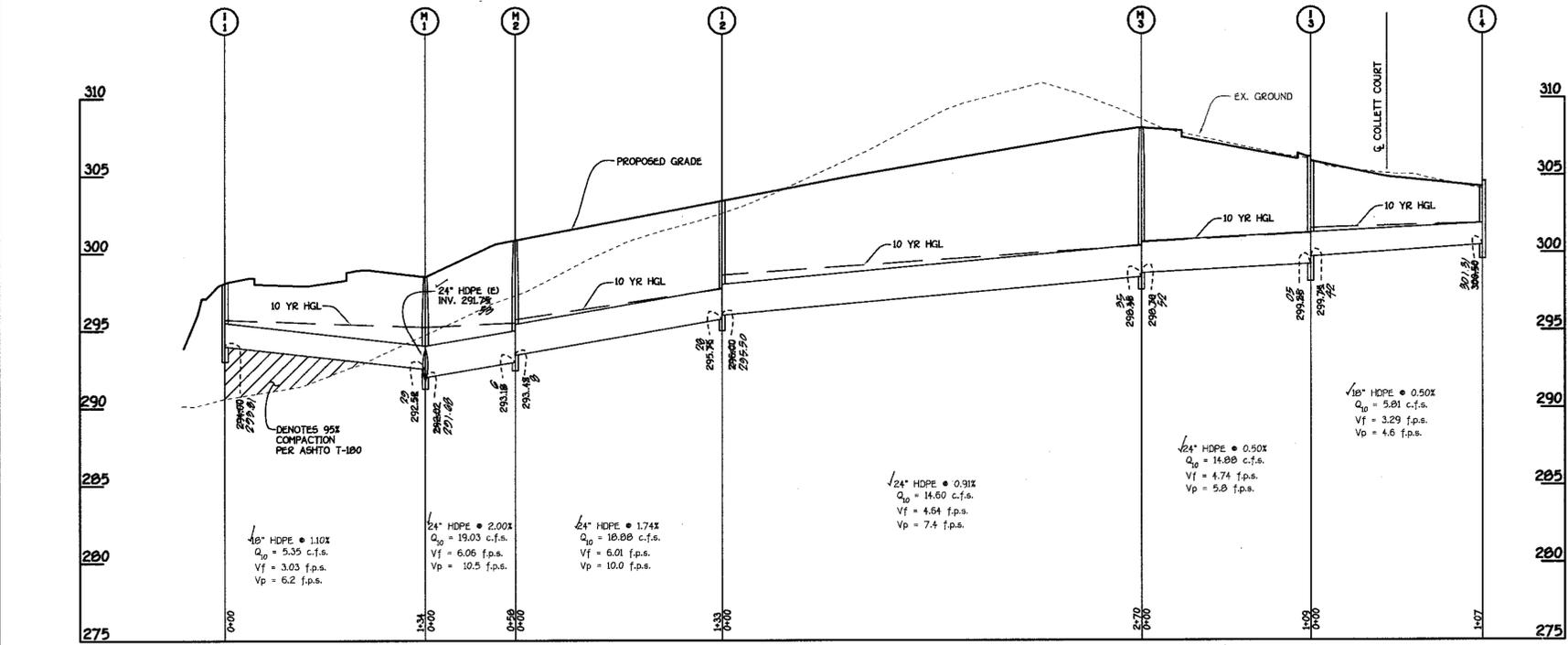


S.W.M. NOTES AND DETAILS  
**ROCKBURN MANOR**  
Lots 1 Thru 22  
ZONED R-20  
TAX MAP NO. 37 PARCEL NO. 56 GRID NO. 5  
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
DATE: SEPTEMBER 14, 2001  
SHEET 8 OF 15

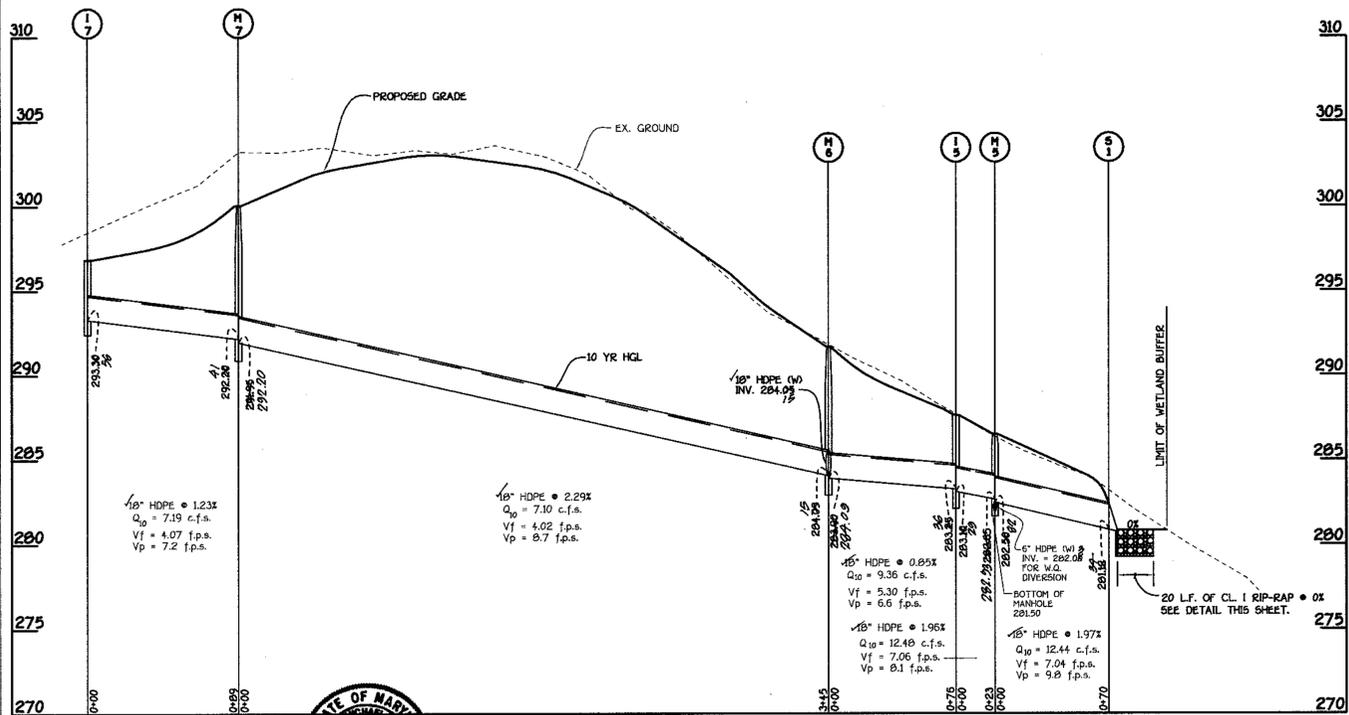
AS-BUILT 10-15-04 F-00-66



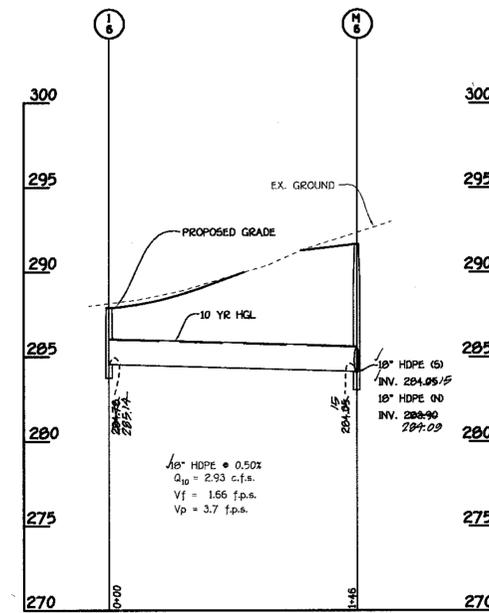
Approved: Department Of Planning And Zoning  
 Chief, Division Of Land Development  
 Chief, Development Engineering Division  
 Approved: Howard County Department Of Public Works  
 Chief, Bureau Of Highways



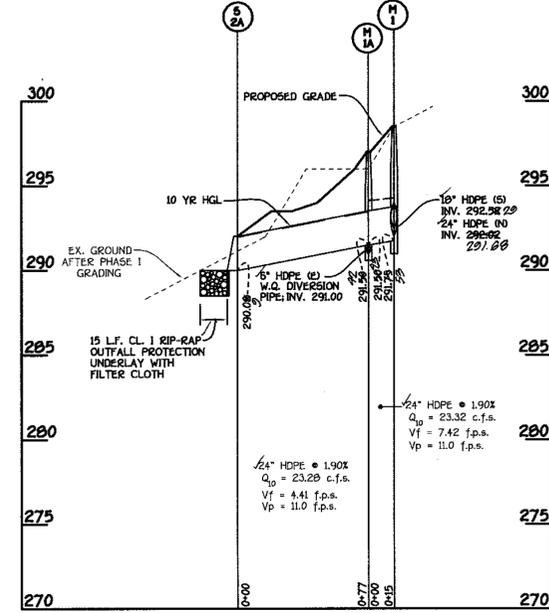
**PROFILE**  
 SCALE: HORIZ. : 1" = 50'  
 VERT. : 1" = 5'



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



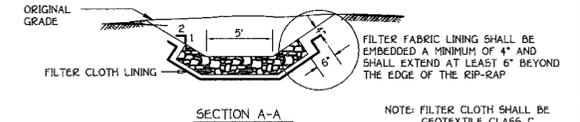
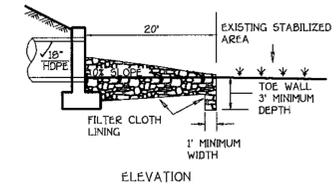
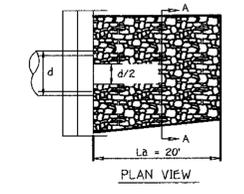
**PROFILE**  
 SCALE: HORIZ. : 1" = 50'  
 VERT. : 1" = 5'



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

STRUCTURE NO.	TOP ELEVATION	INV. IN	INV. OUT	ROAD NAME	ROAD STA.	OFFSET	W	TYPE	REMARKS
I-1	298.03 5'	---	293.0/294.00	MONTEREY ROAD	C.L. STA. 3+95	4' 12.43'R	2.5'	A-10 INLET	S.D. 4.41
I-2	303.39 4'	295.50 296.00	295.75 296	MONTEREY ROAD	C.L. STA. 7+10 10'	4' 12.43'R	2.5'	A-10 INLET	S.D. 4.41
I-3	306.36 4'	---	299.75 4'	MONTEREY ROAD	C.L. STA. 10+02 25'	4' 12.43'R	2.5'	A-10 INLET	S.D. 4.41
I-4	304.88 4'	---	301.3/306.00	MONTEREY ROAD	C.L. STA. 11+08 1'	4' 12.43'R	2.5'	A-10 INLET	S.D. 4.41
I-5	287.62 288.05	---	282.85 283.20	---	---	---	---	5' INLET	S.D. 4.22
I-6	287.40 287.42	---	285.12 284.78	---	---	---	---	5' INLET	S.D. 4.22
I-7	296.84 7'	---	293.38 5'	COLLETT COURT	L.P. STA. 1+48 8'	---	---	2.5' A-10 INLET	S.D. 4.41
M-1	298.80	292.58	291.28 292.02	MONTEREY ROAD	C.L. STA. 5+16	28' 29'R	---	STD. MANHOLE	G - 5.01
M-1A	297.48 5'	291.58 4'	291.50	MONTEREY ROAD	C.L. STA. 5+13	43'R	---	STD. MANHOLE	G - 5.01
M-2	300.87 301.01	293.48 8'	293.18 6'	MONTEREY ROAD	C.L. STA. 5+76	17'2"	---	STD. MANHOLE	G - 5.01
M-3	300.09 301.03	298.74 5'	298.48 5'	MONTEREY ROAD	C.L. STA. 9+81	18' 47'R	---	STD. MANHOLE	G - 5.01
M-5	286.58 8'	282.58 7'	282.08 2	---	---	---	---	STD. MANHOLE	G - 5.01
M-6	291.88 7'	284.58 15'	284.08 20'	---	---	---	---	STD. MANHOLE	G - 5.01
M-7	300.85 7'	292.88 4'	292.28 291.45	---	---	---	---	STD. MANHOLE	G - 5.01
S-1	282.82 291.09	281.82 3'	281.82 3'	---	---	---	---	HDPE END SECTION	N/A
S-2	294.80 291.09	290.58 9'	290.58 9'	---	---	---	---	HDPE END SECTION	N/A
S-2A	292.08 9'	290.08 9'	290.08 9'	---	---	---	---	HDPE END SECTION	N/A
S-3	282.80 281.89	281.58 9'	281.58 9'	---	---	---	---	HDPE END SECTION	N/A

\* - DENOTES DIMENSION FROM CENTERLINE OF ROADWAY TO FACE OF INLET



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

**ROCK OUTLET PROTECTION III • 5-1**

SIZE	MATERIAL	LENGTH
6"	HDPE	71'
18"	HDPE	990'
24"	HDPE	662'
30"	RCCP	142'



**STORM DRAIN PROFILES**  
**ROCKBURN MANOR**  
 LOTS 1 THRU 22  
 ZONED R-20  
 TAX MAP NO. 37 PARCEL NO. 56 GRID NO. 5  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 DATE: SEPTEMBER 14, 2001  
 SHEET 7 OF 15

FISHER, COLLINS & CARTER, INC.  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTENNIAL SQUARE OFFICE PARK - 10772 BALDOR NATIONAL PIKE  
 ELKREST CITY, MARYLAND 21114  
 (410) 461-2895



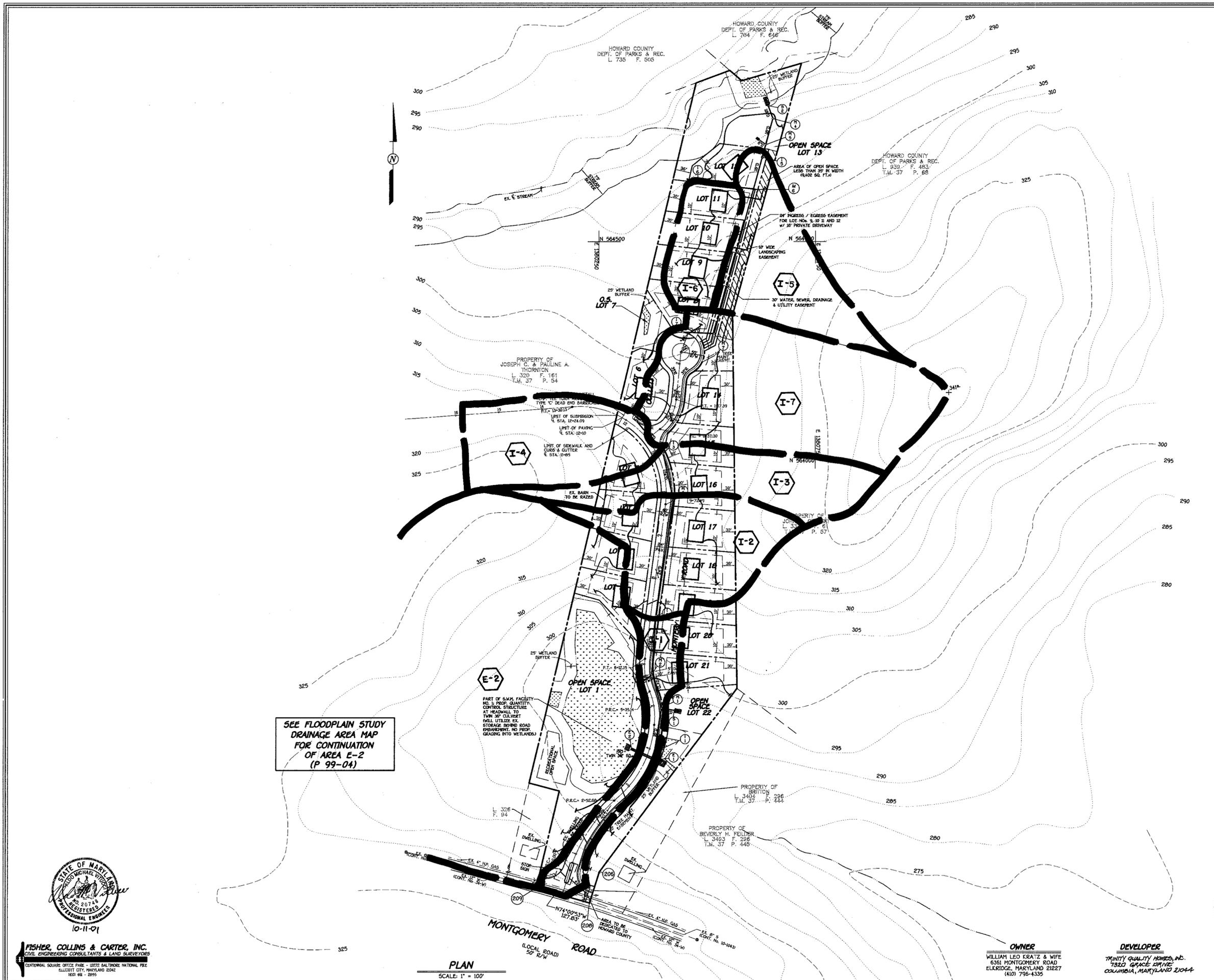
**OWNER**  
 WILLIAM LEO KRATZ & WIFE  
 6361 MONTGOMERY ROAD  
 ELKRIE, MARYLAND 21227

**DEVELOPER**  
 TRINITY QUALITY HOMES, INC.  
 7320 GRACE DRIVE  
 COLUMBIA, MARYLAND 21044

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*Howard Spink* 11/20/01  
 CHIEF, BUREAU OF HIGHWAYS 11/20/01 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Linda Hamilton* 12/4/01  
 CHIEF, DIVISION OF LAND DEVELOPMENT 12/4/01 DATE

*Mark Drummond* 4/10/01  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION 4/10/01 DATE



SEE FLOODPLAIN STUDY  
 DRAINAGE AREA MAP  
 FOR CONTINUATION  
 OF AREA E-2  
 (P 99-04)

DRAINAGE AREA DATA					
STRUCTURE NO.	DRAINAGE AREA	AREA AC.	TC	ZONED	TC
I-1	I-1	1.08	0.66	R-20	10 MIN.
I-2	I-2	1.91	0.42	R-20	10 MIN.
I-3	I-3	0.98	0.48	R-20	10 MIN.
I-4	I-4	1.99	0.39	R-20	10 MIN.
I-7	I-7	2.05	0.47	R-20	10 MIN.
E-2	E-2	23.66	RCN=75	R-20	0.35 HR.
I-5	I-5	0.86	0.54	R-20	10 MIN.
I-6	I-6	0.82	0.48	R-20	10 MIN.



**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTENNIAL SQUARE OFFICE PARK - 10722 BALTIMORE NATIONAL FREE  
 ELICOTT CITY, MARYLAND 21042  
 410-688-2855



**OWNER**  
 WILLIAM LEO KRATZ & WIFE  
 6361 MONTGOMERY ROAD  
 ELKRIDGE, MARYLAND 21227  
 (410) 796-4335

**DEVELOPER**  
 TRINITY QUALITY HOMES, INC.  
 7320 GRACE DRIVE  
 COLUMBIA, MARYLAND 21044

**STORM DRAIN DRAINAGE AREA MAP**  
**ROCKBURN MANOR**  
**LOTS 1 THRU 22**  
 ZONED R-20  
 TAX MAP: 37 PARCEL: 56 GRID: 5  
 1ST. ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
 DATE: SEPTEMBER 14, 2001  
 SHEET 6 OF 15

AS-BUILT 10-15-04 F-00-66



By The Developer:  
 I/We Certify That All Development And/Or Construction Will Be Done According To These Plans And That Any Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of The Environment Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Shall Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District.

Signature Of Developer: Michael P. Pfan  
 Printed Name Of Developer: Michael Pfan

By The Engineer:  
 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 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.

Signature Of Engineer: Alpo M. Vitucci  
 Printed Name Of Engineer: Alpo M. Vitucci

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.

Signature: Jim Lopez  
 Date: 12/6/01  
 Title: Natural Resources Conservation Service

These Plans For Small Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.

Signature: Chris Ariz  
 Date: 12/6/01  
 Title: Howard Soil Conservation District

Approved: Department Of Public Works  
 Signature: Howard Shubert  
 Date: 11/16/01  
 Title: Chief, Bureau Of Highways

Approved: Department Of Planning And Zoning  
 Signature: Wendy H. Hester  
 Date: 12/14/01  
 Title: Chief, Division Of Land Development

Signature: John DeLuca  
 Date: 11/6/01  
 Title: Chief, Development Engineering Division

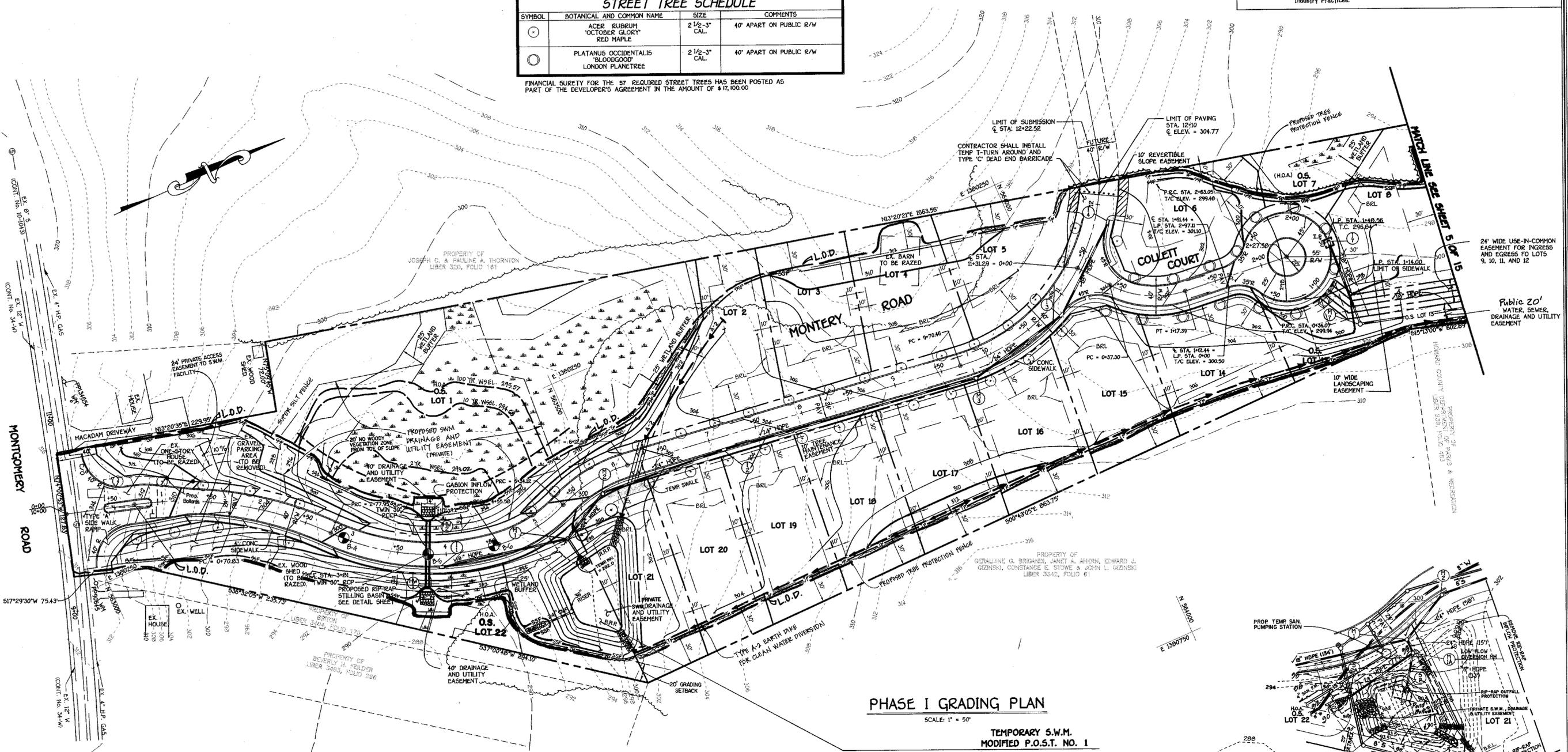
AS-BUILT CERTIFICATION  
 I Herby Certify That The Facility Shown On This Plan Was Constructed As Shown On The "As-Built" Plans And Meets The Approved Plans And Specifications.

Signature: \_\_\_\_\_ P.E. No. \_\_\_\_\_  
 Date: \_\_\_\_\_

Certify Means To State Or Declare A Professional Opinion Based Upon Onsite Inspections And Material Tests Which Are Conducted During Construction. The Onsite Inspections And Material Tests Are Those Inspections And Tests Deemed Sufficient And Appropriate Commonly Accepted Engineering Standards. Certify Does Not Mean Or Imply A Guarantee By The Engineer Nor Does An Engineer's Certification Relieve Any Other Party From Meeting Requirements Imposed By Contract, Employment, Or Other Means, Including Meeting Commonly Accepted Industry Practices.

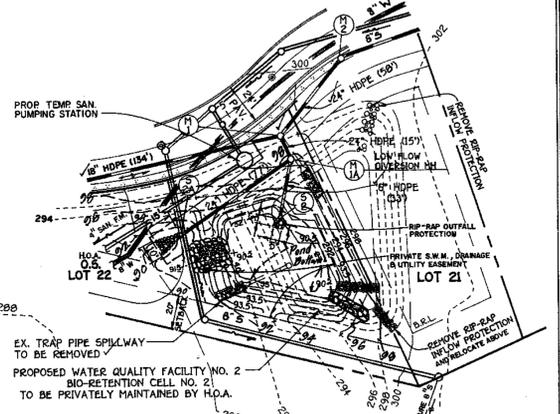
STREET TREE SCHEDULE			
SYMBOL	BOTANICAL AND COMMON NAME	SIZE	COMMENTS
○	ACER RUBRUM "OCTOBER GLORY" RED MAPLE	2 1/2"-3" CAL.	40' APART ON PUBLIC R/W
○	PLATANUS OCCIDENTALIS "BLOODGOOD" LONDON PLANETREE	2 1/2"-3" CAL.	40' APART ON PUBLIC R/W

FINANCIAL SURETY FOR THE 57 REQUIRED STREET TREES HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$17,100.00



NOTE:  
 NO STREET TREES TO BE PLANTED ALONG MONTEREY ROAD FROM STA. 2+50 TO STA. 5+00 DUE TO IMPERVIOUS CORE OF S.W.M. EMBANKMENT

SEDIMENT CONTROL NOTE:  
 CONTRACTOR SHALL PROVIDE IMMEDIATE (SAME DAY) STABILIZATION OF DISTURBED AREA BETWEEN THE L.O.D. AND S.S.F. BELOW HW-1 AND HW-2 WITH ECH/ PERMANENT SEED OR SOG.



FISHER, COLLINS & CARTER, INC.  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTENNIAL SQUARE OFFICE PARK - 3022 BALTIMORE NATIONAL FREE  
 ELLETTT CITY, MARYLAND 21042  
 410.481.2555

OWNER  
 WILLIAM LEO KRATZ & WIFE  
 6380 MONTEREY ROAD  
 ELK RIDGE, MARYLAND 21227

DEVELOPER  
 TRINITY QUALITY HOMES, INC.  
 7300 GRACE DRIVE  
 COLUMBIA, MARYLAND 21044

STREET TREE, GRADING AND SEDIMENT CONTROL PLAN  
**ROCKBURN MANOR**  
 Lots 1 Thru 22  
 ZONED R-20  
 PARCEL NO. 56 GRID NO. 5  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 DATE: SEPTEMBER 14, 2001  
 SHEET 4 OF 15

AS-BUILT 10-15-04 F-00-66



CURVE DATA  
**MONTEREY ROAD**  
 STA. 0+708.3 TO STA. 2+77.95  
 R = 370.00'  
 L = 207.12'  
 Δ = 45°33'21"  
 TAN = 108.35'  
 CHORD = N 32°12'04" E, 204.43'

CURVE DATA  
**MONTEREY ROAD**  
 STA. 2+77.95 TO STA. 4+55.56  
 R = 250.00'  
 L = 177.83'  
 Δ = 40°42'38"  
 TAN = 92.75'  
 CHORD = N 27°52'56" E, 173.92'

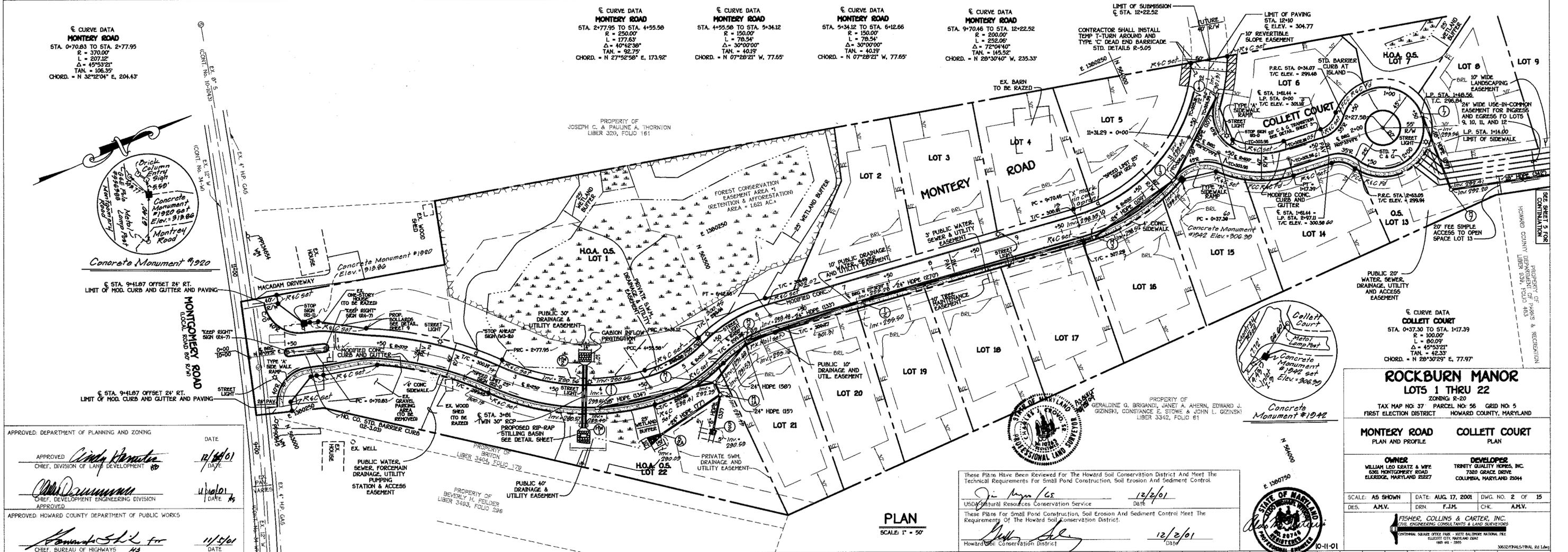
CURVE DATA  
**MONTEREY ROAD**  
 STA. 4+55.56 TO STA. 5+34.12  
 R = 150.00'  
 L = 78.54'  
 Δ = 30°00'00"  
 TAN = 40.19'  
 CHORD = N 07°28'21" W, 77.65'

CURVE DATA  
**MONTEREY ROAD**  
 STA. 5+34.12 TO STA. 6+12.66  
 R = 150.00'  
 L = 78.54'  
 Δ = 30°00'00"  
 TAN = 40.19'  
 CHORD = N 07°28'21" W, 77.65'

CURVE DATA  
**MONTEREY ROAD**  
 STA. 9+704.6 TO STA. 12+22.52  
 R = 200.00'  
 L = 252.06'  
 Δ = 72°04'40"  
 TAN = 145.52'  
 CHORD = N 28°30'40" W, 235.33'

CURVE DATA  
**MONTEREY ROAD**  
 STA. 9+704.6 TO STA. 12+22.52  
 R = 200.00'  
 L = 252.06'  
 Δ = 72°04'40"  
 TAN = 145.52'  
 CHORD = N 28°30'40" W, 235.33'

CURVE DATA  
**COLLETT COURT**  
 STA. 0+37.30 TO STA. 1+17.39  
 R = 100.00'  
 L = 80.09'  
 Δ = 45°33'21"  
 TAN = 42.33'  
 CHORD = N 29°02'59" E, 77.97'



APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 DATE: 11/16/01  
 APPROVED: *[Signature]*  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 APPROVED: *[Signature]*  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 APPROVED: *[Signature]*  
 CHIEF, BUREAU OF HIGHWAYS

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.  
 J. M. [Name] 12/2/01  
 USDO Natural Resources Conservation Service  
 These Plans For Small Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.  
 J. M. [Name] 12/2/01  
 Howard Soil Conservation District

**ROCKBURN MANOR**  
 LOTS 1 THRU 22  
 ZONING R-20  
 TAX MAP NO. 37 PARCEL NO. 56 GRID NO. 5  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**MONTEREY ROAD**  
 PLAN AND PROFILE

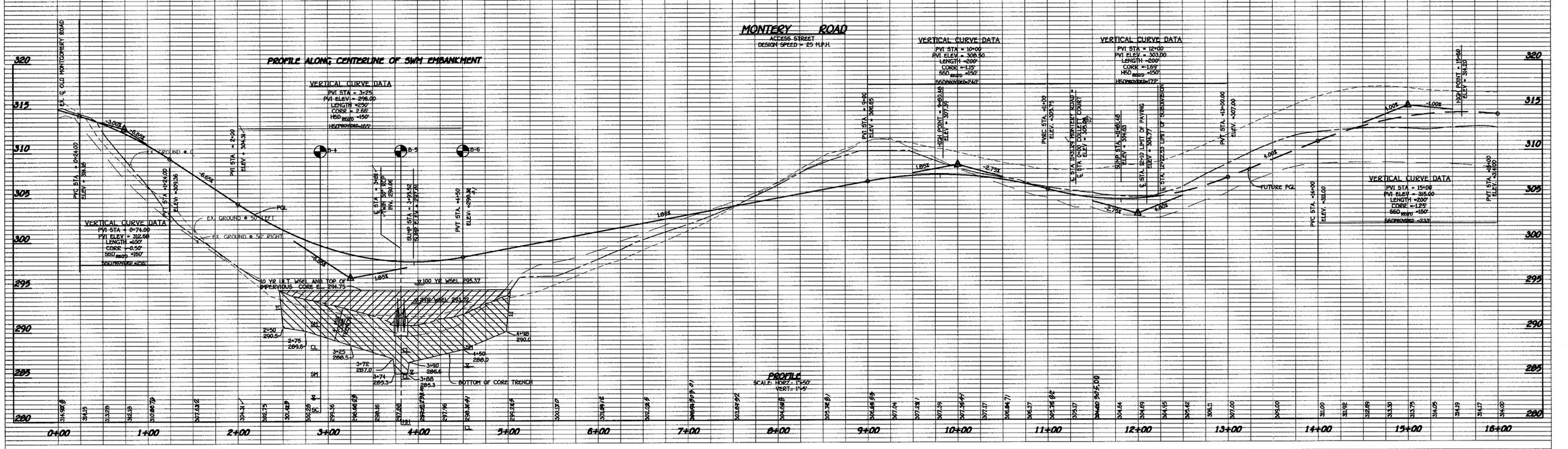
**COLLETT COURT**  
 PLAN

**OWNER**  
 WILLIAM LEO LEATZ & WIFE  
 6361 MONTGOMERY ROAD  
 ELKBRIDGE, MARYLAND 21727

**DEVELOPER**  
 TRINITY QUALITY HOMES, INC.  
 7380 GRACE DRIVE  
 COLUMBIA, MARYLAND 21044

SCALE: AS SHOWN DATE: AUG. 17, 2001 DWG. NO. 2 OF 15  
 DES. AM.V. DRN. F.J.M. CHK. AM.V.

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE PARK - 1872 BALDWIN NATIONAL PIKE  
 ELKBRIDGE, MD. 21740-2002  
 410-441-2895



AS-BUILT 10-15-04 F-00-66

SHEET INDEX	
SHEET No.	DESCRIPTION
1	TITLE SHEET
2	MONTEREY RD. PLAN AND PROFILE & COLLETT CT. PLAN
3	COLLETT COURT PROFILE & ROADWAY DETAILS
4	STREET TREE, GRADING, AND SEDIMENT CONTROL PLAN
5	GRADING, AND SEDIMENT CONTROL PLAN
6	DRAINAGE AREA MAP
7	STORM DRAIN PROFILES
8	STORMWATER MANAGEMENT DETAILS
9	STORMWATER MANAGEMENT DETAILS
10	SEDIMENT CONTROL NOTES AND DETAILS
11	SEDIMENT CONTROL NOTES AND DETAILS
12	LANDSCAPING PLAN
13	FOREST CONSERVATION PLAN
14	FOREST CONSERVATION PLAN
15	FOREST CONSERVATION NOTES AND DETAILS

# FINAL ROAD CONSTRUCTION, GRADING AND STORMWATER MANAGEMENT PLANS

## ROCKBURN MANOR

LOTS 1 THRU 22

ZONING "R-20"

TAX MAP No: 37 PARCEL No: 56 GRID No: 5

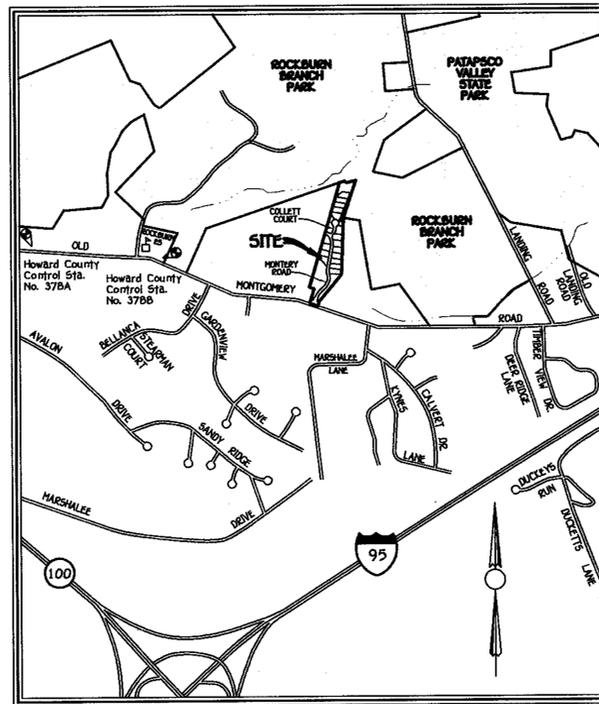
APPROVED: DEPARTMENT OF PUBLIC WORKS  
*[Signature]* 11/5/01  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*[Signature]* 11/6/01  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*[Signature]* 11/6/01  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

STREET LIGHT CHART				
DWG. No.	STREET NAME	STATION	OFF-SET	FIXTURE/POLE TYPE
2	MONTEREY ROAD	0+35	37' RT	150-WATT H.P.S. VAPOR PENDANT FIXTURE (CUTOFF) MOUNTED AT 30' ON A BRONZE FIBERGLASS POLE USING A 12" ARM.
2	MONTEREY ROAD	2+10	15' LT	100-WATT "TRADITIONAIRE" H.P.S. VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.
2	MONTEREY ROAD	3+00	15' LT	100-WATT "TRADITIONAIRE" H.P.S. VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.
2	MONTEREY ROAD	5+44	15' LT	100-WATT "TRADITIONAIRE" H.P.S. VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.
2	MONTEREY ROAD	9+10	0' RT	100-WATT "TRADITIONAIRE" H.P.S. VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.
2	COLLETT COURT	0+30	20' LT	100-WATT "TRADITIONAIRE" H.P.S. VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.
2	COLLETT COURT	LP. STA. 1+20	3' BEHIND CURB	100-WATT "TRADITIONAIRE" H.P.S. VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.

TRAFFIC CONTROL SIGNS				
STREET NAME	STATION	OFFSET	POSTED SIGN	SIGN CODE
MONTEREY ROAD	0+65	23' LT	STOP	R1-1
MONTEREY ROAD	0+42	0' C	KEEP RIGHT	R4-7
MONTEREY ROAD	0+85	0' C	KEEP RIGHT	R4-7
MONTEREY ROAD	2+50	14' RT	SPEED LIMIT 25	R2-1
MONTEREY ROAD	2+50	14' LT	STOP AHEAD	W3-1b
MONTEREY ROAD	10+00	14' LT	SPEED LIMIT 25	R2-1
COLLETT COURT	0+50	15' LT	STOP	R1-1



VICINITY MAP  
 SCALE 1" = 1200'

### GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS / BUREAU OF ENGINEERING / CONSTRUCTION INSPECTION DIVISION AT (410) 313-1000 AT LEAST (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (0990) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS JUNE 1993".  
 NOTE: MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
- 2 FOOT CONTOUR TOPOGRAPHY AND EXISTING CONDITIONS BASED ON FIELD RUN TOPOGRAPHY PREPARED BY FCC IN NOVEMBER, 1997.
- THE COORDINATES SHOWN HEREON ARE BASED UPON HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT Nos. 378A AND 378B WERE USED FOR THIS PROJECT.  
 378A N 563,779.909  
 E 1,376,329.279  
 378B N 563,857.706  
 E 1,378,026.624
- WATER IS PUBLIC, CONTRACT No.34-W AND THE WATERSHED AREA IS PATAPSCO
- SEWER IS PUBLIC, CONTRACT No.10-1043 AND THE DRAINAGE AREA IS PATAPSCO
- S.W.M. WILL BE PROVIDED BY PRIVATELY OWNED AND MAINTAINED DETENTION S.W.M. FACILITY ON OPEN SPACE LOT 1 AND THE WATER QUALITY STRUCTURES ON OPEN SPACE LOTS 13 AND 22.
- FLOODPLAIN ON THIS SITE IS BASED ON STUDY PREPARED BY FISHER, COLLINS AND CARTER INC. DATED MARCH, 1999.
- WETLANDS ON THIS SITE WAS DELINEATED BY EXPLORATION RESEARCH, INC. DATED AUGUST, 1997.
- THE SUBJECT PROPERTY, DUE TO ITS LOCATION, IS EXEMPT FROM HAVING TO PERFORM AN APPROPRIATE TRAFFIC ANALYSIS.
- BACKGROUND INFORMATION:  
 A. SUBDIVISION NAME: ROCKBURN MANOR (FORMERLY "KRATZ PROPERTY")  
 B. TAX MAP No: 37  
 C. PARCEL No: 56  
 D. ZONING: R-20  
 E. ELECTION DISTRICT: FIRST  
 F. TOTAL TRACT AREA: 12.112 AC. +  
 G. NO. OF BUILDABLE LOTS: 18  
 H. NO. OF OPEN SPACE LOTS: 4  
 I. OPEN SPACE REQUIRED: 3.63 AC. (LOT SIZE 14,000 SQ. FT.) = 12.112 x 30% = 3.63 AC.  
 J. OPEN SPACE PROVIDED: 4.464 AC.  
 K. PRELIMINARY PLAN APPROVAL DATE:  
 L. PREVIOUS FILE Nos.: 5-98-06, P-99-04
- REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE TO BE PROVIDED AT THE JUNCTION OF THE PIPE / FLAG STEM AND THE ROAD R/W AND NOT ONTO THE PIPE / FLAG STEM DRIVEWAY.
- NO CEMETERIES EXIST ON THE PROPERTY.
- FOREST STAND DELINEATION PROVIDED BY EXPLORATION RESEARCH, INC. DATED AUGUST, 1997.
- MDE TRACKING / PERMIT NUMBER FOR THE S.W.M. FACILITY IS No. 98-NT-0670 / 199960762.
- THE FOREST CONSERVATION OBLIGATION FOR THIS SITE HAS BEEN MET WITH 0.55 ACRES OF FOREST RETENTION AND 1.43 ACRES OF ON-SITE REFORESTATION. THE REMAINING 3.68 ACRES OF OFF-SITE REFORESTATION AREA HAS BEEN PURCHASED FROM THE WINKLER FOREST MITIGATION BANK. THE SURETY OBLIGATION FOR THE ON-SITE AREAS IS \$35,937.90.

## FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

ROAD CLASSIFICATION CHART		
ROAD NAME	CLASSIFICATION	R/W WIDTH
MONTEREY ROAD	PUBLIC ACCESS STREET	40'
COLLETT COURT	PUBLIC ACCESS PLACE	40'

FISHER, COLLINS & CARTER, INC.  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTENNIAL SQUARE OFFICE PARK - 10725 BALTHAZAR NATIONAL PIKE  
 ELKLOTT CITY, MARYLAND 21042  
 (410) 481-2895  
 F.C.C. "MSDC" TITLE SHEETING

OWNER  
 WILLIAM LEO KRATZ & WIFE  
 6361 MONTGOMERY ROAD  
 ELKBRIDGE, MARYLAND 21227

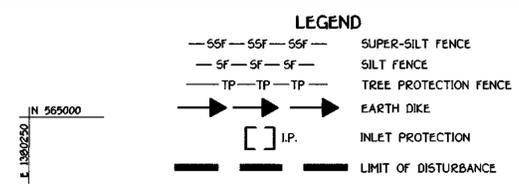
DEVELOPER  
 TRINITY QUALITY HOMES, INC.  
 7320 GRACE DRIVE  
 COLUMBIA, MARYLAND 21044

STATE OF MARYLAND  
 PROFESSIONAL ENGINEER  
 No. 20748  
 REGISTERED  
*[Signature]*  
 ALDO M. VITUCCI, P.E.

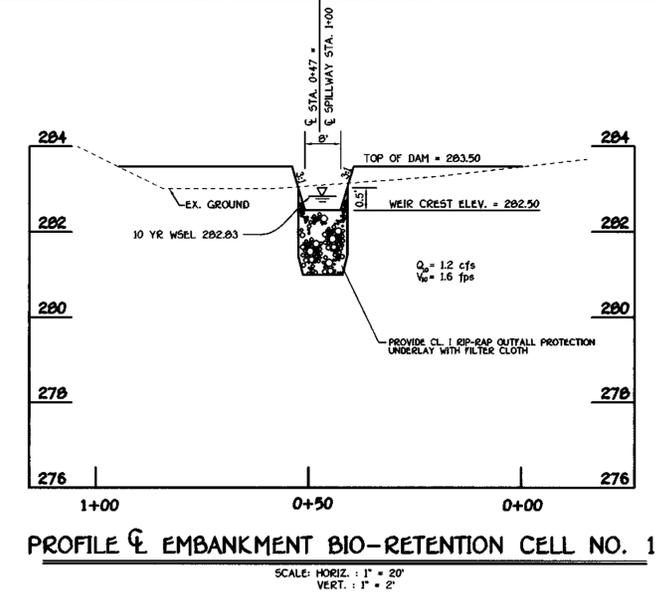
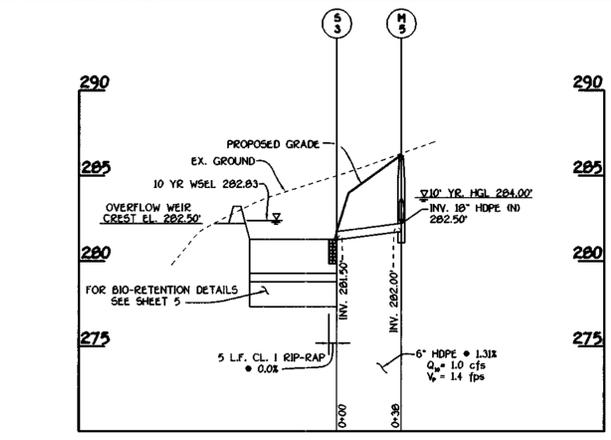
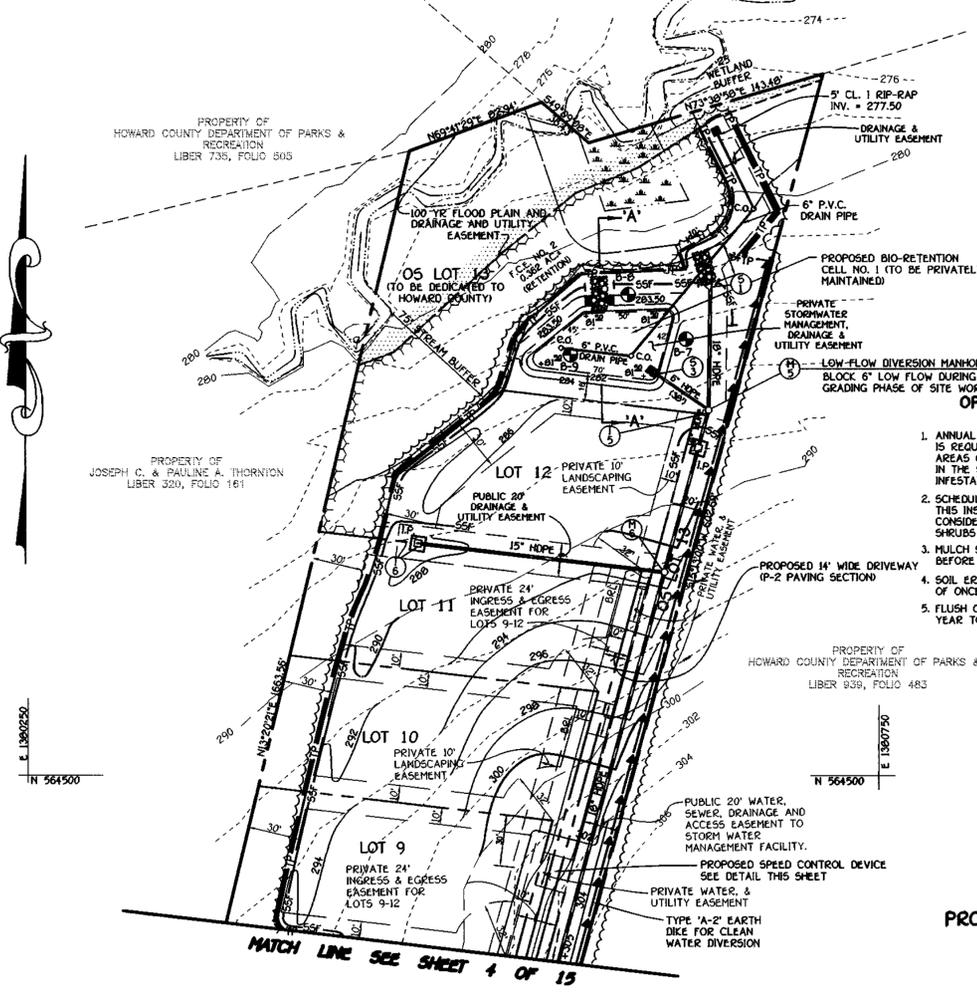


ROCKBURN MANOR  
 LOTS 1 THRU 22  
 ZONING: R-20  
 TAX MAP No.: 37 PARCEL No.: 56 GRID No.: 5  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 DATE: SEPT. 14, 2001  
 SHEET 1 OF 15

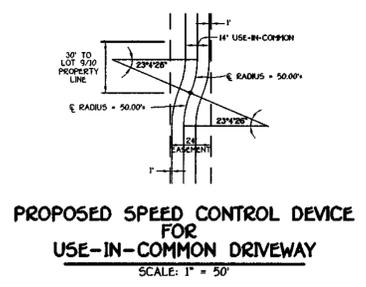
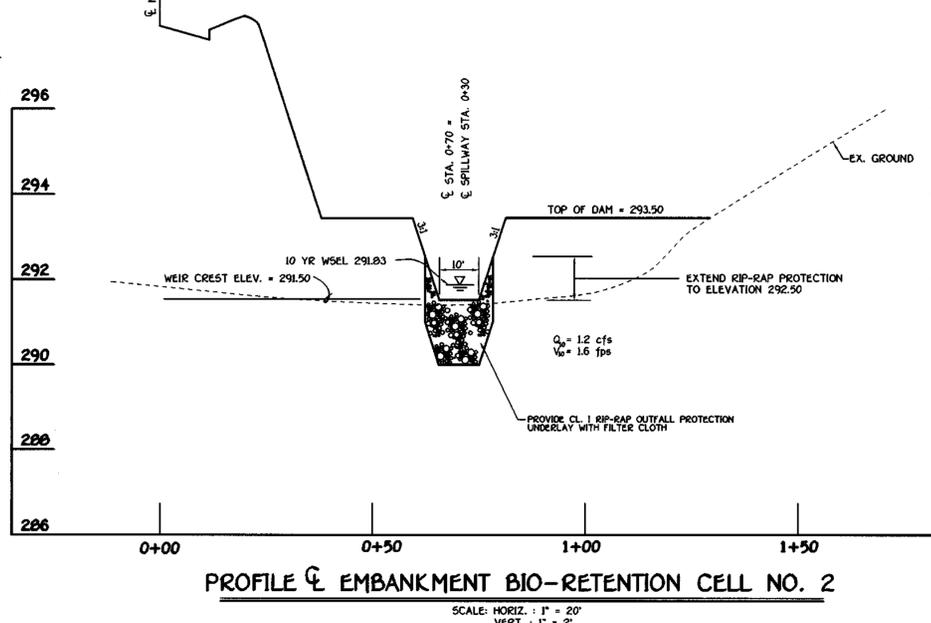
AS-BUILT 10-15-04 F-00-66



**SEDIMENT CONTROL NOTE:**  
 CONTRACTOR SHALL PROVIDE IMMEDIATE (SAME DAY) STABILIZATION OF DISTURBED AREA BETWEEN THE L.O.D. AND SSF BEHOLD OUTFALL 6-1 WITH E.C.M. / PERMANENT SEEDING OR SOO.



- OPERATION AND MAINTENANCE SCHEDULE FOR BIO-RETENTION AREA (PRIVATE)**
- ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING.
  - SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDER BEYOND TREATMENT. TREATMENT OF ALL DISEASED TREES AND SHRUBS AND REPLACEMENT OF ALL DEFICIENT STAKES AND WIRES.
  - MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 TO 3 YEARS.
  - SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.
  - FLUSH OUT DRAIN AND OUTFALL PIPE FROM I-7 TO 5-2 AT LEAST ONCE PER YEAR TO INSURE PROPER FLOW.



By The Developer:  
 "I/We Certify That All Development And/Or Construction Will Be Done According To These Plans, And That Any Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of The Environment Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Shall Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District."

Signature Of Developer: *Michael P. Falk* 10/11/01  
 Date: 10/11/01

Printed Name Of Developer: MICHAEL P. FALK

By The Engineer:  
 "I Certify That This Plan For Pond Construction, Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Professional Knowledge Of The Site Conditions. This Plan Was Prepared In Accordance With The Training Program Of The Howard Soil Conservation District. I Have Notified The Developer That I Am 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: *Alfred M. Vitucci* 10-11-01  
 Date: 10-11-01

Printed Name Of Engineer: ALFRED M. VITUCCI

Approved: Department Of Public Works  
 Signature: *James S. Hill* 11/1/01  
 Chief, Bureau Of Highways Date: 11/1/01

Approved: Department Of Planning And Zoning  
 Signature: *Cindy Hamilton* 12/4/01  
 Chief, Division Of Land Development Date: 12/4/01

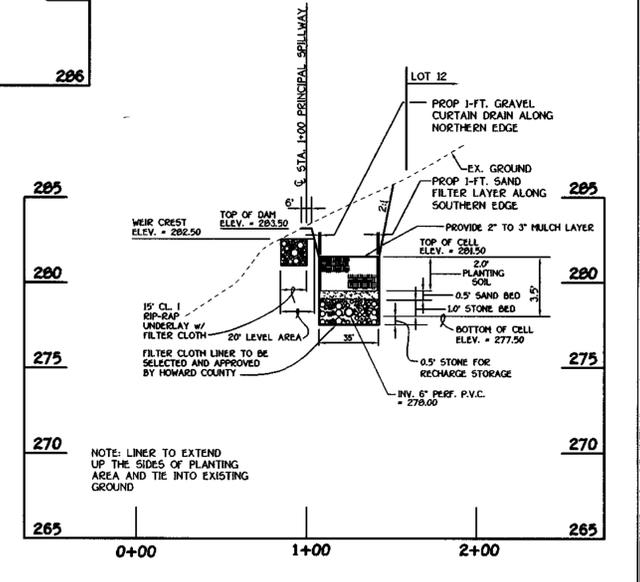
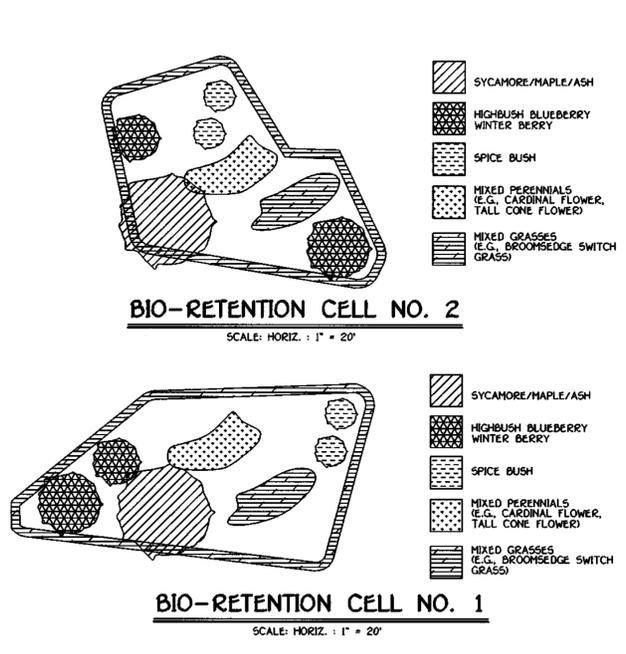
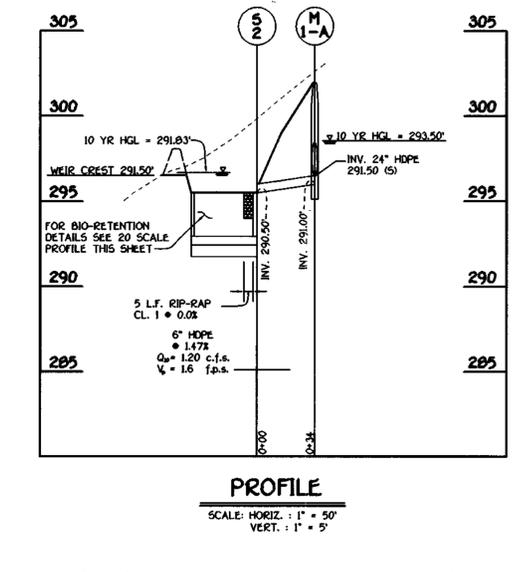
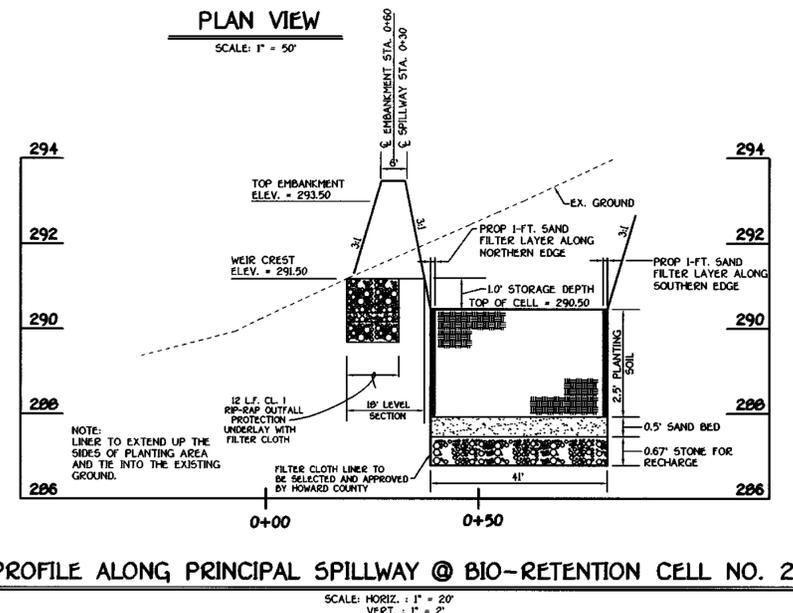
Signature: *Michael P. Falk* 11/6/01  
 Chief, Development Engineering Division Date: 11/6/01

**BIO-RETENTION PLANT MATERIAL CELL No. 1**

QUANTITY	NAME	MAXIMUM SPACING (FT.)
2	RED MAPLE	12
2	WHITE ASH	12
2	SYCAMORE	12
15	WITCH HAZEL	12
15	RED OSLER DOGWOOD	12
20	WINTER BERRY	12
MIXED PERENNIALS AND GRASSES		
N/A	CARDINAL FLOWER TALL CONE FLOWER BROOMSEDGE SWITCH GRASS	N/A

**BIO-RETENTION PLANT MATERIAL CELL No. 2**

QUANTITY	NAME	MAXIMUM SPACING (FT.)
2	RED MAPLE	12
2	WHITE ASH	12
2	SYCAMORE	12
15	WITCH HAZEL	12
15	RED OSLER DOGWOOD	12
20	WINTER BERRY	12
MIXED PERENNIALS AND GRASSES		
N/A	CARDINAL FLOWER TALL CONE FLOWER BROOMSEDGE SWITCH GRASS	N/A



**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL FREE  
 ELICOTT CITY, MARYLAND 21042  
 410-461-2959

**OWNER**  
 WILLIAM LEO KOATZ & WIFE  
 7320 GRACE DRIVE  
 ELK RIDGE, MARYLAND 21227

**DEVELOPER**  
 TRINITY QUALITY HOMES, INC.  
 7320 GRACE DRIVE  
 COLUMBIA, MARYLAND 21044

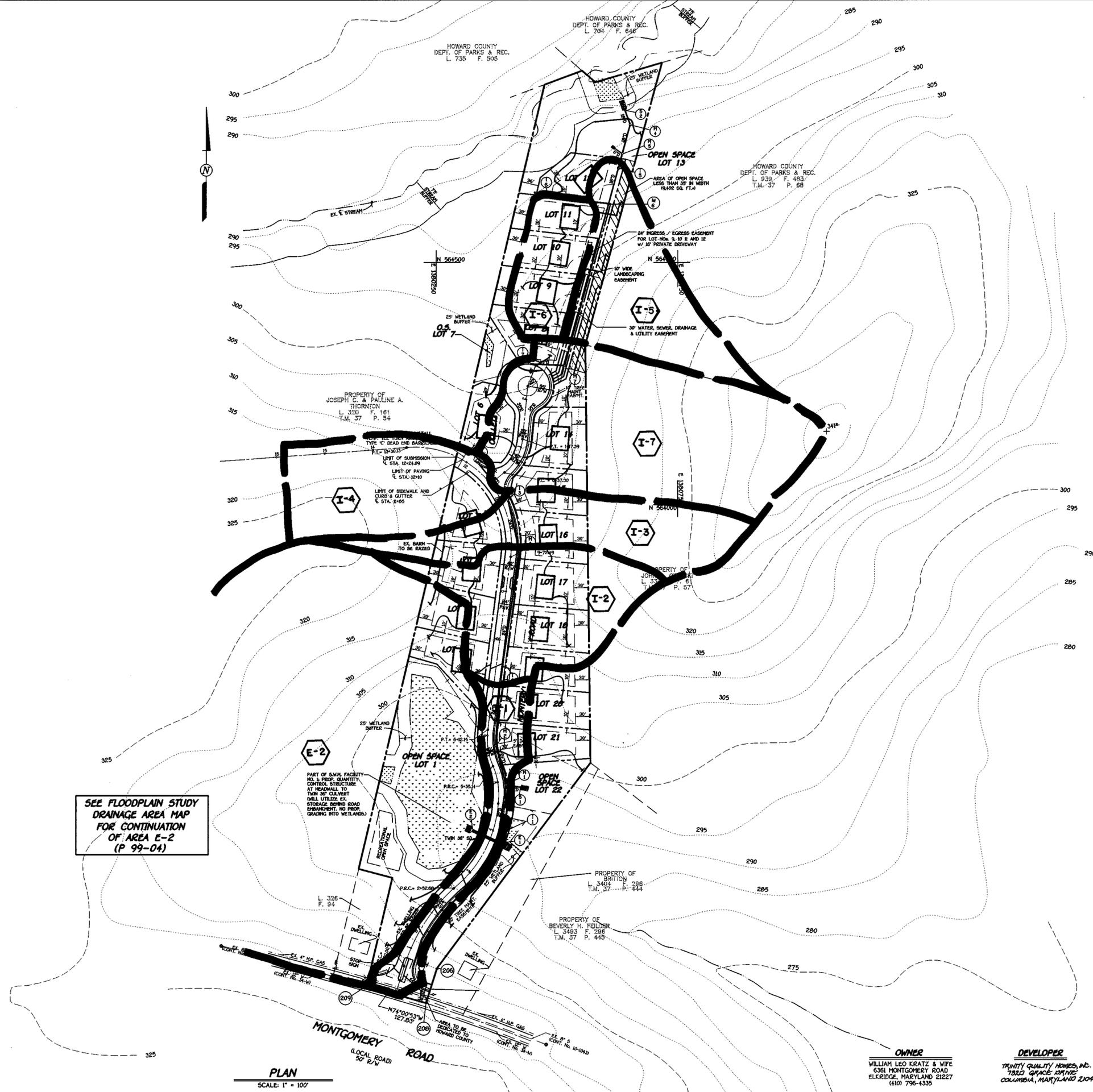


**STREET TREE, GRADING AND SEDIMENT CONTROL PLAN**  
**ROCKBURN MANOR**  
 Lots 1 Thru 22  
 ZONED R-20  
 TAX MAP NO. 37 PARCEL NO. 56 GRID NO. 5  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 DATE: SEPTEMBER 14, 2001  
 SHEET 5 OF 15

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*Howard Shickler* 11/1/01  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Cindy Hamilton* 12/4/01  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Mike Dammann* 4/10/01  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



SEE FLOODPLAIN STUDY  
 DRAINAGE AREA MAP  
 FOR CONTINUATION  
 OF AREA E-2  
 (P 99-04)

DRAINAGE AREA DATA					
STRUCTURE NO.	DRAINAGE AREA	AREA AC.	'C'	ZONED	TC
I-1	I-1	1.08	0.66	R-20	10 MIN.
I-2	I-2	1.91	0.42	R-20	10 MIN.
I-3	I-3	0.98	0.48	R-20	10 MIN.
I-4	I-4	1.99	0.39	R-20	10 MIN.
I-7	I-7	2.05	0.47	R-20	10 MIN.
E-2	E-2	23.66	RCN-75	R-20	0.35 HR.
I-5	I-5	0.86	0.54	R-20	10 MIN.
I-6	I-6	0.82	0.48	R-20	10 MIN.



**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTENAL SQUARE OFFICE PARK - 10772 BALTIMORE NATIONAL PIKE  
 ELLETTT CITY, MARYLAND 21742  
 (410) 461-2895

PLAN  
 SCALE: 1" = 100'

**OWNER**  
 WILLIAM LEO KRATZ & WIFE  
 6361 MONTGOMERY ROAD  
 ELLETTT CITY, MARYLAND 21727  
 (410) 796-4335

**DEVELOPER**  
 TRINITY QUALITY HOMES, INC.  
 7820 GRACE DRIVE  
 COLUMBIA, MARYLAND 21044

STORM DRAIN DRAINAGE AREA MAP  
**ROCKBURN MANOR**  
 LOTS 1 THRU 22  
 ZONED R-20  
 TAX MAP: 37 PARCEL: 56 GRID: 5  
 1ST. ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
 DATE: SEPTEMBER 14, 2001  
 SHEET 6 OF 15

F-00-66

Approved: Department Of Planning And Zoning  
*Cindy Pennington* 12/1/0  
 Chief, Division Of Land Development Date

*David D. Williams* 11/16/0  
 Chief, Development Engineering Division Date

Approved: Howard County Department Of Public Works  
*Howard S. Smith Jr.* 11/16/0  
 Chief, Bureau Of Highways Date

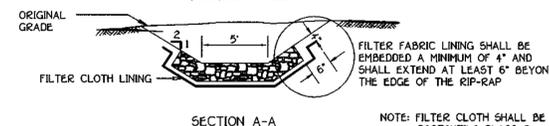
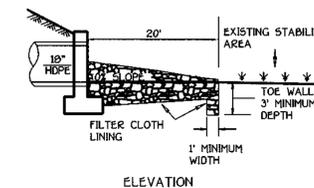
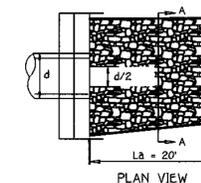
**STRUCTURE SCHEDULE**

STRUCTURE NO.	TOP ELEVATION	INV.IN	INV.OUT	ROAD NAME	ROAD STA.	OFFSET	W	TYPE	REMARKS
I-1	298.03	-----	294.00	MONTEREY ROAD	C.L. STA. 3+95	*12.43'R	2.5'	A-10 INLET	S.D. 4.41
I-2	303.39	296.00	295.75	MONTEREY ROAD	C.L. STA. 7+12	*12.43'R	2.5'	A-10 INLET	S.D. 4.41
I-3	306.38	299.75	299.25	MONTEREY ROAD	C.L. STA. 10+84	*12.43'R	2.5'	A-10 INLET	S.D. 4.41
I-4	304.85	-----	300.50	MONTEREY ROAD	C.L. STA. 11+85	*12.43'R	2.5'	A-10 INLET	S.D. 4.41
I-5	287.62	282.50	282.25	-----	-----	N 564692.67 E 138043.90		'S' INLET	S.D. 4.22
I-6	287.90	-----	284.78	-----	-----	N 564636.443 E 1380479.022		'S' INLET	S.D. 4.22
I-7	296.84	-----	293.30	COLLETT COURT	L.P. STA. 1+49	-----	2.5'	A-10 INLET	S.D. 4.41
M-1	298.50	292.52	291.75	MONTEREY ROAD	C.L. STA. 5+16	29'		STD. MANHOLE	G - 5.01
M-1A	297.00	291.50	291.00	MONTEREY ROAD	C.L. STA. 5+13	43'R		STD. MANHOLE	G - 5.01
M-2	300.87	293.45	293.18	MONTEREY ROAD	C.L. STA. 5+76	17'R		STD. MANHOLE	G - 5.01
M-3	308.09	298.70	298.45	MONTEREY ROAD	C.L. STA. 9+81	17'R		STD. MANHOLE	G - 5.01
M-5	286.50	282.65	282.00	-----	-----	N 56478.64 E 1380445.77		STD. MANHOLE	G - 5.01
M-6	291.66	284.05	283.90	-----	-----	N 56489.44 E 1380433.17		STD. MANHOLE	G - 5.01
M-7	300.05	292.20	291.95	-----	-----	N 564286.52 E 1380433.32		STD. MANHOLE	G - 5.01
S-1	282.62	281.12	281.12	-----	-----	N 564781.85 E 1380451.10		HDPE END SECTION	N/A
S-2	291.00	290.50	290.50	-----	-----	N 563432.54 E 1380443.17		HDPE END SECTION	N/A
S-2A	292.08	290.08	290.08	-----	-----	N 563375.79 E 1380430.12		HDPE END SECTION	N/A
S-3	282.00	281.50	281.50	-----	-----	N 564743.49 E 1380461.39		HDPE END SECTION	N/A

\* - DENOTES DIMENSION FROM CENTERLINE OF ROADWAY TO FACE OF INLET

**Construction Specifications**

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

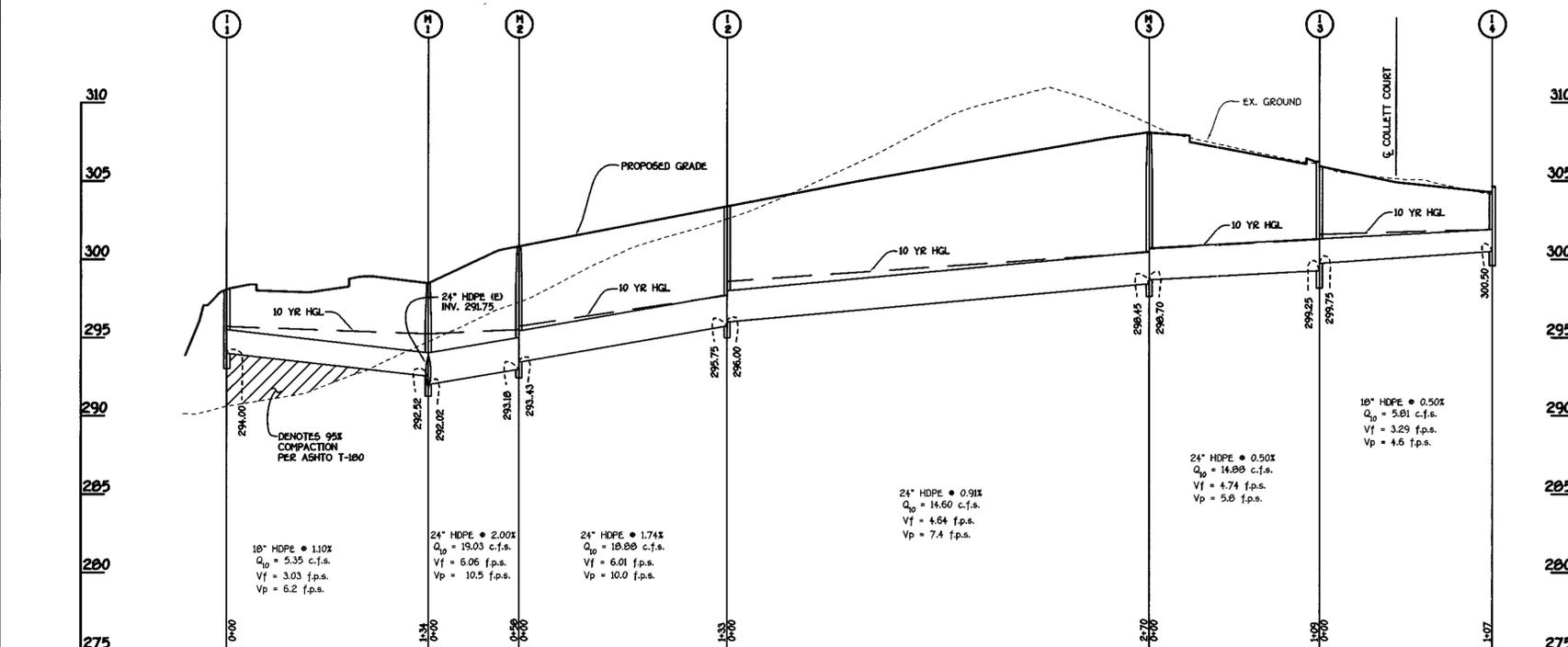


**ROCK OUTLET PROTECTION III • 5-1**

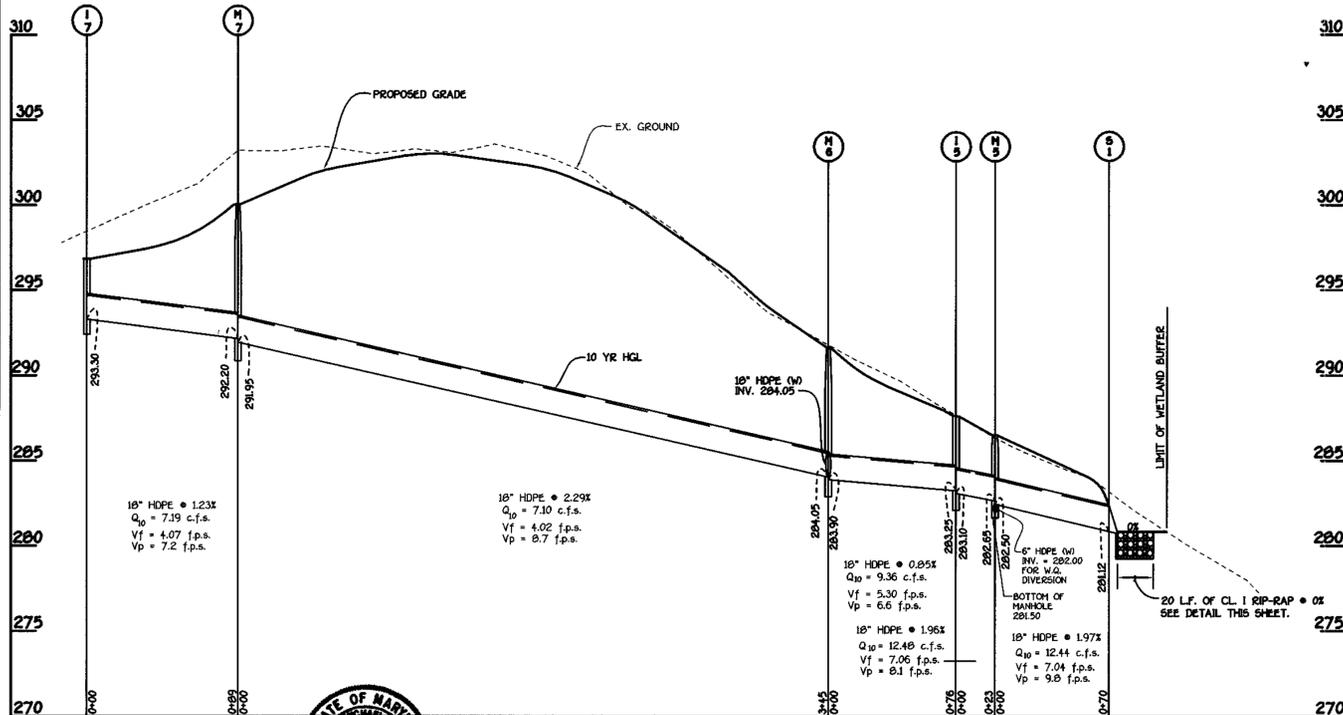
PIPE SCHEDULE		
SIZE	MATERIAL	LENGTH
6"	HDPE	71'
18"	HDPE	990'
24"	HDPE	662'
30"	RCCP	142'

**STORM DRAIN PROFILES**  
**ROCKBURN MANOR**  
 LOTS 1 THRU 22  
 ZONED R-20  
 TAX MAP NO. 37 PARCEL NO. 56 GRID NO. 5  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 DATE: SEPTEMBER 14, 2001  
 SHEET 7 OF 15

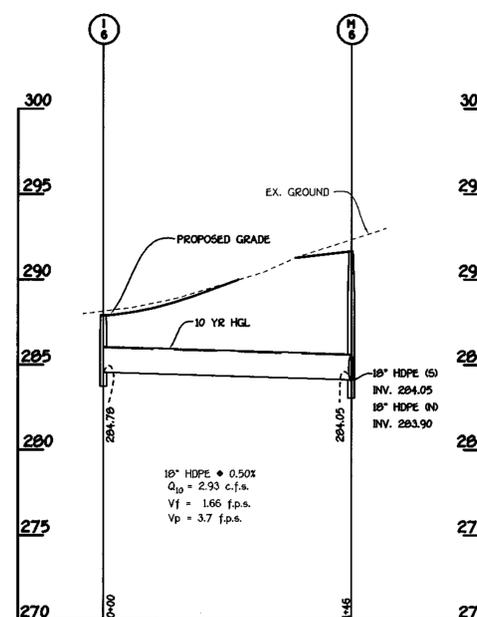
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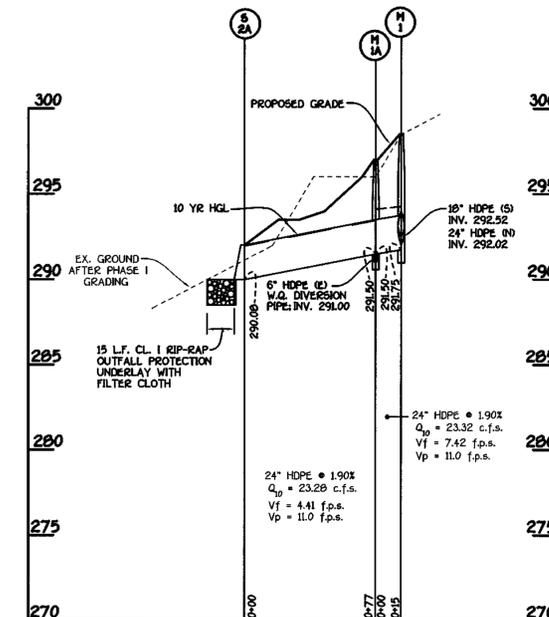
**PROFILE**  
 SCALE: HORIZ. : 1" = 50'  
 VERT. : 1" = 5'



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



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



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

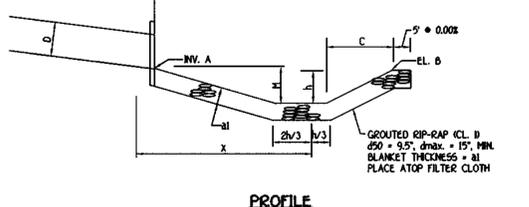
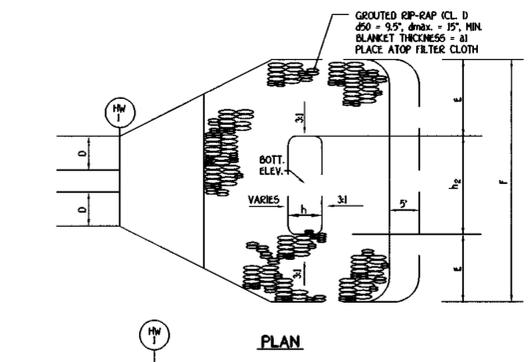
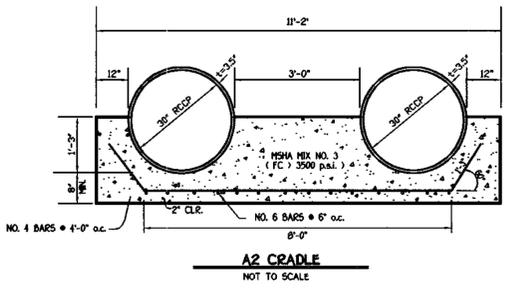
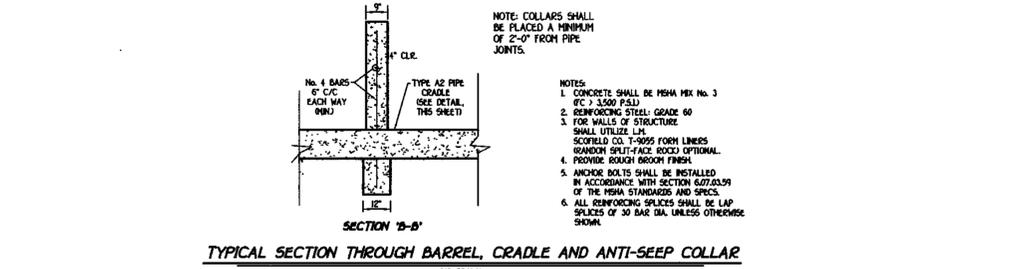
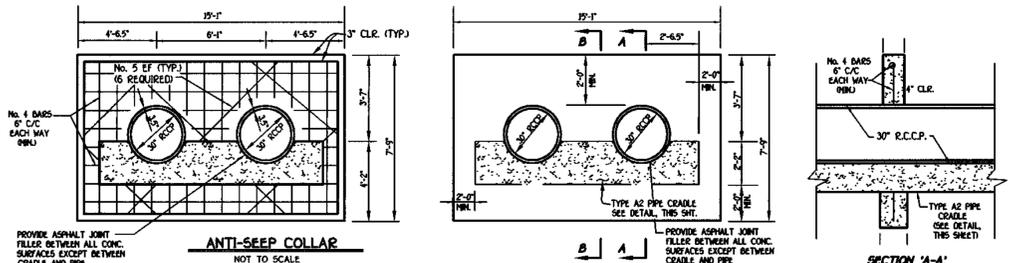
**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
 ELKLOFT CITY, MARYLAND 21042  
 410.461.2000



10-11-01

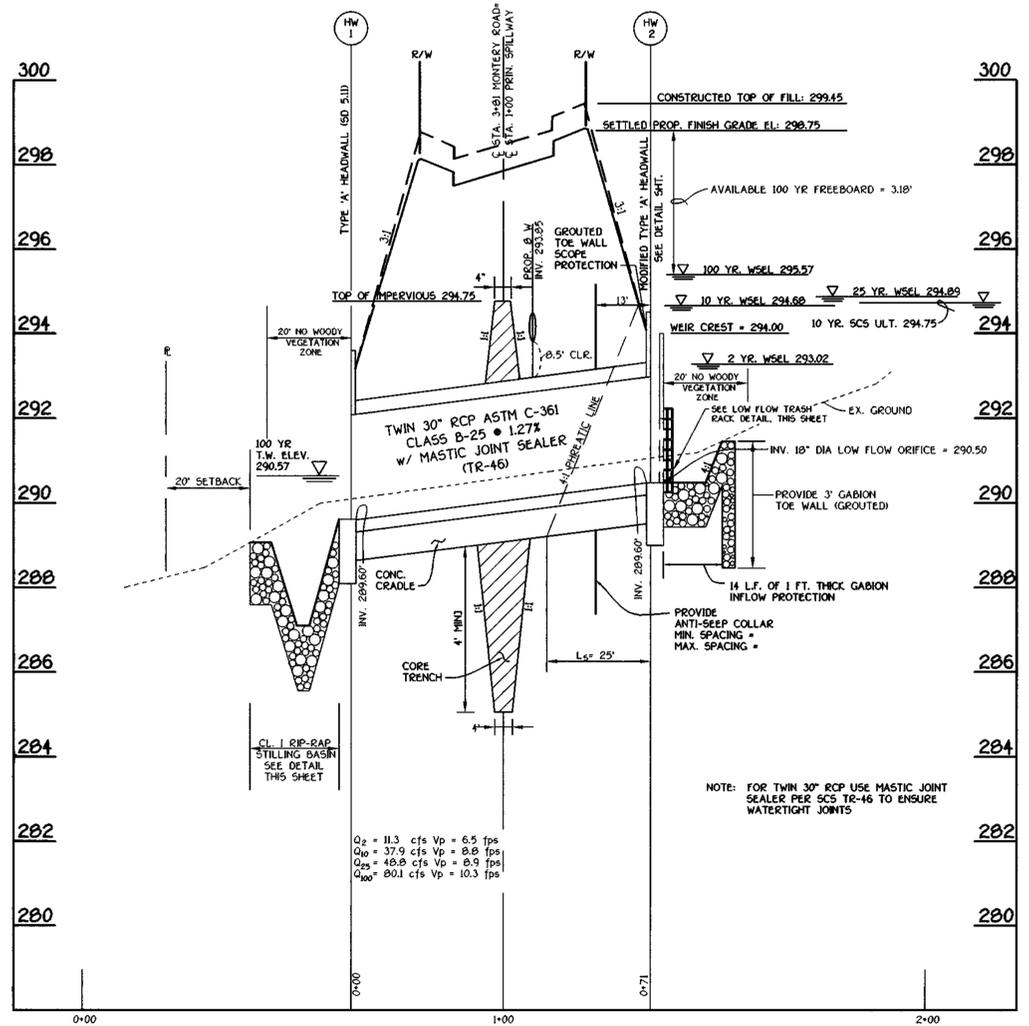
**OWNER**  
 WILLIAM LEO KEATZ & WIFE  
 6361 MONTGOMERY ROAD  
 ELKDRIDGE, MARYLAND 21227

**DEVELOPER**  
 TRINITY QUALITY HOMES, INC.  
 7320 GRACE DRIVE  
 COLUMBIA, MARYLAND 21044

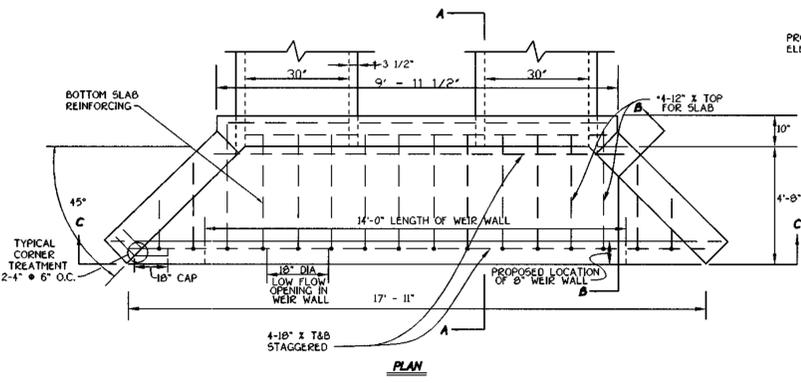


STILLING BASIN OUTFALL DETAIL • HW-1  
NO SCALE

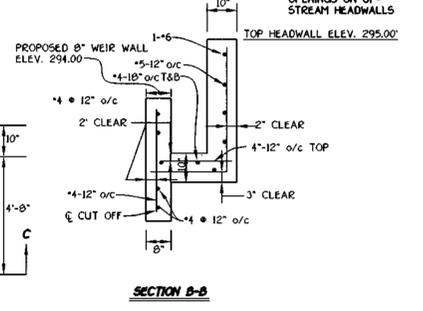
STILLING BASIN DATA										
STRUCTURE NO.	INV.	EL.	C	D	E	F	H	M	at	h <sub>2</sub>
HW-1	209.60	209.10	6.0'	2.5'	6.0'	10.50'	2.0'	2.5'	2.0'	6.50'



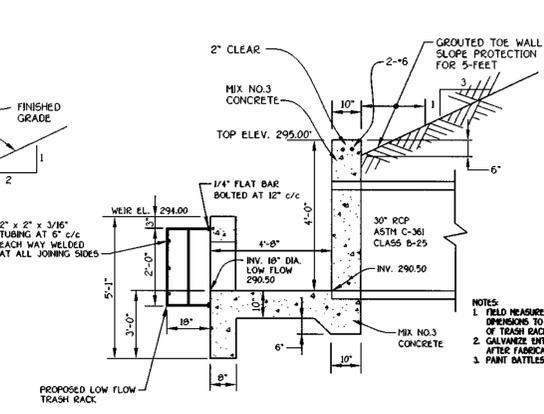
PROFILE ALONG PRINCIPAL SPILLWAY  
SCALE: HORIZ. 1" = 20'  
VERT. 1" = 2'



MODIFIED TYPE 'A' HEADWALL • HW-2  
NO SCALE



SECTION B-B



SECTION A-A w/ TRASH RACK DETAIL

By The Developer:  
I/We Certify That All Development And/Or Construction Will Be Done According To These Plans. And That Any Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of The Environment Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Shall Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District.

Signature Of Developer: *Mark Man Pava* Date: 10/11/01  
Printed Name Of Developer: **MARK MAN PAVA**

By The Engineer:  
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 To 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: *Adam Vitucci* Date: 10-11-01  
Printed Name Of Engineer: **ADAM VITUCCI**

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.

Signature: *John Hayes /es* Date: 12/2/01  
USDA Natural Resources Conservation Service

Signature: *John Hayes* Date: 12/2/01  
Howard Soil Conservation District

Signature: *John Hayes* Date: 1/15/01  
Approved: Department Of Public Works  
Chief, Bureau Of Highways

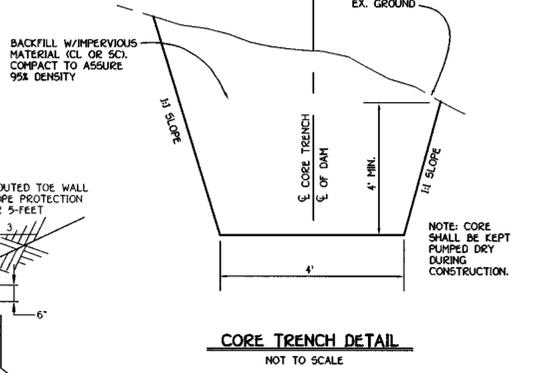
Signature: *Cindy Kunkin* Date: 12/4/01  
Approved: Department Of Planning And Zoning  
Chief, Division Of Land Development

Signature: *John Hayes* Date: 11/6/01  
Approved: Department Of Engineering Division  
Chief, Development Engineering Division

AS-BUILT CERTIFICATION  
I Herby Certify That The Facility Shown On This Plan Was Constructed As Shown On The "As-Built" Plans And Meets The Approved Plans And Specifications.

Signature: \_\_\_\_\_ P.E. No. \_\_\_\_\_  
Date: \_\_\_\_\_

Certify Means To State Or Declare A Professional Opinion Based Upon Onsite Inspections And Material Tests Which Are Conducted During Construction. The Onsite Inspections And Material Tests Are Those Inspections And Tests Deemed Sufficient And Appropriate Commonly Accepted Engineering Standards. Certify Does Not Mean Or Imply A Guarantee By The Engineer Nor Does An Engineer's Certification Relieve Any Other Party From Meeting Requirements Imposed By Contract, Employment, Or Other Means, Including Meeting Commonly Accepted Industry Practices.



CORE TRENCH DETAIL  
NOT TO SCALE

NOTE: SEE SHEET 2 FOR PROFILE ALONG CENTERLINE OF EMBANKMENT WHICH IN THIS CASE IS THE PROPOSED CENTERLINE OF MONTEREY ROAD

**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTRAL SQUARE OFFICE PARK • 18072 BALTIMORE NATIONAL PIKE  
ELLICOTT CITY, MARYLAND 21114  
(410) 461-2955



OWNER  
WILLIAM LEO KRATZ & WIFE  
6351 MONTGOMERY ROAD  
ELDERIDGE, MARYLAND 21227

DEVELOPER  
TRINITY QUALITY HOMES, INC.  
7200 GRACE DRIVE  
COLUMBIA, MARYLAND 21044

S.W.M. NOTES AND DETAILS  
**ROCKBURN MANOR**  
Lots 1 Thru 22  
ZONED R-20  
TAX MAP NO. 37 PARCEL NO. 56 GRID NO. 5  
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
DATE: SEPTEMBER 14, 2001  
SHEET 8 OF 15

# STORM WATER MANAGEMENT POND CONSTRUCTION SPECIFICATIONS

These specifications are appropriate to all ponds within the scope of the standard for practice MD-37B. All references to ASTM and AASHTO specifications apply to the most recent version.

## Site Preparation

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and steep banks shall be sloped to no steeper than 1:1. All trees shall be cleared and grubbed within 25 feet of the toe of the embankment.

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

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

## EARTH FILL

Material - The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6" across or other objectionable materials. Fill material for the center of the embankment, and cut off trench shall conform to Unified Soil Classification GC, SC, CL or CL and must have at least 30% passing the #20 sieve. Consideration may be given to the use of other materials in the embankment if designed by a geotechnical engineer. Such special designs must have construction supervised by a geotechnical engineer. Materials used in the outer shell of the embankment must have the capability to support vegetation of the quality required to prevent erosion of the embankment.

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

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

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

Cut Off Trench - The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall be at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or 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.

## Structure Backfill

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

Structure backfill may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 303 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 or structure 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 spilling 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 the specified for the core of the embankment or other embankment materials.

## Pipe Conduits

All pipes shall be circular in cross section.  
 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-301.  
 2. Bedding - Reinforced concrete pipe conduits shall be laid in a concrete bedding/cradle for their entire length. The bedding/cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 50% of its outside diameter with a minimum thickness of 6 inches. Where a concrete cradle is not needed for structural reasons, flowable fill may be used 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 the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 4 feet from the riser.  
 4. Backfilling shall conform to "Structure Backfill".  
 5. Other details (anti-seep collars, valves, etc) shall be as shown on the drawings.

# STORMWATER MANAGEMENT POND MAINTENANCE SCHEDULE

(PUBLIC FACILITY)

- ROUTINE MAINTENANCE**
  - Facility shall be inspected annually and after major storms. Inspections should be performed during wet weather to determine if the pond is functioning properly.
  - Top and side slopes of the embankment shall be mowed a minimum of two (2) times a year, once in June and once in September. Other side slopes, the bottom of the pond, and maintenance access should be mowed as needed.
  - Debris and litter next to the outlet structure shall be removed during regular mowing operations and as needed.
  - Visible signs of erosion in the pond as well as rip-rap outlet area shall be repaired as soon as it is noticed.
- NON-ROUTINE MAINTENANCE**
  - Structural components of the pond such as the dam, riser structure and the pipes shall be repaired upon the detection of any damage. The components should be inspected during maintenance operations.
  - Sediment should be removed when its accumulation significantly reduces the design storage, interferes with the function of the riser, when deemed necessary for aesthetic reasons, or when deemed necessary by the Howard County's Department of Public Works.



# STANDARDS AND SPECIFICATIONS FOR TOPSOIL

Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.

**Definition**  
 To provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, material toxic to plants, and/or unacceptable soil gradation.

**Purpose**  
 To provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, material toxic to plants, and/or unacceptable soil gradation.

**Conditions Where Practice Applies**

- This practice is limited to areas having 2:1 or flatter slopes where:
  - The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
  - The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish containing supplies of moisture and plant nutrients.
  - The original soil to be vegetated contains material toxic to plant growth.
  - The soil is so acidic that treatment with limestone is not feasible.
- For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have the appropriate stabilization shown on the plans.

**Construction and Material Specifications**

- Topsoil obtained from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experiment Station.
- Topsoil Specifications - Soil to be used as topsoil must meet the following:
  - Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Segregated topsoil shall not be a mixture of contrasting textures and shall contain less than 2% by volume of coarse stones, slag, coarse fragments, gravel, roots, trash, or other materials larger than 1 1/2" in diameter.
  - Topsoil must be free of plants or plant parts such as bermudagrass, quackgrass, Johnson grass, nutgrass, poison ivy, thistle, or others as specified.
  - 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.
    - For sites having disturbed areas under 5 acres:
    - For sites having disturbed areas over 5 acres:
- On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
  - pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be added to raise the pH to 6.5 or higher.
  - Organic content of topsoil shall be not less than 1.5 percent by weight.
  - Topsoil having soluble salt content greater than 500 parts per million shall not be used.
  - No soil or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phytotoxic 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.

- Place topsoil (if required) and apply soil amendments as specified in 2.0.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.
- Topsoil Application
  - When topsoiling, maintain needed erosion and sediment control practices such as diversions, grade stabilization structures, earth dikes, slope stabilization and sediment traps and basins.
  - Grades on the areas to be topsoiled, which have been previously established, shall be maintained, albeit 2" - 3" higher in elevation.
  - Topsoil shall be uniformly distributed in a 4" - 6" 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.
  - 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 seed preparation.

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

- Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:
  - Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMA 26.04.02.
  - Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a pH of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.
  - Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.
  - Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/3 the normal lime application rate.

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

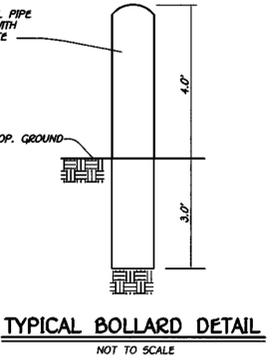
DESIGN SUMMARY					
DESIGN YEAR	ALLOWABLE RELEASE RATE	FACILITY INFLOW	FACILITY DISCHARGE	WATER SURFACE ELEVATION	STORAGE VOLUME (ACFT)
2 YEAR	14.4 c.f.s.	25.6 c.f.s.	12.1 c.f.s.	293.29	0.998
10 YEAR	41.5 c.f.s.	61.7 c.f.s.	36.9 c.f.s.	294.66	1.092
100 YEAR	N/A	105.0 c.f.s.	72.0 c.f.s.	295.39	1.640

STRUCTURE CLASSIFICATION: LOW HAZARD CLASS '1' POND  
 STORAGE - HEIGHT PRODUCT: 1.640 Ac. ft. x 8' = 13.12  
 WATERSHED AREA TO FACILITY (ACRES): ULTIMATE 23.6 ACRES  
 LEVEL OF MANAGEMENT PROVIDED BY FACILITY: TWO AND TEN YEAR STORMS

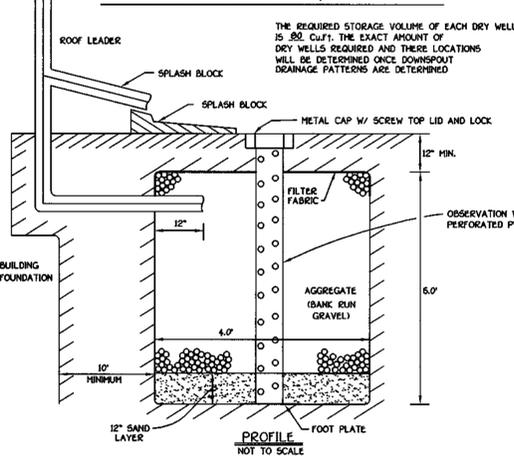
## EMBANKMENT AND CUT-OFF TRENCH CONSTRUCTION

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

A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER SHOULD BE PRESENT TO MONITOR THE PLACEMENT AND COMPACTING OF FILL FOR THE EMBANKMENT AND CUT-OFF TRENCH FOR THE POND STRUCTURES. IN ACCORDANCE WITH MARYLAND SOIL CONSERVATION SPECIFICATION 37B SOILS CONSIDERED SUITABLE FOR THE CENTER OF EMBANKMENT AND CUT-OFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CH OR CL. ALL FILL MATERIALS MUST BE PLACED AND COMPACTED IN ACCORDANCE WITH MD SCS 37B SPECIFICATIONS. BASED ON THE RESULTS OF OUR SUBSURFACE EXPLORATION IT APPEARS THAT SOILS SUITABLE FOR USE AS CUT-OFF AND CORE TRENCH MATERIALS WILL BE AVAILABLE ON-SITE.



## WATER QUALITY TREATMENT FOR LOTS 2, 3, 6 & 12 TYPICAL DRY WELL CROSS SECTION INFILTRATION MANUAL



## SEQUENCE OF CONSTRUCTION

- OBTAIN A GRADING PERMIT.
- NOTIFY MISS UTILITY AT LEAST 48 HOURS BEFORE BEGINNING ANY WORK AT 1-800-257-7777. NOTIFY THE HOWARD COUNTY OFFICE OF CONSTRUCTION/INSPECTION AT 410-313-1330 24 HOURS BEFORE STARTING WORK.
- CLEAR AND GRUB FOR SEDIMENT CONTROL MEASURES ONLY. INSTALL STABILIZED CONSTRUCTION ENTRANCE. (1 week)
- INSTALL REMAINING SEDIMENT CONTROL MEASURES, EARTH DIKES, SILT FENCES AND TEMP. P.O.S.T. NO. 1 INDICATED ON THE PLANS. NO BLASTING WILL BE PERMITTED FOR THE EXCAVATION OF THE ROAD/POND EMBANKMENT, WHERE NECESSARY, RIPPING AND JACK HAMMERING SHOULD BE UTILIZED IN THE EXCAVATION OF THE CORE TRENCH. (2 weeks)
- OBTAIN PERMISSION OF THE SEDIMENT CONTROL INSPECTOR PRIOR TO PROCEED WITH THE INITIAL STAGE OF PHASE I CONSTRUCTION AND STABILIZATION OF THE POND CROSSING AS IT IS TO BE THE STABLE MEANS OF CONSTRUCTION ACCESS TO THE REMAINDER OF THE SITE.
- UPON A 5-DAY, CLEAR WEATHER (NO PRECIPITATION) FORECAST FROM THE NATIONAL WEATHER SERVICE, INSTALL THE PROPOSED TWIN 30-INCH RCP BARREL PIPES UNDER THE INITIAL PHASE OF CONSTRUCTION TO ALLOW FOR CLEAN WATER TO TRAVERSE THE SITE. (2 weeks) OBTAIN PERMISSION OF THE SEDIMENT CONTROL INSPECTOR TO PROCEED WITH PHASE II OF THE SITE WORK.
- CLEAR AND GRUB FOR THE REMAINDER OF PHASE I CONSTRUCTION ON THE SITE. (1 week)
- GRADE THE REMAINING SITE TO PROPOSED SUBGRADE AND INSTALL THE REMAINING STORM SYSTEM. STABILIZE ALL ROADWAY SLOPES IMMEDIATELY UPON COMPLETION OF GRADING AS SHOWN ON THESE PLANS. (4 weeks)
- THE CONTRACTOR SHALL INSPECT AND PROVIDE NECESSARY MAINTENANCE ON ALL SEDIMENT AND EROSION CONTROL STRUCTURES SHOWN HEREON AFTER EACH RAINFALL AND ON A DAILY BASIS. (1 week)
- INSTALL BASE COURSE FOR THE PROPOSED ROADS. (1 week)
- STABILIZE ALL DISTURBED AREAS AND OBTAIN PERMISSION FROM THE SEDIMENT CONTROL INSPECTORS TO PROCEED.
- APPLY TACK COAT TO SUB-BASE AND LAY SURFACE COURSE. (1 week)
- WHEN ALL CONTRIBUTING AREAS TO THE SEDIMENT CONTROL DEVICES FOR THE INITIAL GRADING PHASE HAVE BEEN STABILIZED AND WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, THE DEVICE MAY BE REMOVED AND/OR BACK FILLED AND THE REMAINING AREAS BROUGHT TO FINAL GRADE. THIS INCLUDES CONSTRUCTION OF THE QUALITY FACILITY NO. 2 IN THE AREA OF P.O.S.T. NO. 1. STABILIZE ALL REMAINING AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES. (2 weeks)
- NOTIFY HOWARD COUNTY OFFICE OF INSPECTIONS AND PERMITS FOR A FINAL INSPECTION OF THE COMPLETED PROJECT.

## SEDIMENT CONTROL AND STORMWATER MANAGEMENT DETAILS AND NOTES

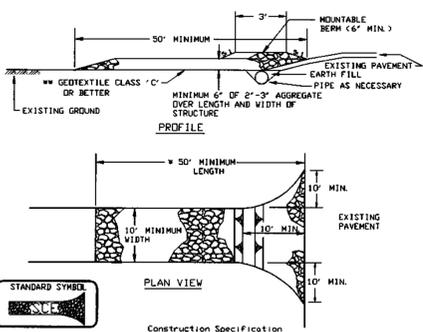
### ROCKBURN MANOR

LOTS 1 THRU 22

ZONED R-20  
 TAX MAP NO. 37 PARCEL NO. 56 GRID NO. 5  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 DATE: SEPTEMBER 14, 2001  
 SHEET 9 OF 15

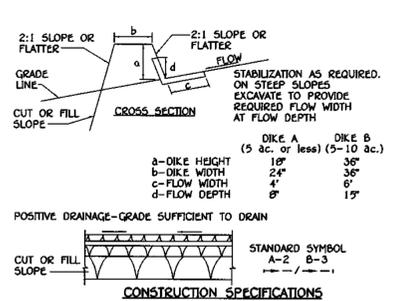
**OWNER**  
 WILLIAM LEO KRATZ & WIFE  
 6361 HUNTERGROVE ROAD  
 ELK RIDGE, MARYLAND 21227

**DEVELOPER**  
 TRINITY QUALITY HOMES, INC.  
 7320 GRACE DRIVE  
 COLUMBIA, MARYLAND 21044



- Construction Specification**
- Length - minimum of 50' (30' for single residence lot).
  - Width - 10' minimum, should be flared at the existing road to provide a turning radius.
  - Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. Written approval authority may not require single family residences to use geotextile.
  - Stone - crushed aggregate (2" to 3") or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
  - 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 shall be sized according to the drainage. When the SEE 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.
  - 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.

**STABILIZED CONSTRUCTION ENTRANCE - 2**  
NOT TO SCALE



- CONSTRUCTION SPECIFICATIONS**
- ALL DIKES SHALL BE COMPACTED BY EARTH-MOVING EQUIPMENT.
  - ALL DIKES SHALL HAVE POSITIVE DRAINAGE TO AN OUTLET.
  - TOP WIDTH MAY BE WIDER AND SIDE SLOPES MAY BE FLATTER IF DESIRED TO FACILITATE CROSSING BY CONSTRUCTION TRAFFIC.
  - FIELD LOCATION SHOULD BE ADJUSTED AS NEEDED TO UTILIZE A STABILIZED SAFE OUTLET.
  - EARTH DIKES SHALL HAVE AN OUTLET THAT FUNCTIONS WITH A MINIMUM OF EROSION. RUNOFF SHALL BE CONVEYED TO A SEDIMENT BASIN WHERE EITHER THE DIKE CHANNEL OR THE DRAINAGE AREA ABOVE THE DIKE ARE NOT STABILIZED CONSTRUCTION TRAFFIC.
  - STABILIZATION SHALL BE: (A) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED AND STRAW MULCH OR STRAW MULCH IF NOT IN SEEDING SEASON, (B) FLOW CHANNEL AS PER THE CHART BELOW.

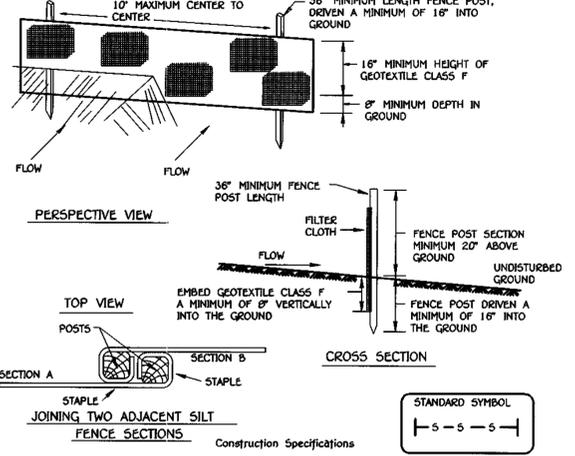
**FLOW CHANNEL STABILIZATION**

TREATMENT	CHANNEL GRADE	DIKE A	DIKE B
1	5-3.0%	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3.1-5.0%	SEED AND STRAW MULCH	SEED USING JUTE, OR EXCELSDOR; SOD; 2" STONE
3	5.1-8.0%	SEED WITH JUTE, OR SOD; 2" STONE	LINED RIP-RAP 4"-8"
4	8.1-20%	LINED RIP-RAP 4"-8"	ENGINEERING DESIGN

A. STONE TO BE 2 INCH STONE, OR RECYCLED CONCRETE EQUIVALENT, IN A LAYER AT LEAST 3 INCHES IN THICKNESS AND BE PRESSED INTO THE SOIL WITH CONSTRUCTION EQUIPMENT. B. RIP-RAP TO BE 1-3 INCHES IN A LAYER AT LEAST 6 INCHES THICKNESS AND PRESSED INTO THE SOIL.

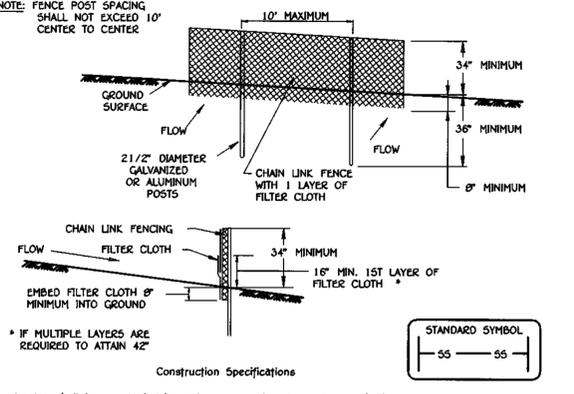
C. APPROVED EQUIVALENTS CAN BE SUBSTITUTED FOR ANY OF THE ABOVE MATERIALS.

- PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.



- CONSTRUCTION SPECIFICATIONS**
- Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) cut, or 1 3/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pound per linear foot.
  - Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:
- |                      |                            |                |
|----------------------|----------------------------|----------------|
| Tensile Strength     | 50 lbs/in (min.)           | Test: MSMT 509 |
| Tensile Modulus      | 20 lbs/in (min.)           | Test: MSMT 509 |
| Flow Rate            | 0.3 gal/ft / minute (max.) | Test: MSMT 322 |
| Filtering Efficiency | 75% (min.)                 | Test: MSMT 322 |
- Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
  - Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

**DETAIL 22 - SILT FENCE**  
NOT TO SCALE



- CONSTRUCTION SPECIFICATIONS**
- Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Detour for Chain Link Fencing. The specification for a 6' fence shall be used, substituting 42" fabric and 6' length posts.
  - Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence.
  - Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.
  - Filter cloth shall be embedded a minimum of 6" into the ground.
  - When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.
  - 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.
  - Filter cloth shall be fastened securely to each fence post with wire ties or staples at top and mid section and shall meet the following requirements for Geotextile Class F:
- |                      |                            |                |
|----------------------|----------------------------|----------------|
| Tensile Strength     | 50 lbs/in (min.)           | Test: MSMT 509 |
| Tensile Modulus      | 20 lbs/in (min.)           | Test: MSMT 509 |
| Flow Rate            | 0.3 gal/ft / minute (max.) | Test: MSMT 322 |
| Filtering Efficiency | 75% (min.)                 | Test: MSMT 322 |

**DETAIL 33 - SUPER SILT FENCE**  
NOT TO SCALE

**DEVELOPER'S CERTIFICATE**

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND THAT ANY PERSONNEL IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY."

Signature of Developer: *M. J. [Signature]* DATE: 10/11/01

**ENGINEER'S CERTIFICATE**

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

Signature of Engineer: *[Signature]* DATE: 10-11-01

REVIEW FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

U.S.D.A. Natural Resources Conservation Service DATE: 12/6/01

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

APPROVED: DEPARTMENT OF PLANNING AND ZONING DATE: 12/6/01

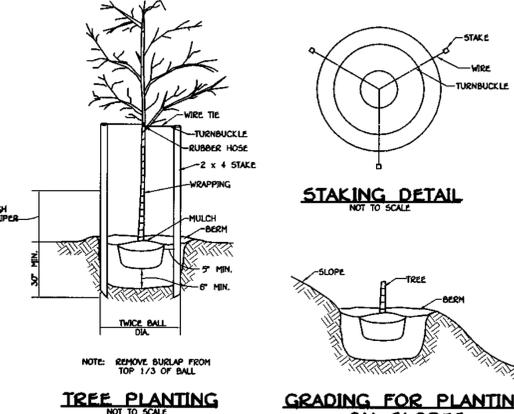
CHIEF, DIVISION OF LAND DEVELOPMENT DATE: 12/4/01

APPROVED: DEPARTMENT OF PLANNING AND ZONING DATE: 11/6/01

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE: 11/6/01

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS DATE: 11/6/01

CHIEF, BUREAU OF HIGHWAYS



**TREE PLANTING**  
NOT TO SCALE

- SEEDING CONTROL NOTES**
- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF PLANNING AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855).
  - 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 THERE TO.
  - FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN (3) 7 CALENDAR DAYS FOR ALL PERMITTED SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1, BY 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE. GRADING NECESSARY TO INSTALL STORM DRAINS, SEDIMENT TRAP AND EARTH DIKES TO BE PERFORMED FIRST. REMAINDER OF THE GRADING TO BE PERFORMED AFTER STORM DRAINS, SEDIMENT TRAP AND EARTH DIKES ARE INSTALLED.
  - 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.
  - 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 SEEDING (SEC. 51), SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50), AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
  - 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.
  - SITE ANALYSIS:
 

TOTAL AREA OF SITE	12.11 ACRES
AREA DISTURBED	9.08 ACRES
AREA TO BE ROOFED OR PAVED	3.70 ACRES
AREA TO BE VEGETATIVELY STABILIZED	5.38 ACRES
TOTAL CUT	20,000 CU.YDS.
TOTAL FILL	20,000 CU.YDS.
OFFSITE WASTE/BORROW AREA LOCATION	N/A CU.YDS.
  - 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 CONTROL STRUCTURES, 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.
  - TECHNIQUES 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.

**EARTH DIKE**  
NOT TO SCALE

- 20.0 STANDARDS AND SPECIFICATIONS**
- VEGETATIVE STABILIZATION**
- DEFINITION**  
Using vegetation as cover for barren soil to protect it from soil erosion.
- PURPOSE**  
Vegetative stabilization specifications are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and run-off to downstream areas, and improving wildlife habitat and visual resources.
- CONDITIONS WHERE PRACTICE APPLIES**  
This practice shall be used on divided areas as specified on the plans and may be used on highly erodible or critically eroding areas. This specification is divided into Temporary Seeding, to quickly establish vegetative cover for short duration (up to one year), and Permanent Seeding, for long term vegetative cover. Examples of applicable areas for Temporary Seeding are temporary soil stabilization practices and earth dikes, etc. and for Permanent Seeding are lawns, dunes, cut and fill slopes and other areas at final grade, former stripmine and staging areas, etc.
- EFFECTS ON WATER QUALITY AND QUANTITY**  
Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff. Infiltration, evaporation, transpiration, percolation, and groundwater recharge. Vegetation, over time, will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth. Vegetation will help reduce sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone. Sediment control devices must remain in place during grading, seeding, mulching and vegetative establishment to prevent large quantities of sediment and associated chemicals and nutrients from washing into surface waters.
- SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS**
- Site Preparation**
    - Install erosion and sediment control structures (either temporary or permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins.
    - Perform all grading operations at right angles to the slope. Final grading and shaping is not usually having disturbed area over 5 acres.
    - Schedule required soil tests to determine soil amendment composition and application rates for sites having disturbed area over 5 acres.
  - Soil Amendments (Fertilizer and Lime Specifications)**
    - Soil tests must be performed to determine the exact rates and application rates for both lime and fertilizer on sites having disturbed area over 5 acres. Soil tests shall be performed by the University of Maryland or a recognized commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analysis.
    - Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Fertilizer may be substituted for fertilizer with prior approval from the appropriate authority. Fertilizer bags shall be labeled with the name, trade name or trademark and percentage of the applicable active ingredients and shall bear the name, trade name or trademark and percentage of the applicable active ingredients.
    - Lime materials shall be ground limestone (hydrated or burnt lime) which contains at least 50% total oxides (calcium oxide plus magnesium oxide). Limestone shall be ground to such fineness that it will pass through a 100 mesh sieve and 98-100% will pass through a #20 mesh sieve.
    - Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.
  - Seeding Preparation**
    - Seeding preparation shall consist of loosening soil to a depth of 3" to 5" by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rollers mounted on crawler 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 treated leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.
    - Apply fertilizer and lime as prescribed on the plans.
    - Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.
  - Permanent Seeding**
    - Minimum soil conditions required for permanent vegetative establishment:
      - Soil pH shall be between 6.0 and 7.0.
      - Soluble salts shall be less than 500 parts per million (ppm).
      - The soil shall contain less than 40% clay, but enough fine grained material (>20% silt plus clay) to provide the capacity to hold a moderate amount of moisture, in excess of 10% (loam or silt loam) to be planted, then a sandy soil (<30% silt plus clay).
      - Soil shall contain 1.5% minimum organic matter by weight.
      - Soil shall contain sufficient pore space to permit adequate root penetration.
      - If these conditions are not met, the soil on site, during topsoil, is required.
    - Areas conforming with the above conditions will be maintained in a true and even grade, then aerified or otherwise loosened to a depth of 3-5" to permit bonding of the topsoil to the surface area and to create horizontal erosion check areas to prevent topsoil from sliding down a slope.
    - Soil amendments as per soil test or as included on the plans.
    - Soil amendments into the top 3-5" of topsoil by disking or other suitable means. Lawn areas should be rolled to smooth the surface, remove large objects like stones and branches, and ready the area for seed and application. Where site conditions will not permit normal seeded preparation, loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface. Steep slopes (than 3:1) should be treated by a dozer leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 1-2" of soil should be loose and friable. Seeded loosening may not be necessary on newly disturbed areas.

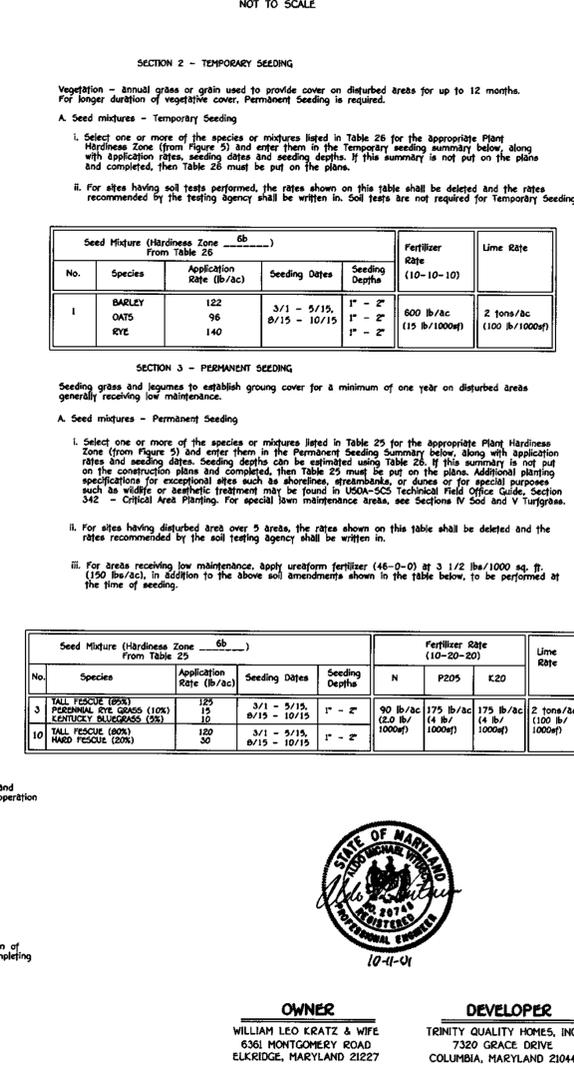
**DETAIL 22 - SILT FENCE**  
NOT TO SCALE

- Seed spread dry shall be incorporated into the subsoil at the rates prescribed on the Temporary or Permanent Seeding Summaries or Tables 265 or 26. The seeded area shall be covered with a mulch of straw or other suitable material to protect the seed.
  - Where practical, seed should be applied in directions perpendicular to each other.
  - Orill or Outbacker seeding: Mechanized seeders that apply and cover seed with soil.
  - Outbacker seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering.
  - Where practical, seed should be applied in two directions perpendicular to each other.
  - Mulch Specifications (in order of preference):**
    - Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonable bright in color, and shall not be used with any other material, or excessive dirt and shall be free of noxious weed seeds as specified in the Maryland Seed Law.
    - Wood Cellulose Fiber Mulch (WCFM) shall consist of specially prepared wood cellulose processed into a uniform fibrous physical fiber.
    - WCFM shall be dyed green or contain a green dye in the package that will provide a "disappearing color" to facilitate visual inspection of the uniformly seeded areas.
    - WCFM, including dye, shall contain no germination or growth inhibiting factors.
    - The mulch material shall form a bi-layer - the ground cover, on application, having moisture absorption and permeation properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
    - WCFM material shall contain no elements or compounds at concentrations levels that will be phytotoxic.
    - WCFM must conform to the following physical requirements: fiber length to 100 micrometers (1/1000th of a meter), diameter approximately 1.5 micrometers (1/600th of an inch), ash content of 1.5% maximum and water holding capacity of 90% minimum.
  - Mulching Seeded Area - Mulch** shall be applied to all seeded areas immediately after seeding.
    - If grading is completed outside of the seeding season, mulch shall be applied as prescribed in this section, and maintenance of the seeding season returns and seeding can be performed in accordance with these specifications.
    - When straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tons/acre. Mulch shall be applied to a uniform loose depth of between 1" and 2". Much applied shall achieve a uniform distribution and depth so that the soil surface is not exposed. If a mulch anchoring tool is to be used, the rate should be increased to 2.5 tons/acre.
    - Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 lbs. per acre. The wood cellulose fiber used as a mulch shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
    - Securing Straw Mulch (Mulch Anchoring): Mulch anchoring shall be performed immediately following mulch application to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon size of area and erosion hazard:
      - A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface to a minimum of two (2) inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should be used on the contour if possible.
      - Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 pounds/acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
      - Application of liquid binders should be heavier at the edges where wind catches mulch, such as in valleys and crests of banks. The remainder of area should be applied uniform after binder application. Synthetic binders such as Acrylic Ure (Ago-Tack), Dax-10 (Folpro), Terra Tex II, Terra Tack AC or other approved equal may be used at rates recommended by the manufacturer.
      - Lightweight plastic netting may be stapled over the mulch according to manufacturer's recommendations. Netting is usually available in rolls 4' to 15' wide and 300 to 3,000 feet long.
  - Incremental Stabilization - Cut Slopes**
    - All cut slopes shall be dressed, prepared, seeded and mulched as the work progresses. Slopes shall be excavated and stabilized in equal increments not to exceed 15'.
    - Construction sequence (Refer to Figure 3 below):
      - Excavate and stabilize all temporary erosion, side ditches, or berms that will be used to convey runoff from the site.
      - Perform Phase 1 excavation, dress, and stabilize.
      - Perform Phase 2 excavation, dress and stabilize. Overseed Phase 1 areas as necessary.
      - Perform final phase excavation, dress and stabilize. Overseed previously seeded areas as necessary.
- Notes:** Once excavation has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation of completing the operation of the seeding season will necessitate the application of temporary stabilization.
- Incremental Stabilization - Fill Slopes**
    - Embankments shall be constructed in lifts as prescribed on the plans.
    - Slopes shall be stabilized immediately when the vertical height of the multiple lifts reaches 15' or when the grading operation ceases and permanent seed and mulch are present on the slope.
    - At the end of each day, temporary berms and pipe slope drains should be constructed along the top edge of the embankment to intercept surface runoff and convey it down the slope in a non-erosive manner to a sediment trapping device.
    - Construction Sequence (Refer to Figure 4 below):
      - Excavate and stabilize all temporary erosion, side ditches, or berms that will be used to convey runoff from the site.
      - In Figure 4, unless other methods shown on the plans address this area.
      - Place Phase 1 embankment, dress and stabilize.
      - Place Phase 2 embankment, dress and stabilize.
      - Place final embankment, dress and stabilize. Overseed previously seeded areas as necessary.
- Notes:** Once the placement of fill has begun the operation should be continuous from grubbing through the completion of placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation of completing the operation of the seeding season will necessitate the application of temporary stabilization.

**DETAIL 33 - SUPER SILT FENCE**  
NOT TO SCALE

- SECTION 2 - 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.
- A. Seed mixtures - Temporary Seeding**
- Select one or more of the species or mixtures listed in Table 26 for the appropriate Plant Hardiness Zone (from Figure 5) and enter them in the Temporary Seeding Summary below, along with application rates and seeding depths. If the summary is not put on the plans and completed, then Table 26 must be put on the plans.
  - If for areas having soil tests performed, the rates shown on this table shall be deleted and the rates recommended by the testing agency shall be written in. Soil tests are not required for Temporary Seeding.
- | Seed Mixture (Hardiness Zone from Table 26) | Application Rate (lb/acre) | Seeding Dates | Seeding Depth | Fertilizer Rate (10-20-20) | Lime Rate     |
|---|----------------------------|---------------|---------------|----------------------------|---------------|
| 1. BARLEY                                   | 122                        | 3/1 - 5/15    | 1" - 2"       | 600 lb/acre                | 2 tons/acre   |
| 2. OATS                                     | 96                         | 8/15 - 10/15  | 1" - 2"       | 115 lb/1000ft              | 100 lb/1000ft |
| 3. RYE                                      | 140                        |               |               |                            |               |
- SECTION 3 - PERMANENT SEEDING**
- Seeding grass and legumes to establish ground cover for a minimum of one year on disturbed areas generally receiving low maintenance.
- A. Seed mixtures - Permanent Seeding**
- Select one or more of the species or mixtures listed in Table 25 for the appropriate Plant Hardiness Zone (from Figure 5) and enter them in the Permanent Seeding Summary below, along with application rates and seeding depths. Seeding depths can be estimated using Table 26. If this summary is not put on the construction plans and completed, then Table 25 must be put on the plans. Additional planning specifications for exceptional sites such as shorelines, streambanks, or dunes or for special purposes such as wildlife or aesthetic planting, may be found in USA-SGS Technical Field Guide, Section 342 - Critical Area Planting. For special low maintenance areas, see Sections IV SOD and V Turfgrass.
  - For areas having disturbed area over 5 acres, the rates shown on this table shall be deleted and the rates recommended by the soil testing agency shall be written in.
  - For areas receiving low maintenance, apply uniform fertilizer (46-0-0) at 3 1/2 lbs/1000 sq. ft. (150 lb/acre). In addition to the above soil amendments shown in the table below, to be performed at the time of seeding.
- | Seed Mixture (Hardiness Zone from Table 25) | Application Rate (lb/acre) | Seeding Dates | Seeding Depth | Fertilizer Rate (10-20-20) | Lime Rate   |
|---|----------------------------|---------------|---------------|----------------------------|-------------|
| 1. MALL FESCUE (PPR)                        | 125                        | 3/1 - 5/15    | 1" - 2"       | 90 lb/acre                 | 2 tons/acre |
| 2. PERSONAL RYE GRASS (10%)                 | 15                         | 8/15 - 10/15  | 1" - 2"       | 175 lb/acre                | 175 lb/acre |
| 3. CENTAURIA BULBOSA (25%)                  | 100                        |               |               | 1000ft                     | 1000ft      |
| 4. MALL FESCUE (80%)                        | 120                        | 3/1 - 5/15    | 1" - 2"       | 1000ft                     | 1000ft      |
| 5. MALL FESCUE (20%)                        | 30                         | 8/15 - 10/15  | 1" - 2"       |                            |             |

**DETAIL 33 - SUPER SILT FENCE**  
NOT TO SCALE



- TREE PROTECTION DETAIL**  
NOT TO SCALE
- NOTES:**
- FOREST PROTECTION DEVICE ONLY.
  - RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
  - BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
  - FOOT DAMAGE SHOULD BE AVOIDED.
  - PROTECTIVE DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

**SEDIMENT CONTROL NOTES AND DETAILS**

**ROCKBURN MANOR**  
LOTS 1 THRU 22  
ZONED R-20  
TAX MAP NO. 37 PARCEL NO. 56 GRID NO. 5  
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
DATE: SEPTEMBER 14, 2001  
SHEET 10 OF 15

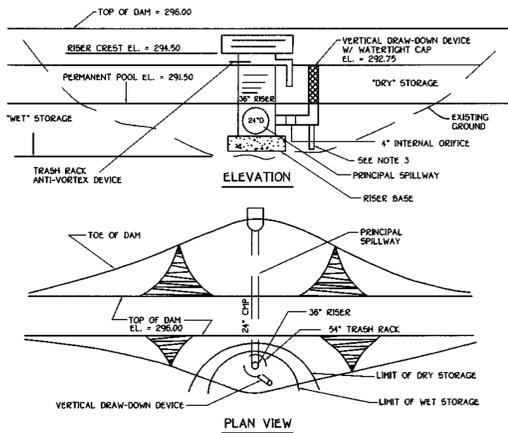
**OWNER**  
WILLIAM LEO KRATZ & WIFE  
6361 MONTGOMERY ROAD  
ELKDRIDGE, MARYLAND 21227

**DEVELOPER**  
TRINITY QUALITY HOMES, INC.  
7320 GRACE DRIVE  
COLUMBIA, MARYLAND 21044

10-11-01

**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
ENTONIAL SQUARE OFFICE PARK - 1072 BALTIMORE NATIONAL PARK  
ELKLOFT CITY, MARYLAND 21242  
410-418-1999

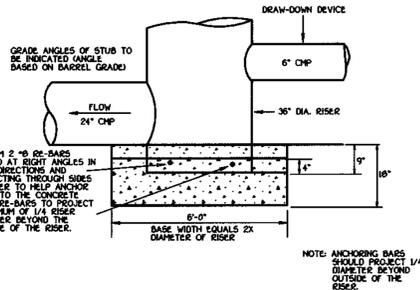
10-11-01



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

**BASIN DRAWDOWN SCHEMATIC  
VERTICAL DRAW-DOWN DEVICE**

NOT TO SCALE

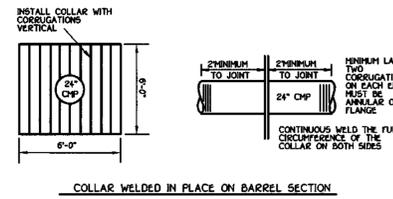


- Construction Specifications**
- The riser shall have a base attached with a watertight connection and shall have sufficient weight to prevent flotation of the riser. Two approved bases for risers 10" or less in height are:
- A concrete base 18" thick with the riser embedded 9" in the base.
  - A 1/4" minimum thickness steel plate attached to the riser by a continuous weld around the circumference of the riser to form a watertight connection. The plate shall have 2" of stone, gravel, or compacted earth placed on it to prevent flotation. In either case, each side of the square base shall be twice the riser diameter.

Note: For risers greater than ten feet high computations shall be made to design a base which will prevent flotation. The minimum factor of safety shall be 1.20 (downward forces = 1.20 x upward forces).

**RISER BASE DETAIL**

NOT TO SCALE



**COLLAR WELDED IN PLACE ON BARREL SECTION**

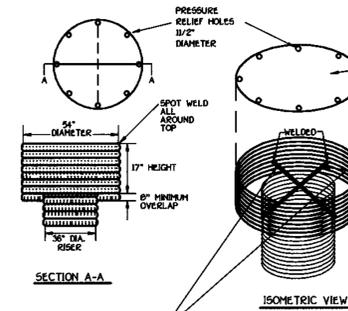


**ANTI-SEEP COLLAR DESIGN**



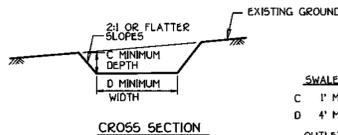
**COLLAR FOR FLANGE JOINT PIPE  
TYPICAL ANTI-SEEP COLLARS**

NOT TO SCALE



**CONCENTRIC TRASH RACK  
AND ANTI-VORTEX DEVICE**

NOT TO SCALE



**CROSS SECTION**



**PLAN VIEW**

DRAINAGE AREA = 10 ac (MAX)  
SLOPE = 10% (MAX)

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

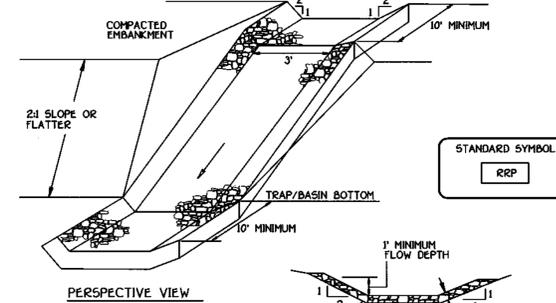
- Seed and cover with straw mulch.
- Seed and cover with Erosion Control Matting or line with sod.
- 4"-7" stone or recycled concrete equivalent pressed into soil in a minimum 7" layer.

**Construction Specifications**

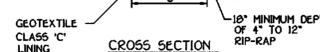
- All temporary swales shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.
- Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.
- Runoff diverted from an undisturbed area shall outlet directly into an undisturbed stabilized area at a non-erosive velocity.
- 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.
- 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.
- Fill, if necessary, shall be compacted by earth moving equipment.
- All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the swale.
- Inspection and maintenance must be provided periodically and after each rain event.

**TEMPORARY SWALE**

NOT TO SCALE



**PERSPECTIVE VIEW**



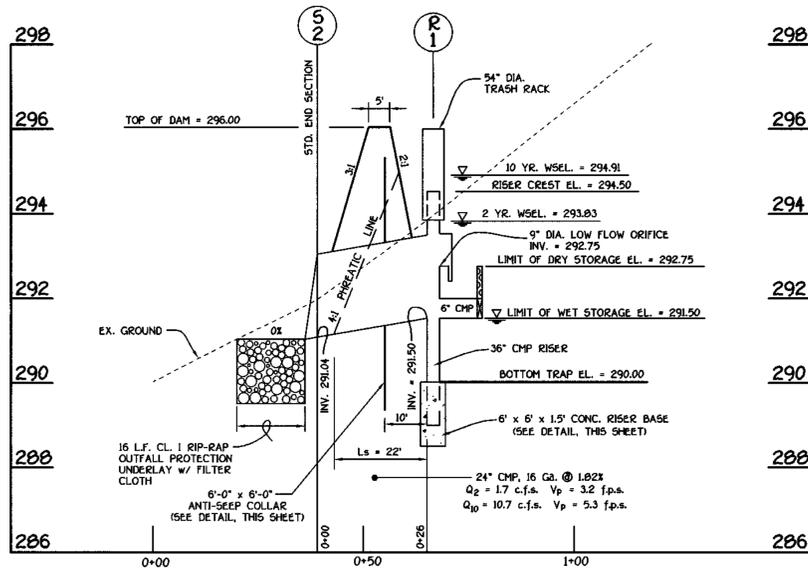
**CROSS SECTION**

**Construction Specifications**

- Rip-rap lined inflow channels shall be 1' in depth, have a trapezoidal cross section with 2:1 or flatter side slopes and 3" (min) bottom width. The channel shall be lined with 4" to 12" rip-rap to a depth of 10".
- Filter cloth shall be installed under all rip-rap. Filter cloth shall be Geotextile Class C.
- Entrance and exit sections shall be installed as shown on the detail section.
- Rip-rap used for the lining may be recycled for permanent outlet protection if the basin is to be converted to a stormwater management facility.
- Gabion Inflow Protection may be used in lieu of Rip-rap Inflow Protection.
- Rip-rap should blend into existing ground.
- Rip-rap Inflow Protection shall be used where the slope is between 4:1 and 10:1, for slopes flatter than 10:1 use Earth Dike or Temporary Swale lining criteria.

**RIP-RAP INFLOW PROTECTION**

NOT TO SCALE



**PROFILE ALONG PRINCIPAL SPILLWAY**

SCALE: HORIZ. 1" = 20'  
VERT. 1" = 2'



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ELESBEE, MARYLAND 21127

**DEVELOPER**  
TRINITY QUALITY HOMES, INC.  
7360 GRACE DRIVE  
COLUMBIA, MARYLAND 21044

**SEDIMENT CONTROL NOTES AND DETAILS**

**ROCKBURN MANOR**  
Lots 1 Thru 22

ZONED R-20  
TAX MAP NO. 37 PARCEL NO. 56 GRID NO. 5  
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
DATE: SEPTEMBER 14, 2001  
SHEET 11 OF 15

**DEVELOPER'S CERTIFICATE**

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND THAT ANY RESPONSIBLE PERSONNEL IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.

SIGNATURE OF DEVELOPER \_\_\_\_\_ DATE \_\_\_\_\_

**ENGINEER'S CERTIFICATE**

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

SIGNATURE OF ENGINEER \_\_\_\_\_ DATE 10-1-01

REVIEW FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE DATE 12/2/01

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

HOWARD SOIL CONSERVATION DISTRICT DATE 12/2/01

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT DATE 12/4/01

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 11/1/01

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS DATE 11/1/01

F-00-66

Approved: Department Of Public Works  
 Chief, Bureau Of Highways *[Signature]* 11/14/01  
 Date

Approved: Department Of Planning And Zoning  
 Chief, Division Of Land Development *[Signature]* 12/14/01  
 Date

*[Signature]* 11/16/01  
 Chief, Development Engineering Division Date

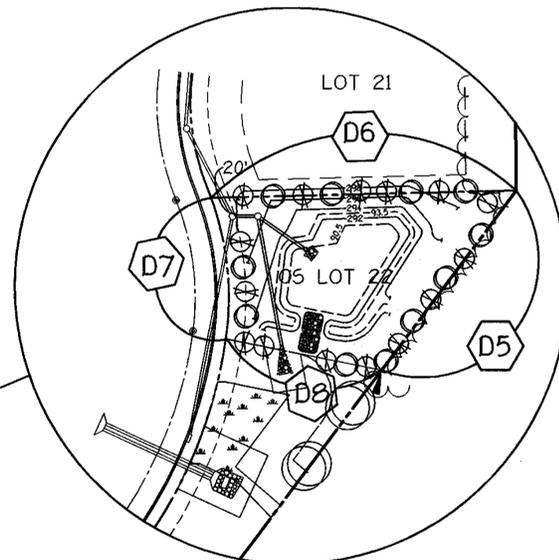
LANDSCAPE SCHEDULE				
QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
60		ACER RUBRUM 'RED SUNSET'	RED SUNSET RED MAPLE	2 1/2"-3"
42		PINUS STROBUS	WHITE PINE	6'-8' HT.

NOTE: THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 15.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED 102 LANDSCAPING TREES HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$24,300.00.

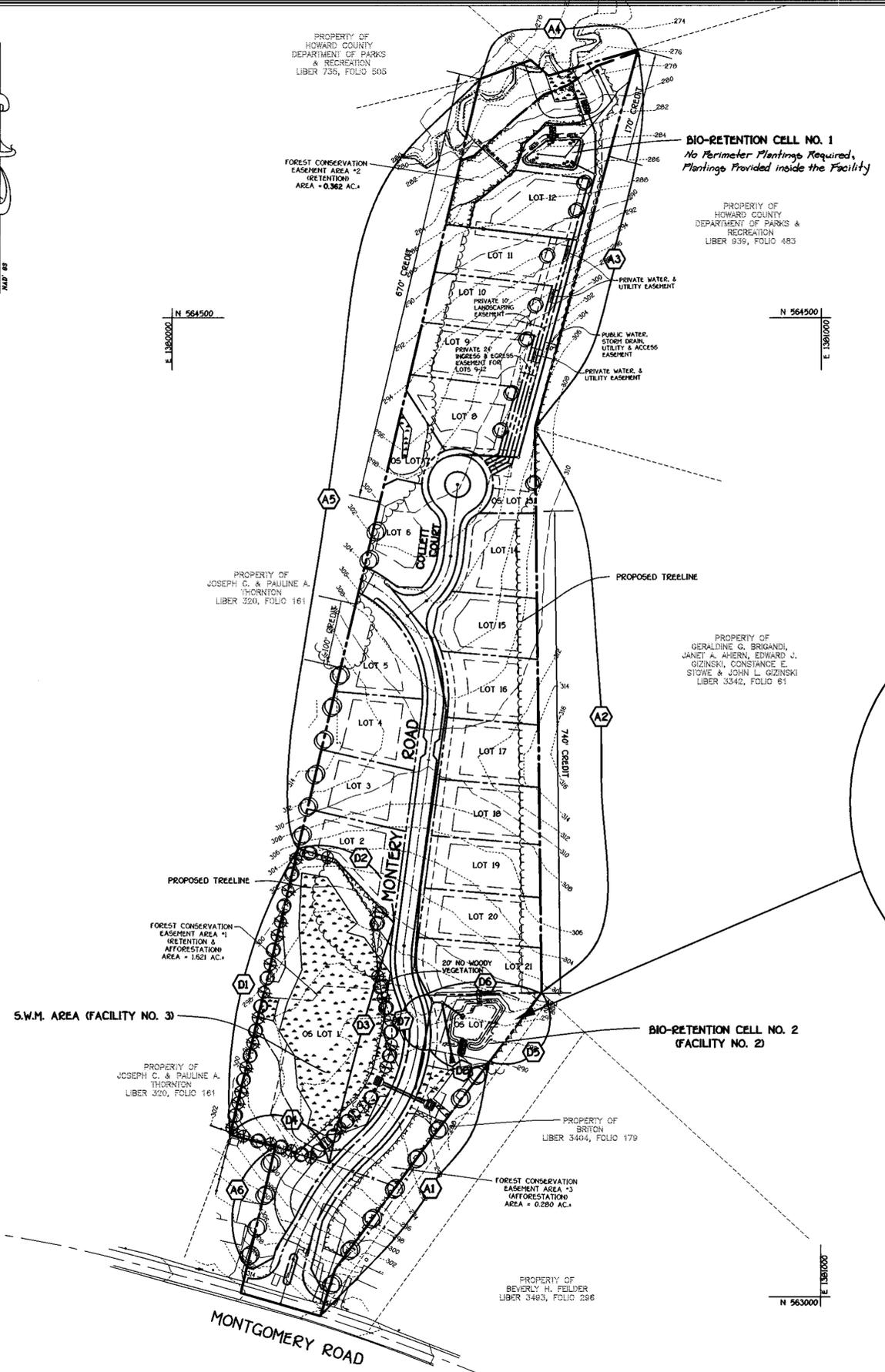
SCHEDULE A PERIMETER LANDSCAPE EDGE							
PERIMETER	CATEGORY (PROPERTIES/ROADWAYS)	LANDSCAPE TYPE	LINEAR FEET OF ROADWAY FRONTAGE PERIMETER	CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NUMBER OF PLANTS REQUIRED	
						SHADE TREES	EVERGREEN TREES
A1	ADJACENT TO PERIMETER	A	472'	NO	NO	8	-
A2	ADJACENT TO PERIMETER	A	864'	YES 740'	NO	2	-
A3	ADJACENT TO PERIMETER	A	499'	YES 170'	NO	6	-
A4	ADJACENT TO PERIMETER	A	263'	YES 263'	NO	0	-
A5	ADJACENT TO PERIMETER	A	1212'	YES 770'	NO	8	-
A6	ADJACENT TO PERIMETER	A	230'	NO	NO	4	-

SCHEDULE D S.W.M. AREA LANDSCAPING (FACILITY 2)				
LINEAR FEET OF PERIMETER	D5: 132'	D6: 181'	D7: 85'	D8: 94'
NUMBER OF TREES REQUIRED:				
SHADE TREES	3	4	2	2
EVERGREEN TREES	4	5	3	3
CREDIT FOR EXISTING VEGETATION (NO, YES AND %)	NO	NO	NO	NO
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	NO	NO	NO	NO
NUMBER OF TREES PROVIDED:				
SHADE TREES (1:50)	3	4	2	2
EVERGREEN TREES (1:40)	4	5	3	3
OTHER TREES (2:1 SUBSTITUTION)	-	-	-	-

SCHEDULE D S.W.M. AREA LANDSCAPING (FACILITY 3)				
LINEAR FEET OF PERIMETER	D1: 452'	D2: 193'	D3: 410'	D4: 160'
NUMBER OF TREES REQUIRED:				
SHADE TREES	9	1	8	3
EVERGREEN TREES	12	10	10	4
CREDIT FOR EXISTING VEGETATION (NO, YES AND %)	NO	YES, 150'	NO	NO
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	NO	NO	NO	NO
NUMBER OF TREES PROVIDED:				
SHADE TREES (1:50)	9	1	9	3
EVERGREEN TREES (1:40)	12	11	10	4
OTHER TREES (2:1 SUBSTITUTION)	-	-	-	-



NOTE: SEE SHEET 5 FOR BIO-RETENTION PLANT MATERIALS.



PLAN  
 SCALE: 1" = 100'



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 4100 401 - 2955

OWNER  
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 ELK RIDGE, MARYLAND 21227

DEVELOPER  
 TRINITY QUALITY HOMES, INC.  
 7320 GRACE DRIVE  
 COLUMBIA, MARYLAND 21044

LANDSCAPE PLAN  
**ROCKBURN MANOR**  
 Lots 1 Thru 22  
 ZONED R-20  
 TAX MAP NO. 37 PARCEL NO. 56 GRID NO. 5  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 DATE: SEPTEMBER 14, 2001  
 SHEET 12 OF 15

F-00-66

**LEGEND**

- LOD — LIMIT OF DISTURBANCE
- ▲ PERMANENT TREE PROTECTION SIGN
- △ TEMPORARY TREE PROTECTION SIGN
- TP — TREE PROTECTION FENCE
- EXISTING TREE LINE
- PROPOSED TREELINE
- SPECIMEN TREE
- ▨ FOREST CONS. ESMN'T AREA
- ▩ FOREST CONS. ESMN'T AREA / REFORESTATION (TYPE I)
- ▧ FOREST CONS. ESMN'T AREA / TYPE II REFORESTATION

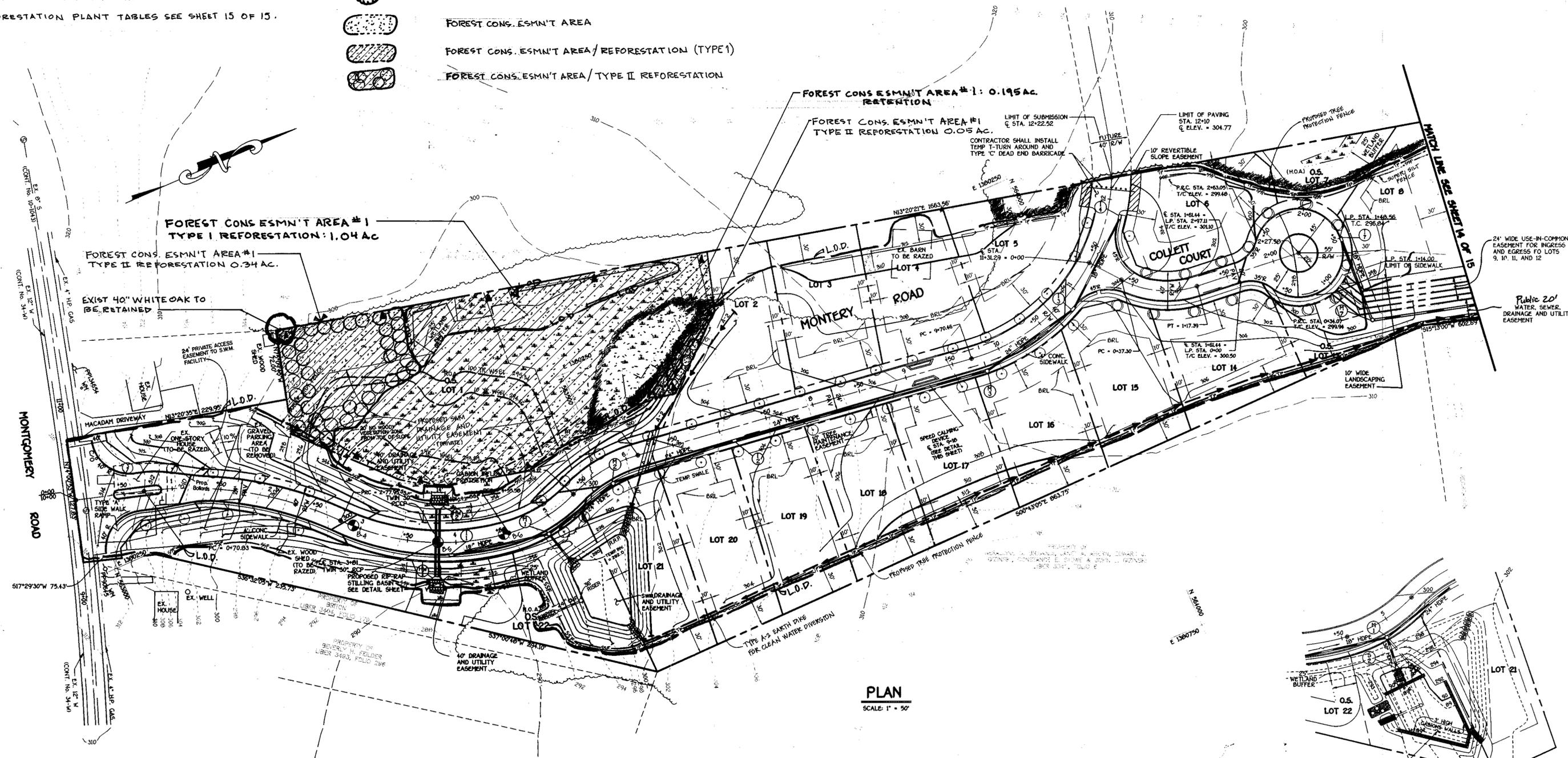
**FOREST CONSERVATION EASEMENT AREA SUMMARY**  
 CONS ESMN'T AREA #1 1.621 AC. RETENTION & REFORESTATION  
 CONS ESMN'T AREA #2 0.362 AC. RETENTION ONLY

REFORESTATION PROPOSED AREA #1: 1.426 AC.  
 TOTAL REFORESTATION PROPOSED: 1.426 AC.  
 FOR REFORESTATION PLANT TABLES SEE SHEET 15 OF 15.

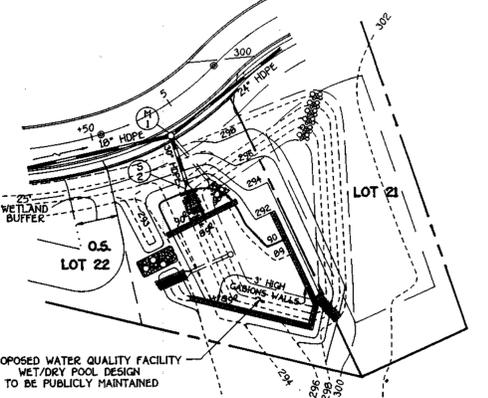
Approved: Department of Public Works  
 Chief, Bureau of Highways  
 Date: 11/16/01

Approved: Department of Planning and Zoning  
 Chief, Division of Land Development  
 Date: 12/14/01

Chief, Development Engineering Division  
 Date: 11/16/01



**PLAN**  
 SCALE: 1" = 50'



**PHASE II GRADING PLAN**  
 SCALE: 1" = 50'

**NOTE:**  
 NO STREET TREES TO BE PLANTED ALONG MONTEREY ROAD FROM STA. 2+50 TO STA. 5+00 DUE TO IMPERVIOUS CORE OF S.W.M. EMBANKMENT



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**OWNER**  
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**DEVELOPER**  
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**FOREST CONSERVATION PLAN**  
**ROCKBURN MANOR**  
 Lots 1 Thru 22  
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 DATE: SEPT. 14, 2001  
 SHEET 13 OF 15

**FOREST CONSERVATION WORKSHEET**

**PRESERVATION AREA NOTES**

- All proposed activities shall conform to the terms, conditions and schedules of an approved Soil Erosion and Sediment Control Plan.
- Blaze orange plastic fence or silt fence (where applicable) shall be installed along all tree save areas that are within 50 feet of proposed construction activities. The Tree Protective Devices shall be in place at the time of construction activities commence. No protective device shall be installed along tree save areas that are greater than 50 feet from construction activity. The location of all Tree Protective Devices shall be shown on the Soil Erosion and Sediment Control Plan which will be incorporated into this Forest Conservation Plan by reference.

**FOREST MANAGEMENT NOTES**

**PRECONSTRUCTION**  
Conduct a preconstruction meeting with the contractor(s) to review forest protection measures and practices. Consultant to select edge trees to remove as appropriate.

**DURING CONSTRUCTION**  
Provide maintenance to tree protection measures.

Water trees having critical root zone impacts on a bi-weekly basis or as needed.

Monitor conditions of remaining trees for signs of stress (leaf discoloration, leaf drop, insect infestation, etc.)\*

**POST CONSTRUCTION (TWO YEAR MINIMUM)**  
Inspect existing trees around the perimeter of disturbed limits for damage or stress signs from construction, including excessive compaction in the root zone.\*

Evaluate remaining trees for signs of stress and conduct appropriate cultural management: crown reduction, pruning, watering, soil aeration, fertilizing, etc. Remove dead or dying trees and evaluate for hazard trees.\*

\*A licensed arborist or forester should be retained for these services.

	Acres
<b>Net Tract Area</b>	
A. Total Tract Area	12.11
B. Area Within 100 Year Floodplain	0.27
C. Other Deductions	0
D. Net Tract Area	11.84
Zoning Use Category: High Density Residential Land Use Category	
E. Afforestation Minimum (15% x D)	1.78
F. Conservation Threshold (20% x D)	2.37
<b>Existing Forest Cover</b>	
G. Existing Forest on Net Tract Area	8.23
H. Forest Area Above Afforestation Threshold	6.45
I. Forest Area Above Conservation Threshold	5.86
<b>Breakeven Point</b>	
J. Forest Retention Above Threshold with no Mitigation	3.54
K. Clearing Permitted without Mitigation	4.69
<b>Proposed Forest Clearing</b>	
L. Forest Areas to be Cleared	7.60
M. Forest Areas to be Retained	0.55
<b>Planting Requirements</b>	
N. Reforestation for Clearing Above Threshold	1.47
P. Reforestation for Clearing Below the Threshold	3.64
Q. Credit for Retention Above Conservation Threshold	0
R. Total Reforestation Required	5.11
S. Total Afforestation Required	0
T. Total Reforestation and Afforestation Requirement	5.11

**FOREST CONSERVATION NARRATIVE**

This Forest Conservation Plan was prepared in accordance with the Howard County Forest Conservation Manual and the 1991 Forest Conservation Act.

The existing site consists of 12.11 acres with 0.267 acres of floodplain. There are 8.23 acres existing forest within the net tract area. Retention areas are prioritized to provide protection for wetlands. Forest proposed to be cleared is 7.60 acres. Existing forest to be placed in protective easement is 0.55 acres. The reforestation requirement is 5.11 acres. Onsite reforestation proposed is 1.43 acres. *Offsite reforestation is proposed to be purchased from the "Winkler Forest Mitigation Bank" for the remaining 3.68 acres of required reforestation.*

Approved: Department Of Public Works  
 Chief Bureau Of Highways *[Signature]* 11/16/01  
 Date

Approved: Department Of Planning And Zoning  
 Chief, Division Of Land Development *[Signature]* 12/18/01  
 Date

*[Signature]* 11/6/01  
 Chief, Development Engineering Division  
 Date



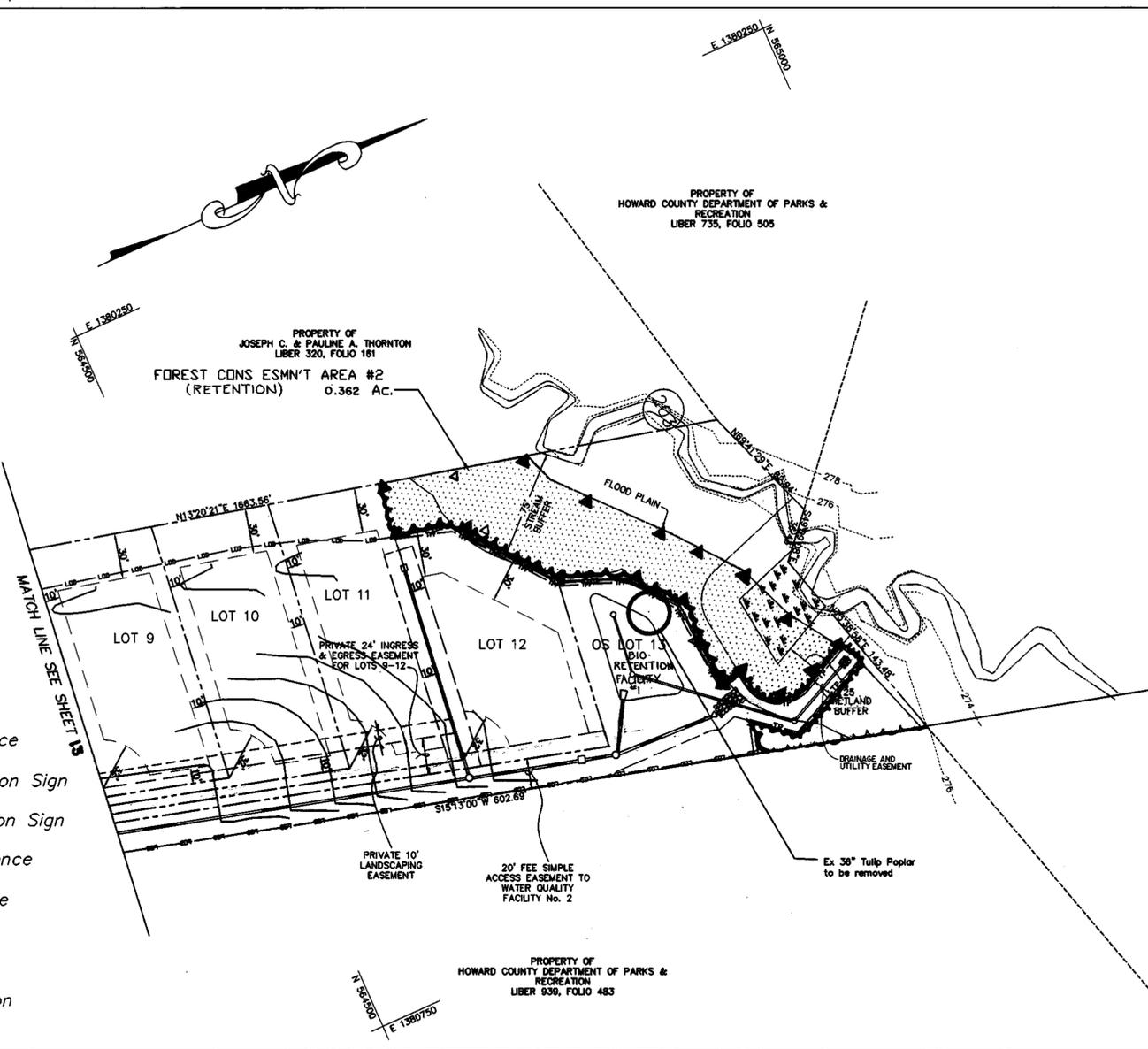
FOREST CONSERVATION SIGN



**EXPLORATION RESEARCH, INC.**  
 ENVIRONMENTAL CONSULTANTS  
 LANDSCAPE ARCHITECTS  
 2008 FOREST ST. #200  
 BLOOMING GARDENS, MARYLAND 21040  
 TEL: (410) 790-1200 FAX: (410) 790-7000

Prepared for:  
**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
 ELKLOTT CITY, MARYLAND 21092  
 (410) 461-2855

AT LEAST 48 HOURS PRIOR TO DIGGING,  
 CONTACT MISS UTILITY AT 1-800-257-7777



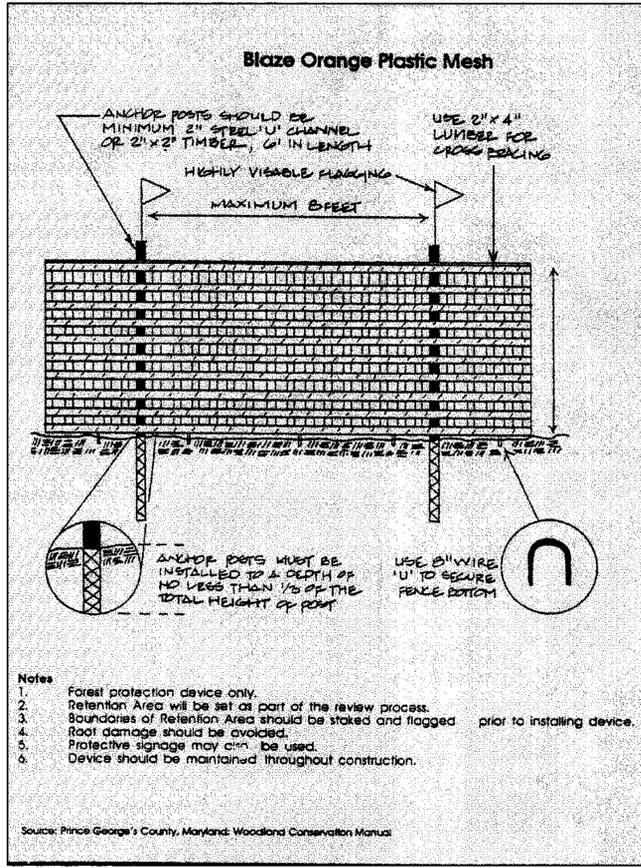
- Legend**
- Limit of Disturbance
  - Permanent Tree Protection Sign
  - Temporary Tree Protection Sign
  - Tree Protection Fence
  - Proposed Tree Line
  - Specimen Tree
  - Forest Conservation Easement Area

SCALE 1" = 50'

**OWNER**  
 WILLIAM LEO KRATZ & WIFE  
 6361 MONTGOMERY ROAD  
 ELKRIE, MARYLAND 21227

**DEVELOPER**  
 TRINITY QUALITY HOMES, INC.  
 7850 GRADE CIRCLE  
 COLUMBIA, MARYLAND 21044

Protective fencing shall consist of Tree Protection Fence as shown. Silt fence may be substituted for Tree Protection Fence when required for sediment and erosion control purposes (see approved sediment and erosion control plan)



- Notes**
- Forest protection device only.
  - Retention Area will be set as part of the review process.
  - Boundaries of Retention Area should be staked and flagged prior to installing device.
  - Root damage should be avoided.
  - Protective signage may also be used.
  - Device should be maintained throughout construction.



TREE PROTECTION FENCE

FINAL FOREST CONSERVATION AND REFORESTATION PLAN  
**ROCKBURN MANOR**  
 Lots 1 Thru 22  
 ZONED R-20  
 TAX MAP NO. 37 PARCEL NO. 58 GRID NO. 5  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 DATE: SEPTEMBER 14, 2001  
 SHEET 14 OF 15

FCA#1 TYPE 1 REFORESTATION (1.04 Ac.)

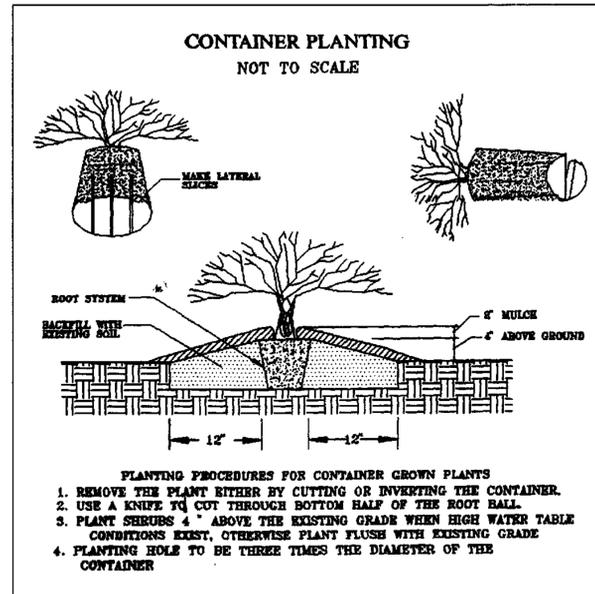
Qty	Botanical Name	Common Name	Min. Size	Spacing	P.U.	Total P.U.
73	Acer rubrum	Red Maple	1/4" cal.	11' o.c.	2	146
73	Fraxinus pennsylvanica	Green Ash	1/4" cal.	11' o.c.	2	146
73	Nyssa sylvatica	Black Gum	1/4" cal.	11' o.c.	2	146
73	Liquidambar styraciflua	Sweetgum	1/4" cal.	11' o.c.	2	146
73	Quercus palustris	Pin Oak	1/4" cal.	11' o.c.	2	146

Type 1 Planting Units Required: 728  
 Type 1 Planting Units Provided: 730

FCA#1 TYPE 2 REFORESTATION (0.39 Ac.)

Qty	Botanical Name	Common Name	Min. Size	Spacing	P.U.	Total P.U.
35	Acer rubrum	Red Maple	1/4" cal.	11' o.c.	2	70
35	Fraxinus pennsylvanica	Green Ash	1/4" cal.	11' o.c.	2	70
35	Liquidambar styraciflua	Sweetgum	1/4" cal.	11' o.c.	2	70
32	Quercus palustris	Pin Oak	1/4" cal.	11' o.c.	2	64

Type 2 Planting Units Required FCA#1: 273  
 Type 2 Planting Units Provided FCA#1: 274



- PLANTING PROCEDURES FOR CONTAINER GROWN PLANTS**
1. REMOVE THE PLANT EITHER BY CUTTING OR INVERTING THE CONTAINER.
  2. USE A KNIFE TO CUT THROUGH BOTTOM HALF OF THE ROOT BALL.
  3. PLANT SHRUBS 4" ABOVE THE EXISTING GRADE WHEN HIGH WATER TABLE CONDITIONS EXIST, OTHERWISE PLANT FLUSH WITH EXISTING GRADE
  4. PLANTING HOLE TO BE THREE TIMES THE DIAMETER OF THE CONTAINER

REFORESTATION AREA MONITORING NOTES

1. Monthly visits during the first growing season are to assess the success of the plantings and to determine if supplemental watering, pest control or other actions are necessary. Early spring visits will document winter kill and autumn visits will document summer kill.
2. The minimum survival rate shall be 75% of the total number of trees planted per acre at the end of the two year maintenance period. Wild tree seedlings from natural regeneration on the planting site may be counted up to 50% toward the total survival number if they are healthy native species at least 12 inches tall.
3. Survival will be determined by a stratified random sampling of the plantings. The species composition of the sample population should be proportionate to the amount of each species in the entire planting to be sampled.
4. Effective monitoring will assess plant survivability during the first growing season and make recommendations for reinforcement plantings if required at that time.

REFORESTATION PLANTING NOTES

1. Reforestation areas may be planted as soon as reasonable to do so. Late winter- early spring plantings are preferred. Earliest planting dates will vary from year to year but planting may generally begin as soon as the ground is no longer frozen. Alternate planting dates may be considered as condition warrants.
2. Soil amendments and fertilization recommendations will be made based upon the results of soil analysis for nitrogen, phosphorus, potassium, organic matter content and pH. If required, fertilizer will be provided using a slow release, soluble 16-8-16 analysis designed to last 5-8 years contained in polyethylene perforated bags such as manufactured by ADCO Works, P.O. Box 310 Hollis, N.Y. 11423 or approved equal.
3. Plant materials will be planted in accordance with the Planting Distribution Diagram, Planting Details and plant schedule.
4. Plant material shall be nursery grown and inspected prior to planting. Plants not conforming to the American Standard for Nursery Stock specifications for size, form, vigor, or roots, or due to trunk wounds, breakage, desiccation, insect or disease must be replaced.
5. Planting stock must be protected from desiccation at all times prior to planting. Materials held for planting shall be moistened and placed in cool shaded areas until ready for placement.
6. Newly planted trees may require watering at least once per week during the first growing season depending on rainfall in order to get established. The initial planting operation should allow for watering during installation to completely soak backfill material.
7. Planting holes should be excavated to a minimum diameter of 2.5 to 3 times the diameter of the root ball or container.
8. Mulch shall be applied in accordance with the diagram provided and shall consist of composted, shredded hardwood bark mulch, free of wood alcohol.

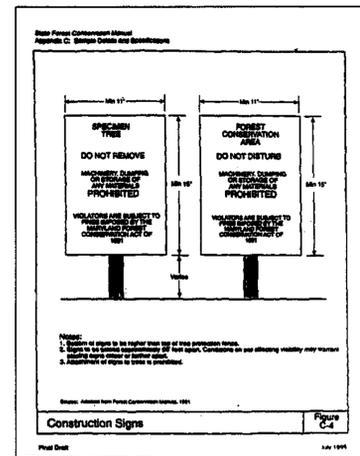
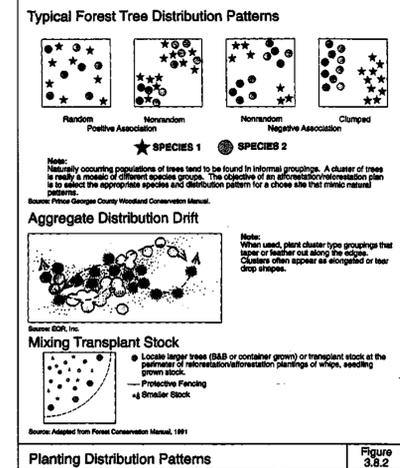
Approved: Department Of Public Works

*Howard St...*  
 Chief Bureau Of Highways *HS* Date *11/16/01*

Approved: Department Of Planning And Zoning

*Andy...*  
 Chief, Division Of Land Development *HB* Date *11/16/01*

*...*  
 Chief, Development Engineering Division Date *11/16/01*



SIGN DETAIL: TEMPORARY CONSTRUCTION SIGN

SIGNAGE NOTE: ALL TREE PROTECTION SIGNS SHALL BE PLACED ON ALUMINUM POSTS OR PRESSURE TREATED WOOD POLES. NO ATTACHMENT OF SIGNS TO TREES IS PERMITTED.

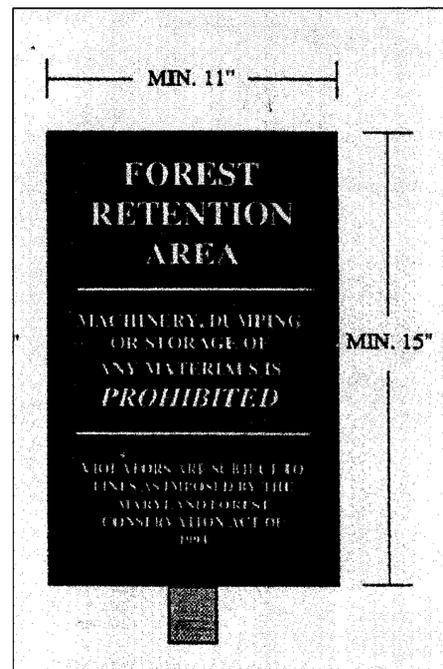
Prepared by:



**EXPLORATION RESEARCH, INC.**  
 ENVIRONMENTAL CONSULTANTS  
 LANDSCAPE ARCHITECTS  
 8514 FORESBY STREET  
 BELTSVILLE, MARYLAND 21043  
 TEL: (410) 760-1150 FAX: (410) 760-7200

Prepared for:

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
 ELLICOTT CITY, MARYLAND 21042  
 (410) 461-3855



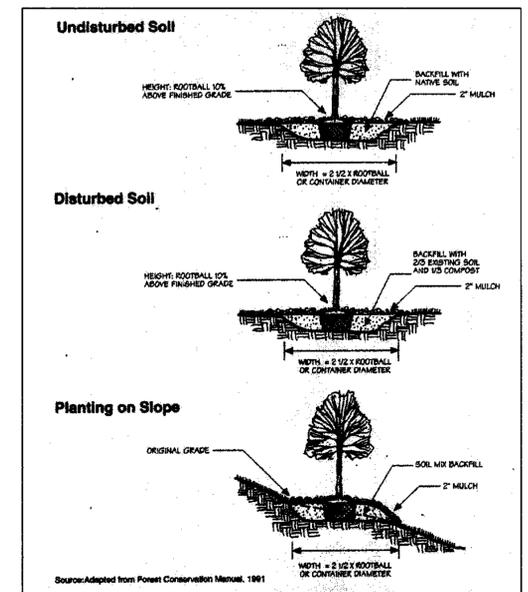
SIGN DETAIL: PERMANENT SIGN

OWNER  
 WILLIAM LEO KRATZ & WIFE  
 6381 MONTGOMERY ROAD  
 ELKRODGE, MARYLAND 21227

DEVELOPER  
 TRINITY QUALITY HOMES, INC.  
 7320 GRACE DRIVE  
 COLUMBIA, MARYLAND 21044



*Howard St...*  
 6/2/00



TREE PLANTING DETAIL

FINAL FOREST CONSERVATION AND REFORESTATION PLAN

**ROCKBURN MANOR**

Lots 1 Thru 22

ZONED R-20  
 TAX MAP NO. 37 PARCEL NO. 56 GRID NO. 5  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 DATE: SEPTEMBER 14, 2001  
 SHEET 15 OF 15

F-00-66

Approved: Department Of Public Works  
 Chief, Bureau Of Highways *[Signature]* 11/17/01  
 Date

Approved: Department Of Planning And Zoning  
 Chief, Division Of Land Development *[Signature]* 12/4/01  
 Date

*[Signature]* 11/16/01  
 Chief, Development Engineering Division  
 Date

LANDSCAPE SCHEDULE				
QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
35	○	ACER RUBRUM "RED SUNSET"	RED SUNSET RED MAPLE	2 1/2"-3"
15	○	PINUS STROBUS	WHITE PINE	6'-8' HT.

NOTE: THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED 102 LANDSCAPING TREES HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$24,300.00.

36	⊕	PLATANUS x ACER FOLIA	LONDON PLANETREE	2 1/2"-3"
8	⊕	CIPRESSOPARIS HOLLANDI	LEYLAND CYPRESS	6'-8' HT.

SCHEDULE A PERIMETER LANDSCAPE EDGE						
PERIMETER	CATEGORY (PROPERTIES/ROADWAYS)	LANDSCAPE TYPE	LINEAR FEET OF ROADWAY FRONTAGE PERIMETER	CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NUMBER OF PLANTS REQUIRED SHADE TREES EVERGREEN TREES SHRUBS
A1	ADJACENT TO PERIMETER	A	472'	NO	NO	4 8*
A2	ADJACENT TO PERIMETER	A	864'	YES 740'	NO	2 -
A3	ADJACENT TO PERIMETER	A	499'	YES 170'	NO	6 -
A4	ADJACENT TO PERIMETER	A	263'	YES 263'	NO	0 -
A5	ADJACENT TO PERIMETER	A	1212'	YES 770'	NO	8 -
A6	ADJACENT TO PERIMETER	A	230'	NO	NO	4 -

8 EVERGREEN TREES WERE SUBSTITUTED FOR FOUR SHADE TREES

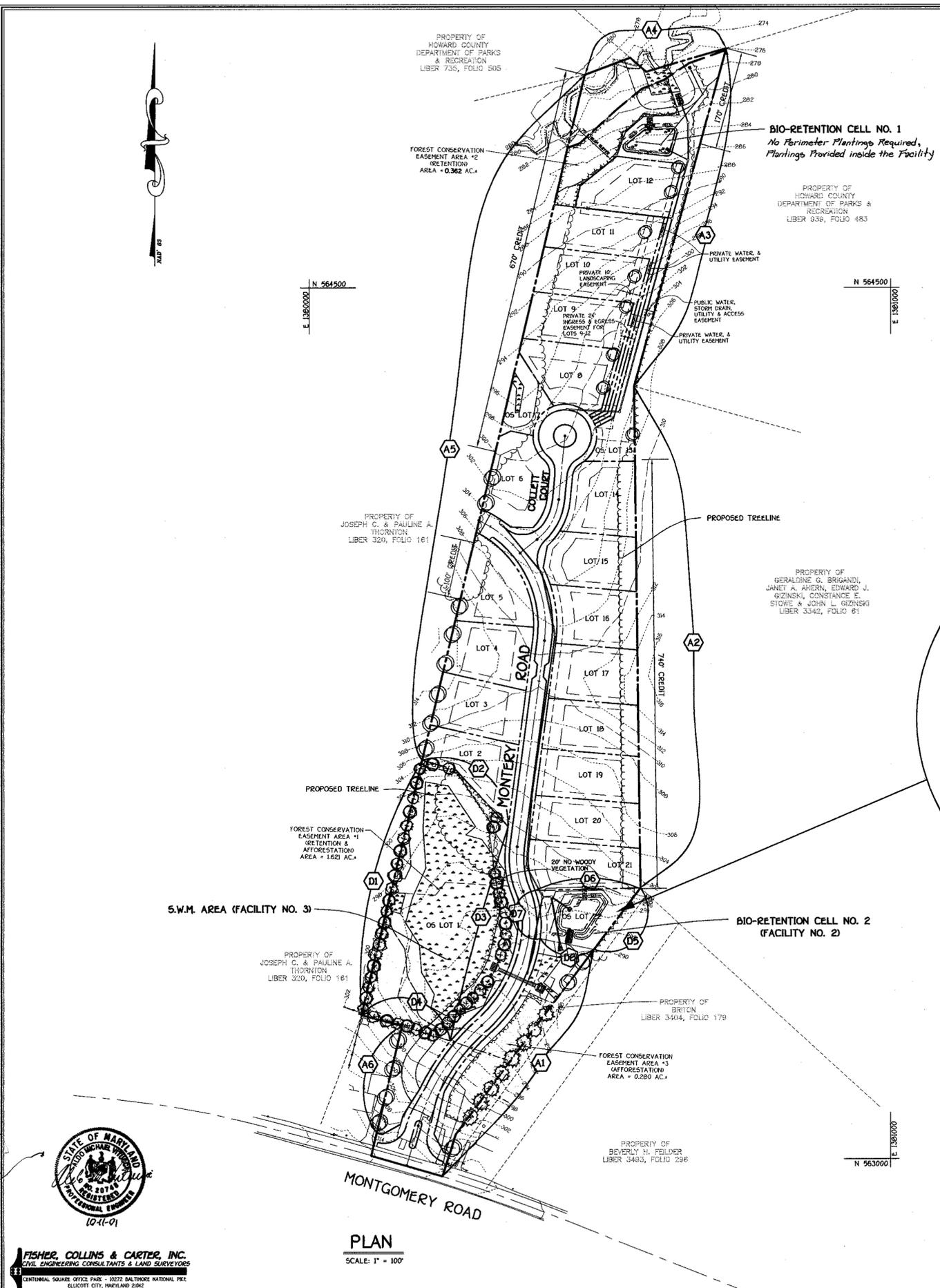
SCHEDULE D S.W.M. AREA LANDSCAPING (FACILITY 2)				
LINEAR FEET OF PERIMETER	D5: 132'	D6: 181'	D7: 85'	D8: 94'
NUMBER OF TREES REQUIRED:				
SHADE TREES	3	4	2	2
EVERGREEN TREES	4	5	3	3
CREDIT FOR EXISTING VEGETATION (NO, YES AND X)	NO	NO	NO	NO
CREDIT FOR OTHER LANDSCAPING (NO, YES AND X)	NO	NO	NO	NO
NUMBER OF TREES PROVIDED:				
SHADE TREES (150)	3	4	2	2
EVERGREEN TREES (140)	4	5	3	3
OTHER TREES (21) SUBSTITUTION	---	---	---	---

SCHEDULE D S.W.M. AREA LANDSCAPING (FACILITY 3)				
LINEAR FEET OF PERIMETER	D1: 452'	D2: 193'	D3: 410'	D4: 160'
NUMBER OF TREES REQUIRED:				
SHADE TREES	9	1	8	3
EVERGREEN TREES	12	1	10	4
CREDIT FOR EXISTING VEGETATION (NO, YES AND X)	NO	YES, 150'	NO	NO
CREDIT FOR OTHER LANDSCAPING (NO, YES AND X)	NO	NO	NO	NO
NUMBER OF TREES PROVIDED:				
SHADE TREES (150)	15*	1	14*	5*
EVERGREEN TREES (140)	---	---	---	---
OTHER TREES (21) SUBSTITUTION	---	---	---	---

SHADE TREES WERE SUBSTITUTED FOR EVERGREEN TREES

NOTE:  
SEE SHEET 5 FOR  
BIO-RETENTION PLANT  
MATERIALS.

STATE OF MARYLAND  
 PROFESSIONAL ENGINEER  
 ROBERT H. VOGEL, P.E. 10103  
 FOR REVISION NO. 1 ONLY  
 2/6/04



PLAN  
SCALE: 1" = 100'

FISHER, COLLINS & CARTER, INC.  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
 ELICOTT CITY, MARYLAND 21042  
 410-461-2000

OWNER  
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 ELK RIDGE, MARYLAND 21227

DEVELOPER  
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 7320 GRACE DRIVE  
 COLUMBIA, MARYLAND 21044

NO.	REVISION	DATE
1	REVISE S.W.M. AREA (FACILITY 3) & ALL PLANTINGS	2.5.04
2	REVISION	DATE

LANDSCAPE PLAN  
**ROCKBURN MANOR**  
 Lots 1 Thru 22  
 ZONED R-20  
 TAX MAP NO. 37 PARCEL NO. 56 GRID NO. 5  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
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 SHEET 12 OF 15

F-00-66