SITE DEVELOPMENT PLAN

WESTERN REGIONAL PARK

GLENWOOD

HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS

CAPITAL PROJECT N-3932

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KEY TO PLAN SHEETS
SCALE: 1" = 400'

400 0 200 400 800

NORTH

BENCHMARK DATA

B.M. 14E1 ELEV. 591.029
N 596,213.616
E 1,301,991.909

BEING A STANDARD STAMPED (BRASS OR ALUMINUM) DISC SET ONTO A CONCRETE (3' DEEP) COLUMN. LOCATED APPROX. 54' EAST OF C&P POLE #20 AND APPROX. 74.4' NORTHEAST OF BG&E POLE #959734

B.M. 14FB ELEV. 620.437
N 595,657.268
E 1,306,552.158

BEING A STANDARD STAMPED (BRASS OR ALUMINUM) DISC SET ONTO A CONCRETE (3' DEEP) COLUMN. LOCATED APPROX. 98' SOUTH OF THE CENTERLINE OF MCKENDREE ROAD AND APPROX. 3.6' EAST OF THE EASTERN EDGE OF ROUTE 97

VICINITY MAP
Scale : 1" = 2000'

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STATE OF MARYLAND — STEPHEN RICHARD MORSE — NO. 15951 — REGISTERED PROFESSIONAL ENGINEER

(2)

10/19/12

PROFESSIONAL CERTIFICATE:

I HEREBY CERTIFY THAT THE INFORMATION CLOUDED AND LISTED UNDER REVISION # 1 (OR 2 DEPENDING ON THE PAGE) ON THIS DOCUMENT WAS PREPARED OR APPROVED BY ME, AND I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND (LICENSE NO. 15951, EXPIRATION DATE 3/15/2014). I DO NOT CERTIFY THE ACCURACY OF ANY OTHER INFORMATION, ALL OF WHICH WAS PREPARED BY OTHERS.

ADDRESS CHART

BUILDING	AREA/PAGE #	ADDRESS
IN-LINE HOCKEY	H / C7	14700 CARRS MILL ROAD
CONCESSION	I / C8	2360 ROUTE 97
MAINTENANCE	F / C5	15040 CARRS MILL ROAD
PRIMARY ENT. SIGN	J / C9	14714 CARRS MILL ROAD
SEC. ENT. SIGN	H / C7	14814 CARRS MILL ROAD
SERVICE ENT. SIGN	F / C5	15036 CARRS MILL ROAD
ALL OTHER CONSTRUCTION, INCLUDING GRADING, PARKING LOTS, TRAILS, COMFORT STATIONS, PICNIC PAVILIONS, PLAYING FIELDS, ETC.		14800 CARRS MILL ROAD

HOWARD COUNTY HEALTH DEPARTMENT NOTES

1. HOWARD COUNTY HEALTH DEPARTMENT APPROVAL IS BASED ON PHASE I MASS GRADING ONLY.
2. DETAILED SEPTIC SYSTEM CONSTRUCTION PLANS AND THE PERCOLATION CERTIFICATION PLAN MUST BE SUBMITTED AND APPROVED BY THE HOWARD COUNTY HEALTH DEPARTMENT PRIOR TO ISSUANCE OF THE BUILDING PERMIT.
3. A REVISED GROUNDWATER APPROPRIATIONS PERMIT APPLICATION, FOR THE PROPOSED FLOWS, MUST BE SUBMITTED TO THE HOWARD COUNTY HEALTH DEPARTMENT FOR FORWARDING TO THE MARYLAND DEPARTMENT OF THE ENVIRONMENT FOR REVIEW AND APPROVAL. THE GROUNDWATER APPROPRIATION PERMIT MUST BE ISSUED PRIOR TO ISSUANCE OF THE BUILDING PERMIT.
4. ON DECEMBER 23, 2004 WP-05-53 WAS ISSUED TO GRANT A REQUEST THAT SECTIONS 16.156 (m)(1)(i) AND 16.156 (m)(2) BE WAIVED FOR THE REACTIVATION OF APPROVAL FOR SDP-02-64 TO FILE FOR BUILDING PERMITS TO INITIATE CONSTRUCTION AT THE WESTERN REGIONAL PARK. THIS REQUESTED WAIVER WILL REMAIN VALID FOR ONE YEAR FROM THE DATE THAT THE REQUEST WAS GRANTED OR UNTIL DECEMBER 23, 2005.

GENERAL NOTES

1. OBSTRUCTIONS SHOWN ON THIS DRAWING ARE FOR THE CONVENIENCE OF THE CONTRACTOR ONLY AND KCI TECHNOLOGIES, INC., DOES NOT WARRANT OR GUARANTEE THE CORRECTNESS OR THE COMPLETENESS OF THE INFORMATION GIVEN. THE CONTRACTOR MUST VERIFY SUCH INFORMATION TO HIS OWN SATISFACTION.
2. SHOULD THE CONTRACTOR DISCOVER ANY DISCREPANCIES BETWEEN THE PLANS AND FIELD CONDITIONS, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY TO RESOLVE THE SITUATION. SHOULD THE CONTRACTOR MAKE FIELD CORRECTIONS OR ADJUSTMENTS WITHOUT NOTIFYING THE ENGINEER, THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR THOSE CHANGES.
3. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE ENGINEER OF ANY DEVIATION FROM THE PLANS PRIOR TO ANY CHANGE BEING MADE. ANY DEVIATION OF THE PLAN WITHOUT THE WRITTEN AUTHORIZATION FROM THE ENGINEER WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

[signature] 9/12/02
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

Cindy Hamilton 10/22/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

[signature] 10/23/02
DIRECTOR — DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

Penny Borenstein MD 10-17-02
COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT — DATE

PERMIT INFORMATION CHART

SUBDIVISION NAME			SECTION/AREA		LOT/PARCEL#
WESTERN REGIONAL PARK			N/A		PARCEL 'A'
PLAT# or L/F	GRID #	ZONING	TAX MAP NO.	ELECT. DISTR.	CENSUS TRACT
15581 – 15585	3,4, 9,& 10	RCDEO	14	04	6040.02
WATER CODE			SEWER CODE		
-					

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[signature] 10/15/02
DIRECTOR OF PUBLIC WORKS — DATE

[signature] 10/15/02.
CHIEF, BUREAU OF ENGINEERING — DATE

DEPARTMENT OF RECREATION AND PARKS
HOWARD COUNTY, MARYLAND

Kenneth M. Alban ACTING DIR 10/15/02
DIRECTOR OF RECREATION AND PARKS — DATE

NO.	REVISIONS DESCRIPTION	DATE
1	ADDED GENERAL NOTE # 4	7/20/04
2	THIS SHEET WAS MODIFIED TO INCLUDE THE RAINWATER HARVESTING FACILITIES DESIGN INFORMATION. REFER TO THE FULL RAINWATER HARVESTING PARKS FACILITIES DESIGN PACKAGE, CAPITAL PROJECT C-0313, DATED DECEMBER 2011.	9/05/12

KCI FILE: M:\ 2000 \ 0100057.5 \ UCOVER01.DGN

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STATE OF MARYLAND — MICHAEL NORMAN ARMSTRONG — NO. 16109 — REGISTERED PROFESSIONAL ENGINEER
Michael N. Armstrong

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

TITLE SHEET

SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

T1

SHEET NO.: 1 OF 113

SDP-02-64

GENERAL NOTES

1. THE SUB... PROPERT... ZONED RCDEO PER THE 10/18/9... ...PREHENSIVE ZONING PLAN.
2. NO CLEAR... GRADING OR CONSTRUCTION IS PERMITTED WITHIN ... REQUIRED WETLANDS, STREAMS OR THEIR BUFFERS AND FOREST CONSERVATION EASEME...TS, EXCEPT AS APPROVED PER WP-02-92.

   WP-02-92 STATES ...HAT ON MAY 6, 2002, "THE PLANNING DIRECTOR APPROVED YOUR REQUEST TO WAIVE SECTION 16.116(A) WHICH PROHIBITS GRADING, REMOVAL OF VEGETATIVE COVER AND TREES, PAVING AND NEW STRUCTURES WITHIN 25 FOOT OF A WETLAND AND 75 FEET OF A PERENNIAL STREAM BANK AND FROM SECTION 16.115(C)(2) WHICH PROHIBITS CLEARING, EXCAVATING, FILLING, ALTERING DRAINAGE, IMPERVIOUS PAVING, OR PLACEMENT OF STRUCTURES WITHIN THE 100 YEAR FLOOD PLAIN TO PERMIT GRADING CLEARING AND CONSTRUCTION FOR 10' WIDE ASPHALT PATHWAYS, WOODEN BOARDWALKS AND PEDESTRIAN BRIDGES FOR A TRAIL SYSTEM WITHIN THE PROPOSED COUNTY PARK.

   APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:

   1. THE WAIVER PETITION APPROVAL PERTAINS TO THE LIMIT OF DISTURBANCE WITHIN THE FLOOD PLAIN, AND WETLAND AND STREAM BUFFERS AS SHOWN ON REVISED SDP-02-64 AND THE WAIVER PETITION PLAN EXHIBIT ONLY. BEST MANAGEMENT PRACTICES FOR WORKING WITHIN THE WETLANDS, STREAMS, REQUIRED BUFFERS AND FLOOD PLAIN AREAS SHALL BE USED BY ALL CONTRACTORS WHEN CONSTRUCTING THE ASPHALT PATHWAYS, WOODEN BOARDWALKS AND PEDESTRIAN BRIDGES.
   2. ALL CONSTRUCTION AND GRADING DISTURBANCES FOR THE PROPOSED ASPHALT PATHWAYS, WOODEN BOARDWALKS AND PEDESTRIAN BRIDGES LOCATED WITHIN THE FLOOD PLAIN, WETLANDS, STREAMS AND THEIR REQUIRED BUFFERS ARE SUBJECT TO OBTAINING ALL NECESSARY WATER QUALITY CERTIFICATES AND PERMITS FROM THE MARYLAND DEPARTMENT OF THE ENVIRONMENT, THE DEPARTMENT OF NATURAL RESOURCES, AND/OR THE ARMY CORPS OF ENGINEERS, AS APPLICABLE.
   3. ALL GRADING, AND REMOVAL OF VEGETATIVE COVER AND TREES WITHIN THE 100 YEAR FLOOD PLAIN, STREAMS, WETLANDS AND THEIR REQUIRED BUFFERS SHALL BE MINIMIZED TO ACCOMMODATE THE PROPOSED PATHWAYS, BOARDWALKS, AND PEDESTRIAN BRIDGES, AND SHALL COMPLY WITH THE APPROVED GRADING AND SEDIMENT CONTROL PLAN FOR SDP-02-64
   4. COMPLIANCE WITH THE ENCLOSED COMMENTS FROM THE SOIL CONSERVATION DISTRICT (SCD) DATED APRIL 18 AND 30, 2002 AND THE POINT BY POINT RESPONSE TO THE SCD COMMENTS FROM THE DEPARTMENT OF RECREATION AND PARKS DATED APRIL 19, 2002."
3. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
4. THIS PROJECT COMPLIES WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION WITH A BREAK-EVEN OBLIGATION OF 41.77 ACRES WHICH HAS BEEN MET BY RECORDING 42.54 ACRES OF ON-SITE FOREST RETENTION EASEMENT ON A PLAT OF REVISION FOR THE WESTERN REGIONAL PARK AS PLAT NO. 15581 - 15585.
5. THERE ARE NO BURIAL GROUNDS OR CEMETERY SITES LOCATED ON THE PROJECT SITE.
6. REFERENCE NUMBERS OF OTHER APPROVED PLANS: CAPITAL PROJECT - C-0523A (GLENWOOD LIBRARY) F-01-174
7. UNLESS OTHERWISE NOTED,THE EXISTING TOPOGRAPHY IS TAKEN FROM AERIAL SURVEY WITH A CONTOUR INTERVAL OF TWO FEET,PREPARED BY 3DI, DATED MARCH 28, 2001 AND VARIOUS FIELD SURVEYS PERFORMED BY KCI TECHNOLOGIES, INC. PRIOR TO BEGINNING CONSTRUCTION OF FACILITIES IN ANY GIVEN SITE AREA, THE CONTRACTOR SHALL VERIFY TIE-IN ELEVATIONS SHOWN ON THESE PLANS, AS REQUIRED.
8. STORM DRAIN SYSTEM IS A PRIVATE SYSTEM.
9. FIRE PROTECTION SYSTEM (CHECKLIST ITEM #38) - A STATIC FIRE PROTECTION SYSTEM WILL BE SUBMITTED WITH ARCHITECTURAL DRAWINGS AND BUILDING PERMIT APPLICATIONS.
10. PRIVATE SEWAGE AND WATER SUPPLY SYSTEM (CHECKLIST ITEM 39) - A PERCOLATION, WELL AND SEPTIC PLAN HAVE BEEN SUBMITTED TO THE COUNTY HEALTH DEPARTMENT AND MDE FOR REVIEW.
11. PROPOSED WELL AND SEPTIC LOCATIONS ARE SHOWN ON THE SITE PLANS. FINAL WATER LINES WILL BE SHOWN WHEN WELL LOCATIONS ARE APPROVED BY MDE.
12. THE SDP IS SUBJECT TO THE FOURTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS
13. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
14. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313 1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
15. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1 800 257 7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
16. 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. ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
17. THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS. 14E1 AND 14FB WERE USED FOR THIS PROJECT.
18. WATER IS PRIVATE WELL.
19. SEWER IS PRIVATE SEPTIC SYSTEM.
20. STORMWATER MANAGEMENT IS TO BE PROVIDED IN BIORETENTION FACILITIES, SURFACE SAND FILTERS, DRY SWALES, AND DRY EXTENDED DETENTION PONDS. HOWARD COUNTY SHALL CONTROL, OWN, AND MAINTAIN STORMWATER MANAGEMENT ON THE SITE.
21. EXISTING UTILITIES ARE BASED ON FIELD SURVEYS AND AVAILABLE RECORD DRAWINGS.
22. THE FLOODPLAIN STUDY FOR THIS PROJECT WAS PREPARED BY KCI, TECHNOLOGIES, INC. DATED SEPT. 2001 AND WAS APPROVED ON SEPT. 2001.
23. THE WETLANDS DELINEATION STUDY FOR THIS PROJECT WAS PREPARED BY KCI TECHNOLOGIES, INC. A WAIVER PETITION APPLICATION HAS BEEN APPROVED TO ALLOW DISTURBANCES INSIDE THE STREAM BUFFER, 100 YEAR FLOOD PLAIN AREAS, AND WETLANDS FOR THE PATHS, BOARDWALKS, AND FOOT BRIDGES AS SHOWN ON THE PLAN.
24. A WETLAND PERMIT APPLICATION HAS BEEN SUBMITTED TO THE MDE TO ALLOW STREAM CROSSING AS SHOWN ON THE PLANS. TRACKING # 01-NT-0478/200260448.
25. NO TRAFFIC STUDY IS REQUIRED FOR THIS PROJECT.
26. IN COMPLIANCE WITH THE AMENDED HOWARD COUNTY BUILDING CODE SECTION 904.1.1 (COUNCIL BILL #81, 1997) MAINTENANCE BUILDINGS AND HOCKEY PAVILION EACH EXCEEDING 5,000 SF IN TOTAL AREA SHALL BE PROVIDED WITH A COMPLETE AUTOMATIC FIRE SUPPRESSION SYSTEM DESIGNED IN ACCORDANCE WITH NFPA#13.
27. REFERENCE PLAT NO.15581-15585 FOR FOREST CONSERVATION EASEMENT, NATURAL CREDIT AREA AND WETLAND AND FLOODPLAIN METES AND BOUNDS
28. THE PARK STAFF WILL COLLECT THE TRASH WITHIN THE PARK AND TRANSPORT IT TO THE TRASH DUMPSTERS THAT WILL BE LOCATED AT THE MAINTENANCE FACILITY.
29. ALL EXTERIOR LIGHT FIXTURES SHALL BE DIRECTED/REFLECTED AWAY FROM ALL ADJACENT PUBLIC ROADS AND RESIDENTIAL LAND USE AREAS IN ACCORDANCE WITH SECTION 134 OF THE ZONING REGULATIONS. FULL CUT-OFF LIGHTING IS PROPOSED FOR ALL EXTERIOR SITE LIGHTING.
30. THIS SDP IS SUBJECT TO THE RECORDATION OF FINAL SUBDIVISION PLAT, F-01-174 WHICH CONSOLIDATES PARCELS 33, 149, 249 AND 218, LOTS 1 AND 2 AND ESTABLISHES NEW PARCEL 'A', WESTERN REGIONAL PARK AND DELINEATES THE PROPOSED FOREST CONSERVATION EASEMENTS ON PARCEL 'A'.

SITE ANALYSIS DATA CHART

1. TOTAL PROJECT AREA: 189.88 AC (8,270,737 SF): DISTURBED AREA: 94.80 AC (4,129,328 SF.)
2. PRESENT ZONING DESIGNATION: RCDEO PROPOSED USE FOR SITE: REGIONAL PARK
3. BUILDING AND USE CHART

STRUCTURE	USE	SQUARE FOOT	NO. OF EMPLOYEES
CONCESSIONS BUILDING	FOOD SERVICE, STORAGE, RESTROOMS	2,099 SF FLOOR 2 - 576 SF	2
IN-LINE HOCKEY PAVILION	HOCKEY, PICNIC, RESTROOMS, STORAGE	36,973 SF FLOOR 2 - 840 SF	1
MAINTENANCE BUILDING	OFFICES, RESTROOMS, GARAGE, STORAGE	6,995 SF	15
PICNIC SHELTERS	PICNIC	5,617 SF	-
COMFORT STATIONS	RESTROOMS	612 SF	-

PARKING REQUIREMENTS (PER HOWARD COUNTY RECREATION & PARKS)			
FACILITY	QTY.	SPACES PER FACILITY	TOTAL SPACES
SOFTBALL FIELD	5	42	210
SOCCER FIELD	4	60	240
PICNIC SHELTER A	2	50	100
HOCKEY PAVILION	1	75	75
PICNIC SHELTER B& C	3	10	30
MAINTENANCE BUILDING	1	15	15
TENNIS	2	6	12
BASKETBALL	2	6	12
TOTAL REQUIRED			694 SPACES

4. PARKING SPACES PROVIDED ON SITE: 694 SPACES INCLUDING 28 HANDICAP SPACES THERE ARE AN ADDITIONAL 134 SPACES LOCATED AT THE LIBRARY
5. OPEN SPACE ON-SITE: 189.87 AC AND 100% OF GROSS AREA
6. BUILDING COVERAGE OF SITE: 1.20 AC AND 0.66% OF GROSS AREA
7. APPLICABLE DPZ FILE REFERENCES: F79-71, F99-83 VOID, SDP-99-21, WP-99-38, F-01-174 , WP-02-92

BENCHMARK DATA

B.M. 14E1 — ELEV. 591.029 N 596,213.616 E 1,301,991.909

BEING A STANDARD STAMPED (BRASS OR ALUMINUM) DISC SET ONTO A CONCRETE (3' DEEP) COLUMN. LOCATED APPROX. 54' EAST OF C&P POLE #20 AND APPROX. 74.4' NORTHEAST OF BG&E POLE #959734

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VICINITY MAP

Scale : 1" = 2000'

STANDARD YARD LIGHT ON 22' POLE
CITATION III BY WHITEWAY
SCALE : 1" = 20'

TYPICAL YARD LIGHT DETAIL
LeSABRE III BY WHITEWAY

FURNISHED BY OWNER, INSTALLED BY G.C.: LIGHT FIXTURE, MOUNTING ARM, POLE, ANCHOR BOLTS, NUTS, AND WASHERS BY OWNER, ALL OTHER MATERIALS FURNISHED AND INSTALLED BY G.C.

ALL EXTERIOR LIGHT FIXTURES SHALL BE DIRECTED/REFLECTED AWAY FROM ALL ADJACENT PUBLIC ROADS AND RESIDENTIAL LAND USE AREAS IN ACCORDANCE WITH SECTION 134 OF THE ZONING REGULATIONS. FULL CUT-OFF LIGHTING IS PROPOSED FOR ALL EXTERIOR SITE LIGHTING

LIGHTING DETAILS

NOTE: USE SHEETS C1-C11 FOR PARKING LAYOUT.

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

[signature] 9/12/02
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

[signature] 10/22/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

[signature] 10/23/02
DIRECTOR — DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

[signature] 10-17-02
COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[signature] 9/4/02
DIRECTOR OF PUBLIC WORKS — DATE

[signature] 9/4/02
CHIEF, BUREAU OF ENGINEERING — DATE

DEPARTMENT OF RECREATION AND PARKS
HOWARD COUNTY, MARYLAND

[signature] 9-4-02
DIRECTOR OF RECREATION AND PARKS — DATE

NO. | REVISIONS DESCRIPTION | DATE

KCI FILE: M:\ 2000 \ 0100057.S \ UCOVER01.DGN

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HUNT VALLEY, MARYLAND 21030
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WWW.KCI.COM
KCI TECHNOLOGIES

STATE OF MARYLAND • MICHAEL NORMAN ARMSTRONG • REGISTERED PROFESSIONAL ENGINEER • NO. 16109
[signature] 9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

GENERAL NOTES SITE DATA

SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO	01-00057
CAPITAL PROJECT NO	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE	

T2

SHEET NO.: 2 OF 113

SDP-02-64

OWNER INFORMATION TABLE

KEY	PARCEL	LOT	OWNER/ADDRESS	LIBER/FOLIO	TAX ACCOUNT	ZONING
1	A		HOWARD COUNTY MARYLAND DEPARTMENT OF PUBLIC WORKS 3430 COURT HOUSE DRIVE ELLICOTT CITY, MD 21043	3259/636	14-04-355822	RCDEO
2	125		GLENWOOD, LLC. c/o ROGER HOLLAND 751 FREDERICK STREET HANOVER, PA 17331	4456/640	14-04-308603	B2
3	15		HOWARD COUNTY MARYLAND GEORGE HOWARD BUILDING 3430 COURT HOUSE DRIVE ELLICOTT CITY, MD 21043	1186/329	14-04-319818	RCDEO
4	59 *(SEE NOTE A)		CLIFTON L. & LINDA K. CLEVENGER P.O. BOX 157 GLENWOOD, MD 21738	3272/226	14-04-340612	RCDEO
5	329		J. DAVID & ELIZABETH C. MULLINIX 14420 HOWARD ROAD DAYTON, MD 21036	1354/498	14-04-343417	RCDEO
6	14 *(SEE NOTE B)	PAR C	RICHARD A. & JAYNE L. NESSIF 15202 CARRS MILL ROAD WOODBINE, MD 21797	5047/437	14-04-361016	RCDEO
7	13 *(SEE NOTE C)		RICHARD A. & JAYNE L. NESSIF 15202 CARRS MILL ROAD WOODBINE, MD 21797	4132/650	14-04-326466	RCDEO
8	240	28	JAMES A. & LYNDA D. GAIDIS 15012 KENWOOD COURT WOODBINE, MD 21797	2786/637	14-04-351916	RCDEO
9	240	29	EDWARD C. & PAMELA A. SMITH 4344 LEEDS HALL DRIVE ONLEY, MD 20832	3636/254	14-04-351924	RCDEO
10	240	1	JOHN T. & PAMELA J. ANTLITZ 15028 KENWOOD COURT WOODBINE, MD 21797	4215/79	14-04-361059	RCDEO
11	240	2	STEPHEN G. & MAUREEN P. EDWARDS 15034 KENWOOD COURT WOODBINE, MD 21797	4403/141	14-04-361067	RCDEO
12	240	3	JOHN C. & OLIVE M. GOETZ 6320 NAVAL AVENUE LANHAM, MD 20706	4367/136	14-04-361075	RCDEO
13	240	4	MILES & KATHLEEN A. DILLON 22 BLACK OAK COURT REISTERSTOWN, MD 21136	4235/392	14-04-361083	RCDEO
14	240	PAR A	MICHAEL P. & STEPHANIE V. BROOKS 2106 HAMMOND AVENUE WEST FRIENDSHIP, MD 21794	4259/474	14-04-361091	RCDEO
15	144		ARNETT M. & LAURA A. DORSEY 2236 MILLERS MILL ROAD COOKSVILLE, MD 21723	4206/562	14-04-313623	RCDEO
16	192		JAMES S. LEE & WIFE 2322 MILLERS MILL ROAD COOKSVILLE, MD 21723	674/102	14-04-321278	RCDEO
17	141		JAMES A. HALL & WIFE 2324 MILLERS MILL ROAD COOKSVILLE, MD 21723	384/590	14-04-316746	RCDEO
18	28		ALBERT W. CLIPPER & WIFE 2328 MILLERS MILL ROAD COOKSVILLE, MD 21723	474/661	14-04-311779	RCDEO
19	98		THOMAS E KEYS & WIFE 2332 MILLERS MILL ROAD COOKSVILLE, MD 21723	278/406	14-04-320646	RCDEO
20	29		DONNA A. BURTON 2336 MILLERS MILL ROAD COOKSVILLE, MD 21723	1799/642	14-04-328604	RCDEO
21	115		BRYAN C. & EVA M. ALEXANDER 2340 MILLERS MILL ROAD COOKSVILLE, MD 21723	5132/424	14-04-328620	RCDEO
22	214	1	AUGUSTUS YOUNG & WIFE 2344 MILLERS MILL ROAD COOKSVILLE, MD 21723	846/472	14-04-337352	RCDEO
23	214	2	RONALD E. & PATRICIA E. MILES 2065 BALTIMORE BOULEVARD FINKSBURG, MD 21048	1556/614	14-04-337360	RCDEO
24	214	3	DAVID M. SKEBERDIS 2352 MILLERS MILL ROAD COOKSVILLE, MD 21723	4800/522	14-04-337379	RCDEO
25	30		KATIE S. MILES c/o MERLE C. MILES 2427 MILLERS MILL ROAD COOKSVILLE, MD 21723	303/487	14-04-322932	RCDEO
26	107		ELLA S. MILES 2409 MILLERS MILL ROAD COOKSVILLE, MD 21723	315/455	14-04-322916	RCDEO
27	137		MARGARET HARRIS & HUSBAND RTE. #97 BOX 2328 COOKSVILLE, MD 21723	626/156	14-04-317114	RCDEO
28	109		CREIGHTON NORTHROP 9819 NORTHBROOK COURT ELLICOTT CITY, MD 21042	4370/253	14-04-326075	RCDEO
29	32		CECIL R. & MADGE JONES 875 THE OLD STATION COURT WOODBINE, MD 21797	1832/129	14-04-308778	RCDEO

NOTES:
A. PARCEL 59 IS AN EASEMENT HELD BY THE MARYLAND AGRICULTURAL LAND PRESERVATION FOUNDATION - FILE #13-04-80-05E.
B. PARCEL 13 IS AN EASEMENT HELD BY THE HOWARD COUNTY AGRICULTURAL LAND PRESERVATION PROGRAM - FILE #HO-90-10-E (P/O)
C. PARCEL 14 IS AN EASEMENT HELD BY THE HOWARD COUNTY AGRICULTURAL LAND PRESERVATION PROGRAM - FILE #HO-97-03-PPCL (P/O)

LEGEND

— 90 —	EX. INDEX CONTOUR
-----	EX. 2' INTERMEDIATE CONTOUR
ChA	SOIL LINE
— — —	PROPERTY BOUNDARY
○	EX. TREE
	EX. WOODS LINE
— W —	SURVEYED WETLAND
— — —	EX. STREAMS
FC123	FOREST CONSERVATION EASEMENT LINE
	STORMWATER MANAGEMENT CREDIT EASEMENT

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

[signature] 9/12/02
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

[signature] 10/22/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

[signature] 10/23/02
DIRECTOR — DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

[signature] 10-17-02
COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT — DATE

NORTH

GRAPHIC SCALE
200 0 100 200 400
(IN FEET)
1 inch = 200ft.

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 0100057.5 \ UBOUND01.DGN

KCI TECHNOLOGIES INC.
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STATE OF MARYLAND ★ MICHAEL NORMAN ARMSTRONG ★ NO. 16109 ★ REGISTERED PROFESSIONAL ENGINEER
[signature] 9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

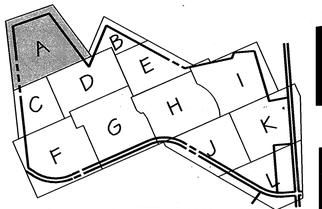
SITE BOUNDARY

SCALE: 1" = 200'
DATE: 06-12-02
KCI JOB NO.: 01-00057
CAPITAL PROJECT NO.: N-3932
PERMIT ISSUE:
CONSTRUCTION ISSUE:

B1

SHEET NO.: 3 OF 113

SDP-02-64



PLAN SHEET LOCATOR

NOT TO SCALE

NOTE

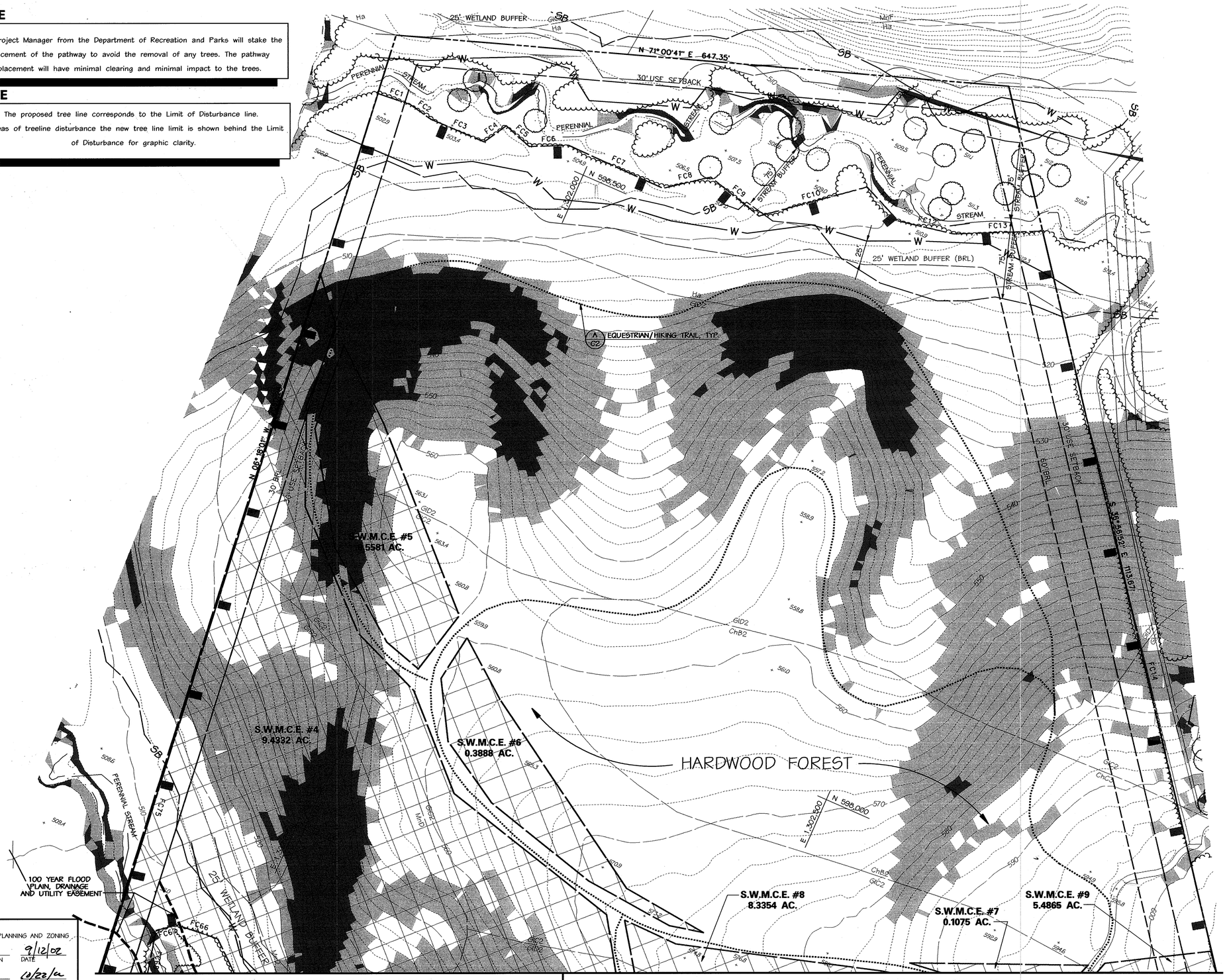
The Project Manager from the Department of Recreation and Parks will stake the placement of the pathway to avoid the removal of any trees. The pathway placement will have minimal clearing and minimal impact to the trees.

NOTE

The proposed tree line corresponds to the Limit of Disturbance line. In areas of treeline disturbance the new tree line limit is shown behind the Limit of Disturbance for graphic clarity.

LEGEND

- EX. INDEX CONTOUR
- EX. 2' INTERMEDIATE CONTOUR
- SOIL LINE
- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- EX. WOODS LINE
- 15-24.9% SLOPES
- 25%+ SLOPES
- 100 YEAR FLOODPLAIN
- SURVEYED WETLAND
- 25' WETLAND BUFFER
- EX. STREAMS
- 75' STREAM BUFFER
- EQUESTRIAN/HIKING TRAIL
- EX. SPOT ELEVATION
- PROPOSED TREE LINE TO REMAIN
- PROPOSED ASPHALT PATH
- PROPOSED CONCRETE PATH
- PROPOSED FENCE LINE
- PROPOSED RETAINING WALL
- PROPOSED CONC. CURB & GUTTER
- PROPOSED ASPHALT PAVING
- 620 PROPOSED INDEX CONTOUR
- 614 PROPOSED INTERMEDIATE CONTOUR
- +617.25 PROPOSED SPOT ELEVATION
- PROPOSED INLET
- PROPOSED STORM DRAIN END SECTION
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN
- PROPOSED SEPTIC TANK
- PROPOSED SANITARY SEWER
- PROPOSED SEWER MANHOLE
- PROPOSED SEPTIC DRAIN FIELD
- PROPOSED MONITORING WELL
- PROPOSED 2" WATER LINE
- EXISTING WELL
- PROPOSED LIGHT POLE
- PROPOSED PADDOCK FENCE
- SWM CREDIT EASEMENT
- FOREST CONSERVATION EASEMENT & FOREST RETENTION SIGN



MATCHLINE - SEE SHEET C2, PLAN OF AREA C

MATCHLINE - SEE SHEET C3

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	9/12/02 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	10/22/02 DATE
DIRECTOR	10/23/02 DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER F.S. HOWARD COUNTY HEALTH DEPARTMENT	10-17-02 DATE

NORTH

GRAPHIC SCALE

50 0 25 50 100

(IN FEET)
1 inch = 50ft.

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 0100057.S \ USITE01.DGN

KCI TECHNOLOGIES INC.
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STATE OF MARYLAND ★ MICHAEL NORMAN ARMSTRONG ★ NO. 16 ★ REGISTERED PROFESSIONAL ENGINEER

Michael N. Armstrong 9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

SITE PLAN
AREA A

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

C1

SHEET NO.: 4 OF 113

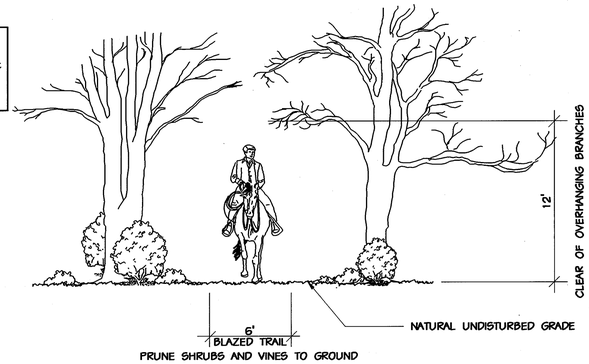
SDP-02-64

NOTES

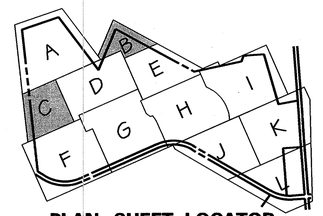
The Project Manager from the Department of Recreation and Parks will stake the placement of the pathway to avoid the removal of any trees. The pathway placement will have minimal clearing and minimal impact to the trees.

NOTES

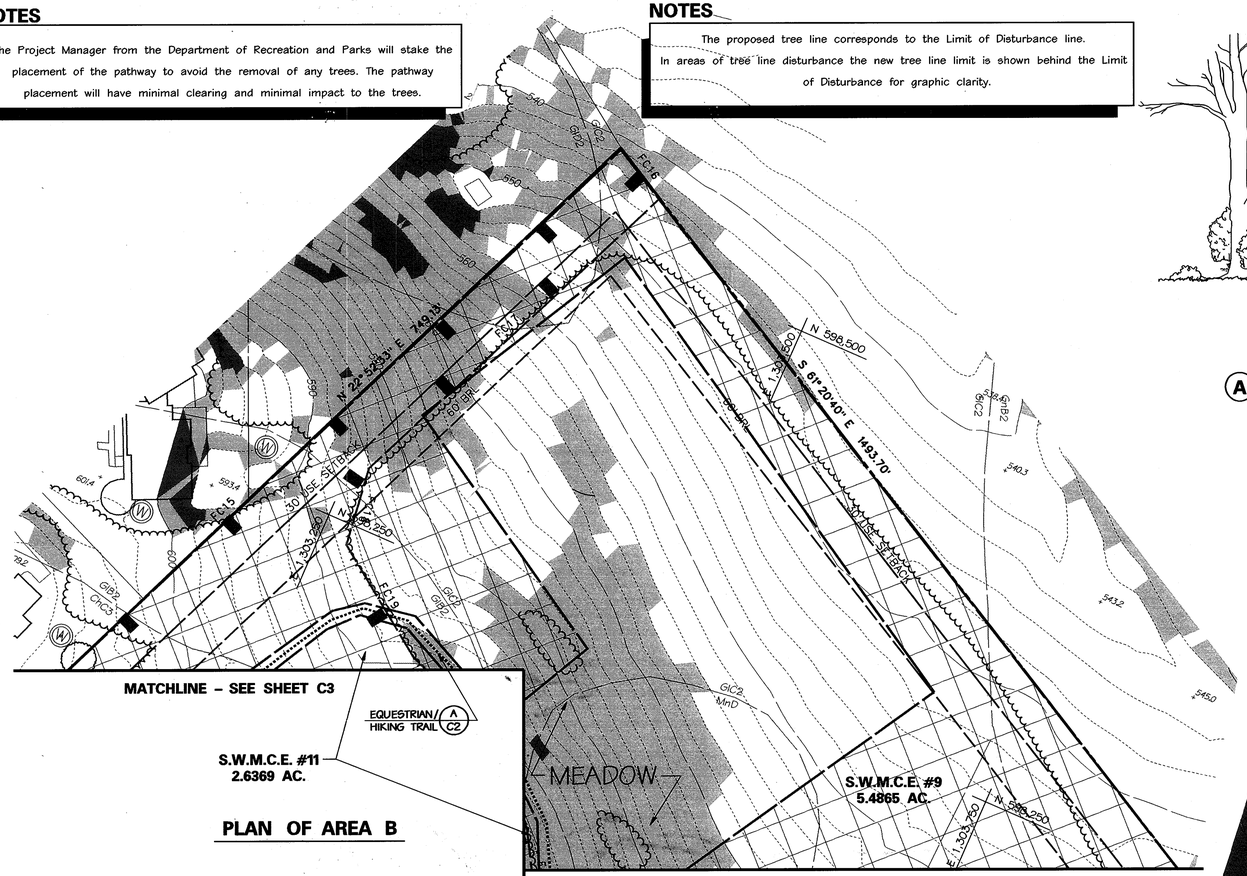
The proposed tree line corresponds to the Limit of Disturbance line. In areas of tree line disturbance the new tree line limit is shown behind the Limit of Disturbance for graphic clarity.



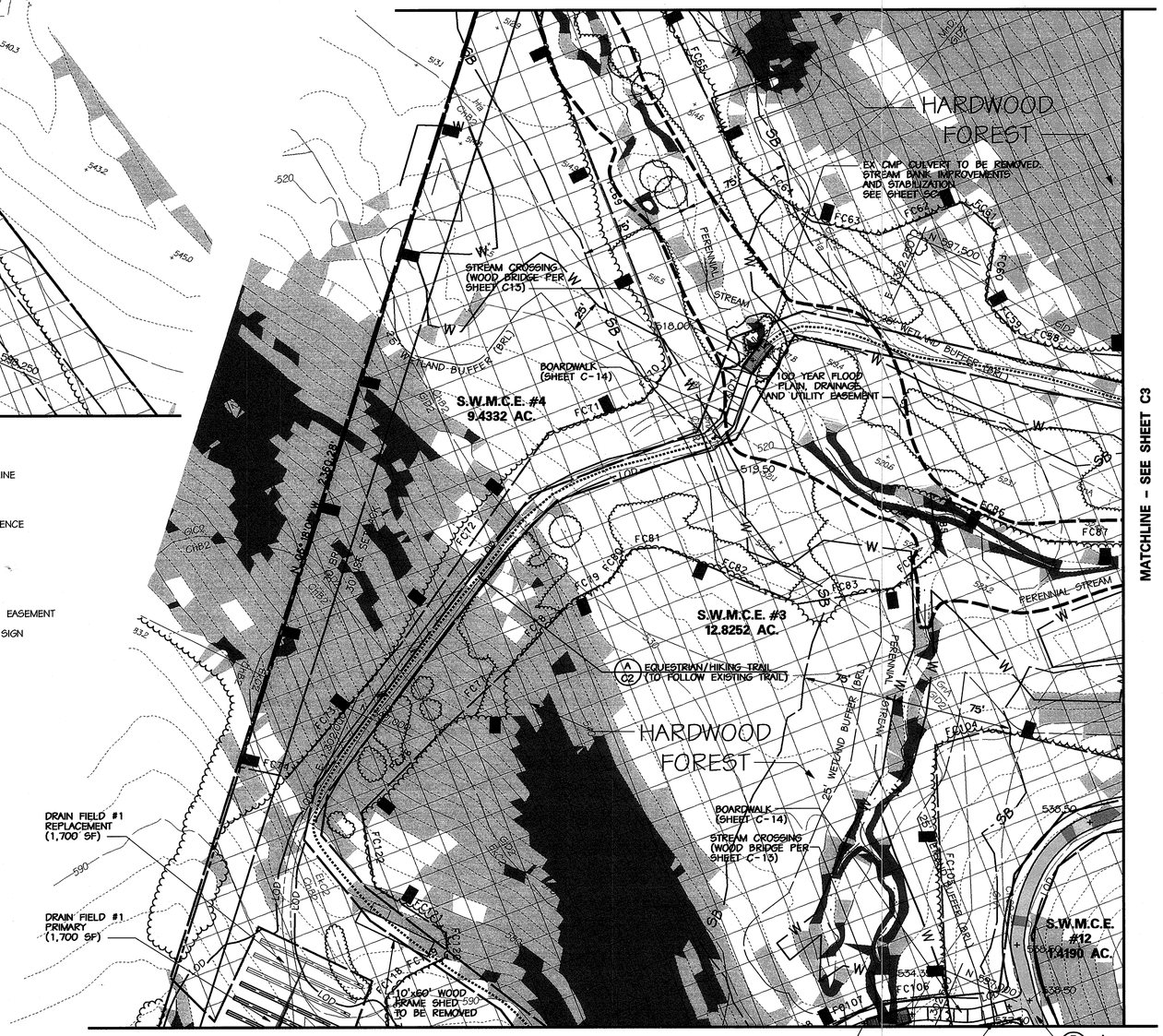
(A) EQUESTRIAN TRAIL DETAIL
NOT TO SCALE



PLAN SHEET LOCATOR
NOT TO SCALE



PLAN OF AREA B



PLAN OF AREA C

LEGEND

- EX. INDEX CONTOUR (590)
- EX. 2' INTERMEDIATE CONTOUR
- SOIL LINE (GIC2)
- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- EX. WOODS LINE
- 15-24.9% SLOPES
- 25%+ SLOPES
- 100 YEAR FLOODPLAIN
- SURVEYED WETLAND (W)
- 25' WETLAND BUFFER
- EX. STREAMS
- 75' STREAM BUFFER (SB)
- EQUESTRIAN/HIKING TRAIL
- EX. SPOT ELEVATION (570.9)
- PROPOSED ASPHALT PATH
- PROPOSED CONCRETE PATH
- PROPOSED TREE LINE TO REMAIN
- PROPOSED FENCE LINE
- PROPOSED RETAINING WALL
- PROPOSED CONC. CURB & GUTTER
- PROPOSED ASPHALT PAVING
- PROPOSED INDEX CONTOUR (620)
- PROPOSED INTERMEDIATE CONTOUR (614)
- PROPOSED SPOT ELEVATION (+617.25)
- PROPOSED INLET
- PROPOSED STORM DRAIN END SECTION
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN
- PROPOSED SEPTIC TANK
- PROPOSED SANITARY SEWER (S)
- PROPOSED SEWER MANHOLE
- PROPOSED SEPTIC DRAIN FIELD
- PROPOSED MONITORING WELL
- EXISTING WELL (W)
- PROPOSED 2" WATER LINE
- PROPOSED LIGHT POLE
- PROPOSED PADDOCK FENCE
- SWM CREDIT EASEMENT
- FOREST CONSERVATION EASEMENT & FOREST RETENTION SIGN (FC67)

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/28/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER — DATE 10-17-02
HOWARD COUNTY HEALTH DEPARTMENT

NORTH

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50ft.

NO.	REVISIONS	DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 01000057.S \ USITE02.DGN

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TECHNOLOGIES WWW.KCI.COM

STATE OF MARYLAND * MICHAEL JAMES GRAHAM * 21431 * REGISTERED PROFESSIONAL ENGINEER
Michael J. Graham 9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-515-4640

SITE PLAN
AREAS B & C

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

C2

SHEET NO.: 5 OF 113

SDP-02-64

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

MATCHLINE – SEE SHEET C1

MATCHLINE – SEE SHEET C2, PLAN OF AREA B

MATCHLINE – SEE SHEET C2, PLAN OF AREA C

MATCHLINE – SEE SHEET C4

MATCHLINE – SEE SHEET C5

MATCHLINE – SEE SHEET C6

S.W.M.C.E. #4
9.4332 AC.

S.W.M.C.E. #7
0.1075 AC.

S.W.M.C.E. #9
5.4865 AC.

S.W.M.C.E. #11
2.6369 AC.

S.W.M.C.E. #14
0.1019 AC.

S.W.M.C.E. #8
8.3354 AC.

S.W.M.C.E. #3
12.8252 AC.

S.W.M.C.E. #12
1.4190 AC.

HARDWOOD FOREST

MEADOW

EQUESTRIAN/HIKING TRAIL

100 YEAR FLOOD PLAIN, DRAINAGE AND UTILITY EASEMENT

PERENNIAL STREAM

INTERMITTENT STREAM

STREAM CROSSING (WOOD BRIDGE PER SHEET C-13)

25% WETLAND BUFFER (BRL)

LIMITS OF TREE REMOVAL

DRAIN FIELD #2 PRIMARY (46,000 SF)

10' ASPHALT PATH

BOARDWALK (SHEET C-14)

BLOCK MODULAR RETAINING WALL (3' MAX. HT.)

SWM POND F SEE SHEET SW5 FOR PLAN AND DETAILS

30" RCCP

S 36°56'52" E 1113.67'

N 22°52'33" E 749.13'

N 89°17'50" E 1302.50'

N 89°17'50" E 1302.25'

589.00

599.20

601.80

601.20

598.30

595.50

PLAN SHEET LOCATOR

NOT TO SCALE

LEGEND

- EX. INDEX CONTOUR
- EX. 2' INTERMEDIATE CONTOUR
- SOIL LINE
- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- EX. WOODS LINE
- 15-24.9% SLOPES
- 25%+ SLOPES
- 100 YEAR FLOODPLAIN
- SURVEYED WETLAND
- 25' WETLAND BUFFER
- EX. SPOT ELEVATION
- EX. STREAMS
- 75' STREAM BUFFER
- EQUESTRIAN/HIKING TRAIL
- PROPOSED TREE LINE TO REMAIN
- PROPOSED ASPHALT PATH
- PROPOSED CONCRETE PATH
- PROPOSED FENCE LINE
- PROPOSED RETAINING WALL
- PROPOSED CONC. CURB & GUTTER
- PROPOSED ASPHALT PAVING
- PROPOSED INDEX CONTOUR
- PROPOSED INTERMEDIATE CONTOUR
- PROPOSED SPOT ELEVATION
- PROPOSED INLET
- PROPOSED STORM DRAIN END SECTION
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN
- PROPOSED SEPTIC TANK
- PROPOSED SANITARY SEWER
- PROPOSED SEWER MANHOLE
- PROPOSED SEPTIC DRAIN FIELD
- PROPOSED MONITORING WELL
- PROPOSED 2" WATER LINE
- EXISTING WELL
- PROPOSED LIGHT POLE
- PROPOSED PADDOCK FENCE
- SWM CREDIT EASEMENT
- FC67 FOREST CONSERVATION EASEMENT & FOREST RETENTION SIGN

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/23/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, H.D. — DATE 10-17-02
HOWARD COUNTY HEALTH DEPARTMENT

NOTE

The proposed tree line corresponds to the Limit of Disturbance line. In areas of treeline disturbance the new tree line limit is shown behind the Limit of Disturbance for graphic clarity.

NOTE

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NORTH

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50ft.

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000\ 01000057.5 \ USITE03.DGN

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STATE OF MARYLAND • MICHAEL ARMSTRONG • 21677 • REGISTERED PROFESSIONAL ENGINEER
9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

SITE PLAN
AREA D

SCALE: 1" = 50'
DATE: 06-12-02
KCI JOB NO.: 01-00057
CAPITAL PROJECT NO.: N-3932
PERMIT ISSUE:
CONSTRUCTION ISSUE:

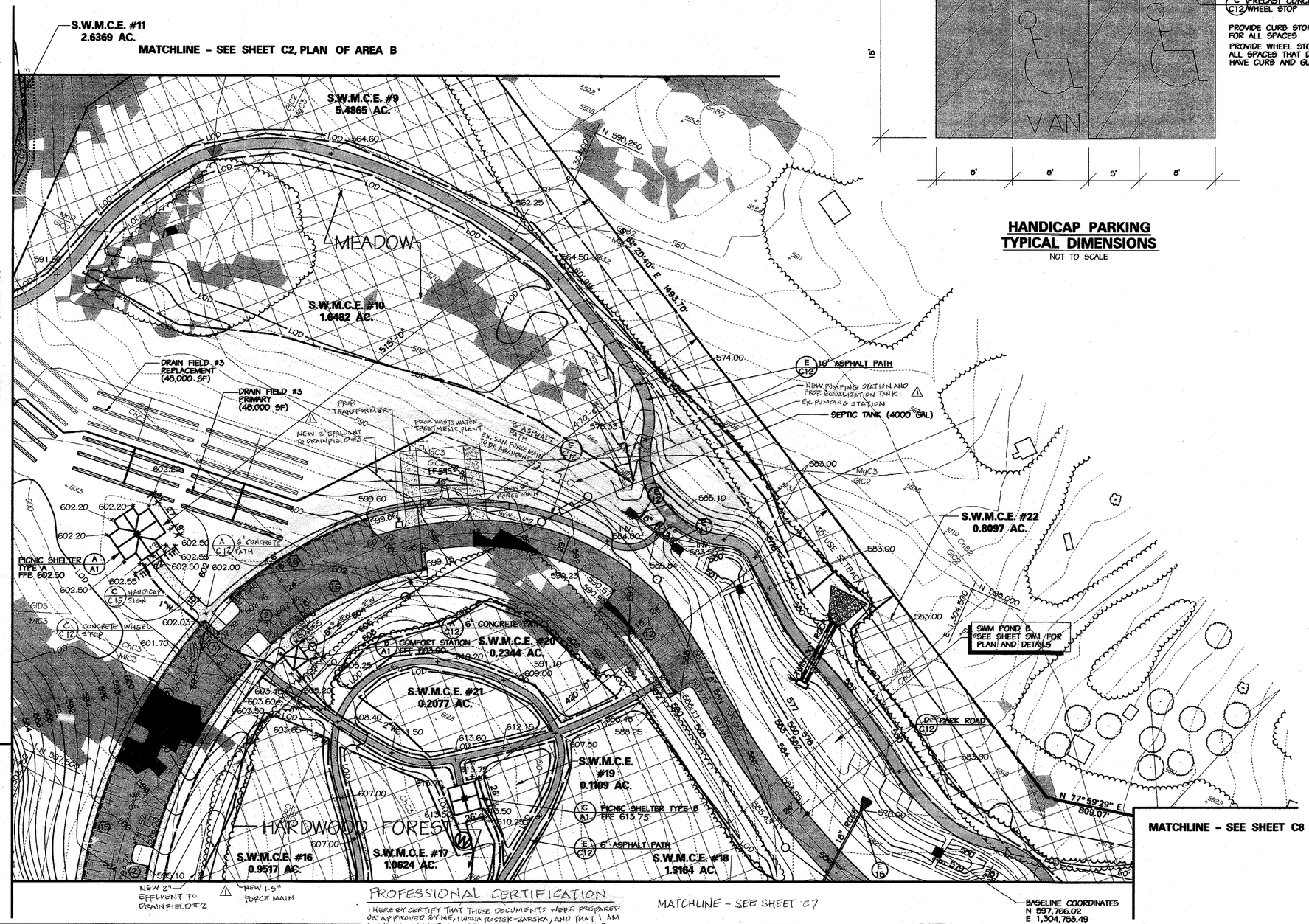
C3

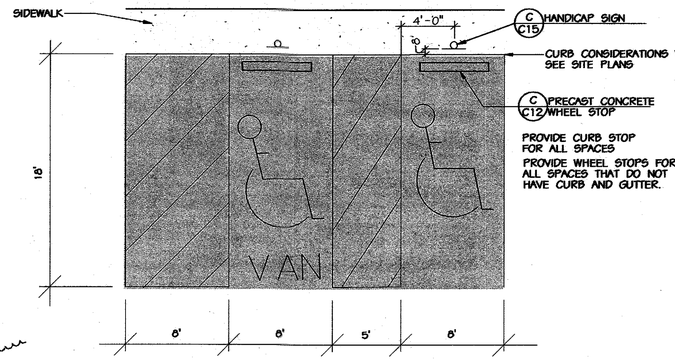
SHEET NO.: 6 OF 113

SDP-02-64

NOTES

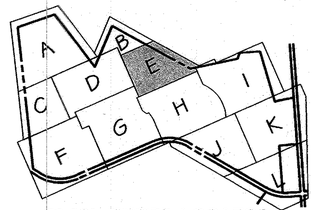
1. THE STORMWATER MANAGEMENT FACILITIES AND STORMWATER MANAGEMENT SWALES ARE OWNED BY AND WILL BE MAINTAINED BY THE HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS.





HANDICAP PARKING TYPICAL DIMENSIONS

NOT TO SCALE



PLAN SHEET LOCATOR

NOT TO SCALE

LEGEND

- EX. INDEX CONTOUR
- EX. 2' INTERMEDIATE CONTOUR
- SOIL LINE
- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
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- 15-24.9% SLOPES
- 25%+ SLOPES
- 100 YEAR FLOODPLAIN
- EX. SPOT ELEVATION
- SURVEYED WETLAND
- 25' WETLAND BUFFER
- EX. STREAMS
- 75' STREAM BUFFER
- EQUESTRIAN/HIKING TRAIL
- PROPOSED TREE LINE TO REMAIN
- PROPOSED ASPHALT PATH
- PROPOSED CONCRETE PATH
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- PROPOSED ASPHALT PAVING
- PROPOSED INDEX CONTOUR
- PROPOSED INTERMEDIATE CONTOUR
- PROPOSED SPOT ELEVATION
- PROPOSED INLET
- PROPOSED STORM DRAIN END SECTION
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN
- PROPOSED SEPTIC TANK
- PROPOSED SANITARY SEWER
- PROPOSED SEWER MANHOLE
- PROPOSED SEPTIC DRAIN FIELD
- PROPOSED MONITORING WELL
- PROPOSED 2" WATER LINE
- EXISTING WELL
- PROPOSED LIGHT POLE
- PROPOSED PADDOCK FENCE
- SWM CREDIT EASEMENT
- FOREST CONSERVATION EASEMENT
- FCET & FOREST RETENTION SIGN

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, LIWONA ROSTEK-ZARSKA, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21245 EXPIRATION DATE: JUNE 9, 2018.

LIWONA ROSTEK-ZARSKA — REG. NO. 21245 — STATE OF MARYLAND

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/23/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, HOWARD COUNTY HEALTH DEPARTMENT — DATE 10-17-02

REVISION #1 - BLDG (07/29/16)
ADDED WASTE WATER TREATMENT PLANT MODIFIED EX. PUMPING STATIONS, ADDED NEW PUMPING STATIONS AND INSTALLED NEW 1.5" & 2" FORCE MAINS.

MATCHLINE – SEE SHEET C7

NOTE: THE TOTAL LIMIT OF DISTURBANCE IS ABOUT 4,977 SF AND THEREFORE, IT IS EXEMPT FROM SWM. ANY FUTURE DISTURBANCE ADDED TO THE 4,977 SF THAT EXCEEDS 5,000 SF SHALL COMPLY WITH CURRENT STORMWATER MANAGEMENT REQUIREMENTS.

NOTE

The proposed tree line corresponds to the Limit of Disturbance line. In areas of treeline disturbance the new tree line limit is shown behind the Limit of Disturbance for graphic clarity.

NOTE

The Project Manager from the Department of Recreation and Parks will stake the placement of the pathway to avoid the removal of any trees. The pathway placement will have minimal clearing and minimal impact to the trees.

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50ft.

NORTH

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

NO.	REVISIONS	DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 0100057.5 \ USITE04.DGN

KCI TECHNOLOGIES INC.
ENGINEERS • PLANNERS • SURVEYORS
10 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND 21030
PHONE (410) 316-7800 FAX: (410) 316-7817
TECHNOLOGIES WWW.KCI.COM

STATE OF MARYLAND — MICHAEL H. TROTTER — REG. NO. 21437 — PROFESSIONAL ENGINEER — 9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410) 313-4620

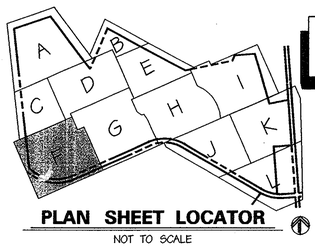
SITE PLAN
AREA E

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

C4

SHEET NO.: 7 OF 113

SDP-02-64



PLAN SHEET LOCATOR

NOT TO SCALE

The Project Manager from the Department of Recreation and Parks will stake the placement of the pathway to avoid the removal of any trees. The pathway placement will have minimal clearing and minimal impact to the trees.

LEGEND

- EX. INDEX CONTOUR (550)
- EX. 2' INTERMEDIATE CONTOUR
- SOIL LINE (GIC2)
- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- EX. WOODS LINE
- 15-24.9% SLOPES
- 25%+ SLOPES
- 100 YEAR FLOODPLAIN
- SURVEYED WETLAND (W)
- WETLAND BUFFER
- EX. STREAMS
- 75' STREAM BUFFER (SB)
- EQUESTRIAN/HIKING TRAIL
- EX. SPOT ELEVATION (+599)
- PROPOSED TREE LINE TO REMAIN
- PROPOSED ASPHALT PATH
- PROPOSED CONCRETE PATH
- PROPOSED FENCE LINE
- PROPOSED RETAINING WALL
- PROPOSED CONC. CURB & GUTTER
- PROPOSED ASPHALT PAVING
- PROPOSED INDEX CONTOUR (620)
- PROPOSED INTERMEDIATE CONTOUR (614)
- PROPOSED SPOT ELEVATION (+617.25)
- PROPOSED INLET
- PROPOSED STORM DRAIN END SECTION
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN
- PROPOSED SEPTIC TANK
- PROPOSED SANITARY SEWER
- PROPOSED SEWER MANHOLE
- PROPOSED SEPTIC DRAIN FIELD
- PROPOSED MONITORING WELL
- PROPOSED WATER LINE
- EXISTING WELL (W)
- PROPOSED LIGHT POLE
- PROPOSED PADDOCK FENCE
- SWM CREDIT EASEMENT
- FOREST CONSERVATION EASEMENT & FOREST RETENTION SIGN (FC67)

CONCRETE SLAB A/C12 · SEPTIC TANK (1000 GAL) · DRAIN FIELD #1 PRIMARY (1,700 SF) · S.W.M.C.E. #4 9.4332 AC.

MATCHLINE – SEE SHEET C2, PLAN OF AREA C

STREAM CROSSING (WOOD BRIDGE PER SHEET C-13)

MATCHLINE – SEE SHEET C3

DUMPSTER PAD C/C18 · EX. SHED (6'x16') TO BE REMOVED · TYPICAL OPEN STORAGE BIN · EX. 2 STORY FRAME DWELLING (41'x52') TO BE REMOVED · ASPHALT VEHICLE PARKING · REDUCED STORAGE BIN AREA · HOSE BIB AND CONCRETE PAD · HARDWOOD FOREST

MAINTENANCE BUILDING (11'X71') FFE 597.25 F/A1 · CONCRETE WHEEL STOP A/C12 · HANDICAP SIGN C/C16

EX. SHED (7'x11') TO BE REMOVED · EX. 2 STORY FRAME DWELLING (40'x55') TO BE REMOVED · EX. SHED (10'x12') TO BE REMOVED · EX. 2 STORY FRAME DWELLING (42'x76') TO BE REMOVED · ASPHALT TRAILER PARKING · 6 HORSE TRAILER PARKING SPACES (59'x18') · EX. DRIVE TO BE REMOVED

B/C16 6' CHAIN-LINK FENCE · AREA OF WORK B · A/C12 EQUESTRIAN/HIKING TRAIL TYP. · FIRE SUPPRESSION TANK · HOSE BIB AND CONCRETE PAD · EXISTING SEPTIC DRY WELL · 10' ASPHALT PATH E/C12

EXISTING SEPTIC FIELD - TO BE ABANDONED · S.W.M.C.E. #3 12.8252 AC. · MEADOW

S.W.M.C.E. #12 1.4190 AC. · S.W.M.C.E. #13 3.0500 AC.

EX. WELL · GRASS ISLAND · DIVERSION STRUCTURE (SEE SHEET SWG) · SCRUB/SHRUB AND TREES · BIORETENTION AREA # FF SEE SHEET SWG FOR PLANS AND DETAILS · STONE DUMPRAP SEE SHEET SWG

S.W.M.C.E. #1 0.1155 AC. · S.W.M.C.E. #2 0.5314 AC.

PROPOSED PUBLIC SIGHT DISTANCE EASEMENT

INTERSECTION COORDINATES N 596,007.20 E 1,302,332.57

SEE SHEET D5 FOR DETAIL PLAN · SEE SHEET D3 FOR DETAIL PLAN

D/C16 ENTRANCE GATE · SERVICE ENTRANCE MAINTENANCE/ HORSE TRAILERS ONLY · B/C12 ENTRANCE SIGN · E/C12 10' ASPHALT PATH · PADDOCK FENCE

FIELD 9 ATHLETIC TURF · D/C16 WARNING TRACK · A/C16 INFIELD MIX · B/C16 6' CHAIN LINK FENCE

H/C12 PADDOCK FENCE · 5' CHAIN LINK FENCE B/C16 · 50' USE SETBACK FROM FOW · SIGHT LINE · 75' BRL · 25' WETLAND BUFFER (TYP.) · PERENNIAL STREAM · INTERMITTENT STREAM · 50' PEDESTRIAN GATE E/C16 · DOUBLE GATE C/C16 · DRAIN PAN D/C15 · A/C15 CONCRETE RETAINING WALL (5' MAX. HEIGHT) · CONCRETE WALK A/C12

VEHICULAR INGRESS AND EGRESS ACCESS RESTRICTED

CARRS MILL ROAD
COUNTY OWNED PUBLIC ROAD
60' W. R.O.W.
DESIGNATED SCENIC ROAD
COLLECTOR ROAD

PROPOSED PUBLIC SIGHT DISTANCE EASEMENT

NOTE: PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL VERIFY ROAD TIE-IN ELEVATIONS SHOWN HEREON.

THE PARK STAFF WILL COLLECT THE TRASH WITHIN THE PARK AND TRANSPORT IT TO THE TRASH DUMPSTERS THAT WILL BE LOCATED AT THE MAINTENANCE FACILITY.

The proposed tree line corresponds to the Limit of Disturbance line. In areas of treeline disturbance the new tree line limit is shown behind the Limit of Disturbance for graphic clarity.

NORTH

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50ft.

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/25/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/25/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER HO. CO. HEALTH DEPARTMENT — DATE 10-17-02

MATCHLINE – SEE SHEET C6

PROFESSIONAL CERTIFICATE:

I HEREBY CERTIFY THAT THE INFORMATION CLOUDED AND LISTED UNDER REVISION #1 (OR 2 DEPENDING ON THE PAGE) ON THIS DOCUMENT WAS PREPARED OR APPROVED BY ME, AND I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND (LICENSE NO. 19951 EXPIRATION DATE 3/15/2014). I DO NOT CERTIFY THE ACCURACY OF ANY OTHER INFORMATION, ALL OF WHICH WAS PREPARED BY OTHERS.

10/17/02

NO.	REVISIONS	DESCRIPTION	DATE
1	ADDED CHANGES TO PAVING, BUILDING, AND UTILITY LAYOUT		1/09/07
2	THIS SHEET WAS MODIFIED TO INCLUDE THE RAINWATER HARVESTING FACILITIES DESIGN INFORMATION. REFER TO THE FULL RAINWATER HARVESTING PARKS FACILITIES DESIGN PACKAGE, CAPITAL PROJECT C-0313, DATED DECEMBER 2011.		9/05/12

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KCI TECHNOLOGIES INC.
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KCITECHNOLOGIES WWW.KCI.COM

STATE OF MARYLAND ... PROFESSIONAL ENGINEER
9/3/02

WESTERN REGIONAL PARK

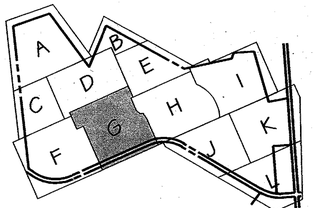
HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
3300 CENTENNIAL LANE
COLUMBIA, MARYLAND 21046-1677
(410) 313-4640

SITE PLAN
AREA F

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

C5

SHEET NO.: 8 OF 135



PLAN SHEET LOCATOR

NOT TO SCALE

LEGEND

- EX. INDEX CONTOUR
- EX. 2' INTERMEDIATE CONTOUR
- SOIL LINE
- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- EX. WOODS LINE
- 15-24.9% SLOPES
- 25%+ SLOPES
- 100 YEAR FLOODPLAIN
- SURVEYED WETLAND
- 25' WETLAND BUFFER
- EX. STREAMS
- 75' STREAM BUFFER
- EQUESTRIAN/HIKING TRAIL
- EX. SPOT ELEVATION
- PROPOSED TREE LINE TO REMAIN
- PROPOSED ASPHALT PATH
- PROPOSED CONCRETE PATH
- PROPOSED FENCE LINE
- PROPOSED RETAINING WALL
- PROPOSED CONC. CURB & GUTTER
- PROPOSED ASPHALT PAVING
- PROPOSED INDEX CONTOUR
- PROPOSED INTERMEDIATE CONTOUR
- PROPOSED SPOT ELEVATION
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- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN
- PROPOSED SEPTIC TANK
- PROPOSED SANITARY SEWER
- PROPOSED SEWER MANHOLE
- PROPOSED SEPTIC DRAIN FIELD
- PROPOSED MONITORING WELL
- PROPOSED 2" WATER LINE
- EXISTING WELL
- PROPOSED LIGHT POLE
- PROPOSED PADDOCK FENCE
- SWM CREDIT EASEMENT
- FOREST CONSERVATION EASEMENT & FOREST RETENTION SIGN

NOTE

The Project Manager from the Department of Recreation and Parks will stake the placement of the pathway to avoid the removal of any trees. The pathway placement will have minimal clearing and minimal impact to the trees.

NOTE

The proposed tree line corresponds to the Limit of Disturbance line. In areas of treeline disturbance the new tree line limit is shown behind the Limit of Disturbance for graphic clarity.

REVISION #1 - BLDG(07/29/16)
ADDED NEW WASTEWATER TREATMENT PLANT, MODIFIED EX. PUMPING STATIONS, ADDED NEW PUMPING STATIONS AND INSTALLED NEW 1.5" & 2" FORCEMAINS.

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENT WERE PREPARED OR APPROVED BY ME, IWONA ROSEK-ZARSKA, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE No. 21295, EXPIRATION DATE: JUNE 9, 2018.

Iwona Rosek-Zarska
11/8/16

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50ft.

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02
DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER — DATE 10-17-02
HOWARD COUNTY HEALTH DEPARTMENT

S.W.M.C.E. #12
1.4190 AC.

S.W.M.C.E. #8
8.3354 AC.

MATCHLINE - SEE SHEET C3

MATCHLINE - SEE SHEET C4

MATCHLINE - SEE SHEET C7

MATCHLINE - SEE SHEET C5

BOARDWALK

SWM POND F
FOR PLAN AND DETAILS
SEE SHEET SW5

PARK ROAD

DRAIN FIELD #2
REPLACEMENT
(18,000 SF)

DRAIN FIELD #2
PRIMARY
(18,000 SF)

CONCRETE
RETAINING WALL
(3' MAX HT.)

NATIVE
GRASSES

SEPTIC TANK
(5000 GAL)

A/A1 PICNIC SHELTER
TYPE 1
FFE 595.15

B/C16 6' CHAIN LINK
FENCE

FIELD 8

A/C16 INFILL MIX

ATHLETIC TURF

BIORETENTION AREA F4
FOR PLAN AND DETAILS
SEE SHEET SW9

C/C15 HANDICAP SIGN
TYP.

A/C12 10' CONCRETE
PATH

NEW PUMPING
STATION

B/A1 COMFORT STATION
FFE 595.00

E/C16 PED. GATE,
TYP.

DOUBLE GATE
TYP.

ASPHALT
WARNING TRACK

A/C12 6' CONCRETE
PATH

STONE DIAPHRAGM
SEE SHEET SW8

BIORETENTION AREA F3
FOR PLAN AND DETAILS
SEE SHEET SW8

THRUST
BLOCK

PROP. 2" FORCEMAIN

PROP. 1.5" FORCEMAIN

2" WATER

SEE SHEET D3
FOR DETAIL PLAN

A/C12 6' CONCRETE
PATH

C/C12 CONCRETE WHEEL
STOP, TYP.

FIELD 9

FIELD 7
ATHLETIC TURF

FIELD 6
ATHLETIC TURF

B/C15 BACKSTOP
TYP.

A/C16 INFIELD MIX

SEE SHEET D3
FOR BLEACHERS, WALL LAYOUT
AND GRADING DETAIL PLAN

B/C16 8' CHAIN LINK
FENCE

E/C12 ASPHALT
WARNING TRACK

D/C15 DRAIN PAN
TYP.

B/C16 5' CHAIN LINK
FENCE

H/C12 PADDOCK
FENCE, TYP.

NATIVE
GRASSES

50' USE SETBACK FROM ROW

75' BRL

SIGHT LINE

SIGHT LINE

VEHICULAR INGRESS AND EGRESS ACCESS RESTRICTED

R-668.34' L-629.05'

CARRS MILL ROAD
COUNTY OWNED PUBLIC ROAD
60' W. R.O.W.
DESIGNATED SCENIC ROAD
COLLECTOR ROAD

NORTH

NO.	REVISIONS	DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 0100057.6 \ USITE06.DGN

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KCI TECHNOLOGIES WWW.KCI.COM

STATE OF MARYLAND • IWONA ROSEK-ZARSKA • 21295 • PROFESSIONAL ENGINEER
9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

SITE PLAN
AREA 6

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

C6

SHEET NO.: 9 OF 113

SDP-02-64

MATCHLINE – SEE SHEET C4

MATCHLINE – SEE SHEET C6

MATCHLINE – SEE SHEET C8

MATCHLINE – SEE SHEET C9

S.W.M.C.E. #16
0.9517 AC.

S.W.M.C.E. #17
1.0624 AC.

S.W.M.C.E. #18
1.3164 AC.

S.W.M.C.E. #22
0.8097 AC.

S.W.M.C.E. #25
0.1587 AC.

S.W.M.C.E. #15
1.8711 AC.

HARDWOOD FOREST

SAND FILTER F2 (SHEET SW7)

DRY SWALE 3
BASELINE BEGINNING COORDINATES
N 597,657.17
E 1,304,489.37

DRY SWALE 2 (SHEET SW3)

DRY SWALE 3 (SHEET SW5)

TYP. CHECK DAM (SHEET SW4)

6' ASPHALT PATH

CONCRETE WHEEL STOPS, TYP.

5' CONC. PATH

PICNIC SHELTER TYPE B FFE 615.10

PROP. 2" FORCEMAIN

PROP. 1.5" FORCEMAIN

PICNIC SHELTER TYPE C FFE 599.50

FUTURE PLAY GROUND

EXISTING SEPTIC FIELD TO BE REMOVED

EX. SHED (16'X12') TO BE REMOVED

EXISTING SEPTIC TANK TO BE REMOVED

EX. 2 STORY FRAME DWELLING (50' X 60') TO BE REMOVED

FIELD 10
TEE BALL

ATHLETIC TURF

ENTRANCE GATE

PROPOSED ENTRANCE SIGNAGE

SECONDARY PARK ENTRANCE

SIGHT LINE

VEHICULAR INGRESS AND EGRESS ACCESS RESTRICTED

INTERSECTION COORDINATES
N 596,667.27
E 1,304,269.96

PADDOCK FENCE, TYP.

FIELD 5
ATHLETIC TURF

12' CHAIN LINK FENCE

6' ASPHALT PATH

RETAINING WALL G

RETAINING WALL H

IN-LINE HOCKEY PAVILION FFE 618.50

CONCRETE PAVING

EXISTING TREE TO REMAIN

EX. FRAME SHED (10'X12') TO BE REMOVED

HANDICAP SIGN TYP.

PARK DRIVE

FIELD 4
ATHLETIC TURF

5' ASPHALT PATH

NATIVE GRASSES

FUTURE PLAY GROUND

FUTURE SEAT WALL TO BE DESIGNED WITH BUILDING ARCHITECTURAL DRAWINGS.

SEE RETAINING WALL "A" DETAIL A SHEET C-17 ON CONSTRUCTION DWGS WDLI CAP PROJ # 3932.

CARRS MILL ROAD

COUNTY OWNED PUBLIC ROAD
50' W. R.O.W.
DESIGNATED SCENIC ROAD
COLLECTOR ROAD

NOTES: 1. ALL CARRS MILL ROAD IMPROVEMENTS, INCLUDING DECELERATION LANES, SHALL MEET DMV IV STANDARD DETAIL R-10.01 (SEE DETAIL, SHEET C9). CROSS SLOPE OF DECELERATION LANES AND TAPERS SHALL MATCH EXISTING CARRS MILL ROAD CROSS SLOPE. PRIOR TO BEGINNING WORK, CONTRACTOR SHALL VERIFY ALL TIE-IN ELEVATIONS SHOWN HEREON.

NOTE

The proposed tree line corresponds to the Limit of Disturbance line. In areas of treeline disturbance the new tree line limit is shown behind the Limit of Disturbance for graphic clarity.

NOTE

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APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER HOWARD COUNTY HEALTH DEPARTMENT — DATE 10-17-02

REVISION #1 - 8LDG (07/29/16)
ADDED WASTEWATER TREATMENT PLANT MODIFIED EX. PUMPING STATIONS, ADDED NEW PUMPING STATIONS AND INSTALLED NEW 1.5" & 2" FORCE MAINS.

11/18/16

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, INONA ROSTEK-BARSKA, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE NO. 21245 EXPIRATION DATE: JUNE 9, 2018.

PLAN SHEET LOCATOR

NOT TO SCALE

LEGEND

- EX. INDEX CONTOUR
- EX. 2' INTERMEDIATE CONTOUR
- SOIL LINE
- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- EX. WOODS LINE
- 15-24.9% SLOPES
- 25%+ SLOPES
- 100 YEAR FLOODPLAIN
- SURVEYED WETLAND
- 25' WETLAND BUFFER
- EX. STREAMS
- 75' STREAM BUFFER
- EQUESTRIAN/HIKING TRAIL
- EX. SPOT ELEVATION
- PROPOSED TREE LINE TO REMAIN
- PROPOSED ASPHALT PATH
- PROPOSED CONCRETE PATH
- PROPOSED FENCE LINE
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- PROPOSED SEWER MANHOLE
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- PROPOSED 2" WATER LINE
- EXISTING WELL
- PROPOSED LIGHT POLE
- PROPOSED PADDOCK FENCE
- SWM CREDIT EASEMENT
- FOREST CONSERVATION EASEMENT & FOREST RETENTION SIGN (FC67)

NORTH

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50ft.

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\2000\01000057.S\USITE07.DGN

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HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
WWW.KCI.COM

STATE OF MARYLAND · MICHAEL T. DUNCAN · 21245 · REGISTERED PROFESSIONAL ENGINEER
Michael T. Duncan 9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410) 313-4640

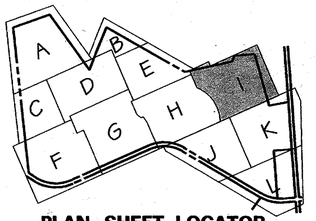
SITE PLAN
AREA H

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

C7

SHEET NO.: 10 OF 113

SDP-02-64



PLAN SHEET LOCATOR

NOT TO SCALE

LEGEND

- EX. INDEX CONTOUR (590)
- EX. 2' INTERMEDIATE CONTOUR
- SOIL LINE (GIC2)
- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- EX. WOODS LINE
- 15-24.9% SLOPES
- 25%+ SLOPES
- 100 YEAR FLOODPLAIN
- SURVEYED WETLAND (W)
- 25' WETLAND BUFFER
- EX. STREAMS
- EX. SPOT ELEVATION (570.9)
- 75' STREAM BUFFER (SB)
- EQUESTRIAN/HIKING TRAIL
- PROPOSED TREE LINE TO REMAIN
- PROPOSED ASPHALT PATH
- PROPOSED CONCRETE PATH
- PROPOSED FENCE LINE
- PROPOSED RETAINING WALL
- PROPOSED CONC. CURB & GUTTER
- PROPOSED ASPHALT PAVING
- PROPOSED INDEX CONTOUR (620)
- PROPOSED INTERMEDIATE CONTOUR (614)
- PROPOSED SPOT ELEVATION (617.25)
- PROPOSED INLET
- PROPOSED STORM DRAIN END SECTION
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN
- PROPOSED SEPTIC TANK
- PROPOSED SANITARY SEWER (9)
- PROPOSED SEWER MANHOLE
- PROPOSED SEPTIC DRAIN FIELD
- PROPOSED MONITORING WELL
- PROPOSED 2" WATERLINE
- EXISTING WELL (W)
- PROPOSED LIGHT POLE
- PROPOSED PADDOCK FENCE
- SWM CREDIT EASEMENT
- FOREST CONSERVATION EASEMENT & FOREST RETENTION SIGN (FC67)

NOTE

The Project Manager from the Department of Recreation and Parks will stake the placement of the pathway to avoid the removal of any trees. The pathway placement will have minimal clearing and minimal impact to the trees.

NOTE

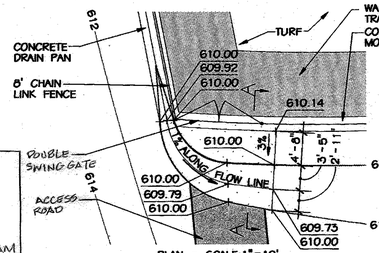
The proposed tree line corresponds to the Limit of Disturbance line. In areas of treeline disturbance the new tree line limit is shown behind the Limit of Disturbance for graphic clarity.

REVISION #1 - BLDG (07/29/16)
ADDED NEW WASTEWATER TREATMENT PLANT, MODIFIED EX. PUMPING STATIONS, ADDED NEW PUMPING STATIONS AND INSTALLED NEW 1.5" & 2" FORCE MAINS.

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, IWONA ROSTEK-ZARSKA, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21249, EXPIRATION DATE: JUNE 9, 2018.

11/18/16



A CONCRETE APRON
SCALE: AS SHOWN

MATCHLINE - SEE SHEET C4

MATCHLINE - SEE SHEET C7

S.W.M.C.E. #22
0.8097 AC.

S.W.M.C.E. #23
0.0745 AC.

DRY SWALE 2 (SHEET SW5)

SWALE CROSSING TIMBER BRIDGE FOR EQUESTRIAN TRAIL

N 77°39'28" E 809.67'

50' USE SETBACK

60' BRL

75' BRL

5' CHAIN LINK FENCE TYP. (8/C16)

LOD

S 20°08'03" E 99.88'

N 85°33'20" E 158.35'

N 85°33'26" E 318.84'

N 87°31'05" W 185.94'

LOCAL COUNTY ROAD

MILLERS MILL ROAD

50' RIGHT OF WAY

S 16°23'30" E 22.92'

S 16°23'30" E 851.58'

S.W.M.C.E. #24
0.7659 AC.

6' CHAIN LINK FENCE, TYP. (D/C16)

SAND FILTER G SEE SHEET SW10

ASPHALT WARNING TRACK, TYP. (D/C16)

DRAIN FAN, TYP. (D/C15)

INFIELD MIX (A/C16)

REFER TO SHEET D2 FOR SOFTBALL COMPLEX DETAILS DUGOUTS, BLEACHERS, AND PLAZA

DUGOUT, TYP.

CONCRETE BLEACHERS, TYP.

CONCESSION/RESTROOM PAVILION FFE 616.25 (D/A1)

FIELD 3 ATHLETIC TURF

FIELD 2 ATHLETIC TURF

FIELD 1 ATHLETIC TURF

BACKSTOP, TYP. (B/C15)

MOUNTABLE CURB (I/C12)

DEPRESSED CURB/H.C. RAMP (G/C12)

6' ASPHALT PATH (E/C12)

10' ASPHALT PATH (E/C12)

CONCRETE CURB & GUTTER (B/C12)

DOUBLE GATE, TYP. (F/C16)

DRAIN PAN, TYP. (D/C15)

6" PVC UNDERDRAIN

3,500 GAL. SEPTIC TANK

NOSE DOWN CURB AT INLET

CONCRETE PAVING (A/C12)

PEDESTRIAN GATE (E/C16)

CONCRETE CURB & GUTTER (B/C12)

NOSE DOWN CURB

MAINTENANCE ACCESS

CONCRETE APRON (A/D8)

10' ASPHALT MAINTENANCE ACCESS (D/C12)

TW 610.00
BW 609.00

TW 610.00
BW 603.00

BASELINE COORDINATES
N597,739.10
E 1,305,914.00

CONCRETE RETAINING WALL (9' MAX WALL HEIGHT) (A/C15)

OUTFIELD RETAINING WALL SEE SHEET D6 FOR DETAIL PLAN AND PROFILE

WELL #2332

DRY SWALE 1 (SHEET SW3)

PROP. 1.5" FORCEMAIN

PROP. 2" FORCEMAIN

EX. SEPTIC DRAIN FIELD

CONCRETE WHEEL STOP, TYP (C/C12)

NORTH

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50ft.

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, HOWARD COUNTY HEALTH DEPARTMENT — DATE 10-17-02

6' ASPHALT PATH (E/C12)
10' ASPHALT PATH (E/C12)
PARK ROAD (D/C12)

MATCHLINE - SEE SHEET C9

MATCHLINE - SEE SHEET C10

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\2000\01000057.5\USITE05.DGN

KCI TECHNOLOGIES INC.
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10 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
WWW.KCI.COM

KCI TECHNOLOGIES

MARYLAND REGISTERED ENGINEER — MICHAEL N. JUNKINS — PROFESSIONAL ENGINEER
9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
3430 COURTHOUSE DRIVE, ELLICOTT CITY, MARYLAND 21043-1677
COLUMBIA, MARYLAND 21046-1677
(410) 313-4640

SITE PLAN
AREA 1

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

C8

MATCHLINE – SEE SHEET C7

MATCHLINE – SEE SHEET C8

MATCHLINE – SEE SHEET C10

MATCHLINE – SEE SHEET C11

FIELD 4
ATHLETIC TURF

CARRS MILL ROAD
COUNTY OWNED PUBLIC ROAD – COLLECTOR
DESIGNATED SCENIC ROAD

SWM POND E
SEE SHEET SW4

VEHICULAR INGRESS AND EGRESS ACCESS RESTRICTED

PROPOSED ENTRANCE SIGN
PRIMARY PARK ENTRANCE
R=120'
R=40'
R=120'

DECELERATION LANE
STD. DTL. R-1-.01
THIS SHEET

INTERSECTION COORDINATES
N 596,365.82
E 1,304,986.51

EX. SWM OUTFALL
36" RCP

EXISTING RISER STRCTURE AND 36" RCP OUTFALL PIPE CONSTRUCTED UNDER APPROVED DESIGN SDP-01-208 BY FREDERICK WARD ASSOC., INC.

FUTURE WATER FEATURE

PARK ROAD

OPEN PLAY AREA

Prop. 16" FORCE MAIN

PADDOCK FENCE

ENTRANCE GATE, TYP.

MOUNTABLE CURB

CONCRETE WHEEL STOP, TYP.

6' CONCRETE PATH

6' ASPHALT PATH

10' ASPHALT PATH

CONCRETE CURB & GUTTER

STONE DUST PATH

FOREBAY

INV. 586.00

24" HDPE

15" HDPE

2" WATER

75' SETBACK FROM PROP. L.L.

50' SETBACK FROM ROW

N 596,500

N 596,250

E 1,304,860

189'-0"
100'-0"
109'-0"
109.84'
139'-0"
15'-0"

PLAN SHEET LOCATOR

NOT TO SCALE

LEGEND

- EX. INDEX CONTOUR
- EX. 2' INTERMEDIATE CONTOUR
- SOIL LINE
- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- EX. WOODS LINE
- 15-24.9% SLOPES
- 25%+ SLOPES
- 100 YEAR FLOODPLAIN
- SURVEYED WETLAND
- 25' WETLAND BUFFER
- EX. STREAMS
- 75' STREAM BUFFER
- EQUESTRIAN/HIKING TRAIL
- EX. SPOT ELEVATION
- PROPOSED TREE LINE TO REMAIN
- PROPOSED ASPHALT PATH
- PROPOSED CONCRETE PATH
- PROPOSED FENCE LINE
- PROPOSED RETAINING WALL
- PROPOSED CONC. CURB & GUTTER
- PROPOSED ASPHALT PAVING
- PROPOSED INDEX CONTOUR
- PROPOSED INTERMEDIATE CONTOUR
- PROPOSED SPOT ELEVATION
- PROPOSED INLET
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN
- PROPOSED SEPTIC TANK
- PROPOSED SANITARY SEWER
- PROPOSED SEWER MANHOLE
- PROPOSED STORM DRAIN END SECTION
- PROPOSED SEPTIC DRAIN FIELD
- PROPOSED MONITORING WELL
- PROPOSED 2" WATER LINE
- EXISTING WELL
- PROPOSED LIGHT POLE
- PROPOSED PADDOCK FENCE

℄ ROAD

ROW (50'-0" MIN.)
12'-0" REQUIRED TRAVEL LANE (NOTE 2)
VARIES
4'-0" (MIN.)
SURFACE OVERLAY (NOTE 3)
NOTCH AND SEAL
VARIES TO TYPICAL SECTION ON CONSTRUCTION PLAN
EXISTING PAVING
VARIES (NOTE 1)
VARIES
EXISTING TRAVEL LANE

1. WHEN EXISTING TRAVEL LANE IS LESS THAT THE REQUIRED 12' LANE, CONTRACTOR SHALL REMOVE ENOUGH OF THE EXISTING ROAD BED TO PROVIDE A MINIMUM BASE WIDENING OF 4'.
2. THE SURFACE OVERLAY SHALL BE CARRIED TO THE ℄ OF THE ROAD AND NOTCHED AND SEALED.
3. SURFACE OVERLAY COURSE TO RE EQUAL TO SURFACE COURSE OF TYPICAL PAVING SECTION OF SUBDIVISION.
4. ℄ OF ROAD TO BE MILLED AT DEPTH OF 1 1/2". X1" WIDE USING A MILLING MACHINE.

DECELERATION LANE

NOT TO SCALE

11/18/16

REVISION#1-BLOG (07/29/16)
ADDED WASTEWATER TREATMENT PLANT MODIFIED EX. PUMPING STATIONS, ADDED NEW PUMPING STATIONS AND INSTALLED NEW 1.5" & 2" FORCE MAINS.

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, I WONA ROSTEK-ZARSKA, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21245, EXPIRATION DATE: JUNE 9, 2018.

NOTES:

1. ALL CARRS MILL ROAD IMPROVEMENTS, INCLUDING DECELERATION LANES, SHALL MEET DMV IV STANDARD DETAIL R-10.01 (SEE DETAIL THIS SHEET). CROSS SLOPE OF DECELERATION LANES AND TAPERS SHALL MATCH EXISTING CARRS MILL ROAD CROSS SLOPE. PRIOR TO BEGINNING WORK CONTRACTOR SHALL VERIFY ALL TIE-IN ELEVATIONS SHOWN HEREON.

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, H.C.H.D., HOWARD COUNTY HEALTH DEPARTMENT — DATE 10-17-02

NOTE

The Project Manager from the Department of Recreation and Parks will stake the placement of the pathway to avoid the removal of any trees. The pathway placement will have minimal clearing and minimal impact to the trees.

NOTE

The proposed tree line corresponds to the Limit of Disturbance line. In areas of treeline disturbance the new tree line limit is shown behind the Limit of Disturbance for graphic clarity.

NORTH

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50ft.

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

NO.	REVISIONS	DESCRIPTION	DATE

KCI FILE: MA 2000 \ 01000057.5 \ USITE09.DGN

KCI TECHNOLOGIES INC.
ENGINEERS • PLANNERS • SURVEYORS
10 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND 21030
PHONE (410) 316-7800 FAX (410) 316-7817
KCI TECHNOLOGIES WWW.KCI.COM

STATE OF MARYLAND * MICHAEL J. MUSTON * 21627 * REGISTERED PROFESSIONAL ENGINEER
9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

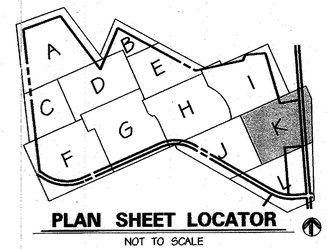
SITE PLAN
AREA J

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

C9

SHEET NO.: 12 OF 113

SDP-02-64



PLAN SHEET LOCATOR

NOT TO SCALE

LEGEND

- EX. INDEX CONTOUR
- EX. 2' INTERMEDIATE CONTOUR
- SOIL LINE
- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- EX. WOODS LINE
- 15-24.9% SLOPES
- 25%+ SLOPES
- 100 YEAR FLOODPLAIN
- EX. SPOT ELEVATION
- SURVEYED WETLAND
- 25' WETLAND BUFFER
- EX. STREAMS
- 75' STREAM BUFFER
- EQUESTRIAN/HIKING TRAIL
- PROPOSED TREE LINE TO REMAIN
- PROPOSED ASPHALT PATH
- PROPOSED CONCRETE PATH
- PROPOSED FENCE LINE
- PROPOSED RETAINING WALL
- PROPOSED CONC. CURB & GUTTER
- PROPOSED ASPHALT PAVING
- PROPOSED INDEX CONTOUR
- PROPOSED INTERMEDIATE CONTOUR
- PROPOSED SPOT ELEVATION
- PROPOSED INLET
- PROPOSED STORM DRAIN END SECTION
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN
- PROPOSED SEPTIC TANK
- PROPOSED SANITARY SEWER
- PROPOSED SEWER MANHOLE
- PROPOSED SEPTIC DRAIN FIELD
- PROPOSED MONITORING WELL
- PROPOSED 2" WATER LINE
- EXISTING WELL
- PROPOSED LIGHT POLE
- PROPOSED PADDOCK FENCE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, H.C. HEALTH DEPARTMENT — DATE 10-17-02

NOTE

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NOTE

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11/18/16

REVISION #1 - BLDG (07/29/16)
ADDED WASTEWATER TREATMENT PLANT MODIFIED EX. PUMPING STATIONS, ADDED NEW PUMPING STATIONS AND INSTALLED NEW 1-5" & 2" FORCE MAINS.

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, I NOVA ROSTEK-ZARSKA, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE NO. 21245, EXPIRATION DATE: JUNE 9, 2018.

NORTH

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50ft.

NO.	REVISIONS	DESCRIPTION	DATE

KCI FILE: MA 2000 \ 01-00057S \ USITE10.DGN

KCI TECHNOLOGIES INC.
ENGINEERS • PLANNERS • SURVEYORS
10 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
WWW.KCI.COM

STATE OF MARYLAND ★ NOVA ROSTEK-ZARSKA ★ 21245 ★ REGISTERED PROFESSIONAL ENGINEER
9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
3430 COURTHOUSE DRIVE
COLUMBIA, MARYLAND 21046-1677
(410) 313-4640

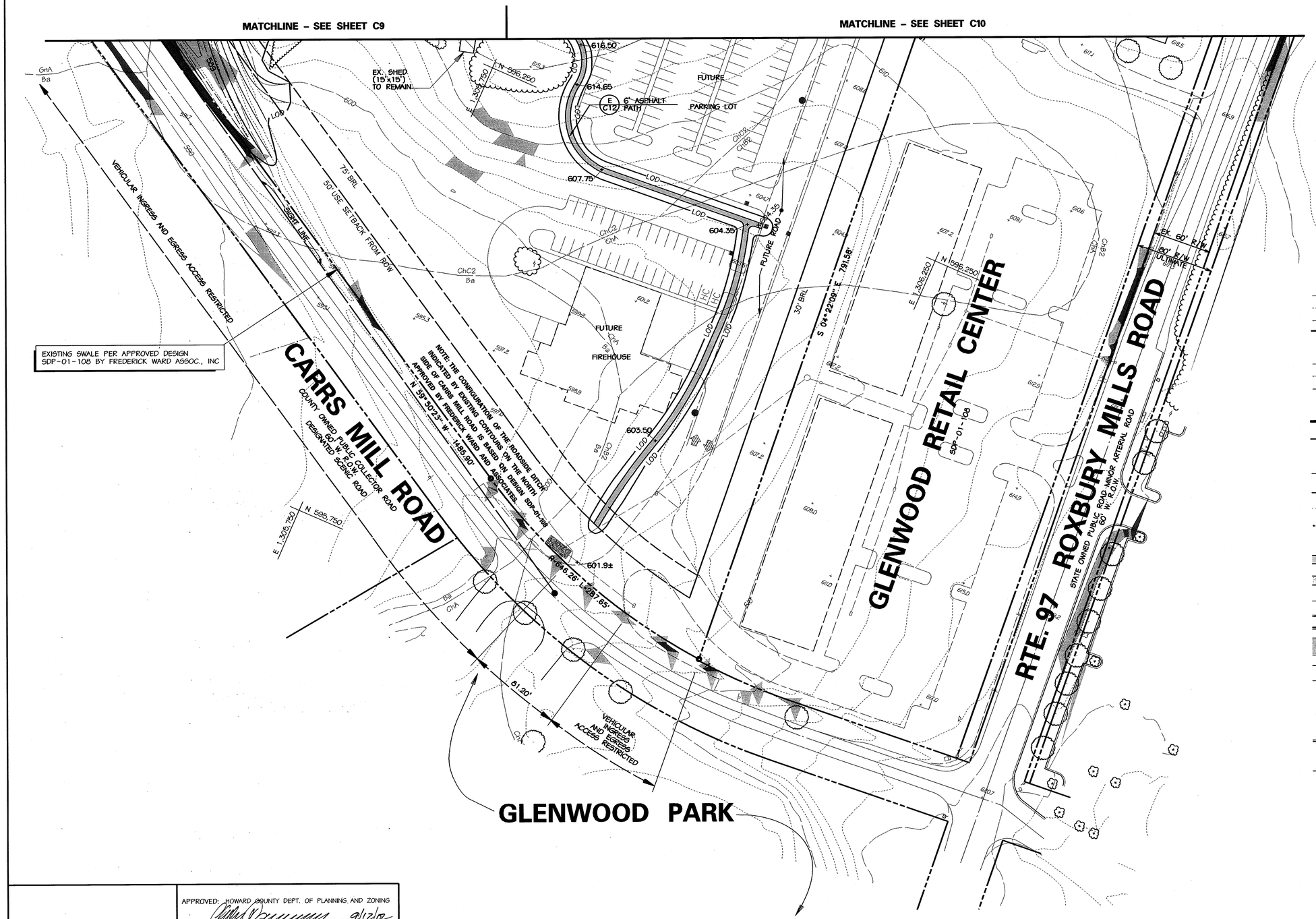
SITE PLAN
AREA K

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

C10

SHEET NO.: 13 OF 113

SDP-02-64



LEGEND

- EX. INDEX CONTOUR
- EX. 2' INTERMEDIATE CONTOUR
- SOIL LINE
- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- EX. WOODS LINE
- 15-24.9% SLOPES
- 25%+ SLOPES
- 100 YEAR FLOODPLAIN
- SURVEYED WETLAND
- EX. SPOT ELEVATION
- EX. STREAMS
- 75' STREAM BUFFER
- 25' WETLAND BUFFER
- EQUESTRIAN/HIKING TRAIL
- PROPOSED TREE LINE TO REMAIN
- PROPOSED ASPHALT PATH
- PROPOSED CONCRETE PATH
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- PROPOSED SEPTIC TANK
- PROPOSED SANITARY SEWER
- PROPOSED SEWER MANHOLE
- PROPOSED SEPTIC DRAIN FIELD
- PROPOSED MONITORING WELL
- PROPOSED 2" WATER LINE
- EXISTING WELL

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER — DATE 10-17-02

HOWARD COUNTY HEALTH DEPARTMENT

NOTE

The proposed tree line corresponds to the Limit of Disturbance line. In areas of treeline disturbance the new tree line limit is shown behind the Limit of Disturbance for graphic clarity.

NOTE

The Project Manager from the Department of Recreation and Parks will stake the placement of the pathway to avoid the removal of any trees. The pathway placement will have minimal clearing and minimal impact to the trees.

NORTH

GRAPHIC SCALE

50 0 25 50 100

(IN FEET)
1 inch = 50ft.

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 0100057.S \ USITE11.DGN

KCI TECHNOLOGIES INC.
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HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
WWW.KCI.COM

STATE OF MARYLAND ★ MICHAEL NORMAN ARMSTRONG ★ REGISTERED PROFESSIONAL ENGINEER
9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

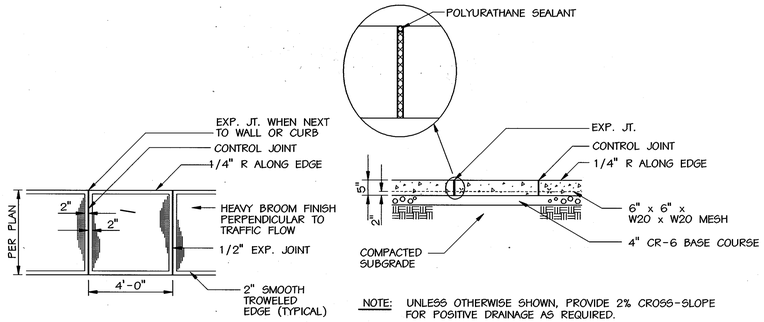
SITE PLAN
AREA L

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

C11

SHEET NO.: 14 OF 113

SDP-02-64



PROFILE

NOTE: UNLESS OTHERWISE SHOWN, PROVIDE 2% CROSS-SLOPE FOR POSITIVE DRAINAGE AS REQUIRED.

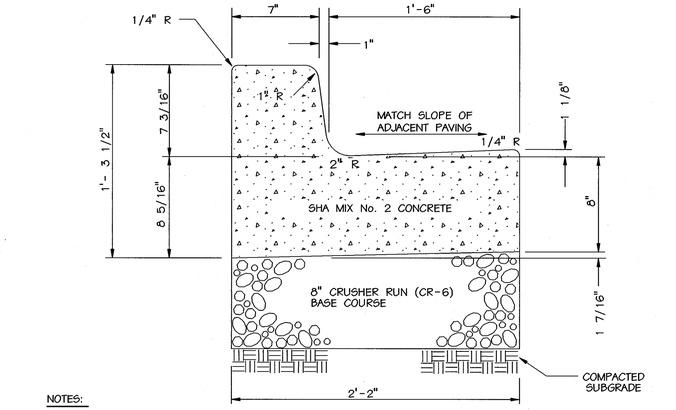
SECTION

NOTES:

1. PROVIDE EXPANSION JOINTS 16' C.C. MAX. AND SCORE JOINTS 4' C.C. (UNLESS OTHERWISE NOTED). EXPANSION JOINTS SHALL BE ZIP STRIP CONTROL JOINTS MANUFACTURED BY SUPERIOR FEATHERWEIGHT TOOLS (OR APPROVED EQUIVALENT) WITH 1/2 " PREMOLDED BITUMINOUS JOINT MATERIAL. ALL CONTROL JOINTS SHALL BE SEALED WITH A POLYURETHANE SEALANT.
2. WHEN SIDEWALK ABUTS CURB, SIDEWALK SHALL BE 1/4 " ABOVE CURB WITH ROOFING FELT SATURATED ON BOTH SIDES WITH ASPHALTIC MATERIAL BETWEEN THEM. ROOFING PAPER SHALL NOT WEIGH LESS THAN 39.8 LBS. PER S.F.

A CONCRETE DETAILS

NOT TO SCALE

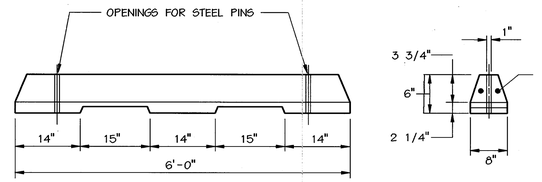


NOTES:

1. PROVIDE EXPANSION JOINTS EVERY 16' MAX.
2. PROVIDE CONTROL JOINTS EVERY 8'. JOINTS ARE TO ALIGN WITH THE PROPOSED SIDEWALK JOINTS (TYPICAL).
3. COMPLY WITH HOWARD COUTY DPW STANDARD DETAILS AND SPECIFICATONS.

B COMBINATION CURB AND GUTTER

NOT TO SCALE



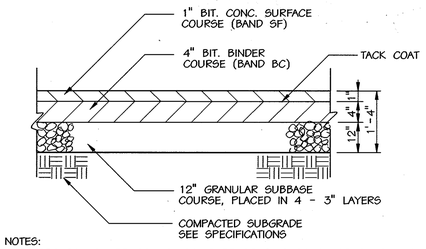
ELEVATION

SECTION

NOTE:
CONTRACTOR TO PROVIDE TWO (2) NO. 8 REBARS, 16" LONG FOR EACH WHEEL STOP.

C PRECAST CONCRETE WHEEL STOP

NOT TO SCALE

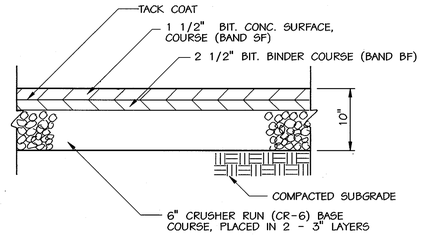


NOTES:

1. REFERENCE HOWARD COUNTY STANDARD SPECIFICATIONS FOR P1 PAVING.
2. COMPLY WITH HOWARD COUNTY STANDARD DETAILS AND SPECIFICATIONS

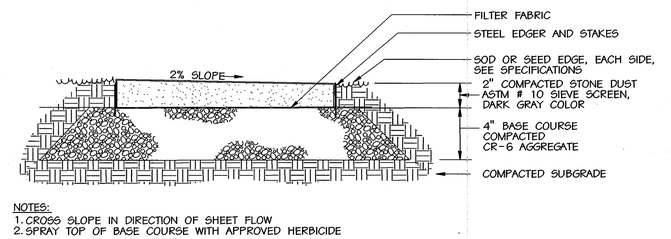
D ASPHALT PAVING - ROADS AND PARKING

NOT TO SCALE



E ASPHALT PAVING - PATHS

NOT TO SCALE

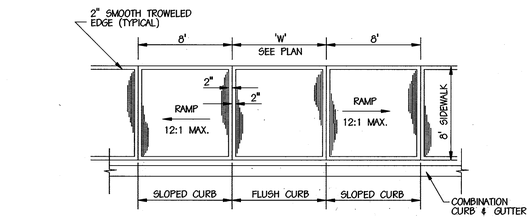


NOTES:

1. CROSS SLOPE IN DIRECTION OF SHEET FLOW
2. SPRAY TOP OF BASE COURSE WITH APPROVED HERBICIDE

F STONE DUST PATH SECTION

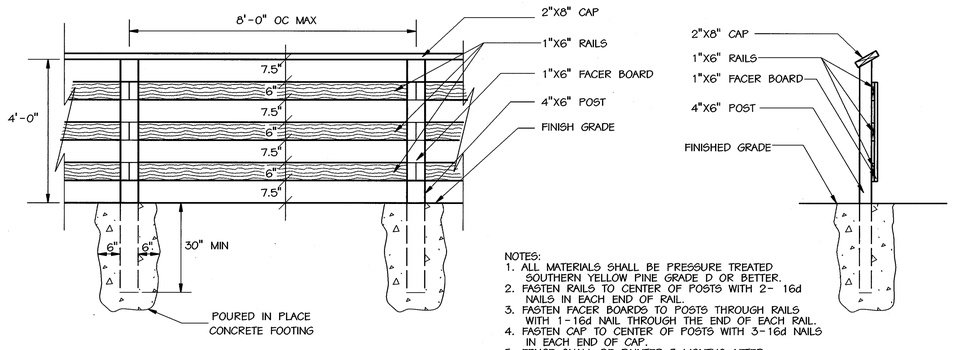
NOT TO SCALE



NOTE: SURFACE TEXTURE OF RAMPS SHALL BE COARSE BROOMING OR NON SKID SURFACE.

G DEPRESSED CURB /HANDICAP RAMP

NOT TO SCALE

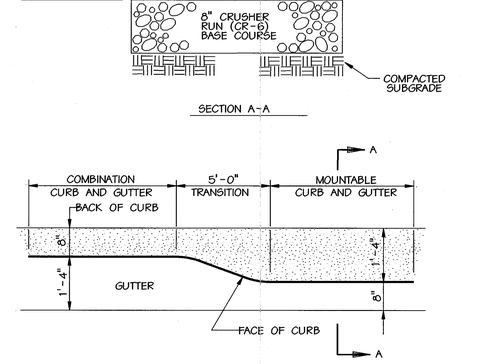


NOTES:

1. ALL MATERIALS SHALL BE PRESSURE TREATED SOUTHERN YELLOW PINE GRADE D OR BETTER.
2. FASTEN RAILS TO CENTER OF POSTS WITH 2- 16d NAILS IN EACH END OF RAIL.
3. FASTEN FACER BOARDS TO POSTS THROUGH RAILS WITH 1-16d NAIL THROUGH THE END OF EACH RAIL.
4. FASTEN CAP TO CENTER OF POSTS WITH 3-16d NAILS IN EACH END OF CAP.
5. FENCE SHALL BE PAINTED 3 MONTHS AFTER INSTALLATION IS COMPLETE COLOSR TO BE SELECTED BY COUNTY'S REPRESENTATIVE

H PADDOCK FENCE DETAIL

SCALE: 1/2"=1'



PLAN
TRANSITION DETAIL

I MOUNTABLE CURB & GUTTER DETAIL

NOT TO SCALE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 9/12/02
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 9/22/02
DIRECTOR	DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER HOWARD COUNTY HEALTH DEPARTMENT	DATE 10-17-02

NO.	REVISIONS	DESCRIPTION	DATE

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KCI TECHNOLOGIES INC.
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10 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND 21030
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STATE OF MARYLAND * MICHAEL LEE MONTGOMERY * 21552 * REGISTERED PROFESSIONAL ENGINEER
Michael L. Montgomery 9/13/2002

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

SITE DETAILS

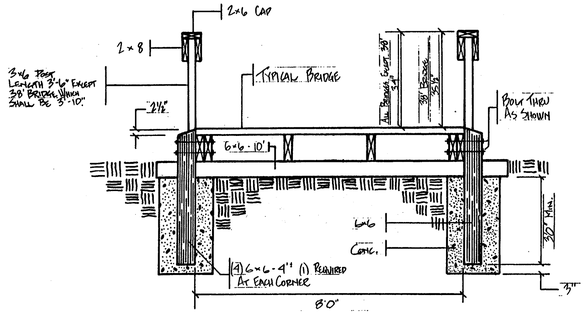
SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

C12

SHEET NO.: 15 OF 113

SDP-02-64

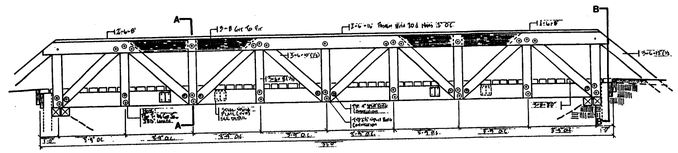
OPEN SPACE PATHWAY BRIDGE DETAILS



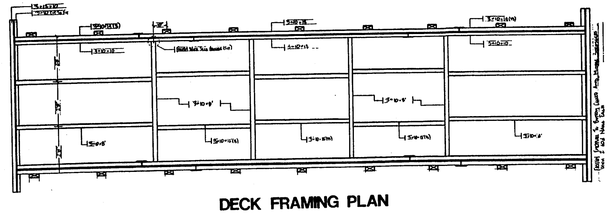
SECTION B-B

FOOTING DETAILS
SCALE: ½" = 1'

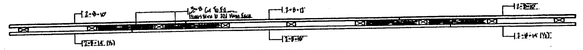
TYPICAL 32' BRIDGE
SCALE: ¼" = 1'



SIDE VIEW



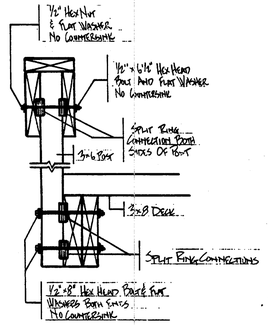
DECK FRAMING PLAN



TOP CHORD

OPEN SPACE PATHWAY BRIDGE DETAILS

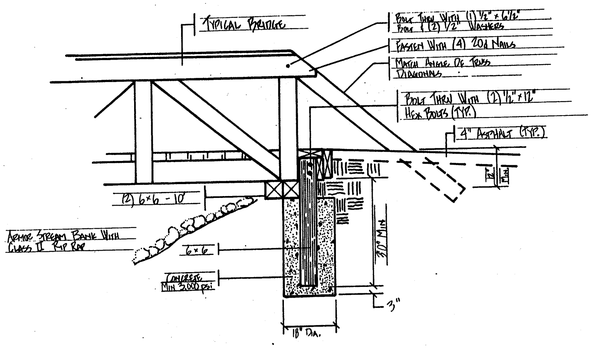
SPLIT RING CONNECTION
Required For Bridges Over 18' Only
SCALE: ½" = 1'



SECTION A-A

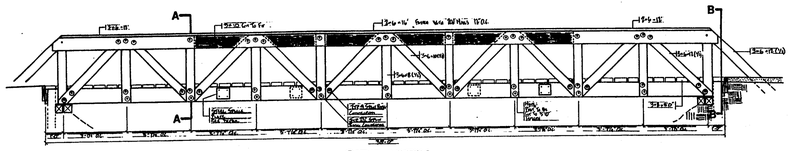
OPEN SPACE PATHWAY BRIDGE DETAILS

SIDE VIEW

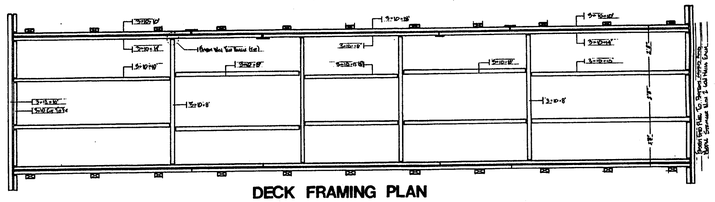


FOOTING DETAILS
SCALE: ½" = 1'

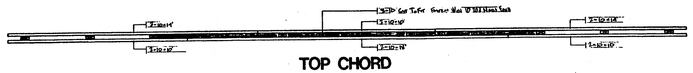
TYPICAL 38' BRIDGE
SCALE: ¼" = 1'



SIDE VIEW



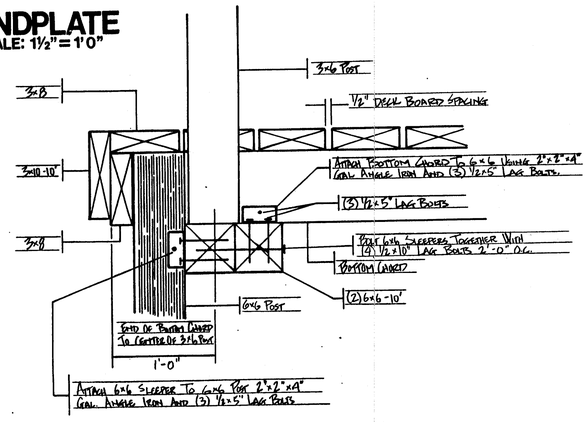
DECK FRAMING PLAN



TOP CHORD

OPEN SPACE PATHWAY BRIDGE DETAILS

ENDPLATE
SCALE: 1½" = 1'0"



APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 9/12/02
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 10/22/02
DIRECTOR	DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER HOWARD COUNTY HEALTH DEPARTMENT	DATE 10-17-02

NO.	REVISIONS DESCRIPTION	DATE

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STATE OF MARYLAND ★ PROFESSIONAL ENGINEER ★ 9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

SITE DETAILS

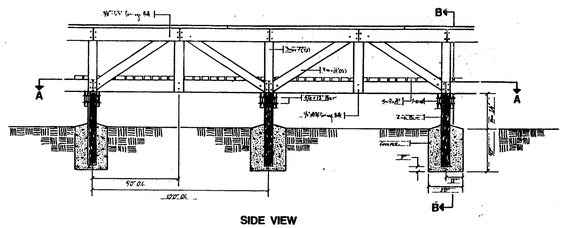
SCALE:	AS SHOWN
DATE:	6/12/02
KCI JOB NO.:	01-00
CAPITAL PROJECT NO.:	N 3-32
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

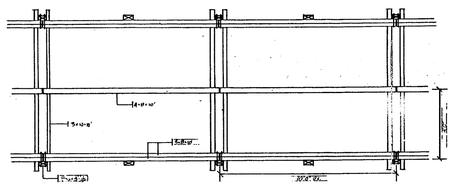
C13

SHEET NO.: 16 OF 113

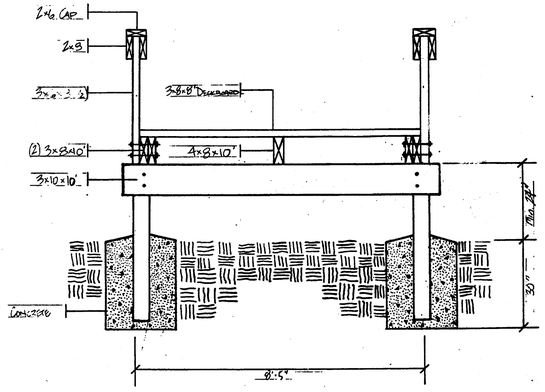
SDP-02

TYPICAL BOARDWALK
SCALE: ¼" = 1'



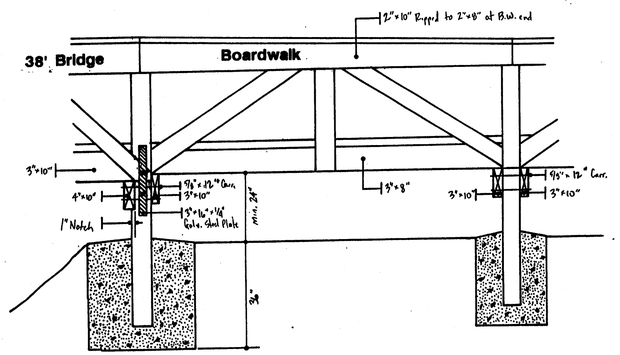

SECTION A-A

TYPICAL BOARDWALK
SCALE: ½" = 1'

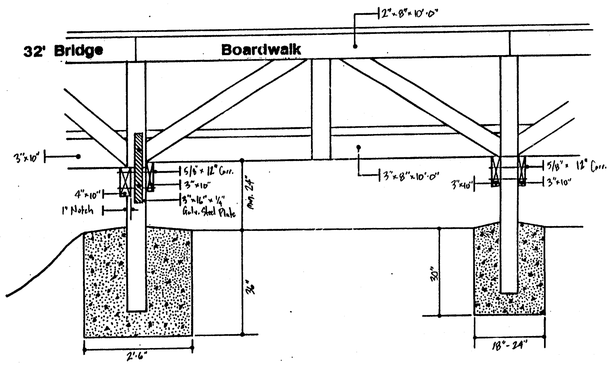


SECTION B-B

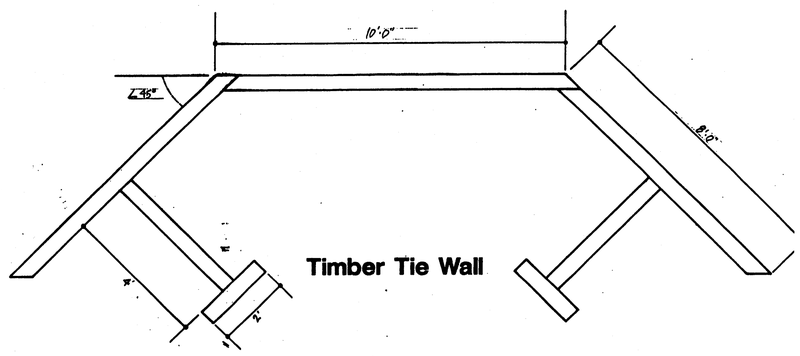
BRIDGE TO BOARDWALK CONNECTION DETAILS
SCALE: ½" = 1'



BRIDGE TO BOARDWALK CONNECTION DETAILS
SCALE: ½" = 1'

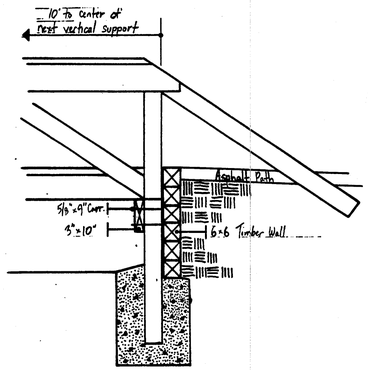


BRIDGE TO BOARDWALK CONNECTION DETAILS
SCALE: ½" = 1'



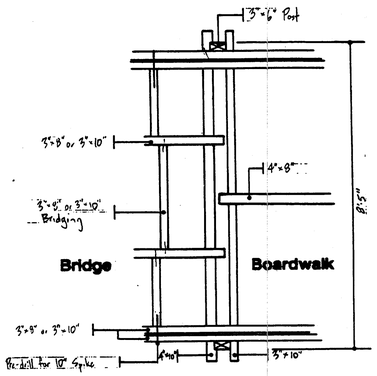
Timber Tie Wall

BRIDGE TO BOARDWALK CONNECTION DETAILS
SCALE: ½" = 1'



End of Boardwalk

BRIDGE TO BOARDWALK CONNECTION DETAILS
SCALE: ½" = 1'



Framing plan

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/23/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER — DATE 10-17-02

HOWARD COUNTY HEALTH DEPARTMENT

NO.	REVISIONS	DESCRIPTION	DATE

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STATE OF MARYLAND * MICHAEL NORMAN ARMSTRONG * 19621 * REGISTERED PROFESSIONAL ENGINEER
9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

SITE DETAILS

SCALE	AS SHOWN
DATE	6/12/02
KCI JOB NO.	01-00057
CAPITAL PROJECT NO.	N-3932
PERMIT ISSUE	
CONSTRUCTION ISSUE	

C14

SHEET NO. 17 OF 17

SDP-02

RETAINING WALL DESIGN SCHEDULE

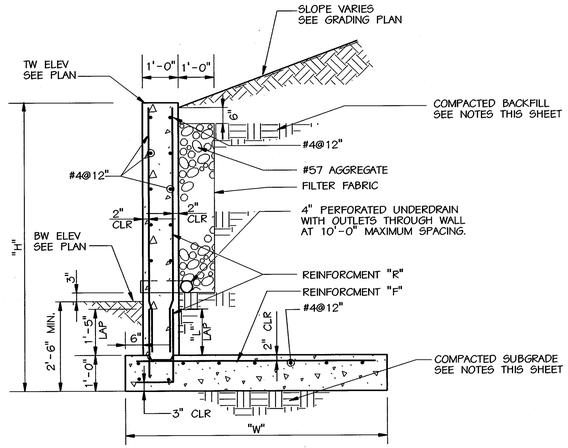
WALL	TOP OF WALL ELEV.	BOTTOM OF FTG. ELEV	H	W	R	L	F
B1	573.00	565.35	7.65'	5'-6"	#4@12"	1'-5"	#4@12"
B2	573.00	566.35	6.65'	4'-8"	#4@12"	1'-5"	#4@12"
B3	573.00	568.35	4.65'	3'-4"	#4@12"	1'-5"	#4@12"
C1	562.00	554.50	7.50'	7'-6"	#4@12"	1'-5"	#5@12"
C2	562.00	555.50	6.50'	6'-6"	#4@12"	1'-5"	#4@12"
C3	562.00	557.50	4.50'	4'-4"	#4@12"	1'-5"	#4@12"
K1	590.50	585.95	4.55'	4'-9"	#4@12"	1'-5"	#4@12"
K2	590.50	586.45	4.05'	4'-2"	#4@12"	1'-5"	#4@12"
A1	610.00	601.50	8.50'	6'-3"	#5@12"	1'-9"	#5@12"
A2	610.00	602.50	7.50'	5'-6"	#4@12"	1'-5"	#4@12"
A3	610.00	603.50	6.50'	4'-9"	#4@12"	1'-5"	#4@12"
A4	610.00	604.50	5.50'	4'-2"	#4@12"	1'-5"	#4@12"
A5	610.00	605.50	4.50'	3'-4"	#4@12"	1'-5"	#4@12"
G1	618.00	613.19	4.81'	4'-0"	#4@12"	1'-5"	#4@12"
G2	618.00	612.25	5.75'	4'-0"	#4@12"	1'-5"	#4@12"
H1	619.85	615.85	4.00'	2'-6"	#4@12"	1'-5"	#4@12"
H2	619.85	615.85	4.00'	1'-9"	#4@12"	1'-5"	#4@12"
D1/D3	618.75	611.62	7.13'	1'-9"	#4@12"	1'-5"	#4@12"
D2/D4	618.75	611.62	7.13'	5'-0"	#4@12"	1'-5"	#4@12"
E1/E3	618.75	611.62	7.13'	1'-9"	#4@12"	1'-5"	#4@12"
E2/E4	618.75	611.62	7.13'	5'-0"	#4@12"	1'-5"	#4@12"
F1/F3	618.00	609.62	8.38'	1'-9"	#5@12"	1'-9"	#4@12"
F2/F4	618.00	609.62	8.38'	5'-8"	#4@12"	1'-5"	#4@12"
J1/J3	580.00	571.62	8.38'	1'-9"	#4@12"	1'-5"	#4@12"
J2	580.00	571.62	8.38'	5'-2"	#4@12"	1'-5"	#4@12"
J4	580.00	571.62	8.38'	5'-10"	#5@12"	1'-9"	#4@12"

FILL SELECTION, PLACEMENT AND COMPACTION FOR RETAINING WALLS

FILL IN STRUCTURAL AND PAVEMENT AREAS SHOULD BE PLACED IN HORIZONTAL, EIGHT-INCH MAXIMUM LOOSE LIFTS AND COMPACTED TO AT LEAST 95 PERCENT OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D-698).

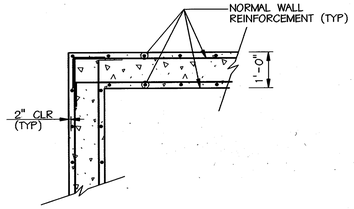
IN BUILDING AREAS THE FILL SHOULD EXTEND A MINIMUM OF 10 FEET BEYOND THEBUILDING LIMITS AND FILL SLOPES NO STEEPER THAN 2(H):1(V) SHOULD BE USED.

THE MOISTURE CONTENT OF THE FILL SHOULD BE PROPERLY CONTROLLED DURING PLACEMENT. IN-PLACE DENSITY TESTS SHOULD BE PERFORMED BY AN ENGINEERING TECHNICIAN ON A FULL-TIME BASIS UNDER THE SUPERVISION OF A GEOTECHNICALENGINEER LICENSED IN THE STATE OF MARYLAND TO VERIFY THAT THE PROPER DEGREE OF COMPACTION IS BEING OBTAINED.



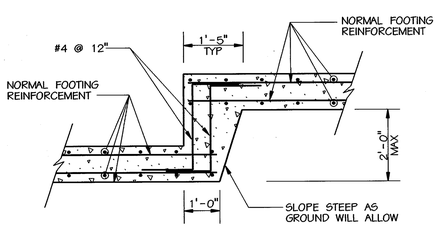
RETAINING WALL SECTION DETAIL

SCALE 1/2"=1'-0"



RETAINING WALL CORNER DETAIL

SCALE 1/2"=1'-0"

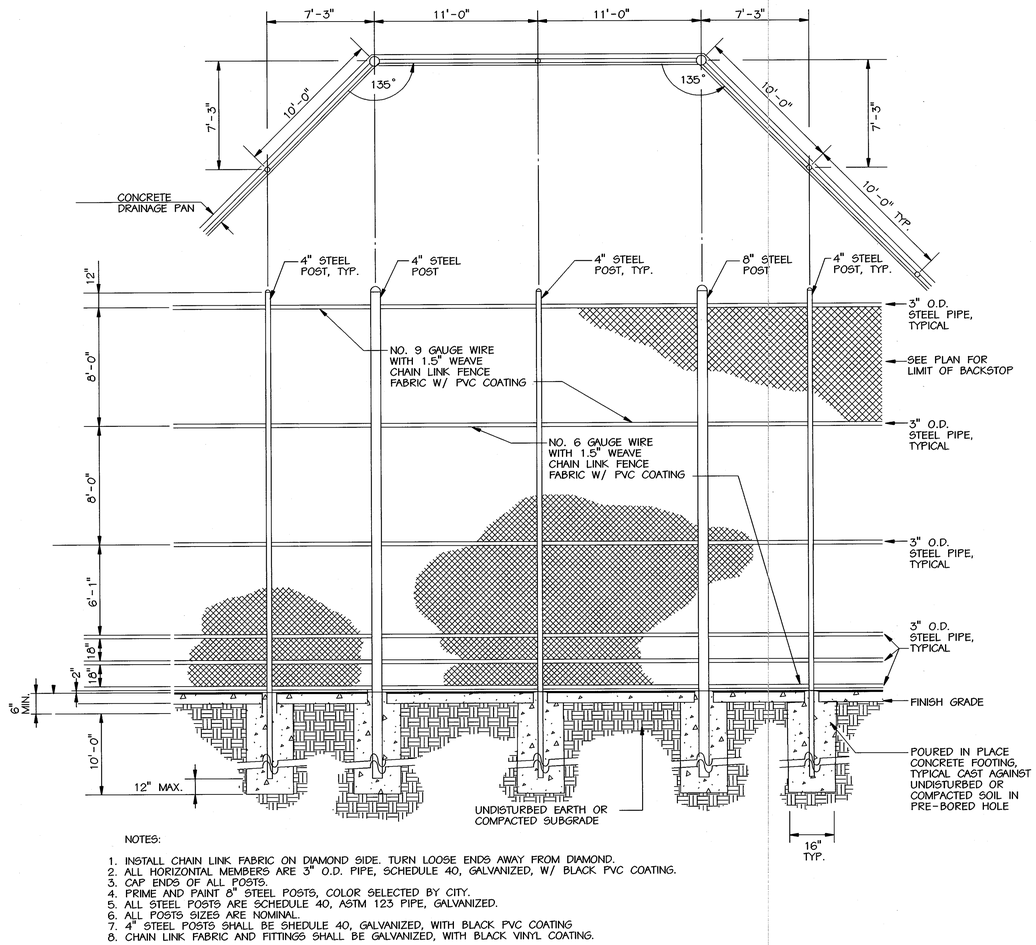


FOOTING STEP DETAIL

SCALE 1/2"=1'-0"

A CONCRETE RETAINING WALL DETAILS

SCALE 1/2"=1'-0"



NOTES:

1. INSTALL CHAIN LINK FABRIC ON DIAMOND SIDE. TURN LOOSE ENDS AWAY FROM DIAMOND.
2. ALL HORIZONTAL MEMBERS ARE 3" O.D. PIPE, SCHEDULE 40, GALVANIZED, W/ BLACK PVC COATING.
3. CAP ENDS OF ALL POSTS.
4. PRIME AND PAINT 8" STEEL POSTS, COLOR SELECTED BY CITY.
5. ALL STEEL POSTS ARE SCHEDULE 40, ASTM 123 PIPE, GALVANIZED.
6. ALL POSTS SIZES ARE NOMINAL.
7. 4" STEEL POSTS SHALL BE SHEDULE 40, GALVANIZED, WITH BLACK PVC COATING
8. CHAIN LINK FABRIC AND FITTINGS SHALL BE GALVANIZED, WITH BLACK VINYL COATING.

B BACKSTOP FENCE DETAIL

NOT TO SCALE

RETAINING WALL NOTES:

1. THE PROPOSED WALL CONSTRUCTION SHALL BE PERFORMED UNDER THE OBSERVATION OF A MARYLAND REGISTERED PROFESSIONAL ENGINEER.
2. FOUNDATION SOILS SHALL BE EXAMINED BY THE ENGINEER TO ASSURE THE ACTUAL FOUNDATION SOIL STRENGTH MEETS OR EXCEEDS THE ASSUMED DESIGN STRENGTH OF 2000 LBS PER SQUARE FOOT.

FILL COMPACTION NOTES

1. FILL IN STRUCTURAL AND PAVEMENT AREAS SHOULD BE PLACED IN HORIZONTAL, EIGHT-INCH MAXIMUM LOOSE LIFTS AND COMPACTED TO AT LEAST 95 PERCENT OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D-698). IN AREAS TO SUPPORT FLOOR SLABS AND PAVEMENTS THE UPPERMOST ONE FOOT (AFTER COMPACTION) SHOULD BE COMPACTED TO 97 PERCENT OF THE MAXIMUM DRY DENSITY.
2. IN BUILDING AND RETAINING WALL AREAS THE FILL SHALL EXTEND A MINIMUM OF 10 FEET BEYOND THE BUILDING LIMITS AND FILL SLOPES NO STEEPER THAT 2(H):1(V) SHALL BE USED.
3. WALL BACKFILL MATERIALS SHALL BE COMPACTED TO DRY DENSITIES ON THE ORDER OF 90 PERCENT OF STANDARD PROCTOR MAXIMUM DRY DENSITY. IF WALL BACKFILL MATERIALS ARE TO SUPPORT STRUCTURAL LOADS, THEN THE BACKFILL MATERIAL SHALL BE COMPACTED TO AT LEAST 95 PERCENT

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

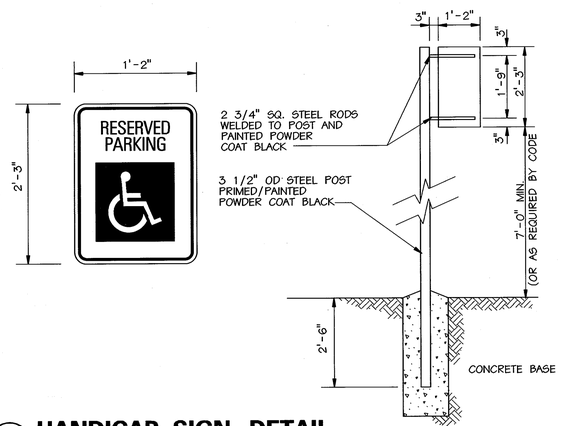
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

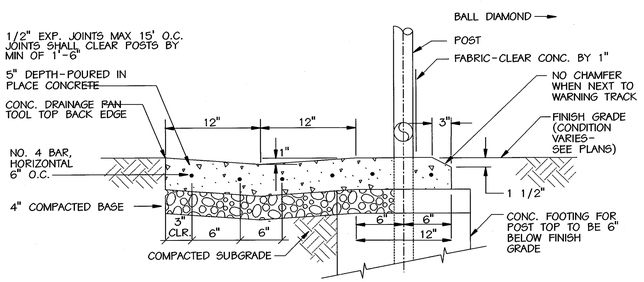
APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, H.D. — DATE 10-17-02
HOWARD COUNTY HEALTH DEPARTMENT



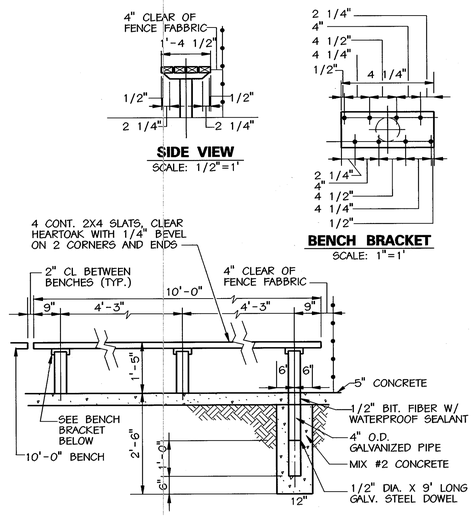
C HANDICAP SIGN DETAIL

NOT TO SCALE



D CONCRETE DRAINAGE PAN AT BALLFIELD FENCE

NOT TO SCALE



E PLAYERS' BENCH

SCALE 1/2"=1'-0"

NO.	REVISIONS DESCRIPTION	DATE

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HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
WWW.KCI.COM

STATE OF MARYLAND — JEFFREY S. LINKIN — No. 22320 — REGISTERED PROFESSIONAL ENGINEER — 9-3-02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
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SITE DETAILS

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CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
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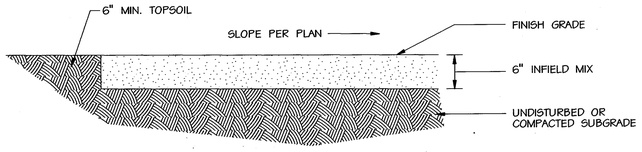
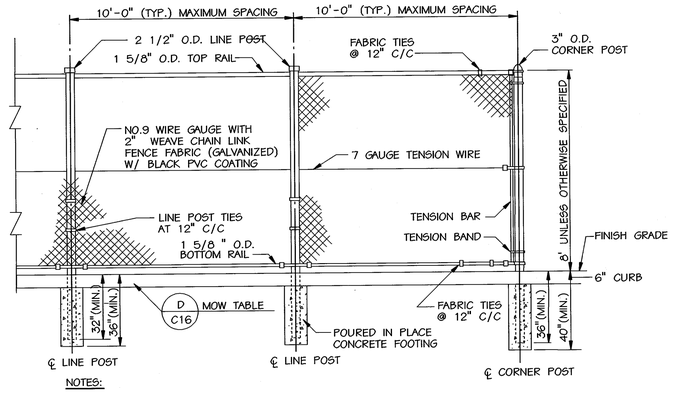
C15

SHEET NO.: 18 OF 113

SDP-02-64

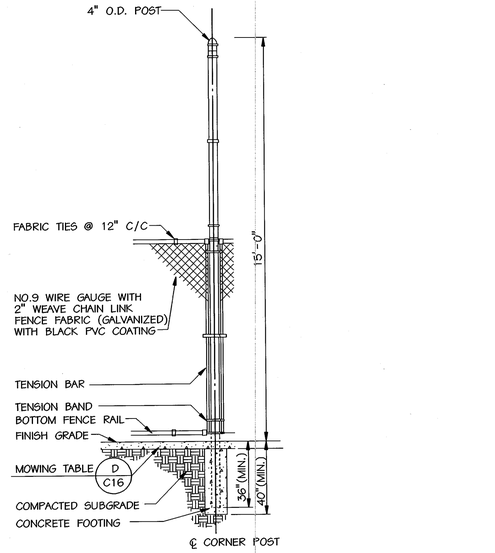


A INFIELD MIX DETAIL
NOT TO SCALE



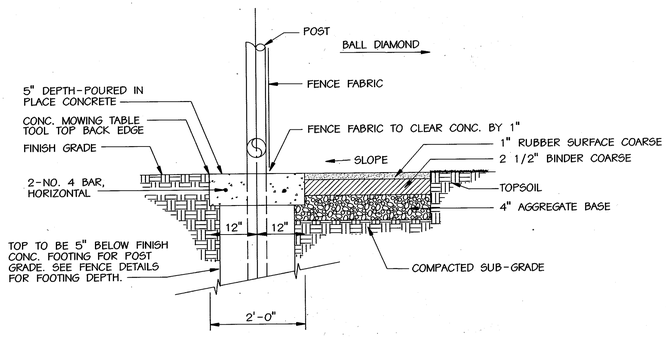
NOTES:
1. ALL PIPING SHALL BE SCHEDULE 40.
2. CONTRACTOR SHALL EXERCISE EXTREME CARE WHEN INSTALLING FENCE SO AS NOT TO DAMAGE UNDERGROUND UTILITIES.
3. INSTALL FABRIC ON DIAMOND SIDE OF FIELD
4. KNUCKLE SELVAGE TOP AND BOTTOM OF FABRIC
5. ALL CHAIN LINK, FABRIC, POSTS AND FITTINGS SHALL BE GALVANIZED WITH BLACK PVC COATING.

B OUTFIELD FENCE DETAIL
NOT TO SCALE

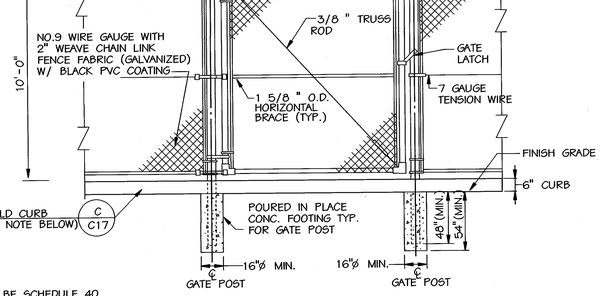


NOTES:
1. ALL PIPING SHALL BE SCHEDULE 40.
2. CONTRACTOR SHALL EXERCISE EXTREME CARE WHEN INSTALLING FENCE SO AS NOT TO DAMAGE UNDERGROUND UTILITIES.
5. ALL CHAIN LINK, FABRIC, POSTS AND FITTINGS SHALL BE GALVANIZED WITH BLACK PVC COATING.

C FOUL LINE POLE DETAIL
NOT TO SCALE

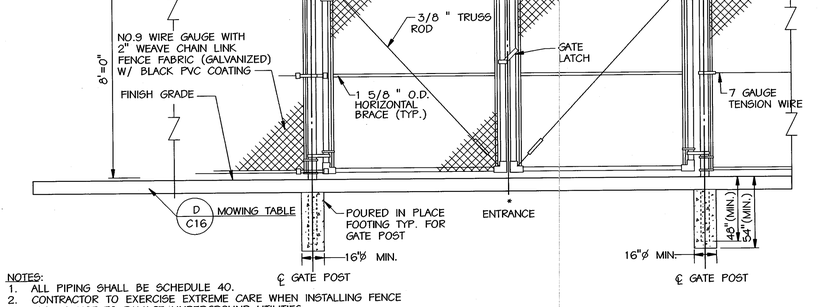


D WARNING TRACK DETAIL
NOT TO SCALE



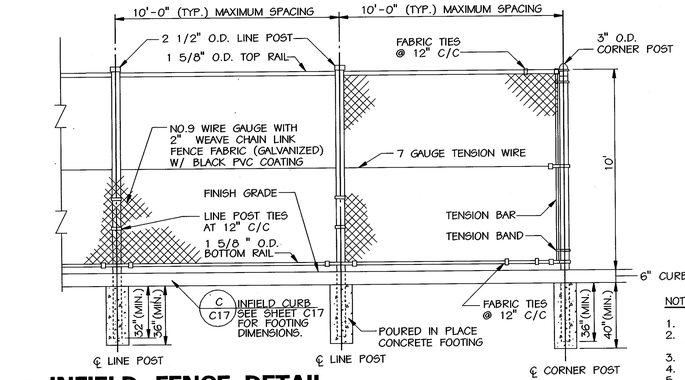
NOTES:
1. ALL PIPING SHALL BE SCHEDULE 40.
2. CONTRACTOR TO EXERCISE EXTREME CARE WHEN INSTALLING FENCE SO AS NOT TO DAMAGE UNDERGROUND UTILITIES.
3. ALL CHAIN LINK, FABRIC, POSTS AND FITTINGS SHALL BE GALVANIZED WITH BLACK PVC COATING.

E PEDESTRIAN GATE DETAIL
NOT TO SCALE



NOTES:
1. ALL PIPING SHALL BE SCHEDULE 40.
2. CONTRACTOR TO EXERCISE EXTREME CARE WHEN INSTALLING FENCE SO AS NOT TO DAMAGE UNDERGROUND UTILITIES.
3. ALL CHAIN LINK, FABRIC, POSTS AND FITTINGS SHALL BE GALVANIZED WITH BLACK PVC COATING.

F DOUBLE GATE DETAIL
NOT TO SCALE



NOTES:
1. ALL PIPING SHALL BE SCHEDULE 40.
2. CONTRACTOR SHALL EXERCISE EXTREME CARE WHEN INSTALLING FENCE SO AS NOT TO DAMAGE UNDERGROUND UTILITIES.
3. INSTALL FABRIC ON OUTSIDE SIDE OF COURTS
4. KNUCKLE SELVAGE TOP AND BOTTOM OF FABRIC
5. ALL CHAIN LINK, FABRIC, POSTS AND FITTINGS SHALL BE GALVANIZED WITH BLACK PVC COATING.

G INFIELD FENCE DETAIL
NOT TO SCALE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, H.C.H.D. — DATE 10-17-02
HOWARD COUNTY HEALTH DEPARTMENT

NO.	REVISIONS	DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 0100057.5 \ USDET05.DGN

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STATE OF MARYLAND * ENGINEER * MICHAEL JOSEPH ARMSTRONG * 21583 * PROFESSIONAL
Michael J. Armstrong 9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
3430 COURTHOUSE DRIVE
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

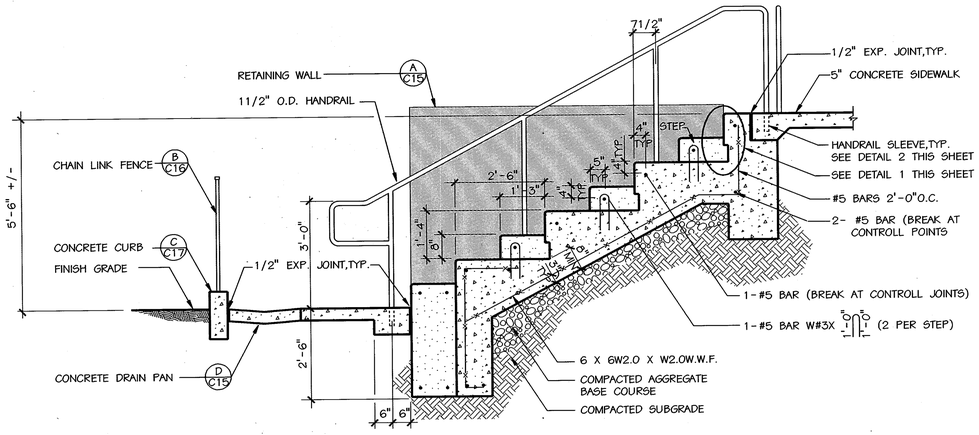
SITE DETAILS

SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

C16

SHEET NO.: 19 OF 113

SDP-02-64

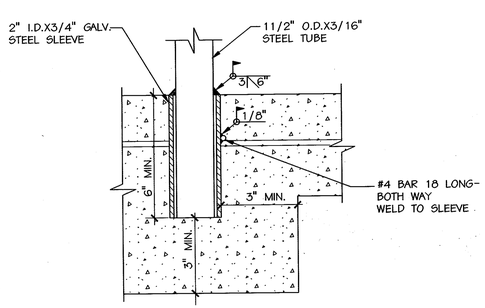


A CONCRETE BLEACHER /STAIR DETAIL – FIELD 1

SCALE: 1/2"=1'

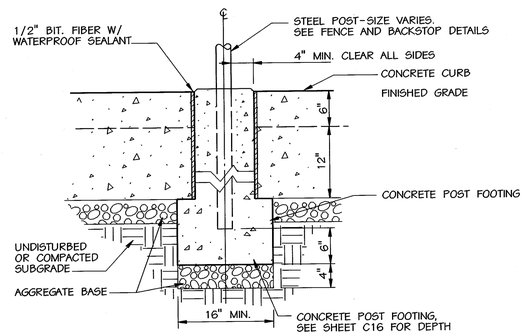
B CONCRETE BLEACHER /STAIR DETAIL – FIELDS 2, 3 & 9

SCALE: 1/2"=1'

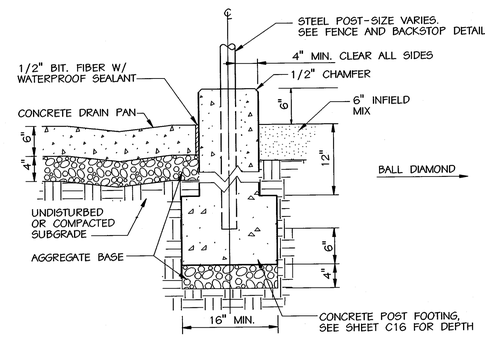


DETAIL 2 – HANDRAIL SLEEVE

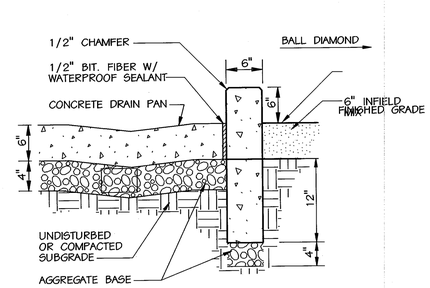
NOT TO SCALE



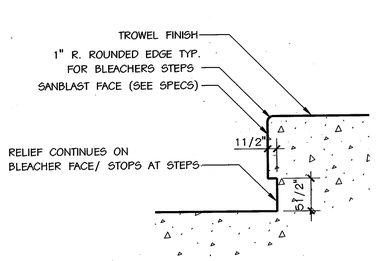
ELEVATION C–C CURB/FOOTING CONNECTION



SECTION B–B

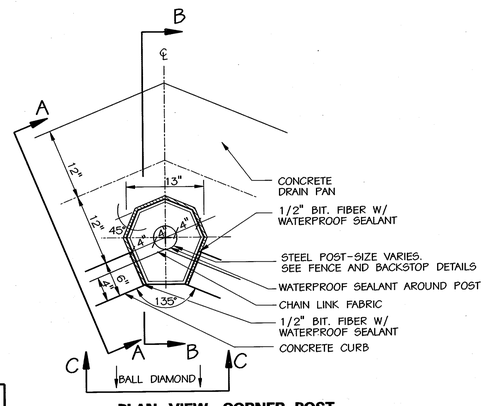


SECTION A–A CONCRETE CURB

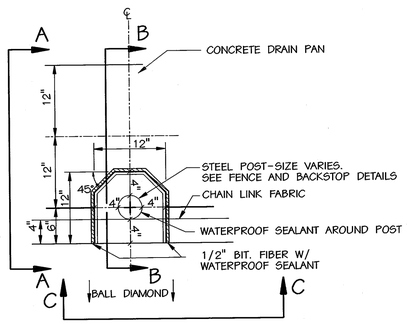


DETAIL 1 – BLEACHER STEP

NOT TO SCALE



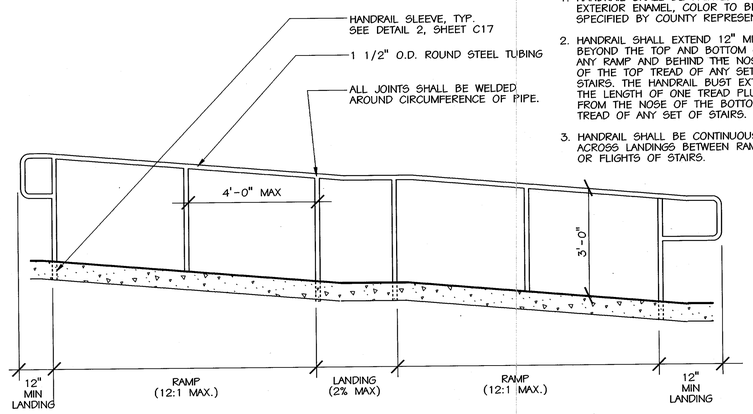
PLAN VIEW CORNER POST



PLAN VIEW LINE POST

NOTES:

1. HANDRAIL SHALL BE PAINTED WITH EXTERIOR ENAMEL, COLOR TO BE SPECIFIED BY COUNTY REPRESENTATIVE.
2. HANDRAIL SHALL EXTEND 12" MIN. BEYOND THE TOP AND BOTTOM OF ANY RAMP AND BEHIND THE NOSE OF THE TOP TREAD OF ANY SET OF STAIRS. THE HANDRAIL BUST EXTEND THE LENGTH OF ONE TREAD PLUS 12" FROM THE NOSE OF THE BOTTOM TREAD OF ANY SET OF STAIRS.
3. HANDRAIL SHALL BE CONTINUOUS ACROSS LANDINGS BETWEEN RAMPS OR FLIGHTS OF STAIRS.



D HANDRAIL DETAIL

SCALE: 1/2"=1'

C INFIELD CURB AT FENCE/BACKSTOP POST DETAIL

SCALE: 1"=1'

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/8/02

DIRECTOR — DATE 10/22/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, H.C.H.D. — DATE 10-17-02

HOWARD COUNTY HEALTH DEPARTMENT

NO.	REVISIONS	DESCRIPTION	DATE

KCI FILE:

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KCI TECHNOLOGIES WWW.KCI.COM

STATE OF MARYLAND — MICHAEL JOSEPH ARMSTRONG — 21587 — REGISTERED PROFESSIONAL ENGINEER
9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

SITE DETAILS

SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

C17

SHEET NO.: 20 OF 113

SDP-02-64

North Elevation
(A) Exterior Sign X.SID 1- Site Identity Sign- Double-faced
Western Regional Park Howard County, Maryland
Scale: N.T.S.
Schematic Design 11.2001
MORTAR&ink

North Elevation
(B) Exterior Sign X.SID 2- Secondary Site Identity Sign- Double-faced
Western Regional Park Howard County, Maryland
Scale: N.T.S.
Schematic Design 11.2001
MORTAR&ink

(1) LATCH- FRONT VIEW
N.T.S.

(2) LOCK DOWN POST ELEVATION
N.T.S.

(3) LATCH- TOP VIEW
N.T.S.

4" X 3/16" SQ. POSTS
2" X 1/8" SQ. TUBE STOCK FRAME
1 1/2" X 1/8" SQ. TUBE STOCK BALLASTER

(4) HINGE- TOP VIEW
N.T.S.

(C) CONCRETE SERVICE PAD
N.T.S.

NOTES:
1. CONTRACTOR TO PROVIDE SHOP DRAWINGS OF GATE FOR OWNERS APPROVAL.
2. PAINT GATES AND POST WITH TWO(2) COATS OF GLOSS BLACK, POLYURETHANE PAINT. PRIME FIRST.

(D) ENTRANCE GATE
N.T.S.

DOUBLE 'S' COMBINATION THRU INLET
NOT TO SCALE

TYPE 'E' THRU INLET
NOT TO SCALE

DOUBLE 'S' THRU INLET
NOT TO SCALE

MANHOLE SHALL BE DESIGNED BY THE PRECAST MANHOLE MANUFACTURER. REINFORCEMENTS SHOWN ARE MINIMUMS ALLOWED.

SECTION
WATER QUALITY DIVERSION MANHOLE
NOT TO SCALE

WATER QUALITY DIVERSION MANHOLE GENERAL NOTES

1. MANHOLE BASE SHALL BE BEDDED ON 6-INCH GRANULAR MATERIAL ON FIRM SUBGRADE.
2. EXCAVATION BELOW PIPES SHALL BE BACKFILLED WITH GRANULAR OR SELECT MATERIAL 1/3 OF WAY TO TOP OF PIPE.
3. CONNECTION BETWEEN MANHOLE WALL AND SEWER SHALL BE NON-SHRINK GROUT OR RUBBER GASKET (COMPRESSION TYPE) JOINT.
4. MANHOLE STEPS SHALL BE AS SPECIFIED ON HOW. CTY STD. DETAIL G5.21. MANHOLE COVER SHALL BE AS SPECIFIED ON HOW. CTY. STD. DETAIL G5.51.
5. PROVIDE PIPE JOINT WITHIN 2'-0" MAXIMUM FROM OUTSIDE OF MANHOLE WALL.
6. MANHOLE SHALL BE IN ACCORDANCE WITH ASTM C-478 EXCEPT AS SHOWN.
7. ALL CAST-IN-PLACE CONCRETE SHALL BE HOWARD COUNTY STANDARD MIX NO. 3

SLAB REINFORCING WATER QUALITY DIVERSION MANHOLE
NOT TO SCALE

WATER QUALITY DIVERSION NOTE:
8" DIVERSION PIPE TO PROTRUDE INTO STRUCTURE 0.25' WITH A 90° ELBOW ORIENTED DOWNWARD.

SECTION 1
TYPE C WATER QUALITY INLET DETAIL
NOT TO SCALE

SLAB REINFORCING TYPE C WATER QUALITY INLET
NOT TO SCALE

SECTION 2
TYPE C WATER QUALITY INLET DETAIL
NOT TO SCALE

KEY - TYPE B & C WATER QUALITY INLETS AND DIVERSION MANHOLE
NOT TO SCALE

NOTES:

1. ALL CONCRETE SHALL BE HOWARD COUNTY STANDARD MIX NO. 3.
2. REINFORCING = #4 @ 12" o/c EW IN ℄ OF WALLS REINFORCING CONTINUOUS AT CORNERS. ALL LAPS 1'-4".
3. TOP 4" OF WALL SHALL BE BRICK MASONTY. ADDITIONAL BRICK SHALL BE USED TO BRING INLET TOP TO EXISTING GRADE IF REQUIRED.
4. WHERE A IS 3'-6" OR GREATER STANDARD MANHOLE STEPS SHALL BE INSTALLED AS SHOWN.
5. MANHOLE STEPS SHALL BE AS SPECIFIED IN HOW. CTY. STD. DETAIL G5.21.

WATER QUALITY DIVERSION NOTE:
8" DIVERSION PIPE TO PROTRUDE INTO STRUCTURE 0.25' WITH A 90° ELBOW ORIENTED DOWNWARD.

SECTION
TYPE B WATER QUALITY INLET DETAIL
NOT TO SCALE

SECTION
TYPE B WATER QUALITY INLET DETAIL
NOT TO SCALE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 9/12/02
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 10/22/02
DIRECTOR	DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER / HOWARD COUNTY HEALTH DEPARTMENT	DATE 10-17-02

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE:

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STATE OF MARYLAND ★ MICHAEL ARMSTRONG ★ REGISTERED PROFESSIONAL ENGINEER NO. 16108
9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

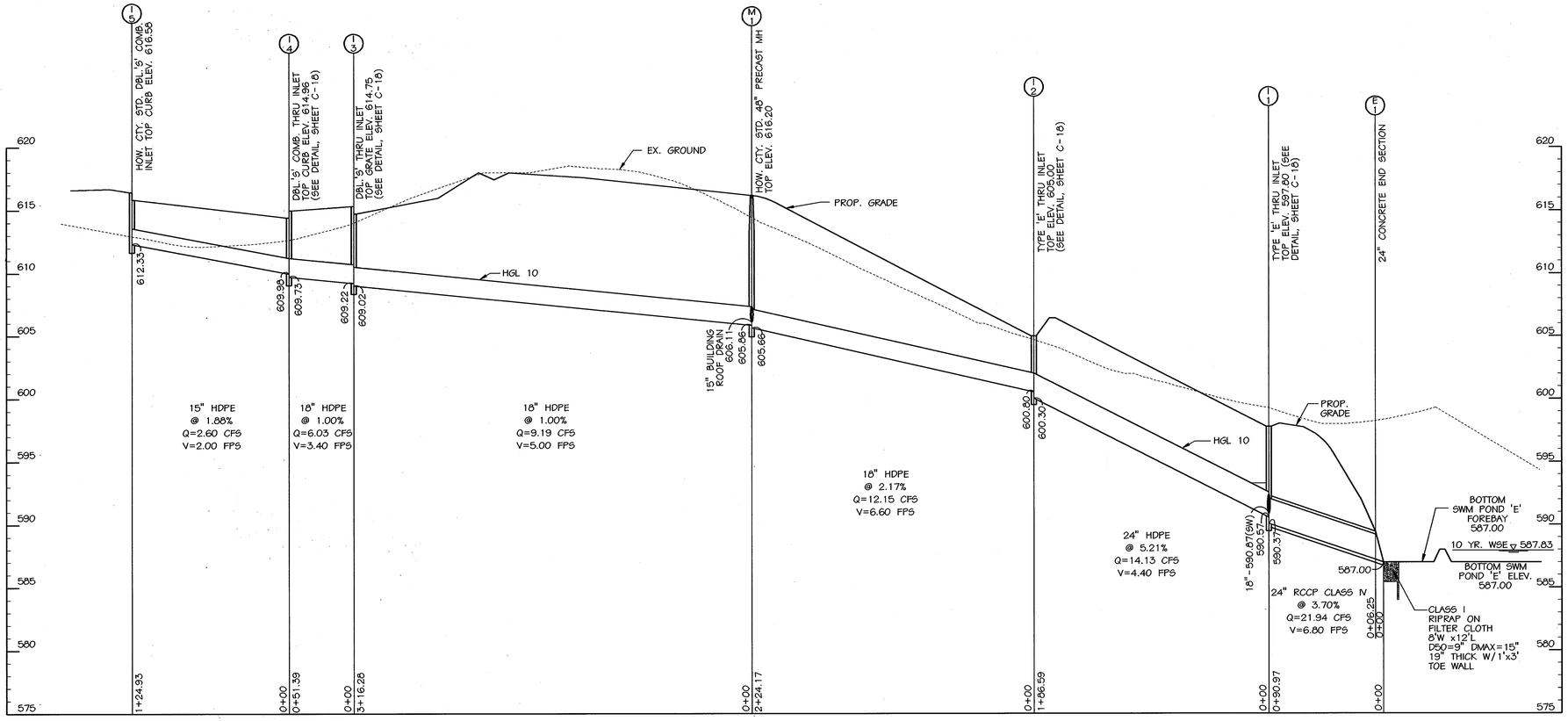
SITE DETAILS

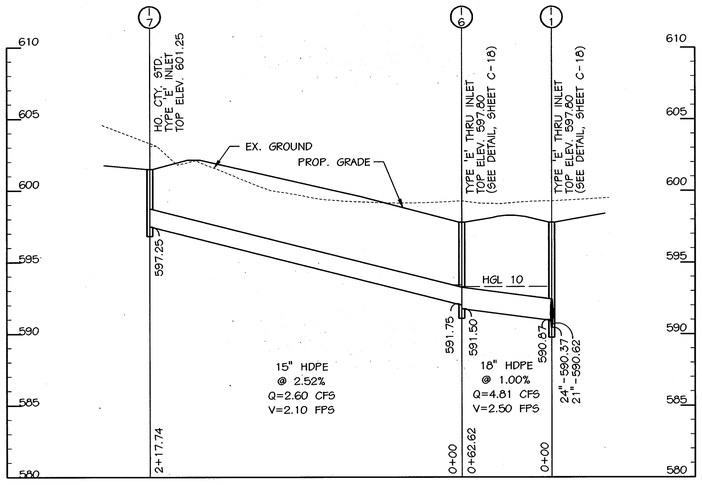
SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

C18

SHEET NO.: 21 OF 113

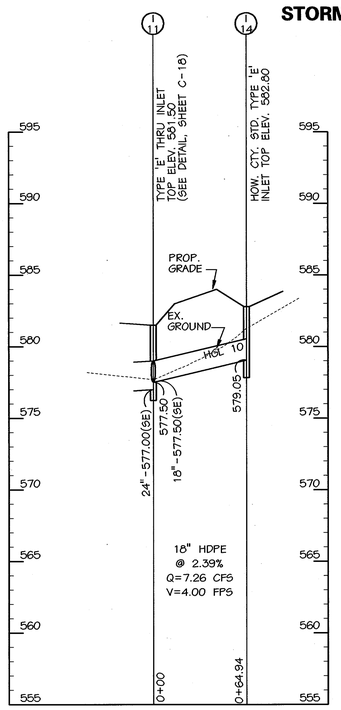
SDP-02-64





STORM DRAIN PROFILE

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



STORM DRAIN PROFILES

SCALE: HORIZ.: 1"=50'
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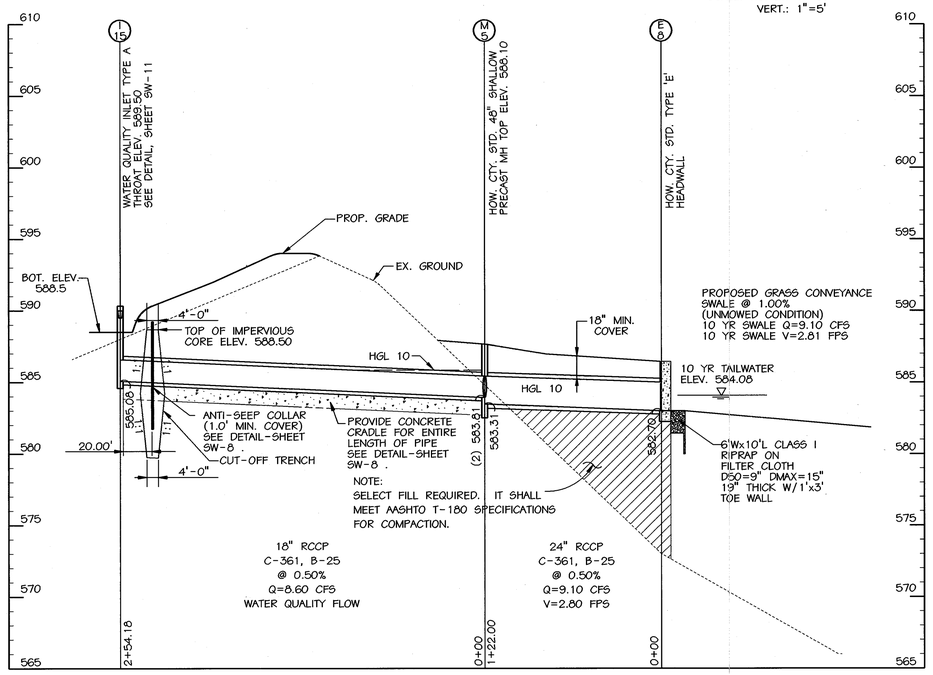

STORM DRAIN PROFILE

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

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING	
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 9/12/02
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 10/25/02
DIRECTOR	DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS	
COUNTY HEALTH OFFICER HOWARD COUNTY HEALTH DEPARTMENT	DATE 10-17-02

NO.	REVISIONS	DESCRIPTION	DATE

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STATE OF MARYLAND · REGISTERED PROFESSIONAL ENGINEER · NO. 21668 · REGISTRATION NOT TRANSFERABLE
Michael P. Thompson 2/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

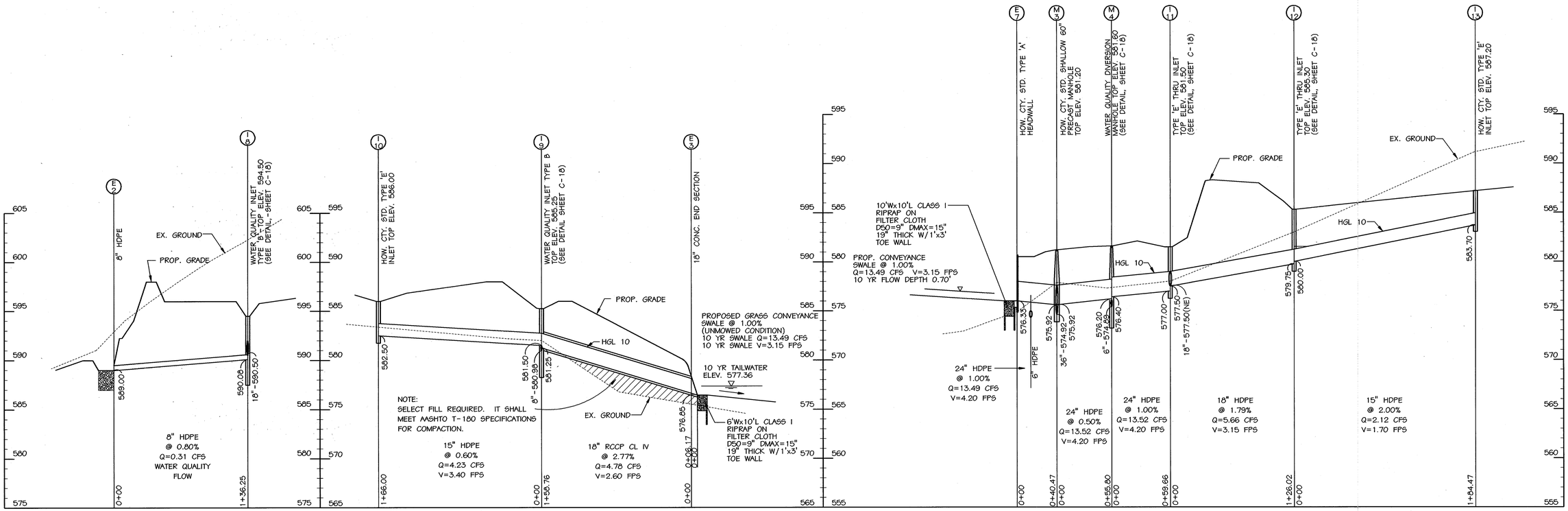
STORM DRAIN PROFILES

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SD1

SHEET NO.: 22 OF 113

SDP-02-64



STORM DRAIN PROFILE

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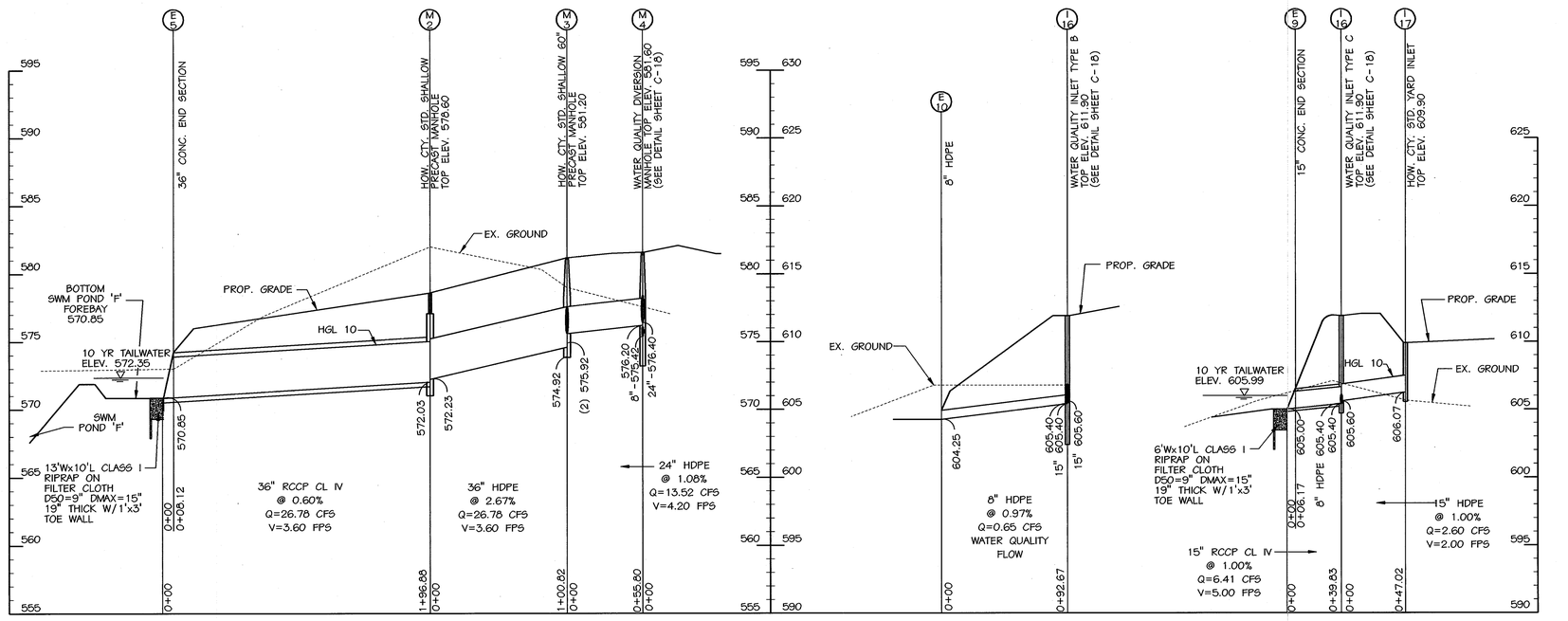

STORM DRAIN PROFILE

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

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER — DATE 10-17-02
HOWARD COUNTY HEALTH DEPARTMENT

NO.	REVISIONS DESCRIPTION	DATE

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STATE OF MARYLAND * MICHAEL ARMSTRONG * 21030 * REGISTERED PROFESSIONAL ENGINEER
9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

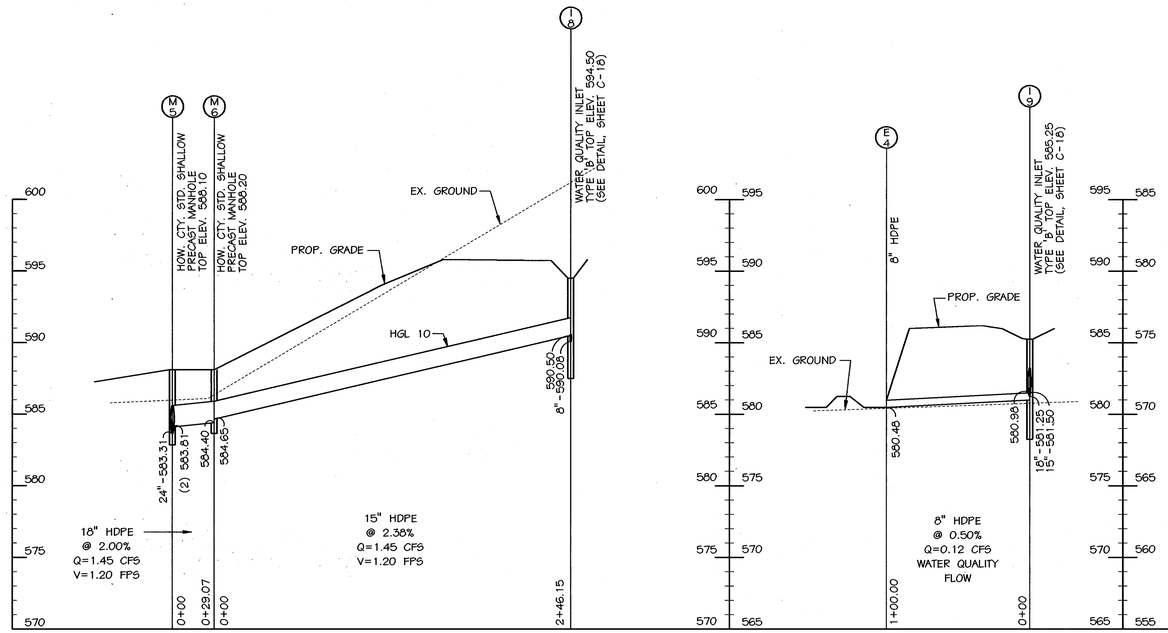
STORM DRAIN PROFILES

SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SD2

SHEET NO.: 23 OF 113

SDP-02-64



STORM DRAIN PROFILE

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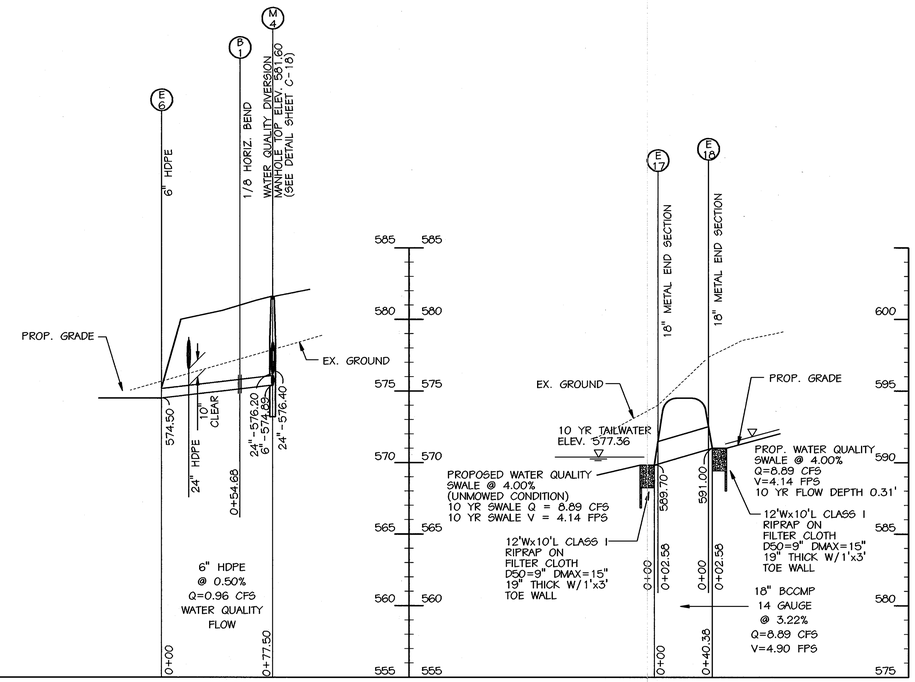
VERT.: 1"=5'



STORM DRAIN PROFILE

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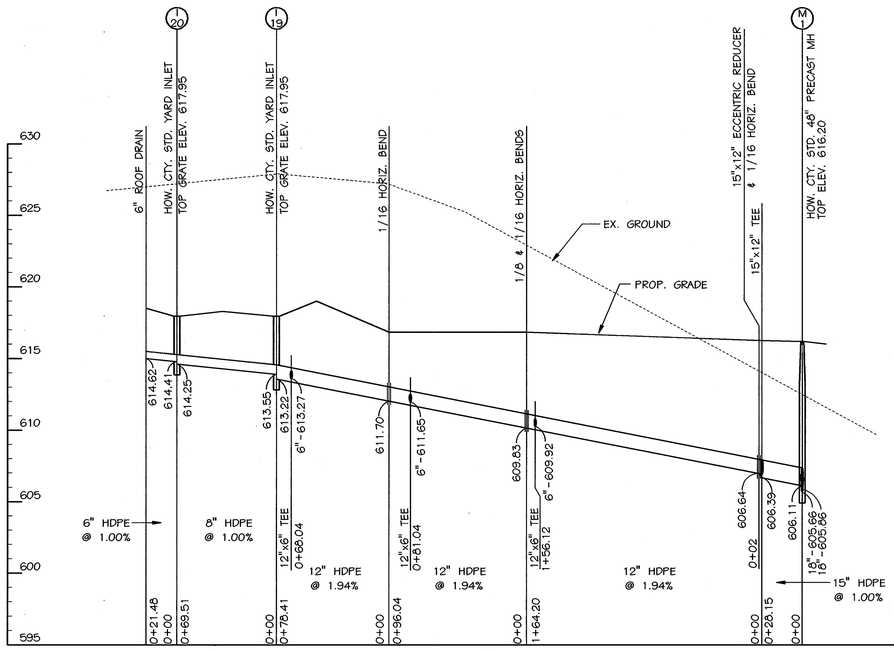

STORM DRAIN PROFILE

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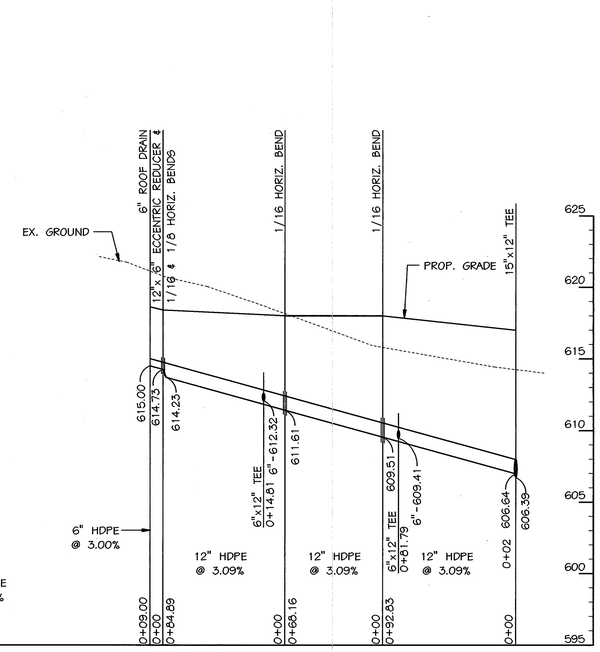

STORM DRAIN PROFILE

SCALE: HORIZ.: 1"=50'
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APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, H.S. — DATE 10-17-02
HOWARD COUNTY HEALTH DEPARTMENT

NO.	REVISIONS DESCRIPTION	DATE

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9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
3430 COURTHOUSE DRIVE
COLUMBIA, MARYLAND 21045-1677
(410) 313-4640

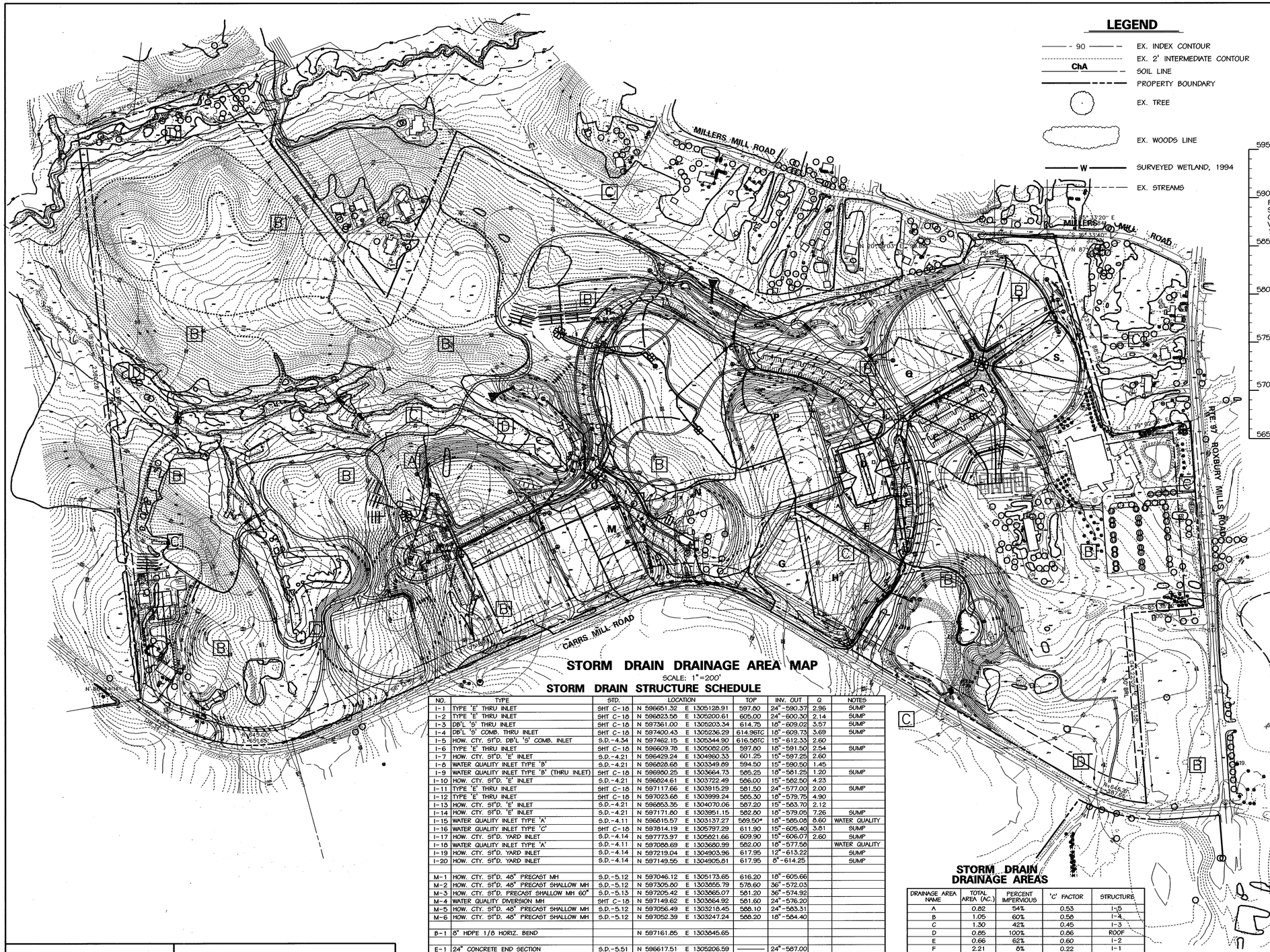
STORM DRAIN PROFILES

SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SD3

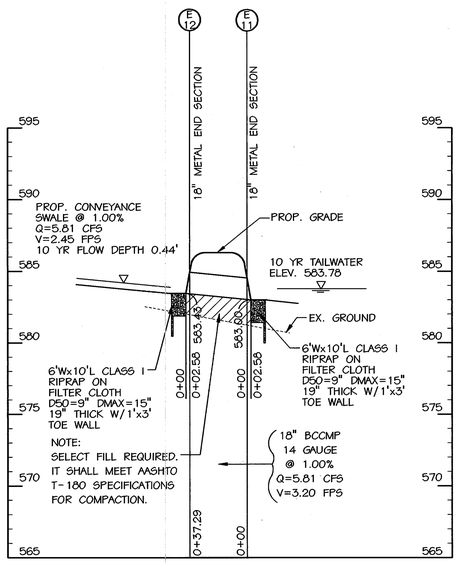
SHEET NO.: 24 OF 113

SDP-02-64



LEGEND

- EX. INDEX CONTOUR
- EX. 2' INTERMEDIATE CONTOUR
- ChA — SOIL LINE
- PROPERTY BOUNDARY
- EX. TREE
- EX. WOODS LINE
- W — SURVEYED WETLAND, 1994
- EX. STREAMS



STORM DRAIN PROFILE

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

STORM DRAIN DRAINAGE AREA MAP

SCALE: 1"=200'

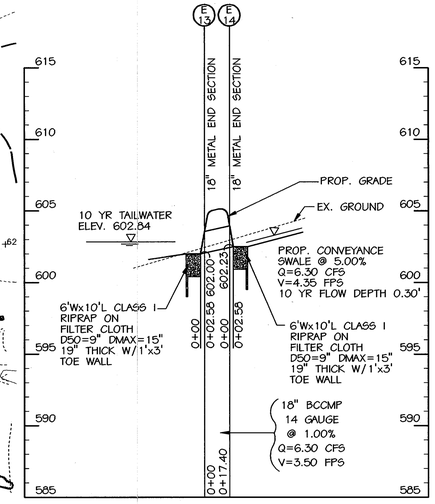
STORM DRAIN STRUCTURE SCHEDULE

NO.	TYPE	STD.	LOCATION		TOP	INV. OUT	Q	NOTES
I-1	TYPE 'E' THRU INLET	SHT C-18	N 596651.32	E 1305128.91	597.80	24"-590.37	2.96	SUMP
I-2	TYPE 'E' THRU INLET	SHT C-18	N 596823.58	E 1305200.61	605.00	24"-600.30	2.14	SUMP
I-3	DB'L 'S' THRU INLET	SHT C-18	N 597361.00	E 1305203.34	614.75	18"-609.02	3.57	SUMP
I-4	DB'L 'S' COMB. THRU INLET	SHT C-18	N 597400.43	E 1305236.29	614.96TC	18"-609.73	3.69	SUMP
I-5	HOW. CTY. ST'D. DB'L 'S' COMB. INLET	S.D.-4.34	N 597462.15	E 1305344.90	616.58TC	15"-612.33	2.60	
I-6	TYPE 'E' THRU INLET	SHT C-18	N 596609.78	E 1305082.05	597.80	18"-591.50	2.54	SUMP
I-7	HOW. CTY. ST'D. 'E' INLET	S.D.-4.21	N 596429.24	E 1304960.33	601.25	15"-597.25	2.60	
I-8	WATER QUALITY INLET TYPE 'B'	S.D.-4.21	N 596628.66	E 1303549.89	594.50	15"-590.50	1.45	
I-9	WATER QUALITY INLET TYPE 'B' (THRU INLET)	SHT C-18	N 596980.25	E 1303664.73	595.25	18"-581.25	1.20	SUMP
I-10	HOW. CTY. ST'D. 'E' INLET	S.D.-4.21	N 596824.61	E 1303722.49	586.00	15"-582.50	4.23	
I-11	TYPE 'E' THRU INLET	SHT C-18	N 597117.66	E 1303915.29	581.50	24"-577.00	2.00	SUMP
I-12	TYPE 'E' THRU INLET	SHT C-18	N 597023.68	E 1303999.24	585.30	18"-579.75	4.90	
I-13	HOW. CTY. ST'D. 'E' INLET	S.D.-4.21	N 596853.35	E 1304070.06	587.20	15"-583.70	2.12	
I-14	HOW. CTY. ST'D. 'E' INLET	S.D.-4.21	N 597171.80	E 1303951.15	582.80	15"-579.05	7.26	SUMP
I-15	WATER QUALITY INLET TYPE 'A'	S.D.-4.11	N 596815.57	E 1303137.27	589.50*	18"-585.08	0.60	WATER QUALITY
I-16	WATER QUALITY INLET TYPE 'C'	SHT C-18	N 597814.19	E 1305797.29	611.90	15"-605.40	3.61	SUMP
I-17	HOW. CTY. ST'D. YARD INLET	S.D.-4.14	N 597773.97	E 1305621.66	609.90	15"-606.07	2.60	SUMP
I-18	WATER QUALITY INLET TYPE 'A'	S.D.-4.11	N 597058.69	E 1303680.99	582.00	18"-577.58		WATER QUALITY
I-19	HOW. CTY. ST'D. YARD INLET	S.D.-4.14	N 597219.04	E 1304903.96	617.95	12"-613.22		SUMP
I-20	HOW. CTY. ST'D. YARD INLET	S.D.-4.14	N 597149.55	E 1304905.81	617.95	8"-614.25		SUMP
M-1	HOW. CTY. ST'D. 48" PRECAST MH	S.D.-5.12	N 597046.12	E 1305173.65	616.20	18"-605.66		
M-2	HOW. CTY. ST'D. 48" PRECAST SHALLOW MH	S.D.-5.12	N 597305.60	E 1303655.79	578.60	36"-572.03		
M-3	HOW. CTY. ST'D. PRECAST SHALLOW MH 60"	S.D.-5.13	N 597205.42	E 1303665.07	581.20	36"-574.92		
M-4	WATER QUALITY DIVERSION MH	SHT C-18	N 597149.62	E 1303664.92	581.60	24"-576.20		
M-5	HOW. CTY. ST'D. 48" PRECAST SHALLOW MH	S.D.-5.12	N 597056.49	E 1303218.45	588.10	24"-583.31		
M-6	HOW. CTY. ST'D. 48" PRECAST SHALLOW MH	S.D.-5.12	N 597052.39	E 1303247.24	588.20	18"-584.40		
B-1	8" HDPE 1/8 HORIZ. BEND		N 597161.85	E 1303845.65				
E-1	24" CONCRETE END SECTION	S.D.-5.51	N 596617.51	E 1305206.59	———	24"-587.00		
E-2	8" HDPE		N 596812.97	E 1303214.55	———	8"-569.00		
E-3	18" CONCRETE END SECTION	S.D.-5.51	N 597103.30	E 1303760.78	———	18"-576.85		
E-4	8" HDPE		N 597064.91	E 1303607.78	———	8"-580.48		
E-5	36" CONCRETE END SECTION	S.D.-5.51	N 597437.86	E 1303713.35	———	36"-570.85		
E-6	6" HDPE		N 597215.82	E 1303636.83	———	6"-574.50		
E-7	24" TYPE 'A' HEADWALL	S.D.-5.11	N 597192.70	E 1303626.65	———	24"-576.33		
E-8	24" TYPE 'E' HEADWALL	S.D.-5.31	N 597179.32	E 1303210.67	———	24"-582.70		
E-9	15" CONCRETE END SECTION	S.D.-5.51	N 597635.53	E 1305632.69	———	15"-605.00		
E-10	6" HDPE		N 597906.59	E 1305804.43	———	6"-604.25		
E-11	18" METAL END SECTION	S.D.-5.61	N 597924.53	E 1304221.17	———	18"-583.00		
E-12	18" METAL END SECTION	S.D.-5.61	N 597953.12	E 1304184.85	———	18"-583.43		
E-13	18" METAL END SECTION	S.D.-5.61	N 597633.49	E 1305039.18	———	18"-602.00		
E-14	18" METAL END SECTION	S.D.-5.61	N 597619.05	E 1305046.90	———	18"-602.23		
E-15	18" CONCRETE END SECTION	S.D.-5.51	N 597766.60	E 1304488.48	———	18"-576.00		
E-16	18" TYPE 'C' ENDWALL	S.D.-5.21	N 597682.03	E 1304481.83	———	18"-583.00		
E-17	18" METAL END SECTION	S.D.-5.61	N 597588.61	E 1304521.19	———	18"-589.70		
E-18	18" METAL END SECTION	S.D.-5.61	N 597566.96	E 1304548.78	———	18"-591.00		
E-19	18" CONCRETE END SECTION	S.D.-5.51	N 597103.76	E 1303726.48	———	18"-576.60		

*THROAT OPENING ELEV. (OPEN ALL 4 SIDES)

STORM DRAIN DRAINAGE AREAS

DRAINAGE AREA NAME	TOTAL AREA (AC.)	PERCENT IMPERVIOUS	'C' FACTOR	STRUCTURE
A	0.82	54%	0.53	I-5
B	1.05	60%	0.55	I-4
C	1.30	42%	0.45	I-3
D	0.85	100%	0.86	ROOF
E	0.66	62%	0.60	I-2
F	2.21	8%	0.22	I-1
G	2.26	3%	0.19	I-7
H	2.47	0%	0.17	I-6
J	0.58	36%	0.41	I-8
J	4.11	2%	0.17	I-10
K	1.07	0%	0.16	I-9
L	2.22	15%	0.27	I-13
M	1.31	29%	0.36	I-12
N	6.67	3%	0.18	I-14
O	0.92	26%	0.36	I-11
P	5.44	11%	0.27	E-5
Q	2.77	19%	0.33	E-14
R	2.66	23%	0.36	E-17
S	2.24	11%	0.24	I-17
T	1.35	18%	0.32	I-16



STORM DRAIN PROFILE

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

GRAPHIC SCALE
200 0 100 200 400
(IN FEET)
1 inch = 200ft.

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, HOWARD COUNTY HEALTH DEPARTMENT — DATE 10-17-02

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 01000057.S \ USSDAMAP01.DGN

KCI TECHNOLOGIES INC.
ENGINEERS • PLANNERS • SURVEYORS
10 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
KCI TECHNOLOGIES WWW.KCI.COM

MICHAEL MARK STRONG — No. 21406 — REGISTERED PROFESSIONAL ENGINEER — STATE OF MARYLAND
9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410) 313-4640

STORM DRAIN PROFILES & DRAINAGE AREA MAP

SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SD4

SHEET NO.: 25 OF 113

SDP-02-64

VICINITY MAP

Scale : 1" = 2000'

LEGEND

- 90 — EX. INDEX CONTOUR
- EX. 2' INTERMEDIATE CONTOUR
- ChA — SOIL LINE
- PROPERTY BOUNDARY
- EX. TREE
- EX. WOODS LINE
- W — SURVEYED WETLAND, 1994
- EX. STREAMS
- B — Tc PATH
- DRAINAGE AREA DIVIDE

DRAINAGE AREA LIMITS EAST OF ROUTE 97 ARE TAKEN FROM STORMWATER MANAGEMENT PLANS PREPARED BY FREDERICK WARD ASSOCIATES, INC., DATED NOV. 12, 2001 FOR THE DEVELOPMENT OF THE GLENWOOD STATION RETAIL CENTER IMMEDIATELY.

DA TO SWALE DESIGNATES DRAINAGE AREA TO A PERMANENT SWALE BEING USED AS A TEMPORARY SWALE DURING SEDIMENT AND EROSION CONTROL.

AREA OF SITE DISTURBANCE (EXCLUDING PATH CONSTRUCTION) THIS SHEET = 4,116,429 S.F.± OR 94.50 AC.±
AREA OF DISTURBANCE FOR PATH CONSTRUCTION THIS SHEET = 12,899 S.F.± OR .30 AC.±
TOTAL AREA OF DISTURBANCE = 4,129,328 S.F.± OR 94.80 AC.±

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

[signature] 9/12/02
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

[signature] 10/22/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

[signature] 10/23/02
DIRECTOR — DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

[signature] 10-17-02
COUNTY HEALTH OFFICER — DATE
HOWARD COUNTY HEALTH DEPARTMENT

ENGINEER'S CERTIFICATE

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

Michael N. Armstrong — 9/3/02
SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE) — DATE
MICHAEL N. ARMSTRONG

DEVELOPER'S CERTIFICATE

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

[signature] — 9/4/02
SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) — DATE
RONALD G LEPSON

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

[signature] — 9/5/02
USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE

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

[signature] — 9/5/02
HOWARD SCD — DATE

NORTH

GRAPHIC SCALE
200 0 100 200 400
(IN FEET)
1 inch = 200ft.

MARYLAND COORDINATE SYSTEM — HORIZONTAL NAD 83-91 — VERTICAL NAVD 29

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 0100057.5 \ USCDAEX.DGN

KCI TECHNOLOGIES INC.
ENGINEERS • PLANNERS • SURVEYORS
10 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND 21030
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WWW.KCI.COM
KCI TECHNOLOGIES

STATE OF MARYLAND ★ MICHAEL NORMAN ARMSTRONG ★ NO. 16109 REGISTERED ★ PROFESSIONAL ENGINEER
Michael N. Armstrong 9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

EXISTING SEDIMENT & EROSION CONTROL DRAINAGE AREA MAP

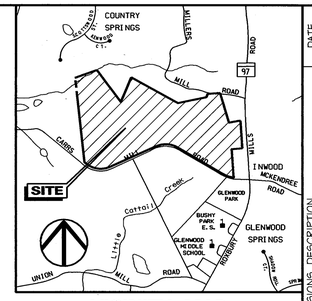
SCALE:	1" = 200'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SC1

SDP-02-64

VICINITY MAP

Scale : 1" = 2000'



LEGEND

- 90 — EX. INDEX CONTOUR
- ChA — EX. 2' INTERMEDIATE CONTOUR
- SOIL LINE
- PROPERTY BOUNDARY
- EX. TREE
- EX. WOODS LINE
- W — SURVEYED WETLAND, 1994
- B — EX. STREAMS
- Tc PATH
- DRAINAGE AREA LINES
- LIMIT OF DISTURBANCE

DRAINAGE AREA LIMITS EAST OF ROUTE 97 ARE TAKEN FROM STORMWATER MANAGEMENT PLANS PREPARED BY FREDERICK WARD ASSOCIATES, INC., DATED NOV. 12, 2001 FOR THE DEVELOPMENT OF THE GLENWOOD STATION RETAIL CENTER.

DA TO SWALE DESIGNATES DRAINAGE AREA TO A PERMANENT SWALE BEING USED AS A TEMPORARY SWALE DURING SEDIMENT AND EROSION CONTROL.

AREA OF SITE DISTURBANCE (EXCLUDING PATH CONSTRUCTION) THIS SHEET = 4,116,429 S.F.± OR 94.50 AC.±
AREA OF DISTURBANCE FOR PATH CONSTRUCTION THIS SHEET = 12,899 S.F.± OR .30 AC.±
TOTAL AREA OF DISTURBANCE = 4,129,328 S.F.± OR 94.80 AC.±

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER — DATE 10-17-02
HOWARD COUNTY HEALTH DEPARTMENT

ENGINEER'S CERTIFICATE

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

SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE) — DATE 9/3/02
MICHAEL N. ARMSTRONG

DEVELOPER'S CERTIFICATE

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

SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) — DATE 9/4/02
RONALD G. LEPSON

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 9/5/02

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

HOWARD SCD — DATE 9/5/02

NORTH

GRAPHIC SCALE
200 0 100 200 400
(IN FEET)
1 inch = 200ft.

MARYLAND COORDINATE SYSTEM HORIZONTAL NAD 83-91
VERTICAL NAVD 29

NO.	REVISIONS/ DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 01000057.S \ USCDAPR0.DGN

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STATE OF MARYLAND ★ MICHAEL NEIL ARMSTRONG ★ 13331 ★ REGISTERED PROFESSIONAL ENGINEER
Michael N. Armstrong 9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410) 313-4640

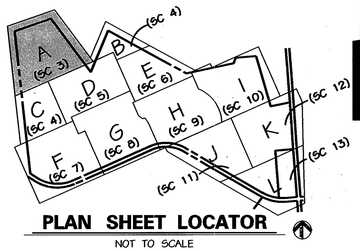
PROPOSED SEDIMENT & EROSION CONTROL DRAINAGE AREA MAP

SCALE:	1" = 200'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SC2

SHEET NO.: 27 OF 113

SDP-02-64



PLAN SHEET LOCATOR

NOT TO SCALE

NOTE:

The Project Manager from the Department of Recreation and Parks will stake the placement of the pathway to avoid the removal of any trees. The pathway placement will have minimal clearing and minimal impact to the trees.

LEGEND

- EX. INDEX CONTOUR (590)
- EX. 2' INTERMEDIATE CONTOUR
- SOIL LINE (GIC2)
- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- EX. WOODS LINE
- SURVEYED WETLAND (W)
- EX. STREAMS
- 75' STREAM BUFFER (SB)
- EQUESTRIAN/HIKING TRAIL
- EX. SPOT ELEVATION (570.9)
- PROPOSED ASPHALT PATH
- PROPOSED CONCRETE PATH
- PROPOSED FENCE LINE
- PROPOSED RETAINING WALL
- PROPOSED CONC. CURB & GUTTER
- PROPOSED ASPHALT PAVING
- PROPOSED TREE LINE TO REMAIN
- PROPOSED INDEX CONTOUR (620)
- PROPOSED INTERMEDIATE CONTOUR (614)
- PROPOSED SPOT ELEVATION (+617.25)
- PROPOSED INLET
- PROPOSED STORM DRAIN END SECTION
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN
- PROPOSED SEPTIC TANK
- PROPOSED SANITARY SEWER (S)
- PROPOSED SEWER MANHOLE
- PROPOSED MONITORING WELL
- PROPOSED SEPTIC DRAIN FIELD
- SILT FENCE (SF)
- SUPER SILT FENCE (SSF)
- STABILIZED CONSTRUCTION ENTRANCE (SCE)
- BLAZE ORANGE SAFETY FENCE (BOF)
- LIMIT OF DISTURBANCE (LOD)
- PROPOSED LIGHT POLE
- PROPOSED PADDOCK FENCE

PATH INSTALLATION NOTE

ONLY DISTURB PATH AND ADJACENT AREAS THAT CAN BE COMPLETED AND STABILIZED BY THE END OF EACH WORKING DAY (MAXIMUM 200' OF PATHWAY CONSTRUCTION AREA AT ANY ONE TIME). PLACE WATERBARS ACROSS PATHS TO PREVENT WATER FROM ENTERING THE WORK AREA. IF WEATHER, OR ANY OTHER CONDITIONS DO NOT ALLOW COMPLETION OF PATH INSTALLATION AND STABILIZATION OF DISTURBED AREAS, SILT FENCE SHALL BE INSTALLED DOWNSTREAM OF ALL DISTURBANCE. THE ENDS OF THE SILT FENCE SHALL BE EXTENDED UPSLOPE A MINIMUM OF 2 FEET VERTICALLY. ALL DISTURBED AREA WITHIN BUFFERS IS TO BE STABILIZED WITH EROSION CONTROL MATTING PLACED OVER PERMANENT SEEDING.

DUST CONTROL NOTE

DUST CONTROL IS TO BE USED AT ALL TIMES. SEE SHEET SC30 FOR SPECIFICATIONS.

AREA OF SITE DISTURBANCE (EXCLUDING PATH CONSTRUCTION) THIS SHEET = 0 S.F.± OR 0.00 AC.±
AREA OF DISTURBANCE FOR PATH CONSTRUCTION THIS SHEET = 0 S.F.± OR 0 AC.±
TOTAL AREA OF DISTURBANCE THIS SHEET = 51,083 S.F.± OR 1.17 AC.±

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 9/5/02

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

HOWARD SCD — DATE 9/5/02

ENGINEER'S CERTIFICATE

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

Michael N. Armstrong — DATE 9/3/02
SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE)
MICHAEL N. ARMSTRONG

DEVELOPER'S CERTIFICATE

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

Ronald G. Lepson — DATE 9/4/02
SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE)
RONALD G. LEPSON

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11/22/02
DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT — DATE 10-17-02

MATCHLINE – SEE SHEET SC4, PLAN B

MATCHLINE – SEE SHEET SC5

NOTE: THE ENDS OF SILT FENCE AND SUPER SILT FENCE SHALL BE TURNED UPHILL A MINIMUM OF 2' IN ELEVATION.

THE PROJECT MANAGER FROM THE DEPARTMENT OF RECREATION AND PARKS WILL STAKE THE PLACEMENT OF THE PATHWAY TO AVOID THE REMOVAL OF ANY TREES. THE PATHWAY PLACEMENT WILL HAVE MINIMAL CLEARING AND MINIMAL IMPACT TO THE TREES.

NORTH

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50ft.

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 01000057.5 \ USCPLN01.DGN

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HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
KCI TECHNOLOGIES WWW.KCI.COM

MARYLAND REGISTERED PROFESSIONAL ENGINEER
Michael N. Armstrong
9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

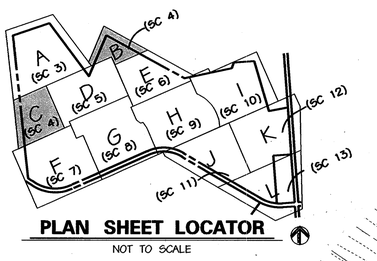
SEDIMENT & EROSION CONTROL PLAN
AREA A

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SC3

SHEET NO.: 28 OF 113

SDP-02-64



PLAN SHEET LOCATOR

NOT TO SCALE

LEGEND

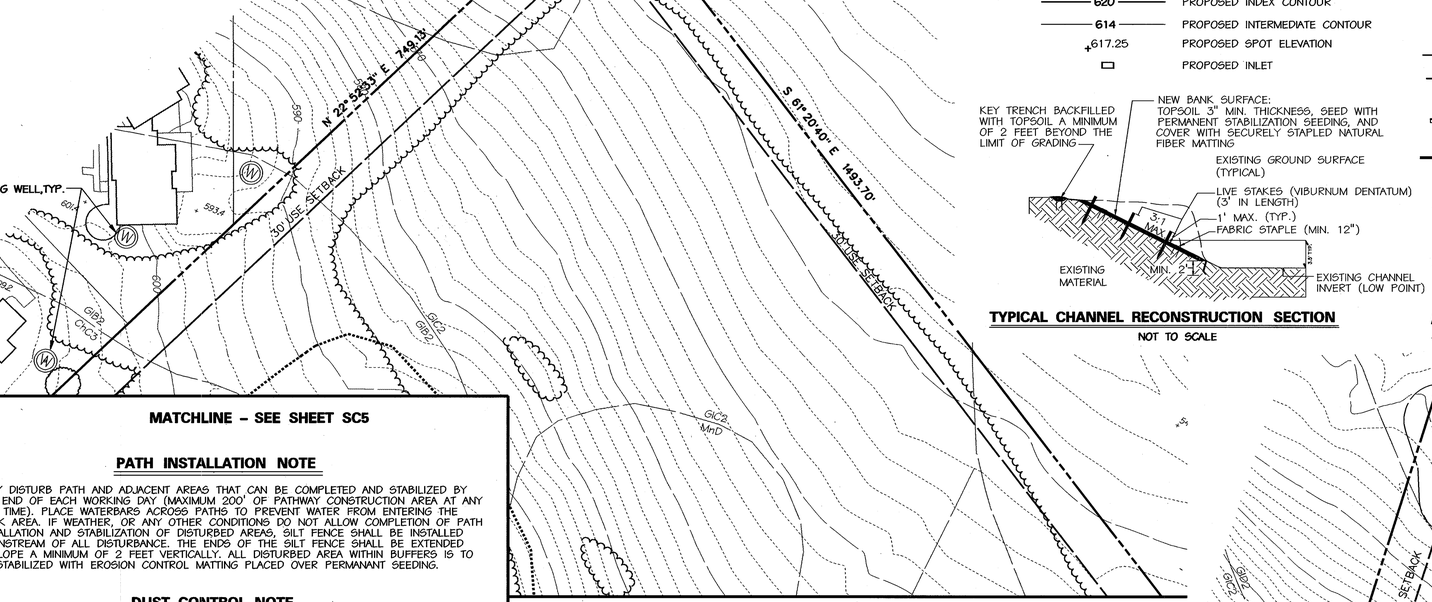
- EX. INDEX CONTOUR
- EX. 2' INTERMEDIATE CONTOUR
- SOIL LINE
- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- EX. WOODS LINE
- SURVEYED WETLAND
- EX. STREAMS
- 75' STREAM BUFFER
- EQUESTRIAN/HIKING TRAIL
- EX. SPOT ELEVATION
- PROPOSED TREE LINE TO REMAIN
- PROPOSED ASPHALT PATH
- PROPOSED CONCRETE PATH
- PROPOSED FENCE LINE
- PROPOSED RETAINING WALL
- PROPOSED CONC. CURB & GUTTER
- PROPOSED ASPHALT PAVING
- PROPOSED INDEX CONTOUR
- PROPOSED INTERMEDIATE CONTOUR
- PROPOSED SPOT ELEVATION
- PROPOSED INLET
- PROPOSED STORM DRAIN END SECTION
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN
- PROPOSED SEPTIC TANK
- PROPOSED SANITARY SEWER
- PROPOSED SEWER MANHOLE
- PROPOSED MONITORING WELL
- PROPOSED SEPTIC DRAIN FIELD
- SILT FENCE
- SUPER SILT FENCE
- STABILIZED CONSTRUCTION ENTRANCE
- BLAZE ORANGE SAFETY FENCE
- LIMIT OF DISTURBANCE
- PROPOSED LIGHT POLE
- PROPOSED PADDOCK FENCE

NOTE: THE ENDS OF SILT FENCE AND SUPER SILT FENCE SHALL BE TURNED UPHILL A MINIMUM OF 2' IN ELEVATION.

THE PROJECT MANAGER FROM THE DEPARTMENT OF RECREATION AND PARKS WILL STAKE THE PLACEMENT OF THE PATHWAY TO AVOID THE REMOVAL OF ANY TREES. THE PATHWAY PLACEMENT WILL HAVE MINIMAL CLEARING AND MINIMAL IMPACT TO THE TREES.

NOTE:

The Project Manager from the Department of Recreation and Parks will stake the placement of the pathway to avoid the removal of any trees. The pathway placement will have minimal clearing and minimal impact to the trees.



TYPICAL CHANNEL RECONSTRUCTION SECTION

NOT TO SCALE

MATCHLINE – SEE SHEET SC3

MATCHLINE – SEE SHEET SC6

PATH INSTALLATION NOTE

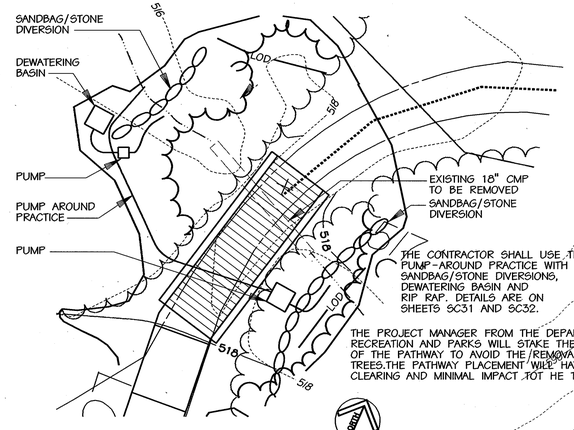
ONLY DISTURB PATH AND ADJACENT AREAS THAT CAN BE COMPLETED AND STABILIZED BY THE END OF EACH WORKING DAY (MAXIMUM 200' OF PATHWAY CONSTRUCTION AREA AT ANY ONE TIME). PLACE WATERBARS ACROSS PATHS TO PREVENT WATER FROM ENTERING THE WORK AREA. IF WEATHER, OR ANY OTHER CONDITIONS DO NOT ALLOW COMPLETION OF PATH INSTALLATION AND STABILIZATION OF DISTURBED AREAS, SILT FENCE SHALL BE INSTALLED DOWNSTREAM OF ALL DISTURBANCE. THE ENDS OF THE SILT FENCE SHALL BE EXTENDED UPSLOPE A MINIMUM OF 2 FEET VERTICALLY. ALL DISTURBED AREA WITHIN BUFFERS IS TO BE STABILIZED WITH EROSION CONTROL MATTING PLACED OVER PERMANANT SEEDING.

DUST CONTROL NOTE

DUST CONTROL IS TO BE USED AT ALL TIMES. SEE SHEET SC30 FOR SPECIFICATIONS.

PLAN OF AREA B

AREA OF SITE DISTURBANCE (EXCLUDING PATH CONSTRUCTION) THIS SHEET = 13,553 S.F.± OR 0.31 AC.±
AREA OF DISTURBANCE FOR PATH CONSTRUCTION THIS SHEET = 7,952 S.F.± OR 0.18 AC.±
TOTAL AREA OF DISTURBANCE THIS SHEET = 21,505 S.F.± OR 0.49 AC.±

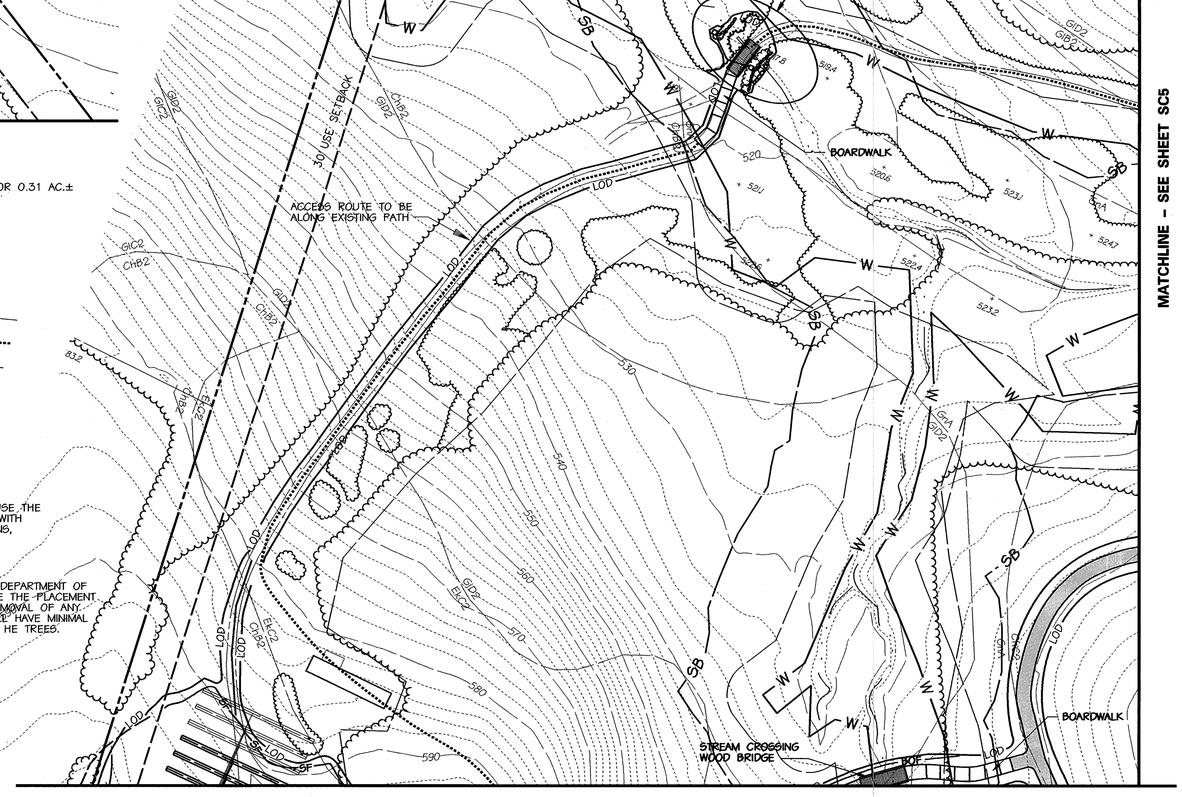


DETAIL PLAN OF CHANNEL RECONSTRUCTION

SCALE 1" = 10'

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50ft.

NORTH



MATCHLINE – SEE SHEET SC7

PLAN OF AREA C

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA – NATURAL RESOURCES CONSERVATION SERVICE — DATE 9/5/02

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

HOWARD SCD — DATE 9/5/02

ENGINEER'S CERTIFICATE

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

Michael N. Armstrong — DATE 9/3/02
SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE)
MICHAEL N. ARMSTRONG

DEVELOPER'S CERTIFICATE

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

Ronald G. Epson — DATE 9/4/02
SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE)
RONALD G. EPSON

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02
DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, H.C.H.D. — DATE 10-17-02
HOWARD COUNTY HEALTH DEPARTMENT

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 0100057.5 \ USCPLN02.DGN

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WWW.KCI.COM

STATE OF MARYLAND • MICHAEL NICHOLAS ARMSTRONG • 21586 • REGISTERED PROFESSIONAL ENGINEER
Michael N. Armstrong 9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

SEDIMENT & EROSION CONTROL PLAN

AREAS B & C

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SC4

SHEET NO.: 29 OF 113

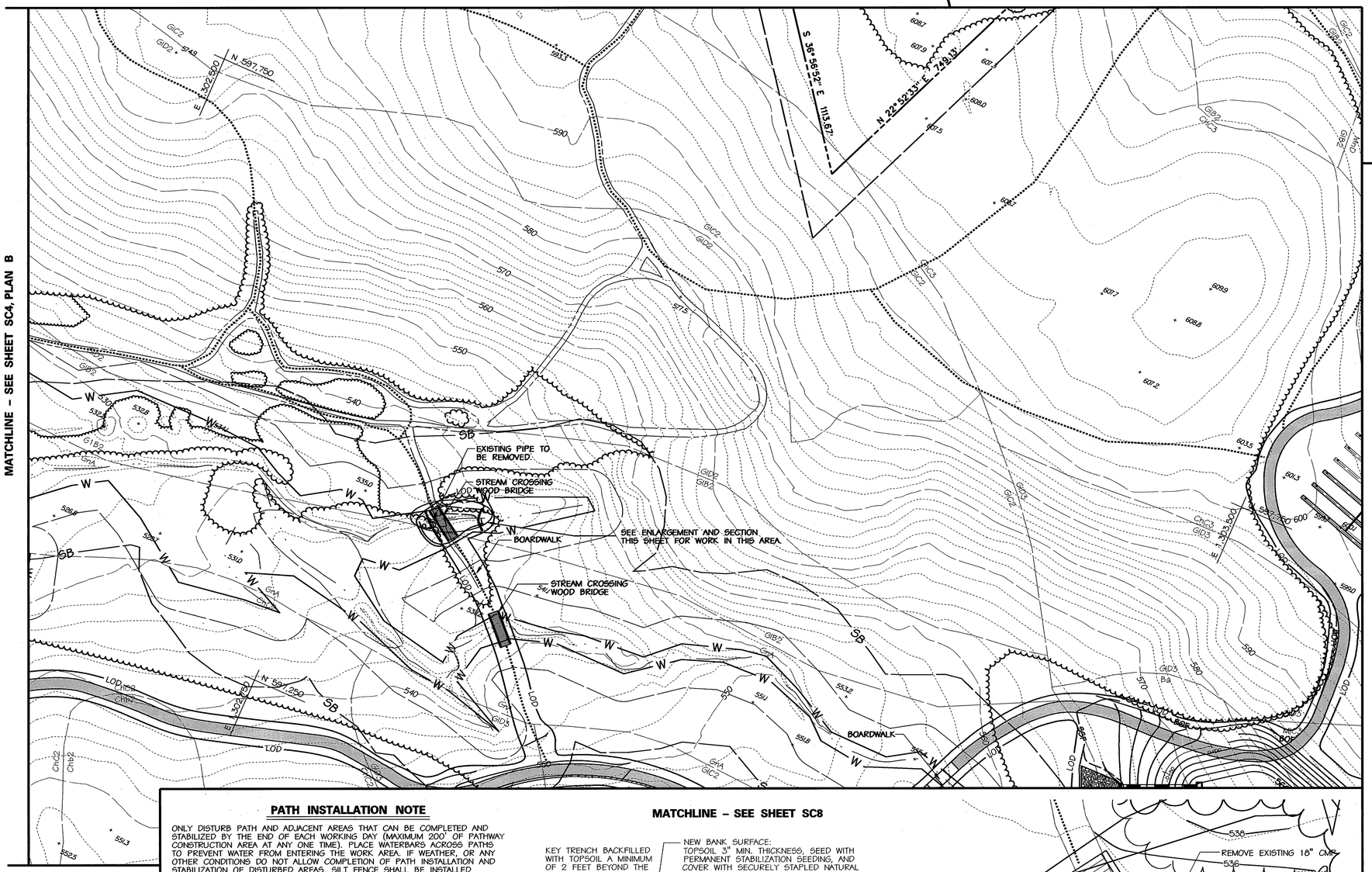
SDP-02-64

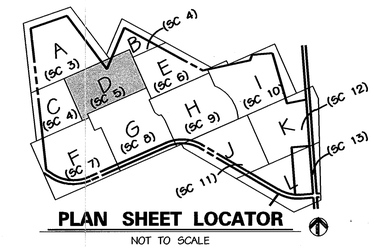
MATCHLINE – SEE SHEET SC3

MATCHLINE – SEE SHEET SC4, PLAN OF AREA A

MATCHLINE – SEE SHEET SC4, PLAN B

MATCHLINE – SEE SHEET SC6





PLAN SHEET LOCATOR

NOT TO SCALE

LEGEND

- EX. INDEX CONTOUR
- EX. 2' INTERMEDIATE CONTOUR
- SOIL LINE
- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- EX. WOODS LINE
- SURVEYED WETLAND
- EX. STREAMS
- 75' STREAM BUFFER
- EQUESTRIAN/HIKING TRAIL
- EX. SPOT ELEVATION
- PROPOSED TREE LINE TO REMAIN
- PROPOSED ASPHALT PATH
- PROPOSED CONCRETE PATH
- PROPOSED FENCE LINE
- PROPOSED RETAINING WALL
- PROPOSED CONC. CURB & GUTTER
- PROPOSED ASPHALT PAVING
- PROPOSED INDEX CONTOUR
- PROPOSED INTERMEDIATE CONTOUR
- PROPOSED SPOT ELEVATION
- PROPOSED INLET
- PROPOSED STORM DRAIN END SECTION
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN
- PROPOSED SEPTIC TANK
- PROPOSED SANITARY SEWER
- PROPOSED SEWER MANHOLE
- PROPOSED MONITORING WELL
- PROPOSED SEPTIC DRAIN FIELD
- SILT FENCE
- SUPER SILT FENCE
- STABILIZED CONSTRUCTION ENTRANCE
- BLAZE ORANGE SAFETY FENCE
- LIMIT OF DISTURBANCE
- PROPOSED LIGHT POLE
- PROPOSED PADDOCK FENCE

PATH INSTALLATION NOTE

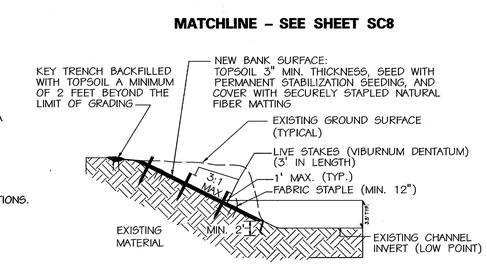
ONLY DISTURB PATH AND ADJACENT AREAS THAT CAN BE COMPLETED AND STABILIZED BY THE END OF EACH WORKING DAY (MAXIMUM 200' OF PATHWAY CONSTRUCTION AREA AT ANY ONE TIME). PLACE WATERBARS ACROSS PATHS TO PREVENT WATER FROM ENTERING THE WORK AREA. IF WEATHER, OR ANY OTHER CONDITIONS DO NOT ALLOW COMPLETION OF PATH INSTALLATION AND STABILIZATION OF DISTURBED AREAS, SILT FENCE SHALL BE INSTALLED DOWNSTREAM OF ALL DISTURBANCE. THE ENDS OF THE SILT FENCE SHALL BE EXTENDED UPSLOPE A MINIMUM OF 2 FEET VERTICALLY. ALL DISTURBED AREA WITHIN BUFFERS IS TO BE STABILIZED WITH EROSION CONTROL MATTING PLACED OVER PERMANENT SEEDING.

MATCHLINE – SEE SHEET SC7

DUST CONTROL NOTE

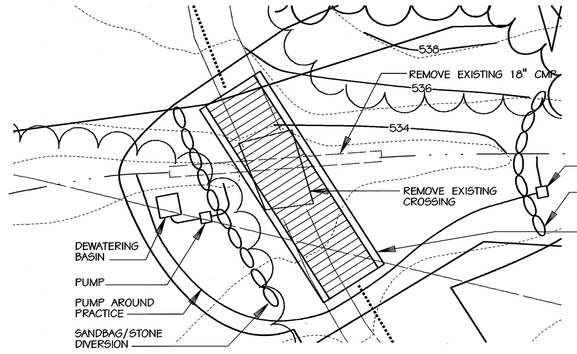
DUST CONTROL IS TO BE USED AT ALL TIMES. SEE SHEET SC30 FOR SPECIFICATIONS.

MATCHLINE – SEE SHEET SC8



TYPICAL CHANNEL RECONSTRUCTION SECTION

NOT TO SCALE



DETAIL PLAN OF CHANNEL RECONSTRUCTION

SCALE: 1"=10'

AREA OF SITE DISTURBANCE (EXCLUDING PATH CONSTRUCTION) THIS SHEET = 52,081 S.F.± OR 1.20 AC.±
AREA OF DISTURBANCE FOR PATH CONSTRUCTION THIS SHEET = 4,947 S.F.± OR 0.11 AC.±
TOTAL AREA OF DISTURBANCE THIS SHEET = 57,028 S.F.± OR 1.31 AC.±

THE ENDS OF THE SILT FENCE AND SUPER SILT FENCE SHALL BE TURNED UPHILL A MINIMUM OF 2' IN ELEVATION.

THE PROJECT MANAGER FROM THE DEPARTMENT OF RECREATION AND PARKS WILL STAKE THE PLACEMENT OF THE PATHWAY TO AVOID THE REMOVAL OF ANY TREES.THE PATHWAY PLACEMENT WILL HAVE MINIMAL CLEARING AND MINIMAL IMPACT TOT HE TREES.

THE CONTRACTOR SHALL USE THE PUMP-AROUND PRACTICE WITH SANDBAG/STONE DIVERSIONS, DEWATERING BASIN, AND RIP RAP. DETAILS ARE ON SHEETS SC31 AND SC32.

NORTH

GRAPHIC SCALE

50 0 25 50 100

(IN FEET)
1 inch = 50ft.

NOTE

The Project Manager from the Department of Recreation and Parks will stake the placement of the pathway to avoid the removal of any trees. The pathway placement will have minimal clearing and minimal impact to the trees.

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, H.D. HOWARD COUNTY HEALTH DEPARTMENT — DATE 10-17-02

ENGINEER'S CERTIFICATE

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

Michael N. Armstrong — SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE) — DATE 9/3/02

MICHAEL N. ARMSTRONG

DEVELOPER'S CERTIFICATE

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

SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) — DATE 9/4/02

RONALD G. LEPSON

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA – NATURAL RESOURCES CONSERVATION SERVICE — DATE 9/5/02

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

HOWARD SCD — DATE 9/5/02

NO.	REVISIONS	DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 01000057.6 \ USCPLN03.DGN

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PHONE: (410) 316-7800 FAX: (410) 316-7817
WWW.KCI.COM

KCI TECHNOLOGIES

STATE OF MARYLAND * ENGINEER * MICHAEL NEIL ARMSTRONG * No. 15787 * PROFESSIONAL ENGINEER
Michael N. Armstrong 9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410) 313-4640

SEDIMENT & EROSION CONTROL PLAN
AREA D

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

SC5

SHEET NO.: 30 OF 113

SDP-02-64

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, I WONA ROSTEK-ZARSKA, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE NO. 21249, EXPIRATION DATE: JUNE 9, 2018.

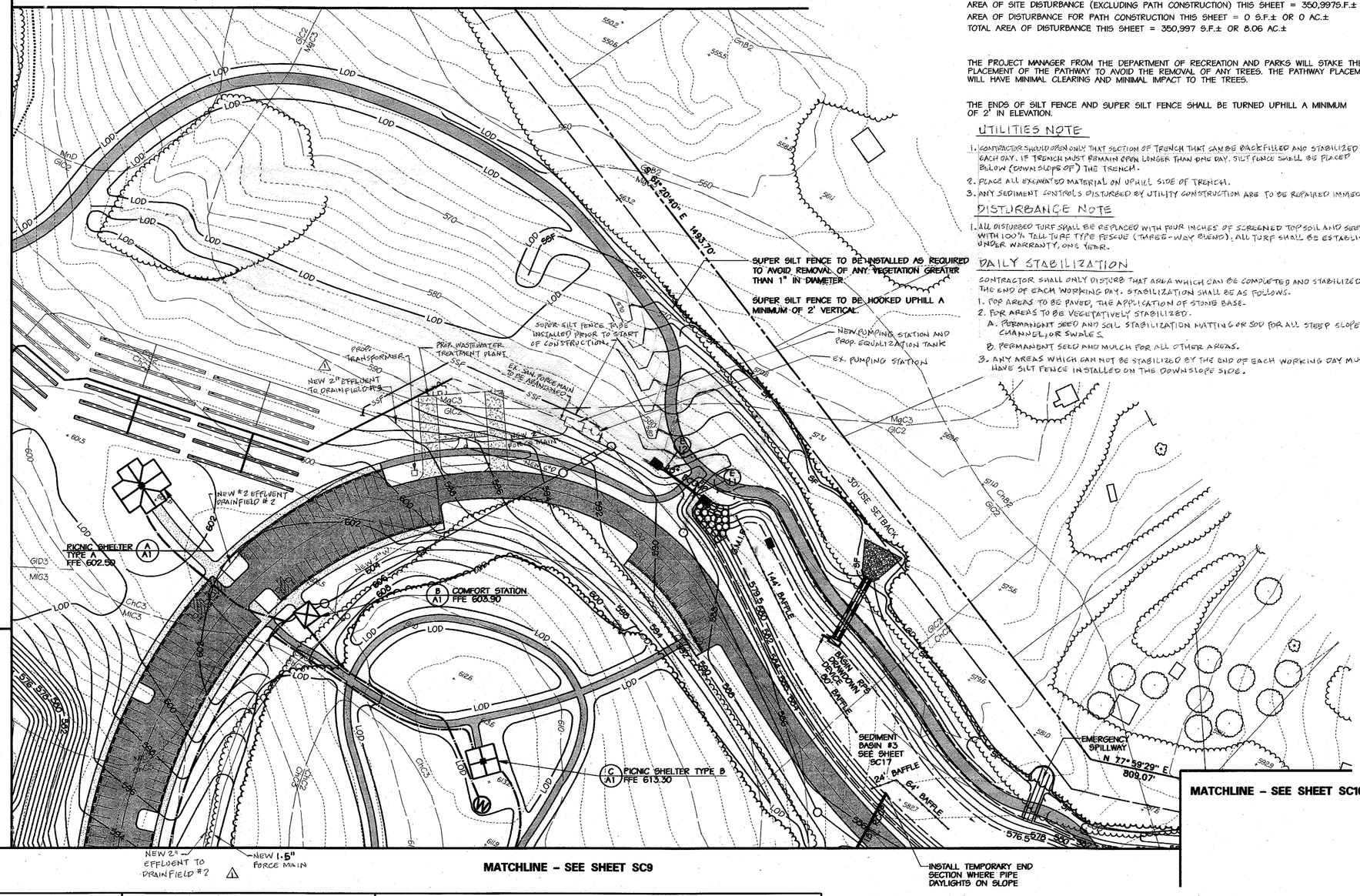
11/18/16

REVISION #1 - BLDG (07/29/16)
ADDED WASTEWATER TREATMENT PLANT, MODIFIED EX. PUMPING STATIONS, ADDED NEW PUMPING STATIONS AND INSTALLED NEW 1.5" & 2" FORCE MAIN.

NOTE

The Project Manager from the Department of Recreation and Parks will stake the placement of the pathway to avoid the removal of any trees. The pathway placement will have minimal clearing and minimal impact to the trees.

MATCHLINE - SEE SHEET SC4, PLAN OF AREA B



PATH INSTALLATION NOTE

ONLY DISTURB PATH AND ADJACENT AREAS THAT CAN BE COMPLETED AND STABILIZED BY THE END OF EACH WORKING DAY (MAXIMUM 200' OF PATHWAY CONSTRUCTION AREA AT ANY ONE TIME). PLACE WATERBARS ACROSS PATHS TO PREVENT WATER FROM ENTERING THE WORK AREA. IF WEATHER, OR ANY OTHER CONDITIONS DO NOT ALLOW COMPLETION OF PATH INSTALLATION AND STABILIZATION OF DISTURBED AREAS, SILT FENCE SHALL BE INSTALLED DOWNSTREAM OF ALL DISTURBANCE. THE ENDS OF THE SILT FENCE SHALL BE EXTENDED UPSLOPE A MINIMUM OF 2 FEET VERTICALLY. ALL DISTURBED AREA WITHIN BUFFERS IS TO BE STABILIZED WITH EROSION CONTROL MATTING PLACED OVER PERMANENT SEEDING.

DUST CONTROL NOTE

DUST CONTROL IS TO BE USED AT ALL TIMES. SEE SHEET SC30 FOR SPECIFICATIONS.

AREA OF SITE DISTURBANCE (EXCLUDING PATH CONSTRUCTION) THIS SHEET = 350,9976 S.F.± OR 8.06 AC.±
AREA OF DISTURBANCE FOR PATH CONSTRUCTION THIS SHEET = 0 S.F.± OR 0 AC.±
TOTAL AREA OF DISTURBANCE THIS SHEET = 350,997 S.F.± OR 8.06 AC.±

THE PROJECT MANAGER FROM THE DEPARTMENT OF RECREATION AND PARKS WILL STAKE THE PLACEMENT OF THE PATHWAY TO AVOID THE REMOVAL OF ANY TREES. THE PATHWAY PLACEMENT WILL HAVE MINIMAL CLEARING AND MINIMAL IMPACT TO THE TREES.

THE ENDS OF SILT FENCE AND SUPER SILT FENCE SHALL BE TURNED UPHILL A MINIMUM OF 2' IN ELEVATION.

UTILITIES NOTE

1. CONTRACTOR SHOULD OPEN ONLY THAT SECTION OF TRENCH THAT CAN BE BACKFILLED AND STABILIZED EACH DAY. IF TRENCH MUST REMAIN OPEN LONGER THAN ONE DAY, SILT FENCE SHALL BE PLACED BELOW (DOWNSLOPE OF) THE TRENCH.
2. PLACE ALL EXCAVATED MATERIAL ON UPHILL SIDE OF TRENCH.
3. ANY SEDIMENT CONTROLS DISTURBED BY UTILITY CONSTRUCTION ARE TO BE REPAIRED IMMEDIATELY.

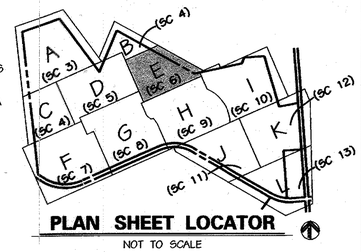
DISTURBANCE NOTE

1. ALL DISTURBED TURF SHALL BE REPLACED WITH FOUR INCHES OF SCREENED TOPSOIL AND SEEDED WITH 100% TALL TURF TYPE FESCUE (THREE-WAY BLEND). ALL TURF SHALL BE ESTABLISHED UNDER WARRANTY, ONE YEAR.

DAILY STABILIZATION

CONTRACTOR SHALL ONLY DISTURB THAT AREA WHICH CAN BE COMPLETED AND STABILIZED BY THE END OF EACH WORKING DAY. STABILIZATION SHALL BE AS FOLLOWS.

1. FOR AREAS TO BE PAVED, THE APPLICATION OF STONE BASE.
2. FOR AREAS TO BE VEGETATIVELY STABILIZED.
   A. PERMANENT SEED AND SOIL STABILIZATION MATTING OR SOD FOR ALL STEEP SLOPES, CHANNELS OR SWALES.
   B. PERMANENT SEED AND MULCH FOR ALL OTHER AREAS.
3. ANY AREAS WHICH CAN NOT BE STABILIZED BY THE END OF EACH WORKING DAY MUST HAVE SILT FENCE INSTALLED ON THE DOWNSLOPE SIDE.



PLAN SHEET LOCATOR
NOT TO SCALE

LEGEND

- EX. INDEX CONTOUR (590)
- EX. 2' INTERMEDIATE CONTOUR
- SOIL LINE (GIC2)
- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- EX. WOODS LINE
- SURVEYED WETLAND (W)
- EX. STREAMS
- 75' STREAM BUFFER (SB)
- EQUESTRIAN/HIKING TRAIL
- EX. SPOT ELEVATION (570.9)
- PROPOSED TREE LINE TO REMAIN
- PROPOSED ASPHALT PATH
- PROPOSED CONCRETE PATH
- PROPOSED FENCE LINE
- PROPOSED RETAINING WALL
- PROPOSED CONC. CURB & GUTTER
- PROPOSED ASPHALT PAVING
- PROPOSED INDEX CONTOUR (620)
- PROPOSED INTERMEDIATE CONTOUR (614)
- PROPOSED SPOT ELEVATION (+617.25)
- PROPOSED INLET
- PROPOSED STORM DRAIN END SECTION
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN
- PROPOSED SEPTIC TANK
- PROPOSED SANITARY SEWER (S)
- PROPOSED SEWER MANHOLE
- PROPOSED MONITORING WELL
- PROPOSED SEPTIC DRAIN FIELD
- SILT FENCE (SF)
- SUPER SILT FENCE (SSF)
- STABILIZED CONSTRUCTION ENTRANCE (SCE)
- BLAZE ORANGE SAFETY FENCE (BOF)
- LIMIT OF DISTURBANCE (LOD)
- REMOVABLE PUMPING STATION (RPS)
- TEMPORERY/PERMANENT SWALE
- PROPOSED LIGHT POLE
- PROPOSED PADDOCK FENCE

NORTH

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50ft.

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02
DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, M.D. — DATE 10-17-02
HOWARD COUNTY HEALTH DEPARTMENT

ENGINEER'S CERTIFICATE

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

Michael N. Armstrong — DATE 9/3/02
SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE)
MICHAEL N. ARMSTRONG

DEVELOPER'S CERTIFICATE

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

Ronald G. Lepson — DATE 9/4/02
SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE)
RONALD G. LEPSON

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 9/5/02

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

HOWARD SCD — DATE 9/5/02

NO.	REVISIONS	DESCRIPTION	DATE

K.C.I. FILE: MA\ 2000\ 01000057.S\ USCPLN04.DGN

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10 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
KCI TECHNOLOGIES WWW.KCI.COM

MARYLAND LICENSED PROFESSIONAL ENGINEER — MICHAEL N. ARMSTRONG — 9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

SEDIMENT & EROSION CONTROL PLAN

AREA E

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

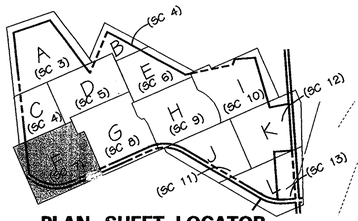
SC6

SHEET NO.: 31 OF 113

SDP-02-64

LEGEND

- 590 — EX. INDEX CONTOUR
- EX. 2' INTERMEDIATE CONTOUR
- GIC2 — SOIL LINE
- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- EX. WOODS LINE
- W — SURVEYED WETLAND
- EX. STREAMS
- SB — 75' STREAM BUFFER
- EQUESTRIAN/HIKING TRAIL
- 5709 — EX. SPOT ELEVATION
- PROPOSED TREE LINE TO REMAIN
- PROPOSED ASPHALT PATH
- PROPOSED CONCRETE PATH
- PROPOSED FENCE LINE
- PROPOSED RETAINING WALL
- PROPOSED CONC. CURB & GUTTER
- PROPOSED ASPHALT PAVING
- 620 — PROPOSED INDEX CONTOUR
- 614 — PROPOSED INTERMEDIATE CONTOUR
- 614 — PROPOSED SPOT ELEVATION
- PROPOSED INLET
- PROPOSED STORM DRAIN END SECTION
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN
- PROPOSED SEPTIC TANK
- S — PROPOSED SANITARY SEWER
- PROPOSED SEWER MANHOLE
- PROPOSED MONITORING WELL
- PROPOSED SEPTIC DRAIN FIELD
- SF — SF — SILT FENCE
- SSF — SSF — SUPER SILT FENCE
- SCE — TABILIZED CONSTRUCTION ENTRANCE
- BOF — BOF — LAZE ORANGE SAFETY FENCE
- LOD — LIMIT OF DISTURBANCE
- RPS — REMOVABLE PUMPING STATION
- PROPOSED LIGHT POLE
- PROPOSED PADDOCK FENCE



PLAN SHEET LOCATOR

NOT TO SCALE

THE PROJECT MANAGER FROM THE DEPARTMENT OF RECREATION AND PARKS WILL STAKE THE PLACEMENT OF THE PATHWAY TO AVOID THE REMOVAL OF ANY TREES. THE PATHWAY PLACEMENT WILL HAVE MINIMAL CLEARING AND MINIMAL IMPACT TO THE TREES.

THE ENDS OF SILT FENCE AND SUPER SILT FENCE SHALL BE TURNED UPHILL A MINIMUM OF 2' IN ELEVATION.

The Project Manager from the Department of Recreation and Parks will stake the placement of the pathway to avoid the removal of any trees. The pathway placement will have minimal clearing and minimal impact to the trees.

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 9/5/02

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

HOWARD SCD — DATE 9/5/02

ENGINEER'S CERTIFICATE

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

SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE) MICHAEL N. ARMSTRONG — DATE 9/3/02

DEVELOPER'S CERTIFICATE

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

SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) RONALD G. GIBSON — DATE 9/12/02

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

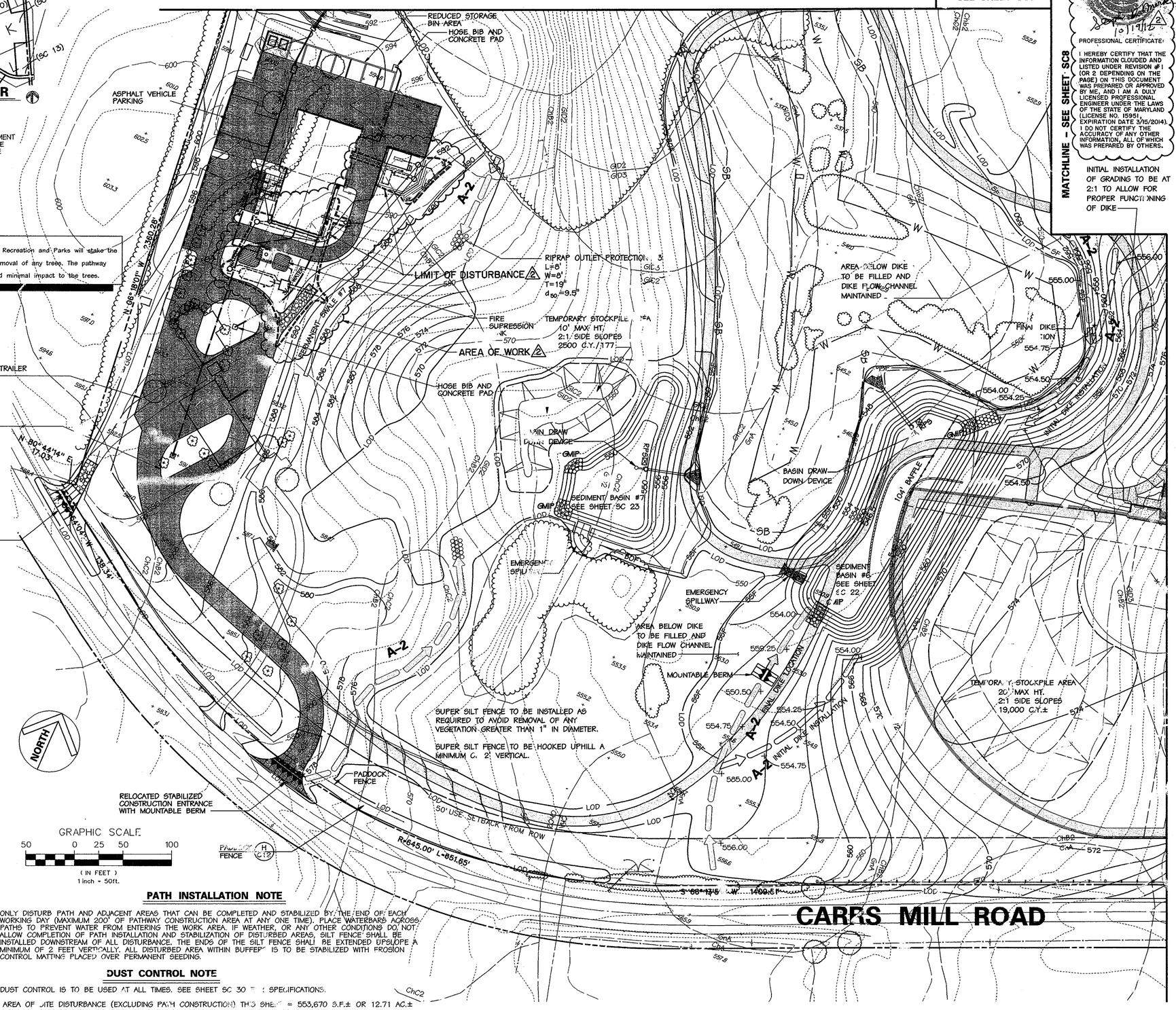
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/28/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, MD, HOWARD COUNTY HEALTH DEPARTMENT — DATE 10-17-02



PATH INSTALLATION NOTE

ONLY DISTURB PATH AND ADJACENT AREAS THAT CAN BE COMPLETED AND STABILIZED BY THE END OF EACH WORKING DAY (MAXIMUM 200' OF PATHWAY CONSTRUCTION AREA AT ANY ONE TIME). PLACE WATERBARS ACROSS PATHS TO PREVENT WATER FROM ENTERING THE WORK AREA. IF WEATHER, OR ANY OTHER CONDITIONS DO NOT ALLOW COMPLETION OF PATH INSTALLATION AND STABILIZATION OF DISTURBED AREAS, SILT FENCE SHALL BE INSTALLED DOWNSTREAM OF ALL DISTURBANCE. THE ENDS OF THE SILT FENCE SHALL BE EXTENDED UPSLOPE A MINIMUM OF 2 FEET VERTICALLY. ALL DISTURBED AREA WITHIN BUFFER IS TO BE STABILIZED WITH EROSION CONTROL MATTING PLACED OVER PERMANENT SEEDING.

DUST CONTROL NOTE

DUST CONTROL IS TO BE USED AT ALL TIMES. SEE SHEET SC 30 FOR SPECIFICATIONS.

AREA OF SITE DISTURBANCE (EXCLUDING PATH CONSTRUCTION) THIS SHEET = 553,670 S.F.± OR 12.71 AC.±
AREA OF DISTURBANCE FOR PATH CONSTRUCTION THIS SHEET = 0 S.F.± OR 0 AC.±
TOTAL AREA OF DISTURBANCE THIS SHEET = 553,670 S.F.± OR 12.71 AC.±

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

NO.	REVISIONS DESCRIPTION	DATE
1	ADDED CHANGES TO PAVING, BUILDING, AND UTILITY LAYOUT	1/09/07
2	THIS SHEET WAS MODIFIED TO INCLUDE THE RAINWATER HARVESTING FACILITIES DESIGN INFORMATION. REFER TO THE FULL RAINWATER HARVESTING PARKS FACILITIES DESIGN PACKAGE, CAPITAL PROJECT C-3932, DATED DECEMBER 2011.	9/05/12

PROFESSIONAL CERTIFICATE:

I HEREBY CERTIFY THAT THE INFORMATION CLOUDED AND LISTED UNDER REVISION #1 (OR 2 DEPENDING ON THE PAGE) ON THIS DOCUMENT WAS PREPARED OR APPROVED BY ME, AND I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND (LICENSE NO. 15981, EXPIRATION DATE 3/15/2014). I DO NOT CERTIFY THE ACCURACY OF ANY OTHER INFORMATION, ALL OF WHICH WAS PREPARED BY OTHERS.

9/3/02

KCI FILE: MA 2000 \ 01000057.S \ USCPLN05.DGN

KCI TECHNOLOGIES INC.
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TECHNOLOGIES WWW.KCI.COM

9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1577
(410) 313-4640

SEDIMENT & EROSION CONTROL PLAN

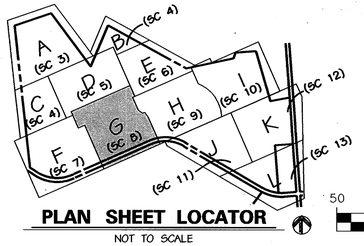
AREA F

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SC7

SHEET NO.: 32 OF 135

SDP-02-64



PLAN SHEET LOCATOR

NOT TO SCALE

GRAPHIC SCALE

50 0 25 50 100

(IN FEET)

1 inch = 50ft.

PATH INSTALLATION NOTE

ONLY DISTURB PATH AND ADJACENT AREAS THAT CAN BE COMPLETED AND STABILIZED BY THE END OF EACH WORKING DAY (MAXIMUM 200' OF PATHWAY CONSTRUCTION AREA AT ANY ONE TIME). PLACE WATERBARS ACROSS PATHS TO PREVENT WATER FROM ENTERING THE WORK AREA. IF WEATHER, OR ANY OTHER CONDITIONS DO NOT ALLOW COMPLETION OF PATH INSTALLATION AND STABILIZATION OF DISTURBED AREAS, SILT FENCE SHALL BE INSTALLED DOWNSTREAM OF ALL DISTURBANCE. THE ENDS OF THE SILT FENCE SHALL BE EXTENDED UP SLOPE A MINIMUM OF 2 FEET VERTICALLY. ALL DISTURBED AREA WITHIN BUFFERS IS TO BE STABILIZED WITH EROSION CONTROL MATTING PLACED OVER PERMANENT SEEDING.

DUST CONTROL NOTE

DUST CONTROL IS TO BE USED AT ALL TIMES. SEE SHEET SC 35 FOR SPECIFICATIONS.

INLET PROTECTION NOTE

IF REQUIRED BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, INLET PROTECTION WILL BE PLACED ON ALL INLETS AS THEY ARE INSTALLED. NO INLET PROTECTION IS SHOWN BECAUSE ALL INLETS DRAIN TO A SEDIMENT BASIN. ALL STORM DRAINS ARE TO BE FLUSHED PRIOR TO SEDIMENT BASIN REMOVAL OR CONVERSION TO A PERMANENT STORMWATER MANAGEMENT FACILITY.

AREA OF SITE DISTURBANCE (EXCLUDING PATH CONSTRUCTION) THIS SHEET= 846,724 S.F.± OR 19.44 AC.±

AREA OF DISTURBANCE FOR PATH CONSTRUCTION THIS SHEET = 0 S.F.± OR 0 AC.±
TOTAL AREA OF DISTURBANCE THIS SHEET = 846,724 S.F.± OR 19.44 AC.±

LEGEND

- EX. INDEX CONTOUR
- EX. 2' INTERMEDIATE CONTOUR
- SOIL LINE
- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- EX. WOODS LINE
- SURVEYED WETLAND
- EX. STREAMS
- 75' STREAM BUFFER
- EQUESTRIAN/HIKING TRAIL
- EX. SPOT ELEVATION
- PROPOSED ASPHALT PATH
- PROPOSED CONCRETE PATH
- PROPOSED FENCE LINE
- PROPOSED RETAINING WALL
- PROPOSED CONC. CURB & GUTTER
- PROPOSED ASPHALT PAVING
- PROPOSED TREE LINE TO REMAIN
- PROPOSED INDEX CONTOUR
- PROPOSED INTERMEDIATE CONTOUR
- PROPOSED SPOT ELEVATION
- PROPOSED INLET
- PROPOSED STORM DRAIN END SECTION
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN
- PROPOSED SEPTIC TANK
- PROPOSED SANITARY SEWER
- PROPOSED SEWER MANHOLE
- PROPOSED MONITORING WELL
- PROPOSED SEPTIC DRAIN FIELD
- SILT FENCE
- SUPER SILT FENCE
- STABILIZED CONSTRUCTION ENTRANCE
- BLAZE ORANGE SAFETY FENCE
- LIMIT OF DISTURBANCE
- PERMANENT SWALE
- PROPOSED LIGHT POLE
- PROPOSED PADDOCK FENCE

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 9/5/02

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

HOWARD SCD — DATE 9/5/02

ENGINEER'S CERTIFICATE

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

Michael N. Armstrong — DATE 9/3/02

SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE)
MICHAEL N. ARMSTRONG

DEVELOPER'S CERTIFICATE

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

SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) — DATE 9/4/02
EDWARD G. LEPSON

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9/20/02

DIRECTOR — DATE 10/23/02

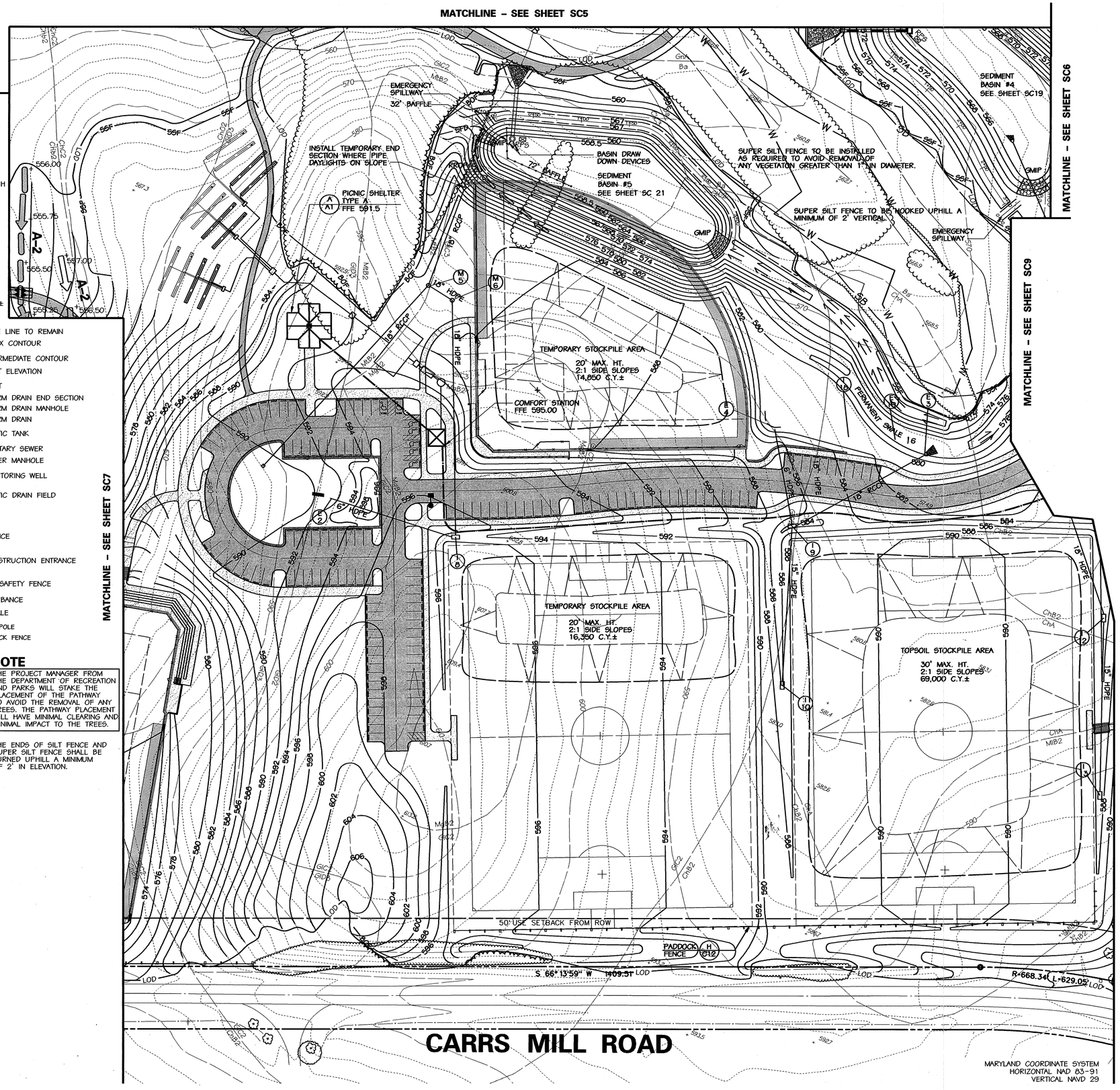
APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, MD
HOWARD COUNTY HEALTH DEPARTMENT — DATE 10-17-02

NOTE

THE PROJECT MANAGER FROM THE DEPARTMENT OF RECREATION AND PARKS WILL STAKE THE PLACEMENT OF THE PATHWAY TO AVOID THE REMOVAL OF ANY TREES. THE PATHWAY PLACEMENT WILL HAVE MINIMAL CLEARING AND MINIMAL IMPACT TO THE TREES.

THE ENDS OF SILT FENCE AND SUPER SILT FENCE SHALL BE TURNED UPHILL A MINIMUM OF 2' IN ELEVATION.



NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 01000057.S \ USCPLN06.DGN

KCI TECHNOLOGIES INC.
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10 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
WWW.KCI.COM

STATE OF MARYLAND * MICHAEL NEIL ARMSTRONG * 21030 * REGISTERED PROFESSIONAL ENGINEER
9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21045-1677
(410)-313-4640

SEDIMENT & EROSION CONTROL PLAN

AREA G

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

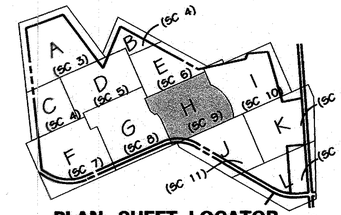
SC8

SHEET NO.: 33 OF 113

SDP-02-64

NORTH

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50ft.



PLAN SHEET LOCATOR
NOT TO SCALE

LEGEND

- EX. INDEX CONTOUR
- EX. 2' INTERMEDIATE CONTOUR
- SOIL LINE
- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- EX. WOODS LINE
- SURVEYED WETLAND
- EX. STREAMS
- 75' STREAM BUFFER
- EQUESTRIAN/HIKING TRAIL
- EX. SPOT ELEVATION
- PROPOSED TREE LINE TO REMAIN
- PROPOSED ASPHALT PATH
- PROPOSED CONCRETE PATH
- PROPOSED FENCE LINE
- PROPOSED RETAINING WALL
- PROPOSED CONC. CURB & GUTTER
- PROPOSED ASPHALT PAVING
- PROPOSED INDEX CONTOUR
- PROPOSED INTERMEDIATE CONTOUR
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- PROPOSED SEWER MANHOLE
- PROPOSED SEPTIC DRAIN FIELD
- SILT FENCE
- SUPER SILT FENCE
- STABILIZED CONSTRUCTION ENTRANCE
- BLAZE ORANGE SAFETY FENCE
- LIMIT OF DISTURBANCE
- TEMPORERY/PERMANENT SWALE
- PROPOSED LIGHT POLE
- PROPOSED PADDOCK FENCE

INLET PROTECTION NOTE

IF REQUIRED BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, INLET PROTECTION WILL BE INSTALLED ON ALL INLETS AS THEY ARE PLACED. NO INLET PROTECTION IS SHOWN BECAUSE ALL INLETS DRAIN TO A SEDIMENT BASIN. ALL STORM DRAINS ARE TO BE FLUSHED PRIOR TO SEDIMENT BASIN REMOVAL OR CONVERSION TO A PERMANENT STORMWATER MANAGEMENT FACILITY.

THE ENDS OF SILT FENCE AND SUPER SILT FENCE SHALL BE TURNED UPHILL A MINIMUM OF 2' IN ELEVATION.

AREA OF SITE DISTURBANCE (EXCLUDING PATH CONSTRUCTION) THIS SHEET = 799,110 S.F.± OR 18.35 AC.±
AREA OF DISTURBANCE FOR PATH CONSTRUCTION THIS SHEET = 00 S.F.± OR 0 AC.±
TOTAL AREA OF DISTURBANCE THIS SHEET = 799,110 S.F.± OR 18.35 AC.±

PATH INSTALLATION NOTE

ONLY DISTURB PATH AND ADJACENT AREAS THAT CAN BE COMPLETED AND STABILIZED BY THE END OF EACH WORKING DAY (MAXIMUM 200' OF PATHWAY CONSTRUCTION AREA AT ANY ONE TIME). PLACE WATERBARS ACROSS PATHS TO PREVENT WATER FROM ENTERING THE WORK AREA. IF WEATHER, OR ANY OTHER CONDITIONS DO NOT ALLOW COMPLETION OF PATH INSTALLATION AND STABILIZATION OF DISTURBED AREAS, SILT FENCE SHALL BE INSTALLED DOWNSTREAM OF ALL DISTURBANCE. THE ENDS OF THE SILT FENCE SHALL BE EXTENDED UPSLOPE A MINIMUM OF 2 FEET VERTICALLY. ALL DISTURBED AREA WITHIN BUFFERS IS TO BE STABILIZED WITH EROSION CONTROL MATTING PLACED OVER PERMANENT SEEDING.

DUST CONTROL NOTE

DUST CONTROL IS TO BE USED AT ALL TIMES. SEE SHEET SC 29 FOR SPECIFICATIONS.

NOTE: SEE SHEET C7 FOR FINAL PARKING LAYOUT.

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

REVISION #1- BLDG (07/29/16)
ADDED WASTE WATER TREATMENT PLANT. MODIFIED EX. PUMPING STATIONS, ADDED NEW PUMPING STATIONS AND INSTALLED NEW 1.5" & 2" FORCE MAINS.

Iwona Rostek-Zarska
11/18/16

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, IWONA ROSTEK-ZARSKA, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21245, EXPIRATION DATE: JUNE 9, 2018.

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02
DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, HOWARD COUNTY HEALTH DEPARTMENT — DATE 10-17-02

ENGINEER'S CERTIFICATE

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

Michael N. Armstrong — 9/3/02
SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE) — DATE
MICHAEL N. ARMSTRONG

DEVELOPER'S CERTIFICATE

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

Ronald G. Epson — 9/4/02
SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) — DATE
RONALD G. EPSON

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 9/5/02

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

HOWARD SCD — DATE 9/5/02

NOTE

THE PROJECT MANAGER FROM THE DEPARTMENT OF RECREATION AND PARKS WILL STAKE THE PLACEMENT OF THE PATHWAY TO AVOID THE REMOVAL OF ANY TREES. THE PATHWAY PLACEMENT WILL HAVE MINIMAL CLEARING AND MINIMAL IMPACT TO THE TREES.

NO.	REVISIONS	DESCRIPTION	DATE

KCI FILE: M:\ 2000\ 01000057.S \ UECPLN07.DGN

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STATE OF MARYLAND — MICHAEL NEIL ARMSTRONG — REGISTERED PROFESSIONAL ENGINEER
Michael N. Armstrong 9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

SEDIMENT & EROSION CONTROL PLAN

AREA H

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SC9

SHEET NO.: 34 OF 113

SDP-02-64

LEGEND

- EX. INDEX CONTOUR (590)
- EX. 2' INTERMEDIATE CONTOUR
- SOIL LINE (GIC2)
- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- EX. WOODS LINE
- SURVEYED WETLAND (W)
- EX. STREAMS
- 75' STREAM BUFFER (SB)
- EQUESTRIAN/HIKING TRAIL
- EX. SPOT ELEVATION (570.9)
- PROPOSED TREE LINE TO REMAIN
- PROPOSED ASPHALT PATH
- PROPOSED CONCRETE PATH
- PROPOSED FENCE LINE
- PROPOSED RETAINING WALL
- PROPOSED CONC. CURB & GUTTER
- PROPOSED ASPHALT PAVING
- PROPOSED INDEX CONTOUR (620)
- PROPOSED INTERMEDIATE CONTOUR (614)
- PROPOSED SPOT ELEVATION (+617.25)
- PROPOSED INLET
- PROPOSED STORM DRAIN END SECTION
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN
- PROPOSED SEPTIC TANK
- PROPOSED SANITARY SEWER (S)
- PROPOSED SEWER MANHOLE
- PROPOSED MONITORING WELL
- PROPOSED SEPTIC DRAIN FIELD
- SILT FENCE (SF)
- SUPER SILT FENCE (SSF)
- STABILIZED CONSTRUCTION ENTRANCE (SCE)
- BLAZE ORANGE SAFETY FENCE (BOF)
- LIMIT OF DISTURBANCE (LOD)
- REMOVABLE PUMPING STATION (RPS)
- TEMPORARY/PERMANENT SWALE
- PROPOSED LIGHT POLE
- PROPOSED PADDOCK FENCE

PATHWAY INSTALLATION NOTE

ONLY DISTURB PATH AND ADJACENT AREAS THAT CAN BE COMPLETED AND STABILIZED BY THE END OF EACH WORKING DAY (MAXIMUM 200' OF PATHWAY CONSTRUCTION AREA AT ANY ONE TIME). PLACE WATERBARS ACROSS PATHS TO PREVENT WATER FROM ENTERING THE WORK AREA. IF WEATHER, OR ANY OTHER CONDITIONS DO NOT ALLOW COMPLETION OF PATH INSTALLATION AND STABILIZATION OF DISTURBED AREAS, SILT FENCE SHALL BE INSTALLED DOWNSTREAM OF ALL DISTURBANCE. THE ENDS OF THE SILT FENCE SHALL BE EXTENDED UPSLOPE A MINIMUM OF 2 FEET VERTICALLY. ALL DISTURBED AREA WITHIN BUFFERS IS TO BE STABILIZED WITH EROSION CONTROL MATTING PLACED OVER PERMANENT SEEDING.

DUST CONTROL NOTE

DUST CONTROL IS TO BE USED AT ALL TIMES. SEE SHEET SC 30 FOR SPECIFICATIONS.

AREA OF SITE DISTURBANCE (EXCLUDING PATH CONSTRUCTION) THIS SHEET = 730,794 S.F.± OR 16.78 AC.±
AREA OF DISTURBANCE FOR PATH CONSTRUCTION THIS SHEET = 0 S.F.± OR 0.00 AC.±
TOTAL AREA OF DISTURBANCE THIS SHEET = 730,794 S.F.± OR 16.78 AC.±

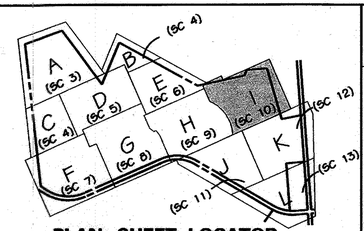
THE ENDS OF SILT FENCE AND SUPER SILT FENCE SHALL BE TURNED UPHILL A MINIMUM OF 2' IN ELEVATION.

NOTE

The Project Manager from the Department of Recreation and Parks will stake the placement of the pathway to avoid the removal of any trees. The pathway placement will have minimal clearing and minimal impact to the trees.

NORTH

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50ft.



PLAN SHEET LOCATOR

NOT TO SCALE

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, IWONA ROSTEK-ZARSKA, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21245 EXPIRATION DATE: JUNE 9, 2018.

REVISION #1 - BLDG (07/29/16)
ADDED WASTEWATER TREATMENT
MODIFIED EX. PUMPING STATIONS,
ADDED NEW PUMPING STATIONS AND
INSTALLED NEW 1.5" & 2" FORCE MAINS.

Iwona Rostek-Zarska
11/18/16

MATCHLINE – SEE SHEET SC9

MATCHLINE – SEE SHEET SC6

MILLERS MILL ROAD

LOCAL COUNTY ROAD

ARMOR BOTH SIDES OF EARTH DIKE

N 77°59'29" E 809.07'

30' USE SETBACK

SEDIMENT BASIN #3 SEE SHEET SC 12

TEMPORARY STOCKPILE AREA
10' MAX. HT.
2:1 SIDE SLOPES
7,750 C.Y.±

WOOD BRIDGE SWALE CROSSING

PERMANENT SWALE #3

TEMPORARY STOCKPILE AREA
10' MAX. HT.
2:1 SIDE SLOPES
5,125 C.Y.±

TOPSOIL STOCKPILE AREA
30' MAX HT.
2:1 SIDE SLOPES
34,000 C.Y.±

N 20°09'03" E 99.88'

N 85°33'20" E 158.35'

N 85°33'20" E 178.84'

N 87°31'03" W 185.94'

50' USE SETBACK

PERMANENT SWALE #2

30' RIGHT-OF-WAY

S 16°23'30" E 22.92'

TOPSOIL STOCKPILE AREA
30' MAX HT.
2:1 SIDE SLOPES
34,000 C.Y.±

CONCESSION/RESTROOM PAVILION
FFE 618.25

EMERGENCY SPILLWAY

INSTALL TEMPORARY END SECTION WHERE PIPE DAYLIGHTS ON SLOPE

S 16°23'30" E 85.98'

15" HDPE

BOLLARDS

6" SAN.

PROP. 1.5" FORCEMAIN

EX. SEPTIC DRAIN FIELD

PROP. 2" FORCEMAIN

PERMANENT SWALE #1

GMIP

72" BAFFLE

40' BAFFLE

BASIN DRAWDOWN DEVICE

SEDIMENT BASIN #2 SEE SHEET SC16

TEMPORARY STOCKPILE AREA
20' MAX. HT.
2:1 SIDE SLOPES
7,000 C.Y.±

SUPER SILT FENCE TO BE INSTALLED AS REQUIRED TO AVOID REMOVAL OF ANY VEGETATION GREATER THAN 1" IN DIAMETER.

SUPER SILT FENCE TO BE HOOKED UPHILL A MINIMUM OF 2" VERTICAL

NOTE: SEE SHEET C8 FOR FINAL PARKING LAYOUT.

MATCHLINE – SEE SHEET SC11

MATCHLINE – SEE SHEET SC12

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 9/5/02

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

HOWARD SCD — DATE 9/5/02

ENGINEER'S CERTIFICATE

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

Michael N. Armstrong — DATE 9/3/02
SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE)
MICHAEL N. ARMSTRONG

DEVELOPER'S CERTIFICATE

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

SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) — DATE 9/4/02
RONALD G. LEPSON

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02
DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER — DATE 10-17-02
HOWARD COUNTY HEALTH DEPARTMENT

NO.	REVISIONS	DESCRIPTION	DATE

KCI FILE: M:\ 2000\ 01000057.S\ USCPLN03.DGN

KCI TECHNOLOGIES INC.
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10 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
TECHNOLOGIES WWW.KCI.COM

STATE OF MARYLAND * MICHAEL NEIL ARMSTRONG * 21245 * REGISTERED PROFESSIONAL ENGINEER
Michael N. Armstrong 9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

SEDIMENT & EROSION CONTROL PLAN

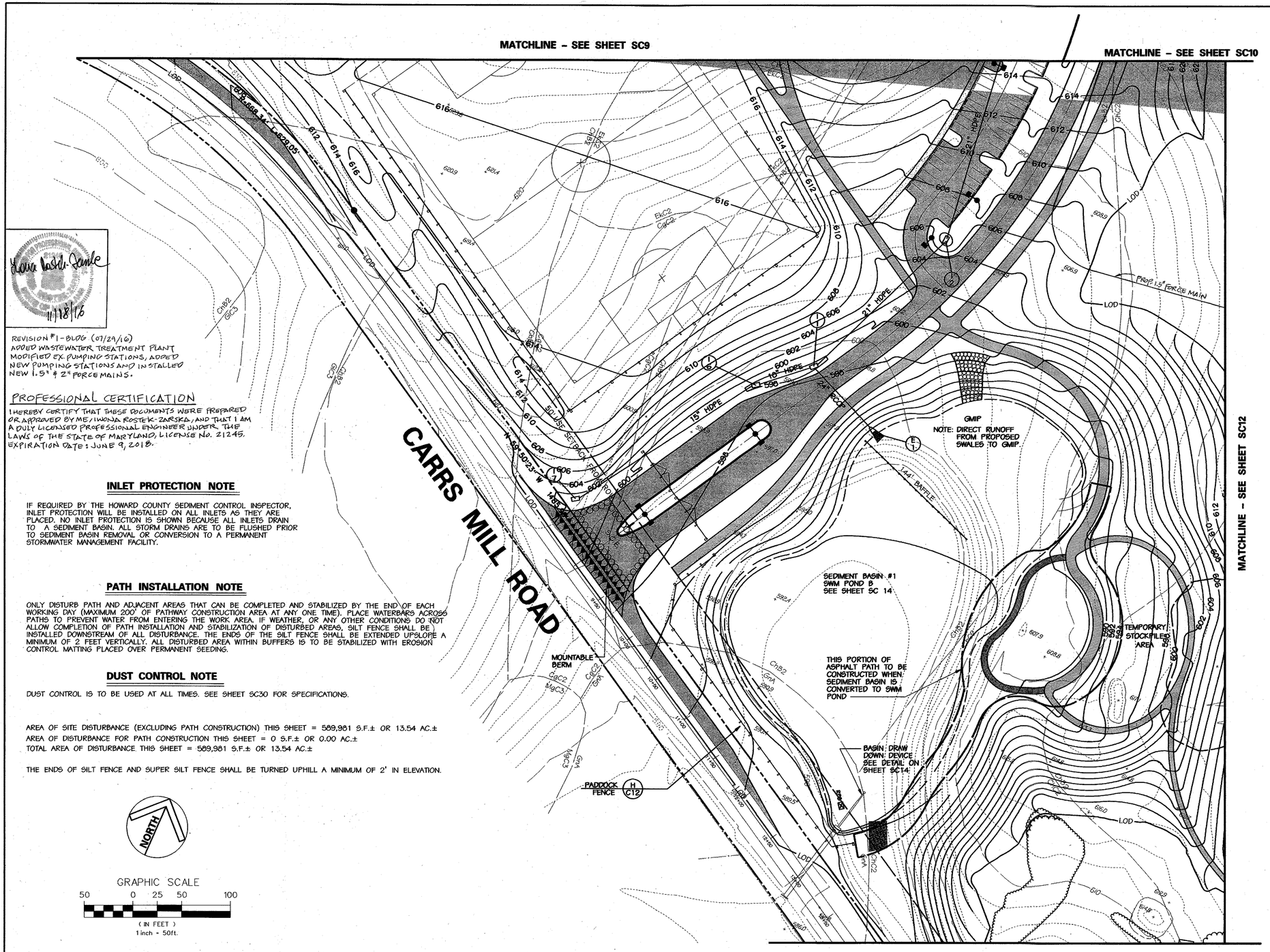
AREA 1

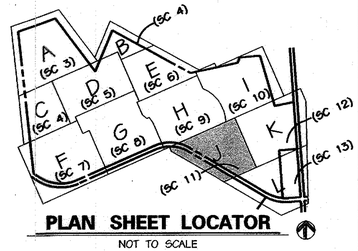
SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SC10

SHEET NO.: 35 OF 113

SDP-02-64





PLAN SHEET LOCATOR

NOT TO SCALE

REVISION #1 - BLOCK (07/29/16)
ADDED WASTEWATER TREATMENT PLANT MODIFIED EX. PUMPING STATIONS, ADDED NEW PUMPING STATIONS AND INSTALLED NEW 1.5" & 2" FORCE MAINS.

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, IWONA ROSTEK-ZARSKA, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21245, EXPIRATION DATE: JUNE 9, 2018.

INLET PROTECTION NOTE

IF REQUIRED BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, INLET PROTECTION WILL BE INSTALLED ON ALL INLETS AS THEY ARE PLACED. NO INLET PROTECTION IS SHOWN BECAUSE ALL INLETS DRAIN TO A SEDIMENT BASIN. ALL STORM DRAINS ARE TO BE FLUSHED PRIOR TO SEDIMENT BASIN REMOVAL OR CONVERSION TO A PERMANENT STORMWATER MANAGEMENT FACILITY.

PATH INSTALLATION NOTE

ONLY DISTURB PATH AND ADJACENT AREAS THAT CAN BE COMPLETED AND STABILIZED BY THE END OF EACH WORKING DAY (MAXIMUM 200' OF PATHWAY CONSTRUCTION AREA AT ANY ONE TIME). PLACE WATERBARS ACROSS PATHS TO PREVENT WATER FROM ENTERING THE WORK AREA. IF WEATHER, OR ANY OTHER CONDITIONS DO NOT ALLOW COMPLETION OF PATH INSTALLATION AND STABILIZATION OF DISTURBED AREAS, SILT FENCE SHALL BE INSTALLED DOWNSTREAM OF ALL DISTURBANCE. THE ENDS OF THE SILT FENCE SHALL BE EXTENDED UPSLOPE A MINIMUM OF 2 FEET VERTICALLY. ALL DISTURBED AREA WITHIN BUFFERS IS TO BE STABILIZED WITH EROSION CONTROL MATTING PLACED OVER PERMANENT SEEDING.

DUST CONTROL NOTE

DUST CONTROL IS TO BE USED AT ALL TIMES. SEE SHEET SC30 FOR SPECIFICATIONS.

AREA OF SITE DISTURBANCE (EXCLUDING PATH CONSTRUCTION) THIS SHEET = 589,981 S.F.± OR 13.54 AC.±
AREA OF DISTURBANCE FOR PATH CONSTRUCTION THIS SHEET = 0 S.F.± OR 0.00 AC.±
TOTAL AREA OF DISTURBANCE THIS SHEET = 589,981 S.F.± OR 13.54 AC.±

THE ENDS OF SILT FENCE AND SUPER SILT FENCE SHALL BE TURNED UPHILL A MINIMUM OF 2' IN ELEVATION.

NORTH

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50ft.

LEGEND

- EX. INDEX CONTOUR (590)
- EX. 2' INTERMEDIATE CONTOUR
- SOIL LINE (GIC2)
- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- EX. WOODS LINE
- SURVEYED WETLAND (W)
- EX. STREAMS
- 75' STREAM BUFFER (SB)
- EQUESTRIAN/HIKING TRAIL
- EX. SPOT ELEVATION (570.9)
- PROPOSED TREE LINE
- PROPOSED ASPHALT PATH
- PROPOSED CONCRETE PATH
- PROPOSED FENCE LINE
- PROPOSED RETAINING WALL
- PROPOSED CONC. CURB & GUTTER
- PROPOSED ASPHALT PAVING
- PROPOSED INDEX CONTOUR (620)
- PROPOSED INTERMEDIATE CONTOUR (614)
- PROPOSED SPOT ELEVATION (+617.25)
- PROPOSED INLET
- PROPOSED STORM DRAIN END SECTION
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN
- PROPOSED SEPTIC TANK
- PROPOSED SANITARY SEWER (SF)
- PROPOSED SEWER MANHOLE
- PROPOSED MONITORING WELL
- PROPOSED SEPTIC DRAIN FIELD
- SILT FENCE (SF)
- SUPER SILT FENCE (SSF)
- STABILIZED CONSTRUCTION ENTRANCE (SCE)
- BLAZE ORANGE SAFETY FENCE (BOF)
- LIMIT OF DISTURBANCE (LOD)
- REMOVABLE PUMPING STATION (RPS)

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER M.D. — DATE 10-17-02
HOWARD COUNTY HEALTH DEPARTMENT

ENGINEER'S CERTIFICATE

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

Michael N. Armstrong — 9/3/02
SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE) — DATE
MICHAEL N. ARMSTRONG

DEVELOPER'S CERTIFICATE

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

SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) — DATE 9/4/02
RONALD G. LEPSON

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 9/5/02

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

HOWARD SCD — DATE 9/5/02

NOTE

The Project Manager from the Department of Recreation and Parks will stake the placement of the pathway to avoid the removal of any trees. The pathway placement will have minimal clearing and minimal impact to the trees.

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

NO.	REVISIONS	DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 01000057.S \ USCPLN09.DGN

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KCI TECHNOLOGIES WWW.KCI.COM

STATE OF MARYLAND * MICHAEL NEIL ARMSTRONG * PROFESSIONAL ENGINEER
9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

SEDIMENT & EROSION CONTROL PLAN

AREA J

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SC11

SHEET NO.: 36 OF 113

SDP-02-64

MATCHLINE – SEE SHEET SC10

MATCHLINE – SEE SHEET SC11

MATCHLINE – SEE SHEET SC13

REPLACE PUMPS AT EX. PUMPING STATION

NEW PUMPING STATION

EXISTING LIBRARY (200'x145') TO REMAIN

CAPITOL PROJECT C-0523A

EXISTING SWM FACILITY

EXISTING PARKING

EXISTING WELL

MOUNTABLE BERM

AREA UNDER CONSTRUCTION

ROXBURY MILLS ROAD

ROUTE 97

EX. 60' R/W

50' R/W ULTIMATE

50' USE SETBACK FROM R/W

S 04°08'18" E 715.91'

S 04°09'16" E 776.98'

S 76°23'30" E 851.5

N 79°02'26" E 324.82'

315.40'

9.42'

PROP. 8" FORCE MAIN

NEW PUMPING STATION AND WET WELL

PROP. 6" FORCE MAIN

30' USE SETBACK

289.32'

S 85°38'32" W 300.00'

S 04°22'09" E 791.58'

10.48'

100'

LOD

SF

SFF

PO/SI

NOTE

The Project Manager from the Department of Recreation and Parks will stake the placement of the pathway to avoid the removal of any trees. The pathway placement will have minimal clearing and minimal impact to the trees.

PATHWAY INSTALLATION NOTE

ONLY DISTURB PATH AND ADJACENT AREAS THAT CAN BE COMPLETED AND STABILIZED BY THE END OF EACH WORKING DAY (MAXIMUM 200' OF PATHWAY CONSTRUCTION AREA AT ANY ONE TIME). PLACE WATERBARS ACROSS PATHS TO PREVENT WATER FROM ENTERING THE WORK AREA. IF WEATHER, OR ANY OTHER CONDITIONS DO NOT ALLOW COMPLETION OF PATH INSTALLATION AND STABILIZATION OF DISTURBED AREAS, SILT FENCE SHALL BE INSTALLED DOWNSTREAM OF ALL DISTURBANCE. THE ENDS OF THE SILT FENCE SHALL BE EXTENDED UPSLOPE A MINIMUM OF 2 FEET VERTICALLY. ALL DISTURBED AREA WITHIN BUFFERS IS TO BE STABILIZED WITH EROSION CONTROL MATTING PLACED OVER PERMANENT SEEDING.

DUST CONTROL NOTE

DUST CONTROL IS TO BE USED AT ALL TIMES. SEE SHEET SC30 FOR SPECIFICATIONS.

THE ENDS OF SILT FENCE AND SUPER SILT FENCE SHALL BE TURNED UPHILL A MINIMUM OF 2' IN ELEVATION.

AREA OF SITE DISTURBANCE (EXCLUDING PATH CONSTRUCTION) THIS SHEET = 106,071 S.F.± OR 2.44 AC.±
AREA OF DISTURBANCE FOR PATH CONSTRUCTION THIS SHEET = 00 S.F.± OR 0 AC.±
TOTAL AREA OF DISTURBANCE THIS SHEET = 106,071 S.F.± OR 2.44 AC.±

REVISION #1 - BLDG (07/29/16) ADDED WASTEWATER TREATMENT PLANT, MODIFIED EX. PUMPING STATIONS, ADDED NEW PUMPING STATIONS AND INSTALLED NEW 1.5" & 2" FORCE MAINS.

PROFESSIONAL CERTIFICATION

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LEGEND

- EX. INDEX CONTOUR (590)
- EX. 2' INTERMEDIATE CONTOUR
- SOIL LINE (GIC2)
- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- EX. WOODS LINE
- SURVEYED WETLAND (W)
- EX. STREAMS
- 75' STREAM BUFFER (SB)
- EQUESTRIAN/HIKING TRAIL
- EX. SPOT ELEVATION (570.9)
- PROPOSED TREE LINE TO REMAIN
- PROPOSED ASPHALT PATH
- PROPOSED CONCRETE PATH
- PROPOSED FENCE LINE
- PROPOSED RETAINING WALL
- PROPOSED CONC. CURB & GUTTER
- PROPOSED ASPHALT PAVING
- PROPOSED INDEX CONTOUR (620)
- PROPOSED INTERMEDIATE CONTOUR (614)
- PROPOSED SPOT ELEVATION (+617.25)
- PROPOSED INLET
- PROPOSED STORM DRAIN END SECTION
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN
- PROPOSED SEPTIC TANK
- PROPOSED SANITARY SEWER (SF)
- PROPOSED SEWER MANHOLE
- PROPOSED MONITORING WELL
- PROPOSED SEPTIC DRAIN FIELD
- SILT FENCE (SF)
- SUPER SILT FENCE (SSF)
- STABILIZED CONSTRUCTION ENTRANCE (SCE)
- BLAZE ORANGE SAFETY FENCE (BOF)
- LIMIT OF DISTURBANCE (LOD)
- PERIMETER DIKE/SWALE

PLAN SHEET LOCATOR

NOT TO SCALE

A (SC 3), B (SC 4), C (SC 4), D (SC 5), E (SC 6), F (SC 7), G (SC 8), H (SC 9), I (SC 10), J (SC 11), K (SC 12), L (SC 13)

NO	REVISIONS	DESCRIPTION	DATE

KCI FILE: MA 2000 \ 01000057.6 \ USCP.LN10.DGN

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HUNT VALLEY, MARYLAND 21030
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KCI TECHNOLOGIES WWW.KCI.COM

9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

SEDIMENT & EROSION CONTROL PLAN

AREA K

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SC12

SHEET NO.: 37 OF 113

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE: 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE: 10/22/02

DIRECTOR — DATE: 10/28/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER — DATE: 10-17-02
HOWARD COUNTY HEALTH DEPARTMENT

ENGINEER'S CERTIFICATE

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

Michael N. Armstrong — 9/3/02
SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE) — DATE
MICHAEL N. ARMSTRONG

DEVELOPER'S CERTIFICATE

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

SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) — DATE: 9/4/02
RONALD G. LEPSON

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE: 9/5/02

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

HOWARD SCD — DATE: 9/5/02

NORTH

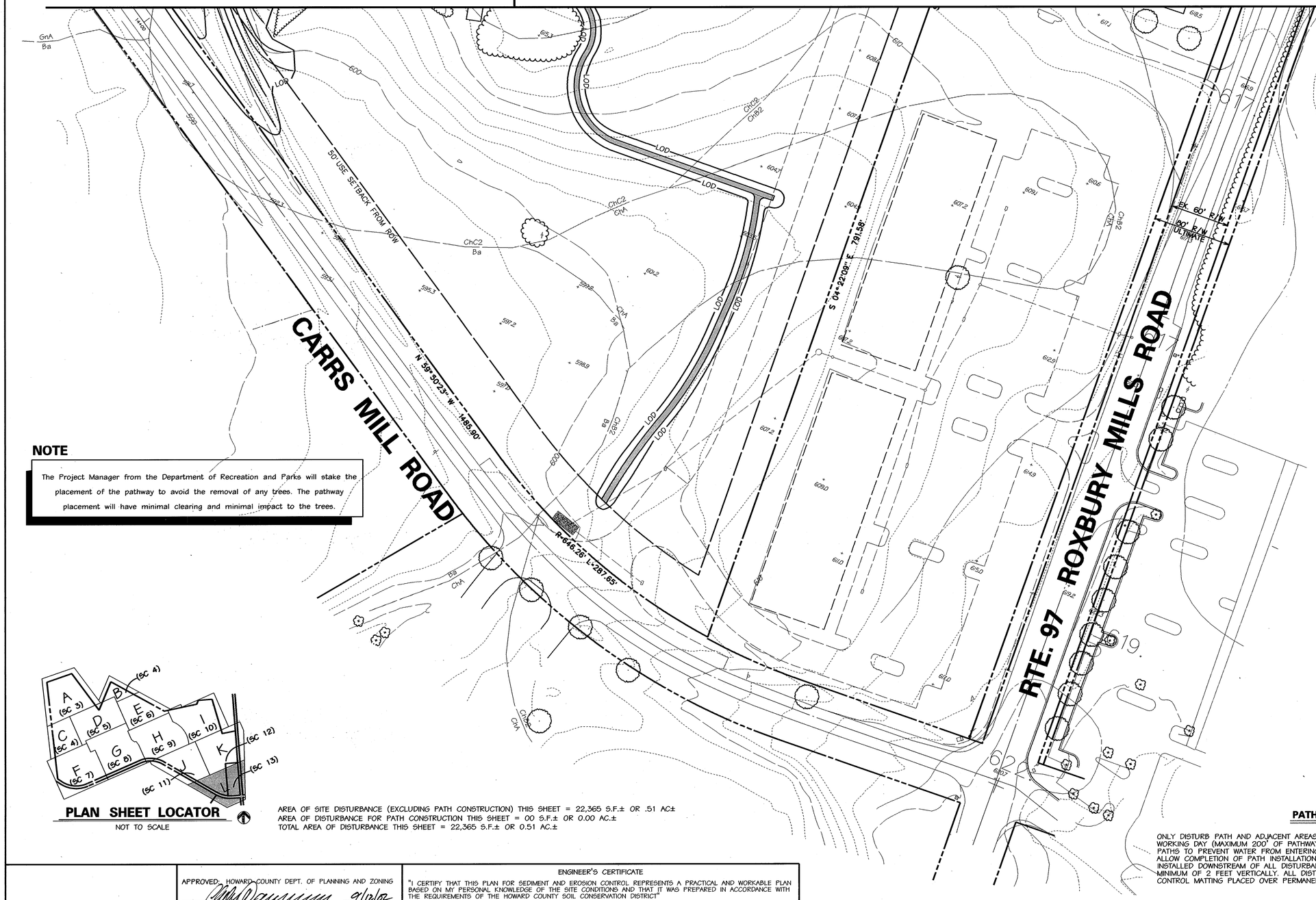
GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50ft.

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

SDP-02-64

MATCHLINE – SEE SHEET SC11

MATCHLINE – SEE SHEET SC12



NOTE

The Project Manager from the Department of Recreation and Parks will stake the placement of the pathway to avoid the removal of any trees. The pathway placement will have minimal clearing and minimal impact to the trees.

LEGEND

- 590 — EX. INDEX CONTOUR
- GlC2 — EX. 2' INTERMEDIATE CONTOUR
- SOIL LINE
- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- EX. WOODS LINE
- W — SURVEYED WETLAND
- EX. STREAMS
- SB — 75' STREAM BUFFER
- EQUESTRIAN/HIKING TRAIL
- 570.9 — EX. SPOT ELEVATION
- PROPOSED TREE LINE TO REMAIN
- PROPOSED ASPHALT PATH
- PROPOSED CONCRETE PATH
- PROPOSED FENCE LINE
- PROPOSED RETAINING WALL
- PROPOSED CONC. CURB & GUTTER
- PROPOSED ASPHALT PAVING
- 620 — PROPOSED INDEX CONTOUR
- 614 — PROPOSED INTERMEDIATE CONTOUR
- 617.25 — PROPOSED SPOT ELEVATION
- PROPOSED INLET
- PROPOSED STORM DRAIN END SECTION
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN
- PROPOSED SEPTIC TANK
- S — PROPOSED SANITARY SEWER
- PROPOSED SEWER MANHOLE
- PROPOSED MONITORING WELL
- PROPOSED SEPTIC DRAIN FIELD
- SF — SF — SILT FENCE
- SSF — SSF — SUPER SILT FENCE
- SCE — STABILIZED CONSTRUCTION ENTRANCE
- BOF — BOF — BLAZE ORANGE SAFETY FENCE
- LOD — LIMIT OF DISTURBANCE
- PROPOSED LIGHT POLE
- PROPOSED PADDOCK FENCE

PLAN SHEET LOCATOR

NOT TO SCALE

AREA OF SITE DISTURBANCE (EXCLUDING PATH CONSTRUCTION) THIS SHEET = 22,365 S.F.± OR .51 AC±
AREA OF DISTURBANCE FOR PATH CONSTRUCTION THIS SHEET = 00 S.F.± OR 0.00 AC.±
TOTAL AREA OF DISTURBANCE THIS SHEET = 22,365 S.F.± OR 0.51 AC.±

PATHWAY INSTALLATION NOTE

ONLY DISTURB PATH AND ADJACENT AREAS THAT CAN BE COMPLETED AND STABILIZED BY THE END OF EACH WORKING DAY (MAXIMUM 200' OF PATHWAY CONSTRUCTION AREA AT ANY ONE TIME). PLACE WATERBARS ACROSS PATHS TO PREVENT WATER FROM ENTERING THE WORK AREA. IF WEATHER, OR ANY OTHER CONDITIONS DO NOT ALLOW COMPLETION OF PATH INSTALLATION AND STABILIZATION OF DISTURBED AREAS, SILT FENCE SHALL BE INSTALLED DOWNSTREAM OF ALL DISTURBANCE. THE ENDS OF THE SILT FENCE SHALL BE EXTENDED UPSLOPE A MINIMUM OF 2 FEET VERTICALLY. ALL DISTURBED AREA WITHIN BUFFERS IS TO BE STABILIZED WITH EROSION CONTROL MATTING PLACED OVER PERMANENT SEEDING.

DUST CONTROL NOTE

DUST CONTROL IS TO BE USED AT ALL TIMES. SEE SHEET SC 30 FOR SPECIFICATIONS.

THE ENDS OF SILT FENCE AND SUPER SILT FENCE SHALL BE TURNED UPHILL A MINIMUM OF 2' IN ELEVATION.

NORTH

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50ft.

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, M.D. — DATE 10-17-02
HOWARD COUNTY HEALTH DEPARTMENT

ENGINEER'S CERTIFICATE

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

Michael N. Armstrong — 9/3/02
SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE) — DATE
MICHAEL N. ARMSTRONG

DEVELOPER'S CERTIFICATE

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

Ronald G. Lepson — 9/4/02
SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) — DATE
RONALD G. LEPSON

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 9/5/02

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

HOWARD SCD — DATE 9/5/02

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 01000057.5 \ USCPLN11.DGN

KCI TECHNOLOGIES INC.
ENGINEERS • PLANNERS • SURVEYORS
10 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
KCI TECHNOLOGIES WWW.KCI.COM

ENGINEER * STATE OF MARYLAND * MICHAEL NEIL ARMSTRONG * 21431 * REGISTERED PROFESSIONAL * 9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

SEDIMENT & EROSION CONTROL PLAN

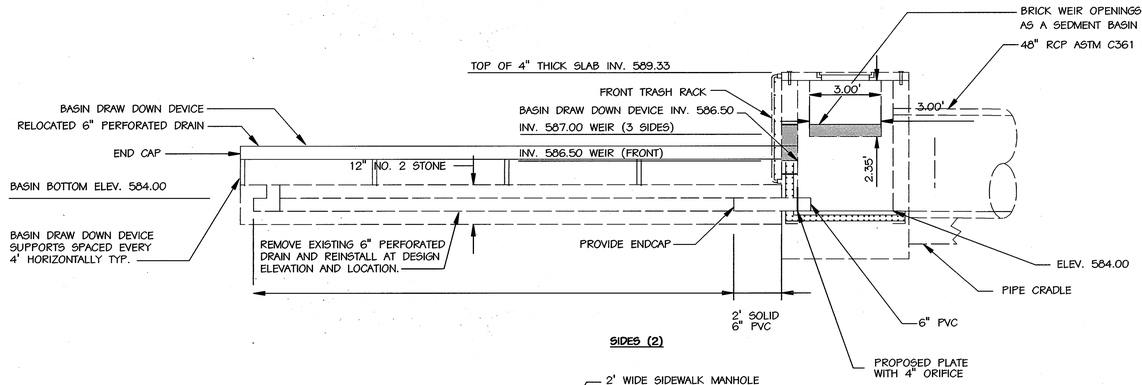
AREA L

SCALE:	1" = 50'
DATE:	06-12-02
K.C.I JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

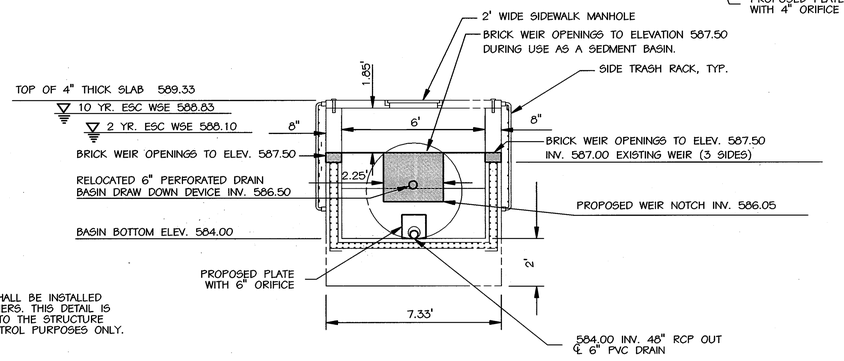
SC13

SHEET NO.: 38 OF 113

SDP-02-64



SIDES (2)



FRONT

NOTE:

THIS STRUCTURE SHALL BE INSTALLED PER PLANS BY OTHERS. THIS DETAIL IS FOR MODIFICATION TO THE STRUCTURE FOR SEDIMENT CONTROL PURPOSES ONLY.

NOTE:

1. PRECAST STRUCTURE S-1 SHALL BE CONSTRUCTED UNDER APPROVED DESIGN "SDP-01-108" FOR GLENWOOD STATION BY FREDERICK WARD ASSOCIATES, INC.
2. PRINCIPAL SPILLWAY AND DAM EMBANKMENT SHALL REMAIN UN-CHANGED FROM DESIGN "SDP-01-108" FOR GLENWOOD STATION BY FREDERICK WARD ASSOCIATES, INC.

PRECAST STRUCTURE S-1 DETAIL (BY OTHERS)

SCALE:1" = 3'-0"

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 9/5/02

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

HOWARD SCD — DATE 9/5/02

ENGINEER'S CERTIFICATE

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

Michael N. Armstrong — 9/3/02
SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE) — DATE
MICHAEL N. ARMSTRONG

DEVELOPER'S CERTIFICATE

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

SIGNATURE OF DEVELOPER (FRINT NAME BELOW SIGNATURE) — DATE 9/4/02

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/20/02

DIRECTOR — DATE 10/28/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, HOWARD COUNTY HEALTH DEPARTMENT — DATE 10-17-02

SEDIMENT BASIN TABLE

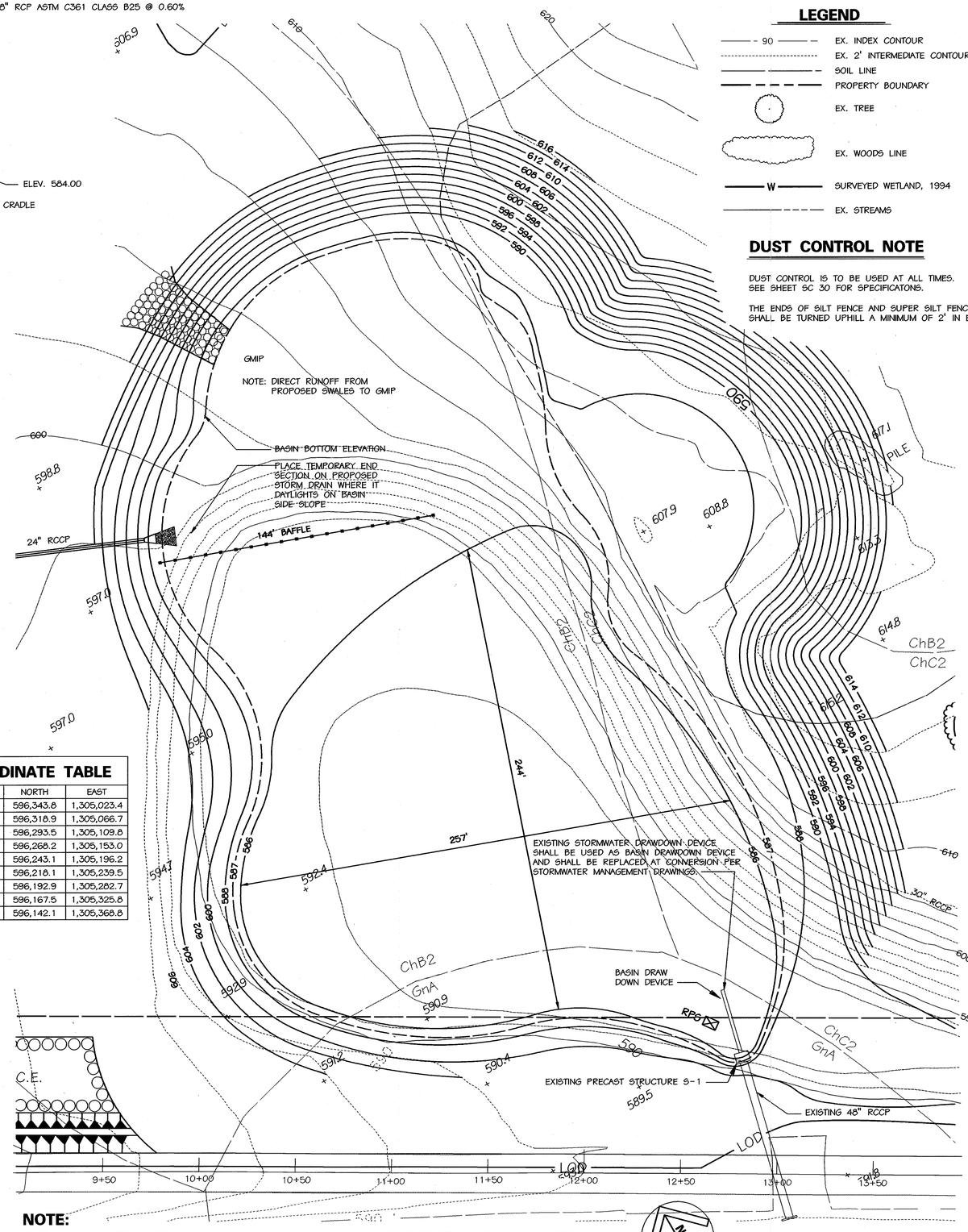
Basin Number		1
Existing Drainage Area Ac.		40.30
Interim Drainage Area Ac.		44.39
Proposed Drainage Area Ac.		44.39
Storage Required C. F.	Wet	79,902
	Dry	79,902
	Total	159,804
Storage Provided	Wet	82,859
	Dry	86,713
	Total	169,572
Existing Ground Elev (centerline intersection)		590.90
Top Embankment Elev.		590.85
Emergency Spillway Crest Elev		N/A
Top of Riser Elev.		589.00
Weir Crest/Dry Storage Elev.		587.50
Wet Storage Elev.		586.50
Cleanout Elev.		585.50
Bottom Elev.		584.00
Q_{10}Into Basin C.F.S.		162.1
Q_{10}Out Barrel C.F.S.		59.3
Q_{10}Out Emergency Spillway C.F.S.		N/A
Total Q_{10}out of Basin C.F.S.		59.3
Basin Depth	Wet	2.5'
	Dry	1.0'
	Total	3.5'
Design Highwater		588.83
Freeboard Provided		2.02'
Barrel Diameter		48"
Riser Interior Dimensions		48" x 72"
Emergency Spillway Width		N/A
Wet Storage Zone Elev.		584.00 - 586.50
Dry Storage Zone Elev.		586.50 - 587.50
Bottom Dimensions		244' x 257'
Dimension from Cleanout Elev. to Top		4.5'
Start Drawdown Perforations at Elev.		586.50
Interim SWM Required		YES
Interim SWM Provided		YES
Existing Q-2 for Interim SWM (cfs)		28.1
Proposed Q-2 Out for SWM (cfs)		19.1

COORDINATE TABLE

STATION	NORTH	EAST
9+50	596,343.8	1,305,023.4
10+00	596,318.9	1,305,066.7
10+50	596,293.5	1,305,109.8
11+00	596,268.2	1,305,153.0
11+50	596,243.1	1,305,196.2
12+00	596,218.1	1,305,239.5
12+50	596,192.9	1,305,282.7
13+00	596,167.5	1,305,325.8
13+50	596,142.1	1,305,368.8

NOTES:

1. GRADING SHOWN IS FOR INITIAL INSTALLATION. BASIN SHAPE MAY CHANGE AS SITE GRADING OCCURS. SEE SHEET SC11 FOR FINAL BASIN SHAPE AT COMPLETION OF GRADING.
2. FINAL BASIN DREDGE IS TO BE TAKEN TO A SITE WITH AN ACTIVE GRADING PERMIT WITH EROSION AND SEDIMENT CONTROL MEASURES IN PLACE AND FUNCTIONING.
3. BLAZE ORANGE SAFETY FENCE IS TO BE INSTALLED AROUND THE BASIN TO PREVENT ACCESS TO BASIN BY CHILDREN.
4. AT TIME OF CONSTRUCTION, PAINT A NOTE ON STRUCTURE S-1, INDICATING THAT THE DIMENSION FROM THE TOP OF THE STRUCTURE (589.33) TO THE CLEANOUT ELEVATION (585.00) IS 4.33'.
5. TOP OF BAFFLE SHALL BE AT ELEVATION 586.50.
6. FOR CONFERSION TO STORMWATER MANAGEMENT FACILITY, SEE STORMWATER MANAGEMENT DRAWINGS.



NOTE:

STATIONING IS PROJECTED CENTERLINE STATIONING ALONG CARRS MILL ROAD.

SEDIMENT BASIN #1 DETAIL

SCALE: 1"=30'

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

LEGEND

- EX. INDEX CONTOUR
- EX. 2' INTERMEDIATE CONTOUR
- SOIL LINE
- PROPERTY BOUNDARY
- EX. TREE
- EX. WOODS LINE
- W — SURVEYED WETLAND, 1994
- EX. STREAMS

DUST CONTROL NOTE

DUST CONTROL IS TO BE USED AT ALL TIMES. SEE SHEET SC 30 FOR SPECIFICATONS.

THE ENDS OF SILT FENCE AND SUPER SILT FENCE SHALL BE TURNED UPHILL A MINIMUM OF 2' IN ELEVATON.

NO. | REVISIONS DESCRIPTION | DATE

KCI FILE: M:\ 2000 \ 0100057.5 \ USCBAS11.DGN

KCI TECHNOLOGIES INC.
ENGINEERS • PLANNERS • SURVEYORS
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PHONE: (410) 316-7800 FAX: (410) 316-7817
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STATE OF MARYLAND * PIONEER * HOWARD ENGINEERING SERVICES * PROFESSIONAL ENGINEER — Michael N. Armstrong — 9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY, DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

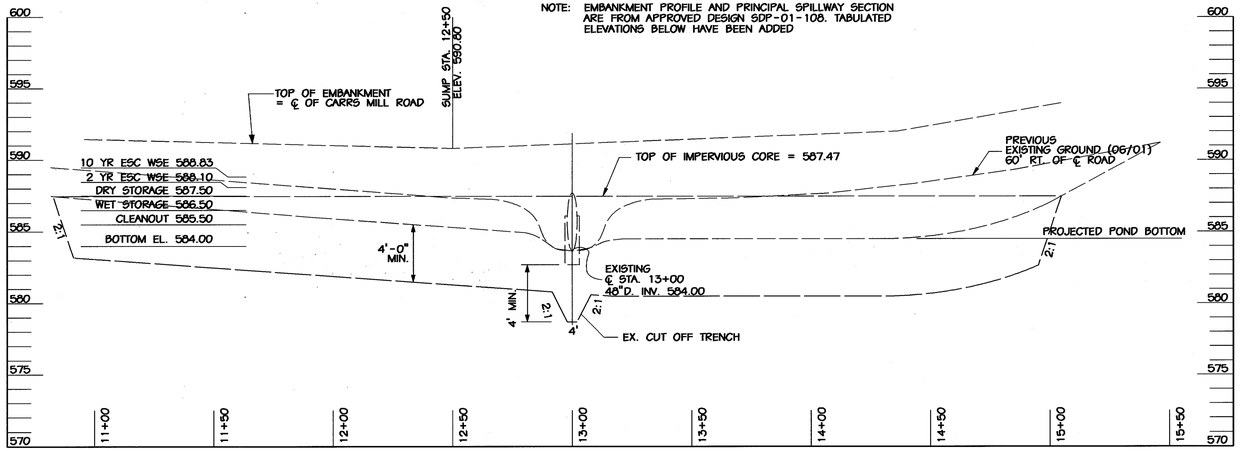
SEDIMENT BASIN #1 PLAN & DETAILS

SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SC14

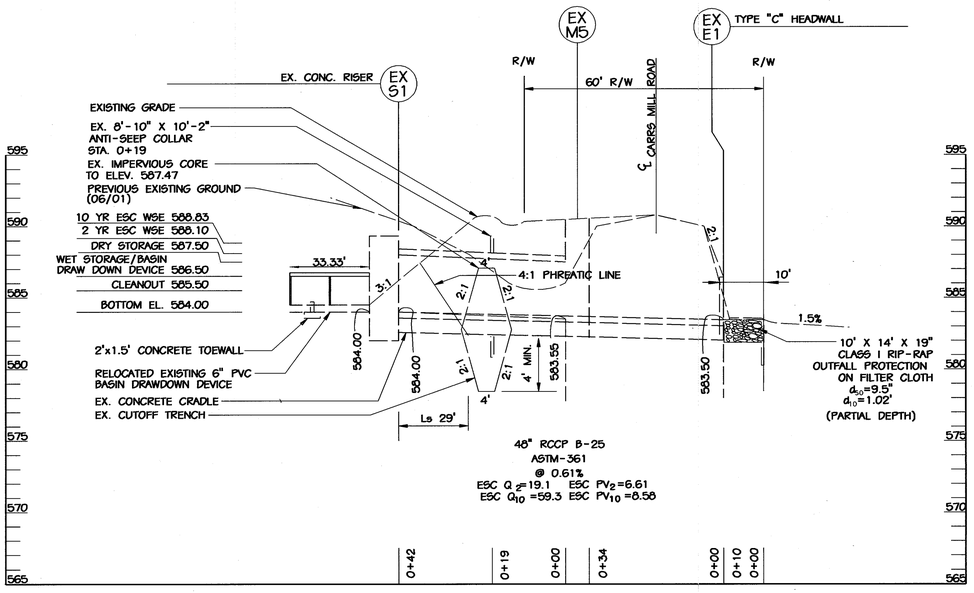
SHEET NO.: 39 OF 113

SDP-02-64



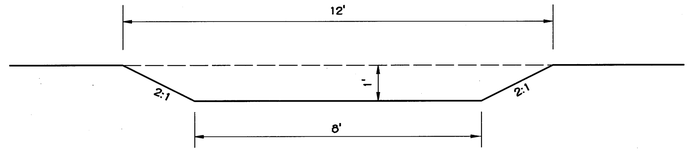
PROFILE ALONG CENTERLINE EMBANKMENT

SCALE : HORIZONTAL - 1"=30'
VERTICAL - 1"=5'



SECTION THROUGH PRINCIPAL SPILLWAY

SCALE : HORIZONTAL - 1"=30'
VERTICAL - 1"=5'



TYPICAL SECTION EMERGENCY SPILLWAY

SCALE 1"=2'

BASIN	TOP OF EMBANKMENT	EMERGENCY SPILLWAY CREST	EMERGENCY SPILLWAY STABILIZATION	EMERGENCY SPILLWAY FLOW (CFS)	EMERGENCY SPILLWAY VELOCITY (FPS)	10 YR WSE	2 YR WSE	TOP OF RISER	DRY STORAGE	WET STORAGE	CLEANOUT	BASIN BOTTOM
1	590.85	NA	NA	NA	NA	588.83	588.10	589.00	587.50	586.50	585.50	584.00
2	608.25	607.25	GRASSED (TOKEN)	0	0	606.89	606.13	606.25	605.25	604.00	603.00	602.50
3	583.25	582.25	GRASSED (TOKEN)	0	0	581.86	580.94	581.25	579.25	577.80	577.00	576.25
4	574.00	573.00	GRASSED (TOKEN)	0	0	572.64	571.92	572.00	571.50	569.50	568.00	567.00
5	567.00	566.00	GRASSED (TOKEN)	0	0	564.98	563.65	564.25	562.50	560.50	559.25	558.50
6	554.00	553.00	RIP RAP (TOKEN)	0	0	552.44	550.97	552.00	550.00	548.25	547.25	546.50
7	556.00	555.00	GRASSED (TOKEN)	0	0	554.86	553.93	554.00	553.60	552.00	550.75	550.00

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 9/5/02

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

HOWARD SCD — DATE 9/5/02

ENGINEER'S CERTIFICATE

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

Michael N. Armstrong — DATE 9/3/02
SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE)
MICHAEL N. ARMSTRONG

DEVELOPER'S CERTIFICATE

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

SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) — DATE 9/4/02
RONALD E. LEPSON

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02
DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, H.C.H.D. — DATE 10-17-02

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 0100057-S \ USCBAS12.DGN

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KCI TECHNOLOGIES WWW.KCI.COM

STATE OF MARYLAND * MICHAEL NEIL ARMSTRONG * 21592 * REGISTERED PROFESSIONAL ENGINEER
Michael N. Armstrong 9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410) 313-4640

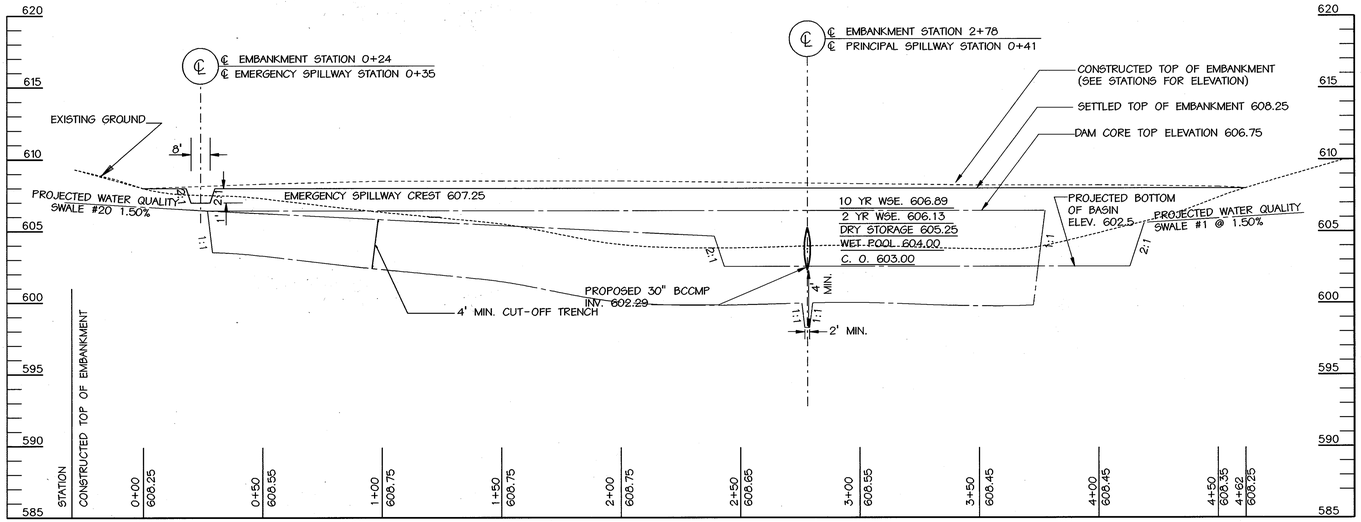
SEDIMENT BASIN #1 PROFILES & DETAILS

SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SC15

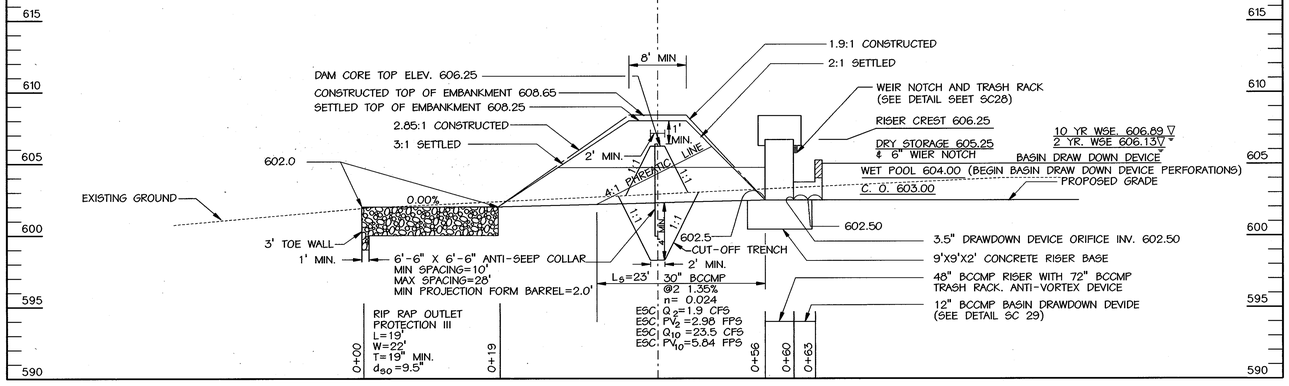
SHEET NO.: 40 OF 113

SDP-02-64



PROFILE ALONG CENTERLINE OF EMBANKMENT

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



PROFILE ALONG CENTERLINE OF PRINCIPAL SPILLWAY

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

LEGEND

- EX. INDEX CONTOUR (90)
- EX. 2' INTERMEDIATE CONTOUR
- SOIL LINE
- PROPERTY BOUNDARY
- EX. TREE
- EX. WOODS LINE
- EX. STREAMS
- W — SURVEYED WETLAND, 1994
- SSF — SSF — SUPER SILT FENCE
- LOD — LIMIT OF DISTURBANCE
- RPS — REMOVABLE PUMPING STATION
- GMIP — GABION MATTRESS INFLOW PROTECTION
- 40' BAFFLE — BAFFLE

COORDINATE TABLE

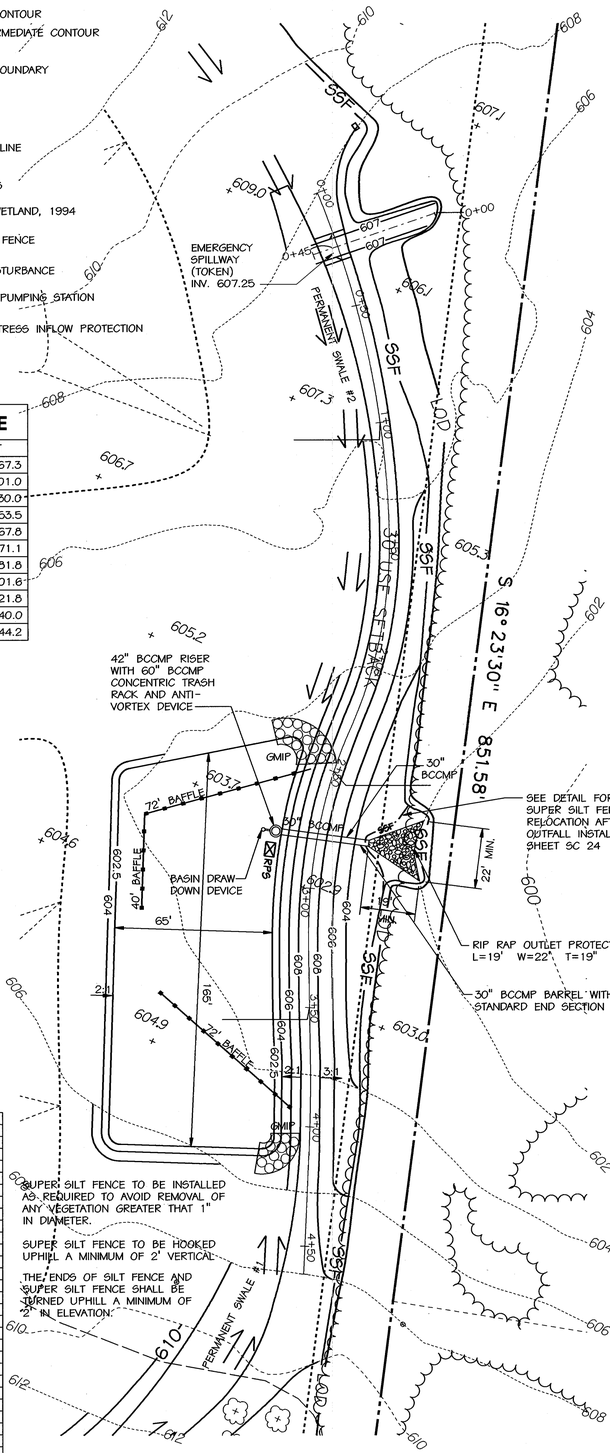
STATION	NORTH	EAST
0+00	597,954.6	1,304,767.3
0+50	597,917.8	1,305,801.0
1+00	597,877.0	1,305,830.0
1+50	597,833.0	1,305,853.5
2+00	597,785.2	1,305,867.8
2+50	597,735.3	1,305,871.1
3+00	597,686.6	1,305,861.8
3+50	597,640.7	1,305,901.6
4+00	597,595.0	1,305,921.8
4+50	597,548.4	1,305,940.0
4+62	597,537.6	1,305,944.2

NOTES:

1. GRADING SHOWN IS FOR INITIAL INSTALLATION. BASIN SHAPE MAY CHANGE AS SITE GRADING OCCURS. SEE SHEET SC10 FOR FINAL BASIN SHAPE AT COMPLETION OF GRADING.
2. FINAL BASIN DREDGE IS TO BE TAKEN TO A SITE WITH AN ACTIVE GRADING PERMIT WITH EROSION AND SEDIMENT CONTROL MEASURES IN PLACE AND FUNCTIONING.
3. BLAZE ORANGE SAFETY FENCE IS TO BE INSTALLED AROUND THE BASIN TO PREVENT ACCESS TO BASIN BY CHILDREN.
4. AT TIME OF CONSTRUCTION, PAINT A NOTE ON THE TRASH RACK/ANTI-VORTEX DEVICE INDICATING THAT THE DIMENSION FROM THE TOP OF THE TRASH RACK/ANTI-VORTEX DEVICE (555.83) TO THE CLEANOUT ELEVATION (550.75) IS 5.08'.
5. TOP OF BAFFLES SHALL BE AT ELEVATION 605.25.
6. INDICATED FINISHED GRADE CONTOURS ARE BASED ON PROPOSED SETTLED GRADES SHOWN ON PROFILES ON THIS SHEET.

DUST CONTROL NOTE

DUST CONTROL IS TO BE USED AT ALL TIMES. SEE SHEET SC30 FOR SPECIFICATIONS.



SEDIMENT BASIN #2 PLAN

SCALE: 1" = 30'

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

SEDIMENT BASIN TABLE

Basin Number		2
Existing Drainage Area Ac.		9.02
Interim Drainage Area Ac.		7.51
Proposed Drainage Area Ac.		7.51
Storage Required C. F.	Wet	16,236
	Dry	16,236
	Total	32,472
Storage Provided	Wet	18,327
	Dry	16,896
	Total	35,548
Existing Ground Elev (centerline intersection)		604.60
Top Embankment Elev.		608.25
Emergency Spillway Crest Elev		607.25
Top of Riser		606.25
Weir Crest/Dry Storage Elev.		605.25
Wet Storage Elev.		604.00
Cleanout Elev.		603.00
Bottom Elev.		602.50
Q_{10}into Basin C.F.S.		41.3
Q_{10}Out Barrel C.F.S.		23.9
Q_{10}Out Emergency Spillway C.F.S.		0.0
Total Q_{10}out of Basin C.F.S.		23.9
Basin Depth	Wet	1.50'
	Dry	1.25'
	Total	2.75'
Design Highwater		606.89
Freeboard Provided		1.37
Barrel Diameter		30"
Riser Diameter		48"
Emergency Spillway Width		8.0'
Wet Storage Zone Elev.		602.50 - 604.00
Dry Storage Zone Elev.		604.00 - 605.25
Bottom Dimensions		65' x 165'
Dimension fromn cleanout elev. to Top		5.0'
Start Drawdown Perforations at Elev		604.00
Interim SWM Required		YES
Interim SWM Provided		YES
Existing Q-2 for Interim SWM (cfs)		2.3
Proposed Q-2 Out for SWM (cfs)		1.9

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 9/5/02

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

HOWARD SCD — DATE 9/5/02

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER — DATE 10-17-02
HOWARD COUNTY HEALTH DEPARTMENT

ENGINEER'S CERTIFICATE

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

Michael N. Armstrong — 9/3/02
SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE) — DATE
MICHAEL N. ARMSTRONG

DEVELOPER'S CERTIFICATE

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SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) — DATE 9/4/02
RONALD G. DEPSON

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 0100057.5 \ USCBAS21.DGN

KCI TECHNOLOGIES INC.
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WWW.KCI.COM
KCI TECHNOLOGIES

MARYLAND REGISTERED PROFESSIONAL ENGINEER — Michael N. Armstrong — 9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

SEDIMENT BASIN #2 PLAN & PROFILES

SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SC16

SHEET NO.: 41 OF 113

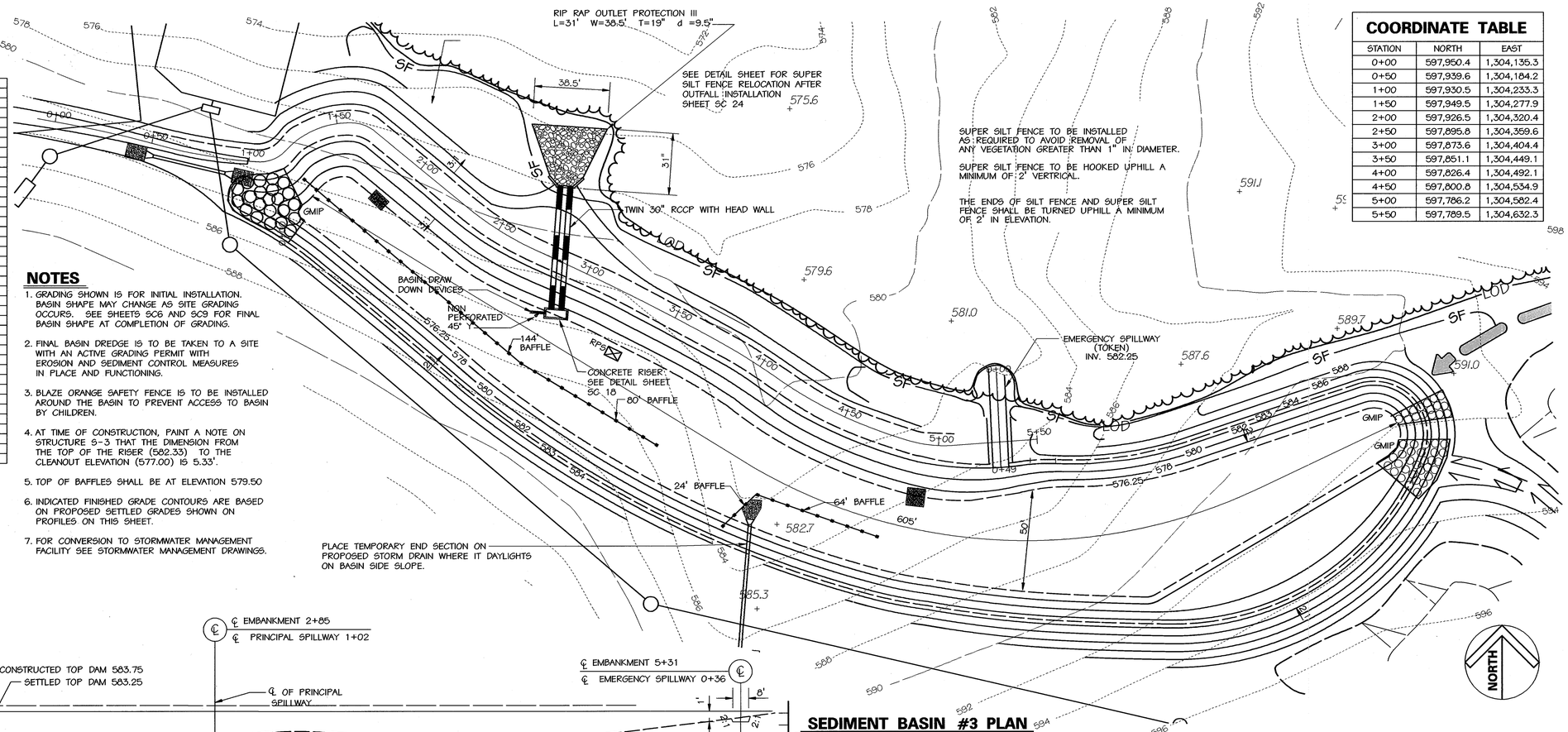
SDP-02-64

SEDIMENT BASIN TABLE

Basin Number		3
Existing Drainage Area (Ac.)		23.70
Interim Drainage Area (Ac.)		22.00
Proposed Drainage Area (Ac.)		22.00
Storage Required C.F.	Wet	42,660
	Dry	42,660
	Total	85,320
Storage Provided C.F.	Wet	43,449
	Dry	47,416
	Total	90,865
Existing Ground Elev (centerline intersection)		581.50
Top Embankment Elev.		583.25
Emergency Spillway Crest Elev.		582.25
Top of Riser		581.25
Weir Crest/Dry Storage Elev.		579.25
Wet Storage Elev.		577.80
Cleanout Elev.		577.00
Bottom Elev.		576.25
Q_{10}into Basin (cfs)		107.8
Q_{10}Out Barrel (cfs)		54.8
Q_{10}Out Emergency Spillway (cfs)		0.0
Total Q_{10}out of Basin (cfs)		54.8
Basin Depth	Wet	1.55'
	Dry	1.45'
	Total	3.00'
Design Highwater		581.86
Freeboard Provided		1.39
Barrel Diameter		TWIN 30"
Riser Diameter		4.0'X10.5'
Emergency Spillway Width		8.0'
Wet Storage Zone Elev.		576.25 - 578.00
Dry Storage Zone Elev.		578.00 - 579.25
Bottom Dimensions		50' x 605'
Dimension from cleanout elev. to Top		4.25'
Start Drawdown Perforations at Elev.		577.80
Interim SWM Required		YES
Interim SWM Provided		YES
Existing Q-2 for Interim SWM (cfs)		4.7
Proposed Q-2 Out for SWM (cfs)		4.5

DUST CONTROL NOTE

DUST CONTROL IS TO BE USED AT TLL TIMES.
SEE SHEET SC 30 FOR SPECIFICATIONS.



COORDINATE TABLE

STATION	NORTH	EAST
0+00	597,950.4	1,304,135.3
0+50	597,939.6	1,304,184.2
1+00	597,930.5	1,304,233.3
1+50	597,949.5	1,304,277.9
2+00	597,926.5	1,304,320.4
2+50	597,895.8	1,304,359.6
3+00	597,873.6	1,304,404.4
3+50	597,851.1	1,304,449.1
4+00	597,826.4	1,304,492.1
4+50	597,800.8	1,304,534.9
5+00	597,786.2	1,304,582.4
5+50	597,789.5	1,304,632.3

NOTES

1. GRADING SHOWN IS FOR INITIAL INSTALLATION. BASIN SHAPE MAY CHANGE AS SITE GRADING OCCURS. SEE SHEETS SC6 AND SC9 FOR FINAL BASIN SHAPE AT COMPLETION OF GRADING.
2. FINAL BASIN DREDGE IS TO BE TAKEN TO A SITE WITH AN ACTIVE GRADING PERMIT WITH EROSION AND SEDIMENT CONTROL MEASURES IN PLACE AND FUNCTIONING.
3. BLAZE ORANGE SAFETY FENCE IS TO BE INSTALLED AROUND THE BASIN TO PREVENT ACCESS TO BASIN BY CHILDREN.
4. AT TIME OF CONSTRUCTION, PAINT A NOTE ON STRUCTURE S-3 THAT THE DIMENSION FROM THE TOP OF THE RISER (582.33) TO THE CLEANOUT ELEVATION (577.00) IS 5.33'.
5. TOP OF BAFFLES SHALL BE AT ELEVATION 579.50
6. INDICATED FINISHED GRADE CONTOURS ARE BASED ON PROPOSED SETTLED GRADES SHOWN ON PROFILES ON THIS SHEET.
7. FOR CONVERSION TO STORMWATER MANAGEMENT FACILITY SEE STORMWATER MANAGEMENT DRAWINGS.

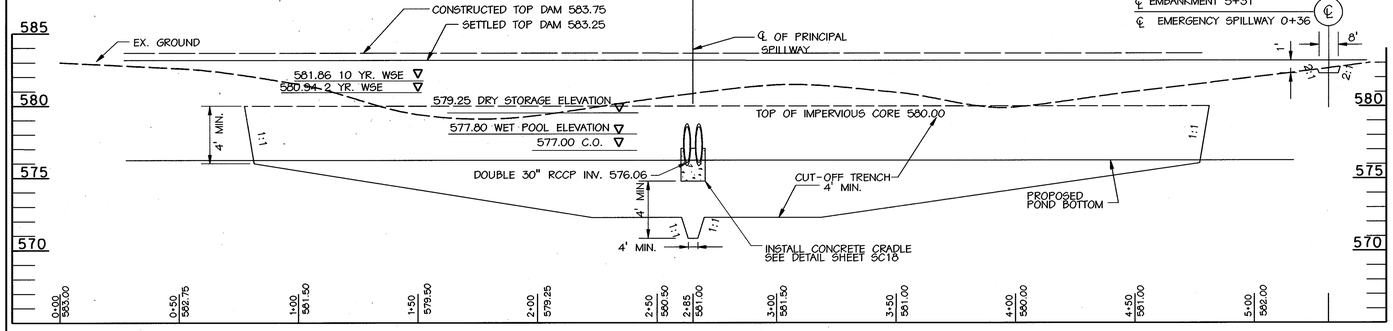
SEDIMENT BASIN #3 PLAN

SCALE: 1" = 30'

NOTE: INDICATED FINISHED GRADE CONTOURS ARE BASED ON PROPOSED SETTLED GRADES SHOWN ON PROFILES THIS SHEET

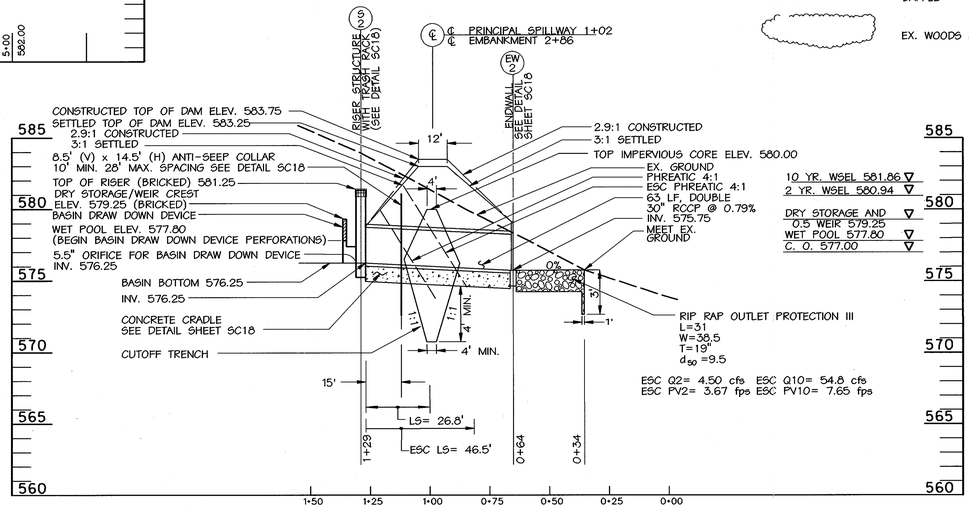
LEGEND

- EX. INDEX CONTOUR
- EX. 2' INTERMEDIATE CONTOUR
- PROPOSED CONTOUR
- SOIL LINE
- PROPERTY BOUNDARY
- EX. TREE
- EX. STREAMS
- SURVEYED WETLAND, 1994
- SUPER SILT FENCE
- LIMIT OF DISTURBANCE
- REMOVABLE PUMPING STATION
- GABION MATTRESS INFLOW PROTECTION
- BAFFLE
- EX. WOODS LINE



PROFILE ALONG CENTERLINE OF EMBANKMENT

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



PROFILE ALONG CENTERLINE OF PRINCIPAL SPILLWAY

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

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 9/5/02

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

HOWARD SCD — DATE 9/5/02

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER — DATE 10-17-02
HOWARD COUNTY HEALTH DEPARTMENT

ENGINEER'S CERTIFICATE

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

Michael N. Armstrong — DATE 9/3/02
SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE)
MICHAEL N. ARMSTRONG

DEVELOPER'S CERTIFICATE

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

SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) — DATE 9/4/02
RONALD G. LEPSON

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 01000057.S \ USCBASE31.DGN

KCI TECHNOLOGIES INC.
ENGINEERS • PLANNERS • SURVEYORS
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HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
TECHNOLOGIES WWW.KCI.COM

STATE OF MARYLAND ★ MICHAEL NORMAN ARMSTRONG ★ 21585 ★ REGISTERED PROFESSIONAL ENGINEER
Michael N. Armstrong 9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410) 313-4640

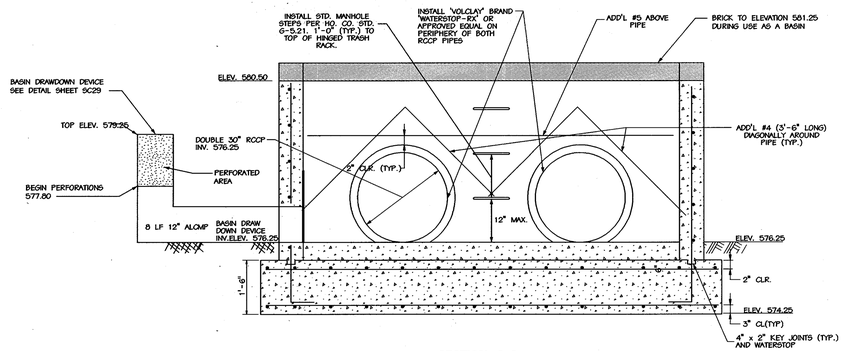
SEDIMENT BASIN #3 PLAN & PROFILES

SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

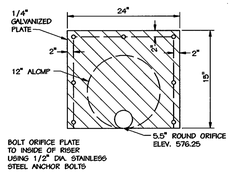
SC17

SHEET NO.: 42 OF 113

SDP-02-64

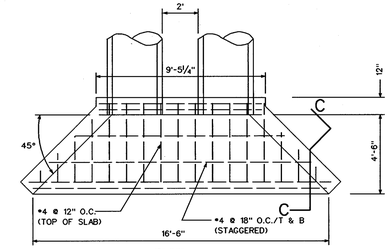


SECTION C–C

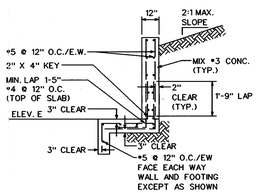


ORIFICE PLATE DETAIL FOR BASIN 3

NOT TO SCALE



PLAN



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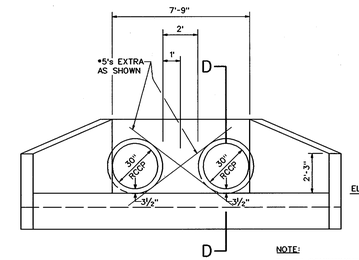
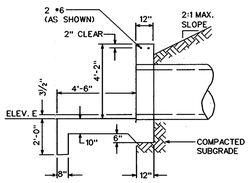


ELEVATION

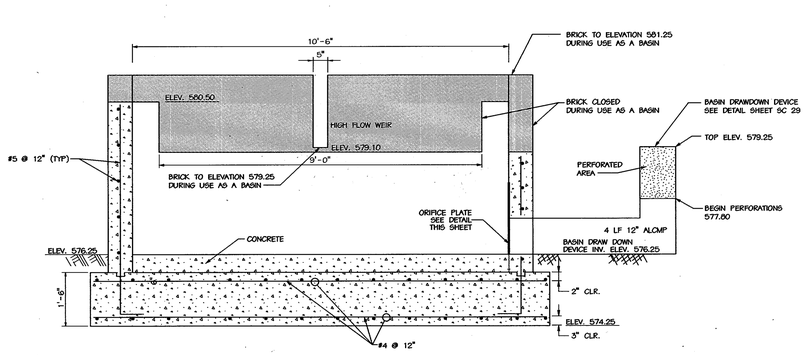


SECTION D–D

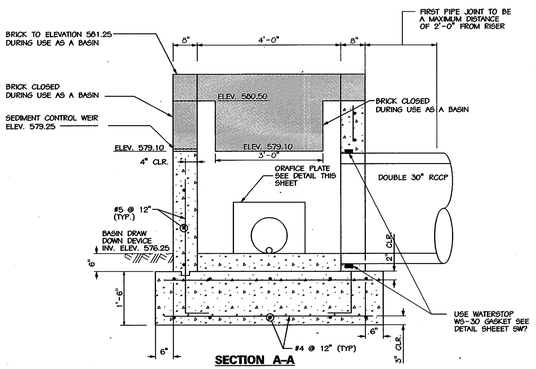
NOTE:
TO BE CONSTRUCTED AT POND FACILITIES B AND F WHERE NOTED ON PLANS.

BASIN 3 AND 4 OUTFALL STRUCTURE DETAILS

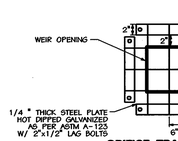
SCALE: 1" = 4'



SECTION B–B



SECTION A–A

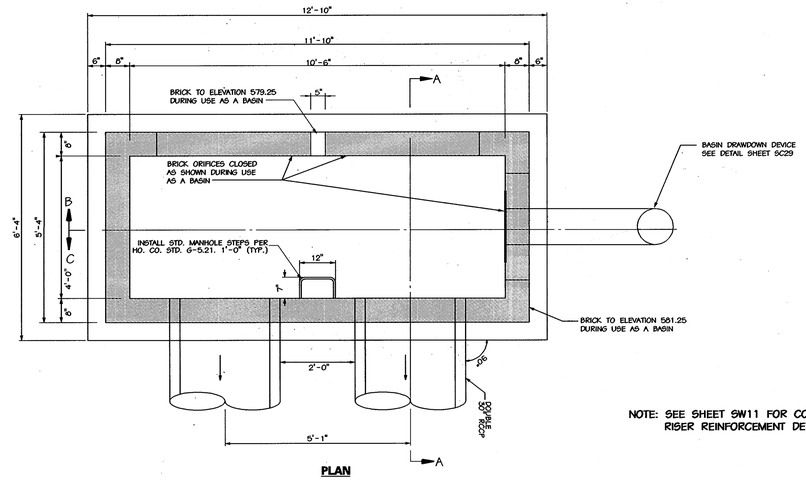


ORIFICE TRASH RACK DETAIL

N.T.S.

NOTE:
TRASH RACK TO BE PAINTED BATTLESHIP GREY.

#8 REBAR @ 6" OC BOTH WAYS

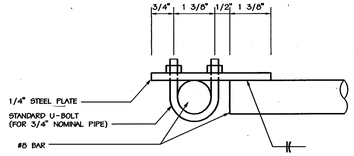


PLAN

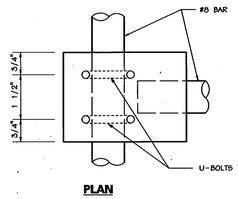
NOTE: SEE SHEET SW11 FOR CONCRETE RISER REINFORCEMENT DETAILS

CONCRETE RISER DETAILS FOR POND B

SCALE: 1" = 2'



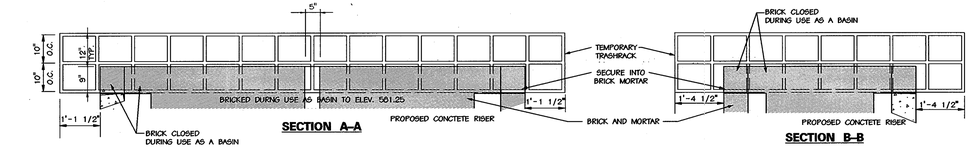
SECTION



PLAN

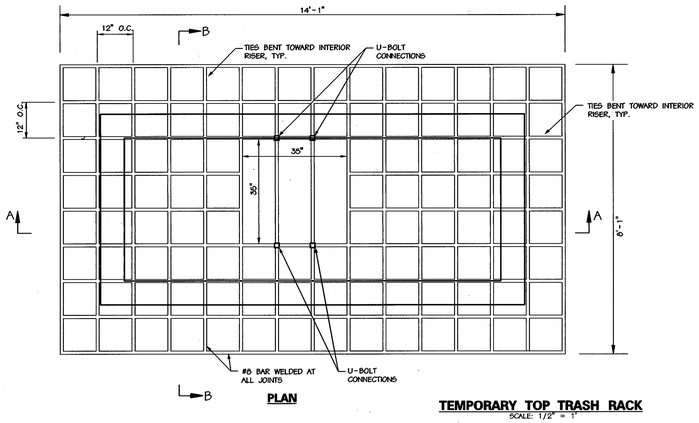
U-BOLT CONNECTION DETAIL

NOT TO SCALE



SECTION A–A

SECTION B–B



PLAN

TEMPORARY TOP TRASH RACK

SCALE: 1"= 1'

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER — DATE 10-17-02
HOWARD COUNTY HEALTH DEPARTMENT

ENGINEER'S CERTIFICATE

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

Michael N. Armstrong — 9/3/02
SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE) — DATE
MICHAEL N. ARMSTRONG

DEVELOPER'S CERTIFICATE

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

SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) RONALD G. LEPSON — DATE 9/4/02

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 9/5/02

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

HOWARD SCD — DATE 9/5/02

NO.	REVISIONS	DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 01000057.S \ USCBA632.DGN

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STATE OF MARYLAND * MICHAEL NORTON ARMSTRONG * 21046 * REGISTERED PROFESSIONAL ENGINEER

Michael N. Armstrong 9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

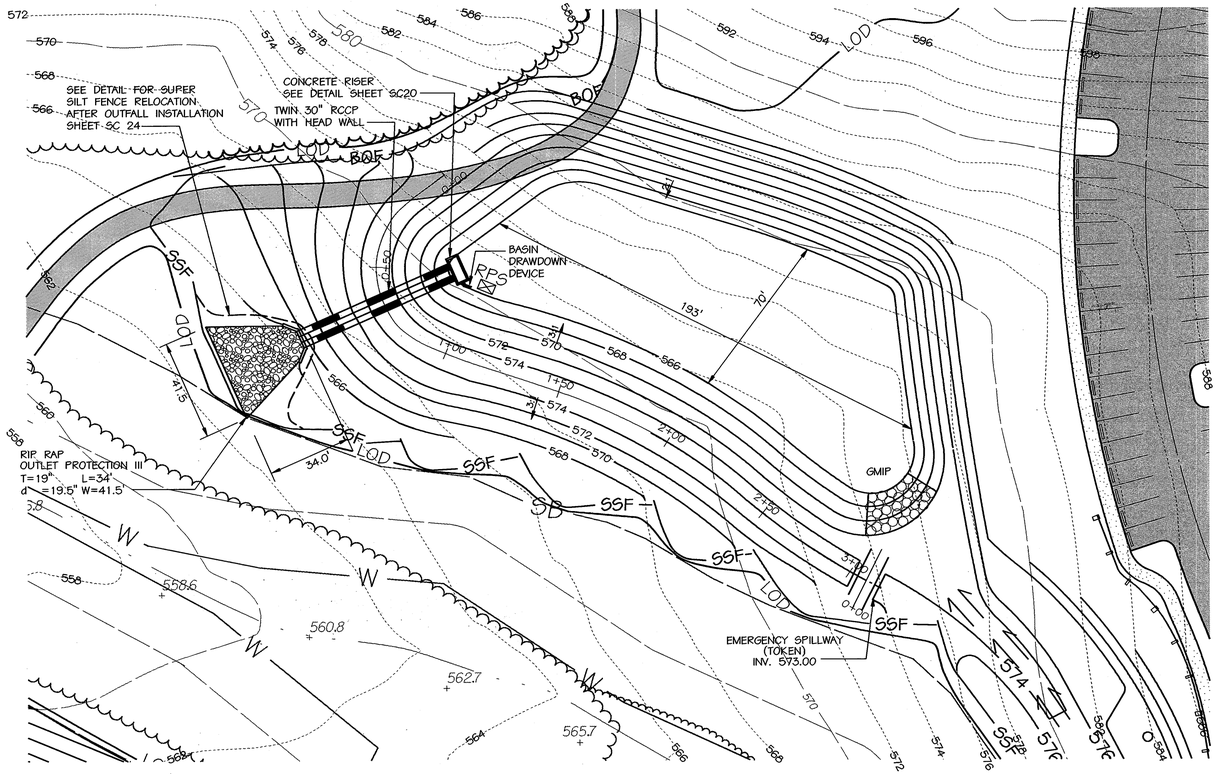
SEDIMENT BASIN #3 DETAILS

SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SC18

SHEET NO.: 43 OF 113

SDP-02-64



SEDIMENT BASIN #4 PLAN

SCALE: 1" = 30'

NOTE: INDICATED FINISHED GRADE CONTOURS ARE BASED ON PROPOSED SETTLED GRADES SHOWN ON PROFILES THIS SHEET

NORTH

SUPER SILT FENCE TO BE INSTALLED AS REQUIRED TO AVOID REMOVAL OF ANY VEGETATION GREATER THAN 1" IN DIAMETER.

SUPER SILT FENCE TO BE HOOKED UPHILL A MINIMUM OF 2' VERTICAL.

COORDINATE TABLE

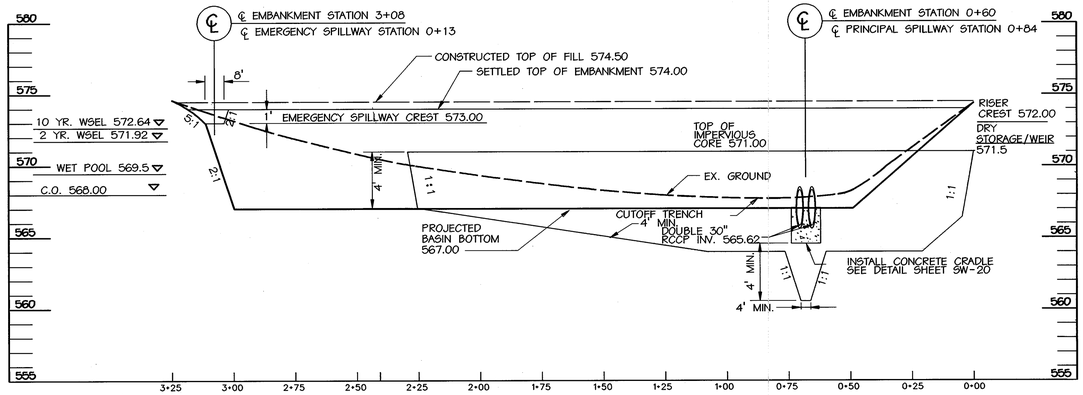
STATION	NORTH	EAST
0+00	597,542.1	1,303,561.8
0+50	597,503.7	1,303,533.4
1+00	597,467.4	1,303,562.3
1+50	597,451.2	1,303,609.6
2+00	597,430.2	1,303,654.9
2+50	597,400.2	1,303,694.8
3+00	597,375.4	1,303,731.3
3+25	597,368.6	1,303,744.3

NOTES:

1. GRADING SHOWN IS FOR INITIAL INSTALLATION. BASIN SHAPE MAY CHANGE AS SITE GRADING OCCURS. SEE SHEET SC8 FOR FINAL BASIN SHAPE AT COMPLETION OF GRADING.
2. FINAL BASIN DREDGE IS TO BE TAKEN TO A SITE WITH AN ACTIVE GRADING PERMIT WITH EROSION AND SEDIMENT CONTROL MEASURES IN PLACE AND FUNCTIONING.
3. BLAZE ORANGE SAFETY FENCE IS TO BE INSTALLED AROUND THE BASIN TO PREVENT ACCESS TO BASIN BY CHILDREN.
4. AT TIME OF CONSTRUCTION PAINT A NOTE ON THE STRUCTURE S-3, INDICATING THAT THE DIMENSION FROM THE TOP OF THE RISER (572.33) TO THE CLEANOUT ELEVATION (568.00) IS 4.33'.
5. INDICATED FINISHED GRADE CONTOURS ARE BASED ON PROPOSED SETTLED GRADES SHOWN ON PROFILES ON THIS SHEET.
6. FOR CONVERSION TO STORMWATER MANAGEMENT FACILITY, SEE STORMWATER MANAGEMENT DRAWINGS

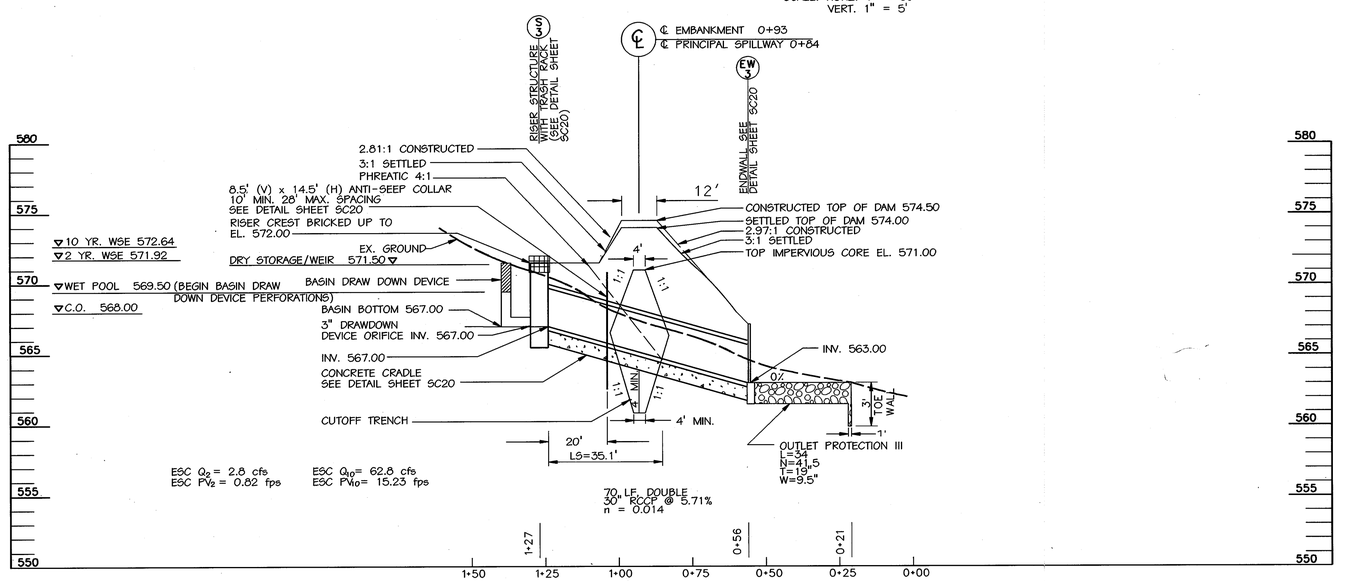
SEDIMENT BASIN TABLE

Basin Number		4
Existing Drainage Area (Ac.)		15.14
Interim Drainage Area (Ac.)		16.72
Proposed Drainage Area (Ac.)		16.72
Storage Required (C.F.)	Wet	30,096
	Dry	30,096
	Total	60,192
Storage Provided (C.F.)	Wet	37,715
	Dry	37,163
	Total	74,878
Existing Ground Elev (centerline intersection)		567.50
Top Embankment Elev.		574.00
Emergency Spillway Crest Elev.		573.00
Top of Riser		572.00
Weir Crest/Dry Storage Elev.		571.50
Wet Storage Elev.		569.50
Cleanout Elev.		568.00
Bottom Elev.		567.00
Q_{100} into Basin (cfs)		75.5
Q_{10} Out Barrel (cfs)		62.8
Q_{10} Out Emergency Spillway (cfs)		0.0
Total Q_{10} out of Basin (cfs)		62.8
Basin Depth	Wet	2.50'
	Dry	2.00
	Total	4.50'
Design Highwater		572.64
Freeboard Provided		1.36'
Barrel Diameter		TWIN 30"
Riser Interior dimensions		4.0'x10.5'
Emergency Spillway Width		8.0'
Wet Storage Zone Elev.		567.00 - 569.50
Dry Storage Zone Elev.		569.50 - 571.50
Bottom Dimensions		70 'X 193'
Dimension fromn cleanout elev. to Top		4.50'
Start Drawdown Perforations at Elev,		569.50
Interim SWM Required		YES
Interin SWM Provided		YES
Existing Q-2 for Interim SWM (cfs)		4.0
Proposed Q-2 Out for SWM (cfs)		2.8



PROFILE ALONG CENTERLINE OF EMBANKMENT

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



PROFILE ALONG CENTERLINE OF PRINCIPAL SPILLWAY

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

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

LEGEND

- 90 — EX. INDEX CONTOUR
- EX. 2' INTERMEDIATE CONTOUR
- 574 — PROPOSED CONTOUR
- SOIL LINE
- PROPERTY BOUNDARY
- EX. TREE
- EX. WOODS LINE
- EX. STREAMS
- W — SURVEYED WETLAND, 1994
- RPS — REMOVABLE PUMPING STATION
- SSF — SUPER SILT FENCE
- LOD — LIMIT OF DISTURBANCE
- GMIP — GABION MATTRESS INFLOW PROTECTION

DUST CONTROL NOTE

DUST CONTROL TO BE USED AT ALL TIMES. SEE SHEET SC30 FOR SPECIFICATIONS.

THE ENDS OF SILT FENCE AND SUPTER SILT FENCE SHALL BE TURNED UPHILL A MINIMUM OF 2' IN ELEVATION.

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 9/5/02

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

HOWARD SCD — DATE 9/5/02

ENGINEER'S CERTIFICATE

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

Michael N. Armstrong — 9/3/02
SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE) — DATE
MICHAEL N. ARMSTRONG

DEVELOPER'S CERTIFICATE

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

SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) — DATE 9/4/02

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02
DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, H.D. — DATE 10-17-02
HOWARD COUNTY HEALTH DEPARTMENT

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 01000057.6 \ USCBAS41.DGN

KCI TECHNOLOGIES INC.
ENGINEERS • PLANNERS • SURVEYORS
10 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
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STATE OF MARYLAND • MICHAEL NEIL ARMSTRONG • 21562 • REGISTERED PROFESSIONAL ENGINEER
9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410) 313-4640

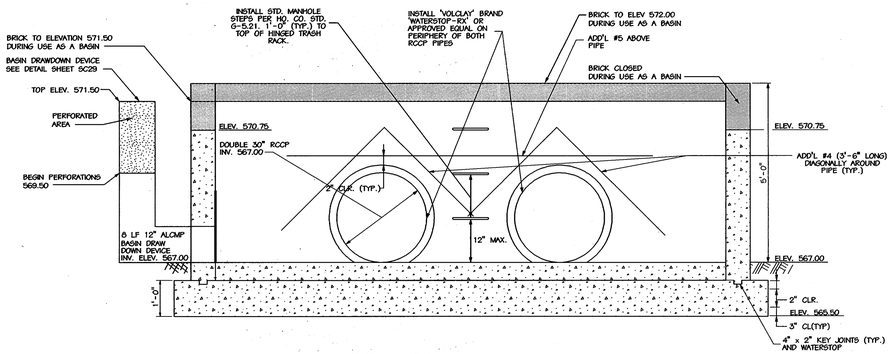
SEDIMENT BASIN #4 PLAN & PROFILES

SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

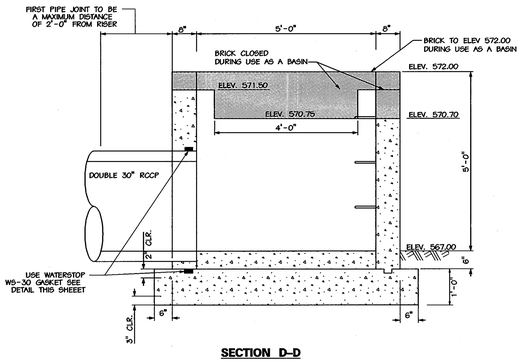
SC19

SHEET NO.: 44 OF 113

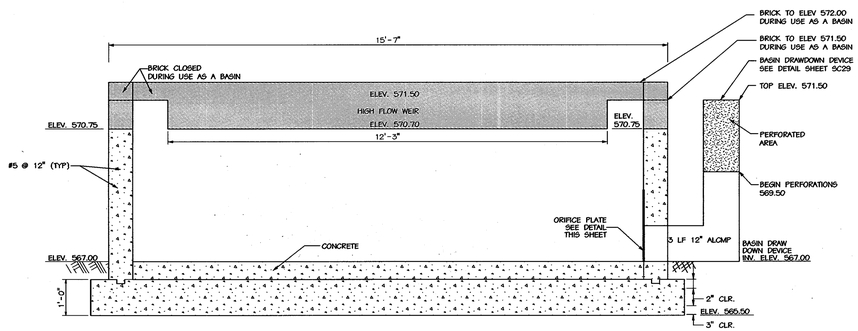
SDP-02-64



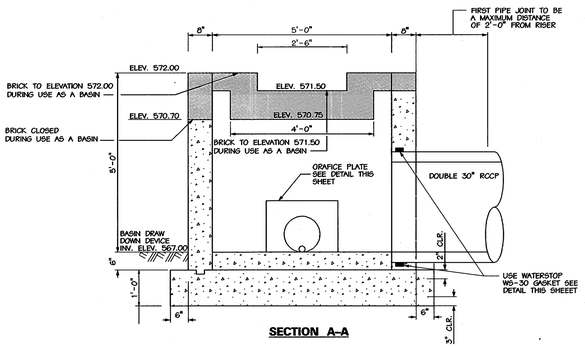
SECTION C-C



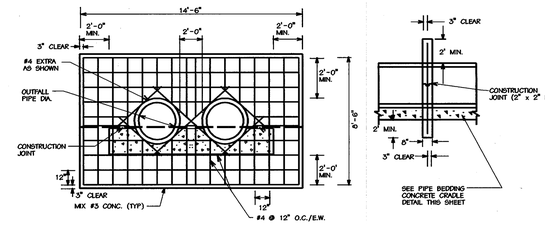
SECTION D-D



SECTION B-B



SECTION A-A

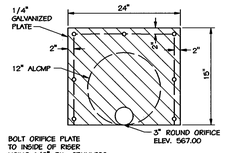


CONCRETE ANTI-SEEP COLLAR FOR BASIN 3 AND 4 (1 REQ'D.)

NOT TO SCALE

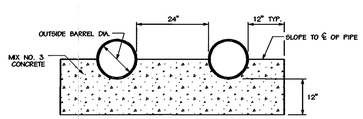
NOTES:

1. ANTI-SEEP COLLAR SHALL BE FORMED IN 2 POURS.
2. ANTI-SEEP COLLARS TO BE PLACED A MINIMUM OF 2' FROM ANY PIPE JOINT.
3. ANTI-SEEP COLLAR TO BE INSTALLED AT FACILITIES B AND F WHERE NOTED ON PLANS.



ORIFICE PLATE DETAIL FOR BASIN 4

NOT TO SCALE

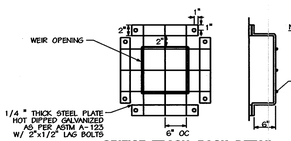


PIPE BEDDING CONCRETE CRADLE

NOT TO SCALE

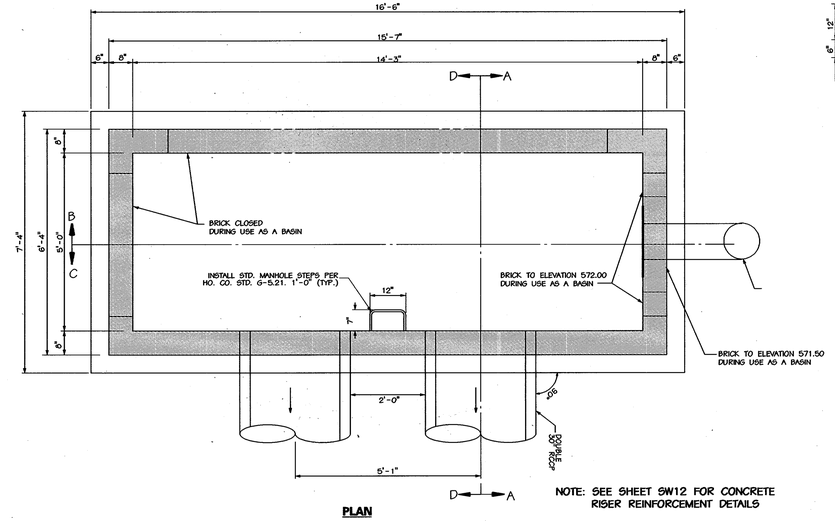
NOTES:

1. USE SCS TR-46 A-2 CONCRETE CRADLE MODIFIED FOR TWIN PIPES.
2. THE CONCRETE CRADLE SHALL BE SLOPED TO MEET THE SPRING LINE OF THE PIPE.



ORIFICE TRASH RACK DETAIL

N.T.S.

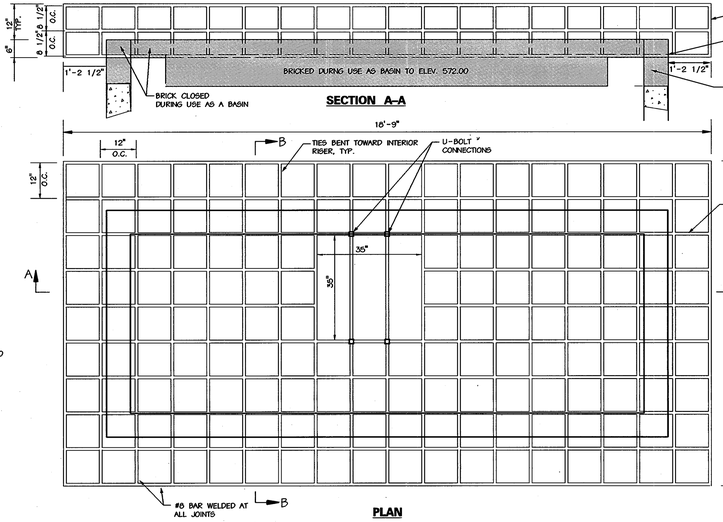


PLAN

NOTE: SEE SHEET SW12 FOR CONCRETE RISER REINFORCEMENT DETAILS

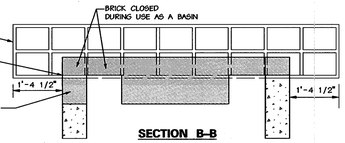
CONCRETE RISER DETAILS FOR BASIN 4

SCALE: 1" = 2'



PLAN

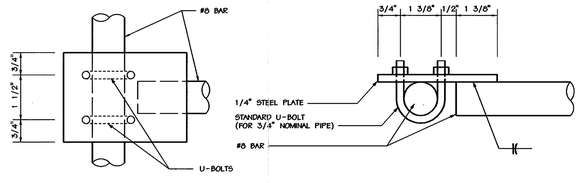
SECTION A-A



SECTION B-B

TEMPORARY TOP TRASH RACK

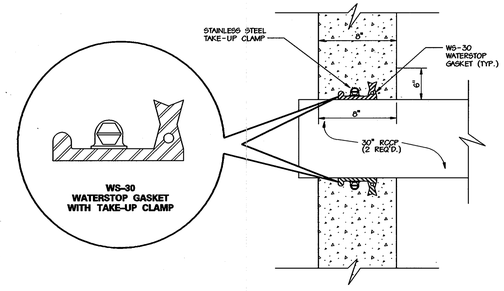
SCALE: 1/2" = 1'



PLAN **SECTION**

U-BOLT CONNECTION DETAIL

NOT TO SCALE



WS-30 WATERSTOP GASKET DETAIL

NOT TO SCALE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/24/02

DIRECTOR — DATE 10/28/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, H.C.H.D. HOWARD COUNTY HEALTH DEPARTMENT — DATE 10-17-02

ENGINEER'S CERTIFICATE

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

Michael N. Armstrong — DATE 9/3/02

SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE)

MICHAEL N. ARMSTRONG

DEVELOPER'S CERTIFICATE

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

SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) RONALD G. LEPSON — DATE 9/4/02

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 9/5/02

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

HOWARD SCD — DATE 9/5/02

NO.	REVISIONS	DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 01000057 \ USCBAS42.DGN

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STATE OF MARYLAND * MICHAEL NEIL ARMSTRONG * 21431 * REGISTERED PROFESSIONAL ENGINEER
Michael N. Armstrong 9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

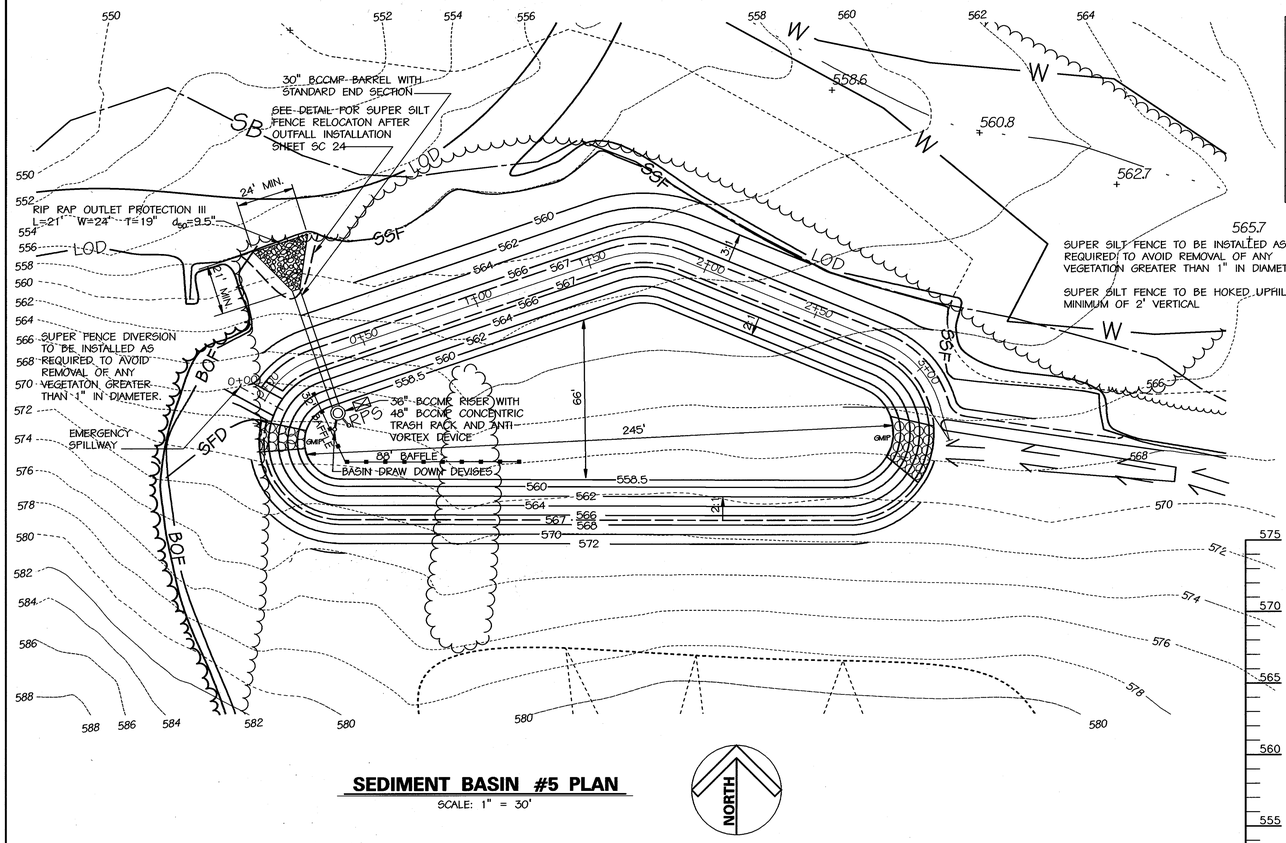
SEDIMENT BASIN #4 DETAILS

SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SC20

SHEET NO.: 45 OF 113

SDP-02-64



SEDIMENT BASIN #5 PLAN

SCALE: 1" = 30'

NORTH

COORDINATE TABLE		
STATION	NORTH	EAST
0+00	597,236.0	1,303,205.7
0+50	597,260.9	1,303,247.3
1+00	597,277.0	1,303,294.6
1+50	597,293.2	1,303,342.0
2+00	597,291.3	1,303,390.1
2+50	597,272.3	1,303,436.3
3+00	597,249.4	1,303,480.2
3+33	597,219.5	1,303,492.5

NOTES:

1. GRADING SHOWN IS FOR INITIAL INSTALLATION. BASIN SHAPE MAY CHANGE AS SITE GRADING OCCURS. SEE SHEET SC8 FOR FINAL BASIN SHAPE AT COMPLETION OF GRADING.
2. FINAL BASIN DREDGE IS TO BE TAKEN TO A SITE WITH AN ACTIVE GRADING PERMIT WITH EROSION AND SEDIMENT CONTROL MEASURES IN PLACE AND FUNCTIONING.
3. BLAZE ORANGE SAFETY FENCE IS TO BE INSTALLED AROUND THE BASIN TO PREVENT ACCESS TO BASIN BY CHILDREN.
4. AT TIME OF CONSTRUCTION, PAINT A NOTE ON THE TRASH RACK/ANTI-VORTEX DEVICE INDICATING THAT THE DIMENSION FROM THE TOP OF THE TRASH RACK/ANTI-VORTEX DEVICE (564.25) TO THE CLEANOUT ELEVATION (559.25) IS 5.00'.
5. TOP OF BAFFLES SHALL BE AT ELEVATION 562.50.
6. INDICATED FINISHED GRADE CONTOURS ARE BASED ON PROPOSED SETTLED GRADES SHOWN ON PROFILES THIS SHEET.

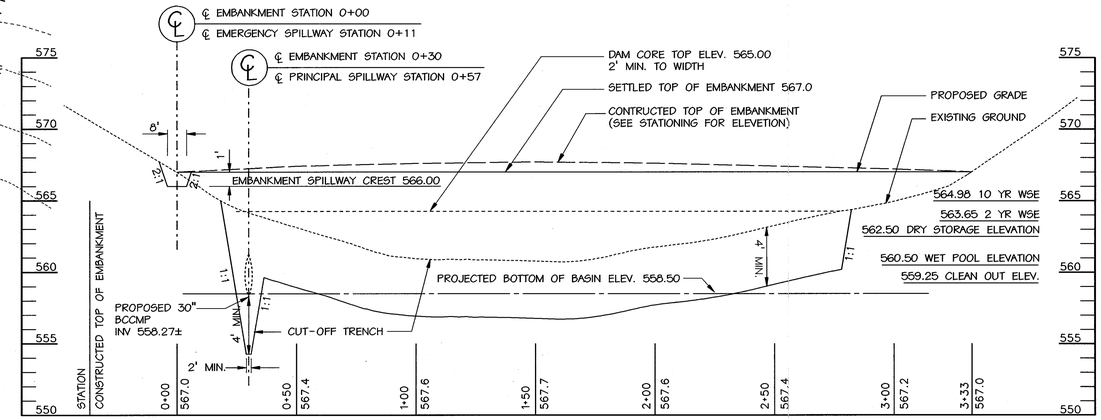
DUST CONTROL NOTE

DUST CONTROL IS TO BE USED AT ALL TIMES. SEE SHEET SC30 FOR SPECIFICATIONS.

THE ENDS OF SILT FENCE AND SUPER SILT FENCE SHALL BE TURNED UPHILL A MINIMUM OF 2' IN ELEVATION.

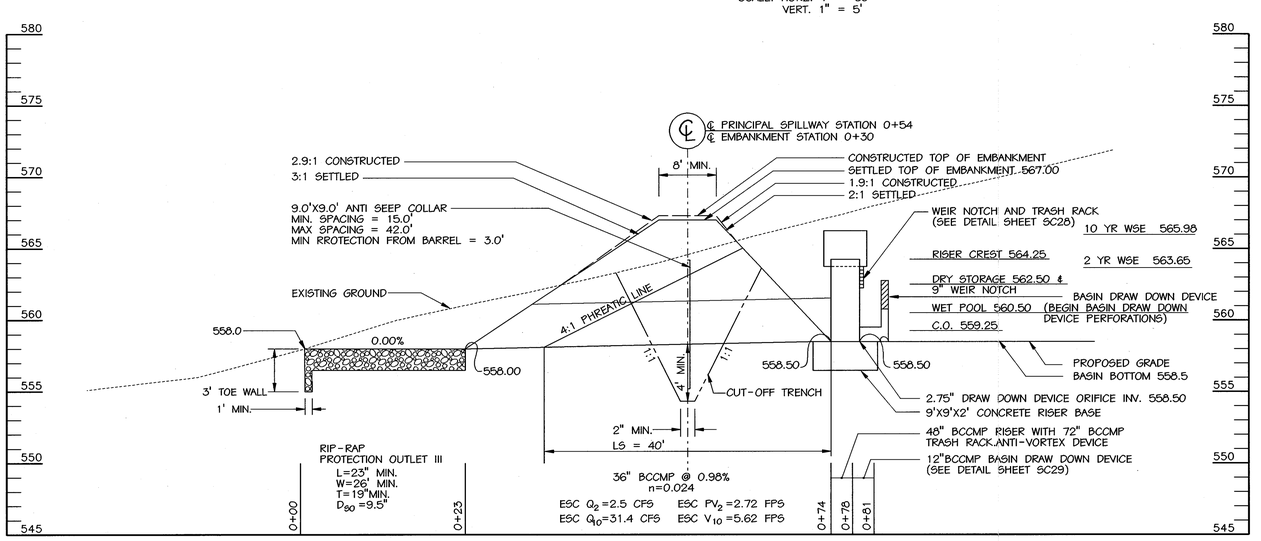
SEDIMENT BASIN TABLE

Basin Number		5
Existing Drainage Area (Ac.)		12.30
Interim Drainage Area (Ac.)		11.76
Proposed Drainage Area (Ac.)		11.76
Storage Required (C.F.)	Wet	22,140
	Dry	22,140
	Total	44,280
Storage Provided (C.F.)	Wet	27,776
	Dry	32,387
	Total	60,163
Existing Ground Elev (centerline intersection)		564.10
Top Embankment Elev.		567.00
Emergency Spillway Crest Elev.		566.00
Top of Riser		564.25
Weir Crest/Dry Storage Elev.		562.50
Wet Storage Elev.		560.50
Cleanout Elev.		559.25
Bottom Elev.		558.50
Q_{10}into Basin (cfs)		65.5
Q_{10}Out Barrel (cfs)		31.4
Q_{10}Out Emergency Spillway (cfs)		0.0
Total Q_{10}out of Basin (cfs)		31.4
Basin Depth	Wet	2.00
	Dry	2.00
	Total	4.00
Design Highwater		564.98
Freeboard Provided		2.02
Barrel Diameter		36"
Riser Diameter		48"
Emergency Spillway Width		8.0'
Wet Storage Zone Elev.		558.50 - 560.50
Dry Storage Zone Elev.		560.50 - 562.50
Bottom Dimensions		66 'X 245'
Dimension fromn cleanout elev. to Top		3.25'
Start Drawdown Perforations at Elev.		560.50
Interim SWM Required		YES
Interim SWM Provided		YES
Existing Q-2 for Interim SWM (cfs)		2.9
Proposed Q-2 Out for SWM (cfs)		2.5



PROFILE ALONG CENTERLINE OF EMBANKMENT

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



PROFILE ALONG CENTERLINE OF PRINCIPAL SPILLWAY

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

LEGEND

- EX. INDEX CONTOUR (90)
- EX. 2' INTERMEDIATE CONTOUR
- PROPOSED CONTOUR (558.5)
- SOIL LINE
- PROPERTY BOUNDARY
- EX. TREE
- EX. WOODS LINE
- EX. STREAMS
- SURVEYED WETLAND, 1994 (W)
- SUPER SILT FENCE (SSF)
- LIMIT OF DISTURBANCE (LOD)
- REMOVABLE PUMPING STATION (RPS)
- BAFFLE

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 9/5/02

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

HOWARD SCD — DATE 9/5/02

ENGINEER'S CERTIFICATE

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

Michael N. Armstrong — DATE 9/3/02
SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE)
MICHAEL N. ARMSTRONG

DEVELOPER'S CERTIFICATE

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

SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) — DATE 2/4/02
RONALD G. LEPSON

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02
DIRECTOR — DATE 10/28/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER — DATE 10-17-02
HOWARD COUNTY HEALTH DEPARTMENT

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 0100057.5 \ USCBA551.DGN

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HUNT VALLEY, MARYLAND 21030
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KCI TECHNOLOGIES

STATE OF MARYLAND * MICHAEL NEIL ARMSTRONG * 9382 * REGISTERED PROFESSIONAL ENGINEER
Michael N. Armstrong 9/3/02

WESTERN REGIONAL PARK
HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

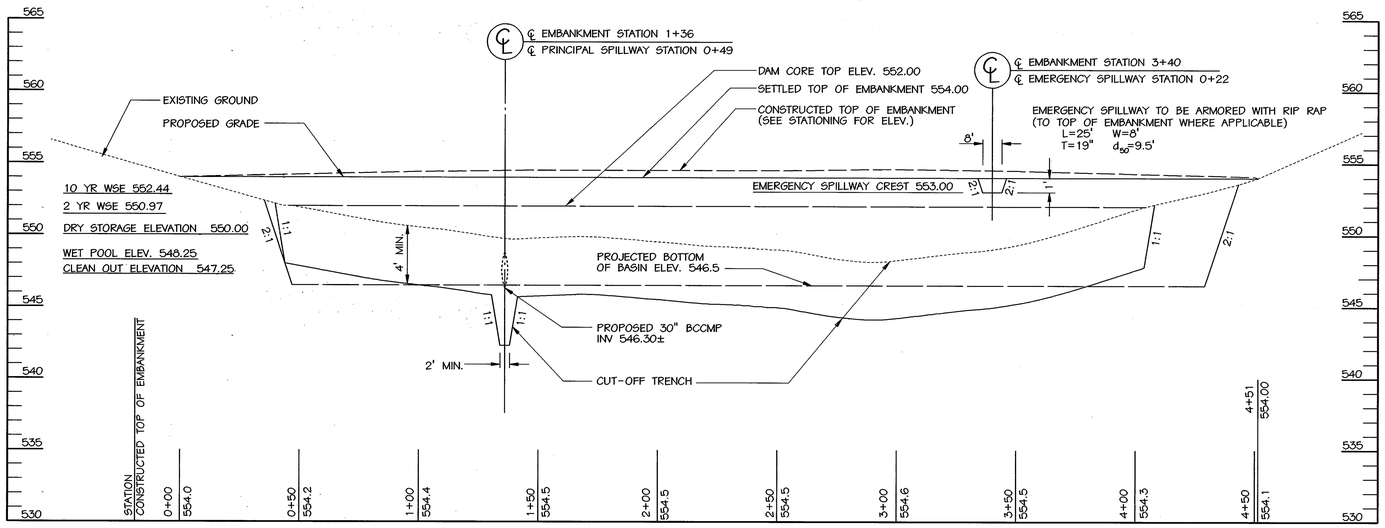
SEDIMENT BASIN #5 PLAN & PROFILES

SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SC21

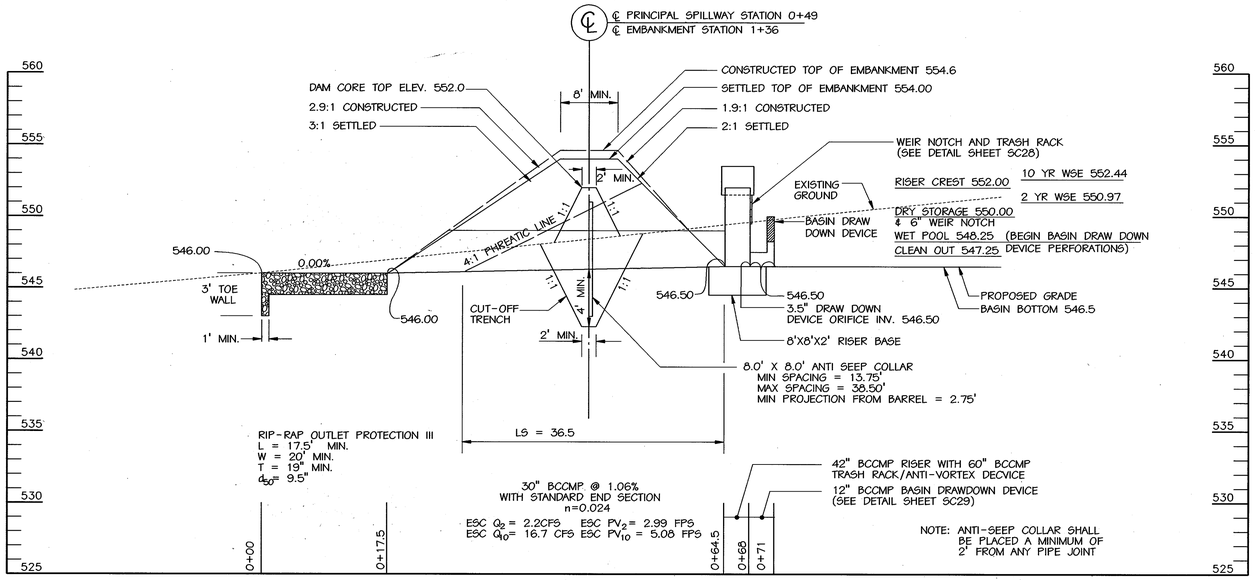
SHEET NO.: 46 OF 113

SDP-02-64



PROFILE ALONG CENTERLINE OF EMBANKMENT

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



PROFILE ALONG CENTERLINE PRINCIPAL SPILLWAY

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

SEDIMENT BASIN TABLE

Basin Number		6
Existing Drainage Area (Ac.)		10.55
Interim Drainage Area (Ac.)		9.23
Proposed Drainage Area (Ac.)		9.23
Storage Required (C.F.)	Wet	18,990
	Dry	18,390
	Total	37,380
Storage Provided (C.F.)	Wet	20,405
	Dry	23,893
	Total	44,298
Existing Ground Elev (centerline intersection)		549.70
Top Embankment Elev.		554.00
Emergency Spillway Crest Elev.		553.00
Top of Riser		552.00
Weir Crest/Dry Storage Elev.		550.00
Wet Storage Elev.		548.25
Cleanout Elev.		547.25
Bottom Elev.		546.50
Q_{10}into Basin (cfs)		51.3
Q_{10}Out Barrel (cfs)		16.7
Q_{10}Out Emergency Spillway (cfs)		0.0
Total Q_{10}out of Basin (cfs)		16.7
Basin Depth	Wet	1.75'
	Dry	1.75'
	Total	3.50'
Design Highwater		552.44
Freeboard Provided		1.56'
Barrel Diameter		30"
Riser Diameter		42"
Emergency Spillway Width		8.0'
Wet Storage Zone Elev.		546.50 - 548.25
Dry Storage Zone Elev.		548.25 - 550.00
Bottom Dimensions		40' X 320'
Dimension fromm cleanout elev. to Top		6.33'
Start Drawdown Perforations at Elev.		548.25
Interim SEM Require		YES
Interin SWM Provided		YES
Existing Q-2 for Interim SWM (cfs)		5.1
Proposed Q-2 Out for SWM (cfs)		2.2

COORDINATE TABLE

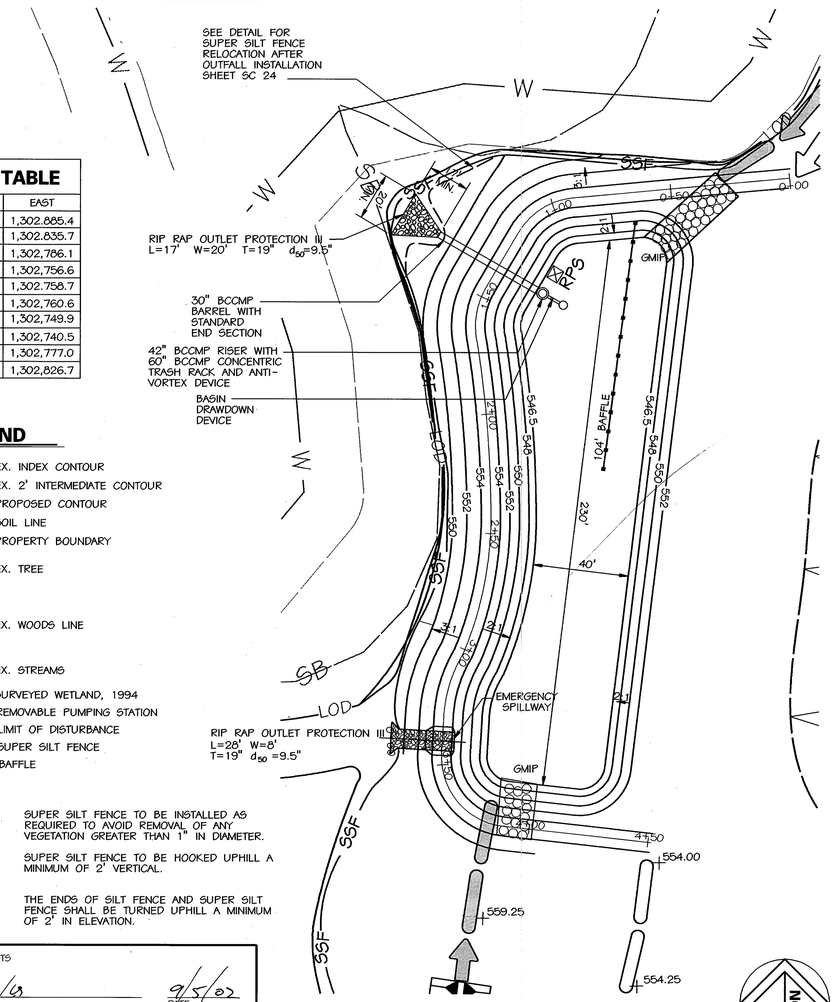
STATION	NORTH	EAST
0+00	596,657.8	1,302,885.4
0+50	596,653.2	1,302,835.7
1+00	596,647.1	1,302,786.1
1+50	596,608.0	1,302,756.6
2+00	596,558.6	1,302,758.7
2+50	596,508.6	1,302,760.6
3+00	596,460.0	1,302,749.9
3+50	596,411.7	1,302,740.5
4+00	596,384.8	1,302,777.0
4+50	596,379.4	1,302,826.7

NOTES:

1. GRADING SHOWN IS FOR INITIAL INSTALLATION. BASIN SHAPE MAY CHANGE AS SITE GRADING OCCURS. SEE SHEET SC7 FOR FINAL BASIN SHAPE AT COMPLETION OF GRADING.
2. FINAL BASIN DREDGE IS TO BE TAKEN TO A SITE WITH AN ACTIVE GRADING PERMIT WITH EROSION AND SEDIMENT CONTROL MEASURES IN PLACE AND FUNCTIONING.
3. BLAZE ORANGE SAFETY FENCE IS TO BE INSTALLED AROUND THE BASIN TO PREVENT ACCESS TO BASIN BY CHILDREN.
4. AT TIME OF CONSTRUCTION, PAINT A NOTE ON THE TRASH RACK/ANTI-VORTEX DEVICE STATING THAT THE DIMENSION FROM THE TOP OF THE TRASH RACK/ANTI-VORTEX DEVICE (551.58) TO THE CLEANOUT ELEVATION (547.25) IS 4.33'.
5. TOP OF BAFFLES SHALL BE AT ELEVATION 550.00
6. INDICATED FINISHED GRADE CONTOURS ARE BASED ON PROPOSED SETTLED GRADES SHOWN ON PROFILES THIS SHEET.

LEGEND

- 90 — EX. INDEX CONTOUR
- EX. 2' INTERMEDIATE CONTOUR
- 554 — PROPOSED CONTOUR
- SOIL LINE
- PROPERTY BOUNDARY
- EX. TREE
- EX. WOODS LINE
- EX. STREAMS
- W — SURVEYED WETLAND, 1994
- RPS — REMOVABLE PUMPING STATION
- LOD — LIMIT OF DISTURBANCE
- SSF — SUPER SILT FENCE
- BAFFLE



SUPER SILT FENCE TO BE INSTALLED AS REQUIRED TO AVOID REMOVAL OF ANY VEGETATION GREATER THAN 1" IN DIAMETER.

SUPER SILT FENCE TO BE HOOKED UPHILL A MINIMUM OF 2' VERTICAL.

THE ENDS OF SILT FENCE AND SUPER SILT FENCE SHALL BE TURNED UPHILL A MINIMUM OF 2' IN ELEVATION.

DUST CONTROL NOTE

DUST CONTROL IS TO BE USED AT ALL TIMES. SEE SHEET SC30 FOR SPECIFICATIONS.

SEDIMENT BASIN #6 PLAN

SCALE: 1" = 30'

INDICATED FINISHED GRADE CONTOURS ARE BASED ON PROPOSED SETTLED GRADES SHOWN ON PROFILES THIS SHEET.

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, HOWARD COUNTY HEALTH DEPARTMENT — DATE 10-17-02

ENGINEER'S CERTIFICATE

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

SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE) — DATE 9/3/02
MICHAEL N. ARMSTRONG

DEVELOPER'S CERTIFICATE

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

SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) — DATE 9/4/02
RONALD G. LEPSON

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 9/5/02

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

HOWARD SCD — DATE 9/5/02

NO.	REVISIONS	DESCRIPTION	DATE

KCI FILE: M:\ 2000\ 01000057.S \ USCBA661.DGN

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STATE OF MARYLAND • MICHAEL NEIL ARMSTRONG • 21602 • REGISTERED PROFESSIONAL ENGINEER
Michael N. Armstrong 9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410) 313-4640

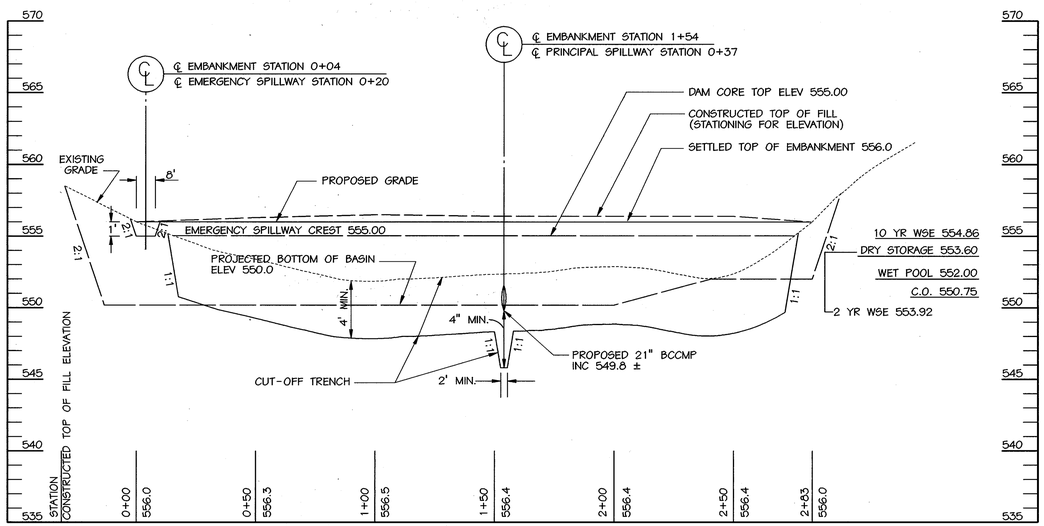
SEDIMENT BASIN #6 PLAN & PROFILES

SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SC22

SHEET NO.: 47 OF 113

SDP-02-64



PROFILE ALONG CENTERLINE OF EMBANKMENT

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

NOTES:

1. GRADING SHOWN IS FOR INITIAL INSTALLATION. BASIN SHAPE MAY CHANGE AS SITE GRADING OCCURS. SEE SHEET SC7 FOR FINAL BASIN SHAPE AT COMPLETION OF GRADING.
2. FINAL BASIN DREDGE IS TO BE TAKEN TO A SITE WITH AN ACTIVE GRADING PERMIT WITH EROSION AND SEDIMENT CONTROL MEASURES IN PLACE AND FUNCTIONING.
3. BLAZE ORANGE SAFETY FENCE IS TO BE INSTALLED AROUND THE BASIN TO PREVENT ACCESS TO BASIN BY CHILDREN.
4. AT TIME OF CONSTRUCTION, PAINT A NOTE ON THE TRASH RACK/ANTI-VORTEX DEVICE INDICATING THAT THE DIMENSION FROM THE TOP OF THE TRASH RACK/ANTI-VORTEX DEVICE (555.83) TO THE CLEANOUT ELEVATION (550.75) IS 5.08'.
5. INDICATED FINISHED GRADE CONTOURS ARE BASED ON PROPOSED SETTLED GRADES SHOWN ON PROFILES ON THIS SHEET

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

Jim Myers /cds. — 9/5/02
USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE

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

— 9/5/02
HOWARD SCD — DATE

ENGINEER'S CERTIFICATE

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

Michael N. Armstrong — 9/3/02
SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE) — DATE
MICHAEL N. ARMSTRONG

DEVELOPER'S CERTIFICATE

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

— 9/4/02
SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) — DATE
RONALD G. LEPSON

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

— 9/12/02
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

— 10/22/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

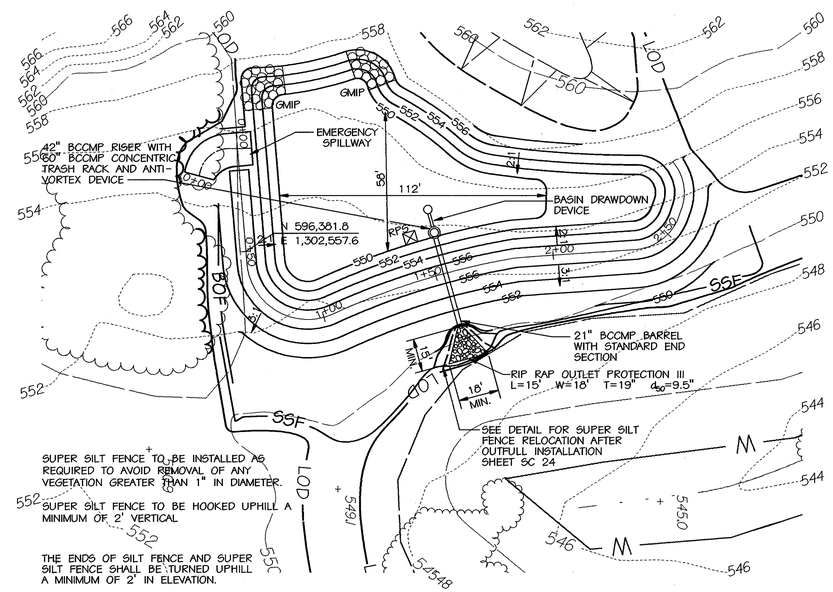
— 10/23/02
DIRECTOR — DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

— 10-17-02
COUNTY HEALTH OFFICER, H.S. HOWARD COUNTY HEALTH DEPARTMENT — DATE

COORDINATE TABLE

STATION	NORTH	EAST
0+00	596,377.6	1,302,507.8
0+50	596,381.8	1,302,557.6
1+00	596,414.4	1,302,585.3
1+50	596,461.3	1,302,568.0
2+00	596,510.3	1,302,559.2
2+50	596,558.4	1,302,550.3
2+83	596,560.5	1,302,520.2



SEDIMENT BASIN #7 PLAN

SCALE: 1"=30'

DUST CONTROL NOTE

DUST CONTROL IS TO BE USED AT ALL TIMES. SEE SHEET SC29 FOR SPECIFICATONS.

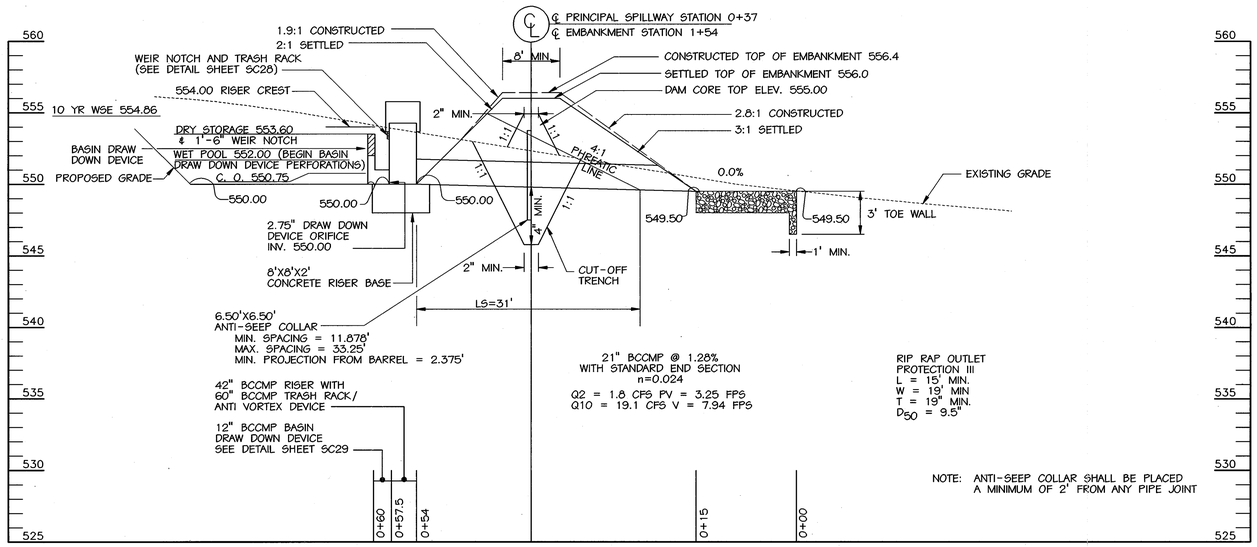
NORTH

LEGEND

- EX. INDEX CONTOUR
- EX. 2' INTERMEDIATE CONTOUR
- PROPOSED CONTOUR
- SOIL LINE
- PROPERTY BOUNDARY
- EX. TREE
- EX. WOODS LINE
- SURVEYED WETLAND, 1994
- EX. STREAMS
- SUPER SILT FENCE
- LIMIT OF DISTURBANCE
- REMOVABLE PUMPING STATION

SEDIMENT BASIN TABLE

Basin Number		7
Existing Drainage Area Ac.		6.95
Interim Drainage Area Ac.		7.17
Proposed Drainage Area Ac.		7.17
Storage Required C. F.	Wet	12,906
	Dry	12,906
	Total	25,812
Storage Provided	Wet	13,410
	Dry	13,724
	Total	27,134
Existing Ground Elev (centerline intersection)		552.30
Top Embankment Elev.		556.00
Emergency Spillway Crest Elev		555.00
Top of Riser		554.00
Weir Crest/Dry Storage Elev.		553.60
Wet Storage Elev.		552.00
Cleanout Elev.		550.75
Bottom Elev.		550.00
Q_{in} into Basin C.F.S.		31.4
Q_{p0} Out Barrel C.F.S.		19.2
Q_{p0} Out Emergency Spillway C.F.S.		0.0
Total Q_{p0} out of Basin C.F.S.		19.2
Basin Depth	Wet	2.0'
	Dry	1.6'
	Total	3.6'
Design Highwater		554.86
Freeboard Provided		1.14'
Barrel Diameter		21"
Riser Diameter		42"
Emergency Spillway Width		8.0'
Wet Storage Zone Elev.		550.00 - 552.00
Dry Storage Zone Elev.		552.00 - 553.60
Bottom Dimensions		58' X 112'
Dimension fromn cleanout elev. to Top		5.08'
Start Drawdown Perforations at Elev		552.00
Interim SWM Required		YES
Interim SWM Provided		YES
Existing Q-2 for Interim SWM (cfs)		2.1
Proposed Q-2 Out for SWM (cfs)		1.5



PROFILE ALONG CENTERLINE OF PRINCIPAL SPILLWAY

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

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 01000057.5 \ USCBAS71.DGN

KCI TECHNOLOGIES INC.
ENGINEERS • PLANNERS • SURVEYORS
10 NORTH PARK DRIVE HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
KCI TECHNOLOGIES WWW.KCI.COM

MARYLAND REGISTERED PROFESSIONAL ENGINEER — MICHAEL NEIL ARMSTRONG — 9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

SEDIMENT BASIN #7 PLAN & PROFILES

SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SC23

SHEET NO.: 48 OF 113

SDP-02-64

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

MOUNTABLE BERM DETAIL
NOT TO SCALE

TYPICAL SILT FENCE/SUPER SILT FENCE INSTALLATION AT TRAP OUTFALL

TYPICAL SILT FENCE/SUPER SILT FENCE INSTALLATION AT PIPE OUTFALL

SILT FENCE/SUPER SILT FENCE OUTFALL PROTECTION

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 9/5/02

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

HOWARD SCD — DATE 9/5/02

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SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE) — DATE 9/3/02.
MICHAEL N. ARMSTRONG

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SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) — DATE 9/4/02
RONALD G. LEPSON

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER — DATE 10-17-02
HOWARD COUNTY HEALTH DEPARTMENT

DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE

Construction Specification

1. Length - minimum of 50' (*30' for single residence lot).

2. Width - 10' minimum, should be flared at the existing road to provide a turning radius.

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

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

5. Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.

6. Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

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DETAIL 22 - SILT FENCE

Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be $1\frac{1}{2}$" x $1\frac{1}{2}$" square (minimum) cut, or $1\frac{3}{4}$" 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 pond per linear foot.

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

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft / minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.) ²	Test: MSMT 322

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

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

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DETAIL 33 - SUPER SILT FENCE

Construction Specifications

1. Fencing shall be 42 inches in height and constructed in accordance with the latest Maryland State Highway (SHA) Details for Chain Link Fencing. The (SHA) specification for a 6 foot fence shall be used, substituting 42 inch fabric and 6 foot length posts.

2. The posts do not need to be set in concrete.

3. Chain link fence shall be fastened securely to the fence posts with wire ties or staples. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence.

4. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.

5. Filter cloth shall be embedded a minimum of 8" into the ground.

6. When two sections of geotextile fabric adjoin each other, they shall be overlapped by 6" and folded.

7. Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	MODIFIED	

DETAIL 28 - BENCHED SLOPES

SLOPE X:1	Y (MAX)
2	20'
3	30'
4	40'

Construction Specifications

1. All fills shall be compacted as required to reduce erosion, slippage, settlement, subsidence or other related problems. Fill intended to support buildings, structures and conduits, etc., shall be compacted in accordance with local requirements or codes.

2. All fill shall be placed and compacted in layers not to exceed 8" in thickness.

3. Except for approved landfills or nonstructural fills, fill material shall be free of brush, rubbish, rocks, logs, stumps, building debris and other objectionable materials that would interfere with or prevent construction of satisfactory fills.

4. Frozen material or soft, mucky or highly compressible materials shall not be incorporated into fill slopes ore structural fills. Fill shall not be placed on a frozen foundation.

5. All benches shall be kept free of sediment during all phases of development.

6. Seeps or springs encountered during construction shall be handled in accordance with the Standard and Specification for Subsurface Drain or other approved methods.

7. All graded areas shall be permanently stabilized immediately following finished grading.

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DETAIL 23A - STANDARD INLET PROTECTION

MAX. DRAINAGE AREA = 1/4 ACRE

Construction Specifications

1. Excavate completely around the inlet to a depth of 18" below the notch elevation.

2. Drive the 2" x 4" construction grade lumber posts 1' into the ground at each corner of the inlet. Place nail strips between the posts on the ends of the inlet. Assemble the top portion of the 2" x 4" frame using the overlap joint shown on Detail 23A. The top of the frame (weir) must be 6" below adjacent roadways where flooding and safety issues may arise.

3. Stretch the 1/2" x1/2" wire mesh tightly around the frame and fasten securely. The ends must meet and overlap at a post.

4. Stretch the Geotextile Class E tightly over the wire mesh with the geotixtile extending from the top of the frame to 18" below the inlet notch elevation. Fasten the geotextile firmly to the frame. The ends of the geotextile must meet at a post, be overlapped and folded, then fastened down.

5. Backfill around the inlet in compacted 6" layers until the layer of earth is level with the notch elevation on the ends and top elevation on the sides.

6. If the inlet is not in a sump, construct a compacted earth dike across the ditch line directly below it. The top of the earth dike should be at least 6" higher than the top of the frame.

7. The structure must be inspected periodically and after each rain and the geotextile replaced when it becomes clogged.

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DETAIL 23C-CURB INLET PROTECTION (COG OR COS INLETS)

MAX. DRAINAGE AREA = 1/4 ACRE

1. Attach a continuous piece of wire mesh (30" minimum width by throat length plus 4') to the 2" x 4" weir (measuring throat length plus 2') as shown on the standard drawing.

2. Place a continuous piece of Geotextile Class E the same dimensions as the wire mesh over the wire mesh and securely attach it to the 2" x 4" weir.

3. Securely nail the 2" X 4" weir to a 9" long vertical spacer to be located between the weir and the inlet face (max. 4' apart).

4. Place the assembly against the inlet throat and nail (minimum 2' lengths of 2" x 4" to the top of the weir at spacer locations). These 2" x 4" anchors shall extend across the inlet top and be held in place by sandbags or alternate weight.

5. The assembly shall be placed so that the end spacers are a minimum 1' beyond both ends of the throat opening.

6. Form the 1/2" x 1/2" wire mesh and the geotextile fabric to the concrete gutter and against the face of the curb on both sides of the inlet. Place clean 3/4" x 1 1/2" stone over the wire mesh and geotextile in such a manner to prevent water from entering the inlet under or around the geotextile.

7. This type of protection must be inspected frequently and the filter cloth and stone replaced when clogged with sediment.

8. Assure that storm flow does not bypass the inlet by installing a temporary earth or asphalt dike to direct the flow to the inlet.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E - 16 - 5B	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 0100057.5 \ USCDET01.DGN

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STATE OF MARYLAND ★ MICHAEL NORMAN ARMSTRONG ★ REGISTERED PROFESSIONAL ENGINEER NO. 16109
9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

SEDIMENT & EROSION CONTROL DETAILS

SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SC24

SHEET NO.: 49 OF 113

SDP-02-64

DETAIL 3 - PERIMETER DIKE / SWALE

PD/S-1 SEED AND MULCH (DRAINING = 1 ACRE)
PD/S-2 SEED AND COVER WITH SOIL
STABILIZATION MATTING OR
LINE WITH SOD (DRAINING BETWEEN 1 AND 2 ACRES)

STANDARD SYMBOL
PD/S-1

Construction Specifications

1. All perimeter dike/swales shall have an uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.

2. Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.

3. Runoff diverted from an undisturbed area shall outlet into an undisturbed stabilized area at a non-erosive velocity.

4. The swale shall be excavated or shaped to line, grade, and cross-section as required to meet the criteria specified in the standard.

5. Fill shall be compacted by earth moving equipment.

6. Stabilization with seed and mulch or as specified of the area disturbed by the dike and swale shall be completed within 7 days upon removal.

7. Inspection and required maintenance shall be provided after each rain event.

Note: The maximum drainage area for this practice is 2 acres.

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

DETAIL 1 - EARTH DIKE

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

STANDARD SYMBOL
A-2 B-3

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

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

Construction Specifications

1. All temporary earth dikes shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.

2. Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.

3. Runoff diverted from an undisturbed area shall outlet directly into an undisturbed, stabilized area at a non-erosive velocity.

4. All trees, brush, stumps, obstructions, and other objectional material shall be removed and disposed of so as not to interfere with the proper functioning of the dike.

5. The dike shall be excavated or shaped to line, grade and cross section as required to meet the criteria specified herein and be free of bank projections or other irregularities which will impede normal flow.

6. Fill shall be compacted by earth moving equipment.

7. All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the dike.

8. Inspection and maintenance must be provided periodically and after each rain event.

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

DETAIL 2 - TEMPORARY SWALE

	SWALE A	SWALE B
C	1' MIN.	1' MIN.
D	4' MIN.	6' MIN.

OUTLET AS REQUIRED

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

STANDARD SYMBOL
A - 2 / B - 3

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

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

Construction Specifications

1. All temporary swales shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.

2. Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.

3. Runoff diverted from an undisturbed area shall outlet directly into an undisturbed stabilized area at a non-erosive velocity.

4. All trees, brush, stumps, obstructions, and other objectional material shall be removed and disposed of so as not to interfere with the proper functioning of the swale.

5. The swale shall be excavated or shaped to line, grade and cross section as required to meet the criteria specified herein and be free of bank projections or other irregularities which will impede normal flow.

6. Fill, if necessary, shall be compacted by earth moving equipment.

7. All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the swale.

8. Inspection and maintenance must be provided periodically and after each rain event.

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

DETAIL 27 - ROCK OUTLET PROTECTION III

NOTE: FILTER CLOTH SHALL BE GEOTEXTILE CLASS C

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MODIFIED ROCK OUTLET PROTECTION III FOR CONCRETE END SECTIONS

NOTE: FILTER CLOTH SHALL BE GEOTEXTILE CLASS C

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	MODIFIED	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

MODIFIED ROCK OUTLET PROTECTION III FOR END OF EARTH DIKE

	CLASS A EARTH DIKE	CLASS B EARTH DIKE	ENG EARTH DIKE
APRON	5'	7'	VARIES
WIDTH	8'	12'	VARIES
LENGTH	8'	12'	VARIES

NOTE: FILTER CLOTH SHALL BE GEOTEXTILE CLASS C

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	MODIFIED	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

ROCK OUTLET PROTECTION III

Construction Specifications

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

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

3. Geotextile shall be protected from punching, cutting, or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of geotextile over the damaged part or by completely replacing the geotextile. All overlaps whether for repairs or for joining two pieces of geotextile shall be a minimum of one foot.

4. Stone for the rip-rap or gabion outlets may be placed by equipment. They shall be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for rip-rap or gabion outlets shall be delivered and placed in a manner that will ensure that it is reasonably homogeneous with the smaller stones and spalls filling the voids between the larger stones. Rip-rap shall be placed in a manner to prevent damage to the filter blanket or geotextile. Hand placement will be required to the extent necessary to prevent damage to the permanent works.

5. The stone shall be placed so that it blends in with the existing ground. If the stone is placed too high then the flow will be forced out of the channel and scour adjacent to the stone will occur.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE F - 18 - 10A	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

Jim Myers / OS. — 9/5/02
USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE

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

[signature] — 9/5/02
HOWARD SCD — DATE

ENGINEER'S CERTIFICATE

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Michael N. Armstrong — 9/3/02
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MICHAEL N. ARMSTRONG

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[signature] — 9/4/02
SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) — DATE
RONALD G. LEPSON

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

[signature] — 9/12/02
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

Cindy Hamilton — 10/22/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

[signature] — 10/23/02
DIRECTOR — DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

[signature] — 10-[illegible]
COUNTY HEALTH OFFICER — DATE
HOWARD COUNTY HEALTH DEPARTMENT

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 0100057.5 \ USCDET02.DGN

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STATE OF MARYLAND ★ REGISTERED PROFESSIONAL ENGINEER ★ MICHAEL NORMAN ARMSTRONG NO. 16109
Michael N. Armstrong 9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
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SEDIMENT & EROSION CONTROL DETAILS

SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SC25

SUPER FENCE DIVERSION

Construction Specifications

1. Fencing shall be 42 inches in height and constructed in accordance with the latest Maryland State Highway (SHA) Details for Chain Link Fencing. The specification for a 6' fence shall be used, substituting 42" fabric and 6' length posts.
2. The posts do not need to be set in concrete.
3. Chain link fence shall be fastened securely to the fence posts with wire ties or staples. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence. The chain link fencing shall be six (6) guage or heavier.
4. Mirafi MCF 1212 Railroad Cloth or equivalent shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.
5. Mirafi MCF 12121 Railroad Cloth or equivalent shall be embedded a minimum of 8" into the ground.
6. When two sections of Mirafe MCF 1212 Railroad Cloth or equivalent adjoin each other, they shall be overlapped by 6" and folded.
7. Maintenance shall be performed as needed.
8. Maximum flow slope 10.0%

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DETAIL 30 - EROSION CONTROL MATTING

Stapling shall be per manufacturers specifications.

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DETAIL 6 - GABION INFLOW PROTECTION

Construction Specifications

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

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REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 9/5/02

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

HOWARD SCD — DATE 9/5/02

ENGINEER'S CERTIFICATE

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

Michael N. Armstrong — DATE 9/3/02
SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE)
MICHAEL N. ARMSTRONG

DEVELOPER'S CERTIFICATE

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

SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) — DATE 9/4/02
RONALD G. LEPSON

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER — DATE 10-17-02
HOWARD COUNTY HEALTH DEPARTMENT

HOWARD SOIL CONSERVATION DISTRICT

TEMPORARY SEEDING NOTES

Apply to graded or cleared areas likely to be re-disturbed where a short-term vegetative cover is needed.

Seedbed preparation: -- Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.

Soil Amendments: -- Apply 600 lbs/acre 10-10-10 fertilizer (14 lbs/1000 sq. ft.).

Seeding: -- For periods March 1 - April 30 and from August 15 - October 15, seed with 2-1/2 bushel per acre of annual rye (3.2 lbs/1000 sq. ft.). For the period May 1 - August 14, seed with 3 lbs/acre of weeping lovegrass (.07 lbs/1000 ft.). For the period November 16 - February 28, protect site by applying 2 tons/acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

Mulching: -- Apply 1-1/2 to 2 tons/acre (70 to 90 lbs/1000 sq. ft.) of unrotted weed-free, small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal. Per acre (5 gal/1000 sq. ft.) of emulsified asphalt on flat areas. On slope 8 ft. or higher, use 348 gal. Per acre (8 gal/1000 sq. ft.) for anchoring.

Refer to the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for additional rates and methods not covered.

HOWARD SOIL CONSERVATION DISTRICT

PERMANANT SEEDING NOTES

Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.

Seedbed Preparation: Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.

Soil Amendments: In lieu of soil test recommendations, use one of the following schedules:

1. Preferred -- Apply 2 tons/acre dolomitic limestone (92 lbs/1000 sq. ft.) and 600 lbs/acre 10-10-10 fertilizer (14 lbs/1000 sq. ft.) before seeding. Harrow or disk into upper three inches of soil. At time of seeding, apply 400 lbs/acre 30-0-0 ureaform fertilizer (9 lbs/1000 sq. ft.)
2. Acceptable -- Apply 2 tons/acre dolomitic limestone (92 lbs/1000 sq. ft.) and 1000 lbs/acre 10-10-10 fertilizer (23 lbs/1000 sq. ft.) before seeding. Harrow or disk into upper three inches of soil.

Seeding - For the periods March 1 - April 30, and August 1 - October 15, seed with 60 lbs/acre (1.4 lbs/1000 sq. ft.) of Kentucky 31 Tall Fescue. For the period May 1 - July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs/acre (.05 lbs/100sq. ft.) of weeping lovegrass. During the period of October 16 - February 28, protect site by: Option 1 - Two tons per acre of well anchored straw mulch and seed as soon as possible in the spring. Option 2 - Use sod. Option 3 - Seed with 60 lbs/acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw.

Mulching - Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sq. ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq. ft.) of emulsified asphalt on flat areas. On slope 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq. ft.) for anchoring.

Maintenance - Inspect all seeding areas and make needed repairs, replacememts and reseedings.

21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL

Definition

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

Purpose

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

Conditions Where Practice Applies

I. This practice is limited to areas having 2:1 or flatter slopes where:
   a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
   b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
   c. The original soil to be vegetated contains material toxic to plant growth.
   d. The soil is so acidic that treatment with limestone is not feasible.

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

Construction and Material Specifications

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

II. Topsoil Specifications - Soil to be used as topsoil must meet the following:
   i. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixutre of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2" in diameter.
   ii. Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, Johnsongrass, nutsedge, poison ivy, thistle, or others as specified.
   iii. Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be disturbed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following proceures.

III. For sites having disturbed areas under 5 acres:
   i. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section * - Vegetative Stabilization Methods and Materials.

IV. For sites having disturbed areas over 5 acres:
   i. On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
      a. pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
      b. Organic content 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 as elapsed (14 days min.) to permit dissipation of phyto-toxic materials.

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

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

V. Topsoil Application
   i. When topsoiling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.
   ii. Grades on the areas to be topsoiled, which have been previously established, shall be maintained, albeit 4" - 8" higher in elevation.
   iii. Topsoil shall be uniformly distributed in a 4" - 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minmum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
   iv. Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that my otherwise be detrimental to proper grading and seedbed preparation.

VI. Alternative for Permanent Seeding - Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:
   i. Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:
      a. Composted Sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.
      b. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a pH of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.
      c. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.
   ii. 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.

NO.	REVISIONS DESCRIPTION	DATE

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(410)-313-4640

SEDIMENT & EROSION CONTROL DETAILS

SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SC26

SDP-02-64

DETAIL 20A - REMOVABLE PUMPING STATION

NOTE: THIS MEASURE MUST BE LOCATED WHERE IT WILL BE READILY ACCESSIBLE TO ALLOW FOR IT'S PRACTICLE USE.

Construction Specifications

1. The outer pipe should be 48" dia. or shall, in any case, be at least 4" greater in diameter than the center pipe. The outer pipe shall be wrapped with 1/2" hardware cloth to prevent backfill material from entering the perforations.

2. After installing the outer pipe, backfill around outer pipe with 2" aggregate or clean gravel.

3. The inside stand pipe (center pipe) should be constructed by perforating a corrugated or PVC pipe between 12" and 36" in diameter. The perforations shall be 1/2" X 6" slits or 1" diameter holes 6" on center. The center pipe shall be wrapped with 1/2" hardware cloth first, then wrapped again with Geotextile Class E.

4. The center pipe should extend 12" to 18" above the anticipated water surface elevation or riser crest elevation when dewatering a basin.

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DETAIL 18 - SEDIMENT BASIN BAFFLES

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BASIN DRAWDOWN SCHEMATIC HORIZONTAL DRAW-DOWN DEVICE

Construction Specifications

1. The total area of the perforations must be greater than 2 times the area of the internal orifice.

2. The perforated portion of the draw-down device shall be wrapped with 1/2" hardware cloth and geotextile fabric. The geotextile fabric shall meet the specifications for Geotextile Class E.

3. Provide support of draw-down device to prevent sagging and floatation. An acceptable preventative measure is to stake both sides of draw-down device with 1" steel angle, or 1' by 4" square or 2" round wooden posts set 3' minimum into the ground then joining them to the device by wrapping with 12 gauge minimum wire.

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BASIN DRAWDOWN SCHEMATIC VERTICAL DRAW-DOWN DEVICE

Construction Specifications

1. Perforations in the draw-down device may not extend into the wet storage.

2. The total area of the perforations must be greater than 4 times the area of the internal orifice.

3. The perforated portion of the draw-down device shall be wrapped with 1/2" hardware cloth and geotextile fabric. The geotextile fabric shall meet the specifications for Geotextile Class E.

4. Provide support of draw-down device to prevent sagging and floatation. An acceptable preventative measure is to stake both sides of draw-down device with 1" steel angle, or 2" by 2" square or 2" round wooden posts set 3' minimum into the ground then joining them to the device by wrapping with 12 guage minimum wire.

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REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

Jim Myers / ces. 9/5/02
USDA - NATURAL RESOURCES CONSERVATION SERVICE DATE

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

9/5/02
HOWARD SCD DATE

ENGINEER'S CERTIFICATE

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

Michael N. Armstrong 9/3/02
SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE) DATE
MICHAEL N. ARMSTRONG

DEVELOPER'S CERTIFICATE

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

9/4/02
SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) DATE
RONALD G. LEPSON

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

9/12/02
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Cindy Hamilton 10/22/02
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

10/23/02
DIRECTOR DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

10-17-02
COUNTY HEALTH OFFICER DATE
HOWARD COUNTY HEALTH DEPARTMENT

24.0 MATERIALS AND SPECIFICATIONS
TABLE 27 GEOTEXTILE FABRICS

CLASS	APPARENT OPENING SIZE MM. MAX.	GRAB TENSILE STRENGTH LB. MIN.	BURST STRENGTH PSI MIN.
A	0.30**	250	500
B	0.60	200	320
C	0.30	200	320
D	0.60	90	145
E	0.30	90	145
F (SILT FENCE)	0.40 - 0.80 *	90	190

* US STD. SIEVE CW-02215 ** .50 MM. MAX. FOR SUPER SILT FENCE

THE PROPERTIES SHALL BE DETERMINED IN ACCORDANCE WITH THE FOLLOWING PROCEDURES:

- APPARENT OPENING SIZE MSMT 323

-GRAB TENSILE STRENGHT ASTM D 1682 4"x8" SPECIMEN 1"x2" CLAMPS, 12"/ MIM. STRAIN RATE IN BOTH PRINCIPAL DIRECTIONS OF GEOTEXTILEFABRIC.

-BURST STRENGHT ASTM D 3786

THE FABRIC SHALL BE INERT TO COMMONLY ENCOUNTERED CHEMICALS AND HYDRCARBONS, AND WILL BE ROT AND MILDEW RESISTANT. IT SHALLBE MANUFACTTURED FROM FIBERS CONSISTING OF LONG CHAIN SYNHETIC POLYMERS, AND COMPPOSED OF A MINIMUM OF 85% BY WEIGHT OF POLYOLEPHINS, POLYESTERS, OR POLYAMIDES. THE GEOTEXTILE FABRIC SHALL RESIST DETERIORATION FROM ULTRAVIOLET EXPOSURE.

IN ADDITION CLASSES A THROUGH E SHALL HAVE A 0.01 CM/SEC. MINIMUM PERMEABILITY WHEN TESTED IN ACCORDANCE WITH MSMT 507, AND AN APPARENT MINIMUM ELONGATION OF 20 PERCENT (20%)WHEN TESTED IN ACCORDANCE WITH THE GRAB TENSILE STRENGTH REQUIREMENTS LISTED ABOVE.

SILT FENCE
CLASS F GEATEXTILE FABRICS FOR ALL SILT FENCE SHALL HAVE A 50LB./IN. MINIMUM TENSILE STRENTH AND A 20 LB/IN. MINIMUM TENSILE MODULES WHEN TESTED IN ACCORDANCE WITH MSMT 509. MATERIAL SHALL ALSO HAVE A 0.3 GAL./FT.SQUARED/MIN. FLOW RATE ND SEVENTY-FIVE PERCENT (75%) MINIMUMFILTERING EFFICIENCY WHEN TESTED IN ACCORDANCE WITH MSMT 322.

GEOTEXTILE FABRICS USED IN THE CONSTRUCTION OF THE SILT FENCE SHALL RESIST DETERIORATION FROM ULTRAVIOLET EXPOSURE. THE FABRIC SHALL CONTAIN SUFFICIENT AMOUNTS OF ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF 12 MOUNTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERTURE RANGE OF 0 TO 120 DEGREES F.

TABLE 28 STONE SIZE

	SIZE RANGE	D 50	D 100	AASHTO	HEIGHT
NUMBER 57*	3/8"-1 1/2"	1/2"	1 1/2"	M-43	N/A
NUMBER 1	2"-3"	2 1/2"	3"	M-43	N/A
RIP-RAP**	4"-7"	5 1/2"	7"	N/A	N/A
CLASS I	N/A	9 1/2"	15"	N/A	150 LB. MAX.
CLASSE II	N/A	16"	24'	N/A	700 LB. MAX.
CLASS III	N/A	23"	34"	N/A	2000 LB. MAX

* THIS CLASSIFICATION IS TO BE USED ON THE INSIDE FACE OF STONE OUTLETS AND CHECK DAMS.
** THIS CLASSIFICATION IS TO BE USED WHENEVER SMALL RIP-RAP IS REQUIRED. THE STATE HIGHWAY ADMINISTRATION DESIGNATION FOR THIS STONE IS STONE FOR GABIONS (905.01.04).

STONE FOR GABION BASKETS

BASKET THICKNESS		SIZE OF INDIVIDUAL STONES	
INCHES	MM	INCHES	MM
6	150	3-5	75-125
9	225	4-7	100-175
12	300	4-7	100-175
18	460	4-7	100-175
36	910	4-12	100-300

NOTE: RECYCLED CONCRETE EQUIVALENT MAY BE SUBSTITUTED FOR ALL STONE CLASSIFICATIONS. RECYCLED CONCRETE EQUIVALENT SHALL BE CONCRETE BROKEN INTO THE SIZES MEETING THE APPROPRIATE CLASSIFICATION, SHALL CONTAIN NO STEEL REINFORCEMENT, AND SHALL HAVE A DENSITY OF 150 POUNDS PER CUBIC FOOT.

MATERIALS SPECIFICATIONS
Pages H-24-1 and H-24-2

DETAIL 31 - TREE PROTECTION

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SEDIMENT & EROSION CONTROL DETAILS

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DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SC27

SHEET NO.: 52 OF 113

SDP-02-64

DETAIL 17 - TYPES OF COUPLERS FOR CORRUGATED STEEL PIPE
(ALL CONNECTOR BANDS REQUIRE NEOPRENE GASKETS)

NOTE: UNDER NO CIRCUMSTANCES WILL THE DIMPLE (UNIVERSAL) CONNECTOR BAND BE ACCEPTABLE FOR USE IN ANY SEDIMENT CONTROL OR STORMWATER MANAGEMENT STRUCTURE

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DETAIL 16 - CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE

AT NO TIME IS THE WEIR NOTCH TO INTERFERE WITH CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE SUPPORT BARS. IF WEIR NOTCH INTERFERES WITH SUPPORT BARS SPLIT LENGTH IN HALF AND USE 2 NOTCHES.

PROVIDE TRASH RACK FOR EACH WEIR NOTCH. SEE DETAIL THIS SHEET.

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DETAIL 16 CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE (continued)

Riser Diam., In.	Trash Rack Cylinder Diam. in.	Trash Rack Cylinder Thick., gage	H. in.	Minimum Size Support Bar	Minimum Top Thickness	Minimum Top Stiffener
12	18	16	6	6" Rebar	16 ga.	--
15	21	16	7	"	"	--
18	27	16	8	"	"	--
21	30	16	11	"	"	--
24	36	16	13	"	14 ga.	--
27	42	16	15	"	14 ga.	--
36	54	14	17	8" Rebar	12 ga.	--
42	60	14	19	"	"	--
48	72	12	21	1¼" pipe or 1¼" x 1¼" x¼ angle	10 ga.	--
54	78	12	25	"	"	--
60	90	12	29	1½" pipe or 1½" x 1½" x¼ angle	8 ga.	--
66	96	10	33	2" pipe or 2x2x3/16 angle	8 ga., w/stiffener	2x2x¼ angle
72	102	10	36	"	"	2½x 2½ x¼ angle
78	114	10	39	2½" pipe or 2x2x¼ angle	"	"
64	120	10	42	2½" pipe or 2½x 2½x¼ angle	"	2½x 2½x 5/16 angle

Note: The above trash rack and anti-vortex device information is only for corrugated metal pipe. Concrete risers must meet the requirements of MD 378.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C - 10 - 26A	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 14 - TYPICAL ANTI-SEEP COLLARS

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C - 10 - 24	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 15 - RISER BASE DETAIL

NOTE: ANCHORING BARS SHOULD PROJECT ¼ DIAMETER BEYOND OUTSIDE OF THE RISER.

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:

1. A concrete base 18" thick with the riser embedded 9" in the base.

2. 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 floatation. The minimum factor of safety shall be 1.20 (downward forces = 1.20 x upward forces).

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C - 10 - 25	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

RISER WEIR NOTCH TABLE*

BASIN *	WEIR LENGTH A	WEIR HEIGHT B	WEIR ELEVATION C	TOP RISER ELEVATION D
1	72"	6"	586.50	589.00
2	6"	12"	605.25	606.25
3	6"	33"	579.25	581.25
4	30"	6"	571.50	572.25
5	9"	21"	562.50	564.25
6	6"	24"	550.00	552.00
7	18"	6"	553.60	554.00

* WEIR NOTCH CENTER IS TO FACE CENTER OF BASIN DRAW DOWN DEVICE VERTICAL STAND PIPE AND IS NOT TO INTERFERE WITH CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE SUPPORT BARS.

WEIR NOTCH TRASH RACK DETAIL

ANTI-SEEP COLLAR TABLE
DETAIL C-10-24

BASIN *	BARREL DIA.	MIN. PROJECTION EACH WAY	MIN. DIMENSIONS
1	PER STORMWATER MANAGEMENT PLANS FOR GLENWOOD STATION BY FREDERICK WARD ASSOCIATES, INC., SDP-01-108		
2	30"	2.00'	6.50' x 6.50'
3	TWIN 30"	2.00'	8.00' x 12.00'
4	TWIN 30"	2.00'	8.00' x 12.00'
5	36"	3.00'	9.00' x 9.00'
6	30"	2.75'	8.00' x 8.00'
7	21"	2.375'	6.50' x 6.50'

RISER BASE TABLE
DETAIL C-10-25

BASIN *	BARREL		RISER		DRAWDOWN		BASE		
	DIA.	GAGE	DIA.	GAGE	DIA.	GAGE	LENGTH	WIDTH	HEIGHT
1	PER STORMWATER MANAGEMENT PLANS FOR GLENWOOD STATION BY FREDERICK WARD ASSOCIATES, INC., SDP-01-108								
2	30"	16	48"	14	12"	16	108"	108"	24"
3	TWIN 30"	RCCP	48" x 126"	CONC.	12"	16	154"	76"	24"
4	TWIN 30"	RCCP	48" x 126"	CONC.	12"	16	154"	76"	21"
5	36"	16	48"	14	12"	16	108"	108"	24"
6	30"	16	42"	16	12"	16	96"	96"	24"
7	21"	16	42"	16	12"	16	96"	96"	24"

TRASH RACK TABLE
DETAILS C-10-26 AND C-10-26A

BASIN *	RISER			TRASH RACK CYLINDER			TOP		
	DIA.	GAGE	HEIGHT*	DIA.	GAGE	HEIGHT	SUPPORT BAR	GAGE	STIFFNER
1	PER STORMWATER MANAGEMENT PLANS FOR GLENWOOD STATION BY FREDERICK WARD ASSOCIATES, INC., SDP-01-108								
2	48"	14	45"	72"	14	21"	1¼" X 1¼" X¼" ANGLE	10	NA
3	PER STORMWATER MANAGEMENT PLANS, SHEET SW10								
4	PER STORMWATER MANAGEMENT PLANS, SHEET SW10								
5	48"	14	66"	72"	12	21"	1¼" X 1¼" X¼" ANGLE	10	NA
6	42"	16	66"	60"	14	19"	#8 REBAR	12	NA
7	42"	16	48"	60"	14	19"	#8 REBAR	12	NA

* FROM BARREL INVERT, FULL HEIGHT IS 9" GREATER

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

Jim Myers /cs — 9/5/02
USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE

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

[signature] — 9/5/02
HOWARD SCD — DATE

ENGINEER'S CERTIFICATE

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

Michael N. Armstrong — 9/3/02
SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE) — DATE
MICHAEL N. ARMSTRONG

DEVELOPER'S CERTIFICATE

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

[signature] — 9/4/02
SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) — DATE
RONALD G. LEPSON

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

[signature] — 9/12/02
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

Cindy Hamm — 10/22/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

[signature] — 10/23/02
DIRECTOR — DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

[signature] — 10-17-02
COUNTY HEALTH OFFICER — DATE
HOWARD COUNTY HEALTH DEPARTMENT

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 01000057.5 \ USCDET05.DGN

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10 NORTH PARK DRIVE
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KCI TECHNOLOGIES

STATE OF MARYLAND ★ MICHAEL NORMAN ARMSTRONG ★ REGISTERED PROFESSIONAL ENGINEER NO. 16109
Michael N. Armstrong 9/3/02

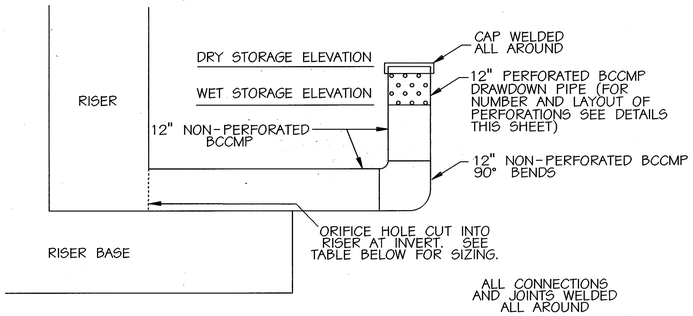
WESTERN REGIONAL PARK
HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

SEDIMENT & EROSION CONTROL DETAILS

SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

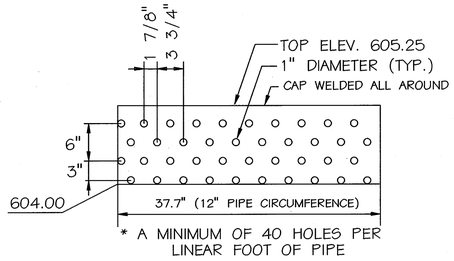
SC28

SDP-02-64



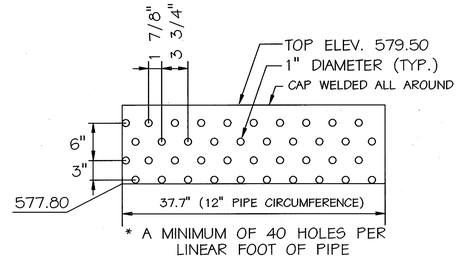
BASIN DRAWDOWN DEVICE GENERAL PROFILE

NOT TO SCALE



BASIN #2 PERFORATION DETAIL

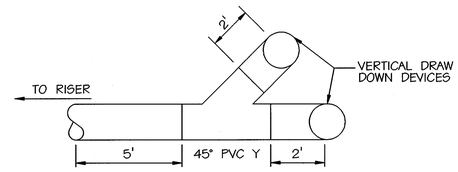
NOT TO SCALE



TWO (2) PERFORATION PIPES ARE TO BE USED

BASIN #3 PERFORATION DETAIL

NOT TO SCALE

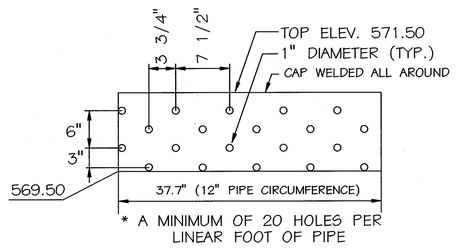


BASIN #3 DRAWDOWN DEVICE DETAIL

NOT TO SCALE

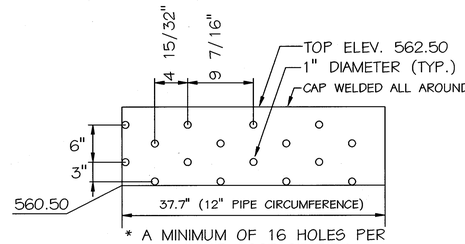
DRAWDOWN ORIFICE SIZING TABLE DETAIL C-10-30		
BASIN #	ORIFICE SIZE	ORIFICE INVERT
1	6"	586.50
2	3 1/2 "	602.50
3	5 1/2"	576.25
4	3"	567.00
5	2 3/4"	558.50
6	3 1/2"	546.50
7	2 3/4"	550.00

* BASIN #1 IS TO USE EXISTING 20' 6" DIA. PERFORATED PIPE AS A BASIN DRAWDOWN DEVICE.



BASIN #4 PERFORATION DETAIL

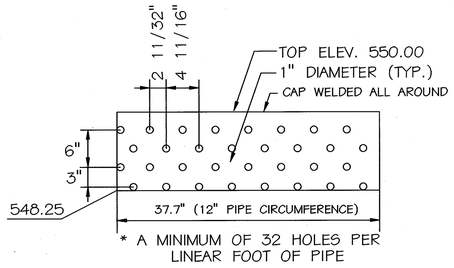
NOT TO SCALE



TWO (2) PERFORATION PIPES ARE TO BE USED

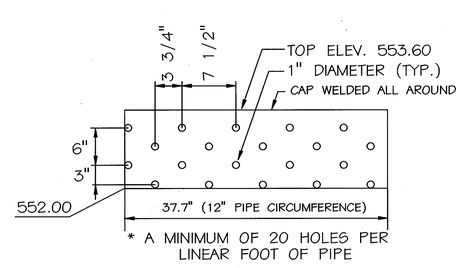
BASIN #5 PERFORATION DETAIL

NOT TO SCALE



BASIN #6 PERFORATION DETAIL

NOT TO SCALE



BASIN #7 PERFORATION DETAIL

NOT TO SCALE

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 9/5/02

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

HOWARD SCD — DATE 9/5/02

ENGINEER'S CERTIFICATE

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

Michael N. Armstrong — DATE 9/3/02
SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE)
MICHAEL N. ARMSTRONG

DEVELOPER'S CERTIFICATE

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SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) — DATE 9/4/02
RONALD G. LEPSON

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/21/02
DIRECTOR — DATE 10/22/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER — DATE 10-17-02
HOWARD COUNTY HEALTH DEPARTMENT

NO.	REVISIONS DESCRIPTION	DATE

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STATE OF MARYLAND * REGISTERED PROFESSIONAL ENGINEER * MICHAEL N. ARMSTRONG
Michael N. Armstrong 9/3/02

WESTERN REGIONAL PARK

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PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SC29

SHEET NO.: 54 OF 113

SDP-02-64

DETAIL FOR BLAZE ORANGE PLASTIC MESH SAFETY FENCE FOR BASINS

NOT TO SCALE

HOWARD COUNTY CONSERVATION DISTRICT

STANDARD SEDIMENT CONTROL NOTES

1. 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 (410 313-1855).

2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the most current MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL and revisions thereto.

3. Following initial soil disturbance or re-disturbance, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.

4. All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol 1, Chapter 12 of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.

5. All disturbed areas must be stabilized within the time period specified above in accordance with the 1994 MARYAND 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.

6. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.

7. Site Analysis:

Total Area of Site	189.88	Acres
Area Disturbed	94.80	Acres
Area to be roofed or paved	23.72	Acres
Area to be vegetatively stabilized	68.93	Acres
Total Cut	362,747	Cu. Yds.
Total Fill	189,783	Cu. Yds.
Offsite waste/borrow area location	Not Applicable	

8. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.

9. Additional sediment control must be provided, if deemed necessary by the Howard County Sediment Control Inspector.

10. On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made

11. Trenches for the construction utilities is limited to three pipe lengths or that which shall be back-filled and stabilized by the end of each work day, whichever is shorter.

30.0 DUST CONTROL

CONDITIONS WHERE PRACTICE APPLIES

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

SPECIFICATIONS

TEMPORARY METHODS

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

PERMANANT METHODS

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

SEQUENCE OF CONSTRUCTION

1 WEEK	1. OBTAIN GRADING PERMIT. NOTIFY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT'S NONTIDAL WETLANDS AND WATERWAYS INSPECTIONS AND COMPLIANCE DIVISION AT LEAST FIVE (5) DAYS PRIOR TO ANY EARTH MOVING CONSTRUCTION WITHIN NONTIDAL WETLANDS AND/OR THEIR BUFFERS.
1 WEEK	2. BLAZE ORANGE HIGH VISABILITY FENCE SHALL BE INSTALLED ALONG THE LIMIT OF DISTURBANCE (LOD), WHERE THE LIMIT IS WITHIN 50 FEET OF THE WETLAND BUFFER, STREAM BUFFER OR FOREST CONSERVATION AREA EASEMENT.
3 MONTHS	3. CLEAR AND GRUB FOR AND INSTALL EROSION AND SEDIMENT CONTROL MEASURES OR DEVICES. CONSTRUCTION OF THE SEDIMENT BASINS IS TO BE DONE IN THE FOLLOWING ORDER: A. NOTIFY THE ENGINEER-IN-CHARGE FOR "AS-BUILT" INSPECTION OF PERMANENT FACILITIES. B. EXCAVATE THE BASINS. MATERIAL NOT USED IN THE EMBANKMENT CONSTRUCTION TO BE PLACED IN TEMPORARY STOCKPILES. DOUBLE-STAKED SILT FENCE (5 FOOT MAXIMUM POST SPACING) IS TO BE PLACED BELOW STOCKPILES UNTIL ALL EROSION AND SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED AND ARE FUNCTIONAL. C. INSTALL PRINCIPAL SPILLWAYS AND APPURTENANCES. D. INSTALL REMAINDER OF EMBANKMENT. E. CONDUCT PARTIAL "AS-BUILT" SURVEY OF ALL STRUCTURES AND CHECK STORAGE VOLUMES. ADJUST ELEVATIONS, INVERTS, AND GRADING AS NEEDED. SEDIMENT BASINS ARE TO BE DEWATERED AND CLEARED TO ORIGINAL DEPTH AS SOON AS SEDIMENT REACHES CLEAN OUT ELEVATION. USE REMOVABLE PUMPING STATIONS INSTALLED DURING CONSTRUCTION.
1 MONTH	4. UPON APPROVAL OF HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, CLEAR AND GRUB SITE. DUST CONTROL IS TO BE USED AT ALL TIMES. NOTE: CONTRACTOR IS TO LIMIT CLEARING AND GRUBBING TO TWENTY ACRES AT ANY POINT IN TIME. IF THIS CREATES A HARDSHIP THE CONTRACTOR IS TO GET PERMISSION FOR ANY ADDITIONAL DISTURBANCE FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR AND THE HOWARD SOIL CONSERVATION DISTRICT.
8 MONTHS	5. MASS GRADE ALL AREAS WITHIN LIMITS OF DISTURBANCE, EXCEPTING SEDIMENT BASIN AREAS. DUST CONTROL IS TO BE USED AT ALL TIMES. NOTE: CONTRACTOR IS TO LIMIT CLEARING AND GRUBBING TO TWENTY ACRES AT ANY POINT IN TIME. IF THIS CREATES A HARDSHIP THE CONTRACTOR IS TO GET PERMISSION FOR ANY ADDITIONAL DISTURBANCE FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR AND THE HOWARD SOIL CONSERVATION DISTRICT.
3 MONTHS	6. INSTALL UTILITIES AND BEGIN BUILDING CONSTRUCTION. PROVIDE INLETS WITH INLET PROTECTION AS NECESSARY. PROVIDE PUMP AROUND PRACTICE AS NECESSARY.
3 MONTHS	7. FINE GRADE ALL AREAS TO BE PAVED. INSTALL CURBS AND GUTTERS AND SUB-BASE AS REQUIRED. PAVE ALL SURFACES TO FINISHED GRADE.
2 MONTHS	8. FINE GRADE REMAINING AREAS AND PERMANENTLY STABILIZE THOSE AREAS.
3 MONTHS	9. INSTALL REQUIRED LANDSCAPING AS SPECIFIED ON THE PLAN.
4 MONTHS	10. WHEN VEGETATION IS ESTABLISHED AND WITH PERMISSION OF THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE EROSION AND SEDIMENT CONTROL MEASURES AND STABILIZE THOSE AREAS DISTURBED BY THIS PROCESS. REMOVE ACCUMULATED SEDIMENT FROM PERMANENT WATER QUALITY SWALES. REMOVE ACCUMULATED SEDIMENT FROM SEDIMENT BASINS 1 THROUGH 7. INSTALL SUPER SILT FENCE BELOW SEDIMENT BASIN EMBANKMENTS. REMOVE SEDIMENT BASINS *2, *5, *6, AND *7. CONVERT SEDIMENT BASINS *1, *3, AND *4 TO PERMANENT STORM WATER MANAGEMENT FACILITIES PER APPROVED PLANS. PERMANENTLY STABLIZE THESE AREAS.
2 MONTHS	11. COMPLETE MASS GRADING IN AREA OF SEDIMENT BASINS *2, *5, *6, AND *7. FINE GRADE SEDIMENT AREAS OF SEDIMENT BASINS *2, *5, *6, AND *7 AND PERMANENTLY STABILIZE THOSE AREAS. REMOVE ALL REMAINING EROSION AND SEDIMENT CONTROL MEASURES AND PERMANENTLY STABILIZE AREAS DISTURBED BY THIS PROCESS.
2 MONTHS	12. CONVERT TEMPORARY SWALES TO PERMANENT CONVEYANCE AND DRY SWALES PER APPROVED STORMWATER MANAGEMENT PLANS. INSTALL BIORETENTION FACILITIES AND SAND FILTERS PER APPROVED STORMWATER MANAGEMENT PLANS. SUPER SILT FENCE IS TO BE PLACED BELOW ANY CONSTRUCTION ACTIVITY.
1 WEEK	13. CONDUCT FINAL "AS-BUILT" SURVEY OF PERMANENT WATER QUALITY AND STORM WATER MANAGEMENT FACILITIES AND SUBMIT "AS-BUILT" PLANS TO THE APPROPRIATE AGENCIES WITHIN 30 DAYS OF COMPLETION OF CONVERSION OR CONSTRUCTION.

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

Jim Myers /US. — 9/5/02

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE

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

9/5/02

HOWARD SCD — DATE

ENGINEER'S CERTIFICATE

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Michael N. Armstrong — 9/3/02

SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE) — DATE

MICHAEL N. ARMSTRONG

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9/4/02

SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) — DATE

RONALD G. LEPSON

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 9/12/02 DATE

Cindy Hamilton — CHIEF, DIVISION OF LAND DEVELOPMENT — 10/22/02 DATE

DIRECTOR — 10/23/02 DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER — 10-17-02 DATE

HOWARD COUNTY HEALTH DEPARTMENT

SEDIMENT BASIN CONSTRUCTION SPECIFICATIONS

1. SITE PREPARATIONS: PERIMETER SEDIMENT CONTROL DEVICES MUST BE INSTALLED PRIOR TO CLEARING AND GRUBBING. AREAS WHERE THE EMBANKMENT IS TO BE PLACED SHALL BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS OR OTHER OBJECTIONABLE MATERIAL. THE POOL AREA SHALL NOT BE CLEARED UNTIL COMPLETION OF THE DAM EMBANKMENT UNLESS THE POOL AREA IS TO BE USED FOR BORROW. IN ORDER TO FACILITATE CLEAN OUT AND RESTORATION, THE POOL AREA (MEASURED AT THE TOP OF THE PIPE SPILLWAY) SHALL BE CLEARED OF ALL BRUSH, TREES, AND OTHER OBJECTIONABLE MATERIALS.

2. CUT-OFF TRENCH: A CUT-OFF TRENCH SHALL BE EXCAVATED ALONG THE CENTERLINE OF EARTH FILL EMBANKMENTS. THE MINIMUM DEPTH SHALL BE FOUR FEET. THE CUT-OFF TRENCH SHALL EXTEND UP BOTH ABUTMENTS TO THE RISER CREST ELEVATION. THE MINIMUM BOTTOM WIDTH SHALL BE TWO FEET, BUT WIDE ENOUGH TO PERMIT OPERATION OF EXCAVATION AND COMPACTION EQUIPMENT. THE SIDE SLOPES SHALL BE NO STEEPER THAN 1:1. COMPACTION REQUIREMENTS SHALL BE THE SAME AS THOSE FOR THE EMBANKMENT. THE TRENCH SHALL BE DEWATERED DURING THE BACKFILLING-COMPACTION OPERATIONS. FOR DEWATERING SEE SECTION D.

3. EMBANKMENT: THE FILL MATERIAL SHALL BE TAKEN FROM APPROVED AREAS SHOWN ON THE PLANS. IT SHALL BE CLEAN MINERAL SOIL FREE OF ROOTS, WOODY VEGETATION, OVERSIZED STONES, ROCKS, OR OTHER OBJECTIONABLE MATERIAL. RELATIVELY PERVIOUS MATERIALS SUCH AS SAND OR GRAVEL (UNIFIED SOIL CLASSES GWW, GP, SW & SP) OR ORGANIC MATERIALS (UNIFIED SOIL CLASSES OL AND OH) SHALL NOT BE PLACED IN THE EMBANKMENT. AREAS ON WHICH FILL IS TO BE PLACED SHALL BE SCARIFIED PRIOR TO PLACEMENT OF FILL. THE FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SO THAT IT CAN BE FORMED BY HAND INTO A BALL WITHOUT CRUMBLING. IF WATER CAN BE SQUEEZED OUT OF THE BALL, IT IS TOO WET FOR PROPER COMPACTION. FILL MATERIAL SHALL BE PLACED IN SIX-INCH TO EIGHT-INCH THICK CONTINUOUS LIFTS OVER THE ENTIRE LENGTH OF THE FILL. COMPACTION SHALL BE OBTAINED BY ROUTING AND HAULING THE CONSTRUCTION EQUIPMENT OVER THE FILL SO THAT THE ENTIRE SURFACE OF EACH LAYER OF THE FILL IS TRAVERSED BY AT LEAST ONE WHEEL OR TREAD TRACK OF THE EQUIPMENT OR BY THE USE OF A COMPACTOR. THE EMBANKMENT SHALL BE CONSTRUCTED TO AN ELEVATION 10 PERCENT HIGHER THAN THE DESIGN HEIGHT TO ALLOW FOR SETTLEMENT.

4. PRINCIPAL SPILLWAY: STEEL RISERS SHALL BE SECURELY ATTACHED TO THE BARREL OR BARREL STUB BY WELDING THE FULL CIRCUMFERENCE MAKING A WATERTIGHT STRUCTURAL CONNECTION. CONCRETE RISERS SHALL BE POURED WITH THE PRINCIPAL SPILLWAY IN PLACE OR PRECAST WITH VOIDS AROUND THE PRINCIPAL SPILLWAY FILLED WITH CONCRETE OR SHRINK PROOF GROUT FOR WATERTIGHT CONNECTION. THE BARREL STUB MUST BE ATTACHED TO THE RISER AT THE SAME PERCENT (ANGLE) OF GRADE AS THE OUTLET CONDUIT. THE CONNECTION BETWEEN THE RISER AND THE RISER BASE SHALL BE WATERTIGHT. ALL CONNECTIONS BETWEEN BARREL SECTIONS MUST BE ACHIEVED BY APPROVED WATERTIGHT BAND ASSEMBLIES. THE BARREL AND RISER SHALL BE PLACED ON A FIRM, SMOOTH FOUNDATION OF IMPERVIOUS SOIL AS THE EMBANKMENT IS CONSTRUCTED. BREACHING THE EMBANKMENT TO INSTALL THE BARREL IS UNACCEPTABLE. PERVIOUS MATERIALS SUCH AS SAND, GRAVEL, OR CRUSHED STONE SHALL NOT BE USED AS BACKFILL AROUND THE PIPE AND ANTI-SEEP COLLARS. THE FILL MATERIAL AROUND THE PIPE SPILLWAY SHALL BE PLACED IN FOUR-INCH LIFTS AND HAND COMPACTED UNDER AND AROUND THE PIPE TO AT LEAST THE SAME DENSITY AS THE ADJACENT EMBANKMENT. A DEPTH OF 1.5 TIMES THE PIPE DIAMETER (MIN.) SHALL BE BACKFILLED OVER THE PRINCIPAL SPILLWAY AND HAND COMPACTED BEFORE CROSSING IT WITH CONSTRUCTION EQUIPMENT.

5. EMERGENCY SPILLWAY: THE EMERGENCY SPILLWAY SHALL BE INSTALLED IN UNDISTURBED GROUND. THE ACHIEVEMENT OF PLANNED ELEVATIONS, GRADES, DESIGN WIDTH, ENTRANCE AND EXIT CHANNEL SLOPES ARE CRITICAL TO THE SUCCESSFUL OPERATION OF THE EMERGENCY SPILLWAY AND MUST BE CONSTRUCTED WITHIN A TOLERANCE OF +/- 0.2 FEET.

6. VEGETATIVE TREATMENT: STABILIZE THE EMBANKMENT IN ACCORDANCE WITH THE APPROPRIATE VEGETATIVE STANDARD AND SPECIFICATIONS IMMEDIATELY FOLLOWING CONSTRUCTION. IN NO CASE SHALL THE EMBANKMENT REMAIN UNSTABILIZED FOR MORE THAN SEVEN (7) DAYS. ONCE CONSTRUCTED, THE TOP AND OUTSIDE FACE OF THE EMBANKMENT SHALL BE STABILIZED WITH SEED AND MULCH. THE REMAINDER OF THE INTERIOR SLOPES SHOULD BE STABILIZED (ONE TIME) WITH SEED AND MULCH UPON BASIN COMPLETION AND MONITORED AND MAINTAINED EROSION FREE DURING THE LIFE OF THE BASIN.

7. SAFETY: LOCAL REQUIREMENTS CONCERNING FENCING AND SIGNS SHALL BE MET, WARNING THE PUBLIC OF HAZARDS OF SOFT SEDIMENT AND FLOODWATER.

8. MAINTENANCE: REPAIR ALL DAMAGE CAUSED BY SOIL EROSION AND CONSTRUCTION EQUIPMENT AT OR BEFORE THE END OF EACH WORKING DAY. SEDIMENT SHALL BE REMOVED FROM THE BASIN WHEN IT REACHES THE SPECIFIED DISTANCE BELOW THE TOP OF THE RISER AS SHOWN ON THE RISER. THIS SEDIMENT SHALL BE PLACED IN SUCH A MANNER THAT IT WILL NOT ERODE FROM THE SITE. THE SEDIMENT SHALL NOT BE DEPOSITED DOWNSTREAM FROM THE EMBANKMENT, ADJACENT TO A STREAM OR FLOODPLAIN. DISPOSAL AREAS MUST BE STABILIZED.

9. FINAL DISPOSAL: WHEN TEMPORARY STRUCTURES HAVE SERVED THEIR INTENDED PURPOSE AND THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED, THE EMBANKMENT AND RESULTING SEDIMENT DEPOSITS ARE TO BE LEVELED OR OTHERWISE DISPOSED OF IN ACCORDANCE WITH THE APPROVED SEDIMENT CONTROL PLAN. THE PROPOSED USE OF A SEDIMENT BASIN SITE WILL OFTEN DICTATE FINAL DISPOSITION OF THE BASIN AND ANY SEDIMENT CONTAINED THEREIN. IF THE SITE IS SCHEDULED FOR FUTURE CONSTRUCTION, THEN THE BASIN MATERIAL AND TRAPPED SEDIMENTS MUST BE REMOVED AND SAFELY DISPOSED OF AND THE BASIN SHALL BE BACKFILLED WITH A STRUCTURAL FILL. WHEN THE BASIN AREA IS TO REMAIN OPEN SPACE, THE POND MAY BE PUMPED DRY (USING METHODS IN SECTION D - DEWATERING), GRADED, AND BACK FILLED.

10. CONVERSION TO STORMWATER MANAGEMENT STRUCTURE: AFTER PERMANENT STABILIZATION OF ALL DISTURBED CONTRIBUTORY DRAINAGE AREAS, TEMPORARY SEDIMENT BASINS, IF INITIALLY BUILT AND CERTIFIED TO MEET PERMANENT STANDARDS, MAY BE CONVERTED TO PERMANENT STORMWATER MANAGEMENT STRUCTURES. TO CONVERT THE BASIN FROM TEMPORARY TO PERMANENT USE, THE OUTLET STRUCTURE MUST BE MODIFIED IN ACCORDANCE WITH APPROVED STORMWATER MANAGEMENT DESIGN PLANS. ADDITIONAL GRADING MAY ALSO BE NECESSARY TO PROVIDE THE REQUIRED STORAGE VOLUME IN THE BASIN. CONVERSION CAN ONLY TAKE PLACE AFTER ALL DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED TO THE SATISFACTION OF THE INSPECTION AUTHORITY AND STORM DRAINS HAVE BEEN FLUSHED.

11. LENGTH OF PERMITTED USE: ALL TEMPORARY BASINS MUST BE REMOVED WITHIN THREE (3) YEARS OF CONSTRUCTION, AND APPROVAL OF THE SEDIMENT CONTROL INSPECTOR.

NO.	REVISIONS DESCRIPTION	DATE

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SEDIMENT & EROSION CONTROL DETAILS

SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SC30

SHEET NO.: 55 OF 113

SDP-02-64

MGWC 1.2: PUMP-AROUND PRACTICE

Temporary measure for dewatering in-channel construction sites

DESCRIPTION

The work should consist of installing a temporary pump around and supporting measures to divert flow around in-stream construction sites.

IMPLEMENTATION SEQUENCE

Sediment control measures, pump-around practices, and associated channel and bank construction should be completed in the following sequence (refer to Detail 1.2):

1. Construction activities including the installation of erosion and sediment control measures should not begin until all necessary easements and/or right-of-ways have been acquired. All existing utilities should be marked in the field prior to construction. The contractor is responsible for any damage to existing utilities that may result from construction and should repair the damage at his/her own expense to the county's or utility company's satisfaction.
2. The contractor should notify the Maryland Department of the Environment or WMA sediment control inspector at least 5 days before beginning construction. Additionally, the contractor should inform the local environmental protection and resource management inspection and enforcement division and the provider of local utilities a minimum of 48 hours before starting construction.
3. The contractor should conduct a pre-construction meeting on site with the WMA sediment control inspector, the county project manager, and the engineer to review limits of disturbance, erosion and sediment control requirements, and the sequence of construction. The contractor should stake out all limits of disturbance prior to the pre-construction meeting so they may be reviewed. The participants will also designate the contractor's staging areas and flag all trees within the limit of disturbance which will be removed for construction access. Trees should not be removed within the limit of disturbance without approval from the WMA or local authority.
4. Construction should not begin until all sediment and erosion control measures have been installed and approved by the engineer and the sediment control inspector. The contractor should stay within the limits of the disturbance as shown on the plans and minimize disturbance within the work area whenever possible.
5. Upon installation of all sediment control measures and approval by the sediment control inspector and the local environmental protection and resource management inspection and enforcement division, the contractor should begin work at the upstream section and proceed downstream beginning with the establishment of stabilized construction entrances. In some cases, work may begin downstream if appropriate. The sequence of construction must be followed unless the contractor gets written approval for deviations from the WMA or local authority. The contractor should only begin work in an area which can be completed by the end of the day including grading adjacent to the channel. At the end of each work day, the work area must be stabilized and the pump around removed from the channel. Work should not be conducted in the channel during rain events.
6. Sandbag dikes should be situated at the upstream and downstream ends of the work area as shown on the plans, and stream flow should be pumped around the work area. The pump should discharge onto a stable velocity dissipater made of riprap or sandbags.
7. Water from the work area should be pumped to a sediment filtering measure such as a dewatering basin, sediment bag, or other approved source. The measure should be located such that the water drains back into the channel below the downstream sandbag dike.
8. Traversing a channel reach with equipment within the work area where no work is proposed should be avoided. If equipment has to traverse such a reach for access to another area, then timber mats or similar measures should be used to minimize disturbance to the channel. Temporary stream crossings should be used only when necessary and only where noted on the plans or specified. *(See Section 4, Stream Crossings, Maryland Guidelines to Waterway Construction)*.
9. All stream restoration measures should be installed as indicated by the plans and all banks graded in accordance with the grading plans and typical cross- sections. All grading must be stabilized at the end of each day with seed and mulch or seed and matting as specified on the plans.
10. After an area is completed and stabilized, the clean water dike should be removed. After the first sediment flush, a new clean water dike should be established upstream from the old sediment dike. Finally, upon establishment of a new sediment dike below the old one, the old sediment dike should be removed.
11. A pump around must be installed on any tributary or storm drain outfall which contributes baseflow to the work area. This should be accomplished by locating a sandbag dike at the downstream end of the tributary or storm drain outfall and pumping the stream flow around the work area. This water should discharge onto the same velocity dissipater used for the main stem pump around.
12. If a tributary is to be restored, construction should take place on the tributary before work on the main stem reaches the tributary confluence. Construction in the tributary, including pump around practices, should follow the same sequence as for the main stem of the river or stream. When construction on the tributary is completed, work on the main stem should resume. Water from the tributary should continue to be pumped around the work area in the main stem.
13. The contractor is responsible for providing access to and maintaining all erosion and sediment control devices until the sediment control inspector approves their removal.
14. After construction, all disturbed areas should be regraded and revegetated as per the planting plan.

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

Jim Myers /cs — 9/5/02
USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE

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

[signature] — 9/5/02
HOWARD SCD — DATE

ENGINEER'S CERTIFICATE

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

Michael N. Armstrong — 9/3/02
SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE) — DATE
MICHAEL N. ARMSTRONG

DEVELOPER'S CERTIFICATE

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

[signature] — 9/4/02
SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) — DATE
RONALD G. LEPSON

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

[signature] — 9/12/02
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

Cindy Hamilton — 10/22/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

[signature] — 10/23/02
DIRECTOR — DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

[signature] — 10-17-02
COUNTY HEALTH OFFICER — DATE
HOWARD COUNTY HEALTH DEPARTMENT

Maryland's Guidelines To Waterway Construction
DETAIL 1.2: PUMP-AROUND PRACTICE

PLAN VIEW

SECTION A-A

cross section of sandbag dike

TEMPORARY INSTREAM CONSTRUCTION MEASURES	*REVISED NOVEMBER 2000 PAGE 1.2 - 3*	MARYLAND DEPARTMENT OF THE ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

MGWC 1.5: SANDBAG/STONE CHANNEL DIVERSION

Temporary measure for dewatering in-channel construction sites

DESCRIPTION

The work should consist of installing sandbag or stone flow diversions for the purpose of erosion control when construction activities occur within the stream channel.

EFFECTIVE USES & LIMITATIONS

Diversions are used to isolate work areas from flow during the construction of in-stream projects. Diversions which have an insufficient flow capacity can fail and severely erode the disturbed channel section under construction. Therefore, in-channel construction activities should occur only during periods of low rainfall. This temporary measure may not be practical in large channels.

MATERIAL SPECIFICATIONS

Materials for sandbag and stone stream diversions should meet the following requirements:

- *Riprap*: Riprap should be washed and have a minimum diameter of 6 inches (0.15 meters).
- *Sandbags*: Sandbags should consist of materials which are resistant to ultra-violet radiation, tearing, and puncture and should be woven tightly enough to prevent leakage of the fill material (i.e., sand, fine gravel, etc.).
- *Sheeting*: Sheeting should consist of polyethylene or other materials which are impervious and resistant to puncture and tearing.

INSTALLATION GUIDELINES

All erosion and sediment control devices, including dewatering basins, should be implemented as the first order of business according to a plan approved by the WMA or local authority. Installation should proceed from upstream to downstream during periods of low flow. If necessary, silt fence or straw bales should be installed around the perimeter of the work area.

Sandbag/stone diversions can be used independently or as components of other stream diversion techniques. Installation of this measure should proceed as follows (refer to Detail 1.5):

1. The diversion structure should be installed from upstream to downstream.
2. The height of the sandbag/stone diversion should be a function of the duration of the project in the stream reach. For projects with a duration less than 2 weeks, the height of the diversion should be one half the streambank height, measured from the channel bed, plus 1 foot (0.3 meters) or bankfull height, whichever is greater. For projects of longer duration, the top of the sandbag or stone diversion should correspond to bankfull height. For diversion structures utilizing sandbags, the stream bed should be hand prepared prior to placement of the base layer of sandbags in order to ensure a water tight fit. Additionally, it may be necessary to prepare the bank in a similar fashion.
3. All excavated material should be deposited and stabilized in an approved area outside the 100-year floodplain unless otherwise authorized by the WMA.
4. Sediment-laden water from the construction area should be pumped to a dewatering basin.
5. Sheeting on the diversion should be positioned such that the upstream portion covers the downstream portion with at least a 18-inch (0.45 meters) overlap.
6. Sandbag or stone diversions should not obstruct more than 45% of the stream width. Additionally, bank stabilization measures should be placed in the constricted section if accelerated erosion and bank scour are observed during the construction time or if project time is expected to last more than 2 weeks.
7. Prior to removal of these temporary structures, any accumulated sediment should be removed, deposited and stabilized in an approved area outside the 100-year floodplain unless authorized by the WMA.
8. Sediment control devices are to remain in place until all disturbed areas are stabilized in accordance with an approved sediment and erosion control plan and the inspecting authority approves their removal.

Maryland's Guidelines To Waterway Construction
DETAIL 1.5: SANDBAG/STONE DIVERSION

TRANSVERSE SECTION VIEW

H/2 + 1 ft (0.3 m) for projects of duration < 2 weeks;
2-year flood elevation for projects of longer duration

PLAN VIEW

TEMPORARY INSTREAM CONSTRUCTION MEASURES	*REVISED NOVEMBER 2000 PAGE 1.5 - 3*	MARYLAND DEPARTMENT OF THE ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

MGWC 4.7: SMALL BRIDGE INSTALLATION

Proposed construction sequence for small bridges

DESCRIPTION

The following is a typical sequence of construction for a small bridge installation and details the minimum requirements to be incorporated into the project.

EFFECTIVE USES & LIMITATIONS

This method has been chosen in order to illustrate a general sequence of construction and is not suitable for all projects. Therefore, the construction sequence should be reviewed and modified as necessary to meet specific project needs.

MATERIAL SPECIFICATIONS

Materials for sandbag and stone stream diversions should meet the following requirements:

- *Riprap*: Riprap should be washed and have a minimum diameter of 6 inches (15 centimeters).
- *Sandbags*: Sandbags should consist of materials which are resistant to ultra-violet radiation, tearing, and puncture and should be woven tightly enough to prevent leakage of the fill material (i.e., sand, fine gravel, etc.).

INSTALLATION GUIDELINES

All erosion and sediment control devices, should be implemented as the first order of business according to a plan approved by the WMA or local authority. (See the *1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control.*) The proposed construction sequence is as follows:

1. Install a sandbag or stone stream diversion according to specifications to divert the stream flow away from one bank.
2. Build dewatering basins as needed.
3. Install the first bridge abutment, and dewater and stabilize the disturbed area according to a plan approved by the WMA.
4. Redivert the channel to protect the opposite bank.
5. Build the second bridge abutment, dewater as necessary, and stabilize the area.
6. Remove the flow diversions.
7. Restore the dewatering basin(s) to the original grade, remove any silt fence installed before construction, and seed and mulch all disturbed areas.

SPECIFICATIONS FOR WATER BARS

Definition

A post-harvest trench constructed across a road or trail, which may be reinforced by using a pole on sandy soil. Also called water breaks.

Purpose

A post-harvest practice used to intercept and divert side-ditch and surface runoff from roads or trails, which will not have vehicular traffic, to minimize erosion and provide conditions suitable for natural or artificial revegetation. On moderate slopes water bars will remove water from the road or trail allowing adequate natural revegetation to occur.

Conditions Where Practice Applies

This is a practice that can be utilized on road or trail grades where surface water runoff may cause erosion of the exposed soil. Use only where there will not be any vehicular traffic. If there is a potential for vehicular traffic, use rolling dips.

Specifications

1. Proper spacing between water bars can be determined from the following formula:

Table - Water Bar Spacing

1000 ÷ (% grade + 2.5) = water bar spacing

An example:

Grade of Road (%)	Approximate Distance Between Water Bars (ft)
2	250
5	135
10	80
15	60
20+	45

2. Water bars should be at an angle of 30 to 45 degrees downslope to turn surface water off the road or trail.
3. Excavate a trench 3 to 4 inches below the surface of the road or trail with a 1 foot berm on the down hill side of the trench. Spoil materials should be used to develop the bar height.
4. The uphill end of the bar should extend beyond the side ditch line of the road and tie into the bank to fully intercept any ditch flows.
5. The outflow end of the bar is to be fully opened and extend far enough beyond the edge of the road or trail to safely disperse runoff water onto the undisturbed forest floor. The outlet length should not be excessive.
6. On sandy soils, a 5" to 8" pole should be placed in the full length of the trench. This pole should be pegged and filled with soil on the downslope side.
7. Use water bars for forest roads with little or no traffic. Specifications are average and may be adjusted to conditions.
8. Ensure that the outlet is open and consider the need for energy dissipating water spreaders at or below drain outlet on sensitive areas.
9. Upon completion of the operation, exposed soil resulting from the creation of water bars must be seeded and mulched.

Diagram - Water Bar and Other Water Break

NO.	REVISIONS DESCRIPTION	DATE

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SEDIMENT& EROSION CONTROL DETAILS

SCALE:	AS SHOWN
DATE:	6/12/02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SC31

SHEET NO. 56 OF 113

SDP-02-6

MGWC 2.1: Riprap

Rigid engineering technique for bank stabilization

Description

Riprap is used to protect and stabilize embankment soils from the erosive forces of flowing water and piping forces resulting from groundwater seepage. A well-engineered riprap system should consist of the following:

- a filter layer of gravel or cloth designed to prevent soil movement into or through the riprap layer while allowing water to drain from the embankment, and
- a stone layer of appropriate gradation and thickness to resist the shearing forces of channelized water.

Effective Uses & Limitations

When properly designed and installed, riprap is an effective method where soil conditions, water turbulence and velocity, expected vegetative cover, and groundwater conditions are such that the soil may erode under the design flow conditions. Some common areas of riprap applicability are:

- diversion channel banks and/or bottoms,
- roadside ditches,
- drop structure outlets, and
- laterally expanding banks threatening infrastructure or personal property.

Additionally, properly graded riprap forms a flexible, self-healing cover which can be easily repaired in localized areas by the timely replacement of stone. Uniform-grade riprap can also be used with a geotextile filter cloth.

Filter cloth should only be utilized when the bank material is noncohesive such as sand or gravel.

Material Specifications

- *Filters:* Material and design specifications for granular filters are found in Table 3.1a.

Table 3.1a: Granular Filter Material Grading Specifications

% less than	U.S. Standard sieve size
100	2 ½ in (64 mm)
85-100	1 in (25 mm)
60-100	½ in (13 mm)
35-70	No. 10
20-50	No. 40
3-20	No. 200

The thickness of the filter should not be less than 6 inches (15 cm). Generally, filters that are one-half the thickness of the riprap layer are satisfactory.

Synthetic filter cloth may be used cautiously based on the *1994 MD Standards and Specifications for Soil Erosion and Sediment Control*.

- *Riprap:* The maximum diameter or weight of stone for riprap should be based upon the design flow velocity using Figure 3.1. This chart is based on a maximum slope of 2H:1V. The stone gradations for Classes I - III are found in Table 3.1b.

Table 3.1b: Stone Gradations for Riprap Stone Classes

Class	Size	% Total Weight < Given Size
I	150 lb (70 kg)	100
	2 lb (1 kg)	10 max
II	700 lb (320 kg)	100
	20 lb (10 kg)	10 max
III	2000 lb (910 kg)	100
	40 lb (20 kg)	10 max

Uniform-grade riprap should incorporate angular rock to promote interlocking.

Approximate Cost ($1999): $78 per linear ft

Installation Guidelines

All erosion and sediment control devices, including dewatering basins, should be implemented as the first order of business according to a plan approved by the WMA or local authority. Once a slope stabilization project is initiated, preparation and placement of the riprap should immediately follow the initial disturbance to minimize the chances for further slope degradation. The recommended construction procedure for riprap is as follows beginning with initial slope preparations (refer to Detail 2.1):

1. The contractor should install all sediment and erosion control devices as the first order of business.
2. Excavation should be made in reasonably close conformity with the existing stream slope and bed.
3. All fill in the subgrade should be compacted to a density approximating that of the surrounding undisturbed material.
4. Provisions must be made to anchor the riprap at the stream bed so as to provide protection against undermining. If this cannot be accomplished by creating a toe trench, an alternative method of protection must receive prior written approval from the WMA or local authority.
5. The filter layer or blanket should be placed immediately after slope preparation.
   - The stone for granular filters should be spread in a uniform layer to the specified depth. Where more than one layer is employed, they should be spread such that there is minimal mixing.
   - When cloth filters are used, special care should be taken not to damage the fabric during riprap placement.
6. Riprap placement should begin with the toe. The larger stones, as specified by the design gradation, should be placed in the toe and along the perimeter of the slope and channel protection. The riprap should be placed with suitable equipment in such a manner as to produce a reasonably graded mass of stones with zero drop height. The placing of stones that cause extensive segregation is not allowed. Where appropriate, a low flow channel shall be constructed through the riprap.
7. Any excavation voids existing along the edges of the completed slope and channel protection should be backfilled and compacted.
8. All disturbed areas should be permanently stabilized in accordance with an approved sediment and erosion control plan.

Note: The use of rock vanes (MGWC 3.3: Rock Vanes) should be considered to redirect high-velocity flows at the toe.

MGWC 1.1: Dewatering Basins

Temporary measure for filtering sediment-laden water

Description

The work should consist of installing dewatering basins jointly with channel diversion measures to filter sediment-laden water from in-stream construction sites before the water re-enters the downstream reach.

Effective Uses & Limitations

Undersized dewatering basins will not adequately filter sediment-laden water from the construction site.

Material Specifications

Materials for dewatering basins should meet the following requirements:

- *Riprap*: Riprap should be washed and have a diameter ranging from 4 to 6 inches (10 to 15 centimeters).
- *Filter Cloth*: Filter cloth should be a woven or non-woven fabric consisting only of continuous chain polymeric filaments or yarns of polyester. The fabric should be inert to commonly encountered chemicals, hydro-carbons, ultraviolet light, and mildew and should be rot resistant.
- *Straw Bales/Silt Fence*: Straw bales should meet the criteria as specified in the *1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control.*

Installation Guidelines

Due to the danger of overtopping by events greater than the design flow, dewatering basins require a vegetative buffer strip to filter sediment-laden overflow. A 50-foot (15-meter) minimum grass-covered buffer width is required for slopes less than 20 degrees (1:2.7) when right-of-way is not limited. For slopes greater than 20 degrees, basins should have a 100-foot (30-meter) minimum buffer width when practical.

All erosion and sediment control devices should be installed as the first order of business according to a plan approved by the Water Management Administration (WMA) or local authority. Dewatering basins should be constructed as follows (refer to Detail 1.1):

1. Excavated subsoil and topsoil should be stored separately and replaced in their natural order. Additionally, the excavated sediments should be prevented from entering the waterway by using sediment perimeter controls or other measures.
2. The dewatering basin should have a minimum depth of 3 feet (1 meter) where basin depth is measured from the top of the straw bales to the bottom of the excavation.
3. Once the dewatering basin becomes filled to one-half of the excavated depth, accumulated sediment should be removed and disposed of in an approved area outside the 100-year floodplain unless otherwise authorized by the WMA.
4. Sediment control devices should remain in place until all disturbed areas are stabilized and the inspecting authority approves their removal. All disturbed ground contours should be returned to their original condition unless otherwise approved by the WMA or local authority.

Maryland's Guidelines To Waterway Construction
DETAIL 1.1: DEWATERING BASINS

TEMPORARY INSTREAM CONSTRUCTION MEASURES	REVISED NOVEMBER 2000 PAGE 1.1 - 2	MARYLAND DEPARTMENT OF THE ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

MGWC 4.8: Temporary Access Bridge

Temporary stream crossing intended for minimum corridor disturbance

Description

A temporary access bridge is a stream crossing made of wood, metal, or other materials designed to limit the amount of disturbance to the stream banks and bed.

Effective Uses & Limitations

Temporary access bridges are the preferred method of waterway crossing since they typically cause the least disturbance to the waterway bed and banks, pose the least chance for interference with fish migration, and can be quickly removed and reused.

Material Specifications

- *Stringers*: Stringers should either be logs, sawn timber, prestressed concrete beams, metal beams, or other approved materials.
- *Deck Materials*: Deck materials should be of sufficient strength to support the anticipated load.

Construction Sequence

All erosion and sediment control devices, including stream diversions, should be implemented as the first order of business according to a plan approved by the WMA or local authority. Dewatering basins should be built as needed and swales or ditches should be used to prevent surface drainage from entering the stream via the bridge crossing. (See the *1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control*.) The proposed construction, maintenance, and removal sequence is as follows:

1. Abutments should be placed parallel to, and on, stable banks such that the structure is at or above bankfull depth to prevent the entrapment of floating materials and debris.
2. Temporary access bridges should be constructed to span the entire channel. If the bankfull channel width exceeds 8 feet (2.5 meters), then a footing, pier, or other bridge support may be constructed within the waterway. No support will be permitted within the channel for waterways less than 8 feet wide. One additional bridge support will be permitted for each additional 8-foot width of the channel.
3. All decking members should be placed perpendicularly to the stringers, butted tightly, and securely fastened to the stringers. Decking materials must be butted tightly to prevent any soil material tracked onto the bridge from falling into the waterway.
4. Although run planks are optional, they may be necessary to properly distribute loads. One run plank should be provided for each track of the equipment wheels and should be securely fastened to the length of the span.
5. Curbs or fenders may be installed along the outer sides of the deck to provide additional safety.
6. Bridges should be securely anchored at one end using steel cable or chain to prevent the bridge from floating downstream and possibly causing an obstruction to the flow. Anchoring at only one end will prevent channel obstruction in the event that flood waters float the bridge. Acceptable anchors are large trees, boulders, or driven steel anchors.
7. All areas disturbed during installation should be stabilized within 14 calendar days in accordance with a revegetation plan approved by the WMA.
8. Periodic inspection should be performed by the user to ensure that the bridge, streambed, and stream banks are maintained and not damaged.
9. Maintenance should be performed as needed to ensure that the structure complies with all standards and specifications. This should include the removal of trapped sediment and debris which should then be disposed of and stabilized outside the floodplain.
10. When the temporary bridge is no longer needed, all structures including abutments and other bridging materials should be removed within 14 calendar days. In all cases, the bridge materials should be removed within 1 year of installation. Removal of the bridge and clean-up of the area, including protection and stabilization of disturbed stream banks, should be accomplished without the use of construction equipment in the waterway.

Maryland's Guidelines To Waterway Construction
DETAIL 2.1: RIPRAP

SECTION VIEW

SLOPE PROTECTION AND STABILIZATION TECHNIQUES	REVISED NOVEMBER 2000 PAGE 2.1 - 4	MARYLAND DEPARTMENT OF THE ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

Figure 2.1: Riprap Diameter as a Function of Stream Velocity (Based on Ishbash Equation)

SLOPE PROTECTION STABILIZATION TECHNIQUES

MARYLAND DEPARTMENT OF THE ENVIRONMENT
WATERWAY CONSTRUCTION GUIDELINES
REVISED NOVEMBER 2000

PAGE 2.1-3

Maryland's Guidelines To Waterway Construction
DETAIL 4.8: TEMPORARY ACCESS BRIDGE

SKETCH

STREAM CROSSINGS	PAGE 4.8 - 3	MARYLAND DEPARTMENT OF THE ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

Jim Myers / LB — 9/5/02
USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE

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

[signature] — 9/5/02
HOWARD SCD — DATE

ENGINEER'S CERTIFICATE

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

Michael N. Armstrong — 9/3/02
SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE) — DATE
MICHAEL N. ARMSTRONG

DEVELOPER'S CERTIFICATE

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

[signature] — 9/4/02
SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) — DATE
RONALD G. JEPSON

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

[signature] — 9/12/02
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

Cindy Hamilton — 10/22/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

[signature] — 10/23/02
DIRECTOR — DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

[signature] MD — 10-17-02
COUNTY HEALTH OFFICER — DATE
HOWARD COUNTY HEALTH DEPARTMENT

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 01000575 \ USCDET09.DGN

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WWW.KCI.COM

STATE OF MARYLAND — MICHAEL NORMAN ARMSTRONG — NO. 16109 — REGISTERED PROFESSIONAL ENGINEER
Michael N. Armstrong 9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

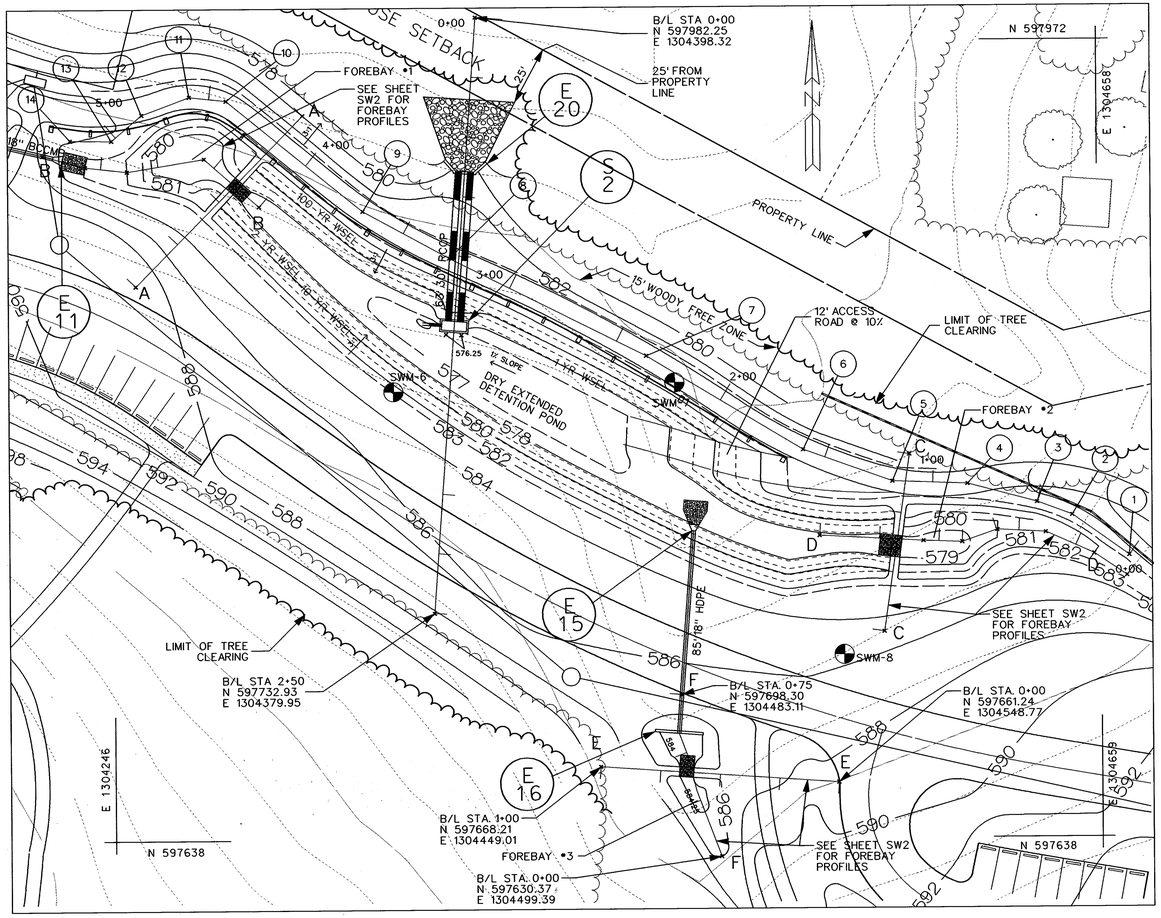
SEDIMENT& EROSION CONTROL DETAILS

SCALE:	AS SHOWN
DATE:	6/12/02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SC32

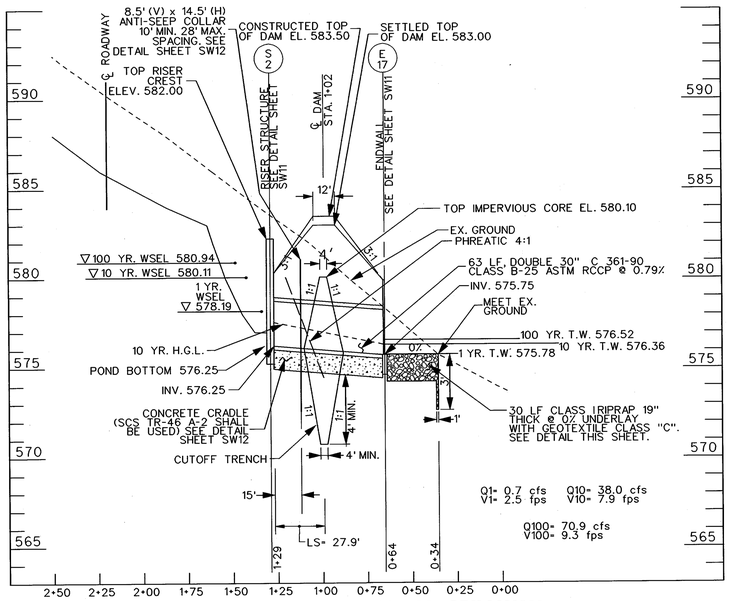
SHEET NO. 57 OF 113

SDP-02-64



POND B PLAN

SCALE 1"=30'



PROFILE ALONG PRINCIPAL SPILLWAY

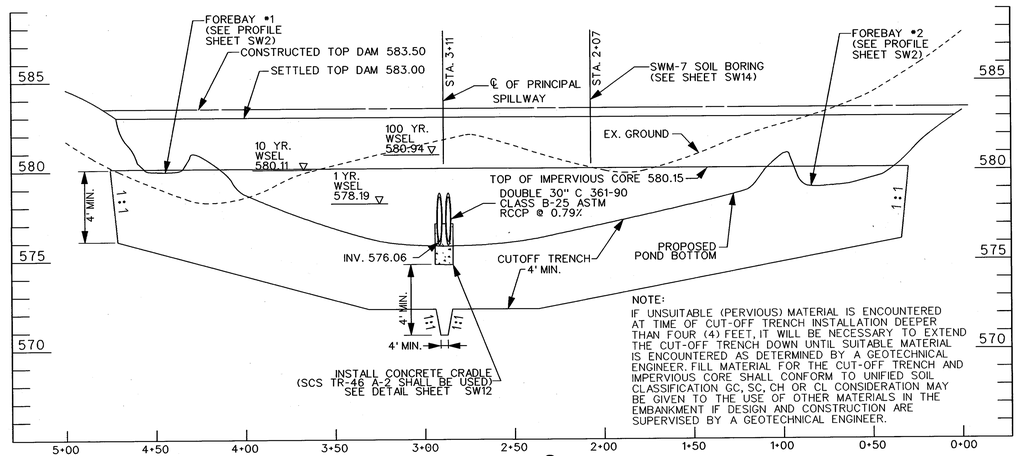
SCALE: HOR. 1" = 40'
VERT. 1" = 4'

SWM POND STATIONING (℄ EMBANKMENT)		
POINT	COORDINATES	
	NORTH	EAST
1	597755.84	1304670.84
2	597772.79	1304647.02
3	597778.27	1304632.35
4	597786.07	1304603.34
5	597787.29	1304571.85
6	597800.69	1304534.50
7	597840.34	1304469.07
8	597881.57	1304386.98
9	597901.52	1304350.83
10	597947.92	1304293.88
11	597949.63	1304278.39
12	597942.24	1304258.47
13	597931.54	1304245.70
14	597931.66	1304228.43

S.W.M. DESIGN SUMMARY							
DESIGN STORM	FACILITY INFLOW (cfs)	FACILITY OUTFLOW (cfs)	STAGE	STORAGE VOLUME AC. FT.	BYPASS DISCHARGE (cfs)	ALLOWABLE RELEASE AT DESIGN POINT "B" (cfs)	DESIGN POINT "B" DISCHARGE (cfs)
1 Year	5.4	0.7	578.19	0.15	0.6	1.6	0.9
2 Year	12.3	3.3	579.29	0.36	2.5	N/A	4.4
10 Year	42.3	38.0	580.11	0.53	14.7	N/A	52.3
100 Year	82.8	70.9	580.94	0.79	33.2	N/A	102.1

STRUCTURE TYPE: DRY EXTENDED DETENTION POND
SURFACE AREA: 0.48 AC.
STRUCTURE HAZARD CLASSIFICATION: "A"
STORAGE-HEIGHT PRODUCT: 10.94
WATERSHED AREA TO FACILITY (ACRES): 22.64
LEVEL OF MANAGEMENT REQUIRED AND PROVIDED BY FACILITY: 1 YEAR (QUANTITY)

WATERSHED: CATTAIL CREEK
STREAM CLASS: III
FREEBOARD: 2.06 FT.
WATER QUALITY: DRY SWALES (SEE SHEET SW3 FOR DETAILS AND SUMMARY TABLE)

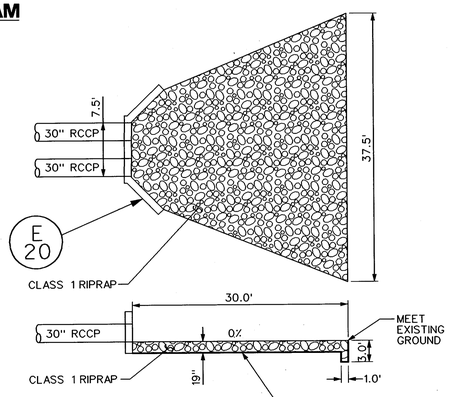


PROFILE ALONG ℄ OF DAM

SCALE: HOR. 1" = 40'
VERT. 1" = 4'

NOTES:

1. SEE SHEET LS14 FOR POND B LANDSCAPING PLAN AND DETAILS.
2. SEE SHEETS SW3 FOR WATER QUALITY PLANS AND DETAILS IN SUB-AREA B.



E-17 RIPRAP OUTLET PROTECTION

SCALE: 1" = 10'

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, HOWARD COUNTY HEALTH DEPARTMENT — DATE 10-17-02

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE 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."

NAME RONALD G. LEPSON — SIGNATURE — DATE 9/4/02

ENGINEER'S CERTIFICATE

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

NAME MARK S. RICHMOND — SIGNATURE — DATE 06/11/02

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 9/5/02

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

HOWARD SCD — DATE 9/5/02

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 01000057.S \ SWM04.DGN

KCI TECHNOLOGIES INC.
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STATE OF MARYLAND — 21598 — REGISTERED PROFESSIONAL ENGINEER

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410) 313-4640

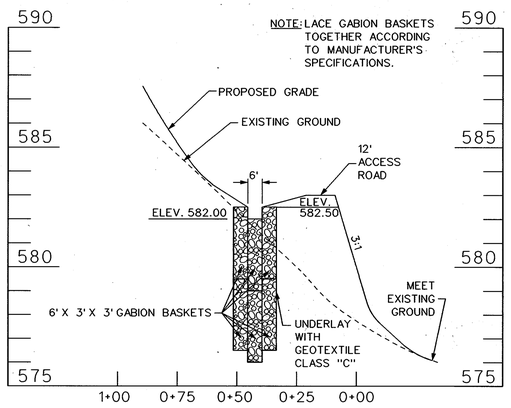
STORMWATER MANAGEMENT B PLAN AND PROFILES

SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SW1

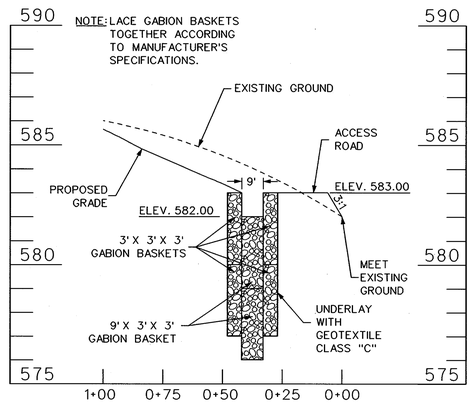
SHEET NO.: 58 OF 113

SDP-02-64



FOREBAY #1 CROSS-SECTION A-A

SCALE: HOR. 1" = 30'
VERT. 1" = 3'



FOREBAY #2 CROSS-SECTION C-C

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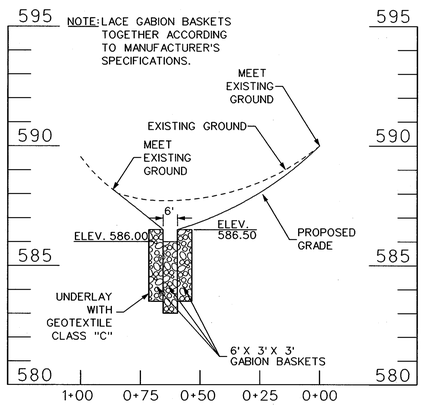
VERT. 1" = 3'



FOREBAY #3 CROSS-SECTION E-E

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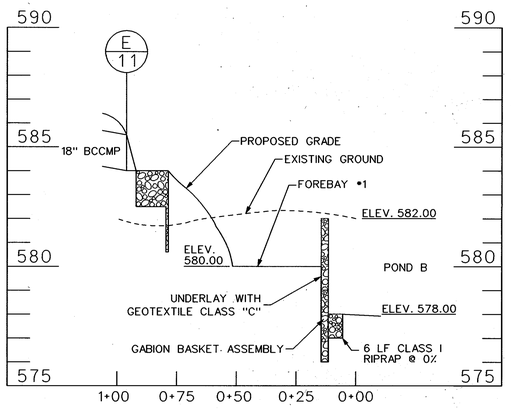
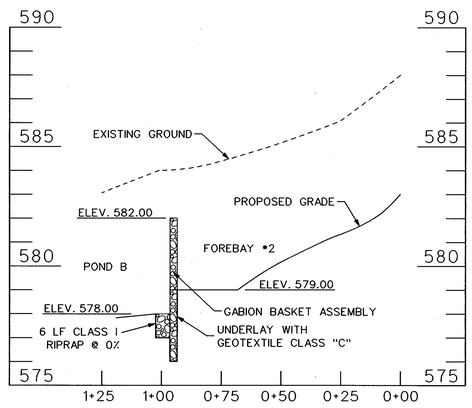
VERT. 1" = 3'



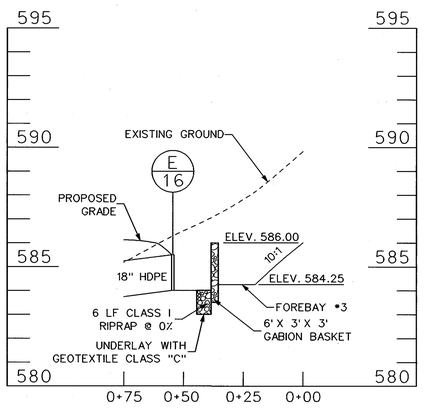
FOREBAY #1 CROSS-SECTION B-B

SCALE: HOR. 1" = 30'
VERT. 1" = 3'



FOREBAY #2 CROSS-SECTION D-D

SCALE: HOR. 1" = 30'
VERT. 1" = 3'



FOREBAY #3 CROSS-SECTION F-F

SCALE: HOR. 1" = 30'
VERT. 1" = 3'

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/2/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, H.C. HEALTH DEPARTMENT — DATE 10-17-02

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE 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."

RONALD G. LEPSON — SIGNATURE — 9/4/02 DATE

ENGINEERS CERTIFICATE

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

MARK S. RICHMOND — SIGNATURE — 06/11/02 DATE

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 9/5/02

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

HOWARD SCD — DATE 9/5/02

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE:

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STATE OF MARYLAND — RONALD G. LEPSON — No. 19888 — REGISTERED PROFESSIONAL ENGINEER

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410) 313-4640

STORMWATER MANAGEMENT B DETAILS AND PROFILES

SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

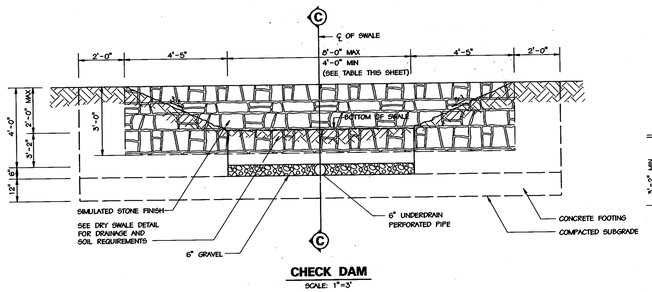
SW2

SHEET NO.: 59 OF 113

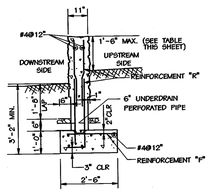
SDP-02-64

CHECK DAM SUMMARY TABLE				
SWALE	BOTTOM WIDTH	DAM HEIGHT	CHANNEL SLOPE	DAM SPACING*
DS-1	8.0'	1'-0"	1.5%	66.7'
DS-2	8.0'	1'-6"	3.3%	45.1'
DS-3	6.0'	1'-6"	4.0%	37.5'

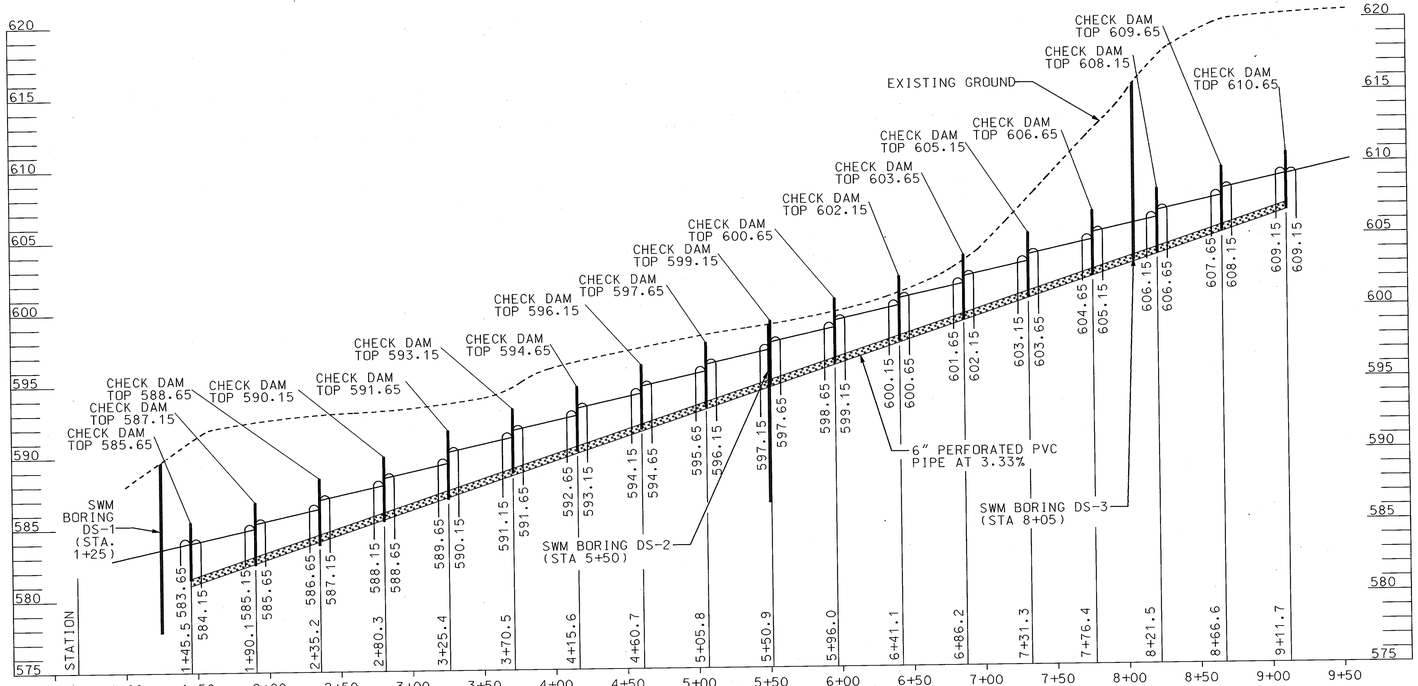
* CHECK DAMS TO BE SPACED AS SHOWN ON PLAN VIEW. SEE SHEETS C7 AND C8.



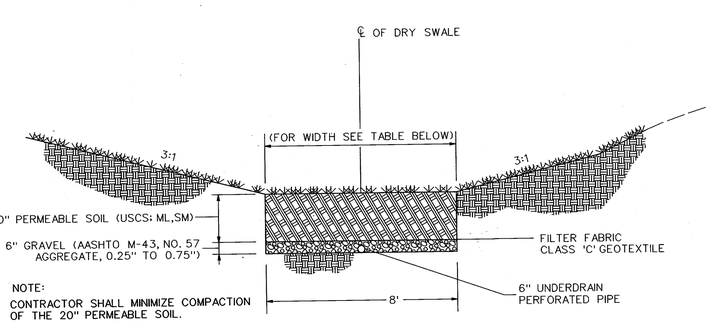
CHECK DAM
SCALE: 1"=3'



SECTION C-C
SCALE: 1"=3'

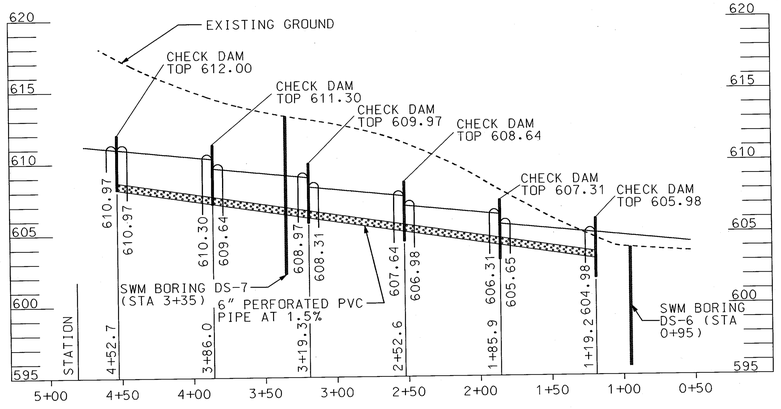


DRY SWALE DS-2 PROFILE
SCALE: HOR. 1"=50'
VER. 1"=5'

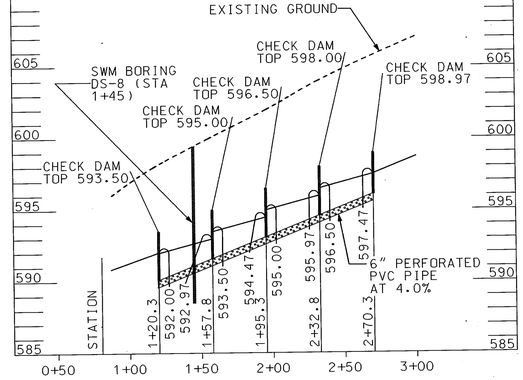


TYPICAL SECTION FOR DRY SWALE
NOT TO SCALE

DRY SWALE SUMMARY TABLE				
NAME	WIDTH	SLOPE	CHANNEL DEPTH	WQ_v ELEV.
DS-1	8.0'	1.5%	1.5'	1.0'
DS-2	8.0'	3.3%	2.1'	1.5'
DS-3	6.0'	4.0%	2.0'	1.5'



DRY SWALE DS-1 PROFILE
SCALE: HOR. 1"=50'
VER. 1"=5'



DRY SWALE DS-3 PROFILE
SCALE: HOR. 1"=50'
VER. 1"=5'

S.W.M. SIZING CRITERIA SUMMARY (AREA G)		
	REQUIRED	PROVIDED
WQ_v	0.13 AC.-FT.	0.06 AC.-FT. (DS-1) 0.04 AC.-FT. (SF-G) 0.03 AC.-FT. (NON-STRUCTURAL)
Re_v	0.03 AC.-FT.	0.03 AC.-FT. (NON-STRUCTURAL)
CP_v	NOT REQUIRED	N/A
QP_{10}	NOT REQUIRED	N/A
QP_{100}	NOT REQUIRED	N/A

STRUCTURE TYPE: DRY SWALE
STRUCTURE HAZARD CLASSIFICATION: "A"
TOTAL AREA DRAINING TO FACILITY: 3.24 AC.
WQ_v PROVIDED BY DRY SWALES AND THROUGH NON-STRUCTURAL PRACTICES.
Re_v PROVIDED THROUGH NON-STRUCTURAL PRACTICES.

S.W.M. SIZING CRITERIA SUMMARY (AREA B)		
	REQUIRED	PROVIDED
WQ_v	0.58 AC.-FT.	0.25 AC.-FT. (DS-2) 0.03 AC.-FT. (DS-3) 0.30 AC.-FT. (NON-STRUCTURAL)
Re_v	0.12 AC.-FT.	0.12 AC.-FT. (NON-STRUCTURAL)
CP_v	0.41 AC.-FT.	0.41 AC.-FT. (POND B)
QP_{10}	NOT REQUIRED	N/A
QP_{100}	NOT REQUIRED	N/A

STRUCTURE TYPE: DRY SWALE
STRUCTURE HAZARD CLASSIFICATION: "A"
TOTAL AREA DRAINING TO FACILITY DS-2: 11.27 AC.
TOTAL AREA DRAINING TO FACILITY DS-3: 1.76 AC.
WQ_v PROVIDED BY DRY SWALES AND THROUGH NON-STRUCTURAL PRACTICES.
Re_v PROVIDED THROUGH NON-STRUCTURAL PRACTICES
CP_v PROVIDED IN DRY EXTENDED DETENTION POND. (SEE SHEET SW1)

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

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

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, H.C.H.D. — DATE 10-17-02

HOWARD COUNTY HEALTH DEPARTMENT

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE 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."

RONALD G. LEPSON — SIGNATURE — DATE 9/4/02

ENGINEER'S CERTIFICATE

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

Mark S. Richmond — SIGNATURE — DATE 9/3/02

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 9/5/02

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

HOWARD SCD — DATE 9/5/02

NO.	REVISIONS	DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 01000057.S \ SWM06.DGN

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HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
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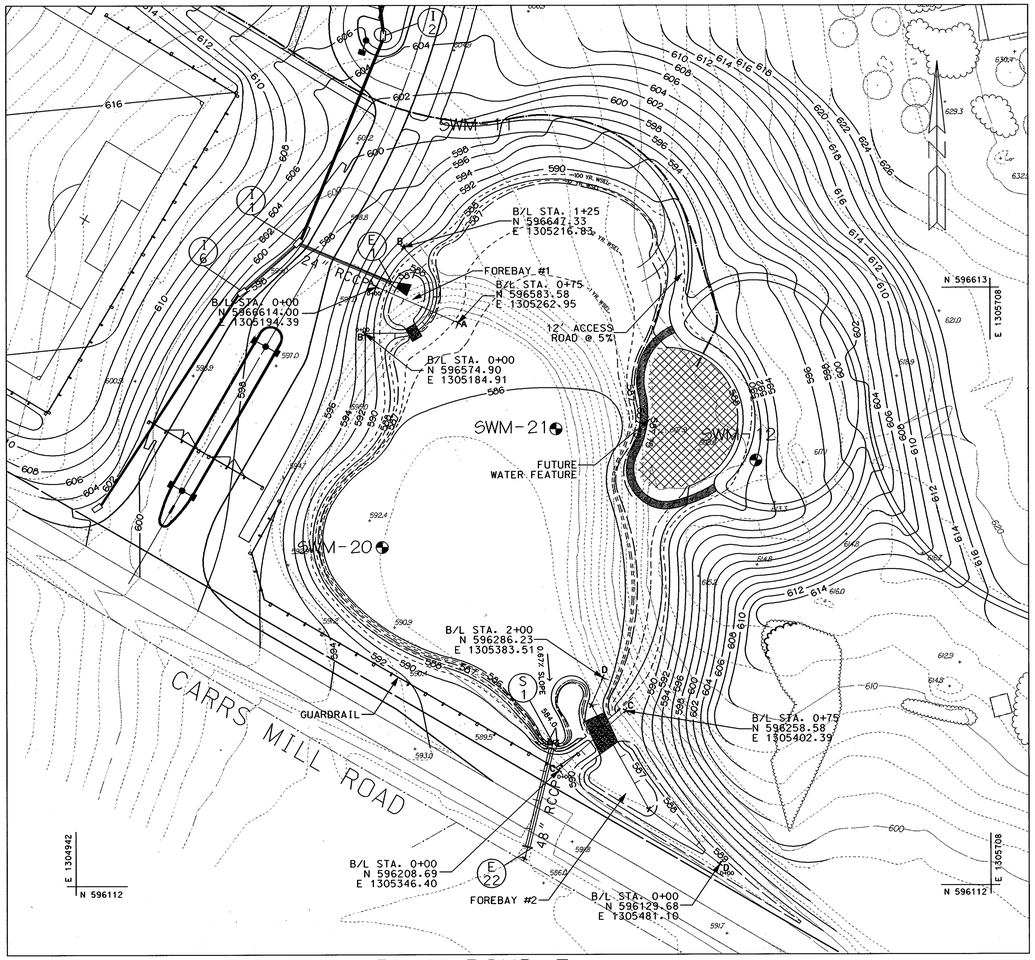
WESTERN REGIONAL PARK
HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410) 313-4640

DRY SWALE DETAILS AND PROFILES

SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SW3
SHEET NO.: 60 OF 113

SDP-02-64



PLAN-POND E

SCALE: 1"=60'

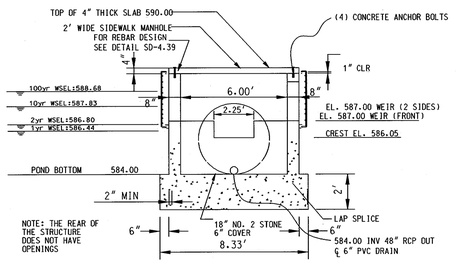
NOTES:

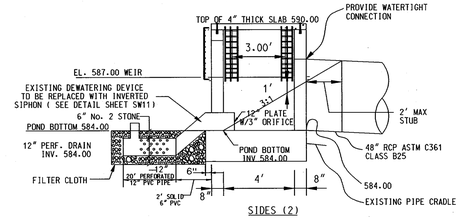
1. RISER CONSTRUCTED UNDER APPROVED DESIGN "SDP-01-108" FOR GLENWOOD STATION BY FREDERICK WARD ASSOCIATES, INC.
2. PRINCIPAL SPILLWAY AND DAM EMBANKMENT TO REMAIN UNCHANGED FROM DESIGN "SDP-01-108" FOR GLENWOOD STATION BY FREDERICK WARD ASSOCIATES, INC.
3. SEE SHEET LS15 FOR POND E LANDSCAPING PLAN AND DETAILS.

S.W.M. DESIGN SUMMARY								
DESIGN STORM	FACILITY INFLOW (cfs)	FACILITY OUTFLOW (cfs)	WATER SURFACE ELEVATION (FT)	EXISTING WATER SURFACE ELEVATION (FT)	STORAGE VOLUME AC. FT.	BYPASS DISCHARGE (cfs)	ALLOWABLE RELEASE AT DESIGN POINT (cfs)	DESIGN POINT "F" DISCHARGE (cfs)
1 Year	45.7	2.2	586.46	-	1.93	0.0	N/A	2.2
2 Year	68.6	5.3	586.84	586.25	2.54	0.0	12.2	5.3
10 Year	150.3	39.4	587.85	587.47	4.67	0.0	53.1	39.4
100 Year	247.5	99.2	588.70	588.59	6.88	0.0	112.3	99.2

STRUCTURE TYPE: DRY EXTENDED DETENTION POND
SURFACE AREA: 2.99 AC.
STRUCTURE HAZARD CLASSIFICATION: "A"
STORAGE-HEIGHT PRODUCT: 62.34
WATERSHED AREA TO FACILITY (ACRES): 44.58
LEVEL OF MANAGEMENT REQUIRED AND PROVIDED BY FACILITY: 2, 10, AND 100 YEAR (QUANTITY)

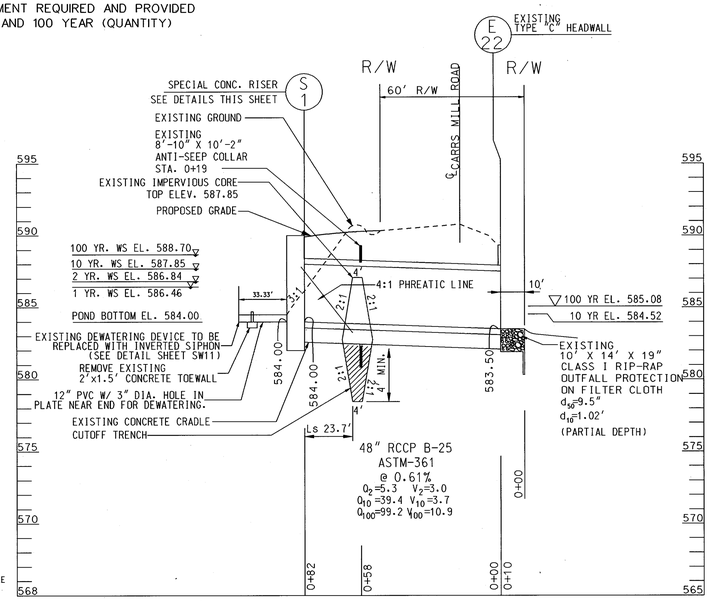
WATERSHED: CATTAIL CREEK
STREAM CLASS: III
FREEBOARD: 2.10 FT.
WATER QUALITY: EXTENDED DETENTION





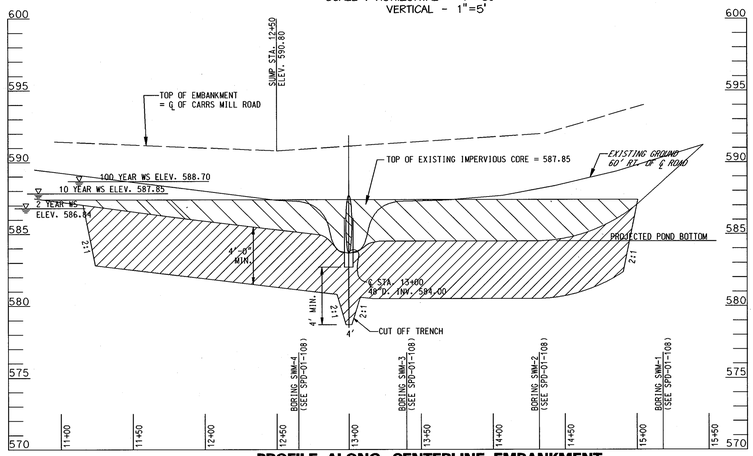
PRECAST STRUCTURE S-1 DETAIL (BY OTHERS)

SCALE: 1"=4'



SECTION THROUGH PRINCIPAL SPILLWAY

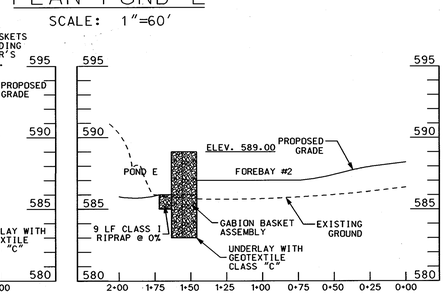
SCALE : HORIZONTAL - 1"=30'
VERTICAL - 1"=5'



PROFILE ALONG CENTERLINE EMBANKMENT

SCALE : HORIZONTAL - 1"=50'
VERTICAL - 1"=5'

NOTE:
ABOVE PROFILES TAKEN FROM DESIGN "SDP-01-108" FOR GLENWOOD STATION BY FREDERICK WARD ASSOCIATES, INC.

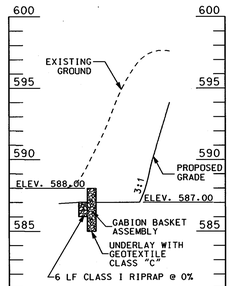


FOREBAY #2 CROSS-SECTION C-C

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

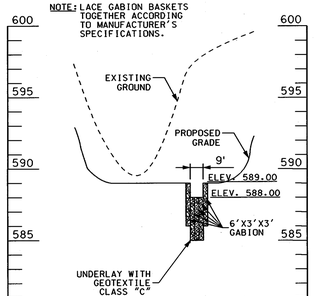
FOREBAY #2 CROSS-SECTION D-D

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



FOREBAY #1 CROSS-SECTION A-A

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



FOREBAY #1 CROSS-SECTION B-B

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

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER — DATE 10-17-02
HOWARD COUNTY HEALTH DEPARTMENT

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE 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."

RONALD G. LEPSON — SIGNATURE — DATE 9/4/02
NAME

ENGINEERS CERTIFICATE

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

MARK S. RICHMOND — SIGNATURE — 06/11/02 DATE
NAME

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 9/5/02

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

HOWARD SCD — DATE 9/5/02

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 01000057.S \ SWM05.DGN

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HUNT VALLEY, MARYLAND 21030
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WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

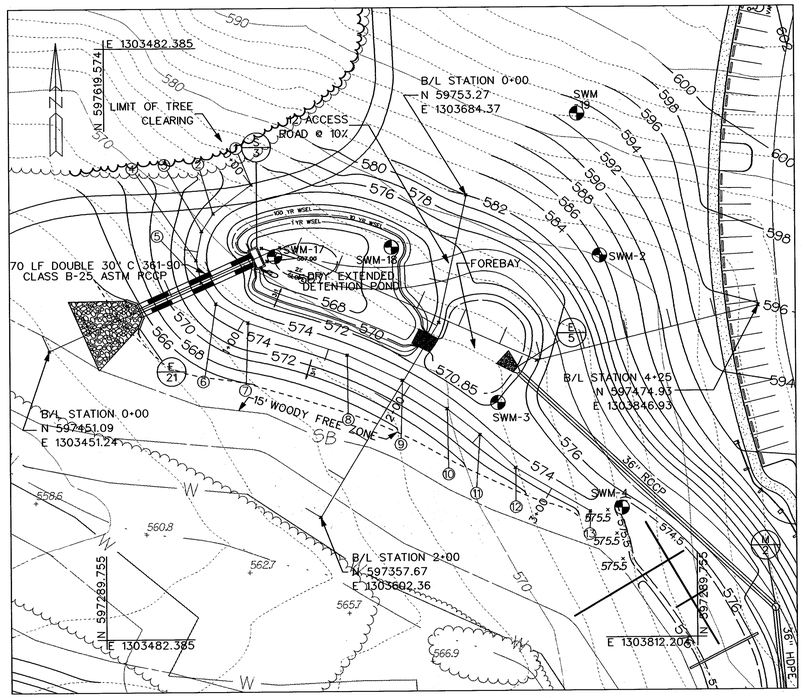
STORMWATER MANAGEMENT E PLAN AND DETAILS

SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SW4

SHEET NO.: 61 OF 113

SDP-02-64



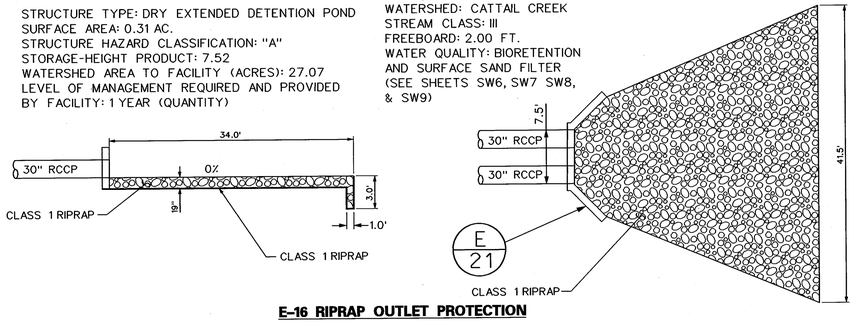
PLAN-POND F

SCALE 1"=40'

S.W.M. DESIGN SUMMARY							
DESIGN STORM	FACILITY INFLOW (cfs)	FACILITY OUTFLOW (cfs)	STAGE	STORAGE VOLUME AC. FT.	BYPASS DISCHARGE(cfs)	ALLOWABLE RELEASE AT DESIGN POINT(cfs)	DESIGN POINT DISCHARGE(cfs)
1 Year	4.2	0.6	570.73	0.31	6.6	6.9	6.6
2 Year	10.8	4.3	570.84	0.33	19.5	N/A	19.5
10 Year	41.9	41.6	571.24	0.40	86.9	N/A	114.8
100 Year	84.8	88.8	572.00	0.53	185.1	N/A	253.7

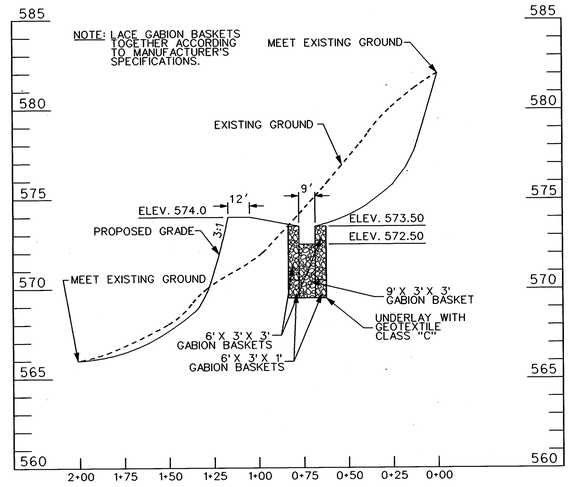
STRUCTURE TYPE: DRY EXTENDED DETENTION POND
SURFACE AREA: 0.31 AC.
STRUCTURE HAZARD CLASSIFICATION: "A"
STORAGE-HEIGHT PRODUCT: 7.52
WATERSHED AREA TO FACILITY (ACRES): 27.07
LEVEL OF MANAGEMENT REQUIRED AND PROVIDED BY FACILITY: 1 YEAR (QUANTITY)

WATERSHED: CATTAIL CREEK
STREAM CLASS: III
FREEBOARD: 2.00 FT.
WATER QUALITY: BIORETENTION AND SURFACE SAND FILTER (SEE SHEETS SW6, SW7 SW8, & SW9)



E-16 RIPRAP OUTLET PROTECTION

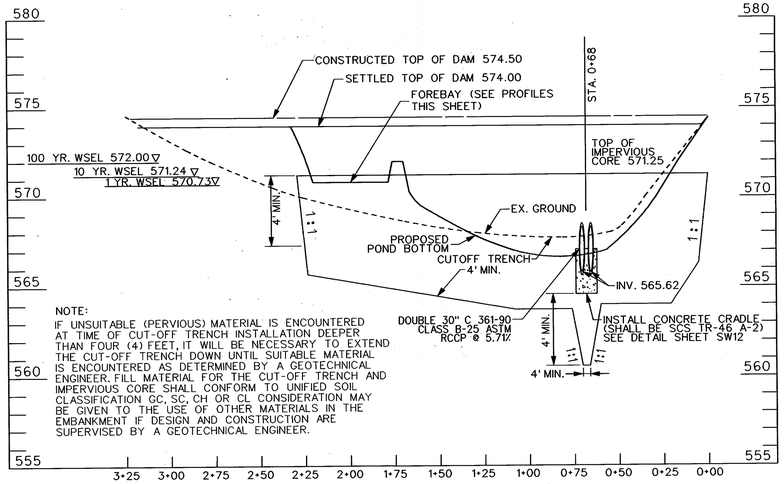
SCALE: 1" = 10'



FOREBAY CROSS-SECTION

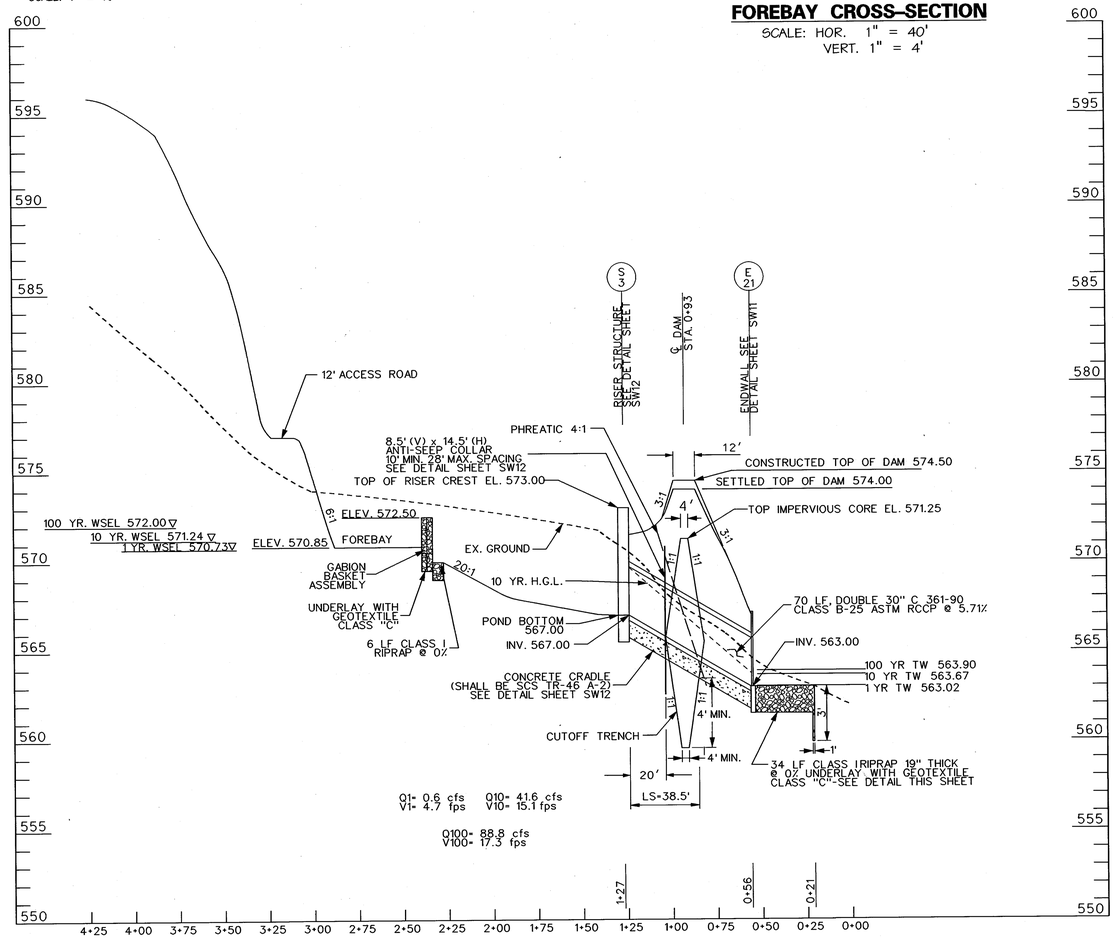
SCALE: HOR. 1" = 40'
VERT. 1" = 4'

SWM POND STATIONING (℄ OF EMBANKMENT)		
POINT	COORDINATES	
	NORTH	EAST
①	597543.528	1303564.414
②	597527.594	1303543.221
③	597517.799	1303536.663
④	597501.529	1303533.501
⑤	597488.864	1303536.373
⑥	597477.182	1303544.435
⑦	597466.496	1303562.282
⑧	597448.182	1303617.522
⑨	597433.822	1303648.198
⑩	597417.831	1303673.146
⑪	597403.267	1303691.452
⑫	597384.703	1303711.119
⑬	597360.293	1303752.697



PROFILE ALONG ℄ OF DAM

SCALE: HOR. 1" = 40'
VERT. 1" = 4'



PROFILE ALONG PRINCIPAL SPILLWAY

SCALE: HOR. 1" = 40'
VERT. 1" = 4'

NOTES: 1. SEE SHEET LS16 FOR POND F LANDSCAPING PLAN AND DETAILS.

2. SEE SHEETS SW6, SW7, SW8, AND SW9, FOR WATER QUALITY PLANS AND DETAILS IN SUB-AREA F.

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, HOWARD COUNTY HEALTH DEPARTMENT — DATE 10-17-02

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE 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."

RONALD G. LEPSON (NAME) — SIGNATURE — 9/4/02 DATE

ENGINEER'S CERTIFICATE

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

MARK S. RICHMOND (NAME) — Mark S. Richmond (SIGNATURE) — 06/11/02 DATE

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 9/5/02

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

HOWARD SCD — DATE 9/5/02

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 01000057.S \ SWM07.DGN

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PHONE: (410) 316-7800 FAX: (410) 316-7817
TECHNOLOGIES WWW.KCI.COM

STATE OF MARYLAND — MARK S. RICHMOND — No. 10858 — REGISTERED PROFESSIONAL ENGINEER

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410) - 313-4640

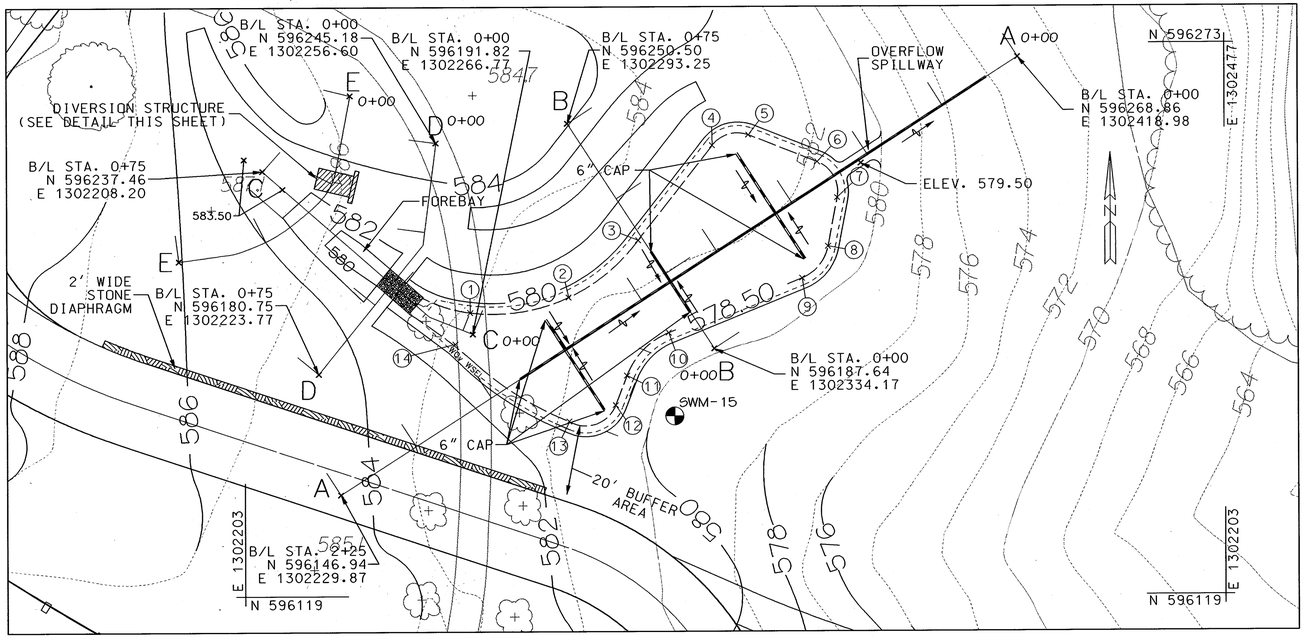
STORMWATER MANAGEMENT F PLAN AND PROFILES

SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SW5

SHEET NO.: 62 OF 113

SDP-02-64



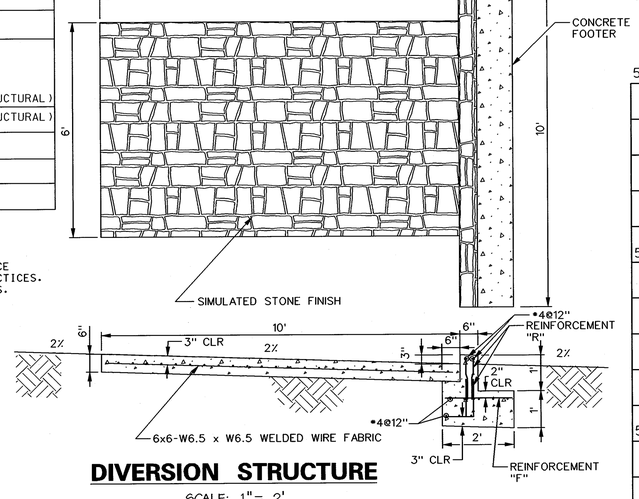
BIORETENTION F1 PLAN

SCALE: 1" = 20'

CONTROL POINTS OF BIORETENTION F1		
POINT	COORDINATES	
	NORTH	EAST
①	596197.828	1302266.069
②	596202.042	1302293.518
③	596217.963	1302312.939
④	596244.395	1302333.717
⑤	596247.320	1302343.801
⑥	596239.780	1302363.008
⑦	596229.805	1302368.576
⑧	596216.179	1302365.995
⑨	596207.298	1302358.729
⑩	596192.108	1302321.414
⑪	596180.192	1302309.729
⑫	596171.918	1302306.549
⑬	596167.397	1302293.572
⑭	596189.009	1302261.890

S.W.M. SIZING CRITERIA SUMMARY BIORETENTION F1		
	REQUIRED	PROVIDED
WQ_v	1.51 AC.-FT.	0.11 AC.-FT. (BR-F1) 0.16 AC.-FT. (SF-F2) 0.08 AC.-FT. (BR-F3) 0.10 AC.-FT. (BR-F4) 1.06 AC.-FT. (NON-STRUCTURAL)
Re_v	0.21 AC.-FT.	0.21 AC.-FT. (NON-STRUCTURAL)
Cp_v	0.52 AC.-FT.	0.52 AC.-FT. (POND F)
Qp_{10}	NOT REQUIRED	N/A
Qp_{100}	NOT REQUIRED	N/A

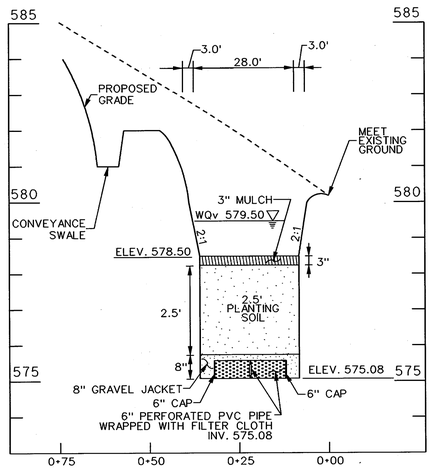
STRUCTURE TYPE: BIORETENTION
STRUCTURE HAZARD CLASSIFICATION: "A"
TOTAL AREA DRAINING TO FACILITY 3.32 AC.
WQ_v PROVIDED IN BIORETENTION FACILITY, SURFACE SAND FILTER, AND THROUGH NON-STRUCTURAL PRACTICES.
Re_v PROVIDED THROUGH NON-STRUCTURAL PRACTICES.
Cp_v PROVIDED IN DRY EXTENDED DETENTION POND (SEE SHEET SW5).



DIVERSION STRUCTURE

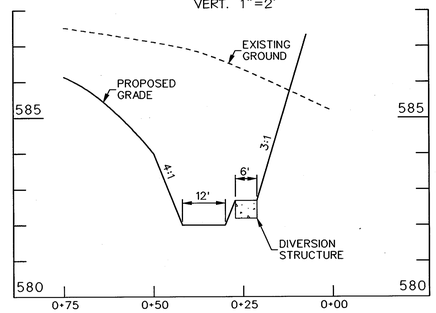
SCALE: 1"= 2'

NOTE: TOP OF SIMULATED STONE FINISH TO BE SET AT GRADE.



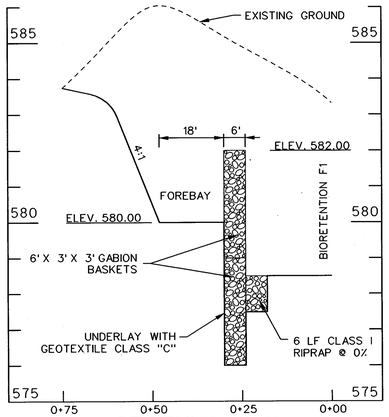
SECTION B–B

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



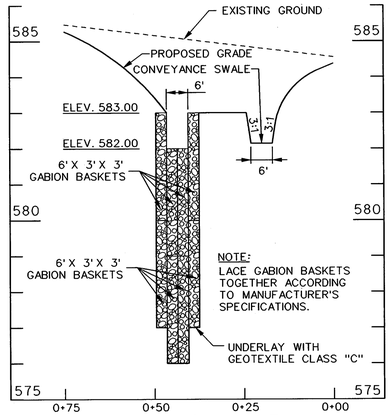
SECTION E–E

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



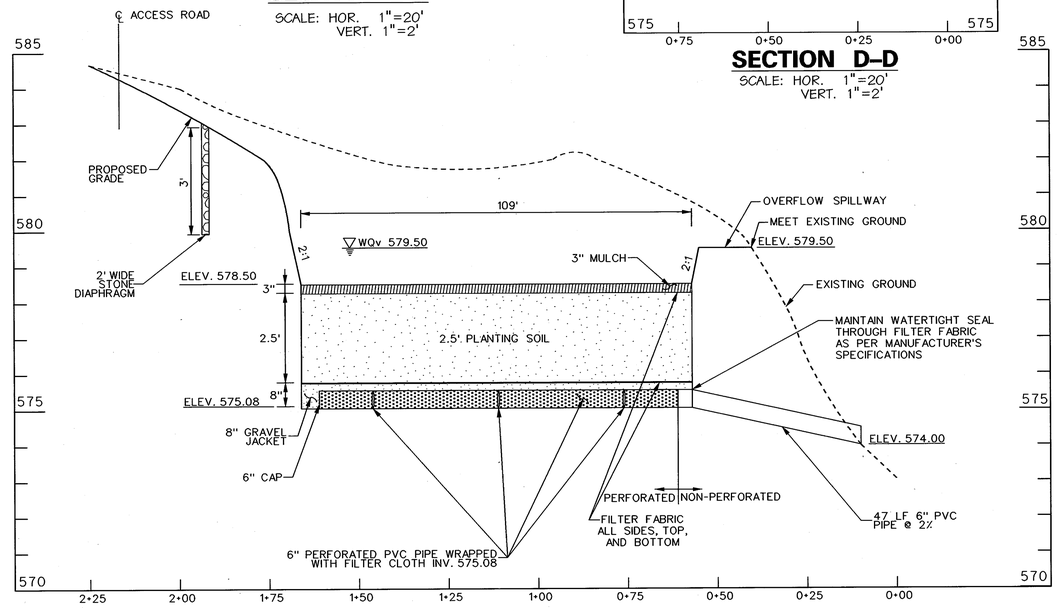
SECTION C–C

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



SECTION D–D

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



SECTION A–A

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

NOTES: 1. SEE SHEET SW13 FOR CONSTRUCTION AND MAINTENANCE NOTES AND MATERIAL SPECIFICATIONS.

2. SEE SHEET LS17 FOR BIORETENTION LANDSCAPING PLAN.

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, H.C.H.D. — DATE 10-17-02
HOWARD COUNTY HEALTH DEPARTMENT

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE 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."

RONALD G. LEPSON — SIGNATURE — 9/4/02
NAME — DATE

ENGINEERS CERTIFICATE

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

MARK.S. RICHMOND — SIGNATURE — 06/11/02
NAME — DATE

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 9/5/02

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

HOWARD SCD — DATE 9/5/02

NO.	REVISIONS	DESCRIPTION	DATE

KCI FILE:

KCI TECHNOLOGIES INC.
ENGINEERS • PLANNERS • SURVEYORS
10 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
TECHNOLOGIES WWW.KCI.COM

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

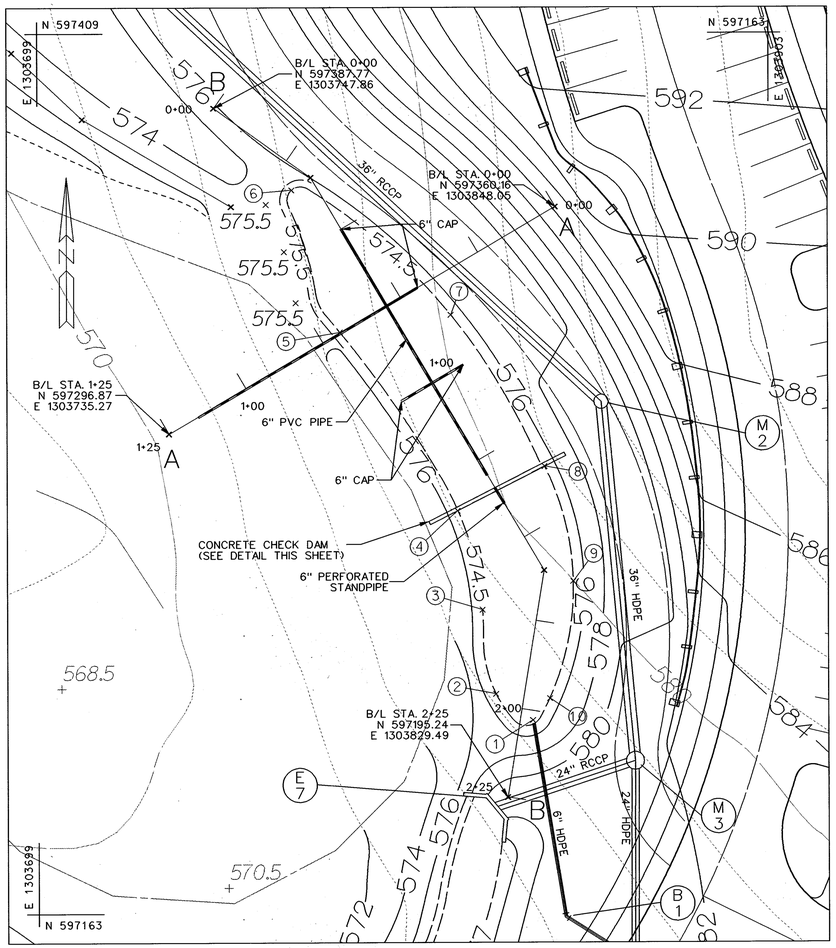
BIORETENTION F1 PLAN AND PROFILE

SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SW6

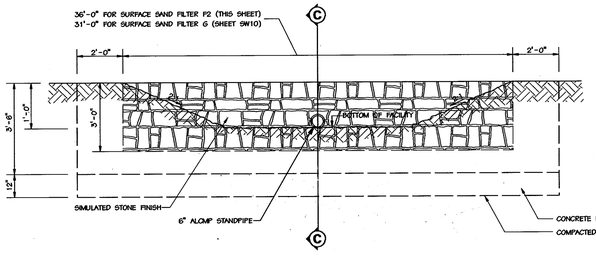
SHEET NO.: 63 OF 113

SDP-02-64



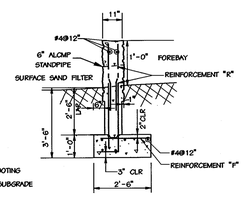
PLAN – SURFACE SAND FILTER F2

SCALE 1"=20'



CHECK DAM

NOT TO SCALE



SECTION C–C

NOT TO SCALE

CONTROL POINTS OF SURFACE SAND FILTER F2

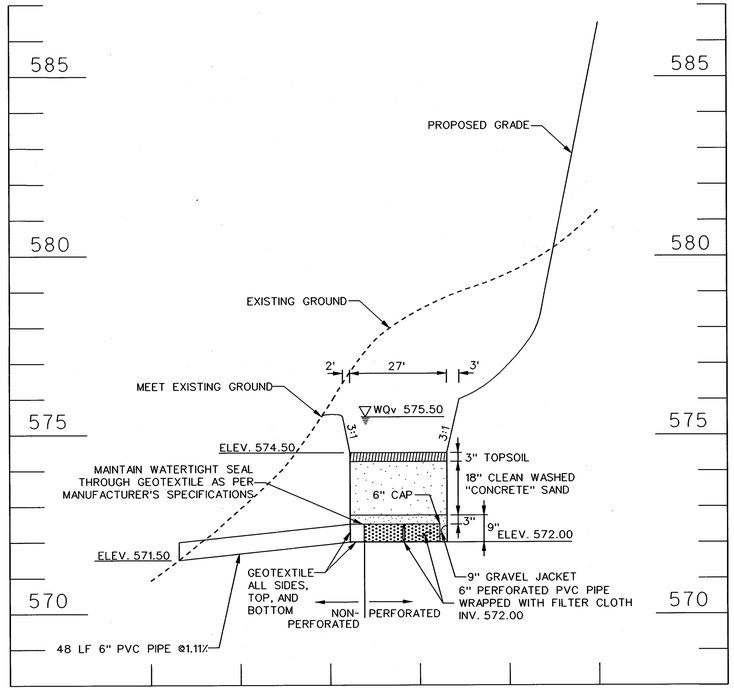
POINT	COORDINATES	
	NORTH	EAST
①	597216.78	1303836.54
②	597224.13	1303826.27
③	597247.66	1303822.59
④	597275.32	1303815.69
⑤	597325.30	1303783.03
⑥	597364.91	1303769.60
⑦	597330.10	1303813.94
⑧	597287.70	1303839.99
⑨	597255.61	1303847.88
⑩	597222.85	1303841.33

S.W.M. SIZING CRITERIA SUMMARY (AREA F)

	REQUIRED	PROVIDED
WQ_v	1.51 AC.-FT.	0.11 AC.-FT. (BR-F1) 0.16 AC.-FT. (SF-F2) 0.08 AC.-FT. (BR-F3) 0.10 AC.-FT. (BR-F4) 1.06 AC.-FT. (NON-STRUCTURAL)
Re_v	0.21 AC.-FT.	0.21 AC.-FT. (NON-STRUCTURAL)
*Cp_v	0.52 AC.-FT.	0.52 AC.-FT. (POND F)
Qp_{10}	NOT REQUIRED	N/A
Qp_{100}	NOT REQUIRED	N/A

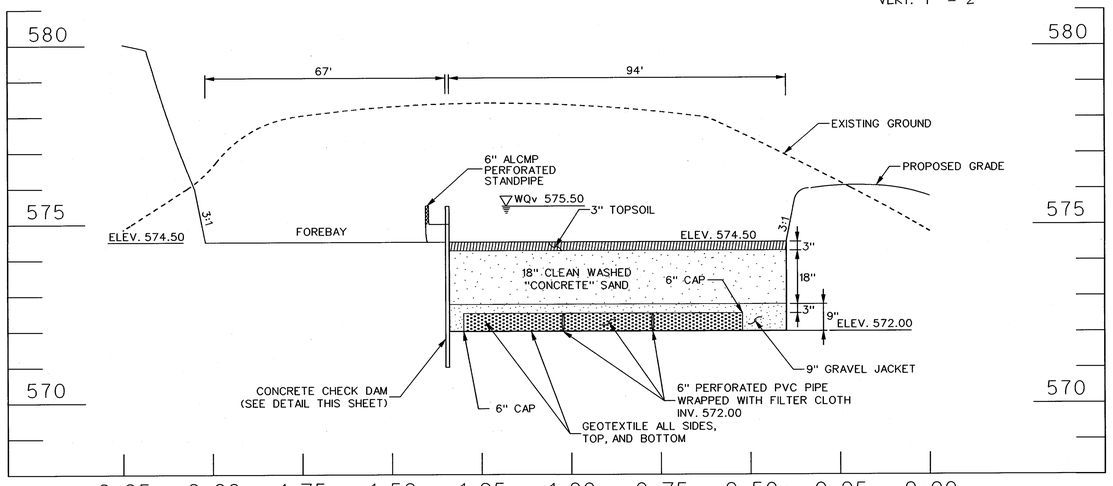
STRUCTURE TYPE: SURFACE SAND FILTER
STRUCTURE HAZARD CLASSIFICATION: "A"
TOTAL AREA DRAINING TO FACILITY: 11.94 AC.
WQ_v PROVIDED IN BIORETENTION FACILITIES, A SURFACE SAND FILTER, AND THROUGH NON-STRUCTURAL PRACTICES.
Re_v PROVIDED THROUGH NON-STRUCTURAL PRACTICES.
Cp_v PROVIDED IN DRY EXTENDED DETENTION POND (SEE SHEET SW5).

* FOR SUB AREA F-2



SECTION A–A

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



SECTION B–B

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

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11/26/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, M.D. — DATE 10-17-02
HOWARD COUNTY HEALTH DEPARTMENT

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE 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."

NAME RONALD G. LEPSON — SIGNATURE — DATE 9/4/02

ENGINEERS CERTIFICATE

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

NAME MARK S. RICHMOND — SIGNATURE Mark S. Richmond — DATE 06/11/02

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 9/5/02

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

HOWARD SCD — DATE 9/5/02

NOTES:
1. SEE SHEET SW13 FOR CONSTRUCTION AND MAINTENANCE NOTES AND MATERIAL SPECIFICATIONS.
2. SEE SHEET LS16 FOR SURFACE SAND FILTER LANDSCAPING PLAN.

NO.	REVISION/S DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 01000057.5 \ SWM09.DGN

KCI TECHNOLOGIES INC.
ENGINEERS • PLANNERS • SURVEYORS
10 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
KCI TECHNOLOGIES WWW.KCI.COM

PROFESSIONAL ENGINEER — STATE OF MARYLAND — RONALD G. LEPSON — No. 21436

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

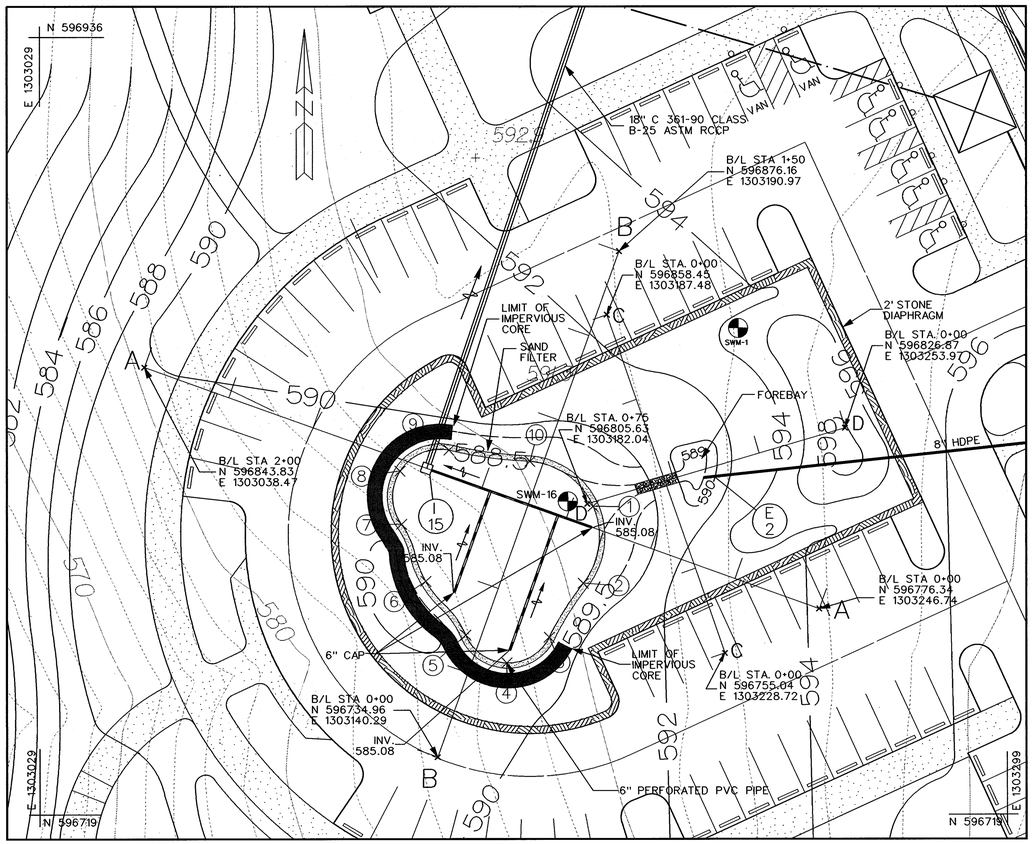
SURFACE SAND FILTER F2 PLAN AND PROFILES

SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SW7

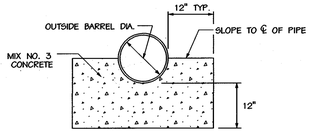
SHEET NO.: 64 OF 113

SDP-02-64



BIORETENTION F3 PLAN
SCALE: 1" = 20'

CONTROL POINTS OF BIORETENTION F3		
POINT	COORDINATES	
	NORTH	EAST
①	596804.943	1303183.621
②	596783.479	1303180.863
③	596768.431	1303171.385
④	596761.295	1303159.576
⑤	596769.018	1303148.142
⑥	596784.077	1303136.984
⑦	596799.968	1303130.221
⑧	596814.829	1303129.831
⑨	596820.869	1303143.317
⑩	596817.562	1303166.041



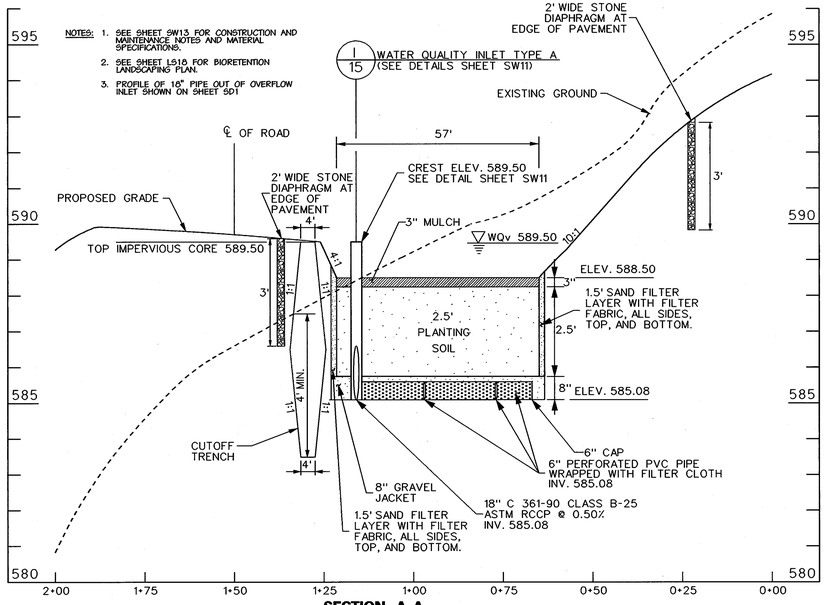
PIPE BEDDING CONCRETE CRADLE
NOT TO SCALE

NOTES:
1. USE SCS TR-46 A-2 CONCRETE CRADLE.
2. THE CONCRETE CRADLE SHALL BE SLOPED TO MEET THE SPRING LINE OF THE PIPE.

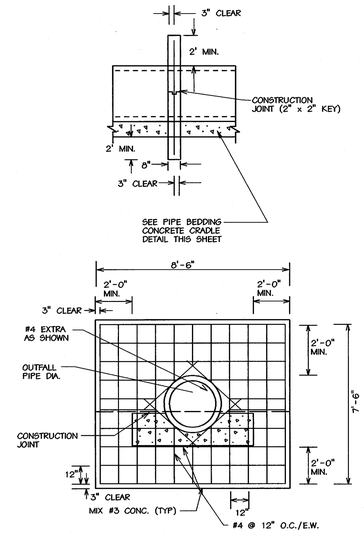
S.W.M. SIZING CRITERIA SUMMARY (AREA F)		
	REQUIRED	PROVIDED
WQ_V	1.51 AC.-FT.	0.11 AC.-FT. (BR-F1) 0.16 AC.-FT. (SF-F2) 0.08 AC.-FT. (BR-F3) 0.10 AC.-FT. (BR-F4) 1.06 AC.-FT. (NON-STRUCTURAL)
Re_V	0.21 AC.-FT.	0.21 AC.-FT. (NON-STRUCTURAL)
*Cp_V	0.52 AC.-FT.	0.52 AC.-FT. (POND F)
Qp_{10}	NOT REQUIRED	N/A
Qp_{100}	NOT REQUIRED	N/A

STRUCTURE TYPE: BIORETENTION
STRUCTURE HAZARD CLASSIFICATION: "A"
TOTAL ON-SITE AREA DRAWING TO FACILITY: 1.80 AC.
WQ_V PROVIDED IN BIORETENTION FACILITIES, A SURFACE SAND FILTER, AND THROUGH NON-STRUCTURAL PRACTICES.
Re_V PROVIDED THROUGH NON-STRUCTURAL PRACTICES
Cp_V PROVIDED IN DRY EXTENDED DETENTION POND (SEE SHEET SW5).

* FOR SUB AREA F2

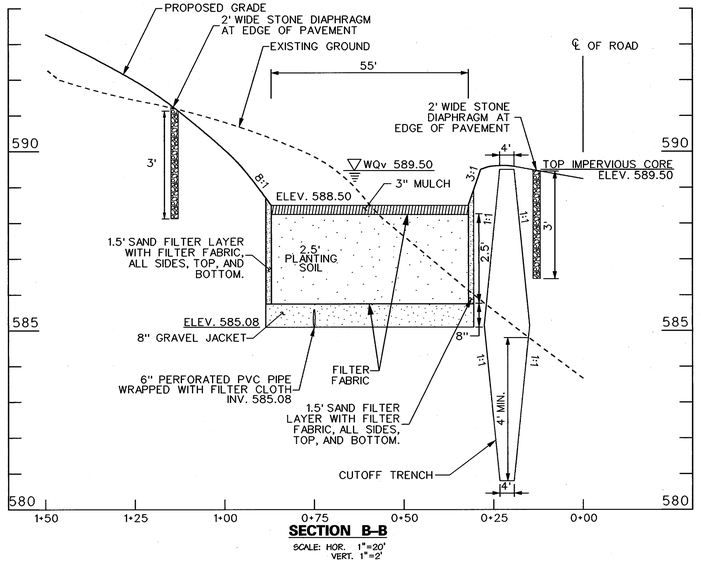


SECTION A-A
SCALE: HOR. 1"=20'
VERT. 1"=2'

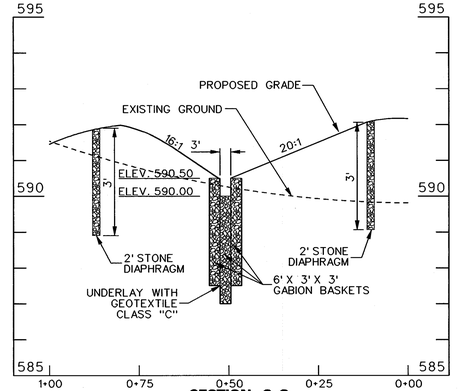


CONCRETE ANTI-SEEP COLLAR (1 REQ'D.)
NOT TO SCALE

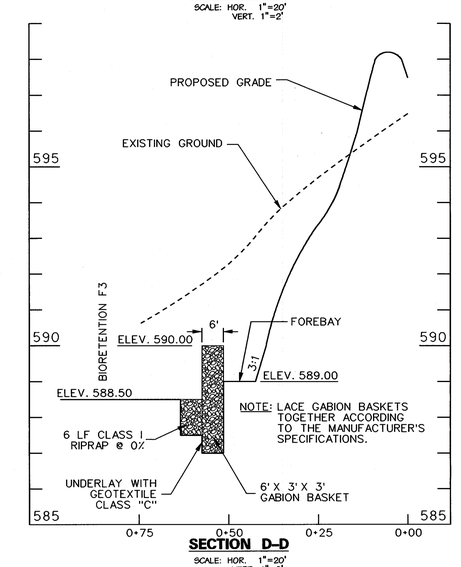
NOTES: 1. ANTI-SEEP COLLAR SHALL BE FORMED IN 2 POURS.
2. ANTI-SEEP COLLARS TO BE PLACED A MINIMUM OF 2' FROM ANY PIPE JOINT.



SECTION B-B
SCALE: HOR. 1"=20'
VERT. 1"=2'



SECTION C-C
SCALE: HOR. 1"=20'
VERT. 1"=2'



SECTION D-D
SCALE: HOR. 1"=20'
VERT. 1"=2'

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, M.D. — DATE 10-17-02
HOWARD COUNTY HEALTH DEPARTMENT

DEVELOPER'S CERTIFICATE

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RONALD G. LEPSON — NAME — SIGNATURE — DATE 9/4/02

ENGINEERS CERTIFICATE

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MARK S. RICHMOND — NAME — SIGNATURE — DATE 06/11/02

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 9/5/02

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

HOWARD SCD — DATE 9/5/02

NO.	REVISIONS	DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 01000057.5 \ SWM02.DGN

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HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
KCI TECHNOLOGIES WWW.KCI.COM

STATE OF MARYLAND — MARK S. RICHMOND — 21586 — REGISTERED PROFESSIONAL ENGINEER

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

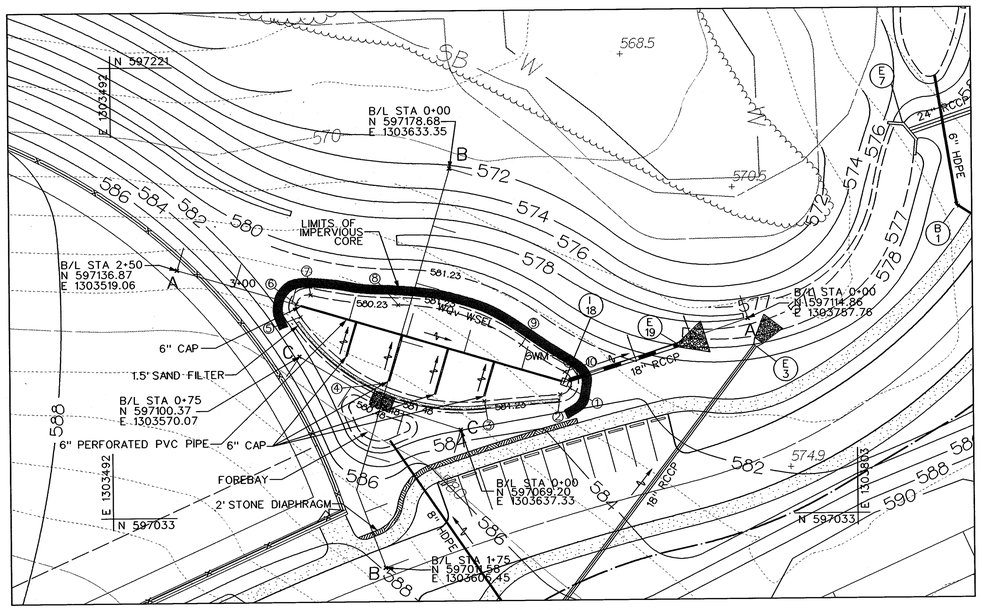
BIORETENTION F3 PLAN AND PROFILES

SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SW8

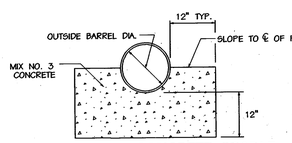
SHEET NO.: 65 OF 113

SDP-02-64



BIORETENTION F4 PLAN

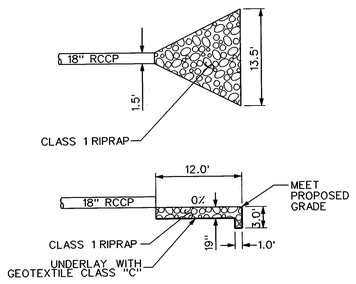
SCALE: 1"=30'



PIPE BEDDING CONCRETE CRADLE

NOT TO SCALE

NOTES:
1. USE SCS TR-46 A-2 CONCRETE CRADLE.
2. THE CONCRETE CRADLE SHALL BE SLOPED TO MEET THE SPRING LINE OF THE PIPE.



E-19 RIPRAP OUTLET PROTECTION

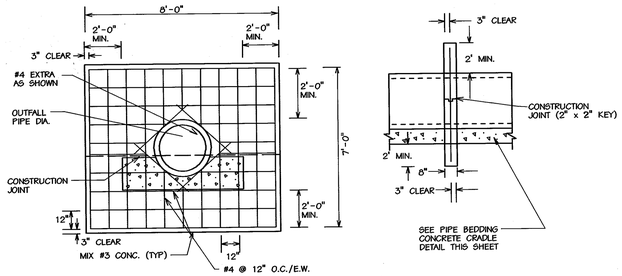
SCALE: 1" = 10'

S.W.M. SIZING CRITERIA SUMMARY (AREA F)		
	REQUIRED	PROVIDED
WQ_v	1.51 AC.-FT.	0.11 AC.-FT. (BR-F1) 0.16 AC.-FT. (SF-F2) 0.08 AC.-FT. (BR-F3) 0.10 AC.-FT. (BR-F4) 1.06 AC.-FT. (NON-STRUCTURAL)
Re_v	0.21 AC.-FT.	N/A
*Cp_v	0.52 AC.-FT.	N/A
Op_{10}	NOT REQUIRED	N/A
Op_{100}	NOT REQUIRED	N/A

STRUCTURE TYPE: BIORETENTION
STRUCTURE HAZARD CLASSIFICATION: "A"
TOTAL AREA DRAINING TO FACILITY: 6.00 AC.
WQ_v PROVIDED IN BIORETENTION FACILITIES, A SURFACE SAND FILTER, AND THROUGH NON-STRUCTURAL PRACTICES.
Re_v PROVIDED THROUGH NON-STRUCTURAL PRACTICES
Cp_v PROVIDED IN DRY EXTENDED DETENTION POND (SEE SHEET SW5).

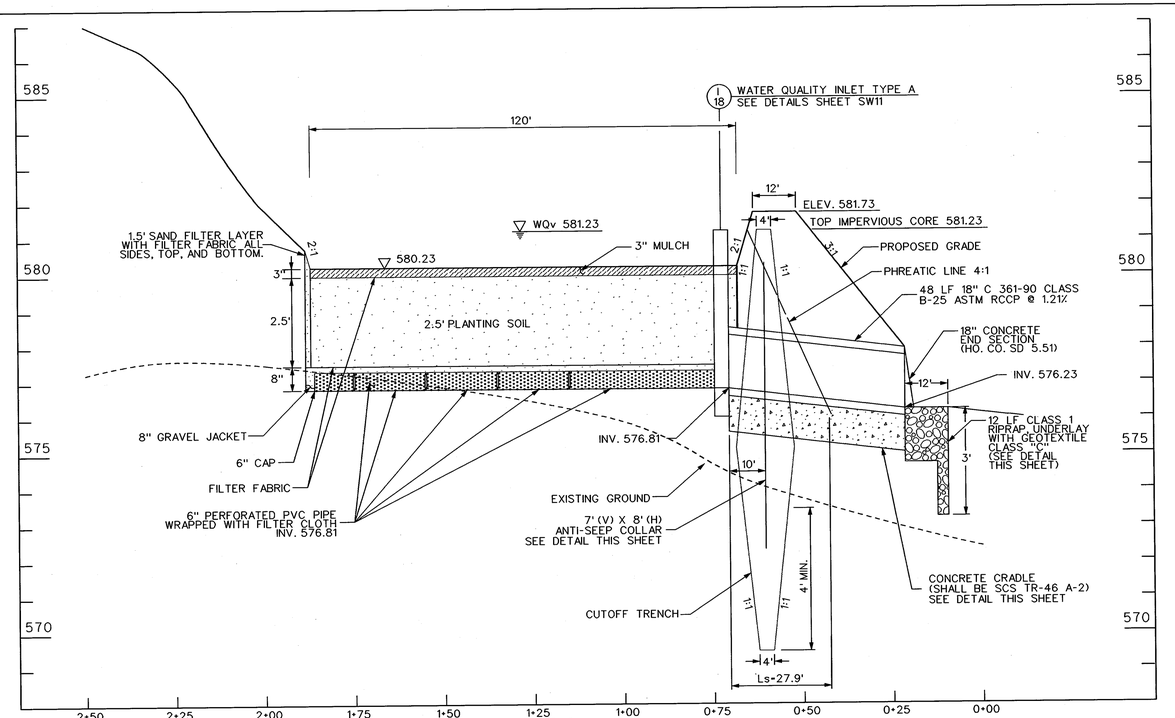
* FOR SUB AREA F2

NOTES:
1. ANTI-SEEP COLLAR SHALL BE FORMED IN 2 POURS.
2. ANTI-SEEP COLLARS TO BE PLACED A MINIMUM OF 2' FROM ANY PIPE JOINT.



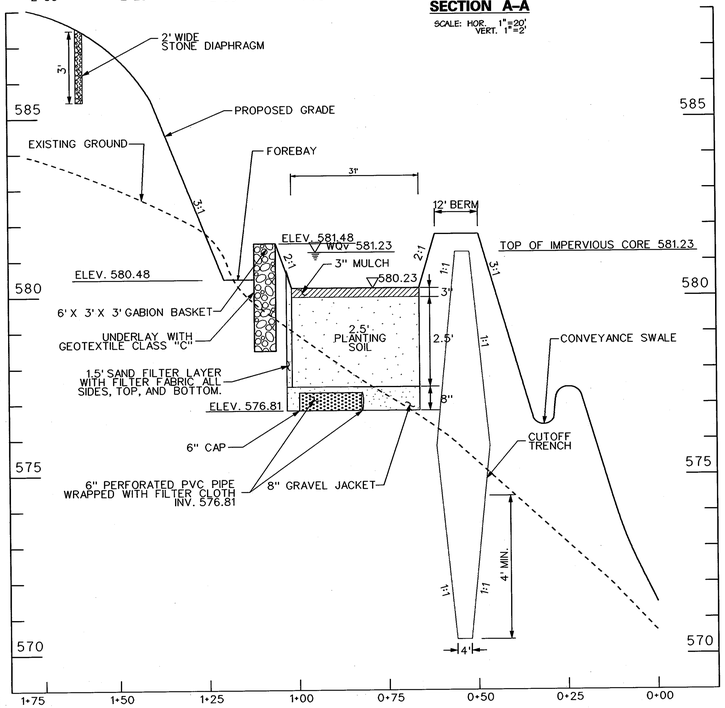
CONCRETE ANTI-SEEP COLLAR (1 REQ'D.)

NOT TO SCALE



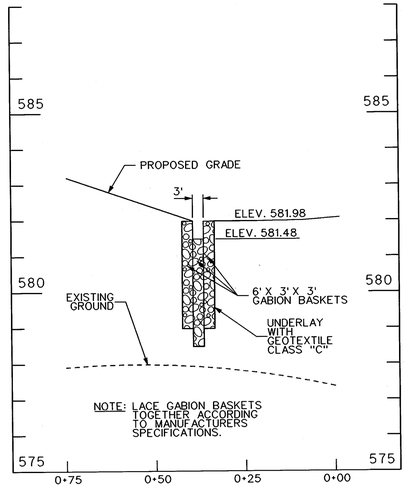
SECTION A-A

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



SECTION B-B

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



SECTION C-C

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

CONTROL POINTS OF BIORETENTION F4		
POINT	COORDINATES	
	NORTH	EAST
①	597086.281	1303683.131
②	597083.610	1303679.008
③	597081.091	1303647.296
④	597088.506	1303604.007
⑤	597116.897	1303570.704
⑥	597122.344	1303568.941
⑦	597126.073	1303574.949
⑧	597121.672	1303611.603
⑨	597104.443	1303662.859
⑩	597093.030	1303681.022

NOTES:
1. SEE SHEET SW13 FOR CONSTRUCTION AND MAINTENANCE NOTES AND MATERIAL SPECIFICATIONS.
2. SEE SHEET L519 FOR BIORETENTION LANDSCAPING PLAN.

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, H.C.H.D. — DATE 10-17-02

HOWARD COUNTY HEALTH DEPARTMENT

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE 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."

RONALD G. LEPSON — NAME — SIGNATURE — DATE 9/4/02

ENGINEERS CERTIFICATE

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MARK S. RICHMOND — NAME — SIGNATURE — DATE 06/11/02

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 9/5/02

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

HOWARD SCD — DATE 9/5/02

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 01000057.S \ SWM03.DGN

KCI TECHNOLOGIES INC.
ENGINEERS • PLANNERS • SURVEYORS
10 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
KCI TECHNOLOGIES WWW.KCI.COM

STATE OF MARYLAND — REGISTERED PROFESSIONAL ENGINEER

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
3430 COURTHOUSE DRIVE
ELLICOTT CITY, MARYLAND 21043-4640
COLUMBIA (410)-313-4640

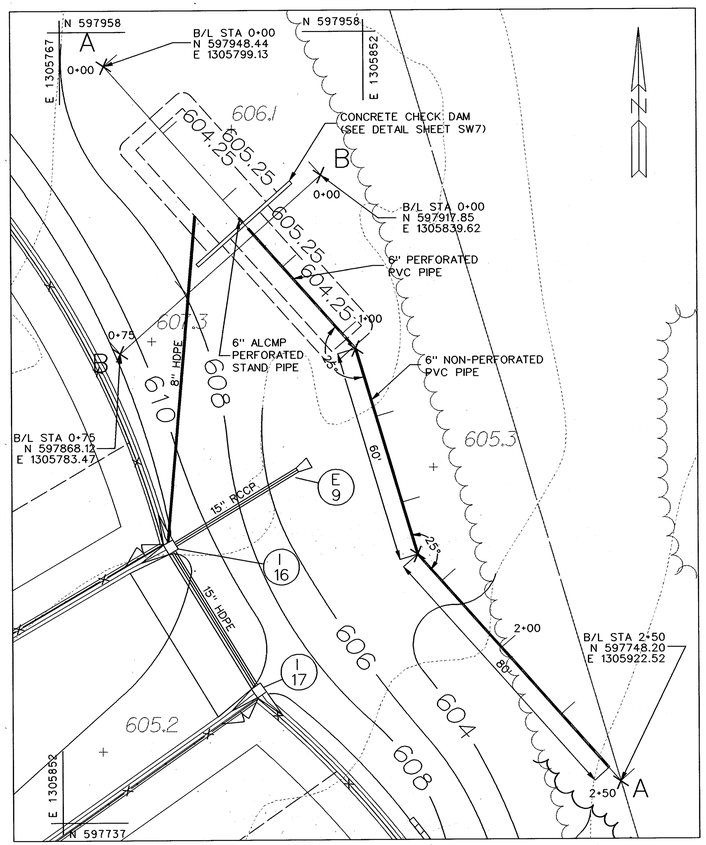
BIORETENTION F4 PLAN AND PROFILES

SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SW9

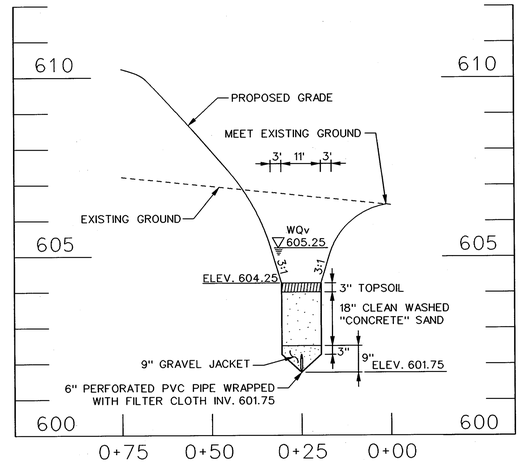
SHEET NO.: 66 OF 113

SDP-02-64



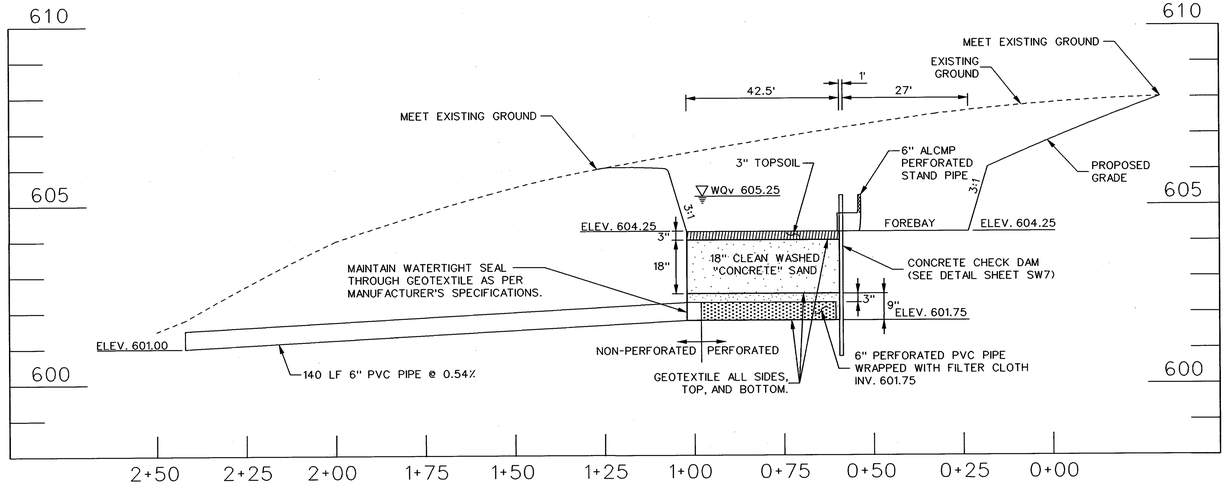
SURFACE SAND FILTER G PLAN

SCALE 1"=20'



SECTION B–B

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



SECTION A–A

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

NOTES:

1. SEE SHEET SW13 FOR CONSTRUCTION AND MAINTENANCE NOTES AND MATERIAL SPECIFICATIONS.
2. SEE SHEET LS20 FOR SURFACE SAND FILTER LANDSCAPING PLAN.

S.W.M. SIZING CRITERIA SUMMARY (AREA G)		
	REQUIRED	PROVIDED
WQ_v	0.13 AC.-FT.	0.06 AC.-FT (DS-1) 0.04 AC.-FT (SF-G) 0.03 AC.-FT (NON-STRUCTURAL)
Re_v	0.03 AC.-FT.	0.03 AC.-FT. (NON-STRUCTURAL)
Cp_v	NOT REQUIRED	N/A
Qp_{10}	NOT REQUIRED	N/A
Qp_{100}	NOT REQUIRED	N/A

STRUCTURE TYPE: DRY SWALE
STRUCTURE HAZARD CLASSIFICATION: "A"
TOTAL AREA OF DRAINAGE AREA G: 8.78 AC.
WQ_v PROVIDED IN DRY SWALES AND NON-STRUCTURALLY THROUGH NATURAL AREA CONSERVATION.
Re_v PROVIDED THROUGH NON STRUCTURAL PRACTICES (DISCONNECTION OF NON-ROOFTOP RUNOFF).

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/24/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, H.C.H.D. — DATE 10-17-02
HOWARD COUNTY HEALTH DEPARTMENT

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE 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."

NAME: RONALD G. LEPSON — SIGNATURE — DATE 9/4/02

ENGINEERS CERTIFICATE

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

NAME: MARK S. RICHMOND — SIGNATURE: Mark S. Richmond — DATE 06/11/02

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 9/5/02

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

HOWARD SCD — DATE 9/5/02

NO.	REVISIONS	DESCRIPTION	DATE

KCI FILE:

KCI TECHNOLOGIES INC.
ENGINEERS • PLANNERS • SURVEYORS
10 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
KCI TECHNOLOGIES WWW.KCI.COM

STATE OF MARYLAND — MARK S. RICHMOND — No. 21598 — REGISTERED PROFESSIONAL ENGINEER

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

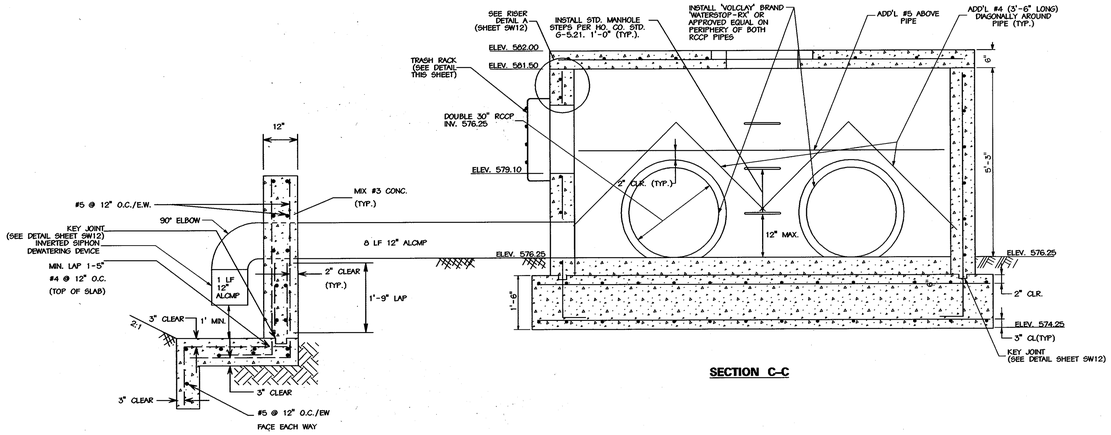
SURFACE SAND FILTER G PLAN AND PROFILES

SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

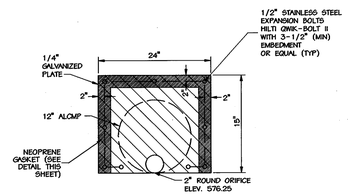
SW10

SHEET NO.: 67 OF 113

SDP-02-64

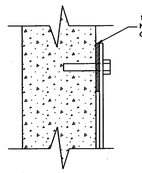


SECTION C–C



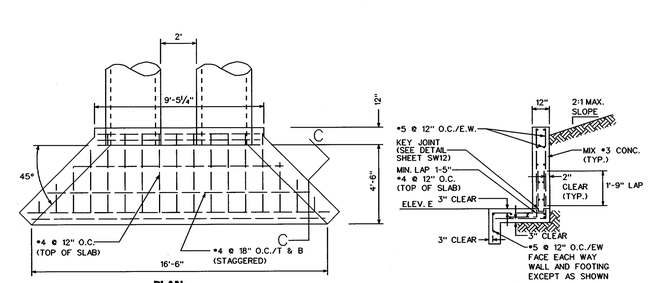
ORIFICE PLATE DETAIL FOR POND F

NOT TO SCALE



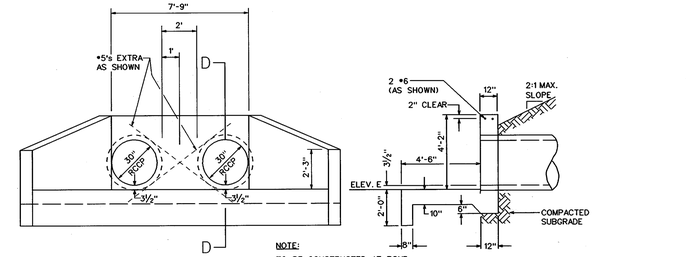
ORIFICE GASKET DETAIL

NOT TO SCALE



PLAN

SECTION C–C



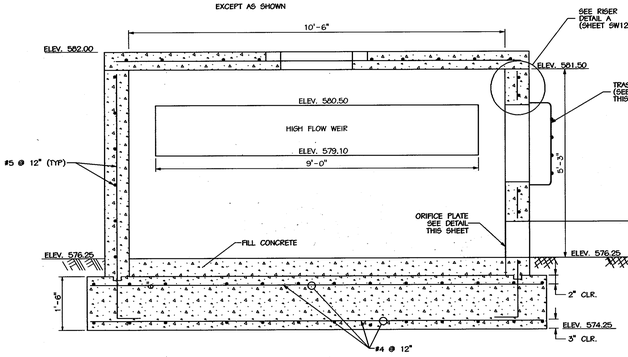
ELEVATION

NOTE:
TO BE CONSTRUCTED AT POND FACILITIES B AND F WHERE NOTED ON PLANS.

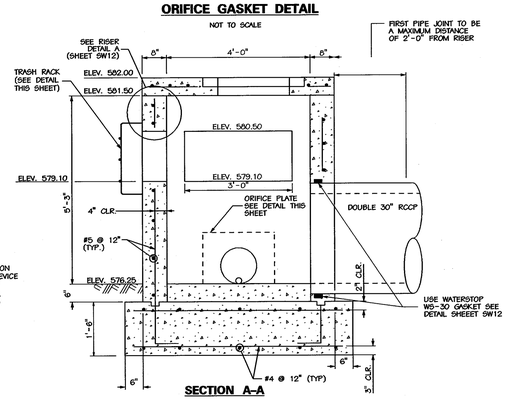
SECTION D–D

PONDS B AND F OUTFALL STRUCTURE DETAILS

SCALE: 1" = 4'



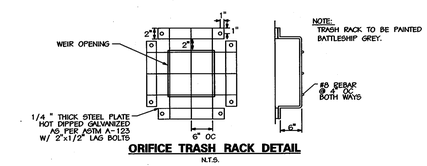
SECTION B–B



FIRST PIPE JOINT TO BE A MAXIMUM DISTANCE OF 2'-0" FROM RISER

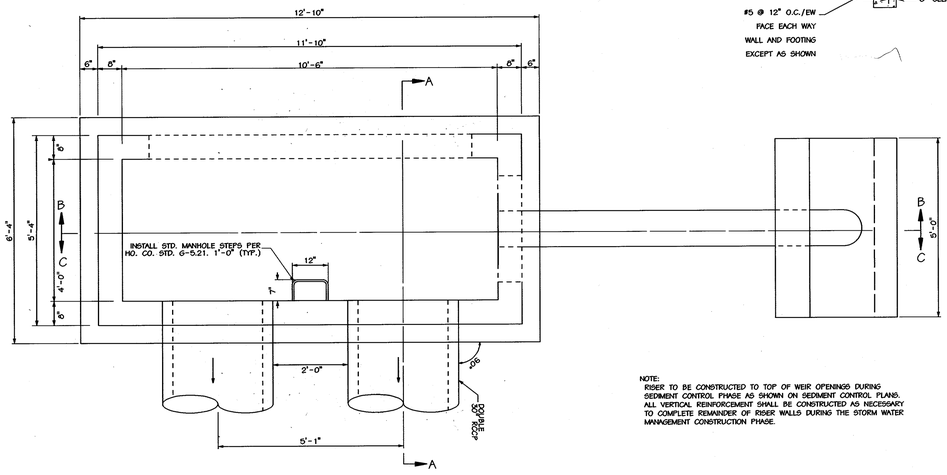
USE WATERSTOP WS-30 GASKET SEE DETAIL SHEEET SW12

SECTION A–A



ORIFICE TRASH RACK DETAIL

N.T.S.

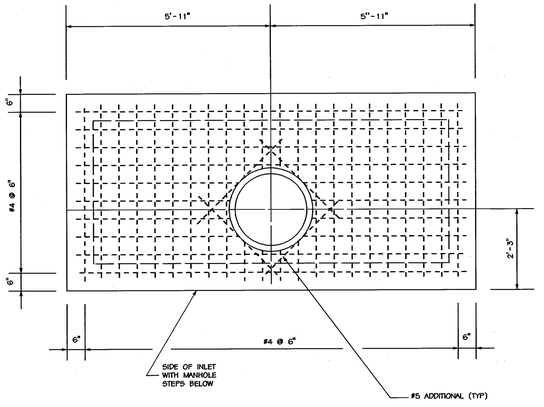


PLAN

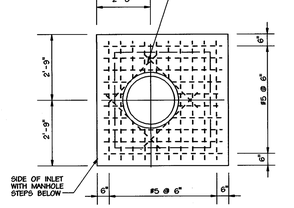
NOTE:
RISER TO BE CONSTRUCTED TO TOP OF WEIR OPENINGS DURING SEDIMENT CONTROL PHASE AS SHOWN ON SEDIMENT CONTROL PLANS. ALL VERTICAL REINFORCEMENT SHALL BE CONSTRUCTED AS NECESSARY TO COMPLETE REMAINDER OF RISER WALLS DURING THE STORM WATER MANAGEMENT CONSTRUCTION PHASE.

CONCRETE RISER DETAILS FOR POND B

SCALE: 1" = 2'

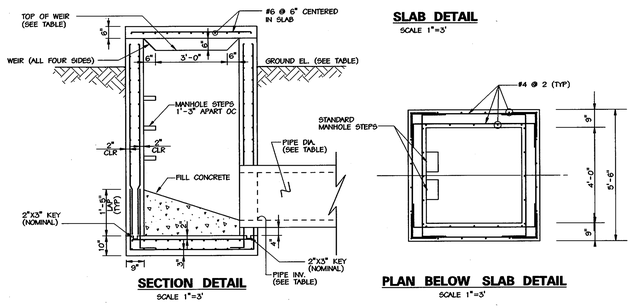


TOP SLAB DETAIL



SLAB DETAIL

SCALE 1"=3'



SECTION DETAIL

SCALE 1"=3'

PLAN BELOW SLAB DETAIL

SCALE 1"=3'

WATER QUALITY INLET TYPE A DETAILS

SCALE 1"=3'

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11/20/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, HOWARD COUNTY HEALTH DEPARTMENT — DATE 10-17-02

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE 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."

RONALD G. LEPSON — SIGNATURE — DATE 9/4/02

ENGINEERS CERTIFICATE

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

MARK S. RICHMOND — SIGNATURE — DATE 06/11/02

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 9/5/02

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

HOWARD SCD — DATE 9/5/02

WATER QUALITY INLET TYPE A STRUCTURE TABLE				
SEE SHT	GROUND EL.	PIPE SIZE	PIPE INV.	WEIR EL.
SW8	588.5	18"	585.08	589.5
SW9	581.0	18"	577.58	582.0

NO.	REVISIONS	DESCRIPTION	DATE

KCI FILE:

KCI TECHNOLOGIES INC.
ENGINEERS • PLANNERS • SURVEYORS
10 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
KCI TECHNOLOGIES WWW.KCI.COM

STATE OF MARYLAND — MARK S. RICHMOND — 21433 — REGISTERED PROFESSIONAL ENGINEER

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

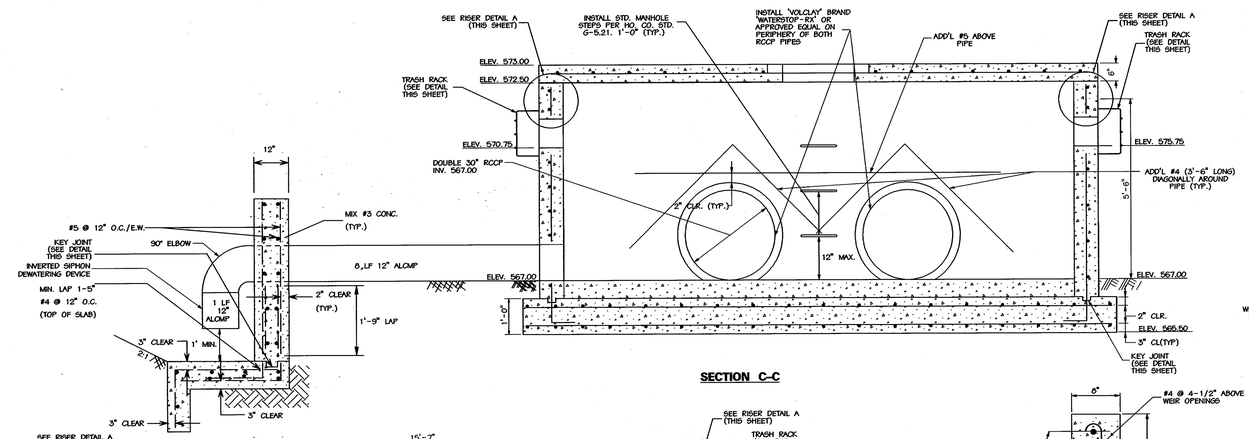
STORMWATER MANAGEMENT NOTES AND DETAILS

SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

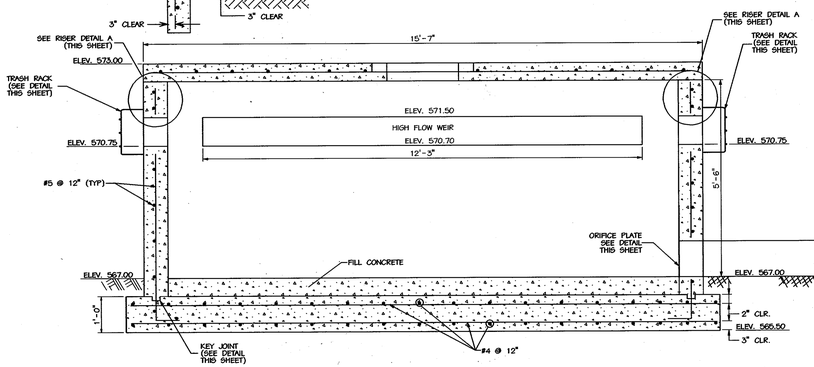
SW11

SHEET NO.: 68 OF 113

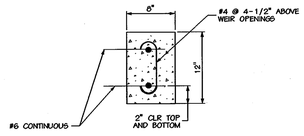
SDP-02-64



SECTION C–C

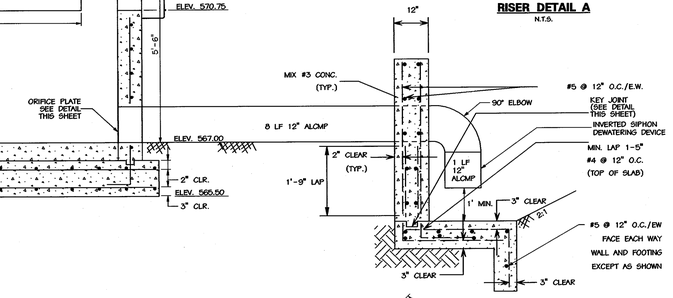


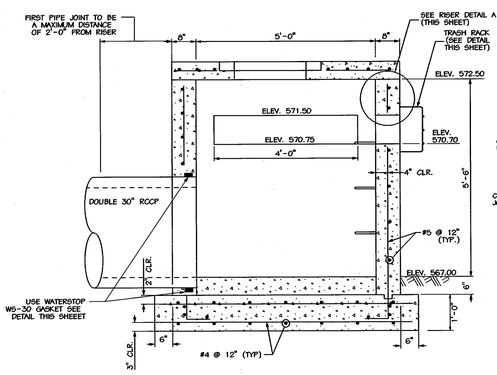
SECTION B–B



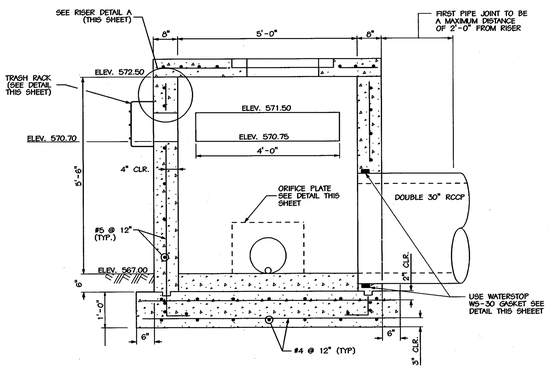
RISER DETAIL A

N.T.S.

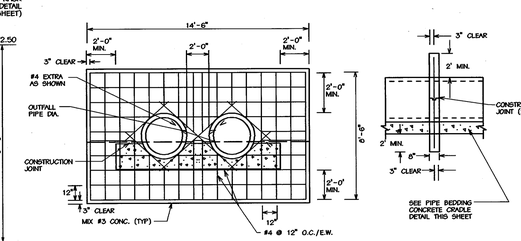




SECTION D–D



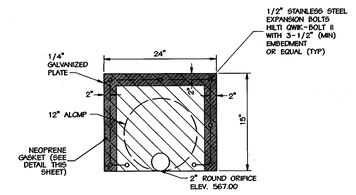
SECTION A–A



CONCRETE ANTI-SEEP COLLAR FOR PONDS B AND F (1 REQ'D.)

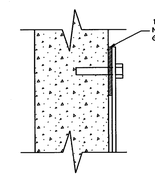
NOT TO SCALE

NOTES:
1. ANTI-SEEP COLLAR SHALL BE FORMED IN 2 POURS.
2. ANTI-SEEP COLLARS TO BE PLACED A MINIMUM OF 2' FROM ANY PIPE JOINT.
3. 1 ANTI-SEEP COLLAR TO BE INSTALLED AT FACILITIES B AND F WHERE NOTED ON PLANS.



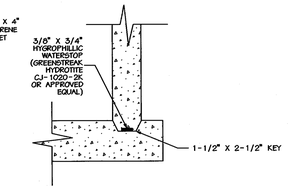
ORIFICE PLATE DETAIL FOR POND F

NOT TO SCALE



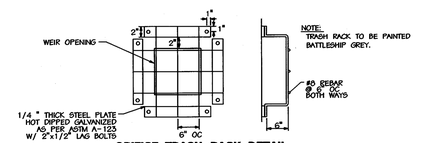
ORIFICE GASKET DETAIL

NOT TO SCALE



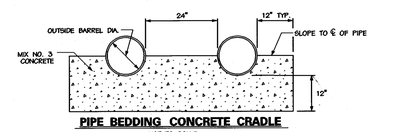
KEY JOINT DETAIL

N.T.S.



ORIFICE TRASH RACK DETAIL

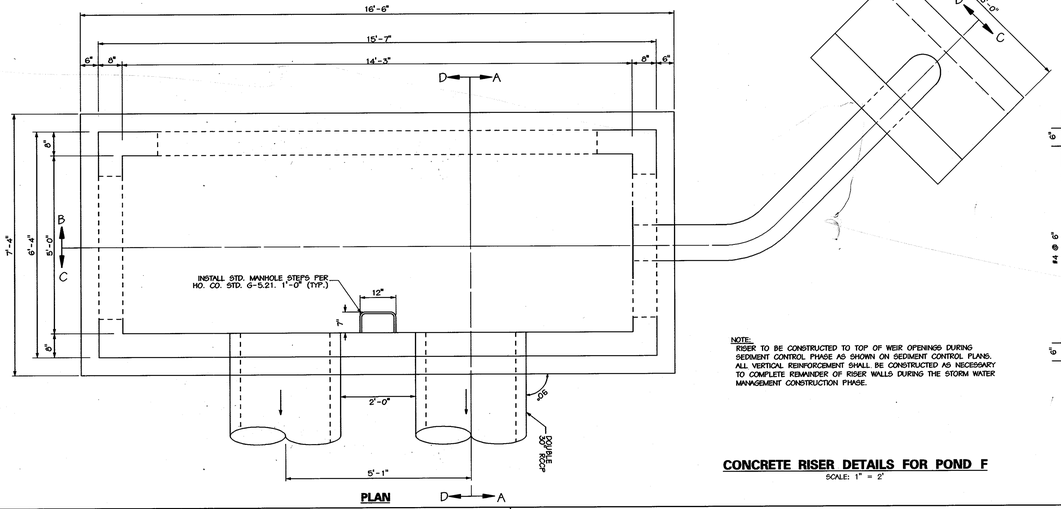
N.T.S.



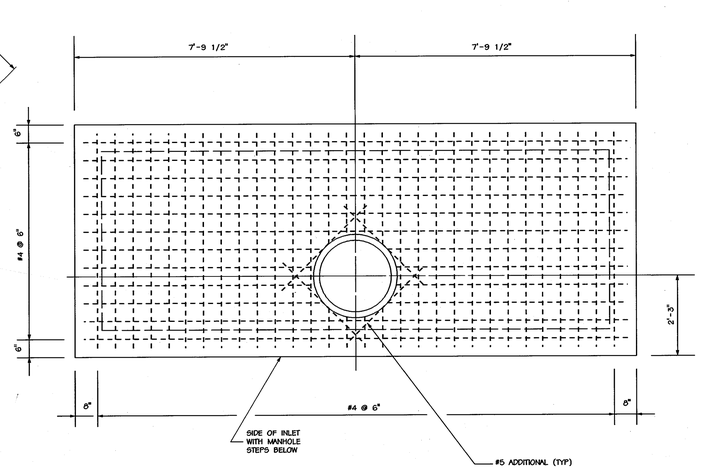
PIPE BEDDING CONCRETE CRADLE

NOT TO SCALE

NOTES:
1. USE SCS TR-46 A-2 CONCRETE CRADLE MODIFIED FOR TWIN PIPES.
2. THE CONCRETE CRADLE SHALL BE SLOPED TO MEET THE SPRING LINE OF THE PIPE.



PLAN

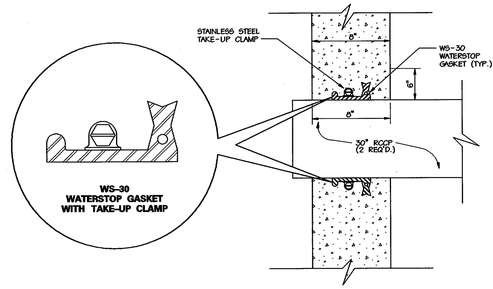


TOP SLAB DETAIL

NOTE:
RISER TO BE CONSTRUCTED TO TOP OF WEIR OPENINGS DURING SEDIMENT CONTROL PHASE AS SHOWN ON SEDIMENT CONTROL PLANS. ALL VERTICAL REINFORCEMENT SHALL BE CONSTRUCTED AS NECESSARY TO COMPLETE REMAINDER OF RISER WALLS DURING THE STORM WATER MANAGEMENT CONSTRUCTION PHASE.

CONCRETE RISER DETAILS FOR POND F

SCALE: 1" = 2'



WS-30 WATERSTOP GASKET DETAIL

NOT TO SCALE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, H.C.H.D. — DATE 10-17-02
HOWARD COUNTY HEALTH DEPARTMENT

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE 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."

DONALD G. LEPSON — SIGNATURE — 2/4/02 DATE

ENGINEERS CERTIFICATE

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MARK S. RICHMOND — SIGNATURE — 06/11/02 DATE

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 9/5/02

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

HOWARD SCD — DATE 9/5/02

NO.	REVISIONS	DESCRIPTION	DATE

KCI FILE:

KCI TECHNOLOGIES INC.
ENGINEERS • PLANNERS • SURVEYORS
10 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
KCI TECHNOLOGIES WWW.KCI.COM

STATE OF MARYLAND — THOMAS E. HOSKINS — 21509 — REGISTERED PROFESSIONAL ENGINEER

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

STORMWATER MANAGEMENT NOTES AND DETAILS

SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SW12

SHEET NO.: 69 OF 113

SDP-02-64

SWM POND CONSTRUCTION SPECIFICATIONS (MARYLAND CODE 378 POND - JANUARY 2000)

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

SITE PREPARATION

AREAS DISIGNATED 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 THAT 1:1. ALL TREES SHALL BE CLEARED AND GRUBBED WITHIN 15 FEET OF THE TOE OF THE EMBANKMENT.

AREAS TO BE COVERED BY THE RESERVOIR WILL BE CLEARED OF ALL TREES, BRUSH, LOGS, FENCES, RUBBISH AND OTHER OBJECTIONABLE MATERIAL UNLESS OTHERWISE DESIGNATED ON THE PLANS. TREES, BRUSH, AND STUMPS SHALL BE CUT APPROXIMATELY LEVEL WITH THE GROUND SURFACE. FOR DRY STORMWATER MANAGEMENT PONDS, A MINIMUM OF A 25-FOOT RADIUS AROUND THE INLET STRUCTURE SHALL BE CLEARED.

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

EARTH FILL

MATERIAL - THE FILL MATERIAL SHALL BE TAKEN FROM APPROVED DESIGNATED BORROW AREAS. 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 CUTOFF TRENCH SHALL CONFORM TO UNIFIED SOIL CALSSIFICATION GC, SC, CH, OR CL AND MUST HAVE AT LEAST 30% PASSING THE #200 SIEVE. CONSIDERATION MAY BE GIVEN TO THE USE OF OTHER MATERIALS IN THE EMBANKMENT IF DESIGNED BY A GEOTECHNICAL ENGINEER. SUCH SPECIAL DESIGNS MUST HAVE CONSTRUCTION SUPERVISED BY A GEOTECHNICAL ENGINEER. MATERIALS USED IN THE OUTER SHELL OF THE EMBANKMENT MUST HAVE THE CAPABILITY TO SUPPORT VEGETATION OF THE QUALITY REQUIRED TO PREVENT EROSION OFTHE EMBANKMENT.

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

COMPACTION - THE MOVEMENT OF THE HAULING AND SPREADING EQUIPMENT OVER THE FILL SHALL BE CONTROLLED SO THAT THE ENTIRE SURFACE OF EACH LIFT SHALL BE TRAVERSED BY NOT LESS THAN ONE TREAD TRACK OF HEAVY EQUIPMENT OR COMPACTION SHALL BE ACHIEVED BY A MINIMUM OF FOUR COMPLETE PASSES OF A SHEEPSFOOT, RUBBER TIRED OR VIBRATORY ROLLER. FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SUCH THAT THE REQUIRED DEGREE OF COMPACTION WILL BE OBTIANED 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 PERMEABILITY. IN ADDITION, THE CORE SHALL BE PLACED CONCURRENTLY WITH THE OUTER SHELL OF THE EMBANKMENT.

STRUCTURE BACKFILL

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

STRUCTURE BACKFILL MAY BE FLOWABLE FILL MEETING THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 313 AS MODIFIED. THE MIXTURE SHALL HAVE A 100-200 PSI; 28 DAY UNCONFINED COMPRESSIVE STRENGTH. THE FLOWABLE FILL SHALL HAVE A MINIMUM PH OF 4.0 AND A MINIMUM RESISTIVITY OF 2,000 OHM-CM. MATERIAL SHALL BE PLACED SUCH THAT A MINIMUM OF 6" (MEASURED PERPENDICULAR TO THE OUTSIDE OF THE PIPE) OF FLOWABLE FILL SHALL BE UNDER (BEDDING), OVER AND, ON THE SIDES OF THE PIPE. IT ONLY NEEDS TO EXTEND UP TO THE SPRING LINE FOR RIDGID CONDUITS. AVERAGE SLUMP OF THE FILL SHALL BE 7" TO ASSURE FLOWABILITY OF THE MATERIAL. ADEQUATE MEASURES SHALL BE TAKEN (SAND BAGS, ETC.) TO PREVENT FLOATING THE PIPE. WHEN USING FLOWABLE FILL, ALL METAL PIPE SHALL BE BITUMINOUS COATED. ANY ADJOINING SOIL FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED FOUR INCHES IN THICKNESS AND COMPACTED BY HAND TAMPERS OR OTHER MANUALLY DIRECTED COMPACTION EQUIPMENT. THE MATERIAL SHALL COMPLETELY FILL ALL VOIDS ADJACENT TO THE FLOWABLE FILL ZONE. AT NO TIME DURING THE BACKFILLING OPERATION SHALL DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN FOUR FEET, MEASURED HORIZONTALLY, TO ANY PART OF A STRUCTURE. UNDER NO CIRCUMSTANCES SHALL EQUIPMENT BE DRIVEN OVER ANY PART OF A STRUCTURE OR PIPE UNLESS THERE IS A COMPACTED FILL OF 24" OR GREATER OVER THE STRUCTURE OR PIPE. BACKFILL MATERIAL OUTSIDE THE STRUCTURAL BACKFILL (FLOWABLE FILL) ZONE SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE CORE OF THE EMBANKMENT OR OTHER EMBANKMENT MATERIALS.

PIPE CONDUITS

ALL PIPES SHALL BE CIRCULAR IN CROSS SECTION.

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

1. MATERIALS - (POLYMER COATED STEEL PIPE) - STEEL PIPES WITH POLYMERIC COATINGS SHALL HAVE A MINIMUM COATING THICKNESS OF 0.01 INCH (10 MIL) ON BOTH SIDES OF THE PIPE. THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATIONS M-245 & M-246 WITH WATERTIGHT COUPLING BANDS OR FLANGES.

MATERIALS - (ALUMINUM COATED STEEL PIPE) - THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION ON M-274 WITH WATERTIGHT COUPLING BANDS OR FLANGES. ALUMINUM COATED STEEL PIPE, WHEN USED WITH FLOWABLE FILL OR WHEN SOIL AND/OR WATER CONDITIONS WARRANT THE NEED FOR INCREASED DURABILITY, SHALL BE FULLY BITUMINOUS COATED PER REQUIREMENTS OF AASHTO SPECIFICATION ON M-190 TYPE A. ANY ALUMINUM COATING DAMAGED OR OTHERWISE REMOVED SHALL BE REPLACED WITH COLD APPLIED BITUMINOUS COATING COMPOUND. ALUMINUM SURFACES THAT ARE TO BE IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH ONE COAT OF ZINC CHROMATE PRIMER OR TWO COATS OF ASPHALT.

MATERIALS - (ALUMINUM PIPE) - THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-196 OR M-211 WITH WATERTIGHT COUPLING BANDS OR FLANGES. ALUMINUM PIPE, WHEN USED WITH FLOWABLE FILL OR WHEN SOIL AND/OR WATER CONDITIONS WARRANT FOR INCREASED DURABILITY, SHALL BE FULLY BITUMINOUS COATED PER REQUIREMENTS OF AASHTO SPECIFICATION M-190 TYPE A. ALUMINUM SURFACES THAT ARE TO BE IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH ONE COAT OF ZINC CHROMATE PRIMER OR TWO COATS OF ASPHALT. HOT DIP GALVANIZED BOLTS MAY BE USED FOR CONNECTIONS. THE PH OF THE SURROUNDING SOILS SHALL BE BETWEEN 4 AND 9.

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

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

ALL CONNECTIONS SHALL USE A RUBBER OR NEOPRENE GASKET WHEN JOINING PIPE SECTIONS. THE END OF EACH PIPE SHALL BE RE-ROLLED AN ADEQUATE NUMBER OF CORRUGATIONS TO ACCOMMODATE THE BANDWIDTH. THE FOLLOWING TYPE CONNECTIONS ARE ACCEPTABLE FOR PIPES LESS THAN 24 INCHES IN DIAMETER: FLANGES ON BOTH ENDS OF THE PIPE WITH A CIRCULAR 3/8 INCH CLOSED CELL NEOPRENE GASKET, PRE-PUNCHED TO THE FLANGE BOLT CIRCLE, SANDWICHED BETWEEN ADJACENT FLANGES; A 12 INCH WIDE STANDARD LAP TYPE BAND WITH 12 INCH WIDE BY 3/8 INCH THICK CLOSED CELL CIRCULAR NEOPRENE GASKET; AND A 12 INCH WIDE HUGGER TYPE BAND WITH O-RING GASKETS HAVING A MINIMUM DIAMETER OF 1/2 INCH GREATER THAN THE CORRUGATION DEPTH. PIPES 24 INCHES IN DIAMETER AND LARGER SHALL BE CONNECTED BY A 24 INCH LONG ANNULAR CORRUGATED BAND USING A MINIMUM OF 4 (FOUR) RODS AND LUGS, 2 ON EACH CONNECTING PIPE END. A 24 INCH WIDE BY 3/8 INCH THICK CLOSED CELL CIRCULAR NEOPRENE GASKET WILL BE INSTALLED WITH 12 INCHES ON THE END OF EACH PIPE. FLANGED JOINTS WITH 3/8 INCH CLOSED CELL GASKETS THE FULL WIDTH OF THE FLANGE IS ALSO ACCEPTABLE. HELICALLY CORRUGATED PIPE SHALL HAVE EITHER CONTINUOUSLY WELDED SEAMS OR HAVE LOCK SEAMS WITH INTERNAL CAULKING OR A NEOPRENE BEAD.

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

5. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL".

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

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

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

2. BEDDING - REINFORCED CONCRETE PIPE CONDUITS SHALL BE LAID IN A CONCRETE BEDDING/CRADLE FOR THEIR ENTIRE LENGTH. THIS BEDDING/CRADLE SHALL CONSIST OF HIGH SLUMP CONCRETE PLACED UNDER THE PIPE AND UP THE SIDES OF THE PIPE AT LEAST 50% OF ITS OUTSIDE DIAMETER WITH A MINIMUM THICKNESS OF 6 INCHES. WHERE A CONCRETE CRADLE IS NOT NEEDED FOR STRUCTURAL REASONS, FLOWABLE FILL MAY BE USED 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.

PLASTIC PIPE - THE FOLLOWING CRITERIA SHALL APPLY FOR PLASTIC PIPE:

1. MATERIAL - 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 M2 52 TYPE S, AND 12" THROUGH 24" INCH SHALL MEET THE REQUIREMENTS OF AASHTO M294 TYPE S.

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

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

4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL".

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

DRAINAGE DIAPHRAGMS - WHEN A DRAINAGE DIAPHRAGM IS USED, A REGISTERED PROFESSIONAL ENGINEER WILL SUPERVISE THE DESIGN AND CONSTRUCTION INSPECTION.

CONCRETE

CONCRETE SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 414, MIX NO. 3.

ROCK RIPRAP

ROCK RIPRAP SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 311. GEOTEXTILE SHALL BE PLACED UNDER ALL RIPRAP AND SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 921.09, CLASS C.

CARE OF WATER DURING CONSTRUCTION

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

STABILIZATION

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

EROSION AND SEDIMENT CONTROL

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

FENCE AND GATE (42-INCH HEIGHT)

CONSTRUCT FENCING IN ACCORDANCE WITH THE STATE HIGHWAY ADMINISTRATION STANDARD DETAILS 690.01 AND 690.02. USE SPECIFICATIONS FOR A 6-FOOT FENCE, SUBSTITUTING 42-INCH FABRIC AND 6-FOOT 8-INCH LINE POSTS. CONSTRUCT THE GATE IN ACCORDANCE WITH STATE HIGHWAY ADMINISTRATION STANDARD DETAIL 692.01 WITH 42-INCH FABRIC. THE FABRIC USED FOR THE FENCE AND GATE MUST CONFORM TO AASHTO DESIGNATION M181.74.

FILTER CLOTH

FILTER CLOTH SHALL BE MIRAFI 1405, DUPONT TYPAR #3341 OR APPROVED EQUAL.

GABIONS

ALL GABIONS SHALL BE CLASS IV CPVC COATED.

WOODY VEGETATION NOTE

TREES, SHRUBS, OR OTHER WOODY VEGETATION WILL NOT BE ALLOWED WITHIN A 25' RADIUS OF THE INLET STRUCTURE IN THE POOL AREA, AND NOT ALLOWED ON, OR WITHIN 15' OF ANY PORTION OF THE EMBANKMENT.

CONSULTANT'S HAZARD CLASS CERTIFICATION (FACILITIES B, E, AND F)

"I CERTIFY THAT THIS POND MEETS ALL REQUIREMENTS FOR HAZARD CLASS (A, B, OR C). [REQUIREMENTS AS STATED IN THE USDA NATURAL RESOURCES CONSERVATION SERVICE- MARYLAND CONSERVATION PRACTICE STANDARD FOR POND, CODE 378, JANUARY 2000.] ALL NECESSARY INVESTIGATIONS AND COMPUTATIONS HAVE BEEN PERFORMED TO VERIFY THIS FINDING. A COPY OF SAID INFORMATION HAS BEEN SUPPLIED TO N.R.C.S./H.C.S.C.D.

SIGNATURE *Mark S. Richmond* LICENSE No. *16898* DATE *9/3/02*

PRINT NAME *Mark S. Richmond*

SEQUENCE OF CONSTRUCTION (SEDIMENT BASIN CONVERSION)

1. NOTIFY CERTIFYING ENGINEER FIVE (5) WORKING DAYS PRIOR TO BEGINNING STORM WATER MANAGEMENT CONVERSION.
2. NOTIFY HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) DAYS PRIOR TO DOING ANY WORK.
3. REMOVE EXCESS SEDIMENT FROM POND BOTTOM.
4. CONVERT SEDIMENT BASIN TO STORMWATER MANAGEMENT POND (REGRADE POND, CONSTRUCT DEWATERING DEVICE, RECONFIGURE RISER)
5. UPON COMPLETION OF STORM WATER MANAGEMENT POND CONSTRUCTION STABILIZE ACCORDING TO PERMANENT SEEDING SCHEDULE.
6. WITH PERMISSION OF INSPECTOR, REMOVE ALL TEMPORARY MEASURES AND STABILIZE THESE DISTURBED AREAS.

SEQUENCE OF CONSTRUCTION (NON-SEDIMENT BASIN CONVERSION)

1. NOTIFY CERTIFYING ENGINEER FIVE (5) WORKING DAYS PRIOR TO BEGINNING STORM WATER MANAGEMENT CONSTRUCTION.
2. NOTIFY HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) DAYS PRIOR TO DOING ANY WORK.
3. CONSTRUCT STORMWATER MANAGEMENT BMP INCLUDING FOREBAY OUTLET STRUCTURES AND UNDERDRAINS.
4. UPON COMPLETION OF STORM WATER MANAGEMENT POND CONSTRUCTION STABILIZE ACCORDING TO PERMANENT SEEDING SCHEDULE.
5. WITH PERMISSION OF INSPECTOR, REMOVE ALL TEMPORARY MEASURES AND STABILIZE THESE DISTURBED AREAS.

CONSTRUCTION NOTE:

UNLESS OTHERWISE NOTED, ALL CONSTRUCTION AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH:

1. HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION IV OCTOBER, 1990, ERRATA & ADDENDA.
2. SOIL CONSERVATION SERVICE OF MARYLAND STANDARDS AND SPECIFICATIONS, POND, CODE 378, JANUARY, 2000.
3. MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION, JANUARY, 2001, STANDARD SPECIFICATION FOR CONSTRUCTION AND MATERIAL.

GENERAL NOTES

1. UTILITIES AND TOPOGRAPHICAL FEATURES SHOWN ON THESE PLANS ARE ONLY FOR THE CONVENIENCE OF THE USER AND THERE IS NO WARRANTY OR GUARANTEE OF THE CORRECTNESS OR THE COMPLETENESS OF THE INFORMATION GIVEN. THE USER OF THESE DRAWINGS MUST VERIFY ALL SUCH INFORMATION TO HIS OWN SATISFACTION.
2. AS-BUILT PLANS & CERTIFICATION ARE REQUIRED FOR THE STORM WATER MANAGEMENT FACILITIES. THESE MUST BE PREPARED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER. HOWARD COUNTY WILL NOT PERFORM THE INSPECTION OR PREPARE THE AS-BUILT PLANS OR CERTIFICATION.
3. IN ORDER TO PREPARE THE REQUIRED AS-BUILT PLANS & CERTIFICATION, THIS STORM WATER MANAGEMENT FACILITY MUST BE INSPECTED BY THE ENGINEER AT SPECIFIC STAGES DURING CONSTRUCTION AS REQUIRED BY THE CURRENT HOWARD COUNTY STORM WATER MANAGEMENT POLICY AND DESIGN MANUAL. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT LEAST FIVE (5) WORKING DAYS PRIOR TO STARTING ANY WORK SHOWN ON THESE PLANS.

CONTRACTOR'S NOTE

THE CONSTRUCTION SHOWN HEREON MUST BE CERTIFIED TO THE HOWARD COUNTY SOIL CONSERVATION DISTRICT. CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE MD. STANDARD AND SPECIFICATION FOR PONDS (CODE 378) AND THIS SET OF DRAWINGS.
A REGISTERED PROFESSIONAL ENGINEER MUST BE NOTIFIED SUFFICIENTLY IN ADVANCE OF CONSTRUCTION SO THAT HE CAN ARRANGE FOR:

1. INSPECTION OF THE PIPE TRENCH, BEDDING, AND CUTOFF TRENCH.
2. SUPERVISION OF THE RISER / BARREL AND ANTI-SEEP COLLARS CONSTRUCTION.
3. SUPERVISION OF EMBANKMENT CONSTRUCTION (WITH IMPERVIOUS CORE) AND COMPACTION TESTING.
4. COMPLETION OF AS-BUILT SURVEY AND STUDY AT TIME OF CONVERSION TO STORM WATER MANAGEMENT AND SUBMIT TO APPROPRIATE AGENCIES WITHIN 30 DAYS AFTER COMPLETION.

OPERATION AND MAINTENANCE SCHEDULE FOR BIO-RETENTION FACILITIES (F-6)

A. 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.
B. SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, TREATMENT OF ALL DISEASED TREES AND SHRUBS AND REPLACEMENT OF ALL DEFICIENT STAKES AND WIRES.
C. MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 TO 3 YEARS.
D. SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.

OPERATION AND MAINTENANCE SCHEDULE FOR EXTENDED DETENTION STORMWATER POND

ROUTINE MAINTENANCE:

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

NON- ROUTINE MAINTENANCE:

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

SPECIFICATIONS FOR OPEN CHANNELS

1. MATERIAL SPECIFICATIONS

THE RECOMMENDED CONSTRUCTION MATERIALS FOR OPEN CHANNELS AND FILTER STRIPS ARE DETAILED IN THE TABLE BELOW.

2. DRY SWALE

PERMEABLE SOIL MIXTURE (20" TO 30" DEEP) SHOULD MEET THE FOLLOWING "PLANTING" SOIL SPECIFICATIONS.

THE SOIL SHALL BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED OR DUMPED WITHIN THE DRY SWALE AREA THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVE A HINDRANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE FREE OF BERMUDA GRASS, QUACKGRASS, JOHNSON GRASS, OR OTHER NOXIOUS WEEDS AS SPECIFIED UNDER COMAR 15.08.01.05.
THE PLANTING SOIL SHALL BE TESTED AND SHALL MEET THE FOLLOWING CRITERIA:

PH RANGE 5.2 - 7.0
ORGANIC MATTER 1.5 - 4% (BY WEIGHT)
MAGNESIUM 35 LB./AC
PHOSPHORUS (PHOSPHATE - P2 O5) 75 LB./AC
POTASSIUM (POTASH - K2 O) 85 LB./AC
SOLUBLE SALTS NOT TO EXCEED 500 PPM

ALL DRY SWALE AREAS SHALL HAVE A MINIMUM OF ONE TEST. EACH TEST SHALL CONSIST OF BOTH THE STANDARD SOIL TEST FOR PH, PHOSPHORUS, AND POTASSIUM AND ADDITIONAL TESTS OF ORGANIC MATTER, AND SOLUBLE SALTS. A TEXTURAL ANALYSIS IS REQUIRED FROM THE SITE STOCKP ILED TOPSOIL. IF TOPSOIL IS IMPORTED, THEN A TEXTURE ANALYSIS SHALL BE PERFORMED FOR EACH LOCATION WHERE THE TOP SOIL WAS EXCAVATED. SINCE DIFFERENT LABS CALIBRATE THEIR TESTING EQUIPMENT DIFFERENTLY, ALL TESTING RESULTS SHALL COME FROM THE SAME TESTING FACILITY.
SHOULD THE PH FALL OUT OF THE ACCEPTABLE RANGE, IT MAY BE MODIFIED (HIGHER) WITH LIME OR (LOWER) WITH IRON SULFATE PLUS SULFUR.
PERMEABLE SOIL SHALL BE PLACED IN A LOOSE CONDITION AT A MOISTURE CONTENT WHERE THE MATERIAL IS FRIABLE, AS APPROVED BY THE FIELD ENGINEER.

CHECK DAMS, IF REQUIRED, SHALL BE PLACED AS SPECIFIED.

SEED WITH FLOOD/DROUGHT RESISTANT GRASSES; SEE TABLE A.7 THIS SHEET.

3. PLANT SELECTION

RECOMMENDED GRASS SPECIES FOR USE IN ESTABLISHING PERMANENT GROUND COVER ARE PROVIDED IN TABLE A.7 THIS SHEET.

TABLE A.7 COMMON GRASS SPECIES FOR OPEN CHANNELS

COMMON NAME	SCIENTIFIC NAME
BIG BLUESTEM	ANDROPOGON GERARDII
SWITCH GRASS	PANICUM VIRGATUM

NOTE: BOTH OF THESE GRASSES SHOULD BE USED IN THE SEED MIX.

"AS-BUILT" CERTIFICATION-FACILITY "E"

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

SIGNATURE ______ P.E.No. ______

PRINT NAME ______ DATE ______

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

"AS-BUILT" CERTIFICATION-FACILITY "B"

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

SIGNATURE ______ P.E.No. ______

PRINT NAME ______ DATE ______

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

"AS-BUILT" CERTIFICATION-FACILITY "F"

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

SIGNATURE ______ P.E.No. ______

PRINT NAME ______ DATE ______

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

OPERATION, MAINTENANCE, AND INSPECTION

HOWARD COUNTY WILL OWN, OPERATE, AND MAINTAIN THE STORMWATER MANAGEMENT FACILITY. INSPECTION OF THE POND(S) SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, SCS "STANDARDS AND SPECIFICATIONS FOR PONDS" (MD-378). HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS AND ANY HEIRS, SUCCESSORS, OR ASSIGNEES SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND CONTINUED OPERATION, SURVEILLANCE, INSPECTION, AND MAINTENANCE THEREOF. HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATIONS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING, OR SLUMPING.

MATERIAL SPECIFICATIONS FOR BIORETENTION AND SAND FILTER FACILITIES AND DRY SWALES

MATERIAL	SPECIFICATION	SIZE	NOTES
PLANTING SOIL (2.5' TO 4' DEEP)	SAND 35-60% SILT 30-55% CLAY 10-25%	N/A	USDA SOIL TYPES: LOAMY SAND, SANDY LOAM, OR LOAM
DRY SWALE SOIL	USCS; ML, SM	N/A	SOIL WITH A HIGHER PERCENT ORGANIC CONTENT IS PREFERED
DRY SWALE SAND	ASTM C-33 FINE AGGREGATE CONCRETE SAND	0.02" TO 0.04"	
MULCH	SHREDDED HARDWOOD		AGED 6 MONTHS, MINIMUM
PEA GRAVEL DIAPHRAGM AND CURTAIN DRAIN	PEA GRAVEL: ASTM D-448 ORNAMENTAL STONE: WASHED COBBLES	NO. 6 STONE 2" TO 5"	
GEOTEXTILE	CLASS "C"-APPARENT OPENING SIZE (ASTM-D-4751), GRAB TENSILE STRENGTH (ASTM-D-4632), PUNCTURE RESISTANCE (ASTM-D-4833)	N/A	FOR USE AS NECESSARY BENEATH UNDERDRAINS ONLY
UNDERDRAIN GRAVEL	AASHTO M-43	0.375" TO 0.75"	
UNDERDRAIN PIPING	F 758, TYPE PS 28 OR AASHTO M-278	4" TO 6" RIGID SCHEDULE 40 PVC OR SDR35	3/8" PERF. @ 6" ON CENTER, 4 HOLES PER ROW; MINIMUM OF 3" OF GRAVEL OVER PIPES; NOT NECESSARY UNDERNEATH PIPES
BIORETENTION/ SAND FILTER SAND	AASHTO-M-6 OR ASTM-C-33	0.02" TO 0.04"	SAND SUBSTITUTIONS SUCH AS DIABASE AND GRAYSTONE #10 ARE NOT ACCEPTABLE. NO CALCIUM CARBONATED OR DOLOMITIC SAND SUBSTITUTIONS ARE ACCEPTABLE. NO "ROCK DUST" CAN BE USED FOR SAND.
IMPERMEABLE LINER (IF REQUIRED)	ASTM-D-4833 (THICKNESS) ASTM-D-412 (TENSILE STRENGTH 1,100 LB. ELONGATION 200%) ASTM-D-624 (TEAR RESISTANCE-150 LB./IN) ASTM-D-471 (WATER ABSORBTION: +8 TO -2% MASS)	30 MIL THICKNESS	LINER TO BE ULTRAVIOLET RESISTANT. A GEOTEXTILE FABRIC SHOULD BE USED TO PROTECT THE LINER FROM PUNCTURE.

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE *9/12/02*

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE *10/22/02*

DIRECTOR — DATE *10/23/02*

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT — DATE *10-17-02*

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE 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."

NAME *RONALD G. LEPSON* — SIGNATURE — DATE *9/4/02*

ENGINEERS CERTIFICATE

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

NAME MARK S. RICHMOND — SIGNATURE — DATE 06/11/02

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE *9/5/02*

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

HOWARD SCD — DATE *9/5/02*

NO. | REVISIONS DESCRIPTION | DATE

KCI FILE:

KCI TECHNOLOGIES INC.
ENGINEERS • PLANNERS • SURVEYORS
10 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
WWW.KCI.COM

STATE OF MARYLAND — MARK S. RICHMOND — NO. 16898 — REGISTERED PROFESSIONAL ENGINEER

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

STORMWATER MANAGEMENT NOTES

SCALE:	N/A
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SW13

BORING LOG (BIORETENTION F3)

BORING SWM-1

PROJECT : Western Regional Park
CLIENT : Howard County Department of Recreation and Parks
SITE: Allen Property

JOB NUMBER: 01-00057.G
SHEET NO. 1 of 1
NORTH: 1303224
EAST: 596853.9
ELEVATION: 593.6
START DATE: 12/4/2000
END DATE: 12/4/2000
DRILLER: E2CR
LOGGED BY: JLP

GROUNDWATER		DEPTH OF: (feet)			EQUIPMENT	CASING	SAMPLER	CORE
Date	Time	Water	Casing	Cave-In	TYPE	HSA	SS	
12/4/2000	12:45:00 PM	DRY		5.5	SIZE, ID	3.25"	1 5/8"	
12/5/2000	3:00:00 PM	DRY		5.5	HAMMER WT.		140 lbs	
					HAMMER FALL		30"	

SAMPLE NUMBER	SAMPLE DEPTH	SAMPLE RECOVERY	BLOWS / 6" (1800)	LABORATORY TEST RESULTS: NAT. Moist. Freq.	LABORATORY TEST RESULTS: LIQUID LIMIT	LABORATORY TEST RESULTS: PLASTICITY INDEX	DEPTH	ELEV. DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
S-1	0.0	18"	1 2 3	15.9%						Brown, moist, medium stiff, Sandy CLAY (cl) USDA [Clay Loam]	
								EL 591.6			
								2.0		Orange, tan, and white, moist, stiff to very stiff, SILT-SAND (ML-SM) USDA [SANDY LOAM] (RESIDUAL)	
S-2	2.5	18"	4 5 6								
S-3	5.0	18"	5 5 5	14.1%							
S-4	8.5	18"	5 5 7	12.4%							
S-5	13.5	18"	7 7 6								
S-6	18.5	18"	8 8 12	13.8%							
								EL 573.6			
								20.0		Bottom of Boring @ 20 ft.	

BLOWS/FT.	DENSITY
0-4	VERY LOOSE
5-10	LOOSE
11-30	MEDIUM DENSE
31-50	DENSE
OVER 50	VERY DENSE

BLOWS/FT.	CONSISTANCY
0-2	VERY SOFT
3-4	SOFT
5-8	MEDIUM STIFF
9-15	STIFF
16-30	VERY STIFF
OVER 30	HARD

SAMPLE IDENTIFICATION
- S - SPLIT SPOON
- T - THIN WALL TUBE
- SS - 3in. SPLIT SPOON
- R - DIAMOND CORE
- W - WASH SAMPLE
- U - UNDISTURBED

SAMPLE PROPORTIONS	
DESCRIPTIVE TERM	PERCENT
TRACE	1 TO 10
LITTLE	11 TO 20
SOME	21 TO 35
AND	35 TO 50

BORING SWM-1

BORING LOG (POND F)

BORING SWM-3

PROJECT : Western Regional Park
CLIENT : Howard County Department of Recreation and Parks
SITE: Allen Property

JOB NUMBER: 01-00057.G
SHEET NO. 1 of 1
NORTH: 1303701.7
EAST: 597420.8
ELEVATION: 571.8
START DATE: 12/4/2000
END DATE: 12/4/2000
DRILLER: E2CR
LOGGED BY: JLP

GROUNDWATER		DEPTH OF: (feet)			EQUIPMENT	CASING	SAMPLER	CORE
Date	Time	Water	Casing	Cave-In	TYPE	HSA	SS	
12/4/2000	10:00:00 AM	7.2'		14'	SIZE, ID	3.25"	1 5/8"	
12/5/2000	3:00:00 PM	4.5'		11'	HAMMER WT.		140 lbs	
					HAMMER FALL		30"	

SAMPLE NUMBER	SAMPLE DEPTH	SAMPLE RECOVERY	BLOWS / 6" (1800)	LABORATORY TEST RESULTS: NAT. Moist. Freq.	LABORATORY TEST RESULTS: LIQUID LIMIT	LABORATORY TEST RESULTS: PLASTICITY INDEX	DEPTH	ELEV. DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
S-1	0.0	12"	2 2 2							18" Topsoil with Quart gravel-sized fragments	
								EL 570.3			
								1.5		Tan, orange, white, and black, moist, medium stiff to very stiff, Sandy SILT (ML), trace Clay USDA [SILT LOAM] (RESIDUAL)	
S-2	2.5	18"	4 3 3	20.6%							
S-3	5.0	18"	3 3 4								
S-4	8.5	18"	7 11 23	16.5%						Sample S-4: Gravel-sized decomposed rock fragments	
S-5	13.5	18"	8 18 24	15.5%							
S-6	18.5	12"	14 13 12	16.8%							
								EL 551.8			
								20.0		Bottom of Boring @ 20 ft.	

BLOWS/FT.	DENSITY
0-4	VERY LOOSE
5-10	LOOSE
11-30	MEDIUM DENSE
31-50	DENSE
OVER 50	VERY DENSE

BLOWS/FT.	CONSISTANCY
0-2	VERY SOFT
3-4	SOFT
5-8	MEDIUM STIFF
9-15	STIFF
16-30	VERY STIFF
OVER 30	HARD

SAMPLE IDENTIFICATION
- S - SPLIT SPOON
- T - THIN WALL TUBE
- SS - 3in. SPLIT SPOON
- R - DIAMOND CORE
- W - WASH SAMPLE
- U - UNDISTURBED

SAMPLE PROPORTIONS	
DESCRIPTIVE TERM	PERCENT
TRACE	1 TO 10
LITTLE	11 TO 20
SOME	21 TO 35
AND	35 TO 50

BORING SWM-3

BORING LOG (SURFACE SAND FILTER F2)

BORING SWM-4

PROJECT : Western Regional Park
CLIENT : Howard County Department of Recreation and Parks
SITE: Allen Property

JOB NUMBER: 01-00057.G
SHEET NO. 1 of 1
NORTH: 1303710.3
EAST: 597362.6
ELEVATION: 575.0
START DATE: 12/4/2000
END DATE: 12/4/2000
DRILLER: E2CR
LOGGED BY: JLP

GROUNDWATER		DEPTH OF: (feet)			EQUIPMENT	CASING	SAMPLER	CORE
Date	Time	Water	Casing	Cave-In	TYPE	HSA	SS	
12/4/2000	9:45:00 AM	DRY		11'	SIZE, ID	3.25"	1 5/8"	
12/5/2000	3:00:00 PM	9'		11'	HAMMER WT.		140 lbs	
					HAMMER FALL		30"	

SAMPLE NUMBER	SAMPLE DEPTH	SAMPLE RECOVERY	BLOWS / 6" (1800)	LABORATORY TEST RESULTS: NAT. Moist. Freq.	LABORATORY TEST RESULTS: LIQUID LIMIT	LABORATORY TEST RESULTS: PLASTICITY INDEX	DEPTH	ELEV. DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
S-1	0.0	12"	2 2 3							Tan, orange, and white, moist, medium stiff to very stiff, Clayey SILT (ml) USDA [Silt Loam] (RESIDUAL)	
S-2	2.5	18"	6 5 5								
S-3	5.0	18"	5 5 6	18.2%							
S-4	8.5	18"	12 12 13	9.4%							
S-5	13.5	18"	8 18 12	20.3%						Sample S-5: Seams of fine white Sand	
S-6	18.5	18"	10 11 12	16.4%							
								EL 555.0			
								20.0		Bottom of Boring @ 20 ft.	

BLOWS/FT.	DENSITY
0-4	VERY LOOSE
5-10	LOOSE
11-30	MEDIUM DENSE
31-50	DENSE
OVER 50	VERY DENSE

BLOWS/FT.	CONSISTANCY
0-2	VERY SOFT
3-4	SOFT
5-8	MEDIUM STIFF
9-15	STIFF
16-30	VERY STIFF
OVER 30	HARD

SAMPLE IDENTIFICATION
- S - SPLIT SPOON
- T - THIN WALL TUBE
- SS - 3in. SPLIT SPOON
- R - DIAMOND CORE
- W - WASH SAMPLE
- U - UNDISTURBED

SAMPLE PROPORTIONS	
DESCRIPTIVE TERM	PERCENT
TRACE	1 TO 10
LITTLE	11 TO 20
SOME	21 TO 35
AND	35 TO 50

BORING SWM-4

BORING LOG (BIORETENTION F4)

BORING SWM-5

PROJECT : Western Regional Park
CLIENT : Howard County Department of Recreation and Parks
SITE: Allen Property

JOB NUMBER: 01-00057.G
SHEET NO. 1 of 1
NORTH: 1303683
EAST: 597097.3
ELEVATION: 573.7
START DATE: 12/4/2000
END DATE: 12/4/2000
DRILLER: E2CR
LOGGED BY: JLP

GROUNDWATER		DEPTH OF: (feet)			EQUIPMENT	CASING	SAMPLER	CORE
Date	Time	Water	Casing	Cave-In	TYPE	HSA	SS	
12/4/2000	12:00:00 PM	DRY		9'	SIZE, ID	3.25"	1 5/8"	
12/5/2000	3:00:00 PM	7.1'		8.5'	HAMMER WT.		140 lbs	
					HAMMER FALL		30"	

SAMPLE NUMBER	SAMPLE DEPTH	SAMPLE RECOVERY	BLOWS / 6" (1800)	LABORATORY TEST RESULTS: NAT. Moist. Freq.	LABORATORY TEST RESULTS: LIQUID LIMIT	LABORATORY TEST RESULTS: PLASTICITY INDEX	DEPTH	ELEV. DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
S-1	0.0	18"	2 2 3							18" Topsoil	
								EL 572.2			
								1.5		Brown, tan, white, and orange, moist, loose to medium dense, Clayey SAND (SC), some Silt, trace gravel-sized rock fragments USDA [LOAM] (RESIDUAL)	
S-2	2.5	18"	3 3 3	20.4%							
S-3	5.0	18"	2 2 3								
S-4	8.5	12"	3 3 4	25.7%							
S-5	13.5	18"	4 5 6	22.1%							
S-6	18.5	18"	5 6 7	17.5%							
								EL 553.7			
								20.0		Bottom of Boring @ 20 ft.	

BLOWS/FT.	DENSITY
0-4	VERY LOOSE
5-10	LOOSE
11-30	MEDIUM DENSE
31-50	DENSE
OVER 50	VERY DENSE

BLOWS/FT.	CONSISTANCY
0-2	VERY SOFT
3-4	SOFT
5-8	MEDIUM STIFF
9-15	STIFF
16-30	VERY STIFF
OVER 30	HARD

SAMPLE IDENTIFICATION
- S - SPLIT SPOON
- T - THIN WALL TUBE
- SS - 3in. SPLIT SPOON
- R - DIAMOND CORE
- W - WASH SAMPLE
- U - UNDISTURBED

SAMPLE PROPORTIONS	
DESCRIPTIVE TERM	PERCENT
TRACE	1 TO 10
LITTLE	11 TO 20
SOME	21 TO 35
AND	35 TO 50

BORING SWM-5

BORING LOG (POND B)

BORING SWM-6

PROJECT : Western Regional Park
CLIENT : Howard County Department of Recreation and Parks
SITE: Allen Property

JOB NUMBER: 01-00057.G
SHEET NO. 1 of 1
NORTH: 1304363.3
EAST: 597825.9
ELEVATION: 585.5
START DATE: 12/1/2000
END DATE: 12/1/2000
DRILLER: E2CR
LOGGED BY: JLP

GROUNDWATER		DEPTH OF: (feet)			EQUIPMENT	CASING	SAMPLER	CORE
Date	Time	Water	Casing	Cave-In	TYPE	HSA	SS	
12/1/2000	11:30:00 AM	DRY		8.5'	SIZE, ID	3.25"	1 5/8"	
12/5/2000	3:00:00 PM	DRY		8.5'	HAMMER WT.		140 lbs	
					HAMMER FALL		30"	

SAMPLE NUMBER	SAMPLE DEPTH	SAMPLE RECOVERY	BLOWS / 6" (1800)	LABORATORY TEST RESULTS: NAT. Moist. Freq.	LABORATORY TEST RESULTS: LIQUID LIMIT	LABORATORY TEST RESULTS: PLASTICITY INDEX	DEPTH	ELEV. DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
S-1	0.0	12"	1 1 2							18" Topsoil	
								EL 584.0			
								1.5		Orange, black, and white, moist, soft to very stiff, SILT (ml) USDA [Silt Loam] (RESIDUAL)	
S-2	2.5	18"	2 2 2								
S-3	5.0	18"	4 5 6	19.5%							
S-4	8.5	18"	2 4 4	20.2%							
S-5	13.5	18"	5 6 6	22.3%							
S-6	18.5	18"	5 8 8	21.7%							
								EL 565.5			
								20.0		Bottom of Boring @ 20 ft.	

BLOWS/FT.	DENSITY
0-4	VERY LOOSE
5-10	LOOSE
11-30	MEDIUM DENSE
31-50	DENSE
OVER 50	VERY DENSE

BLOWS/FT.	CONSISTANCY
0-2	VERY SOFT
3-4	SOFT
5-8	MEDIUM STIFF
9-15	STIFF
16-30	VERY STIFF
OVER 30	HARD

SAMPLE IDENTIFICATION
- S - SPLIT SPOON
- T - THIN WALL TUBE
- SS - 3in. SPLIT SPOON
- R - DIAMOND CORE
- W - WASH SAMPLE
- U - UNDISTURBED

SAMPLE PROPORTIONS	
DESCRIPTIVE TERM	PERCENT
TRACE	1 TO 10
LITTLE	11 TO 20
SOME	21 TO 35
AND	35 TO 50

BORING SWM-6

BORING LOG (POND B)

BORING SWM-7

PROJECT : Western Regional Park
CLIENT : Howard County Department of Recreation and Parks
SITE: Allen Property

JOB NUMBER: 01-00057.G
SHEET NO. 1 of 1
NORTH: 1304080.8
EAST: 597289.2
ELEVATION: 579.0
START DATE: 12/1/2000
END DATE: 12/1/2000
DRILLER: E2CR
LOGGED BY: JLP

GROUNDWATER		DEPTH OF: (feet)			EQUIPMENT	CASING	SAMPLER	CORE
Date	Time	Water	Casing	Cave-In	TYPE	HSA	SS	
12/1/2000	10:45:00 AM	DRY		8.5'	SIZE, ID	3.25"	1 5/8"	
12/5/2000	3:00:00 PM	DRY		8.5'	HAMMER WT.		140 lbs	
					HAMMER FALL		30"	

SAMPLE NUMBER	SAMPLE DEPTH	SAMPLE RECOVERY	BLOWS / 6" (1800)	LABORATORY TEST RESULTS: NAT. Moist. Freq.	LABORATORY TEST RESULTS: LIQUID LIMIT	LABORATORY TEST RESULTS: PLASTICITY INDEX	DEPTH	ELEV. DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
S-1	0.0	12"	2 3 3							18" Topsoil	
								EL 577.5			
								1.5		Brown, orange, and tan, moist, medium dense Silty SAND (SM), little Clay, trace gravel-sized Quartzite fragments USDA [SANDY LOAM]	
S-2	2.5	18"	7 11 12								
S-3	5.0	18"	5 9 12	17.1%							
S-4	8.5	12"	5 11 14	16.9%							
								EL 567.0			
								12.0		Orange, tan, black, and white, moist, very stiff, SILT (ml) with gravel-sized decomposed rock fragments USDA [Silt Loam] (RESIDUAL)	
S-5	13.5	18"	6 7 8	18.7%							
S-6	18.5	18"	6 11 19	20.5%							
								EL 559.0			
								20.0		Bottom of Boring @ 20 ft.	

BLOWS/FT.	DENSITY
0-4	VERY LOOSE
5-10	LOOSE
11-30	MEDIUM DENSE
31-50	DENSE
OVER 50	VERY DENSE

BLOWS/FT.	CONSISTANCY
0-2	VERY SOFT
3-4	SOFT
5-8	MEDIUM STIFF
9-15	STIFF
16-30	VERY STIFF
OVER 30	HARD

SAMPLE IDENTIFICATION
- S - SPLIT SPOON
- T - THIN WALL TUBE
- SS - 3in. SPLIT SPOON
- R - DIAMOND CORE
- W - WASH SAMPLE
- U - UNDISTURBED

SAMPLE PROPORTIONS	
DESCRIPTIVE TERM	PERCENT
TRACE	1 TO 10
LITTLE	11 TO 20
SOME	21 TO 35
AND	35 TO 50

BORING SWM-7

BORING LOG (POND B)

BORING SWM-8

PROJECT : Western Regional Park
CLIENT : Howard County Department of Recreation and Parks
SITE: Allen Property

JOB NUMBER: 01-00057.G
SHEET NO. 1 of 1
NORTH: 1304551.4
EAST: 597714.9
ELEVATION: 585.0
START DATE: 12/1/2000
END DATE: 12/1/2000
DRILLER: E2CR
LOGGED BY: JLP

GROUNDWATER		DEPTH OF: (feet)			EQUIPMENT	CASING	SAMPLER	CORE
Date	Time	Water	Casing	Cave-In	TYPE	HSA	SS	
12/1/2000	9:00:00 AM	DRY		8.5'	SIZE, ID	3.25"	1 5/8"	
12/5/2000	3:00:00 PM	DRY		8.5'	HAMMER WT.		140 lbs	
					HAMMER FALL		30"	

SAMPLE NUMBER	SAMPLE DEPTH	SAMPLE RECOVERY	BLOWS / 6" (1800)	LABORATORY TEST RESULTS: NAT. Moist. Freq.	LABORATORY TEST RESULTS: LIQUID LIMIT	LABORATORY TEST RESULTS: PLASTICITY INDEX	DEPTH	ELEV. DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
S-1	0.0	18"	2 2 3							18" Topsoil	
								EL 583.5			
								1.5		Tan, moist, very stiff, Clayey SILT (ml), trace gravel-sized Quartzite fragments USDA [Silt Loam]	
S-2	2.5	18"	6 7 8	15.6%							
								EL 580.5			
								4.5		Tan, moist, medium dense Silty SAND (sp) with gravel-sized Quartzite fragments USDA [Loam]	
S-3	5.0	18"	7 14 13	8.6%							
								EL 577.5			
								7.5		Orange, moist, stiff to very stiff, SILT (ml) USDA [Silt Loam] (RESIDUAL)	
S-4	8.5	18"	4 5 6								
S-5	13.5	18"	8 10 11								
S-6	18.5	18"	4 6 10	21.4%							
								EL 565.0			
								20.0		Bottom of Boring @ 20 ft.	

BLOWS/FT.	DENSITY
0-4	VERY LOOSE
5-10	LOOSE
11-30	MEDIUM DENSE
31-50	DENSE
OVER 50	VERY DENSE

BLOWS/FT.	CONSISTANCY
0-2	VERY SOFT
3-4	SOFT
5-8	MEDIUM STIFF
9-15	STIFF
16-30	VERY STIFF
OVER 30	HARD

SAMPLE IDENTIFICATION
- S - SPLIT SPOON
- T - THIN WALL TUBE
- SS - 3in. SPLIT SPOON
- R - DIAMOND CORE
- W - WASH SAMPLE
- U - UNDISTURBED

SAMPLE PROPORTIONS	
DESCRIPTIVE TERM	PERCENT
TRACE	1 TO 10
LITTLE	11 TO 20
SOME	21 TO 35
AND	35 TO 50

BORING SWM-8

BORING LOG (POND E)

BORING SWM-11

PROJECT : Western Regional Park
CLIENT : Howard County Department of Recreation and Parks
SITE: Allen Property

JOB NUMBER: 01-00057.G
SHEET NO. 1 of 1
NORTH: 1305285.6
EAST: 596728.3
ELEVATION: 602.7
START DATE: 11/30/2000
END DATE: 11/30/2000
DRILLER: E2CR
LOGGED BY: JLP

GROUNDWATER		DEPTH OF: (feet)			EQUIPMENT	CASING	SAMPLER	CORE
Date	Time	Water	Casing	Cave-In	TYPE	HSA	SS	
11/30/2000	9:20:00 AM	DRY		11.5'	SIZE, ID	3.25"	1 5/8"	
12/5/2000	3:00:00 PM	DRY		11.5'	HAMMER WT.		140 lbs	
					HAMMER FALL		30"	

SAMPLE NUMBER	SAMPLE DEPTH	SAMPLE RECOVERY	BLOWS / 6" (1800)	LABORATORY TEST RESULTS: NAT. Moist. Freq.	LABORATORY TEST RESULTS: LIQUID LIMIT	LABORATORY TEST RESULTS: PLASTICITY INDEX	DEPTH	ELEV. DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
S-1	0.0	18"	1 3 4	19.2%						Dark brown, moist, medium stiff, Sandy CLAY (cl), trace gravel-sized rock fragments USDA [Clay Loam]	
								EL 600.7			
								2.0		Brown, white, and black, moist, stiff, SILT (ml) USDA [Silt Loam] (RESIDUAL)	
S-2	2.5	18"	6 7 7	24.6%							
S-3	5.0	18"	4 4 5								
S-4	8.5	18"	3 4 5	20.9%							
S-5	13.5	18"	3 4 4	28.0%							
								EL 586.2			
								16.5		Orange, moist, medium dense, Silty SAND (SM), little black gravel-sized rock fragments USDA [SANDY LOAM]	
S-6	18.5	18"	8 7 7	23.3%							
								EL 582.7			
								20.0		Bottom of Boring @ 20 ft.	

BLOWS/FT.	DENSITY
0-4	VERY LOOSE
5-10	LOOSE
11-30	MEDIUM DENSE
31-50	DENSE
OVER 50	VERY DENSE

BLOWS/FT.	CONSISTANCY
0-2	VERY SOFT
3-4	SOFT
5-8	MEDIUM STIFF
9-15	STIFF
16-30	VERY STIFF
OVER 30	HARD

SAMPLE IDENTIFICATION
- S - SPLIT SPOON
- T - THIN WALL TUBE
- SS - 3in. SPLIT SPOON
- R - DIAMOND CORE
- W - WASH SAMPLE
- U - UNDISTURBED

SAMPLE PROPORTIONS	
DESCRIPTIVE TERM	PERCENT
TRACE	1 TO 10
LITTLE	11 TO 20
SOME	21 TO 35
AND	35 TO 50

BORING SWM-11

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/24/02

DIRECTOR — DATE 10/28/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, HOWARD COUNTY HEALTH DEPARTMENT — DATE 10-17-02

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE 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."

RONALD G. LEPSON — SIGNATURE — DATE 9/4/02

ENGINEER'S CERTIFICATE

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

MARK S. RICHMOND — SIGNATURE — DATE 06/11/02

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 9/5/02

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

HOWARD SCD — DATE 9/5/02

NO.	REVISIONS	DESCRIPTION	DATE

KCI FILE:

KCI TECHNOLOGIES INC.
ENGINEERS • PLANNERS • SURVEYORS
10 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND 21030
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WESTERN REGIONAL PARK
HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

SOIL BORING LOGS

SCALE:
DATE: 06-12-02
KCI JOB NO.: 01-00057
CAPITAL PROJECT NO.: N-3932
PERMIT ISSUE:
CONSTRUCTION ISSUE:

SW14

SHEET NO.: 71 OF 113

SDP-02-64

BORING LOG (POND E) — BORING SWM-12

PROJECT : Western Regional Park
CLIENT : Howard County Department of Recreation and Parks
SITE: Allen Property

JOB NUMBER: 01-00057.G
SHEET NO. 1 of 1
NORTH: 1305511.8
EAST: 596468.4
ELEVATION: 612.1
START DATE: 11/30/2000
END DATE: 11/30/2000
DRILLER: E2CR
LOGGED BY: JLP

GROUNDWATER Date	Time	DEPTH OF: (feet) Water	Casing	Cave-In
11/30/2000	10:00:00 AM	DRY		7'
12/5/2000	3:00:00 PM	DRY		7'

EQUIPMENT	CASING	SAMPLER	CORE
TYPE	HSA	SS	
SIZE, ID	3.25"	1 5/8"	
HAMMER WT.		140 lbs	—
HAMMER FALL		30"	—

SAMPLE NUMBER	SAMPLE DEPTH	SAMPLE RECOVERY	BLOWS / 6" (%RQD)	NMC / Froc. Freq.	LIQUID LIMIT	PLASTICITY INDEX
S-1	0.0	18"	2 3 4	29.7%		
S-2	2.5	18"	12 15 19			
S-3	5.0	0	50/0	11.9%		
S-4	8.5	18"	16 32 36	15.9%		
S-5	13.5	0	50/0			

ELEV. / DEPTH	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
	18" Topsoil	
EL 610.6 / 1.5	Light brown, moist, dense, decomposed Quartzite fragments (Boulders) USDA [Loam]	
EL 600.6 / 11.5	Bottom of Boring @ 11.5 ft.	Auger refusal at 11.5'

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTANCY	SAMPLE IDENTIFICATION	SAMPLE PROPORTIONS: DESCRIPTIVE TERM	PERCENT
0-4	VERY LOOSE	0-2	VERY SOFT	S - SPLIT SPOON	TRACE	1 TO 10
5-10	LOOSE	3-4	SOFT	T - THIN WALL TUBE	LITTLE	11 TO 20
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	SS - 3in. SPLIT SPOON	SOME	21 TO 35
31-50	DENSE	9-15	STIFF	R - DIAMOND CORE	AND	35 TO 50
OVER 50	VERY DENSE	16-30	VERY STIFF	W - WASH SAMPLE		
		OVER 30	HARD	U - UNDISTURBED		

BORING SWM-12

KC12 B&W LOG WRP.GPJ KC11.GDT 12/7/01

BORING LOG (BIORETENTION F1) — BORING SWM-15

PROJECT : Western Regional Park
CLIENT : Howard County Department of Recreation and Parks
SITE: Allen Property

JOB NUMBER: 01-00057.G
SHEET NO. 1 of 1
NORTH: 596168
EAST: 1302323
ELEVATION: 579.6
START DATE: 3/7/2002
END DATE: 3/7/2002
DRILLER: E2CR
LOGGED BY: CMN

GROUNDWATER Date	Time	DEPTH OF: (feet) Water	Casing	Cave-In
3/7/2002	9:45:00 AM	DRY		9.5'
3/8/2002	11:00:00 AM	DRY		9.0'

EQUIPMENT	CASING	SAMPLER	CORE
TYPE	HSA	SS	
SIZE, ID	4.25	1 5/8"	
HAMMER WT.		140 lbs.	—
HAMMER FALL		30.0"	—

SAMPLE NUMBER	SAMPLE DEPTH	SAMPLE RECOVERY	BLOWS / 6" (%RQD)	NMC / Froc. Freq.	LIQUID LIMIT	PLASTICITY INDEX
S-1	0.0	10"	3 2 3			
S-2	2.5	16"	5 7 9	15.7%		
S-3	5.0	16"	6 7 12			
S-4	7.5	14"	18 29 47	7.3%	NP	NP
S-5	10.0	2"	50/2	5.7%		
S-6	12.5	11"	25 50/5	4%		
S-7	14.0	1"	50/1			

ELEV. / DEPTH	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
		3" Topsoil
EL 577.6 / 2.0	Brown, moist, medium stiff, SILT, little fine-grained Sand, some fine to very fine root fragments, trace gravel-sized quartz fragments (ml) USDA [Silt Loam]	
EL 575.1 / 4.5	Light-brown, moist, very stiff, fine-grained Sandy SILT, trace gravel to cobble-sized quartz fragments (ml) USDA [Loam]	
EL 572.6 / 7.0	Brown and black, moist, medium dense, Silty fine-grained SAND (sm) USDA [Sandy Loam]	
EL 570.1 / 9.5	Tan and black, moist, very dense, Silty fine-grained SAND, some gravel to cobble-sized quartz fragments (SM) USDA [SANDY LOAM]	
EL 567.6 / 12.0	Decomposed Rock sampled as: Tan and black, moist, very dense, Silty fine-grained SAND, some gravel to cobble-sized quartz fragments (sm) USDA [Sandy Loam]	
EL 565.6 / 14.0	Brown, moist, very stiff, Clayey SILT, and gray, gravel to cobble-sized rock fragments (ml) USDA [Silt Loam]	
	Bottom of Boring @ 14 ft.	

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTANCY	SAMPLE IDENTIFICATION	SAMPLE PROPORTIONS: DESCRIPTIVE TERM	PERCENT
0-4	VERY LOOSE	0-2	VERY SOFT	-S - SPLIT SPOON	TRACE	1 TO 10
5-10	LOOSE	3-4	SOFT	-T- THIN WALL TUBE	LITTLE	11 TO 20
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	-SS- 3in. SPLIT SPOON	SOME	21 TO 35
31-50	DENSE	9-15	STIFF	-R- DIAMOND CORE	AND	35 TO 50
OVER 50	VERY DENSE	16-30	VERY STIFF	-W- WASH SAMPLE		
		OVER 30	HARD	-U- UNDISTURBED		

BORING SWM-15

KC12 B&W CADD WRP2.GPJ KC11.GDT 3/21/02

BORING LOG (BIORETENTION F3) — BORING SWM-16

PROJECT : Western Regional Park
CLIENT : Howard County Department of Recreation and Parks
SITE: Allen Property

JOB NUMBER: 01-00057.G
SHEET NO. 1 of 1
NORTH: 596808
EAST: 1303176
ELEVATION: 591.0
START DATE: 3/7/2002
END DATE: 3/7/2002
DRILLER: E2CR
LOGGED BY: CMN

GROUNDWATER Date	Time	DEPTH OF: (feet) Water	Casing	Cave-In
3/7/2002	11:00:00 AM	DRY		11.0'
3/8/2002	12:00:00 PM	DRY		11.0'

EQUIPMENT	CASING	SAMPLER	CORE
TYPE	HSA	SS	
SIZE, ID	4.25	1 5/8"	
HAMMER WT.		140 lbs.	—
HAMMER FALL		30.0"	—

SAMPLE NUMBER	SAMPLE DEPTH	SAMPLE RECOVERY	BLOWS / 6" (%RQD)	NMC / Froc. Freq.	LIQUID LIMIT	PLASTICITY INDEX
S-1	0.0	18"	2 3 4			
S-2	2.5	18"	4 5 5			
S-3	5.0	16"	7 7 7			
S-4	7.5	18"	8 9 8	14.5%		
S-5	10.0	18"	9 10 12	14.4%	33	NP
S-6	12.5	16"	9 14 21	11.5%		
S-7	14.0	16"	9 9 12	10.7%		

ELEV. / DEPTH	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
	TOPSOIL	
EL 589.0 / 2.0	Dark-brown, moist, stiff, Silty CLAY (cl) USDA [Clay Loam]	
EL 586.5 / 4.5	Orange, tan, and red, moist, medium dense, Silty micaceous SAND (SM) USDA [SANDY LOAM]	
EL 575.5 / 15.5	Bottom of Boring @ 15.5 ft.	

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTANCY	SAMPLE IDENTIFICATION	SAMPLE PROPORTIONS: DESCRIPTIVE TERM	PERCENT
0-4	VERY LOOSE	0-2	VERY SOFT	-S - SPLIT SPOON	TRACE	1 TO 10
5-10	LOOSE	3-4	SOFT	-T- THIN WALL TUBE	LITTLE	11 TO 20
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	-SS- 3in. SPLIT SPOON	SOME	21 TO 35
31-50	DENSE	9-15	STIFF	-R- DIAMOND CORE	AND	35 TO 50
OVER 50	VERY DENSE	16-30	VERY STIFF	-W- WASH SAMPLE		
		OVER 30	HARD	-U- UNDISTURBED		

BORING SWM-16

KC12 B&W CADD WRP2.GPJ KC11.GDT 3/21/02

BORING LOG (POND F) — BORING SWM-17

PROJECT : Western Regional Park
CLIENT : Howard County Department of Recreation and Parks
SITE: Allen Property

JOB NUMBER: 01-00057.G
SHEET NO. 1 of 1
NORTH: 597503
EAST: 1303577
ELEVATION: 569.9
START DATE: 3/6/2002
END DATE: 3/6/2002
DRILLER: E2CR
LOGGED BY: CMN

GROUNDWATER Date	Time	DEPTH OF: (feet) Water	Casing	Cave-In
3/6/2002	12:15:00 PM	DRY		9.5'
3/7/2002	1:00:00 PM	DRY		9.5'

EQUIPMENT	CASING	SAMPLER	CORE
TYPE	HSA	SS	
SIZE, ID	4.25	1 5/8"	
HAMMER WT.		140 lbs.	—
HAMMER FALL		30.0"	—

SAMPLE NUMBER	SAMPLE DEPTH	SAMPLE RECOVERY	BLOWS / 6" (%RQD)	NMC / Froc. Freq.	LIQUID LIMIT	PLASTICITY INDEX
S-1	0.0	6"	3 2 3			
S-2	2.5	18"	3 3 4			
S-3	5.0	14"	3 5 5	18.6%		
S-4	7.5	10"	7 12 19	15.5%		
S-5	10.0	14"	6 14 21	7.7%	27	NP
S-6	12.5	14"	5 6 8	22.1%		
S-7	14.0	14"	4 5 7			

ELEV. / DEPTH	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
	Brown, moist, loose, Clayey fine-grained SAND, trace very fine root fragments, trace gravel to cobble-sized quartz fragments (sc) USDA [Loam]	
EL 567.9 / 2.0	Light-brown, moist, medium stiff, Silty CLAY (cl) USDA [Clay Loam]	
EL 565.4 / 4.5	Light-brown, moist, stiff, micaceous SILT, some fine-grained Sand, trace gravel to cobble-sized quartz fragments (ml) USDA [SANDY LOAM]	Infiltration testing conducted @ 5.2' Maximum infiltration rate less than 0.015 inches/hour
EL 562.9 / 7.0		
EL 560.4 / 9.5	Light-brown, moist, stiff, Silty CLAY, to gray-brown and tan, hard, gravel to cobble-sized rock fragments (cl-ml) USDA [Clay Loam]	
EL 557.9 / 12.0	Black, tan, and gray, moist, micaceuos Silty GRAVEL-sized rock fragments (GM) USDA [Silt Loam]	
EL 555.9 / 14.0	Brown, black, red, and white, moist, stiff, Sandy SILT, some mica (ml) USDA [Loam]	
EL 554.4 / 15.5	Orange-brown, gray, black, and white, moist, stiff, SILT (ml) USDA [Silt Loam]	
	Bottom of Boring @ 15.5 ft.	

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTANCY	SAMPLE IDENTIFICATION	SAMPLE PROPORTIONS: DESCRIPTIVE TERM	PERCENT
0-4	VERY LOOSE	0-2	VERY SOFT	-S - SPLIT SPOON	TRACE	1 TO 10
5-10	LOOSE	3-4	SOFT	-T- THIN WALL TUBE	LITTLE	11 TO 20
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	-SS- 3in. SPLIT SPOON	SOME	21 TO 35
31-50	DENSE	9-15	STIFF	-R- DIAMOND CORE	AND	35 TO 50
OVER 50	VERY DENSE	16-30	VERY STIFF	-W- WASH SAMPLE		
		OVER 30	HARD	-U- UNDISTURBED		

BORING SWM-17

KC12 B&W CADD WRP2.GPJ KC11.GDT 3/21/02

BORING LOG (POND F) — BORING SWM-18

PROJECT : Western Regional Park
CLIENT : Howard County Department of Recreation and Parks
SITE: Allen Property

JOB NUMBER: 01-00057.G
SHEET NO. 1 of 1
NORTH: 597508
EAST: 1303643
ELEVATION: 574.5
START DATE: 3/6/2002
END DATE: 3/6/2002
DRILLER: E2CR
LOGGED BY: CMN

GROUNDWATER Date	Time	DEPTH OF: (feet) Water	Casing	Cave-In
3/6/2002	1:05:00 PM	DRY		10.0'
3/7/2002	2:00:00 PM	DRY		10.0'

EQUIPMENT	CASING	SAMPLER	CORE
TYPE	HSA	SS	
SIZE, ID	4.25	1 5/8"	
HAMMER WT.		140 lbs.	—
HAMMER FALL		30.0"	—

SAMPLE NUMBER	SAMPLE DEPTH	SAMPLE RECOVERY	BLOWS / 6" (%RQD)	NMC / Froc. Freq.	LIQUID LIMIT	PLASTICITY INDEX
S-1	0.0	16"	3 4 4			
S-2	2.5	16"	4 6 8			
S-3	5.0	16"	3 5 6	19.5%		
S-4	7.5	14"	6 6 6			
S-5	10.0	16"	4 6 7	15.6%	NP	NP
S-6	12.5	14"	4 6 8	17.8%		
S-7	14.0	18"	4 6 9	21.3%		

ELEV. / DEPTH	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
	Light-brown, moist, medium stiff, Silty CLAY (cl-ml) USDA [Clay Loam]	
EL 572.5 / 2.0	Light-brown, moist, stiff, Clayey Silt (ml) USDA [Silt Loam]	
EL 570.0 / 4.5	Brown, moist, stiff, SILT, some fine-grained Sand (ml) USDA [SANDY LOAM]	
EL 567.5 / 7.0	Orange-brown, gray, and black, moist, stiff, SILT, some Sand, some mica (ml) USDA [Silt Loam]	Infiltration testing conducted @ 10.2' Maximum infiltration rate less than 0.002 inches/hour
	S-7: Red, gravel to cobble-sized quartz fragments	
EL 559.0 / 15.5	Bottom of Boring @ 15.5 ft.	

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTANCY	SAMPLE IDENTIFICATION	SAMPLE PROPORTIONS: DESCRIPTIVE TERM	PERCENT
0-4	VERY LOOSE	0-2	VERY SOFT	-S - SPLIT SPOON	TRACE	1 TO 10
5-10	LOOSE	3-4	SOFT	-T- THIN WALL TUBE	LITTLE	11 TO 20
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	-SS- 3in. SPLIT SPOON	SOME	21 TO 35
31-50	DENSE	9-15	STIFF	-R- DIAMOND CORE	AND	35 TO 50
OVER 50	VERY DENSE	16-30	VERY STIFF	-W- WASH SAMPLE		
		OVER 30	HARD	-U- UNDISTURBED		

BORING SWM-18

KC12 B&W CADD WRP2.GPJ KC11.GDT 3/21/02

BORING LOG (POND E) — BORING SWM-20

PROJECT : Western Regional Park
CLIENT : Howard County Department of Recreation and Parks
SITE: Allen Property

JOB NUMBER: 01-00057.G
SHEET NO. 1 of 1
NORTH: 596395
EAST: 1305198
ELEVATION: 590.6
START DATE: 3/6/2002
END DATE: 3/6/2002
DRILLER: E2CR
LOGGED BY: CMN

GROUNDWATER Date	Time	DEPTH OF: (feet) Water	Casing	Cave-In
3/6/2002	9:30:00 AM	DRY		15.2'
3/7/2002	11:15:00 AM	DRY		15.2'

EQUIPMENT	CASING	SAMPLER	CORE
TYPE	HSA	SS	
SIZE, ID	4.25	1 5/8"	
HAMMER WT.		140 lbs.	—
HAMMER FALL		30.0"	—

SAMPLE NUMBER	SAMPLE DEPTH	SAMPLE RECOVERY	BLOWS / 6" (%RQD)	NMC / Froc. Freq.	LIQUID LIMIT	PLASTICITY INDEX
S-1	0.0	12"	1 2 3			
S-2	2.5	12"	5 7 9			
S-3	5.0	16"	3 4 5			
S-4	7.5	18"	3 3 4	25.8%	31	NP
S-5	10.0	12"	4 5 5	23.9%		
S-6	12.5	16"	4 5 6	23.3%		
S-7	15.0	16"	5 6 6	17.9%		
S-8	17.5	16"	6 9 11			
S-9	19.0	18"	6 7 7			

ELEV. / DEPTH	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
	Brown, moist, medium stiff, SILT, trace fine-grained Sand (ml) USDA [Silt Loam]	
	S-3: Very stiff	
	S-4: Gray and tan, stiff	
EL 583.6 / 7.0	Black, tan, and brown, moist, Silty micaceous SAND (SM) USDA [SANDY LOAM]	Infiltration testing conducted @ 9.4' Maximum infiltration rate less than 0.01 inches/hour
	S-5: Stiff	
	S-8: Very stiff	
	S-9: Stiff	
EL 570.1 / 20.5	Bottom of Boring @ 20.5 ft.	

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTANCY	SAMPLE IDENTIFICATION	SAMPLE PROPORTIONS: DESCRIPTIVE TERM	PERCENT
0-4	VERY LOOSE	0-2	VERY SOFT	-S - SPLIT SPOON	TRACE	1 TO 10
5-10	LOOSE	3-4	SOFT	-T- THIN WALL TUBE	LITTLE	11 TO 20
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	-SS- 3in. SPLIT SPOON	SOME	21 TO 35
31-50	DENSE	9-15	STIFF	-R- DIAMOND CORE	AND	35 TO 50
OVER 50	VERY DENSE	16-30	VERY STIFF	-W- WASH SAMPLE		
		OVER 30	HARD	-U- UNDISTURBED		

BORING SWM-20

KC12 B&W CADD WRP2.GPJ KC11.GDT 3/21/02

BORING LOG (POND E) — BORING SWM-21

PROJECT : Western Regional Park
CLIENT : Howard County Department of Recreation and Parks
SITE: Allen Property

JOB NUMBER: 01-00057.G
SHEET NO. 1 of 1
NORTH: 596494
EAST: 1305344
ELEVATION: 600.18
START DATE: 3/6/2002
END DATE: 3/6/2002
DRILLER: E2CR
LOGGED BY: CMN

GROUNDWATER Date	Time	DEPTH OF: (feet) Water	Casing	Cave-In
3/6/2002	10:35:00 AM	DRY		14.3'
3/7/2002	12:30:00 PM	DRY		14.3'

EQUIPMENT	CASING	SAMPLER	CORE
TYPE	HSA	SS	
SIZE, ID	4.25	1 5/8"	
HAMMER WT.		140 lbs.	—
HAMMER FALL		30.0"	—

SAMPLE NUMBER	SAMPLE DEPTH	SAMPLE RECOVERY	BLOWS / 6" (%RQD)	NMC / Froc. Freq.	LIQUID LIMIT	PLASTICITY INDEX
S-1	0.0	16"	1 3 3			
S-2	2.5	18"	4 5 5			
S-3	5.0	16"	4 5 6			
S-4	7.5	18"	5 5 5			
S-5	10.0	16"	6 6 7			
S-6	12.5	18"	4 4 6	17.7%		
S-7	15.0	16"	4 6 7	17.2%		
S-8	17.5	18"	6 6 8	21.7%	31	NP
S-9	19.0	16"	4 5 8	22.3%		

ELEV. / DEPTH	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
	Brown, moist, medium stiff, CLAY, trace fine to very fine root fragments, trace gravel sized rock fragments (cl) USDA [Clay Loam]	
EL 598.2 / 2.0	Light-brown, moist, stiff, SILT, little fine-grained Sand (ml) USDA [Silt Loam]	
EL 595.7 / 4.5	Light-brown, moist, stiff, Sandy SILT, trace gravel-sized rock fragments, little mica (ml) USDA [Loam]	
	S-4: Black, tan, and brown	
	S-5: Gray-brown and white	
EL 588.2 / 12.0	Tan, black, and white, moist, loose, Silty SAND, some mica (SM) USDA [Sand Loam]	
	S-7: Medium dense	
EL 581.2 / 19.0	Gray-brown, tan, black, and white, moist, medium dense, fine-grained Silty SAND, some mica, some gravel-sized quartz framents (SM) USDA [SANDY LOAM]	Infiltration testing conducted @ 19.5' Maximum infiltration rate less than 0.008 inches/hour
EL 579.7 / 20.5	Bottom of Boring @ 20.5 ft.	

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTANCY	SAMPLE IDENTIFICATION	SAMPLE PROPORTIONS: DESCRIPTIVE TERM	PERCENT
0-4	VERY LOOSE	0-2	VERY SOFT	-S - SPLIT SPOON	TRACE	1 TO 10
5-10	LOOSE	3-4	SOFT	-T- THIN WALL TUBE	LITTLE	11 TO 20
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	-SS- 3in. SPLIT SPOON	SOME	21 TO 35
31-50	DENSE	9-15	STIFF	-R- DIAMOND CORE	AND	35 TO 50
OVER 50	VERY DENSE	16-30	VERY STIFF	-W- WASH SAMPLE		
		OVER 30	HARD	-U- UNDISTURBED		

BORING SWM-21

KC12 B&W CADD WRP2.GPJ KC11.GDT 3/21/02

BORING LOG (DRY SWALE 2) — BORING DS-1

PROJECT : Western Regional Park
CLIENT : Howard County Department of Recreation and Parks
SITE: Allen Property

JOB NUMBER: 01-00057.G
SHEET NO. 1 of 1
NORTH: 597732
EAST: 1304690
ELEVATION: 588.3
START DATE: 3/7/2002
END DATE: 3/7/2002
DRILLER: E2CR
LOGGED BY: CMN

GROUNDWATER Date	Time	DEPTH OF: (feet) Water	Casing	Cave-In
3/7/2002	11:40:00 AM	DRY		7.0'

EQUIPMENT	CASING	SAMPLER	CORE
TYPE	HSA	SS	
SIZE, ID	4.25	1 5/8"	
HAMMER WT.		140 lbs.	—
HAMMER FALL		30.0"	—

SAMPLE NUMBER	SAMPLE DEPTH	SAMPLE RECOVERY	BLOWS / 6" (%RQD)	NMC / Froc. Freq.	LIQUID LIMIT	PLASTICITY INDEX
S-1	0.0	16"	3 3 4			
S-2	2.5	14"	6 8 10	11%		
S-3	5.0	18"	8 11 20	8.6%		
S-4	7.5	16"	10 14 17	10%		
S-5	9.0	14"	8 9 12			

ELEV. / DEPTH	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
	Dark-brown, moist, medium stiff, Silty CLAY (cl) USDA [Clay Loam]	2" Topsoil
EL 586.3 / 2.0	Tan, brown, and orange, moist, very stiff to hard, micaceous SILT, trace gravel-sized rock fragments (ml) USDA [Silt Loam]	
EL 577.8 / 10.5	Bottom of Boring @ 10.5 ft.	

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTANCY	SAMPLE IDENTIFICATION	SAMPLE PROPORTIONS: DESCRIPTIVE TERM	PERCENT
0-4	VERY LOOSE	0-2	VERY SOFT	-S - SPLIT SPOON	TRACE	1 TO 10
5-10	LOOSE	3-4	SOFT	-T- THIN WALL TUBE	LITTLE	11 TO 20
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	-SS- 3in. SPLIT SPOON	SOME	21 TO 35
31-50	DENSE	9-15	STIFF	-R- DIAMOND CORE	AND	35 TO 50
OVER 50	VERY DENSE	16-30	VERY STIFF	-W- WASH SAMPLE		
		OVER 30	HARD	-U- UNDISTURBED		

BORING DS-1

KC12 B&W CADD WRP2.GPJ KC11.GDT 3/21/02

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

[signature] — CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

[signature] — CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

[signature] — DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

[signature] — COUNTY HEALTH OFFICER, HOWARD COUNTY HEALTH DEPARTMENT — DATE 10-17-02

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE 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."

RONALD G. LEPSON — NAME; [signature] — SIGNATURE; 9/4/02 — DATE

ENGINEERS CERTIFICATE

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

MARK S. RICHMOND — NAME; [signature] — SIGNATURE; 06/11/02 — DATE

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

[signature] — USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 9/5/02

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

[signature] — HOWARD SCD — DATE 9/5/02

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE:

KCI TECHNOLOGIES INC.
ENGINEERS • PLANNERS • SURVEYORS
10 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
WWW.KCI.COM

STATE OF MARYLAND — MARK S. RICHMOND — NO. 16898 — REGISTERED PROFESSIONAL ENGINEER

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

SOIL BORING LOGS

SCALE:
DATE: 06-12-02
KCI JOB NO.: 01-00057
CAPITAL PROJECT NO.: N-3932
PERMIT ISSUE:
CONSTRUCTION ISSUE:

SW15

BORING LOG (DRY SWALE 2) — BORING DS-2

PROJECT : Western Regional Park
CLIENT : Howard County Department of Recreation and Parks
SITE: Allen Property

JOB NUMBER:01-00057.G
SHEET NO. 1 of 1
NORTH: 597730
EAST: 1305023
ELEVATION: 597.0
START DATE: 3/7/2002
END DATE: 3/7/2002
DRILLER: E2CR
LOGGED BY: CMN

GROUNDWATER Date	Time	DEPTH OF: (feet) Water	Casing	Cave-In	EQUIPMENT	CASING	SAMPLER	CORE
3/7/2002	2:10:00 PM	DRY		8.0'	TYPE	HSA	SS	
					SIZE, ID	4.25	1 5/8"	
					HAMMER WT.		140 lbs.	—
					HAMMER FALL		30.0"	—

SAMPLE NUMBER	SAMPLE DEPTH	SAMPLE RECOVERY	BLOWS / 6" (%RQD)	NMC / Frac. Freq.	LIQUID LIMIT	PLASTICITY INDEX	ELEV. / DEPTH	DESCRIPTION AND CLASSIFICATION
S-1	0.0	16"	3 3 4					Light-brown, moist, medium stiff, CLAY, trace gravel-sized quartz fragments (cl) USDA [Clay Loam]
							EL 595.0 / 2.0	
S-2	2.5	18"	3 6 8	16.2%				Light-brown, moist, stiff to very stiff, fine-grained Sandy micaceous SILT, trace decomposed gravel-sized quartz fragments (ML) USDA [Loam]
S-3	5.0	16"	3 7 9	21.7%	48	15		
S-4	7.5	18"	6 6 9	17.9%				
S-5	9.0	18"	7 10 12					
							EL 586.5 / 10.5	Bottom of Boring @ 10.5 ft.

NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.

DEPTH: 5, 10, 15, 20, 25

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTANCY	SAMPLE IDENTIFICATION	SAMPLE PROPORTIONS DESCRIPTIVE TERM	PERCENT
0-4	VERY LOOSE	0-2	VERY SOFT	-S - SPLIT SPOON	TRACE	1 TO 10
5-10	LOOSE	3-4	SOFT	-T- THIN WALL TUBE	LITTLE	11 TO 20
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	-SS- 3in. SPLIT SPOON	SOME	21 TO 35
31-50	DENSE	9-15	STIFF	-R- DIAMOND CORE	AND	35 TO 50
OVER 50	VERY DENSE	16-30	VERY STIFF	-W- WASH SAMPLE		
		OVER 30	HARD	-U- UNDISTURBED		

BORING DS-2

KC12 B&W CADD WRP2.GPJ KC11.GDT 3/21/02

BORING LOG (DRY SWALE 2) — BORING DS-3

PROJECT : Western Regional Park
CLIENT : Howard County Department of Recreation and Parks
SITE: Allen Property

JOB NUMBER:01-00057.G
SHEET NO. 1 of 1
NORTH: 597899
EAST: 1305215
ELEVATION: 613.7
START DATE: 3/7/2002
END DATE: 3/7/2002
DRILLER: E2CR
LOGGED BY: CMN

GROUNDWATER Date	Time	DEPTH OF: (feet) Water	Casing	Cave-In	EQUIPMENT	CASING	SAMPLER	CORE
3/7/2002	2:40:00 PM	DRY		7.0'	TYPE	HSA	SS	
					SIZE, ID	4.25	1 5/8"	
					HAMMER WT.		140 lbs.	—
					HAMMER FALL		30.0"	—

SAMPLE NUMBER	SAMPLE DEPTH	SAMPLE RECOVERY	BLOWS / 6" (%RQD)	NMC / Frac. Freq.	LIQUID LIMIT	PLASTICITY INDEX	ELEV. / DEPTH	DESCRIPTION AND CLASSIFICATION
S-1	0.0	16"	2 3 4					Light-brown, moist, medium stiff, CLAY, little very fine root fragments (cl) USDA [Clay Loam]
							EL 611.7 / 2.0	
S-2	2.5	18"	6 9 11					Light-brown to orange-brown, moist, very stiff, Sandy SILT, trace gravel-sized quartz fragments (ml) USDA [Loam] S-3: Brown
S-3	5.0	14"	6 9 10	14.3%				
							EL 606.7 / 7.0	Tan and light-gray, moist, very stiff, Sandy SILT (ml) USDA [Loam]
S-4	7.5	18"	10 14 16	9.8%				
S-5	9.0	10"	11 12 18	10.2%				
							EL 603.2 / 10.5	Bottom of Boring @ 10.5 ft.

BLOWS/FT. DENSITY / BLOWS/FT. CONSISTANCY / SAMPLE IDENTIFICATION / SAMPLE PROPORTIONS legend (as above)

BORING DS-3

BORING LOG (DRY SWALE 1) — BORING DS-6

PROJECT : Western Regional Park
CLIENT : Howard County Department of Recreation and Parks
SITE: Allen Property

JOB NUMBER:01-00057.G
SHEET NO. 1 of 1
NORTH: 597626
EAST: 1305913
ELEVATION: 606.1
START DATE: 3/8/2002
END DATE: 3/8/2002
DRILLER: E2CR
LOGGED BY: CMN

GROUNDWATER Date	Time	DEPTH OF: (feet) Water	Casing	Cave-In	EQUIPMENT	CASING	SAMPLER	CORE
3/8/2002	8:00:00 AM	DRY		7.0'	TYPE	HSA	SS	
					SIZE, ID	4.25	1 5/8"	
					HAMMER WT.		140 lbs.	—
					HAMMER FALL		30.0"	—

SAMPLE NUMBER	SAMPLE DEPTH	SAMPLE RECOVERY	BLOWS / 6" (%RQD)	NMC / Frac. Freq.	LIQUID LIMIT	PLASTICITY INDEX	ELEV. / DEPTH	DESCRIPTION AND CLASSIFICATION
S-1	0.0	16"	1 3 3					Brown, moist, medium stiff, Clayey SILT, trace very fine root fragments (ml) USDA [Silt Loam]
							EL 604.1 / 2.0	
S-2	2.5	16"	4 5 5	23.1%				Light-brown, moist, stiff to very stiff, micaceous SILT, some Sand (ML) USDA [Silt Loam]
S-3	5.0	16"	5 7 8	22.8%	38	12		
S-4	7.5	18"	6 7 12	12.4%				S-4: Light-gray to white
S-5	9.0	14"	7 7 11					S-5: Light-brown
							EL 595.6 / 10.5	Bottom of Boring @ 10.5 ft.

BLOWS/FT. DENSITY / BLOWS/FT. CONSISTANCY / SAMPLE IDENTIFICATION / SAMPLE PROPORTIONS legend (as above)

BORING DS-6

BORING LOG (DRY SWALE 1) — BORING DS-7

PROJECT : Western Regional Park
CLIENT : Howard County Department of Recreation and Parks
SITE: Allen Property

JOB NUMBER:01-00057.G
SHEET NO. 1 of 1
NORTH: 597395
EAST: 1305882
ELEVATION: 612.7
START DATE: 3/8/2002
END DATE: 3/8/2002
DRILLER: E2CR
LOGGED BY: CMN

GROUNDWATER Date	Time	DEPTH OF: (feet) Water	Casing	Cave-In	EQUIPMENT	CASING	SAMPLER	CORE
3/8/2002	8:30:00 AM	DRY		7.5'	TYPE	HSA	SS	
					SIZE, ID	4.25	1 5/8"	
					HAMMER WT.		140 lbs.	—
					HAMMER FALL		30.0"	—

SAMPLE NUMBER	SAMPLE DEPTH	SAMPLE RECOVERY	BLOWS / 6" (%RQD)	NMC / Frac. Freq.	LIQUID LIMIT	PLASTICITY INDEX	ELEV. / DEPTH	DESCRIPTION AND CLASSIFICATION
S-1	0.0	16"	1 3 3					Dark-brown, moist, medium stiff to stiff, Silty CLAY (cl) USDA [Clay Loam]
S-2	2.5	16"	4 5 5	18.8%				
S-3	5.0	16"	5 7 8					
							EL 605.7 / 7.0	White and tan, moist, very stiff, micaceous SILT (ml) USDA [Silt Loam]
S-4	7.5	14"	6 7 12	11.5%				
S-5	9.0	18"	7 7 11	9.8%				
							EL 602.2 / 10.5	Bottom of Boring @ 10.5 ft.

BLOWS/FT. DENSITY / BLOWS/FT. CONSISTANCY / SAMPLE IDENTIFICATION / SAMPLE PROPORTIONS legend (as above)

BORING DS-7

BORING LOG (DRY SWALE 3) — BORING DS-8

PROJECT : Western Regional Park
CLIENT : Howard County Department of Recreation and Parks
SITE: Allen Property

JOB NUMBER:01-00057.G
SHEET NO. 1 of 1
NORTH: 597519
EAST: 1304581
ELEVATION: 599.0
START DATE: 3/7/2002
END DATE: 3/7/2002
DRILLER: E2CR
LOGGED BY: CMN

GROUNDWATER Date	Time	DEPTH OF: (feet) Water	Casing	Cave-In	EQUIPMENT	CASING	SAMPLER	CORE
3/7/2002	0:55:00 AM	DRY		7.5'	TYPE	HSA	SS	
					SIZE, ID	4.25	1 5/8"	
					HAMMER WT.		140 lbs.	—
					HAMMER FALL		30.0"	—

SAMPLE NUMBER	SAMPLE DEPTH	SAMPLE RECOVERY	BLOWS / 6" (%RQD)	NMC / Frac. Freq.	LIQUID LIMIT	PLASTICITY INDEX	ELEV. / DEPTH	DESCRIPTION AND CLASSIFICATION
S-1	0.0	16"	3 4 5					Light-brown, moist, medium stiff, Sandy CLAY, trace gravel-sized rock fragments (cl) USDA [Clay Loam]
							EL 597.0 / 2.0	
S-2	2.5	16"	5 6 5	15.4%				Light-brown, moist, medium dense, Silty SAND (SM) USDA [Loam]
S-3	5.0	18"	4 5 5	11.9%	35	NP		S-3: Trace gravel-sized rock fragments
							EL 592.0 / 7.0	Orange-brown and tan, moist, medium stiff, fine-grained Sandy SILT, trace gravel-sized rock fragments (ml) USDA [Loam]
S-4	7.5	18"	4 4 4	17.5%				
S-5	9.0	14"	5 6 6					
							EL 588.5 / 10.5	Bottom of Boring @ 10.5 ft.

BLOWS/FT. DENSITY / BLOWS/FT. CONSISTANCY / SAMPLE IDENTIFICATION / SAMPLE PROPORTIONS legend (as above)

BORING DS-8

BORING LOG (DRY SWALE 3) — BORING DS-9

PROJECT : Western Regional Park
CLIENT : Howard County Department of Recreation and Parks
SITE: Allen Property

JOB NUMBER:01-00057.G
SHEET NO. 1 of 1
NORTH: 597469
EAST: 1304877
ELEVATION: 612.6
START DATE: 3/7/2002
END DATE: 3/7/2002
DRILLER: E2CR
LOGGED BY: CMN

GROUNDWATER Date	Time	DEPTH OF: (feet) Water	Casing	Cave-In	EQUIPMENT	CASING	SAMPLER	CORE
3/7/2002	0:35:00 AM	DRY		7.0'	TYPE	HSA	SS	
					SIZE, ID	4.25	1 5/8"	
					HAMMER WT.		140 lbs.	—
					HAMMER FALL		30.0"	—

SAMPLE NUMBER	SAMPLE DEPTH	SAMPLE RECOVERY	BLOWS / 6" (%RQD)	NMC / Frac. Freq.	LIQUID LIMIT	PLASTICITY INDEX	ELEV. / DEPTH	DESCRIPTION AND CLASSIFICATION
S-1	0.0	12"	2 2 3					Dark-brown, moist, medium stiff, CLAY (cl) USDA [Clay Loam]
							EL 610.6 / 2.0	Tan, brown, and red, moist, very stiff, SILT (ml) USDA [Silt Loam]
S-2	2.5	16"	4 9 10					
S-3	5.0	14"	9 20 28	7.6%				S-3: Hard
S-4	7.5	16"	6 8 9	9.9%				
S-5	9.0	14"	6 7 6	14.1%				S-5: Stiff
							EL 602.1 / 10.5	Bottom of Boring @ 10.5 ft.

BLOWS/FT. DENSITY / BLOWS/FT. CONSISTANCY / SAMPLE IDENTIFICATION / SAMPLE PROPORTIONS legend (as above)

BORING DS-9

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER — DATE 10-17-02
HOWARD COUNTY HEALTH DEPARTMENT

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE 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."

RONALD G. LEPSON — NAME; SIGNATURE; 9/4/02 — DATE

ENGINEERS CERTIFICATE

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

MARK S. RICHMOND — NAME; SIGNATURE; 06/11/02 — DATE

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 9/5/02

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

HOWARD SCD — DATE 9/5/02

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE:

KCI TECHNOLOGIES INC.
ENGINEERS • PLANNERS • SURVEYORS
10 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
WWW.KCI.COM

STATE OF MARYLAND — MARK S. RICHMOND — No. 16898 — REGISTERED PROFESSIONAL ENGINEER

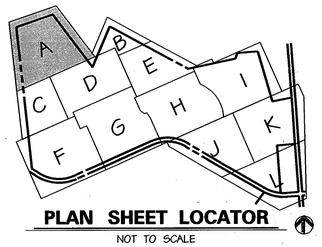
WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

SOIL BORING LOGS

SCALE:
DATE: 06-12-02
KCI JOB NO.: 01-00057
CAPITAL PROJECT NO.: N-3932
PERMIT ISSUE:
CONSTRUCTION ISSUE:

SW16



PLAN SHEET LOCATOR

NOT TO SCALE

GRAPHIC SCALE

50 0 25 50 100

(IN FEET)
1 inch = 50ft.

LEGEND

- SHRUBS
- EVERGREEN TREES
- ORNAMENTAL OR UNDERSTORY TREES
- SHADE TREES
- 590 — EX. INDEX CONTOUR
- GIC2 — EX. 2' INTERMEDIATE CONTOUR
- SOIL LINE
- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- EX. WOODS LINE
- W — SURVEYED WETLAND (BUILDING RESTRICTION LINE)
- EX. STREAMS
- SB — 75' STREAM BUFFER
- EQUESTRIAN/HIKING TRAIL
- 570.9 — EX. SPOT ELEVATION
- PROPOSED TREE LINE TO REMAIN
- PROPOSED ASPHALT PATH
- PROPOSED CONCRETE PATH
- PROPOSED FENCE LINE
- PROPOSED RETAINING WALL
- PROPOSED CONC. CURB & GUTTER
- PROPOSED ASPHALT PAVING
- 620 — PROPOSED INDEX CONTOUR
- 614 — PROPOSED INTERMEDIATE CONTOUR
- 617.25 — PROPOSED SPOT ELEVATION
- PROPOSED INLET
- PROPOSED STORM DRAIN END SECTION
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN
- PROPOSED SEPTIC TANK
- S — PROPOSED SANITARY SEWER
- PROPOSED SEWER MANHOLE
- PROPOSED SEPTIC DRAIN FIELD
- PROPOSED MONITORING WELL
- PROPOSED LIGHT POLE
- PROPOSED PADDOCK FENCE

PLANT SYMBOLS AND LABELS THAT ARE SCREENED ARE PROPOSED PLANTINGS TO BE PLANTED AT THE DISCRETION OF RECREATION AND PARKS. THEY ARE NOT INCLUDED IN THE REQUIRED PLANT TABULATIONS AND ARE NOT LISTED IN THE PLANT SCHEDULES.

- HIGH MARSH PLANTING
- WET WILD FLOWER MIX
- WILD FLOWER MIX
- LAWN MIX #1
- HERBACEOUS PLANTS
- MICROPOOL PLANTING
- FOREBAY PLANTING
- NATIVE MIX "A"
- BOULDER PLACEMENT

NOTES

1. SEE ENLARGED LANDSCAPE PLANS FOR PLANTINGS OF STORMWATER MANAGEMENT AND BIORETENTION FACILITIES.
2. SEE LS12 FOR PLANT LISTS AND HOWARD COUNTY LANDSCAPE TABULATIONS.
3. SEE LS13 FOR PLANTING DETAILS AND NOTES.
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APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

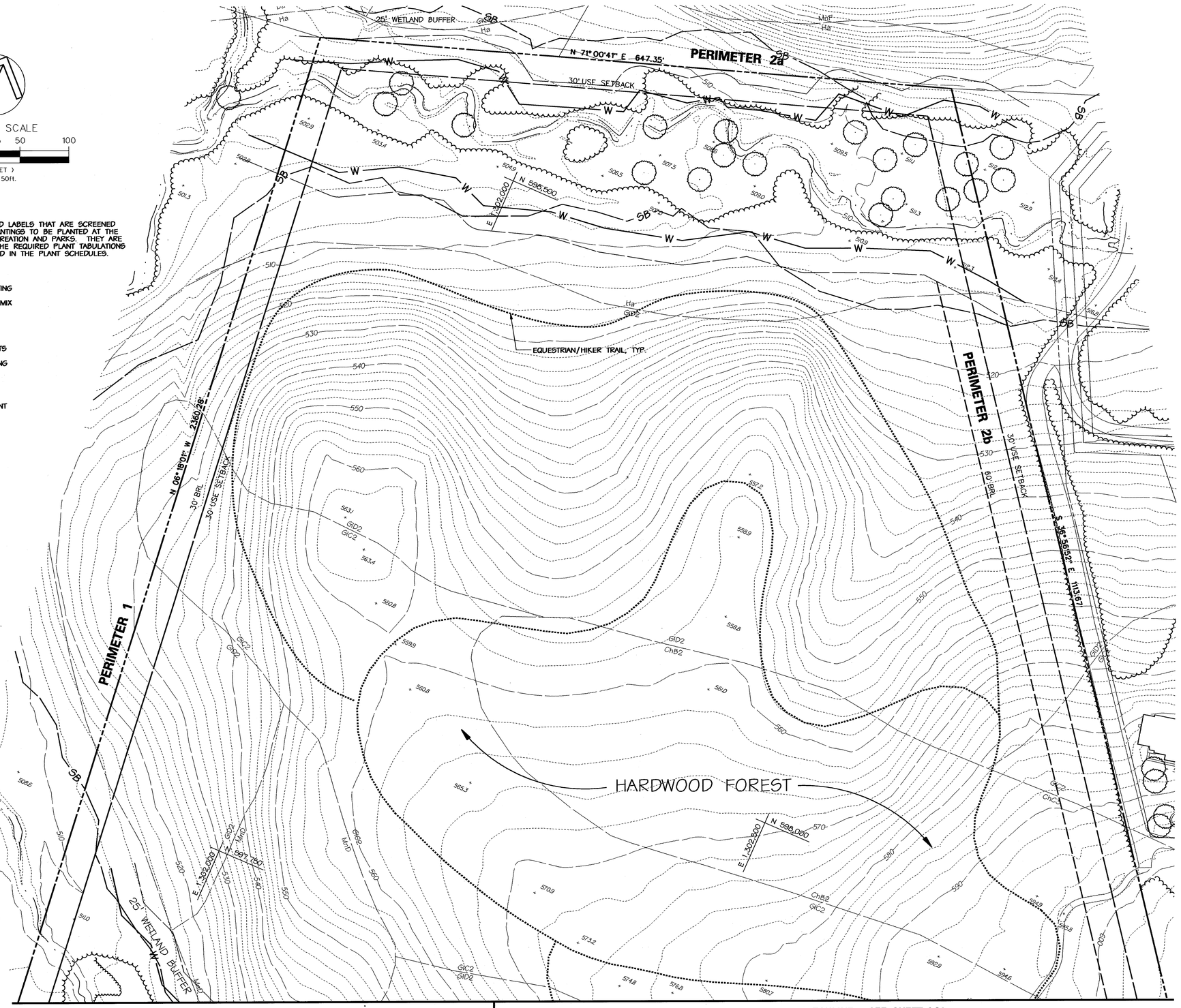
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS.

COUNTY HEALTH OFFICER, H.C.H.D. — DATE 10-17-02

HOWARD COUNTY HEALTH DEPARTMENT



MATCHLINE – SEE SHEET LS2, PLAN OF AREA C

MATCHLINE – SEE SHEET LS3

NO PROPOSED PLANTING ON THIS SHEET

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

NO.	REVISIONS	DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 01000057.S \ ULAND01.DGN

KCI TECHNOLOGIES INC.
ENGINEERS • PLANNERS • SURVEYORS
10 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
KCI TECHNOLOGIES WWW.KCI.COM

STATE OF MARYLAND — DOUGLAS M. TAYLOR — REGISTERED LANDSCAPE ARCHITECT — 01/16/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410) 313-4640

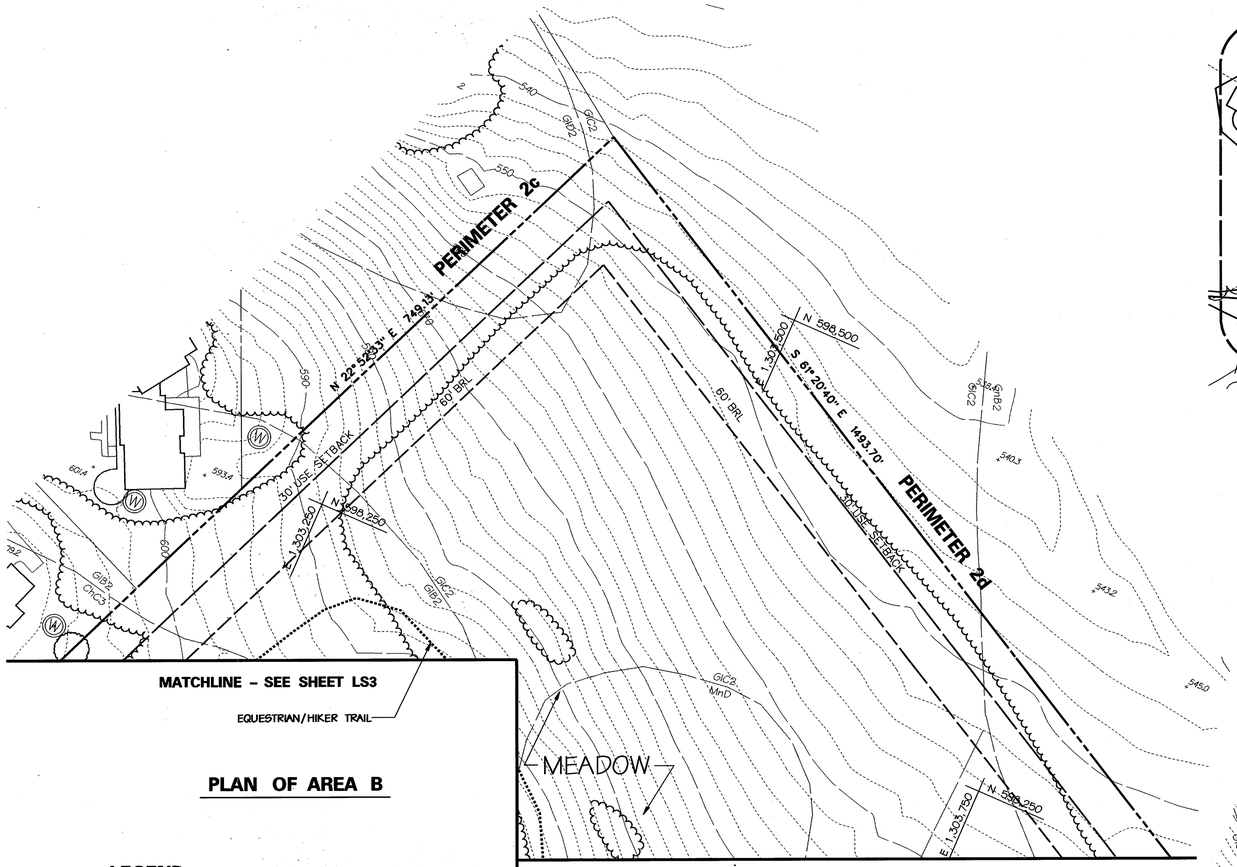
LANDSCAPE PLAN
AREA A

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

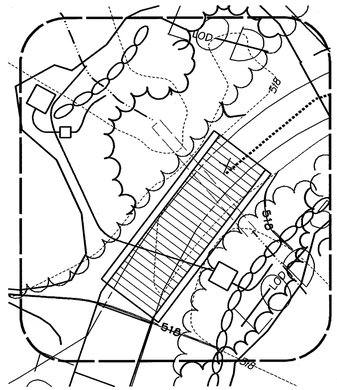
LS1

SHEET NO.: 74 OF 113

SDP-02-64



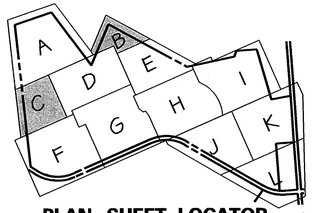
PLAN OF AREA B



GRAPHIC SCALE

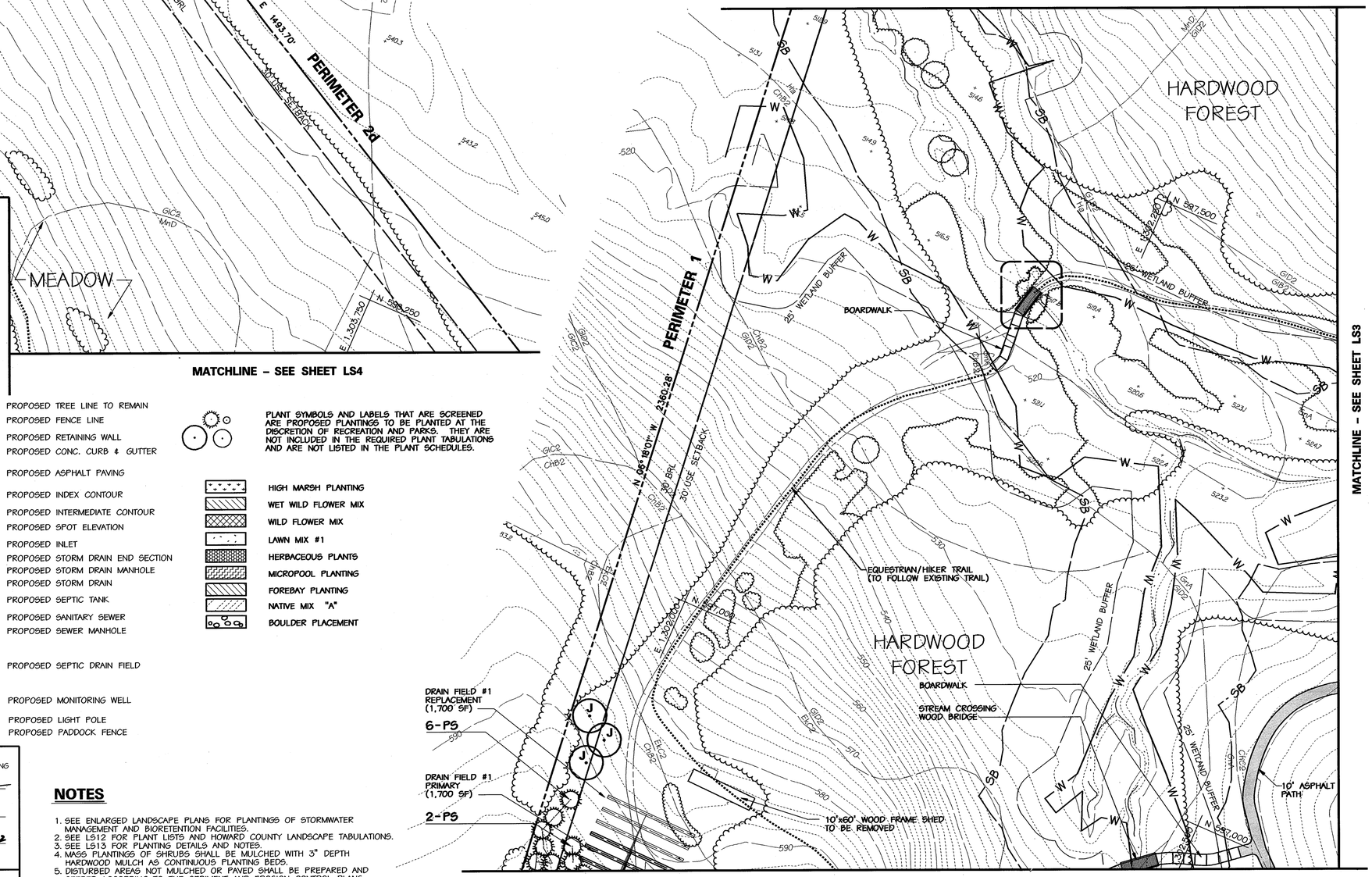
50 0 25 50 100

(IN FEET)
1 inch = 50ft.



PLAN SHEET LOCATOR
NOT TO SCALE

MATCHLINE – SEE SHEET LS1



PLAN OF AREA C

LEGEND

- SHRUBS
- EVERGREEN TREES
- ORNAMENTAL OR UNDERSTORY TREES
- SHADE TREES
- 590 — EX. INDEX CONTOUR
- EX. 2' INTERMEDIATE CONTOUR
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- EX. STREAMS
- SB — 75' STREAM BUFFER
- EQUESTRIAN/HIKING TRAIL
- 570.9 + EX. SPOT ELEVATION
- PROPOSED ASPHALT PATH
- PROPOSED CONCRETE PATH
- PROPOSED TREE LINE TO REMAIN
- PROPOSED FENCE LINE
- PROPOSED RETAINING WALL
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- PROPOSED ASPHALT PAVING
- 620 — PROPOSED INDEX CONTOUR
- 614 — PROPOSED INTERMEDIATE CONTOUR
- +617.25 PROPOSED SPOT ELEVATION
- PROPOSED INLET
- PROPOSED STORM DRAIN END SECTION
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN
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- HERBACEOUS PLANTS
- MICROPOOL PLANTING
- FOREBAY PLANTING
- NATIVE MIX "A"
- BOULDER PLACEMENT

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER — DATE 10-17-02
HOWARD COUNTY HEALTH DEPARTMENT

NOTES

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MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 01000057.S \ ULAND02.DGN

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HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
TECHNOLOGIES WWW.KCI.COM

STATE OF MARYLAND — DONALD M. LIGHT — No. 21402 — REGISTERED LANDSCAPE ARCHITECT

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410) 313-4840

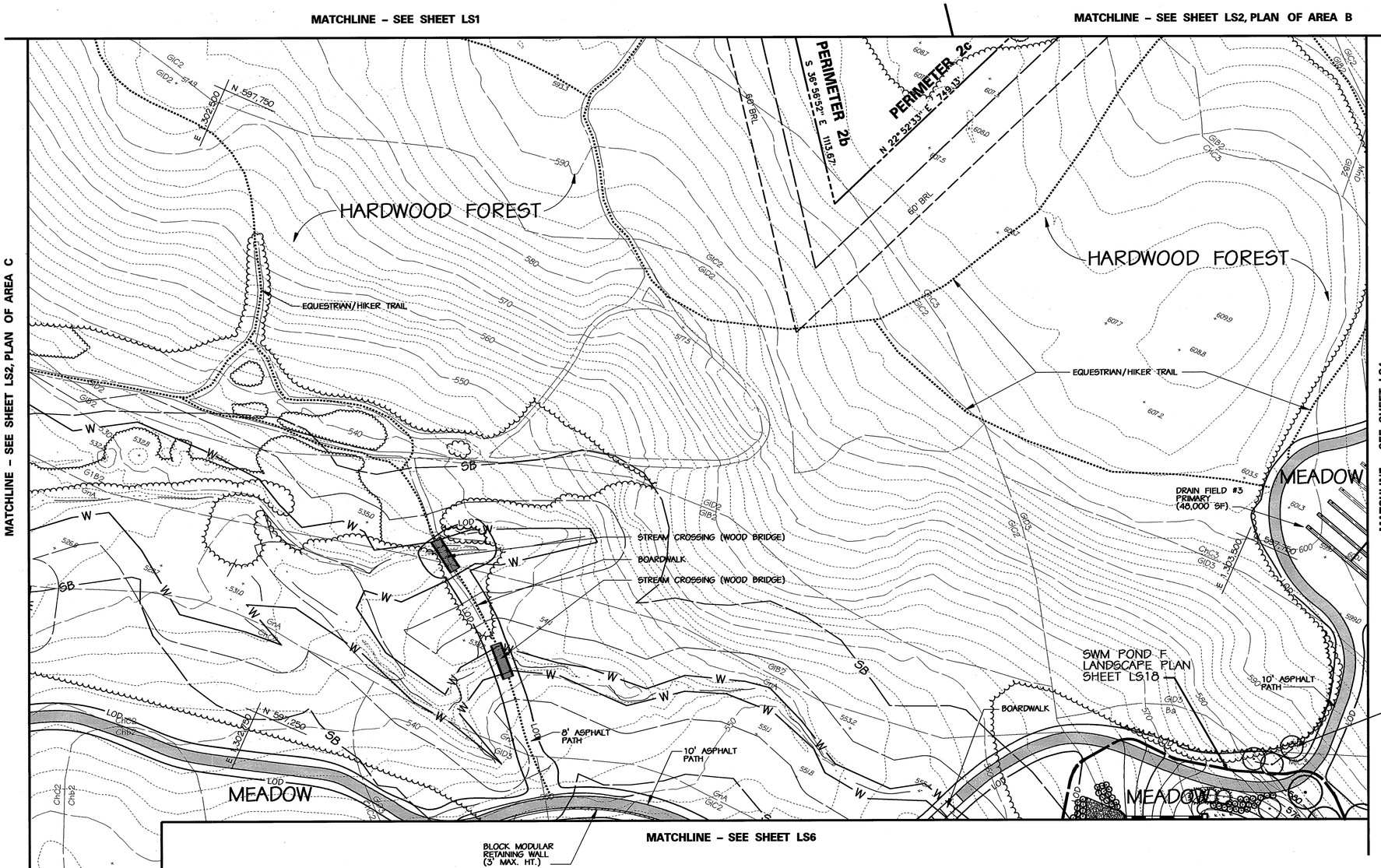
LANDSCAPE PLAN
AREAS B & C

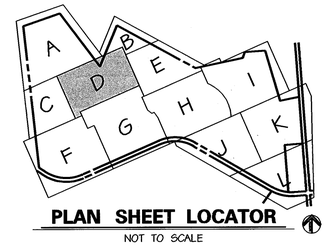
SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

LS2

SHEET NO.: 75 OF 113

SDP-02-64





PLAN SHEET LOCATOR

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- FOREBAY PLANTING
- NATIVE MIX "A"
- BOULDER PLACEMENT

GRAPHIC SCALE

50 0 25 50 100

(IN FEET)

1 inch = 50ft.

NORTH

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER — DATE 10-17-02
HOWARD COUNTY HEALTH DEPARTMENT

NOTES

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NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 01000057.S \ ULAND03.DGN

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HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
WWW.KCI.COM

KCI TECHNOLOGIES

STATE OF MARYLAND — CHRISTOPHER MICHAEL LONG — No. 21436 — REGISTERED LANDSCAPE ARCHITECT — 9/13/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

LANDSCAPE PLAN
AREA D

SCALE:	1" = 50'
DATE:	06-12-02
K.C.I JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

LS3

SHEET NO.: 76 OF 113

SDP-02-64

MATCHLINE – SEE SHEET LS2, PLAN OF AREA B

MATCHLINE – SEE SHEET LS3

MATCHLINE – SEE SHEET LS6

MATCHLINE – SEE SHEET LS7

MATCHLINE – SEE SHEET LS8

DRAIN FIELD #3 PRIMARY (48,000 SF)

PROP. WASTEWATER TREATMENT PLANT

PROP. TRANSFORMER

NEW 2" EFFLUENT TO DRAINFIELD #2

NEW 1.5" FORCE MAIN

NEW 2" EFFLUENT TO DRAINFIELD #2

EX. 5" SAN. FORCE MAIN TO BE ABANDONED

6' ASPHALT PATH

10' ASPHALT TRAIL

NEW PUMPING STATION AND PROP. EQUALIZATION TANK

EX. PUMPING STATION

SEPTIC TANK (4000 GAL)

SWM POND B LANDSCAPE PLAN SHEET LS14

PERIMETER 2d

SWM POND B SEE SHEET SW1 FOR POND DESIGN

PICNIC SHELTER TYPE A SEE SHEET C12

COMFORT STATION SEE SHEET C12

6' CONCRETE PATH

PARKING LOT #4

PICNIC SHELTER TYPE B SEE SHEET C12

6' ASPHALT PATH

SWM POND F LANDSCAPE PLAN SHEET LS16

N 598,250
E 1,304,000
S 81° 20' 40" E 1493.70'
N 598,000
E 1,304,500
N 77° 59' 29" E 809.07'

LANDSCAPE NOTE

1. IF REQUIRED, REPLACE ANY EXISTING LANDSCAPE TREE(S) REMOVED FOR THE LINE INSTALLATION IN A LOCATION IN PROXIMITY OF THE ORIGINAL TREE OR AS SHOWN ON THE PLANS.

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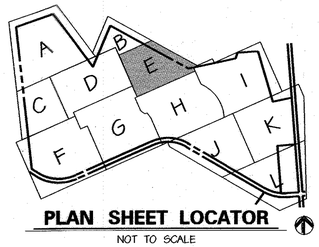

PLAN SHEET LOCATOR

NOT TO SCALE

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- EX. 2' INTERMEDIATE CONTOUR
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- EX. SPOT ELEVATION
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- PROPOSED ASPHALT PATH
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- PROPOSED LIGHT POLE
- PROPOSED PADDOCK FENCE
- SHRUBS
- EVERGREEN TREES
- ORNAMENTAL OR UNDERSTORY TREES
- SHADE TREES

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER — DATE 10-17-02

HOWARD COUNTY HEALTH DEPARTMENT

NOTES

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REGISTERED PROFESSIONAL ENGINEER — IWONA M. ROSTEK-ZARSKA — 21245 — STATE OF MARYLAND — 11/18/16

REVISION #1 - BLDG (07/29/16)
ADDED WASTEWATER TREATMENT PLANT MODIFIED EX. PUMPING STATIONS ADDED NEW PUMPING STATIONS AND INSTALLED NEW 1.5" & 2" FORCE MAIN.

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, IWONA ROSTEK-ZARSKA, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21245 EXPIRATION DATE: JUNE 9, 2018.

NORTH

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50ft.

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\2000\01000057.6\ULAND04.DGN

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PHONE: (410) 316-7800 FAX: (410) 316-7817
KCI TECHNOLOGIES WWW.KCI.COM

STATE OF MARYLAND — VICTORIA L. MUELLER — 21601 — REGISTERED LANDSCAPE ARCHITECT — 9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

LANDSCAPE PLAN

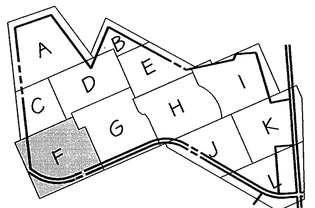
AREA E

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

LS4

SHEET NO.: 77 OF 113

SDP-02-64



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NOT TO SCALE

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(IN FEET)

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LEGEND

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- EX. 2' INTERMEDIATE CONTOUR
- SOIL LINE (GIC2)
- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- EX. WOODS LINE
- SURVEYED WETLAND (BUILDING RESTRICTION LINE) (W)
- EX. STREAMS
- 75' STREAM BUFFER (SB)
- EQUESTRIAN/HIKING TRAIL
- EX. SPOT ELEVATION (709)
- PROPOSED TREE LINE TO REMAIN
- PROPOSED ASPHALT PATH
- PROPOSED CONCRETE PATH
- PROPOSED FENCE LINE
- PROPOSED RETAINING WALL
- PROPOSED CONC. CURB & GUTTER
- PROPOSED ASPHALT PAVING
- PROPOSED INDEX CONTOUR (620)
- PROPOSED INTERMEDIATE CONTOUR (614)
- PROPOSED SPOT ELEVATION (+617.25)
- PROPOSED INLET
- PROPOSED STORM DRAIN END SECTION
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN
- PROPOSED SEPTIC TANK
- PROPOSED SANITARY SEWER (S)
- PROPOSED SEWER MANHOLE
- PROPOSED SEPTIC DRAIN FIELD
- PROPOSED MONITORING WELL
- PROPOSED LIGHT POLE
- PROPOSED PADDOCK FENCE
- SHRUBS
- EVERGREEN TREES
- ORNAMENTAL OR UNDERSTORY TREES
- SHADE TREES

PLANT SYMBOLS AND LABELS THAT ARE SCREENED ARE PROPOSED PLANTINGS TO BE PLANTED AT THE DISCRETION OF RECREATION AND PARKS. THEY ARE NOT INCLUDED IN THE REQUIRED PLANT TABULATIONS AND ARE NOT LISTED IN THE PLANT SCHEDULES.

- HIGH MARSH PLANTING
- WET WILD FLOWER MIX
- WILD FLOWER MIX
- LAWN MIX #1
- HERBACEOUS PLANTS
- MICROPOOL PLANTING
- FOREBAY PLANTING
- NATIVE MIX "A"
- BOULDER PLACEMENT

NORTH

MATCHLINE - SEE SHEET LS2, PLAN OF AREA C

MATCHLINE - SEE SHEET LS3

MATCHLINE - SEE SHEET LS6

SEPTIC TANK (1000 GAL)

DRAIN FIELD #1 PRIMARY (1,700 SF)

STREAM CROSSING WOOD BRIDGE

DRAIN FIELD #2 REPLACEMENT (18,000 SF)

DUMPSTER PAD

OPEN STORAGE BINS

HARDWOOD FOREST

REMOVE EXISTING TREE AND REPLACE WITH NEW BALLED AND BAGGED TREE OF THE SAME SPECIES (1)

PERIMETER 1

N 05°-18'-01" W 2390.28'

REMOVE EXISTING TREES AND REPLACE WITH NEW BALLED AND BAGGED TREES OF THE SAME SPECIES AFTER REGRADING (1)

AREA OF WORK (1)

10' ASPHALT PATH

6 HORSE TRAILER PARKING SPACES (59'x15')

PARKING LOT #8

N 80°-44'-14" E 17.03'

N 55°-44'-04" W 135.54'

MEADOW

BIORETENTION AREA F1 LANDSCAPE PLAN SEE SHEET LS17

NATIVE MIX "B"

FOREBAY PLANTING

BIORETENTION AREA F1 SEE SHEET SW6 FOR ENGINEERING PLAN

SCRUB/ SHRUB AND TREES

WILD FLOWERS 4675 S.F.

SERVICE ENTRANCE MAINTENANCE/ HORSE TRAILERS ONLY

10' ASPHALT PATH

6' CONCRETE PATH

SPORTS FIELD ATHLETIC TURF

R=645.00' L=651.65'

INTERSECTION COORDINATES N 596,007.2074 E 1,302,332.5735

PERIMETER 8

S 68°-13'-59" W 1409.51'

CARRS MILL ROAD

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

NOTES

1. SEE ENLARGED LANDSCAPE PLANS FOR PLANTINGS OF STORMWATER MANAGEMENT AND BIORETENTION FACILITIES.
2. SEE LS12 FOR PLANT LISTS AND HOWARD COUNTY LANDSCAPE TABULATIONS.
3. SEE LS13 FOR PLANTING DETAILS AND NOTES.
4. MASS PLANTINGS OF SHRUBS SHALL BE MULCHED WITH 3" DEPTH HARDWOOD MULCH AS CONTINUOUS PLANTING BEDS.
5. DISTURBED AREAS NOT MULCHED OR PAVED SHALL BE PREPARED AND SEEDED ACCORDING TO THE SEDIMENT AND EROSION CONTROL PLANS AND SPECIFICATIONS UNLESS OTHERWISE DESIGNATED ON THE LANDSCAPE PLANS AND ON THE TECHNICAL SPECIFICATIONS FOR SPECIAL SEEDING MIXTURE OR SODDING OR BIORETENTION PLANTINGS.

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER — DATE 10-17-02

HOWARD COUNTY HEALTH DEPARTMENT

PROFESSIONAL CERTIFICATE:

I HEREBY CERTIFY THAT THE INFORMATION CLOUDED AND LISTED UNDER REVISION #1 (OR 2, DEPENDING ON THE PAGE) ON THIS DOCUMENT WAS PREPARED OR APPROVED BY ME, AND I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND (LICENSE NO. 19951, EXPIRATION DATE 3/15/2014). I DO NOT CERTIFY THE ACCURACY OF ANY OTHER INFORMATION, ALL OF WHICH WAS PREPARED BY OTHERS.

STATE OF MARYLAND — STEPHEN RICHARD HOSE — NO. 19951 — REGISTERED PROFESSIONAL ENGINEER

10/19/12

NO.	REVISIONS DESCRIPTION	DATE
1	THIS SHEET WAS MODIFIED TO INCLUDE THE RAINWATER HARVESTING FACILITIES DESIGN INFORMATION. REFER TO THE FULL RAINWATER HARVESTING PARKS FACILITIES DESIGN PACKAGE, CAPITAL PROJECT C-0313, DATED DECEMBER 2011.	9/05/12

KCI FILE: M:\ 2000\ 01000057.S \ ULANDS.DGN

KCI TECHNOLOGIES INC.
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HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
TECHNOLOGIES WWW.KCI.COM

STATE OF MARYLAND — RICHARD A. HILDEBRANDT — 21677 — REGISTERED LANDSCAPE ARCHITECT

9/14/12

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
3430 COURTHOUSE DRIVE
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

LANDSCAPE PLAN

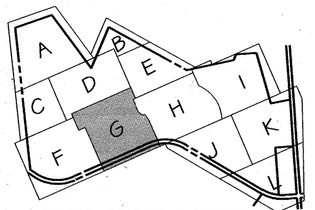
AREA F

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

LS5

SHEET NO.: 78 OF 113

SDP-02-64



PLAN SHEET LOCATOR

NOT TO SCALE

NORTH

GRAPHIC SCALE

50 0 25 50 100

(IN FEET)

1 inch = 50ft.

LEGEND

- 590 — EX. INDEX CONTOUR
- GIC2 — EX. 2' INTERMEDIATE CONTOUR
- SOIL LINE
- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- EX. WOODS LINE
- W — SURVEYED WETLAND (BUILDING RESTRICTION LINE)
- EX. STREAMS
- SB — 75' STREAM BUFFER
- EQUESTRIAN/HIKING TRAIL
- 570.9 — EX. SPOT ELEVATION
- PROPOSED TREE LINE
- PROPOSED ASPHALT PATH
- PROPOSED CONCRETE PATH
- PROPOSED FENCE LINE
- PROPOSED RETAINING WALL
- PROPOSED CONC. CURB & GUTTER
- PROPOSED ASPHALT PAVING
- 620 — PROPOSED INDEX CONTOUR
- 614 — PROPOSED INTERMEDIATE CONTOUR
- +617.25 — PROPOSED SPOT ELEVATION
- PROPOSED INLET
- PROPOSED STORM DRAIN END SECTION
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN
- PROPOSED SEPTIC TANK
- S — PROPOSED SANITARY SEWER
- PROPOSED SEWER MANHOLE
- PROPOSED SEPTIC DRAIN FIELD
- PROPOSED MONITORING WELL

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- SHRUBS
- EVERGREEN TREES
- ORNAMENTAL OR UNDERSTORY TREES
- SHADE TREES
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- WET WILD FLOWER MIX
- WILD FLOWER MIX
- LAWN MIX #1
- HERBACEOUS PLANTS
- MICROPOOL PLANTING
- FOREBAY PLANTING
- NATIVE MIX "A"
- BOULDER PLACEMENT

NOTES

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APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

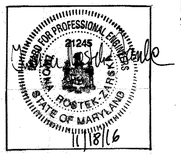
DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER — DATE 10-17-02

HOWARD COUNTY HEALTH DEPARTMENT

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29



REVISION #1 - BLDG (07/29/16)
ADDED WASTEWATER TREATMENT PLANT MODIFIED EX. PUMPING STATIONS, ADDED NEW PUMPING STATIONS AND INSTALLED NEW 1.5" & 2" FORCE MAINS.

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, IWONA ROSTEK-ZARSKA AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER, UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE NO. 21245, EXPIRATION DATE : JUNE 9, 2018.

MATCHLINE – SEE SHEET LS3

MATCHLINE – SEE SHEET LS4

MATCHLINE – SEE SHEET LS5

MATCHLINE – SEE SHEET LS7

MATCHLINE – SEE SHEET LS7

BOARDWALK

RETAINING WALL (3' MAX. HT.)

6' CONCRETE PATH

DRAIN FIELD #2 REPLACEMENT (18,000 SF)

DRAIN FIELD #2 PRIMARY (18,000 SF)

SEPTIC TANK (3000 GAL.)

PICNIC SHELTER TYPE A SEE SHEET

BIORETENTION AREA F3 LANDSCAPE PLAN SHEET LS18

BIORETENTION AREA F3 SEE SHEET SW8

NATIVE GRASSES

SWM POND F SEE SHEET SW5

SWM POND F LANDSCAPE PLAN SHEET LS18

BALL FIELD

ATHLETIC TURF

10' CONCRETE PATH

NEW PUMPING STATION

INFIELD MIX

BIORETENTION AREA F4 SEE SHEET SW9

ASPHALT WARNING TRACK

6' CONCRETE PATH

BIORETENTION AREA 4 LANDSCAPE PLAN SHEET LS18

PROP. 2" FORCE MAIN

PROP. 1.5" FORCE MAIN

PARKING LOT #7

PARKING LOT #6

SPORTS FIELD
ATHLETIC TURF

SPORTS FIELD
ATHLETIC TURF

PERIMETER 8

S 66°13'59" W 1109.51'

R=668.34' L=629.05'

CARRS MILL ROAD

NO.	REVISIONS	DESCRIPTION	DATE

KCI FILE: MA\ 2000\ 0100057.6\ ULANDDB.DGN

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WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410) 313-4620

LANDSCAPE PLAN

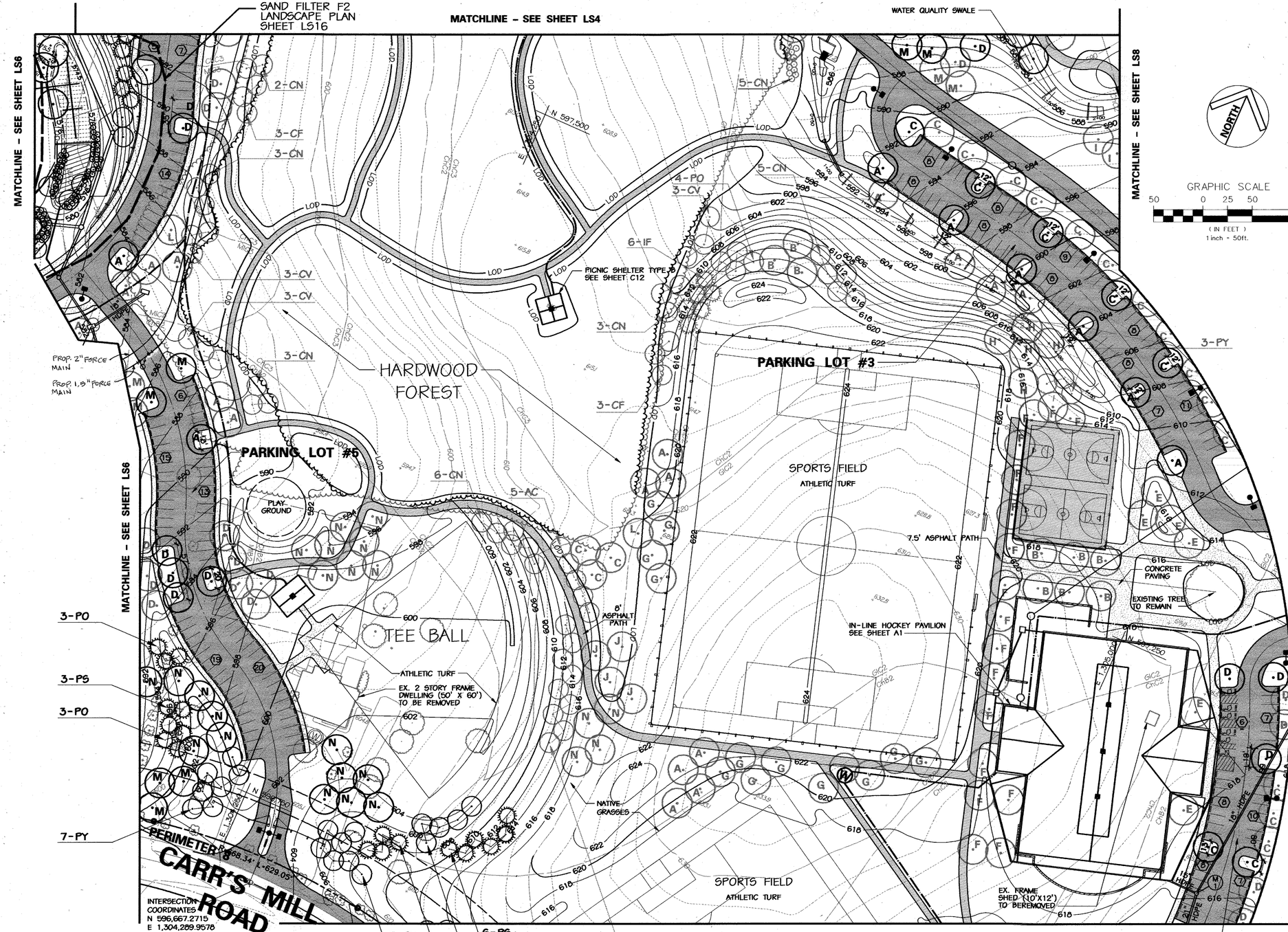
AREA G

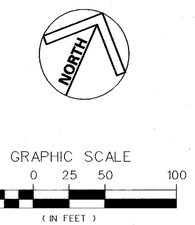
SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

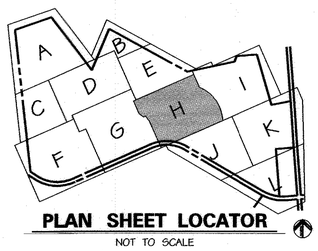
LS6

SHEET NO.: 79 OF 113

SDP-02-64







PLAN SHEET LOCATOR

NOT TO SCALE

LEGEND

- EX. INDEX CONTOUR
- EX. 2' INTERMEDIATE CONTOUR
- SOIL LINE
- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- EX. WOODS LINE
- SURVEYED WETLAND (BUILDING RESTRICTION LINE)
- EX. STREAMS
- 75' STREAM BUFFER
- EQUESTRIAN/HIKING TRAIL
- EX. SPOT ELEVATION
- PROPOSED TREE LINE
- PROPOSED ASPHALT PATH
- PROPOSED CONCRETE PATH
- PROPOSED FENCE LINE
- PROPOSED RETAINING WALL
- PROPOSED CONC. CURB & GUTTER
- PROPOSED ASPHALT PAVING
- PROPOSED INDEX CONTOUR
- PROPOSED INTERMEDIATE CONTOUR
- PROPOSED SPOT ELEVATION
- PROPOSED INLET
- PROPOSED STORM DRAIN END SECTION
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN
- PROPOSED SEPTIC TANK
- PROPOSED SANITARY SEWER
- PROPOSED SEWER MANHOLE
- PROPOSED SEPTIC DRAIN FIELD
- PROPOSED MONITORING WELL
- SHRUBS
- EVERGREEN TREES
- ORNAMENTAL OR UNDERSTORY TREES
- SHADE TREES
- HIGH MARSH PLANTING
- WET WILD FLOWER MIX
- WILD FLOWER MIX
- LAWN MIX #1
- HERBACEOUS PLANTS
- MICROPOOL PLANTING
- FOREBAY PLANTING
- NATIVE MIX "A"
- BOULDER PLACEMENT

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NOTE: SEE SHEET C7 FOR FINAL PAVING LAYOUT.

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/16/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, HOWARD COUNTY HEALTH DEPARTMENT — DATE 10-17-02

NOTES

1. SEE ENLARGED LANDSCAPE PLANS FOR PLANTINGS OF STORMWATER MANAGEMENT AND BIORETENTION FACILITIES.
2. SEE LS12 FOR PLANT LISTS AND HOWARD COUNTY LANDSCAPE TABULATIONS.
3. SEE LS13 FOR PLANTING DETAILS AND NOTES.
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REVISION #1-BLDG (07/29/16)
ADDED WASTEWATER TREATMENT PLANT MODIFIED BR. PUMPING STATIONS, ADDED NEW PUMPING STATIONS AND INSTALLED NEW 1.5" & 2" FORCE MAINS.

LICENSED PROFESSIONAL ENGINEER 21245 IWONA ROSTEK-ZARSKA STATE OF MARYLAND 11/18/16

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, IWONA ROSTEK-ZARSKA, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE NO. 21245 EXPIRATION DATE: JUNE 9, 2018.

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 01000575 \ ULAND07.DGN

KCI TECHNOLOGIES INC.
ENGINEERS • PLANNERS • SURVEYORS
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HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
KCI TECHNOLOGIES WWW.KCI.COM

STATE OF MARYLAND — MICHELLE LYNN NEUDECKER — No. 21586 — REGISTERED LANDSCAPE ARCHITECT — 4/5/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410) 313-4640

LANDSCAPE PLAN

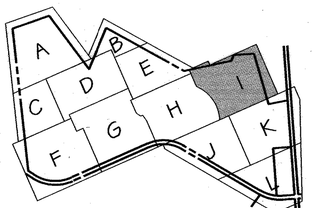
AREA H

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

LS7

SHEET NO.: 80 OF 113

SDP-02-64



PLAN SHEET LOCATOR

NOT TO SCALE

LEGEND

- EX. INDEX CONTOUR (590)
- EX. 2' INTERMEDIATE CONTOUR
- SOIL LINE (GIC2)
- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- EX. WOODS LINE
- SURVEYED WETLAND (W) (BUILDING RESTRICTION LINE)
- EX. STREAMS
- 75' STREAM BUFFER (SB)
- EQUESTRIAN/HIKING TRAIL
- EX. SPOT ELEVATION (5709)
- PROPOSED TREE LINE
- PROPOSED ASPHALT PATH
- PROPOSED CONCRETE PATH
- PROPOSED FENCE LINE
- PROPOSED RETAINING WALL
- PROPOSED CONC. CURB & GUTTER
- PROPOSED ASPHALT PAVING
- PROPOSED INDEX CONTOUR (620)
- PROPOSED INTERMEDIATE CONTOUR (614)
- PROPOSED SPOT ELEVATION (+617.25)
- PROPOSED INLET
- PROPOSED STORM DRAIN END SECTION
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN (S)
- PROPOSED SEPTIC TANK
- PROPOSED SANITARY SEWER (S)
- PROPOSED SEWER MANHOLE
- PROPOSED SEPTIC DRAIN FIELD
- PROPOSED MONITORING WELL
- SHADE TREE
- ORNAMENTAL OR UNDERSTORY TREE
- EVERGREEN TREE
- SHRUBS

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- (2F) DESIGNATES PERIMETER PLANTING REQUIREMENTS

- MICROPOOL PLANTING
- FOREBAY PLANTING
- NATIVE MIX "A"
- BOULDER PLACEMENT
- HIGH MARSH PLANTING
- WET WILD FLOWER MIX
- WILD FLOWER MIX
- LAWN MIX #1
- HERBACEOUS PLANTS

MATCHLINE – SEE SHEET LS4

MATCHLINE – SEE SHEET LS7

MATCHLINE – SEE SHEET LS9

MATCHLINE – SEE SHEET LS10

REVISION #1 - 8LOG (07/29/16)
ADDED WASTEWATER TREATMENT PLANT, MODIFIED EX. PUMPING STATIONS, ADDED NEW PUMPING STATIONS AND INSTALLED NEW 1.5" & 2" FORCE MAINS.

PROFESSIONAL CERTIFICATION

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APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, HOWARD COUNTY HEALTH DEPARTMENT — DATE 10-17-02

NOTES

1. SEE ENLARGED LANDSCAPE PLANS FOR PLANTINGS OF STORMWATER MANAGEMENT AND BIORETENTION FACILITIES.
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GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50ft.

NOTE: SEE SHEET C8 FOR FINAL PARKING LAYOUT.

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: MA 2000 \ 01 00057.8 \ ULANDS.DGN

KCI TECHNOLOGIES INC.
ENGINEERS • PLANNERS • SURVEYORS
10 NORTH PARK DRIVE
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PHONE: (410) 316-7800 FAX: (410) 316-7817
TECHNOLOGIES WWW.KCI.COM

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

LANDSCAPE PLAN

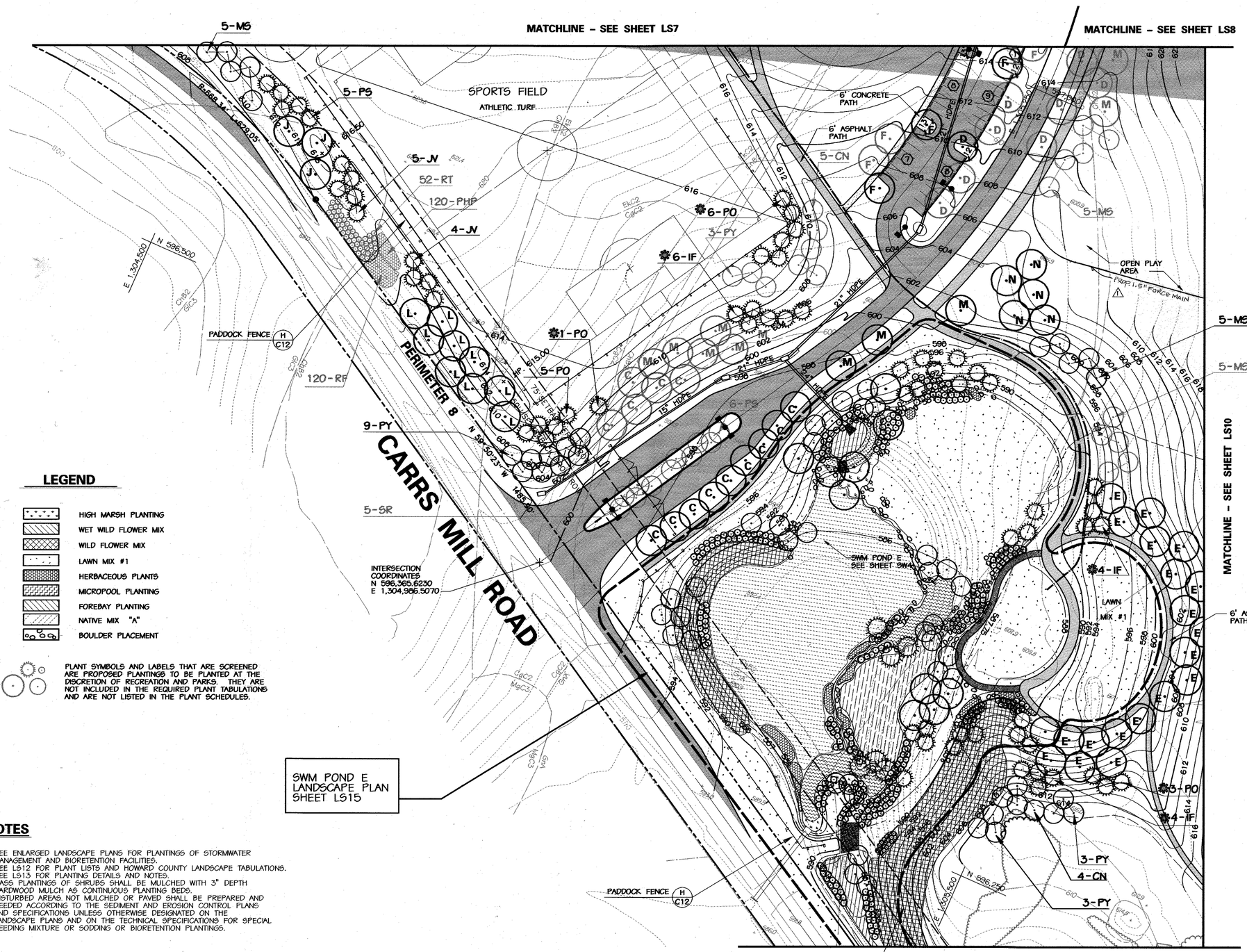
AREA 1

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

LS8

SHEET NO.: 81 OF 113

SDP-02-64



LEGEND

- HIGH MARSH PLANTING
- WET WILD FLOWER MIX
- WILD FLOWER MIX
- LAWN MIX #1
- HERBACEOUS PLANTS
- MICROPOOL PLANTING
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5. DISTURBED AREAS NOT MULCHED OR PAVED SHALL BE PREPARED AND SEEDED ACCORDING TO THE SEDIMENT AND EROSION CONTROL PLANS AND SPECIFICATIONS UNLESS OTHERWISE DESIGNATED ON THE LANDSCAPE PLANS AND ON THE TECHNICAL SPECIFICATIONS FOR SPECIAL SEEDING MIXTURE OR SODDING OR BIORETENTION PLANTINGS.

6-IF DESIGNATES PLANTINGS TO BE COUNTED FOR EVERGREEN REQUIREMENTS FOR STORMWATER MANAGEMENT POND E. SEE ENLARGED LANDSCAPE PLAN FOR DETAILED PLANTINGS IN SWM POND

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

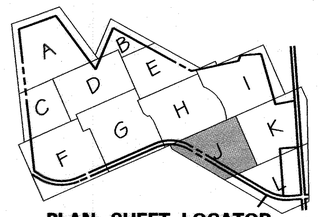
COUNTY HEALTH OFFICER — DATE 10-17-02
HOWARD COUNTY HEALTH DEPARTMENT

REVISION #1 - BLDG (07/29/16)
ADDED WASTEWATER TREATMENT PLANT, MODIFIED BY: PUMPING STATIONS, ADDED NEW PUMPING STATIONS AND INSTALLED NEW 1.5" & 2" FORCE MAINS.

STATE OF MARYLAND — IWONA ROSTEK-ZARSKA — 21245 — REGISTERED PROFESSIONAL ENGINEER — 11/18/16

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, IWONA ROSTEK-ZARSKA, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21245, EXPIRATION DATE: JUNE 9, 2018.



PLAN SHEET LOCATOR

NOT TO SCALE

LEGEND

- EX. INDEX CONTOUR
- EX. 2' INTERMEDIATE CONTOUR
- SOIL LINE
- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- EX. WOODS LINE
- SURVEYED WETLAND (BUILDING RESTRICTION LINE)
- EX. STREAMS
- 75' STREAM BUFFER
- EQUESTRIAN/HIKING TRAIL
- EX. SPOT ELEVATION
- PROPOSED TREE LINE
- PROPOSED ASPHALT PATH
- PROPOSED CONCRETE PATH
- PROPOSED FENCE LINE
- PROPOSED RETAINING WALL
- PROPOSED CONC. CURB & GUTTER
- PROPOSED ASPHALT PAVING
- PROPOSED INDEX CONTOUR
- PROPOSED INTERMEDIATE CONTOUR
- PROPOSED SPOT ELEVATION
- PROPOSED INLET
- PROPOSED STORM DRAIN END SECTION
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN
- PROPOSED SEPTIC TANK
- PROPOSED SANITARY SEWER
- PROPOSED SEWER MANHOLE
- PROPOSED SEPTIC DRAIN FIELD
- PROPOSED MONITORING WELL
- SHADE TREE
- ORNAMENTAL OR UNDERSTORY TREE
- EVERGREEN TREE
- SHRUBS

NORTH

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50ft.

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 0100057.6 \ ULANDSCP.DGN

KCI TECHNOLOGIES INC.
ENGINEERS • PLANNERS • SURVEYORS
10 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
KCI TECHNOLOGIES WWW.KCI.COM

STATE OF MARYLAND — WILLIAM A. LINTZ — 21610 — REGISTERED LANDSCAPE ARCHITECT

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410) 313-4640

LANDSCAPE PLAN

AREA J

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

LS9

SHEET NO.: 82 OF 113

SDP-02-64

MATCHLINE – SEE SHEET LS8

MATCHLINE – SEE SHEET 10

MATCHLINE – SEE SHEET LS9

MATCHLINE – SEE SHEET LS11

EXISTING LIBRARY

CAPITAL PROJECT C-0523A SDP-99-21

EXISTING SWM

EXISTING TREES TO REMAIN

PERIMETER 3

PERIMETER 4

PERIMETER 5

PERIMETER 6

PERIMETER 7

ROUTE 97

AREA UNDER CONSTRUCTION

NEW PUMPING STATION AND WET WELL

TROY 1.5" FORCE MAIN

1.5" FORCE MAIN

NOTE: CREDIT FOR PERIMETER LANDSCAPING IS PROVIDED BY SDP-99-21 (LIBRARY SITE DEVELOPMENT PLAN)

NOTE: CREDIT FOR PERIMETER LANDSCAPING IS PROVIDED BY SDP-99-21 (LIBRARY SITE DEVELOPMENT PLAN)

NO PROPOSED PLANTING ON THIS SHEET

PLAN SHEET LOCATOR

NOT TO SCALE

LEGEND

- EX. INDEX CONTOUR
- EX. 2' INTERMEDIATE CONTOUR
- SOIL LINE
- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- EX. WOODS LINE
- SURVEYED WETLAND (BUILDING RESTRICTION LINE)
- EX. STREAMS
- 75' STREAM BUFFER
- EQUESTRIAN/HIKING TRAIL
- EX. SPOT ELEVATION
- PROPOSED TREE LINE
- PROPOSED ASPHALT PATH
- PROPOSED CONCRETE PATH
- PROPOSED FENCE LINE
- PROPOSED RETAINING WALL
- PROPOSED CONC. CURB & GUTTER
- PROPOSED ASPHALT PAVING
- PROPOSED INDEX CONTOUR
- PROPOSED INTERMEDIATE CONTOUR
- PROPOSED SPOT ELEVATION
- PROPOSED INLET
- PROPOSED STORM DRAIN END SECTION
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN
- PROPOSED SEPTIC TANK
- PROPOSED SANITARY SEWER
- PROPOSED SEWER MANHOLE
- PROPOSED SEPTIC DRAIN FIELD
- PROPOSED MONITORING WELL
- SHADE TREE
- ORNAMENTAL OR UNDERSTORY TREE
- EVERGREEN TREE
- SHRUBS

PLANT SYMBOLS AND LABELS THAT ARE SCREENED ARE PROPOSED PLANTINGS TO BE PLANTED AT THE DISCRETION OF RECREATION AND PARKS. THEY ARE NOT INCLUDED IN THE REQUIRED PLANT TABULATIONS AND ARE NOT LISTED IN THE PLANT SCHEDULES.

- HIGH MARSH PLANTING
- WET WILD FLOWER MIX
- WILD FLOWER MIX
- LAWN MIX #1
- HERBACEOUS PLANTS
- MICROPOOL PLANTING
- FOREBAY PLANTING
- NATIVE MIX "A"
- BOULDER PLACEMENT

GRAPHIC SCALE

50 0 25 50 100

(IN FEET)

1 inch = 50ft.

NORTH

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, HOWARD COUNTY HEALTH DEPARTMENT — DATE 10-17-02

NOTES

1. SEE ENLARGED LANDSCAPE PLANS FOR PLANTINGS OF STORMWATER MANAGEMENT AND BIORETENTION FACILITIES.
2. SEE LS12 FOR PLANT LISTS AND HOWARD COUNTY LANDSCAPE TABULATIONS.
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IWONA M. ROSTEK-ZARSKA — No. 21245 — STATE OF MARYLAND — 11/18/16

REVISION #1 - BLDG (07/29/16)
ADDED WASTE WATER TREATMENT PLANT MODIFIED EX. PUMPING STATIONS, ADDED NEW PUMPING STATIONS AND INSTALLED NEW 1.5" & 2" FORCE MAINS.

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NO.	REVISIONS	DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 0100057.6 \ ULAND10.DGN

KCI TECHNOLOGIES INC.
ENGINEERS • PLANNERS • SURVEYORS
10 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
KCI TECHNOLOGIES WWW.KCI.COM

STATE OF MARYLAND — JULIE L. TAYLOR — No. 21245 — REG. PROFESSIONAL LANDSCAPE ARCHITECT — 9/12/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410) 313-4640

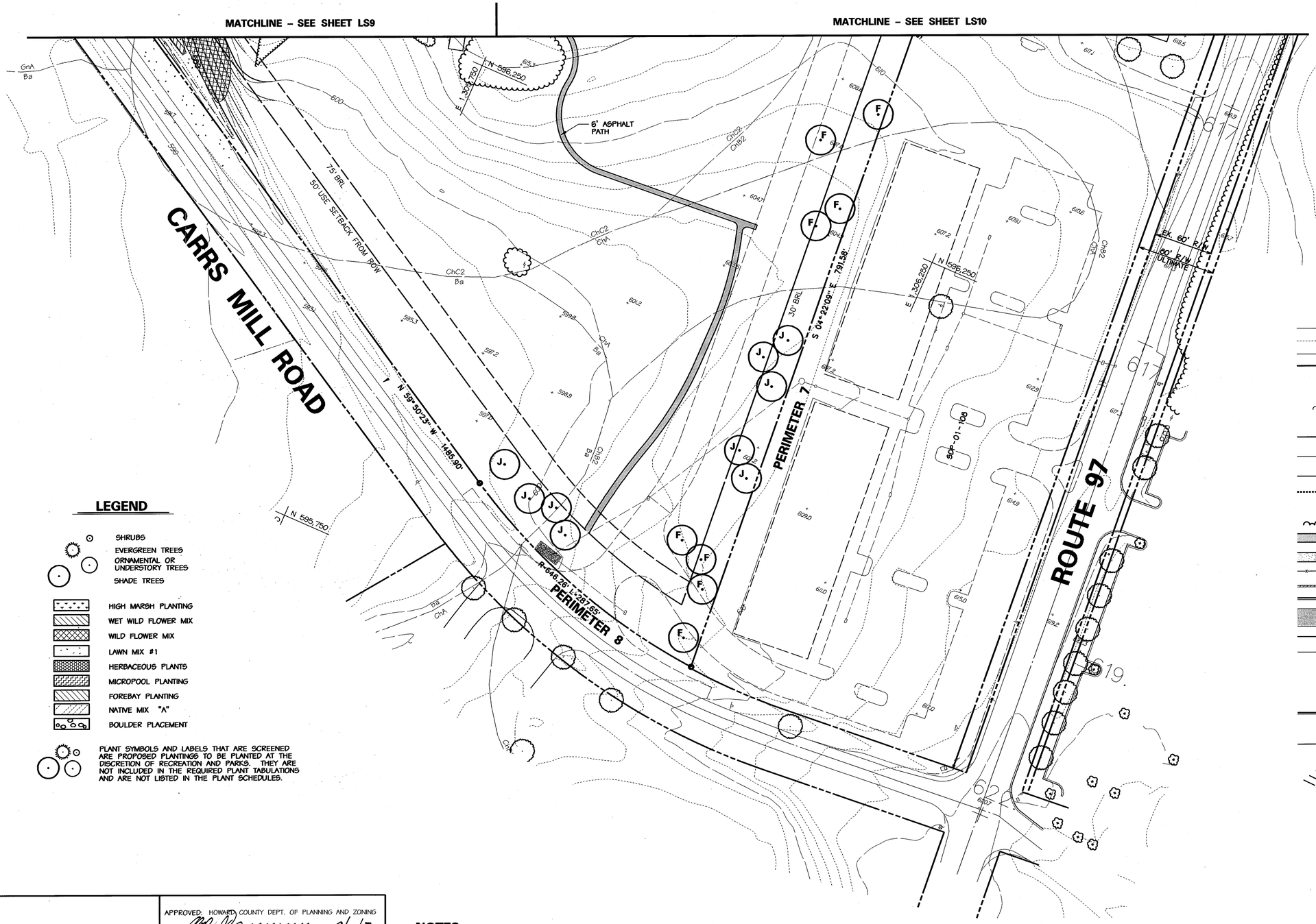
LANDSCAPE PLAN
AREA K

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

LS10

SHEET NO.: 83 OF 113

SDP-02-64



LEGEND

- SHRUBS
- EVERGREEN TREES
- ORNAMENTAL OR UNDERSTORY TREES
- SHADE TREES
- HIGH MARSH PLANTING
- WET WILD FLOWER MIX
- WILD FLOWER MIX
- LAWN MIX #1
- HERBACEOUS PLANTS
- MICROPOOL PLANTING
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- BOULDER PLACEMENT

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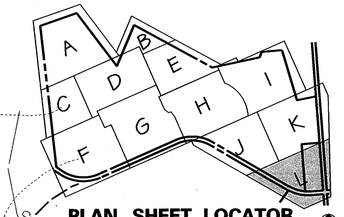

PLAN SHEET LOCATOR

NOT TO SCALE

LEGEND

- 590 — EX. INDEX CONTOUR
- EX. 2' INTERMEDIATE CONTOUR
- GIC2 — SOIL LINE
- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- EX. WOODS LINE
- W — SURVEYED WETLAND (BUILDING RESTRICTION LINE)
- EX. STREAMS
- SB — 75' STREAM BUFFER
- EQUESTRIAN/HIKING TRAIL
- 570.9 — EX. SPOT ELEVATION
- PROPOSED TREE LINE
- PROPOSED ASPHALT PATH
- PROPOSED CONCRETE PATH
- PROPOSED FENCE LINE
- PROPOSED RETAINING WALL
- PROPOSED CONC. CURB & GUTTER
- PROPOSED STORM DRAIN END SECTION
- PROPOSED ASPHALT PAVING
- 620 — PROPOSED INDEX CONTOUR
- 614 — PROPOSED INTERMEDIATE CONTOUR
- 617.25 — PROPOSED SPOT ELEVATION
- PROPOSED INLET
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN
- PROPOSED SEPTIC TANK
- S — PROPOSED SANITARY SEWER
- PROPOSED SEWER MANHOLE
- PROPOSED SEPTIC DRAIN FIELD
- PROPOSED MONITORING WELL

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 9/12/02
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 10/22/02
DIRECTOR	DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER HOWARD COUNTY HEALTH DEPARTMENT	DATE 10-17-02

NOTES

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GRAPHIC SCALE

50 0 25 50 100

(IN FEET)
1 inch = 50ft.

NORTH

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 0100057.S \ ULAND11.DGN

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PHONE: (410) 316-7800 FAX: (410) 316-7817
WWW.KCI.COM

STATE OF MARYLAND NICHOLAS M. LINEBACK REGISTERED LANDSCAPE ARCHITECT

9/13/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

LANDSCAPE PLAN
AREA L

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

LS11

SHEET NO.: 84 OF 113

SDP-02-64

PLANT SYMBOLS AND LABELS THAT ARE SCREENED ARE PROPOSED PLANTINGS TO BE PLANTED AT THE DISCRETION OF RECREATION AND PARKS. THEY ARE NOT INCLUDED IN THE REQUIRED PLANT TABULATIONS AND ARE NOT LISTED IN THE PLANT SCHEDULES.

NOTE: STORMWATER MANAGEMENT PLANTING CONCEPT

STORMWATER MANAGEMENT POND #1 IS DESIGNED AS A DRY POND. THE GRADING AND LANDSCAPING HAVE BEEN DESIGNED TO PROVIDE AN ATTRACTIVE ENTRANCE FEATURE TO THE POND. THE EXTENSIVE QUANTITY OF EVERGREEN PLANTINGS REQUIRED BY THE LANDSCAPE MANUAL CONFLICTS WITH THE INTENDED PURPOSE OF THE LANDSCAPE DESIGN, WHICH IS TO PROVIDE A VISUAL FEATURE AT THE PARK ENTRANCE. THE QUANTITIES OF EVERGREEN TREES SHOWN WITH AN ASTERIK ON THE PLANS INDICATE EVERGREEN PLANTINGS MEETING THE LANDSCAPE REQUIREMENTS. THEY ARE DSITRIBUTED IN AND AROUND THE SWM POND AREA. IN ADDITION, FLOWERING TREES, NATIVE GRASSES AND WILDFLOWER, AND BIO-RETENTION TYPE PLANTINGS THAT CONFORM WITH THE APPROPRIATE DESIGN CONCEPT FOR THE PARK HAVE BEEN ADDED.

SCHEDULE A
PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT TO PERIMETER PROPERTIES													
PERIMETER FRONTAGE DESIGNATION	1	2a	2b	2c	2d	2e	2f	2g	3	4	5	6	7	8
LANDSCAPE TYPE	C	C	C	C	C	C	C	C	C	C	B	A	A	B
LINEAR FEET OF ROADWAY PERIMETER	2360	647	1114	750	1500	810	100	340	875	325	760	300	792	4602
CREDIT FOR EXISTING VEGETATION	1630	647	1114	750	1500	560	0	210	875	325*	760*	300*		0
CREDIT FOR BERM OR FENCING	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EDGE TO BE LANDSCAPED	730	0	0	0	0	260	100	130	0	325	760	300	792	4602
PLANT QUANTITIES REQUIRED														
SHADE /STREET TREES	18	0	0	0	0	7	3	4	0	8	15	5	13	92
EVERGREEN TREES	37	0	0	0	0	13	5	7	0	16	19			115
SHRUBS	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PLANT QUANTITIES PROPOSED														
SHADE /STREET TREES	17	0	0	0	0	14	3	7	13	8*	15*	5*	13	62
EVERGREEN TREES	40	0	0	0	0	43	5	10	41	16*	19*	0*	0	117
OTHER TREES (2:1 Substitution)	0	0	0	0	0					0	0	0	0	72
SHRUBS (10:1 Substitution)	0	0	0	0	0					0	0	0	0	
	57	0	0	0	0	57	8	17	54	0	0	0	13	251

*CREDIT FOR PERIMETER LANDSCAPING IS PROVIDED BY SDP 99-21 (LIBRARY SITE DEVELOPMENT PLAN)

SCHEDULE B
PARKING LOT INTERNAL LANDSCAPING

PARKING LOT DESIGNATION	NUMBER SPACES	NUMBER ISLANDS	QUANTITY TREES REQUIRED		QUANTITY PROPOSED SHADE TREES	QUANTITY PROPOSED OTHER TREES (2:1 Substitution)	TOTAL TREES PROPOSED
PARKING LOT #1 -Baseball Complex	178	17	9		35		35
PARKING LOT #2 -Roller Rink	79	7	3		9		9
PARKING LOT #3 -Roller Rink	83		4		11		11
PARKING LOT #4 -Park Road	122	10	6		9		9
PARKING LOT #5 -West soccer fields	73	6	4		7		7
PARKING LOT #6 -West soccer fields	45	1	2		5		5
PARKING LOT #7 -West base ball fields	99	9	5		7		7
PARKING LOT #8 -maintenance/equestrian	15	5	1		6		6
							0
	694	55	34	0	89	0	89

PROPOSED PLANTING NOT INCLUDED IN PARKING AREAS OR PERIMETER TALLIES: (*MAY BE INCLUDED IN SWM POND TALLIES)	
SHADE TREES	39
EVERGREEN TREES	24
OTHER TREES	18

SCHEDULE D
STORM WATER MANAGEMENT AREA LANDSCAPING

	TYPE B LINEAR FT.	TYPE C	CREDIT EXISTING VEGETATION	CREDIT OTHER LANDSCAPING	TREES REQUIRED	PROPOSED TREES
SWM POND B -ALONG PERIMETER 2D	340	300	300	300		
SHADE TREES					7	20
EVERGREEN TREES					8	17
OTHER TREES (2;1 SUBSTITUTION)					0	NA
SHRUBS						NA
SWM POND E -ALONG CARRS MILL ROAD	2010		0	0		
SHADE TREES					40	41
EVERGREEN TREES					50	** 52
OTHER TREES (2;1 SUBSTITUTION)						NA
SHRUBS						NA

**13 Evergreens Located on the West Side of Entrance Drive

I/We certify that the landscaping shown on this plan will be done according to the plan, Section 16.124 of the Howard County and the Howard County Landscape Manual. I/We further certify that upon completion a Certification of Landscape Installation, accompanied by an executed one year guarantee of plant materials, will be submitted to the Department of Planning and Zoning.

Developer's/Owner's name: RONALD G. LEPSON — Date: 9/4/02

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER — DATE 10-17-02
HOWARD COUNTY HEALTH DEPARTMENT

MASTER PLANT SCHEDULE

KEY	BOTANICAL NAME / COMMON NAME	SIZE	QTY	ROOT	REMARK
	SHADE TREES	2-2 1/2"-3"CAL.		B& B	
A	Acer rubrum 'October Glory'/ October Glory Red Maple	2-1/2"-3"CAL.	13	B& B	
B	Acer rubrum 'Red Sunset'/ Red Sunset Red Maple	2-1/2"-3"CAL.	2	B& B	
C	Acer saccharum 'Green Mountain'/ Green Mountain Sugar Maple	2-1/2"-3"CAL.	29	B& B	
D	Acer saccharum 'Legacy'/ Legacy Sugar Maple	2-1/2"-3"CAL.	15	B& B	
E	Cladrastis lutea 'Sweetshade'/ Sweetshade Yellowwood	2-1/2"-3"CAL.	20	B& B	
F	Fraxinus americana 'Autumn Purple/ Autumn Purple White Ash	2-1/2"-3"CAL.	22	B& B	
G	Fraxinus pennsylvanica 'Patmore'/ Patmore Green Ash	2-1/2"-3"CAL.	26	B& B	
H	Liquidamber styraciflua 'Rotundiloba'/ Rotundiloba Sweet Gum	2-1/2"-3"CAL.		B& B	
I	Nyssa sylvatica/ Black Gum	2-1/2"-3"CAL.	1	B& B	
J	Platanus x acerifolia 'Bloodgood'/ Bloodgood London Plane	2-1/2"-3"CAL.	53	B& B	
K	Quercus alba/ White Oak	2-1/2"-3"CAL.		B& B	
L	Quercus coccinea/ Scarlet Oak	2-1/2"-3"CAL.	21	B& B	
M	Quercus rubra/ Red Oak	2-1/2"-3"CAL.	21	B& B	
N	Tilia tomentosa/ Silver Linden	2-1/2"-3"CAL.	34	B& B	
	ORNAMENTAL OR UNDERSTORY TREES	8-10' HT.		B& B	
AC	Amelanchier canadensis/ Shadblow Serviceberry	8-10' HT.		B& B	
BN	Betula nigra/ River Birch	2" CAL.		B& B	CLUMP
CC	Carpinus caroliniana/ American Hornbeam	8-10' HT.		B& B	
CN	Cercis canadensis/ Redbud	8-10' HT.	15	B& B	
CF	Cornus florida/ White Flowering Dogwood	8-10' HT.		B& B	
CV	Chionanthus virginicus/ White Fringe Tree	8-10' HT.		B& B	
MV	Magnolia virginiana/ Sweetbay Magnolia	8-10' HT.		B& B	
MS	Malus x 'Snowdrift'/ Snowdrift Crabapple	8-10' HT.	29	B& B	
PSK	Prunus serrulata 'Kwanzan'/ Kwanzan Cherry	8-10' HT.		B& B	
PY	Prunus x yedoensis 'Yoshino'/ Yoshino Cherry	8-10' HT.	46	B& B	
SR	Syringa reticulata 'Ivory Silk'/ Ivory Silk Lilac	8-10' HT.		B& B	
	EVERGREEN TREES				
CL	Cupressocyparis leylandii/ Leyland Cypress	6-8' HT.	16	B& B	
IF	Ilex x attenuata 'Fosteri'/ Fosters Holly	6-8' HT.	20	B& B	
IO	Ilex opaca/ American Holly	6-8' HT.	14	B& B	
JV	Juniperus virginiana/ Eastern Red Cedar	6-8' HT.	100	B& B	
PO	Picea omorika/ Serbian Spruce	6-8' HT.	57	B& B	
PS	Pinus strobus/ Eastern White Pine	6-8' HT.	80	B& B	
TD	Taxodium distichum / Bald Cypress	6-8' HT.		B& B	
TO	Thuja occidentalis 'Elegantissima'/ Elegant Arborvitae	6-8' HT.		B& B	
TG	Thuja occidentalis 'Giganteoides'/ Giganteoides Arborvitae	6-8' HT.		B& B	
	SHRUBS				
CA	Cornus amomum/ Silky Dogwood	2-2 1/2' HT.		B& B	
CS	Cornus stolonifera/ Red-Osier Dogwood	2-2 1/2' HT.		B& B	
IV	Ilex verticillata/ Winterberry	2-2 1/2' HT.		B& B	
IM	Ilex x meserveae 'Blue Prince'/ Blue Prince Holly	2-2 1/2' HT.		B& B	
IT	Itea virginiana 'Henry Garnet'/ Henry Garnet Sweetspire	2-2 1/2' HT.		B& B	
RA	Rhus aromatica / Fragrant Sumac	2-2 1/2' HT.		B& B	
RT	Rhus typhina/ Staghorn Sumac	2-2 1/2' HT.		B& B	
SC	Sambucus canadensis/ American Elderberry	2-2 1/2' HT.		B& B	
SE	Salix exigua/ Coyote Willow	2-2 1/2' HT.		B& B	
SJ	Spiraea japonica 'Little Princess' / Little Princess Spirea	2-2 1/2' HT.		B& B	
SP	Spiraea japonica 'Pendens' / Penden's Spirea	2-2 1/2' HT.		B& B	
VC	Vaccinium corymbosun/ Highbush Blueberry	2-2 1/2' HT.		B& B	
VD	Viburnum dentatum/ Arrowwood Viburnum	2-2 1/2' HT.		B& B	
VP	Viburnum prunifolium/ Blackhaw Viburnum	2-2 1/2' HT.		B& B	
	HERBACEOUS PLANTS				
EP	Eupatorium perpurea/ Joe Pye Weed	1 GAL.		CONT.	
SW	Panicum virgatum/ Switchgrass	1 GAL.		CONT.	
RF	Rudbeckia fulgida/Black Eyed Susan				
IV	Iris versicolor/Blue Flag Iris				

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 01000057.5 \ ULSDET01.DGN

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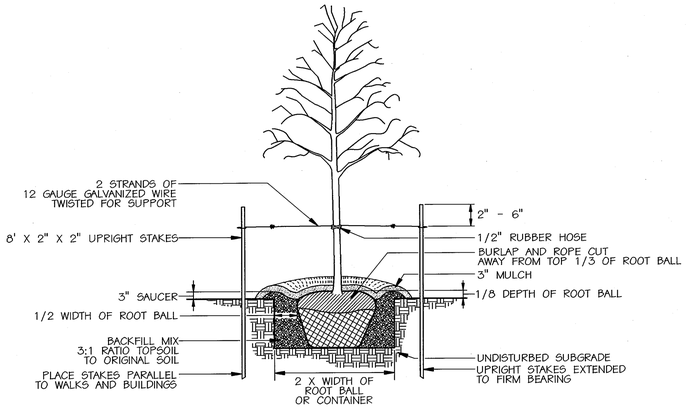
STATE OF MARYLAND — NICHOLAS M. LINEHAN — REGISTERED LANDSCAPE ARCHITECT — 9/13/02

WESTERN REGIONAL PARK
HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

LANDSCAPE DETAILS

SCALE: AS SHOWN
DATE: 06-12-02
KCI JOB NO.: 01-00057
CAPITAL PROJECT NO.: N-3932
PERMIT ISSUE:
CONSTRUCTION ISSUE:

LS12



DECIDUOUS TREE PLANTING DETAIL

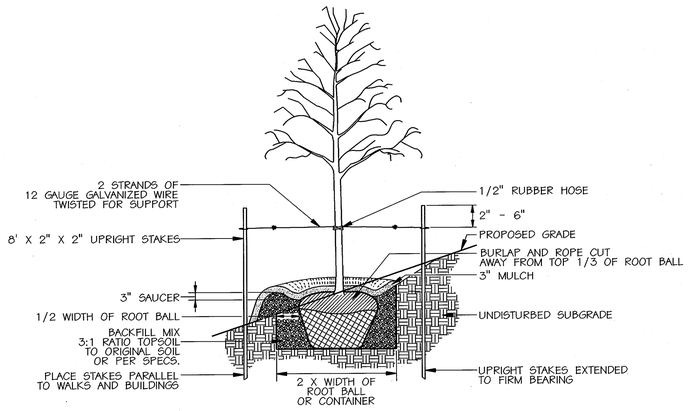
B & B

NOT TO SCALE

SLOPE PLANTING DETAIL FOR ALL SHRUBS

B & B AND CONTAINER GROWN

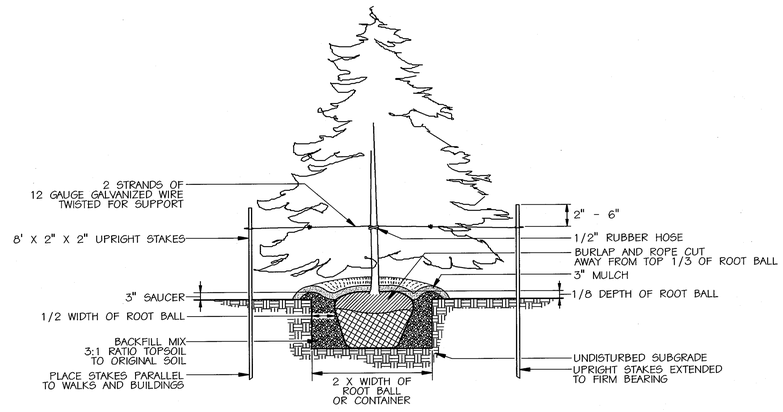
NOT TO SCALE



SLOPE PLANTING DETAIL FOR ALL TREES

B & B

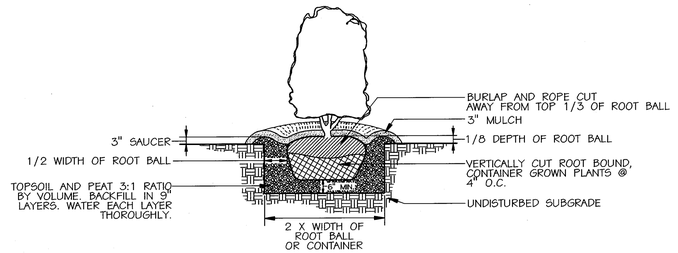
NOT TO SCALE



EVERGREEN TREE PLANTING DETAIL

B & B

NOT TO SCALE



SHRUB PLANTING DETAIL

B & B AND CONTAINER GROWN

NOT TO SCALE

PLANTING NOTES

1. DESCRIPTION

The Contractor shall furnish and install all plant materials, labor and other materials necessary to complete the work as shown on the plans and details.

MATERIALS AND METHODS

A. The materials and methods shall comply with all the requirements of the current edition of the "American Standard for Nursery Stock" as prepared by the American Association of Nurserymen and as modified herein.

B. Substitutions

1. If a plant is found not to be suitable or available, the Landscape Contractor shall notify the Owner's Representative before bidding.

2. The Owner or Owner's Representative will select a reasonable alternate, or will provide all Landscape Contractors with the source of the original plant selection.

C. Utilities

The Landscape Contractor shall verify the correct location of any existing underground utilities prior to any excavation or plant installation. The Landscape Contractor shall call Miss Utility (1-800-257-7777) a minimum of 48 hours prior to construction.

D. Plant Material Sources
The Landscape Contractor shall, at least ten (10) days before beginning planting operations submit a list of planting material sources giving the nursery address and phone number for each plant material required on the job.

E. The total number of plants shall be as shown on the landscape plan. If this total differs from the plant schedule, the Landscape Contractor shall notify the Owner's Representative before bidding.

F. Time of Planting:
Planting season schedule shall be in accordance with the "American Standard for Nursery Stock" as prepared by the American Association of Nurserymen.

Plant pines and oaks during spring planting season only.

G. Mulch:
Mulch shall be shredded hardwood bark. The Landscape Contractor shall provide a one (1) lb. sample to the Owner's Representative for his approval. Mulch shall be applied to a depth of three (3) inches within 24 hours of installation of plant materials.

H. Tree wrap shall not be utilized.

I. The Landscape Contractor shall prune plant material within two (2) days of installation in accordance with the details and as directed by the Owner's Representative.

J. Topsoil
ASTM D 5268, pH range 5.5 to 7.4, 1.5 percent organic material minimum, free of stones 1 inch (25 mm) or larger in any dimension, and other extraneous materials harmful to plant growth.

1. Topsoil Source: Reuse surface soil stockpiled on the site. Verify suitability of surface soil to produce topsoil meeting requirements and amend when necessary. Supplement with imported topsoil when quantities are insufficient. Clean topsoil of roots, plants, sods, stones clay lumps, and other extraneous materials harmful to plant growth.

2. Spread topsoil 6" min. depth over all landscape areas.

K. Soil Preparation:

1. Spread agricultural lime on sod and seed areas at a rate of 45 lbs/1000 s.f.
2. Fertilize sod and seed areas with (5-10-10) at a rate of 10 lbs/1000 s.f.

L. All disturbed areas within the limit of contract which are not paved, sodded or otherwise planted shall be seeded. The following seed mixture and rate of application will be used:

This plan has been prepared in accordance with the provisions of Section 16.124 of the Howard County Code and the Landscape Manual..

PLANT SYMBOLS AND LABELS THAT ARE SCREENED ARE PROPOSED PLANTINGS TO BE PLANTED AT THE DISCRETION OF RECREATION AND PARKS. THEY ARE NOT INCLUDED IN THE REQUIRED PLANT TABULATIONS AND ARE NOT LISTED IN THE PLANT SCHEDULES.

I/We certify that the landscaping shown on this plan will be done according to the plan, Section 16.124 of the Howard County and the Howard County Landscape Manual. I/We further certify that upon completion a Certification of Landscape Installation, accompanied by an executed one year guarantee of plant materials, will be submitted to the Department of Planning and Zoning.

Developer's/Owner's name RONALD G. LEPSON — 9/4/02 Date

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, HOWARD COUNTY HEALTH DEPARTMENT — DATE 10-17-02

NO.	REVISIONS	DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 0100057.S \ ULSDET01.DGN

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TECHNOLOGIES WWW.KCI.COM

STATE OF MARYLAND — DONALD M. LIEB — REGISTERED LANDSCAPE ARCHITECT

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410) 313-4620

LANDSCAPE DETAILS

SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

LS13

SHEET NO.: 86 OF 113

SDP-02-64

LEGEND

- SHADE TREE
- ORNAMENTAL OR UNDERSTORY TREE
- EVERGREEN TREE
- SHRUBS
- HIGH MARSH PLANTING
- WET WILD FLOWER MIX
- FOREBAY PLANTING

PLANT LIST
STORMWATER MANAGEMENT POND "B"

KEY	BOTANICAL NAME / COMMON NAME	SIZE	QTY	ROOT	REMARK
	SHADE TREES				
H	Liquidamber styraciflua "Rotundiloba"/ Rotundilkobna Sweet Gum	2-1/2"-3"CAL.	11	B&B	
I	Nyssa sylvativca/ Black Gum	2-1/2"-3"CAL.	7	B&B	
L	Quercus rubra/ Red Oak	2-1/2"-3"CAL.	2	B&B	
	ORNAMENTAL OR UNDERSTORY TREES				
AC	Amelanchier canadensis/ Shadblow Seviceberry	8'-10' HT.	4	B&B	
MV	Magnolia virginiana/ Sweetbay Magnolia	8'-10' HT.	3	B&B	
	EVERGREEN TREES				
IO	Ilex opaca/ Fosters Holly	6-8' HT.	11	B&B	
PO	Picea omorika/ Serbian Spruce	6-8' HT.	6	B&B	
	SHRUBS				
CA	Cornus amomum/ Silky Dogwood	2-2 1/2' HT.	79	B&B	
IV	Ilex verticillata/ Winterberry	2-2 1/2' HT.	37	B&B	
RT	Rhus typhina/ Staghorn Sumac	2-2 1/2' HT.	23	B&B	
SE	Salix exigua/ Coyote Willow	2-2 1/2' HT.	57	B&B	
VD	Viburnum dentatum/ Arrowwood Viburnum	2-2 1/2' HT.	69	B&B	

PLANT LIST SWM "B"
FOREBAY PLANTING AREAS

	BOTANICAL NAME / COMMON NAME	SIZE	QTY #1	QTY #2	ROOT	REMARKS
	HERBACEOUS PLANTS					
	Carex comosa/ Bottle Brush Sedge		30	25		
	Dichanthelium scoparium/ Broom Panic Sedge		30	25		
	Lobelia cardinalis/ Cardinal Flower		15	12		
	Scirpus fluviatilis/ River Bullrush		45	35		
	Scirpus pungens/ Common 3 Square		35	25		
	NATIVE SEED MIX "A"					.25 lbs./ 1000 s.f.

PLANT LIST SWM "B"
HIGH MARSH PLANTING AREA

	BOTANICAL NAME / COMMON NAME	SIZE	QTY	ROOT	REMARK
	HERBACEOUS PLANTS				
	Andropogan glomeratus/ Lowland Broom Sedge		75		
	Andropogon virginicus/ Broom Sedge		75		
	Asclepsis incarnata/ Swamp Milkweed		105		
	Aster novae-angeliae/ New England Aster		105		
	Caltha palustris/ Marsh Marigold		35		
	Eupatorium perfoliatum/ Bonset		140		
	Iris versicolor/ Blue Flag		65		
	Monarda didyma/ Beebalm		35		
	Physotegia purpurea/ Dragon Head Purple		35		
	NATIVE SEED MIX "A"				.25 lbs./ 1000 s.f.

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9/20/02

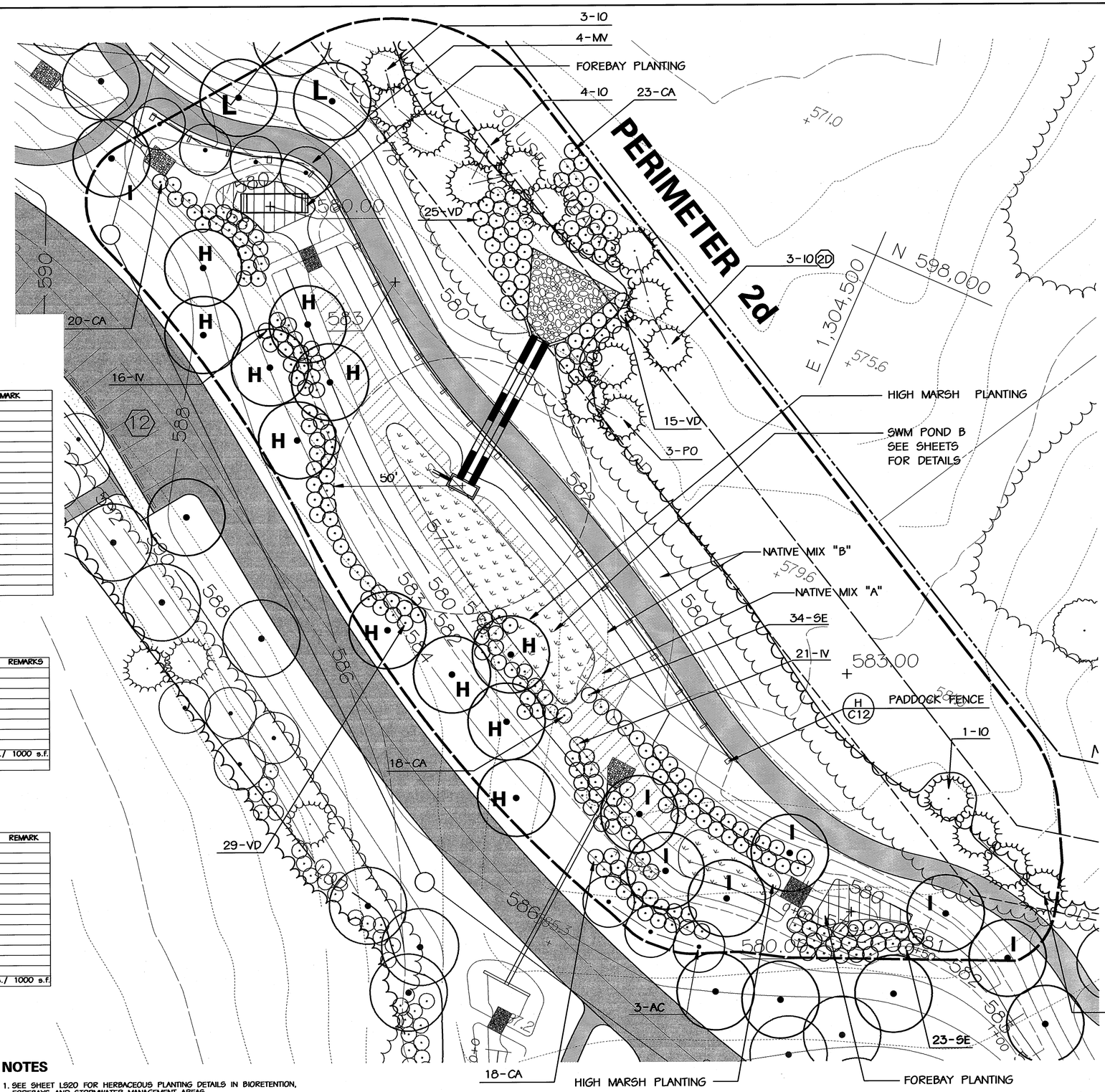
DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, H.C. HOWARD COUNTY HEALTH DEPARTMENT — DATE 10-17-02

NOTES

1. SEE SHEET LS20 FOR HERBACEOUS PLANTING DETAILS IN BIORETENTION, FOREBAYS AND STORMWATER MANAGEMENT AREAS.
2. SEED ALL STORMWATER MANAGEMENT AND BIORETENTION AREAS SLOPES AND DAM EMBANKMENTS WITH NATIVE SEED MIX "B" UNLESS OTHERWISE INDICATED IN THE DRAWING SPECIFICATIONS.
3. SEE SHEET LS12 AND LS13 FOR PLANTING DETAILS, NOTES AND COUNTY LANDSCAPE TABULATIONS.



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

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 01000057.S \ LIDETSWMB.DGN

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STATE OF MARYLAND — THOMAS M. LONG — No. 21435 — REGISTERED LANDSCAPE ARCHITECT

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
6751 COLUMBIA GATEWAY DRIVE
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

PLANTING PLAN

STORMWATER MANAGEMENT POND B

SCALE:	1" = 20'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

LS14

SHEET NO.: 87 OF 113

SDP-02-64

PLANT LIST
STORMWATER MANAGEMENT POND "E"

KEY	BOTANICAL NAME / COMMON NAME	SIZE	QTY	ROOT	REMARK
	SHADE TREES				
E	Cladrastis lutea / 'Sweetshade Yellowwood	2-1/2"-3"CAL.	1	B&B	
H	Liquidamber styraciflua 'Rotundiloba'/ Rodundiloba Sweet Gum	2-1/2"-3"CAL.	4	B&B	
I	Nyssa sylbatica/ Black Gum	2-1/2"-3"CAL.	5	B&B	
L	Quercus coccinea/ Scarlet Oak	2-1/2"-3"CAL.	1	B&B	
	ORNAMENTAL OR UNDERSTORY TREES				
BN	Betula nigra/ River Birch	2" CAL.	10	B&B	
CN	Cercis canadensis/ Redbud	8-10' HT.	3	B&B	
CV	Chionanthus virginicus/ White Fringe Tree	8-10' HT.	7	B&B	
MV	Magnolia virginiana/ Sweetbay Magnolia	8-10' HT.	3	B&B	
PY	Prunus x yedoensis 'Yoshino"/ Yoshino Cherry	8-10' HT.	6	B&B	
		8-10' HT.	3	B&B	
	EVERGREEN TREES				
TD	Taxodium distichum/ Bald Cypress	6-8' HT.	6	B&B	
IF	Ilex x attenuata ' Fosteri'/ Fosters Holly	6-8' HT.	7	B&B	
JV	Juniperus virginiana/ Eastern Red Cedar	6-8' HT.	8	B&B	
PO	Picea omorika/ Serbian Spruce	6-8' HT.	4	B&B	
TO	Thuja occidentalis ' Elegantissima'/ Elegant Arborvitae	6-8' HT.	3	B&B	
	SHRUBS				
AM	Aronia melanocarpa/ Black chokeberry	2-2 1/2' HT.	57	B&B	
CA	Cornus amomum/ Silky Dogwood	2-2 1/2' HT.	45	B&B	
CS	Cornus stolonifera/ Red-Osier Dogwood	2-2 1/2' HT.	31	B&B	
IT	Itea virginiana 'Henry Garnet"/ Henry Garnet Sweetspire	2-2 1/2' HT.	51	B&B	
PON	Physocarpus opulifolius nanus/ Dwarf Ninebark	2-2 1/2' HT.	15	B&B	
RA	Rhus aromatica/ Fragrant Sumac	2-2 1/2' HT.	62	B&B	
SE	Salix exigua/ Coyote Willow	2-2 1/2' HT.	55	B&B	
		2-2 1/2' HT.	20	B&B	
VD	Viburnum dintatum/ Arrowwood Viburnum	2-2 1/2' HT.	16	B&B	
VP	Viburnum prunifolium/ Blackhaw Viburnum	2-2 1/2' HT.	18	B&B	
	HERBACEOUS PLANTS				
EP	Eupatorium perpurea/ Joe Pye Weed		24		
IV	Iris versicolor/ Blue Flag Iris		730		
PV	Panicum virgatum/ Switchgrass		32		
RF	Rudbeckia fulgida/ Black Eyed Susan		76		

PLANT LIST SWM "E"
MICROPOOLS

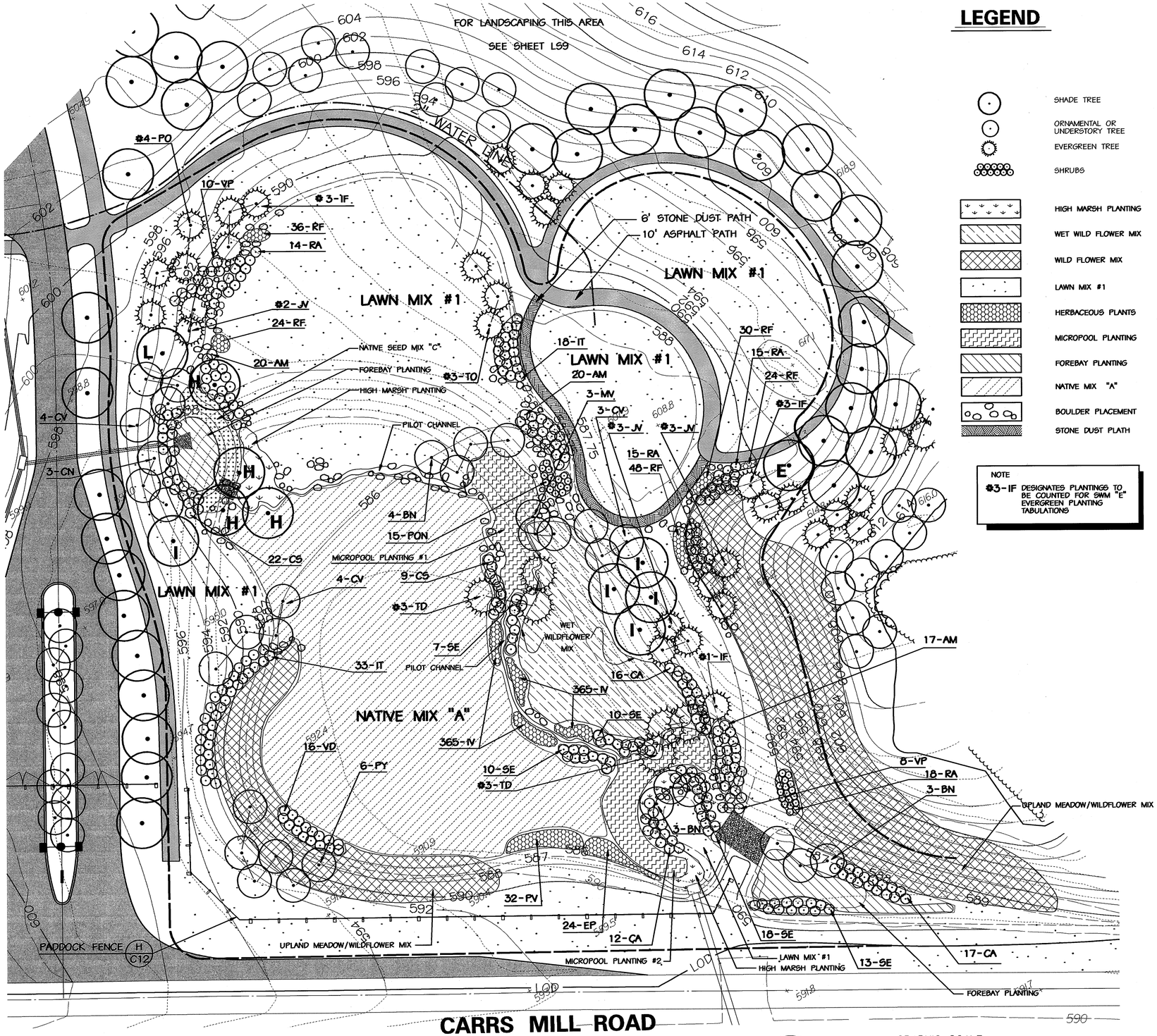
	BOTANICAL NAME / COMMON NAME	SIZE	QTY #1	QTY #2	ROOT	REMARKS
	HERBACEOUS PLANTS					
	Acorus calamus/Sweet Flag		98	64		
	Caltha palustris/ Marsh Marigold		98	32		
	Iris psuedacorus/ Yellow Water Iris		245	32		
	Iris versicolor/ Blue Flag		245	32		
	Scirpus fluviatus/ River Bulrush		147	192		
	Scirpus pungens/ Three Square Bulrush		98	192		
	Saururus cernus/ Lizard Tail		49	96		
	SEED MIX					
	Alopecurus patrensis/ Meadow Foxtail		50%	50%		
	Carex scoparia/ Blunt Broomsedge		50%	50%		

PLANT LIST SWM "E"
FOREBAY PLANTING AREAS

BOTANICAL NAME / COMMON NAME	SIZE	QTY #1	QTY #2	ROOT	REMARKS
HERBACEOUS PLANTS					
Carex comosa/ Bottle Brush Sedge		56	100		
Dichanthelium scoparium/ Broom Panic Sedge		56	100		
Lobelia cardinalis/ Cardinal Flower		28	50		
Scirpus fluviatilis/ River Bulrush		84	150		
Scirpus pungens/ Common 3 Square		56	100		
NATIVE SEED MIX "A"					
					.25 LBS./ 1000 S.F.

NOTES

1. SEE SHEET LS20 FOR HERBACEOUS PLANTING DETAILS IN BIORETENTION, FOREBAYS AND STORMWATER MANAGEMENT AREAS.
2. SEED ALL STORMWATER MANAGEMENT AND BIORETENTION AREAS SLOPES AND DAM EMBANKMENTS WITH NATIVE SEED MIX "B" UNLESS OTHERWISE INDICATED IN THE DRAWING SPECIFICATIONS.
3. SEED PILOT CHANNEL WITH NATIVE MIX "A".PLACE JUTE FIBER MESH ON BOTTOM AND SIDES OF PILOT CHANNEL.
4. FOR BOULDER PLACEMENT AND TOPSOIL DETAILS SEE SHEET LS19



LEGEND

- SHADE TREE
- ORNAMENTAL OR UNDERSTORY TREE
- EVERGREEN TREE
- SHRUBS
- HIGH MARSH PLANTING
- WET WILD FLOWER MIX
- WILD FLOWER MIX
- LAWN MIX #1
- HERBACEOUS PLANTS
- MICROPOOL PLANTING
- FOREBAY PLANTING
- NATIVE MIX "A"
- BOULDER PLACEMENT
- STONE DUST PLATH

NOTE
#3-IF DESIGNATES PLANTINGS TO BE COUNTED FOR SWM "E" EVERGREEN PLANTING TABULATIONS

GRAPHIC SCALE
30 0 15 30 60
(IN FEET)
1 inch = 30ft.

NORTH

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02 by

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER — DATE 10-17-02
HOWARD COUNTY HEALTH DEPARTMENT

NO.	REVISIONS	DESCRIPTION	DATE

KCI FILE: MA 2000 \ 01000576 \ LDETWSMME.DGN

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HUNT VALLEY, MARYLAND 21030
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KCI TECHNOLOGIES WWW.KCI.COM

STATE OF MARYLAND — DOUGLAS M. WARD — No. 21646 — REGISTERED LANDSCAPE ARCHITECT

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
3430 COURTLAND DRIVE
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

PLANTING PLAN

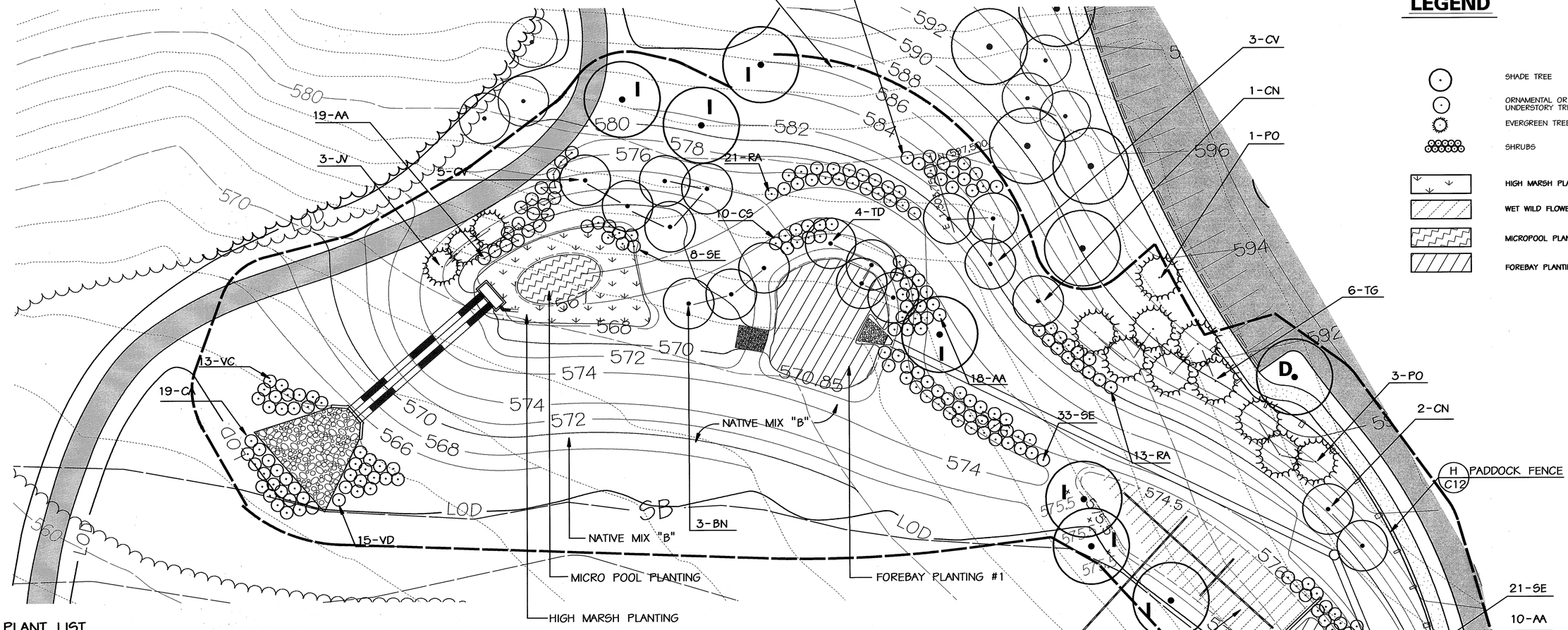
STORMWATER MANAGEMENT POND E

SCALE:	1" = 30'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

LS15

SHEET NO.: 88 OF 113

SDP-02-64



LEGEND

- SHADE TREE
- ORNAMENTAL OR UNDERSTORY TREE
- EVERGREEN TREE
- SHRUBS
- HIGH MARSH PLANTING
- WET WILD FLOWER MIX
- MICROPOOL PLANTING
- FOREBAY PLANTING

PLANT LIST
STORMWATER MANAGEMENT POND "F"

KEY	BOTANICAL NAME / COMMON NAME	SIZE	QTY	ROOT	REMARK
	SHADE TREES				
D	Acer saccharum 'Legacy'/ Legacy Sugar Maple	2-1/2"-3"CAL.	1	B&B	
I	Nyssa sylvatica/ Black Gum		7		
	ORNAMENTAL OR UNDERSTORY TREES				
BN	Betula nigra/ River Birch	8-10' HT.	7		
CN	Cercis canadensis/ Redbud	8-10' HT.	3		
CV	Chionanthus virginicus/ White Fringe Tree	8-10' HT.	8		
TD	Taxiduim distichum/ Bald Cypress	6-8' HT.	4		
	EVERGREEN TREES				
JV	Juniperus virginiana/ Eastern Red Cedar	6-8' HT.	3	B&B	
PO	Picea omorika/ Serbian Spruce	6-8' HT.	4	B&B	
TG	Thuja occidentalis 'Giganteoides'/ Giganteoides Arborvitae	6-8' HT.	6	B&B	
	SHRUBS				
AA	Aronia arbutifolia/ Red Chokeberry	2-2 1/2' HT.	47	B&B	
CA	Cornus amomum/ Silky Dogwood	2-2 1/2' HT.	19	B&B	
CS	Cornus stolonifera/ Red-Osier Dogwood	2-2 1/2' HT.	27	B&B	
RA	Rhus aromatica/ Fragrant Sumac	2-2 1/2' HT.	34	B&B	
SE	Salix exigua/ Coyote Willow	2-2 1/2' HT.	74	B&B	
VC	Vaccinium corymbosum/ Highbush Blueberry	2-2 1/2' HT.	13	B&B	
VD	Vaccinium dentatum, arrowwood viburnum	2-2 1/2' HT.	15	B&B	
VP	Viburnum prunifolium/ Blackhaw viburnum	2-2 1/2' HT.	36	B&B	

PLANT LIST SWM "F"
FOREBAY PLANTING AREAS

BOTANICAL NAME / COMMON NAME	SIZE	QTY #1	QTY #2	ROOT	REMARKS
HERBACEOUS PLANTS					
Carex comosa/ Bottle Brush Sedge		55	90		
Dichanthelium scoparium/ Broom Panic Sedge		56	90		
Lobelia cardinalis/ Cardinal Flower		165	35		
Scirpus fluviatilis/ River Bulrush		165	70		
Scirpus pungens/ Common 3 Square		110	70		
NATIVE SEED MIX "A"					.25 LBS./ 1000 S.F.

PLANT LIST SWM "F"
MICROPOOL

BOTANICAL NAME / COMMON NAME	SIZE	QTY	ROOT	REMARKS
HERBACEOUS PLANTS				
Acorus calamus/ Sweet Flag		15		
Caltha palustris/ Marsh Marigold		30		
Iris psuedacorus/ Yellow Water Iris		38		
Iris versicolor/ Blue Flag		38		
Scirpus fluviatus/ River Bulrush		15		
Scirpus pungens/ Three Square Bulrush		8		
Saururus cernus/ Lizard Tail		8		
NATIVE SEED MIX "A"				.25 LBS/ 1000 S.F.

NOTES

1. SEE SHEET LS20 FOR HERBACEOUS PLANTING DETAILS IN BIORETENTION, FOREBAYS AND STORMWATER MANAGEMENT AREAS.
2. SEED ALL STORMWATER MANAGEMENT AND BIORETENTION AREAS SLOPES AND DAM EMBANKMENTS WITH NATIVE SEED MIX "B" UNLESS OTHERWISE INDICATED IN THE DRAWING SPECIFICATIONS.
3. SEED PILOT CHANNEL WITH NATIVE MIX "A".PLACE JUTE FIBER MESH ON BOTTOM AND SIDES OF PILOT CHANNEL.
4. FOR BOULDER PLACEMENT AND TOPSOIL DETAILS SEE SHEET LS19

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/26/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, H.S. HOWARD COUNTY HEALTH DEPARTMENT — DATE 10-17-02

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

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

NO.	REVISIONS	DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 01000057.S \ UDET5WMF.DGN

KCI TECHNOLOGIES INC.
ENGINEERS • PLANNERS • SURVEYORS
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HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
KCI TECHNOLOGIES WWW.KCI.COM

STATE OF MARYLAND — MICHAEL M. LENHART — No. 15 — REGISTERED LANDSCAPE ARCHITECT

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410) 313-4640

PLANTING PLAN

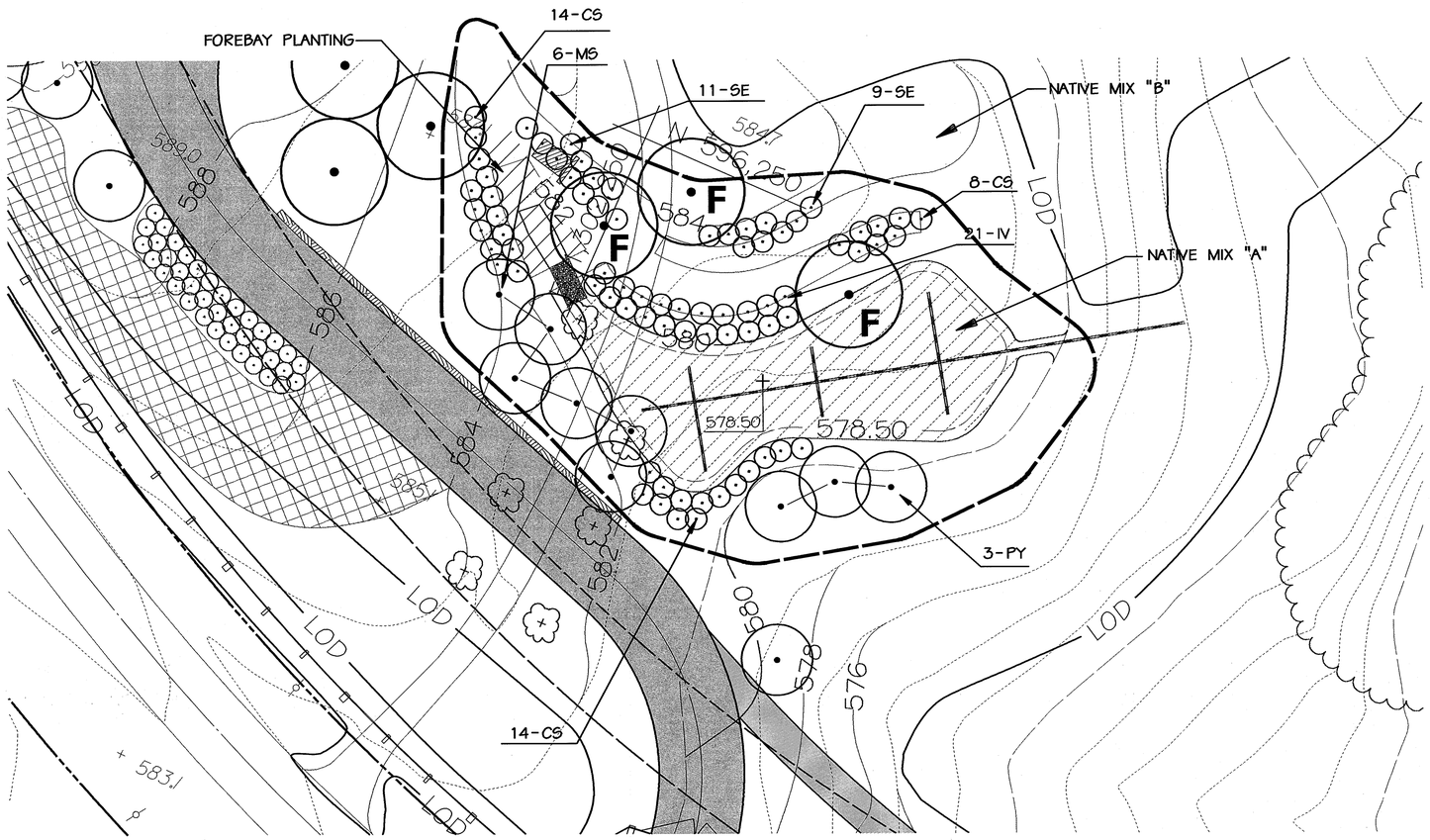
SWM POND F & SURFACE SAND FILTER #2

SCALE:	1" = 20'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

LS16

SHEET NO.: 89 OF 113

SDP-02-64



LEGEND

- SHADE TREE
- ORNAMENTAL OR UNDERSTORY TREE
- EVERGREEN TREE
- SHRUBS
- WET WILD FLOWER MIX
- FOREBAY PLANTING

PLANT LIST
BIORETENTION AREA "F1"

KEY	BOTANICAL NAME / COMMON NAME	SIZE	QTY	ROOT	REMARKS
	SHADE TREES				
F	Fraxinus americana 'Autumn Purple'/ Autumn Purple White Ash	2-1/2"-3"CAL.	3	B&B	
	ORNAMENTAL OR UNDERSTORY TREES				
MS	Thuja occidentalis 'Giganteoides'/ Giganteoides Arborvitae	8-10' HT.	6	B&B	
PY	Prunus x yedoensis 'Yoshino'/ Yoshino Cherry	8-10' HT.	3	B&B	
	SHRUBS				
CS	Cornus stolonifera/ Red-Osier Dogwood	2-2 1/2' HT.	36	B&B	
IV	Ilex verticillata/ Winterberry	2-2 1/2' HT.	21	B&B	
SE	Salix exigua/ Coyote Willow	2-2 1/2' HT.	21	B&B	

PLANT LIST
FOREBAY PLANTING AREA

	BOTANICAL NAME / COMMON NAME	SIZE	QTY	ROOT	REMARKS
	HERBACEOUS PLANTS				
	Aster novae-angeliae/ New England Aster		40		
	Carex comosa/ Bottle Brush Sedge		32		
	Lobelia cardinalis/ Cardinal Flower		40		
	Scirpus fluviatilis/ River Bullrush		24		
	Scirpus pungens/ Commmon 3-Square		24		

PLANT LIST
HIGH MARSH PLANTING AREA

	BOTANICAL NAME / COMMON NAME	SIZE	QTY	ROOT	REMARKS
	HERBACEOUS PLANTS				
	Andropogan glomeratus/ Lowland Broom Sedge		65		
	Andropogon virginicus/ Broom Sedge		65		
	Asclepsis incarnata/ Swamp Milkweed		125		
	Aster novae-angeliae/ New England Aster		125		
	Caltha palustris/ Marsh Marigold		32		
	Eupatorium perfoliatum/ Bonset		125		
	Monarda didyma/ Beebalm		65		
	Physotegia purpurea/ Dragon Head Purple		32		

NOTES

1. SEE SHEET LS20 FOR HERBACEOUS PLANTING DETAILS IN BIORETENTION, FOREBAYS AND STORMWATER MANAGEMENT AREAS.
2. SEED ALL STORMWATER MANAGEMENT AND BIORETENTION AREAS SLOPES AND DAM EMBANKMENTS WITH NATIVE SEED MIX "B" UNLESS OTHERWISE INDICATED IN THE DRAWING SPECIFICATIONS.
3. SEED PILOT CHANNEL WITH NATIVE MIX "A".PLACE JUTE FIBER MESH ON BOTTOM AND SIDES OF PILOT CHANNEL.
4. FOR BOULDER PLACEMENT AND TOPSOIL DETAILS SEE SHEET LS19

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/2/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, H.C.H.D. — DATE 10-17-02

HOWARD COUNTY HEALTH DEPARTMENT

NORTH

GRAPHIC SCALE

20 0 10 20 40

(IN FEET)

1 inch = 20ft.

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 01000057.S \ UDETBRF1.DGN

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PHONE: (410) 316-7800 FAX: (410) 316-7817
KCI TECHNOLOGIES WWW.KCI.COM

STATE OF MARYLAND — NICHOLAS M. TAYLOR — No. 21437 — REGISTERED LANDSCAPE ARCHITECT

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410) 313-4640

PLANTING PLAN

BIORENENTION AREA F1

SCALE:	1" = 20'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

LS17

SHEET NO.: 90 OF 113

SDP-02-64

PLANT LIST
PARKING AREA

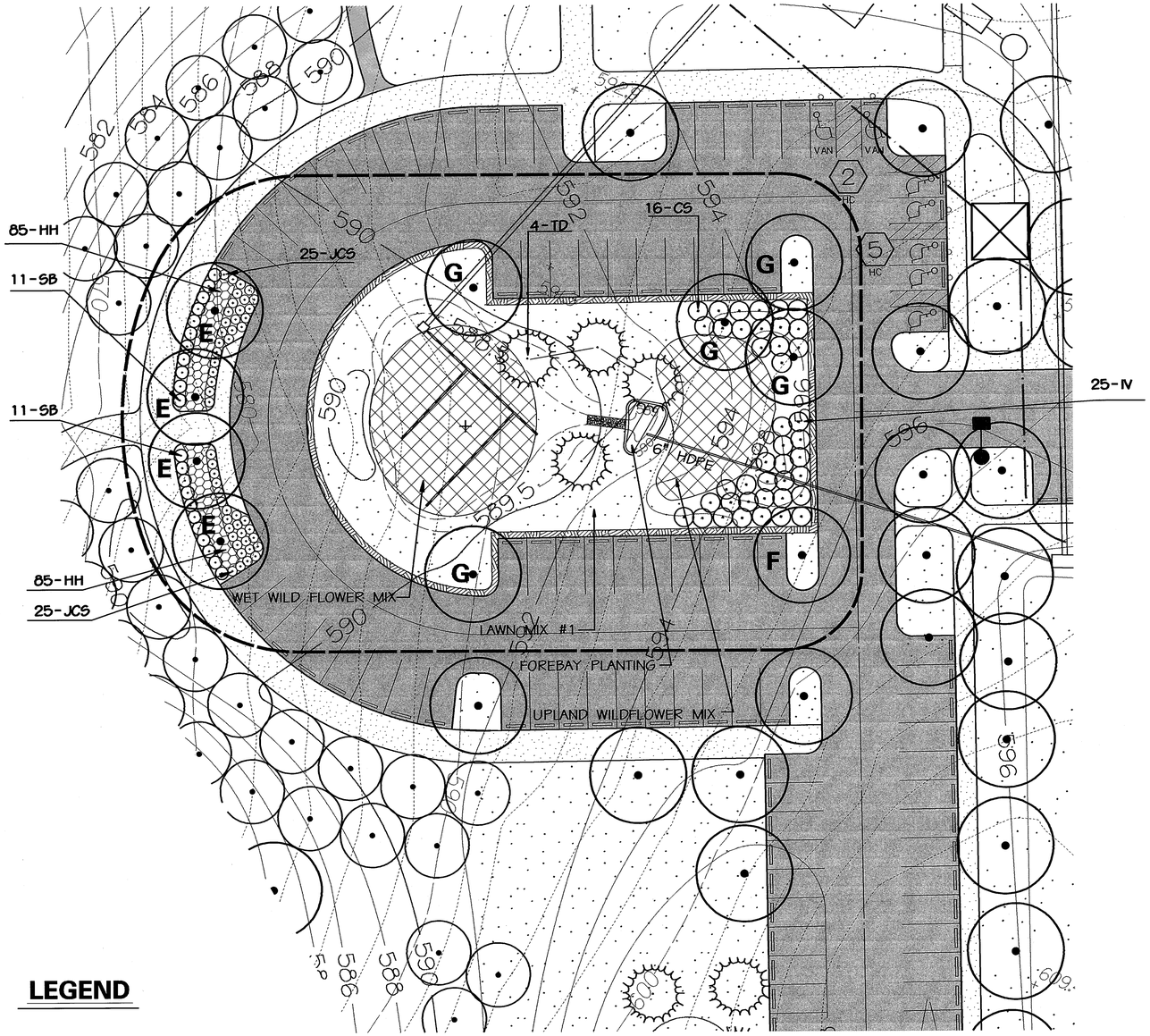
KEY	BOTANICAL NAME / COMMON NAME	SIZE	QTY	ROOT	REMARKS
	SHADE TREES				
E	Cladrastis lutea 'Sweetshade'/ Sweetshade Yellowwood	2-1/2"-3"CAL.	4	B& B	
F	Fraxinus americana 'Autumn Purple/ Autumn Purple White Ash	2-1/2"-3"CAL.	1	B& B	
G	Fraxinus pennsylvanica 'Patmore'/ Patmore Green Ash	2-1/2"-3"CAL.	3	B& B	
	SHRUBS				
SB	Spiraea bumalda "Anthony Waterer"/ Anthony Waterer Spirea	2-1/2"-3"CAL.	22	B& B	
JCS	Juniperus chinensis "sargentii / Sargent's Juniper	2-1/2"-3"CAL.	50	B& B	
	HERBACEOUS PLANTS				
HH	Hemerocallis hybrid x Hyperion / Hyperion Daylily	1 GAL	170	CONT.	

PLANT LIST
BIORETENTION AREA "F3"

KEY	BOTANICAL NAME / COMMON NAME	SIZE	QTY	ROOT	REMARK
	SHADE TREES				
G	Fraxinus pennsylvanica 'Patmore'/ Patmore Green Ash	2-1/2"-3"CAL.	2	B& B	
	EVERGREEN TREES				
TD	Taxodium distichum/ Bald Cypress	8-10' HT.	4	B& B	
	SHRUBS				
CS	Cornus stolonifera/ Red-Osier Dogwood	2-2 1/2' HT.	16	B& B	
IV	Ilex verticillata/ Winterberry	2-2 1/2' HT.	25	B& B	

PLANT LIST BR F3
FOREBAY PLANTING AREA

	BOTANICAL NAME / COMMON NAME	SIZE	QTY	ROOT	REMARKS
	HERBACEOUS PLANTS				
	Lobelia cardinalis/ Cardinal Flower		10		
	Saururus cvernus/ Lizard Tail		30		
	Scirpus fluviatilis/ River Bullrush		40		
	NATIVE SEED MIX "A"				.25 LBS./ 1000 S.F.



LEGEND

- SHADE TREE
- ORNAMENTAL OR UNDERSTORY TREE
- EVERGREEN TREE
- SHRUBS
- WET WILD FLOWER MIX
- LAWN MIX #1
- HERBACEOUS PLANTS
- FOREBAY PLANTING

NOTES

1. SEE SHEET LS20 FOR HERBACEOUS PLANTING DETAILS IN BIORETENTION, FOREBAYS AND STORMWATER MANAGEMENT AREAS.
2. SEED ALL STORMWATER MANAGEMENT AND BIORETENTION AREAS SLOPES AND DAM EMBANKMENTS WITH NATIVE SEED MIX "B" UNLESS OTHERWISE INDICATED IN THE DRAWING SPECIFICATIONS.
3. SEED PILOT CHANNEL WITH NATIVE MIX "A".PLACE JUTE FIBER MESH ON BOTTOM AND SIDES OF PILOT CHANNEL.
4. FOR BOULDER PLACEMENT AND TOPSOIL DETAILS SEE SHEET LS19

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, H.D. — DATE 10-17-02

HOWARD COUNTY HEALTH DEPARTMENT

NORTH

GRAPHIC SCALE

20 0 10 20 40

(IN FEET)

1 inch = 20ft.

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

NO.	REVISIONS	DESCRIPTION	DATE

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STATE OF MARYLAND — CHRISTOPHER TABOR — REG. NO. 21331 — REGISTERED LANDSCAPE ARCHITECT

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

PLANTING PLAN

BIORETENTION AREA F3

SCALE:	1" = 20'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

LS18

SHEET NO.: 91 OF 113

SDP-02-64

LEGEND

SHADE TREE

ORNAMENTAL OR UNDERSTORY TREE

EVERGREEN TREE

SHRUBS

HIGH MARSH PLANTING

NATIVE MIX "A"

FOREBAY PLANTING

PLANT LIST
BIORETENTION AREA F4

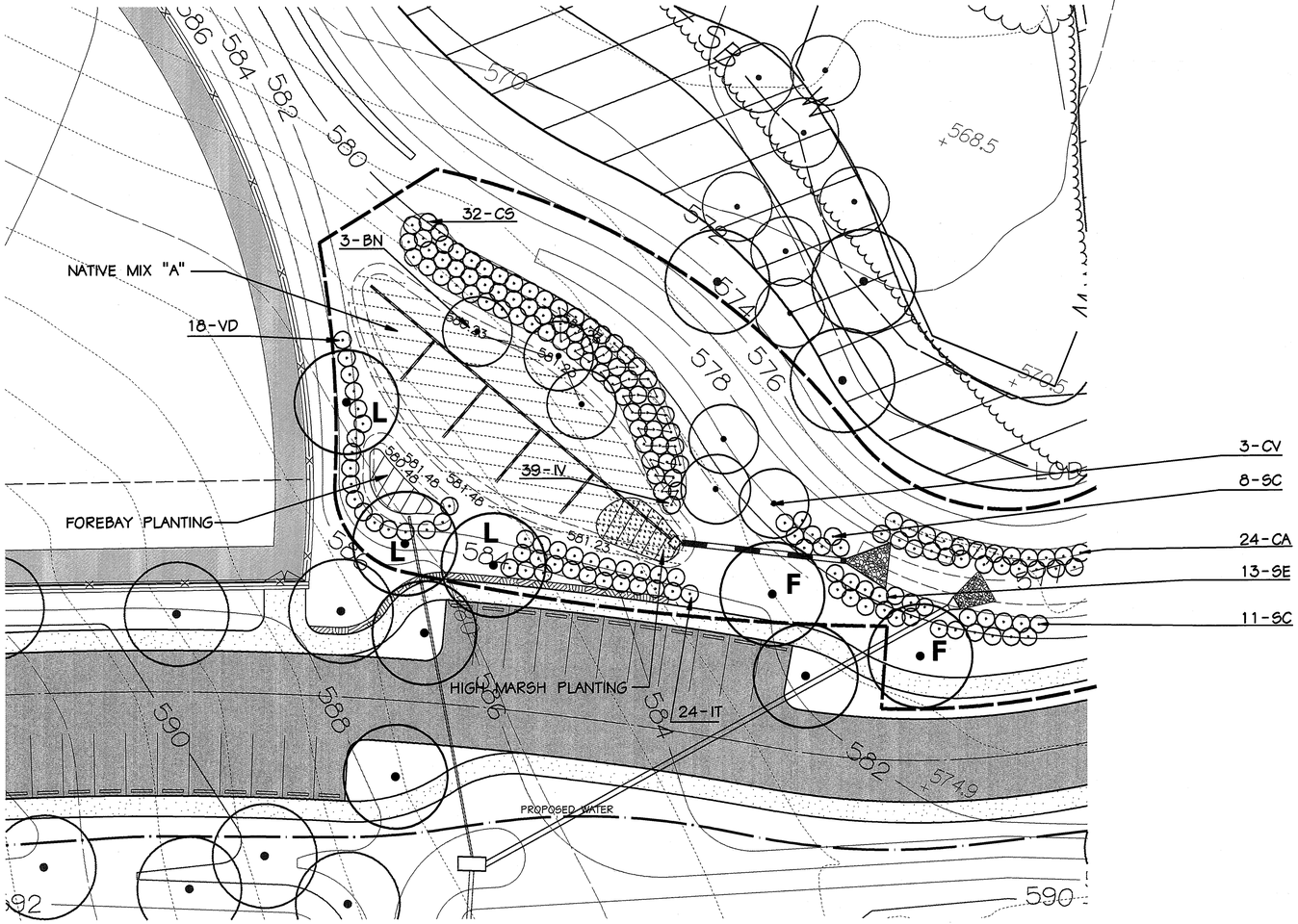
KEY	BOTANICAL NAME / COMMON NAME	SIZE	QTY	ROOT	REMARKS
	SHADE TREES				
F	Fraxinus americana 'Autumn Purple'/ Autumn Purple White Ash	2-1/2"-3"CAL.	2	B&B	
L	Quercus coccinea/ Scarlet Oak	2-1/2"-3"CAL.	3	B&B	
	ORNAMENTAL OR UNDERSTORY TREES				
BN	Betula nigra/ River Birch	8-10' HT.	3	B&B	
CV	Chionanthus virginicus/ White Fringe Tree	8-10' HT.	3	B&B	
	SHRUBS				
CA	Cornus amomum/ Silky Dogwood	2-2 1/2' HT.	24	B&B	
CS	Cornus stolonifera/ Red-Osier Dogwood	2-2 1/2' HT.	32	B&B	
IT	Itea virginiana 'Henry Garnet'/ Henry Garnet Sweetwpire	2-2 1/2' HT.	24	B&B	
IV	Ilex verticillata/ Winterberry	2-2 1/2' HT.	39	B&B	
SC	Sambucus canadensis/ American Elderberry	2-2 1/2' HT.	19	B&B	
SE	Salix exigua/ Coyote Willow	2-2 1/2' HT.	13	B&B	
VD	Viburnum dentatum/ Arrowwood Viburnum	2-2 1/2' HT.	18	B&B	

PLANT LIST
FOREBAY PLANTING AREA

	BOTANICAL NAME / COMMON NAME	SIZE	QTY	ROOT	REMARKS
	HERBACEOUS PLANTS				
	Carex comosa/ Bottle Brush Sedge		15		
	Lobelia cardinalis/ Cardinal Flower		30		
	Scirpus fluviatilis/ River Bullrush		15		

PLANT LIST
HIGH MARSH PLANTING AREA

	BOTANICAL NAME / COMMON NAME	SIZE	QTY	ROOT	REMARKS
	HERBACEOUS PLANTS				
	Andropogan glomeratus/ Lowland Broom Sedge		20		
	Eupatorium perfoliatum/ Boneset		40		
	Scirpus fluviatilis/ River Bullrush		30		



NOTES

1. SEE SHEET LS20 FOR HERBACEOUS PLANTING DETAILS IN BIORETENTION, FOREBAYS AND STORMWATER MANAGEMENT AREAS.
2. SEED ALL STORMWATER MANAGEMENT AND BIORETENTION AREAS SLOPES AND DAM EMBANKMENTS WITH NATIVE SEED MIX "B" UNLESS OTHERWISE INDICATED IN THE DRAWING SPECIFICATIONS.
3. SEED PILOT CHANNEL WITH NATIVE MIX "A". PLACE JUTE FIBER MESH ON BOTTOM AND SIDES OF PILOT CHANNEL.
4. FOR BOULDER PLACEMENT AND TOPSOIL DETAILS SEE SHEET LS19

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/27/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, H.S. HOWARD COUNTY HEALTH DEPARTMENT — DATE 10-17-02

GRAPHIC SCALE

20 0 10 20 40

(IN FEET)

1 inch = 20ft.

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 01000057.S \ UDETBRF4.DGN

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STATE OF MARYLAND — DOUGLAS M. LUDLOW — No. 21431 — REGISTERED PROFESSIONAL LANDSCAPE ARCHITECT

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

PLANTING PLAN

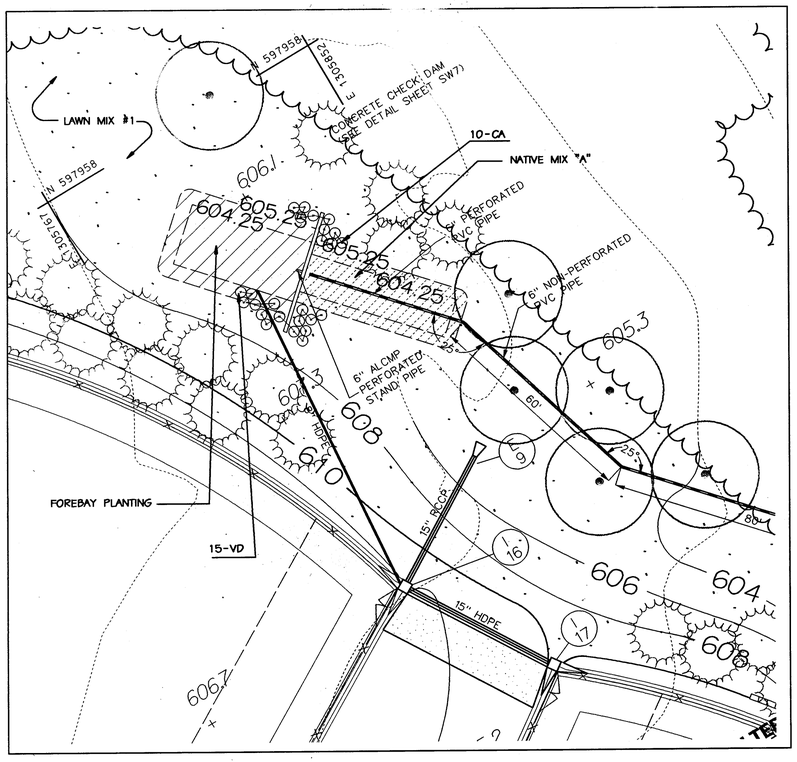
BIORETENTION AREA F4

SCALE:	1" = 20'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

LS19

SHEET NO.: 92 OF 113

SDP-02-64



SAND FILTER G

SCALE = 30'

LEGEND

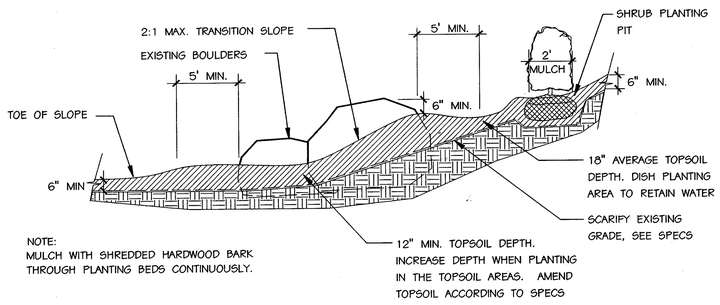
- LAWN MIX #1
- FOREBAY PLANTING
- NATIVE MIX "A"

PLANT LIST - SAND FILTER C

KEY	BOTANICAL NAME / COMMON NAME	SIZE	QTY	ROOT	REMARK
	SHRUBS				
CA	Cornus amomum/ Silky Dogwood	2-2 1/2' HT.	10	B&B	
VD	Viburnum dentatum/ Arrowwood Viburnum	2-2 1/2' HT.	15	B&B	

FOREBAY PLANTING AREA

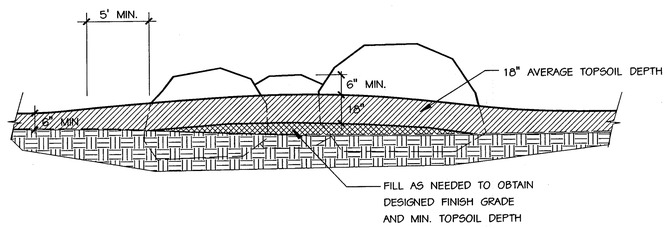
BOTANICAL NAME / COMMON NAME	SIZE	QTY #1	QTY #2	ROOT	REMARKS
HERBACEOUS PLANTS					
Carex comosa/ Bottle Brush Sedge	1 QT.	30	25	CONT.	
Dichanthelium scoparium/ Broom Panic Sedge	1 QT.	30	25	CONT.	
Lobelia cardinalis/ Cardinal Flower	1 QT.	15	12	CONT.	
Scirpus fluviatilis/ River Bullrush	1 QT.	45	35	CONT.	
Scirpus pungens/ Common 3 Square	1 QT.	35	25	CONT.	
NATIVE SEED MIX "A"					.25 lbs./ 1000 s.f.



NOTE:
MULCH WITH SHREDDED HARDWOOD BARK THROUGH PLANTING BEDS CONTINUOUSLY.

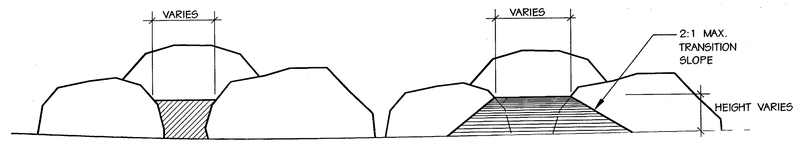
TOPSOILING AT BOULDERS - SLOPE

NOT TO SCALE



TOPSOILING AT BOULDERS - NO SLOPE

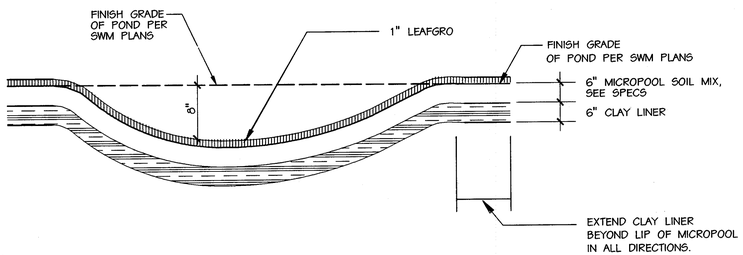
NOT TO SCALE



NOTE:
FILLING OF VOIDS BETWEEN BOULDERS SHALL BE FIELD VERIFIED BY THE COUNTY'S REPRESENTATIVE.

TOPSOILING AT BOULDERS - BETWEEN BOULDERS

NOT TO SCALE



MICROPOOL PLANTING DETAIL

NOT TO SCALE

TOPSOILING

1. Comply with Site Grading, Sediment and Erosion Control Plans and Specifications.

2. Topsoil shall be ASTM D 5268, good, friable, natural loam with a pH range of 5.5 to 7.0. Topsoil shall have three (3) percent organic material minimum, free of stones * inch or larger in any dimension, and other extraneous materials harmful to plant growth.

   a. On-site Topsoil: Reuse surface soil stockpiled on the site. Verify by testing suitability of surface soil to produce topsoil meeting requirements and amend when necessary. Clean topsoil of roots, plants, sods, stones, ay lumps, and other extraneous materials harmful to plant growth.

   b. Imported Topsoil: Contractor shall obtain imported topsoil to supplement on-site topsoil from approved sources off the site. Contractor shall supply the County's Representative with the location pf the topsoil 2 weeks before delivery.

3. Spreading Topsoil:

   a. Topsoil: Topsoil shall be spread uniformly to the depths and locations indicated on the Contract Drawings. Topsoil shall be hand packed in the areas around the existing boulders in SWM Pond E to fill existing pockets so the boulders appear to be set in the existing grade. Fill voids between boulders.

   b. Tillage: Topsoil and soil amendments shall be tilled into the top 2 inches of the existing grade.

MICROPOOL AND BASIN WETLAND PLANTING AREAS

1. Related Work: Coordinate with the General Landscaping Specifications for the proper scheduling of the work specified herein.

2. Contractor shall grade micropools according to the spot elevations on the Contract Drawings. If rock is encountered, then the Contractor shall notify the Engineer and field adjustments may be made.

3. The Contractor shall excavate and stockpile the existing soil and to depths indicated on the Contract Drawings. The Contractor shall replace clay liner to a 6" depth. Micropool grading, backfilling and planting shall be conducted under the supervision of the County's representative

4. A planting mix of 2/3 topsoil to 1/3 Leafgro shall be mixed and placed in each Micropool, Forebay, High Marsh, Wildflower Areas, and the entire basin of the Storm Water Management Ponds at the depths and locations shown on the Contract Drawings.

5. Seed and mulch seeded areas according to the Grasses and Wildflowers specification and applicable Erosion and Sediment Control plans and specifications.

6. Plant container grown wetland plants in Micropools with special care not damage the herbaceous growth. Mulch wetland plant areas with Leafgro, or approved equal, to a depth of 1".

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, HOWARD COUNTY HEALTH DEPARTMENT — DATE 10-17-02

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

NO. | REVISIONS | DESCRIPTION | DATE

KCI FILE: M:\ 2000 \ 01000057.5 \ UDETWSWME.DGN

KCI TECHNOLOGIES INC.
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HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
KCI TECHNOLOGIES WWW.KCI.COM

STATE OF MARYLAND — NICHOLAS J. PHILLIPS — 21431 — REGISTERED PROFESSIONAL ENGINEER

9/12/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

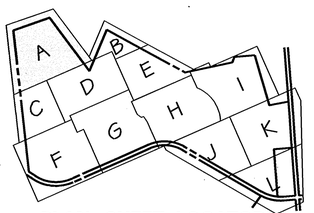
LANDSCAPE DETAILS

SCALE:	1" = 30'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

LS20

SHEET NO.: 93 OF 113

SDP-02-64

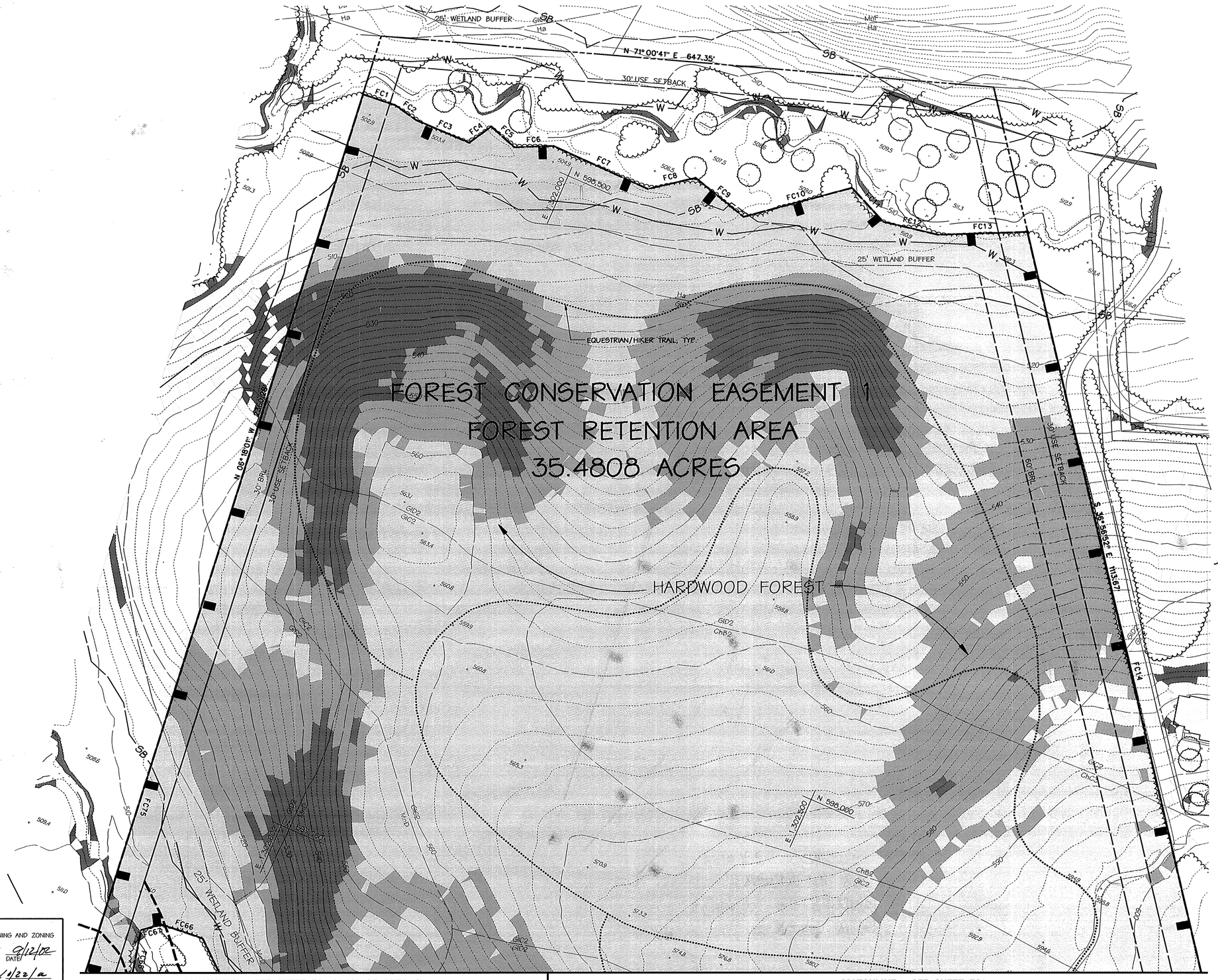


PLAN SHEET LOCATOR

NOT TO SCALE

LEGEND

- EX. INDEX CONTOUR (590)
- EX. 2' INTERMEDIATE CONTOUR
- SOIL LINE (GIC2)
- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- EX. WOODS LINE
- FOREST PROTECTION FENCE (BOF)
- FOREST RETENTION SIGN
- FOREST CONSERVATION EASEMENT LINE
- FOREST CONSERVATION EASEMENT AREA
- 15-24.9% SLOPES
- 25%+ SLOPES
- 100 YEAR FLOODPLAIN
- SURVEYED WETLAND (W)
- 25' WETLAND BUFFER
- EX. STREAMS
- 75' STREAM BUFFER (SB)
- EQUESTRIAN/HIKING TRAIL
- EX. SPOT ELEVATION (570.9)
- PROPOSED TREE LINE TO REMAIN
- PROPOSED ASPHALT PATH
- PROPOSED CONCRETE PATH
- PROPOSED FENCE LINE
- PROPOSED RETAINING WALL
- PROPOSED CONC. CURB & GUTTER
- PROPOSED INDEX CONTOUR (620)
- PROPOSED INTERMEDIATE CONTOUR (614)
- PROPOSED SPOT ELEVATION (+617.25)
- PROPOSED INLET
- PROPOSED STORM DRAIN END SECTION
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN
- PROPOSED SEPTIC TANK
- PROPOSED SANITARY SEWER (S)
- PROPOSED SEWER MANHOLE
- PROPOSED SEPTIC DRAIN FIELD
- PROPOSED MONITORING WELL
- EXISTING WELL (W)
- PROPOSED LIGHT POLE
- PROPOSED PADDOCK FENCE
- FOREST CONSERVATION EASEMENT AREA
- FOREST CONSERVATION EASEMENT LINE



MATCHLINE – SEE SHEET FC2, PLAN OF AREA C

MATCHLINE – SEE SHEET FC3

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, H.C.H.D. — DATE 10-17-02

HOWARD COUNTY HEALTH DEPARTMENT

NORTH

GRAPHIC SCALE

50 0 25 50 100

(IN FEET)

1 inch = 50ft.

SEE FCE LINE TABLE, SHEET FC12, FOR BEARING AND DISTANCE OF EASEMENT LINES

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

NO.	REVISIONS DESCRIPTION	DATE

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STATE OF MARYLAND — DOUGLAS N. WESTPHAL — REGISTERED LANDSCAPE ARCHITECT — 902

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410) 313-4640

FOREST CONSERVATION PLAN

AREA A

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

FC1

SHEET NO.: 94 OF 113

SDP-02-64

MATCHLINE - SEE SHEET FC3

PLAN OF AREA B

MATCHLINE - SEE SHEET FC4

LEGEND

- 590 -	EX. INDEX CONTOUR
	EX. 2' INTERMEDIATE CONTOUR
GIC2	SOIL LINE
	PROPERTY BOUNDARY
	EX. TREE (SIGNIFICANT SIZE OR LOCATION)
	EX. WOODS LINE
	15-24.9% SLOPES
	25%+ SLOPES
	100 YEAR FLOODPLAIN
—W—	SURVEYED WETLAND
	25' WETLAND BUFFER
	EX. STREAMS
—SB—	75' STREAM BUFFER
	EQUESTRIAN/HIKING TRAIL
+570.9	EX. SPOT ELEVATION
	PROPOSED ASPHALT PATH
	PROPOSED CONCRETE PATH
	PROPOSED TREE LINE TO REMAIN
	PROPOSED FENCE LINE
	PROPOSED RETAINING WALL
	PROPOSED CONC. CURB & GUTTER
—620—	PROPOSED INDEX CONTOUR
—614—	PROPOSED INTERMEDIATE CONTOUR
+617.25	PROPOSED SPOT ELEVATION
	PROPOSED INLET
	PROPOSED STORM DRAIN MANHOLE
	PROPOSED STORM DRAIN END SECTION
	PROPOSED STORM DRAIN
	PROPOSED SEPTIC TANK
—S—	PROPOSED SANITARY SEWER
	PROPOSED SEWER MANHOLE
	PROPOSED SEPTIC DRAIN FIELD
	PROPOSED MONITORING WELL
(W)	EXISTING WELL
	PROPOSED LIGHT POLE
	PROPOSED PADDOCK FENCE
—BOF—	FOREST PROTECTION FENCE
	FOREST RETENTION SIGN
	FOREST CONSERVATION EASEMENT LINE
	FOREST CONSERVATION EASEMENT AREA

SEE FCE LINE TABLE, SHEET FC12, FOR BEARING AND DISTANCE OF EASEMENT LINES.

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

[signature] CHIEF, DEVELOPMENT ENGINEERING DIVISION	9/12/02 DATE
[signature] CHIEF, DIVISION OF LAND DEVELOPMENT	10/22/02 DATE
[signature] DIRECTOR	10/23/02 DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

[signature] COUNTY HEALTH OFFICER HOWARD COUNTY HEALTH DEPARTMENT	10-17-02 DATE

NORTH

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50ft.

MATCHLINE - SEE SHEET FC1

MATCHLINE - SEE SHEET FC3

PLAN SHEET LOCATOR
NOT TO SCALE

MATCHLINE - SEE SHEET FC5

PLAN OF AREA C

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

NO.	REVISIONS DESCRIPTION	DATE

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WWW.KCI.COM

STATE OF MARYLAND NICHOLAS M. LINEHAN REGISTERED LANDSCAPE ARCHITECT [seal and signature] 11/13/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

FOREST CONSERVATION PLAN

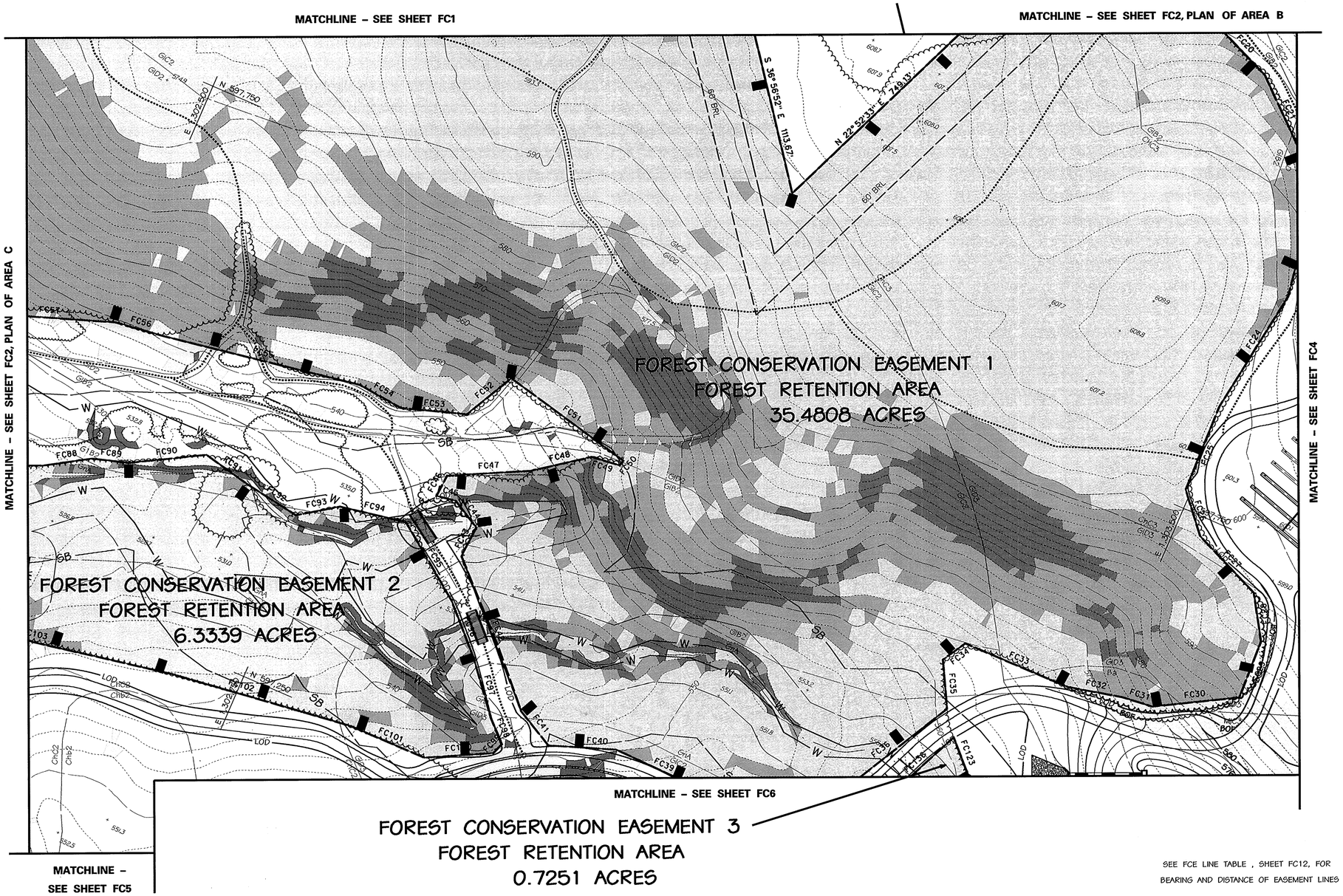
AREAS B & C

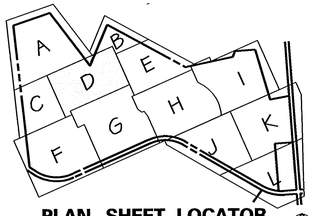
SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

FC2

SHEET NO.: 95 OF 113

SDP-02-64





PLAN SHEET LOCATOR

NOT TO SCALE

LEGEND

590	EX. INDEX CONTOUR
	EX. 2' INTERMEDIATE CONTOUR
GIC2	SOIL LINE
	PROPERTY BOUNDARY
	EX. TREE (SIGNIFICANT SIZE OR LOCATION)
	EX. WOODS LINE
BOF	FOREST PROTECTION FENCE
	FOREST RETENTION SIGN
	FOREST CONSERVATION EASEMENT LINE
	FOREST CONSERVATION EASEMENT AREA
	15-24.9% SLOPES
	25%+ SLOPES
	100 YEAR FLOODPLAIN
W	SURVEYED WETLAND
	25' WETLAND BUFFER
	EX. STREAMS
SB	75' STREAM BUFFER
	EQUESTRIAN/HIKING TRAIL
570.9	EX. SPOT ELEVATION
	PROPOSED TREE LINE TO REMAIN
	PROPOSED ASPHALT PATH
	PROPOSED CONCRETE PATH
	PROPOSED FENCE LINE
	PROPOSED RETAINING WALL
	PROPOSED CONC. CURB & GUTTER
620	PROPOSED INDEX CONTOUR
614	PROPOSED INTERMEDIATE CONTOUR
+617.25	PROPOSED SPOT ELEVATION
	PROPOSED INLET
	PROPOSED STORM DRAIN END SECTION
	PROPOSED STORM DRAIN MANHOLE
	PROPOSED STORM DRAIN
	PROPOSED SEPTIC TANK
S	PROPOSED SANITARY SEWER
	PROPOSED SEWER MANHOLE
	PROPOSED SEPTIC DRAIN FIELD
	PROPOSED MONITORING WELL
W	EXISTING WELL
	PROPOSED LIGHT POLE
	PROPOSED PADDOCK FENCE

SEE FCE LINE TABLE, SHEET FC12, FOR BEARING AND DISTANCE OF EASEMENT LINES

NORTH

GRAPHIC SCALE

50 0 25 50 100

(IN FEET)
1 inch = 50ft.

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 9/12/02
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 10/22/02
DIRECTOR	DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER HOWARD COUNTY HEALTH DEPARTMENT	DATE 10-17-02

NO.	REVISIONS DESCRIPTION	DATE

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STATE OF MARYLAND
NICHOLAS M. LIMBERT
REGISTERED LANDSCAPE ARCHITECT
9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

FOREST CONSERVATION PLAN

AREA D

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

FC3

SHEET NO.: 96 OF 113

SDP-02-64

FOREST CONSERVATION EASEMENT AREA 1
FOREST RETENTION AREA
35.4808 ACRES

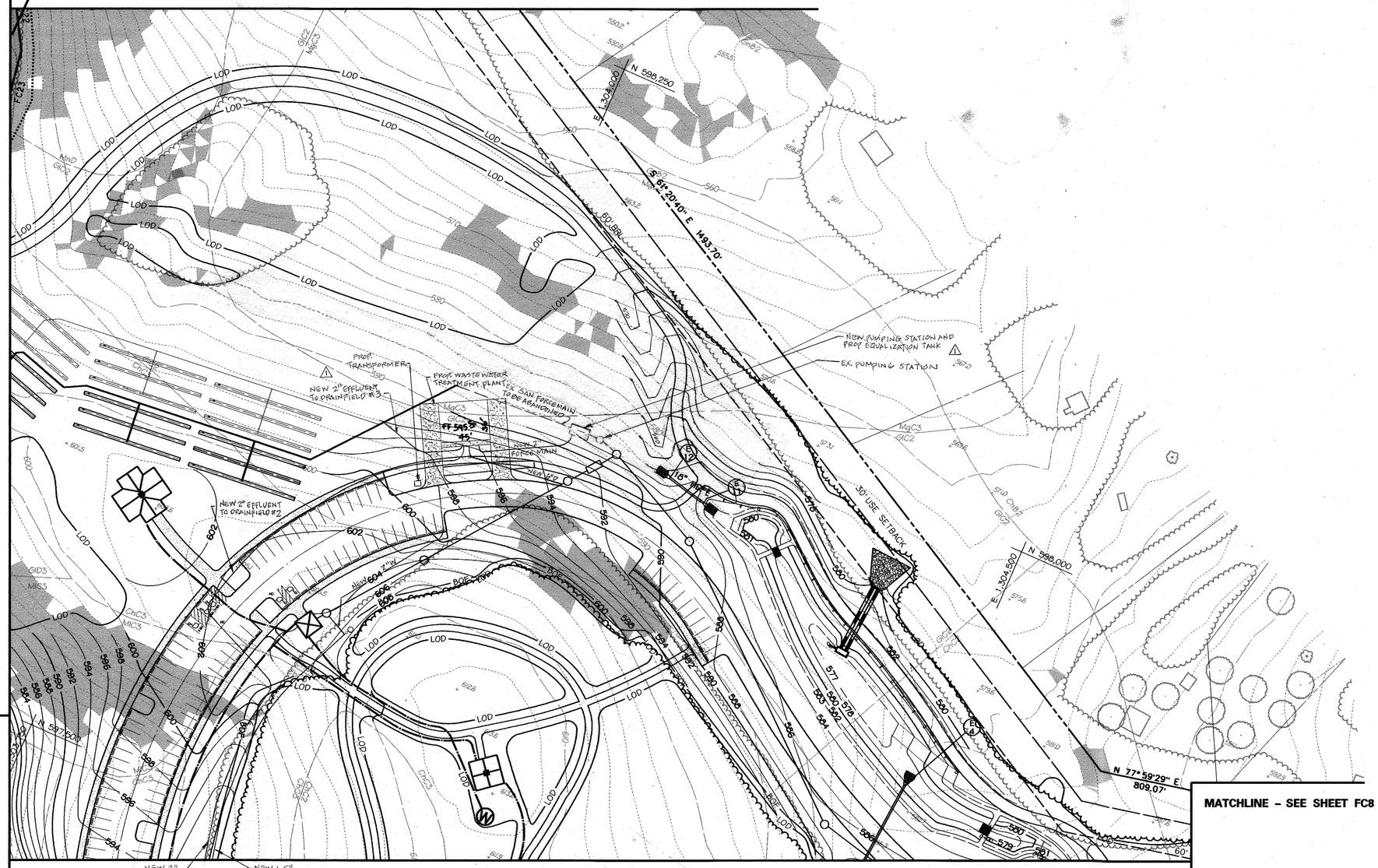
MATCHLINE – SEE SHEET FC2, PLAN OF AREA B

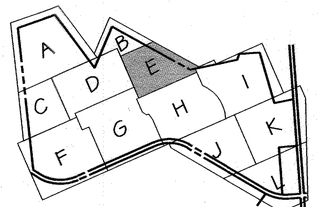
MATCHLINE – SEE SHEET FC3

MATCHLINE – SEE SHEET FC6

MATCHLINE – SEE SHEET FC7

MATCHLINE – SEE SHEET FC8





PLAN SHEET LOCATOR
NOT TO SCALE

LEGEND

- EX. INDEX CONTOUR
- EX. 2' INTERMEDIATE CONTOUR
- SOIL LINE
- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- EX. WOODS LINE
- FOREST PROTECTION FENCE
- FOREST RETENTION SIGN
- FOREST CONSERVATION EASEMENT LINE
- FOREST CONSERVATION EASEMENT AREA
- 15-24.9% SLOPES
- 25%+ SLOPES
- 100 YEAR FLOODPLAIN
- SURVEYED WETLAND
- 25' WETLAND BUFFER
- EX. STREAMS
- 75' STREAM BUFFER
- EQUESTRIAN/HIKING TRAIL
- EX. SPOT ELEVATION
- PROPOSED TREE LINE TO REMAIN
- PROPOSED ASPHALT PATH
- PROPOSED CONCRETE PATH
- PROPOSED FENCE LINE
- PROPOSED RETAINING WALL
- PROPOSED CONC. CURB & GUTTER
- PROPOSED INDEX CONTOUR
- PROPOSED INTERMEDIATE CONTOUR
- PROPOSED SPOT ELEVATION
- PROPOSED INLET
- PROPOSED STORM DRAIN END SECTION
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN
- PROPOSED SEPTIC TANK
- PROPOSED SANITARY SEWER
- PROPOSED SEWER MANHOLE
- PROPOSED SEPTIC DRAIN FIELD
- PROPOSED MONITORING WELL
- EXISTING WELL
- PROPOSED LIGHT POLE
- PROPOSED PADDOCK FENCE

SEE FCE LINE TABLE, SHEET FC12, FOR BEARING AND DISTANCE OF EASEMENT LINES.

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50ft.

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/26/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11/22/02

DIRECTOR — DATE 10/29/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER — DATE 10/7/02
HOWARD COUNTY HEALTH DEPARTMENT

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, IWONA ROSTEK-ZARSKA, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21245, EXPIRATION DATE: JUNE 9, 2018.

11/18/16

REVISION #1 - BLDG (07/29/16)
ADDED WASTE WATER TREATMENT PLANT, MODIFIED EX. PUMPING STATIONS, ADDED NEW PUMPING STATIONS AND INSTALLED NEW 1.5" & 2" FORCE MAIN.

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: MA 2000 \ 01000057.6 \ UFCPLN04.DGN

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STATE OF MARYLAND — DONALD M. HILL — No. 21246 — REGISTERED PROFESSIONAL LANDSCAPE ARCHITECT
9/26/02

WESTERN REGIONAL PARK
HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

FOREST CONSERVATION PLAN
AREA E

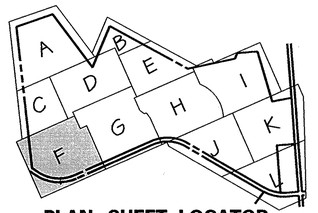
SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

FC4

SHEET NO.: 97 OF 113

SDP-02-64

FOREST CONSERVATION EASEMENT 2
FOREST RETENTION AREA
6.3339 ACRES



PLAN SHEET LOCATOR

NOT TO SCALE

LEGEND

- EX. INDEX CONTOUR
- EX. 2' INTERMEDIATE CONTOUR
- SOIL LINE
- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- EX. WOODS LINE
- FOREST PROTECTION FENCE
- FOREST RETENTION SIGN
- FOREST CONSERVATION EASEMENT LINE
- FOREST CONSERVATION EASEMENT AREA
- 15-24.9% SLOPES
- 25%+ SLOPES
- 100 YEAR FLOODPLAIN
- SURVEYED WETLAND
- 25' WETLAND BUFFER
- EX. STREAMS
- 75' STREAM BUFFER
- EQUESTRIAN/HIKING TRAIL
- EX. SPOT ELEVATION
- PROPOSED TREE LINE TO REMAIN
- PROPOSED ASPHALT PATH
- PROPOSED CONCRETE PATH
- PROPOSED FENCE LINE
- PROPOSED RETAINING WALL
- PROPOSED CONC. CURB & GUTTER
- PROPOSED INDEX CONTOUR
- PROPOSED INTERMEDIATE CONTOUR
- PROPOSED SPOT ELEVATION
- PROPOSED INLET
- PROPOSED STORM DRAIN END SECTION
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN
- PROPOSED SEPTIC TANK
- PROPOSED SANITARY SEWER
- PROPOSED SEWER MANHOLE
- PROPOSED SEPTIC DRAIN FIELD
- PROPOSED MONITORING WELL
- EXISTING WELL
- PROPOSED LIGHT POLE
- PROPOSED PADDOCK FENCE

SEE FCE LINE TABLE, SHEET FC12, FOR BEARING AND DISTANCE OF EASEMENT INES.

MATCHLINE – SEE SHEET FC2, PLAN OF AREA C

MATCHLINE – SEE SHEET FC3

MATCHLINE – SEE SHEET FC6

MATCHLINE – SEE SHEET FC6

AREA OF WORK

50' USE SETBACK FROM ROW

75' BRL

R=645.00' L=651.65'

S 08°13'50" W 1400.61'

N 596,500

E 1,303,000

CARRS MILL ROAD

GRAPHIC SCALE

50 0 25 50 100

(IN FEET)

1 inch = 50ft.

NORTH

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/22/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/27/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT — DATE 10-17-02

STATE OF MARYLAND
STEPHEN RICHARD HOSE
No. 15951
REGISTERED
PROFESSIONAL ENGINEER

10/19/12

PROFESSIONAL CERTIFICATE:

I HEREBY CERTIFY THAT THE INFORMATION CLOUDED AND LISTED UNDER REVISION # 1 (OR 2, DEPENDING ON THE PAGE) ON THIS DOCUMENT WAS PREPARED OR APPROVED BY ME, AND I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND (LICENSE NO. 15951, EXPIRATION DATE 3/15/2014). I DO NOT CERTIFY THE ACCURACY OF ANY OTHER INFORMATION, ALL OF WHICH WAS PREPARED BY OTHERS.

NO.	REVISIONS	DESCRIPTION	DATE
1	THIS SHEET WAS MODIFIED TO INCLUDE THE RAINWATER HARVESTING FACILITIES DESIGN INFORMATION. REFER TO THE FULL RAINWATER HARVESTING PARKS FACILITIES DESIGN PACKAGE, CAPITAL PROJECT C-0313., DATED DECEMBER 2011.		9/05/12

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STATE OF MARYLAND
NICHOLAS M. FINK
No. 21406
PROFESSIONAL ENGINEER
12/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

FOREST CONSERVATION PLAN
AREA F

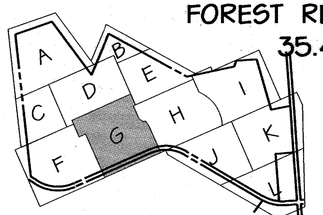
SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

FC5

SHEET NO.: 98 OF 113

SDP-02-64

FOREST CONSERVATION EASEMENT 1, FOREST RETENTION AREA, 35.4808 ACRES



PLAN SHEET LOCATOR

NOT TO SCALE

LEGEND

- 590 — EX. INDEX CONTOUR
- EX. 2' INTERMEDIATE CONTOUR
- GIC2 — SOIL LINE
- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- EX. WOODS LINE
- BOF — FOREST PROTECTION FENCE
- FOREST RETENTION SIGN
- FOREST CONSERVATION EASEMENT LINE
- FOREST CONSERVATION EASEMENT AREA
- 15-24.9% SLOPES
- 25%+ SLOPES
- 100 YEAR FLOODPLAIN
- W — SURVEYED WETLAND
- 25' WETLAND BUFFER
- EX. STREAMS
- SB — 75' STREAM BUFFER
- EQUESTRIAN/HIKING TRAIL
- 570.9 — EX. SPOT ELEVATION
- PROPOSED TREE LINE TO REMAIN
- PROPOSED ASPHALT PATH
- PROPOSED CONCRETE PATH
- PROPOSED FENCE LINE
- PROPOSED RETAINING WALL
- PROPOSED CONC. CURB & GUTTER
- 620 — PROPOSED INDEX CONTOUR
- 614 — PROPOSED INTERMEDIATE CONTOUR
- +617.25 — PROPOSED SPOT ELEVATION
- PROPOSED INLET
- PROPOSED STORM DRAIN END SECTION
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN
- PROPOSED SEPTIC TANK
- S — PROPOSED SANITARY SEWER
- PROPOSED SEWER MANHOLE
- PROPOSED SEPTIC DRAIN FIELD
- PROPOSED MONITORING WELL
- EXISTING WELL
- PROPOSED LIGHT POLE
- PROPOSED PADDOCK FENCE

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

SEE FCE LINE TABLE, SHEET FC12, FOR BEARING AND DISTANCE OF EASEMENT LINES.

REVISION #1 DATED (07/29/16)
ADDED WASTEWATER TREATMENT PLANT MODIFIED EX. PUMPING STATIONS, ADDED NEW PUMPING STATIONS AND INSTALLED NEW 1.5" & 2" FORCE MAINS.

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, I WONA ROSTEK-ZARSKA, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND; LICENSE NO. 21245, EXPIRATION DATE: JUNE 9, 2016.

WONA ROSTEK-ZARSKA — 21245 — REGISTERED PROFESSIONAL ENGINEER — STATE OF MARYLAND — 7/18/16

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, I WONA ROSTEK-ZARSKA, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND; LICENSE NO. 21245, EXPIRATION DATE: JUNE 9, 2016.

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50ft.

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 9/12/02
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 10/22/02
DIRECTOR	DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, HOWARD COUNTY HEALTH DEPARTMENT	DATE 10-17-02

MATCHLINE – SEE SHEET FC3

MATCHLINE – SEE SHEET FC4

MATCHLINE – SEE SHEET FC5

MATCHLINE – SEE SHEET FC7

FOREST CONSERVATION EASEMENT 3 FOREST RETENTION AREA 0.7251 ACRES

NEW PUMPING STATION

PROP 2" FORCE MAIN

PROP 1.5" FORCE MAIN

24" HDPE

18" HDPE

15" HDPE

CARRS MILL ROAD

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\2000\0100057.6\UFCPLNG6.DGN

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STATE OF MARYLAND — NICHOLAS M. LINNEMAN — 21562 — REGISTERED LANDSCAPE ARCHITECT — 7/29/16

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

FOREST CONSERVATION PLAN

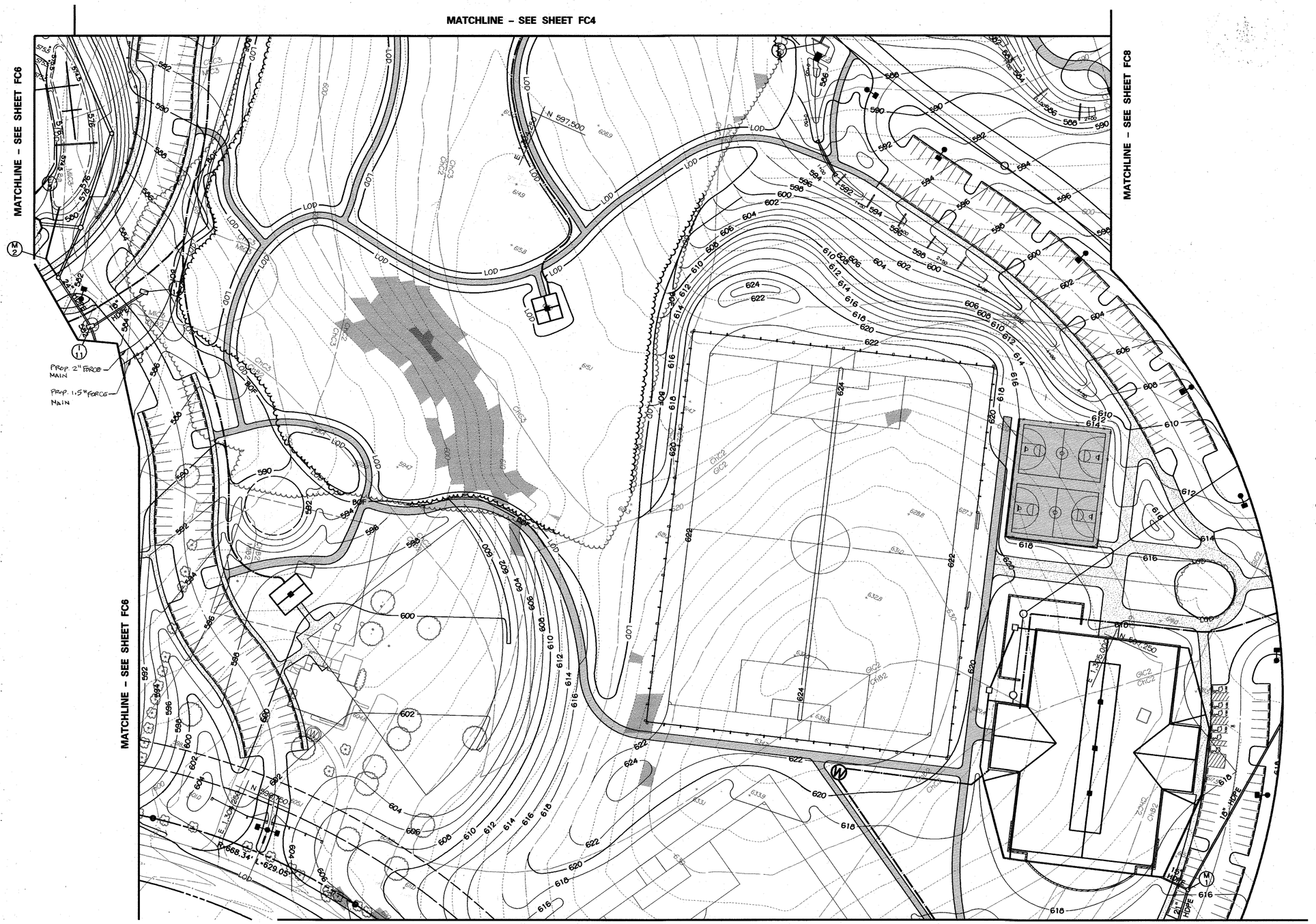
AREA G

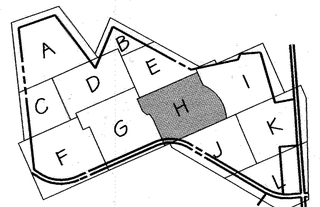
SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

FC6

SHEET NO.: 99 OF 113

SDP-02-64





PLAN SHEET LOCATOR

NOT TO SCALE

LEGEND

590	EX. INDEX CONTOUR
	EX. 2' INTERMEDIATE CONTOUR
GIC2	SOIL LINE
	PROPERTY BOUNDARY
	EX. TREE (SIGNIFICANT SIZE OR LOCATION)
	EX. WOODS LINE
BOF	FOREST PROTECTION FENCE
	FOREST RETENTION SIGN
	FOREST CONSERVATION EASEMENT LINE
	15-24.9% SLOPES
	25%+ SLOPES
	100 YEAR FLOODPLAIN
W	SURVEYED WETLAND
	25' WETLAND BUFFER
	EX. STREAMS
SB	75' STREAM BUFFER
	EQUESTRIAN/HIKING TRAIL
570.9	EX. SPOT ELEVATION
	PROPOSED TREE LINE TO REMAIN
	PROPOSED ASPHALT PATH
	PROPOSED CONCRETE PATH
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	PROPOSED RETAINING WALL
	PROPOSED CONC. CURB & GUTTER
	PROPOSED ASPHALT PAVING
620	PROPOSED INDEX CONTOUR
614	PROPOSED INTERMEDIATE CONTOUR
+617.25	PROPOSED SPOT ELEVATION
	PROPOSED INLET
	PROPOSED STORM DRAIN END SECTION
	PROPOSED STORM DRAIN MANHOLE
	PROPOSED STORM DRAIN
	PROPOSED SEPTIC TANK
S	PROPOSED SANITARY SEWER
	PROPOSED SEWER MANHOLE
	PROPOSED SEPTIC DRAIN FIELD
	PROPOSED MONITORING WELL
W	EXISTING WELL
	PROPOSED LIGHT POLE
	PROPOSED PADDOCK FENCE

NORTH

GRAPHIC SCALE

50 0 25 50 100

(IN FEET)
1 inch = 50ft.

NOTE: SEE SHEET C7 FOR FINAL PARKING LAYOUT.

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 9/12/02
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 10/22/02
DIRECTOR	DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER HOWARD COUNTY HEALTH DEPARTMENT	DATE 10-17-02

REVISION #1 - BLDG (07/29/16)
ADDED WASTEWATER TREATMENT PLANT MODIFIED EX. PUMPING STATIONS, ADDED NEW PUMPING STATIONS AND INSTALLED NEW 1.5" & 2" FORCE MAINS.

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, IWONA ROSTEK-ZARSKA, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE No. 21245, EXPIRATION DATES: JUNE 9, 2018

NO FOREST CONSERVATION PROPOSED ON THIS SHEET

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 0100057.S \ UFCPLN07.DGN

KCI TECHNOLOGIES INC.
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WWW.KCI.COM

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

FOREST CONSERVATION PLAN

AREA H

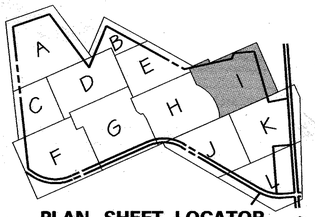
SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

FC7

SHEET NO.: 100 OF 113

SDP-02-64

NO FOREST CONSERVATION PROPOSED ON THIS SHEET



PLAN SHEET LOCATOR

NOT TO SCALE

LEGEND

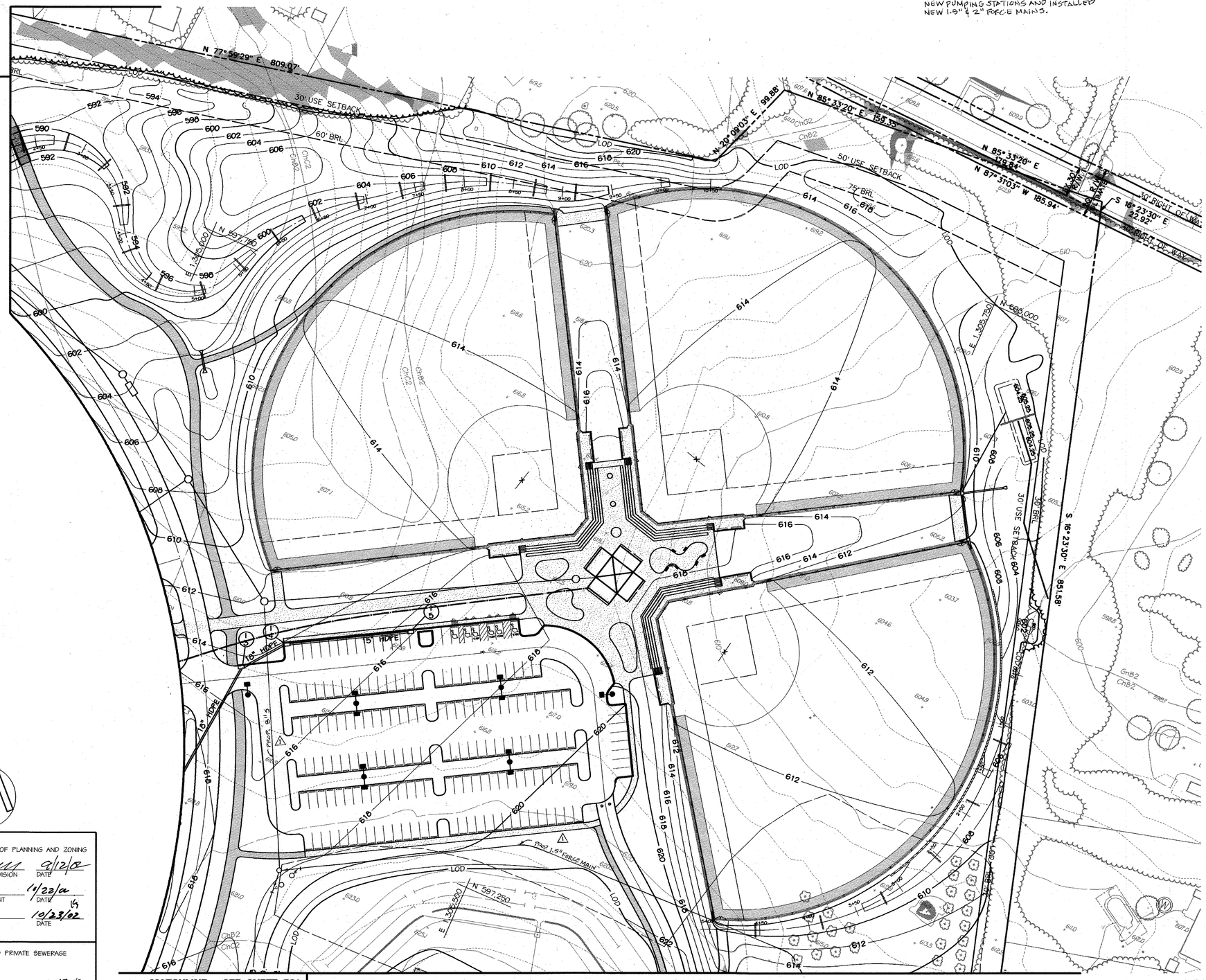
- EX. INDEX CONTOUR (590)
- EX. 2' INTERMEDIATE CONTOUR
- SOIL LINE (GIC2)
- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- EX. WOODS LINE
- FOREST PROTECTION FENCE (BOF)
- FOREST RETENTION SIGN
- FOREST CONSERVATION EASEMENT LINE
- 15-24.9% SLOPES
- 25%+ SLOPES
- 100 YEAR FLOODPLAIN
- SURVEYED WETLAND (W)
- 25' WETLAND BUFFER
- EX. STREAMS
- 75' STREAM BUFFER (SB)
- EQUESTRIAN/HIKING TRAIL
- EX. SPOT ELEVATION (5709)
- PROPOSED TREE LINE TO REMAIN
- PROPOSED ASPHALT PATH
- PROPOSED CONCRETE PATH
- PROPOSED FENCE LINE
- PROPOSED RETAINING WALL
- PROPOSED CONC. CURB & GUTTER
- PROPOSED ASPHALT PAVING
- PROPOSED INDEX CONTOUR (620)
- PROPOSED INTERMEDIATE CONTOUR (614)
- PROPOSED SPOT ELEVATION (+617.25)
- PROPOSED INLET
- PROPOSED STORM DRAIN END SECTION
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN
- PROPOSED SEPTIC TANK
- PROPOSED SANITARY SEWER (S)
- PROPOSED SEWER MANHOLE
- PROPOSED SEPTIC DRAIN FIELD
- PROPOSED MONITORING WELL
- EXISTING WELL (W)
- PROPOSED LIGHT POLE
- PROPOSED PADDOCK FENCE

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50ft.

NORTH

MATCHLINE – SEE SHEET FC4

MATCHLINE – SEE SHEET FC7



NOTE: SEE SHEET C8 FOR FINAL PARKING LAYOUT.

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/23/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER — DATE 10-17-02
HOWARD COUNTY HEALTH DEPARTMENT

REGISTERED FOR PROFESSIONAL ENGINEERS — 21245 — WONA ROSTEK-ZARSKA — STATE OF MARYLAND — 11/15/16

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, WONA ROSTEK-ZARSKA, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER, UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21245, EXPIRATION DATE: JUNE 9, 2018.

REVISION #1 - BLDG (07/29/16)
ADDED WASTEWATER TREATMENT PLANT
MODIFIED B.Y. PUMPING STATION, ADDED NEW PUMPING STATIONS AND INSTALLED NEW 1.5" & 2" FORCE MAINS.

NO.	REVISION/DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 01000057.S \ UFCPLN08.DGN

KCI TECHNOLOGIES INC.
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HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
TECHNOLOGIES WWW.KCI.COM

STATE OF MARYLAND — LINDA M. HIRT — REGISTERED LANDSCAPE ARCHITECT — 1418/16

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

FOREST CONSERVATION PLAN

AREA I

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

FC8

SHEET NO.: 101 OF 113

SDP-02-64

MATCHLINE – SEE SHEET FC7

MATCHLINE – SEE SHEET FC8

MATCHLINE – SEE SHEET FC10

MATCHLINE – SEE SHEET FC11

CARRS MILL ROAD

N 596,500
E 1,304,500

N 592,325.43" W 1455.40'

R=865.34' L=628.05'

N 596,250
E 1,553,620

1" SETBACK FROM ROW

50' USE SETBACK FROM ROW

75' SETBACK FROM ROW

18" HDPE

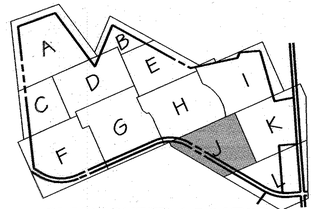
24" RCCP

21" HDPE

12" HDPE 1.5" FORCE MAIN

LOD

NO FOREST CONSERVATION PROPOSED ON THIS SHEET



PLAN SHEET LOCATOR

NOT TO SCALE

LEGEND

- EX. INDEX CONTOUR
- EX. 2' INTERMEDIATE CONTOUR
- SOIL LINE
- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- EX. WOODS LINE
- FOREST PROTECTION FENCE
- FOREST RETENTION SIGN
- FOREST CONSERVATION EASEMENT LINE
- 15-24.9% SLOPES
- 25%+ SLOPES
- 100 YEAR FLOODPLAIN
- SURVEYED WETLAND
- 25' WETLAND BUFFER
- EX. STREAMS
- 75' STREAM BUFFER
- EQUESTRIAN/HIKING TRAIL
- EX. SPOT ELEVATION
- PROPOSED TREE LINE TO REMAIN
- PROPOSED ASPHALT PATH
- PROPOSED CONCRETE PATH
- PROPOSED FENCE LINE
- PROPOSED RETAINING WALL
- PROPOSED CONC. CURB & GUTTER
- PROPOSED ASPHALT PAVING
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- PROPOSED SEPTIC TANK
- PROPOSED SANITARY SEWER
- PROPOSED SEWER MANHOLE
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- PROPOSED MONITORING WELL
- EXISTING WELL
- PROPOSED LIGHT POLE
- PROPOSED PADDOCK FENCE

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50ft.

NORTH

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

REVISION #1 - BLDS (07/29/16)
ADDED WASTE-WATER TREATMENT PLANT
MODIFIED EX. PUMPING STATIONS, ADDED
NEW PUMPING STATIONS AND INSTALLED
NEW 1.5" & 2" FORCE MAINS.

STATE OF MARYLAND — INONA ROSTEK-ZARSKA — 21245 — REGISTERED PROFESSIONAL ENGINEER — 11/18/16

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, INONA ROSTEK-ZARSKA, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE NO. 21245, EXPIRATION DATE: JUNE 9, 2018.

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 9/12/02
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 10/22/02
DIRECTOR	DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER HOWARD COUNTY HEALTH DEPARTMENT	DATE 10/7/02

NO.	REVISIONS	DESCRIPTION	DATE

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KCI TECHNOLOGIES WWW.KCI.COM

STATE OF MARYLAND — INONA ROSTEK-ZARSKA — 21245 — REGISTERED PROFESSIONAL ENGINEER — 11/18/16

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

FOREST CONSERVATION PLAN

AREA J

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

FC9

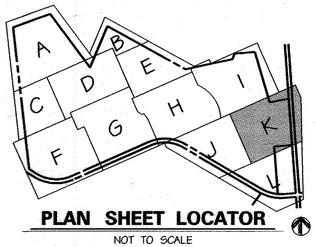
SHEET NO.: 102 OF 113

SDP-02-64

MATCHLINE – SEE SHEET FC8

MATCHLINE – SEE SHEET FC9

MATCHLINE – SEE SHEET FC11



PLAN SHEET LOCATOR

NOT TO SCALE

LEGEND

- EX. INDEX CONTOUR (590)
- EX. 2' INTERMEDIATE CONTOUR
- SOIL LINE (GIC2)
- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- EX. WOODS LINE
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- 15-24.9% SLOPES
- 25%+ SLOPES
- 100 YEAR FLOODPLAIN
- SURVEYED WETLAND (W)
- 25' WETLAND BUFFER
- EX. STREAMS
- 75' STREAM BUFFER (SB)
- EQUESTRIAN/HIKING TRAIL
- EX. SPOT ELEVATION (570.9)
- PROPOSED TREE LINE TO REMAIN
- PROPOSED ASPHALT PATH
- PROPOSED CONCRETE PATH
- PROPOSED FENCE LINE
- PROPOSED RETAINING WALL
- PROPOSED CONC. CURB & GUTTER
- PROPOSED ASPHALT PAVING
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- EXISTING WELL (W)
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- PROPOSED PADDOCK FENCE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, H.C.H.D. — DATE 10-17-02

HOWARD COUNTY HEALTH DEPARTMENT

REVISION #1 - BLOG (07/29/16)
ADDED WASTEWATER TREATMENT PLANT
MODIFIED EX. PUMPING STATIONS, ADDED
NEW PUMPING STATIONS AND INSTALLED
NEW 1.5" & 2" FORCE MAINS.

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, IWONA ROSTEK-ZARSKA, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE No. 21245 EXPIRATION DATE: JUNE 9, 2018.

11/18/16

NO FOREST CONSERVATION ON THIS SHEET

NORTH

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50ft.

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 01000057.5 \ LFCPLN10.DGN

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WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

FOREST CONSERVATION PLAN

AREA K

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

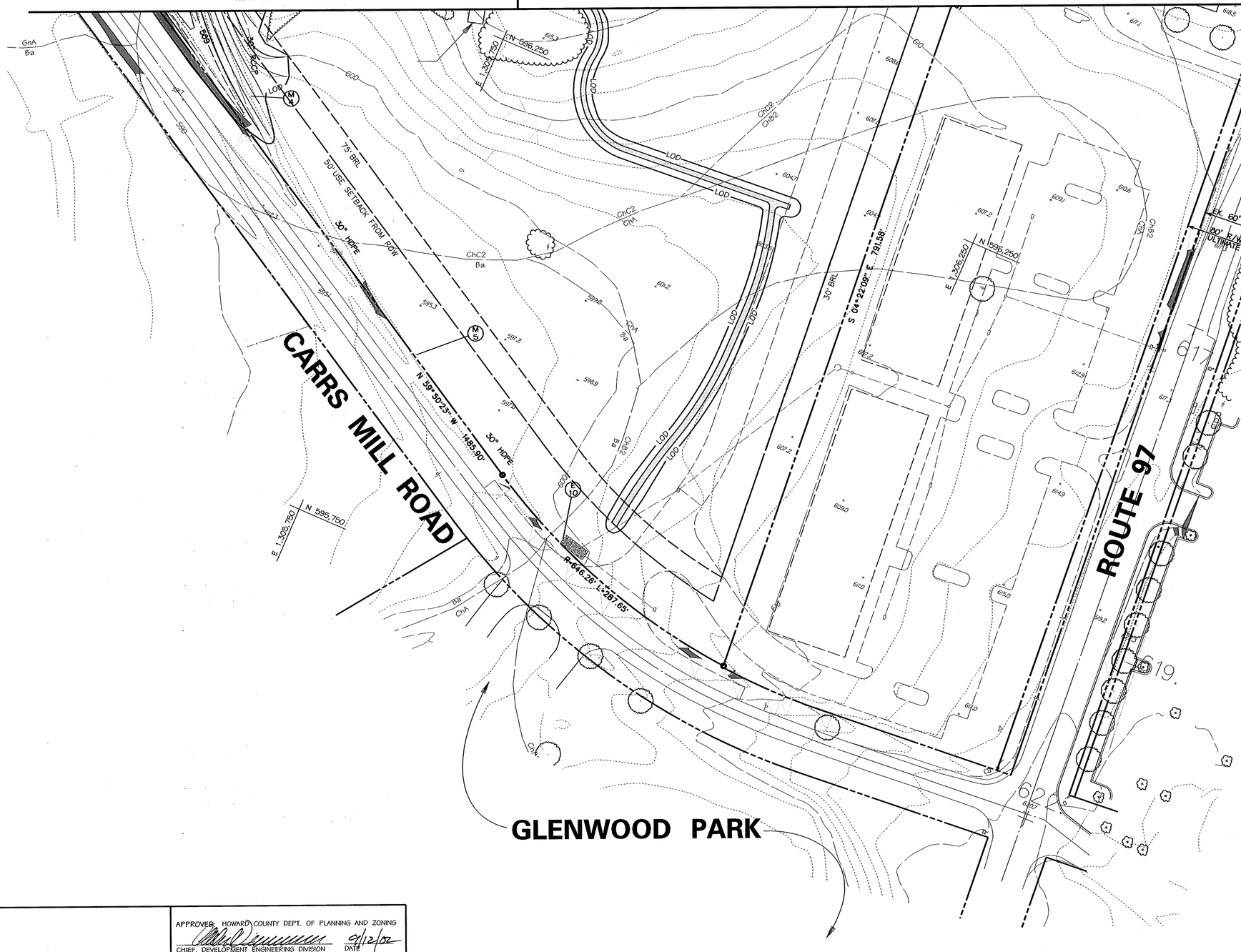
FC10

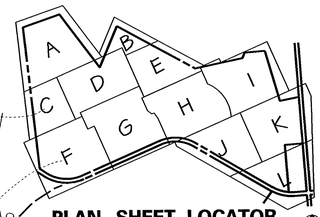
SHEET NO.: 103 OF 113

SDP-02-64

MATCHLINE – SEE SHEET FC9

MATCHLINE – SEE SHEET FC10





PLAN SHEET LOCATOR

NOT TO SCALE

LEGEND

- EX. INDEX CONTOUR
- EX. 2' INTERMEDIATE CONTOUR
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- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
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- SURVEYED WETLAND
- 25' WETLAND BUFFER
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- PROPOSED SEPTIC DRAIN FIELD
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- EXISTING WELL
- PROPOSED LIGHT POLE
- PROPOSED PADDOCK FENCE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, H.S.S. HOWARD COUNTY HEALTH DEPARTMENT — DATE 10-17-02

NO FOREST CONSERVATION PROPOSED ON THIS SHEET

NORTH

GRAPHIC SCALE

50 0 25 50 100

(IN FEET)

1 inch = 50ft.

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

NO.	REVISIONS	DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 01000057.5 \ UFCPLN11.DGN

KCI TECHNOLOGIES INC.
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10 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
TECHNOLOGIES WWW.KCI.COM

STATE OF MARYLAND — CHRISTOPHER J. KRIEN — No. 21462 — REGISTERED LANDSCAPE ARCHITECT — 10-17-02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
COLUMBIA, MARYLAND 21046-1677
(410) - 313-4640

FOREST CONSERVATION PLAN

AREA L

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

FC11

SHEET NO.: 104 OF 113

SDP-02-64

Forest Conservation Worksheet

Net Tract Area			
A.	Total Tract Area	A=	189.88
B.	Area within 100-year Floodplain	B=	2.20
C.	Area to Remain In Agricultural Production	C=	0.00
D.	Net Tract Area (D=(A-B-C))	D=	187.68
Land Use Category :	nstitutional Development Areas		
E.	Afforestation Threshold (D x 15%)	E=	28.15
F.	Conservation Threshold (D x 20%)	F=	37.54
Existing Forest Cover			
G.	Existing Forest Cover (excluding floodplain)	G=	58.70
H.	Area of Forest Above Afforestation Threshold	H=	30.55
	(1) If G<=E then H=0 and I=0, go to L		
	(2) If G>E then H=G-E, go to I		
I.	Area of Forest Above Conservation Threshold	I=	21.16
	(1) If G<=F then I=0, go to L		
	(2) If G>F then I=G-F, go to J		
Break Even Point			
J.	Forest Retention Above Threshold with no Mitigation	J=	41.77
	(1) If I>0 then J=(0.2 x I)+F, go to K		
	(2) If I=0, J=0, go to L		
K.	Clearing Permitted Without Mitigation (K=G-J)	K=	16.93
Proposed Forest Clearing			
L.	Total Area of Forest to be Cleared	L=	16.20*
M.	Total Area of Forest to be Retained (M=G-L)	M=	42.50
Planting Requirements			
N.	Reforestation for Clearing Above the Conservation Threshold	N=	4.13
	(1) If L=K then N=0, P=0, Q=0, R=0, S=0, go to T		
	(2) If M>F then N=L x 0.25, P=0, go to Q		
	(3) If M<=F then N=I x .025, go to P		
P.	Reforestation for Clearing Below the Conservation Threshold	P=	0.00
	(1) If G>F and M>F then P=0, Q=0, go to R		
	(2) If G>F and M<=F then P=2.0 x (F-M), Q=0, go to R		
	(3) If G<=F then P=2.0 x L, Q=0, go to R		
Q.	Credit for Retention Above the Conservation Threshold	Q=	4.66
	(1) If M>F then Q=M-F, go to R		
	(2) If M<=F then Q=0, go to R		
R.	Total Reforestation Required	R=	0.00
	(1) If Q>N and M>E then R=0, S=0, go to T		
	(2) If Q<=N and M>E then R=(N+P)-Q, S=0, go to T		
	(3) If Q<=N and M<=E then R=N+P, go to S		
S.	Total Afforestation Required	S=	0.00
	(1) If G<E and M<E then S=E-G, go to T		
	(2) If G<E and M=E then S=0, go to T		
T.	Total Reforestation and Afforestation Requirement T=(R+S)	T=	0.00

*NOTE: THE AMOUNT OF FOREST TO BE CLEARED SHOWN IN THE FOREST CONSERVATION WORKSHEET (16.20 AC.) IS FOR CALCULATING FOREST CONSERVATION REQUIREMENTS ONLY. THE ACTUAL AMOUNT OF FOREST TO BE CLEARED AS SHOWN ON THE PLANS IS 2.20 AC.± THE REMAINING 14.00 AC. OF FOREST WILL BE RETAINED BUT NOT RECORDED IN A FOREST CONSERVATION EASEMENT.

GENERAL NOTES

Standard non-disturbance note:
"There shall be no clearing, grading, construction, or disturbance of vegetation in the Forest Conservation Easement and/or Forest Buffer Easement except as permitted by the Howard County Department of Planning and Zoning."

Protective Covenants note:
"Any Forest Conservation Easement and/or Forest Buffer Easement shown hereon is subject to protective covenants which may be found in the land records of Howard County and which restrict disturbance and use of these areas."

This project complies with the requirements of Section 16.1200 of the Howard County Code for forest conservation with a break-even obligation of 42.50 acres which has been met by recording 42.50 acres of on-site forest retention easement on a Plat of Revision for the Western Regional Park as Plat No. F-01-174. , 15581-15585

The Forest Conservation Easements have been established to fulfill the requirements of Section 16.1200 of the Howard County Code and the Forest Conservation Manual. No clearing, grading or construction is permitted within the Forest Conservation Easements, however, forest management practices as defined in the Deed of Forest Conservation Easement are allowed.

FOREST CONSERVATION NOTES

1. There is no reforestation requirement for this project. (See the Forest Conservation Worksheet, this sheet.)
2. For additional information on existing forest conditions, refer to the Forest Stand Delineation Report prepared by Riemer Muegge Associates, Inc.
3. Project Construction Timetable:

   Install Temporary Forest Protection Fencing (Blaze Orange Fence) around the forest and tree areas to be protected, as indicated on this plan. Contact the Landscape Architect who prepared this plan to set the fence location in the field.

   Notify the owner's Engineer and the Howard County Department of Planning and Zoning for a pre-construction meeting to inspect the protective fencing prior to beginning construction activities.

   Install sediment control devices and proceed with clearing and grading activities.

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

[signature] 9/12/02
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

Cindy Hamilton 10/22/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

[signature] 10/23/02
DIRECTOR — DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

[signature] 10-17-02
COUNTY HEALTH OFFICER — DATE
HOWARD COUNTY HEALTH DEPARTMENT

FOREST CONSERVATION EASEMENT AREA No. 1
1,545,544 Sq. Ft. or 35.4808 ACRES

LINE TABLE

LINE	BEARING	DISTANCE
FC1	N85 33/64 01'36"E	35.86'
FC2	S78 33/64 21'34"E	26.96'
FC3	N89 33/64 15'55"E	60.59'
FC4	N30 33/64 09'16"E	28.76'
FC5	S71 33/64 59'16"E	32.67'
FC6	N64 33/64 23'06"E	41.34'
FC7	S89 33/64 11'11"E	109.53'
FC8	N52 33/64 56'29"E	51.58'
FC9	S74 33/64 47'47"E	65.19'
FC10	N51 33/64 17'23"E	118.05'
FC11	S66 33/64 18'22"E	48.35'
FC12	N79 33/64 33'24"E	60.02'
FC13	N64 33/64 21'48"E	93.67'
FC14	S36 33/64 57'15"E	956.96'
FC15	N22 33/64 52'32"E	749.13'
FC16	S60 33/64 55'27"E	44.73'
FC17	S23 33/64 21'07"W	276.29'
FC18	S07 33/64 13'12"E	55.62'
FC19	S54 33/64 16'41"E	91.84'
FC20	S67 33/64 29'49"E	67.00'
FC21	S48 33/64 20'10"E	77.98'
FC22	S30 33/64 23'05"E	67.56'
FC23	S09 33/64 03'43"E	73.97'
FC24	S08 33/64 22'57"W	122.54'
FC25	S01 33/64 34'17"E	84.97'
FC26	S40 33/64 53'54"E	46.27'
FC27	S66 33/64 56'58"E	73.44'
FC28	S32 33/64 05'33"E	46.78'
FC29	S02 33/64 21'07"E	56.78'
FC30	S60 33/64 27'42"W	82.75'
FC31	S83 33/64 59'13"W	29.68'
FC32	S77 33/64 11'19"W	52.57'
FC33	S89 33/64 34'32"W	104.86'
FC34	S30 33/64 21'55"W	26.12'
FC35	S28 33/64 15'31"E	46.76'
FC36	S28 33/64 15'51"W	127.94'
FC37	S45 33/64 40'28"W	45.60'
FC38	S71 33/64 33'20"W	58.95'
FC39	N88 33/64 32'22"W	121.98'
FC40	S70 33/64 10'18"W	64.15'
FC41	N61 33/64 58'41"W	41.35'
FC42	N44 33/64 35'00"W	157.12'
FC43	N04 33/64 23'46"E	30.40'
FC44	N60 33/64 55'52"W	31.99'
FC45	S80 33/64 31'51"W	18.90'
FC46	N04 33/64 04'56"E	21.82'
FC47	N63 33/64 10'14"E	79.21'
FC48	N53 33/64 34'07"E	58.89'
FC49	N83 33/64 28'39"E	27.36'
FC50	N15 33/64 55'58"E	5.66'
FC51	N77 33/64 01'25"W	131.51'
FC52	S27 33/64 17'14"W	54.22'
FC53	S72 33/64 00'12"W	62.88'
FC54	N83 33/64 56'46"W	44.21'
FC55	S80 33/64 25'04"W	191.41'
FC56	S82 33/64 24'04"W	47.01'
FC57	S70 33/64 29'26"W	125.66'
FC58	S81 33/64 41'54"W	37.68'
FC59	N66 33/64 01'30"W	38.25'
FC60	N15 33/64 14'52"W	53.16'
FC61	N72 33/64 47'30"W	34.15'
FC62	S44 33/64 31'05"W	67.57'
FC63	S77 33/64 50'18"W	51.64'
FC64	N75 33/64 11'02"W	69.90'
FC65	N49 33/64 36'34"W	170.30'
FC66	S85 33/64 04'11"W	45.22'
FC67	S51 33/64 56'17"W	22.69'
FC68	S12 33/64 26'36"E	61.28'
FC69	S45 33/64 08'46"E	271.71'
FC70	S12 33/64 47'50"W	35.07'
FC71	S47 33/64 36'14"W	75.72'
FC72	S11 33/64 08'08"W	197.06'
FC73	S16 33/64 35'32"W	130.55'
FC74	S77 33/64 58'57"W	37.32'
FC75	N06 33/64 16'38"W	1574.34'

FOREST CONSERVATION EASEMENT AREA No. 2
275,903 Sq. Ft. or 6.3339 ACRES

LINE TABLE

LINE	BEARING	DISTANCE
FC76	N21 33/64 20'09"E	98.20'
FC77	N22 33/64 45'02"E	60.25'
FC78	N19 33/64 12'49"E	69.62'
FC79	N39 33/64 41'36"E	29.79'
FC80	N12 33/64 02'13"E	29.80'
FC81	N62 33/64 34'41"E	23.62'
FC82	N88 33/64 59'47"E	110.93'
FC83	N56 33/64 37'52"E	73.47'
FC84	N24 33/64 03'35"E	41.91'
FC85	N28 33/64 50'33"W	43.47'
FC86	N88 33/64 50'12"E	95.70'
FC87	N66 33/64 35'15"E	72.36'
FC88	N58 33/64 17'03"E	46.57'
FC89	N73 33/64 24'06"E	34.68'
FC90	N60 33/64 27'54"E	74.09'
FC91	S77 33/64 53'56"E	50.04'
FC92	S80 33/64 57'19"E	51.91'
FC93	N55 33/64 35'54"E	42.64'
FC94	N79 33/64 47'02"E	63.53'
FC95	S53 33/64 43'51"E	86.70'
FC96	S44 33/64 39'03"E	57.19'
FC97	S39 33/64 21'15"E	58.79'
FC98	S46 33/64 07'42"E	27.47'
FC99	S19 33/64 38'28"W	11.55'
FC100	S62 33/64 39'30"W	65.14'
FC101	S89 33/64 42'26"W	76.12'
FC102	S82 33/64 43'17"W	176.65'
FC103	S79 33/64 33'07"W	239.98'
FC104	S51 33/64 14'54"W	45.32'
FC105	S26 33/64 16'40"E	188.59'
FC106	S59 33/64 26'39"W	49.07'
FC107	S43 33/64 23'01"W	49.19'
FC108	S26 33/64 51'25"W	32.67'
FC109	S11 33/64 34'08"W	32.92'
FC110	S20 33/64 42'04"E	83.49'
FC111	S06 33/64 58'57"W	47.92'
FC112	S20 33/64 42'21"W	64.80'
FC113	S49 33/64 06'10"W	34.42'
FC114	S84 33/64 55'06"W	17.54'
FC115	N66 33/64 30'55"W	72.15'
FC116	N56 33/64 53'30"W	202.38'
FC117	N27 33/64 25'30"W	22.76'
FC118	N19 33/64 42'38"E	21.88'
FC119	N39 33/64 57'21"E	34.47'
FC120	N26 33/64 33'04"W	18.24'
FC121	N80 33/64 35'23"W	64.16'
FC122	N33 33/64 53'28"W	57.11'

FOREST CONSERVATION EASEMENT AREA No. 3
31,587 Sq. Ft. or 0.7251 ACRES

LINE TABLE

LINE	BEARING	DISTANCE
FC123	S44 33/64 29'06"E	36.75'
FC124	S61 33/64 57'25"E	71.14'
FC125	S72 33/64 00'35"E	54.15'
FC126	S58 33/64 03'27"E	105.94'
FC127	S39 33/64 04'45"E	27.95'
FC128	S24 33/64 57'40"W	36.40'
FC129	S45 33/64 54'46"W	59.12'
FC130	N73 33/64 30'23"W	46.17'
FC131	N58 33/64 50'36"W	124.05'
FC132	N66 33/64 57'44"W	58.91'
FC133	N74 33/64 10'19"W	28.17'
FC134	N87 33/64 45'10"W	23.06'
FC135	N36 33/64 02'56"E	51.43'
FC136	N24 33/64 06'16"E	85.17'

A.

FOREST PROTECTION NOTES

Planning and Design of protection devices:

For all retained areas, including both forested and isolated specimen trees:
1. All retention areas and isolated specimen trees shall be protected by highly visible, well-anchored temporary protection devices.
2. If there are more than 50' of existing woodland between the forest retention area and the limits of disturbance, temporary protection devices will not be required.
3. All protection devices shall be in place prior to any grading or land clearing.
4. All protection devices shall remain in place until all construction has ceased in the immediate vicinity.
5. Devices shall be maintained throughout construction.
6. Attachment of signs or any other objects to trees is prohibited.
7. No equipment, machinery, vehicles, materials, or excessive pedestrian traffic shall be allowed within the protected area.

Pre-construction meeting:

After the boundaries of the retention areas have been staked and flagged and before any disturbance has taken place on site, a pre-construction meeting at the construction site shall take place. The developer, contractor or project manager, and Howard County inspectors shall attend.

On-site decisions:

Any significant changes made to the Forest Conservation Plan due to on-site conditions shall be made with prior consent of the Department of Planning and Zoning.

Post-construction phase:

The following measures shall be taken:

1. Corrective measures if damages occurred due to negligence:
   a. Stress reduction.
   b. Removal of dead or dying trees. This may be done only if trees pose an immediate safety hazard.
2. Removal of temporary structures:
   a. No burial of discarded materials will occur on-site within the conservation area.
   b. No open burning within 100 feet of a wooded area.
   c. All temporary forest protection structures will be removed after construction.

PENALTY FOR VIOLATION

Following the completion of construction, prior to use, the County inspector shall inspect the entire site. If trees in the retention areas are found severely damaged or dead due to mechanical intrusion, the area may be considered to be in violation of the conservation plan and fees may be assessed accordingly at $1.20 per square foot of the affected area. Other penalties may apply.

LONG TERM PROTECTION

Long term protection will be provided for forest conservation areas. This will be accomplished by providing easements on the record plat. The plat restrictions are binding and will be recorded in the land records for the property.

Uses permitted in forest conservation areas include the removal of dead or dying trees, removal of noxious plants or weeds, passive recreational uses such as hiking or nature study, and forest and wildlife management.

No dumping of trash or other materials within the forest conservation area will be permitted.

FOREST RETENTION SIGN
NOT TO SCALE

BLAZE ORANGE PLASTIC MESH FENCE DETAIL
NOT TO SCALE

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 0100057.5 \ UFCPLN12.DGN

KCI TECHNOLOGIES INC.
ENGINEERS • PLANNERS • SURVEYORS
10 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
WWW.KCI.COM
KCI TECHNOLOGIES

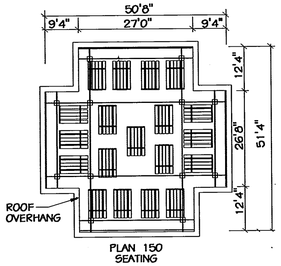
STATE OF MARYLAND — NICHOLAS M. LINEHAN — REGISTERED LANDSCAPE ARCHITECT — 9/13/02

WESTERN REGIONAL PARK
HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

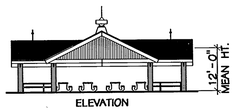
FOREST CONSERVATION DETAILS

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

FC12



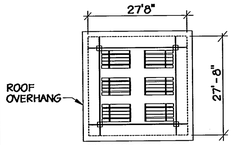
PLAN 150 SEATING



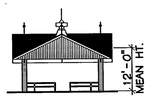
ELEVATION

A PAVILLION A

NOT TO SCALE



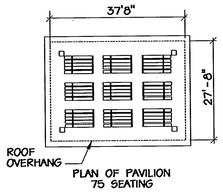
PLAN OF PAVILION 50 SEATING



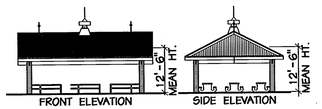
ELEVATION

C PAVILLION B

NOT TO SCALE



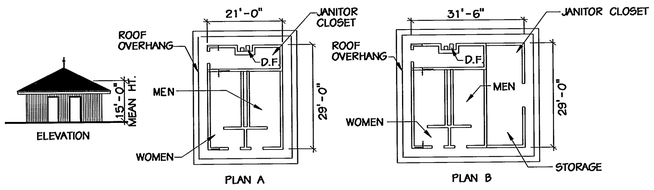
PLAN OF PAVILION 75 SEATING



FRONT ELEVATION SIDE ELEVATION

E PAVILLION C

NOT TO SCALE



B COMFORT STATION

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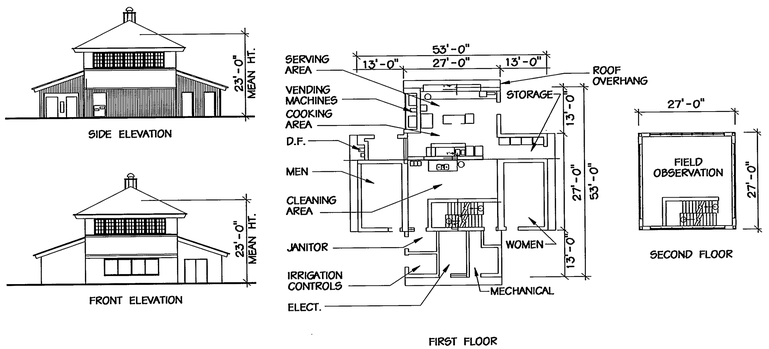
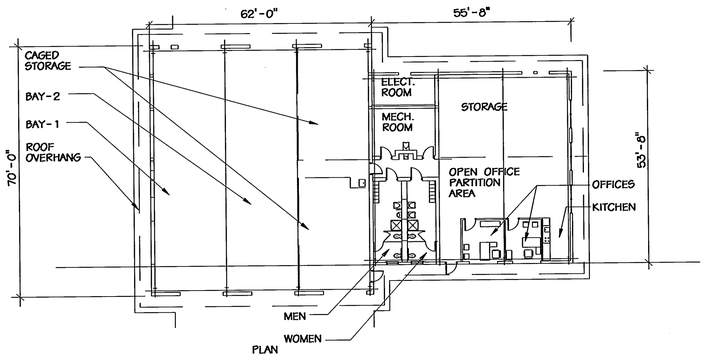
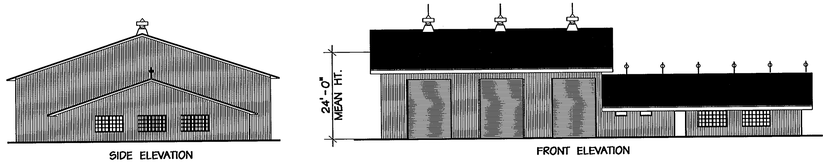


D CONCESSIONS BUILDING

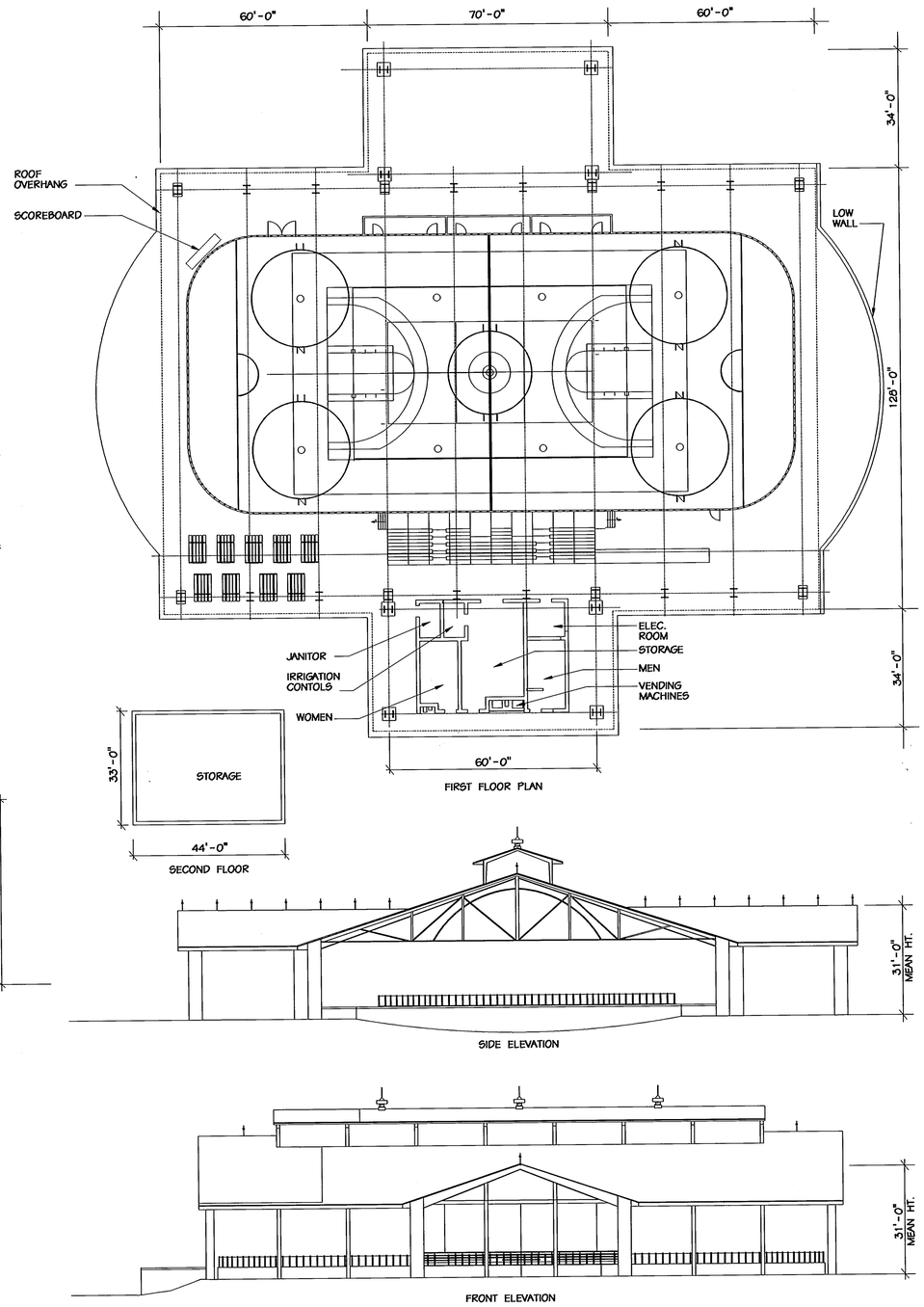
NOT TO SCALE





F MAINTENANCE BUILDING

NOT TO SCALE



G IN-LINE HOCKEY PAVILLION

NOT TO SCALE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, HOWARD COUNTY HEALTH DEPARTMENT — DATE 10-17-02

ENGINEER'S CERTIFICATE

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

SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE) — DATE 06/12/02

MICHAEL N. ARMSTRONG

DEVELOPER'S CERTIFICATE

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

SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) — DATE 9/9/02

RONALD G. LEYSON

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE

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

HOWARD SCD — DATE

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 01000057.S \ UARCH01.DGN

KCI TECHNOLOGIES INC.
ENGINEERS • PLANNERS • SURVEYORS
10 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
KCI TECHNOLOGIES WWW.KCI.COM

STATE OF MARYLAND — DOUGLAS M. LIGHT — No. 21436 — REGISTERED PROFESSIONAL LANDSCAPE ARCHITECT — 9/13/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
3430 COURTHOUSE DRIVE
COLUMBIA, MARYLAND 21045-1677
(410) 313-4640

ARCHITECTURAL DETAILS

SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

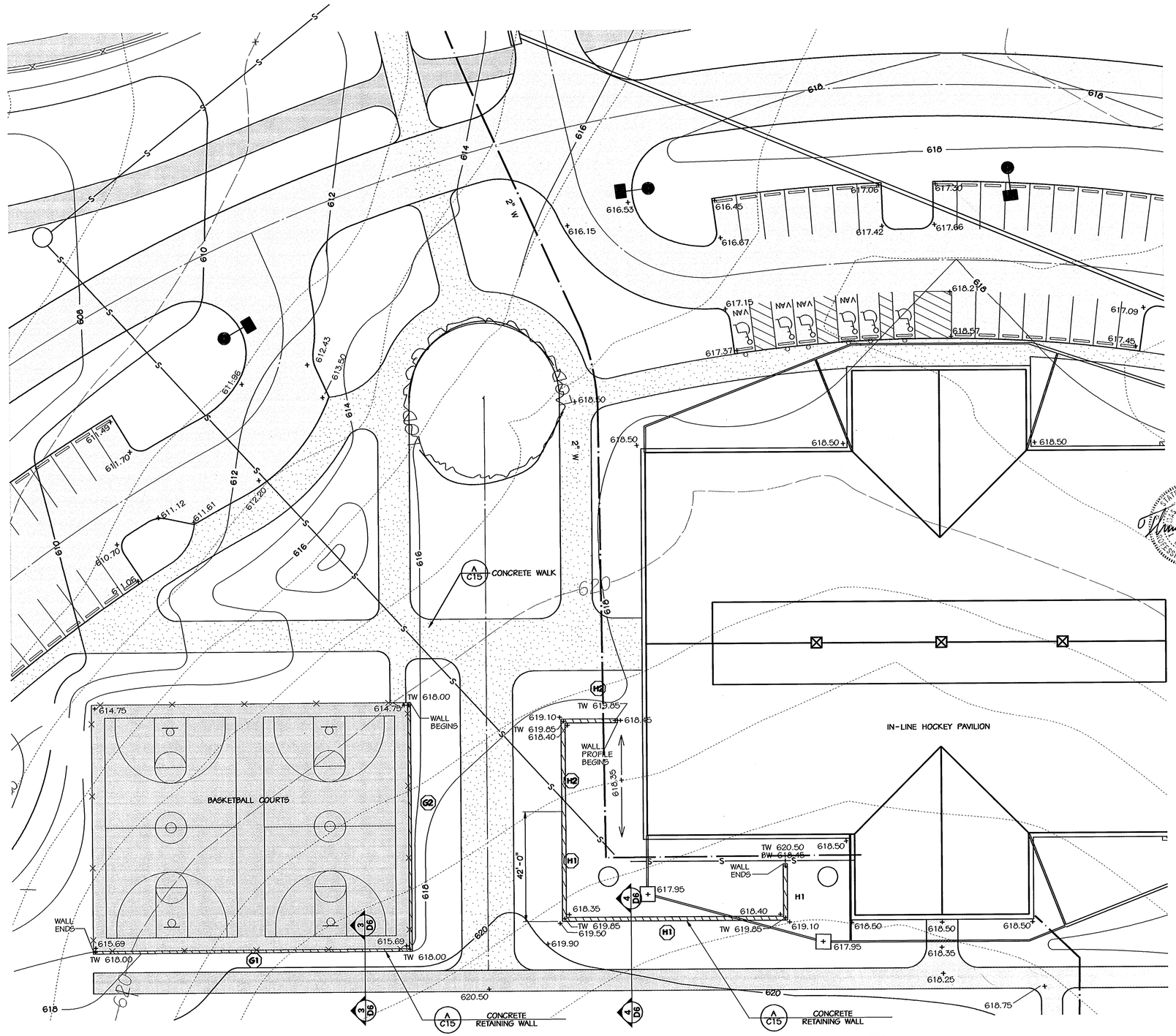
A1

SHEET NO.: 106 OF 113

SDP-02-64

NOTES:

1. THE PROPOSED WALL CONSTRUCTION SHALL BE PERFORMED UNDER THE OBSERVATION OF A MARYLAND REGISTERED PROFESSIONAL ENGINEER.
2. FOUNDATION SOILS SHALL BE EXAMINED BY THE ENGINEER TO ASSURE THE ACTUAL FOUNDATION SOIL STRENGTH MEETS OR EXCEEDS THE ASSUMED DESIGN STRENGTH.
3. (A2) REFERS TO WALL/FOOTING DESIGNATION - SEE CHART ON SHEET C15 FOR RETAINING WALL DETAILS, FOOTINGS AND REINFORCING. HORIZONTAL DIMENSIONS DENOTE STEP IN FOOTING.



FIELD 5

NORTH

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

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 9/12/02
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 10/22/02
DIRECTOR	DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER HOWARD COUNTY HEALTH DEPARTMENT	DATE 10-17-02

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 0100057.S \ UDETPL01.DGN

KCI TECHNOLOGIES INC.
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10 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
WWW.KCI.COM

9.3.02

9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

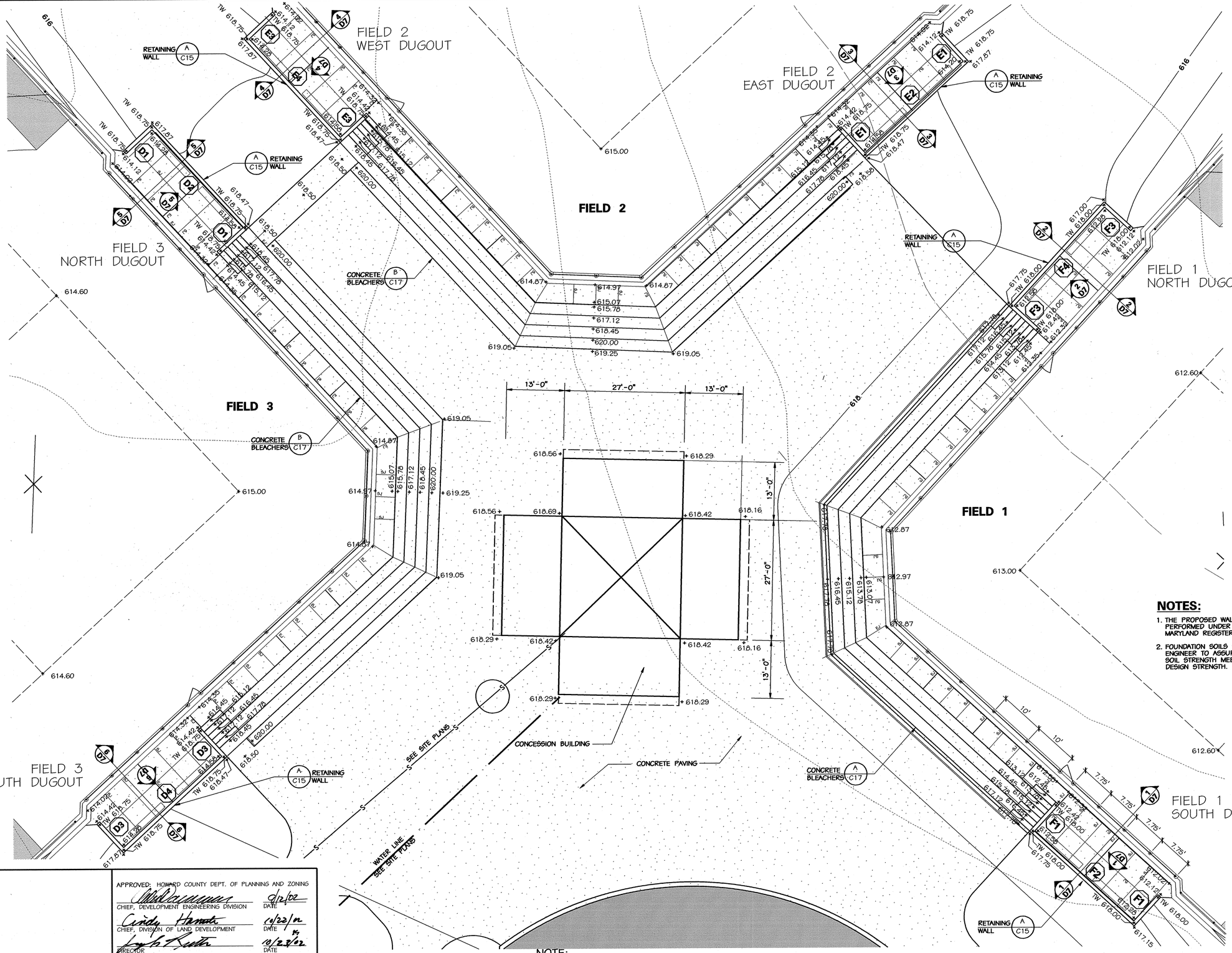
DETAIL PLAN OF HOCKEY PAVILION AREA

SCALE:	1" = 20'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

D1

SHEET NO.: 107 OF 113

SDP-02-64



NOTES:

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NOTE:

(A2) REFERS TO WALL/FOOTING DESIGNATION - SEE CHART ON SHEET C15 FOR RETAINING WALL DETAILS, FOOTINGS AND REINFORCING. HORIZONTAL DIMENSIONS DENOTE STEP IN FOOTING.

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/2/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER — DATE 10-12-02
HOWARD COUNTY HEALTH DEPARTMENT

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

NO.	REVISIONS	DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 01000057.6 \ UDETPLO2.DGN

KCI TECHNOLOGIES INC.
ENGINEERS • PLANNERS • SURVEYORS
10 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
TECHNOLOGIES WWW.KCI.COM

STATE OF MARYLAND — THOMAS M. LINDSEY — No. 13279 — PROFESSIONAL ENGINEER — 9-3-02

STATE OF MARYLAND — RICHARD L. WEAVER — No. 1001 — LANDSCAPE ARCHITECT — 9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410) 313-4640

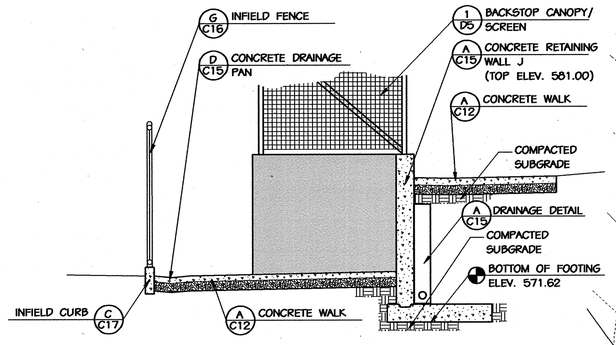
DETAIL PLAN OF SOFTBALL COMPLEX AREA

SCALE:	1" = 10'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

D2

SHEET NO.: 108 OF 113

SDP-02-64

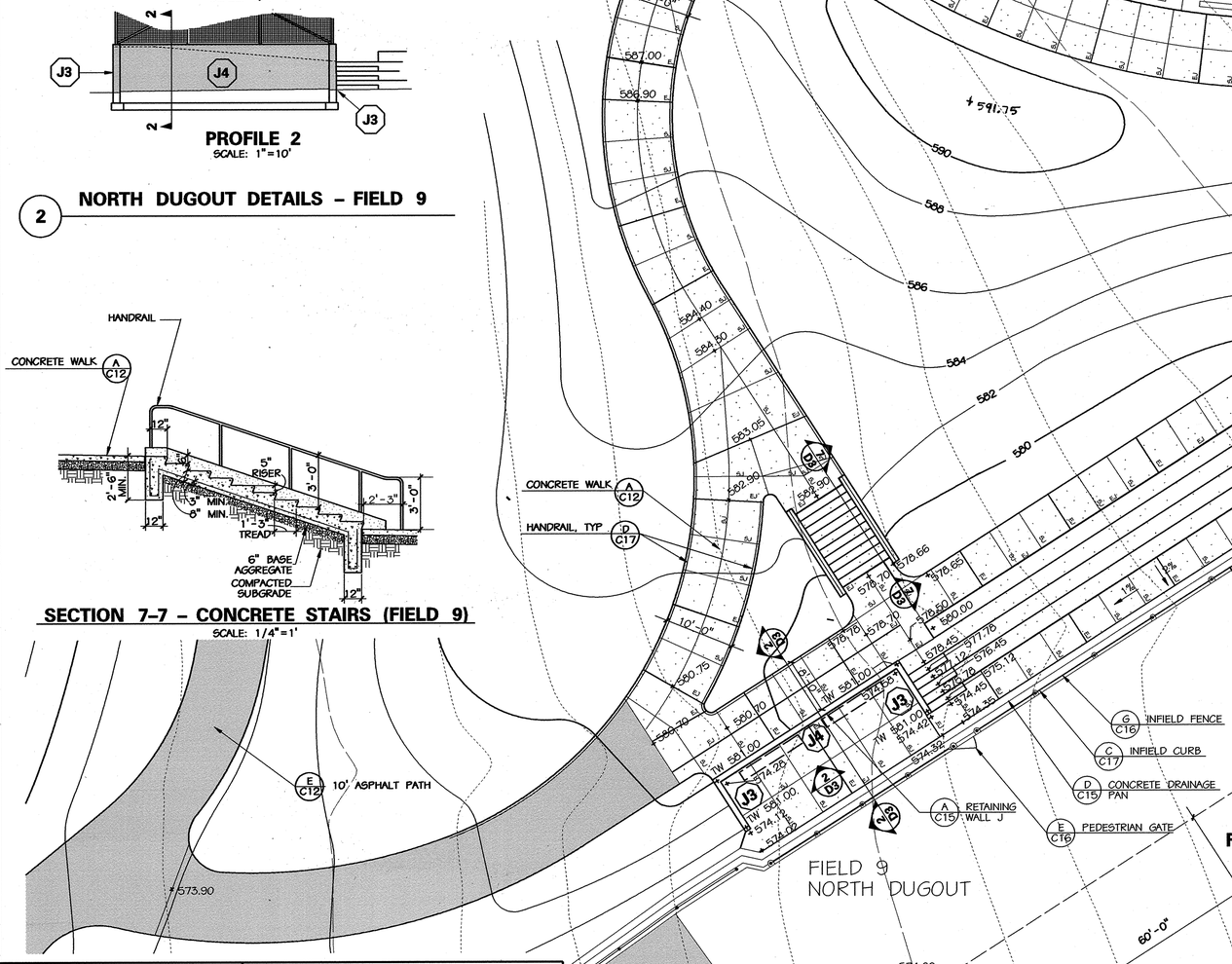


SECTION 2–2
SCALE: 1/4"=1'

PROFILE 2
SCALE: 1"=10'

2 NORTH DUGOUT DETAILS – FIELD 9

SECTION 7–7 – CONCRETE STAIRS (FIELD 9)
SCALE: 1/4"=1'



NOTE:
A2 REFERS TO WALL/FOOTING DESIGNATION – SEE CHART ON SHEET C15 FOR RETAINING WALL DETAILS, FOOTINGS AND REINFORCING. HORIZONTAL DIMENSIONS DENOTE STEP IN FOOTING.

NOTES:
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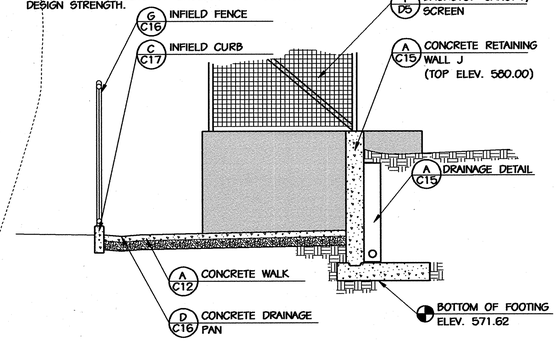
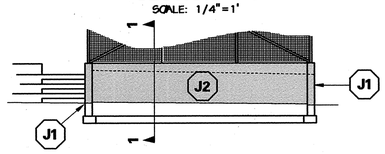
2. FOUNDATION SOILS SHALL BE EXAMINED BY THE ENGINEER TO ASSURE THE ACTUAL FOUNDATION SOIL STRENGTH MEETS OR EXCEEDS THE ASSUMED DESIGN STRENGTH.



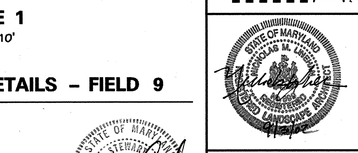
SECTION 1–1
SCALE: 1/4"=1'



PROFILE 1
SCALE: 1"=10'

1 SOUTH DUGOUT DETAILS – FIELD 9

9.3.02



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

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER H.S.S. HOWARD COUNTY HEALTH DEPARTMENT — DATE 10-17-02

NO.	REVISIONS	DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 01000057.6 \ UDETPL05.DGN

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ENGINEERS • PLANNERS • SURVEYORS
10 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND 21030
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WESTERN REGIONAL PARK
HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410) 313-4640

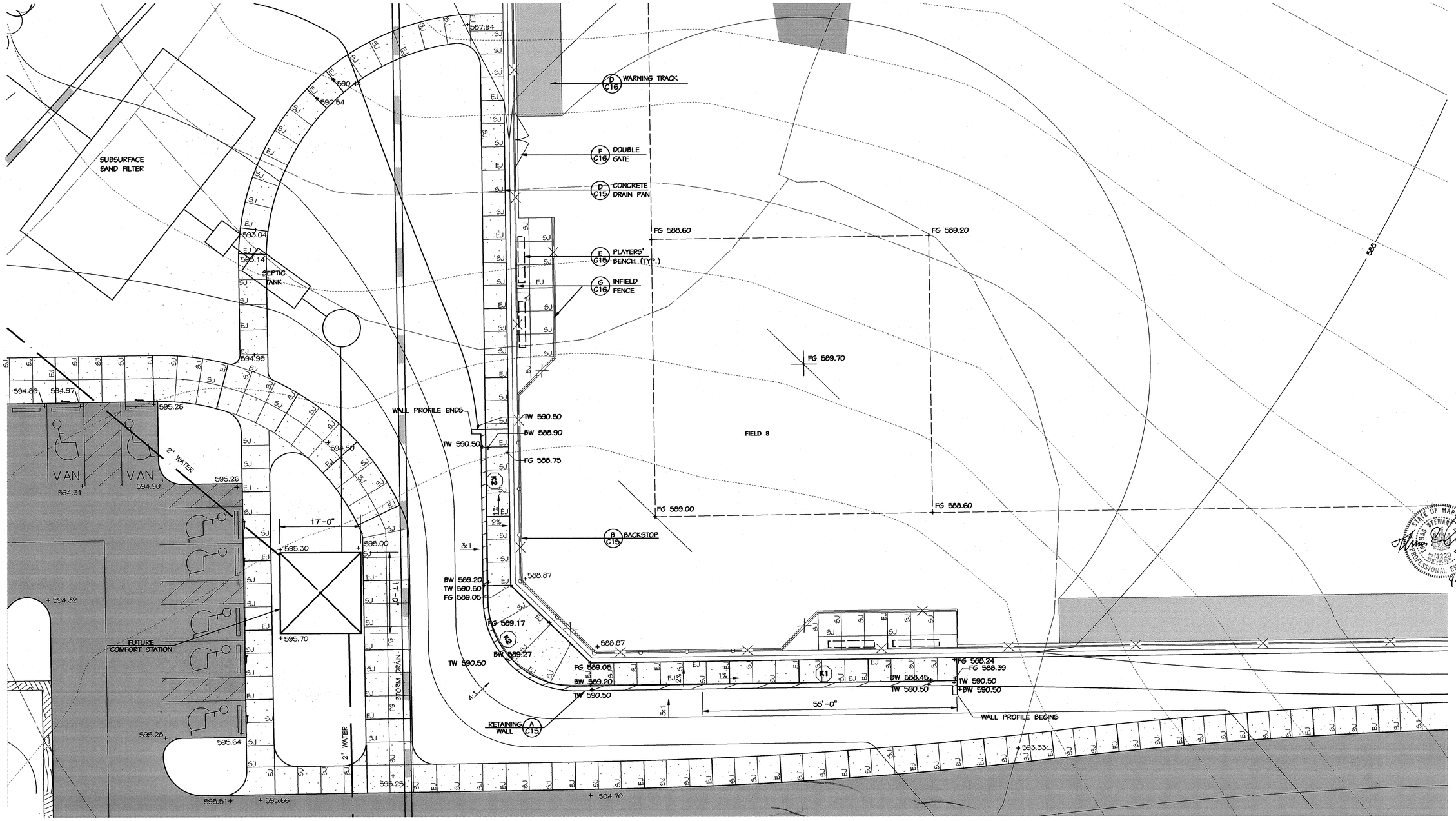
DETAIL PLAN OF FIELD 9 BLEACHER AREA

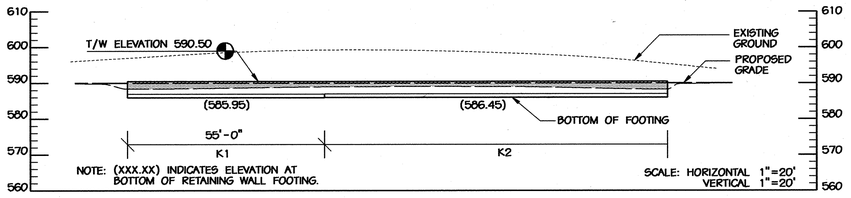
SCALE:	1" = 10'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

D3

SHEET NO.: 109 OF 113

SDP-02-64





PROFILE – WALL K

NOTES:

1. THE PROPOSED WALL CONSTRUCTION SHALL BE PERFORMED UNDER THE OBSERVATION OF A MARYLAND REGISTERED PROFESSIONAL ENGINEER.
2. FOUNDATION SOILS SHALL BE EXAMINED BY THE ENGINEER TO ASSURE THE ACTUAL FOUNDATION SOIL STRENGTH MEETS OR EXCEEDS THE ASSUMED DESIGN STRENGTH.
3. (A2) REFERS TO WALL/FOOTING DESIGNATION - SEE CHART ON SHEET C15 FOR RETAINING WALL DETAILS, FOOTINGS AND REINFORCING. HORIZONTAL DIMENSIONS DENOTE STEP IN FOOTING.

K2 WALL/FOOTING DESIGNATION

RETAINING WALL DETAILS
FOOTINGS AND REINFORCING
SEE SHEET C15

NOTE: HORIZONTAL DIMENSIONS DENOTE STEP IN FOOTINGS

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

NORTH

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 9/12/02
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 10/26/02
DIRECTOR	DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER HOWARD COUNTY HEALTH DEPARTMENT	DATE 10-17-02

NO.	REVISIONS DESCRIPTION	DATE

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STATE OF MARYLAND
MICHAEL NORMAN ARMSTRONG
NO. 16189
REGISTERED PROFESSIONAL ENGINEER
9-3-02

STATE OF MARYLAND
MICHAEL NORMAN ARMSTRONG
NO. 16189
REGISTERED PROFESSIONAL ENGINEER
9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

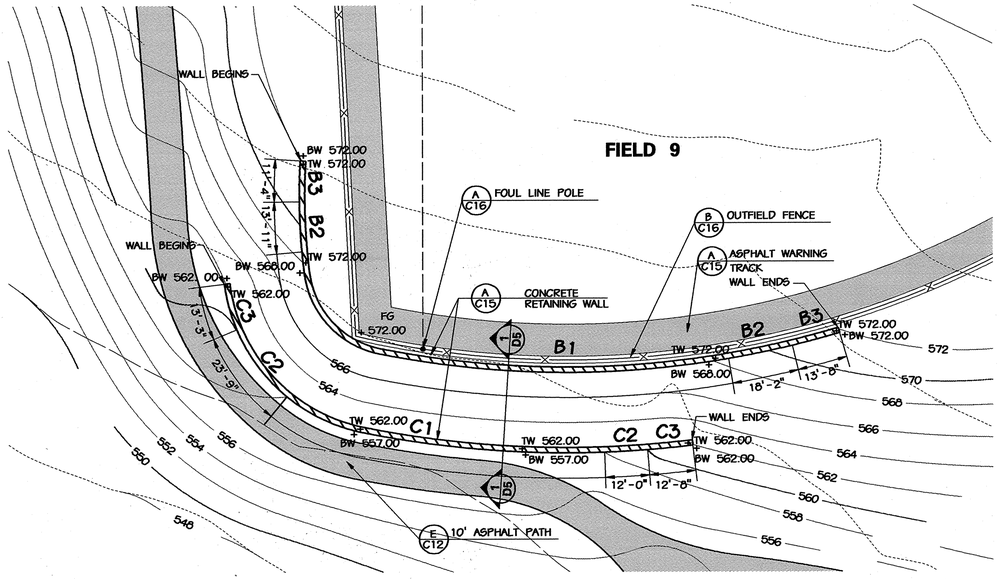
DETAIL PLAN OF FIELD 8 BLEACHER AREA

SCALE:	1" = 10'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

D4

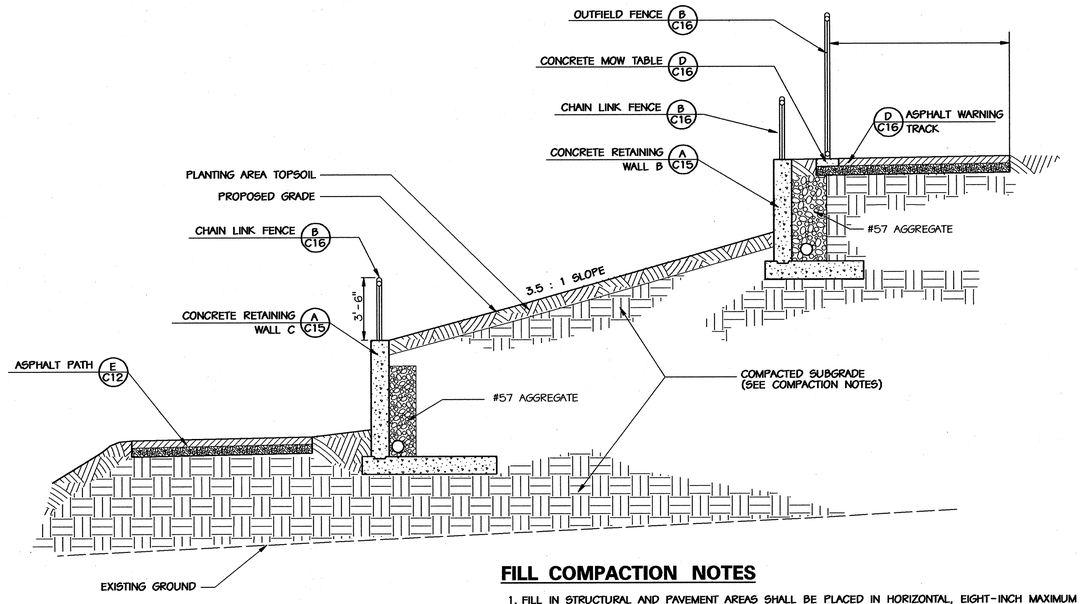
SHEET NO.: 110 OF 113

SDP-02-64



RETAINING WALLS B AND C

NOTE: SEE WALL PROFILES, THIS SHEET



RETAINING WALL NOTES:

1. THE PROPOSED WALL CONSTRUCTION SHALL BE PERFORMED UNDER THE OBSERVATION OF A MARYLAND REGISTERED PROFESSIONAL ENGINEER.
2. FOUNDATION SOILS SHALL BE EXAMINED BY THE ENGINEER TO ASSURE THE ACTUAL FOUNDATION SOIL STRENGTH MEETS OR EXCEEDS THE ASSUMED DESIGN STRENGTH OF 2000 LBS PER SQUARE FOOT.

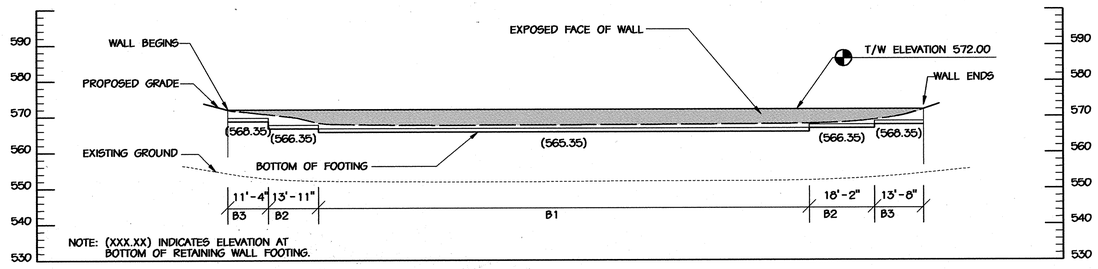
FILL COMPACTION NOTES

1. FILL IN STRUCTURAL AND PAVEMENT AREAS SHALL BE PLACED IN HORIZONTAL, EIGHT-INCH MAXIMUM LOOSE LIFTS AND COMPACTED TO AT LEAST 95 PERCENT OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D-698). IN AREAS TO SUPPORT FLOOR SLABS AND PAVEMENTS THE UPPERMOST ONE FOOT (AFTER COMPACTION) SHALL BE COMPACTED TO 97 PERCENT OF THE MAXIMUM DRY DENSITY.
2. IN BUILDING AND RETAINING WALL AREAS THE FILL SHALL EXTEND A MINIMUM OF 10 FEET BEYOND THE BUILDING LIMITS AND FILL SLOPES NO STEEPER THAT 2(H):1(V) SHALL BE USED.
3. WALL BACKFILL MATERIALS SHALL BE COMPACTED TO DRY DENSITIES ON THE ORDER OF 90 PERCENT OF STANDARD PROCTOR MAXIMUM DRY DENSITY. IF WALL BACKFILL MATERIALS ARE TO SUPPORT STRUCTURAL LOADS, THEN THE BACK-FILL MATERIAL SHALL BE COMPACTED TO AT LEAST 95 PERCENT

1 SECTION OF RETAINING WALLS (B & C) – FIELD 9

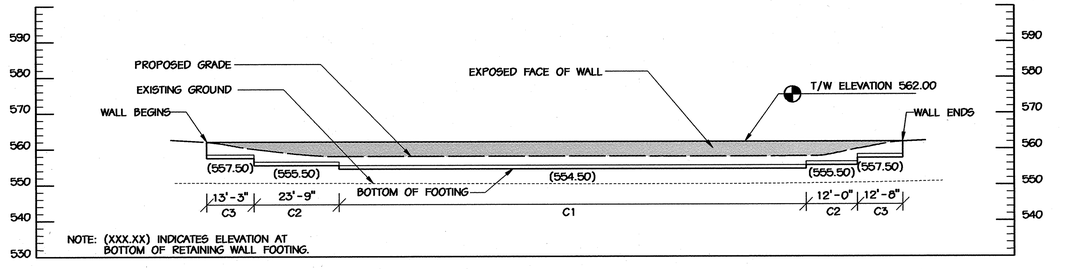
SCALE: 1/4"=1'

NOTE:
A2 REFERS TO WALL/FOOTING DESIGNATION - SEE CHART ON SHEET C15 FOR RETAINING WALL DETAILS, FOOTINGS AND REINFORCING. HORIZONTAL DIMENSIONS DENOTE STEP IN FOOTING.



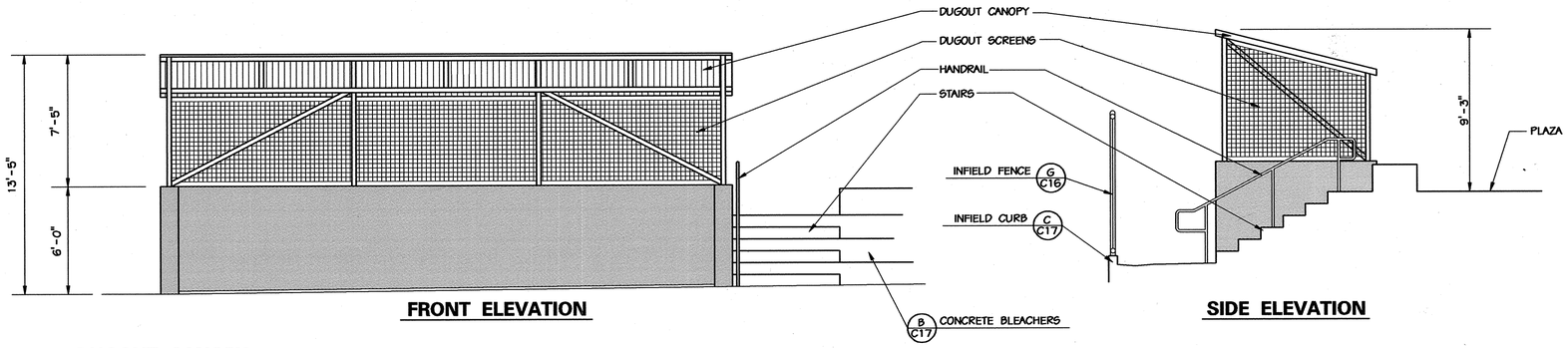
PROFILE – RETAINING WALL (B) – FIELD 9

SCALE: HORIZONTAL 1"=20'
VERTICAL 1"=20'



PROFILE – RETAINING WALL (C) – FIELD 9

SCALE: HORIZONTAL 1"=20'
VERTICAL 1"=20'



1 DUGOUT CANOPY

SCALE: 1/4"=1'

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/22/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER — DATE 10-17-02
HOWARD COUNTY HEALTH DEPARTMENT

STATE OF MARYLAND — MICHAEL JORDAN ARMSTRONG — REG. NO. 19515 — REGISTERED PROFESSIONAL ENGINEER
Michael J. Armstrong 9/3/02

STATE OF MARYLAND — JAMES STEWART LEE — No. 13229 — REGISTERED PROFESSIONAL ENGINEER
9-3-02

NO.	REVISIONS	DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 0100057 \ UDETPL03.DGN

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WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

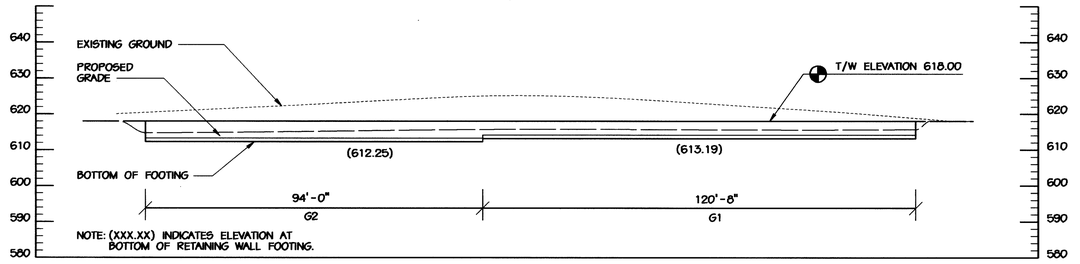
DETAIL PLAN OF RETAINING WALLS

SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

D5

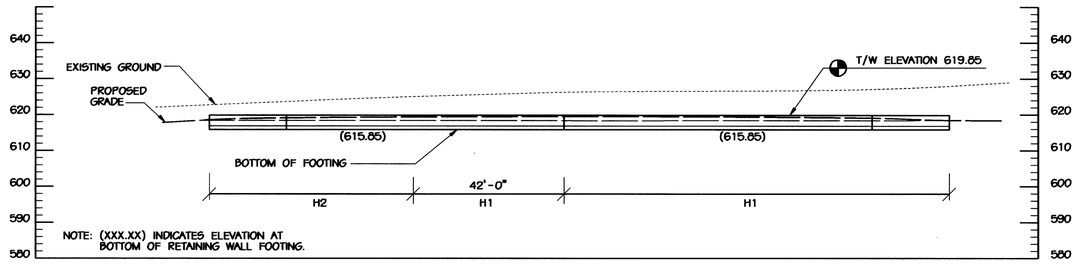
SHEET NO.: 111 OF 113

SDP-02-64



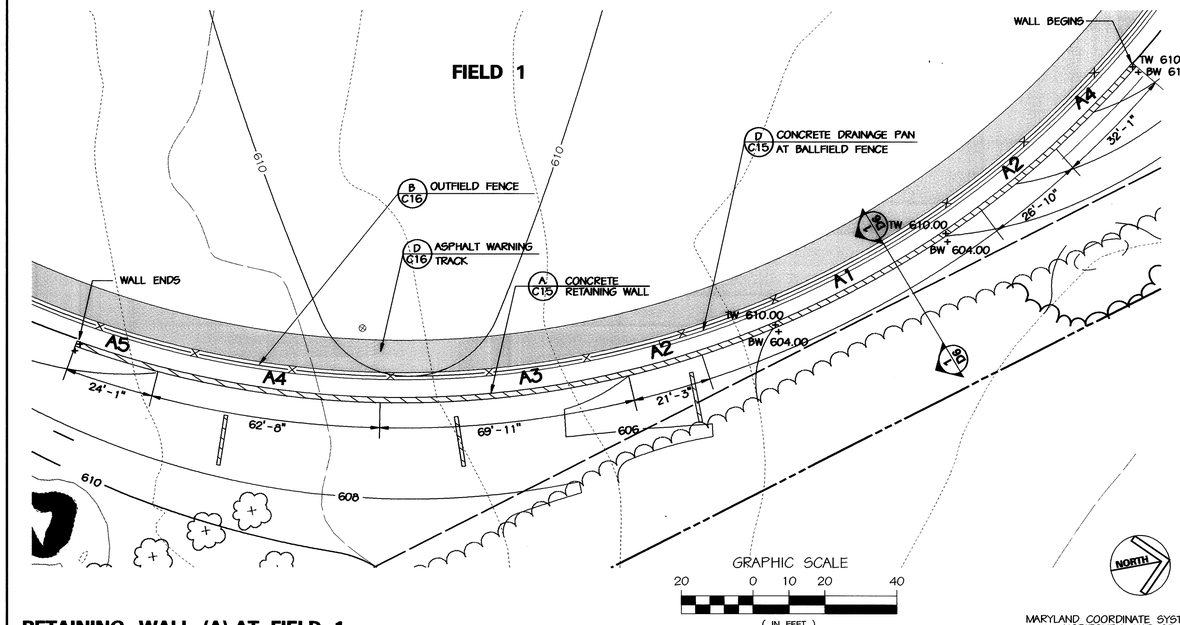
PROFILE – RETAINING WALL (G) – BASKETBALL COURTS

SCALE: HORIZONTAL 1"=20'
VERTICAL 1"=20'

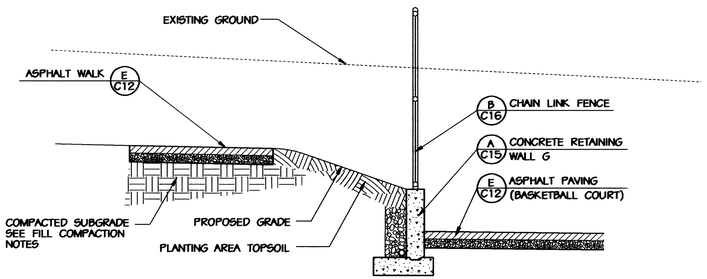


PROFILE –RETAINING WALL (H) SEAT WALL AT ROLLER HOCKEY PAVILION

SCALE: HORIZONTAL 1"=20'
VERTICAL 1"=20'



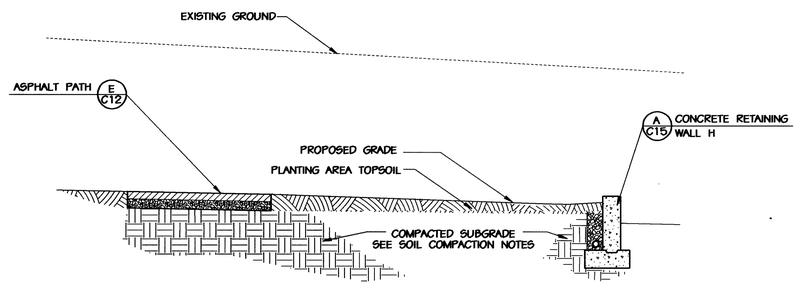
RETAINING WALL (A) AT FIELD 1



~~SECTION 3-3 – RETAINING WALL (G) AT BASKETBALL COURTS~~

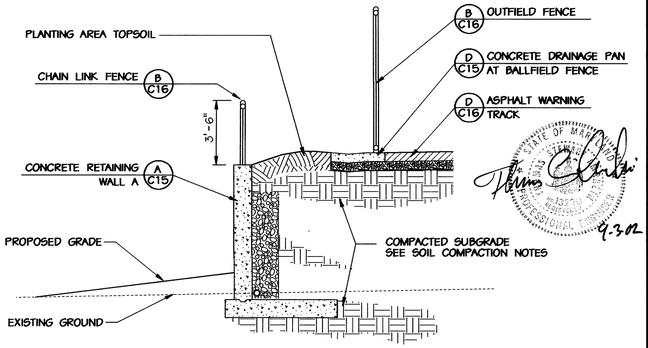
~~SCALE: 1"=1'~~

VOID SEE RETAINING WALL "A" SECTION A-A ON C-17 ON CONSTRUCTION DOCUMENTS VOL I Cap. Proj. H3932.



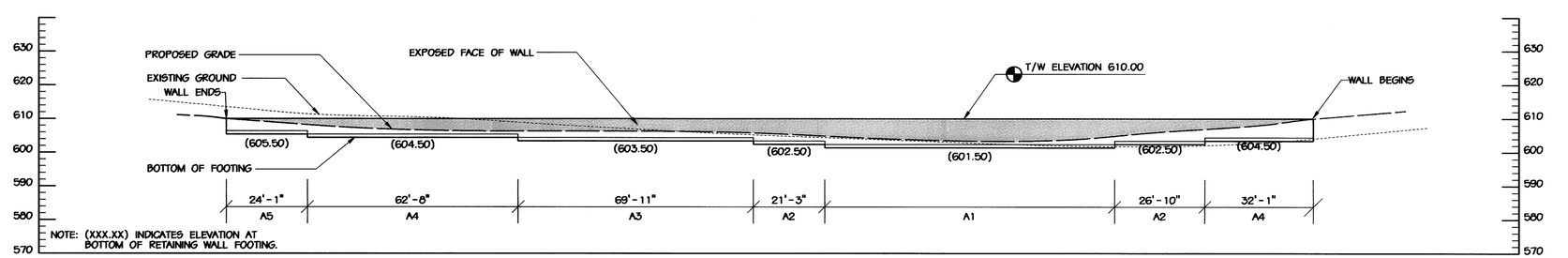
SECTION 4-4 – RETAINING WALL (H) AT ROLLER HOCKEY PAVILION

SCALE: 1/4"=1'



SECTION 1-1 – RETAINING WALL (A) AT FIELD 1

SCALE: 1/4"=1'



PROFILE – RETAINING WALL (A) AT FIELD 1

SCALE: HORIZONTAL 1"=20'
VERTICAL 1"=20'

FILL COMPACTION NOTES

1. FILL IN STRUCTURAL AND PAVEMENT AREAS SHOULD BE PLACED IN HORIZONTAL, EIGHT-INCH MAXIMUM LOOSE LIFTS AND COMPACTED TO AT LEAST 95 PERCENT OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D-698). IN AREAS TO SUPPORT FLOOR SLABS AND PAVEMENTS THE UPPERMOST ONE FOOT (AFTER COMPACTION) SHOULD BE COMPACTED TO 97 PERCENT OF THE MAXIMUM DRY DENSITY.
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RETAINING WALL NOTES:

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NOTE:
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APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/23/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER — DATE 10-17-02
HOWARD COUNTY HEALTH DEPARTMENT

NO.	REVISIONS	DESCRIPTION	DATE

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HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
KCI TECHNOLOGIES WWW.KCI.COM

STATE OF MARYLAND · MICHAEL T. LAMBERTUS · PROFESSIONAL ENGINEER
Michael T. Lambertus 9/3/02

STATE OF MARYLAND · JAMES C. CARTER · REGISTERED PROFESSIONAL ENGINEER
James C. Carter 9.3.02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

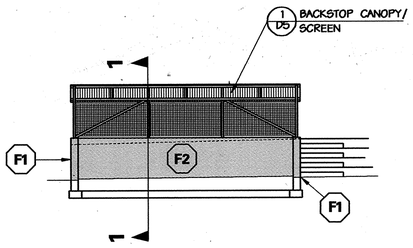
DETAIL PLAN OF RETAINING WALLS

SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

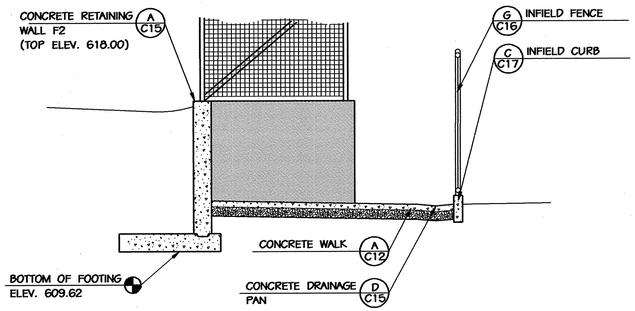
D6

SHEET NO.: 112 OF 113

SDP-02-64

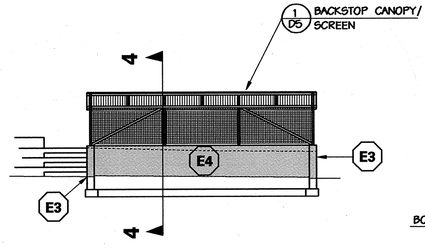


PROFILE 1
SCALE: 1"=10'

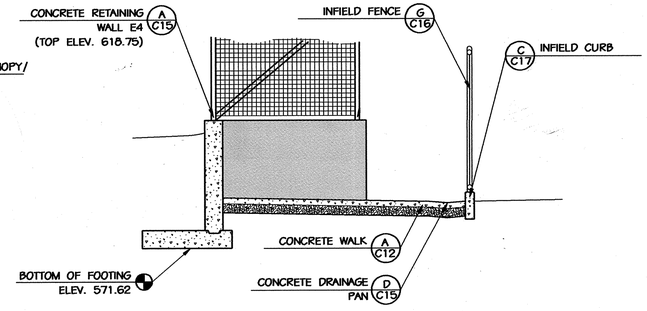


SECTION 1–1
SCALE: 1/4"=1'

1 SOUTH DUGOUT DETAIL – FIELD 1

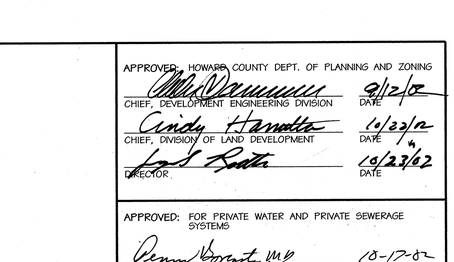


PROFILE 4
SCALE: 1"=10'

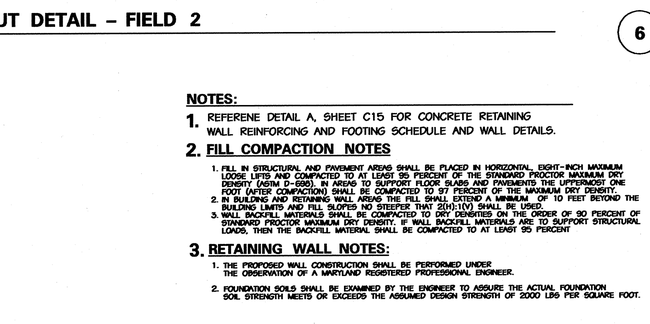


SECTION 4–4
SCALE: 1/4"=1'

4 WEST DUGOUT DETAIL – FIELD 2



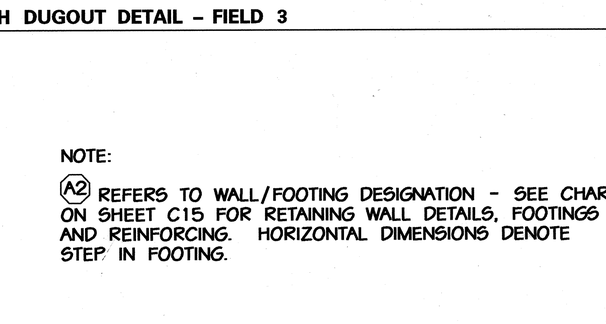
PROFILE 2
SCALE: 1"=10'



SECTION 2–2
SCALE: 1/4"=1'

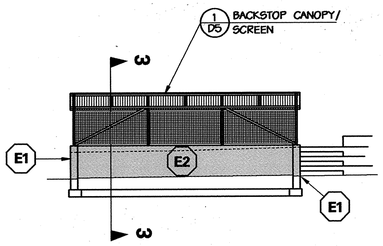
2 NORTH DUGOUT DETAIL – FIELD 1

PROFILE 5
SCALE: 1"=10'

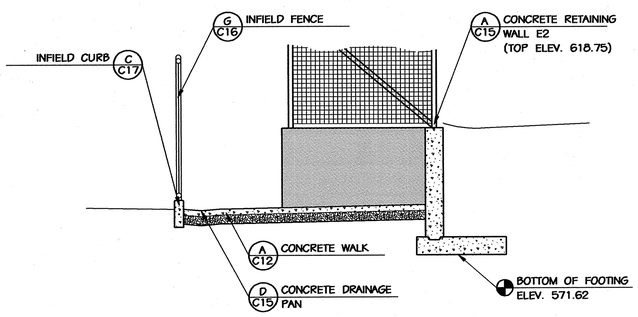


SECTION 5–5
SCALE: 1/4"=1'

5 NORTH DUGOUT DETAIL – FIELD 3

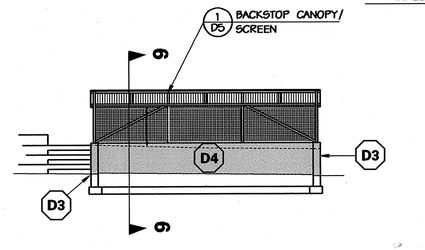


PROFILE 3
SCALE: 1"=10'

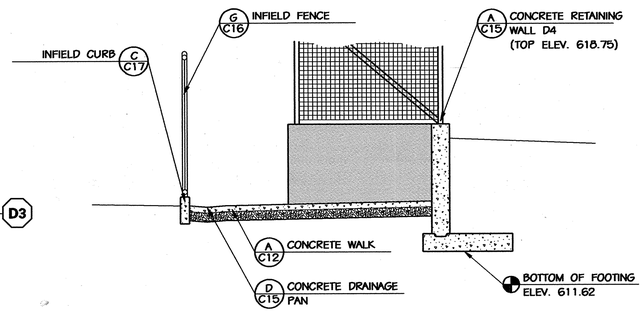


SECTION 3–3
SCALE: 1/4"=1'

3 EAST DUGOUT DETAIL – FIELD 2



PROFILE 6
SCALE: 1"=10'



SECTION 6–6
SCALE: 1/4"=1'

6 SOUTH DUGOUT DETAIL – FIELD 3

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/12/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/23/02

DIRECTOR — DATE 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, M.D. — DATE 10-17-02
HOWARD COUNTY HEALTH DEPARTMENT

NOTES:

1. REFERENE DETAIL A, SHEET C15 FOR CONCRETE RETAINING WALL REINFORCING AND FOOTING SCHEDULE AND WALL DETAILS.
2. **FILL COMPACTION NOTES**
   1. FILL IN STRUCTURAL AND PAVEMENT AREAS SHALL BE PLACED IN HORIZONTAL, EIGHT-INCH MAXIMUM LOOSE LIFTS AND COMPACTED TO AT LEAST 95 PERCENT OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D-698). IN AREAS TO SUPPORT FLOOR SLABS AND PAVEMENTS THE UPPERMOST ONE FOOT (AFTER COMPACTION) SHALL BE COMPACTED TO 97 PERCENT OF THE MAXIMUM DRY DENSITY.
   2. IN BUILDING AND RETAINING WALL AREAS THE FILL SHALL EXTEND A MINIMUM OF 10 FEET BEYOND THE BUILDING LIMITS AND FILL SLOPES NO STEEPER THAT 2(H):1(V) SHALL BE USED.
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3. **RETAINING WALL NOTES:**
   1. THE PROPOSED WALL CONSTRUCTION SHALL BE PERFORMED UNDER THE OBSERVATION OF A MARYLAND REGISTERED PROFESSIONAL ENGINEER.
   2. FOUNDATION SOILS SHALL BE EXAMINED BY THE ENGINEER TO ASSURE THE ACTUAL FOUNDATION SOIL STRENGTH MEETS OR EXCEEDS THE ASSUMED DESIGN STRENGTH OF 2000 LBS PER SQUARE FOOT.

NOTE:

(A2) REFERS TO WALL/FOOTING DESIGNATION - SEE CHART ON SHEET C15 FOR RETAINING WALL DETAILS, FOOTINGS AND REINFORCING. HORIZONTAL DIMENSIONS DENOTE STEP IN FOOTING.

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 0100057.5 \ UDETPLO7.DGN

KCI TECHNOLOGIES INC.
ENGINEERS • PLANNERS • SURVEYORS
10 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
WWW.KCI.COM

KCI TECHNOLOGIES

STATE OF MARYLAND • ENGINEER • MICHAEL JOSEPH ARMSTRONG • 21627 • PROFESSIONAL ENGINEER
9/3/02

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

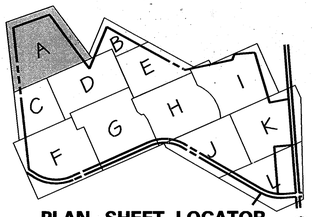
SOFTBALL COMPLEX AREA RETAINING WALL SECTIONS AND PROFILES

SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

D7

SHEET NO.: 113 OF 113

SDP-02-64



PLAN SHEET LOCATOR

NOT TO SCALE

CURVE DATA TABLES

Baseline	Curve Number	Radius	Length	Chord Bearing	Chord Length
A	C1	650.00'	1252.62'	N 24°58'41" W	1067.59'
	C2	730.00'	332.43'	N 67°06'23" W	329.56'
	C3	225.00'	231.40'	N 83°33'23" W	221.33'
	C4	325.00'	296.68'	S 40°39'13" W	286.28'
	C5	450.00'	290.50'	S 4°10'05" E	285.48'
	C6	250.00'	398.79'	S 27°00'40" W	350.68'
	C7	1000.00'	298.12'	S 68°06'35" W	297.02'
	C8	100.00'	100.04'	S 62°28'08" W	100.00'
B	C9	185.00'	209.43'	N 32°39'47" W	198.77'
	C10	200.00'	157.76'	N 41°58'49" W	153.70'
	C11	275.00'	211.43'	N 41°24'34" W	206.26'
C	C12	67.50'	212.06'	S 24°39'56" E	135.00'
D	C13	75.00'	110.52'	N 29°19'30" W	100.79'
	C14	150.00'	170.79'	N 38°56'18" W	161.72'
	C15	35.00'	54.96'	S 38°43'00" W	49.49'
E	C16	40.00'	62.83'	S 51°29'46" E	56.57'
	C17	40.00'	31.42'	S 16°00'14" W	30.61'
F	C18	190.67'	268.09'	N 53°33'48" W	246.56'
	C19	270.59'	192.92'	N 32°07'23" W	188.86'
	C20	188.00'	72.32'	N 44°01'45" W	71.88'
	C21	50.00'	78.54'	N 74°36'24" W	70.71'
G	C22	50.00'	74.59'	S 17°39'30" W	67.86'
	C23	583.00'	423.58'	S 4°15'45" E	414.33'
	C24	50.00'	74.59'	S 26°10'56" E	67.86'
H	C25	50.00'	81.89'	S 31°17'04" E	73.04'
	C26	797.00'	27.57'	S 79°11'40" E	27.57'
	C27	583.00'	366.10'	S 62°44'11" E	348.63'
	C28	50.00'	74.59'	S 88°01'20" E	67.86'
J	C29	12.00'	18.85'	N 74°36'24" W	16.97'
MAIN WALK1	C30	272.18'	24.66'	S 66°17'54" E	24.65'
	C31	442.75'	238.98'	S 84°21'24" E	236.09'
	C32	179.86'	153.12'	N 55°47'27" E	148.54'
	C33	411.30'	274.60'	N 12°16'29" E	269.53'
	C34	90.47'	44.04'	N 7°05'40" E	43.61'
	C35	62.80'	32.98'	N 5°59'50" E	32.60'
	C36	296.52'	34.60'	N 5°42'11" W	34.59'
	C37	56.86'	28.51'	N 12°00'23" E	28.21'
	C38	76.54'	62.77'	N 49°51'58" E	61.02'
	C39	1686.86'	117.09'	N 71°22'14" E	117.07'
	C40	42.33'	23.22'	N 49°36'15" E	22.65'
	C41	139.58'	128.15'	N 3°31'28" E	123.70'
	C42	100.00'	36.11'	N 33°07'19" W	35.91'
	C43	85.00'	91.77'	N 74°23'42" W	87.35'
	C44	255.00'	152.22'	N 88°13'24" W	149.97'
	C45	110.00'	57.32'	N 56°11'39" W	56.68'
	C46	100.00'	10.68'	N 44°19'27" W	10.67'
	C47	35.00'	15.07'	N 25°13'47" W	14.95'
	C48	66.00'	21.61'	N 3°25'48" W	21.71'
	C49	76.00'	39.21'	N 20°48'54" E	38.78'
	C50	115.00'	102.05'	N 61°01'04" E	98.74'
	C51	170.00'	10.08'	N 88°06'21" E	10.08'
	C52	195.00'	56.89'	N 81°37'35" E	56.70'
	C53	66.00'	26.11'	N 84°45'00" E	25.94'
	C54	90.00'	79.61'	N 70°44'46" E	77.04'
	C55	232.95'	203.51'	N 70°26'05" E	197.10'
	C56	160.00'	72.01'	N 82°34'05" E	71.41'
	C57	105.00'	32.39'	N 60°50'14" E	32.26'
	C58	140.00'	68.70'	N 37°44'15" E	68.96'
	C59	190.00'	40.00'	N 29°30'22" E	39.93'
	C60	100.00'	91.99'	N 61°53'30" E	88.78'
	C61	285.00'	64.29'	N 81°46'58" E	64.15'
	C62	60.00'	81.98'	N 36°11'52" E	75.72'
	C63	95.00'	19.00'	N 8°39'16" W	18.97'
	C64	66.44'	73.05'	N 45°53'07" W	69.43'
	C65	99.00'	104.23'	N 47°13'27" W	99.49'
	C66	57.26'	74.53'	N 20°13'35" E	68.38'
	C67	152.00'	119.27'	N 39°02'11" E	116.23'
	C68	280.62'	118.62'	N 24°41'17" E	117.93'
	C69	186.50'	145.43'	N 59°09'27" E	141.77'
	C70	585.64'	218.32'	S 87°49'24" E	217.06'
	C71	166.25'	36.40'	S 70°52'17" E	36.33'
	C72	1345.66'	117.86'	S 62°05'23" E	117.82'
	C73	70.32'	60.06'	S 35°06'53" E	58.25'
	C74	79.82'	139.09'	S 60°34'02" E	122.15'
	C75	34.02'	34.31'	S 81°35'30" E	32.87'
	C76	210.00'	59.07'	S 55°46'30" E	58.88'
	C77	691.40'	132.80'	S 61°19'54" E	132.59'
	C78	208.50'	65.66'	S 64°51'04" E	65.39'
	C79	96.71'	46.78'	S 87°43'55" E	46.33'
	C80	93.80'	77.88'	S 77°48'21" E	75.66'
	C81	44.91'	52.66'	S 87°32'33" E	49.60'
	C82	30.00'	39.95'	S 82°54'36" E	37.07'
	C83	270.66'	146.42'	S 60°15'13" E	144.64'
	C84	86.34'	20.06'	S 84°25'13" E	20.00'
	C85	89.47'	75.22'	S 68°43'57" E	72.97'
	C86	160.00'	61.69'	S 33°19'45" E	61.31'
	C87	446.51'	120.04'	S 29°57'01" E	119.68'
	C88	263.00'	14.18'	S 39°09'44" E	14.18'
	C89	693.00'	70.19'	S 37°45'46" E	70.16'
WALK3	C90	96.06'	63.57'	S 50°07'10" W	62.41'
	C91	210.06'	49.27'	S 75°47'45" W	49.15'
	C92	83.93'	128.75'	N 53°32'52" W	116.49'
	C93	775.82'	247.76'	N 18°44'52" W	246.71'
	C94	1080.02'	143.63'	N 31°42'42" W	143.72'
	C95	53.50'	52.98'	N 7°09'12" W	50.84'
	C96	101.79'	40.98'	N 32°45'11" E	40.71'
	C97	40.00'	14.60'	N 60°46'32" E	14.52'
	C98	57.00'	19.04'	N 61°39'45" E	18.95'

Baseline	Curve Number	Radius	Length	Chord Bearing	Chord Length
WALK4	C99	50.00'	14.96'	N 28°39'37" W	14.91'
	C100	199.55'	112.06'	N 3°59'57" W	110.59'
	C101	68.00'	18.90'	N 20°03'05" E	18.84'
	C102	105.18'	35.86'	N 37°14'08" E	35.71'
	C103	45.00'	41.84'	N 73°05'40" E	40.35'
	C104	300.00'	36.95'	S 83°42'05" E	36.93'
	C105	145.00'	187.27'	N 55°51'56" E	174.53'
	C106	235.00'	64.74'	N 25°09'06" E	64.61'
	C107	123.00'	122.58'	N 59°59'30" E	117.58'
	C108	157.00'	33.79'	S 86°17'23" E	33.73'
WALK5	C109	120.00'	24.14'	N 3°46'23" W	24.10'
	C110	162.12'	43.45'	N 1°51'30" W	43.32'
	C111	218.00'	160.13'	N 15°13'23" W	156.55'
	C112	674.14'	60.01'	N 38°48'57" W	59.99'
	C113	100.00'	47.07'	N 27°52'52" W	46.64'
	C114	84.50'	137.73'	N 32°17'51" E	122.98'
	C115	150.00'	40.83'	N 86°47'23" E	40.71'
	C116	75.00'	49.95'	S 66°20'02" E	49.03'
	C117	43.55'	26.23'	S 30°01'16" E	25.83'
	C118	110.00'	38.57'	S 2°28'56" E	38.36'
	C119	105.00'	78.74'	S 13°39'33" E	76.91'
	C120	210.00'	37.33'	S 40°14'04" E	37.28'
	C121	200.00'	49.36'	S 52°23'52" E	49.24'
WALK6	C122	84.85'	26.42'	S 79°40'51" E	26.31'
	C123	100.00'	22.82'	S 82°03'46" E	22.77'
	C124	413.47'	90.67'	S 81°48'22" E	90.49'
	C125	71.00'	46.77'	N 73°02'25" E	45.93'
	C126	475.00'	151.43'	N 45°02'19" E	150.79'
WALK7	C127	145.00'	71.36'	N 66°00'32" E	70.64'
	C128	50.00'	83.43'	S 52°05'25" E	74.08'
	C129	488.58'	62.04'	S 0°38'58" E	62.00'
	C130	20.00'	23.01'	S 35°56'46" W	21.76'
	C131	285.88'	94.61'	S 55°42'34" W	94.11'
WALK8	C132	105.88'	67.46'	N 68°00'27" E	66.34'
	C133	94.50'	115.74'	N 84°50'13" E	108.64'
	C134	248.70'	146.50'	S 43°12'03" E	144.39'
	C135	64.50'	90.82'	S 66°39'51" E	83.50'
WALK9	C136	287.50'	211.45'	N 38°04'20" W	206.72'
WALK10	C137	141.94'	50.09'	N 31°12'02" W	49.83'
	C138	371.75'	106.70'	N 12°52'07" W	106.33'
	C139	170.50'	129.67'	N 26°28'01" W	126.57'
	C140	82.67'	103.18'	N 12°33'03" W	96.65'
WALK11	C141	50.00'	63.04'	S 26°50'24" W	58.94'
	C142	60.00'	101.65'	S 39°15'30" W	89.92'
	C143	82.96'	56.59'	N 72°40'03" W	55.50'
WALK12	C144	160.00'	82.52'	S 85°56'48" E	81.60'
	C145	143.00'	79.74'	S 84°44'48" E	78.71'
	C146	112.68'	168.20'	S 26°00'34" E	153.01'
	C147	30.00'	44.78'	S 26°00'36" E	40.74'
	C148	66.60'	136.04'	S 10°41'16" E	113.06'
	C149	8.00'	14.27'	S 3°41'58" E	12.45'
	C150	70.94'	132.31'	N 71°46'12" E	113.95'
WALK13	C151	46.37'	64.45'	S 26°38'56" W	59.36'
	C152	72.00'	51.46'	S 7°18'24" W	50.37'
	C153	30.20'	69.20'	S 37°51'41" E	55.03'
	C154	121.22'	33.02'	N 68°41'23" E	32.92'
WALK14	C155	70.50'	102.72'	N 84°02'54" E	93.87'
	C156	115.08'	103.36'	S 28°28'52" E	99.92'
	C157	203.00'	204.24'	S 31°34'22" E	195.73'
	C158	279.18'	102.87'	S 70°57'06" E	102.29'
	C159	45.00'	71.11'	S 36°14'25" E	63.94'
	C160	60.99'	109.79'	S 42°32'30" E	95.56'
	C161	344.64'	113.29'	S 9°04'04" E	112.78'
	C162	378.00'	104.91'	S 8°04'02" W	104.57'
	C163	609.67'	101.08'	S 11°16'06" W	100.96'

LINE DATA TABLE

Baseline	Line Number	Bearing	Length
A	L1	N 30°09'37" E	368.77'
	L2	N 80°11'06" W	83.13'
	L3	N 54°05'56" W	72.07'
	L4	S 65°20'04" W	105.07'
B	L5	N 11°13'01" W	35.01'
	L6	N 63°34'26" W	66.72'
C	L7	N 24°39'56" W	337.00'
	L8	S 65°20'04" W	115.50'
	L9	N 65°20'04" E	115.50'
D	L10	N 12°53'31" E	39.25'
	L11	N 71°32'28" W	126.78'
	L12	N 6°18'08" W	376.57'
	L13	N 83°30'14" E	132.73'
	L14	S 6°16'14" E	123.70'
	L15	S 83°42'16" W	97.69'
E	L16	N 83°30'14" E	43.86'
	L17	S 6°29'46" E	108.47'
	L18	S 38°30'14" W	77.20'
F	L19	S 86°10'12" W	47.80'
	L20	N 52°52'01" W	43.94'
	L21	N 29°36'24" W	111.60'
	L22	S 60°23'36" W	338.96'
G	L23	S 60°23'36" W	18.96'
	L24	S 66°56'01" E	18.96'
H	L25	S 15°38'04" W	15.32'
	L26	S 80°11'06" E	83.13'
	L27	N 49°14'35" E	18.98'
J	L28	S 60°23'36" W	314.77'
	L29	S 29°36'24" W	138.00'
K	L30	S 60°23'36" W	326.77'
MAIN WALK1	L31	N 22°46'39" W	19.35'
	L32	N 43°27'58" W	22.46'
	L33	N 41°15'56" W	70.54'
	L34	N 47°22'57" W	43.86'
	L35	N 37°33'53" W	37.66'
	L36	N 12°53'41" W	20.41'
	L37	N 6°02'04" E	11.18'
	L38	N 86°26'26" E	41.55'
	L39	N 73°24'54" E	99.15'
	L40	S 83°54'53" E	53.39'
	L41	S 84°32'18" E	26.65'
	L42	N 52°00'01" E	14.34'
	L43	N 23°28'28" E	43.40'
	L44	N 35°32'17" E	23.23'
	L45	N 88°14'43" E	46.69'
	L46	N 75°19'15" E	13.42'
	L47	N 2°55'31" W	43.08'
	L48	N 14°23'01" W	5.16'
	L49	S 50°42'56" E	35.55'
	L50	S 44°45'24" E	58.50'
WALK3	L51	N 44°17'11" E	12.46'
	L52	N 50°19'06" E	32.21'
	L53	N 71°13'58" E	22.05'
	L54	N 52°05'32" E	37.54'
WALK4	L55	N 37°14'04" W	68.10'
	L56	S 80°16'03" E	49.34'
	L57	N 18°51'56" E	1.78'
	L58	N 31°26'20" E	59.80'
	L59	N 88°32'40" E	61.09'
WALK5	L60	N 1°59'25" E	4.82'
	L61	N 78°59'27" E	23.25'
	L62	S 85°24'42" E	12.75'
	L63	S 47°15'25" E	7.68'
	L64	S 12°47'25" E	8.79'
	L65	S 7°49'24" W	68.06'
	L66	S 48°19'37" E	9.14'
	L67	S 59°28'08" E	54.94'
WALK6	L68	S 70°45'36" E	17.70'
	L69	N 54°10'08" E	46.45'
	L70	N 35°54'10" E	24.70'
WALK7	L71	N 51°54'38" E	40.78'
	L72	N 80°06'25" E	12.81'
	L73	S 58°42'34" W	10.59'
WALK8	L74	N 86°15'55" E	8.88'
	L75	N 72°59'51" E	336.97'
WALK9	L76	N 59°08'32" W	152.03'
	L77	N 17°00'07" W	428.19'
WALK10	L78	N 41°18'37" W	9.76'
WALK11	L79	S 62°57'23" W	30.48'
WALK12	L80	N 18°20'10" E	26.73'
WALK13	L81	S 66°28'01" W	4.90'
	L82	N 60°53'07" E	8.88'
WALK14	L83	N 42°18'32" E	20.12'
	L84	N 85°53'23" E	153.18'
	L85	S 0°07'00" E	36.75'

PLAN OF AREA A NOT SHOWN.
NO BASELINE INFORMATION IN AREA A.

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

DIRECTOR — DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, HOWARD COUNTY HEALTH DEPARTMENT — DATE

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

NO. | REVISIONS DESCRIPTION | DATE

KCI FILE: M:\ 2000 \ 01000057.S \ UGEOMPL01.DGN

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WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

GEOMETRY PLAN
AREA A

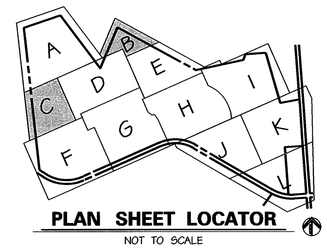
SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

G1

SHEET NO.: 114 OF 135

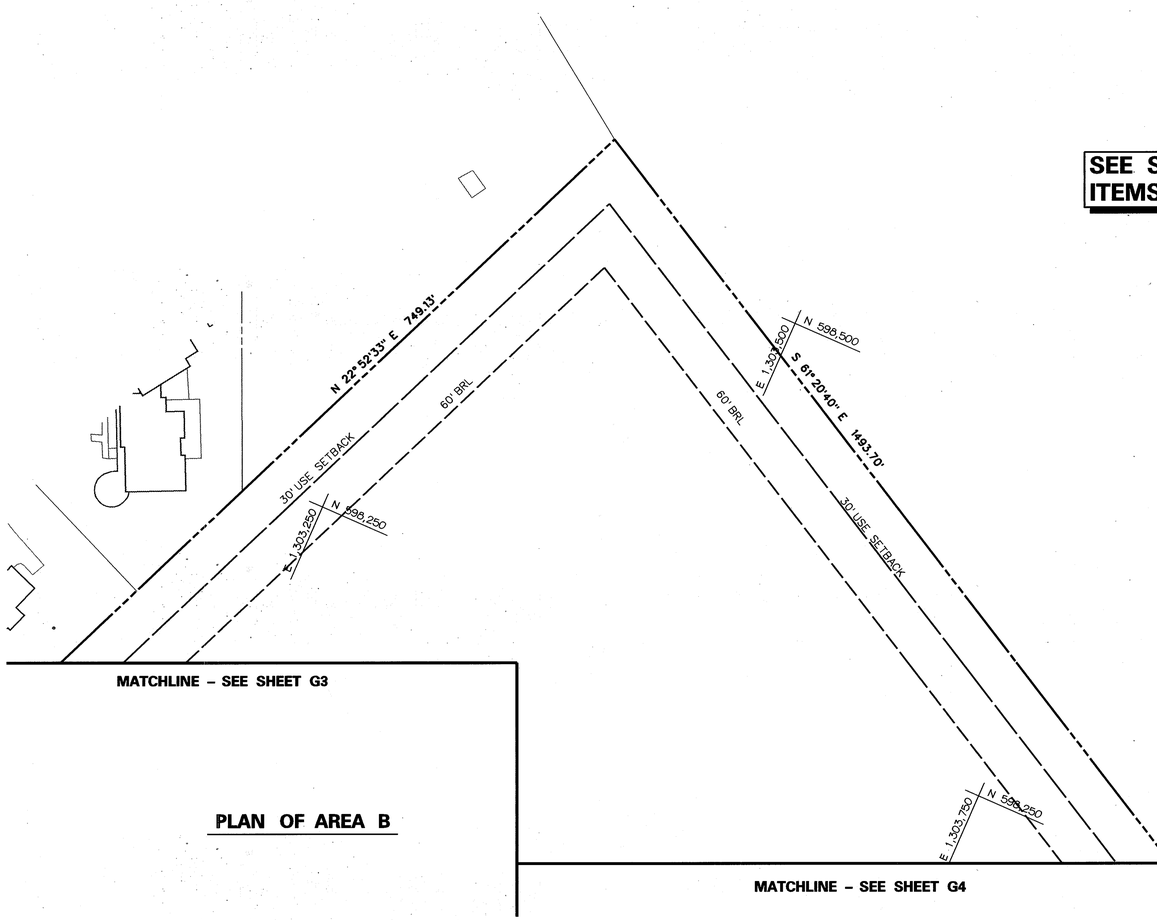
SDP-02-64

SEE SITE PLANS FOR ITEMS NOT IN CONTRACT.



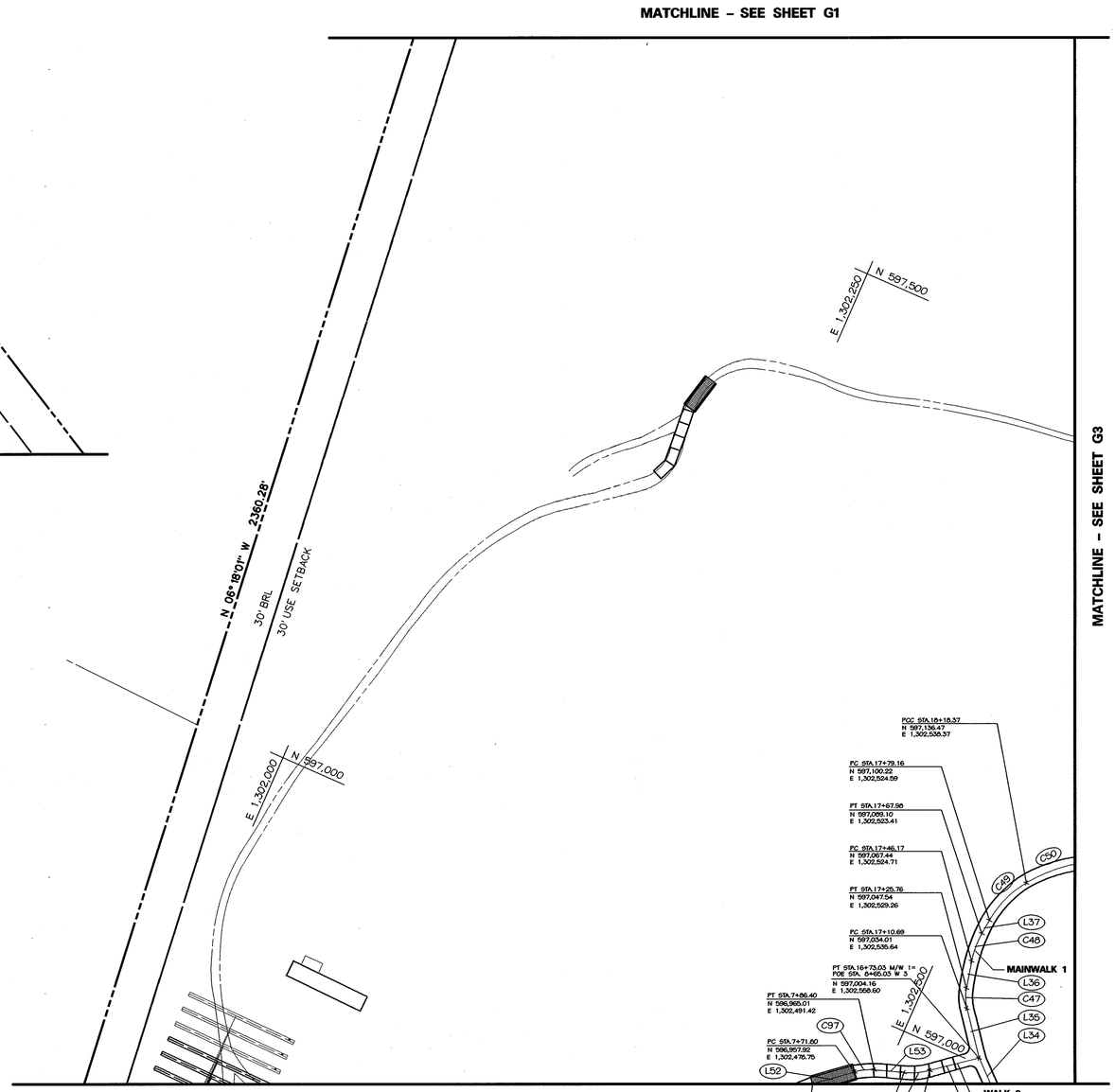
PLAN SHEET LOCATOR

NOT TO SCALE



PLAN OF AREA B

NO GEOMETRY INFORMATION THIS PLAN



PLAN OF AREA C

LEGEND

(C25) CURVE NUMBER

(L48) LINE NUMBER

NOTE: SEE LINE AND CURVE TABLES, ON SHEET G1 FOR GEOMETRY INFORMATION.

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

DIRECTOR — DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER HOWARD COUNTY HEALTH DEPARTMENT — DATE

NORTH

GRAPHIC SCALE

50 0 25 50 100

(IN FEET)

1 inch = 50ft.

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 01000057.5 \ UGEOMPLO2.DGN

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7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410) - 313-4640

GEOMETRY PLAN
AREAS B & C

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

G2

SHEET NO.:115 OF 135

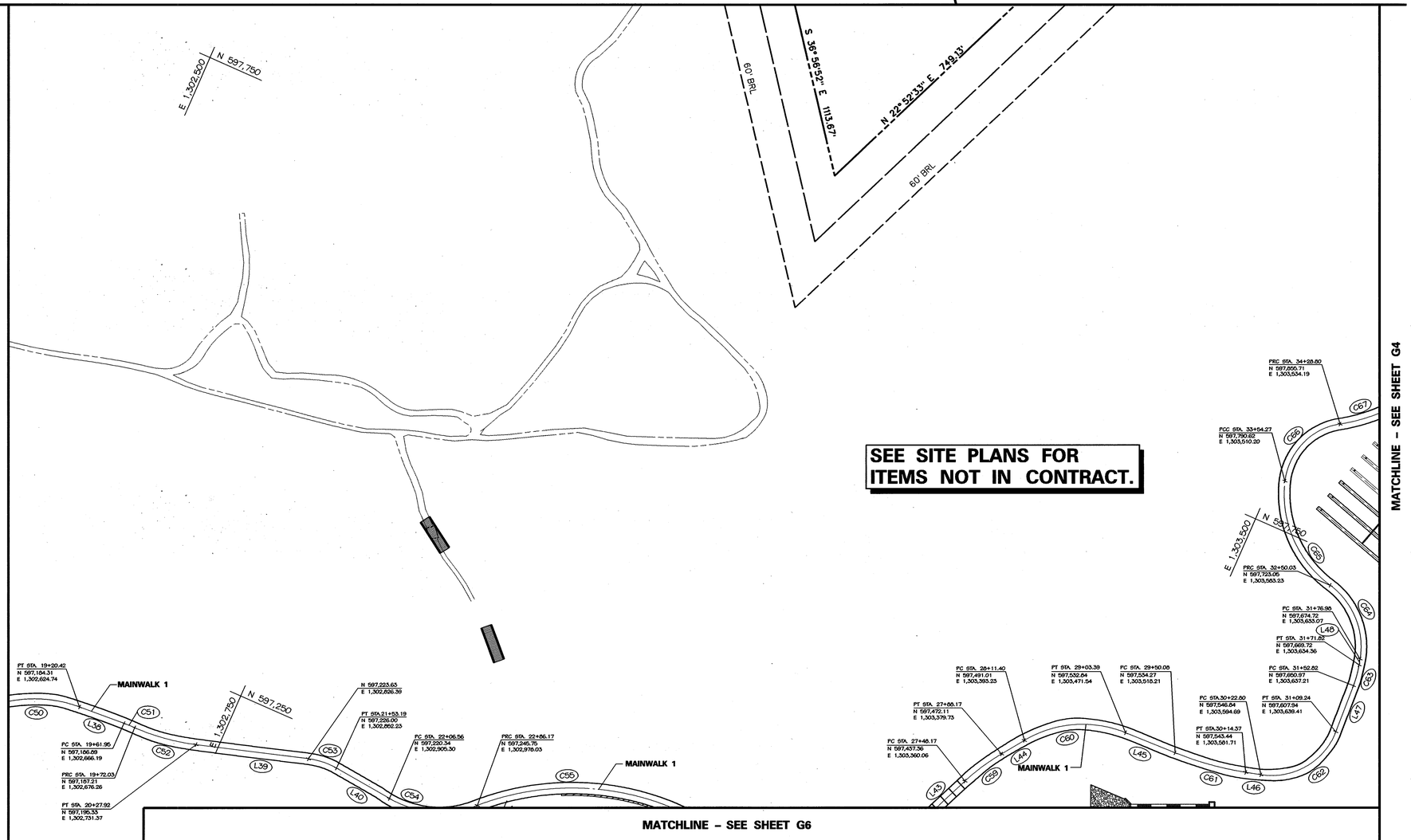
SDP-02-64

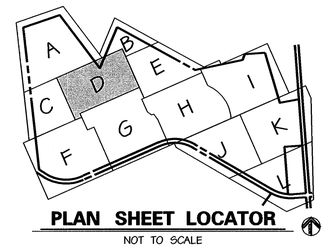
MATCHLINE – SEE SHEET G1

MATCHLINE – SEE SHEET G2, PLAN OF AREA B

MATCHLINE – SEE SHEET G2, PLAN OF AREA C

MATCHLINE – SEE SHEET G4





PLAN SHEET LOCATOR

NOT TO SCALE

LEGEND

(C25) CURVE NUMBER

(L48) LINE NUMBER

NOTE: SEE LINE AND CURVE TABLES, ON SHEET G1 FOR GEOMETRY INFORMATION.

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

DIRECTOR — DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, HOWARD COUNTY HEALTH DEPARTMENT — DATE

NORTH

GRAPHIC SCALE

50 0 25 50 100

(IN FEET)

1 inch = 50ft.

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

NO.	REVISIONS	DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 0100057.5 \ UGEOMPL03.DGN

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TECHNOLOGIES WWW.KCI.COM

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410) - 313-4640

GEOMETRY PLAN
AREA D

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

G3

SHEET NO.: 116 OF 135

SDP-02-64

MATCHLINE – SEE SHEET G2, PLAN OF AREA B

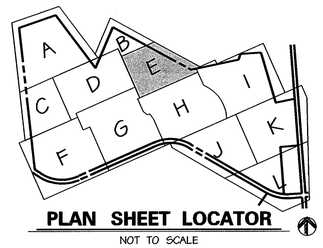
MATCHLINE – SEE SHEET G3

MATCHLINE – SEE SHEET C6

MATCHLINE – SEE SHEET G7

MATCHLINE – SEE SHEET G8

SEE SITE PLANS FOR ITEMS NOT IN CONTRACT.



PLAN SHEET LOCATOR

NOT TO SCALE

MAINWALK 1

WALK 5

WALK 6

BASELINE A

60' BRL

30' USE SETBACK

S 61°20'40" E 1493.70'

N 598,250

E 1,304,000

N 598,000

E 1,304,500

E 1,303,750

N 597,500

LEGEND

(C25) CURVE NUMBER

(L48) LINE NUMBER

NOTE: SEE LINE AND CURVE TABLES, ON SHEET G1 FOR GEOMETRY INFORMATION.

GRAPHIC SCALE

50 0 25 50 100

(IN FEET)

1 inch = 50ft.

NORTH

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

DIRECTOR — DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, HOWARD COUNTY HEALTH DEPARTMENT — DATE

NO.	REVISIONS	DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 01000057.5 \ UGEOMPLOA.DGN

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HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410) - 313-4640

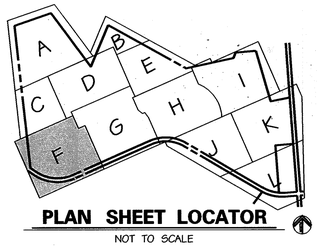
GEOMETRY PLAN
AREA E

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

G4

SHEET NO.: 117 OF 135

SDP-02-64



PLAN SHEET LOCATOR

NOT TO SCALE

MATCHLINE – SEE SHEET G2, PLAN OF AREA C

MATCHLINE – SEE SHEET G3

MATCHLINE – SEE SHEET G6

MATCHLINE – SEE SHEET G6

SEE SITE PLANS FOR ITEMS NOT IN CONTRACT.

LEGEND

(C25) CURVE NUMBER

(L48) LINE NUMBER

NOTE: SEE LINE AND CURVE TABLES, ON SHEET G1 FOR GEOMETRY INFORMATION.

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

DIRECTOR — DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER, HOWARD COUNTY HEALTH DEPARTMENT — DATE

NORTH

GRAPHIC SCALE

50 0 25 50 100

(IN FEET)

1 inch = 50ft.

COUNTY OWNED PUBLIC ROAD
60' W. R.O.W.
DESIGNATED SCENIC ROAD
COLLECTOR ROAD

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

NO.	REVISIONS DESCRIPTION	DATE

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WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
6751 COLUMBIA GATEWAY DRIVE
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

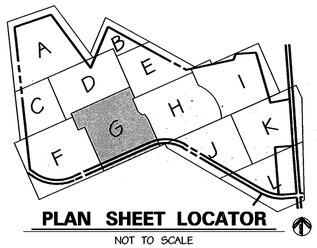
GEOMETRY PLAN
AREA F

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

G5

SHEET NO.: 118 OF 135

5DP-02-64



PLAN SHEET LOCATOR

NOT TO SCALE

MATCHLINE – SEE SHEET G3

MATCHLINE – SEE SHEET G4

MATCHLINE – SEE SHEET G5

MATCHLINE – SEE SHEET G7

MATCHLINE – SEE SHEET C7

SEE SITE PLANS FOR ITEMS NOT IN CONTRACT.

MAINWALK 1

WALK 10

WALK 11

BASELINE A

BASELINE C

N 597,186.82
E 1,303,246.01

N 597,038.91
E 1,303,379.51

N 597,013.99
E 1,303,324.93

N 597,002.51
E 1,303,365.93

N 596,959.41
E 1,303,349.85

N 596,984.33
E 1,303,404.43

N 597,063.25
E 1,303,577.26

N 597,068.09
E 1,303,942.60

N 596,807.43
E 1,303,372.85

N 596,920.11
E 1,303,618.21

N 596,956.07
E 1,303,696.94

N 596,604.92
E 1,303,101.73

N 596,546.85
E 1,303,116.04

N 596,500
E 1,303,250

N 596,480.28
E 1,303,523.08

N 596,592.96
E 1,303,768.45

N 596,628.52
E 1,303,846.31

N 596,750
E 1,304,000

N 596,740.55
E 1,304,091.97

75' BRL

50' USE SETBACK FROM ROW

S 66° 13' 59" W 1409.51'

R=668.34' L=629.05'

CARRS MILL ROAD
COUNTY OWNED PUBLIC ROAD
60' W. R.O.W.
DESIGNATED SCENIC ROAD
COLLECTOR ROAD

LEGEND

(C25) CURVE NUMBER

(L46) LINE NUMBER

NOTE: SEE LINE AND CURVE TABLES, ON SHEET G1 FOR GEOMETRY INFORMATION.

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50ft.

NORTH

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING	
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
DIRECTOR	DATE
APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS	
COUNTY HEALTH OFFICER HOWARD COUNTY HEALTH DEPARTMENT	DATE

NO.	REVISIONS DESCRIPTION	DATE

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HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

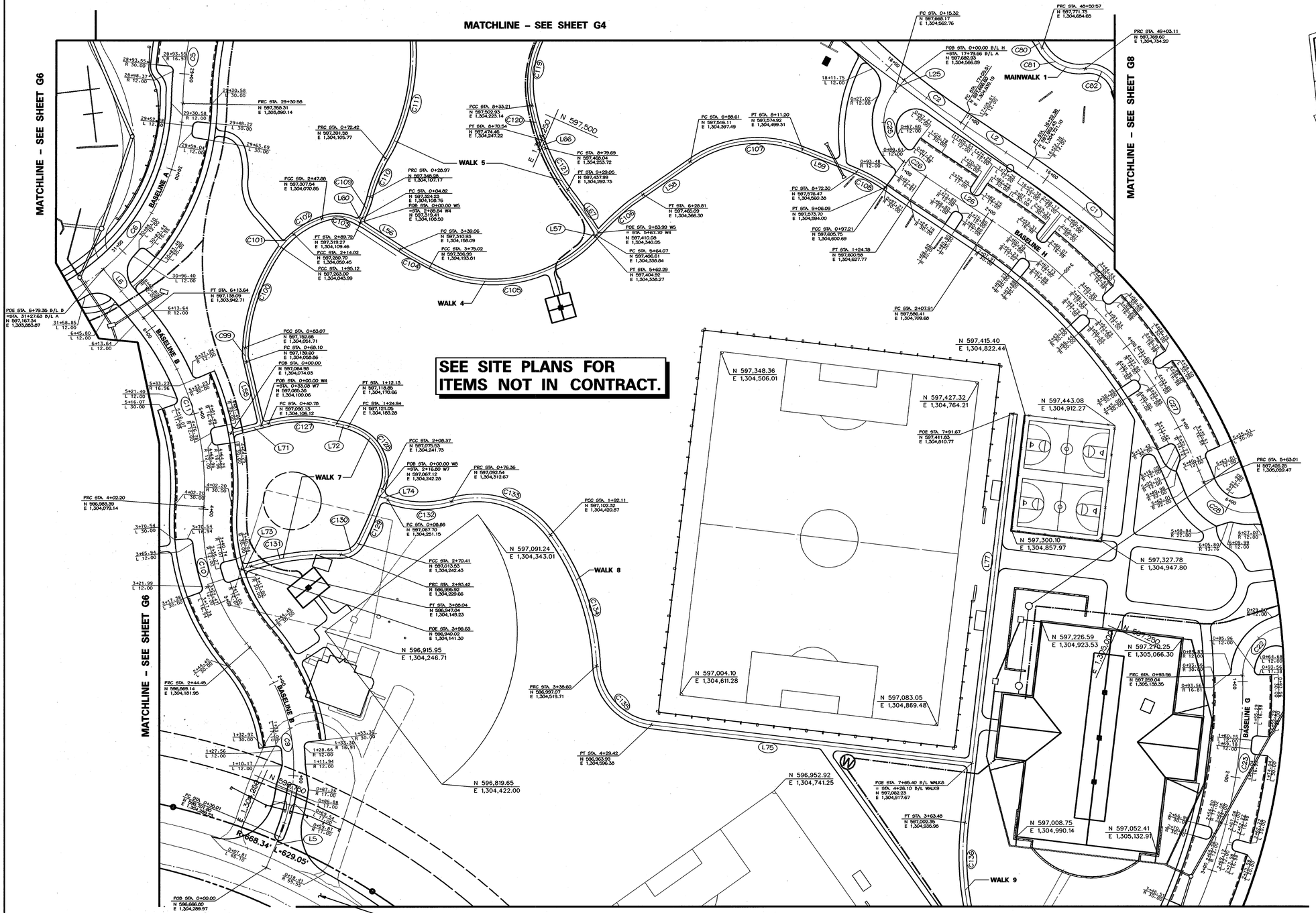
GEOMETRY PLAN
AREA G

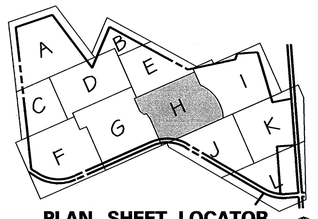
SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

G6

SHEET NO.: 119 OF 135

SDP-02-64





PLAN SHEET LOCATOR

NOT TO SCALE

LEGEND

C25 CURVE NUMBER

L48 LINE NUMBER

NOTE: SEE LINE AND CURVE TABLES, ON SHEET G1 FOR GEOMETRY INFORMATION.

CARRS MILL ROAD

COUNTY OWNED PUBLIC ROAD
60' W. R.O.W.
DESIGNATED SCENIC ROAD
COLLECTOR ROAD

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

DIRECTOR — DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT — DATE

NOTE

The proposed tree line corresponds to the Limit of Disturbance line. In areas of treeline disturbance the new tree line limit is shown behind the Limit of Disturbance for graphic clarity.

NOTE

The Project Manager from the Department of Recreation and Parks will stake the placement of the pathway to avoid the removal of any trees. The pathway placement will have minimal clearing and minimal impact to the trees.

NORTH

GRAPHIC SCALE

50 0 25 50 100

(IN FEET)
1 inch = 50ft.

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 0100057.S \ UGEOMPL07.DGN

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WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

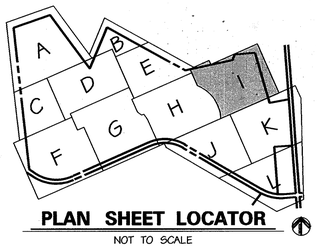
GEOMETRY PLAN
AREA H

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

G7

SHEET NO.: 120 OF 135

SDP-02-64



PLAN SHEET LOCATOR

NOT TO SCALE

MATCHLINE – SEE SHEET G4

MATCHLINE – SEE SHEET G7

MAINWALK 1

BASELINE A

BASELINE H

BASELINE F

BASELINE K

BASELINE J

BASELINE I

N 77° 59'29" E 809.07'

30' USE SETBACK

60' BRL

N 20° 09'03" E 99.88'

N 85° 33'20" E 158.35'

N 85° 33'20" E 179.84'

N 87° 31'03" W 185.94'

50' USE SETBACK

75' BRL

50' R/W

30' RIGHT OF WAY

S 16° 23'30" E 22.92'

S 16° 23'30" E 851.58'

30' USE SETBACK

30' BRL

PILE

SEE SITE PLANS FOR ITEMS NOT IN CONTRACT.

PT STA. 45+43.07
N 597,765.03
E 1,304,770.99

PC STA. 50.01.57
N 597,723.45
E 1,304,612.16

PCC STA. 51+47.96
N 597,651.72
E 1,304,357.75

PRC STA. 51+66.06
N 597,649.76
E 1,304,957.66

PCC STA. 52+43.26
N 597,623.31
E 1,305,025.66

PRC STA. 53+04.97
N 597,572.06
E 1,305,059.56

PCC STA. 54+25.01
N 597,466.39
E 1,305,119.10

PRC STA. 54+39.19
N 597,457.39
E 1,305,128.05

PT STA. 55+09.36
N 597,401.33
E 1,305,171.02

N 597,484.16
E 1,305,171.56

PT STA.11+75.06 B/L A
= POE STA. 6+56.57 B/L H
N 597,436.30
E 1,305,102.67

PT STA. 6+37.60
N 597,423.91
E 1,305,088.29

POE STA.11+54.17 B/L F
= POB STA. 0+00 B/L G
= STA. 10+46.59 B/L A
N 597,333.07
E 1,305,175.44

PC STA. 0+18.96
N 597,303.30
E 1,305,150.94

PT STA. 3+96.62 B/L J
= 3+26.77 B/L K
N 597,299.59
E 1,305,356.56

PT STA.10+91.96 B/L F
= POE STA. 4+71.62 B/L J
N 597,363.00
E 1,305,229.50

PT STA. 8+15.21
N 597,500.53
E 1,305,470.14

PT STA. 3+33.62
N 597,245.81
E 1,305,297.65

PC STA. 3+14.77
N 597,239.31
E 1,305,314.04

N 597,155.41
E 1,305,486.06

N 597,117.10
E 1,305,388.48

N 597,219.00
E 1,305,511.68

N 597,183.86
E 1,305,471.05

N 597,242.22
E 1,305,600.34

N 597,239.22
E 1,305,620.84

N 597,894.41
E 1,305,279.68

N 597,951.55
E 1,305,375.63

N 597,744.20
E 1,305,496.48

N 597,736.84
E 1,305,538.41

N 597,774.41
E 1,305,548.31

N 597,692.36
E 1,305,526.69

N 597,722.57
E 1,305,578.53

N 597,687.06
E 1,305,400.53

N 597,646.94
E 1,305,386.27

N 597,656.84
E 1,305,348.70

N 597,635.22
E 1,305,430.75

N 597,605.01
E 1,305,378.91

N 597,843.42
E 1,305,785.88

N 597,579.38
E 1,305,597.45

N 597,613.76
E 1,305,646.62

PC STA. 7+36.67
N 597,481.77
E 1,305,566.51

N 597,571.36
E 1,305,642.75

N 597,564.59
E 1,305,681.01

N 597,530.21
E 1,305,631.84

POB STA. 0+00 B/L K
= PT STA. 7+11.67 B/L F
N 597,460.05
E 1,305,500.66

N 597,751.29
E 1,305,843.30

POB STA. 0+00 B/L J
= PT STA.36+82.87 B/L F
N 597,394.62
E 1,305,567.72

PT STA. 6+25.07
N 597,354.74
E 1,305,563.45

PT STA. 5+52.75
N 597,333.06
E 1,305,643.40

PT STA. 5+08.81
N 597,306.33
E 1,305,678.27

N 597,333.52
E 1,305,769.37

N 597,250

E 1,305,250

N 597,750

E 1,305,000

N 598,000

E 1,305,750

LEGEND

(C25) CURVE NUMBER

(L46) LINE NUMBER

NOTE: SEE LINE AND CURVE TABLES, ON SHEET G1 FOR GEOMETRY INFORMATION.

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50ft.

NORTH

MATCHLINE – SEE SHEET G9

MATCHLINE – SEE SHEET C10

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

DIRECTOR — DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT — DATE

NO.	REVISIONS DESCRIPTION	DATE

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WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
3430 COURTHOUSE DRIVE
COLUMBIA, MARYLAND 21046-1677
(410) - 313-4640

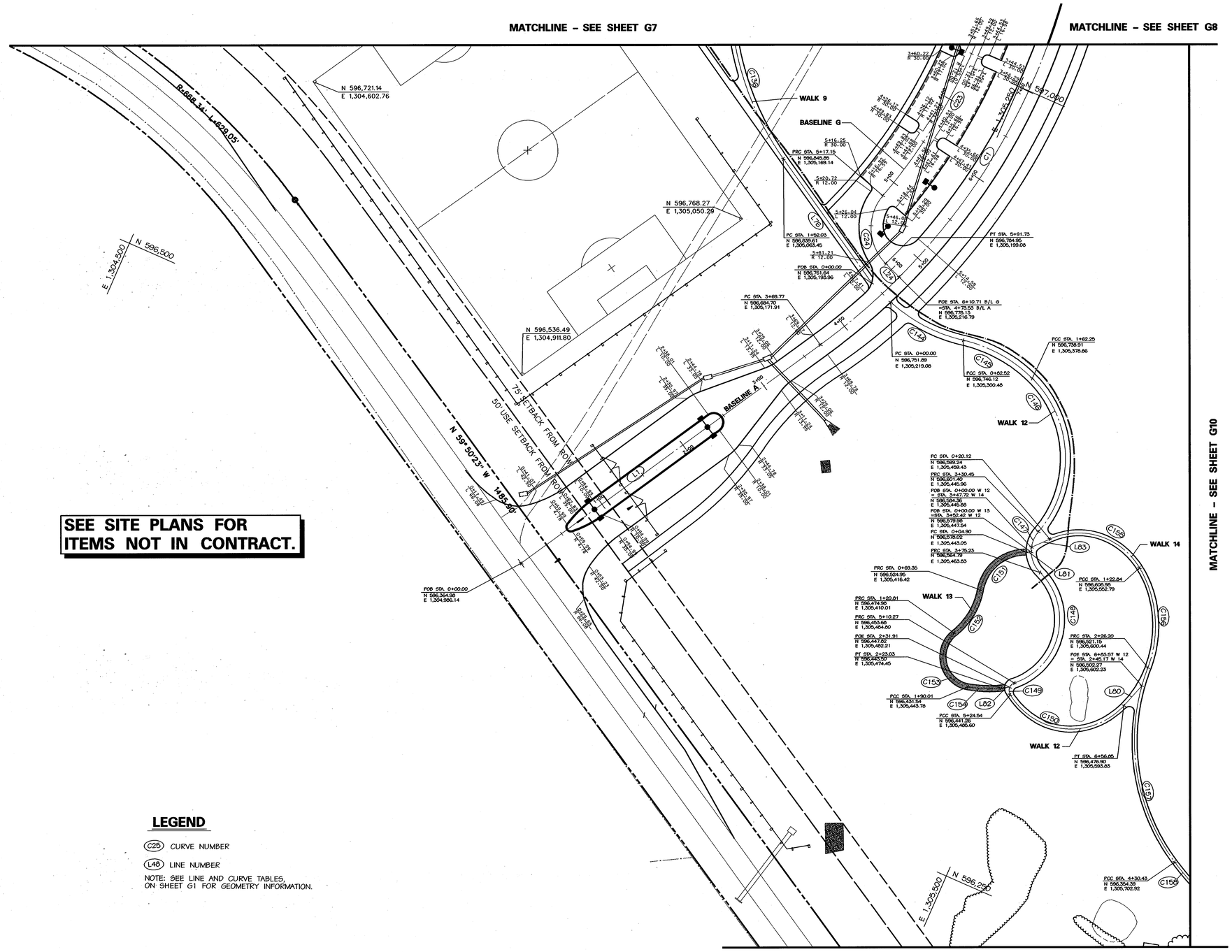
GEOMETRY PLAN
AREA 1

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

G8

SHEET NO.: 121 OF 135

5DP-02-64



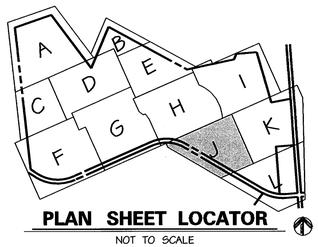
LEGEND

(C25) CURVE NUMBER

(L48) LINE NUMBER

NOTE: SEE LINE AND CURVE TABLES, ON SHEET G1 FOR GEOMETRY INFORMATION.

SEE SITE PLANS FOR ITEMS NOT IN CONTRACT.



PLAN SHEET LOCATOR

NOT TO SCALE

NO.	REVISIONS	DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 01000057.5 \ UGEOMPL09.DGN

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WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

GEOMETRY PLAN
AREA J

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

G9

SHEET NO.: 122 OF 135

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

DIRECTOR — DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT — DATE

NORTH

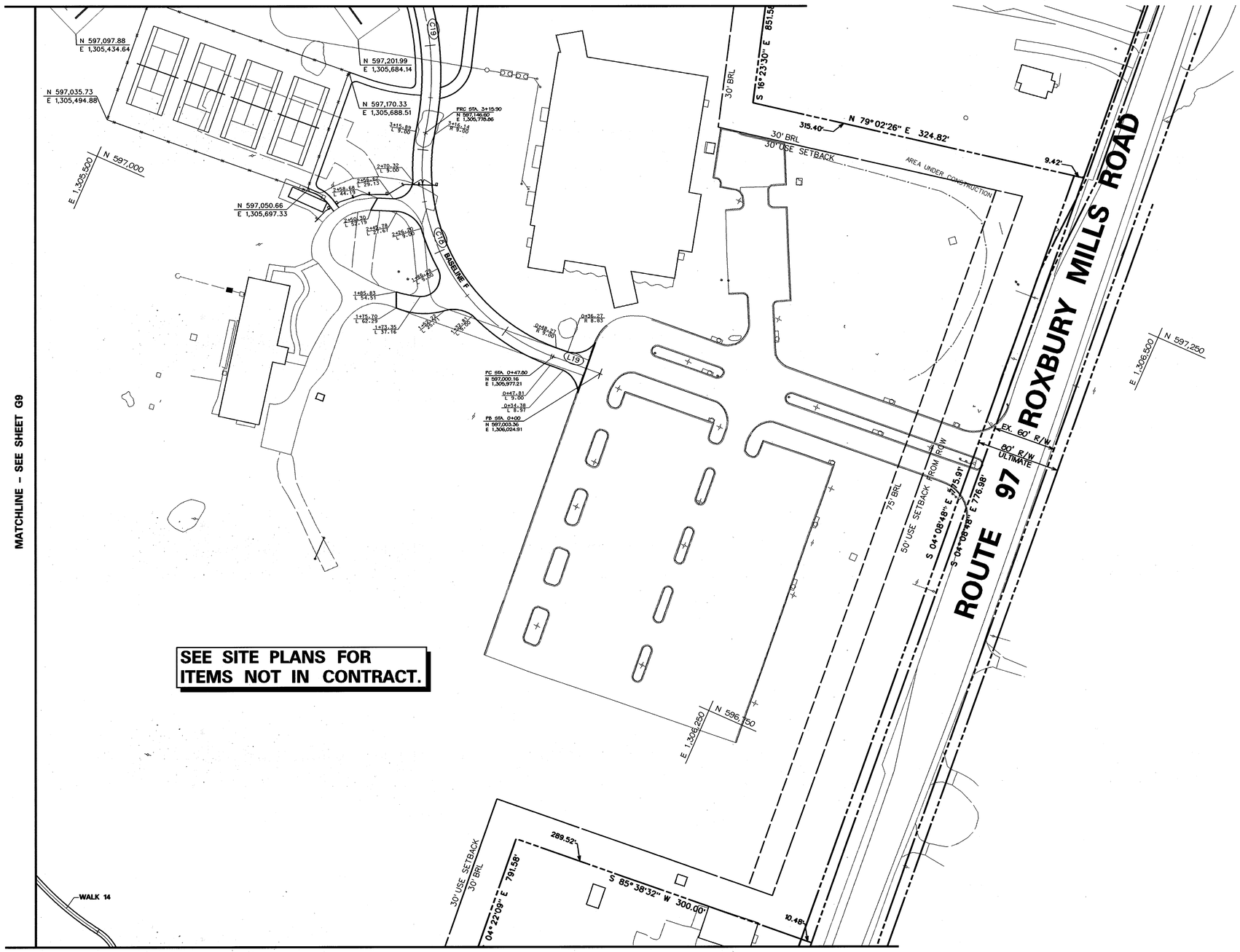
GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50ft.

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

SDP-02-64

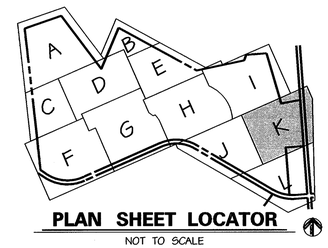
MATCHLINE – SEE SHEET C8

MATCHLINE – SEE SHEET G9



SEE SITE PLANS FOR ITEMS NOT IN CONTRACT.

MATCHLINE – SEE SHEET G11



PLAN SHEET LOCATOR
NOT TO SCALE

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50ft.

LEGEND

(C25) CURVE NUMBER

(L48) LINE NUMBER

NOTE: SEE LINE AND CURVE TABLES, ON SHEET G1 FOR GEOMETRY INFORMATION.

NORTH

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

DIRECTOR — DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT — DATE

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 01000575 \ UGEOMPL10.DGN

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WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

GEOMETRY PLAN
AREA K

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

G10

SHEET NO.: 123 OF 135

SDP-02-64

SEE SITE PLANS FOR ITEMS NOT IN CONTRACT.

PLAN SHEET LOCATOR
NOT TO SCALE

LEGEND

(C25) CURVE NUMBER

(L48) LINE NUMBER

NOTE: SEE LINE AND CURVE TABLES, ON SHEET G1 FOR GEOMETRY INFORMATION.

NORTH

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50ft.

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

DIRECTOR — DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT — DATE

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 0100057.6 \ UUGEOMPL11.DGN

KCI TECHNOLOGIES INC.
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WESTERN REGIONAL PARK

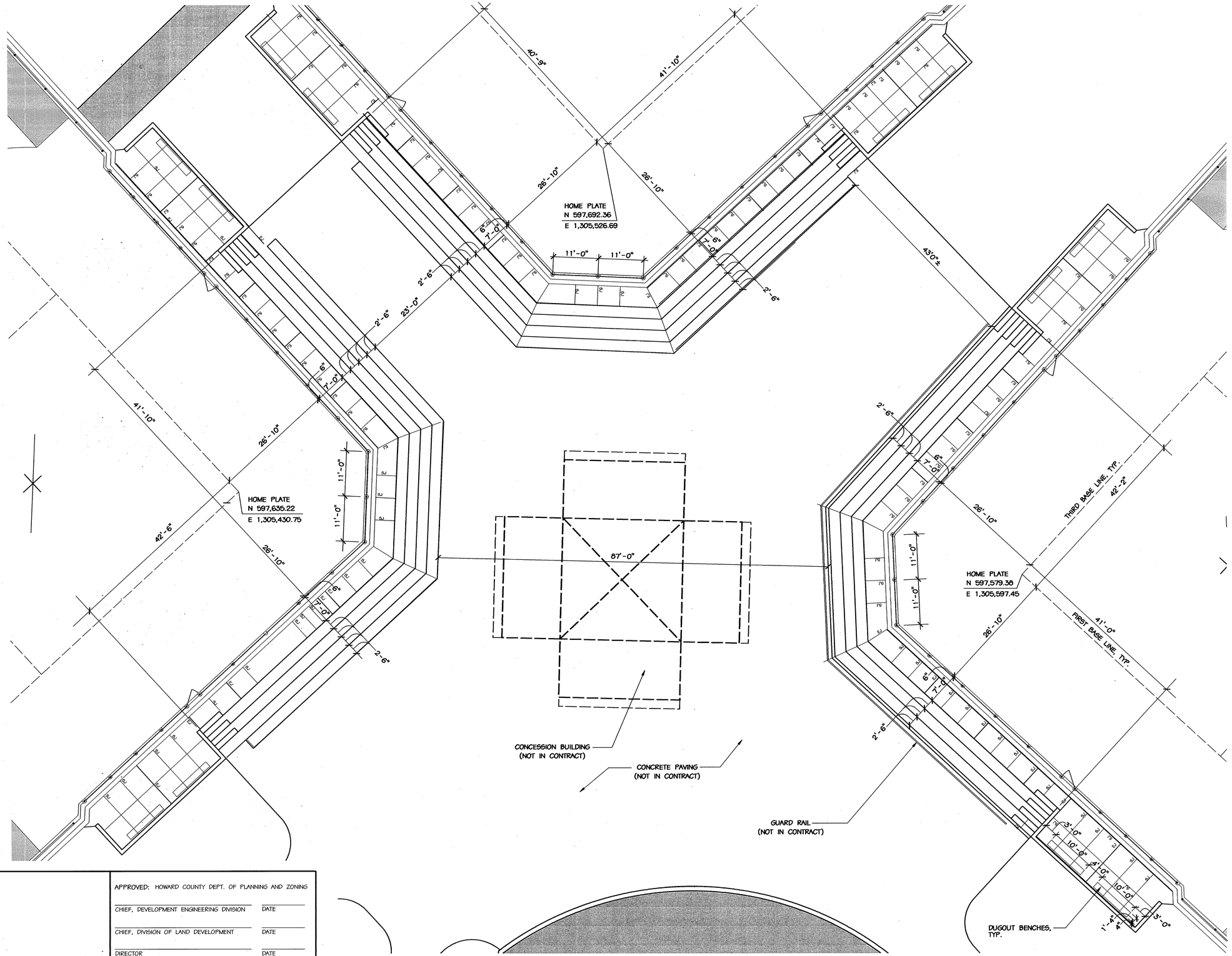
HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

GEOMETRY PLAN
AREA L

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

G11

SDP-02-64



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

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
DIRECTOR	DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER HOWARD COUNTY HEALTH DEPARTMENT	DATE

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 0100057.5 \ ULODETPL02.DGN

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7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

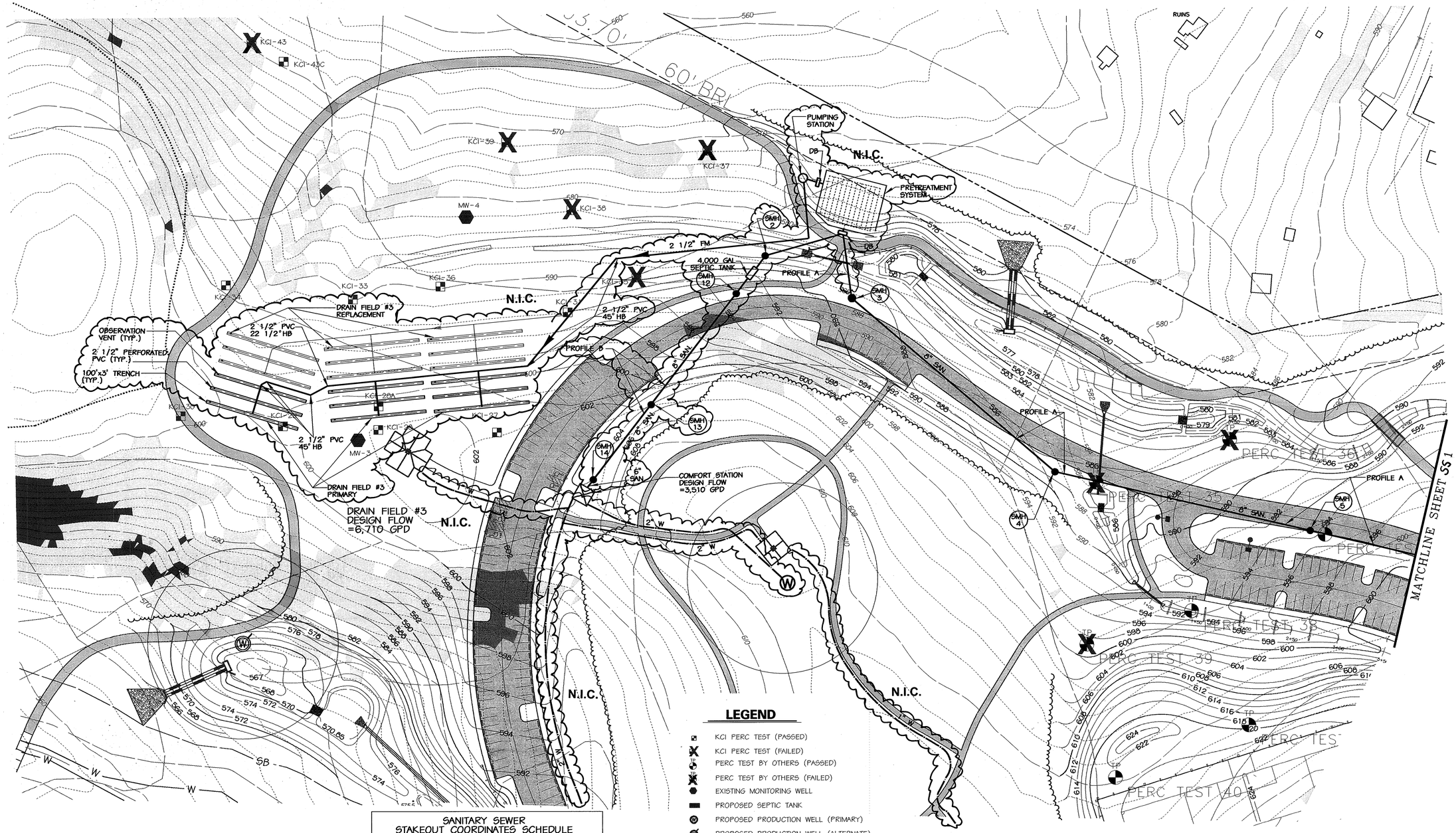
LAYOUT PLAN OF SOFTBALL COMPLEX AREA

SCALE:	1" = 10'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

G12

SHEET NO.: 125 OF 135

SDP-02-64



LEGEND

- KCI PERC TEST (PASSED)
- KCI PERC TEST (FAILED)
- PERC TEST BY OTHERS (PASSED)
- PERC TEST BY OTHERS (FAILED)
- EXISTING MONITORING WELL
- PROPOSED SEPTIC TANK
- PROPOSED PRODUCTION WELL (PRIMARY)
- PROPOSED PRODUCTION WELL (ALTERNATE)
- EXISTING BUILDING
- PROPOSED BUILDING
- GIC2 SOIL LINE
- PAVILION
- RESTROOM FACILITY
- 15-24.9% SLOPES
- 25%+ SLOPES
- PROPERTY BOUNDARY
- SEPTIC TANK
- SSMH
- PROPOSED SANITARY LINE
- PROPOSED WATER LINE
- DB DISTRIBUTION BOX

NOTE

FOR PROFILE AND DETAILS SEE DWG. NOS. C-4, C-5 AND C-6

NORTH

GRAPHIC SCALE

50 0 25 50 100

(IN FEET)
1 inch = 50ft.

SANITARY SEWER STAKEOUT COORDINATES SCHEDULE

ITEM	EASTING	NORTHING
SMH 1	1304083.43	597947.72
SMH 2	1304132.61	597933.05
SMH 3	1304223.73	597888.37
SMH 4	1304436.77	597706.02
SMH 5	1304704.51	597644.11
SMH 12	1304102.23	597893.41
SMH 13	1304012.75	597776.89
SMH 14	1303951.86	597698.12

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

DIRECTOR — DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT — DATE

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 0100057.S \ BORDER.DGN

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HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

ON - SITE SEPTIC SYSTEM PLAN

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

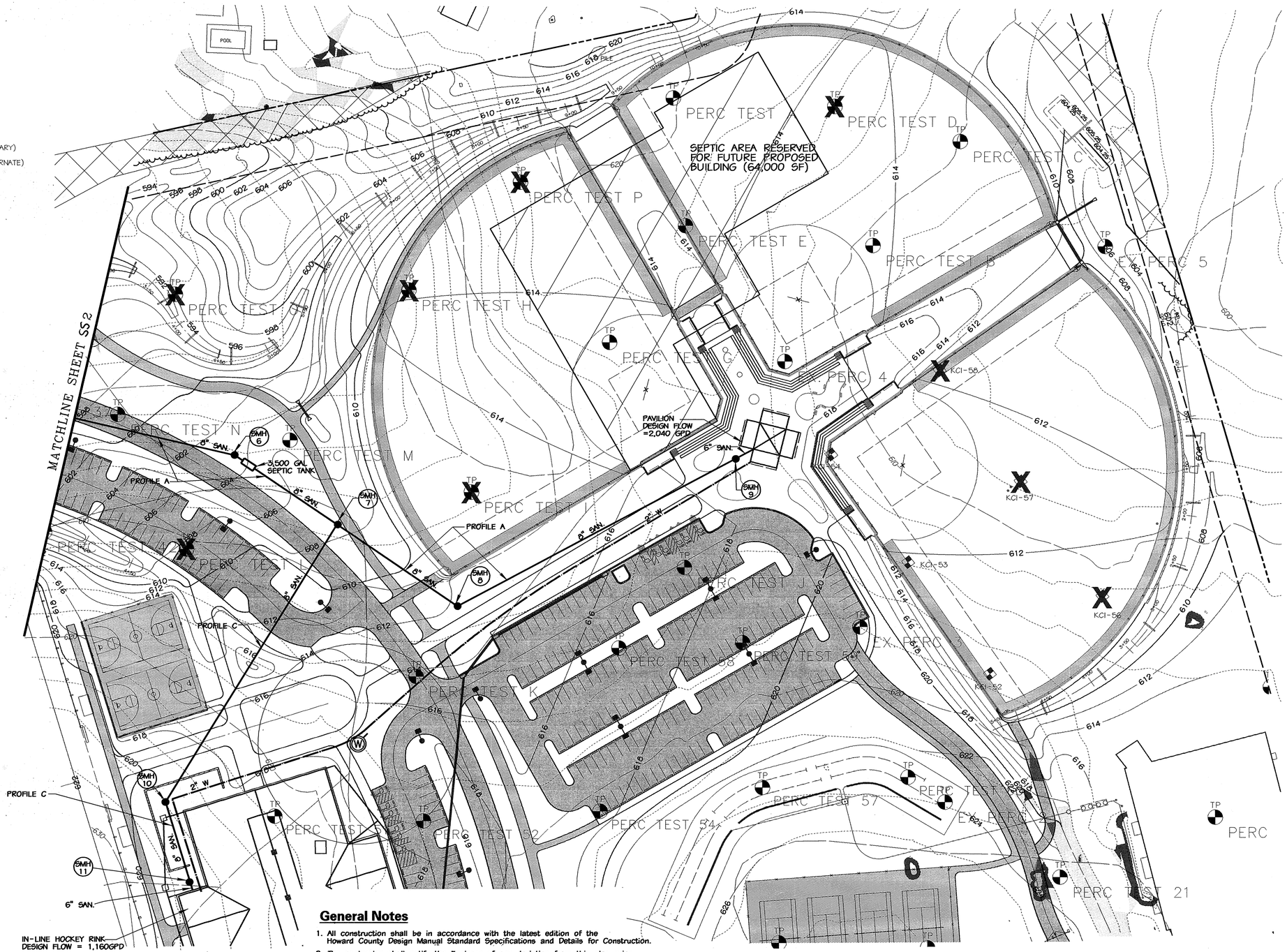
SS2

SHEET NO.: 127 OF 135

M:/2000/0100057/WS02.DGN SDP-02-64

LEGEND

- KCI PERC TEST (PASSED)
- KCI PERC TEST (FAILED)
- PERC TEST BY OTHERS (PASSED)
- PERC TEST BY OTHERS (FAILED)
- EXISTING MONITORING WELL
- PROPOSED SEPTIC TANK
- PROPOSED PRODUCTION WELL (PRIMARY)
- PROPOSED PRODUCTION WELL (ALTERNATE)
- EXISTING BUILDING
- PROPOSED BUILDING
- GIC2 — SOIL LINE
- PAVILION
- RESTROOM FACILITY
- 15-24.9% SLOPES
- 25%+ SLOPES
- PROPERTY BOUNDARY
- SEPTIC TANK
- SGMH
- PROPOSED SANITARY LINE
- PROPOSED WATER LINE
- DB — DISTRIBUTION BOX



General Notes

1. All construction shall be in accordance with the latest edition of the Howard County Design Manual Standard Specifications and Details for Construction.
2. The contractor shall notify the Engineer of any deviation from this plan prior to any change being made.
3. Unless otherwise noted, Sewer Elevations refer to Invert Elevation.
4. The contractor shall notify the Howard County Health Department, Bureau of Environmental Health (410) 313-2640 and Maryland Department of the Environment (410) 631-3780 at least five (5) working days prior to starting any work.
5. The Howard County Health Department must approve precast structure shop drawings. The contractor must allow a minimum of 10 working days for shop drawing review.
6. The following Milestones of Construction must be approved by the Howard County Health Department:
   a. Initial System Stakeout by registered surveyor
   b. Open Trench Inspection
   c. Pretreatment system installation
   d. Pumping Station Installation
7. Location of wells or septic systems within 100' of the property lines of this site are shown on the Boundary plan Drawing No. B-1.
8. For Continuation of Water Lines see Drawing Nos. C-1 through C-11

SANITARY SEWER STAKEOUT COORDINATES SCHEDULE		
ITEM	EASTING	NORTHING
SMH 6	1304975.00	597581.77
SMH 7	1305078.18	597512.18
SMH 8	1305198.00	597431.00
SMH 9	1305476.03	597578.00
SMH 10	1304906.05	597235.23
SMH 11	1304930.03	597155.10

NOTE
FOR PROFILE AND DETAILS SEE DWG. NOS. C-4, C-5 AND C-6

NORTH

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50ft.

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

DIRECTOR — DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER HOWARD COUNTY HEALTH DEPARTMENT — DATE

NO.	REVISIONS DESCRIPTION	DATE

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COLUMBIA, MARYLAND 21046-1677
(410) 313-4640

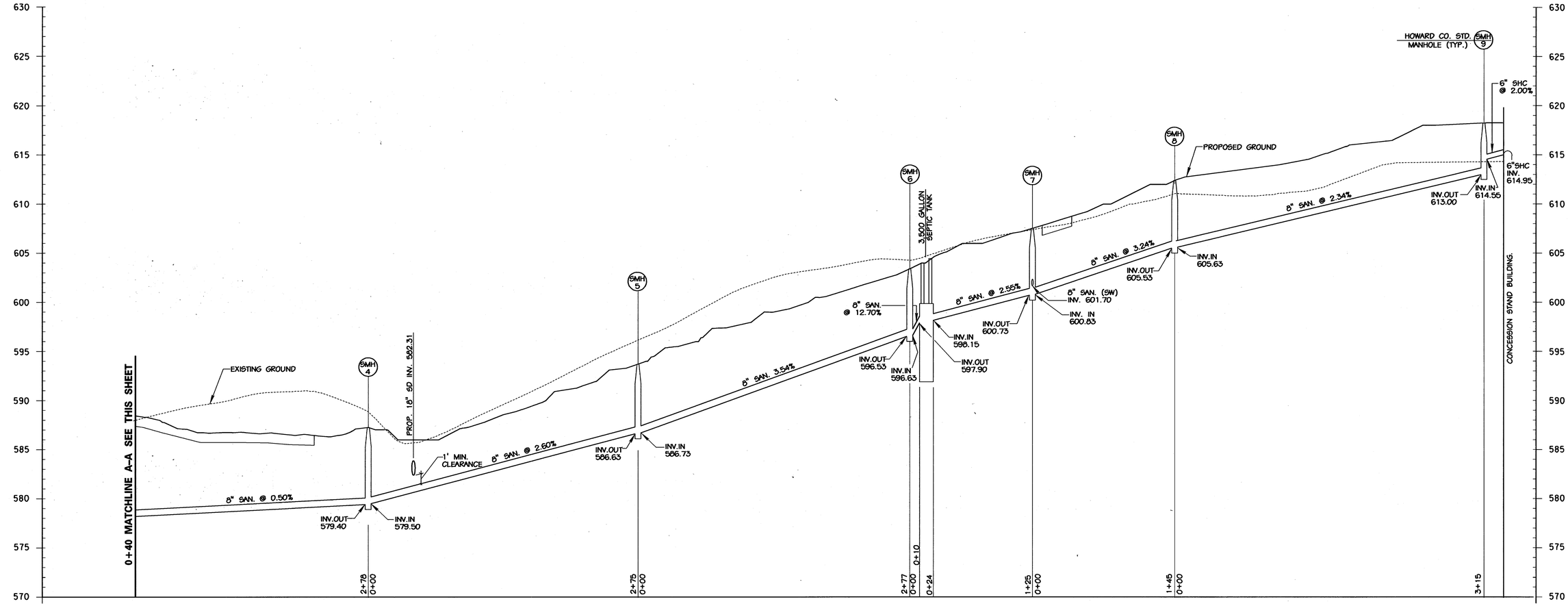
ON - SITE SEPTIC SYSTEM PLAN

SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SS1

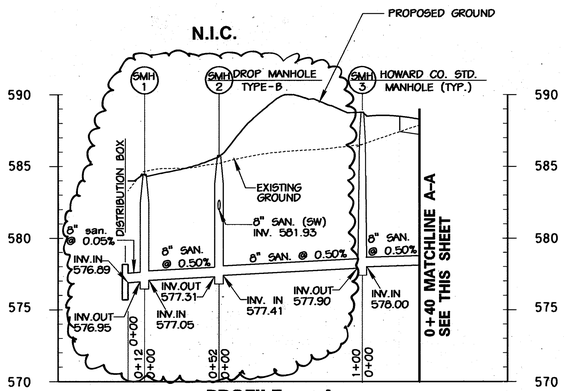
SHEET NO.: 126 OF 135

M:/2000/0100057/WS03.DGN SDP-02-64



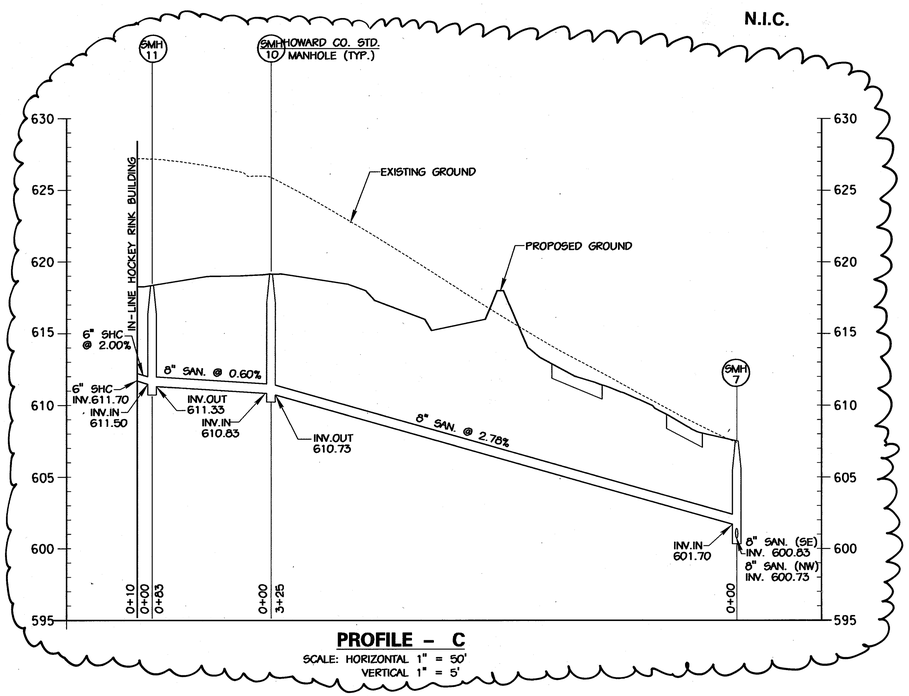
PROFILE – A
SCALE: HORIZONTAL 1" = 50'
VERTICAL 1" = 5'

N.I.C.



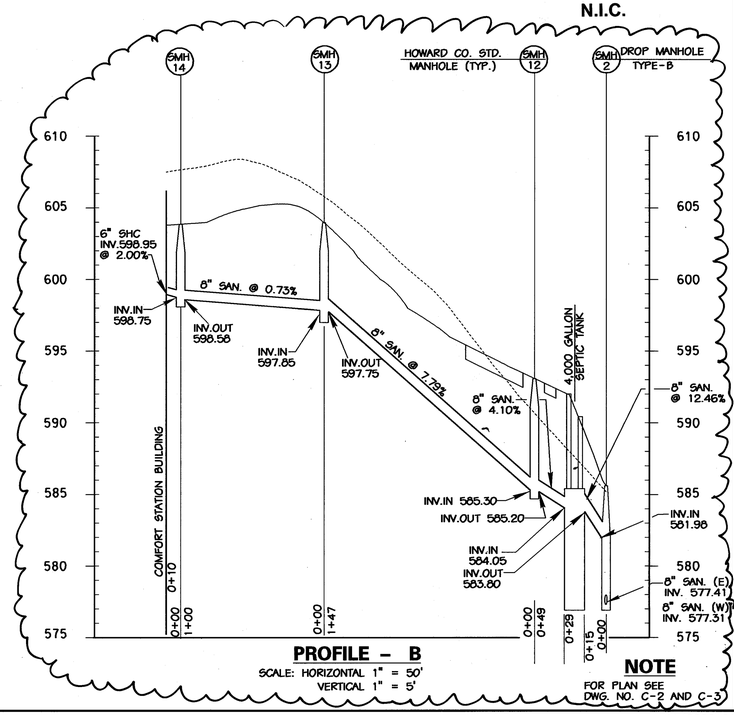
PROFILE – A
SCALE: HORIZONTAL 1" = 50'
VERTICAL 1" = 5'

N.I.C.



PROFILE – C
SCALE: HORIZONTAL 1" = 50'
VERTICAL 1" = 5'

N.I.C.



PROFILE – B
SCALE: HORIZONTAL 1" = 50'
VERTICAL 1" = 5'

NOTE
FOR PLAN SEE DWG. NO. C-2 AND C-3

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING	
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
DIRECTOR	DATE
APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS	
COUNTY HEALTH OFFICER HOWARD COUNTY HEALTH DEPARTMENT	DATE

NO.	REVISIONS	DESCRIPTION	DATE

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COLUMBIA, MARYLAND 21046-1677
(410) 313-4640

ON – SITE SEPTIC SYSTEM PROFILES

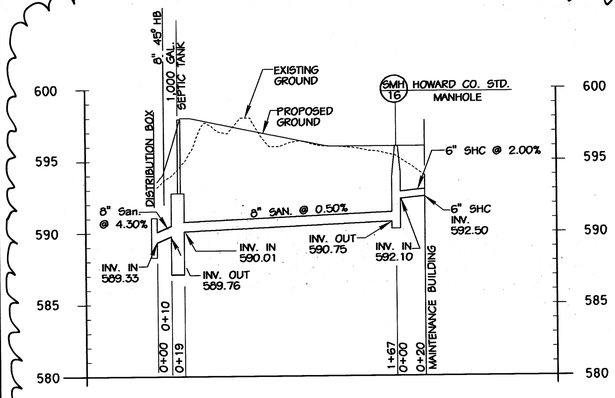
SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SS3

SHEET NO.: 128 OF 135

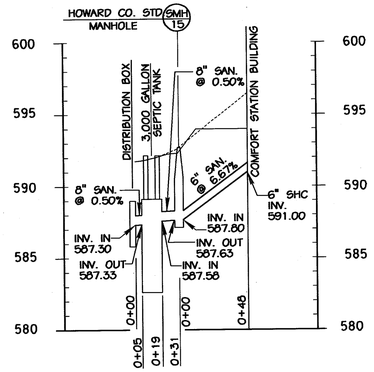
M:/2000/0100057/profile.DGN SDP-02-64

N.I.C.



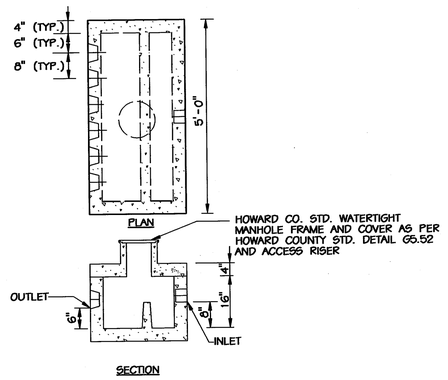
PROFILE – D

SCALE: HORIZONTAL 1" = 50'
VERTICAL 1" = 5'



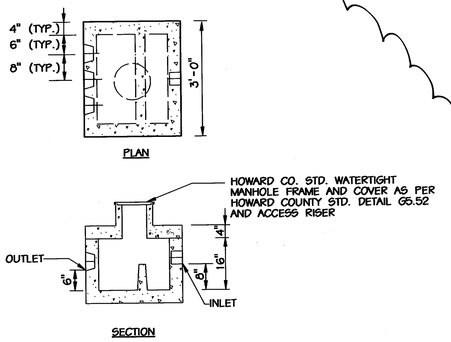
PROFILE – E

SCALE: HORIZONTAL 1" = 50'
VERTICAL 1" = 5'



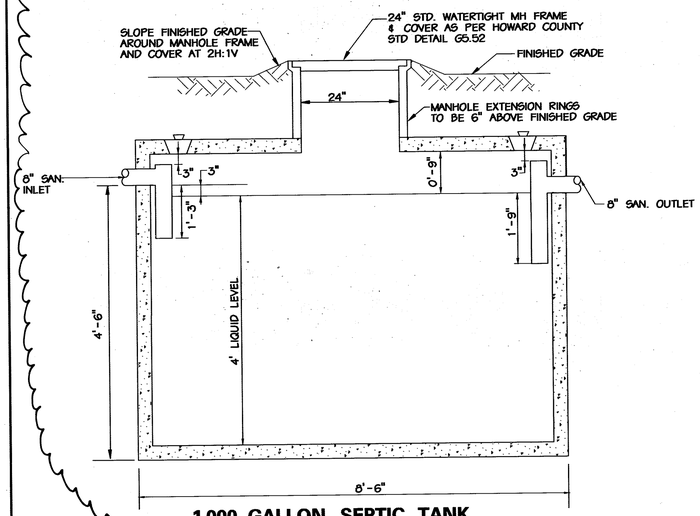
SIX OUTLET DISTRIBUTION BOX DETAIL

NOT TO SCALE



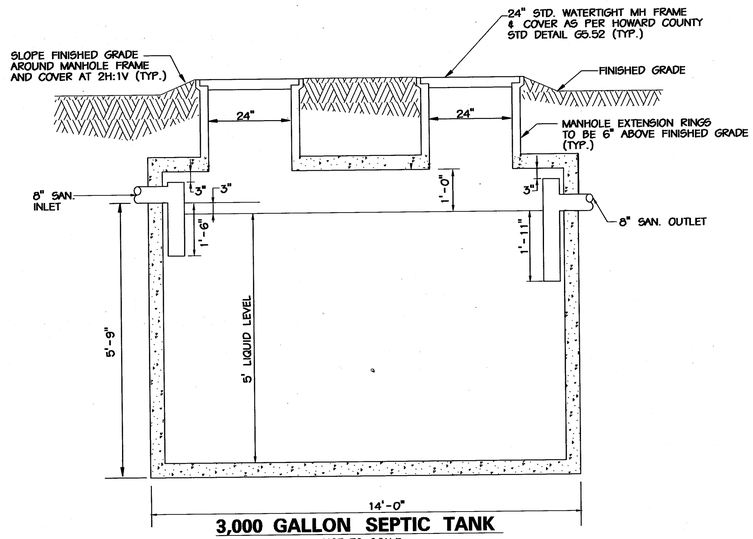
THREE OUTLET DISTRIBUTION BOX DETAIL

NOT TO SCALE



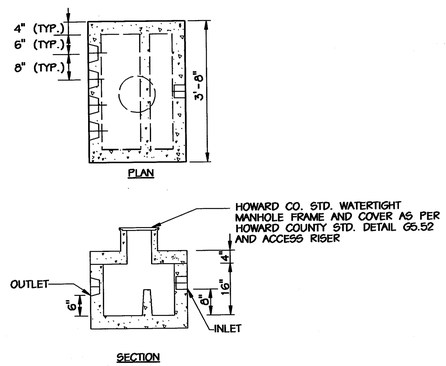
1,000 GALLON SEPTIC TANK

NOT TO SCALE



3,000 GALLON SEPTIC TANK

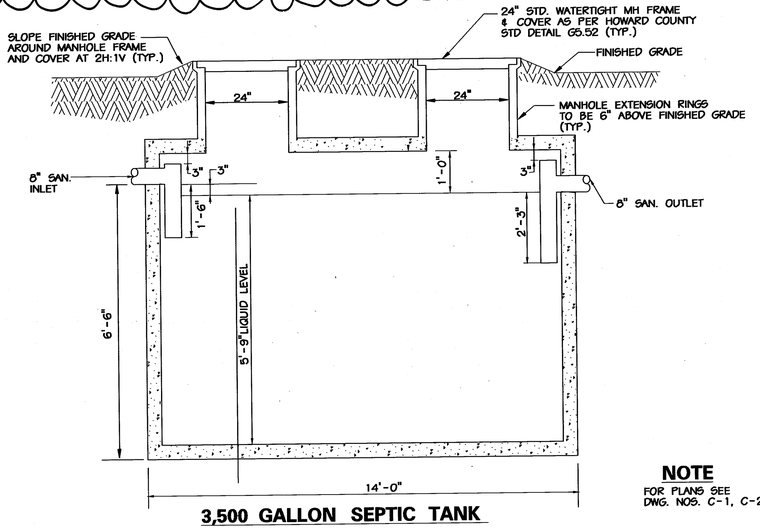
NOT TO SCALE



FOUR OUTLET DISTRIBUTION BOX DETAIL

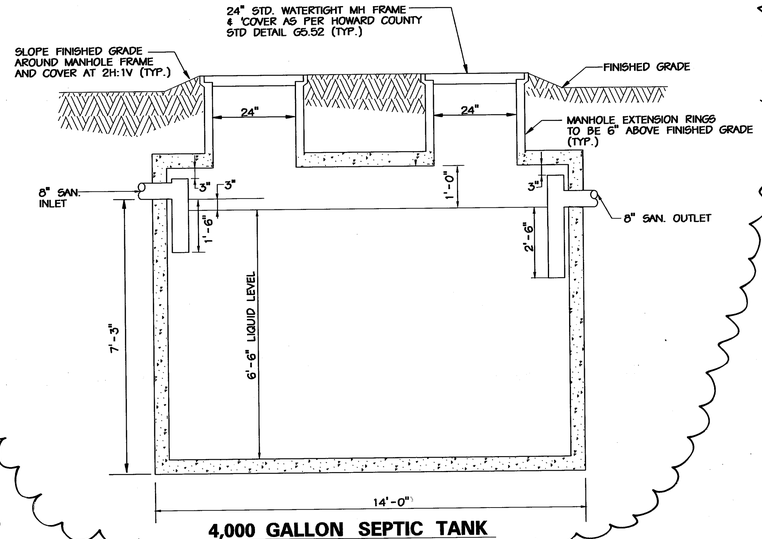
NOT TO SCALE

N.I.C.



3,500 GALLON SEPTIC TANK

NOT TO SCALE



4,000 GALLON SEPTIC TANK

NOT TO SCALE

NOTE

FOR PLANS SEE DWG. NOS. C-1, C-2 AND C-3

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING	
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
DIRECTOR	DATE
APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS	
COUNTY HEALTH OFFICER HOWARD COUNTY HEALTH DEPARTMENT	DATE

NO.	REVISIONS	DESCRIPTION	DATE

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HOWARD COUNTY, DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410) 313-4640

ON – SITE SEPTIC TANK PROFILE AND DETAILS

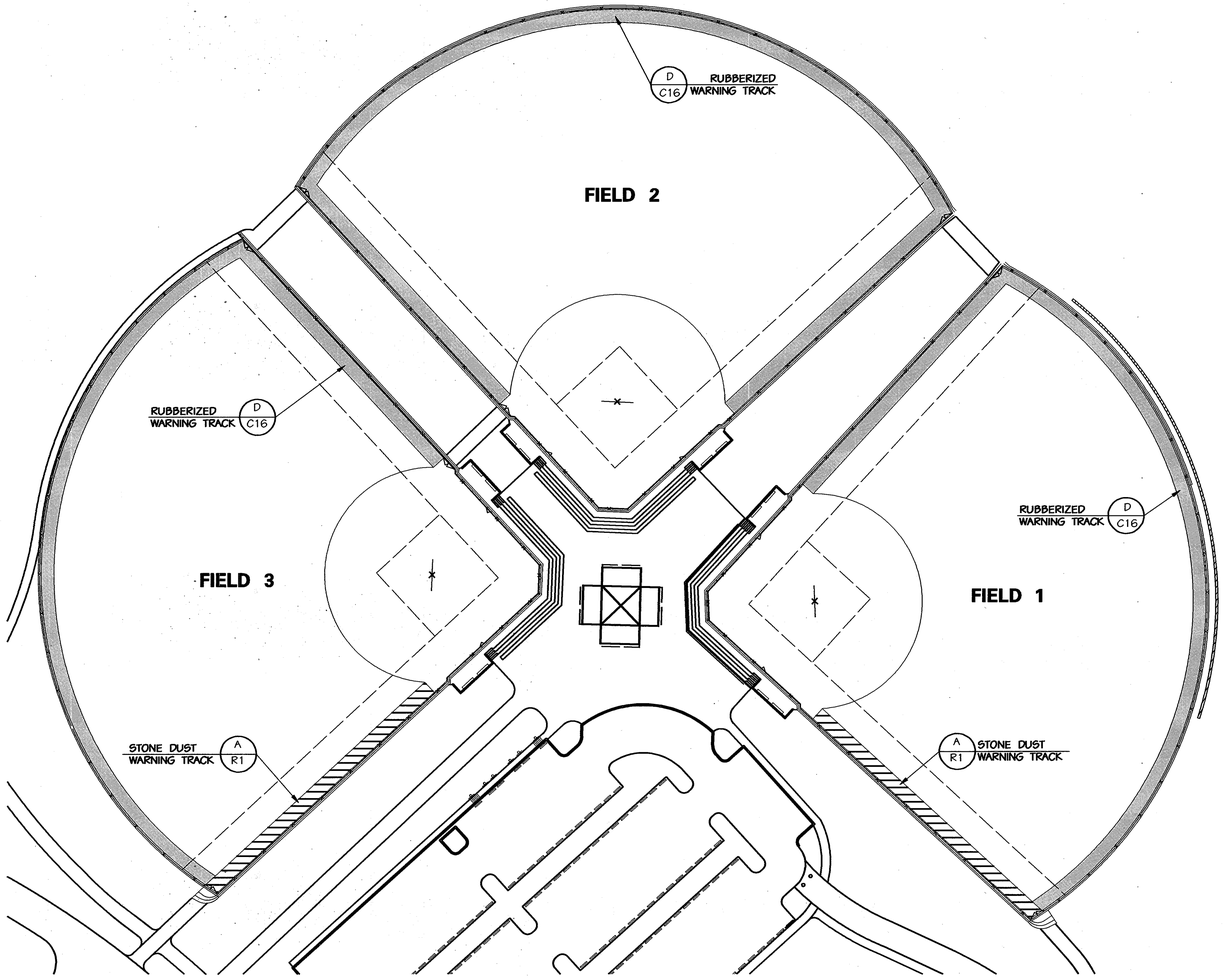
SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SS4

SHEET NO.: 129 OF 135

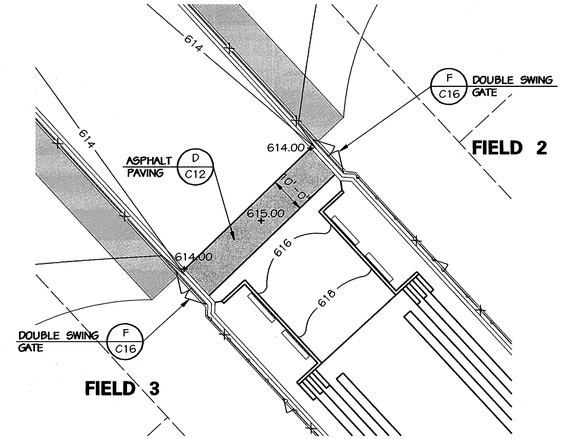
M:/2000/0100057/PROFILE2.DGN

SDP-02-64



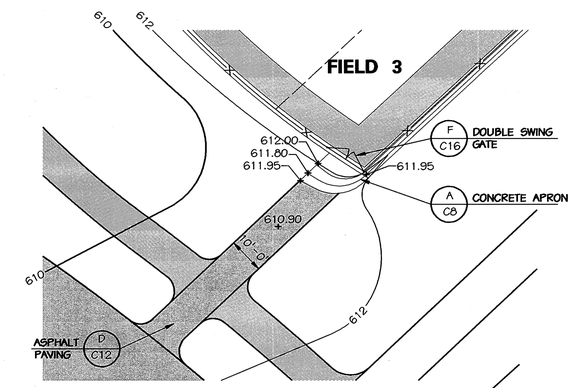
WARNING TRACK PAVING DIAGRAM

SCALE: 1"=50'



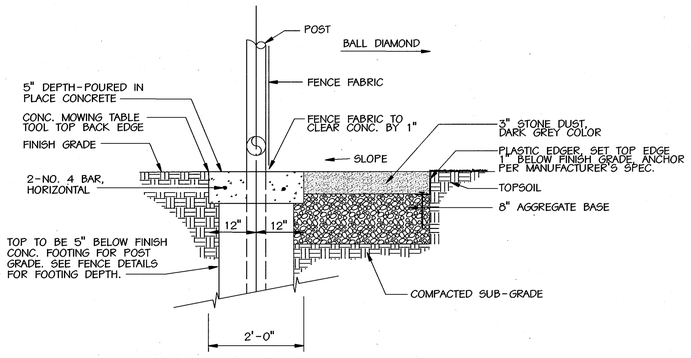
PLAN REVISION #1

SCALE: 1"=20'



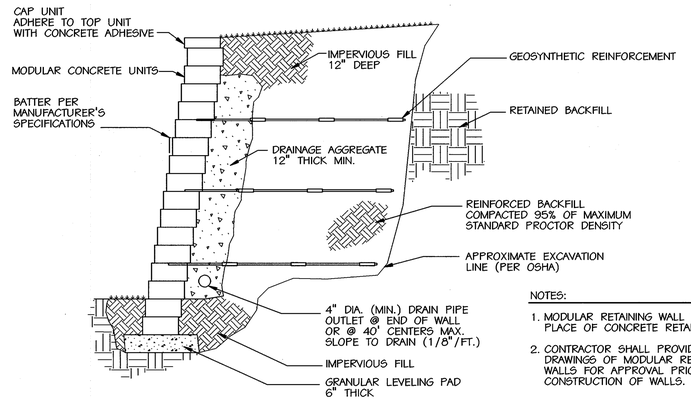
PLAN REVISION #2

SCALE: 1"=20'



A STONE DUST WARNING TRACK DETAIL

NOT TO SCALE



NOTES:

1. MODULAR RETAINING WALL TAKES PLACE OF CONCRETE RETAINING WALL.
2. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF MODULAR RETAINING WALLS FOR APPROVAL PRIOR TO CONSTRUCTION OF WALLS.

A ADD-ALT #1: MODULAR BLOCK RETAINING WALL

NOT TO SCALE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

DIRECTOR — DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT — DATE

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE:

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WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

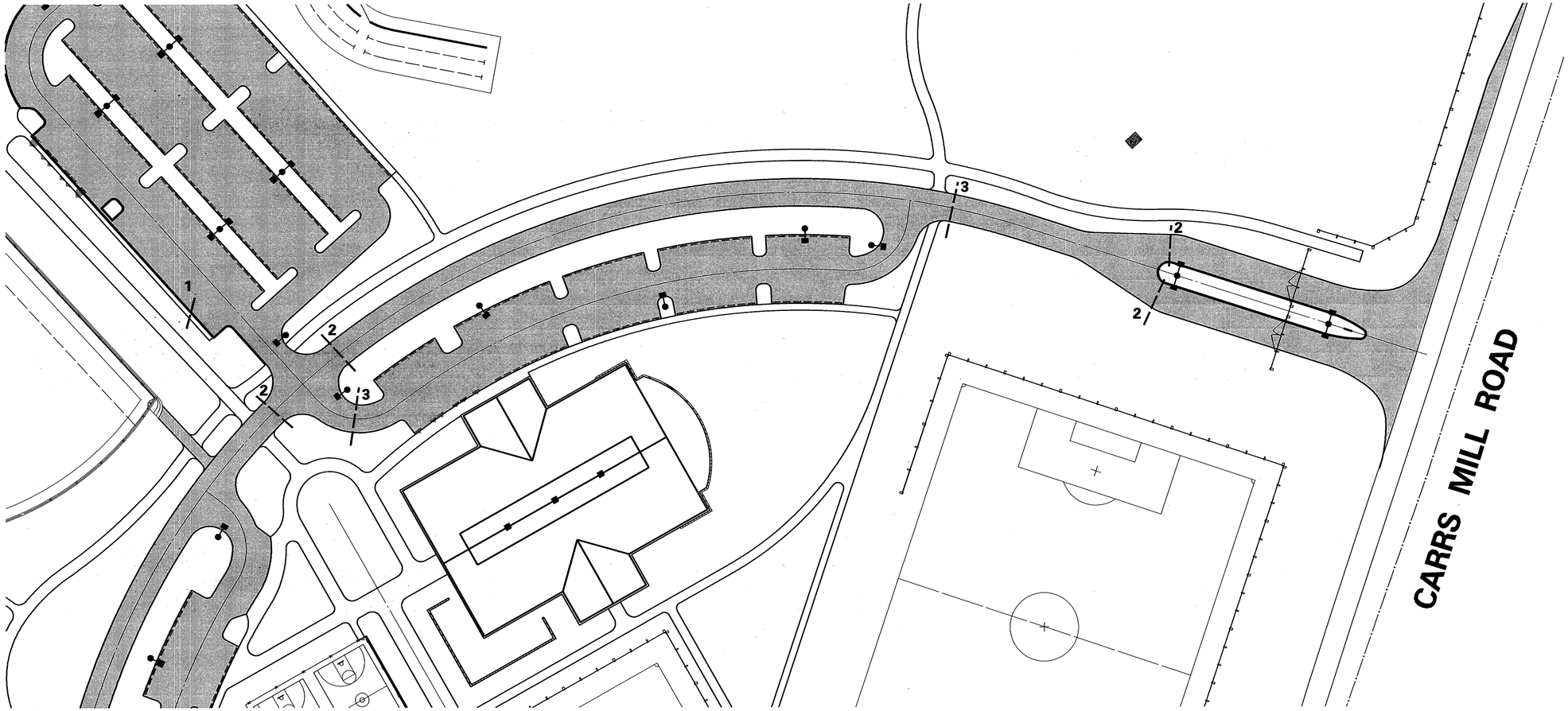
SOFTBALL COMPLEX AREA REVISIONS

SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

R1

SHEET NO.:130 OF 135

SDP-02-64



LEGEND

3 — NUMBER OF PARALLEL RUNS OF CONDUIT

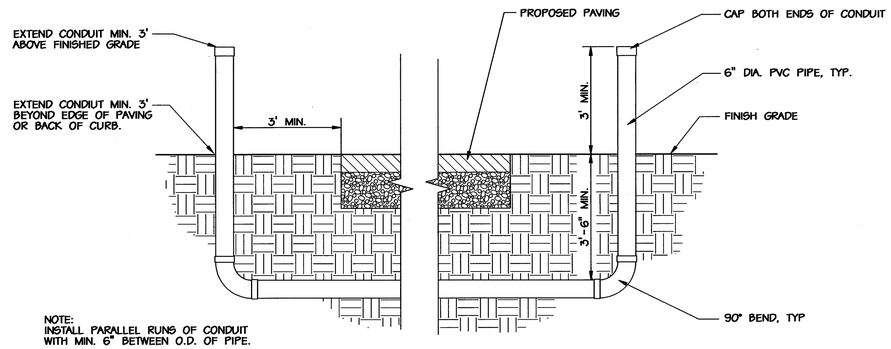
— LOCATION OF CONDUIT

NOTE:
CONDUIT FOR FUTURE ELECTRICAL, WATER AND IRRIGATION SYSTEMS.

CONDUIT LOCATION PLAN

SCALE: 1"=50'

NORTH



NOTE:
INSTALL PARALLEL RUNS OF CONDUIT WITH MIN. 6" BETWEEN O.D. OF PIPE.

A CONDUIT INSTALLATION DETAIL

SCALE: 1/2"=1'

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

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COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT — DATE

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COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

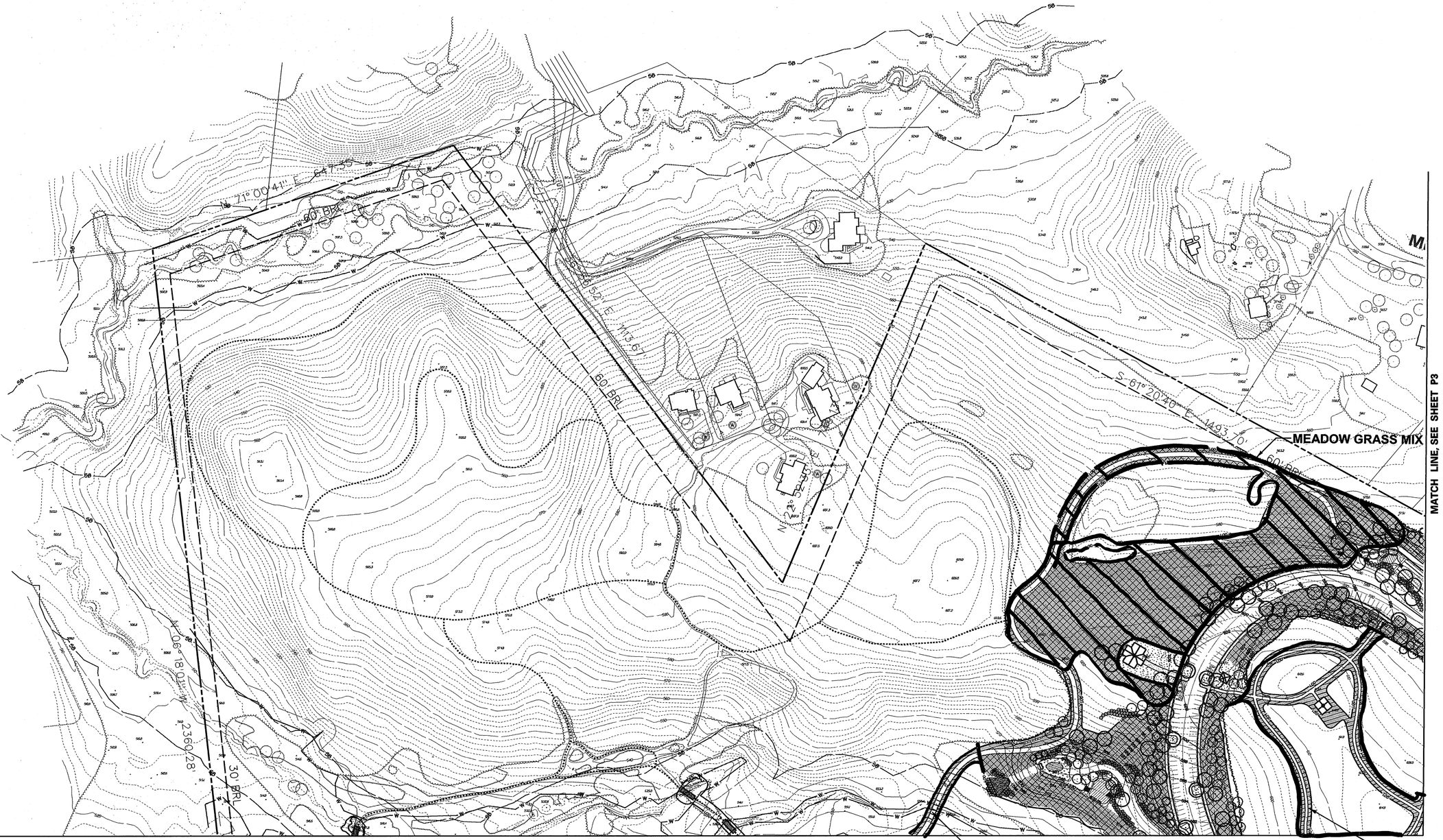
CONDUIT LOCATION PLAN & DETAIL

SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

R2

SHEET NO.:131 OF 135

SDP-02-64



SEED MIX LEGEND

- SOD AREA
- NATIVE SEED MIX
- NOT IN CONTRACT WOODLAND MIX
- LAWN MIX #1
- ATHLETIC TURF MIX

LEGEND

- 590 — EX. INDEX CONTOUR
- EX. 2' INTERMEDIATE CONTOUR
- GIC2 — SOIL LINE
- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- EX. WOODS LINE
- W — SURVEYED WETLAND
- EX. STREAMS
- SB — 75' STREAM BUFFER
- 570.9 EX. SPOT ELEVATION

NOTES:

1. PATHS, ROADS AND PARKING LOTS THAT ARE NOT IN CONTRACT SHALL BE SEEDED WITH ADJACENT SEED MIX
2. SEED TO CONTRACT LIMIT LINES SHOWN ON SITE PLANS
3. SEED TO L.O.D. ALONG CARRS MILL ROAD

GRAPHIC SCALE
100 0 50 100 200
(IN FEET)
1 inch = 100ft.

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

DIRECTOR — DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT — DATE

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\ 2000 \ 0100057.6 \ USEEDO1.DGN

KCI TECHNOLOGIES INC.
ENGINEERS • PLANNERS • SURVEYORS
10 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND 21030
PHONE: (410) 316-7800 FAX: (410) 316-7817
TECHNOLOGIES WWW.KCI.COM

WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

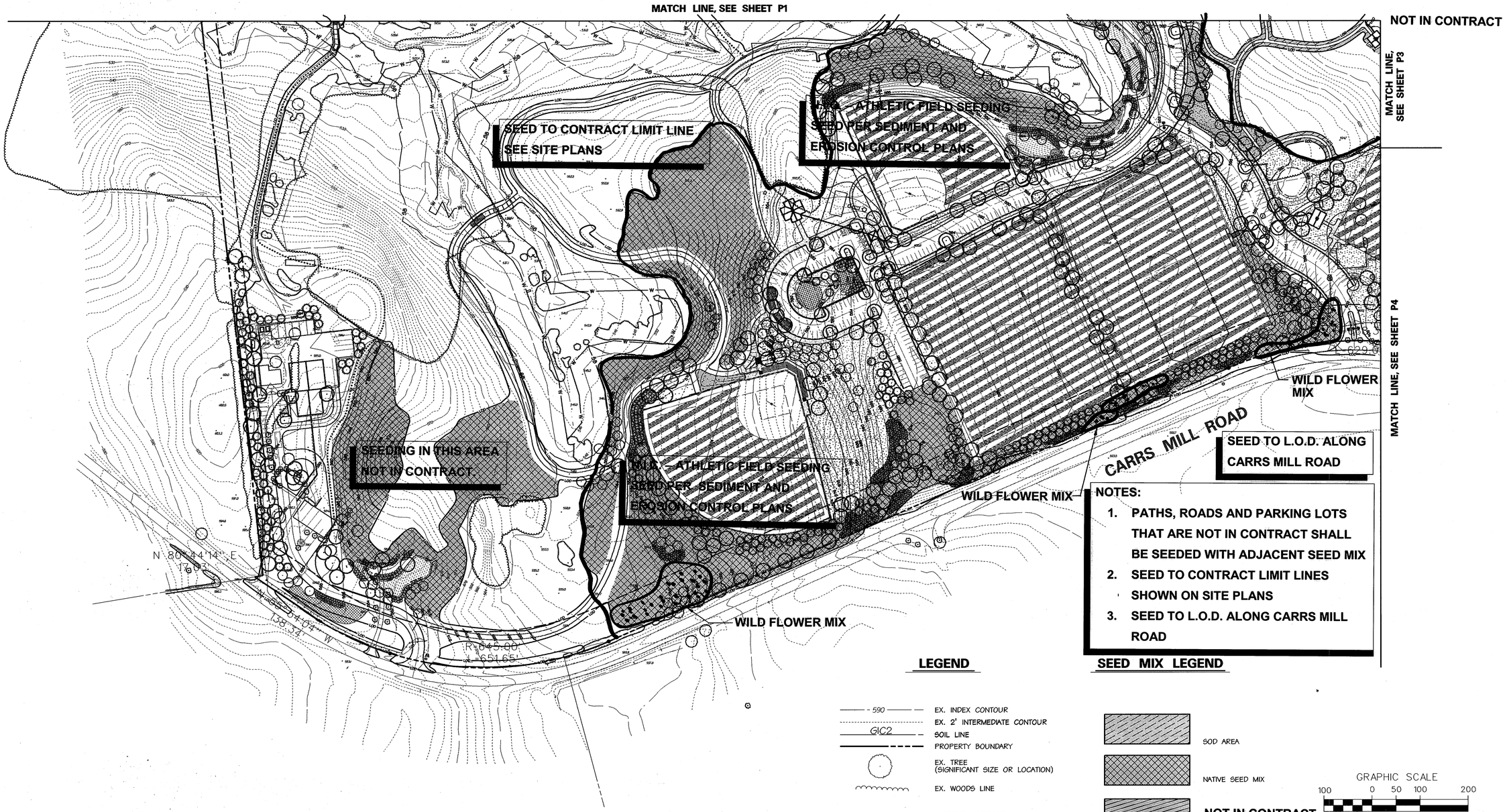
SEEDING PLAN

SCALE:	1" = 100'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

P1

SHEET NO.: 132 OF 135

SDP-02-64



NOTES:

1. PATHS, ROADS AND PARKING LOTS THAT ARE NOT IN CONTRACT SHALL BE SEEDED WITH ADJACENT SEED MIX
2. SEED TO CONTRACT LIMIT LINES SHOWN ON SITE PLANS
3. SEED TO L.O.D. ALONG CARRS MILL ROAD

LEGEND

590	EX. INDEX CONTOUR
	EX. 2' INTERMEDIATE CONTOUR
GIC2	SOIL LINE
	PROPERTY BOUNDARY
	EX. TREE (SIGNIFICANT SIZE OR LOCATION)
	EX. WOODS LINE
W	SURVEYED WETLAND
	EX. STREAMS
SB	75' STREAM BUFFER
570.9	EX. SPOT ELEVATION

SEED MIX LEGEND

	SOD AREA
	NATIVE SEED MIX
	NOT IN CONTRACT WOODLAND MIX
	LAWN MIX #1
	ATHLETIC TURF MIX

GRAPHIC SCALE
100 0 50 100 200
(IN FEET)
1 inch = 100ft.

NORTH

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

DIRECTOR — DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT — DATE

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

NO.	REVISIONS DESCRIPTION	DATE

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WESTERN REGIONAL PARK

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

SEEDING PLAN

SCALE:	1" = 100'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

P2

SHEET NO.: 133 OF 135

SDP-02-64

SEED MIX LEGEND

- SOD AREA
- NATIVE SEED MIX
- NOT IN CONTRACT — WOODLAND MIX
- LAWN MIX #1
- ATHLETIC TURF MIX

LEGEND

- 590 — EX. INDEX CONTOUR
- EX. 2' INTERMEDIATE CONTOUR
- GIC2 — SOIL LINE
- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- EX. WOODS LINE
- W — SURVEYED WETLAND
- EX. STREAMS
- SB — 75' STREAM BUFFER
- 570.9 — EX. SPOT ELEVATION

NOTES:

1. PATHS, ROADS AND PARKING LOTS THAT ARE NOT IN CONTRACT SHALL BE SEEDED WITH ADJACENT SEED MIX
2. SEED TO CONTRACT LIMIT LINES SHOWN ON SITE PLANS
3. SEED TO L.O.D. ALONG CARRS MILL ROAD

NORTH

GRAPHIC SCALE
100 0 50 100 200
(IN FEET)
1 inch = 100ft.

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

DIRECTOR — DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT — DATE

NO.	REVISIONS	DESCRIPTION	DATE

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HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046-1677
(410)-313-4640

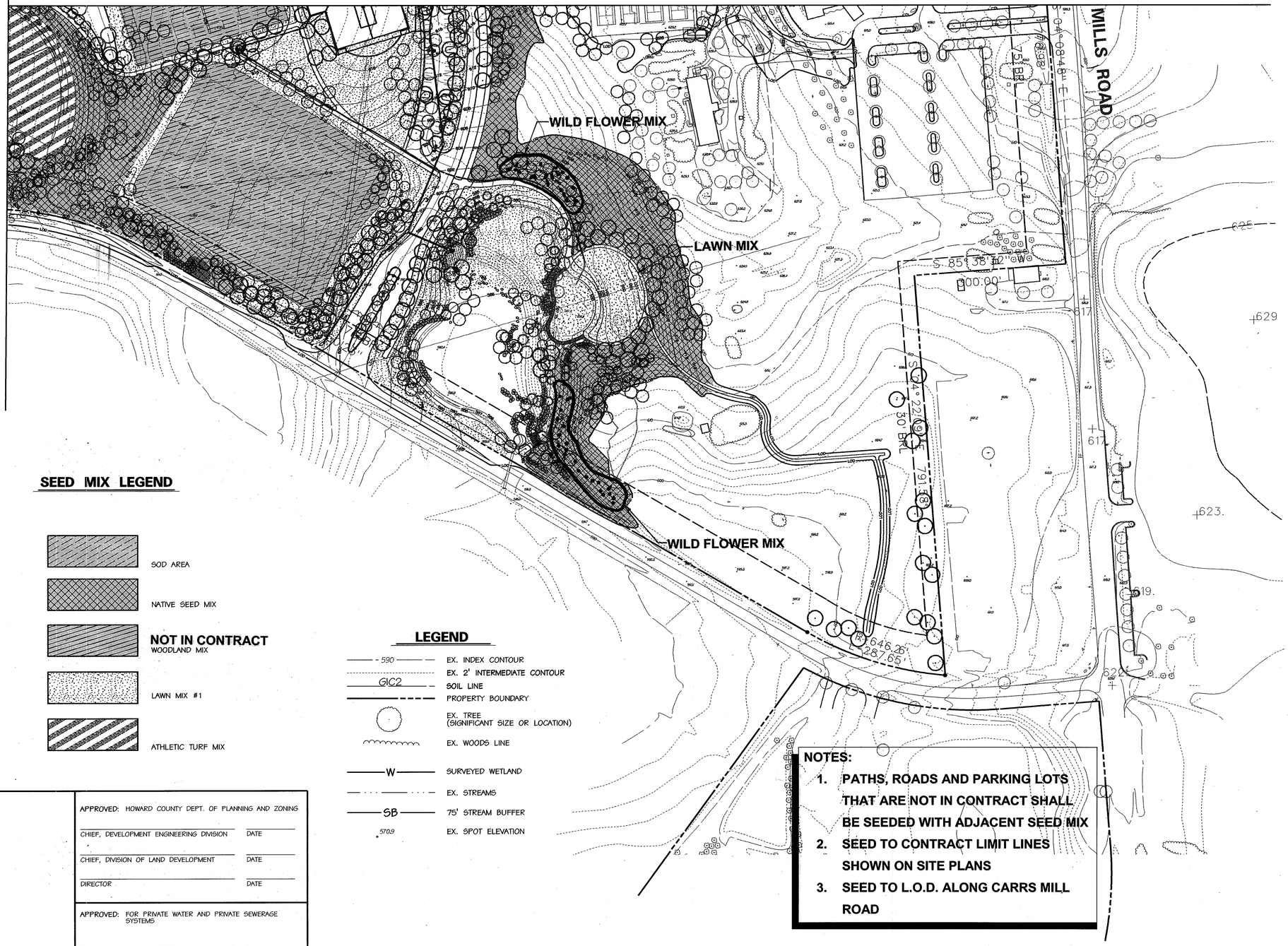
SEEDING PLAN

SCALE:	1" = 100'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

P3

SHEET NO.: 134 OF 135

SDP-02-64



SEED MIX LEGEND

- SOD AREA
- NATIVE SEED MIX
- **NOT IN CONTRACT** WOODLAND MIX
- LAWN MIX #1
- ATHLETIC TURF MIX

LEGEND

590	EX. INDEX CONTOUR
	EX. 2' INTERMEDIATE CONTOUR
GIC2	SOIL LINE
	PROPERTY BOUNDARY
	EX. TREE (SIGNIFICANT SIZE OR LOCATION)
	EX. WOODS LINE
W	SURVEYED WETLAND
	EX. STREAMS
SB	75' STREAM BUFFER
570.9	EX. SPOT ELEVATION

NOTES:

1. PATHS, ROADS AND PARKING LOTS THAT ARE NOT IN CONTRACT SHALL BE SEEDED WITH ADJACENT SEED MIX
2. SEED TO CONTRACT LIMIT LINES SHOWN ON SITE PLANS
3. SEED TO L.O.D. ALONG CARRS MILL ROAD

NORTH

GRAPHIC SCALE
100 0 50 100 200
(IN FEET)
1 inch = 100ft.

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

DIRECTOR — DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT — DATE

MARYLAND COORDINATE SYSTEM
HORIZONTAL NAD 83-91
VERTICAL NAVD 29

NO.	REVISIONS DESCRIPTION	DATE

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WESTERN REGIONAL PARK

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COLUMBIA, MARYLAND 21046-1677
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SEEDING PLAN

SCALE:	1" = 100'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

P4

SHEET NO.: 135 OF 135

SDP-02-64