

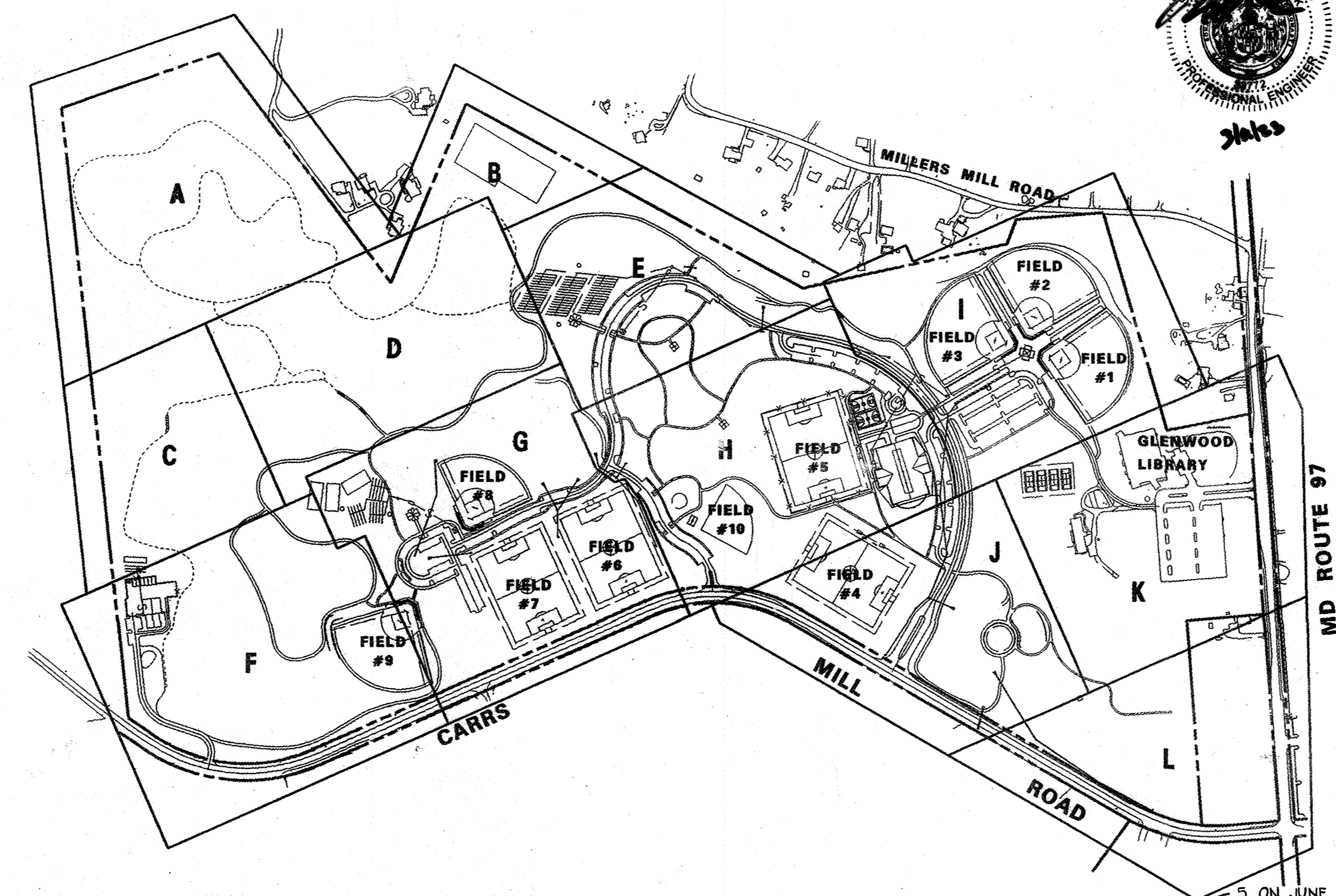
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54	SC29	SEDIMENT & EROSION CONTROL DETAILS
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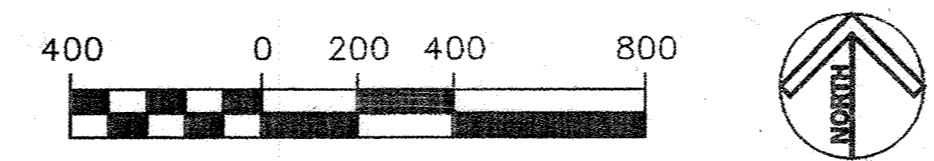
# SITE DEVELOPMENT PLAN

# WESTERN REGIONAL PARK

**GLENWOOD**  
**HOWARD COUNTY, MARYLAND**  
**DEPARTMENT OF PUBLIC WORKS**  
**CAPITAL PROJECT N-3932**



**KEY TO PLAN SHEETS**  
**SCALE: 1" = 400'**



**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.

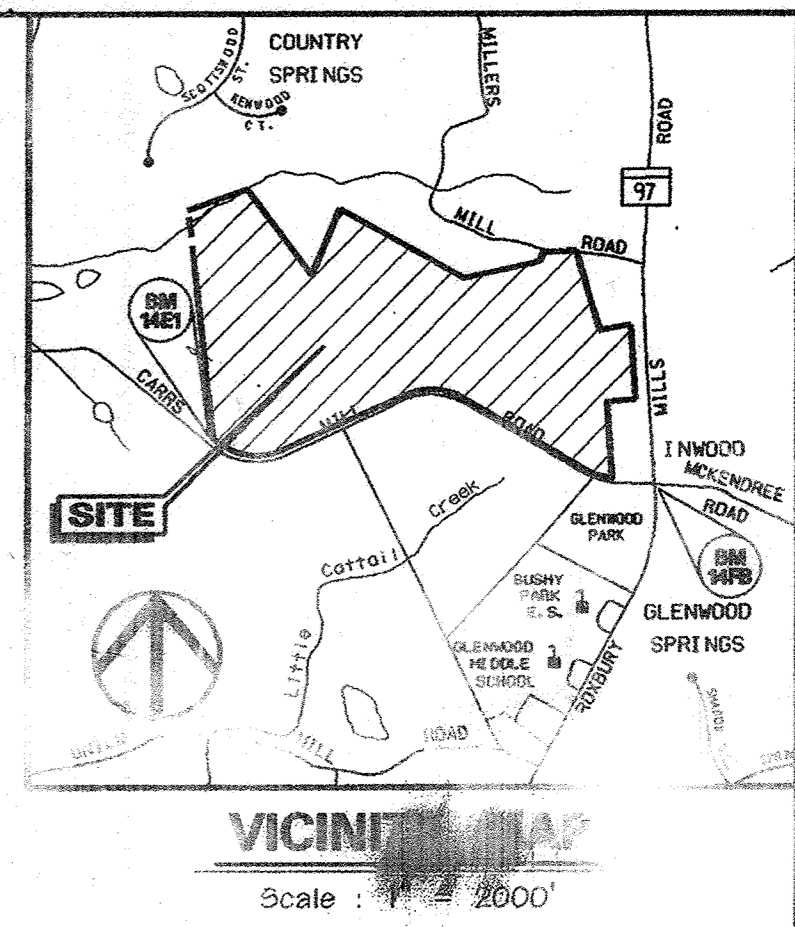
**BENCHMARK DATA**

B.M. 14E1 ELEV. 591.029  
 N 596,213.816  
 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 C4 P. POLE #20 AND APPROX. 74.4' NORTHEAST OF B6 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. 10' SOUTH OF THE CENTERLINE OF WICKENDREEL ROAD AND APPROX. 10' EAST OF THE CENTERLINE OF MILLERS MILL ROAD



**INDEX OF SHEETS CONTINUED**

SHEET NO.	SHEET REF.	DESCRIPTION
94	FC01	FOREST CONSERVATION PLAN - AREA A
95	FC02	FOREST CONSERVATION PLAN - AREA B
96	FC03	FOREST CONSERVATION PLAN - AREA C
97	FC04	FOREST CONSERVATION PLAN - AREA D
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105	FC12	FOREST CONSERVATION PLAN - AREA L
106	A1	ARCHITECTURAL DETAIL - PAVILION AREA
107	D1	DETAIL PLAN OF HOCKEY PAVILION AREA
108	D2	DETAIL PLAN OF SOFTBALL COMPLEX AREA
109	D3	DETAIL OF FIELD 9 BLEACHER AREA
110	D4	DETAIL OF FIELD 8 BLEACHER AREA
111	D5	DETAIL PLAN OF RETAINING WALLS
112	D6	DETAIL PLAN OF RETAINING WALLS
113	D7	SOFTBALL COMPLEX AREA, RETAINING WALL SECTIONS AND PROFILES
114	D7	PROPOSED WDW/ELECTRICAL LINES PLAN & PROFILE

HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.  
 LICENSE NO. 33772  
 EXPIRATION DATE: 06/16/23  
 FOR REV. NO. 4 ONLY



**ADDRESS CHART**

BUILDING	AREA/PAGE #	ADDRESS
IN-LINE HOCKEY CONCESSION	H / C7	14700 CARRS MILL ROAD
MAINTENANCE	F / C5	2360 ROUTE 97
	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

**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  
 [Signature] 10/2/02  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 [Signature] 10/23/02  
 DIRECTOR

**PERMIT INFORMATION CHART**

SUBMISSION NAME	SECTION/AREA	LOT/PARCEL #
WESTERN REGIONAL PARK	N/A	Parcel A
PLANTING PLAN STORMWATER MANAGEMENT POND E	14	6040.02
PLANTING PLAN STORMWATER MANAGEMENT POND F AND SURFACE SAND FILTER #2	04	6040.02
PLANTING PLAN BIORETENTION AREA F1		
PLANTING PLAN BIORETENTION AREA F3		
PLANTING PLAN BIORETENTION AREA F4		
LANDSCAPE DETAILS		

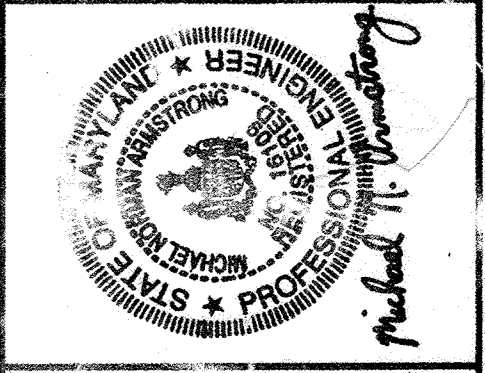
APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 [Signature] 10-17-02  
 COUNTY HEALTH OFFICER  
 HOWARD COUNTY HEALTH DEPARTMENT

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
 [Signature] 10/15/02  
 CHIEF, BUREAU OF ENGINEERING

DEPARTMENT OF RECREATION AND PARKS  
 HOWARD COUNTY, MARYLAND  
 [Signature] 10/15/02  
 DIRECTOR OF RECREATION AND PARKS

NO.	REVISIONS/DESCRIPTION	DATE
1	ADDED GENERAL NOTE # 4	7/20/04
2	ADDED GENERAL NOTE # 5	7/20/04
3	ADDED SHEET 114 TO SET (REV)	3.6.21
4	ADD PALLEBALL COURTS	3-9-23

**KCI TECHNOLOGIES INC.**  
 ENGINEERS & PLANNERS & SURVEYORS  
 10 NORTH PARK I VE  
 HUNT VALLEY, MARYLAND 21086  
 PHONE: (410) 361-1817  
 FAX: (410) 316-7817  
 WWW.KCI.COM



**WESTERN REGIONAL PARK**  
 DEPARTMENT OF RECREATION AND PARKS  
 HOWARD COUNTY, MARYLAND  
 COLUMBIA, MARYLAND 21046-1677  
 (410)-513-4640

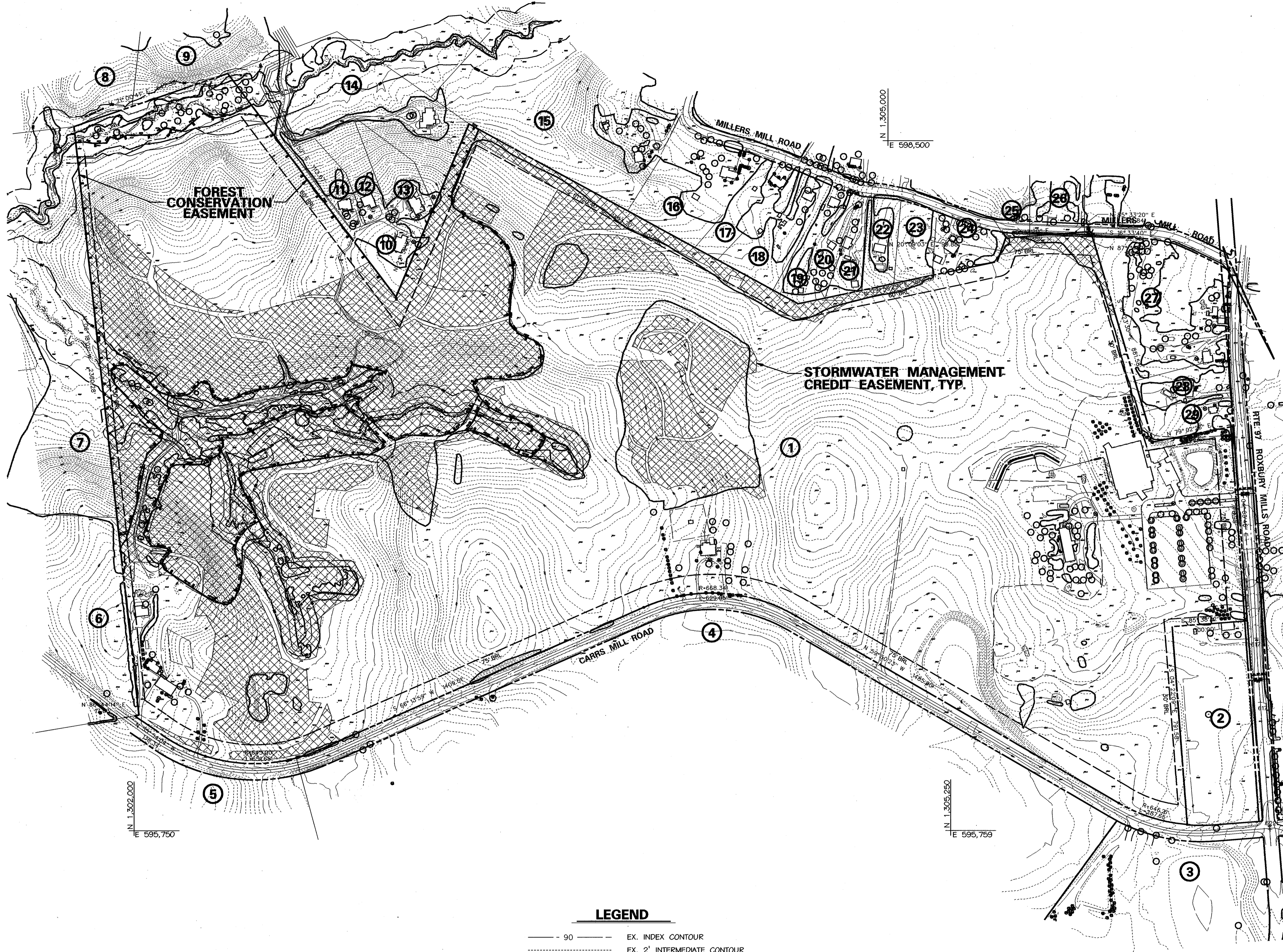
**TITLE SHEET**

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 115  
 50P-02-64



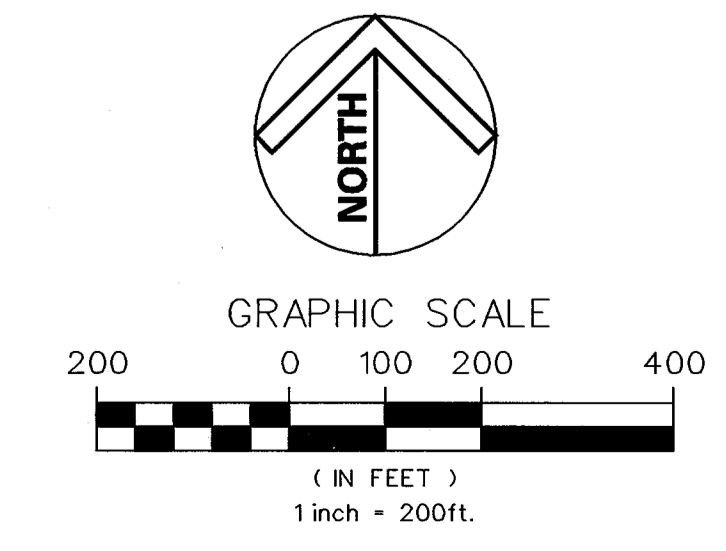


OWNER INFORMATION TABLE						
KEY	PARCEL	LOT	OWNER/ADDRESS	LIBER/FOLIO	TAX ACCOUNT	ZONING
1	A		HOWARD COUNTY MARYLAND DEPARTMENT OF PUBLIC WORKS 3430 COURT HOUSE DRIVE ELLICOTT CITY, MD 21043	3259/636	14-04-355822	RCDEO
2	125		GLENWOOD, LLC c/o ROGER HOLLAND 751 FREDERICK STREET HANOVER, PA 17331	4456/640	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		CLIFTON L. & LINDA P. CLEVENGER 731 BOX 157 GLENWOOD, MD 21736	3272/226	14-04-340612	RCDEO
5	329		J. DAVID & ELIZABETH C. MULLINX 14420 HOWARD ROAD DAYTON, MD 21036	1354/498	14-04-343417	RCDEO
6	14	PAR C	RICHARD A. & JAYNE L. NESSIF 15002 CARRS MILL ROAD WOODBINE, MD 21797	5047/437	14-04-361016	RCDEO
7	13		RICHARD A. & JAYNE L. NESSIF 15002 CARRS MILL ROAD WOODBINE, MD 21797	4132/650	14-04-326466	RCDEO
8	240	28	JAMES A. & JONDA J. GADIS 15002 CARRS MILL ROAD WOODBINE, MD 21797	2786/637	14-04-351916	RCDEO
9	240	29	EDWARD C. & PAMELA A. SMITH 4334 LEWIS MILL DRIVE ONLEY, MD 20835	3636/254	14-04-351924	RCDEO
10	240	1	JOHN T. & PAMELA J. ANTLITZ 15028 KENWOOD COURT WOODBINE, MD 21797	4215/79	14-04-361058	RCDEO
11	240	2	STEPHEN G. & MAUREEN P. EDWARDS 15028 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 DRIVE REISTERSTOWN, MD 21136	4235/392	14-04-361083	RCDEO
14	240	PAR A	MICHAEL P. & BROOKS 2106 HAMMOND AVENUE WEST FRIENDSHIP, MD 21794	4259/474	14-04-361091	RCDEO
15	144		ARNETT M. & LAURA M. MORSEY 2236 MILLERS MILL ROAD COOKSVILLE, MD 21723	4206/562	14-04-313623	RCDEO
16	192		JAMES S. LEE & WIFE 2324 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 2326 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 2085 BALTIMORE BOULEVARD FINKSBURG, MD 21046	1556/614	14-04-337360	RCDEO
24	214	3	DAVID M. SKEBERDIS 2332 MILLERS MILL ROAD COOKSVILLE, MD 21723	4800/522	14-04-337379	RCDEO
25	30		KATIE S. MILES c/o MERLE S. MILES 2324 MILLERS MILL ROAD COOKSVILLE, MD 21723	303/487	14-04-322932	RCDEO
26	107		ELLA S. MILES 2309 MILLERS MILL ROAD COOKSVILLE, MD 21723	315/455	14-04-322916	RCDEO
27	137		MARGARET HARRIS & HUSBAND RTE. #97 BOX 2326 COOKSVILLE, MD 21723	626/156	14-04-317114	RCDEO
28	109		CREIGHTON NORTHROP 3919 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 #13-04-30-05E.  
 B. PARCEL 13 IS AN EASEMENT HELD BY THE HOWARD COUNTY AGRICULTURAL LAND PRESERVATION PROGRAM - FILE #HO-30-10-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).

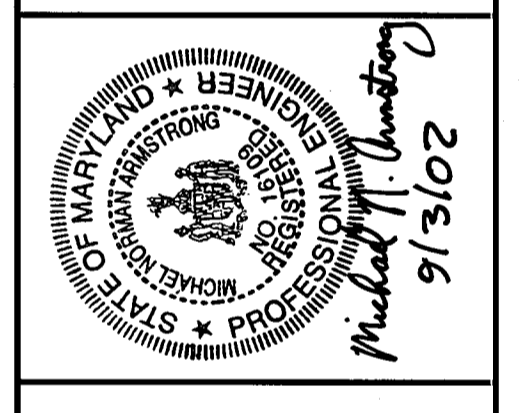
LEGEND	
--- 90 ---	EX. INDEX CONTOUR
--- ChA ---	EX. 2' INTERMEDIATE CONTOUR
---	SOIL LINE
---	PROPERTY BOUNDARY
○	EX. TREE
▭	EX. WOODS LINE
W	SURVEYED WETLAND
---	EX. STREAMS
---	FOREST CONSERVATION EASEMENT LINE
▨	STORMWATER MANAGEMENT CREDIT EASEMENT

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
*McDonnell* 9/12/02  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE  
*Wicks* 10/24/02  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE  
*Leah* 10/23/02  
 DIRECTOR DATE  
 APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
*Benjamin* 10-17-02  
 COUNTY HEALTH OFFICER DATE  
 HOWARD COUNTY HEALTH DEPARTMENT



NO.	REVISIONS DESCRIPTION	DATE

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



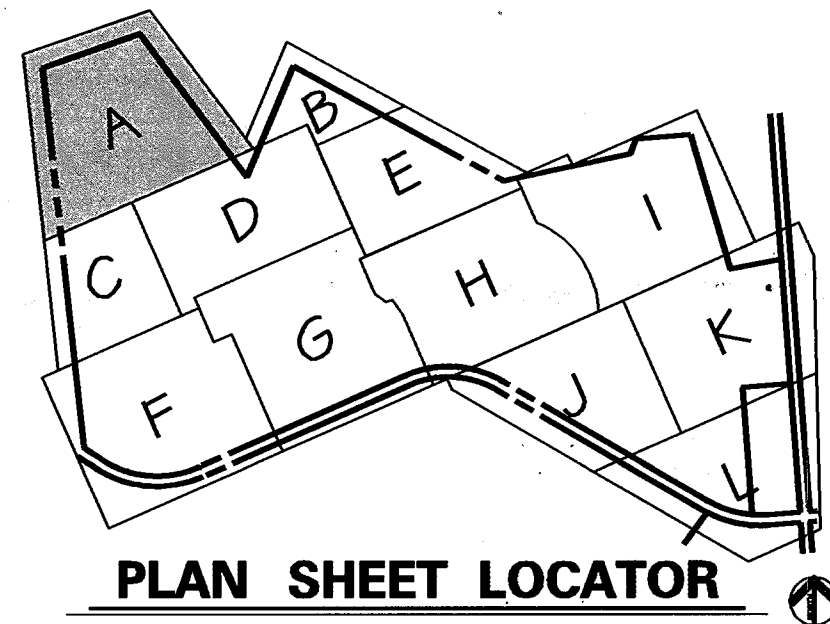
**WESTERN REGIONAL PARK**  
 HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
 7120 OAKLAND MILLS ROAD  
 COLUMBIA, MARYLAND 21046-1677  
 (410) 313-4640

**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  
 50P-02-64



**PLAN SHEET LOCATOR**

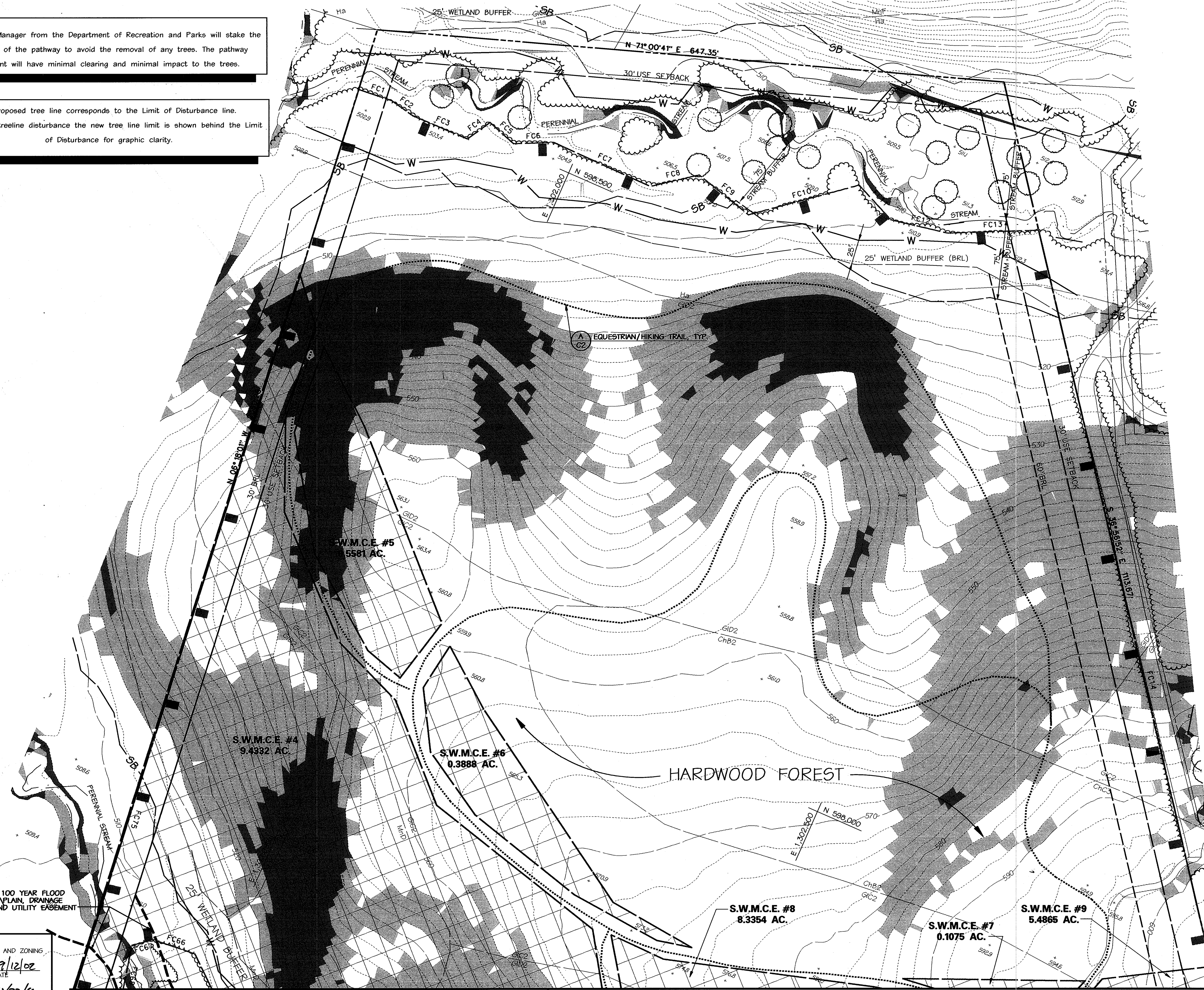
NOT TO SCALE

**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
- W SURVEYED WETLAND
- 25' WETLAND BUFFER
- EX. STREAMS
- SB 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

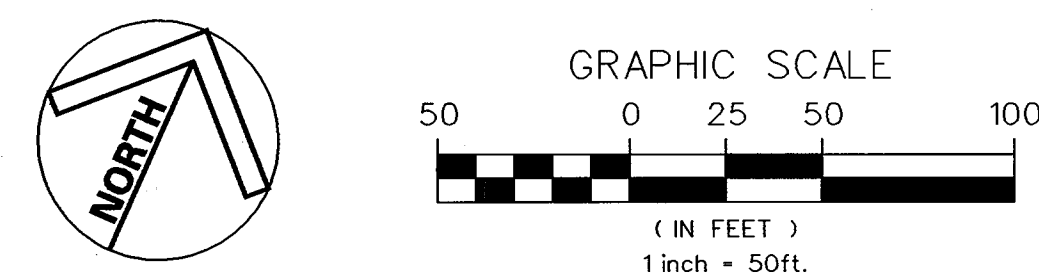
**NOTE**  
The Project Manager from the Department of Recreation and Parks will stake the placement of the pathway to avoid the removal of any trees. The pathway placement will have minimal clearing and minimal impact to the trees.

**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.



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

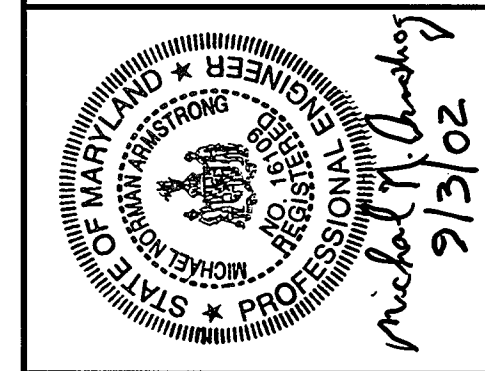


MATCHLINE - SEE SHEET C2, PLAN OF AREA C

MATCHLINE - SEE SHEET C3

NO.	REVISIONS DESCRIPTION	DATE

**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

**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

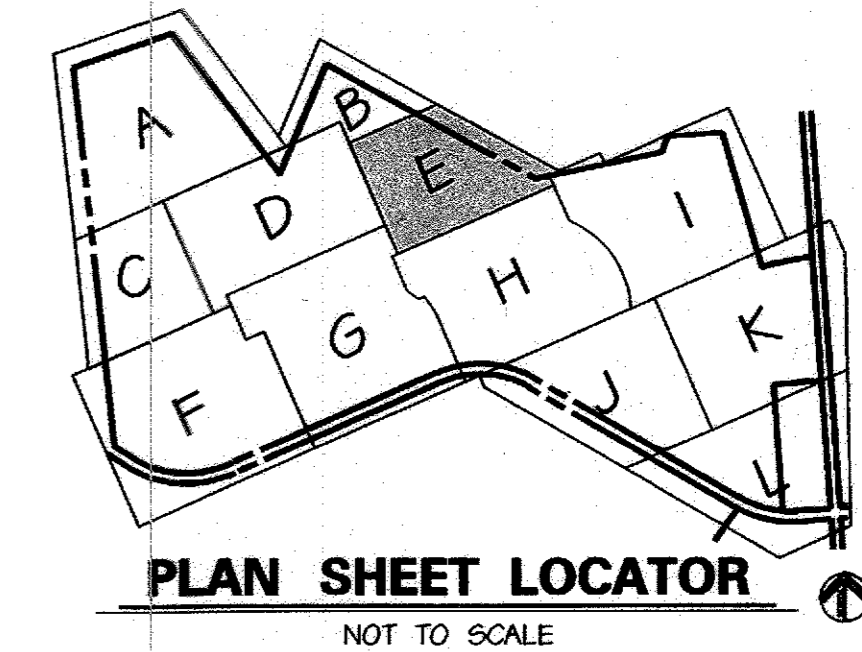
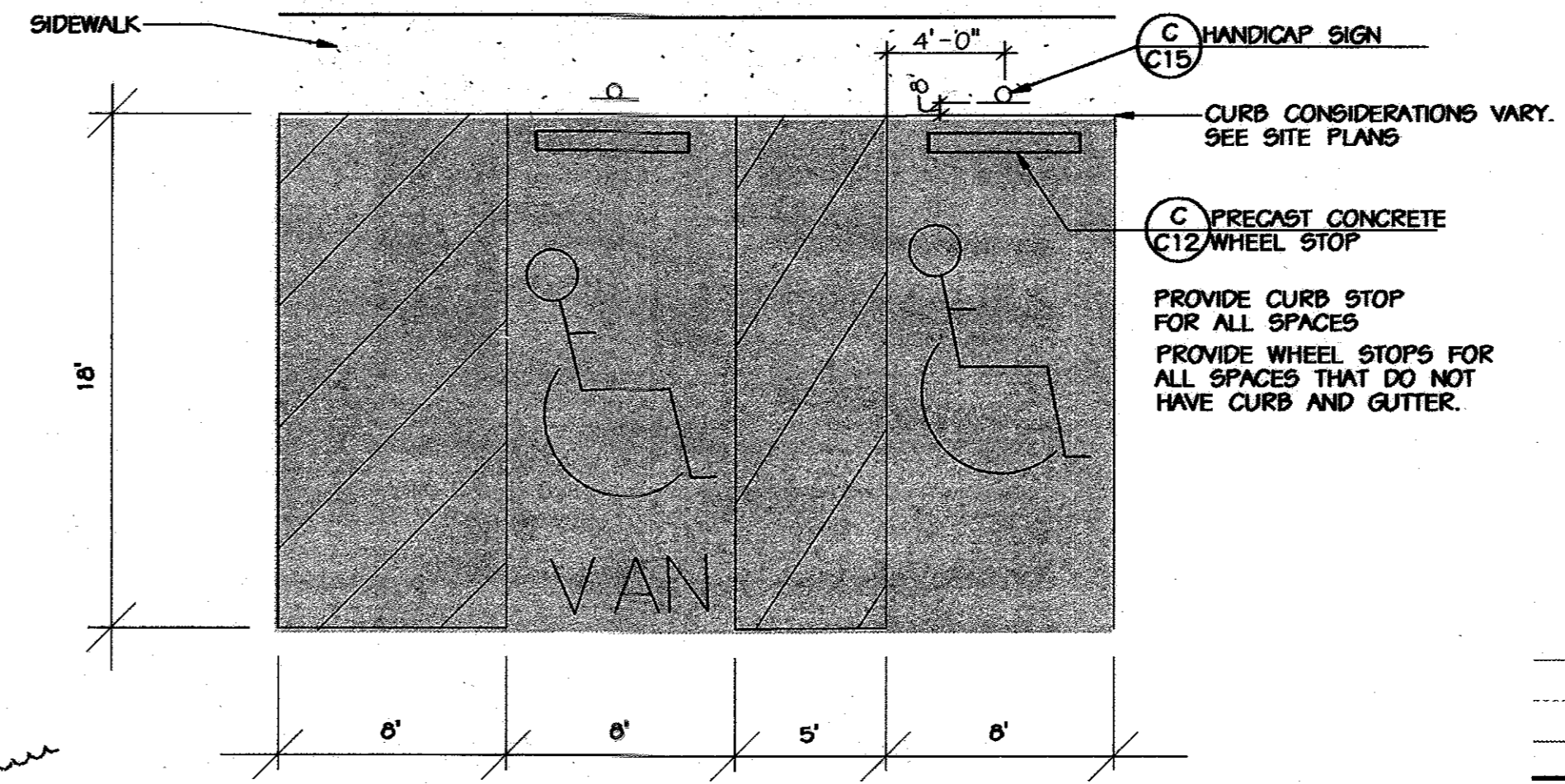
MARYLAND COORDINATE SYSTEM  
 HORIZONTAL NAD 83-91  
 VERTICAL NAVD 29





**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.

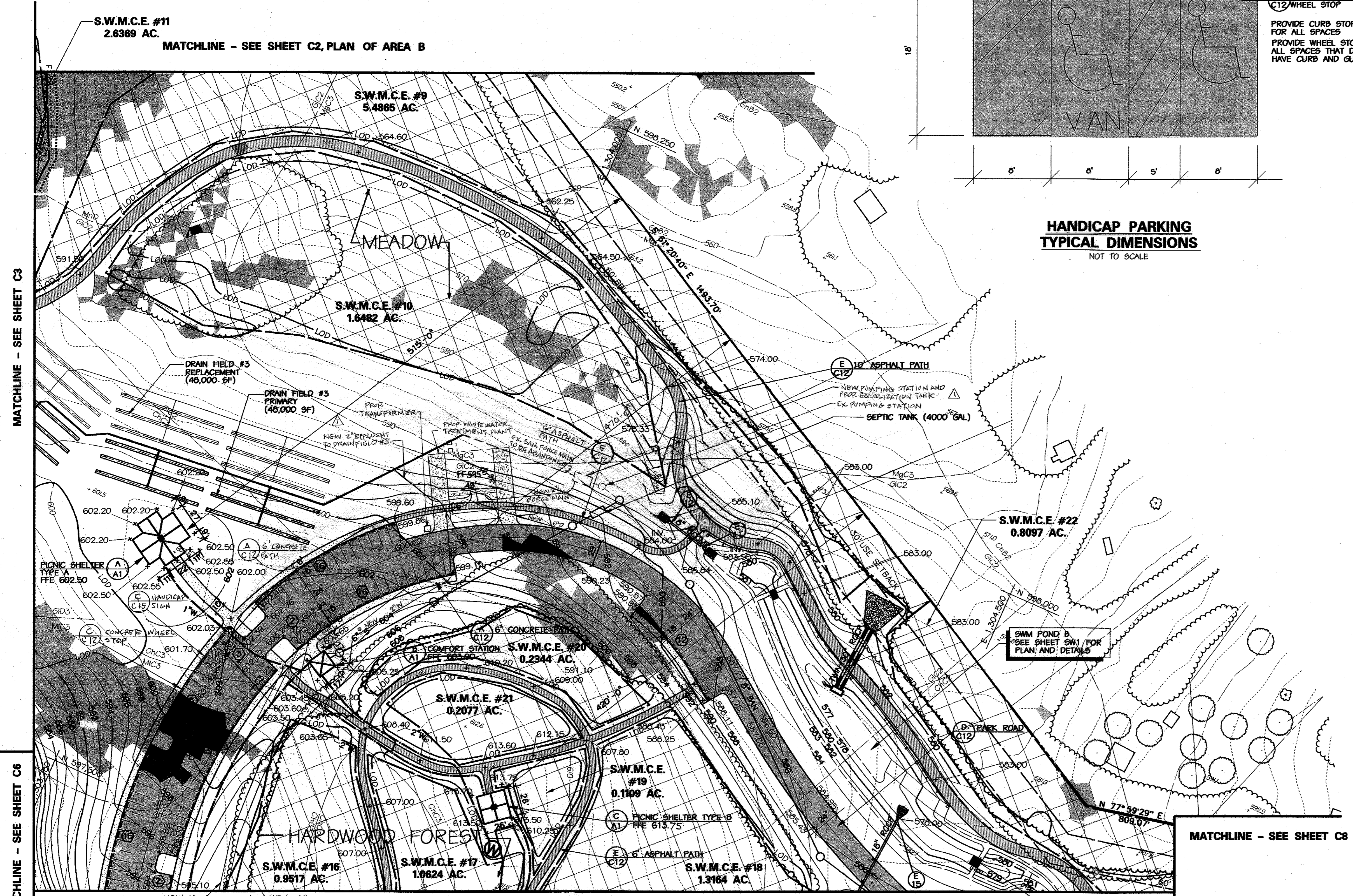


**PLAN SHEET LOCATOR**  
NOT TO SCALE

**LEGEND**

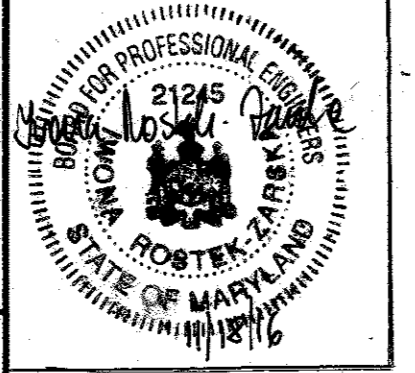
- 590 - EX. INDEX CONTOUR
- - - EX. 2' INTERMEDIATE CONTOUR
- GIC2 - SOIL LINE
- - - PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- ~ EX. WOODS LINE
- 15-24.9% SLOPES
- 25%+ SLOPES
- - - 100 YEAR FLOODPLAIN
- +570.9 EX. SPOT ELEVATION
- W SURVEYED WETLAND
- - - 25' WETLAND BUFFER
- EX. STREAMS
- SB 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
- 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
- FC67

**HANDICAP PARKING TYPICAL DIMENSIONS**  
NOT TO SCALE



**PROFESSIONAL CERTIFICATION**

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, IWOONA 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 'C7'

**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.

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.

BASILINE COORDINATES  
N 597,766.02  
E 1,304,753.49

MATCHLINE - SEE SHEET C3

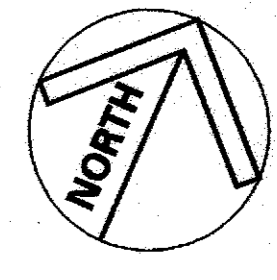
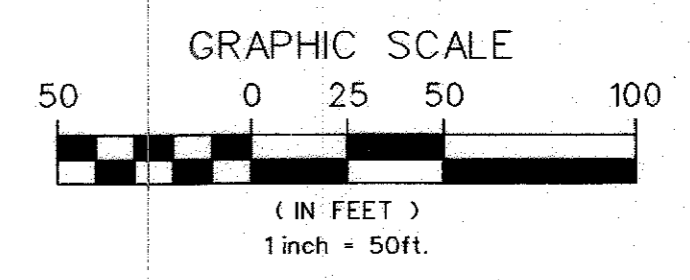
MATCHLINE - SEE SHEET C6

MATCHLINE - SEE SHEET C8

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
 Chief, Development Engineering Division  
 Cindy Hamrick  
 Chief, Division of Land Development  
 Leah Rutter  
 Director

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 County Health Officer  
 Howard County Health Department

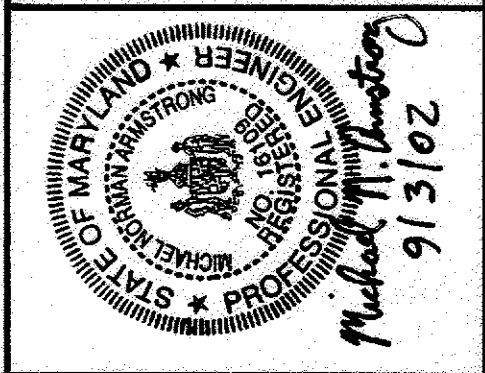
REVISION #1 - BLDG (07/29/16)  
 ADDED WASTE WATER TREATMENT PLANT MODIFIED EX. PUMPING STATIONS, ADDED NEW PUMPING STATIONS AND INSTALLED NEW 1.5" & 2" FORCE MAINS.



MARYLAND COORDINATE SYSTEM  
 HORIZONTAL NAD 83-91  
 VERTICAL NAVD 29

NO.	REVISIONS DESCRIPTION	DATE

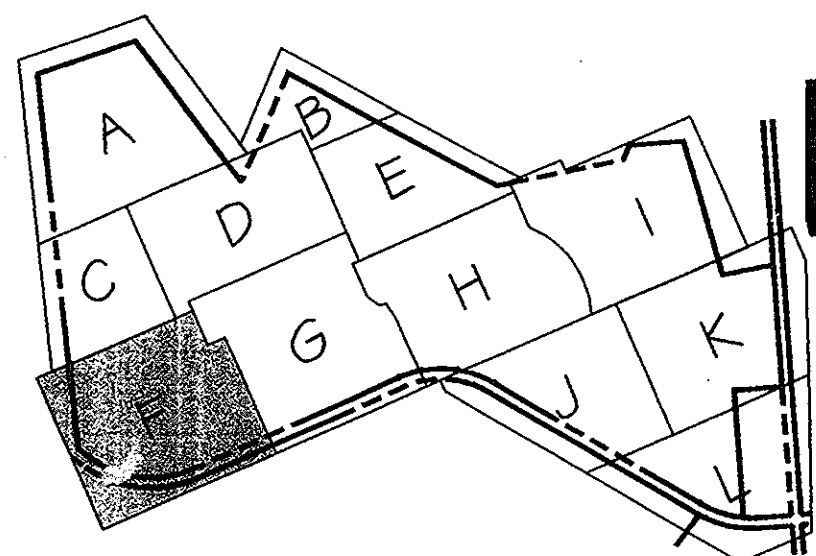
**KCI TECHNOLOGIES INC.**  
 ENGINEERS • PLANNERS • SURVEYORS  
 18 NORTH PARK DRIVE  
 HUNT VALLEY, MARYLAND 21036  
 PHONE: (410) 316-7880 FAX: (410) 316-7817  
 WWW.KCI.COM



**WESTERN REGIONAL PARK**  
 HOWARD COUNTY, DEPARTMENT OF RECREATION AND PARKS  
 COLUMBIA, MARYLAND 21046-1677  
 (410)-313-4640

**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



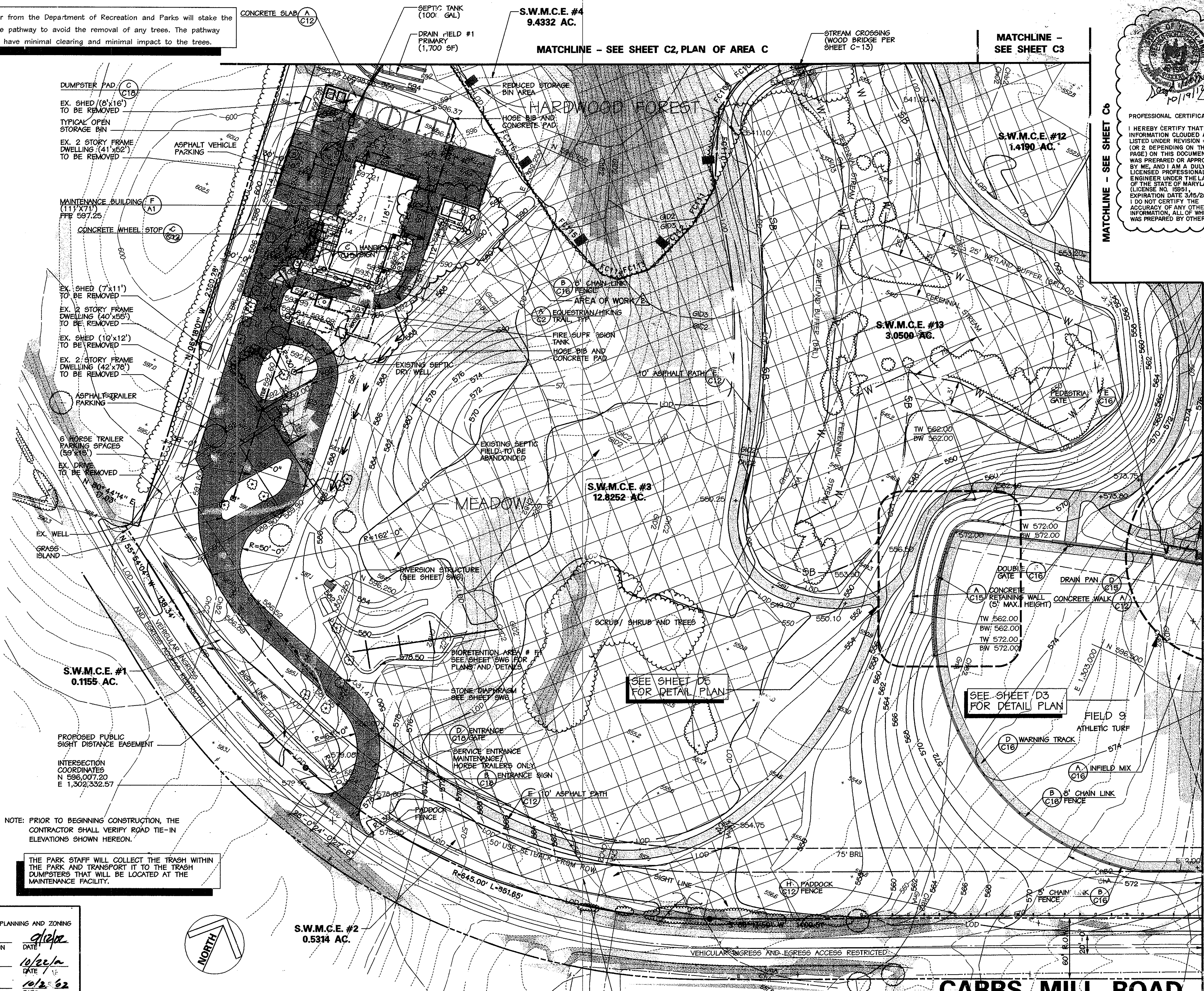
**PLAN SHEET LOCATOR**

NOT TO SCALE

**LEGEND**

- 550 --- EX. INDEX CONTOUR
- 600 --- 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
- --- 75' WETLAND BUFFER
- --- EX. STREAMS
- SB --- 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 PUBLIC SIGHT DISTANCE EASEMENT
- PROPOSED MONITORING WELL
- PROPOSED WATER LINE
- EXISTING WELL
- PROPOSED LIGHT POLE
- PROPOSED PADDOCK FENCE
- SWM CREDIT EASEMENT
- FC67
- FOREST CONSERVATION EASEMENT & FOREST RETENTION SIGN

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

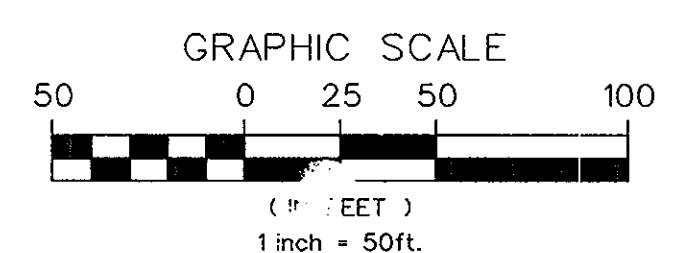
THE PARK STAFF WILL COLLECT THE TRASH WITHIN THE PARK AND TRANSPORT IT TO THE TRASH DUMPSTERS THAT WILL BE LOCATED AT THE MAINTENANCE FACILITY.

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DIRECTOR

DATE: 10/22/02  
 DATE: 10/22/02  
 DATE: 10/22/02

APPROVED: FOR PRIVATE WATER AND SEWERAGE SYSTEMS  
 COUNTY HEALTH OFFICER  
 HOWARD COUNTY HEALTH DEPARTMENT

DATE: 10-12-02

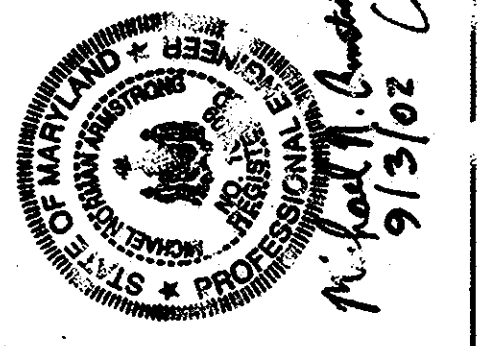


The proposed tree line corresponds to the Limit of Disturbance line. In areas of tree line disturbance the new tree line limit is shown behind the Limit of Disturbance for graphic clarity.

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. 18591 EXPIRATION DATE 5/15/2014. I DO NOT CERTIFY THE ACCURACY OF ANY OTHER INFORMATION, ALL OF WHICH WAS PREPARED BY OTHERS.

NO.	REVISIONS DESCRIPTION	DATE
1	ADDED CHANGES TO PAVING, BUILDING, AND UTILITY LAYOUT	1/09/07
2	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 TECHNOLOGIES INC.**  
 ENGINEERS • PLANNERS • SURVEYORS  
 10 NORTH PARK DRIVE  
 HUNT VALLEY, MARYLAND 21080  
 PH. (410) 478-7800 FAX (410) 366-7817  
 TECHNOLOGIES WWW.KCITC.COM



**WESTERN REGIONAL PARK**  
 HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
 7120 WILKINSON VILLES ROAD  
 COLUMBIA, MARYLAND 21046-1677  
 (410) 313-4640

**SITE PLAN AREA F**

SCALE: 1" = 50'

DATE: 06-12-02

PROJECT NO.: 01-00057

CAPITAL PROJECT NO.: N-3927

CONSTRUCTION ISSUE:

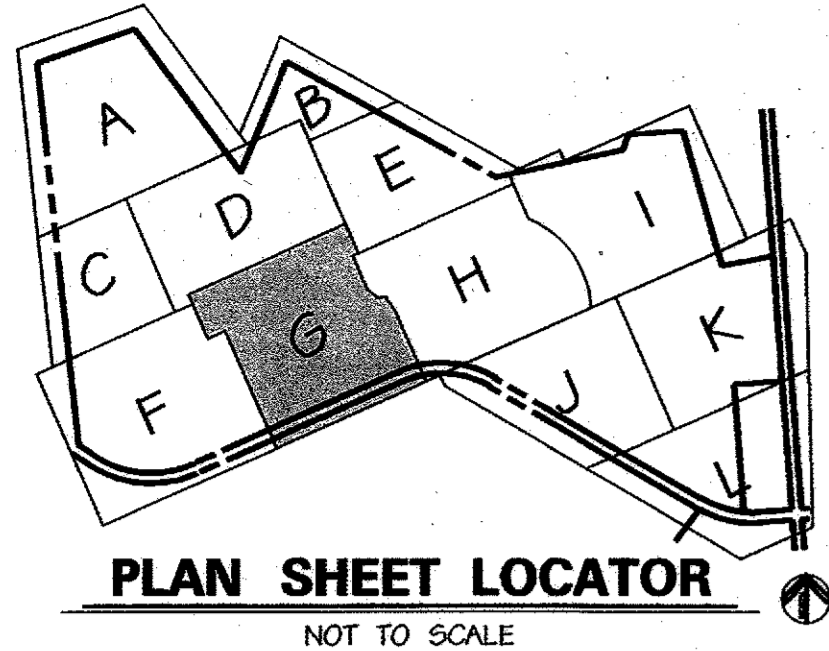
**C5**

SHEET NO.: 8 OF 135

**CARRS MILL ROAD**  
 COUNTY OWNED PUBLIC ROAD  
 60' W. P.O.W.  
 DESIGNATED CONC. ROAD  
 COLLECTOR ROAD

MARYLAND COORDINATE SYSTEM  
 HORIZONTAL NAD 83-91  
 VERTICAL NAVD 29





**PLAN SHEET LOCATOR**  
NOT TO SCALE

**LEGEND**

- 590 --- EX. INDEX CONTOUR
- 590 --- 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
- 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
- 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 50' & 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 tree line disturbance the new tree line limit is shown behind the Limit of Disturbance for graphic clarity.

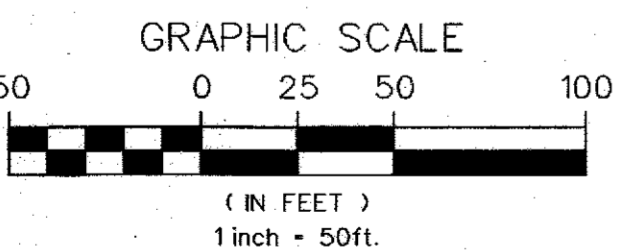
REVISION #1 - BLOG (07/29/16)  
ADDED NEW WASTEWATER TREATMENT PLANT, MODIFIED EX. PUMPING STATIONS, ADDED NEW PUMPING STATIONS AND INSTALLED NEW 1.5" & 2" FORCE MAINS.

**PROFESSIONAL CERTIFICATION**

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



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



MARYLAND COORDINATE SYSTEM  
HORIZONTAL NAD 83-91  
VERTICAL NAVD 29

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION *[Signature]* 9/12/02  
 CHIEF, DIVISION OF LAND DEVELOPMENT *[Signature]* 10/23/02  
 DIRECTOR *[Signature]* 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 COUNTY HEALTH OFFICER *[Signature]* 10-17-02  
 HOWARD COUNTY HEALTH DEPARTMENT

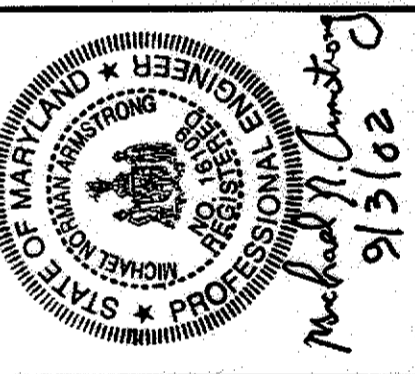
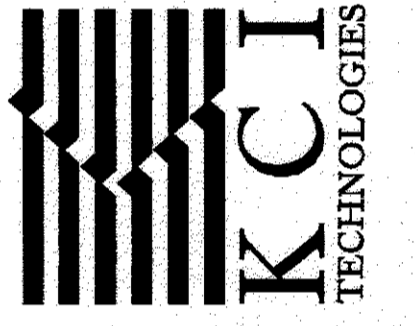


**CARRS MILL ROAD**

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

NO.	REVISIONS DESCRIPTION	DATE

**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



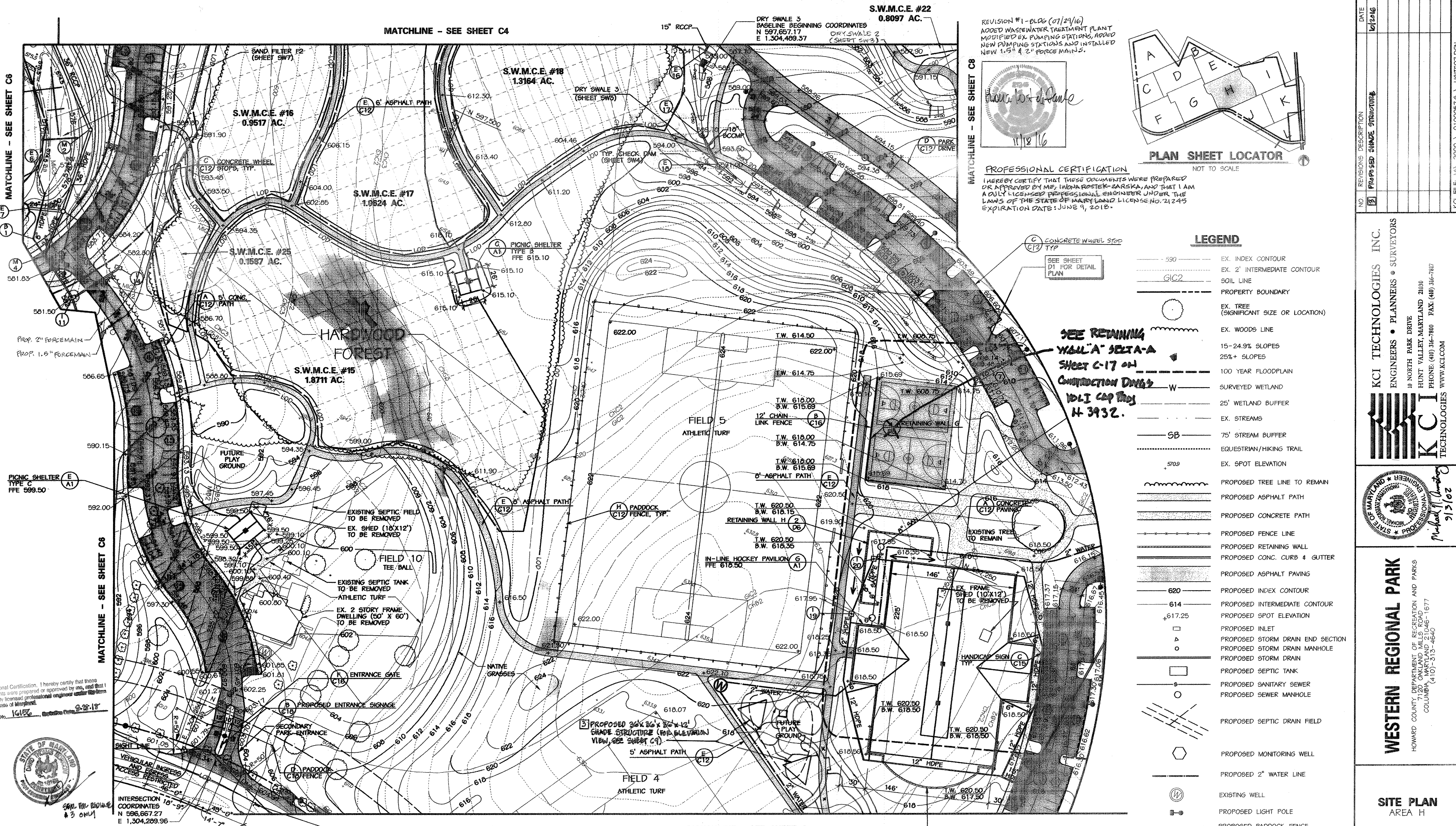
**WESTERN REGIONAL PARK**  
 HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
 7150 OAKLAND MILLS ROAD  
 COLUMBIA, MARYLAND 21046-1677  
 (410) 313-4640

**SITE PLAN AREA G**

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

**C6**

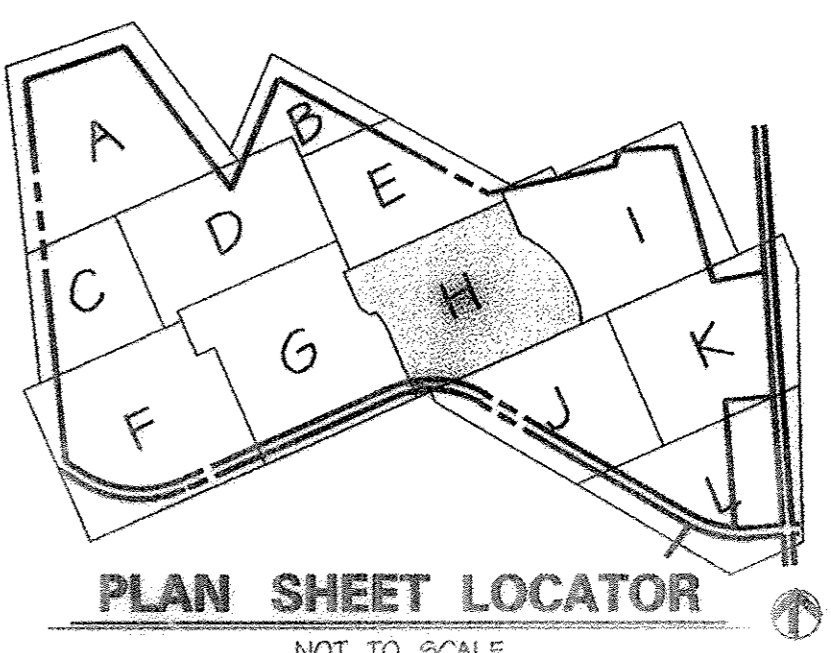
SHEET NO.: 9 OF 113  
 SDP-02-64



REVISION #1 - 06/29/16  
 ADDED WASTEWATER TREATMENT PLANT  
 MODIFIED EX. PUMPING STATIONS, ADDED  
 NEW PUMPING STATIONS AND INSTALLED  
 NEW 1.5" & 2" FORCE MAINS.

11/18/16

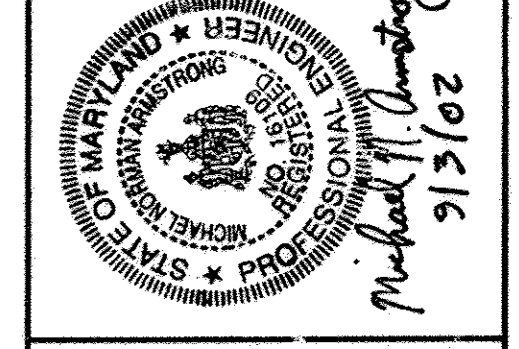
PROFESSIONAL CERTIFICATION  
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED  
 OR APPROVED BY ME, MICHAŁ ROSTEK-ZARSKA, AND THAT I AM  
 A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE  
 LAWS OF THE STATE OF MARYLAND LICENSE NO. 21245  
 EXPIRATION DATE: JUNE 9, 2018.



- 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. STREAMS
  - 25' WETLAND BUFFER
  - 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 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

NO.	REVISIONS DESCRIPTION	DATE
1	PROPOSED SHADE STRUCTURE	10/20/16

KCI TECHNOLOGIES INC.  
 ENGINEERS • PLANNERS • SURVEYORS  
 10 NORTH PARK DRIVE  
 HUNT VALLEY, MARYLAND 21030  
 PHONE: (410) 361-7800 FAX: (410) 361-7817  
 WWW.KCI.COM



**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  
 RCI JOB NO.: 01-00057  
 CAPITAL PROJECT NO.: N-3932  
 PERMIT ISSUE:  
 CONSTRUCTION ISSUE:

**C7**  
 SHEET NO.: 10 OF 113  
 SDP-02-64

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.  
 License No. 16156, Expiration Date: 8-25-18

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
 Chief Development Engineering Division  
 Chief, Division of Land Development  
 Director

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 County Health Officer  
 Howard County Health Department

DATE: 9/12/16  
 DATE: 10/23/16  
 DATE: 10-17-02

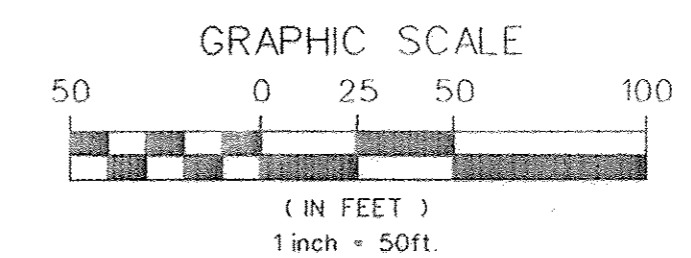
**CARRS MILL ROAD**

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

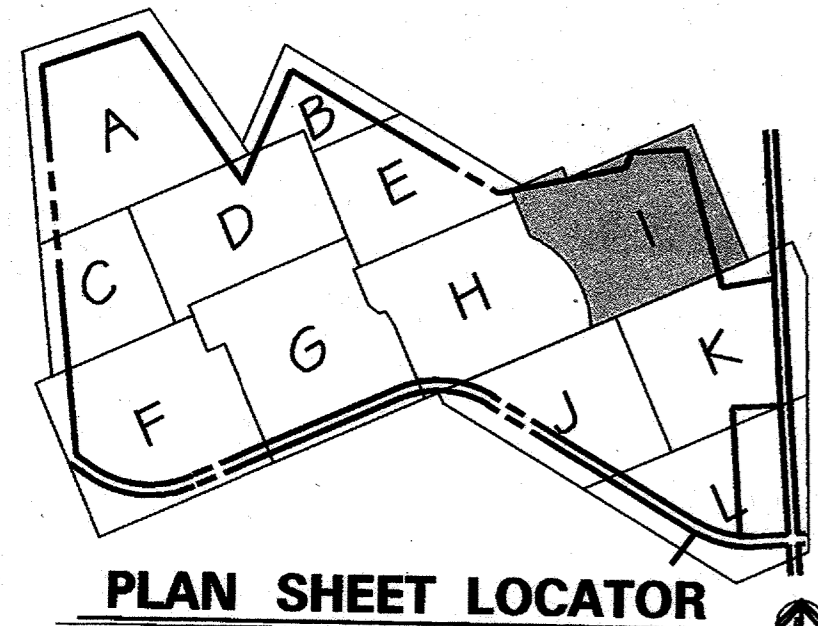
**NOTE**  
 The proposed tree line corresponds to the Limit of Disturbance line. In areas of treeline disturbance the new tree line limit is shown behind the Limit of Disturbance for graphic clarity.

**NOTE**  
 THE ADDITION OF THE SHADE STRUCTURE (1,296 SF OF SHADE; 42 SF OF DISTURBANCE) IS EXEMPT FROM PROVIDING STORM-WATER MANAGEMENT. ANY IMPROVEMENTS IN IMPERVIOUS COVER THAT EXCEED 5,000 SF REQUIRE SWM.

**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



**PLAN SHEET LOCATOR**

**LEGEND**

- 590 --- EX. INDEX CONTOUR
- 590 --- 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
- 570.9 EX. SPOT ELEVATION
- 5B 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
- 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" WATERLINE
- EXISTING WELL
- PROPOSED LIGHT POLE
- PROPOSED PADDOCK FENCE
- SWM CREDIT EASEMENT
- FC67 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.

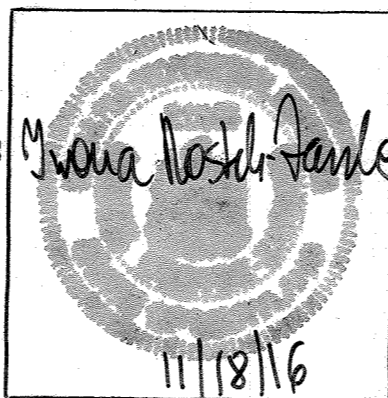
**NOTE**

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

MATCHLINE - SEE SHEET C4

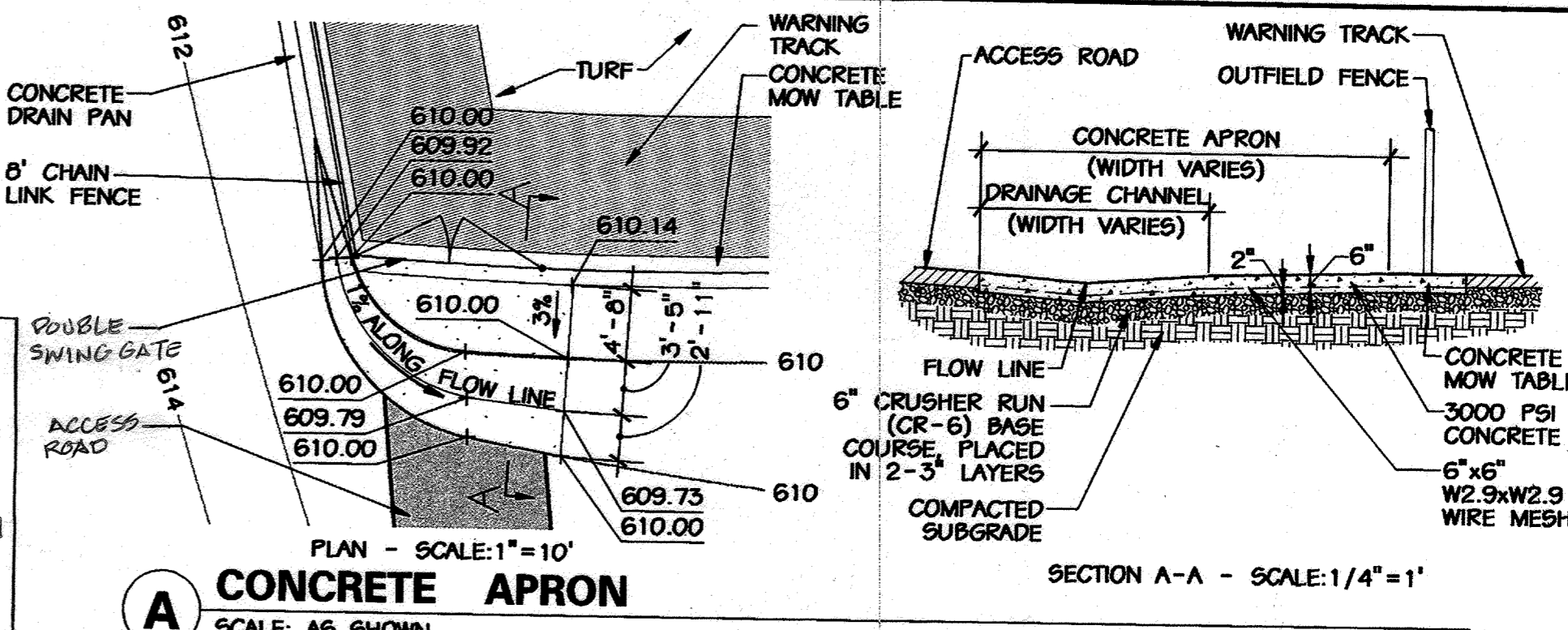
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S.W.M.C.E. #23  
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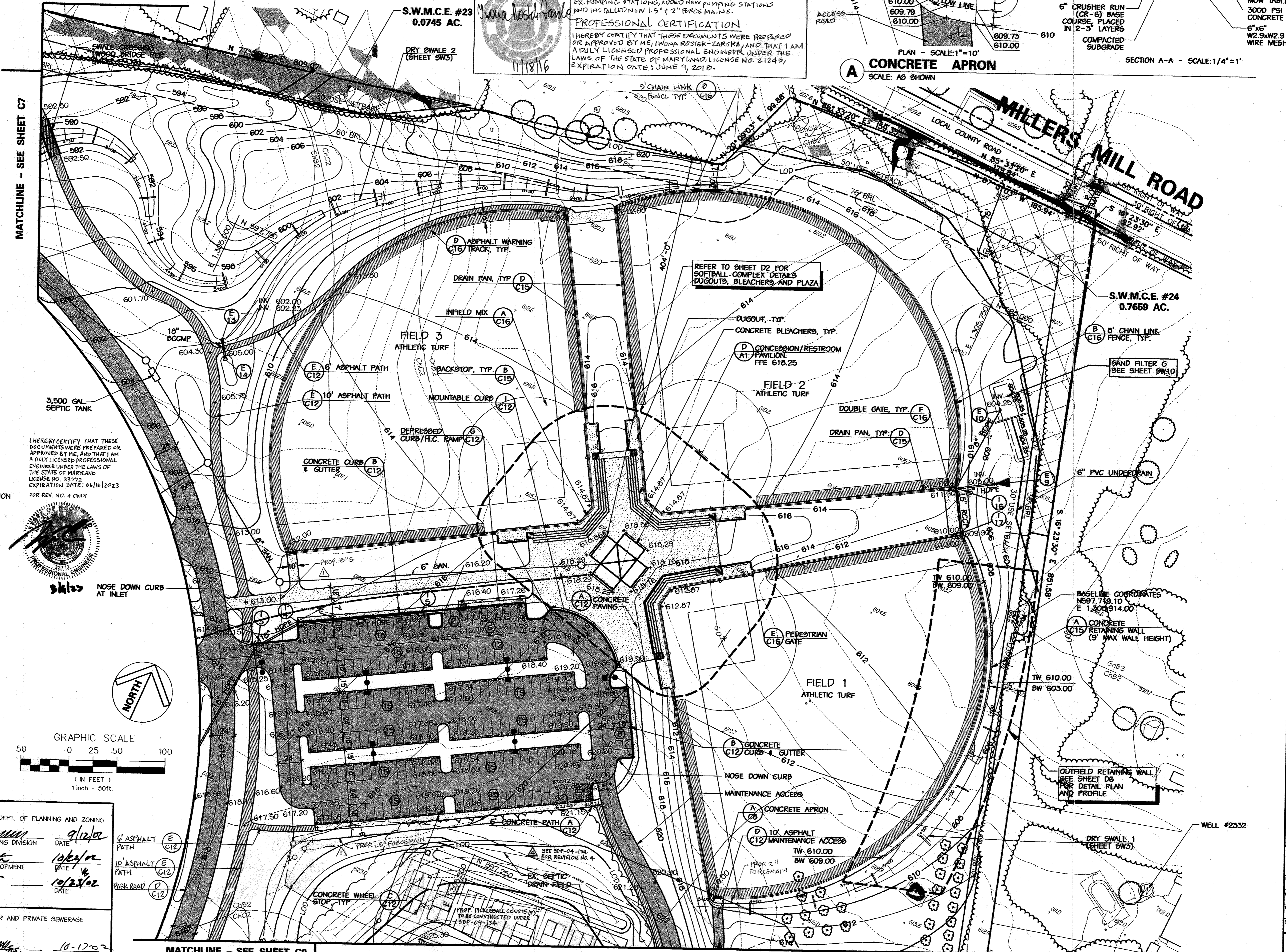


REVISION #1 - BLDG (07/29/16)  
ADDED NEW WASTEWATER TREATMENT PLANT, MODIFIED EX. PUMP AND STATIONS, ADDED NEW PUMP STATIONS AND INSTALLED NEW 1.5" & 2" FORCE MAINS.

**PROFESSIONAL CERTIFICATION**  
HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, MONA ROSTEK-ZARSKA, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 111816, EXPIRATION DATE: JUNE 9, 2018.



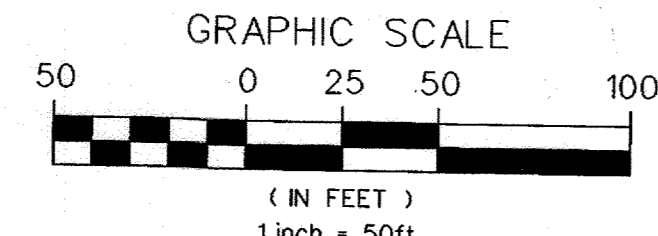
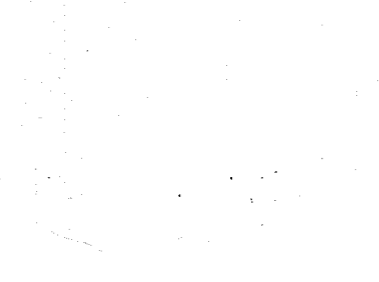
MATCHLINE - SEE SHEET C7



I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772, EXPIRATION DATE: 04/11/2023, FOR REV. NO. 4 ONLY.



skls NOSE DOWN CURB AT INLET



APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
 Chief Development Engineering Division DATE: 9/12/02  
 Chief, Division of Land Development DATE: 10/2/02  
 Director DATE: 10/28/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 County Health Officer DATE: 10-17-02  
 Howard County Health Department

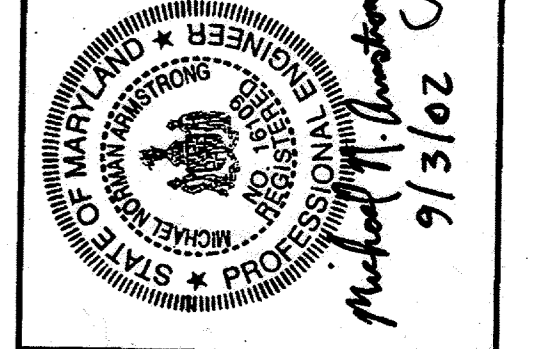
MATCHLINE - SEE SHEET C9

MATCHLINE - SEE SHEET C10

NO.	REVISIONS DESCRIPTION	DATE
1	ADD PICKLEBALL COURTS	3-9-23

**KCI TECHNOLOGIES INC.**  
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10 NORTH PARK DRIVE  
 HUNT VALLEY, MARYLAND 21088  
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**WESTERN REGIONAL PARK**  
 HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
 10000 OAKLAND MILLS ROAD  
 COLUMBIA, MARYLAND 21046-1677  
 (410) 313-4640

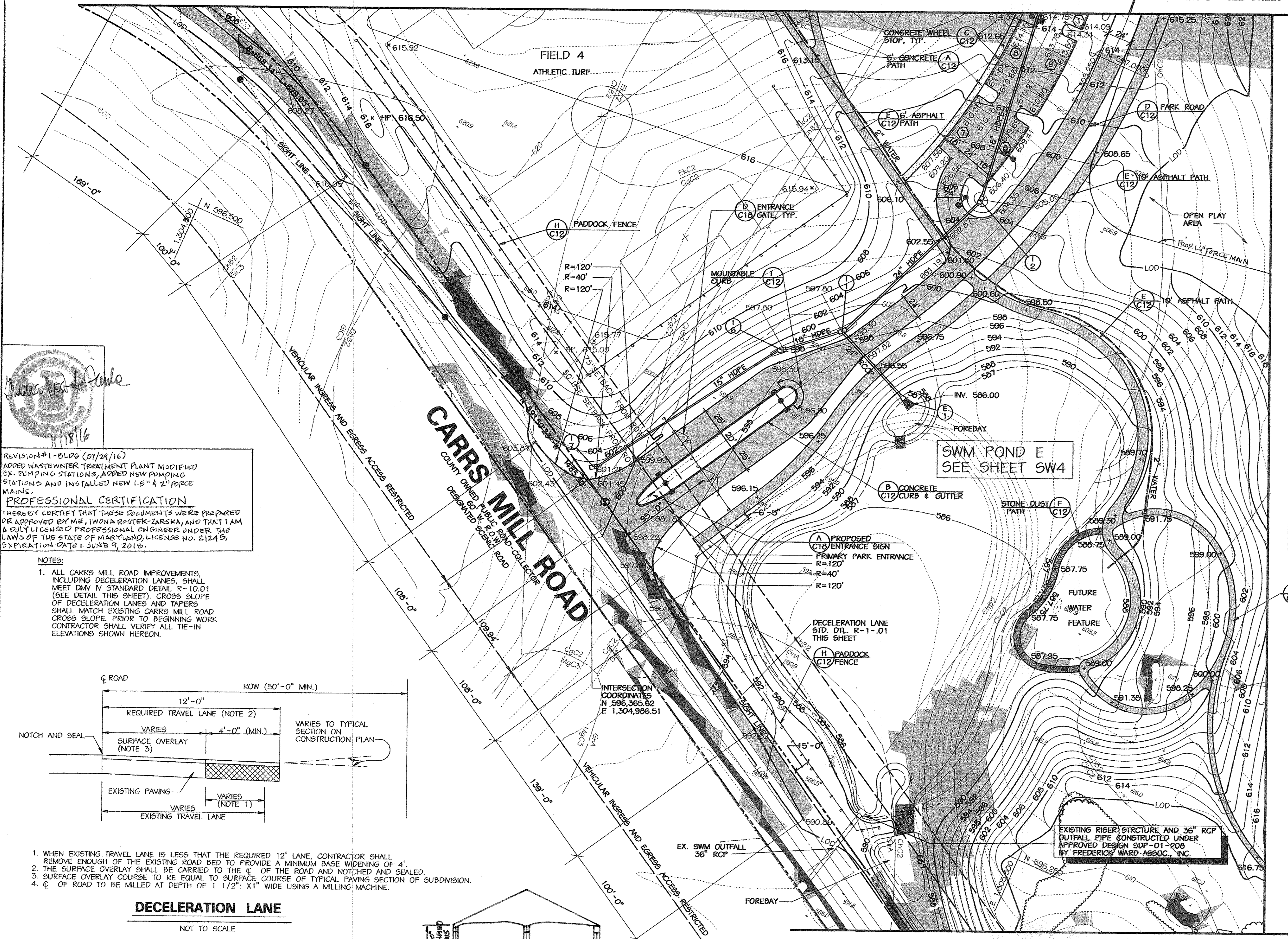
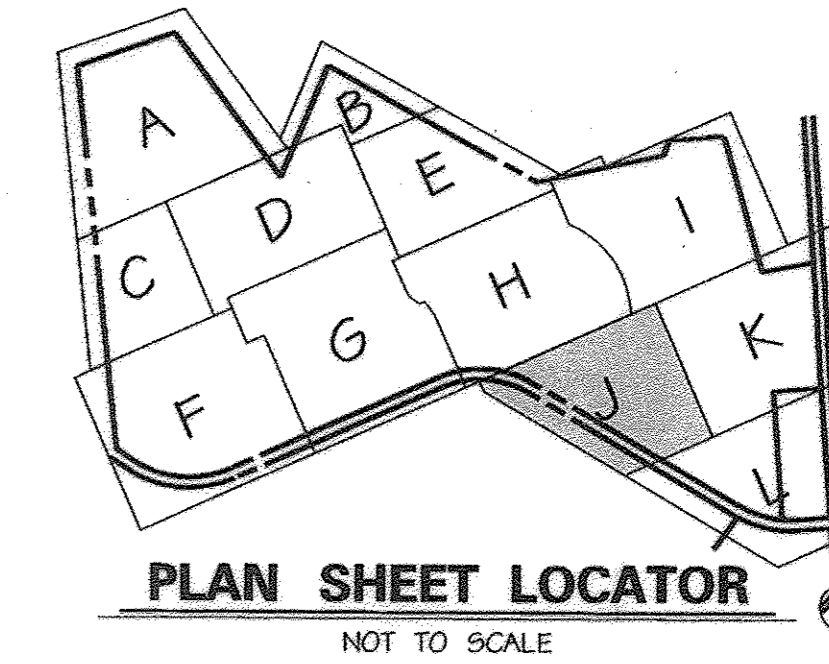
**SITE PLAN AREA I**

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

MATCHLINE - SEE SHEET C7

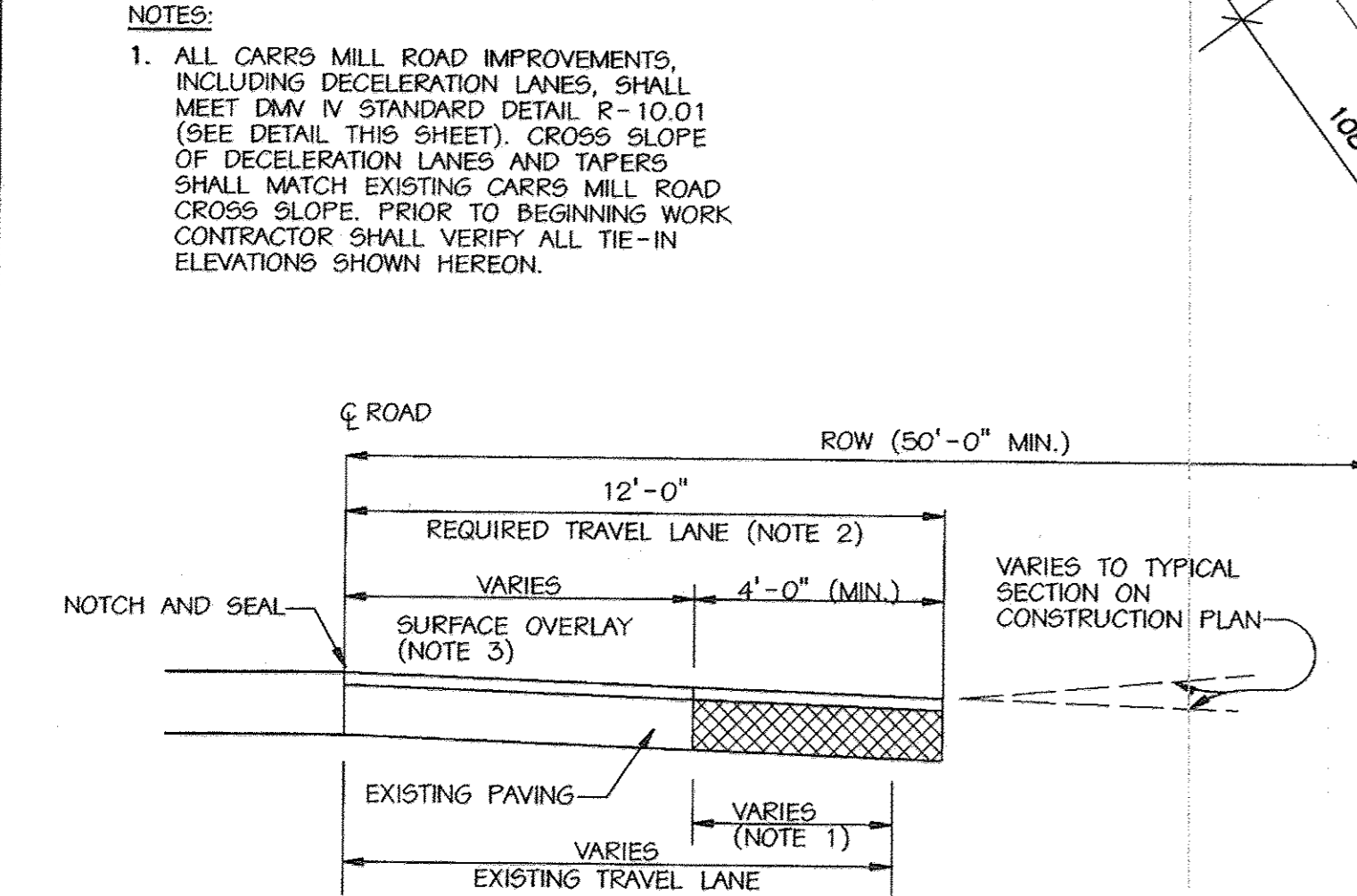
MATCHLINE - SEE SHEET C8



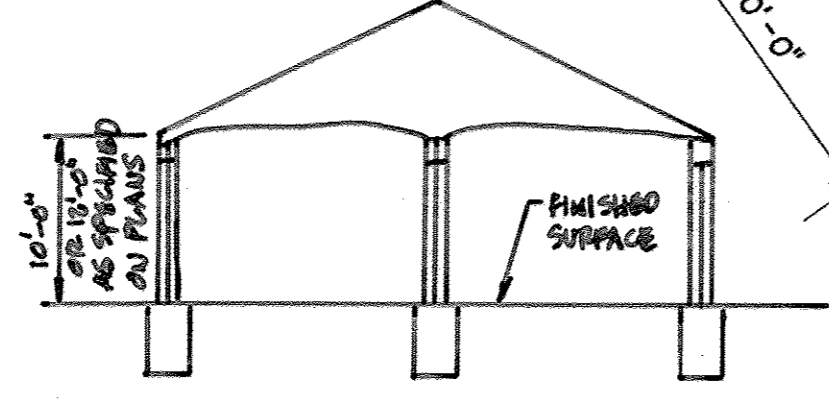
REVISION #1 - BLOG (07/24/16)  
ADDED WASTEWATER TREATMENT PLANT MODIFIED EX. PUMPING STATIONS, ADDED NEW PUMPING STATIONS AND INSTALLED NEW 1.5" & 2" FORCE MAINS.

**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.

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.



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



**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.

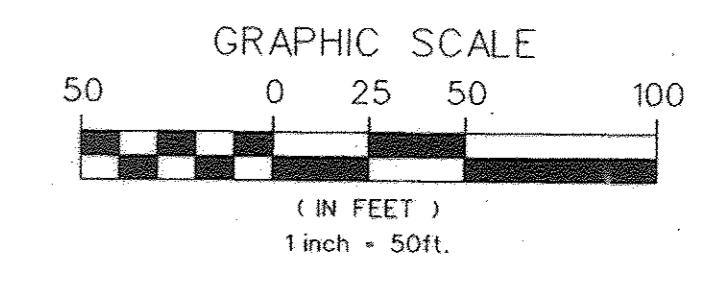
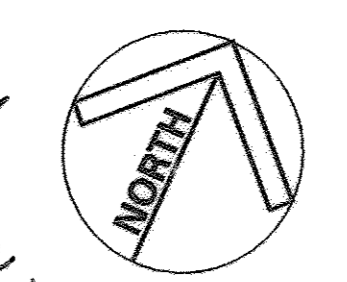
**NOTE**  
The proposed tree line corresponds to the Limit of Disturbance line. In areas of tree line disturbance the new tree line limit is shown behind the Limit of Disturbance for graphic clarity.

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
 Chief, Development Engineering Division  
 9/12/02  
 DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
 Chief, Division of Land Development  
 10/23/02  
 DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 County Health Officer  
 10-17-02  
 DATE

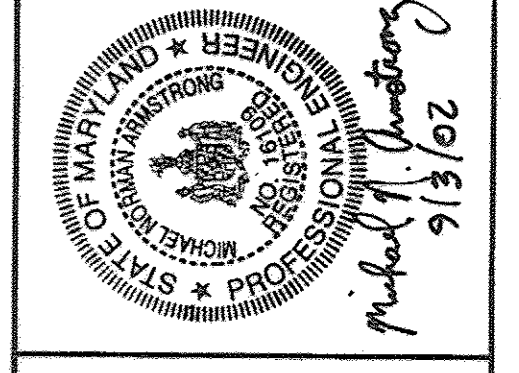
Professional Certification, I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.  
 License No. 16156  
 Expiration Date: 8-28-18



MARYLAND COORDINATE SYSTEM  
HORIZONTAL NAD 83-91  
VERTICAL NAVD 29

NO.	REVISIONS DESCRIPTION	DATE
1	PROPOSED SHADE STRUCTURE	10/20/16

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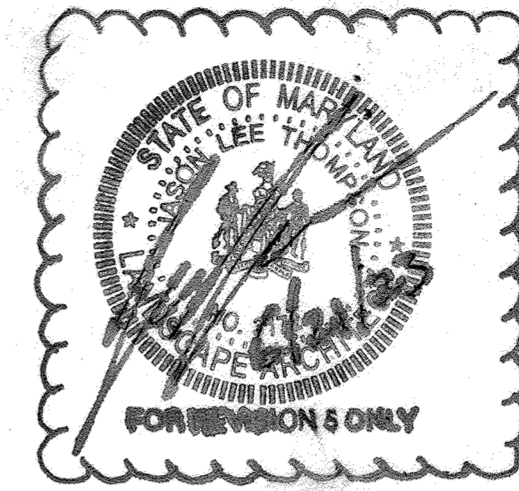
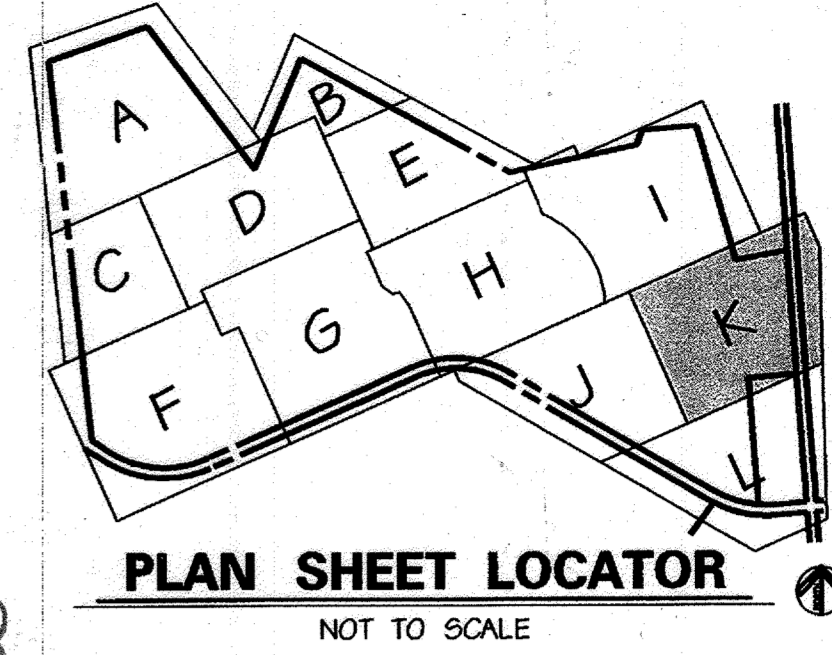
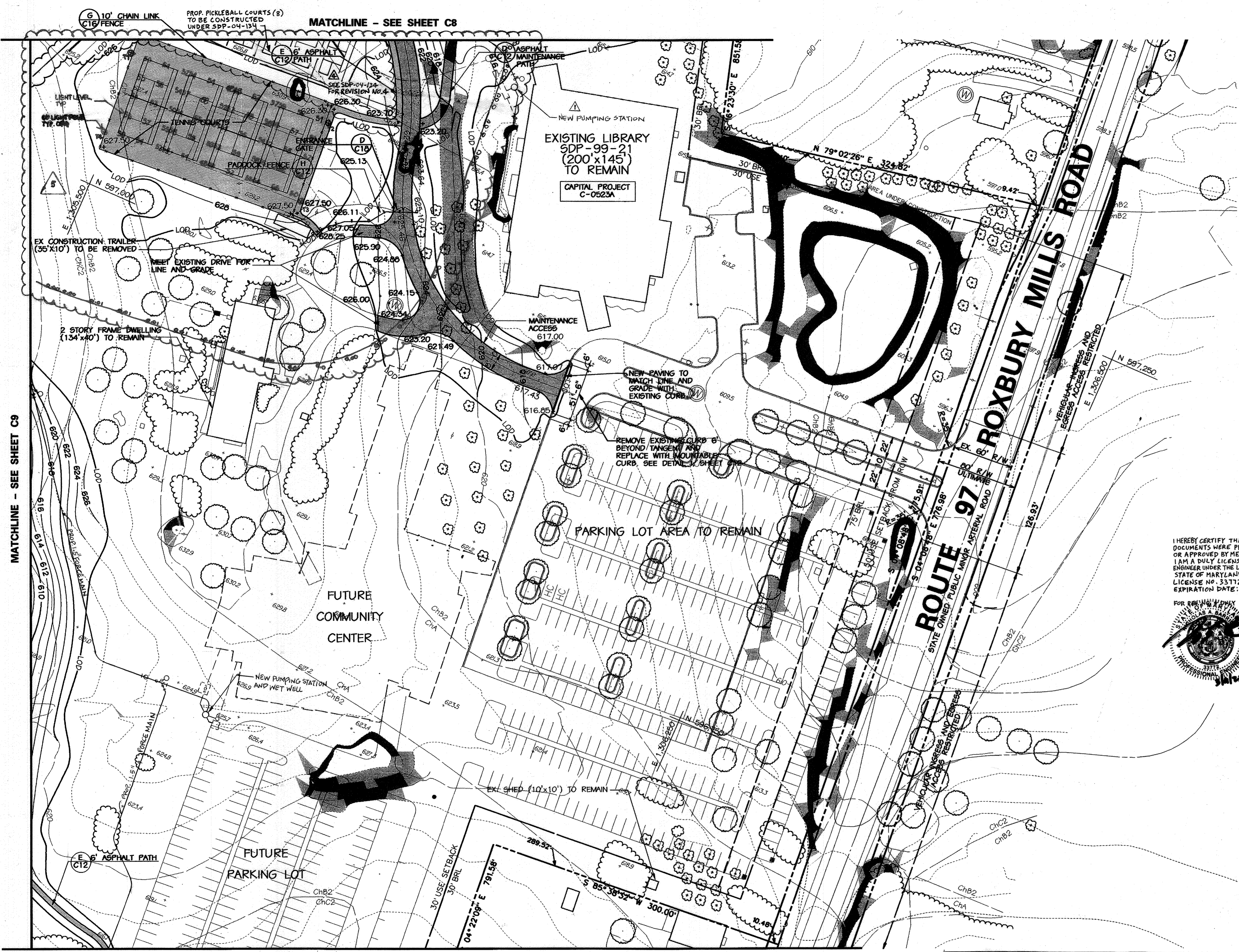


**WESTERN REGIONAL PARK**  
HOWARD COUNTY, DEPARTMENT OF RECREATION AND PARKS  
COLUMBIA, MARYLAND 21046-1677  
(410) 313-4640

**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



**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
- 

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 33112. EXPIRATION DATE: 06/16/2023.

FOR REVISIONS ONLY

MATCHLINE - SEE SHEET C9

MATCHLINE - SEE SHEET C8

MATCHLINE - SEE SHEET C11

APPROVED, HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
 Chief, Development Engineering Division  
 Chief, Division of Land Development  
 Director

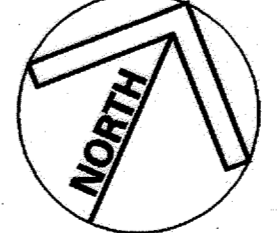
APPROVED, FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 County Health Officer

**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.

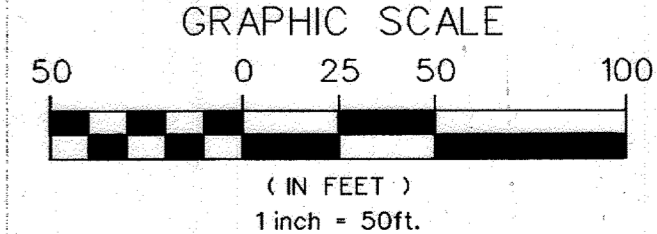
**NOTE**  
 The Project Manager from the Department of Recreation and Parks will stake the placement of the pathway to avoid the removal of any trees. The pathway placement will have minimal clearing and minimal impact to the trees.

REVISION #1 - 01/24/16  
 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, JIMONA 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.



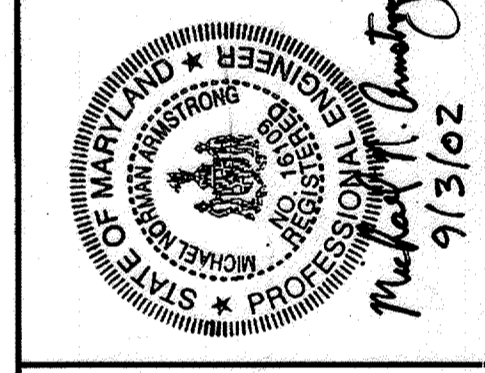
MARYLAND COORDINATE SYSTEM  
 HORIZONTAL NAD 83-91  
 VERTICAL NAVD 29



NO.	REVISIONS DESCRIPTION	DATE
1	ADD PICKLEBALL COURTS	3-4-23
2	TENNIS COURT LIGHTING	5-30-23

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

**SITE PLAN AREA K**

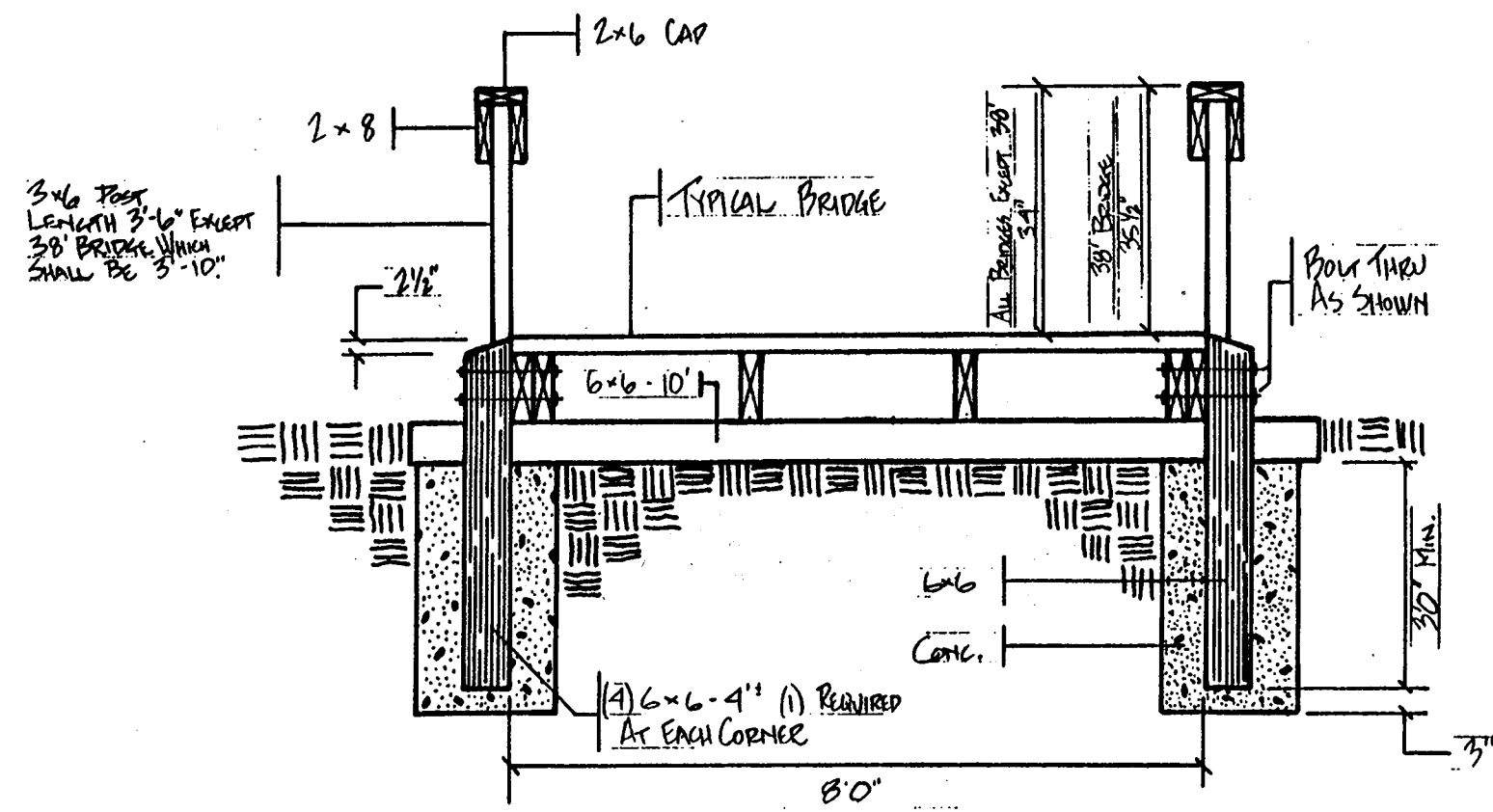
SCALE: 1" = 50'  
 DATE: 06-12-02  
 KCI JOB NO.: 01-00057  
 CAPITAL PROJECT NO.: N-3932  
 PERMIT ISSUE:  
 CONSTRUCTION ISSUE:

**C10**  
 SHEET NO.: 13 OF 145



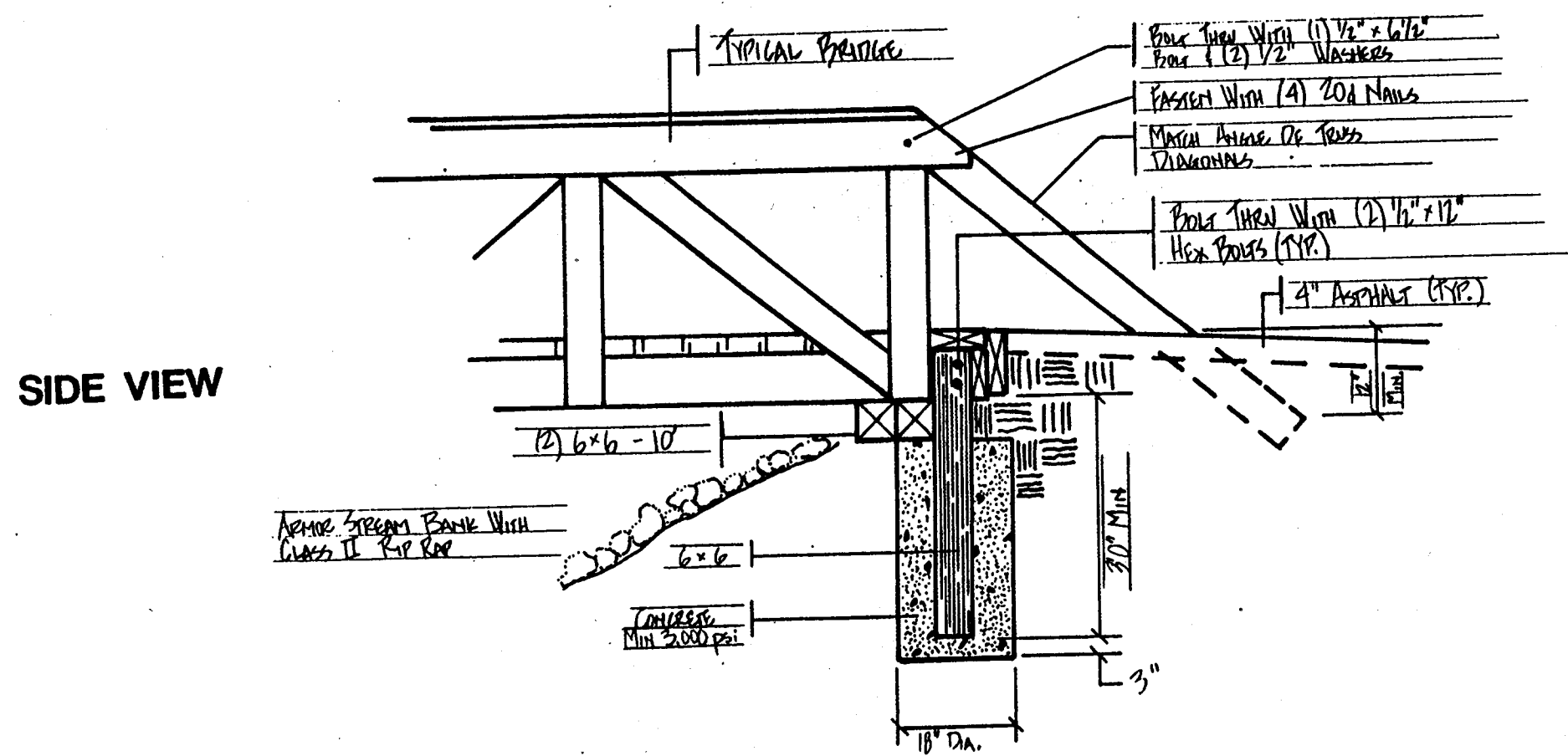


**OPEN SPACE PATHWAY BRIDGE  
DETAILS**



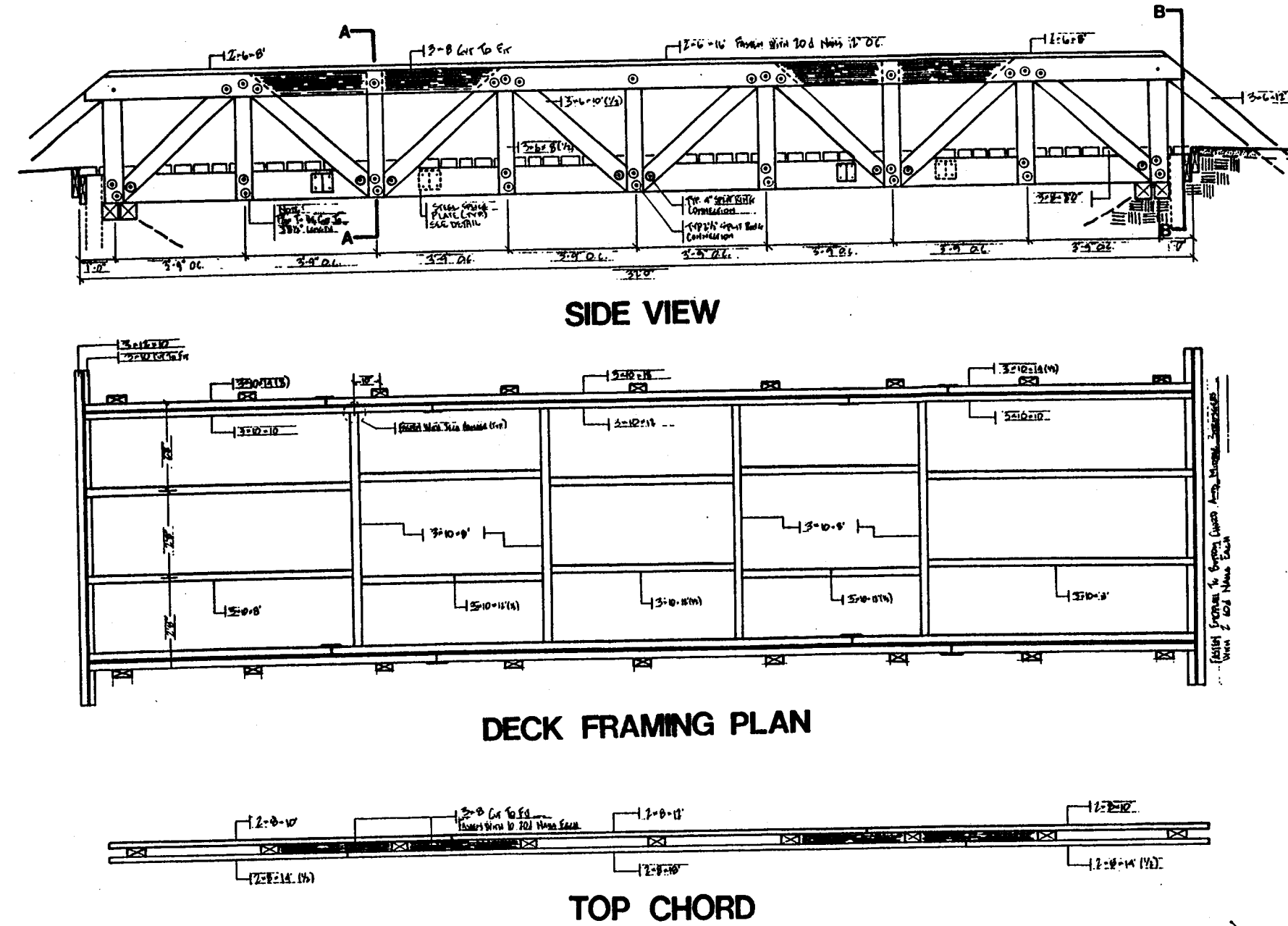
**FOOTING DETAILS  
SCALE: 1/2" = 1'**

**OPEN SPACE PATHWAY BRIDGE  
DETAILS**

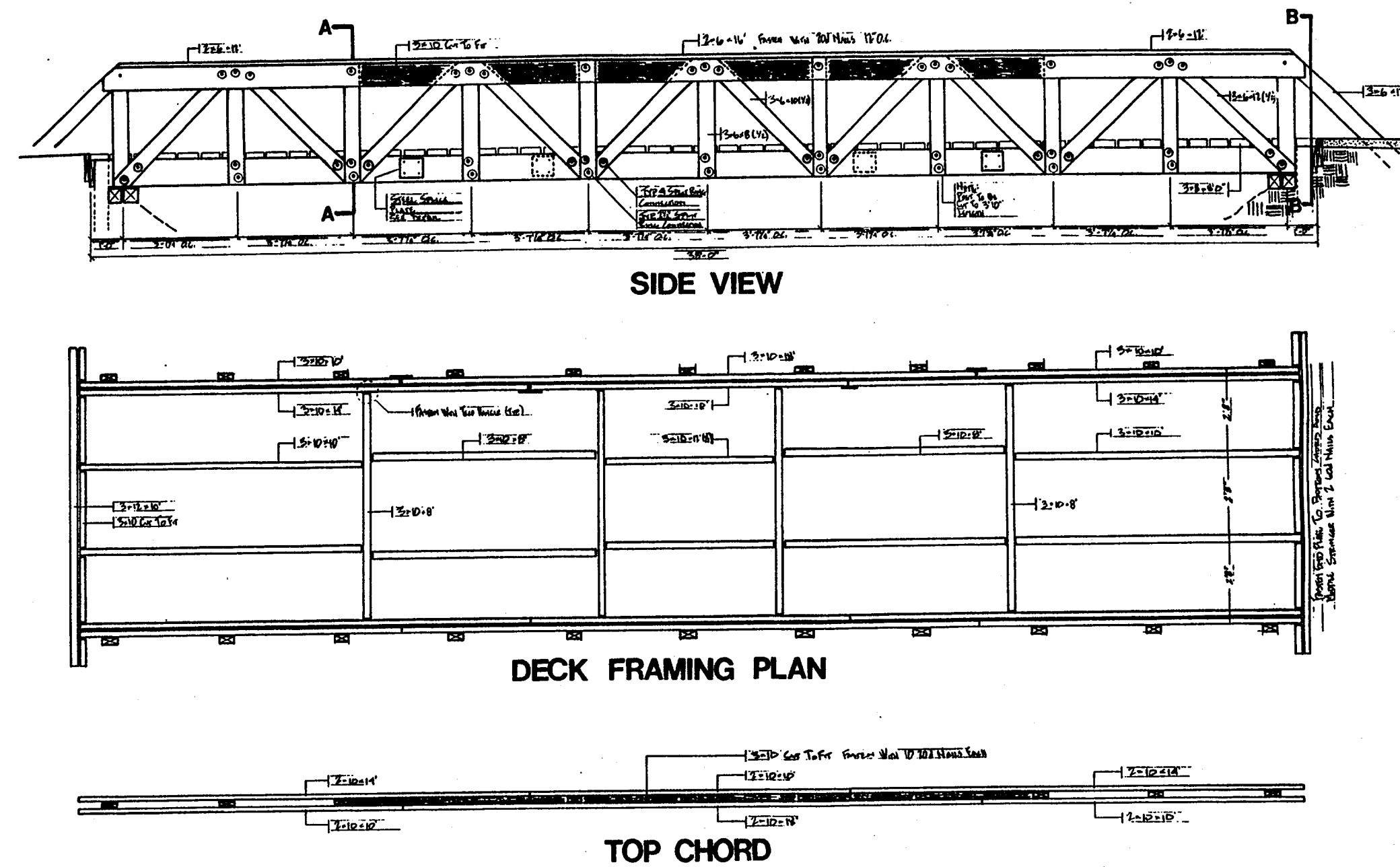


**FOOTING DETAILS  
SCALE: 1/2" = 1'**

**TYPICAL 32' BRIDGE  
SCALE: 1/4" = 1'**

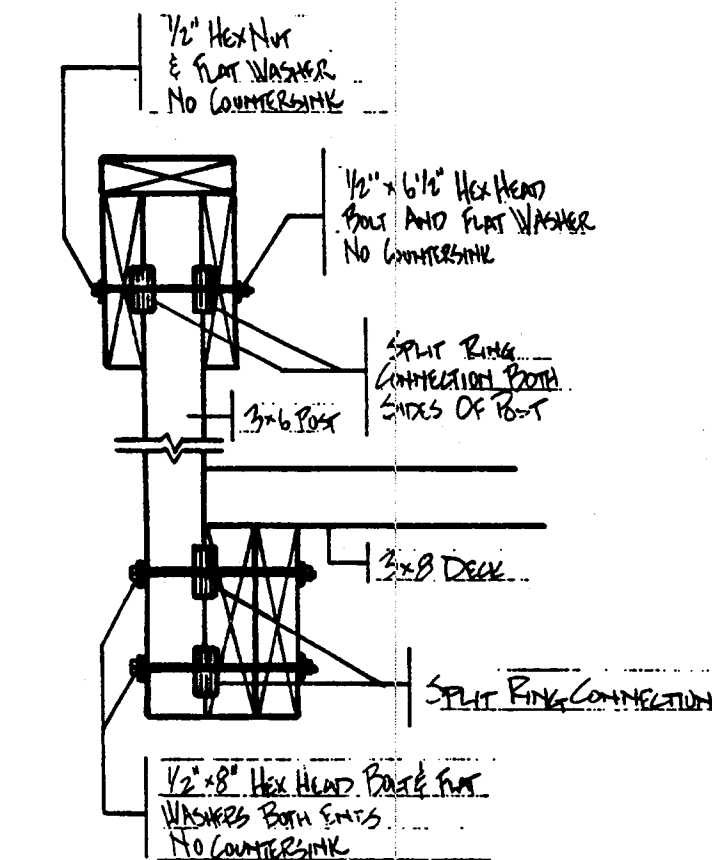


**TYPICAL 38' BRIDGE  
SCALE: 1/4" = 1'**



**OPEN SPACE PATHWAY BRIDGE  
DETAILS**

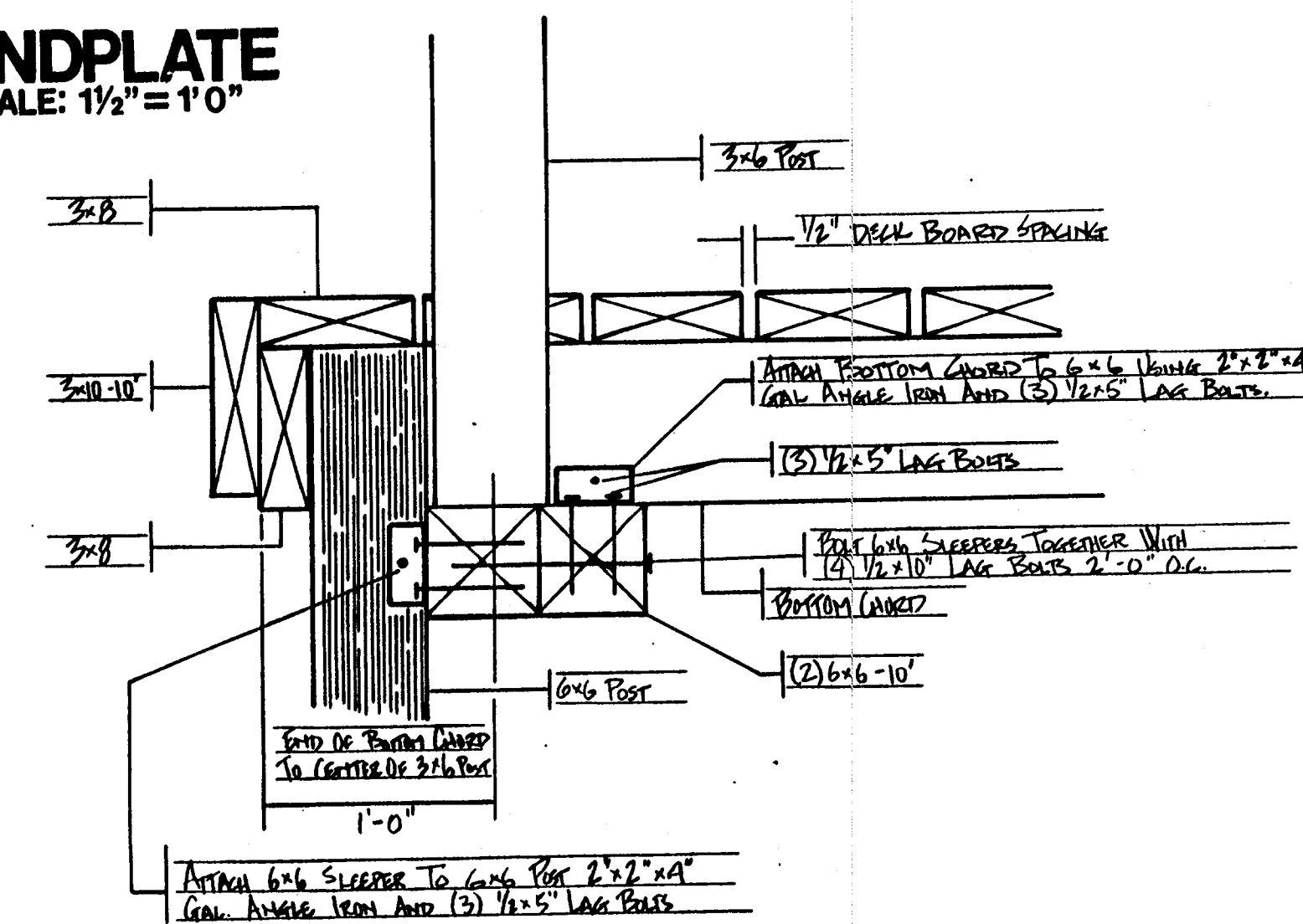
**SPLIT RING CONNECTION  
Required For Bridges Over 18' Only  
SCALE: 1/2" = 1'**



**SECTION A-A**

**OPEN SPACE PATHWAY BRIDGE  
DETAILS**

**ENDPLATE  
SCALE: 1/2" = 1'0"**



APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
 Chief, Development Engineering Division  
 Chief, Division of Land Development  
 Recorder

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 County Health Officer  
 Howard County Health Department

NO.	REVISIONS DESCRIPTION	DATE

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 TECHNOLOGIES WWW.KCI.COM



**WESTERN REGIONAL PARK**  
 HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
 7120 OAKLAND HILLS ROAD  
 COLUMBIA, MARYLAND 21046-1677  
 1-410-313-5135-4640

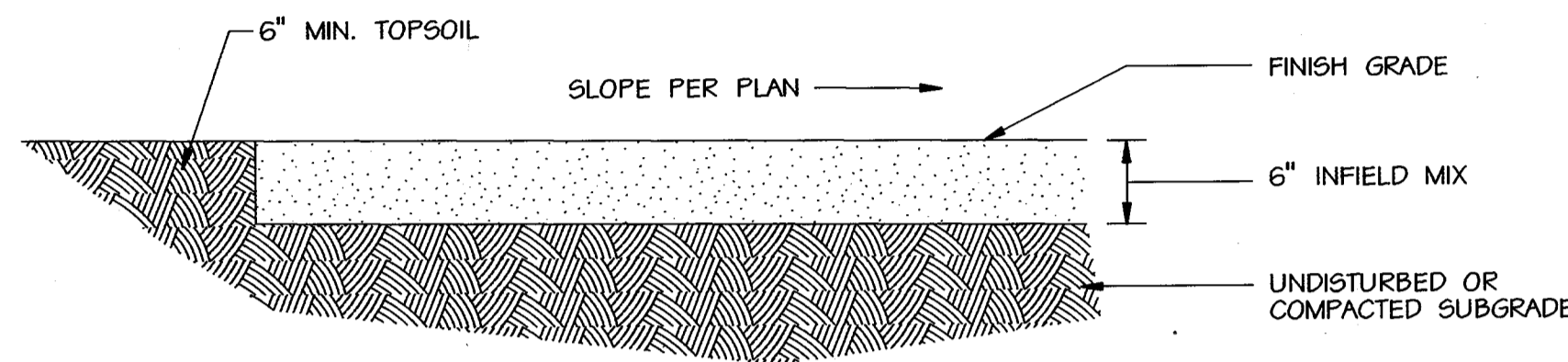
**SITE DETAILS**

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



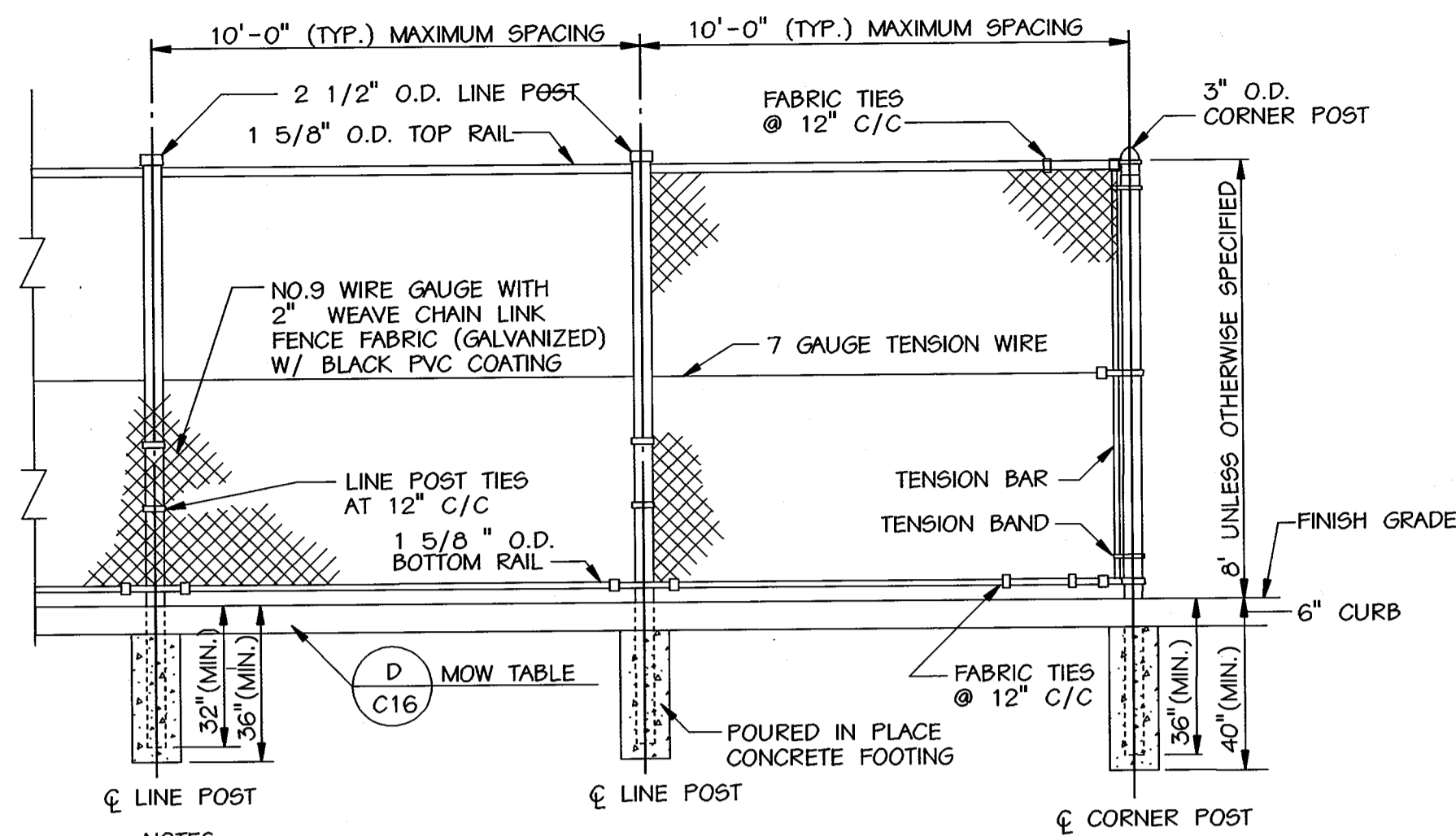






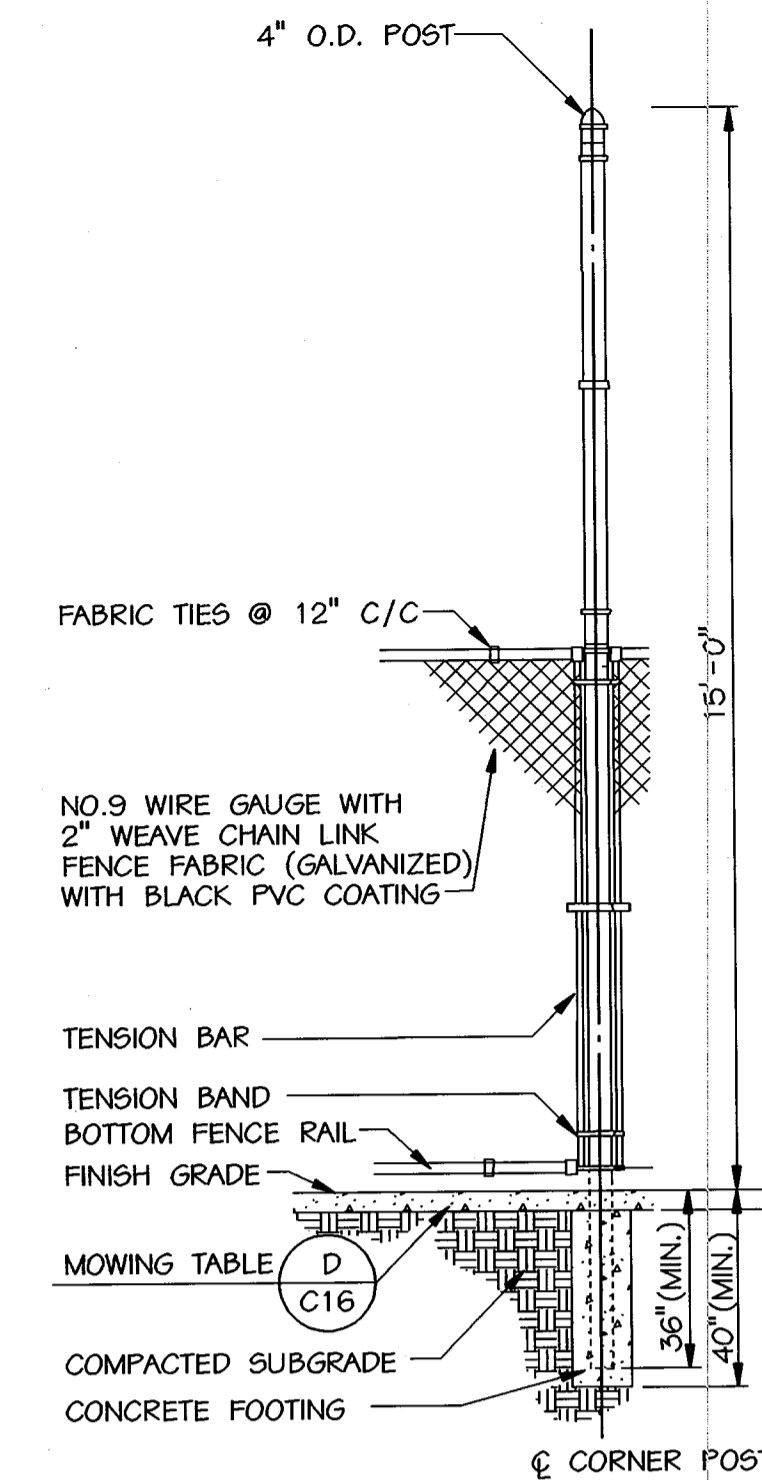
**A INFIELD MIX DETAIL**

NOT TO SCALE



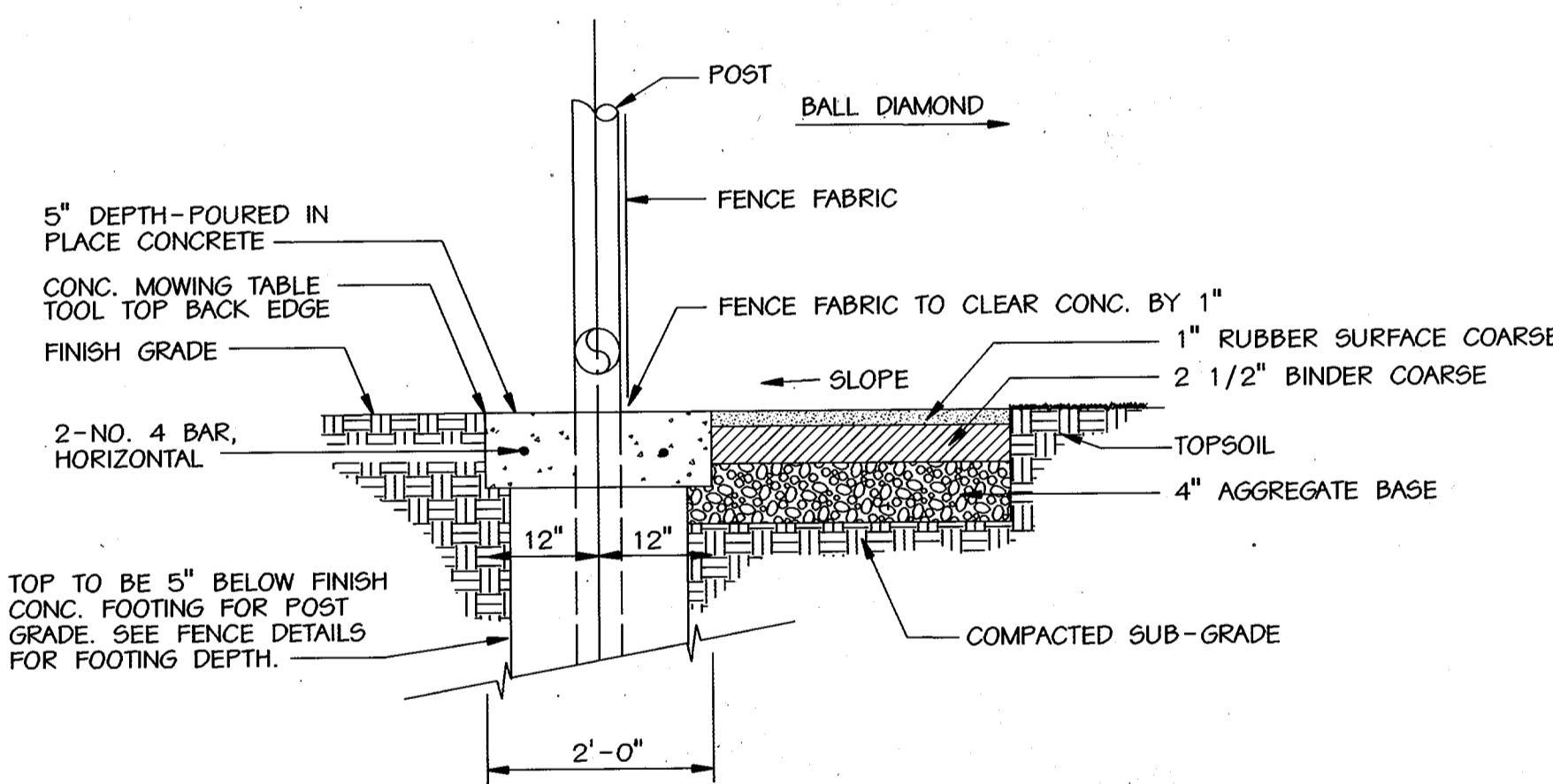
**B OUTFIELD FENCE DETAIL**

NOT TO SCALE



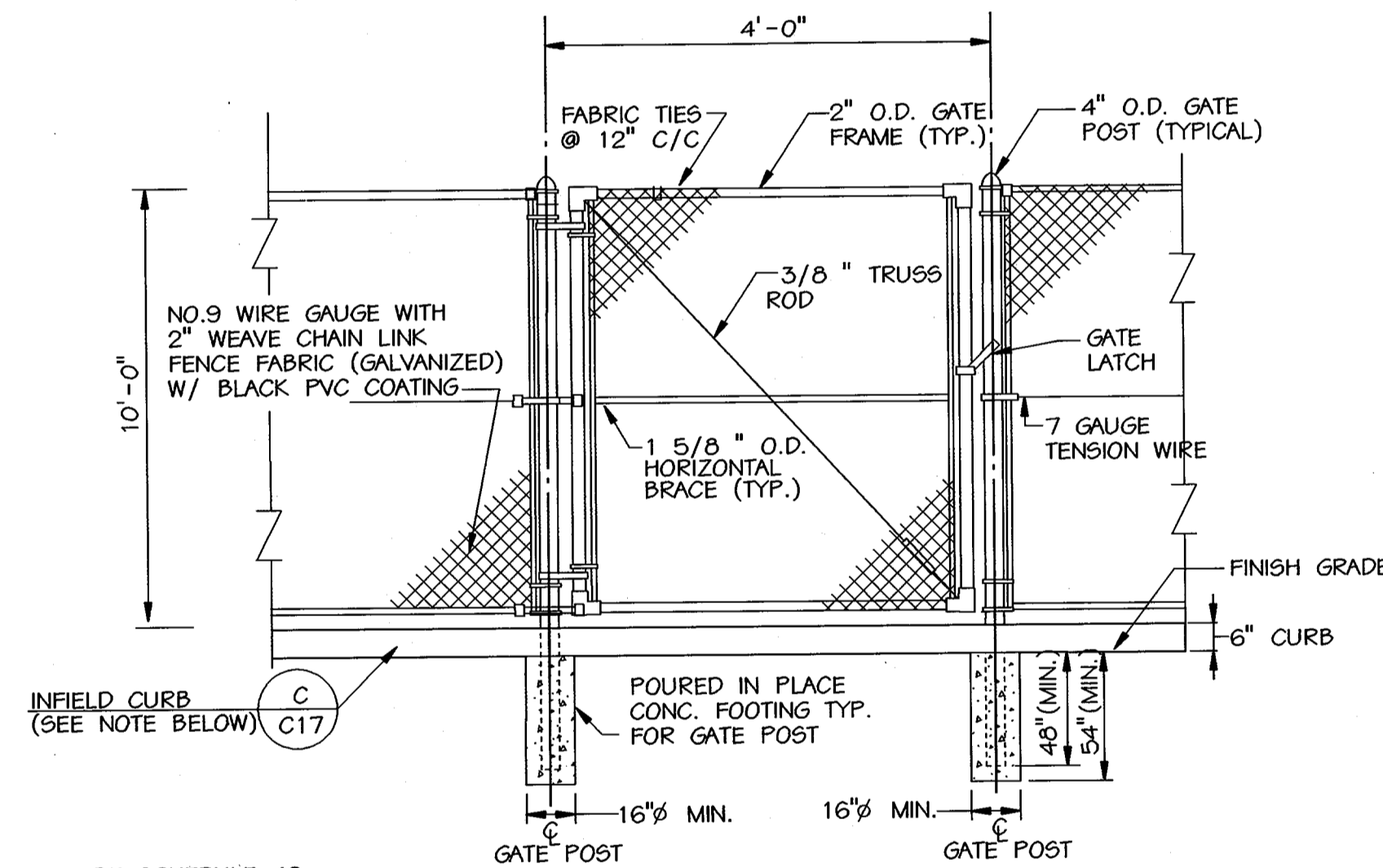
**C FOUL LINE POLE DETAIL**

NOT TO SCALE



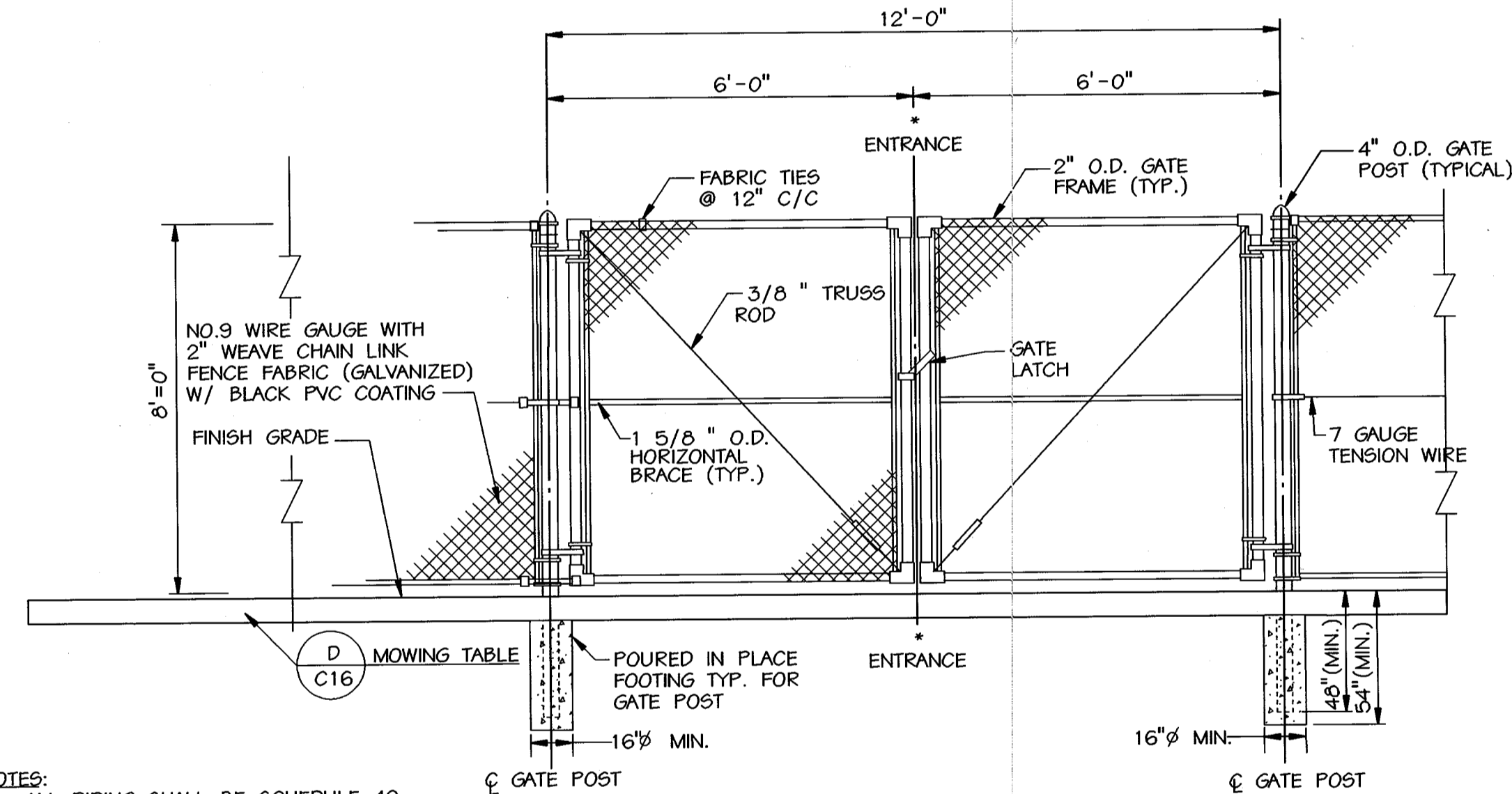
**D WARNING TRACK DETAIL**

NOT TO SCALE



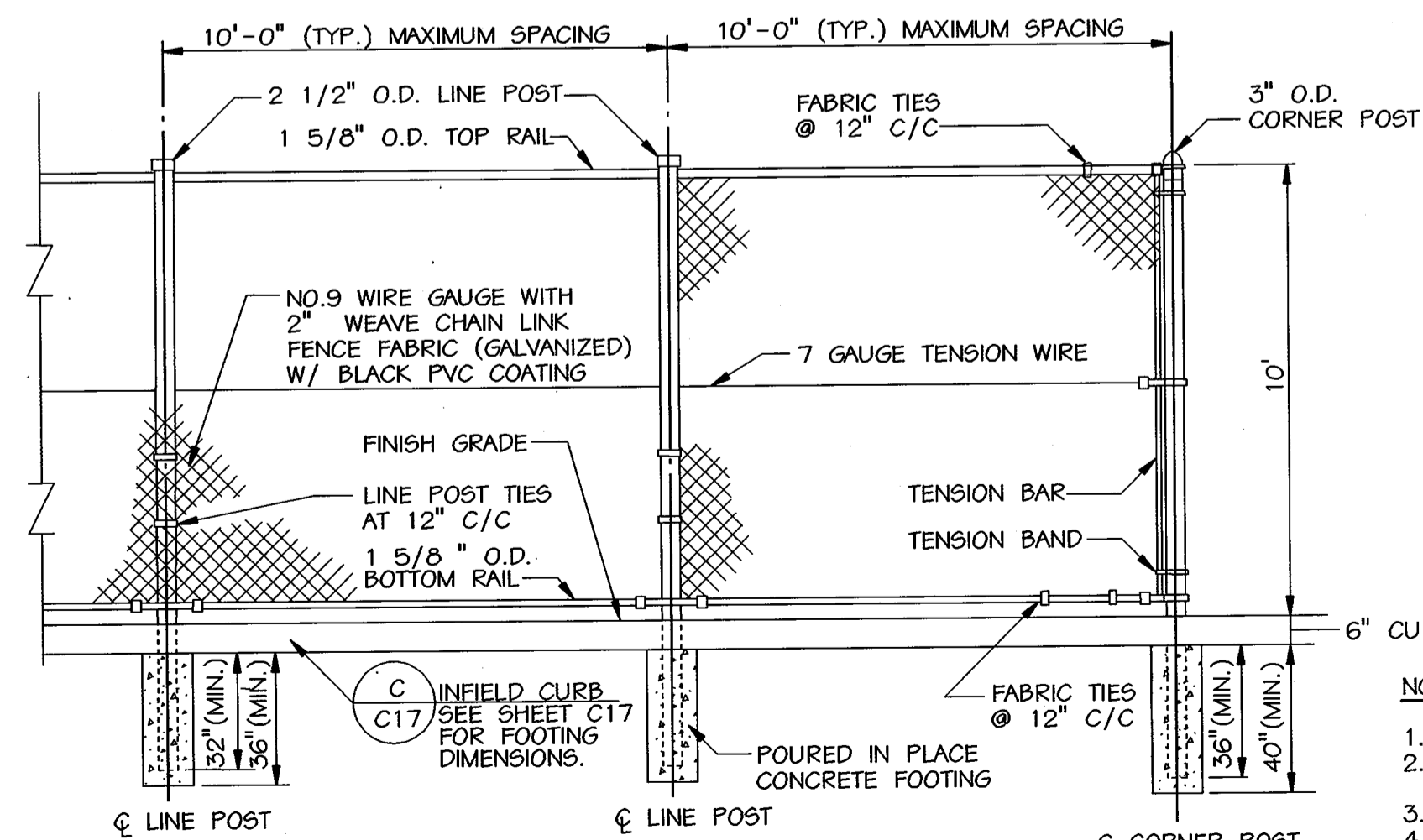
**E PEDESTRIAN GATE DETAIL**

NOT TO SCALE



**F DOUBLE GATE DETAIL**

NOT TO SCALE



**G INFIELD FENCE DETAIL**

NOT TO SCALE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
 Chief, Development Engineering Division  
 Chief, Division of Land Development  
 Director

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 County Health Officer  
 Howard County Health Department

NO.	REVISIONS DESCRIPTION	DATE

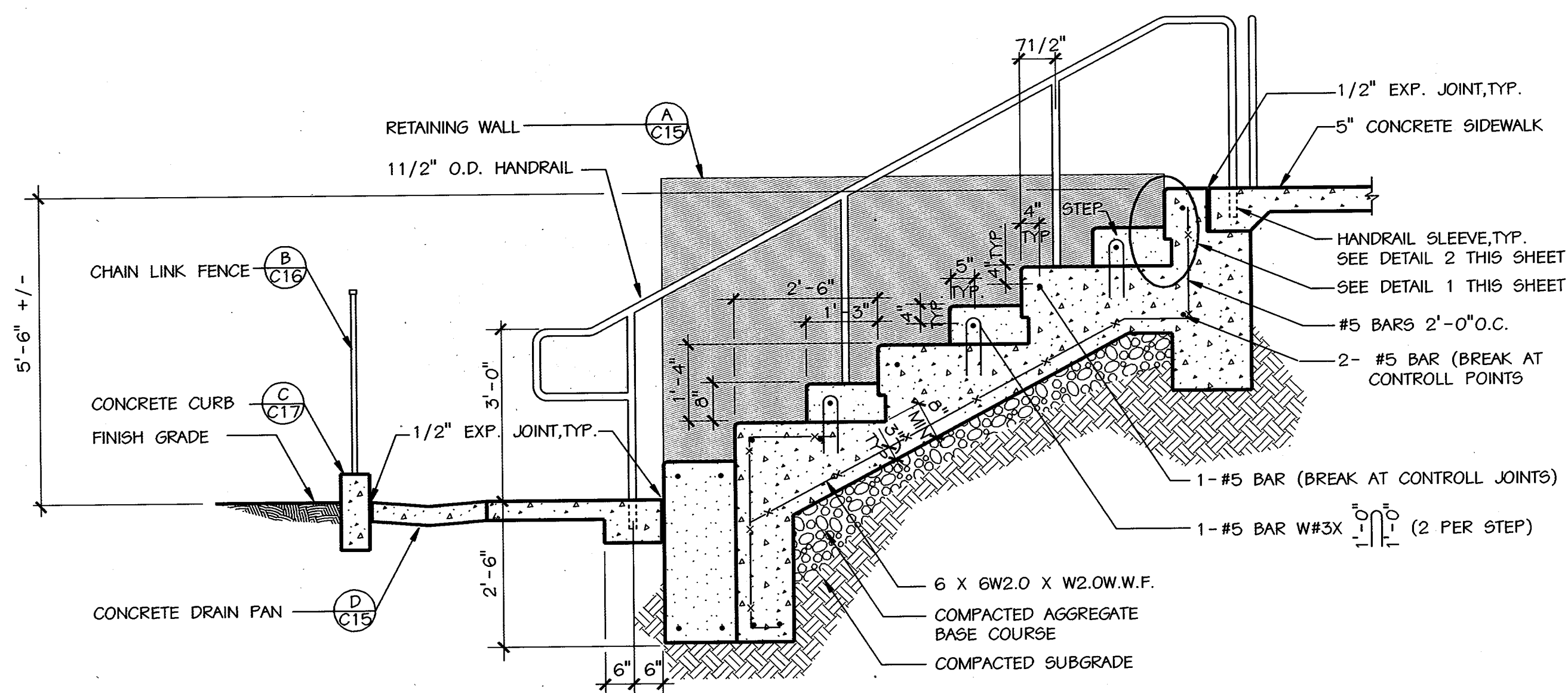
**KCI TECHNOLOGIES INC.**  
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 10 NORTH PARK DRIVE  
 HUNT VALLEY, MARYLAND 21030  
 PHONE: (410) 314-7800 FAX: (410) 314-7817  
 WWW.KCI.COM



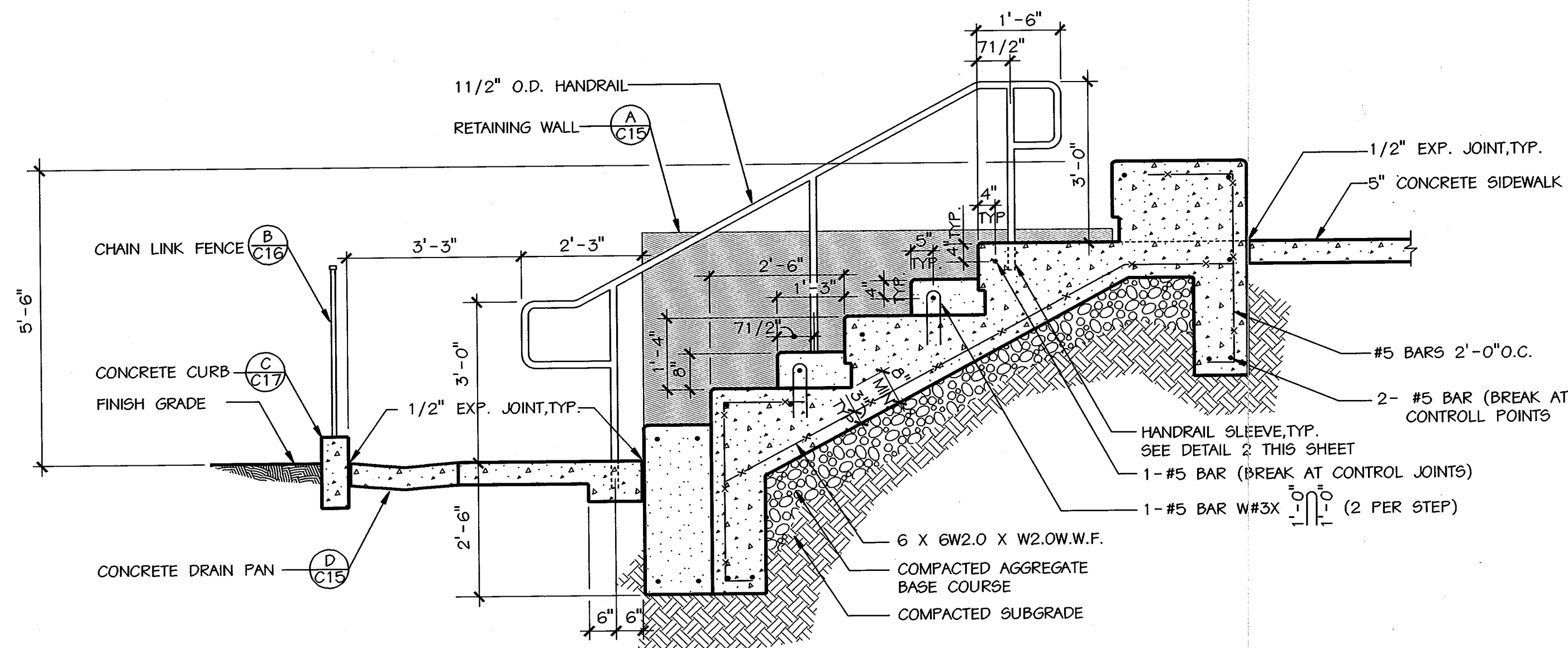
**WESTERN REGIONAL PARK**  
 DEPARTMENT OF RECREATION AND PARKS  
 7120 OAKLAND MILLS ROAD  
 COLUMBIA, MARYLAND 21046-1677  
 (410) 313-4640

**SITE DETAILS**

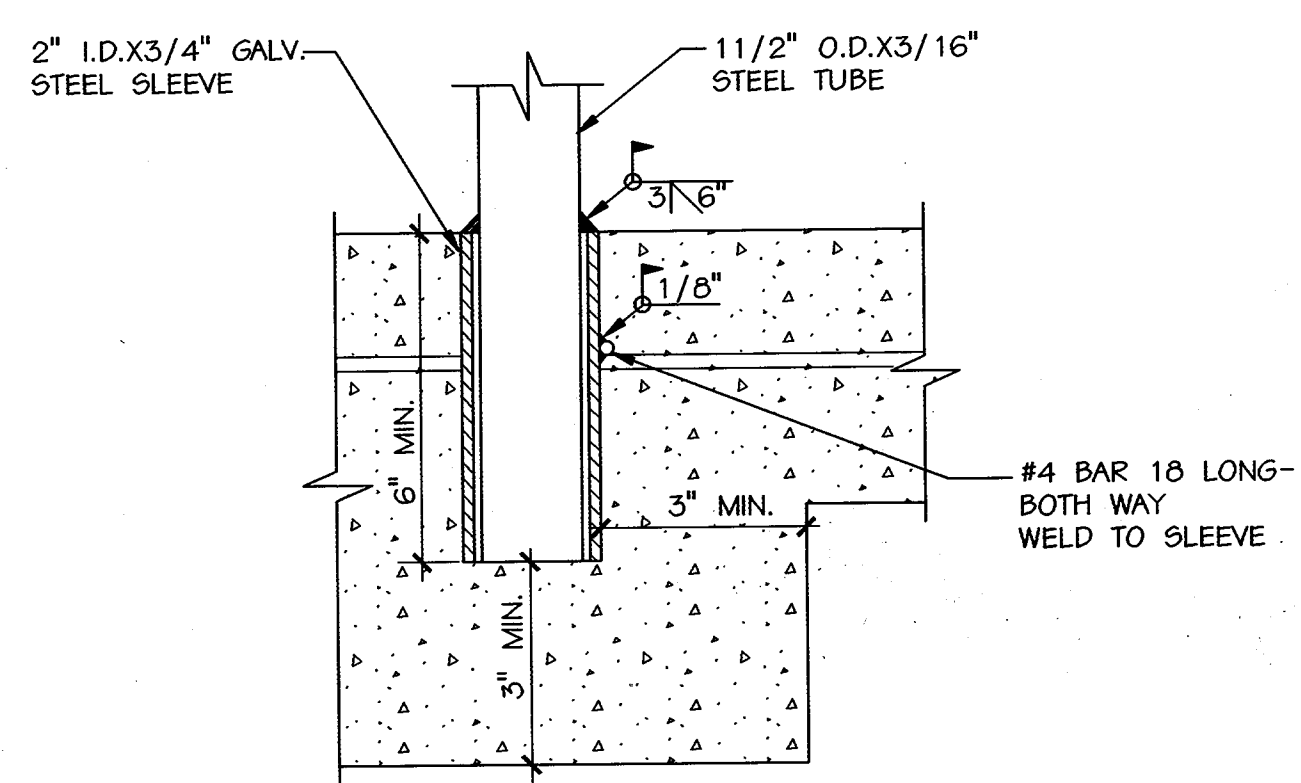
SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	



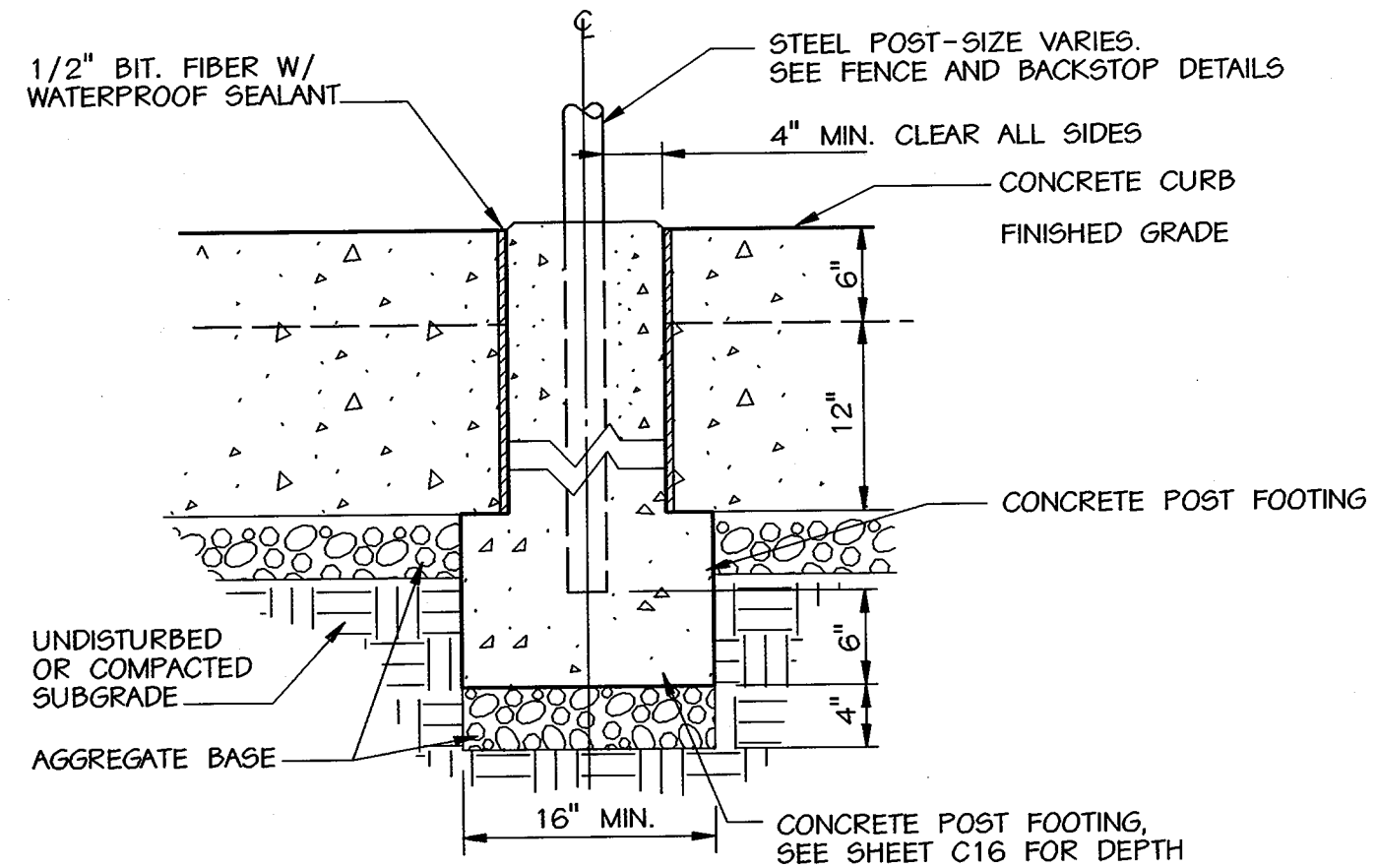
**A CONCRETE BLEACHER /STAIR DETAIL - FIELD 1**  
SCALE: 1/2"=1'



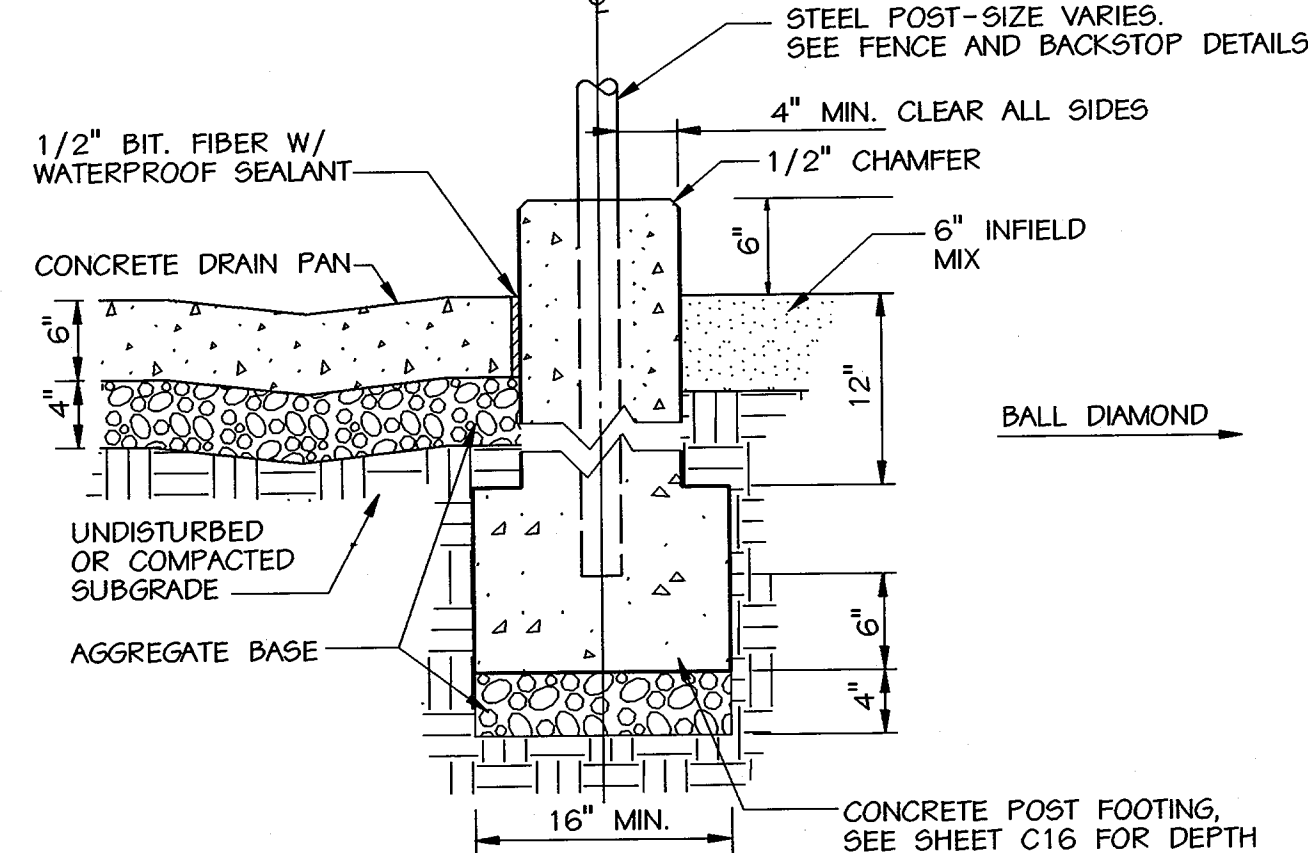
**B CONCRETE BLEACHER /STAIR DETAIL - FIELDS 2, 3 & 9**  
SCALE: 1/2"=1'



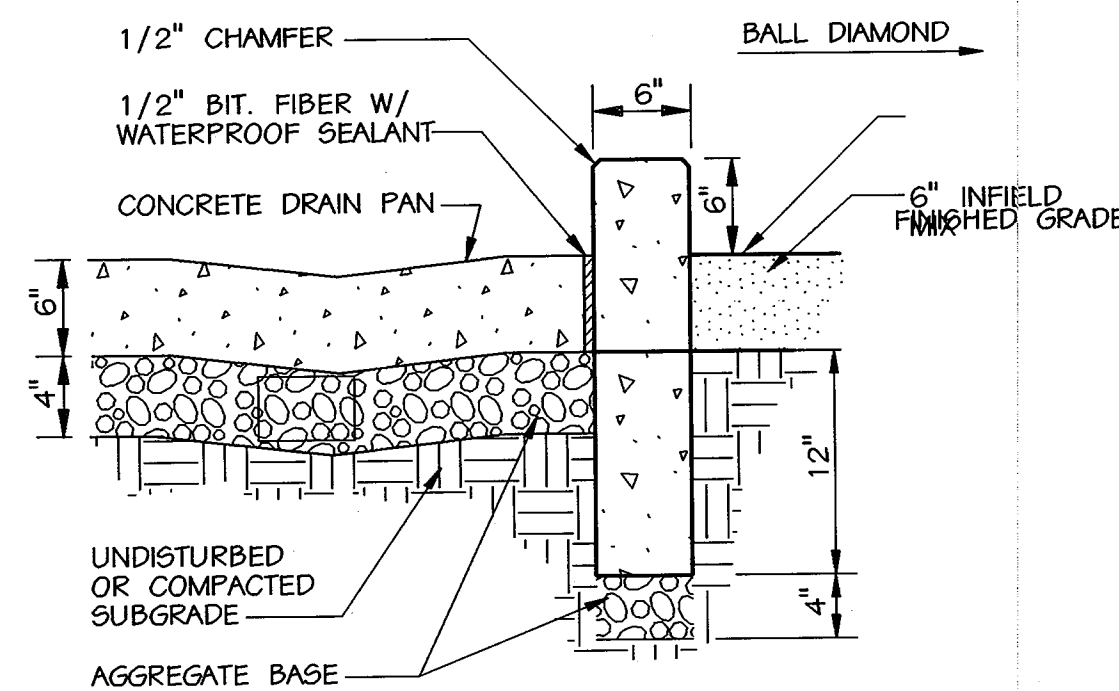
**DETAIL 2 - HANDRAIL SLEEVE**  
NOT TO SCALE



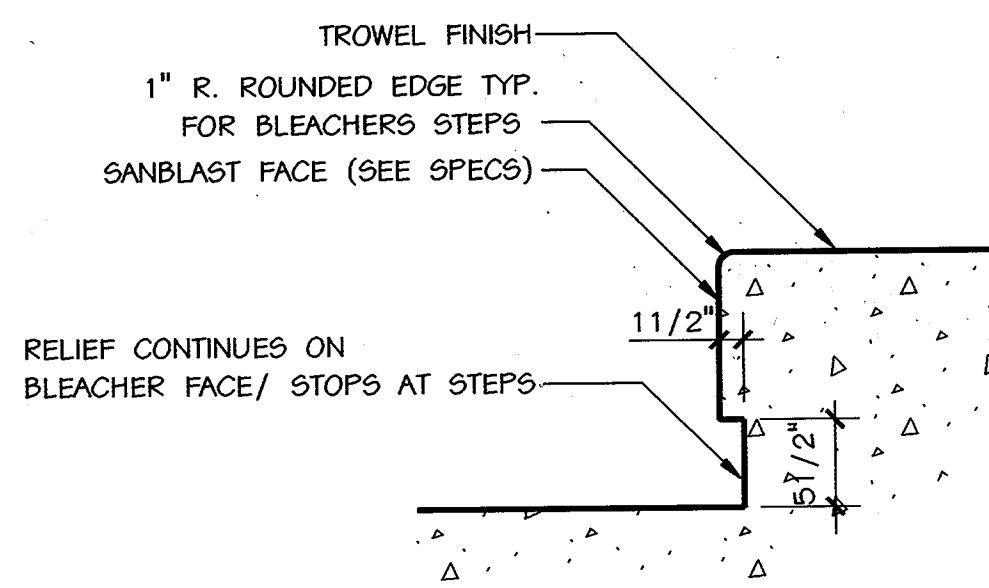
**ELEVATION C-C CURB/FOOTING CONNECTION**



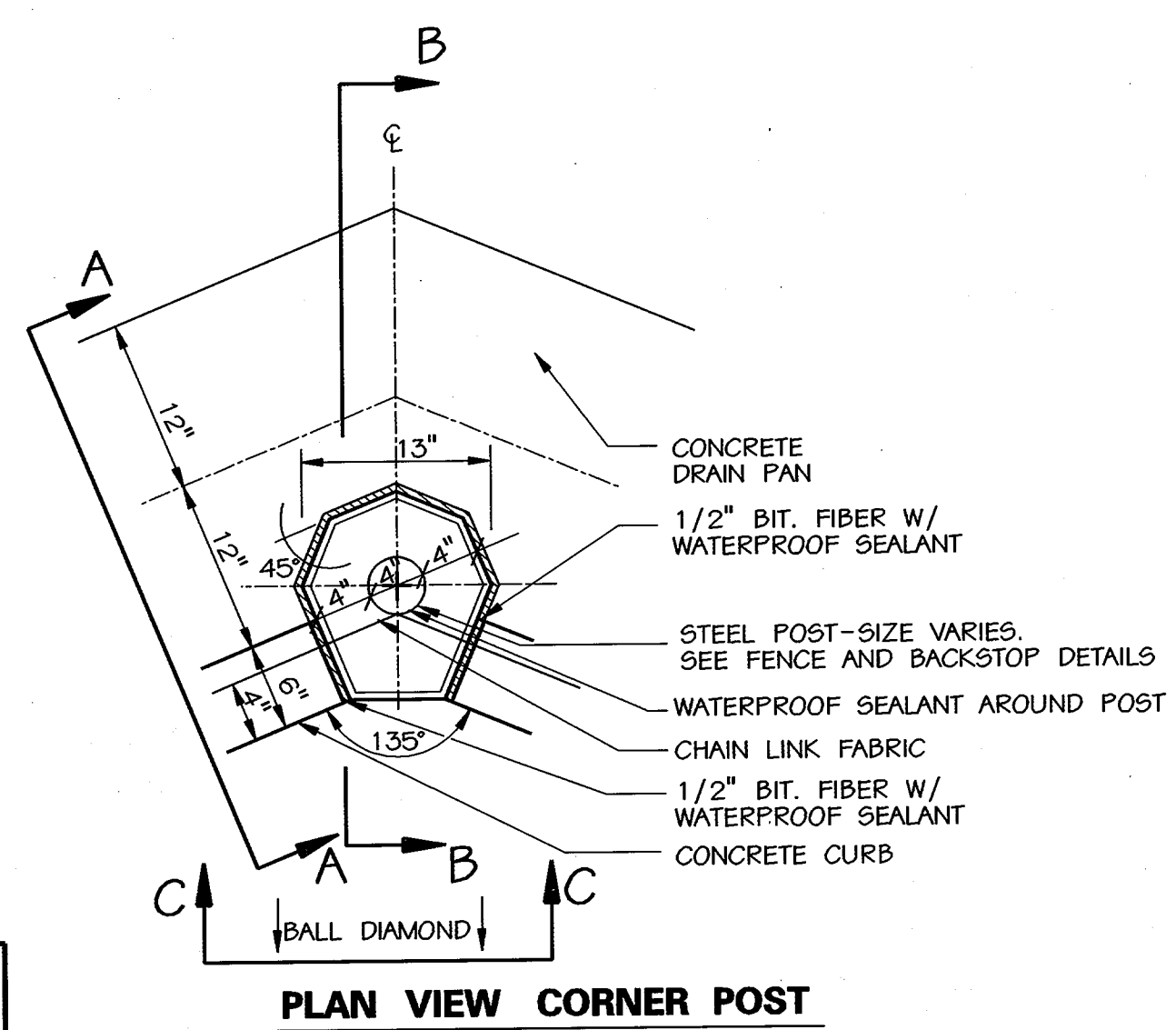
**SECTION B-B**



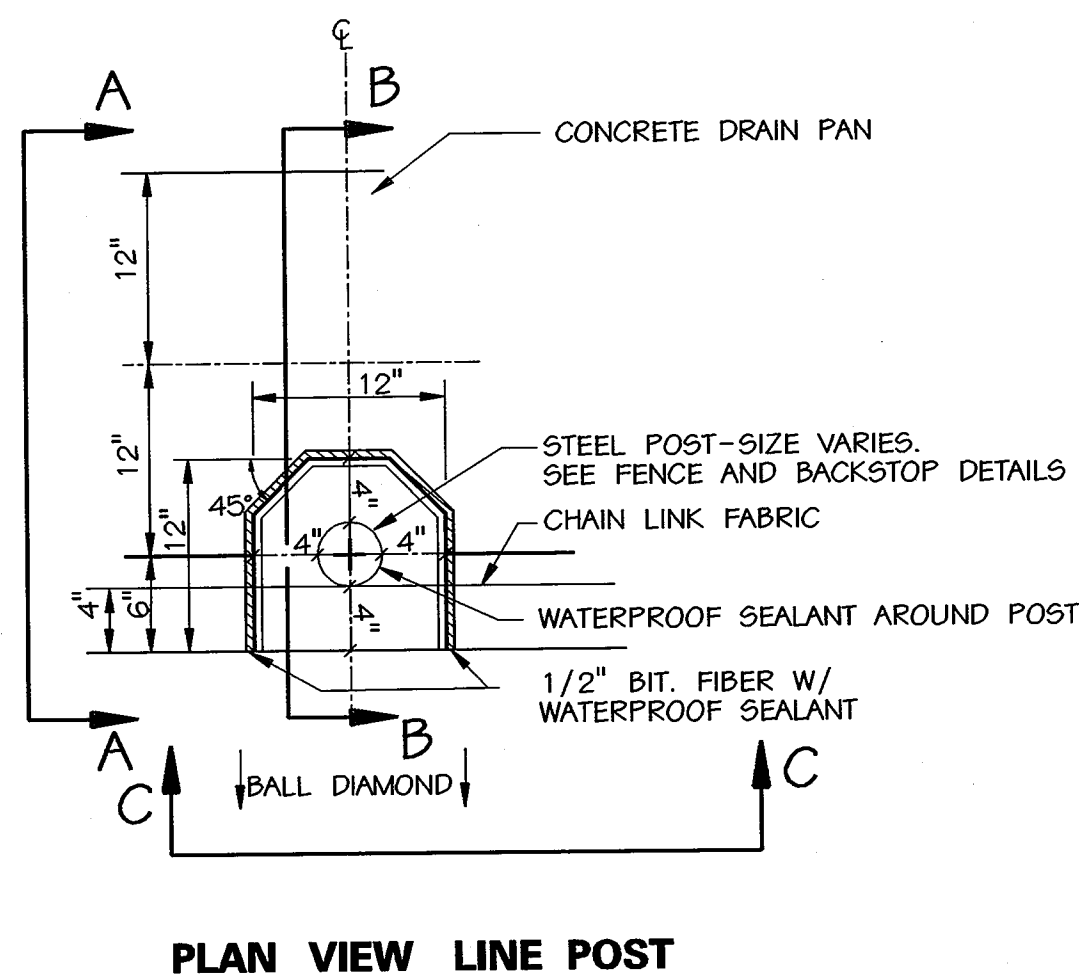
**SECTION A-A CONCRETE CURB**



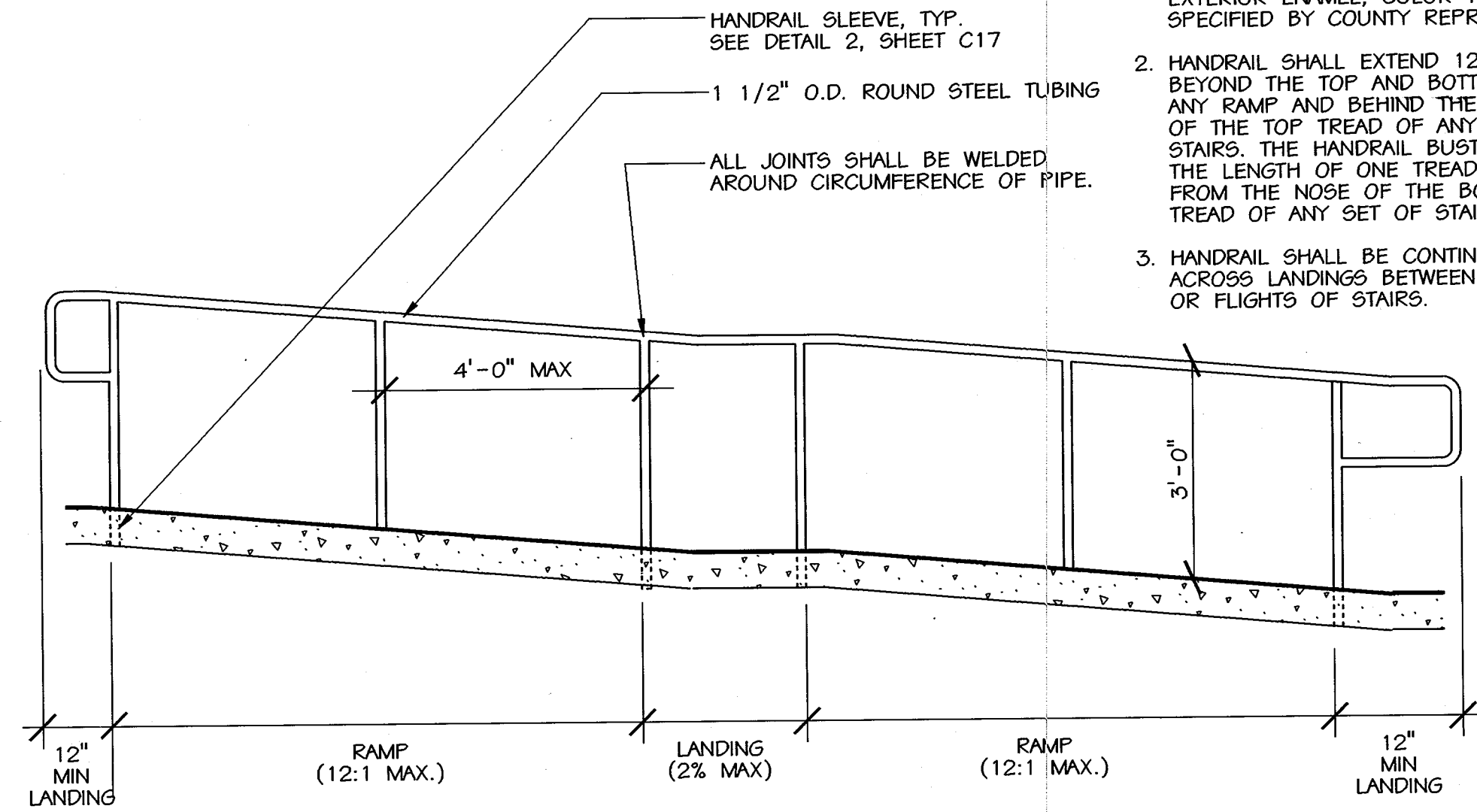
**DETAIL 1 - BLEACHER STEP**  
NOT TO SCALE



**PLAN VIEW CORNER POST**



**PLAN VIEW LINE POST**



**D HANDRAIL DETAIL**  
SCALE: 1/2"=1'

**NOTES:**

- HANDRAIL SHALL BE PAINTED WITH EXTERIOR ENAMEL, COLOR TO BE SPECIFIED BY COUNTY REPRESENTATIVE.
- 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 MUST EXTEND THE LENGTH OF ONE TREAD PLUS 12" FROM THE NOSE OF THE BOTTOM TREAD OF ANY SET OF STAIRS.
- HANDRAIL SHALL BE CONTINUOUS ACROSS LANDINGS BETWEEN RAMPS OR FLIGHTS OF STAIRS.

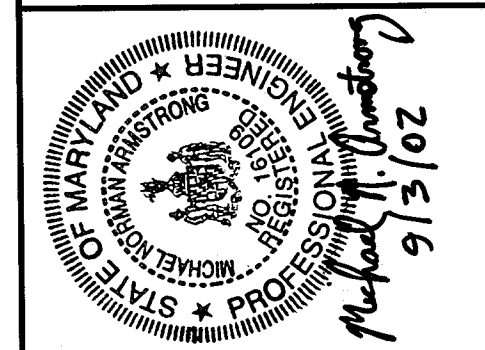
APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
*Chad Dawkins* 9/12/02  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE  
*Chad Hammett* 10/20/02  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE  
*Paul R. Ruff* 10/24/02  
 DIRECTOR DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
*Denny Brantley* 10-12-02  
 COUNTY HEALTH OFFICER DATE  
 HOWARD COUNTY HEALTH DEPARTMENT

**C INFIELD CURB AT FENCE/BACKSTOP POST DETAIL**  
SCALE: 1"=1'

NO.	REVISIONS DESCRIPTION	DATE

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



**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

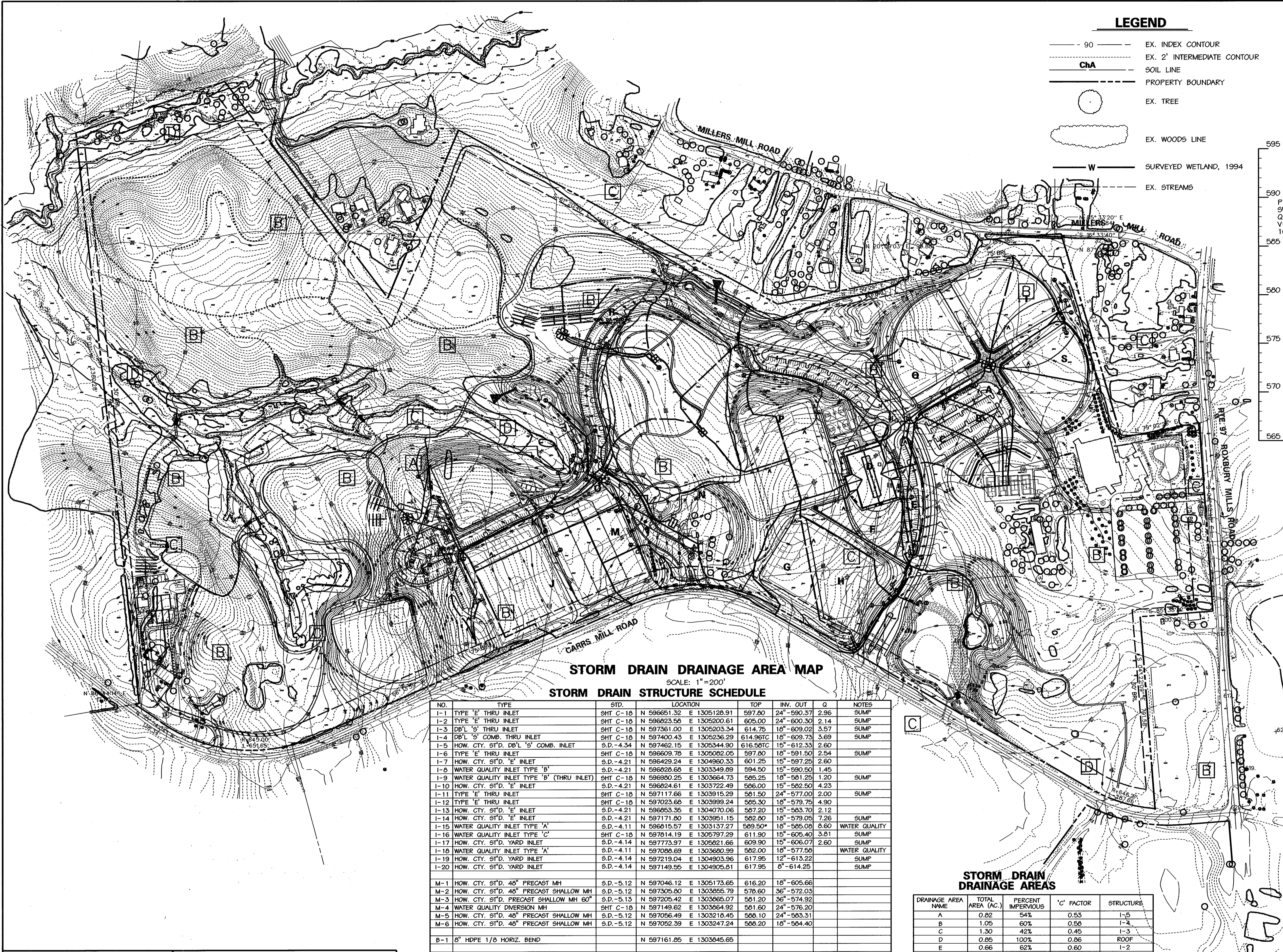












**STORM DRAIN DRAINAGE AREA MAP**

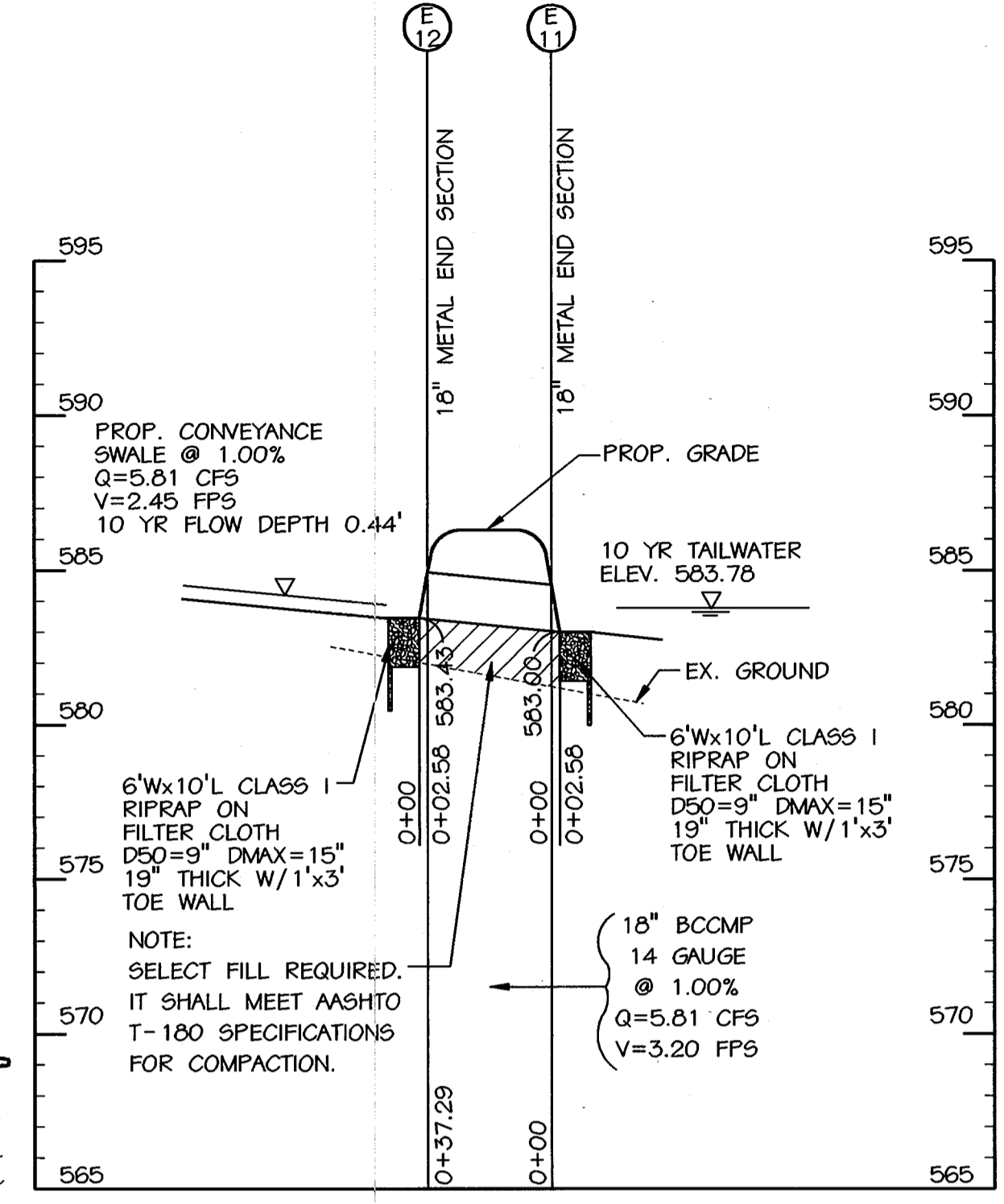
**STORM DRAIN STRUCTURE SCHEDULE**

NO.	TYPE	ST.D.	LOCATION	TOP	INV. OUT	Q	NOTES
I-1	TYPE 'E' THRU INLET	SHT C-10	N 596651.32 E 1305126.91	597.00	24'-590.37	2.96	SUMP
I-2	TYPE 'E' THRU INLET	SHT C-10	N 596623.58 E 1305200.61	605.00	24'-600.30	2.14	SUMP
I-3	DB'L 'S' THRU INLET	SHT C-10	N 597361.00 E 1305203.34	614.75	10'-609.02	3.57	SUMP
I-4	DB'L 'S' COMB. THRU INLET	SHT C-10	N 597400.43 E 1305236.29	614.96TC	10'-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	616.96TC	15'-612.33	2.60	
I-6	TYPE 'E' THRU INLET	SHT C-10	N 596629.70 E 1305202.05	597.80	10'-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	10'-597.25	2.60	
I-8	WATER QUALITY INLET TYPE 'B'	S.D.-4.21	N 596628.68 E 1303349.89	594.50	15'-590.50	1.45	
I-9	WATER QUALITY INLET TYPE 'B' (THRU INLET)	SHT C-10	N 596800.25 E 1303664.73	595.25	10'-591.25	1.20	SUMP
I-10	HOW. CTY. ST'D. 'E' INLET	S.D.-4.21	N 596624.61 E 1303722.49	596.00	15'-592.50	4.23	
I-11	TYPE 'E' THRU INLET	SHT C-10	N 597117.66 E 1303915.29	581.50	24'-577.00	2.00	SUMP
I-12	TYPE 'E' THRU INLET	SHT C-10	N 597023.68 E 1303999.24	585.30	10'-579.75	4.90	
I-13	HOW. CTY. ST'D. 'E' INLET	S.D.-4.21	N 596653.36 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	582.00	10'-579.05	7.26	SUMP
I-15	WATER QUALITY INLET TYPE 'A'	S.D.-4.11	N 59615.57 E 1303137.27	589.50*	10'-585.00	0.60	WATER QUALITY
I-16	WATER QUALITY INLET TYPE 'C'	SHT C-10	N 597814.19 E 1305707.29	611.90	15'-605.40	3.51	SUMP
I-17	HOW. CTY. ST'D. YARD INLET	S.D.-4.14	N 597773.97 E 1305921.66	609.90	15'-606.07	2.60	SUMP
I-18	WATER QUALITY INLET TYPE 'A'	S.D.-4.11	N 597086.69 E 1303680.99	582.00	10'-577.50		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	6'-614.25		SUMP
M-1	HOW. CTY. ST'D. 48" PRECAST MH	S.D.-5.12	N 597046.12 E 1305173.65	616.20	10'-605.66		
M-2	HOW. CTY. ST'D. 48" PRECAST SHALLOW MH	S.D.-5.12	N 597305.60 E 1303855.79	578.60	36'-572.03		
M-3	HOW. CTY. ST'D. PRECAST SHALLOW MH 60"	S.D.-5.13	N 597205.42 E 1303855.07	581.20	36'-574.92		
M-4	WATER QUALITY DIVERSION MH	SHT C-10	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 1303216.45	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	10'-584.40		
B-1	8" HDPE 1/8 HORIZ. BEND		N 597161.05 E 1303645.65				
E-1	24" CONCRETE END SECTION	S.D.-5.51	N 596617.51 E 1305206.59		24'-597.00		
E-2	8" HDPE		N 596612.97 E 1303214.55		8'-589.00		
E-3	10" CONCRETE END SECTION	S.D.-5.51	N 597103.30 E 1303760.78		10'-576.65		
E-4	8" HDPE		N 597064.91 E 1303607.78		8'-580.48		
E-5	36" CONCRETE END SECTION	S.D.-5.51	N 597437.06 E 1303713.30		36'-570.65		
E-6	8" HDPE		N 597215.62 E 1303636.63		8'-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 1303210.87		24'-582.70		
E-9	15" CONCRETE END SECTION	S.D.-5.51	N 597835.53 E 1305832.69		15'-605.00		
E-10	8" HDPE		N 597906.59 E 1305804.43		8'-604.25		
E-11	10" METAL END SECTION	S.D.-5.61	N 597924.53 E 1304221.17		10'-583.00		
E-12	10" METAL END SECTION	S.D.-5.61	N 597833.12 E 1304184.98		10'-583.43		
E-13	10" METAL END SECTION	S.D.-5.61	N 597833.49 E 1305039.18		10'-602.00		
E-14	10" METAL END SECTION	S.D.-5.61	N 597619.05 E 1305048.90		10'-602.23		
E-15	10" CONCRETE END SECTION	S.D.-5.51	N 597766.60 E 1304488.48		10'-578.00		
E-16	10" TYPE 'C' ENDWALL	S.D.-5.21	N 597682.03 E 1304481.83		10'-583.00		
E-17	10" METAL END SECTION	S.D.-5.61	N 597568.01 E 1304521.19		10'-589.70		
E-18	10" METAL END SECTION	S.D.-5.61	N 597566.96 E 1304548.78		10'-591.00		
E-19	10" CONCRETE END SECTION	S.D.-5.51	N 597103.76 E 1303726.48		10'-576.60		

\*THROAT OPENING ELEV. (OPEN ALL 4 SIDES)

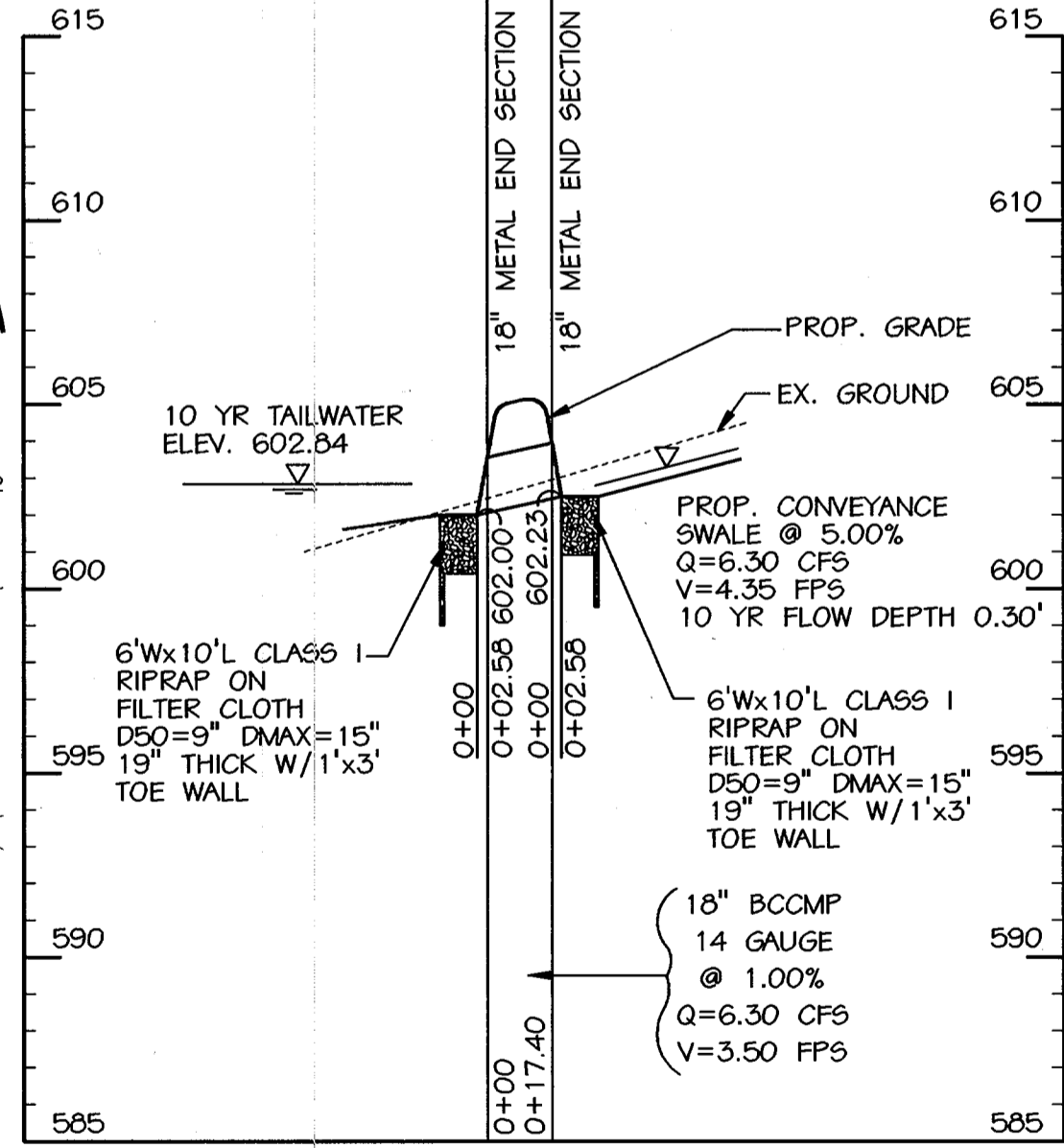
**LEGEND**

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



**STORM DRAIN PROFILE**

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

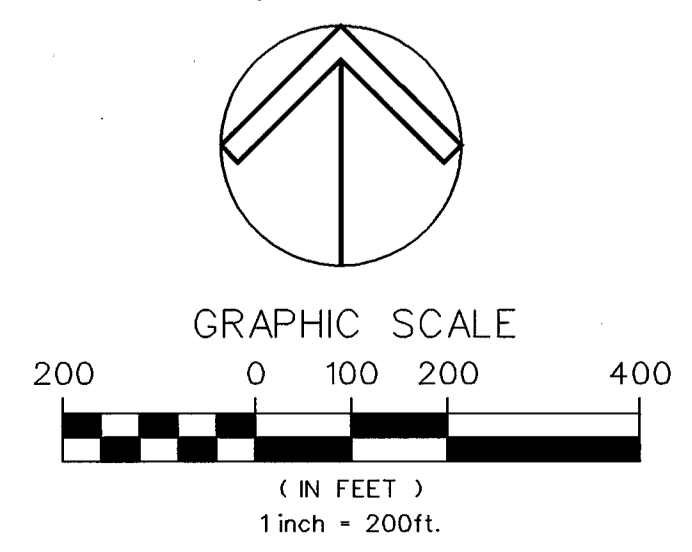


**STORM DRAIN PROFILE**

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

**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%	0.58	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
I	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%	0.38	I-12
N	6.67	3%	0.18	I-14
O	0.92	28%	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



APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
 Chief, Development Engineering Division  
 Chief, Division of Land Development  
 Director  
 APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 County Health Officer  
 Director

DATE: \_\_\_\_\_

NO. REVISIONS DESCRIPTION

**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

Professional Engineer  
 Michael J. Channing  
 9/3/02

**WESTERN REGIONAL PARK**  
 HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
 7120 OAKLAND MILLS ROAD  
 COLUMBIA, MARYLAND 21046-1677  
 (410) 315-9690

**STORM DRAIN PROFILES & DRAINAGE AREA MAP**

SCALE: AS SHOWN

DATE: 06-12-02

KCI JOB NO.: 01-00057

CAPITAL PROJECT NO.: N-3932

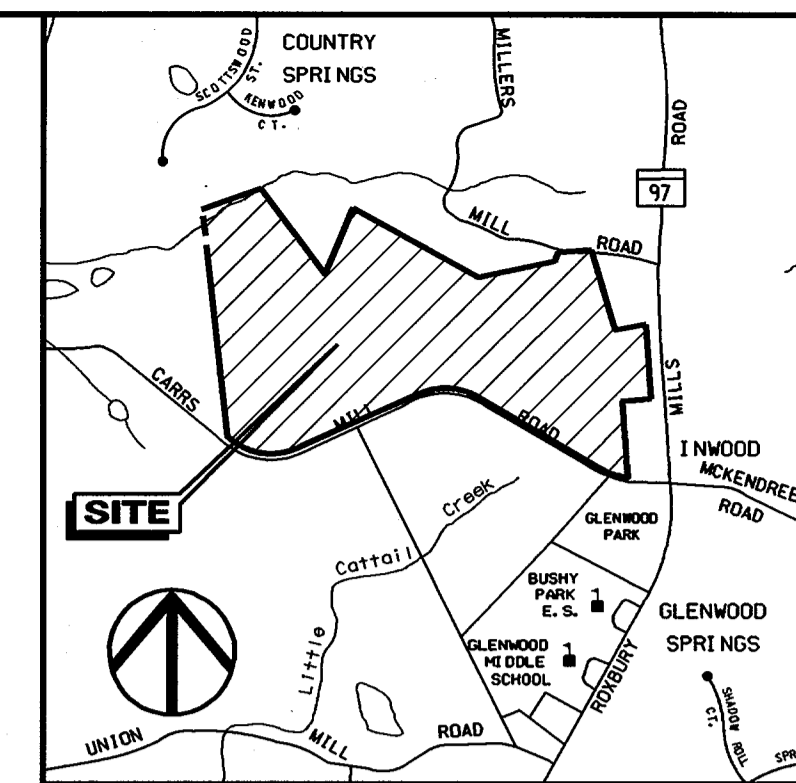
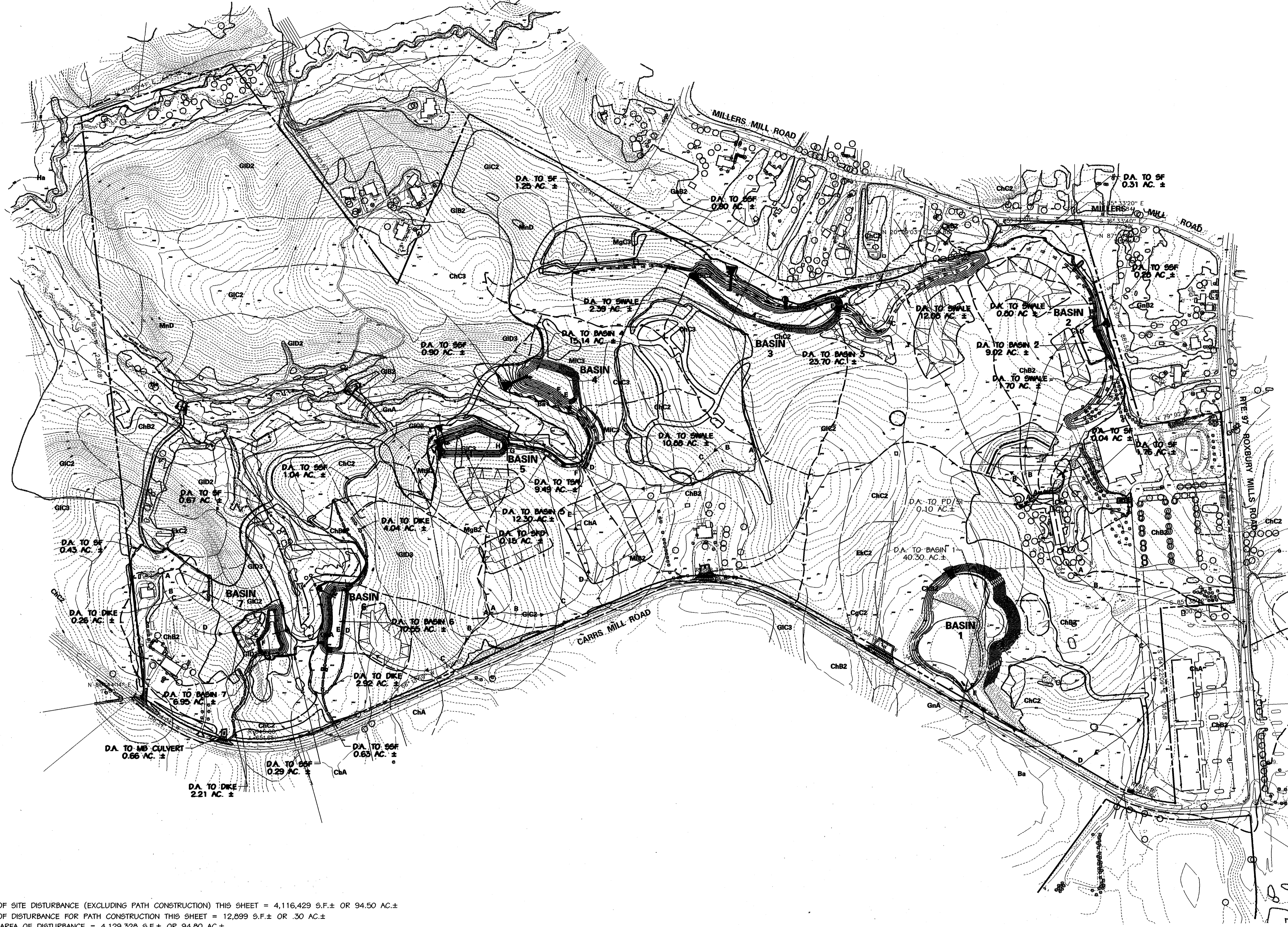
PERMIT ISSUE:

CONSTRUCTION ISSUE:

**SD4**

SHEET NO.: 25 OF 113

SDP-02-64



- LEGEND**
- 90 EX. INDEX CONTOUR
  - ChA EX. 2' INTERMEDIATE CONTOUR
  - SOIL LINE
  - PROPERTY BOUNDARY
  - EX. TREE
  - EX. WOODS LINE
  - W SURVEYED WETLAND, 1994
  - EX. STREAMS
  - 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  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE: 9/12/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 COUNTY HEALTH OFFICER  
 DATE: 10-12-02

**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

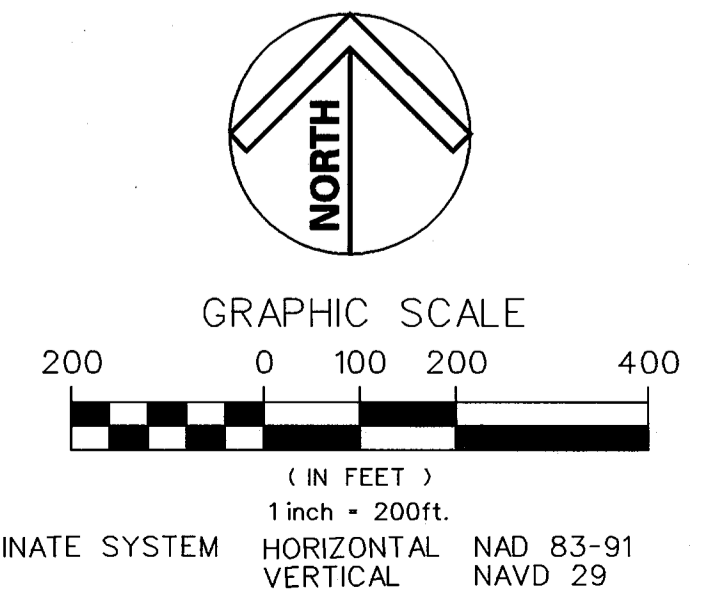
**DEVELOPER'S CERTIFICATE**  
 "I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED 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. LEFSON  
 DATE: 9/4/02

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

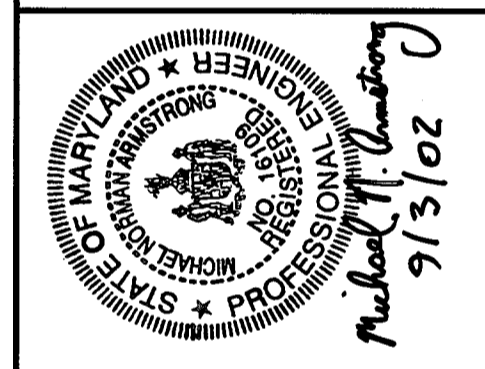
USDA - NATURAL RESOURCES CONSERVATION SERVICE  
 DATE: 9/5/02

HOWARD SCD  
 DATE: 9/5/02



NO.	REVISIONS DESCRIPTION	DATE

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 10 NORTH PARK DRIVE  
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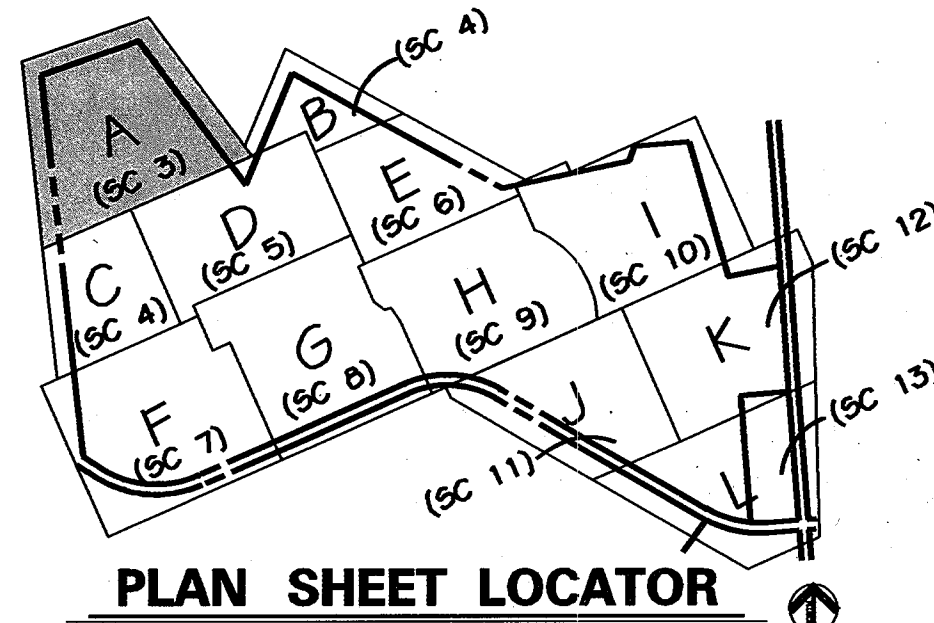
**WESTERN REGIONAL PARK**  
 HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
 7120 OAKLAND MILLS ROAD  
 COLUMBIA, MD 21046-1677  
 (410) 313-4640

**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**  
 SHEET NO.: 26 OF 113  
 SDF-02-64





**PLAN SHEET LOCATOR**

NOT TO SCALE

**LEGEND**

- 590 - EX. INDEX CONTOUR
- 620 - PROPOSED INDEX CONTOUR
- 614 - PROPOSED INTERMEDIATE CONTOUR
- GIC2 - EX. 2' INTERMEDIATE CONTOUR
- GIC2 - SOIL LINE
- --- - PROPERTY BOUNDARY
- (CIRCLE) - 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 ASPHALT PATH
- --- - PROPOSED CONCRETE PATH
- --- - PROPOSED FENCE LINE
- --- - PROPOSED RETAINING WALL
- --- - PROPOSED CONC. CURB & GUTTER
- --- - PROPOSED ASPHALT PAVING
- 620 - PROPOSED TREE LINE TO REMAIN
- 614 - PROPOSED INTERMEDIATE CONTOUR
- 617.25 - PROPOSED SPOT ELEVATION
- (SQUARE) - PROPOSED INLET
- (TRIANGLE) - PROPOSED STORM DRAIN END SECTION
- (CIRCLE) - PROPOSED STORM DRAIN MANHOLE
- (CIRCLE) - PROPOSED STORM DRAIN
- (SQUARE) - PROPOSED SEPTIC TANK
- (S) - PROPOSED SANITARY SEWER
- (CIRCLE) - PROPOSED SEWER MANHOLE
- (CIRCLE) - PROPOSED MONITORING WELL
- (DIAGONAL LINES) - PROPOSED SEPTIC DRAIN FIELD
- (S) - SILT FENCE
- (S) - SUPER SILT FENCE
- (SCE) - STABILIZED CONSTRUCTION ENTRANCE
- (BOF) - BLAZE ORANGE SAFETY FENCE
- (LOD) - LIMIT OF DISTURBANCE
- (CIRCLE) - PROPOSED LIGHT POLE
- (CIRCLE) - 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 UPGLOPE 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 *Jim Meyer/cs* 9/5/02  
 DATE  
 THIS DEVELOPMENT IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
 HOWARD SCD *Yvette Selig* 9/5/02  
 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."  
*Ronald G. Lepson* 9/4/02  
 SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) DATE  
 RONALD G. LEPSON

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
*Christina Williams* 9/12/02  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE  
*Cindy Hamrick* 4/22/02  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE  
*Lois Smith* 10/23/02  
 DIRECTOR DATE

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

**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.

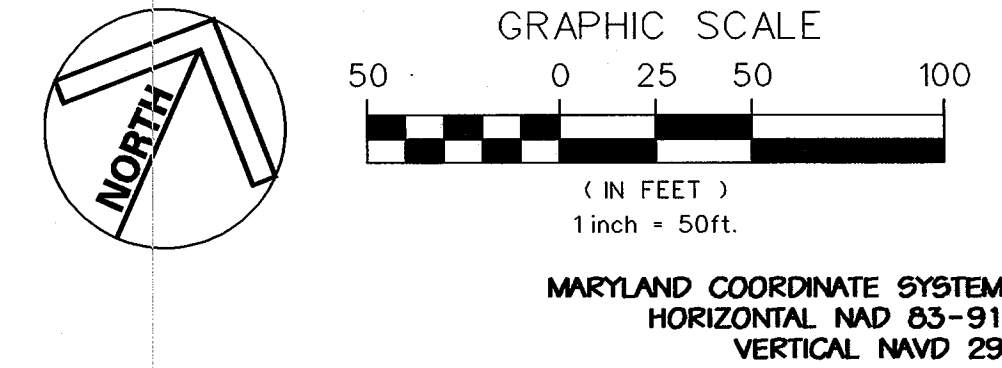


MATCHLINE - SEE SHEET SC4, PLAN B

MATCHLINE - SEE SHEET SC5

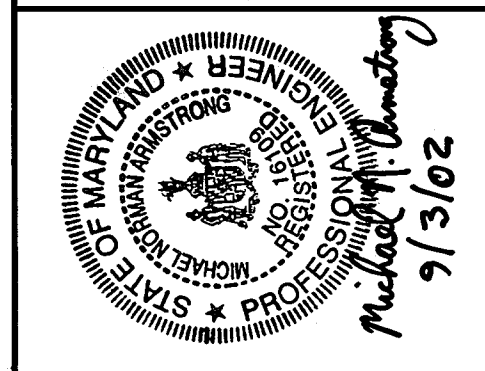
NOTE: THE ENDS OF SILT FENCE AND SUPER SILT FENCE SHALL BE TURNED UP HILL A MINIMUM OF 2' IN ELEVATION.

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.



NO.	REVISIONS DESCRIPTION	DATE

**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



**WESTERN REGIONAL PARK**  
 HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
 7120 OAKLAND MILLS ROAD  
 COLUMBIA, MARYLAND 21046-1677  
 (410) 315-8680

**SEDIMENT & EROSION CONTROL PLAN AREA A**

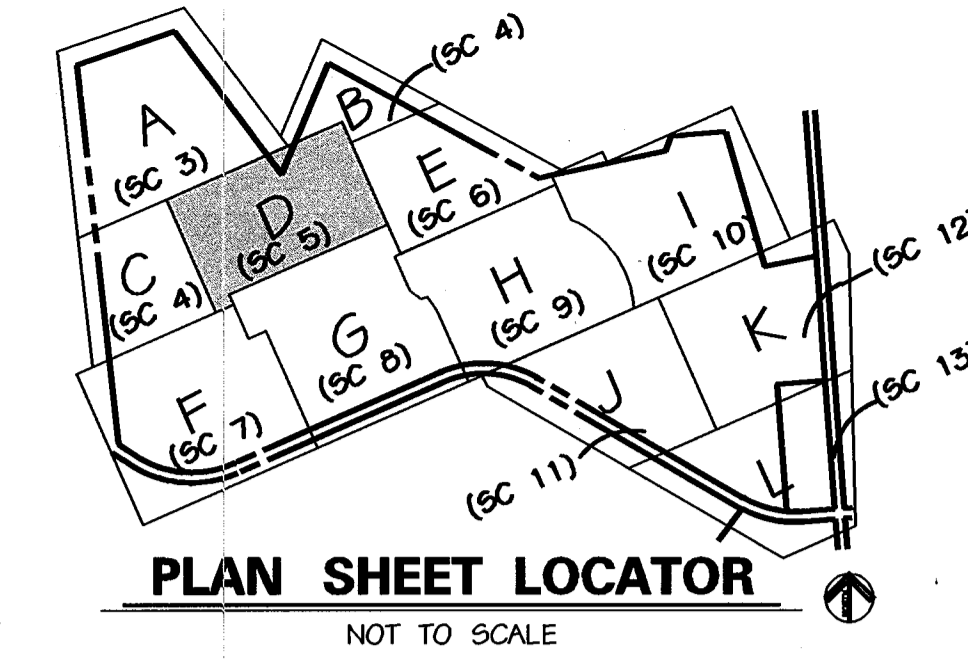
SCALE: 1" = 50'  
 DATE: 06-12-02  
 KCI JOB NO.: 01-00057  
 CAPITAL PROJECT NO.: N-3932  
 PERMIT ISSUE:  
 CONSTRUCTION ISSUE:

**SC3**  
 SHEET NO.: 28 OF 113  
 SDF-02-64

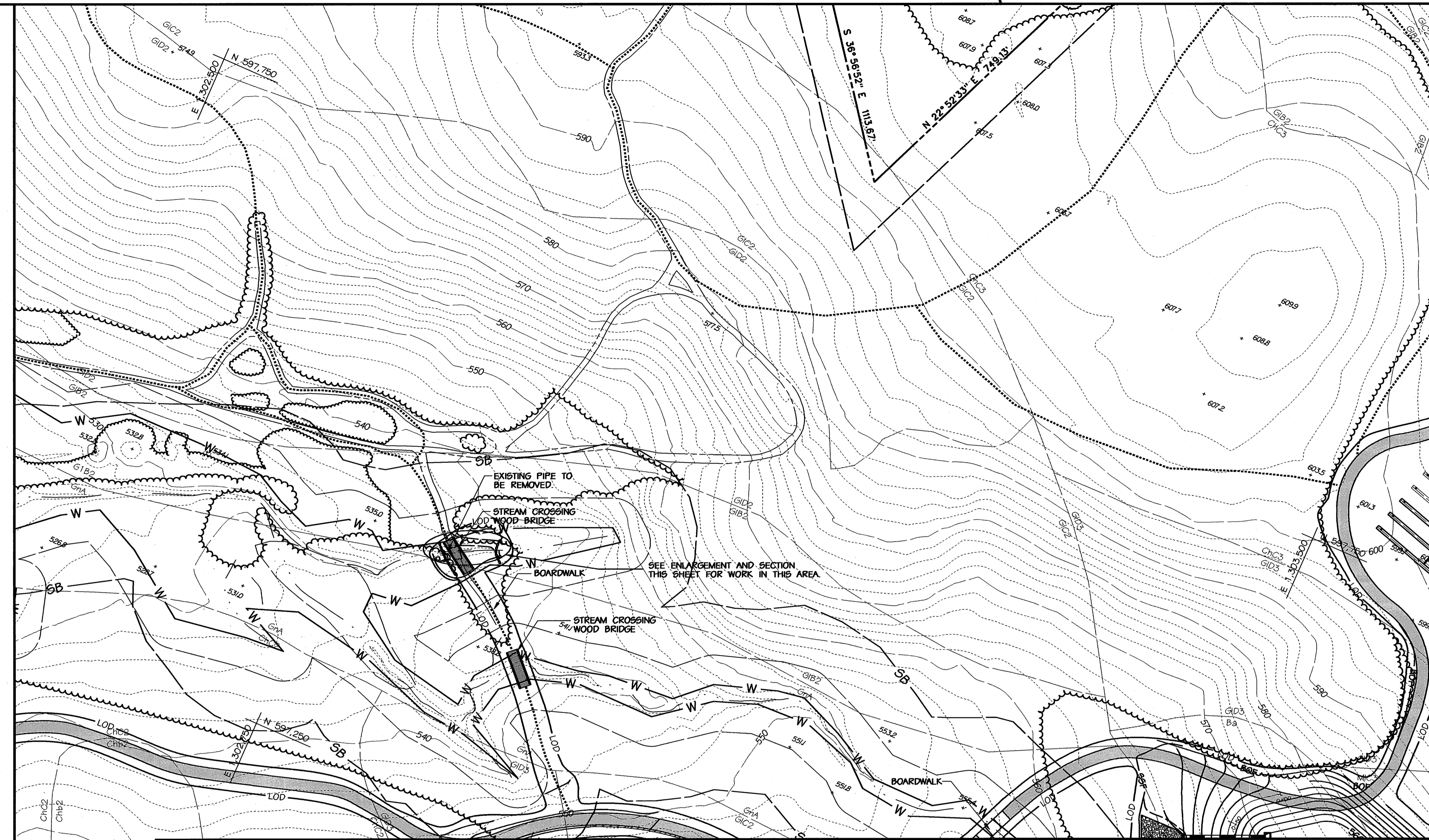


MATCHLINE - SEE SHEET SC3

MATCHLINE - SEE SHEET SC4, PLAN OF AREA A



MATCHLINE - SEE SHEET SC4, PLAN B



MATCHLINE - SEE SHEET SC6

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
- EX. STREAMS
- SB 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 MONITORING WELL
- PROPOSED SEPTIC DRAIN FIELD
- 5F 5F SILT FENCE
- 5SF 5SF SUPER SILT FENCE
- SCE STABILIZED CONSTRUCTION ENTRANCE
- BOF BOF BLAZE ORANGE SAFETY FENCE
- LOD LIMIT OF DISTURBANCE
- PROPOSED LIGHT POLE
- PROPOSED PADDOCK FENCE

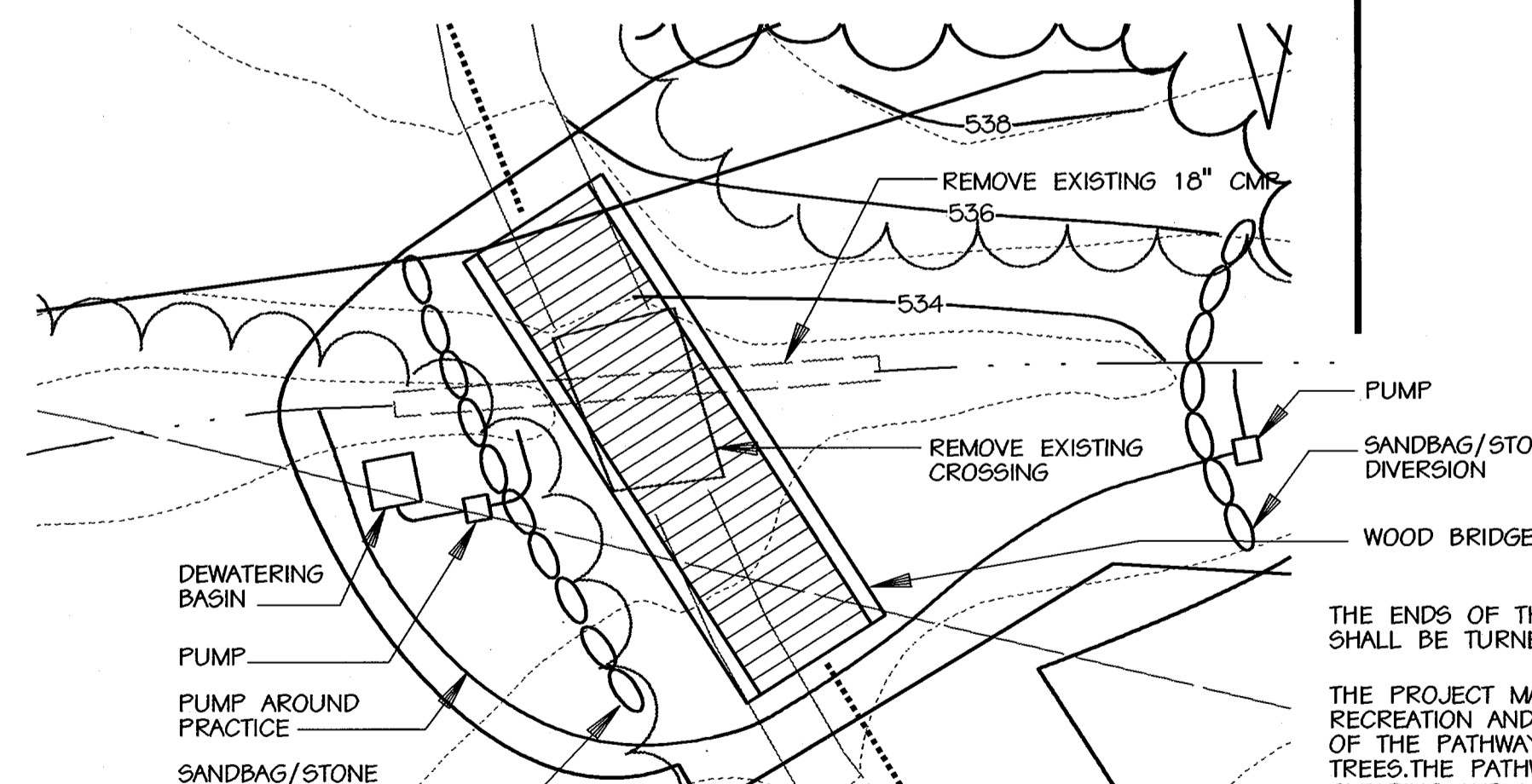
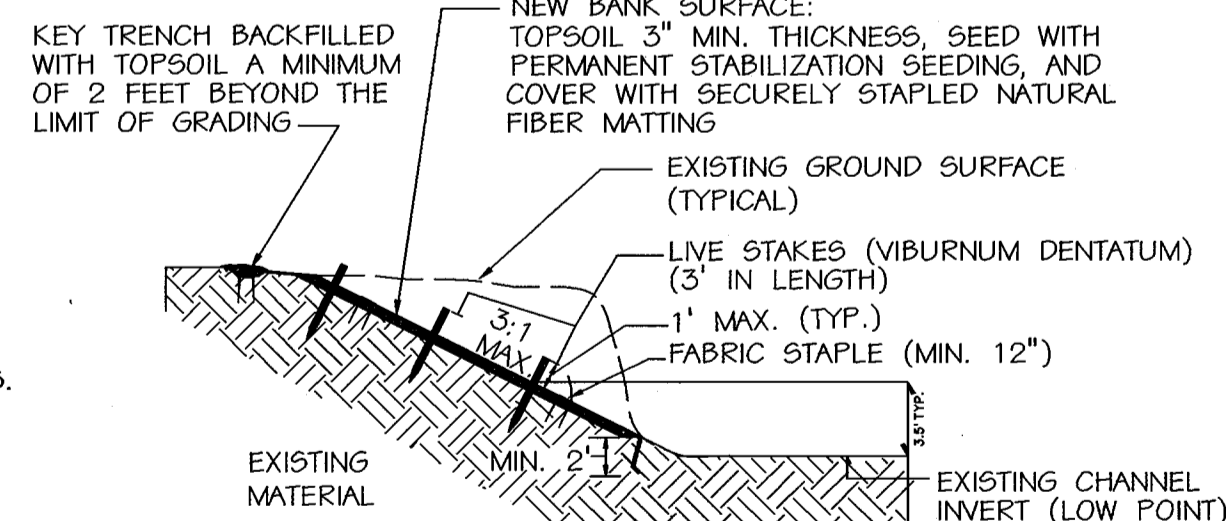
PATH INSTALLATION NOTE

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.

DUST CONTROL NOTE

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

MATCHLINE - SEE SHEET SC8



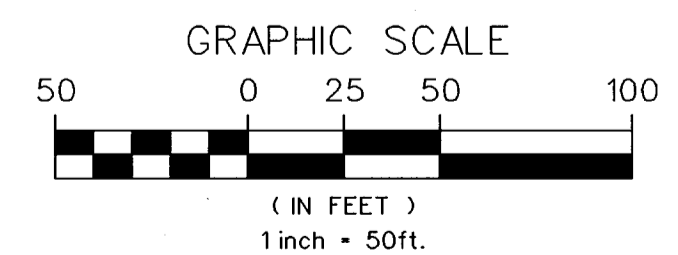
THE ENDS OF THE SILT FENCE AND SUPER SILT FENCE SHALL BE TURNED UPHILL A MINIMUM OF 2' IN ELEVATION.

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 TO THE 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.

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 SC7

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.±

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

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

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

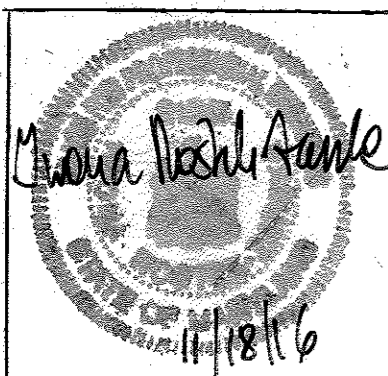


WESTERN REGIONAL PARK  
HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
7120 OAKLAND MILLS ROAD  
COLUMBIA, MARYLAND 21046-1677  
(410) 313-4640

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:	

SC5  
SHEET NO.: 30 OF 113



**PROFESSIONAL CERTIFICATION**

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, MICHAEL N. ARMSTRONG, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE NO. 21249, EXPIRATION DATE: JUNE 9, 2018.

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.

**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 = 350,997.5 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**

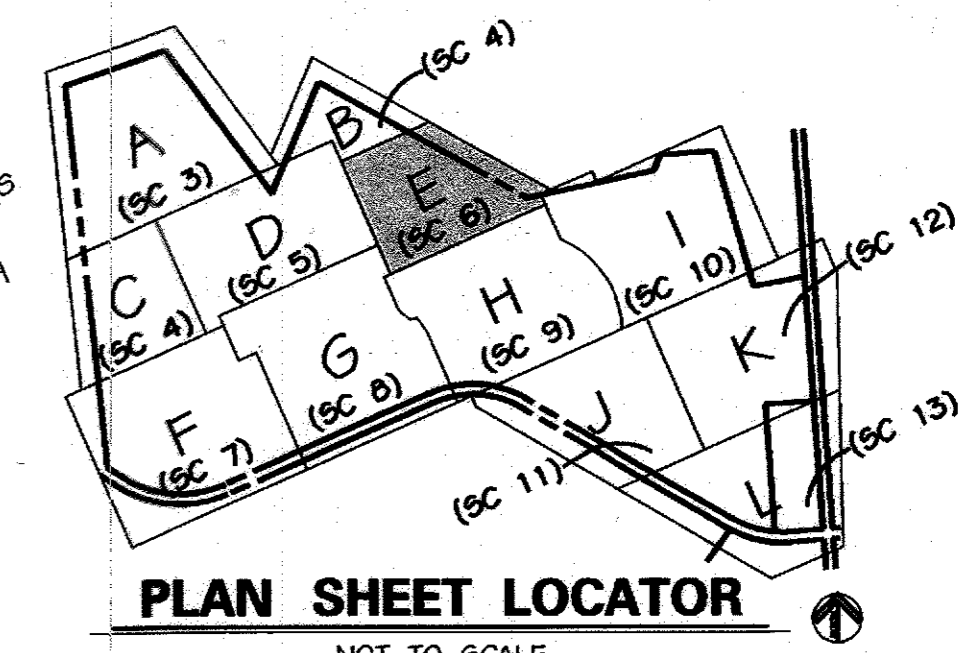
- CONTRACTOR SHOULD OPEN ONLY THAT SECTION OF TRENCH THAT CAN BE BACKFILLED AND STABILIZED EACH DAY. IF TRENCH MUST REMAIN OPEN LONGER THAN ONE DAY, SILT FENCE SHALL BE PLACED BELOW (DOWN SLOPE OF) THE TRENCH.
- PLACE ALL EXCAVATED MATERIAL ON UPHILL SIDE OF TRENCH.
- ANY SEDIMENT CONTROLS DISTURBED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

**DISTURBANCE NOTE**

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

**DAILY STABILIZATION**

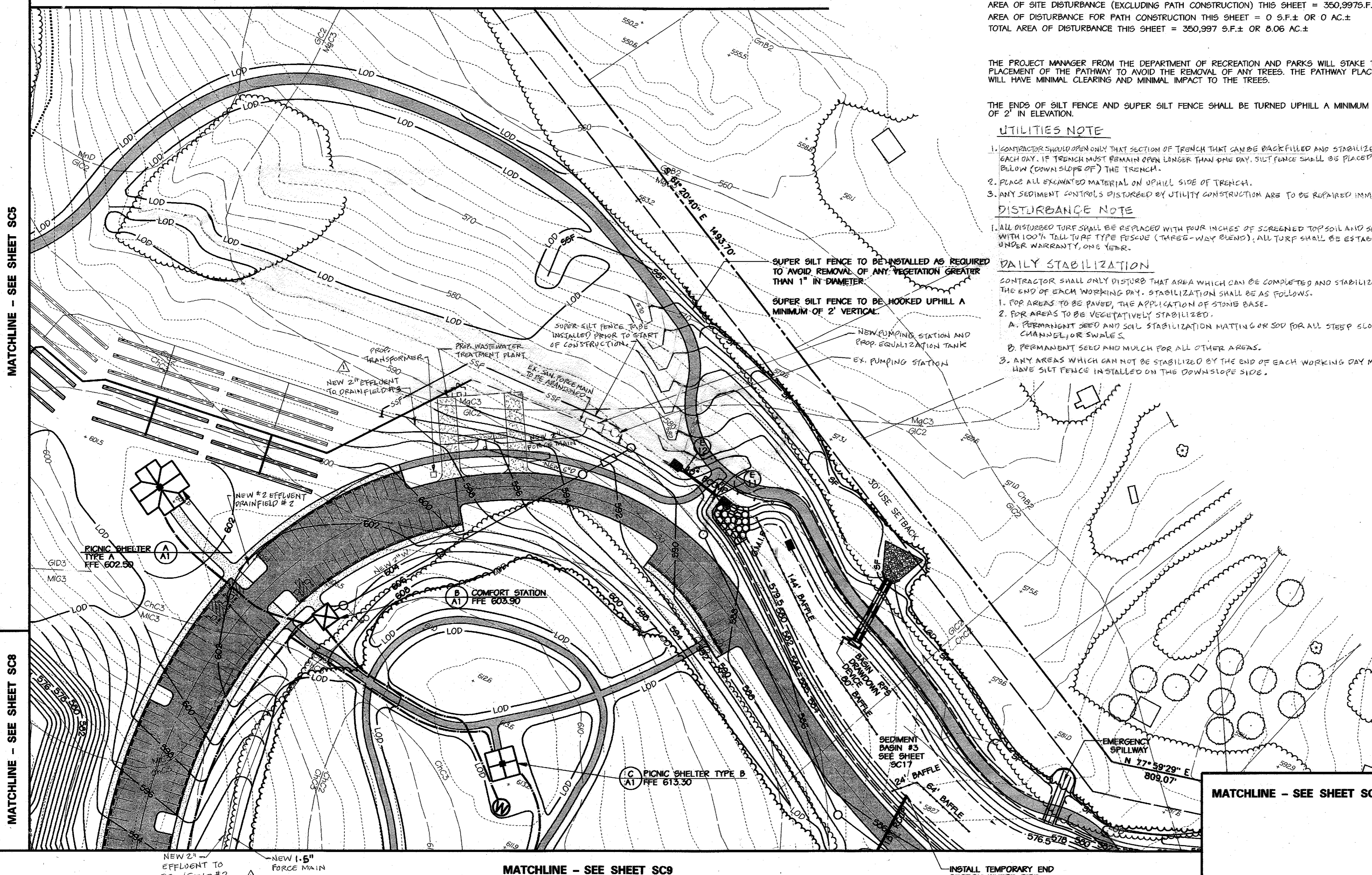
- CONTRACTOR SHALL ONLY DISTURB THAT AREA WHICH CAN BE COMPLETED AND STABILIZED BY THE END OF EACH WORKING DAY. STABILIZATION SHALL BE AS FOLLOWS:
- FOR AREAS TO BE PAVED, THE APPLICATION OF STONE BASE.
    - PERMANENT SEED AND SOIL STABILIZATION MATTING OR SOD FOR ALL STEEP SLOPES, CHANNELS OR SWALES.
    - PERMANENT SEED AND MULCH FOR ALL OTHER AREAS.
  - ANY AREAS WHICH CANNOT 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**

- 590 EX. INDEX CONTOUR
- 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
- 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 MONITORING WELL
- PROPOSED SEPTIC DRAIN FIELD
- SF SILT FENCE
- SF SUPER SILT FENCE
- SCE STABILIZED CONSTRUCTION ENTRANCE
- BOF BLAZE ORANGE SAFETY FENCE
- LOD LIMIT OF DISTURBANCE
- RPS REMOVABLE PUMPING STATION
- TEMPORARY/PERMANENT SWALE
- PROPOSED LIGHT POLE
- PROPOSED PADDOCK FENCE



MATCHLINE - SEE SHEET SC5

MATCHLINE - SEE SHEET SC8

MATCHLINE - SEE SHEET SC4, PLAN OF AREA B

MATCHLINE - SEE SHEET SC9

MATCHLINE - SEE SHEET SC10

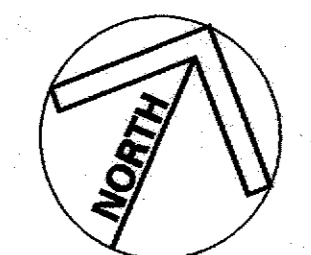
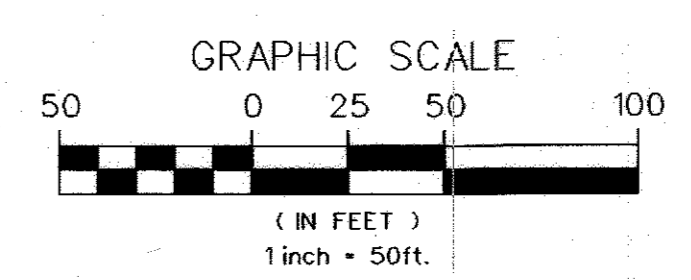
APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
 [Signature] 9/12/02  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 [Signature] 10/22/02  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 [Signature] 10/23/02  
 DIRECTOR

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

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

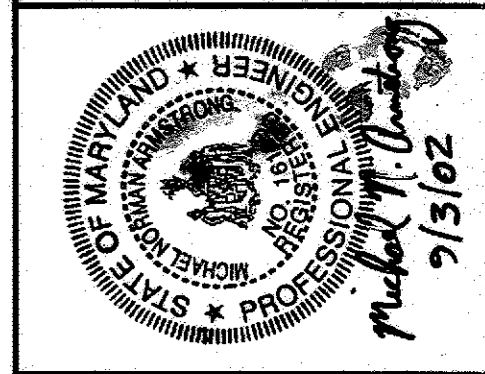
DEVELOPER'S CERTIFICATE  
 "I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED 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] 9/19/02  
 SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE)  
 RONALD G. LEPPSON

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS  
 [Signature] 9/5/02  
 USDA - NATURAL RESOURCES CONSERVATION SERVICE  
 THIS DEVELOPMENT IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
 [Signature] 9/5/02  
 HOWARD SCD



NO.	REVISIONS DESCRIPTION	DATE

**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



**WESTERN REGIONAL PARK**  
 HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
 7120 OAKLAND MILLS ROAD  
 COLUMBIA, MD 21046-1677  
 (410) 515-4646

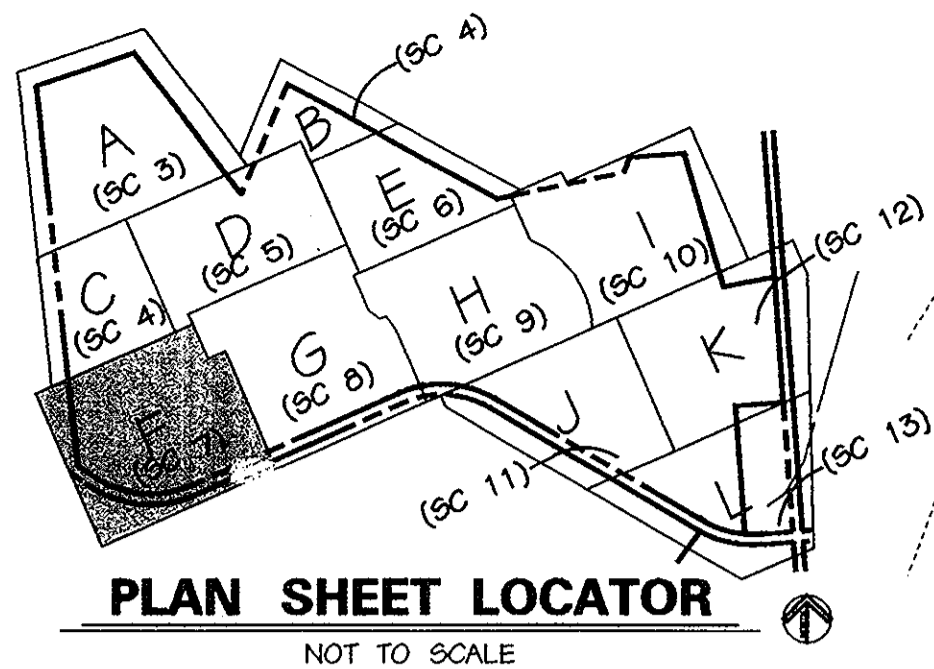
**SEDIMENT & EROSION CONTROL PLAN**  
 AREA E

SCALE: 1" = 50'  
 DATE: 06-12-02  
 CGI 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
- GIC2 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
- EGUESTRIAN/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
- 61' PROPOSED SPOT ELEVATION
- PROPOSED INLET
- PROPOSED SEWER DRAIN END SECTION
- PROPOSED SEWER DRAIN MANHOLE
- PROPOSED STORM DRAIN
- PROPOSED SEPTIC TANK
- PROPOSED SANITARY SEWER
- PROPOSED SEWER MANHOLE
- PROPOSED MONITORING WELL
- PROPOSED SEPTIC DRAIN FIELD
- SF SILT FENCE
- SOF SUPER SILT FENCE
- SCe TABILIZED CONSTRUCTION ENTRANCE
- BOF LAZE ORANGE SAFETY FENCE
- LOD LIMIT OF DISTURBANCE
- RPS2 REMOVABLE PUMPING STATION
- INITIAL STABILIZED CONSTRUCTION ENTRANCE WITH MOUNTABLE BERM
- PROPOSED LIGHT POLE
- PROPOSED PADDOCK FENCE



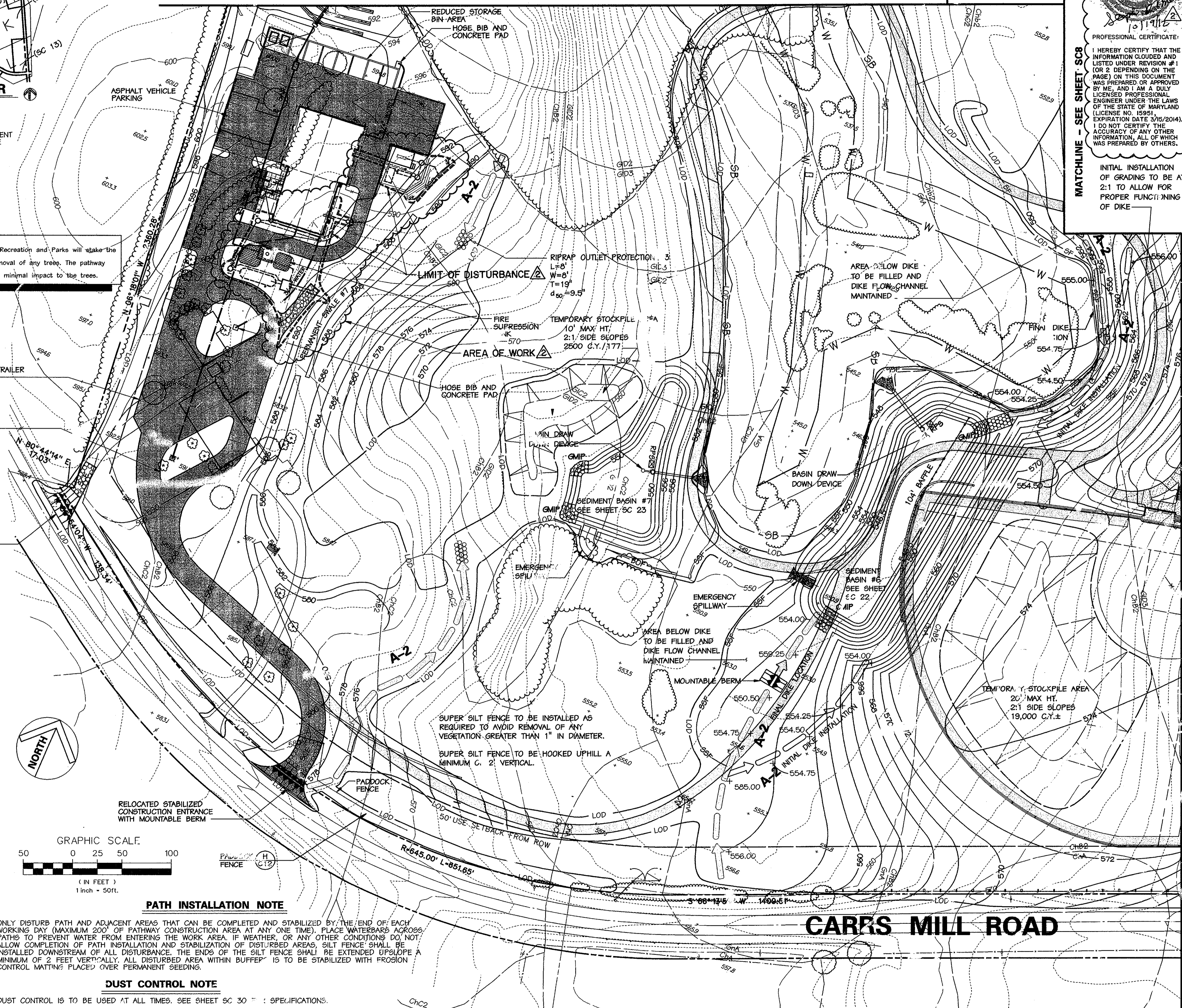
THE PROJECT MANAGER FROM THE DEPARTMENT OF RECREATION AND PARKS WILL STAKE THE PLACEMENT OF THE PATHWAY TO AVOID THE REMOVAL OF ANY TREES. THE PATHWAY PLACEMENT WILL HAVE MINIMAL CLEARING AND MINIMAL IMPACT TO THE TREES.

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.

MATCHLINE - SEE SHEET SC4, PLAN OF AREA C

MATCHLINE - SEE SHEET SC5



**PROFESSIONAL CERTIFICATE:**

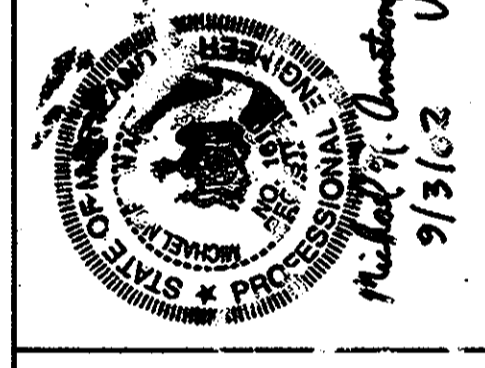
I HEREBY CERTIFY THAT THE INFORMATION CLOUDED AND LISTED UNDER REVISION #1 (OR 2 DEPENDING ON THE PAGE) ON THIS DOCUMENT WAS PREPARED OR APPROVED BY ME, AND I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND (LICENSE NO. 15951) EXPIRATION DATE 3/15/2014. I DO NOT GUARANTEE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

INITIAL INSTALLATION OF GRADING TO BE AT 2:1 TO ALLOW FOR PROPER FUNCTIONING OF DIKE

NO.	REVISIONS DESCRIPTION	DATE
1	ADDED CHANGES TO PAVING, BUILDING, AND UTILITY LAYOUT	11/09/07
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-0913, DATED DECEMBER 2011.	9/05/12

**KCI TECHNOLOGIES INC.**  
ENGINEERS • PLANNERS • SURVEYORS

10 NORTH PARK DRIVE  
BETHESDA, MARYLAND 20814  
TEL: (301) 316-7800 FAX: (301) 316-7817  
WWW.KCI.COM



REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

*Jim Mays* 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.

*John Selig* 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* 7/3/02  
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. L. Pison* 9/4/02  
SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) DATE  
RONALD G. L. PISON

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

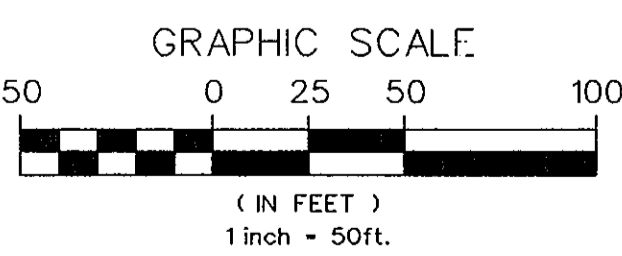
*Chris Deane* 9/12/02  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Janis Hamrick* 10/2/02  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Paul Smith* 10/23/02  
DIRECTOR DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

*Deann Brantley* 10-17-02  
COUNTY HEALTH OFFICER DATE  
HOWARD COUNTY HEALTH DEPARTMENT



**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 PROSION 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.±

**CARRS MILL ROAD**

**WESTERN REGIONAL PARK**

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
7120 OAKLAND MILLS ROAD  
COLUMBIA, MARYLAND 21046-5771  
(410) 313-4840

**SEDIMENT & EROSION CONTROL PLAN**

AREA 1

SCALE: 1" = 50'

DATE: 06-12-02

DCI JOB NO.: 01-00057

CAPITAL PROJECT NO.: N-3932

PERMIT ISSUE:

CONSTRUCTION ISSUE:

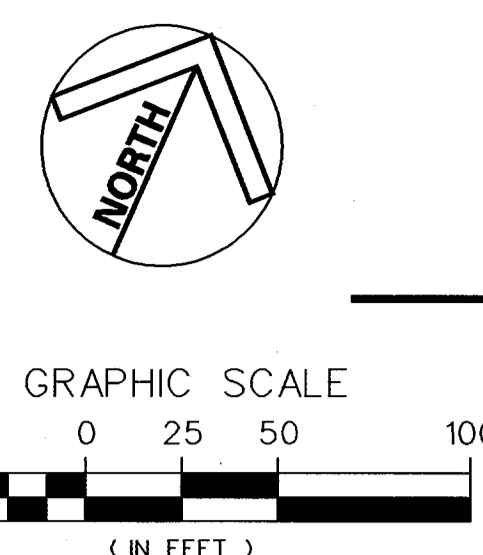
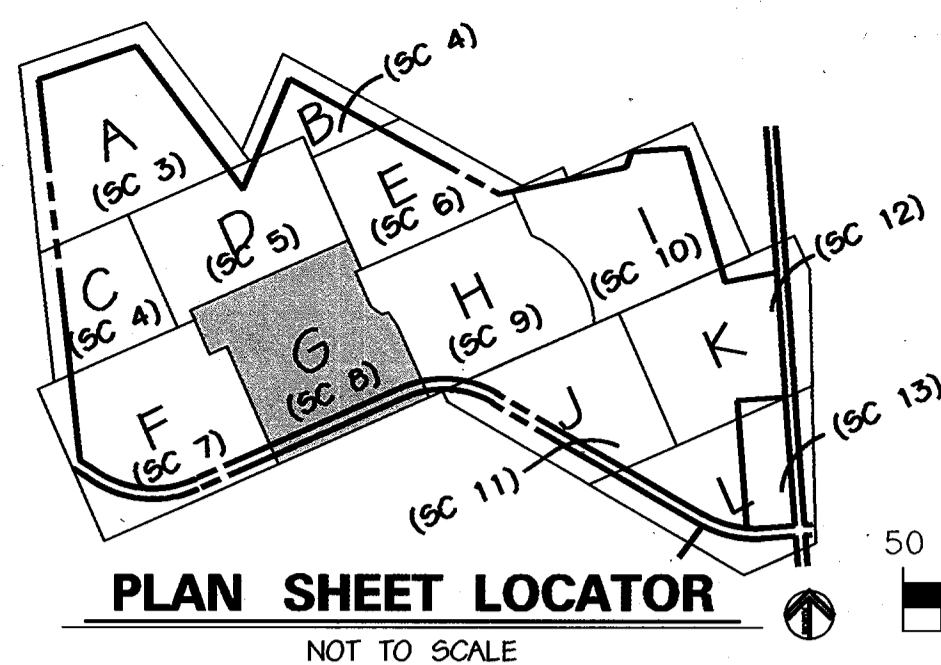
**SC7**

MARYLAND COORDINATE SYSTEM  
HORIZONTAL NAD 83-91  
VERTICAL NAVD 29

SHEET NO.: 32 OF 135

SDP-02-64





**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	
590	EX. INDEX CONTOUR
GIC2	EX. 2' INTERMEDIATE CONTOUR
---	SOIL LINE
---	PROPERTY BOUNDARY
○	EX. TREE (SIGNIFICANT SIZE OR LOCATION)
W	EX. WOODS LINE
---	SURVEYED WETLAND
---	EX. STREAMS
SB	75' STREAM BUFFER
---	EQUESTRIAN/HIKING TRAIL
570.9	EX. SPOT ELEVATION
---	PROPOSED ASPHALT PATH
---	PROPOSED CONCRETE PATH
---	PROPOSED FENCE LINE
---	PROPOSED RETAINING WALL
---	PROPOSED CONC. CURB & GUTTER
---	PROPOSED ASPHALT PAVING
620	PROPOSED TREE LINE TO REMAIN
614	PROPOSED INDEX CONTOUR
617.25	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
9F	SILT FENCE
9SF	SUPER SILT FENCE
GCE	STABILIZED CONSTRUCTION ENTRANCE
BOF	BLAZE ORANGE SAFETY FENCE
LOD	LIMIT OF DISTURBANCE
---	PERMANENT SWALE
○	PROPOSED LIGHT POLE
---	PROPOSED PADDOCK FENCE

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS  
 USDA - NATURAL RESOURCES CONSERVATION SERVICE  
 J. Myers / 15  
 9/5/02  
 DATE  
 THIS DEVELOPMENT IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
 HOWARD SCD  
 G. Selig  
 9/5/02  
 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  
 SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE)  
 MICHAEL N. ARMSTRONG  
 9/3/02  
 DATE

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

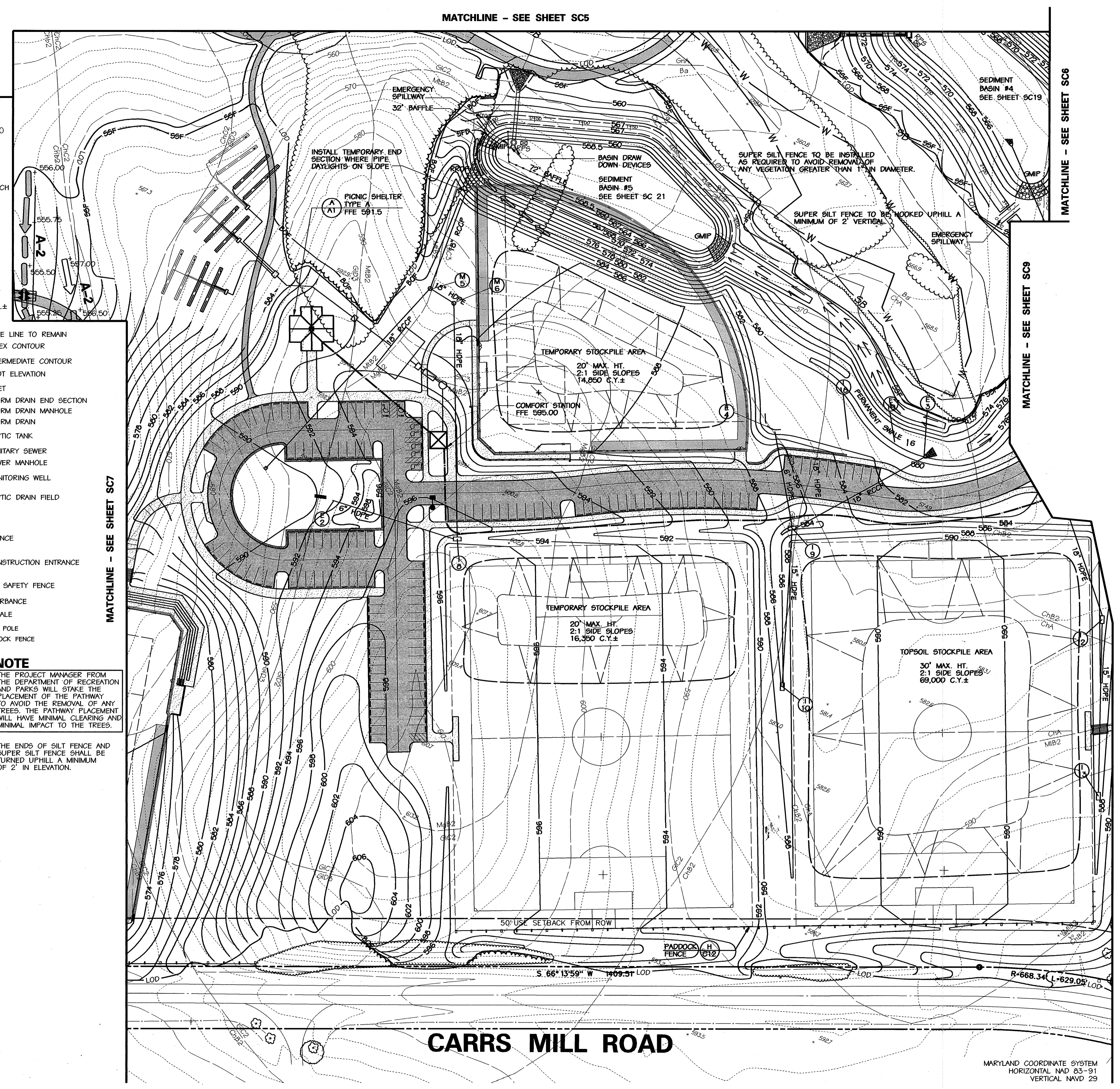
APPROVED, HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
 Chief, Development Engineering Division  
 9/12/02  
 DATE  
 Chief, Division of Land Development  
 10/20/02  
 DATE  
 10/23/02  
 DATE

APPROVED, FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 County Health Officer  
 10-17-02  
 DATE  
 HOWARD COUNTY HEALTH DEPARTMENT

**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 UP HILL A MINIMUM OF 2' IN ELEVATION.

MATCHLINE - SEE SHEET SC7



**CARRS MILL ROAD**

MARYLAND COORDINATE SYSTEM  
 HORIZONTAL NAD 83-91  
 VERTICAL NAVD 29

NO.	REVISIONS DESCRIPTION	DATE

**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



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

**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:

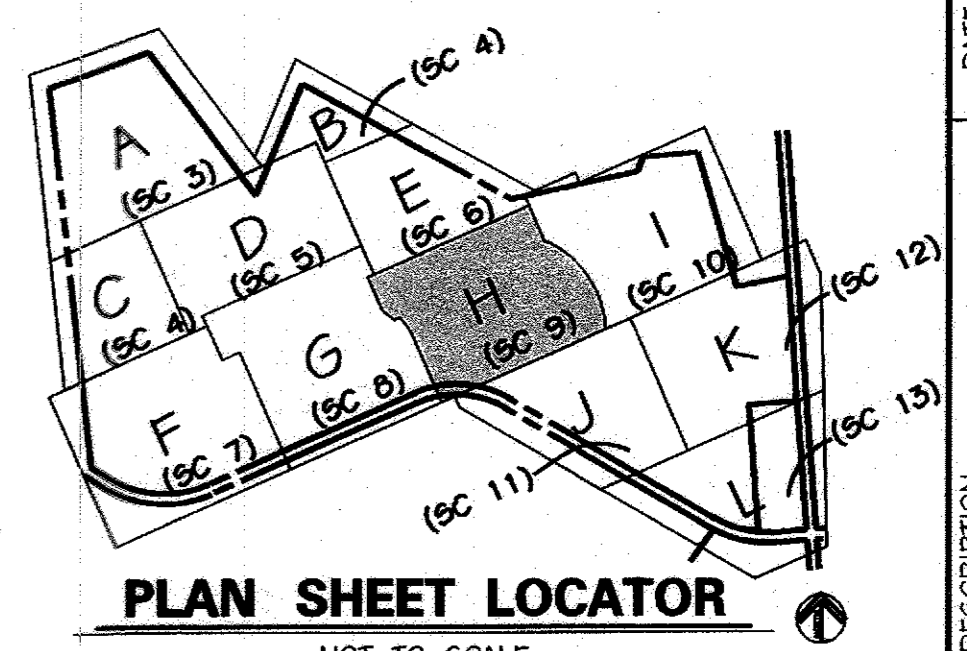
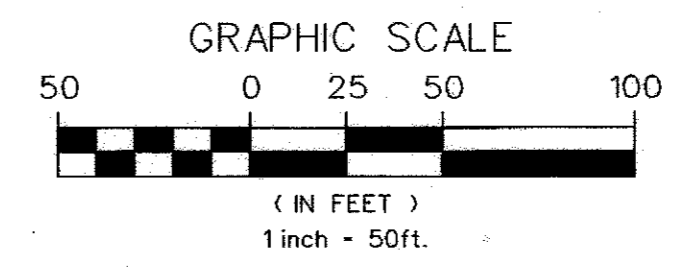
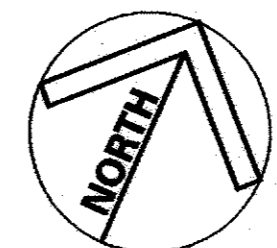
**SC8**  
 SHEET NO.: 33 OF 113  
 SDP-02-64

MATCHLINE - SEE SHEET SC8

15" RCCP

SEDIMENT BASIN #3  
SEE SHEET SC 17

MATCHLINE - SEE SHEET SC10



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
- EX. STREAMS
- SB 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 SEWER MANHOLE
- PROPOSED SEPTIC DRAIN FIELD
- SF SILT FENCE
- SSF SUPER SILT FENCE
- SCE STABILIZED CONSTRUCTION ENTRANCE
- BOF BLAZE ORANGE SAFETY FENCE
- LOD LIMIT OF DISTURBANCE
- TEMPORARY/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.

PATH INSTALLATION NOTE

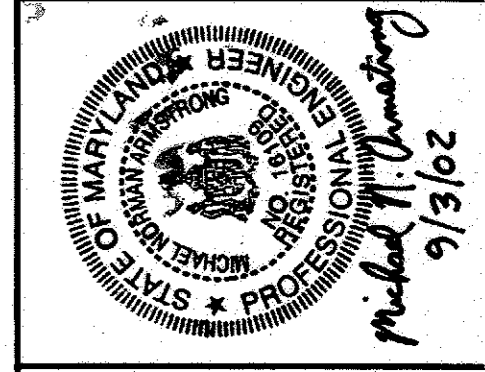
ONLY DISTURB PATH AND ADJACENT AREAS THAT CAN BE COMPLETED AND STABILIZED BY THE END OF EACH WORKING DAY (MAXIMUM 200' OF PATHWAY CONSTRUCTION AREA AT ANY ONE TIME). PLACE WATERBARS ACROSS PATHS TO PREVENT WATER FROM ENTERING THE WORK AREA. IF WEATHER, OR ANY OTHER CONDITIONS DO NOT ALLOW COMPLETION OF PATH INSTALLATION AND STABILIZATION OF DISTURBED AREAS, SILT FENCE SHALL BE INSTALLED DOWNSTREAM OF ALL DISTURBED AREAS. 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.

NO.	REVISIONS DESCRIPTION	DATE

**KCI TECHNOLOGIES INC.**  
ENGINEERS • PLANNERS • SURVEYORS  
19 NORTH PARK DRIVE  
HUNT VALLEY, MARYLAND 20880  
PHONE: (410) 314-7800 FAX: (410) 314-7817  
WWW.KCI.COM



**WESTERN REGIONAL PARK**  
HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
7120 OAKLAND MILLS ROAD  
COLUMBIA, MD 21046-1677  
(410) 313-4640

SEDIMENT & EROSION CONTROL PLAN  
AREA H

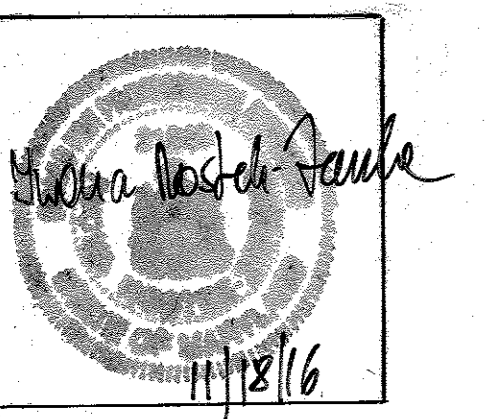
SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00052
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

**SC9**  
SHEET NO.: 34 OF 113  
SDP-02-64

MATCHLINE - SEE SHEET SC8

MATCHLINE - SEE SHEET SC9

REVISION #1 - BLOG (07/21/02)  
ADDED WASTE WATER 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, WANDA WOSKIW-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  
*Wanda Woskiw* 9/12/02  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
*Cindy Hamrick* 10/23/02  
CHIEF, DIVISION OF LAND DEVELOPMENT  
*James Smith* 10/23/02  
DIRECTOR

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
*Deany Bronte, MD* 10-17-02  
COUNTY HEALTH OFFICER  
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* 9/14/02  
SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) DATE  
RONALD G. LEPSON

MATCHLINE - SEE SHEET SC11

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.

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS  
*Jim Ryan* 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  
*John Se* 9/5/02  
HOWARD SCD DATE

THE ENDS OF SILT FENCE AND SUPER SILT FENCE SHALL BE TURNED UPSLOPE 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. ±

**LEGEND**

**PATHWAY INSTALLATION NOTE**

**DUST CONTROL 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 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.

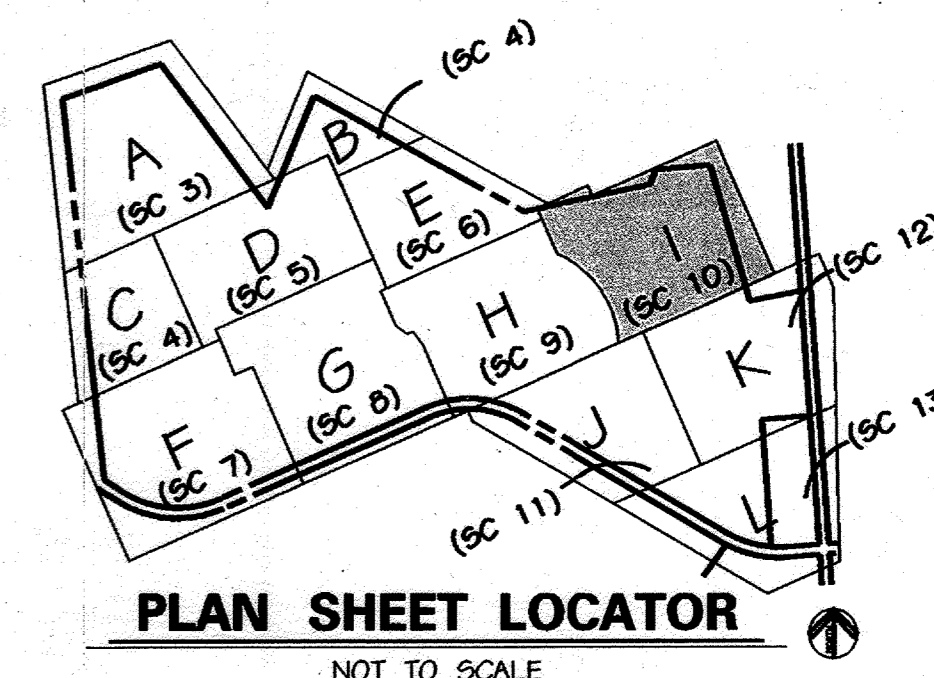
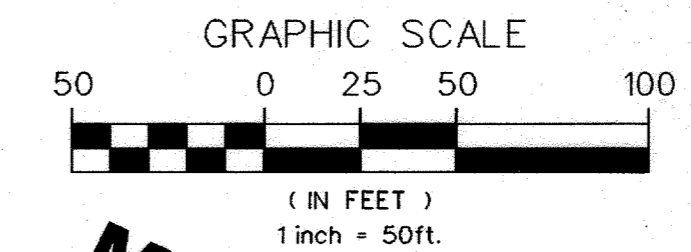
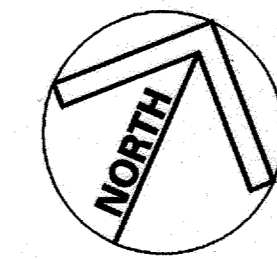
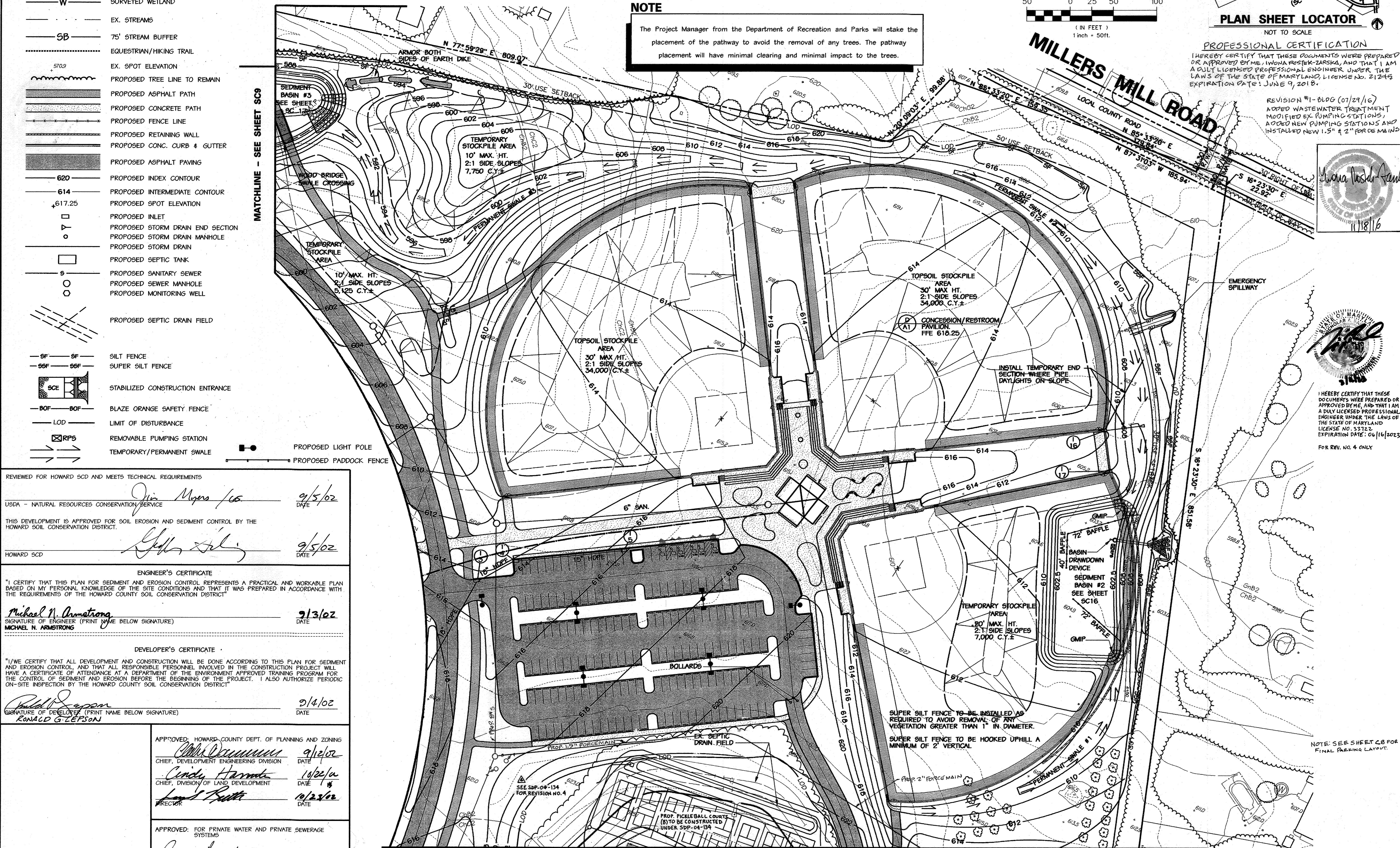
- 530 EX. INDEX CONTOUR
- GIC2 EX. 2' INTERMEDIATE CONTOUR
- SOIL LINE
- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- EX. WOODS LINE
- W SURVEYED WETLAND
- EX. STREAMS
- 5B 75' STREAM BUFFER
- EQUESTRIAN/HIKING TRAIL
- 5702 EX. SPOT ELEVATION
- PROPOSED TREE LINE TO REMAIN
- PROPOSED 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 MONITORING WELL
- PROPOSED SEPTIC DRAIN FIELD
- SF SILT FENCE
- SOF SUPER SILT FENCE
- SCE STABILIZED CONSTRUCTION ENTRANCE
- BOF BLAZE ORANGE SAFETY FENCE
- LOD LIMIT OF DISTURBANCE
- RPS REMOVABLE PUMPING STATION
- PROPOSED LIGHT POLE
- PROPOSED PADDOCK FENCE

MATCHLINE - SEE SHEET SC6

MATCHLINE - SEE SHEET SC9

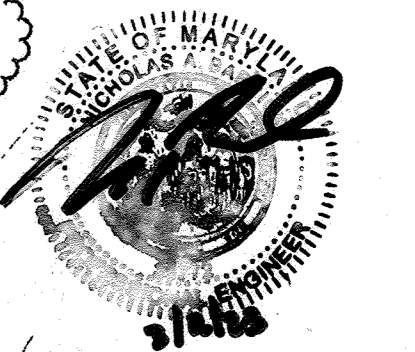
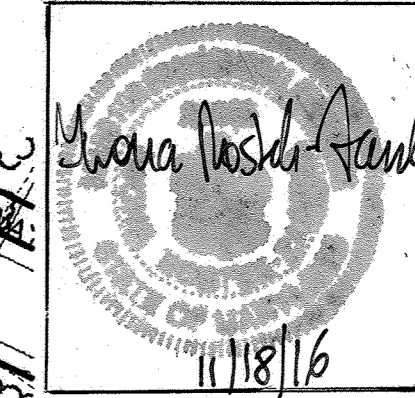
MATCHLINE - SEE SHEET SC11

MATCHLINE - SEE SHEET SC12



**PROFESSIONAL CERTIFICATION**  
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, IWONA ROSTEK-ZARSKA, AND THAT I AM A DAILY 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" x 2" PERCE MAINS.



I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DAILY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33722 EXPIRATION DATE: 06/16/2023 FOR REV. NO. 4 ONLY

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS  
 USDA - NATURAL RESOURCES CONSERVATION SERVICE  
 THIS DEVELOPMENT IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
 HOWARD SCD

**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)  
 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. Zepson  
 SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE)  
 RONALD G. ZEPSON

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DIRECTOR

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 COUNTY HEALTH OFFICER  
 HOWARD COUNTY HEALTH DEPARTMENT

DATE: 2-9-13

REVISIONS DESCRIPTION

NO. 1 ADD PICKLEBALL COURTS

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

**WESTERN REGIONAL PARK**  
 HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
 7120 OAKLAND MILLS ROAD  
 COLUMBIA, MARYLAND 21046-1677  
 (410)-513-4640

**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:

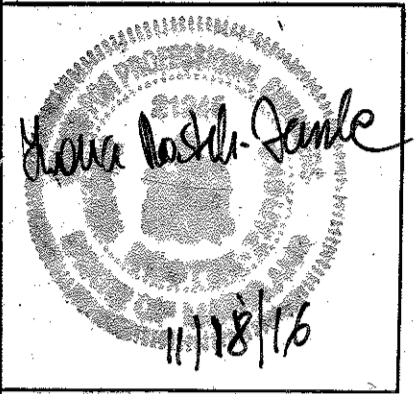
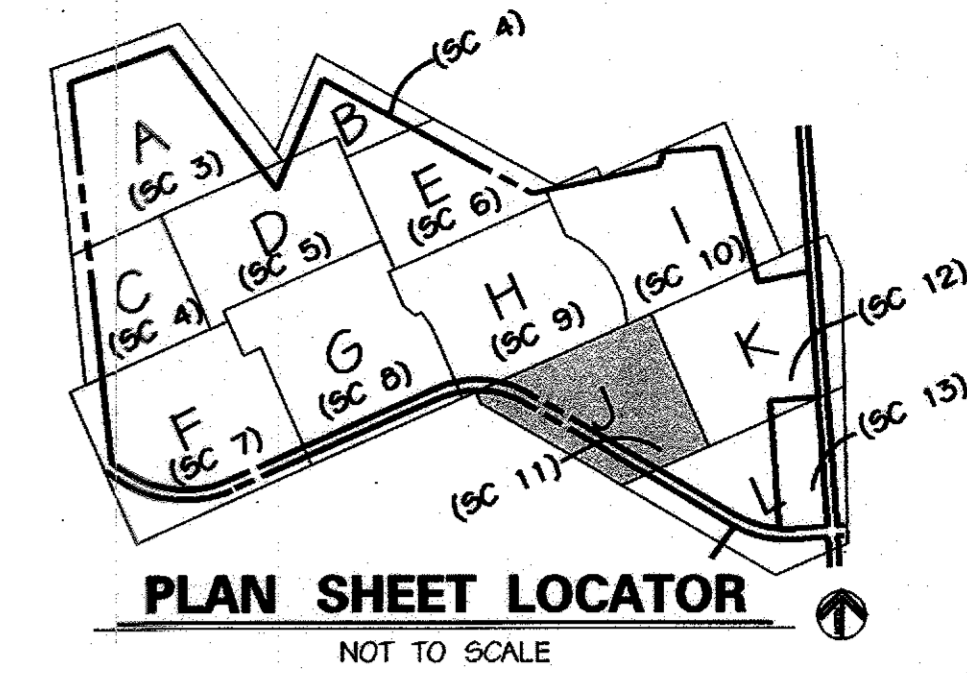
**SC10**  
 SHEET NO.: 35 OF 113

MARYLAND COORDINATE SYSTEM  
 HORIZONTAL NAD 83-91  
 VERTICAL NAVD 29

SDP-02-64

MATCHLINE - SEE SHEET SC9

MATCHLINE - SEE SHEET SC10



REVISION #1-0106 (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 WANDA 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**

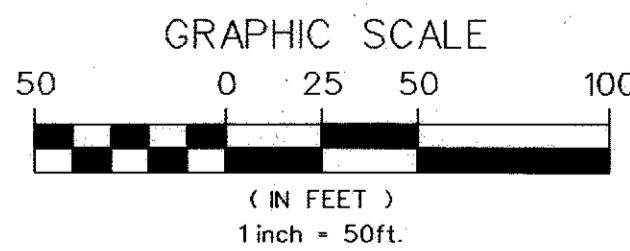
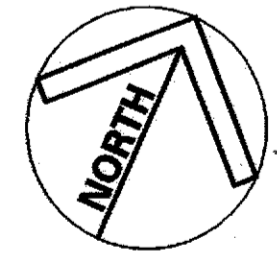
ONLY DISTURB PATH AND ADJACENT AREAS THAT CAN BE COMPLETED AND STABILIZED BY THE END OF EACH  
WORKING DAY (MAXIMUM 200' OF PATHWAY CONSTRUCTION AREA AT ANY ONE TIME). PLACE WATERBARS ACROSS  
PATHS TO PREVENT WATER FROM ENTERING THE WORK AREA. IF WEATHER, OR ANY OTHER CONDITIONS DO NOT  
ALLOW COMPLETION 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 = 509,901 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 = 509,901 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.



**CARRS MILL ROAD**

**MOUNTABLE BERM**

**Paddock FENCE**

SEDIMENT BASIN #1  
SEE SHEET SC 14

THIS PORTION OF  
ASPHALT PATH TO BE  
CONSTRUCTED WHEN  
SEDIMENT BASIN IS  
CONVERTED TO SWM  
POND

BASIN DRAW  
DOWN DEVICE  
SEE DETAIL ON  
SHEET SC14

GMP  
NOTE: DIRECT RUNOFF  
FROM PROPOSED  
SWALES TO GMP.

**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
- 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 MONITORING WELL
- PROPOSED SEPTIC DRAIN FIELD
- SILT FENCE
- SUPER SILT FENCE
- STABILIZED CONSTRUCTION ENTRANCE
- BLAZE ORANGE SAFETY FENCE
- LIMIT OF DISTURBANCE
- REMOVABLE PUMPING STATION

MATCHLINE - SEE SHEET SC12

MATCHLINE - SEE SHEET SC13

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
*Michael N. Armstrong* 9/12/02  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE  
*Cindy Hamata* 10/23/02  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE  
*Leslie Rutter* 10/23/02  
DIRECTOR DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
*Pamela Brantley MD* 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"

*Ronald G. Lepson* 2/2/02  
SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) DATE  
RONALD G. LEPSON

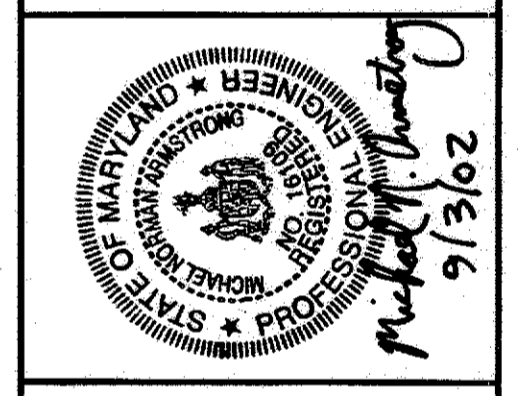
REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS  
*Jim Muench* 9/5/02  
USDA - NATURAL RESOURCES CONSERVATION SERVICE DATE  
THIS DEVELOPMENT IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE  
HOWARD SOIL CONSERVATION DISTRICT.  
*John Kelly* 9/5/02  
HOWARD SCD DATE

**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 TECHNOLOGIES INC.**  
ENGINEERS • PLANNERS • SURVEYORS  
10 NORTH PARK DRIVE  
HUNT VALLEY, MARYLAND 21030  
PHONE: (410) 316-7800 FAX: (410) 316-7807  
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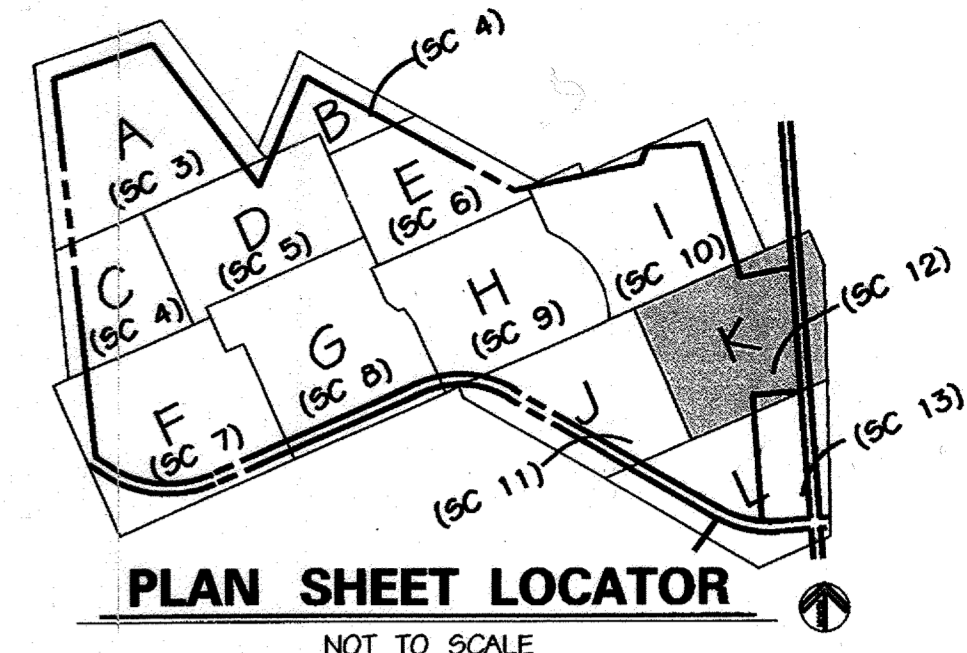
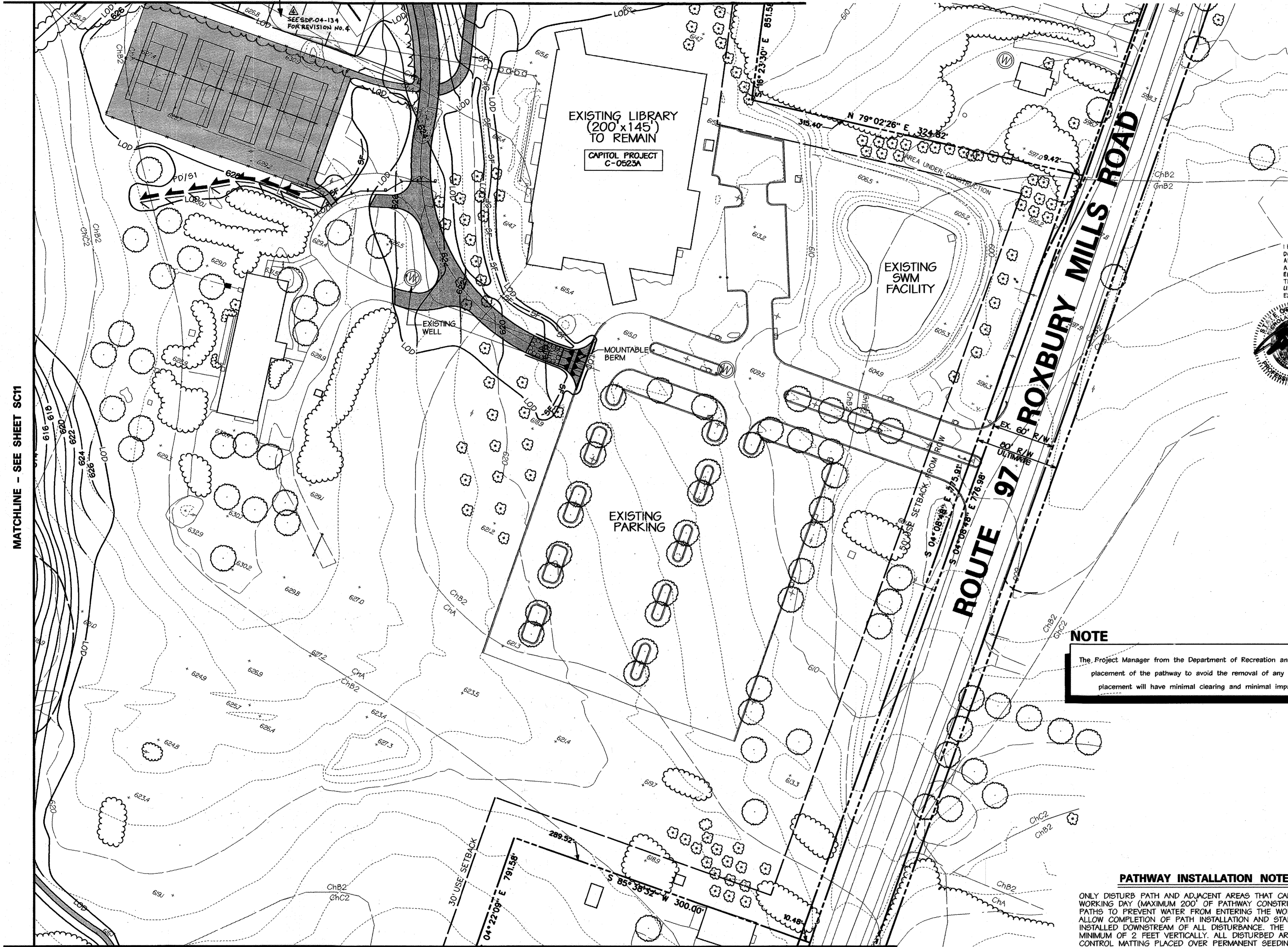
**WESTERN REGIONAL PARK**  
HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
7120 OAKLAND MILLS ROAD  
COLUMBIA, MARYLAND 21046-1677  
(410) 313-4640

**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:

PROP. PICKLEBALL COURTS (S) TO BE CONSTRUCTED UNDER SDP-04-154

MATCHLINE - SEE SHEET SC10



PLAN SHEET LOCATOR  
NOT TO SCALE

**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
- EX. STREAMS
- SB 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 MONITORING WELL
- PROPOSED SEPTIC DRAIN FIELD
- SF SILT FENCE
- SSF SUPER SILT FENCE
- SCE STABILIZED CONSTRUCTION ENTRANCE
- BOF BLAZE ORANGE SAFETY FENCE
- LOD LIMIT OF DISTURBANCE
- PERIMETER DIKE/SWALE

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE NO. 33722 EXPIRATION DATE: 06/16/2023



**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 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 SC30 FOR SPECIFICATIONS.  
THE ENDS OF SILT FENCE AND SUPER SILT FENCE SHALL BE TURNED UP-HILL 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.±

MATCHLINE - SEE SHEET SC13

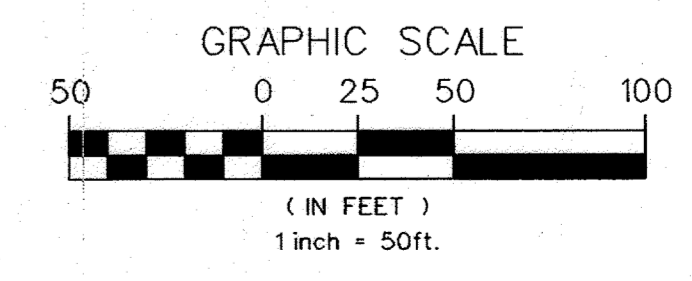
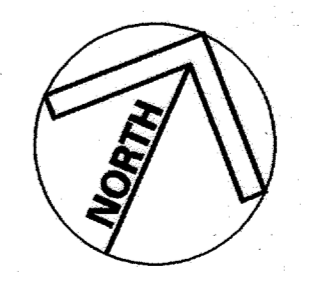
APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
*Chris Dammas* 9/12/02  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
*Cindy Hammett* 10/22/02  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
*Paul R. Butler* 10/22/02  
 DIRECTOR

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
*Paul R. Butler* 10-17-02  
 COUNTY HEALTH OFFICER  
 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)  
 MICHAEL N. ARMSTRONG

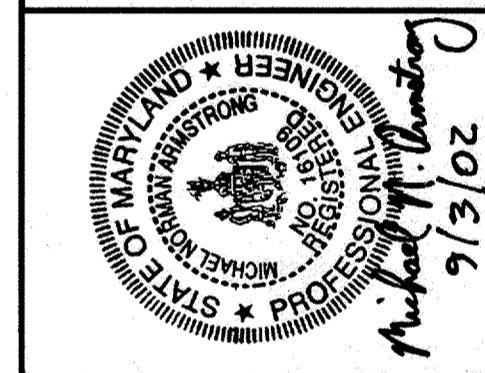
**DEVELOPER'S CERTIFICATE**  
 "I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED 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.  
*Paul R. Butler* 9/4/02  
 SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE)  
 RONALD G. LEFSON

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS  
*Jim Myers* 9/5/02  
 USDA - NATURAL RESOURCES CONSERVATION SERVICE  
 THIS DEVELOPMENT IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
*Paul R. Butler* 9/5/02  
 HOWARD SCD



NO.	REVISIONS DESCRIPTION	DATE
1	ADD PICKLEBALL COURTS	3-7-23

**KCI TECHNOLOGIES INC.**  
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 10 NORTH PARK DRIVE  
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**WESTERN REGIONAL PARK**  
 HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
 7120 OAKLAND MILLS ROAD  
 COLUMBIA, MARYLAND 21046-1677  
 (410)-315-4640

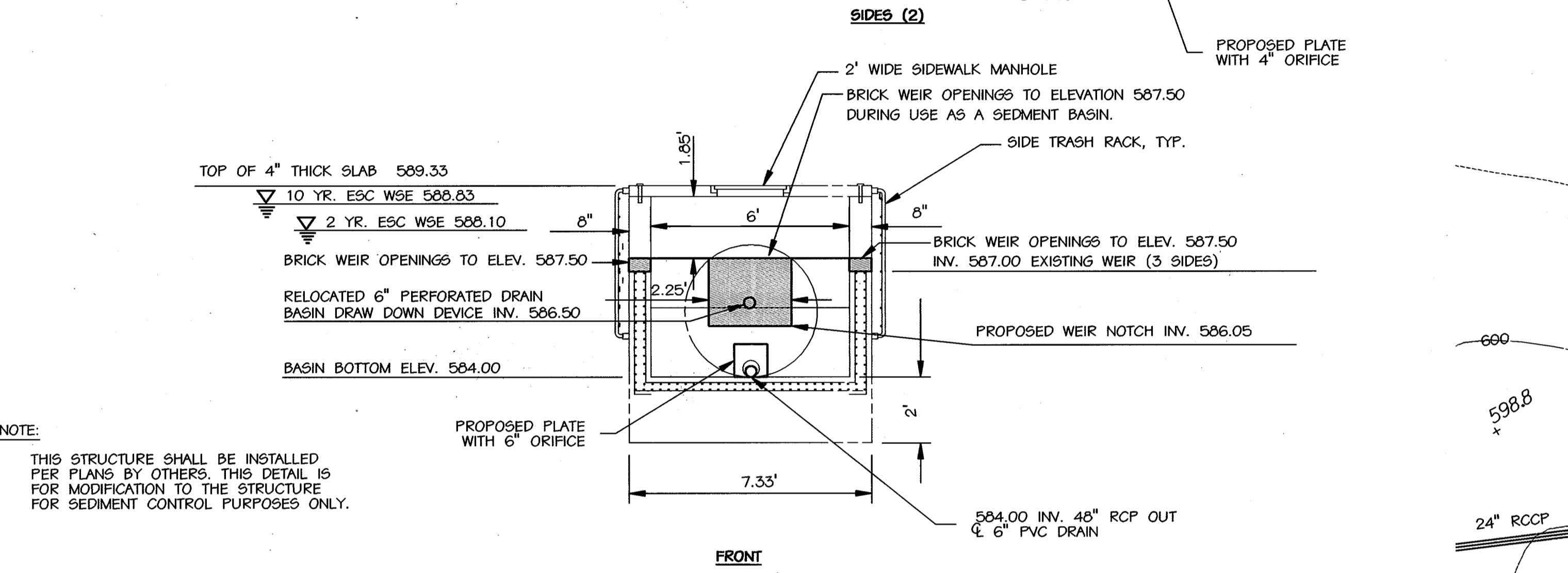
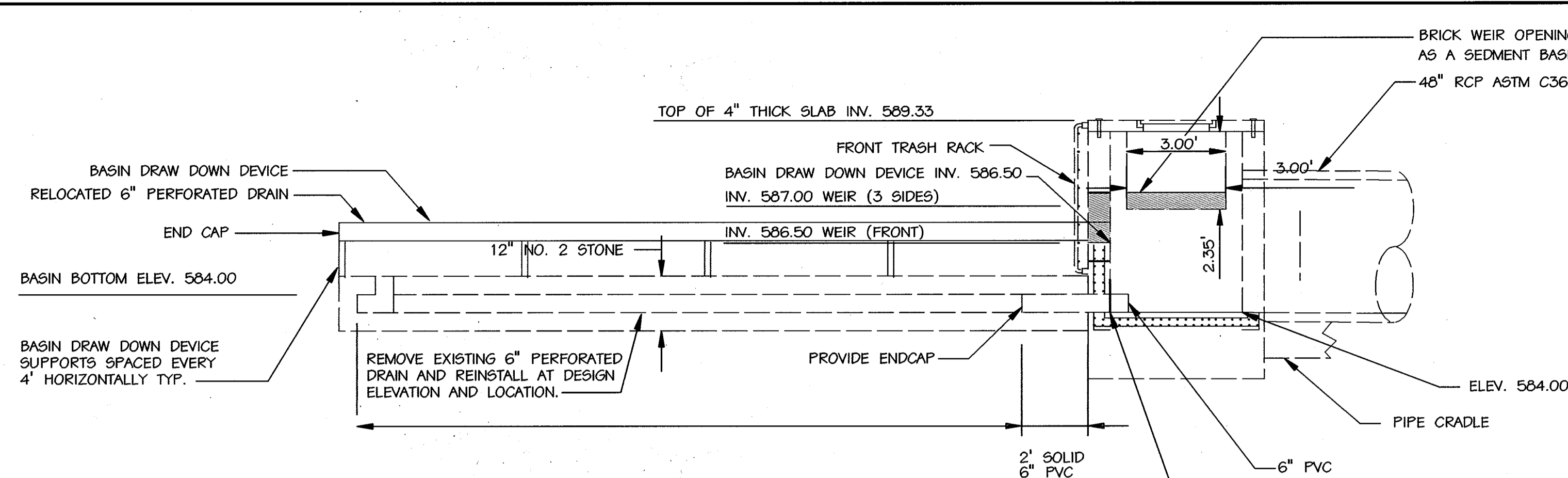
**SEDIMENT & EROSION CONTROL PLAN**  
 AREA K

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 143





**PRECAST STRUCTURE S-1 DETAIL (BY OTHERS)**

- 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.

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE

HOWARD SCD

DATE: 9/5/02

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  
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"

DATE: 9/14/02

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

DATE: 9/12/02

DATE: 10/20/02

DATE: 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

DATE: 10-17-02

**SEDIMENT BASIN TABLE**

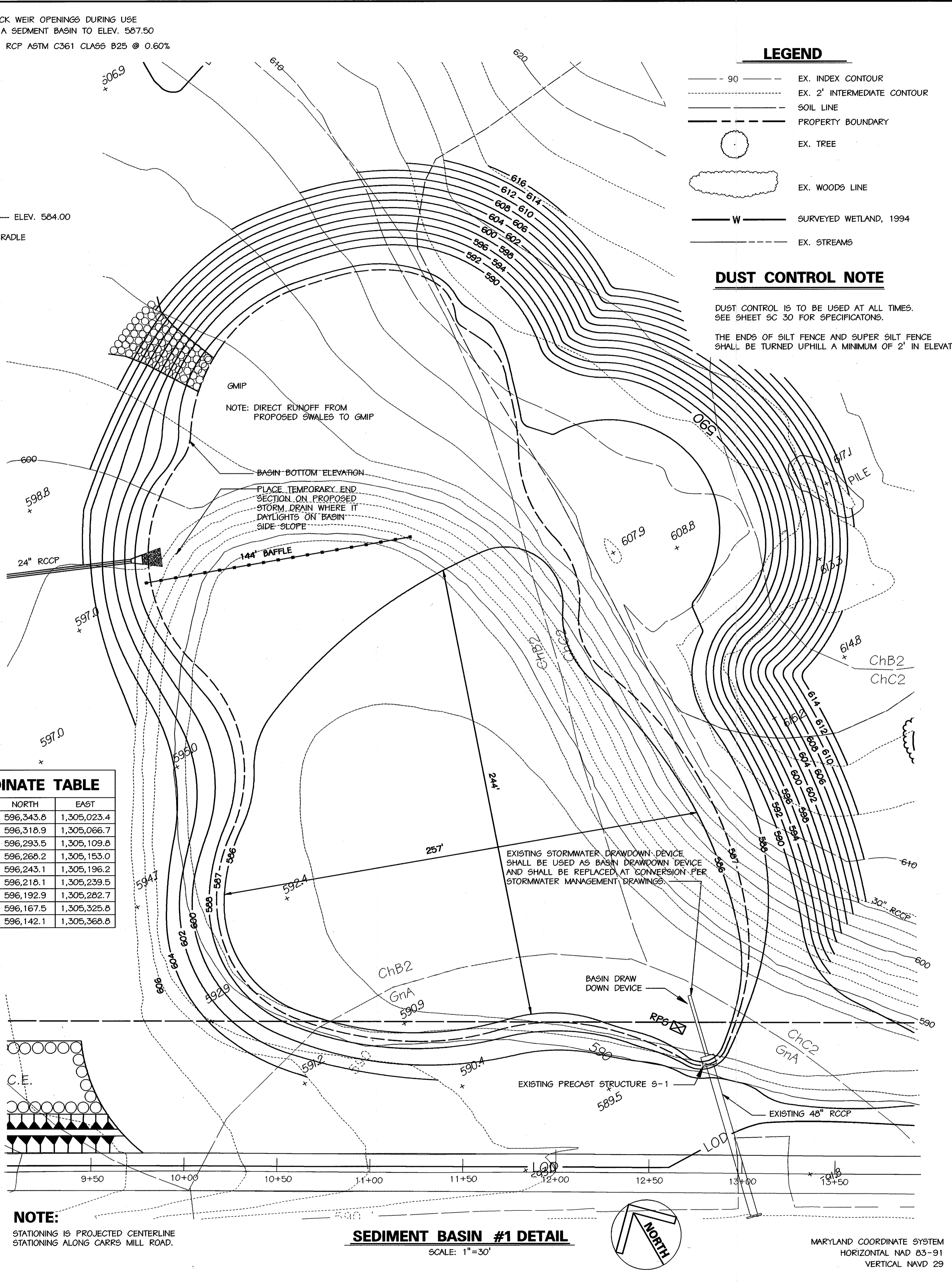
Basin Number	1
Existing Drainage Area Ac.	40.30
Interim Drainage Area Ac.	44.39
Proposed Drainage Area Ac.	44.39
Storage Required C. F.	79,902
Wet	79,902
Dry	79,902
Total	159,804
Storage Provided	82,859
Wet	86,713
Dry	26,713
Total	113,426
Existing Ground Elev. (centerline intersection)	590.50
Top Embankment 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 <sub>in</sub> to Basin C.F.S.	162.1
Q <sub>out</sub> Barrel C.F.S.	59.3
Q <sub>out</sub> Emergency Spillway C.F.S.	N/A
Total Q <sub>out</sub> of Basin C.F.S.	59.3
Basin Depth	2.5
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	596,243.8	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:**

- 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.
- 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.
- BLAZE ORANGE SAFETY FENCE IS TO BE INSTALLED AROUND THE BASIN TO PREVENT ACCESS TO BASIN BY CHILDREN.
- 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'.
- TOP OF BAFFLE SHALL BE AT ELEVATION 586.50.
- FOR CONVERSION TO STORMWATER MANAGEMENT FACILITY, SEE STORMWATER MANAGEMENT DRAWINGS.



**LEGEND**

- 90 - 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 SPECIFICATIONS.

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

**NOTE:** STATIONING IS PROJECTED CENTERLINE STATIONING ALONG CARRS MILL ROAD.

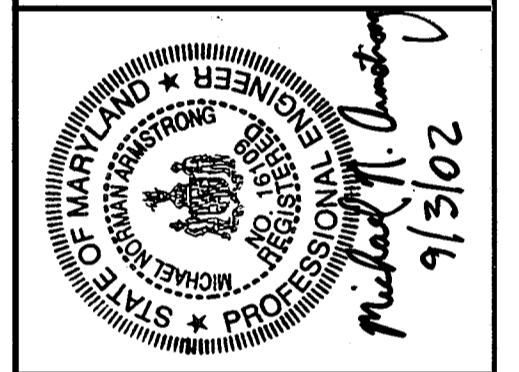
**SEDIMENT BASIN #1 DETAIL**

SCALE: 1"=30'

NO.	REVISIONS DESCRIPTION	DATE

**KCI TECHNOLOGIES INC.**  
ENGINEERS • PLANNERS • SURVEYORS

10 NORTH PARK DRIVE  
HUNT VALLEY, MARYLAND 21036  
PHONE: (410) 316-7800 FAX: (410) 316-7817  
WWW.KCI.COM



**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

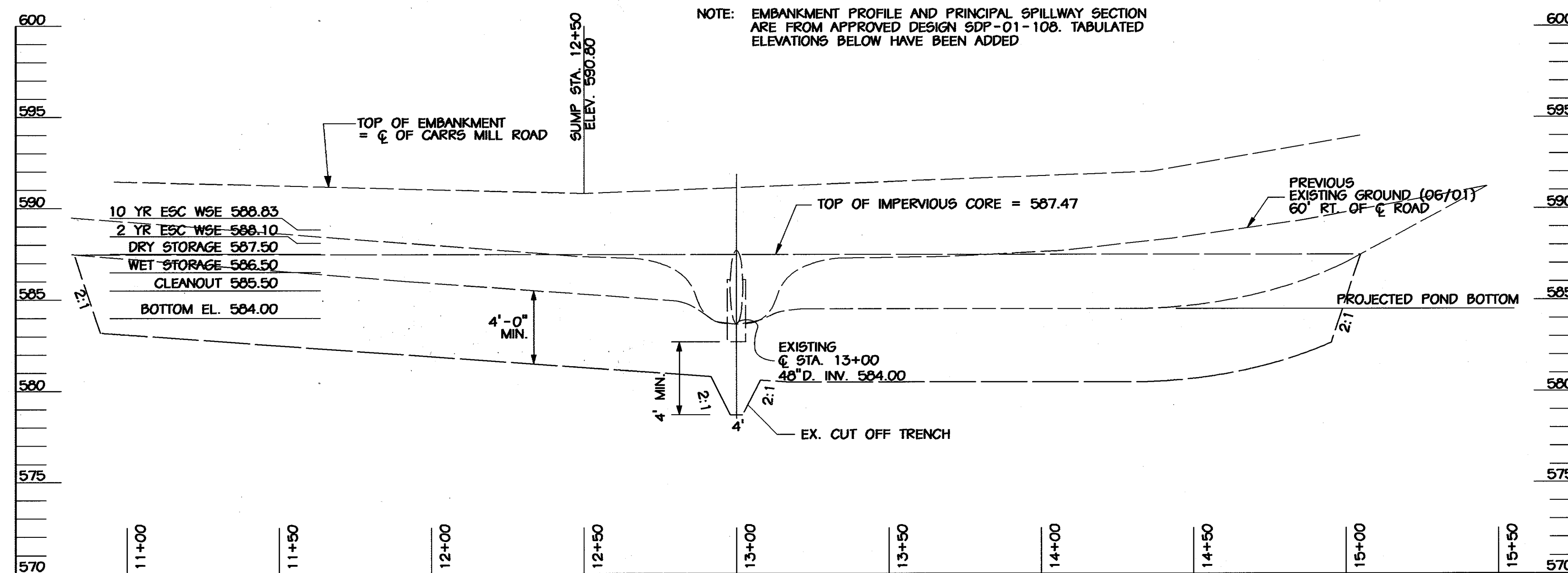
DATE: 06-12-02

KCI JOB NO.: 01-00057

CAPITAL PROJECT NO.: N-3932

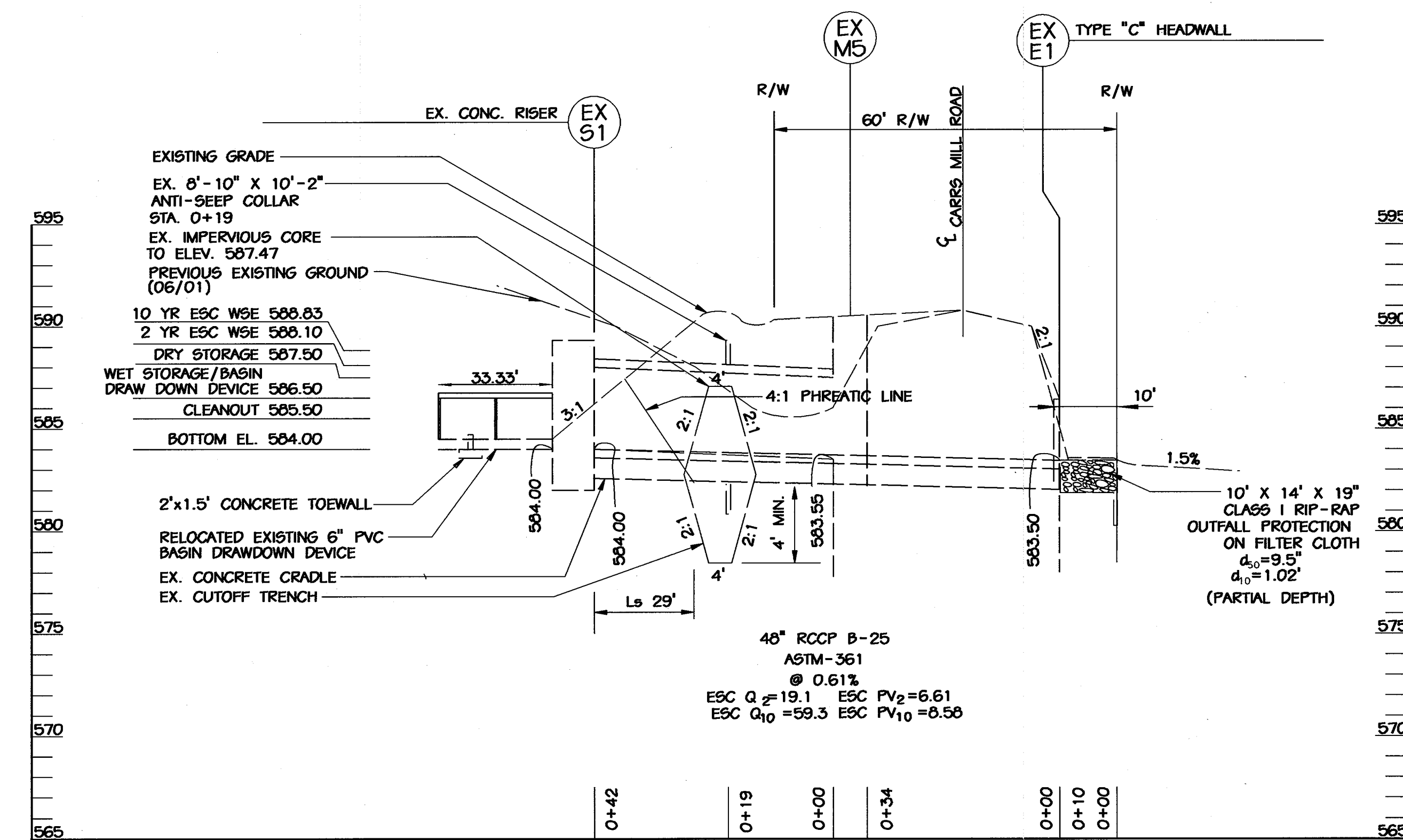
PERMIT ISSUE:

CONSTRUCTION ISSUE:



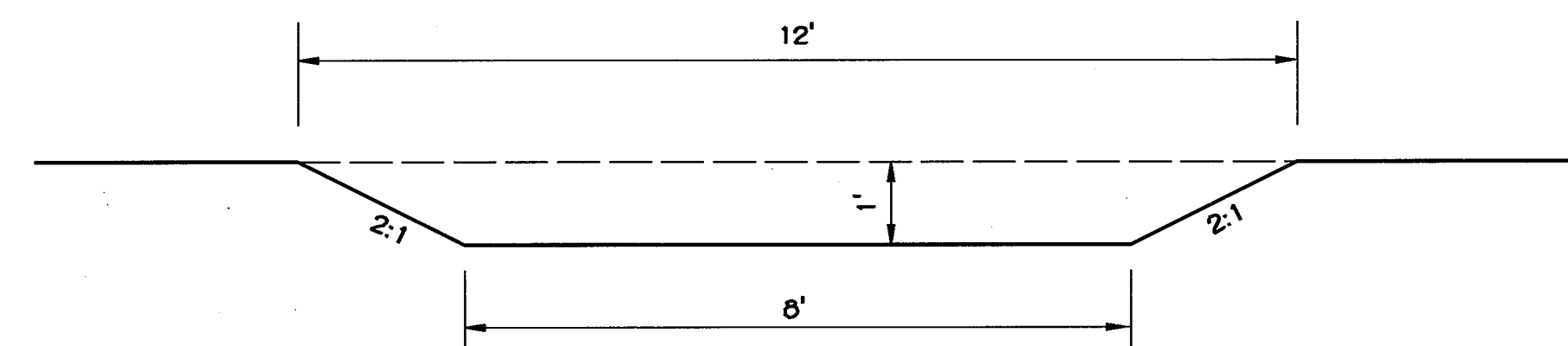
**PROFILE ALONG CENTERLINE EMBANKMENT**

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  
 HOWARD SCD

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)  
 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  
 SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE)  
 RONALD G. LEPSON

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DIRECTOR  
 APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 COUNTY HEALTH OFFICER  
 HOWARD COUNTY HEALTH DEPARTMENT

NO.	REVISIONS DESCRIPTION	DATE

**KCI TECHNOLOGIES INC.**  
 ENGINEERS • PLANNERS • SURVEYORS  
 10 NORTH PARK DRIVE  
 HUNT VALLEY, MARYLAND 21080  
 PHONE: (410) 36-7800 FAX: (410) 36-7817  
 WWW.KCI.COM



**WESTERN REGIONAL PARK**  
 HOWARD COUNTY, DEPARTMENT OF RECREATION AND PARKS  
 17200 OAKMOUNT 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:







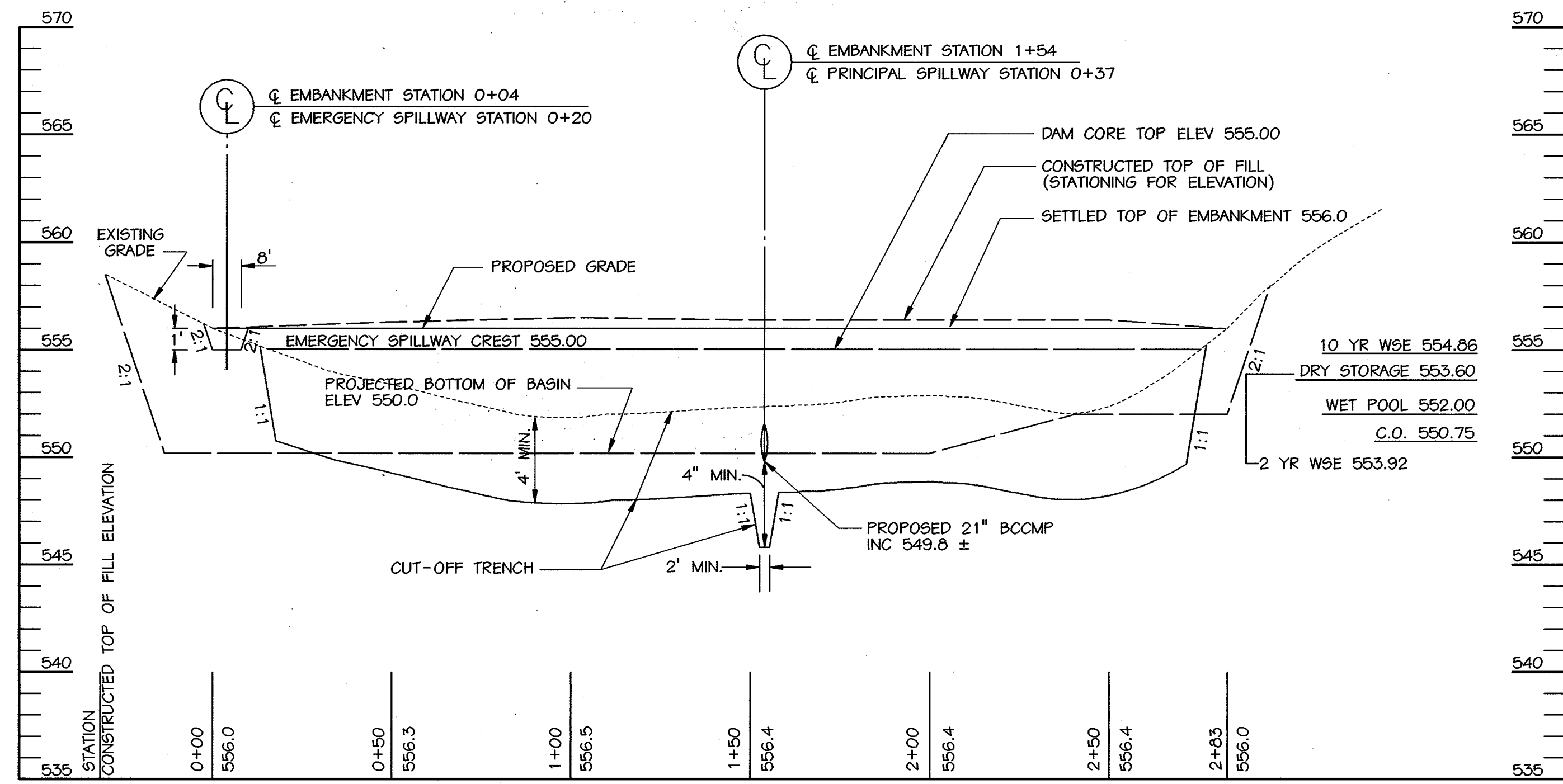










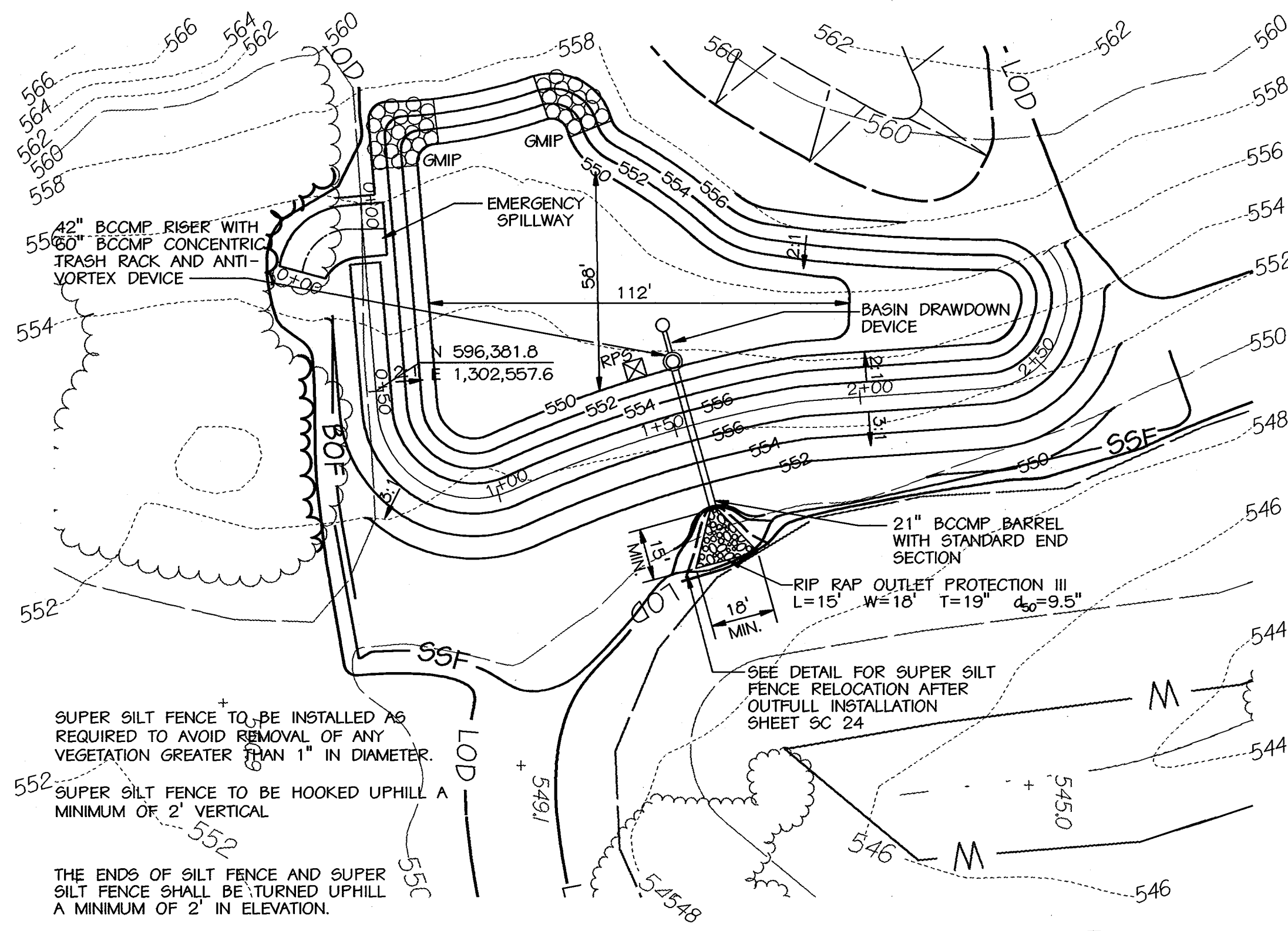


**PROFILE ALONG CENTERLINE OF EMBANKMENT**

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

**NOTES:**

- 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.
- 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.
- BLAZE-ORANGE SAFETY FENCE IS TO BE INSTALLED AROUND THE BASIN TO PREVENT ACCESS TO BASIN BY CHILDREN.
- 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 (556.83) TO THE CLEANOUT ELEVATION (550.75) IS 5.08'.
- INDICATED FINISHED GRADE CONTOURS ARE BASED ON PROPOSED SETTLED GRADES SHOWN ON PROFILES ON THIS SHEET



**SEDIMENT BASIN #7 PLAN**

**DUST CONTROL NOTE**

DUST CONTROL IS TO BE USED AT ALL TIMES. SEE SHEET SC29 FOR SPECIFICATIONS.

**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

**LEGEND**

- 90 EX. INDEX CONTOUR
- 554 EX. 2' INTERMEDIATE CONTOUR
- 554 PROPOSED CONTOUR
- SOIL LINE
- PROPERTY BOUNDARY
- EX. TREE
- EX. WOODS LINE
- W SURVEYED WETLAND, 1994
- EX. STREAMS
- SSF SUPER SILT FENCE
- LOD LIMIT OF DISTURBANCE
- RPS 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
Quanto Basin C.F.S.	31.4
QuOut Barrel C.F.S.	19.2
QuOut Emergency Spillway C.F.S.	0.0
Total QuOut 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 from 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

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE 9/5/02

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

HOWARD SCD 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

**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."

Edward G. Lepson 9/14/02

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

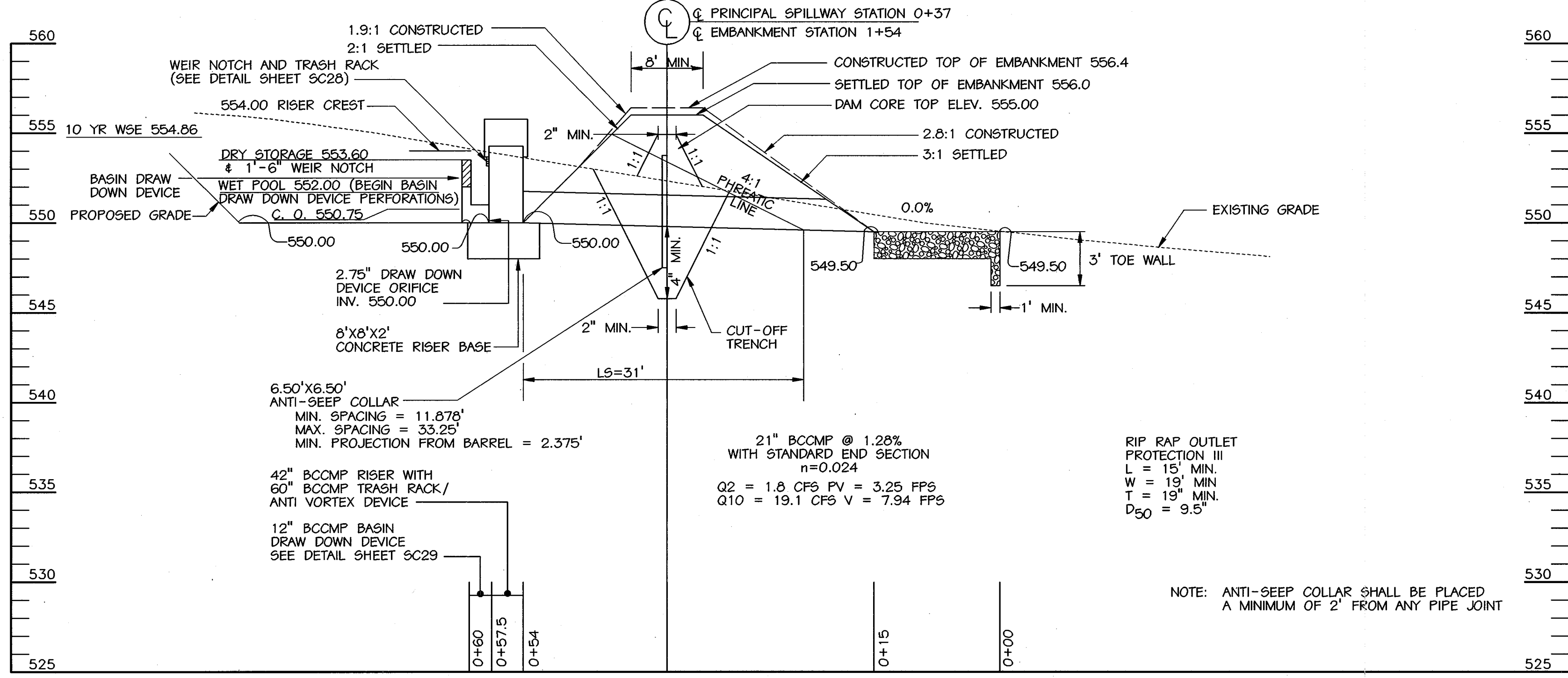
Chief, Development Engineering Division 9/12/02

Chief, Division of Land Development 1/22/02

Director 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

County Health Officer 10-17-02



**PROFILE ALONG CENTERLINE OF PRINCIPAL SPILLWAY**

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

DATE

REVISIONS DESCRIPTION

NO.

KCI TECHNOLOGIES INC.  
ENGINEERS • PLANNERS • SURVEYORS  
10 NORTH PARK DRIVE  
HUNT VALLEY, MARYLAND 21080  
PHONE: (410) 316-7800 FAX: (410) 316-7817  
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WESTERN REGIONAL PARK  
HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
7120 OKLAND MILLS ROAD  
COLUMBIA, MD 21046-1677  
(410) 313-0640

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:

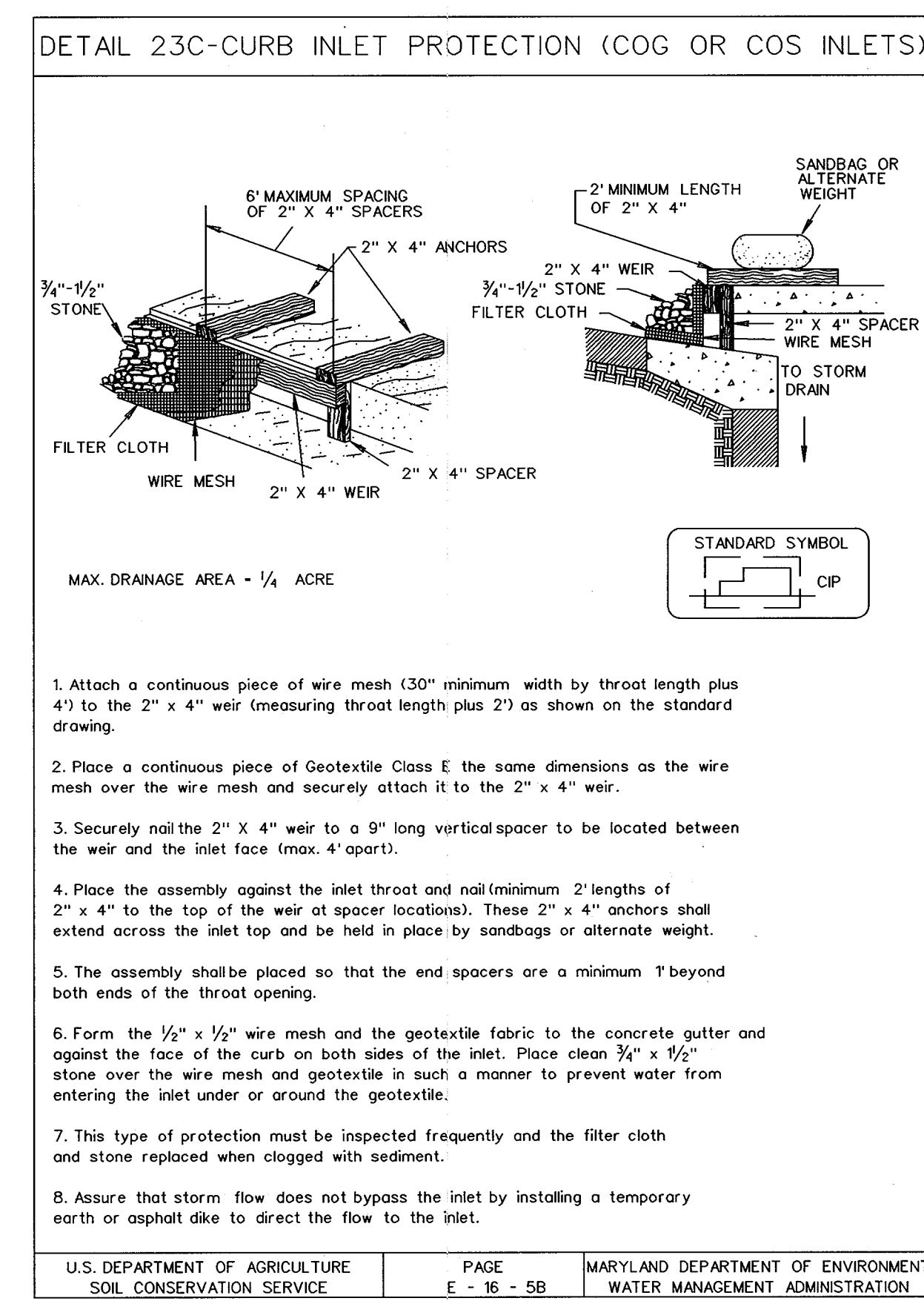
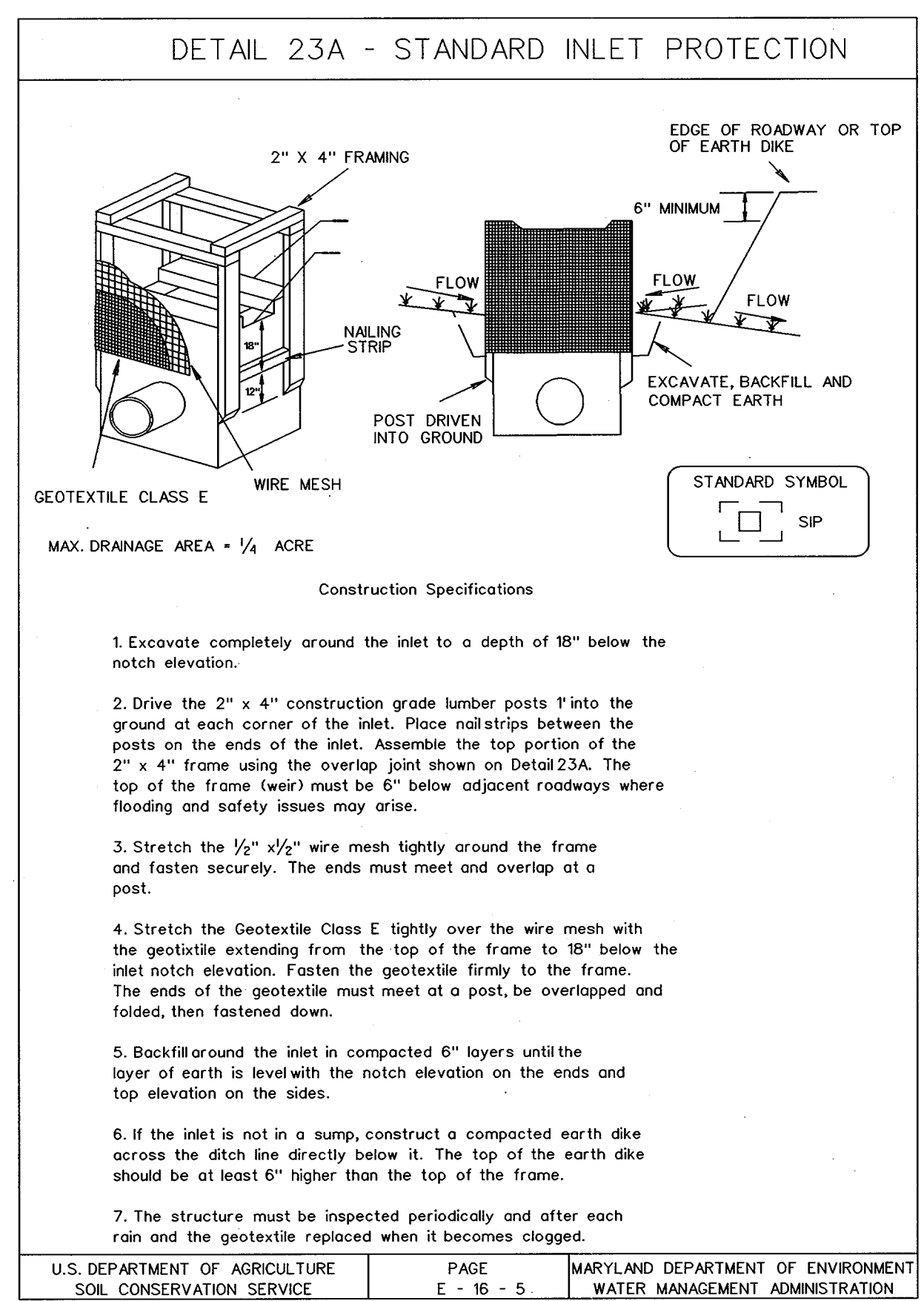
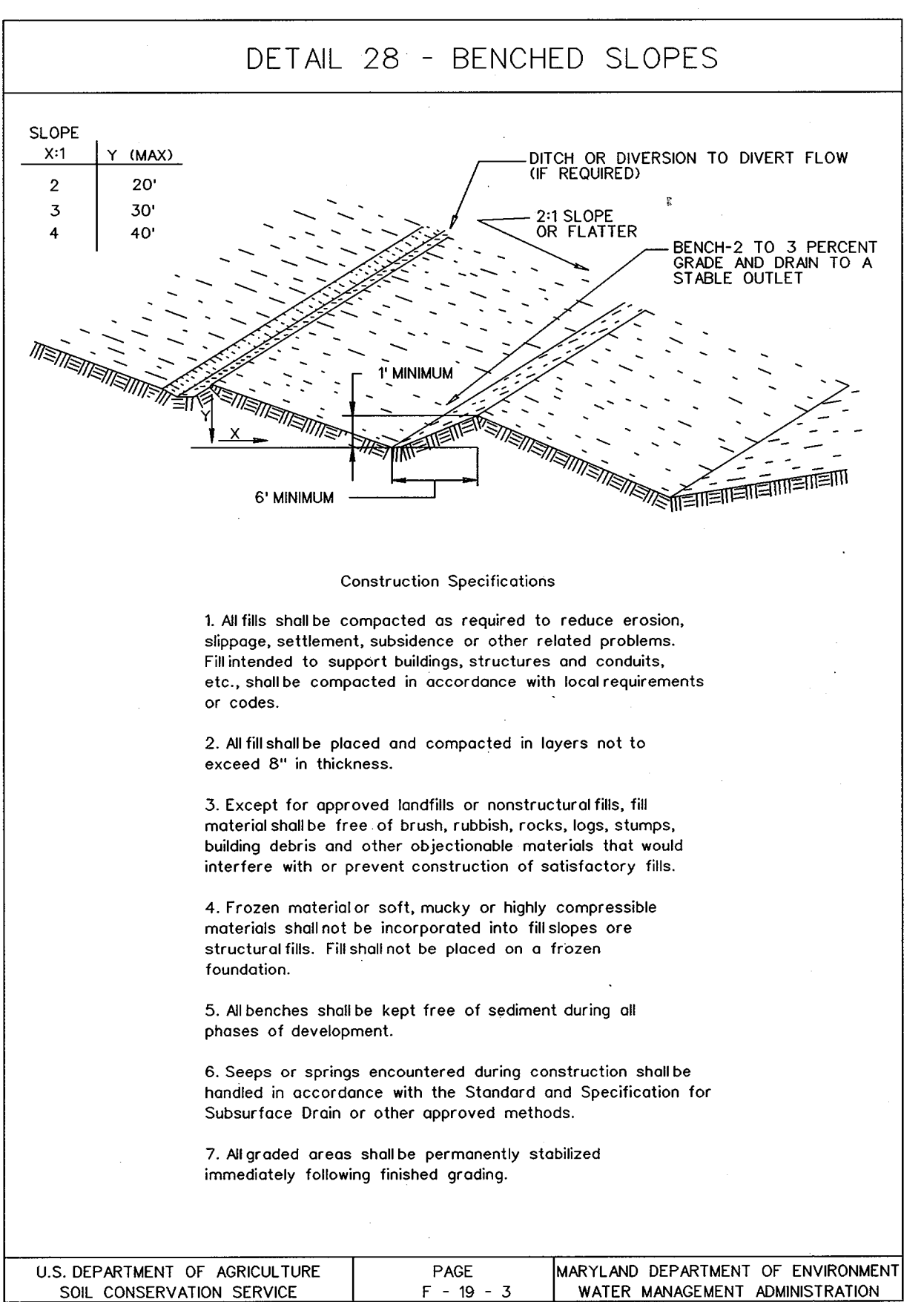
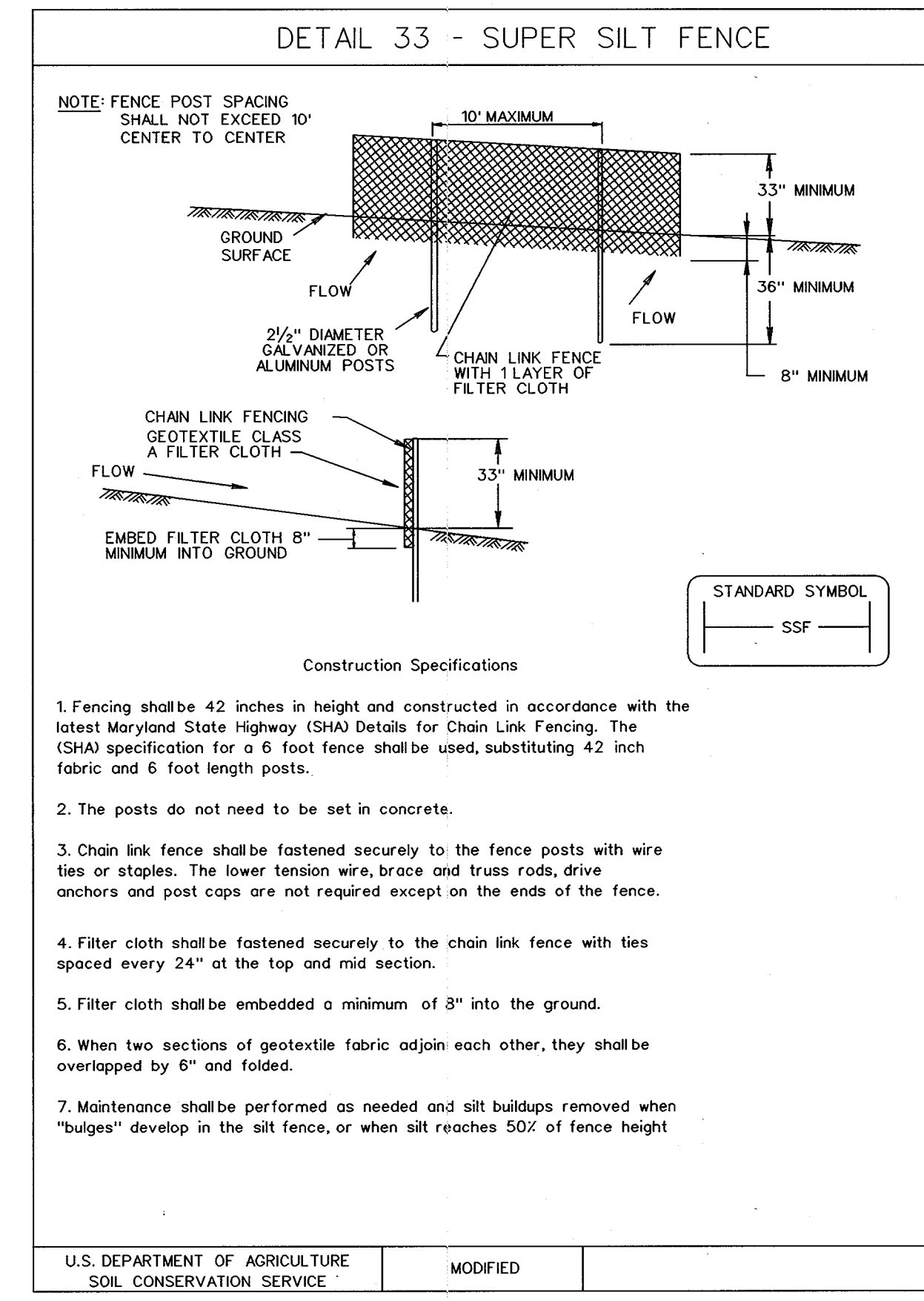
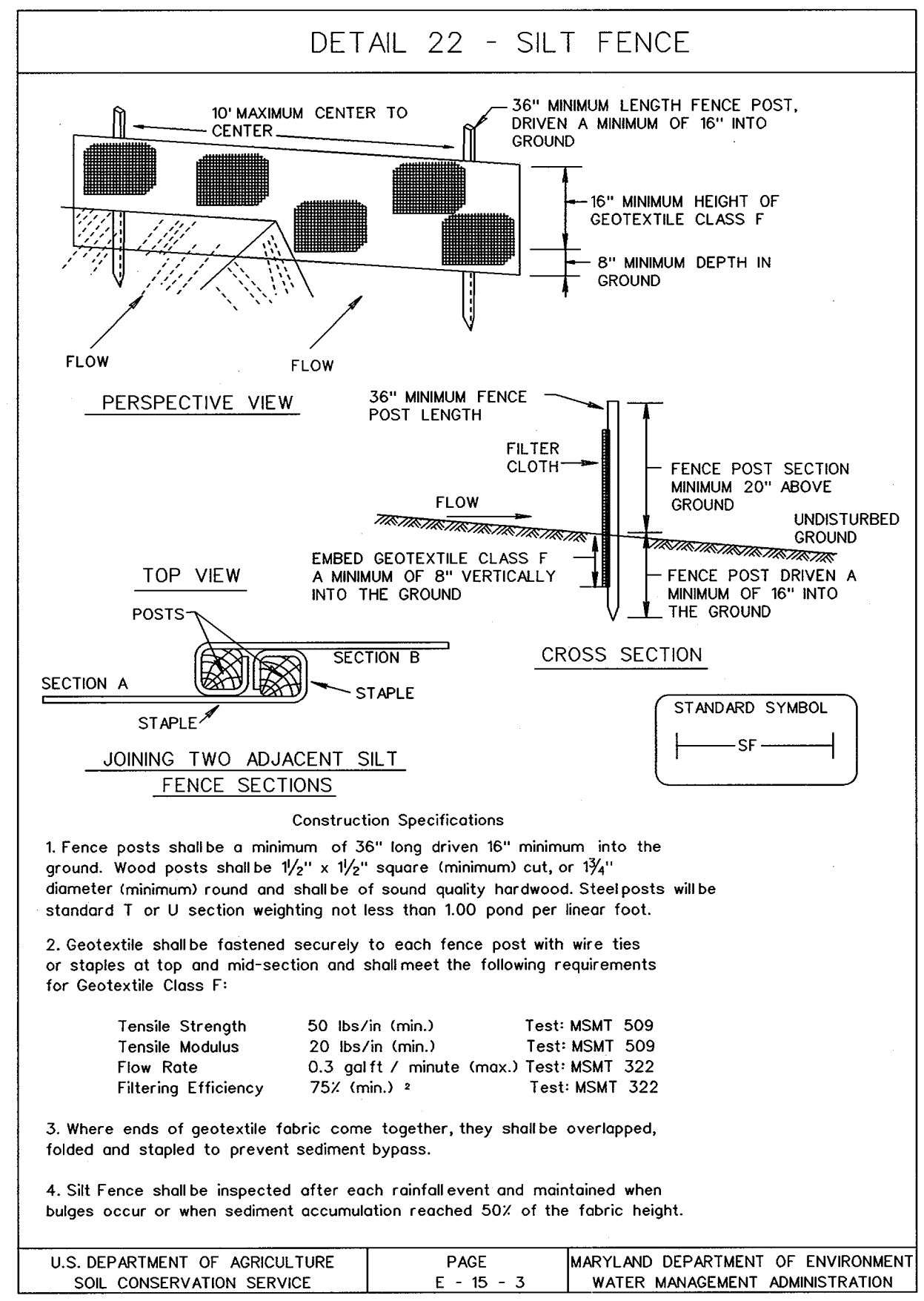
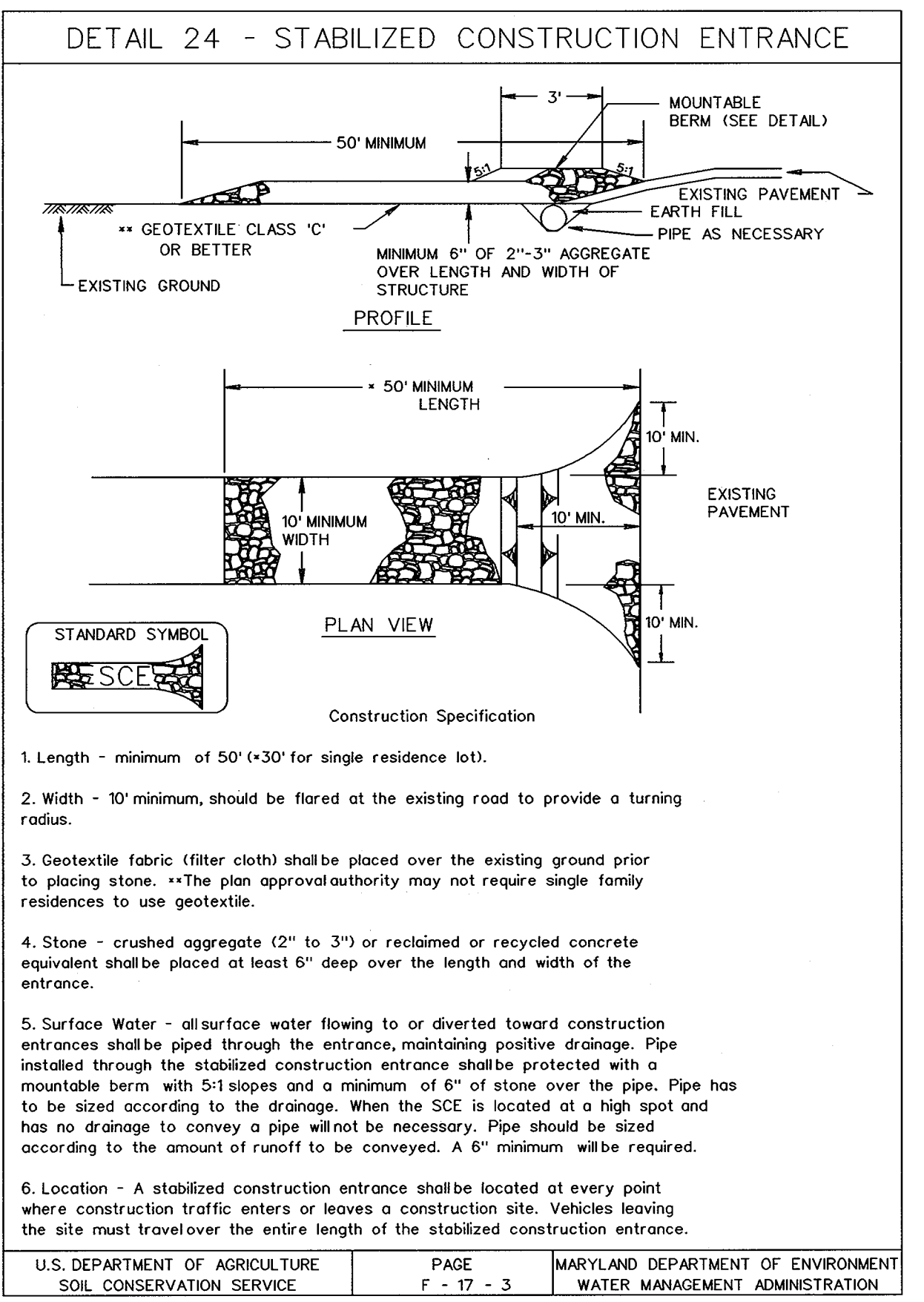
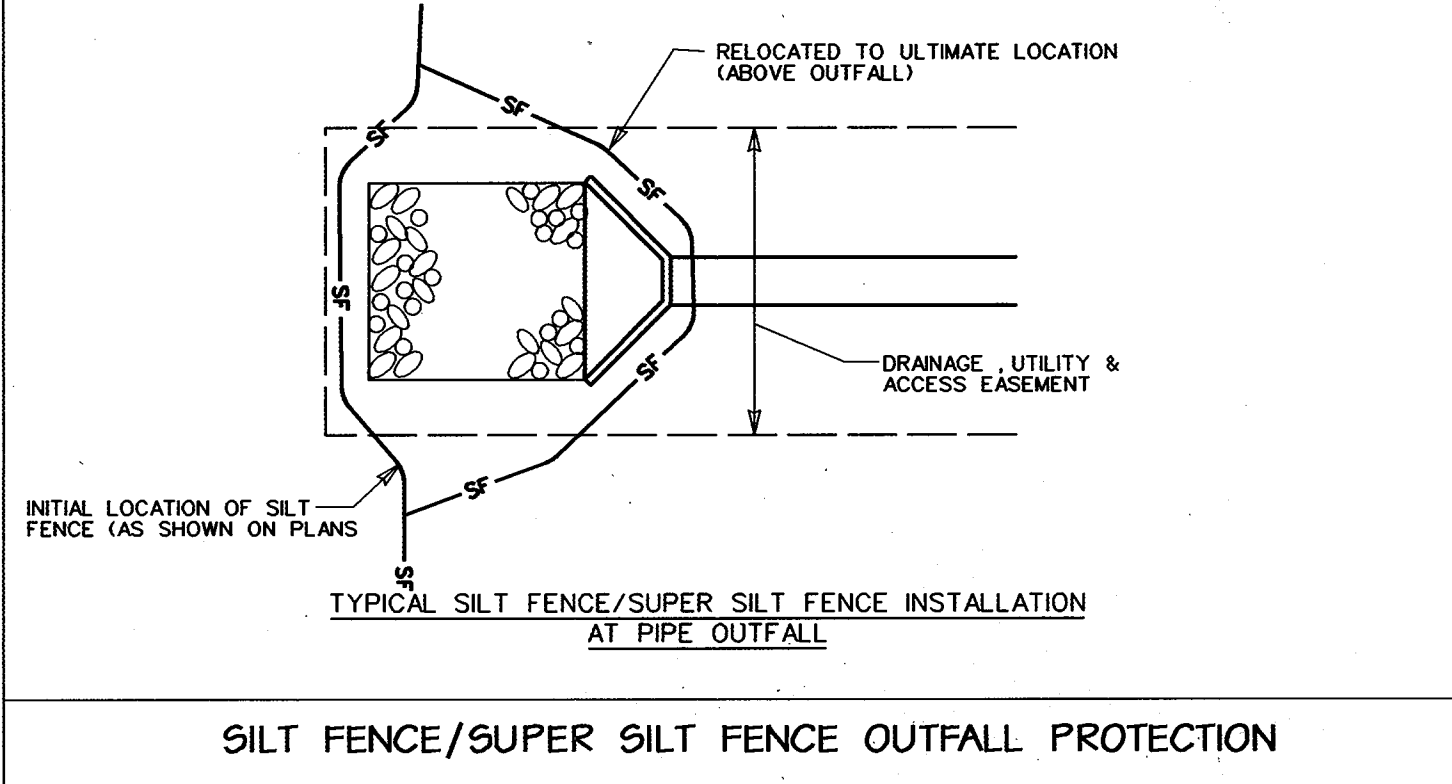
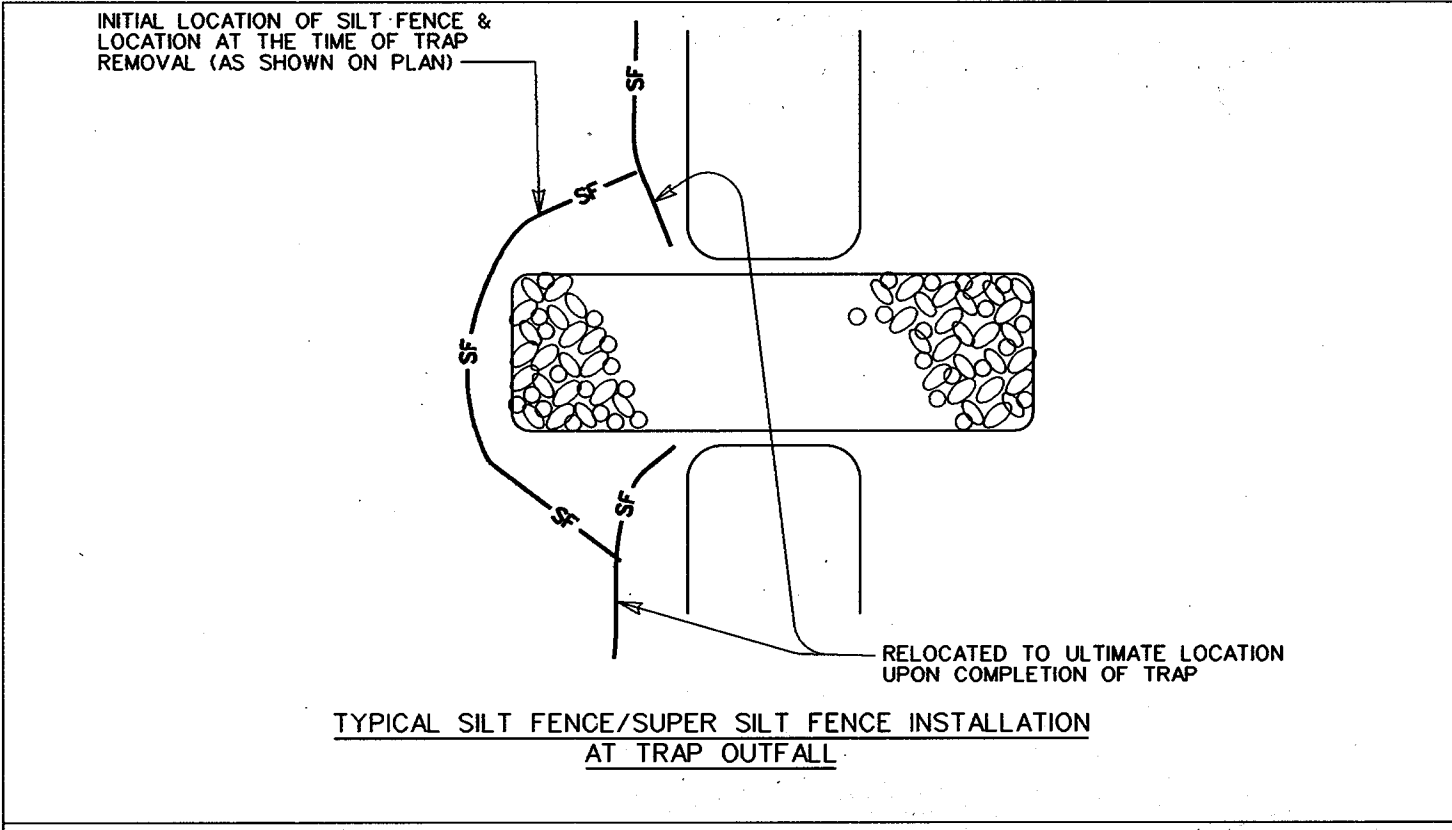
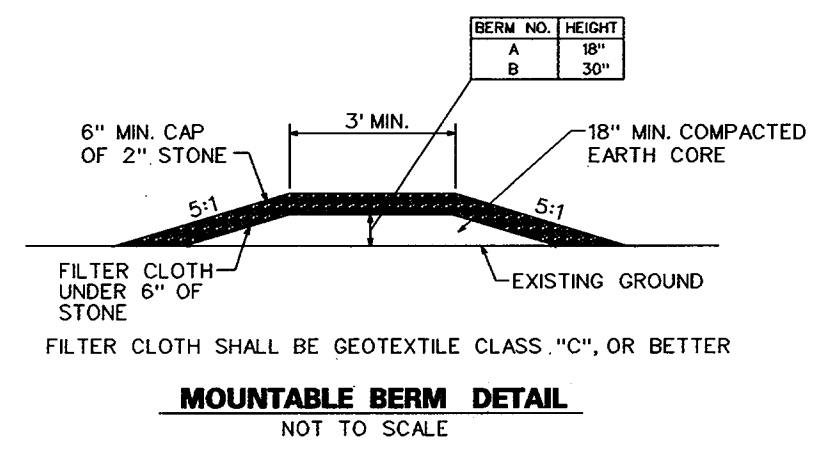
SC23

MARYLAND COORDINATE SYSTEM  
HORIZONTAL NAD 83-91  
VERTICAL NAVD 29

SHEET NO.: 48 OF 113

SDP-02-64





REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE *Jin Myers / cos* 9/5/02 DATE

THIS DEVELOPMENT IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT. *John Smith* 9/5/02 DATE

HOWARD SCD

ENGINEER'S CERTIFICATE

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*Michael N. Armstrong* 9/3/02 DATE

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* 9/14/02 DATE

SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) RONALD G. LEPSON

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

*Mark Cummings* 9/12/02 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION

*Chris Hancock* 11/22/02 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT

*Paul Smith* 10/23/02 DATE

DIRECTOR

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

*Doug Banta MD* 10-17-02 DATE

COUNTY HEALTH OFFICER S.S. HOWARD COUNTY HEALTH DEPARTMENT

DATE

NO. REVISIONS DESCRIPTION

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

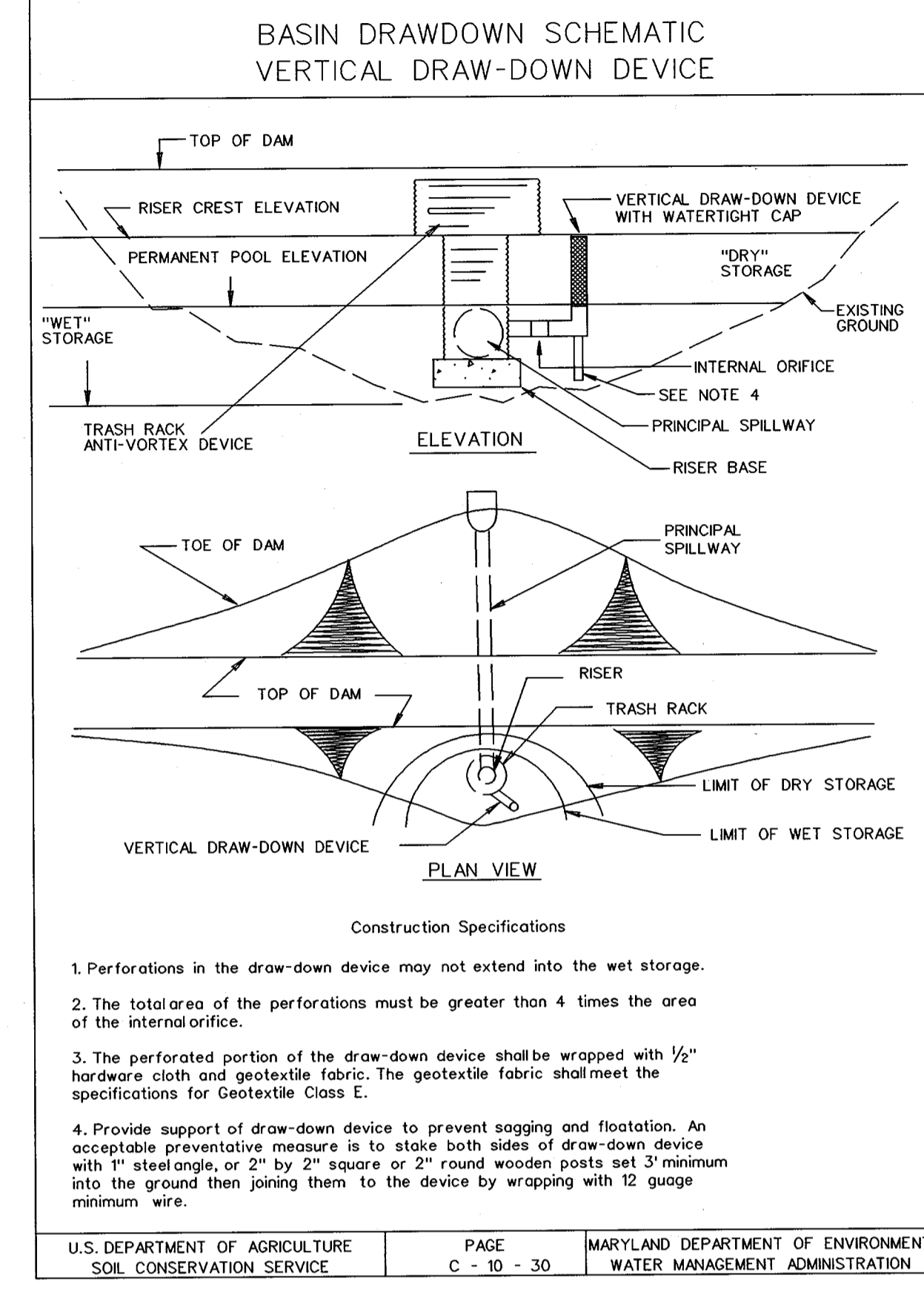
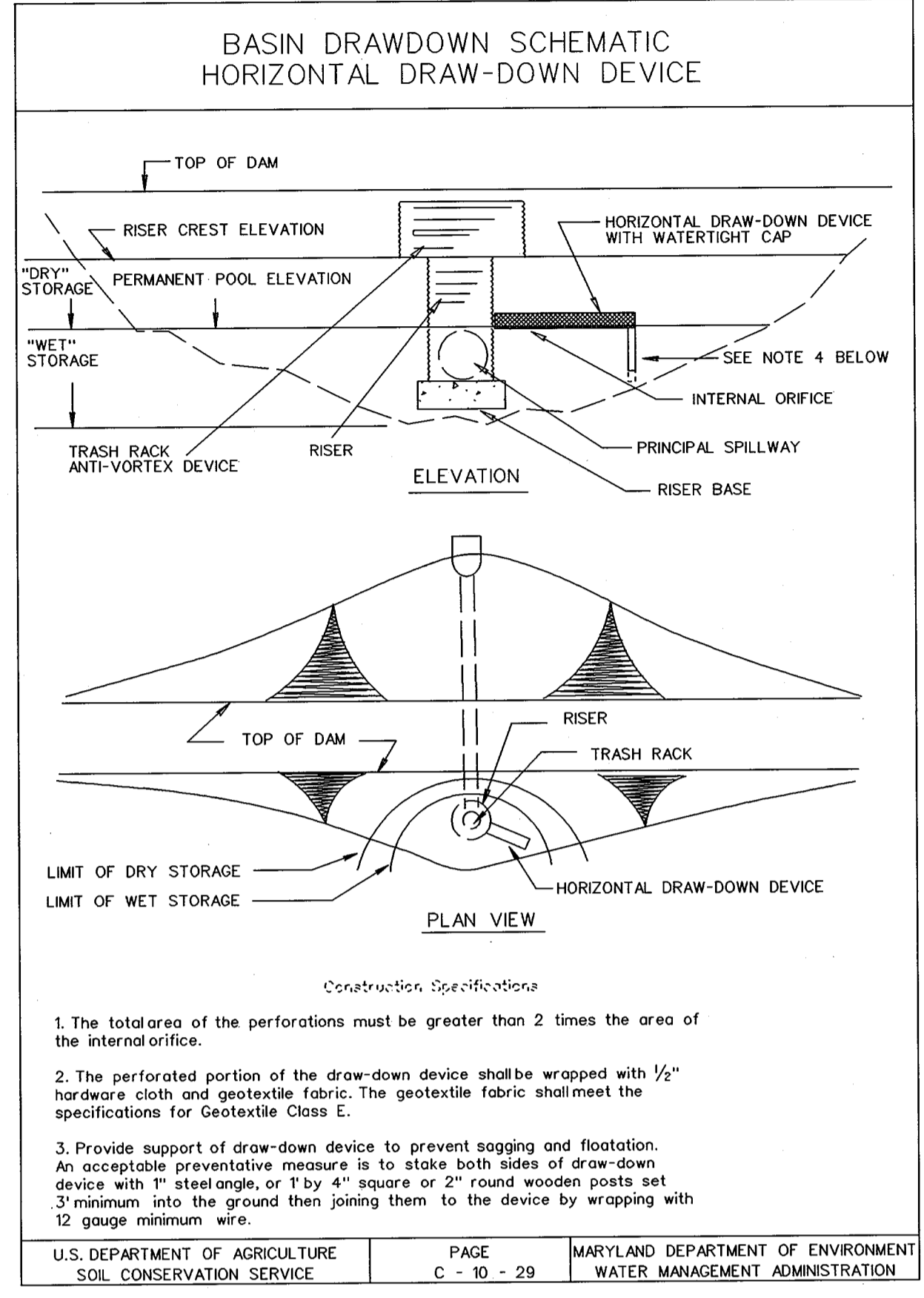
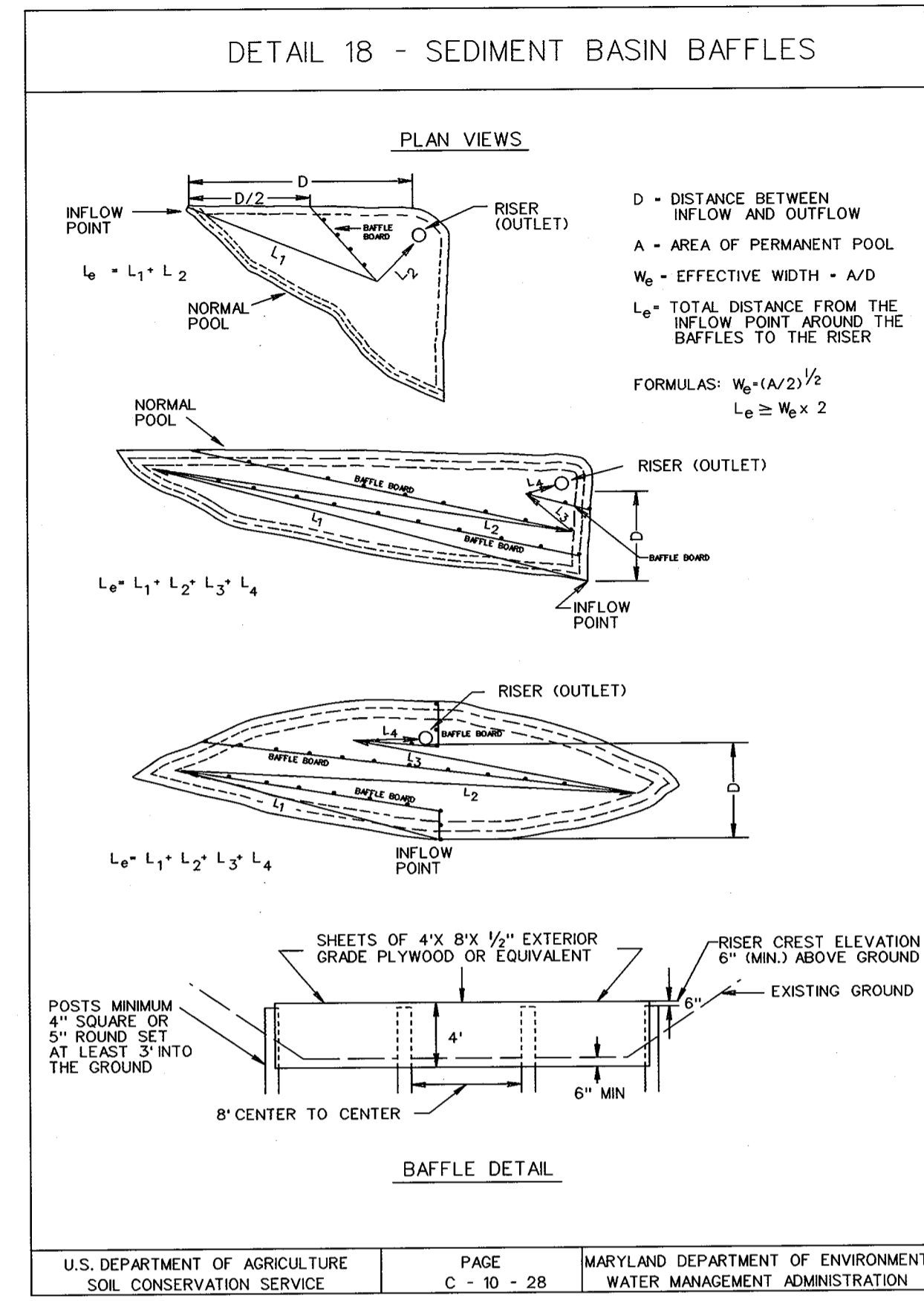
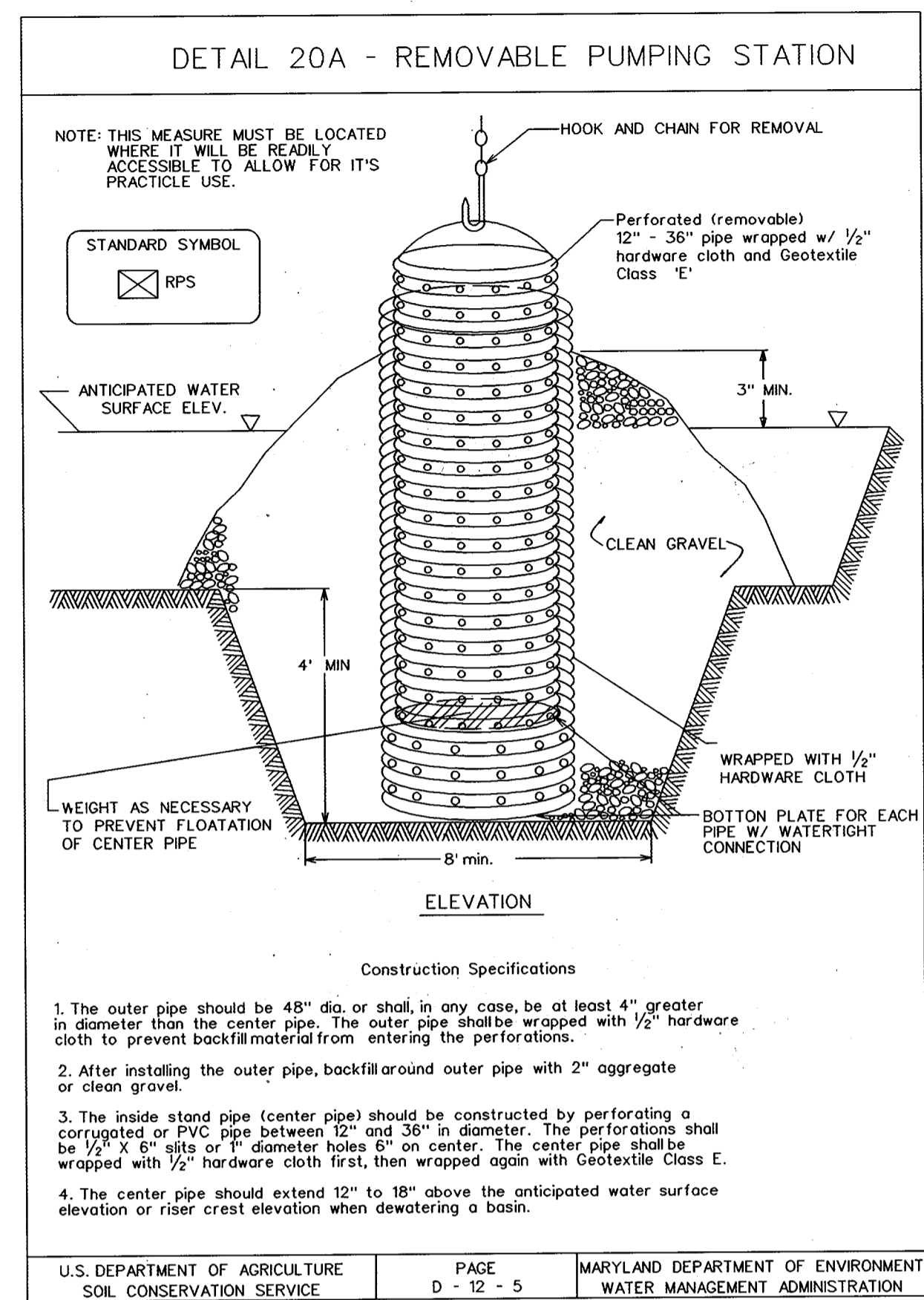
SC24

SHEET NO.: 49 OF 113

SDP-02-64







REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

*Jim Myers / ces* 9/5/02 DATE

USDA - NATURAL RESOURCES CONSERVATION SERVICE

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

*Yetta Solis* 9/5/02 DATE

HOWARD SCD

ENGINEER'S CERTIFICATE

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*Michael N. Armstrong* 9/3/02 DATE

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. Letson* 9/4/02 DATE

SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE)

RONALD G. LETSON

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

*Mike Dammann* 9/12/02 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION

*Cecilia Harrold* 11/22/02 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT

*Paul Smith* 10/23/02 DATE

DIRECTOR

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

*Remy Beatty MD* 10/17/02 DATE

COUNTY HEALTH OFFICER

HOWARD COUNTY HEALTH DEPARTMENT

#### TABLE 27 GEOTEXTILE FABRICS

CLASS	APPARENT OPENING SIZE MM. MAX.	GRAB TENSILE STRENGTH LB. MIN.	BURST STRENGTH PS. 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 STRENGTH ASTM D 1682 4"x8" SPECIMEN 1"x2" CLAMPS, 12 1/2" MIN. STRAIN RATE IN BOTH PRINCIPAL DIRECTIONS OF GEOTEXTILE FABRIC.
- BURST STRENGTH ASTM D 3786

THE FABRIC SHALL BE INERT TO COMMONLY ENCOUNTERED CHEMICALS AND HYDROCARBONS, AND WILL BE ROT AND MILDEW RESISTANT. IT SHALL BE MANUFACTURED FROM FIBERS CONSISTING OF LONG CHAIN SYNTHETIC POLYMERS, AND COMPOSED OF A MINIMUM OF 85% BY WEIGHT OF POLYOLEPHINS, POLYESTERS, OR POLYAMIDES. THE GEOTEXTILE FABRIC SHALL RESIST DETRIORATION 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 GEOTEXTILE FABRICS FOR ALL SILT FENCE SHALL HAVE A 50LB./IN. MINIMUM TENSILE STRENGTH 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 AND SEVENTY-FIVE PERCENT (75%) MINIMUM FILTERING EFFICIENCY WHEN TESTED IN ACCORDANCE WITH MSMT 322.

GEOTEXTILE FABRICS USED IN THE CONSTRUCTION OF THE SILT FENCE SHALL RESIST DETRIORATION FROM ULTRAVIOLET EXPOSURE. THE FABRIC SHALL CONTAIN SUFFICIENT AMOUNTS OF ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF 12 MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0 TO 120 DEGREES F.

#### MATERIALS SPECIFICATIONS

Pages H-24-1 and H-24-2

#### TABLE 28 STONE SIZE

NUMBER	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.
CLASS II	N/A	16"	24"	N/A	700 LB. MAX.
CLASS III	N/A	23"	34"	N/A	2000 LB. MAX.

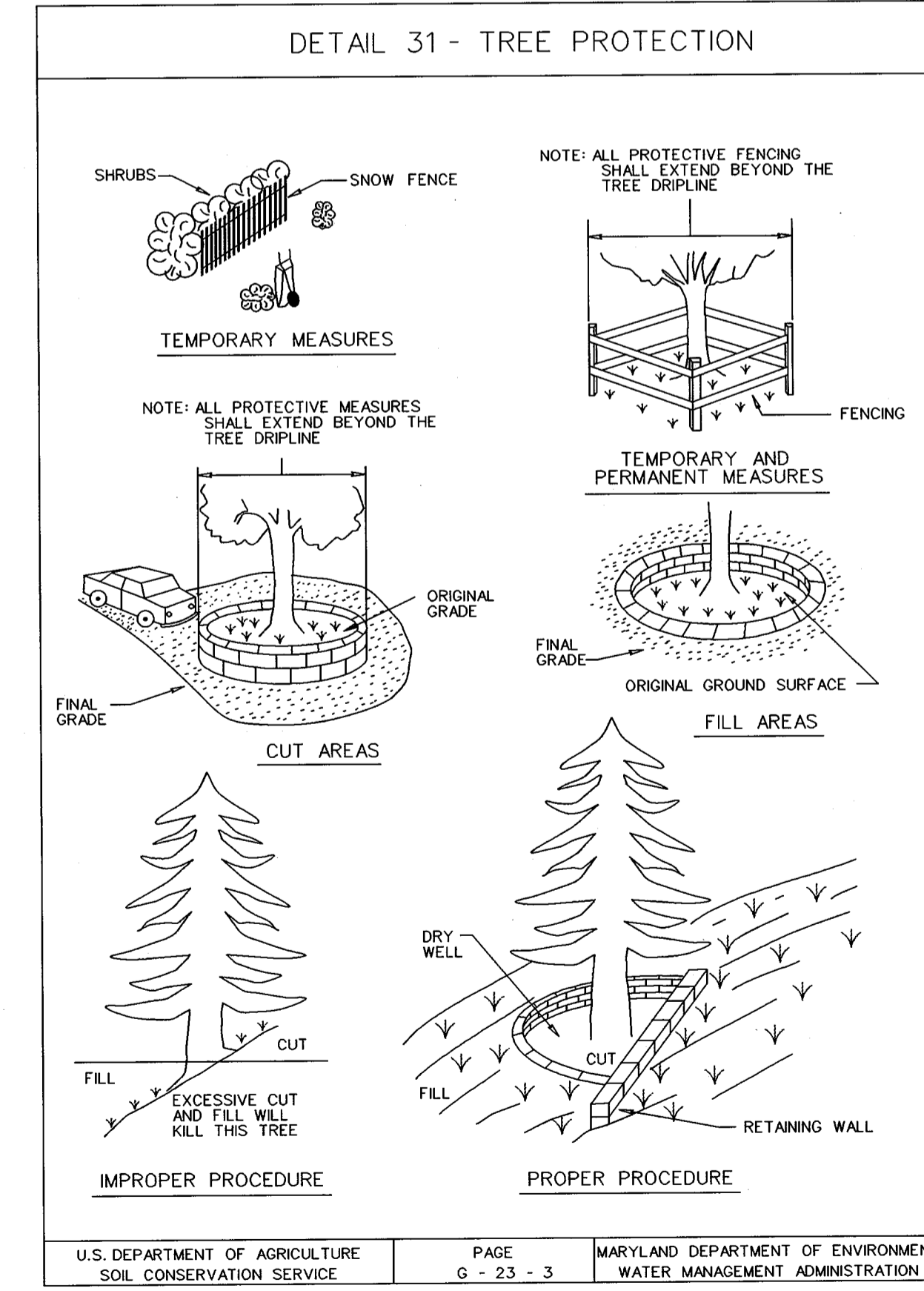
\* THIS CLASSIFICATION IS TO BE USED ON THE INSIDE FACE OF STONE OUTLETS AND CHECK DAMS

\*\* THIS CLASSIFICATION IS TO BE USED WHENEVER SMALL RIP-RAP IS REQUIRED. THE STATE HIGHWAY ADMINISTRATION DESIGNATION FOR THIS STONE IS STONE FOR GABIONS (1 905.014).

#### STONE FOR GABION BASKETS

BASKET THICKNESS	SIZE OF INDIVIDUAL STONES	
	INCHES	MM
6	150	3-5
9	225	4-7
12	300	4-7
18	460	4-7
36	910	4-12

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.



DATE

REVISIONS DESCRIPTION

NO.

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

KCI TECHNOLOGIES

STATE OF MARYLAND PROFESSIONAL ENGINEER LICENSE NO. 10005675

Michael N. Armstrong 9/3/02

WESTERN REGIONAL PARK  
HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
7120 OAKLAND MILLS ROAD  
COLUMBIA, MD 21046-1677  
(410) 313-4540

SEDIMENT & EROSION CONTROL DETAILS

SCALE: AS SHOWN

DATE: 06-12-02

KCI JOB NO.: 01-00057

CAPITAL PROJECT NO.: N-3932

PERMIT ISSUE:

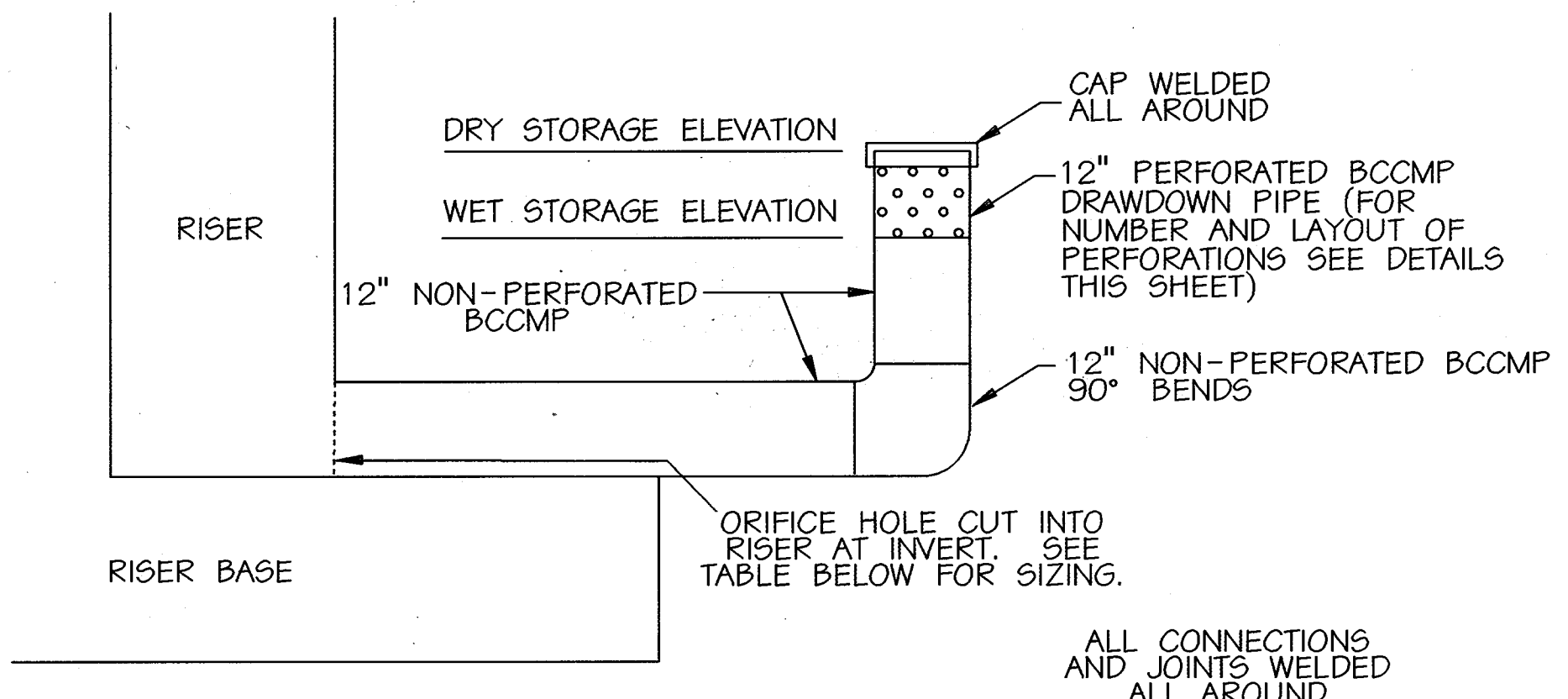
CONSTRUCTION ISSUE:

SC27

SHEET NO.: 52 OF 113

SDF-02-64





**BASIN DRAWDOWN DEVICE GENERAL PROFILE**

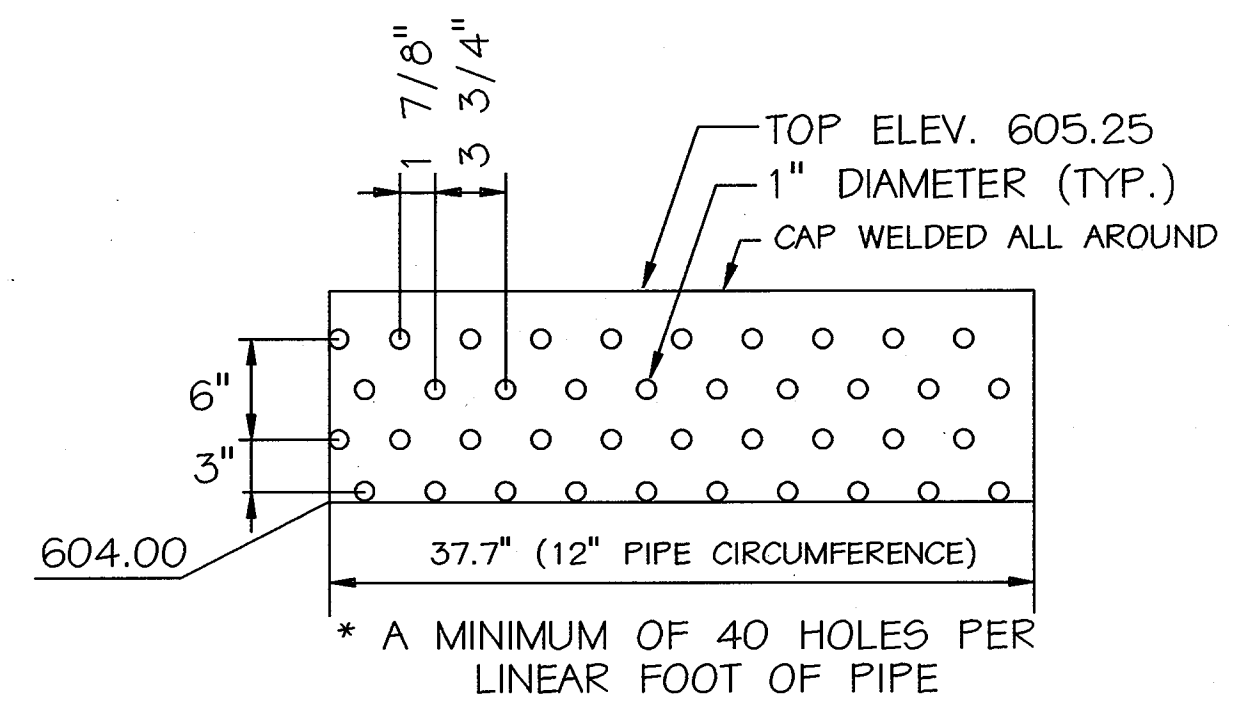
NOT TO SCALE

ALL CONNECTIONS AND JOINTS WELDED ALL AROUND

**DRAWDOWN ORIFICE SIZING TABLE**  
DETAIL C-10-30

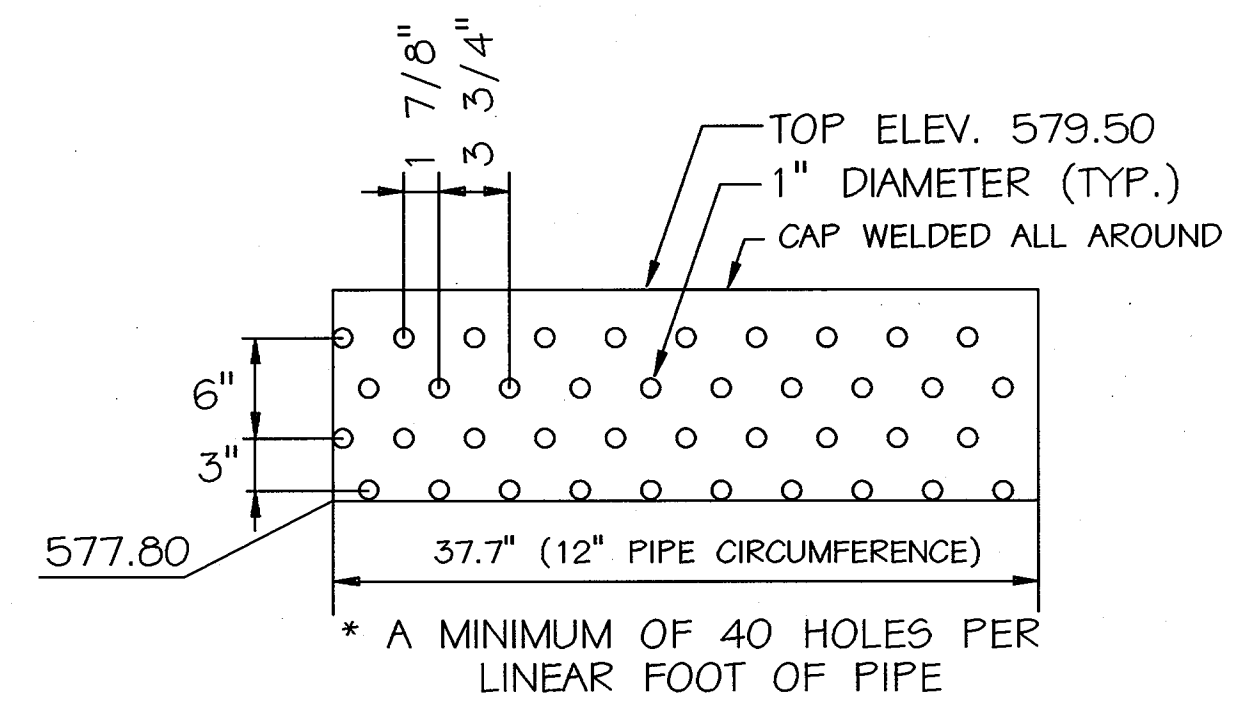
BASIN #	ORIFICE SIZE	ORIFICE INVERT
1	6"	586.50
2	3 1/2"	602.50
3	5 1/2"	576.25
4	3"	567.00
5	2 3/4"	558.50
6	3 1/2"	546.50
7	2 3/4"	550.00

\* BASIN #1 IS TO USE EXISTING 20' 6" DIA. PERFORATED PIPE AS A BASIN DRAWDOWN DEVICE.



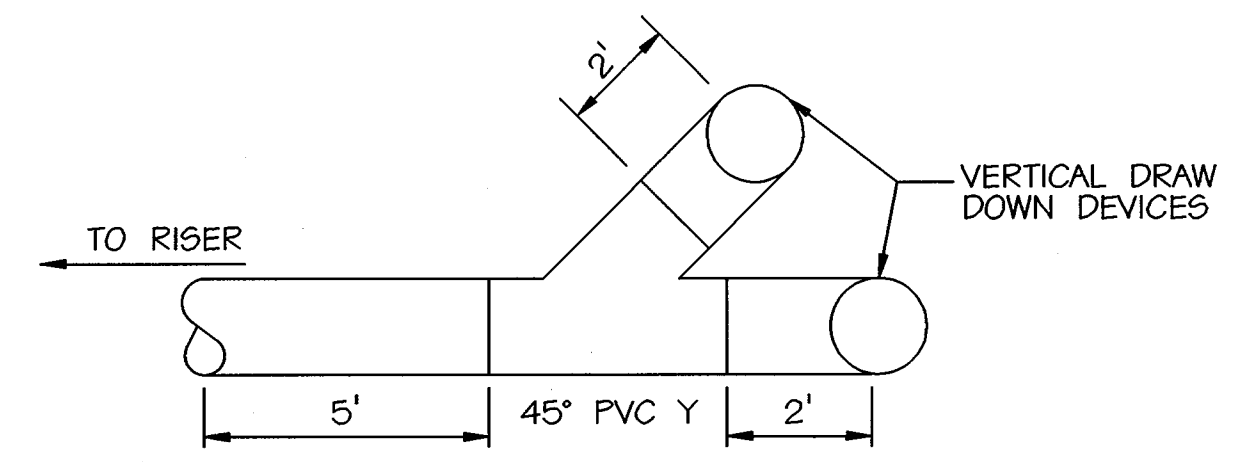
**BASIN #2 PERFORATION DETAIL**

NOT TO SCALE



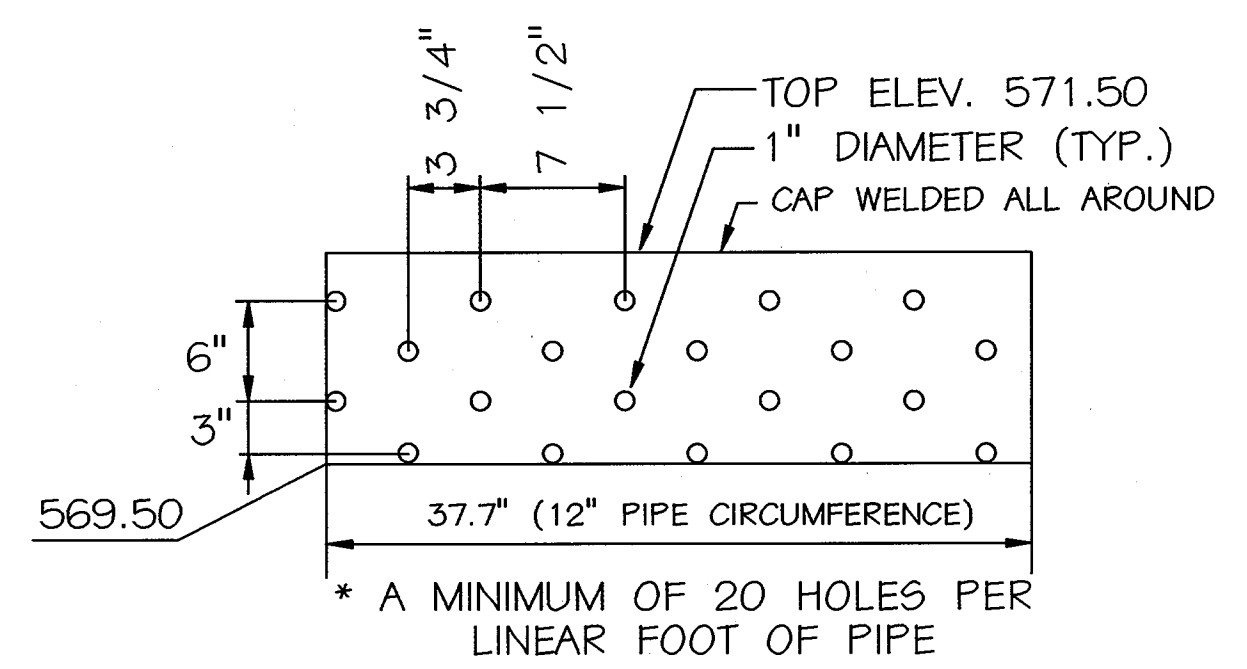
**TWO (2) PERFORATION PIPES ARE TO BE USED  
BASIN #3 PERFORATION DETAIL**

NOT TO SCALE



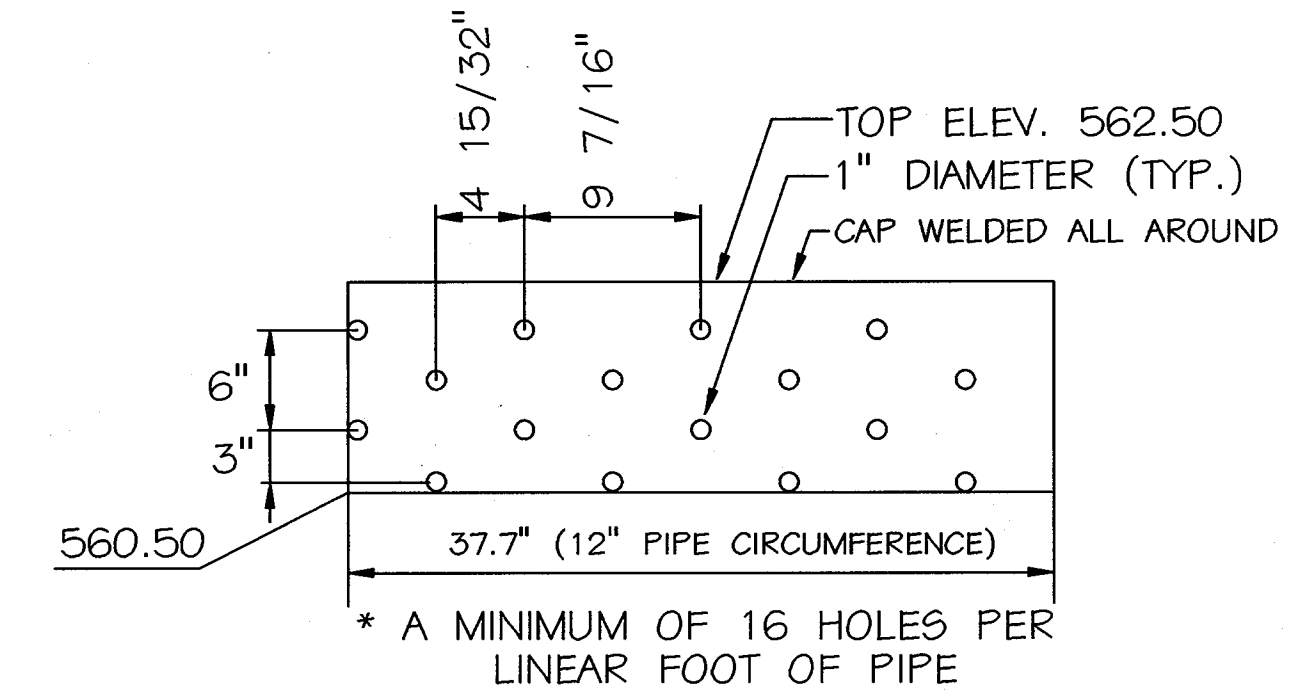
**BASIN #3 DRAWDOWN DEVICE DETAIL**

NOT TO SCALE



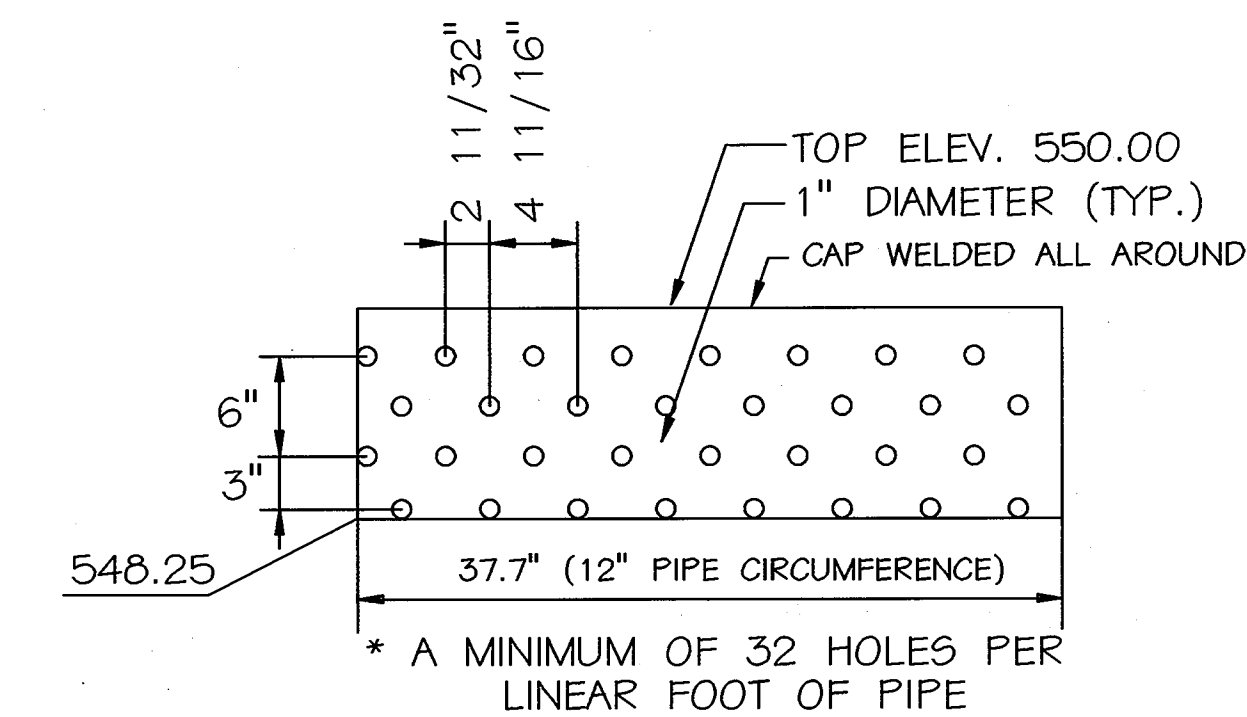
**BASIN #4 PERFORATION DETAIL**

NOT TO SCALE



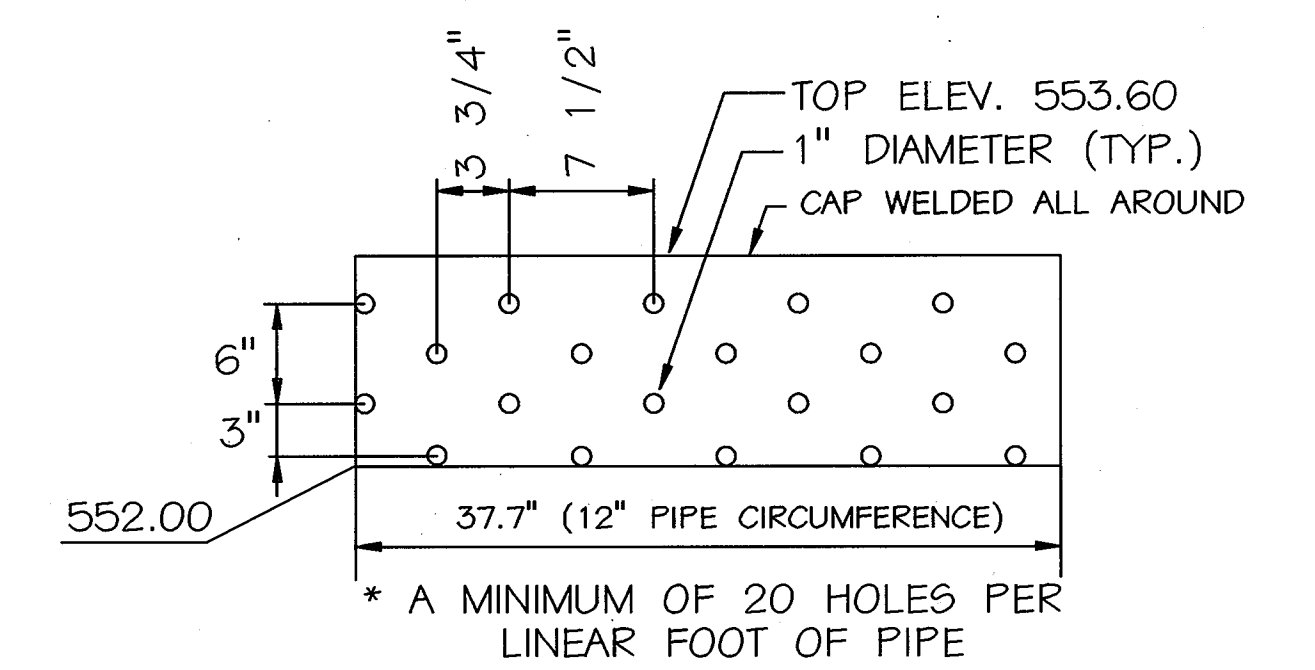
**TWO (2) PERFORATION PIPES ARE TO BE USED  
BASIN #5 PERFORATION DETAIL**

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

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

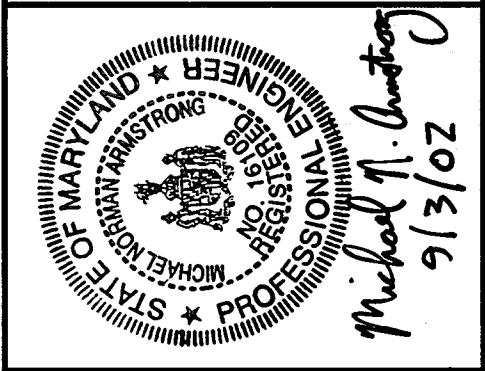
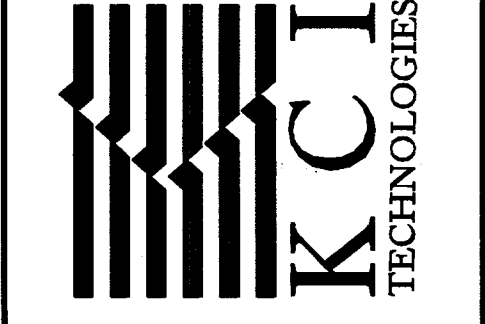
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Ronald G. LeFron  
SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE)  
RONALD G. LEFRON  
9/4/02  
DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
Chief, Development Engineering Division  
Chief, Division of Land Development  
Director

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
County Health Officer  
HOWARD COUNTY HEALTH DEPARTMENT

NO.	REVISIONS DESCRIPTION	DATE

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ENGINEERS • PLANNERS • SURVEYORS  
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HUNT VALLEY, MARYLAND 21080  
PHONE: (410) 316-7800 FAX: (410) 316-7817  
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**WESTERN REGIONAL PARK**  
HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
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:

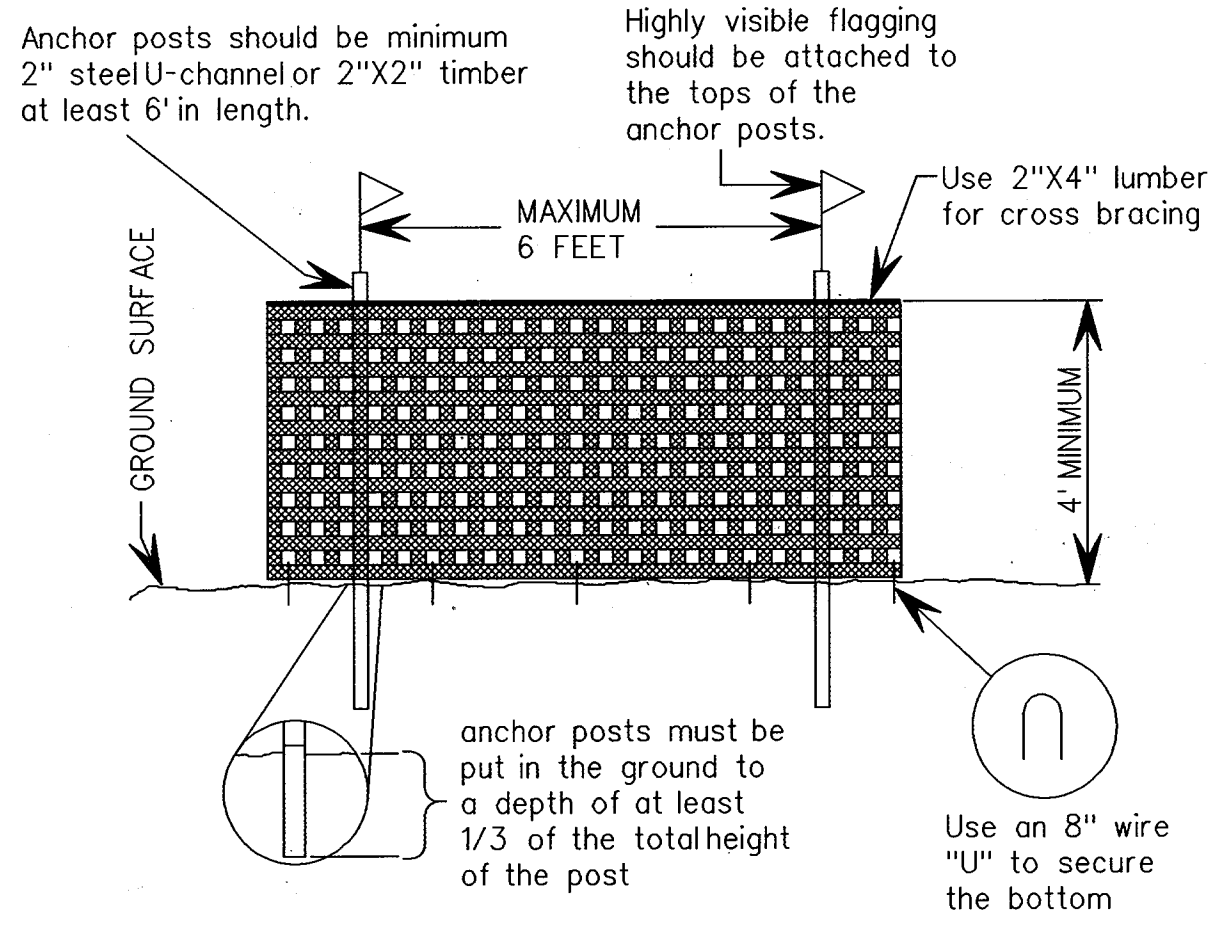
**SC29**  
SHEET NO.: 54 OF 113

**HOWARD COUNTY CONSERVATION DISTRICT**

**STANDARD SEDIMENT CONTROL NOTES**

- A minimum of 48 hours notice must be given to the Howard County Department of Inspections, Licenses and Permits, Sediment Control Division prior to the start of any construction (410 313-1855).
- All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the most current MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL and revisions thereto.
- 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.
- All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol 1, Chapter 12 of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
- All disturbed areas must be stabilized within the time period specified above in accordance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seeding (Sec. 51), sod (Sec. 54), temporary seeding (Sec. 50) and mulching (Sec. 52). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
- All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
- Site Analysis:
 

Total Area of Site	189.88	Acres
Area Disturbed	94.80	Acres
Area to be roofed or paved	27.72	Acres
Area to be vegetatively stabilized	65.94	Acres
Total Cut	362.747	Cu. Yds.
Total Fill	189.783	Cu. Yds.
Offsite waste/borrow area location	Not Applicable	
- Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- Additional sediment control must be provided, if deemed necessary by the Howard County Sediment Control Inspector.
- On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.
- Trenches for the construction 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.



**DETAIL FOR BLAZE ORANGE PLASTIC MESH SAFETY FENCE FOR BASINS**

NOT TO SCALE

**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**

- Mulches - See standards for vegetative stabilization with mulches only. Mulch should be crimped or tacked to prevent blowing.
- Vegetative Cover - See standards for temporary vegetative cover.
- 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, and similar plows are examples of equipment which may produce the desired effect.
- 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.
- 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.
- Calcium Chloride - Apply at rates that will keep surface moist. May need retreatment.

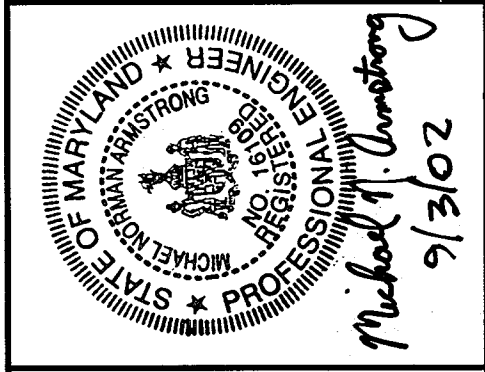
**PERMANANT METHODS**

- 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.
- Top soiling - Covering with less erosive soil materials. See standards for top soiling.
- Stone - Cover surface with crushed stone or coarse gravel.

**SEQUENCE OF CONSTRUCTION**

- | NO.  | REVISIONS DESCRIPTION   | DATE |
|--|---|------|
| 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 VISIBILITY 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 STABILIZE 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 BIOTENTION 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.  |      |

**KCI TECHNOLOGIES INC.**  
 ENGINEERS • PLANNERS • SURVEYORS  
 10 NORTH PARK DRIVE  
 HUNT VALLEY, MARYLAND 21080  
 PHONE: (410) 316-7800 FAX: (410) 316-7817  
 WWW.KCI.COM



**WESTERN REGIONAL PARK**  
 HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
 7120 OAKLAND AVENUE, SUITE 100  
 COLUMBIA, MD 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:

**SC30**  
 SHEET NO.: 55 OF 113  
 SDP-02-64

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  
 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"

Ronald G. Lepson  
 SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE)  
 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: 10/23/02

Director  
 DATE: 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

County Health Officer  
 DATE: 10/23/02  
 HOWARD COUNTY HEALTH DEPARTMENT

**SEDIMENT BASIN CONSTRUCTION SPECIFICATIONS**

- 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.
- 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.
- 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 GW, 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.
- 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.
- 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.
- 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.
- SAFETY:** LOCAL REQUIREMENTS CONCERNING FENCING AND SIGNS SHALL BE MET, WARNING THE PUBLIC OF HAZARDS OF SOFT SEDIMENT AND FLOODWATER.
- 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 PLAN. 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.
- 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.
- CONVERSION TO STORMWATER MANAGEMENT STRUCTURE:** AFTER PERMANENT STABILIZATION OF ALL DISTURBED CONTRIBUTORY DRAINAGE AREAS, TEMPORARY SEDIMENT BASINS, IF INITIAL 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.
- LENGTH OF PERMITTED USE:** ALL TEMPORARY BASINS MUST BE REMOVED WITHIN THREE (3) YEARS OF CONSTRUCTION, AND APPROVAL OF THE SEDIMENT CONTROL INSPECTOR.

**MGWC 1.2: PUMP-AROUND PRACTICE**



**DESCRIPTION**

The work should consist of installing a temporary pump around and supporting measures to divert flow around in-stream construction sites.

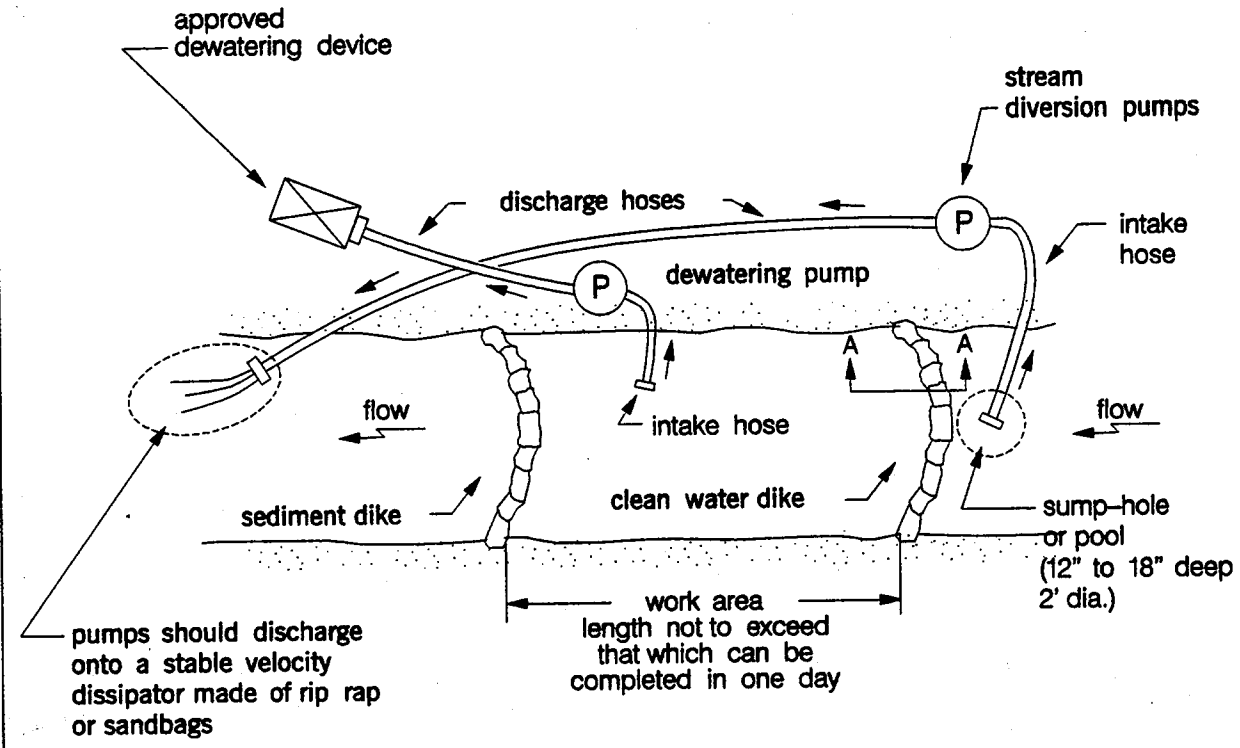
**IMPLEMENTATION SEQUENCE**

Sediment control measures, pump-around practices, and associated channel and bank construction should be completed in the following sequence (refer to Detail 1.2):

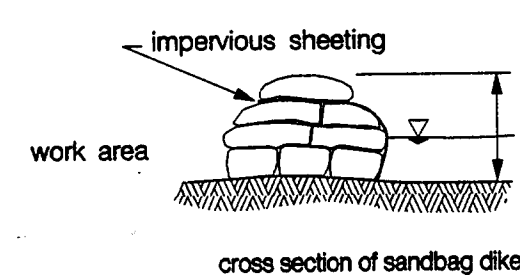
1. Construction activities including the installation of erosion and sediment control measures should not begin until all necessary easements and/or right-of-ways have been acquired. All existing utilities should be marked in the field prior to construction. The contractor is responsible for any damage 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.

**Maryland's Guidelines To Waterway Construction  
DETAIL 1.2: PUMP-AROUND PRACTICE**

**PLAN VIEW**



**SECTION A-A**



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**



**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):

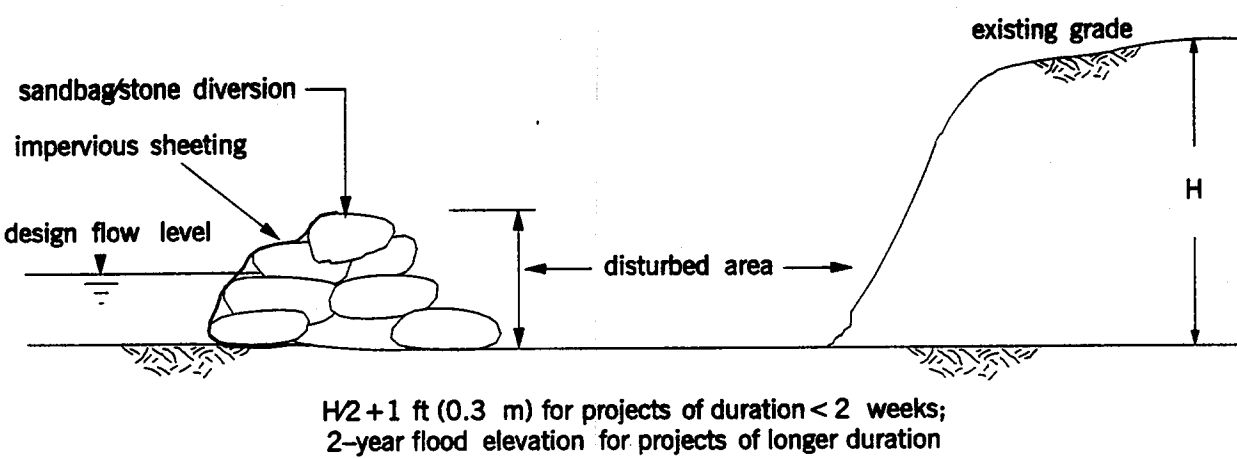
1. The diversion structure should be installed from upstream to downstream.
2. The height of the sandbag/stone diversion should be a function of the duration of the project in the stream reach. For projects with a duration less than 2 weeks, the height of the diversion should be one half the streambank 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.

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DIRECTOR

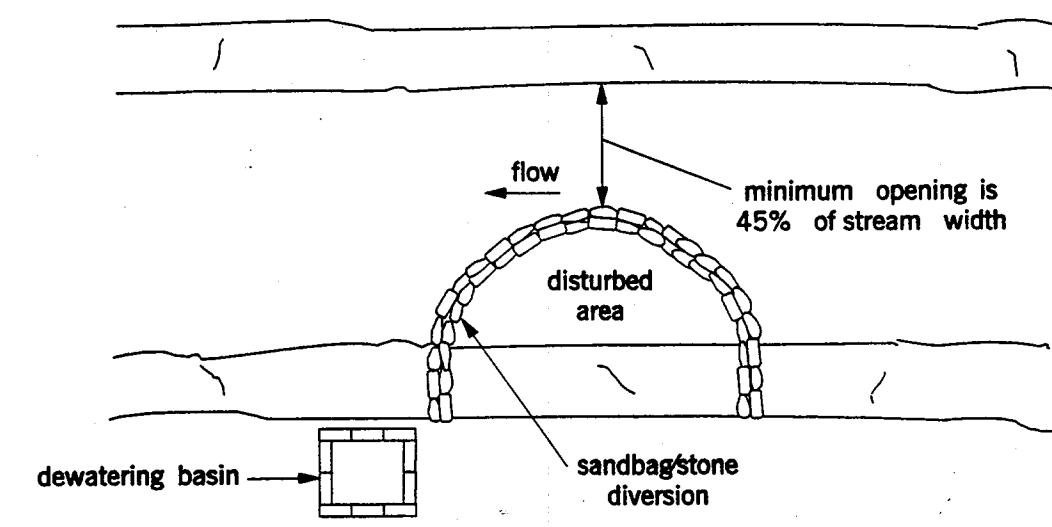
APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEM  
 COUNTY HEALTH DEPARTMENT

**Maryland's Guidelines To Waterway Construction  
DETAIL 1.5: SANDBAG/STONE DIVERSION**

**TRANSVERSE SECTION VIEW**



**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**



**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**

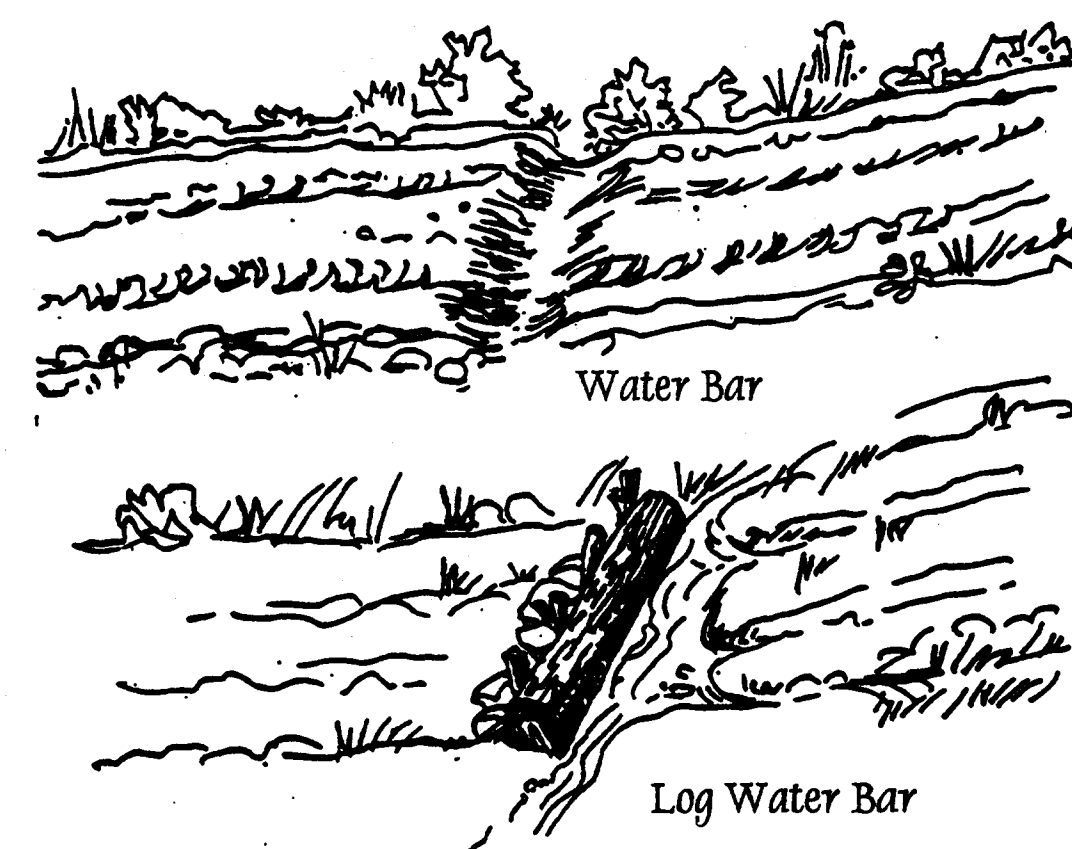
$$1000 \div (\% \text{ grade} + 2.5) = \text{water bar spacing}$$

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**



REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS  
 J. M. ... 9/5/02  
 THIS DEVELOPMENT IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.  
 G. ... 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)  
 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 S. Lepson 9/4/02  
 SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE)  
 RONALD S. LEPSON

NO.	REVISIONS	DESCRIPTION	DATE

**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

Professional Engineer  
 Michael J. ...  
 9/3/02

**WESTERN REGIONAL PARK**  
 HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
 7120 OAKLAND MILLS ROAD  
 COLUMBIA, MARYLAND 21045-1677  
 (410) 311-4640

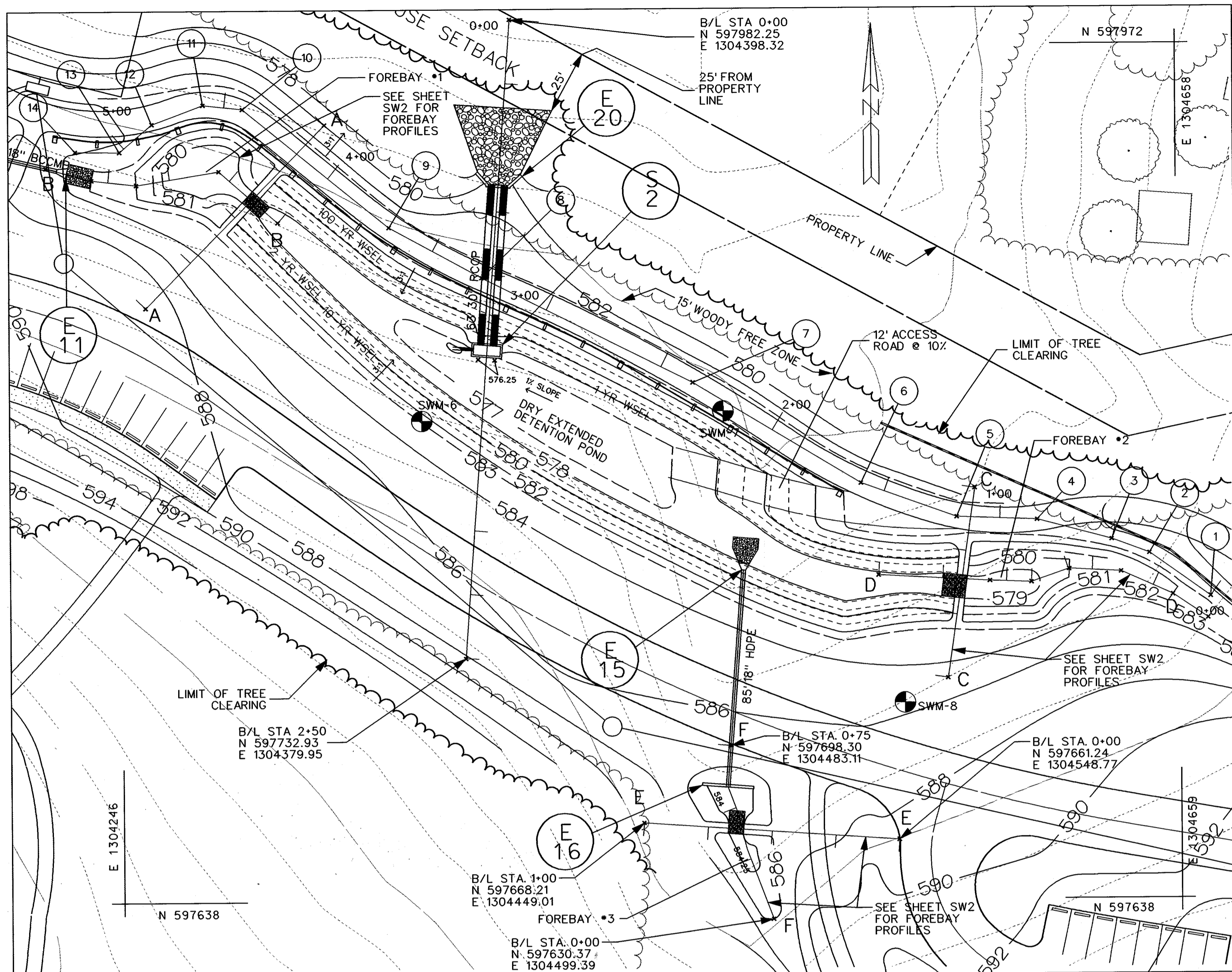
**SEDIMENT & EROSION CONTROL DETAILS**

SCALE: AS SHOWN  
 DATE: 6/12/02  
 KCI JOB NO.: 01-00757  
 CAPITAL PROJECT NO.: N-3932  
 PERMIT ISSUE:  
 CONSTRUCTION ISSUE:

**SC31**  
 SHEET NO. 56 OF 113  
 SDP-02-2





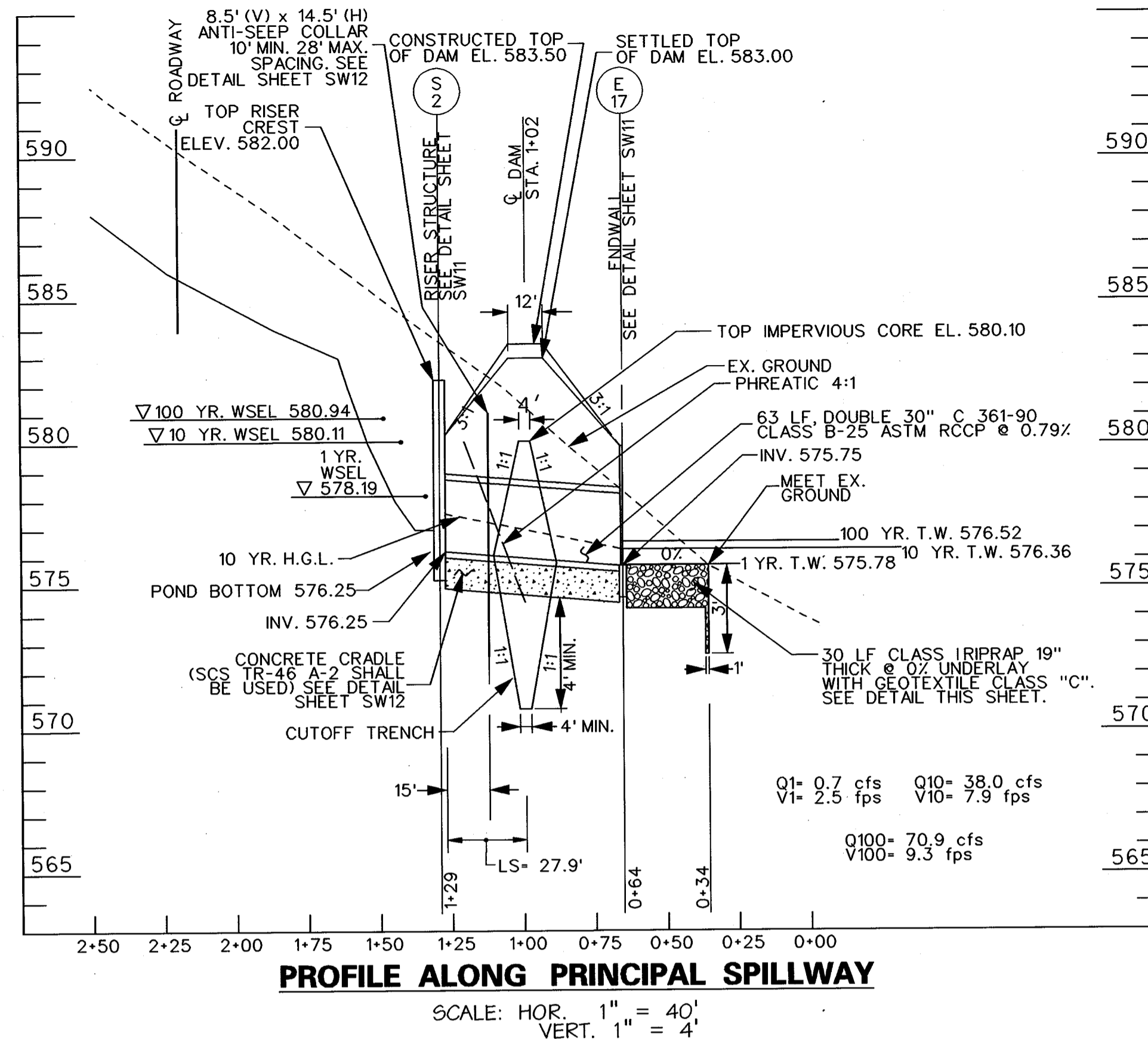


**POND B PLAN**  
SCALE 1"=30'

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)	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	

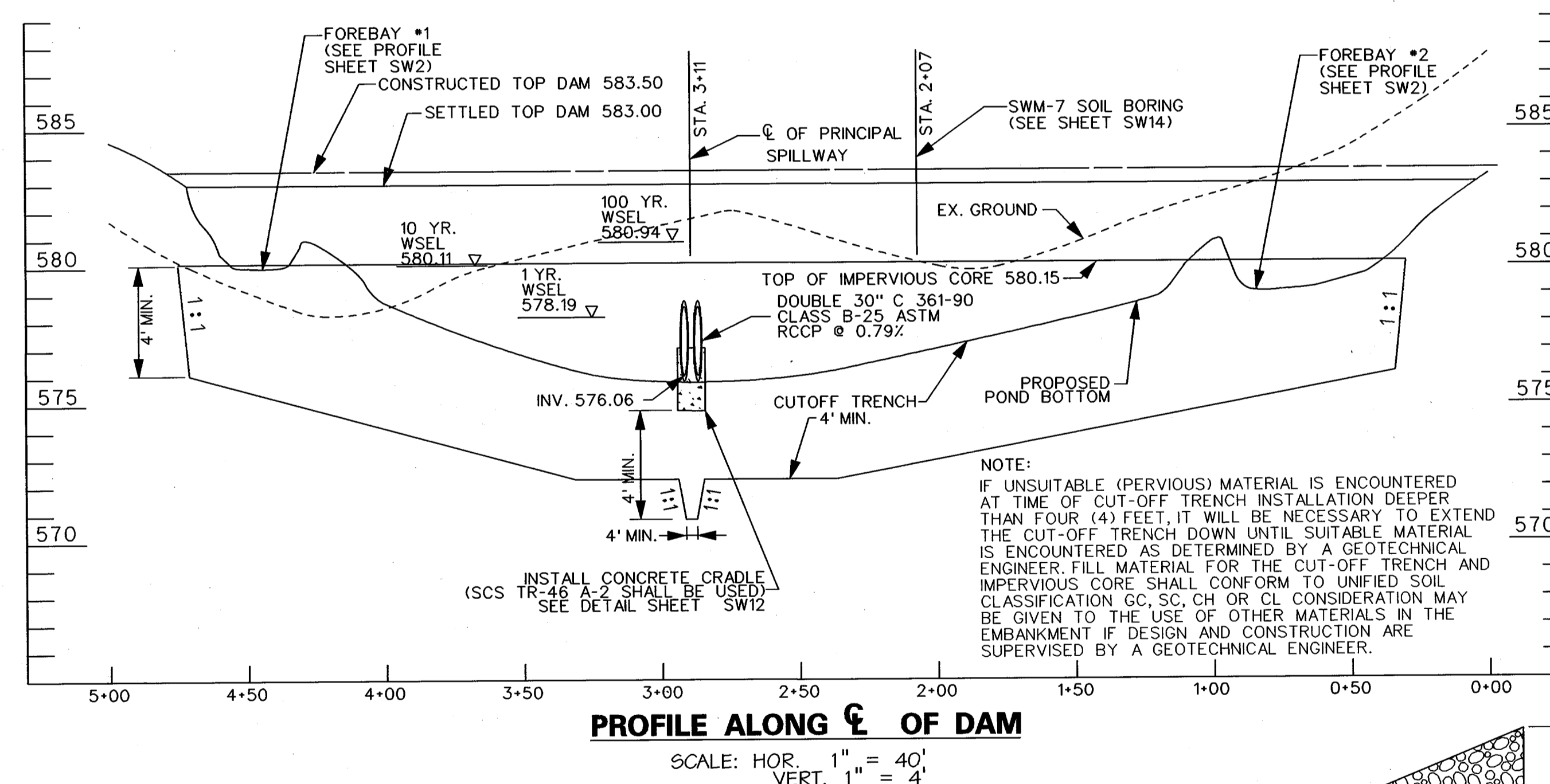
STRUCTURE TYPE: DRY EXTENDED DETENTION POND  
 SURFACE AREA: 0.48 AC.  
 STRUCTURE HAZARD CLASSIFICATION: "A"  
 STORAGE-HEIGHT PRODUCT: 10.94  
 WATERSHED AREA TO FACILITY (ACRES): 22.64  
 LEVEL OF MANAGEMENT REQUIRED AND PROVIDED BY FACILITY: 1 YEAR (QUANTITY)

WATERSHED: CATTAL CREEK  
 STREAM CLASS: III  
 FREEBOARD: 2.06 FT.  
 WATER QUALITY: DRY SWALES (SEE SHEET SW3 FOR DETAILS AND SUMMARY TABLE)



**PROFILE ALONG PRINCIPAL SPILLWAY**  
SCALE: HOR. 1" = 40', VERT. 1" = 4'

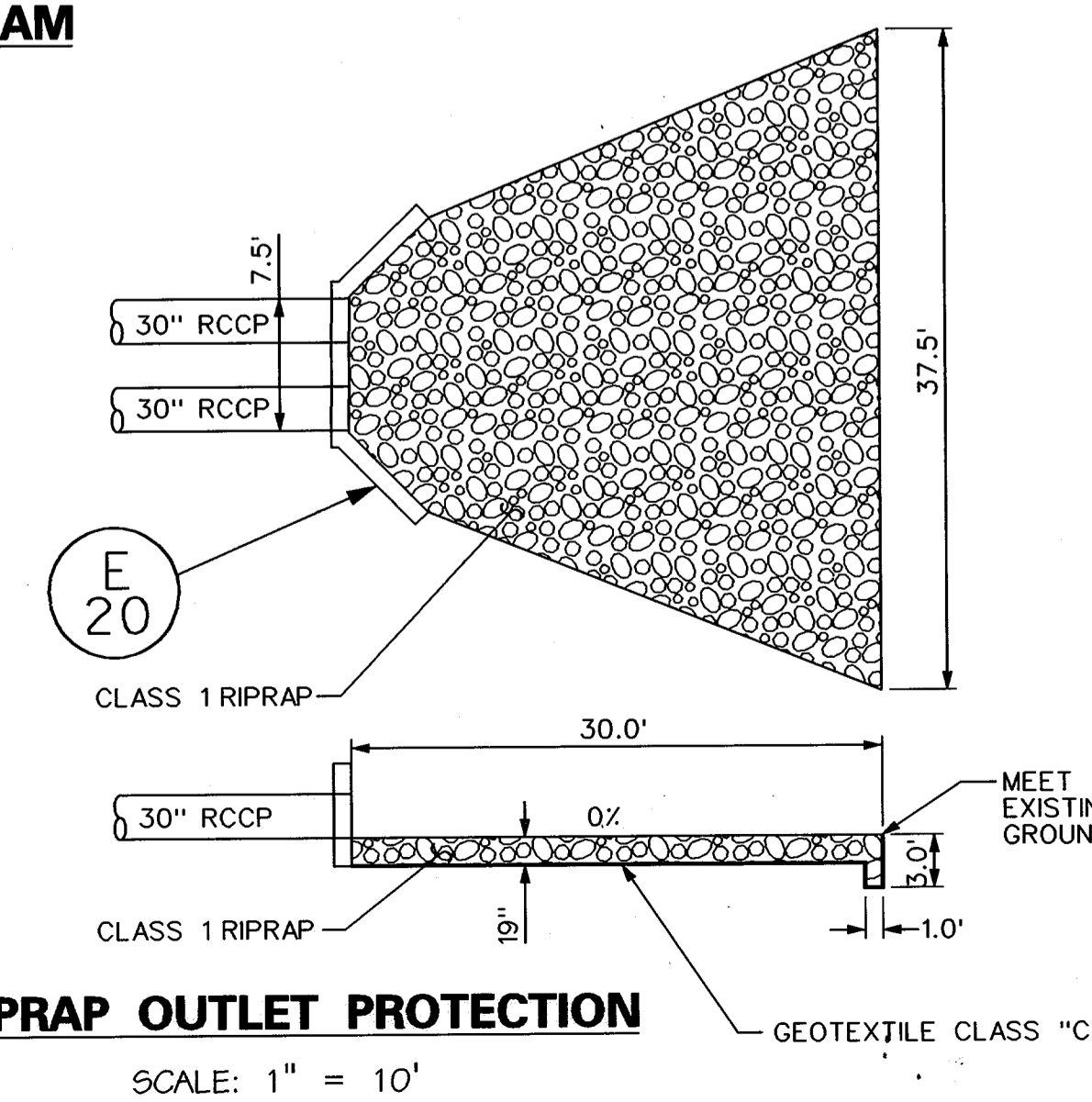
SWM POND STATIONING (E EMBANKMENT)		
POINT	COORDINATES	
	NORTH	EAST
1	597755.84	1304670.84
2	597772.79	1304647.02
3	597778.27	1304632.35
4	597786.07	1304603.34
5	597787.29	1304571.85
6	597800.69	1304534.50
7	597840.34	1304469.07
8	597881.57	1304386.98
9	597901.52	1304350.83
10	597947.92	1304293.88
11	597949.63	1304278.39
12	597942.24	1304258.47
13	597931.54	1304245.70
14	597931.66	1304228.43



**PROFILE ALONG E OF DAM**  
SCALE: HOR. 1" = 40', VERT. 1" = 4'

NOTE:  
 IF UNSUITABLE (PERVIOUS) MATERIAL IS ENCOUNTERED AT TIME OF CUT-OFF TRENCH INSTALLATION DEEPER THAN FOUR (4) FEET, IT WILL BE NECESSARY TO EXTEND THE CUT-OFF TRENCH DOWN UNTIL SUITABLE MATERIAL IS ENCOUNTERED AS DETERMINED BY A GEOTECHNICAL ENGINEER. FILL MATERIAL FOR THE CUT-OFF TRENCH AND IMPERVIOUS CORE SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CH OR CL CONSIDERATION MAY BE GIVEN TO THE USE OF OTHER MATERIALS IN THE EMBANKMENT IF DESIGN AND CONSTRUCTION ARE SUPERVISED BY A GEOTECHNICAL ENGINEER.

- NOTES:
- SEE SHEET LS14 FOR POND B LANDSCAPING PLAN AND DETAILS.
  - 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

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 COUNTY HEALTH OFFICER  
 DATE: 10/23/02

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."  
 DATE: 9/14/02

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."  
 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

DATE: \_\_\_\_\_

REVISIONS: DESCRIPTION: \_\_\_\_\_

NO. \_\_\_\_\_

KCI TECHNOLOGIES INC.  
 ENGINEERS • PLANNERS • SURVEYORS  
 10 NORTH PARK DRIVE  
 HUNT VALLEY, MARYLAND 20830  
 PHONE: (410) 314-7800 FAX: (410) 314-7817  
 WWW.KCI.COM

STATE OF MARYLAND  
 PROFESSIONAL ENGINEER  
 No. 10000000000000000000

**WESTERN REGIONAL PARK**  
 HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
 7120 OAKLAND HILLS ROAD  
 COLUMBIA, MARYLAND 21046-1677  
 (410)-313-4640

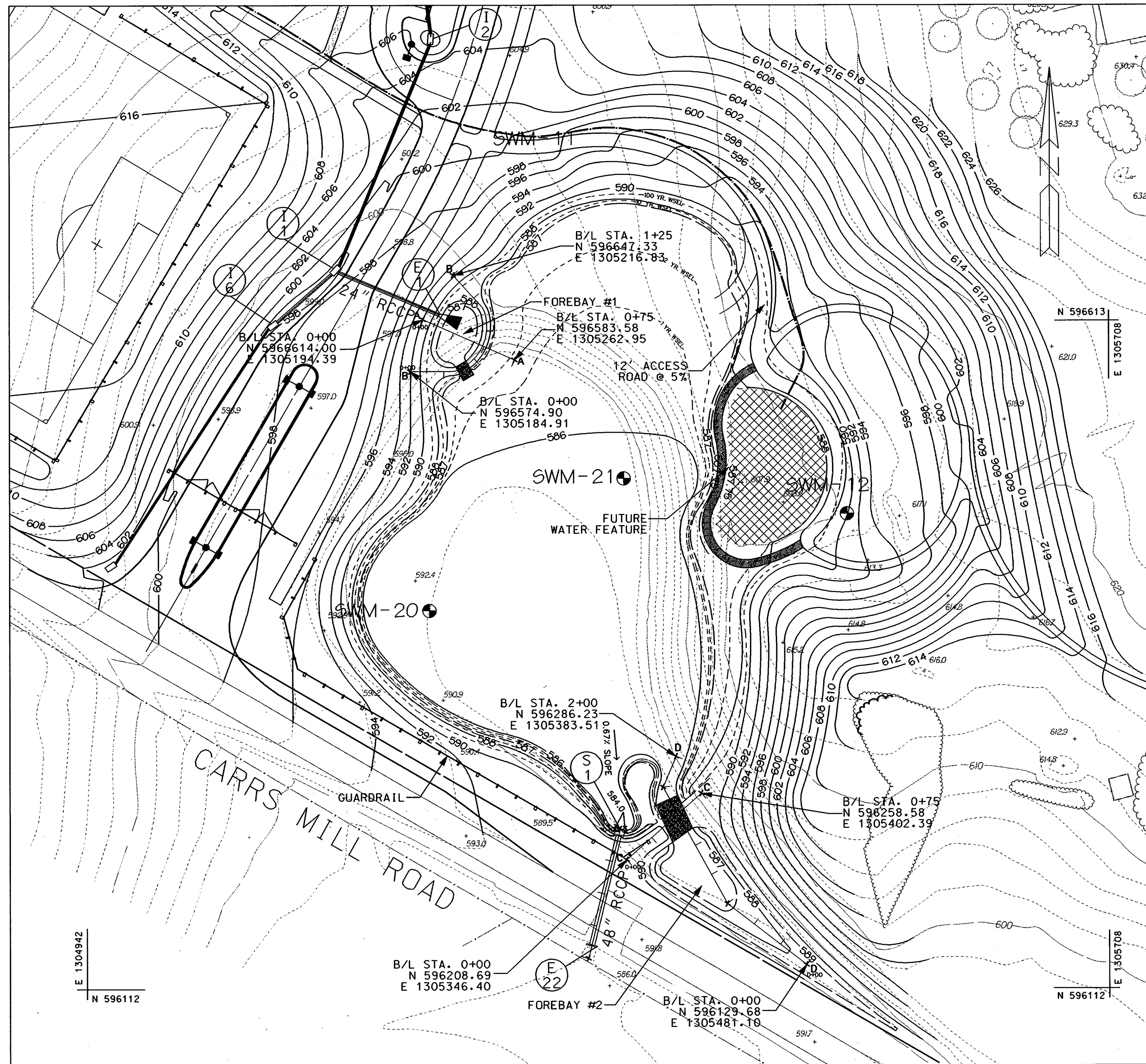
**STORMWATER MANAGEMENT B PLAN AND PROFILES**

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

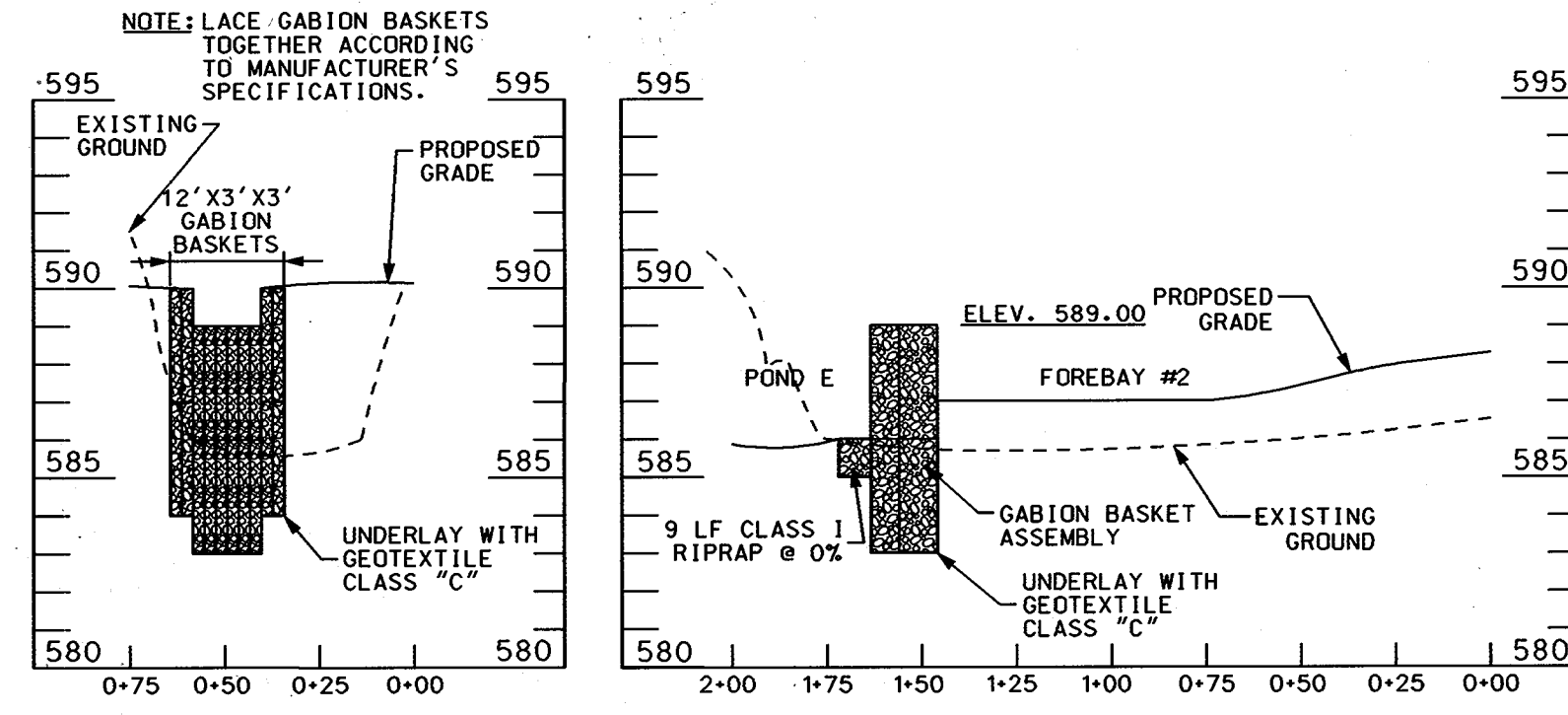






PLAN-POND E

SCALE: 1"=60'

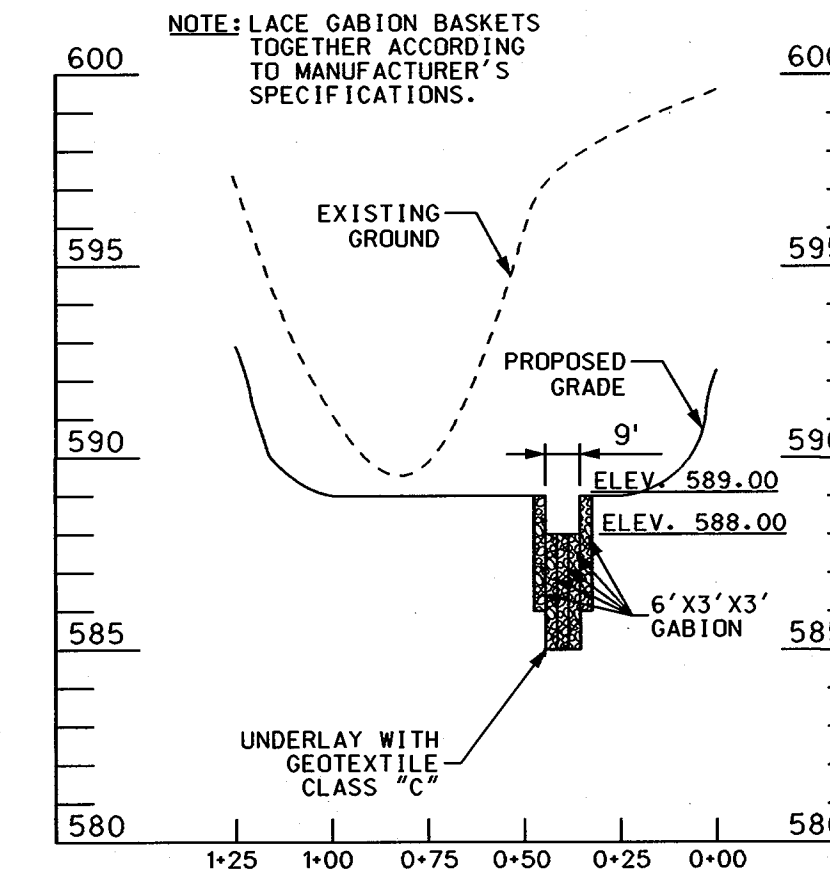


FOREBAY #2 CROSS-SECTION C-C

FOREBAY #2 CROSS-SECTION D-D

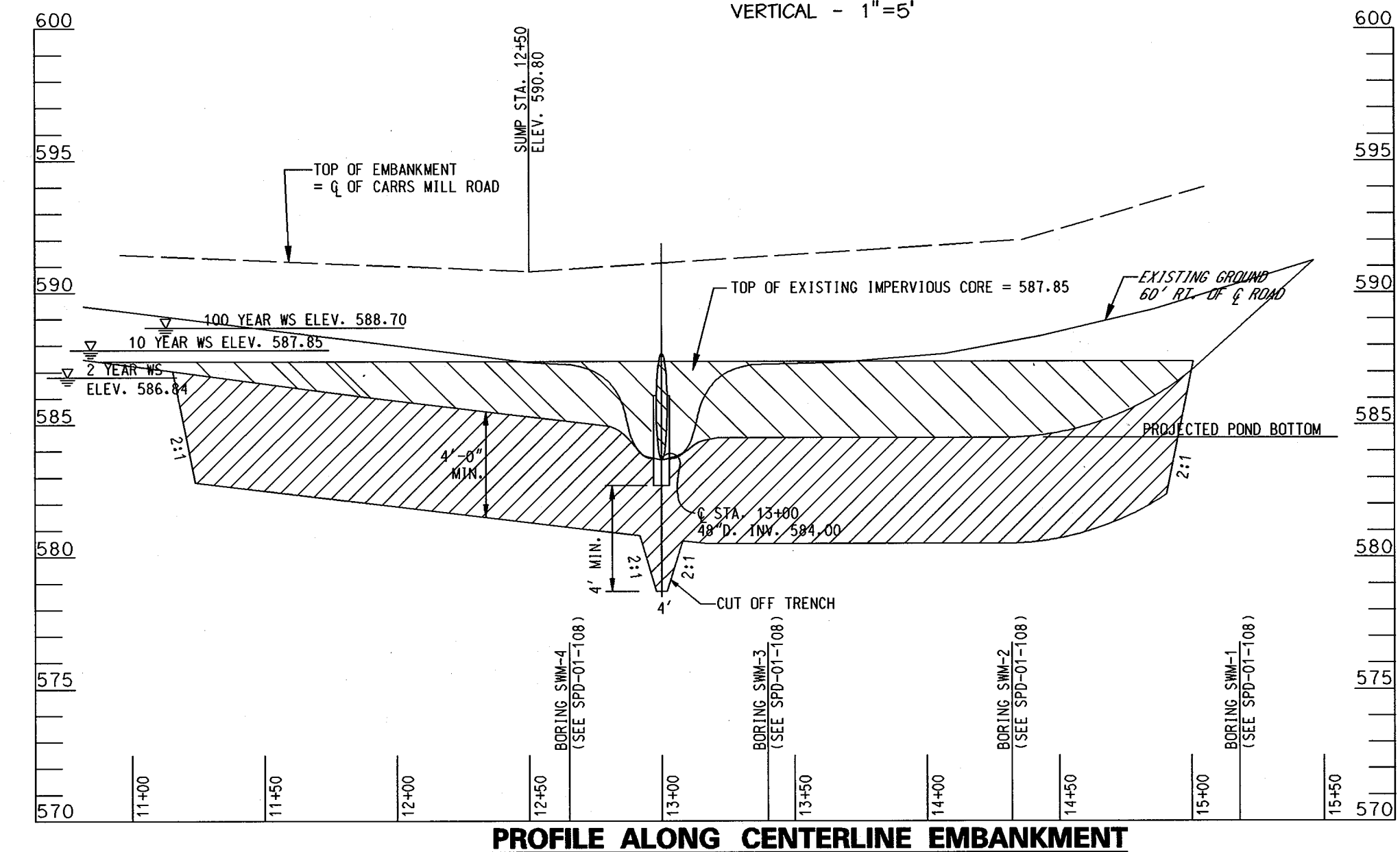
FOREBAY #1 CROSS-SECTION A-A

FOREBAY #1 CROSS-SECTION B-B



SECTION THROUGH PRINCIPAL SPILLWAY

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



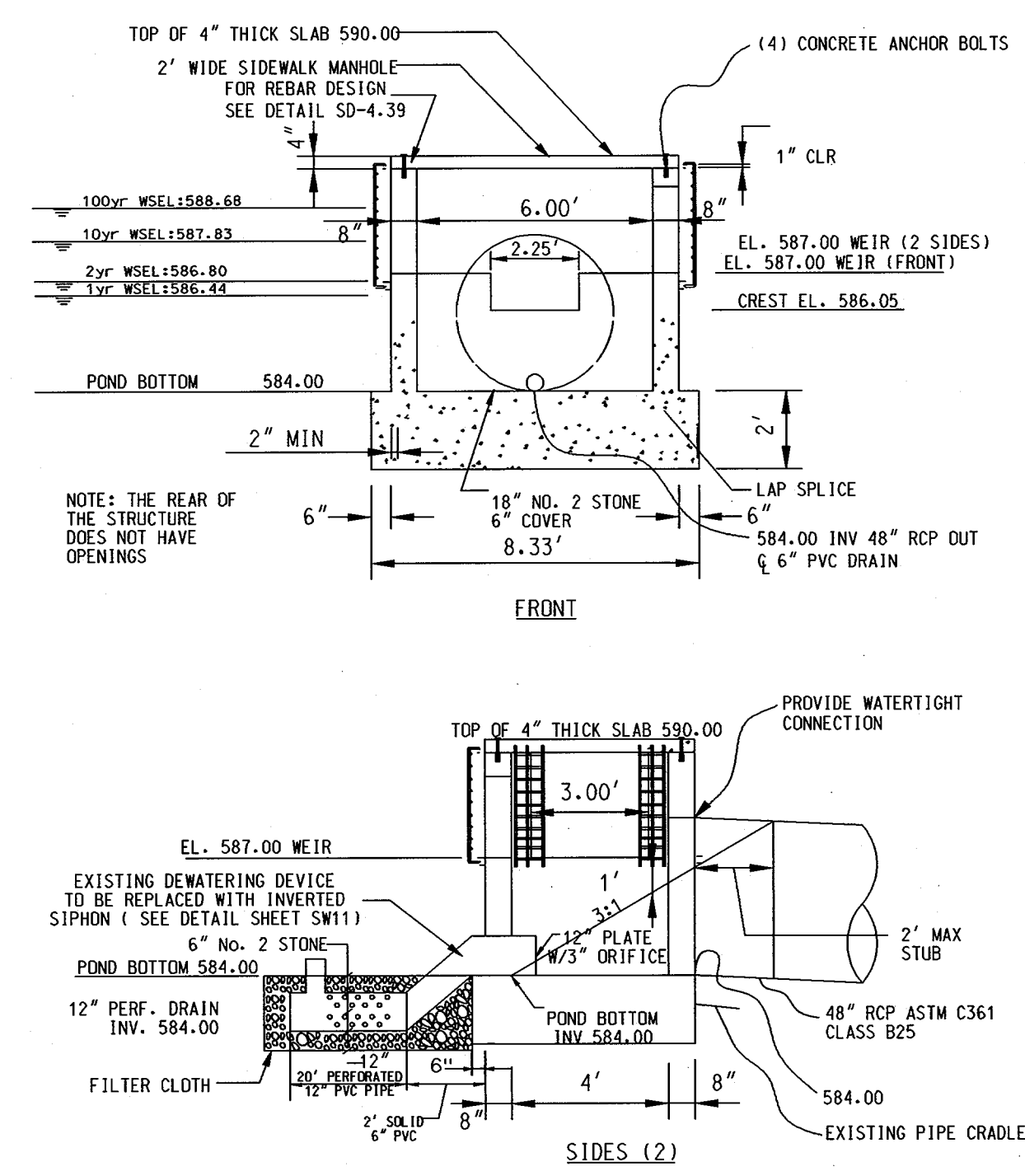
PROFILE ALONG CENTERLINE EMBANKMENT

SCALE: HORIZONTAL - 1"=50'  
VERTICAL - 1"=5'

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 "E" 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

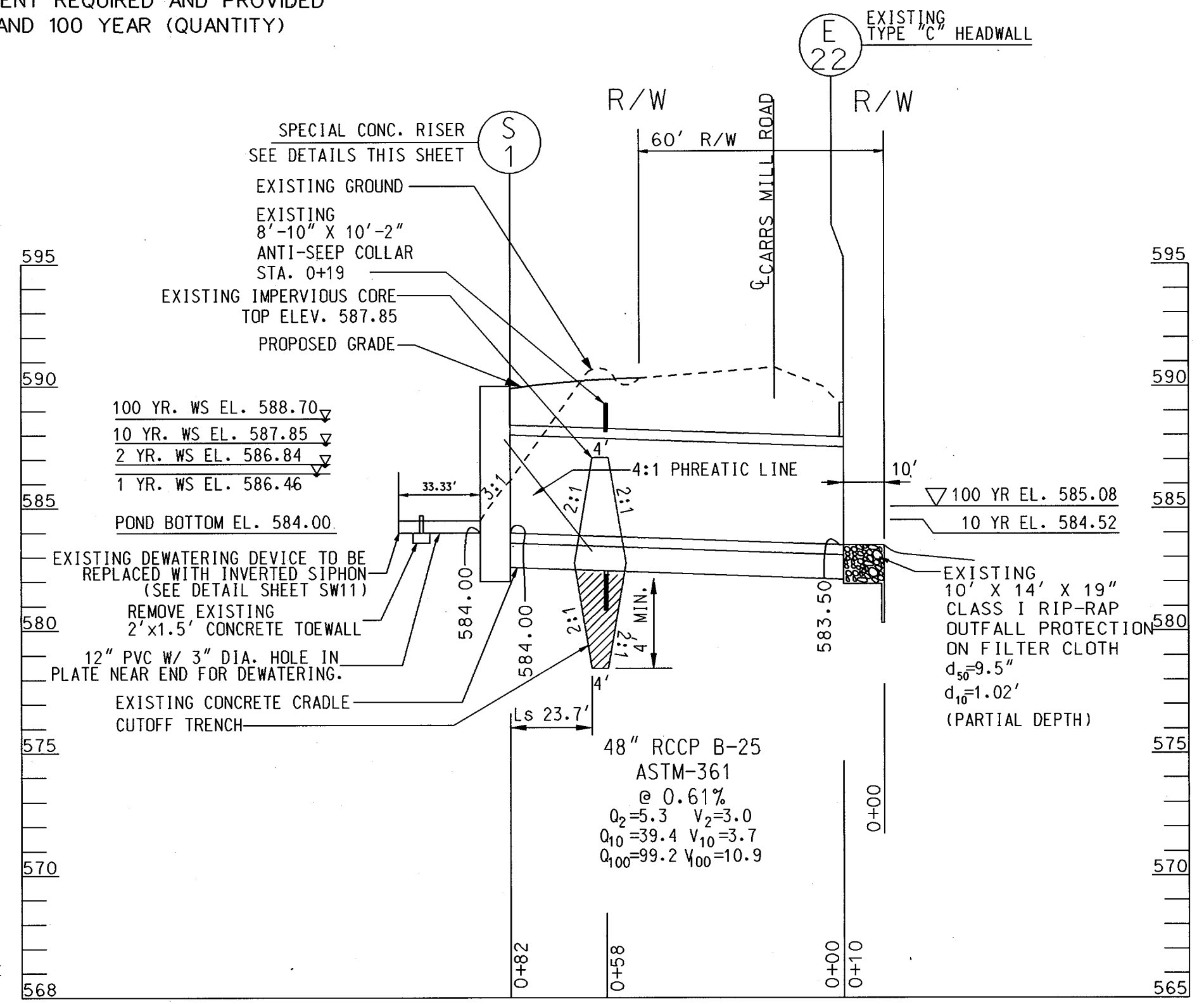
STRUCTURE TYPE: DRY EXTENDED DETENTION POND  
 SURFACE AREA: 2.99 AC.  
 STRUCTURE HAZARD CLASSIFICATION: "A"  
 STORAGE-HEIGHT PRODUCT: 62.34  
 WATERSHED AREA TO FACILITY (ACRES): 44.58  
 LEVEL OF MANAGEMENT REQUIRED AND PROVIDED BY FACILITY: 2, 10, AND 100 YEAR (QUANTITY)

WATERSHED: CATTAL CREEK  
 STREAM CLASS: III  
 FREEBOARD: 2.10 FT.  
 WATER QUALITY: EXTENDED DETENTION



PRECAST STRUCTURE S-1 DETAIL (BY OTHERS)

SCALE: 1"=4'



- NOTES:
- RISER CONSTRUCTED UNDER APPROVED DESIGN "SDP-01-108" FOR GLENWOOD STATION BY FREDERICK WARD ASSOCIATES, INC.
  - PRINCIPAL SPILLWAY AND DAM EMBANKMENT TO REMAIN UNCHANGED FROM DESIGN "SDP-01-108" FOR GLENWOOD STATION BY FREDERICK WARD ASSOCIATES, INC.
  - SEE SHEET LS15 FOR POND E LANDSCAPING PLAN AND DETAILS.

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

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 COUNTY HEALTH OFFICER  
 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  
 DATE: 9/14/02

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."  
 MARK S. RICHMOND  
 DATE: 06/11/02

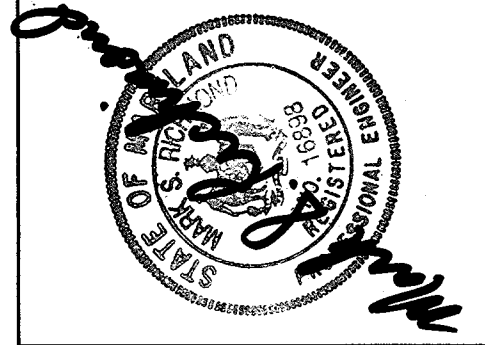
REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS  
 USDA - NATURAL RESOURCES CONSERVATION SERVICE  
 DATE: 9/5/02

THIS DEVELOPMENT IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
 DATE: 9/5/02

NOTE:  
 ABOVE PROFILES TAKEN FROM DESIGN "SDP-01-108" FOR GLENWOOD STATION BY FREDERICK WARD ASSOCIATES, INC.

NO.	REVISIONS DESCRIPTION	DATE

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



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

STORMWATER MANAGEMENT PLAN AND DETAILS

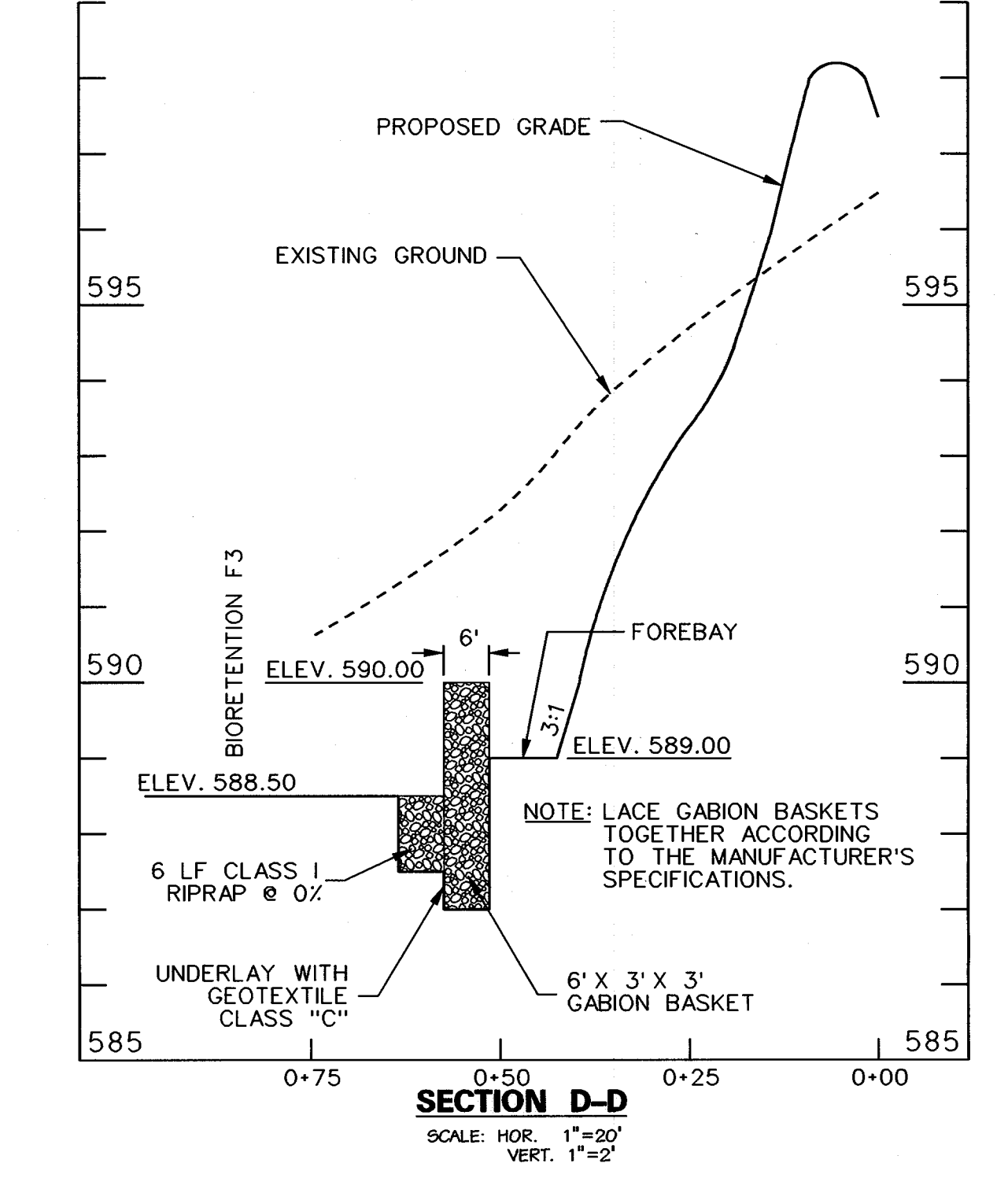
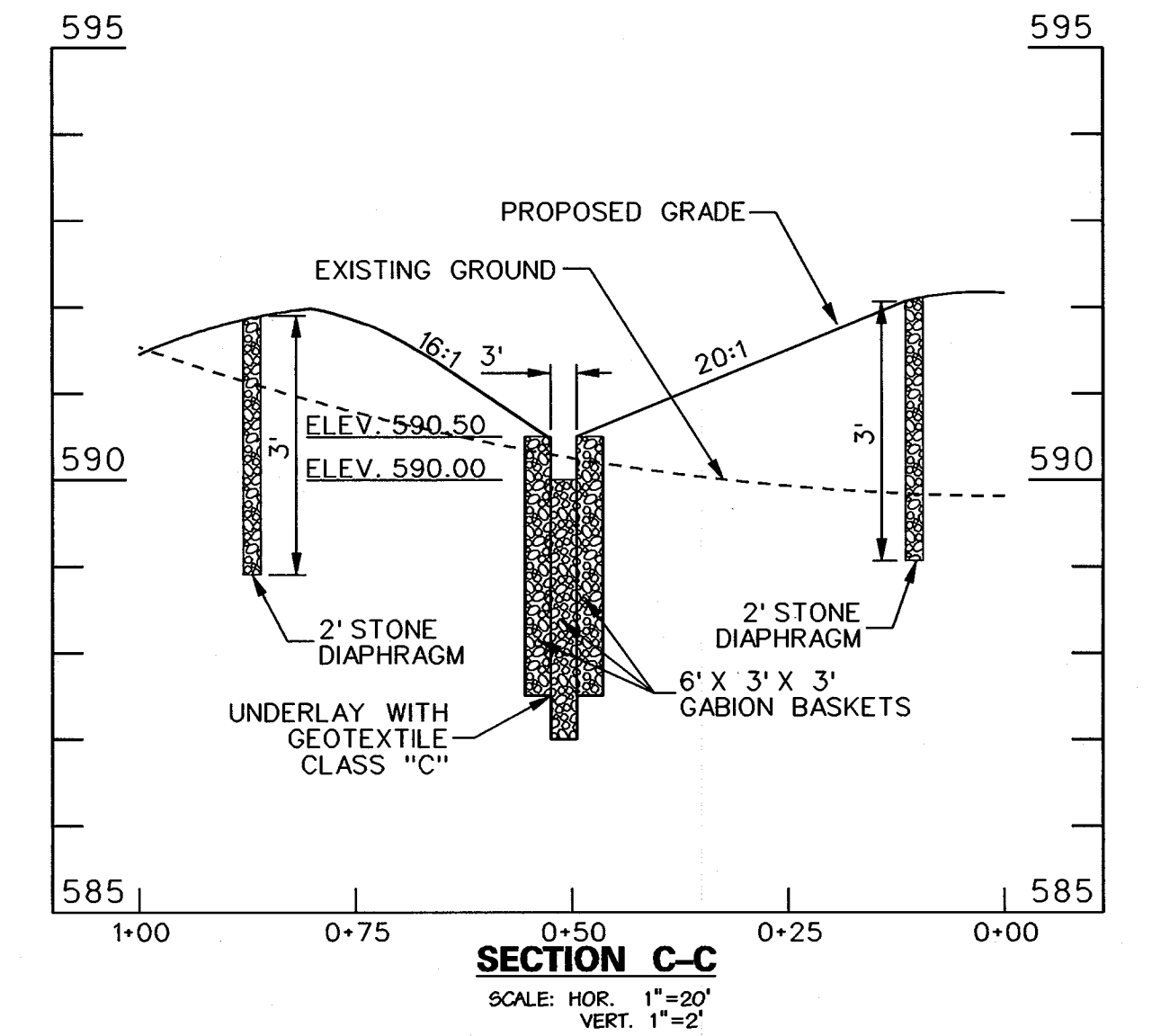
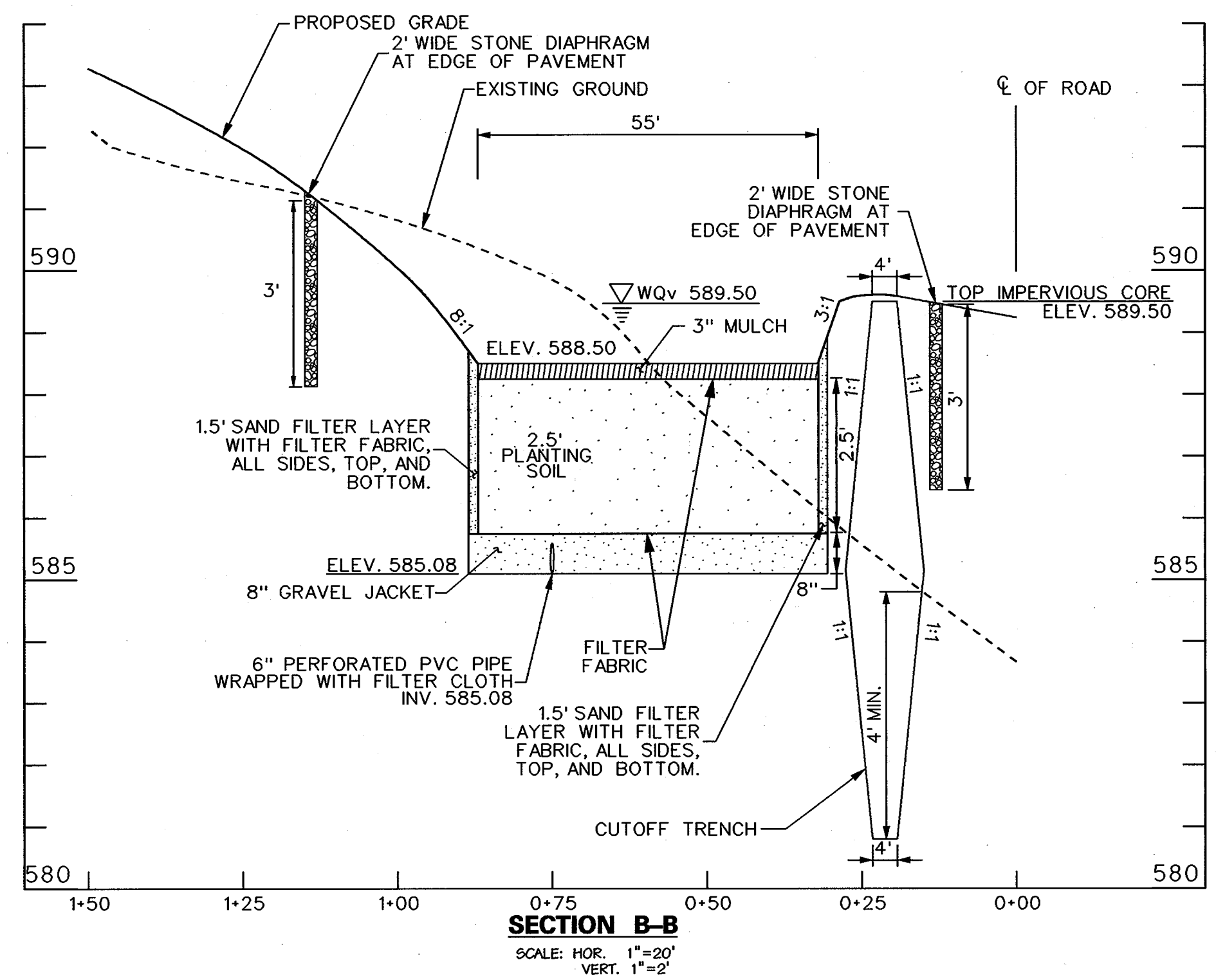
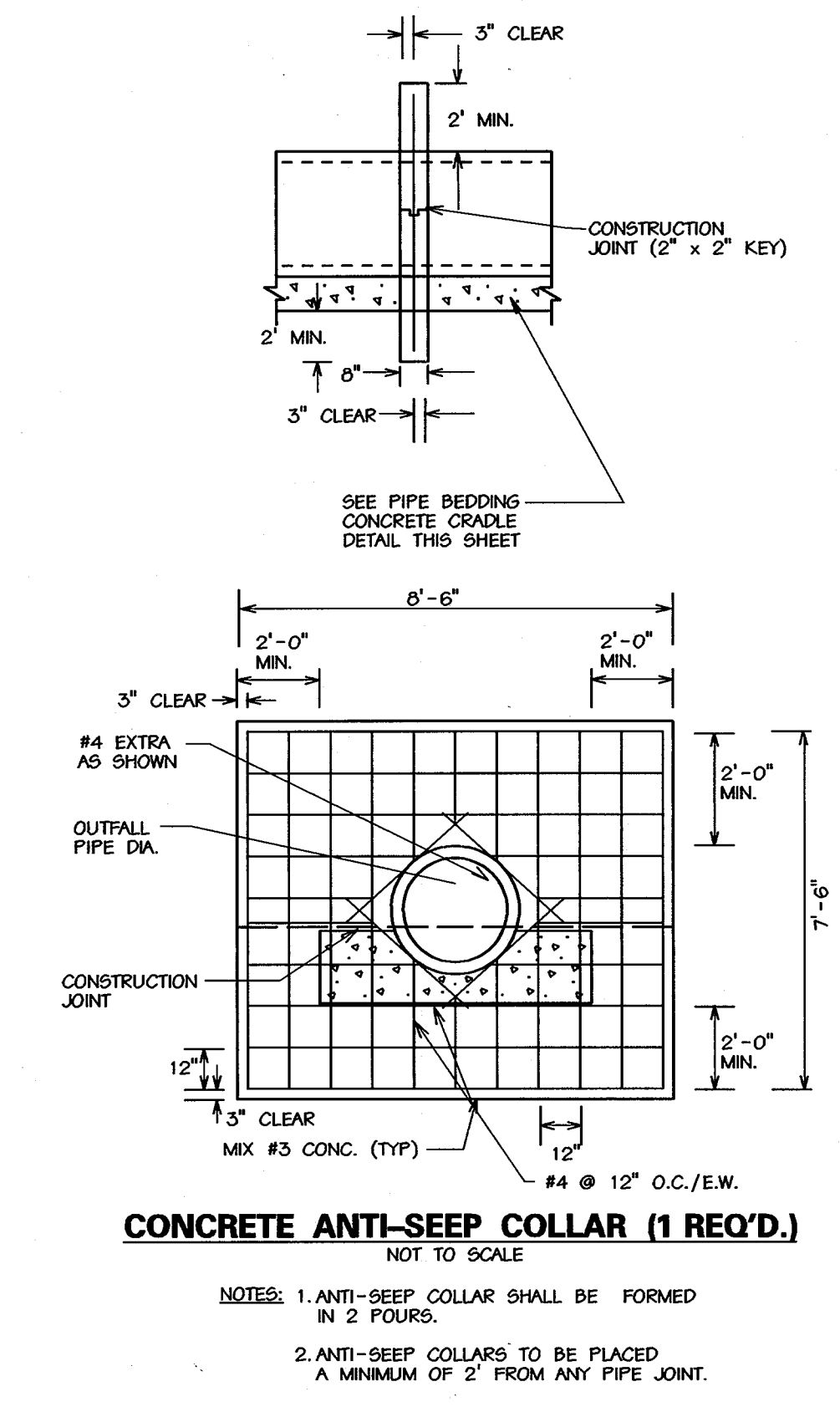
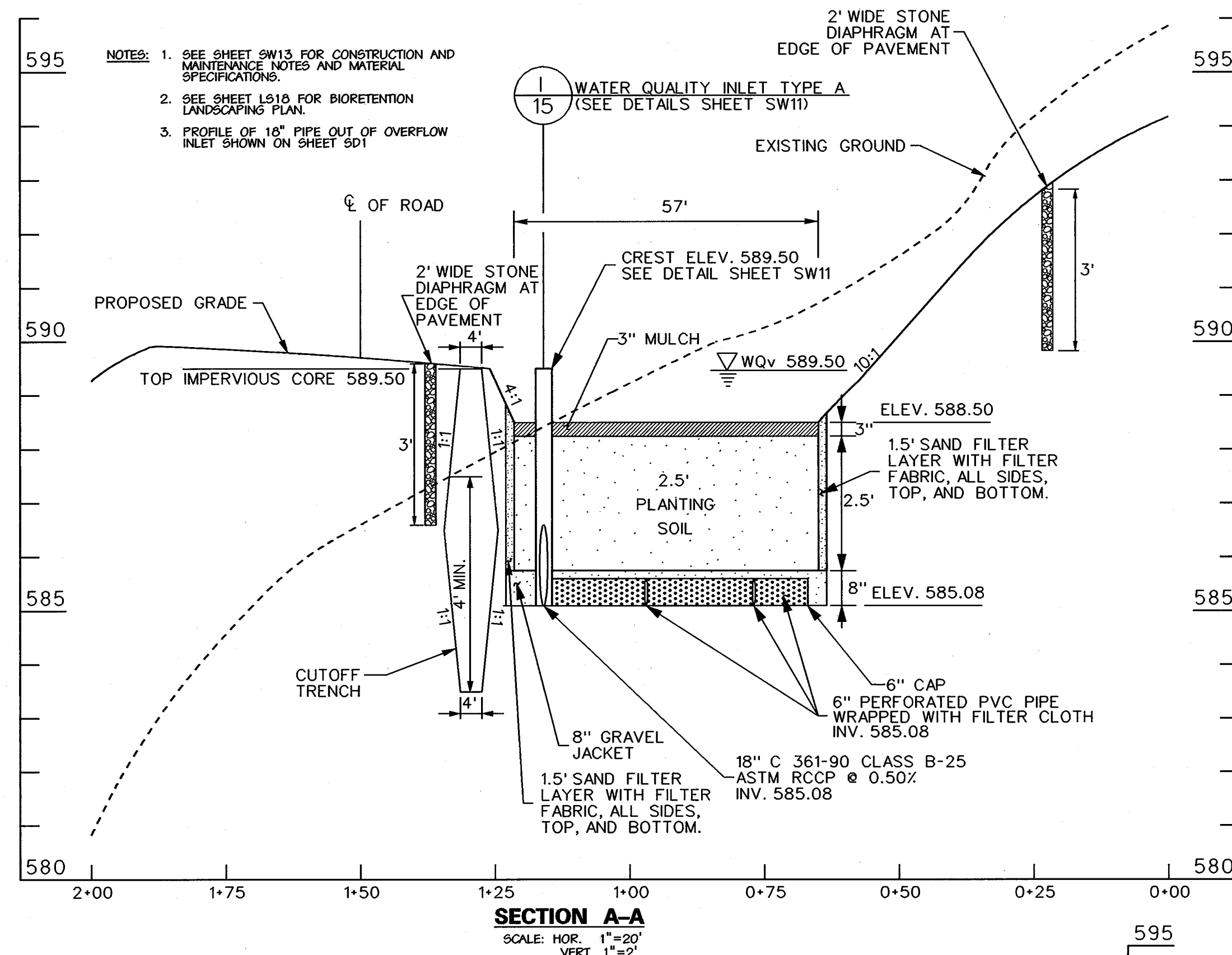
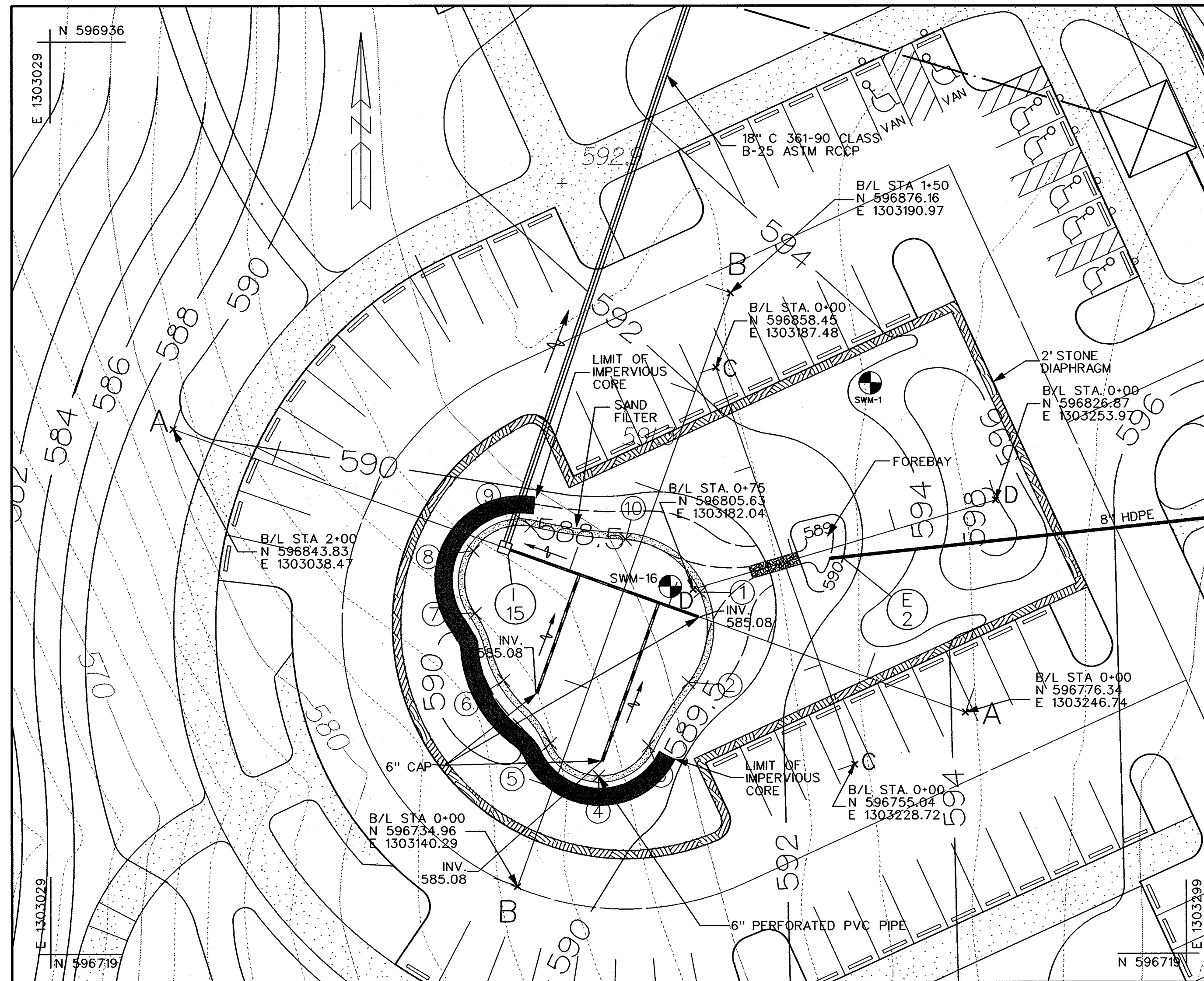
SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	





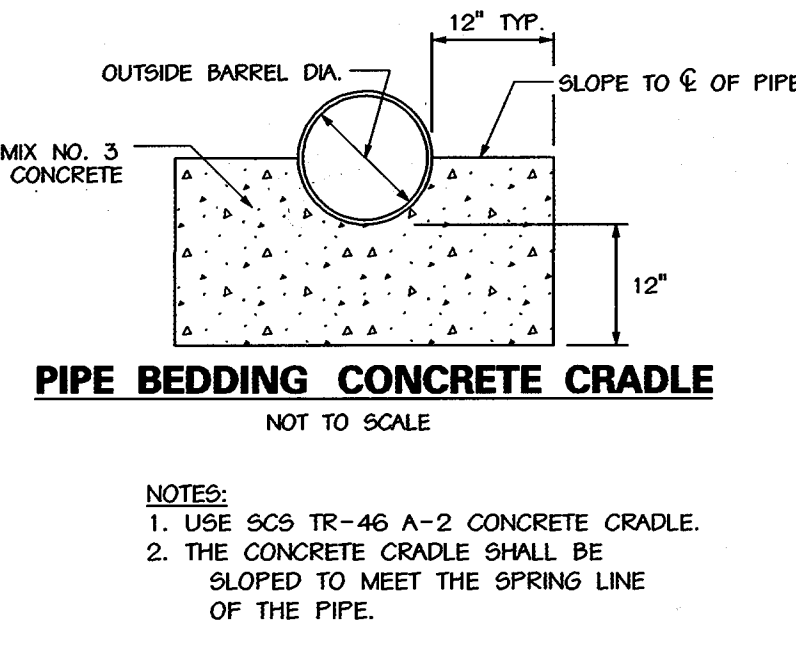






**CONTROL POINTS OF BIORETENTION F3**

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



**S.W.M. SIZING CRITERIA SUMMARY (AREA F)**

	REQUIRED	PROVIDED
WQ <sub>v</sub>	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 <sub>v</sub>	0.21 AC.-FT.	0.21 AC.-FT. (NON-STRUCTURAL)
C <sub>p</sub>	0.52 AC.-FT.	0.52 AC.-FT. (POND F)
Q <sub>p10</sub>	NOT REQUIRED	N/A
Q <sub>p100</sub>	NOT REQUIRED	N/A

STRUCTURE TYPE: BIORETENTION  
STRUCTURE HAZARD CLASSIFICATION: "A"  
TOTAL ON-SITE AREA DRAWING TO FACILITY: 1.80 AC.  
WQ<sub>v</sub> PROVIDED IN BIORETENTION FACILITIES, A SURFACE SAND FILTER, AND THROUGH NON-STRUCTURAL PRACTICES.  
Re<sub>v</sub> PROVIDED THROUGH NON-STRUCTURAL PRACTICES  
C<sub>p</sub> PROVIDED IN DRY EXTENDED DETENTION POND (SEE SHEET SW5).  
\* FOR SUB AREA F2

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

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
COUNTY HEALTH OFFICER  
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."

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."

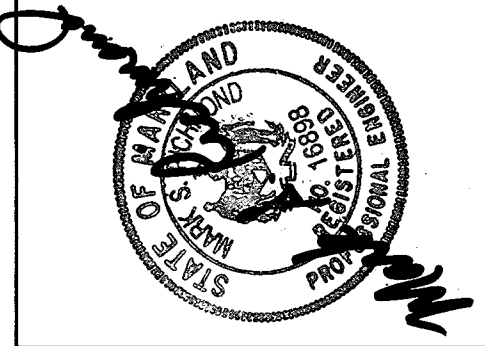
REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

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.  
DATE: 9/5/02

NO.	REVISIONS DESCRIPTION	DATE

**KCI TECHNOLOGIES INC.**  
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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) 316-4640

**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:









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 ASHTO SPECIFICATIONS APPLY TO THE MOST RECENT VERSION.

**SITE PREPARATION**

AREAS DESIGNATED FOR BORROW AREAS, EMBANKMENT, AND STRUCTURAL WORKS SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL. ALL TREES, VEGETATION, ROOTS AND OTHER OBSTRUCTIVE MATERIALS SHALL BE REMOVED. CHANNEL BANKS AND SHARP BREAKS SHALL BE SLOPED TO NO STEEPER THAN 1:1. ALL TREES SHALL BE CLEARED AND GRUBBED WITHIN 15 FEET OF THE TOE OF THE EMBANKMENT.

AREAS TO BE COVERED BY THE RESERVOIR WILL BE CLEARED OF ALL TREES, BRUSH, LOGS, FENCES, RUBBISH AND OTHER OBSTRUCTIVE MATERIALS 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. 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 CLASSIFICATION (U.S.C.) M-25 OR BETTER. AT LEAST 50% PASSING THE #20 SIEVE. CONSIDERATION MAY BE GIVEN TO THE USE OF OTHER MATERIALS IF THE EMBANKMENT IS DESIGNED BY A GEOTECHNICAL ENGINEER. SPECIAL DESIGNATIONS MUST HAVE CONSTRUCTION SUPERVISED BY GEOTECHNICAL ENGINEER. MATERIALS USED IN THE OUTER SHELL OF THE EMBANKMENT MUST HAVE THE CAPABILITY TO SUPPORT VEGETATION OF THE QUALITY REQUIRED TO PREVENT EROSION OF THE EMBANKMENT.

PLACEMENT - AREAS ON WHICH FILL IS TO BE PLACED SHALL BE SCARIFIED PRIOR TO PLACEMENT OF FILL. FILL MATERIALS SHALL BE PLACED IN MAXIMUM 8 INCH DEPTH (BEFORE COMPACTION) LAYERS WHICH ARE TO BE CONTINUOUS OVER THE ENTIRE LENGTH OF THE FILL. THE MOST WORKABLE 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 PASS OF COMPACTION EQUIPMENT. 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 DENSITY WILL BE OBTAINED BY 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 ASHTO 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, AS SHOWN ON THE PLANS. THE SIDE SLOPES OF THE TRENCH SHALL BE 1 TO 1 OR FLATTER. THE TRENCH 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 ON THE DAM. 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 FIT 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 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 315 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 6,000 OHM-CM. MATERIAL SHALL BE PLACED SUCH THAT A MINIMUM OF 6" MEASURED PERPENDICULAR TO THE OUTSIDE OF THE PIPE) OF FLOWABLE FILL SHALL BE UNDER (BEDDING) OVER AND ON THE SIDES OF THE PIPE. IT ONLY NEEDS TO EXTEND UP TO THE SPRING LINE FOR RIGID CONDUITS. AVERAGE SLUMP OF THE FILL SHALL BE 7" TO ASSURE FLOWABILITY OF THE MATERIAL. ADEQUATE MEASURES SHALL BE TAKEN (SAND BARRIERS) 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 ASHTO 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 ASHTO 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 ASHTO SPECIFICATION TYPE A. ANY ALUMINUM COATING DAMAGED OR OTHERWISE REMOVED SHALL BE REPLACED WITH COAT APPLIED BITUMINOUS COATING COMPOUND. ALUMINUM SURFACES THAT ARE 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 ASHTO 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 ASHTO 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 COMPLETELY WATERTIGHT. DUMPLE 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 NEOPRENE GASKET; 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 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 CORNER OF THE PIPE AND A 24 INCH WIDE BY 3/8 INCH THICK CIRCULAR NEOPRENE GASKET. THE BAND SHALL BE INSTALLED ON THE END OF EACH PIPE. FLANGED JOINTS WITH 3/8 INCH CLOSED CELL GASKETS THE FULL WIDTH OF THE FLANGE IS ALSO ACCEPTABLE. CONNECTIONS SHALL BE MADE BY 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 UNSUITABLE 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/CRADE FOR THEIR ENTIRE LENGTH. THIS BEDDING/CRADE 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 CRADE IS NOT NEEDED FOR STRUCTURAL REASONS, FLOWABLE FILL MAY BE USED AS DESCRIBED IN "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 42" THROUGH 24" INCH SHALL MEET THE REQUIREMENTS OF ASHTO M-252 TYPE S, AND 12" THROUGH 24" INCH SHALL MEET THE REQUIREMENTS OF ASHTO M-294 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 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 STRUCTURES. THE CONTRACTOR SHALL ALSO FURNISH, INSTALL, OPERATE, AND MAINTAIN ALL NECESSARY PUMPING AND OTHER EQUIPMENT REQUIRED FOR REMOVAL OF WATER FROM VARIOUS PARTS OF THE WORK AND FOR MAINTAINING THE EXCAVATION AND FOUNDATION OF 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 SLUMPS FROM WHICH THE WATER SHALL BE PUMPED.

**STABILIZATION**

ALL BORROW AREAS SHALL BE GRADED TO PROVIDE PROPER DRAINAGE AND LEFT IN A SLIGHTLY CONDITION. ALL EXPOSED SURFACES OF THE EMBANKMENT, SPILLWAY, SLOPE AND BORROW AREAS, AND BERMS SHALL BE STABILIZED BY SEEDING, LIMING, FERTILIZING AND MULCHING IN ACCORDANCE WITH THE NATURAL RESOURCES CONSERVATION SERVICE STANDARDS AND SPECIFICATIONS FOR CRITICAL AREA PLANTING (MD-342) OR AS SHOWN ON THE ACCOMPANYING DRAWINGS.

**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 FENCE 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 ASHTO DESIGNATION M18174.

**FILTER CLOTH**

FILTER CLOTH SHALL BE MIRA11405, DUPONT TYPAR 43341 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 THE FINDING. A COPY OF SAID INFORMATION HAS BEEN SUPPLIED TO N.R.C.S./M.C.S.C.D.

SIGNATURE: *Mark S. Richmond* LICENSE NO. 16898 DATE 9/13/02

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 PLAN 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.

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-1)**

- 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 BEFORE TREATMENT. TREATMENT OF ALL CLOSED CELL CIRCULAR NEOPRENE GASKETS WILL BE DONE EVERY 2 TO 3 YEARS.
- C. MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH AND RE-APPLY MULCH AS NECESSARY TO MAINTAIN 2 TO 3 INCHES.
- 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**

- 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 AREAS 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 MATERIALS THAT 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 BERBERIS GRASS, QUERCUS GRASS, 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 STOCK PILE 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 ION SULFATE PLUS SULFUR.

FREE OF BERBERIS GRASS, QUERCUS GRASS, 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:

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 GERARDI
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.

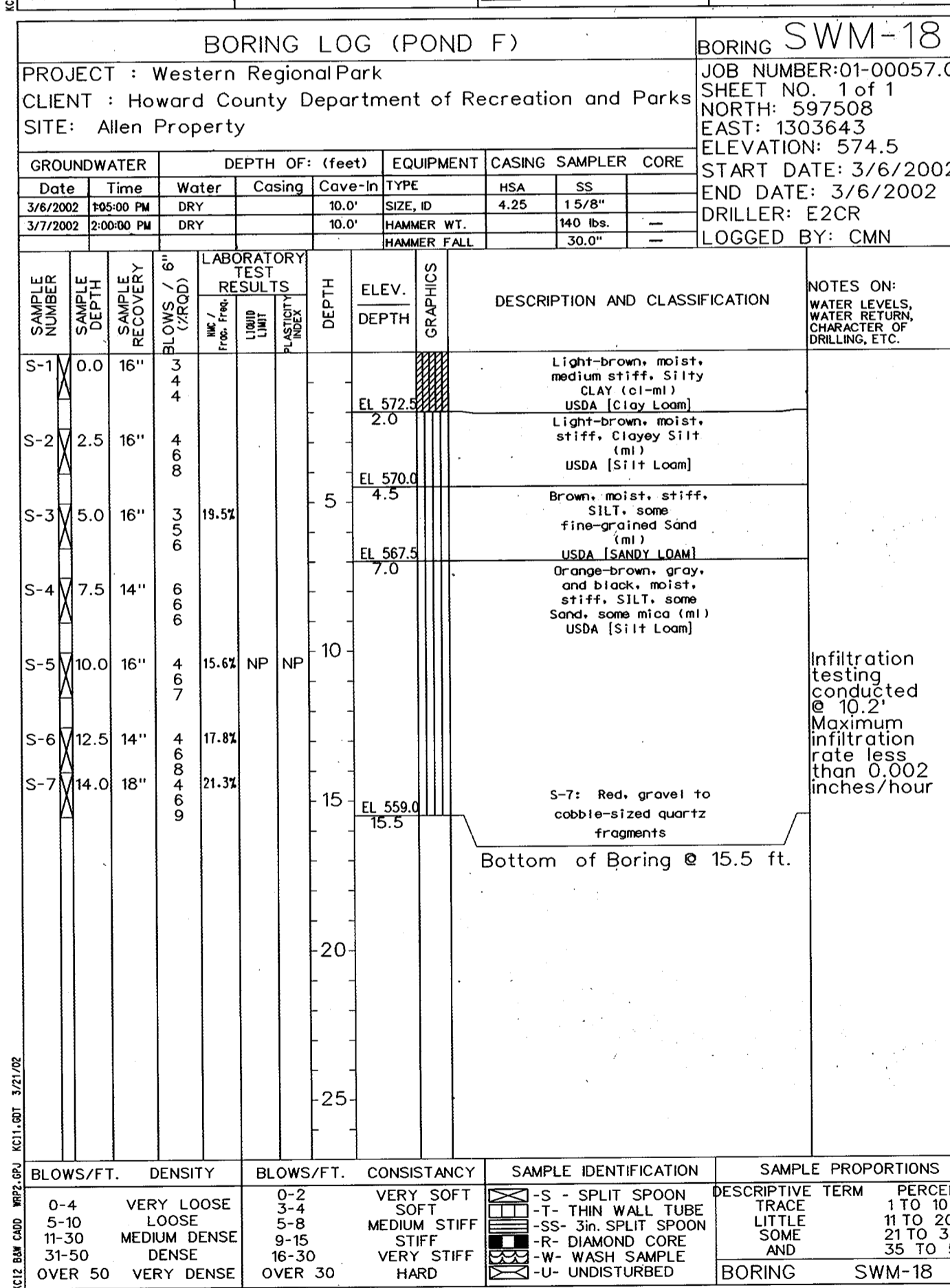
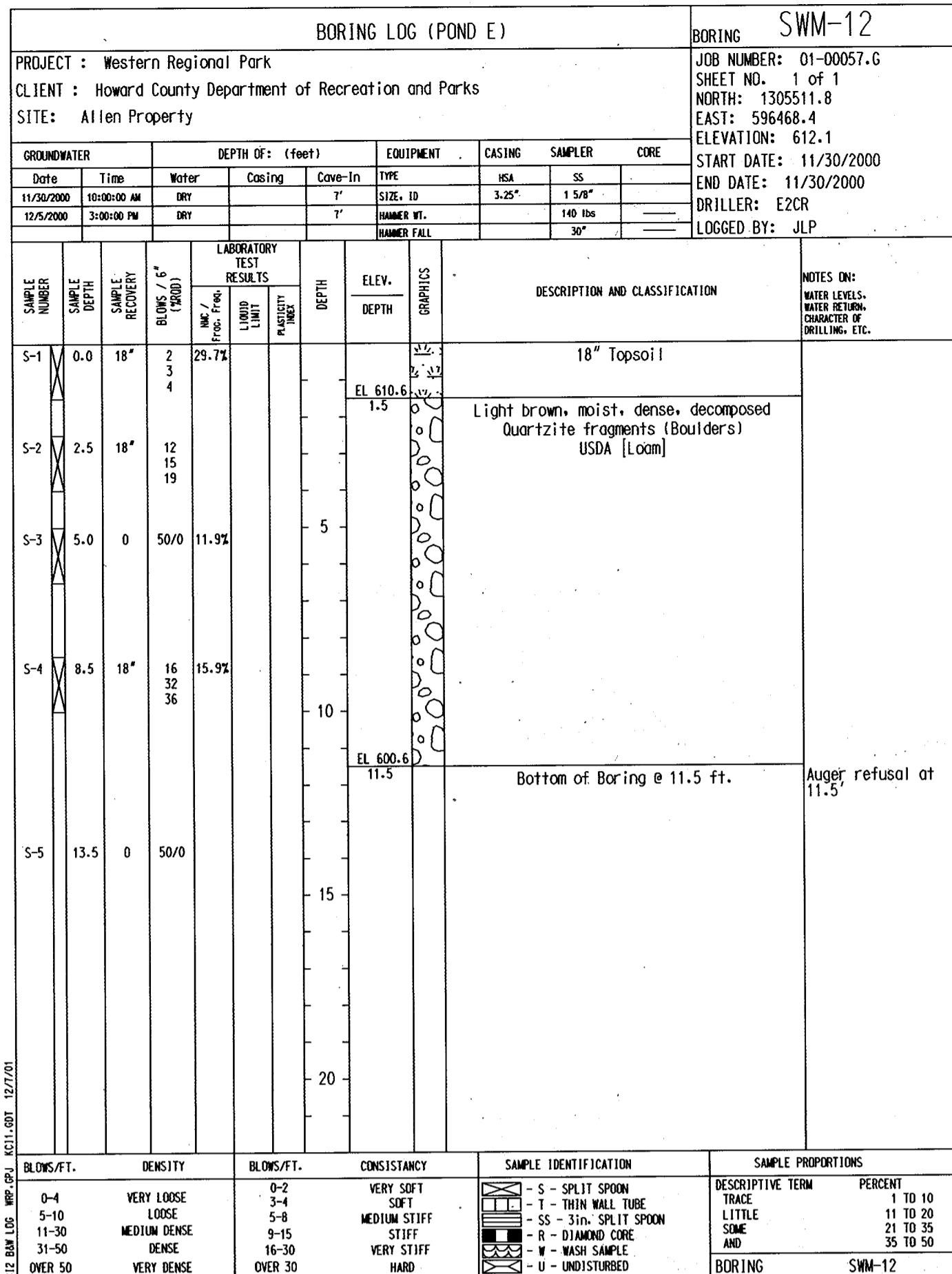
**"AS-BUILT" CERTIFICATION-FACILITY "F"**

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: \_\_\_\_\_

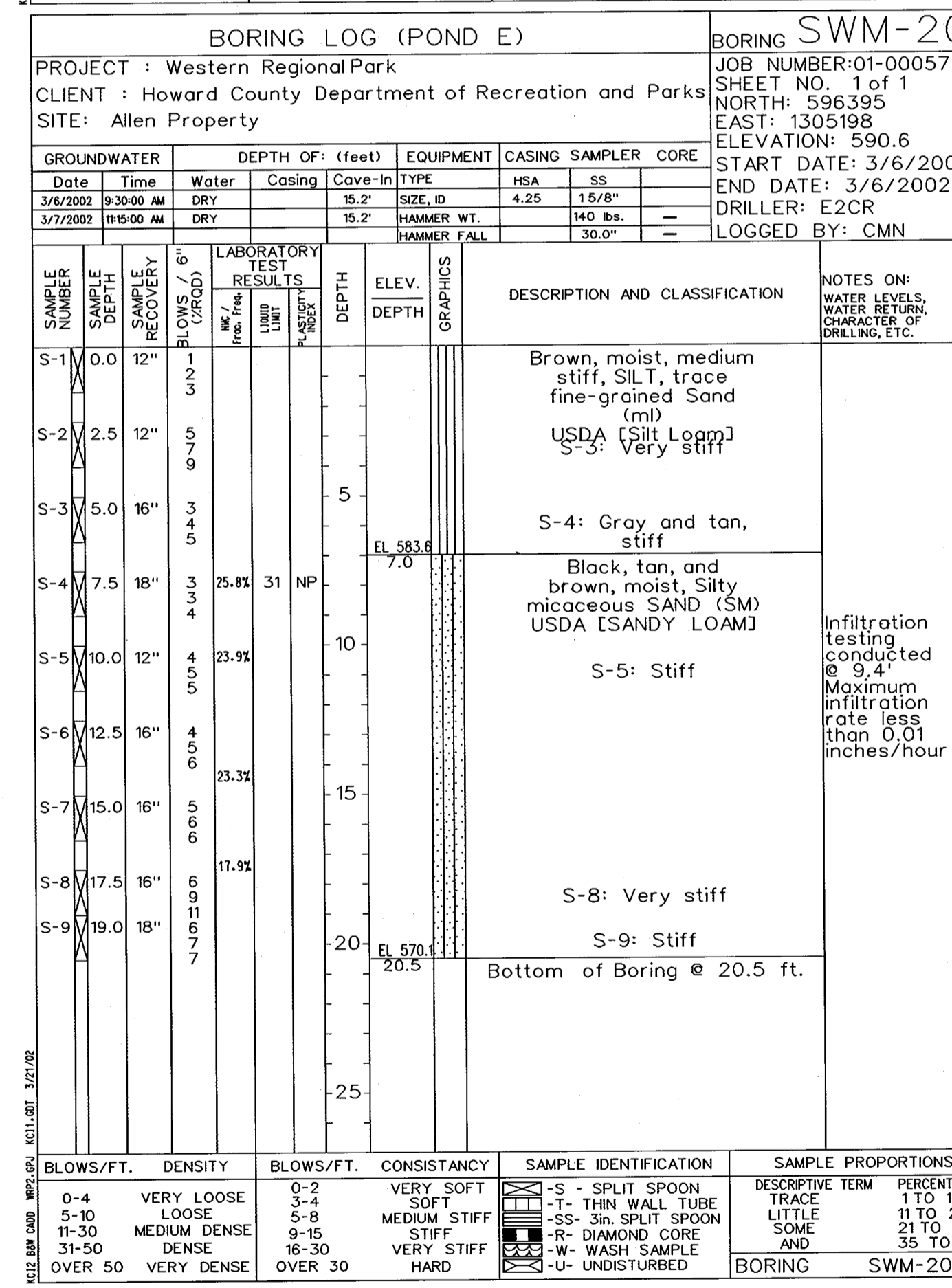
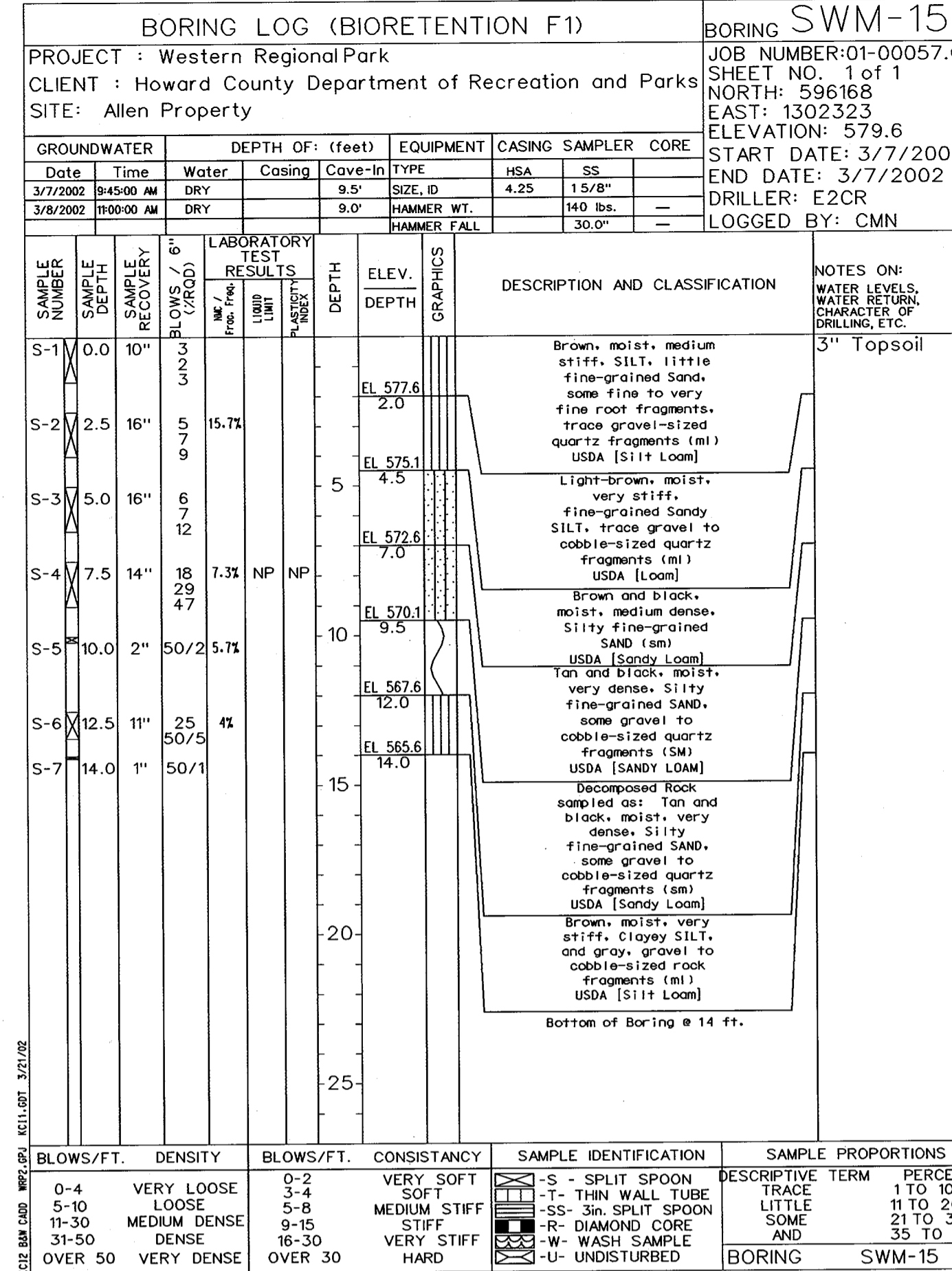
CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON-SITE INSPECTIONS AND MATERIAL TEST ARE THOSE INSPECTIONS AND TEST DEEMED SUFFICIENT AND APPROPRIATE BY COMMONLY ACCEPTED





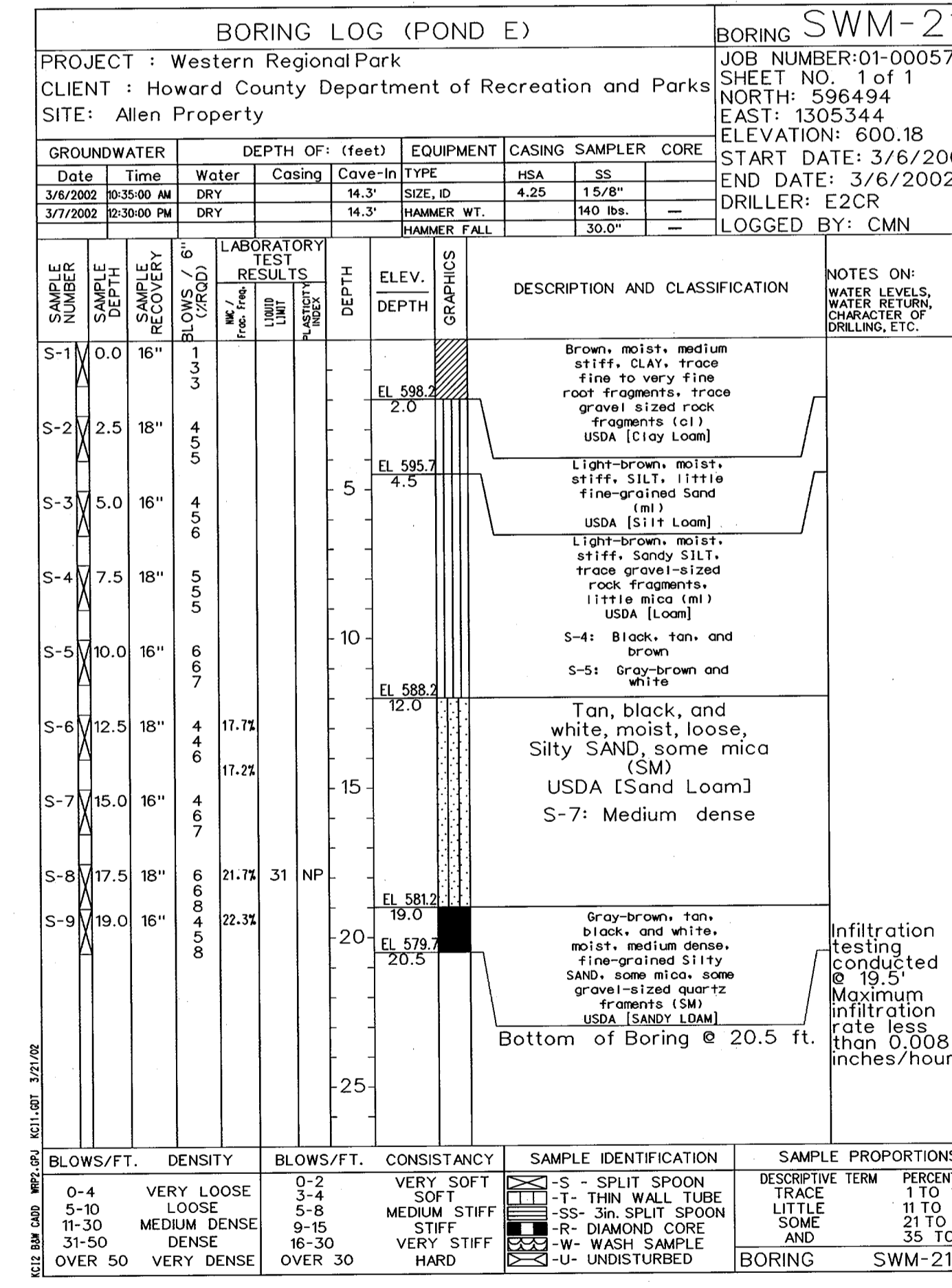
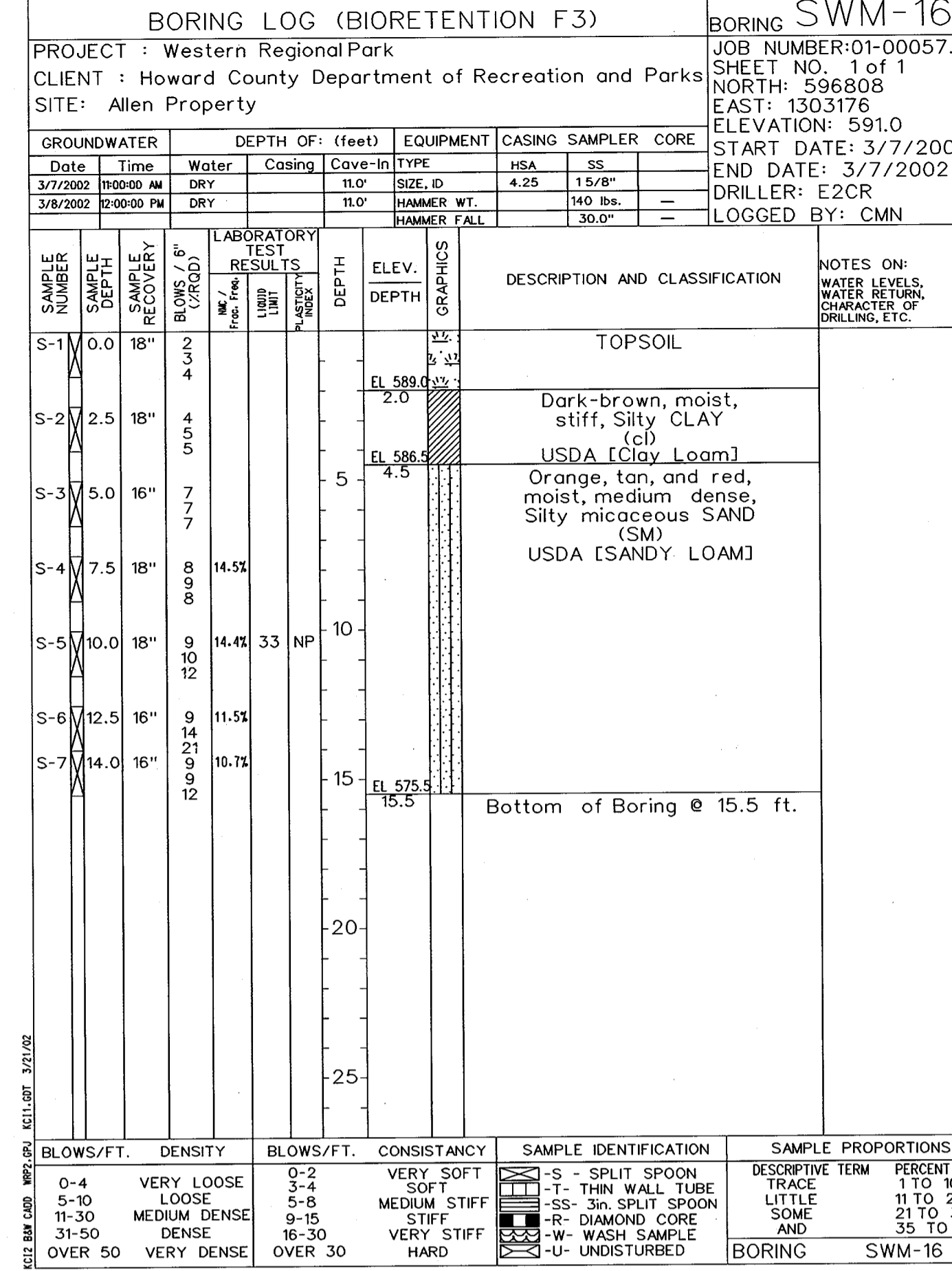
APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE: 9/12/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 COUNTY HEALTH OFFICER  
 DATE: 10/17/02



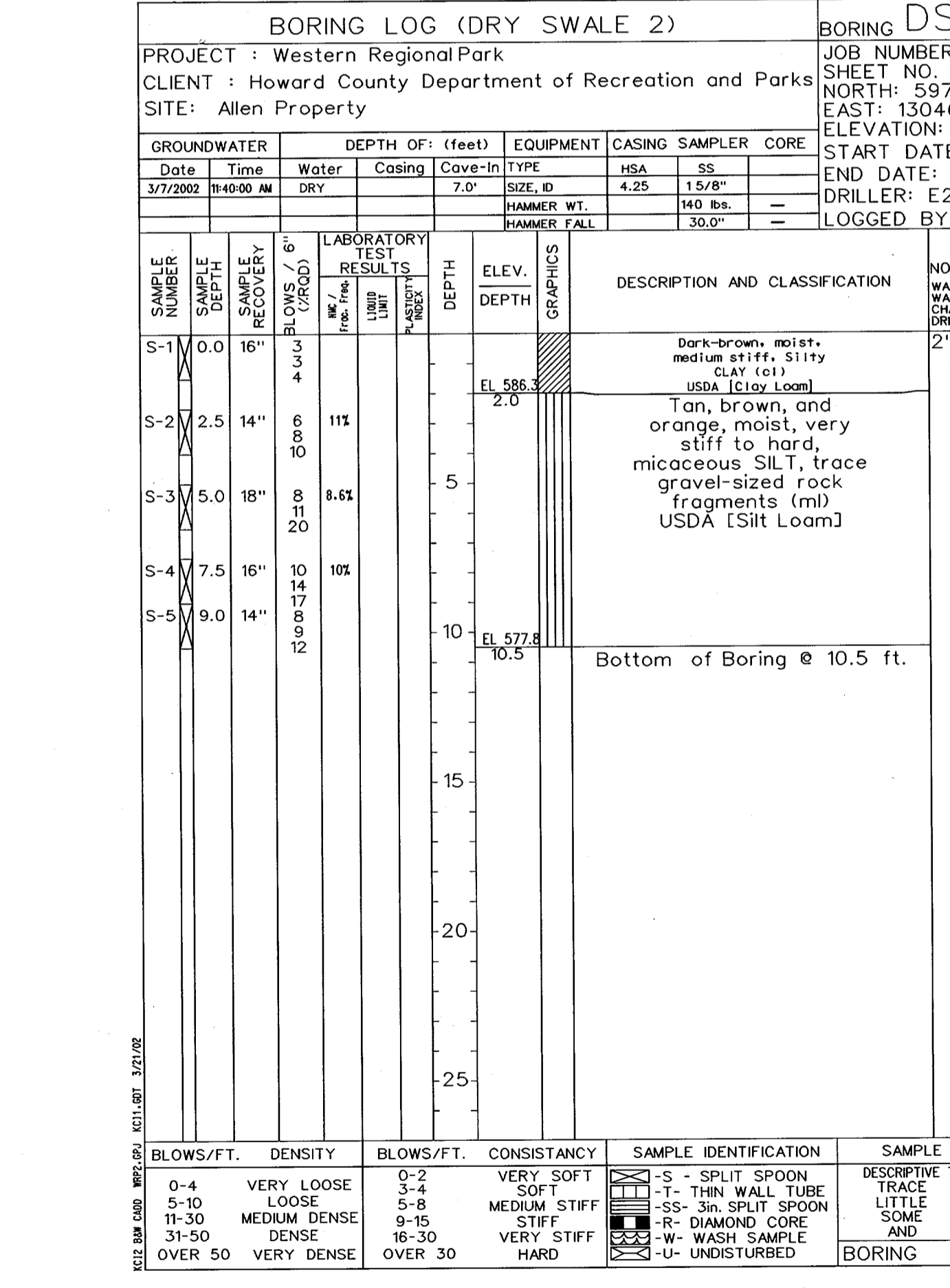
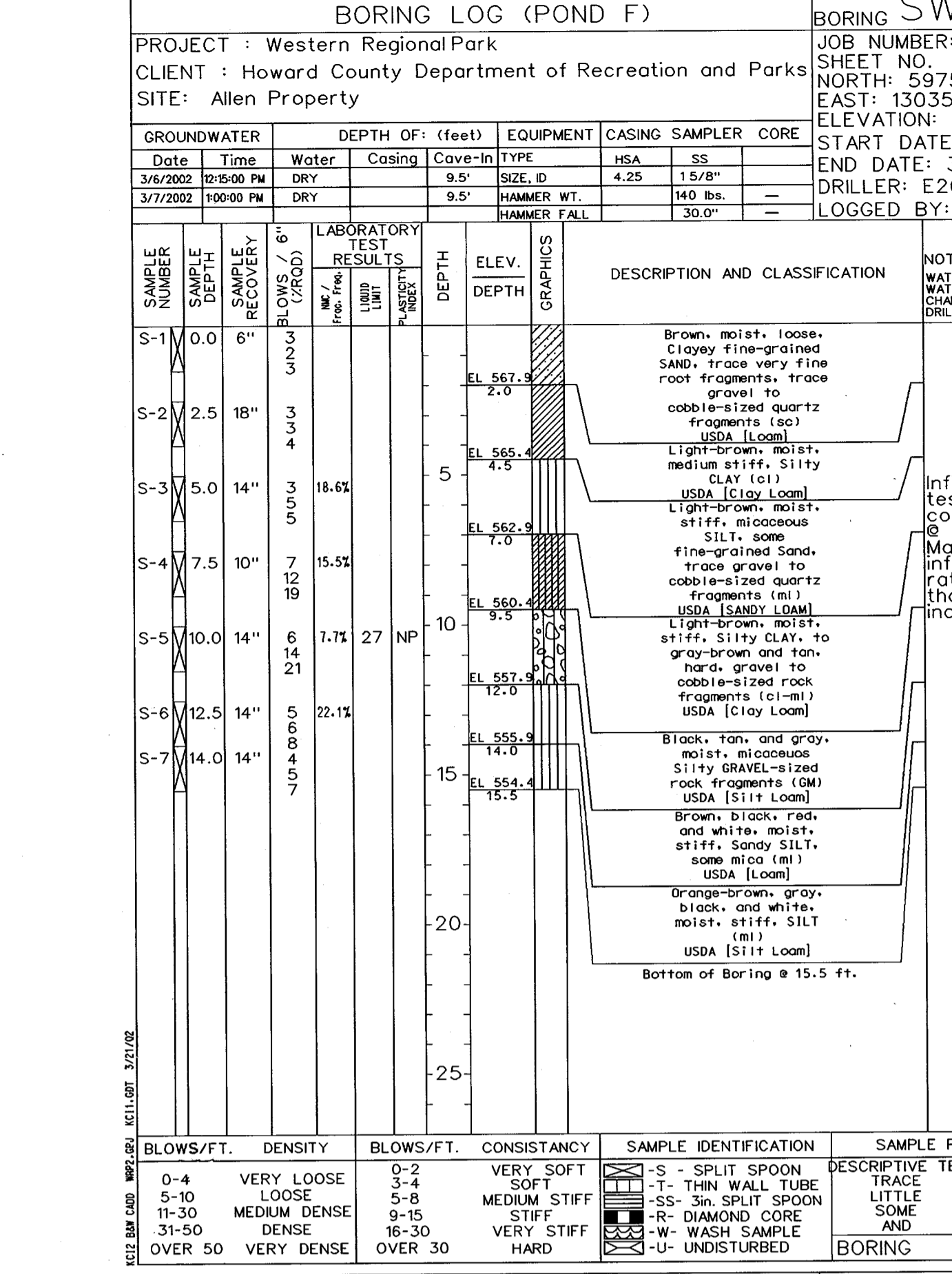
DEVELOPER'S CERTIFICATE  
 "/>WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE 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.

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.



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



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

**KCI TECHNOLOGIES INC.**  
 ENGINEERS • PLANNERS • SURVEYORS

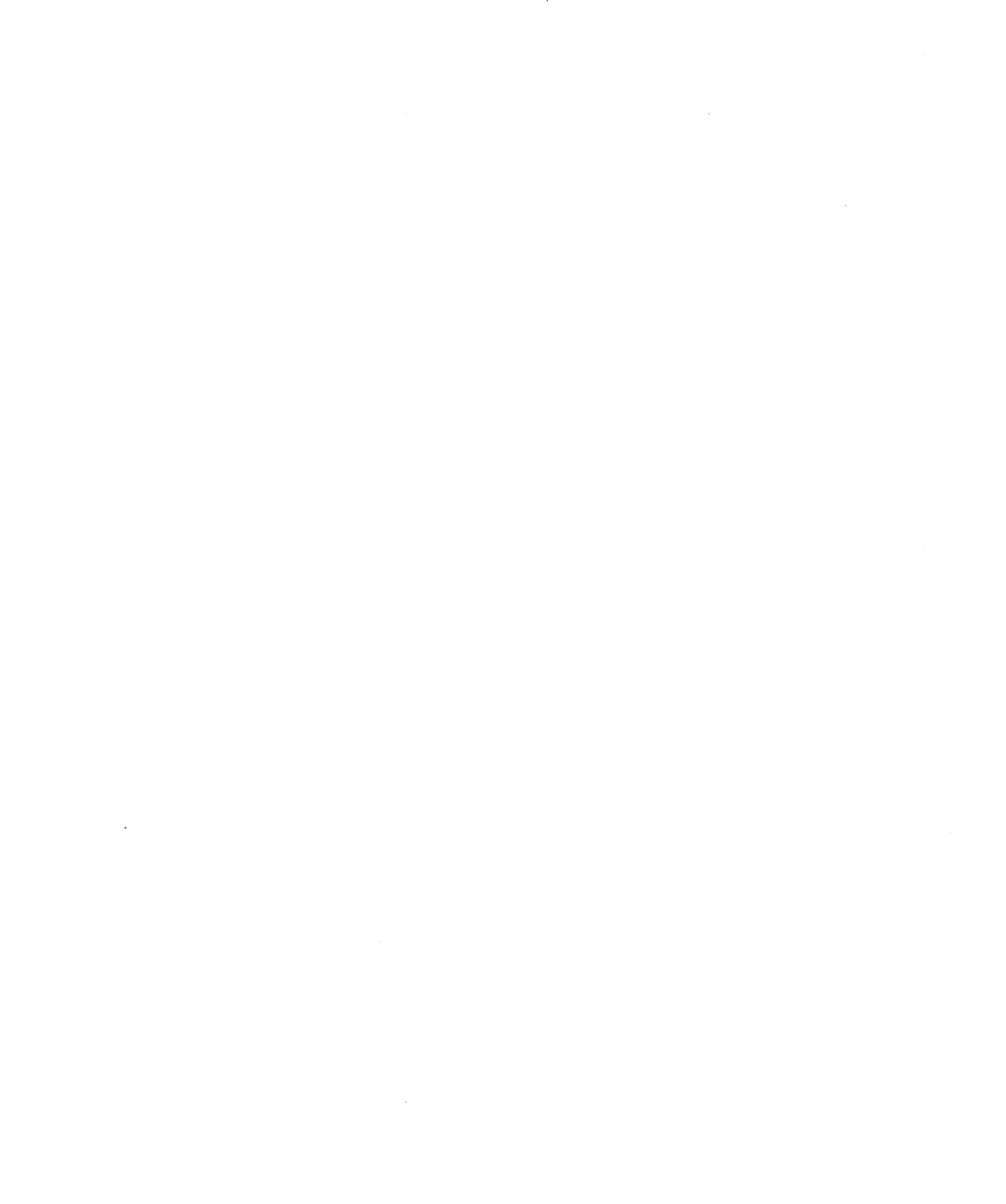
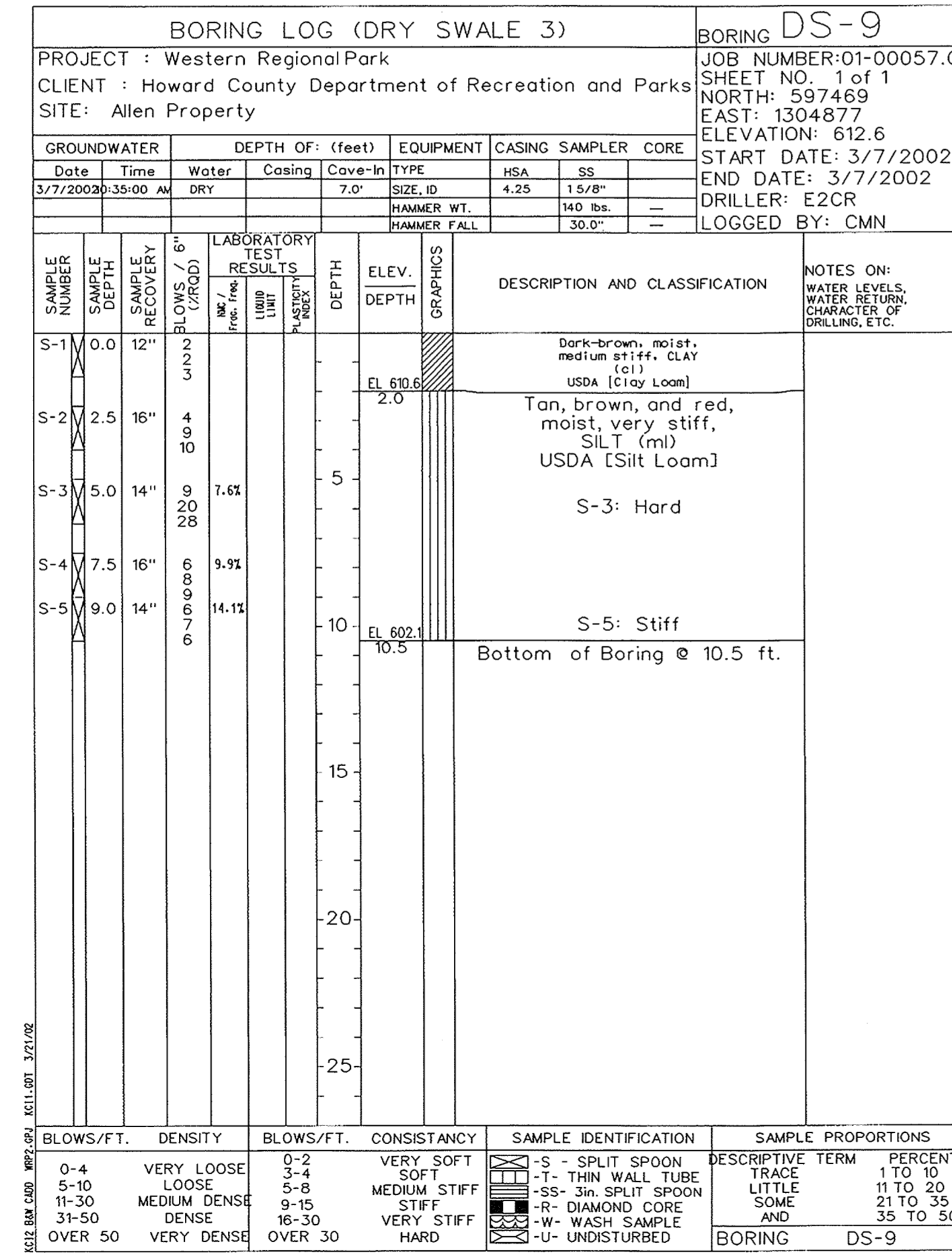
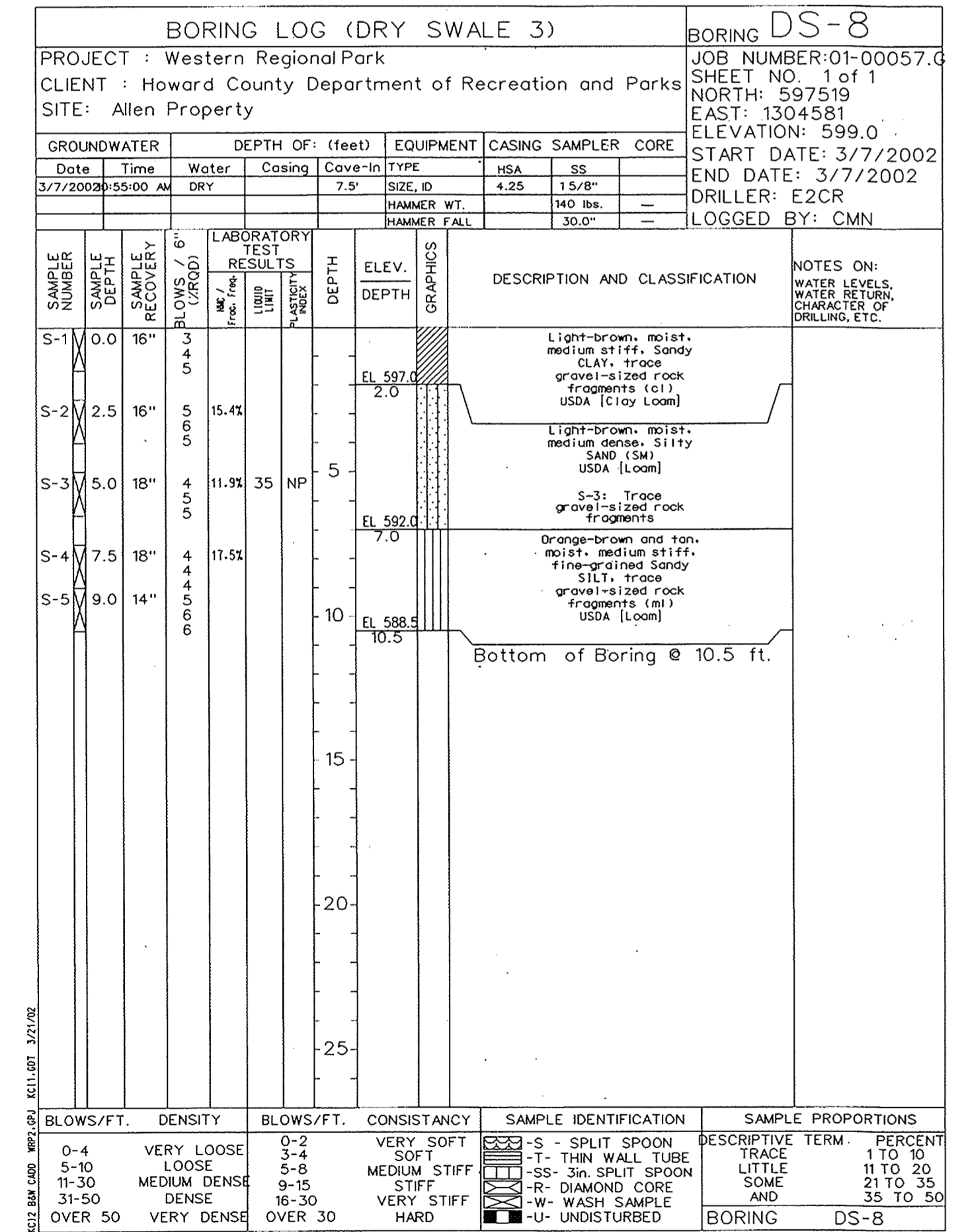
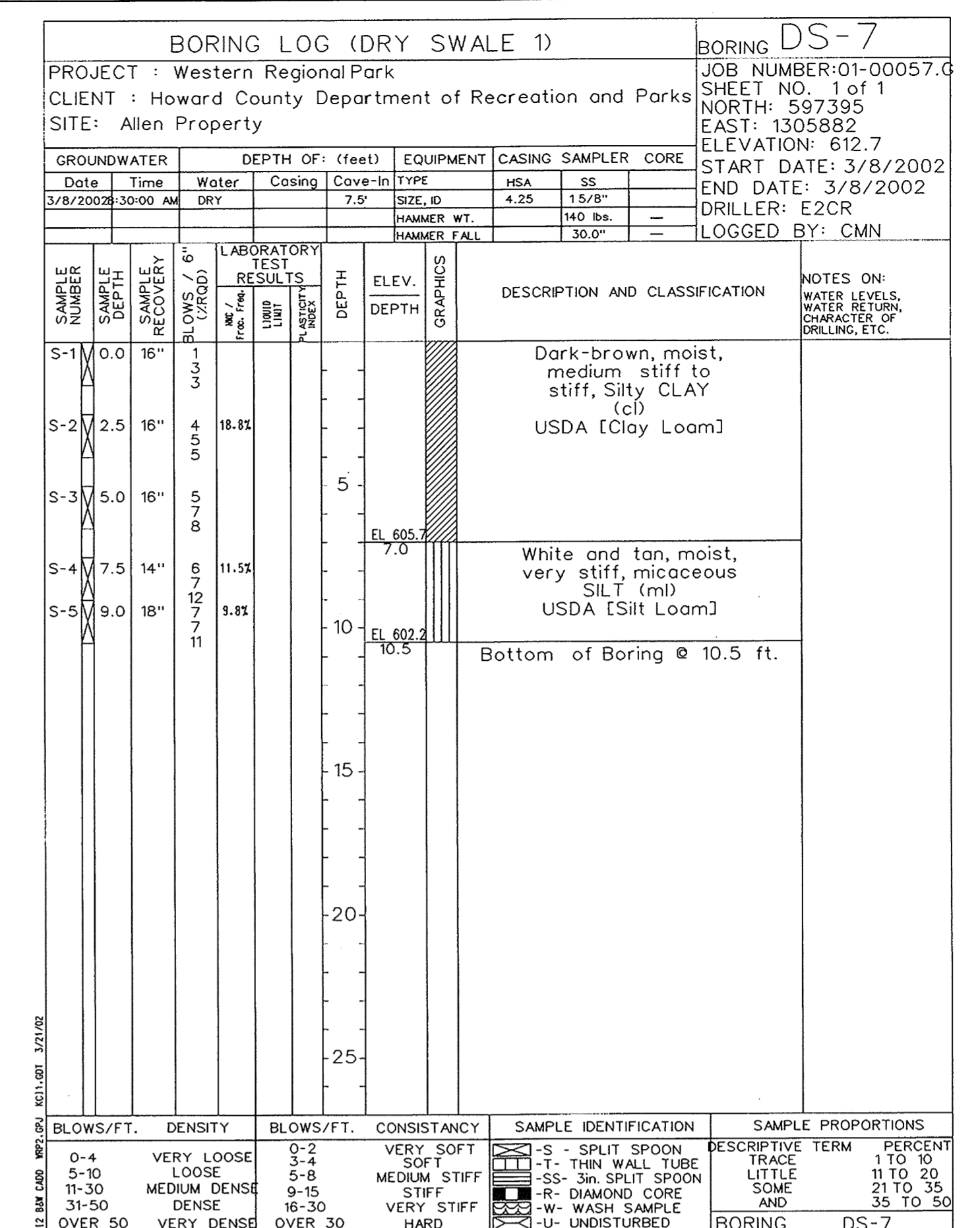
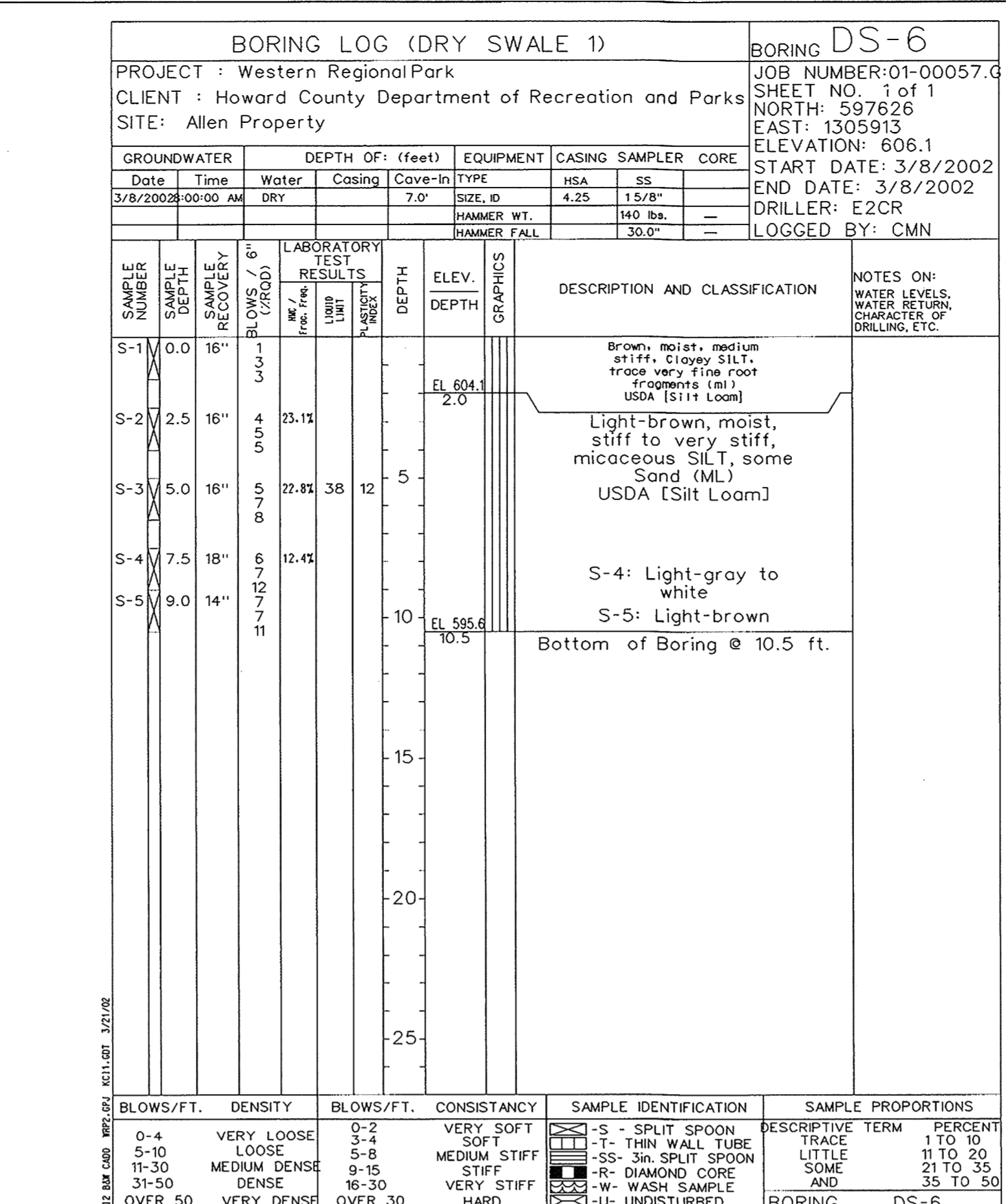
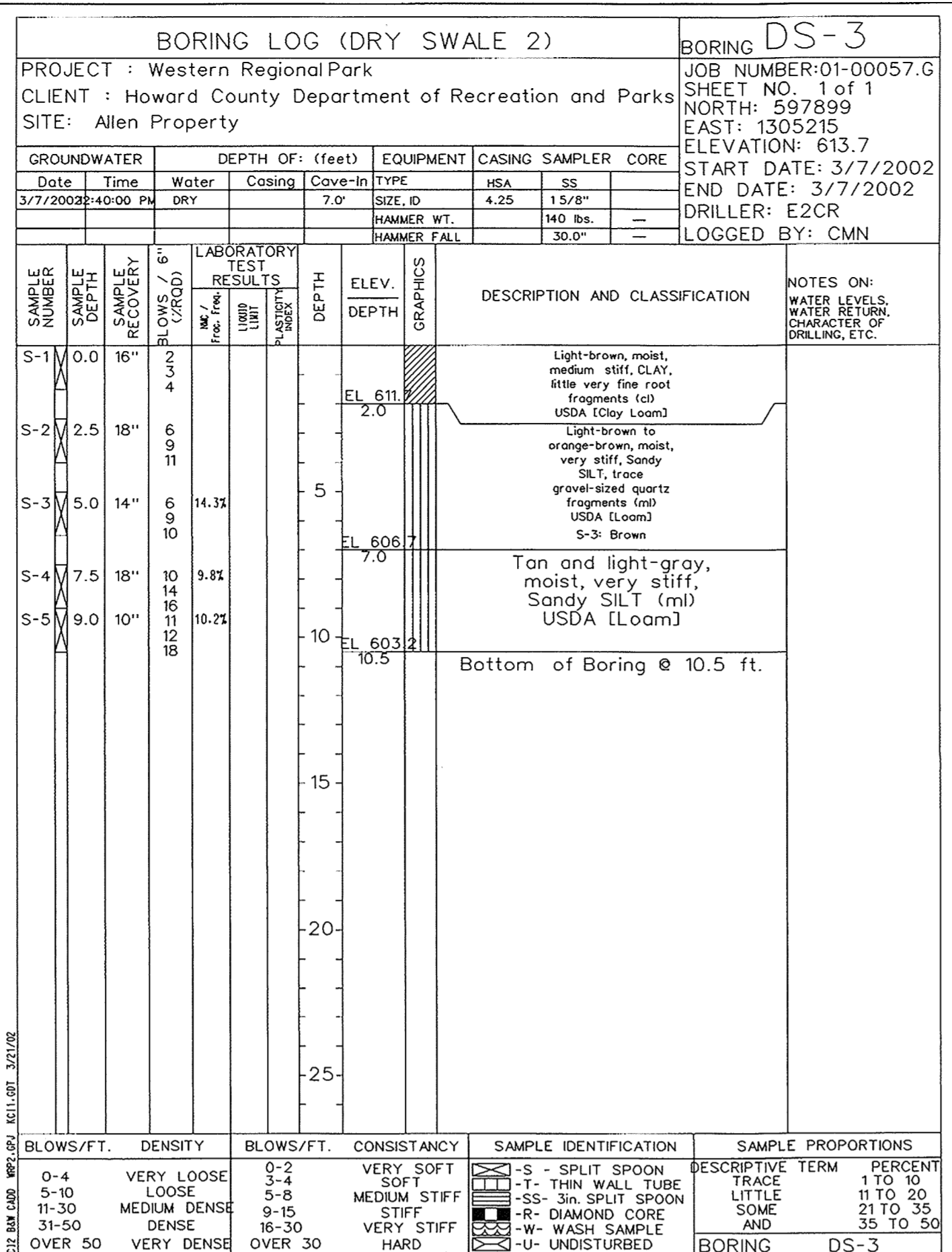
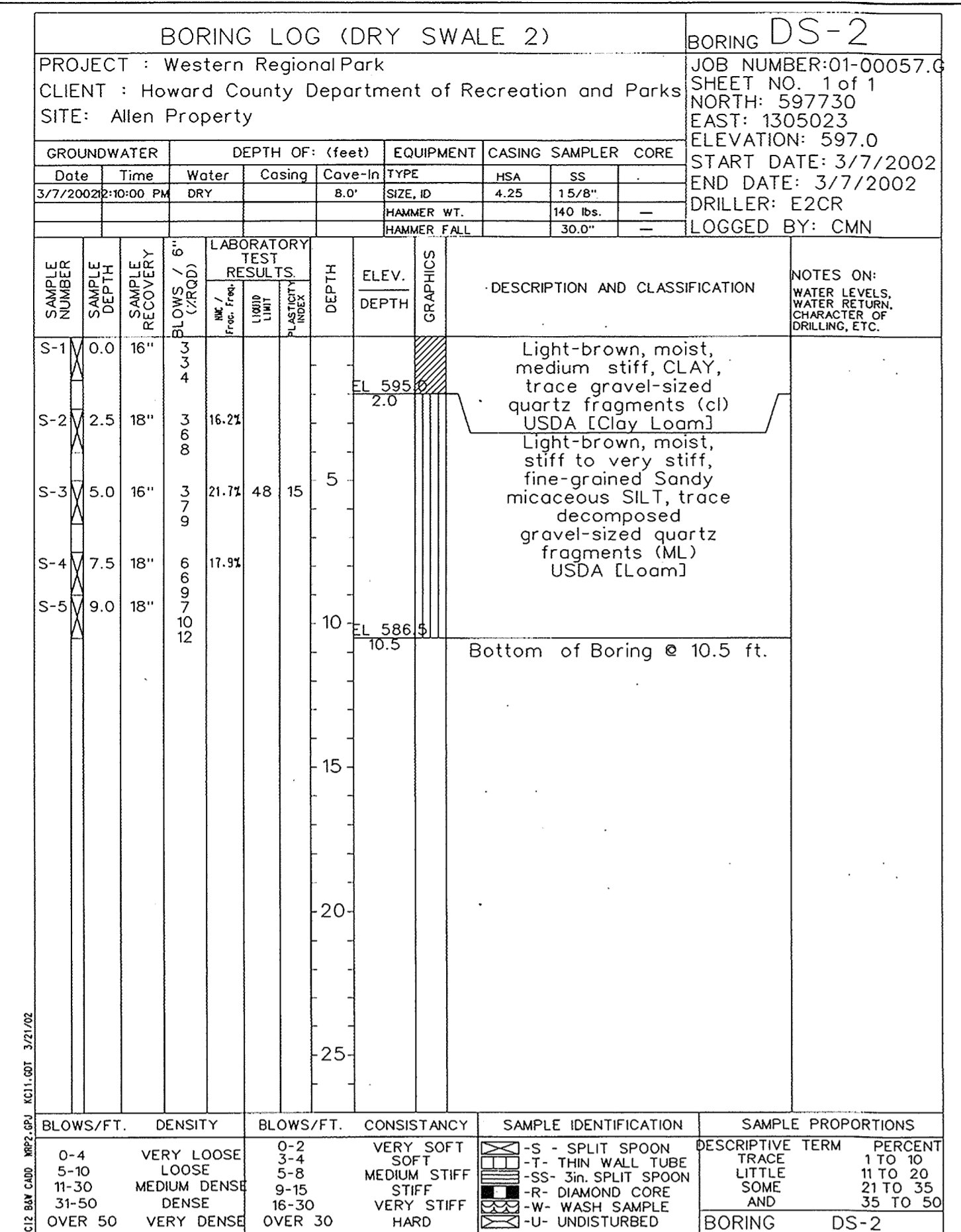
10 NORTH PARK DRIVE  
 HUNT VALLEY, MARYLAND 21030  
 PHONE: (410) 316-7800 FAX: (410) 316-7817  
 WWW.KCI.COM

**WESTERN REGIONAL PARK**  
 HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
 7120 OAKLAND MILLS ROAD  
 COLUMBIA, MARYLAND 21046-1677  
 (410)-513-4640

**SOIL BORING LOGS**

**SW15**  
 SHEET NO.: 72 OF 113  
 S0P-02-64





APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
 [Signature] 9/12/02  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 [Signature] 10/22/02  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 [Signature] 10/23/02  
 DIRECTOR

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 [Signature] 10-12-02  
 COUNTY HEALTH OFFICER  
 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."  
 [Signature] 9/14/02  
 NAME: RANDOLPH G. LEPSON  
 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."  
 [Signature] 06/11/02  
 NAME: MARK S. RICHMOND

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS  
 [Signature] 9/5/02  
 USDA - NATURAL RESOURCES CONSERVATION SERVICE  
 [Signature] 9/5/02  
 THIS DEVELOPMENT IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT  
 [Signature] 9/5/02  
 HOWARD SCD

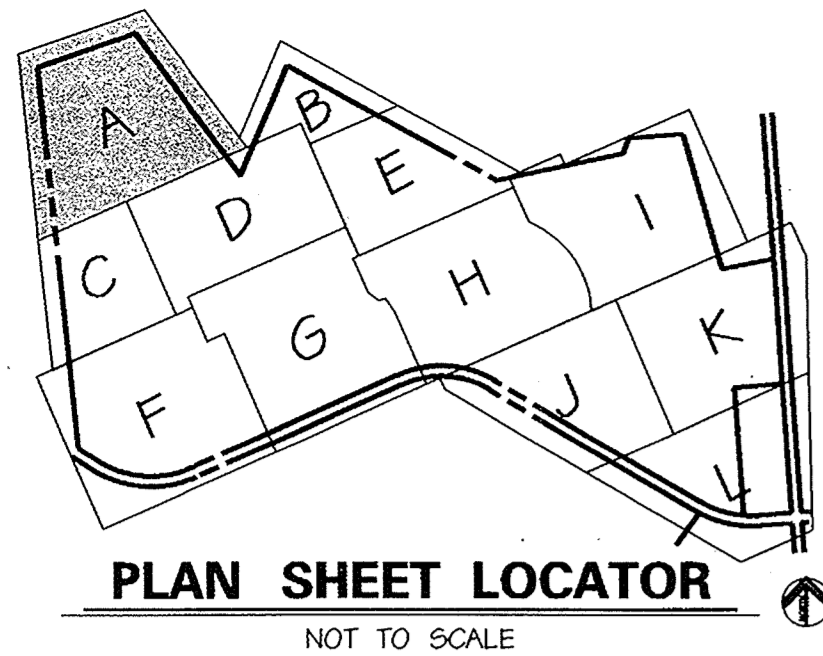
SCALE:  
 DATE: 06-12-02  
 KCI JOB NO.: 01-00057  
 CAPITAL PROJECT NO.: N-3932  
 PERMIT ISSUE:  
 CONSTRUCTION ISSUE:  
**SW16**  
 SHEET NO. 73 OF 145  
 SDP-02-64

DATE: \_\_\_\_\_  
 NO. REVISIONS: \_\_\_\_\_  
 DESCRIPTION: \_\_\_\_\_  
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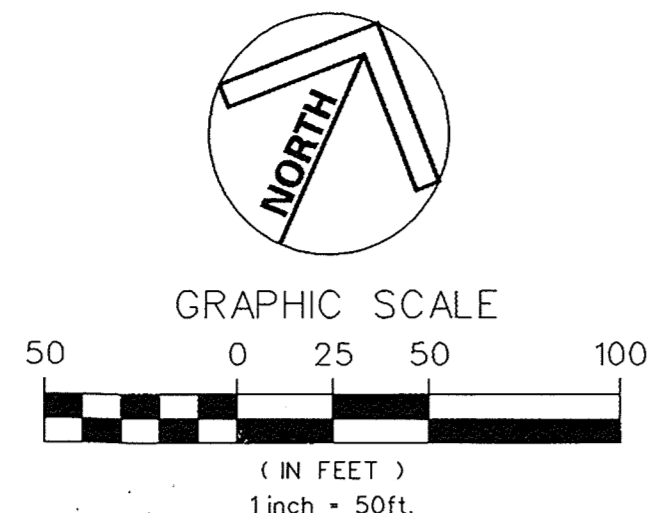
**KCI TECHNOLOGIES INC.**  
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 10 NORTH PARK DRIVE  
 HUNT VALLEY, MARYLAND 21080  
 PHONE: (410) 316-7800 FAX: (410) 316-7817  
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**WESTERN REGIONAL PARK**  
 HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
 7120 OAKLAND ROAD, SUITE 100  
 COLUMBIA, MD 21046-1677  
 (410) 313-4640

**SOIL BORING LOGS**



PLAN SHEET LOCATOR  
NOT TO SCALE



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

**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
- FOREBAY PLANTING
- NATIVE MIX "A"
- BOULDER PLACEMENT
- 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 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 LIGHT POLE
- PROPOSED PADDOCK FENCE

**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 SEEDING 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  
 [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

MATCHLINE - SEE SHEET LS2, PLAN OF AREA C

MATCHLINE - SEE SHEET LS3

NO PROPOSED PLANTING ON THIS SHEET

NO.	REVISIONS DESCRIPTION	DATE

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 10 NORTH PARK DRIVE  
 HUNT VALLEY, MARYLAND 20830  
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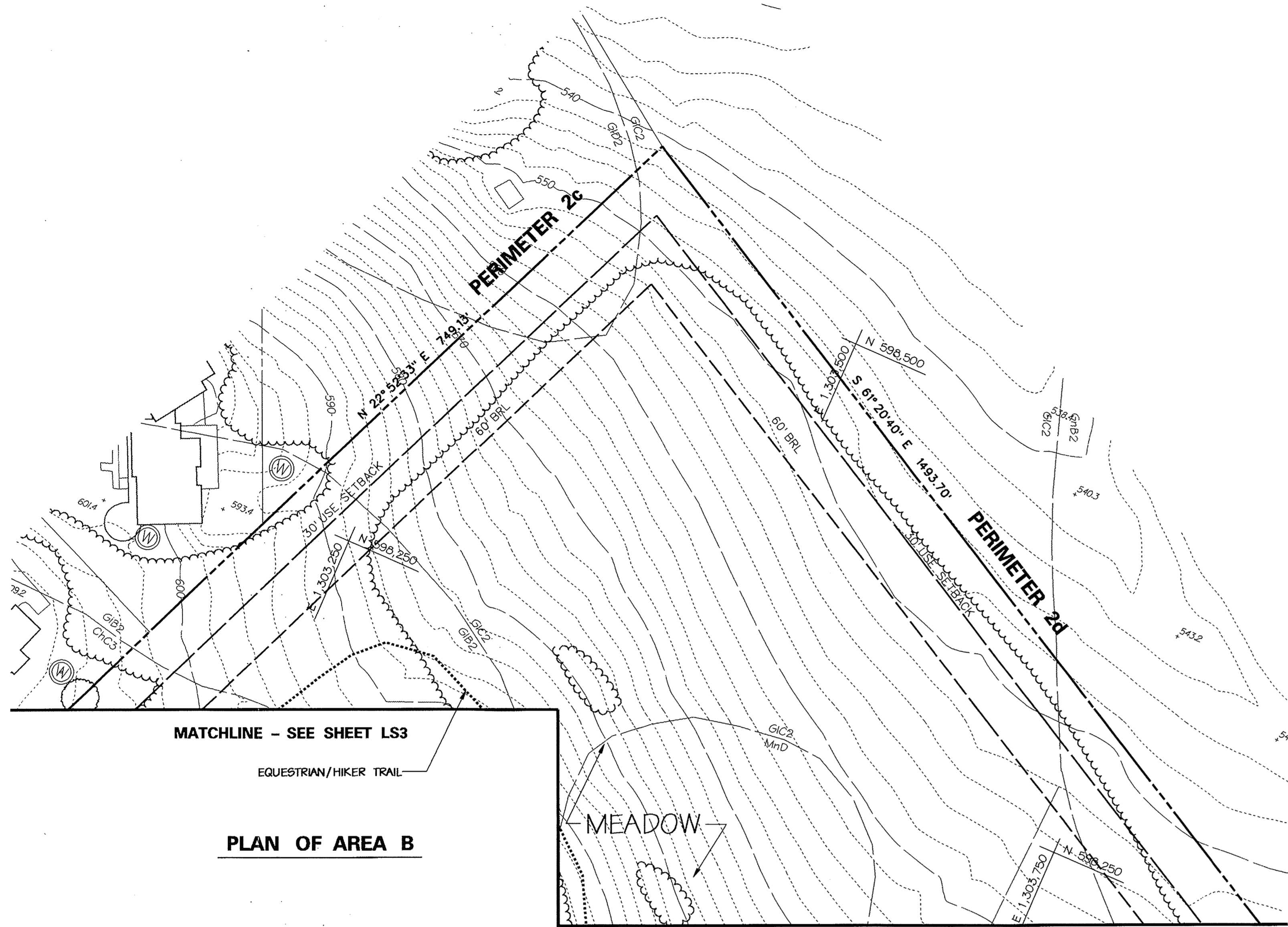
**WESTERN REGIONAL PARK**  
 LANDSCAPE PLAN  
 AREA A

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

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 140

MARYLAND COORDINATE SYSTEM  
 HORIZONTAL NAD 83-91  
 VERTICAL NAVD 29



MATCHLINE - SEE SHEET LS3

EQUESTRIAN/HIKER TRAIL

**PLAN OF AREA B**

MEADOW

MATCHLINE - SEE SHEET LS4

**LEGEND**

- |  |  |  |                                  |
|--|--|--|----------------------------------|
|  | SHRUBS                                       |  | PROPOSED TREE LINE TO REMAIN     |
|  | EVERGREEN TREES                              |  | PROPOSED FENCE LINE              |
|  | ORNAMENTAL OR UNDERSTORY TREES               |  | PROPOSED RETAINING WALL          |
|  | SHADE TREES                                  |  | PROPOSED CONC. CURB & GUTTER     |
|  | EX. INDEX CONTOUR                            |  | PROPOSED ASPHALT PAVING          |
|  | EX. 2' INTERMEDIATE CONTOUR                  |  | PROPOSED INDEX CONTOUR           |
|  | SOIL LINE                                    |  | PROPOSED INTERMEDIATE CONTOUR    |
|  | PROPERTY BOUNDARY                            |  | PROPOSED SPOT ELEVATION          |
|  | EX. TREE (SIGNIFICANT SIZE OR LOCATION)      |  | PROPOSED INLET                   |
|  | EX. WOODS LINE                               |  | PROPOSED STORM DRAIN END SECTION |
|  | SURVEYED WETLAND (BUILDING RESTRICTION LINE) |  | PROPOSED STORM DRAIN MANHOLE     |
|  | EX. STREAMS                                  |  | PROPOSED STORM DRAIN             |
|  | 75' STREAM BUFFER                            |  | PROPOSED SEPTIC TANK             |
|  | EQUESTRIAN/HIKING TRAIL                      |  | PROPOSED SANITARY SEWER          |
|  | EX. SPOT ELEVATION                           |  | PROPOSED SEWER MANHOLE           |
|  | PROPOSED ASPHALT PATH                        |  | PROPOSED SEPTIC DRAIN FIELD      |
|  | PROPOSED CONCRETE PATH                       |  | 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   |

DRAIN FIELD #1 REPLACEMENT (1,700 SF)  
6-P5

DRAIN FIELD #1 PRIMARY (1,700 SF)  
2-P5

**NOTES**

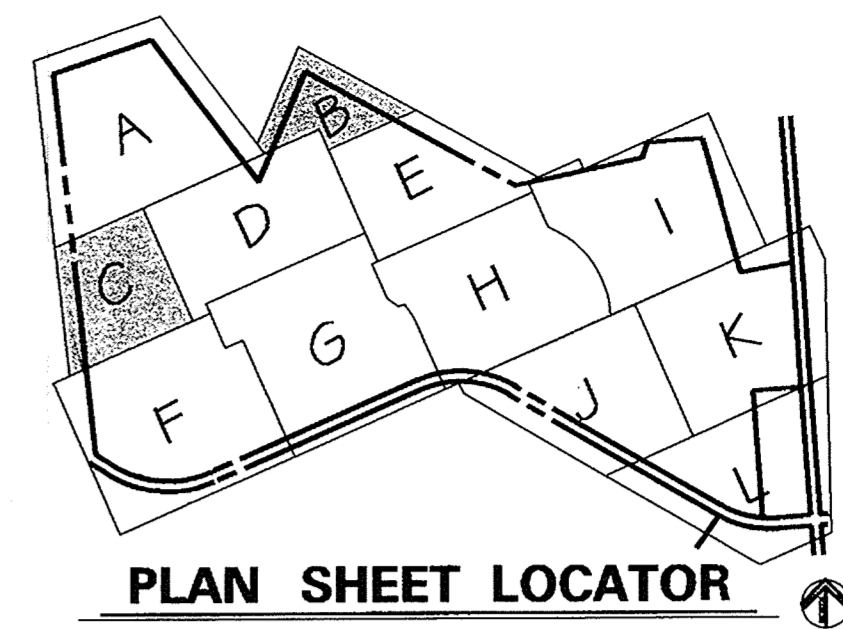
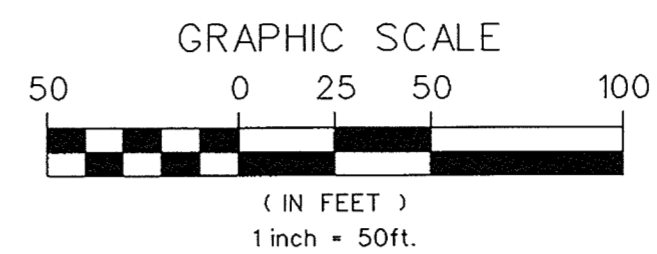
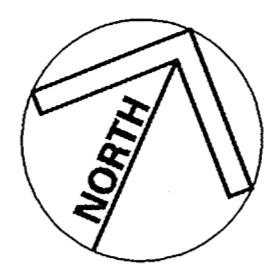
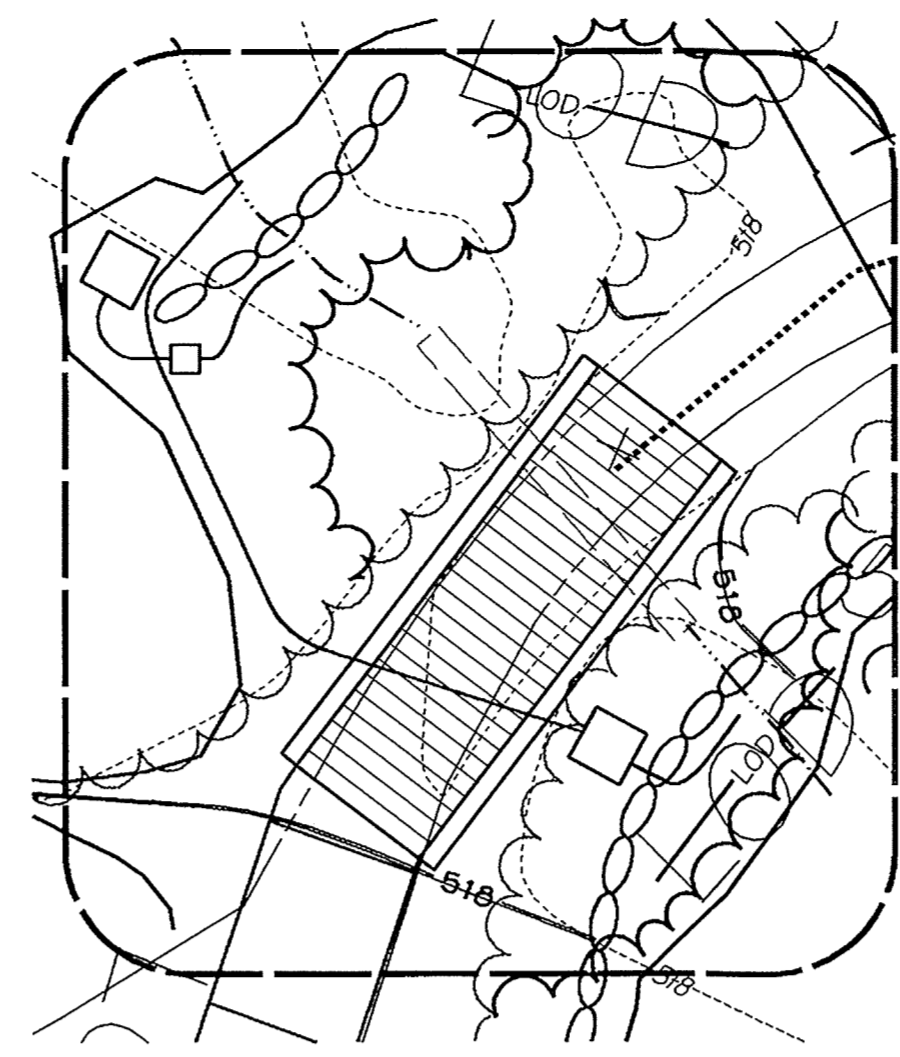
- SEE ENLARGED LANDSCAPE PLANS FOR PLANTINGS OF STORMWATER MANAGEMENT AND BIORETENTION FACILITIES.
- SEE LS12 FOR PLANT LISTS AND HOWARD COUNTY LANDSCAPE TABULATIONS.
- SEE LS13 FOR PLANTING DETAILS AND NOTES.
- MASS PLANTINGS OF SHRUBS SHALL BE MULCHED WITH 3" DEPTH HARDWOOD MULCH AS CONTINUOUS PLANTING BEDS.
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APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
*[Signature]* 01/17/02  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*[Signature]* 10/22/02  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*[Signature]* 10/23/02  
 REC'D. DATE

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



PLAN SHEET LOCATOR

NOT TO SCALE

MATCHLINE - SEE SHEET LS1



HARDWOOD FOREST

HARDWOOD FOREST

MATCHLINE - SEE SHEET LS5

**PLAN OF AREA C**

MATCHLINE - SEE SHEET LS3

NO.	REVISIONS DESCRIPTION	DATE

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 WWW.KCI.COM



**WESTERN REGIONAL PARK**  
 LANDSCAPE PLAN  
 AREAS B & C

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
 1100 OAKLAND MILLS ROAD  
 COLUMBIA, MARYLAND 21046-1877  
 (410)-313-4640

SCALE: 1" = 50'

DATE: 06-12-02

KCI JOB NO.: 01-00057

CAPITAL PROJECT NO.: N-3932

PERMIT ISSUE:

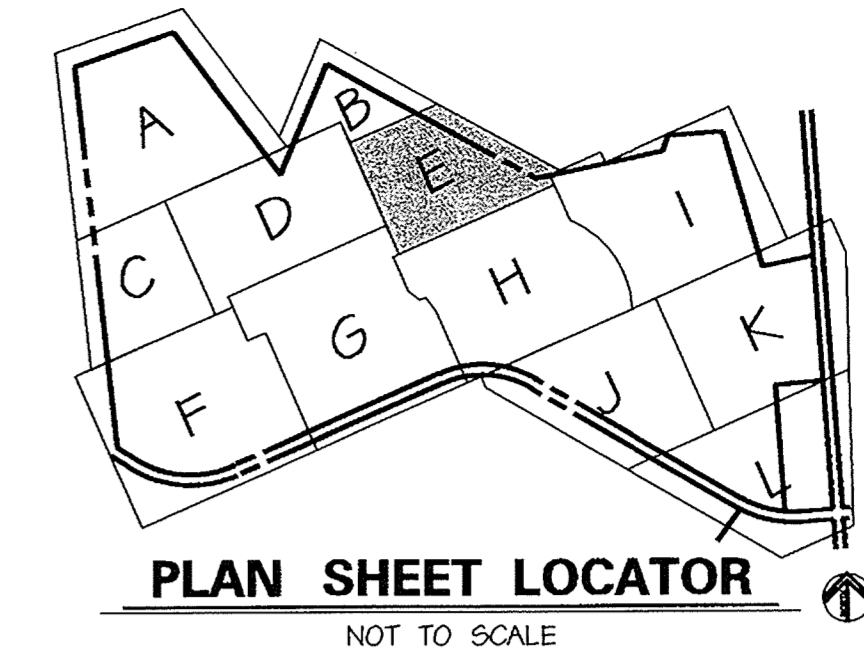
CONSTRUCTION ISSUE:

**LS2**

SHEET NO.: 75 OF 118



MATCHLINE - SEE SHEET LS2, PLAN OF AREA B

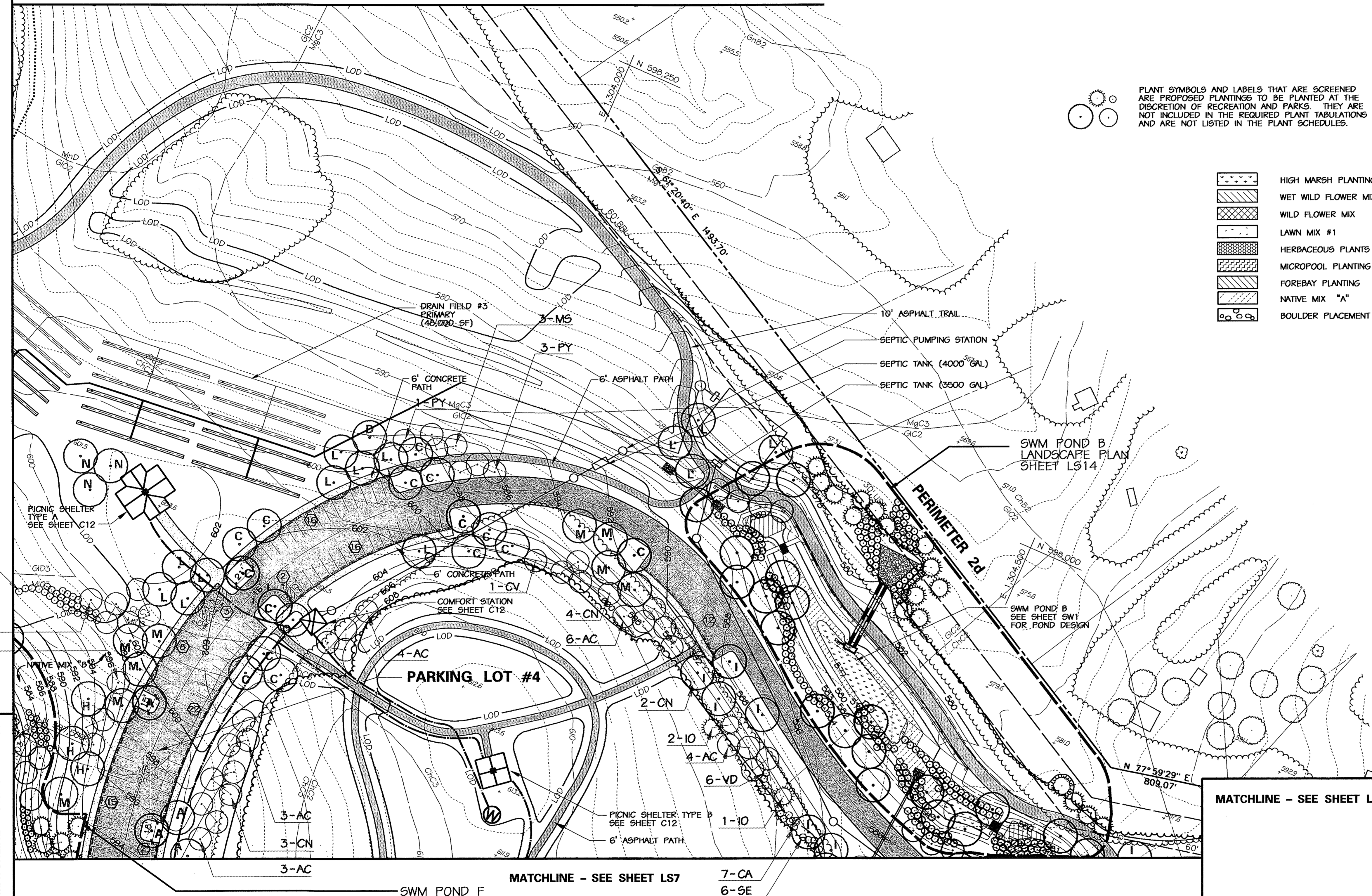


LEGEND

- 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
- 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
- PROPOSED SANITARY SEWER
- 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



MATCHLINE - SEE SHEET LS8

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

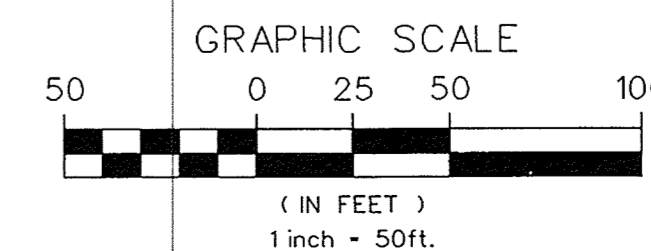
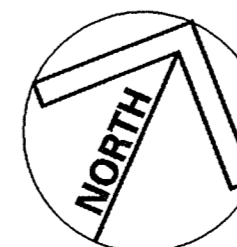
[Signature] 10/22/02  
 DIRECTOR DATE

APPROVED, FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 [Signature] 10-17-02  
 COUNTY HEALTH OFFICER DATE  
 HOWARD COUNTY HEALTH DEPARTMENT

SWM POND F  
 LANDSCAPE PLAN  
 SHEET LS16

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 DESTROYED 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.



MARYLAND COORDINATE SYSTEM  
 HORIZONTAL NAD 83-91  
 VERTICAL NAVD 29

NO.	REVISIONS DESCRIPTION	DATE

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



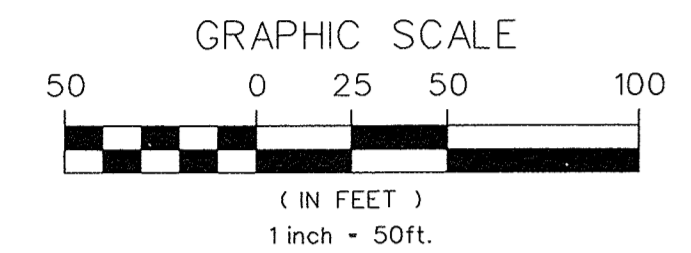
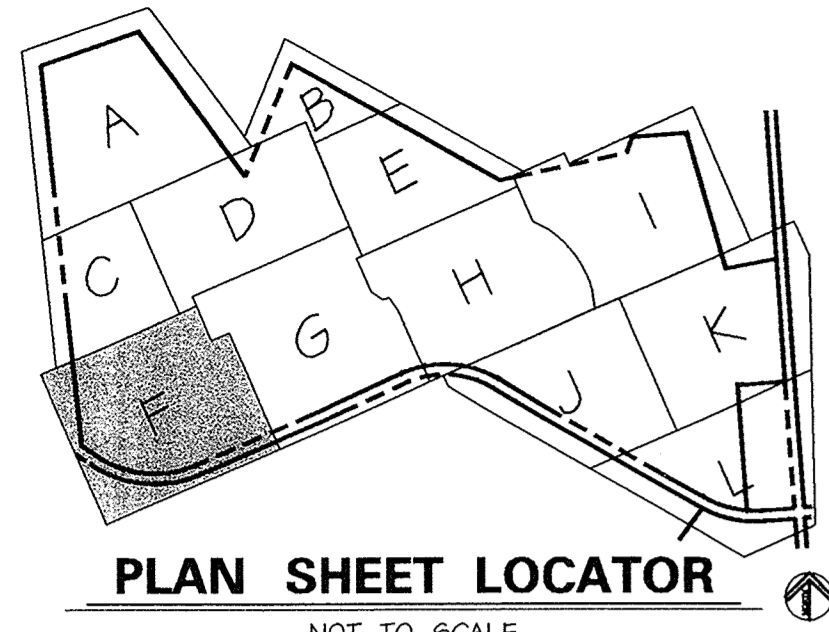
WESTERN REGIONAL PARK  
 HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
 7120 OAKLAND MILLS ROAD  
 COLUMBIA, MARYLAND 21046-1677  
 (410)-313-4640

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:	

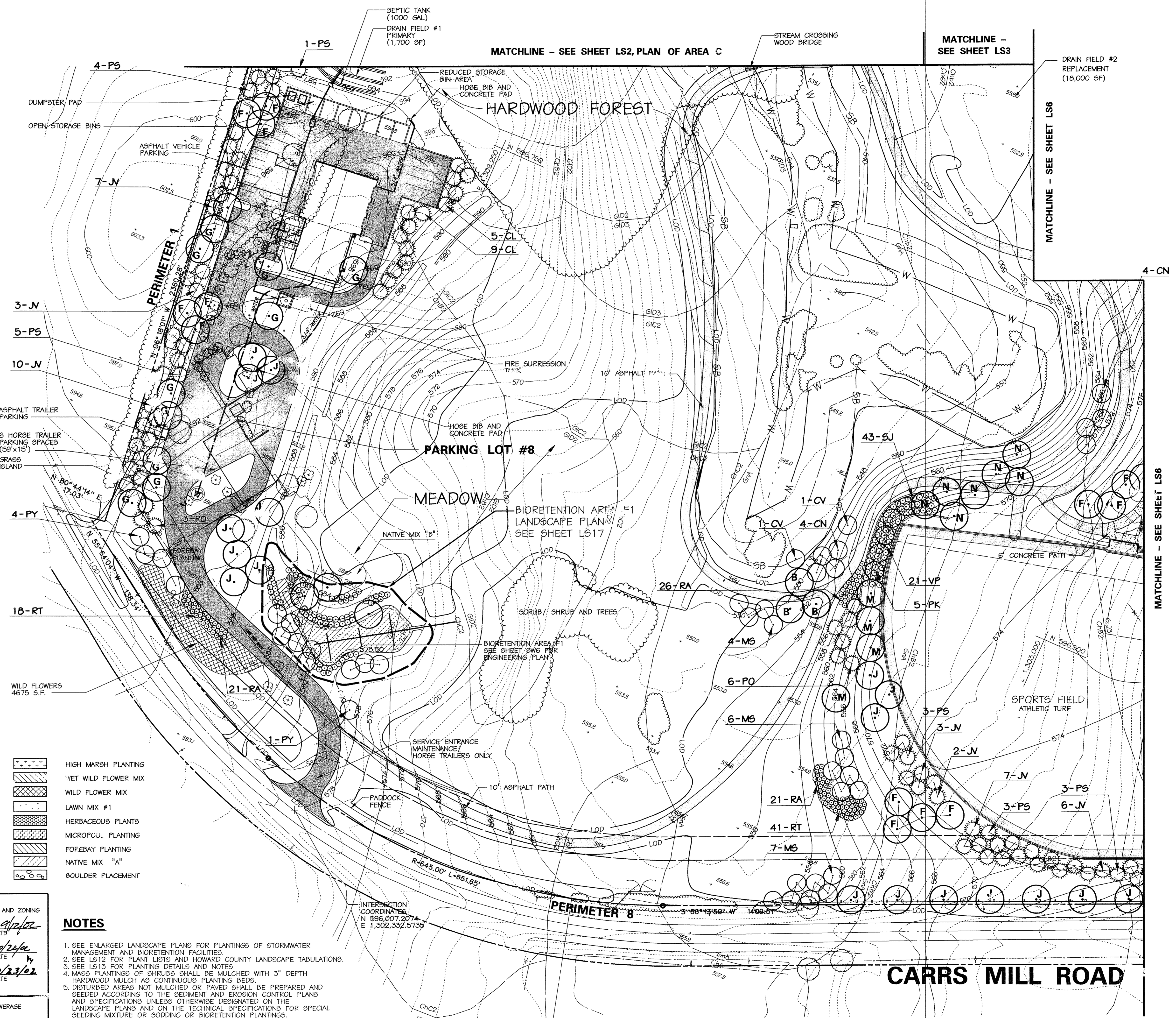
LS4  
 SHEET NO. 77 OF 143



**LEGEND**

	EX. INDEX CONTOUR
	EX. 2' INTERMEDIATE CONTOUR
	901 LINE
	PROPERTY BOUNDARY
	EX. TREE (SIGNIFICANT SIZE OR LOCATION)
	EX. WOODS LINE
	EX. WETLAND (BUILDING RESTRICTION LINE)
	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 SEPTIC DRAIN FIELD
	PROPOSED MONITORING WELL
	PROPOSED LIGHT POLE
	PROPOSED CHICKEN 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.



- NOTES**
- SEE ENLARGED LANDSCAPE PLANS FOR PLANTINGS OF STORMWATER MANAGEMENT AND BIORETENTION FACILITIES.
  - SEE LS12 FOR PLANT LISTS AND HOWARD COUNTY LANDSCAPE TABULATIONS.
  - SEE LS13 FOR PLANTING DETAILS AND NOTES.
  - MASS PLANTINGS OF SHRUBS SHALL BE MULCHED WITH 3" DEPTH HARDWOOD MULCH AS CONTINUOUS PLANTING BEDS.
  - 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  
*Howard County Seal*  
 DATE: 9/2/02  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

*Cindy Hamant*  
 DATE: 10/2/02  
 CHIEF, DIVISION OF LAND DEVELOPMENT

*Paul Rutter*  
 DATE: 10/23/02  
 DIRECTOR

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

NO.	REVISIONS DESCRIPTION	DATE
1	ADDED CHANGES TO PAVING, BUILDING, AND UTILITY LAYOUT	1/09/07

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 ENGINEERS • PLANNERS • SURVEYORS  
 10 NORTH PARK DRIVE  
 ELLENDALE, VA. • VA. • MARYLAND 21030  
 PHONE: (410) 316-7800 FAX: (410) 316-7817  
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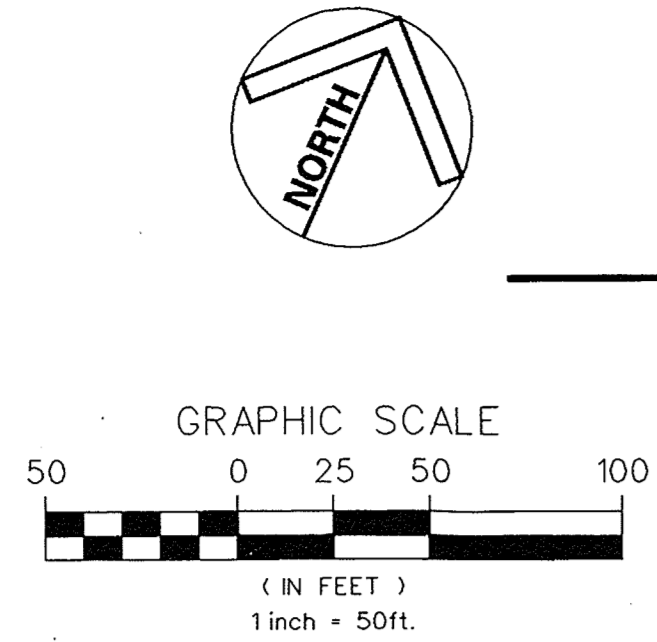
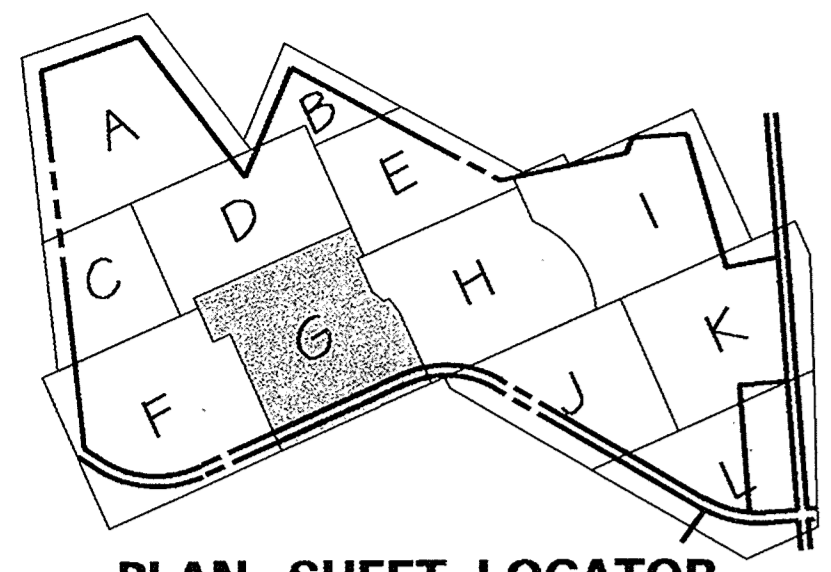


**WESTERN REGIONAL PARK**  
 HOWARD COUNTY, DEPARTMENT OF RECREATION AND PARKS  
 COLUMBIA, MARYLAND 21046-1677  
 PHONE: (410) 316-7800 FAX: (410) 316-7817

**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 135  
 9DP-02-64



**LEGEND**

- 590 --- EX. INDEX CONTOUR
- GIC2 --- EX. 2' INTERMEDIATE CONTOUR
- SOIL LINE --- SOIL LINE
- PROPERTY BOUNDARY --- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- EX. WOODS LINE --- EX. WOODS LINE
- W --- SURVEYED WETLAND (BUILDING RESTRICTION LINE)
- EX. STREAMS --- EX. STREAMS
- 5B --- 75' STREAM BUFFER
- EQUESTRIAN/HIKING TRAIL --- EQUESTRIAN/HIKING TRAIL
- 5709 EX. SPOT ELEVATION
- PROPOSED TREE LINE --- PROPOSED TREE LINE
- PROPOSED ASPHALT PATH --- PROPOSED ASPHALT PATH
- PROPOSED CONCRETE PATH --- PROPOSED CONCRETE PATH
- PROPOSED FENCE LINE --- PROPOSED FENCE LINE
- PROPOSED RETAINING WALL --- PROPOSED RETAINING WALL
- PROPOSED CONC. CURB & GUTTER --- PROPOSED CONC. CURB & GUTTER
- PROPOSED ASPHALT PAVING --- 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 SEPTIC DRAIN FIELD
- PROPOSED MONITORING WELL
- SHRUBS
- EVERGREEN TREES
- ORNAMENTAL OR UNDERSTORY TREES
- SHADE TREES
- HIGH MARSH PLANTING --- HIGH MARSH PLANTING
- WET WILD FLOWER MIX --- WET WILD FLOWER MIX
- WILD FLOWER MIX --- WILD FLOWER MIX
- LAWN MIX #1 --- LAWN MIX #1
- HERBACEOUS PLANTS --- HERBACEOUS PLANTS
- MICROPOOL PLANTING --- MICROPOOL PLANTING
- FOREBAY PLANTING --- FOREBAY PLANTING
- NATIVE MIX "A" --- NATIVE MIX "A"
- BOULDER PLACEMENT --- BOULDER PLACEMENT

- NOTES**
- SEE ENLARGED LANDSCAPE PLANS FOR PLANTINGS OF STORMWATER MANAGEMENT AND BIORETENTION FACILITIES.
  - SEE L512 FOR PLANT LISTS AND HOWARD COUNTY LANDSCAPE TABULATIONS.
  - SEE L513 FOR PLANTING DETAILS AND NOTES.
  - MASS PLANTINGS OF SHRUBS SHALL BE MULCHED WITH 3" DEPTH HARDWOOD MULCH AS CONTINUOUS PLANTING BEDS.
  - 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

*[Signature]* 9/12/02  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*[Signature]* 11/23/02  
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

BIORETENTION AREA F3  
LANDSCAPE PLAN  
SHEET L518

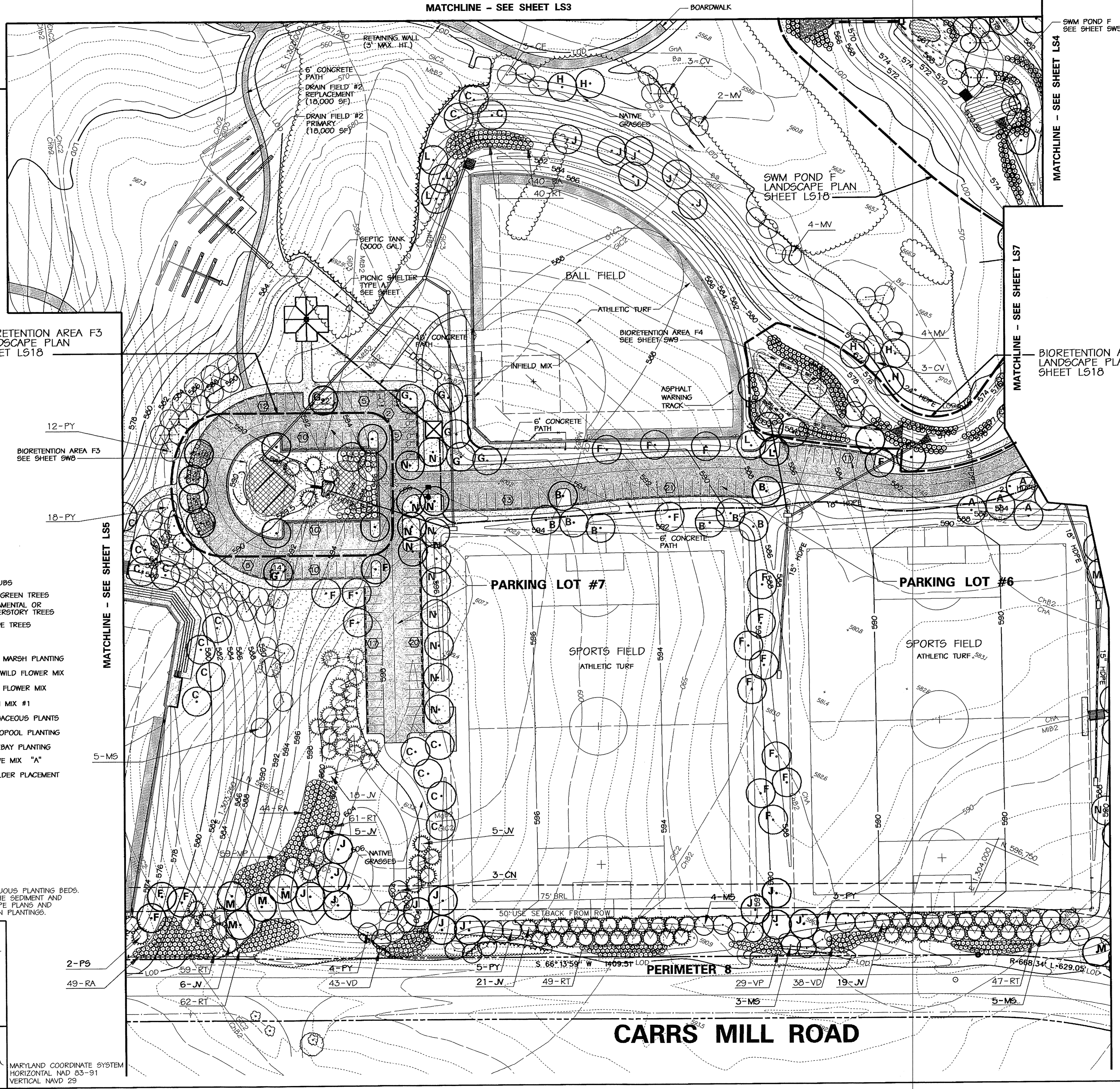
BIORETENTION AREA F3  
SEE SHEET 5W8

BIORETENTION AREA F3  
SEE SHEET L55

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

MARYLAND COORDINATE SYSTEM  
HORIZONTAL NAVD 83-91  
VERTICAL NAVD 29



NO.	REVISIONS DESCRIPTION	DATE

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HUNT VALLEY, MARYLAND 20880  
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WWW.KCI.COM



**WESTERN REGIONAL PARK**  
HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
11200 ORLAND ROAD  
COLUMBIA, MD 21046-1677  
(410) 313-4640

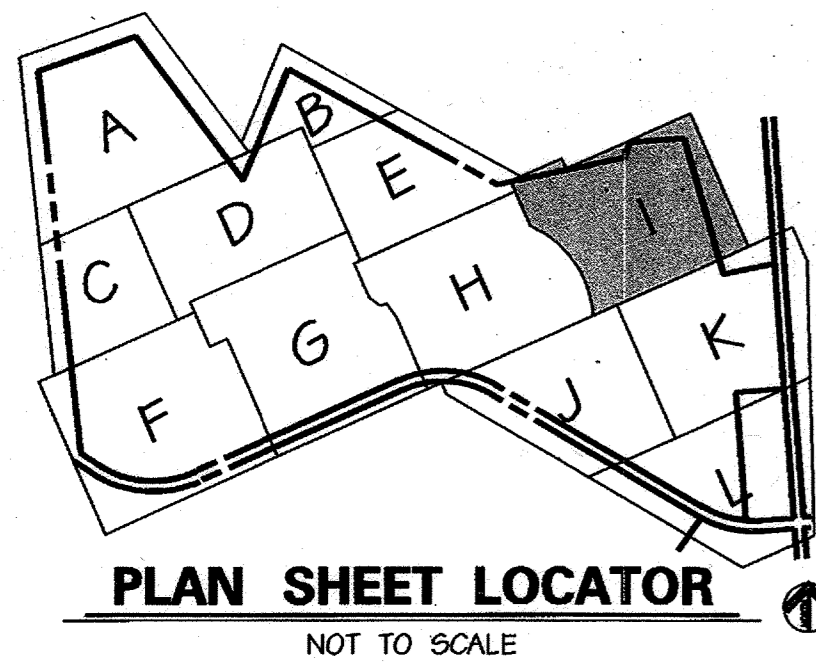
**LANDSCAPE PLAN**  
AREA G

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







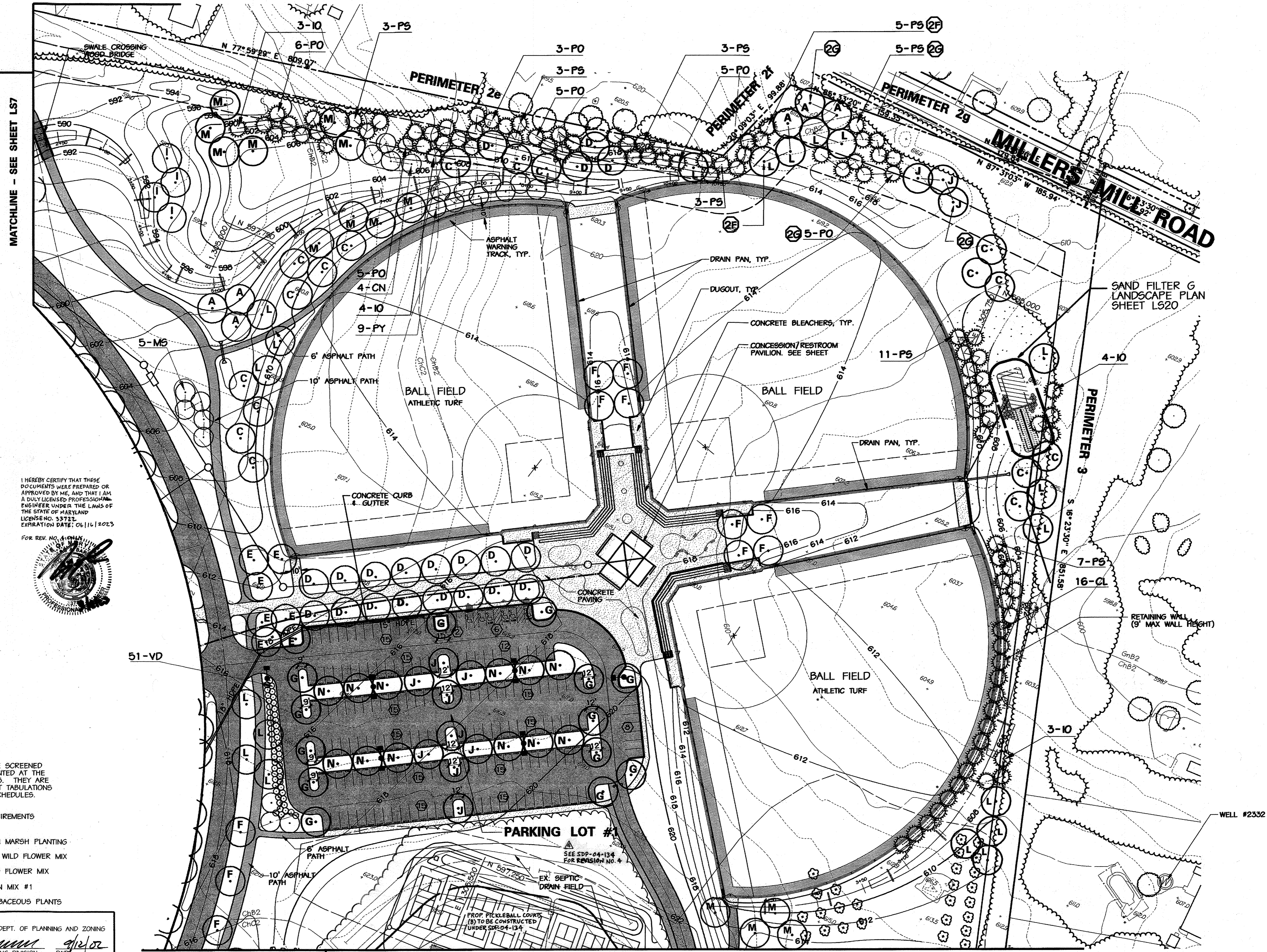
**PLAN SHEET LOCATOR**

NOT TO SCALE

**LEGEND**

- 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
- 9B 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
- 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
- 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.
- 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

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 53722. EXPIRATION DATE: 06/11/2023

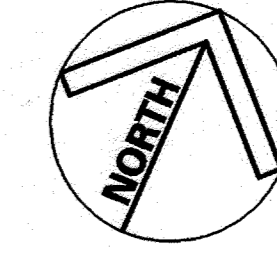
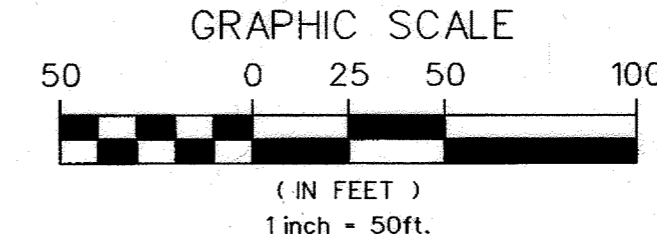
FOR REV. NO. 410N

MATCHLINE - SEE SHEET LS9

MATCHLINE - SEE SHEET LS10

**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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5. DISTURBED AREAS NOT MULCHED OR PAVED SHALL BE PREPARED AND SEEDING 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.



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

*Ms. [Signature]* 9/12/02  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Cindy Hamrick* 10/22/02  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Joseph Smith* 10/22/02  
DIRECTOR DATE

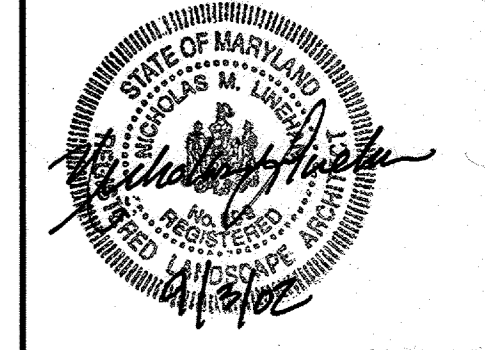
APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

*Perry [Signature]* 10-17-02  
COUNTY HEALTH OFFICER DATE  
HOWARD COUNTY HEALTH DEPARTMENT

NO.	REVISIONS DESCRIPTION	DATE
1	ADD PICKLEBALL COURTS	3-9-23

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30 NORTH PARK DRIVE  
HUNT VALLEY, MARYLAND 21030  
PHONE: (410) 316-7800 FAX: (410) 316-7817  
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 I

SCALE: 1" = 50'

DATE: 06-12-02

KCI JOB NO.: 01-00057

CAPITAL PROJECT NO.: N-3932

PERMIT ISSUE:

CONSTRUCTION ISSUE:

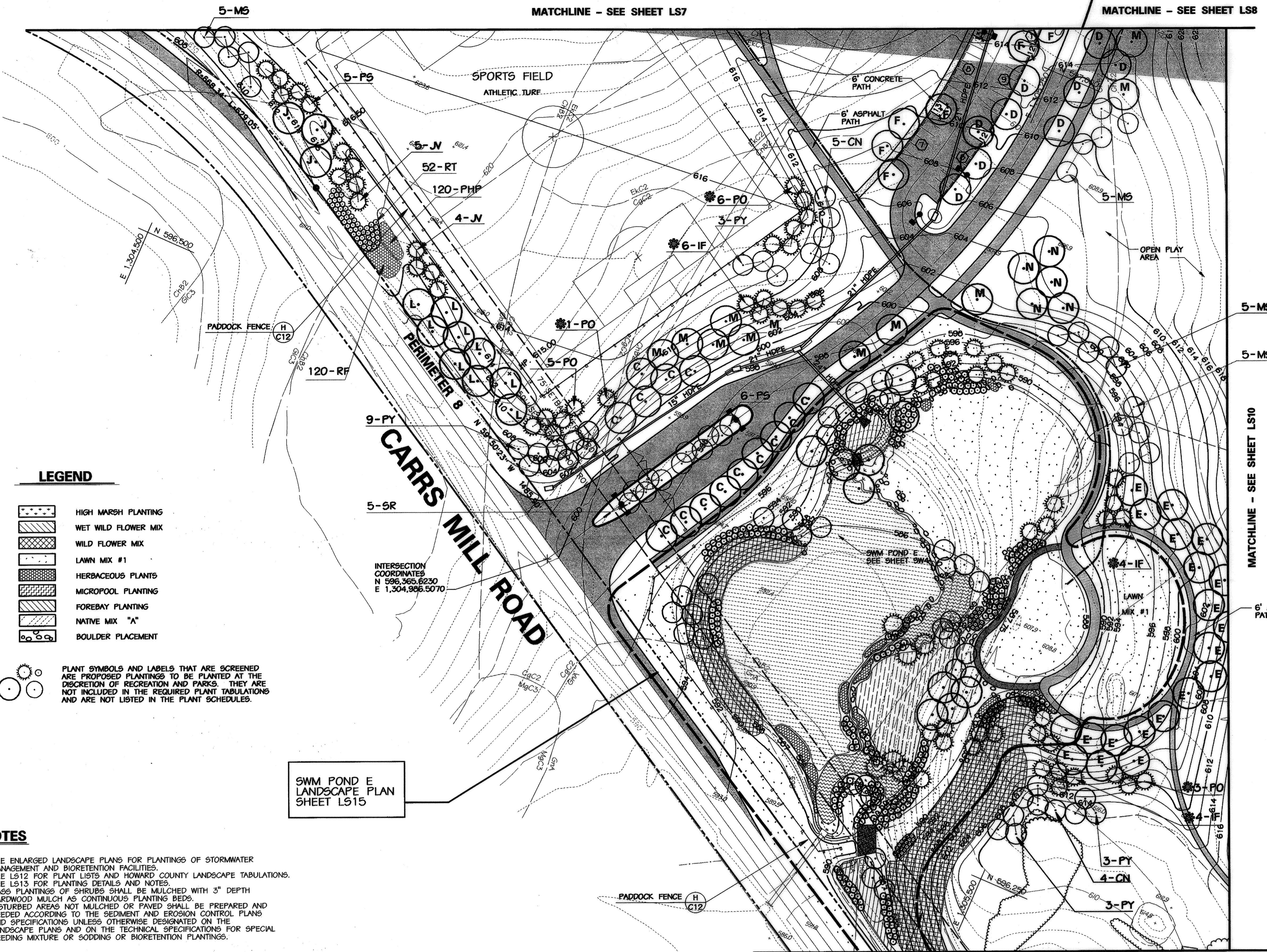
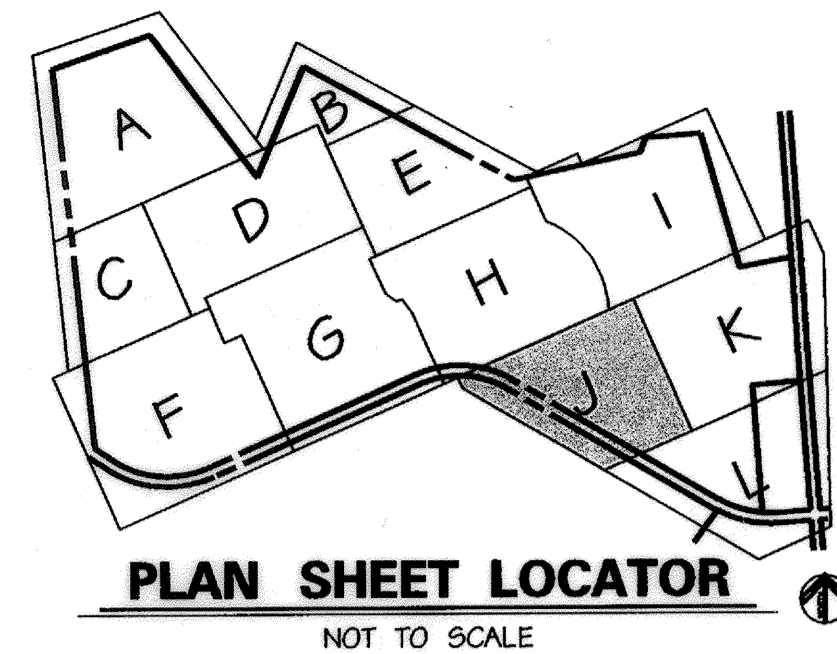
**LS8**

SHEET NO.: 81 OF 138

50P-02-64

MATCHLINE - SEE SHEET LS7

MATCHLINE - SEE SHEET LS8



**LEGEND**

- 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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**NOTES**

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2. SEE LS12 FOR PLANT LISTS AND HOWARD COUNTY LANDSCAPE TABULATIONS.
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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.

SWM POND E  
LANDSCAPE PLAN  
SHEET LS15

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
 Chief, Development Engineering Division  
 Cindy Hamrick  
 Chief, Division of Land Development  
 Leny Brantley  
 Director

DATE: 01/21/02  
 DATE: 11/24/01  
 DATE: 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 County Health Officer  
 Leny Brantley  
 DATE: 10-17-02

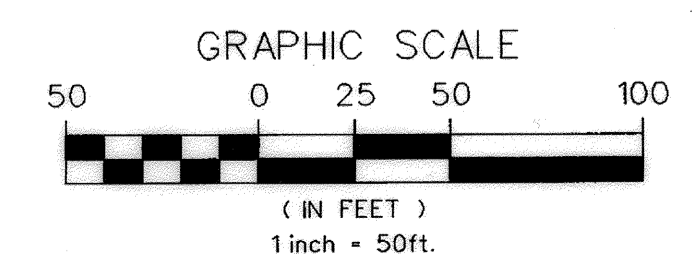
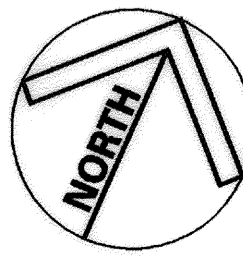
MATCHLINE - SEE SHEET LS11

**\*6-IF** DESIGNATES PLANTINGS TO BE COUNTED FOR EVERGREEN REQUIREMENTS FOR STORMWATER MANAGEMENT FOND E. SEE ENLARGED LANDSCAPE PLAN FOR DETAILED PLANTINGS IN SWM POND.

UPLAND MEADOW/WILDFLOWER MIX

- 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

MATCHLINE - SEE SHEET LS10

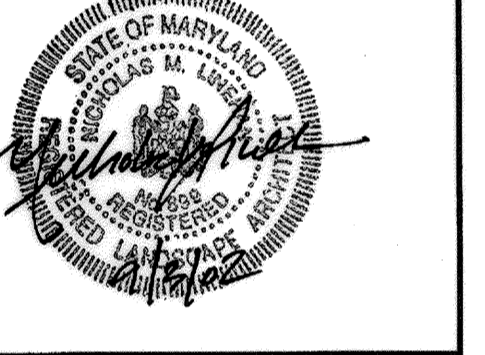


MARYLAND COORDINATE SYSTEM  
 HORIZONTAL NAD 83-91  
 VERTICAL NAVD 29

NO.	REVISIONS DESCRIPTION	DATE

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



**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**

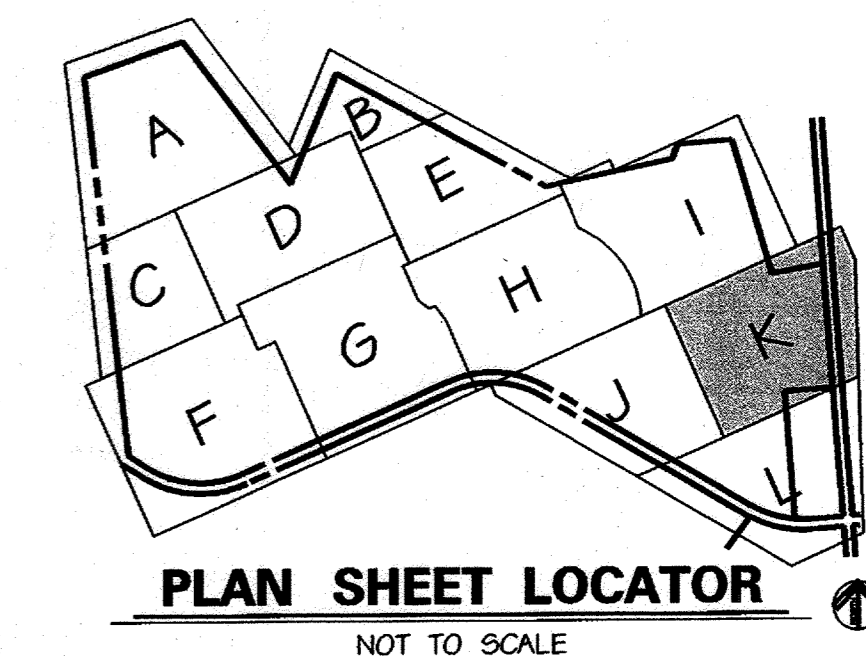
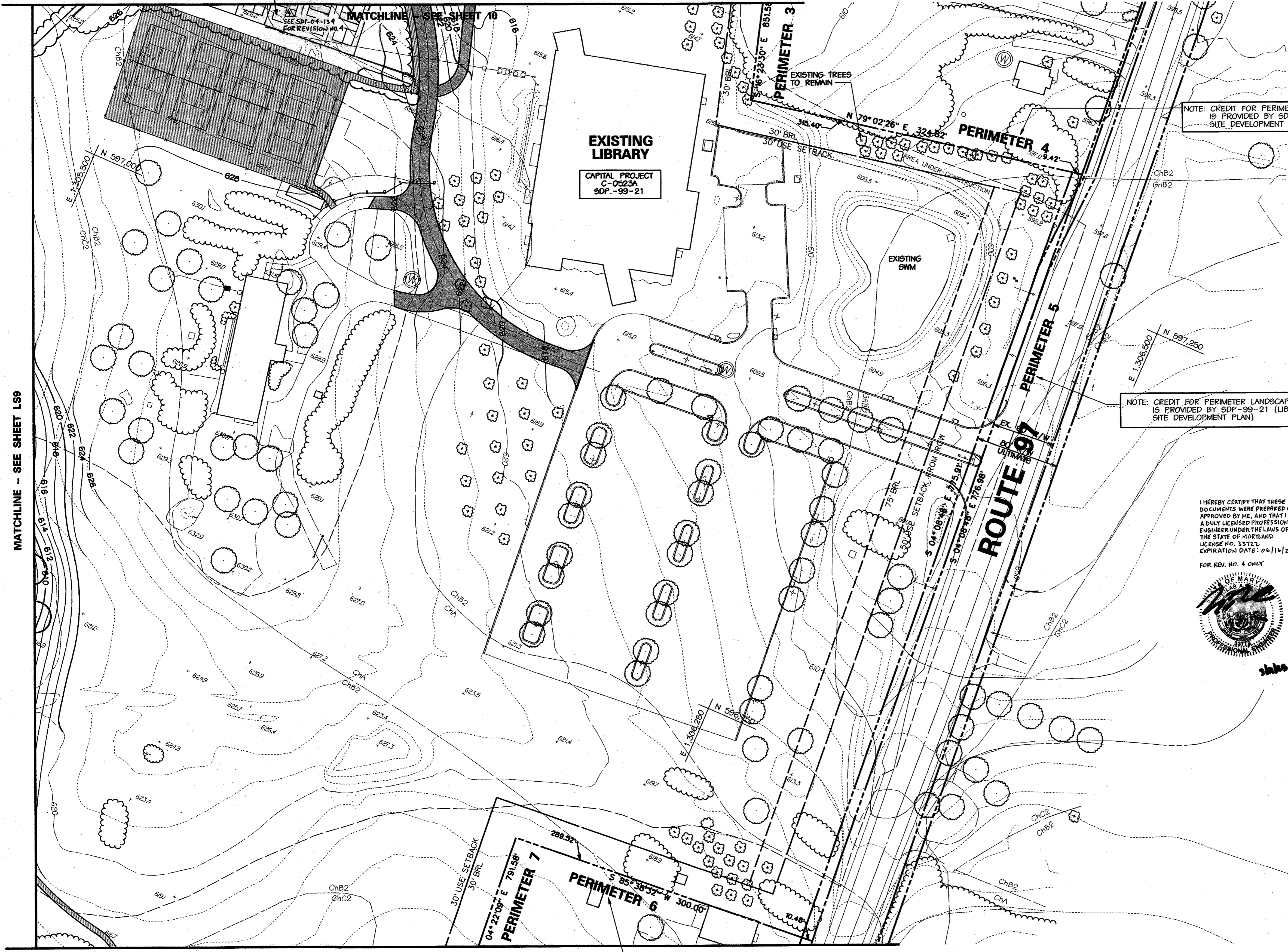
SHEET NO.: 82 OF 114

PROP. PICKLEBALL COURTS (8)  
TO BE CONSTRUCTED  
UNDER SDP-04-134

MATCHLINE - SEE SHEET LS8

MATCHLINE - SEE SHEET LS10

MATCHLINE - SEE SHEET LS11



**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
- 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
- PROPOSED SANITARY SEWER
- PROPOSED SEWER MANHOLE
- PROPOSED SEPTIC DRAIN FIELD
- PROPOSED MONITORING WELL
- 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

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)

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE NO. 33722 EXPIRATION DATE: 06/11/2023 FOR REV. NO. 4 ONLY



**NOTES**

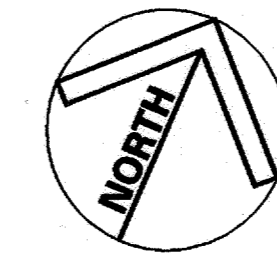
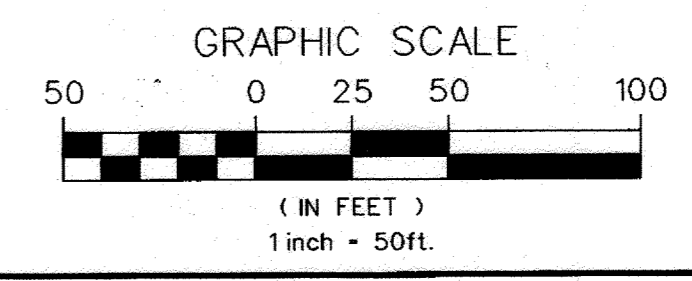
1. SEE ENLARGED LANDSCAPE PLANS FOR PLANTINGS OF STORMWATER MANAGEMENT AND BIORETENTION FACILITIES.
2. SEE LS12 FOR PLANT LISTS AND HOWARD COUNTY LANDSCAPE TABULATIONS.
3. SEE LS13 FOR PLANTING DETAILS AND NOTES.
4. MASS PLANTINGS OF SHRUBS SHALL BE MULCHED WITH 3" DEPTH HARDWOOD MULCH AS CONTINUOUS 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.

NO PROPOSED PLANTING ON THIS SHEET

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
*[Signature]* 9/12/02  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
*[Signature]* 10/24/02  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
*[Signature]* 10/23/02  
 DIRECTOR

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
*[Signature]* 10-17-02  
 COUNTY HEALTH OFFICER  
 HOWARD COUNTY HEALTH DEPARTMENT

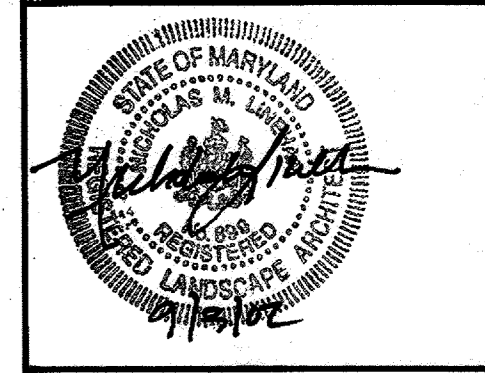
NOTE: CREDIT FOR PERIMETER LANDSCAPING IS PROVIDED BY SDP-99-21 (LIBRARY SITE DEVELOPMENT PLAN)



MARYLAND COORDINATE SYSTEM  
 HORIZONTAL NAD 83-91  
 VERTICAL NAVD 29

NO.	REVISION DESCRIPTION	DATE
1	ADD PICKLEBALL COURTS	3-1-23

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



**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:

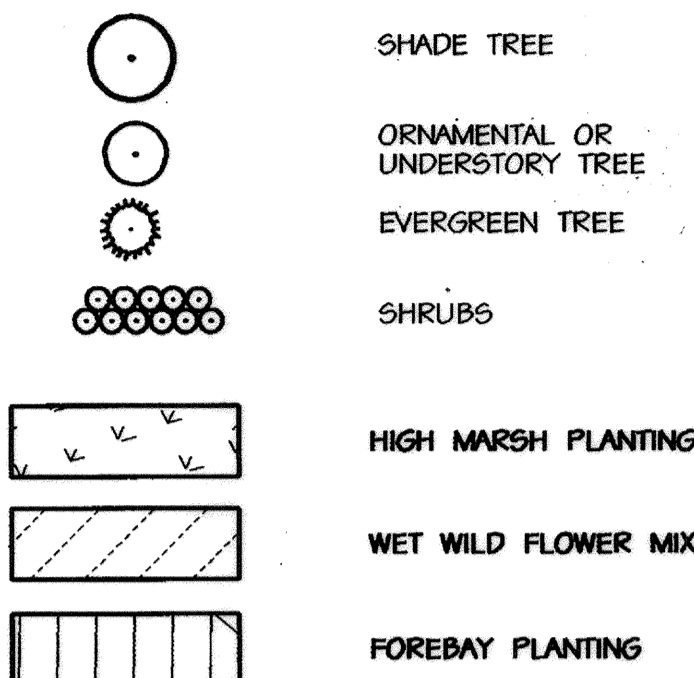
**LS10**  
 SHEET NO. 83 OF 113  
 50P-02-64







**LEGEND**



**PLANT LIST  
STORMWATER MANAGEMENT POND "B"**

KEY	BOTANICAL NAME / COMMON NAME	SIZE	QTY	ROOT	REMARK
<b>SHADE TREES</b>					
H	Liquidambar styraciflua / Rotundiloba / Rotundiloba Sweet Gum	2-1/2" - 3" CAL.	11	Ø4 Ø	
I	Nyssa sylvatica / Black Gum	2-1/2" - 3" CAL.	7	Ø4 Ø	
L	Quercus rubra / Red Oak	2-1/2" - 3" CAL.	2	Ø4 Ø	
<b>ORNAMENTAL OR UNDERSTORY TREES</b>					
AC	Amelanchier canadensis / Shadblow Serviceberry	Ø - 10' HT.	4	Ø4 Ø	
MV	Magnolia virginiana / Sweetbay Magnolia	Ø - 10' HT.	3	Ø4 Ø	
<b>EVERGREEN TREES</b>					
IO	Ilex opaca / Foster's Holly	6-8' HT.	11	Ø4 Ø	
PO	Picea omarika / Serbian Spruce	6-8' HT.	6	Ø4 Ø	
<b>SHRUBS</b>					
CA	Cornus amomum / Silky Dogwood	2-2 1/2' HT.	79	Ø4 Ø	
IV	Ilex verticillata / Winterberry	2-2 1/2' HT.	57	Ø4 Ø	
RT	Rhus typhina / Staghorn Sumac	2-2 1/2' HT.	23	Ø4 Ø	
SE	Salix exigua / Coyote Willow	2-2 1/2' HT.	57	Ø4 Ø	
VD	Viburnum dentatum / Arrowwood Viburnum	2-2 1/2' HT.	69	Ø4 Ø	

**PLANT LIST SWM "B"  
FOREBAY PLANTING AREAS**

BOTANICAL NAME / COMMON NAME	SIZE	QTY	ROOT	REMARKS
<b>HERBACEOUS PLANTS</b>				
Carex comosa / Bottle Brush Sedge		30 25		
Dichanthium scoparium / Broom Panic Sedge		30 25		
Lobelia cardinalis / Cardinal Flower		15 12		
Scirpus fluviatilis / River Bulrush		45 35		
Scirpus pungens / Common 3 Square		35 25		
<b>NATIVE SEED MIX "A"</b>				.25 lbs. / 1000 s.f.

**PLANT LIST SWM "B"  
HIGH MARSH PLANTING AREA**

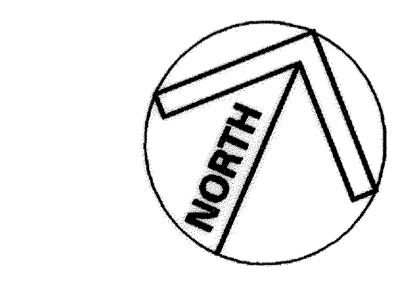
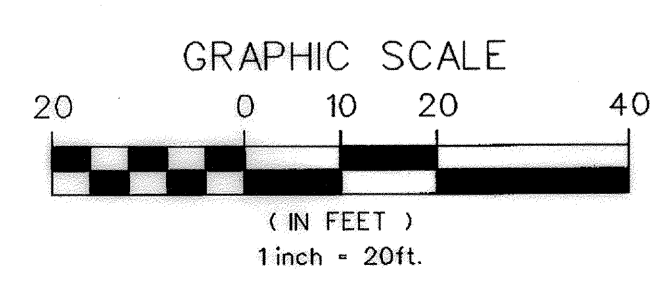
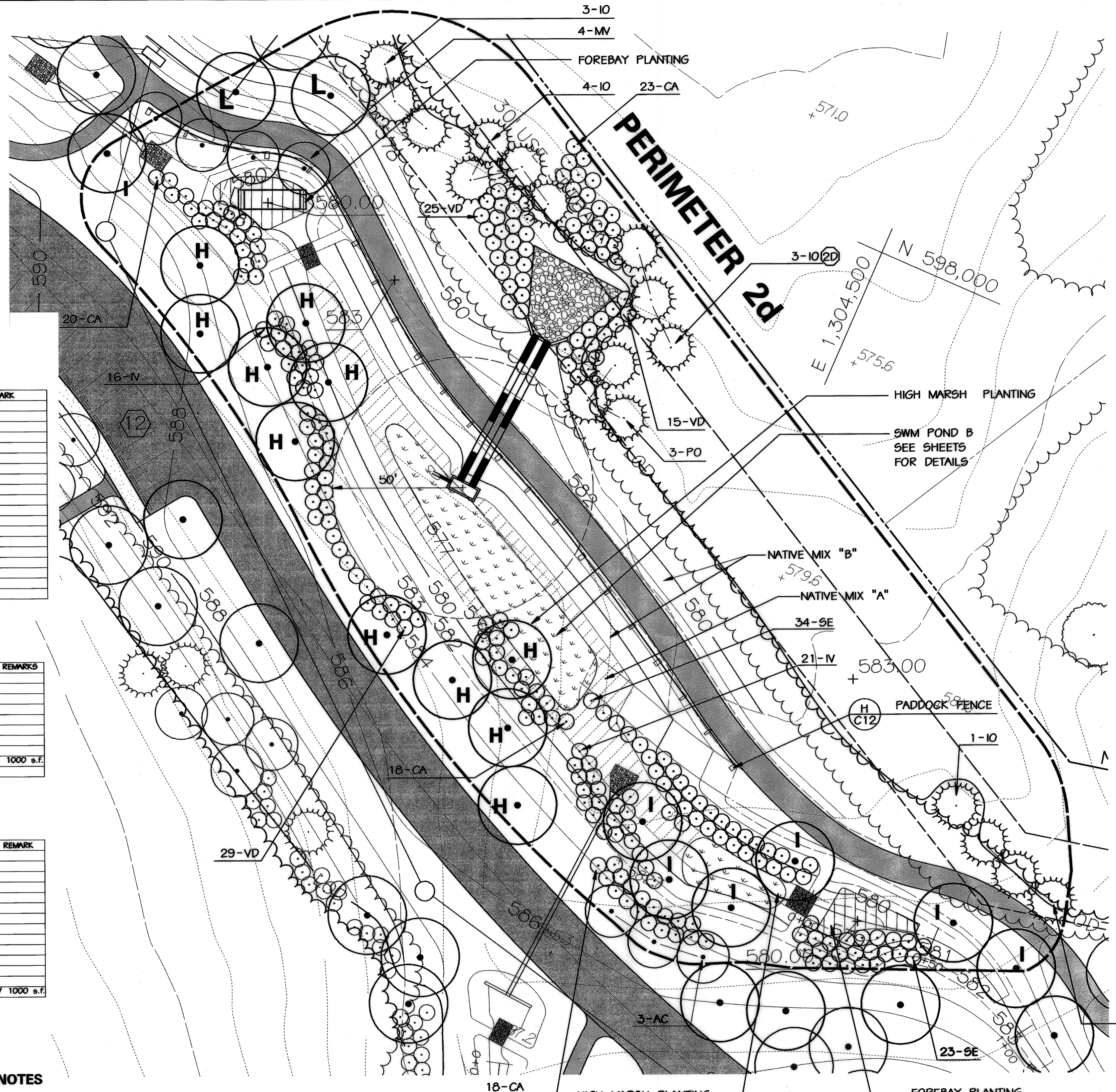
BOTANICAL NAME / COMMON NAME	SIZE	QTY	ROOT	REMARK
<b>HERBACEOUS PLANTS</b>				
Andropogon glomeratus / Lowland Broom Sedge		75		
Andropogon virginicus / Broom Sedge		105		
Asclepias incarnata / Swamp Milkweed		105		
Aster novae-angliae / New England Aster		35		
Caltha palustris / Marsh Marigold		140		
Eupatorium perfoliatum / Boneset		65		
Iris versicolor / Blue Flag		35		
Monarda didyma / Beebalm		35		
Physotegia purpurea / Dragon Head Purple		35		
<b>NATIVE SEED MIX "A"</b>				.25 lbs. / 1000 s.f.

**NOTES**

- SEE SHEET LS20 FOR HERBACEOUS PLANTING DETAILS IN BIORETENTION, FOREBAYS AND STORMWATER MANAGEMENT AREAS.
- SEED ALL STORMWATER MANAGEMENT AND BIORETENTION AREAS SLOPES AND DAM EMBANKMENTS WITH NATIVE SEED MIX "B" UNLESS OTHERWISE INDICATED IN THE DRAWING SPECIFICATIONS.
- SEE SHEET LS12 AND LS13 FOR PLANTING DETAILS, NOTES AND COUNTY LANDSCAPE TABULATIONS.

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
 [Signature] 9/12/02  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 [Signature] 10/22/02  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 [Signature] 10/23/02  
 DIRECTOR

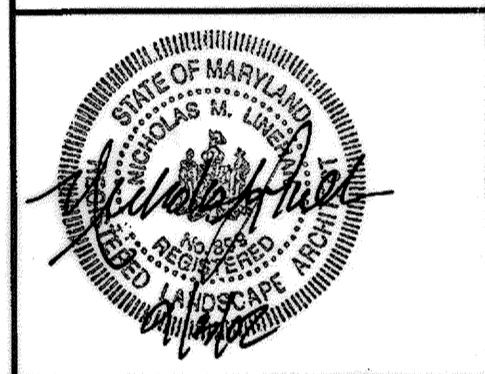
APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 [Signature] 10-17-02  
 COUNTY HEALTH OFFICER  
 HOWARD COUNTY HEALTH DEPARTMENT



MARYLAND COORDINATE SYSTEM  
 HORIZONTAL NAD 83-91  
 VERTICAL NAVD 29

NO.	REVISIONS DESCRIPTION	DATE

**KCI TECHNOLOGIES INC.**  
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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

**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. 07 OF 14  
 SDP-02-64

**PLANT LIST  
STORMWATER MANAGEMENT POND "E"**

KEY	BOTANICAL NAME / COMMON NAME	SIZE	QTY	ROOT	REMARK
<b>SHADE TREES</b>					
E	<i>Cedrasia lita</i> / Sweetshade Yellowwood	2-1/2" - 3" CAL.	1	B4 B	
H	<i>Liquidambar styraciflua</i> / Roundleba Sweet Gum	2-1/2" - 3" CAL.	4	B4 B	
L	<i>Nyssa sylvatica</i> / Black Gum	2-1/2" - 3" CAL.	5	B4 B	
I	<i>Quercus coccinea</i> / Scarlet Oak	2-1/2" - 3" CAL.	1	B4 B	
<b>ORNAMENTAL OR UNDERSTORY TREES</b>					
BN	<i>Betula nigra</i> / River Birch	2" CAL.	10	B4 B	
CN	<i>Cercis canadensis</i> / Redbud	8-10' HT.	3	B4 B	
CV	<i>Chionanthus virginicus</i> / White Fringe Tree	8-10' HT.	7	B4 B	
MV	<i>Magnolia virginiana</i> / Sweetbay Magnolia	8-10' HT.	3	B4 B	
PY	<i>Prunus x yedoensis</i> / Yoshino / Yoshino Cherry	8-10' HT.	6	B4 B	
VP	<i>Prunus x yedoensis</i> / Yoshino / Yoshino Cherry	8-10' HT.	3	B4 B	
<b>EVERGREEN TREES</b>					
TD	<i>Taxodium distichum</i> / Bald Cypress	6-8' HT.	6	B4 B	
IF	<i>Ilex x attenuata</i> / Foster / Foster Holly	6-8' HT.	7	B4 B	
JV	<i>Juniperus virginiana</i> / Eastern Red Cedar	6-8' HT.	6	B4 B	
PO	<i>Picea omorika</i> / Serbian Spruce	6-8' HT.	4	B4 B	
TO	<i>Thuja occidentalis</i> / Elegantissima / Elegant Arborvitae	6-8' HT.	3	B4 B	
<b>SHRUBS</b>					
AM	<i>Aronia melanocarpa</i> / Black chokeberry	2-2 1/2' HT.	57	B4 B	
CA	<i>Cornus amomum</i> / Silky Dogwood	2-2 1/2' HT.	45	B4 B	
CS	<i>Cornus stolonifera</i> / Red-Osier Dogwood	2-2 1/2' HT.	31	B4 B	
IT	<i>Itea virginiana</i> / Henry Garnet / Henry Garnet Sweetspire	2-2 1/2' HT.	51	B4 B	
PON	<i>Physocarpus opulifolius</i> / Dwarf Ninebark	2-2 1/2' HT.	15	B4 B	
RA	<i>Rhus aromatica</i> / Fragrant Sumac	2-2 1/2' HT.	62	B4 B	
SE	<i>Salix exigua</i> / Coyote Willow	2-2 1/2' HT.	50	B4 B	
VD	<i>Viburnum dentatum</i> / Arrowwood Viburnum	2-2 1/2' HT.	20	B4 B	
VP	<i>Viburnum prunifolium</i> / Blackhaw Viburnum	2-2 1/2' HT.	16	B4 B	
<b>HERBACEOUS PLANTS</b>					
EP	<i>Eupatorium purpurea</i> / Joe Pye Weed		24		
IV	<i>Iris versicolor</i> / Blue Flag Iris		750		
PV	<i>Panicum virgatum</i> / Switchgrass		32		
RF	<i>Rudbeckia fulgida</i> / Black Eyed Susan		76		

**PLANT LIST SWM "E"  
MICROPOOLS**

BOTANICAL NAME / COMMON NAME	SIZE	QTY	ROOT	REMARKS
<b>HERBACEOUS PLANTS</b>				
<i>Acorus calamus</i> / Sweet Flag		96	64	
<i>Caltha palustris</i> / Marsh Marigold		96	32	
<i>Iris pseudacorus</i> / Yellow Water Iris		245	32	
<i>Iris versicolor</i> / Blue Flag		245	32	
<i>Scirpus fluviatilis</i> / River Bulrush		147	192	
<i>Scirpus pungens</i> / Three Square Bulrush		96	192	
<i>Saururus cernuus</i> / Lizard Tail		49	96	
<b>SEED MIX</b>				
<i>Alopecurus pratensis</i> / Meadow Foxtail		50%	50%	
<i>Carex scoparia</i> / Blunt Broomsgedge		50%	50%	

**PLANT LIST SWM "E"  
FOREBAY PLANTING AREAS**

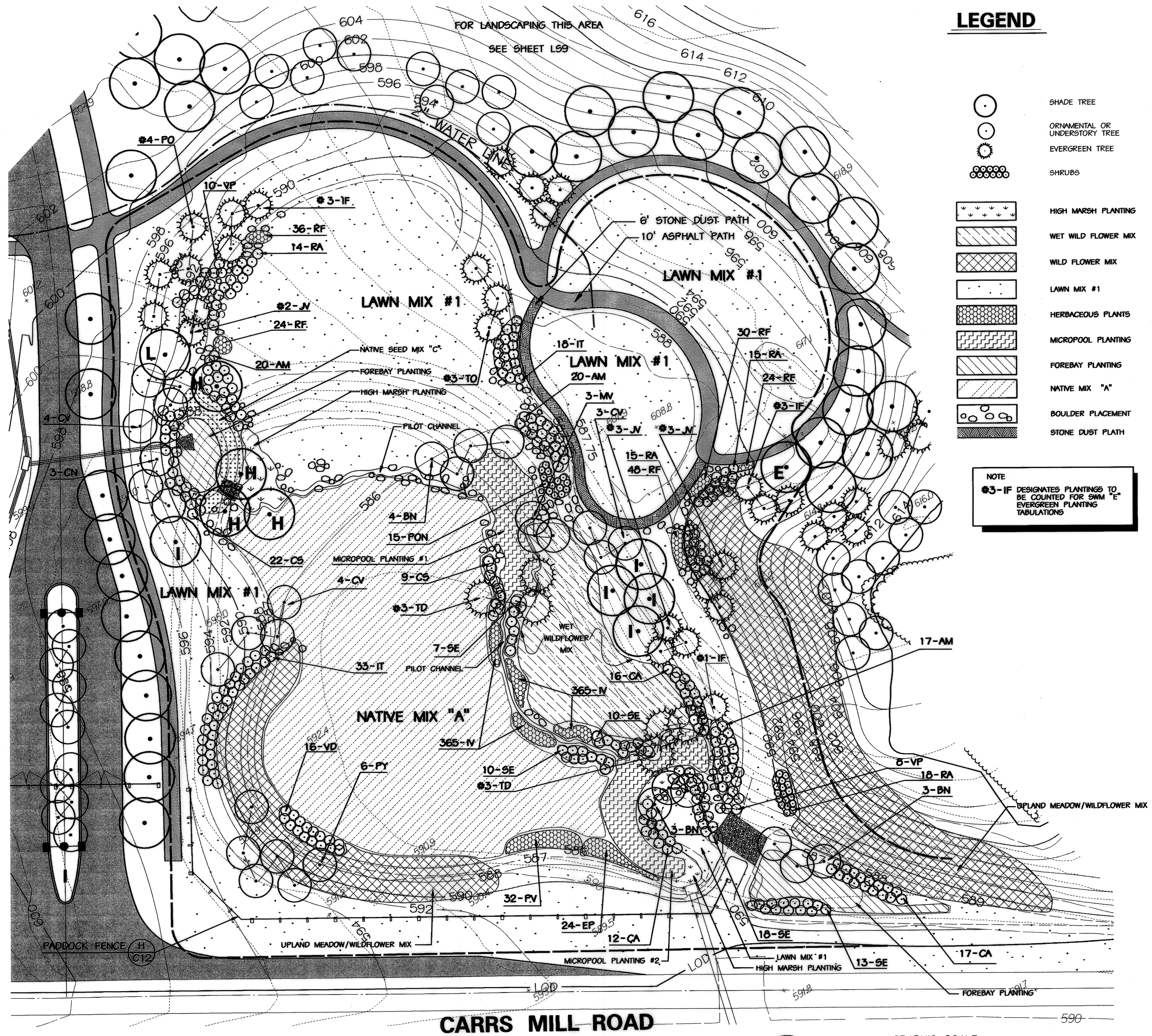
BOTANICAL NAME / COMMON NAME	SIZE	QTY	ROOT	REMARKS
<b>HERBACEOUS PLANTS</b>				
<i>Carex comosa</i> / Bottle Brush Sedge		56	100	
<i>Dichanthium scoparium</i> / Broom Panic Sedge		56	100	
<i>Lobelia cardinalis</i> / Cardinal Flower		28	50	
<i>Scirpus fluviatilis</i> / River Bulrush		84	150	
<i>Scirpus pungens</i> / Common 3 Square		56	100	
<b>NATIVE SEED MIX "A"</b>				
				.25 LBS. / 1000 S.F.

**NOTES**

- SEE SHEET LS20 FOR HERBACEOUS PLANTING DETAILS IN BIORETENTION, FOREBAYS AND STORMWATER MANAGEMENT AREAS.
- SEED ALL STORMWATER MANAGEMENT AND BIORETENTION AREAS SLOPES AND DAM EMBANKMENTS WITH NATIVE SEED MIX "A" UNLESS OTHERWISE INDICATED IN THE DRAWING SPECIFICATIONS.
- SEED PILOT CHANNEL WITH NATIVE MIX "A". PLACE JUTE FIBER MESH ON BOTTOM AND SIDES OF PILOT CHANNEL.
- FOR BOULDER PLACEMENT AND TOPSOIL DETAILS SEE SHEET LS19

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
 CHIEF, DEVELOPMENT ENGINEERS DIVISION  
 DATE: 9/12/02  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE: 10/2/02  
 DIRECTOR

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



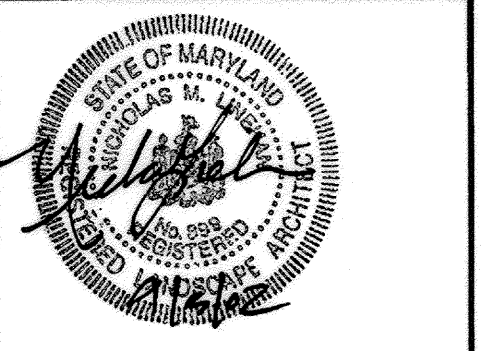
**LEGEND**

- 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

NO.	REVISIONS DESCRIPTION	DATE

**KCI TECHNOLOGIES INC.**  
 ENGINEERS • PLANNERS • SURVEYORS  
 10 NORTH PARK DRIVE  
 HUNT VALLEY, MARYLAND 20830  
 PHONE: (410) 316-7800 FAX: (410) 316-7817  
 WWW.KCI.COM



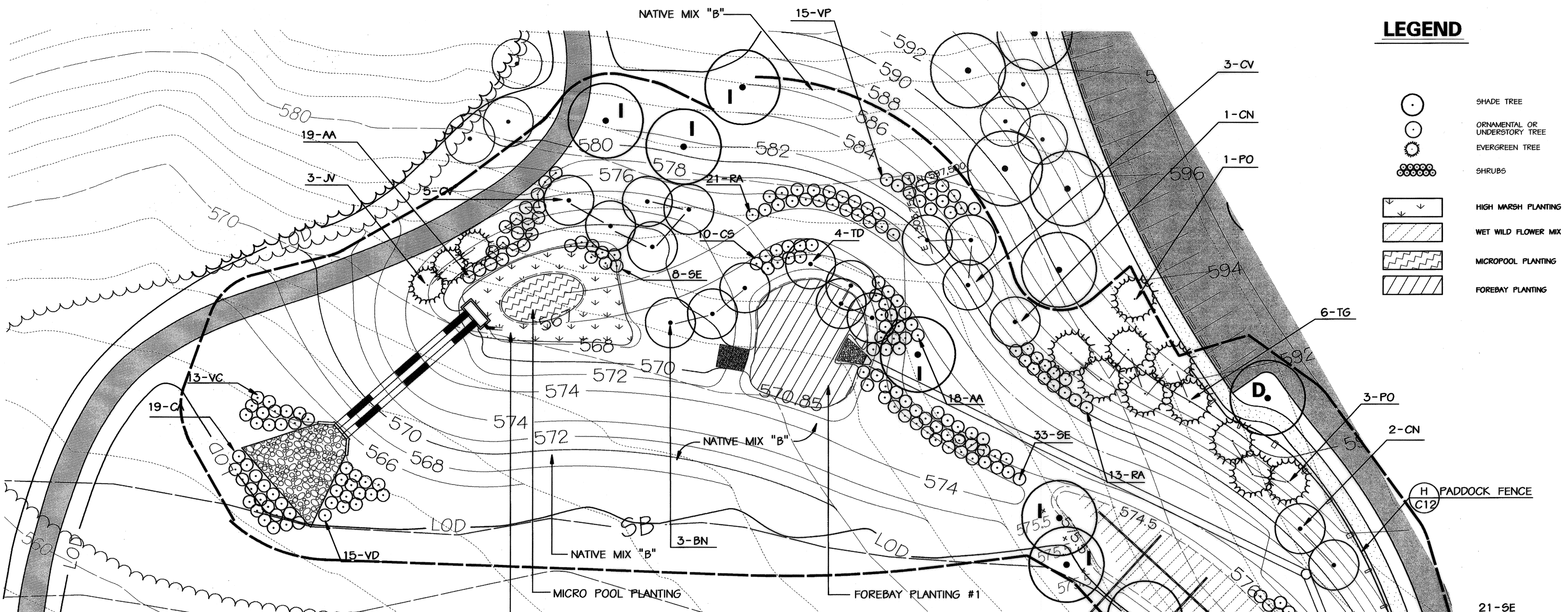
**WESTERN REGIONAL PARK**  
 HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
 7120 OAKLAND MILLS ROAD  
 COLUMBIA, MARYLAND 21046-1677  
 (410)-513-4640

**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 138  
 MARYLAND COORDINATE SYSTEM  
 HORIZONTAL NAD 83-91  
 VERTICAL NAVD 29

KCI FILE: MA 2000 0100057.S \ UDETWAME.DGN





**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	REMARKS
<b>SHADE TREES</b>					
D	Acer saccharum / Legacy / Legacy Sugar Maple	2-1/2" - 3" CAL.	1	B4 B	
I	Nyssa sylvatica / Black Gum		7		
<b>ORNAMENTAL OR UNDERSTORY TREES</b>					
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	Taxodium distichum / Bald Cypress	6-8' HT.	4		
<b>EVERGREEN TREES</b>					
JV	Juniperus virginiana / Eastern Red Cedar	6-8' HT.	3	B4 B	
PO	Picea omorika / Serbian Spruce	6-8' HT.	4	B4 B	
TG	Thuja occidentalis / Giganteoides / Giganteoides Arborvitae	6-8' HT.	6	B4 B	
<b>SHRUBS</b>					
AA	Aronia arbutifolia / Red Chokeberry	2-2 1/2' HT.	47	B4 B	
CA	Cornus amomum / Silky Dogwood	2-2 1/2' HT.	19	B4 B	
CS	Cornus stolonifera / Red-Osier Dogwood	2-2 1/2' HT.	27	B4 B	
RA	Rhus aromatica / Fragrant Sumac	2-2 1/2' HT.	34	B4 B	
SE	Salix exigua / Coyote Willow	2-2 1/2' HT.	74	B4 B	
VC	Vaccinium corymbosum / Highbush Blueberry	2-2 1/2' HT.	13	B4 B	
VD	Vaccinium dentatum, arrowwood viburnum	2-2 1/2' HT.	15	B4 B	
VP	Viburnum prunifolium / Blackhaw viburnum	2-2 1/2' HT.	36	B4 B	

**PLANT LIST SWM "F"  
FOREBAY PLANTING AREAS**

BOTANICAL NAME / COMMON NAME	SIZE	QTY	ROOT	REMARKS
<b>HERBACEOUS PLANTS</b>				
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	
<b>NATIVE SEED MIX "A"</b>				
				.25 LBs. / 1000 S.F.

**PLANT LIST SWM "F"  
MICROPOOL**

BOTANICAL NAME / COMMON NAME	SIZE	QTY	ROOT	REMARKS
<b>HERBACEOUS PLANTS</b>				
Acorus calamus / Sweet Flag		15		
Caltha palustris / Marsh Marigold		30		
Iris pseudacorus / Yellow Water Iris		36		
Iris versicolor / Blue Flag		36		
Scirpus fluviatilis / River Bulrush		15		
Scirpus pungens / Three Square Bulrush		8		
Saururus cernuus / Lizard Tail		8		
<b>NATIVE SEED MIX "A"</b>				
				.25 LBs. / 1000 S.F.

**NOTES**

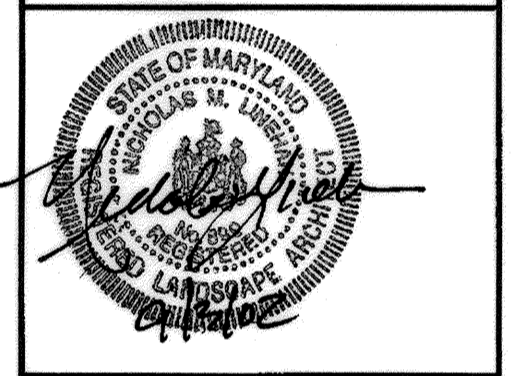
- SEE SHEET LS20 FOR HERBACEOUS PLANTING DETAILS IN BIORETENTION, FOREBAYS AND STORMWATER MANAGEMENT AREAS.
- SEED ALL STORMWATER MANAGEMENT AND BIORETENTION AREAS SLOPES AND DAM EMBANKMENTS WITH NATIVE SEED MIX "B" UNLESS OTHERWISE INDICATED IN THE DRAWING SPECIFICATIONS.
- SEED PILOT CHANNEL WITH NATIVE MIX "A". PLACE JUTE FIBER MESH ON BOTTOM AND SIDES OF PILOT CHANNEL.
- FOR BOULDER PLACEMENT AND TOPSOIL DETAILS SEE SHEET LS19

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
 [Signature] 9/2/02  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 [Signature] 10/23/02  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 [Signature] 10/23/02  
 DIRECTOR

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

NO.	REVISIONS DESCRIPTION	DATE

**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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**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

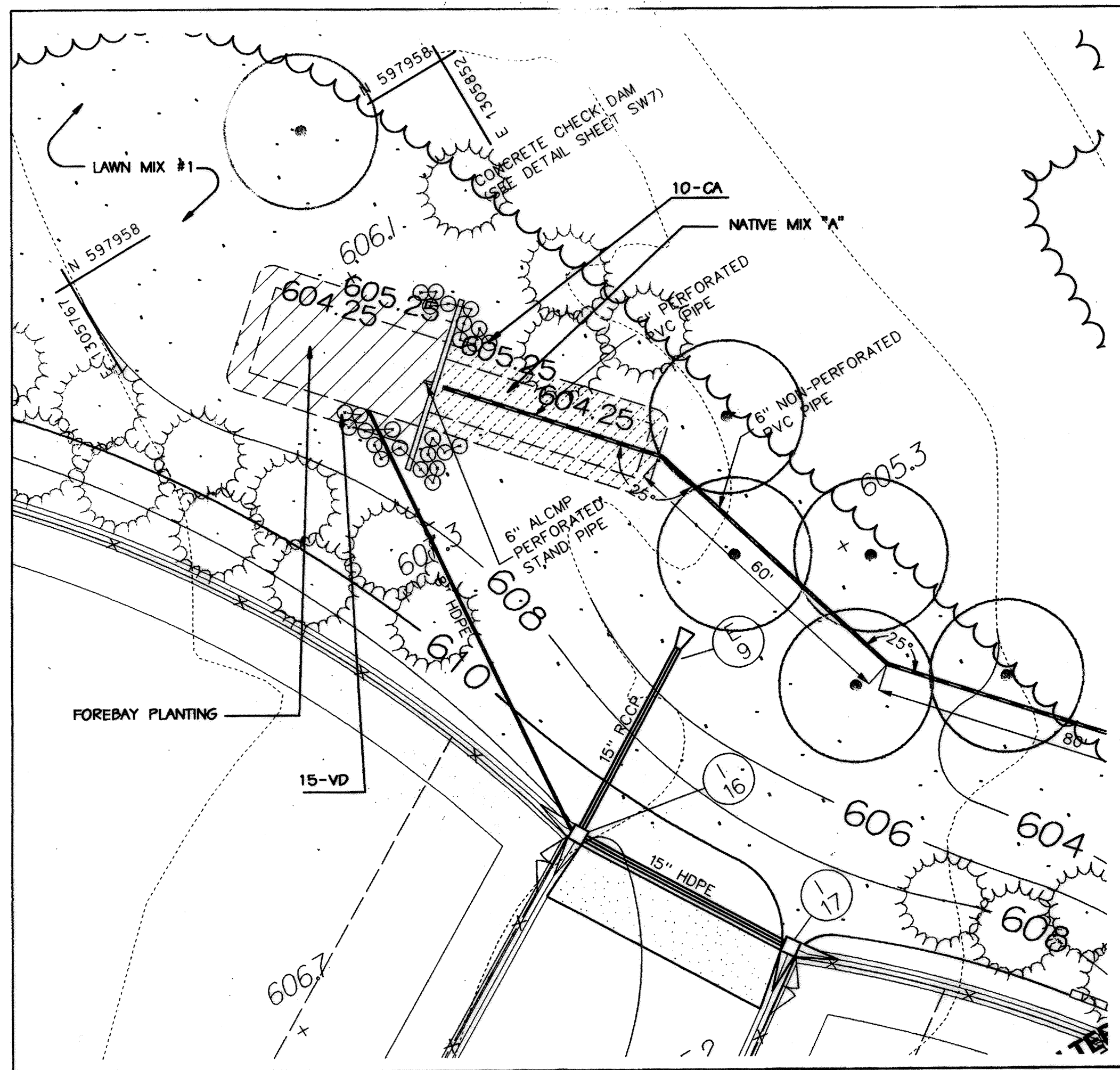
SCALE: 1" = 20'  
 DATE: 06-12-02  
 KCI JOB NO.: 01-00057  
 CAPITAL PROJECT NO.: N-3932  
 PERMIT ISSUE:  
 CONSTRUCTION ISSUE:

**LS16**  
 SHEET NO.: 89 OF 143  
 MARYLAND COORDINATE SYSTEM  
 HORIZONTAL NAD 83-91  
 VERTICAL NAVD 29









**SAND FILTER G**

SCALE = 30'

**LEGEND**

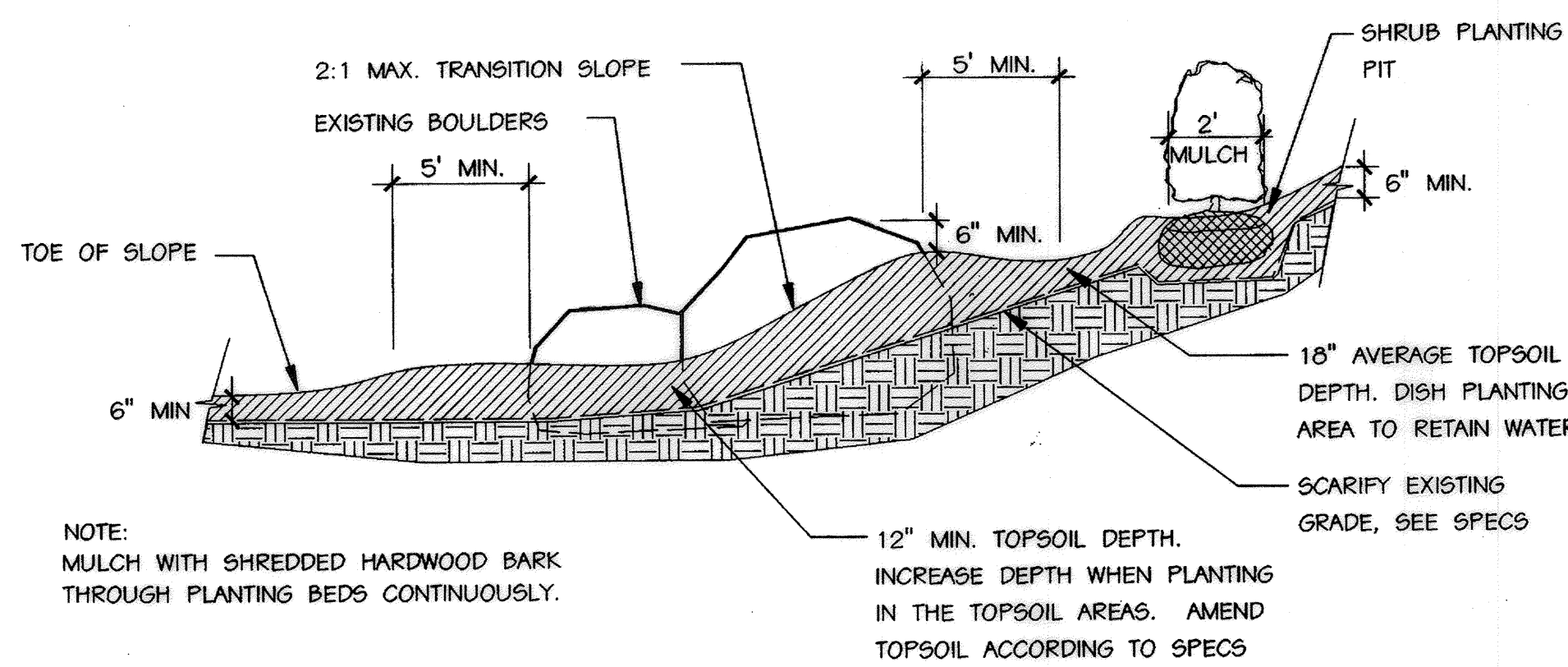
- LAWN MIX #1
- FOREBAY PLANTING
- NATIVE MIX "A"

**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	

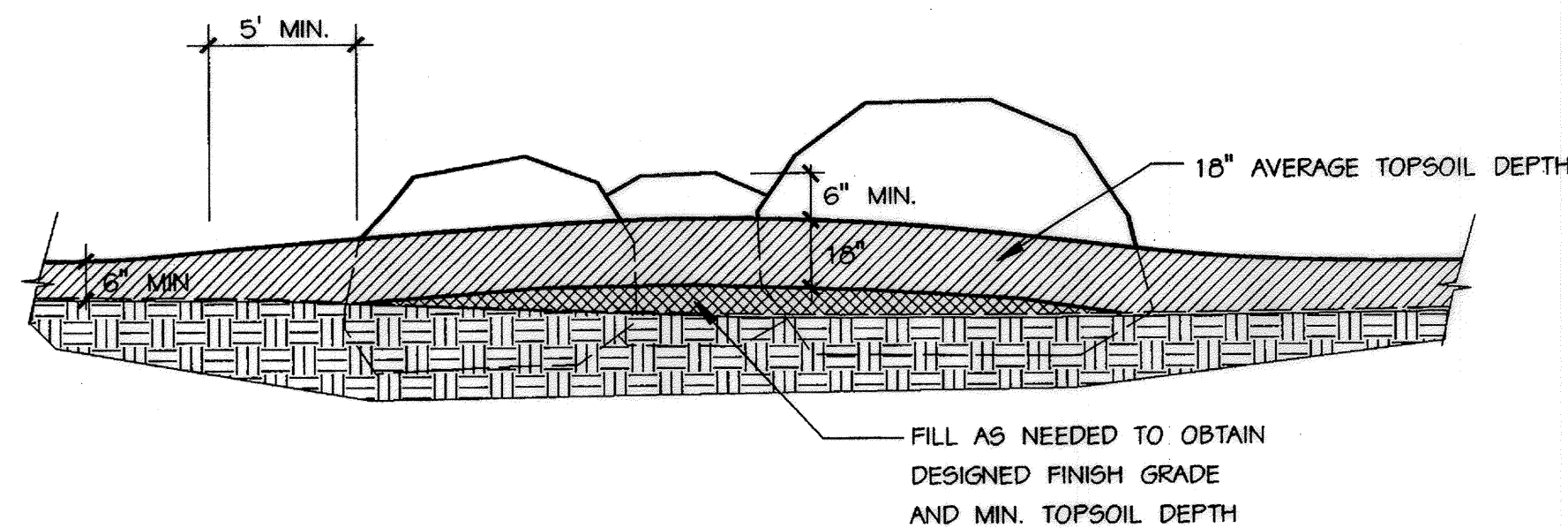
**FOREBAY PLANTING AREA**

BOTANICAL NAME / COMMON NAME	SIZE	QTY	ROOT	REMARKS
<b>HERBACEOUS PLANTS</b>	<b>#1 #2</b>			
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.



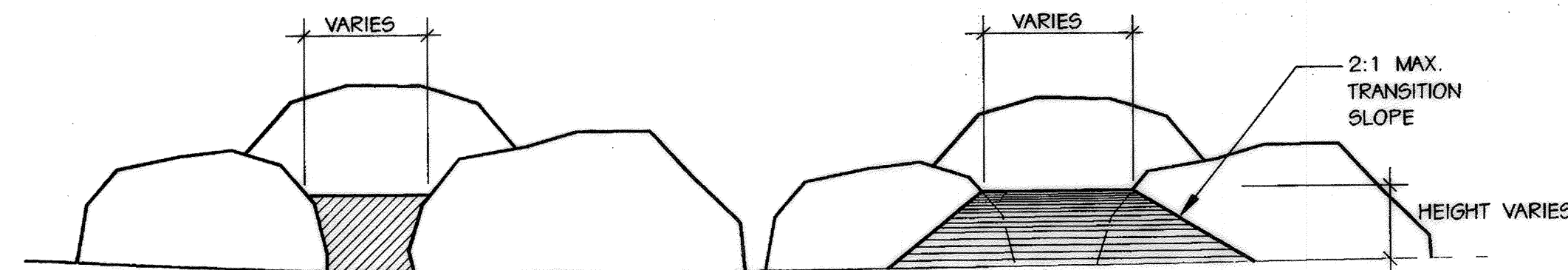
**TOPSOILING AT BOULDERS - SLOPE**

NOT TO SCALE



**TOPSOILING AT BOULDERS - NO SLOPE**

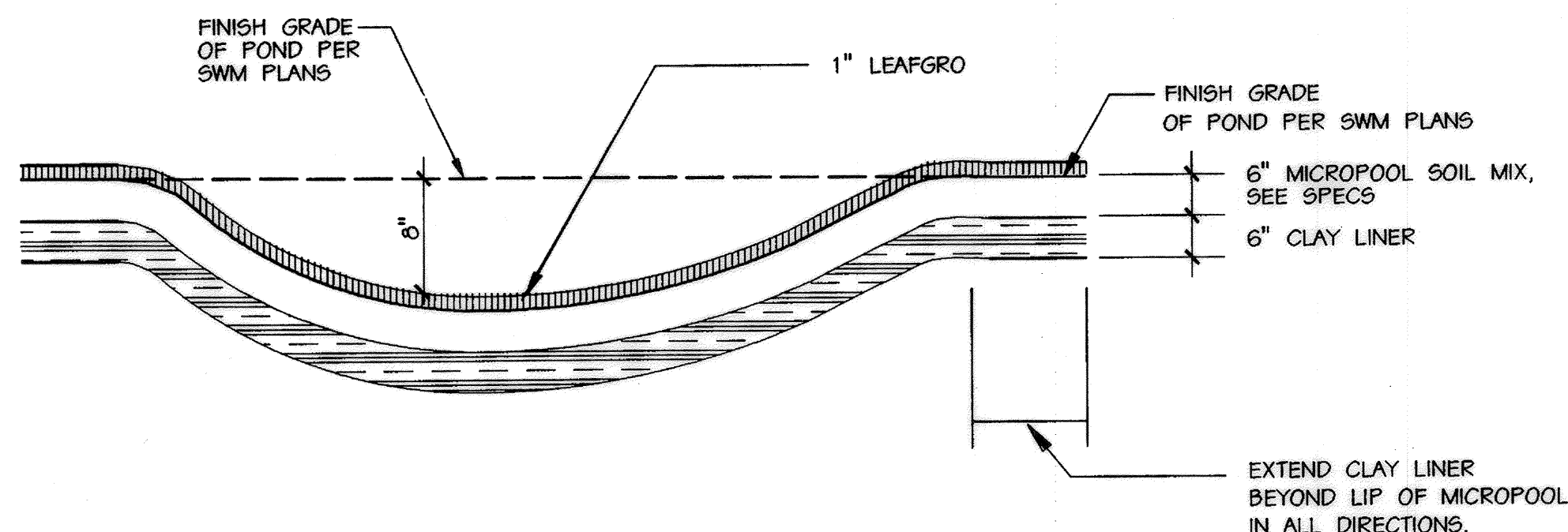
NOT TO SCALE



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**

- Comply with Site Grading, Sediment and Erosion Control Plans and Specifications.
- 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.
  - 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, lumps, and other extraneous materials harmful to plant growth.
  - 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 of the topsoil 2 weeks before delivery.
- Spreading Topsoil:
  - 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.
  - Tillage: Topsoil and soil amendments shall be tilled into the top 2 inches of the existing grade.

**MICROPOOL AND BASIN WETLAND PLANTING AREAS**

- Related Work: Coordinate with the General Landscaping Specifications for the proper scheduling of the work specified herein.
- Contractor shall grade micropools according to the spot elevations on the Contract Drawings. If rock is encountered, the Contractor shall notify the Engineer and field adjustments may be made.
- 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.
- 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.
- Seed and mulch seeded areas according to the Grasses and Wildflowers specification and applicable Erosion and Sediment Control plans and specifications.
- 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  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DIRECTOR

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 COUNTY HEALTH OFFICER  
 HOWARD COUNTY HEALTH DEPARTMENT

NO.	REVISIONS DESCRIPTION

**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



**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:	



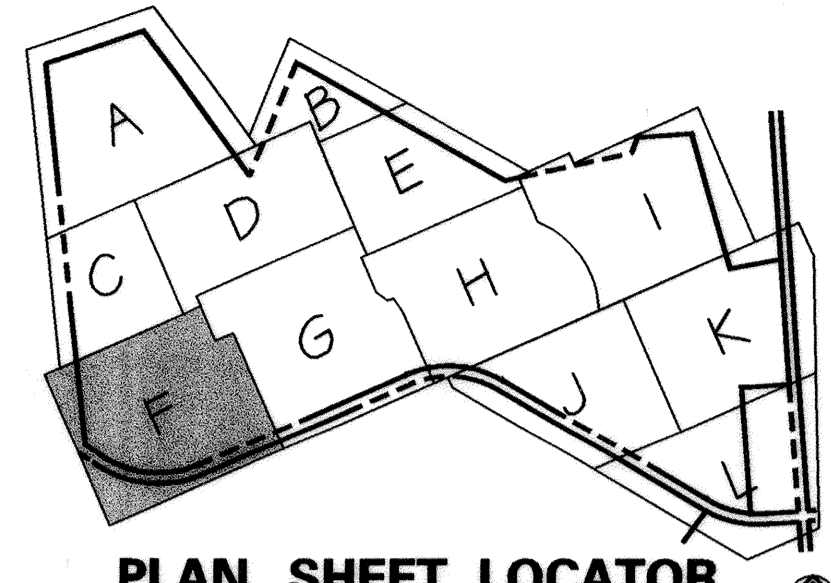








**FOREST CONSERVATION EASEMENT 2**  
**FOREST RETENTION AREA**  
**6.3339 ACRES**



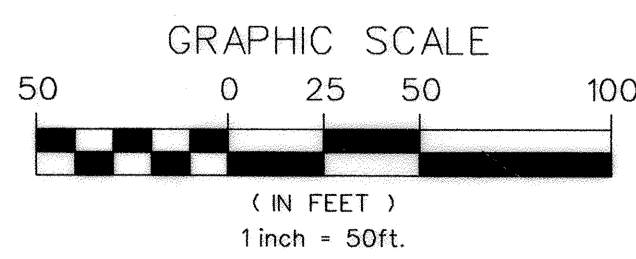
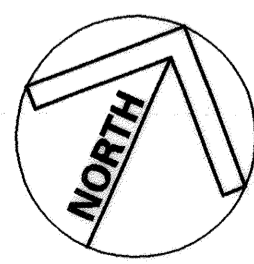
**PLAN SHEET LOCATOR**

NOT TO SCALE

**LEGEND**

- EX. INDEX CONTOUR
- EX. 2' INTERMEDIATE CONTOUR
- SOIL LINE
- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- EX. WOODS LINE
- BOF 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 BEARINGS AND DISTANCE OF EASEMENT LINES.



APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
*[Signature]* 9/22/02  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE  
*[Signature]* 10/20/02  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE  
*[Signature]* 10/22/02  
 DIRECTOR DATE

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

MATCHLINE - SEE SHEET FC2, PLAN OF AREA C

MATCHLINE - SEE SHEET FC3

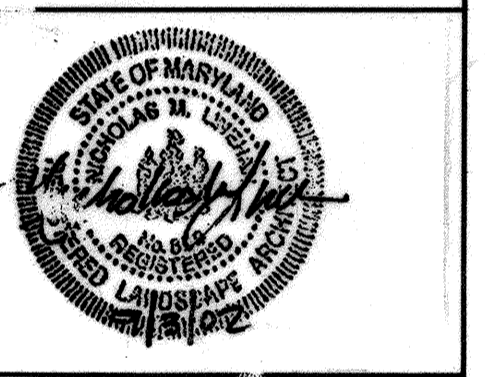
MATCHLINE - SEE SHEET FC6

MATCHLINE - SEE SHEET FC8



NO.	REVISIONS DESCRIPTION	DATE
1	ADDED CHANGES TO PAVING, BUILDING, AND UTILITY LAYOUT	1/09/07

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 HUNT VALLEY, MARYLAND 20830  
 PHONE: (410) 316-7800 FAX: (410) 316-7877  
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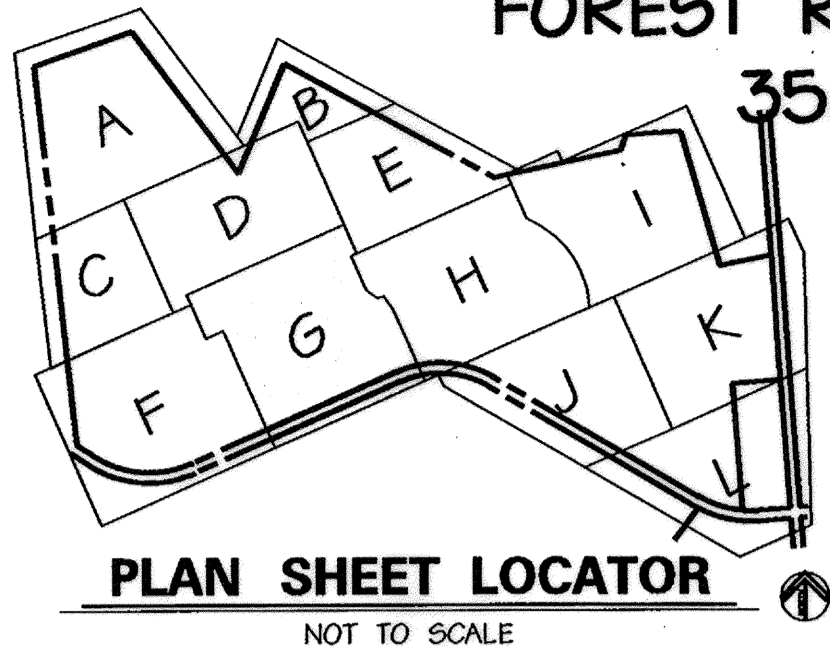


**WESTERN REGIONAL PARK**  
 HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
 7120 OAKLAND MILLS ROAD  
 COLUMBIA, MARYLAND 21046-1677  
 (410) 313-4640

**FOREST CONSERVATION PLAN AREA F**

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

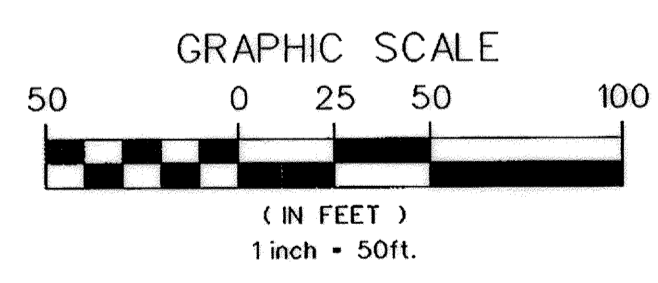
**FOREST CONSERVATION EASEMENT 1,  
FOREST RETENTION AREA,  
35.4808 ACRES**



**LEGEND**

- 590 — EX. INDEX CONTOUR
- GIC2 — EX. 2' INTERMEDIATE CONTOUR
- 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
- 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.

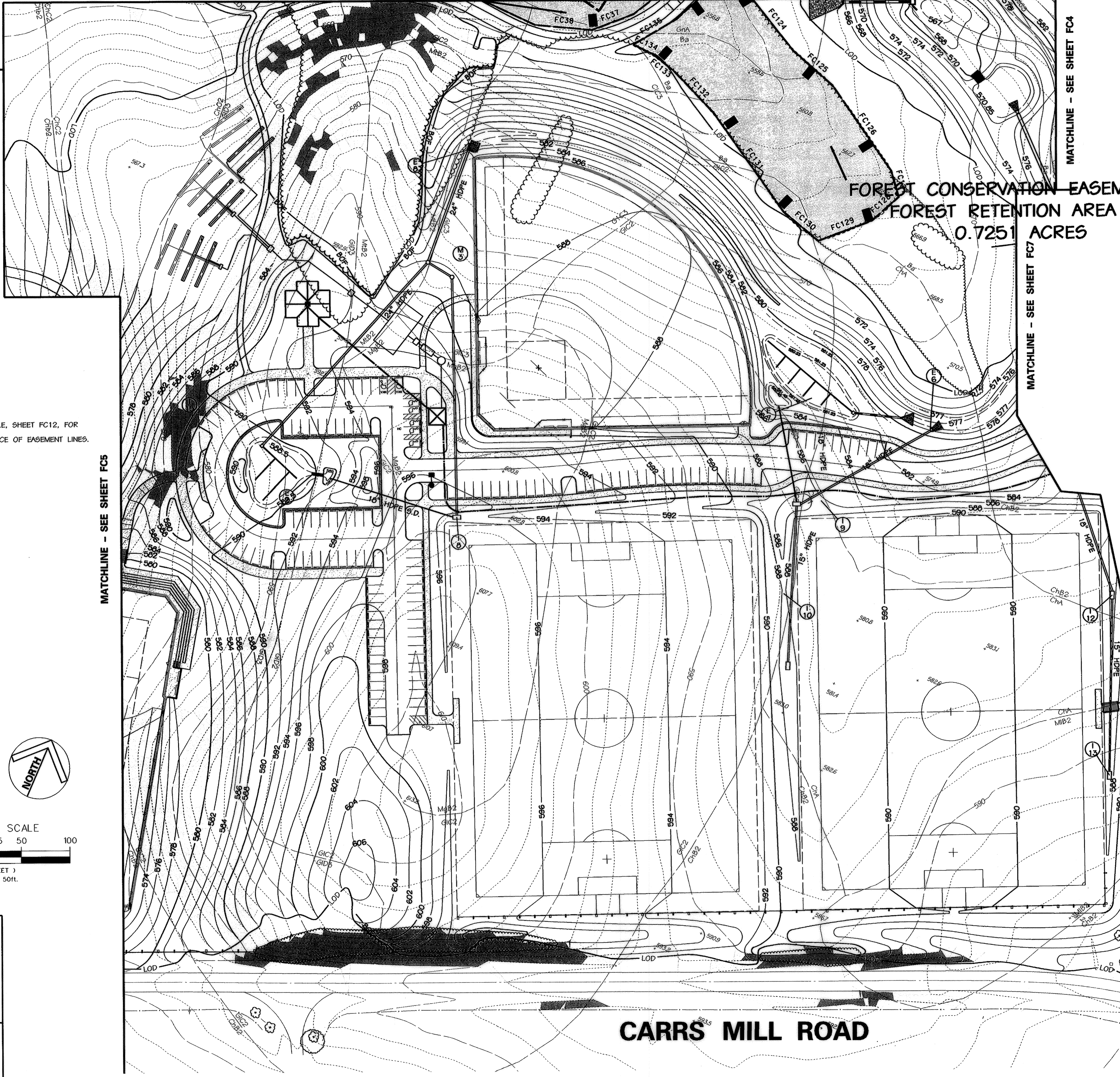


MARYLAND COORDINATE SYSTEM  
HORIZONTAL NAD 83-91  
VERTICAL NAVD 29

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
*[Signature]* 9/12/02  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE  
*[Signature]* 10/29/02  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE  
 DIRECTOR DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
*[Signature]* 10-12-02  
 COUNTY HEALTH OFFICER DATE  
 HOWARD COUNTY HEALTH DEPARTMENT

MATCHLINE - SEE SHEET FC3



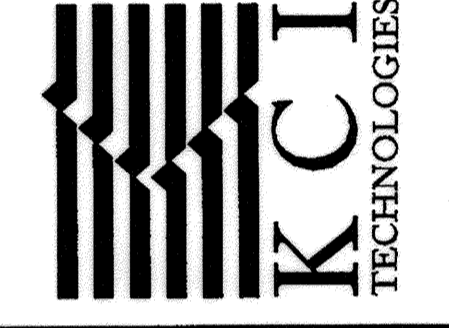
MATCHLINE - SEE SHEET FC4

MATCHLINE - SEE SHEET FC7

MATCHLINE - SEE SHEET FC7

NO.	REVISIONS DESCRIPTION	DATE

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 ENGINEERS • PLANNERS • SURVEYORS  
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 HUNT VALLEY, MARYLAND 20830  
 PHONE: (410) 316-7800 FAX: (410) 316-7817  
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 HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
 7120 OAKLAND MILLS ROAD  
 COLUMBIA, MARYLAND 21046-1877  
 (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 114  
 U3



NO FOREST CONSERVATION PROPOSED ON THIS SHEET



PLAN SHEET LOCATOR

NOT TO SCALE

LEGEND

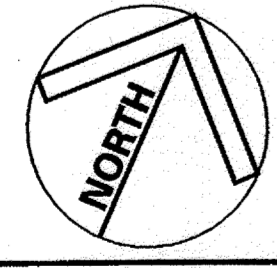
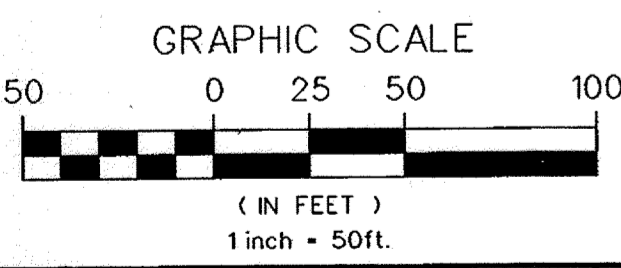
- 590 --- EX. INDEX CONTOUR
- 2' --- EX. 2' INTERMEDIATE CONTOUR
- GIC2 --- SOIL LINE
- --- PROPERTY BOUNDARY
- EX. TREE (SIGNIFICANT SIZE OR LOCATION)
- EX. WOODS LINE
- BOF --- FOREST PROTECTION FENCE
- FOREST RETENTION SIGN
- FOREST CONSERVATION EASEMENT LINE
- ▲ 15-24.9% SLOPES
- ▲ 25%+ SLOPES
- 100 YEAR FLOODPLAIN
- W --- SURVEYED WETLAND
- 25' WETLAND BUFFER
- EX. STREAMS
- 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
- EXISTING WELL
- PROPOSED LIGHT POLE
- PROPOSED PADDOCK FENCE

MATCHLINE - SEE SHEET FC4

MATCHLINE - SEE SHEET FC7



I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A ONLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE NO. 53722 EXPIRATION DATE: 06/16/2023



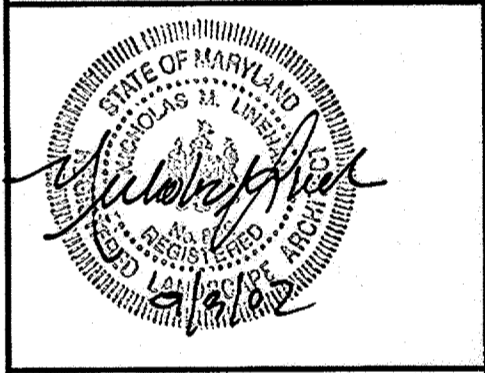
APPROVED, HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
 Chief, Development Engineering Division  
 Chief, Division of Land Development  
 Director

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 County Health Officer  
 Director

NOTE: SEE SHEET C8 FOR FINAL PARKING LAYOUT.

NO.	REVISIONS DESCRIPTION	DATE
1	ADD PICKLEBALL COURTS	5-1-23

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 HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
 7120 OAKLAND MILLS ROAD  
 COLUMBIA, MD 21046  
 (410) 513-4540

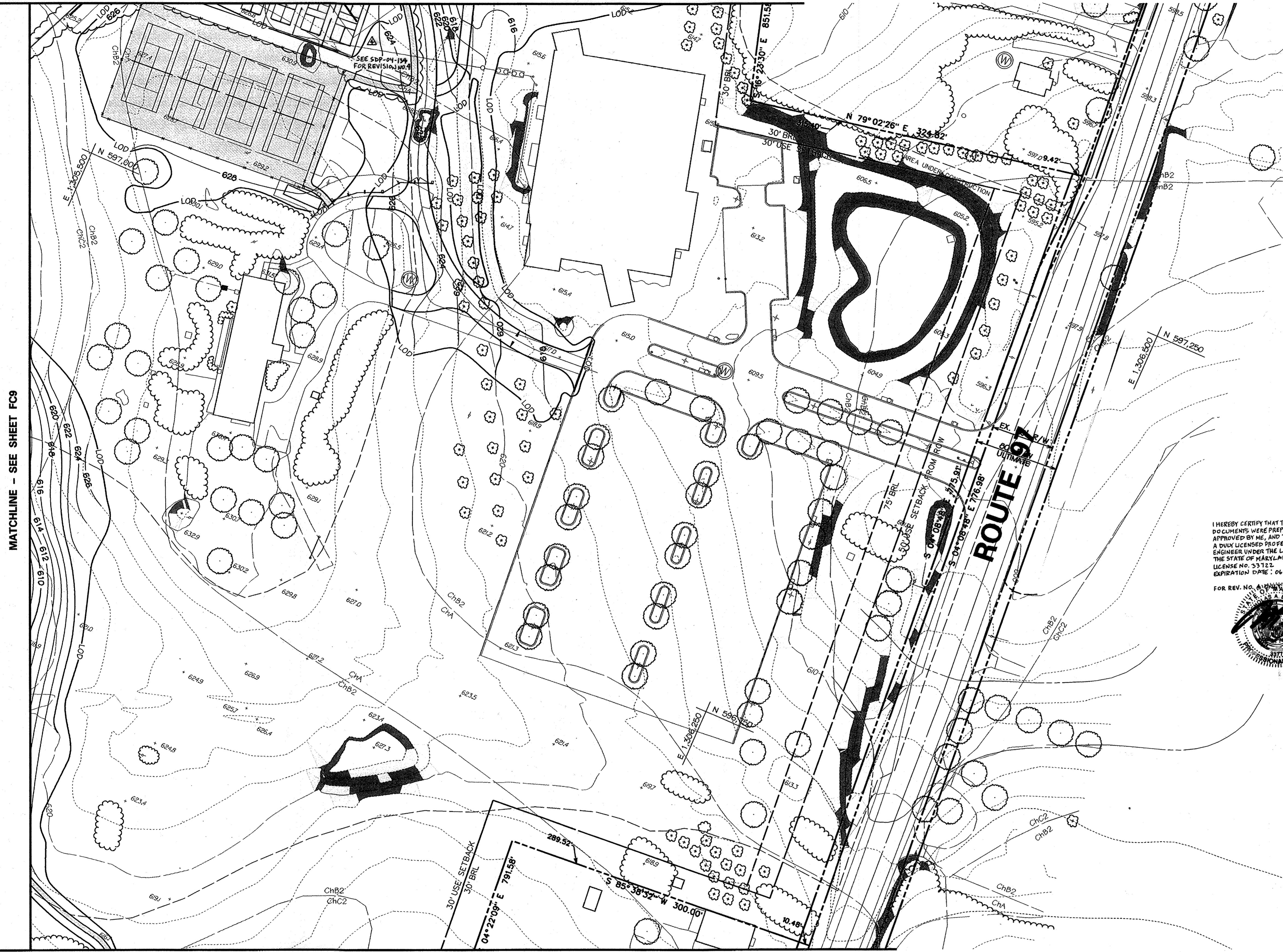
**FOREST CONSERVATION PLAN**  
 AREA I

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 114

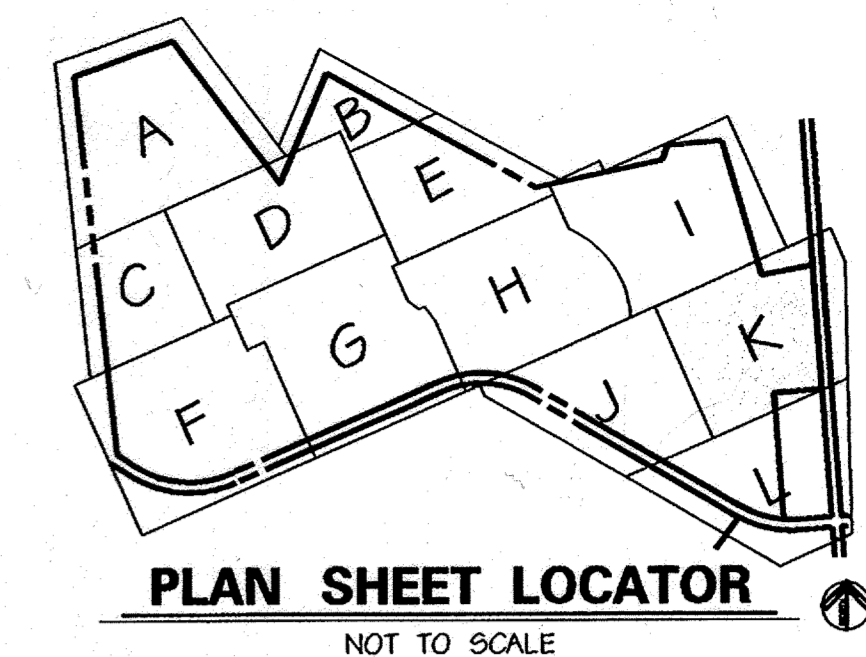
MARYLAND COORDINATE SYSTEM  
 HORIZONTAL NAD 83-91  
 VERTICAL NAVD 29





MATCHLINE - SEE SHEET FC9

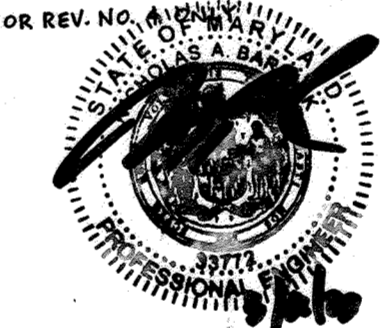
MATCHLINE - SEE SHEET FC11



**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
	PROPOSED INDEX CONTOUR
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	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

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE NO. 53722 EXPIRATION DATE: 06/11/2023



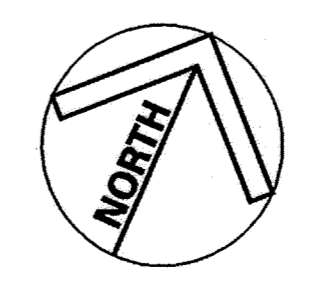
APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
 [Signature] 9/12/02  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 10/23/02  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

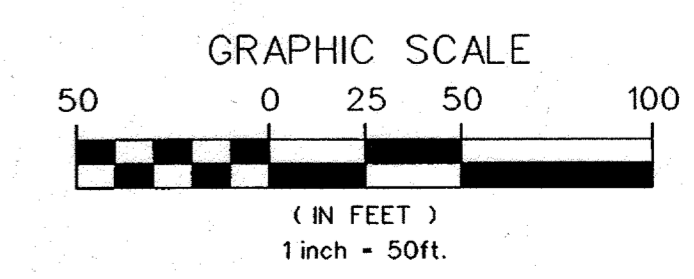
[Signature] 10/23/02  
 DIRECTOR DATE

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

NO FOREST CONSERVATION ON THIS SHEET



MARYLAND COORDINATE SYSTEM  
 HORIZONTAL NAD 83-91  
 VERTICAL NAVD 29



NO.	REVISIONS DESCRIPTION	DATE
1	ADD PICKLEBALL COURTS	9-9-23

**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



**WESTERN REGIONAL PARK**  
 HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
 120 OAKLAND MILLS ROAD  
 COLUMBIA, MD 21046  
 (410) 313-4640

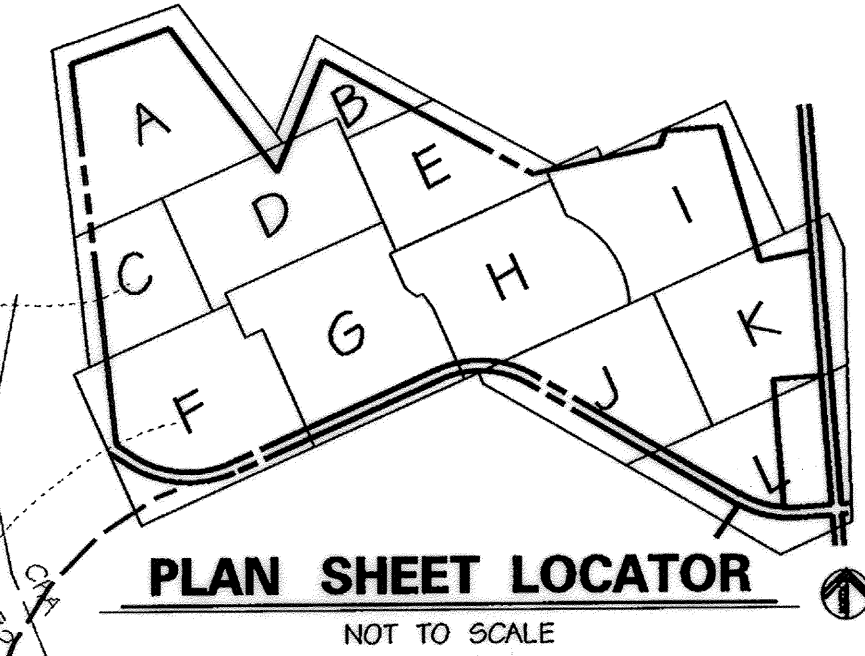
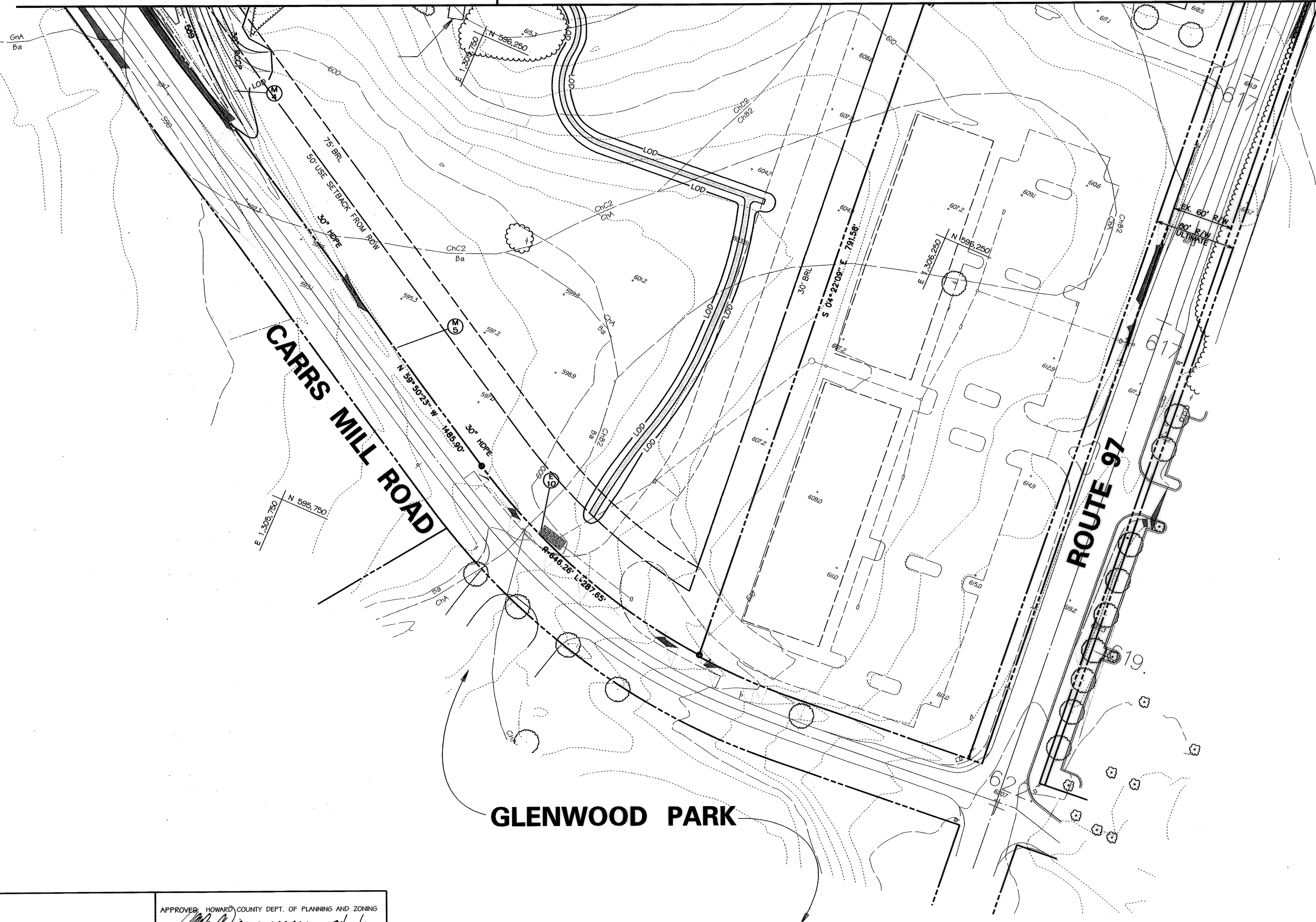
**FOREST CONSERVATION PLAN**  
 AREA K

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
- 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
- SURVEYED WETLAND
- 25' WETLAND BUFFER
- EX. STREAMS
- SB 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
- EXISTING WELL
- PROPOSED LIGHT POLE
- PROPOSED PADDOCK FENCE

NO.	REVISIONS DESCRIPTION	DATE

**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



**WESTERN REGIONAL PARK**  
HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
COLUMBIA, MARYLAND 21046-1677  
(410) 313-4640

**FOREST CONSERVATION PLAN**  
AREA L

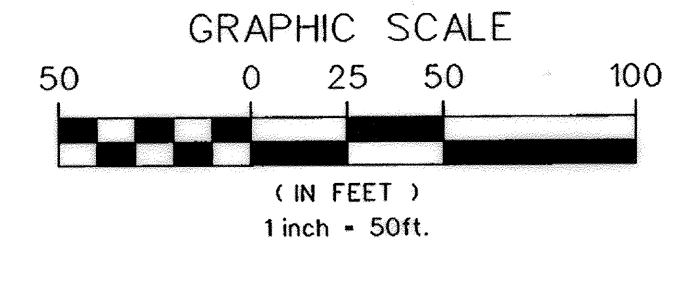
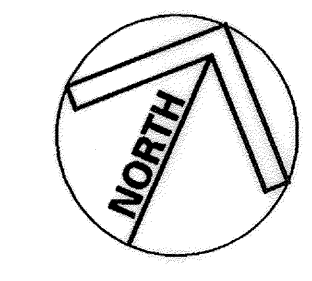
SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

**FC11**  
SHEET NO.: 104 OF 113  
SDP-02-64

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE: 01/23/02  
  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE: 11/29/01  
  
 DIRECTOR DATE: 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
  
 COUNTY HEALTH OFFICER DATE: 10-12-02  
 HOWARD COUNTY HEALTH DEPARTMENT

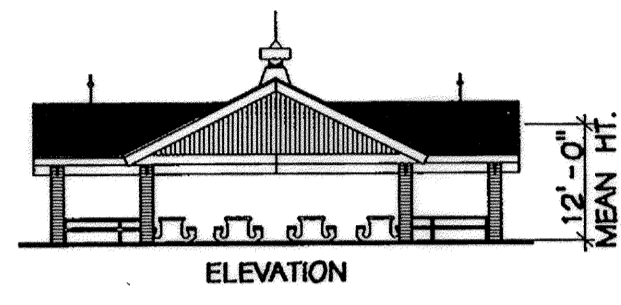
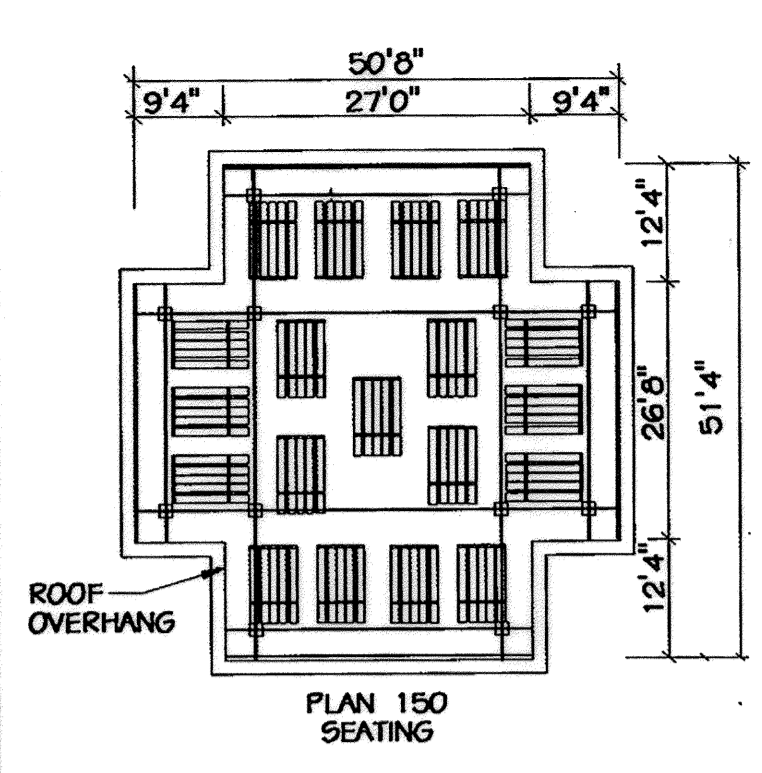
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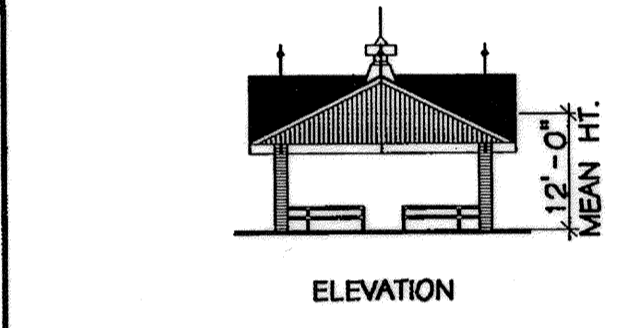
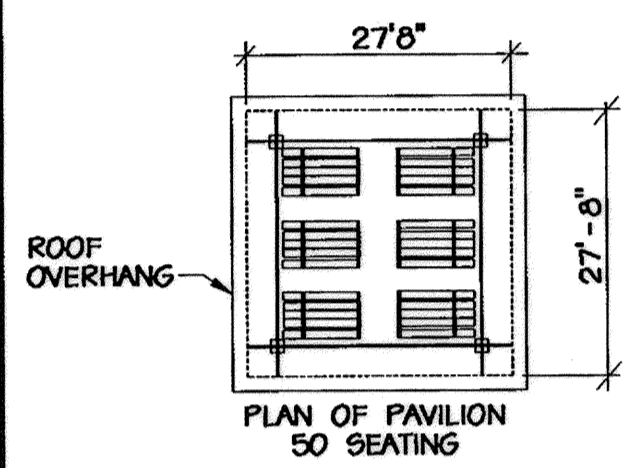
MARYLAND COORDINATE SYSTEM  
HORIZONTAL NAD 83-91  
VERTICAL NAVD 29



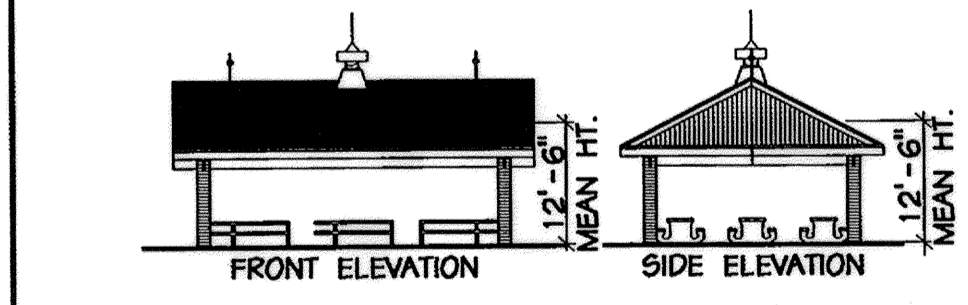
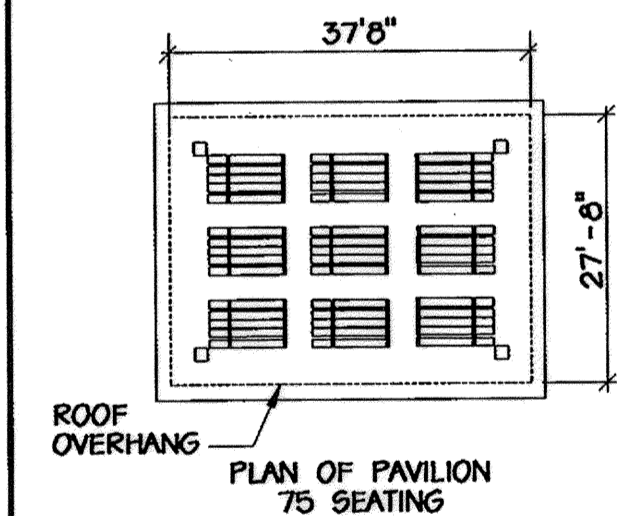




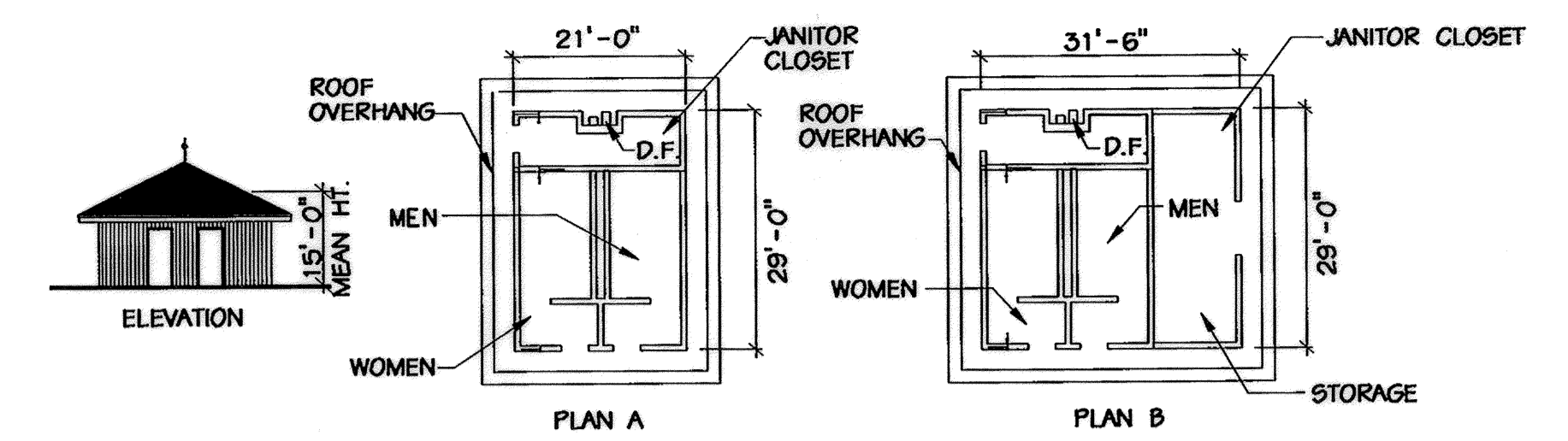
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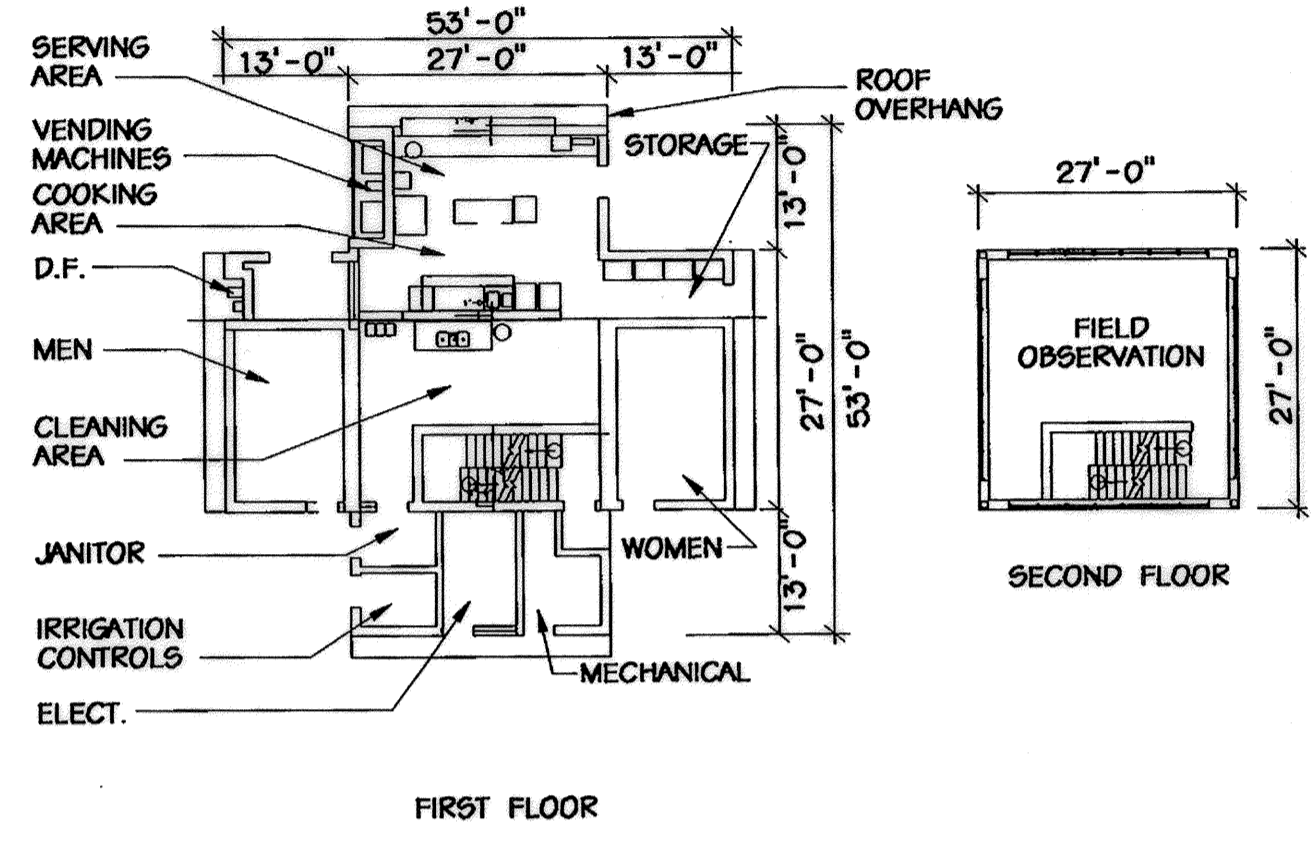
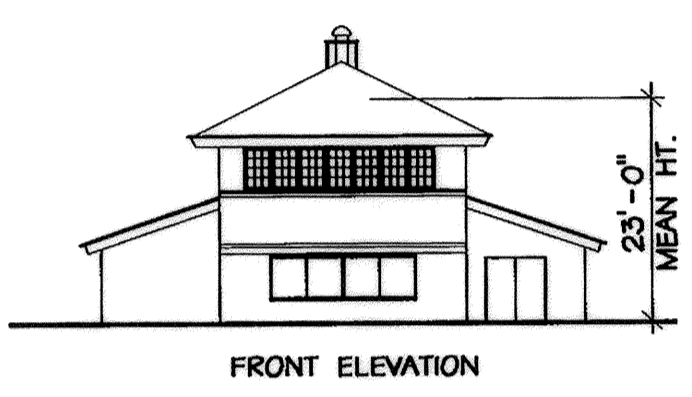
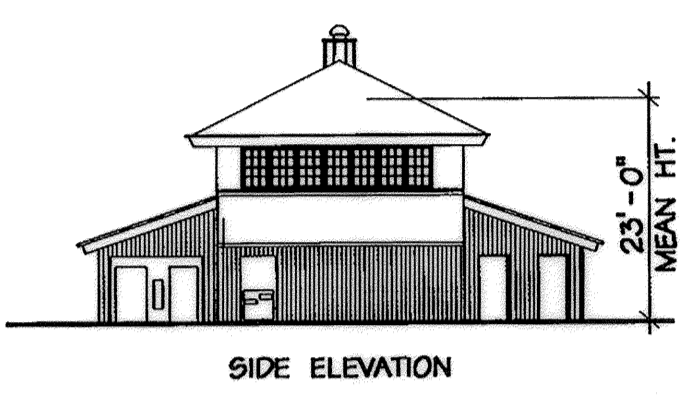
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NOT TO SCALE



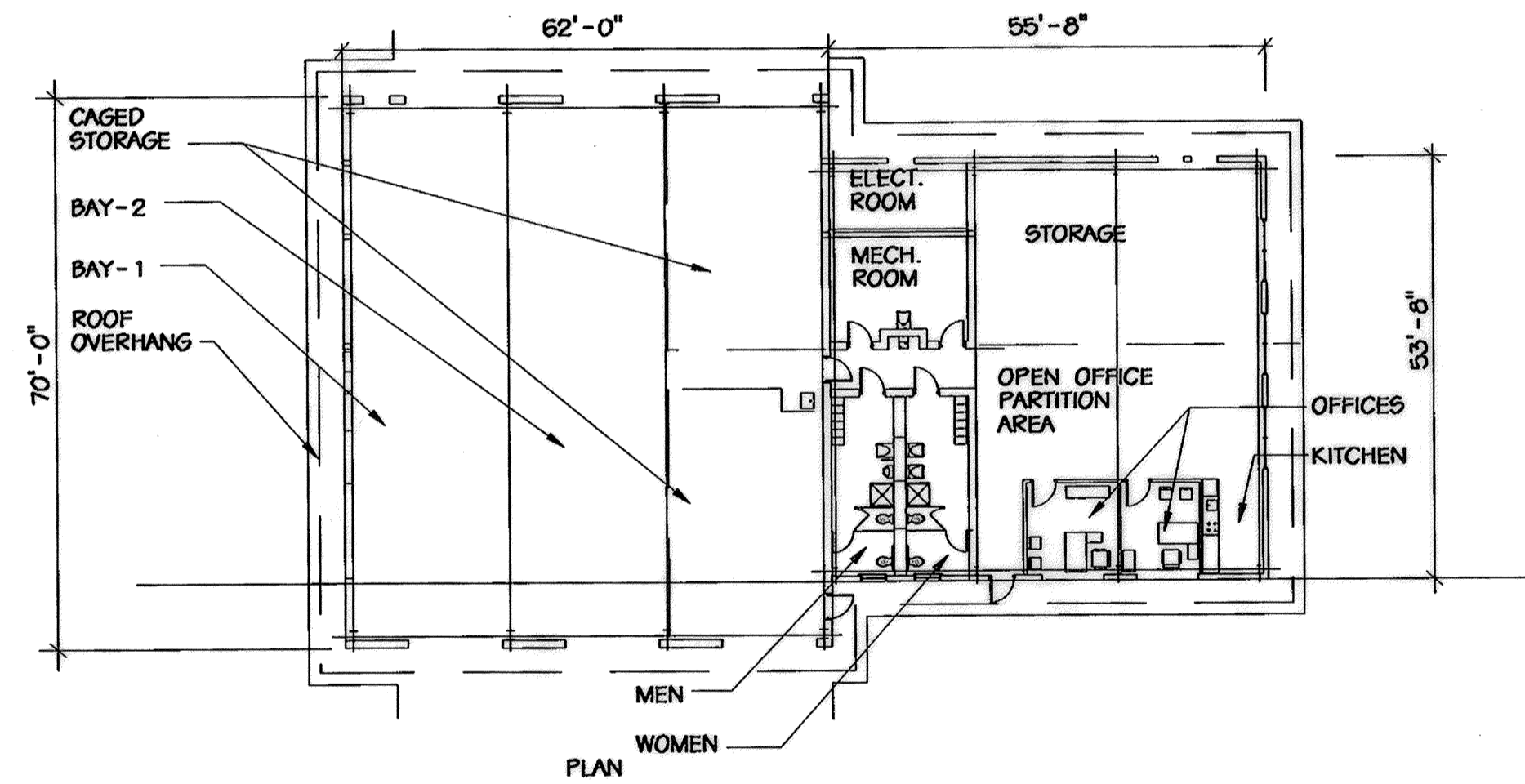
**E PAVILLION C**  
NOT TO SCALE



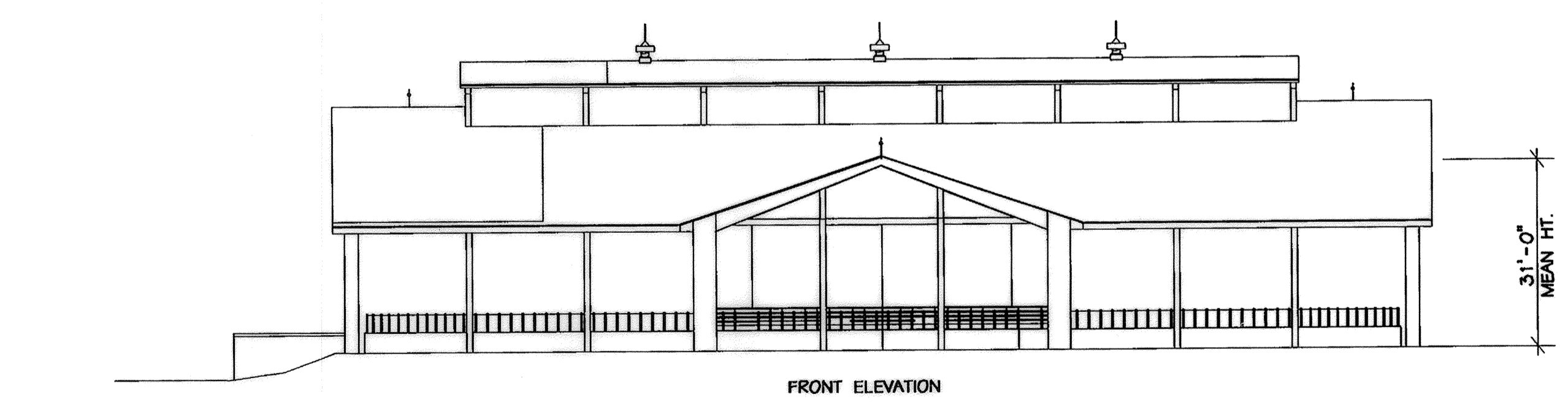
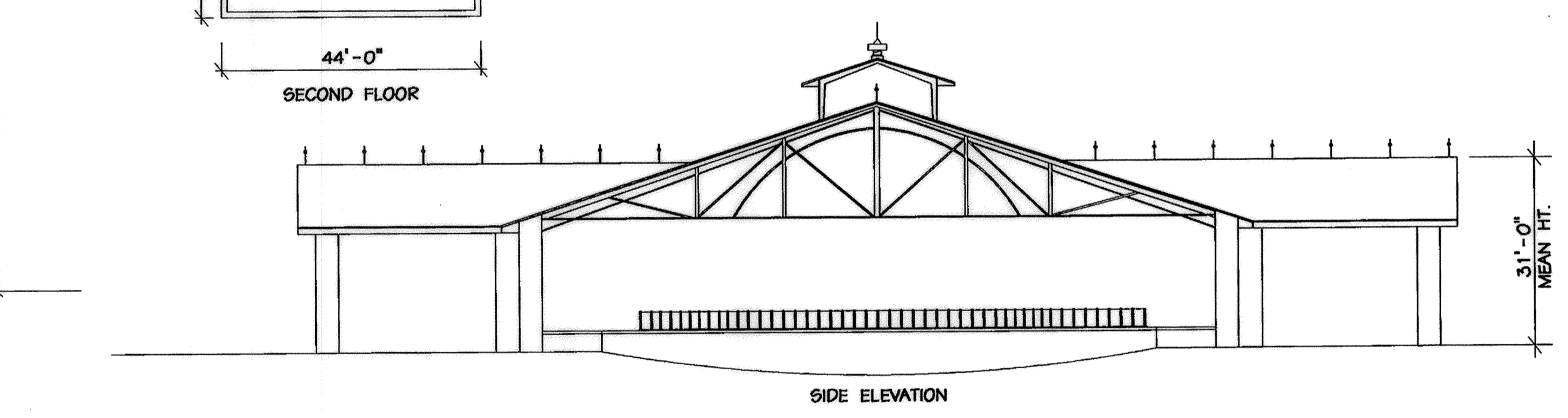
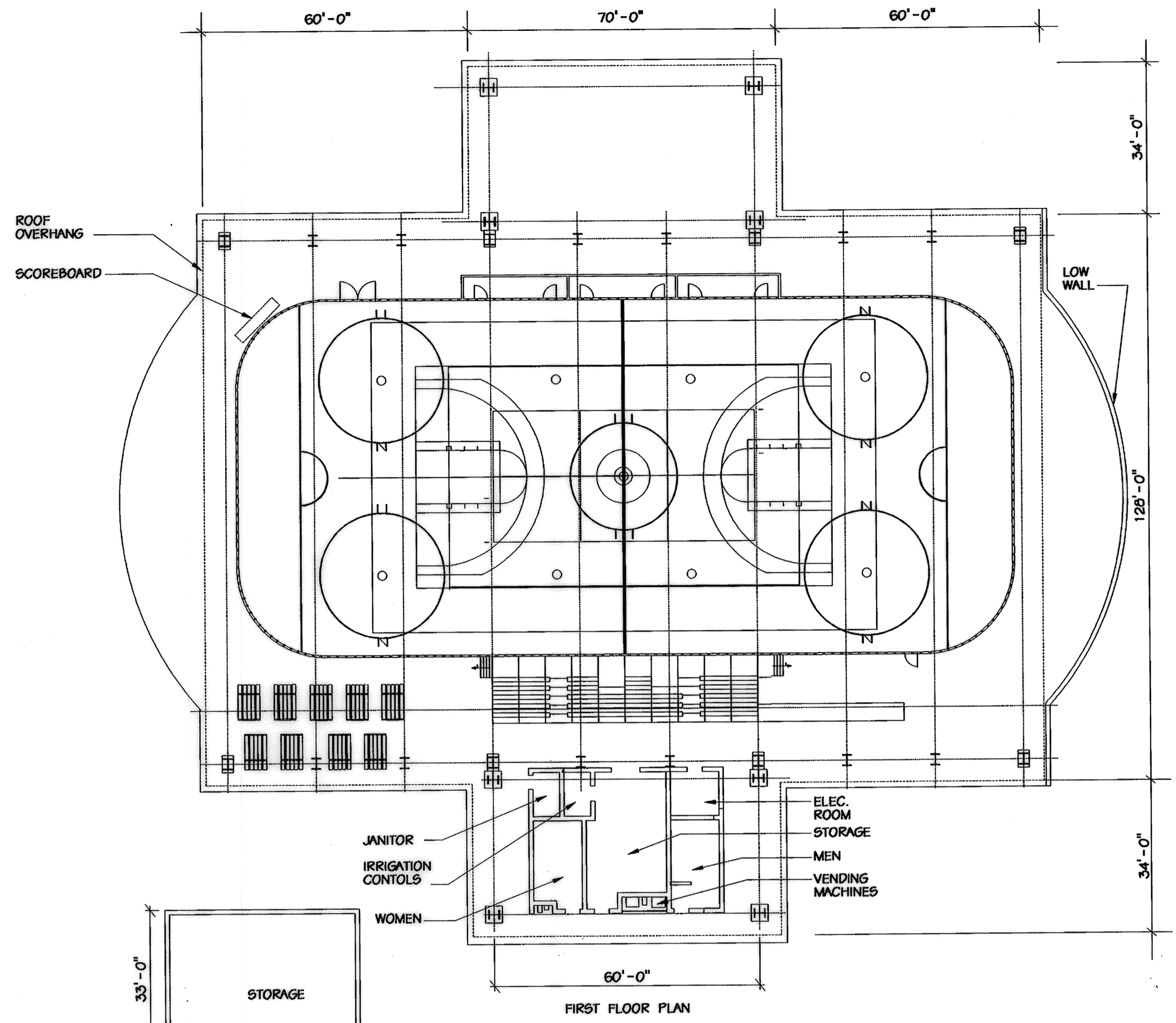
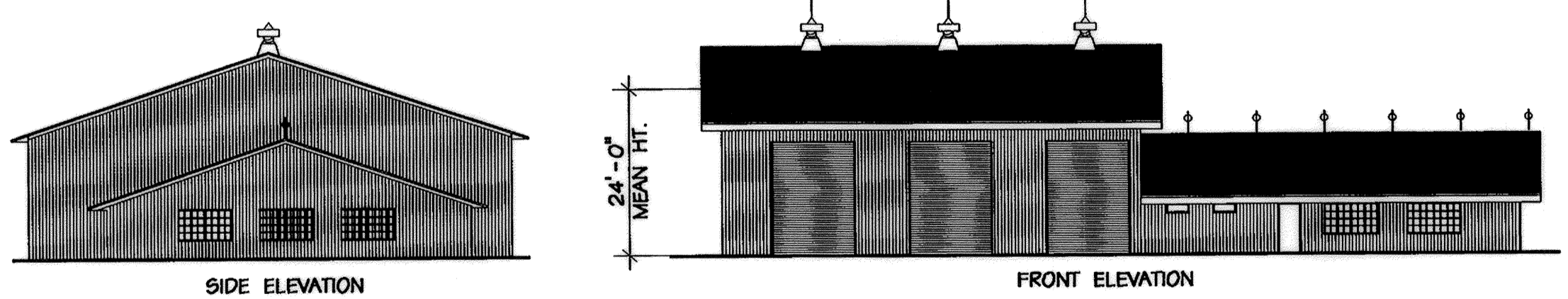
**B COMFORT STATION**  
NOT TO SCALE



**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  
 Chief, Division of Land Development  
 Director

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 County Health Officer  
 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"

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"

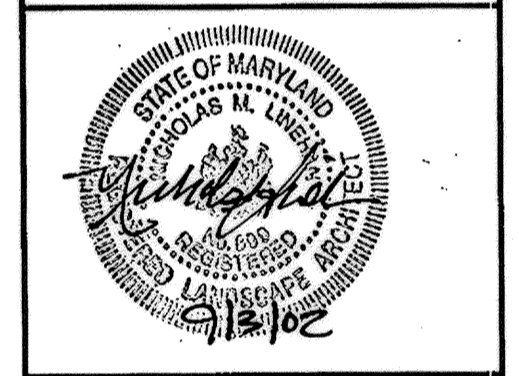
REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE

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

NO.	REVISIONS DESCRIPTION	DATE

**KCI TECHNOLOGIES INC.**  
 ENGINEERS • PLANNERS • SURVEYORS  
 10 NORTH PARK DRIVE  
 HUNT VALLEY, MARYLAND 20830  
 PHONE: (410) 346-7800 FAX: (410) 346-7817  
 WWW.KCI.COM



**WESTERN REGIONAL PARK**  
 DEPARTMENT OF RECREATION AND PARKS  
 7120 OAKLAND MILLS ROAD  
 COLUMBIA, MARYLAND 21046-1677  
 (410) 513-4640

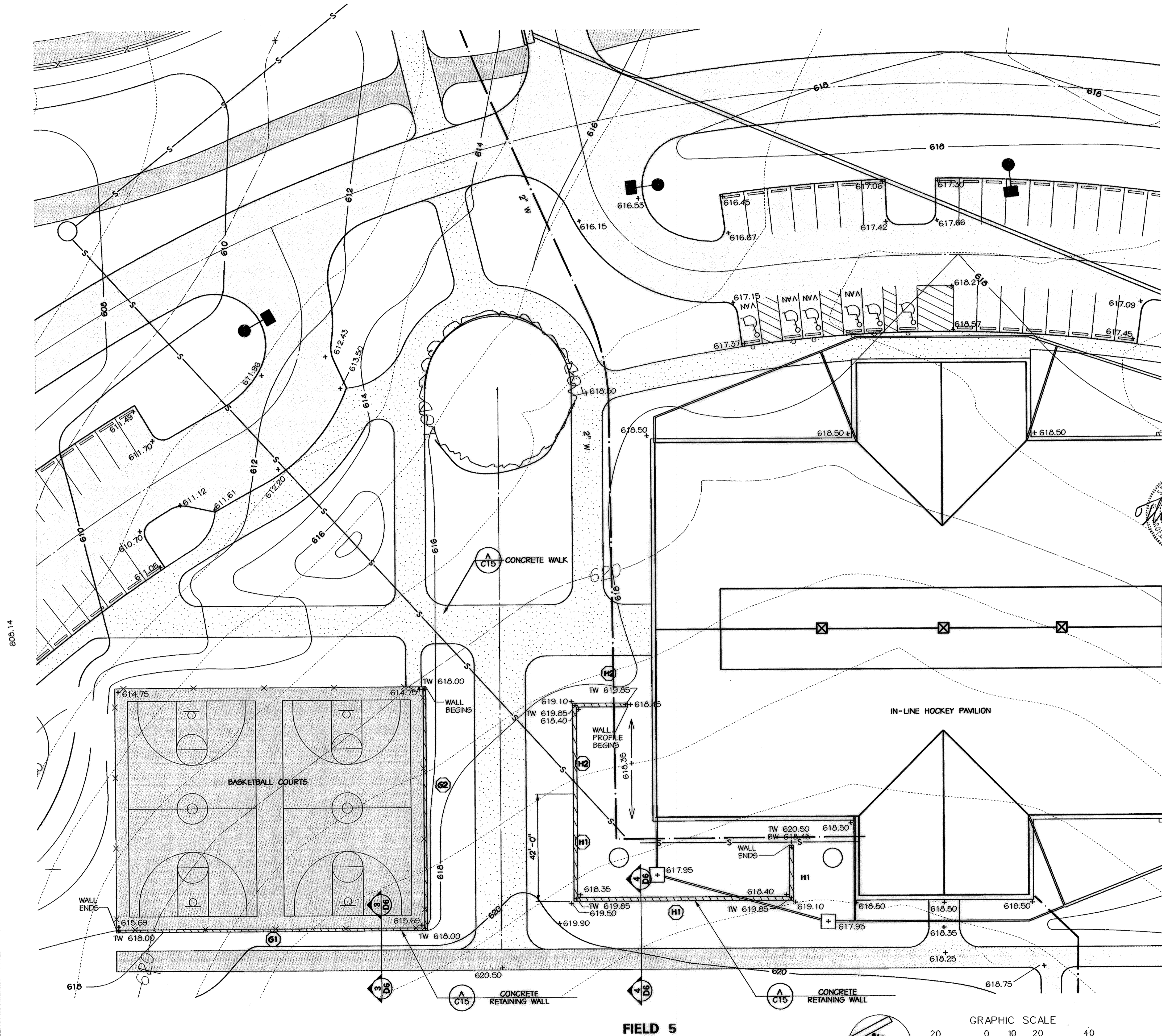
**ARCHITECTURAL DETAILS**

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.



Professional Engineer  
 State of Maryland  
 License No. 103220  
 William S. Smith  
 9.3.02

NO.	REVISIONS DESCRIPTION	DATE

**KCI TECHNOLOGIES INC.**  
 ENGINEERS • PLANNERS • SURVEYORS  
 10 NORTH PARK DRIVE  
 HUNT VALLEY, MARYLAND 20830  
 PHONE: (410) 316-7800 FAX: (410) 316-7817  
 WWW.KCI.COM

Professional Engineer  
 State of Maryland  
 License No. 103220  
 William S. Smith  
 9/3/02

**WESTERN REGIONAL PARK**  
 HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
 71 LUMBUR MARYLAND 21046-1677  
 COLUMBIA, MARYLAND (410)-513-4640

**DETAIL PLAN OF HOCKEY PAVILION AREA**

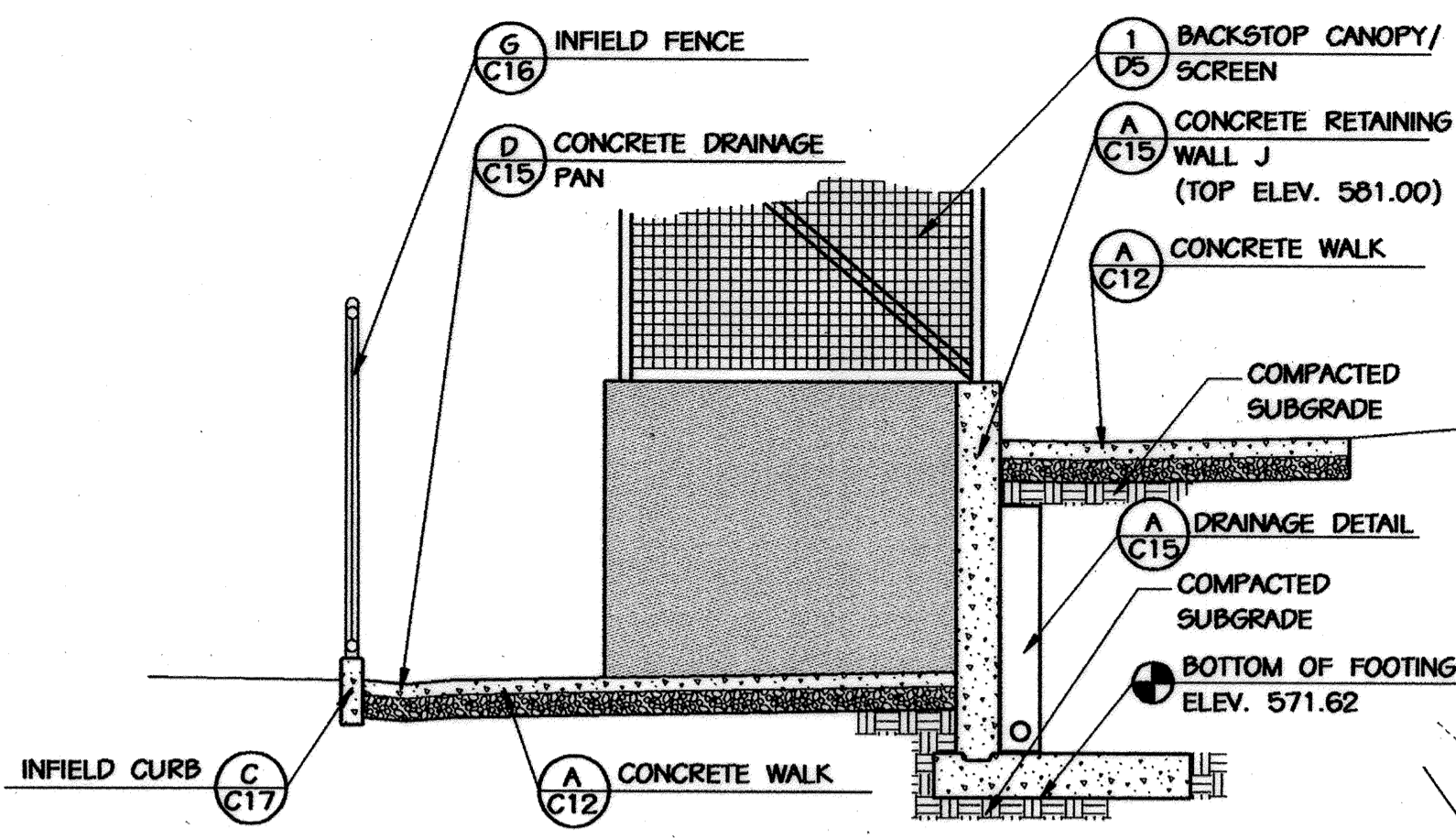
SCALE: 1" = 20'  
 DATE: 06-12-02  
 KCI JOB NO.: 01-00057  
 CAPITAL PROJECT NO.: N-3932  
 PERMIT ISSUE:  
 CONSTRUCTION ISSUE:

**D1**  
 SHEET NO.: 107 OF 143  
 SDP-02-64

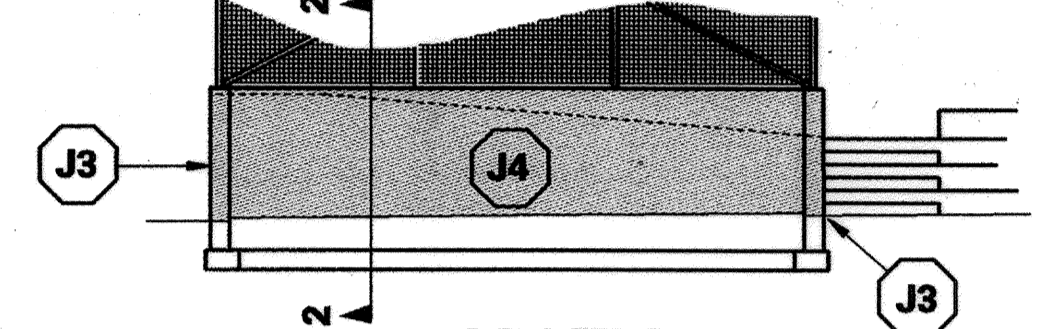
APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
 [Signature] 9/12/02  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE  
 [Signature] 10/23/02  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE  
 [Signature] 10/23/02  
 DIRECTOR DATE

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



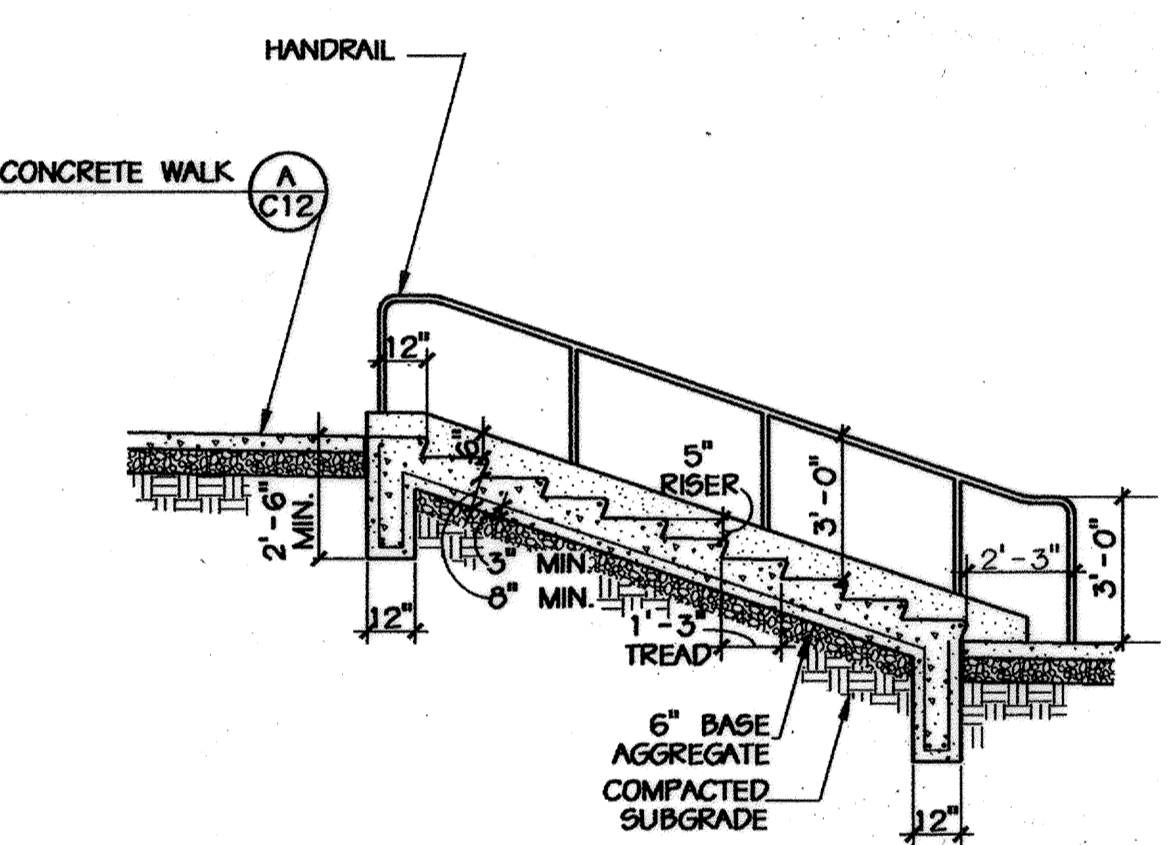


**SECTION 2-2**  
SCALE: 1/4"=1'

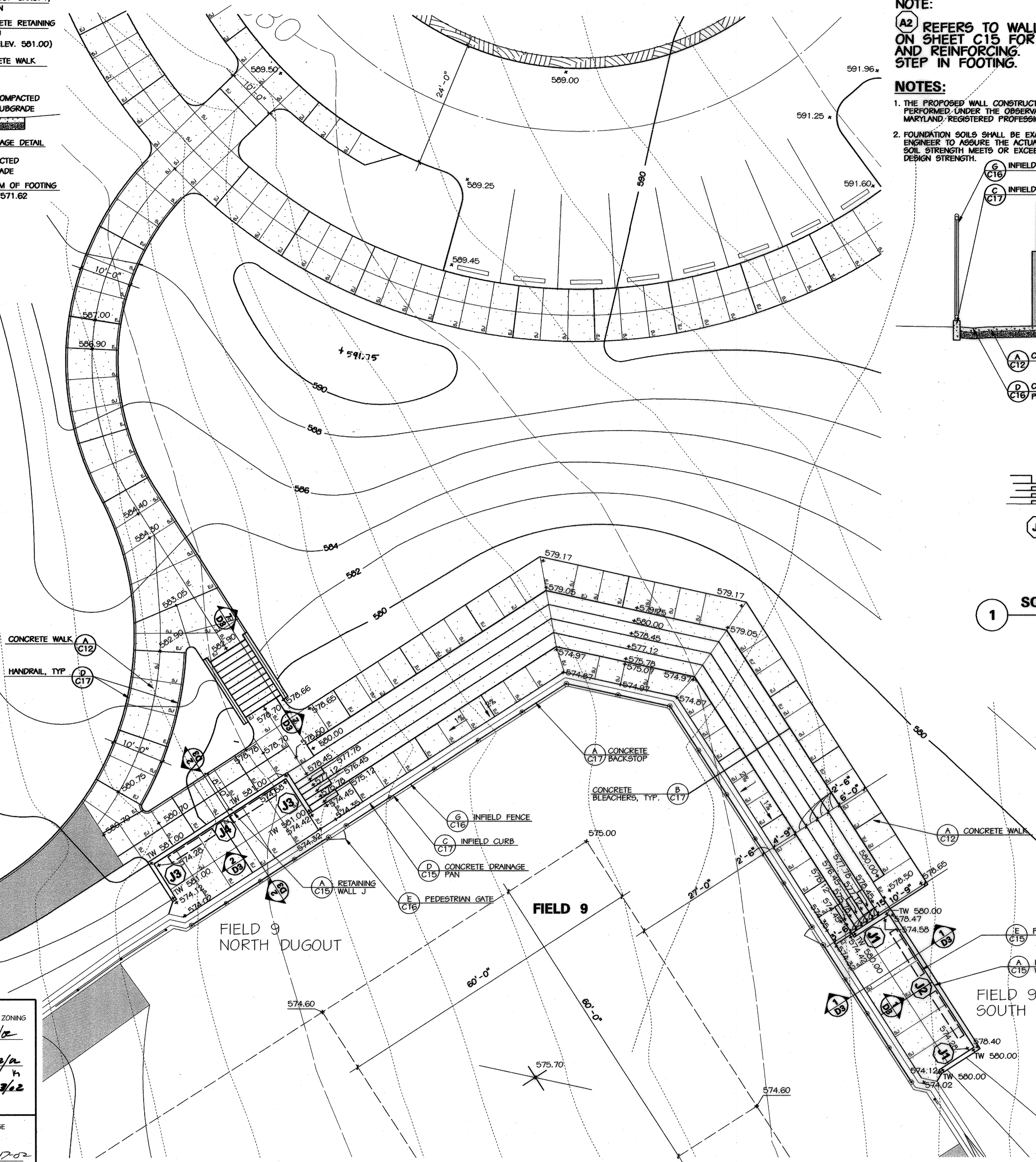


**PROFILE 2**  
SCALE: 1"=10'

**2 NORTH DUGOUT DETAILS - FIELD 9**



**SECTION 7-7 - CONCRETE STAIRS (FIELD 9)**  
SCALE: 1/4"=1'

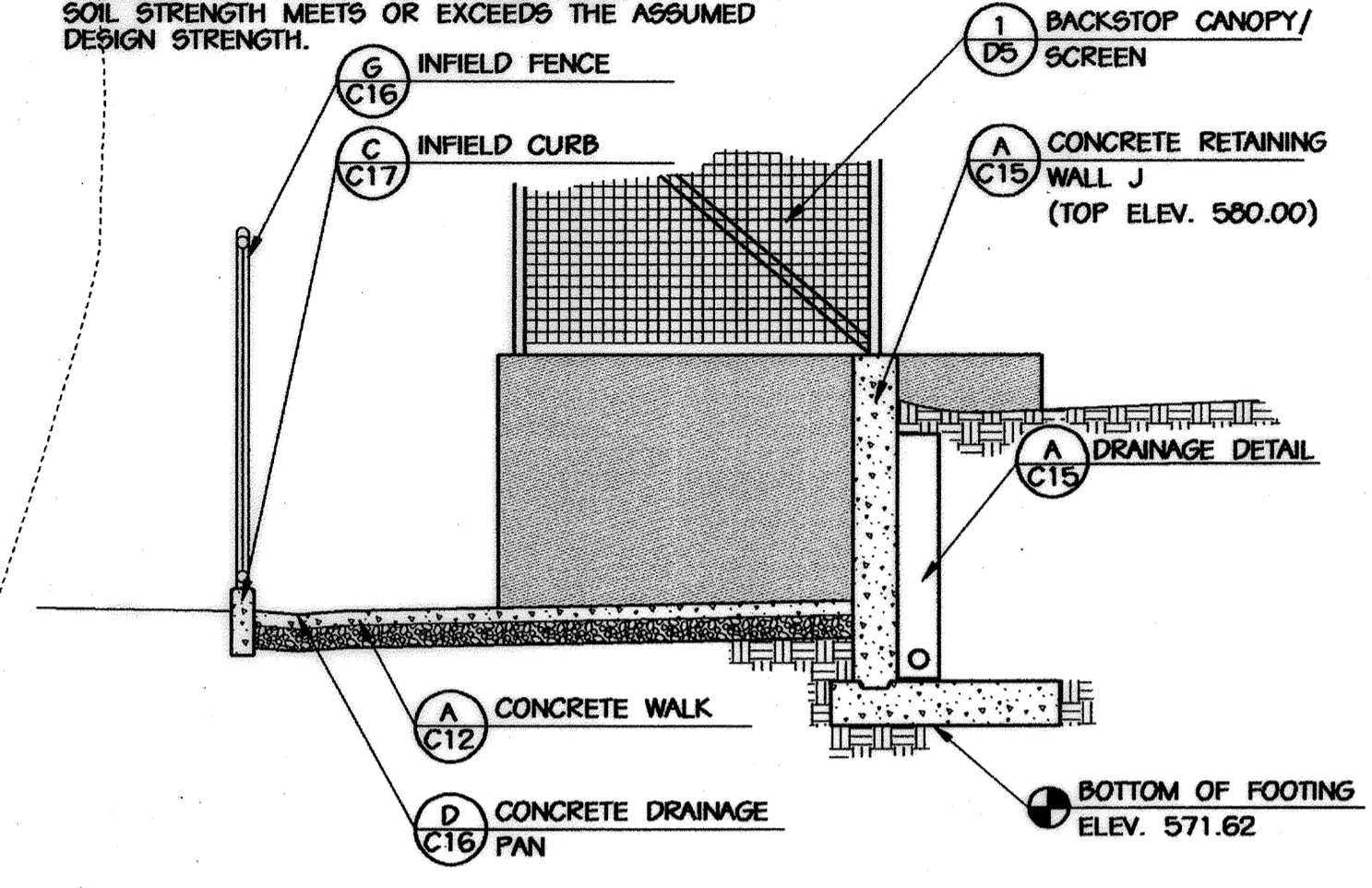


**NOTE:**

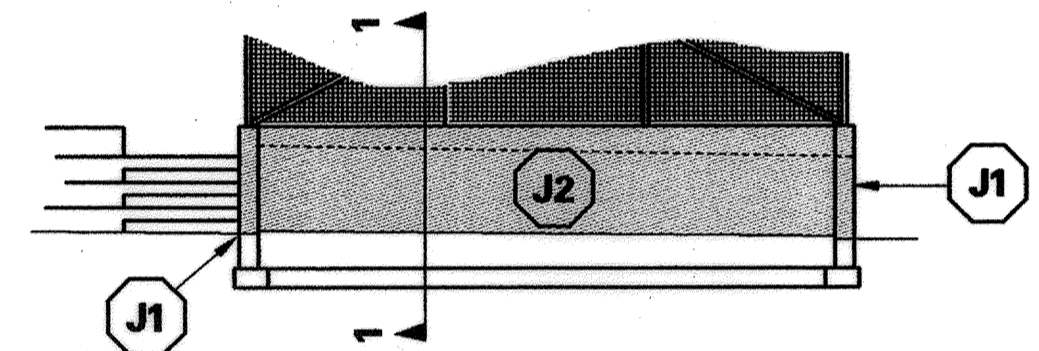
**(A2) REFERS TO WALL/FOOTING DESIGNATION - SEE CHART ON SHEET C15 FOR RETAINING WALL DETAILS, FOOTINGS AND REINFORCING. HORIZONTAL DIMENSIONS DENOTE STEP IN FOOTING.**

**NOTES:**

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.

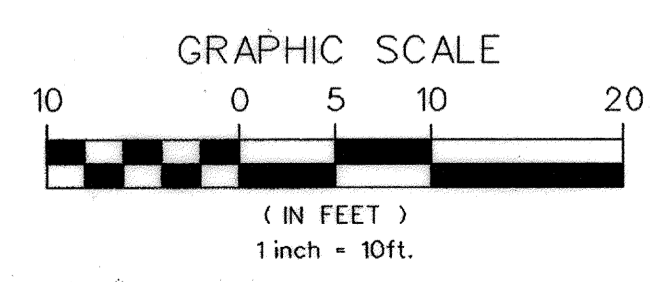
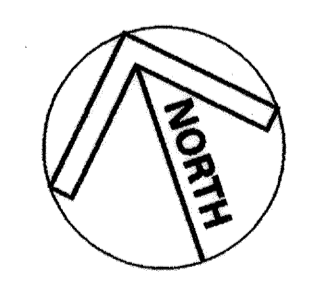


**SECTION 1-1**  
SCALE: 1/4"=1'



**PROFILE 1**  
SCALE: 1"=10'

**1 SOUTH DUGOUT DETAILS - FIELD 9**



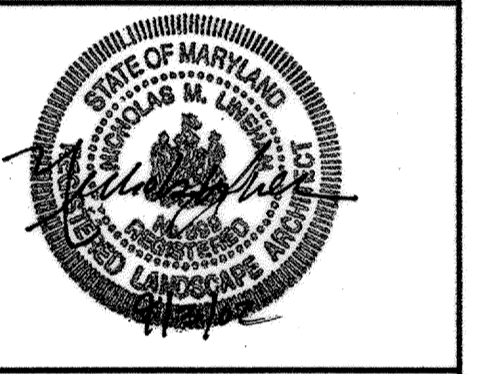
MARYLAND COORDINATE SYSTEM  
HORIZONTAL NAD 83-91  
VERTICAL NAVD 29

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

NO.	REVISIONS DESCRIPTION	DATE

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



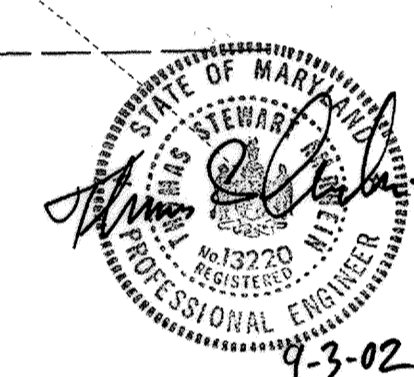
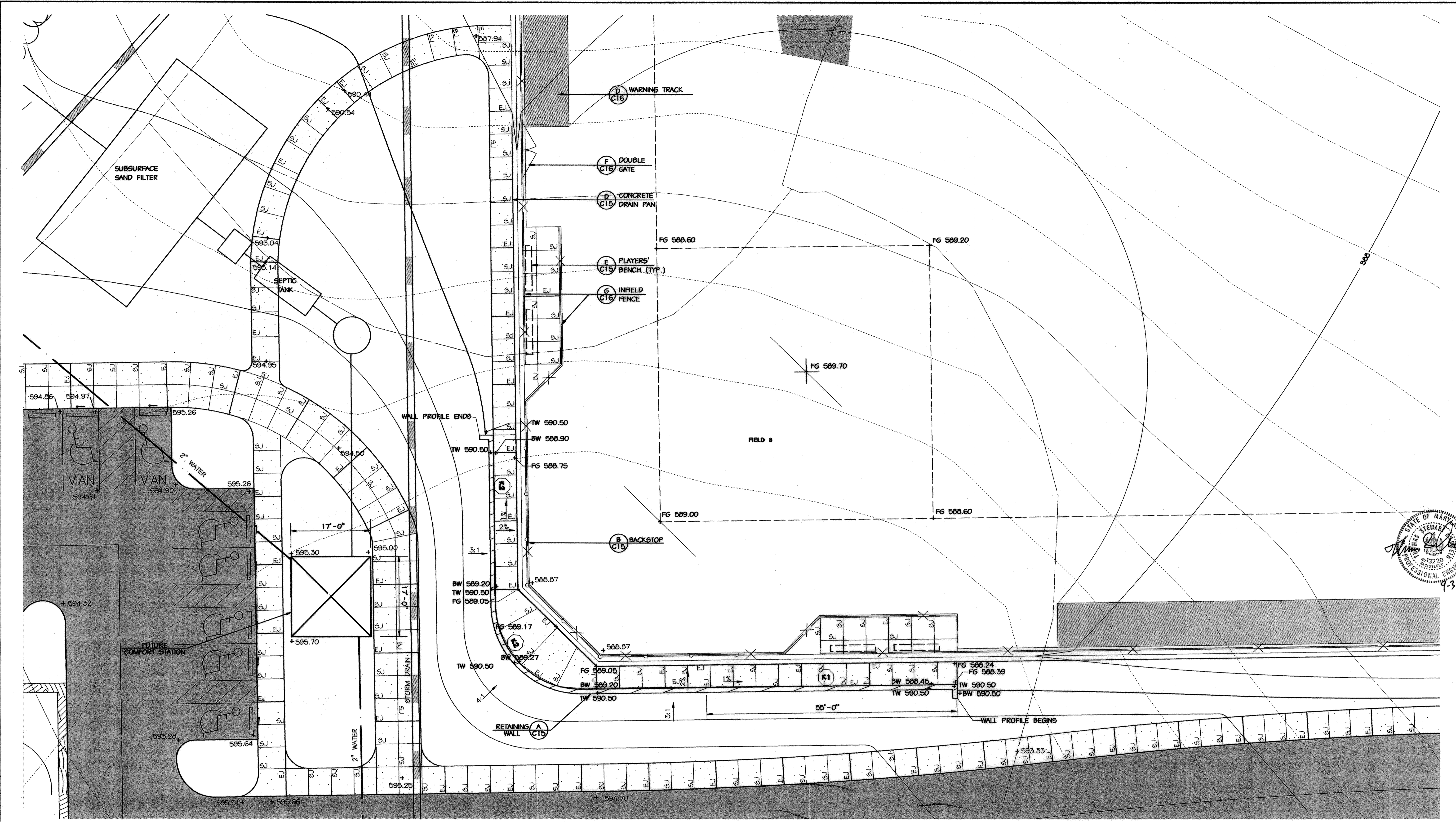
**WESTERN REGIONAL PARK**  
 HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
 7120 OAKLAND MILLS ROAD  
 COLUMBIA, MARYLAND 21046-1677  
 (410) 313-4640

**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:

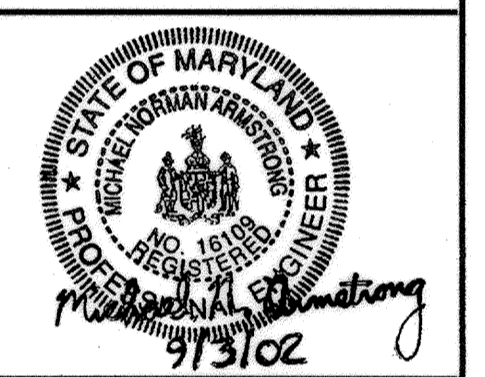
**D3**

SHEET NO.: 109 OF 113  
 SDP-02-64



NO.	REVISIONS DESCRIPTION	DATE

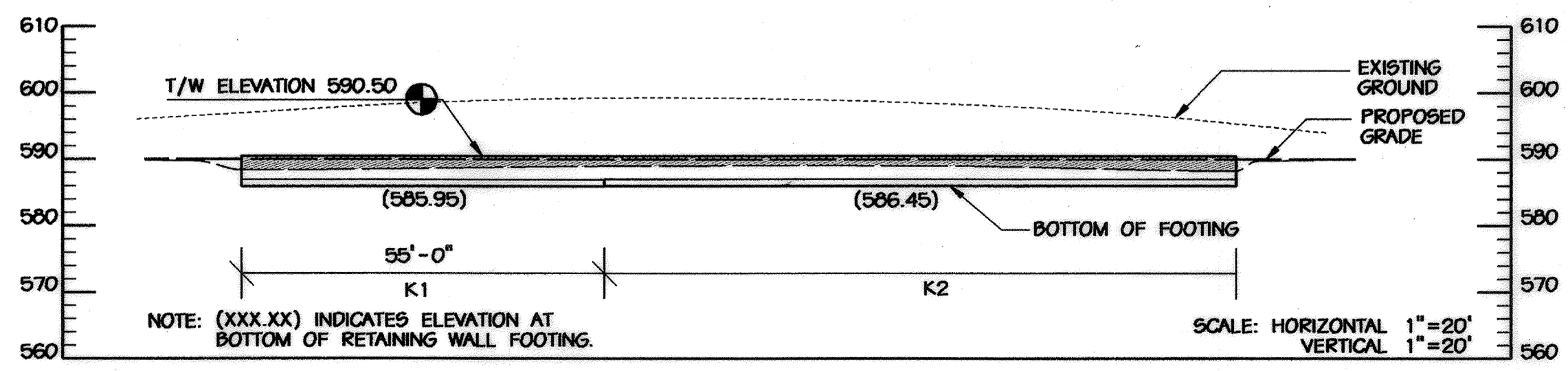
**KCI TECHNOLOGIES INC.**  
 ENGINEERS • PLANNERS • SURVEYORS  
 10 NORTH PARK DRIVE  
 HUNT VALLEY, MARYLAND 21030  
 PHONE: (410) 316-7800 FAX: (410) 316-7817  
 WWW.KCI.COM



**WESTERN REGIONAL PARK**  
 HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
 7120 OAKLAND MILLS ROAD  
 COLUMBIA, MARYLAND 21046-1677  
 (410)-513-4840

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE: 9/12/02  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE: 11/24/02  
 DIRECTOR DATE: 10/23/02

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 COUNTY HEALTH OFFICER DATE: 10-12-02  
 HOWARD COUNTY HEALTH DEPARTMENT



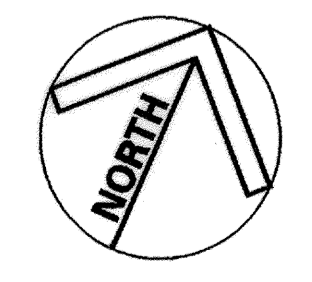
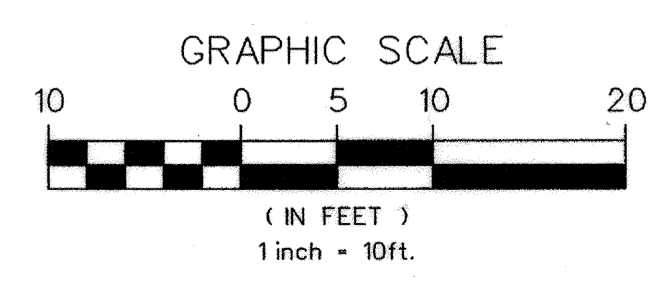
**PROFILE - WALL K**

- 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. (K) REFERS TO WALL/FOOTING DESIGNATION - SEE CHART ON SHEET C15 FOR RETAINING WALL DETAILS, FOOTINGS AND REINFORCING. HORIZONTAL DIMENSIONS DENOTE STEP IN FOOTINGS.

**K2 WALL/FOOTING DESIGNATION**

RETAINING WALL DETAILS, FOOTINGS AND REINFORCING SEE SHEET C15

NOTE: HORIZONTAL DIMENSIONS DENOTE STEP IN FOOTINGS

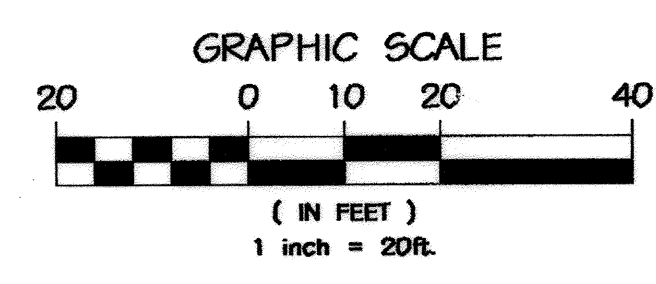
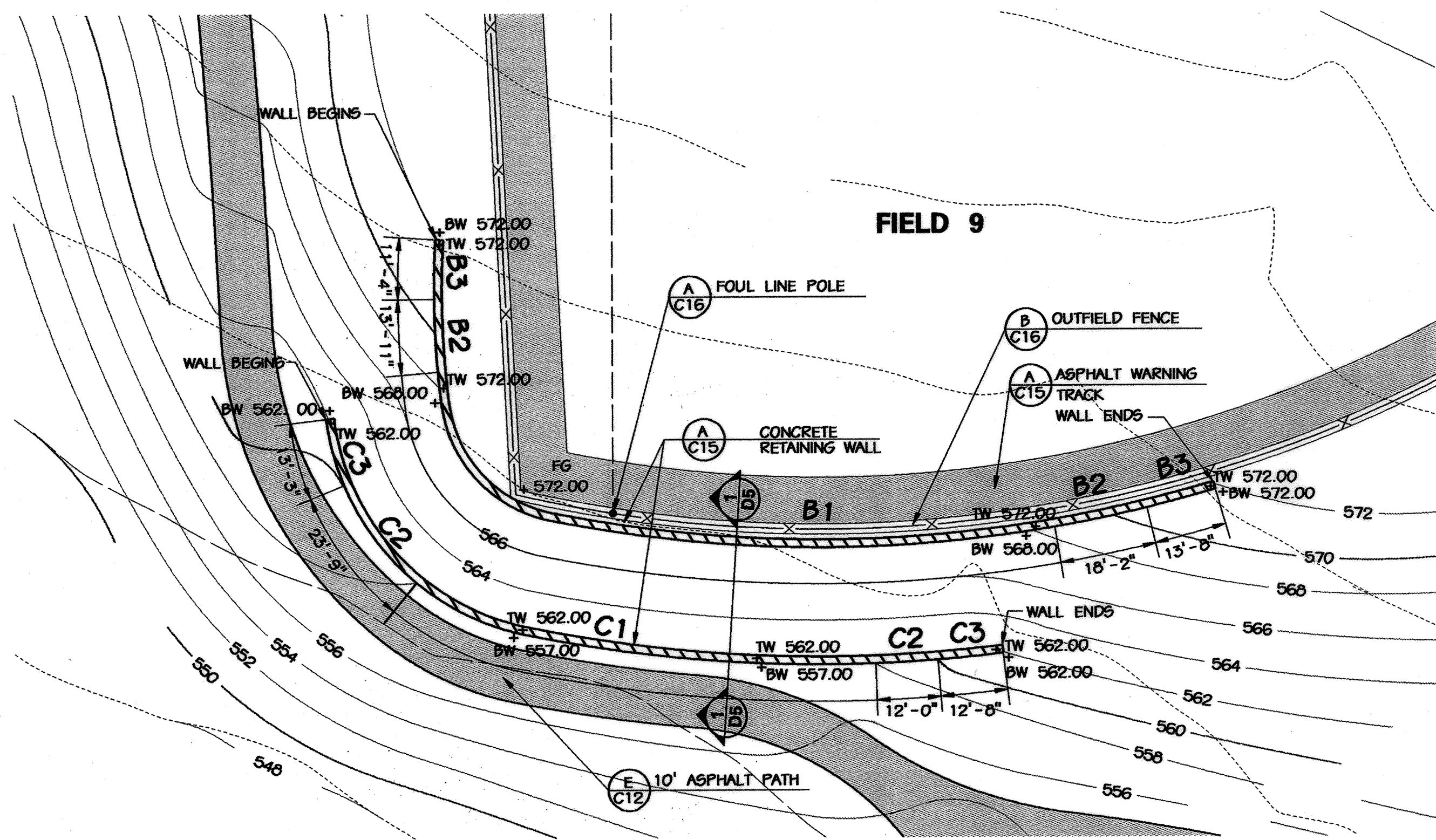


**DETAIL PLAN OF FIELD 8 BLEACHER AREA**

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  
 50P-02-64

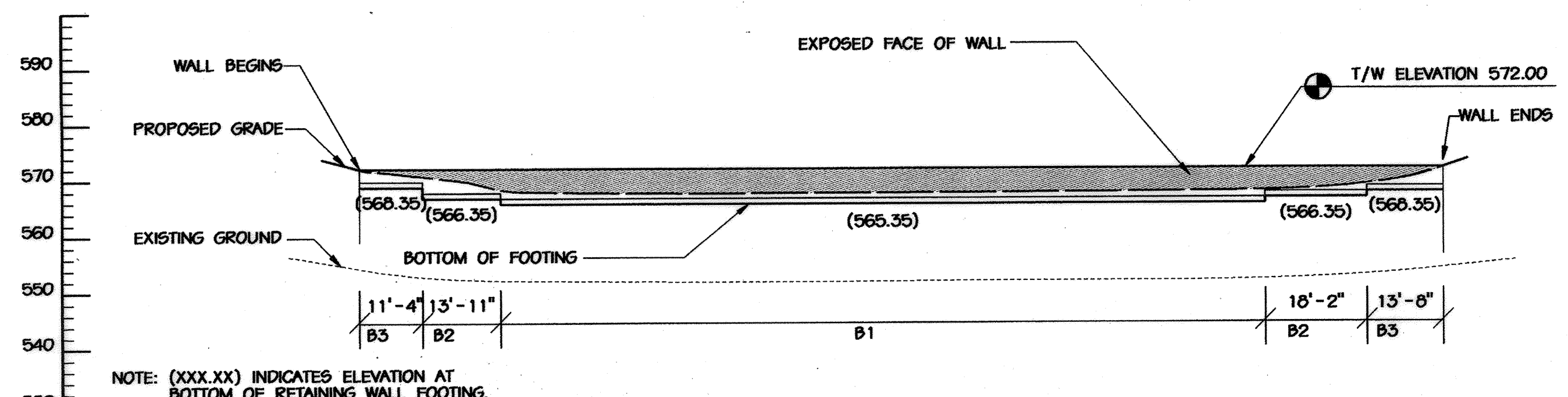
MARYLAND COORDINATE SYSTEM  
 HORIZONTAL NAD 83-91  
 VERTICAL NAVD 29



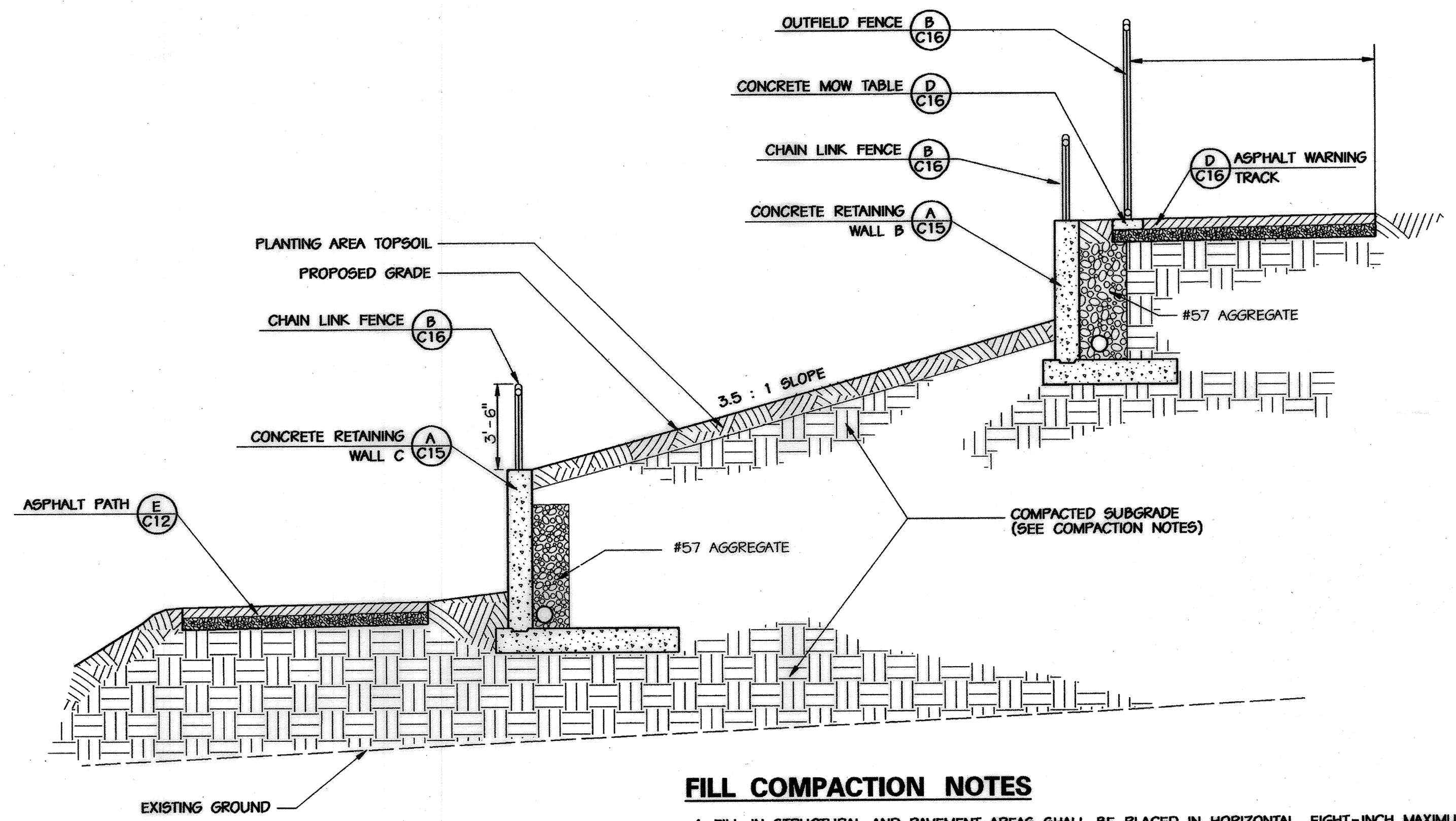
**RETAINING WALLS B AND C**  
NOTE: SEE WALL PROFILES, THIS SHEET

MARYLAND COORDINATE SYSTEM  
HORIZONTAL NAD 83-91  
VERTICAL NVD 23

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'



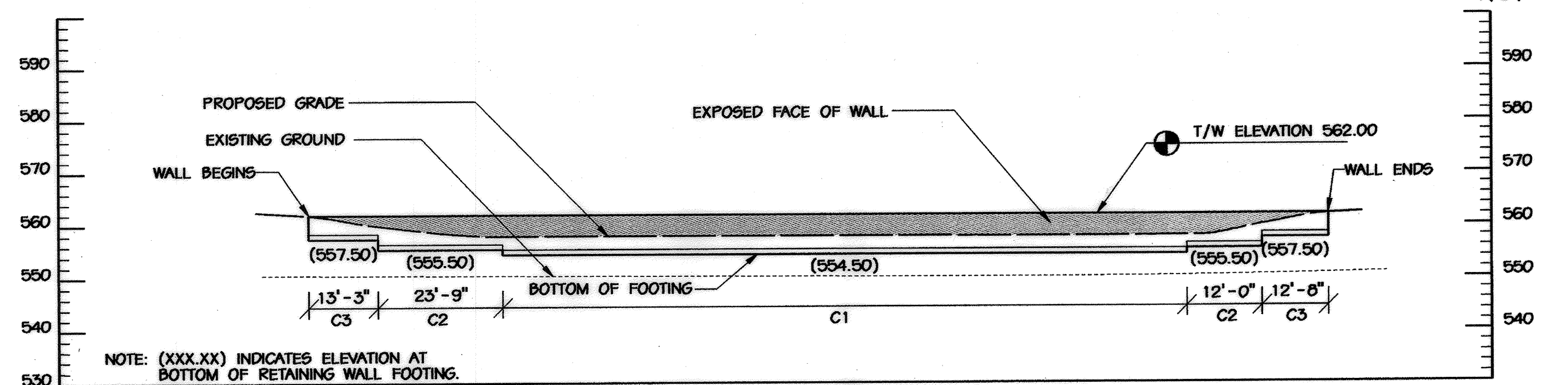
**FILL COMPACTION NOTES**

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 THAN 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

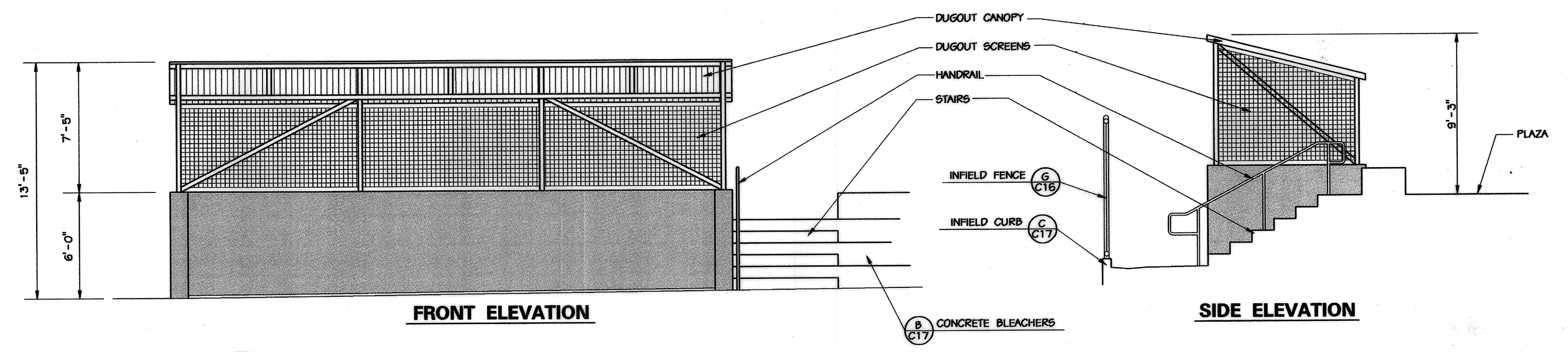
**RETAINING WALL NOTES:**

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.

**SECTION OF RETAINING WALLS (B & C) - FIELD 9**  
SCALE: 1/4"=1'



**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  
 Cindy Hamrick 9/22/02  
 Chief, Division of Land Development  
 David S. Harts 10/23/02  
 Director

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 County Health Officer  
 Dennis Kovach 10-17-02  
 DATE

STATE OF MARYLAND  
 PROFESSIONAL ENGINEER  
 Michael J. Armstrong  
 9/3/02

STATE OF MARYLAND  
 PROFESSIONAL ENGINEER  
 Thomas J. ...  
 9.3.02

NO.	REVISIONS DESCRIPTION	DATE

**KCI TECHNOLOGIES INC.**  
 ENGINEERS • PLANNERS • SURVEYORS  
 10 NORTH PARK DRIVE  
 HUNT VALLEY, MARYLAND 20830  
 PHONE: (410) 316-7800 FAX: (410) 316-7817  
 WWW.KCI.COM

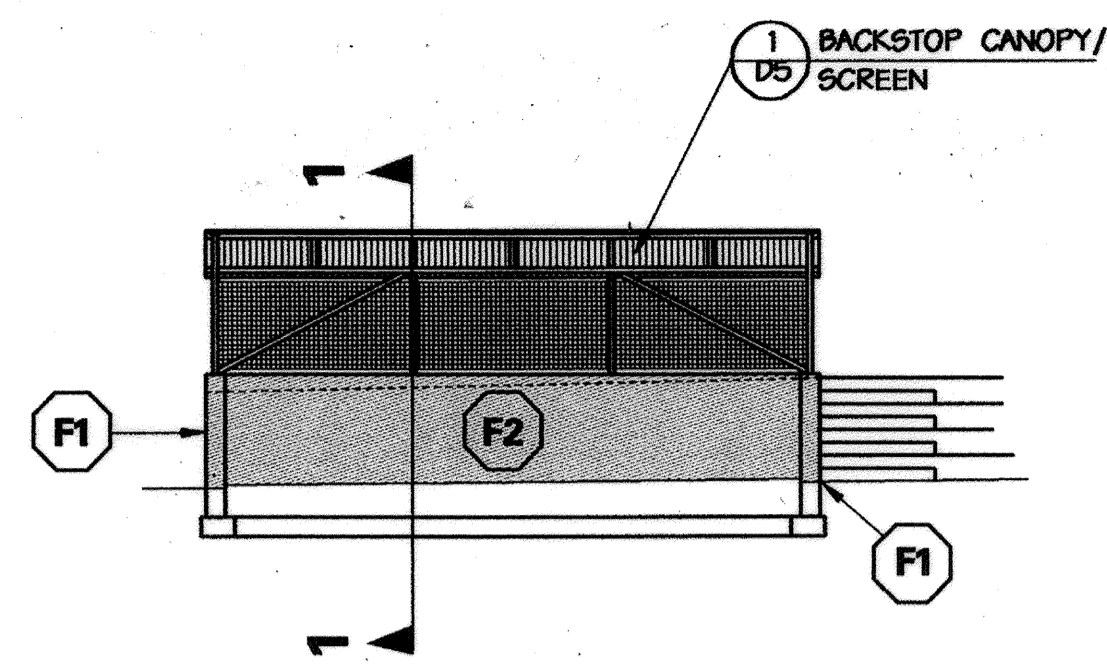
**WESTERN REGIONAL PARK**  
 HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
 1120 OAKLAND MILLS ROAD  
 COLUMBIA, MARYLAND 21046-1677  
 (410)-513-4640

**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:

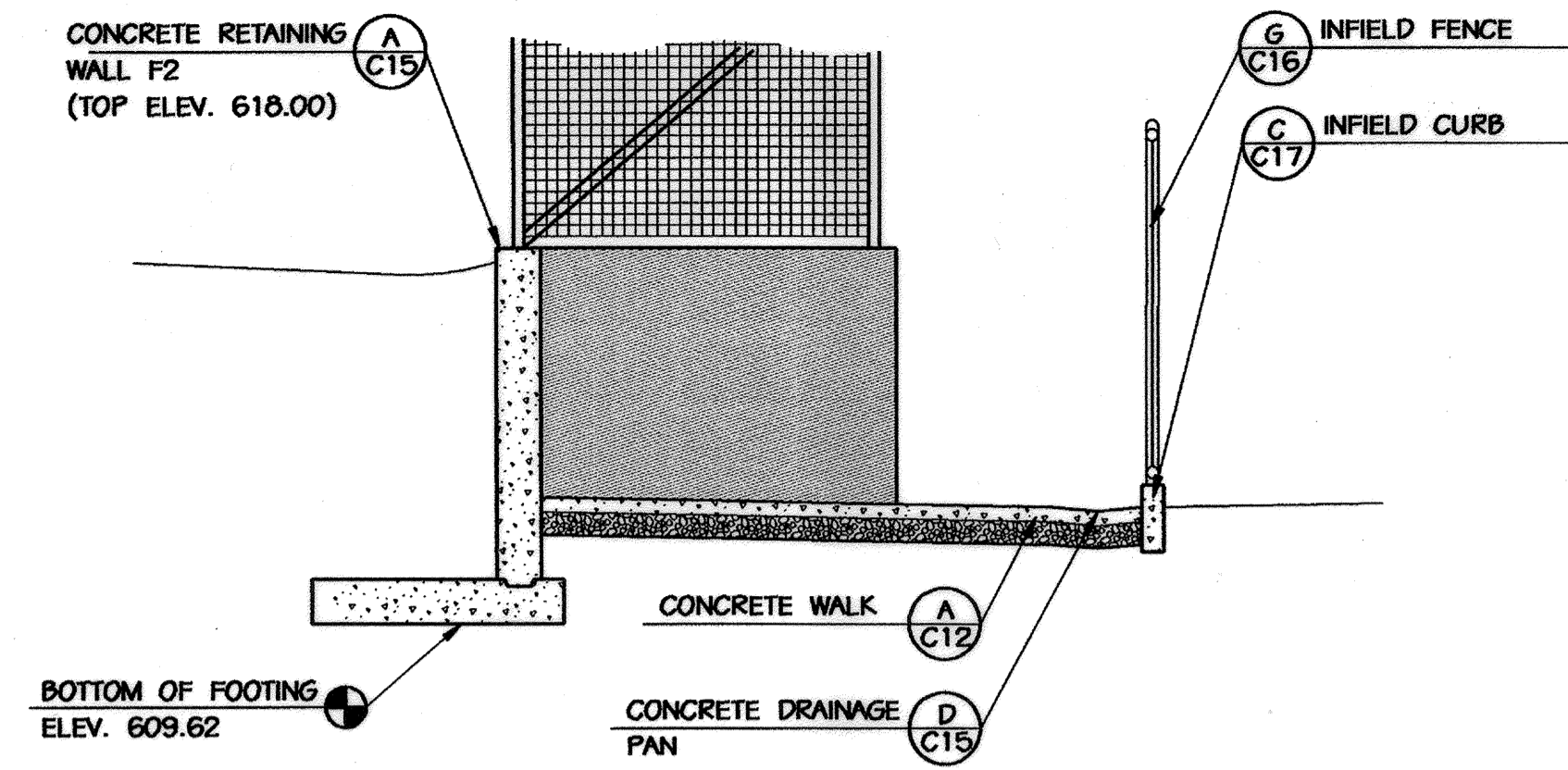
**D5**  
 SHEET NO.: 111 OF 115  
 50P-02-64



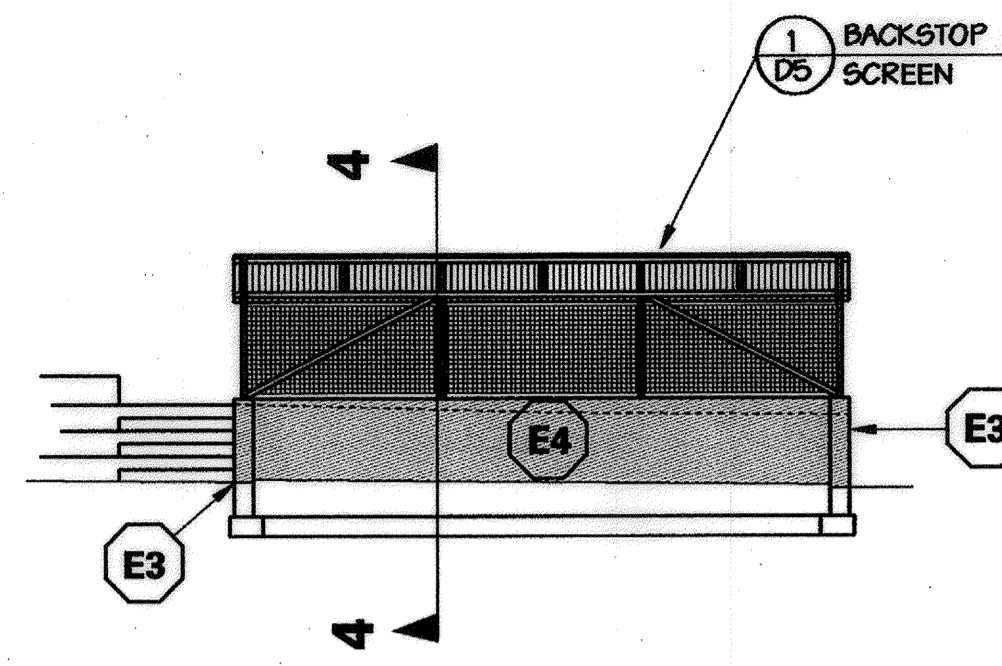




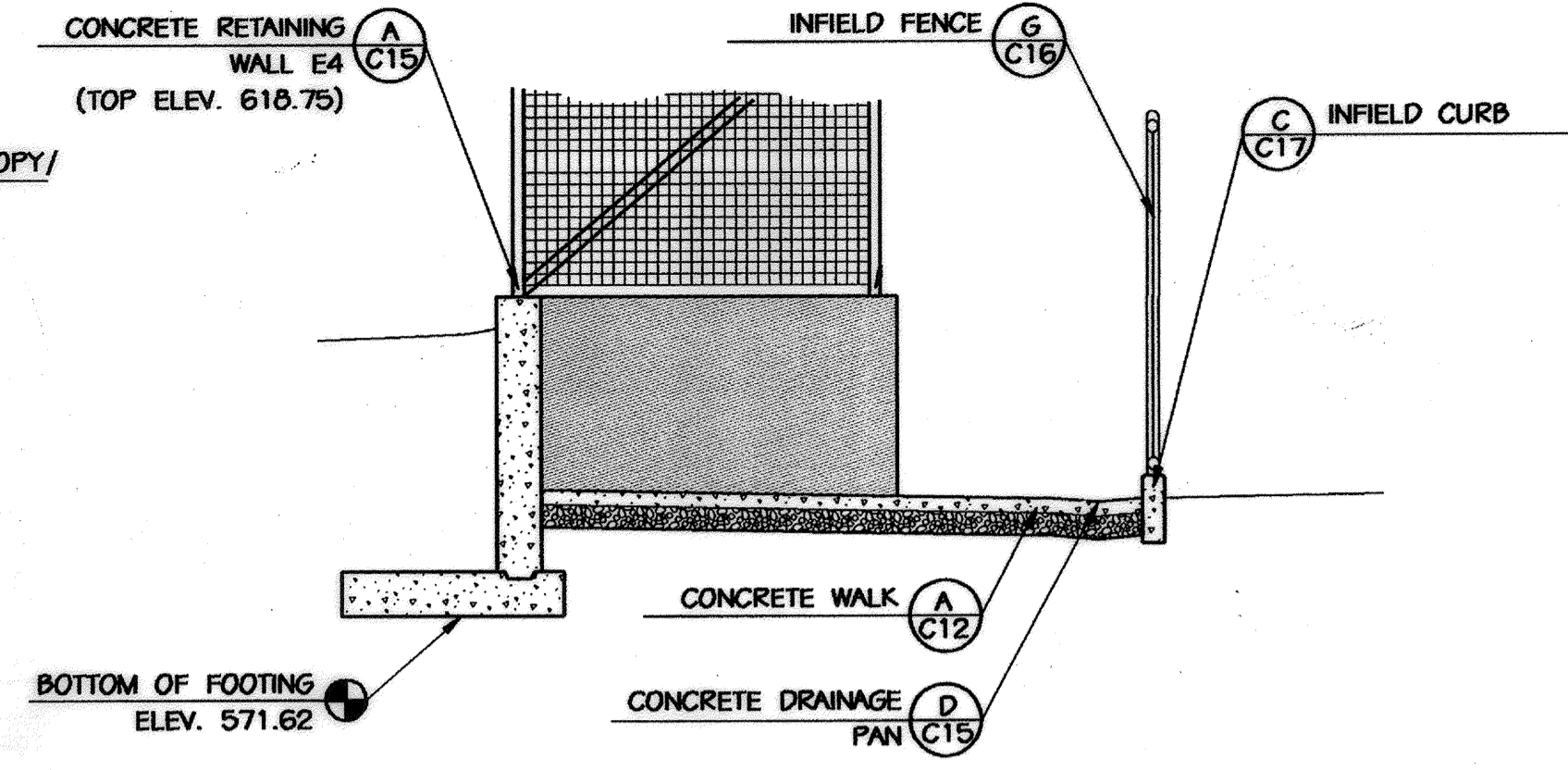
**PROFILE 1**  
SCALE: 1"=10'



**SECTION 1-1**  
SCALE: 1/4"=1'



**PROFILE 4**  
SCALE: 1"=10'



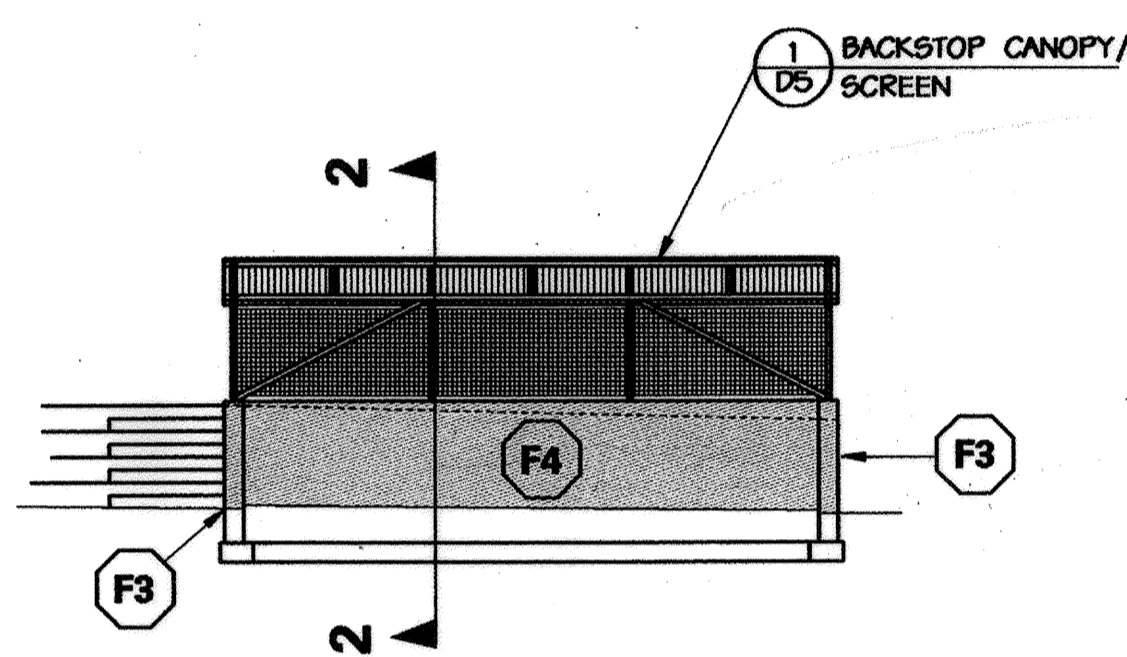
**SECTION 4-4**  
SCALE: 1/4"=1'

1

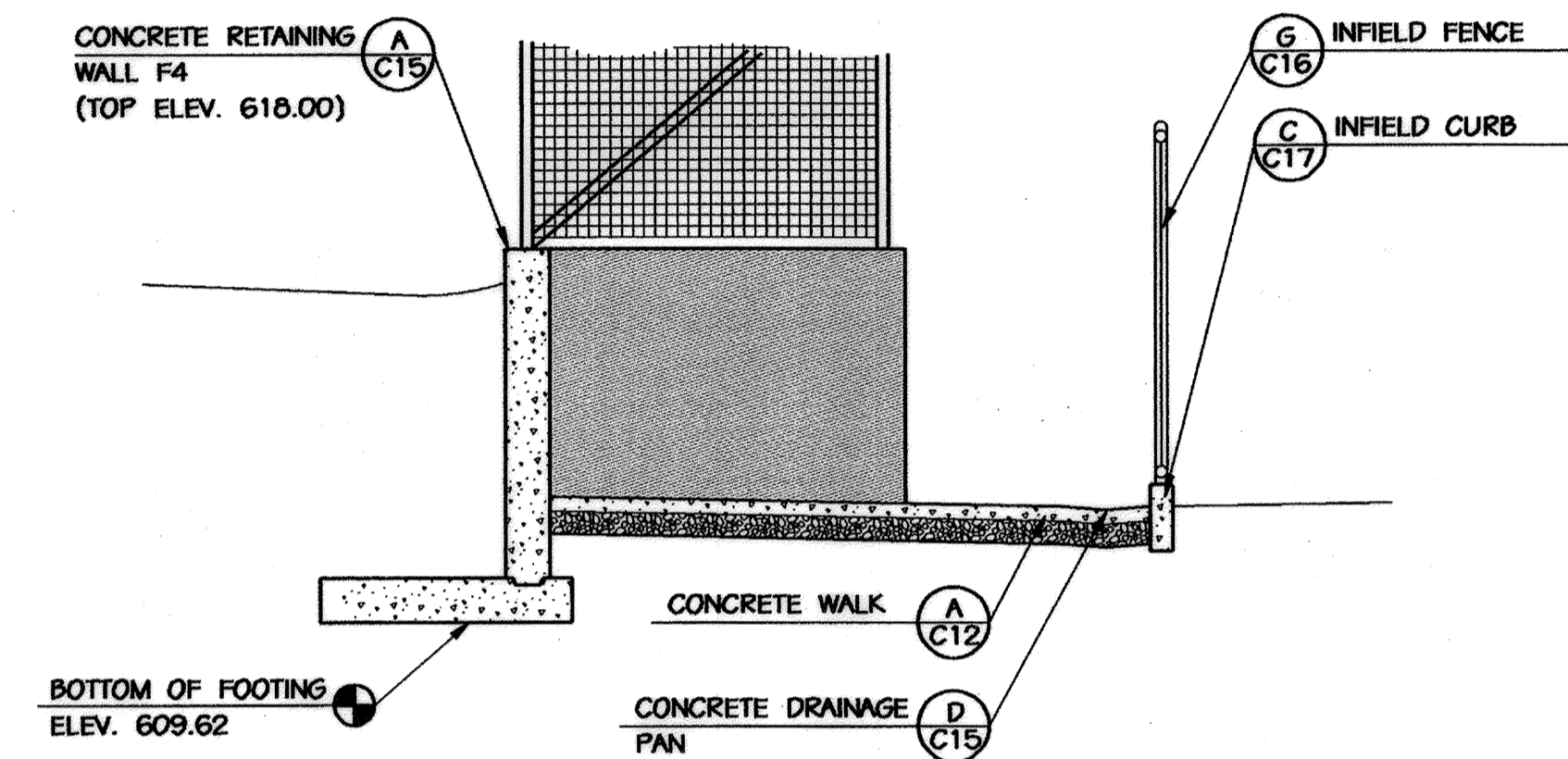
**SOUTH DUGOUT DETAIL - FIELD 1**

4

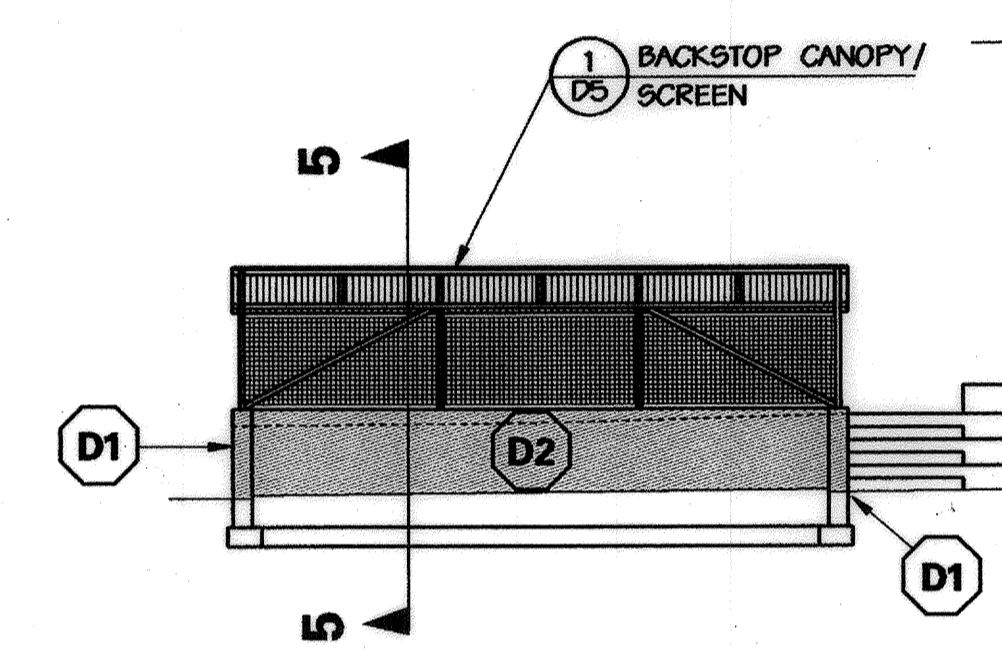
**WEST DUGOUT DETAIL - FIELD 2**



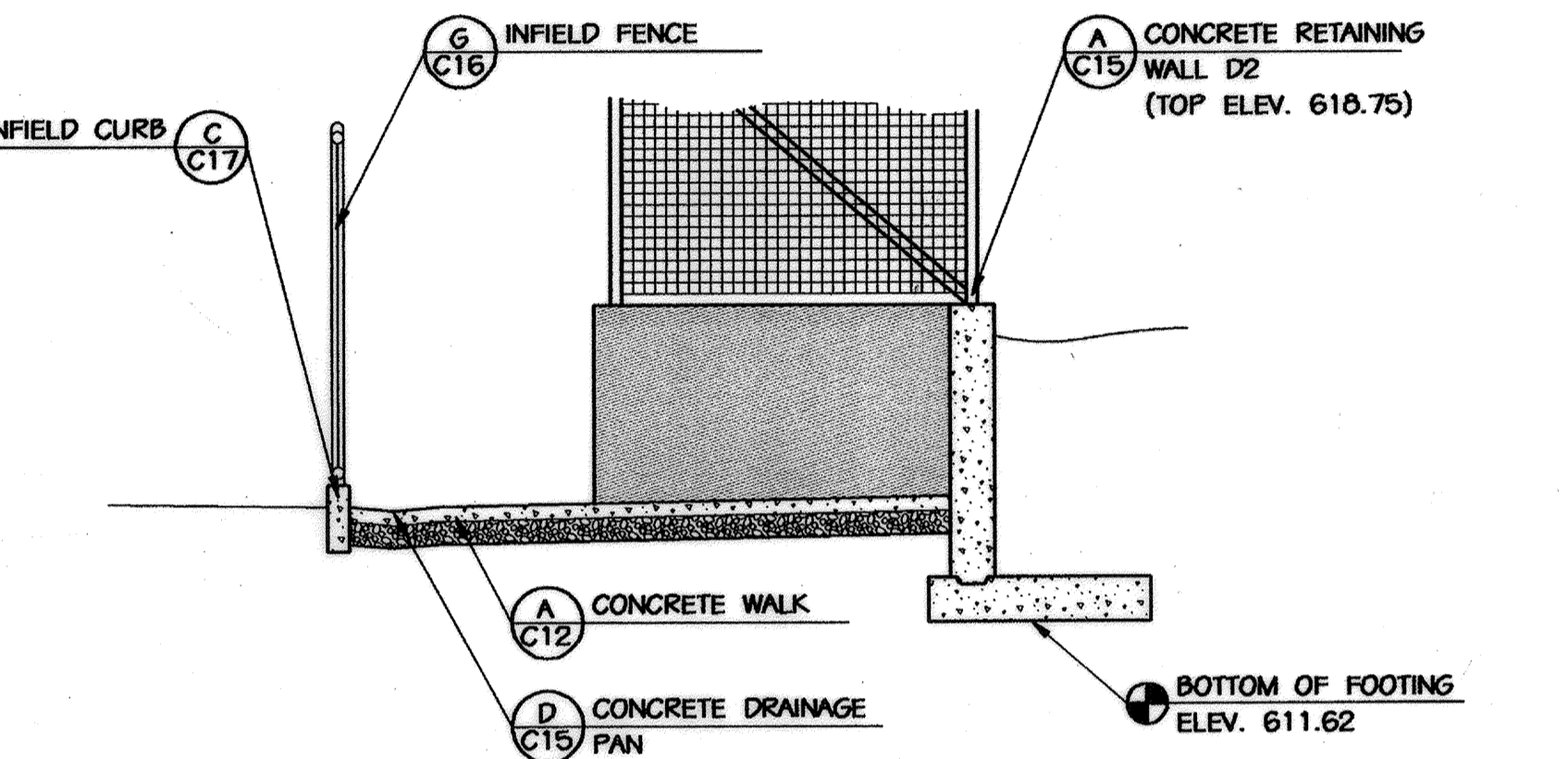
**PROFILE 2**  
SCALE: 1"=10'



**SECTION 2-2**  
SCALE: 1/4"=1'



**PROFILE 5**  
SCALE: 1"=10'



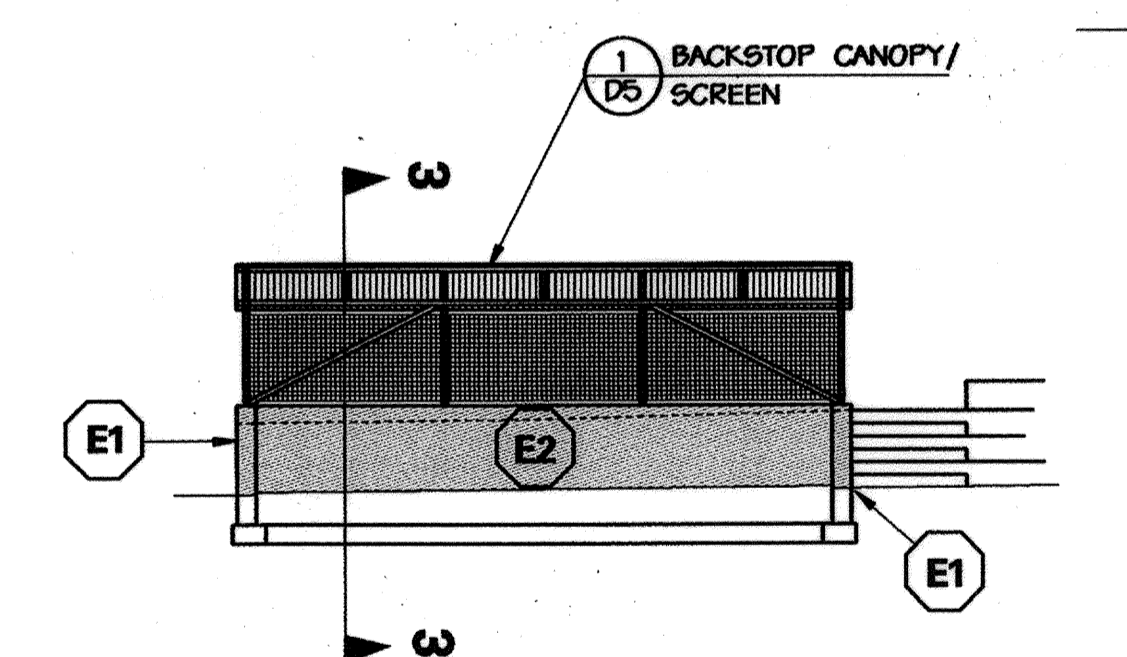
**SECTION 5-5**  
SCALE: 1/4"=1'

2

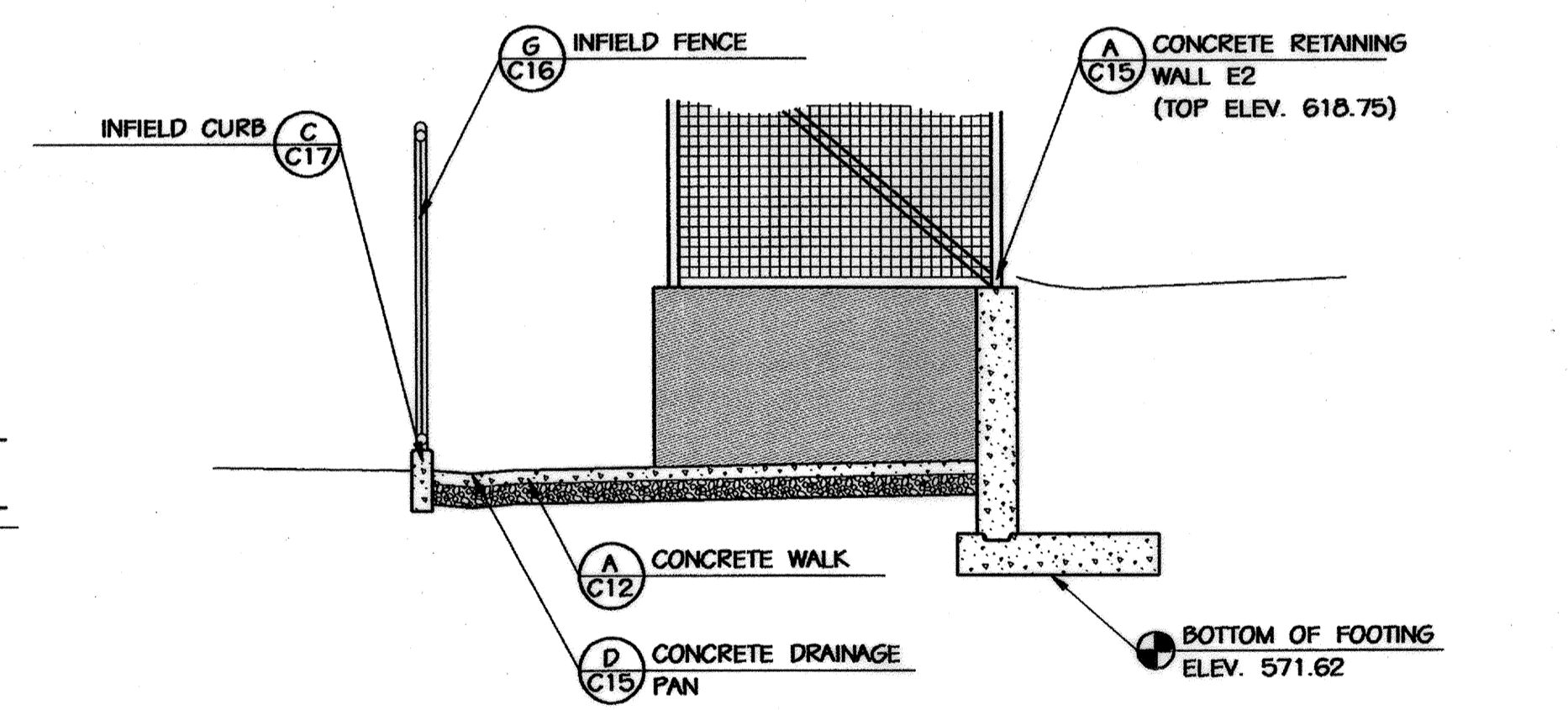
**NORTH DUGOUT DETAIL - FIELD 1**

5

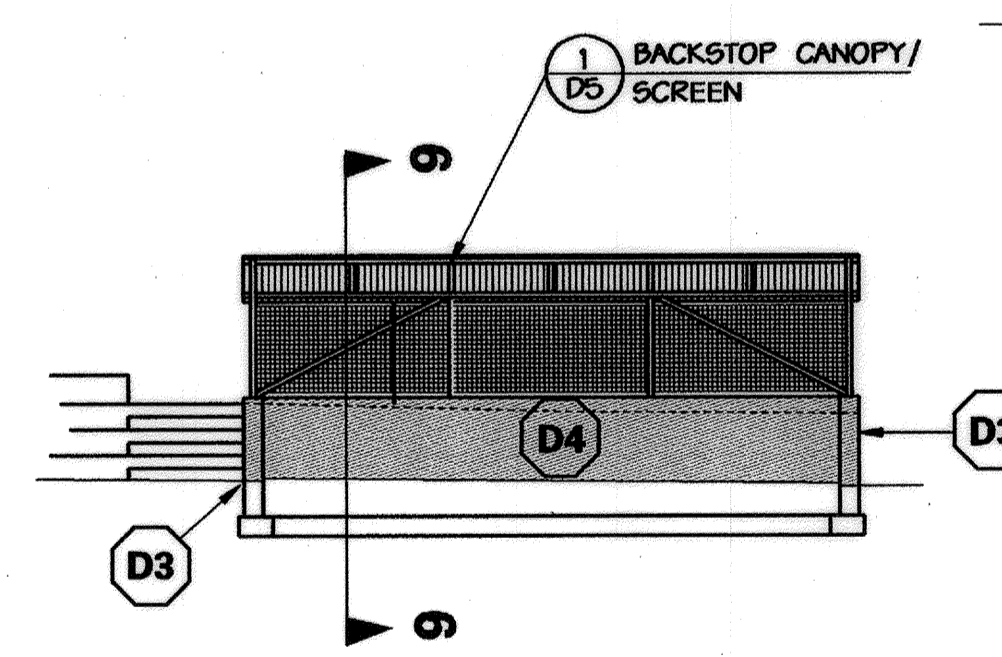
**NORTH DUGOUT DETAIL - FIELD 3**



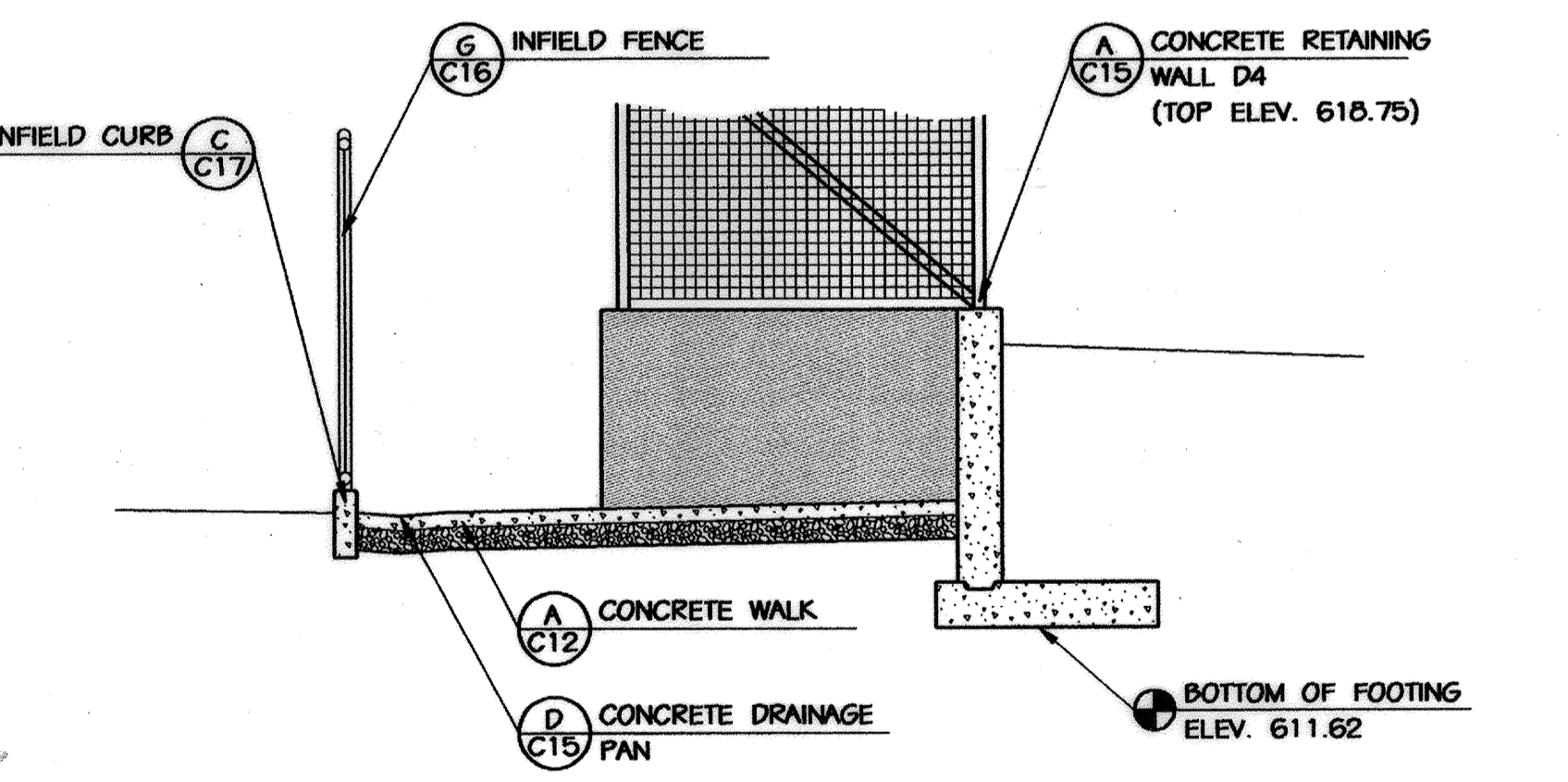
**PROFILE 3**  
SCALE: 1"=10'



**SECTION 3-3**  
SCALE: 1/4"=1'



**PROFILE 6**  
SCALE: 1"=10'



**SECTION 6-6**  
SCALE: 1/4"=1'

3

**EAST DUGOUT DETAIL - FIELD 2**

6

**SOUTH DUGOUT DETAIL - FIELD 3**

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
*[Signature]* 9/12/02  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE  
*[Signature]* 10/23/02  
 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

**NOTES:**

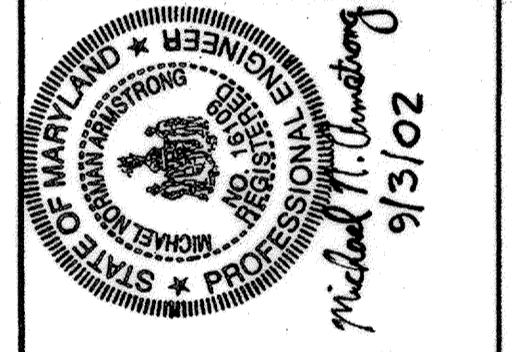
- REFERRE DETAIL A, SHEET C15 FOR CONCRETE RETAINING WALL REINFORCING AND FOOTING SCHEDULE AND WALL DETAILS.
- FILL COMPACTION NOTES**
  - FILL IN STRUCTURAL AND PAVEMENT AREAS SHALL BE PLACED IN HORIZONTAL, EIGHT-INCH MAXIMUM LAYER LIFTS AND COMPACTED TO AT LEAST 95 PERCENT OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D-998). 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.
  - IN BUILDING AND RETAINING WALL AREAS THE FILL SHALL EXTEND A MINIMUM OF 10 FEET BEYOND THE BUILDING LIMITS AND FILL SLOPES NO STEEPER THAN 2(H):1(V) SHALL BE USED.
  - 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.
- RETAINING WALL NOTES:**
  - THE PROPOSED WALL CONSTRUCTION SHALL BE PERFORMED UNDER THE OBSERVATION OF A MARYLAND REGISTERED PROFESSIONAL ENGINEER.
  - 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

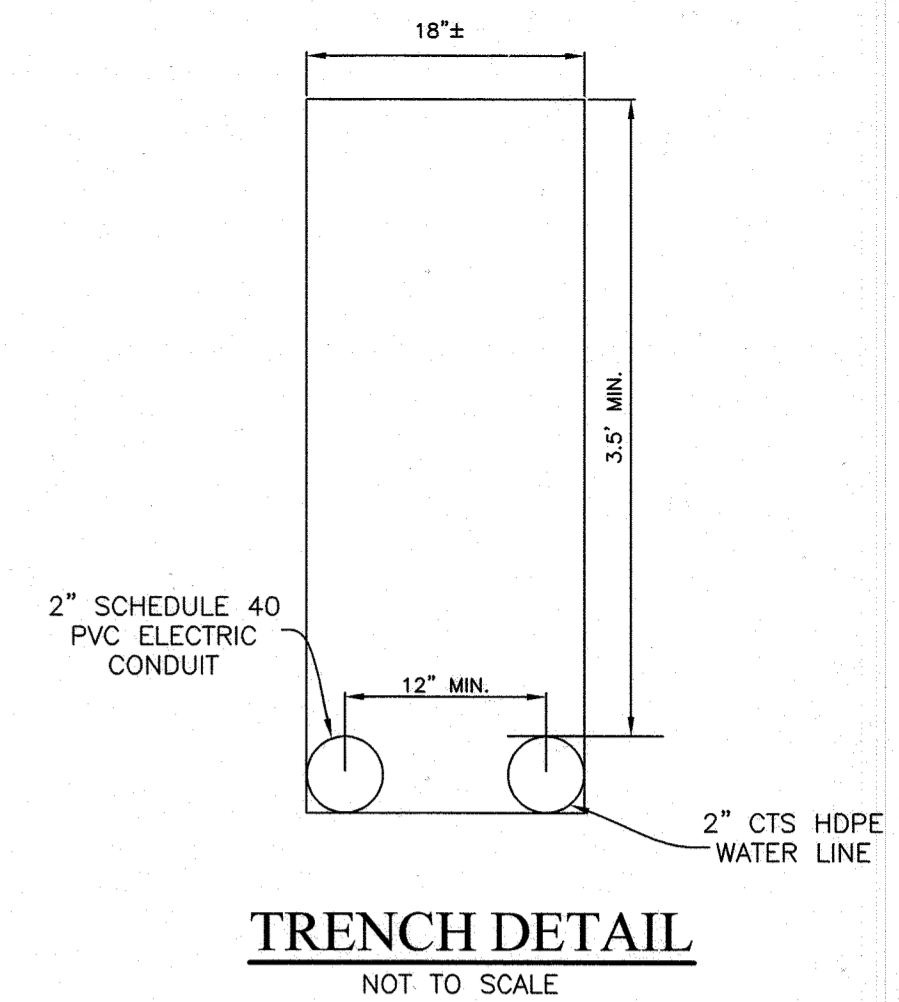
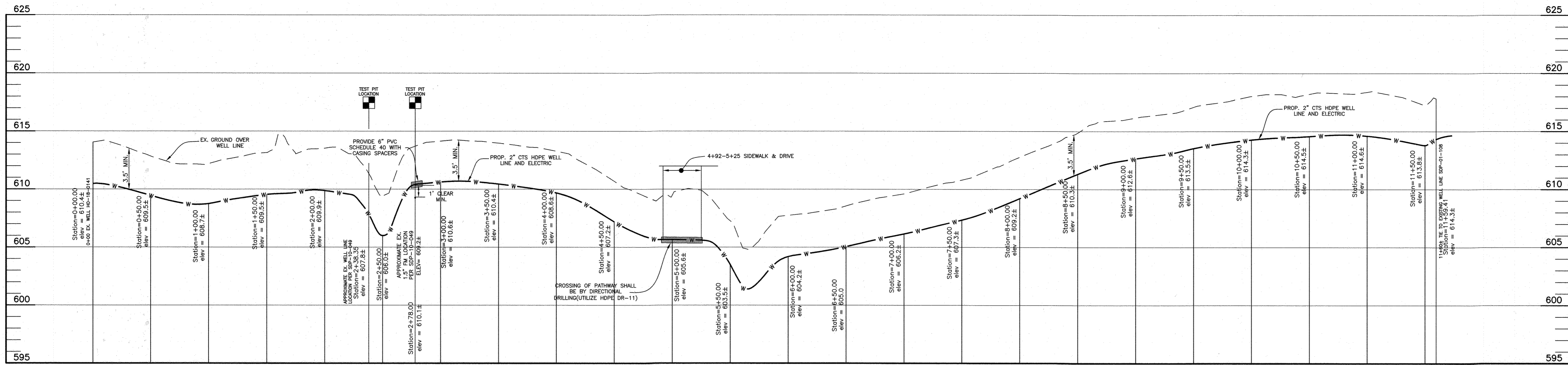
**KCI TECHNOLOGIES INC.**  
 ENGINEERS • PLANNERS • SURVEYORS  
 30 NORTH PARK DRIVE  
 HUNT VALLEY, MARYLAND 21030  
 PHONE: (410) 316-7800 FAX: (410) 316-7817  
 WWW.KCI.COM



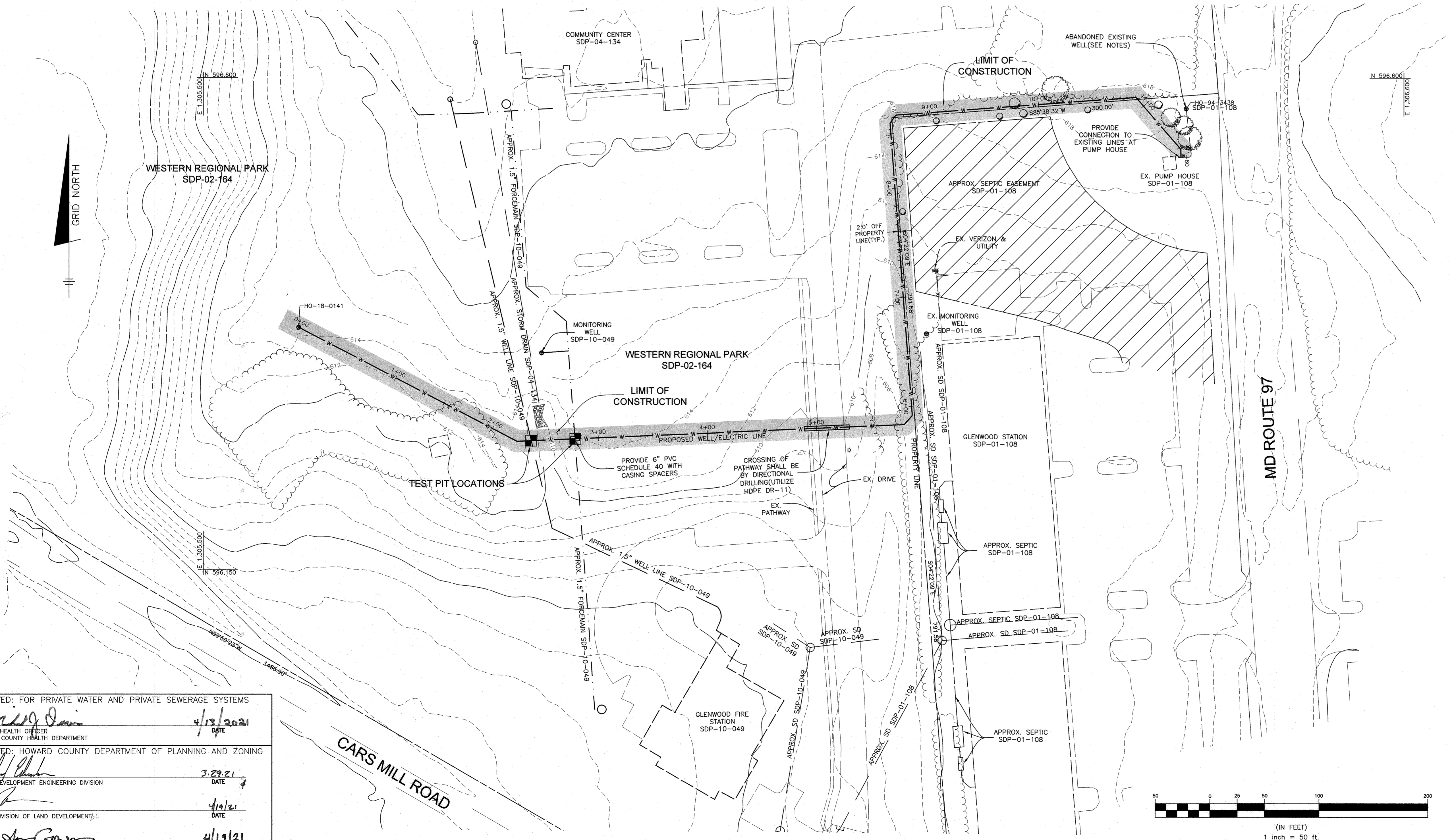
**WESTERN REGIONAL PARK**  
 HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
 7120 OAKLAND MILLS ROAD  
 COLUMBIA, MARYLAND 21046-1677  
 (410)-513-4640

**SOFTBALL 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:	



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



**NOTE:**  
THE EXISTING WELL LOCATED ON THE GLENWOOD STATION PROPERTY, SDP-01-108 SHALL BE PROPERLY ABANDONED BY A CERTIFIED WELL/SEPTIC CONTRACTOR PER THE BUREAU OF ENVIRONMENTAL HEALTH REQUIREMENTS.

**NOTE:**  
AN AGREEMENT BETWEEN HOWARD COUNTY AND THE OWNERS OF THE ADJACENT PROPERTY KNOWN AS GLENWOOD STATION FOR, AMONG OTHER THINGS, THE DEVELOPMENT, CONSTRUCTION, OWNERSHIP AND MAINTENANCE RESPONSIBILITIES FOR THE WELL AND WELL LINE/ELECTRIC ASSOCIATED WITH THE WELL THAT RUNS THROUGH THE PARK PROPERTY TO THE GLENWOOD STATION PROPERTY.

- NOTES FOR CONSTRUCTION ON PARK PROPERTY:**
- CONTRACTOR TO TEST PIT AT ALL UTILITY CROSSINGS TO VERIFY ELEVATIONS PRIOR TO CONSTRUCTION
  - THE DEPARTMENT OF RECREATION AND PARKS SHALL BE NOTIFIED WITH THE CONSTRUCTION SCHEDULE FOR INSPECTION BY DEPARTMENT STAFF.
  - PROVIDE TEMPORARY SIGNAGE STATING "THIS AREA OF PARK IS TEMPORARILY CLOSED DUE TO CONSTRUCTION".
  - ALL TOPSOIL SHALL BE STOCKPILED SEPARATELY AND REINSTALLED.
  - PRIOR TO THE INSTALLATION OF TOPSOIL, ALL SUBGRADE AREAS SHALL BE LOOSENED TO A MINIMUM OF 4 INCHES DEPTH AND MADE FRIABLE BY CROSS DISCING.
  - MARYLAND CERTIFIED TALL FESCUE SOD SHALL BE INSTALLED IN ALL DISTURBED AREAS NOT PAVED OR MULCHED.
  - APPROVAL BY THE DEPARTMENT IS REQUIRED:
    - FOR GRADING PRIOR TO THE PLACEMENT OF TOPSOIL.
    - PLACEMENT OF TOPSOIL PRIOR TO THE INSTALLATION OF TURF
    - COMPLETION OF TURF
  - INSTALL TEMPORARY ORANGE FENCING WHERE IT IS CONTIGUOUS WITH CONSTRUCTION AREAS IN PARK.

**THIS SHEET IS TO BE ADDED TO THE SITE DEVELOPMENT PLAN SET SDP-04-064**

NO.	DATE	REVISION
1	3.8.21	ADD SHEET TO SET

**BENCHMARK ENGINEERING, INC.**  
ENGINEERS & LAND SURVEYORS & PLANNERS  
8480 BALTIMORE NATIONAL PIKE & SUITE 315 & ELLICOTT CITY, MARYLAND 21043  
(7) 410-465-6105 (F) 410-465-6644  
WWW.BCI-CIVILENGINEERING.COM

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 20250, Expiration Date: 6-30-2021.

*Almalaga 3-8-21*

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
*[Signature]* 4/13/2021  
COUNTY HEALTH OFFICER  
HOWARD COUNTY HEALTH DEPARTMENT

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*[Signature]* 3.29.21  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

*[Signature]* 4/19/21  
CHIEF, DIVISION OF LAND DEVELOPMENT

*[Signature]* 4/19/21  
DIRECTOR

OWNER:  
HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
7120 OAKLAND MILLS ROAD  
COLUMBIA, MARYLAND 21046  
410.313.4640

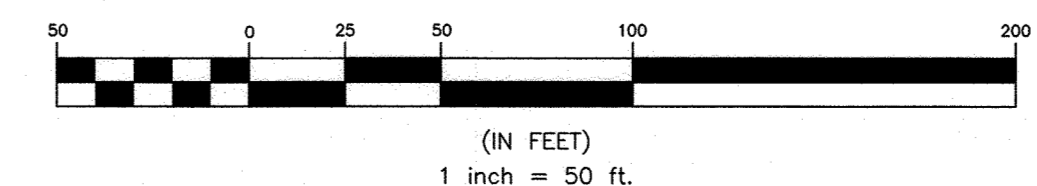
DEVELOPER:  
HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
7120 OAKLAND MILLS ROAD  
COLUMBIA, MARYLAND 21046  
410.313.4640

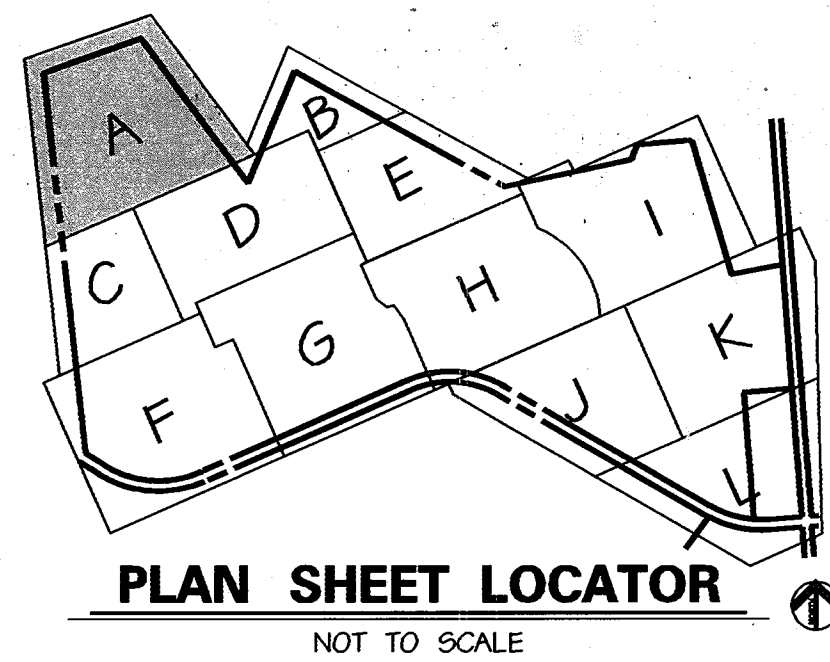
**WESTERN REGIONAL PARK**  
'REVISED SITE DEVELOPMENT PLAN'

TAX MAP: 14 GRID: 3 PARCEL: A  
ZONED: RC-DEO  
ELECTION DISTRICT NO. 04 HOWARD COUNTY, MARYLAND

**PROPOSED WELL/ELECTRIC LINES PLAN & PROFILE**

DATE: MARCH 2021 BEI PROJECT NO. 3041  
SCALE: AS SHOWN SHEET 114 OF 114





**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	750.00	332.43	N 67° 08' 23" W	329.56
	C3	225.00	231.40	N 83° 33' 23" W	221.33
	C4	325.00	298.68	S 40° 39' 13" W	288.28
	C5	450.00	290.50	S 4° 10' 03" E	285.48
	C6	230.00	398.79	S 27° 00' 40" W	350.68
	C7	1000.00	298.12	S 68° 08' 35" W	297.02
	C8	1000.00	100.04	S 62° 28' 06" W	100.00
	C9	188.00	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
	C13	75.00	110.52	N 29° 19' 30" W	100.79
D	C14	150.00	170.79	N 38° 55' 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	246.55
	C19	270.59	192.92	N 32° 07' 29" W	188.86
G	C20	188.00	72.32	N 44° 01' 45" W	71.88
	C21	50.00	78.54	N 74° 36' 24" W	70.71
H	C22	50.00	74.59	S 17° 39' 30" W	67.86
	C23	583.00	423.58	S 4° 15' 43" E	414.33
J	C24	50.00	74.59	S 28° 10' 56" E	67.86
	C25	50.00	81.89	S 31° 17' 04" E	73.04
K	C26	797.00	27.57	S 79° 11' 40" E	27.57
	C27	583.00	356.10	S 62° 44' 11" E	349.63
L	C28	50.00	74.59	S 88° 01' 20" E	67.86
	C29	12.00	18.26	N 74° 36' 24" W	16.97
M	C30	272.18	24.66	S 66° 17' 54" E	24.65
	C31	442.75	238.98	S 84° 21' 24" E	236.09
N	C32	179.86	153.12	N 55° 47' 27" E	148.54
	C33	411.30	274.00	N 12° 16' 29" E	269.53
O	C34	90.47	44.04	N 7° 05' 40" E	43.61
	C35	62.80	32.98	N 5° 59' 50" E	32.60
P	C36	296.52	34.60	N 5° 42' 11" W	34.59
	C37	56.85	28.51	N 12° 00' 23" E	28.21
Q	C38	76.54	62.77	N 48° 51' 59" E	61.02
	C39	1636.86	117.03	N 71° 22' 14" E	117.07
R	C40	42.33	29.22	N 48° 36' 15" E	28.58
	C41	138.58	128.15	N 3° 31' 28" E	123.70
S	C42	100.00	36.11	N 33° 07' 19" W	35.91
	C43	85.00	91.77	N 74° 23' 42" W	87.39
T	C44	255.00	152.22	N 88° 13' 24" W	148.97
	C45	110.00	57.32	N 58° 11' 59" W	56.68
U	C46	100.00	10.68	N 44° 19' 27" W	10.67
	C47	25.00	15.07	N 25° 13' 47" W	14.95
V	C48	66.00	21.81	N 37° 25' 48" W	21.71
	C49	76.00	39.21	N 20° 48' 54" E	38.78
W	C50	115.00	102.05	N 61° 01' 04" E	98.74
	C51	170.00	10.08	N 88° 08' 21" E	10.08
X	C52	195.00	56.89	N 81° 37' 56" E	56.70
	C53	66.00	26.11	N 84° 45' 00" E	25.94
Y	C54	90.00	79.61	N 70° 44' 46" E	77.04
	C55	232.95	203.51	N 70° 26' 03" E	197.10
Z	C56	160.00	72.01	N 82° 34' 05" E	71.41
	C57	105.00	32.39	N 60° 50' 14" E	32.26
AA	C58	140.00	69.70	N 37° 44' 15" E	68.98
	C59	190.00	40.00	N 29° 30' 22" E	39.93
AB	C60	100.00	91.99	N 61° 53' 30" E	88.78
	C61	285.00	64.29	N 81° 46' 59" E	64.15
AC	C62	60.00	61.98	N 36° 11' 52" E	75.72
	C63	95.00	19.00	N 8° 39' 16" W	18.97
AD	C64	66.44	73.05	N 45° 53' 07" W	69.43
	C65	99.00	104.23	N 47° 13' 27" W	99.49
AE	C66	57.26	74.53	N 20° 13' 36" E	69.38
	C67	152.00	119.27	N 38° 02' 11" E	116.23
AF	C68	280.62	118.82	N 24° 41' 17" E	117.93
	C69	186.50	145.43	N 59° 09' 27" E	141.77
AG	C70	586.64	218.32	S 87° 49' 24" E	217.06
	C71	166.25	36.40	S 70° 52' 17" E	36.33
AH	C72	1345.66	117.86	S 62° 05' 23" E	117.82
	C73	70.32	60.06	S 39° 06' 53" E	58.25
AI	C74	79.82	139.09	S 60° 34' 02" E	122.15
	C75	34.02	34.31	S 81° 35' 30" E	32.87
AJ	C76	210.00	59.07	S 58° 46' 30" E	58.88
	C77	691.40	132.80	S 61° 19' 54" E	132.59
AK	C78	208.50	65.66	S 64° 51' 04" E	65.39
	C79	96.71	46.78	S 87° 43' 55" E	46.33
AL	C80	93.80	77.88	S 77° 48' 21" E	75.66
	C81	44.91	52.55	S 87° 32' 33" E	49.60
AM	C82	30.00	39.95	S 82° 54' 36" E	37.07
	C83	270.66	146.42	S 60° 15' 13" E	144.64
AN	C84	66.34	20.08	S 84° 25' 13" E	20.00
	C85	88.47	75.22	S 68° 43' 57" E	72.97
AO	C86	160.00	61.89	S 33° 19' 45" E	61.31
	C87	448.51	120.04	S 29° 57' 01" E	119.68
AP	C88	263.00	14.18	S 39° 09' 44" E	14.18
	C89	683.00	70.19	S 37° 49' 46" E	70.16
AQ	C90	96.06	63.57	S 57° 07' 10" W	62.41
	C91	210.06	49.27	S 73° 47' 43" W	49.15
AR	C92	83.93	128.73	N 53° 32' 32" W	118.49
	C93	75.30	247.76	N 18° 44' 52" W	246.71
AS	C94	1080.02	143.83	N 31° 42' 42" W	143.72
	C95	53.50	52.98	N 7° 09' 12" W	50.84
AT	C96	101.78	40.98	N 32° 45' 11" W	40.71
	C97	40.00	14.80	N 67° 46' 32" E	14.52
AU	C98	57.00	19.04	N 61° 38' 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 9° 59' 57" W	110.59	
	C101	68.00	18.90	N 30° 03' 05" E	18.84	
	C102	105.18	33.86	N 57° 14' 08" E	33.71	
	C103	45.00	41.84	N 73° 05' 40" E	40.35	
	C104	300.00	35.95	S 83° 42' 03" E	35.93	
	C105	145.00	187.27	N 55° 51' 56" E	174.53	
	C106	295.00	64.74	N 25° 09' 08" E	64.61	
	C107	123.00	122.59	N 59° 59' 30" E	117.58	
	C108	157.00	33.79	S 86° 17' 23" E	33.73	
	C109	120.00	24.14	N 3° 46' 23" W	24.10	
WALK5	C110	162.12	43.45	N 1° 51' 30" W	43.32	
	C111	218.00	180.13	N 15° 13' 23" W	156.55	
	C112	674.14	60.01	N 35° 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 66° 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	39.57	S 2° 28' 56" E	39.36	
	C119	105.00	78.74	S 13° 38' 33" E	76.91	
	C120	210.00	37.33	S 40° 14' 04" E	37.28	
WALK6	C121	200.00	49.36	S 52° 23' 52" E	49.24	
	C122	84.85	26.42	S 79° 40' 51" E	26.31	
	C123	100.00	22.82	S 82° 05' 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	
	C127	145.00	71.36	N 66° 00' 32" E	70.64	
	C128	50.00	85.43	S 52° 05' 25" E	74.08	
	C129	488.99	62.04	S 0° 38' 58" E	62.00	
	C130	20.00	23.01	S 35° 56' 46" W	21.76	
	C131	265.88	94.61	S 58° 42' 34" W	94.11	
WALK8	C132	105.88	67.48	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° 59' 51" E	83.60	
	WALK9	C136	287.50	211.45	N 38° 04' 20" W	206.72
		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 28° 28' 01" W	128.57
		C140	82.87	103.18	N 12° 33' 03" W	96.65
		C141	50.00	63.04	S 28° 50' 24" W	58.94
		C142	60.00	101.65	S 39° 15' 30" W	99.92
C143		82.96	56.59	N 72° 40' 03" W	56.50	
C144		160.00	82.52	S 88° 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	
WALK12	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	
	C151	46.37	64.45	S 28° 38' 56" W	59.38	
	C152	72.00	51.46	S 7° 18' 24" W	50.37	
	C153	30.20	69.20	S 37° 51' 41" E	56.03	
	C154	121.22	33.02	N 68° 41' 23" E	32.92	
	C155	70.50	102.72	N 64° 02' 54" E	99.87	
	C156	115.08	103.36	S 28° 28' 52" E	99.92	
	C157	203.00	204.24	S 31° 34' 22" E	196.73	
WALK14	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	

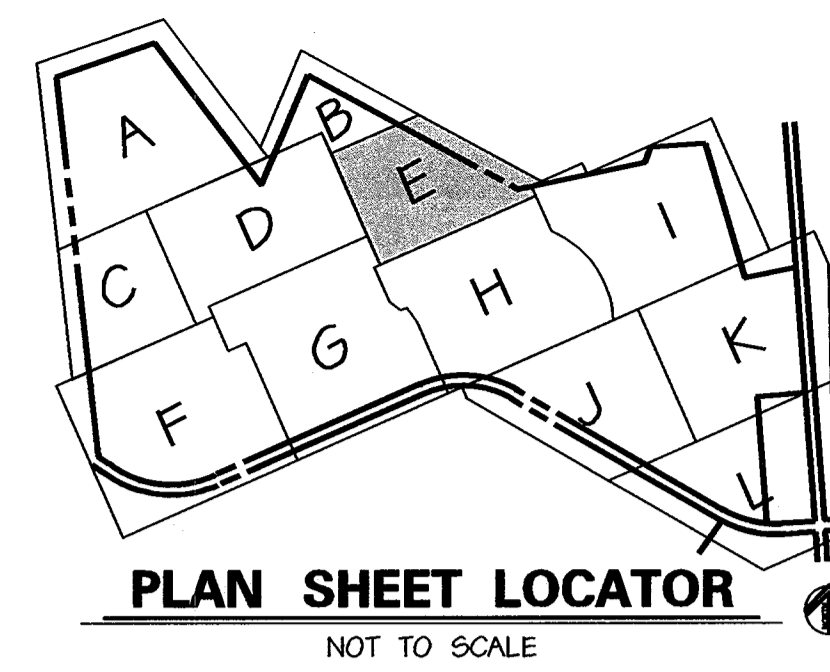
**LINE DATA TABLE**

Baseline	Line Number	Bearing	Length
A	L1	N 30° 09' 37" E	369.77
	L2	N 80° 11' 08" W	83.13
	L3	N 54° 05' 38" W	72.07
	L4	S 65° 20' 04" W	105.07
B	L5	N 1° 13' 01" W	35.01
	L6	N 63° 34' 26" W	65.72
C	L7	N 24° 39' 56" W	337.00
	L8	S 65° 20' 04" W	115.50
	L9	N 66° 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
E	L14	S 6° 16' 14" E	123.70
	L15	S 83° 42' 16" W	97.69
	L16	N 83° 30' 14" E	43.86
F	L17	S 6° 29' 46" E	106.47
	L18	S 38° 30' 14" W	77.20
G	L19	S 86° 10' 12" W	47.80
	L20	N 52° 52' 01" W	43.94
H	L21	N 29° 36' 24" W	111.60
	L22	S 60° 23' 36" W	338.96
I	L23	S 60° 23' 36" W	18.98
	L24	S 68° 56' 01" E	18.98
J	L25	S 15° 38' 04" W	15.32
	L26	S 80° 11' 08" E	83.13
K	L27	N 49° 14' 56" E	18.98
	L28	S 60° 23' 36" W	314.77
L	L29	S 29° 36' 24" W	138.00
	L30	S 60° 23' 36" W	326.77
M	L31	N 22° 48' 39" W	19.36
	L32	N 43° 27' 58" W	22.46

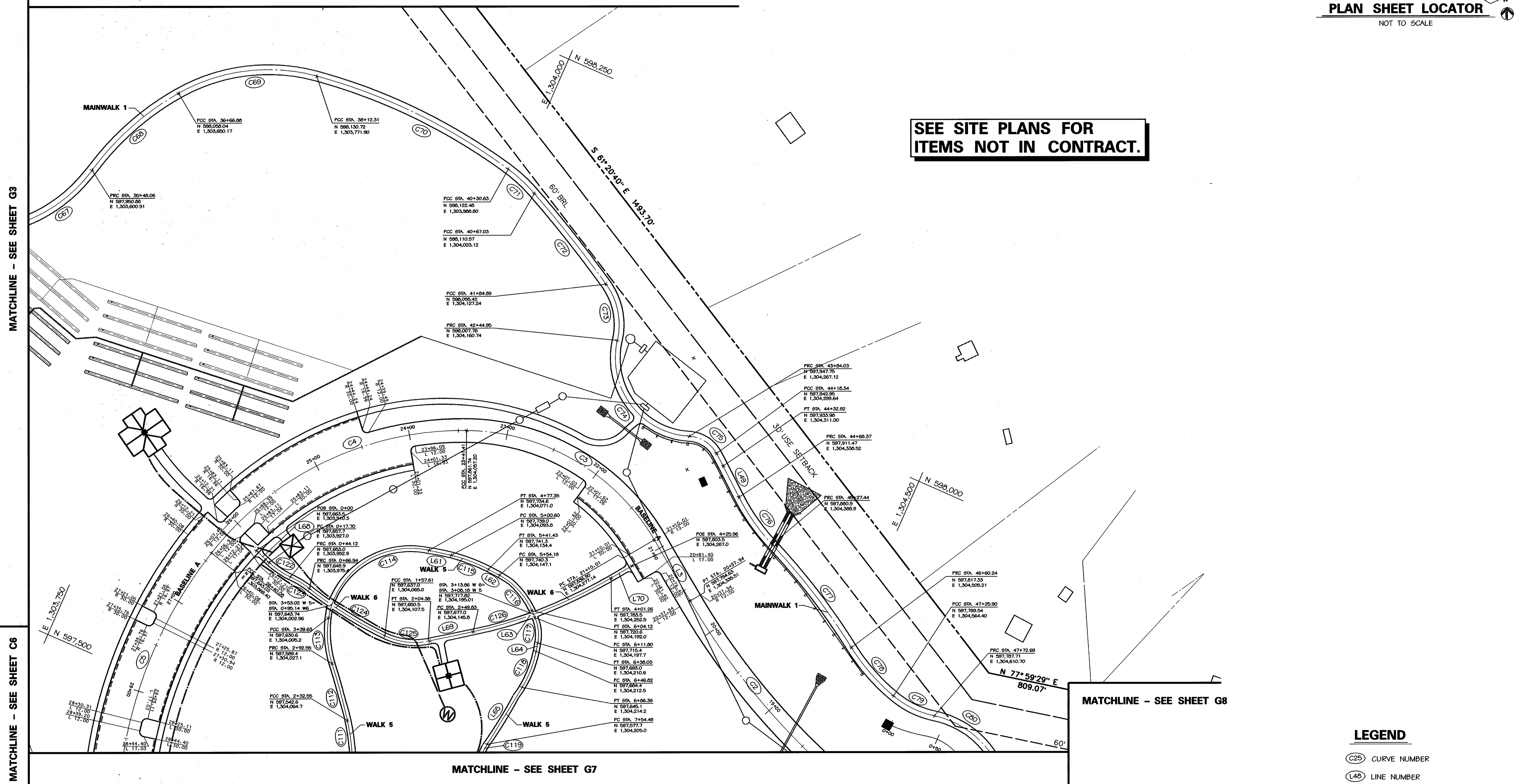




MATCHLINE - SEE SHEET G2, PLAN OF AREA B



SEE SITE PLANS FOR  
ITEMS NOT IN CONTRACT.



MATCHLINE - SEE SHEET G3

MATCHLINE - SEE SHEET G6

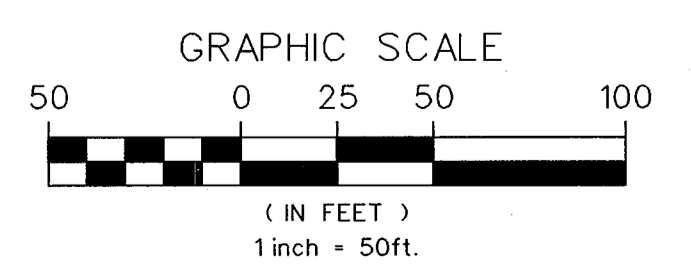
MATCHLINE - SEE SHEET G8

MATCHLINE - SEE SHEET G7

**LEGEND**

- (C25) CURVE NUMBER
- (L48) LINE NUMBER

NOTE: SEE LINE AND CURVE TABLES,  
ON SHEET G1 FOR GEOMETRY INFORMATION.



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	DATE
HOWARD COUNTY HEALTH DEPARTMENT	

NO.	REVISIONS DESCRIPTION	DATE

**KCI TECHNOLOGIES INC.**  
ENGINEERS • PLANNERS • SURVEYORS

10 NORTH PARK DRIVE  
HUNT VALLEY, MARYLAND 21030  
PHONE: (410) 366-7800 FAX: (410) 316-7817  
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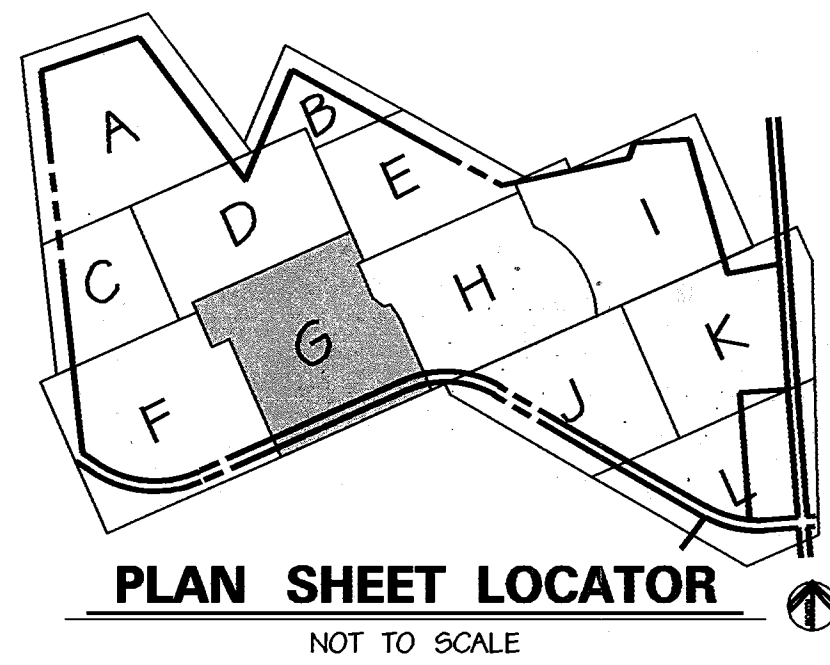
**WESTERN REGIONAL PARK**  
HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
7120 OAKLAND MILLS ROAD  
COLUMBIA, MARYLAND 21046-1677  
(410)-513-4640

**GEOMETRY PLAN**  
AREA E

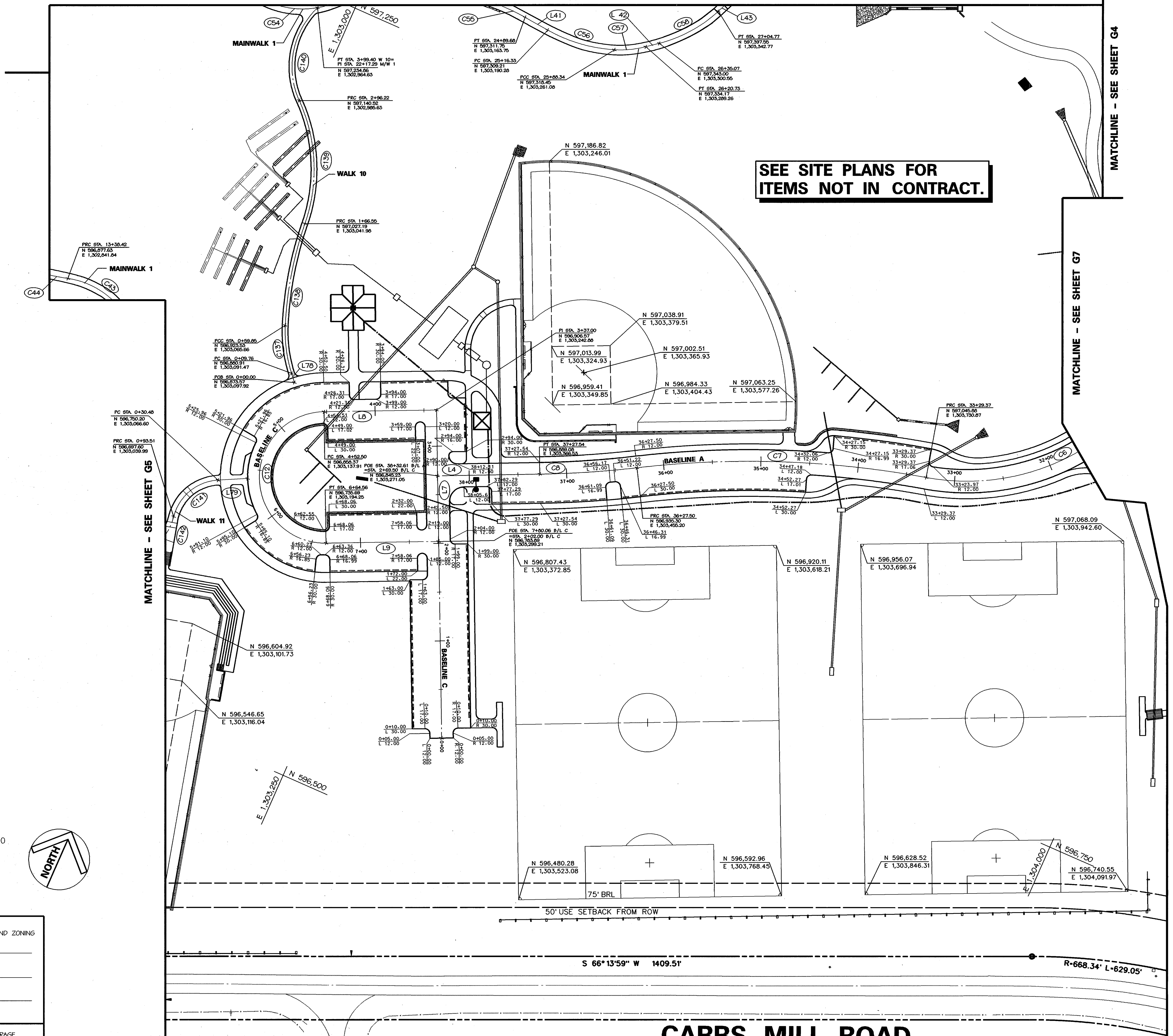
SCALE:	1" = 50'
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

**G4**  
SHEET NO.: 117 OF 135  
SDP-02-64





MATCHLINE - SEE SHEET G3



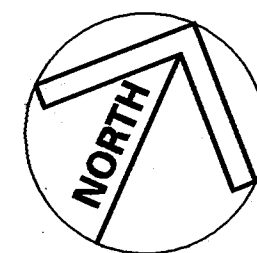
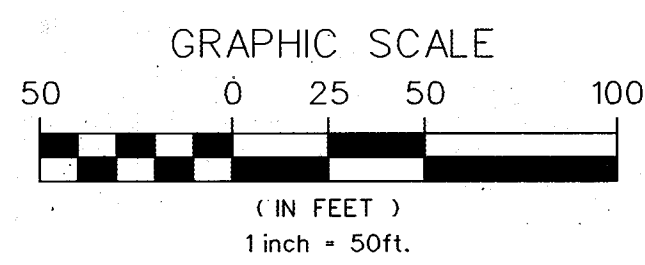
MATCHLINE - SEE SHEET G4

MATCHLINE - SEE SHEET G7

MATCHLINE - SEE SHEET C7

**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	DATE
HOWARD COUNTY HEALTH DEPARTMENT	

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

NO.	REVISIONS DESCRIPTION	DATE

**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

**WESTERN REGIONAL PARK**  
HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
7120 OAKLAND MILLS ROAD  
COLUMBIA, MARYLAND 21046-1677  
(410) 513-4640

**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





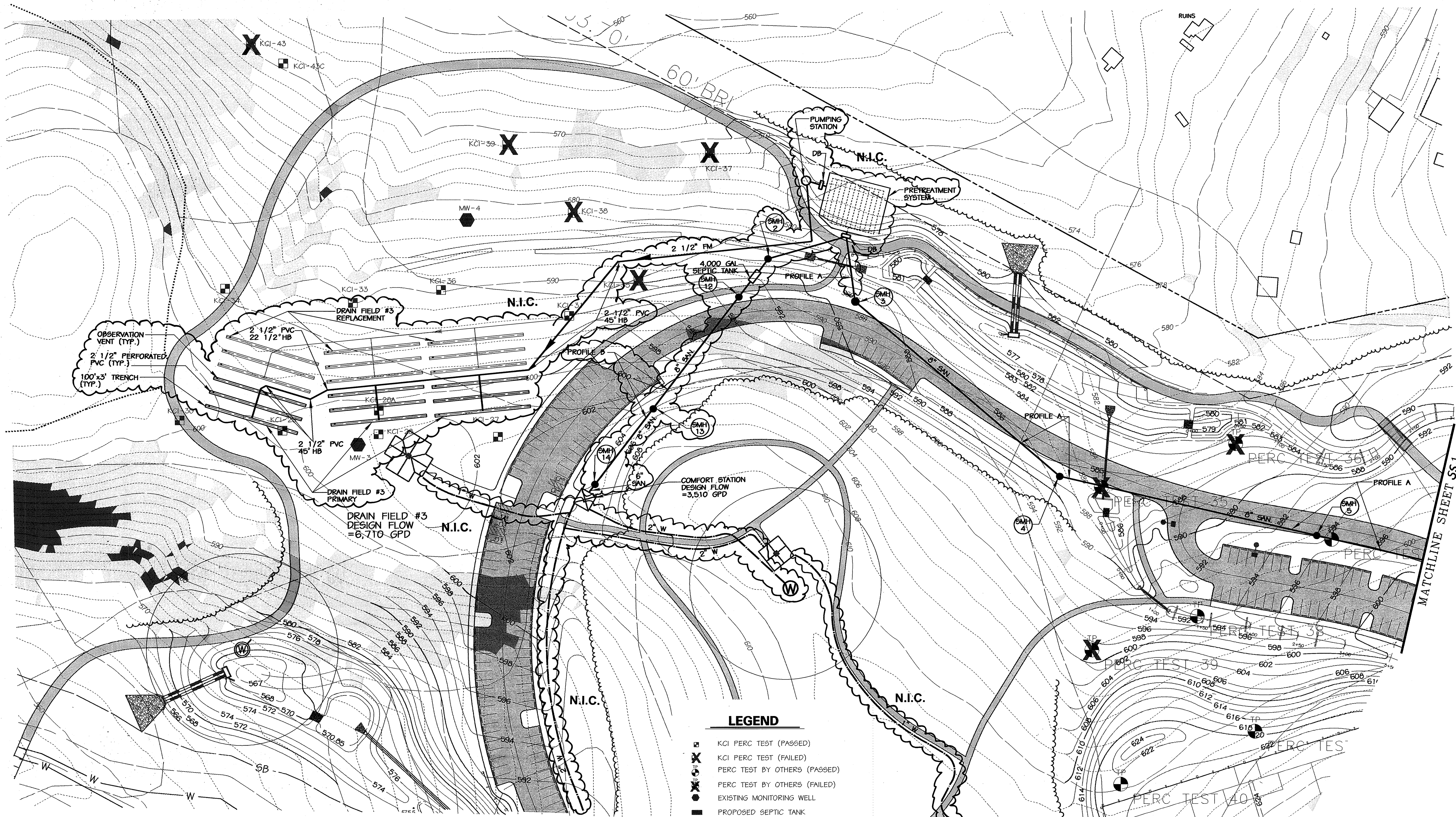










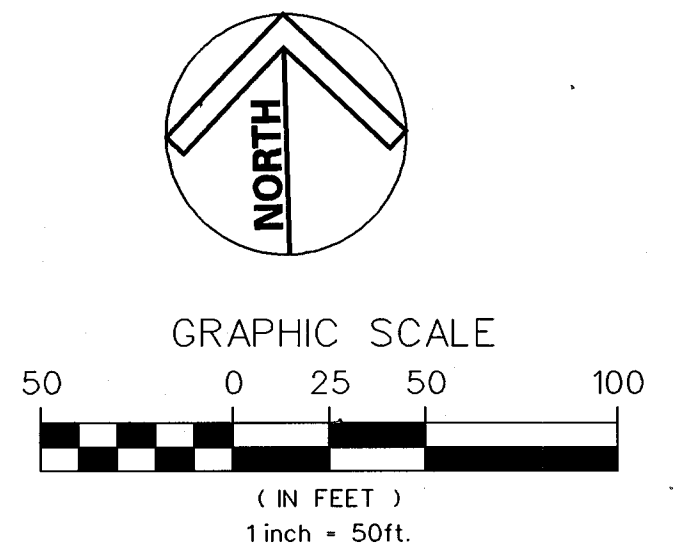


**SANITARY SEWER  
STAKEOUT COORDINATES SCHEDULE**

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

- 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
  - SOIL LINE
  - PAVILION
  - RESTROOM FACILITY
  - 15-24.9% SLOPES
  - 25%+ SLOPES
  - PROPERTY BOUNDARY
  - SEPTIC TANK
  - SMH
  - PROPOSED SANITARY LINE
  - PROPOSED WATER LINE
  - DISTRIBUTION BOX

**NOTE**  
FOR PROFILE AND DETAILS SEE  
DWG. NOS. C-4, C-5 AND C-6



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      DATE \_\_\_\_\_  
HOWARD COUNTY HEALTH DEPARTMENT

NO.	REVISIONS DESCRIPTION	DATE

**KCI TECHNOLOGIES INC.**  
ENGINEERS • PLANNERS • SURVEYORS  
10 NORTH PARK DRIVE  
HUNT VALLEY, MARYLAND 21030  
PHONE: (410) 316-7880 FAX: (410) 316-7817  
WWW.KCI.COM

**WESTERN REGIONAL PARK**  
HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
7120 OKLAND MILLS ROAD  
COLUMBIA, (410) 313-4640

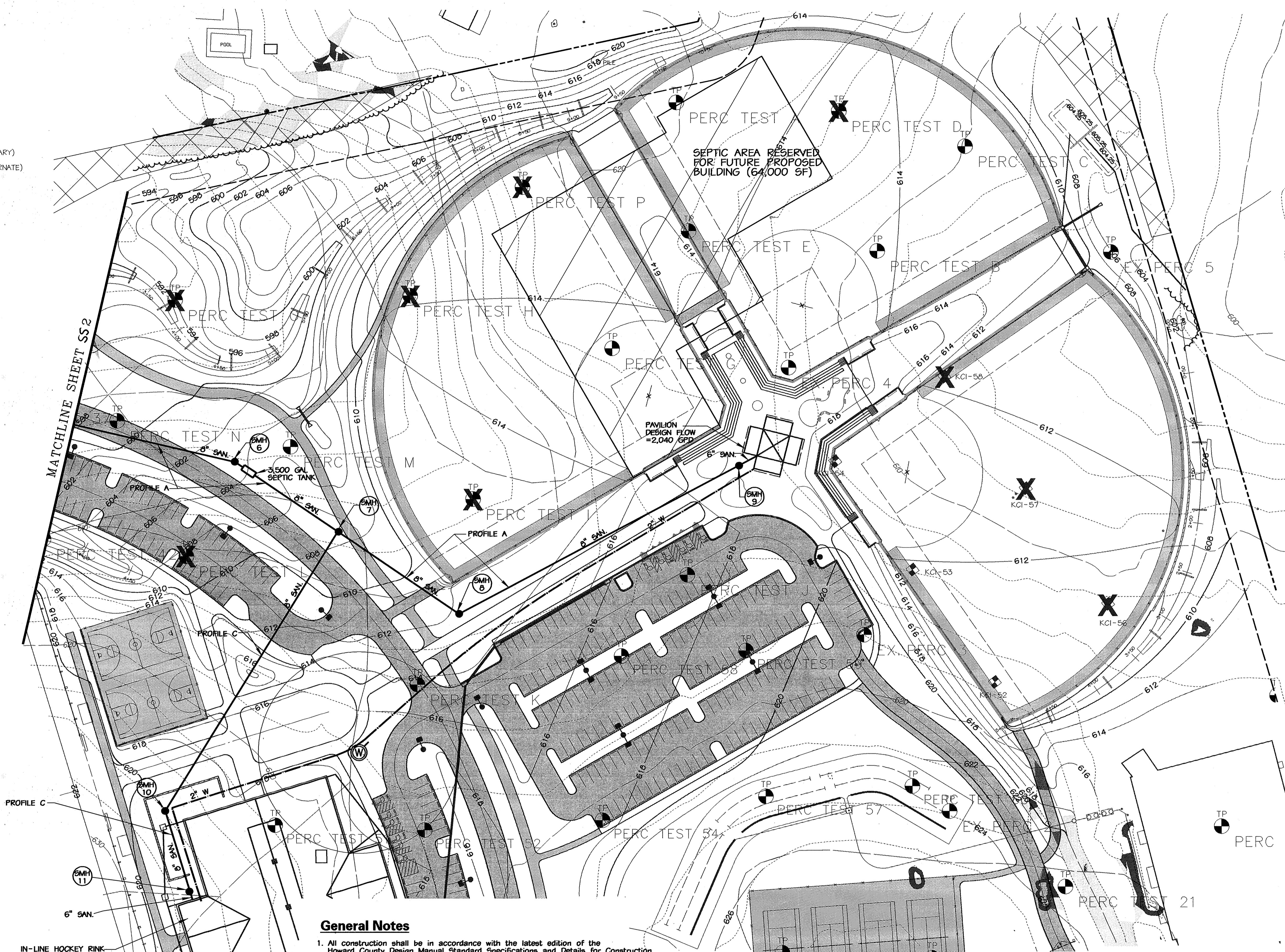
**ON - SITE  
SEPTIC SYSTEM  
PLAN**

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

**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
- GLC2 SOIL LINE
- ⊠ PAVILION
- ⊠ RESTROOM FACILITY
- ▲ 15-24.9% SLOPES
- ▲ 25%+ SLOPES
- PROPERTY BOUNDARY
- SEPTIC TANK
- SMH
- PROPOSED SANITARY LINE
- PROPOSED WATER LINE
- DB
- DISTRIBUTION BOX



**General Notes**

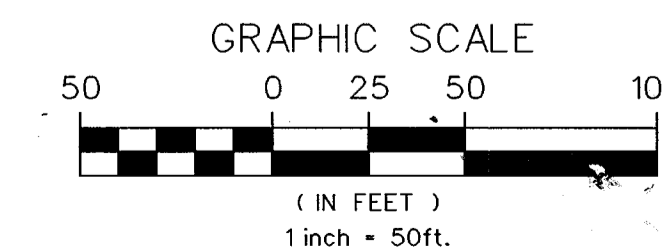
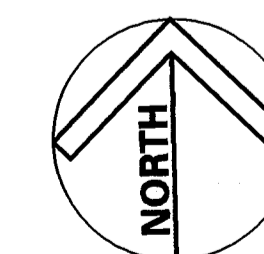
1. All construction shall be in accordance with the latest edition of the Howard County Design Manual Standard Specifications and Details for Construction.
2. The contractor shall notify the Engineer of any deviation from this plan prior to any change being made.
3. Unless otherwise noted, Sewer Elevations 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 Stakout 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	597501.77
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



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      DATE \_\_\_\_\_  
HOWARD COUNTY HEALTH DEPARTMENT

NO.	REVISIONS DESCRIPTION	DATE

**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

**WESTERN REGIONAL PARK**  
HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
17120 OAKLAND MILLS ROAD  
COLUMBIA, MD 21046  
(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:

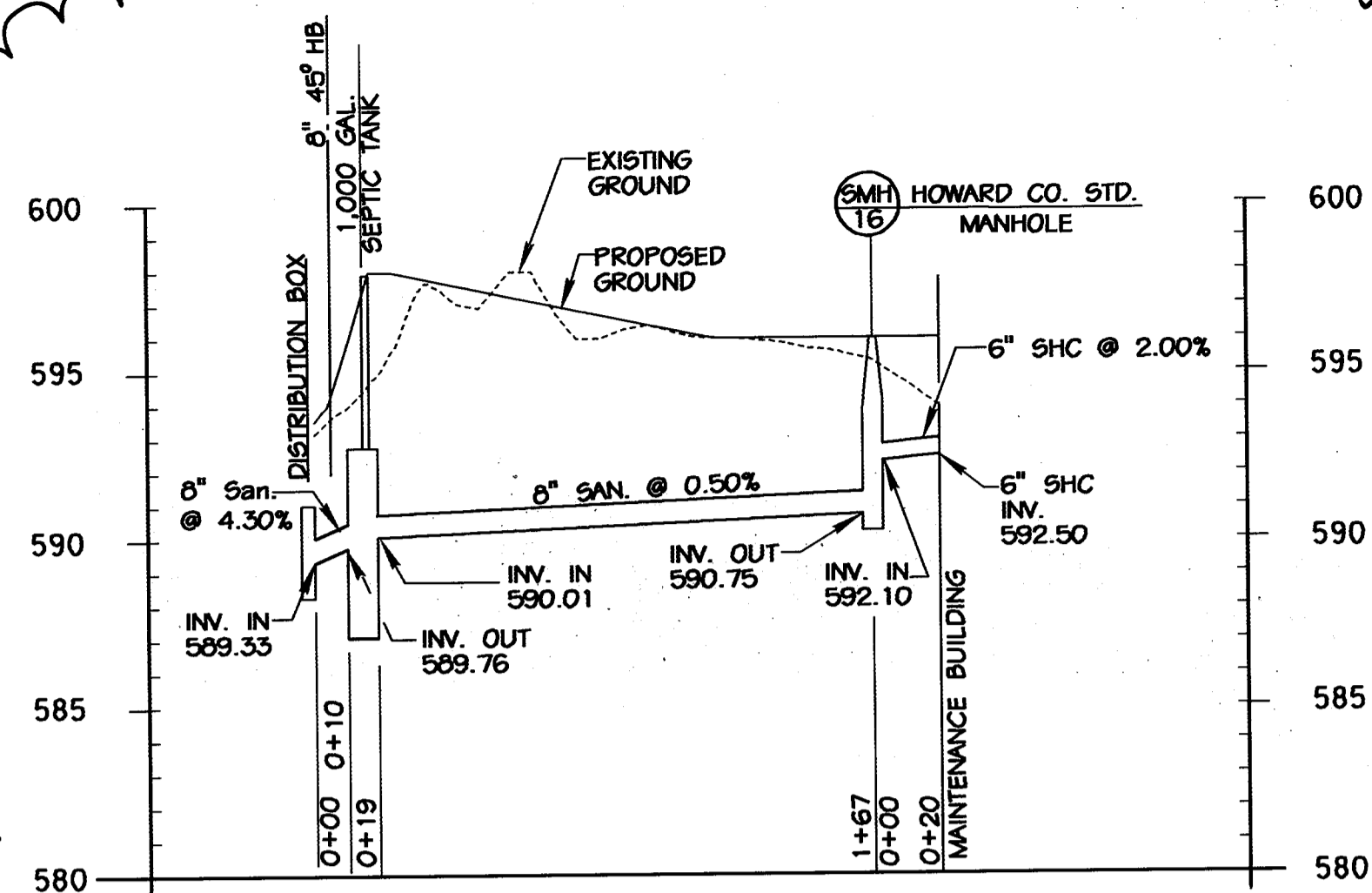
CONSTRUCTION ISSUE:

**SS1**

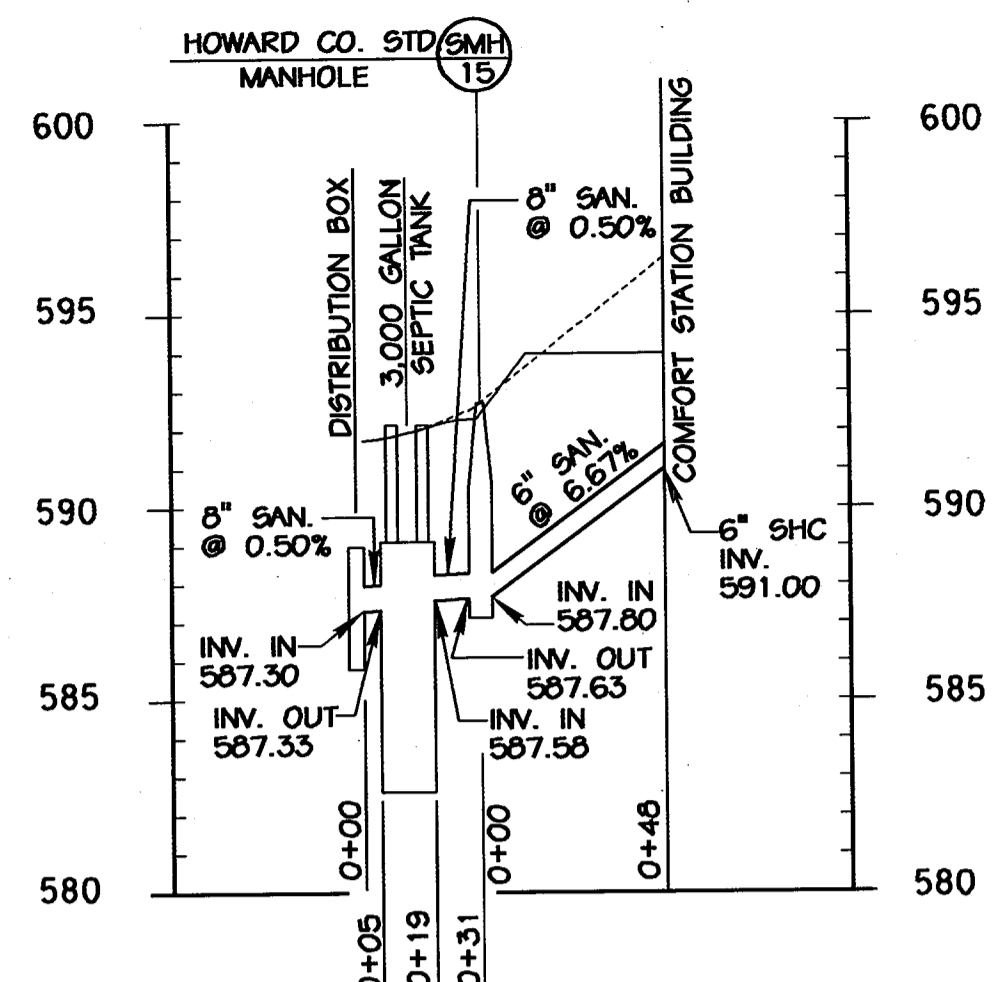




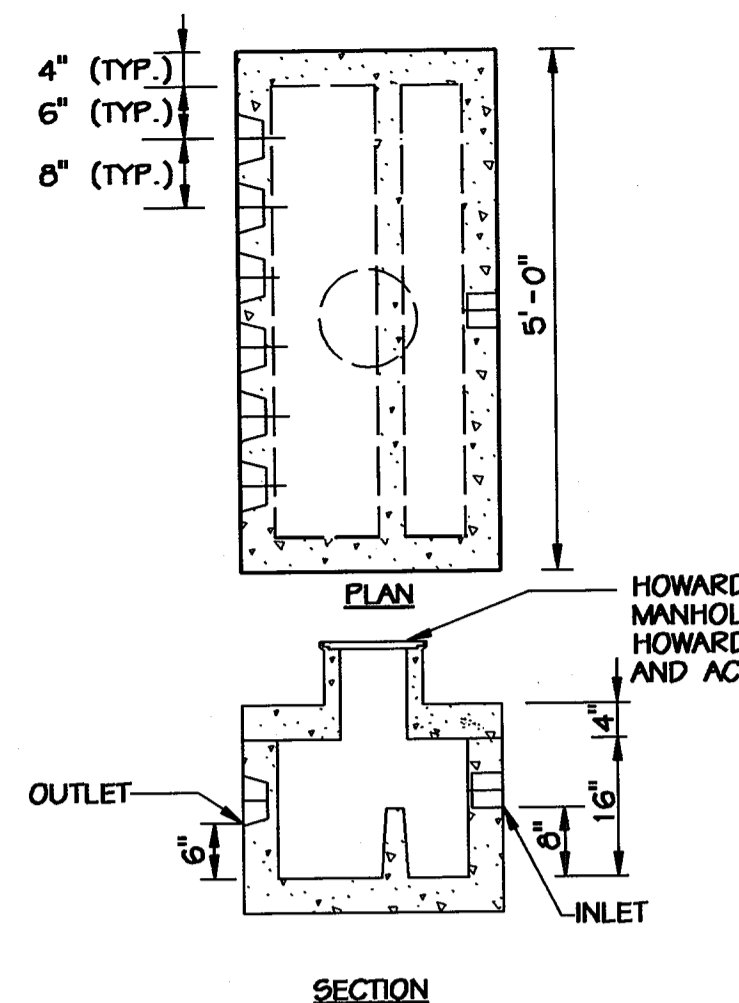
N.I.C.



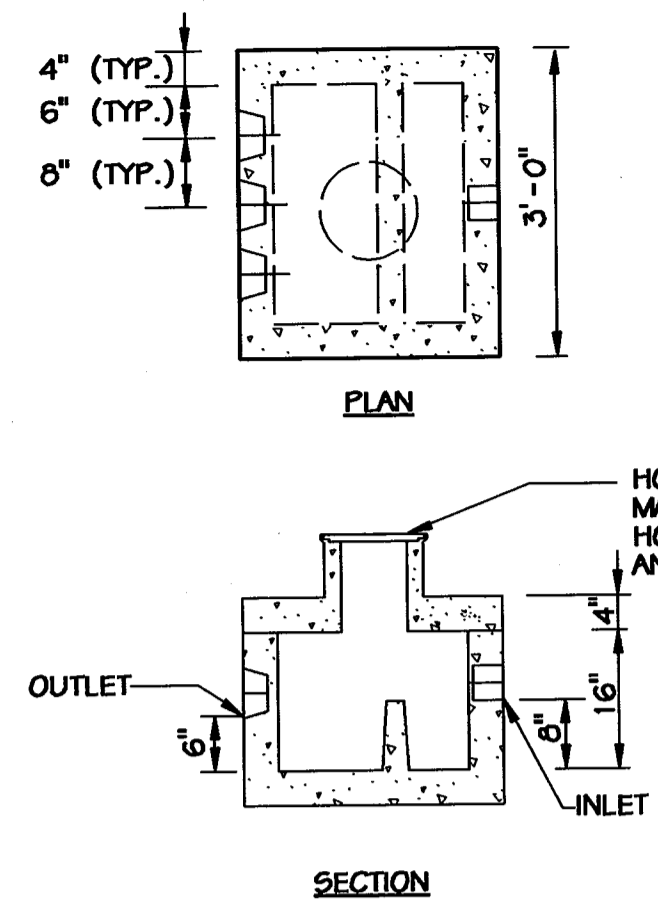
**PROFILE - D**  
SCALE: HORIZONTAL 1" = 50'  
VERTICAL 1" = 5'



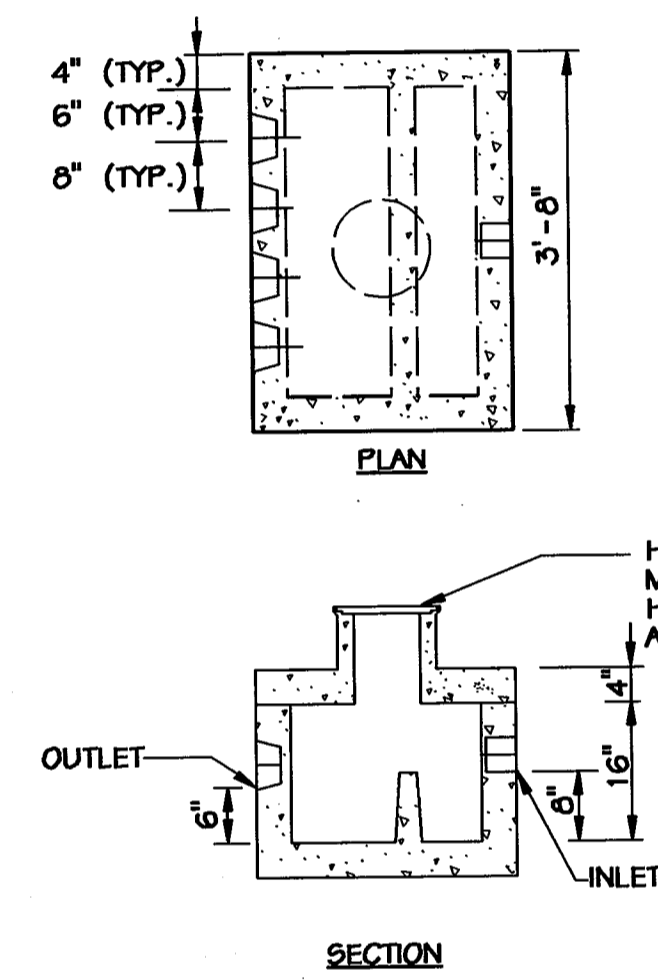
**PROFILE - E**  
SCALE: HORIZONTAL 1" = 50'  
VERTICAL 1" = 5'



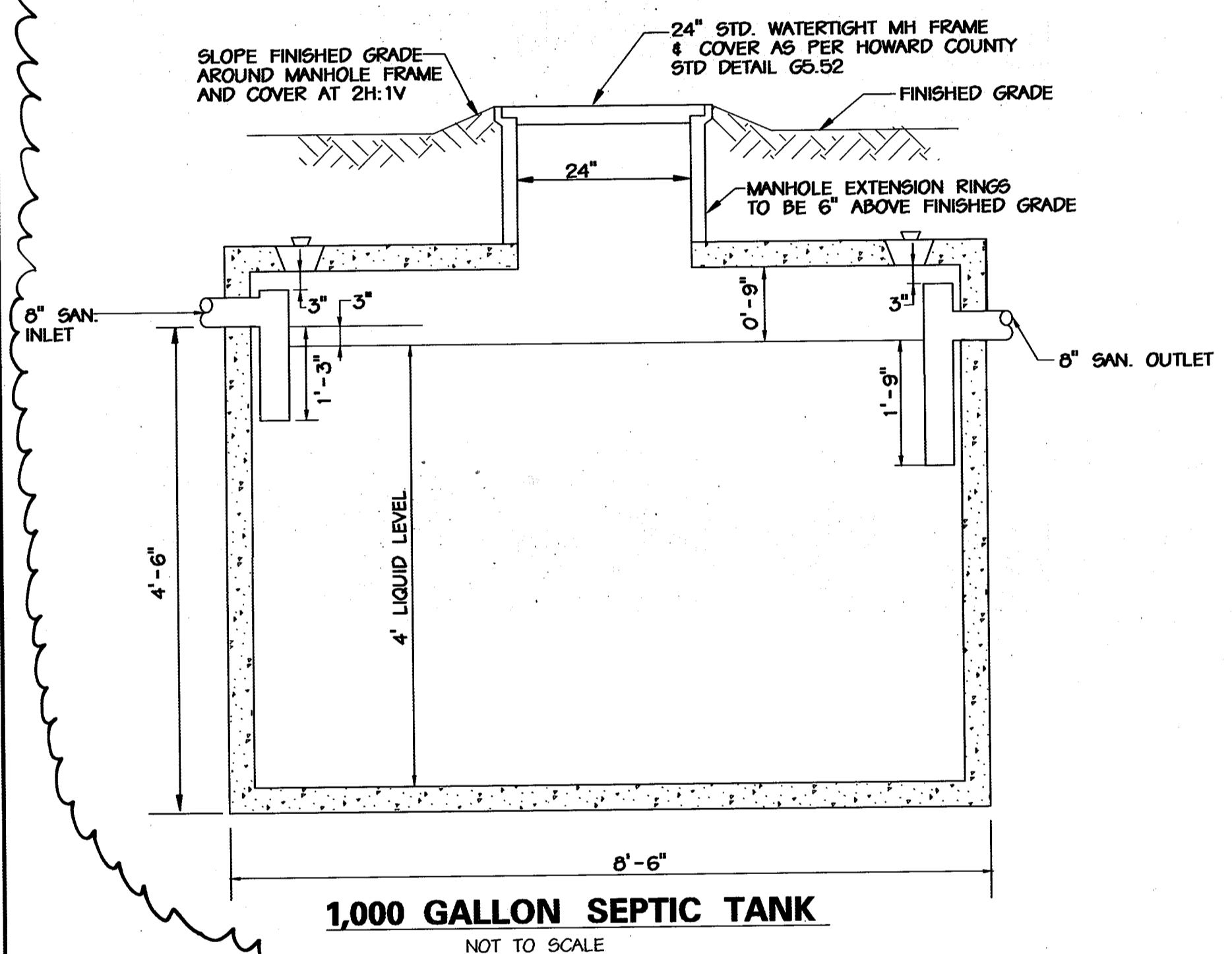
**SIX OUTLET DISTRIBUTION BOX DETAIL**  
NOT TO SCALE



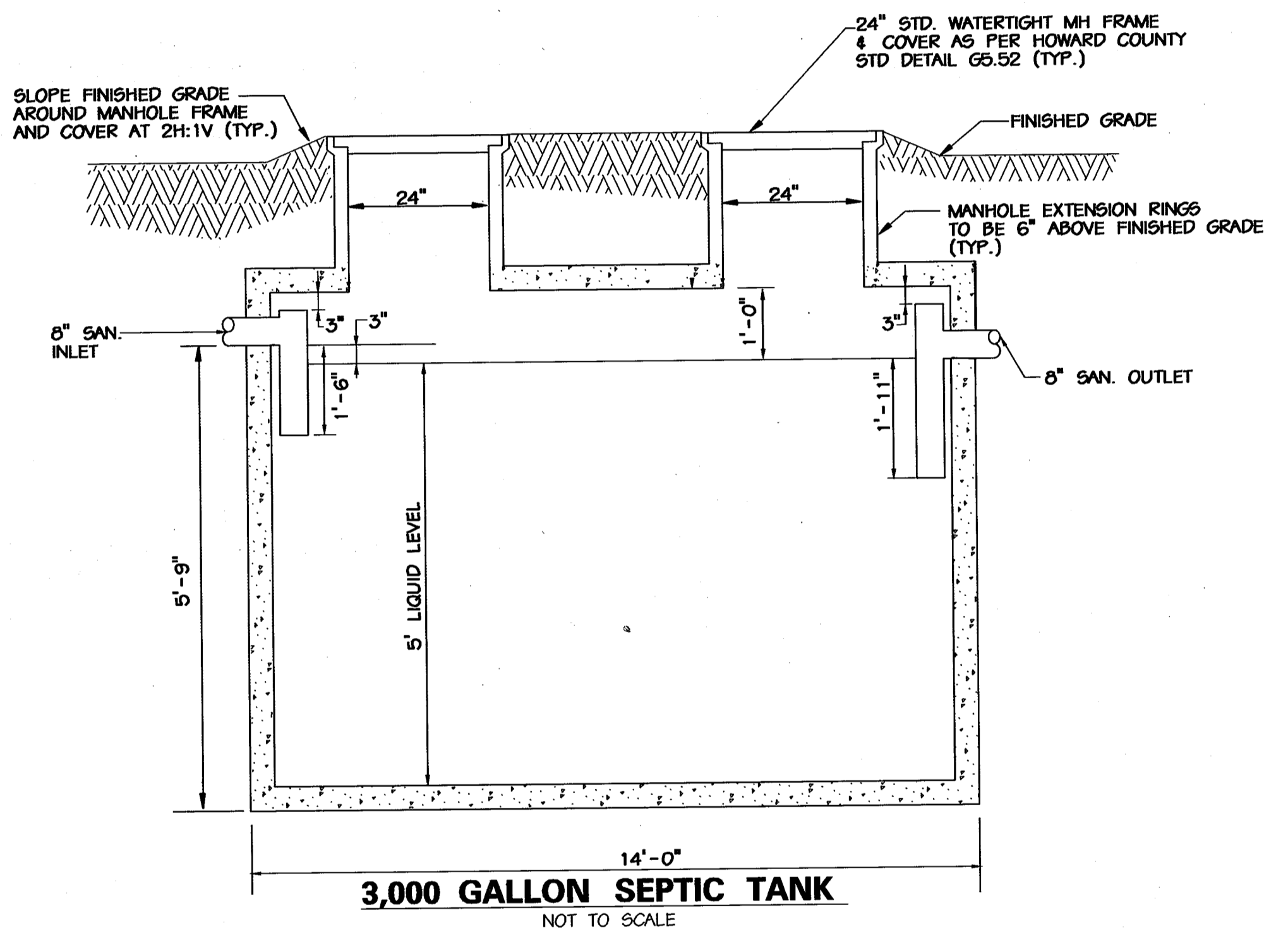
**THREE OUTLET DISTRIBUTION BOX DETAIL**  
NOT TO SCALE



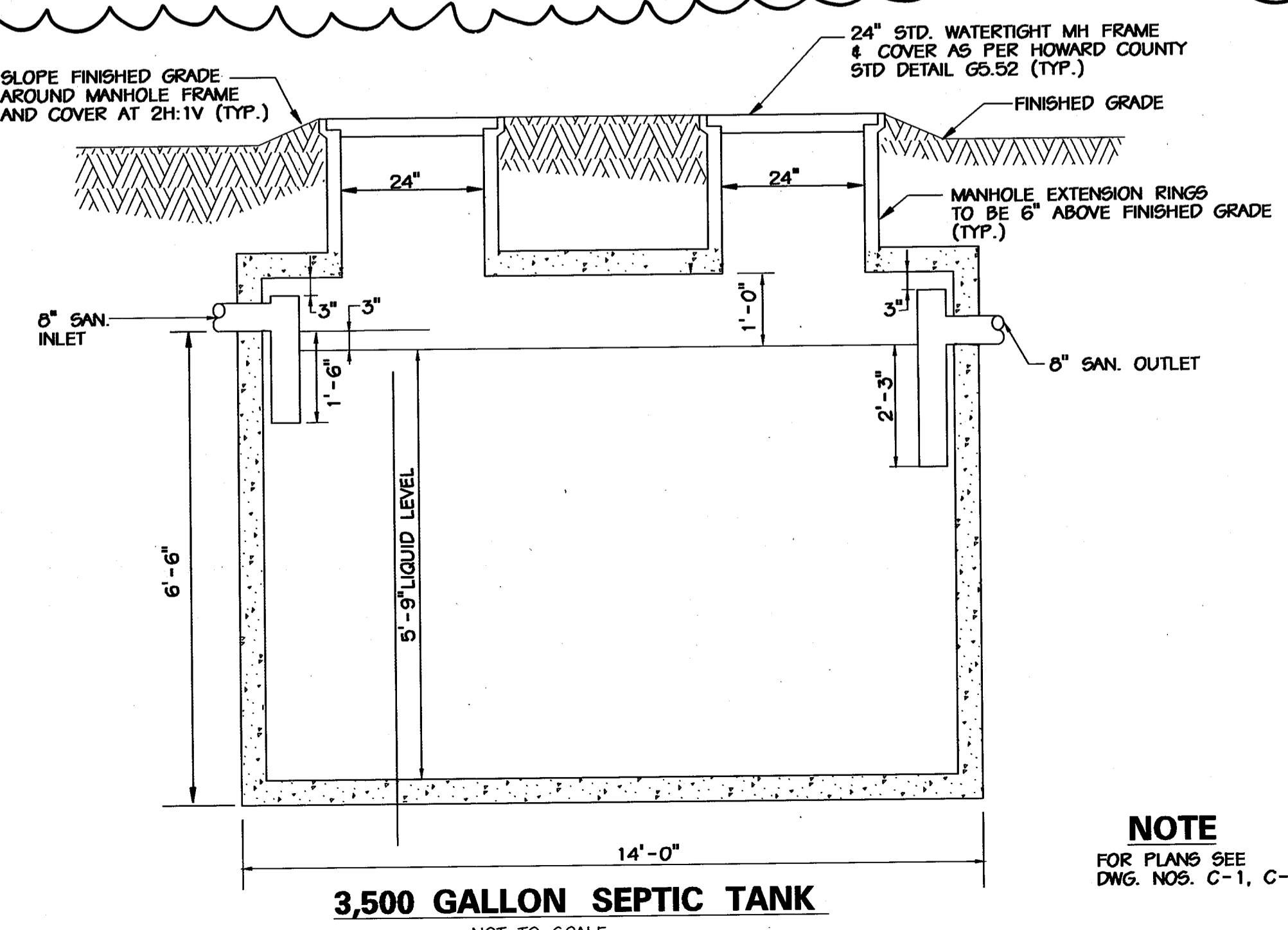
**FOUR OUTLET DISTRIBUTION BOX DETAIL**  
NOT TO SCALE



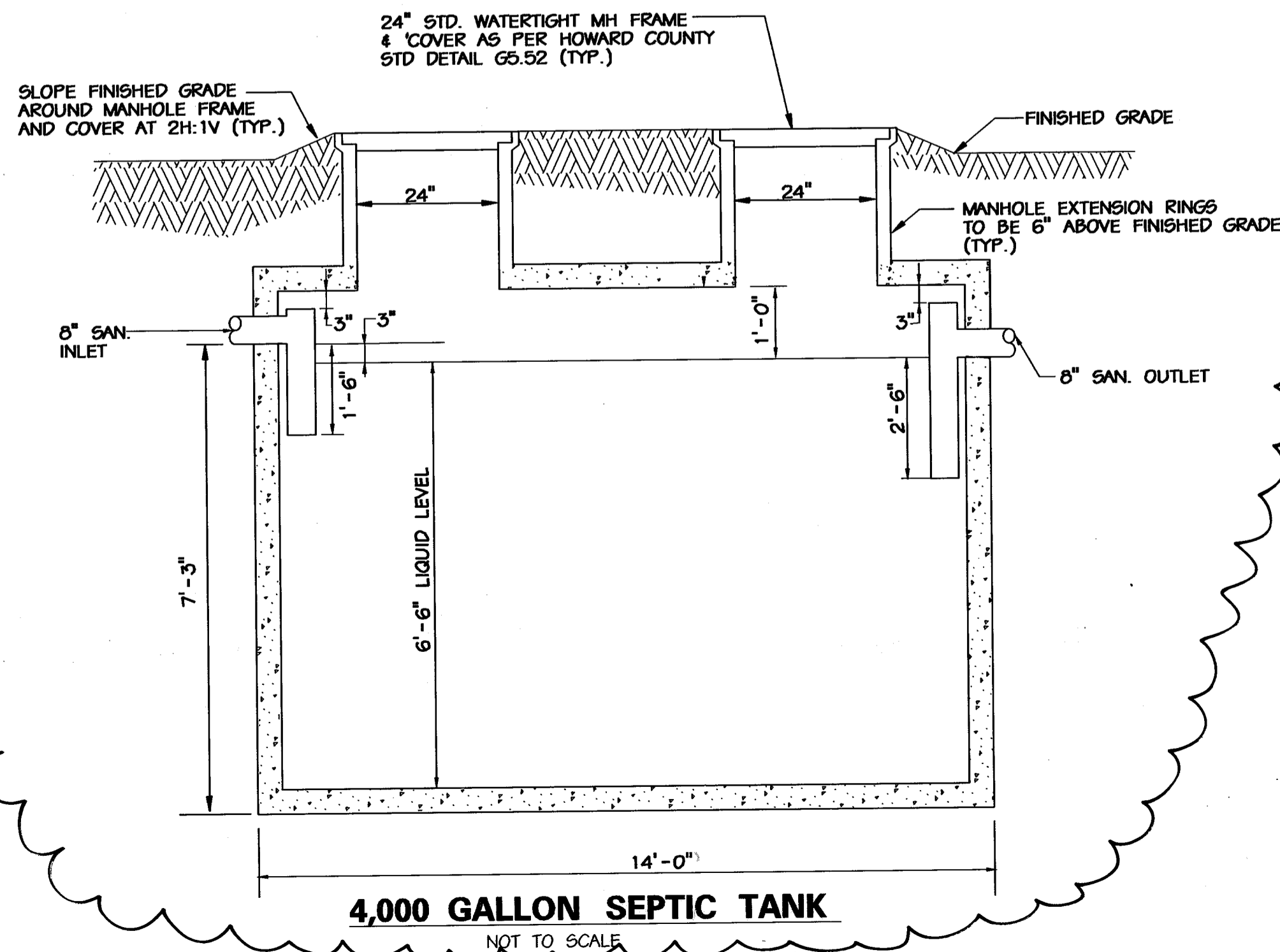
**1,000 GALLON SEPTIC TANK**  
NOT TO SCALE



**3,000 GALLON SEPTIC TANK**  
NOT TO SCALE



**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 \_\_\_\_\_ DATE \_\_\_\_\_  
HOWARD COUNTY HEALTH DEPARTMENT

NO.	REVISIONS DESCRIPTION	DATE

**KCI TECHNOLOGIES INC.**  
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HUNT VALLEY, MARYLAND 20830  
PHONE: (410) 316-7800 FAX: (410) 316-7817  
WWW.KCI.COM

**WESTERN REGIONAL PARK**

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
1120 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

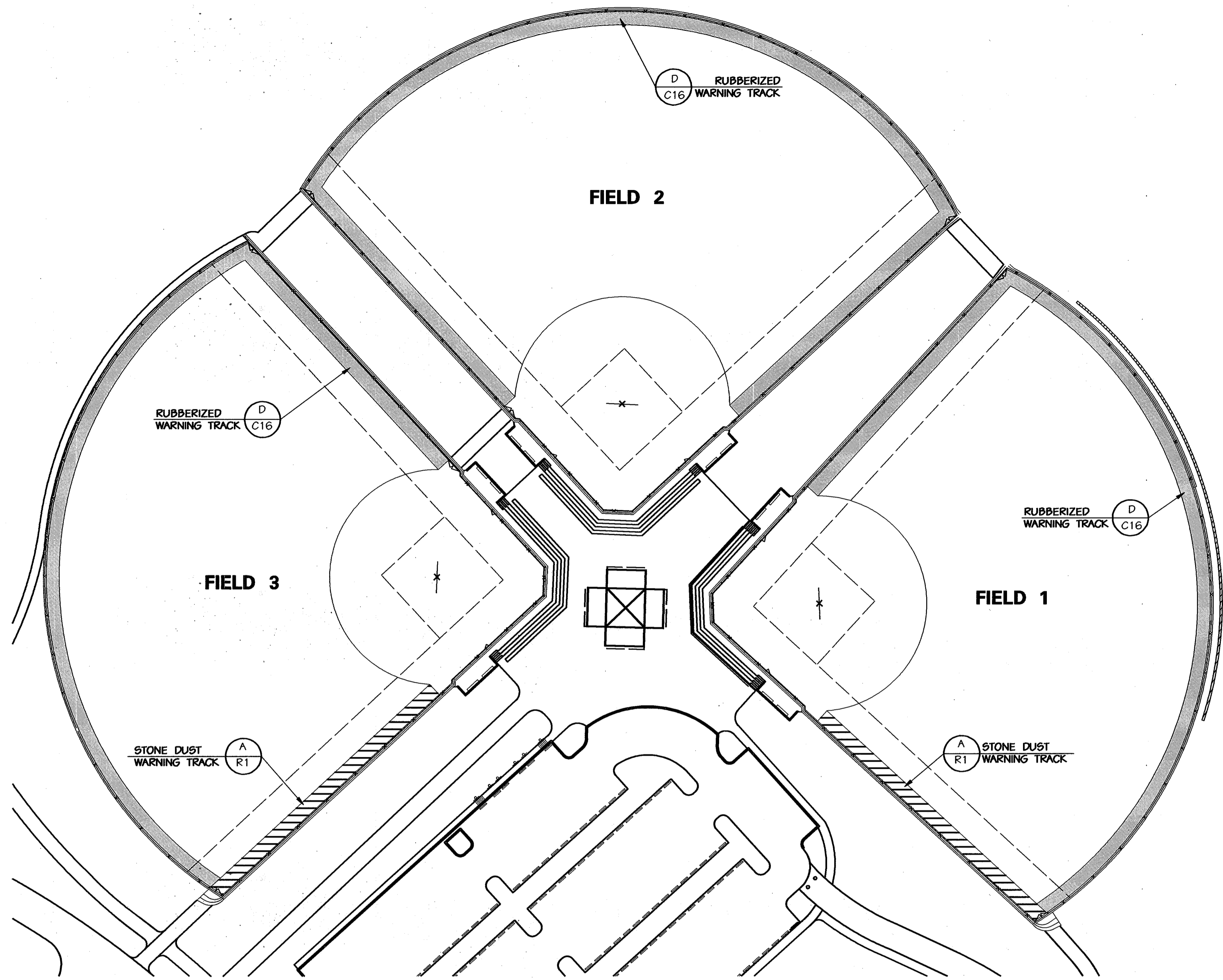
CAPITAL PROJECT NO.: N-3932

PERMIT ISSUE:

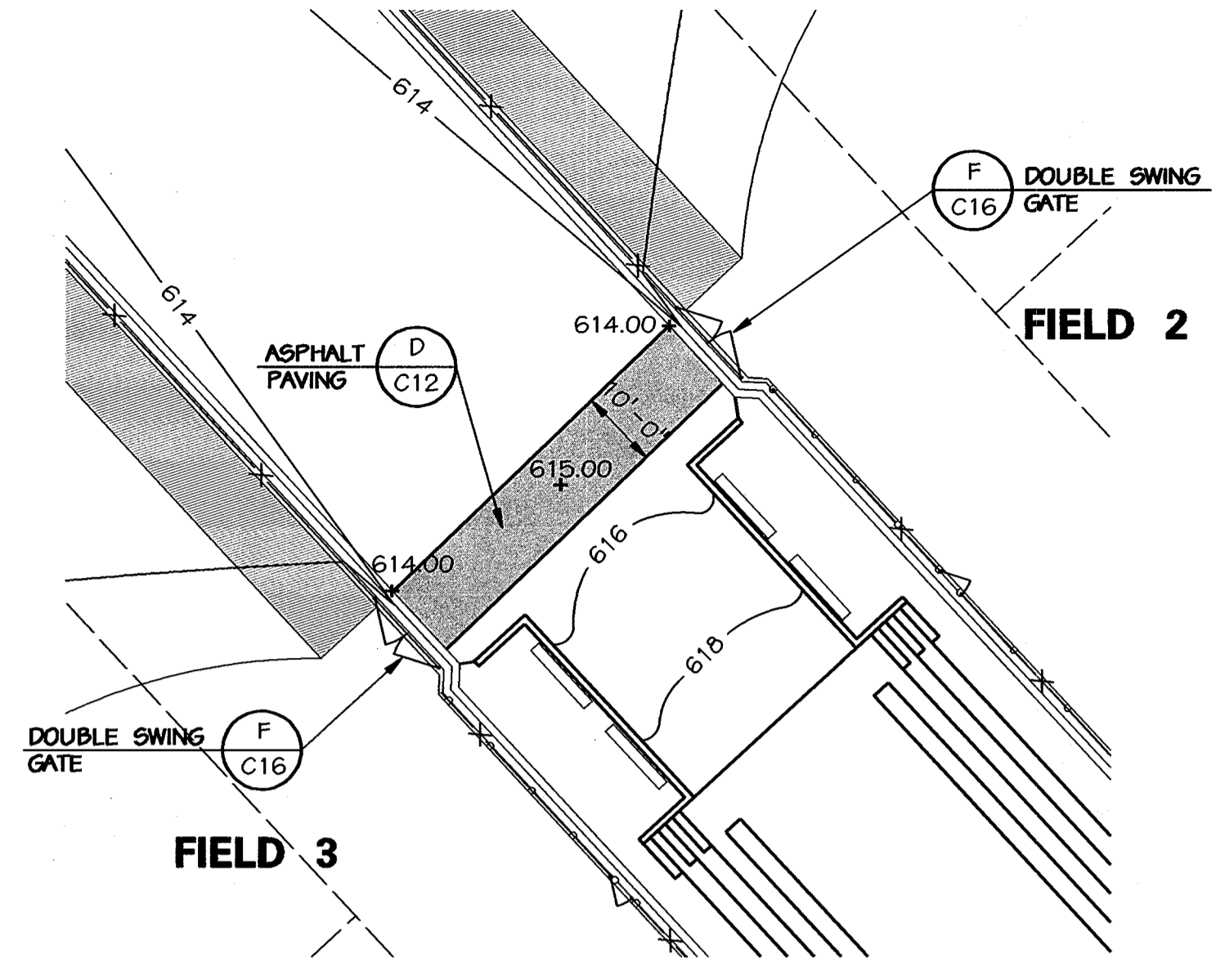
CONSTRUCTION ISSUE:

**SS4**

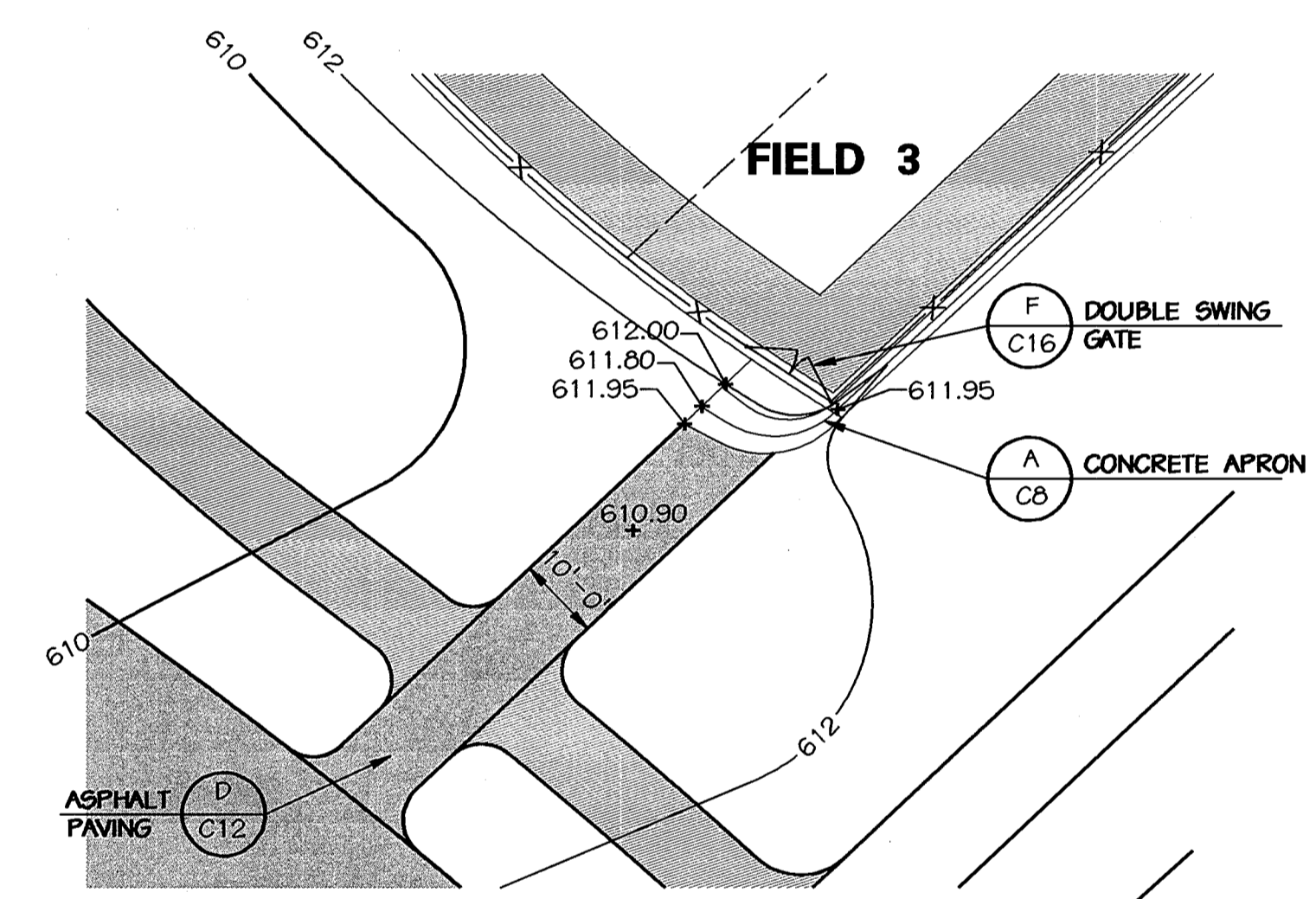
SHEET NO.: 129 OF 135



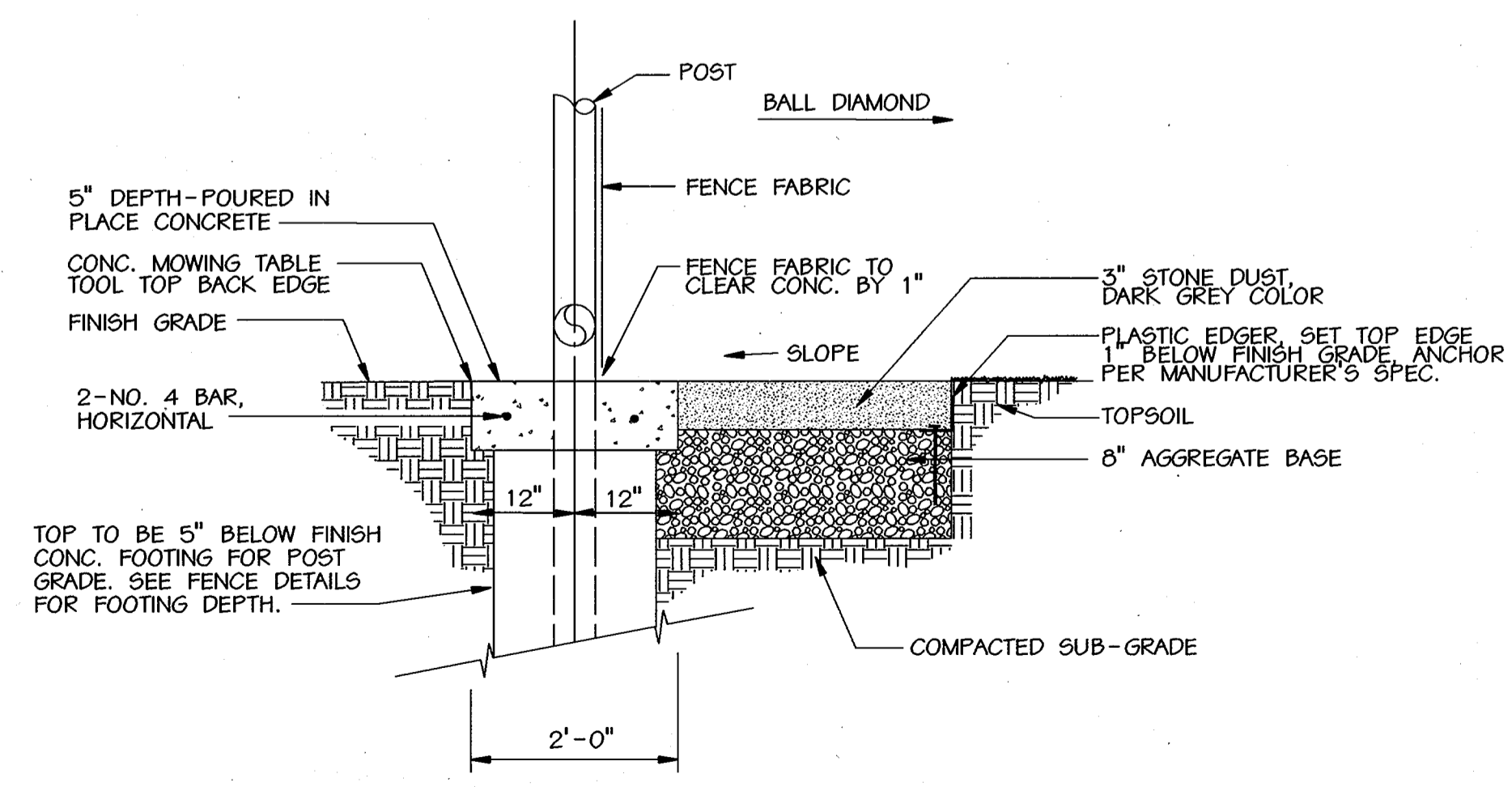
**WARNING TRACK PAVING DIAGRAM**  
SCALE: 1"=50'



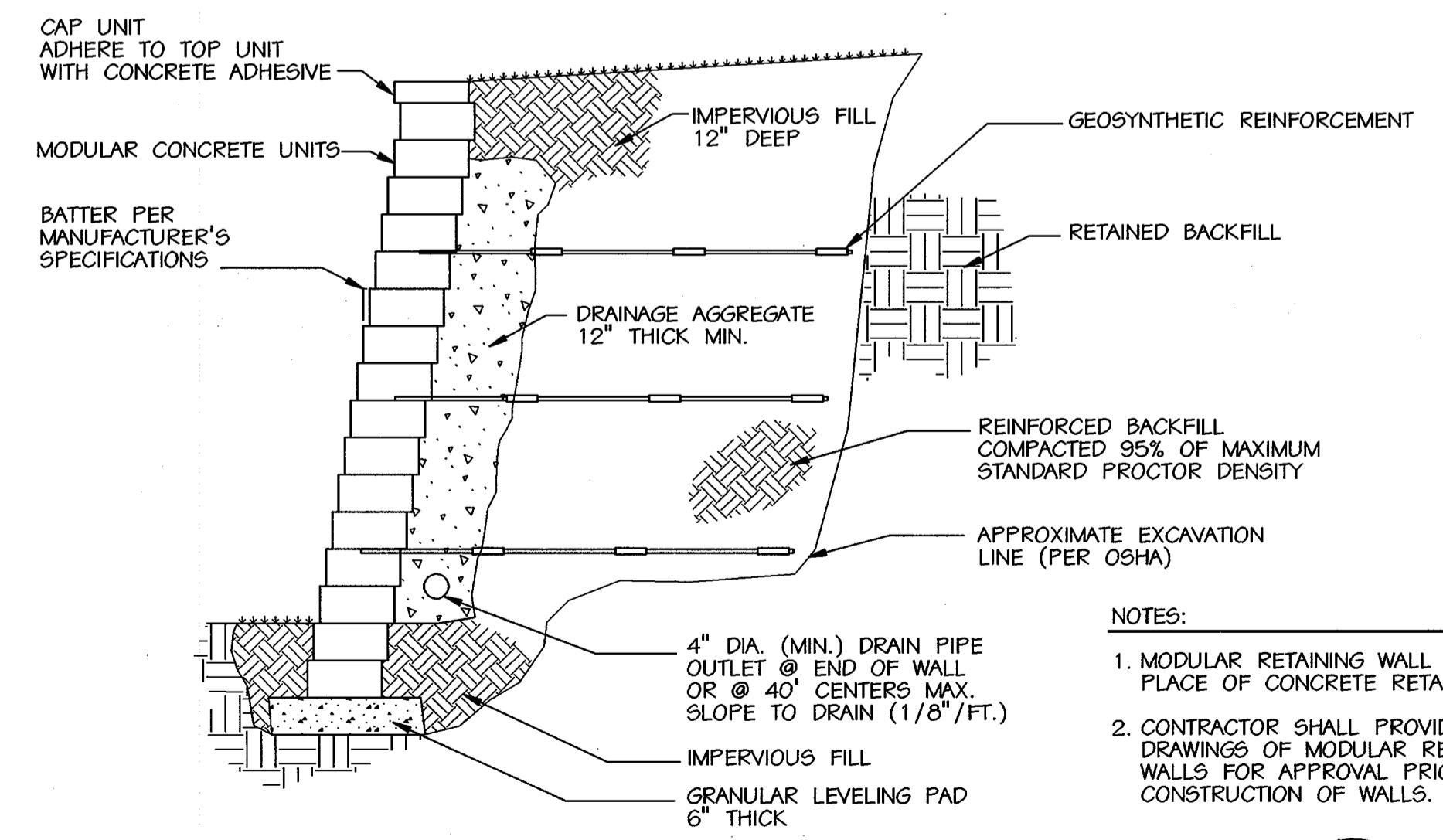
**PLAN REVISION #1**  
SCALE: 1"=20'



**PLAN REVISION #2**  
SCALE: 1"=20'



**A STONE DUST WARNING TRACK DETAIL**  
NOT TO SCALE



**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

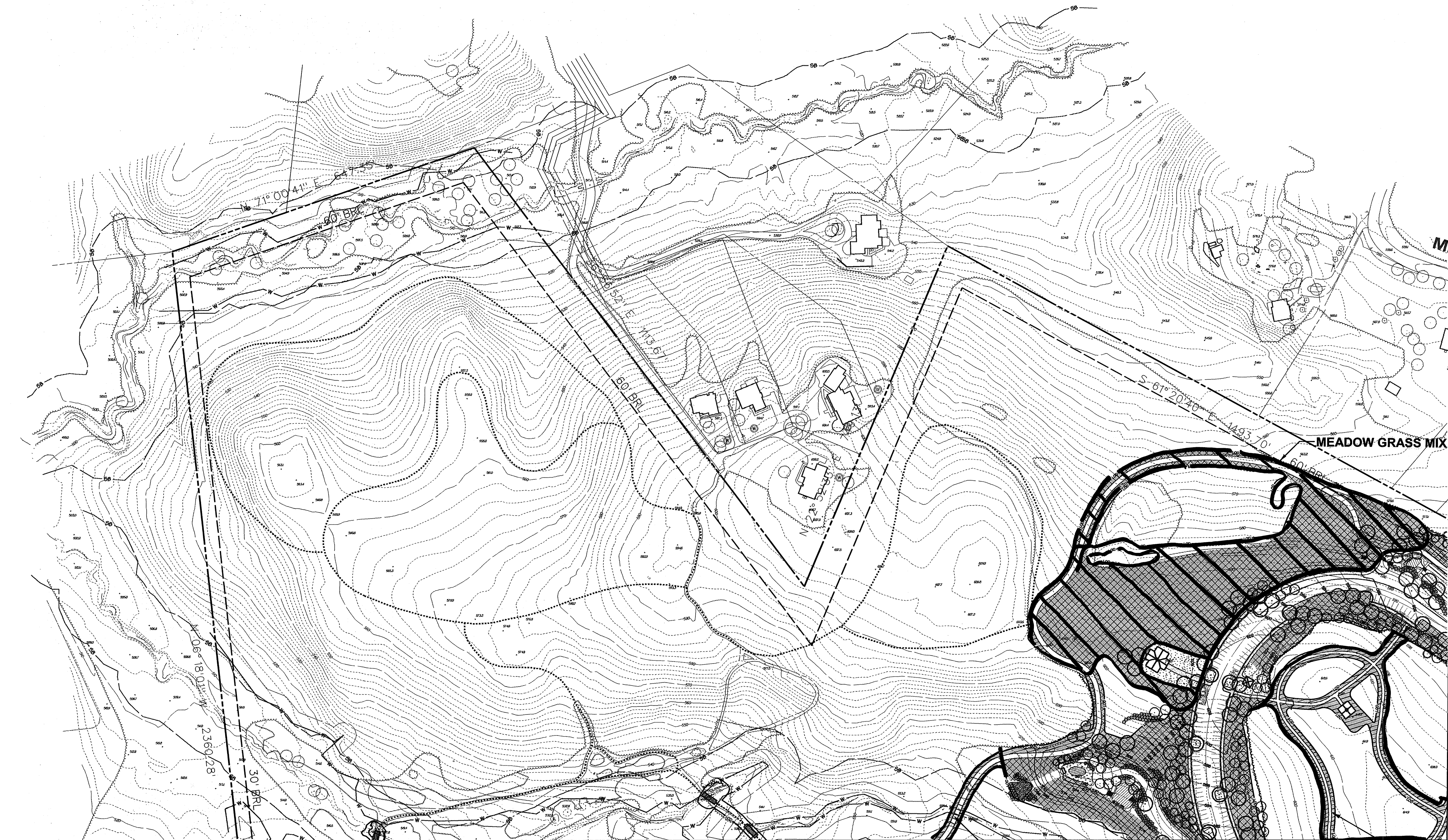
**KCI TECHNOLOGIES INC.**  
ENGINEERS • PLANNERS • SURVEYORS  
10 NORTH PARK DRIVE  
HUNT VALLEY, MARYLAND 20880  
PHONE: (410) 367-8000 FAX: (410) 316-7817  
WWW.KCI.COM

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HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
7120 OAKLAND MILLS ROAD  
COLUMBIA, MARYLAND 21046-1677  
(410) 513-4640

**SOFTBALL COMPLEX AREA REVISIONS**

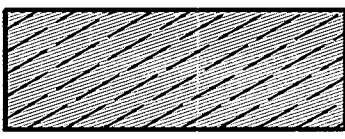
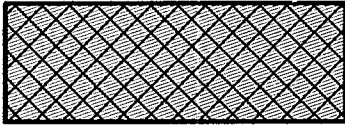
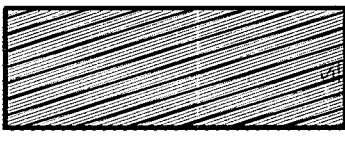
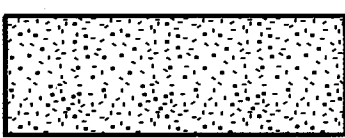
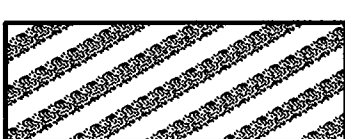
SCALE:	AS SHOWN
DATE:	06-12-02
KCI JOB NO.:	01-00057
CAPITAL PROJECT NO.:	N-3932
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	





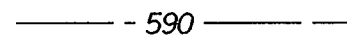
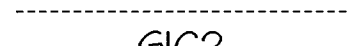








MATCH LINE, SEE SHEET P3

**SEED MIX LEGEND**

-  SOD AREA
-  NATIVE SEED MIX
-  **NOT IN CONTRACT**  
WOODLAND MIX
-  LAWN MIX #1
-  ATHLETIC TURF MIX

MATCH LINE, SEE SHEET P2

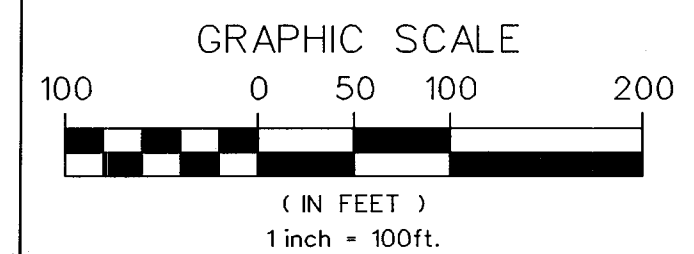
**LEGEND**

-  - 590 - EX. INDEX CONTOUR
-  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
-  570.9 EX. SPOT ELEVATION

NOT IN CONTRACT

NOT IN CONTRACT

- 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



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 DATE \_\_\_\_\_  
HOWARD COUNTY HEALTH DEPARTMENT

**KCI TECHNOLOGIES INC.**  
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PHONE: (410) 36-7800 FAX: (410) 36-7817  
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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

**SEEDING PLAN**

SCALE: 1" = 100'

DATE: 06-12-02

KCI JOB NO.: 01-00057

CAPITAL PROJECT NO.: N-3932

PERMIT ISSUE:

CONSTRUCTION ISSUE:

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\2000\0100057.S \USEE001.DGN

MARYLAND COORDINATE SYSTEM  
HORIZONTAL NAD 83-91  
VERTICAL NAVD 29





