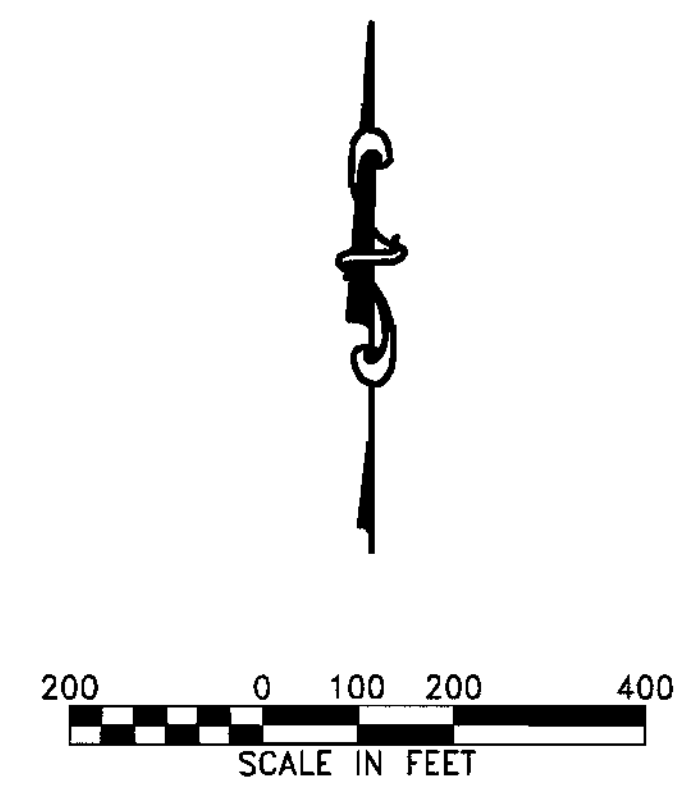
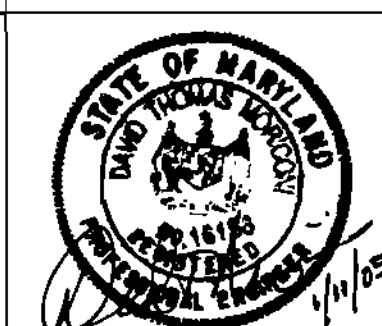


APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division Date 2/2/05
 Chief, Division of Land Development Date 2/4/05
 Director Date 2/14/05

APPROVED FOR PUBLIC (OR PRIVATE) WATER AND PUBLIC (OR PRIVATE) SEWERAGE SYSTEMS
 County Health Officer Date 3/9/05
 Howard County Health Department



PREPARED BY
URS
 4 NORTH PARK DRIVE
 HUNT VALLEY, MARYLAND
 TEL: (410) 785-7220



DES:DTM/RKK				
DRN:RMC/HWC				
CHK:DTM/RKK				
DATE: 10/8/04	BY	NO.	REVISION	DATE

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

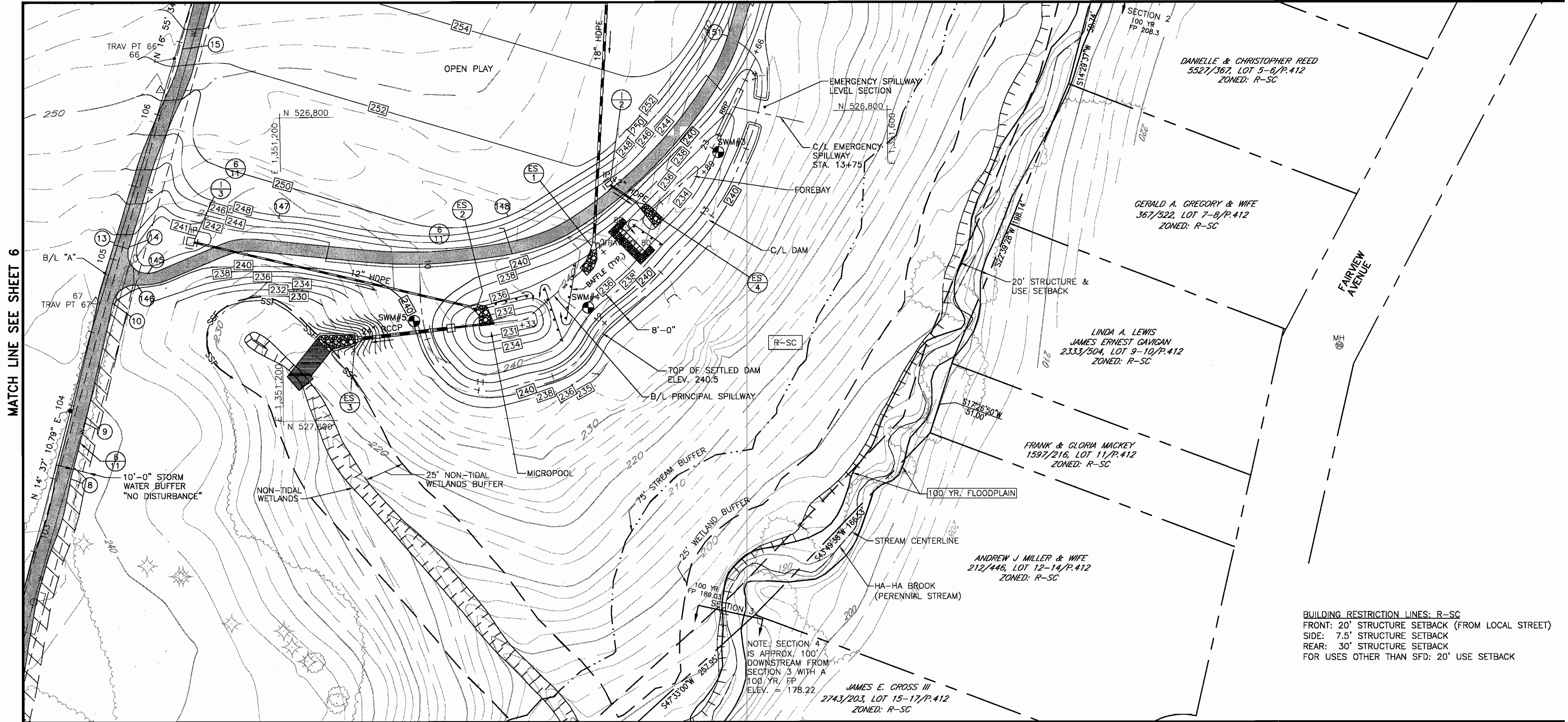
DEVELOPER:
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 9250 BENDIX ROAD
 COLUMBIA, MARYLAND 21045

TAX MAP: 50
 GRID: 1&2
 ZONED: R-20 & R-SC
 PARCEL NO.: 364
 CENSUS TRACT: 6069.03
 WATER CODE: C06
 SEWER CODE: 7170900

HIGH RIDGE PARK

KEY PLAN

DEED REFERENCE: LIBER 8771, FOLIO 685
 ELECTION DISTRICT NO. 6, HOWARD COUNTY, MARYLAND



MATCH LINE SEE SHEET 6

BUILDING RESTRICTION LINES: R-SC
 FRONT: 20' STRUCTURE SETBACK (FROM LOCAL STREET)
 SIDE: 7.5' STRUCTURE SETBACK
 REAR: 30' STRUCTURE SETBACK
 FOR USES OTHER THAN SFD: 20' USE SETBACK

GEOMETRY KEY (148)

COORDINATE TABLE								
NO.	NORTHING	EASTING	NO.	NORTHING	EASTING	NO.	NORTHING	EASTING
55	527,113.1337	1,351,233.8008	73	527,213.9599	1,351,194.8316	91	527,083.8128	1,351,367.9994
56	527,119.3478	1,351,230.4267	74	527,231.0004	1,351,137.3023	92	527,050.2090	1,351,379.7029
57	527,119.3819	1,351,212.7067	75	527,319.4303	1,351,226.0725	93	527,028.9368	1,351,362.6835
58	527,146.1943	1,351,220.4798	76	527,105.4631	1,351,231.5287	94	527,011.3054	1,351,376.7344
59	527,158.3846	1,351,188.7994	77	527,088.3063	1,351,241.3074	95	NOT USED	
60	NOT USED		78	527,030.3908	1,351,227.9408	96	527,001.3287	1,351,393.2951
61	527,152.1931	1,351,200.5237	79	527,086.4161	1,351,260.4593	97	526,991.6560	1,351,425.8901
62	527,221.2282	1,351,220.9723	80	527,081.8455	1,351,263.9707	98	526,987.3021	1,351,468.4771
63	527,223.2186	1,351,242.4208	81	527,070.9284	1,351,300.1269	99	526,975.2318	1,351,509.2270
64	527,236.5694	1,351,225.5164	82	527,081.7252	1,351,311.6686	100	526,922.1023	1,351,449.1645
65	527,348.5269	1,351,289.2652	83	527,315.6766	1,351,307.8035	101	526,952.4361	1,351,378.7860
66	527,276.0029	1,351,425.1099	84	NOT USED		102	526,995.9029	1,351,372.0942
67	527,201.9931	1,351,614.8944	85	527,060.3541	1,351,307.7535	103	526,985.7062	1,351,353.3668
68	527,044.6393	1,351,146.7637	86	527,054.9909	1,351,322.6110	104	526,981.7161	1,351,345.0952
69	527,167.3684	1,351,183.1168	87	527,050.4155	1,351,324.4003	105	526,973.5314	1,351,339.9689
70	527,185.5450	1,351,121.7522	88	527,036.1054	1,351,338.2453	106	526,986.6202	1,351,328.1844
71	NOT USED		89	527,077.0646	1,351,355.5711	107	526,969.5694	1,351,322.7243
72	NOT USED		90	527,067.8224	1,351,358.4586			

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division: *[Signature]* Date: 2/2/05
 Chief, Division of Land Development: *[Signature]* Date: 2/9/05
 Director: *[Signature]* Date: 2/10/05

APPROVED FOR PUBLIC (OR PRIVATE) WATER AND PUBLIC (OR PRIVATE) SEWERAGE SYSTEMS
 County Health Officer: *[Signature]* Date: 2/9/05



DES:	DTM	DRN:	RMC	CHK:	DTM	DATE:	10/8/04	BY:	NO.	REVISION	DATE

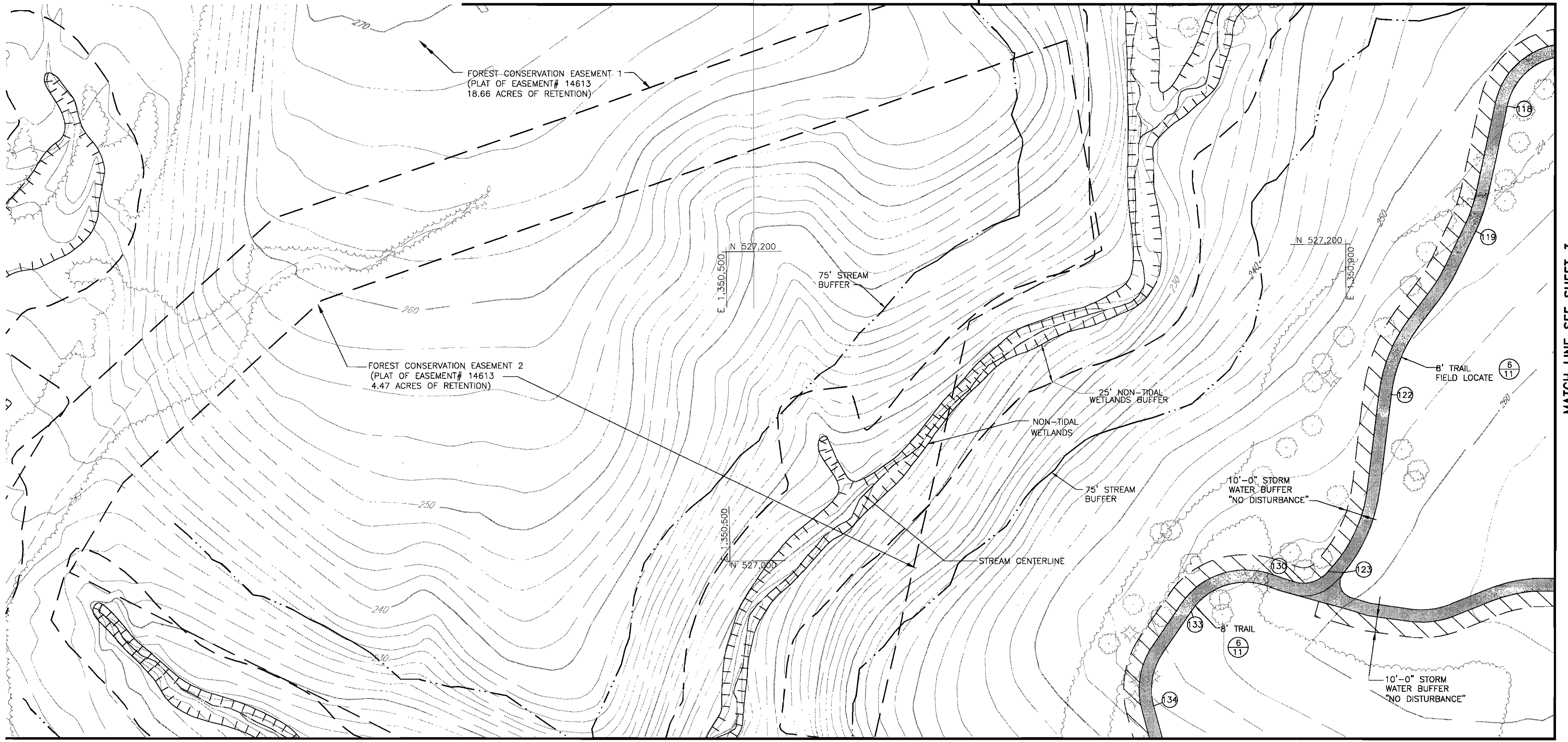
OWNER:
 HOWARD COUNTY DEPARTMENT
 RECREATION AND PARKS
 7120 OAKLAND MILLS ROAD
 COLUMBIA, MARYLAND 21046

DEVELOPER:
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 9250 BENDIX ROAD
 COLUMBIA, MARYLAND 21045

TAX MAP: 50
 GRID: 1&2
 ZONED: R-20 & R-SC
 PARCEL NO.: 364
 CENSUS TRACT: 6069.03
 WATER CODE: C06
 SEWER CODE: 7170900

HIGH RIDGE PARK SITE DEVELOPMENT PLAN

DEED REFERENCE: LIBER 8771, FOLIO 685
 ELECTION DISTRICT NO. 6, HOWARD COUNTY, MARYLAND



MATCH LINE SEE SHEET 3

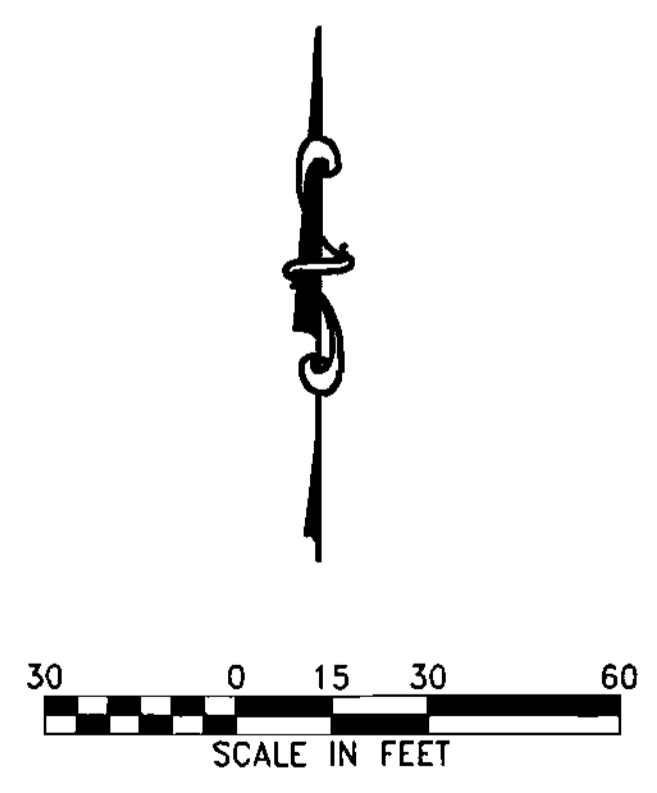
MATCH LINE SEE SHEET 6

GEOMETRY KEY (134)

COORDINATE TABLE											
NO.	NORTHING	EASTING	NO.	NORTHING	EASTING	NO.	NORTHING	EASTING	NO.	NORTHING	EASTING
109	526,988.1181	1,351,260.1664	127	NOT USED		151	526,851.3726	1,351,504.6098	171	526,401.3284	1,350,727.1866
110	527,013.9854	1,351,238.5392	128	NOT USED		152	527,172.9733	1,351,598.8268	172	526,374.5462	1,350,736.6356
111	527,015.4054	1,351,233.7451	129	NOT USED		153	527,170.1332	1,351,608.4150	173	526,366.9647	1,350,799.6372
112	527,137.2063	1,351,187.7410	130	526,975.5400	1,350,871.1010	154	526,716.5049	1,350,784.0253	174	526,382.5829	1,350,842.0738
113	527,293.8706	1,351,235.6271	133	526,956.6925	1,350,804.9758	155	526,687.0304	1,350,785.9411	175	526,377.1254	1,350,910.8183
114	527,394.0090	1,351,183.0545	134	526,895.1897	1,350,780.8552	156	526,646.5313	1,350,774.2724	176	526,350.8358	1,350,944.2524
115	527,398.8135	1,351,142.5430	135	526,779.0987	1,350,811.7958	157	526,612.0565	1,350,746.0473	177	526,313.1329	1,350,951.4763
116	527,068.6766	1,351,100.6743	136	526,745.6828	1,350,800.7996	158	526,601.3757	1,350,726.2074			
117	527,363.3948	1,351,047.4762	137	526,728.5126	1,350,793.0234	159	NOT USED				
118	527,283.2333	1,351,008.8989	138	526,693.2972	1,350,851.2727	160	NOT USED				
119	527,201.9493	1,350,988.4859	139	526,688.1922	1,350,945.1619	161	526,578.1084	1,350,685.9991			
120	NOT USED		142	526,707.5544	1,350,986.8150	162	526,555.7055	1,350,656.6026			
121	NOT USED		143	NOT USED		163	526,536.4539	1,350,618.3398			
122	527,096.5002	1,350,934.0485	144	NOT USED		164	526,533.0410	1,350,579.0430			
123	526,981.3628	1,350,903.4125	145	NOT USED		165	526,504.2292	1,350,556.4166			
124	NOT USED		146	NOT USED		166	526,448.4702	1,350,591.2898			
125	NOT USED		147	NOT USED		167	526,424.8417	1,350,636.3855			
126	NOT USED		148	NOT USED		170	526,417.9743	1,350,704.9609			

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division: *[Signature]* Date: 2/2/05
 Check, Division of Land Development: *[Signature]* Date: 2/4/05
 Director: *[Signature]* Date: 2/10/05

APPROVED: FOR PUBLIC (OR PRIVATE) WATER AND PUBLIC (OR PRIVATE) SEWERAGE SYSTEMS
 County Health Officer: *[Signature]* Date: 2/9/05
 Howard County Health Department: *[Signature]*



PREPARED BY
URS
 4 NORTH PARK DRIVE
 HUNT VALLEY, MARYLAND
 TEL: (410) 785-7220



DES:DTM/RKK			
DRN:RMC/HWC			
CHK:DTM/RKK			
DATE: 10/8/04	BY	NO.	REVISION

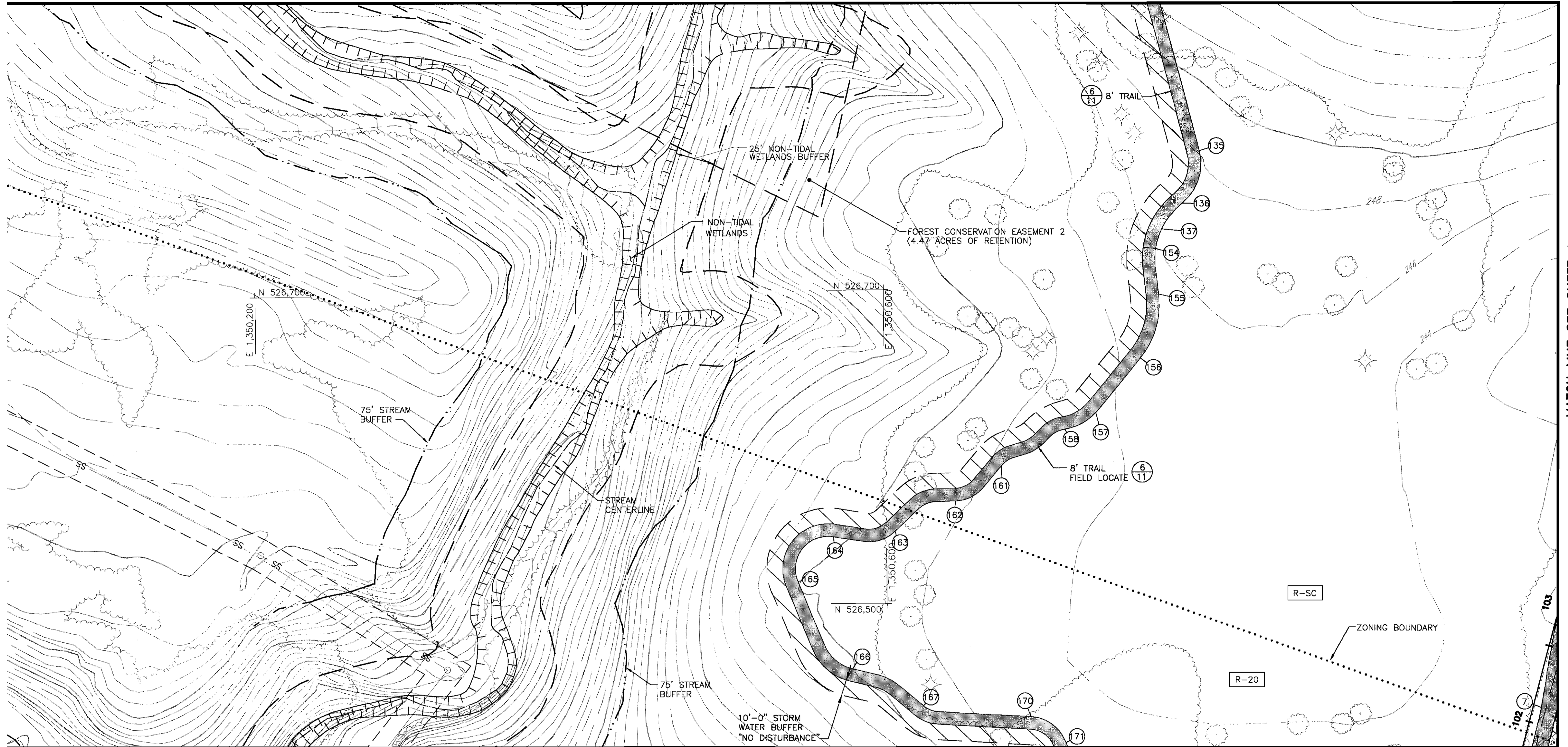
OWNER:
 HOWARD COUNTY DEPARTMENT
 RECREATION AND PARKS
 7120 OAKLAND MILLS ROAD
 COLUMBIA, MARYLAND 21046

DEVELOPER:
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 9250 BENDIX ROAD
 COLUMBIA, MARYLAND 21045

TAX MAP: 50
 GRD: 1&2
 ZONED: R-20 & R-5C
 PARCEL NO.: 364
 CENSUS TRACT: 6069.03
 WATER CODE: C06
 SEWER CODE: 7170900

HIGH RIDGE PARK SITE DEVELOPMENT PLAN

DEED REFERENCE: LIBER 8771, FOLIO 685
 ELECTION DISTRICT NO. 6, HOWARD COUNTY, MARYLAND



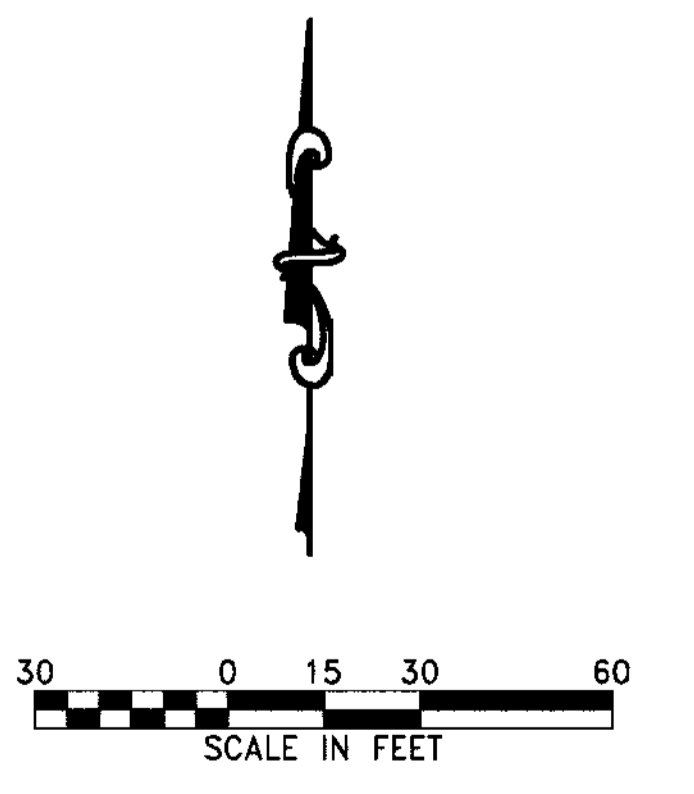
MATCH LINE SEE SHEET 4

MATCH LINE SEE SHEET 7

NOTES:
1. REFER TO SHEET 5 FOR COORDINATE TABLE.

BUILDING RESTRICTION LINES: R-SC
 FRONT: 20' STRUCTURE SETBACK
 SIDE: 7.5' STRUCTURE SETBACK
 REAR: 30' STRUCTURE SETBACK
 FOR USES OTHER THAN SFD: 20' USE SETBACK

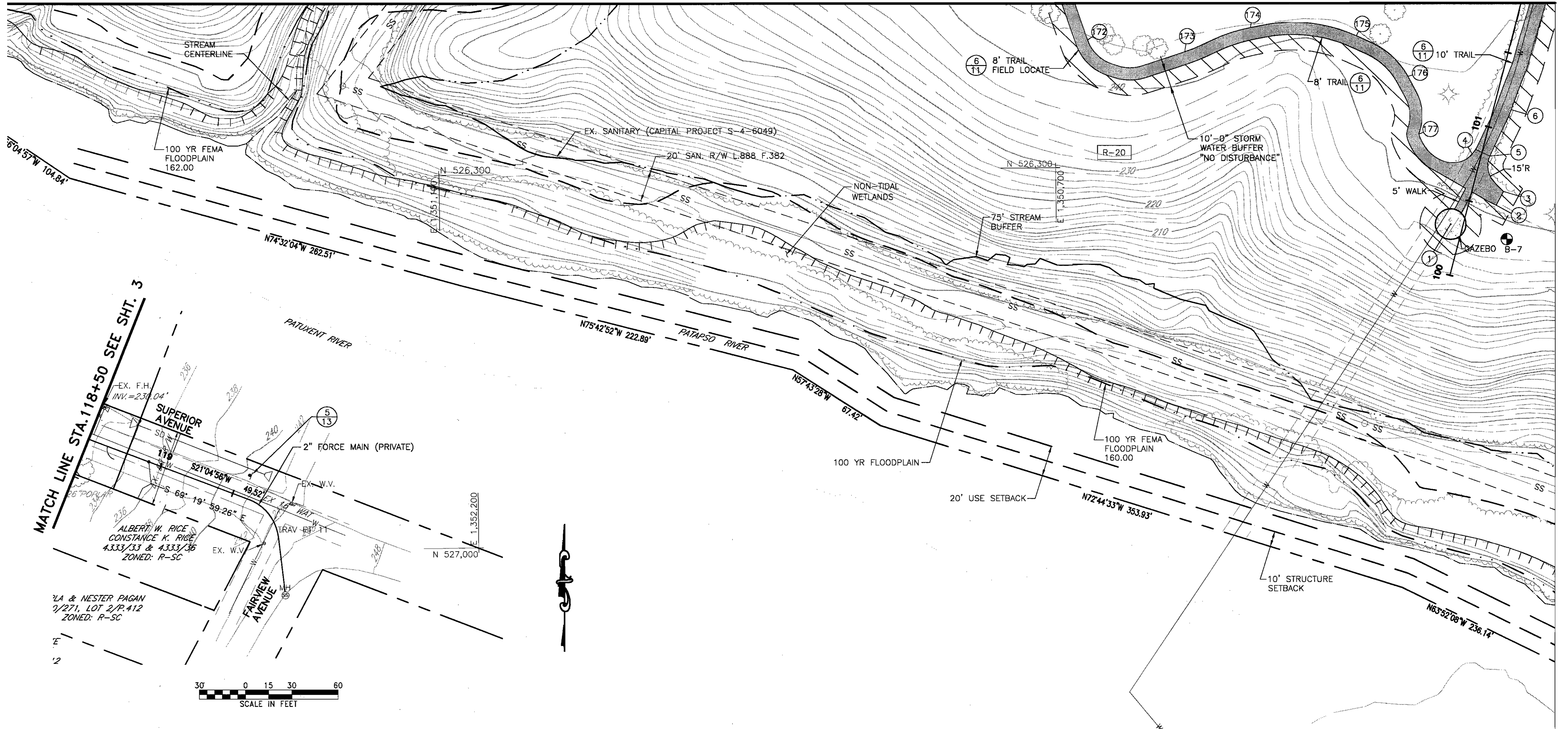
BUILDING RESTRICTION LINES: R-20
 FRONT: 30' STRUCTURE SETBACK
 SIDE: 10' STRUCTURE SETBACK
 REAR: 30' STRUCTURE SETBACK



APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division Date 2/2/05
 Chief, Division of Land Development Date 2/4/05
 Director Date 2/10/05

APPROVED FOR PUBLIC (OR PRIVATE) WATER AND PUBLIC (OR PRIVATE) SEWERAGE SYSTEMS
 County Health Officer Date 2/9/05
 Howard County Health Department

PREPARED BY URS 4 NORTH PARK DRIVE HUNT VALLEY, MARYLAND TEL: (410) 785-7220	DES: DTM/RKK DRN: RMC/HWC CHK: DTM/RKK DATE: 10/8/04	OWNER: HOWARD COUNTY DEPARTMENT RECREATION AND PARKS 7120 OAKLAND MILLS ROAD COLUMBIA, MARYLAND 21046	DEVELOPER: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS 9250 BENDIX ROAD COLUMBIA, MARYLAND 21045	TAX MAP: 50 GRID: 1&2 ZONED: R-20 & R-SC PARCEL NO.: 364 CENSUS TRACT: 6069.03 WATER CODE: 006 SEWER CODE: 7170900	HIGH RIDGE PARK SITE DEVELOPMENT PLAN DEED REFERENCE: LIBER 8771, FOLIO 685 ELECTION DISTRICT NO. 6, HOWARD COUNTY, MARYLAND



NOTES:
1. REFER TO SHEET 5 FOR COORDINATE TABLE.

BUILDING RESTRICTION LINES: R-20
FRONT: 30' STRUCTURE SETBACK
SIDE: 10' STRUCTURE SETBACK
REAR: 30' STRUCTURE SETBACK

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division: *[Signature]* Date: 2/2/05
 Chief, Division of Land Development: *[Signature]* Date: 2/4/05
 Director: *[Signature]* Date: 2/10/05

APPROVED FOR PUBLIC (OR PRIVATE) WATER AND PUBLIC (OR PRIVATE) SEWERAGE SYSTEMS
 County Health Officer: *[Signature]* Date: 2/10/05
 Howard County Health Department: *[Signature]*

DES:DTM/RKK				
DRN:RMC/HWC				
CHK:DTM/RKK				
DATE: 10/8/04	BY	NO.	REVISION	DATE

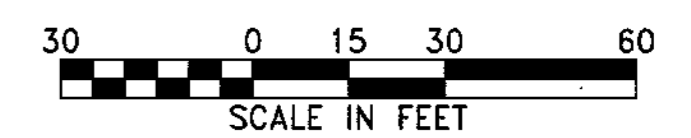
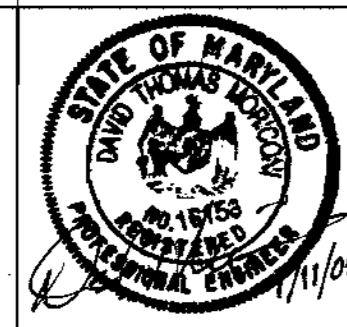
OWNER:
HOWARD COUNTY DEPARTMENT
RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046

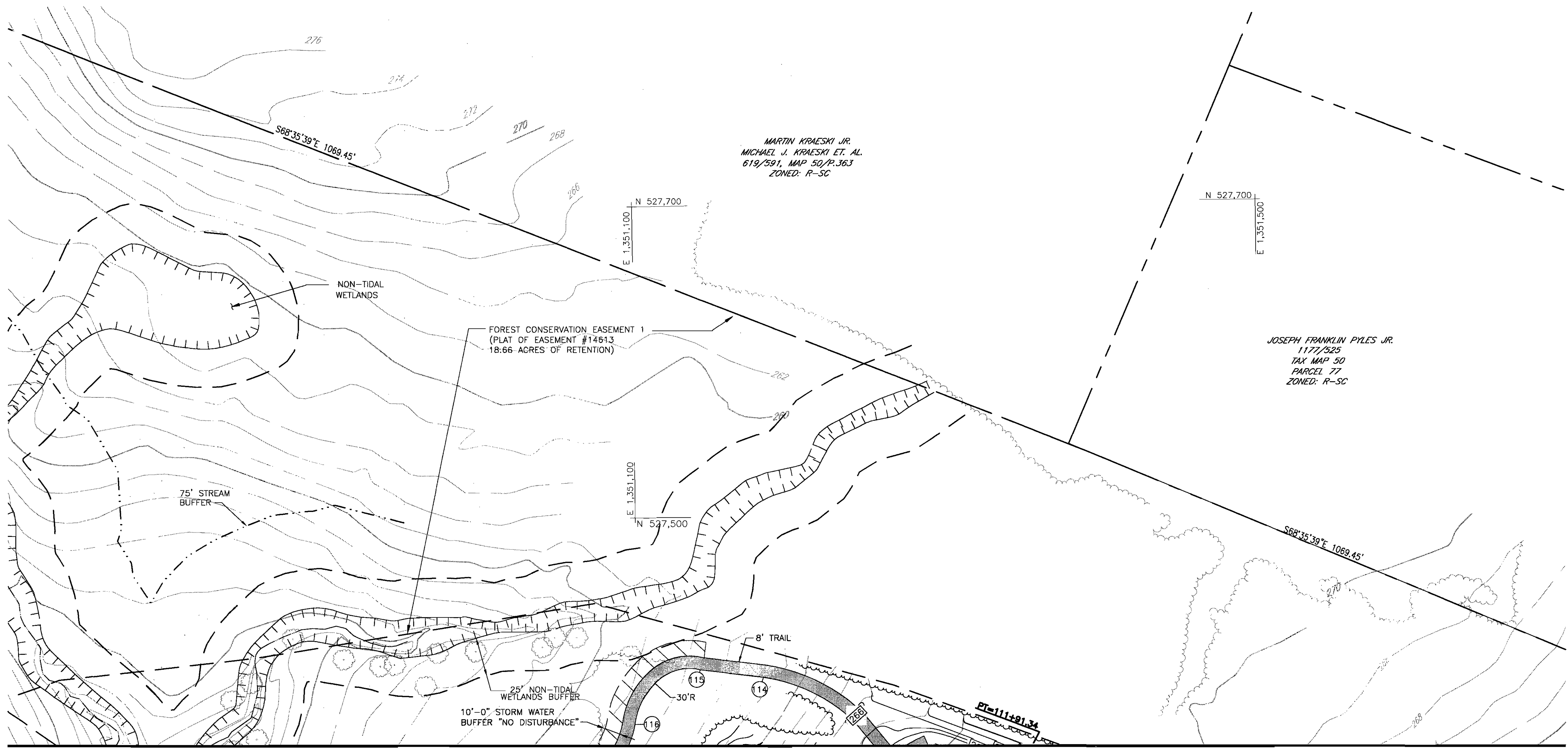
DEVELOPER:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
COLUMBIA, MARYLAND 21045

TAX MAP: 50
GRID: 1&2
ZONED: R-20 & R-SC
PARCEL NO.: 364
CENSUS TRACT: 6069.03
WATER CODE: C06
SEWER CODE: 7170900

HIGH RIDGE PARK SITE DEVELOPMENT PLAN

DEED REFERENCE: LIBER 8771, FOLIO 685
ELECTION DISTRICT NO. 6, HOWARD COUNTY, MARYLAND



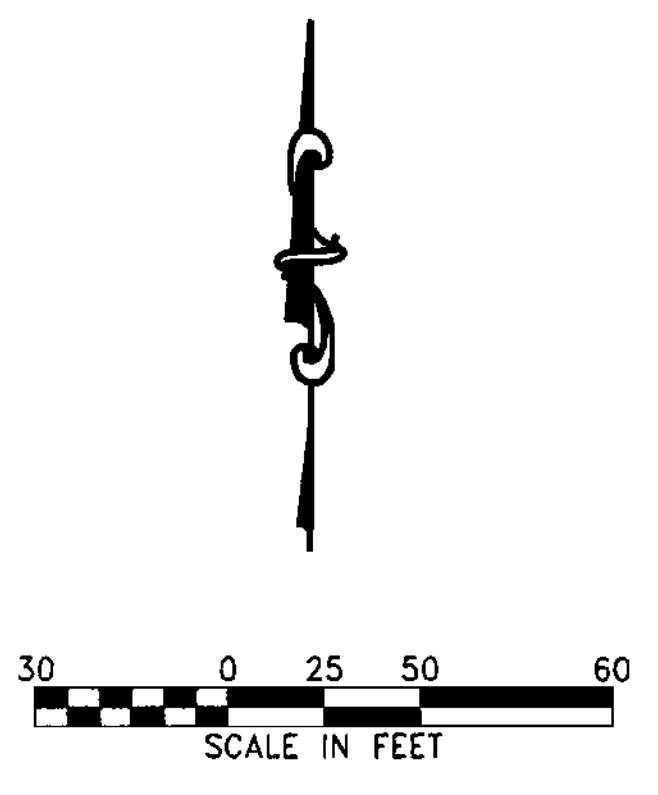


MARTIN KRAESKI JR.
MICHAEL J. KRAESKI ET. AL.
619/591, MAP 50/P.363
ZONED: R-SC

JOSEPH FRANKLIN PYLES JR.
1177/525
TAX MAP 50
PARCEL 77
ZONED: R-SC

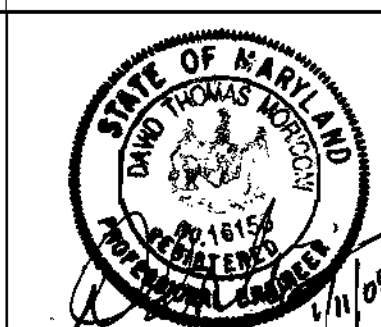
MATCH LINE SEE SHEET 3 & 5

NOTES:
1. REFER TO SHEET 5 FOR COORDINATE TABLE.



APPROVED: DEPARTMENT OF PLANNING AND ZONING		APPROVED: FOR PUBLIC (OR PRIVATE) WATER AND PUBLIC (OR PRIVATE) SEWERAGE SYSTEMS	
Chief, Development Engineering Division <i>[Signature]</i>	Date: 2/2/05	County Health Officer <i>[Signature]</i>	Date: 2/9/05
Chief, Division of Land Development <i>[Signature]</i>	Date: 2/4/05	Howard County Health Department <i>[Signature]</i>	Date: 2/9/05
Director <i>[Signature]</i>	Date: 2/10/05		

PREPARED BY
URS
4 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND
TEL: (410) 785-7220



DES:DTM/RKK			
DRN:RMC/HWC			
CHK:DTM/RKK			
DATE: 10/8/04	BY	NO.	REVISION

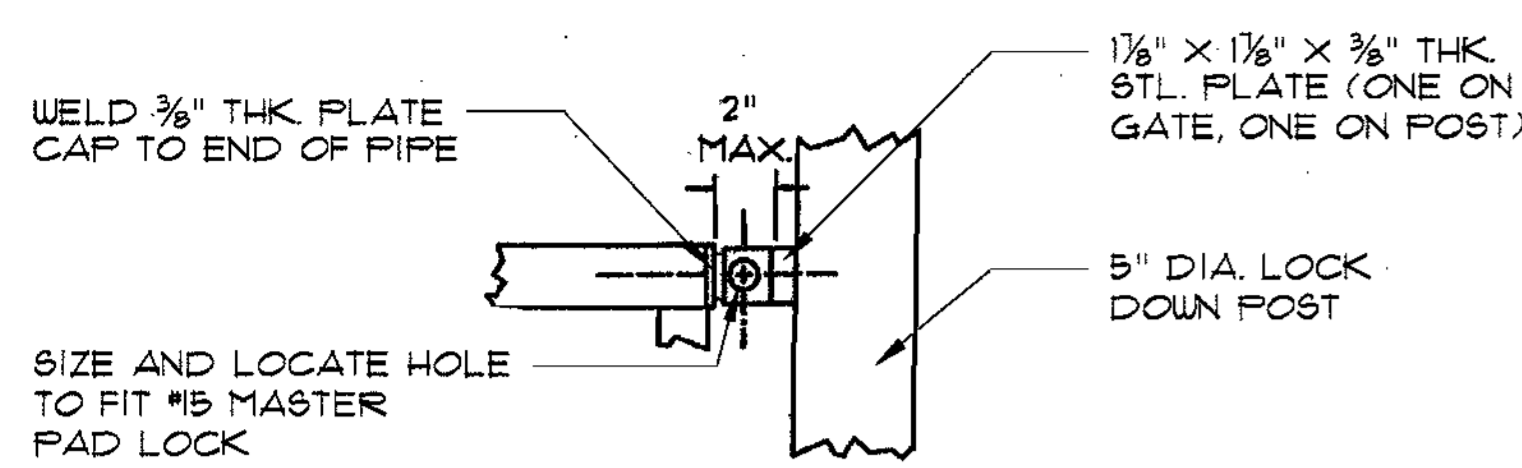
OWNER:
HOWARD COUNTY DEPARTMENT
RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046

DEVELOPER:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
COLUMBIA, MARYLAND 21045

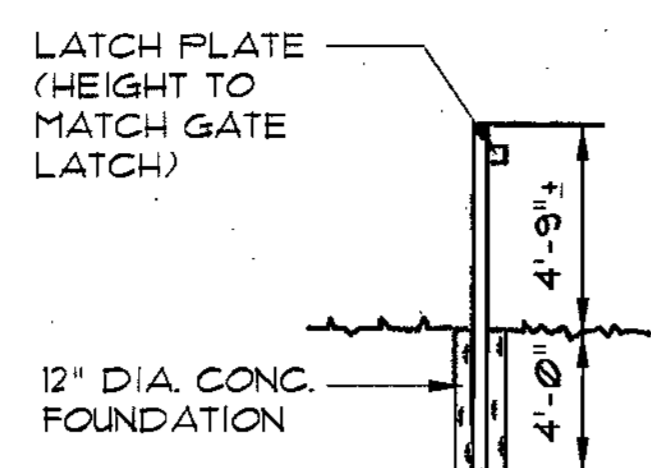
TAX MAP: 50
GRID: 1&2
ZONED: R-20 & R-SC
PARCEL NO.: 364
CENSUS TRACT: 6069.03
WATER CODE: C06
SEWER CODE: 7170900

HIGH RIDGE PARK SITE DEVELOPMENT PLAN

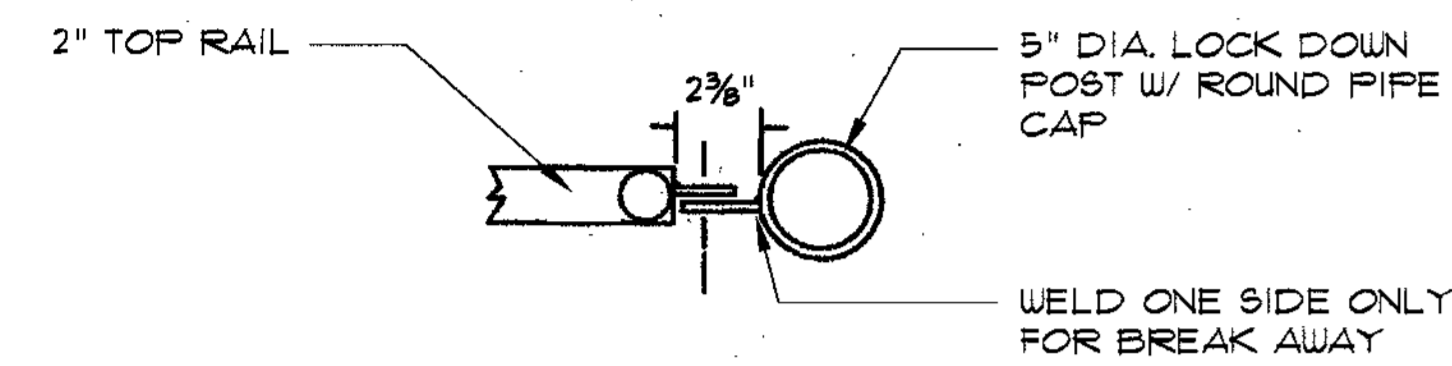
DEED REFERENCE: LIBER 8771, FOLIO 685
ELECTION DISTRICT NO. 6, HOWARD COUNTY, MARYLAND



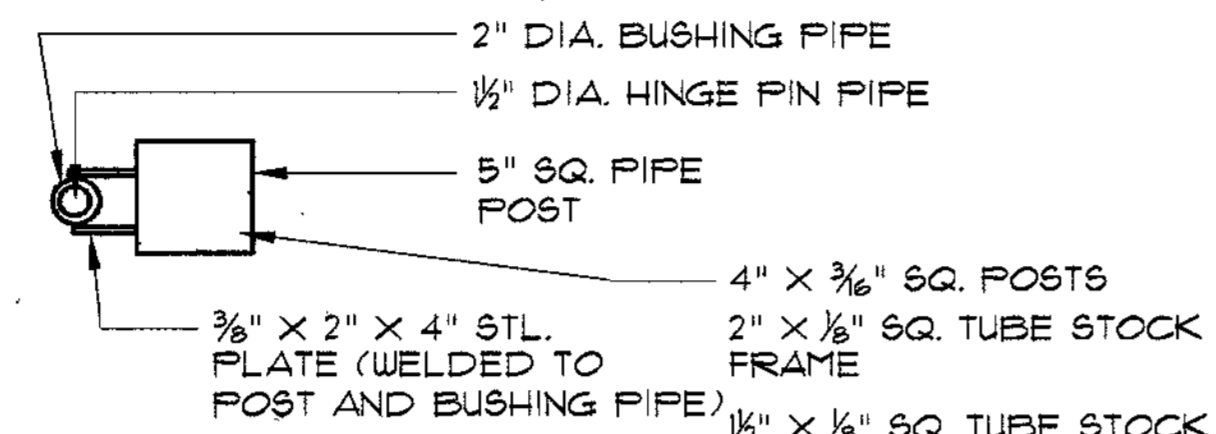
LATCH - FRONT VIEW
NTS



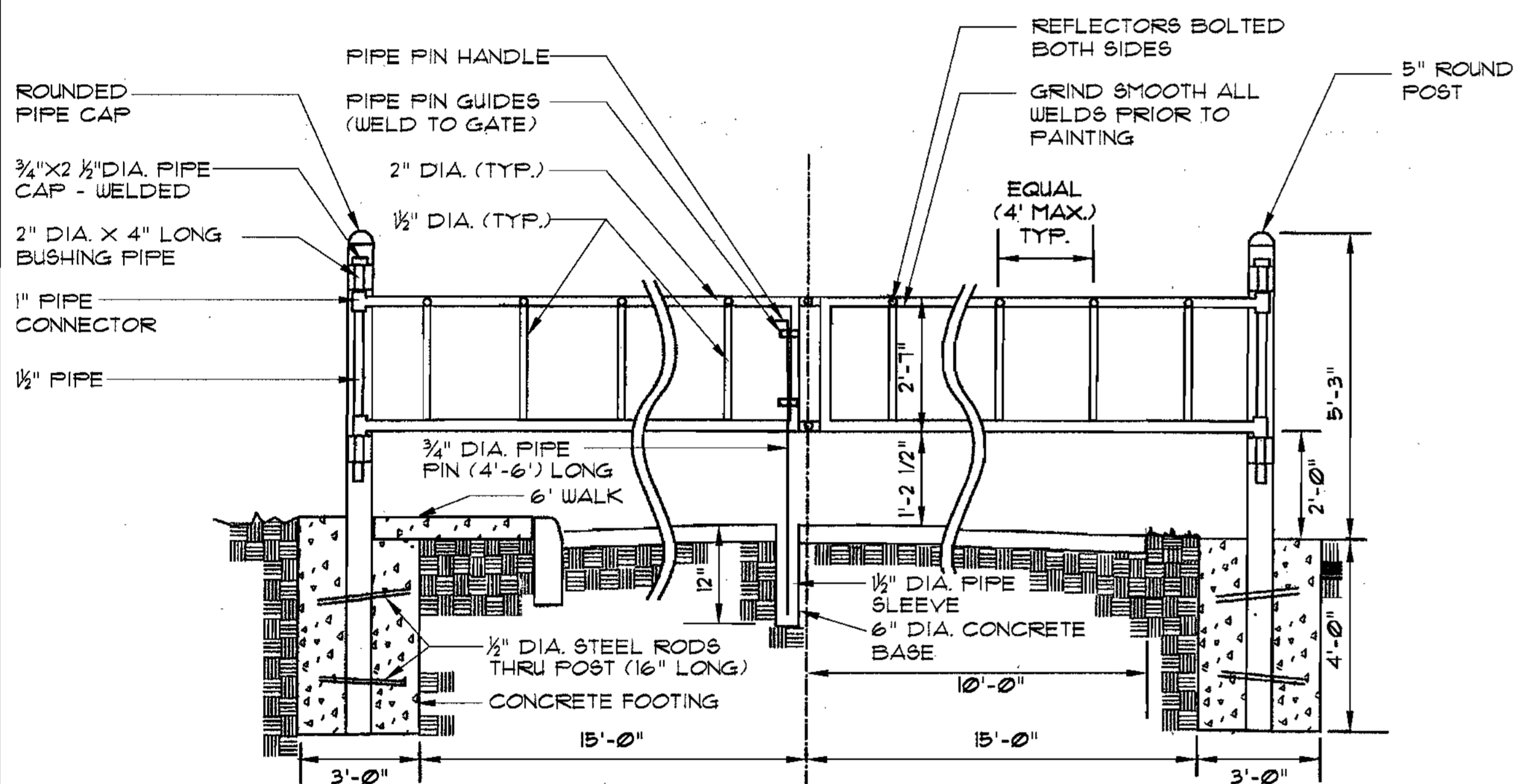
LOCK DOWN POST ELEVATION
NTS



LATCH - TOP VIEW
NTS

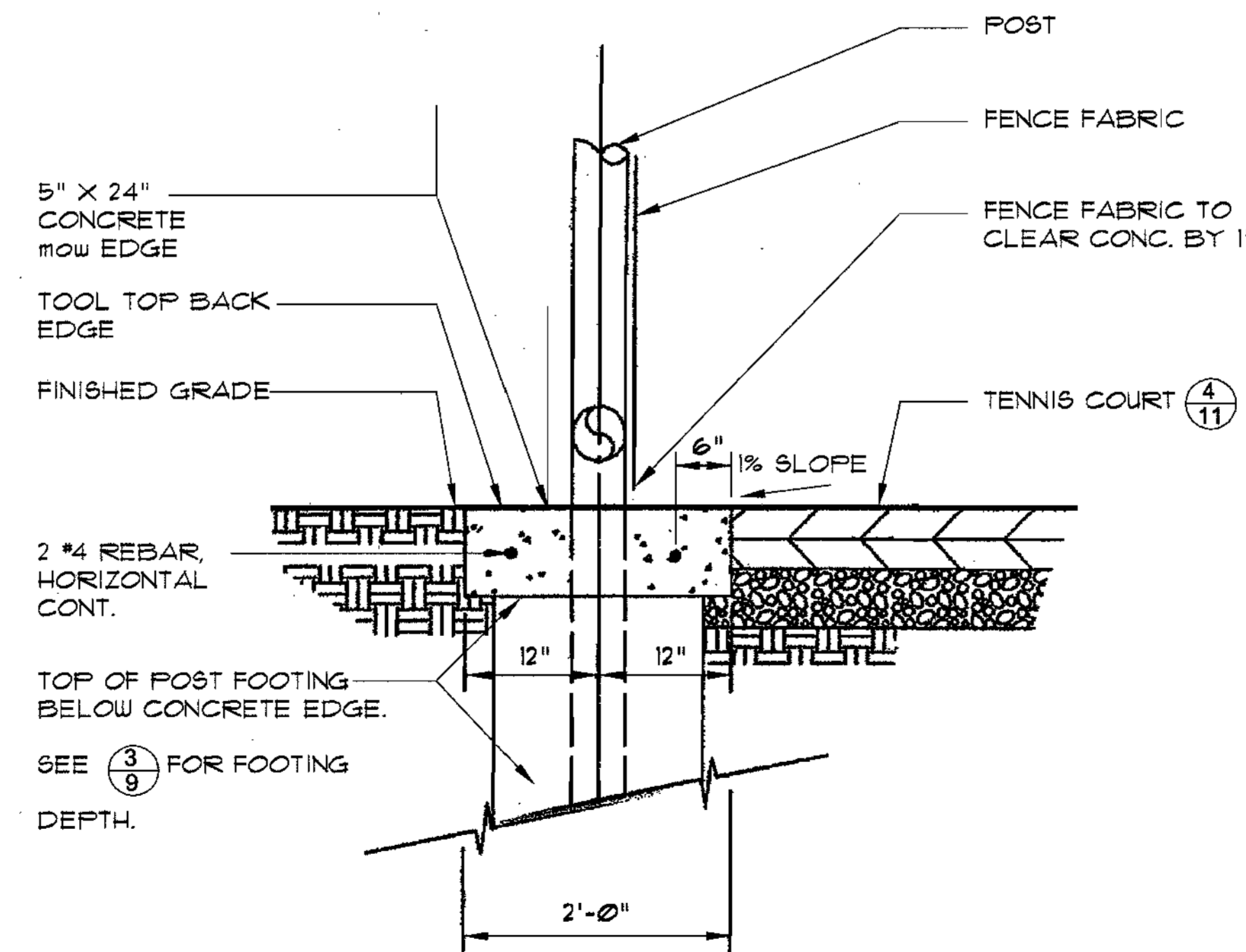


HINGE - TOP VIEW
NTS

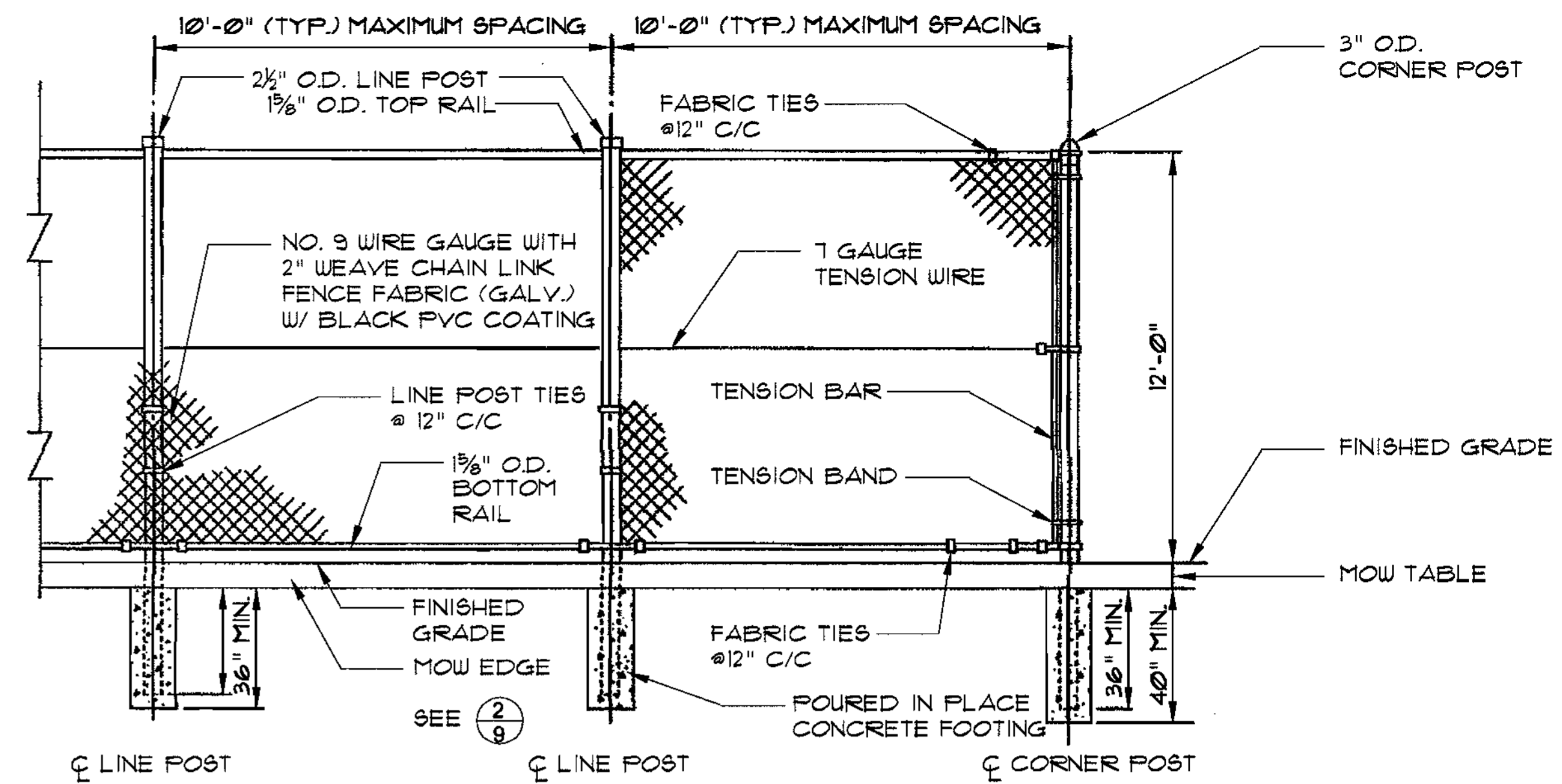


- NOTES:
 1. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF GATE FOR APPROVAL.
 2. PRIME AND PAINT GATES AND POSTS WITH TWO (2) COATS OF GLOSS BLACK POLYURETHANE.

1
ENTRANCE GATE
9 NTS

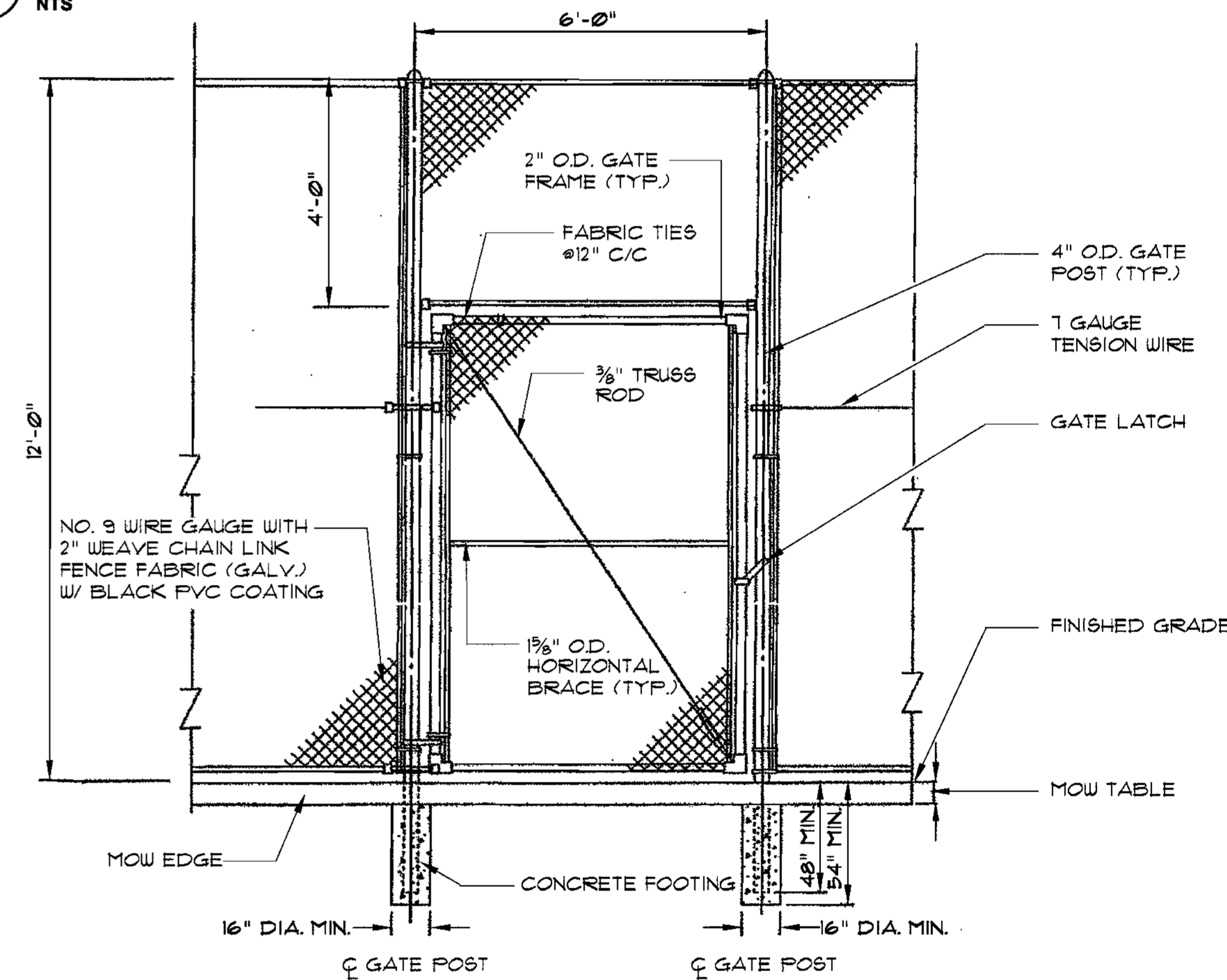


2
CONCRETE MOW EDGE
9 NTS



- NOTES:
 1. PIPING SHALL BE SCHEDULE 40.
 2. INSTALL FABRIC ON OUTSIDE OF POSTS.
 3. KNUCKLE SELVAGE TOP AND BOTTOM OF FABRIC.
 4. CHAIN LINK FABRIC, POSTS, AND FITTINGS SHALL BE GALVANIZED WITH BLACK PVC COATING.

3
CHAIN LINK FENCE
9 NTS



- NOTES:
 1. PIPING SHALL BE SCHEDULE 40.
 2. CHAIN LINK FABRIC, POSTS AND FITTINGS SHALL BE GALVANIZED WITH BLACK PVC COATING.

4
PEDESTRIAN GATE
9 NTS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division Date 2/2/05
 Chief, Division of Land Development Date 2/4/05
 Director Date 2/16/05



DES:DTM/RKK	DRN:RMC/HWC	CHK:DTM/RKK	DATE: 10/8/04	BY	NO.	REVISION	DATE

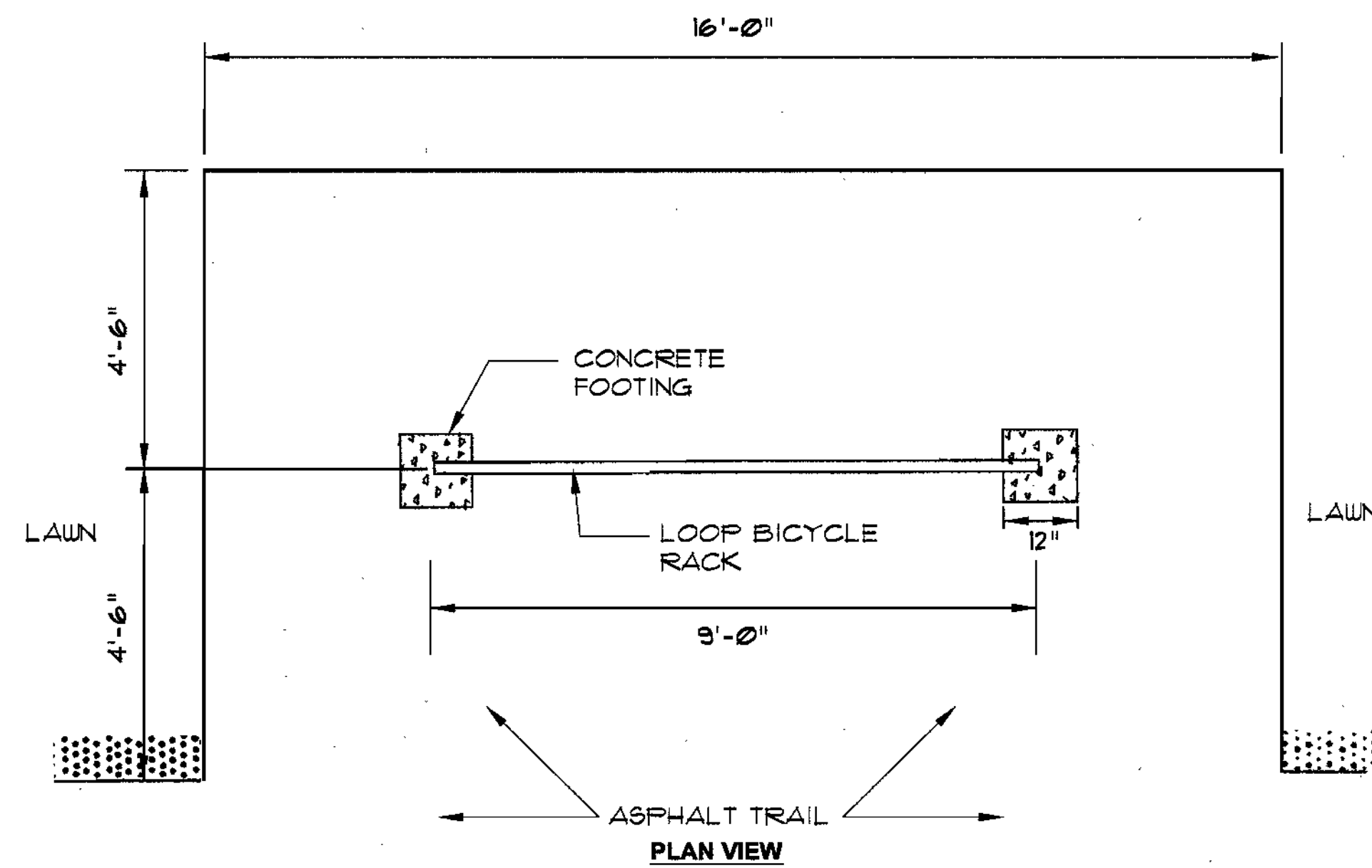
OWNER:
 HOWARD COUNTY DEPARTMENT
 RECREATION AND PARKS
 7120 OAKLAND MILLS ROAD
 COLUMBIA, MARYLAND 21046

DEVELOPER:
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 9250 BENDIX ROAD
 COLUMBIA, MARYLAND 21045

TAX MAP: 50
 GRID: 1&2
 ZONED: R-20 & R-SC
 PARCEL NO.: 364
 CENSUS TRACT: 6069.03
 WATER CODE: C06
 SEWER CODE: 7170900

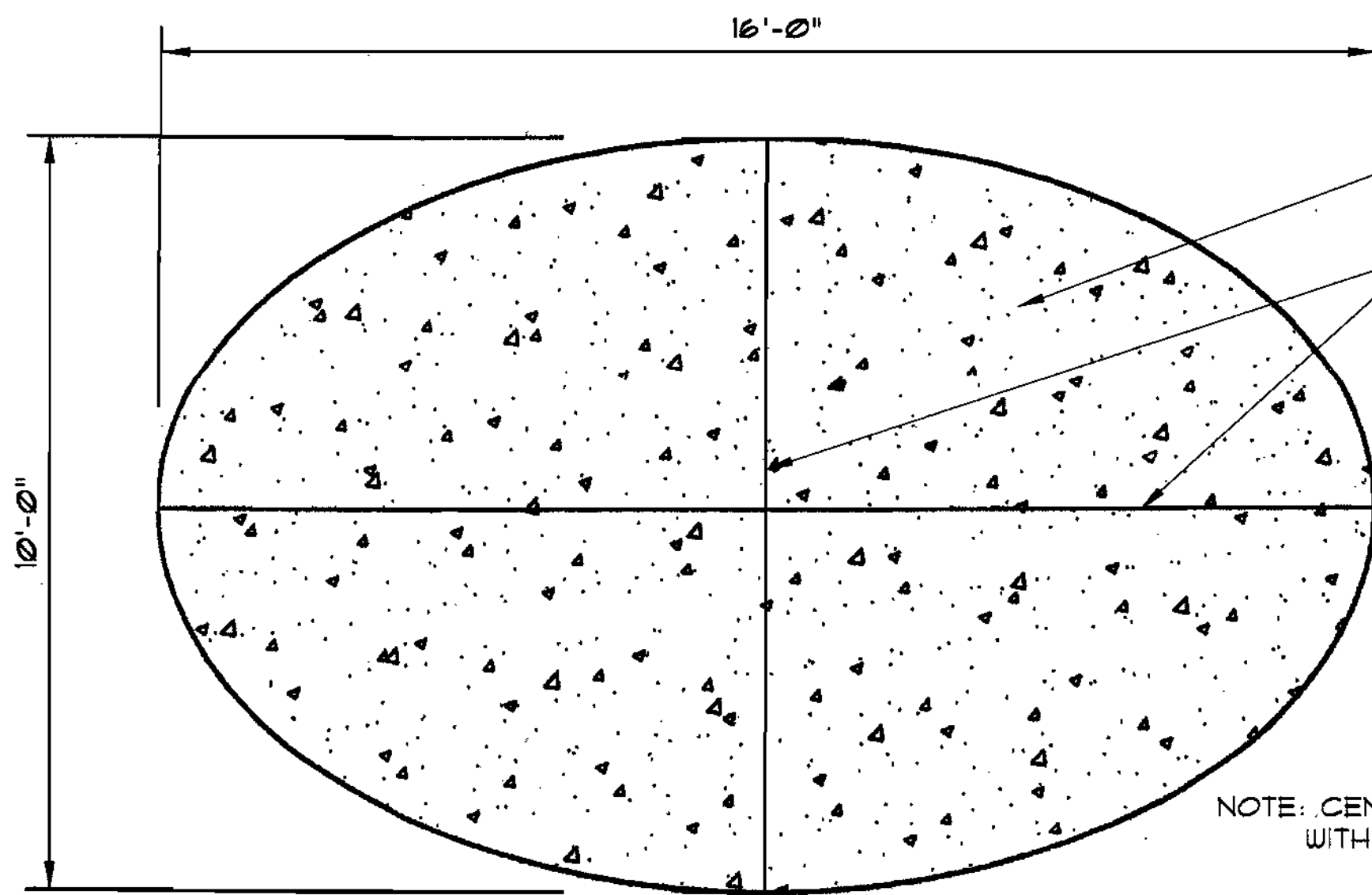
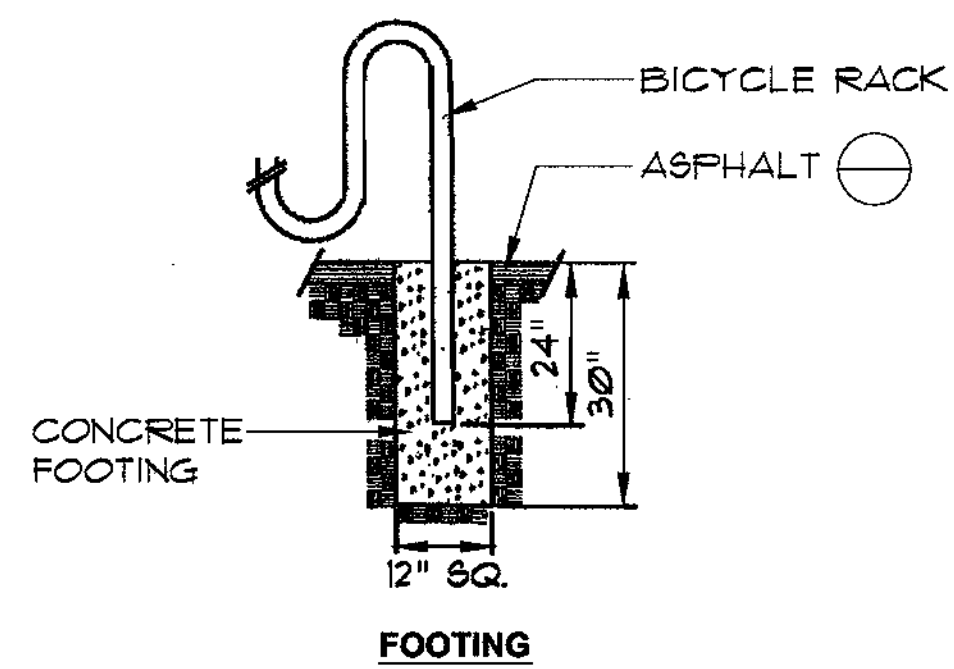
HIGH RIDGE PARK
SITE DETAILS

DEED REFERENCE: LIBER 8771, FOLIO 685
 ELECTION DISTRICT NO. 6, HOWARD COUNTY, MARYLAND



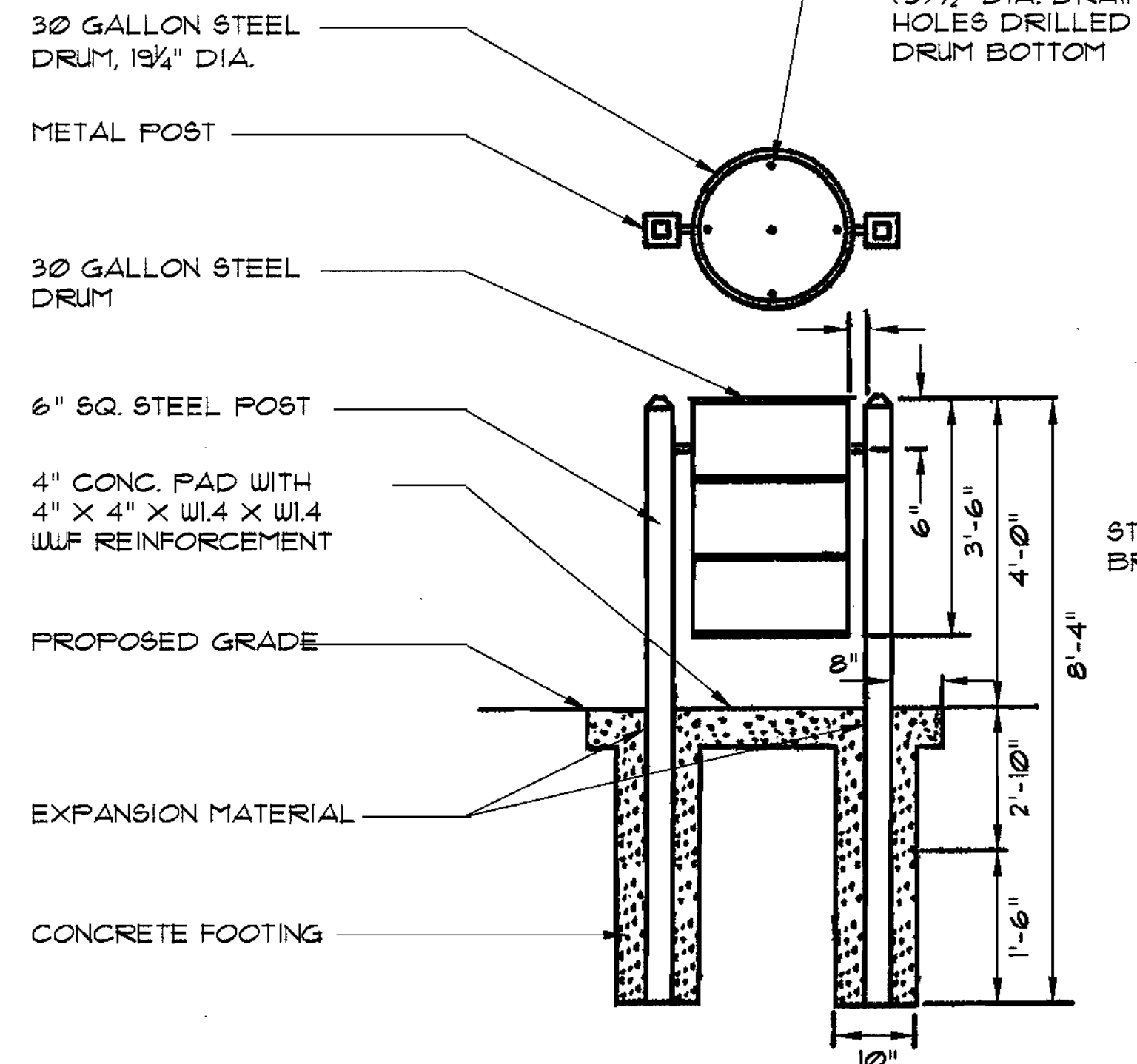
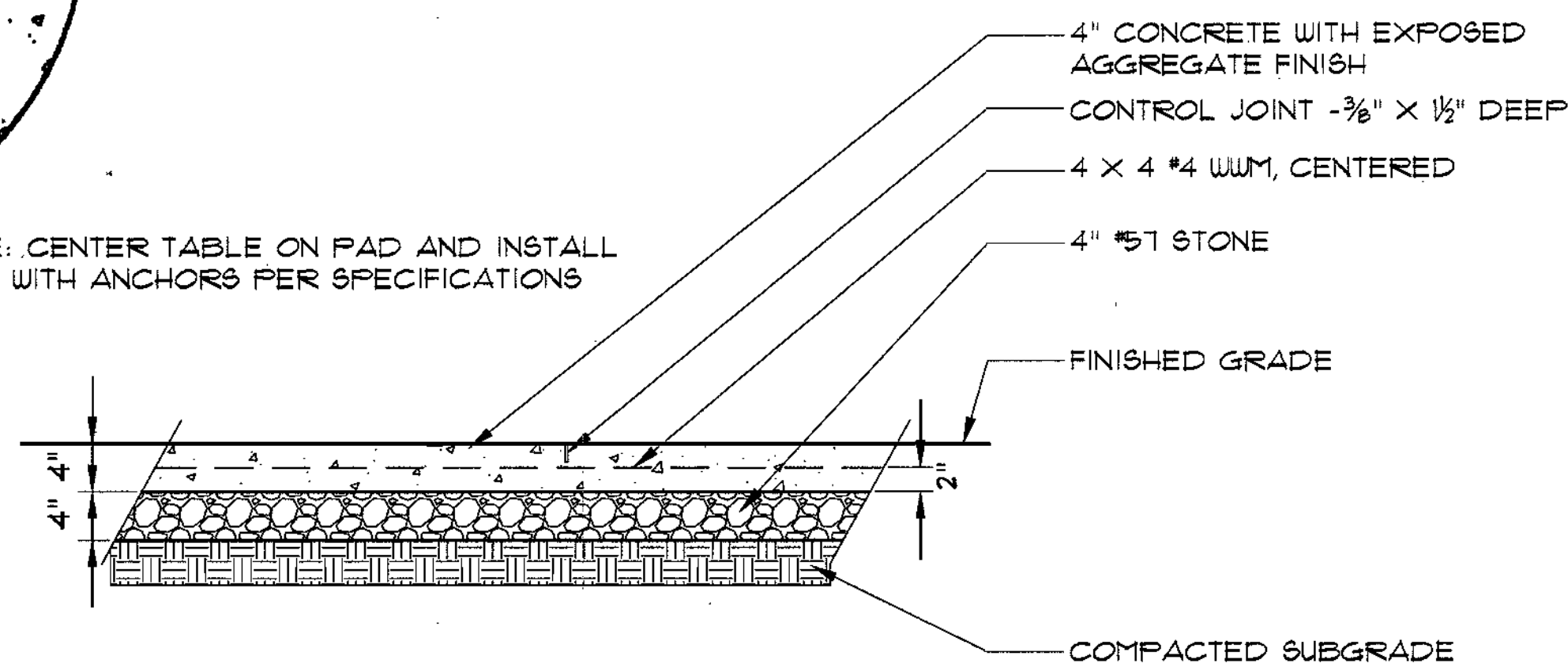
1 BICYCLE RACK
10 NTS

SEE SHEET 3 FOR PAVING LIMITS



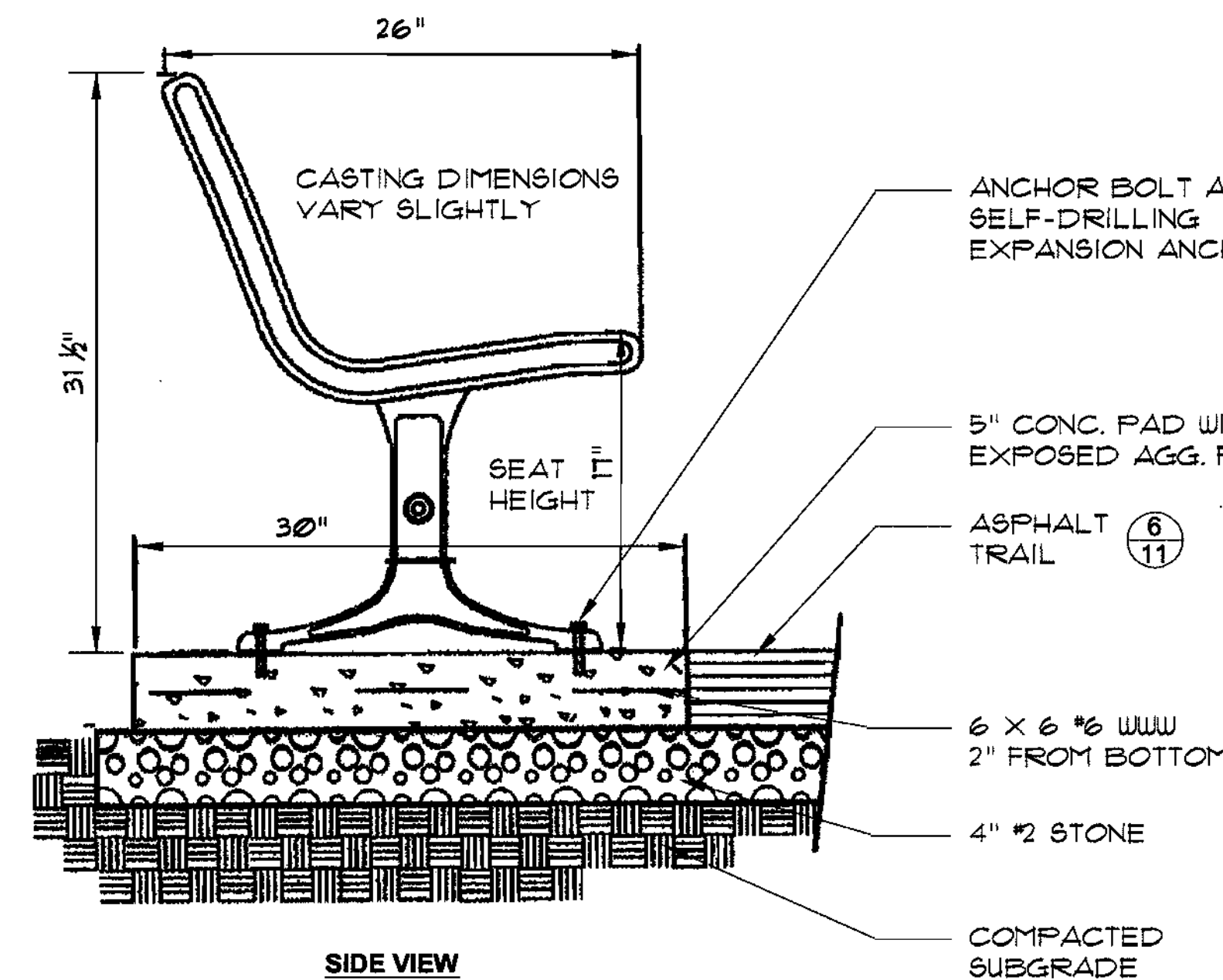
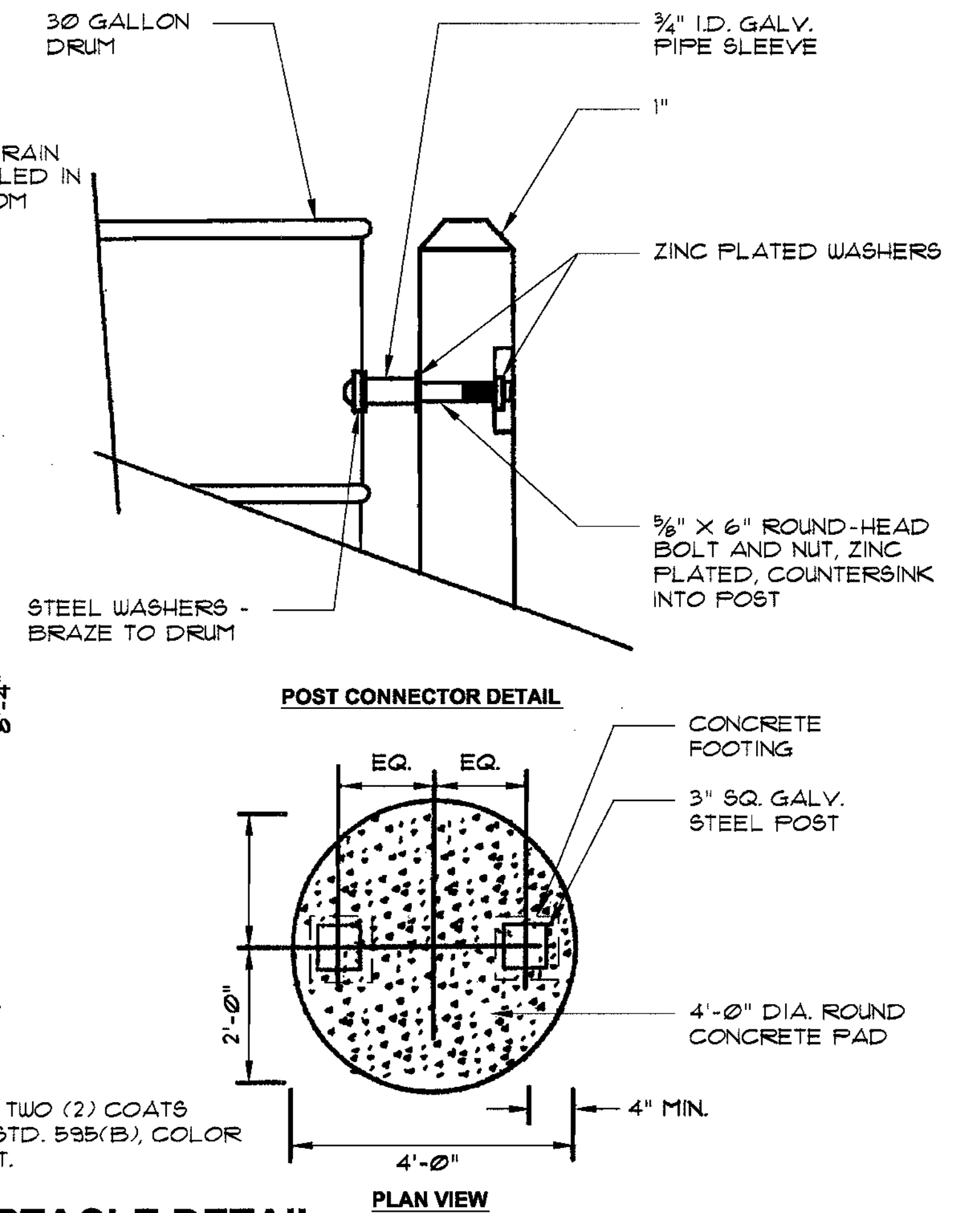
2 CONCRETE PAD FOR PICNIC TABLE
10 NTS

NOTE: CENTER TABLE ON PAD AND INSTALL WITH ANCHORS PER SPECIFICATIONS

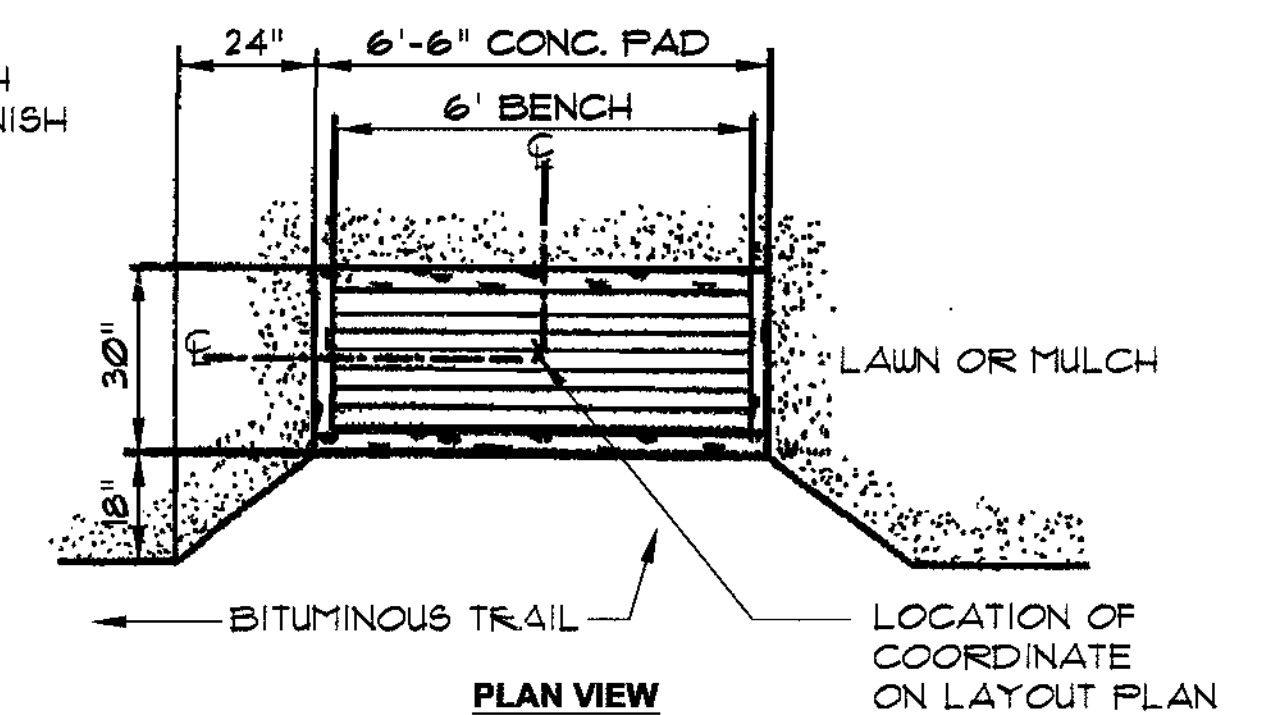


NOTE:
1. PAINT DRUM AND POST WITH TWO (2) COATS OF DARK BROWN FEDERAL STD. 595(B), COLOR #20062, POLYURETHAN PAINT.

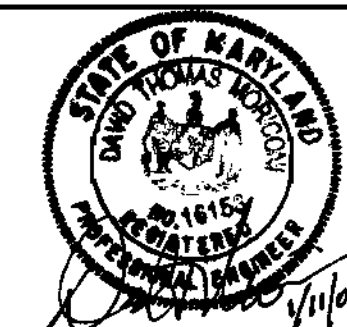
3 TRASH RECEPTACLE DETAIL
10 NTS



4 BENCH
10 NTS



APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division Date: 2/2/05
 Chief, Division of Land Development Date: 2/4/05
 Director Date: 2/16/05



DES:DTM/RKK	DRN:RMC/HWC	CHK:DTM/RKK	DATE: 10/8/04	BY	NO.	REVISION	DATE

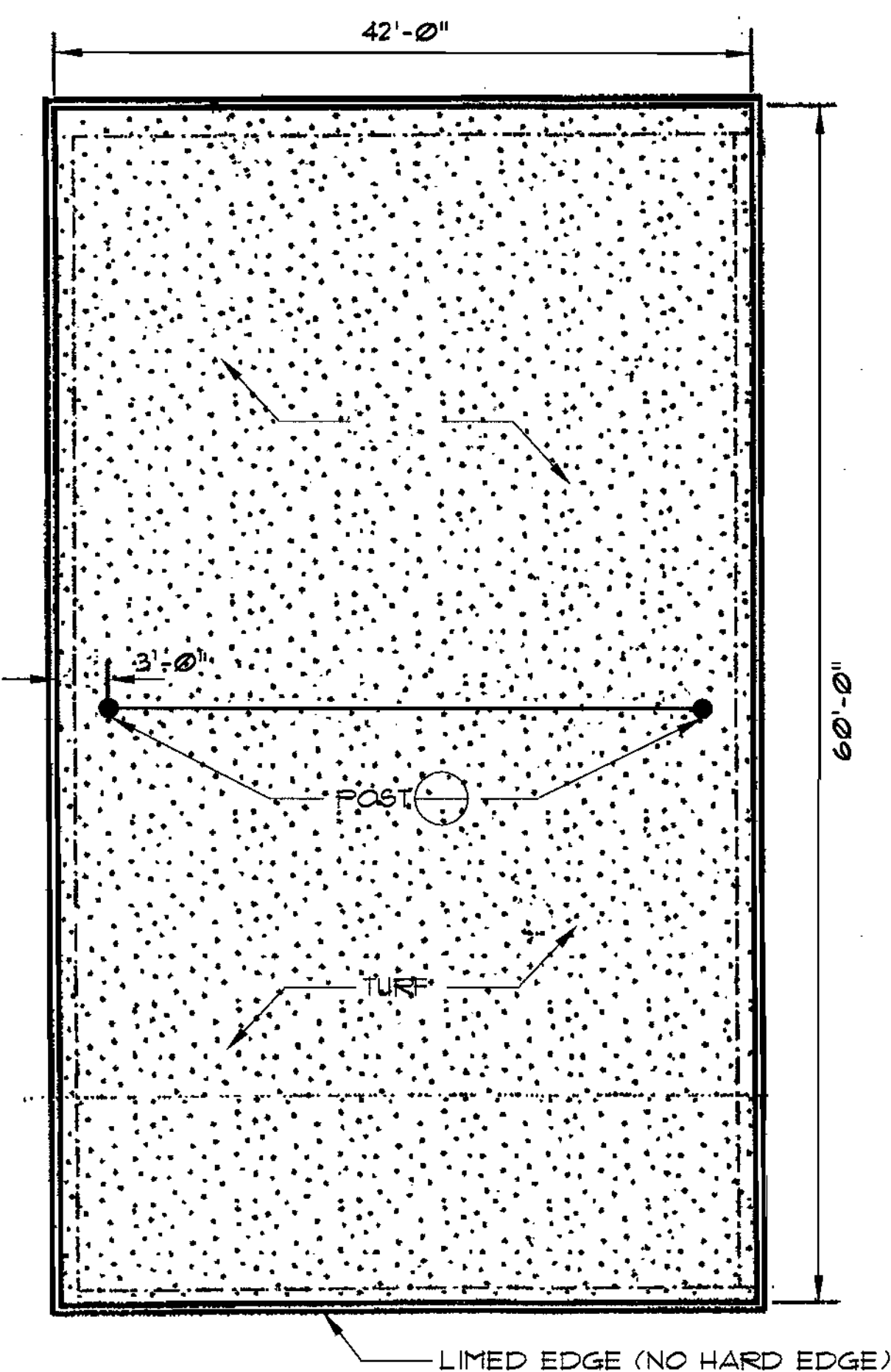
OWNER:
HOWARD COUNTY DEPARTMENT
RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046

DEVELOPER:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
COLUMBIA, MARYLAND 21045

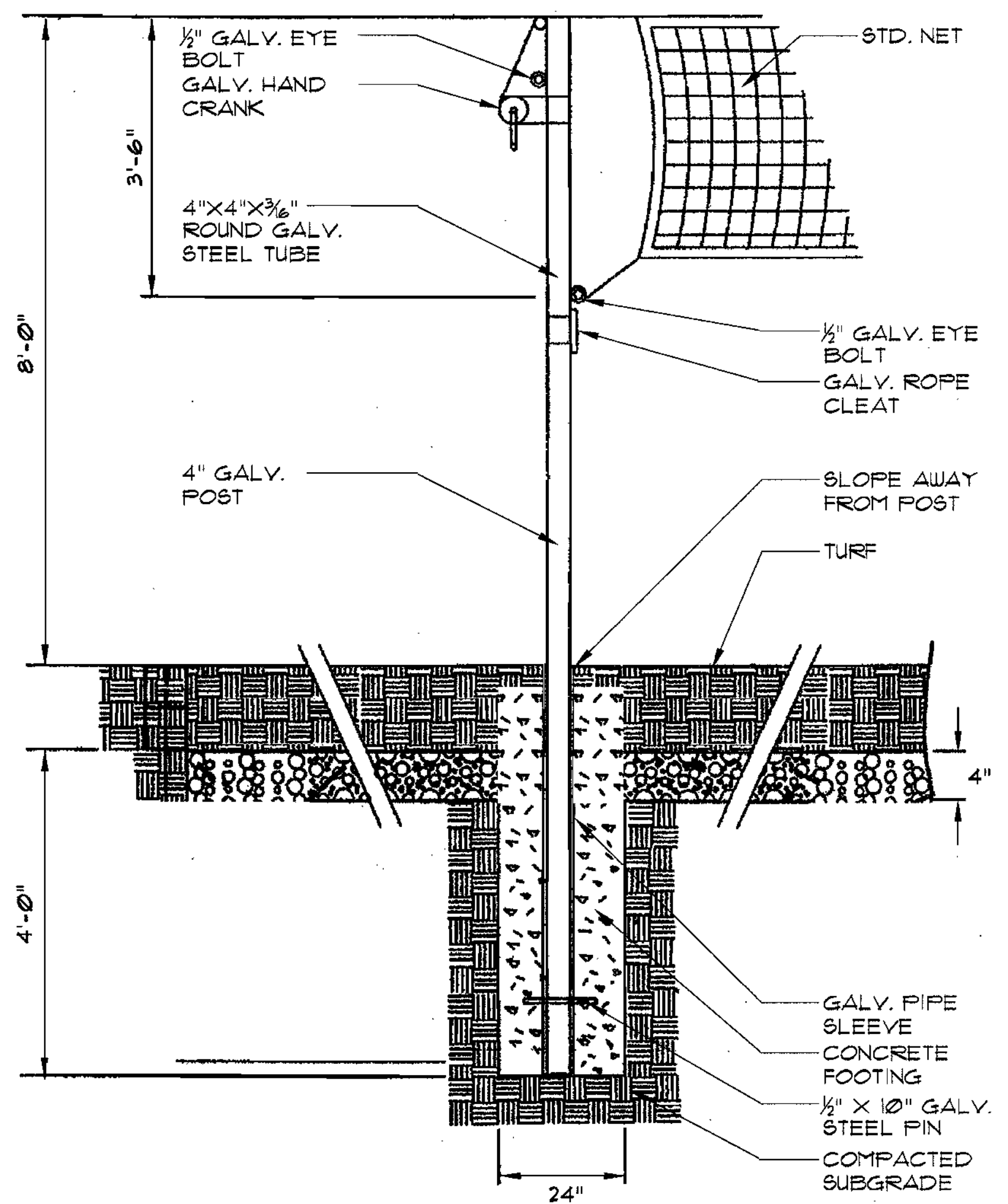
TAX MAP: 50
GRID: 1&2
ZONED: R-20 & R-SC
PARCEL NO.: 364
CENSUS TRACT: 6069.03
WATER CODE: C06
SEWER CODE: 7170900

**HIGH RIDGE PARK
SITE DETAILS**

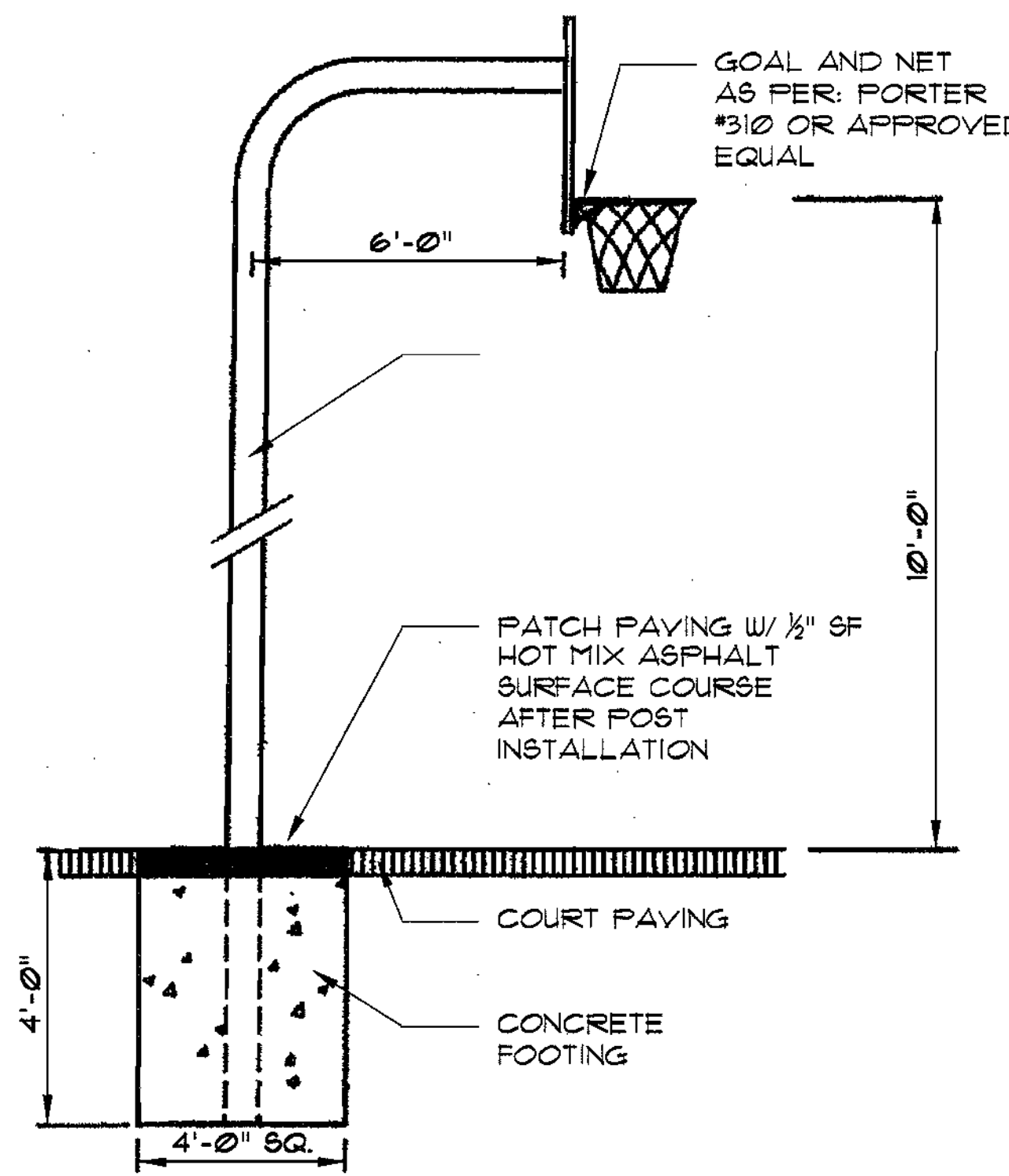
DEED REFERENCE: LIBER 8771, FOLIO 685
ELECTION DISTRICT NO. 6, HOWARD COUNTY, MARYLAND



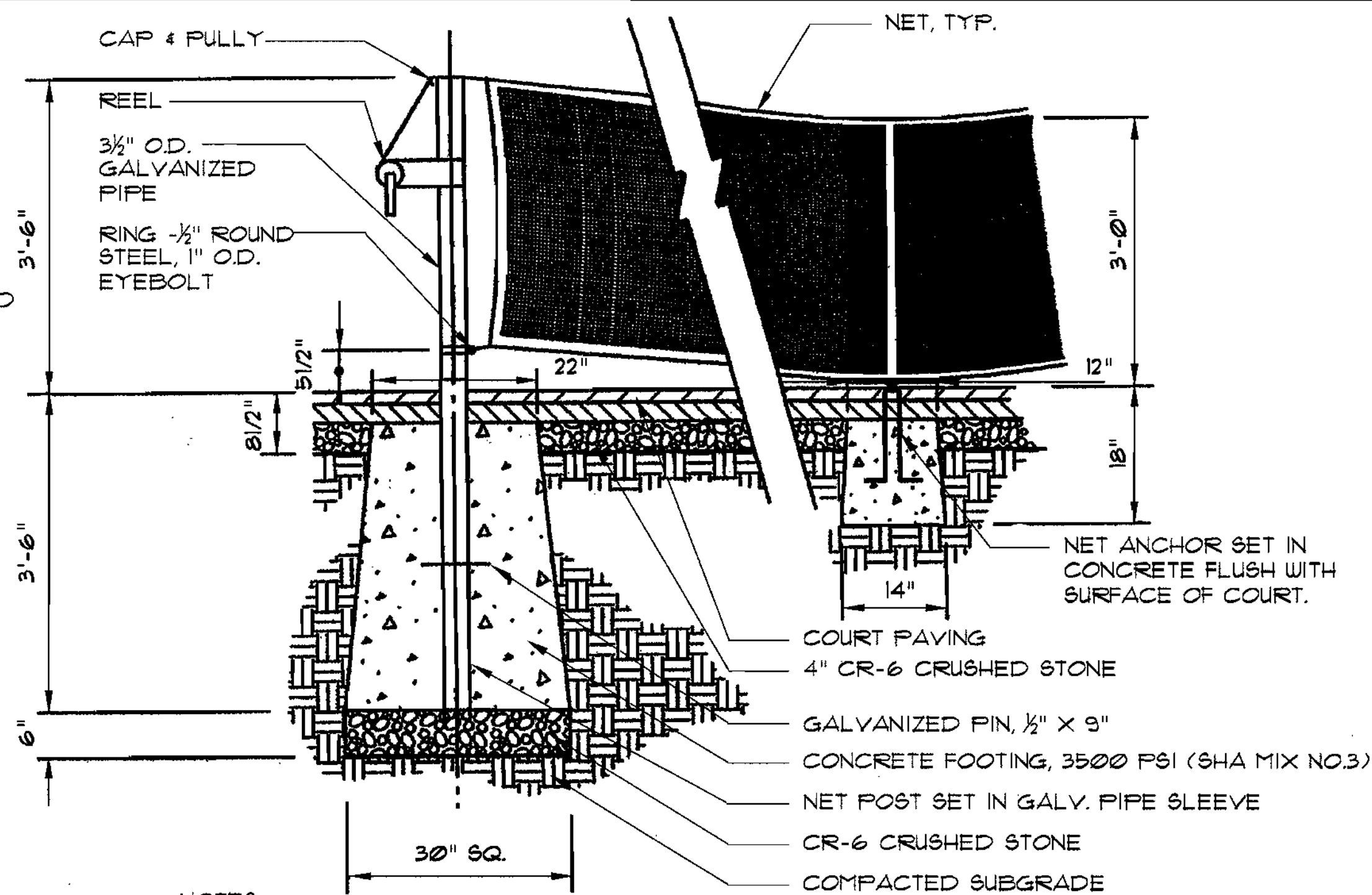
1 VOLLEYBALL COURT LAYOUT
11 NTS 60' X 42'



2 VOLLEYBALL NET AND SURFACE
11 NTS

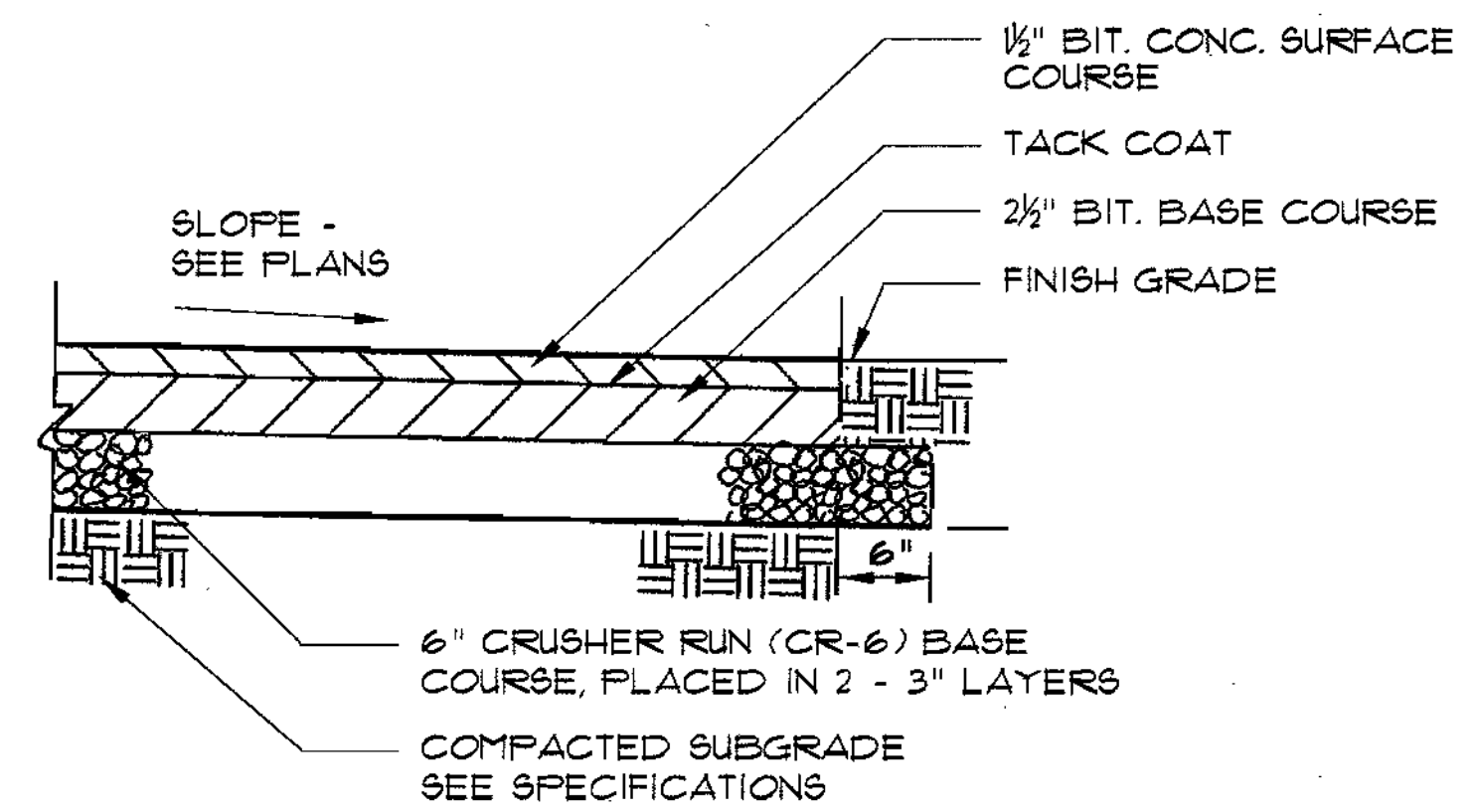


3 BASKETBALL GOAL
11 NTS



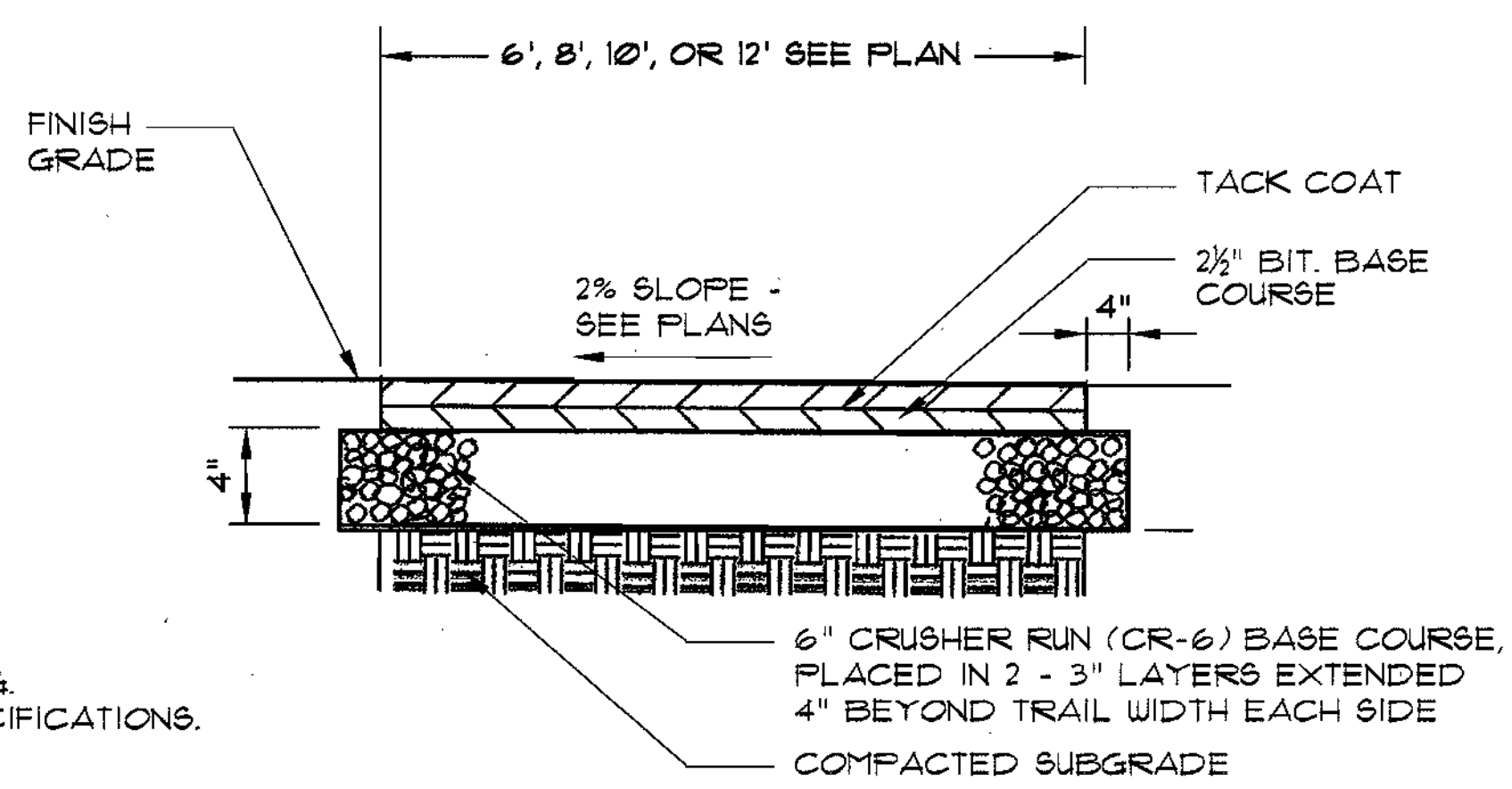
4 TENNIS EQUIPMENT
11 NTS

- NOTES:
 1. POST AND NET ANCHOR FOUNDATIONS SHALL BE ROUND AT THE TOP AND SQUARE AT THE BASE.
 2. POSTS SHALL BE USED WITH FABRIC NETS ONLY.
 3. SLEEVE SHALL BE SIZED TO ALLOW PIPE TO BE REMOVED WITHOUT BINDING, BUT SHALL HOLD PIPE FIRMLY WITH MIN. CLEAR DISTANCE.
 4. CONTRACTOR SHALL INSTALL NET ANCHOR AT MID COURT.
 5. PRIME AND PAINT POSTS TO MATCH GREEN COURT SURFACE.
 6. REFER TO TENNIS COURT PLAN FOR LOCATION OF POSTS.

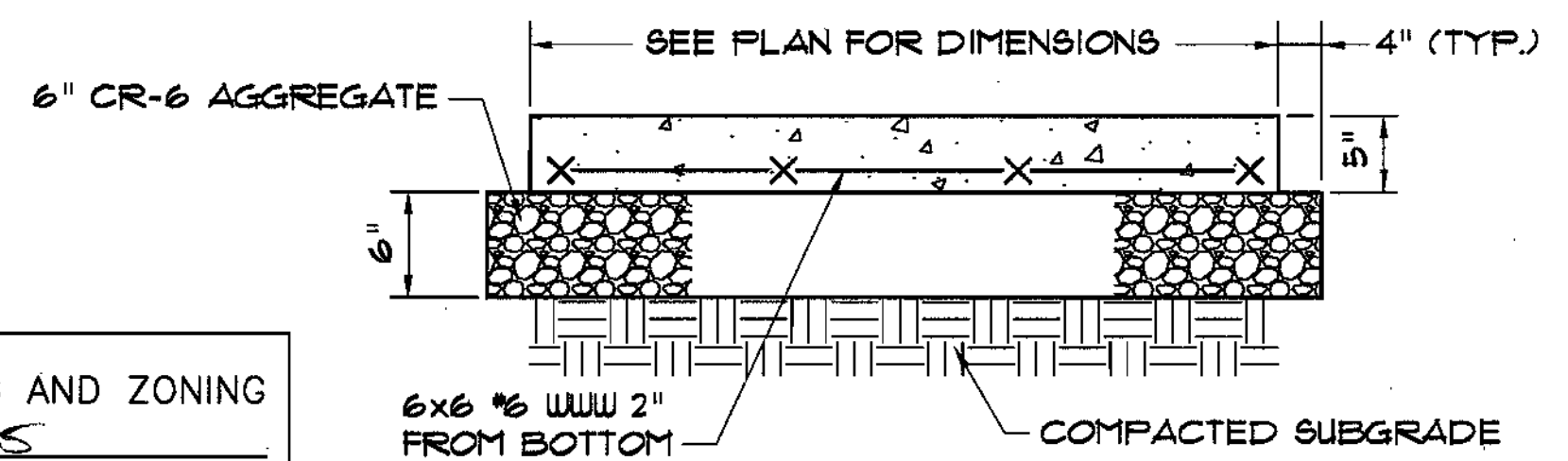


5 ASPHALT ROADS & PARKING - PAVING DETAIL
11 NTS

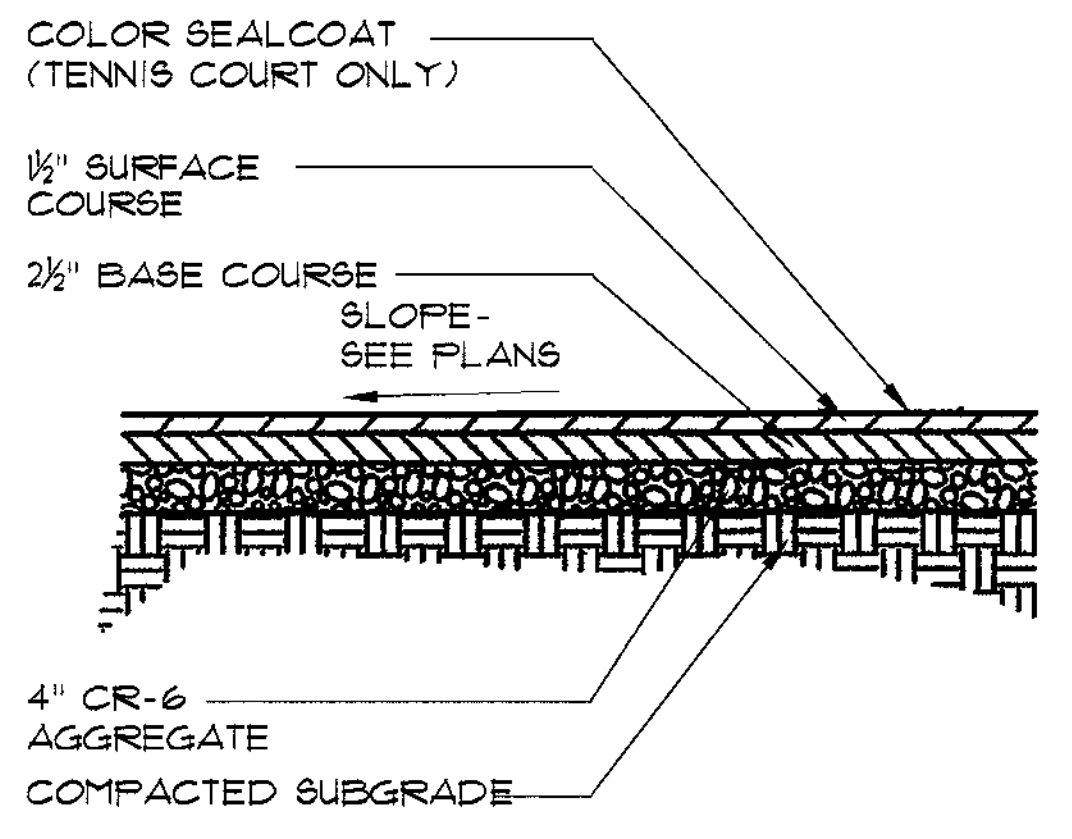
- NOTES:
 1. SEE HOWARD COUNTY STANDARD SPECIFICATION FOR PARKING.
 2. COMPLY WITH HOWARD COUNTY STANDARD DETAILS AND SPECIFICATIONS.



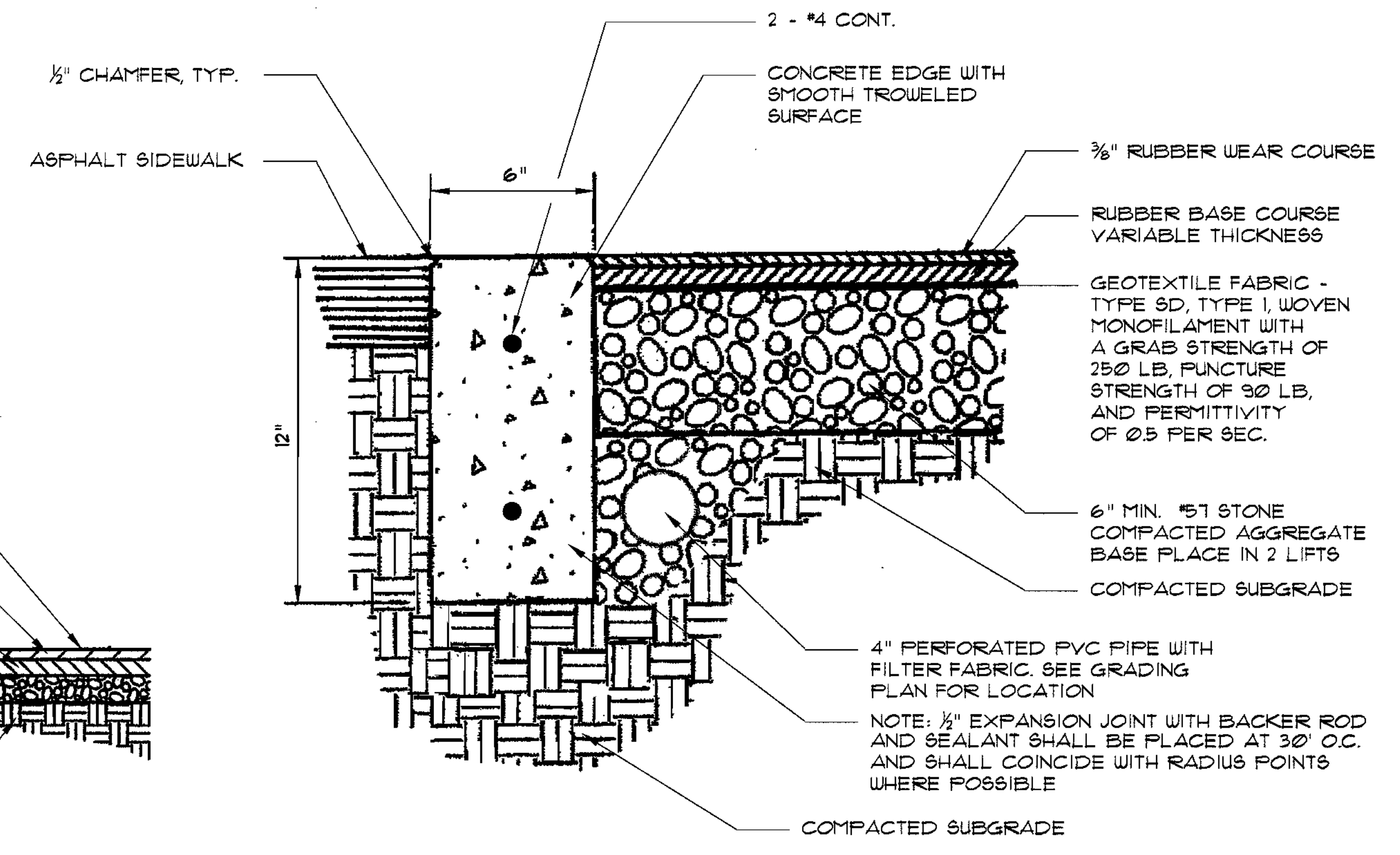
6 ASPHALT TRAIL - TYPICAL SECTION
11 NTS



7 CONCRETE PAVING
11 NTS

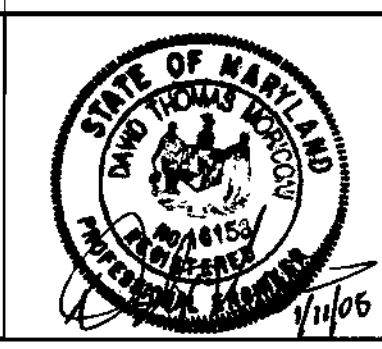


8 COURT PAVING
11 NTS



9 PLAYGROUND EDGE & SURFACE
11 NTS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division Date: 2/2/05
 Chief, Division of Land Development Date: 2/4/05
 Director Date: 2/16/05



DES:DTM/RKK			
DRN:RMC/HWC			
CHK:DTM/RKK			
DATE: 10/8/04	BY: NO.	REVISION	DATE

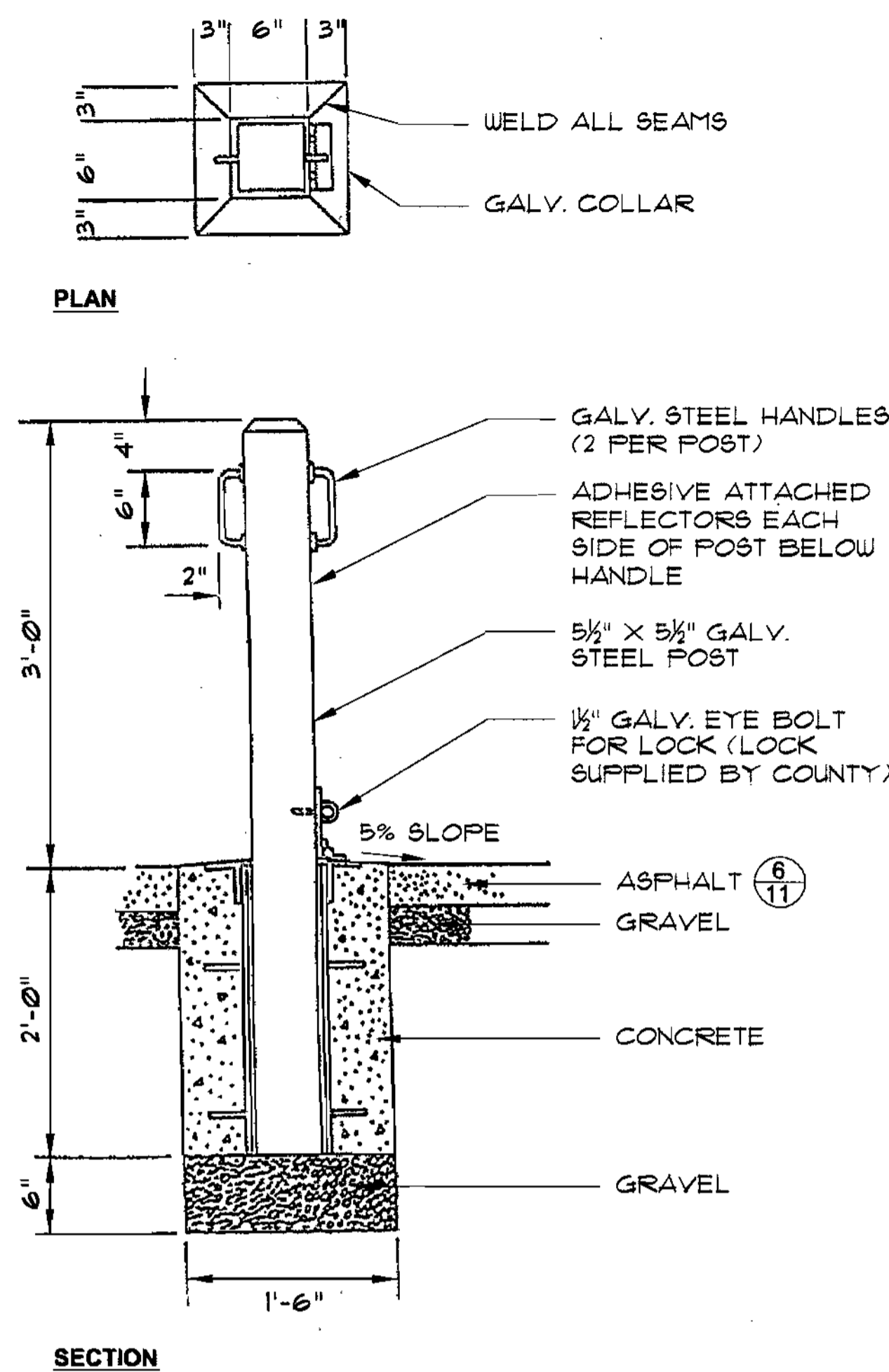
OWNER:
 HOWARD COUNTY DEPARTMENT
 RECREATION AND PARKS
 7120 OAKLAND MILLS ROAD
 COLUMBIA, MARYLAND 21046

DEVELOPER:
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 9250 BENDIX ROAD
 COLUMBIA, MARYLAND 21045

TAX MAP: 50
GRID: 1&2
ZONED: R-20 & R-SC
PARCEL NO.: 364
CENSUS TRACT: 6069.03
WATER CODE: C06
SEWER CODE: 7170900

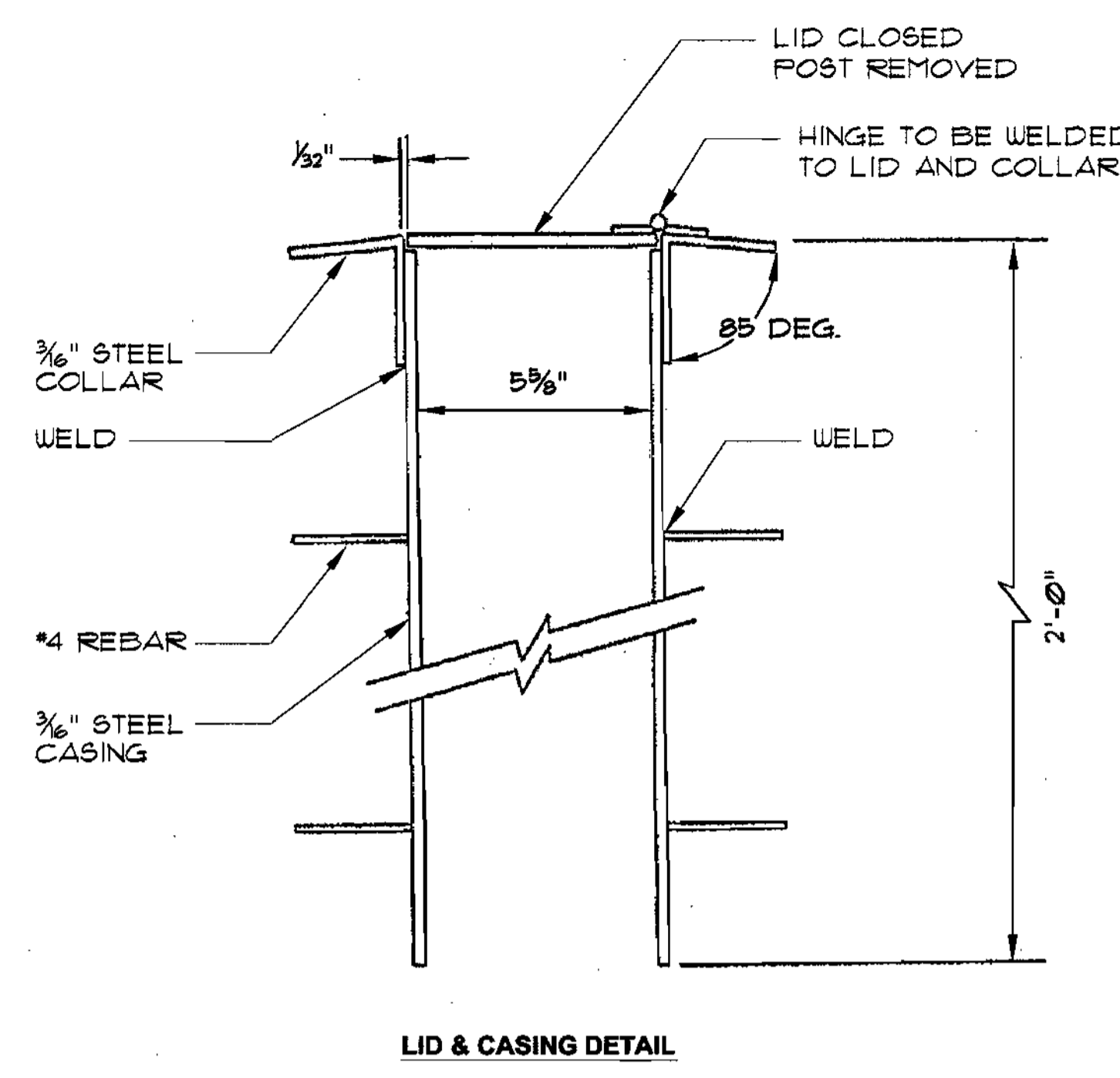
HIGH RIDGE PARK
 SITE DETAILS

DEED REFERENCE: LIBER 8771, FOLIO 685
 ELECTION DISTRICT NO. 6, HOWARD COUNTY, MARYLAND

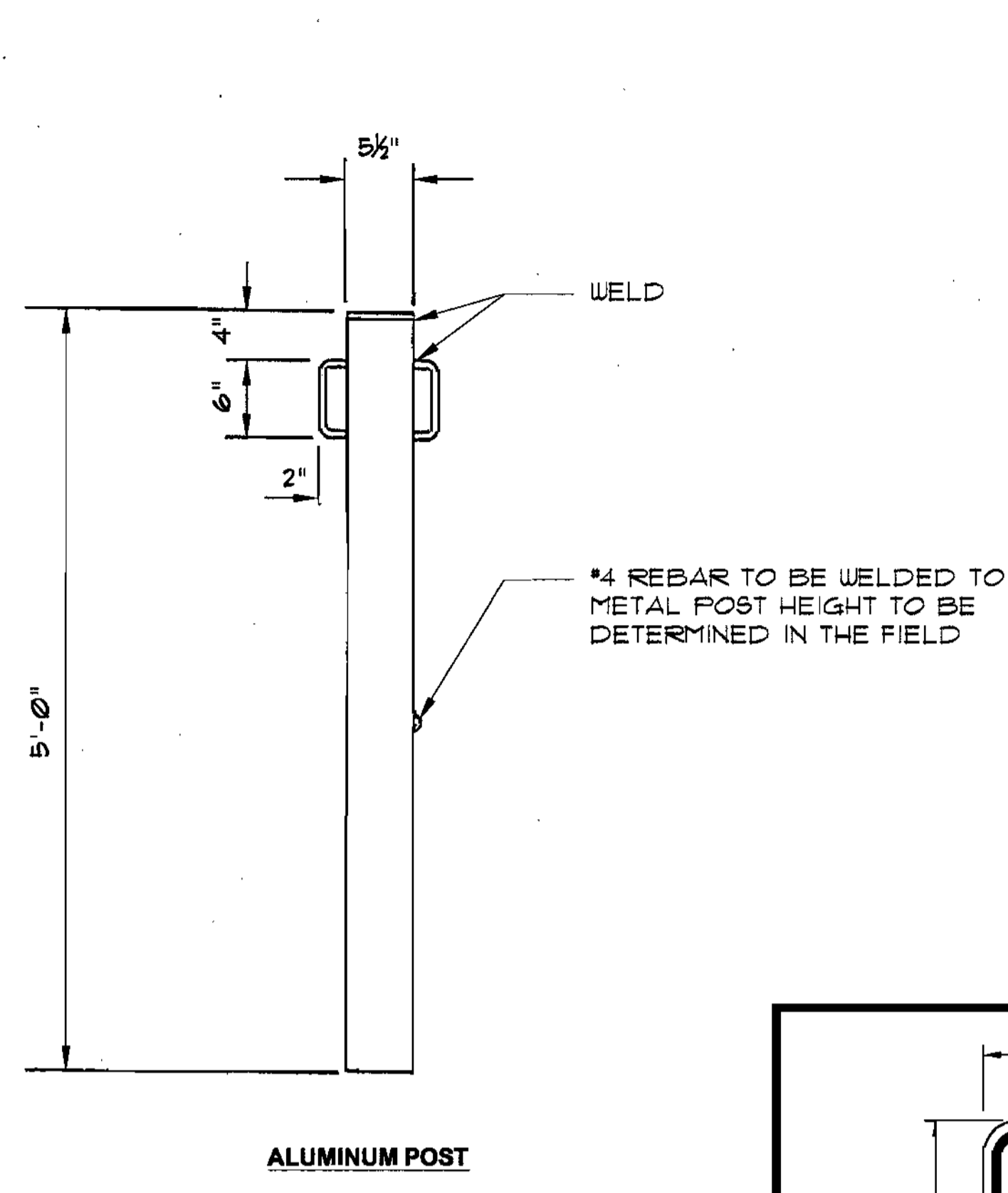


NOTE: ORIENT HANDLES PARALLEL TO DIRECTION OF PATHWAY (NOT AT RIGHT ANGLES TO PATH)

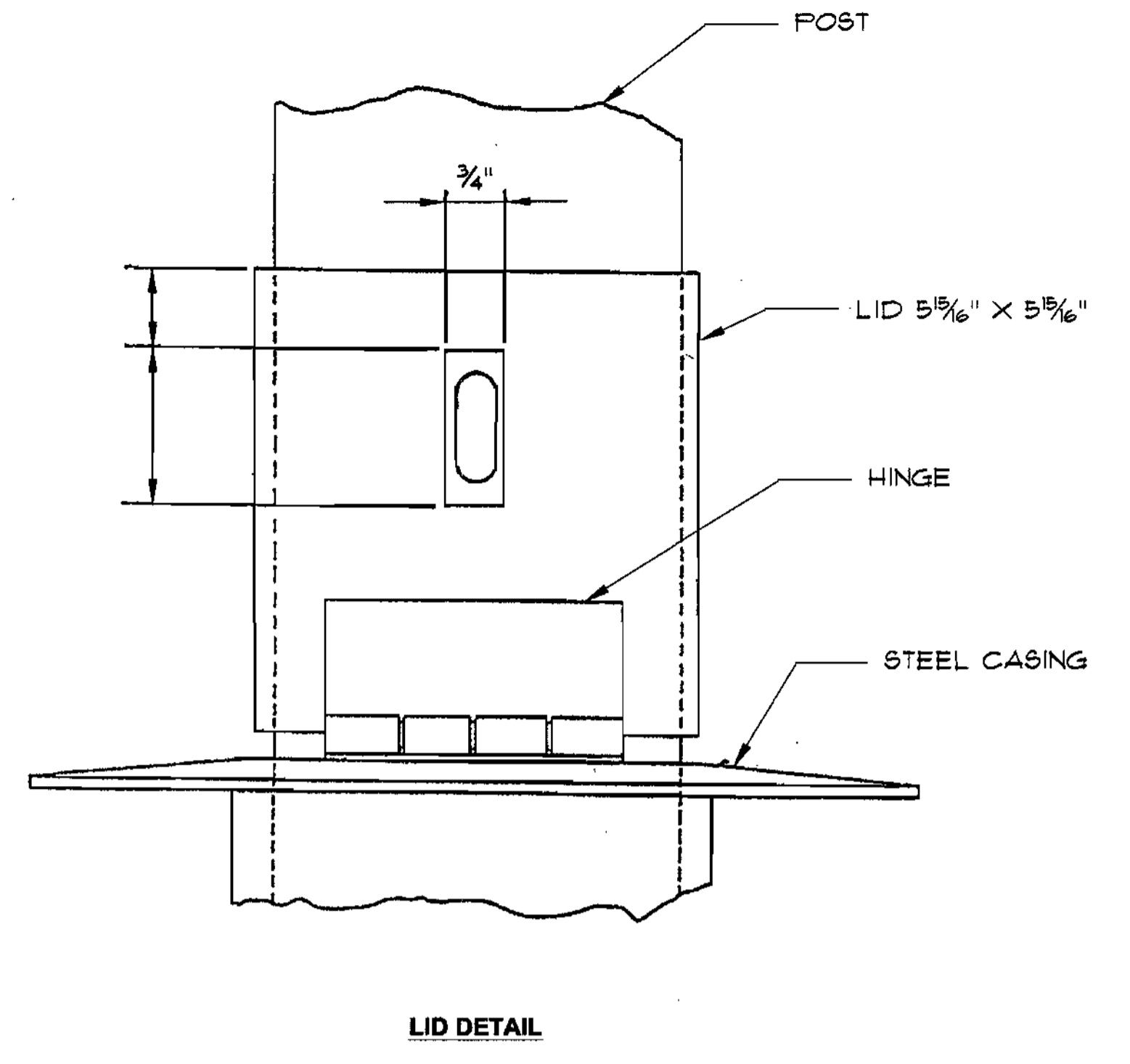
1
12 REMOVABLE BOLLARD DETAIL
NTS



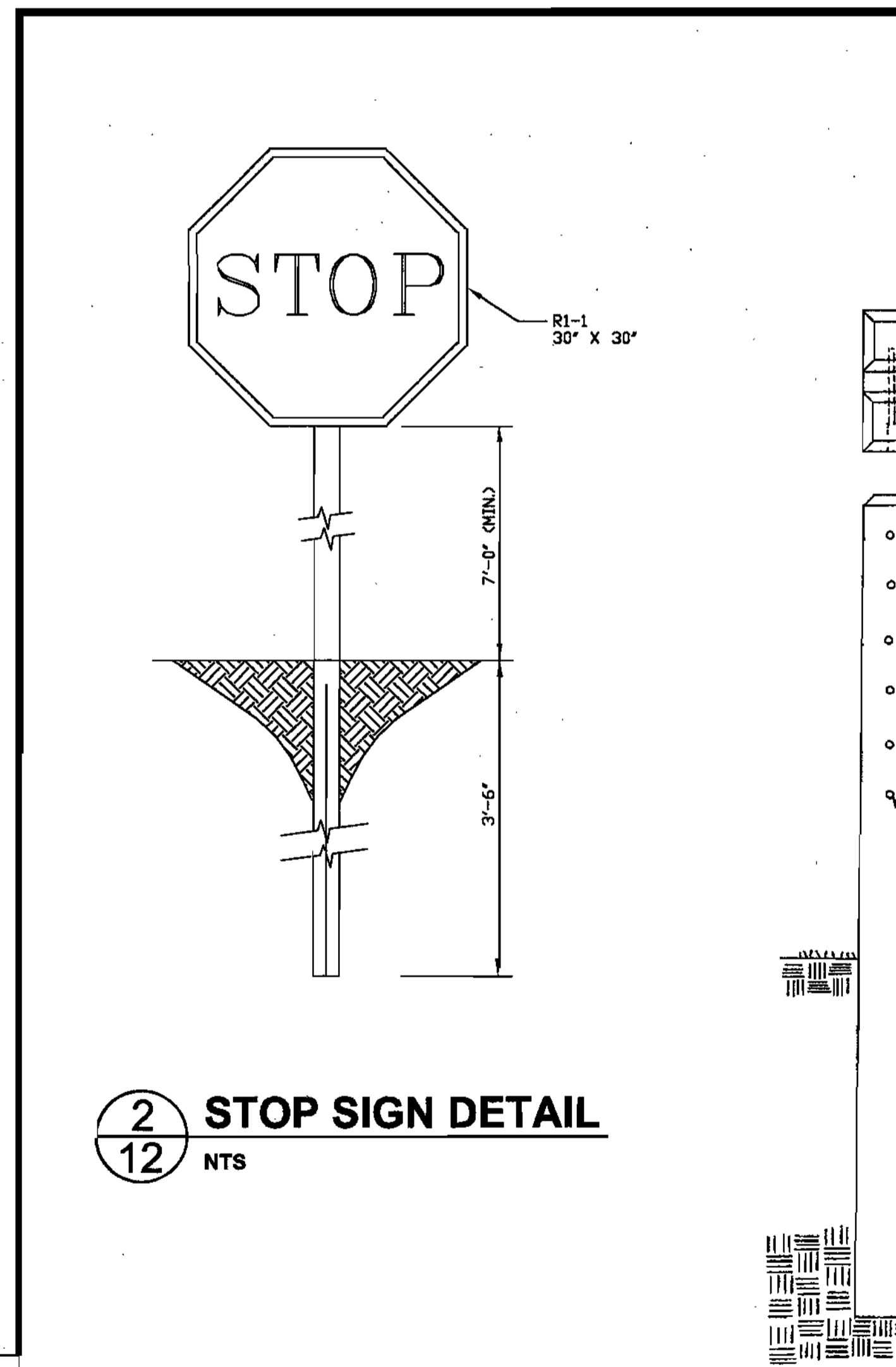
LID & CASING DETAIL



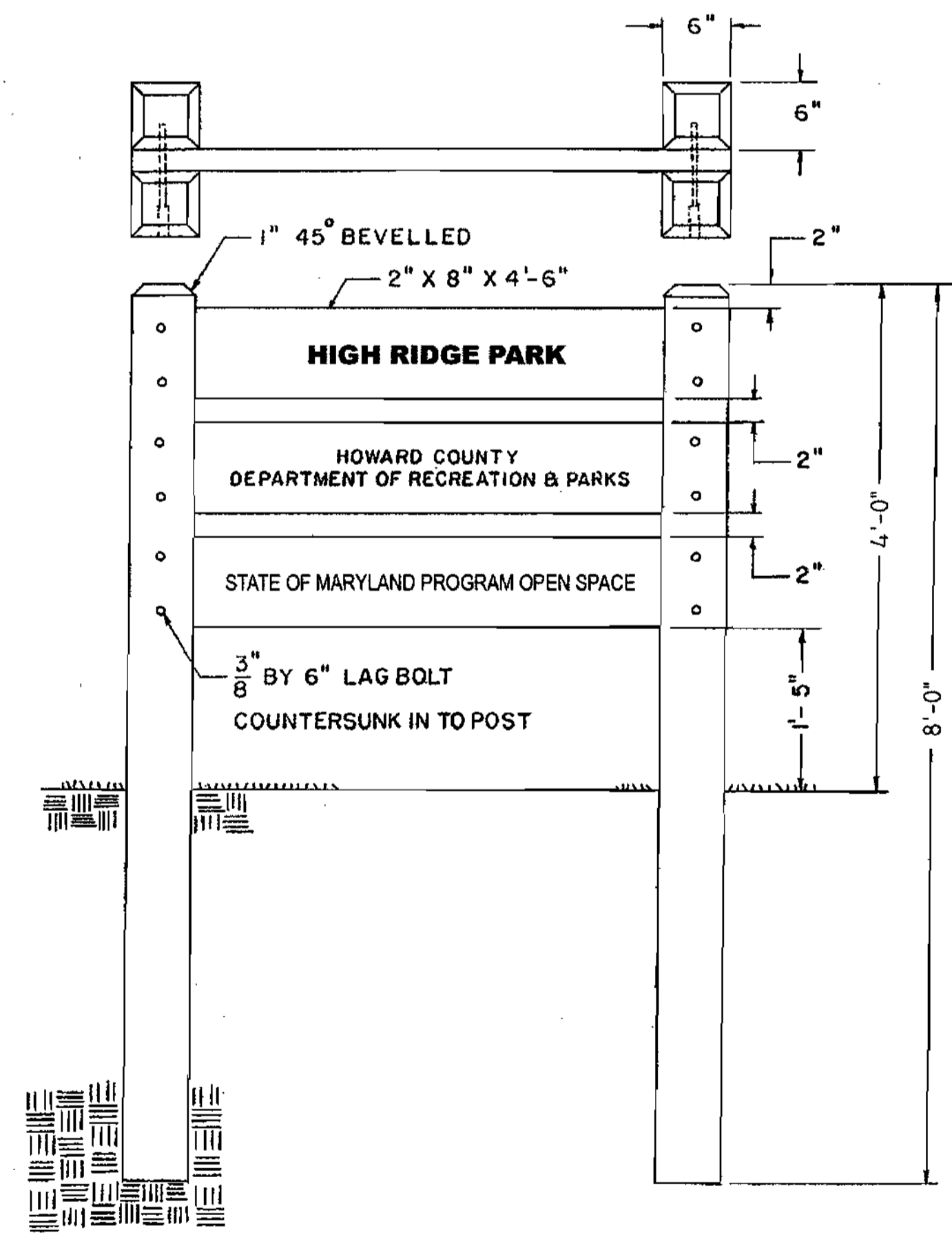
ALUMINUM POST



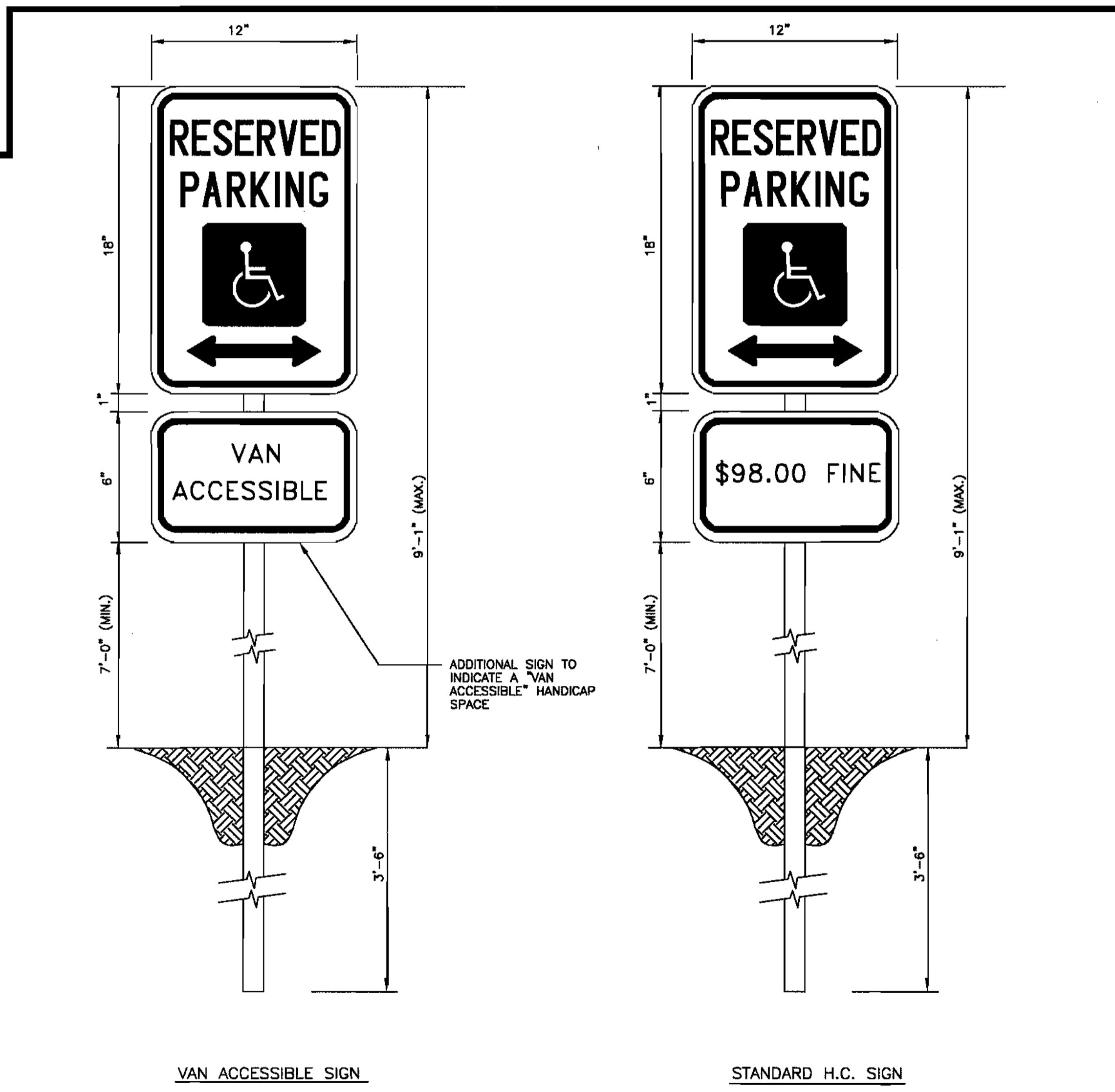
LID DETAIL



2
12 STOP SIGN DETAIL
NTS



3
12 PARK SIGN DETAIL
NTS



VAN ACCESSIBLE SIGN

STANDARD H.C. SIGN

4
12 HANDICAP SIGN DETAIL
NTS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division: *[Signature]* Date: 2/2/05
 Chief, Division of Land Development: *[Signature]* Date: 2/4/05
 Director: *[Signature]* Date: 2/16/05

DES:DTM/RKK			
DRN:RMC/HWC			
CHK:DTM/RKK			
DATE: 10/8/04	BY	NO.	REVISION

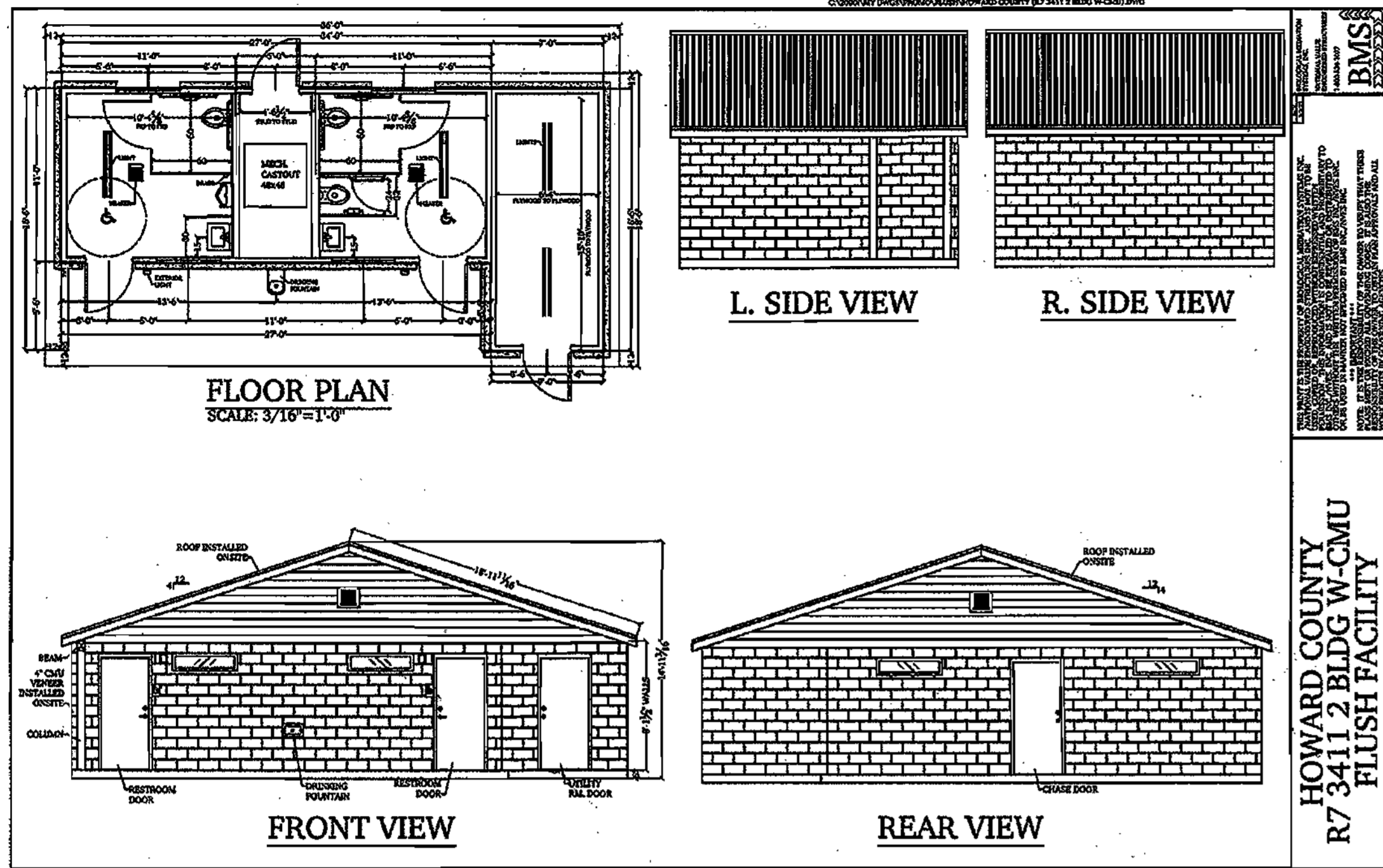
OWNER:
HOWARD COUNTY DEPARTMENT
RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046

DEVELOPER:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
COLUMBIA, MARYLAND 21045

TAX MAP: 50
GRID: 1&2
ZONED: R-20 & R-SC
PARCEL NO.: 364
CENSUS TRACT: 6069.03
WATER CODE: C06
SEWER CODE: 7170900

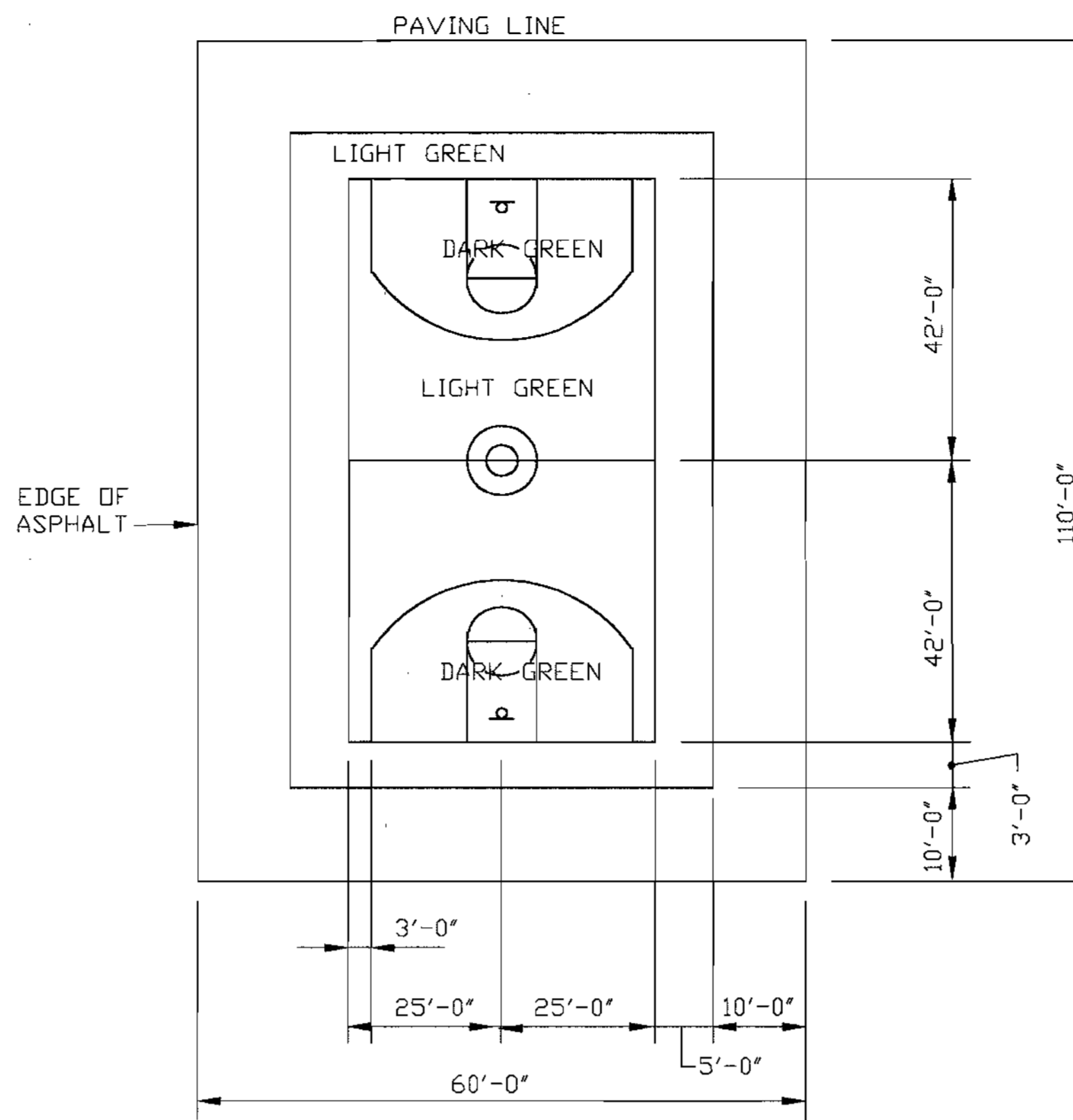
**HIGH RIDGE PARK
SITE DETAILS**

DEED REFERENCE: LIBER 8771, FOLIO 685
ELECTION DISTRICT NO. 6, HOWARD COUNTY, MARYLAND

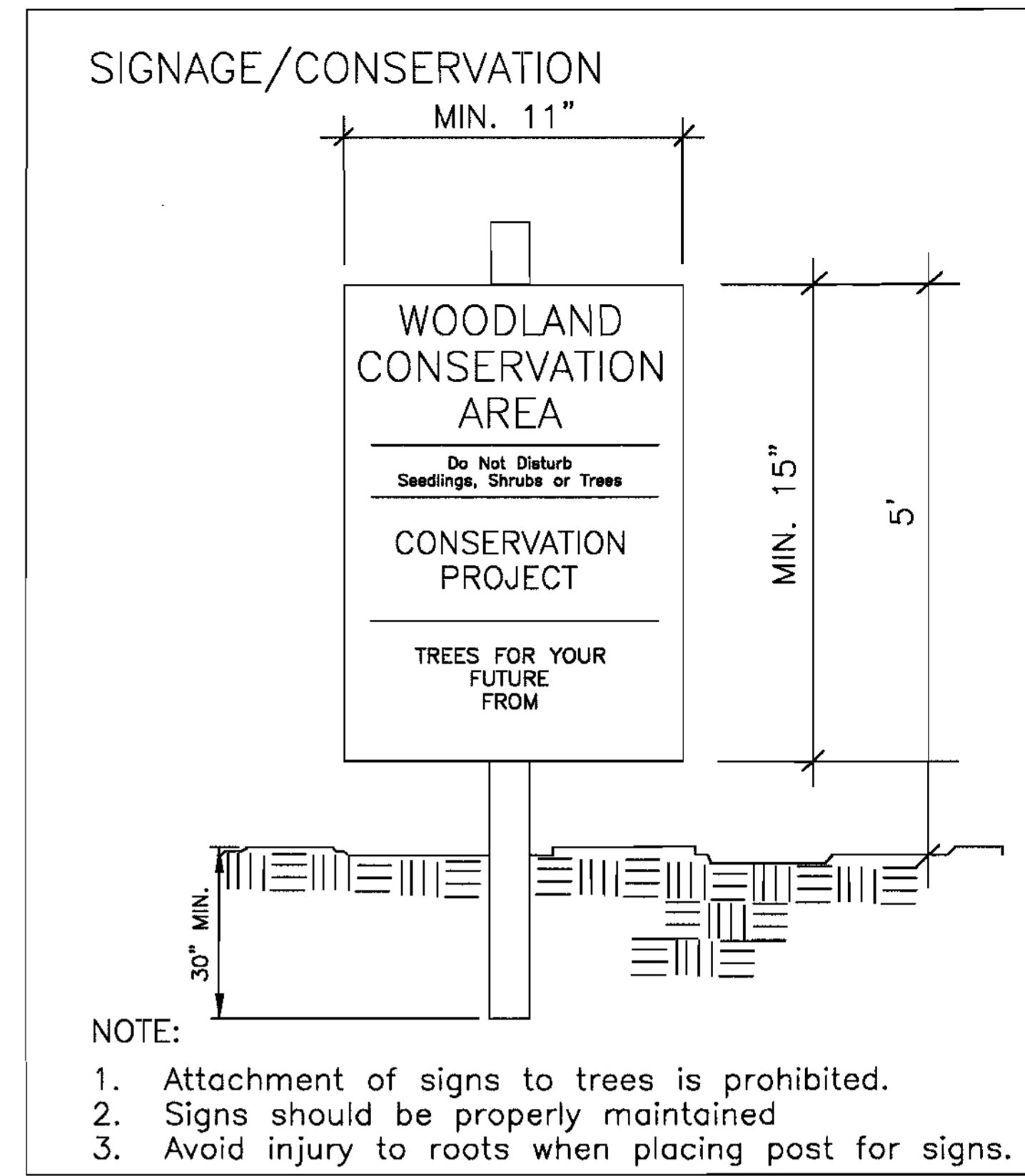


NOTE: COMFORT STATION SHOWN WILL BE CONSTRUCTED UNDER SEPARATE CONTRACT AND IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

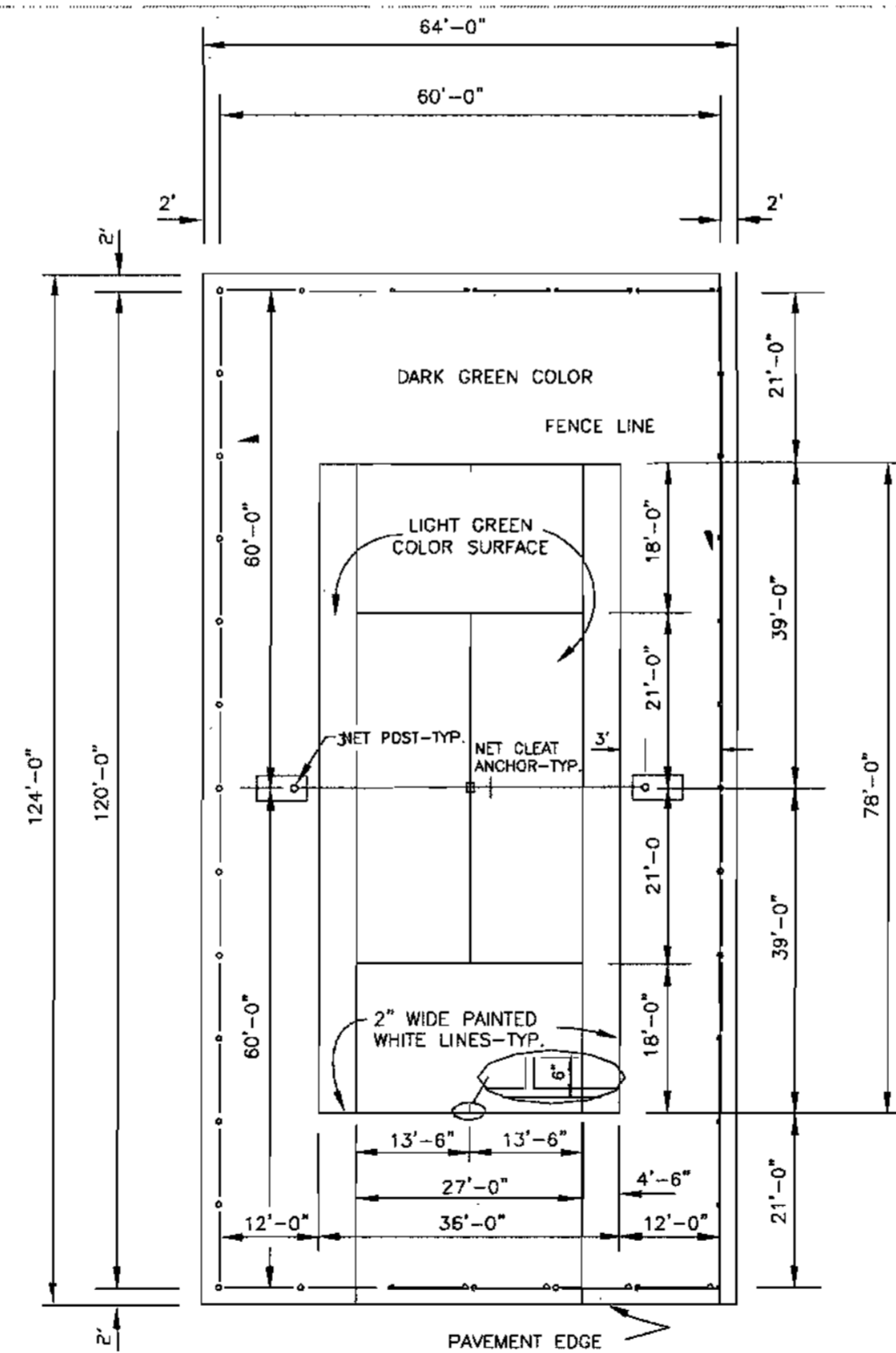
1
13 NTS
COMFORT STATION



2
13 NTS
PLAN VIEW BASKETBALL COURT



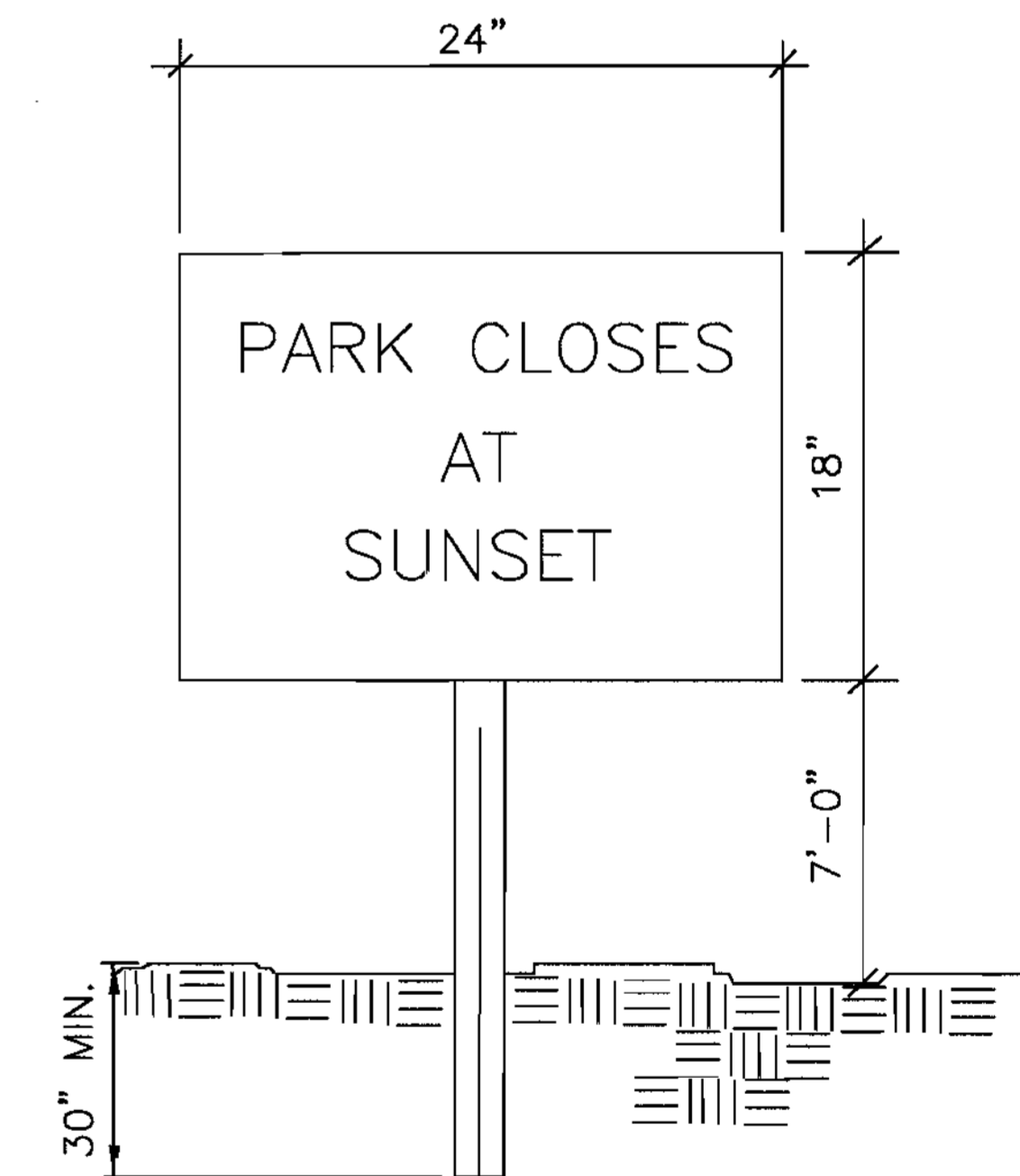
3
13 NTS
WOODLAND CONSERVATION SIGN



NOTES:
PROVIDE 1% SLOPE ACROSS COURT.
GATES ARE TO BE LOCATED AS SHOWN ON SITE PLAN AND ARE TO SWING OUT.
APPLY PROTECTIVE COLORCOATING ON SMOOTH ASPHALT SURFACE AT MANUFACTURER'S RECOMMENDED RATE.
COLORCOAT SURFACE AFTER FENCE AND GATES HAVE BEEN INSTALLED. PROVIDE CHAIN AND LOCK FOR GATES TO PROTECT THE COLORCOATED SURFACE FROM POSSIBLE VANDALISM.

ALL MEASUREMENTS FOR LINE STRIPING OF COURTS ARE TO THE OUTSIDE OF LINES, EXCEPT THOSE INVOLVING THE CENTER SERVICE LINE WHICH IS EQUALLY DIVIDED BETWEEN LEFT AND RIGHT SERVICE COURTS.
FOR PAVEMENT SECTION AND NET POST ANCHOR DETAILS, SEE STANDARD NO. 203.
FOR FENCE AND GATE DETAILS, SEE STANDARD NO. 204 AND 205.

4
13 NTS
TENNIS COURT - SINGLE



5
13 NTS
PARK CLOSED SIGN

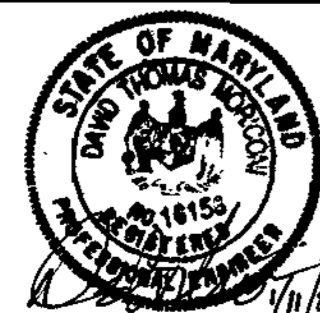
APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division Date: 2/2/05

Chief, Division of Land Development Date: 2/4/05

Director Date: 2/10/05

PREPARED BY
URS
4 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND
TEL: (410) 785-7220



DES:DTM/RKK				
DRN:RMC/HWC				
CHK:DTM/RKK				
DATE: 10/8/04	BY	NO.	REVISION	DATE

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

DEVELOPER:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
COLUMBIA, MARYLAND 21045

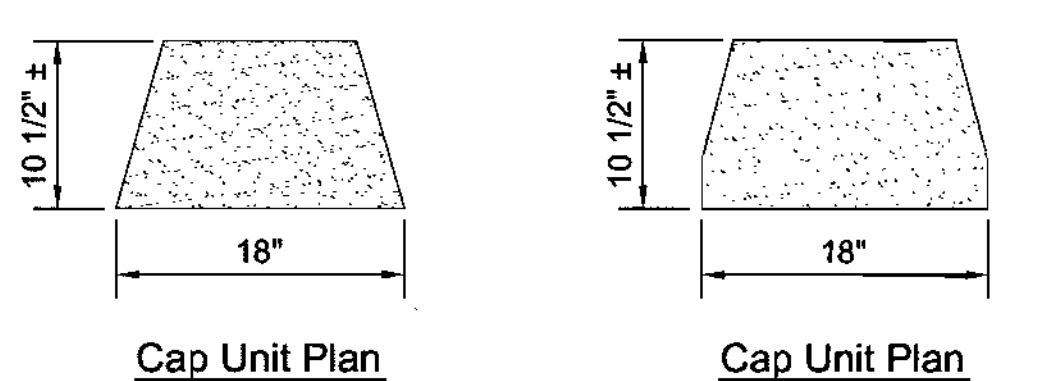
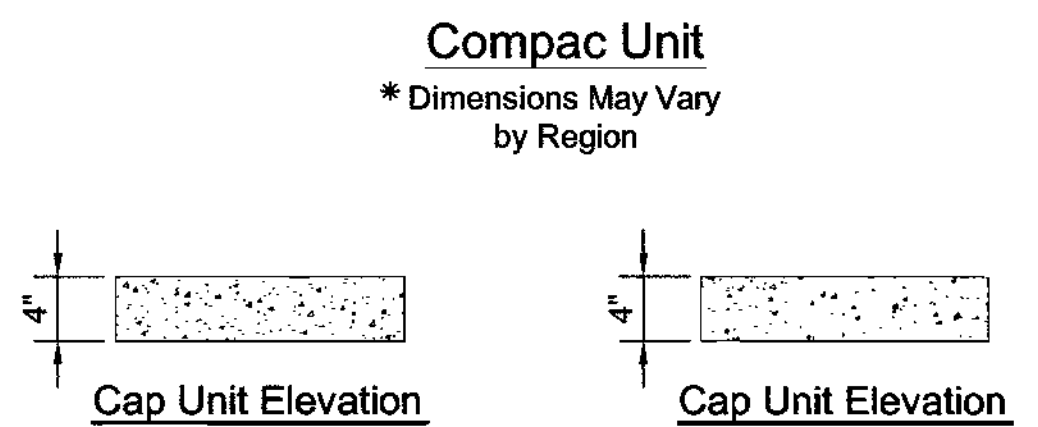
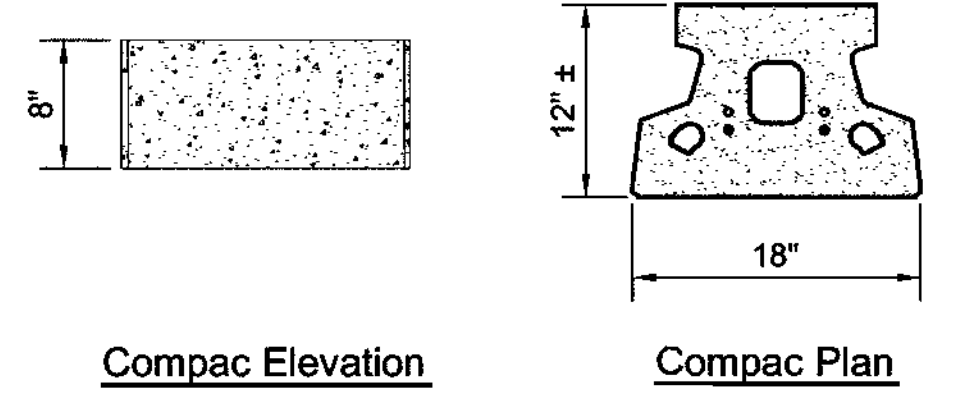
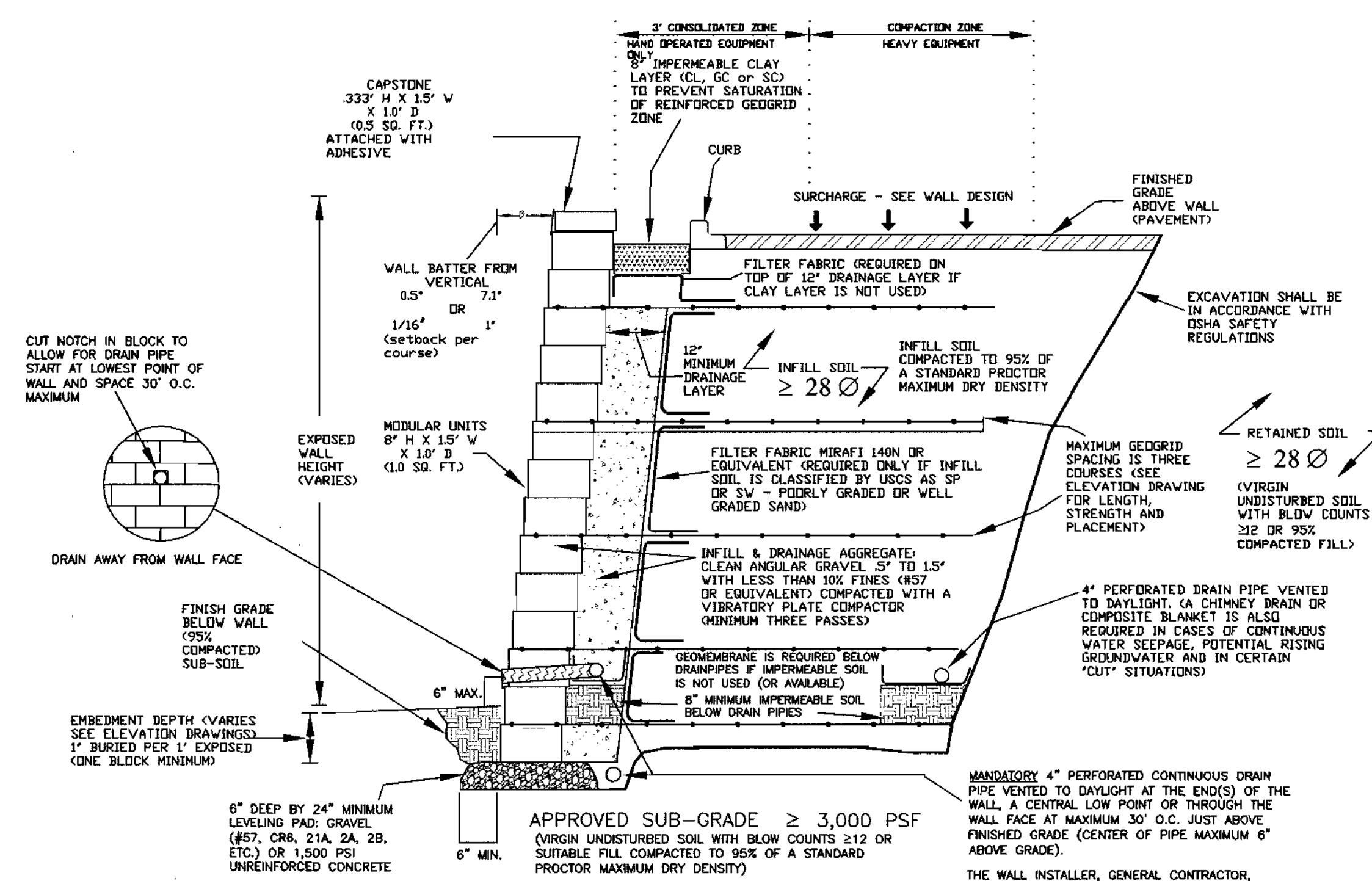
TAX MAP: 50
GRID: 1&2
ZONED: R-20 & R-SC
PARCEL NO.: 364
CENSUS TRACT: 8069.03
WATER CODE: C06
SEWER CODE: 7170900

HIGH RIDGE PARK
SITE DETAILS

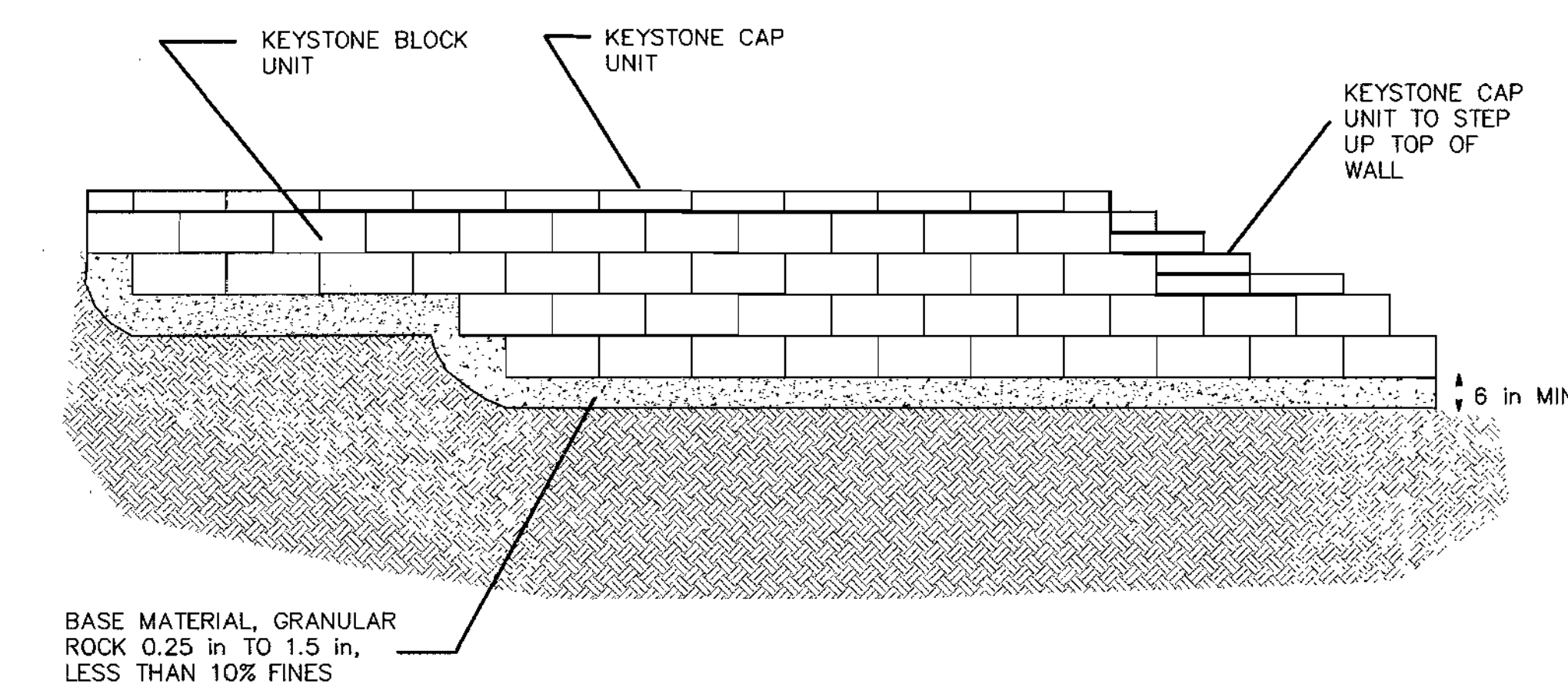
DEED REFERENCE: LIBER 8771, FOLIO 685
ELECTION DISTRICT NO. 6, HOWARD COUNTY, MARYLAND

KEYSTONE COMPAC

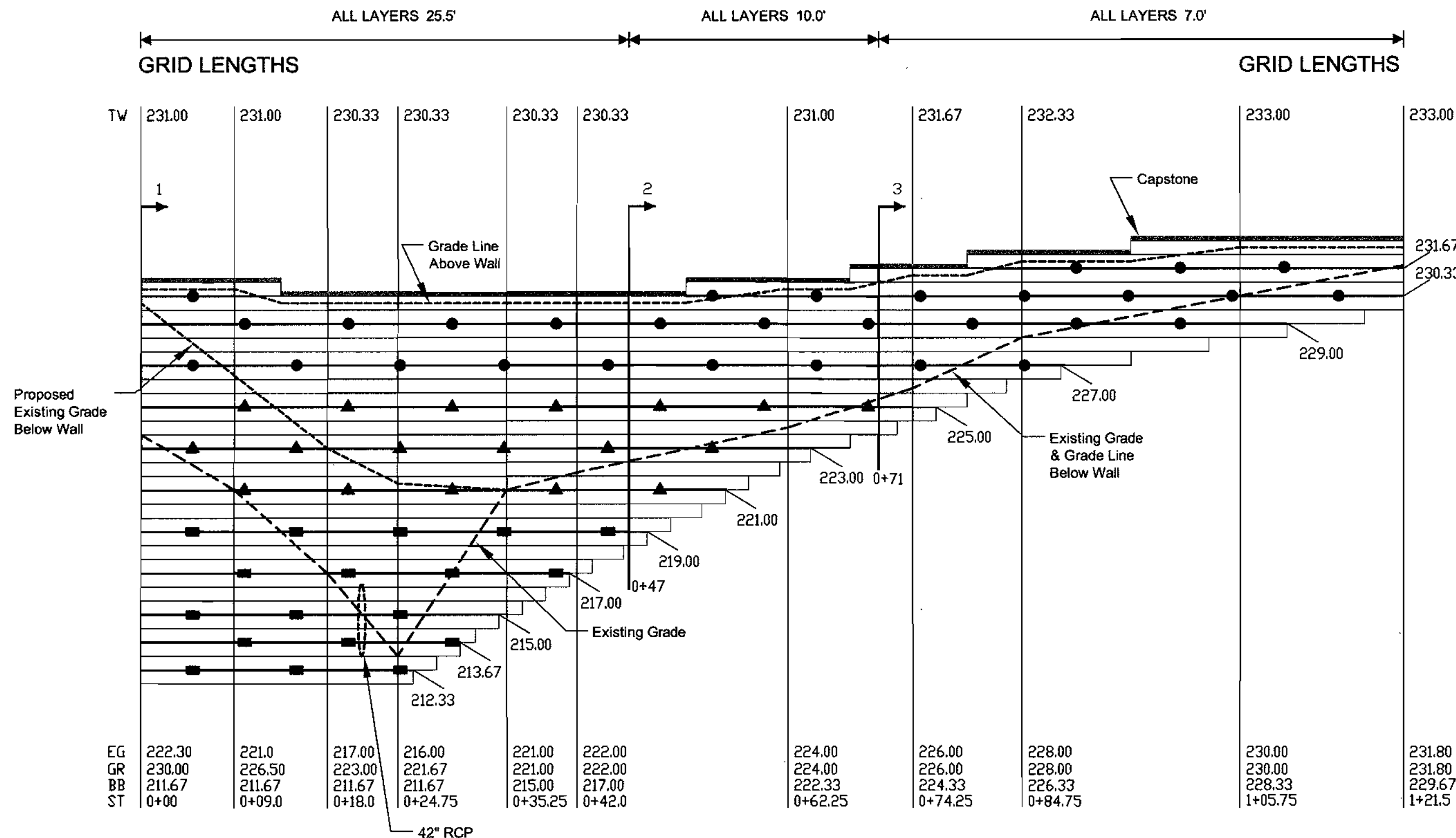
WALL SECTION WITH SURCHARGE



N. T. S.



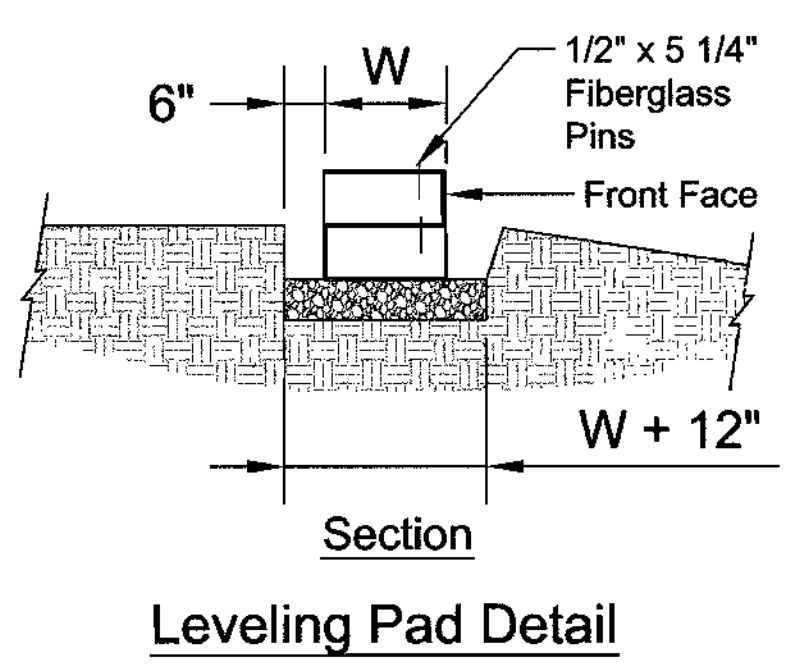
KEYSTONE STEP DOWN TYPICAL DETAIL



TW = TOP OF WALL (NOT INCLUDING CAP)
 EG = EXISTING GRADE
 GR = PROPOSED FINISHED GRADE AT BASE OF WALL
 BB = BOTTOM OF BLOCK / TOP OF LEVELING PAD
 ST = WALL STATION

GRID KEY: MIRAFI 3XT
 MIRAFI 5XT
 MIRAFI 7XT

SCALE: HORIZONTAL SCALE 1" = 10'
 VERTICAL SCALE 1" = 5'



Leveling Pad Detail

APPROVED: DEPARTMENT OF RECREATION AND PARKS
[Signature]
 DIRECTOR DATE: 2-15-05

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature]
 Chief, Development Engineering Division DATE: 2/2/05
[Signature]
 Chief, Division of Land Development DATE: 2/4/05
[Signature]
 Director DATE: 2/16/05

PREPARED BY
URS
 4 NORTH PARK DRIVE
 HUNT VALLEY, MARYLAND
 TEL: (410) 785-7220

DATE	BY	NO.	REVISION	DATE
8/3/04				

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

DEVELOPER:
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 9250 BENDIX ROAD
 COLUMBIA, MARYLAND 21045

TAX MAP: 50
 GRID: 1&2
 ZONED: R-20 & R-SC
 PARCEL NO.: 364
 CENSUS TRACT: 6089.03
 WATER CODE: C06
 SEWER CODE: 7170900

HIGH RIDGE PARK RETAINING WALL DETAILS

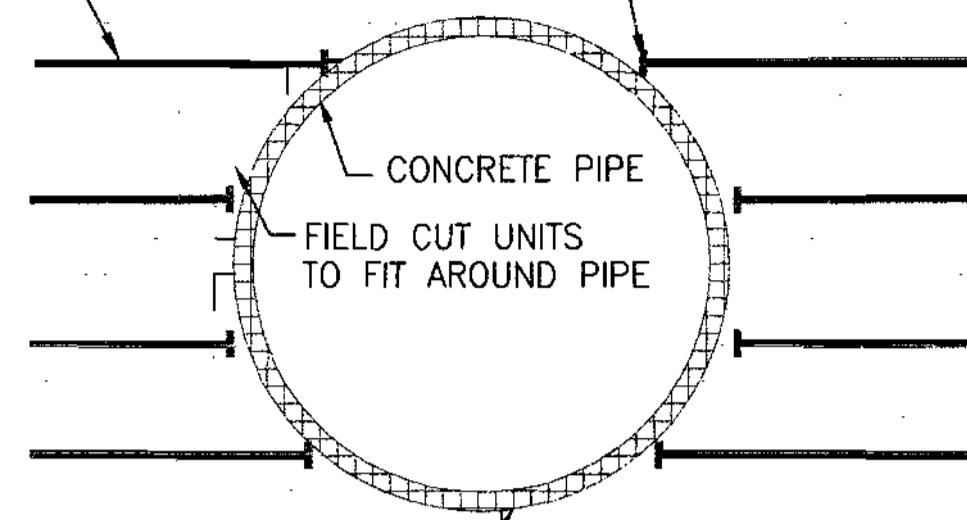
DEED REFERENCE: LIBER 8711 FOLIO 685
 ELECTOR DISTRICT NO. 6, HOWARD COUNTY, MARYLAND

RYAN & ASSOCIATES
 A Division of WKR Consulting, Inc.
RETAINING WALL DIVISION
 PHONE 717-262-4242 FAX 717-262-4245
 29 SOUTH MAIN STREET, SUITE A
 CHAMBERSBURG, PA 17201

Professional Engr. No. 21586

MIRAFI STRUCTURAL GEOGRID (TYP.) REFER TO ELEVATION VIEW FOR LENGTH, TYPE AND ELEVATION

GEOGRID TERMINATES WITHIN 2" OF PIPE (TYP.)



FILL VOIDS BETWEEN UNITS AND PIPE WITH GROUT OR CUSHION (DESIGNED BY OTHERS)

GENERAL NOTES

1. **SOIL PARAMETERS:** Ryan & Associates (RA) has reviewed the "Geotechnical investigation" report for this site dated 09/09/2004 prepared by Marshall Engineering, Inc. The in-situ soils are classified as ML (sandy silt and sandy clayey silts), SM-SC (silty to clayey, fine to medium sand) and SP-SM (poorly graded sand-silty sand). Based on this report, an internal angle of friction of 28° was used for the soils in the retaining wall design. This is for a worst case ML (sandy silt, clayey silt/silt) soil type. CH (fat clay), CL (lean clay), MH (elastic silt) and OH/OL/PT (organic) soils are not acceptable for wall construction. If these unsuitable soils are encountered they must be removed and replaced with soils that meet or exceed the design friction angle of 28°. An average value of the three proctors was used for the soil unit weight of 139.8 PCF (maximum wet density). The maximum wet density of 139.8 PCF was used for the foundation soils and a value of 132.8 PCF (average maximum wet density less 5% for 95% compaction) was used for the infill and retained soils. Fluctuations in unit weights of 5 PCF higher or lower will not affect this design, however if the unit weights vary by more than 5 PCF RA must be notified so that the cross sections can be rerun to verify that all factors of safety are still met. Soil moisture must be within (2% of optimum to obtain proper compaction results (no exceptions). No cohesion was used in any of the calculations. If possible, sandy soils (SC, SM and SP) should be stockpiled and used for wall backfill, since these soils have a higher friction angle, are more "free-draining" and are less sensitive to moisture.

2. **SPECIFICATIONS:** Construction and materials must conform to the attached "Ryan & Associates segmental retaining wall specifications and installation guidelines for Keystone".

3. **BEARING CAPACITY:** The sub-grade (the soils under the wall's gravel leveling pad and the soils under the wall's reinforced geogrid zone) must be tested by the site geotechnical engineer prior to wall construction and have minimum allowable bearing capacity of 3,000 PSF. The actual bearing pressure exerted by each specific wall section is shown on the "Cross Section Details and Factors of Safety" table so that the site geotechnical engineer may determine specifically how to handle any areas where low bearing capacity soils are encountered on an individual wall section basis. Areas of the sub-grade that do not meet these maximum pressures will require undercutting and/or geogrid reinforcing. The sub-grades must be virgin (natural undisturbed soil with blow counts ≥ 12).

4. **CONSTRUCTION OVERSIGHT:** The construction of this wall must be performed under the observation/review of a Maryland Registered Professional Engineer or their designated representative to ensure that it is built in accordance with the RA General Notes and Specifications. A registered professional geotechnical/structural engineer must certify all wall construction.

5. **GEOGRIDS:** This wall was designed with Mirafi 3XT, 5XT & 7XT geogrids which have LTDS (Long Term Design Strengths) of 1558, 2234 & 2961 respectively. All geogrid substitutions must have prior approval of RA.

6. **REAR DRAIN TILES:** Due to Howard County requirements, a rear drainpipe is required at the back of the wall's reinforced geogrid zone. This is in addition to the mandatory 4" drainpipe at the front of the wall (within the gravel leveling pad or behind the at grade course— depending which drainpipe position is exercised). The rear drainpipe shall be surrounded by a minimum of 6" of clean gravel (#57 or equivalent) and shall have perpendicular solid pipes that run forward and connect to the front drainage system with crosses or tees.

7. **DESIGN SOFTWARE:** Internal and external wall calculations were performed with Keywall 2004 design software (version 3.3.1.181). A table has been included ("Cross Section Details and Factors of Safety") which has the following information: section locations (area of wall referenced), total wall heights, loads applied, factors of safety (for sliding, overturning and bearing capacity) and bearing pressures (the weight exerted by the wall structure— block and geogrid zone). Factors of safety of 1.5 were also met for: geogrid pullout (from the soil and from the block), geogrid overstress (geogrid rupture) and connection (block to geogrid).

8. **GLOBAL STABILITY:** Due to Howard County requirements, a global stability analysis was done at the maximum height of the wall (station 0+18). The analysis verified that the geogrid lengths met a factor of safety of 1.3. RA did the analysis with 28° soils and 0# of cohesion (for the worst case scenario of fine-grained ML soils). A copy of the global stability analysis is included in the 8 1/2" X 11" submittal.

9. **WALL BATTER:** This wall was designed with the blocks having no batter (0.0'). This was done so that the 0.5' near vertical batter (front pin position: 1/16" setback per block course) may be used if desired and will allow for some construction tolerance. However, the 7.1' batter (rear pin position: 1" setback per block course) is strongly recommended by RA since it is more conservative (yields higher factors of safety) and allows for more construction tolerance. If the near vertical batter is used the wall installer should lay the base course tilted back a minimum of 1/4" to compensate for movement during construction (from compaction equipment and the geogrid losing its slack) to ensure that the wall does not go beyond vertical (have a negative batter). It is important for the wall installer and the civil engineer/surveyor to predetermine the wall's batter during stake out. The base of the wall will need to be moved forward if there are critical dimensions that need to be met on the high side of the wall.

10. **RCP STORWATER PIPE INTERSECTING THE WALL:** The civil plan shows an RCP (reinforced concrete pipe) pipe intersecting the wall at approximate wall station 0+21.3. Since this is a structural pipe it should be able to be worked around without additional means of support. However, it should be verified by the pipe manufacturer that it can withstand the load of the wall (maximum bearing pressure of 2,994 PSF). The blocks may be cut to fit around the pipe and the voids filled with type "M" mortar or non-shrink grout, or a concrete collar can be cast around it. If a concrete collar is cast in place, its top elevation must coincide with a top of block elevation to eliminate the horizontal cutting of blocks. NOTE: RA is not responsible for wall failure that results from this pipe leaking water and saturating the wall's reinforced geogrid zone. It is imperative that the site contractor adequately seals all joints in these structures.

11. **CIVIL PLAN:** This design package is based on the civil plan electronic files (prepared by The URS Corporation) provided to RA via the email dated 09/14/2004. A Partial copy of this plan has been included in the 8 1/2" X 11" submittal to show the RA wall numbering and stationing.

12. **WALL PROFILE:** The elevation drawing is done to represent the grade changes necessary on the civil plan and was done in even block course increments of .667' (8"). Minor field changes may be necessary by the wall installer. Lineal footage may be added or subtracted as needed if the wall's height is equal to or less than the design height. If the wall needs to be raised in height, RA shall be notified and new structural cross sections must be provided before the installer proceeds. The cap height of .333' (4") is not accounted for on the profile elevations however its height may have been used in some cases to achieve the desired TW elevations.

13. **BLOCK SYSTEM:** This design is valid only for the Keystone Compac II block systems. Each segmental wall system has unique dimensions, connection devices and interacts differently with geogrids; therefore other block types may not be substituted without partial or total redesigns.

14. **FACTORS OF SAFETY:** The following factors of safety have been met in this design: Sliding 1.5, Overturning 2.0, Bearing Capacity 2.0, Geogrid Overstress 1.5, Geogrid Pullout 1.5 (from the soil and from the block) and Global Stability 1.3.

15. SPECIAL HOWARD COUNTY RETAINING WALL SPECIFICATIONS:

A. The retaining wall shall only be constructed under the observation of a Registered Professional Engineer and a (NICET, WACEL, or equivalent) certified soils technician.

B. The required bearing pressure beneath the footing of the wall shall be verified in the field by a certified soils technician. Testing documentation shall be provided to the Howard County Inspector prior to the start of construction. The required test procedure shall be the Dynamic Cone Penetrometer Test ASTM STP-399.

C. The suitability of the fill material shall be confirmed by the on-site soils technician. Each eight inch lift must be compacted to 95% Standard Proctor Density and the testing report shall be made available to the Howard County Inspector upon completion of the construction.

D. For walls over ten feet in height, one soil boring is required every 100 feet along the length of the wall, copies of the boring reports shall be provided to the Howard County Inspector prior to the start of construction.

16. **EMBEDMENT:** Wall embedment varies from two to twenty-seven blocks (burying to virgin and eliminating "step-downs"). The exact amount of buried blocks can be determined by subtracting the "BB" elevation from the "GR" elevation on the RA profile drawings.

17. **SEPARATE 8 1/2" X 11" SUBMITTAL:** These 24" X 36" sheets were done in conjunction with an 8 1/2" X 11" submittal. The cross section calculations and the global stability analysis are included in the 8 1/2" X 11" submittal.

MATERIAL ESTIMATE*:

BLOCK TYPE: Keystone Compac II		GEOGRID TYPE: Mirafi 3XT, 5XT & 7XT					CU. YDS.		FT.	
TOTAL	(1 S.F.)	(.5 S.F.)	SQ. YDS.	SQ. YDS.	SQ. YDS.	CU. YDS.	LEVELING	PAD	WALL	
SQ. FT.	BLOCK	CAPS**	PINS	GRID	GRID	GRID	GRAVEL	GRAVEL	LENGTH	
1,400	1,355	90	2,549	575	535	605	83	9	121	

NOTE: Quantities have been increased by the following percentages: block & caps 3%, geogrid 15% & gravel 5%.
**Cap quantity is based on one unit for each step down transition on the top of the wall.

* Ryan & Associates is not responsible for extras or shortages based on this take-off. The recipient is responsible for verifying the accuracy of this design by reviewing the site/ grading plan for this project or by taking field measurements.

CROSS SECTION DETAILS & FACTORS OF SAFETY:

SECTION	STATION	TOTAL WALL HEIGHT	LOAD APPLIED	SLIDING minimum 1.50	OVERTURNING minimum 2.00	BEARING CAPACITY minimum 2.50	BEARING PRESSURE PSF
1	0+00 TO 0+47	19.33'	300 PSF LIVE LOAD	2.65	10.71	12.05	2,994
2	0+47 TO 0+71	12.00'	300 PSF LIVE LOAD	1.68	3.68	5.61	2,157
3	0+71 TO 1+21.5	8.00'	300 PSF LIVE LOAD	1.62	3.44	5.69	1,460

APPROVED: DEPARTMENT OF RECREATION AND PARKS

Lauff Arthur
DIRECTOR DATE 2-15-05

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chris Damico Chief, Development Engineering Division Date 2/2/05
Clayton Hamer Chief, Division of Land Development Date 2/4/05
Mark M. Wright Director Date 2/16/05

DES:	DRN:	CHK:	DATE: 8/3/04	BY	NO.	REVISION	DATE

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

DEVELOPER:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
COLUMBIA, MARYLAND 21045

TAX MAP: 50
GRID: 1&2
ZONED: R-20 & R-SC
PARCEL NO.: 364
CENSUS TRACT: 6069.03
WATER CODE: C06
SEWER CODE: 7170900

HIGH RIDGE PARK
RETAINING WALL DETAILS

DEED REFERENCE: LIBER 8771, FOLIO 665
ELECTION DISTRICT NO. 6, HOWARD COUNTY, MARYLAND

SHEET 15 OF 39

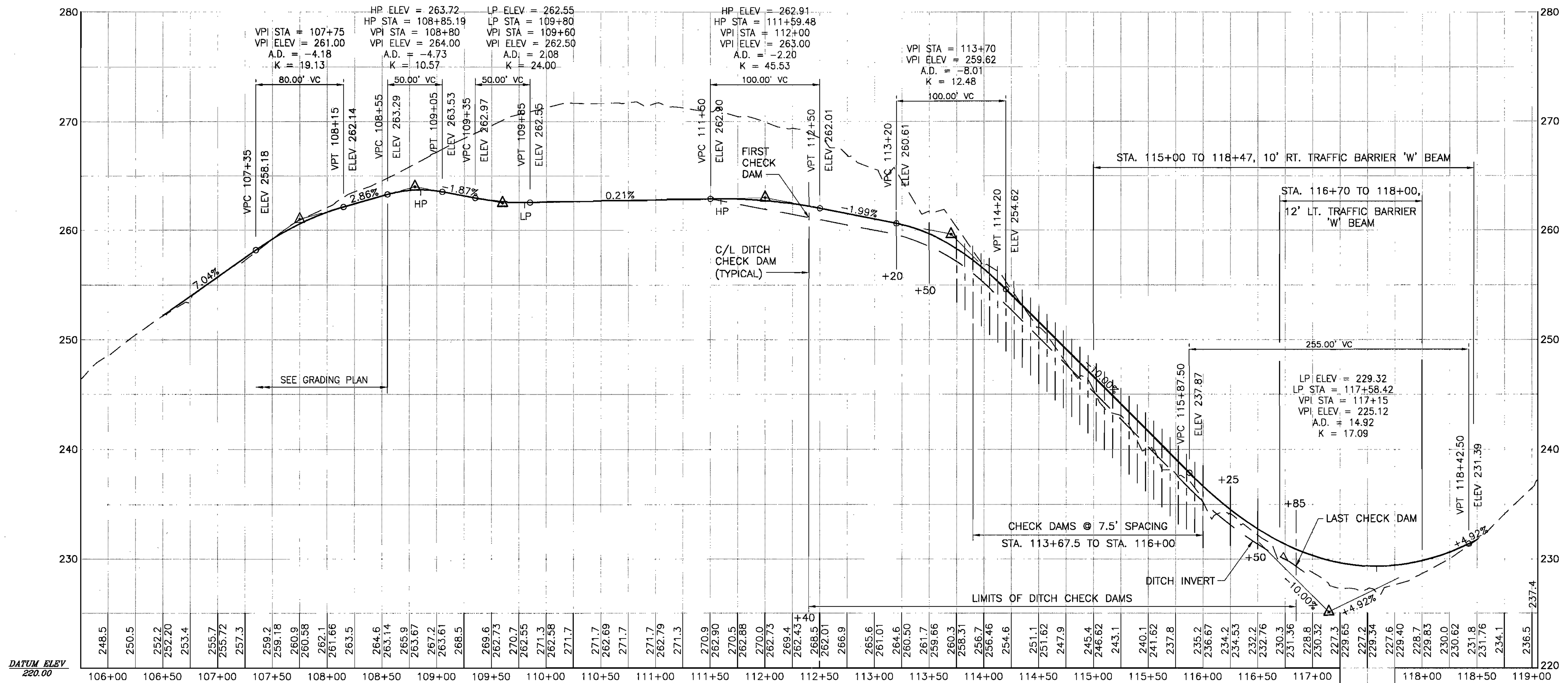
SDP-05-19



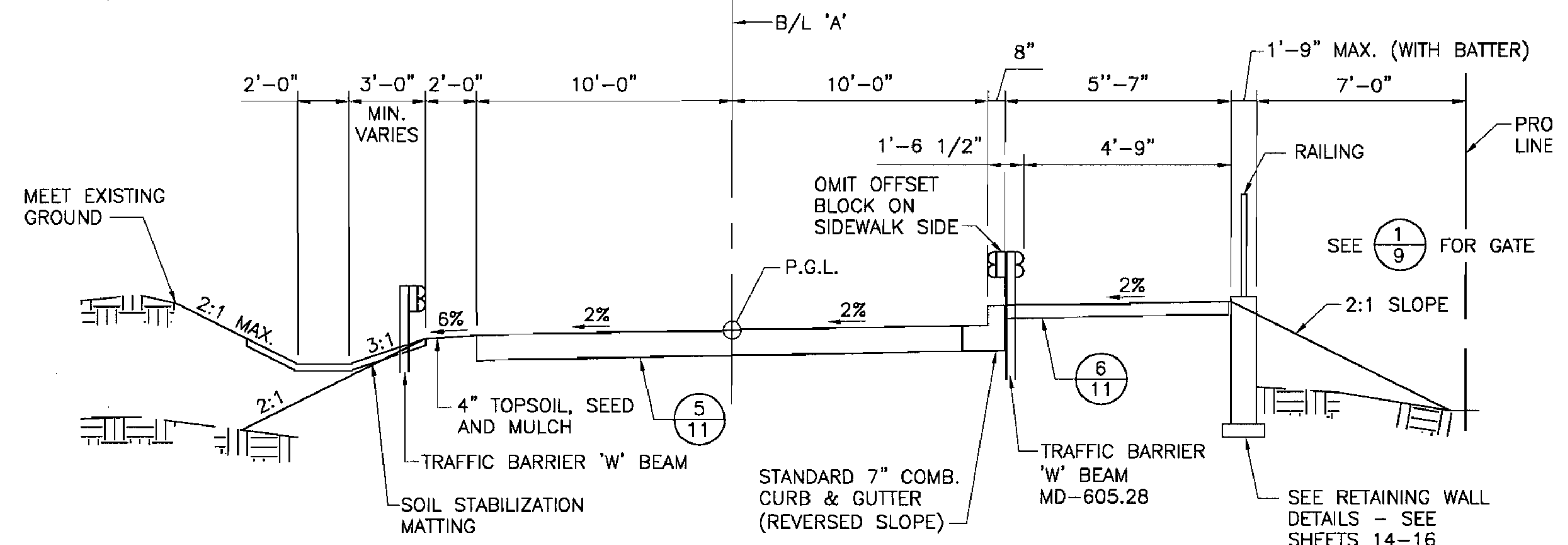
RYAN & ASSOCIATES
A Division of WKR Consulting, Inc.
RETAINING WALL DIVISION
PHONE 717-262-4242 FAX 717-262-4245
29 SOUTH MAIN STREET, SUITE A
CHAMBERSBURG, PA 17201

Professional Engr. No. 21586

PREPARED BY
URS
4 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND
TEL: (410) 785-7220



1
15 PROFILE - BASELINE (B/L) 'A'
SCALE: HOR. 1"=50', VER. 1"=5'



3
15 PARK ENTRANCE - TYPICAL SECTION
NTS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division Date: 2/2/05
 Chief, Division of Land Development Date: 2/4/05
 Director Date: 2/14/05



DES:DTM/RKK			
DRN:RMC/HWC			
CHK:DTM/RKK			
DATE: 10/8/04	BY NO.	REVISION	DATE

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

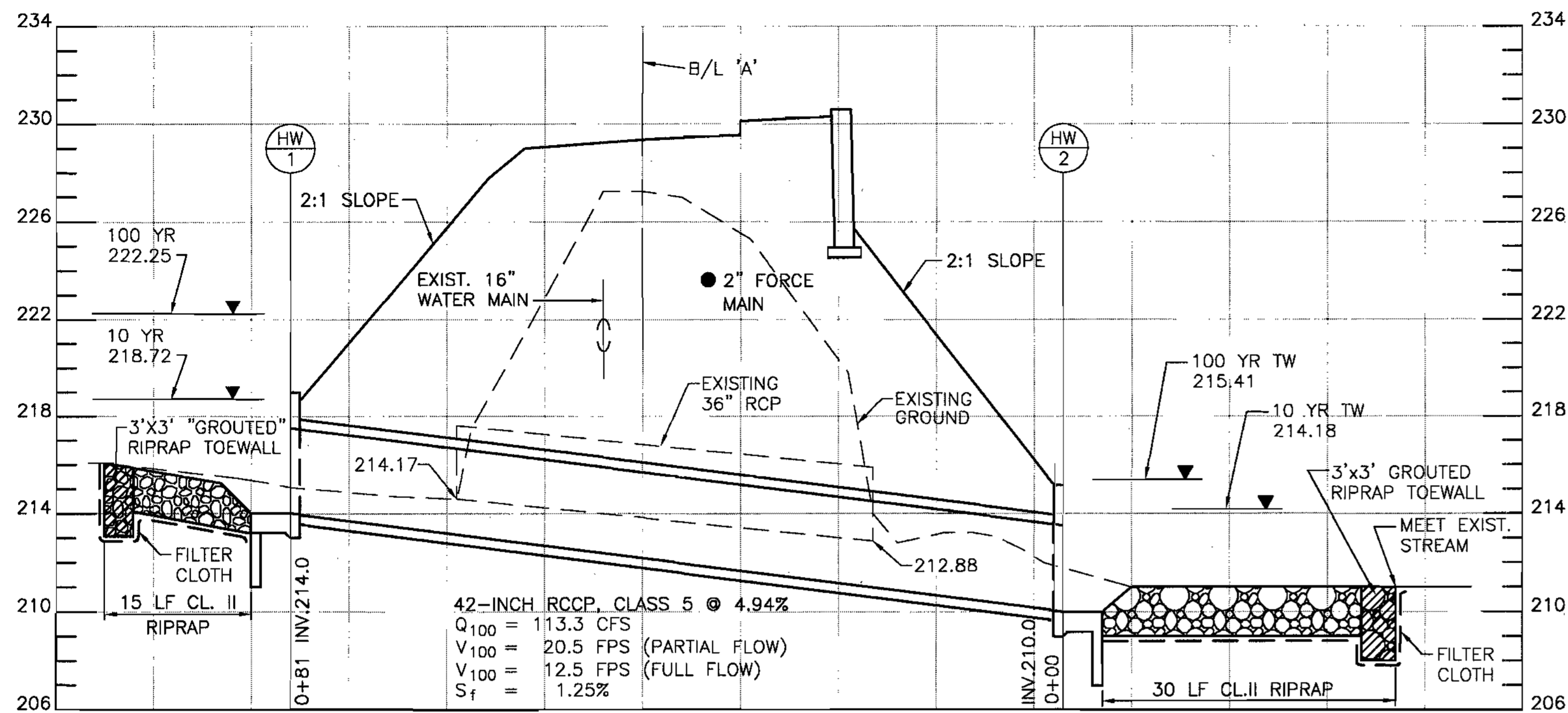
DEVELOPER:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
COLUMBIA, MARYLAND 21045

TAX MAP: 50
GRID: 1&2
ZONED: R-20 & R-SC
PARCEL NO.: 364
CENSUS TRACT: 6069.03
WATER CODE: C06
SEWER CODE: 7170900

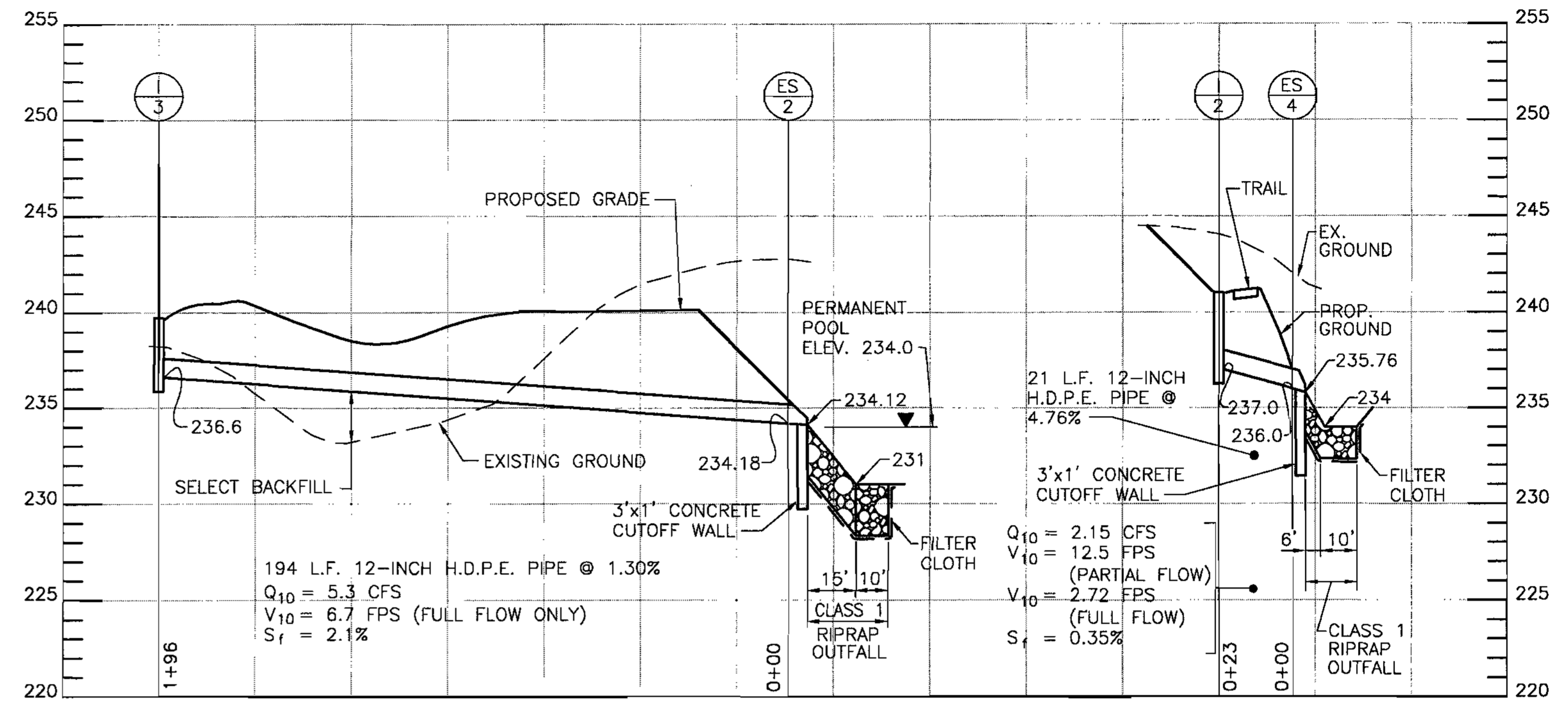
HIGH RIDGE PARK

ROADWAY PROFILE AND TYPICAL SECTION

DEED REFERENCE: LIBER 8771, FOLIO 685
ELECTION DISTRICT NO. 6, HOWARD COUNTY, MARYLAND

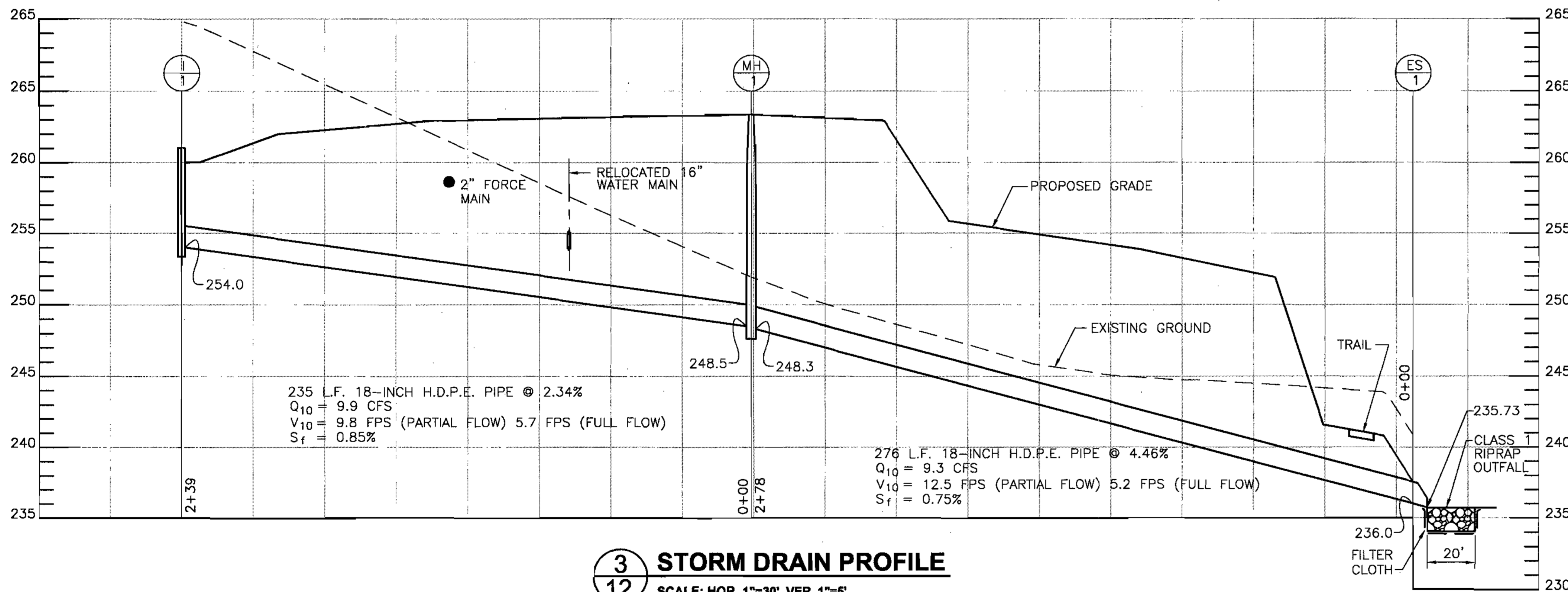


1 CROSS CULVERT PROFILE
12 SCALE: HOR. 1"=10', VER. 1"=4'



2 STORM DRAIN PROFILES
12 SCALE: HOR. 1"=30', VER. 1"=5'

DRAINAGE AREAS TO STORM DRAINS			
AREA	ACRES	% IMPERVIOUS AREA	RCN
(1)	26.38	19.6	75
(5A ₁)	1.99	86.3	
(5A ₂)	0.89	11.3	
(5B)	1.39	11.6	



3 STORM DRAIN PROFILE
12 SCALE: HOR. 1"=30', VER. 1"=5'

PIPE SCHEDULE		
ITEM	QUANTITY	MATERIALS
4" PVC SCH 40 UNDERDRAIN & SD PIPE	540 LF	SCH 40 PVC
12" HDPE STORM DRAIN PIPE	215 LF	HDPE
18" HDPE STORM DRAIN PIPE	511 LF	HDPE
24" RCP C-361, B-25 SWM OUTFALL PIPE	56 LF	C-361, B-25
42" RCP, CLASS 5 CULVERT PIPE	48 LF	RCP

STRUCTURE SCHEDULE					
NO.	DESCRIPTION	LOCATION	INV. IN	INV. OUT	TOP ELEV.
I-1	TYPE "S" INLET (SD-4.22)	201+76, 56' LT.	-	256.50	TG 261.0
I-2	TYPE "S" INLET (SD-4.22)	302+98, 203' RT.	-	237.0	TG 241.0
I-3	TYPE "S" INLET (SD-4.22)	105+25, 46' RT.	-	236.6	TG 239.5
MH 1	STANDARD PRECAST MH (G-5.12)	302+34, 30' LT.	248.5	248.3	263.4
MH 2	STANDARD PRECAST MH (G-5.12)	117+62.5, 29' LT.	215.49	215.30	225.5
ES-1	18" CMP END SECTION (SD 5.61)		-	235.73	-
ES-2	12" CMP END SECTION (SD 5.61)		-	234.12	-
ES-3	24" CONCRETE END SECTION (SD 5.52)		-	227.9	-
ES-4	12" CMP END SECTION (SD 5.61)		-	235.76	-
HW-1	TYPE 'A' HEADWALL-CIRCULAR (SD5.11)	117+50.5, 36' LT.	214.00	-	-
HW-2	TYPE 'A' HEADWALL-CIRCULAR (SD5.11)	117+46, 45' RT.	-	210.0	-

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division: *[Signature]* Date: 2/2/05
 Chief, Division of Land Development: *[Signature]* Date: 2/4/05
 Director: *[Signature]* Date: 2/10/05

NOTES:

- ALL HIGH DENSITY POLYETHYLENE PIPE (HDPE) SHALL MEET AASHTO M-252 TYPES, M294 TYPE S AND ASTM RESPECTIVELY.
- ALL PIPE PLACED IN FILL SHALL COMPLY WITH AASHTO T-180.



DES:	DTM/RKK	DRN:	HWC	CHK:	DTM/RKK	DATE:	10/8/04	BY:	NO.	REVISION	DATE

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

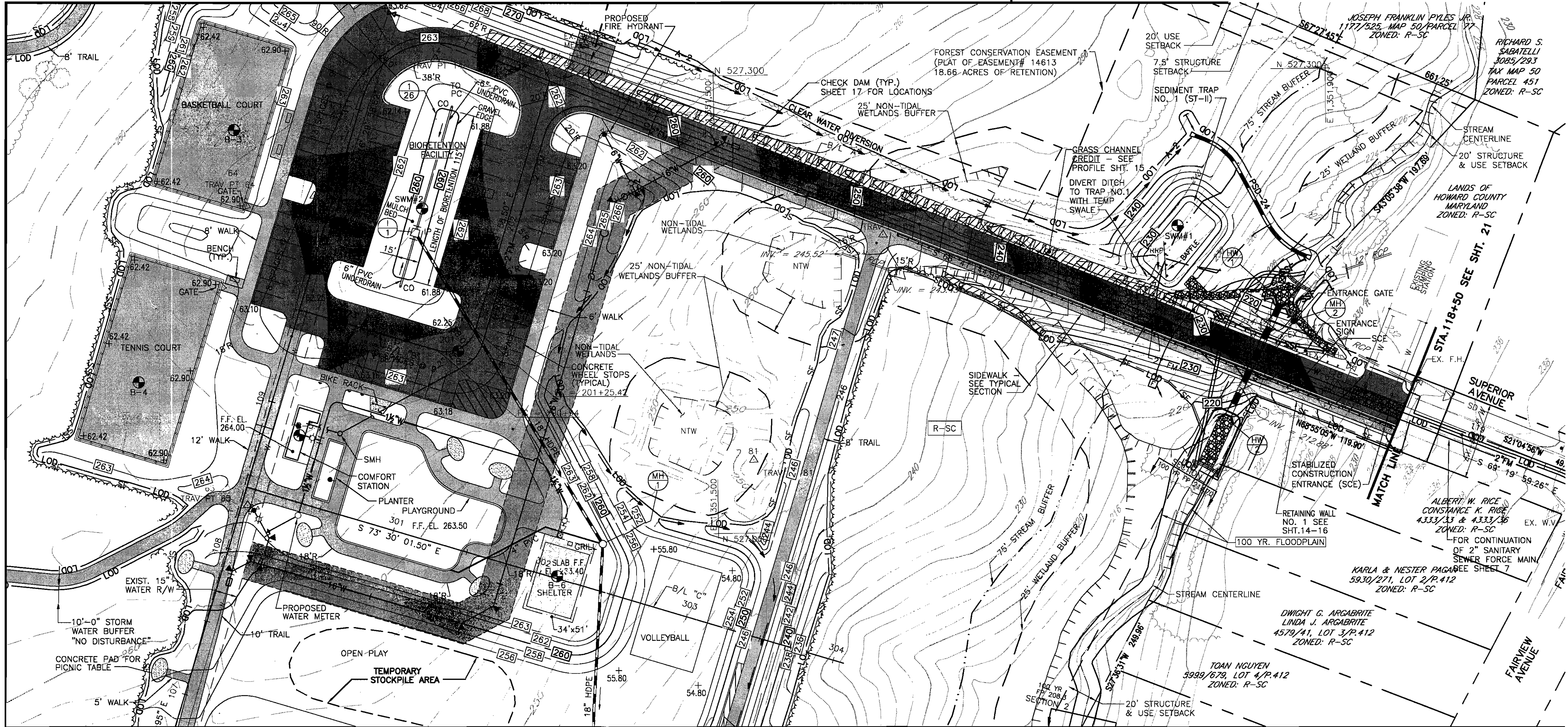
DEVELOPER:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
COLUMBIA, MARYLAND 21045

TAX MAP:	50
GRID:	1&2
ZONED:	R-20 & R-SC
PARCEL NO.:	364
CENSUS TRACT:	6069.03
WATER CODE:	CD6
SEWER CODE:	7170900

HIGH RIDGE PARK

STORM DRAIN PROFILES, SCHEDULES AND DETAILS

DEED REFERENCE: LIBER 8771, FOLIO 685
ELECTION DISTRICT NO. 6, HOWARD COUNTY, MARYLAND



MATCH LINE SEE SHEET 21

MATCH LINE SEE SHEET 20

SEDIMENT TRAP #1 (ST-II)
 MAXIMUM DRAINAGE AREA = 0.66 ACRES
 MAXIMUM WET STORAGE REQ'D. = 2,376 CF
 MAXIMUM DRY STORAGE REQ'D. = 2,376 CF
 BOTTOM DIMENSIONS = 26'x48'
 BOTTOM ELEVATION = 228.0 WEIR LENGTH = 4.0'
 WET ELEVATION = 230.0
 DRY STORAGE ELEVATION = 231.5
 CLEANOUT ELEVATION = 229.0
 $Q_1(PRE)=1.77$ CFS $Q_1(DURING CONSTR.)=1.19$ CFS
 $Q_1(POST CONSTR.)=1.12$ CFS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division: *[Signature]* Date: 2/20/05
 Chief, Division of Land Development: *[Signature]* Date: 2/4/05
 Director: *[Signature]* Date: 2/10/05

ENGINEER'S CERTIFICATE
 I certify that this plan pond construction and for sediment and erosion 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] Date: 1/11/05
 Signature of Engineer (print name below signature): DAVID T. MORICONI

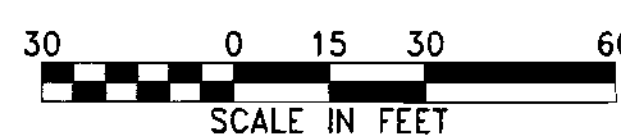
DEVELOPER'S CERTIFICATE
 I/we certify that all development and construction will be done according to these plans, and that any responsible personnel involved in the construction of this project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District. 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] Date: 2-15-05
 Signature of Developer (print name below signature): GARY W. ARTHUR

NOTE:
 1. PROVIDE EROSION CONTROL MATTING FOR ALL DITCHES & SWALES AS SHOWN ON PLAN.

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.
 USDA - Natural Resources Conservation Service Date: 1/25/05
 These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.
 Howard Soil Conservation District Date: 1/25/05

EROSION & SEDIMENT CONTROL LEGEND

220	EXISTING CONTOUR	SCE	STABILIZED CONSTRUCTION ENTRANCE (SCE)
220	PROPOSED CONTOUR	IP	INLET PROTECTION
LOD	LIMIT OF DISTURBANCE	OCF	ORANGE CONSTRUCTION FENCE (TREE PROTECTION FENCE)
SF	SILT FENCE	PTL	PROPOSED TREE LINE
SSF	SUPER SILT FENCE	PSD-24	PIPE SLOPE DRAIN
A-2, B-2	EARTH DIKE	A-2	TEMPORARY SWALE
ERM	EROSION CONTROL (SOIL STAB) MATTING	RRP	RIPRAP INFLOW PROTECTION
F	FILTER BAG		
SP	SUMP PIT		



DES: DTM			
DRN: RMC			
CHK: DTM			
DATE: 10/8/04	NO.	REVISION	DATE

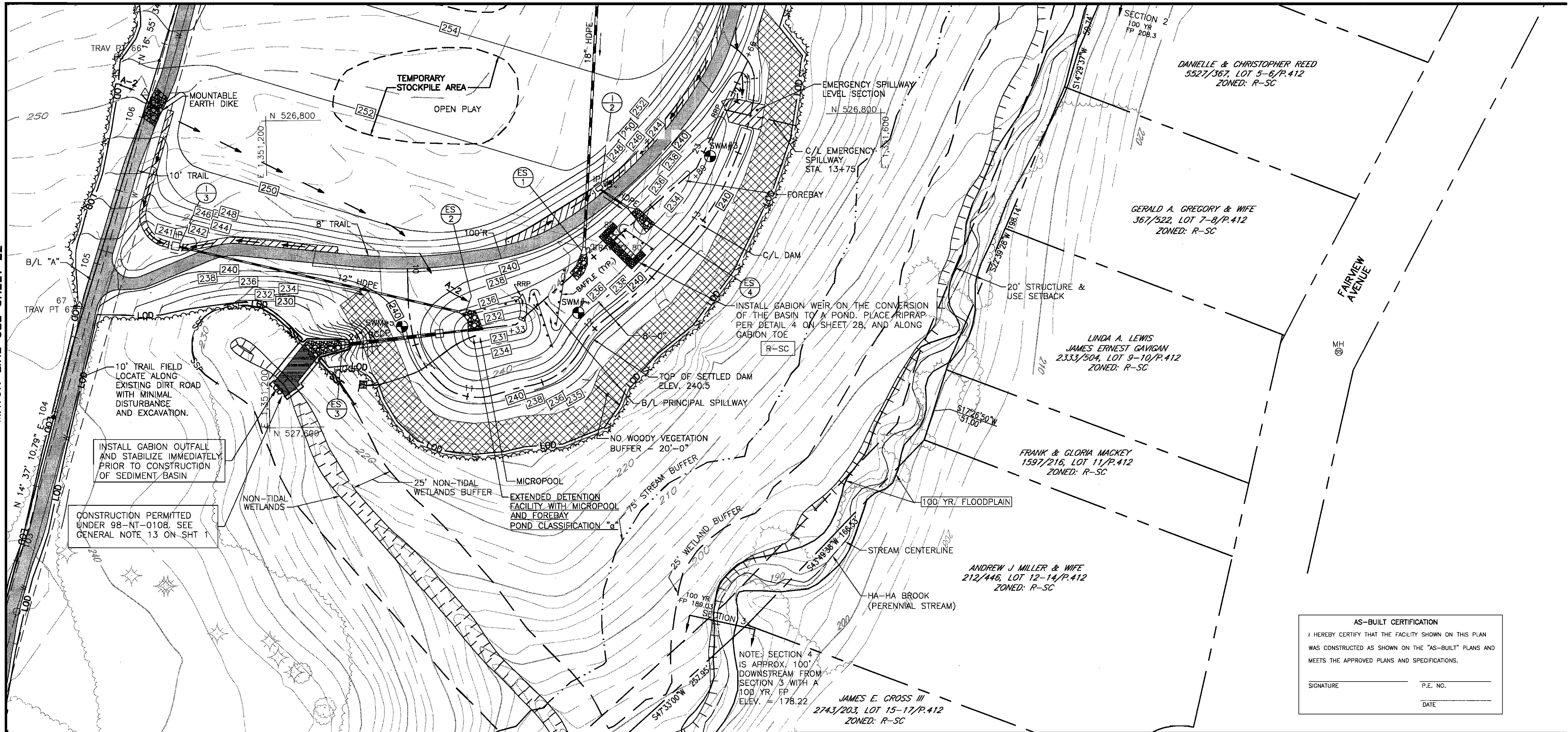
OWNER:
 HOWARD COUNTY DEPARTMENT
 RECREATION AND PARKS
 7120 OAKLAND MILLS ROAD
 COLUMBIA, MARYLAND 21046

DEVELOPER:
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 9250 BENDIX ROAD
 COLUMBIA, MARYLAND 21045

TAX MAP: 50
 GRID: 1&2
 ZONED: R-20 & R-SC
 PARCEL NO.: 364
 CENSUS TRACT: 6069.03
 WATER CODE: C06
 SEWER CODE: 7170900

HIGH RIDGE PARK
 GRADING & EROSION & SEDIMENT CONTROL PLAN

DEED REFERENCE: LIBER 8771, FOLIO 685
 ELECTION DISTRICT NO. 6, HOWARD COUNTY, MARYLAND



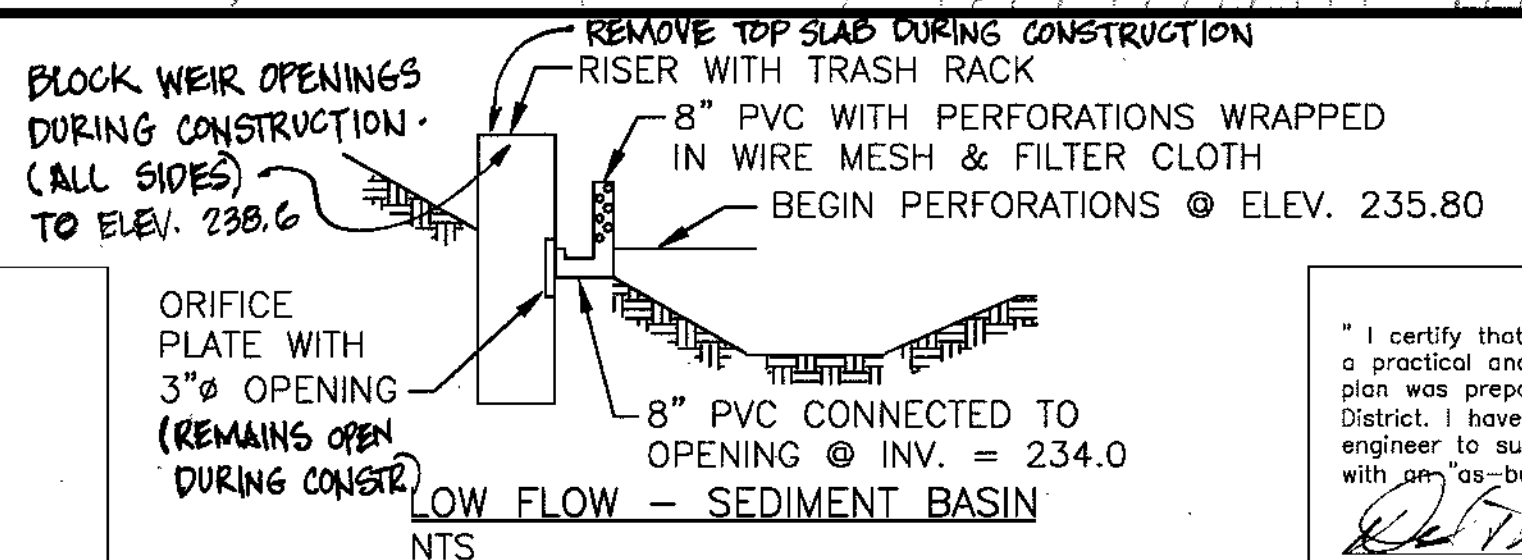
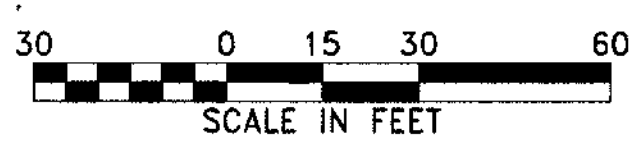
AS-BUILT CERTIFICATION
 I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

SIGNATURE _____ P.E. NO. _____
 DATE _____

- NOTES:**
- BEGIN PERFORATIONS ON LOW FLOW DEWATERING DEVICE AT ELEV. 235.80
 - SEDIMENT BASIN AND FINAL POND GRADING ARE IDENTICAL.

REFER TO SHEET 19 FOR LEGEND

SEDIMENT BASIN DATA		
MAXIMUM DRAINAGE AREA	VOLUME REQUIRED	VOLUME PROVIDED
5.04 AC	18,144 CF	21,869 CF
WET VOLUME/ELEVATION	DRY VOLUME/ELEVATION	
9072 CF/235.80	9072 CF/237.02	
CLEANOUT VOLUME/ELEVATION		
4536 CF/234.69		
DISTANCE - RISER CREST TO CLEANOUT ELEV.		
2.61 FT		



ENGINEER'S CERTIFICATE
 I certify that this plan pond construction and for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.

Signature of Engineer (print name below signature) *David T. MacLellan* Date *1/11/05*

DEVELOPER'S CERTIFICATE
 I/we certify that all development and construction will be done according to these plans, and that any responsible personnel involved in the construction of this project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.

Signature of Developer (print name below signature) *Gary J. Arthur* Date *2/15/05*

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division *[Signature]* Date *2/2/05*
 Chief, Division of Land Development *[Signature]* Date *2/4/05*
 Director *[Signature]* Date *2/10/05*

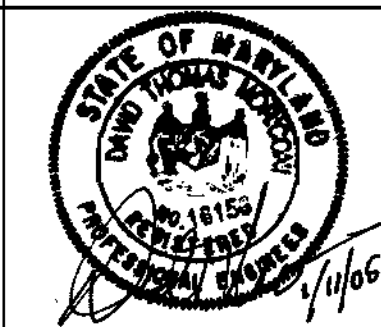
These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

USDA - Natural Resources Conservation Service *[Signature]* Date *1/25/05*

These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Howard SCD *[Signature]* Date *1/25/05*

PREPARED BY
URS
 4 NORTH PARK DRIVE
 HUNT VALLEY, MARYLAND
 TEL: (410) 785-7220



DES: DTM/RKK	DRN: RMC/HWC	CHK: DTM/RKK	DATE: 10/8/04	BY	NO.	REVISION	DATE

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

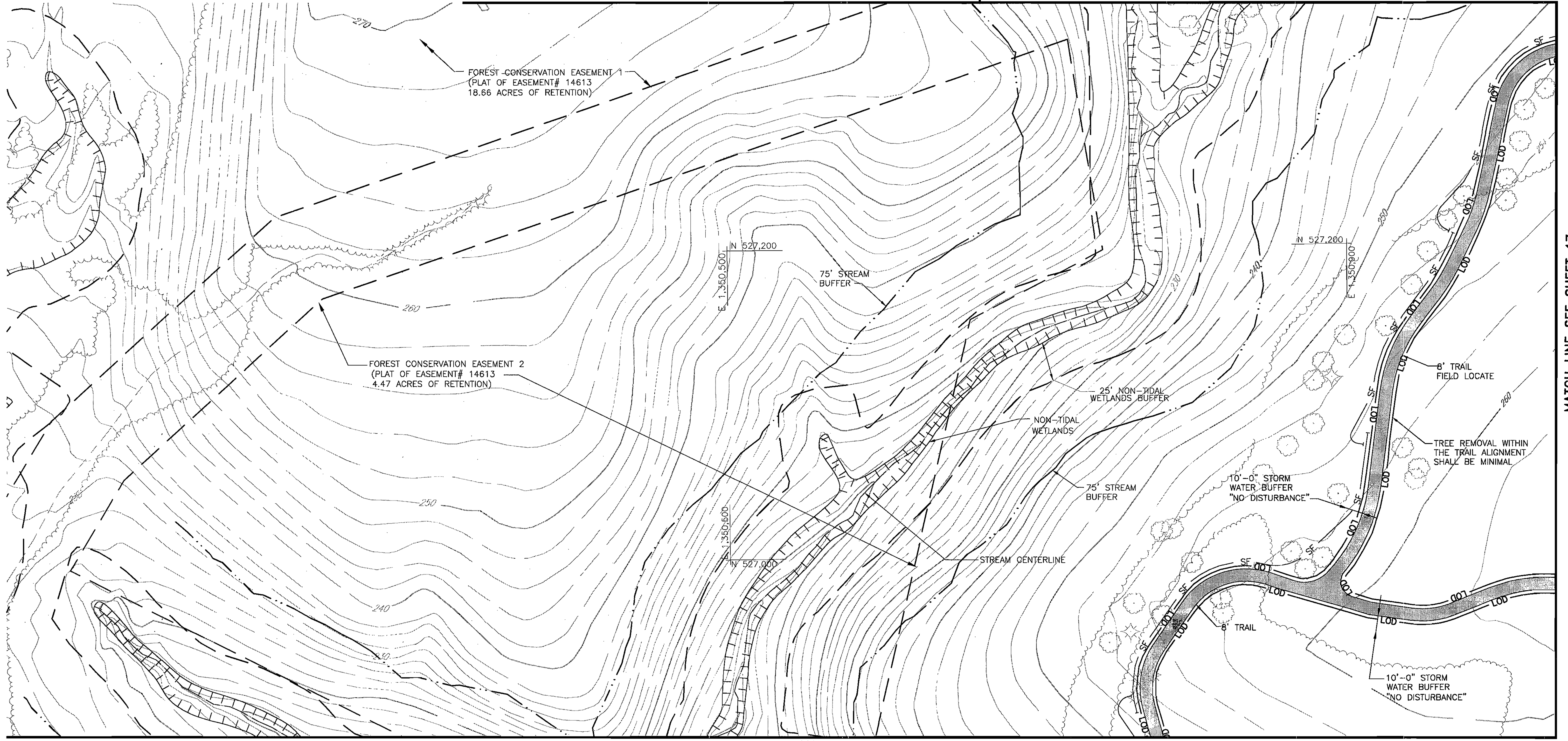
DEVELOPER:
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 9250 BENDIX ROAD
 COLUMBIA, MARYLAND 21045

TAX MAP: 50
 GRID: 1&2
 ZONED: R-20 & R-SC
 PARCEL NO.: 364
 CENSUS TRACT: 6069.03
 WATER CODE: C06
 SEWER CODE: 7170900

HIGH RIDGE PARK
 GRADING & EROSION & SEDIMENT CONTROL PLAN

DEED REFERENCE: LIBER 8771, FOLIO 685
 ELECTION DISTRICT NO. 6, HOWARD COUNTY, MARYLAND

SHEET 20 of 39
 SDP-05-19



MATCH LINE SEE SHEET 22

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division
 Chief, Division of Land Development
 Director

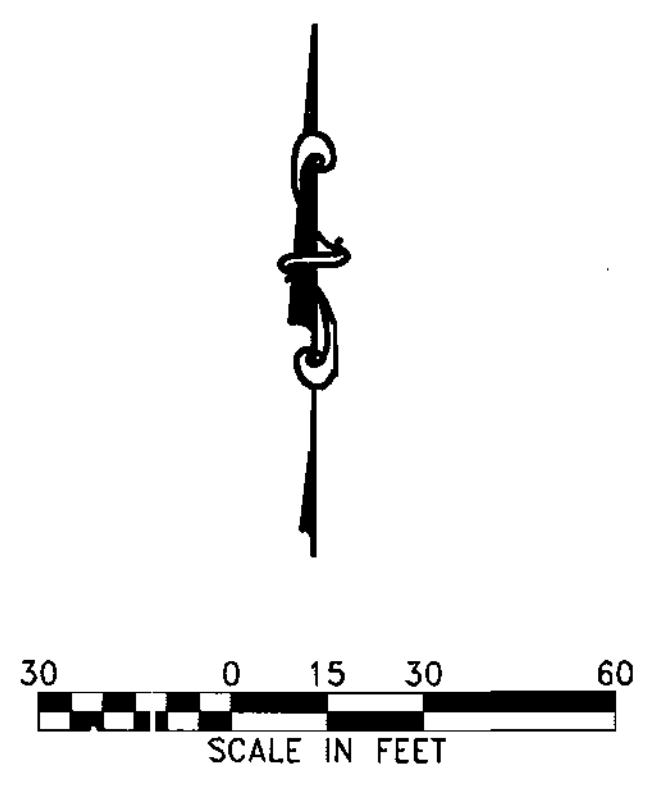
ENGINEER'S CERTIFICATE
 "I certify that this plan pond construction and for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."
 Signature of Engineer (print name below signature) DAVID T. MORICONI Date 1/11/05

DEVELOPER'S CERTIFICATE
 "I/we certify that all development and construction will be done according to these plans, and that any responsible personnel involved in the construction of this project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."
 Signature of Developer (print name below signature) GARY J. FATHUS Date 2/15/05

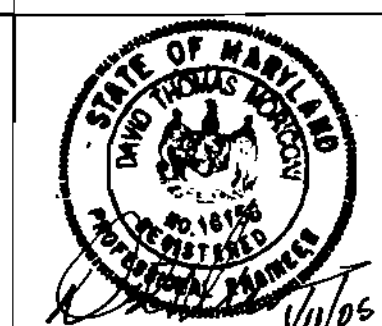
REFER TO SHEET 19 FOR LEGEND

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.
 Signature Jim Myers Date 1/25/05
 USDA - Natural Resources Conservation Service

These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.
 Signature Gary Selby Date 1/25/05
 Howard SCD



PREPARED BY
URS
 4 NORTH PARK DRIVE
 HUNT VALLEY, MARYLAND
 TEL: (410) 785-7220



DES:DTM/RKK					
DRN:RMC/HWC					
CHK:DTM/RKK					
DATE: 10/8/04	BY	NO.	REVISION	DATE	

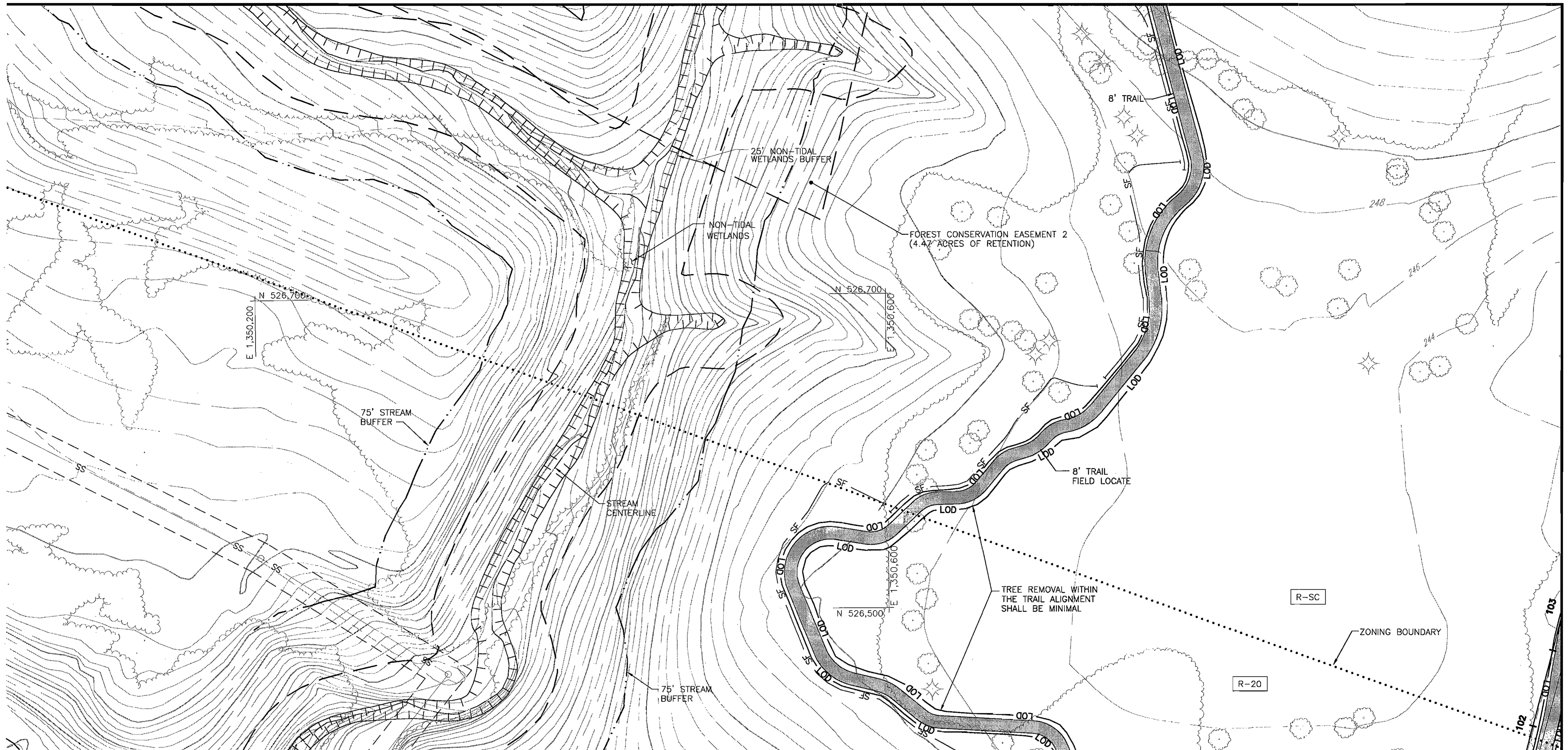
OWNER:
 HOWARD COUNTY DEPARTMENT
 RECREATION AND PARKS
 7120 OAKLAND MILLS ROAD
 COLUMBIA, MARYLAND 21046

DEVELOPER:
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 9250 BENDIX ROAD
 COLUMBIA, MARYLAND 21045

TAX MAP: 50
 GRID: 1&2
 ZONED: R-20 & R-SC
 PARCEL NO.: 364
 CENSUS TRACT: 6069.03
 WATER CODE: C06
 SEWER CODE: 7170900

HIGH RIDGE PARK
 GRADING & EROSION & SEDIMENT CONTROL PLAN

DEED REFERENCE: LIBER 8771, FOLIO 685
 ELECTION DISTRICT NO. 6, HOWARD COUNTY, MARYLAND



MATCH LINE SEE SHEET 20

MATCH LINE SEE SHEET 23

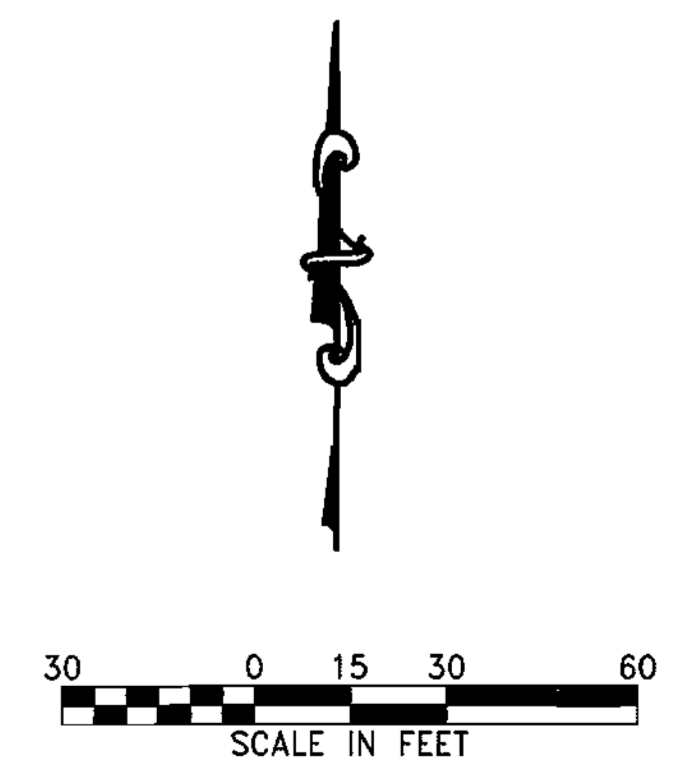
ENGINEER'S CERTIFICATE
 I certify that this plan pond construction and for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.
 Signature of Engineer (print name below signature) DAVID T. MORICONI Date 1/11/05

REFER TO SHEET 19 FOR LEGEND

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.
 USDA - Natural Resources Conservation Service Date: 1/25/05
 These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.
 Howard SCD Date: 1/25/05

APPROVED DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division Date: 2/2/05
 Chief, Division of Land Development Date: 2/4/05
 Director Date: 2/11/05

DEVELOPER'S CERTIFICATE
 I/We certify that all development and construction will be done according to these plans, and that any responsible personnel involved in the construction of this project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.
 Signature of Developer (print name below signature) GARY J. ARTHUR Date 2-15-05



PREPARED BY
URS
 4 NORTH PARK DRIVE
 HUNT VALLEY, MARYLAND
 TEL: (410) 785-7220



DES:DTM/RKK			
DRN:RMC/HWC			
CHK:DTM/RKK			
DATE: 10/8/04	BY	NO.	REVISION
			DATE

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

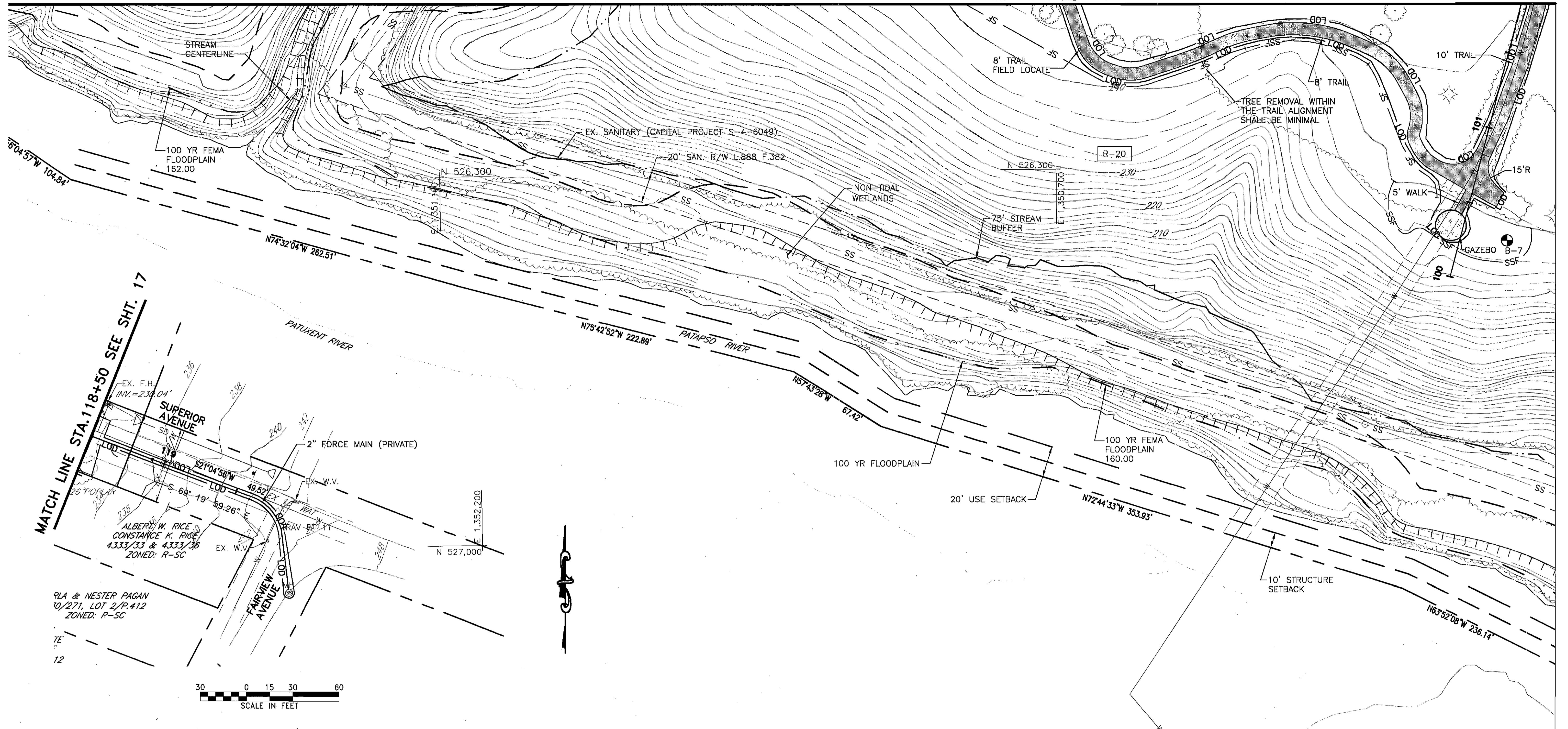
DEVELOPER:
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 9250 BENDIX ROAD
 COLUMBIA, MARYLAND 21045

TAX MAP: 50
 GRID: 1&2
 ZONED: R-20 & R-SC
 PARCEL NO.: 364
 CENSUS TRACT: 6069.03
 WATER CODE: C06
 SEWER CODE: 7170900

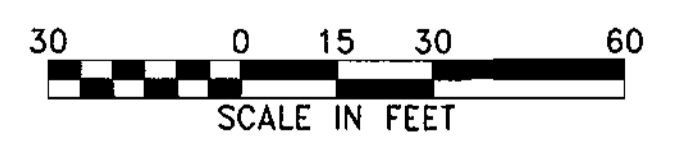
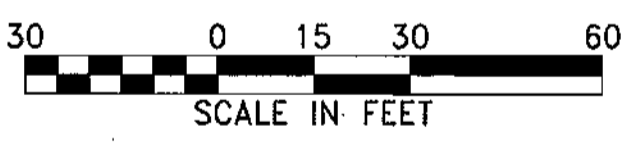
HIGH RIDGE PARK
 GRADING & EROSION & SEDIMENT CONTROL PLAN

DEED REFERENCE: LIBER 8771, FOLIO 685
 ELECTION DISTRICT NO. 6, HOWARD COUNTY, MARYLAND

SHEET 22 of 39



MATCH LINE STA. 118+50 SEE SHT. 17



ENGINEER'S CERTIFICATE
 "I certify that this plan pond construction and for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.
 Signature of Engineer (print name below signature) David T. Morianni Date 1/11/05

REFER TO SHEET 19 FOR LEGEND

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.
 USDA - Natural Resources Conservation Service Date: 1/25/05
 Signature: [Signature]
 Howard SCD Date: 1/25/05
 Signature: [Signature]

DEVELOPER'S CERTIFICATE
 "I/We certify that all development and construction will be done according to these plans, and that any responsible personnel involved in the construction of this project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.
 Signature of Developer (print name below signature) GARY J. ARTHUR Date 2-15-05

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division Date: 2/2/05
 Chief, Division of Land Development Date: 2/4/05
 Director Date: 2/10/05

PREPARED BY
URS
 4 NORTH PARK DRIVE
 HUNT VALLEY, MARYLAND
 TEL: (410) 785-7220



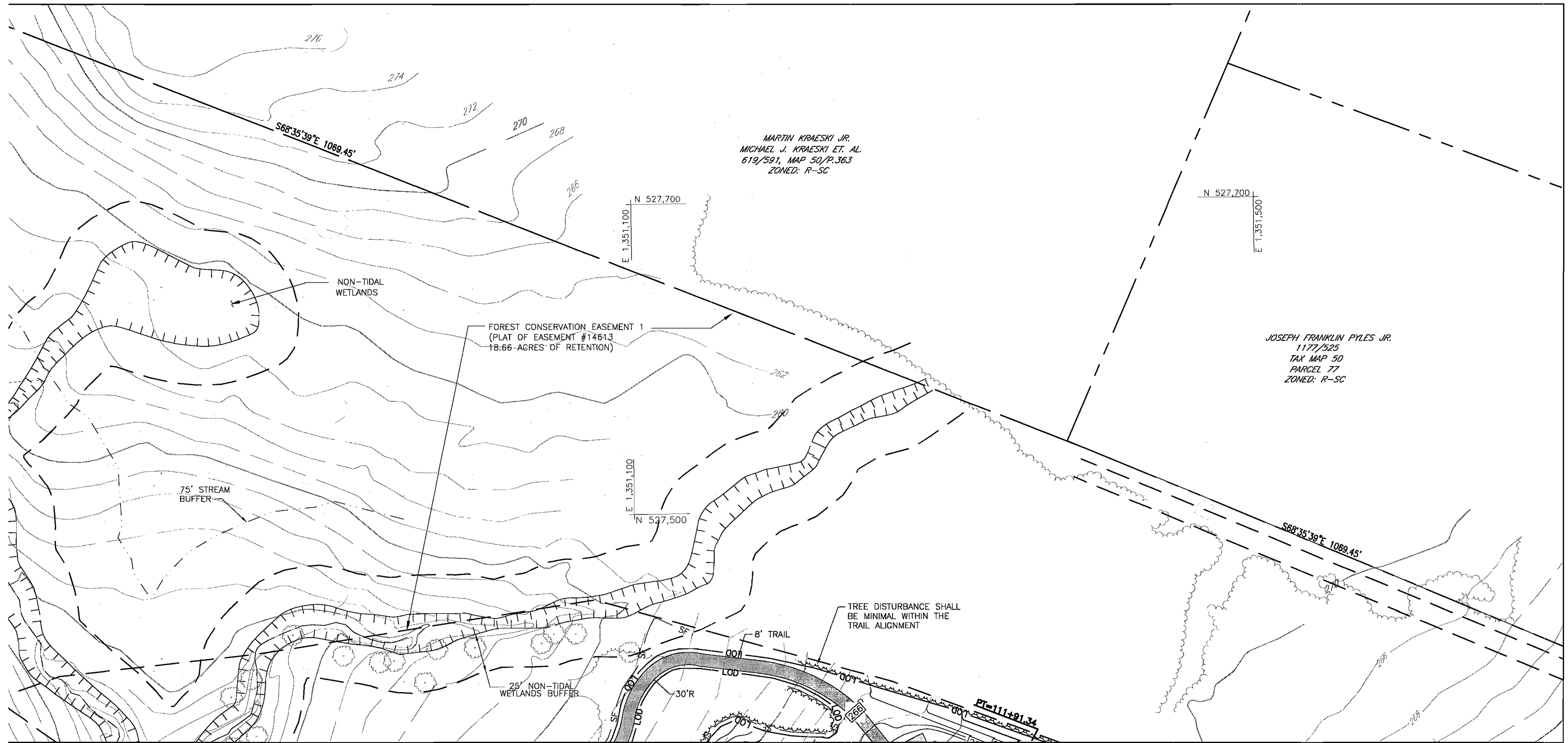
DES:DTM/RKK			
DRN:RMC/HWC			
CHK:DTM/RKK			
DATE: 10/8/04	BY NO.	REVISION	DATE

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

DEVELOPER:
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 9250 BENDIX ROAD
 COLUMBIA, MARYLAND 21045

TAX MAP: 50
 GRID: 1&2
 ZONED: R-20 & R-SC
 PARCEL NO.: 364
 CENSUS TRACT: 6069.03
 WATER CODE: C06
 SEWER CODE: 7170900

HIGH RIDGE PARK
 GRADING & EROSION & SEDIMENT CONTROL PLAN
 DEED REFERENCE: LIBER 8771, FOLIO 685
 ELECTION DISTRICT NO. 6, HOWARD COUNTY, MARYLAND
 SHEET 23 OF 39
 SDP-05-19



MATCH LINE SEE SHEET 21

MATCH LINE SEE SHEET 19

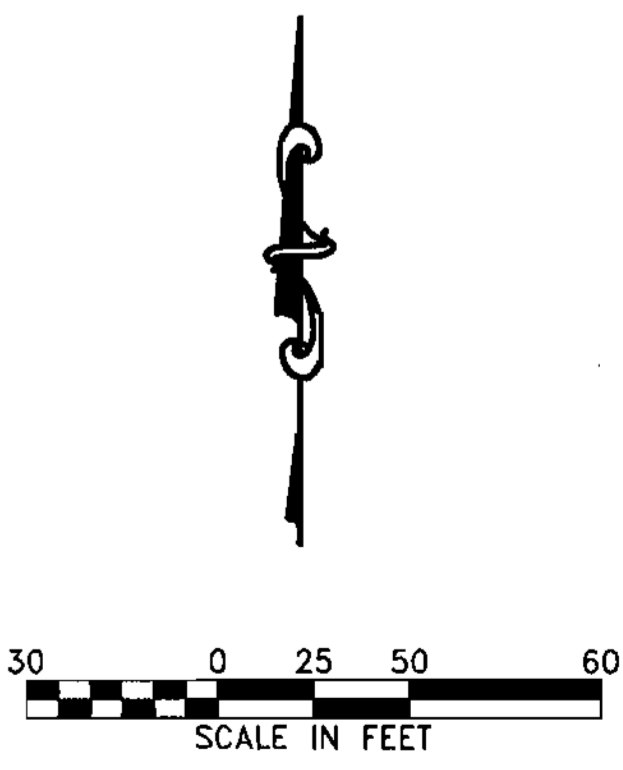
APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division
 Chief, Division of Land Development
 Director

ENGINEER'S CERTIFICATE
 * I certify that this plan pond construction and for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.
 Signature of Engineer (print name below signature) *David T. Moriconi* Date *1/11/05*

DEVELOPER'S CERTIFICATE
 * I/We certify that all development and construction will be done according to these plans, and that any responsible personnel involved in the construction of this project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.
 Signature of Developer (print name below signature) *GARY J. KETHUR* Date *2-15-05*

REFER TO SHEET 19 FOR LEGEND

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.
 USDA - Natural Resources Conservation Service Date: *1/25/05*
 These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.
 Howard SCD Date: *1/25/05*



DES: DTM/RKK					
DRN: RMC/HWC					
CHK: DTM/RKK					
DATE: 10/8/04	BY	NO.	REVISION	DATE	

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

DEVELOPER:
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 9250 BENDIX ROAD
 COLUMBIA, MARYLAND 21045

TAX MAP: 50
 GRID: 1&2
 ZONED: R-20 & R-SC
 PARCEL NO.: 364
 CENSUS TRACT: 6069.03
 WATER CODE: C06
 SEWER CODE: 7170900

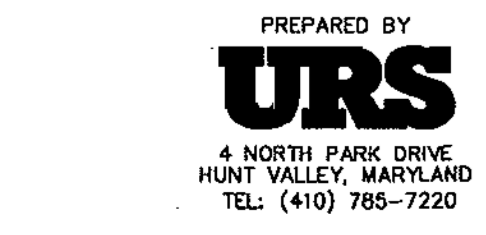
HIGH RIDGE PARK

GRADING & EROSION & SEDIMENT CONTROL PLAN

DEED REFERENCE: LIBER 8771, FOLIO 685
 ELECTION DISTRICT NO. 6, HOWARD COUNTY, MARYLAND

SHEET 24 OF 39

SDP-05-19



**HOWARD SOIL 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. (313-1885)
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE "1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", AND REVISIONS THERETO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1, B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENTS TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 7 OF "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, SOD, TEMPORARY SEEDING, AND MULCHING (SEC G.) TEMPORARY STABILIZATION WITH MULCH ALONE SHALL 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 = 88.4 ACRES ±
AREA DISTURBED = 7.4 ACRES ±
AREA TO BE ROOFED OR PAVED = 3.07 ACRES ±
AREA TO BE VEGETATIVELY STABILIZED = 4.33 ACRES ±
TOTAL CUT = 24,494 CUBIC YARDS
TOTAL FILL = 23,040 CUBIC YARDS
OFFSITE WASTE/BORROW LOCATION = N/A TO BE DETERMINED BUT MUST BE A SITE WITH AN ACTIVE GRADING PERMIT
- 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 OF 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.

TEMPORARY SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: LOOSEN UPPER 3 INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING (UNLESS PREVIOUSLY LOOSENED).

SOILS AMENDMENTS: APPLY 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS./1000 SQ.FT.)

SEEDING: FOR PERIODS MARCH 1 THROUGH APRIL 30 AND FROM AUGUST 15 THROUGH NOVEMBER 15, SEED WITH 1 1/2 BU. PER ACRE OF ANNUAL RYE (3.2 LBS./1000 SQ.FT.) FOR THE PERIOD MAY 1 THROUGH AUGUST 14, SEED WITH 3 LBS. PER ACRE OF WEEPING LOVEGRASS (.07 LBS./1000 SQ.FT.) FOR THE PERIOD OF NOVEMBER 16 THROUGH FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING OR USE SOD.

SEEDING: FOR THE PERIODS MARCH 1 THROUGH APRIL 30, AND AUGUST 1 THROUGH OCTOBER 15, SEED WITH 60 LBS. PER ACRE (1.4 LBS./1000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THROUGH JULY 31, SEED WITH 60 LBS. KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS. PER ACRE (.05 LBS./1000 SQ.FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THROUGH FEBRUARY 28, PROTECT SITE BY: OPTION (1) 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (2) USE SOD. OPTION (3) SEED WITH 60 LBS/ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WELL ANCHORED STRAW.

MULCHING: APPLY 1 1/2 TO 2 TONS PER ACRE (70 TO 90 LBS./1000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GALS./1000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREA. ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GALS./1000 SQ.FT.) FOR ANCHORING.

MAINTENANCE: INSPECT ALL SEEDING AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

PERMANENT SEEDING NOTES

APPLY TO GRADED OR CLEARED AREA NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: LOOSEN UPPER 3 INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING (IF NOT PREVIOUSLY LOOSENED).

SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES:

- PREFERRED - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS./1000 SQ.FT.) AND 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS./1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS. PER ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS./1000 SQ.FT.)
 - ACCEPTABLE - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS./1000 SQ. FT.) AND 1000 LBS. PER ACRE 10-10-10 FERTILIZER (23 LBS./1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOILS.
- SEEDING - FOR THE PERIODS MARCH 1 - APRIL 30, AND AUGUST 1 - OCTOBER 15, SEED WITH 60 LBS/ACRE (1.4 LBS./1000 SQ. FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 - JULY 31, SEED WITH 60 LBS KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS/ACRE (.05 LBS./1000 SQ. FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 - FEBRUARY 28, PROTECT SITE BY:
- OPTION 1 - TWO TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING.
OPTION 2 - USE SOD.
OPTION 3 - SEER: WITH 60 LBS/ACRE KENTUCKY 30 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WELL ANCHORED STRAW.
- MULCHING - APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS./1000 SQ. FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL./1000 SQ. FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPE 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL./1000 SQ. FT.) FOR ANCHORING.
- MAINTENANCE - INSPECT ALL SEEDING AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

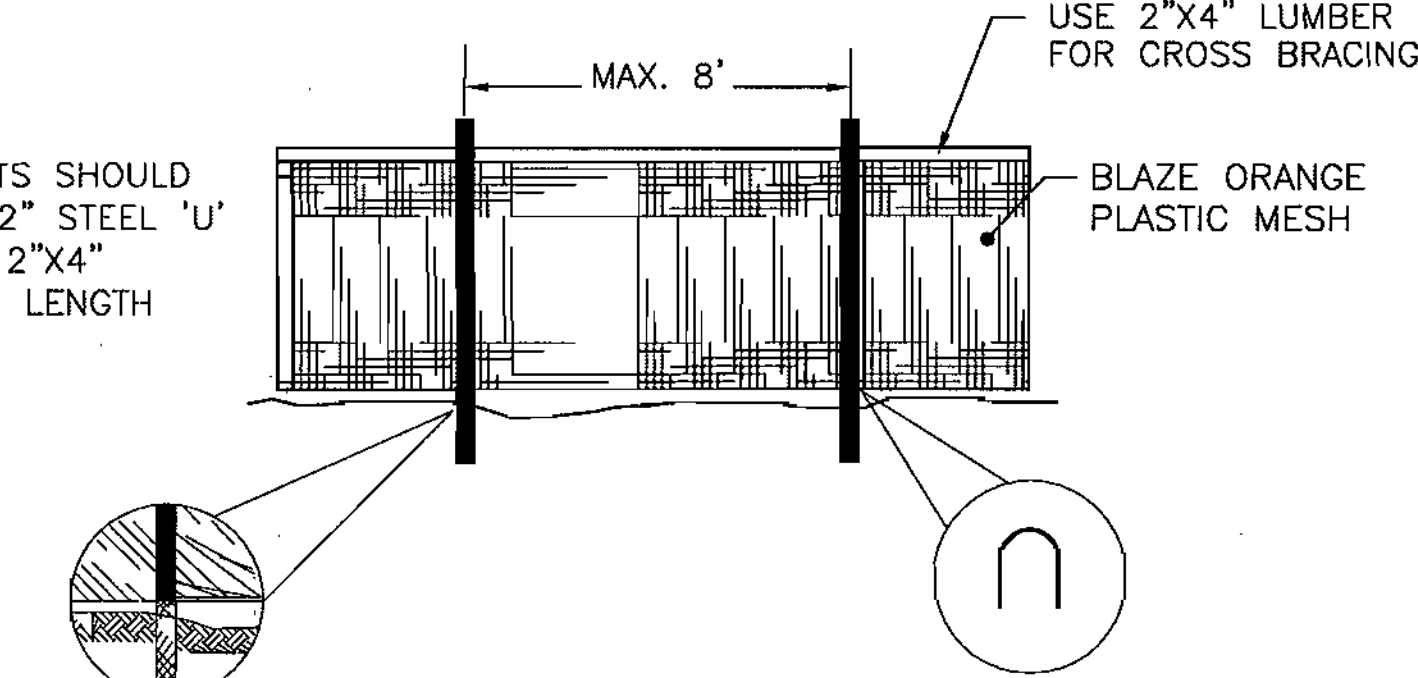
TOPSOIL CONSTRUCTION AND MATERIAL SPECIFICATIONS

- TOPSOIL SALVAGED FROM THE EXISTING SITE MAY BE USED PROVIDED THAT IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-SCS IN COOPERATION WITH MARYLAND AGRICULTURAL EXPERIMENTAL STATION.
- TOPSOIL SPECIFICATIONS - SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING:
 - TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY.
 - TEXTURED SUBSOILS AND SHALL CONTAIN LESS THAN 5% BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 1/2" IN DIAMETER.
 - WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, GROUND LIMESTONE SHALL BE SPREAD AT THE RATE OF 4-8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL. LIME SHALL BE DISTRIBUTED UNIFORMLY OVER DESIGNATED AREAS AND WORKED INTO THE SOIL IN CONJUNCTION WITH TILLAGE OPERATIONS AS DESCRIBED IN THE FOLLOWING PROCEDURES.
 - FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES:
 - PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION - SECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS.
 - TOPSOIL APPLICATION
 - WHEN TOPSOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, EARTH DIKES, SLOPE SILT FENCE AND SEDIMENT TRAPS AND BASINS.
 - GRADES ON THE AREAS TO BE TOPSOILED, WHICH HAVE BEEN PREVIOUSLY ESTABLISHED, SHALL BE MAINTAINED, ALBERT 4" - 8" HIGHER IN ELEVATION.
 - TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED IN A 4" - 8" LAYER AND LIGHTLY COMPACTED TO A MINIMUM THICKNESS OF 4". SPREADING SHALL BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
 - TOPSOIL SHALL NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.
 - THESE TOPSOIL SPECIFICATIONS HAVE BEEN EDITED FROM THE 1994 EROSION AND SEDIMENT CONTROL STANDARDS TO FIT THIS PROJECT. IT IS STILL THE INTENTION TO FOLLOW THE REFERENCED 1994 EROSION AND SEDIMENT CONTROLS STANDARDS IN THEIR ENTIRETY.

SEQUENCE OF CONSTRUCTION

- OBTAIN HOWARD COUNTY GRADING PERMIT. (1 DAY)
 - NOTIFY HOWARD COUNTY AT LEAST 48 HOURS PRIOR TO START OF CONSTRUCTION. PHONE (410) 313-1880 (1 DAY) AND MARK RAAB AT (410) 313-4730.
 - INSTALL STABILIZED CONSTRUCTION ENTRANCE WITH MOUNTABLE BERM AND INSTALL ORANGE CONSTRUCTION FENCE (TREE PROTECTION FENCE). SILT FENCE AND SUPER SILT FENCE WITH APPROVAL FROM MARK RAAB AND SEDIMENT CONTROL INSPECTOR. (10 DAYS)
 - INSTALL PUMP AROUND PRACTICE AND DIVERSION PIPE. REMOVE EXIST. 36" PIPE AND REPLACE WITH 42" RCCP CL. 5, HEADWALLS, RIPRAP CHANNEL PROTECTION, ROADWAY EMBANKMENT BETWEEN 116+75 AND 117+95, RIPRAP DITCHES BETWEEN 116+75 TO 117+95 LT & MH-1 TO MH-1 PIPE. REMOVE PUMP AROUND PRACTICE AND DIVERSION PIPE WITH PERMISSION FROM INSPECTOR BEFORE PROCEEDING WITH REST OF THE SITES.
 - BEGIN INSTALLATION OF MODULAR BLOCK RETAINING WALL SYSTEM.
 - INSTALL EARTH DIKE NO. 1 (CLEAR WATER DIVERSION) & SLOPE DRAIN.
 - CONSTRUCT SEDIMENT BASIN AS SHOWN ON THE STORMWATER MANAGEMENT PLANS WITH THE FOLLOWING MODIFICATIONS: (3 WEEKS)
 - EXCAVATE POND TO THE BOTTOM ELEV. 231.0
 - INSTALL EMBANKMENT, RISER WITH TRASH RACKS, PRINCIPAL SPILLWAY
 - INSTALL 3" ORIFICE PLATE AT ELEV. 234.0
 - INSTALL LOW FLOW DEVICE
 - INSTALL PERIMETER CONTROLS: SILT FENCE, SUPER SILT FENCE, PIPE SLOPE DRAIN, EARTH DIKES AND SED. TRAP AS SHOWN ON THE PLAN. INSTALL ORANGE CONSTRUCTION FENCE AT THE LIMITS OF DISTURBANCE NOT SERVED BY SILT OR SUPER SILT FENCE. THE SILT FENCE, SUPER SILT FENCE AND ORANGE SAFETY FENCE SHALL BE INSTALLED UNDER THE SUPERVISION OF HOWARD COUNTY DEPARTMENT OF RECREATION & PARKS.
 - WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, CLEAR AND GRUB SITE WITHIN THE LIMITS OF DISTURBANCE. (2 WEEKS)
 - STRIP AND STOCKPILE TOPSOIL (1 WEEK)
 - CONSTRUCT SANITARY SEWER, WATER LINE RELOCATION, AND STORM DRAIN AS INDICATED ON THE APPROVED PLANS.
 - GRADE SITE TO THE PROPOSED ELEVATIONS AS INDICATED ON THE SITE PLAN, INSTALL RETAINING WALLS.
 - GRADE AND PERMANENTLY STABILIZE PATHWAY IN INCREMENTS, NOT TO EXCEED 200' IN LENGTH.
 - CONSTRUCT CURB, GUTTER AND INSTALL PAVEMENT ON THE ROADS AND PARKING LOTS
 - CONSTRUCT BIORETENTION AREA. INSTALL SILT FENCE AROUND THE BIORETENTION AREAS TO PROTECT AGAINST CONTAMINATION.
 - WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, CONSTRUCT THE FOLLOWING: (15 WEEKS)
 - FINE GRADE AND STABILIZE SITE. (1 WEEK)
 - AFTER SITE IS PERMANENTLY STABILIZED, OBTAIN PERMISSION FROM HOWARD COUNTY SEDIMENT CONTROL INSPECTOR AND REMOVE SEDIMENT CONTROL MEASURES, CONVERT SEDIMENT BASIN INTO PERMANENT STORMWATER MANAGEMENT POND AS FOLLOWS: (2 WEEKS)
 - EXCAVATE POND TO THE BOTTOM ELEVATION INDICATED ON THE STORMWATER MANAGEMENT PLAN.
 - REMOVE DRAW-DOWN DEVICE. INSTALL 4" UNDERDRAIN PVC PIPE.
 - REMOVE ALL SEDIMENT CONTROL MEASURES AFTER RECEIVING PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR. (1 WEEK)
- NOTE: THIS SEQUENCE MAY BE MODIFIED AFTER RECEIVING PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR AS LONG AS THE INTENTION AND INTEGRITY OF THIS PLAN IS NOT COMPROMISED.

PATUXENT RIVER AND TRIBUTARIES ARE USE 1 WATERWAYS. INSTANT WORK MAY NOT BE CONDUCTED FROM MARCH 1 THROUGH JUNE 15, INCLUSIVE, OF ANY YEAR.



ANCHOR POSTS SHOULD BE MINIMUM 2" STEEL 'U' CHANNEL OR 2"x4" TIMBER, 6' IN LENGTH

ANCHOR POSTS MUST BE INSTALLED TO A DEPTH OF NO LESS THAN 1/3 OF THE TOTAL HEIGHT OF POST

USE 8" WIRE 'U' TO SECURE FENCE BOTTOM

- TREE PROTECTION DEVICE ONLY.
- TREE PROTECTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
- BOUNDARIES OF TREE PROTECTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
- ROOT DAMAGE SHOULD BE AVOIDED.
- PROTECTIVE SIGNAGE MAY ALSO BE USED, AND SHOULD BE ATTACHED DIRECTLY TO POSTS OR CROSS BRACING
- DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

TREE PROTECTION FENCE

SCALE: NONE

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

USDA - Natural Resources Conservation Service Date: 1/25/05

These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Howard SCD Date: 1/25/05

ENGINEER'S CERTIFICATE

I certify that this plan pond construction and for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.

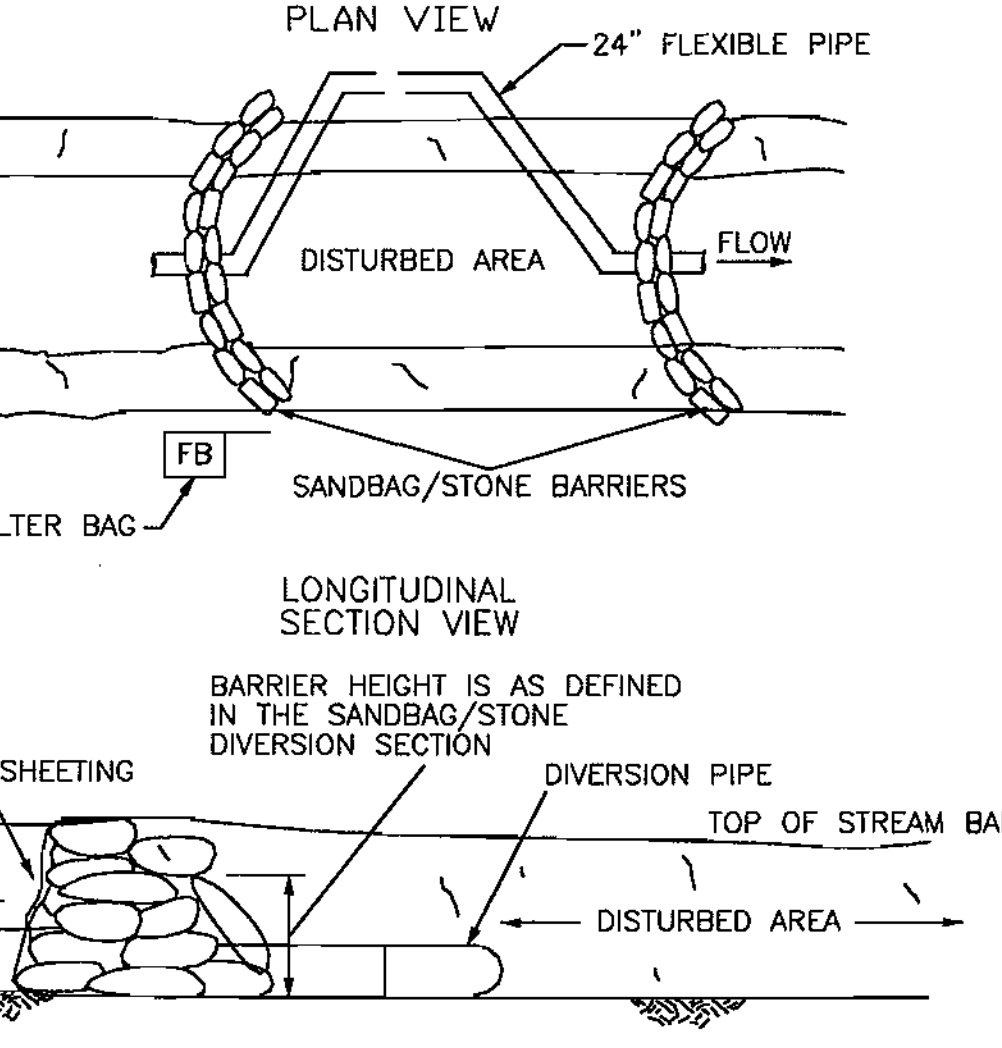
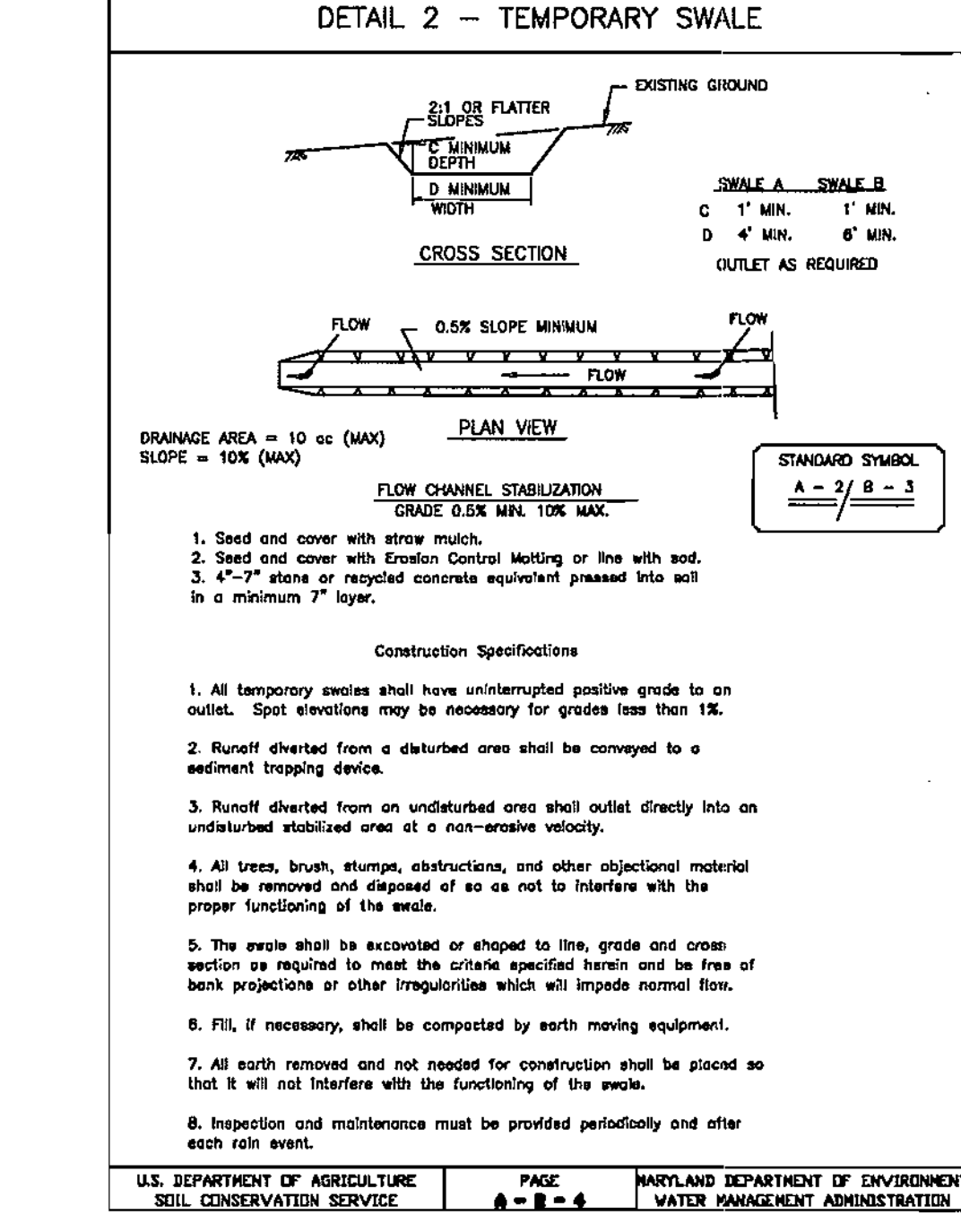
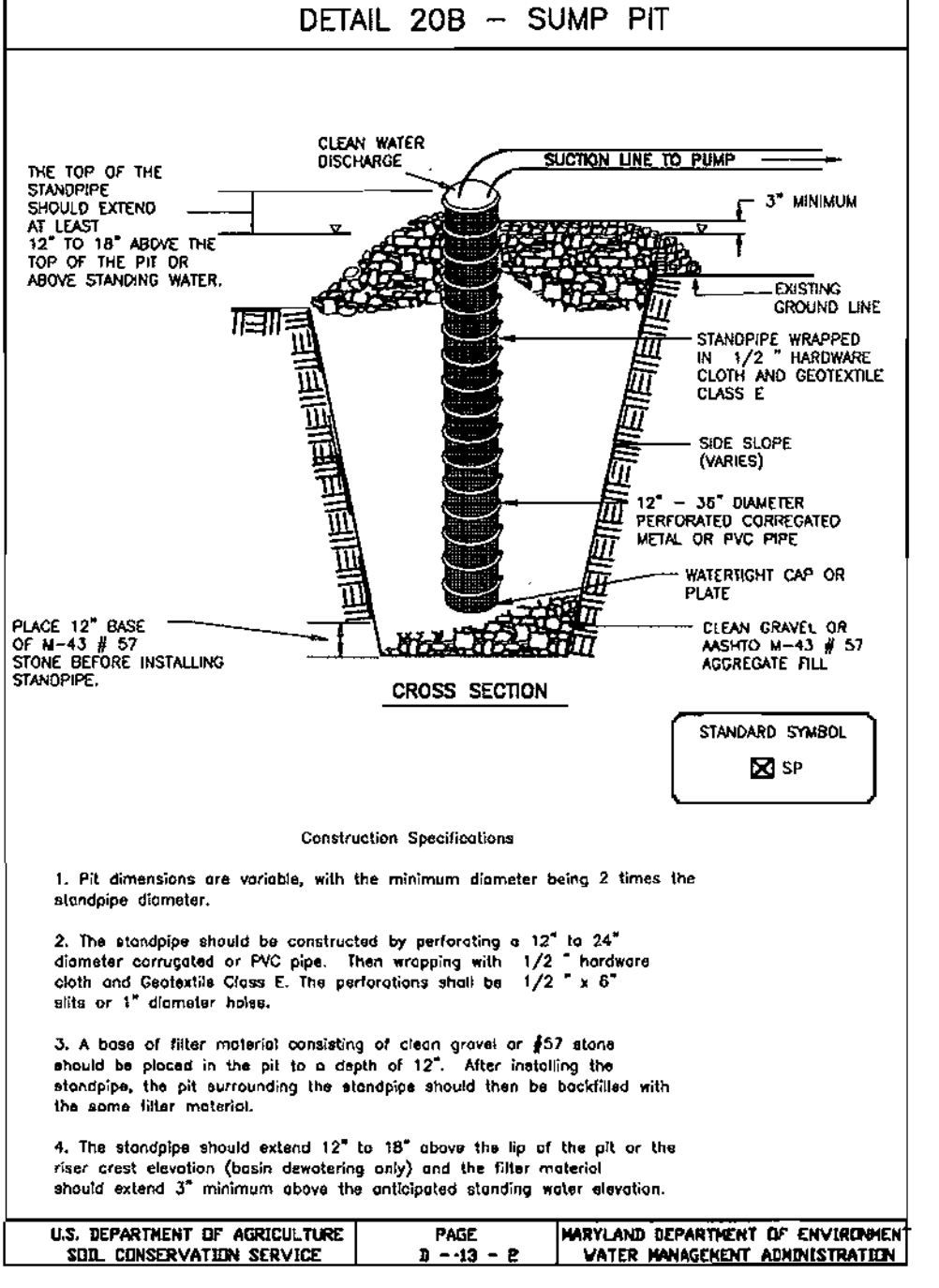
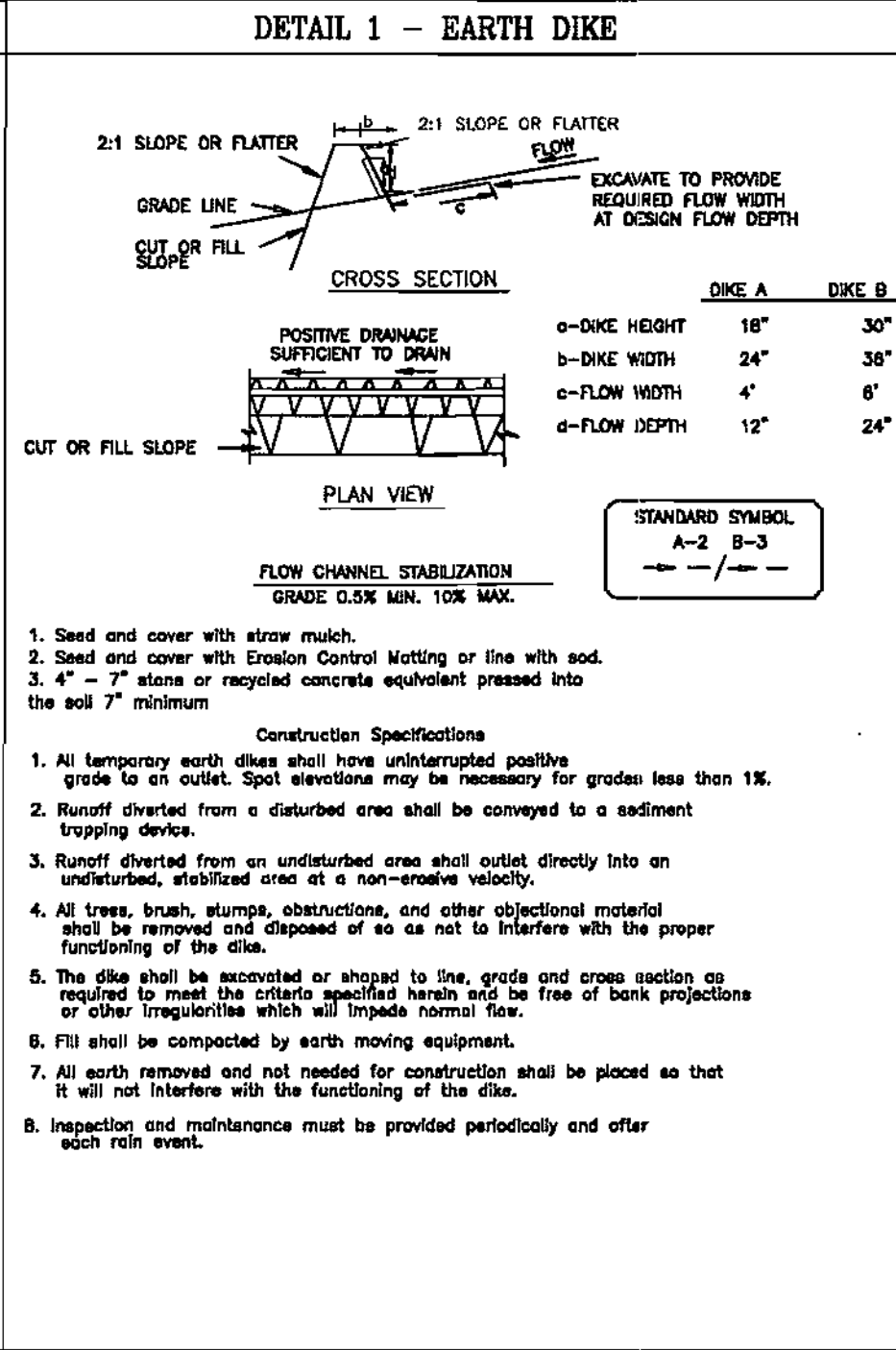
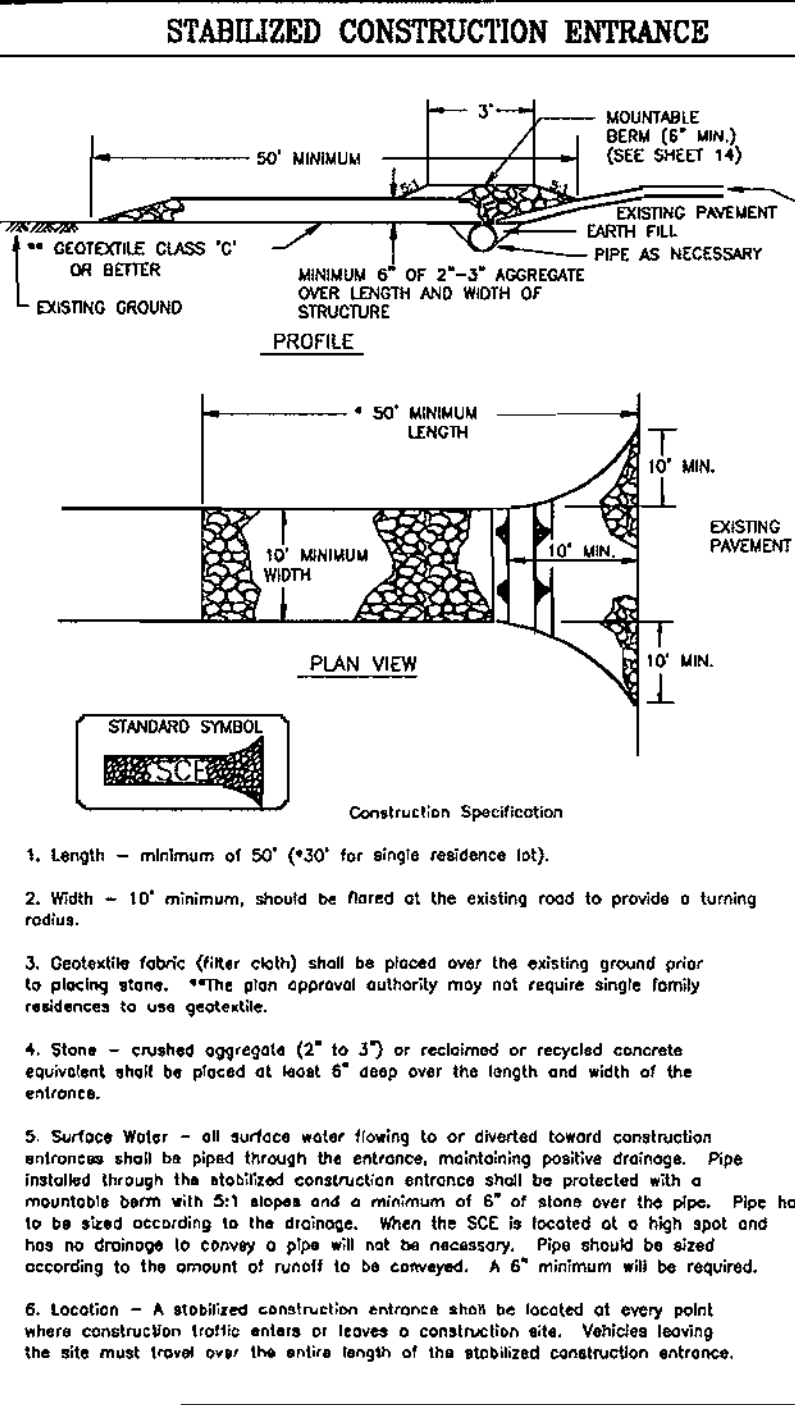
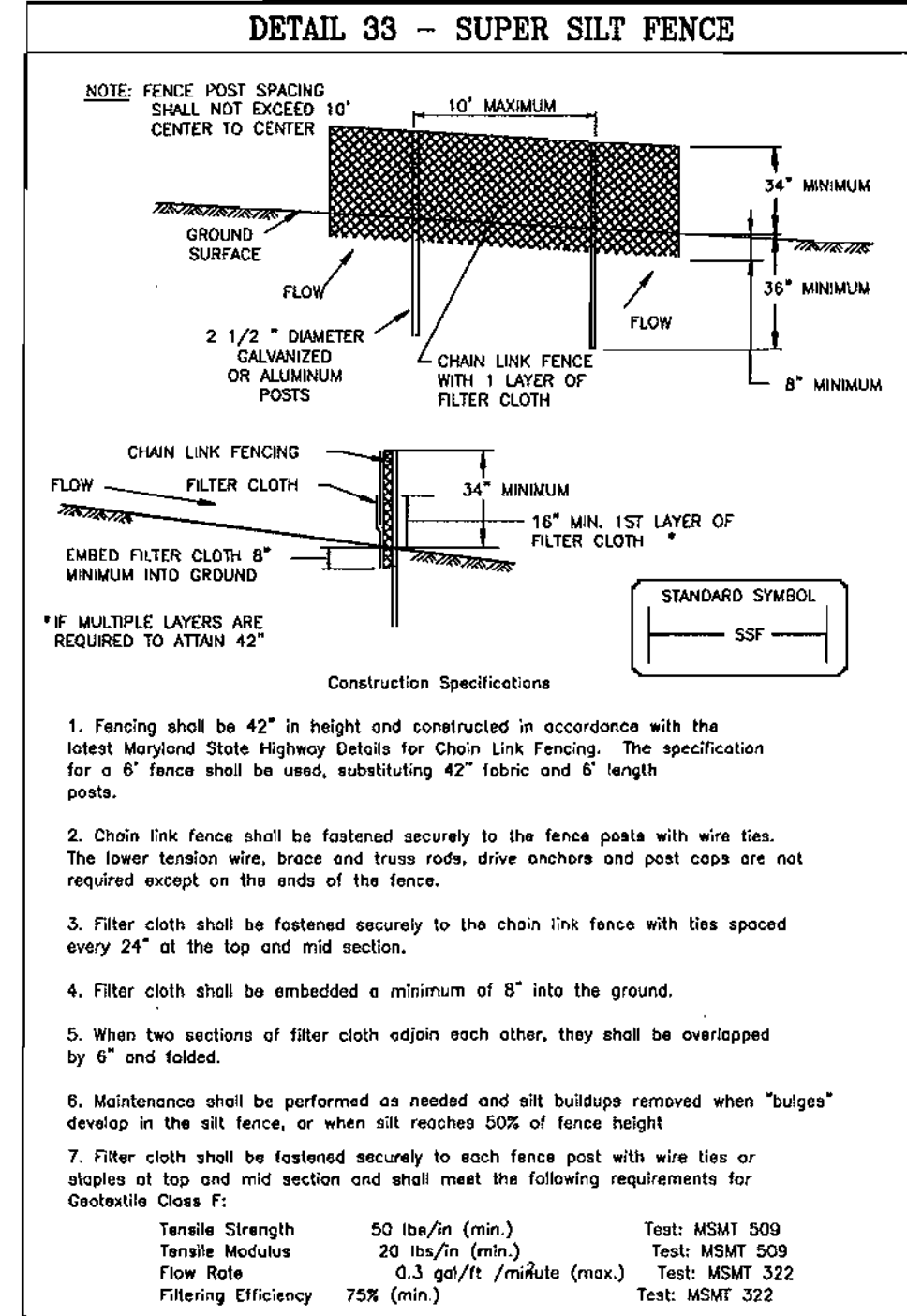
Signature of Engineer (print name below signature) Date: 1/16/05
DAVID F. MORGANTI

DEVELOPER'S CERTIFICATE

I/we certify that all development and construction will be done according to these plans, and that any responsible personnel involved in the construction of this project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.

Signature of Developer (print name below signature) Date: 1-15-05
GARY J. KISHUTE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Date: 2/2/05
Date: 2/1/05
Date: 2/16/05



DETAIL 1.4 - DIVERSION PIPE

INSTALL AT THE END OF WORK DAY THROUGH EXISTING PIPE, WITHIN DISTURBED AREA, OR THROUGH NEW PIPE TO MAINTAIN FLOW DURING NON-WORK HOURS.

PREPARED BY
URS
4 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND
TEL (410) 785-7220



DES:DTM/RKK					
DRN:RMC/HWC					
CHK:DTM/RKK					
DATE: 10/8/04	BY NO.		REVISION		DATE

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

DEVELOPER:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
COLUMBIA, MARYLAND 21045

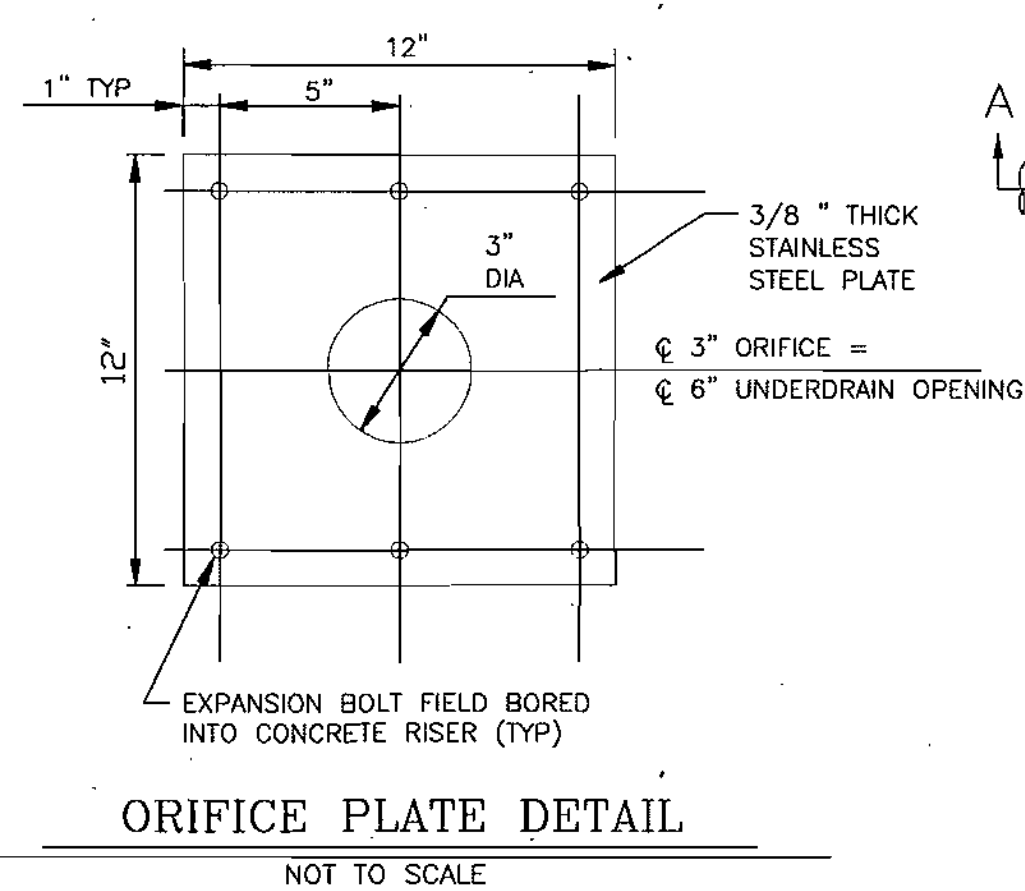
TAX MAP: 50
GRID: 1&2
ZONED: R-20 & R-SC
PARCEL NO.: 364
CENSUS TRACT: 6069.03
WATER CODE: C06
SEWER CODE: 7170900

HIGH RIDGE PARK
EROSION & SEDIMENT CONTROL NOTES & DETAILS

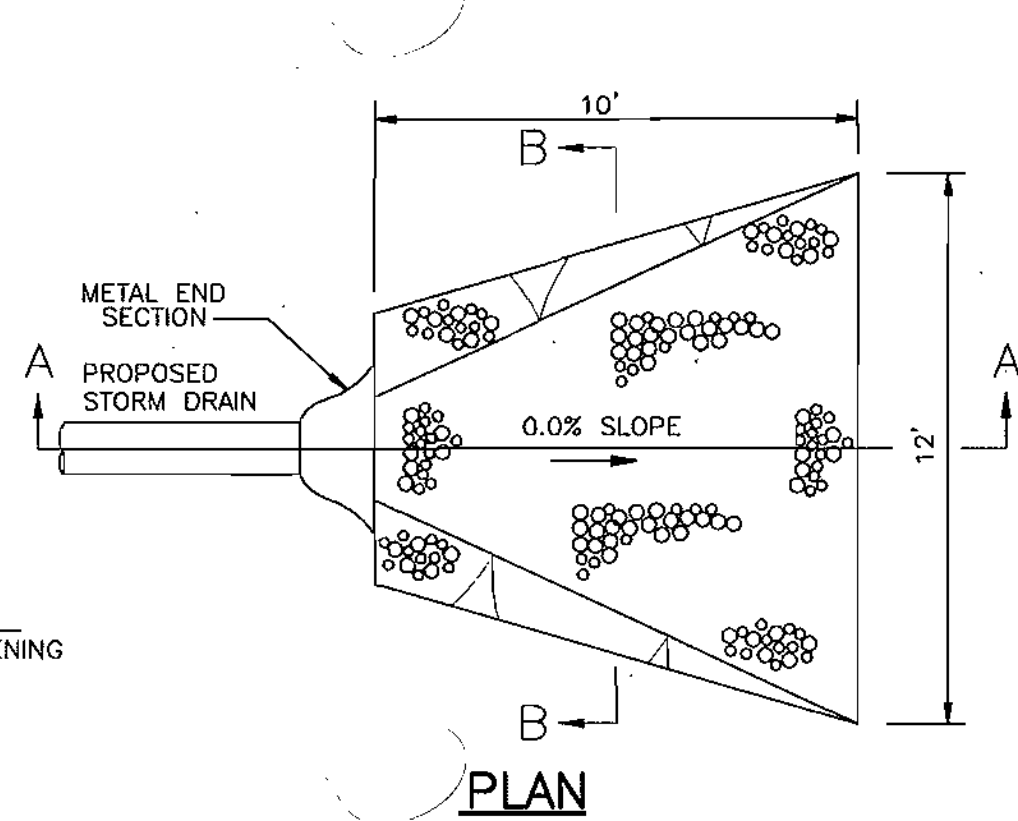
DEED REFERENCE: LIBER 6771, FOLIO 685
ELECTION DISTRICT NO. 6, HOWARD COUNTY, MARYLAND

SHEET 25 OF 39
SDP-05-19

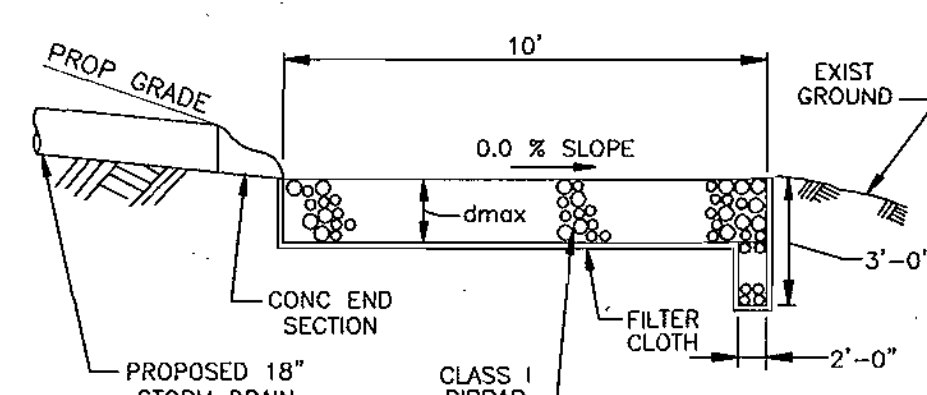
NOTE: ORIFICE PLATE TO BE INSTALLED OVER 6" UNDERDRAIN OPENING BEFORE GRADING STARTS.



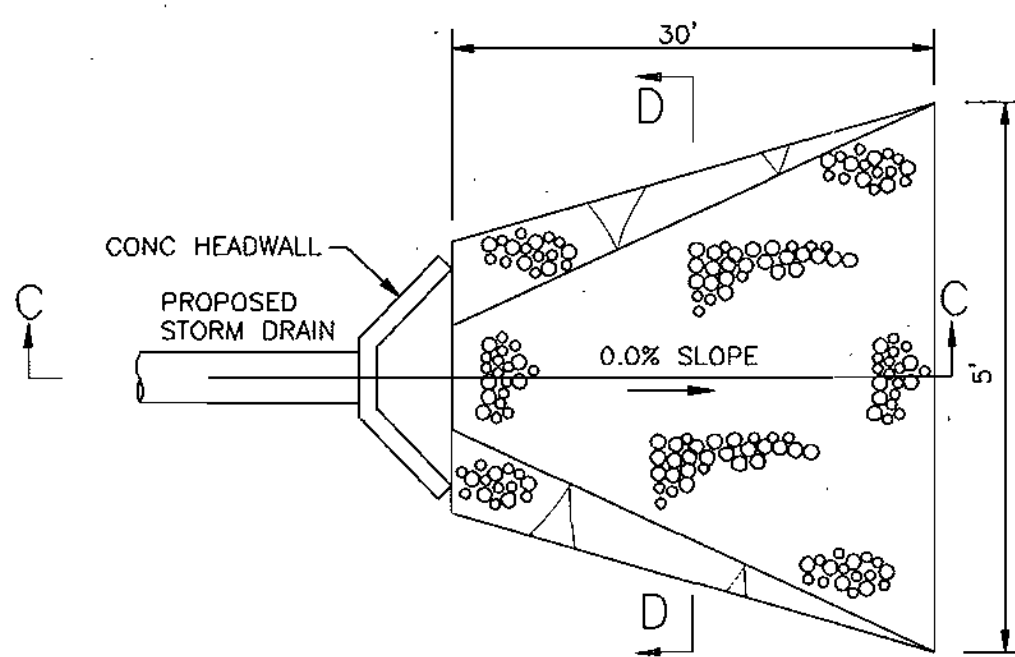
ORIFICE PLATE DETAIL
NOT TO SCALE



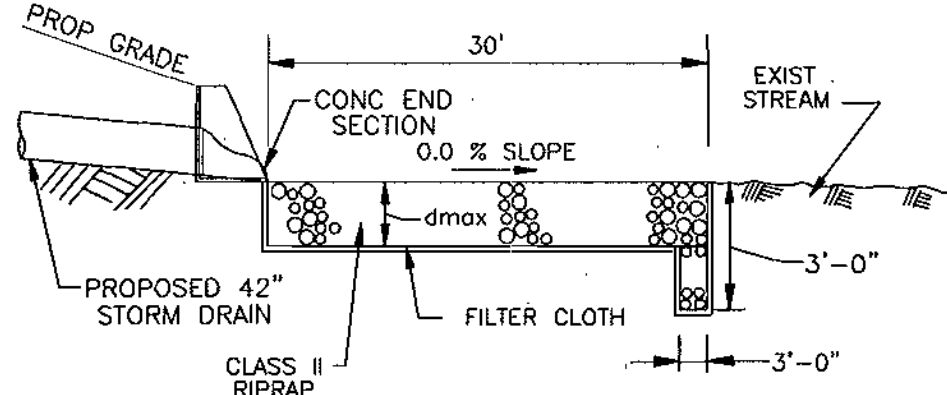
PLAN



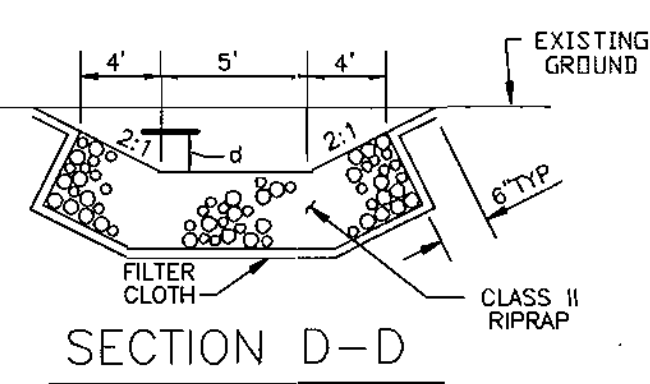
SECTION A-A



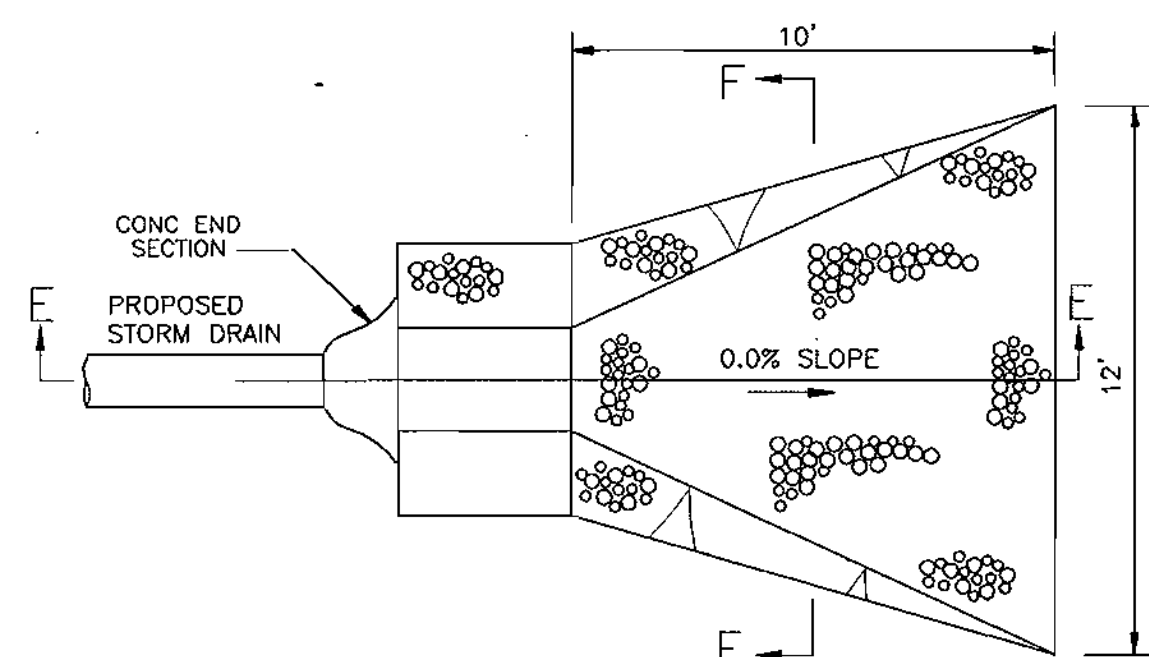
HW-2 OUTFALL PROTECTION
NOT TO SCALE



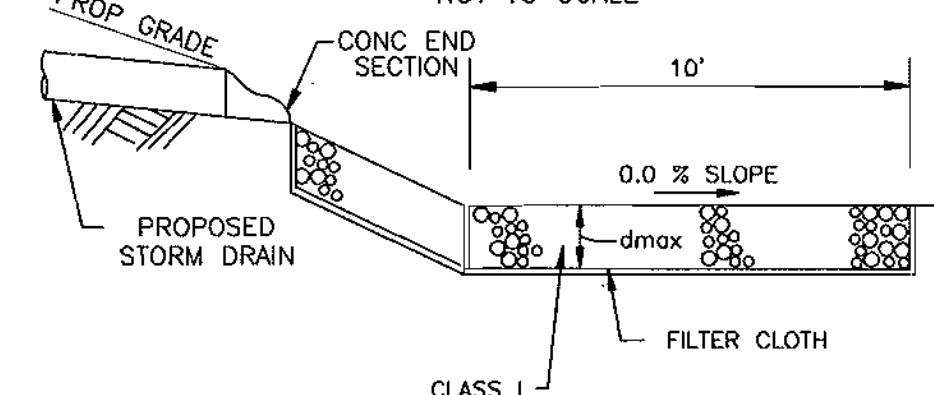
SECTION C-C



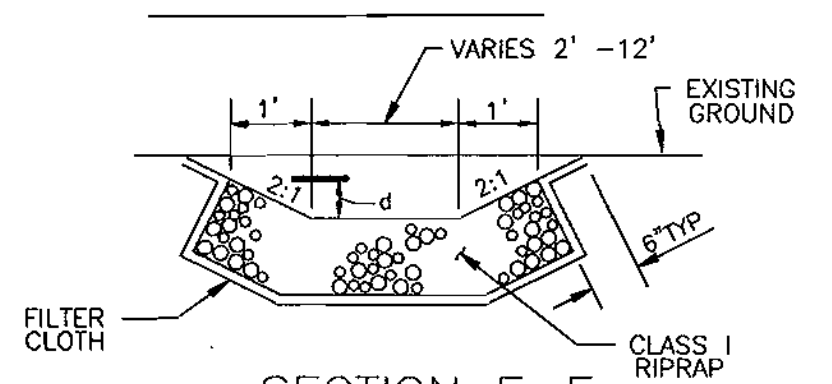
SECTION D-D



ES-2 AND ES-4 OUTFALL PROTECTION
NOT TO SCALE



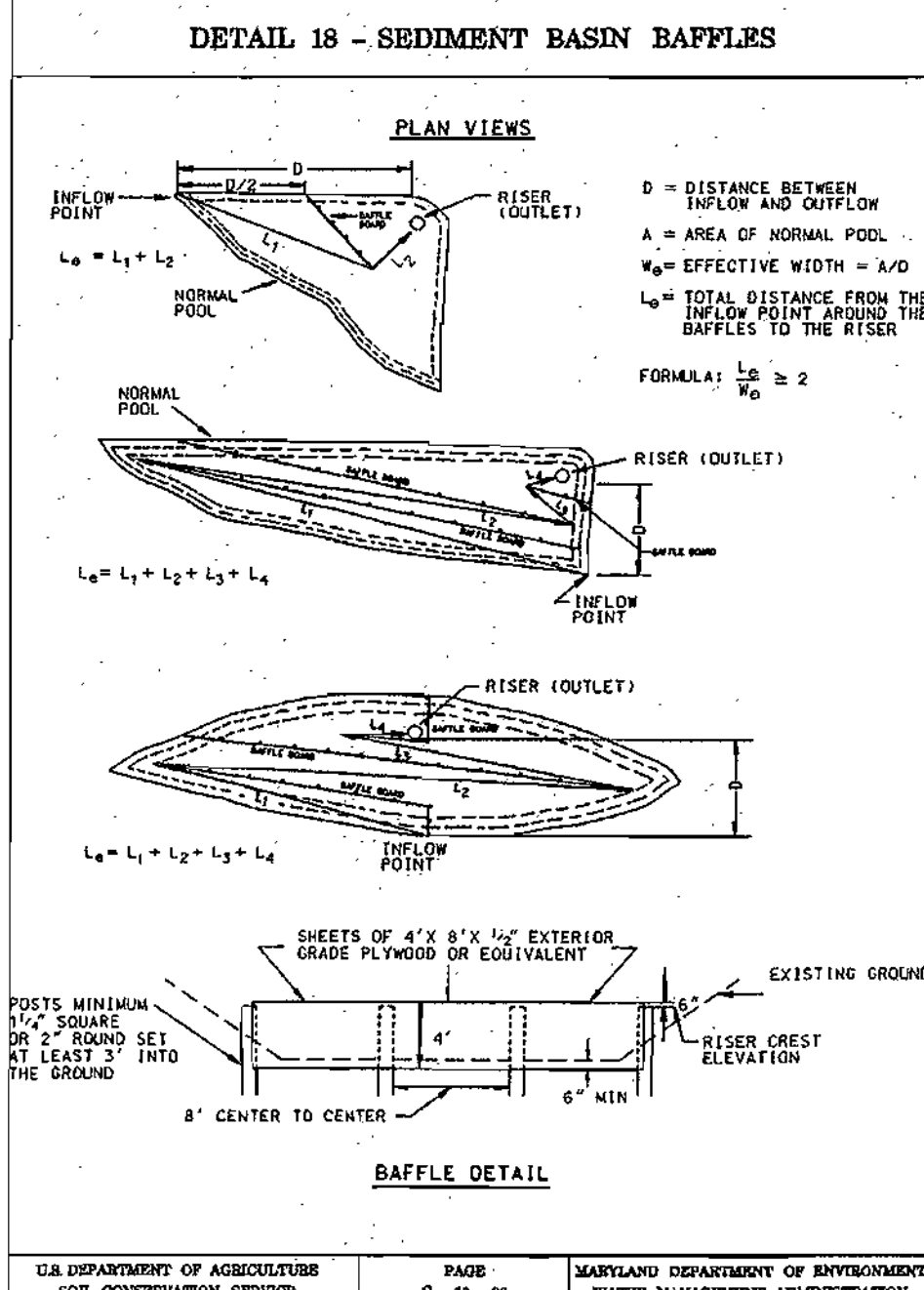
SECTION E-E



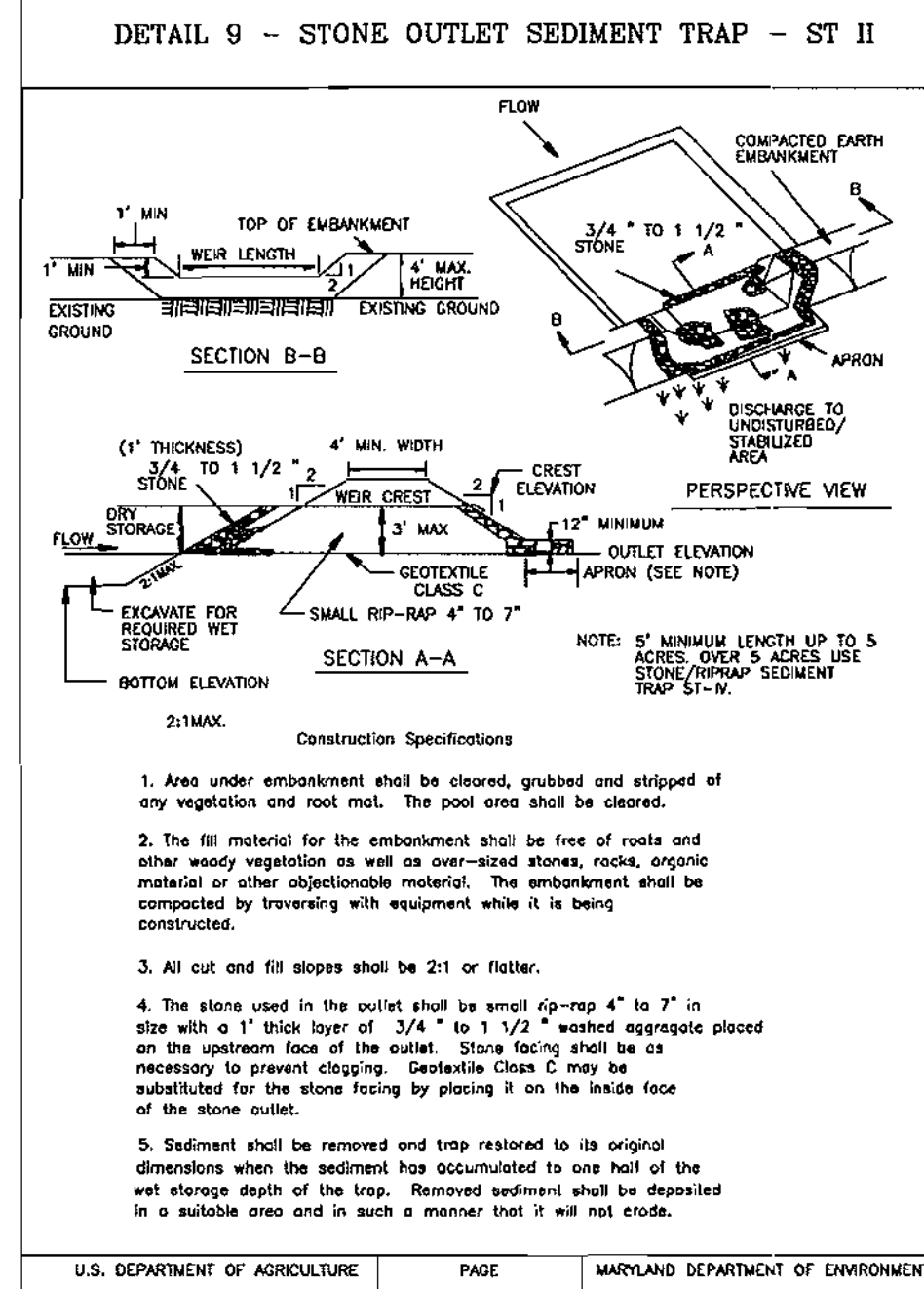
SECTION F-F

OUTFALL	dmax	d50	Q	V	d
HW-2	32"	16"	113.3	12.5	2.0'
ES-1	19"	9.5"	9.3	5.25	2.0'
ES-2	19"	9.5"	5.3	6.75	6"
ES-3	19"	9.5"	8.4	2.7	2.0'
ES-4	19"	9.5"	2.2	2.7	6"

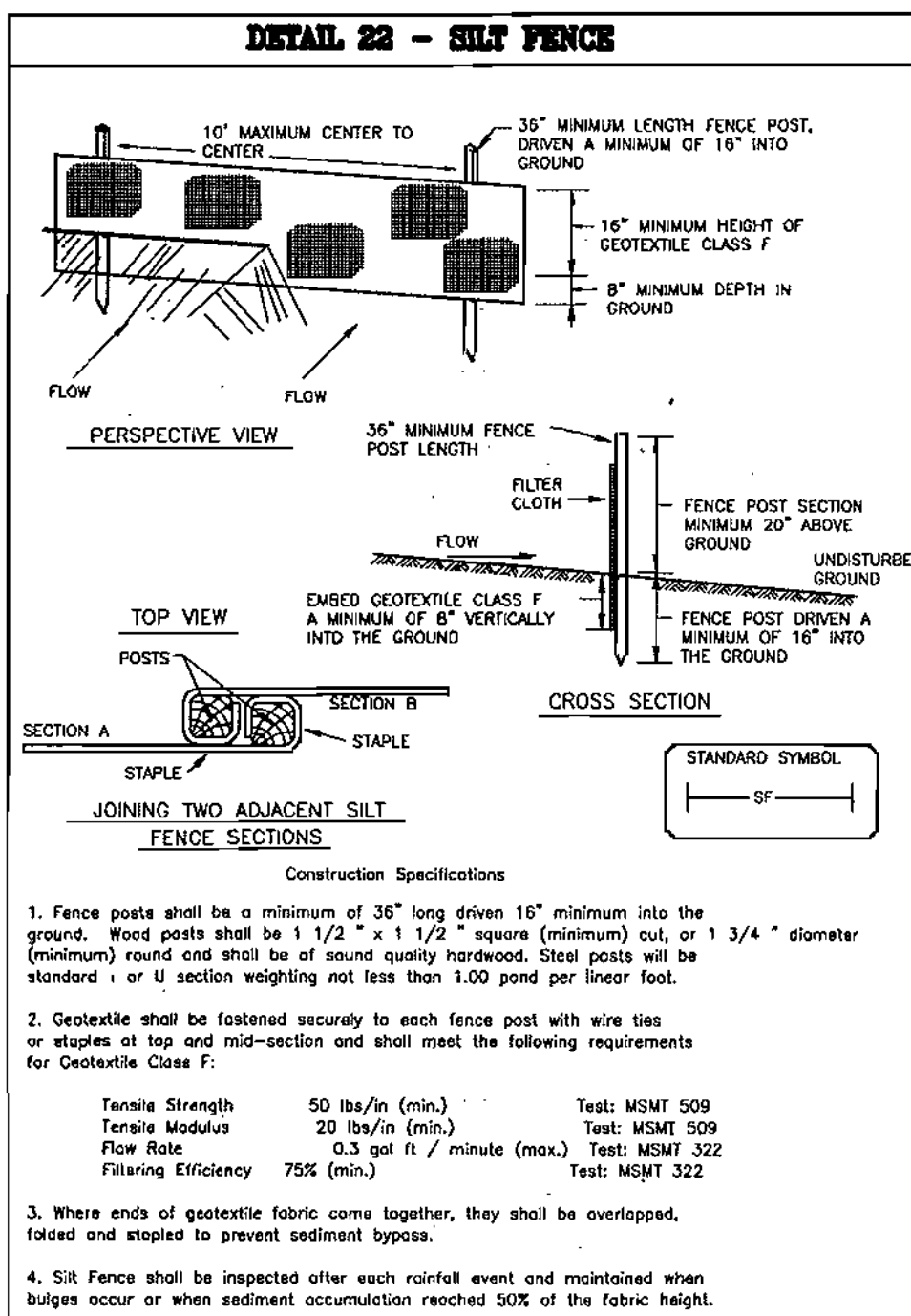
ALL Q'S AND V'S ARE BASED ON A 10-YEAR STORM EXCEPT FOR HW-2, WHICH IS BASED ON A 100-YEAR STORM.



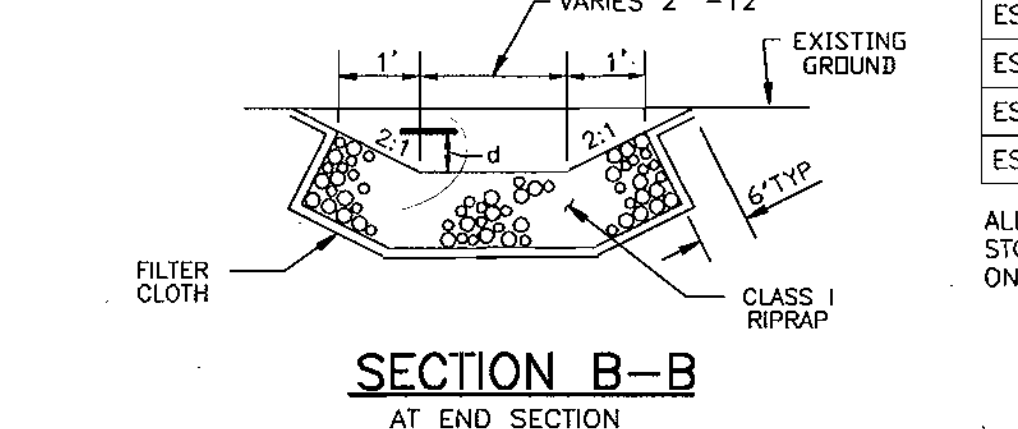
DETAIL 18 - SEDIMENT BASIN RAFFLES



DETAIL 9 - STONE OUTLET SEDIMENT TRAP - ST II

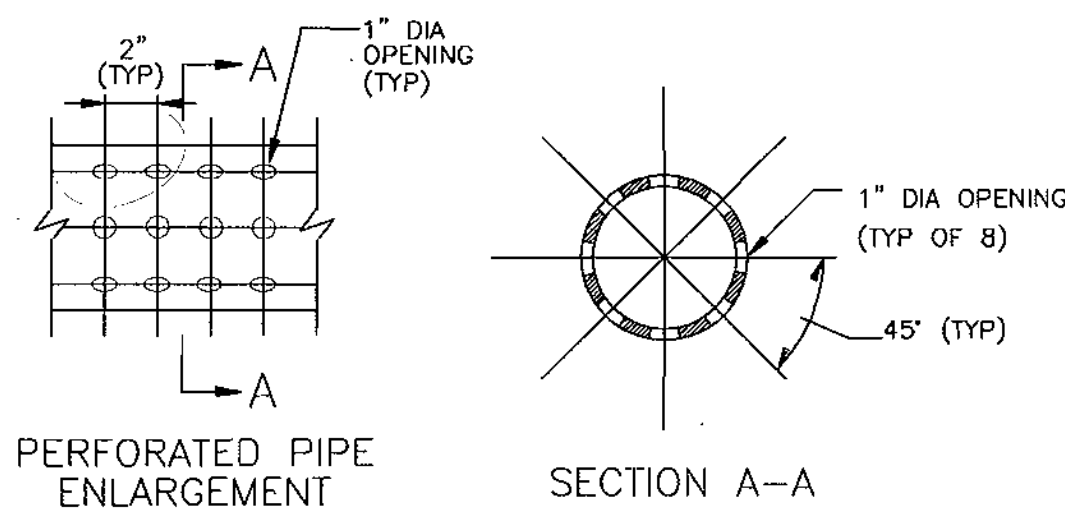


DETAIL 22 - SILT FENCE

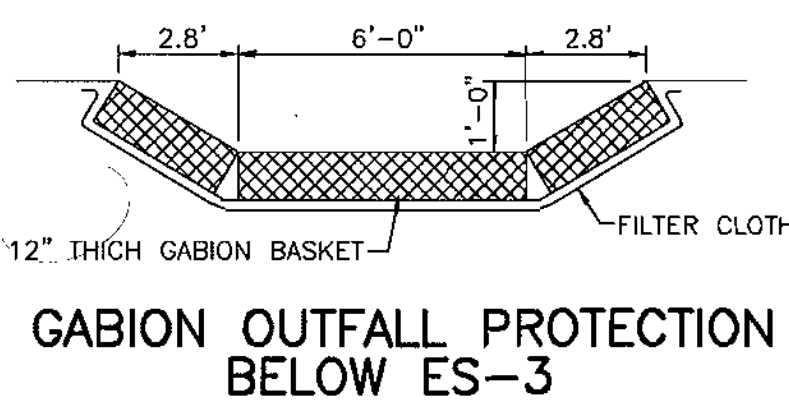


SECTION B-B
AT END SECTION

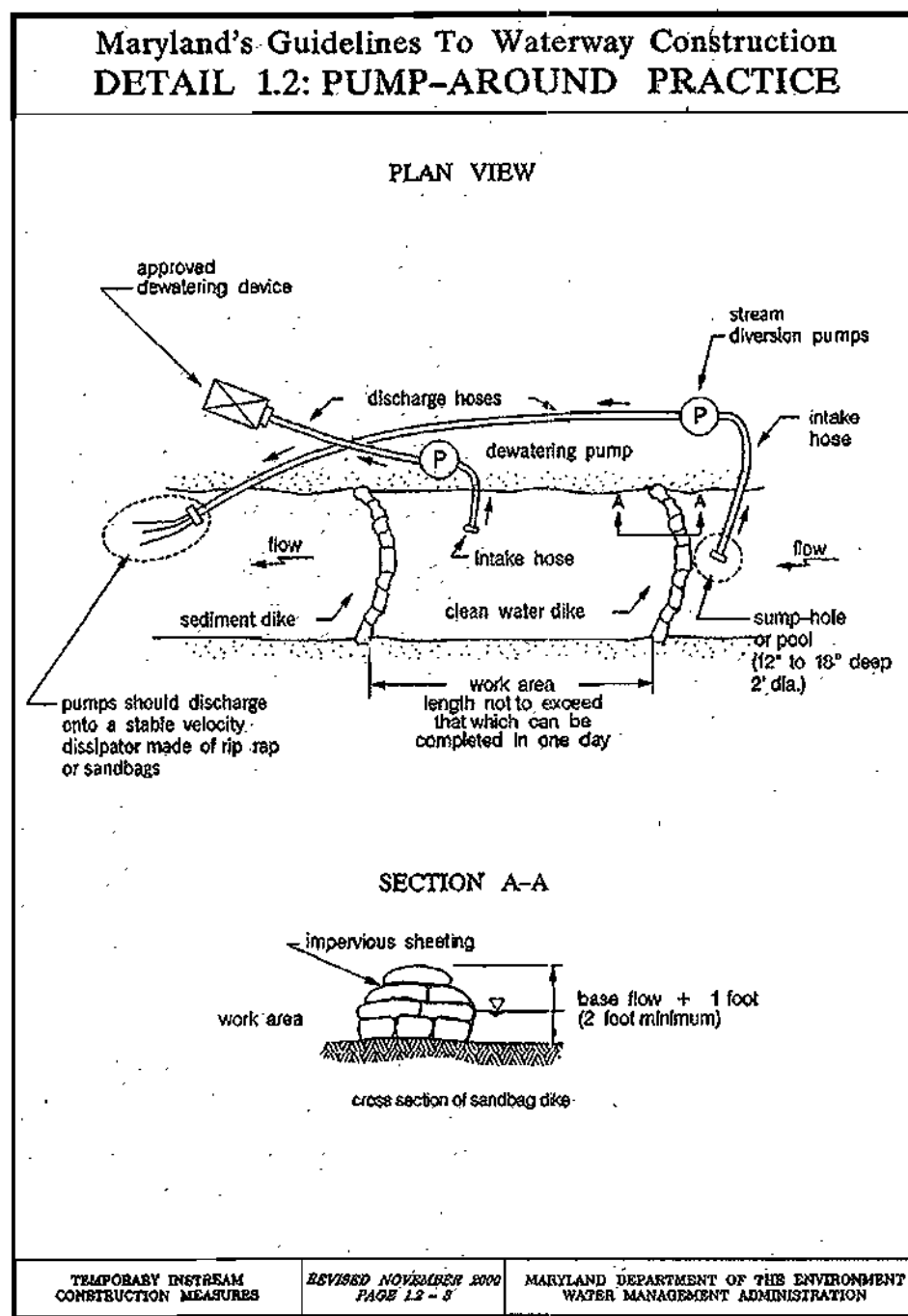
ES-1 AND ES-3 OUTFALL PROTECTION
NOT TO SCALE



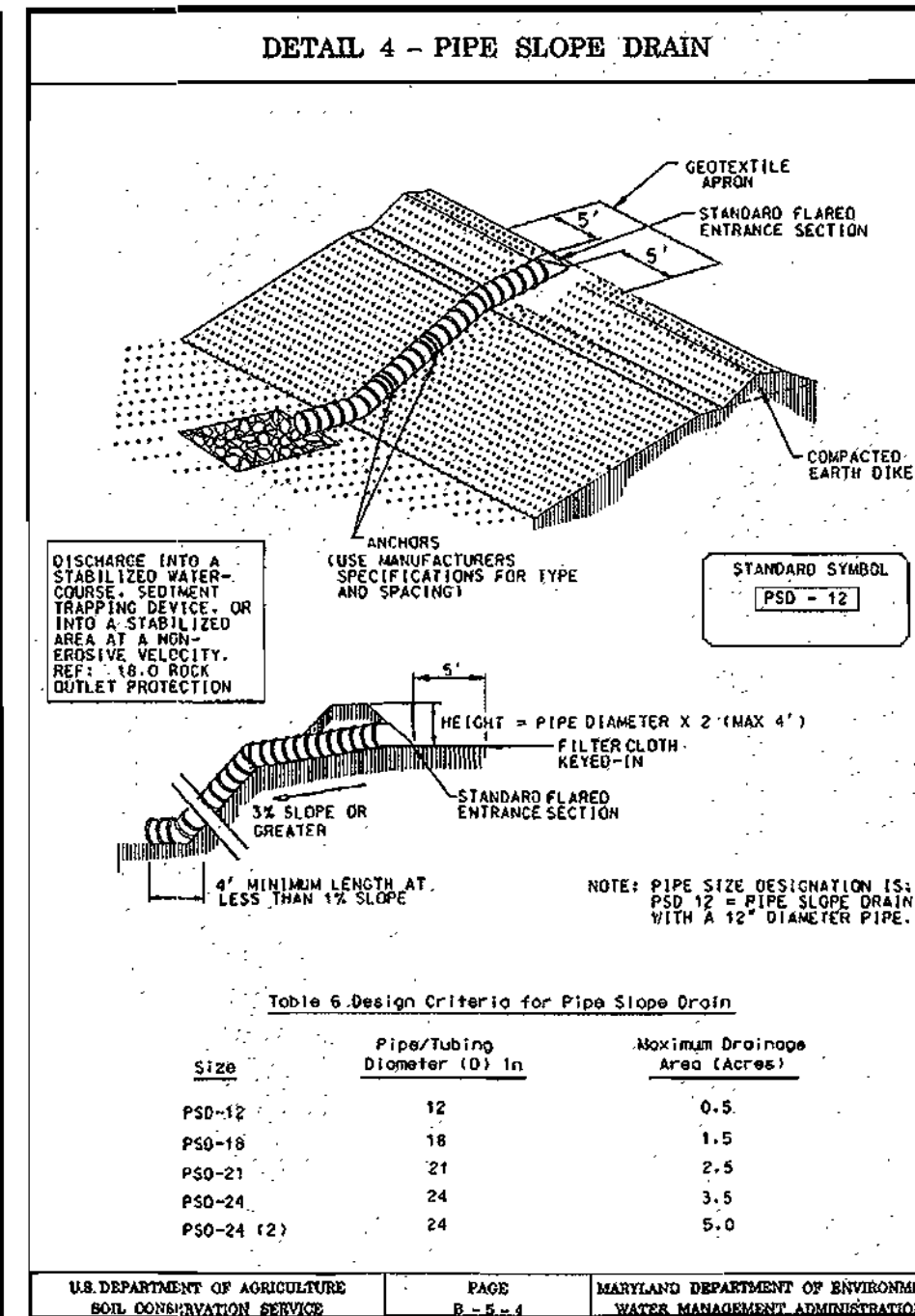
DRAW-DOWN DEVICE
NOT TO SCALE



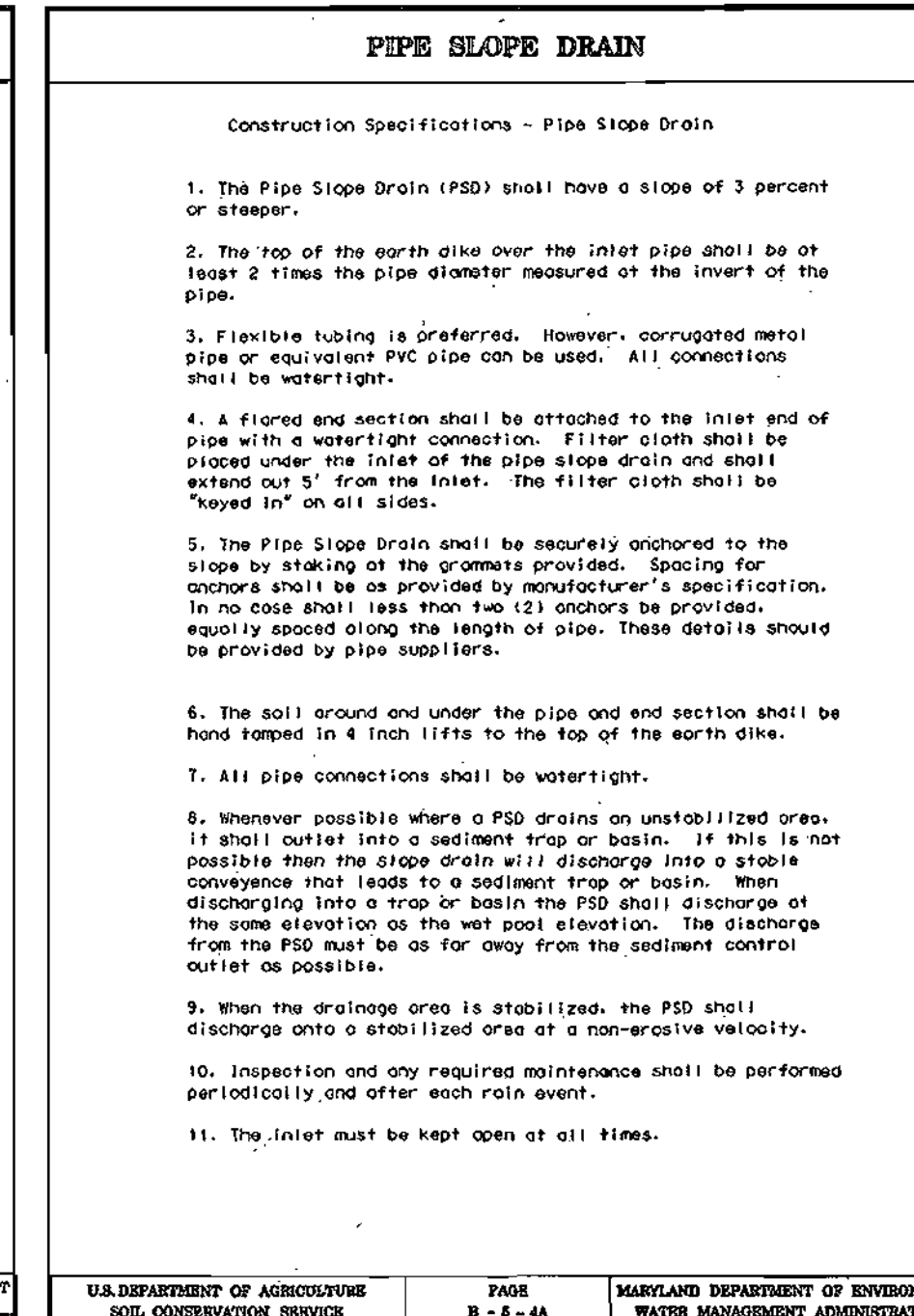
GABION OUTFALL PROTECTION BELOW ES-3
NTS



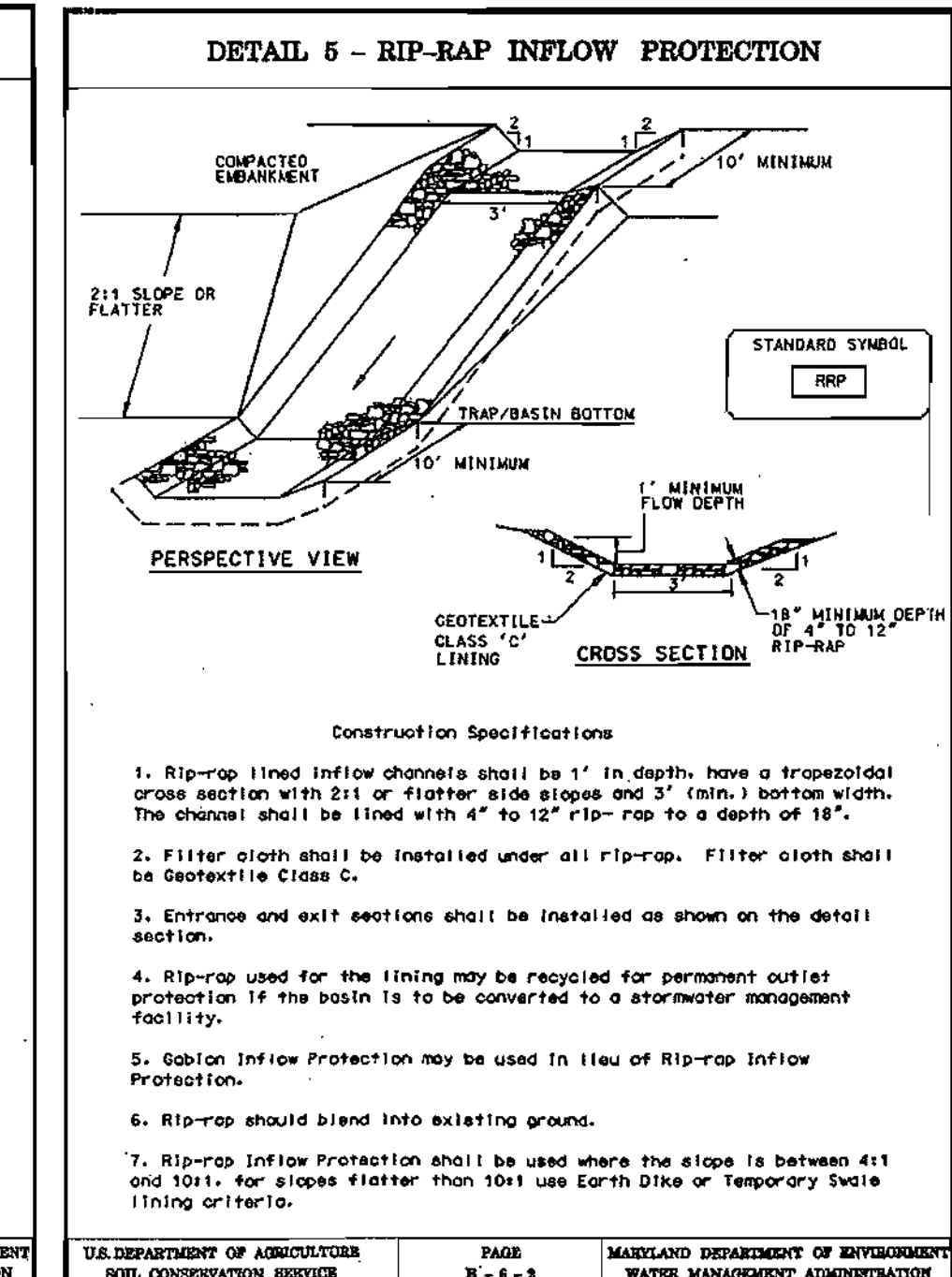
Maryland's Guidelines To Waterway Construction
DETAIL 1.2: PUMP-AROUND PRACTICE



DETAIL 4 - PIPE SLOPE DRAIN



PIPE SLOPE DRAIN



DETAIL 5 - RIP-RAP INFLOW PROTECTION

APPROVED: *[Signature]*
DEPARTMENT OF PLANNING AND ZONING
Chief, Development Engineering Division
Chief, Division of Land Development
Director

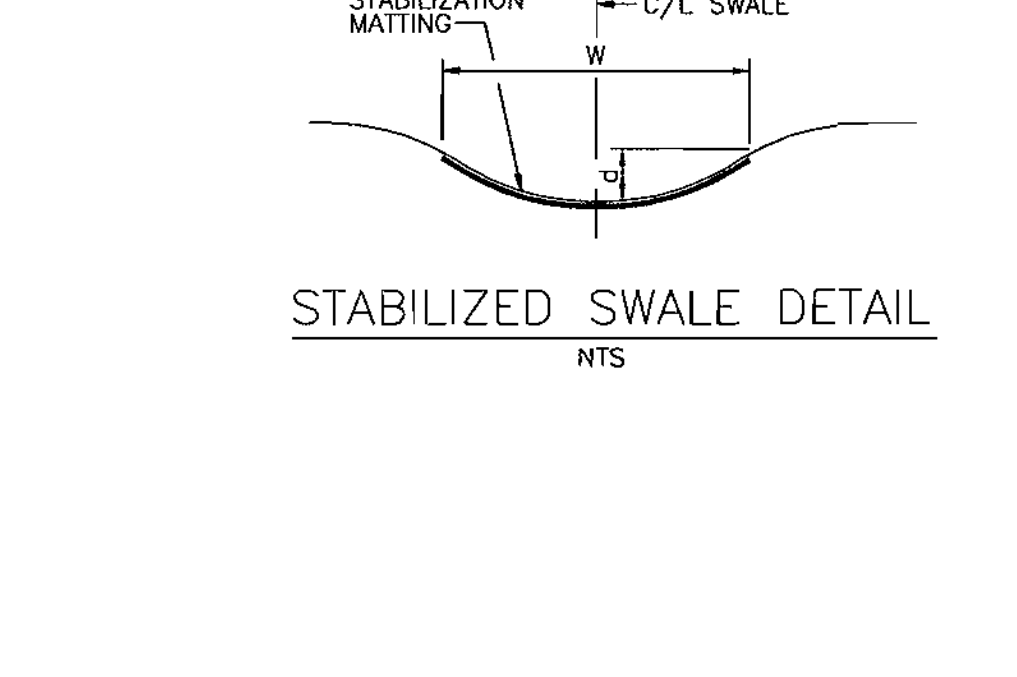
DESIGNER	DATE	BY	NO.	REVISION	DATE
DTM/RKK	10/8/04				
DRN/RMC/HWC					
CHK:DTM/RKK					

ENGINEER'S CERTIFICATE
"I certify that this plan pond construction and for sediment and erosion 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] 1/1/05
Signature of Engineer (print name below signature) Date

DEVELOPER'S CERTIFICATE
"I/we certify that all development and construction will be done according to these plans, and that any responsible personnel involved in the construction of this project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District. 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] 2-15-05
Signature of Developer (print name below signature) Date

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.
USDA - Natural Resources Conservation Service Date: 1/25/05
These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.
[Signature] 1/25/05
Howard SCD Date

DITCH LOCATION	Q10	V10	W	d
ADJ. TO ENTR. RD.	1.6'	4.0'	6.0'	1.0'
TO I-2	1.0'	2.0'	4.0'	0.5'
TO I-3	1.5'	2.5'	4.0'	0.5'



STABILIZED SWALE DETAIL
NTS

PREPARED BY
URS
4 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND
TEL: (410) 785-7220

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

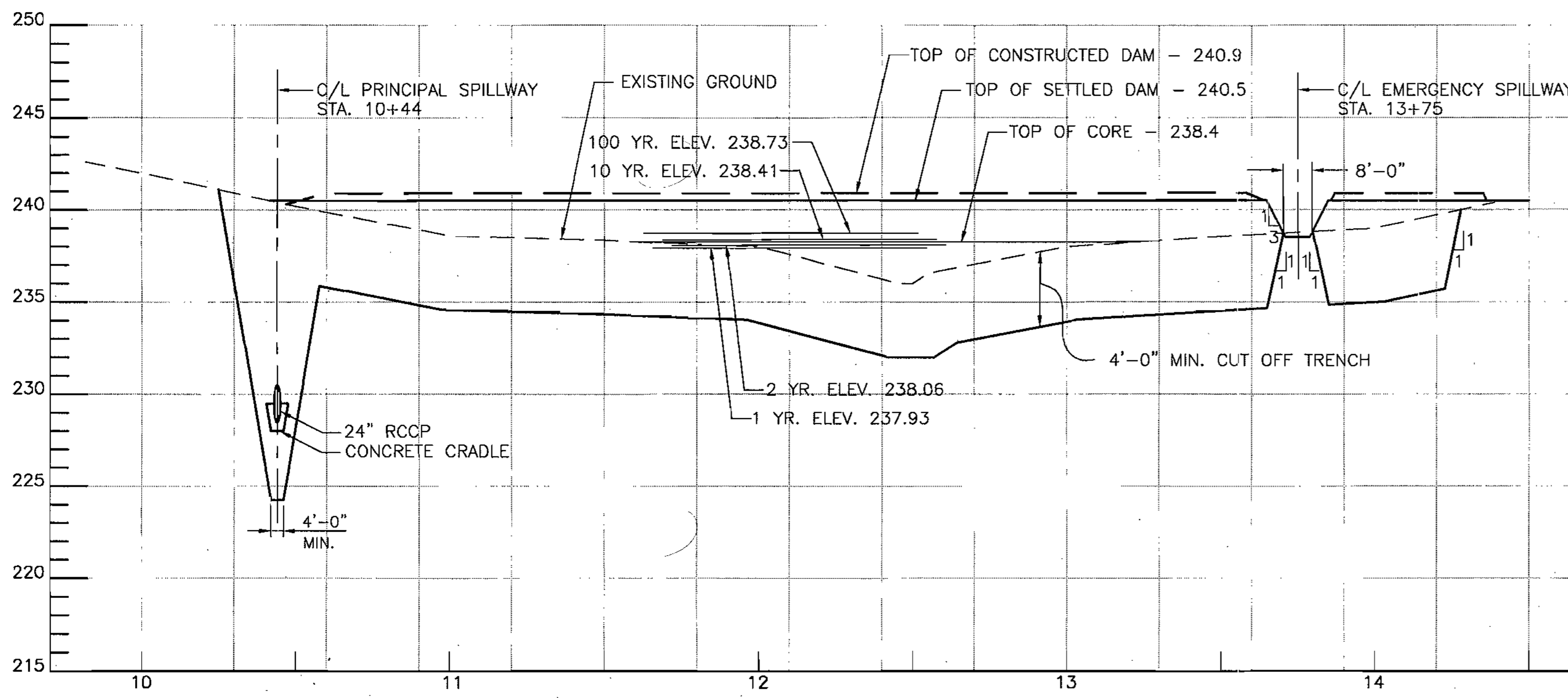
DEVELOPER:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
COLUMBIA, MARYLAND 21045

TAX MAP: 50
GRID: 1&2
ZONED: R-20 & R-SC
PARCEL NO.: 364
CENSUS TRACT: 6089.03
WATER CODE: C06
SEWER CODE: 7170900

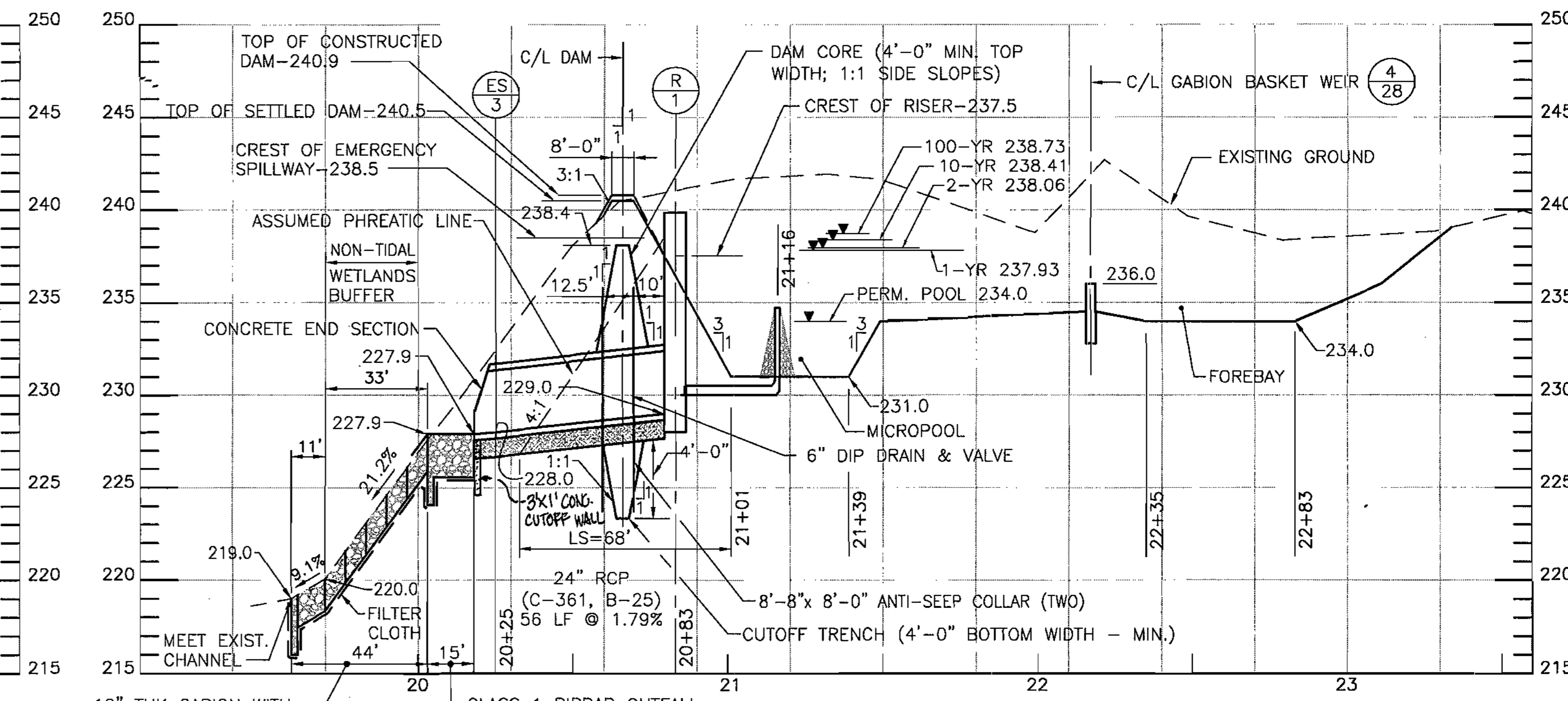
DEED REFERENCE: LIBER 8771, FOLIO 685
ELECTION DISTRICT NO. 6, HOWARD COUNTY, MARYLAND

HIGH RIDGE PARK
EROSION AND SEDIMENT CONTROL DETAILS

SHEET 26 OF 39
SDP-05-19



1 PROFILE ALONG DAM
 SCALE: H 1"=30', V 1"=5'



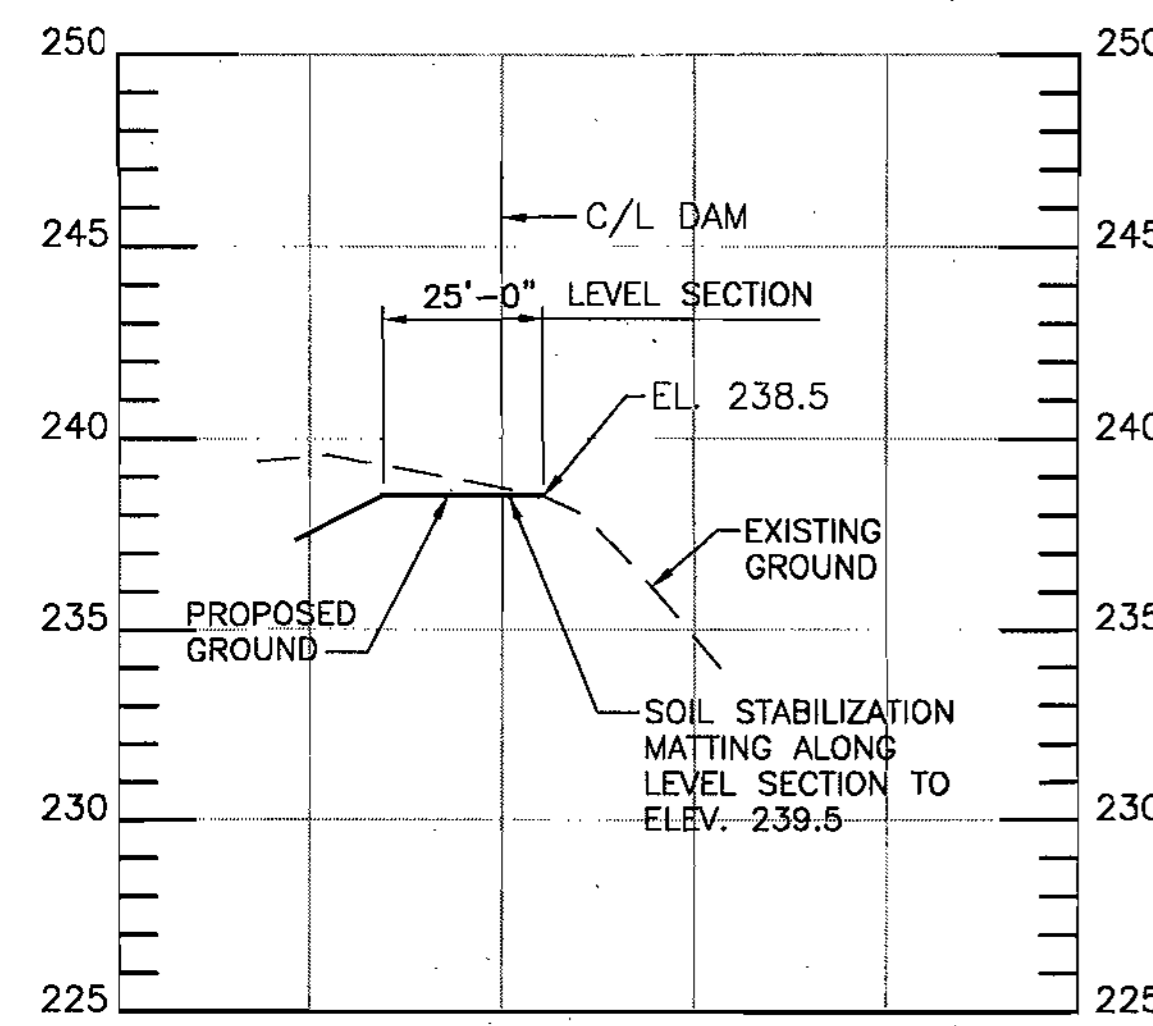
2 PROFILE - PRINCIPAL SPILLWAY
 SCALE: H 1"=30', V 1"=5'

OPERATION AND MAINTENANCE SCHEDULE FOR STORMWATER MANAGEMENT EXTENDED DETENTION FACILITY

- ROUTINE MAINTENANCE**
- FACILITY WILL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHOULD BE PERFORMED DURING WET WEATHER TO DETERMINE IF FUNCTIONING PROPERLY.
 - TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF TWO (2) TIMES A YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER.
 - DEBRIS AND LITTER NEXT TO THE OUTLET STRUCTURE SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
 - VISIBLE SIGNS OF EROSION IN THE POND AS WELL AS RIPRAP OUTLET AREAS SHALL BE REPAIRED AS SOON AS IT IS NOTICED.
- NON-ROUTINE MAINTENANCE**
- STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, THE RISER, AND THE PIPES SHALL BE REPAIRED UPON DETECTION OF ANY DAMAGE. THE COMPONENTS SHOULD BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.
 - SEDIMENT SHOULD BE REMOVED WHEN ITS ACCUMULATION SIGNIFICANTLY REDUCES THE DESIGN STORAGE, INTERFERES WITH THE FUNCTION OF THE RISER, WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, OR WHEN DEEMED NECESSARY BY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

OPERATION AND MAINTENANCE SCHEDULE FOR BIO-RETENTION AREAS

- ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING.
 - SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, TREATMENT OF ALL DEFICIENT STAKES AND WIRES.
 - MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 TO 3 YEARS.
 - SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.
- NOTE: CONTRACTOR SHALL ENSURE THAT THE S.W.M. FACILITY IS WATER TIGHT.**
- ALL PIPE CONNECTIONS AT STRUCTURES SHALL BE CEMENTED TO ENSURE WATER TIGHT CONNECTION.
 - ALL ACCOMP. PIPE JOINTS SHALL USE 12" WIDE HUGGER BAND WITH "O" RING GASKETS.
 - TEES AND ELBOWS TO BE FACTORY FABRICATED WELDS, ONE PIECE.
 - TRENCH BEDDING TO BE IN ACCORDANCE WITH RECOMMENDATIONS FROM THE GEOTECHNICAL ENGINEER IN THE FIELD.
 - PROVIDE WATER TIGHT JOINTS AT ALL PIPE CONNECTIONS. (FOR REINFORCED CONCRETE PIPE, ASTM C-361, RUBBER GASKET PIPE).

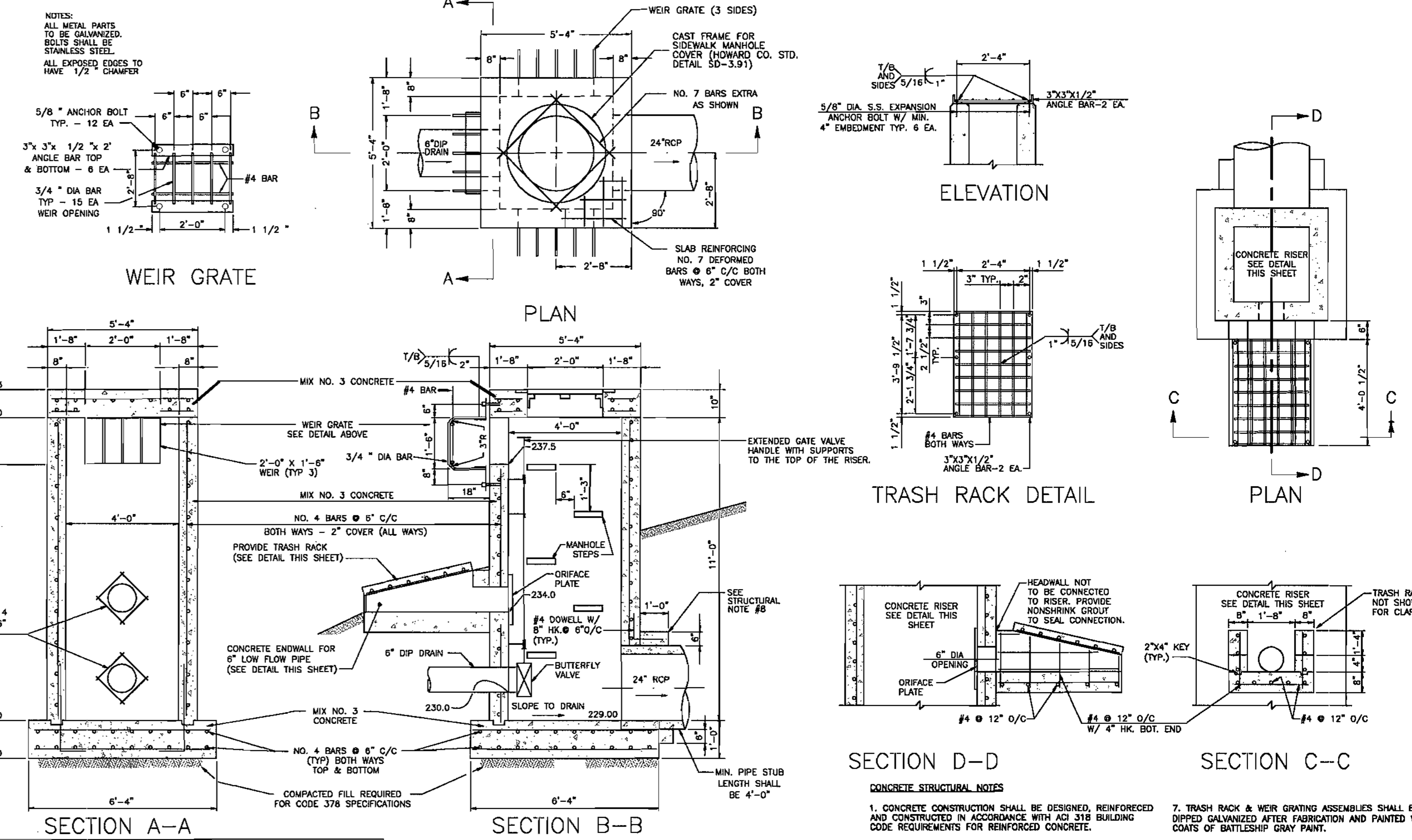


3 PROFILE ALONG EMERGENCY SPILLWAY
 SCALE: H 1"=30', V 1"=5'

BMP DATA SUMMARY							
ADDRESS	HIGH RIDGE PARK, HOWARD COUNTY, MD						
MS COORDINATES (NAD83)	NORTH 526,660		EAST 1,351,310				
ADC MAP GRID	1137/612						
STRUCTURE TYPE	EXTENDED-DETENTION (MICROPOOL/FOREBAY)						
MOP LAND USE	PARK						
STRUCTURE DRAINAGE AREA	5.04 ACRES						
TOTAL SITE DRAINAGE AREA	7.4 ACRES (DISTURBED)						
RCA - POST DEVELOPMENT	0.0						
ON/OFF SITE SWM	ON SITE STORMWATER MANAGEMENT						
OWNER	HOWARD COUNTY DEPT. OF RECREATION & PARKS						

STORMWATER SUMMARY CHART							
STORM	EXISTING PEAK DISCHARGE	PROPOSED PEAK INFLOW	PROPOSED PEAK DISCHARGES	PROPOSED POND ELEVATIONS	PROPOSED STORAGE VOLUMES	PROPOSED PEAK DISCHARGES	PROPOSED POND ELEVATIONS
	CFS	CFS	CFS	FT.	AC.-FT.	CFS	FT.
1 YR.	1.77	7.45	0.35	238.40	0.2312	5.71	237.93
2 YR.	3.31	10.59	0.41	237.11	0.3520	8.09	238.06
10 YR.	9.41	21.48	0.43	238.06	0.5481	15.35	238.41
100 YR.	17.27	34.24	25.39	238.64	0.6784	29.08	238.73

*LOW FLOW ORIFICE IN CLOGGED CONDITION



4 RISER DETAIL (R-1)
 NTS

AS-BUILT CERTIFICATION

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: _____ PE No. _____
 Date: _____

ENGINEER'S CERTIFICATE

I certify that this plan pond construction and for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.

Signature of Engineer (print name below signature): *DAVID T. MERICONI* Date: *1/11/05*

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division: *[Signature]* Date: *2/2/05*
 Chief, Division of Land Development: *[Signature]* Date: *2/4/05*
 Director: *[Signature]* Date: *2/10/05*

DEVELOPER'S CERTIFICATE

"I/we certify that all development and construction will be done according to these plans, and that any responsible personnel involved in the construction of this project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.

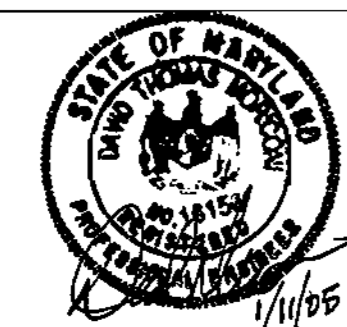
Signature of Developer (print name below signature): *GARY J. KATHNER* Date: *2-15-05*

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

USDA - Natural Resources Conservation Service Date: *1/25/05*

These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Howard SCD Date: *1/25/05*



DES: DTM/RKK			
DRN: HWC			
CHK: DTM/RKK			
DATE: 10/8/04	BY NO.	REVISION	DATE

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

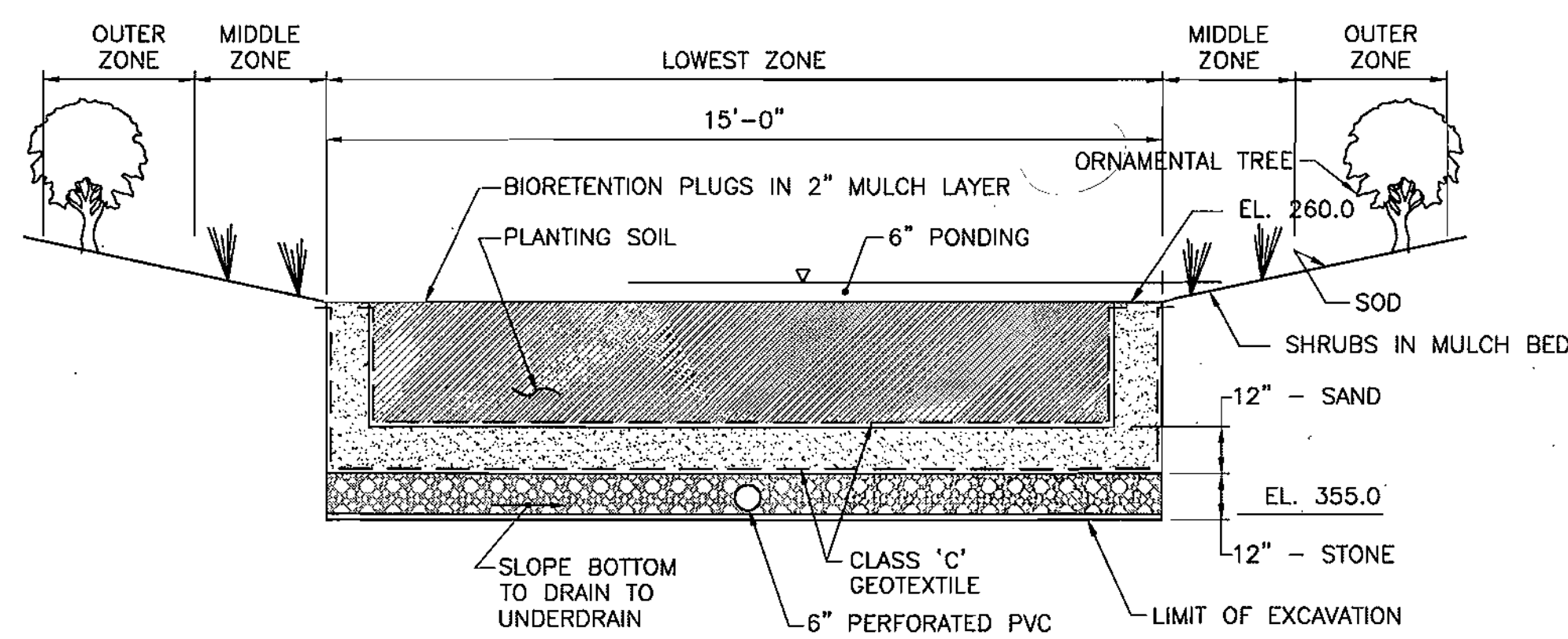
DEVELOPER:
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 9250 BENDIX ROAD
 COLUMBIA, MARYLAND 21045

TAX MAP: 50
GRID: 1&2
ZONED: R-20 & R-SC
PARCEL NO: 364
CENSUS TRACT: 6069.03
WATER CODE: C05
SEWER CODE: 7170900

HIGH RIDGE PARK
STORMWATER MANAGEMENT POND DETAILS

DEED REFERENCE: LIBER 8771, FOLIO 685
 ELECTION DISTRICT NO. 6, HOWARD COUNTY, MARYLAND

SHEET 27 OF 39
 SDP-05-19



1
28 NTS
TYPICAL SECTION - BIORETENTION AREA
NOTE: SEE LANDSCAPE PLAN FOR PLANTING

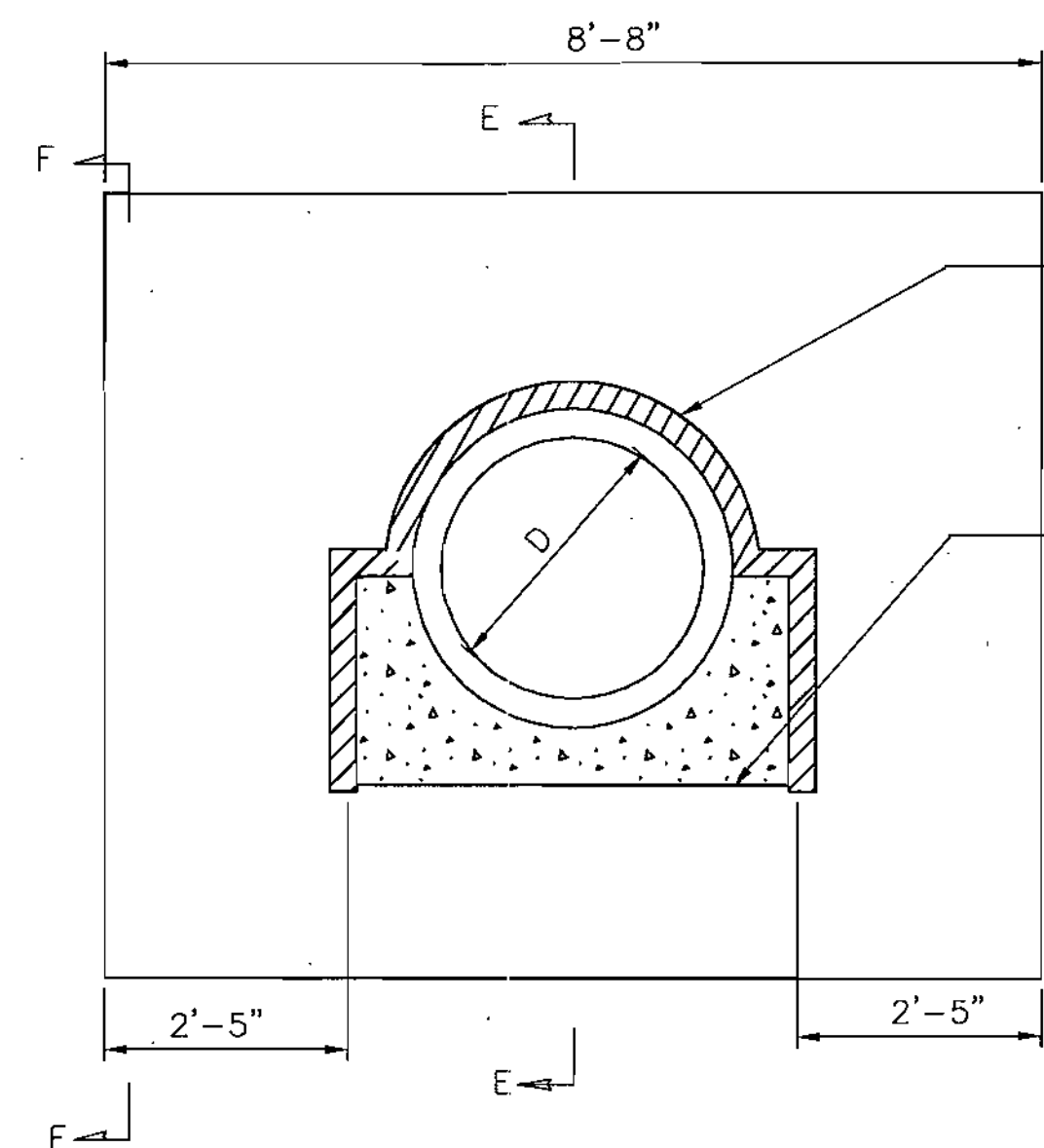
OWNERSHIP AND MAINTENANCE RESPONSIBILITY OF THIS STORMWATER MANAGEMENT FACILITY (F-6) BELONGS TO HOWARD COUNTY

MATERIAL SPECIFICATIONS FOR PLANTING AREA

- PLANTING SOIL:** SAND 35% - 60%
SILT 30% - 55%
CLAY 10% - 25%
- * PROVIDE FOR TESTING OF EXISTING SOILS FOR COMPLIANCE WITH BIORETENTION SPECIFICATIONS.
- GEOTEXTILE:** CLASS 'C'
OPENING SIZE PER ASTM-D-4751
GRAB TENSILE STRENGTH PER ASTM-D-4632
PUNCTURE RESISTANCE PER ASTM-D-4833
- GRAVEL:** AASHTO M-43 (0.25" TO 0.75")
- UNDERDRAIN PIPING:** 6" RIGID SCHEDULE 40 PVC OR SDR 35
3/8" PERFORATIONS @ 6" O.C., 4 HOLES PER ROW, MIN. OF 3" OF GRAVEL OVER PIPE

OPERATION, MAINTENANCE AND INSPECTION

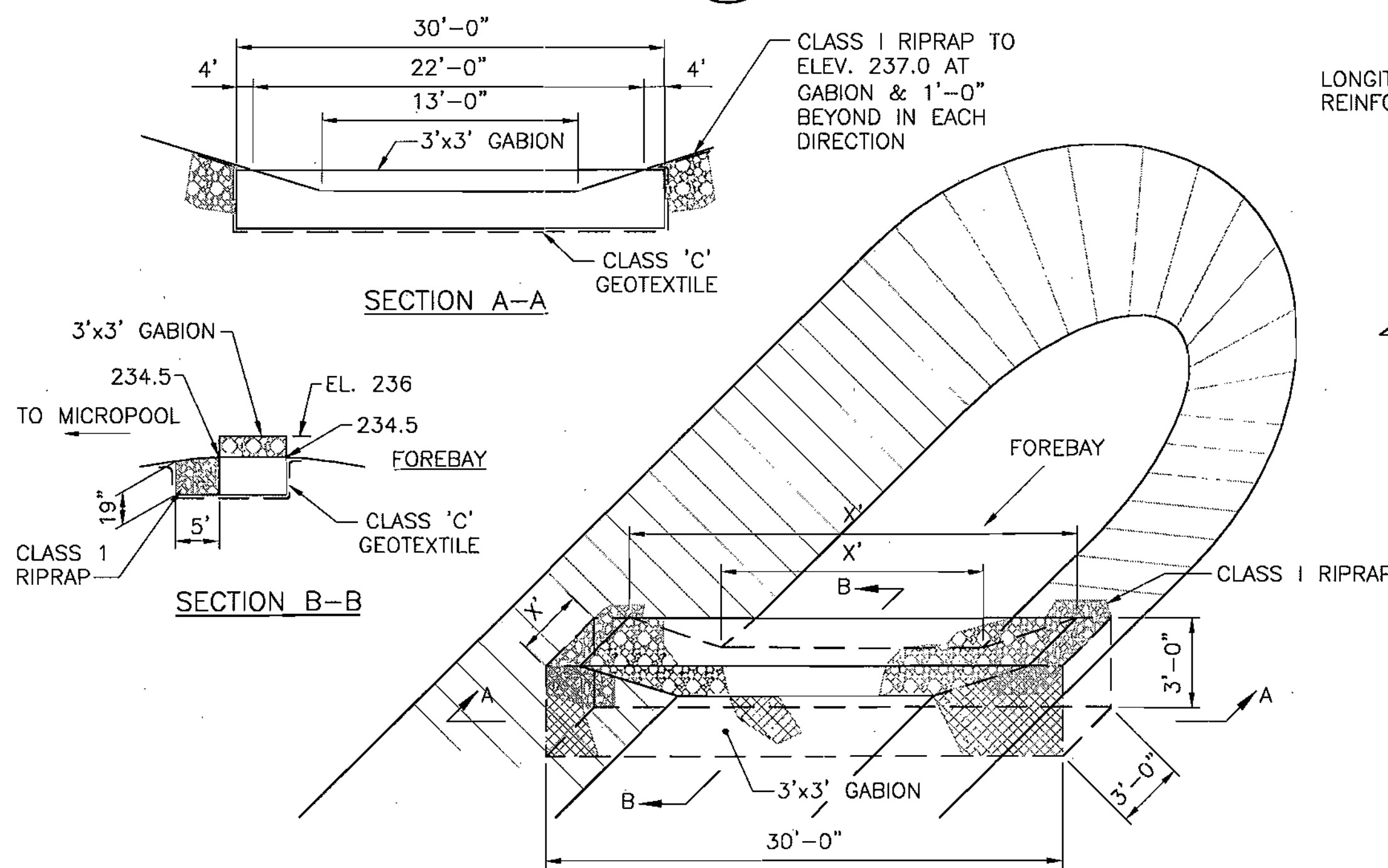
Inspection of the stormwater management facilities shown herein shall be performed at least annually, in accordance with the checklist and requirements contained within USDA, NRCS "Standards And Specifications For Ponds" (MD-378). The pond owner(s) and any heirs, successors, or assigns shall be responsible for the safety of the pond and the continued operation, surveillance, inspection, and maintenance thereof. The pond owner(s) shall promptly notify the Soil Conservation District of any unusual observations that may be indications of distress such as excessive seepage, turbid seepage, sliding or slumping.



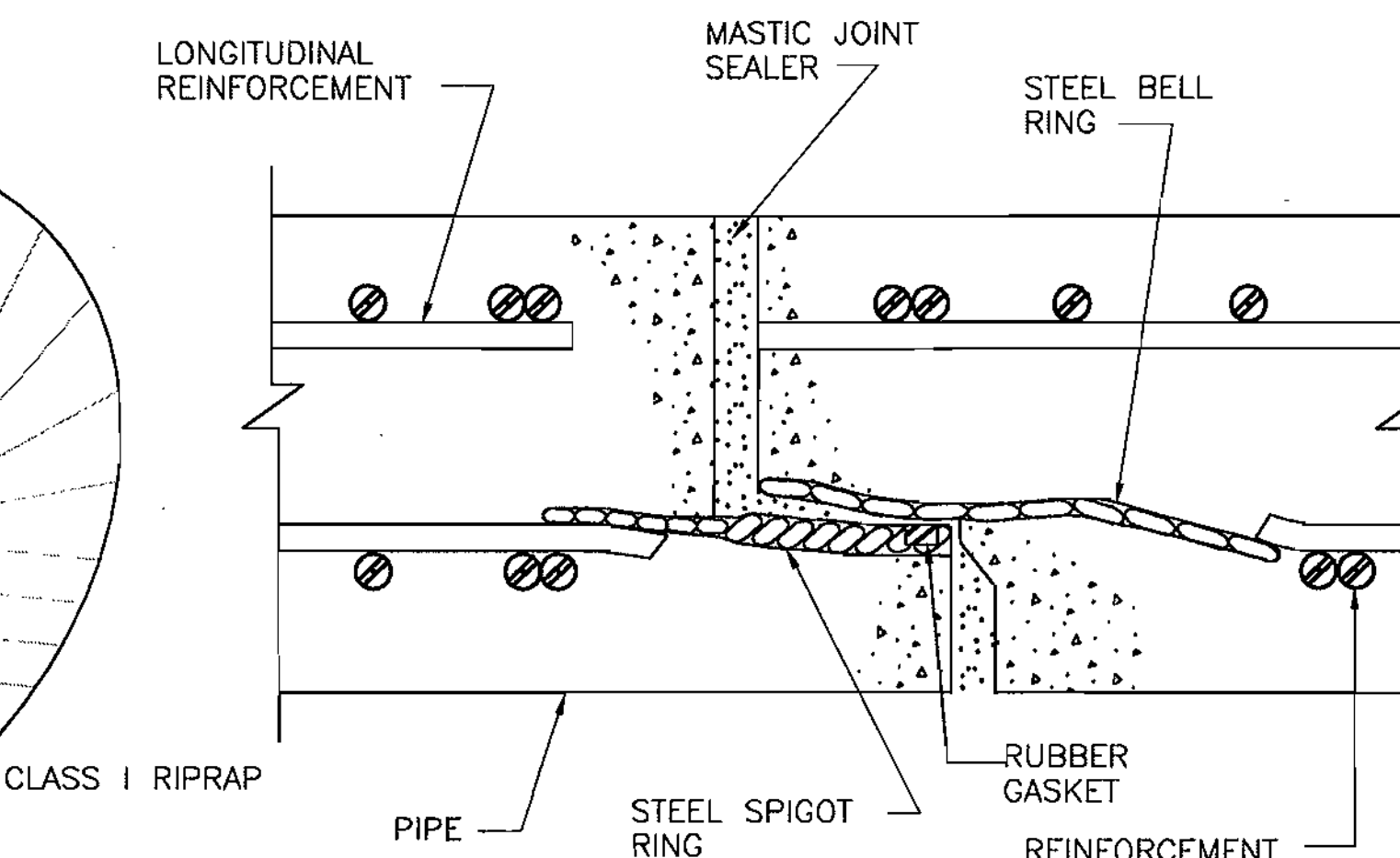
DETAIL SHOWN FOR EARTH FOUNDATION. FOR ROCK FOUNDATION, FOUND BOTTOM OF CRADLE ON ROCK LINE AND KEY COLLAR 6" INTO ROCK

PLAN VIEW

2
28 NTS
ALTERNATE FOR CLASS(a) DAMS LESS THAN 50FT HIGH



4
28 NTS
GABION BASKET WEIR

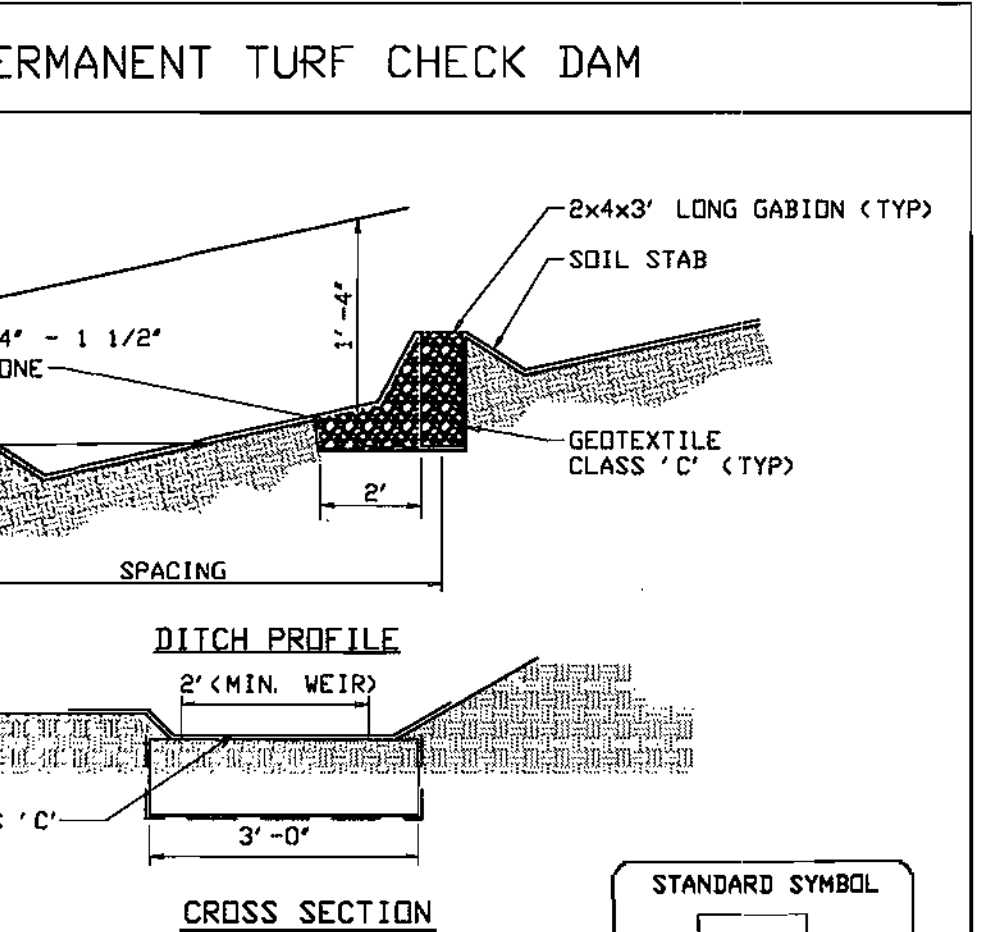


5
28 NTS
ASTM DESIGNATION C361

NOTE TO CONTRACTOR: ASTM C361 PIPE MAY BE DIFFICULT TO OBTAIN. ALLOW FOR AMPLE TIME PRIOR TO INSTALLATION TO ORDER PIPE FOR DELIVERY.

AS-BUILT CERTIFICATION
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.

3
28 NTS
A2 CONCRETE CRADLE DETAIL



PERMANENT TURF CHECK DAM

DITCH PROFILE
2" (MIN. WEIR)
3'-0"

CROSS SECTION

SLOPE	SPACING
2X or less	80'
2.1X to 4X	40'
4.1X to 7X	25'
7.1X to 10X	15'
over 10X	use lined waterway design

STANDARD GABION CHECK DAM DESIGN

SEE SHEET 17 FOR LOCATIONS

Construction Specifications

- Swales and ditches shall be prepared in accordance with the construction specifications described in Section A-2, Standards and Specifications for Temporary Swale.
- The check dam shall be constructed as shown. The soil shall be placed so that it completely covers the width of the channel and keyed into the channel banks.
- The top of the check dam shall be constructed so the the center is approximately 6" lower than the outer edges, forming a weir that water can flow across.
- The maximum height of the check dam at the center shall not exceed 6".
- The check dam shall be lined with soil stabilization matting.
- Accumulated sediment shall be removed when it has built up to 1/2 of the original height of the weir crest

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 3 - 8 - 3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

6
28 NTS
CHECK DAM

ENGINEER'S CERTIFICATE
I certify that this plan pond construction and for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.

Signature of Engineer (print name below signature) *David T. Moriconi* Date *1/16/05*

DEVELOPER'S CERTIFICATE
I/we certify that all development and construction will be done according to these plans, and that any responsible personnel involved in the construction of this project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.

Signature of Developer (print name below signature) *Gary J. Arthur* Date *2-15-05*

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

Signature *Jim Myers* Date *1/25/05*
USDA - Natural Resources Conservation Service

These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Signature *Gary J. Arthur* Date *1/25/05*
Howard SCD

PREPARED BY
URS
4 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND
TEL: (410) 785-7220

DES:	DTM/RKK		
DRN:	RMC/HWC		
CHK:	DTM/RKK		
DATE:	10/8/04	BY:	NO.
		REVISION	DATE

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

DEVELOPER:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
COLUMBIA, MARYLAND 21045

TAX MAP:	50
GRID:	1&2
ZONED:	R-20 & R-30
PARCEL NO.:	384
CENSUS TRACT:	6069.03
WATER CODE:	C06
SEWER CODE:	7170900

HIGH RIDGE PARK
BIORETENTION AND MISC. STORMWATER
MANAGEMENT DETAILS
DEED REFERENCE: LIBER 8771, FOLIO 685
ELECTION DISTRICT NO. 6, HOWARD COUNTY, MARYLAND

SHEET 28 OF 39
SDP-05-19

SWM POND CONSTRUCTION SPECIFICATIONS

These specifications are appropriate to all ponds within the scope of the Standard for practice MD-378. All references to ASTM and AASHTO Specifications apply to the most recent version.

Site Preparation

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped to no steeper than 1:1. All trees shall be cleared and grubbed within 15 feet of the toe of the embankment.

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

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

Earth Fill

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

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

Compaction—The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of heavy equipment or compaction shall be achieved by a minimum of four complete passes of a sheepfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture to yield the required degree of compaction with the equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it would not crumble, yet not be so wet that water can be squeezed out. When required by the reviewing agency the minimum required density shall not be less than 95% of maximum dry density with a moisture content within 2% of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99 (Standard Proctor).

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

Embankment Core — The core shall be parallel to the centerline of the embankment as shown on the plans. The top width of the core shall be a minimum of four feet. The height shall extend up to at least the 10-year water elevation or as shown on the plans. The side slopes shall be 1:1 or flatter. The core shall be compacted with construction equipment, rollers, or hand tampers

to assure maximum density and minimum permeability. In addition, the core shall be placed concurrently with the outer shell of the embankment.

Structure Backfill

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

1. Materials — (Polymer Coated Steel Pipe) — Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. This pipe and its appurtenances shall conform to the requirements of AASHTO Specifications M-245 & M-246 with watertight coupling bands or flanges.

Materials — (Aluminum Coated Steel Pipe) — This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with watertight coupling bands or flanges. Aluminum Coated Steel Pipe, when used with flowable fill or when soil and/or water conditions warrant the need for increased durability, shall be fully bituminous coated per requirements of AASHTO M-190 Type A. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt.

Materials — (Aluminum Pipe) — This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-196 or M-211 with watertight coupling bands or flanges. Aluminum Pipe, when used with flowable fill or when soil and/or soil conditions warrant for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

2. Coupling bands, anti-seep collars, end sections, etc., must be composed of the same material and coatings as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 mils in thickness.

3. Connections — All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be

welded all around when the pipe and riser are metal. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight. Dimple bands are not considered to be watertight. All connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled an adequate number of corrugations to accommodate the bandwidth. The following type connections are acceptable for pipe less than 24 inches in diameter: flanges on both ends of the pipe with a circular 3/8 inch closed cell neoprene gasket, pre-punched to the flange bolt circle, sandwiched between adjacent flanges; a 12-inch wide standard lap type band with 12-inch wide by 3/8-inch thick closed cell circular neoprene gasket; and a 12-inch wide hugger type band with o-ring gaskets having a minimum diameter of 1/2 inch greater than the corrugation depth. Pipes 24 inches in diameter and larger shall be connected by a 24-inch long annular corrugated band using a minimum of 4 (four) rods and lugs, 2 one each connecting pipe end. A 24-inch wide by 3/8-inch closed cell circular neoprene gasket will be installed with 12 inches on the end of each pipe. Flanged joint is with 3/8 inch closed cell gaskets the full width of the flange is also acceptable. Helically corrugated pipe shall have either continuously welded seams or have lock seams with internal caulking or a neoprene bead.

4. Bedding — The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

5. Backfilling shall conform to "Structure Backfill".

6. Other details (Anti-seep collars, valves, etc.) shall be as shown on the drawings.

Reinforced Concrete Pipe — All of the following criteria shall apply for reinforced concrete pipe:

1. Materials—Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM C-361.

2. Bedding — Reinforced concrete pipe conduits shall be laid in concrete bedding cradle for their entire length. This bedding cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 50% of its outside diameter with a minimum thickness of 6 inches. Where a concrete cradle is not needed for structural reasons, flowable fill may be used as described in the "Structure Backfill" section of this standard. Gravel bedding is not permitted.

3. Laying pipe — Bell and spigot pipe shall be placed with the bell and 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 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 Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 2 feet from the riser. 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 — All of the following criteria shall apply for plastic pipe:

1. Materials — PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241. Corrugated High Density Polyethylene (HDPE) pipe, couplings and fittings, shall conform to the following: 4" - 10" pipe shall meet the requirements of AASHTO M-252 Type S, and 12" through 24" shall meet the requirements of AASHTO 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 unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

4. Backfilling shall conform to "Structure Backfill".

5. Other details (Anti-seep collars, valves, etc.) shall be as shown on the drawings. Drainage Diaphragms — When a drainage diaphragm is used, registered professional engineer will supervise the design and construction inspection.

SEQUENCE OF CONSTRUCTION AND INSPECTOR'S CHECK-OFF LIST FOR SWM FACILITIES

STAGE	DEVELOPER'S/ENGINEER APPROVAL		INSPECTOR'S APPROVAL	
	INITIALS	DATE	INITIALS	DATE
1. PRE-CONSTRUCTION MEETING. *				
2. SCE, TREE PROTECTION, AND POND EXCAVATION TO THE BOTTOM ELEVATION 231.00				
3. INSTALLATION OF STRUCTURES AND ASSOCIATED STORM DRAINAGE: * A.FOOTING SUBGRADE PRIOR TO POURING. * B.FOOTING FORMED AND STEEL SET PRIOR TO POURING. * C.STRUCTURE SIDES FORMED AND STEEL SET PRIOR TO POURING. *				
D.PRIOR TO TOP SLAB AND MANHOLES BEING SET ON, INSPECTOR MUST INSPECT ALL CAST-IN-PLACE AND PRE-CAST STRUCTURES FOR PROPER ASSEMBLY. *				
4. SEDIMENT BASIN CONSTRUCTION:* A.INSTALLATION OF ORIFICE PLATE B.INSTALLATION OF DRAW-DOWN DEVICE				
5. SITE IS PERMANENTLY STABILIZED, ALL SEDIMENT AND DEBRIS REMOVED FROM THE STRUCTURE AND SEDIMENT BASIN CONVERTED INTO STORMWATER MANAGEMENT POND.* A. POND EXCAVATED TO THE BOTTOM ELEVATIONS INDICATED ON THE PLAN SHEET. B. ORIFICE PLATE IS REMOVED C. DRAW-DOWN DEVICE IS REMOVED AND UNDERDRAIN PIPE INSTALLED.				
6. FINAL INSPECTION. *				
NOTE: SEE CONSTRUCTION SPECIFICATIONS FOR DETAILED REQUIREMENTS.				
* MANDATORY NOTIFICATION/APPROVAL OF INSPECTOR PRIOR TO PROCEEDING WITH NEXT STAGE.				

4035M-4 (REV 4-89)

Concrete

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

Rock Riprap

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

Care of Water During Construction

All work on permanent structures shall be carried out in areas free from water. The Contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works. The contractor shall also furnish, install, operate, and maintain all necessary pumping and other equipment required for removal of water from the various parts of the work and for maintaining the excavations, foundation, and other parts of the work free from water as required or directed by the engineer for constructing each part of the work. After having served their purpose, all temporary protective works shall be removed or leveled and graded to the extent required or prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom of required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level at the locations being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water to sumps 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, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Natural Resources Conservation Service Standards and Specifications for Critical Area Planting (MD-342) or as shown on the accompanying drawings.

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.

OPERATION AND MAINTENANCE

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

AS-BUILT CERTIFICATION

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: _____ PE No. _____
Date: _____

ENGINEER'S CERTIFICATE

I certify that this plan pond construction and for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.

Signature of Engineer (print name below signature): DAVID F. MORICANI Date: 1/16/05

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division: [Signature] Date: 2/2/05
Chief, Division of Land Development: [Signature] Date: 2/4/05
Director: [Signature] Date: 2/14/05

DEVELOPER'S CERTIFICATE

I/we certify that all development and construction will be done according to these plans, and that any responsible personnel involved in the construction of this project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.

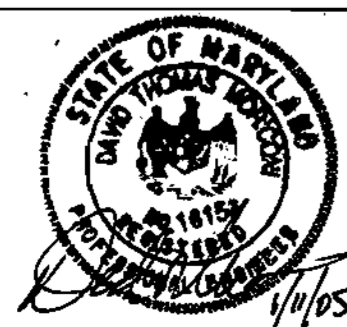
Signature of Developer (print name below signature): GARY J. ARTHUR Date: 2-15-05

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

USDA - Natural Resources Conservation Service: [Signature] Date: 1/25/05

These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Howard SCD: [Signature] Date: 1/25/05



DES:DTM/RKK					
DRN:RMC/HWC					
CHK:DTM/RKK					
DATE: 10/8/04	BY	NO.	REVISION	DATE	

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

DEVELOPER:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
COLUMBIA, MARYLAND 21045

TAX MAP: 50
GRID: 1&2
ZONED: R-20 & R-5C
PARCEL NO.: 364
CENSUS TRACT: 6069.03
WATER CODE: C06
SEWER CODE: 7170900

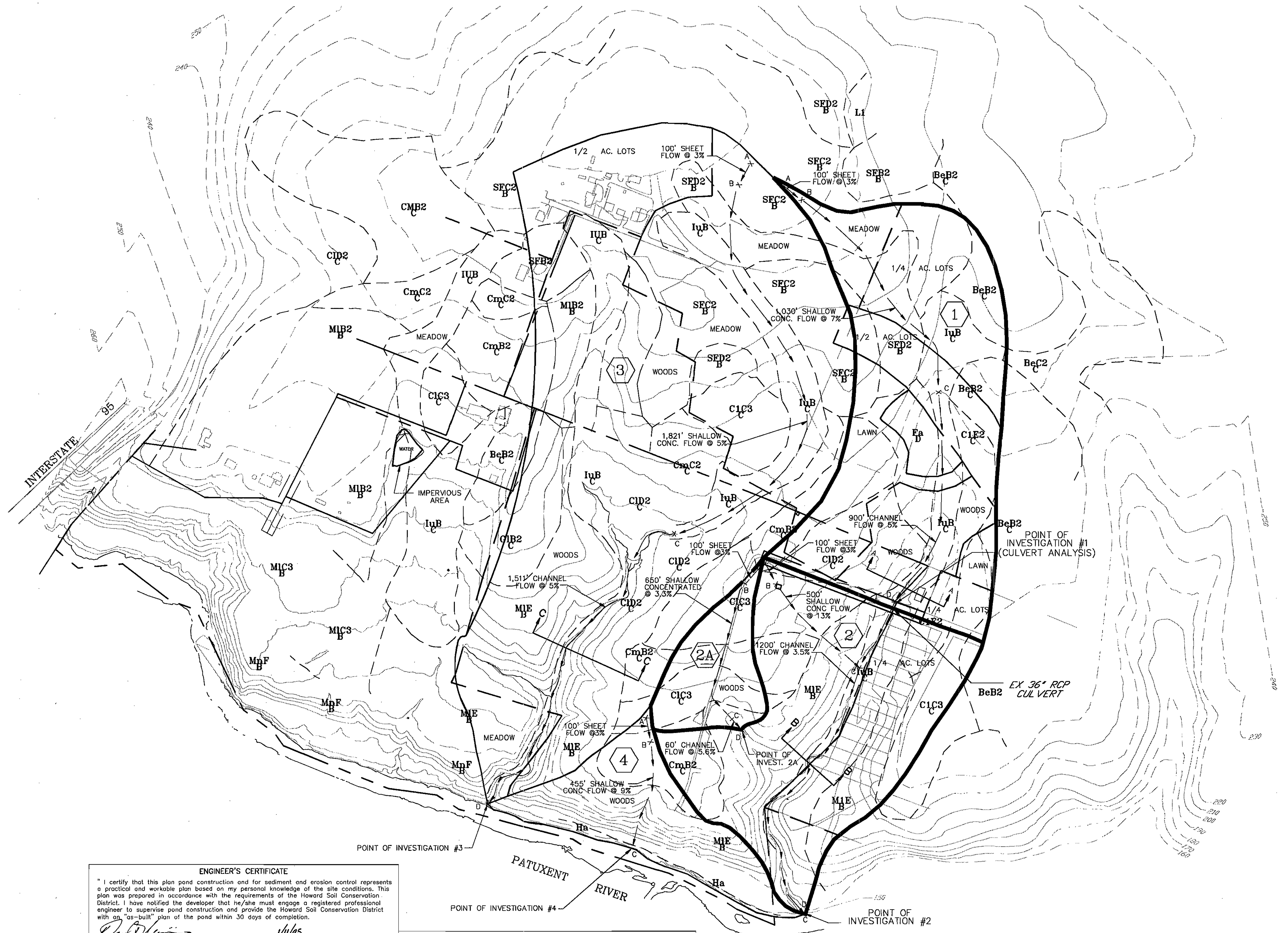
**HIGH RIDGE PARK
STORMWATER MANAGEMENT NOTES**

DEED REFERENCE: LIBER 8771, FOLIO 685
ELECTION DISTRICT NO. 6, HOWARD COUNTY, MARYLAND

MAP SYMBOL	MAPPING UNIT	SOIL GROUP
BeB2	BELTSVILLE SILT LOAM, 1 TO 5% SLOPES	C
CmB2	CHILLUM SILT LOAM, 1 TO 5% SLOPES	C
CmC2	CHILLUM SILT LOAM, 5 TO 10% SLOPES	C
CID2	CHILLUM GRAVELLY LOAM, 10 TO 15% SLOPES	C
CIC3	CHILLUM GRAVELLY LOAM, 5 TO 10% SLOPES	C
Fa	FALLSINGTON LOAM	D
IuB	IUKA LOAM, LOCAL ALLUVIUM, 1 TO 5% SLOPES	C
MIB2	MANOR LOAM, 3 TO 8% SLOPES	B
MIE	MANOR LOAM, 25 TO 45% SLOPES	B
MnF	MANOR VERY STONY LOAM, 25 TO 60% SLOPES	B
SfC2	SASSAFRASS GRAVELLY SANDY LOAM, 5 TO 10% SLOPES	B
SfD2	SASSAFRASS GRAVELLY SANDY LOAM, 10 TO 15% SLOPES	B

DRAINAGE AREAS

AREA	ACRES	RCN	% IMPERVIOUS AREA
①	28.2	75.3	18.8
②	25.3	70.4	12.9
③	65.1	64.2	2.5
④	8.0	57.8	0

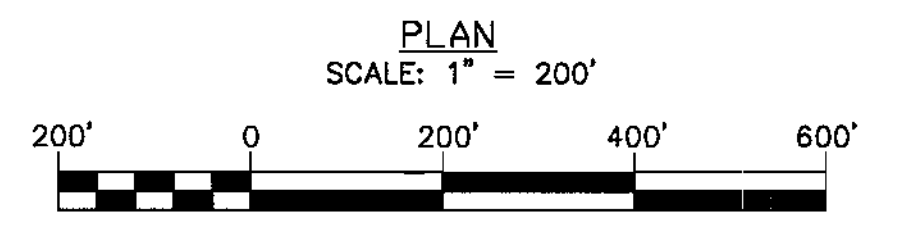


ENGINEER'S CERTIFICATE
 I certify that this plan pond construction and for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he/site must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.
 Signature of Engineer (print name below signature) DAVID T. MCKELON Date 1/16/05

DEVELOPER'S CERTIFICATE
 I/We certify that all development and construction will be done according to these plans, and that any responsible personnel involved in the construction of this project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.
 Signature of Developer (print name below signature) GARY J. ARTHUR Date 2-15-05

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.
 USDA - Natural Resources Conservation Service Date: 1/25/05
 These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.
 Howard SCD Date: 1/25/05

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division Date: 2/2/05
 Chief, Division of Land Development Date: 2/4/05
 Director Date: 2/14/05



DES: DTM/RKK	DRN: RMC/HWC	CHK: DTM/RKK	DATE: 10/8/04	BY NO.	REVISION	DATE

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

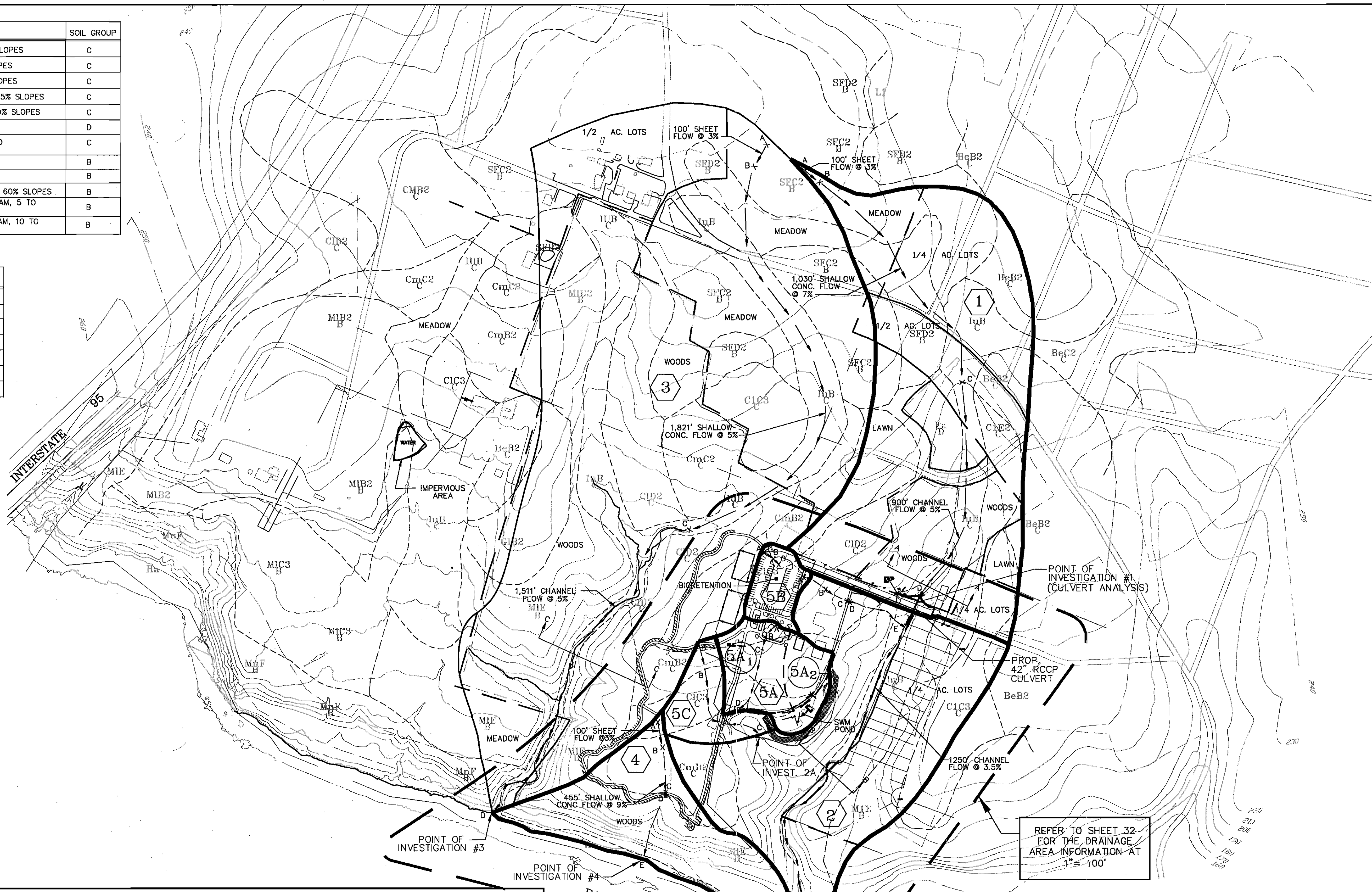
DEVELOPER:
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 9250 BENDIX ROAD
 COLUMBIA, MARYLAND 21045

TAX MAP: 50
 GRID: 1&2
 ZONED: R-20 & R-5C
 PARCEL NO.: 364
 CENSUS TRACT: 6069.03
 WATER CODE: C06
 SEWER CODE: 7170900

HIGH RIDGE PARK
 PRE-DEVELOPMENT DRAINAGE AREA MAP
 DEED REFERENCE: LIBER 8771, FOLIO 685
 ELECTION DISTRICT NO. 6, HOWARD COUNTY, MARYLAND
 SHEET 30 OF 39
 SDP-05-19

MAP SYMBOL	MAPPING UNIT	SOIL GROUP
BeB2	BELTSVILLE SILT LOAM, 1 TO 5% SLOPES	C
CmB2	CHILLUM SILT LOAM, 1 TO 5% SLOPES	C
CmC2	CHILLUM SILT LOAM, 5 TO 10% SLOPES	C
CID2	CHILLUM GRAVELLY LOAM, 10 TO 15% SLOPES	C
CIC3	CHILLUM GRAVELLY LOAM, 5 TO 10% SLOPES	C
Fa	FALLSINGTON LOAM	D
IuB	IUKA LOAM, LOCAL ALLUVIUM, 1 TO 5% SLOPES	C
MIB2	MANOR LOAM, 3 TO 8% SLOPES	B
MIE	MANOR LOAM, 25 TO 45% SLOPES	B
MnF	MANOR VERY STONY LOAM, 25 TO 60% SLOPES	B
SfC2	SASSAFRASS GRAVELLY SANDY LOAM, 5 TO 10% SLOPES	B
SfD2	SASSAFRASS GRAVELLY SANDY LOAM, 10 TO 15% SLOPES	B

DRAINAGE AREAS			
AREA	ACRES	RCN	% IMPERVIOUS AREA
①	26.4	75	19.6
②	20.2	72	16.4
③	65.3	65	3.5
④	8.0	59	1.5
⑤A	3.65	74	8.8
⑤B	1.39	95	86.3
⑤C			



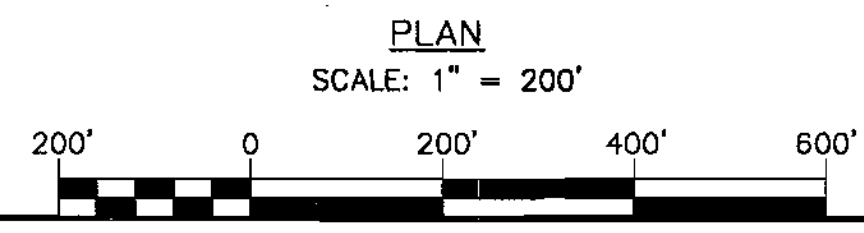
ENGINEER'S CERTIFICATE
 I certify that this plan pond construction and for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.
 Signature of Engineer (print name below signature) DAVID T. MORRIS Date 1/11/05

DEVELOPER'S CERTIFICATE
 I/We certify that all development and construction will be done according to these plans, and that any responsible personnel involved in the construction of this project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.
 Signature of Developer (print name below signature) GARY J. ARTHUR Date 2-15-05

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.
 Signature of Reviewer Jim Munn Date 1/25/05
 USDA - Natural Resources Conservation Service
 These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.
 Signature of Reviewer Gary Arthur Date 1/25/05
 Howard SCD

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division [Signature] Date 2/2/05
 Chief, Division of Land Development [Signature] Date 2/4/05
 Director [Signature] Date 2/14/05

REFER TO SHEET 32 FOR THE DRAINAGE AREA INFORMATION AT 1" = 100'



DES: DTM/RKK	DRN: RMC/HWC	CHK: DTM/RKK	DATE: 10/8/04	BY NO.	REVISION	DATE

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

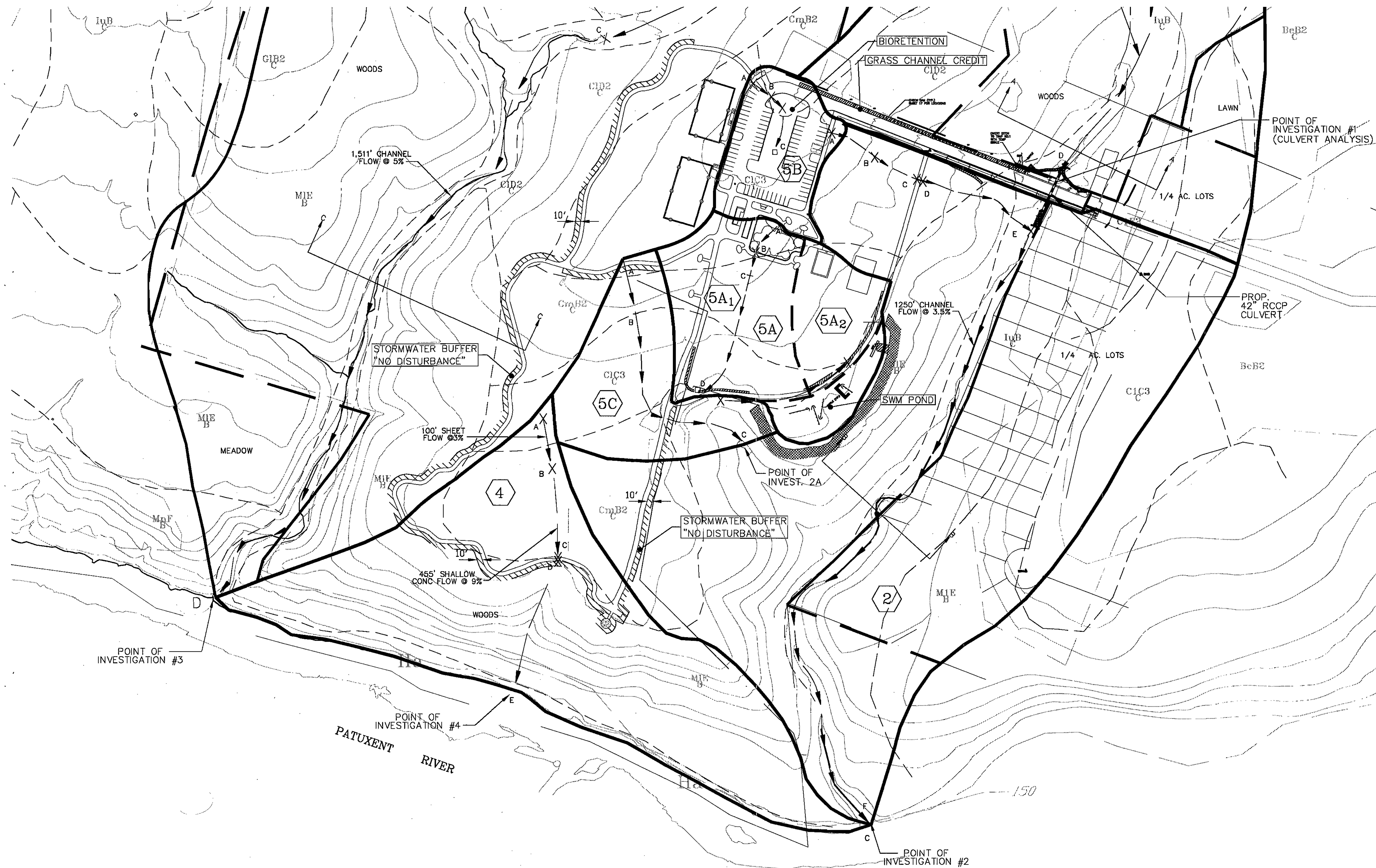
DEVELOPER:
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 9250 BENDIX ROAD
 COLUMBIA, MARYLAND 21045

TAX MAP: 50
GRID: 1&2
ZONED: R-20 & R-SC
PARCEL NO.: 364
CENSUS TRACT: 6069.03
WATER CODE: C06
SEWER CODE: 7170900

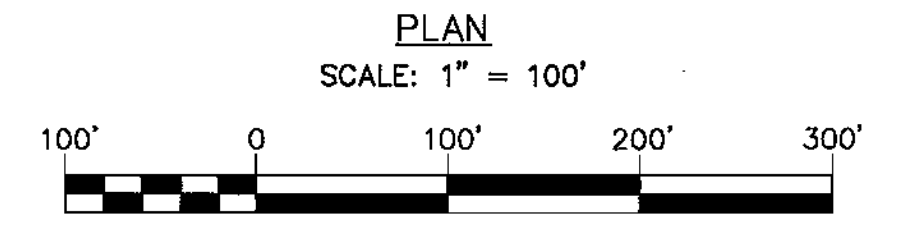
HIGH RIDGE PARK

POST-DEVELOPMENT DRAINAGE AREA MAP

DEED REFERENCE: LIBER 8771, FOLIO 685
 ELECTION DISTRICT NO. 6, HOWARD COUNTY, MARYLAND



APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division Date: 2/2/05
 Chief, Division of Land Development Date: 2/4/05
 Director Date: 2/16/05



DES: DTM/RKK				
DRN: RMC/HWC				
CHK: DTM/RKK				
DATE: 10/8/04	BY	NO.	REVISION	DATE

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

DEVELOPER:
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 9250 BENDIX ROAD
 COLUMBIA, MARYLAND 21045

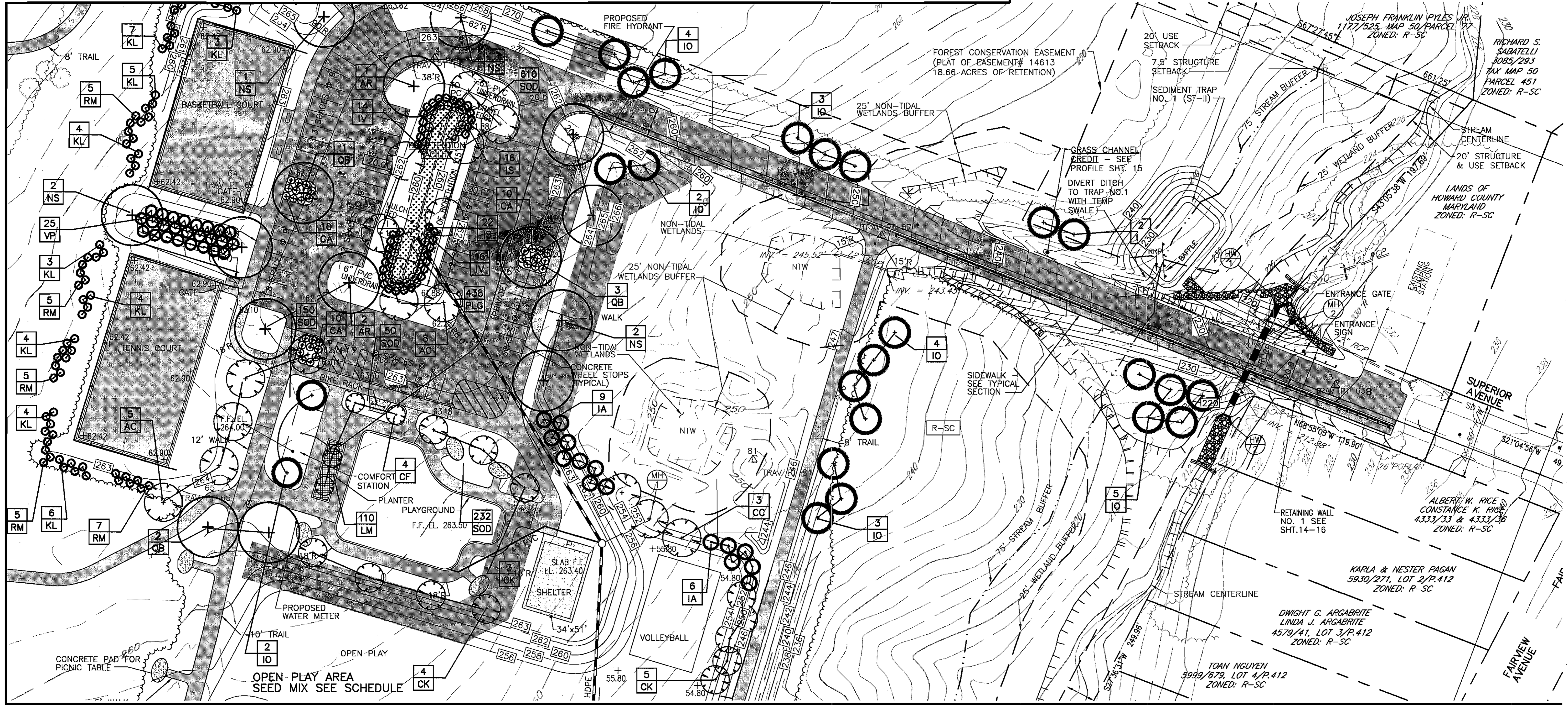
TAX MAP: 50
 GRID: 1&2
 ZONED: R-20 & R-SC
 PARCEL NO.: 364
 CENSUS TRACT: 6069.03
 WATER CODE: C06
 SEWER CODE: 7170900

HIGH RIDGE PARK

POST-DEVELOPMENT DRAINAGE AREA MAP

DEED REFERENCE: LIBER 8771, FOLIO 685
 ELECTION DISTRICT NO. 6, HOWARD COUNTY, MARYLAND

MATCH LINE SEE SHEET 36

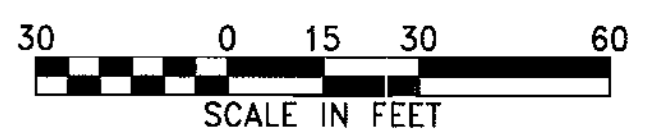


MATCH LINE SEE SHEET 35

MATCH LINE SEE SHEET 34

- NOTES:**
- SEE SHEET 36 FOR GENERAL PLANTING NOTES AND DETAILS.
 - SEE SHEET 31 FOR STORMWATER MANAGEMENT FACILITY SEED MIX NO.1 AND FOR BIORETENTION PLUG SCHEDULE
 - PLANS FOR LANDSCAPE PURPOSES ONLY.

LANDSCAPE PLANT SCHEDULE							
KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	SPACING	NOTES
AC	13	AMELANCHIER CANADENSIS	SHADBLow SERVICEBERRY	7' HT	B&B	25' OC	CLUMP FORM
AS	5	ACER SACCHARUM	SUGAR MAPLE	3" CAL	B&B	40' OC	
AR	7	ACER RUBRUM 'RED SUNSET'	RED SUNSET MAPLE	3" CAL	B&B	40' OC	
CB	10	COTINUS OBOVATUS	AMERICAN SMOKETREE	2.5" CAL	B&B	25' OC	
CC	4	CERCIS CANADENSIS	EASTERN REDBUD	2.5" CAL	B&B	25' OC	
CF	4	CERCIS CANADENSIS 'FOREST PANSY'	FOREST PANSY REDBUD	2.5" CAL	B&B	20' OC	SPECIMEN
CK	15	CLADRASIS KENTUKEA	AMERICAN YELLOWWOOD	3" CAL	B&B	30' OC	
IA	15	ILEX X AQUIPERNYI	DRAGON LADY HOLLY	5' HT	B&B	20' OC	
IO	25	ILEX OPACA 'MISS HELEN'	AMERICAN HOLLY	6' HT	B&B	25' OC	INCLUDES 3 MALE ONLY
IS	38	ILEX VOMITORIA 'SCHILLINGS'	SCHILLINGS YALPON HOLLY	24" HT	CONT	5' OC	
IV	30	ILEX VERTICILLATA 'RED SPRITE'	RED SPRITE WINTERBERRY	24" HT	CONT	5' OC	
KL	54	KALMIA LATIFOLIA 'ALBA'	WHITE MOUNTAIN LAUREL	24" HT	CONT	5' OC	
NS	6	NYSSA SYLVATICA	BLACK GUM	3" CAL	B&B	40' OC	
PF	6	PINUS STROBUS 'FASTIGIATA'	COLUMNAR WHITE PINE	8" HT	B&B	25' OC	
CA	30	COTONEASTER APICULATUS	CRANBERRY COTONEASTER	18" HT	CONT	5' OC	
QB	6	QUERCUS BOREALIS	NORTHERN RED OAK	3" CAL	B&B	40' OC	
RM	27	RHODODENDRON MAXIMUM	GREAT RHODODENDRON	24" HT	CONT	8' OC	
LM	110	LIRIOPE MUSCARI 'VARIEGATA'	VARIEGATED LIRIOPE	1 GAL	CONT	24" OC	
VP	25	VIBURNUM X BURKWOODII	BURKWOOD VIBURNUM	24" HT	CONT	6' OC	
PLG	438	BIORETENTION PLUGS: SEE SCHEDULE ON SHEET 31					
SWM	1278 SY	STORMWATER MANAGEMENT MIX: SEE SCHEDULE ON SHEET 31					
SOD	1042 SY	SOD: TALL FESCUE					
SEED	1.7 AC	OPEN PLAY AREA SEED MIX: SEE SCHEDULE ON SHEET 31					



APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division: *[Signature]* Date: 2/2/05

Chief, Division of Land Development: *[Signature]* Date: 2/4/05

Director: *[Signature]* Date: 2/10/05

PREPARED BY
URS
4 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND
TEL: (410) 785-7220



DES: RKK			
DRN: RMC/VH			
CHK: RKK			
DATE: 10/8/04	BY: NO.	REVISION	DATE

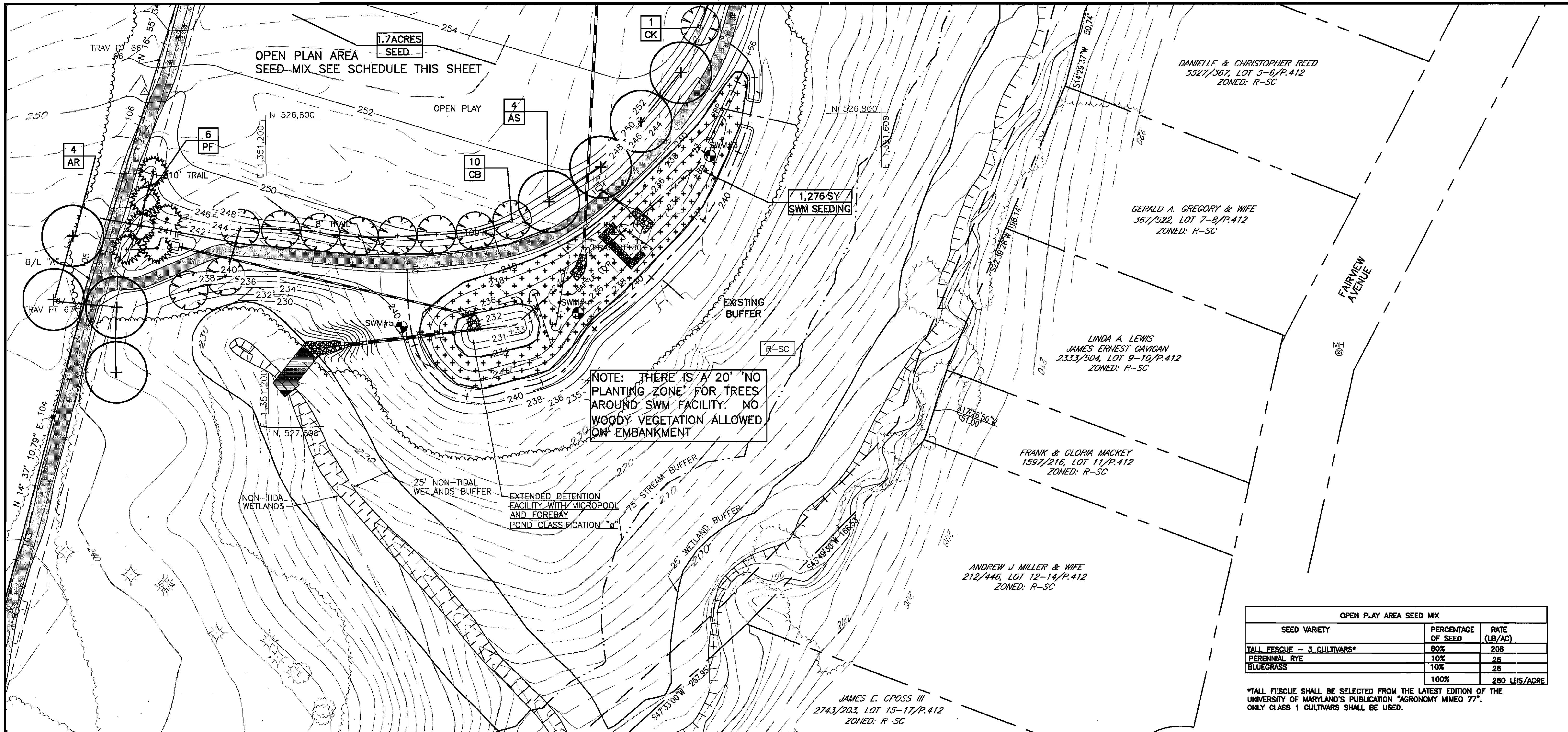
OWNER:
HOWARD COUNTY DEPARTMENT
RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046

DEVELOPER:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
COLUMBIA, MARYLAND 21045

TAX MAP: 50
GRID: 1&2
ZONED: R-20 & R-SC
PARCEL NO.: 364
CENSUS TRACT: 6069.03
WATER CODE: C06
SEWER CODE: 7170900

HIGH RIDGE PARK LANDSCAPE PLAN

DEED REFERENCE: LIBER 8771, FOLIO 685
ELECTION DISTRICT NO. 6, HOWARD COUNTY, MARYLAND

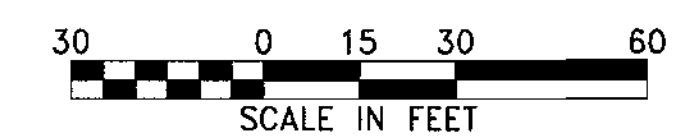


OPEN PLAY AREA SEED MIX		
SEED VARIETY	PERCENTAGE OF SEED	RATE (LB/AC)
TALL FESCUE - 3 CULTIVARS*	80%	20B
PERENNIAL RYE	10%	2B
BLUEGRASS	10%	2B
	100%	290 LBS/ACRE

*TALL FESCUE SHALL BE SELECTED FROM THE LATEST EDITION OF THE UNIVERSITY OF MARYLAND'S PUBLICATION "AGRONOMY MIMED 77". ONLY CLASS 1 CULTIVARS SHALL BE USED.

SWM SEEDING					
SEED VARIETY	PERCENTAGE OF SEED	MINIMUM PURITY	GERMINATION RATE	MAXIMUM % WEED	RATE (LB/AC)
LOLIUM MULTIFLORUM LAM. - ANNUAL RYEGRASS	50%	98%	90%	0.15%	10.0
ASTER PUNICEUS - SWAMP ASTER	15%	98%	80%	0.15%	3.0
ELYMUS VIRGINICUS - VIRGINIA WILD RYE	15%	98%	90%	0.15%	3.0
AGROSTIS STOLONIFERA - RED TOP	10%	98%	90%	0.15%	2.0
MIMULUS RINGENS - SQUARE MONKEY FLOWER	10%	98%	90%	0.15%	2.0
	100%				TOTAL 20.0

NOTE: SWM SEED MIX TO BE SEEDD INSIDE FACILITY FROM ELEVATION 234 TO ELEVATION 240.



APPROVED: DEPARTMENT OF PLANNING AND ZONING

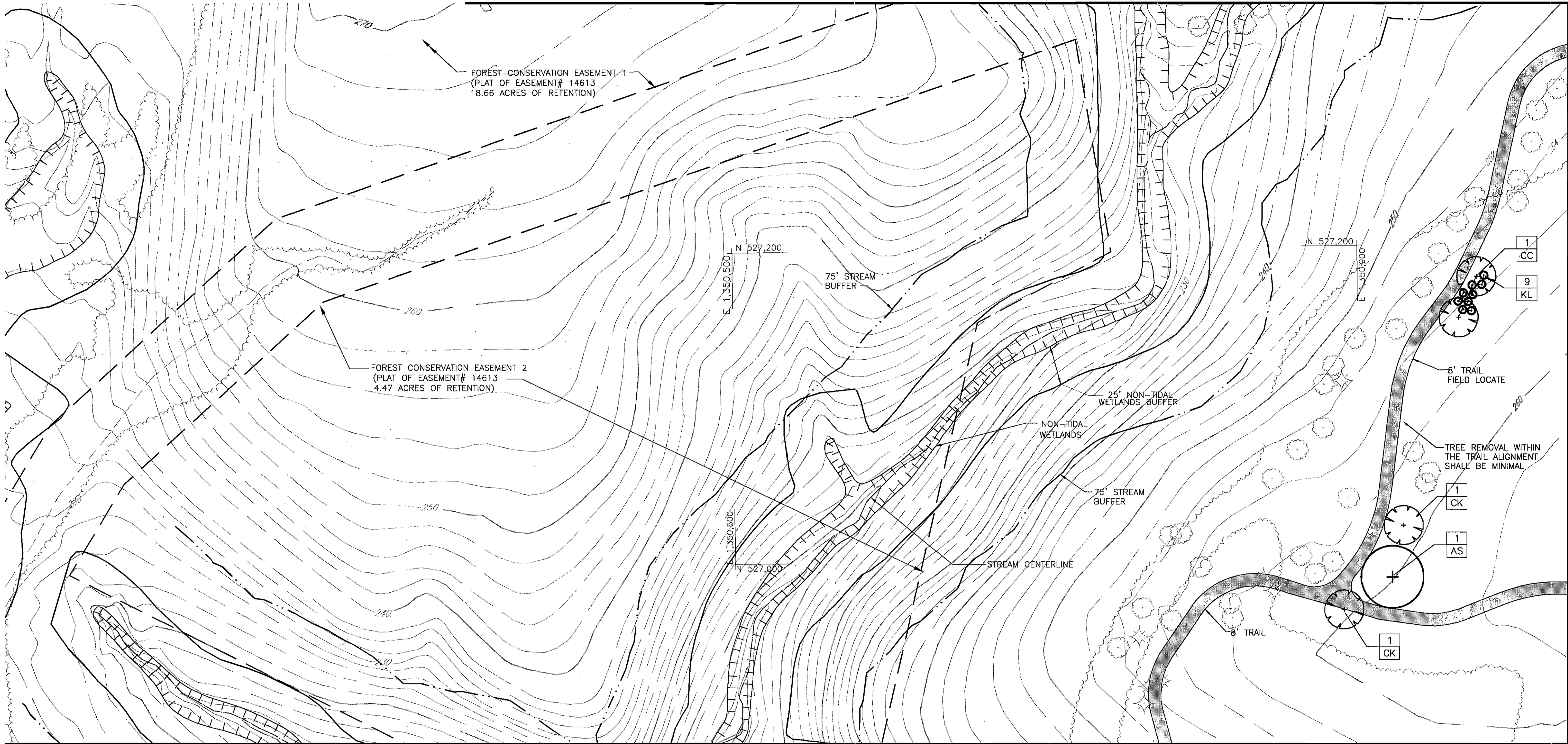
Chief, Development Engineering Division: *[Signature]* Date: 2/2/05

Chief, Division of Land Development: *[Signature]* Date: 2/4/05

Director: *[Signature]* Date: 2/14/05

BIORETENTION PLUG SCHEDULE - SEE SHEET NO. 30						
QTY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT PLUG	SPACING	NOTES
73	IRIS VERSICOLOR	BLUE FLAG	3" ROOT	PLUG	24" OC	PLACE PLUGS IN COLONIES OF 7 - 15 PLUGS EACH.
73	LOBELIA CARDINALIS	CARDINAL FLOWER	3" ROOT	PLUG	24" OC	
73	RUDBECKIA LACINIATA	TALL CONEFLOWER	3" ROOT	PLUG	24" OC	
73	VERNONIA NOVEBORACENSIS	NEW YORK IRONWEED	3" ROOT	PLUG	24" OC	
73	VERBENA HASTATA	BLUE VERVAIN	3" ROOT	PLUG	24" OC	
73	SCUTELLARIA INTEGRIFOLIA	ROUGH SKULLCAP	3" ROOT	PLUG	24" OC	

PREPARED BY URS 4 NORTH PARK DRIVE HUNT VALLEY, MARYLAND TEL: (410) 785-7220	DES: RKK DRN: RMC/VH CHK: RKK DATE: 10/8/04	OWNER: HOWARD COUNTY DEPARTMENT RECREATION AND PARKS 7120 OAKLAND MILLS ROAD COLUMBIA, MARYLAND 21046	DEVELOPER: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS 9250 BENDIX ROAD COLUMBIA, MARYLAND 21045	TAX MAP: 50 GRID: 1&2 ZONED: R-20 & R-SC PARCEL NO.: 364 CENSUS TRACT: 6069.03 WATER CODE: C06 SEWER CODE: 7170900	HIGH RIDGE PARK LANDSCAPE PLAN	DEED REFERENCE: LIBER 8771, FOLIO 685 ELECTION DISTRICT NO. 6, HOWARD COUNTY, MARYLAND	SHEET 34 OF 39 SDP-05-19



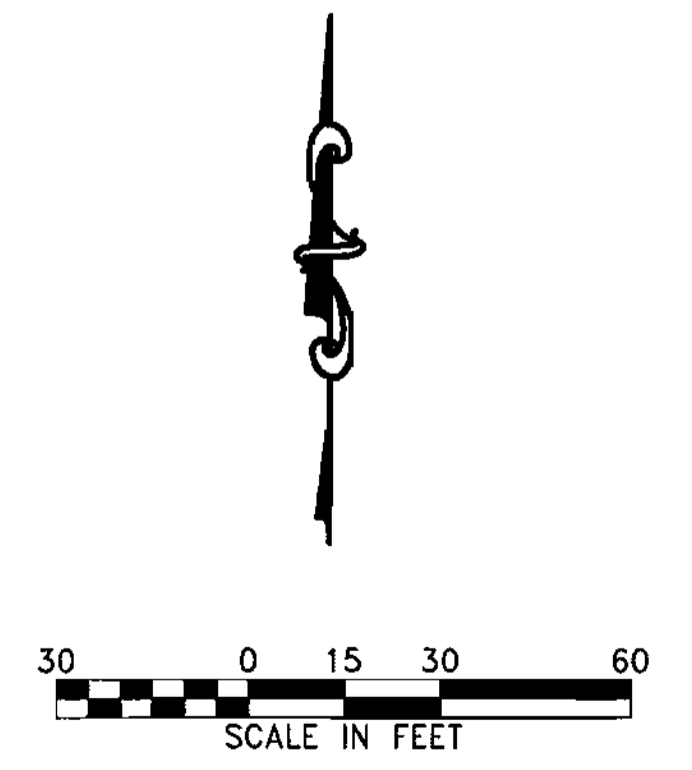
MATCH LINE SEE SHEET 33

APPROVED: DEPARTMENT OF PLANNING AND ZONING

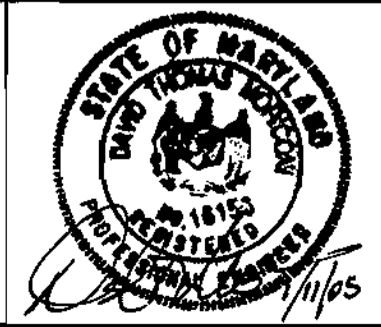
Chief, Development Engineering Division Date: 2/2/05

Chief, Division of Land Development Date: 2/4/05

Director Date: 2/10/05



PREPARED BY
URS
4 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND
TEL: (410) 785-7220



DES: RKK					
DRN: RMC/VH					
CHK: RKK					
DATE: 10/8/04	BY	NO.	REVISION	DATE	

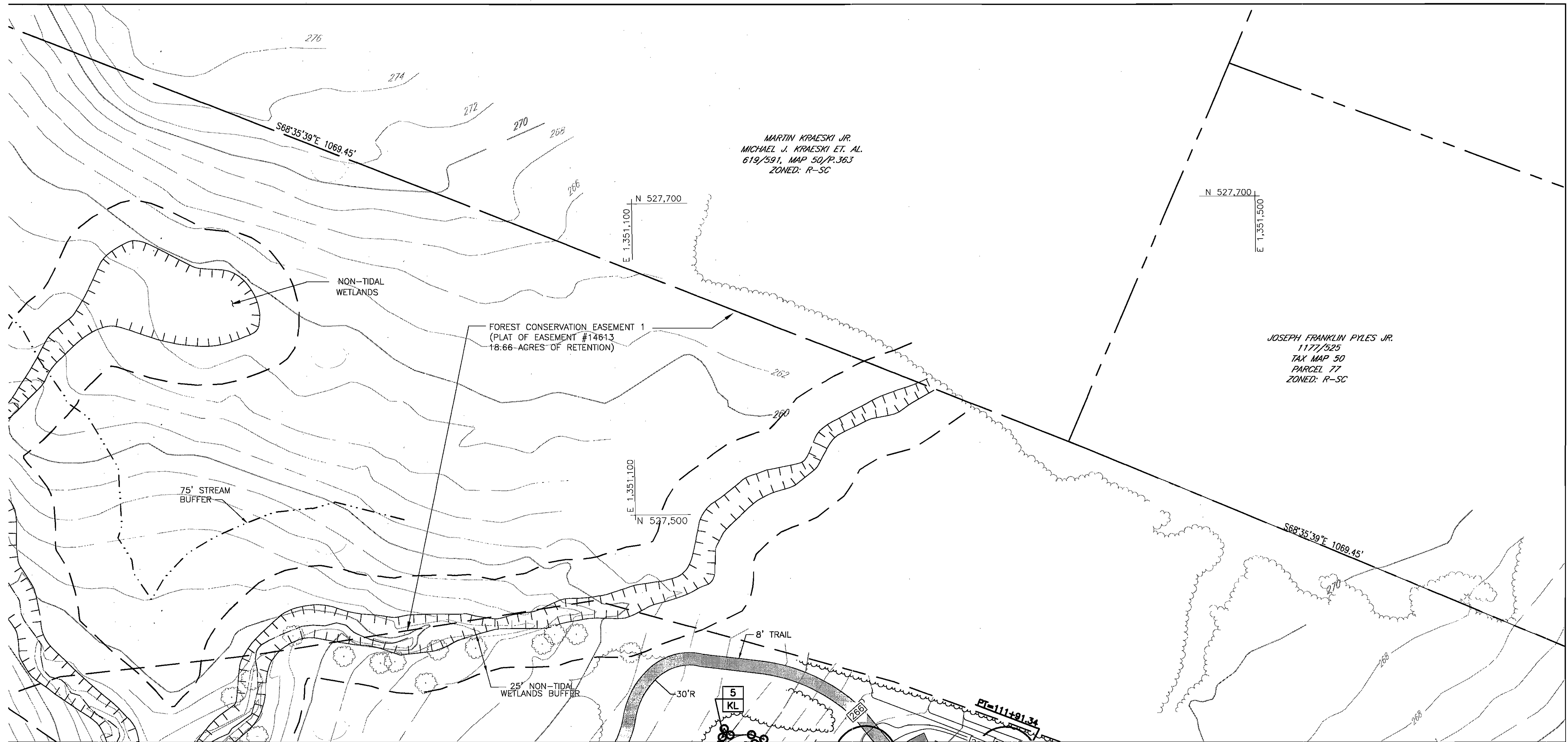
OWNER:
HOWARD COUNTY DEPARTMENT
RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21046

DEVELOPER:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
COLUMBIA, MARYLAND 21045

TAX MAP: 50
GRID: 1&2
ZONED: R-20 & R-SC
PARCEL NO.: 364
CENSUS TRACT: 6069.03
WATER CODE: C06
SEWER CODE: 7170900

HIGH RIDGE PARK
LANDSCAPE PLAN

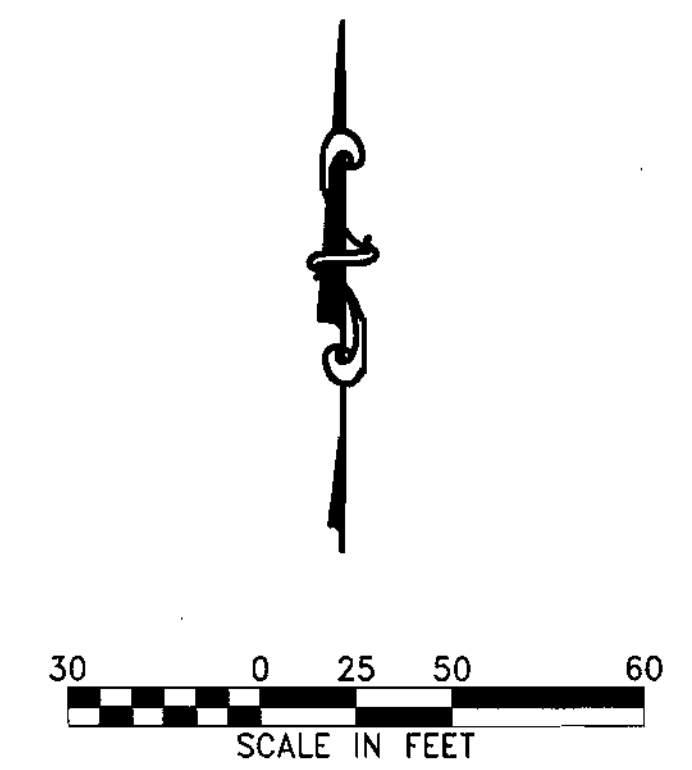
DEED REFERENCE: LIBER 8771, FOLIO 685
ELECTION DISTRICT NO. 6, HOWARD COUNTY, MARYLAND



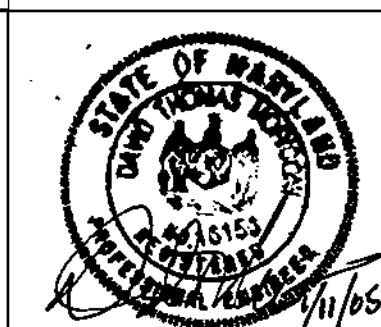
MATCH LINE SEE SHEET 35

MATCH LINE SEE SHEET 33

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division Date: 2/2/05
 Chief, Division of Land Development Date: 2/4/05
 Director Date: 2/10/05



PREPARED BY
URS
 4 NORTH PARK DRIVE
 HUNT VALLEY, MARYLAND
 TEL: (410) 785-7220



DES: RKK				
DRN: RMC/VH				
CHK: RKK				
DATE: 10/8/04	BY	NO.	REVISION	DATE

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

DEVELOPER:
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 9250 BENDIX ROAD
 COLUMBIA, MARYLAND 21045

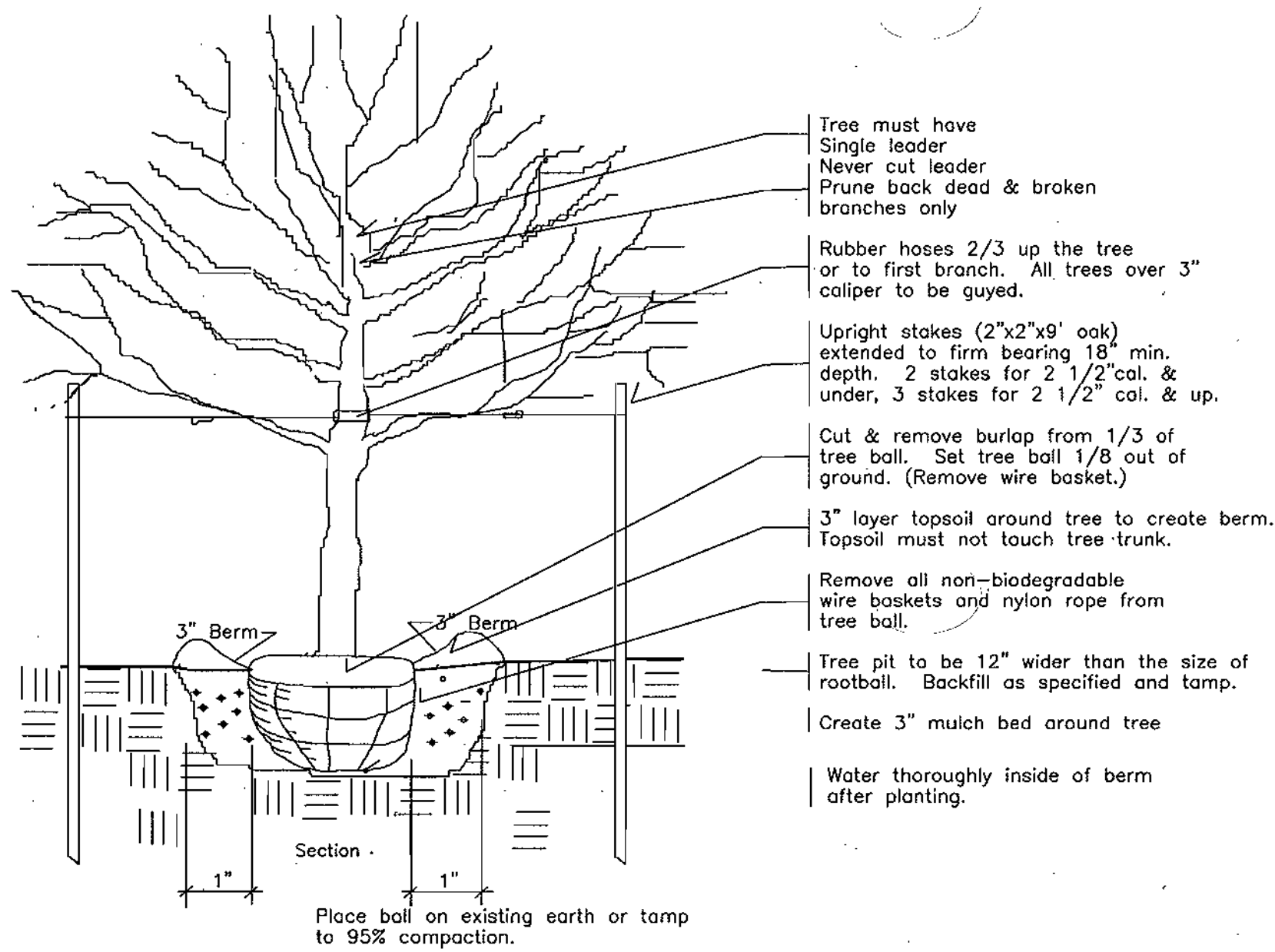
TAX MAP: 50
 GRID: 1&2
 ZONED: R-20 & R-SC
 PARCEL NO.: 364
 CENSUS TRACT: 6069.03
 WATER CODE: C06
 SEWER CODE: 7170900

HIGH RIDGE PARK

LANDSCAPE PLAN

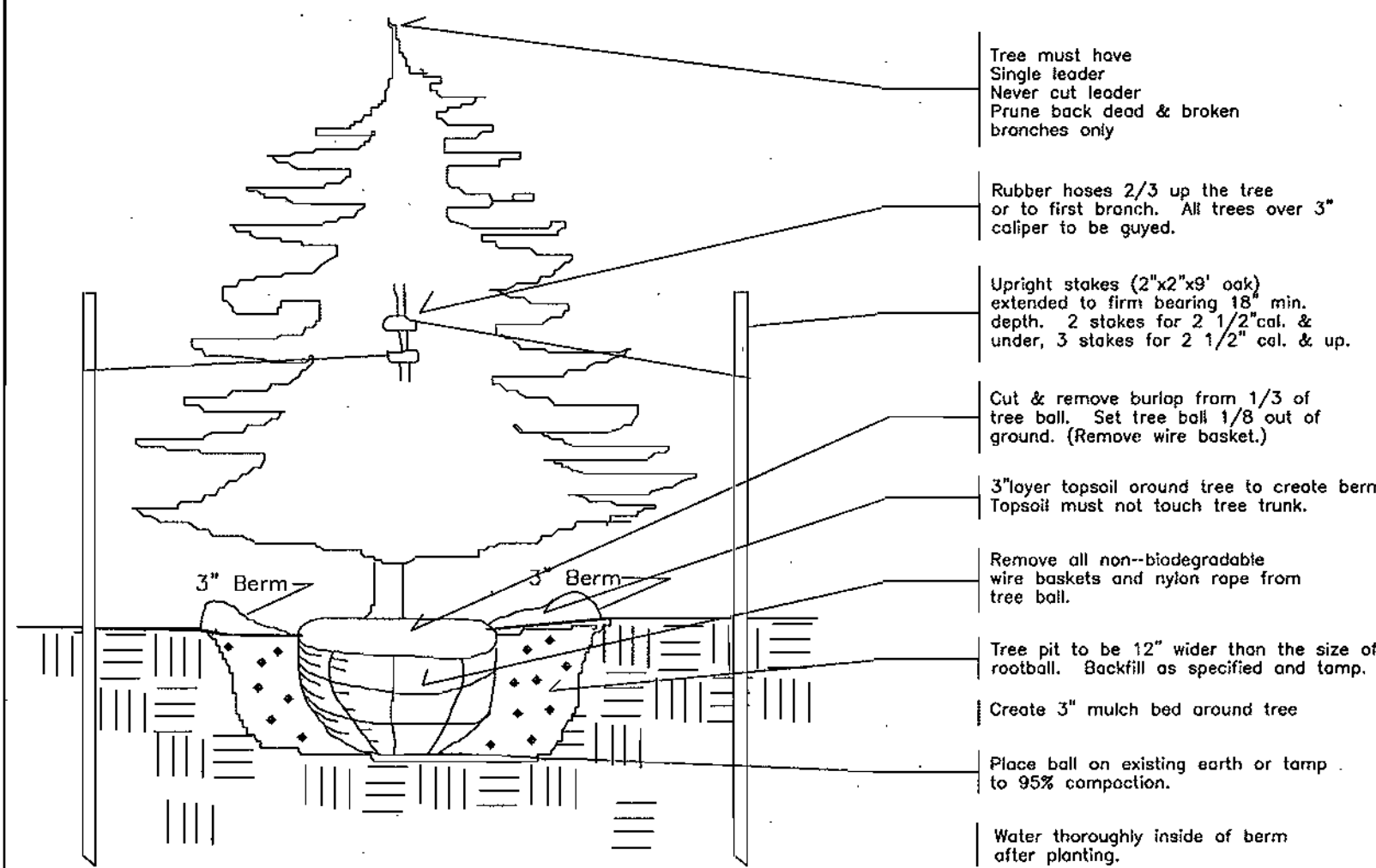
DEED REFERENCE: LIBER 8771, FOLIO 685
 ELECTION DISTRICT NO. 6, HOWARD COUNTY, MARYLAND

SHEET 36 OF 39



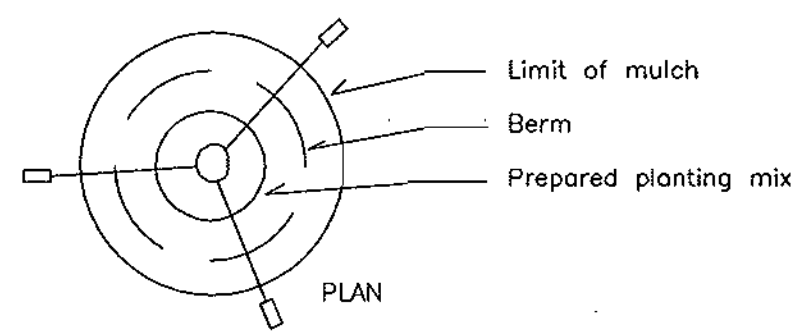
DECIDUOUS TREE PLANTING DETAIL: SECTION

NO SCALE



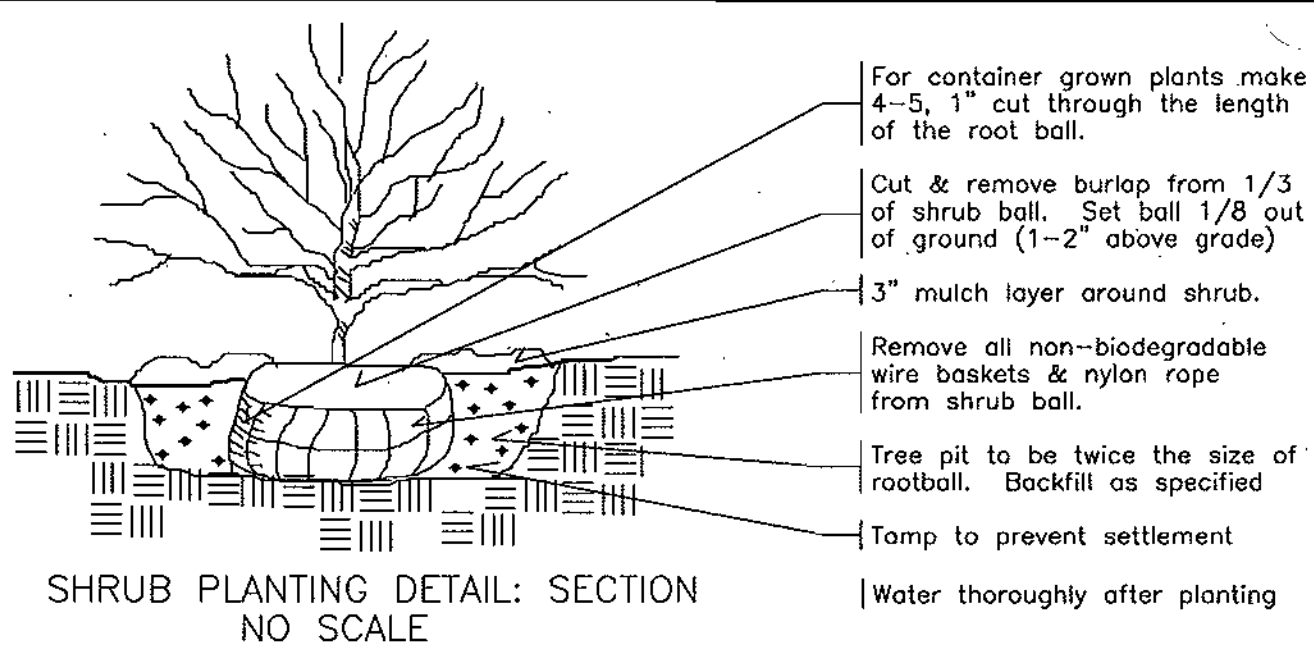
EVERGREEN TREE PLANTING DETAIL: SECTION

NO SCALE



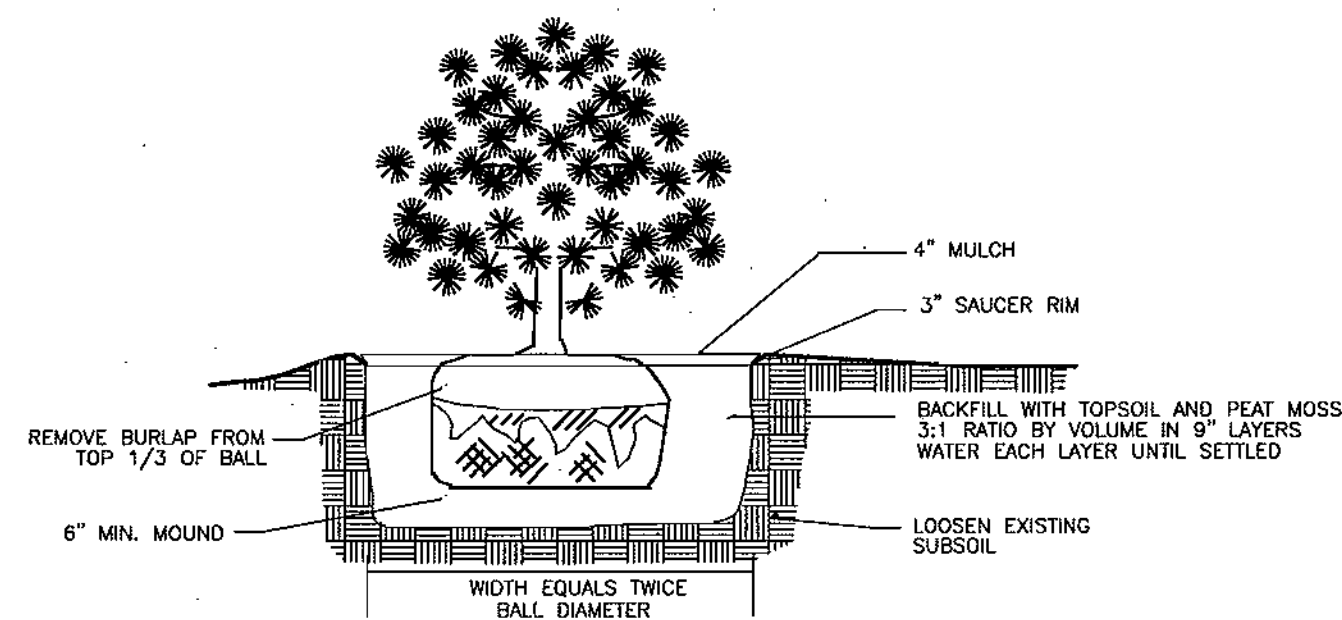
DECIDUOUS AND EVERGREEN TREE PLANTING DETAIL: PLAN VIEW

NO SCALE



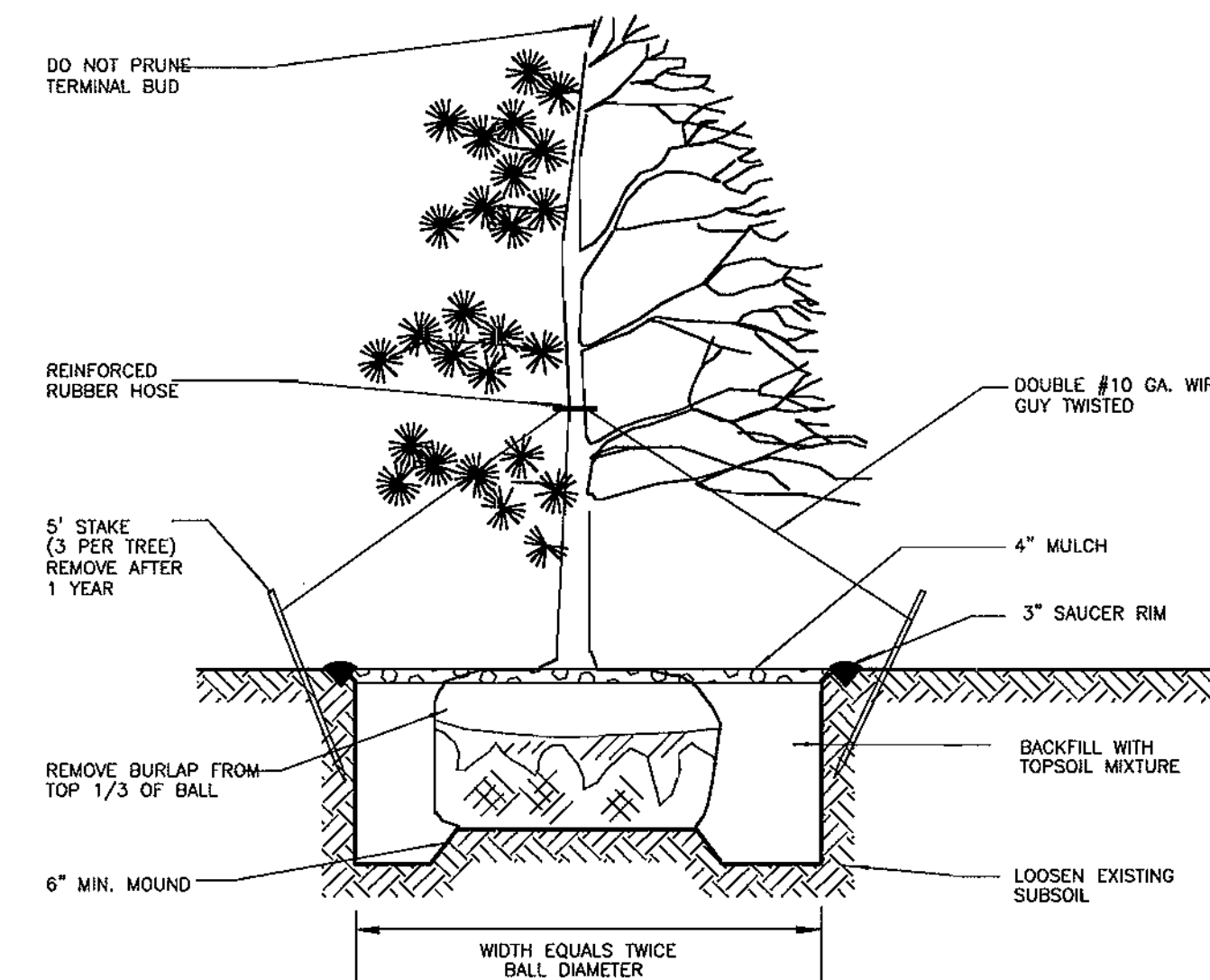
SHRUB PLANTING DETAIL: SECTION

NO SCALE



SHRUB PLANTING DETAIL

NOT TO SCALE



EVERGREEN TREE PLANTING DETAIL

NOT TO SCALE

SCHEDULE A
PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT TO ROADWAYS	ADJACENT TO PERIMETER PROPERTIES
LANDSCAPE BUFFER TYPE	NONE	TYPE A
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	NONE - ENTRANCE ROAD TO PARK IS 20' WIDE	1,219 LINEAR FEET
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE IF NEEDED)	NO	*1,219 LF ALONG ADJACENT PROPERTIES TO REMAIN
NUMBER OF PLANTS REQUIRED SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTION) SHRUBS (10:1 SUBSTITUTION)		0
NUMBER OF PLANTS PROVIDED SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTION) SHRUBS (10:1 SUBSTITUTION) (DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)	NONE	14

*THE EXISTING STREAM AND FOREST BUFFER EXCEEDING MINIMUM REQUIREMENTS IS PROVIDED.

SCHEDULE B
PARKING LOT INTERNAL LANDSCAPING

CATEGORY	LOT 1
NUMBER OF PARKING SPACES	67
NUMBER OF PARKING ISLANDS REQUIRED	4
NUMBER OF PARKING ISLANDS PROVIDED	6
NUMBER OF TREES REQUIRED SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTION)	4
NUMBER OF TREES PROVIDED SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTION)	6
	*4

*8 ORNAMENTAL TREES PROVIDED, 4 CREDITED AT 2:1 RATIO

SCHEDULE D
STORMWATER MANAGEMENT AREA LANDSCAPING

LINEAR FEET OF PERIMETER	1036'
NUMBER OF TREES REQUIRED SHADE TREES EVERGREEN TREES	20 26
CREDIT FOR EXISTING VEGETATION (YES, NO & %) (DESCRIBE IF NEEDED)	*YES 100 % EXISTING FOREST TO BE RETAINED
CREDIT FOR OTHER LANDSCAPING (YES, NO & %)	NO
NUMBER OF TREES PROVIDED SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTION)	NONE, SEE NOTE BELOW

*THE SWM FACILITY IS OVER 250' FROM THE NEAREST DWELLING AND INCLUDING EXISTING FOREST AND STREAM BUFFER.

NOTE: NO LANDSCAPE SURETY IS REQUIRED SINCE THIS IS A HOWARD COUNTY CAPITAL PROJECT.

GENERAL NOTES FOR PLANTING

- Plants shall conform to current "American Standards for Nursery Stock" by American Association of Nurseriesmen (ANN), particularly with regards to size, growth, size of ball, and density of branch structure.
- All plants (B&B or container) shall be properly identified by weather proof labels securely attached thereto before delivery to project site. Labels shall not be removed until the final inspection by the Landscape Architect.
- Any material and/or work may be rejected by the Landscape Architect if it does not meet the requirements of the specifications. All rejected materials shall be removed from the site by the contractor.
- The contractor shall furnish all plants in quantities and sizes to complete the work as specified in the plant schedule.
- Substitutions in plant species or size shall not be permitted except with the written approval by the landscape architect.
- Plants shall be installed as shown on the drawings and by scaling or as designated in the field by the landscape architect. All locations are to be approved by the landscape architect prior to excavation.
- Contractor shall contact Miss Utility prior to excavation.
- If utility lines are encountered in excavation of tree pits, other locations for trees shall be selected by the landscape architect. Such changes shall be made by the contractor without additional compensation. No changes shall take place prior to location and digging the pits for the trees.
- Contractor shall first locate and mark the underground utilities and delineate the utility easement areas where no planting shall take place prior to location and digging the pits for the trees.
- All equipment and tools shall be placed so as not to interfere or hinder the pedestrian and vehicular traffic.
- During planting operation, excess and waste materials shall be promptly and frequently removed from the site.
- The landscape contractor shall be responsible to verify all plant quantities prior to commencement of work. Quantities in the schedule are intended to be only a guide. In the event of a discrepancy between the number of plants in the schedule and on the drawings, the greater number shall apply.
- All disturbed areas of the site not planted with shrubs, groundcover or sod shall be seeded with lawn seed.
- Diameters of plant materials as drawn are representative of plants at or near maturity rather than at initial planting.
- All shrubs or trees occurring in a continuous R.O.W. or formal arrangement shall have uniform height, spread, and habit of growth.
- A minimum of 12" depth of new topsoil shall be placed in all bed areas by landscape contractor prior to plant installation. Backfill all shrubs and trees with backfill mix of one part peat to three parts topsoil. Backfill all holly, boxwood, perennials, and groundcover with backfill mix of one part peat to one part topsoil.
- Mulch perennial and groundcover beds with min. 2" of shredded hardwood mulch. Mulch shrubs and trees with min. 3" of shredded hardwood mulch. Mulch shall extend in a continuous layer within plantings beds from face to face of site structures - walks, building, or other plant bed limits.
- All bed edges shall be spade-cut and closely align as possible with edges as shown on drawing.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division Date: 2/2/05

Chief, Division of Land Development Date: 2/4/05

Director Date: 2/16/05



DATE	BY	NO.	REVISION	DATE
10/8/04				

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

DEVELOPER:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
COLUMBIA, MARYLAND 21045

TAX MAP: 50
GRID: 1&2
ZONED: R-20 & R-SC
PARCEL NO.: 364
CENSUS TRACT: 6069.03
WATER CODE: C06
SEWER CODE: 7170900

HIGH RIDGE PARK
LANDSCAPE DETAILS

DEED REFERENCE: LIBER 8771, FOLIO 685
ELECTION DISTRICT NO. 6, HOWARD COUNTY, MARYLAND

SHEET 37 OF 39

SDP-05-19

Howard County
Parks & Recreation
Highridge Park
(Acres of Fun) Play Structure

PROVIDED BY:

WEST RECREATION, INC.
P.O. BOX 487
QUEENSTOWN, MD 21658
PHONE: (800) 233-0529
FAX: (410) 827-8855

1	PROPOSED SHADE STRUCTURE	10/2016
No.	Revision	Date

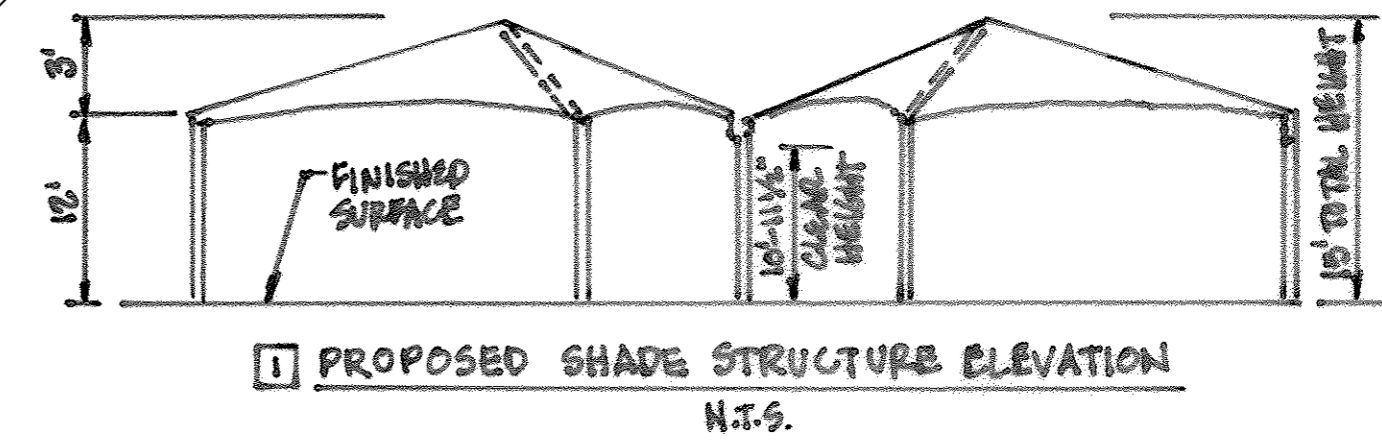
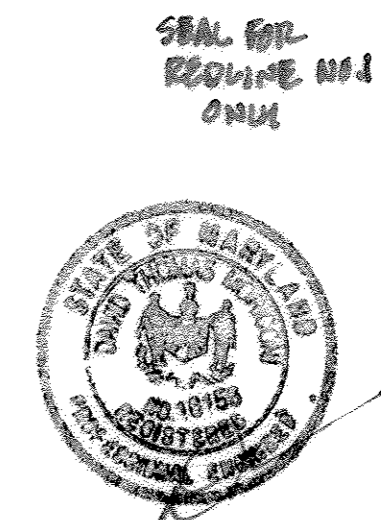
This play equipment is recommended for children ages 5 - 12

Soft, resilient surfacing should be placed in the use zones of all equipment, as specified for each type of equipment, and at depths to meet the critical fall heights as specified by the U.S. consumer Product Safety Commission, ASTM standard F 1487 and Canadian Standard CAN/CSA-Z-614.



Drawn By: BLO
Scale: AS SHOWN
Date: 07/06/04
Drawing Name: HIGHRIDGEPK2

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.
Licenses No. 16156, Expiration Date: 8-28-18



SIDEWALK

PLANTER

SHELTER

ADA ACCESSIBLE SAFETY SURFACING

- 5,637 SQUARE FEET REQUIRED
- GTIMPAX Poured-IN-PLACE RUBBER SURFACING
- 1/2" EPDM WEAR COURSE (50% COLOR/ 50% BLACK)
- 3" SBR RUBBER IMPACT COURSE (3-1/2" TOTAL THICKNESS)
- 8-1/2" STONE BASE (BY OTHERS)
- 8' MAXIMUM FALL HEIGHT

PROPOSED 26' x 26' x 15' TRIANGLE SUPERMAN JOINED SHADE STRUCTURE

EQUIPMENT LIST

ITEM	QUANTITY	PART NUMBER	MANUFACTURER	DESCRIPTION
1	1	85077	GAMETIME	(ACRES OF FUN) POWERSCAPE PLUS PLAY STRUCTURE FOR AGES 5-12
2	1	4628	GAMETIME	36" HIGH PARALLEL BARS (FITKID)
3	1	1525	GAMETIME	POGO POLE
4	1	8672	GAMETIME	WALKING THE PLANK (USE WITH RUBBER SURFACING)

Chief, PED
Eric P. BLD
DATE 5/17/05
DATE 8/17/05
DATE



THE PLAY COMPONENTS IDENTIFIED IN THIS PLAY AREA ARE IPEMA CERTIFIED. THE USE AND LAYOUT OF THESE COMPONENTS CONFORM TO THE REQUIREMENTS OF ASTM F1487-01.

