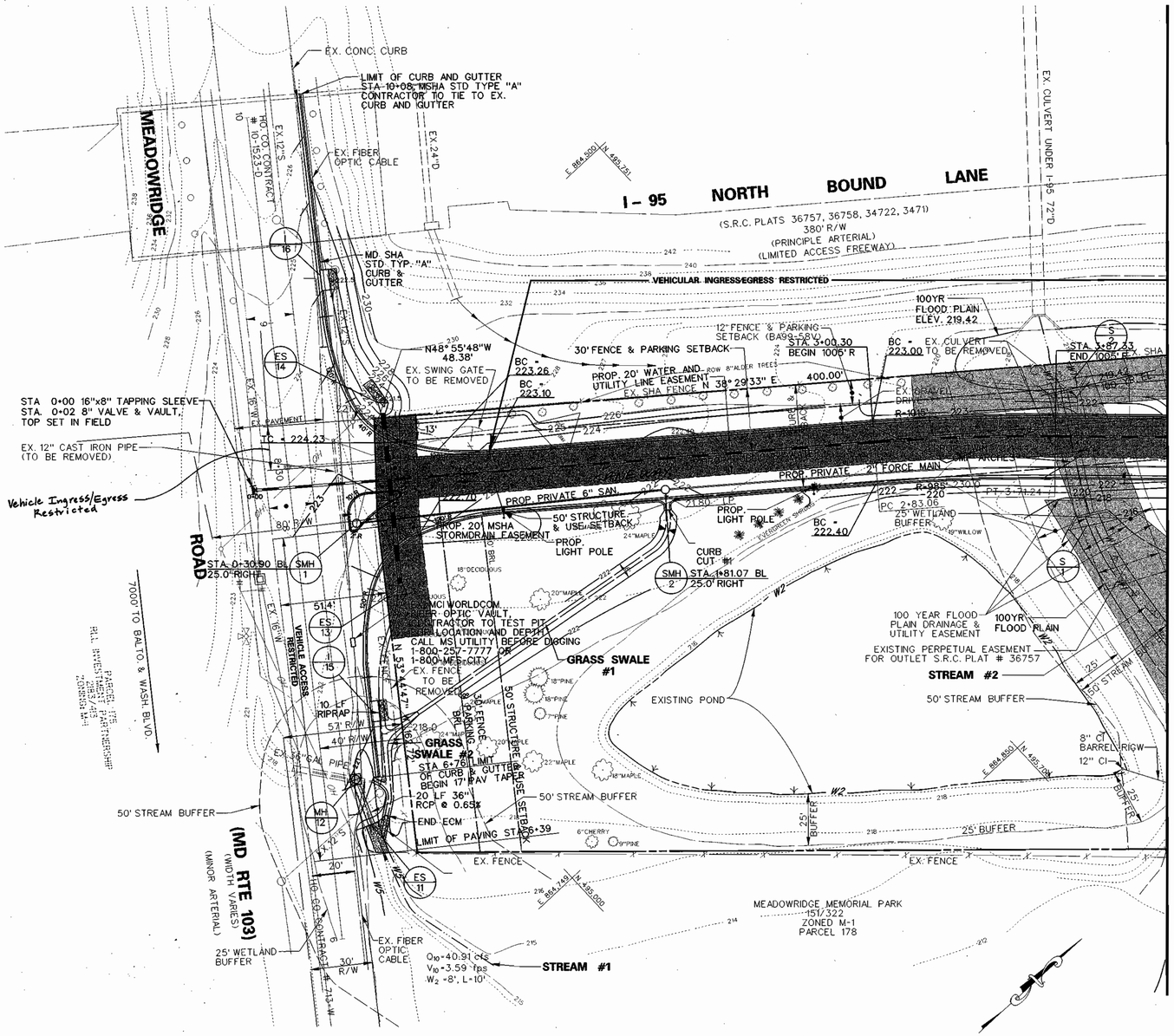


GENERAL NOTES

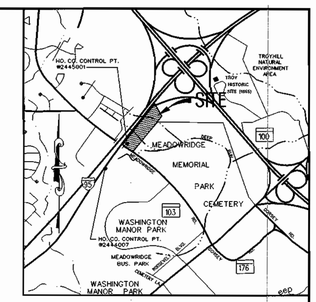
1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV,I.E. STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
2. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN FROM BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
3. THE CONTRACTOR SHALL TEST PIT EXISTING UTILITIES AT LEAST FIVE (5) DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS TO VERIFY THEIR LOCATION AND ELEVATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY IF LOCATION OF UTILITIES IS OTHER THAN SHOWN.
4. CONTRACTOR TO NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS.

MISS UTILITY	1-800-257-7777
VERIZON TELEPHONE COMPANY	752-9976
HOWARD COUNTY BUREAU OF UTILITIES	992-2366
AT&T CABLE LOCATION DIVISION	393-3553
BALTIMORE GAS & ELECTRIC COMPANY	685-0123
STATE HIGHWAY ADMINISTRATION	531-5533
HOWARD COUNTY CONSTRUCTION/ INSPECTION/ SURVEY DIVISION (24 HOURS NOTICE PRIOR TO COMMENCEMENT OF WORK)	792-7272 313-1880

5. TOPO TAKEN FROM FIELD SURVEY DATED APRIL 1989 BY KCI.
6. THE DEVELOPER IS RESPONSIBLE FOR THE ACQUISITION OF ALL EASEMENTS, RIGHTS AND/OR RIGHTS-OF-WAY THAT MAY BE REQUIRED FOR THE SEDIMENT AND EROSION CONTROL PRACTICES, STORM WATER MANAGEMENT PRACTICES AND THE DISCHARGE OF STORM WATER ONTO OR ACROSS ADJACENT OR DOWNSTREAM PROPERTIES INCLUDED IN THIS PLAN. HE IS ALSO RESPONSIBLE FOR THE ACQUISITION OF ALL EASEMENTS, RIGHTS AND/OR RIGHTS-OF-WAY THAT MAY BE REQUIRED FOR GRADING AND/OR WORK ON ADJACENT PROPERTIES INCLUDED IN THIS PLAN.
7. ALL COORDINATES ARE BASED ON HOWARD COUNTY GEODETIC CONTROL TRAVERSE WHICH IS BASED ON THE MARYLAND STATE PLANE COORDINATE SYSTEM. REFERENCE HOWARD COUNTY CONTROL POINTS 2445001 (ELEV. 245.095) & 2444007 (ELEV. 252.125).
8. INSTALLATION OF TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
9. ALL ON-SITE ROADS PARKING AND DRAINAGE STRUCTURES (INCLUDING STORM DRAINS, WATER QUALITY BASINS, TWIN CULVERTS) SHALL BE PRIVATELY OWNED & MAINTAINED.
10. GRAVITY SEWER SERVICE TO THE PROPOSED BUILDING CANNOT BE PHYSICALLY PROVIDED. A PRIVATELY OWNED AND MAINTAINED PUMP STATION SHALL BE PROVIDED AS PER THESE PLANS AND SPECIFICATIONS. THE PUMPS AND ASSOCIATED APPURTENANCES SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY PLUMBING CODE.
11. REFER TO "MARYLAND'S GUIDELINES FOR WATERWAY CONSTRUCTION" BY THE WATER RESOURCES ADMINISTRATION (WRA) DATED SEPTEMBER 1999 REVISED NOVEMBER 2000 FOR STANDARD DETAILS AND DETAILED SPECIFICATIONS OF EACH PRACTICE, SPECIFIED HEREIN FOR WATERWAY CONSTRUCTION.
12. ALL WATER MAINS TO BE D.I.P. CLASS 52 UNLESS OTHERWISE NOTED.
13. TOPS OF ALL WATER MAINS TO HAVE A MINIMUM OF 3' COVER.
14. ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
15. THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
16. INSTREAM CONSTRUCTION WILL NOT BE PERMITTED FROM MARCH 1ST THROUGH ~~MAY~~ JUNE 15TH INCLUSIVE.
17. THE WATER PRESSURE ZONE FOR THIS CONTRACT IS 550.
18. ALL D.I.P. FITTINGS SHALL BE IN ACCORDANCE WITH A.W.W.A. SPECIFICATIONS C-153. DUCTILE IRON COMPACT FITTINGS 3"-12" FOR WATER AND OTHER LIQUIDS.
19. GRAVITY SEWER LINE WILL BE 6" PVC.
20. 2" SANITARY FORCE MAIN WILL BE PVC.
21. NO GRADING OR REMOVAL OF VEGETATIVE COVER IS PERMITTED WITHIN 25 FT OF A WETLAND UNLESS APPROVED BY THIS PLAN. THIS SITE IS SUBJECT TO MDE/ACOE PERMIT NO. 2002-64709.
22. THIS PLAN IS SUBJECT TO THE FIFTH EDITION OF THE SUBDIVISION REGULATIONS AND THE NEW ZONING REGULATIONS AS AMENDED BY COUNCIL BILL 50-2001.
23. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
24. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DPW DEVELOPERS AGREEMENT IN THE AMOUNT OF $13,200.00 FOR 31 SHADE TREES OR SUBSTITUTIONS.
25. THIS SITE IS SUBJECT TO SHA ACCESS PERMIT NO. B-HO-8208-02, ISSUED DECEMBER 31, 2002.
26. STORMWATER MANAGEMENT WILL BE PROVIDED THROUGH 2 UNDERGROUND DETENTION AREAS, 3 BIORETENTION AREAS (F-6), 1 SAND FILTER (F-5), AND 2 GRASS SWALES. THESE FACILITIES ARE PRIVATE SWM FACILITIES AND WILL BE MAINTAINED BY THE OWNER.
27. THE APPROVED APFO STUDY WAS PREPARED BY KCI TECHNOLOGIES, INC. AND APPROVED. SEPT. 5, 2002. THE MITIGATION REQUIREMENTS ARE AS FOLLOWS: NONE
28. WATER LINE WILL BE PUBLIC AND THE SANITARY SEWER WILL BE PRIVATE. THE EXISTING 16" WATER IS CONTRACT NO. 713-W AND THE EXISTING 8" SANITARY SEWER IS CONTRACT NO. 14-15-12-10. THE PROPOSED METER WILL BE LOCATED INSIDE AN EASEMENT ONSITE AND WILL BE PUBLIC.
29. BA-99-58V APPROVED MAY 11, 2000. VARIANCE TO PERMIT A PARKING SETBACK OF 12' FROM AN EXTERNAL PUBLIC STREET RIGHT-OF-WAY IN LIEU OF THE REQUIRED 30' MINIMUM SETBACK. REAPPLIED BA-02-50C APPROVED **December 18,** 2002.
30. "BIORETENTION AREAS DO NOT REQUIRE LANDSCAPE BUFFERING BECAUSE PLANTINGS WILL BE PLACED IN THOSE FACILITIES (SEE SHEET #13 - 14 FOR PLANT LIST AND DETAILS)."
31. DESIGN MANUAL WAIVER DATED MARCH 19, 2002 GRANTED FOR THE USE OF PRESSURE SEWER BY HOWARD COUNTY BUREAU OF ENGINEERING.
32. THIS SITE IS IN THE DEEP RUN TRIBUTARY WHICH FLOWS INTO THE PATAPSCO RIVER WATERSHED #02-13-09 AND IS CLASSIFIED AS A USE I. THE STREAM CLOSURE DATES ARE MARCH 1 THROUGH JUNE 15.
33. THIS PROJECT IS CONDITIONALLY EXEMPT FROM THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION WITH THE FILING OF A DECLARATION OF INTENT FOR LESS THAN 40,000 SQUARE FEET OF CLEARING.
34. WP-02-107 WAIVER TO PERMIT STOCKPILE AND ROUGH GRADING ON SITE PRIOR TO APPROVAL OF THE SDP WAS APPROVED ON JUNE 05, 2002 AND EXPIRES 1 YEAR AFTER ISSUANCE.

LEGEND

PROP. TREE LINE
EX. TREE LINE
FIRE HYDRANT
POLE
POLE WITH LIGHT
EVERGREEN TREE
OAK
EX. FENCE
PROP. FENCE
EX. CONTOURS
PROP. CONTOURS
15' B.R.L. — BUILDING RESTRICTION LINE
INDICATES SURFACE FLOW
RAILROAD LINE
+120.55 SPOT ELEVATION
STREET LIGHT
WETLANDS
PROP. 15' POLE WITH LIGHT
SB-A SOIL BORING - A
STREAM

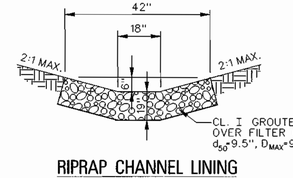


VICINITY MAP

SCALE: 1" = 2000'

SITE ANALYSIS

1. GROSS AREA OF SITE:	6.8264 AC
2. NET AREA OF SITE	6.6041 AC
3. PRESENT ZONING - PER SEPT. 19, 1993	ZONING M-1
4. PROPOSED USE	OFFICE/WAREHOUSE
5. FLOOR AREA	
OFFICE (3 STY.)	19,680 SF
WAREHOUSE	62,115 SF
6. NUMBER OF EMPLOYEES (MAX):	
OFFICE	52 PERSONS
WAREHOUSE	17 PERSONS
*7. PARKING SPACES REQUIRED	
OFFICE SPACE- 1 • 62 SPACES	
WAREHOUSE SPACE- 1 • 17 SPACES	
	TOTAL 79 PS - 4 HC -83
*PARKING REQUIREMENT MODIFICATION WAS APPROVED BY THE DEPARTMENT OF PLANNING & ZONING TO BE BASED ON 1 SPACE PER EMPLOYEE.	
8. PARKING SPACES PROPOSED	87 PS
9. GREEN SPACE AREA	3.1503 AC
10. GREEN SPACE AS % OF NET AREA	47.7%
11. BUILDING COVERAGE	1.57 AC
12. BUILDING COVERAGE AS % OF GROSS AREA	23.0%
13. HANDICAP PARKING SPACES PROVIDED	5
14. TOTAL DISTURBED AREA	5.550 Ac. OR 241,769 s.f.
15. DPZ FILES	SDP90-81, BA99-58V WP-02-107, BA02-50C

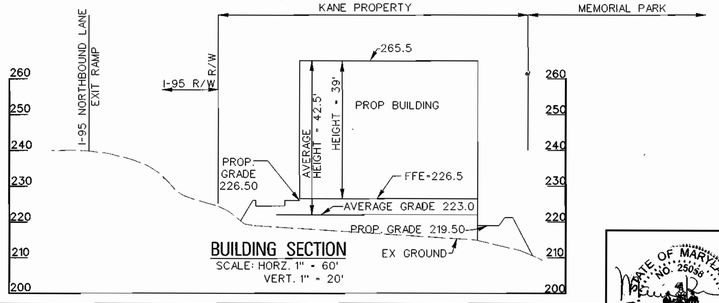


RIPRAP CHANNEL LINING FROM CURB TO ES-11

NOT TO SCALE

SHEET INDEX

SHEET NO.	TITLE
1	SITE DEVELOPMENT PLAN - SHEET 1
2	SITE DEVELOPMENT PLAN - SHEET 2
3	SITE DETAILS
4	PROP. STORMDRAIN DRAINAGE AREA MAP
5	STORMDRAIN PROFILES
6	STORMDRAIN PROFILES
7	STORMDRAIN DETAILS
8	WATER AND SANITARY PROFILES
9	SWM RISER DETAILS (CS-2, CS-4, CS-6)
10	SWM DRAINAGE PLAN
11	UNDERGROUND STORAGE SWM PLAN
12	SWM DETAILS
13	BIORETENTION AREA 1 PLAN
14	BIORETENTION AREAS 2 & 3 PLAN
15	GRADING & SEDIMENT CONTROL PLAN 1
16	GRADING & SEDIMENT CONTROL PLAN 2
17	GRADING & SEDIMENT CONTROL DETAILS
18	GRADING & SEDIMENT CONTROL DETAILS
19	SEDIMENT CONTROL NOTES
20	LANDSCAPE PLAN - SHEET 1
21	LANDSCAPE PLAN - SHEET 2
22	LANDSCAPE DETAILS



BUILDING SECTION

SCALE: HORZ. 1" = 60'
VERT. 1" = 20'

PERMIT INFORMATION CHART					
Subdivision Name: NA		Section/Area: NA		Lot/Parcel No.: 174	
Plat # or L/F: NA	Grid #	Zoning: M-1	Tax Map No.: 37	Elect Distr: 1	Census Tract: 6012
Water Code: D04		Sewer Code: 2153000			

ADDRESS CHART	
LOT/PARCEL #	STREET ADDRESS
174	6500 Kane Way

APPROVED: FOR PUBLIC (OR PRIVATE) WATER AND PUBLIC (OR PRIVATE) SEWAGE SYSTEMS.

COUNTY HEALTH OFFICER, HOWARD COUNTY HEALTH DEPARTMENT — DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5/30/03

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/30/03

DIRECTOR — DATE 5/30/03

Drafting	JAB	DATE	REVISIONS
Check	CGW		
Design	CGW		
Check	THM		

KCI TECHNOLOGIES — ENGINEERS, PLANNERS, SCIENTISTS, CONSTRUCTION MANAGERS
14502 Greenview Drive, Suite 424, Laurel, Maryland 20708
(301) 953-1821 (410) 792-8086
fax: (410) 792-7449
www.kci.com

OWNER:
C & S MEADOWRIDGE, LLC
925 FELL STREET
BALTIMORE, MD 21231
(410) 534-6350

CONTRACT PURCHASER & DEVELOPER:
CREANEY & SMITH GROUP LLC
925 FELL STREET
BALTIMORE, MD 21231
(410) 534-6350

SITE DEVELOPMENT PLAN - SHEET 1

STATE OF MARYLAND — No. 25038 — MARIANNE KIERNAN — PROFESSIONAL ENGINEER
APR 14 2003

KANE COMPANIES, INC. HEADQUARTERS

PROPOSED OFFICE WAREHOUSE
TAX MAP 37 , PARCEL 174
L. 6753 F. 684, ZONE M-1
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
WATER CODE: D04 SEWER CODE: 2153000

GRAPHIC SCALE
30 0 15 30 60
(IN FEET)
1 inch = 30ft.

DATE: APRIL 9, 2003
SHEET 1 OF 22

SDP-02-53

1602008\DRAWINGS\SHEET1.dgn

MATCH LINE - SHEET 1

I - 95 NORTH BOUND LANE

(S.R.C. PLATS 36757, 36758, 34722, 3471)
380' R/W

(LIMITED ACCESS FREEWAY)

EXIT RAMP TO RTE.100 EAST

VEHICULAR INGRESS/EGRESS RESTRICTED

100 YEAR FLOOD PLAIN DRAINAGE & UTILITY EASEMENT

100YR FLOOD PLAIN

END ECM

N 43° 28' 15" E 250.15'

EX. GRAVEL DRIVE

STA. 7+03.6 13' LEFT
STA. 6+91.54 BEGIN 510' R
4' CURB CUT #3 SEE DETAIL
PC 6+75.47 SHEET 3)

STA. 7+25.75 END 510' R

PT 7+08.99

PROP. 20' WATER AND UTILITY LINE EASEMENT

EX. SHA FENCE

BEGIN ECM

BC = 223.40

12' FENCE & PARKING SETBACK (BA99-58V)

STA. 8+75.63 BL 22.0' RIGHT

N 39° 37' 49" E 400.50'

STA. 10+05 13' LEFT

30' FENCE & PARKING SETBACK

BC = 224.20

R=1332.39'

INV.= 217.15

L=252.01

EX. SHA FENCE

EX.24"D TO BE REMOVED

9' X 18' PARKING (7)

9' X 18' PARKING (13)

9' X 18' PARKING (6)

10'x18' Parking (2)

HC

50' STRUCTURE & USE SETBACK

PROP. PRIVATE 12" SAN. FM

50' STREAM BUFFER

2' CURB CUT

CURB CUT #4

GRAVEL DIAPHRAM

SB-C

SB-A

SB-B

SMH 3 PUMP STATION STA. 6+21.89 BL 22.0' RIGHT

SMH 3A STA. 6+91.15 BL 22.0' RIGHT

BC = 222.00

4' CONC. SIDEWALK

8" WHC WM TO BE LOCATED INSIDE BLDG.

BC = 224.25

CONC. WALKWAY

STA. 10+05.19 END PUBLIC WATER MAIN

6,560 SQ. FT. (PER FLOOR) OFFICE 3 STORY

BC = 223.83

BC = 223.26

FFE = 226.5
BUILDING FOOTPRINT 68,675 SQ. FT.
(81,795 SQ. FT. TOTAL INCLUDING OFFICE)

GROUTED IN PLACE WITHIN PROPERTY BOUNDARY

EX. 24"D TO BE CUT & GROUTED

50' BGE

EX. GRASS SWALE 2' WIDE, 1' DEEP

BC = 222.94

BC = 222.46

BC = 222.24

BC = 222.00

25' BUFFER

EX. SD BGE

100YR FLOOD PLAIN

100' YR FLOOD PLAIN EASEMENT

25' WETLAND BUFFER

50' STREAM BUFFER

SWM-3

SWM-4

SWM-2

SWM-1

15" PERF PVC

15" SOLID PVC

30" HDPE

6" PERF PIPE

BIORETENTION AREA #3

BIORETENTION AREA #2
FOR DETAIL SEE SHEET 14

LOADING DOCKS

70'

60'

45'

40' typ.

135'

140'

485'

NOTE: BUILDING AREA BREAKDOWN

WAREHOUSE	62,115
1ST FLOOR OFFICE	6,560
2ND FLOOR OFFICE	6,560
3RD FLOOR OFFICE	6,560

S 42° 49' 18" W 1169.53'

EX.18"D TO BE REMOVED WITHIN PROPERTY BOUNDARY

EX.6"D TO BE REMOVED WITHIN PROPERTY BOUNDARY

EX. FENCE

MEADOWRIDGE MEMORIAL PARK (CEMETERY)
M-1 ZONING DISTRICT
151/322
PARCEL 178

EX. SWING GATE

STREAM #2

E 865,660
N 495,750

E 865,505
N 496,245

TRUCK RADIUS DETAIL 1
SCALE: 1" = 60'

TRUCK RADIUS DETAIL 2
SCALE: 1" = 60'

HANDICAPPED PARKING DETAIL
SCALE: 1" = 20'

HANDICAPPED SIGN DETAIL
NOT TO SCALE

SIGN TYPE M
18"x12"
18"x6"

APPROVED: FOR PUBLIC (OR PRIVATE) WATER AND PUBLIC (OR PRIVATE) SEWAGE SYSTEMS

COUNTY HEALTH OFFICER, HOWARD COUNTY HEALTH DEPARTMENT — DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/30/03

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/8/03

DIRECTOR — DATE 5/8/03

Drafting	JAB	DATE	REVISIONS
Check	CGW		
Design	CGW		
Check	THM		

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CONTRACT PURCHASER & DEVELOPER:
CREANEY & SMITH GROUP LLC
925 FELL STREET
BALTIMORE, MD 21231
(410) 534-6350

SITE DEVELOPMENT PLAN - SHEET 2

STATE OF MARYLAND
NO. 25048
MARIANNE KIERNAN
PROFESSIONAL ENGINEER
APR 14 2003

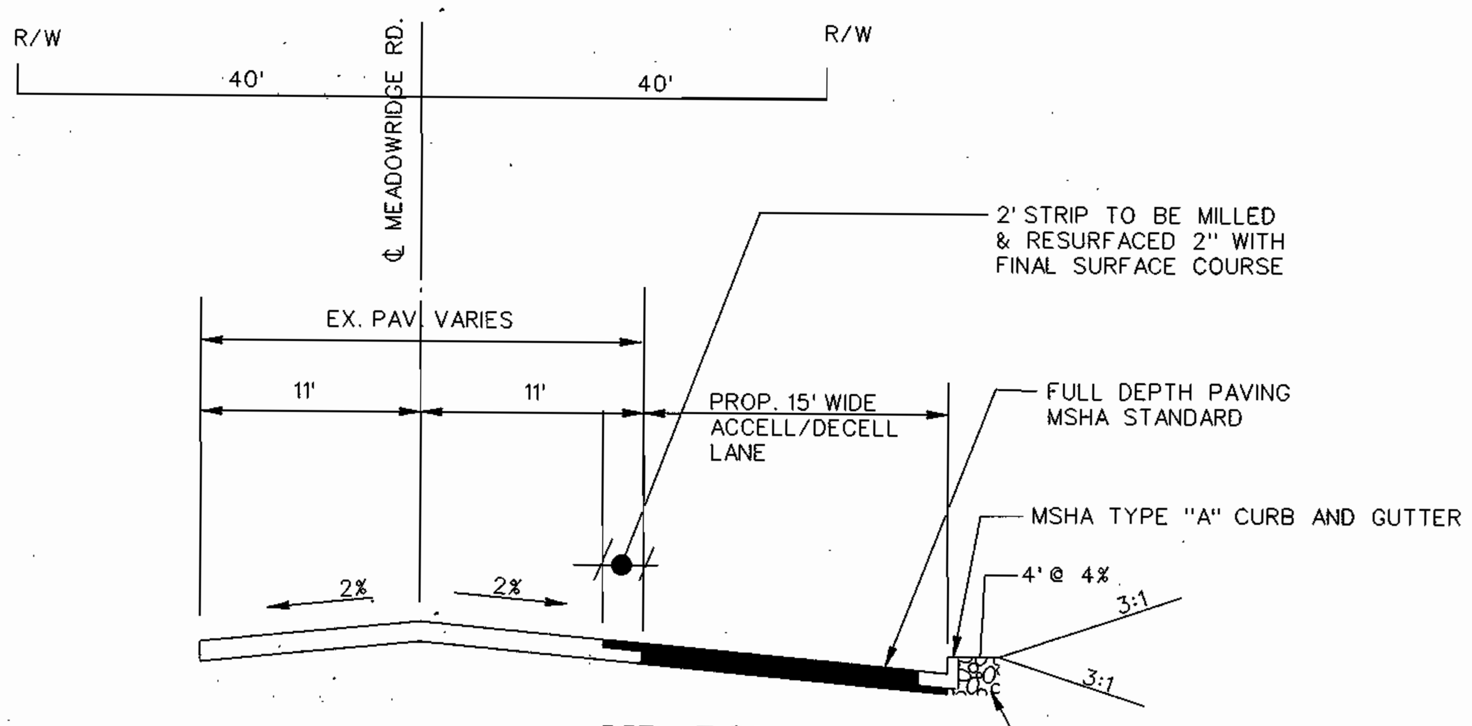
KANE COMPANIES, INC.
HEADQUARTERS
PROPOSED OFFICE WAREHOUSE
TAX MAP 37, PARCEL 174
L. 6753 F. 684, ZONE M-1
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
WATER CODE: D04 SEWER CODE: 215 3000

GRAPHIC SCALE
30 0 15 30 60
(IN FEET)
1 inch = 30ft.

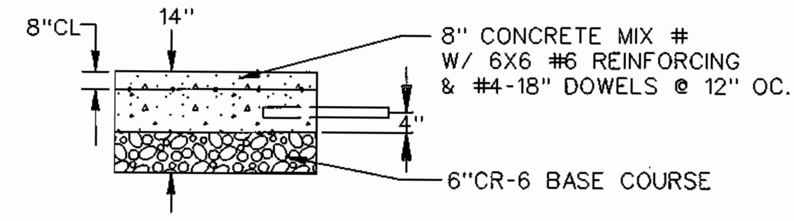
DATE: APRIL 9, 2003
SHEET 2 OF 22

SDP-02-53

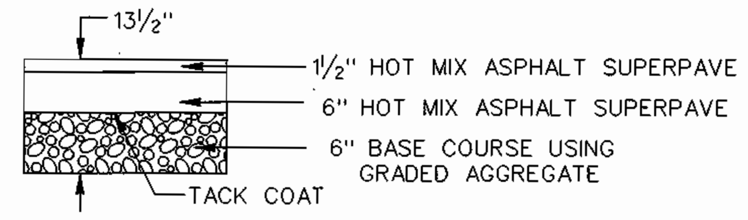
1602008\DRAWINGS\SHEET2.dgn



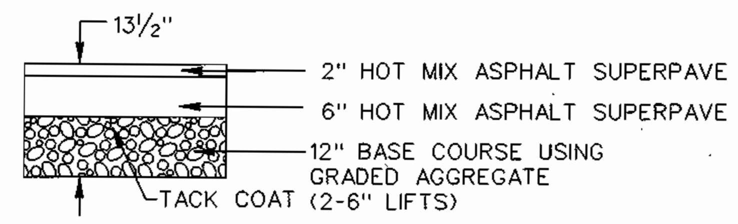
MD ROUTE 103 PAVING SECTION
NOT TO SCALE



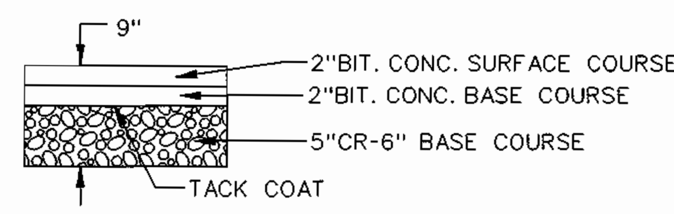
HEAVY DUTY CONCRETE PAVING
(LOADING DOCK)



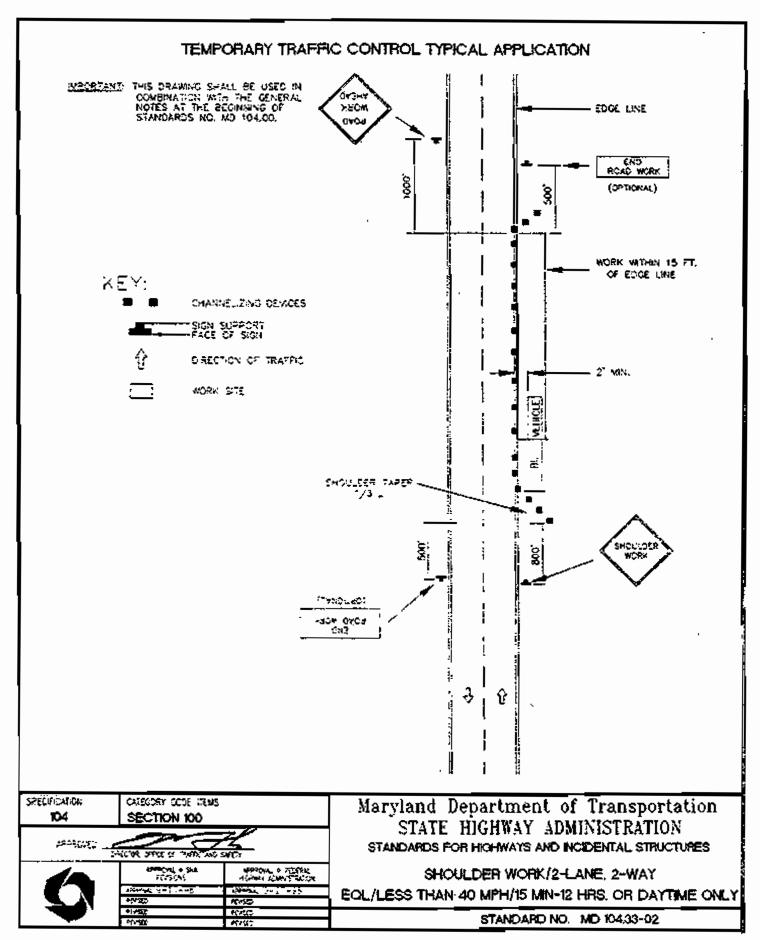
HEAVY DUTY BIT. CONC. PAVING
(DRIVE LANES)

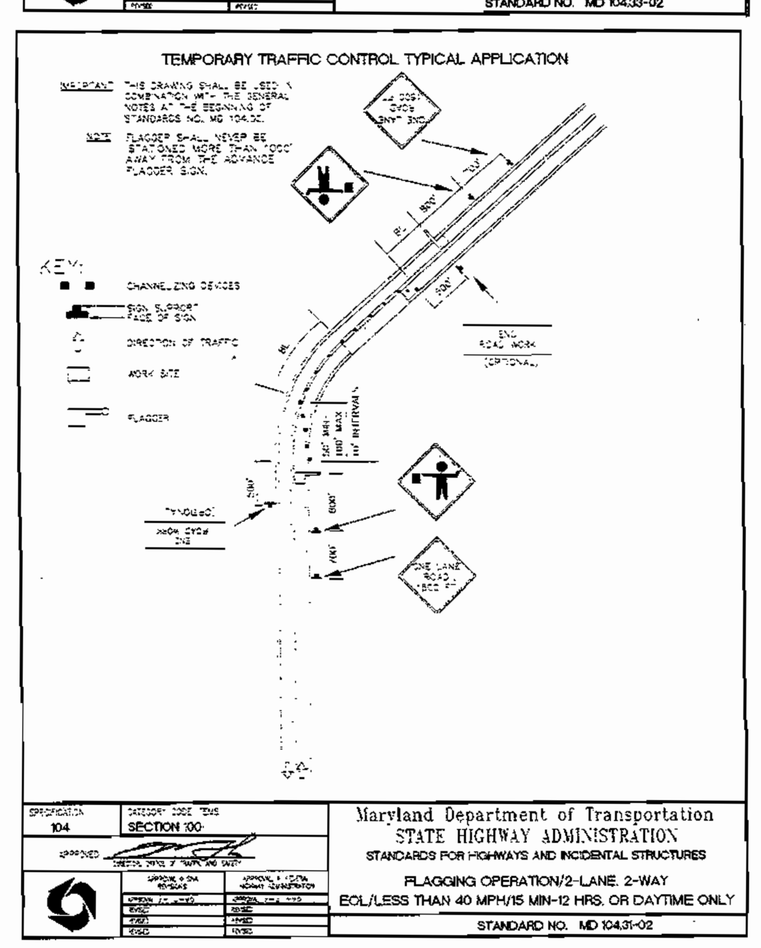


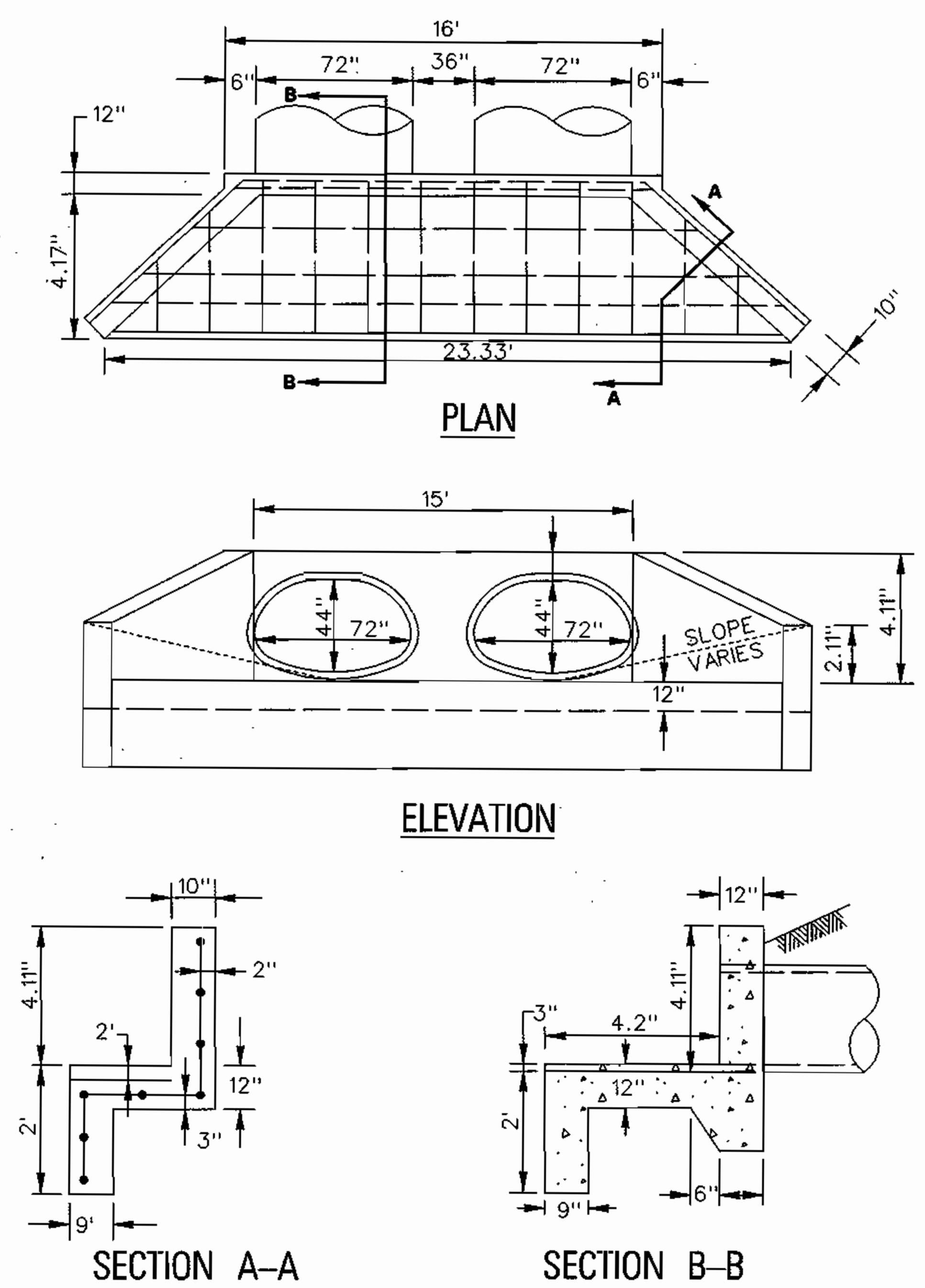
BITUMINOUS CONCRETE PAVING SHA STANDARD DETAIL
(MEADOW RIDGE ROAD & ENTRANCE)



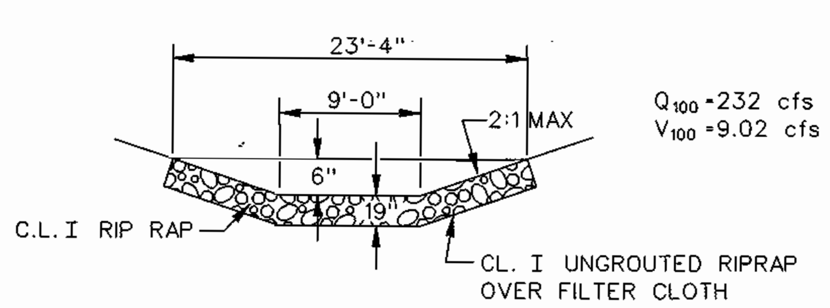
LIGHT DUTY BIT. CONC. PAVING
(PARKING SPACES & AREA EAST OF BUILDING)





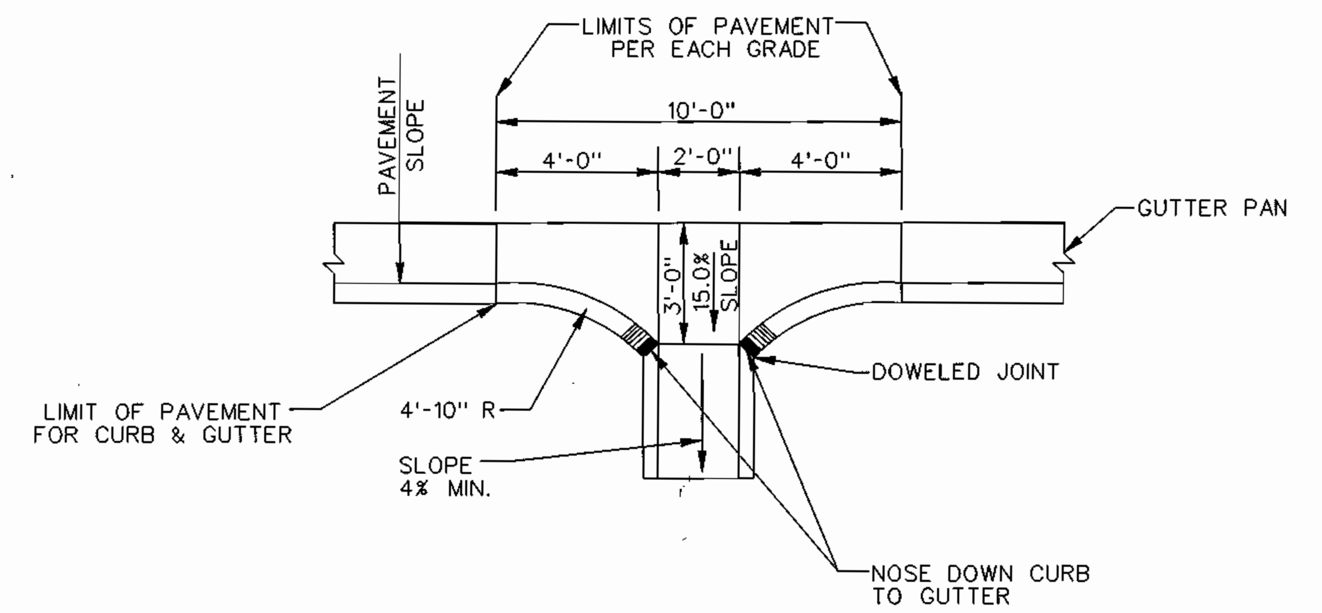


MODIFIED TYPE "A" HEADWALL
TWIN 72" X 44" C.M. PIPE ARCHES
NOT TO SCALE

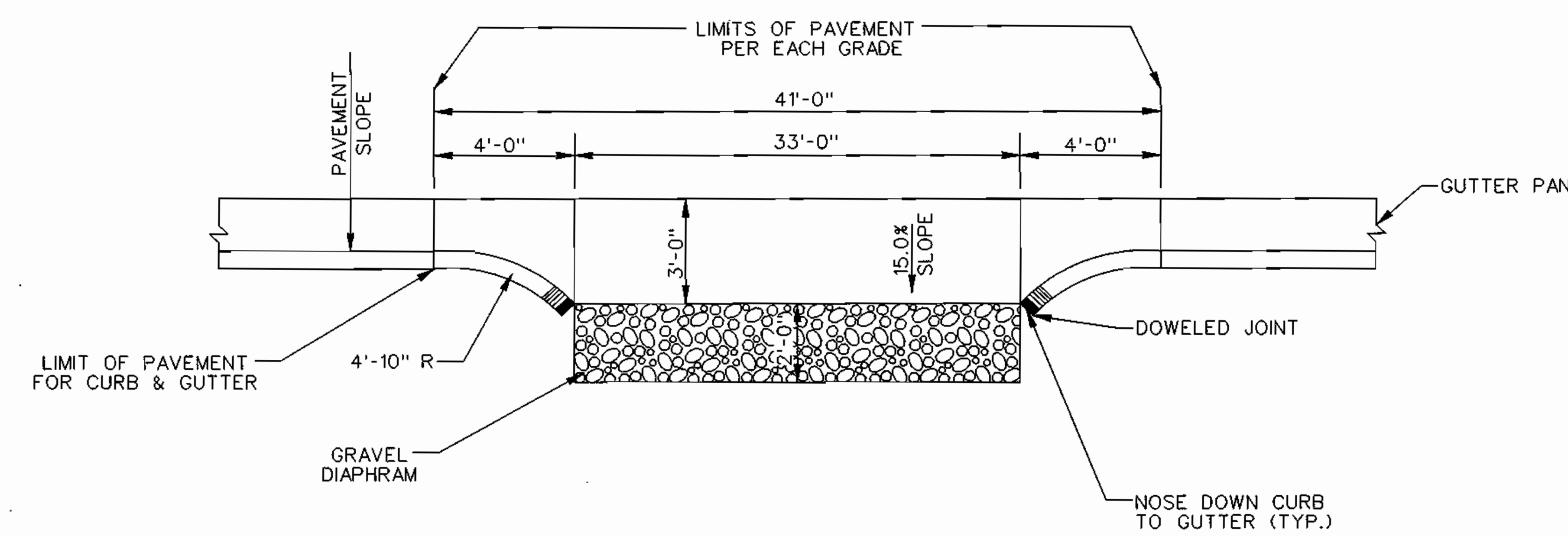


Q_{100} =232 cfs
V_{100} =9.02 cfs

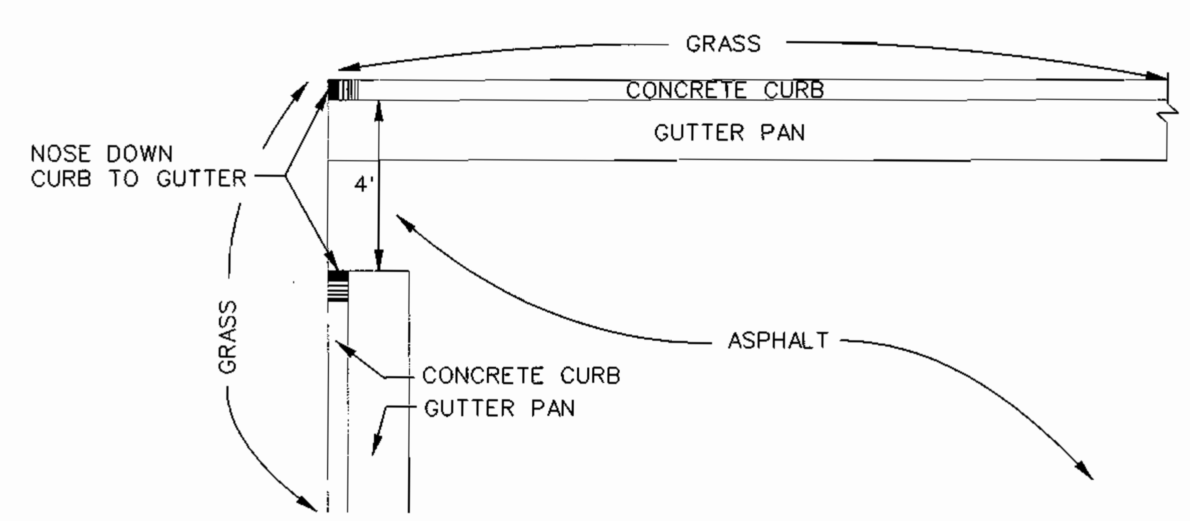
RIP RAP CHANNEL LINING S-1 & S-2
NOT TO SCALE



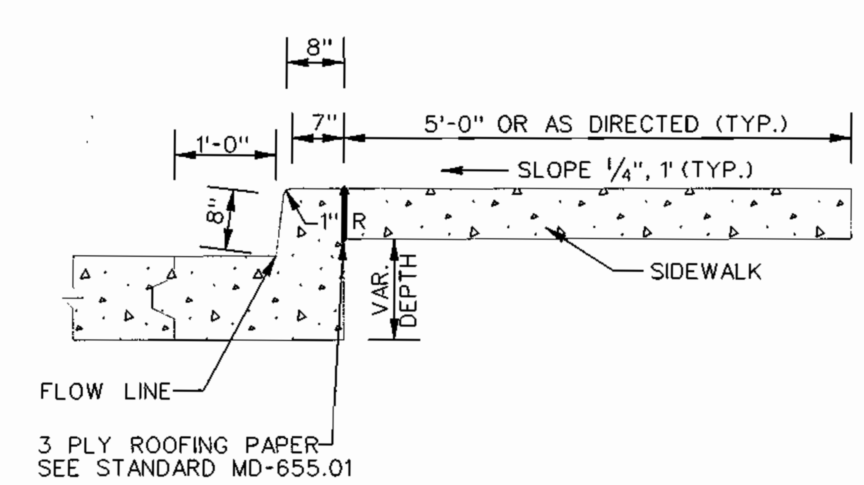
STANDARD CURB & GUTTER AT LOW POINT (CURB CUT #1 & 4)
NOT TO SCALE



STANDARD CURB & GUTTER AT LOW POINT (CURB CUT #2)
NOT TO SCALE



STANDARD CURB & GUTTER AT LOW POINT (CURB CUT #3)
NOT TO SCALE



TYPE 'A' CURB & GUTTER
NOT TO SCALE

* NOTE: PROVIDE 6" HIGH CURB ALONG PERIMETER ACCESS ROAD AND PARKING LOT.

GENERAL STRUCTURAL NOTES:

1. GEOTECHNICAL PARAMETERS:
   A. ASSUMED INTERNAL FRICTION ANGLE, O = 28°
   B. ASSUMED SOIL DENSITY = 125 PCF
   C. ASSUMED ALLOWABLE SOIL PRESSURE = 1500 PSF
   D. NO SURCHARGE & LEVEL BACKFILL
2. GENERAL
   A. IT IS THE CONTRACTOR'S RESPONSIBILITY TO SATISFY HIMSELF AS TO THE LOCATION OF ANY UTILITIES IN THE IMMEDIATE VICINITY OF CONSTRUCTION SO AS TO PREVENT DAMAGE TO THEM. SHOULD ANY DAMAGE TO SUCH UTILITIES OCCUR, THE CONTRACTOR SHALL BE REQUIRED TO REPAIR SUCH DAMAGE AT HIS OWN EXPENSE AND TO THE SATISFACTION OF THE OWNER.
   B. SHOP DRAWINGS FOR ALL STRUCTURAL ELEMENTS SHOWN ON THE CONTRACT DOCUMENTS MUST BE SUBMITTED BY THE GENERAL CONTRACTOR AND REVIEWED BY THE ENGINEER. IF THE CONTRACTOR OR OWNER FAILS TO OBTAIN THE ENGINEER'S REVIEW OF THE SHOP DRAWINGS, THE ENGINEER WILL NOT BE RESPONSIBLE FOR THE STRUCTURAL CERTIFICATION AND DESIGN OF ITS PART OF THE PROJECT. SHOP DRAWINGS ARE REVIEWED BY THE ENGINEER AS A CONVENIENCE TO THE GENERAL CONTRACTOR AND ARE NOT A CONTRACT DOCUMENT.
   C. THE GENERAL CONTRACTOR SHALL REVIEW ALL SHOP DRAWINGS BEFORE SUBMISSION TO THE ENGINEER AND MAKE ALL CORRECTIONS AS HE DEEMS NECESSARY AND SHALL APPROVE AND INITIAL EACH DRAWING.
   D. AT THE TIME OF SHOP DRAWING SUBMISSION, THE GENERAL CONTRACTOR SHALL INFORM THE ENGINEER IN WRITING OF ANY DEVIATIONS OR OMISSIONS FROM THE CONTRACT DOCUMENTS.
   E. THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS BEFORE PROCEEDING WITH CONSTRUCTION. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
   F. CONSULT THE ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR VERIFICATION OF LOCATION AND DIMENSIONS OF OPENINGS, SLEEVES, TRENCHES, AND OTHER PROJECT REQUIREMENTS.
3. FOUNDATIONS
   A. EXCAVATION AND BACKFILL
      1. GROUND WATER WAS NOT ASSUMED.
      2. EXCAVATED AREA SHALL REMAIN FREE OF WATER UNTIL BACKFILL IS PROPERLY PLACED AND COMPACTED TO FINISH GRADE.
      3. FOOTINGS ARE TO BE PLACED ON UNDISTURBED EARTH.
      4. ALL BACKFILL SHALL BE COMPACTED TO A DRY DENSITY OF AT LEAST 90 PERCENT OF MAXIMUM DRY DENSITY AS DETERMINED BY AASHTO T-180.
      5. BACKWALL SHALL NOT BE PLACED UNTIL CONCRETE HAS REACHED 80% OF COMPRESSIVE STRENGTH.
      6. POROUS BACKFILL SHALL BE ASTM C33, SIZE #57.
   B. SPREAD FOOTING FOUNDATIONS
      1. BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE A MINIMUM OF 2'-6" BELOW FINISHED GRADE, SEE SITE PLANS FOR EXISTING AND FINISHED GRADES.
      2. ALL FOOTINGS HAVE BEEN DESIGNED FOR AN ASSUMED NET ALLOWABLE SOIL BEARING PRESSURE OF 1500 P.S.F. CONTRACTOR SHALL NOTIFY ENGINEER PRIOR TO PLACING ALL FOOTINGS IF THE BEARING CAPACITY HAS NOT BEEN ACHIEVED.
      3. PIPE SLEEVES AND OTHER EMBEDDED ITEMS SHALL BE PLACED PRIOR TO CONCRETE PLACEMENT.
4. CAST-IN-PLACE CONCRETE
   A. ALL CONCRETE WORK SHALL CONFORM TO ALL PROVISIONS OF "SPECIFICATION FOR STRUCTURAL CONCRETE FOR BUILDINGS" (ACI 301-89) AND TO THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318-95).
   B. ADDITIONALLY, THE CONCRETE SHALL CONFORM TO ALL PROVISIONS OF THE FOLLOWING PUBLICATIONS:
      1. ACI 305R-91: RECOMMENDED PRACTICE FOR HOT WEATHER CONCRETING
      2. ACI 306R-88: RECOMMENDED PRACTICE FOR COLD WEATHER CONCRETING
      3. ACI 347R-88: RECOMMENDED PRACTICE FOR CONCRETE FORMWORK
   C. ALL CONCRETE UNLESS NOTED OTHERWISE, SHALL BE STONE AGGREGATE CONCRETE HAVING A MINIMUM COMPRESSIVE STRENGTH OF 3,500 P.S.I. AT 28 DAYS. ALL CONCRETE EXPOSED TO WEATHER SHALL HAVE AN AIR ENTRAINMENT OF 6% + 1% , NO ADMIXTURES CONTAINING CHLORIDES SHALL BE PERMITTED. MAXIMUM AGGREGATE SIZE FOR CONCRETE SHALL BE 1". ALL CONCRETE EXCEPT FOOTINGS SHALL CONTAIN A WATER REDUCING ADMIXTURE.
   D. ALL CONCRETE MIX DESIGNS AND ADMIXTURES SHALL BE APPROVED BY THE ENGINEER 30 DAYS PRIOR TO INITIATION OF FIRST POUR.
   E. ALL REINFORCING BARS SHALL CONFORM TO ASTM A-615, GRADE 60.
   F. CONCRETE EXPOSED TO PUBLIC VIEW SHALL MEET THE REQUIREMENTS FOR ARCHITECTURAL CONCRETE (ACI 301).
6. REFER TO SITE PLAN FOR WALL LOCATION.
7. WALL CAN BE CONSTRUCTED UP TO 30'-0" LONG WITHOUT JOINTS.
8. WALLS LONGER THAN 30'-0" REQUIRE CONTROL JOINTS IN THE WALL (NOT THE FOOTING) AT 30'-0" MAXIMUM SPACING.
9. WALLS LONGER THAN 90'-0" REQUIRE EXPANSION JOINTS IN THE WALL AND CONTROL JOINTS IN THE FOOTING AT 90'-0" MAX. SPACING WITH CONTROL JOINTS IN THE WALL AT 30'-0" MAX. SPACING.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/2x/03

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/8/03

DIRECTOR — DATE 5/6/03

Drafting	JAB	DATE	REVISIONS
Check	CGW		
Design	CGW		
Check	THM		

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ENGINEERS PLANNERS SCIENTISTS CONSTRUCTION MANAGERS
14502 Greenview Drive, Suite 424
Laurel, Maryland 20708
(301) 953-1821 (410) 792-8086
fax: (410) 792-7419
www.kci.com

OWNER:
C & S MEADOWRIDGE, LLC
925 FELL STREET
BALTIMORE, MD 21231
(410) 534-6350

CONTRACT PURCHASER & DEVELOPER:
CREANEY & SMITH GROUP LLC
925 FELL STREET
BALTIMORE, MD 21231
(410) 534-6350

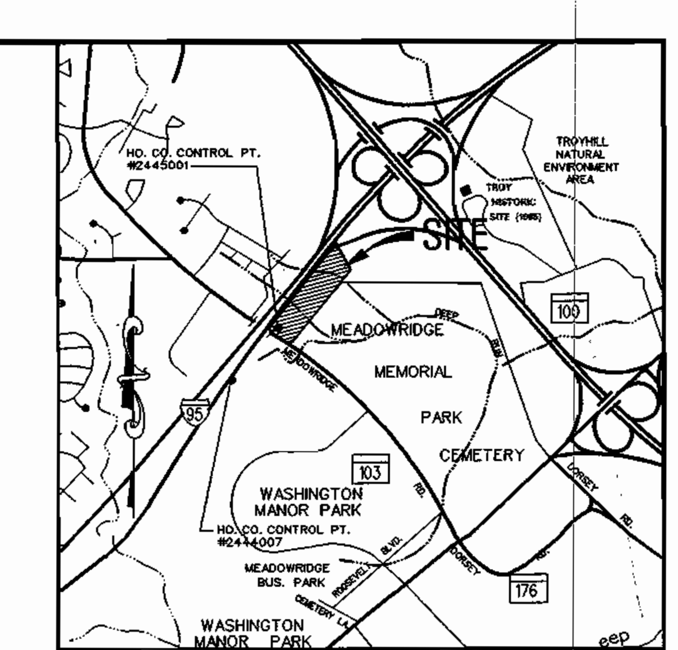
SITE DETAILS

STATE OF MARYLAND NO. 25056 MARIANNE KIERNAN PROFESSIONAL ENGINEER
APR 1 4 2003

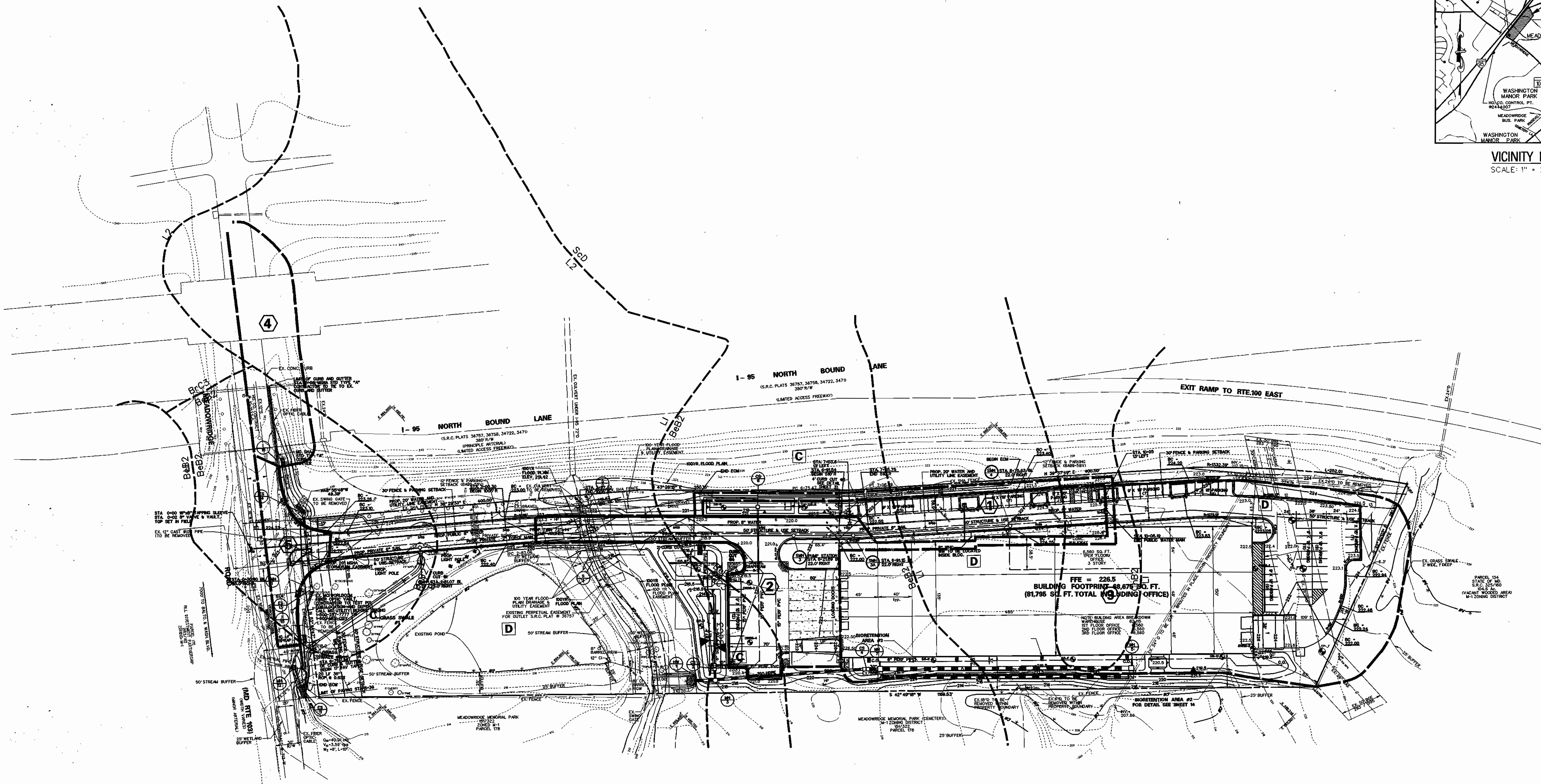
KANE COMPANIES, INC. HEADQUARTERS
PROPOSED OFFICE WAREHOUSE
TAX MAP 37 , PARCEL 174
L. 6753 F. 684, ZONE M-1
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
WATER CODE: D04 SEWER CODE: 215 3000

SCALE AS SHOWN
DATE: APRIL 9, 2003
SHEET 3 OF 22

SDP-02-53
1602008\DRAWINGS\SITEDETAILS.dgn



VICINITY MAP
SCALE: 1" = 2000'



No.	DRAINAGE AREA (Ac)	% IMPERVIOUS	C FACTOR
⟨1⟩	0.50	100%	0.90
⟨2⟩	1.15	100%	0.90
⟨3⟩	2.36	81%	0.78
⟨4⟩	.467	79%	SEE SWM DA MAP
⟨5⟩	.147	100%	

PLAN
SCALE: 1" = 60'

LEGEND

90	EX. INDEX CONTOUR
	EX. 2' INTERMEDIATE CONTOUR
	EX. CURB AND GUTTER
G	EX. GAS LINE
18"D	EX. STORM DRAIN
X	EX. FENCE
W	EX. EDGE OF WATER
OH	EX. OVERHEAD UTILITY LINE
	EX. WATER VALVE
	EX. INLET
	EX. MANHOLE
	EX. TREE
BeB2 / BeC3	EX. SOILS DELINEATION
C	HYDROLOGIC SOILS GROUP
	EX. SOIL BORINGS
	TC PATH
A-B	TC PATH FLOW TYPE
⟨2⟩	DRAINAGE AREA
	DRAINAGE AREA BOUNDARY
	100-YR FLOOD PLAIN
	WETLANDS

SOILS CHART

SOIL	HYDROLOGIC SOIL GROUP	DESCRIPTION
BeB2	C	BELTSVILLE SILT LOAM, 1 TO 5 PERCENT SLOPES, MODERATELY ERODED
BeC3	C	BELTSVILLE SILT LOAM, 5 TO 10 PERCENT SLOPES, SEVERELY ERODED
L1	D	LEONARDTOWN SILT LOAM
CnB2	C	CHILLUM-FAIRFAX LOAMS, 1 TO 5 PERCENT SLOPES, MODERATLEY ERODED

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
CHIEF, DIVISION OF LAND DEVELOPMENT 5/8/03	DATE
DIRECTOR 5/8/03	DATE

		DATE	REVISIONS
Drafting	JAB		
Check	CGW		
Design	CGW		
Check	THM		

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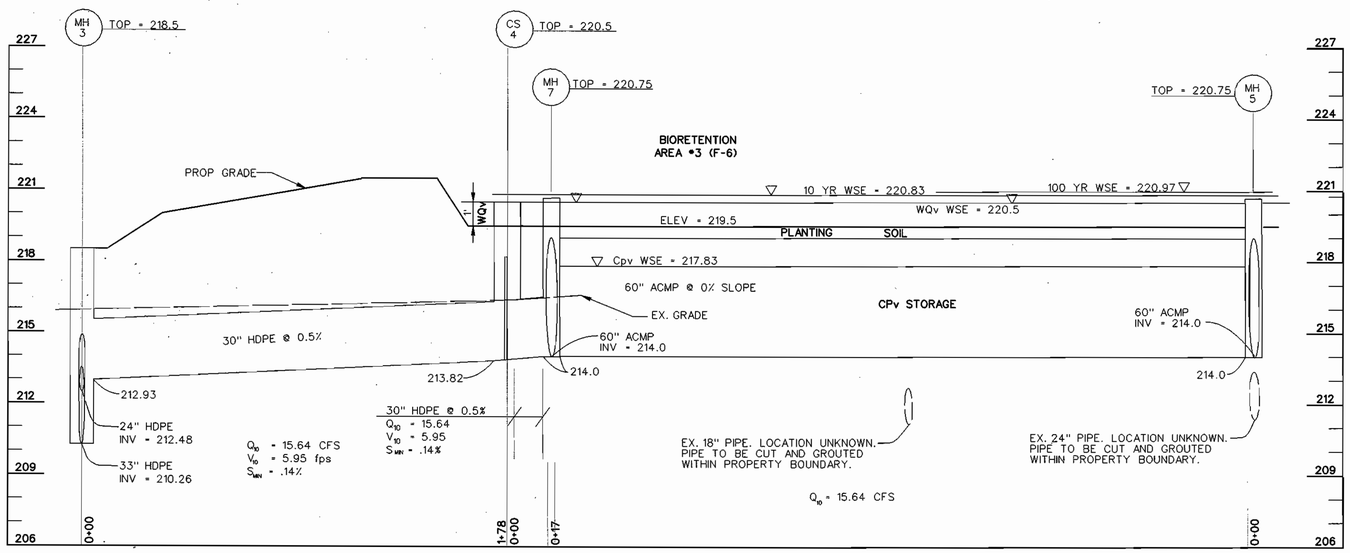
PROPOSED STORMDRAIN DRAINAGE AREA MAP

STATE OF MARYLAND No. 25058 MARIANNE KIERNAN PROFESSIONAL ENGINEER
APR 1 4 2003

KANE COMPANIES, INC. HEADQUARTERS
PROPOSED OFFICE WAREHOUSE
TAX MAP 37, PARCEL 174
L. 6753 F. 684, ZONE M-1
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
WATER CODE: D04 SEWER CODE: 215 3000

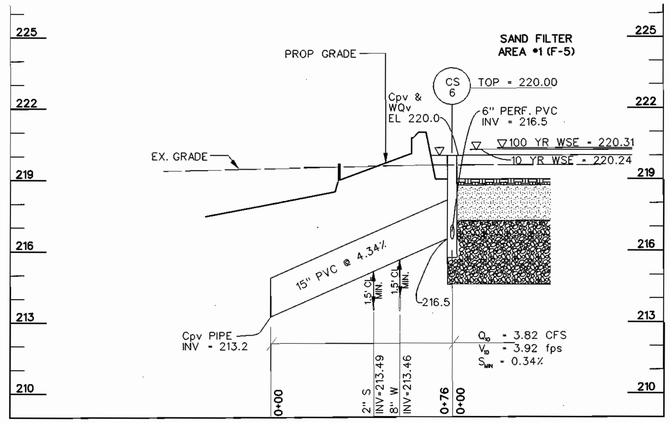
GRAPHIC SCALE
60 0 30 60 120
(IN FEET)
1 inch = 60ft.

DATE: APRIL 9, 2003
SHEET 4 OF 22
SDP-02-53
1602008\DRAWINGS\SDMAP.dgn



STORM DRAIN PROFILE

SCALE: HORZ. 1" = 30'
VERT. 1" = 3'



STORM DRAIN PROFILE

SCALE: HORZ. 1" = 30'
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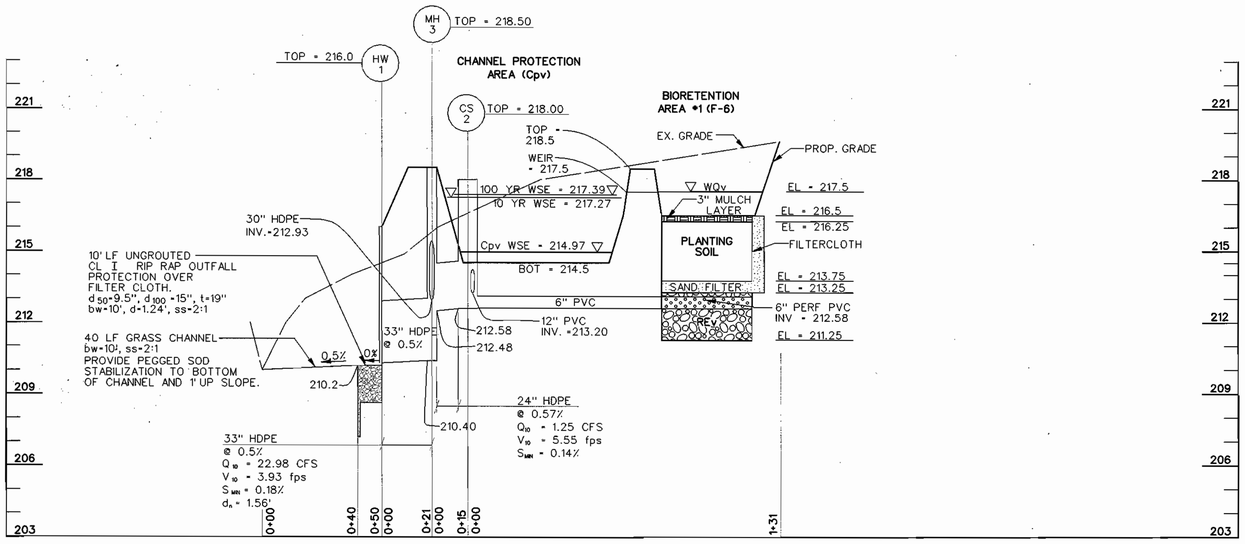
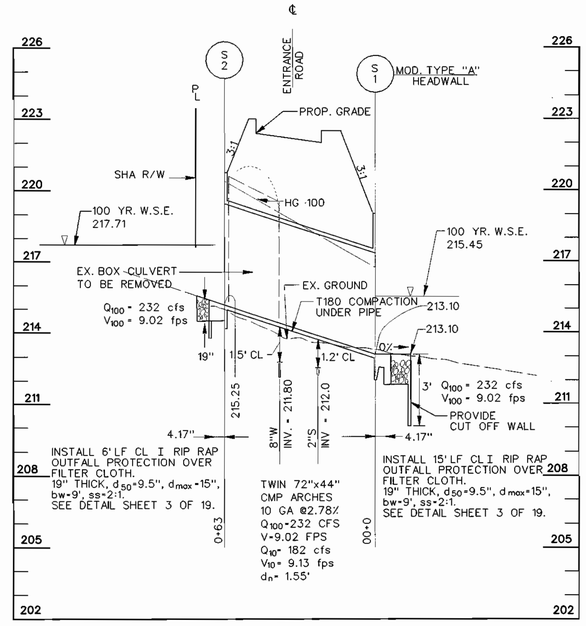


STORM DRAIN PROFILE

SCALE: HORZ. 1" = 30'
VERT. 1" = 3'



STORM DRAIN PROFILE

SCALE: HORZ. 1" = 30'
VERT. 1" = 3'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/29/13

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/1/13

DIRECTOR — DATE 5/6/13

Drafting	JAB	DATE	REVISIONS
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BALTIMORE, MD 21231
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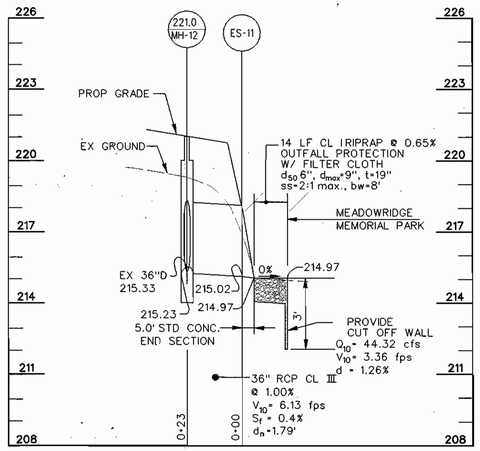
STORMDRAIN PROFILES

STATE OF MARYLAND — No. 25087 — MARIANNE KIERNAN — PROFESSIONAL ENGINEER
APR 14 2003

KANE COMPANIES, INC. HEADQUARTERS
PROPOSED OFFICE WAREHOUSE
TAX MAP 37 , PARCEL 174
L. 6753 F. 684, ZONE M-1
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
WATER CODE: D04 SEWER CODE: 215 3000

GRAPHIC SCALE
30 0 15 30 60
(IN FEET)
1 inch = 30ft.
DATE: APRIL 9, 2003
SHEET 5 OF 22

SDP-02-53 1602008\DRAWINGS\sdprofiles.dgn



STORM DRAIN PROFILE

SCALE: HORZ. 1" = 30'
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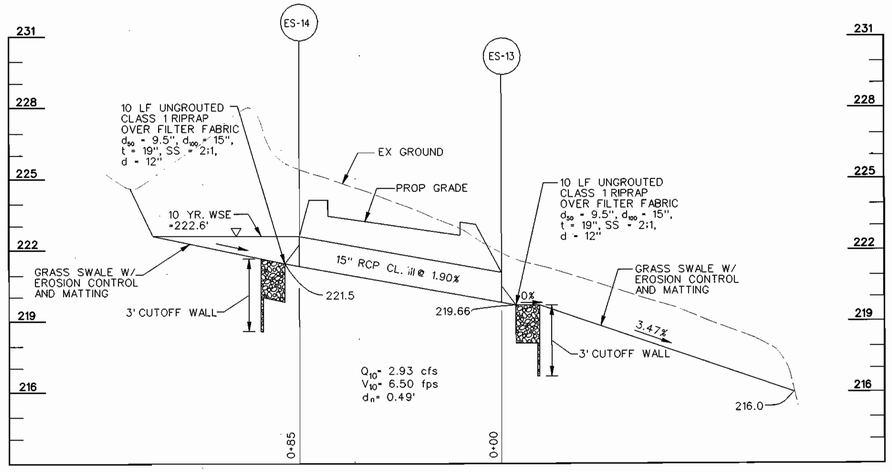

STORM DRAIN PROFILE

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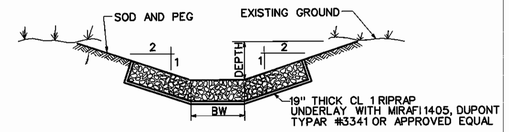


NOTES:
1. ALL RIP-RAP TO BE UNDERLAID WITH ONE COURSE OF THE FOLLOWING NON-WOVEN CLOTH FABRIC OR AN APPROVED EQUAL:
   - MIRAFI 140-N
   - EXXON GEOTEXTILES 130-D
   - TERRATEX SD
2. PROVIDE FILTERCLOTH LINING.

RIPRAP TRAPEZOPIDAL CHANNEL DETAIL

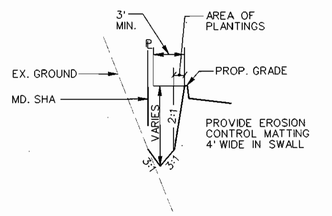
NOT TO SCALE

RIRRAP CHANNEL DESIGN TABLE

STRUCTURE	DESIGN (cfs) Q	BW (ft)	DEPTH (ft)	VELOCITY (f/s)
HW-1	Q_{10} = 22.98 cfs	10	0.91	2.41
ES-11	Q_{10} = 44.42 cfs	8	0.72	6.58
ES-13	Q_{10} = 2.93 cfs	4	0.45	5.24
ES-14	Q_{10} = 2.93 cfs	4	0.45	1.32
S-1	Q_{10} = 182 cfs	40	0.50	6.79
S-2	Q_{10} = 182 cfs	40	0.50	6.79

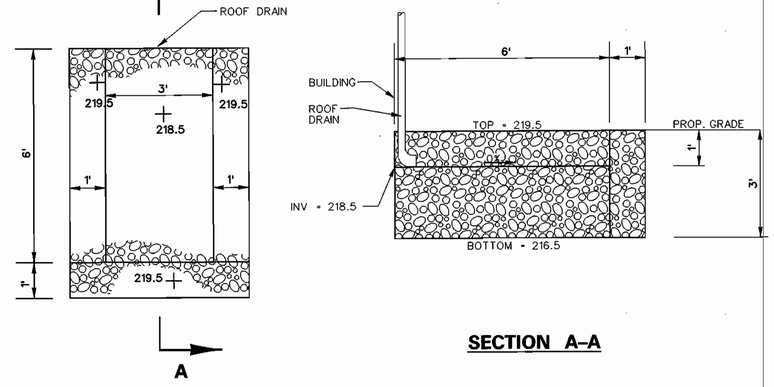
STRUCTURE SCHEDULE

STRUCTURE NUMBER	TYPE	TOP ELEV.	INVERT OUT	INVERT IN	LOCATION	REMARK
HW-1	HEADWALL	216.0	210.2	----	SEE PLAN	HoCo STD SD - 5.21
CS-2	CONTROL STRUCTURE	218.00	212.48	212.58	SEE PLAN	SEE DETAIL SHEET
CS-4	CONTROL STRUCTURE	221.00	214.00	214.00	SEE PLAN	SEE DETAIL SHEET
MH-3	MANHOLE	218.50	210.20	212.40	SEE PLAN	HoCo STD G5.13
MH-5	MANHOLE	220.75	214.0	214.0	SEE PLAN	MD SHA STD 384.07
CS-6	CONTROL STRUCTURE	220.00	216.50	216.50	SEE PLAN	SEE DETAIL SHEET
MH-7	MANHOLE	220.75	214.0	214.0	SEE PLAN	MD SHA STD 384.07
ES-11	END SECTION	----	214.97	----	SEE PLAN	HoCo STD SD - 5.51
MH-12	MANHOLE	221.00	215.23	215.33	SEE PLAN	HoCo STD G5.12
ES-13	END SECTION	----	220.00	----	SEE PLAN	----
ES-14	END SECTION	----	----	221.5	SEE PLAN	----
I-15	SHALLOW INLET	221.67	218.3	----	SEE PLAN	MD SHA STD 374.66
I-16	SHALLOW INLET	224.67	222.5	----	SEE PLAN	MD SHA STD 374.66



TYPICAL GRASS SWALE DETAIL ALONG RTE I-95 @ PROPERTY LINE

NOT TO SCALE



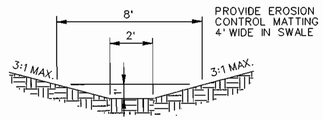
SECTION A-A

GABION OUTFALL DETAIL FOR ROOF DRAIN IN BIORETENTION AREA #3

SCALE: 1"=2'

PIPE SCHEDULE

FROM	TO	TYPE	LENGTH
Cpv	CS-6	15" HDPE	55'
CS-2	MH-3	24" HDPE	15'
MH-5	MH-7	60" ACMP GA 14	620'
MH-3	HW-1	33" HDPE	21'
CS-4	MH-3	30" HDPE	178'
MH-12	ES-11	36" RCP - CL. III	23'
ES-13	ES-14	15" RCP - CL. III	85'
I-15	----	23" x 14" CL. V HEP	2'
I-16	----	23" x 14" CL. V HEP	2'



* GRASS SWALE CREDIT FOR WQv & Rev
1" STORM VELOCITY FOR SWALE #1 IS 0.42 FPS
1" STORM VELOCITY FOR SWALE #2 IS 0.82 FPS
SEE COMPUTATIONS PAGE 74

GRASS 1 & 2 SWALE DETAIL

NOT TO SCALE

GRASS SWALE DESIGN TABLE

STRUCTURE	DESIGN (cfs) Q	BW (ft)	DEPTH (ft)	VELOCITY (f/s)
HW-1	Q_{10} = 22.98 cfs	10	1.38	1.30
ES-14	Q_{10} = 2.97 cfs	4	0.29	2.19
SWALE #1	Q_{10} = 1.97 cfs	2	0.25	2.86
SWALE #2	Q_{10} = 4.06 cfs	2	0.27	3.69

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/16/03

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/8/03

DIRECTOR — DATE 5/8/03

Drafting	JAB	DATE	REVISIONS
Check	CGW		
Design	CGW		
Check	THM		

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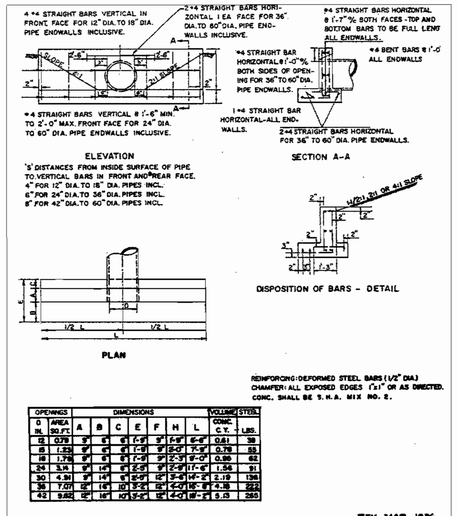
STORMDRAIN PROFILES

STATE OF MARYLAND — No. 25058 — MARIANNE KIETHLEY — PROFESSIONAL ENGINEER
APR 14 2003

KANE COMPANIES, INC. HEADQUARTERS
PROPOSED OFFICE WAREHOUSE
TAX MAP 37 , PARCEL 174
L. 6753 F. 684, ZONE M-1
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
WATER CODE: D04 SEWER CODE: 215 3000
GRAPHIC SCALE
30 0 15 30 60
(IN FEET)
1 inch = 30ft.
DATE: APRIL 9, 2003
SHEET 6 OF 22

SDP-02-53 J602008\DRAWINGS\sdprofiles2.dgn



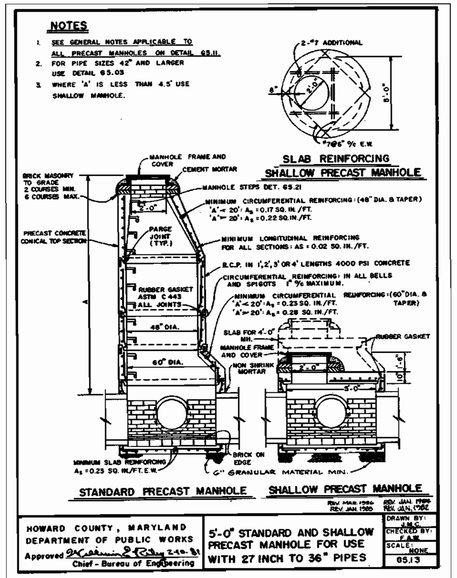
OPENINGS		DIMENSIONS							VOLUME CONC.	STEEL
D IN.	AREA SQ.FT.	A	B	C	E	F	H	L	C.Y.	LBS.
12	0.78	3"	6"	1'-1"	3"	1'-0"	5'-0"	5'-0"	0.61	38
15	1.23	3"	6"	1'-1"	3"	1'-0"	7'-0"	7'-0"	0.78	55
18	1.76	3"	6"	1'-1"	3"	1'-3"	9'-0"	9'-0"	0.95	62
24	3.14	3"	10"	1'-6"	3"	2'-0"	11'-0"	11'-0"	1.54	91
30	4.91	3"	10"	1'-6"	3"	2'-6"	14'-0"	14'-0"	2.13	136
36	7.07	3"	10"	1'-6"	3"	3'-0"	16'-0"	16'-0"	2.78	222
42	9.62	3"	10"	1'-6"	3"	3'-6"	18'-0"	18'-0"	3.43	265

REV. MAR. 1986

HOWARD COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS	TYPE "C" ENDWALL CIRCULAR PIPE	DRAWN BY:
Approved 2/4/88 Chief - Bureau of Engineering		CHECKED BY: F.A.M.
		SCALE: NONE
		SD-5.32

NOTES

1. SEE GENERAL NOTES APPLICABLE TO ALL PRECAST MANHOLES ON DETAIL 6S.11.
2. FOR PIPE SIZES 42" AND LARGER USE DETAIL 6 S.03
3. WHERE 'A' IS LESS THAN 4.5' USE SHALLOW MANHOLE.

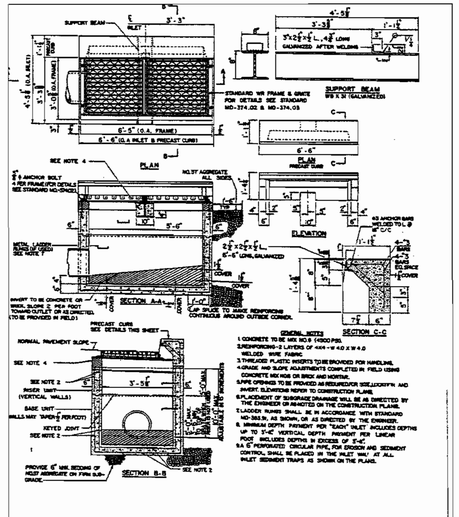


STANDARD PRECAST MANHOLE — SHALLOW PRECAST MANHOLE

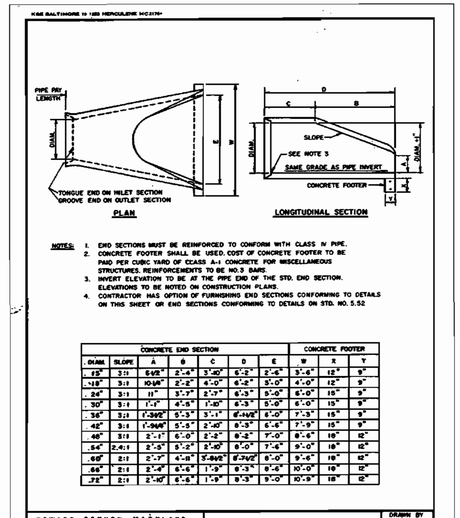
SLAB REINFORCING
SHALLOW PRECAST MANHOLE

REV. MAR. 1986 REV. JAN. 1988 — REV. JAN. 1988

HOWARD COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS	5'-0" STANDARD AND SHALLOW PRECAST MANHOLE FOR USE WITH 27 INCH TO 36" PIPES	DRAWN BY: F.A.M.
Approved 2/4/88 Chief - Bureau of Engineering		CHECKED BY: F.A.M.
		SCALE: NONE
		6S.13



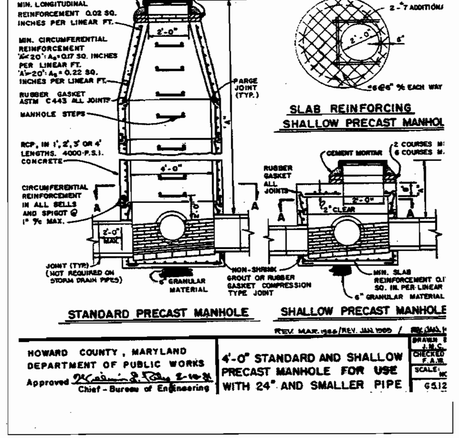
HOWARD COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS	PRECAST WR INLET	DRAWN BY: W.H.
Approved 2/4/88 Chief - Bureau of Engineering		CHECKED BY: W.H.
		SCALE: NONE
		SD 4.35



NOTES:
1. END SECTIONS MUST BE REINFORCED TO CONFORM WITH CLASS IV PIPE.
2. CONCRETE FOOTER SHALL BE USED. COST OF CONCRETE FOOTER TO BE PAID PER CUBIC YARD OF CLASS A-1 CONCRETE FOR MISCELLANEOUS STRUCTURES. REINFORCEMENTS TO BE NO. 3 BARS.
3. INVERT ELEVATION TO BE AT THE PIPE END OF THE STD. END SECTION. ELEVATIONS TO BE NOTED ON CONSTRUCTION PLANS.
4. CONTRACTOR HAS OPTION OF FURNISHING END SECTIONS CONFORMING TO DETAILS ON THIS SHEET OR END SECTIONS CONFORMING TO DETAILS ON STD. NO. 5.52

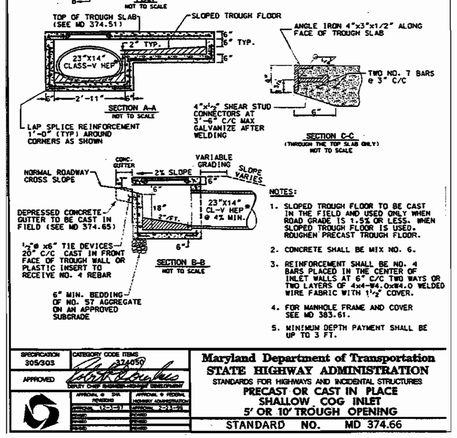
CONCRETE END SECTION							CONCRETE FOOTER	
DIAM.	SLOPE	A	B	C	D	E	W	X	Y
12"	3:1	6'-0"	2'-4"	1'-10"	6'-3"	2'-6"	3'-6"	12"	9"
18"	3:1	10'-6"	2'-8"	2'-10"	6'-3"	3'-0"	4'-0"	12"	9"
24"	3:1	11"	3'-7"	3'-7"	6'-3"	3'-0"	4'-0"	15"	9"
30"	3:1	1'-1"	4'-5"	1'-10"	6'-3"	3'-0"	6'-0"	15"	9"
36"	3:1	1'-3½"	5'-3"	3'-1"	6'-3½"	6'-0"	7'-3"	15"	9"
42"	3:1	1'-6½"	6'-3"	3'-10"	6'-3"	6'-6"	7'-3"	15"	9"
48"	3:1	2'-1"	6'-0"	2'-2"	8'-3"	7'-0"	8'-6"	15"	12"
54"	2.4:1	2'-3"	5'-2"	2'-10"	8'-0"	7'-6"	9'-0"	15"	12"
60"	2:1	2'-7"	4'-8"	3'-6½"	8'-7½"	8'-0"	9'-6"	15"	12"
66"	2:1	2'-4"	6'-0"	1'-9"	8'-3"	9'-0"	10'-0"	15"	12"
72"	2:1	2'-10"	6'-6"	1'-9"	8'-3"	9'-0"	10'-9"	18"	12"

HOWARD COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS	CONCRETE END SECTION CIRCULAR CONCRETE PIPE	DRAWN BY: R.S.H.
Approved 2/4/88 Chief - Bureau of Engineering		CHECKED BY: F.A.M.
		SCALE: NONE
		SD - 5.51



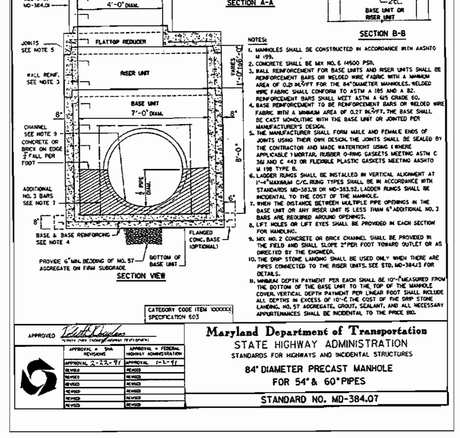
REV. MAR. 1986 / REV. JAN. 1988 / REV. JAN. 1988

HOWARD COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS	4'-0" STANDARD AND SHALLOW PRECAST MANHOLE FOR USE WITH 24" AND SMALLER PIPE	DRAWN BY: F.A.M.
Approved 2/4/88 Chief - Bureau of Engineering		CHECKED BY: F.A.M.
		SCALE: NONE
		6S.12



NOTES:
1. SLOPED TROUGH FLOOR TO BE CAST IN THE FIELD AND USED ONLY WHEN ROAD GRADE IS 1.5% OR LESS. WHEN SLOPED TROUGH FLOOR IS USED, ROUGHEN PRECAST TROUGH FLOOR.
2. CONCRETE SHALL BE MIX NO. 6.
3. REINFORCEMENT SHALL BE NO. 4 BARS PLACED IN THE CENTER OF INLET WALLS AT 6" C/C TWO WAYS OR TWO LAYERS OF 4x4-W4.0xW4.0 WELDED WIRE FABRIC WITH 1½" COVER.
4. FOR MANHOLE FRAME AND COVER SEE MD 383.61.
5. MINIMUM DEPTH PAYMENT SHALL BE UP TO 3 FT.

SPECIFICATION 305/503	CATEGORY CODE ITEM#	Maryland Department of Transportation STATE HIGHWAY ADMINISTRATION STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES PRECAST OR CAST IN PLACE SHALLOW COG INLET 5' OR 10' TROUGH OPENING
APPROVED	DEPUTY CHIEF ENGINEER-HIGHWAY DEVELOPMENT	
APPROVED FOR FEDERAL AID PROJECTS	APPROVED FOR FEDERAL HIGHWAY ADMINISTRATION	
1/12/93	1/12/93	STANDARD NO. MD 374.66



NOTES:
1. MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH AASHTO M 199.
2. CONCRETE SHALL BE MIX NO. 5 4500 PSI.
3. WALL REINFORCEMENT FOR BASE UNITS AND RISER UNITS SHALL BE REINFORCEMENT BARS OR WELDED WIRE FABRIC WITH A MINIMUM AREA OF 0.12 IN²/FT FOR THE 84" DIAMETER MANHOLES. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 AND A 82. REINFORCEMENT BARS SHALL MEET ASTM A 615 GRADE 60.
4. BASE REINFORCEMENT TO BE REINFORCEMENT BARS OR WELDED WIRE FABRIC WITH A MINIMUM AREA OF 0.27 IN²/FT. THE BASE SHALL BE CAST MONOLITHIC WITH THE BASE UNIT OR JOINTED PER MANUFACTURER'S DESIGN.
5. THE MANUFACTURER SHALL FORM MALE AND FEMALE ENDS OF JOINTS USING THEIR OWN DESIGN. THE JOINTS SHALL BE SEALED BY THE CONTRACTOR AND MADE WATERTIGHT USING EITHER: APPLICABLE MATERIAL, RUBBER O-RING GASKETS MEETING ASTM C 361 AND C 443 OR FLEXIBLE PLASTIC GASKETS MEETING AASHTO M 198 TYPE B.
6. LADDER RUNGS SHALL BE INSTALLED IN VERTICAL ALIGNMENT AT 1'-0" MAXIMUM C/C. RUNG TYPES SHALL BE IN ACCORDANCE WITH STANDARDS MD-383.01 OR MD-383.02. LADDER RUNGS SHALL BE INCIDENTAL TO THE COST OF THE MANHOLE.
7. WHEN THE DISTANCE BETWEEN MULTIPLE PIPE OPENINGS IN THE BASE UNIT OR ANY RISER UNIT IS LESS THAN 6" ADDITIONAL NO. 5 BARS ARE REQUIRED AROUND OPENINGS.
8. LIFT HOLES OR LIFT EYES SHALL BE PROVIDED IN EACH SECTION FOR HANDLING.
9. NO. NO. 2 CONCRETE OR BRICK CHANNEL SHALL BE PROVIDED IN THE FIELD AND SHALL SLOPE 2"PER FOOT TOWARD OUTLET OR AS DIRECTED BY THE ENGINEER.
10. THE DRIP STONE LANDING SHALL BE USED ONLY WHEN THERE ARE PIPES CONNECTED TO THE RISER UNITS. SEE STD. NO. MD-364.13 FOR DETAILS.
11. MINIMUM DEPTH PAYMENT PER EACH SHALL BE 10'-0" MEASURED FROM THE BOTTOM OF THE BASE UNIT TO THE TOP OF THE MANHOLE COVER. VERTICAL DEPTH PAYMENT PER LINEAR FOOT SHALL INCLUDE ALL DEPTHS IN EXCESS OF 10'-0". THE COST OF THE DRIP STONE LANDING, NO. 57 AGGREGATE, GROUT, SEALANT, AND ALL NECESSARY APPURTENANCES SHALL BE INCIDENTAL TO THE PRICE BID.

CATEGORY CODE ITEM# XXXXXX
SPECIFICATION 603

APPROVED: Deputy Chief Engineer-Highway Development

APPROVAL & DATE REVISIONS	APPROVED FOR FEDERAL HIGHWAY ADMINISTRATION
APPROVAL 2/25/97	APPROVAL 11-5-97
REVISED	REVISED
REVISED	REVISED
REVISED	REVISED
REVISED	REVISED
REVISED	REVISED

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
84" DIAMETER PRECAST MANHOLE FOR 54" & 60" PIPES
STANDARD NO. MD-384.07

APPROVED: FOR PUBLIC (OR PRIVATE) WATER AND PUBLIC (OR PRIVATE) SEWAGE SYSTEMS

COUNTY HEALTH OFFICER, HOWARD COUNTY HEALTH DEPARTMENT — DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5/1/03

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/1/03

DIRECTOR — DATE 5/6/03

Drafting	DATE	AB	REVISIONS
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Design CGW			
Check THM			

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fax: (410) 792-7419
www.kci.com

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(410) 534-6350

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925 FELL STREET
BALTIMORE, MD 21231
(410) 534-6350

STORMDRAIN DETAILS

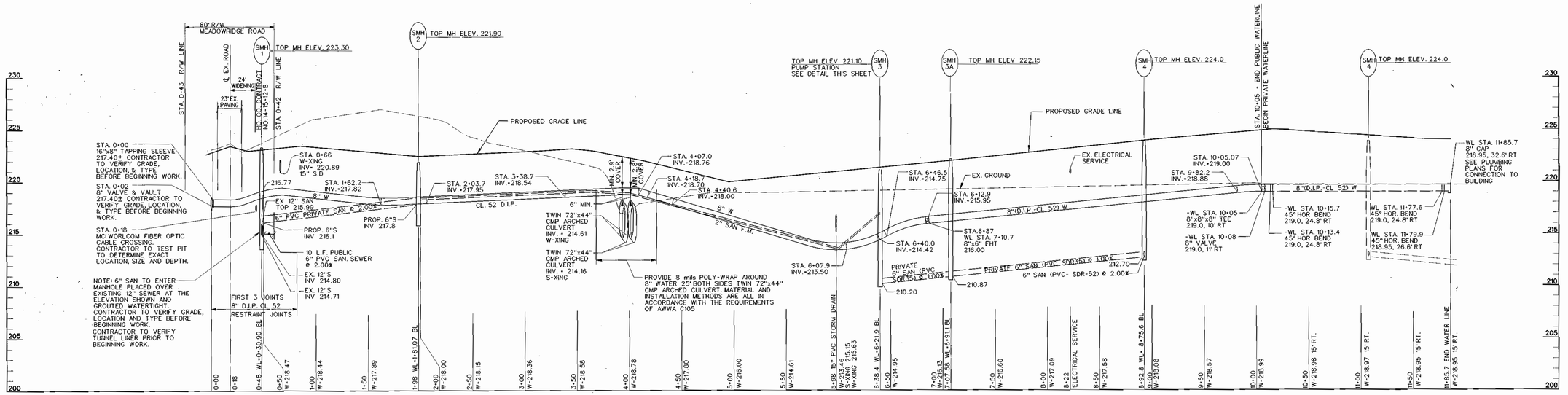
STATE OF MARYLAND — No. 25086 — MARIANNE KIERNAN — PROFESSIONAL ENGINEER
APR 14 2003

KANE COMPANIES, INC. HEADQUARTERS

PROPOSED OFFICE WAREHOUSE
TAX MAP 37, PARCEL 174
L. 6753 F. 684, ZONE M-1
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
WATER CODE: D04 SEWER CODE: 215 3000

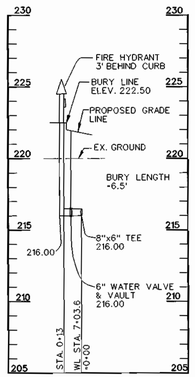
SCALE AS SHOWN
DATE: APRIL 9, 2003
SHEET 7 OF 22
SDP-02-53

1602008\DRAWINGS\WSDETAILS.dgn



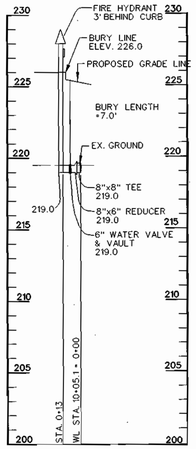
WATER & SANITARY PROFILE

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



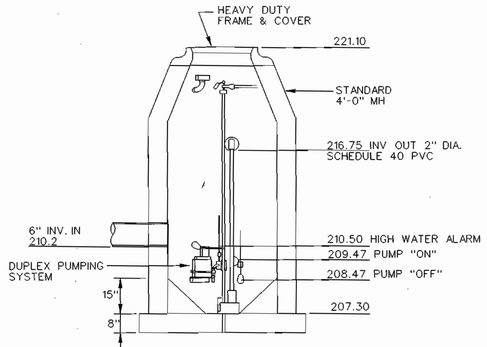
WATER PROFILE

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



WATER PROFILE

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



SANITARY PUMP STATION DETAIL

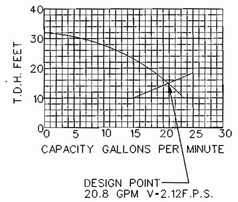
NOT TO SCALE

SANITARY PUMP STATION DESIGN DATA

AVERAGE DAILY FLOW

OFFICE : 15,684SQ. FT. X 0.09GPD=1411GPD
WAREHOUSE: 70,576SQ. FT. X 0.03GPD=1371GPD
WORKSHOP: 8,611SQ. FT. X 0.018GPD=155GPD
AVERAGE DAILY FLOW = 4405GPD
INFIULTRATION: 0.8AC= 400GPD=320GPD

DESIGN FLOW: 4162 GPD X 2 = 320 GPD = 9130GPD
= 0.009MGD
= 6.3 GPM



SYSTEM CURVE

(TWIN) MYERS WGL-20
2HP GRINDER PUMP -3450 RPM
3 1'8" IMPELLER DIAM.

NOTE: SWITCH GEAR SHALL BE PROIVIDED FOR ALTERATING OPERATION OF PUMPS.

APPROVED: FOR PUBLIC (OR PRIVATE) WATER AND PUBLIC (OR PRIVATE) SEWAGE SYSTEMS

COUNTY HEALTH OFFICER, HOWARD COUNTY HEALTH DEPARTMENT — DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/24/03

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/15/03

DIRECTOR — DATE 5/15/03

Drafting	AWW	DATE	REVISIONS
Check	CGW		
Design	CGW		
Check	THM		

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925 FELL STREET
BALTIMORE, MD 21231
(410) 534-6350

WATER & SEWER PROFILES

STATE OF MARYLAND — No. 25039 — MARIANNE WIERMAN — PROFESSIONAL ENGINEER
APR 14 2003

KANE COMPANIES, INC. HEADQUARTERS
PROPOSED OFFICE WAREHOUSE
TAX MAP 37 PARCEL 174
L. 6753 F. 684, ZONE M-1
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
WATER CODE: D04 SEWER CODE: 215 3000

SCALE AS SHOWN
DATE: APRIL 9, 2003
SHEET 8 OF 22

SDP-02-53

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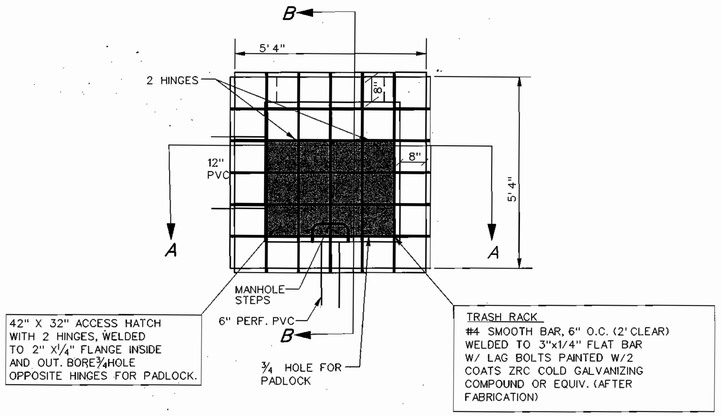
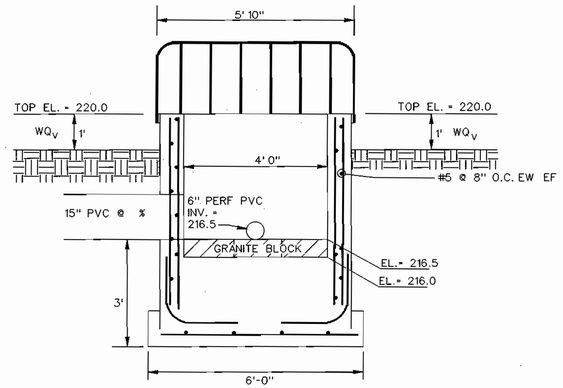
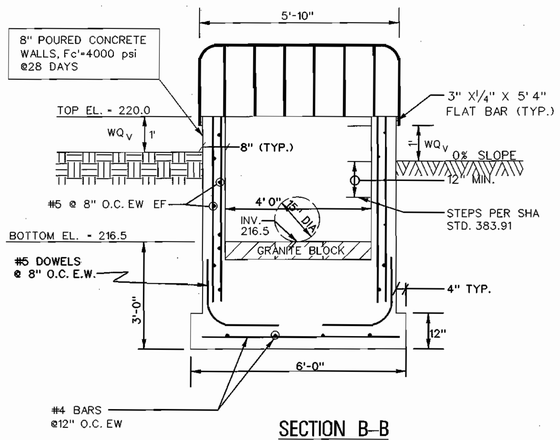


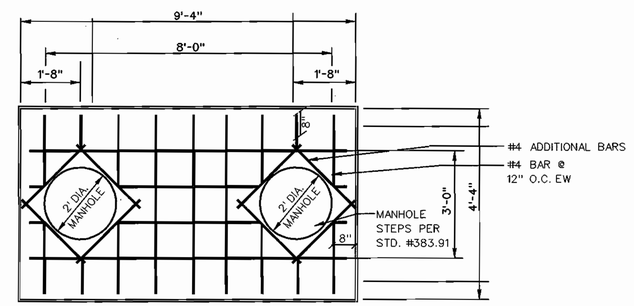
TOP SECTION
CS-6



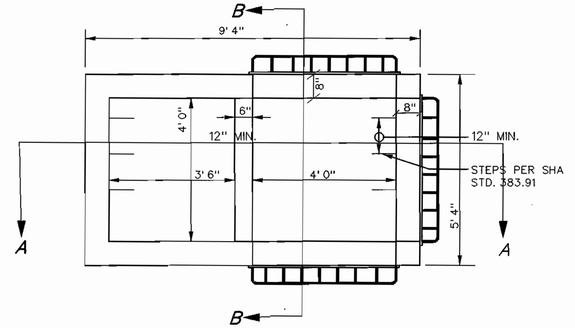
SECTION A-A
CS-6



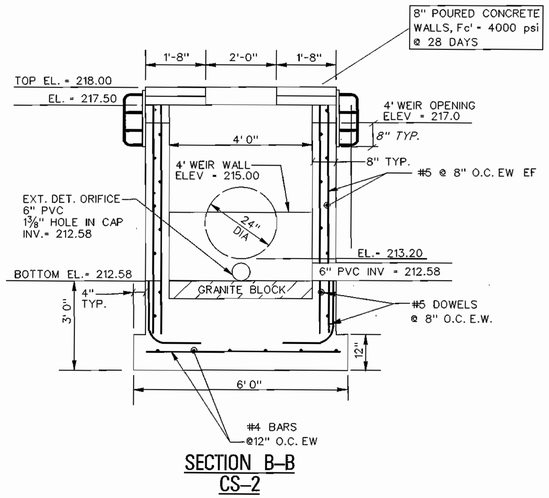
SECTION B-B
CS-6



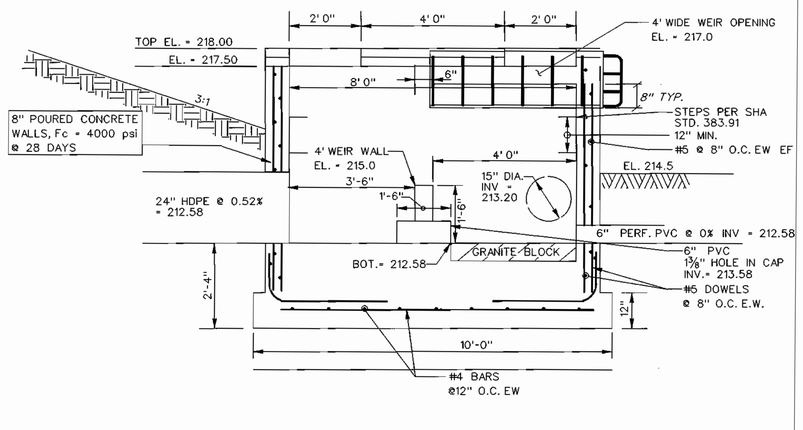
TOP SLAB
CS-2



TOP SECTION
CS-2

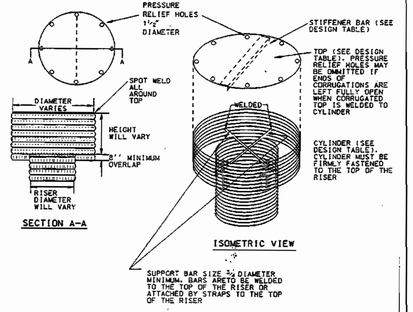


SECTION B-B
CS-2



SECTION A-A
CS-2

DETAIL 16 - CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C - 10 - 35	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 16 CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE (continued)

Riser Diam. in.	Trash Rack Cylinder Diam. in.	Thick.. gage	N. in.	Minimum Size Support Bar	Minimum Top Thickness	Stiffener
12	18	16	6	#6 Rebar	16 ga.	---
15	21	16	7	"	"	---
18	27	16	8	"	"	---
21	30	16	11	"	"	---
24	36	16	13	"	14 ga.	---
27	42	16	15	"	14 ga.	---
36	54	14	17	#8 Rebar	12 ga.	---
42	60	14	19	"	"	---
48	72	12	21	1-1/2" pipe or 1-1/4 x 1-1/4 x 1/4 angle	10 ga.	---
54	78	12	25	"	"	---
60	90	12	29	1-1/2" pipe or 1-1/2 x 1-1/2 x 1/4 angle	8 ga.	---
66	96	10	33	2" pipe or 2x2x3/16 angle	8 ga., w/stiffener	2x2x1/4 angle
72	102	10	36	"	"	2-1/2x2-1/2x1/4 angle
78	114	10	39	2-1/2" pipe or 2x2x1/4 angle	"	"
84	120	10	42	2-1/2" pipe or 2-1/2x2-1/2x1/4 angle	"	2-1/2 x2-1/2x 5/16 angle

Note: The above trash rack and anti-vortex device information is only for corrugated metal pipe. Concrete risers must meet the requirements of MD 378.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C - 10 - 36A	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/16/03

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/8/03

DIRECTOR — DATE 5/8/03

Drafting	JAB
Check	CGW
Design	CGW
Check	THM

DATE	REVISIONS

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Laurel, Maryland 20708
(301) 953-1821 (410) 792-8086
fax: (410) 792-7419
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925 FELL STREET
BALTIMORE, MD 21231
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CONTRACT PURCHASER & DEVELOPER:
CREANEY & SMITH GROUP LLC
925 FELL STREET
BALTIMORE, MD 21231
(410) 534-6350

STORMWATER MANAGEMENT RISER DETAILS FOR CS-2 & CS-6

STATE OF MARYLAND — No. 25018 — MARIANNE KIERNAN — PROFESSIONAL ENGINEER
APR 14 2003

KANE COMPANIES, INC. HEADQUARTERS

PROPOSED OFFICE WAREHOUSE
TAX MAP 37 , PARCEL 174
L. 6753 F. 684, ZONE M-1
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
WATER CODE: D04 SEWER CODE: 215 3000

1/2 inch = 1ft.
DATE: APRIL 9, 2003
SHEET 9 OF 22

SDP-02-58
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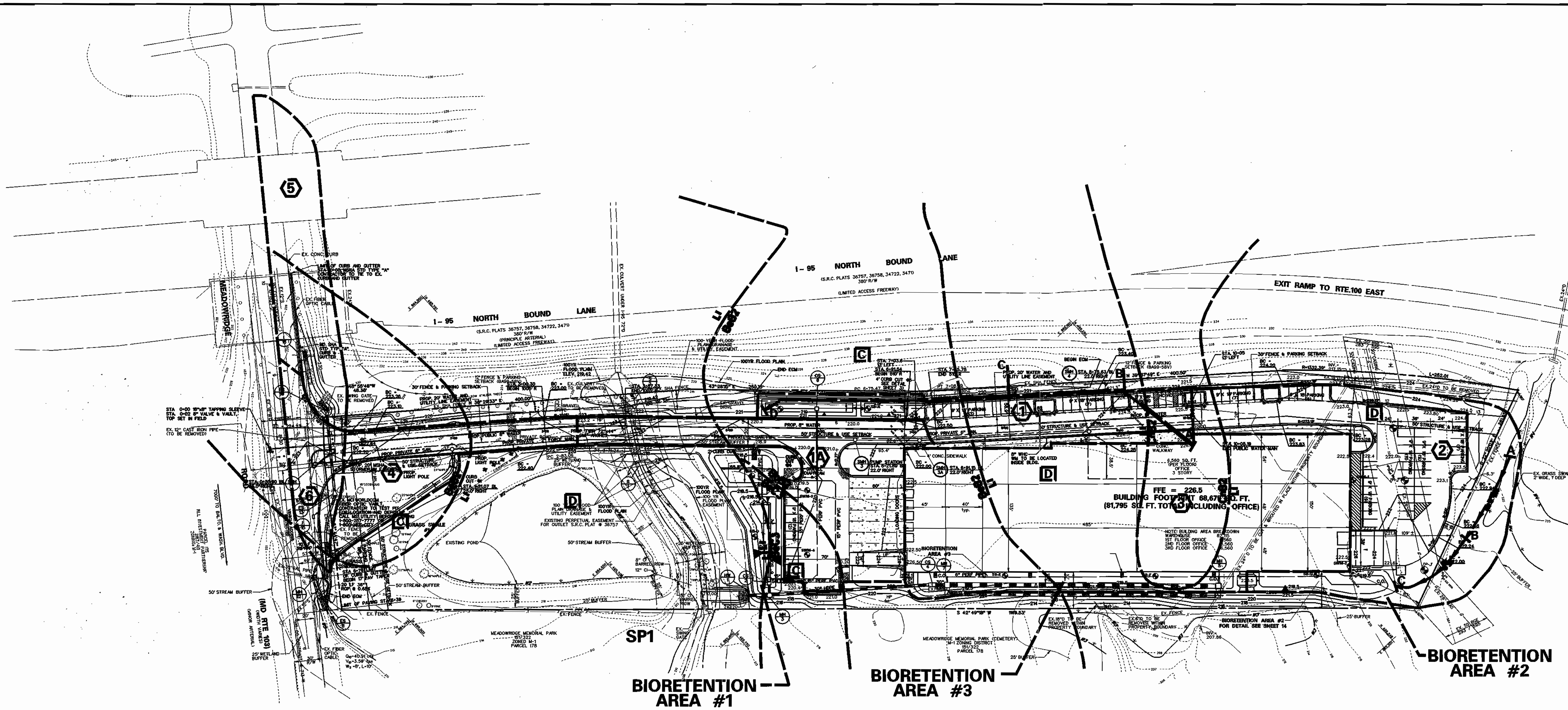

SOILS CHART

SOIL	HYDROLOGIC SOIL GROUP	DESCRIPTION
BeB2	C	BELTSVILLE SILT LOAM, 1 TO 5 PERCENT SLOPES, MODERATELY ERODED
BeC3	C	BELTSVILLE SILT LOAM, 5 TO 10 PERCENT SLOPES, SEVERELY ERODED
L1	D	LEONARDTOWN SILT LOAM
CnB2	C	CHILLUM-FAIRFAX LOAMS, 1 TO 5 PERCENT SLOPES, MODERATLEY ERODED

CHART

No.	DRAINAGE AREA (Ac)	% IMPERVIOUS	RCN	Tc
1	0.50	100%	98	.10
1A	0.65	100%	98	.10
2	0.80	44%	88	.25
3	1.56	100%	98	.10
4	0.35	51%	86	.10
5	0.467	79%	90	.10
6	0.147	100%	98	.10

DRAINAGE AREA SUMMARY TABLE

No.	AREA (Ac)	WQv (CF)	Rev (CF)	Cpv (CF)	Qp (cfs)	Qf (cfs)	BMP
1	0.50	1724	261	6470	NA	NA	SAND FILTER F5
1A	0.65	2242	169		NA	NA	BIORETENTION F6
2	0.80	1295	78	----	NA	NA	BIORETENTION F6
3	1.56	5380	384	8777	NA	NA	BIORETENTION F6
4	0.35	647	----	----	NA	NA	* GRASS SWALE
5	0.467	1290	----	----	NA	NA	* GRASS SWALE
6	0.147	507	----	----	NA	NA	* GRASS SWALE

* GRASS SWALE CREDIT FOR WQv & Rev
1" STORM VELOCITY FOR SWALE #1 IS 0.42 FPS
1" STORM VELOCITY FOR SWALE #2 IS 0.82 FPS
SEE COMPUTATIONS PAGE 74

LEGEND

- EX. INDEX CONTOUR (90)
- EX. 2' INTERMEDIATE CONTOUR
- EX. CURB AND GUTTER
- EX. GAS LINE (G)
- EX. STORM DRAIN (18"D)
- EX. FENCE (X)
- EX. EDGE OF WATER (W)
- EX. OVERHEAD UTILITY LINE (OH)
- EX. WATER VALVE
- EX. INLET
- EX. MANHOLE
- EX. TREE
- EX. SOILS DELINEATION (BeB2 / BeC3)
- HYDROLOGIC SOILS GROUP (C)
- EX. SOIL BORINGS
- TC PATH
- TC PATH FLOW TYPE (A-B)
- DRAINAGE AREA (2)
- DRAINAGE AREA BOUNDARY
- 100-YR FLOOD PLAIN
- STUDY POINT (SP)

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/6/03
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/8/03
DIRECTOR — DATE 5/8/03

Drafting	JAB	DATE	REVISIONS
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CONTRACT PURCHASER & DEVELOPER:
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925 FELL STREET
BALTIMORE, MD 21231
(410) 534-6350

STORMWATER MANAGEMENT DRAINAGE PLAN

STATE OF MARYLAND No. 25058 MARIANNE KIERNAN PROFESSIONAL ENGINEER
APR 14 2003

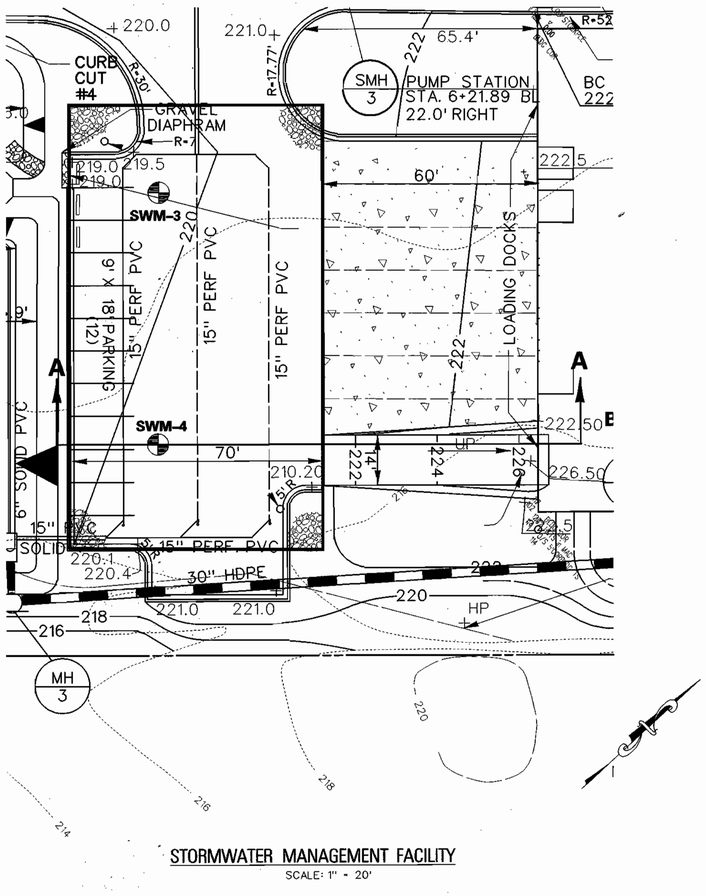
KANE COMPANIES, INC. HEADQUARTERS

PROPOSED OFFICE WAREHOUSE
TAX MAP 37 , PARCEL 174
L. 6753 F. 684, ZONE M-1
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
WATER CODE: D04 SEWER CODE: 215 3000

GRAPHIC SCALE
60 0 30 60 120
(IN FEET)
1 inch = 60ft.

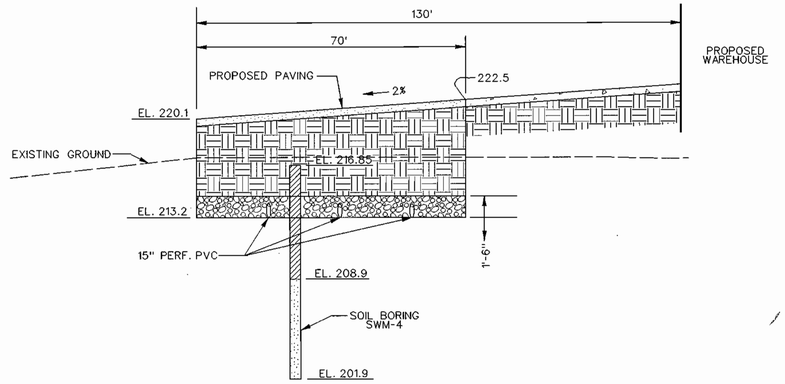
DATE: APRIL 9, 2003
SDP-02-53 SHEET 10 OF 22

1602008\DRAWINGS\SWM_MAP.dgn



STORMWATER MANAGEMENT FACILITY

SCALE: 1" = 20'



SECTION A-A

SCALE: HOR.: 1" = 20'
VERT.: 1" = 5'

S.W.M. DESIGN SUMMARY - FACILITY NO. 1					
DESIGN STORM	FACILITY INFLOW (cfs)	FACILITY OUTFLOW (cfs)	STAGE	STORAGE VOLUME AC. FT.	FACILITY VOLUME 2.5 x S = AC. FT.
1 Year	3.6	0.1	215.88	0.25	0.1

NOTE: ADDITIONAL STORAGE FOR CPv IS HELD ABOVE GROUND @ ELEV. 215.88.

STRUCTURE TYPE: UNDERGROUND STONE STORAGE
SURFACE AREA: 0.20 AC.
STRUCTURE CLASSIFICATION: N/A
STORAGE-HEIGHT PRODUCT: N/A
WATERSHED AREA TO FACILITY (ACRES): 1.15
LEVEL OF MANAGEMENT REQUIRED AND PROVIDED BY FACILITY: 1 YEAR (QUANTITY)
WATERSHED:PATAPSCO
STREAM CLASS: I
FREEBOARD: N/A
THIS FACILITY IS PRIVATE. MAINTENANCE IS TO BE PROVIDED BY PROPERTY OWNER.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED SURFACE STORMWATER FILTRATION SYSTEMS (F-1, F-4, AND F-5)

1. The stormwater wetland facility shall be inspected annually and after major storms. Inspections shall be performed during wet weather to determine if the facility is functioning properly.
2. The top and side slopes of the embankment shall be mowed a minimum of once per year, when vegetation reaches 18" in height or as needed.
3. Filters that have a grass cover shall be mowed a minimum of three (3) times per growing season to maintain a maximum grass height of less than 12 inches.
4. Debris and litter shall be removed during regular mowing operations and as needed.
5. Visible signs of erosion in the facility shall be repaired as soon as it is noticed.
6. Remove silt when it exceeds four (4) inches deep in the forebay.
7. When water ponds on the surface of the filter bed for more than 72 hours, the top few inches of discolored material shall be replaced with fresh material. Proper cleaning and disposal of the removed materials and liquid must be followed by the owner.
8. A log book shall be maintained to determine the rate at which the facility drains.
9. The maintenance log book shall be available to Howard County for inspection to insure compliance with operation and maintenance criteria.
10. Once the performance characteristics of the infiltration system have been verified, the monitoring schedule can be reduced to an annual basis unless the performance data indicates that a more frequent schedule is required.

OPERATION AND MAINTENANCE SCHEDULE FOR BIO-RETENTION AREAS (F-6)

1. 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.
2. Schedule of plant inspection will be twice a year in spring and fall. This inspection will include removal of dead and diseased vegetation considered beyond treatment, treatment of all diseased trees and shrubs and replacement of all deficient stakes and wires.
3. Mulch shall be inspected each spring. Remove previous mulch layer before applying new layer once every 2 to 3 years.
4. Soil erosion to be addressed on an as needed basis, with a minimum of once per month and after heavy storm events.

OPERATION AND MAINTENANCE SCHEDULE FOR UNDERGROUND FACILITIES

1. The underground stormwater management facility is privately owned and it shall be the responsibility of the owner to periodically inspect and clean the facility to maintain it's operation and function.
2. The underground stormwater management facility shall be inspected yearly at a minimum and after especially severe storm events.
3. When sediment accumulation of more than 2" is observed or any debris that might obstruct the outfall is observed, the facility shall be cleaned.
4. The facility shall be cleaned immediately after petroleum spills. The owner shall contact the appropriate regulatory agencies notifying them of the spill and cleanup operation.
5. The sediment and debris shall be removed from the underground stormwater management facility by vacuum truck or other manual means. The owner shall follow proper cleaning and disposal of the removed material and liquid.
6. The inlet and outlet pipes shall be checked for any obstructions at least once every six (6) months. If obstructions are found, the owner shall have them removed and properly disposed of.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/16/03

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/8/03

DIRECTOR — DATE 5/9/03

		DATE	REVISIONS
Drafting	JAB		
Check	CGW		
Design	CGW		
Check	THM		

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14502 Greenview Drive, Suite 424
Laurel, Maryland 20708
(301) 953-1821 (410) 792-8086
fax (410) 792-7449
www.kci.com

OWNER:
C & S MEADOWRIDGE, LLC
925 FELL STREET
BALTIMORE, MD 21231
(410) 534-6350

CONTRACT PURCHASER & DEVELOPER:
CREANEY & SMITH GROUP LLC
925 FELL STREET
BALTIMORE, MD 21231
(410) 534-6350

UNDERGROUND STORAGE STORMWATER MANAGEMENT PLAN

STATE OF MARYLAND — NO. 25036 — MARIANNE KIERNAN — PROFESSIONAL ENGINEER

APR 14 2003

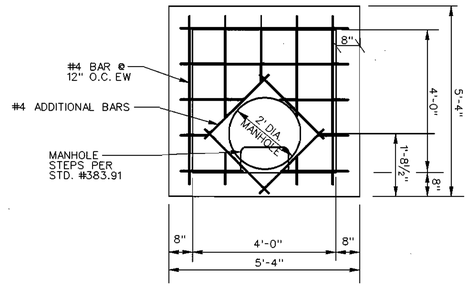
KANE COMPANIES, INC. HEADQUARTERS

PROPOSED OFFICE WAREHOUSE
TAX MAP 37, PARCEL 174
L. 6753 F. 684, ZONE M-1
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
WATER CODE: D04 SEWER CODE: 215 3000

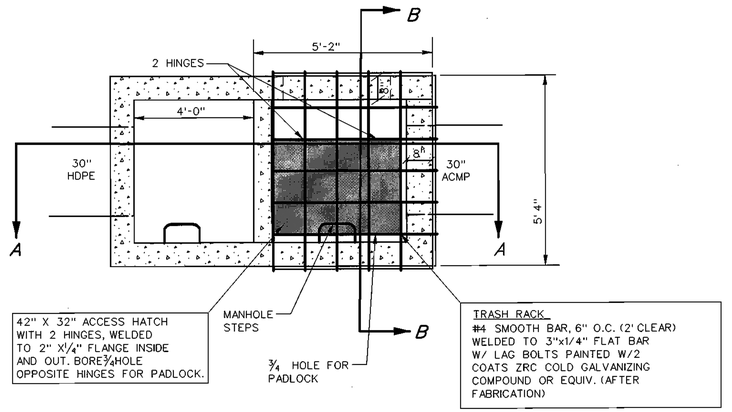
GRAPHIC SCALE
20 0 10 20 40
(IN FEET)
1 inch = 20ft.

DATE: APRIL 9, 2003
SHEET 11 OF 22

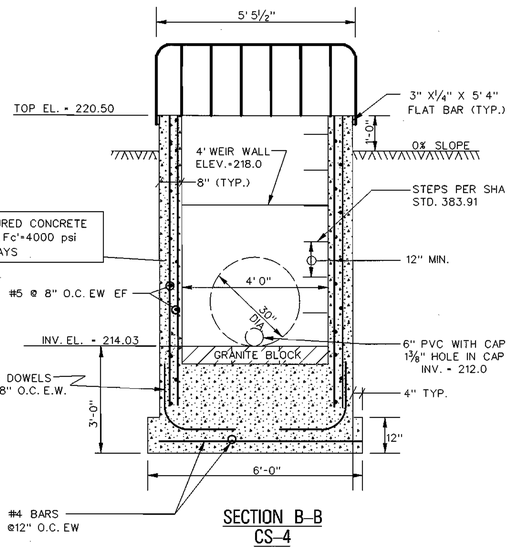
SDP-02-53 \602008\DRAWINGS\UNDERGRDSTOR.DGN



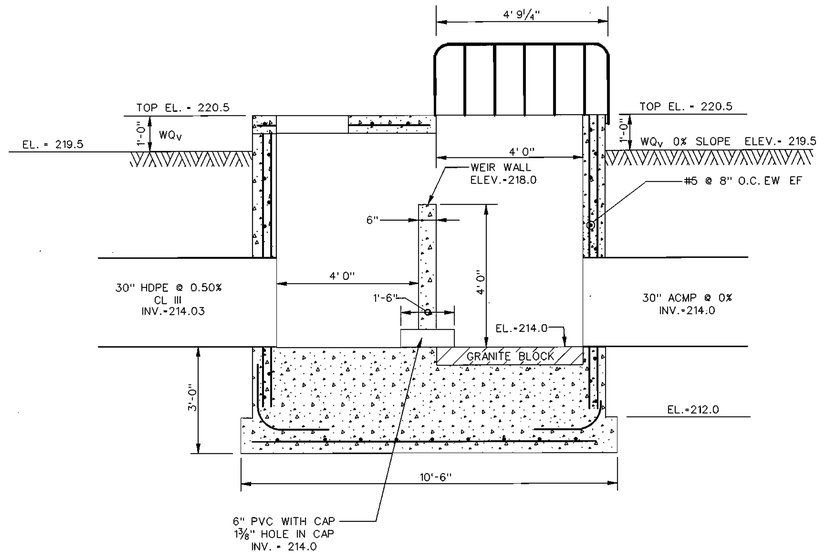
TOP SLAB
CS-4
SCALE: ½" = 1'-0"



TOP SECTION
CS-4
SCALE: ½" = 1'-0"



SECTION B-B
CS-4
SCALE: ½" = 1'-0"



SECTION A-A
CS-4
SCALE: ½" = 1'-0"

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/28/03

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/8/03

DIRECTOR — DATE 5-10-03

Drafting	JAB
Check	CGW
Design	CGW
Check	THM

DATE	REVISIONS

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ENGINEERS
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CONSTRUCTION MANAGERS
14502 Greenview Drive, Suite 424
Laurel, Maryland 20708
(301) 953-1821 (410) 792-8086
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925 FELL STREET
BALTIMORE, MD 21231
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CONTRACT PURCHASER & DEVELOPER:
CREANEY & SMITH GROUP LLC
925 FELL STREET
BALTIMORE, MD 21231
(410) 534-6350

STORMWATER MANAGEMENT DETAILS

STATE OF MARYLAND — No. 25046 — MARIANNE KIERNAN — PROFESSIONAL ENGINEER
APR 14 2003

KANE COMPANIES, INC. HEADQUARTERS

PROPOSED OFFICE WAREHOUSE
TAX MAP 37 , PARCEL 174
L. 6753 F. 684, ZONE M-1
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
WATER CODE: D04 SEWER CODE: 215 3000

SCALE: AS SHOWN
DATE: APRIL 9, 2003
SHEET 12 OF 22

SDP-02-153

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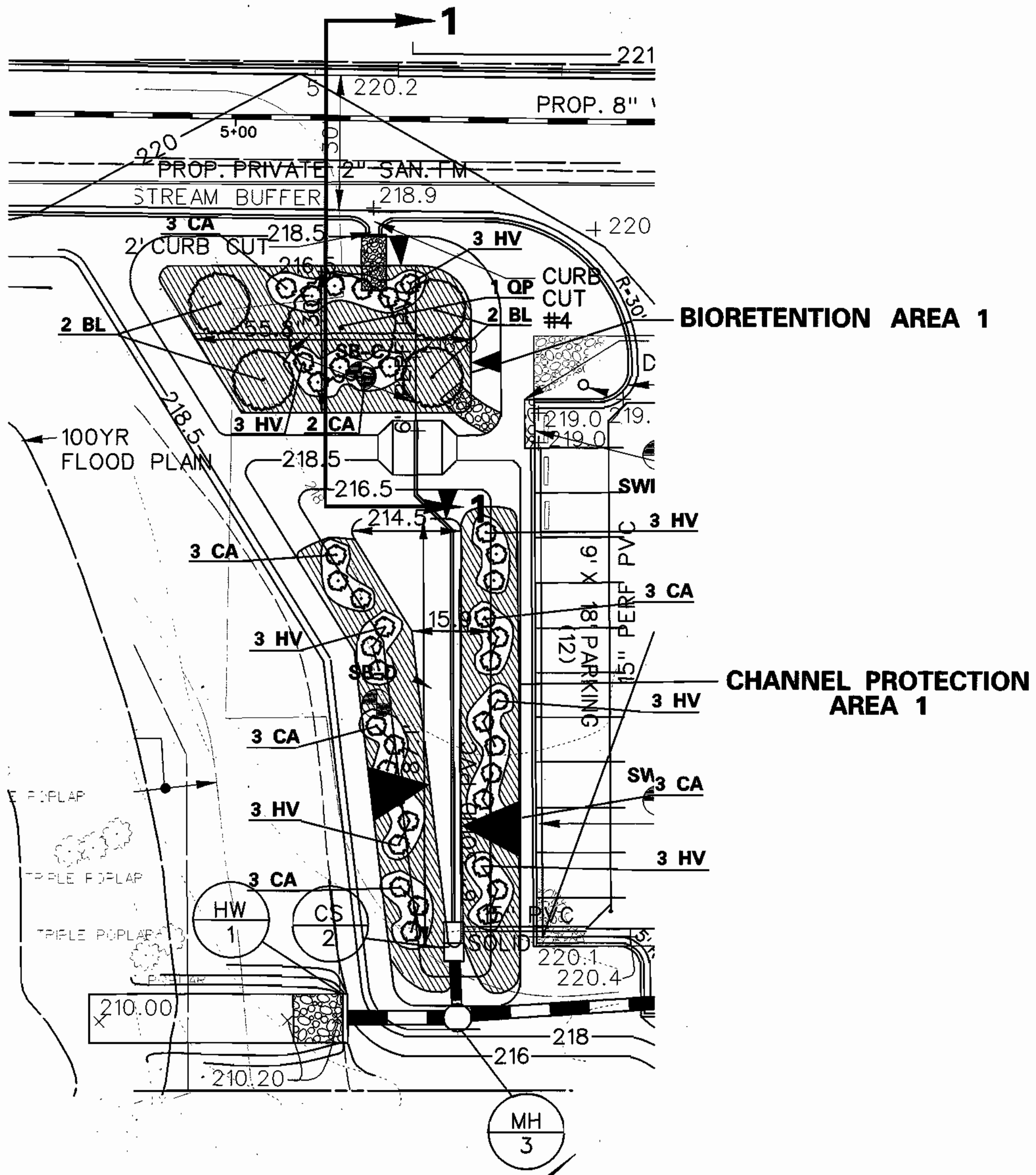
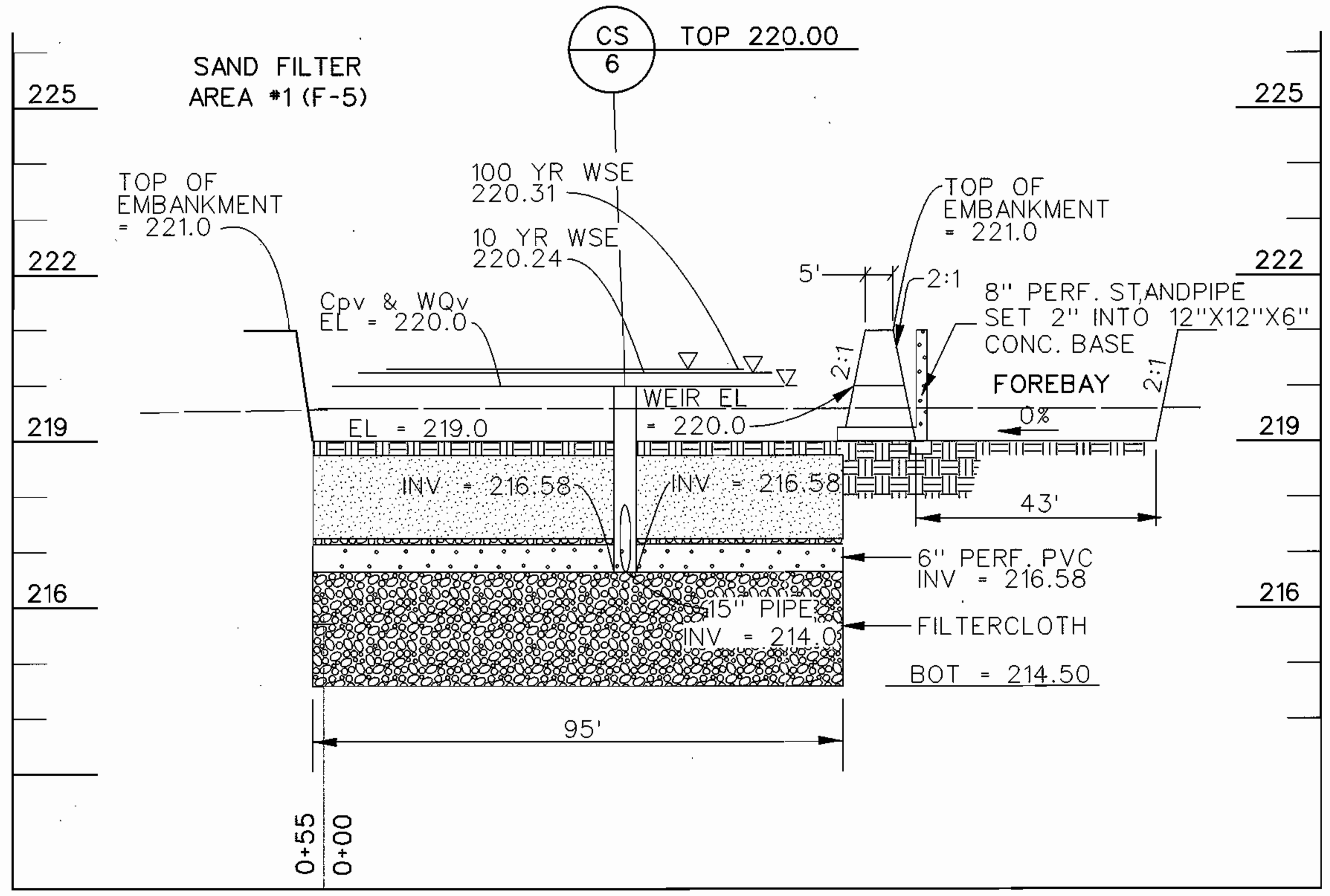


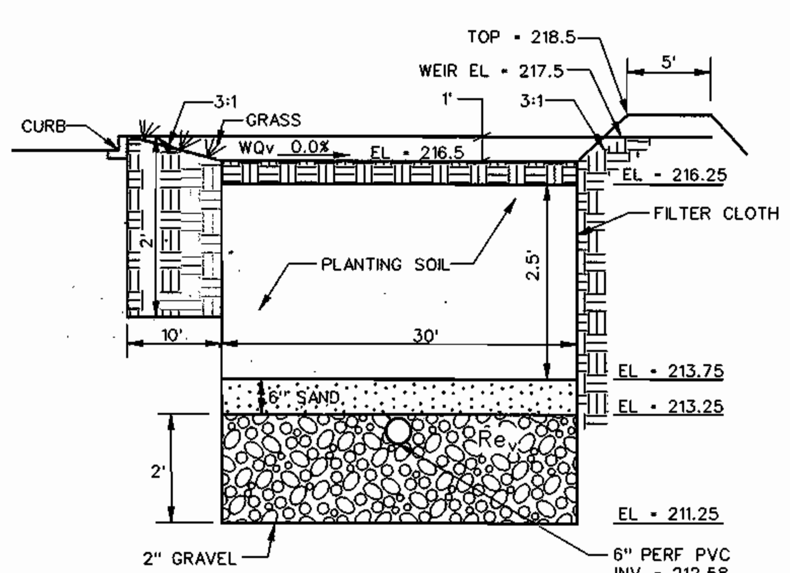
BIORETENTION AREA 1

SCALE: 1" = 20'



SAND FILTER AREA 1 PROFILE

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



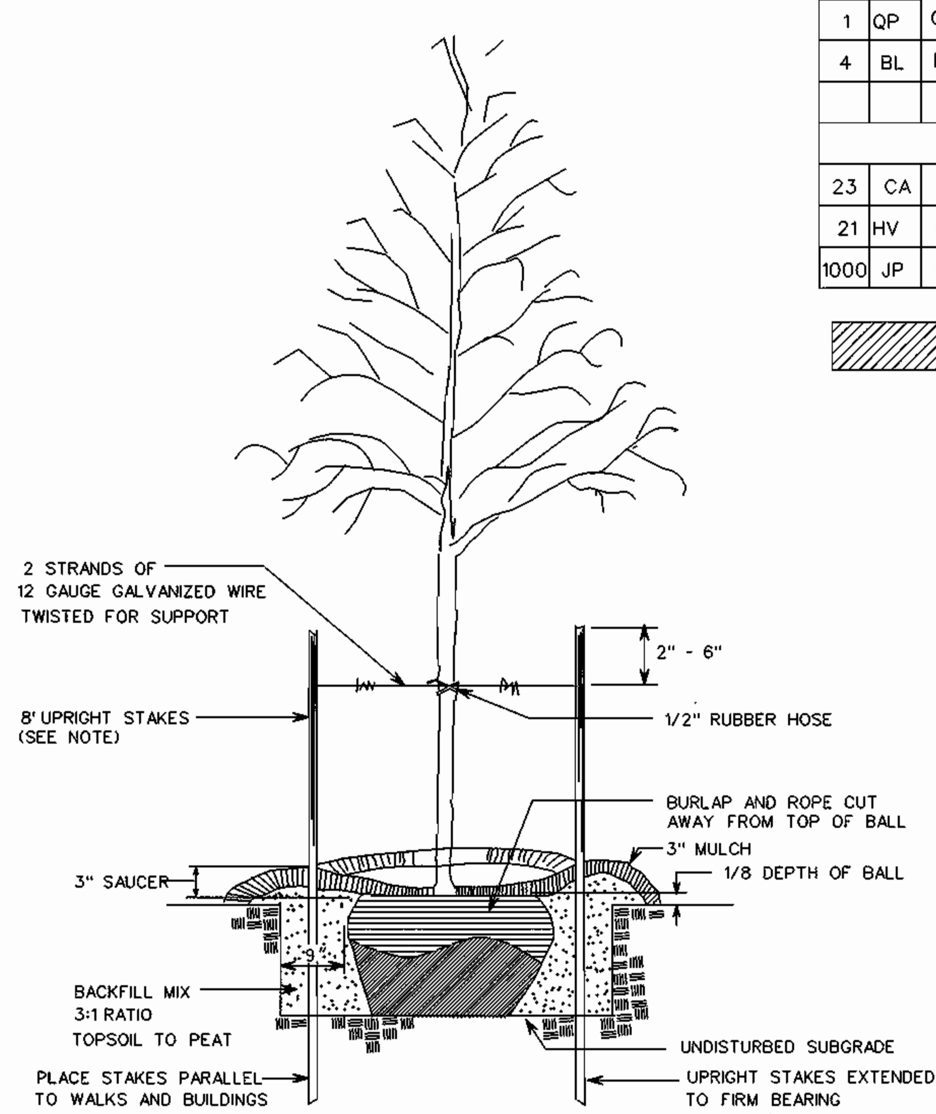
BIORETENTION SECTION 1

NOT TO SCALE

BIORETENTION AREA 1 PLANT SCHEDULE

Qty.	Key	Botanical\Common Name
		TREES
1	QP	Quercus Palustris-Pin Oak (2.5" Cal., B&B, Full Crown)
4	BL	Betula Lenta-Sweet Birch (2.5" Cal., B&B)
		SHRUBS
23	CA	Clethra Ainfolia-Sweet Pepperbush (18"-24" container)
21	HV	Hamamelis Virginica-Witch Hazel (18"-24" container)
1000	JP	Pschysandra terminalis - Japanese pschysandra

Hatching for Herbacious Cover



BIORETENTION
TREE PLANTING DETAIL

NOT TO SCALE

NOTE: EVERGREENS 4'-6' HT., 2'-3' OF STAKE ABOVE GROUND.
DECIDUOUS TREES AND EVERGREENS 6'-8' HT., 3'-4' OF STAKE ABOVE GROUND.
DECIDUOUS TREES EQUAL TO OR GREATER THAN 10' HT., 5' OF STAKE ABOVE GROUND.

PLANTING NOTES

1. Plants shall conform to current "American Standards for Nursery Stock" by American Association of Nurserymen (AAN), particularly with regards to size, growth, size of ball, and density of branch structure.
2. All plants (B&B or container) shall be property identified by weather-proof labels securely attached thereto before delivery to project site. Labels shall identify plants by name species, and size. Labels shall not be removed until the final inspection by the Landscape Architect.
3. Any material and/or work may be rejected by the Landscape Architect if it does not meet the requirement of the specifications. All rejected materials shall be removed from the site by the Landscape Contractor.
4. The Landscape Contractor shall furnish all plants in quantities and sizes to complete the work as specified on the landscape plan. The Landscape Contractor shall be responsible to verify on the plan all plant quantities prior to commencement of work. Quantities in the schedule are the Landscape Contractor's convenience.
5. Substitutions in plant species or size shall not be permitted except with the written approval of the Landscape Architect.
6. Plants shall be located as shown on the drawings and by scaling or as designated in the field by the Landscape Architect.
7. Landscape Contractor shall contact Miss Utility prior to any excavation.
8. 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 of location shall be made without the approval of the Landscape Architect.
9. Landscape Contractor shall first locate and mark the underground utilities, prior to locating and digging the pits for the trees.
10. All equipment and tools shall be placed so as not to interfere or hinder the pedestrian and vehicular traffic flow.
11. During planting operations, excess and waste materials shall be promptly and frequently removed from the site.
12. All disturbed areas of the site not planted with shrubs or ground cover shall be sodded. Till soil to a depth of 6". Apply fertilizer of analysis 5-10-5 at the rate of 20 lbs. per 1000 square feet. Water sod daily until established.
13. All plant beds to received perennials, bulbs or ground cover are to be tilled to a depth of 6" prior to installation of plants. Apply fertilizer of analysis 5-10-5 at the rate specified by manufacturer. Water plants until established.
14. All beds containing shrubs, ground covers, perennials, bulbs or trees are to received 2"-3" of shredded hardwood bark mulch after planting and clean up operations have been completed.

I. BIORETENTION AREA SOIL SPECIFICATIONS

A. Planting Soil

The bioretention areas shall consist of a planting soil having a composition of at least 10 to 25 percent clay and shall be of a sandy loam or loamy sand texture. Loamy soils may be utilized for the planting soil but must consist of 35% sand. In addition, the furnished planting soil shall be of uniform composition, free of stones, stumps, roots or similar objects larger than one inch, brush, or any other material or substance which may be harmful to plant growth, or a hindrance to planting or maintenance operations.

The planting soil shall be free of plants or plant parts of Bermuda grass, Quack grass, Johnson grass, Mugwort, Nutsedge, Poison Ivy, Canadian Thistle or others as specified.

Is shall not contain toxic substances harmful to plant growth.

The planting soil shall be tested and meet the following criteria:

pH range 5.5 - 6.5
Organic matter 1.5 - 3.0%
Magnesium - Mg 35 lbs./acre
Phosphorus - P205 100 lbs./acre
Potassium - K20 85 lbs./acre
Soluble salts not to exceed 500ppm

The following testing frequencies shall apply to the above soil constituents:

pH, Organic Matter: 1 test per 90 cubic yards, but no more than 1 test per Bioretention Area

Magnesium, Phosphorus, Potassium, Soluble Salts:

1 test per 500 cubic yards, but no less than 1 test per borrow source

One grain size analysis shall per performed per 90 cubic yards of planting soil, but no less than 1 test per Bioretention Area.

B. Mulch Layer Specifications

A mulch layer shall be provided on top of the planting soil. An acceptable mulch layer shall include shredded hardwood or shredded wood chips or other similar product approved by the Maryland Department of Environment (MDE).

Of the approved mulch products all must be well aged, uniform in color, and free of foreign material including plant material. Well aged mulch is defined as mulch that has been stockpiled or stored for at least twelve (12) months.

C. Sand Specifications

The sand shall be free of deleterious material and rocks greater than 1 inch in diameter.

D. Compaction

Soil shall be placed in lifts less than 18 inches and lightly compacted (minimal compactive effort) by tamping with a bucket from a dozer or a backhoe.

II. BIORETENTION AREA PLANT SPECIFICATIONS

General Planting Specifications

Root stock of the plant material shall be kept moist during transport from the source to the job site and until planted.

Walls of planting pit shall be dug so that they are vertical.

The diameter of the planting pit must be a minimum of six inches (6") larger than the diameter of the ball of the tree.

The planting pit shall be deep enough to allow 1/4" of the ball to be above the existing grade. Loose soil at the bottom of the pit shall be tamped by hand.

The appropriate amount of fertilizer is to be placed at the bottom of the pit (see below for fertilization rates).

The plant shall be removed from the container and placed in the planting pit by lifting and carrying the plant by its' ball (never lift by branches or trunk).

Set the plant straight and in the center of the pit so that the top of the ball is approximately 1/4" above the final grade.

Backfill planting pit with existing soil.

Make sure plant remains straight during backfilling procedure.

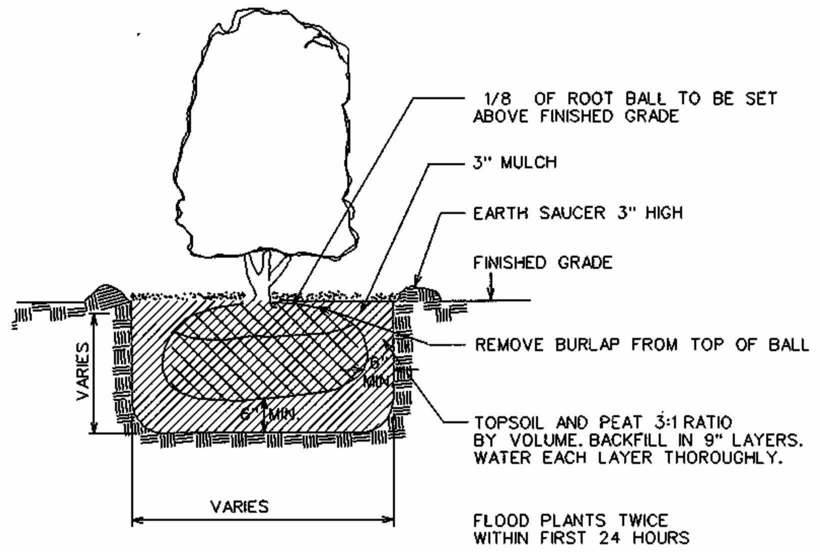
Never cover the top of the ball with soil. Mound soil around the exposed ball (1/4").

Trees shall be braced by using 2" by 2" white oak stakes. Stakes shall be placed parallel to walkways and buildings. Stakes are to be equally spaced on the outside of the tree ball. Utilizing hose and wire the tree is braced to the stakes.

BIORETENTION AREA SEQUENCE OF CONSTRUCTION

1. Install Phase I Silt Fence as shown on the plan. -Construction time: 1/2 Day
2. Stabilize grading within Limit of Disturbance except for Bioretention Area. -Construction time: 1/2 Day
3. Excavate Bioretention Area to proposed depth. -Construction time: 1/2 Day
4. Fill Bioretention Area with planting soil and sand, as shown in the plans and detailed in the specifications. Construction time: 1 Day
5. Plant vegetation specified in the planting plan Bioretention Area. -Construction time: 1/2 Day
6. Upon authorization from DER inspector, remove all sediment controls and stabilize all disturbed areas. Unblock curb openings, and provide drainage to the Bioretention Areas. -Construction time: 1/2 Day

Total Estimated Construction Time - 3.5 Days



BIORETENTION
SHRUB PLANTING DETAIL

B&B AND CONTAINER GROWN
NOT TO SCALE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — 5/8/13 DATE

DIRECTOR — 5/6/03 DATE

Drafting	AWW	DATE	REVISIONS
Check	CGW		
Design	CGW		
Check	THM		

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14502 Greenview Drive, Suite 424
Laurel, Maryland 20708
(301) 953-1821 (410) 792-8086
fax: (410) 792-7419
www.kci.com

OWNER:
C & S MEADOWRIDGE, LLC
925 FELL STREET
BALTIMORE, MD 21231
(410) 534-6350

CONTRACT PURCHASER & DEVELOPER:
CREANEY & SMITH GROUP LLC
925 FELL STREET
BALTIMORE, MD 21231
(410) 534-6350

BIORETENTION AREA 1 PLAN, NOTES AND PLANTING DETAILS

STATE OF MARYLAND — No. 25066 — MARIANNE KIERNAN — PROFESSIONAL ENGINEER — APR 14 2003

KANE COMPANIES, INC.
HEADQUARTERS

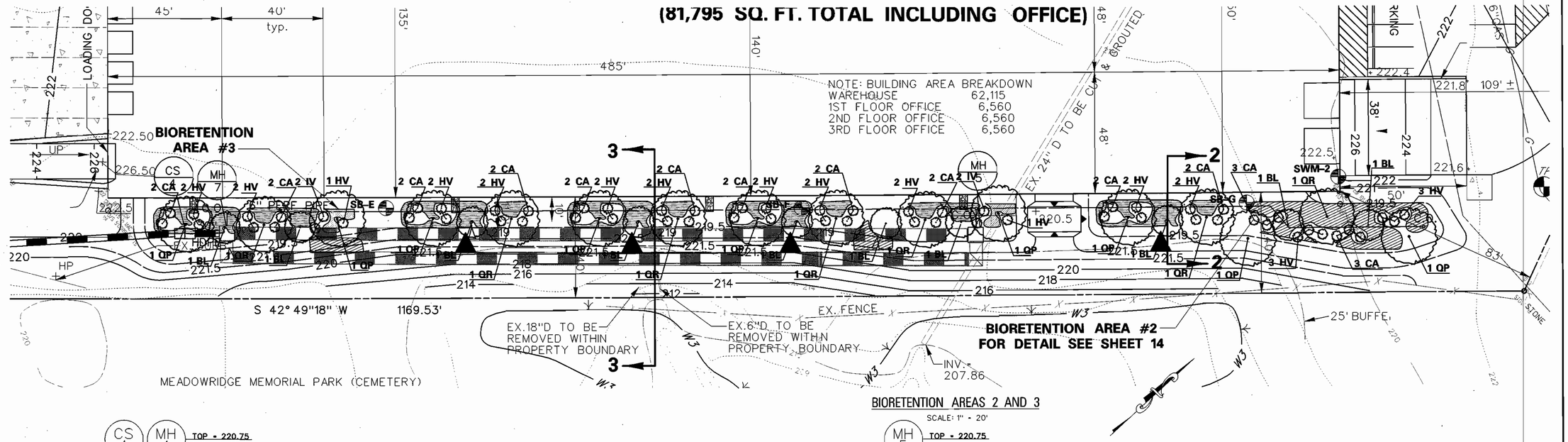
PROPOSED OFFICE WAREHOUSE
TAX MAP 37, PARCEL 174
L. 6753 F. 684, ZONE M-1
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

WATER CODE: D04 SEWER CODE: 215 3000

GRAPHIC SCALE
20 0 10 20 40
(IN FEET)
1 inch = 20ft.

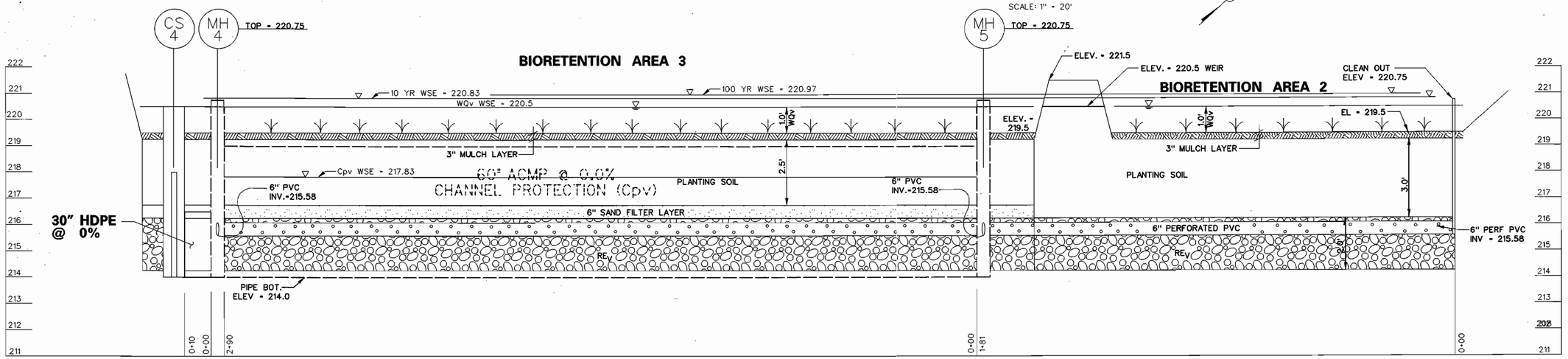
DATE: APRIL 9, 2003
SHEET 13 OF 22

SDP-02-53 02008\DRAWINGS\BIO1.dgn



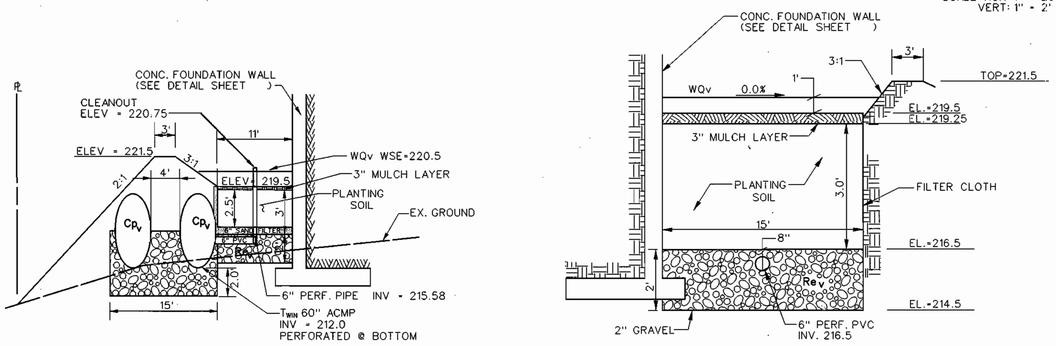
BIORETENTION AREAS 2 AND 3

SCALE: 1" = 20'



BIORETENTION AREAS 2 AND 3 PROFILE

SCALE: HOR: 1" = 20'
VERT: 1" = 2'



BIORETENTION SECTION 3

SCALE: HOR: 1" = 10'
VERT: 1" = 5'

BIORETENTION SECTION 2

NOT TO SCALE

BIORETENTION AREA 3 PLANT SCHEDULE

Qty.	Key	Botanical\Common Name
		TREES
6	QR	Quercus Rubra- Red Oak (2.5" Cal., B&B, Full Crown)
6	QP	Quercus Palustris-Pin Oak (2.5" Cal., B&B, Full Crown)
7	BL	Betula Lenta-Sweet Birch (2.5" Cal., B&B)
		SHRUBS
18	CA	Clethra Ainfolia-Sweet Pepperbush (18"-24" container)
20	HV	Hamamelis Virginica-Witch Hazel (18"-24" container)
4	IV	Ilex Verticillata-Winterberry (30" ht., B&B)
3400	JP	Pschysandra terminalis - Japanese pschysandra

Hatching for Herbacious Cover

BIORETENTION AREA 2 PLANT SCHEDULE

Qty.	Key	Botanical\Common Name
		TREES
2	QR	Quercus Rubra- Red Oak (2.5" Cal., B&B, Full Crown)
3	QP	Quercus Palustris-Pin Oak (2.5" Cal., B&B, Full Crown)
3	BL	Betula Lenta-Sweet Birch (2.5" Cal., B&B)
		SHRUBS
10	CA	Clethra Ainfolia-Sweet Pepperbush (18"-24" container)
10	HV	Hamamelis Virginica-Witch Hazel (18"-24" container)
1200	JP	Pschysandra terminalis - Japanese pschysandra

Hatching for Herbacious Cover

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5/8/03

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/8/03

DIRECTOR — DATE 5/8/03

Drafting	AWW
Check	CGW
Design	CGW
Check	THM

DATE	REVISIONS

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ENGINEERS PLANNERS SCIENTISTS CONSTRUCTION MANAGERS
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925 FELL STREET
BALTIMORE, MD 21231
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CONTRACT PURCHASER & DEVELOPER:
CREANEY & SMITH GROUP LLC
925 FELL STREET
BALTIMORE, MD 21231
(410) 534-6350

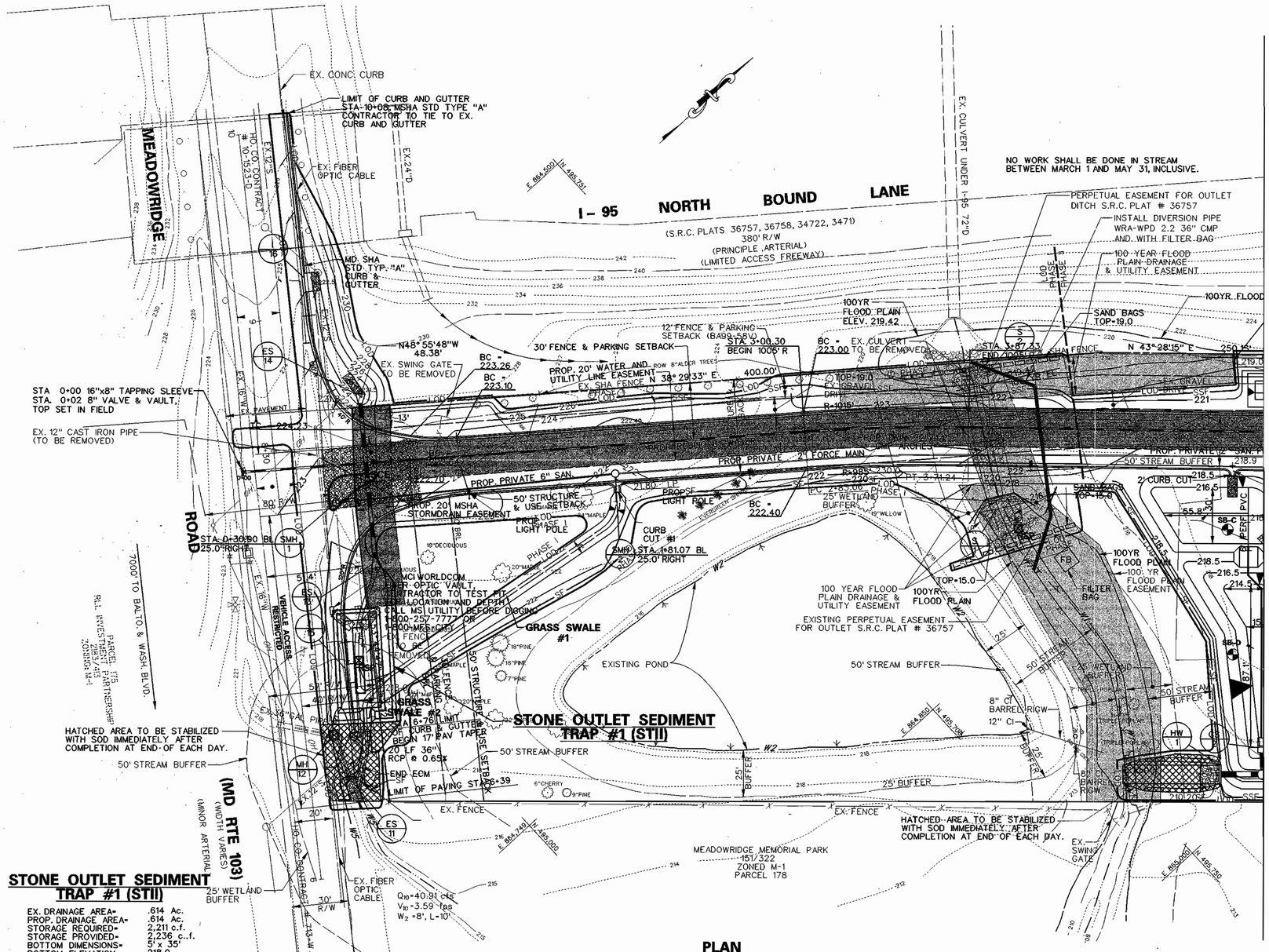
BIORETENTION AREAS 2 AND 3 PLAN

STATE OF MARYLAND — No. 25048 — MARIANNE K. PIERSON — PROFESSIONAL ENGINEER
APR 14 2003

KANE COMPANIES, INC. HEADQUARTERS
PROPOSED OFFICE WAREHOUSE
TAX MAP 37 , PARCEL 174
L. 6753 F. 684, ZONE M-1
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
WATER CODE: D04 SEWER CODE: 215 3000

GRAPHIC SCALE
20 0 10 20 40
(IN FEET)
1 inch = 20ft.
DATE: APRIL 9, 2003
SHEET 14 OF 22

SDP-02-53
2008\DRAWINGS\BIO2.dgn



STONE OUTLET SEDIMENT TRAP #1 (STII)

EX. DRAINAGE AREA=	.614 Ac.
PROP. DRAINAGE AREA=	.614 Ac.
STORAGE REQUIRED=	2,211 c.f.
STORAGE PROVIDED=	2,236 c..f.
BOTTOM DIMENSIONS=	5' x 35'
BOTTOM ELEVATION=	218.0
WEIR LENGTH=	4'
WET STORAGE ELEVATION=	220.0
WEIR CREST ELEVATION=	222.0
TOP OF EMBANKMENT=	223.0
CLEANOUT ELEVATION=	219.0

PLAN

SCALE: 1" = 30'

MATCHLINE SEE SHEET 16

GENERAL NOTES

1. A minimum of 24 hours notice must be given to the Howard County Sediment Control Division prior to the start of any construction (880-3450)..
2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
3. Following initial soil disturbance or redisturbance, permanent or temporary stabilization shall be completed within: a) 7 calender days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.
4. All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 12, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
5. All disturbed areas must be stabilized within the time period specified above in accordance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seedings (Sec. 51) sod (Sec. 54), temporary seeding (Sect. 50) and mulching (Sec. 52). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
6. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
7. Site Analysis:

Total Area of Site	6.8264 Ac.	Acres
Area Disturbed	5.550 Ac.	Acres
Area to be Roofed or Paved	3.420 Ac.	Acres
Area to be Vegetatively Stabilized	3.55 Ac.	Acres
Total Cut	26,780	Cubic Yards
Total Fill	26,780	Cubic Yards
Offsite Waste/Borrow Location	Stockpile Permit #G00008045 Borrow material taken from: Troy Hill Industrial Park	

8. Any sediment control practices which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
9. Additional sediment controls must be provided, if deemed necessary by the Howard County Department of Public Works Sediment Control Inspector.
10. On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of the 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.

SEQUENCE OF CONSTRUCTION

1.	Obtain grading and MDE Permit	1 DAY
2.	Notify Howard County Sediment Control Inspector for pre-construction meetings as required by note number one (No. 1) of the Standard Erosion and Control Notes shown on this sheet. Notify Miss Utility.	1 DAY
3.	Install sediment control measures for Phase I Construction (i.e. see silt fence installation of ES-11 thru MH-12, only)	1 DAY
4.	With silt fence protection install MH-12 thru ES-11 and inclusive pipe. Install riprap outfall. Stabilize site, Contractor shall complete ES-11 to MH-12 in one dry day.	1 DAY
5.	Install stone outlet sediment trap #1. Install permanent outfall from trap to riprap outfall @ ES-11	1 DAY
6.	With inspectors approval grade the Meadowridge Road improvements. Install inlet I-16, structures ES-14 and 13 with inclusive pipe, riprap and grass channels. Do not install glass swale #1. Install glass #2 upto sediment trap #1. All excavasion for road base (MD Rt 103) shall be backfilled with stone at the end of each day.	2 WEEKS
7.	Install Phase 1 utilities. Stabilize site.	2 WEEKS
8.	Install 36" pipe diversion under Phase I Construction around existing culvert across proposed drive. Note: No work permitted within stream between March 1 and ~~May 31~~ June 15th inclusive.	3 DAYS
9.	Install Sanitary Force main and waterline under stream bed at stream crossing where future twin 72"X44" CMP are to be installed. Continue lines to termination in Meadowridge Road.	2 DAYS
10.	Install twin culverts in stream crossing.	2 DAYS
11.	Remove removable sup pit, add Phase II silt fence across S1, remove diversion pipe and divert water back through proposed culverts. Obtain permission from Inspector before proceeding.	1 DAY
12.	With the Howard County Sediment Control Inspector's approval, remove existing drive and culvert. Bring proposed drive up to grade. Grade improvements along Meadowridge Road.	3 DAYS
13.	Install sediment control measure for Phase II Construction (i.e., silt fence, super silt fence, sediment trap #2). Clear and grub area within LOD with inspector's approval.	2 DAYS
14.	Sever and block 24" pipe at the property line before removal of pipe. Remove or grout in place existing 24" pipe within property boundary under building pad. Install 60" storage pipes and block flows from entering same until SWM work is begun later in the sequence.	3 WEEKS
15.	With inspectors approval begin grading the western side of the building pad. As pad is constructed in an easterly direction, and approaches sediment trap #2, remove trap. Close super silt fence @ trap #2 outfall. Grade remainder of building pad.	3 WEEKS
16.	Install Utilities from Phase I construction through Phase II and tie into existing utilities.	3 DAYS
17.	Install paving, curb, gutter and storm drain at culvert across Meadowridge Road. Install paving, curb and gutter for entire site.	7 DAYS
18.	Stabilize all disturbed areas.	3 DAYS
19.	Construction and water, sewer and storm drains north east of the stone construction entrance only at this time. All storm drain inlets and end sections shall have brick bulkheads installed the same day that flows to the water quantity/quality facilities.	21 DAYS
20.	Concurrently fine grade and install curb and gutters. Apply permanent stabilization to all areas fine graded within 48 hours of their completion Install stone sub-base to all areas to be paved as they are fine graded and proof rolled	14 DAYS
21.	After the site has been stabilized install SWM Facilities (i.e. Bioretention and sand filter areas, CPv areas, grass swales 1 & 2)	14 DAYS
22.	Stabilize all disturbed areas.	

NOTE:

ADD ECM MATTING IN ALL DITCHES, SWALES, AND OTHER AREAS OF CONCENTRATED FLOW PER DETAIL SHEET 18 OF 22.

LEGEND

EXISTING TREE LINE
PROPOSED TREE LINE
EXISTING GRADE — 140 —
PROPOSED GRADE — 142 —
EXISTING DRAINAGE DIVIDE
PROPOSED DRAINAGE DIVIDE
PROPOSED EARTH DIKE A-2
LIMIT OF DISTURBANCE LOD
SILT FENCE SF
SUPER SILT FENCE SSF
RIPRAP INFLOW PROTECTION R-2

BY THE DEVELOPER:

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

DEVELOPER — DATE 3/26/03

BY THE ENGINEER:

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

ENGINEER — DATE 4/4/03

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/8/03
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/8/03
DIRECTOR — DATE 5/6/03

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS:

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 4/22/03

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

HOWARD SCD — DATE 4/22/03

Drafting	JAB	DATE	REVISIONS
Check	CGW		
Design	CGW		
Check	THM		

KCI TECHNOLOGIES — ENGINEERS, PLANNERS, SCIENTISTS, CONSTRUCTION MANAGERS
14502 Greenview Drive, Suite 424, Laurel, Maryland 20708
(301) 953-1821 (410) 792-8086
fax: (410) 792-7419
www.kci.com

OWNER:
C & S MEADOWRIDGE, LLC
925 FELL STREET
BALTIMORE, MD 21231
(410) 534-6350

CONTRACT PURCHASER & DEVELOPER:
CREANEY & SMITH GROUP LLC
925 FELL STREET
BALTIMORE, MD 21231
(410) 534-6350

GRADING AND SEDIMENT CONTROL PLAN - SHEET 1

STATE OF MARYLAND — No. 25048 — MARIANNE KIERNAN — PROFESSIONAL ENGINEER — APR 4 2003

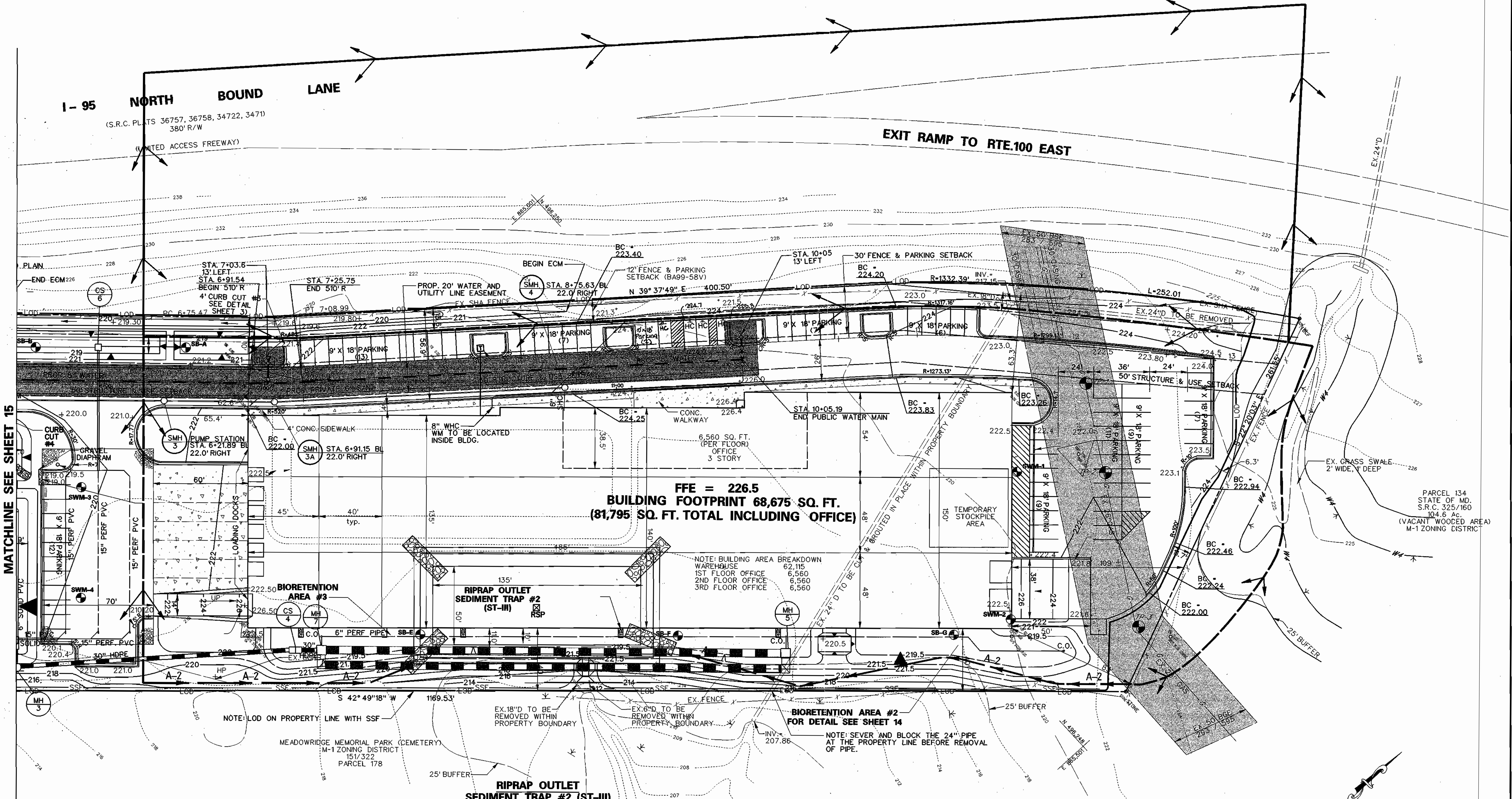
KANE COMPANIES, INC. HEADQUARTERS
PROPOSED OFFICE WAREHOUSE
TAX MAP 37 , PARCEL 174
L. 6753 F. 684, ZONE M-1
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
WATER CODE: D04 SEWER CODE: 215 3000

GRAPHIC SCALE
30 0 15 30 60
(IN FEET)
1 inch = 30ft.

DATE: APRIL 9, 2003
SHEET 15 OF 22

SDP-02-55

1602008\DRAWINGS\SCPLN1.DGN

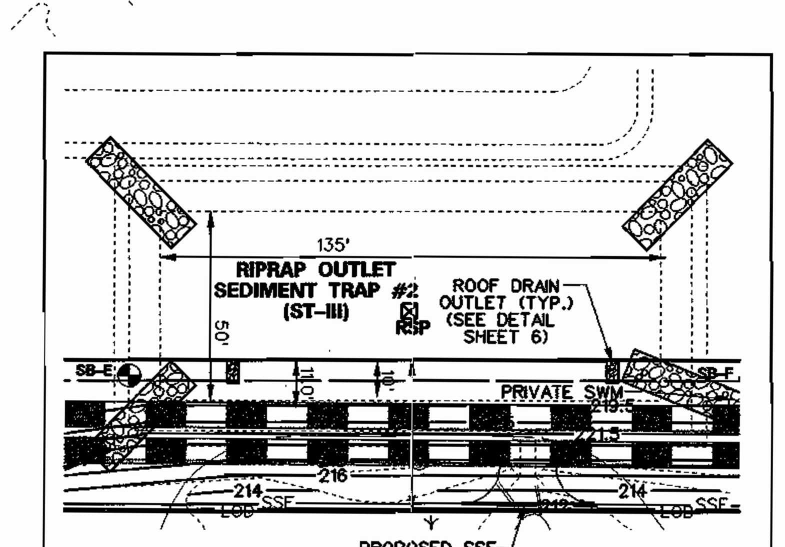


RIPRAP OUTLET SEDIMENT TRAP #2 (ST-III)

EXISTING D.A. = 6.10 Ac.
PROPOSED D.A. = 3.53 AC
STORAGE REQUIRED = 32,940 CF
STORAGE PROVIDED = 33,176 CF
STORAGE DEPTH = 4'
BOTTOM ELEVATION = 208.0
OUTFALL LENGTH = 10'
CLEANOUT ELEV. = 209.0
WEIR LENGTH = 14'
WEIR CREST ELEVATION = 212.0'
WEIR DEPTH = 1.5'
EMBANKMENT ELEVATION = 216.0'

PLAN

SCALE: 1" = 30'



SEDIMENT TRAP #2 INSET

SCALE: 1" = 40'

LEGEND

- EXISTING TREE LINE
- PROPOSED TREE LINE
- EXISTING GRADE (140)
- PROPOSED GRADE (142)
- EXISTING DRAINAGE DIVIDE
- PROPOSED DRAINAGE DIVIDE
- PROPOSED EARTH DIKE (A-2)
- LIMIT OF DISTURBANCE (LOD)
- SILT FENCE (SF)
- SUPER SILT FENCE (SSF)
- RIPRAP INFLOW PROTECTION

BY THE DEVELOPER:

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

DEVELOPER — DATE 3/4/03

BY THE ENGINEER:

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

ENGINEER — DATE 4/14/03

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 4/22/03

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

HOWARD SCD — DATE 4/22/03

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/29/03

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/8/03

DIRECTOR — DATE 5/8/03

Drafting	JAB	DATE	REVISIONS
Check	CGW		
Design	CGW		
Check	THM		

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CONTRACT PURCHASER & DEVELOPER:
CREANEY & SMITH GROUP LLC
925 FELL STREET
BALTIMORE, MD 21231
(410) 534-6350

GRADING AND SEDIMENT CONTROL PLAN - SHEET 2

STATE OF MARYLAND NO. 25058 MARIANNE KIERNAN PROFESSIONAL ENGINEER
APR 1 4 2003

KANE COMPANIES, INC. HEADQUARTERS

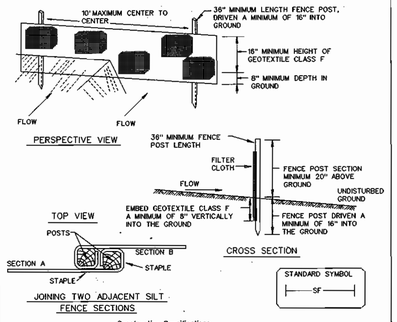
PROPOSED OFFICE WAREHOUSE
TAX MAP 37 , PARCEL 174
L. 6753 F. 684, ZONE M-1
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
WATER CODE: D04 SEWER CODE: 215 3000

GRAPHIC SCALE
30 0 15 30 60
(IN FEET)
1 inch = 30ft.

DATE: APRIL 9, 2003
SHEET 16 OF 22

SDP-02-53
1602008\DRAWINGS\SCPLN2.DGN

DETAIL 22 - SILT FENCE



Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1½" x 1½" square (minimum) cut, or 2¼" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pond per linear foot.

2. Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:

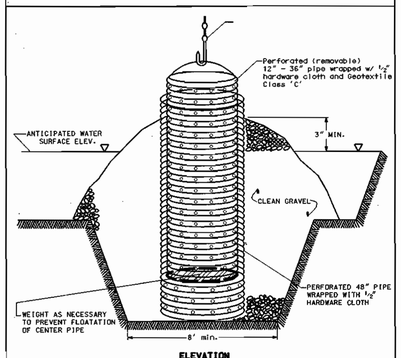
Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal/ft²/ minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.

4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E - 15 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 20A - REMOVABLE PUMPING STATION



ELEVATION

Construction Specifications

1. The outer pipe should be 48" dia. or shall, in any case, be at least 4" greater in diameter than the center pipe. The outer pipe shall be wrapped with ½" hardware cloth to prevent backfill material from entering the perforations.

2. After installing the outer pipe, backfill around outer pipe with 2" aggregate or clean gravel.

3. The inside stand pipe (center pipe) should be constructed by perforating a corrugated or PVC pipe between 12" and 36" in diameter. The perforations shall be ½" x 6" slits or 1" diameter holes 6" on center. The center pipe shall be wrapped with ½" hardware cloth first, then wrapped again with Geotextile Class C.

4. The center pipe should extend 12" to 18" above the anticipated water surface elevation or riser crest elevation when dewatering a basin.

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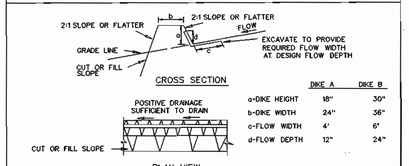
DETAIL 1 - EARTH DIKE



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

1. Seed and cover with straw mulch.
2. Seed and cover with Erosion Control Matting or line with sod.
3. 4" – 7" stone or recycled concrete equivalent pressed into the soil 7" minimum

Construction Specifications

1. All temporary earth dikes shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.

2. Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.

3. Runoff diverted from an undisturbed area shall outlet directly into an undisturbed, stabilized area at a non-erosive velocity.

4. All trees, brush, stumps, obstructions, and other objectional material shall be removed and disposed of so as not to interfere with the proper functioning of the dike.

5. The dike shall be excavated or shaped to line, grade and cross section as required to meet the criteria specified herein and be free of bank projections or other irregularities which will impede normal flow.

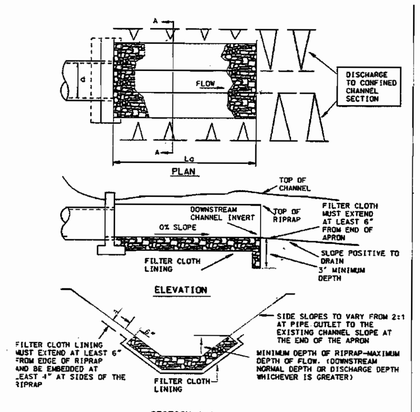
6. Fill shall be compacted by earth moving equipment.

7. All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the dike.

8. Inspection and maintenance must be provided periodically and after each rain event.

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

DETAIL 26 - ROCK OUTLET PROTECTION II

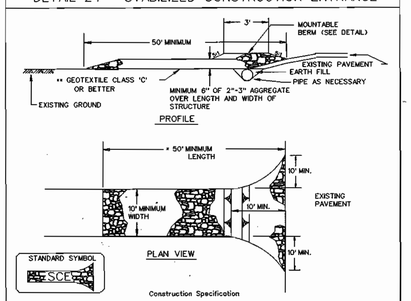


U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE F - 18 - 9	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

Table VI.1. Example Maintenance Schedule for Bioretention Areas

Description	Method	Frequency	Time of the year
SOIL			
Inspect and Repair Erosion	Visual	Monthly	Monthly
ORGANIC LAYER			
Remulch any void areas	By hand	Whenever needed	Whenever needed
Remove previous mulch layer before applying new layer (optional)	By hand	Once every two to three years	Spring
Any additional mulch added (optional)	By hand	Once a year	Spring
PLANTS			
Removal and replacement of all dead and diseased vegetation considered beyond treatment	See planting specifications	Twice a year	3/15 to 4/30 and 10/1 to 11/30
Treat all diseased trees and shrubs	Mechanical or by hand	N/A	Varies, depends on insect or disease infestation
Watering of plant material shall take place at the end of each day for fourteen consecutive days after planting has been completed	By hand	Immediately after completion of project	N/A
Replace stakes after one year	By hand	Once a year	Only remove stakes in the spring
Replace any deficient stakes or wires	By hand	N/A	Whenever needed

DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE



Construction Specification

1. Length - minimum of 50' (*30' for single residence lot).

2. Width - 10' minimum, should be flared at the existing road to provide a turning radius.

3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. **The plan approval authority may not require single family residences to use geotextile.

4. Stone - crushed aggregate (2" to 3"), or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.

5. Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.

6. Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

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STABILIZED CONSTRUCTION ENTRANCE

Construction Specification

1. Length - minimum of 50' (*30' for single residence lot).

2. Width - 10' minimum, should be flared at the existing road to provide a turning radius.

3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. **The plan approval authority may not require single family residences to use geotextile.

4. Stone - crushed aggregate (2" to 3"), or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.

5. Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.

6. Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

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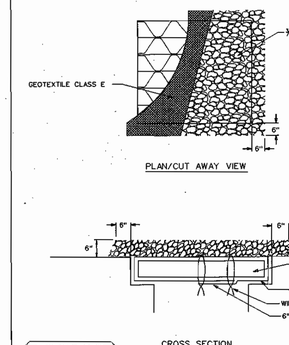
DETAIL 23B - AT GRADE INLET PROTECTION



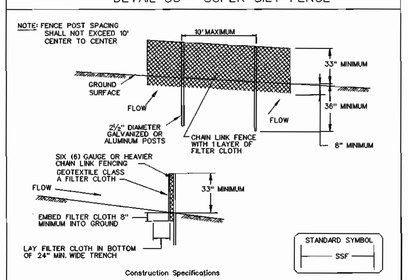
Construction Specifications

1. Lift grate and wrap with Geotextile Class E to completely cover all openings, then set grate back in place.

2. Place ¾" to 1½" stone, 4"-6" thick on the grate to secure the fabric and provide additional filtration.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E - 16 - 5A	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 33 - SUPER SILT FENCE



Construction Specifications

1. Fencing shall be 42 inches in height and constructed in accordance with the latest Maryland State Highway (SHA) Details for Chain Link Fencing. The (SHA) specification for a 6 foot fence shall be used, substituting 42 inch fabric and 6 foot length posts.

2. The posts do not need to be set in concrete.

3. Chain link fence shall be fastened securely to the fence posts with wire ties or staples. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence. The chain link fencing shall be six (6) gauge or heavier.

4. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.

5. Filter cloth shall be embedded a minimum of 8" into the ground.

6. When two sections of geotextile fabric adjoin each other, they shall be overlapped by 6" and folded.

7. Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	MODIFIED	

ROCK OUTLET PROTECTION II

Construction Specifications

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

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

3. Geotextile shall be protected from punching, cutting, or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of geotextile over the damaged part or by completely replacing the geotextile. All overlaps whether for repairs or for joining two pieces of geotextile shall be a minimum of one foot.

4. Stone for the rip-rap or gabion outlets may be placed by equipment. They shall be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for rip-rap or gabion outlets shall be delivered and placed in a manner that will ensure that it is reasonably homogeneous with the smaller stones and spalls filling the voids between the larger stones. Rip-rap shall be placed in a manner to prevent damage to the filter blanket or geotextile. Hand placement will be required to the extent necessary to prevent damage to the permanent works.

5. The stone shall be placed so that it blends in with the existing ground. If the stone is placed too high then the flow will be forced out of the channel and scour adjacent to the stone will occur.

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SUPER SILT FENCE

Design Criteria

Slope	Slope Steepness	Slope Length (maximum)	Silt Fence Length (maximum)
0 - 10%	0 - 10:1	Unlimited	Unlimited
10 - 20%	10:1 - 5:1	200 feet	1,500 feet
20 - 33%	5:1 - 3:1	100 feet	1,000 feet
33 - 50%	3:1 - 2:1	100 feet	500 feet
50% +	2:1 +	50 feet	250 feet

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SILT FENCE

Silt Fence Design Criteria

Slope Steepness	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

Note: In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E - 15 - 3A	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

BY THE DEVELOPER:

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

DEVELOPER — DATE 3/4/03

BY THE ENGINEER:

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

ENGINEER — DATE 4/14/03

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/4/03

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 4/8/03

DIRECTOR — DATE 5/6/03

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 4/22/03

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

HOWARD SCD — DATE 4/22/03

Drafting	DATE	BY	REVISIONS
Check CGW			
Design CGW			
Check THM			

KCI TECHNOLOGIES — ENGINEERS, PLANNERS, SCIENTISTS, CONSTRUCTION MANAGERS
14502 Greenview Drive, Suite 424, Laurel, Maryland 20708
(301) 953-1821 (410) 792-8086
fax: (410) 792-7419
www.kci.com

OWNER/DEVELOPER
C & S MEADOWRIDGE, LLC
925 FELL STREET
BALTIMORE, MD 21231
(410) 534-6350

CONTRACT PURCHASER & DEVELOPER:
CREANEY & SMITH GROUP LLC
925 FELL STREET
BALTIMORE, MD 21231
(410) 534-6350

GRADING AND SEDIMENT CONTROL DETAILS

STATE OF MARYLAND — No. 25038 — MARIANNE KIERNAN — PROFESSIONAL ENGINEER
APR 14 2003

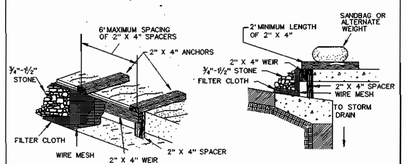
KANE COMPANIES, INC. HEADQUARTERS
PROPOSED OFFICE WAREHOUSE
TAX MAP 37, PARCEL 174
L. 6753 F. 684, ZONE M-1
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
WATER CODE: D04 SEWER CODE: 215 3000

DATE: APRIL 9, 2003
SHEET 17 OF 22

SDP-02-53

1602008\DRAWINGS\SEDDETS.DGN

DETAIL 23C-CURB INLET PROTECTION (COG OR COS INLETS)



MAX. DRAINAGE AREA - ¼ ACRE

STANDARD SYMBOL: CIP

1. Attach a continuous piece of wire mesh (30" minimum width by throat length plus 4') to the 2" x 4" weir (measuring throat length plus 2') as shown on the standard drawing.

2. Place a continuous piece of Geotextile Class E the same dimensions as the wire mesh over the wire mesh and securely attach it to the 2" x 4" weir.

3. Securely nail the 2" X 4" weir to a 9' long vertical spacer to be located between the weir and the inlet face (max. 4' apart).

4. Place the assembly against the inlet throat and nail (minimum 2' lengths of 2" x 4" to the top of the weir at spacer locations). These 2" x 4" anchors shall extend across the inlet top and be held in place by sandbags or alternate weight.

5. The assembly shall be placed so that the end spacers are a minimum 1' beyond both ends of the throat opening.

6. Form the ½" x ½" wire mesh and the geotextile fabric to the concrete gutter and against the face of the curb on both sides of the inlet. Place clean ¾" x 1½" stone over the wire mesh and geotextile in such a manner to prevent water from entering the inlet under or around the geotextile.

7. This type of protection must be inspected frequently and the filter cloth and stone replaced when clogged with sediment.

8. Assure that storm flow does not bypass the inlet by installing a temporary earth or asphalt dike to direct the flow to the inlet.

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EROSION CONTROL MATTING

Construction Specifications

1. Key-in the matting by placing the top ends of the matting in a narrow trench, 6" in depth. Backfill the trench and tamp firmly to conform to the channel cross-section. Secure with a row of staples about 4" down slope from the trench. Spacing between staples is 6".

2. Staple the 4" overlap in the channel center using an 18" spacing between staples.

3. Before stapling the outer edges of the matting, make sure the matting is smooth and in firm contact with the soil.

4. Staples shall be placed 2' apart with 4 rows for each strip, 2 outer rows, and 2 alternating rows down the center.

5. Where one roll of matting ends and another begins, the end of the top strip shall overlap the upper end of the lower strip by 4", shiplap fashion. Reinforce the overlap with a double row of staples spaced 6" apart in a staggered pattern on either side.

6. The discharge end of the matting liner should be similarly secured with 2 double rows of staples.

Note: If flow will enter from the edge of the matting then the area effected by the flow must be keyed-in.

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ROCK OUTLET PROTECTION II

Construction Specifications

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

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

3. Geotextile shall be protected from punching, cutting, or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of geotextile over the damaged part or by completely replacing the geotextile. All overlaps whether for repairs or for joining two pieces of geotextile shall be a minimum of one foot.

4. Stone for the rip-rap or gabion outlets may be placed by equipment. They shall be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for rip-rap or gabion outlets shall be delivered and placed in a manner that will ensure that it is reasonably homogeneous with the smaller stones and spalls filling the voids between the larger stones. Rip-rap shall be placed in a manner to prevent damage to the filter blanket or geotextile. Hand placement will be required to the extent necessary to prevent damage to the permanent works.

5. The stone shall be placed so that it blends in with the existing ground. If the stone is placed too high then the flow will be forced out of the channel and scour adjacent to the stone will occur.

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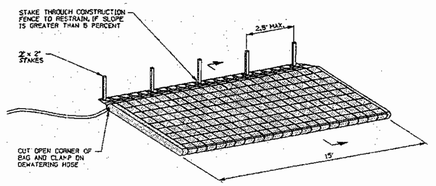
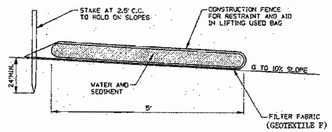




SECTION

STANDARD SYMBOL: FB

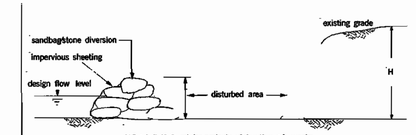
NOTES:
1. FILTER BAG SHALL BE PLACED ON A SLOPING OR LEVEL, WELL GRADED VEGETATED SITE SUCH THAT WATER WILL FLOW AWAY FROM DEVICE AND ANY WORK AREAS.
2. WIDTH AND LENGTH SHALL BE AS SHOWN
3. THE FILTER BAG MUST BE STAKED IN PLACE AND SECURED TO THE PUMP DISCHARGE LINE.
4. FILTER BAG SHALL NOT BE USED FOR DISCHARGE FLOWS GREATER THAN 300 GPM.
5. DEVICE SHALL BE REMOVED AND DISPOSED OF AFTER BAG IS FILLED WITH SEDIMENT. SEDIMENT FROM BAG SHALL BE SPREAD IN AN UPLAND AREA.
6. FILTER FABRIC SHALL MEET THE FOLLOWING REQUIREMENTS FOR GEOTEXTILE CLASS F:

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Tests MSMT 509
Flow Rate	0.3 gal ft²/ minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Tests: MSMT 322

FILTER BAG
TEMPORARY EROSION CONTROL MEASURE FB

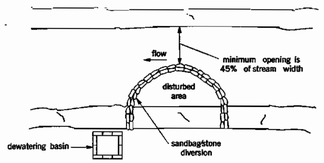
Maryland's Guidelines To Waterway Construction
DETAIL 1.5: SANDBAG/STONE DIVERSION

TRANSVERSE SECTION VIEW



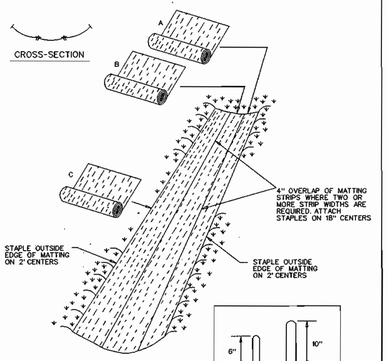
H2+1 ft (0.3 m) for projects of duration <2 weeks;
2-year flood elevation for projects of longer duration

PLAN VIEW



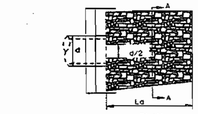
TEMPORARY INSTREAM CONSTRUCTION MEASURES	REVISED NOVEMBER 2000 PAGE 1.5 - 3	MARYLAND DEPARTMENT OF THE ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 30 - EROSION CONTROL MATTING

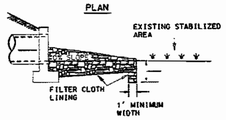


U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE G - 22 - 2	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

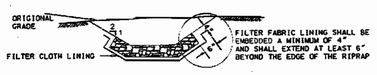
DETAIL 27 - ROCK OUTLET PROTECTION III



PLAN



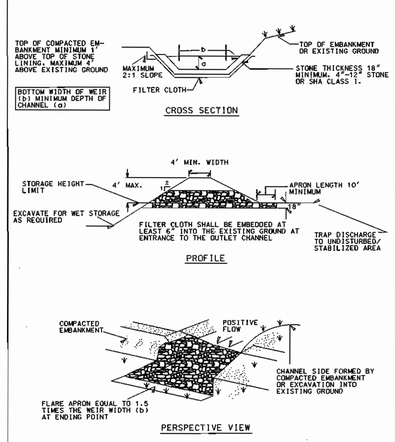
ELEVATION



SECTION A-A

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE F - 18 - 10	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 10 - RIP-RAP OUTLET SEDIMENT TRAP - ST III



NOTE: MAXIMUM DRAINAGE AREA= 10 ac.

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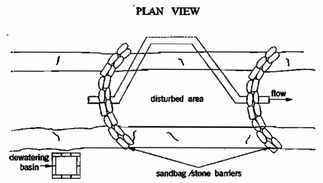
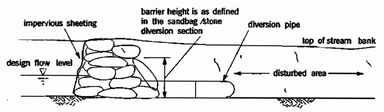
Maryland's Guidelines To Waterway Construction
DETAIL 1.4: DIVERSION PIPE

PLAN VIEW



LONGITUDINAL SECTION VIEW



TEMPORARY INSTREAM CONSTRUCTION MEASURES	REVISED NOVEMBER 2000 PAGE 1.4 - 7	MARYLAND DEPARTMENT OF THE ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

RIP-RAP OUTLET SEDIMENT TRAP - ST III

Construction Specifications

1. The area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.

2. The fill material for the embankment shall be free of roots or other woody vegetation as well as over-sized stones, rocks, organic material or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed. Maximum height of embankment shall be 4', measured at centerline of embankment.

3. All cut and fill slopes shall be 2:1 or flatter.

4. Elevation of the top of any dike directing water into trap must equal or exceed the height of trap embankment.

5. Storage area provided shall be figured by computing the volume measured from top of excavation. (For storage requirements see Table 10).

6. Filter cloth shall be placed over the bottom and sides of the outlet channel prior to placement of stone. Section of fabric must overlap at least 1' with section nearest the entrance placed on top. Fabric shall be embedded at least 6" into existing ground at entrance of outlet channel.

7. Stone used in the outlet channel shall be 4" - 7" placed 18" thick.

8. Outlet - An outlet shall be provided, which includes a means of conveying the discharge in an erosion free manner to an existing stable channel. Protection against scour at the discharge end shall be provided as necessary.

9. Outlet channel must have positive drainage from the trap.

10. Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to ½ of the wet storage depth of the trap (1350 cf/ac). Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.

11. The structure shall be inspected periodically after each rain and repaired as needed.

12. Construction of traps shall be carried out in such a manner that sediment pollution is abated. Once constructed, the top and outside face of the embankment shall be stabilized with seed and mulch. Points of concentrated inflow shall be protected in accordance with Grade Stabilization Structure criteria. The remainder of the interior slopes should be stabilized (one time) with seed and mulch upon trap completion and monitored and maintained erosion free during the life of the trap.

13. The structure shall be dewatered by approved methods, removed and the area stabilized when the drainage area has been properly stabilized.

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1994

BY THE DEVELOPER:

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

DEVELOPER — DATE

BY THE ENGINEER:

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Marvin Kern 4/14/03
ENGINEER — DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/22/03
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/8/03
DIRECTOR — DATE 5/6/03

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 4/22/03

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

HOWARD SCD — DATE 4/22/03

Drafting	JAB	
Check	CGW	
Design	CGW	
Check	THM	

DATE — REVISIONS

KCI TECHNOLOGIES — ENGINEERS, PLANNERS, SCIENTISTS, CONSTRUCTION MANAGERS
14502 Greenview Drive, Suite 424, Laurel, Maryland 20708
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925 FELL STREET
BALTIMORE, MD 21231
(410) 534-6350

GRADING AND SEDIMENT CONTROL DETAILS

STATE OF MARYLAND — No. 25058 — MARIANNE KIERNAN — PROFESSIONAL ENGINEER
APR 14 2003

KANE COMPANIES, INC.
HEADQUARTERS
PROPOSED OFFICE WAREHOUSE
TAX MAP 37, PARCEL 174
L. 6753 F. 684, ZONE M-1
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
WATER CODE: D04 SEWER CODE: 215 3000

DATE: APRIL 9, 2003
SHEET 18 OF 22

SDP-02-53

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Section I - Vegetative Stabilization Methods and Materials

A. Site Preparation

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

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

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

B. Soil Amendments (Fertilizer and Lime Specifications)

i. Soil test must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas over 5 acres. Soil analysis may be preformed by the University of Maryland or a recognized commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.

ii. Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers shall all be delivered to the site fully labeled according to the applicable state fertilizer laws and shall bear the name, trade name or trademark and warrantee of the producer.

iii. Lime materials shall be ground limestone (hydrated or burnt lime may be substituted) which contains at least (50% total oxides (calcium oxide plus magnesium oxide). Limestone shall be ground to such fineness that at least 50% will pass through a #100 mesh sieve and 98 - 100% will pass through a #20 mesh sieve.

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

C. Seedbed Preparation

i. Temporary Seeding

a. Seedbed preparation shall consist of loosening soil to a depth of 3" to 5" by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened it should not be rolled or dragged smooth but left in the roughened condition. Sloped areas (greater than 3:1) should be tracked leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.

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

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

ii. Permanent Seeding

a. Minimum soil conditions required for permanent vegetative establishment:

1. Soil pH shall be between 6.0 and 7.0
2. Soluble salts shall be less that 500 parts per million (ppm).
3. The soil shall contain less that 40% clay but enough fine grained material (30% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if lovegrass or sericea lespedeza is to be planted, then an sandy soil (< 30% silt plus clay) would be acceptable.
4. Soil shall contain 1/5% minimum organic matter of weight.
5. Soil must contain sufficient pore space to permit adequate root penetration.
6. If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Section 21 Standard and specification for Topsoil.

b. Areas previously graded in conformance with the drawings shall be maintained in a true and even grade, then scarified or otherwise loosened to a depth of 3 - 5" to permit bonding of the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil from sliding down a slope.

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

d. Mix soil amendments into the top 3 - 5" of topsoil by disking or other suitable means. Lawn areas should be raked to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Where site conditions will note permit normal seedbed preparation, loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface. Steep slopes steeper than 3:1) should be tracked by a dozer leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 1 -3" of soil should be loose and friable. Seedbed loosening may not be necessary on newly disturbed areas.

D. Seed Specifications

i. All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized seed laboratory. All seed used shall have been tested within the 6 months immediately preceding the date of sowing such material on this job.

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

ii. Inoculant - The inoculant for treating legume seed in the seed mixtures shall be a pure culture of nitrogen-fixing bacteria prepared specifically for the species. Inoculants shall not be used later than the date indicated on the container. Add fresh inoculant as directed on package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75-80° F. can weaken bacteria and make the inoculant less effective.

E. Methods of Seeding

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

a. If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following: nitrogen: maximum of 100 lbs. per acre total of soluble nitrogen; P205 (phosphorous): 200 lbs/acr; K20 (potassium): 200 lbs/ac.

b. Lime - use only ground agricultural limestone, (Up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.

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

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

a. Seed spread dry shall be incorporated into the subsoil at the rates prescribed on the Temporary or Permanent Seeding Summaries or Tables 25 or 26. The seeded area shall then be rolled with a weighted roller to provide good seed to soil contact.

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

iii. Drill or Cultipacker Seeding: Mechanized seeder that apply and cover seed with soil.

a. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after panting.

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

F. Mulch Specifications (In order of preference)

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

ii. Wood Cellulose Fiber Mulch (WCFM)

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

b. WCFM shall be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.

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

d. WCFM materials shall be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogenous slurry. The mulch material shall form a blotter-like ground cover, on application, having moisture absorption and percolation properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.

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

f. WCFM must conform to the following physical requires: fiber length to approximately 10 mm., diameter approximately 1 mm., pH range of 4.0 to 8.5, as content of 1.6% maximum and water holding capacity of 90% minimum.

Note: Only sterile straw mulch should be used in areas where one species of grass is desired.

G. Mulching Seeded Areas - Mulch shall be applied to all seeded areas immediately after seeding.

i. If grading is completed outside of the seeding season, mulch alone shall be applied as prescribed in this section and maintained until the seeding season returns and seeding can be performed in accordance with these specifications.

ii. When straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tons/acres. Mulch shall be applied to a uniform loose depth of between 1" and 2". Mulch applied shall achieve a uniform distribution and depth so that the soil surface is not exposed. If a mulch anchoring tool is to be used, the rate should be increased to 2.5 tons/acre.

iii. Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 lbs. per acres. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons of water.

H. Securing Straw Mulch (Mulch Anchoring): Mulch anchoring shall be performed immediately following mulch application to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon size of area and erosion hazard:

i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of two (2) inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should be used on the contour if possible.

ii. Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 pounds/acres. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.

iii. Application of liquid binders should be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. The remainder of area should be appear uniform after binder application. Synthetic binders - such as Acrylic DLR (Agro-Tack), DCA-70, Petroset, Terra Tax N, Terra Tack AR or other approved equal may be used at rates recommended by the manufacturer to anchor mulch.

iv. Lightweight: plastic netting may be stopled over the mulch according to manufacturer's recommendations. Netting is usually available in rolls 4' to 15 feet wide and 300 to 3,000 feet long.

I. Incremental Stabilization - Cut Slopes

i. All cut slopes shall be dressed, prepared, seeded and mulched as the work progresses. Slopes shall be excavated and stabilized in equal increments not to exceed 15'.

ii. Construction sequence (refer to Figure 4, page G-20-6):

a. Excavate and stabilize all temporary swales, side ditches, or berms that will be used to convey runoff from the excavation.

b. Perform phase 1 excavation, dress, and stabilize.

c. Perform phase 1 excavation, dress, and stabilize. Overseed phase 1 areas as necessary.

d. Perform final phase excavation, dress, and stabilize. Overseed previously seeded areas as necessary.

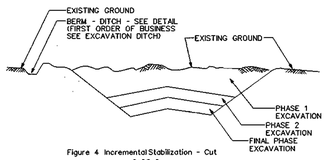

Figure 4 Incremental Stabilization - Cut
G-20-6

Note: Once excavation has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.

J. Incremental Stabilization of Embankments - Fill Slopes

i. Embankments shall be constructed in lifts as prescribed on the plans.

ii. Slopes shall be stabilized immediately when the vertical height of the multiple lifts reaches 15', or when the grading operation ceases as prescribed in the plans.

iii. At the end of each day, temporary berms and pipe slope drains should be constructed along the top edge of the embankment to intercept surface runoff and convey it down the slope in a non-erosive manner to a sediment trapping device.

iv. Construction sequence: Refer to Figure 4, page G-20-7.

a. Excavate and stabilize all temporary swales, side ditches, or berms that will be used to divert runoff around the fill. Construct Slope Silt Fence on low side of fill as shown in Figure 5, unless other methods shown on the plans address this area.

b. Place phase 1 embankment, dress and stabilize.

c. Place phase 2 embankment, dress and stabilize.

d. Place final phase embankment, dress and stabilize. Overseed previously seeded areas as necessary.

Note: Once the placement of fill has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.

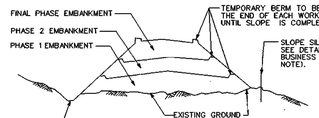

Figure 5 Incremental Stabilization - Fill
G-20-7

Section II - Temporary Seeding

Vegetation - annual grass or grain used to provide cover on disturbed areas for up 12 months. For longer duration of vegetative cover, Permanent Seeding is required.

A. Seed Mixtures - Temporary Seeding

i. Select one or more of the species or mixtures listed in Table 26 for the appropriate Plant Hardiness Zone (from Figure 5) and enter them in the Temporary Seeding Summary, page G-20-8, along with application rates, seeding dates and seeding depths. If this Summary is not put on the plans and completed, then Table 26 must be put on the plans.

ii. For sites having soil tests performed, the rates shown on this table shall be deleted and the rates recommended by the testing agency shall be written in. Soil tests are not required for Temporary Seeding.

Temporary Seeding Summary

Seed Mixture (Hardiness Zone 7A, From Table 26)					Fertilizer Rate (10-10-10)	Lime Rate
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths		
	RYE PLUS FOXTAIL MILLET	150	2/1 TO 11/30	1"	600 lb/ac (15 lb/1000 sf)	2 tons/ac (100 lb/1000 sf)

Section III - Permanent Seeding

Seeding grass and legumes to establish ground cover for a minimum period of one year on disturbed areas generally receiving low maintenance.

A. Seed Mixtures - Permanent Seeding

i. Select one or more of the species or mixtures listed in Table 25 for the appropriate Plant Hardiness Zone (from Figure 5) and enter them in the Permanent Seeding Summary below, along with application rates and seeding dates. Seeding depths can be estimated use Table 26. If this Summary is no put on the construction plans and completed, then Table 25 must be put on the plans. Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-SCS Technical Field Office Guide, Section 342 - Critical Area Planting. For special lawn maintenance areas, see sections I(5g) Sod and (5g) Turfgrass.

ii. For sites having disturbed area over 5 acres, the rates shown on this table shall be deleted and the rates recommended by the soil testing agency shall be written in.

(46-0-0) at 35/lbs/1000 s.f. (150 lbs/ac), in addition to the above soil amendments shown in the table, page G-20-9, to be performed at the time of seeding.

Permanent Seeding Summary

Seed Mixture (Hardiness Zone 7A, From Table 25)					Fertilizer Rate (10-20-20)			Lime Rate
No.	Species	Application Rate (lb/ac)	✱Seeding Dates	Seeding Depths	N	P205	K20	
3	TALL FESCUE PEN. RYE GRASS KENT BLUEGRASS	125 15 10	3/1 TO 5/15 OR 8/15 TO 11/15	1/2"	90 lb/ac (2.0 lb/ 1000 sf)	175 lb/ac (4 lb/ 1000 sf)	175 lb/ac (4 lb/ 1000 sf)	2 tons/ac (100 lb/ 1000 sf)

✱ FOR 5-16 to 8-14 add 10 lbs. OF Millet to Mixture ✱3

Section IV - Sod: To provide quick cover on disturbed areas (2:1 grade or flatter)

A. General specifications

i. Class of turfgrass sod shall be Maryland or Virginia State Certified or Approved. Sod labels shall be made available to the job foreman and inspector.

ii. Sod shall be machine cut at a uniform soil thickness of 3/4", plus or minus 1/4" at the time of cutting. Measurement for thickness shall exclude top growth and thatch. Individual pieces of sod shall be cut to the suppliers width and length. Maximum allowable deviation from standard widths and lengths shall be 5 percent. Broken pads and torn or uneven ends will not be acceptable.

iii. Standard size sections of sod shall be strong enough to support their own weight and retain their size and shape when suspended vertically with a firm grasp on the upper 10 percent of the section.

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

v. Sod shall be harvested, delivered, and installed within a period of 36 hours. Sod not transplanted within this period shall be approved by an agronomist or soil scientist prior to its installation.

B. Sod Installation

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

ii. The first row of sod shall be laid in a straight line with subsequent rows placed parallel to and tightly wedged against each other. Lateral joints shall be staggered to promote more uniform growth and strength. Ensure that sod is not stretched or overlapped and that all joints are butted tight in order to prevent voids which would cause air drying of the roots.

iii. Wherever possible, sod shall be laid with the long edges parallel to the contour and with staggering joints. Sod shall be rolled and tamped, pegged or otherwise secured to prevent slippage on slopes and to ensure solid contact between sod roots and the underlying soil surface.

iv. Sod shall be watered immediately following rolling or tamping until the underside of the new sod pad and soil surface below the sod are thoroughly wet. The operations of laying, tamping and irrigating for any piece of sod shall be completed within eight hours.

C. Sod Maintenance

i. In the absence of adequate rainfall, watering shall be performed daily or as often as necessary during the first week and in sufficient quantities to maintain moist soil to a depth of 4". Watering should be done during the heat of the day to prevent wilting.

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

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

Section IV- Turfgrass Establishment

Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance. Areas to receive seed shall be tilled by disking or other approved methods to a depth of 2 to 4 inches, leveled and raked to prepare a proper seedbed. Stones and debris over 1½ inches in diameter shall be removed. The resulting seedbed shall be in such condition that future mowing of grasses will pose no difficulty.

Note: Choose certified material. Certified material is the best guarantee of cultivar purity. The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of consumer protection and assures a pure genetic line.

A. Turfgrass Mixtures

i. Kentucky Bluegrass - Full sun mixture - For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and eastern shore. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rate: 1.5 to 2.0 pounds/1000 square feet. A minimum of three bluegrass cultivars should be chosen ranging from a minimum of 10% to a maximum of 35% of the mixture by weight.

ii. Kentucky Bluegrass/Perennial Rye - Full sun mixture - For use when turf will receive medium to intensive management. Certified Perennial Ryegrass Cultivars/Certified Kentucky Bluegrass Seeding rate: 2 pounds mixture/ 1000 square feet. A minimum of 3 Kentucky Bluegrass Cultivars must be chosen, with each cultivar ranging from 10% to 35% of the mixture by weight.

iii. Tall Fescue/Kentucky Bluegrass - Full sun mixture - For use in drought prone areas and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes: certified Tall Fescue Cultivars 95 - 100%, certified Kentucky Bluegrass Cultivars 0 - 5%. Seeding rate: 5 to 8 lb/ 1000 s.f. One or more cultivars may be blended.

iv. Kentucky Bluegrss/Fine Fescue - Shade mixture - For use in areas with shade in Bluegrass lawns. For establishment in high quality, intensively managed turf area. Mixture includes: certified Kentucky Bluegrss Cultivars 30-40% and certified Fine Fescue and 60-70%. Seeding rate: 1½ - 3 lbs/1000 square feet. A minimum of 3 Kentucky bluegrass cultivars must be chosen, with each cultivar ranging from a minimum of 10% to a maximum of 35% of the mixture by weight.

Note: Turfgrass varieties should be selected from those listed in the most current University of Maryland Publication, Agronomy Mimeo #77, "Turfgrass Cultivar Recommendations for Maryland".

B. Ideal times of seeding
Western MD: March 15 - June 1, August 1 - October 1 (Hardiness Zonss - 5b, 6a)
Central MD: March 1 - May 15, August 15 - October 15 (Hardiness Zone - 6b)
Southern MD, Eastern Shore: March 1 - May 15, August 15 - October 15 (Hardiness Zone - 7a, 7b)

C. Irrigation

If soil moisture is deficient, supply new seedings with adequate water for plant growth (1/2" - 1" every 3 to 4 days depending on soil texture) until they are firmly established. This is especially true when seedings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

D. Repairs and Maintenance

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

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

ii. If the stand provides less that 40% ground coverage, reestablish following original lime, fertilizer, seedbed preperation and seeding recommendations.

iii. If the stand provides between 40% and 94% ground coverage, overseeding and fertilizing using half of the rates originally

iv. Maintenance fertilizer rates for permanent seedings are shown in Table 24. For lawns and other medium to high maintenance turfgrass areas, refer to the University of Maryland publication "Lawn Care in Maryland" Bulletin No. 171.

21.0 STANDARD AND SPECIFICATIONS

TOPSOIL

Definition:

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

Purpose

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

Conditions Where Practice Applies

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

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

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

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

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

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

Construction and Material Specifications to the placement of topsoil.
Lime shall be disturbed

I. Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experimental Station.

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

i. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1½" in diameter.

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

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

III. For sites having disturbed areas under 5 acres:

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

IV. For site having disturbed areas over 5 acres:

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

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

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

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

d. No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time as elapsed (14 days min.) to permit dissipation of phyto-toxic materials. agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.

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

V. Topsoil Application

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

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

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

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

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

i. Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:

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

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

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

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

24.0 MATERIALS AND SPECIFICATIONS
TABLE 27 GEOTEXTILE FABRICS

CLASS	APPARENT OPENING SIZE MM. MAX.	GRAB TENSILE STRENGTH LB. MIN.	BURST STRENGTH PSI MIN.
A	0.28**	250	500
B	0.60	200	320
C	0.30	200	320
D	0.60	90	145
E	0.30	90	145
F (SILT FENCE)	0.40 - 0.80 *	90	190

* US STD. SIEVE CW-02215 ** .30 MM. MAX. FOR SUPER SILT FENCE

THE PROPERTIES SHALL BE DETERMINED IN ACCORDANCE WITH THE FOLLOWING PROCEDURES:
- APPARENT OPENING SIZE MSMT 323
-GRAB TENSILE STRENGHT ASTM D 1682 4"x8" SPECIMEN 1"x2" CLAMPS, 12"/ MIN. STRAIN RATE IN BOTH PRINCIPAL DIRECTIONS OF GEOTEXTILE/FABRIC.
-BURST STRENGHT ASTM D 3786

THE FABRIC SHALL BE INERT TO COMMONLY ENCOUNTERED CHEMICALS AND HYDRCARBONS, AND WILL BE ROT AND MILDEW RESISTANT. IT SHALLBE MANUFACTURED FROM FIBERS CONSISTING OF LONG CHAIN SYNNETIC POLYMERS, AND COMPOSED OF A MINIMUM OF 85% BY WEIGHT OF POLYOLEPHINS, POLYESTERS, OR POLYAMIDES. THE GEOTEXTILE FABRIC SHALL RESIST DETERIORATION FROM ULTRAVIOLET EXPOSURE.

IN ADDITION CLASSES A THROUGH E SHALL HAVE A 0.01 CM/SEC MINIMUM PERMEABILITY WHEN TESTED IN ACCORDANCE WITH MSMT 507, AND AN APPARENT MINIMUM ELONGATION OF 20 PERCENT (20%)WHEN TESTED IN ACCORDANCE WITH THE GRAB TENSILE STRENGTH REQUIREMENTS LISTED ABOVE.

SILT FENCE
CLASS F GEATEXTILE FABRICS FOR ALL SILT FENCE SHALL HAVE A 50LB/IN MINIMUM TENSILE STRENTH AND A 20 LB/IN MINIMUM TENSILE MODULES WHEN TESTED IN ACCORDANCE WITH MSMT 509. MATERIAL SHALL ALSO HAVE A 0.3 GAL./FT.SQUARED/MIN. FLOW RATE ND SEVENTY-FIVE PERCENT (75%) MINIMUMFILTERING EFFICIENCY WHEN TESTED IN ACCORDANCE WITH MSMT 322.

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

BY THE DEVELOPER:

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

DEVELOPER — DATE

BY THE ENGINEER:

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

Marvin Kemm 4/14/03
ENGINEER — DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/16/03

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/6/03

DIRECTOR — DATE 5/14/03

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 9/22/03

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

HOWARD SCD — DATE 9/22/03

		DATE	REVISIONS
Drafting	JAB		
Check	CGW		
Design	CGW		
Check	THM		

KCI TECHNOLOGIES — ENGINEERS, PLANNERS, SCIENTISTS, CONSTRUCTION MANAGERS
14502 Greenview Drive, Suite 424, Laurel, Maryland 20708
(301) 953-4821 (410) 792-8086
fax: (410) 792-7419
www.kci.com

OWNER:
C & S MEADOWRIDGE, LLC
925 FELL STREET
BALTIMORE, MD 21231
(410) 534-6350

CONTRACT PURCHASER & DEVELOPER:
CREANEY & SMITH GROUP LLC
925 FELL STREET
BALTIMORE, MD 21231
(410) 534-6350

SEDIMENT CONTROL NOTES

STATE OF MARYLAND — No. 25036 — MARIANNE WIERMAN — PROFESSIONAL ENGINEER
APR 14 2003

KANE COMPANIES, INC. HEADQUARTERS

PROPOSED OFFICE WAREHOUSE
TAX MAP 37 , PARCEL 174
L. 6753 F. 684, ZONE M-1
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
WATER CODE: D04 SEWER CODE: 215 3000

DATE: APRIL 9, 2003
SHEET 19 OF 22

SDP-02-53

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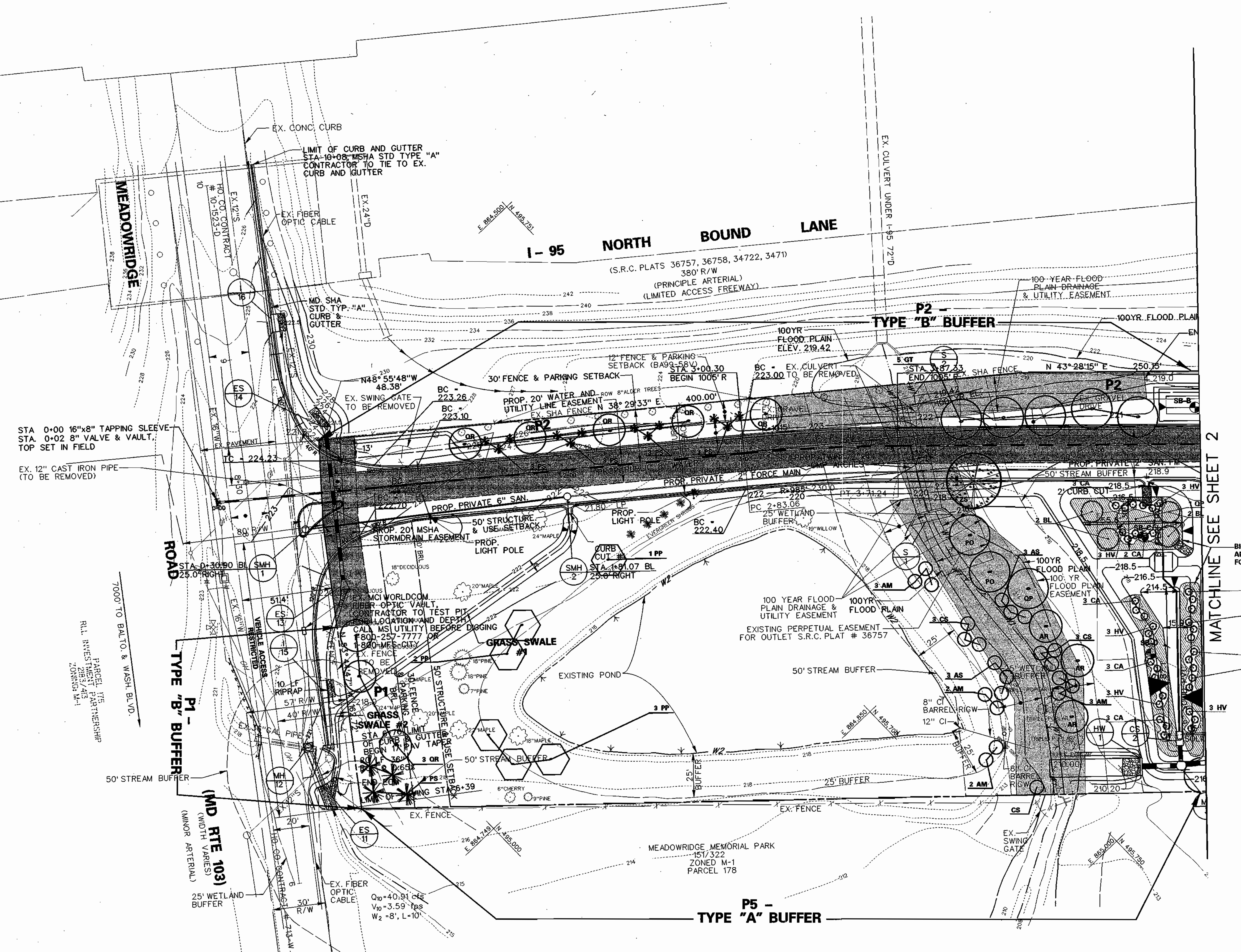

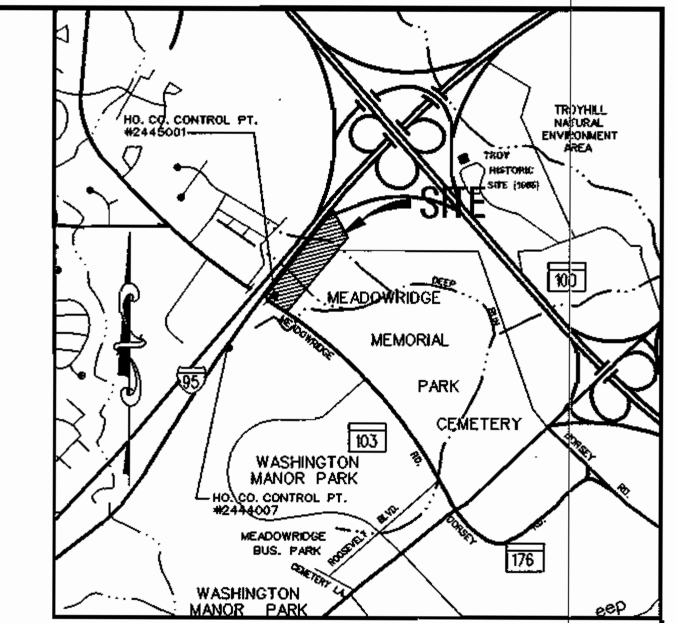

VICINITY MAP
SCALE: 1" = 2000'

- RED OAK
- LOCUST
- ZELKOVA
- WEEPING CHEERY
- DOGWOOD
- EUONYMUS
- EX TREE
- EX PINE TREE

PLANT SCHEDULE

SYMBOL	KEY	BOTANICAL / COMMON NAME	QUANTITY	SIZE/CONDITION	SPACING
	GT	Gleditals Triacathos - Skyline Honeylocust	9	2½"-3" Cal.	B+B
	PP	Prunus Subhirtella Pendula - Weeping Higan Cherry	6	2½"-3" Cal.	B+B
	ZS	Zelkova Serata - Japanese Zelkova	7	2½"-3" Cal.	B+B
	PS	Pinus Strobus - Eastern White Pine	34	6' Ht.	2" Cal.
	QR	Quercus Rubra - Red Oak	34	2.5" Cal.	B+B
	AR	Acer Rubrum -Red Maple	3	2.5" Cal.	B+B
	PO	Platanus Occidentalis -American Sycamore	2	2.5" Cal.	B+B
	QP	Quercus Palustris -Pin Oak	1	2.5" Cal.	B+B
	CS	Cornula Serices - Redosier Dogwood	7	18"-24" Ht.	Cont.
	AM	Aronia Melanocarpa -Black Chokeberry	10	18"-24" Ht.	Cont.
	AS	Alnus Serrulatta -Smooth Alder	6	18"-24" Ht.	Cont.

DEVELOPER'S /BUILDERS CERTIFICATE

I/We Certify that the landscaping shown on this plan will be done according to the plan, Section 16.124 of the Howard County Code and the Howard County Landscape Manual. I/We further certify that upon completion a Certification of Landscape Installation, accompanied by an executed one year guarantee of plant materials, will be submitted to the Department of Planning and Zoning.

Name ____ Date 3/18/02

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/18/03

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/8/03

DIRECTOR — DATE 5/8/03

Drafting	JAB	DATE	REVISIONS
Check	CGW		
Design	CGW		
Check	THM		

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14502 Greenview Drive, Suite 424
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(301) 953-1821 (410) 792-8086
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BALTIMORE, MD 21231
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925 FELL STREET
BALTIMORE, MD 21231
(410) 534-6350

LANDSCAPE PLAN - SHEET 1

STATE OF MARYLAND NO. 25058 MARIANNE KIERNAN PROFESSIONAL ENGINEER
APR 14 2003

KANE COMPANIES, INC. HEADQUARTERS

PROPOSED OFFICE WAREHOUSE
TAX MAP 37, PARCEL 174
L. 6753 F. 684, ZONE M-1
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
WATER CODE: D04 SEWER CODE: 215 3000

GRAPHIC SCALE
30 0 15 30 60
(IN FEET)
1 inch = 30ft.

DATE: APRIL 9, 2003
SHEET 20 OF 22

SDP-02-53

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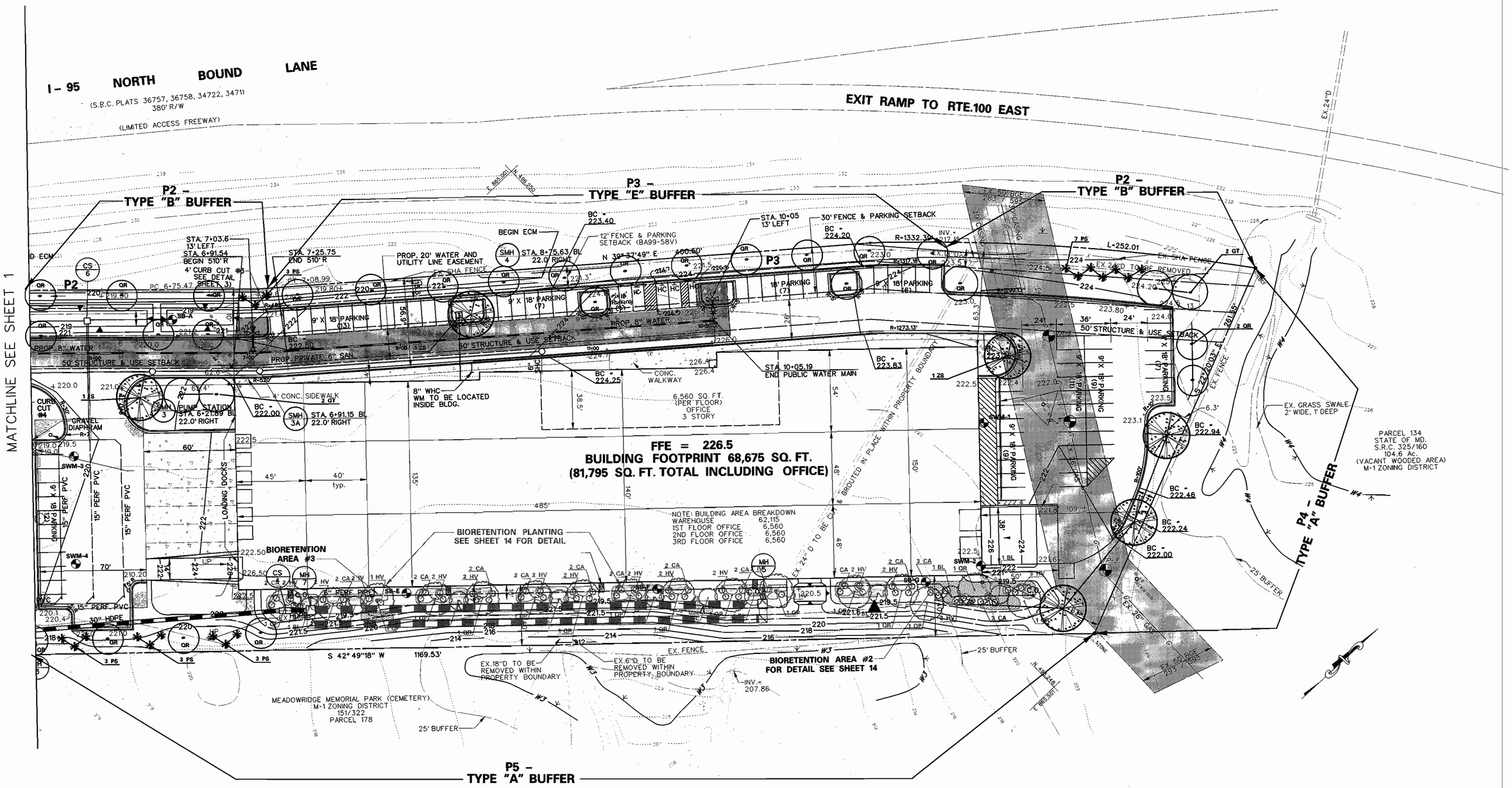

PLAN
SCALE: 1" = 30'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/8/03

DIRECTOR — DATE 5/14/03

Drafting	JAB
Check	CGW
Design	CGW
Check	THM

DATE	REVISIONS

KCI TECHNOLOGIES
ENGINEERS PLANNERS SCIENTISTS CONSTRUCTION MANAGERS
14502 Greenview Drive, Suite 424
Laurel, Maryland 20708
(301) 953-1821 (410) 792-8086
fax: (410) 792-7419
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OWNER:
C & S MEADOWRIDGE, LLC
925 FELL STREET
BALTIMORE, MD 21231
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CONTRACT PURCHASER & DEVELOPER:
CREANEY & SMITH GROUP LLC
925 FELL STREET
BALTIMORE, MD 21231
(410) 534-6350

LANDSCAPE PLAN - SHEET 2

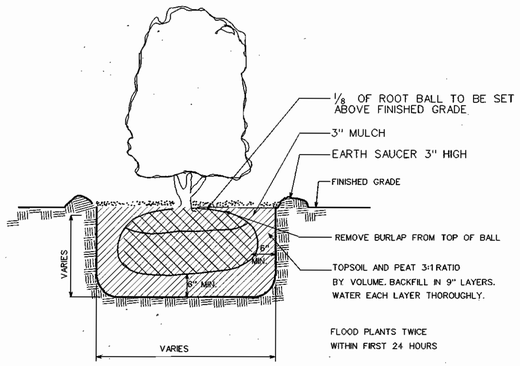
STATE OF MARYLAND — No. 25016 — MARIANNE MERRIAM — PROFESSIONAL ENGINEER — APR 14 2003

KANE COMPANIES, INC. HEADQUARTERS
PROPOSED OFFICE WAREHOUSE
TAX MAP 37 , PARCEL 174
L. 6753 F. 684, ZONE M-1
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
WATER CODE: D04 SEWER CODE: 215 3000

GRAPHIC SCALE
30 0 15 30 60
(IN FEET)
1 inch = 30ft.
DATE: APRIL 9, 2003
SHEET 21 OF 22

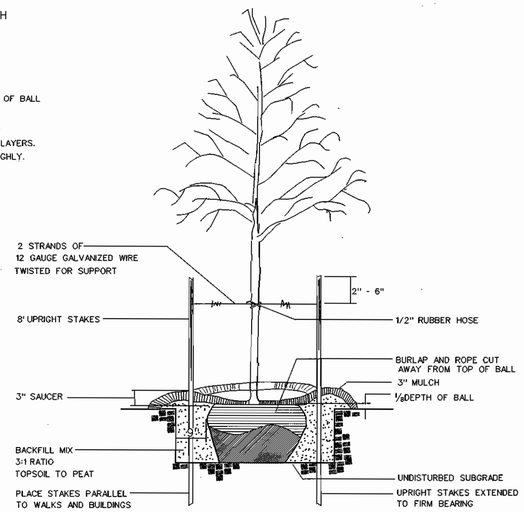
1602008\DRAWINGS\land2.dgn

SDP-02-53



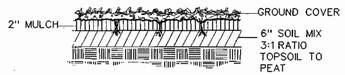
SHRUB PLANTING DETAIL
B&B AND CONTAINER GROWN

NOT TO SCALE



TREE PLANTING DETAIL
B & B

NOT TO SCALE



ALL GROUND COVERS SHALL BE PLANTED IN ACCORDANCE WITH PLANTING SCHEDULE

GROUNDCOVER PLANTING DETAIL

NOT TO SCALE

SCHEDULE A
PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT TO I-95 NO PARKING	ADJACENT TO I-95 WITH PARKING	ADJACENT TO MEADOWRIDGE	ADJACENT TO CEMETARY	ADJACENT TO STATE PROPERTY
LANDSCAPE TYPE	P2 TYPE B	P3 TYPE E	P1 TYPE B	P5 TYPE A	P4 TYPE A
LINEAR FEET OF ROADWAY FRONTAGE PERIMETER	859	443	150	1430	260
CREDIT FOR EXISTING VEGETATION (YES,NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	YES 11 ALDER	NO	NO	NO	NO
CREDIT FOR BIORETENTION PLANT MATERIAL (YES,NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	NO	27 SHADE TREES	NO
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	YES* BERM, 20' ELEV DIFF	NO	NO	NO
NUMBER OF PLANTS REQUIRED					
SHADE TREES	7	11	3	0	5
EVERGREEN TREES	22	0	4	0	0
SHRUBS	0	0	0	0	0
NUMBER OF PLANTS PROVIDED					
SHADE TREES	19	11	3	4	5
EVERGREEN TREES	22	0	4	9	0
OTHER TREES (2:1 SUBSTITUTION)	0	0	0	0	0
SHRUBS (10:1 SUBSTITUTION)	0	0	0	0	0
(DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)				SUB 27 SHADE TREES OF BIORETENTION PLANTINGS FOR P5 TYPE A PLANTINGS	

*THE BERM ONLY IS CREDITED TOWARD REQUIRED SHRUBS.

SCHEDULE D
STORMWATER MANAGEMENT AREA LANDSCAPING

LINEAR FEET OF PERIMETER	790 FEET
NUMBER OF TREES REQUIRED SHADE TREES EVERGREEN TREES	M-1 ZONING, LANDSCAPING IS NOT REQUIRED PER LANDSCAPE MANUAL PG. 30
CREDIT FOR EXISTING VEGETATION (NO, YES, AND %)	NO
CREDIT FOR OTHER LANDSCAPING (NO, YES, AND %)	NO
NUMBER OF TREES PROVIDED	
SHADE TREES	0
EVERGREEN TREES	0
SHRUBS	0

SEE SHEETS #13-14 FOR BIORETENTION PLANTING PLANS.

SCHEDULE B
PARKING LOT INTERNAL LANDSCAPING

NUMBER OF PARKING SPACES	87
NUMBER OF TREES REQUIRED	5
NUMBER OF TREES PROVIDED	
SHADE TREES	7
EVERGREEN TREES	0
OTHER TREES (2:1 SUBSTITUTION)	0
NUMBER OF ISLANDS REQUIRED	5
NUMBER OF ISLANDS PROVIDED	5

PLANTING SPECIFICATIONS

1. DESCRIPTION

The Contractor shall furnish and install all plant materials, labor and other materials necessary to complete the work as shown on the plans and details.

MATERIALS AND METHODS

A. The materials and methods shall comply with all the requirements of the current edition of the "American Standard for Nursery Stock" as prepared by the American Association of Nurserymen ans as modified herein.

B. Substitutions

1. If a plant is found not to be suitable or available, the Landscape Contractor shall notify the Owner's Representative before bidding.

2. The Owner or Owner's Representative will select a reasonable alternate, or to inform all Landscape Contractors of the source of availability of the original

C. Utilities

The Landscape Contractor shall verify the correct location of any existing underground utilities prior to any excavation or plant installation. The Landscape Contractor shall call Miss Utility (1-800-257-7777) a minimum of 48 hours prior to construction.

D. Plant Material Sources

The Landscape Contractor shall, at least ten (10) days before beginning planting operations submit a list of planting material sources giving the nursery address and phone number for each plant material required on the job.

E. The total number of plants shall be as shown on the landscape plan. If this total differs from the plant schedule, the Landscape Contractor shall notify the Owner's Representative before the plant schedule, the Landscape Contractor shall notify the Owner's Representative before

F. Time of Planting:

Planting season schedule shall be in accordance with the "American Standard for Nursery Stock" as prepared by the American Association of Nurserymen.
Plant pines and oaks shall be during spring planting season only.

G. Mulch:

Mulch shall be shredded hardwood bark. The Landscape Contractor shall provide a one (1) lb. sample to the Owner's Representative for his approval. Mulch shall be applied to a depth of three (3) inches within 24 hours of installation of plant materials.

H. Tree wrap shall not be utilized.

I. The Landscape Contractor shall prune plant material within two (2) days of installation in accordance with the details and as directed by the Owner's Representative.

J. Topsoil

ASTM D 5268, pH range 5.5 to 7.4 percent organic material minimum, free of stones 1 inch (25 mm) or larger in any dimension, and other extraneous materials harmful to plant growth.

1. Topsoil Source: Reuse surface soil stockpiled on the site. Verify suitability of surface soil to produce topsoil meeting requirements and amend when necessary. Supplement with imported topsoil when quantities are insufficient. Clean topsoil of roots, plants, sods, stones clay lumps, and other extraneous materials harmful to plant growth.

2. Spread topsoil 4" min. depth over all landscape areas.

K. Soil Preparation:

1. Spread agricultural lime on sod and seed areas at a rate of 92 lbs/1000 s.f.
2. Fertilize sod and seed areas with (10-2-22) at a rate of 23 lbs/1000 s.f.

L. All disturbed areas within the limit of contract which are not paved, sodded or otherwise planted shall be seeded. The following seed mixture and rate of application will be used: 50% Kentucky Bluegrass, 40% Chewings or Red Fescue, 10% Red Top
This mixture shall be applied at the rate of two and a half to five (2.5-5) lbs/s.f. sown in two (2) directions at right angles.

M. Clean-Up and Restoration:

1. During the course of planting, excess and waste materials shall be continuously and promptly removed, lawn areas kept clear, and all reasonable precautions taken to avoid damage of existing lawns, paving, etc.

2. The Landscape Contractor shall restore to their original condition all pavements, sodded and planted areas, structures and substructures, not specifically provided for in the Contract, which are disturbed by the Landscape Contractor during planting operations. Such restoration shall be in a manner satisfactory to the Owner's Representative and at no additional cost to the Owner.

N. Water:

Water for planting and maintenance purposes, will be supplied by the Owner. The Landscape contractor shall provide all equipment necessary to transport the water from source to required locations. The Landscape Contractor shall water all plants promptly, adequately and as often as necessary to insure proper plant growth and to keep the soil moist and in a condition satisfactory to the Owner#s Representative. The Landscape Contractor is responsible for watering all plants from the time of planting until the final inspection.

O. Final Inspection:

The Owner's Representative shall make a final inspection and notify the Landscape Contractor in writing, when all work is satisfactorily completed. If the work is not satisfactorily completed, the Owner's Representative will notify the Landscape Contractor, in writing, as to the deficiencies in the work and the necessary corrective measures. A reasonable amount of time will be given and another final inspection will be scheduled by the Owner's Representative.

P. Owner Maintenance:

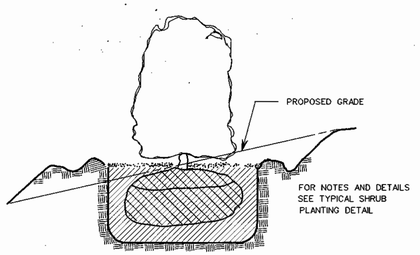
After the planting has been approved by the Owner's Representative and the Owner, the maintenance of watering and weeding of such plants and planted area shall be provided by the Owner. Since the plants are to be guaranteed by the Landscape Contractor for one year from final inspection, he should check the maintenance conducted by the Owner. The Landscape Contractor shall also make monthly site inspections after installation of trees during the guarantee period and shall right any trees that are not vertically true. If the Landscape Contractor is not satisfied with the maintenance of the plants, a written report, in triplicate, stating appropriate changes shall be given immediately to the Owner's Representative: two copies will be forwarded to the Owner.

Q. Guarantee:

All plant material shall be guarantee to be in a vigorous growing condition one year from the date of final inspection. Any plants infected with disease or insects, as well as all dead or unacceptable plants will be replaced by the same plants shall be planted, mulched and guyed as specified herein and without extra compensation to the contractor. At the completion of all such work and with the approval of the Owner's Representative, the Contract will be considered complete.

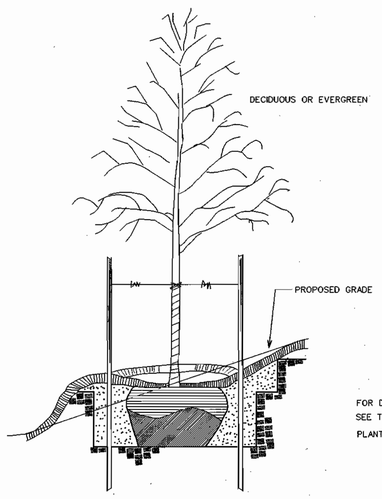
R. Payment:

Terms of payment shall be as specified in the bid package.



SLOPE PLANTING DETAIL
FOR ALL SHRUBS

NOT TO SCALE



SLOPE PLANTING DETAIL
FOR ALL TREES

NOT TO SCALE

LANDSCAPE NOTE

1. This plan has been prepared in accordance with the provisions of Section 16.124 of the Howard County Code and the Landscape Manual.

2. Financial surety for the required landscaping has been posted as part of the DPW developers agreement in the amount of $13,200.00 for 31 shade trees and 26 evergreens.

DEVELOPER'S /BUILDERS CERTIFICATE

I/We Certify that the landscaping shown on this plan will be done according to the plan, Section 16.124 of the Howard County Code and the Howard County Landscape Manual. I/We further certify that upon completion a Certification of Landscape Installation, accompanied by an executed one year guarentee of plant materials, will be submitted to the Department of Planning and Zoning.

Name — Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — 5/2/03 DATE

DIRECTOR — 5/6/03 DATE

Drafting AWW	DATE	REVISIONS
Check CGW		
Design CGW		
Check THM		

KCI TECHNOLOGIES — ENGINEERS, PLANNERS, SCIENTISTS, CONSTRUCTION MANAGERS
14502 Greenview Drive, Suite 424
Laurel, Maryland 20708
(301) 953-1821 (410) 792-8086
fax: (410) 792-7419
www.kci.com

OWNER:
C & S MEADOWRIDGE, LLC
925 FELL STREET
BALTIMORE, MD 21231
(410) 534-6350

CONTRACT PURCHASER & DEVELOPER:
CREANEY & SMITH GROUP LLC
925 FEL. STREET
BALTIMORE, MD 21231
(410) 534-6350

LANDSCAPE DETAILS

STATE OF MARYLAND — No. 25084 — MARIANNE KIETHLEY — PROFESSIONAL ENGINEER
APR 14 2003

KANE COMPANIES, INC. HEADQUARTERS

PROPOSED OFFICE WAREHOUSE
TAX MAP 37 , PARCEL 174
L. 6753 F. 684, ZONE M-1
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
WATER CODE: D04 SEWER CODE: 215 3000

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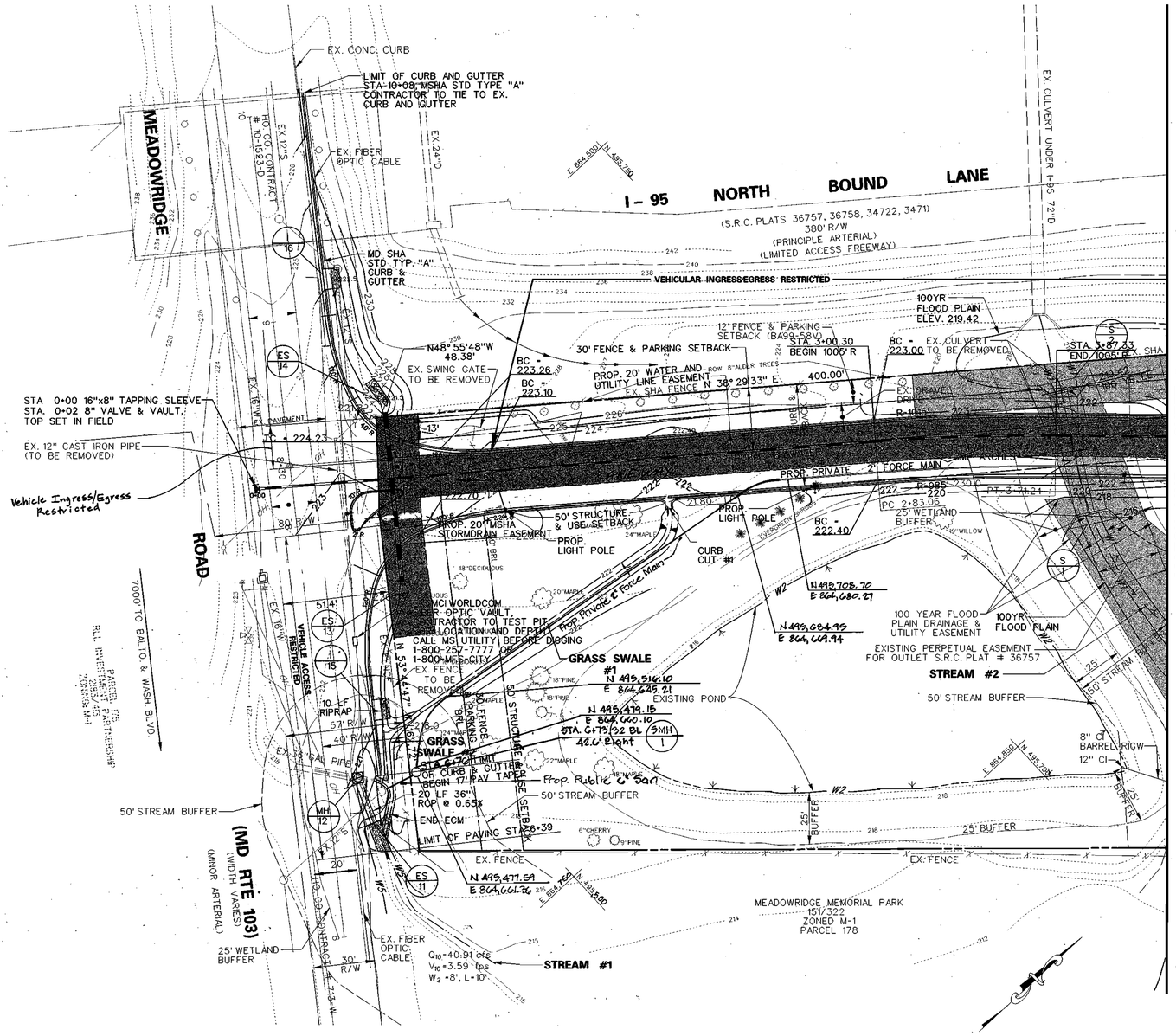
1 inch = 30ft.

DATE: APRIL 9, 2003
SHEET 22 OF 22

SDP-02-53

1602008\DRAWINGS\LAND3.DGN



GENERAL NOTES

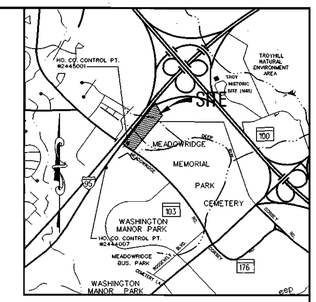
1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV,I.E. STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
2. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN FROM BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
3. THE CONTRACTOR SHALL TEST PIT EXISTING UTILITIES AT LEAST FIVE (5) DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS TO VERIFY THEIR LOCATION AND ELEVATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY IF LOCATION OF UTILITIES IS OTHER THAN SHOWN.
4. CONTRACTOR TO NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS.

MISS UTILITY	1-800-257-7777
VERIZON TELEPHONE COMPANY	752-9976
HOWARD COUNTY BUREAU OF UTILITIES	992-2366
AT&T CABLE LOCATION DIVISION	393-3553
BALTIMORE GAS & ELECTRIC COMPANY	685-0123
STATE HIGHWAY ADMINISTRATION	531-5533
HOWARD COUNTY CONSTRUCTION/ INSPECTION/ SURVEY DIVISION (24 HOURS NOTICE PRIOR TO COMMENCEMENT OF WORK)	792-7272 313-1880

5. TOPO TAKEN FROM FIELD SURVEY DATED APRIL 1989 BY KCI.
6. THE DEVELOPER IS RESPONSIBLE FOR THE ACQUISITION OF ALL EASEMENTS, RIGHTS AND/OR RIGHTS-OF-WAY THAT MAY BE REQUIRED FOR THE SEDIMENT AND EROSION CONTROL PRACTICES, STORM WATER MANAGEMENT PRACTICES AND THE DISCHARGE OF STORM WATER ONTO OR ACROSS ADJACENT OR DOWNSTREAM PROPERTIES INCLUDED IN THIS PLAN. HE IS ALSO RESPONSIBLE FOR THE ACQUISITION OF ALL EASEMENTS, RIGHTS AND/OR RIGHTS-OF-WAY THAT MAY BE REQUIRED FOR GRADING AND/OR WORK ON ADJACENT PROPERTIES INCLUDED IN THIS PLAN.
7. ALL COORDINATES ARE BASED ON HOWARD COUNTY GEODETIC CONTROL TRAVERSE WHICH IS BASED ON THE MARYLAND STATE PLANE COORDINATE SYSTEM. REFERENCE HOWARD COUNTY CONTROL POINTS 2445001 (ELEV. 245.095) & 2444007 (ELEV. 252.125).
8. INSTALLATION OF TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
9. ALL ON-SITE ROADS PARKING AND DRAINAGE STRUCTURES (INCLUDING STORM DRAINS, WATER QUALITY BASINS, TWIN CULVERTS) SHALL BE PRIVATELY OWNED & MAINTAINED.
10. GRAVITY SEWER SERVICE TO THE PROPOSED BUILDING CANNOT BE PHYSICALLY PROVIDED. A PRIVATELY OWNED AND MAINTAINED PUMP STATION SHALL BE PROVIDED AS PER THESE PLANS AND SPECIFICATIONS. THE PUMPS AND ASSOCIATED APPURTENANCES SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY PLUMBING CODE.
11. REFER TO "MARYLAND'S GUIDELINES FOR WATERWAY CONSTRUCTION" BY THE WATER RESOURCES ADMINISTRATION (WRA) DATED SEPTEMBER 1999 REVISED NOVEMBER 2000 FOR STANDARD DETAILS AND DETAILED SPECIFICATIONS OF EACH PRACTICE, SPECIFIED HEREIN FOR WATERWAY CONSTRUCTION.
12. ALL WATER MAINS TO BE D.I.P. CLASS 52 UNLESS OTHERWISE NOTED.
13. TOPS OF ALL WATER MAINS TO HAVE A MINIMUM OF 3' COVER.
14. ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
15. THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
16. INSTREAM CONSTRUCTION WILL NOT BE PERMITTED FROM MARCH 1ST THROUGH ~~MAY 31ST~~ JUNE 15TH INCLUSIVE.
17. THE WATER PRESSURE ZONE FOR THIS CONTRACT IS 550.
18. ALL D.I.P. FITTINGS SHALL BE IN ACCORDANCE WITH A.W.W.A. SPECIFICATIONS C-153. DUCTILE IRON COMPACT FITTINGS 3"-12" FOR WATER AND OTHER LIQUIDS.
19. GRAVITY SEWER LINE WILL BE 6" PVC.
20. 2" SANITARY FORCE MAIN WILL BE PVC.
21. NO GRADING OR REMOVAL OF VEGETATIVE COVER IS PERMITTED WITHIN 25 FT OF A WETLAND UNLESS APPROVED BY THIS PLAN. THIS SITE IS SUBJECT TO MDE/ACOE PERMIT NO. 2002-64709.
22. THIS PLAN IS SUBJECT TO THE FIFTH EDITION OF THE SUBDIVISION REGULATIONS AND THE NEW ZONING REGULATIONS AS AMENDED BY COUNCIL BILL 50-2001.
23. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
24. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DPW DEVELOPERS AGREEMENT IN THE AMOUNT OF $13,200.00 FOR 31 SHADE TREES OR SUBSTITUTIONS.
25. THIS SITE IS SUBJECT TO SHA ACCESS PERMIT NO. B-HO-8208-02, ISSUED DECEMBER 31, 2002.
26. STORMWATER MANAGEMENT WILL BE PROVIDED THROUGH 2 UNDERGROUND DETENTION AREAS, 3 BIORETENTION AREAS (F-6), 1 SAND FILTER (F-5), AND 2 GRASS SWALES. THESE FACILITIES ARE PRIVATE SWM FACILITIES AND WILL BE MAINTAINED BY THE OWNER.
27. THE APPROVED APFO STUDY WAS PREPARED BY KCI TECHNOLOGIES, INC. AND APPROVED. SEPT. 5, 2002. THE MITIGATION REQUIREMENTS ARE AS FOLLOWS: NONE
28. WATER LINE WILL BE PUBLIC AND THE SANITARY SEWER WILL BE PRIVATE. THE EXISTING 16" WATER IS CONTRACT NO. 713-W AND THE EXISTING 8" SANITARY SEWER IS CONTRACT NO. 14-15-12-10. THE PROPOSED METER WILL BE LOCATED INSIDE AN EASEMENT ONSITE AND WILL BE PUBLIC.
29. BA-99-58V APPROVED MAY 11, 2000. VARIANCE TO PERMIT A PARKING SETBACK OF 12' FROM AN EXTERNAL PUBLIC STREET RIGHT-OF-WAY IN LIEU OF THE REQUIRED 30' MINIMUM SETBACK. REAPPLIED BA-02-50C APPROVED **December 18,** 2002.
30. "BIORETENTION AREAS DO NOT REQUIRE LANDSCAPE BUFFERING BECAUSE PLANTINGS WILL BE PLACED IN THOSE FACILITIES (SEE SHEET #13 - 14 FOR PLANT LIST AND DETAILS)."
31. DESIGN MANUAL WAIVER DATED MARCH 19, 2002 GRANTED FOR THE USE OF PRESSURE SEWER BY HOWARD COUNTY BUREAU OF ENGINEERING.
32. THIS SITE IS IN THE DEEP RUN TRIBUTARY WHICH FLOWS INTO THE PATAPSCO RIVER WATERSHED #02-13-09 AND IS CLASSIFIED AS A USE I. THE STREAM CLOSURE DATES ARE MARCH 1 THROUGH JUNE 15.
33. THIS PROJECT IS CONDITIONALLY EXEMPT FROM THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION WITH THE FILING OF A DECLARATION OF INTENT FOR LESS THAN 40,000 SQUARE FEET OF CLEARING.
34. WP-02-107 WAIVER TO PERMIT STOCKPILE AND ROUGH GRADING ON SITE PRIOR TO APPROVAL OF THE SDP WAS APPROVED ON JUNE 05, 2002 AND EXPIRES 1 YEAR AFTER ISSUANCE.

LEGEND

PROP. TREE LINE
EX. TREE LINE
FIRE HYDRANT
POLE
POLE WITH LIGHT
EVERGREEN TREE
OAK
EX. FENCE
PROP. FENCE
EX. CONTOURS
PROP. CONTOURS
BUILDING RESTRICTION LINE
INDICATES SURFACE FLOW
RAILROAD LINE
SPOT ELEVATION
STREET LIGHT
WETLANDS
PROP. 15' POLE WITH LIGHT
SOIL BORING - A
STREAM

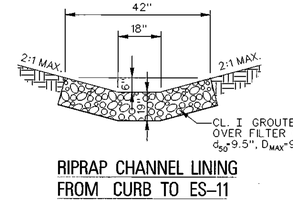


VICINITY MAP

SCALE: 1" = 2000'

SITE ANALYSIS

1. GROSS AREA OF SITE:	6.8264 AC
2. NET AREA OF SITE	6.6041 AC
3. PRESENT ZONING - PER SEPT. 19, 1993	ZONING M-1
4. PROPOSED USE	OFFICE/WAREHOUSE
5. FLOOR AREA	
OFFICE (3 STY.)	19,680 SF
WAREHOUSE	62,115 SF
6. NUMBER OF EMPLOYEES (MAX):	
OFFICE	62 PERSONS
WAREHOUSE	17 PERSONS
*7. PARKING SPACES REQUIRED	
OFFICE SPACE- 1 • 62 SPACES	
WAREHOUSE SPACE- 1 • 17 SPACES	
	TOTAL 79 PS + 4 HC = 83
*PARKING REQUIREMENT MODIFICATION WAS APPROVED BY THE DEPARTMENT OF PLANNING & ZONING TO BE BASED ON 1 SPACE PER EMPLOYEE.	
8. PARKING SPACES PROPOSED	87 PS
9. GREEN SPACE AREA	3.1503 AC
10. GREEN SPACE AS % OF NET AREA	47.7%
11. BUILDING COVERAGE	1.57 AC
12. BUILDING COVERAGE AS % OF GROSS AREA	23.0%
13. HANDICAP PARKING SPACES PROVIDED	5
14. TOTAL DISTURBED AREA	5.550 Ac. OR 241,769 s.f.
15. DPZ FILES	SDP90-81, BA99-58V WP-02-107, BA02-50C



RIPRAP CHANNEL LINING FROM CURB TO ES-11

NOT TO SCALE

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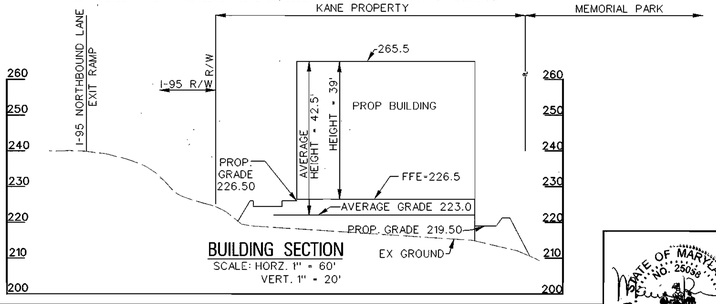
2	SITE DEVELOPMENT PLAN - SHEET 2
3	SITE DETAILS
4	PROP. STORMDRAIN DRAINAGE AREA MAP
5	STORMDRAIN PROFILES
6	STORMDRAIN PROFILES
7	STORMDRAIN DETAILS
8	WATER AND SANITARY PROFILES
9	SWM RISER DETAILS (CS-2, CS-4, CS-6)
10	SWM DRAINAGE PLAN
11	UNDERGROUND STORAGE SWM PLAN
12	SWM DETAILS
13	BIORETENTION AREA 1 PLAN
14	BIORETENTION AREAS 2 & 3 PLAN
15	GRADING & SEDIMENT CONTROL PLAN 1
16	GRADING & SEDIMENT CONTROL PLAN 2
17	GRADING & SEDIMENT CONTROL DETAILS
18	GRADING & SEDIMENT CONTROL DETAILS
19	SEDIMENT CONTROL NOTES
20	LANDSCAPE PLAN - SHEET 1
21	LANDSCAPE PLAN - SHEET 2
22	LANDSCAPE DETAILS



BUILDING SECTION

SCALE: HORZ. 1" = 60'
VERT. 1" = 20'

PERMIT INFORMATION CHART					
Subdivision Name: NA		Section/Area: NA		Lot/Parcel No.: 174	
Plat # or L/F: NA	Grid #	Zoning: M-1	Tax Map No.: 37	Elect Distr: 1	Census Tract: 6012
Water Code: D04		Sewer Code: 2153000			

ADDRESS CHART	
LOT/PARCEL #	STREET ADDRESS
174	6500 Kane Way

APPROVED: FOR PUBLIC (OR PRIVATE) WATER AND PUBLIC (OR PRIVATE) SEWAGE SYSTEMS

COUNTY HEALTH OFFICER, HOWARD COUNTY HEALTH DEPARTMENT — DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/30/03

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/1/03

DIRECTOR — DATE 5/6/03

Drafting	JAB
Check	CGW
Design	CGW
Check	THM

DATE	REVISIONS
10-30-03	Revised San. Sewer line

KCI TECHNOLOGIES — ENGINEERS, PLANNERS, SCIENTISTS, CONSTRUCTION MANAGERS
14502 Greenview Drive, Suite 424, Laurel, Maryland 20708
(301) 953-1821 (410) 792-8086
fax: (410) 792-7419
www.kci.com

OWNER:
C & S MEADOWRIDGE, LLC
925 FELL STREET
BALTIMORE, MD 21231
(410) 534-6350

CONTRACT PURCHASER & DEVELOPER:
CREANEY & SMITH GROUP LLC
925 FELL STREET
BALTIMORE, MD 21231
(410) 534-6350

SITE DEVELOPMENT PLAN - SHEET 1

STATE OF MARYLAND — NO. 25038 — MARIANNE KIERNAN — PROFESSIONAL ENGINEER
APR 14 2003

KANE COMPANIES, INC. HEADQUARTERS

PROPOSED OFFICE WAREHOUSE
TAX MAP 37 PARCEL 174
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WATER CODE: D04 SEWER CODE: 215 3000

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DATE: APRIL 9, 2003
SHEET 1 OF 22

SDP-02-53

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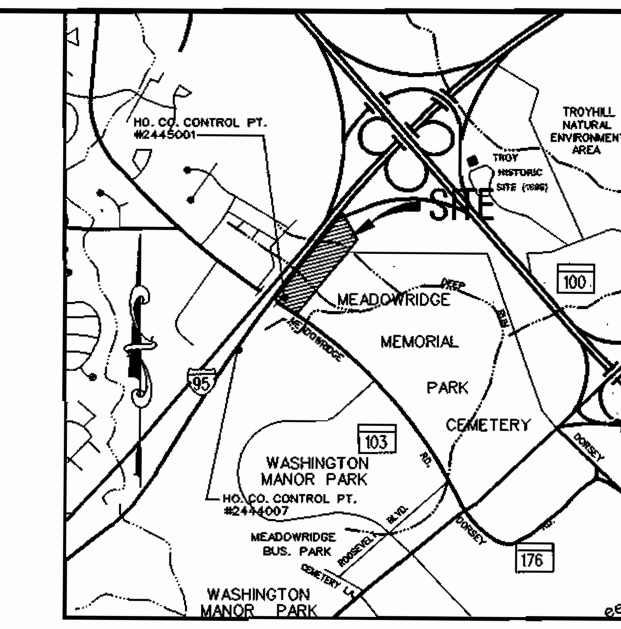

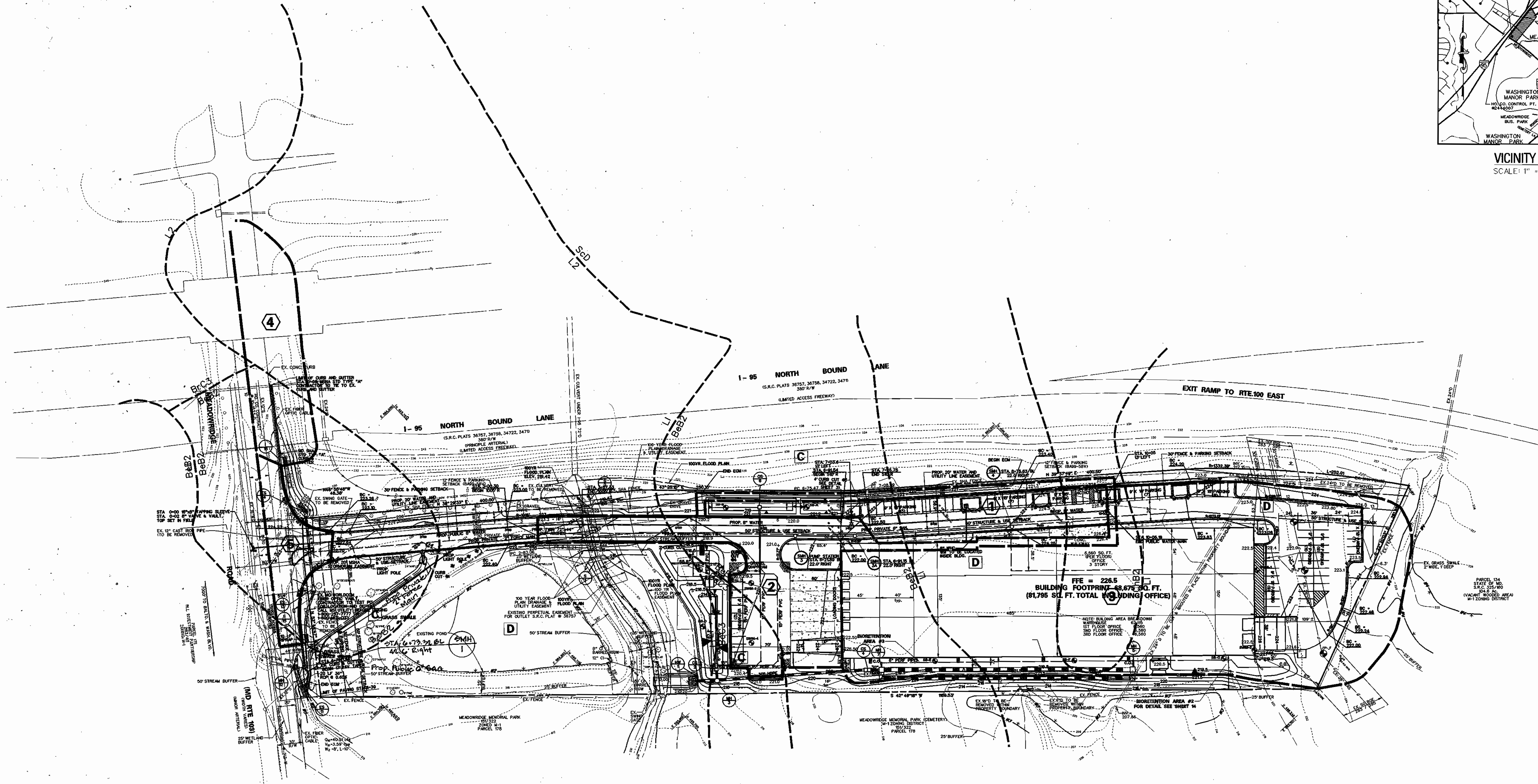

PLAN

SCALE: 1" = 60'

No.	DRAINAGE AREA (Ac)	% IMPERVIOUS	C FACTOR
1	0.50	100%	0.90
2	1.15	100%	0.90
3	2.36	81%	0.78
4	.467	79%	SEE SWM DA MAP
5	.147	100%	

SOILS CHART

SOIL	HYDROLOGIC SOIL GROUP	DESCRIPTION
BeB2	C	BELTSVILLE SILT LOAM, 1 TO 5 PERCENT SLOPES, MODERATELY ERODED
BeC3	C	BELTSVILLE SILT LOAM, 5 TO 10 PERCENT SLOPES, SEVERELY ERODED
L1	D	LEONARDTOWN SILT LOAM
CnB2	C	CHILLUM-FAIRFAX LOAMS, 1 TO 5 PERCENT SLOPES, MODERATLEY ERODED

LEGEND

- EX. INDEX CONTOUR
- EX. 2' INTERMEDIATE CONTOUR
- EX. CURB AND GUTTER
- EX. GAS LINE
- EX. STORM DRAIN
- EX. FENCE
- EX. EDGE OF WATER
- EX. OVERHEAD UTILITY LINE
- EX. WATER VALVE
- EX. INLET
- EX. MANHOLE
- EX. TREE
- EX. SOILS DELINEATION
- HYDROLOGIC SOILS GROUP
- EX. SOIL BORINGS
- TC PATH
- TC PATH FLOW TYPE
- DRAINAGE AREA
- DRAINAGE AREA BOUNDARY
- 100-YR FLOOD PLAIN
- WETLANDS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — 5/8/03 DATE

DIRECTOR — 5/ /03 DATE

Drafting	JAB	DATE	REVISIONS
Check	CGW	10-30-03	Revised San. Sewer Line
Design	CGW		
Check	THM		

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CONTRACT PURCHASER & DEVELOPER:
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925 FELL STREET
BALTIMORE, MD 21231
(410) 534-6350

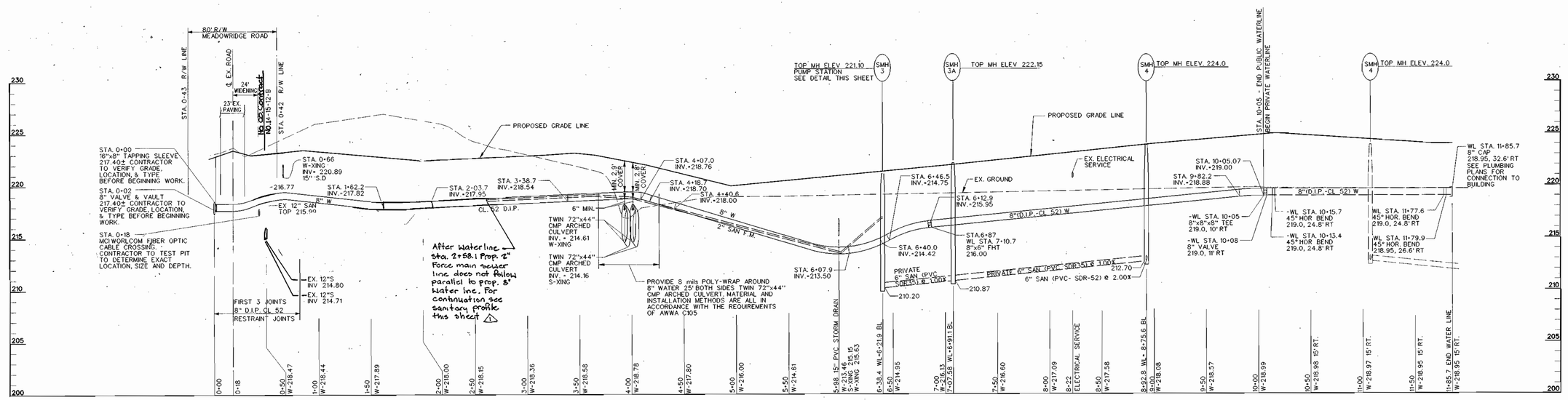
PROPOSED STORMDRAIN DRAINAGE AREA MAP

STATE OF MARYLAND — MARIANNE KIERNAN — NO. 25058 — PROFESSIONAL ENGINEER
APR 1 4 2003

KANE COMPANIES, INC. HEADQUARTERS
PROPOSED OFFICE WAREHOUSE
TAX MAP 37, PARCEL 174
L. 6753 F. 684, ZONE M-1
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
WATER CODE: D04 SEWER CODE: 215 3000

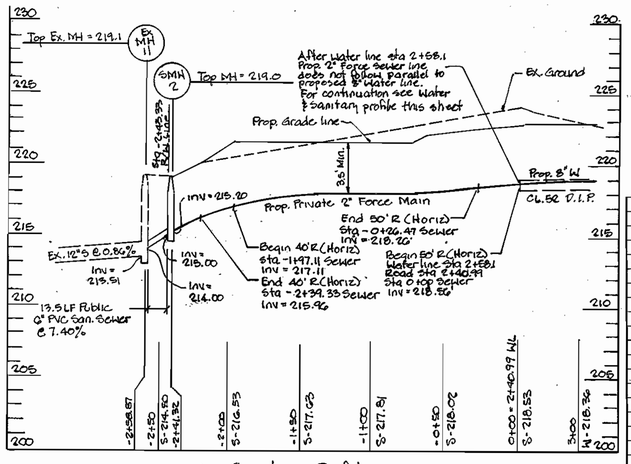
GRAPHIC SCALE
60 0 30 60 120
(IN FEET)
1 inch = 60ft.

DATE: APRIL 9, 2003
SHEET 4 OF 22
SDP-02-53
1602008\DRAWINGS\SDMAP.dgn

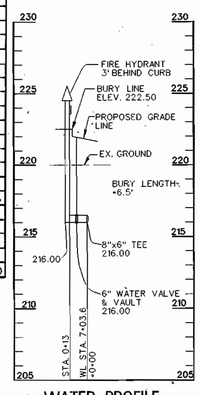


WATER & SANITARY PROFILE

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

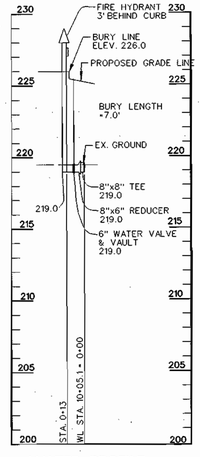


⚠ Sanitary Profile
Scale: Hor: 1"= 50'
Vert: 1" = 5'



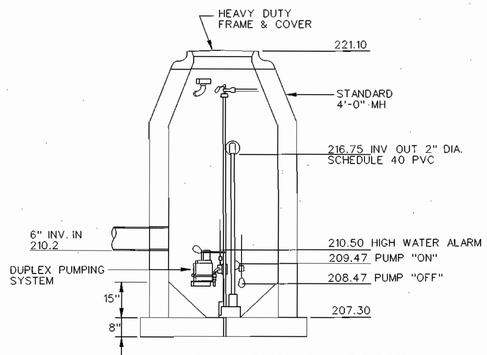
WATER PROFILE

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



WATER PROFILE

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



SANITARY PUMP STATION DETAIL

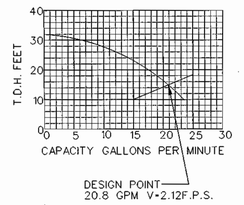
NOT TO SCALE

SANITARY PUMP STATION DESIGN DATA

AVERAGE DAILY FLOW

OFFICE : 15,684SQ. FT. X 0.09GPD=1411GPD
WAREHOUSE: 70,576SQ. FT. X 0.03GPD=1371GPD
WORKSHOP: 8,611SQ. FT. X 0.018GPD=155GPD
AVERAGE DAILY FLOW = 4405GPD
INFIULTRATION: 0.8AC= 400GPD=320GPD

DESIGN FLOW: 4162 GPD X 2 + 320 GPD = 9130GPD
= 0.009MGD
= 6.3 GPM



SYSTEM CURVE

(TWIN) MYERS WGL-20
2HP GRINDER PUMP -3450 RPM
3 1'8" IMPELLER DIAM.

NOTE: SWITCH GEAR SHALL BE PROIVIDED FOR ALTERATING OPERATION OF PUMPS.

APPROVED: FOR PUBLIC (OR PRIVATE) WATER AND PUBLIC (OR PRIVATE) SEWAGE SYSTEMS

COUNTY HEALTH OFFICER HOWARD COUNTY HEALTH DEPARTMENT — DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5/12/03

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/12/03

DIRECTOR — DATE 5/12/03

Drafting	AWW
Check	CGW
Design	CGW
Check	THM

DATE	REVISIONS
10-30-03	Revised San. Sewer line ⚠

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(410) 534-6350

WATER & SEWER PROFILES

STATE OF MARYLAND NO. 25048 MARIANNE KIERNAN PROFESSIONAL ENGINEER
APR 14 2003

KANE COMPANIES, INC. HEADQUARTERS
PROPOSED OFFICE WAREHOUSE
TAX MAP 37 , PARCEL 174
L. 6753 F. 684, ZONE M-1
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
WATER CODE: D04 SEWER CODE: 215 3000

SCALE AS SHOWN
DATE: APRIL 9, 2003
SHEET 8 OF 22

SDP-02-53

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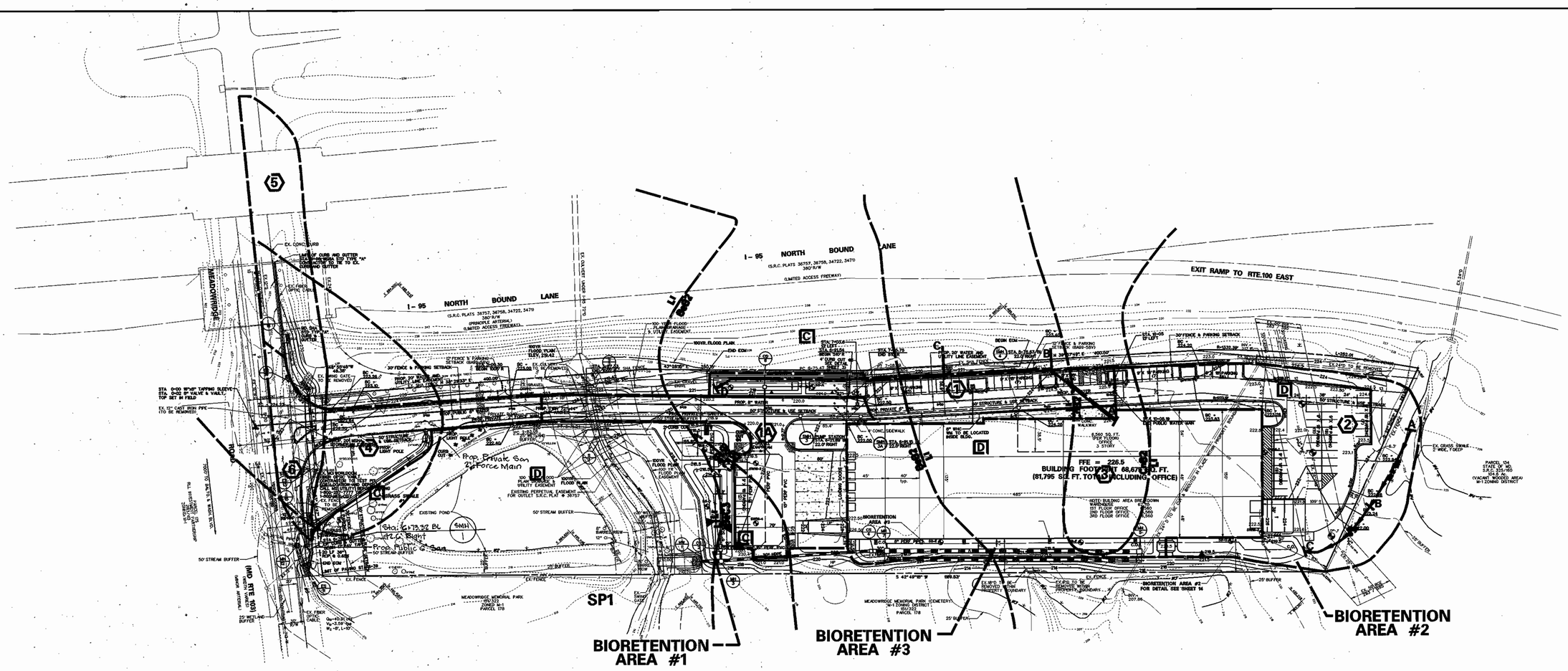

SOILS CHART

SOIL	HYDROLOGIC SOIL GROUP	DESCRIPTION
BeB2	C	BELTSVILLE SILT LOAM, 1 TO 5 PERCENT SLOPES, MODERATELY ERODED
BeC3	C	BELTSVILLE SILT LOAM, 5 TO 10 PERCENT SLOPES, SEVERELY ERODED
L1	D	LEONARDTOWN SILT LOAM
CnB2	C	CHILLUM-FAIRFAX LOAMS, 1 TO 5 PERCENT SLOPES, MODERATLEY ERODED

CHART

No.	DRAINAGE AREA (Ac)	% IMPERVIOUS	RCN	Tc
(1)	0.50	100%	98	.10
(1A)	0.65	100%	98	.10
(2)	0.80	44%	88	.25
(3)	1.56	100%	98	.10
(4)	0.35	51%	86	.10
(5)	0.467	79%	90	.10
(6)	0.147	100%	98	.10

DRAINAGE AREA SUMMARY TABLE

No.	AREA (Ac)	WQv (CF)	Rev (CF)	Cpv (CF)	Qp (cfs)	Qf (cfs)	BMP
(1)	0.50	1724	261	6470	NA	NA	SAND FILTER F5
(1A)	0.65	2242	169		NA	NA	BIORETENTION F6
(2)	0.80	1295	78	----	NA	NA	BIORETENTION F6
(3)	1.56	5380	384	8777	NA	NA	BIORETENTION F6
(4)	0.35	647	----	----	NA	NA	* GRASS SWALE
(5)	0.467	1290	----	----	NA	NA	* GRASS SWALE
(6)	0.147	507	----	----	NA	NA	* GRASS SWALE

* GRASS SWALE CREDIT FOR WQv & Rev.
1" STORM VELOCITY FOR SWALE #1 IS 0.42 FPS
1" STORM VELOCITY FOR SWALE #2 IS 0.82 FPS
SEE COMPUTATIONS PAGE 74

LEGEND

90 — EX. INDEX CONTOUR
EX. 2' INTERMEDIATE CONTOUR
EX. CURB AND GUTTER
G — G — EX. GAS LINE
15"D — EX. STORM DRAIN
X — X — EX. FENCE
W — W — EX. EDGE OF WATER
OH — EX. OVERHEAD UTILITY LINE
EX. WATER VALVE
EX. INLET
EX. MANHOLE
EX. TREE
BeB2 / BeC3 — EX. SOILS DELINEATION
C — HYDROLOGIC SOILS GROUP
EX. SOIL BORINGS
TC PATH
A-B — TC PATH FLOW TYPE
(2) — DRAINAGE AREA
DRAINAGE AREA BOUNDARY
100-YR FLOOD PLAIN
SP — STUDY POINT

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5/5/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/8/02
DIRECTOR — DATE 5/10/02

	DATE	REVISIONS
Drafting JAB	10-30-02	Revised San. Sewer line.
Check CGW		
Design CGW		
Check THM		

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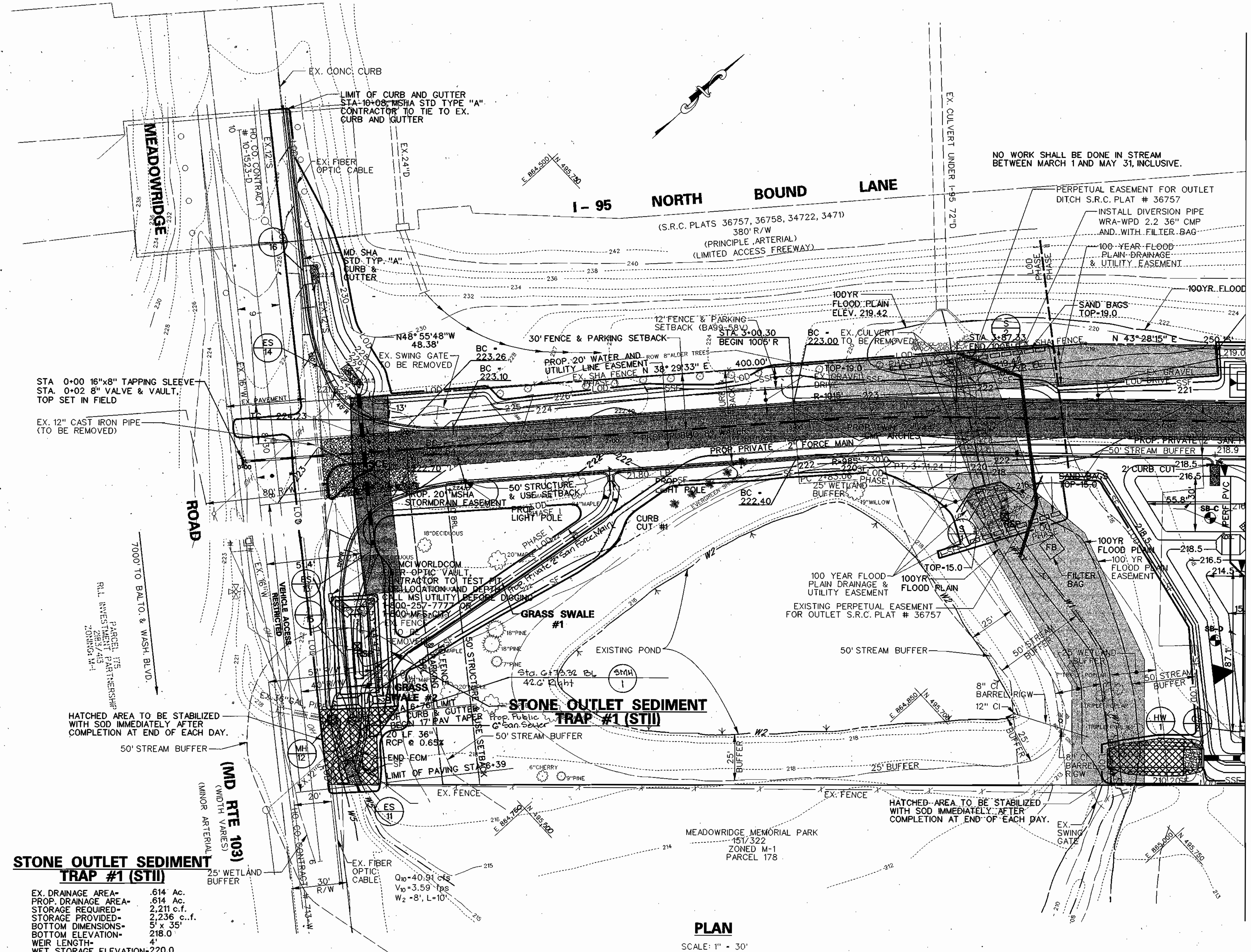
(410) 534-6350

STORMWATER MANAGEMENT DRAINAGE PLAN

STATE OF MARYLAND — No. 25058 — MARIANNE KIERNAN — PROFESSIONAL ENGINEER
APR 14 2003

KANE COMPANIES, INC.
HEADQUARTERS
PROPOSED OFFICE WAREHOUSE
TAX MAP 37 , PARCEL 174
L. 6753 F. 684, ZONE M-1
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
WATER CODE: D04 SEWER CODE: 215 3000
GRAPHIC SCALE
60 0 30 60 120
(IN FEET)
1 inch = 60ft.
DATE: APRIL 9, 2003
SHEET 10 OF 22
SDP-02-53
1602008\DRAWINGS\SWM_MAP.dgn



PLAN

SCALE: 1" = 30'

STONE OUTLET SEDIMENT TRAP #1 (STII)

EX. DRAINAGE AREA-	.614 Ac.
PROP. DRAINAGE AREA-	.614 Ac.
STORAGE REQUIRED-	2,211 c.f.
STORAGE PROVIDED-	2,236 c..f.
BOTTOM DIMENSIONS-	5' x 35'
BOTTOM ELEVATION-	218.0
WEIR LENGTH-	4'
WET STORAGE ELEVATION-	220.0
WEIR CREST ELEVATION-	222.0
TOP OF EMBANKMENT-	223.0
CLEANOUT ELEVATION-	219.0

GENERAL NOTES

1. A minimum of 24 hours notice must be given to the Howard County Sediment Control Division prior to the start of any construction (880-3450).
2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
3. Following initial soil disturbance or redisturbance, permanent or temporary stabilization shall be completed within: a) 7 calender days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.
4. All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 12, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
5. All disturbed areas must be stabilized within the time period specified above in accordance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seedings (Sec. 51) sod (Sec. 54), temporary seeding (Sect. 50) and mulching (Sec. 52). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
6. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
7. Site Analysis:

Total Area of Site	6.8264 Ac.	Acres
Area Disturbed	5.550 Ac.	Acres
Area to be Roofed or Paved	3.420 Ac.	Acres
Area to be Vegetatively Stabilized	3.55 Ac.	Acres
Total Cut	26,780	Cubic Yards
Total Fill	26,780	Cubic Yards
Offsite Waste/Borrow Location	Stockpile Permit #G00008045 Borrow material taken from: Troy Hill Industrial Park	

8. Any sediment control practices which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
9. Additional sediment controls must be provided, if deemed necessary by the Howard County Department of Public Works Sediment Control Inspector.
10. On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of the 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.

SEQUENCE OF CONSTRUCTION

1.	Obtain grading and MDE Permit	1 DAY
2.	Notify Howard County Sediment Control Inspector for pre-construction meetings as required by note number one (No. 1) of the Standard Erosion and Control Notes shown on this sheet. Notify Miss Utility.	1 DAY
3.	Install sediment control measures for Phase I Construction (i.e. see silt fence installation of ES-11 thru MH-12, only)	1 DAY
4.	With silt fence protection install MH-12 thru ES-11 and inclusive pipe. Install riprap outfall. Stabilize site, Contractor shall complete ES-11 to MH-12 in one dry day.	1 DAY
5.	Install stone outlet sediment trap #1. Install permanent outfall from trap to riprap outfall @ ES-11	1 DAY
6.	With inspectors approval grade the Meadowridge Road improvements. Install inlet I-16, structures ES-14 and 13 with inclusive pipe, riprap and grass channels. Do not install glass swale #1. Install glass #2 upto sediment trap #1. All excavasion for road base (MD Rt 103) shall be backfilled with stone at the end of each day.	2 WEEKS
7.	Install Phase 1 utilities. Stabilize site.	2 WEEKS
8.	Install 36" pipe diversion under Phase I Construction around existing culvert across proposed drive. Note: No work permitted within stream between March 1 and ~~May 31~~, June 15th inclusive.	3 DAYS
9.	Install Sanitary Force main and waterline under stream bed at stream crossing where future twin 72"X44" CMP are to be installed. Continue lines to termination in Meadowridge Road.	2 DAYS
10.	Install twin culverts in stream crossing.	2 DAYS
11.	Remove removable sup pit, add Phase II silt fence across S1, remove diversion pipe and divert water back through proposed culverts. Obtain permission from Inspector before proceeding.	1 DAY
12.	With the Howard County Sediment Control Inspector's approval, remove existing drive and culvert. Bring proposed drive up to grade. Grade improvements along Meadowridge Road.	3 DAYS
13.	Install sediment control measure for Phase II Construction (i.e., silt fence, super silt fence, sediment trap #2). Clear and grub area within LOD with inspector's approval.	2 DAYS
14.	Sever and block 24" pipe at the property line before removal of pipe. Remove or grout in place existing 24" pipe within property boundary under building pad. Install 60" storage pipes and block flows from entering same until SWM work is begun later in the sequence.	3 WEEKS
15.	With inspectors approval begin grading the western side of the building pad. As pad is constructed in an easterly direction, and approaches sediment trap #2, remove trap. Close super silt fence @ trap #2 outfall. Grade remainder of building pad.	3 WEEKS
16.	Install Utilities from Phase I construction through Phase II and tie into existing utilities.	3 DAYS
17.	Install paving, curb, gutter and storm drain at culvert across Meadowridge Road. Install paving, curb and gutter for entire site.	7 DAYS
18.	Stabilize all disturbed areas.	3 DAYS
19.	Construction and water, sewer and storm drains north east of the stone construction entrance only at this time. All storm drain inlets and end sections shall have brick bulkheads installed the same day that flows to the water quantity/quality facilities.	21 DAYS
20.	Concurrently fine grade and install curb and gutters. Apply permanent stabilization to all areas fine graded within 48 hours of their completion Install stone sub-base to all areas to be paved as they are fine graded and proof rolled	14 DAYS
21.	After the site has been stabilized install SWM Facilities (i.e. Bioretention and sand filter areas, CPv areas, grass swales 1 & 2)	14 DAYS
22.	Stabilize all disturbed areas.	

NOTE:

ADD ECM MATTING IN ALL DITCHES, SWALES, AND OTHER AREAS OF CONCENTRATED FLOW PER DETAIL SHEET 18 OF 22.

LEGEND

EXISTING TREE LINE	
PROPOSED TREE LINE	
EXISTING GRADE	140
PROPOSED GRADE	142
EXISTING DRAINAGE DIVIDE	
PROPOSED DRAINAGE DIVIDE	
PROPOSED EARTH DIKE	A-2
LIMIT OF DISTURBANCE	LOD
SILT FENCE	SF
SUPER SILT FENCE	SSF
RIPRAP INFLOW PROTECTION	

BY THE DEVELOPER:

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

DEVELOPER ______ DATE 3/14/03

BY THE ENGINEER:

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

ENGINEER Maren Kiernan DATE 4/14/03

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS.

USDA - NATURAL RESOURCES CONSERVATION SERVICE Jim Myers DATE 4/22/03

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

HOWARD SCD ______ DATE 4/22/03

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 4/28/03

CHIEF, DIVISION OF LAND DEVELOPMENT DATE 5/8/03

DIRECTOR DATE 5/8/03

Drafting	JAB	DATE	REVISIONS
Check	CGW	10-30-03	Revised San. Sewer Line
Design	CGW		
Check	THM		

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CONTRACT PURCHASER & DEVELOPER:
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BALTIMORE, MD 21231
(410) 534-6350

GRADING AND SEDIMENT CONTROL PLAN - SHEET 1

STATE OF MARYLAND NO. 25058 MARIANNE KIERNAN PROFESSIONAL ENGINEER APR 14 2003

KANE COMPANIES, INC. HEADQUARTERS

PROPOSED OFFICE WAREHOUSE
TAX MAP 37 , PARCEL 174
L. 6753 F. 684, ZONE M-1
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

WATER CODE: D04 SEWER CODE: 215 3000

GRAPHIC SCALE

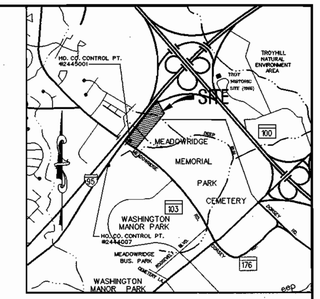
30 0 15 30 60

(IN FEET)
1 inch = 30ft.

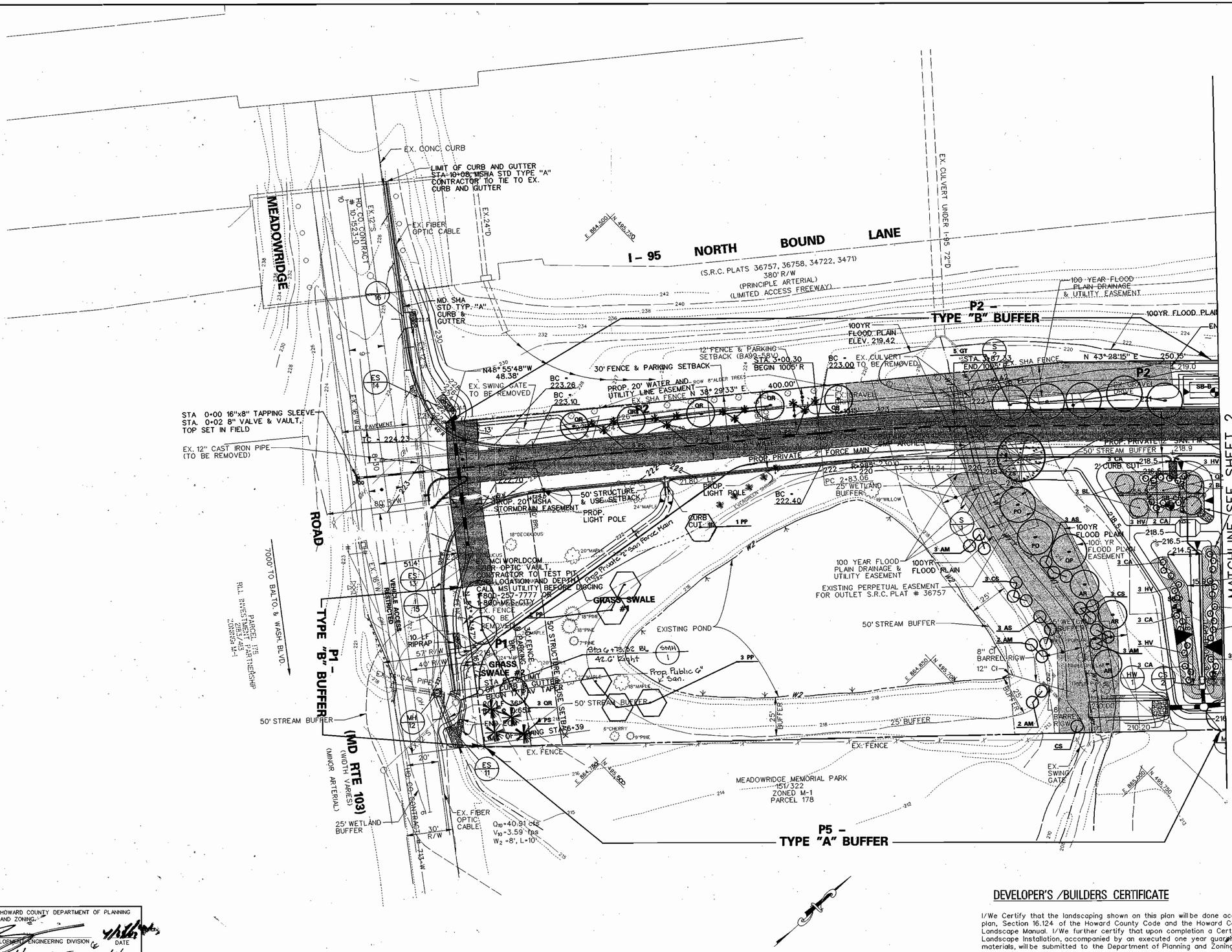
DATE: APRIL 9, 2003

SDP-02-53 SHEET 15 OF 22

1602008\DRAWINGS\SCPLN1.DGN



VICINITY MAP
SCALE: 1" = 2000'



PLANT SCHEDULE

SYMBOL	KEY	BOTANICAL /COMMON NAME	QUANTITY	SIZE/CONDITION	SPACING
	GT	Gleditals Triacathos - Skyline Honeylocust	9	2½"-3" Cal.	B+B
	PP	Prunus Subhirtella Pendula - Weeping Higon Cherry	6	2½"-3" Cal.	B+B
	ZS	Zelkova Serata - Japanese Zelkova	7	2½"-3" Cal.	B+B
	PS	Pinus Strobus - Eastern White Pine	34	6' Ht.	2" Cal.
	QR	Quercus Rubra - Red Oak	34	2.5" Cal.	B+B
	AR	Acer Rubrum -Red Maple	3	2.5" Cal.	B+B
	PO	Platanus Occidentalis -American Sycamore	2	2.5" Cal.	B+B
	QP	Quercus Palustris -Pin Oak	1	2.5" Cal.	B+B
	CS	Cornuda Sericea - Redosier Dogwood	7	18"-24" Ht.	Cont.
	AM	Aronia Melanocarpa -Black Chokeberry	10	18"-24" Ht.	Cont.
	AS	Alnus Serrulatta -Smooth Alder	6	18"-24" Ht.	Cont.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/16/03

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/8/03

DIRECTOR — DATE 5/9/03

DEVELOPER'S /BUILDERS CERTIFICATE

I/We Certify that the landscaping shown on this plan will be done according to the plan, Section 16.124 of the Howard County Code and the Howard County Landscape Manual. I/We further certify that upon completion a Certification of Landscape Installation, accompanied by an executed one year guarantee of plant materials, will be submitted to the Department of Planning and Zoning.

Name — Date 3/18/03

Drafting JAB	DATE	REVISIONS
Check CGW	10-30-03	Revised San. Sewer Line
Design CGW		
Check THM		

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BALTIMORE, MD 21231
(410) 534-6350

CONTRACT PURCHASER & DEVELOPER:
CREANEY & SMITH GROUP LLC
925 FELL STREET
BALTIMORE, MD 21231
(410) 534-6350

LANDSCAPE PLAN - SHEET 1

STATE OF MARYLAND — No. 25056 — MARIANNE KIERNAN — PROFESSIONAL ENGINEER — APR 14 2003

KANE COMPANIES, INC. HEADQUARTERS

PROPOSED OFFICE WAREHOUSE
TAX MAP 37 , PARCEL 174
L. 6753 F. 684, ZONE M-1
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
WATER CODE: D04 SEWER CODE: 215 3000

GRAPHIC SCALE
30 0 15 30 60
(IN FEET)
1 inch = 30ft.

DATE: APRIL 9, 2003
SHEET 20 OF 22

SDP-02-53

1602008\DRAWINGS\land1.dgn

I – 95 NORTH BOUND LANE

(S.R.C. PLATS 36757, 36758, 34722, 3471)
380' R/W

(LIMITED ACCESS FREEWAY)

EXIT RAMP TO RTE.100 EAST

VEHICULAR INGRESS/EGRESS RESTRICTED

MATCH LINE – SHEET 1

100 YEAR FLOOD PLAIN DRAINAGE & UTILITY EASEMENT

100YR FLOOD PLAIN

END ECM

N 43° 28' 15" E 250.35'

EX. GRAVEL DRIVE

STA. 7+03.6 13' LEFT
STA. 6+91.54 BEGIN 510' R
4' CURB CUT #3 SEE DETAIL SHEET 3)

PC 6+75.47

STA. 7+25.75 END 510' R

PT 7+08.99

PROP. 20' WATER AND UTILITY LINE EASEMENT

EX. SHA FENCE

BEGIN ECM

SMH 4 STA. 8+75.63 BL 22.0' RIGHT

BC = 223.40

12' FENCE & PARKING SETBACK (BA90-68Y)

N 39° 37' 49" E 400.50'

STA. 10+05 13' LEFT

30' FENCE & PARKING SETBACK

BC = 224.20

R=1332.39' INV.= 217.15

L=252.01

EX. SHA FENCE TO BE REMOVED

PROP. 8" WATER

PROP. PRIVATE 8" SAN.

50' STRUCTURE & USE SETBACK

50' STREAM BUFFER

2' CURB CUT

CURB CUT #4

GRAVEL DIAPHRAM

SB-A SB-B SB-C SB-D SB-E SB-F SB-G

9' X 18' PARKING (13)

9' X 18' PARKING (7)

9' X 18' PARKING (6)

9' X 18' PARKING (11)

9' X 18' PARKING (9)

9' X 18' PARKING (2)

16' x 18' Parking (5)

HC

SMH 3 PUMP STATION STA. 6+21.89 BL 22.0' RIGHT

SMH 3A STA. 6+91.15 BL 22.0' RIGHT

BC = 222.00

4' CONC. SIDEWALK

Conc. Stoop & Steps See Sheet 11 for Detail

8" WHC TO BE LOCATED INSIDE BLDG.

Conc. Stoop & Steps See Sheet 11 for Details

6,560 SQ. FT. (PER FLOOR) OFFICE 3 STORY

CONC. WALKWAY

STA. 10+05.19 END PUBLIC WATER MAIN

BC = 223.83

BC = 223.26

FFE = 226.5
BUILDING FOOTPRINT 68,675 SQ. FT.
(81,795 SQ. FT. TOTAL INCLUDING OFFICE)

NOTE: BUILDING AREA BREAKDOWN
WAREHOUSE 62,115
1ST FLOOR OFFICE 6,560
2ND FLOOR OFFICE 6,560
3RD FLOOR OFFICE 6,560

GROUTED IN PLACE WITHIN PROPERTY BOUNDARY

EX. 24" D TO BE CUT & CAPPED

EX. 24" D

EX. 50' BGE 283 / 395

EX. 50' BGE 293 / 595

EX. 26" GAS

EX. GRASS SWALE 2' WIDE, 1' DEEP

Wheel stops

SWM-1 SWM-2 SWM-3 SWM-4

6' x 18' PARKING (9)

6' x 18' PARKING (2)

BC = 222.94

BC = 222.46

BC = 222.24

BC = 222.00

25' BUFFER

40' STREAM BUFFER

25' WETLAND BUFFER

100YR FLOOD PLAIN EASEMENT

6" SOLID PVC

15" PERF PVC

15" PERF. PVC

30" HDPE

6" PERF PIPE

BIORETENTION AREA #3

BIORETENTION AREA #2 FOR DETAIL SEE SHEET 14

LOADING DOCKS

6" OF BARREL RGW

EX. SWING GATE

S 42° 49' 18" W 1169.53'

EX. FENCE

EX.18"D TO BE REMOVED WITHIN PROPERTY BOUNDARY

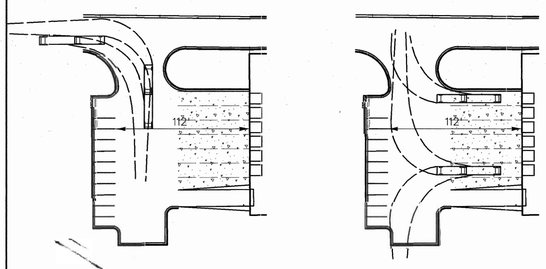
EX.6"D TO BE REMOVED WITHIN PROPERTY BOUNDARY

MEADOWRIDGE MEMORIAL PARK (CEMETERY)
M-1 ZONING DISTRICT
151/322
PARCEL 178

STREAM #2

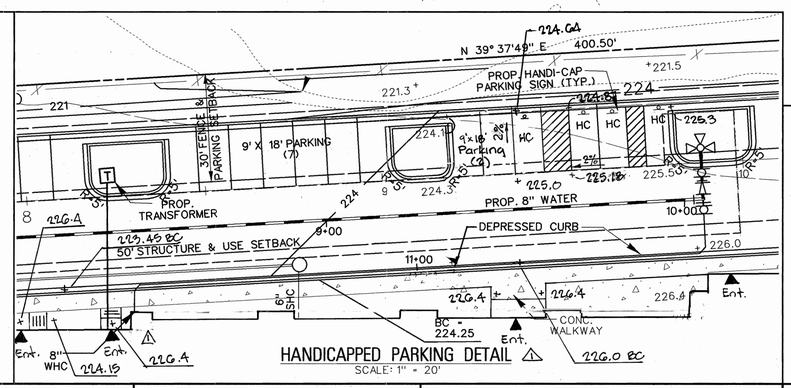
N 865,000 N 486,250 N 486,250 E 865,001

S 22° 20' 03" E 261.82'

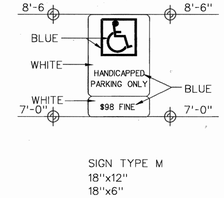


TRUCK RADIUS DETAIL 1
SCALE: 1" = 60'

TRUCK RADIUS DETAIL 2
SCALE: 1" = 60'



HANDICAPPED PARKING DETAIL
SCALE: 1" = 20'



SIGN TYPE M
18"x12"
18"x6"

HANDICAPPED SIGN DETAIL
NOT TO SCALE

APPROVED: FOR PUBLIC (OR PRIVATE) WATER AND PUBLIC (OR PRIVATE) SEWAGE SYSTEMS

COUNTY HEALTH OFFICER, HOWARD COUNTY HEALTH DEPARTMENT — DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5/8/03

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/8/03

DIRECTOR — DATE 5/8/03

Drafting	JAB
Check	CGW
Design	CGW
Check	THM

DATE	REVISIONS
11/23/04	⚠ Revise offsite grading
11/23/04	⚠ Revise stoop & steps per revised architectrals.

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ENGINEERS
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CONSTRUCTION MANAGERS
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CONTRACT PURCHASER & DEVELOPER:
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BALTIMORE, MD 21231
(410) 534-6350

SITE DEVELOPMENT PLAN – SHEET 2

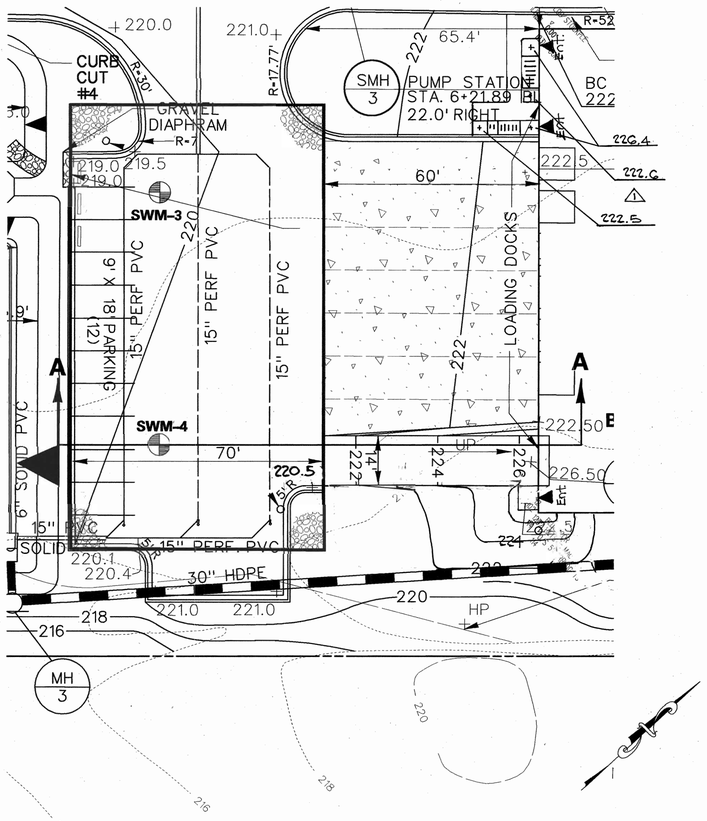
STATE OF MARYLAND
NO. 25058
MARYANNE KISHMAN
PROFESSIONAL ENGINEER
APR 1 4 2003

KANE COMPANIES, INC. HEADQUARTERS
PROPOSED OFFICE WAREHOUSE
TAX MAP 37, PARCEL 174
L. 6753 F. 684, ZONE M-1
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
WATER CODE: D04 SEWER CODE: 215 3000

GRAPHIC SCALE
30 0 15 30 60
(IN FEET)
1 inch = 30ft.
DATE: APRIL 9, 2003
SHEET 2 OF 22

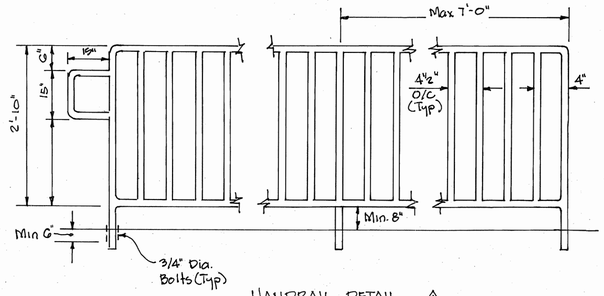
SDP-02-53

1602008\DRAWINGS\SHEET2.dgn

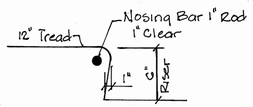


STORMWATER MANAGEMENT FACILITY

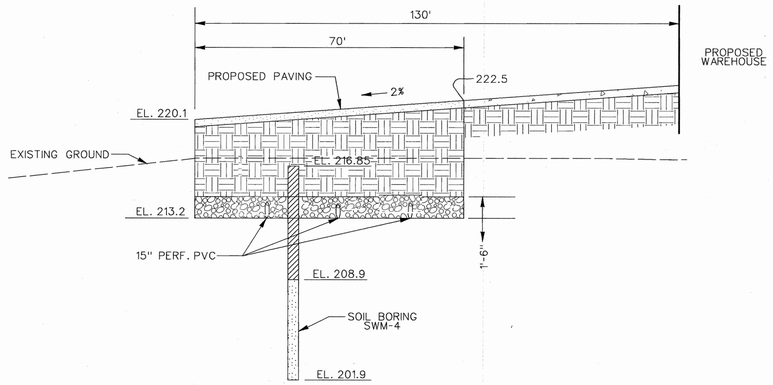
SCALE: 1" = 20'



HANDRAIL DETAIL ⚠
Not to Scale



TYPICAL STAIR DETAIL
Scale: 1½"=1'-0" ⚠



SECTION A-A

SCALE: HOR.: 1" = 20'
VERT.: 1" = 5'

S.W.M. DESIGN SUMMARY - FACILITY NO. 1					
DESIGN STORM	FACILITY INFLOW (cfs)	FACILITY OUTFLOW (cfs)	STAGE	STORAGE VOLUME AC. FT.	FACILITY VOLUME 2.5 x S - AC. FT.
1 Year	3.6	0.1	215.88	0.25	0.1

NOTE: ADDITIONAL STORAGE FOR CPv IS HELD ABOVE GROUND @ ELEV. 215.88.

STRUCTURE TYPE: UNDERGROUND STONE STORAGE
SURFACE AREA: 0.20 AC.
STRUCTURE CLASSIFICATION: N/A
STORAGE-HEIGHT PRODUCT: N/A
WATERSHED AREA TO FACILITY (ACRES): 1.15
LEVEL OF MANAGEMENT REQUIRED AND PROVIDED BY FACILITY: 1 YEAR (QUANTITY)
WATERSHED: PATAPSCO
STREAM CLASS: I
FREEBOARD: N/A
THIS FACILITY IS PRIVATE. MAINTENANCE IS TO BE PROVIDED BY PROPERTY OWNER.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED SURFACE STORMWATER FILTRATION SYSTEMS (F-1, F-4, AND F-5)

1. The stormwater wetland facility shall be inspected annually and after major storms. Inspections shall be performed during wet weather to determine if the facility is functioning properly.
2. The top and side slopes of the embankment shall be mowed a minimum of once per year, when vegetation reaches 18" in height or as needed.
3. Filters that have a grass cover shall be mowed a minimum of three (3) times per growing season to maintain a maximum grass height of less than 12 inches.
4. Debris and litter shall be removed during regular mowing operations and as needed.
5. Visible signs of erosion in the facility shall be repaired as soon as it is noticed.
6. Remove silt when it exceeds four (4) inches deep in the forebay.
7. When water ponds on the surface of the filter bed for more than 72 hours, the top few inches of discolored material shall be replaced with fresh material. Proper cleaning and disposal of the removed materials and liquid must be followed by the owner.
8. A log book shall be maintained to determine the rate at which the facility drains.
9. The maintenance log book shall be available to Howard County for inspection to insure compliance with operation and maintenance criteria.
10. Once the performance characteristics of the infiltration system have been verified, the monitoring schedule can be reduced to an annual basis unless the performance data indicates that a more frequent schedule is required.

OPERATION AND MAINTENANCE SCHEDULE FOR BIO-RETENTION AREAS (F-6)

1. 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.
2. Schedule of plant inspection will be twice a year in spring and fall. This inspection will include removal of dead and diseased vegetation considered beyond treatment, treatment of all diseased trees and shrubs and replacement of all deficient stakes and wires.
3. Mulch shall be inspected each spring. Remove previous mulch layer before applying new layer once every 2 to 3 years.
4. Soil erosion to be addressed on an as needed basis, with a minimum of once per month and after heavy storm events.

OPERATION AND MAINTENANCE SCHEDULE FOR UNDERGROUND FACILITIES

1. The underground stormwater management facility is privately owned and it shall be the responsibility of the owner to periodically inspect and clean the facility to maintain it's operation and function.
2. The underground stormwater management facility shall be inspected yearly at a minimum and after especially severe storm events.
3. When sediment accumulation of more than 2" is observed or any debris that might obstruct the outfall is observed, the facility shall be cleaned.
4. The facility shall be cleaned immediately after petroleum spills. The owner shall contact the appropriate regulatory agencies notifying them of the spill and cleanup operation.
5. The sediment and debris shall be removed from the underground stormwater management facility by vacuum truck or other manual means. The owner shall follow proper cleaning and disposal of the removed material and liquid.
6. The inlet and outlet pipes shall be checked for any obstructions at least once every six (6) months. If obstructions are found, the owner shall have them removed and properly disposed of.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/18/03

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/8/03

DIRECTOR — DATE 5/9/03

Drafting	JAB	DATE	REVISIONS
Check	CGW	4/29/04	⚠ Revise stoop & steps; add handrail & step Detail
Design	CGW		
Check	THM		

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925 FELL STREET
BALTIMORE, MD 21231
(410) 534-6350

UNDERGROUND STORAGE STORMWATER MANAGEMENT PLAN

STATE OF MARYLAND — No. 25058 — REG. PROFESSIONAL ENGINEER — MARIANNE HIERMAN
APR 14 2003

KANE COMPANIES, INC. HEADQUARTERS

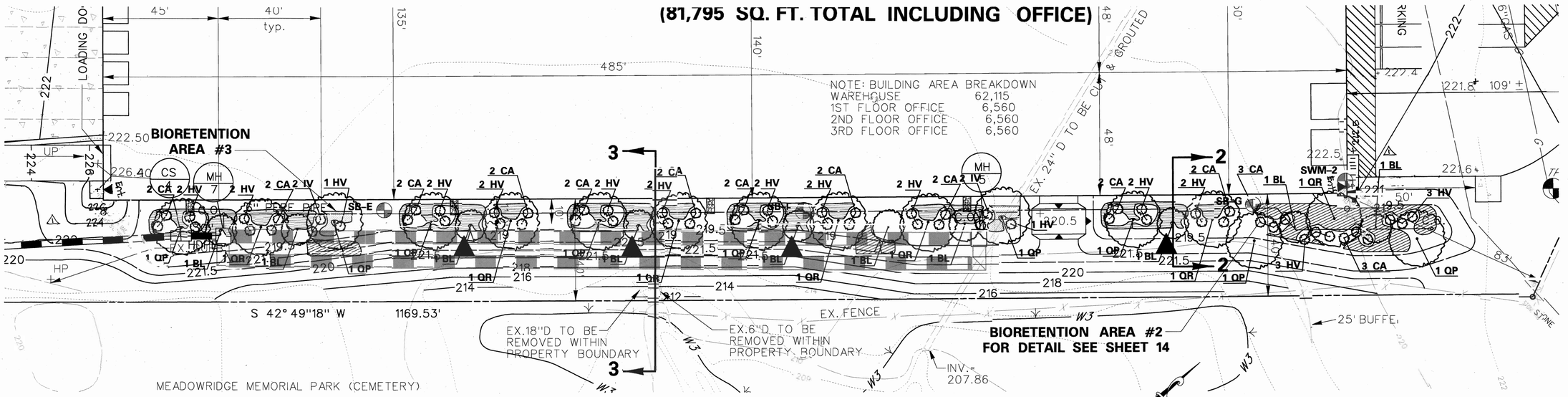
PROPOSED OFFICE WAREHOUSE
TAX MAP 37, PARCEL 174
L. 6753 F. 684, ZONE M-1
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
WATER CODE: D04 SEWER CODE: 215 3000

GRAPHIC SCALE
20 0 10 20 40
(IN FEET)
1 inch = 20ft.

DATE: APRIL 9, 2003
SHEET 11 OF 22

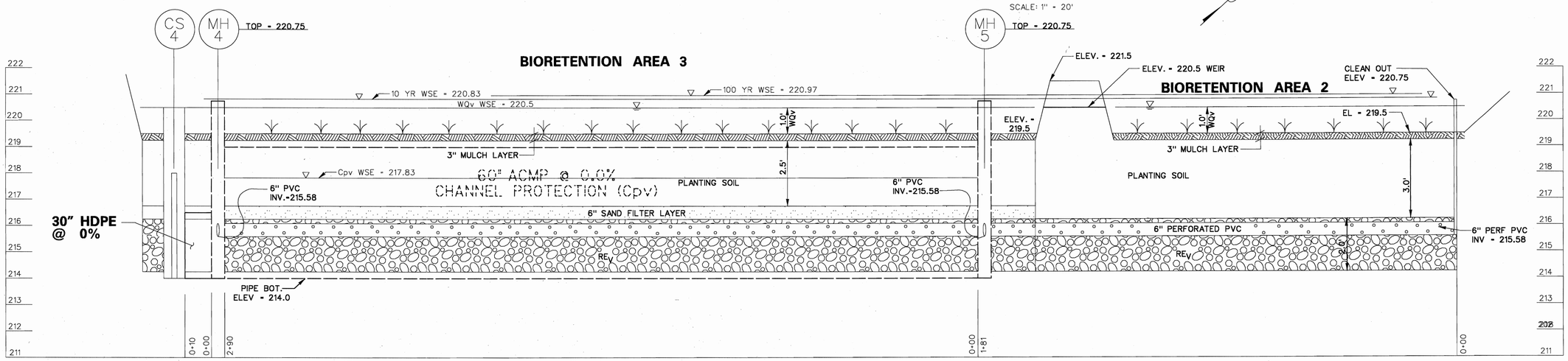
SDP-02-53

(81,795 SQ. FT. TOTAL INCLUDING OFFICE)



BIORETENTION AREAS 2 AND 3

SCALE: 1" = 20'

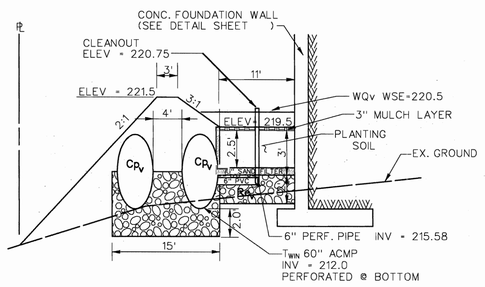


BIORETENTION AREAS 2 AND 3 PROFILE

SCALE: HOR: 1" = 20'
VERT: 1" = 2'

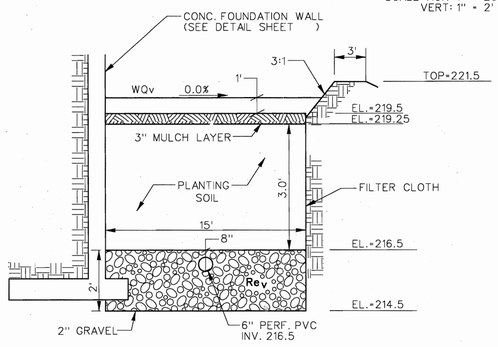
BIORETENTION SECTION 3

SCALE: HOR: 1" = 10'
VERT: 1" = 5'



BIORETENTION SECTION 2

NOT TO SCALE



BIORETENTION AREA 3 PLANT SCHEDULE

Qty.	Key	Botanical\Common Name
		TREES
6	QR	Quercus Rubra- Red Oak (2.5" Cal., B&B, Full Crown)
6	QP	Quercus Palustris-Pin Oak (2.5" Cal., B&B, Full Crown)
7	BL	Betula Lenta-Sweet Birch (2.5" Cal., B&B)
		SHRUBS
18	CA	Clethra Ainfolia-Sweet Pepperbush (18"-24" container)
20	HV	Hamamelis Virginica-Witch Hazel (18"-24" container)
4	IV	Ilex Verticillata-Winterberry (30" ht., B&B)
3400	JP	Pschysandra terminalis - Japanese pschysandra

Hatching for Herbacious Cover

BIORETENTION AREA 2 PLANT SCHEDULE

Qty.	Key	Botanical\Common Name
		TREES
2	QR	Quercus Rubra- Red Oak (2.5" Cal., B&B, Full Crown)
3	QP	Quercus Palustris-Pin Oak (2.5" Cal., B&B, Full Crown)
3	BL	Betula Lenta-Sweet Birch (2.5" Cal., B&B)
		SHRUBS
10	CA	Clethra Ainfolia-Sweet Pepperbush (18"-24" container)
10	HV	Hamamelis Virginica-Witch Hazel (18"-24" container)
1200	JP	Pschysandra terminalis - Japanese pschysandra

Hatching for Herbacious Cover

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — 5/8/03 DATE

DIRECTOR — 5/8/03 DATE

Drafting	AWW
Check	CGW
Design	CGW
Check	THM

DATE	REVISIONS
11/25/02	⚠ Revise stoop & steps per revised architecturals

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CONTRACT PURCHASER & DEVELOPER:
CREANEY & SMITH GROUP LLC
925 FELL STREET
BALTIMORE, MD 21231
(410) 534-6350

BIORETENTION AREAS 2 AND 3 PLAN

STATE OF MARYLAND — No. 25058 — MARIANNE KIERNAN — PROFESSIONAL ENGINEER
APR 1 4 2003

KANE COMPANIES, INC.
HEADQUARTERS
PROPOSED OFFICE WAREHOUSE
TAX MAP 37 , PARCEL 174
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GRAPHIC SCALE
20 0 10 20 40
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DATE: APRIL 9, 2003
SHEET 14 OF 22

SDP-02-53

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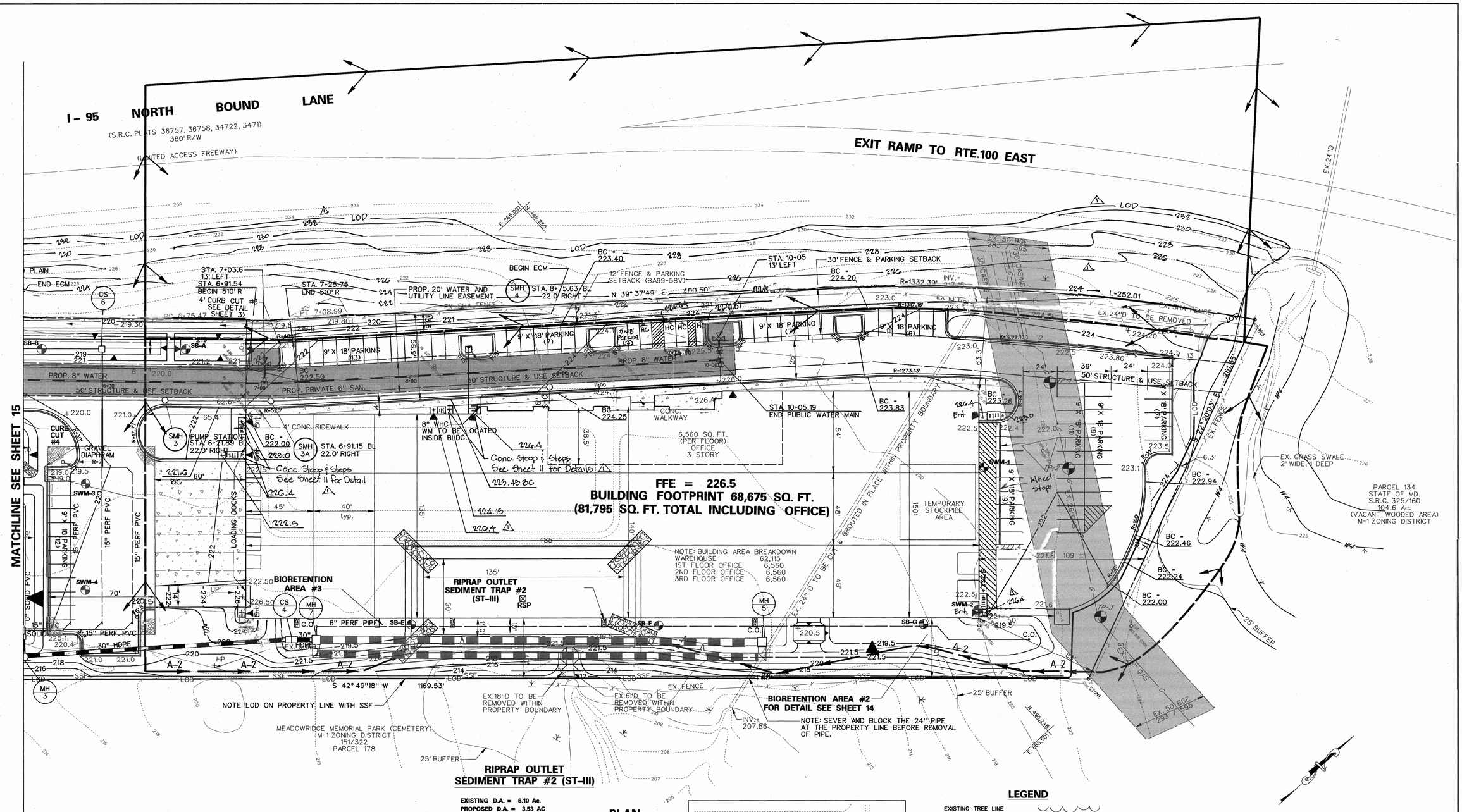
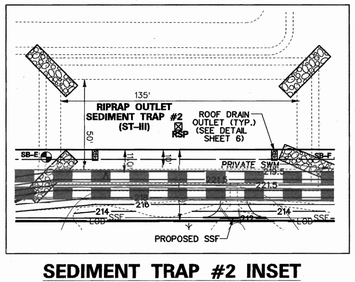


PLAN
SCALE: 1" = 30'

EXISTING D.A. = 6.10 Ac.
PROPOSED D.A. = 3.53 AC
STORAGE REQUIRED = 32,940 CF
STORAGE PROVIDED = 33,176 CF
STORAGE DEPTH = 4'
BOTTOM ELEVATION = 208.0
OUTFALL LENGTH = 10'
CLEANOUT ELEV. = 209.0
WEIR LENGTH = 14'
WEIR CREST ELEVATION = 212.0'
WEIR DEPTH = 1.5'
EMBANKMENT ELEVATION = 216.0'



SEDIMENT TRAP #2 INSET
SCALE: 1" = 40'

LEGEND
- EXISTING TREE LINE
- PROPOSED TREE LINE
- EXISTING GRADE — 140 —
- PROPOSED GRADE — 142 —
- EXISTING DRAINAGE DIVIDE
- PROPOSED DRAINAGE DIVIDE
- PROPOSED EARTH DIKE A-2
- LIMIT OF DISTURBANCE LOD
- SILT FENCE SF
- SUPER SILT FENCE SSF
- RIPRAP INFLOW PROTECTION

BY THE DEVELOPER:

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

DEVELOPER — DATE

BY THE ENGINEER:

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

Marianne Kiernan 4/14/03
ENGINEER — DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/30/03
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/8/03
DIRECTOR — DATE 5/6/03

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 4/22/03

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

HOWARD SCD — DATE 4/22/03

		DATE	REVISIONS
Drafting	JAB	11/23/04	⚠ Revise offsite grading & LOD
Check	CGW	11/23/04	⚠ Revise stoop & steps per revised architecturals
Design	CGW		
Check	THM		

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BALTIMORE, MD 21231
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GRADING AND SEDIMENT CONTROL PLAN - SHEET 2

STATE OF MARYLAND — NO. 25086 — MARIANNE KIERNAN — PROFESSIONAL ENGINEER
APR 14 2003

KANE COMPANIES, INC. HEADQUARTERS
PROPOSED OFFICE WAREHOUSE
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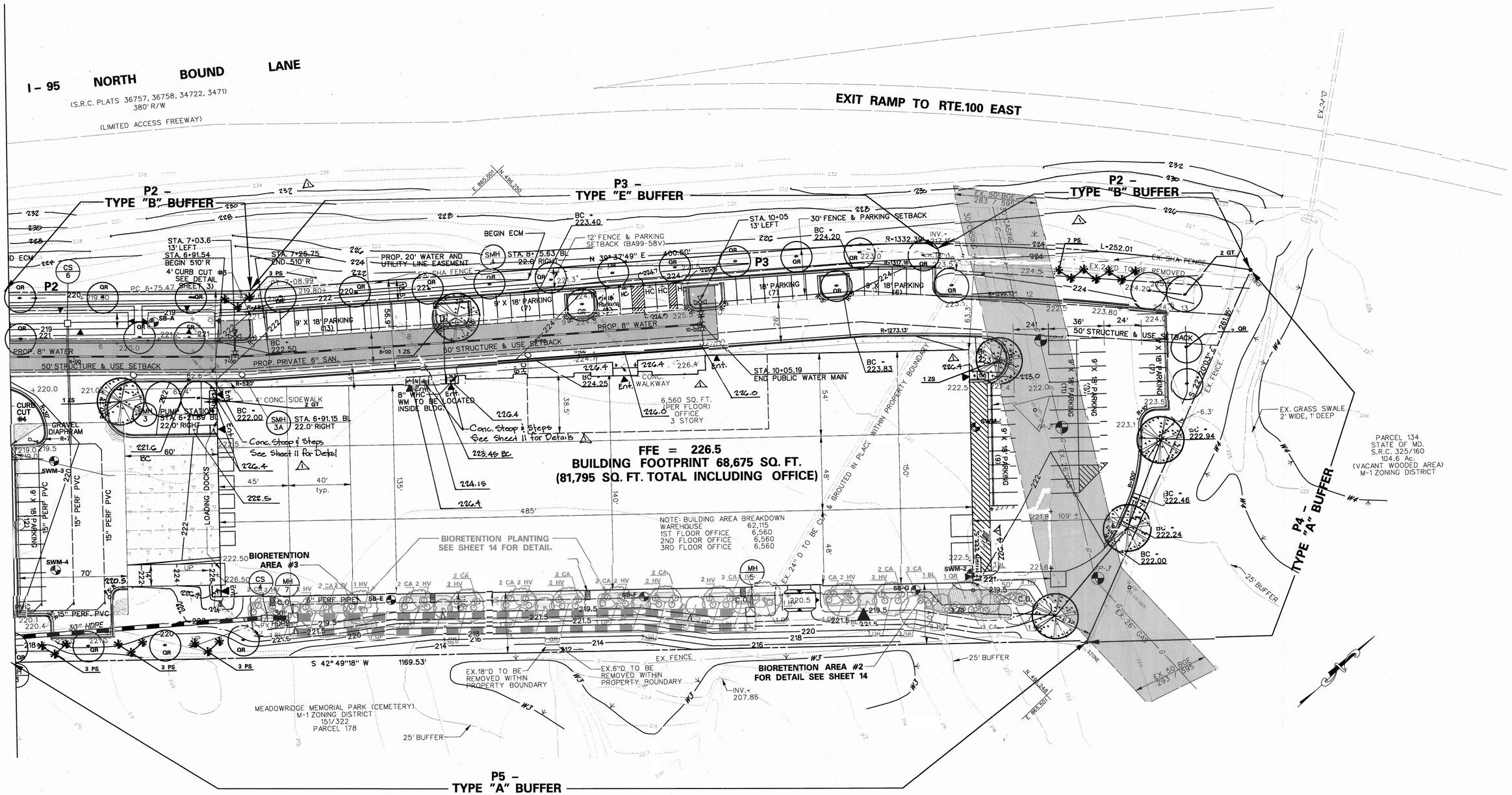
SDP-02-53 1602008\DRAWINGS\SCPLN2.DGN



PLAN
SCALE: 1" = 30'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5/8/03

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/8/03

DIRECTOR — DATE 5/14/03

Drafting	JAB	DATE	REVISIONS
Check	CGW	11/25/03	⚠ Revise offsite grading
Design	CGW	11/25/03	⚠ Revise stoop & steps per revised architecturals
Check	THM		

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www.kci.com

OWNER:
C & S MEADOWRIDGE, LLC
925 FELL STREET
BALTIMORE, MD 21231
(410) 534-6350

CONTRACT PURCHASER & DEVELOPER:
CREANEY & SMITH GROUP LLC
925 FELL STREET
BALTIMORE, MD 21231
(410) 534-6350

LANDSCAPE PLAN - SHEET 2

STATE OF MARYLAND — No. 26060 — MARYANNE KIERNAN — PROFESSIONAL ENGINEER — APR 14 2003

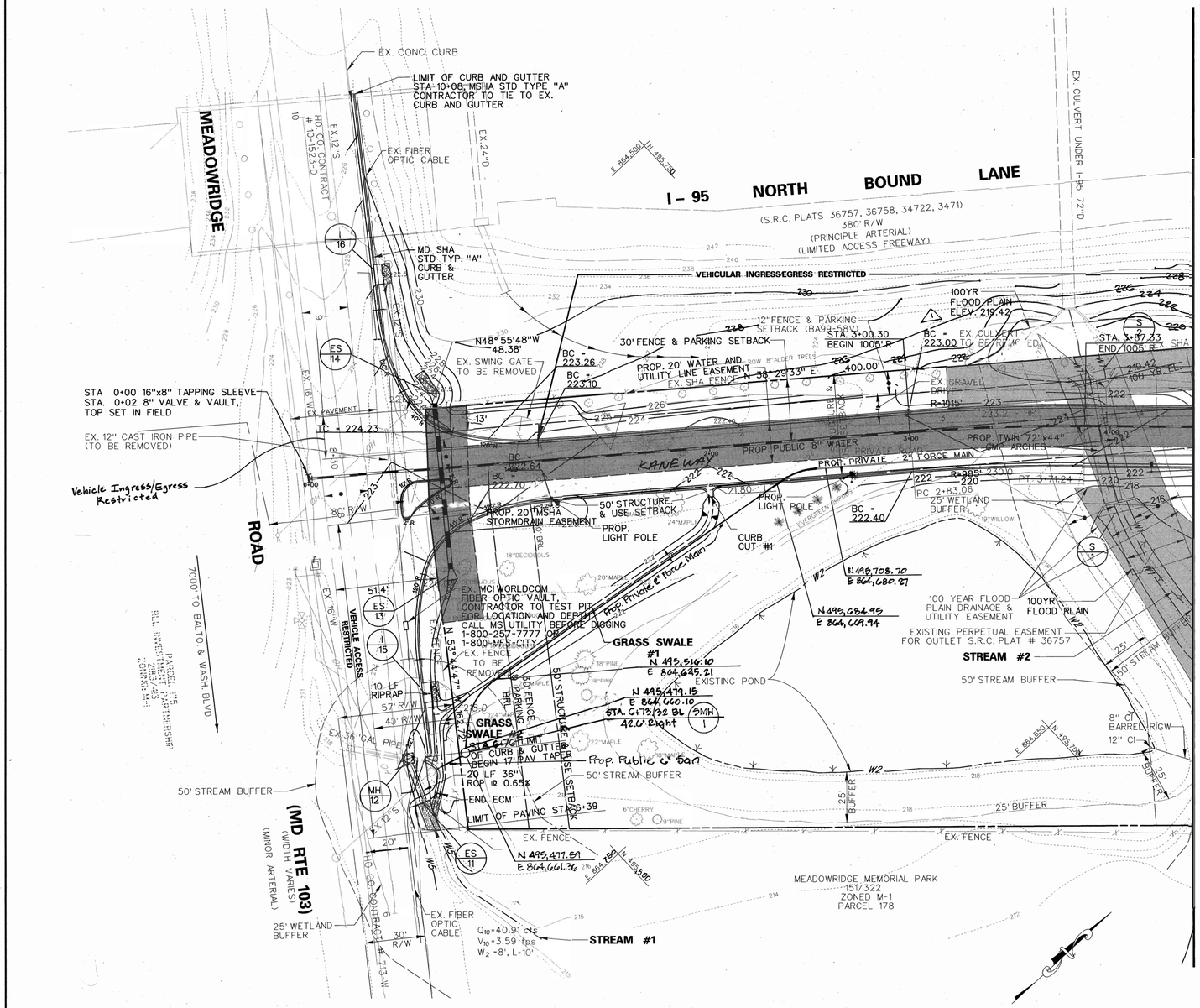
KANE COMPANIES, INC. HEADQUARTERS
PROPOSED OFFICE WAREHOUSE
TAX MAP 37, PARCEL 174
L. 6753 F. 684, ZONE M-1
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
WATER CODE: D04 SEWER CODE: 215 3000

GRAPHIC SCALE
30 0 15 30 60
(IN FEET)
1 inch = 30ft.

DATE: APRIL 9, 2003
SHEET 21 OF 22

1602008\DRAWINGS\land2.dgn

SDP-02-53



GENERAL NOTES

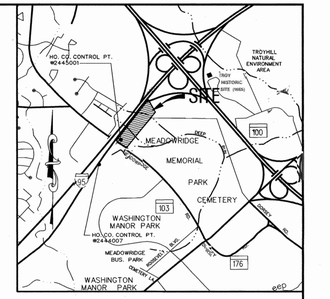
1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, I.E. STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
2. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN FROM BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
3. THE CONTRACTOR SHALL TEST PIT EXISTING UTILITIES AT LEAST FIVE (5) DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS TO VERIFY THEIR LOCATION AND ELEVATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY IF LOCATION OF UTILITIES IS OTHER THAN SHOWN.
4. CONTRACTOR TO NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS.

MISS UTILITY	1-800-257-7777
VERIZON TELEPHONE COMPANY	752-9976
HOWARD COUNTY BUREAU OF UTILITIES	992-2366
AT&T CABLE LOCATION DIVISION	393-3553
BALTIMORE GAS & ELECTRIC COMPANY	685-0123
STATE HIGHWAY ADMINISTRATION	531-5533
HOWARD COUNTY CONSTRUCTION/ INSPECTION/ SURVEY DIVISION	792-7272
(24 HOURS NOTICE PRIOR TO COMMENCEMENT OF WORK)	313-1880

5. TOPO TAKEN FROM FIELD SURVEY DATED APRIL 1989 BY KCI.
6. THE DEVELOPER IS RESPONSIBLE FOR THE ACQUISITION OF ALL EASEMENTS, RIGHTS AND/OR RIGHTS-OF-WAY THAT MAY BE REQUIRED FOR THE SEDIMENT AND EROSION CONTROL PRACTICES, STORM WATER MANAGEMENT PRACTICES AND THE DISCHARGE OF STORM WATER ONTO OR ACROSS ADJACENT OR DOWNSTREAM PROPERTIES INCLUDED IN THIS PLAN. HE IS ALSO RESPONSIBLE FOR THE ACQUISITION OF ALL EASEMENTS, RIGHTS AND/OR RIGHTS-OF-WAY THAT MAY BE REQUIRED FOR GRADING AND/OR WORK ON ADJACENT PROPERTIES INCLUDED IN THIS PLAN.
7. ALL COORDINATES ARE BASED ON HOWARD COUNTY GEODETIC CONTROL TRAVERSE WHICH IS BASED ON THE MARYLAND STATE PLANE COORDINATE SYSTEM. REFERENCE HOWARD COUNTY CONTROL POINTS 2445001 (ELEV. 245.095) & 2444007 (ELEV. 252.125).
8. INSTALLATION OF TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
9. ALL ON-SITE ROADS PARKING AND DRAINAGE STRUCTURES (INCLUDING STORM DRAINS, WATER QUALITY BASINS, TWIN CULVERTS) SHALL BE PRIVATELY OWNED & MAINTAINED.
10. GRAVITY SEWER SERVICE TO THE PROPOSED BUILDING CANNOT BE PHYSICALLY PROVIDED. A PRIVATELY OWNED AND MAINTAINED PUMP STATION SHALL BE PROVIDED AS PER THESE PLANS AND SPECIFICATIONS. THE PUMPS AND ASSOCIATED APPURTENANCES SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY PLUMBING CODE.
11. REFER TO "MARYLAND'S GUIDELINES FOR WATERWAY CONSTRUCTION" BY THE WATER RESOURCES ADMINISTRATION (WRA) DATED SEPTEMBER 1999 REVISED NOVEMBER 2000 FOR STANDARD DETAILS AND DETAILED SPECIFICATIONS OF EACH PRACTICE, SPECIFIED HEREIN FOR WATERWAY CONSTRUCTION.
12. ALL WATER MAINS TO BE D.I.P. CLASS 52 UNLESS OTHERWISE NOTED.
13. TOPS OF ALL WATER MAINS TO HAVE A MINIMUM OF 3' COVER.
14. ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
15. THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
16. INSTREAM CONSTRUCTION WILL NOT BE PERMITTED FROM MARCH 1ST THROUGH ~~MAY~~ JUNE 15th INCLUSIVE.
17. THE WATER PRESSURE ZONE FOR THIS CONTRACT IS 550.
18. ALL D.I.P. FITTINGS SHALL BE IN ACCORDANCE WITH A.W.W.A. SPECIFICATIONS C-153. DUCTILE IRON COMPACT FITTINGS 3"-12" FOR WATER AND OTHER LIQUIDS.
19. GRAVITY SEWER LINE WILL BE 6" PVC.
20. 2" SANITARY FORCE MAIN WILL BE PVC.
21. NO GRADING OR REMOVAL OF VEGETATIVE COVER IS PERMITTED WITHIN 25 FT OF A WETLAND UNLESS APPROVED BY THIS PLAN. THIS SITE IS SUBJECT TO MDE/ACOE PERMIT NO. 2002-64709.
22. THIS PLAN IS SUBJECT TO THE FIFTH EDITION OF THE SUBDIVISION REGULATIONS AND THE NEW ZONING REGULATIONS AS AMENDED BY COUNCIL BILL 50-2001.
23. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
24. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DPW DEVELOPERS AGREEMENT IN THE AMOUNT OF $13,200.00 FOR 31 SHADE TREES OR SUBSTITUTIONS.
25. THIS SITE IS SUBJECT TO SHA ACCESS PERMIT NO. B-HO-8208-02, ISSUED DECEMBER 31, 2002.
26. STORMWATER MANAGEMENT WILL BE PROVIDED THROUGH 2 UNDERGROUND DETENTION AREAS, 3 BIORETENTION AREAS (F-6), 1 SAND FILTER (F-5), AND 2 GRASS SWALES. THESE FACILITIES ARE PRIVATE SWM FACILITIES AND WILL BE MAINTAINED BY THE OWNER.
27. THE APPROVED APFO STUDY WAS PREPARED BY KCI TECHNOLOGIES, INC. AND APPROVED. SEPT. 5, 2002. THE MITIGATION REQUIREMENTS ARE AS FOLLOWS: NONE
28. WATER LINE WILL BE PUBLIC AND THE SANITARY SEWER WILL BE PRIVATE. THE EXISTING 16" WATER IS CONTRACT NO. 713-W AND THE EXISTING 8" SANITARY SEWER IS CONTRACT NO. 14-15-12-10. THE PROPOSED METER WILL BE LOCATED INSIDE AN EASEMENT ONSITE AND WILL BE PUBLIC.
29. BA-99-58V APPROVED MAY 11, 2000. VARIANCE TO PERMIT A PARKING SETBACK OF 12' FROM AN EXTERNAL PUBLIC STREET RIGHT-OF-WAY IN LIEU OF THE REQUIRED 30' MINIMUM SETBACK. REAPPLIED BA-02-50C APPROVED **December 18,** 2002.
30. "BIORETENTION AREAS DO NOT REQUIRE LANDSCAPE BUFFERING BECAUSE PLANTINGS WILL BE PLACED IN THOSE FACILITIES (SEE SHEET #13 - 14 FOR PLANT LIST AND DETAILS)."
31. DESIGN MANUAL WAIVER DATED MARCH 19, 2002 GRANTED FOR THE USE OF PRESSURE SEWER BY HOWARD COUNTY BUREAU OF ENGINEERING.
32. THIS SITE IS IN THE DEEP RUN TRIBUTARY WHICH FLOWS INTO THE PATAPSCO RIVER WATERSHED #02-13-09 AND IS CLASSIFIED AS A USE I. THE STREAM CLOSURE DATES ARE MARCH 1 THROUGH JUNE 15.
33. THIS PROJECT IS CONDITIONALLY EXEMPT FROM THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION WITH THE FILING OF A DECLARATION OF INTENT FOR LESS THAN 40,000 SQUARE FEET OF CLEARING.
34. WP-02-107 WAIVER TO PERMIT STOCKPILE AND ROUGH GRADING ON SITE PRIOR TO APPROVAL OF THE SDP WAS APPROVED ON JUNE 05, 2002 AND EXPIRES 1 YEAR AFTER ISSUANCE.

LEGEND

	PROP. TREE LINE
	EX. TREE LINE
	FIRE HYDRANT
	POLE
	POLE WITH LIGHT
	EVERGREEN TREE
	OAK
x	EX. FENCE
x	PROP. FENCE
240	EX. CONTOURS
240	PROP. CONTOURS
15' B.R.L.	BUILDING RESTRICTION LINE
	INDICATES SURFACE FLOW
	RAILROAD LINE
+120.50	SPOT ELEVATION
	STREET LIGHT
W1	WETLANDS
	PROP. 15' POLE WITH LIGHT
SB-A	SOIL BORING - A
	STREAM

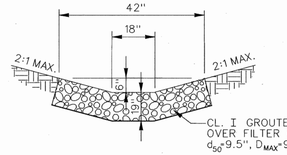


VICINITY MAP

SCALE: 1" = 2000'

SITE ANALYSIS

1. GROSS AREA OF SITE:	6.8264 AC
2. NET AREA OF SITE	6.6041 AC
3. PRESENT ZONING - PER SEPT. 19, 1993	ZONING M-1
4. PROPOSED USE	OFFICE/WAREHOUSE
5. FLOOR AREA	
OFFICE (3 STY.)	19,680 SF
WAREHOUSE	62,115 SF
6. NUMBER OF EMPLOYEES (MAX):	
OFFICE	62 PERSONS
WAREHOUSE	17 PERSONS
*7. PARKING SPACES REQUIRED	
OFFICE SPACE- - 62 SPACES	
WAREHOUSE SPACE- - 17 SPACES	
TOTAL 79 PS + 4 HC = 83	
*PARKING REQUIREMENT MODIFICATION WAS APPROVED BY THE DEPARTMENT OF PLANNING & ZONING TO BE BASED ON 1 SPACE PER EMPLOYEE.	
8. PARKING SPACES PROPOSED	87 PS
9. GREEN SPACE AREA	3.1503 AC
10. GREEN SPACE AS % OF NET AREA	47.7%
11. BUILDING COVERAGE	1.57 AC
12. BUILDING COVERAGE AS % OF GROSS AREA	23.0%
13. HANDICAP PARKING SPACES PROVIDED	5
14. TOTAL DISTURBED AREA	5.550 Ac. OR 241,769 s.f.
15. DPZ FILES	SDP90-81, BA99-58V WP-02-107, BA02-50C

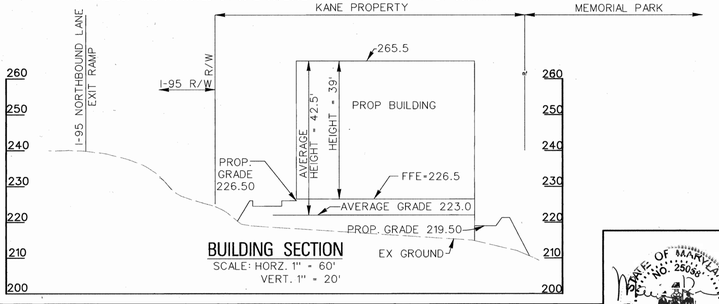


RIPRAP CHANNEL LINING FROM CURB TO ES-11

NOT TO SCALE

SHEET INDEX

SHEET NO.	TITLE
1	SITE DEVELOPMENT PLAN - SHEET 1
2	SITE DEVELOPMENT PLAN - SHEET 2
3	SITE DETAILS
4	PROP. STORMDRAIN DRAINAGE AREA MAP
5	STORMDRAIN PROFILES
6	STORMDRAIN PROFILES
7	STORMDRAIN DETAILS
8	WATER AND SANITARY PROFILES
9	SWM RISER DETAILS (CS-2, CS-4, CS-6)
10	SWM DRAINAGE PLAN
11	UNDERGROUND STORAGE SWM PLAN
12	SWM DETAILS
13	BIORETENTION AREA 1 PLAN
14	BIORETENTION AREAS 2 & 3 PLAN
15	GRADING & SEDIMENT CONTROL PLAN 1
16	GRADING & SEDIMENT CONTROL PLAN 2
17	GRADING & SEDIMENT CONTROL DETAILS
18	GRADING & SEDIMENT CONTROL DETAILS
19	SEDIMENT CONTROL NOTES
20	LANDSCAPE PLAN - SHEET 1
21	LANDSCAPE PLAN - SHEET 2
22	LANDSCAPE DETAILS



BUILDING SECTION

SCALE: HORZ. 1" = 60'
VERT. 1" = 20'

PERMIT INFORMATION CHART					
Subdivision Name: NA		Section/Area: NA		Lot/Parcel No.: 174	
Plat # or L/F: NA	Grid #	Zoning: M-1	Tax Map No.: 37	Elect Distr: 1	Census Tract: 6012
Water Code: D04		Sewer Code: 2153000			

ADDRESS CHART	
LOT/PARCEL #	STREET ADDRESS
174	6500 Kane Way

APPROVED: FOR PUBLIC (OR PRIVATE) WATER AND PUBLIC (OR PRIVATE) SEWAGE SYSTEMS

COUNTY HEALTH OFFICER, HOWARD COUNTY HEALTH DEPARTMENT — DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/25/03

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/1/03

DIRECTOR — DATE 5/6/03

		DATE	REVISIONS
Drafting	JAB	10-30-03	Revised san. sewer line
Check	CGW	11-03-03	Revise offsite grading
Design	CGW		
Check	THM		

KCI TECHNOLOGIES — ENGINEERS, PLANNERS, SCIENTISTS, CONSTRUCTION MANAGERS

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Laurel, Maryland 20708
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fax: (410) 792-7419
www.kci.com

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CONTRACT PURCHASER & DEVELOPER:
CREANEY & SMITH GROUP LLC
925 FELL STREET
BALTIMORE, MD 21231
(410) 534-6350

SITE DEVELOPMENT PLAN - SHEET 1

STATE OF MARYLAND — No. 22058 — MARIANNE KIERNAN — PROFESSIONAL ENGINEER
APR 14 2003

KANE COMPANIES, INC. HEADQUARTERS

PROPOSED OFFICE WAREHOUSE
TAX MAP 37, PARCEL 174
L. 6753 F. 684, ZONE M-1
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
WATER CODE: D04 SEWER CODE: 215 3000

GRAPHIC SCALE
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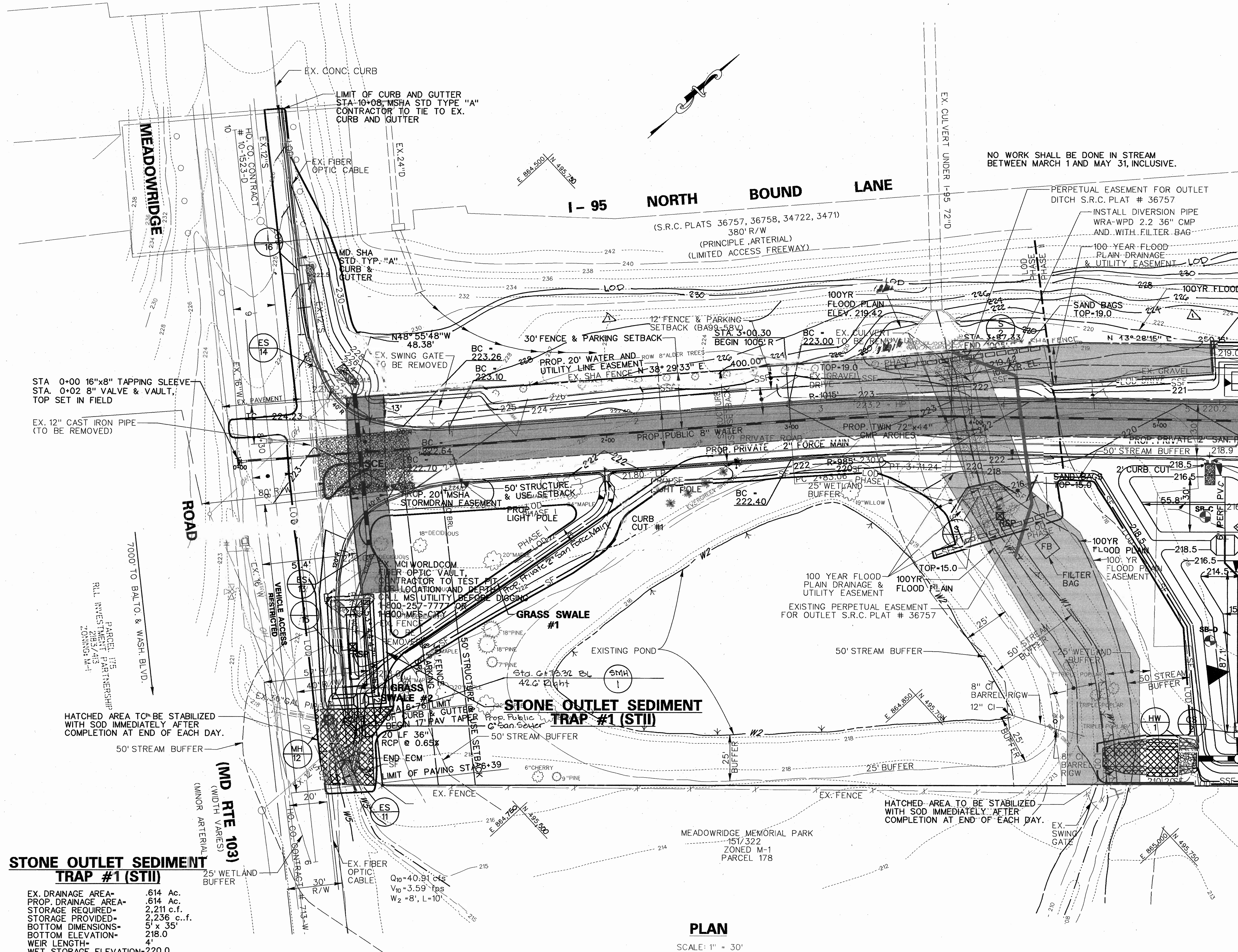
1 inch = 30ft.

DATE: APRIL 9, 2003
SHEET 1 OF 22

SDP-02-53

1602008\DRAWINGS\SHEET1.dgn



STONE OUTLET SEDIMENT TRAP #1 (STII)

EX. DRAINAGE AREA=	.614 Ac.
PROP. DRAINAGE AREA=	.614 Ac.
STORAGE REQUIRED=	2,211 c.f.
STORAGE PROVIDED=	2,236 c..f.
BOTTOM DIMENSIONS=	5' x 35'
BOTTOM ELEVATION=	218.0
WEIR LENGTH=	4'
WET STORAGE ELEVATION=	220.0
WEIR CREST ELEVATION=	222.0
TOP OF EMBANKMENT=	223.0
CLEANOUT ELEVATION=	219.0

PLAN

SCALE: 1" = 30'

NOTE:

ADD ECM MATTING IN ALL DITCHES, SWALES, AND OTHER AREAS OF CONCENTRATED FLOW PER DETAIL SHEET 18 OF 22.

GENERAL NOTES

1. A minimum of 24 hours notice must be given to the Howard County Sediment Control Division prior to the start of any construction (880-3450)..
2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
3. Following initial soil disturbance or redisturbance, permanent or temporary stabilization shall be completed within: a) 7 calender days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.
4. All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 12, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
5. All disturbed areas must be stabilized within the time period specified above in accordance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seedings (Sec. 51) sod (Sec. 54), temporary seeding (Sect. 50) and mulching (Sec. 52). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
6. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
7. Site Analysis:

Total Area of Site	6.8264 Ac.	Acres
Area Disturbed	5.550 Ac.	Acres
Area to be Roofed or Paved	3.420 Ac.	Acres
Area to be Vegetatively Stabilized	3.55 Ac.	Acres
Total Cut	26,780	Cubic Yards
Total Fill	26,780	Cubic Yards
Offsite Waste/Borrow Location	Stockpile Permit #G00008045 Borrow material taken from: Troy Hill Industrial Park	

8. Any sediment control practices which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
9. Additional sediment controls must be provided, if deemed necessary by the Howard County Department of Public Works Sediment Control Inspector.
10. On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of the 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.

SEQUENCE OF CONSTRUCTION

1.	Obtain grading and MDE Permit	**1 DAY**
2.	Notify Howard County Sediment Control Inspector for pre-construction meetings as required by note number one (No. 1) of the Standard Erosion and Control Notes shown on this sheet. Notify Miss Utility.	**1 DAY**
3.	Install sediment control measures for Phase I Construction (i.e. see silt fence installation of ES-11 thru MH-12, only)	**1 DAY**
4.	With silt fence protection install MH-12 thru ES-11 and inclusive pipe. Install riprap outfall. Stabilize site, Contractor shall complete ES-11 to MH-12 in one dry day.	**1 DAY**
5.	Install stone outlet sediment trap #1. Install permanent outfall from trap to riprap outfall @ ES-11	**1 DAY**
6.	With inspectors approval grade the Meadowridge Road improvements. Install inlet I-16, structures ES-14 and 13 with inclusive pipe, riprap and grass channels. Do not install glass swale #1. Install glass #2 upto sediment trap #1. All excavasion for road base (MD Rt 103) shall be backfilled with stone at the end of each day.	**2 WEEKS**
7.	Install Phase 1 utilities. Stabilize site.	**2 WEEKS**
8.	Install 36" pipe diversion under Phase I Construction around existing culvert across proposed drive. Note: No work permitted within stream between March 1 and ~~May 31~~ June 15th inclusive.	**3 DAYS**
9.	Install Sanitary Force main and waterline under stream bed at stream crossing where future twin 72"X44" CMP are to be installed. Continue lines to termination in Meadowridge Road.	**2 DAYS**
10.	Install twin culverts in stream crossing.	**2 DAYS**
11.	Remove removable sup pit, add Phase II silt fence across S1, remove diversion pipe and divert water back through proposed culverts. Obtain permission from Inspector before proceeding.	**1 DAY**
12.	With the Howard County Sediment Control Inspector's approval, remove existing drive and culvert. Bring proposed drive up to grade. Grade improvements along Meadowridge Road.	**3 DAYS**
13.	Install sediment control measure for Phase II Construction (i.e., silt fence, super silt fence, sediment trap #2). Clear and grub area within LOD with inspector's approval.	**2 DAYS**
14.	Sever and block 24" pipe at the property line before removal of pipe. Remove or grout in place existing 24" pipe within property boundary under building pad. Install 60" storage pipes and block flows from entering same until SWM work is begun later in the sequence.	**3 WEEKS**
15.	With inspectors approval begin grading the western side of the building pad. As pad is constructed in an easterly direction, and approaches sediment trap #2, remove trap. Close super silt fence @ trap #2 outfall. Grade remainder of building pad.	**3 WEEKS**
16.	Install Utilities from Phase I construction through Phase II and tie into existing utilities.	**3 DAYS**
17.	Install paving, curb, gutter and storm drain at culvert across Meadowridge Road. Install paving, curb and gutter for entire site.	**7 DAYS**
18.	Stabilize all disturbed areas.	**3 DAYS**
19.	Construction and water, sewer and storm drains north east of the stone construction entrance only at this time. All storm drain inlets and end sections shall have brick bulkheads installed the same day that flows to the water quantity/quality facilities.	**21 DAYS**
20.	Concurrently fine grade and install curb and gutters. Apply permanent stabilization to all areas fine graded within 48 hours of their completion Install stone sub-base to all areas to be paved as they are fine graded and proof rolled	**14 DAYS**
21.	After the site has been stabilized install SWM Facilities (i.e. Bioretention and sand filter areas, CPv areas, grass swales 1 & 2)	**14 DAYS**
22.	Stabilize all disturbed areas.	

LEGEND

- EXISTING TREE LINE
- PROPOSED TREE LINE
- EXISTING GRADE (140)
- PROPOSED GRADE (142)
- EXISTING DRAINAGE DIVIDE
- PROPOSED DRAINAGE DIVIDE
- PROPOSED EARTH DIKE (A-2)
- LIMIT OF DISTURBANCE (LOD)
- SILT FENCE (SF)
- SUPER SILT FENCE (SSF)
- RIPRAP INFLOW PROTECTION

BY THE DEVELOPER:

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

DEVELOPER — DATE 3/14/03

BY THE ENGINEER:

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

ENGINEER — DATE 4/14/03

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS.

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 4/22/03

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

HOWARD SCD — DATE 4/22/03

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/28/03

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/8/03

DIRECTOR — DATE 5/8/03

		DATE	REVISIONS
Drafting	JAB	10-30-03	Revised San. Sewer Line
Check	CGW	11/23/04	Δ Revise offsite grading & LOD
Design	CGW		
Check	THM		

KCI TECHNOLOGIES — *ENGINEERS PLANNERS SCIENTISTS CONSTRUCTION MANAGERS*

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CONTRACT PURCHASER & DEVELOPER:
CREANEY & SMITH GROUP LLC
925 FELL STREET
BALTIMORE, MD 21231
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GRADING AND SEDIMENT CONTROL PLAN - SHEET 1

STATE OF MARYLAND No. 25058 MARIANNE KIERNAN PROFESSIONAL ENGINEER APR 14 2003

KANE COMPANIES, INC. HEADQUARTERS

PROPOSED OFFICE WAREHOUSE
TAX MAP 37 , PARCEL 174
L. 6753 F. 684, ZONE M-1
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
WATER CODE: D04 SEWER CODE: 215 3000

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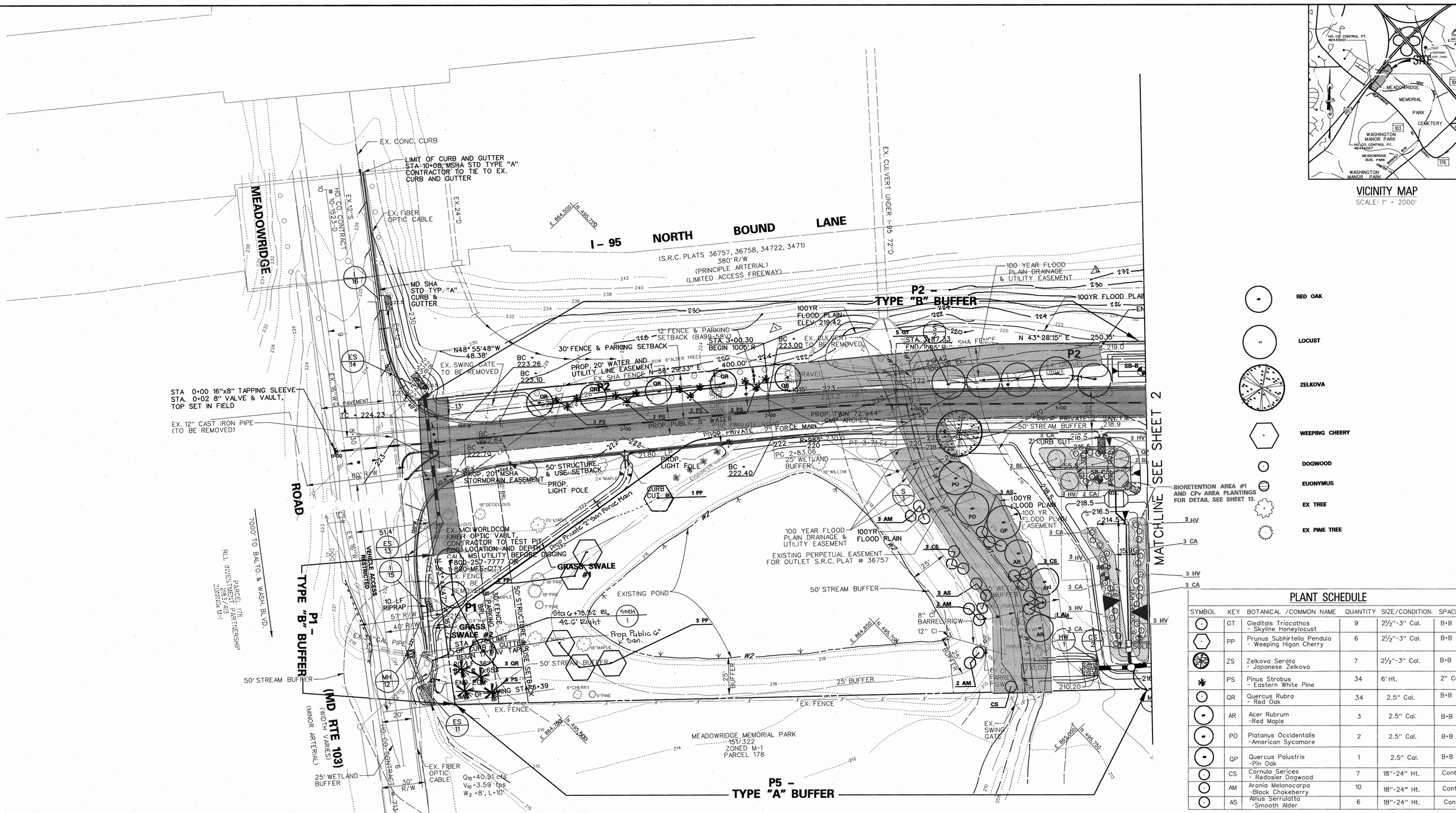
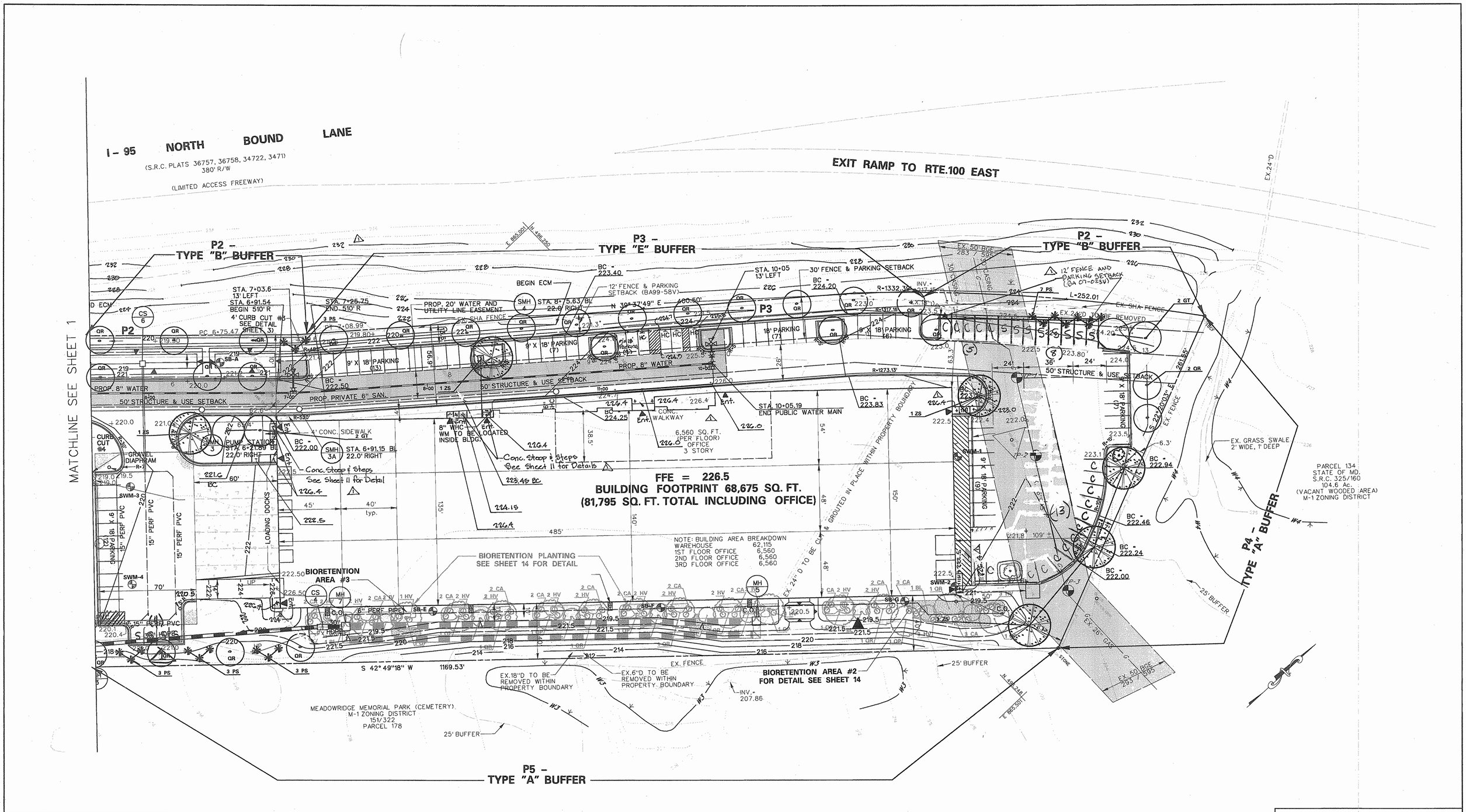
(IN FEET)
1 inch = 30ft.

DATE: APRIL 9, 2003
SDP-02-53 SHEET 15 OF 22

1602008\DRAWINGS\SCPLN1.DGN


MEADOWRIDGE
EX. CONC. CURB
LIMIT OF CURB AND GUTTER STA. 10+08, MSHA STD TYPE "A" CONTRACTOR TO TIE TO EX. CURB AND GUTTER
EX. FIBER OPTIC CABLE
EX. 24"D
EX. 12"S
HO. CO. CONTRACT # 10-1523-D
EX. 16"W
EX. 8"S
EX. 6"W
EX. 8"W
EX. PAVEMENT
MD SHA STD. TYP. "A" CURB & GUTTER
I - 95 NORTH BOUND LANE
(S.R.C. PLATS 36757, 36758, 34722, 3471)
380' R/W
(PRINCIPLE ARTERIAL)
(LIMITED ACCESS FREEWAY)
E 864,500
N 495,250
EX CULVERT UNDER I-95 72"D
100 YEAR FLOOD PLAIN DRAINAGE & UTILITY EASEMENT
100YR FLOOD PLAIN ELEV. 219.42
P2 - TYPE "B" BUFFER
12' FENCE & PARKING SETBACK (BA90-68V)
30' FENCE & PARKING SETBACK
STA. 3+00.30 BEGIN 1005' R
BC - EX. CULVERT 223.00 TO BE REMOVED
STA. 3+87.33 END 1005' R
N 43° 28' 15" E 250.15'
N48° 55' 48"W 48.38'
EX. SWING GATE TO BE REMOVED
BC - 223.26
BC - 223.10
PROP. 20' WATER AND UTILITY LINE EASEMENT
EX. SHA FENCE N 38° 29' 33" E 400.00'
EX. GRAVEL DRIVE
SB-B
STA 0+00 16"x8" TAPPING SLEEVE
STA. 0+02 8" VALVE & VAULT, TOP SET IN FIELD
EX. 12" CAST IRON PIPE (TO BE REMOVED)
TC - 224.23
PROP. PUBLIC 8" WATER
PROP. PRIVATE 8" SAN. FM.
PROP. PRIVATE 21" FORCE MAIN
PROP. TWIN 72"x44" SMF ARCHES
50' STREAM BUFFER
2' CURB CUT
BC - 222.64
BC - 222.79
21.80' LP
PROP. LIGHT POLE
50' STRUCTURE & USE SETBACK
PROP. 20' MSHA STORMDRAIN EASEMENT
PROP. LIGHT POLE
CURB CUT #2
1 PP
BC - 222.40
PC 2+83.06
25' WETLAND BUFFER
R=985' 220
PT 3+71.24
80' R/W
ROAD
7000' TO BALTO. & WASH. BLVD.
EX. MCI WORLDCOM FIBER OPTIC VAULT, CONTRACTOR TO TEST PIT FOR LOCATION AND DEPTH
CALL MISS UTILITY BEFORE DIGGING 1-800-257-7777 OR 1-800-MFS-CITY
EX. FENCE TO BE REMOVED
GRASS SWALE #1
GRASS SWALE #2
EXISTING POND
Sta 6+73.52 BL 42.6' Right
SMH 1
Prop. Public 6" San.
50' STRUCTURE & USE SETBACK
50' STREAM BUFFER
25' BUFFER
EX. FENCE
EX. SWING GATE
MEADOWRIDGE MEMORIAL PARK 151/322 ZONED M-1 PARCEL 178
100 YEAR FLOOD PLAIN DRAINAGE & UTILITY EASEMENT
EXISTING PERPETUAL EASEMENT FOR OUTLET S.R.C. PLAT # 36757
100YR FLOOD PLAIN
100 YR FLOOD PLAIN EASEMENT
50' STREAM BUFFER
25' WETLAND BUFFER
8" CI
BARREL RIGW
12" CI
BARREL RIGW
210.00
210.20
MATCHLINE SEE SHEET 2
BIORETENTION AREA #1 AND CPv AREA PLANTINGS FOR DETAIL SEE SHEET 13.
P1 - TYPE "B" BUFFER
P5 - TYPE "A" BUFFER
(MD RTE 103) (WIDTH VARIES) (MINOR ARTERIAL)
PARCEL 178 MEADOWRIDGE PARTNERSHIP 151/322 ZONING M-1
R.L.L. INVESTMENTS LTD.
MH 12
ES 11
ES 13
ES 14
MH 15
MH 16
MH 17
MH 18
MH 19
MH 20
MH 21
MH 22
MH 23
MH 24
MH 25
MH 26
MH 27
MH 28
MH 29
MH 30
MH 31
MH 32
MH 33
MH



PLAN
SCALE: 1" = 30'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/4/03

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/8/03

DIRECTOR — DATE 5/8/03

		DATE	REVISIONS
Drafting	JAB	11/23/04	△ Revise offsite grading
Check	CGW	11/23/04	△ Revise stoop & steps per revised architecturals
Design	CGW		
Check	THM	10-9-07	Updated Parking & Added Island

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CONTRACT PURCHASER & DEVELOPER:
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925 FELL STREET
BALTIMORE, MD 21231
(410) 534-6350

LANDSCAPE PLAN - SHEET 2

STATE OF MARYLAND
PROFESSIONAL ENGINEER
APR 14 2003

KANE COMPANIES, INC.
HEADQUARTERS
PROPOSED OFFICE WAREHOUSE
TAX MAP 37, PARCEL 174
L. 6753 F. 684, ZONE M-1
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
WATER CODE: D04 SEWER CODE: 215 3000
GRAPHIC SCALE
30 0 15 30 60
(IN FEET)
1 inch = 30ft.
DATE: APRIL 9, 2003
SHEET 21 OF 22

1602008\DRAWINGS\land2.dgn

SDP-02-53

I – 95 NORTH BOUND LANE

(S.R.C. PLATS 36757, 36758, 34722, 3471)
380' R/W
(LIMITED ACCESS FREEWAY)

EXIT RAMP TO RTE.100 EAST

MATCHLINE SEE SHEET 15

MATCHLINE SEE SHEET 13

PROP. 8" WATER

PROP. PRIVATE 6" SAN.

50' STRUCTURE & USE SETBACK

60' STRUCTURE & USE SETBACK

PROP. 20' WATER AND UTILITY LINE EASEMENT

12' FENCE & PARKING SETBACK (BA99-58V)

30' FENCE & PARKING SETBACK

12' FENCE AND PARKING SETBACK (BA 07-023V)

EX. SHA FENCE

EX.24"D TO BE REMOVED

EX. FENCE

EX. GRASS SWALE
2' WIDE, 1' DEEP

PARCEL 134
STATE OF MD.
S.R.C. 325/160
104.6 Ac.
(VACANT WOODED AREA)
M-1 ZONING DISTRICT

STA. 7+03.6
13' LEFT
STA. 6+91.54
BEGIN 510' R
4' CURB CUT #5
SEE DETAIL
SHEET 3)

STA. 7+25.75
END 510' R

PT 7+08.99

BEGIN ECM

STA. 8+75.63 BL
22.0' RIGHT

N 39° 37'49" E 400.50'

STA. 10+05
13' LEFT

STA. 10+05.19
END PUBLIC WATER MAIN

PLAIN

END ECM

CS 6

SMH 4

SMH 5

SMH 7

SMH 3

SMH 3A

PUMP STATION
STA. 6+71.89 BL
22.0' RIGHT

STA. 6+91.15 BL
22.0' RIGHT

BC - 223.40

BC - 224.20

BC - 222.50

BC - 223.83

BC - 223.26

BC - 222.94

BC - 222.46

BC - 222.24

BC - 222.00

BC - 224.25

BC - 222.00

9' X 18' PARKING (7)

9' X 18' PARKING (6)

9' X 18' PARKING (13)

9' X 18' PARKING (9)

HC HC

4' CONC. SIDEWALK

CONC. WALKWAY

Conc. Stoop & Steps
See Sheet 11 For Detail

6,560 SQ. FT.
(PER FLOOR)
OFFICE
3 STORY

FFE = 226.5
BUILDING FOOTPRINT 68,675 SQ. FT.
(81,795 SQ. FT. TOTAL INCLUDING OFFICE)

NOTE: BUILDING AREA BREAKDOWN
WAREHOUSE 62,115
1ST FLOOR OFFICE 6,560
2ND FLOOR OFFICE 6,560
3RD FLOOR OFFICE 6,560

TEMPORARY STOCKPILE AREA

8" WHC
WM TO BE LOCATED
INSIDE BLDG.

GRAVEL DIAPHRAM

SWM-1

SWM-2

SWM-3

SWM-4

15" PERF PVC

15" SOLID PVC

6" SOLID PVC

6" PERF PIPE

30" C.O.

C.O.

LOADING DOCKS

BIORETENTION AREA #3

BIORETENTION AREA #2
FOR DETAIL SEE SHEET 14

RIPRAP OUTLET
SEDIMENT TRAP #2 (ST-III)
RSP

RIPRAP OUTLET
SEDIMENT TRAP #2 (ST-III)

NOTE: LOD ON PROPERTY LINE WITH SSF

S 42° 49'18" W 1169.53'

MEADOWRIDGE MEMORIAL PARK (CEMETERY)
M-1 ZONING DISTRICT
151/322
PARCEL 178

EX.18"D TO BE REMOVED WITHIN PROPERTY BOUNDARY

EX.6"D TO BE REMOVED WITHIN PROPERTY BOUNDARY

INV.= 207.86

NOTE: SEVER AND BLOCK THE 24" PIPE AT THE PROPERTY LINE BEFORE REMOVAL OF PIPE.

EX.24"D TO BE CLAY & GROUTED IN PLACE WITHIN PROPERTY BOUNDARY

EX. 24"D

EX. 50' BGE 283' - 330' CASING

EX. 50' BGE 295'

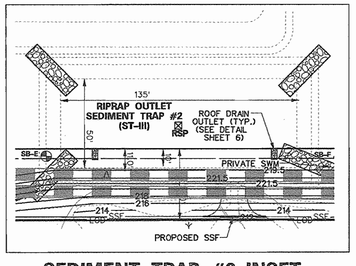
EX. GAS

25' BUFFER

PROPERTY BOUNDARY

PLAN
SCALE: 1" = 30'

EXISTING D.A. = 6.10 Ac.
PROPOSED D.A. = 3.53 AC
STORAGE REQUIRED = 32,940 CF
STORAGE PROVIDED = 33,176 CF
STORAGE DEPTH = 4'
BOTTOM ELEVATION = 208.0
OUTFALL LENGTH = 10'
CLEANOUT ELEV. = 209.0
WEIR LENGTH = 14'
WEIR CREST ELEVATION = 212.0'
WEIR DEPTH = 1.5'
EMBANKMENT ELEVATION = 216.0'



SEDIMENT TRAP #2 INSET
SCALE: 1" = 40'

LEGEND

- EXISTING TREE LINE
- PROPOSED TREE LINE
- EXISTING GRADE — 140 —
- PROPOSED GRADE — 142 —
- EXISTING DRAINAGE DIVIDE
- PROPOSED DRAINAGE DIVIDE
- PROPOSED EARTH DIKE — A-2 —
- LIMIT OF DISTURBANCE — LOD —
- SILT FENCE — SF —
- SUPER SILT FENCE — SSF —
- RIPRAP INFLOW PROTECTION

BY THE DEVELOPER:

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

DEVELOPER — DATE

BY THE ENGINEER:

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

Mark Kuhn 4/14/03
ENGINEER — DATE

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE — 4/22/03 DATE

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

HOWARD SCD — 4/22/03 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/16/03

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/8/03

DIRECTOR — DATE 5/6/03

Drafting	JAB	DATE	REVISIONS
Check	CGW	11/23/04	⚠ Revise off-site grading & LOD
Design	CGW	11/23/04	⚠ Revise stoop & steps per revised architecturals
Check	THM	12-9-04	Updated Parking & Added Island

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BALTIMORE, MD 21231
(410) 534-6350

GRADING AND SEDIMENT CONTROL PLAN – SHEET 2

STATE OF MARYLAND
NO. 25058
MARIANNE KIERNAN
PROFESSIONAL ENGINEER
APR 14 2003

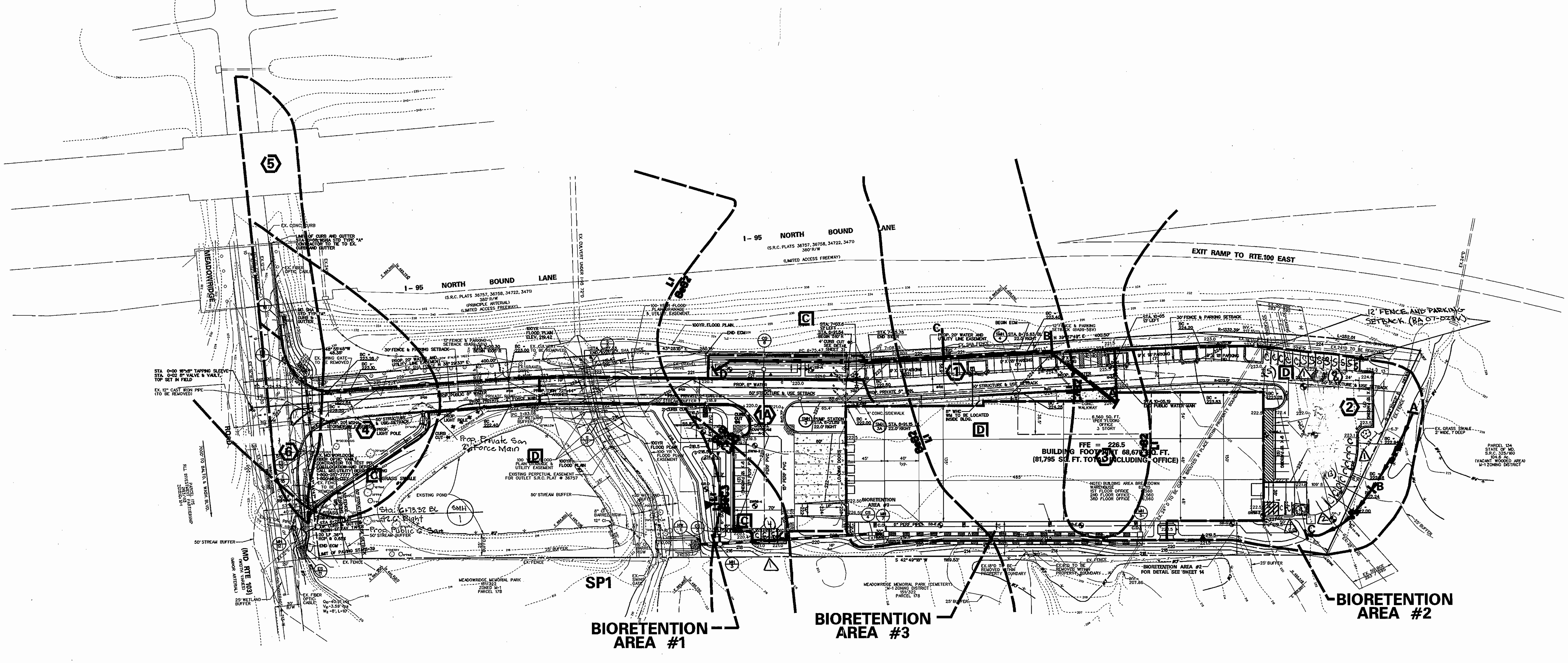
KANE COMPANIES, INC. HEADQUARTERS

PROPOSED OFFICE WAREHOUSE
TAX MAP 37, PARCEL 174
L. 6753 F. 684, ZONE: M-1
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
WATER CODE: D04 SEWER CODE: 215 3000

GRAPHIC SCALE
30 0 15 30 60
(IN FEET)
1 inch = 30ft.

DATE: APRIL 9, 2003
SHEET 16 OF 22

SDP-02-53
1602008\DRAWINGS\SCPLN2.DGN



SOILS CHART

SOIL	HYDROLOGIC SOIL GROUP	DESCRIPTION
BeB2	C	BELTSVILLE SILT LOAM, 1 TO 5 PERCENT SLOPES, MODERATELY ERODED
BeC3	C	BELTSVILLE SILT LOAM, 5 TO 10 PERCENT SLOPES, SEVERELY ERODED
L1	D	LEONARDTOWN SILT LOAM
CnB2	C	CHILLUM-FAIRFAX LOAMS, 1 TO 5 PERCENT SLOPES, MODERATLEY ERODED

CHART

No.	DRAINAGE AREA (Ac)	% IMPERVIOUS	RCN	Tc
1	0.50	100%	98	.10
1A	0.65	100%	98	.10
2	0.80	44%	88	.25
3	1.56	100%	98	.10
4	0.35	51%	86	.10
5	0.467	79%	90	.10
6	0.147	100%	98	.10

DRAINAGE AREA SUMMARY TABLE

No.	AREA (Ac)	WQv (CF)	Rev (CF)	Cpv (CF)	Qp (cfs)	Qf (cfs)	BMP
1	0.50	1724	261	6470	NA	NA	SAND FILTER F5
1A	0.65	2242	169		NA	NA	BIORETENTION F6
2	0.80	1295	78	----	NA	NA	BIORETENTION F6
3	1.56	5380	384	8777	NA	NA	BIORETENTION F6
4	0.35	647	----	----	NA	NA	* GRASS SWALE
5	0.467	1290	----	----	NA	NA	* GRASS SWALE
6	0.147	507	----	----	NA	NA	* GRASS SWALE

* GRASS SWALE CREDIT FOR WQv & Rev
1" STORM VELOCITY FOR SWALE #1 IS 0.42 FPS
1" STORM VELOCITY FOR SWALE #2 IS 0.82 FPS
SEE COMPUTATIONS PAGE 74

LEGEND

- 90 — EX. INDEX CONTOUR
- EX. 2' INTERMEDIATE CONTOUR
- EX. CURB AND GUTTER
- G — EX. GAS LINE
- 18"D — EX. STORM DRAIN
- X — EX. FENCE
- W — EX. EDGE OF WATER
- OH — EX. OVERHEAD UTILITY LINE
- EX. WATER VALVE
- EX. INLET
- EX. MANHOLE
- EX. TREE
- BeB2 / BeC3 — EX. SOILS DELINEATION
- C — HYDROLOGIC SOILS GROUP
- EX. SOIL BORINGS
- TC PATH
- A-B — TC PATH FLOW TYPE
- 2 — DRAINAGE AREA
- DRAINAGE AREA BOUNDARY
- 100-YR FLOOD PLAIN
- SP — STUDY POINT

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/25/08
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/8/08
DIRECTOR — DATE 5/8/08

		DATE	REVISIONS
Drafting	JAB	10-30-03	Revised San. Sewer line.
Check	CGW	10-9-07	Updated Parking
Design	CGW	10-9-07	Added Island
Check	THM		

KCI TECHNOLOGIES — ENGINEERS, PLANNERS, SCIENTISTS, CONSTRUCTION MANAGERS
14502 Greenview Drive, Suite 424
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www.kci.com

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CONTRACT PURCHASER & DEVELOPER:
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925 FELL STREET
BALTIMORE, MD 21231
(410) 534-6350

STORMWATER MANAGEMENT DRAINAGE PLAN

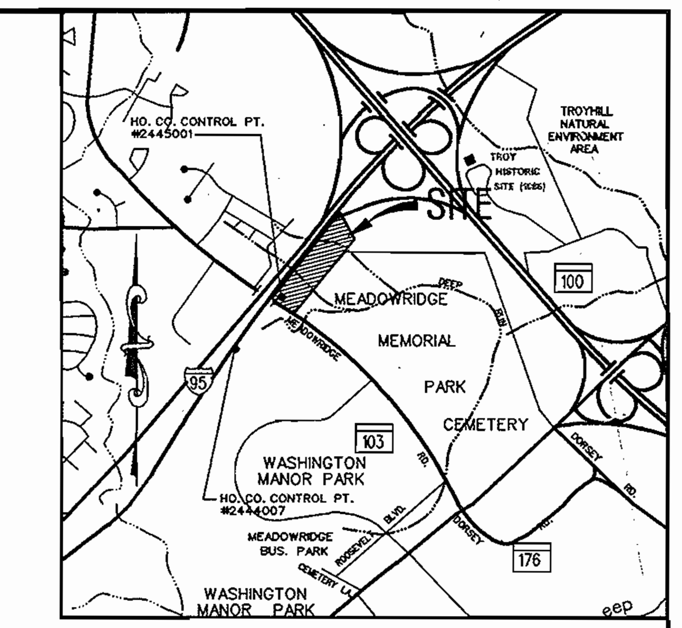
STATE OF MARYLAND No. 25058 MARIANNE KIERNAN PROFESSIONAL ENGINEER
APR 1 4 2003

KANE COMPANIES, INC.
HEADQUARTERS
PROPOSED OFFICE WAREHOUSE
TAX MAP 37, PARCEL 174
L. 6753 F. 684, ZONE M-1
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
WATER CODE: D04 SEWER CODE: 215 3000

GRAPHIC SCALE
60 0 30 60 120
(IN FEET)
1 inch = 60ft.

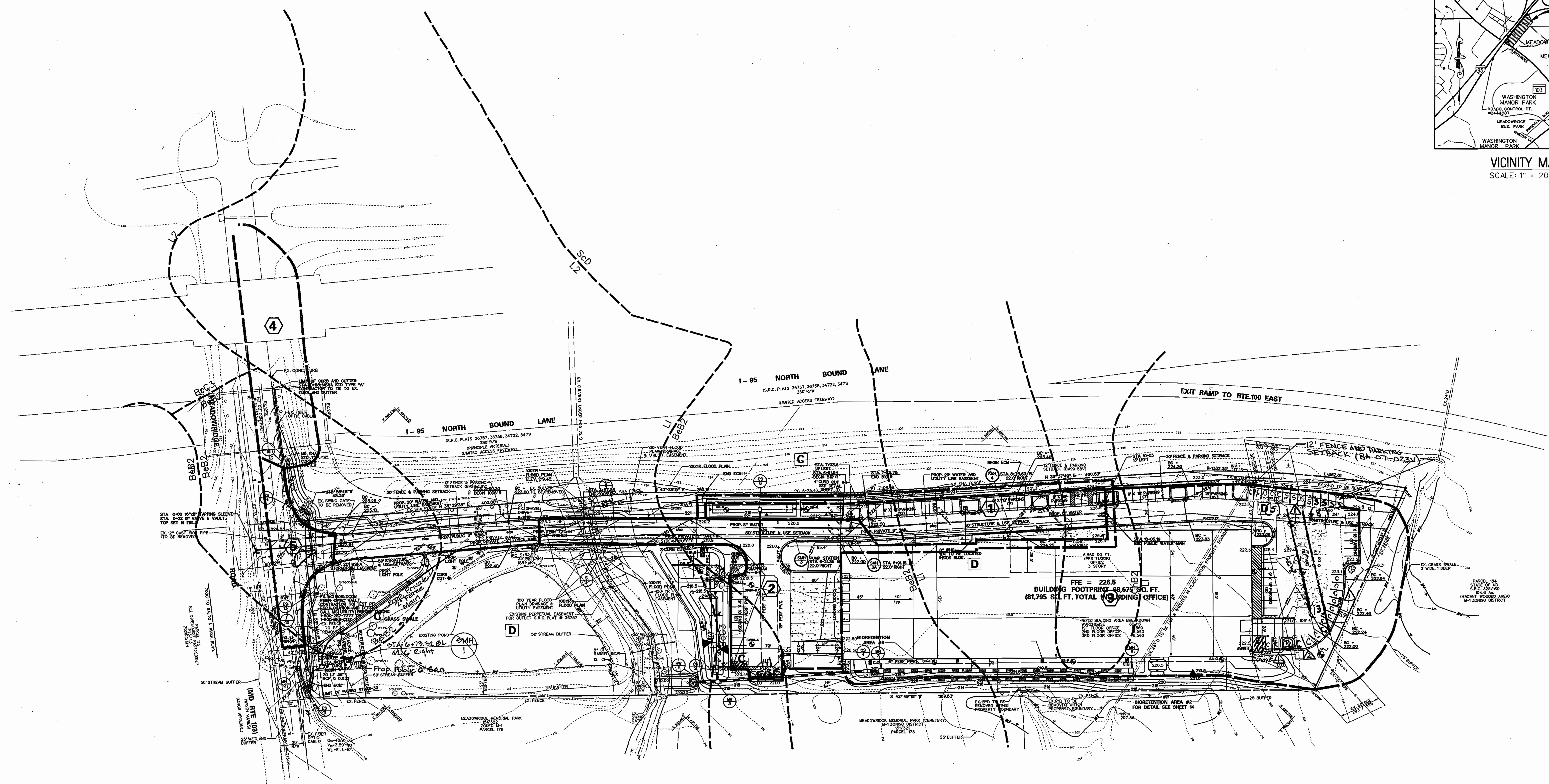
DATE: APRIL 9, 2003
SDP-02-53
SHEET 10 OF 22

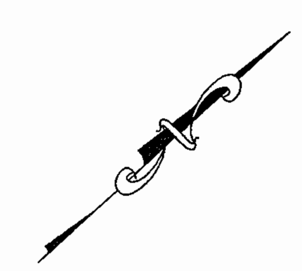
1602008\DRAWINGS\SWM_MAP.dgn



VICINITY MAP

SCALE: 1" = 2000'





No.	DRAINAGE AREA (Ac)	% IMPERVIOUS	C FACTOR
1	0.50	100%	0.90
2	1.15	100%	0.90
3	2.36	81%	0.78
4	.467	79%	SEE SWM DA MAP
5	.147	100%	

PLAN

SCALE: 1" = 60'

LEGEND

SYMBOL	DESCRIPTION
90	EX. INDEX CONTOUR
	EX. 2' INTERMEDIATE CONTOUR
	EX. CURB AND GUTTER
G	EX. GAS LINE
18"D	EX. STORM DRAIN
X	EX. FENCE
W	EX. EDGE OF WATER
OH	EX. OVERHEAD UTILITY LINE
	EX. WATER VALVE
	EX. INLET
	EX. MANHOLE
	EX. TREE
BeB2 / BeC3	EX. SOILS DELINEATION
C	HYDROLOGIC SOILS GROUP
	EX. SOIL BORINGS
	TC PATH
A-B	TC PATH FLOW TYPE
2	DRAINAGE AREA
	DRAINAGE AREA BOUNDARY
	100-YR FLOOD PLAIN
	WETLANDS

SOILS CHART

SOIL	HYDROLOGIC SOIL GROUP	DESCRIPTION
BeB2	C	BELTSVILLE SILT LOAM, 1 TO 5 PERCENT SLOPES, MODERATELY ERODED
BeC3	C	BELTSVILLE SILT LOAM, 5 TO 10 PERCENT SLOPES, SEVERELY ERODED
L1	D	LEONARDTOWN SILT LOAM
CnB2	C	CHILLUM-FAIRFAX LOAMS, 1 TO 5 PERCENT SLOPES, MODERATLEY ERODED

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

[signature] 4/29/03
CHIEF, DEVELOPMENT ENGINEERING DIVISION CG — DATE

Cindy Hamot 5/8/03
CHIEF, DIVISION OF LAND DEVELOPMENT HB — DATE

[signature] 5/6/03
DIRECTOR — DATE

		DATE	REVISIONS
Drafting	JAB	10-30-03	Revised San. Sewer Line
Check	CGW	10-9-07	1 Updated Parking
Design	CGW	10-9-07	2 Added Island
Check	THM		

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BALTIMORE, MD 21231
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PROPOSED STORMDRAIN DRAINAGE AREA MAP

STATE OF MARYLAND No. 25058 MARIANNE KIERNAN PROFESSIONAL ENGINEER
APR 1 4 2003

KANE COMPANIES, INC. HEADQUARTERS

PROPOSED OFFICE WAREHOUSE
TAX MAP 37 , PARCEL 174
L. 6753 F. 684, ZONE M-1
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WATER CODE: D04 SEWER CODE: 215 3000

GRAPHIC SCALE
60 0 30 60 120
(IN FEET)
1 inch = 60ft.

DATE: APRIL 9, 2003
SDP-02-53
SHEET 4 OF 22

1602008\DRAWINGS\SDMAP.dgn

I - 95 NORTH BOUND LANE

(S.R.C. PLATS 36757, 36758, 34722, 3471)
380' R/W

(LIMITED ACCESS FREEWAY)

EXIT RAMP TO RTE.100 EAST

VEHICULAR INGRESS/EGRESS RESTRICTED

MATCH LINE - SHEET 1

100 YEAR FLOOD PLAIN DRAINAGE & UTILITY EASEMENT

100YR FLOOD PLAIN

END ECM

STA. 7+03.6 13' LEFT
STA. 6+91.54 BEGIN 510' R
4' CURB CUT #5 SEE DETAIL SHEET 3)

PC 6+75.47

STA. 7+25.75 END 510' R

PT 7+08.99

BEGIN ECM

BC - 223.40

STA. 8+75.63 BL 22.0' RIGHT

STA. 10+05 13' LEFT

30' FENCE & PARKING SETBACK

BC - 224.20

12' FENCE & PARKING SETBACK (BA90-65V)

PROP. 20' WATER AND UTILITY LINE EASEMENT

EX. SHA FENCE

N 43°28'15" E 250.15'

N 39° 37'49" E 400.50'

R=1332.39' INV.= 217.15

L=252.01

EX. 24"D TO BE REMOVED

EX. 12"D

EX. 50" BOE

EX. 8" SAN.

EX. 8" W

EX. GRAVEL DRIVE

SB-B

SB-A

9' X 18' PARKING (13)

9' X 18' PARKING (7)

9' X 18' PARKING (6)

9'x18' Parking (5)

HC

PROP. 8" WATER

PROP. PRIVATE 2" SAN. FM.

PROP. PRIVATE 6" SAN.

50' STREAM BUFFER

50' STRUCTURE & USE SETBACK

Kane Way

2" CURB CUT

CURB CUT #4

GRAVEL DIAPHRAM

SB-C

SB-D

100YR FLOOD PLAIN

100 YR FLOOD PLAIN EASEMENT

25' WETLAND BUFFER

40' STREAM BUFFER

SWM-3

SWM-4

SWM-2

SWM-1

15" PERF PVC

6" SOLID PVC

8" CL BARREL RCP

HW 1

CS 2

CS 3

CS 4

CS 5

CS 6

MH 3

MH 4

MH 5

MH 7

SMH 3 PUMP STATION STA. 6+21.89 BL 22.0' RIGHT

SMH 3A STA. 6+91.15 BL 22.0' RIGHT

SMH 4 STA. 8+75.63 BL 22.0 RIGHT

4' CONC. SIDEWALK

BC - 222.00

Conc. Stoop & Steps See Sheet 11 for Detail

LOADING DOCKS

BIORETENTION AREA #3

6" PERF PIPE

SB-E

SB-F

SB-G

C.O.

EX. HOUSE

8" WHC - EXIST. WM TO BE LOCATED INSIDE BLDG.

Ent.

CONC. WALKWAY

6,560 SQ. FT. (PER FLOOR) OFFICE 3 STORY

STA. 10+05.19 END PUBLIC WATER MAIN

BC - 223.83

BC - 224.25

BC - 223.26

BC - 222.94

BC - 222.46

BC - 222.24

BC - 222.00

FFE = 226.5
BUILDING FOOTPRINT 68,675 SQ. FT.
(81,795 SQ. FT. TOTAL INCLUDING OFFICE)

NOTE: BUILDING AREA BREAKDOWN
WAREHOUSE 62,115
1ST FLOOR OFFICE 6,560
2ND FLOOR OFFICE 6,560
3RD FLOOR OFFICE 6,560

GROUTED IN PLACE WITHIN PROPERTY BOUNDARY

EX. 24" D TO BE CUT & GROUTED IN PLACE

EX. 18"D TO BE REMOVED WITHIN PROPERTY BOUNDARY

EX. 6"D TO BE REMOVED WITHIN PROPERTY BOUNDARY

EX. FENCE

S 42° 49'18" W 1169.53'

S 22° 20'03" E 261.52'

EX. FENCE

EX. GRASS SWALE 2' WIDE, 1' DEEP

EX. GAS

EX. SWING GATE

MEADOWRIDGE MEMORIAL PARK (CEMETERY)
M-1 ZONING DISTRICT
151/322
PARCEL 178

25' BUFFER

BIORETENTION AREA #2
FOR DETAIL SEE SHEET 14

ADDED TREE TO ISLAND

Wheel Stops

STREAM #2

TRUCK RADIUS DETAIL 1
SCALE: 1" = 60'

TRUCK RADIUS DETAIL 2
SCALE: 1" = 60'

HANDICAPPED PARKING DETAIL
SCALE: 1" = 20'

HANDICAPPED SIGN DETAIL
NOT TO SCALE

SIGN TYPE M
18"x12"
18"x6"

APPROVED: FOR PUBLIC (OR PRIVATE) WATER AND PUBLIC (OR PRIVATE) SEWAGE SYSTEMS

COUNTY HEALTH OFFICER, HOWARD COUNTY HEALTH DEPARTMENT — DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/30/03

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 4/8/03

DIRECTOR — DATE 5/6/03

Drafting	JAB	DATE	REVISIONS
Check	CGW	11/23/04	⚠ Revise offsite grading
Design	CGW	11/23/04	⚠ Revise stoop & steps per revised architectorals.
Check	THM	10-9-07	⚠ Updated Parking ⚠ Added Island

KCI TECHNOLOGIES — ENGINEERS, PLANNERS, SCIENTISTS, CONSTRUCTION MANAGERS

14502 Greenview Drive, Suite 424
Laurel, Maryland 20708
(301) 953-1821 (410) 792-8086
fax: (410) 792-7419
www.kci.com

OWNER:
C & S MEADOWRIDGE, LLC
925 FELL STREET
BALTIMORE, MD 21231
(410) 534-6350

CONTRACT PURCHASER & DEVELOPER:
CREANEY & SMITH GROUP LLC
925 FELL STREET
BALTIMORE, MD 21231
(410) 534-6350

SITE DEVELOPMENT PLAN - SHEET 2

STATE OF MARYLAND
No. 25056
MARIANNE KIERNAN
PROFESSIONAL ENGINEER
APR 14 2003

KANE COMPANIES, INC.
HEADQUARTERS

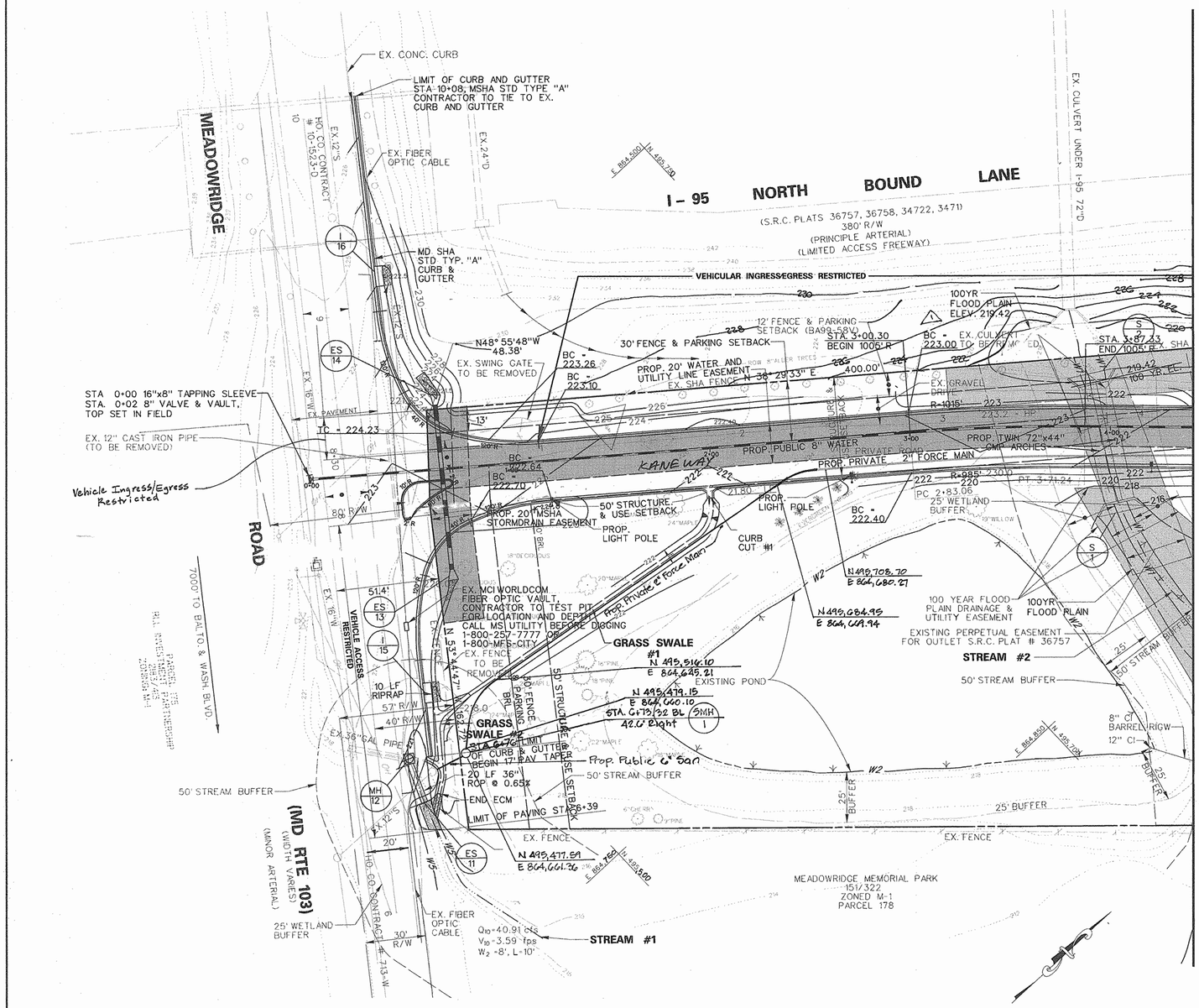
PROPOSED OFFICE WAREHOUSE
TAX MAP 37 PARCEL 174
L. 6753 F. 684, ZONE M-1
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
WATER CODE: D04 SEWER CODE: 215 3000

GRAPHIC SCALE
30 0 15 30 60
(IN FEET)
1 inch = 30ft.

DATE: APRIL 9, 2003
SHEET 2 OF 22

SDP-02-53

1602008\DRAWINGS\SHEET2.dgn



GENERAL NOTES

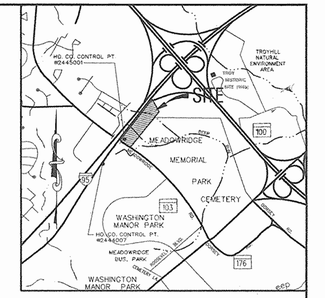
1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV,I.E. STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
2. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN FROM BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
3. THE CONTRACTOR SHALL TEST PIT EXISTING UTILITIES AT LEAST FIVE (5) DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS TO VERIFY THEIR LOCATION AND ELEVATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY IF LOCATION OF UTILITIES IS OTHER THAN SHOWN.
4. CONTRACTOR TO NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS.

MISS UTILITY	1-800-257-7777
VERIZON TELEPHONE COMPANY	752-9976
HOWARD COUNTY BUREAU OF UTILITIES	992-2366
AT&T CABLE LOCATION DIVISION	393-3553
BALTIMORE GAS & ELECTRIC COMPANY	685-0123
STATE HIGHWAY ADMINISTRATION	531-5533
HOWARD COUNTY CONSTRUCTION/ INSPECTION/ SURVEY DIVISION (24 HOURS NOTICE PRIOR TO COMMENCEMENT OF WORK)	792-7272 313-1880

5. TOPO TAKEN FROM FIELD SURVEY DATED APRIL 1989 BY KCI.
6. THE DEVELOPER IS RESPONSIBLE FOR THE ACQUISITION OF ALL EASEMENTS, RIGHTS AND/OR RIGHTS-OF-WAY THAT MAY BE REQUIRED FOR THE SEDIMENT AND EROSION CONTROL PRACTICES, STORM WATER MANAGEMENT PRACTICES AND THE DISCHARGE OF STORM WATER ONTO OR ACROSS ADJACENT OR DOWNSTREAM PROPERTIES INCLUDED IN THIS PLAN. HE IS ALSO RESPONSIBLE FOR THE ACQUISITION OF ALL EASEMENTS, RIGHTS AND/OR RIGHTS-OF-WAY THAT MAY BE REQUIRED FOR GRADING AND/OR WORK ON ADJACENT PROPERTIES INCLUDED IN THIS PLAN.
7. ALL COORDINATES ARE BASED ON HOWARD COUNTY GEODETIC CONTROL TRAVERSE WHICH IS BASED ON THE MARYLAND STATE PLANE COORDINATE SYSTEM. REFERENCE HOWARD COUNTY CONTROL POINTS 2445001 (ELEV. 245.095) & 2444007 (ELEV. 252.125).
8. INSTALLATION OF TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
9. ALL ON-SITE ROADS PARKING AND DRAINAGE STRUCTURES (INCLUDING STORM DRAINS, WATER QUALITY BASINS, TWIN CULVERTS) SHALL BE PRIVATELY OWNED & MAINTAINED.
10. GRAVITY SEWER SERVICE TO THE PROPOSED BUILDING CANNOT BE PHYSICALLY PROVIDED. A PRIVATELY OWNED AND MAINTAINED PUMP STATION SHALL BE PROVIDED AS PER THESE PLANS AND SPECIFICATIONS. THE PUMPS AND ASSOCIATED APPURTENANCES SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY PLUMBING CODE.
11. REFER TO "MARYLAND'S GUIDELINES FOR WATERWAY CONSTRUCTION" BY THE WATER RESOURCES ADMINISTRATION (WRA) DATED SEPTEMBER 1999 REVISED NOVEMBER 2000 FOR STANDARD DETAILS AND DETAILED SPECIFICATIONS OF EACH PRACTICE, SPECIFIED HEREIN FOR WATERWAY CONSTRUCTION.
12. ALL WATER MAINS TO BE D.I.P. CLASS 52 UNLESS OTHERWISE NOTED.
13. TOPS OF ALL WATER MAINS TO HAVE A MINIMUM OF 3' COVER.
14. ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
15. THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
16. INSTREAM CONSTRUCTION WILL NOT BE PERMITTED FROM MARCH 1ST THROUGH ~~MAY~~ JUNE 15TH JUST INCLUSIVE.
17. THE WATER PRESSURE ZONE FOR THIS CONTRACT IS 550.
18. ALL D.I.P. FITTINGS SHALL BE IN ACCORDANCE WITH A.W.W.A. SPECIFICATIONS C-153, DUCTILE IRON COMPACT FITTINGS 3"-12" FOR WATER AND OTHER LIQUIDS.
19. GRAVITY SEWER LINE WILL BE 6" PVC.
20. 2" SANITARY FORCE MAIN WILL BE PVC.
21. NO GRADING OR REMOVAL OF VEGETATIVE COVER IS PERMITTED WITHIN 25 FT OF A WETLAND UNLESS APPROVED BY THIS PLAN. THIS SITE IS SUBJECT TO MDE/ACOE PERMIT NO. 2002-64709.
22. THIS PLAN IS SUBJECT TO THE FIFTH EDITION OF THE SUBDIVISION REGULATIONS AND THE NEW ZONING REGULATIONS AS AMENDED BY COUNCIL BILL 50-2001.
23. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
24. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DPW DEVELOPERS AGREEMENT IN THE AMOUNT OF $13,200.00 FOR 31 SHADE TREES OR SUBSTITUTIONS.
25. THIS SITE IS SUBJECT TO SHA ACCESS PERMIT NO. B-HO-8208-02, ISSUED DECEMBER 31, 2002.
26. STORMWATER MANAGEMENT WILL BE PROVIDED THROUGH 2 UNDERGROUND DETENTION AREAS, 3 BIORETENTION AREAS (F-6), 1 SAND FILTER (F-5), AND 2 GRASS SWALES. THESE FACILITIES ARE PRIVATE SWM FACILITIES AND WILL BE MAINTAINED BY THE OWNER.
27. THE APPROVED APFO STUDY WAS PREPARED BY KCI TECHNOLOGIES, INC. AND APPROVED. SEPT. 5, 2002. THE MITIGATION REQUIREMENTS ARE AS FOLLOWS: NONE
28. WATER LINE WILL BE PUBLIC AND THE SANITARY SEWER WILL BE PRIVATE. THE EXISTING 16" WATER IS CONTRACT NO. 713-W AND THE EXISTING 8" SANITARY SEWER IS CONTRACT NO. 14-15-12-10. THE PROPOSED METER WILL BE LOCATED INSIDE AN EASEMENT ONSITE AND WILL BE PUBLIC.
29. BA-99-58V APPROVED MAY 11, 2000. VARIANCE TO PERMIT A PARKING SETBACK OF 12' FROM AN EXTERNAL PUBLIC STREET RIGHT-OF-WAY IN LIEU OF THE REQUIRED 30' MINIMUM SETBACK. REAPPLIED BA-02-50C APPROVED **December 18,** 2002.
30. "BIORETENTION AREAS DO NOT REQUIRE LANDSCAPE BUFFERING BECAUSE PLANTINGS WILL BE PLACED IN THOSE FACILITIES (SEE SHEET #13 - 14 FOR PLANT LIST AND DETAILS)."
31. DESIGN MANUAL WAIVER DATED MARCH 19, 2002 GRANTED FOR THE USE OF PRESSURE SEWER BY HOWARD COUNTY BUREAU OF ENGINEERING.
32. THIS SITE IS IN THE DEEP RUN TRIBUTARY WHICH FLOWS INTO THE PATAPSCO RIVER WATERSHED #02-13-09 AND IS CLASSIFIED AS A USE I. THE STREAM CLOSURE DATES ARE MARCH 1 THROUGH JUNE 15.
33. THIS PROJECT IS CONDITIONALLY EXEMPT FROM THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION WITH THE FILING OF A DECLARATION OF INTENT FOR LESS THAN 40,000 SQUARE FEET OF CLEARING.
34. WP-02-107 WAIVER TO PERMIT STOCKPILE AND ROUGH GRADING ON SITE PRIOR TO APPROVAL OF THE SDP WAS APPROVED ON JUNE 05, 2002 AND EXPIRES 1 YEAR AFTER ISSUANCE.

LEGEND

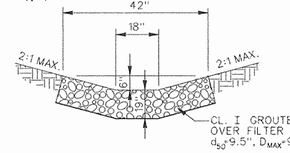
PROP. TREE LINE
EX. TREE LINE
FIRE HYDRANT
POLE
POLE WITH LIGHT
EVERGREEN TREE
OAK
EX. FENCE
PROP. FENCE
EX. CONTOURS
PROP. CONTOURS
BUILDING RESTRICTION LINE
INDICATES SURFACE FLOW
RAILROAD LINE
SPOT ELEVATION
STREET LIGHT
WETLANDS
PROP. 15' POLE WITH LIGHT
SB-A SOIL BORING - A
STREAM



VICINITY MAP
SCALE 1" = 2000'

SITE ANALYSIS

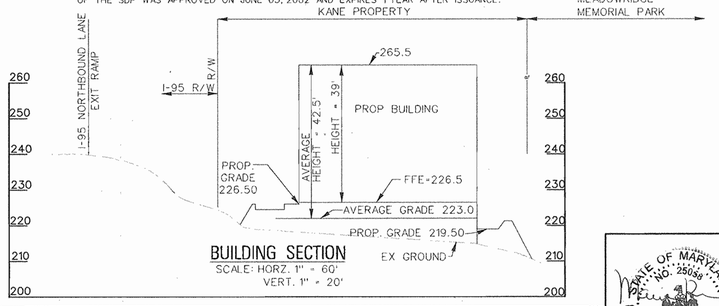
1. GROSS AREA OF SITE:	6.8264 AC	
2. NET AREA OF SITE	6.6041 AC	
3. PRESENT ZONING - PER SEPT. 19, 1993	ZONING M-1	
4. PROPOSED USE	OFFICE/WAREHOUSE	
5. FLOOR AREA		
OFFICE (3 STY.)	19,680 SF	
WAREHOUSE	62,115 SF	
6. NUMBER OF EMPLOYEES (MAX):		
OFFICE	62 PERSONS	
WAREHOUSE	17 PERSONS	
*7. PARKING SPACES REQUIRED		
OFFICE SPACE- - 62 SPACES		
WAREHOUSE SPACE- - 17 SPACES		
TOTAL 93 PS + 4 HC		97
*PARKING REQUIREMENT MODIFICATION WAS APPROVED BY THE DEPARTMENT OF PLANNING & ZONING TO BE BASED ON 1 SPACE PER EMPLOYEE.		
18 COMPACT 75 STANDARD		
8. PARKING SPACES PROPOSED		93 PS
9. GREEN SPACE AREA		3.0983 AC
10. GREEN SPACE AS % OF NET AREA		46.9
11. BUILDING COVERAGE		1.57 AC
12. BUILDING COVERAGE AS % OF GROSS AREA		23.0%
13. HANDICAP PARKING SPACES PROVIDED		4
14. TOTAL DISTURBED AREA	5.550 Ac. OR 241,769 s.f.	
15. DPZ FILES	SDP90-81, BA99-58V WP-02-107, BA02-50C	
16. NUMBER OF COMPACT SPACES PERMITTED		24
17 NUMBER OF COMPACT SPACES PROPOSED		18



RIPRAP CHANNEL LINING FROM CURB TO ES-11
NOT TO SCALE

SHEET INDEX

SHEET NO.	TITLE
1	SITE DEVELOPMENT PLAN - SHEET 1
2	SITE DEVELOPMENT PLAN - SHEET 2
3	SITE DETAILS
4	PROP. STORMDRAIN DRAINAGE AREA MAP
5	STORMDRAIN PROFILES
6	STORMDRAIN PROFILES
7	STORMDRAIN DETAILS
8	WATER AND SANITARY PROFILES
9	SWM RISER DETAILS (CS-2, CS-4, CS-6)
10	SWM DRAINAGE PLAN
11	UNDERGROUND STORAGE SWM PLAN
12	SWM DETAILS
13	BIORETENTION AREA 1 PLAN
14	BIORETENTION AREAS 2 & 3 PLAN
15	GRADING & SEDIMENT CONTROL PLAN 1
16	GRADING & SEDIMENT CONTROL PLAN 2
17	GRADING & SEDIMENT CONTROL DETAILS
18	GRADING & SEDIMENT CONTROL DETAILS
19	SEDIMENT CONTROL NOTES
20	LANDSCAPE PLAN - SHEET 1
21	LANDSCAPE PLAN - SHEET 2
22	LANDSCAPE DETAILS



BUILDING SECTION
SCALE: HORZ. 1" = 60'
VERT. 1" = 20'

PERMIT INFORMATION CHART					
Subdivision Name: NA		Section/Area: NA		Lot/Parcel No.: 174	
Plat # or L/F: NA	Grid #	Zoning: M-1	Tax Map No.: 37	Elect Distr: 1	Census Tract: 6012
Water Code: D04		Sewer Code: 2153000			

ADDRESS CHART	
LOT/PARCEL #	STREET ADDRESS
174	6500 Kane Way

APPROVED: FOR PUBLIC (OR PRIVATE) WATER AND PUBLIC (OR PRIVATE) SEWAGE SYSTEMS

COUNTY HEALTH OFFICER HOWARD COUNTY HEALTH DEPARTMENT — DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/28/03

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/5/03

DIRECTOR — DATE 5/6/03

Drafting	JAB	DATE	REVISIONS
Check	CGW	10-30-03	Revised san. sewer line
Design	CGW	11-25-02	⚠ Revise offsite grading
Check	THM	10-9-07	⚠ Updated Site Analysis Data

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SITE DEVELOPMENT PLAN - SHEET 1

STATE OF MARYLAND — No. 25058 — MARIANNE KIERNAN — PROFESSIONAL ENGINEER — APR 14 2003

KANE COMPANIES, INC. HEADQUARTERS

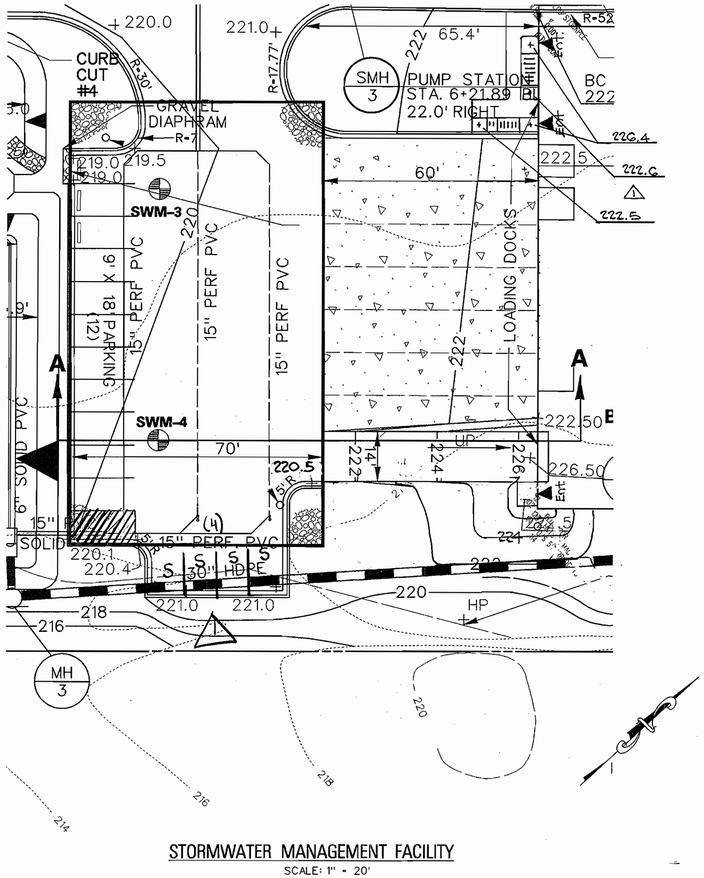
PROPOSED OFFICE WAREHOUSE
TAX MAP 37, PARCEL 174
L. 6753 F. 684, ZONE M-1
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
WATER CODE: D04 SEWER CODE: 215 3000

GRAPHIC SCALE
30 0 15 30 60
(IN FEET)
1 inch = 30ft.

DATE: APRIL 9, 2003
SHEET 1 OF 22

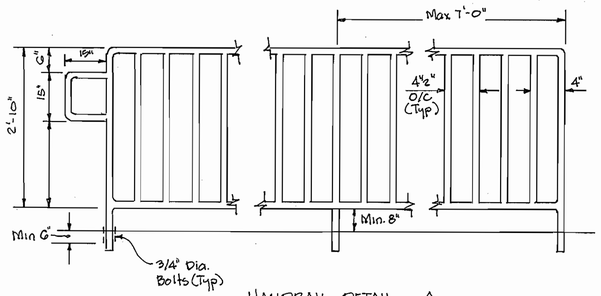
SDP-02-53

1602008\DRAWINGS\SHEET1.dgn



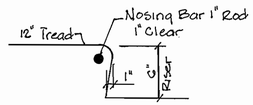
STORMWATER MANAGEMENT FACILITY

SCALE: 1" = 20'



HANDRAIL DETAIL ⚠1

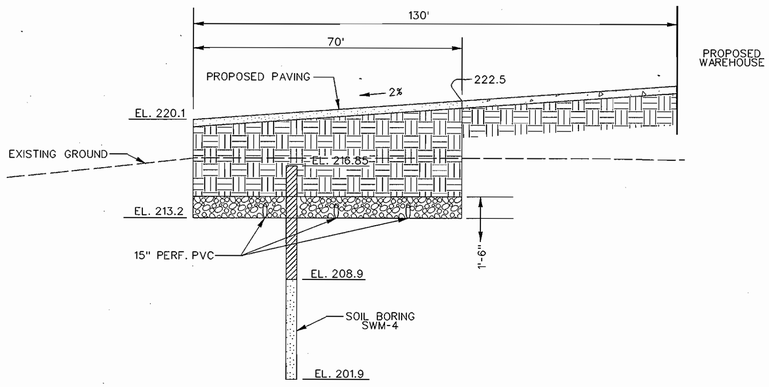
Not to Scale



TYPICAL STAIR DETAIL

Scale: 1½"=1'-0"

⚠1



SECTION A-A

SCALE: HOR.: 1" = 20'
VERT.: 1" = 5'

S.W.M. DESIGN SUMMARY - FACILITY NO. 1					
DESIGN STORM	FACILITY INFLOW (cfs)	FACILITY OUTFLOW (cfs)	STAGE	STORAGE VOLUME AC. FT.	FACILITY VOLUME 2.5 x S - AC. FT.
1 Year	3.6	0.1	215.88	0.25	0.1

NOTE: ADDITIONAL STORAGE FOR CPv IS HELD ABOVE GROUND @ ELEV. 215.88.

STRUCTURE TYPE: UNDERGROUND STONE STORAGE
SURFACE AREA: 0.20 AC.
STRUCTURE CLASSIFICATION: N/A
STORAGE-HEIGHT PRODUCT: N/A
WATERSHED AREA TO FACILITY (ACRES): 1.15
LEVEL OF MANAGEMENT REQUIRED AND PROVIDED BY FACILITY: 1 YEAR (QUANTITY)
WATERSHED: PATAPSCO
STREAM CLASS: I
FREEBOARD: N/A
THIS FACILITY IS PRIVATE. MAINTENANCE IS TO BE PROVIDED BY PROPERTY OWNER.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED SURFACE STORMWATER FILTRATION SYSTEMS (F-1, F-4, AND F-5)

1. The stormwater wetland facility shall be inspected annually and after major storms. Inspections shall be performed during wet weather to determine if the facility is functioning properly.
2. The top and side slopes of the embankment shall be mowed a minimum of once per year, when vegetation reaches 18" in height or as needed.
3. Filters that have a grass cover shall be mowed a minimum of three (3) times per growing season to maintain a maximum grass height of less than 12 inches.
4. Debris and litter shall be removed during regular mowing operations and as needed.
5. Visible signs of erosion in the facility shall be repaired as soon as it is noticed.
6. Remove silt when it exceeds four (4) inches deep in the forebay.
7. When water ponds on the surface of the filter bed for more than 72 hours, the top few inches of discolored material shall be replaced with fresh material. Proper cleaning and disposal of the removed materials and liquid must be followed by the owner.
8. A log book shall be maintained to determine the rate at which the facility drains.
9. The maintenance log book shall be available to Howard County for inspection to insure compliance with operation and maintenance criteria.
10. Once the performance characteristics of the infiltration syster have been verified, the monitoring schedule can be reduced to an annual basis unless the performance data indicates that a more frequent schedule is required.

OPERATION AND MAINTENANCE SCHEDULE FOR BIO-RETENTION AREAS (F-6)

1. 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.
2. Schedule of plant inspection will be twice a year in spring and fall. This inspection will include removal of dead and diseased vegetation considered beyond treatment, treatment of all diseased trees and shrubs and replacement of all deficient snakes and wires.
3. Mulch shall be inspected each spring. Remove previous mulch layer before applying new layer once every 2 to 3 years.
4. Soil erosion to be addressed on an as needed basis, with a minimum of once per month and after heavy storm events.

OPERATION AND MAINTENANCE SCHEDULE FOR UNDERGROUND FACILITIES

1. The underground stormwater management facility is privately owned and it shall be the responsibility of the owner to periodically inspect and clean the facility to maintain it's operation and function.
2. The underground stormwater management facility shall be inspected yearly at a minimum and after especially severe storm events.
3. When sediment accumulation of more than 2" is observed or any debris that might obstruct the outfall is observed, the facility shall be cleaned.
4. The facility shall be cleaned immediately after petroleum spills. The owner shall contact the appropriate regulatory agencies notifying them of the spill and cleanup operation.
5. The sediment and debris shall be removed from the underground stormwater management facility by vacuum truck or other manual means. The owner shall follow proper cleaning and disposal of the removed material and liquid.
6. The inlet and outlet pipes shall be checked for any obstructions at least once every six (6) months. If obstructions are found, the owner shall have them removed and properly disposed of.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/14/03

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/8/03

DIRECTOR — DATE 5/9/03

	DATE	REVISIONS
Drafting JAB	4/29/03	⚠ Revise stoop & steps; add handrail & Step Detail
Check CGW	10-9-02	⚠ Updated Parking
Design CGW		
Check THM		

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UNDERGROUND STORAGE STORMWATER MANAGEMENT PLAN

STATE OF MARYLAND — No. 25058 — MARIANNE KIERNAN — PROFESSIONAL ENGINEER

APR 14 2003

KANE COMPANIES, INC. HEADQUARTERS

PROPOSED OFFICE WAREHOUSE
TAX MAP 37 , PARCEL 174
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WATER CODE: D04 SEWER CODE: 215 3000

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DATE: APRIL 9, 2003
SHEET 11 OF 22

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