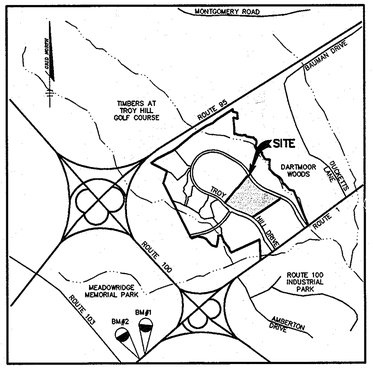
SHEET INDEX	
No.	DESCRIPTION
1	TITLE SHEET
2	SITE DEVELOPMENT PLAN
3	SITE DEVELOPMENT PLAN
4	GRADING, SEDIMENT CONTROL AND DRAINAGE AREA MAP
5	GRADING, SEDIMENT CONTROL AND DRAINAGE AREA MAP
6	SEDIMENT CONTROL NOTES AND DETAILS
7	PROFILES
8	PROFILES
9	DETAILS AND STRUCTURE SCHEDULE
10	BAYSAVER NOTES AND DETAILS
11	LANDSCAPE PLAN
12	LANDSCAPE PLAN
13	STORM WATER MANAGEMENT PLAN ⚠1 ⚠4
14	RETAINING WALL PLAN ⚠4

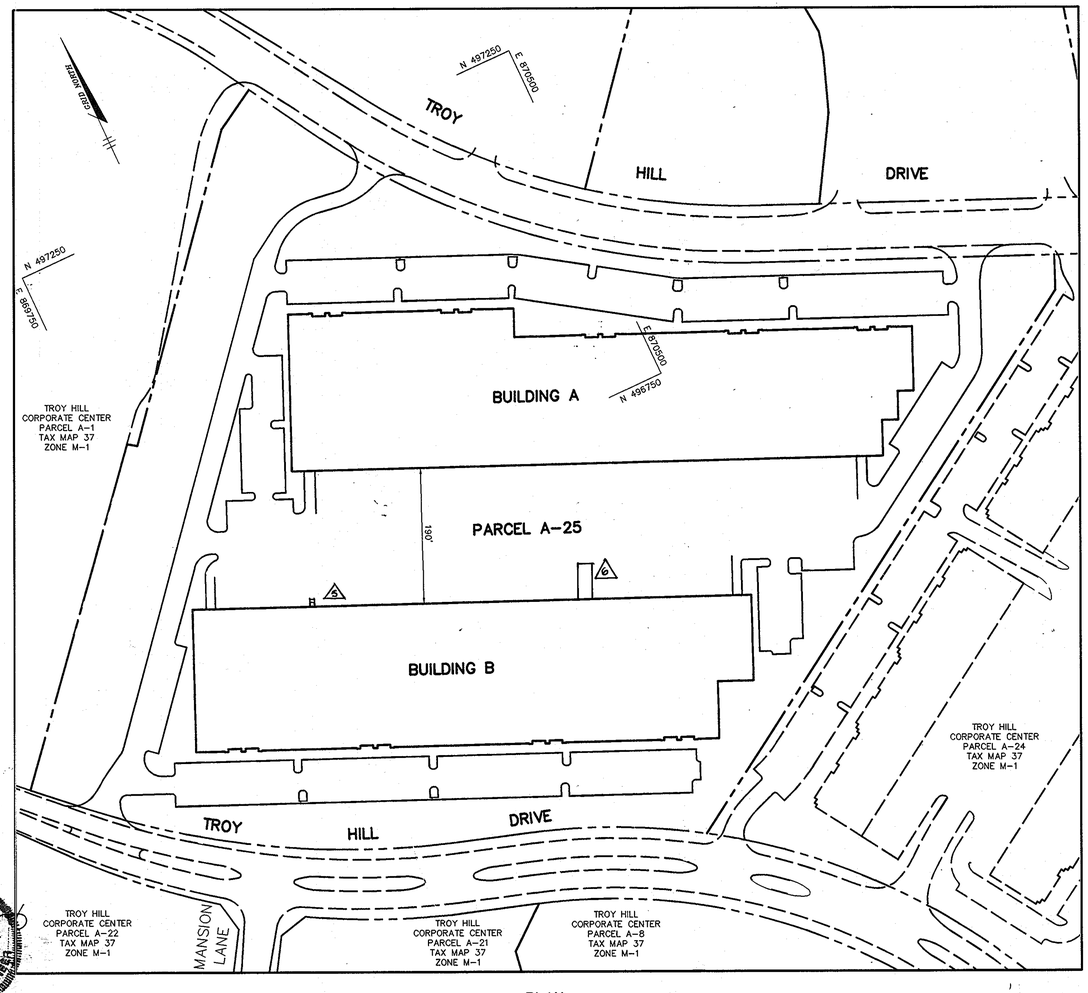
SITE DEVELOPMENT PLAN
TROY HILL CIRCLE
TROY HILL CORPORATE CENTER
PARCEL A-25
1st ELECTION DISTRICT
HOWARD COUNTY, MARYLAND



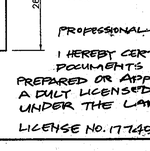
VICINITY MAP
SCALE: 1" = 2000'

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
2. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/ CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
3. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
4. TRAFFIC CONTROL DEVICES, MARKINGS, AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
5. ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
6. THE EXISTING TOPOGRAPHY IS TAKEN FROM FIELD RUN SURVEY WITH MAXIMUM TWO FOOT CONTOUR INTERVALS PREPARED BY LEO W. RADER, APRIL, 2000.
7. THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS. 2445004 AND 2445005 WERE USED FOR THIS PROJECT.
8. WATER IS PUBLIC. CONTRACT NO. 44-3941-D
9. SEWER IS PUBLIC. SEWER DRAINAGE AREA: SHALLOW RUN CONTRACT NO.14-3070-D
10. THE STORMWATER MANAGEMENT FACILITIES PROPOSED FOR THIS SITE ARE FOUR PRIVATE WATER QUALITY BAYSAVERS. QUANTITY MANAGEMENT EXISTS AND IS PROVIDED BY DETENTION BASINS UNDER SDP-98-149 AND F-96-136.
11. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. 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. EXISTING UTILITIES ARE SHOWN BASED ON THE BEST AVAILABLE INFORMATION.
12. A 100- YEAR FLOODPLAIN STUDY IS NOT REQUIRED FOR THIS PROJECT.
13. THERE ARE NO WETLANDS ONSITE AS OF DECEMBER , 2000. PREVIOUS WETLANDS INDICATED ON PLATS 11812 AND 13841 WERE REMOVED PER PERMIT No. 199866879/90-WC-0647/91-WQ-0326.
14. THE OWNER OF ANY LOT OR PARCEL AT TROY HILL CORPORATE CENTER SHALL SUBMIT A TRAFFIC ENGINEER'S ESTIMATE OF PEAK HOUR VEHICULAR SITE TRIP GENERATION WITH EACH RESUBDIVISION PLAT OR SITE DEVELOPMENT PLAN IT FILES WITH THE COUNTY FOR APPROVAL. THE SUBMISSION OF ANY RESUBDIVISION PLAT OR SITE DEVELOPMENT PLAN THAT RESULTS IN A TOTAL AGGREGATE PEAK HOUR PROJECTED TRIP VOLUME FROM TROY HILL OF AT LEAST 1746 VEHICLES PER PEAK HOUR ON A TYPICAL WEEKDAY SHALL REQUIRE THAT THE OWNER OF SUCH PLAN MUST APPLY FOR THE CONSTRUCTION OF THE U.S. ROUTE 1, PHASE III, TRAFFIC IMPROVEMENTS AND MUST COMPLETE CONSTRUCTION OF SUCH IMPROVEMENTS WITHIN THREE YEARS AFTER PLAN APPROVAL IN ACCORDANCE WITH THE ADEQUATE PUBLIC FACILITIES AGREEMENT F-91-24.
15. A NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT.
16. A GEOTECHNICAL STUDY FOR STORMWATER MANAGEMENT IS NOT REQUIRED FOR THIS PROJECT.
17. THE BOUNDARY FOR THIS PROJECT IS BASED ON PLAT F-01-77 PREPARED BY LEO W. RADER, DATED AUGUST, 2000.
18. SUBJECT PROPERTY ZONED M-1 PER 10-18-93 COMPREHENSIVE ZONING PLAN.
19. ALL ELEVATIONS SHOWN ARE BASED ON THE U.S.C. AND G.S. MEAN SEA LEVEL DATUM, 1929.
20. SEE DEPARTMENT OF PLANNING AND ZONING FILE NO'S. S-90-05, P-90-23, F-91-24, F-96-136, F-01-77, F-98-169, SDP-98-149, ZB-1009M
21. THE CONTRACTOR SHALL TEST PIT EXISTING UTILITIES AT LEAST (5) DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS.
22. CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.
23. PIPE SHALL NOT BE INSTALLED BY THE CONTRACTOR UNTIL THE LENGTH CALLED FOR AT EACH STATION HAS BEEN APPROVED BY THE ENGINEER IN THE FIELD.
24. NO PIPE SHALL BE LAID UNTIL LINES OF EXCAVATION HAVE BEEN BROUGHT WITHIN 6" OF FINISHED GRADE.
25. ALL INLETS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOWARD COUNTY STANDARDS.
26. ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
27. STORM DRAIN TRENCHES WITHIN ROAD RIGHT OF WAY SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, i.e., STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION, LATEST AMENDMENTS.
28. PROFILE STATIONS SHALL BE ADJUSTED AS NECESSARY TO CONFORM TO PLAN DIMENSIONS.
29. ALL FILL AREAS WITHIN ROADWAY AND UNDER STRUCTURES TO BE COMPACTED TO A MINIMUM OF 95% COMPACTION OF AASHTO T180.
30. ZB-1009M, ZONING BOARD CASE TO REVISE ZONING FROM B-2 TO M-1 WAS APPROVED. DECISION AND ORDER DATED DECEMBER 22, 2000 HAS BEEN SIGNED.
31. THIS PARCEL IS EXEMPT FROM THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION BECAUSE THE SITE RECEIVED PRELIMINARY APPROVAL AUGUST 9, 1991 (P-90-23), SEE SECTION 16.1202(b)(1)(V).
32. STORM WATER MANAGEMENT FOR ADDITIONAL PARKING IS PROVIDED BY A MICRO-BIORETENTION FACILITY AS PART OF REVISION 7. ⚠2



PLAN
SCALE: 1"=100'



BUILDINGS A AND B ELEVATION
NO SCALE

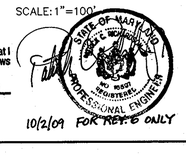
PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THE PORTION OF THESE DOCUMENTS PERTAINING TO REVISION 7 WAS PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

LICENSE NO. 17720 EXPIRATION DATE 4/1/2012

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.

License No. 16597, Expiration Date: 8/15/11



10/2/09 FOR REV. 6 ONLY

BENCHMARKS

BM#1 ELEV. 172.646
HOWARD COUNTY SURVEY CONTROL # 2445005
N 444584.822 E 868641.619

BM#2 ELEV. 148.844
HOWARD COUNTY SURVEY CONTROL # 2445006
N 443080 E 868100

(COORDINATES ARE NAD27)

SITE ANALYSIS

AREA OF PARCEL	21.737 ACRES (946,760 SF)
DISTURBED AREA	20.8 ACRES
PRESENT ZONING	M-1
PROPOSED USE	2 OFFICE/WAREHOUSE FACILITIES (ONE STORY)
BUILDING COVERAGE	
BUILDING-A	166,223 SF (17.6% OF GROSS AREA)
BUILDING-B	152,138 SF (16.1% OF GROSS AREA)
TOTAL AREA	318,361 SF
# OF PARKING SPACES REQUIRED	
BUILDING COVERAGE @ 0.5 SP/1000:	
BUILDING A COVERAGE 166,223 SF x 0.5 SPACES/1000 SF	83 SPACES
BUILDING B COVERAGE 152,138 SF x 0.5 SPACES/1000 SF	+ 76 SPACES
# OF TOTAL PARKING SPACES REQUIRED:	159 SPACES
# OF PARKING SPACES PROVIDED	⚠4 ~~380~~ 384 SPACES (INCLUDING 14 HC) ⚠1

APPLICABLE REFERENCES: S-90-05, P-90-23, F-91-24, F-96-136, F-01-77, F-98-169 SDP-98-149, ZB-1009M

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR — DATE 2/22/01

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 2/21/01

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 2/22/01

DATE	NO.	REVISION
6-28-01	5	ADDED STAIRS TO BLDG. B
9-17-02	⚠1	REV. SITE ANALYSIS (PARKING SPACES PROVIDED)

OWNER / DEVELOPER
TROY HILL CORPORATE CENTER PROPERTY LLC
c/o MANEKIN LLC
7061 COLUMBIA GATEWAY DRIVE
COLUMBIA, MARYLAND 21046
410-290-1400

PROJECT **TROY HILL CIRCLE**
TROY HILL CORPORATE CENTER
PARCEL A-25

AREA TAX MAP 37 ZONE: M-1 PLAT No. 14619
1st. ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE **TITLE SHEET**

RIEMER MUEGGE
a division of:
Patton Harris Rust & Associates, pc
ENGINEERS ● SURVEYORS ● PLANNERS
LANDSCAPE ARCHITECTS ● ENVIRONMENTAL SPECIALISTS
8818 Centre Park Drive, Columbia, MD 21045 ● tel 410.997.8900 fax 410.997.9282

ADDRESS CHART

BUILDING	STREET ADDRESS
A	7030 TROY HILL DRIVE
B	7150 TROY HILL DRIVE

SUBDIVISION NAME:		SECT./AREA:		PARCEL:	
TROY HILL CORPORATE CENTER		–		A-25	
PLAT #:	BLOCK #:	ZONE:	TAX MAP NO.:	ELECT. DIST.:	CENSUS TRACT:
14619	18	M-1	37	1st	6011.02
WATER CODE:		SEWER CODE:			
A-03		2152200			

DATE	NO.	REVISION
9/18/12	7	ADDED 26 PARKING SPACES
10/2/09	6	ADDED DRIVE IN RAMP TO BUILDING B

DATE

ARTHUR E. MUEGGE #8707

DESIGNED BY : C.J.R.
DRAWN BY: MAD
PROJECT NO :00239/SDP1.DWG
DATE :
SCALE : AS SHOWN
DRAWING NO. 1 OF 14

SDP-01-82

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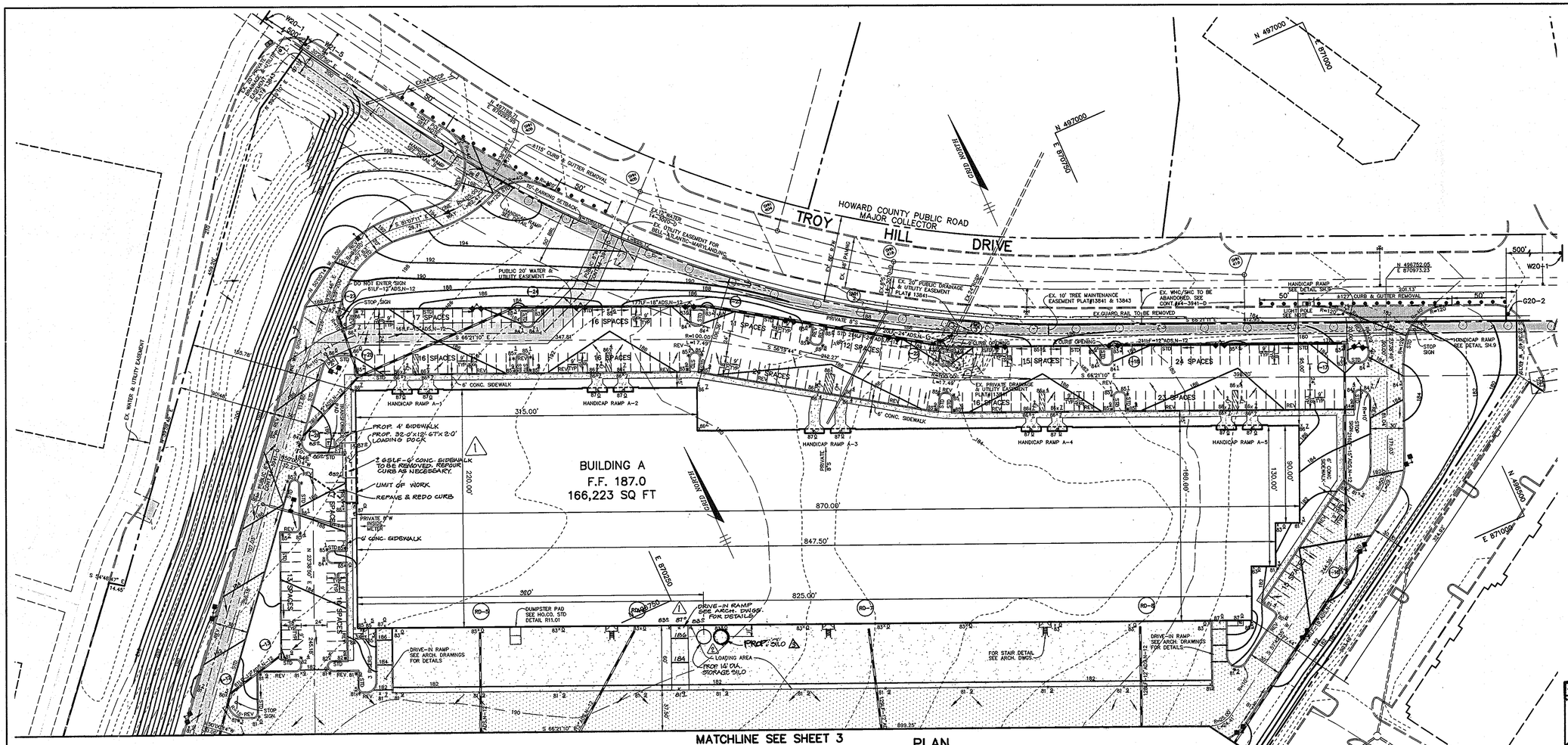
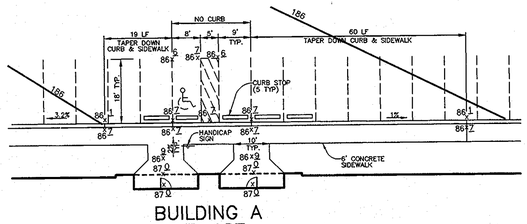
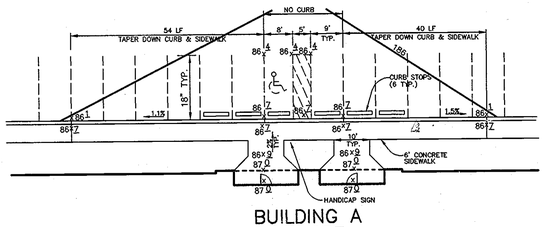


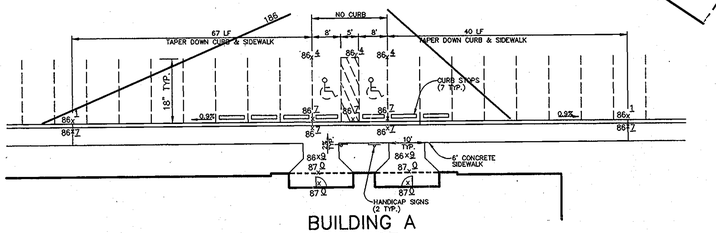
PLAN
SCALE: 1"=50'



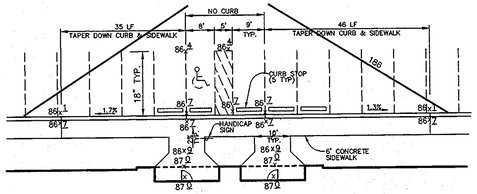
BUILDING A
F.F. 187
HANDICAP RAMP A-1
SCALE: 1" = 20'



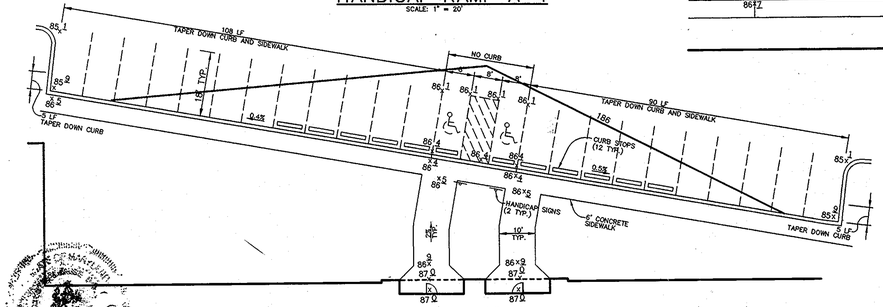
BUILDING A
F.F. 187
HANDICAP RAMP A-4
SCALE: 1" = 20'



BUILDING A
F.F. 187
HANDICAP RAMP A-5
SCALE: 1" = 20'



BUILDING A
F.F. 187
HANDICAP RAMP A-2
SCALE: 1" = 20'



BUILDING A
F.F. 187
HANDICAP RAMP A-3
SCALE: 1" = 20'

NOTES:

1. ALL RADII ARE 5' UNLESS OTHERWISE NOTED.
2. ALL DIMENSIONS ARE TO FACE OF CURB OR BUILDING UNLESS OTHERWISE NOTED.
3. ALL ON-SITE ROADS ARE PRIVATE.
4. ALL LIGHTING IS TO BE DIRECTED/REFLECTED AWAY FROM ADJACENT PUBLIC ROADS AND RESIDENTIALLY ZONED PROPERTIES, AND BE IN ACCORDANCE WITH SECTION 134 OF THE HOWARD COUNTY ZONING REGULATIONS.
5. * STD/REV STANDARD TO REVERSE CURB TRANSITION.
6. P-2 PAVING
7. P-3 PAVING
8. P-5 PAVING
9. CONCRETE
10. STREET LIGHTS TO BE 250 HPS FIXTURE MOUNTED ON 30' BRONZE FIBERGLASS POLE WITH 12' ARM RADIAL TO CURB FILLET DENOTED AS ☼

400W SINGLE HEAD METAL HALIDE SET ON 30' HIGH SQUARE STRAIGHT STEEL w/DARK BRONZE POLYESTER POWER COAT FINISH FULL CUTOFF FIXTURE.

400W DOUBLE HEAD METAL HALIDE SET ON 30' HIGH SQUARE STRAIGHT STEEL w/DARK BRONZE POLYESTER POWER COAT FINISH FULL CUTOFF FIXTURE.

400W DOUBLE HEAD METAL HALIDE SET ON 30' HIGH SQUARE STRAIGHT STEEL w/DARK BRONZE POLYESTER POWER COAT FINISH FULL CUTOFF FIXTURE.

TRAFFIC CONTROL SIGNAGE LEGEND

SIGN

TEMPORARY BARRIER

SHOULDER WORK
W21-5
30"x 30"

ROAD WORK AHEAD
W20-1
30"x 30"

END ROAD WORK
G20-2
60"x 24"

NO.	DATE	REVISION
1	1-3-05	ADDED STORAGE SILO AT BUILDING A
2	9-17-02	MODIFIED SIDEWALK & PARKING SPACES; REPAVED & REPOURED CURB; ADDED LOADING DOCK & DRIVE-IN RAMP.

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR — DATE 2/22/01

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 2/20/01

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 2/22/01

OWNER / DEVELOPER
TROY HILL CORPORATE CENTER PROPERTY LLC
c/o MANEKIN LLC
7061 COLUMBIA GATEWAY DRIVE
COLUMBIA, MARYLAND 21046
410-290-1400

PROJECT **TROY HILL CIRCLE**
TROY HILL CORPORATE CENTER
PARCEL A-25

AREA TAX MAP 37 ZONE: M-1 PLAT No. 14619
1st. ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
SITE DEVELOPMENT PLAN

RIEMER MUEGGE
a division of:
Patton Harris Rust & Associates, pc
ENGINEERS ● SURVEYORS ● PLANNERS
LANDSCAPE ARCHITECTS ● ENVIRONMENTAL SPECIALISTS
8816 Centre Park Drive, Columbia, MD 21045 ● tel 410.997.9900 fax 410.997.3282

FOR REVISIONS DATED 9-30-13 ONLY.

JAMES A. RUFF #21774

DATE

ARTHUR E. MUEGGE #8707

DESIGNED BY : C.J.R.
DRAWN BY: MAD
PROJECT NO : 00239/SDP2.DWG
DATE :
SCALE : AS SHOWN
DRAWING NO. 2 OF 14

SDP-01-82

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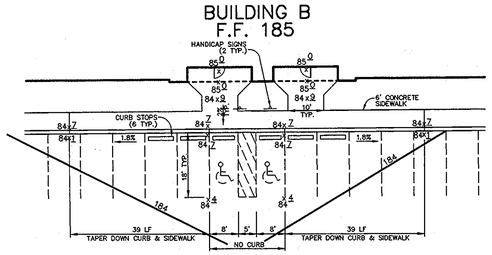
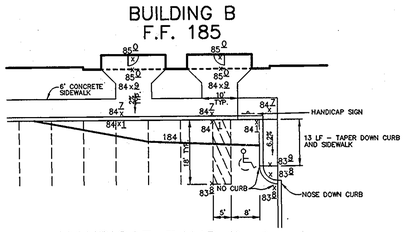
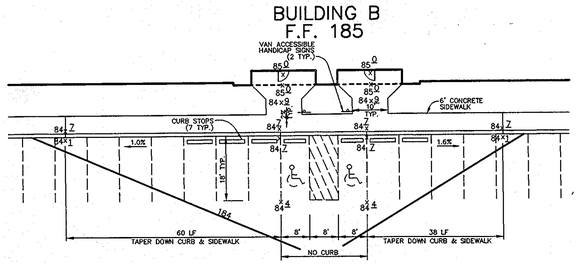


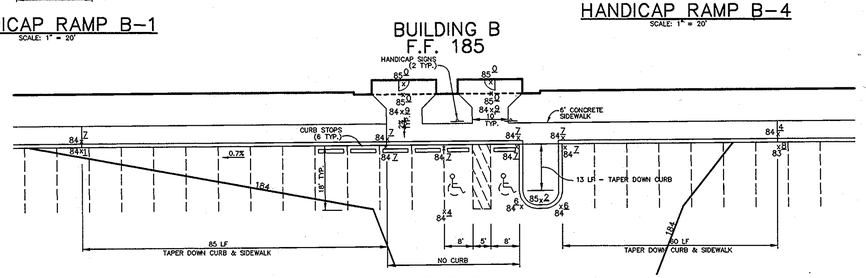
HANDICAP RAMP B-1
SCALE: 1" = 20'



HANDICAP RAMP B-4
SCALE: 1" = 20'



HANDICAP RAMP B-2
SCALE: 1" = 20'



HANDICAP RAMP B-3
SCALE: 1" = 20'

NOTES:

1. ALL RADII ARE 5' UNLESS OTHERWISE NOTED.
2. ALL DIMENSIONS ARE TO FACE OF CURB OR BUILDING UNLESS OTHERWISE NOTED.
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400W SINGLE HEAD METAL HALIDE SET ON 30' HIGH SQUARE STRAIGHT STEEL w/DARK BRONZE POLYESTER POWER COAT FINISH FULL CUTOFF FIXTURE.

400W DOUBLE HEAD METAL HALIDE SET ON 30' HIGH SQUARE STRAIGHT STEEL w/DARK BRONZE POLYESTER POWER COAT FINISH FULL CUTOFF FIXTURE.

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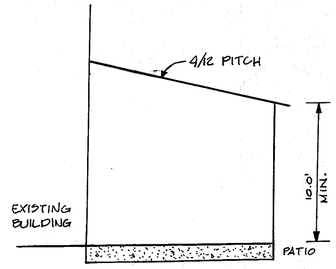


PATIO ROOF ELEVATION
NTS

4

TRAFFIC CONTROL SIGNAGE LEGEND

SIGN

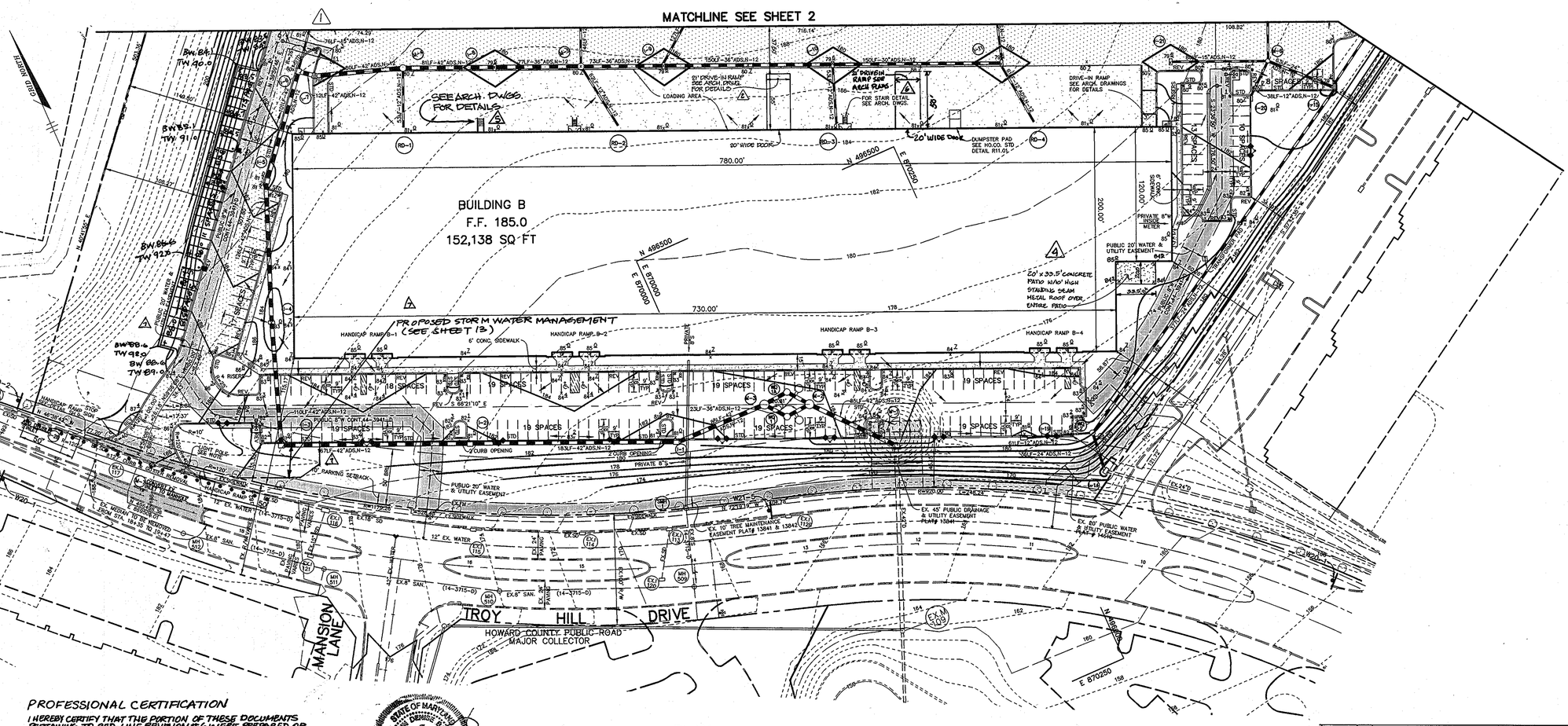
TEMPORARY BARRIER

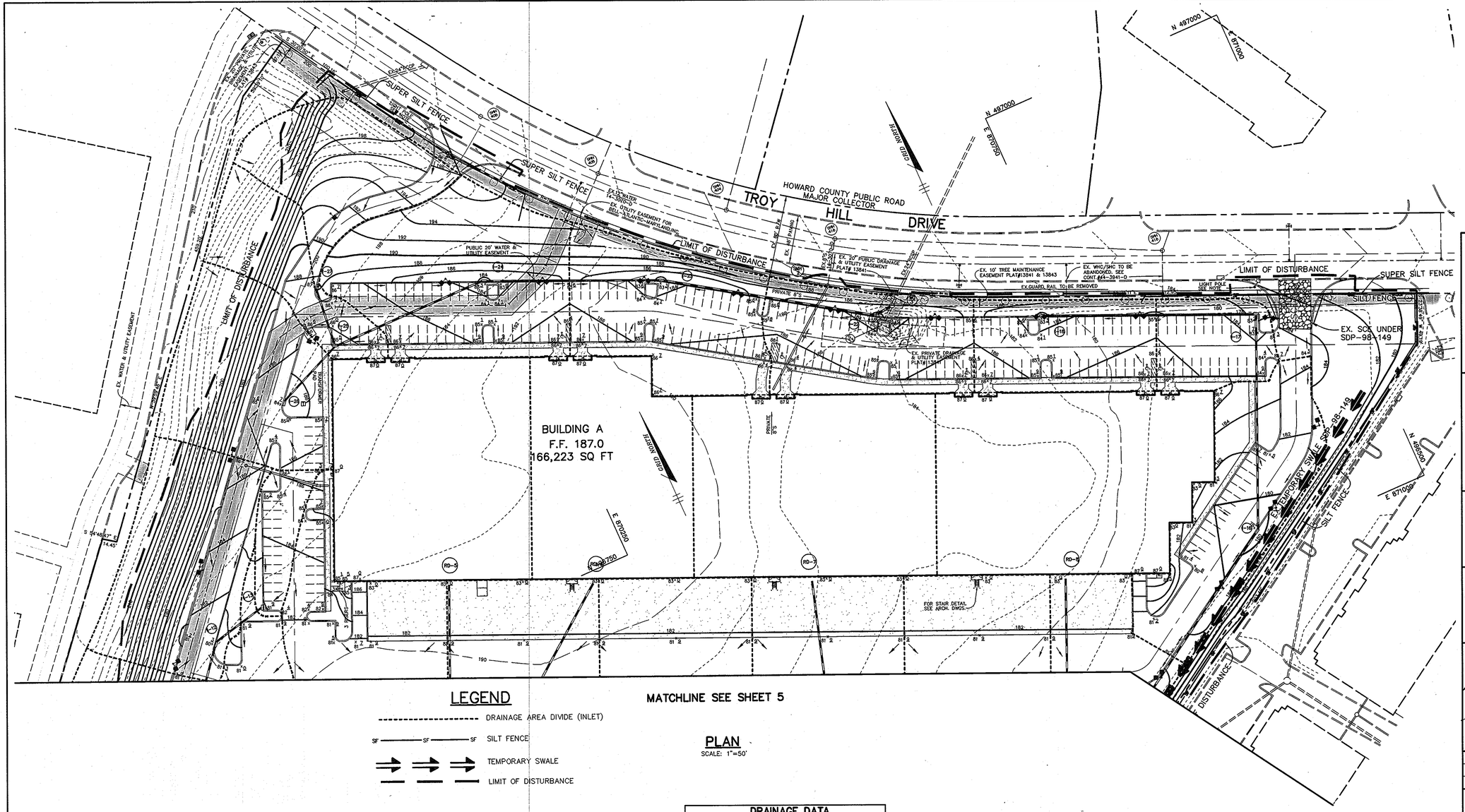
SHOULDER WORK
W21-5
30"x 30"

ROAD WORK AHEAD
W20-1
30"x 30"

END ROAD WORK
G20-2
60"x 24"

MATCHLINE SEE SHEET 2


BUILDING B
F.F. 185.0
152,138 SQ FT
PROPOSED STORM WATER MANAGEMENT (SEE SHEET 13)
HANDICAP RAMP B-1
HANDICAP RAMP B-2
HANDICAP RAMP B-3
HANDICAP RAMP B-4
SEE ARCH. DWGS. FOR DETAILS
21' DRIVE-IN RAMP SEE ARCH. DRWGS. FOR DETAILS
5' DRIVEIN RAMP SEE ARCH PLANS
FOR STAIR DETAIL SEE ARCH. DWGS.
DRIVE-IN RAMP SEE ARCH. DRAWINGS FOR DETAILS
LOADING AREA
20' WIDE DOOR
20' WIDE DOOR
DUMPSTER PAD SEE HO.CO. STD DETAIL R11.01
780.00'
730.00'
N 496500
E 870000
E 870250
20' x 33.5' CONCRETE PATIO W/40' HIGH STANDING SEAM METAL ROOF OVER ENTIRE PATIO
PUBLIC 20' WATER & UTILITY EASEMENT
PRIVATE 8" WATER INSIDE METER
SPACES
PUBLIC 20' WATER & UTILITY EASEMENT
PUBLIC 8" WATER & SEWER EASEMENT
PUBLIC 20' WATER & UTILITY EASEMENT
PRIVATE 8"S
EX. 45' PUBLIC DRAINAGE & UTILITY EASEMENT PLAT# 13041
EX. 60' PUBLIC WATER & UTILITY EASEMENT PLAT# 14619
EX. 10' TREE MAINTENANCE EASEMENT PLAT# 13841 & 13842
EX. 12" WATER (14-3715-D)
EX. 8" SAN. (14-3715-D)
EX. 36" PAVING
EX. 24" PAVING
EX. 8" SAN. (14-3715-D)
EX. 12" WATER (11-3715-D)
EX. 8" SAN. (14-3715-D)
EX. 8" SAN. (14-3715-D)
EX. 12" WATER (11-3715-D)
EX. 8" SAN. (14-3715-D)
EX. 8" SAN. (14-3715-D)
EX. 8" SAN. (14



LEGEND

- DRAINAGE AREA DIVIDE (INLET)
- SF —— SF —— SF SILT FENCE
- TEMPORARY SWALE
- LIMIT OF DISTURBANCE

MATCHLINE SEE SHEET 5

PLAN

SCALE: 1"=50'

DRAINAGE DATA

INLET NOS.	AREA IN ACRES	'C' FACTOR	PERCENT IMPERVIOUS
12	0.63	0.36	25
13	0.13	0.71	77
16	0.65	0.58	58
17	0.23	0.69	74
18	0.38	0.67	71
22	0.49	0.61	63
23	0.57	0.53	51
24	0.83	0.44	37
25	0.30	0.41	33
26	0.59	0.39	31
27	0.39	0.41	32
RD-5	0.98	0.86	100
RD-6	0.77	0.86	100
RD-7	0.99	0.86	100
RD-8	1.06	0.86	100

SEQUENCE OF CONSTRUCTION

1. OBTAIN GRADING PERMIT.
2. INSTALL SILT FENCE, SUPER SILT FENCE, TEMPORARY SWALES AND MAINTAIN ANY EXISTING CONTROLS PREVIOUSLY INSTALLED UNDER SDP-98-149. (1 WEEK)
3. BEGIN BUILDING CONSTRUCTION.
4. INSTALL STORM DRAINAGE, WATER AND SEWER AS SUBGRADE ELEVATIONS ARE ACHIEVED. INSTALL INLET PROTECTION AS NECESSARY. (6 WEEKS)
5. INSTALL CURB AND GUTTER THEN PROCEED WITH CONCRETE POUR FOR TRUCK SETDOWN PAD AND ASPHALT PAVING. (6 WEEKS)
7. APPLY TOPSOIL AND STABILIZE DISTURBED AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES. (2 DAYS)
8. PERFORM FINE GRADING, LANDSCAPING, LIGHTING, SIDEWALK, AND COMPLETE BUILDING CONSTRUCTION. (3 MONTHS)
9. UPON APPROVAL OF DILP SEDIMENT CONTROL INSPECTOR, REMOVE ALL REMAINING SEDIMENT CONTROL DEVICES AND STABILIZE REMAINING DISTURBED AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES. (2 DAYS)

BY THE DEVELOPER :

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

David E. Manova 2/15/01
DEVELOPER DATE

BY THE ENGINEER :

I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT 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.

2.7.01
ENGINEER DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

2/22/01
NATURAL RESOURCES CONSERVATION SERVICE DATE

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

2/22/01
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

2/22/01
DIRECTOR DATE

2/20/01
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

2/22/01
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE	NO.	REVISION

OWNER / DEVELOPER

TROY HILL CORPORATE CENTER PROPERTY LLC
c/o MANEKIN LLC
7061 COLUMBIA GATEWAY DRIVE
COLUMBIA, MARYLAND 21046
410-290-1400

PROJECT **TROY HILL CIRCLE**
TROY HILL CORPORATE CENTER
PARCEL A-25

AREA TAX MAP 37 ZONE: M-1 PLAT No. 14619
1st. ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE **GRADING, SEDIMENT CONTROL AND DRAINAGE AREA MAP**

RIEMER MUEGGE
a division of:
Patton Harris Rust & Associates, pc
ENGINEERS • SURVEYORS • PLANNERS
LANDSCAPE ARCHITECTS • ENVIRONMENTAL SPECIALISTS
8816 Centre Park Drive, Columbia, MD 21045 • tel 410.997.8900 fax 410.997.9282

DATE

STATE OF MARYLAND — ARTHUR E. MUEGGE — NO. 8707 — REGISTERED PROFESSIONAL ENGINEER

ARTHUR E. MUEGGE #8707

DESIGNED BY :	C.J.R.
DRAWN BY:	MAD
PROJECT NO	00239/SDP4.DWG
DATE :	
SCALE :	AS SHOWN
DRAWING NO.	4 OF 12

SDP-01-82

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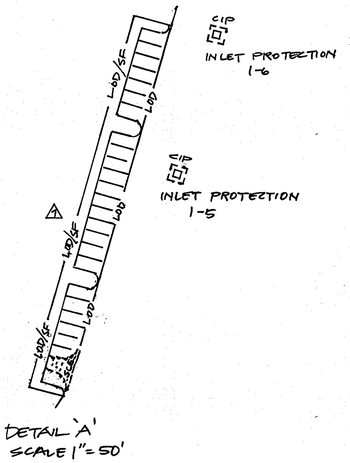

DETAIL 'A'
SCALE 1"= 50'

LEGEND

- DRAINAGE AREA DIVIDE (INLET)
- SF SF SF — SILT FENCE
- TEMPORARY SWALE
- TEMPORARY EARTH DIKE*
- LIMIT OF DISTURBANCE

* NOTE: EARTH DIKE TO BE REPAIRED AND OR REPLACED IMMEDIATELY IF DISTURBED DURING CONSTRUCTION.

DRAINAGE DATA

INLET NOS.	AREA IN ACRES	'C' FACTOR	PERCENT IMPERVIOUS
1	0.47	0.76	85
2	0.33	0.78	88
3	0.38	0.54	53
4	0.07	0.20	1
5	0.78	0.40	32
6	0.29	0.35	24
7	0.29	0.74	83
8	0.75	0.82	95
9	0.65	0.86	100
10	0.65	0.86	100
11	0.65	0.86	100
14	0.31	0.19	0
15	0.50	0.59	60
19	0.34	0.76	85
20	0.14	0.72	79
21	0.63	0.82	94
RD-1	0.78	0.86	100
RD-2	0.73	0.86	100
RD-3	1.10	0.86	100
RD-4	0.87	0.86	100

MATCHLINE SEE SHEET 4

PROPOSED LIMIT OF DISTURBANCE
SEE DETAIL 'A' ABOVE

BUILDING B
F.F. 185.0
152,138 SQ FT

DRIVE IN RAMP

LIMIT OF DISTURBANCE

EX.EARTH DIKE B-2
SDP-98-149 DA=7.7 ACRES

EX.EARTH DIKE A-2
SDP-98-149
DA=0.1 ACRES

EX.24"PSD
SDP-98-149

SUPER SILT FENCE

EX. W TREE MAINTENANCE EASEMENT PLAT# 13041 & 13042

EX. 43' PUBLIC DRAINAGE & UTILITY EASEMENT PLAT# 13041

EX. 20' PUBLIC WATER & UTILITY EASEMENT PLAT# 14619

TO SEDIMENT BASIN #1

PUBLIC 20' WATER & UTILITY EASEMENT

SILT FENCE

N 496500
E 870000
N 496580
E 870250

TROY HILL DRIVE
HOWARD COUNTY PUBLIC ROAD
MAJOR COLLECTOR

MANSION LANE

PLAN
SCALE: 1"=50'

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THE PORTION OF THESE DOCUMENTS PERTAINING TO RED-LINE REVISION & WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE NO. 11740 EXPIRATION DATE: 4-1-2012

STATE OF MARYLAND — ARTHUR E. MUEGGE — No. 8707 — REGISTERED PROFESSIONAL ENGINEER

DATE	NO.	REVISION
10/2/01	6	ADDED DRIVE IN RAMP TO BUILDING B
11-29-01	1	RELOCATED FH AT BLDG. 'B' DRIVE-IN RAMP, MODIFIED CURB.
1/18/12	7	ADDED 26 PARKING SPACES

BY THE DEVELOPER :

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

David E. Mannina 2/15/01
DEVELOPER DATE

BY THE ENGINEER :

I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT 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.

Arthur E. Muegge 2.7.01
ENGINEER DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

Lisa Myers 2/20/01
NATURAL RESOURCES CONSERVATION SERVICE DATE

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

John R. Robertson 2/20/01
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Joseph Kuth 2/22/01
DIRECTOR DATE

2/14/01
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Cindy Hewitt 2/22/01
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

OWNER / DEVELOPER
TROY HILL CORPORATE CENTER PROPERTY LLC
c/o MANEKIN LLC
7061 COLUMBIA GATEWAY DRIVE
COLUMBIA, MARYLAND 21046
410-290-1400

PROJECT **TROY HILL CIRCLE**
TROY HILL CORPORATE CENTER
PARCEL A-25

AREA TAX MAP 37 ZONE: M-1 PLAT No. 14619
1st. ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE **GRADING, SEDIMENT CONTROL AND DRAINAGE AREA MAP**

RIEMER MUEGGE
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8818 Centre Park Drive, Columbia, MD 21045 • tel 410.997.8900 fax 410.997.9282

DATE

ARTHUR E. MUEGGE #8707

DESIGNED BY : C.J.R.
DRAWN BY: MAD
PROJECT NO .00239/SDP5.DWG
DATE :
SCALE : AS SHOWN
DRAWING NO. 5 OF 14

SDP-01-82

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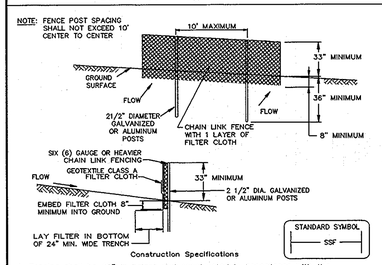
DETAIL 33 – SUPER SILT FENCE



Construction Specifications

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

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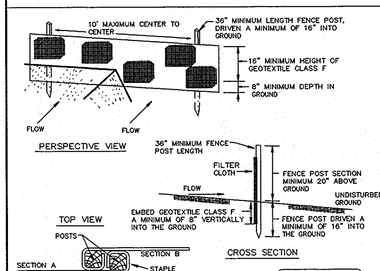
DETAIL 22 – SILT FENCE



JOINING TWO ADJACENT SILT FENCE SECTIONS

Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 11/2" x 11/2" square (minimum) cut, or 13/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pond per linear foot.

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

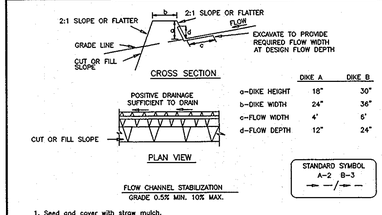
Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft / minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

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 – 16 – 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL – 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.

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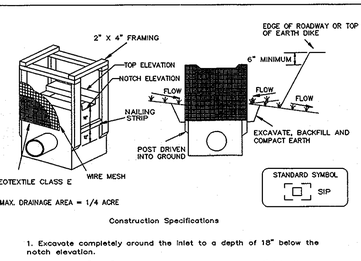
DETAIL 23A – STANDARD INLET PROTECTION



MAX. DRAINAGE AREA = 1/4 ACRE

Construction Specifications

1. Excavate completely around the inlet to a depth of 18" below the notch elevation.

2. Drive the 2" x 4" construction grade lumber posts 1' into the ground at each corner of the inlet. Place nail strips between the posts on the ends of the inlet. Assemble the top portion of the 2" x 4" frame using the overlap joint shown on Detail 23A. The top of the frame (weir) must be 6" below adjacent roadways where flooding and safety issues may arise.

3. Stretch the 1/2" x 1/2" wire mesh tightly around the frame and fasten securely. The ends must meet and overlap at a post.

4. Stretch the Geotextile Class E tightly over the wire mesh with the geotixtile extending from the top of the frame to 18" below the inlet notch elevation. Fasten the geotextile firmly to the frame. The ends of the geotextile must meet at a post, be overlapped and folded, then fastened down.

5. Backfill around the inlet in compacted 6" layers until the layer of earth is level with the notch elevation on the ends and top elevation on the sides.

6. If the inlet is not in a sump, construct a compacted earth dike across the ditch line directly below it. The top of the earth dike should be at least 6" higher than the top of the frame.

7. The structure must be inspected periodically and after each rain and the geotextile replaced when it becomes clogged.

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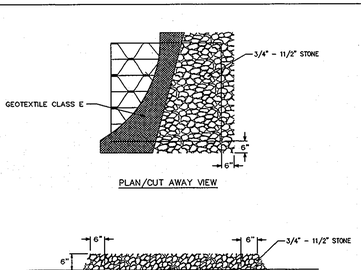
DETAIL 23B – AT GRADE INLET PROTECTION



MAX. DRAINAGE AREA = 1/4 ACRE

Construction Specifications

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

2. Place 3/4" to 11/2" stone, 4"–6" thick on the grate to secure the fabric and provide additional filtration.

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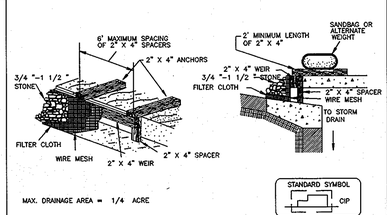
DETAIL 23C – CURB INLET PROTECTION



MAX. DRAINAGE AREA = 1/4 ACRE

Construction Specifications

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

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

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

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

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

6. Form the 1/2 " x 1/2 " wire mesh and the geotextile fabric to the concrete gutter and against the face of the curb on both sides of the inlet. Place clean 3/4 " x 1 1/2 " stone over the wire mesh and geotextile in such a manner to prevent water from entering the inlet under or around the geotextile.

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

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

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30.0 – DUST CONTROL

DEFINITION

CONTROLLING DUST BLOWING AND MOVEMENT ON CONSTRUCTION SITES AND ROADS.

PURPOSE

TO PREVENT BLOWING AND MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES, REDUCE ON AND OFF-SITE DAMAGE, HEALTH HAZARDS, AND IMPROVE TRAFFIC SAFETY.

CONDITIONS WHERE PRACTICE APPLIES

THIS PRACTICE IS APPLICABLE TO AREAS SUBJECT TO DUST BLOWING AND MOVEMENT WHERE ON OFF-SITE DAMAGE IS LIKELY WITHOUT TREATMENT.

SPECIFICATIONS

TEMPORARY METHODS

1. MULCHES – SEE STANDARDS FOR VEGETATIVE STABILIZATION WITH MULCHES ONLY. MULCH SHOULD BE CRIMPED OR TACKED TO PREVENT BLOWING.
2. VEGATATIVE COVER – SEE STANDARDS FOR TEMPORARY VEGETATIVE COVER.
3. TILLAGE – TO ROUGHEN SURFACE AND BRING CLODS TO THE SURFACE. THIS IS AN EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL BLOWING STARTS. BEGIN PLOWING ON WINDWARD SIDE OF SITE. CHISEL–TYPE PLOWS SPACED ABOUT 12" APART, SPRING–TOOTHED HARROWS, AND SIMILAR PLOWS ARE EXAMPLES OF EQUIPMENT WHICH MAY PRODUCE THE DESIRED EFFECT.
4. IRRIGATION – THIS IS GENERALLY DONE AS AN EMERGENGY TREATMENT. SITE IS SPRINKLED WITH WATER UNTIL THE SURFACE IS MOIST. REPEAT AS NEEDED. AT NO TIME SHOULD THE SITE BE IRRIGATED TO THE POINT THAT RUNOFF BEGINS TO FLOW.
5. BARRIERS – SOLID BOARD FENCES, SILT FENCES, SNOW FENCES, BURLAP FENCES, STRAW BALES, AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING. BARRIERS PLACED AT RIGHT ANGLES TO PREVAILING CURRENTS AT INTERVALS OF ABOUT 10 TIMES THEIR HEIGHT ARE EFFECTIVE IN CONTROLLING SOIL BLOWING.
6. CALCIUM CHLORIDE – APPLY AT RATES THAT WILL KEEP SURFACE MOIST. MAY NEED RETREATMENT.

PERMANENT METHODS

1. PERMANENT VEGETATION – SEE STANDARDS FOR PERMANENT VEGETATIVE COVER, AND PERMANENT STABILIZATION WITH SOD. EXISTING TREES OR LARGE SHRUBS MAY AFFORD VALUABLE PROTECTION IF LEFT IN PLACE.
2. TOPSOILING – COVERING WITH LESS EROSIVE SOIL MATERIALS. SEE STANDARDS FOR TOPSOILING.
3. STONE – COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL.

REFERENCES

1. AGRICULTURE HANDBOOK 346. WIND EROSION FORCES IN THE UNITED STATES AND THEIR USES IN PREDICTING SOIL LOSS.
2. AGRICULTURE INFORMATION BULLETIN 354. HOW TO CONTROL WIND EROSION, USDA–ARS.

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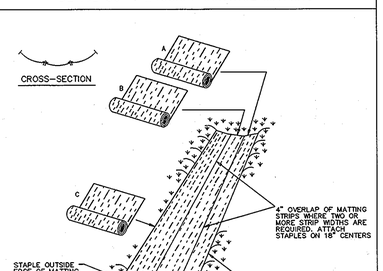
DETAIL 30 – EROSION CONTROL MATTING



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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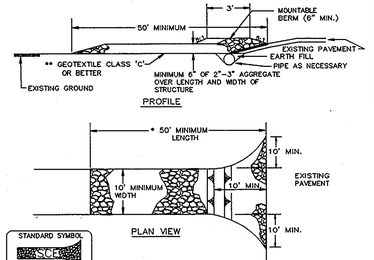
DETAIL 24 – STABILIZED CONSTRUCTION ENTRANCE



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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21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL

Definition

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

Purpose

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

Conditions Where Practice Applies

I. This practice is limited to areas having 2:1 or flatter slopes where:
   a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
   b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
   c. The original soil to be vegetated contains material toxic to plant growth.
   d. The soil is so acidic that treatment with limestone is not feasible.

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

Construction and Material Specifications

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

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

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

II. For sites having disturbed areas under 5 acres:
   1. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization – Section I – Vegetative Stabilization Methods and Materials.

III. For sites having disturbed areas over 5 acres:

   1. On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
      a. pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be 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 bitumenous sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto–toxic materials.

Note: Topsoil substitutes to amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority may be used in lieu of natural topsoil.

   II. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization – Section 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 may 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 site having disturbed areas under 5 acres shall conform to the following requirements:
      a. Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.
      b. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a pH of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.
      c. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.
      d. Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/3 the normal lime application rate.

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

STANDARD SEDIMENT CONTROL NOTES

1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313–1855).
2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE–DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES, AND ALL SLOPES STEEPER 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 THE PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 7, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
5. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING, SOD, TEMPORARY SEEDING, AND MULCHING (SEC. 6.) TEMPORARY STABILIZATION WITH MULCH ALONE SHALL ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHED 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	21.737 ACRES
AREA DISTURBED	20.0 ACRES
AREA TO BE ROOFED OR PAVED	15.1 ACRES
AREA TO BE VEGETATIVELY STABILIZED	4.7 ACRES
TOTAL CUT	100,000 CU. YARDS
TOTAL FILL	100,000 CU. YARDS
OFFSITE WASTE AREA LOCATION TO HAVE ACTIVE GRADING PERMIT	

8. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
9. ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
10. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
11. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK–FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.
12. SITE GRADING WILL BEGIN ONLY AFTER ALL PERIMETER SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED AND ARE IN A FUNCTIONING CONDITION.
13. SEDIMENT WILL BE REMOVED FROM TRAPS WHEN ITS DEPTH REACHES CLEAN OUT ELEVATION SHOWN ON THE PLANS.
14. CUT AND FILL QUANTITIES PROVIDED UNDER SITE ANALYSIS DO NOT REPRESENT BID QUANTITIES. THESE QUANTITIES DO NOT DISTINGUISH BETWEEN TOPSOIL, STRUCTURAL FILL OR EMBANKMENT MATERIAL, NOR DO THEY REFLECT CONSIDERATION OF UNDERCUTTING OR REMOVAL OF UNSUITABLE MATERIAL. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH SITE CONDITIONS WHICH MAY AFFECT THE WORK.

TEMPORARY SEEDING NOTES

Apply to graded or cleared areas likely to be redisturbed where a short–term vegetative cover is needed.

Seedbed Preparation : Loosen upper three inches of soil by raking, discing or other acceptable means before seeding, if not previously loosened.

Soil Amendments : Apply 600 lbs. per acre 10–10–10 fertilizer (14 lbs. per 1000 sq.ft.).

Seeding : For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2–1/2 bushels per acre of annual rye (3.2 lbs. per 1000 sq.ft.). For the period May 1 thru August 14, seed with 3 lbs. per acre of weeping lovegrass (0.07 lbs. per 1000 sq.ft.). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

Mulching : Apply 1–1/2 to 2 tons per acre (70 to 90 lbs. per 1000 sq.ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal. per acre (5 gal. per 1000 sq.ft.) of emulsified asphalt on flat areas. On slopes, 8 ft. or higher, use 347 gal. per acre (8 gal. per 1000 sq.ft.) for anchoring.

Refer to the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

PERMANENT SEEDING NOTES

Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long–lived vegetative cover is needed.

Seedbed Preparation : Loosen upper three inches of soil by raking, discing or other acceptable means before seeding, if not previously loosened.

Soil Amendments : In lieu of soil test recommendations, use one of the following schedules :

1) Preferred – Apply 2 tons per acre dolomitic limestone (92 lbs. per 1000 sq.ft.) and 600 lbs. per acre 10–10–10 fertilizer (14 lbs. per 1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs. per acre 30–0–0 urea–form fertilizer (9 lbs. per 1000 sq.ft.).

2) Acceptable – Apply 2 tons per acre dolomitic limestone (92 lbs. per 1000 sq.ft.) and 1000 lbs. per acre 10–10–10 fertilizer (23 lbs. per 1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil.

Seeding : For the period March 1 thru April 30 and from August 1 thru October 15, seed with 60 lbs. per acre (1.4 lbs. per 1000 sq.ft.) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs. Kentucky 31 Tall Fescue per acre and 2 lbs. per acre (0.05 lbs. per 1000 sq.ft.) of weeping lovegrass. During the period October 16 thru February 28, protect site by one of the following options :

1) 2 tons per acre of well–anchored mulch straw and seed as soon as possible in the spring.

2) Use sod.

3) Seed with 60 lbs. per acre Kentucky 31 Tall Fescue and mulch with 2 tons per acre well anchored straw.

Mulching : Apply 1–1/2 to 2 tons per acre (70 to 90 lbs. per 1000 sq.ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal. per acre (5 gal. per 1000 sq.ft.) of emulsified asphalt on flat areas. On slopes, 8 ft. or higher, use 347 gal. per acre (8 gal. per 1000 sq.ft.) for anchoring.

Maintenance : Inspect all seeded areas and make needed repairs, replacements and reseedings.

BY THE DEVELOPER :

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

David E. Mariea 2/15/01
DEVELOPER DATE

BY THE ENGINEER :

I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT 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 2-7-01
DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

NATURAL RESOURCES CONSERVATION SERVICE 2/22/01
DATE

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

HOWARD SOIL CONSERVATION DISTRICT 2/22/01
DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR 2/22/01
DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION 2/22/01
DATE

CHIEF, DIVISION OF LAND DEVELOPMENT 2/22/01
DATE

DATE	NO.	REVISION

OWNER / DEVELOPER

TROY HILL CORPORATE CENTER PROPERTY LLC
c/o MANEKIN LLC
7061 COLUMBIA GATEWAY DRIVE
COLUMBIA, MARYLAND 21046
410–290–1400

PROJECT **TROY HILL CIRCLE**
TROY HILL CORPORATE CENTER
PARCEL A–25

AREA TAX MAP 37 ZONE: M–1 PLAT No. 14619
1st. ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE

SEDIMENT CONTROL NOTES AND DETAILS

RIEMER MUEGGE
a division of:
Patton Harris Rust & Associates, pc
ENGINEERS ● SURVEYORS ● PLANNERS
LANDSCAPE ARCHITECTS ● ENVIRONMENTAL SPECIALISTS
8818 Centre Park Drive, Columbia, MD 21045 ● tel 410.997.8900 fax 410.997.9282

DATE

STATE OF MARYLAND — ARTHUR E. MUEGGE III — No. 8707 — REGISTERED PROFESSIONAL ENGINEER

ARTHUR E. MUEGGE #8707

DESIGNED BY :	C.J.R.
DRAWN BY:	DAM
PROJECT NO	.00239/ *DETAILS2.DWG
DATE :	
SCALE :	AS SHOWN
DRAWING NO.	6 OF 12

SDP–01–82

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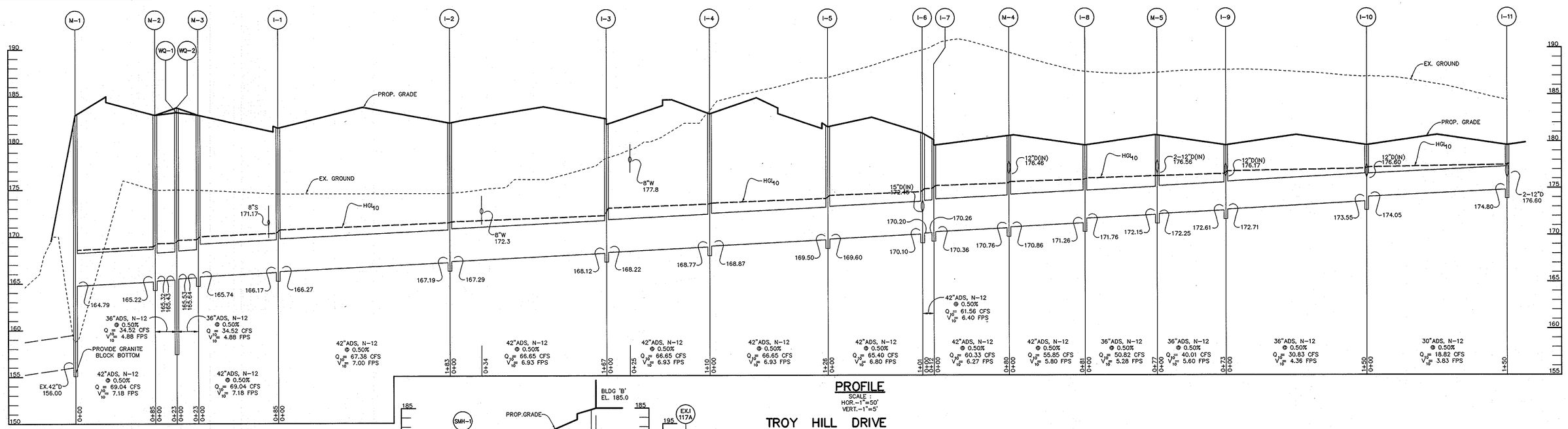

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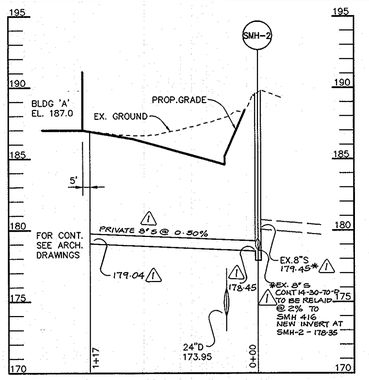

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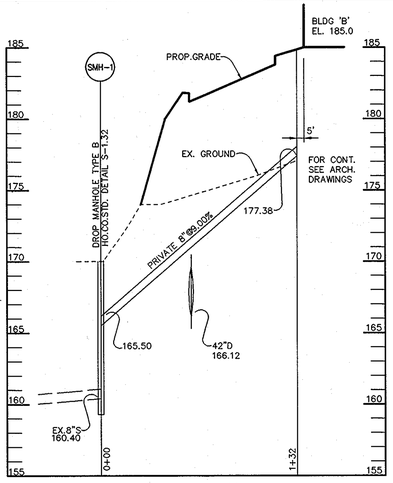

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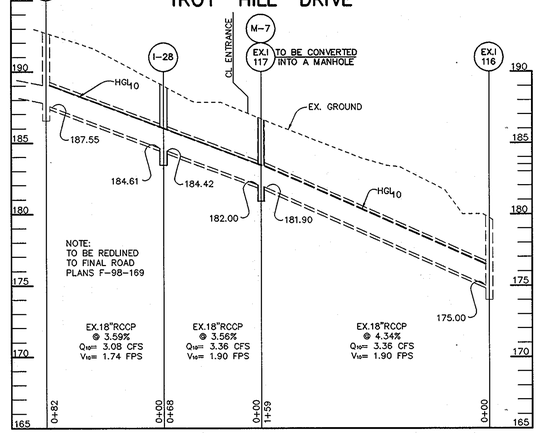

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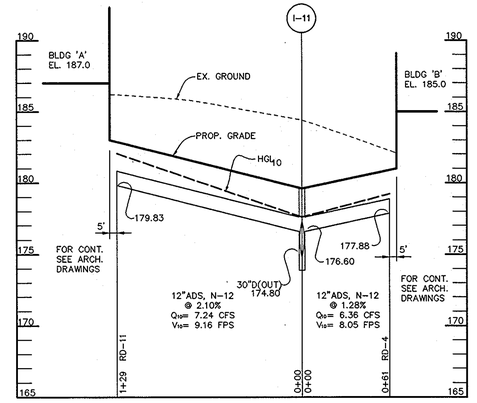

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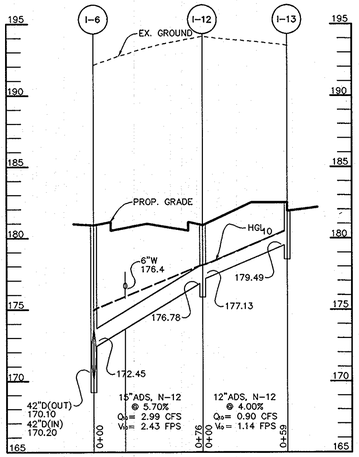

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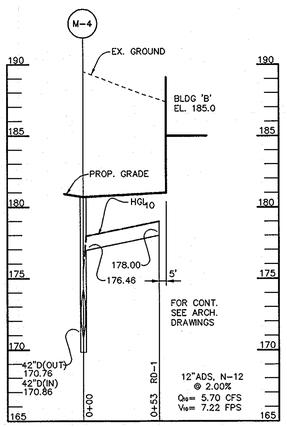

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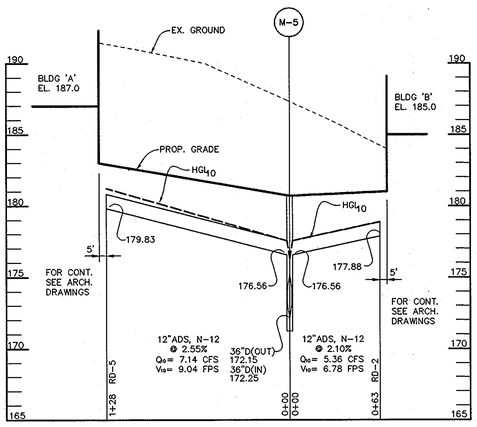

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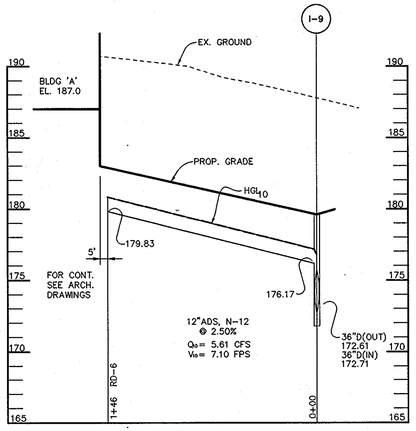

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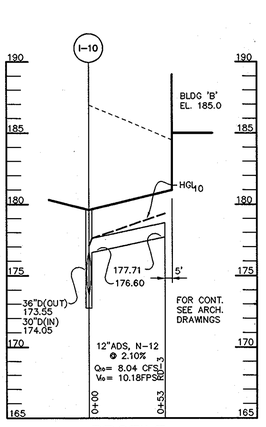

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APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR — DATE 2/22/01

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 2/22/01

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 2/22/01

DATE	NO.	REVISION
9-17-01		REVISED SEWER PROFILE BLDG A

OWNER / DEVELOPER

TROY HILL CORPORATE CENTER PROPERTY LLC
c/o MANEKIN LLC
7061 COLUMBIA GATEWAY DRIVE
COLUMBIA, MARYLAND 21046
410-290-1400

PROJECT **TROY HILL CIRCLE**
TROY HILL CORPORATE CENTER
PARCEL A-25

AREA TAX MAP 37 ZONE: M-1 PLAT No. 14619
1st. ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE **PROFILES**

RIEMER MUEGGE
a division of:
Patton Harris Rust & Associates, pc
ENGINEERS • SURVEYORS • PLANNERS
LANDSCAPE ARCHITECTS • ENVIRONMENTAL SPECIALISTS
8818 Centre Park Drive, Columbia, MD 21046 • tel 410.997.8900 fax 410.997.9282

DATE

STATE OF MARYLAND — ARTHUR E. MUEGGE — NO. 8707 — REGISTERED PROFESSIONAL ENGINEER

ARTHUR E. MUEGGE #8707

DESIGNED BY : C.J.R.
DRAWN BY: DAM
PROJECT NO : 00239/PROFILE1.DWG
DATE :
SCALE : AS SHOWN
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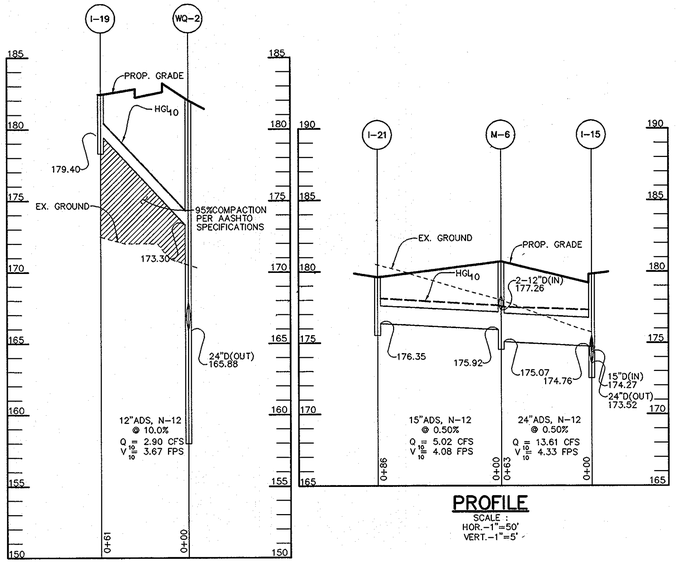

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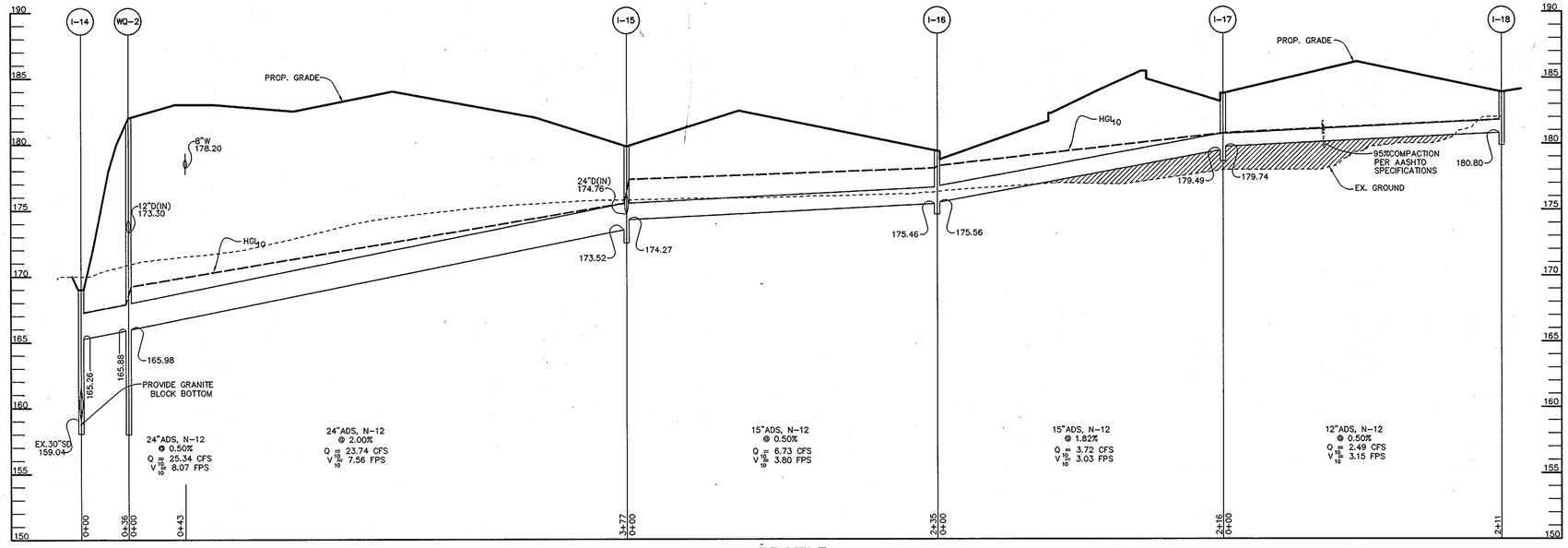

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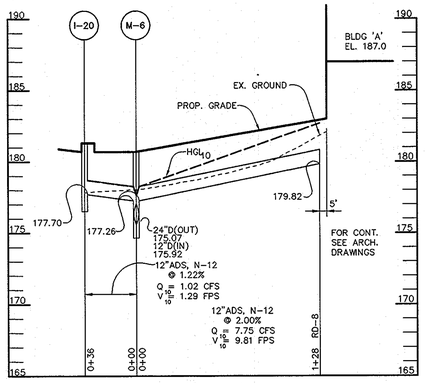

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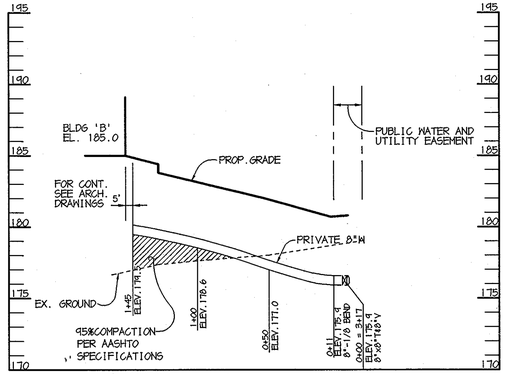

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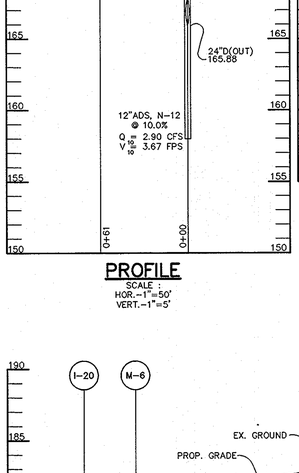

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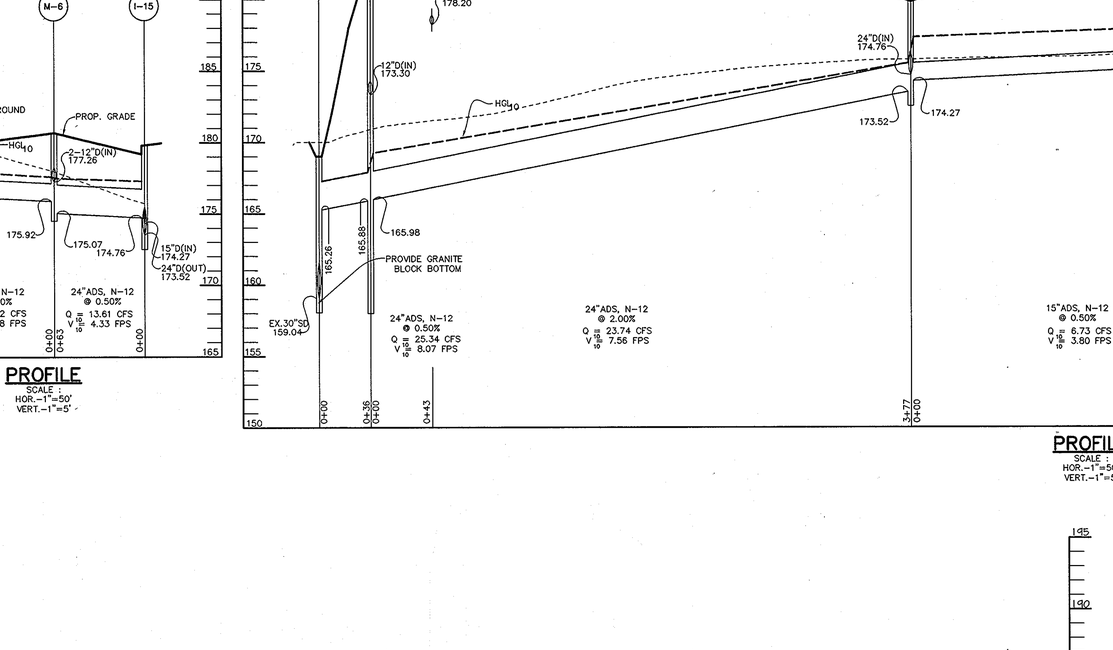

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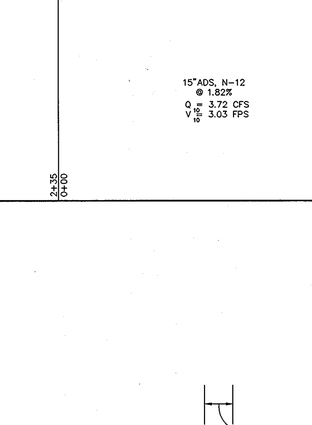

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SCALE :
HOR.-1"=50'
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APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR — DATE 2/22/01

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 2/20/01

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 2/26/01

DATE	NO.	REVISION
9-17-01	1	REVISED STORM DRAIN CROSSING

OWNER / DEVELOPER

TROY HILL CORPORATE CENTER PROPERTY LLC
c/o MANEKIN LLC
7061 COLUMBIA GATEWAY DRIVE
COLUMBIA, MARYLAND 21046
410-290-1400

PROJECT **TROY HILL CIRCLE**
TROY HILL CORPORATE CENTER
PARCEL A-25

AREA TAX MAP 37 ZONE: M-1 PLAT No. 14619
1st. ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE **PROFILES**

RIEMER MUEGGE
a division of:
Patton Harris Rust & Associates, pc
ENGINEERS ● SURVEYORS ● PLANNERS
LANDSCAPE ARCHITECTS ● ENVIRONMENTAL SPECIALISTS
8818 Centre Park Drive, Columbia, MD 21046 ● tel 410.997.8900 fax 410.997.9282

DATE

STATE OF MARYLAND — ARTHUR E. MUEGGE — NO. 8707 — REGISTERED — PROFESSIONAL ENGINEER

ARTHUR E. MUEGGE #8707

DESIGNED BY :	C.J.R.
DRAWN BY:	DAM
PROJECT NO :	00239/ PROFILE2.DWG
DATE :	
SCALE :	AS SHOWN
DRAWING NO.	8 OF 11

SDP-01-82

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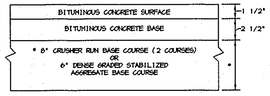
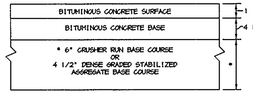


(ALTERNATE)



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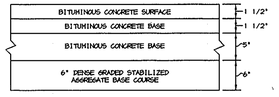

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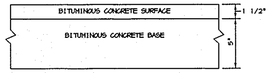
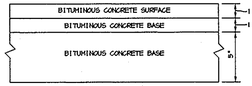


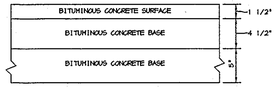
HOWARD COUNTY DESIGN MANUAL VOLUME IV- STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (DRAWING R-2.01)

P-2 PAVING
NO SCALE



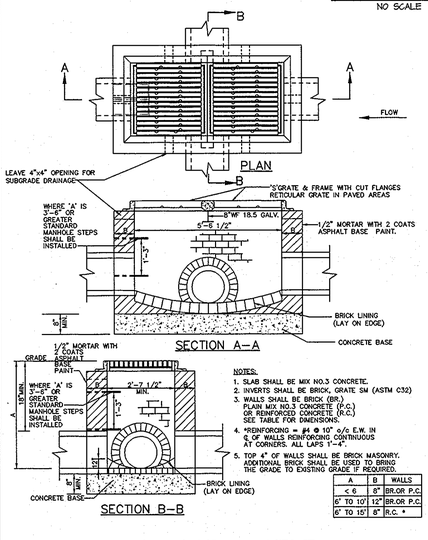
HOWARD COUNTY DESIGN MANUAL VOLUME IV- STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (DRAWING R-2.01)

P-3 PAVING
NO SCALE

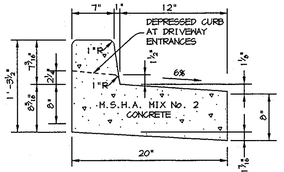


HOWARD COUNTY DESIGN MANUAL VOLUME IV- STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (DRAWING R-2.01)

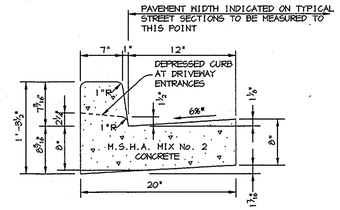
P-5 PAVING
NO SCALE



MODIFIED DOUBLE 'S' INLET
NO SCALE



REVERSE 7" COMBINATION CURB AND GUTTER
NO SCALE



HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (DRAWING R-3.01).

* GUTTER PAN AT THE MEDIAN EDGE OF INTERMEDIATE ARTERIALS OR THE HIGH SIDE OF SUPERELEVATED SECTIONS SHALL BE SLOPED AT THE SAME RATE AS THE PAVEMENT.

STANDARD 7" COMBINATION CURB AND GUTTER
NO SCALE

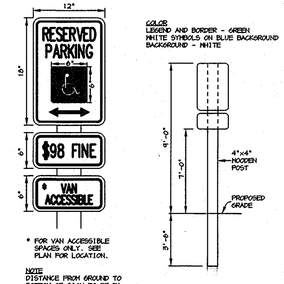
PIPE SCHEDULE

PIPE LENGTH	SIZE	TYPE
1458	42"	ADS, N-12
315	36"	ADS, N-12
559	30"	ADS, N-12
1024	24"	ADS, N-12
413	18"	ADS, N-12
76	15"	ADS, N-12
1267	12"	ADS, N-12

STRUCTURE SCHEDULE

STRUCTURE	TYPE	LOCATION		INV. IN	INV. OUT	TOP	INSIDE DIMENSIONS	REMARKS
I-1	A-5	N 446340.97	E 869967.41	166.27	166.17	181.58	5'x5'	HOCO STD. DETAIL SD 4.40
I-2	A-5	N 446414.37	E 869799.77	167.29	167.19	182.08	5'x5'	HOCO STD. DETAIL SD 4.40
I-3	A-5	N 446481.56	E 869646.34	168.22	168.12	182.48	5'x5'	HOCO STD. DETAIL SD 4.40
I-4	DOUBLE S	N 446582	E 869682	168.87	168.77	183.0	-	HOCO STD. DETAIL SD 4.23
I-5	A-5	N 446701.39	E 869720.23	169.60	169.50	181.58	5'x5'	HOCO STD. DETAIL SD 4.40
I-6	A-5	N 446.778.99	E 869743.33	170.20 (42") 172.45 (15")	170.10	180.88	5'x5'	HOCO STD. DETAIL SD 4.40
I-7	A-5	N 446767.55	E 869807.26	170.36	170.26	180.18	5'x5'	HOCO STD. DETAIL SD 4.40
I-8	DOUBLE S	N 446709	E 869955	171.76	171.26	179.6	-	HOCO STD. DETAIL SD 4.23
I-9	DOUBLE S	N 446649	E 870093	176.17 (12") 172.71 (36")	172.61	179.6	-	HOCO STD. DETAIL SD 4.23
I-10	DOUBLE S	N 446589	E 870230	176.60 (12") 174.05 (30")	173.55	179.6	-	HOCO STD. DETAIL SD 4.23
I-11	DOUBLE S	N 446528.84	E 870367.96	176.60 (12") 176.60 (12")	174.80	179.6	-	HOCO STD. DETAIL SD 4.23
I-12	A-5	N 446837.04	E 869842.03	177.13	176.78	180.88	5'x2'-6"	HOCO STD. DETAIL SD 4.40
I-13	A-5	N 446844.71	E 869901.26	-	179.44	182.48	5'x2'-6"	HOCO STD. DETAIL SD 4.40
I-14	DOUBLE S	N 446159.08	E 870804.06	165.26	159.04	169.0	-	HOCO STD. DETAIL SD 4.23 AND GRANITE BLOCK BOTTOM
I-15	A-5	N 446384.70	E 870621.75	174.76 (24") 174.27 (15")	173.52	179.78	5'x4'	HOCO STD. DETAIL SD 4.40
I-16	A-5	N 446517.72	E 870825.89	175.56	175.46	179.38	5'x3'	HOCO STD. DETAIL SD 4.40
I-17	A-5	N 446712.69	E 870913.53	179.74	179.44	183.78	5'x2'-6"	HOCO STD. DETAIL SD 4.40
I-18	A-5	N 446747.33	E 870720.25	-	180.80	183.88	5'x2'-6"	HOCO STD. DETAIL SD 4.40
I-19	A-5	N 446217.13	E 870250.23	-	179.40	182.38	5'x2'-6"	HOCO STD. DETAIL SD 4.40
I-20	A-5	N 446410.16	E 870556.09	-	177.70	181.28	5'x2'-6"	HOCO STD. DETAIL SD 4.40
I-21	DOUBLE S	N 446468	E 870505	-	176.35	179.6	-	HOCO STD. DETAIL SD 4.23
I-22	A-5	N 446864.51	E 870570.76	173.65	173.55	183.88	5'x3'	HOCO STD. DETAIL SD 4.40
I-23	A-5	N 446983.67	E 870341.61	176.41	175.91	183.88	5'x3'	HOCO STD. DETAIL SD 4.40
I-24	A-5	N 447054.86	E 870231.81	177.54	177.29	183.88	5'x3'	HOCO STD. DETAIL SD 4.40
I-25	A-5	N 447059.27	E 870072.17	179.40 (12") 179.70 (12")	179.15	186.08	5'x3'	HOCO STD. DETAIL SD 4.40
I-26	A-5	N 447027.37	E 870001.72	-	182.30	185.28	5'x2'-6"	HOCO STD. DETAIL SD 4.40
I-27	A-5	N 447118.93	E 870078.54	-	180.00	188.08	5'x2'-6"	HOCO STD. DETAIL SD 4.40
I-28	DOUBLE S COMB.	N 446560.39	E 869484.04	HOLD EX. PIPE ELEVS & CURB ELEVATION				HOCO STD. DETAIL SD 4.34
M-1	5' MH	N 446255	E 870143	164.79	156.00	183.2		HOCO STD. DETAIL 6 5.13 AND GRANITE BLOCK BOTTOM
M-2	8' MH	N 446320	E 870087	165.32	165.22	183.7		MSHA STD DETAIL MD-384.09
M-3	8' MH	N 446386	E 870051	165.74	165.64	183.2		MSHA STD DETAIL MD-384.09
M-4	5' MH	N 446741	E 869881	170.86 (42") 176.46 (12")	170.76	180.7		HOCO STD. DETAIL 6 5.13
M-5	5' MH	N 446678	E 870025	176.56 (12") 172.25 (36")	172.15	180.7		HOCO STD. DETAIL 6 5.13
M-6	5' MH	N 446434	E 870584	177.26 (12") 175.92 (15")	175.07	180.5		HOCO STD. DETAIL 6 5.13
M-7	4' MH	EX. INLET		HOLD EX. INVERTS & RIM ELEV.				HOCO STD. DETAIL 6 5.12
WQ-1	5K	N 446318	E 870065	165.53	165.43	183.7		SEE SHEET 10
WQ-1A	5K	N 446339	E 870074	165.53	165.43	183.2		SEE SHEET 10
WQ-2	3K	N 446194	E 870306	165.98 (24") 173.30 (12")	165.88	182.0		SEE SHEET 10
WQ-3	3K	N 446868	E 870589	173.45	170.42	186.0		SEE SHEET 10
SMH-1	4' MH	N 446412	E 870539	165.50	160.40	EX.GR.		HOCO STD DETAIL 6 5.12
SMH-2	4' MH	N 446280	E 869950	178.45 (1)	178.35 (1)	EX.GR.		HOCO STD DETAIL 6 5.12

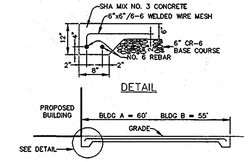
NOTES: LOCATION OF "S" TYPE INLETS AND MANHOLES IS AT CENTER OF TOP COVER OR CENTER OF STRUCTURE; FOR 'A' INLETS LOCATION IS GIVEN FOR CENTER OF THROAT OPENING AT FACE OF CURB. TOP ELEVATION IS TOP OF CURB FOR 'A' INLETS. TOP ELEVATION IS TOP OF GRATE FOR 'S' INLETS. TOP ELEVATION IS TOP OF RIM FOR MANHOLES.



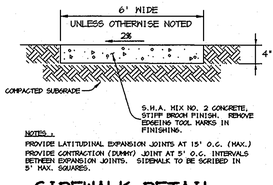
* FOR VAN ACCESSIBLE SPACES ONLY. SEE PLAN FOR LOCATION.

NOTE DISTANCE FROM GROUND TO BOTTOM OF SIGN TO BE 7'.

HANDICAP SIGN DETAIL
NO SCALE

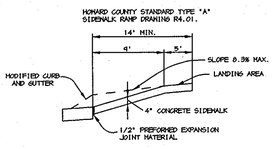


LOADING AREA CONCRETE PAVING
NO SCALE

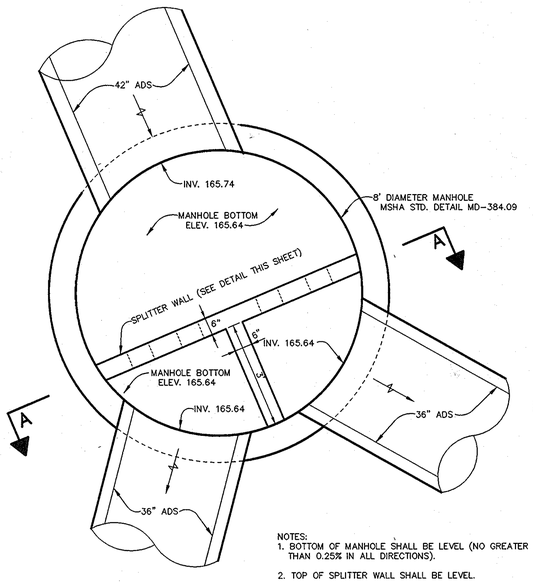


NOTES:
PROVIDE LATITUDINAL EXPANSION JOINTS AT 15' O.C. (MAX.) PROVIDE CONTRACTION (DUMMY) JOINT AT 5' O.C. INTERVALS BETWEEN EXPANSION JOINTS. SIDEWALK TO BE SCRIBED IN 5' MAX. SQUARES.

SIDEWALK DETAIL
NO SCALE

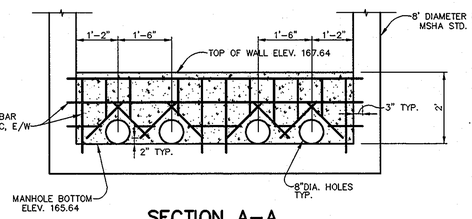


HANDICAP RAMP DETAIL
NO SCALE



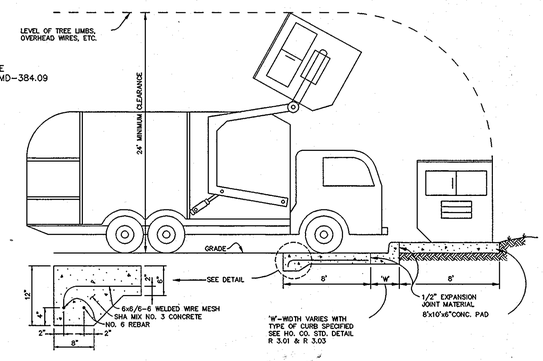
NOTES:
1. BOTTOM OF MANHOLE SHALL BE LEVEL (NO GREATER THAN 0.25% IN ALL DIRECTIONS).
2. TOP OF SPLITTER WALL SHALL BE LEVEL.

FLOW SPLITTER M-3
SCALE: 1" = 2'



SECTION A-A
SCALE: 1" = 2'

NOTES:
1. USE #4 DEFORMED BARS AT 8" CENTER TO CENTER EACH WAY.
2. REBAR SHALL BE EPOXY GROUTED A MINIMUM OF 3" INTO BOTTOM AND SIDES OF MANHOLE.
3. REBAR SHALL BE PLACED IN CENTER OF WALL.
4. USE MIX NO.3 CONCRETE.



DUMPSTER PAD
NO SCALE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR — DATE 2/22/01

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 2/22/01

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 2/22/01

DATE	NO.	REVISION
9.17.01	1	REVISED STRUCTURE SCHEDULE

OWNER / DEVELOPER
TROY HILL CORPORATE CENTER PROPERTY LLC
c/o MANEKIN LLC
7061 COLUMBIA GATEWAY DRIVE
COLUMBIA, MARYLAND 21046
410-290-1400

PROJECT **TROY HILL CIRCLE**
TROY HILL CORPORATE CENTER
PARCEL A-25

AREA TAX MAP 37 ZONE: M-1 PLAT No. 14619
1st. ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE **DETAILS AND STRUCTURE SCHEDULE**

RIEMER MUEGGE
a division of:
Patton Harris Rust & Associates, pc
ENGINEERS ● SURVEYORS ● PLANNERS
LANDSCAPE ARCHITECTS ● ENVIRONMENTAL SPECIALISTS
8818 Centre Park Drive, Columbia, MD 21045 ● tel 410.997.8900 fax 410.997.9282

DATE

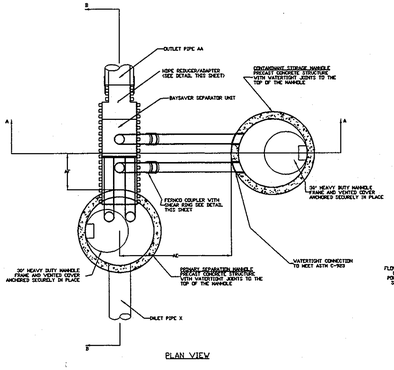
STATE OF MARYLAND — ARTHUR E. MUEGGE — NO. 8707 — REGISTERED PROFESSIONAL ENGINEER

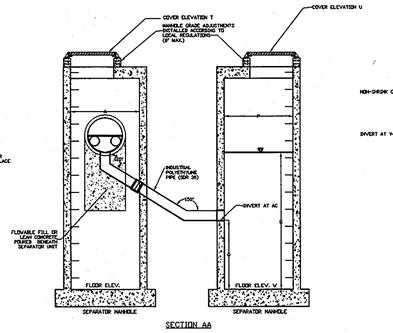
ARTHUR E. MUEGGE #8707

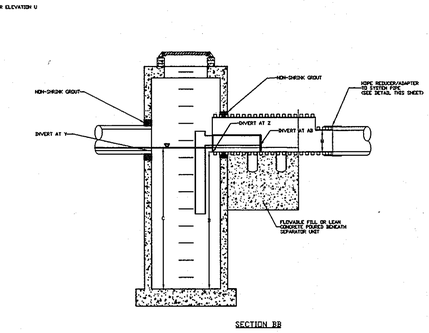
DESIGNED BY :	C.J.R.
DRAWN BY:	DAM
PROJECT NO :	00239/ DETAILS1.DWG
DATE :	
SCALE :	AS SHOWN
DRAWING NO.	9 OF 12

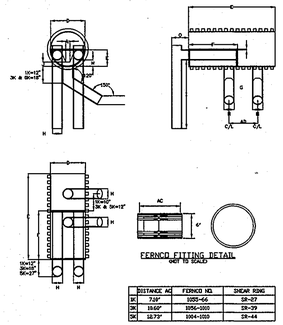
SDP-01-82

F:\PROJECT\00239\DETAILS1.dwg Mon Feb 05 15:08:09 2001 RIEMER MUEGGE & ASSOCIATES, INC.









	DISTANCE AC	FERNCO NO.	SHEAR RING
1K	7.09"	1055-66	SR-27
3K	10.69"	1056-1010	SR-39
5K	18.79"	1064-1010	SR-44

SEQUENCE OF CONSTRUCTION AND INSPECTOR'S CHECK-OFF LIST FOR DUAL MANHOLE SEPARATORS

Stage (X = Approval Required)	Developer's/Engineer Approval		Inspector		Geotechnical Engineer	
	Initials	Date	Initials	Date	Initials	Date
1. Pre-Construction Meeting.	X		X		X	
2. Install Manholes and associated storm drainage: a. Obtain approval of subgrade from Geotechnical Engineer. (Subgrade to have a minimum of 95% compaction)					X	
b. Installation of precast base, lower tank and lower piping.	X		X			
c. Backfill and min. 95% compaction around lower tank and lower piping.					X	
d. Installation of precast middle section(s) with separator unit and remaining piping.	X		X			
e. Installation of precast top slab.	X		X			
f. Installation of adjustment rings and frame and cover.	X		X			
g. Installation of flowable fill or concrete backfill.					X	
3. Backfilling operation and compaction.					X	
4. Site is permanently stabilized. Sediment control measures removed and all sediment and debris removed from dual manhole separators.			X			
5. Final inspection.			X			

Baysaver Separator Unit	Baysaver Manhole Sizes (prim. x stor.)	Maximum Treatment (cfs)*1	Maximum Treatment (gpm)*1	Impervious Area (acres)
1K Baysaver Separator	48x48	2.4	1076	1.2
	48x50	2.4	1076	1.4
	48x72	2.4	1076	1.6
	60x60	2.4	1076	1.5
3K Baysaver Separator	60x60	7.2	3231	3.6 WQ263
	60x72	7.2	3231	4.1
	60x84	7.2	3231	4.6
	72x72	7.2	3231	4.4
5K Baysaver Separator	72x72	11.1	4981	5.5
	72x84	11.1	4981	6.5 WQ-1/1A
	72x96	11.1	4981	7.5
	96x96	11.1	4981	8.0

NOTE:

BAYSAVERS ARE TO BE INSTALLED WITH THE STORM DRAIN SYSTEM AND WILL FUNCTION AS SECONDARY SEDIMENT CONTROL DEVICES.

UPON COMPLETION OF SITE STABILIZATION, EACH BAYSAVER SYSTEM SHALL BE FLUSHED CLEAN & THE MANHOLES CLEANED OUT AND REFILLED WITH CLEAN WATER.

NOTE: DIMENSIONAL SHOP DRAWINGS ARE TO BE APPROVED BY THE DESIGN ENGINEER

BAYSAVER SYSTEM DIMENSIONS

	DESCRIPTION	1K SYSTEM	3K SYSTEM	5K SYSTEM
	SEPARATOR MANHOLE DIMENSIONS			
A	PRIMARY MANHOLE DIAMETER	48"	60"	72"
B	MANHOLE DEPTH BELOW OUTLET	8' - 0"	8' - 0"	8' - 0"
C	MINIMUM FLUID DEPTH	8' - 3"	8' - 4 1/2"	8' - 6"
	STANDARD SEPARATOR UNIT DIMENSIONS			
D	SEPARATOR UNIT ID	24"	36"	48"
E	SEPARATOR UNIT LENGTH	60"	78.2"	75.4"
F	BYPASS PLATE LENGTH	34"	45"	45"
G	WEIR/BYPASS PLATE THICKNESS	3/4"	3/4"	3/4"
H	ELBOW AND CONNECTING PIPE OD	7.125"	10.75"	12.75"
I	ELBOW LENGTH	48"	48"	48"
J	WEIR HEIGHT ABOVE INVERT	3"	4"	6"
K	BYPASS PLATE HEIGHT ABOVE INVERT	12"	18"	24"
L	WIDTH OF WEIR AT BASE	3"	4 1/2"	6"
M	OUTLET PIPE DIAMETER	M	M	M
N	ELBOW INVERT HEIGHT ABOVE UNIT INVERT	4 1/2"	7 1/2"	11"
O	ELBOW PIPE OVERHANG	12"	18"	24"
	STORAGE MANHOLE DIMENSIONS			
P	STORAGE MANHOLE DIAMETER	48"	60"	72"
Q	MANHOLE DEPTH BELOW INLET/OUTLET	48"	48"	48"
R	FLUID DEPTH	8' - 0"	8' - 0"	8' - 0"
S	TOTAL STORAGE VOLUME	200 CF	300 CF	450 CF
	SYSTEM DIMENSIONS AND ELEVATIONS			
T	SEPARATOR MANHOLE COVER ELEVATION	T	T	T
U	STORAGE MANHOLE COVER ELEVATION	U	U	U
V	SEPARATOR MANHOLE FLOOR ELEVATION	V	V	V
W	STORAGE MANHOLE FLOOR ELEVATION	W	W	W
X	INLET PIPE ID AND MATERIAL	X1 X2	X1 X2	X1 X2
Y	INLET PIPE INVERT	Y1 Y2	Y1 Y2	Y1 Y2
Z	SEPARATOR UNIT INVERT	Z	Z	Z
AA	OUTLET PIPE ID AND MATERIAL	AA	AA	AA
AB	ELBOW INVERT ELEVATION	AB	AB	AB
AC	CONNECTING PIPE INVERT ELEVATION	AC	AC	AC
AD	CONNECTION PIPE SPACING	20"	24"	24"
AE	STORAGE MANHOLE SIDE OFFSET	72 ± 6"	72 ± 6"	72 ± 6"
AF	STORAGE MANHOLE DOWNSTREAM OFFSET	23"	31"	25"

BAYSAVER MAINTENANCE

BAYSAVER SYSTEMS MUST BE INSPECTED AND MAINTAINED PERIODICALLY. INSPECTION IS MADE BY CHECKING THE DEPTH OF SEDIMENT IN EACH MANHOLE WITH A GRADE STICK OR SIMILAR DEVICE. MAINTENANCE IS REQUIRED WHEN THE SEDIMENT DEPTH IN EITHER MANHOLE EXCEEDS 2 FEET. MINIMUM INSPECTION IS REQUIRED TWICE A YEAR TO MAINTAIN OPERATION AND FUNCTION OF BAYSAVER.

MAINTENANCE CONSISTS OF THE FOLLOWING:

A. CONTAMINANT STORAGE MANHOLE

1. REMOVE THE ENTIRE VOLUME OF THE CONTAMINATED WATER BY VACUUM TRUCK.

2. CLEAN THE MANHOLE WALLS AND FLUSH OUT THE MANHOLE USING A HIGH PRESSURE HOSE AND REMOVE FLUSHING WATER BY VACUUM TRUCK. MAKE CERTAIN MANHOLE IS CLEAN.

B. PRIMARY SEPARATION MANHOLE

1. USING A SUBMERSIBLE PUMP, PUMP THE CLEAN WATER FROM THE CENTER OF THE MANHOLE DIRECTLY INTO THE EMPTY STORAGE MANHOLE UNTIL THE WATER LEVEL FALLS TO 1 FOOT ABOVE THE SEDIMENT LAYER.

2. REMOVE THE SETTLED SEDIMENT AND REMAINING WATER BY VACUUM TRUCK.

3. CLEAN THE MANHOLE WALLS AND FLUSH OUT THE MANHOLE USING A HIGH PRESSURE HOSE AND REMOVE FLUSHING WATER BY VACUUM TRUCK. MAKE CERTAIN MANHOLE IS CLEAN.

4. CONTAMINATED MATERIAL REMOVED FROM THE MANHOLES MUST BE DISPOSED OF RESPONSIBLY AND LEGALLY BY THE OPERATOR OF THE VACUUM TRUCK.

GENERAL CONSTRUCTION NOTES

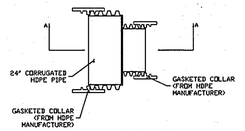
1. ALL WORK MUST BE DONE WITH REGARD FOR THE SAFETY OF THE CONSTRUCTION CREW.

2. ALL WORK AND MATERIALS MUST COMPLY WITH APPLICABLE STATE AND LOCAL REGULATIONS.

3. KNOW THE LOCATION AND DEPTH OF ANY UNDERGROUND UTILITIES BEFORE EXCAVATION BEGINS.

HDPE-HDPE REDUCER DETAIL

FOR USE WITH HDPE OUTLET PIPES
NOT TO SCALE



BAYSAVER INSTALLATION INSTRUCTIONS

1. EXCAVATION MUST PROVIDE ADEQUATE SPACE TO CONNECT INLET AND OUTLET PIPES TO SEPARATOR MANHOLE AND BAYSAVER UNIT. INSTALL PRECAST DROP STRUCTURES ON SOLID GROUND AS VERIFIED BY A GEOTECHNICAL ENGINEER.

2. VERIFY THE SUBGRADE ELEVATION AGAINST THE MANHOLE DIMENSIONS AND CONNECTING STORM DRAIN INVERTS.

3. MAKING SURE THE BASES ARE LEVEL AND THE STORAGE MANHOLE OPENINGS ARE ALIGNED WITH THE SEPARATOR UNIT, INSTALL PRIMARY AND STORAGE MANHOLES. INSTALL RUBBER GASKETS ON BASE UNITS AND COAT WITH LUBRICATING GREASE. INSTALL ADDITIONAL MANHOLE SECTIONS AS REQUIRED. SEAL LIFT HOLES WITH NON-SHRINK GROUT.

4. BACKFILL BASE SECTIONS OF MANHOLES TO INVERT OF STORAGE MANHOLE CONNECTING PIPES. USING APPROVED BACKFILL MATERIAL, BACKFILL AND COMPACT IN 8 INCH LIFTS. BACKFILL AND COMPACTION SHOULD BE MONITORED BY A GEOTECHNICAL ENGINEER.

5. INSTALL BAYSAVER SEPARATOR UNIT AND CONNECTING PIPES. SEAL ALL CONNECTING JOINTS AND INSTALL SEPARATOR UNIT/STORM DRAIN JOINT COLLAR. CUT EXCESS LENGTH OFF CONNECTING PIPES INSIDE STORAGE MANHOLE.

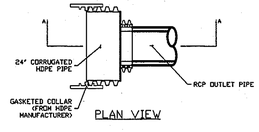
6. BACKFILL SEPARATOR UNIT AND MANHOLES. AREAS NOT ACCESSIBLE TO COMPACTION EQUIPMENT MUST BE BACKFILLED WITH LEAN CONCRETE OR FLOWABLE FILL.

7. INSTALL AND SET MANHOLE COVER GRADE ADJUSTMENT RINGS AS NECESSARY.

8. INSTALL AND SET MANHOLE FRAME AND COVER UNITS.

REDUCER/ADAPTER DETAIL

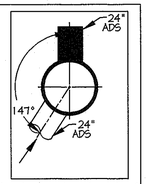
FOR USE WITH OUTLET PIPES OTHER THAN HDPE
NOT TO SCALE



Project: TROY HILL PARCEL A-25
Address: TROY HILL DRIVE
Delivery Date:
Owner: TROY HILL CORP.CENTER
Address: C/O MANEKIN
7060 COLUMBIA GATEWAY DR.
COLUMBIA, MD 21046
Designer: RIEMER MUEGGE, PHR&A
Contact: CHRIS REID, P.E.
Phone: 410-997-8900
Fax: 410-997-9282
Contractor:
Address:
Contact:
Phone:
Fax:

Separator Unit Model:
1K ☐
3K ■
5K ☐
Circle systen orientation above

Manhole Specifications:
Primary Manhole Diameter: 60 inches
Storage Manhole Diameter: 60 inches
Floor Elevations:
Primary Manhole 162.42
Storage Manhole 162.42
Primary Manhole Inverts:
Separator Unit 170.42
Inlet Pipe(s) 175.45 (24" IN)
170.42 (24"OUT)



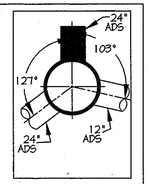
Please show orientation (including angle), size and material of inlet pipes above.
Cover Elevations:
Primary Manhole 186.00
Storage Manhole 180.00
WQ-3

This order can be faxed to Bay Saver, Inc. at (301) 829-3747

Project: TROY HILL PARCEL A-25
Address: TROY HILL DRIVE
Delivery Date:
Owner: TROY HILL CORP.CENTER
Address: C/O MANEKIN
7060 COLUMBIA GATEWAY DR.
COLUMBIA, MD 21046
Designer: RIEMER MUEGGE, PHR&A
Contact: CHRIS REID, P.E.
Phone: 410-997-8900
Fax: 410-997-9282
Contractor:
Address:
Contact:
Phone:
Fax:

Separator Unit Model:
1K ☐
3K ■
5K ☐
Circle systen orientation above

Manhole Specifications:
Primary Manhole Diameter: 60 inches
Storage Manhole Diameter: 60 inches
Floor Elevations:
Primary Manhole 157.88
Storage Manhole 157.88
Primary Manhole Inverts:
Separator Unit 165.43
Inlet Pipe(s) 165.98 (24" IN)
173.30 (12"IN)
165.88 (24"OUT)



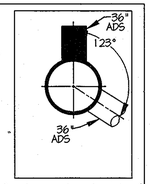
Please show orientation (including angle), size and material of inlet pipes above.
Cover Elevations:
Primary Manhole 182.00
Storage Manhole 181.00
WQ-2

This order can be faxed to Bay Saver, Inc. at (301) 829-3747

Project: TROY HILL PARCEL A-25
Address: TROY HILL DRIVE
Delivery Date:
Owner: TROY HILL CORP.CENTER
Address: C/O MANEKIN
7060 COLUMBIA GATEWAY DR.
COLUMBIA, MD 21046
Designer: RIEMER MUEGGE, PHR&A
Contact: CHRIS REID, P.E.
Phone: 410-997-8900
Fax: 410-997-9282
Contractor:
Address:
Contact:
Phone:
Fax:

Separator Unit Model:
1K ☐
3K ☐
5K ■
Circle systen orientation above

Manhole Specifications:
Primary Manhole Diameter: 72 inches
Storage Manhole Diameter: 84 inches
Floor Elevations:
Primary Manhole 157.43
Storage Manhole 157.43
Primary Manhole Inverts:
Separator Unit 165.43
Inlet Pipe(s) 165.53 (36" IN)
165.43 (36"OUT)



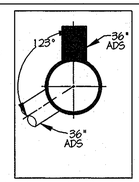
Please show orientation (including angle), size and material of inlet pipes above.
Cover Elevations:
Primary Manhole 183.20
Storage Manhole 183.40
WQ-1

This order can be faxed to Bay Saver, Inc. at (301) 829-3747

Project: TROY HILL PARCEL A-25
Address: TROY HILL DRIVE
Delivery Date:
Owner: TROY HILL CORP.CENTER
Contact: C/O MANEKIN
Address: 7060 COLUMBIA GATEWAY DR.
COLUMBIA, MD 21046
Designer: RIEMER MUEGGE, PHR&A
Contact: CHRIS REID, P.E.
Phone: 410-997-8900
Fax: 410-997-9282
Contractor:
Address:
Contact:
Phone:
Fax:

Separator Unit Model:
1K ☐
3K ☐
5K ■
Circle systen orientation above

Manhole Specifications:
Primary Manhole Diameter: 72 inches
Storage Manhole Diameter: 84 inches
Floor Elevations:
Primary Manhole 157.43
Storage Manhole 157.43
Primary Manhole Inverts:
Separator Unit 165.43
Inlet Pipe(s) 165.53 (36" IN)
165.43 (36"OUT)



Please show orientation (including angle), size and material of inlet pipes above.
Cover Elevations:
Primary Manhole 183.70
Storage Manhole 183.90
WQ-1A

This order can be faxed to Bay Saver, Inc. at (301) 829-3747

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR — DATE 2/22/01

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 2/22/01

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 2/22/01

DATE	NO.	REVISION

OWNER / DEVELOPER
TROY HILL CORPORATE CENTER PROPERTY LLC
c/o MANEKIN LLC
7061 COLUMBIA GATEWAY DRIVE
COLUMBIA, MARYLAND 21046
410-290-1400

PROJECT
TROY HILL CIRCLE
TROY HILL CORPORATE CENTER
PARCEL A-25

AREA TAX MAP 37 ZONE: M-1 PLAT No. 14619
1st. ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
BAYSAVER DETAILS AND NOTES

RIEMER MUEGGE
a division of:
Patton Harris Rust & Associates, pc
ENGINEERS ● SURVEYORS ● PLANNERS
LANDSCAPE ARCHITECTS ● ENVIRONMENTAL SPECIALISTS
8816 Centre Park Drive, Columbia, MD 21045 ● tel 410.997.8900 fax 410.997.9282

DATE

STATE OF MARYLAND — ARTHUR E. MUEGGE — No. 8707 — REGISTERED PROFESSIONAL ENGINEER

ARTHUR E. MUEGGE #8707

DESIGNED BY :	C.J.R.
DRAWN BY:	DAM
PROJECT NO :	00239/DETAILS3.DWG
DATE :	
SCALE :	AS SHOWN
DRAWING NO.	10 OF 12

SDP-01-82

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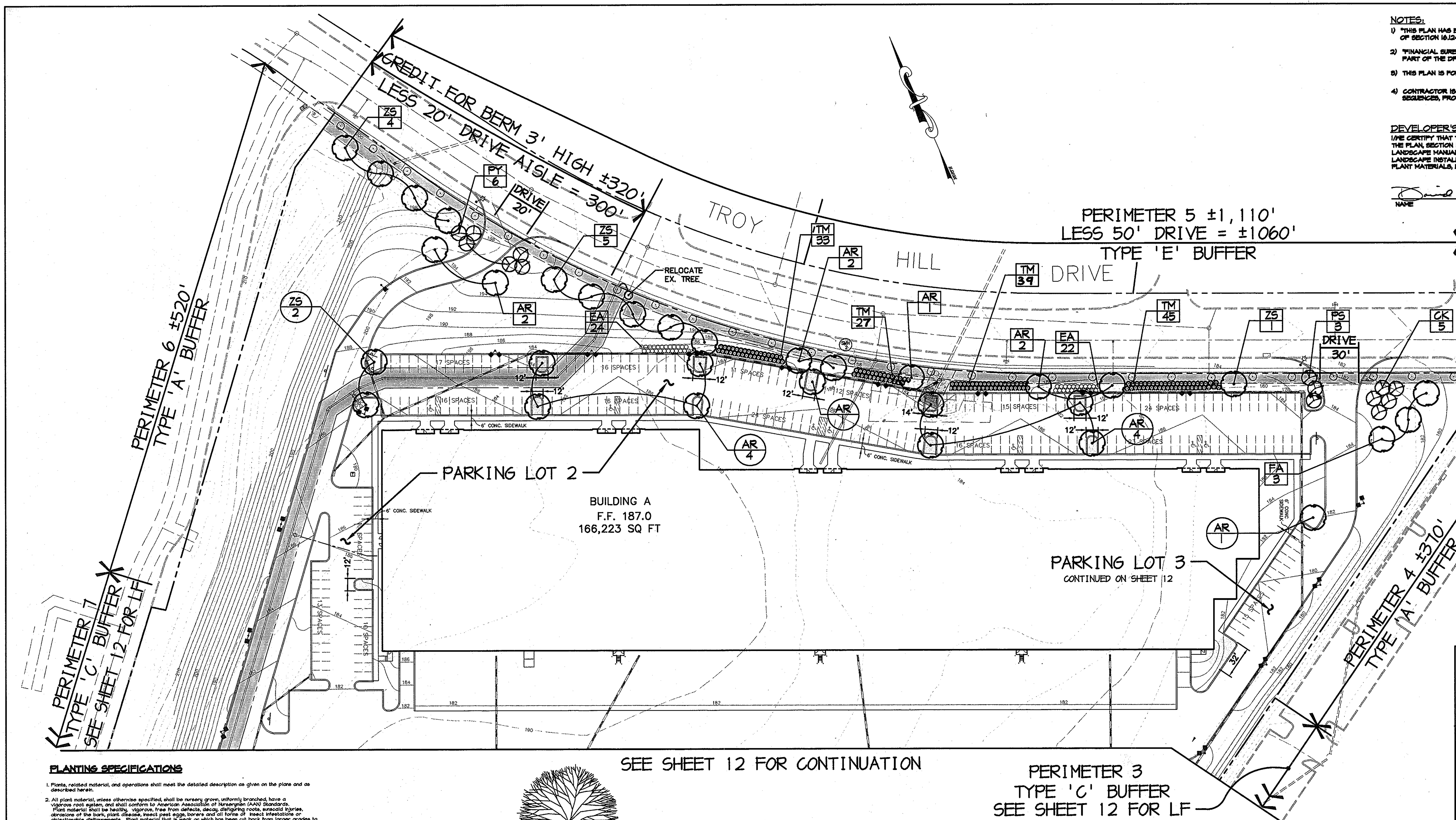


NOTES:

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 MUST BE POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT IN THE AMOUNT OF $ 55,530.00

3) THIS PLAN IS FOR LANDSCAPING PURPOSES ONLY.

4) CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.

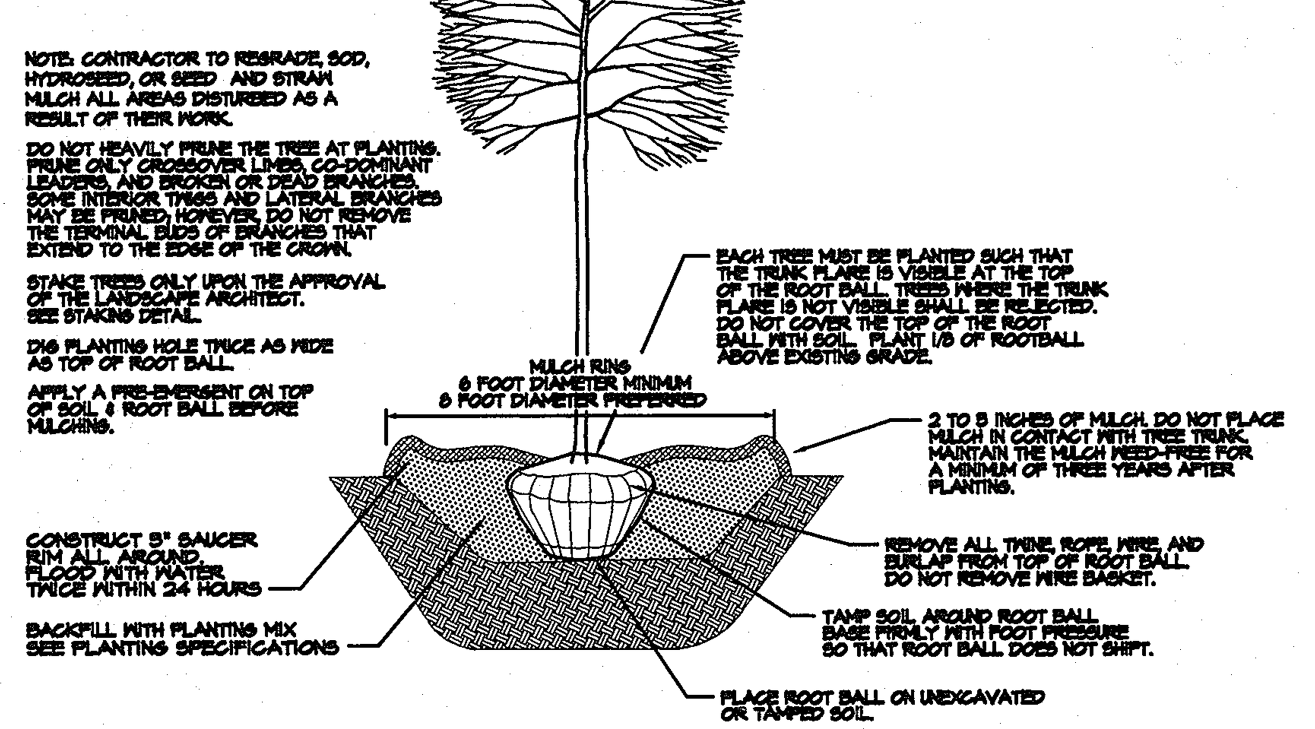
DEVELOPER'S/BUILDER'S CERTIFICATE:

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.

David E. Meunier — NAME 2/15/01 — DATE

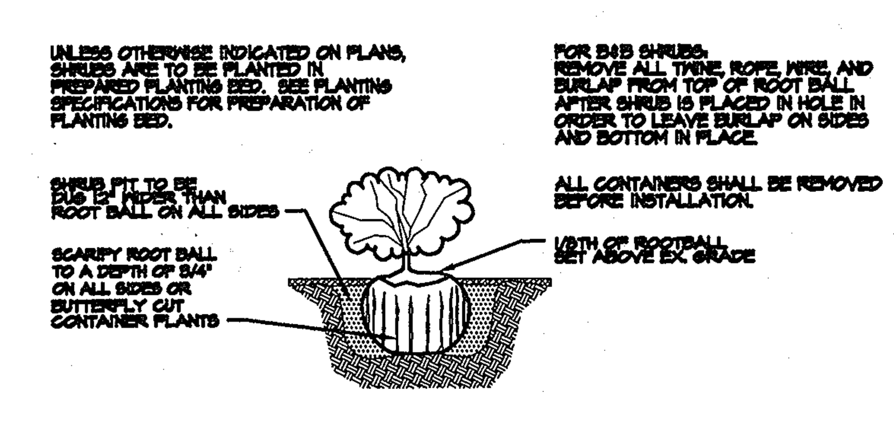
PLANTING SPECIFICATIONS

1. Plants, related material, and operations shall meet the detailed description as given on the plans and as described herein.
2. All plant material, unless otherwise specified, shall be nursery grown, uniformly branched, have a vigorous root system, and shall conform to American Association of Nurserymen (AAN) Standards. Plant material shall be healthy, vigorous, free from defects, decay, disfiguring roots, sunscald injuries, abrasions of the bark, plant disease, insect pest eggs, borers and all forms of insect infestations or objectionable disfigurements. Plant material that is weak or which has been cut back from larger grades to meet specified requirements will be rejected. Trees with forked leaders will not be accepted. All B&B plants shall be freshly dug; no healed-in plants or plants from cold storage will be accepted.
3. Unless otherwise specified, all general conditions, planting operations, details and planting specification shall conform to "Landscape Specification Guidelines for Baltimore-Washington Metropolitan Areas", (hereinafter "Landscape Guidelines") approved by the Landscape Contractors Association of Metropolitan Washington and the Potomac Chapter of the American Society of Landscape Architect, latest edition, including all agenda.
4. Contractor shall be required to guarantee all plant material for a period of one year after date of acceptance in accordance with the appropriate section of the Landscape Guidelines. Contractor's attention is directed to the maintenance requirements found within the one year specifications including watering and replacement of specified plant material.
5. Contractor shall be responsible for notifying utility companies, utility contractors and "Miss Utility" a minimum of 48 hours prior to beginning any work. Contractor may make minor adjustments in spacing and location of plant material to avoid conflicts with utilities. Damage to existing structure and utilities shall be repaired at the expense of the Contractor.
6. Protection of existing vegetation to remain shall be accomplished by the temporary installation of 4 foot high snow fence at the drip line, see detail.
7. Contractor is responsible for installing all material in the proper planting season for each plant type. All planting is to be completed within growing season of completion of site construction. Do not plant Pinus strobus or XCupressocyparis leylandii between November 15 and March 15.
8. Bid shall be based on actual site conditions. No extra payment shall be made for work arising from site conditions differing from those indicated on drawings and specifications.
9. Plant quantities are provided for the convenience of the contractor only. If discrepancies exist between quantities shown on plan and those shown on the plant list, the quantities on the plan take precedence. Where discrepancies on the plan exist between the symbols and the callout leader, the number of symbols take precedence.
10. All shrubs and groundcover areas shall be planted in continuous planting beds, prepared as specified. (See Specification 12) Beds to be mulched with minimum 2" and maximum 3" of composted, double-shredded hardwood mulch.
11. Positive drainage shall be maintained in planting beds (minimum 2 percent slope).
12. Bed preparation shall be as follows: Till into a minimum depth of 6" 1 yard of Compro or Leafgro per 200 SF of planting bed, and 1 yard of topsoil per 100 SF of bed. Add 3 lbs of standard 5-10-5 fertilizer per cubic yard of planting mix and till. Ericaceous plants (Azaleas, Rhododendrons, etc.): top dress after planting with iron sulfate or comparable product according to package directions. Taxus baccata 'Repandens' (English weeping yews): Top dress after planting with 1/4 to 1/2 cup lime each.
13. Planting mix: For trees not in a prepared bed, mix 50% Compro or Leafgro with 50% soil from tree hole to use as backfill, see tree planting detail.
14. Weed Control: Incorporate a pre-emergent herbicide into the planting bed following recommended rates on the label. Caution: Be sure to carefully check the chemical used to assure its adaptability to the specific groundcover to be treated.
15. Water: All plant material planted shall be watered thoroughly the day of planting. All plant material not yet planted shall be properly protected from drying out until planted. At a minimum, water unplanted plant material daily.
16. All areas within contract limits disturbed during or prior to construction not designated to receive plants and mulch shall be fine graded, grass seed planted, and covered with straw mulch.
17. This plan is intended for landscape use only. See other plan sheets for more information on grading, utilities, sediment control, layout, etc.



TREE PLANTING DETAIL - B&B TREES IN ALL SOIL TYPES

NOTE: THIS DETAIL ASSUMES THAT THE PLANTING SPACE IS LARGER THAN 8 FEET. SQUARE, OPEN TO THE SKY, AND NOT COVERED BY ANY PAVING OR GRATING.



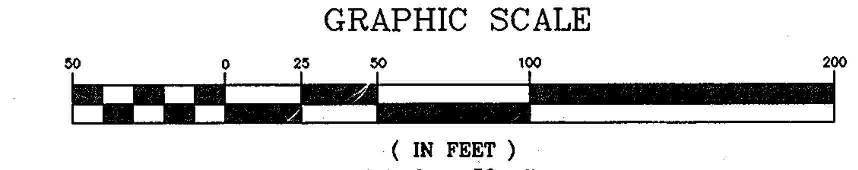
SHRUB PLANTING DETAIL - B&B AND CONTAINER SHRUBS

NOTE: THIS DETAIL ASSUMES THAT THE PLANTING SPACE IS LARGER THAN 4 FEET SQUARE, OPEN TO THE SKY, AND NOT COVERED BY ANY PAVING OR GRATING.

LEGEND

- EX. SHADE TREE APPROVED PER F-98-169
- PROP. FLOWERING TREE
- PROP. SHADE TREE
- PROP. EVG. SHRUB MASS
- PROP. DEC. SHRUB MASS
- PARKING LOT LANDSCAPE REQUIREMENT
- PERIMETER LANDSCAPE REQUIREMENT
- PARKING LOT LANDSCAPE ISLAND (12')

GRAPHIC SCALE



(IN FEET)
1 inch = 50 ft.

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR — 2/22/01 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 2/20/01 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — 2/26/01 DATE

DATE	NO.	REVISION

OWNER / DEVELOPER

TROY HILL CORPORATE CENTER PROPERTY LLC
c/o MANEKIN LLC
7061 COLUMBIA GATEWAY DRIVE
COLUMBIA, MARYLAND 21046
410-290-1400

PROJECT: **TROY HILL CIRCLE**
TROY HILL CORPORATE CENTER
PARCEL A-25

AREA: TAX MAP 37 ZONE: M-1 PLAT No. 14619
1st. ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE

LANDSCAPE PLAN

RIEMER MUEGGE
a division of:
Patton Harris Rust & Associates, pc
ENGINEERS ● SURVEYORS ● PLANNERS
LANDSCAPE ARCHITECTS ● ENVIRONMENTAL SPECIALISTS
8818 Centre Park Drive, Columbia, MD 21045 ● tel 410.997.8900 fax 410.997.9282

2/8/01 DATE

STATE BOARD OF EXAMINERS OF LANDSCAPE ARCHITECTS 830 DAVID DOWS STATE OF MARYLAND

DAVID T. DOWS #830

DESIGNED BY :	D.M.D.
DRAWN BY:	G.T.H.
PROJECT NO :	00239/ LSCP1.DWG
DATE :	
SCALE :	AS SHOWN
DRAWING NO.	11 OF 14

SDP-01-82

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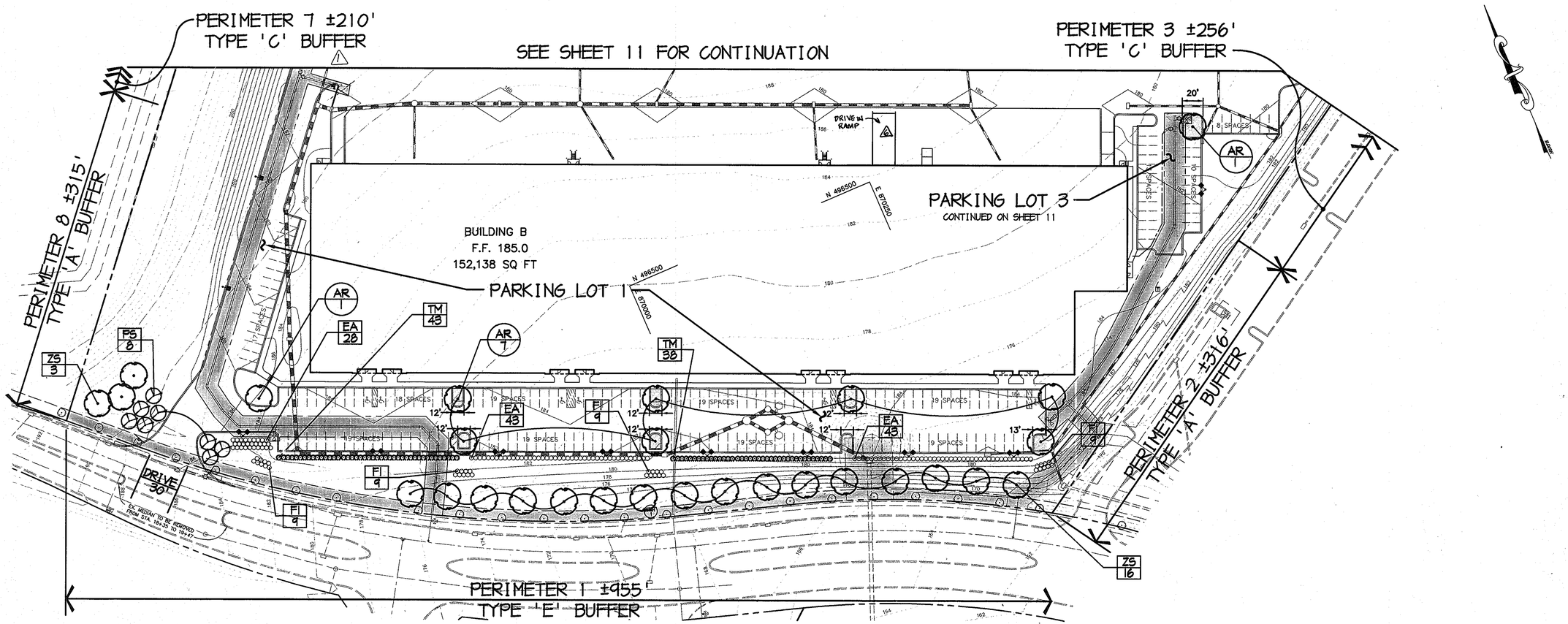

SCHEDULE A - PERIMETER LANDSCAPE EDGE

	ADJACENT TO PERIMETER PROPERTIES						ADJACENT TO ROADWAYS	
	2*	3*	4*	6*	7*	8*	1	5
PERIMETER								
LANDSCAPE TYPE	A	C	A	A	C	A	E	E
LINEAR FEET OF ROADWAY FRONTAGE/ PERIMETER	±	±	±	±	±	±	±955'	±1,110'
CREDIT FOR EXISTING VEGETATION (YES,/NO/LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	–	–	–	–	–	–	NO –	NO –
CREDIT FOR DRIVE AISLE YES/NO/LINEAR FEET)	–	–	–	–	–	–	YES 30'	YES 50'
LINEAR FEET REMAINING	±	±	±	±	±	±	± 925'	± 1,060'
CREDIT FOR WALL, FENCE, OR BERM (YES/NO/LINEAR FEET)	–	–	–	–	–	–	NO –	YES ±300'
NUMBER OF PLANTS REQUIRED								
SHADE TREES	–	–	–	–	–	–	23	27
EVERGREEN TREES	–	–	–	–	–	–	–	–
SHRUBS	–	–	–	–	–	–	231	190**
NUMBER OF PLANTS PROVIDED								
SHADE TREES	–	–	–	–	–	–	19	20
EVERGREEN TREES	–	–	–	–	–	–	–	–
SMALL FLOWERING TREES	–	–	–	–	–	–	8	14
SHRUBS	–	–	–	–	–	–	231	190

SCHEDULE 'A' NOTES:

- REGULATIONS DO NOT REQUIRE LANDSCAPE EDGES, BUFFERING, OR SCREENING BETWEEN INTERNAL LOTS OR PARCELS WITHIN THE SAME DEVELOPMENT. (PAGE 17 OF THE Ho.Co. LANDSCAPE MANUAL)

** " A BERM THAT IS A MINIMUM OF 3' HIGH OR A CHANGE IN GRADE THAT CAUSES A PARKING LOT TO BE LOCATED LOWER THAN THE ADJACENT ROADWAY BY 3' OR MORE, MAY BE SUBSTITUTED FOR SHRUB PLANTING IN A TYPE 'E' LANDSCAPE BUFFER." (PAGE 24 OF THE Ho.Co. LANDSCAPE MANUAL)

SUBSTITUTION NOTES:

PERIMETER 1: (8) FLOWERING TREES WERE SUBSTITUTED FOR (4) SHADE TREES

PERIMETER 2: (14) FLOWERING TREES WERE SUBSTITUTED FOR (7) SHADE TREES

SCHEDULE B - PARKING LOT INTERNAL LANDSCAPING

PARKING LOT	1	2	3
NUMBER OF PARKING SPACES	168	223	46
NUMBER OF SHADE TREES REQUIRED (1/20 SPACES)	8	11	2
NUMBER OF TREES PROVIDED SHADE TREES	8	11	2
NUMBER OF ISLANDS REQUIRED	8	11	2
NUMBER OF ISLANDS PROVIDED (1:20 MIN. 200 SQ.FT.)	8*	9**	5***

SCHEDULE 'B' NOTES:

SUBSTITUTE 3 EXTRA LANDSCAPE ISLANDS FROM PARKING LOT 3 FOR 2 MISSING LANDSCAPE ISLANDS IN PARKING LOT 2.

* 1512 SQ.FT. / 200 = 8 ISLANDS
** 1800 SQ.FT. / 200 = 9 ISLANDS
*** 1016 SQ.FT. / 200 = 5 ISLANDS

PLANT LIST

KEY	QTY	BOTANICAL + COMMON NAME	SIZE	ROOT	SPACING
		MAJOR DECIDUOUS TREES			
AR	26	Acer rubrum 'Red Sunset' Red Sunset maple	2½"-3" Cal.	B & B	Space as shown
FA	3	Fraxinus americana White ash	2½"-3" Cal.	B & B	Space as shown
ZS	31	Zelkova serrata 'Green Vase' Japanese zelkova	2½"-3" Cal.	B & B	Space as shown
		MINOR DECIDUOUS TREES			
CK	5	Cornus kousa Kousa dogwood	8'-10' Ht.	B & B	Min. spacing 15' o.c.
PS	11	Prunus serrulata 'Kwanzan' Kwanzan cherry	1½"-2" Cal.	B & B	Min. spacing 15' o.c.
PY	6	Prunus yaedoensis Yoshino cherry	1½"-2" Cal.	B & B	Min. spacing 15' o.c.
		SHRUBS (TO BE PLANTED IN MULCHED BED)			
EA	160	Euonymus alatus 'Compacta' Dwarf winged euonymus	24"-30" Ht.	B & B	Plant 4' o.c.
FI	36	Forsythia xintermedia Border forsythia	36"-48" Ht.	B & B	Plant 7' o.c.
TM	225	Taxus xmedia 'Densiformis' Densiformis yew	30"-36" Ht.	B & B	Plant 4.5' o.c.

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR — DATE 2/22/01

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 2/22/01

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 2/22/01

DATE	NO.	REVISION
10/2/09	6	ADDED DRIVE IN RAMP TO BUILDING B
11-29-01	1	RELOCATED FH AT BLDG. 'B' DRIVE-IN RAMP, MODIFIED CURB.

OWNER / DEVELOPER

TROY HILL CORPORATE CENTER PROPERTY LLC
c/o MANEKIN LLC
7061 COLUMBIA GATEWAY DRIVE
COLUMBIA, MARYLAND 21046
410-290-1400

PROJECT **TROY HILL CIRCLE**
TROY HILL CORPORATE CENTER
PARCEL A-25

AREA TAX MAP 37 ZONE: M-1 PLAT No. 14619
1st. ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE **LANDSCAPE PLAN**

RIEMER MUEGGE
a division of:
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ENGINEERS ● SURVEYORS ● PLANNERS
LANDSCAPE ARCHITECTS ● ENVIRONMENTAL SPECIALISTS
8818 Centre Park Drive, Columbia, MD 21045 ● tel 410.997.8900 fax 410.997.9282

2/8/01 DATE

DAVID T. DOWS #830

DESIGNED BY :	D.M.D.
DRAWN BY:	G.T.H.
PROJECT NO :	00239/ LSCP2.DWG
DATE :	
SCALE :	AS SHOWN
DRAWING NO.	12 OF 15

SDP-01-82

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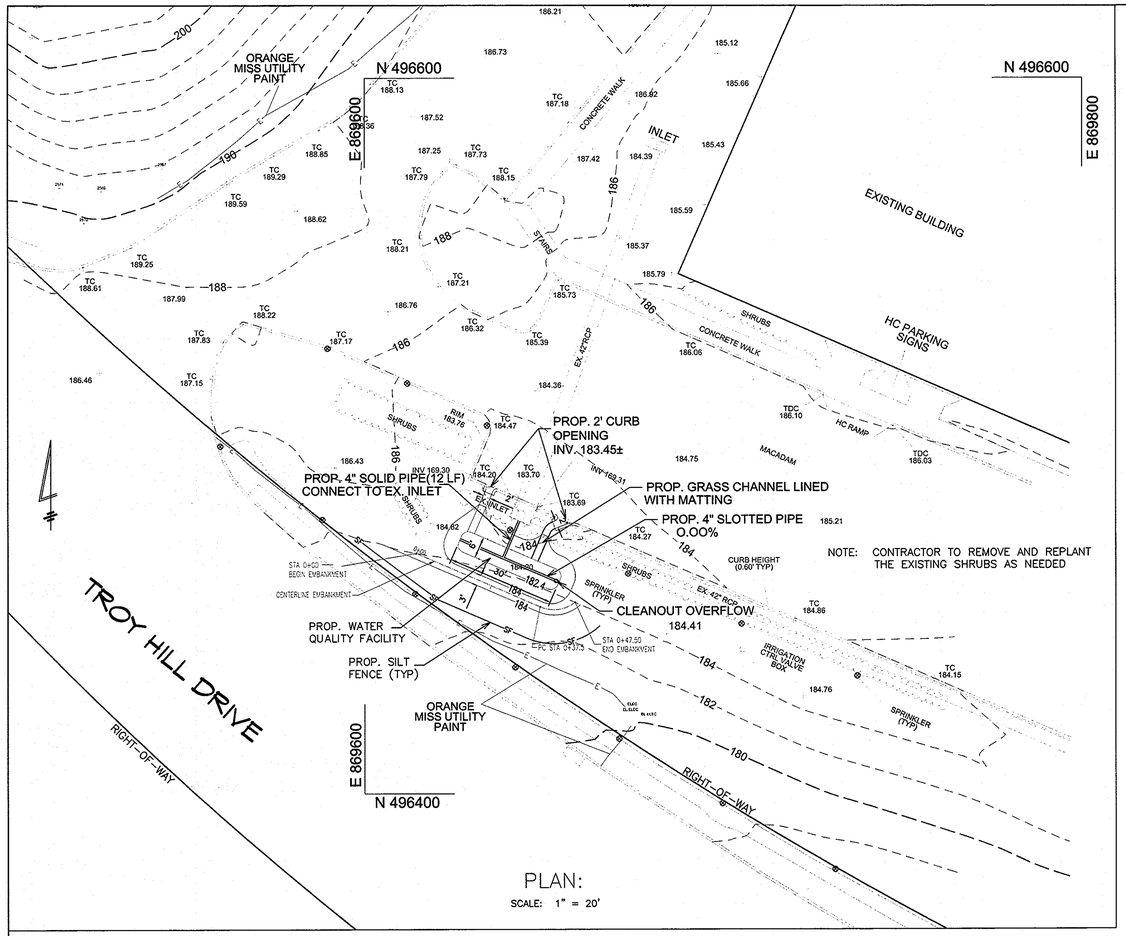
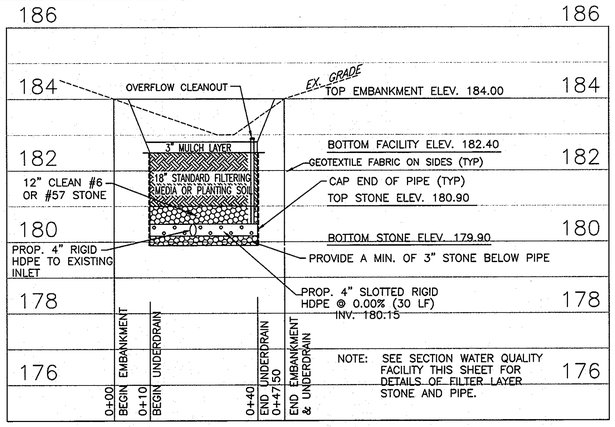
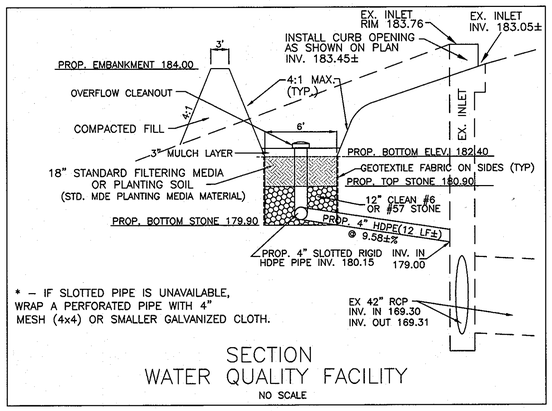


PLAN:
SCALE: 1" = 20'



PROFILE ALONG TOP EMBANKMENT
WATER QUALITY FACILITY
SCALE: 1" = 2' VERT.
1" = 20' HORIZ.



SECTION
WATER QUALITY FACILITY
NO SCALE

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED FACILITY

1. THE 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.
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 LOGBOOK SHALL BE MAINTAINED TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
9. THE MAINTENANCE LOGBOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.
10. ONCE THE PERFORMANCE CHARACTERISTICS OF THE SYSTEM HAVE BEEN VERIFIED, THE MONITORING SCHEDULE CAN BE REDUCED TO AN ANNUAL BASIS UNLESS PERFORMANCE DATA INDICATES THAT A MORE FREQUENT SCHEDULE IS REQUIRED.

WATER QUALITY FACILITY PLANTING SCHEDULE

QTY.	SYMBOL	BOTANICAL/ COMMON NAME	SIZE
2 EA		ACER RUBRUM RED MAPLE	2" CAL. (B&B)
5 EA		VACCINIUM CORYMBOSUM HIGHBUSH BLUEBERRY	2 1/2' – 3' HT
8 EA		VIBURNUM DENTATUM ARROWWOOD VIBURNUM	2 1/2' – 3' HT
15 EA		ANDROPOGON VIRGINICUS / BROOMSEDGE EUPATORIUM PERPUREA / JOEY PYE WEED PANICUM VIRGATUM / SWITCHGRASS	1 QT. CLUMP 18" O/C

SITE STORMWATER MANAGEMENT SUMMARY TABLE	
CENTROID OF FACILITY	N496466 E869642
DRAINAGE AREA TO FACILITY	0.28± ac
IMPERVIOUS AREA FOR MANAGEMENT	4680 S.F.
WATER QUALITY VOLUME (ESDv) REQUIRED: PROVIDED:	346 C.F. 385 C.F.

STRUCTURAL CLASSIFICATION: NON MD-378 DAM

INSPECTION CHART FOR STORMWATER FACILITY CONSTRUCTION

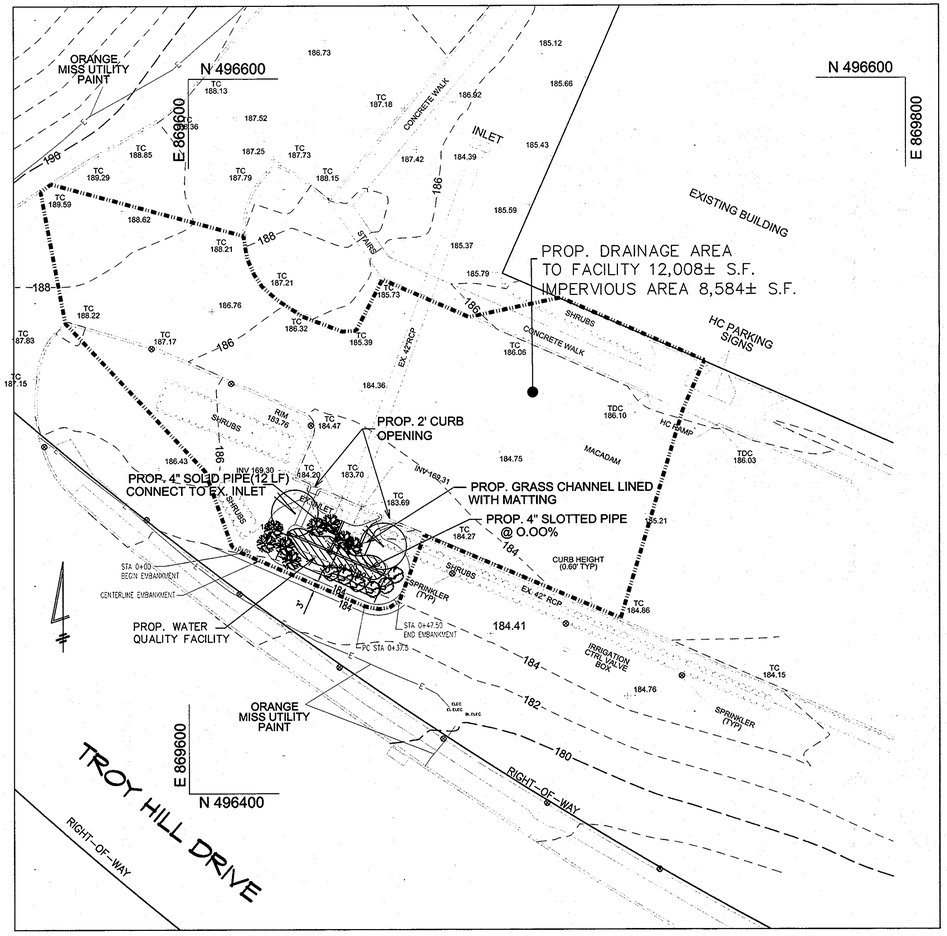
*MANDATORY NOTIFICATION OF THE CERTIFYING ENGINEER IS REQUIRED 48 HOURS PRIOR TO COMPLETION OF EACH INDICATED STAGE.	DEVELOPER'S/ENGINEERS APPROVAL	
STAGE	INITIALS	DATE
1. CLEARING AND GRUBBING.		
2. EXCAVATE FACILITY TO SUBGRADE.		
3. PLACE STONE AND PERFORATED PIPE AS SHOWN IN BOTTOM OF FACILITY.		
4. CAP END OF OUTLET PIPE. CONNECT TO EXISTING INLET.		
5. INSTALL SAND/LOAM LAYER. STABILIZE WITH SEED AND MATTING.		
6. SUBMIT STORMWATER MANAGEMENT AS-BUILT MYLARS TO HOWARD CARROLL.		

1.) SEE CONSTRUCTION SPECIFICATIONS AND STANDARDS FOR CLARIFICATION.

PLEASE NOTIFY CERTIFYING ENGINEER 48 HOURS PRIOR TO COMMENCING CONSTRUCTION

GENERAL NOTES:

1) CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST THREE (3) WORKING DAYS PRIOR TO START OF WORK.
2) CONTRACTOR SHALL FIELD VERIFY ALL UTILITIES TO HIS OWN SATISFACTION.



PLAN: PROPOSED DRAINAGE AREA MAP/PLANTING PLAN
SCALE: 1" = 20'

APPROVED: Howard County Department of Planning and Zoning

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9.12.13

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-13-13

DIRECTOR — DATE 9/13/13

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 17740, EXPIRATION DATE: 4/01/2012.

KRISTIN D. BARMOY, P.E.

OWNER:
TROY HILL CORPORATE CENTER III, LLC
C/O CUSHMAN & WAKEFIELD
500 EAST PRATT STREET
SUITE 500
BALTIMORE, MD 21201
ATTN: ADRIENNE LEE
(410) 685-9595

STATE OF MARYLAND — KRISTIN DENISE BARMOY — No. 17740 — PROFESSIONAL ENGINEER

SPM CONSULTANTS, LLC
ENGINEERING, SURVEYING, LAND PLANNING
(A MBCM ENTERPRISES COMPANY)
849 FAIRMOUNT AVENUE SUITE 100 BALTIMORE, MD 21286
229 EAST MAIN STREET SUITE B WESTMINSTER, MD 21157
PH: 410-876-4112 FAX: 410-876-8213

REVISIONS:
6 1-10-12 ADDED SHEET FOR SWM DETAILS

WATER QUALITY FACILITY FOR ADDITIONAL PARKING AREAS
PARCEL A-25
A RESUBDIVISION OF PARCEL A-19
TROY HILL CORPORATE CENTER
PARCELS A-23, A-24 AND A-25
LOCATED ON TROY HILL DRIVE
FIRST ELECTION DISTRICT - HOWARD COUNTY, MARYLAND
PLAT 14619

SCALE	AS SHOWN
DRAWN BY	DAB
CHECKED BY	KDB
DATE	10-25-2011
SHEET NO.	13 OF 14
PROJECT NO.	20100087

SDP-01-82

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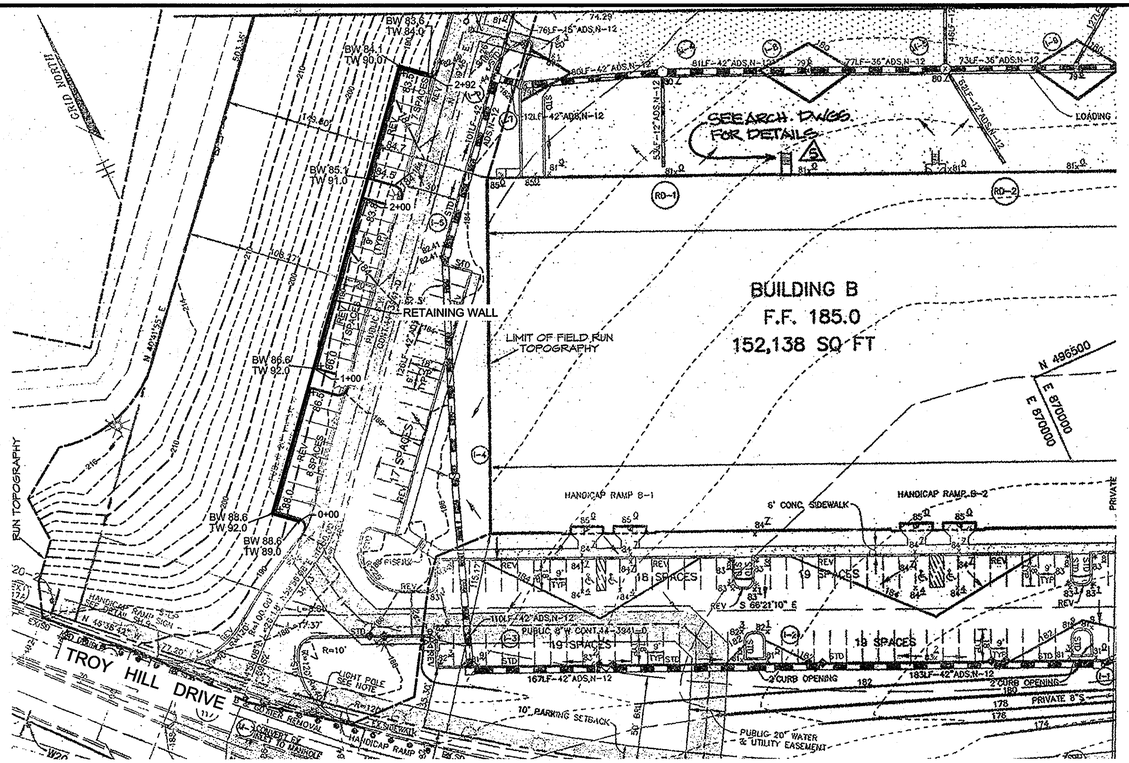
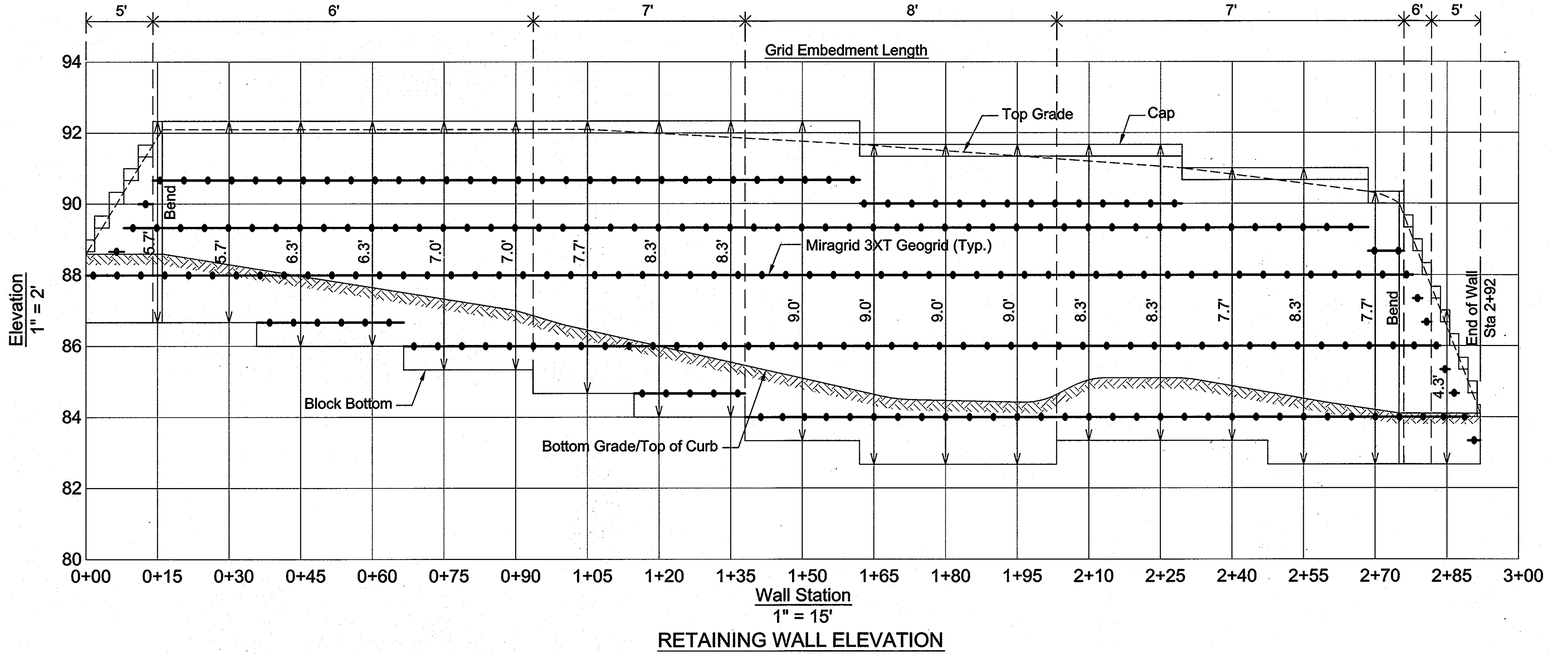


WALL LOCATION PLAN
1" = 20'



RETAINING WALL ELEVATION

SPECIFICATIONS

MODULAR CONCRETE BLOCK RETAINING WALL

PART 1: GENERAL

1.01 Description

A. Work shall consist of furnishing and construction of a Modular Retaining Wall System in accordance with these specifications and in reasonably close conformity with the lines, grades, design, and dimensions shown on the plans.
B. Work includes preparing foundation soil, furnishing and installing leveling pad, unit drainage fill and backfill to the lines and grades shown on the construction drawings.
C. Work includes furnishing and installing geogrid soil reinforcement of the type, size, location, and lengths designated on the construction drawings.

1.02 Delivery, Storage and Handling

A. Contractor shall check all materials upon delivery to assure that the proper type, grade, color, and certification has been received.
B. Contractor shall protect all materials from damage due to job site conditions and in accordance with manufacturer's recommendations. Damaged materials shall not be incorporated into the work.

PART 2: PRODUCTS

2.01 Modular Concrete Retaining Wall Units

A. Modular concrete units shall conform to the following architectural requirements:
face color - color may be specified by the Owner.
face finish - sculptured rock face in angular tri-planer or flat configuration. Other face finishes will not be allowed without written approval of Owner.
bond configuration - running with bonds nominally located at midpoint vertically adjacent units, in both straight and curved alignments.
exposed surfaces of units shall be free of chips, cracks or other imperfections when viewed from a distance of 10 feet under diffused lighting.
B. Modular concrete materials shall conform to the requirements of ASTM C1372 - Standard Specifications for Segmental Retaining Wall Units.
C. Modular concrete units shall conform to the following structural and geometric requirements measured in accordance with appropriate references:
compressive strength = 3000 psi minimum;
absorption = 8 % maximum (6% in northern states) for standard weight aggregates;
dimensional tolerances = ± 1/8" from nominal unit dimensions not including rough split face, ±1/16" unit height - top and bottom planes;
unit size - 8" (H) x 18" (W) x 12 (D) minimum;
unit weight - 75 lbs/unit minimum for standard weight aggregates;
inter-unit shear strength - 1000 plf minimum at 2 psi normal pressure;
geogrid/unit peak connection strength - 1000 plf minimum at 2 psi normal force.
D. Modular concrete units shall conform to the following constructability requirements: (if applicable)
vertical setback = 1/8"± per course (near vertical) or 1"+ per course per the design;
alignment and grid positioning mechanism - fiberglass pins, two per unit minimum;
maximum horizontal gap between erected units shall be - 1/2 inch.

2.02 Shear Connectors (if applicable)

A. Shear connectors shall be 1/2 inch diameter thermoset isopthalic polyester resin-protruded fiberglass reinforcement rods or equivalent to provide connection between vertically and horizontally adjacent units. Strength of shear connectors between vertical adjacent units shall be applicable over a design temperature of 10 degrees F to + 100 degrees F.
B. Shear connectors shall be capable of holding the geogrid in the proper design position during grid pre-tensioning and backfilling.

2.03 Base Leveling Pad Material

A. Material shall consist of a compacted #57 crushed stone base as shown on the construction drawings.

2.04 Unit Drainage Fill

A. Unit drainage fill shall consist of #57crushed stone

2.05 Reinforced Backfill

A. Reinforced backfill shall type SM, be free of debris and meet the following gradation tested in accordance with ASTM D-422 and meet other properties shown on the plan:

Sieve Size	Percent Passing
2 inch	100-75
3/4 inch	100-75
No. 40	0-60
No. 200	0-40

Plasticity Index (PI) <10 and Liquid Limit <35 per ASTM D-4318.
B. Material can be site excavated soils where the above requirements can be met. Unsuitable soils for backfill (high plastic clays or organic soils) shall not be used in the reinforced soil mass.

2.06 Geogrid Soil Reinforcement

A. Geosynthetic reinforcement shall consist of geogrids manufactured specifically for soil reinforcement applications and shall be manufactured from high tenacity polyester yarn.

2.07 Drainage Pipe

A. The drainage pipe shall be perforated corrugated HDPE pipe manufactured in accordance with ASTM D-1248.

PART 3 EXECUTION

3.01 Excavation

A. Contractor shall excavate to the lines and grades shown on the construction drawings. Owner's representative shall be responsible for inspecting and approving the excavation prior to placement of leveling material or fill soils.

3.02 Base Leveling Pad

A. Leveling pad material shall be placed to the lines and grades shown on the construction drawings, to a minimum thickness of 6 inches and extend laterally a minimum of 6" in front and behind the modular wall unit.
B. Leveling pad shall be prepared to insure full contact to the base surface of the concrete units.

3.03 Modular Unit Installation

A. First course of units shall be placed on the leveling pad at the appropriate line and grade. Alignment and level shall be checked in all directions and insure that all units are in full contact with the base and properly seated.
B. Place the front of units side-by-side. Do not leave gaps between adjacent units. Layout of corners and curves shall be in accordance with manufacturer's recommendations.
C. Install shear/connecting devices per manufacturer's recommendations.
D. Place and compact drainage fill within and behind wall units. Place and compact backfill soil behind drainage fill. Follow wall erection and drainage fill closely with structure backfill.
E. Maximum stacked vertical height of wall units, prior to unit drainage fill and backfill placement and compaction, shall not exceed three courses.

3.04 Structural Geogrid Installation

A. Geogrid shall be oriented with the highest strength axis perpendicular to the wall alignment.
B. Geogrid reinforcement shall be placed at the strengths, lengths, and elevations shown on the construction design drawings or as directed by the Engineer.
C. The geogrid shall be laid horizontally on compacted backfill and attached to the modular wall units. Place the next course of modular concrete units over the geogrid. The geogrid shall be pulled taut, and anchored prior to backfill placement on the geogrid.
D. Geogrid reinforcements shall be continuous throughout their embedment lengths and placed side-by-side to provide 100% coverage at each level. Spliced connections between shorter pieces of geogrid or gaps between adjacent pieces of geogrid are not permitted.

3.05 Reinforced Backfill Placement

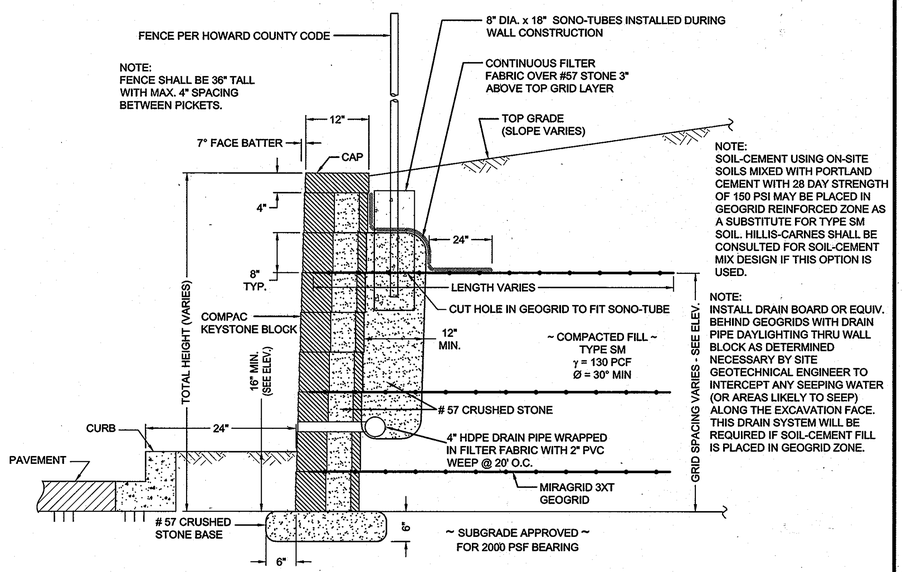
A. Reinforced backfill shall be placed, spread, and compacted in such a manner that minimizes the development of slack in the geogrid and installation damage.
B. Reinforced backfill shall be placed and compacted in lifts not to exceed 6 inches where hand compaction is used, or 8 - 10 inches where heavy compaction equipment is used. Lift thickness shall be decreased to achieve the required density as required.
C. Reinforced backfill shall be compacted to 95% of the maximum density as determined by ASTM D698. The moisture content of the backfill material prior to and during compaction shall be uniformly distributed throughout each layer and shall be + 3% to - 3% of optimum.
D. Only lightweight hand-operated equipment shall be allowed within 3 feet from the tail of the modular concrete unit.
E. Tracked construction equipment shall not be operated directly upon the geogrid reinforcement. A minimum fill thickness of 6 inches is required prior to operation of tracked vehicles over the geogrid. Tracked vehicle turning should be kept to a minimum to prevent tracks from displacing the fill and damaging the geogrid.
F. Rubber tired equipment may pass over geogrid reinforcement at slow speeds, less than 10 MPH. Sudden braking and sharp turning shall be avoided.
G. At the end of each day's operation, the Contractor shall slope the last lift of reinforced backfill away from the wall units to direct runoff away from wall face. The Contractor shall not allow surface runoff from adjacent areas to enter the wall construction site.

3.06 Cap Installation

A. Cap units shall be glued to underlying units with an all-weather adhesive recommended by the manufacturer.

3.07 Field Quality Control

A. The Owner shall engage inspection and testing services, including independent laboratories, to provide quality assurance and testing services during construction.
B. As a minimum, quality assurance testing should include foundation soil inspection, soil and backfill testing, verification of design parameters, and observation of construction for general compliance with design drawings and specifications.



TYPICAL WALL SECTION
N.T.S.

HILLIS-CARNES
ENGINEERING ASSOCIATES
10975 Guilford Road, Suite A, Annapolis Junction, MD
(410) 880-4788 Fax: (410) 880-4098

RETAINING WALL CONSTRUCTION DETAILS

TROY HILL CORPORATE CENTER PARCEL A-25
TROY HILL CIRCLE HOWARD COUNTY, MD

REV. NO.:	DATE:	
#6	01-10-12	ADDED SHEET FOR RETAINING WALL

OWNER:
TROY HILL CORPORATE CENTER III, LLC
C/O CUSHMAN & WAKEFIELD
500 EAST PRATT STREET
SUITE 500
BALTIMORE, MD 21201
ATTN: ADRIENNE LEE
(410) 685-9595

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Development Engineering Division — Date 9-12-13
Chief, Division of Land Development — Date 9-13-13
Director — Date 9/13/13

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 14434, EXPIRATION DATE: 05/13/13.

STATE OF MARYLAND — RICHARD W. STUDENROTH — No. 14434 — PROFESSIONAL ENGINEER

DESIGNED BY:	HM
DRAWN BY:	HM
PROJECT NO:	11216-Z
DATE:	12/06/11
SCALE:	AS SHOWN
DRAWING NO.	14 OF 14

SDP-01-82

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