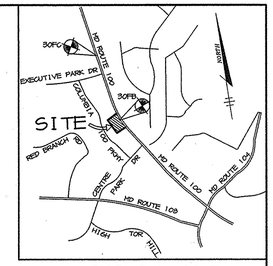
STAYBRIDGE SUITES
SITE DEVELOPMENT PLAN
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SHEET INDEX

BENCHMARKS

HO. CO. SURVEY CONTROL
STATION: 30FB
N 570,134 E 1,365,194

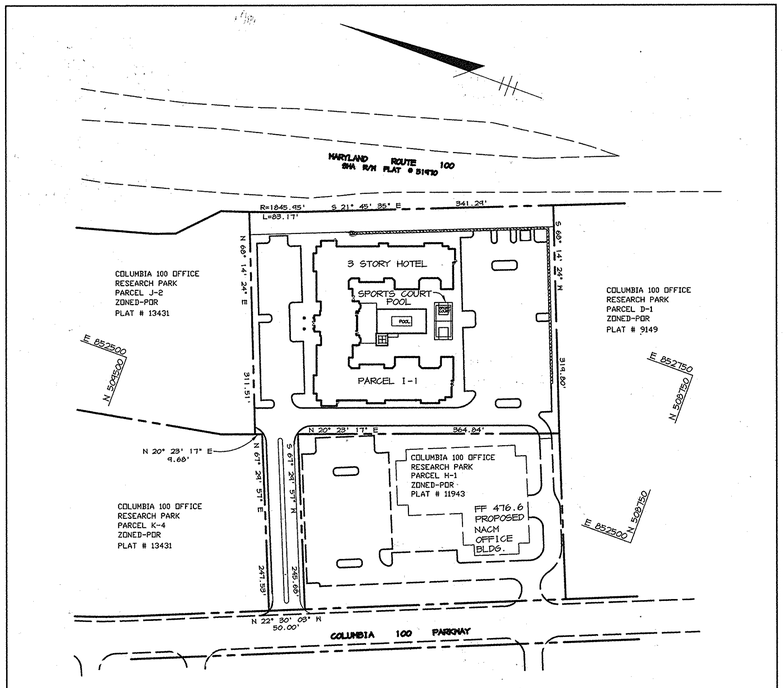
HO. CO. SURVEY CONTROL
STATION: 30FC
N 572,917 E 1,364,670



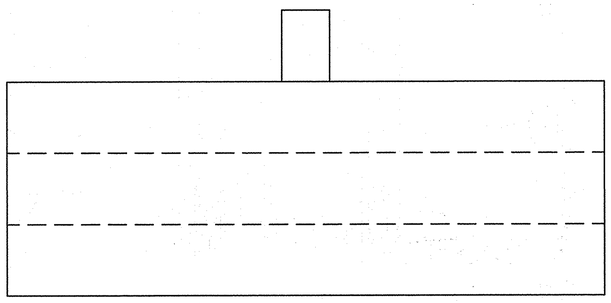
VICINITY MAP
SCALE: 1"=2000'

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 AERIAL SURVEY WITH MAXIMUM TWO FOOT CONTOUR INTERVALS PREPARED BY KINGS AERIAL MAPPING CO. DATED (JULY. 1998).
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. 30FB AND 30FC WERE USED FOR THIS PROJECT.
8. WATER IS PUBLIC. CONTRACT NO. - 24-3734-D
9. SEWER IS PUBLIC. CONTRACT NO. - 24-3734-D DRAINAGE AREA : 108 PUMPING STATION.
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. A WETLANDS DELINEATION FOR THIS PROJECT IS NOT REQUIRED.
14. A TRAFFIC STUDY FOR THIS PROJECT IS NOT REQUIRED.
15. A NOISE STUDY FOR THIS PROJECT IS NOT REQUIRED.
16. A GEOTECHNICAL STUDY FOR THIS PROJECT IS NOT REQUIRED.
17. STORMWATER QUALITY AND QUANTITY MANAGEMENT IS PROVIDED FOR THE DEVELOPMENT BY REGIONAL RETENTION FACILITY PER F-87-82.
18. SUBJECT PROPERTY ZONED POR 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: F-87-82, SP-86-57.
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 STORM DRAIN PIPE BEDDING SHALL BE CLASS 'C' AS SHOWN IN FIG. 11.4, VOLUME 1 OF HOWARD COUNTY DESIGN MANUAL UNLESS OTHERWISE NOTED.
26. ALL INLETS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOWARD COUNTY STANDARDS.
27. ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
29. PROFILES STATIONS SHALL BE ADJUSTED AS NECESSARY TO CONFORM TO PLAN DIMENSIONS.
30. ALL FILL AREAS WITHIN ROADWAY AND UNDER STRUCTURES TO BE COMPACTED TO A MINIMUM OF 95% COMPACTION OF AASHTO T180.
31. AS THIS PROJECT WAS SUBJECT TO FINAL PLANS AND MASS GRADING PLANS PRIOR TO THE FOREST CONSERVATION ACT, THERE ARE NO FOREST CONSERVATION REQUIREMENTS FOR THIS DEVELOPMENT.



PLAN
SCALE: 1"=100'



BUILDING ELEVATION

SITE TABULATION

TOTAL AREA	3.351 AC. (145,970 SF)
CURRENT ZONING	POR
PROPOSED USE	3 STORY EXTENDED STAY HOTEL
BUILDING COVERAGE	24,250 SQ. FT.
REQUIRED PARKING	119 ROOMS @ 1SP / ROOM = 119 SPACES
PROPOSED PARKING	126 SPACES (INCLUDES 7 HC SPACES)
PAVED AREA	58,050 SF (40% OF SITE)

ADDRESS CHART

LOT NUMBER	STREET ADDRESS
I-1	8844 COLUMBIA 100 PARKWAY

SUBDIVISION NAME: COLUMBIA 100 OFFICE RESEARCH PARK			SECT./AREA: 1/2		PARCEL: 406
PLAT #: 13431	BLOCK #: 18	ZONE: POR	TAX MAP NO. 30	ELECT. DIST 2ND	CENSUS TRACT: 6023.02
WATER CODE: 6-02			SEWER CODE: 5657400		

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING:

DIRECTOR — DATE 1/4/99

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 12/31/98

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 12/31/98

DATE	NO.	REVISION

OWNER:
MDS COMPANIES
5550 STERRETT PLACE
COLUMBIA, MD 21044
(410) 730-4091

DEVELOPER:
CARTER & ASSOCIATES, INC.
1275 PEACHTREE ST., N.E.
ATLANTA, GA 30367
(404) 888-3316

PROJECT
STAYBRIDGE SUITES
AN EXTENDED STAY HOTEL

AREA COLUMBIA 100 OFFICE RESEARCH PARK
SECTION 1, AREA 2
PARCEL 406, TAX MAP 30, BLOCK 18, LOT I-1
2nd ELECTION DISTRICT ZONED-POR
HOWARD COUNTY, MARYLAND

TITLE
TITLE SHEET

RIEMER MUEGGE & ASSOCIATES, INC.
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
8818 Centre Park Drive, Columbia, Maryland 21045
tel 410.997.8900 fax 410.997.9282

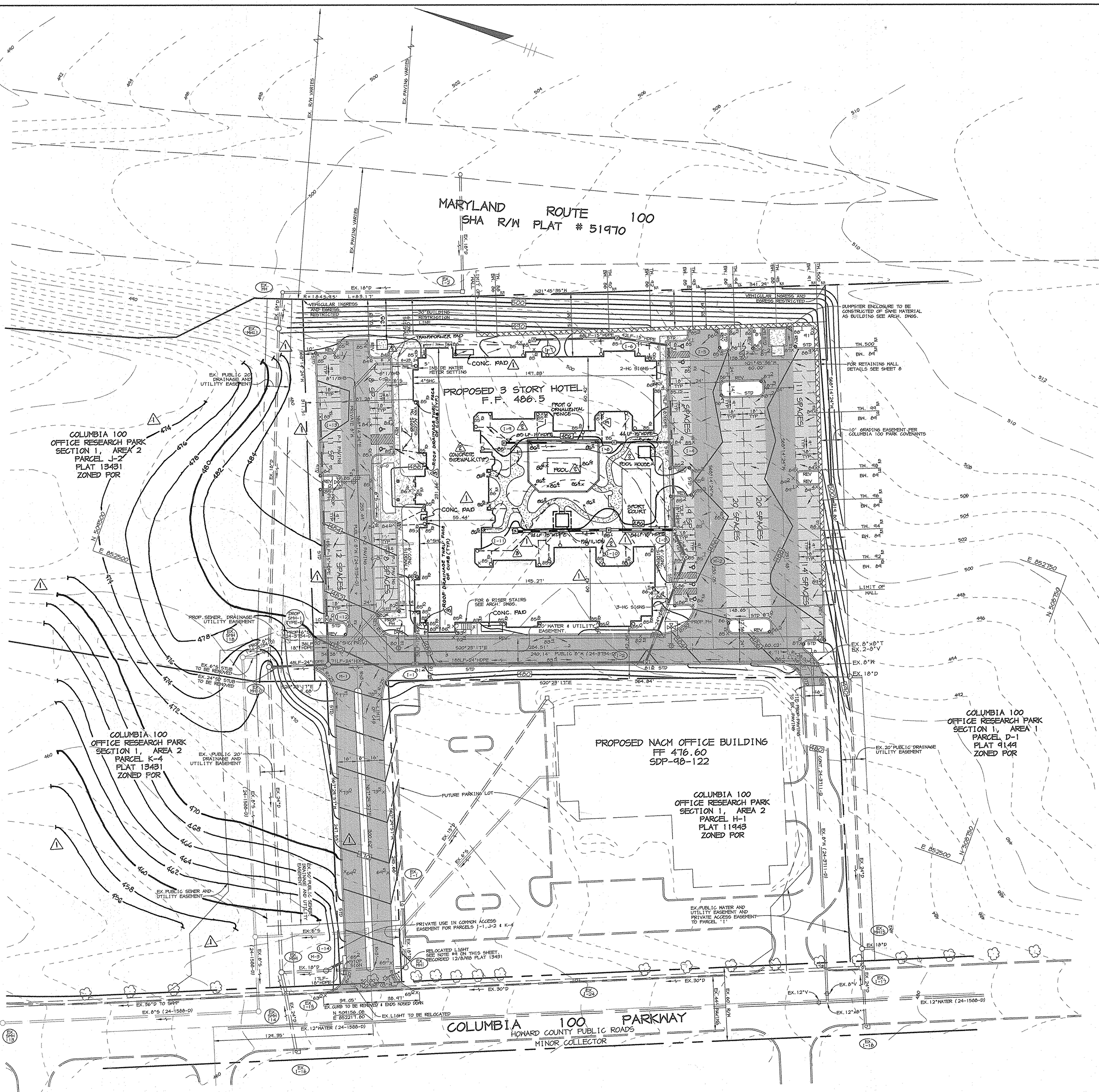
DATE

ARTHUR E. MUEGGE #8707

DESIGNED BY :	C.R.
DRAWN BY :	D.R.D.
CHECKED BY :	C.R.
PROJECT NO :	98210 SDP1.DWG
DATE :	DECEMBER 16, 1998
SCALE :	AS SHOWN
DRAWING NO.	1 OF 8

SDP-99-38

M:\PROJECT\98210\SDP1 Wed Dec 16 09:57:11 1998 RIEMER MUEGGE & ASSOCIATES, INC.



NOTES:

1. ALL RADII ARE 5' UNLESS OTHERWISE NOTED.
2. ALL DIMENSIONS ARE TO FACE OF CURB OR BUILDING UNLESS OTHERWISE NOTED.
2. 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-1 PAVING
7. P-2 PAVING
8. CONCRETE
9. 150-WATT HPS VAPOR PENDANT FIXTURE (CUTOFF) MOUNTED AT 30' ON A BRONZE FIBERGLASS POLE USING A 12' ARM.
10. SWIMMING POOL WATER TO BE DISCHARGED TO THE STORM DRAIN SYSTEM UNDER A STATE ISSUED NPDES GENERAL PERMIT.
11. 4" ROOF DRAINAGE LEADER (TYP)

DATE	NO.	REVISION
11-11-99	3	ADDED ROOF DRAINAGE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR — DATE 1/4/99

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 12/31/98

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 12/31/98

DATE	NO.	REVISION
3-10-99	2	REARRANGE COURTYARD COMPONENTS, ADD TRANSFORMER PAD RELOCATE I-9 & I-10
2-2-99	1	REMOVED 15 GAL. GREASE TRAP; RELOCATED I-11 & I-10; ADDED CONC. PADS(3) & POOL ROOM. MODIFIED GRADING.

OWNER:	DEVELOPER:
MDG COMPANIES 5550 STERRETT PLACE COLUMBIA, MD 21044 (410) 730-9091	CARTER & ASSOCIATES, INC. 1275 PEACHTREE ST., N.E. ATLANTA, GA 30367 (404) 888-3316

PROJECT

STAYBRIDGE SUITES

AN EXTENDED STAY HOTEL

AREA COLUMBIA 100 OFFICE RESEARCH PARK
SECTION 1, AREA 2
PARCEL 406, TAX MAP 30, BLOCK 18, LOT I-1
2nd ELECTION DISTRICT ZONED-POR
HOWARD COUNTY, MARYLAND

TITLE

SITE DEVELOPMENT PLAN

RIEMER MUEGGE & ASSOCIATES, INC.
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
8818 Centre Park Drive, Columbia, Maryland 21045
tel 410.997.8900 fax 410.997.9282

DATE

ARTHUR E. MUEGGE #8707

DESIGNED BY :	C.R.
DRAWN BY :	D.R.D.
CHECKED BY :	C.R.
PROJECT NO :	98210 SDP2.DWG
DATE :	DECEMBER 16, 1998
SCALE :	1"=40'
DRAWING NO.	2 OF 8

SDP-99-38

M:\PROJECT\98210\SDP2 Wed Dec 16 11:12:41 1998 RIEMER MUEGGE & ASSOCIATES, INC.

DRAINAGE CHART

INLET	DRAINAGE AREA (AC)	%IMP	'C'
I-1	0.10	70%	0.72
I-2	0.30	80%	0.78
I-3	0.40	70%	0.67
I-4	0.40	50%	0.55
I-5	0.50	40%	0.49
I-6	0.10	45%	0.51
I-7	0.15	40%	0.48
I-8	0.10	40%	0.48
I-9	0.20	50%	0.55
I-10	0.10	40%	0.48
I-11	0.20	50%	0.55
I-12	0.15	90%	0.80
I-13	0.40	65%	0.67
I-14	0.70	90%	0.80

NOTE: ALL ON-SITE SOILS ARE ASSUMED TYPE 'C' DUE TO MASS GRADING.

INLET SEDIMENT TRAP #1 (I-3)

DRAINAGE AREA	0.84 AC. (REFLECTS EARTH DIKE DIVERSION)
STORAGE VOLUME REQUIRED	1224 CF = 612 DRY + 612 WET
WET STORAGE PROVIDED	612 CF @ 482.75'
DRY STORAGE PROVIDED	1000 CF @ 484.00'
TOP OF WEIR	484.4'
BOTTOM ELEVATION	482.0'
BOTTOM DIMENSION	41'x13'
CLEANOUT ELEVATION	482.5'
SIDE SLOPES	2:1
DEWATERING PIPE DRAWDOWN ELEVATION	482.75'

INLET SEDIMENT TRAP #2 (I-4 & I-5)

DRAINAGE AREA	0.60 AC. (REFLECTS EARTH DIKE DIVERSION)
STORAGE VOLUME REQUIRED	2448 CF = 1224 DRY + 1224 WET
WET STORAGE PROVIDED	1224 CF @ 483.00'
DRY STORAGE PROVIDED	1240 CF @ 484.00'
TOP OF WEIR	484.8'
BOTTOM ELEVATION	482.0'
BOTTOM DIMENSION	72'x12'
CLEANOUT ELEVATION	482.8'
SIDE SLOPES	2:1
DEWATERING PIPE DRAWDOWN ELEVATION	483.00'

INLET SEDIMENT TRAP #3 (I-13)

DRAINAGE AREA	0.40 AC.
STORAGE VOLUME REQUIRED	1440 CF = 720 DRY + 720 WET
WET STORAGE PROVIDED	720 CF @ 482.20'
DRY STORAGE PROVIDED	808 CF @ 483.00'
TOP OF WEIR	483.4'
BOTTOM ELEVATION	481.0'
BOTTOM DIMENSION	50'x10'
CLEANOUT ELEVATION	481.8'
SIDE SLOPES	2:1
DEWATERING PIPE DRAWDOWN ELEVATION	482.20'

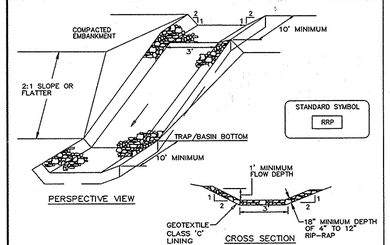
STONE OUTLET SEDIMENT TRAP #1

DRAINAGE AREA	0.70 AC.
STORAGE VOLUME REQUIRED	2520 CF = 1260 DRY + 1260 WET
WET STORAGE PROVIDED	1328 CF @ 457.45'
DRY STORAGE PROVIDED	1328 CF @ 458.50'
TOP OF DAM	460.5'
TOP OF WEIR	454.5'
WEIR LENGTH	5'
BOTTOM ELEVATION	456.0'
BOTTOM DIMENSION	50'x6' (SEE PLAN)
CLEANOUT ELEVATION	457.00'
SIDE SLOPES	2:1

NOTE:

1. SCE IS TO BE USED FOR THE DIVERSION OF RUNOFF INTO THE TRAP AND IS TO BE MAINTAINED DAILY.

DETAIL 5 – RIP-RAP INFLOW PROTECTION



Construction Specifications

1. Rip-rap lined inflow channels shall be 1' in depth, have a trapezoidal cross section with 2:1 or flatter side slopes and 3' (min.) bottom width. The channel shall be lined with 4" to 12" rip- rap to a depth of 18".

2. Filter cloth shall be installed under all rip-rap. Filter cloth shall be Geotextile Class C.

3. Entrance and exit sections shall be installed as shown on the detail section.

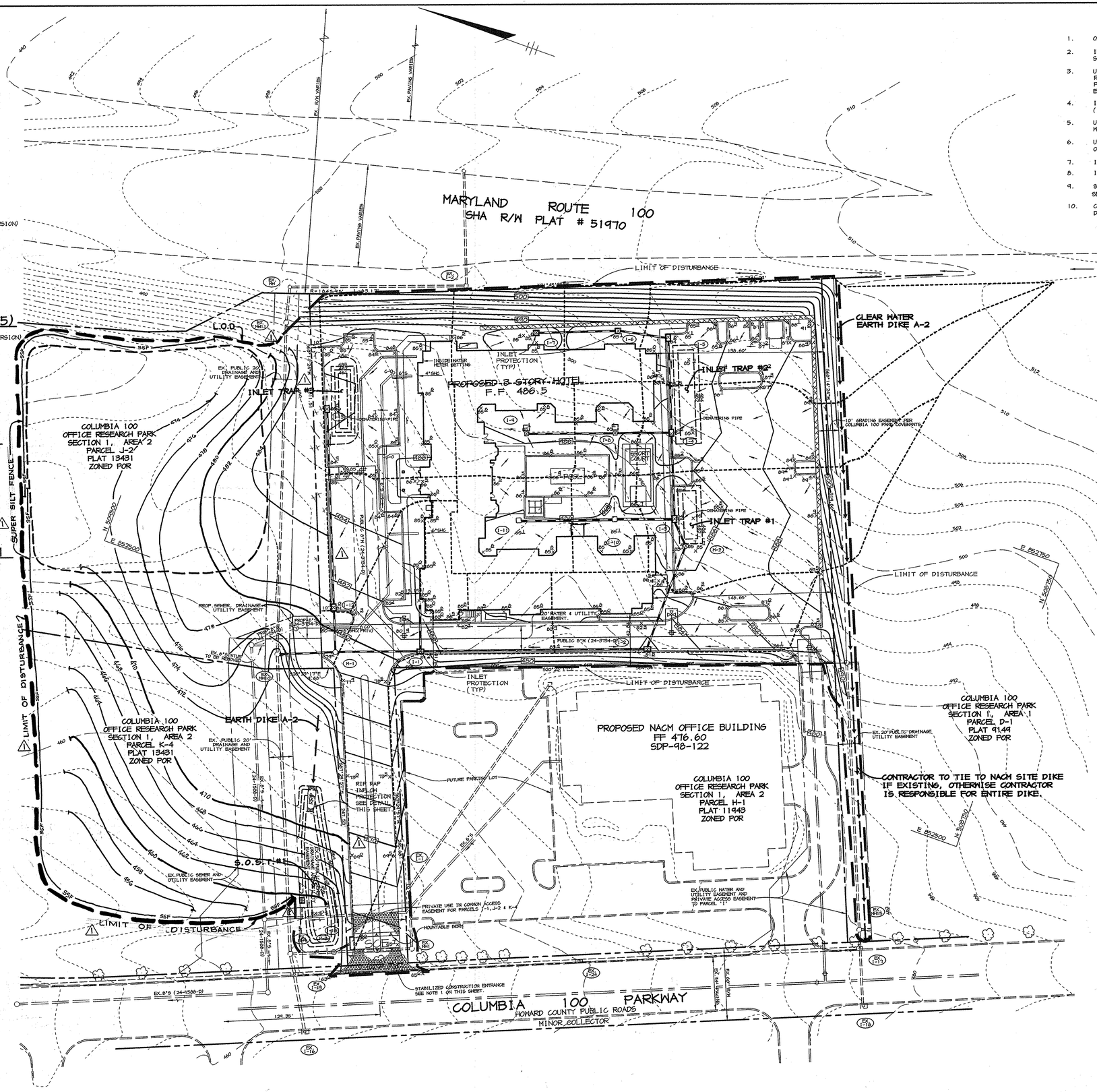
4. Rip-rap used for the lining may be recycled for permanent outlet protection if the basin is to be converted to a stormwater management facility.

5. Gabion Inflow Protection may be used in lieu of Rip-rap Inflow Protection.

6. Rip-rap should blend into existing ground.

7. Rip-rap Inflow Protection shall be used where the slope is between 4:1 and 10:1, for slopes flatter than 10:1 use Earth Dike or Temporary Swale lining criteria.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE B - 8 - 2	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



SEQUENCE OF CONSTRUCTION

1. OBTAIN A GRADING PERMIT.
2. INSTALL STABILIZED CONSTRUCTION ENTRANCE, STONE OUTLET TRAP #1, SILT FENCE, SUPER SILT FENCE, AND EARTH DIKE (8 DAYS).
3. UPON PERMISSION OF HO.CO.DILP. SEDIMENT CONTROL INSPECTOR, BEGIN ROUGH GRADING AND BUILDING CONSTRUCTION. CONSTRUCT WALL AS GRADING PROCEEDS. INSTALL STORM DRAINS AS SOON AS SUBGRADE ELEVATIONS ARE ESTABLISHED.
4. INSTALL INLET SEDIMENT TRAPS 1, 2 & 3 AT INLETS I-3, I-4, I-5 AND I-13 (10 DAYS).
5. UPON REACHING SUBGRADE ELEVATION COMPLETE STORM DRAINS, SEWER AND WATER CONSTRUCTION (4 WEEKS).
6. UPON PERMISSION OF HO.CO.DILP. INSPECTOR REMOVE INLET TRAPS AND STONE OUTLET TRAP.
7. INSTALL CURB AND GUTTER THEN PAVE (4 WEEKS).
8. INSTALL SIDEWALK, LIGHTS, AND LANDSCAPING. (2 WEEKS)
9. STABILIZE ALL DISTURBED AREAS IN ACCORDANCE WITH THE PERMANENT SEEDING NOTES (3 DAYS).
10. COMPLETE ALL REMAINING CONSTRUCTION AND STABILIZE ALL REMAINING DISTURBED AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES. (3 MONTHS)

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.

DEVELOPER — DATE 12.16.98

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 — DATE 12.16.98

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 — DATE 12/22/98

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 12/22/98

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR — DATE 1/4/99

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 12/4/98

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 12/31/98

DATE	NO.	REVISION
2-2-99	1	MODIFIED GRADING, LIMIT OF DISTURBANCE & SILT FENCING LOCATION

OWNER:	DEVELOPER:
MDS COMPANIES 5550 STERRETT PLACE COLUMBIA, MD 21044 (410) 730-9041	CARTER & ASSOCIATES, INC. 1275 PEACHTREE ST., N.E. ATLANTA, GA 30367 (404) 888-3316

PROJECT
STAYBRIDGE SUITES
AN EXTENDED STAY HOTEL

AREA COLUMBIA 100 OFFICE RESEARCH PARK
SECTION 1, AREA 2
PARCEL 406, TAX MAP 30, BLOCK 18, LOT I-1
2nd ELECTION DISTRICT ZONED-POR
HOWARD COUNTY, MARYLAND

TITLE
SEDIMENT CONTROL PLAN AND DRAINAGE AREA MAP

RIEMER MUEGGE & ASSOCIATES, INC.
ENGINEERING ● ENVIRONMENTAL SERVICES ● PLANNING ● SURVEYING
8818 Centre Park Drive, Columbia, Maryland 21045
tel 410.997.8900 fax 410.997.9282

DATE

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

ARTHUR E. MUEGGE #8707

DESIGNED BY :	C.R.
DRAWN BY :	D.R.D.
CHECKED BY :	C.R.
PROJECT NO :	98210 SDP3.DWG
DATE :	DECEMBER 16, 1998
SCALE :	1"=40'
DRAWING NO.	3 OF 8

SDP-99-38

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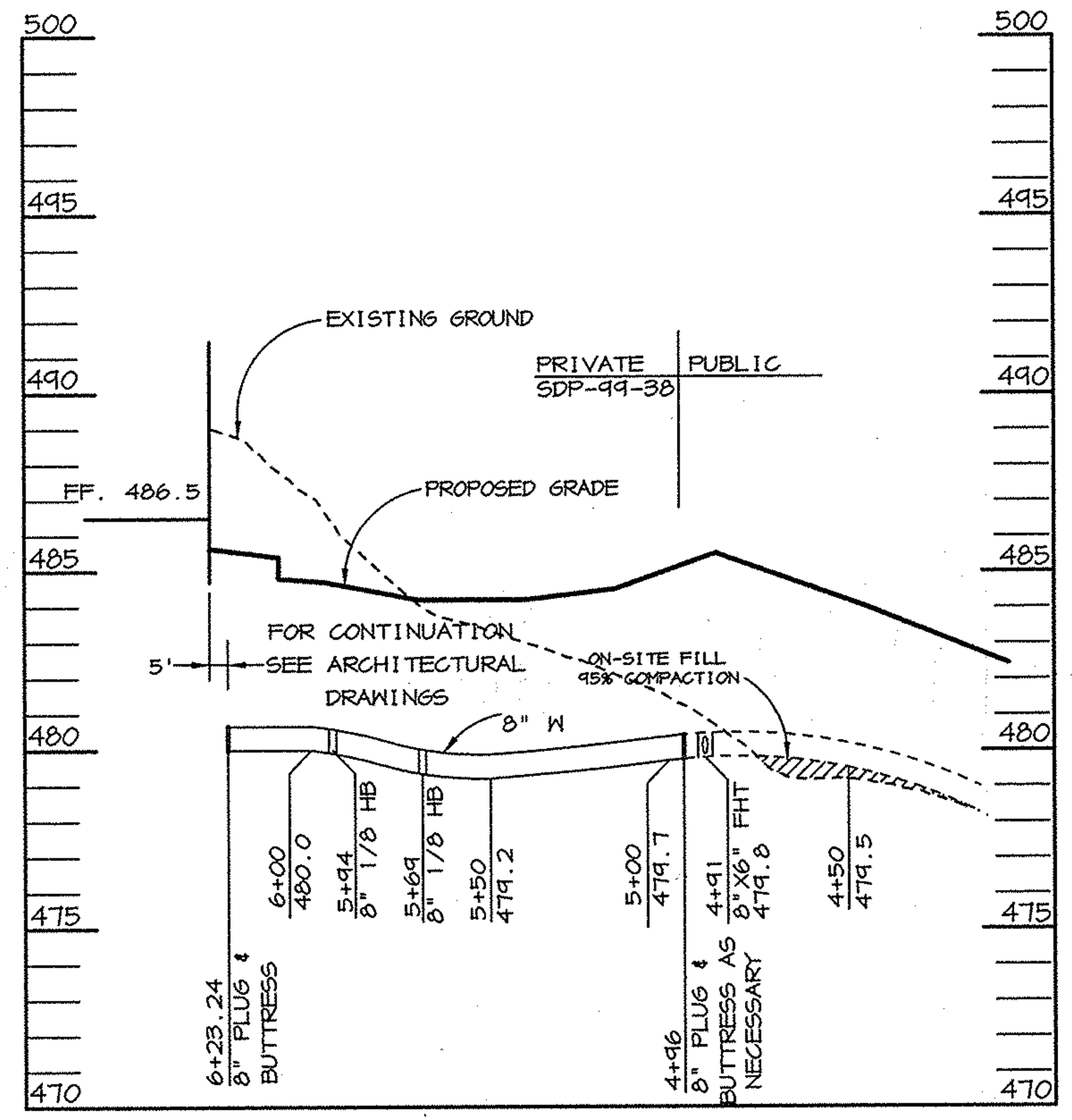
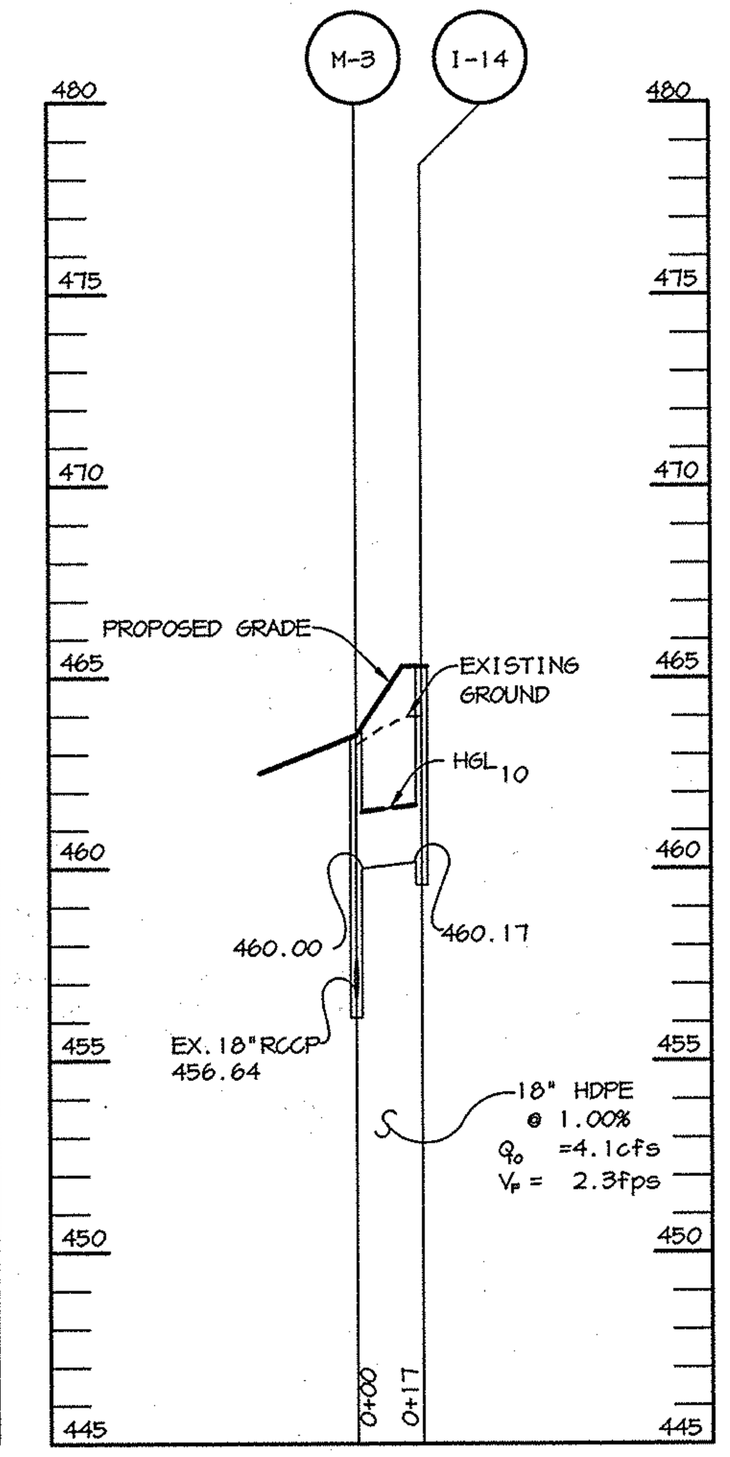


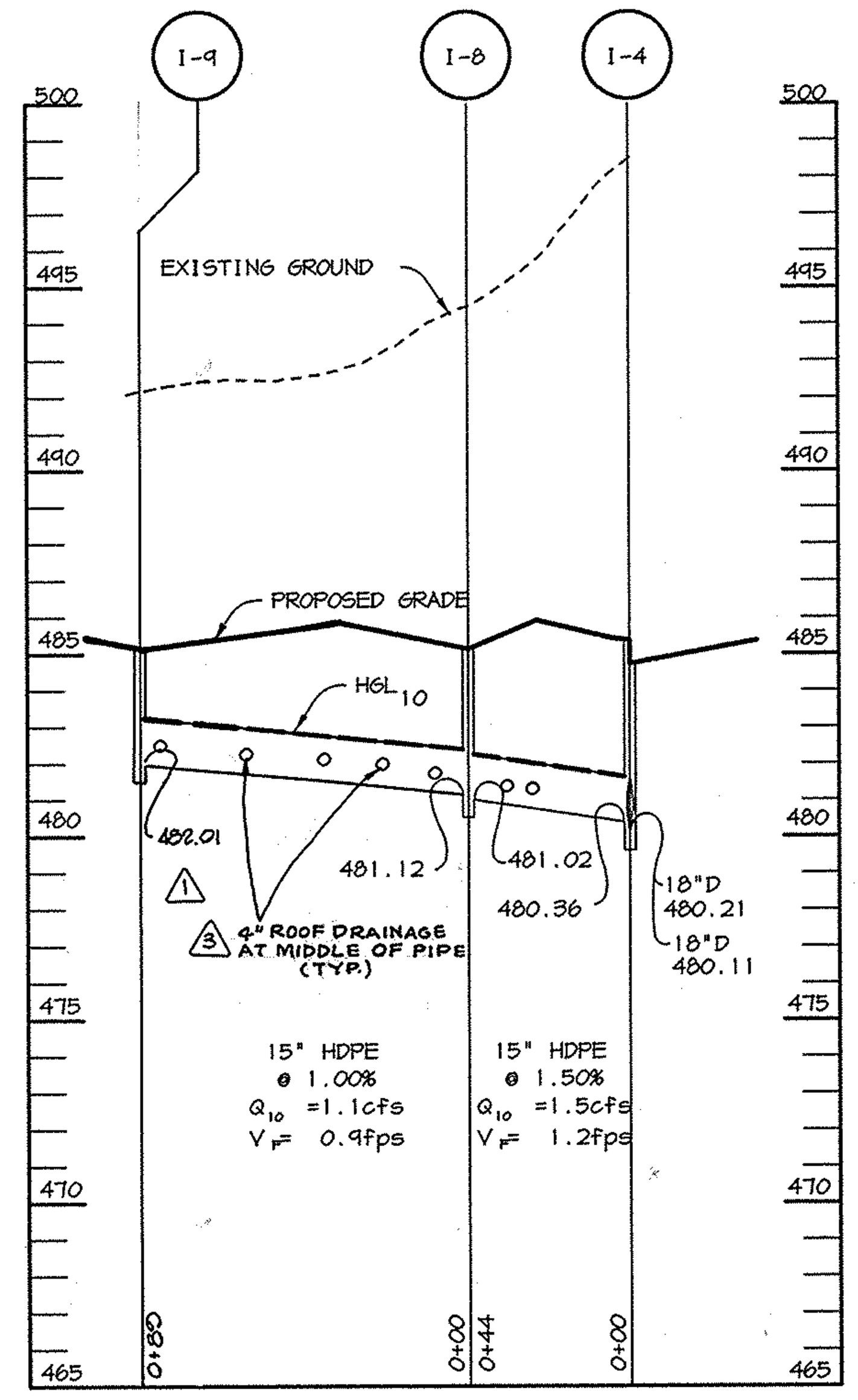
WATER PROFILE

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



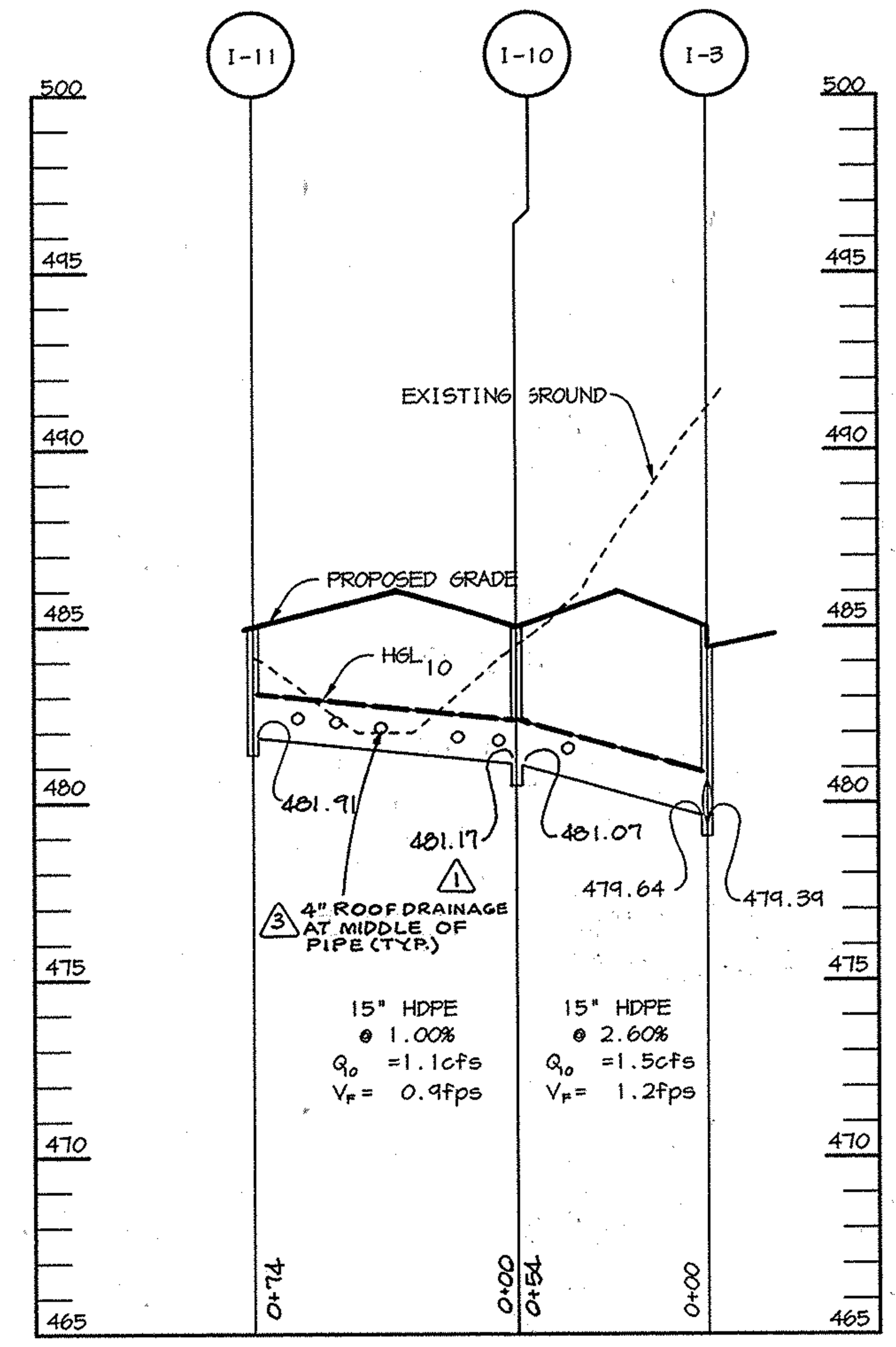
STORM DRAIN PROFILE

SCALE :
HOR.-1"=50'
VERT.-1"=5'



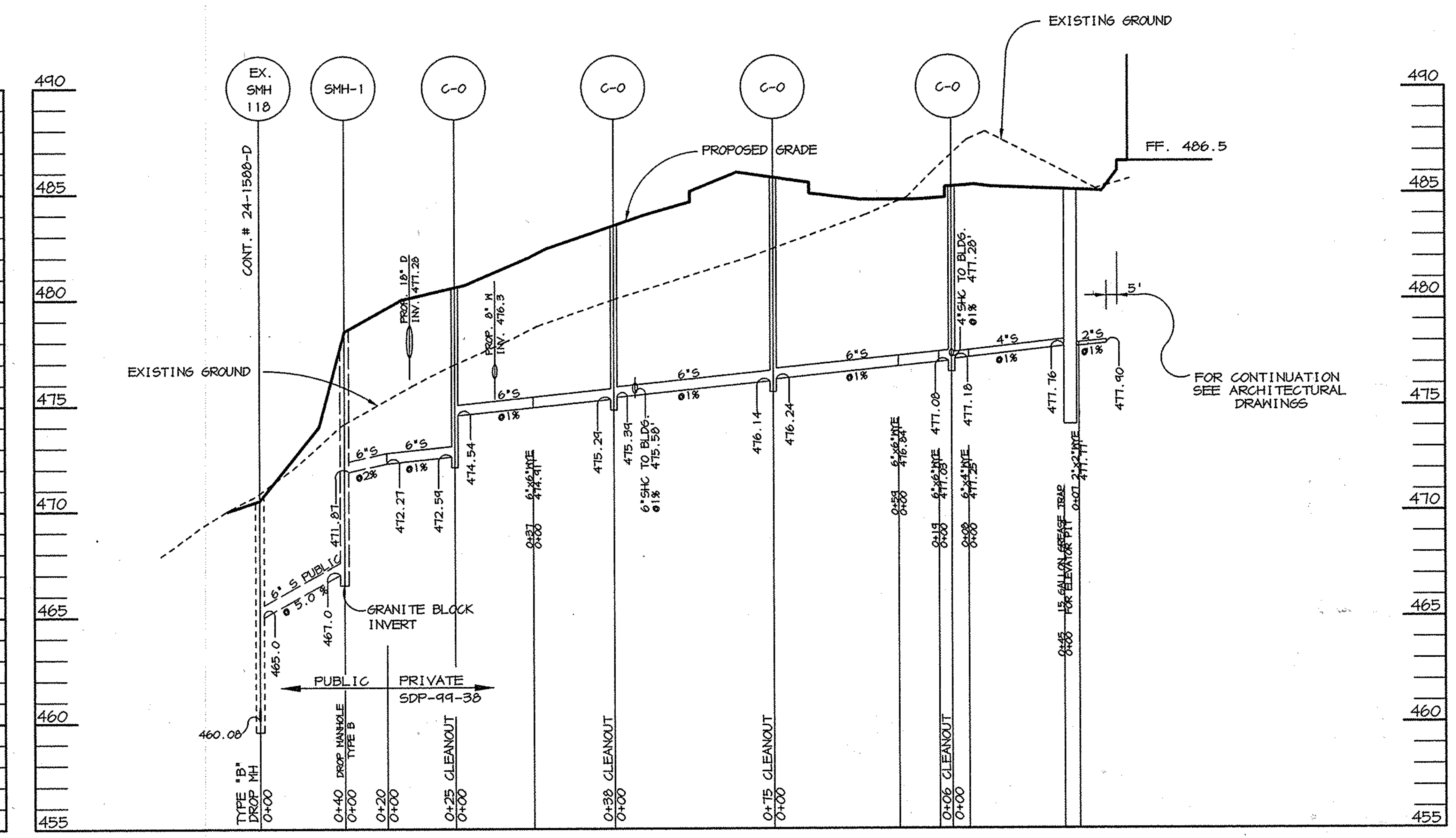
STORM DRAIN PROFILE

SCALE :
HOR.-1"=50'
VERT.-1"=5'



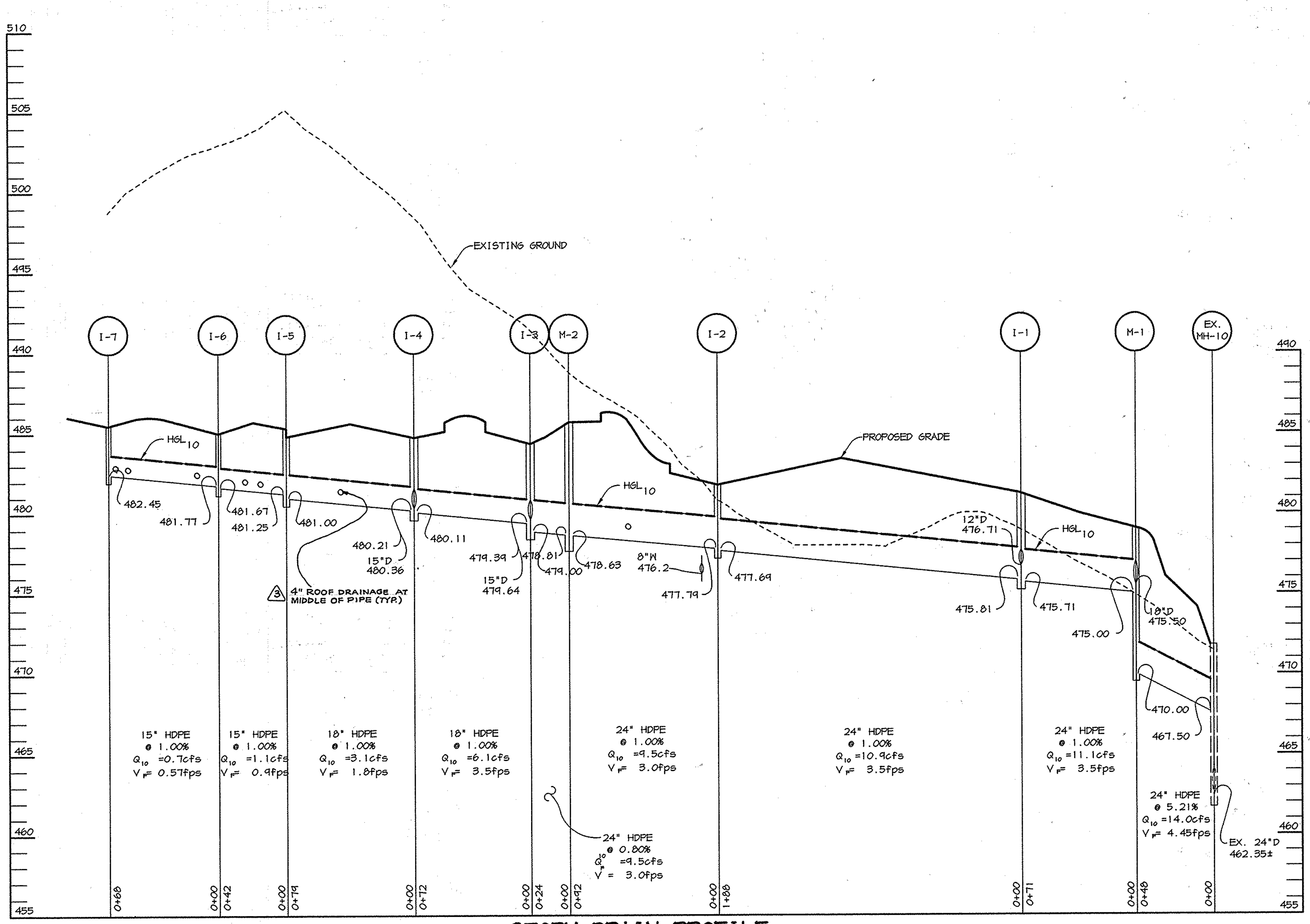
STORM DRAIN PROFILE

SCALE :
HOR.-1"=50'
VERT.-1"=5'



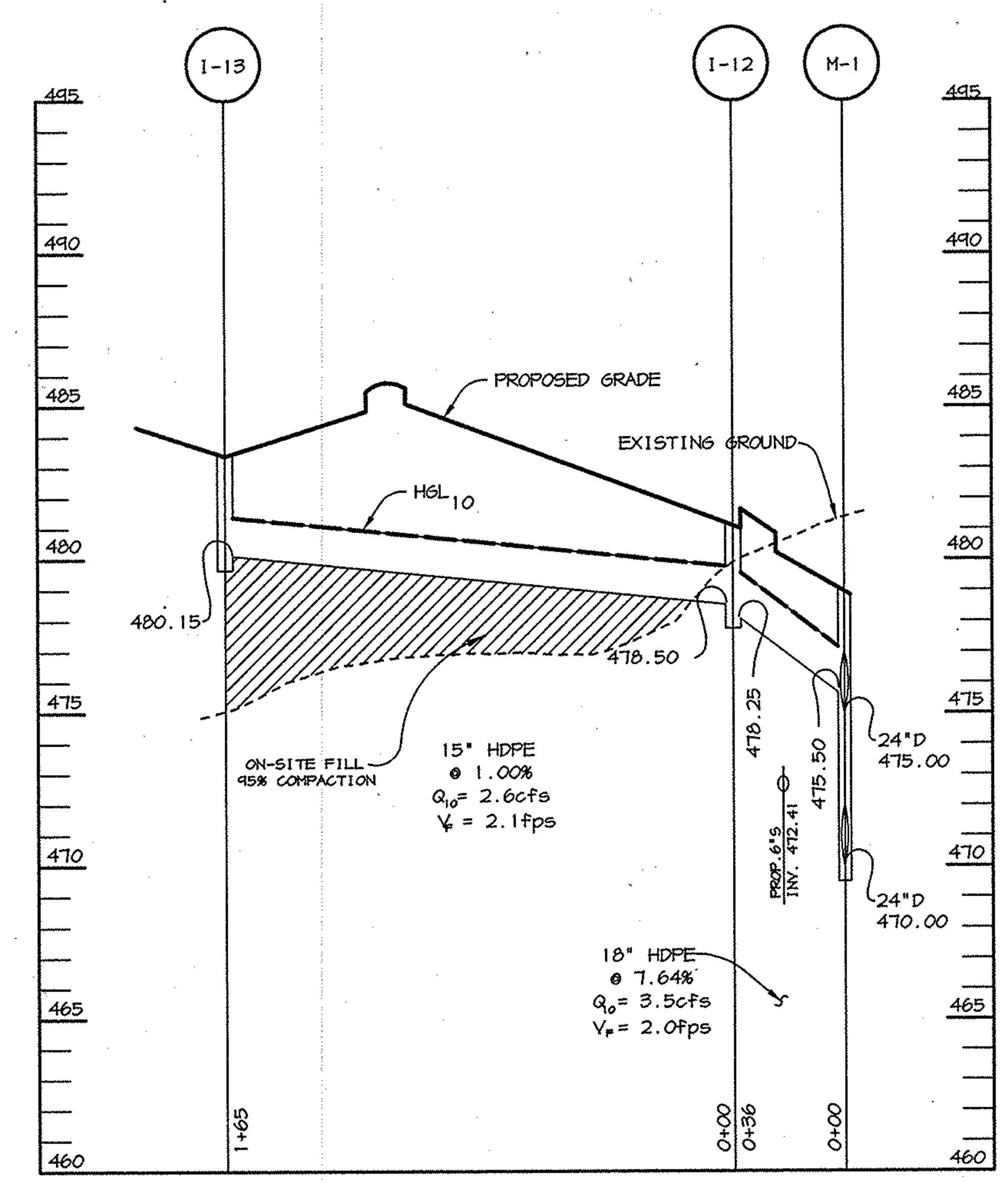
SEWER PROFILE

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



STORM DRAIN PROFILE

SCALE :
HOR.-1"=50'
VERT.-1"=5'



STORM DRAIN PROFILE

SCALE :
HOR.-1"=50'
VERT.-1"=5'

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR — DATE 1/4/99

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 1/4/99

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 12/31/98

DATE	NO.	REVISION
11-11-99	3	ADDED ROOF DRAINAGE
3-19-99	1	REV. I-9 & I-10 LOCATIONS

OWNER:
MDG COMPANIES
5550 STERRETT PLACE
COLUMBIA, MD 21044
(410) 730-9091

DEVELOPER:
CARTER & ASSOCIATES, INC.
1275 PEACHTREE ST., N.E.
ATLANTA, GA 30367
(404) 888-3316

PROJECT
STAYBRIDGE SUITES
AN EXTENDED STAY HOTEL

AREA COLUMBIA 100 OFFICE RESEARCH PARK
SECTION 1, AREA 2
PARCEL 406, TAX MAP 30, BLOCK 18, LOT I-1
2nd ELECTION DISTRICT ZONED-POR
HOWARD COUNTY, MARYLAND

TITLE
PROFILES

RIEMER MUEGGE & ASSOCIATES, INC.
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
8818 Centre Park Drive, Columbia, Maryland 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.R.
DRAWN BY :	D.R.D.
CHECKED BY :	C.R.
PROJECT NO :	98210 SDP4.DWG
DATE :	DECEMBER 16, 1998
SCALE :	1" = 50'
DRAWING NO.	4 OF 8

SDP-99-38

M:\PROJECT\98210\SDP4 Wed Dec 16 11:24:51 1998 RIEMER MUEGGE & ASSOCIATES, INC.

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	3.351 ACRES
AREA DISTURBED	6.982 ACRES
AREA TO BE ROOFED OR PAVED	2.313 ACRES
AREA TO BE VEGETATIVELY STABILIZED	1.500 ACRES
TOTAL CUT	20,000 CU. YARDS
TOTAL FILL	10,000 CU. YARDS
OFFSITE WASTE AREA LOCATION TO HAVE AN APPROVED 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 1983 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 ureaform 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.

21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL

Definition

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

Purpose

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

Conditions Where Practice Applies

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

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

Construction and Material Specifications

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

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

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

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

   III. Where 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 marked into the soil in conjunction with tillage operations as described in the following procedures.

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

III. For sites having disturbed areas over 5 acres:

   I. On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
      a. pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
      b. Organic content of topsoil shall be not less than 1.5 percent by weight.
      c. Topsoil having stone content greater than 500 parts per million shall not be used.
      d. No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time 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.

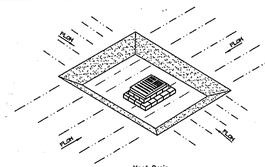
   IV. Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

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:

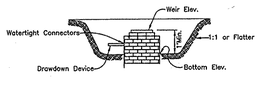
   I. Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for site having disturbed areas under 5 acres shall conform to the following requirements:
      a. Composted sludge shall be supplied by, or originate 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.

STORM INLET SEDIMENT TRAP ST-III



Yard Drain



Construction Specifications For ST-III

1. Sediment shall be removed and the restored to its original dimensions when the sediment has accumulated to 1/2 the design depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.

2. The volume of sediment storage shall be 3600 cubic feet per acre of contributory drainage.

3. The structure shall be inspected after each rain and repairs made as needed.

4. Construction operations shall be carried out in such a manner that erosion and water pollution shall be minimized.

5. The sediment trap shall be removed and the area stabilized when the construction drainage area has been properly stabilized.

6. All cut slopes shall be 1:1 or flatter.

MAXIMUM DRAINAGE AREA: 3 ACRES

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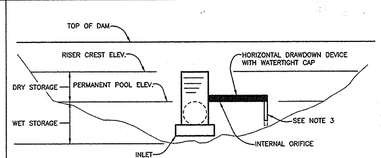
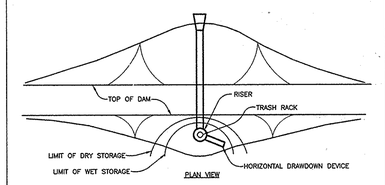
SEDIMENT TRAP AND BASIN DRAWDOWN SCHEMATIC HORIZONTAL DRAW DOWN DEVICE



ELEVATION



PLAN VIEW

Construction Specifications

1. The total area of the perforation must be greater than 2 times the area of the internal orifice.

2. The perforated portion of the drawdown device shall be wrapped with 1/2" hardware cloth and geotextile fabric. The geotextile fabric shall meet the specifications for Geotextile Class E.

3. Provide support of drawdown device to prevent sagging and floatation. An acceptable preventative measure is to stake both sides of drawdown device with 1" steel angle, or 1" by 4" square or 2" round wooden posts set 3' minimum into the ground then joining them to the device by wrapping with 12 gauge minimum wire.

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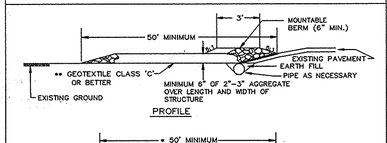
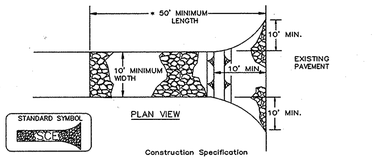
DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE



PROFILE



PLAN VIEW

STANDARD SYMBOL SCE

Construction Specification

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

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

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

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

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

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

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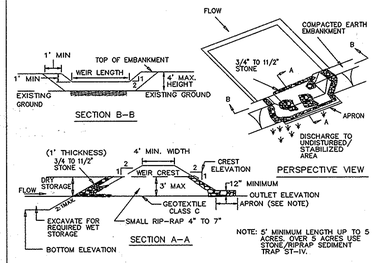
DETAIL 9 - STONE OUTLET SEDIMENT TRAP - ST II



Construction Specifications

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

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

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

4. The stone used in the outlet shall be small rip-rap 4" to 7" in size with a 1' thick layer of 3/4" to 11/2" washed aggregate placed on the upstream face of the outlet. Stone facing shall be as necessary to prevent clogging. Geotextile Class C may be substituted for the stone facing by placing it on the inside face of the stone outlet.

5. Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to one half of the wet storage depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.

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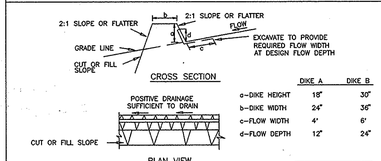
DETAIL 1 - EARTH DIKE



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

STANDARD SYMBOL A-2 B-3

FLOW CHANNEL STABILIZATION GRADE 0.5% MIN. 10% MAX.

1. Seed and cover with straw mulch.
2. Seed and cover with Erosion Control Matting or fine 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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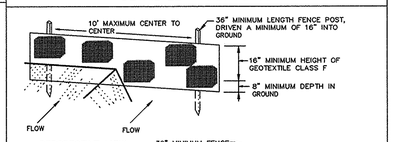
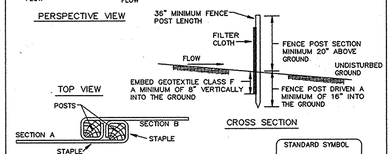
DETAIL 22 - SILT FENCE



PERSPECTIVE VIEW



JOINING TWO ADJACENT SILT FENCE SECTIONS

STANDARD SYMBOL SF

Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1½" x 1½" square (minimum) cut, or 1¾" 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 ²/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.

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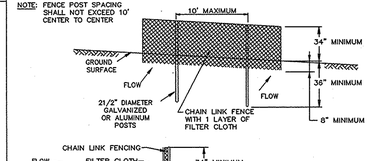
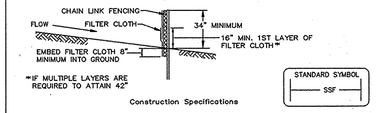
DETAIL 33 - SUPER SILT FENCE





STANDARD SYMBOL SSF

Construction Specifications

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

2. Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence.

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

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

5. When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.

6. 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

7. Filter cloth 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 ²/minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

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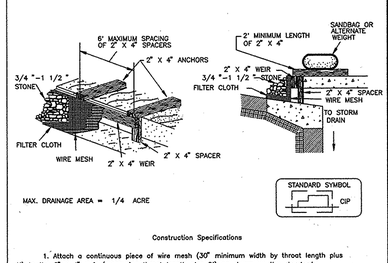
DETAIL 23C - CURB INLET PROTECTION



MAX. DRAINAGE AREA = 1/4 ACRE

STANDARD SYMBOL CIP

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.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE E - 16 - 58 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

BY THE DEVELOPER :

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, 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.

DEVELOPER — DATE 12.16.98

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 — DATE 12.16.98

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 — DATE 12/22/98

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 12/22/98

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR — DATE 1/4/99

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 1/4/99

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 12/31/98

DATE	NO.	REVISION
2-2-99	1	REVISED THE AREA DISTURBED, SITE ANALYSIS.

OWNER:
MDS COMPANIES
5550 STERRETT PLACE
COLUMBIA, MD 21044
(410) 730-4091

DEVELOPER:
CARTER & ASSOCIATES, INC.
1275 PEACHTREE ST., N.E.
ATLANTA, GA 30367
(404) 888-3316

PROJECT
STAYBRIDGE SUITES
AN EXTENDED STAY HOTEL

AREA COLUMBIA 100 OFFICE RESEARCH PARK
SECTION 1, AREA 2
PARCEL 406, TAX MAP 30, BLOCK 18, LOT I-1
2nd ELECTION DISTRICT ZONED-POR
HOWARD COUNTY, MARYLAND

TITLE
DETAILS AND NOTES

RIEMER MUEGGE & ASSOCIATES, INC.
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
8818 Centre Park Drive, Columbia, Maryland 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.R.
DRAWN BY :	D.R.D.
CHECKED BY :	C.R.
PROJECT NO :	98210 SDP5.DWG
DATE :	DECEMBER 16, 1998
SCALE :	AS SHOWN
DRAWING NO.	5 OF 8

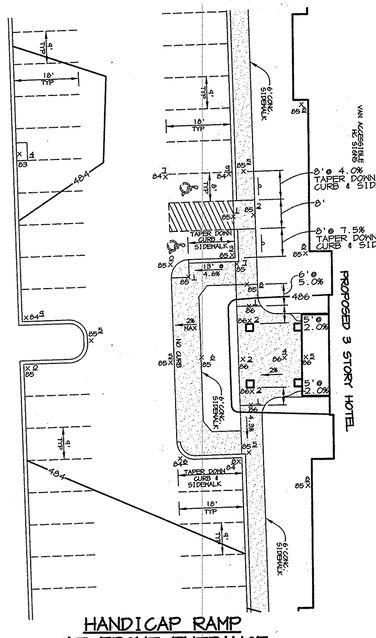
SDP-99-38

M:\PROJECT\98210\SDP5 Wed Dec 16 10:03:41 1998 RIEMER MUEGGE & ASSOCIATES, INC.

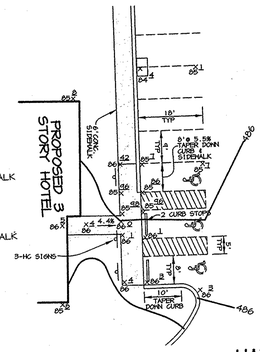
STRUCTURE SCHEDULE

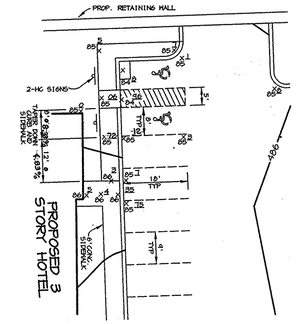
STRUCTURE	TYPE	LOCATION	INV. IN	INV. OUT	TOP	REMARKS
I-1	S"COMB* W RET GRATE	SEE PLAN	476.71(12") 475.81(24")	475.71 (24")	481.78	HOCO STD. DETAIL SD 4.32 & 4.93
I-2	"	SEE PLAN	477.79	477.69	482.38	HOCO STD. DETAIL SD 4.32 & 4.93
I-3	"	SEE PLAN	479.64 (15") 479.84 (18")	478.84 (24")	484.98	HOCO STD. DETAIL SD 4.32 & 4.93
I-4	"	SEE PLAN	480.36 (15") 480.21 (18")	480.11 (18")	485.38	HOCO STD. DETAIL SD 4.32 & 4.93
I-5	"	SEE PLAN	481.25	481.00	485.38	HOCO STD. DETAIL SD 4.32 & 4.93
I-6	S-INLET	SEE PLAN	481.77	481.67	485.10	HOCO STD. DETAIL SD 4.22
I-7	"	SEE PLAN	-	482.45	485.40	HOCO STD. DETAIL SD 4.22
I-8	"	SEE PLAN	481.12	481.02	485.10	HOCO STD. DETAIL SD 4.22
I-9	"	SEE PLAN	-	⚠ 480.01	485.10	HOCO STD. DETAIL SD 4.22
I-10	"	SEE PLAN	⚠ 481.17	⚠ 481.07	485.10	HOCO STD. DETAIL SD 4.22
I-11	"	SEE PLAN	-	⚠ 481.91	485.10	HOCO STD. DETAIL SD 4.22
I-12	S"COMB* W RET GRATE	SEE PLAN	478.50	478.25	481.58	HOCO STD. DETAIL SD 4.32 & 4.93
I-13	"	SEE PLAN	-	480.15	483.98	HOCO STD. DETAIL SD 4.32 & 4.93
I-14	A-10	SEE PLAN	-	460.17	465.28	HOCO STD. DETAIL SD 4.02
M-1	4' MH	SEE PLAN	475.50 (18") 475.00 (24")	470.00 (24")	479.00	HOCO STD. DETAIL # 5.12
M-2	4' MH	SEE PLAN	478.81 (24")	478.63 (24")	485.70	HOCO STD. DETAIL # 5.12
M-3	4' MH	SEE PLAN	460.00 (18")	456.64 (EX.)	463.00	HOCO STD. DETAIL # 5.12

NOTES: * LOCATION OF "S" & MQ FACILITY INLETS AND MANHOLES IS AT CENTER OF TOP COVER; FOR "A" INLETS LOCATION IS GIVEN FOR CENTER OF THROAT OPENING AT FACE OF CURB.
FOR END SECTIONS AND HEADWALLS THE LOCATION IS CENTER OF THROAT OPENING AT FACE OF STRUCTURE.
TOP ELEVATION IS TOP OF CURB/GRATE/RIM.



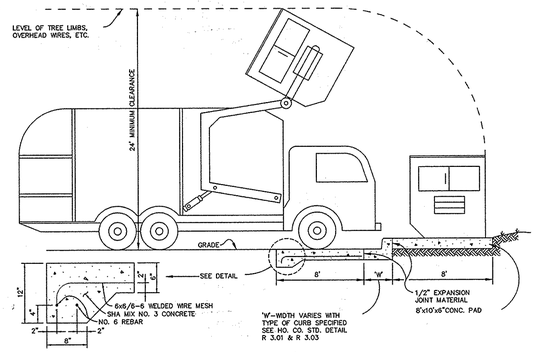
HANDICAP RAMP AT FRONT ENTRANCE
SCALE: 1" = 20'



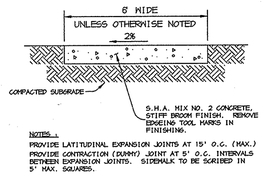


HANDICAP RAMPS AT REAR ENTRANCES
SCALE: 1" = 20'

NOTE: 2% MAXIMUM CROSS SLOPE ON ALL SIDEWALKS.

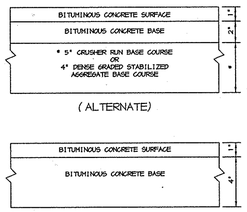


DUMPSTER PAD
NO SCALE



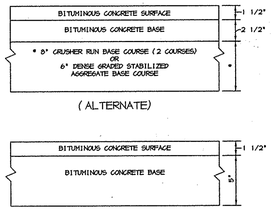
NOTES:
PROVIDE LATITUDINAL EXPANSION JOINTS AT 15' O.C. (MAX.)
PROVIDE CONTRACTION (DUMMY) JOINT AT 5' O.C. INTERVALS BETWEEN EXPANSION JOINTS. SIDEWALK TO BE SCRIBED IN 5' MAX. SQUARES.

SIDEWALK DETAIL
NO SCALE



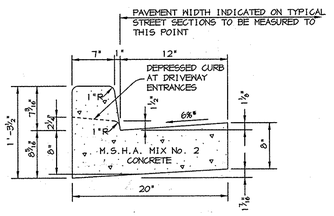
HOWARD COUNTY DESIGN MANUAL VOLUME IV- STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (DRAWING R-2.01)

P-1 PAVING
NO SCALE



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

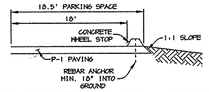
P-2 PAVING
NO SCALE



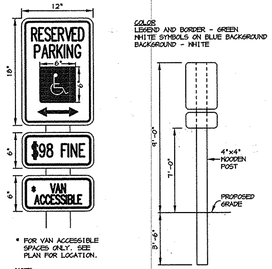
HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (DRAWING R-3.01).

* 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



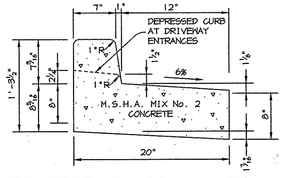
CONCRETE WHEEL STOP LOCATION PLAN
NO SCALE



* 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



REVERSE 7" COMBINATION CURB AND GUTTER
NO SCALE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR — DATE 1/4/99

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 1/4/99

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 12/31/98

DATE	NO.	REVISION
3-17-99	⚠	ADJUSTED STRUCTURE SCHEDULE

OWNER:
MDG COMPANIES
5550 STERRETT PLACE
COLUMBIA, MD 21044
(410) 730-9091

DEVELOPER:
CARTER & ASSOCIATES, INC.
1275 PEACHTREE ST., N.E.
ATLANTA, GA 30367
(404) 888-3316

PROJECT
STAYBRIDGE SUITES
AN EXTENDED STAY HOTEL

AREA COLUMBIA 100 OFFICE RESEARCH PARK
SECTION 1, AREA 2
PARCEL 406, TAX MAP 30, BLOCK 18, LOT I-1
2nd ELECTION DISTRICT ZONED-POR
HOWARD COUNTY, MARYLAND

TITLE
DETAILS

RIEMER MUEGGE & ASSOCIATES, INC.
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
8818 Centre Park Drive, Columbia, Maryland 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.R.
DRAWN BY :	D.R.D.
CHECKED BY :	C.R.
PROJECT NO :	98210 SDP6.DWG
DATE :	DECEMBER 16, 1998
SCALE :	AS SHOWN
DRAWING NO.	6 OF 8

SDP-99-38

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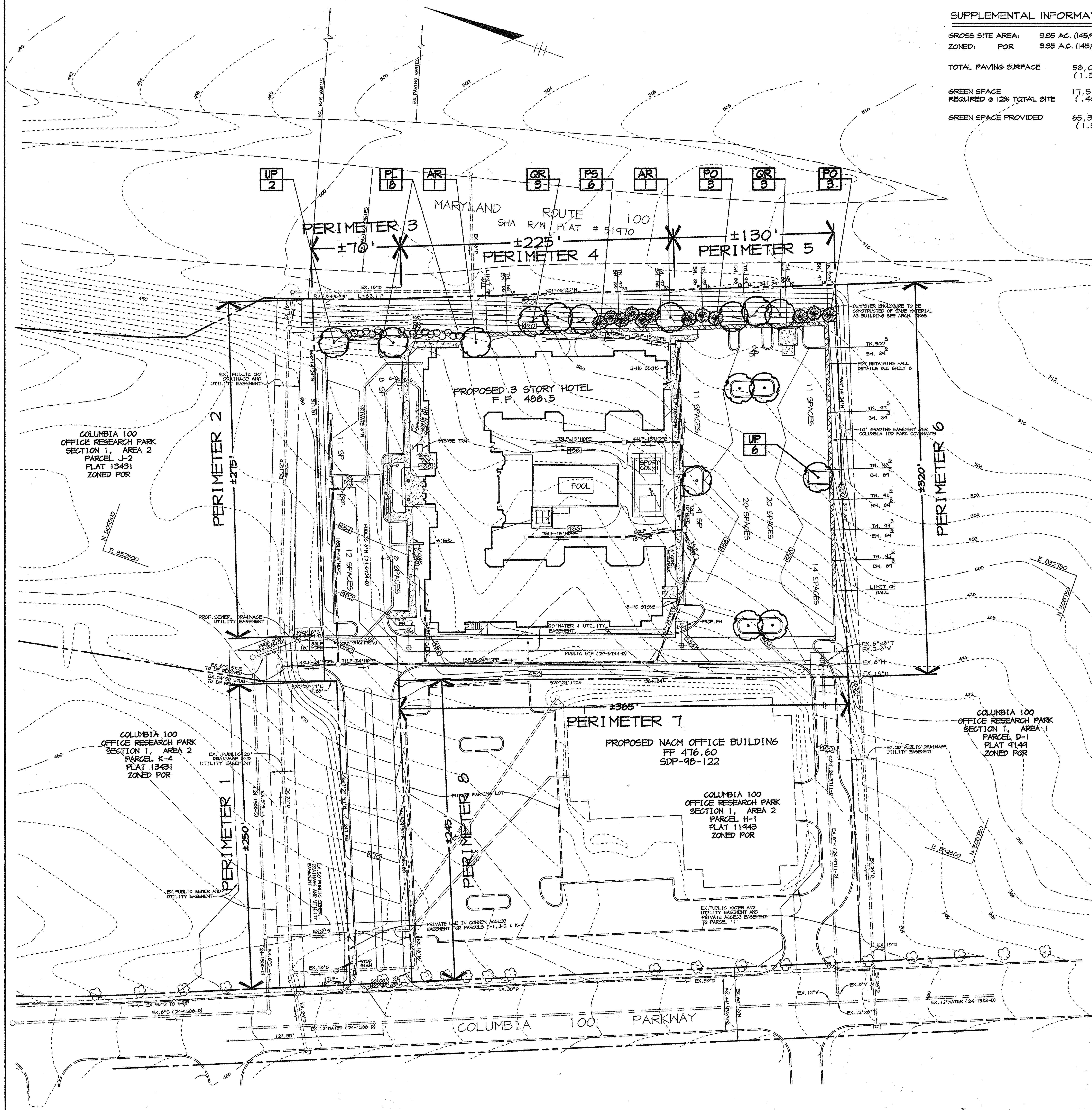


SUPPLEMENTAL INFORMATION

GROSS SITE AREA:	3.35 AC. (145,926 SF)
ZONED: POR	3.35 A.C. (145,926 SF)
TOTAL PAVING SURFACE	58,050 SF (1.33 AC)
GREEN SPACE REQUIRED @ 12% TOTAL SITE	17,511 SF (.40 AC)
GREEN SPACE PROVIDED	65,340 SF (1.5 AC)

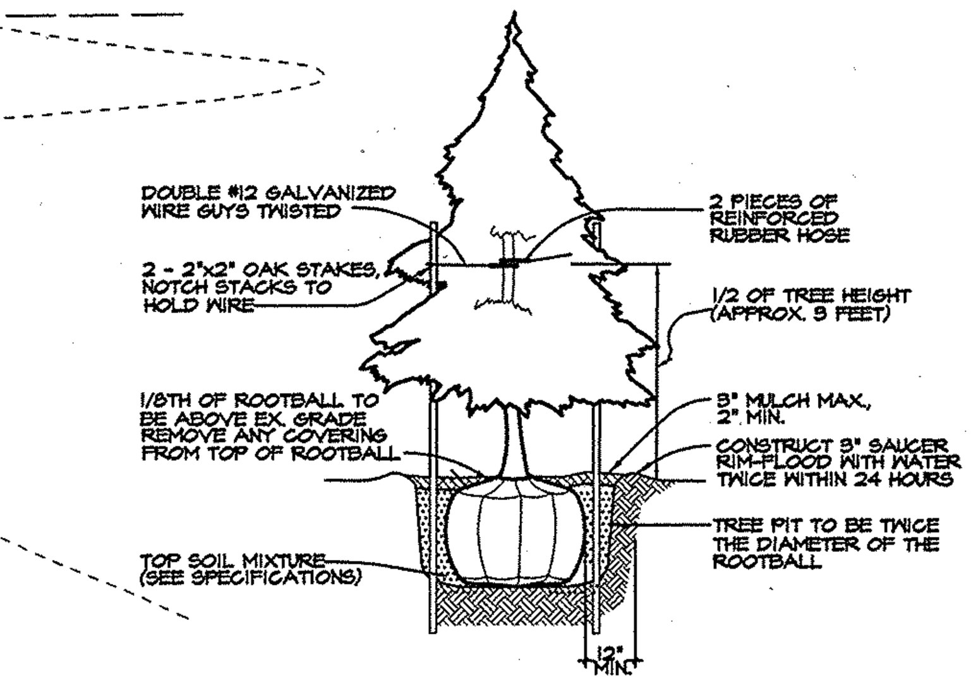
PERIMETER LANDSCAPE EDGE

	ADJACENT TO PERIMETER PROPERTIES					ADJACENT TO ROADWAYS		
PERIMETER	1	2	6	7	8	3	4	5
LANDSCAPE TYPE	* N/A	* N/A	* N/A	* N/A	* N/A	E	B	E
LINEAR FEET OF ROADWAY FRONTAGE/ PERIMETER	±250'	±275'	±320'	±365'	±245'	±70'	±225'	±130'
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	N/A	N/A	N/A	N/A	N/A	NO	NO	NO
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	N/A	N/A	N/A	N/A	N/A	NO	NO	NO
NUMBER OF PLANTS REQUIRED SHADE TREES EVERGREEN TREES SHRUBS	N/A	N/A	N/A	N/A	N/A	@1/40'=2 - @1/4'=18	@1/50'=5 @1/40'=6 -	@1/40'=3 - @1/4'=33
NUMBER OF PLANTS PROVIDED SHADE TREES EVERGREEN TREES SMALL FLOWERING TREES SHRUBS	N/A	N/A	N/A	N/A	N/A	2 - - 18	5 6 - -	3 6 - -

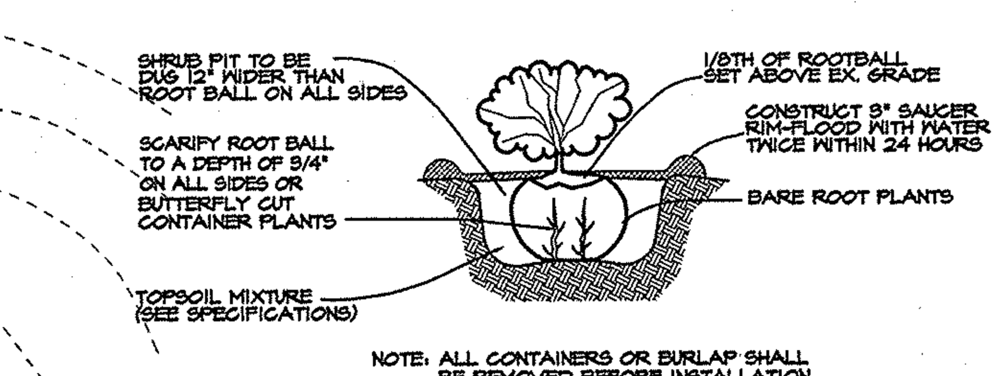
* ACCORDING TO PAGE 17 OF THE HOWARD COUNTY LANDSCAPE MANUAL, "THE REGULATIONS DO NOT REQUIRE LANDSCAPE EDGES, BUFFERING OR SCREENING BETWEEN INTERNAL LOTS OR PARCELS WITHIN THE SAME DEVELOPMENT."

SUBSTITUTION NOTES:

PERIMETER 5:
6 EVERGREEN TREES WERE SUBSTITUTED FOR 33 SHRUBS.



EVERGREEN PLANTING DETAIL
NOT TO SCALE



NOTE: ALL CONTAINERS OR BURLAP SHALL BE REMOVED BEFORE INSTALLATION.

SHRUB PLANTING DETAIL
NOT TO SCALE

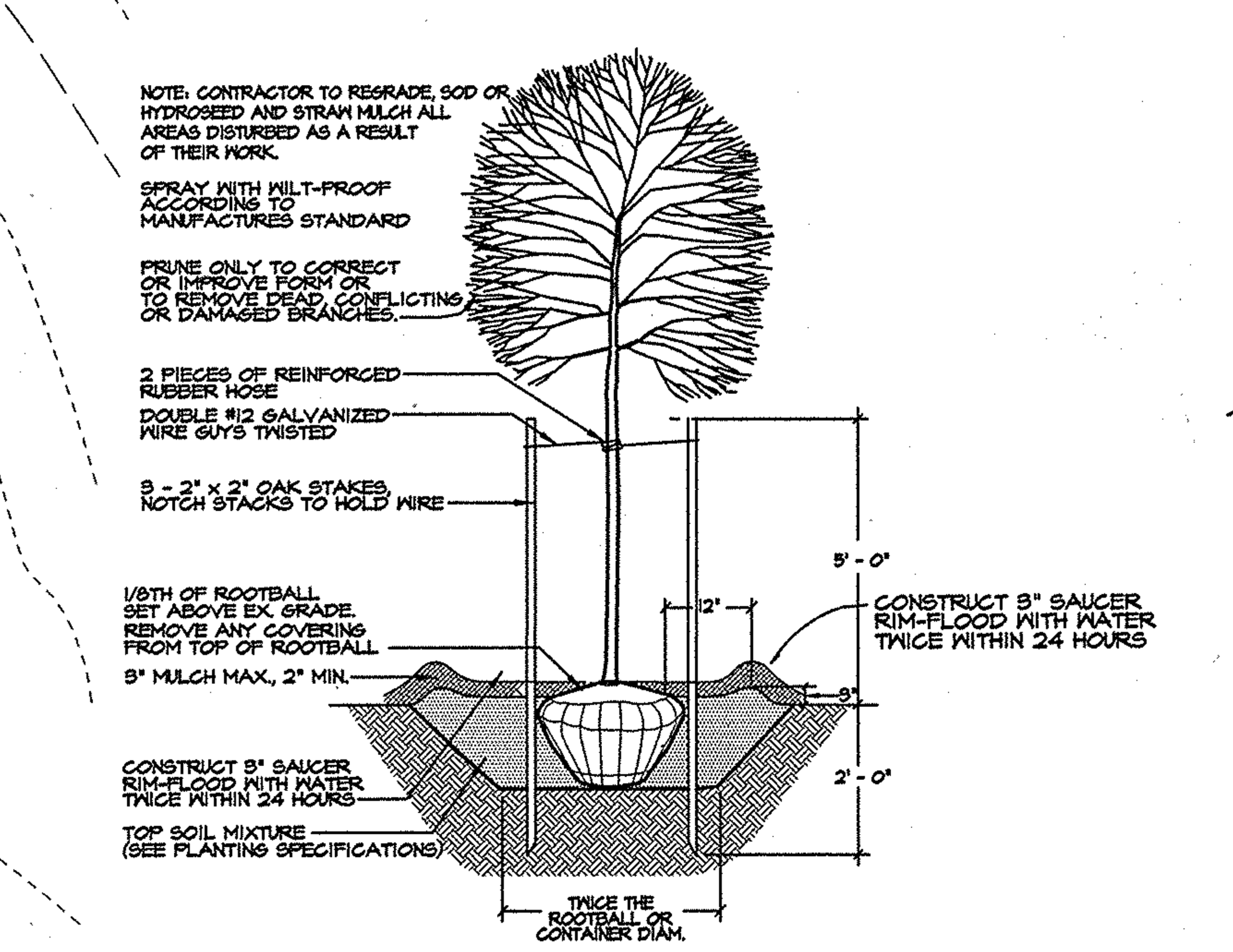
PARKING LOT INTERNAL LANDSCAPING

PARKING LOT	ALL
NUMBER OF PARKING SPACES	126
NUMBER OF SHADE TREES/ISLANDS* REQUIRED (1/20 SPACES)	6
NUMBER OF TREES PROVIDED SHADE TREES OTHER TREES (2:1 SUBSTITUTION)	6 -
NUMBER OF ISLANDS REQUIRED	6
NUMBER OF ISLANDS PROVIDED	6

* 200 SF PLANTING AREA / ISLAND

PLANT MATERIAL LIST

KEY	QTY	BOTANICAL + COMMON NAME	SIZE	ROOT	REMARKS
		SHADE TREES			
AR	2	Acer rubrum 'October Glory' October Glory Red Maple	2½" - 3" Cal.	B & B	Full Crown Central Leader
QR	6	Quercus rubra (borealis) Northern Red Oak	2½" - 3" Cal.	B & B	Full Crown Central Leader
UP	8	Ulmus parvifolia 'Allee' Chinese Elm	2½" - 3" Cal.	B & B	Full Crown Central Leader
		EVERGREEN TREES			
PO	6	Picea omorika Serbian Spruce	6' - 8' Ht.	B & B	Full Form Central Leader
PS	6	Pinus strobus White Pine	6' - 8' Ht.	B & B	Sheared Full Form
		SHRUBS			
PL	18	Prunus lauro. 'Otto Luyken' 'Otto Luyken' Cherry Laurel	3½' - 4' Ht.	B & B	Full shape



B&B TREE PLANTING DETAIL
NOT TO SCALE

NOTES:

1) "THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE WITH THE HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
2) "FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT IN THE AMOUNT OF $ 7,140.00.
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.

[signature] 12.16.98
NAME DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

[signature] 1/4/99
DIRECTOR DATE

[signature] 12/21/90
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[signature] 12/31/98
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE	NO.	REVISION

OWNER:
MDG COMPANIES
5550 STERRETT PLACE
COLUMBIA, MD 21044
(410) 730-9091

DEVELOPER:
CARTER & ASSOCIATES, INC.
1275 PEACHTREE ST., N.E.
ATLANTA, GA 30367
(404) 888-3316

PROJECT
STAYBRIDGE SUITES
AN EXTENDED STAY HOTEL

AREA COLUMBIA 100 OFFICE RESEARCH PARK
SECTION 1, AREA 2
PARCEL 406, TAX MAP 30, BLOCK 18, LOT I-1
2nd ELECTION DISTRICT ZONED-POR
HOWARD COUNTY, MARYLAND

TITLE
LANDSCAPE PLAN

RIEMER MUEGGE & ASSOCIATES, INC.
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
8818 Centre Park Drive, Columbia, Maryland 21045
tel 410.997.8900 fax 410.997.9282

12.16.98
DATE
[seal: STATE OF MARYLAND, DAVID DOWS, 830]
[signature]
DAVID T. DOWS #830

DESIGNED BY :	D.T.D.
DRAWN BY :	A.J.L.
CHECKED BY :	D.T.D
PROJECT NO :	98210 LSCP.DWG
DATE :	DECEMBER 16, 1998
SCALE :	1"=40'
DRAWING NO.	7 OF 8

SDP-99-38

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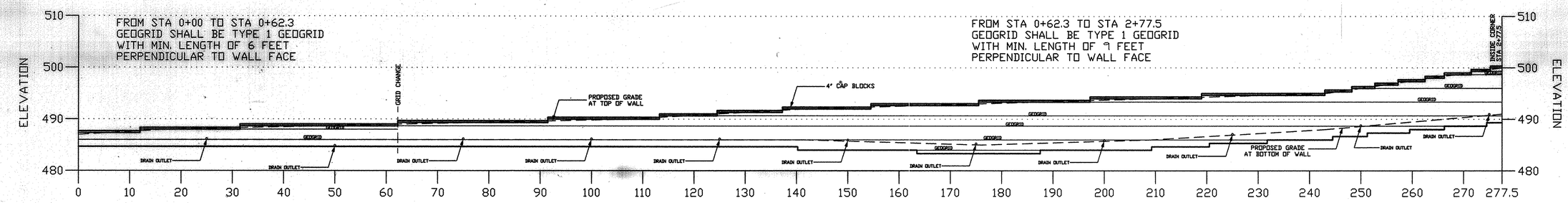
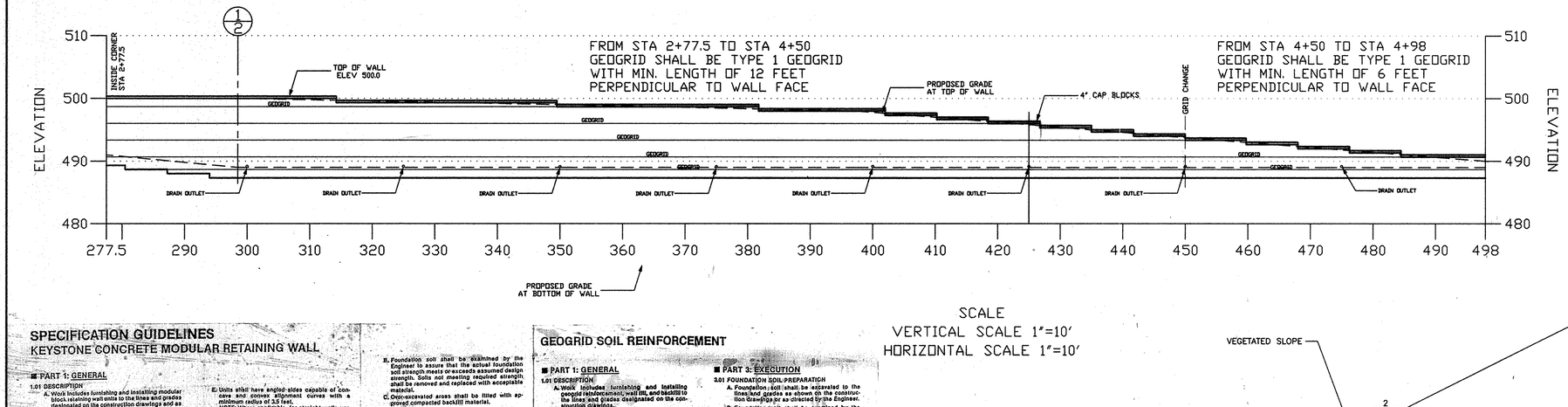




SCALE
VERTICAL SCALE 1"=10'
HORIZONTAL SCALE 1"=10'

SPECIFICATION GUIDELINES
KEYSTONE CONCRETE MODULAR RETAINING WALL

■ PART 1: GENERAL

1.01 DESCRIPTION
A. Work includes furnishing and installing modular block retaining wall units to the lines and grades designated on the construction drawings and as specified herein.
B. Work includes preparing foundation soil, furnishing and installing leveling pad, unit fill and backfill to the lines and grades designated on the construction drawings.
C. Furnishing and installing all appurtenant materials required for construction of the retaining wall as shown on the construction drawings.

1.02 RELATED WORK
A. Section 02275 — Geogrid Soil Reinforcement.

1.03 REFERENCE STANDARDS
A. ASTM C90—85 Hollow Load Bearing Masonry Units.
B. ASTM C140—75 Sampling and Testing Concrete Masonry Units.
C. ASTM C145—85 Solid Load Bearing Concrete Masonry Units.

1.04 DELIVERY, STORAGE AND HANDLING
A. Contractor shall check the materials upon delivery to assure that proper material has been received.
B. Contractor shall prevent excessive mud, wet cement, epoxy, and like materials which may stick themselves, from coming in contact with the materials.
C. Contractor shall protect the materials from damage. Damaged material shall not be incorporated into the retaining wall structure.

1.05 SUBMITTALS
A. Samples of all products used in the work of this section.
B. Latest edition of manufacturers specifications for proposed materials, method of installation and list of material proposed for use.

1.06 QUALITY ASSURANCE
A. Soil testing and inspection service for quality control testing during earthwork operations will be supplied by the owner.

■ PART 2: PRODUCTS

2.01 CONCRETE UNITS
A. Masonry units shall be KeyStone® Retaining Wall Units as manufactured by ____.
B. Concrete wall units shall have a minimum net 28 day compressive strength of 3000 psi. The concrete shall have a maximum moisture absorption of 6 lb/ft³.
C. Exterior dimensions may vary in accordance with ASTM C90—85, Standard and Compac units shall have a minimum of 1 square foot face area each, Mini units shall have a minimum 1/2 square foot face area each.
D. Keystone Standard units shall provide a minimum of 150 psf of wall face area. Fill which is contained within the dimensions of the units may be considered as 80% effective weight.
E. Units shall have angled sides capable of concave and convex alignment curves with a minimum radius of 3.5 feet.
NOTE: Where applicable, for straight walls use non-angled straight side cap units.
F. Units shall be interlocked with non-corrosive fiberglass pins.
G. Units shall be interlocked as to provide a minimum 1/4 inch setback per each course of wall height.
NOTE: Where applicable, zero setback or one inch setback per course options can be used.

2.02 FIBERGLASS CONNECTING PINS
A. Connecting pins shall be 1/2 inch diameter thermoset isophalic polyester resin/pultruded fiberglass reinforcement rods.
B. Pins shall have a minimum flexural strength of 128,000 psi and short beam shear of 6400 psi.

2.03 BASE LEVELING PAD MATERIAL
A. Material shall consist of compacted sand, gravel, crushed rock or leveling concrete (non-reinforced) as shown on construction drawings. The compacted leveling pad shall be a minimum 6 inches thick. When using a non-reinforced leveling concrete option, 1" to 3" thick, maintain the total leveling pad thickness.

2.04 UNIT FILL
A. Fill for units shall be free draining crushed stone, 3/8" to 3/4", or coarse gravel (no more than 5% shall pass the No. 200 sieve with a maximum size of 3/4"). Gradation of the fill shall be approved by the Engineer.
B. Place recommended fill behind the retaining wall units.

2.05 BACKFILL
A. Material shall be insitu soils when approved by the engineer unless otherwise specified in the drawings. Unsuitable soils for backfill (heavy clays or organic soils) shall not be used in the backfill or in the reinforced soil mass.
B. Where additional fill is required contractor shall submit sample and specifications to the engineer to determine if acceptable.

■ PART 3: EXECUTION

3.01 EXCAVATION
A. Contractor shall excavate to the lines and grades shown on the construction drawings. Over excavation shall not be made for ease replacement with compacted fill and/or wall system components will be required at contractor expense. Contractor shall be careful not to disturb embankment materials beyond lines shown.

3.02 FOUNDATION SOIL PREPARATION
A. Foundation soil shall be excavated as required for footing dimensions shown on the construction drawings, or as directed by the Engineer.
B. Foundation soil shall be examined by the Engineer to assure that the actual foundation soil strength meets or exceeds assumed design strength. Soils not meeting required strength shall be removed and replaced with acceptable material.
C. Over-excavated areas shall be filled with approved compacted backfill material.

3.03 BASE LEVELING PAD
A. Leveling pad materials shall be placed as shown on the construction drawings, upon undisturbed insitu soils, to a minimum thickness of 6 inches.
B. Material shall be compacted so as to provide a level hard surface on which to place the first course of units. Compaction shall be to 95% of standard proctor for sand or gravel type materials. For crushed rock, material shall be densely compacted.
C. Leveling pad shall be prepared to insure complete contact of retaining wall unit with base.
D. Leveling pad materials shall be to the depths and widths shown. Contractor may opt for using reduced depth of sands, gravel or crushed rock using a concrete topping. Concrete shall be unreinforced and a maximum of 1" to 3" thick.

3.04 UNIT INSTALLATION
A. First course of concrete wall units shall be placed on the base leveling pad. The units shall be checked for level and alignment. The first course is the most important to insure accurate and acceptable results.
B. Insure that units are in full contact with base.
C. Units are placed side by side for full length of wall alignment. Alignment may be done by means of a string line or offset from base line.
D. Install fiberglass connecting pins and fill all voids at units with unit fill material. Tamp fill.
E. Sweep all excess material from top of units and install next course. Insure each course is completely unit filled, backfilled and compacted prior to proceeding to next course.
F. Lay up each course insuring that pins protrude into adjoining courses above a minimum of one inch. Two pins are required per unit. Pull each unit forward, away from the embankment, against pins in the previous courses and backfill as the course is completed. Repeat procedure to the extent of wall height.
G. As appropriate where the wall changes elevation, units can be stepped with grade or turned into the embankment with a convex return end. Provide appropriate buried units on compacted leveling pad in area of convex return end.

3.05 CAP INSTALLATION
A. Place KeyStone Cap units over projecting pins from units below. Pull forward to set back position. Back fill and compact to finished grade.
B. As required, provide permanent mechanical connection to units with construction adhesive or epoxy. Apply adhesive or epoxy to bottom surface of cap units and install on units below.

3.06 GEOGRID INSTALLATION
A. Follow the requirements of Section 02275, GEOGRID SOIL REINFORCEMENT.

GEOGRID SOIL REINFORCEMENT

■ PART 1: GENERAL

1.01 DESCRIPTION
A. Work includes furnishing and installing geogrid reinforcement, wall fill, and backfill to the lines and grades designated on the construction drawings.
B. Work includes furnishing and installing all appurtenant materials required for construction of the geogrid reinforced soil retaining wall as shown on the construction drawings.

1.02 RELATED WORK
A. Section 02276 . . . . KEYSTONE CONCRETE MODULAR RETAINING WALL.

1.03 REFERENCE STANDARDS
A. See specific geogrid manufacturers reference standards.

1.04 DELIVERY, STORAGE AND HANDLING
A. Contractor shall check the geogrid upon delivery to assure that the proper material has been received.
B. Geogrids shall be stored above —20°F.
C. Contractor shall prevent excessive mud, wet cement, epoxy and like materials which may stick themselves to the geogrid, from coming in contact with the geogrid material.
D. Rolled geogrid material may be laid flat or stood on end for storage.

1.05 SUBMITTALS
A. Samples of all products used in the work of this section.
B. Latest edition of manufacturers specifications for proposed materials, method of installation and list of material proposed for use.

1.06 QUALITY ASSURANCE
A. Soil testing and inspection services for quality control testing during earthwork operation will be supplied by the owner.

■ PART 2 PRODUCTS

2.01 DEFINITIONS
A. Geogrid products shall be high density polyethylene, expanded sheet or polyester woven fiber materials, specifically fabricated for use as soil reinforcement.
B. Concrete retaining wall units are as detailed on the drawings and are specified under Section 02276 . . . . KEYSTONE CONCRETE MODULAR RETAINING WALL.
C. Wall fill is a free draining granular material used within the concrete units.
D. Backfill is the soil which is used as fill for the reinforced soil mass.
E. Foundation soil is the insitu soil.

2.02 GEOGRID
A. Geogrid shall be the type as shown on the drawings having the property requirements as described within the manufacturers specifications.

2.03 ACCEPTABLE MANUFACTURERS
A. A manufacturer's product shall be approved by the Engineer prior to bid opening.

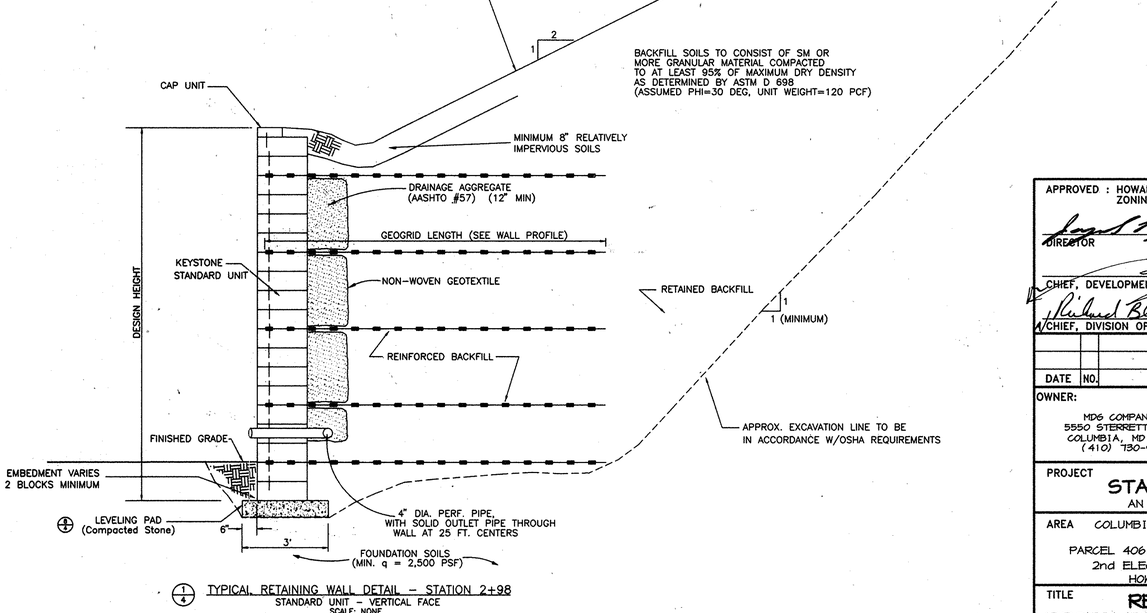
■ PART 3: EXECUTION

3.01 FOUNDATION SOIL PREPARATION
A. Foundation soil shall be excavated to the lines and grades as shown on the construction drawings or as directed by the Engineer.
B. Foundation soil shall be examined by the Engineer to assure that the actual foundation soil strength meets or exceeds assumed design strength.
C. Over-excavated areas shall be filled with approved compacted backfill material.
D. Foundation soil shall be proof rolled prior to fill and geogrid placement.

3.02 WALL ERECTION
A. Wall erection shall be as specified under Section 02276 . . . . KEYSTONE CONCRETE MODULAR RETAINING WALL.

3.03 GEOGRID INSTALLATION
A. The geogrid soil reinforcement shall be laid horizontally on compacted backfill. Connect to the concrete wall units by hooking geogrid over fiberglass pins. Pull taut, and anchor before backfill is placed on the geogrid.
B. Stack in the geogrid at the wall unit connections shall be removed.
C. Geogrid shall be laid at the proper elevation and orientation as shown on the construction drawings or as directed by the Engineer.
D. Correct orientation (roll direction) of the geogrid shall be verified by the contractor.
E. To prevention geogrid pull slippage, geogrid taut to eliminate loose fabric. Stake or secure back edge of geogrid prior to unit setting, backfill and compaction.
F. Follow manufacturers guidelines relative to overlap requirements of uniaxial and biaxial geogrids.

3.04 FILL PLACEMENT
A. Backfill material shall be placed in 8 inch lifts and compacted to 95% of Standard Proctor.
B. Backfill shall be placed, spread, and compacted in such a manner that minimizes the development of slack or loss of preansion of the geogrid.
C. Only hand-operated compaction equipment shall be allowed within 3 feet of the back surface of the Keystone units.
D. Backfill shall be placed from the wall rearward into the embankment to insure that the geogrid remains taut.
E. Tracked construction equipment shall not be operated directly on the geogrid. A minimum backfill thickness of 6 inches is required prior to operation of tracked vehicles over the geogrid. Turning of tracked vehicles should be kept to a minimum to prevent tracks from displacing the fill and damaging the geogrid.
F. Rubber-tired equipment may pass over the geogrid reinforcement at slow speeds, less than 10 MPH. Sudden braking and sharp turning shall be avoided.



1/4 TYPICAL RETAINING WALL DETAIL — STATION 2+98
STANDARD UNIT — VERTICAL FACE
SCALE: NONE

NOTES:

A. THE PROPOSED CONSTRUCTION OF ALL RETAINING WALLS SHALL BE PERFORMED UNDER THE OBSERVATION OF A MARYLAND REGISTERED PROFESSIONAL ENGINEER.

B. BEARING SOIL SHALL BE EXAMINED BY THE ENGINEER TO ASSURE THAT THE ACTUAL FOUNDATION SOIL STRENGTH MEETS OR EXCEEDS ASSUMED DESIGN STRENGTH.

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR — DATE 1/4/99

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 1/4/99

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 12/31/98

DATE	NO.	REVISION

OWNER:
MDS COMPANIES
5550 STERRETT PLACE
COLUMBIA, MD 21044
(410) 730-4041

DEVELOPER:
CARTER & ASSOCIATES, INC.
1275 PEACHTREE ST., N.E.
ATLANTA, GA. 30367
(404) 888-3316

PROJECT
STAYBRIDGE SUITES
AN EXTENDED STAY HOTEL

AREA COLUMBIA 100 OFFICE RESEARCH PARK
SECTION 1, AREA 2
PARCEL 406, TAX MAP 30, BLOCK 18, LOT I-1
2nd ELECTION DISTRICT ZONED-POR
HOWARD COUNTY, MARYLAND

TITLE
RETAINING WALL PROFILES AND DETAILS PLAN

ENGINEERING CONSULTING SERVICES, LTD.
1240 CHARWOOD ROAD, SUITE P
HANOVER, MD. 21076
410-859-8300

12-15-98
DATE

DAVID K. PORTER # 23109

DESIGNED BY :	C.R.
DRAWN BY :	D.R.D.
CHECKED BY :	C.R.
PROJECT NO :	98210 SDP1.DWG
DATE :	DECEMBER 16, 1998
SCALE :	AS SHOWN
DRAWING NO.	8 OF 8

SDP-99-38