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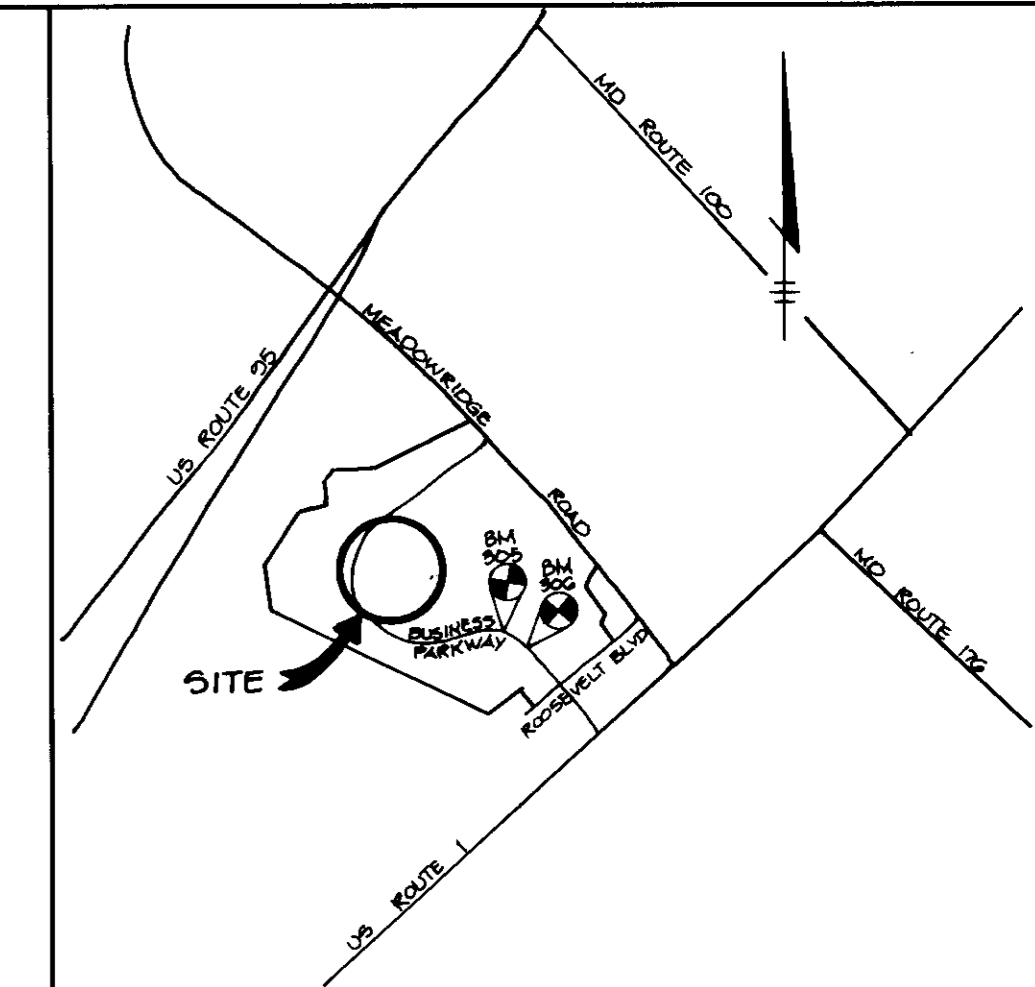
SITE DEVELOPMENT PLAN

MEADOWRIDGE BUSINESS PARK

PARCEL J-2

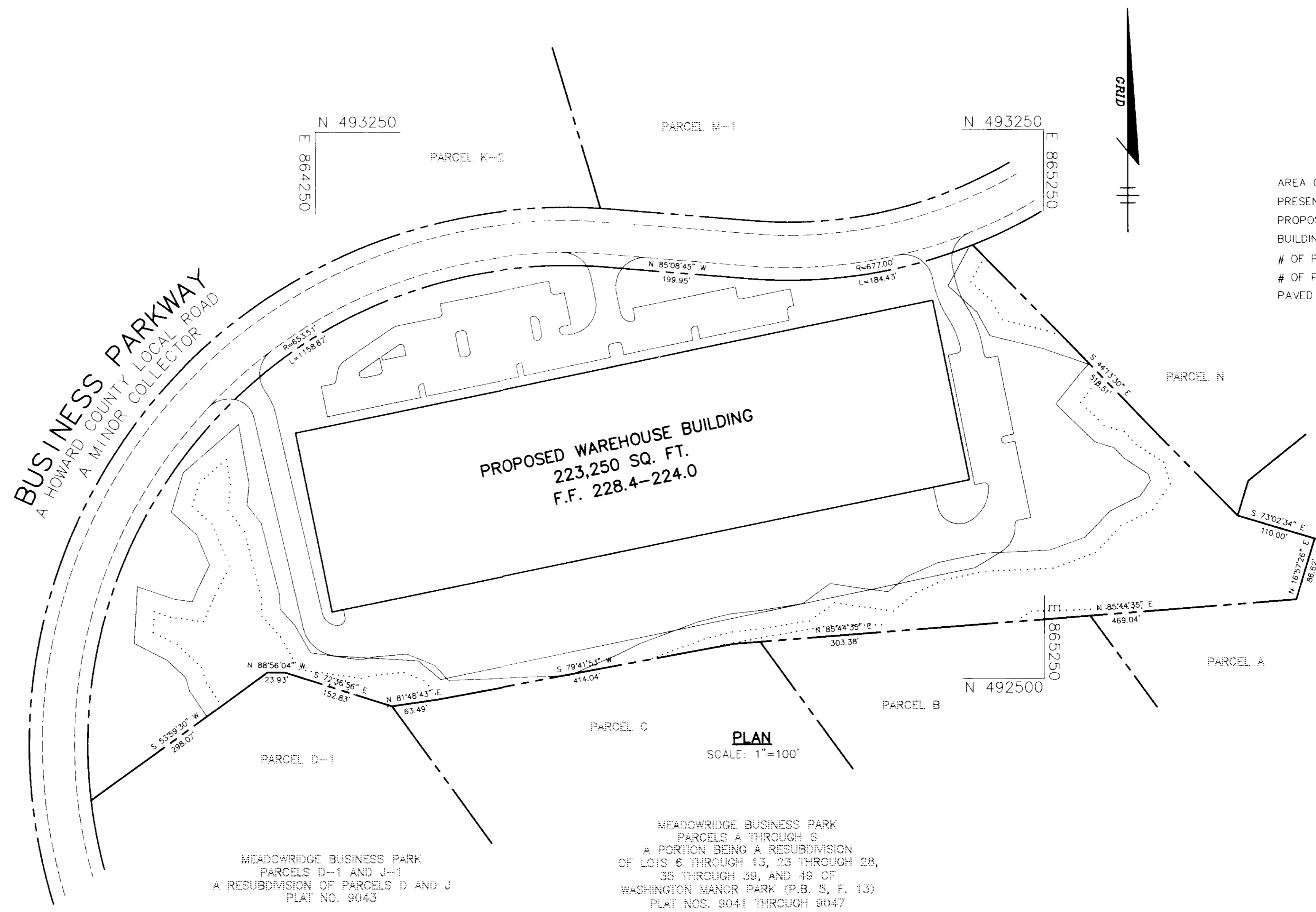
1st ELECTION DISTRICT

HOWARD COUNTY, MARYLAND



GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
- 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.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- 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.
- ALL PLAN DIMENSIONS ARE TO FACE OF CURB AND FACE OF BUILDING UNLESS OTHERWISE NOTED.
- A PORTION OF THE EXISTING TOPOGRAPHY IS TAKEN FROM AERIAL SURVEY WITH MAXIMUM TWO FOOT CONTOUR INTERVALS PREPARED BY WINGS, INC. DATED FEBRUARY, 1994. THE REMAINDER IS THE PROPOSED GRADING UNDER GP-96-156.
- 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. 305 AND 306 WERE USED FOR THIS PROJECT.
- WATER IS PUBLIC. CONTRACT NO. 14-1946-D.
- SEWER IS PUBLIC. SEWER DRAINAGE AREA: PATAPSCO CONTRACT NO. 14-1946-D.
- THE STORMWATER MANAGEMENT FACILITY PROPOSED FOR THIS SITE IS EXISTING UNDER F-89-163. THE FACILITY IS AN EXTENDED DETENTION POND AND IS PRIVATELY MAINTAINED. WATER QUALITY MANAGEMENT IS ALSO PROVIDED ON-SITE BY STORMCEPTORS PRIOR TO RELEASE TO EXISTING WETLANDS.
- 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.
- A 100-YEAR FLOODPLAIN STUDY IS NOT REQUIRED FOR THIS PROJECT.
- THE WETLANDS DELINEATION FOR THIS PROJECT IS FROM RECORDED PLAT NOS. 9043 AND 9045.
- A TRAFFIC STUDY IS NOT REQUIRED FOR THIS PROJECT.
- A NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT.
- THE GEOTECHNICAL STUDY FOR THIS PROJECT WAS PREPARED BY ECS LTD DATED MAY, 1996.
- THE BOUNDARY SURVEY FOR THIS PROJECT IS BASED ON PREVIOUSLY RECORDED PLAT NOS. 9043, 9045.
- SUBJECT PROPERTY ZONED M-1 PER 10-18-93 COMPREHENSIVE ZONING PLAN.
- ALL ELEVATIONS SHOWN ARE BASED ON THE U.S.C. AND G.S. MEAN SEA LEVEL DATUM, 1929.
- SEE DEPARTMENT OF PLANNING AND ZONING FILE NOS WP-91-100, WP-96-108, F-89-163, GP-96-156, F-96-159.
- THE CONTRACTOR SHALL TEST PIT EXISTING UTILITIES AT LEAST (5) DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS.
- CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.
- 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.
- NO PIPE SHALL BE LAID UNTIL LINES OF EXCAVATION HAVE BEEN BROUGHT WITHIN 6" OF FINISHED GRADE.
- 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.
- ALL INLETS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOWARD COUNTY STANDARDS.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
- 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.
- PROFILES STATIONS SHALL BE ADJUSTED AS NECESSARY TO CONFORM TO PLAN DIMENSIONS.
- ALL FILL AREAS WITHIN ROADWAY AND UNDER STRUCTURES TO BE COMPACTED TO A MINIMUM OF 95% COMPACTION OF AASHTO T180.
- NOTES ON WP-91-100:
 - AS OF MARCH 1, 1991, THE PLANNING DIRECTOR GRANTED APPROVAL TO THE REQUEST TO WAIVE SECTION 16.116(C)(6) WHICH PROHIBITS GRADING OR REMOVAL OF VEGETATION WITHIN 25 FEET OF A WETLAND.
 - THE WAIVER APPLIES TO THE FIRST SDP'S ON CURRENTLY UNDEVELOPED SITES WITHOUT APPROVED SDP'S AND NOT TO SUBSEQUENT EXPANSIONS OF USE ON ANY PARCEL WITHIN 25 FEET OF A WETLAND.
 - THE PREVIOUS MASS GRADING PLAN FOR PARCELS J-1 AND L (GP-96-156) DID NOT CONSTITUTE A SITE DEVELOPMENT PLAN THUS ALLOWING THIS PLAN TO DISTURB THE WETLANDS BUFFER.
- NOTES ON WP-96-108:
 - AS OF MAY 1, 1995, THE PLANNING DIRECTOR GRANTED APPROVAL TO THE REQUEST TO WAIVE SECTION 16.155(A)(2) WHICH REQUIRES AN APPROVED SITE DEVELOPMENT PLAN FOR GRADING AND CONSTRUCTION OF A BUILDING ON AN INDUSTRIAL PARCEL SUBJECT TO THE FOLLOWING:
 - A SIGNATURE APPROVAL FROM THE HOWARD SOIL CONSERVATION DISTRICT IS OBTAINED, AND
 - GRADING CANNOT OCCUR IN THE WETLANDS.
- A WETLAND PERMIT HAS BEEN APPROVED FOR THIS PROJECT UNDER AUTHORIZATION NO. 96-NF-0507/1996-04096. AUTHORIZED WORK INVOLVES GRADING, EXCAVATION AND FILL FOR THE CONSTRUCTION OF THE INFRASTRUCTURE INCLUDING ACCESS ROAD AND PARKING LOT. APPROVAL IS EFFECTIVE FROM JULY 30, 1996 TO JULY 30, 1999.



VICINITY MAP
SCALE: 1" = 2000'

BENCHMARKS

BM 305	P.K. NAIL SET IN CURB
N 491,838	E 865,271
BM 306	P.K. NAIL SET IN CURB
N 491,795	E 865,607

SITE ANALYSIS

AREA OF PARCEL	16.40 ACRES
PRESENT ZONING	M-1
PROPOSED USE	WAREHOUSE
BUILDING COVERAGE	223,250 SF (31.3% OF SITE)
# OF PARKING SPACES REQ'D @ .50 SP/1700 SF	112
# OF PARKING SPACES PROVIDED	186 (INCL. 6 HC)
PAVED AREA	186,566 SF (26.1% OF SITE)

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

[Signature] 1/2/97
DIRECTOR DATE

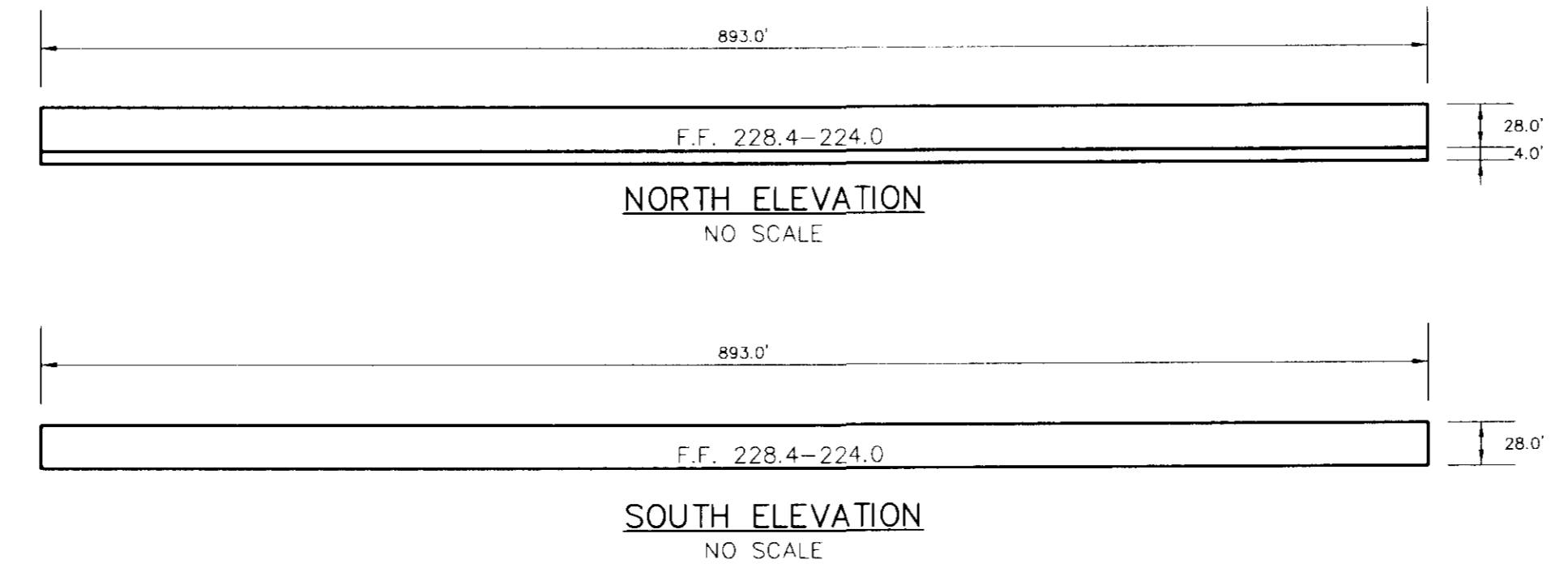
[Signature] 12/24/96
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 1/2/97
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE	NO.	REVISION
OWNER / DEVELOPER		
SECURITY CAPITAL INDUSTRIAL TRUST 14100 EAST 35 TH PLACE AURORA, COLORADO 80011 (303) 375-9292		
PROJECT		
MEADOWRIDGE BUSINESS PARK PARCEL J-2 A WAREHOUSE BUILDING		
AREA	TAX MAP NO. 37	PARCEL J-2
1st ELECTION DISTRICT		ZONED M-1
HOWARD COUNTY, MARYLAND		
TITLE		
TITLE SHEET		

RIEMER MUEGGE & ASSOCIATES, INC.
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
8818 Centre Park Drive • Suite 200 • Columbia, MD 21045
410-997-8900 FAX: 410-997-9282

12-13-96 DATE	GP-96-156 F-89-163 F-96-159
DESIGNED BY: CJR	
DRAWN BY: RPP	
PROJECT NO: HOCO 96E502 SDPI.DWG	
DATE: DECEMBER 13, 1996	
SCALE: AS SHOWN	
DRAWING NO. 1 OF 8	



ADDRESS CHART

PARCEL	STREET ADDRESS
J-2	6635 BUSINESS PARKWAY

PLAT #	BLOCK #	ZONING	TAX MAP NO.	ELECT. DIST.	CENSUS TRACT
12199	22	M-1	37	1st	6012

[Signature]
JAYKANT D. PAREKH #19148

NOTES:
1. ALL CURB RADI 5' UNLESS OTHERWISE NOTED

SEWER ABANDONMENT NOTE

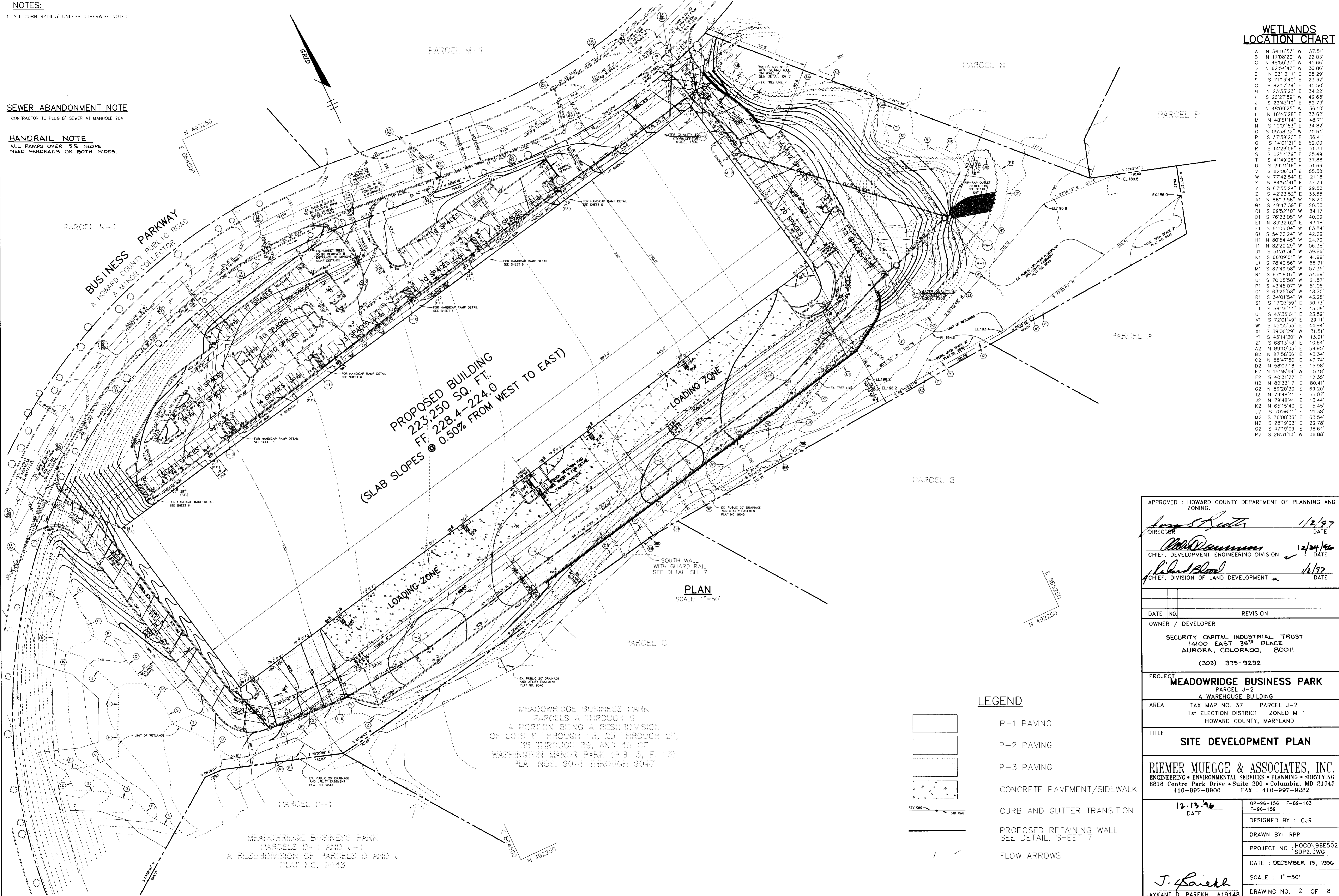
CONTRACTOR TO PLUG 8" SEWER AT MANHOLE 204

HANDRAIL NOTE

ALL RAMP OVER 5% SLOPE
NEED HANDRAILS ON BOTH SIDES.

WETLANDS LOCATION CHART

A	N 34°16'57"	W 37.51'
B	N 17°08'20"	W 22.03'
C	N 46°50'37"	W 45.66'
D	N 62°54'47"	W 36.86'
E	N 03°31'11"	W 28.29'
F	S 21°13'40"	E 23.32'
G	S 82°17'39"	E 45.50'
H	N 23°33'23"	E 34.22'
I	S 26°27'59"	W 49.68'
J	S 14°28'06"	E 41.33'
K	N 48°09'25"	W 36.10'
L	N 16°45'28"	E 33.62'
M	N 48°51'14"	E 48.71'
N	S 10°01'53"	E 34.82'
O	S 05°38'32"	W 35.64'
P	S 37°39'20"	E 36.41'
Q	S 14°01'21"	E 52.00'
R	S 02°4'39"	E 25.49'
T	S 41°49'28"	E 37.88'
U	S 29°31'16"	E 51.66'
V	S 82°36'01"	E 85.58'
W	N 7°42'54"	E 21.18'
X	N 84°54'41"	E 37.79'
Y	S 67°56'24"	E 29.52'
Z	S 42°23'52"	E 33.68'
A1	N 88°13'58"	W 28.20'
B1	S 49°47'39"	E 20.50'
C1	S 69°52'10"	W 84.17'
D1	S 76°23'05"	W 40.09'
E1	N 82°20'29"	E 56.38'
F1	S 81°06'04"	W 63.64'
G1	S 54°22'24"	W 42.29'
H1	N 80°54'45"	W 24.79'
I1	N 82°20'29"	E 56.38'
J1	S 51°31'36"	W 39.86'
K1	S 66°09'01"	W 41.99'
L1	S 78°40'56"	W 58.31'
M1	S 87°49'58"	W 57.35'
N1	S 87°18'07"	W 34.69'
O1	S 70°05'58"	E 61.57'
P1	S 43°45'07"	E 51.05'
Q1	S 63°25'58"	W 48.70'
R1	S 34°01'54"	E 43.28'
S1	S 17°03'59"	E 30.73'
T1	S 56°39'44"	E 45.08'
U1	S 43°35'01"	E 23.59'
V1	S 72°01'49"	E 23.11'
W1	S 45°55'35"	E 44.94'
X1	S 39°00'29"	W 31.51'
Y1	S 43°14'30"	W 13.91'
Z1	S 58°13'43"	E 10.64'
A2	N 89°10'05"	E 59.95'
B2	N 87°58'36"	E 43.34'
C2	N 88°47'50"	E 47.74'
D2	N 58°07'18"	E 15.98'
E2	N 15°38'49"	W 5.18'
F2	S 40°31'27"	E 12.35'
H2	N 80°33'17"	E 80.41'
G2	N 89°20'30"	E 69.20'
I2	N 79°48'41"	E 55.07'
J2	N 79°48'41"	E 13.44'
K2	N 65°15'40"	E 5.45'
L2	S 70°56'11"	E 21.38'
M2	S 76°08'36"	E 63.54'
N2	S 28°19'03"	E 29.78'
O2	S 47°19'09"	E 38.64'
P2	S 28°31'13"	W 38.88'



APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

James S. Reith 1/2/97
DIRECTOR DATE

John P. ... 12/24/96
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Richard ... 1/2/97
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

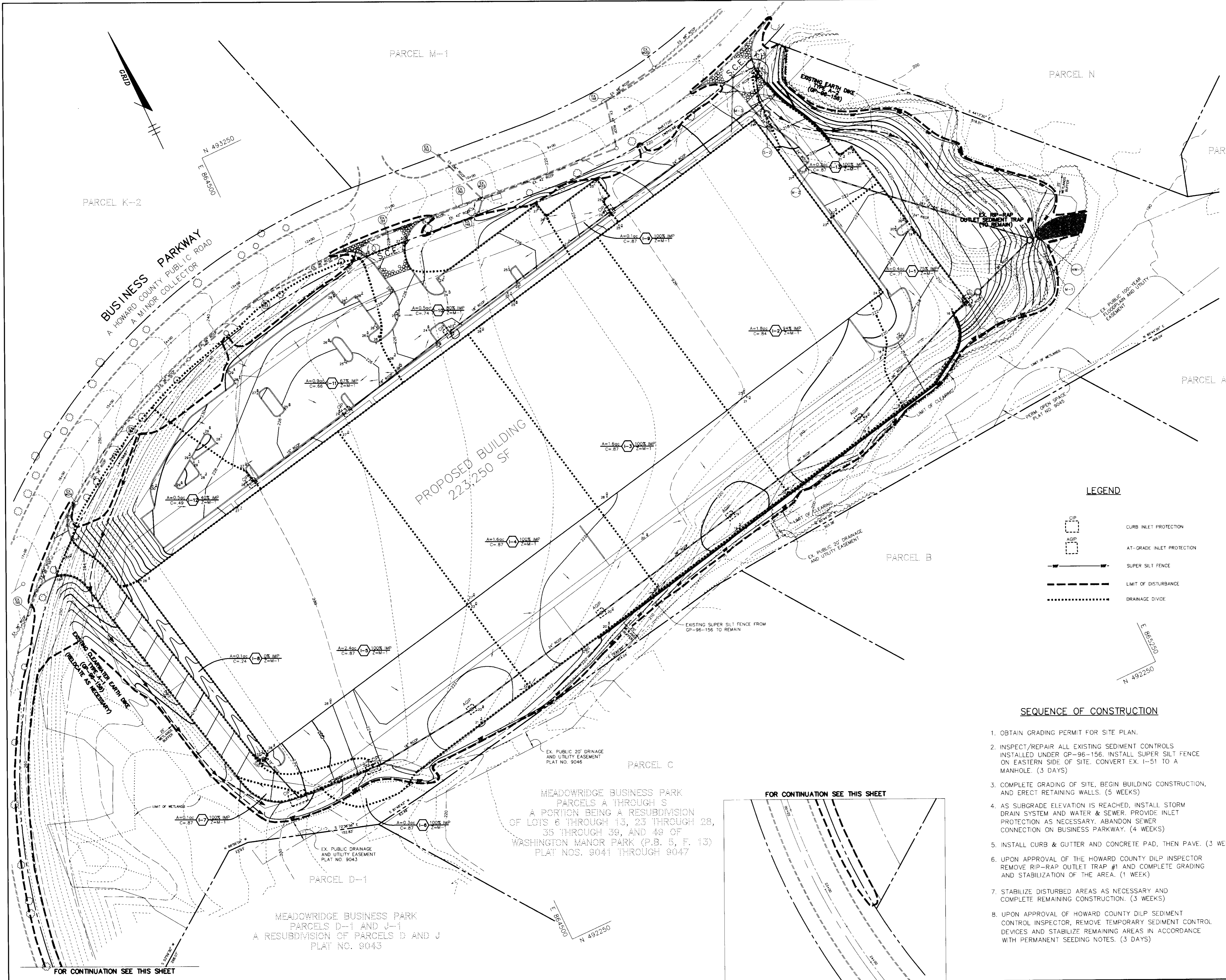
DATE	NO.	REVISION
OWNER / DEVELOPER		
SECURITY CAPITAL INDUSTRIAL TRUST 14100 EAST 35 TH PLACE AURORA, COLORADO, 80011 (303) 375-9292		
PROJECT		
MEADOWRIDGE BUSINESS PARK PARCEL J-2 A WAREHOUSE BUILDING		
AREA		
TAX MAP NO. 37 PARCEL J-2 1st ELECTION DISTRICT ZONED M-1 HOWARD COUNTY, MARYLAND		
TITLE		
SITE DEVELOPMENT PLAN		

RIEMER MUEGGE & ASSOCIATES, INC.
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
8818 Centre Park Drive • Suite 200 • Columbia, MD 21045
410-997-8900 FAX : 410-997-9282

12-13-96 DATE	GP-96-156 F-89-163 F-96-159
	DESIGNED BY : CJR
	DRAWN BY: RPP
	PROJECT NO. HOCO 96E502 SDP2.DWG
	DATE : DECEMBER 13, 1996
	SCALE : 1"=50'
<i>J. Parekh</i> JAYKANT D. PAREKH #19148	DRAWING NO. 2 OF 8

LEGEND

- P-1 PAVING
- P-2 PAVING
- P-3 PAVING
- CONCRETE PAVEMENT/SIDEWALK
- CURB AND GUTTER TRANSITION
- PROPOSED RETAINING WALL
SEE DETAIL, SHEET 7
- FLOW ARROWS



EX. RIP-RAP OUTLET SEDIMENT TRAP #1

DRAINAGE AREA	5.85 ac (proposed)
STORAGE VOLUME REQUIRED	21,060 cf (proposed)
STORAGE VOLUME PROVIDED	22,564 cf
CREST ELEVATION	194.00
TOP OF DAM	198.00
BOTTOM ELEVATION	189.00
CLEANOUT ELEVATION	191.00
SIDE SLOPES	2:1
CREST LENGTH	16.0'

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.

Gabe L. Finke
 DEVELOPER **GABE L. FINKE** DATE **12-12-96**

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.

J. Parekh
 ENGINEER **JAYKANT D. PAREKH** DATE **12-13-96**

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

Jeep Sumners
 NATURAL RESOURCES CONSERVATION SERVICE DATE **12/18/96**

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

John K. Robertson
 HOWARD SOIL CONSERVATION DISTRICT DATE **12/18/96**

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

James S. Butler
 DIRECTOR DATE **1/2/97**

Bill Deussen
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE **12/29/96**

Richard Blood
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE **1/2/97**

LEGEND

	CURB INLET PROTECTION
	AT-GRADE INLET PROTECTION
	SUPER SILT FENCE
	LIMIT OF DISTURBANCE
	DRAINAGE DIVIDE

- SEQUENCE OF CONSTRUCTION**
- OBTAIN GRADING PERMIT FOR SITE PLAN.
 - INSPECT/REPAIR ALL EXISTING SEDIMENT CONTROLS INSTALLED UNDER GP-96-156. INSTALL SUPER SILT FENCE ON EASTERN SIDE OF SITE. CONVERT EX. I-51 TO A MANHOLE. (3 DAYS)
 - COMPLETE GRADING OF SITE, BEGIN BUILDING CONSTRUCTION, AND ERECT RETAINING WALLS. (5 WEEKS)
 - AS SUBGRADE ELEVATION IS REACHED, INSTALL STORM DRAIN SYSTEM AND WATER & SEWER. PROVIDE INLET PROTECTION AS NECESSARY. ABANDON SEWER CONNECTION ON BUSINESS PARKWAY. (4 WEEKS)
 - INSTALL CURB & GUTTER AND CONCRETE PAD, THEN PAVE. (3 WEEKS)
 - UPON APPROVAL OF THE HOWARD COUNTY DILP INSPECTOR REMOVE RIP-RAP OUTLET TRAP #1 AND COMPLETE GRADING AND STABILIZATION OF THE AREA. (1 WEEK)
 - STABILIZE DISTURBED AREAS AS NECESSARY AND COMPLETE REMAINING CONSTRUCTION. (3 WEEKS)
 - UPON APPROVAL OF HOWARD COUNTY DILP SEDIMENT CONTROL INSPECTOR, REMOVE TEMPORARY SEDIMENT CONTROL DEVICES AND STABILIZE REMAINING AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES. (3 DAYS)

DATE	NO.	REVISION

OWNER / DEVELOPER
 SECURITY CAPITAL INDUSTRIAL TRUST
 14100 EAST 35TH PLACE
 AURORA, COLORADO 80011
 (303) 375-9292

PROJECT
MEADOWRIDGE BUSINESS PARK
 PARCEL J-2
 A WAREHOUSE BUILDING

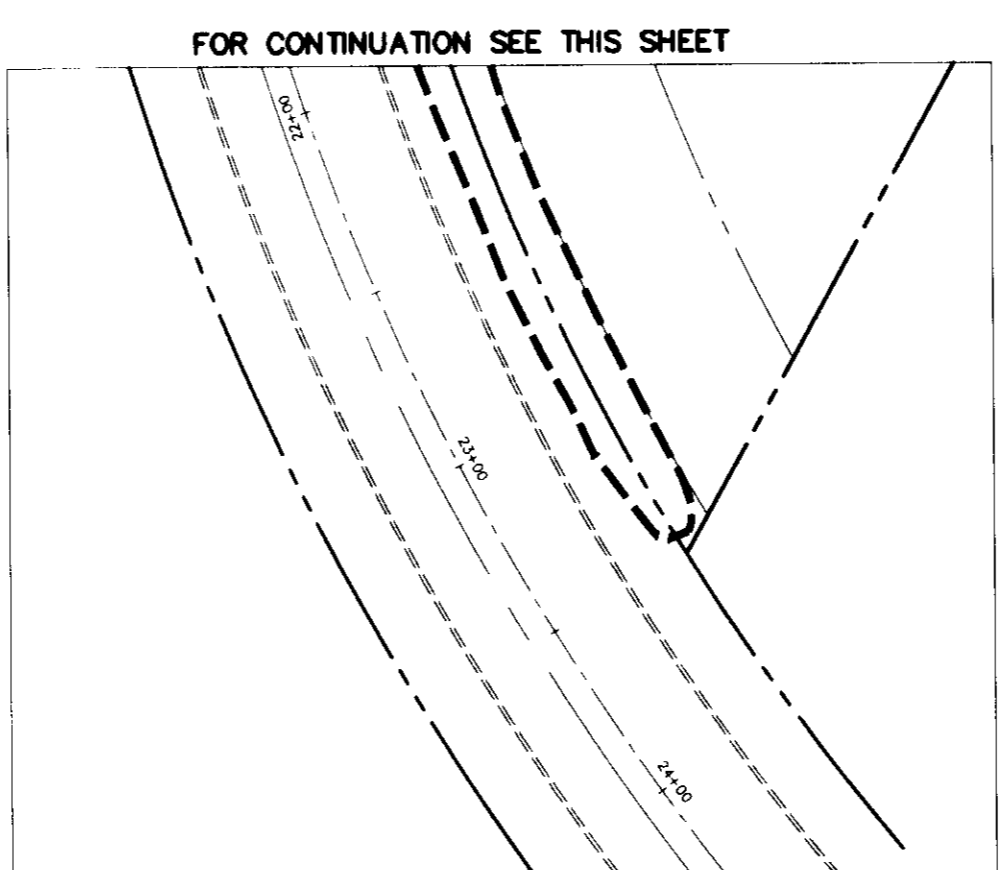
AREA
 TAX MAP NO. 37 PARCEL J-2
 1st ELECTION DISTRICT ZONED M-1
 HOWARD COUNTY, MARYLAND

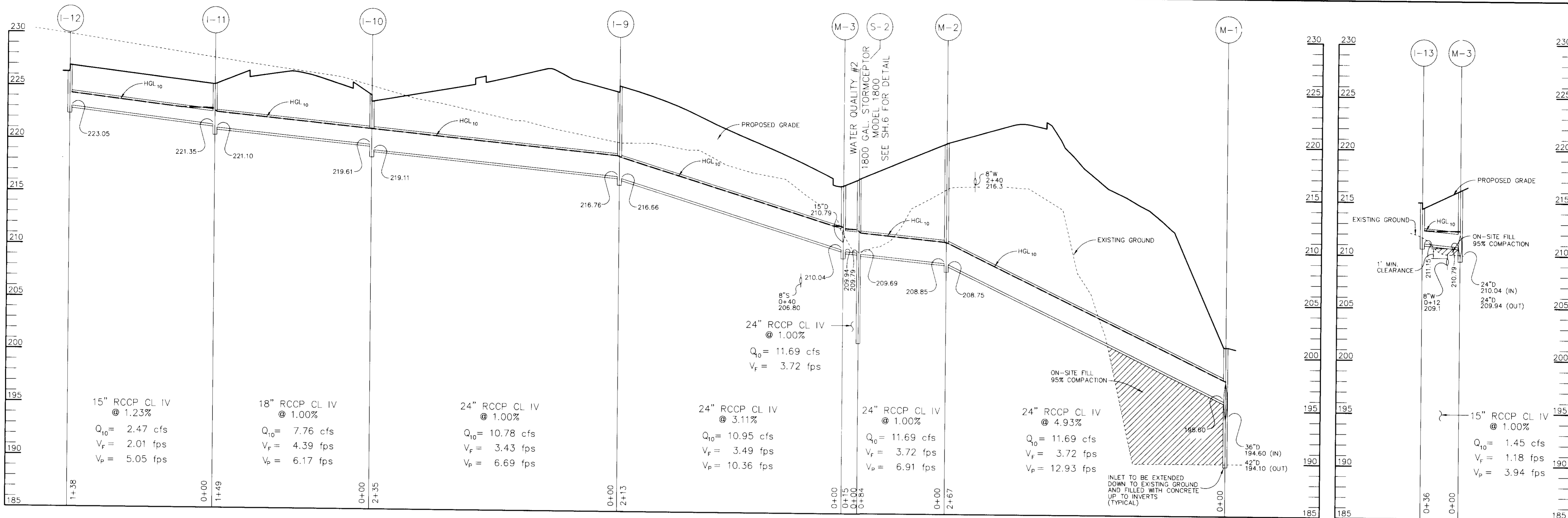
TITLE
**GRADING PLAN,
 SEDIMENT CONTROL PLAN,
 AND DRAINAGE AREA MAP**

RIEMER MUEGGE & ASSOCIATES, INC.
 ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
 8818 Centre Park Drive • Suite 200 • Columbia, MD 21045
 410-997-8900 FAX : 410-997-9282

DATE **12-13-96**
 DESIGNED BY : CJR
 DRAWN BY : RPP
 PROJECT NO : HOCO\96E502
 SDP3.DWG
 DATE : DECEMBER 13, 1996
 SCALE : 1" = 50'
 DRAWING NO. 3 OF 8

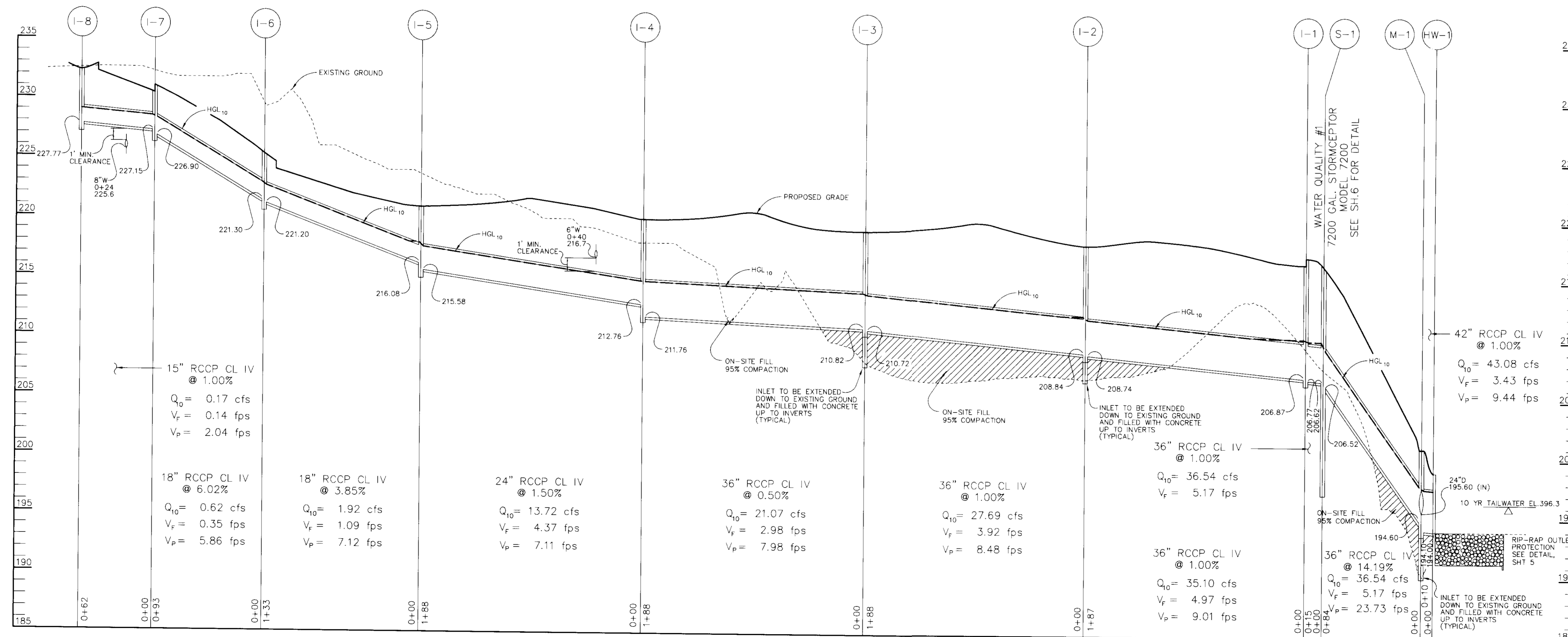
FOR CONTINUATION SEE THIS SHEET





STORM DRAIN PROFILE
 SCALE: HOR. - 1" = 50', VERT. - 1" = 5'

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



STORM DRAIN PROFILE
 SCALE: HOR. - 1" = 50', VERT. - 1" = 5'

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

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 DIRECTOR: *[Signature]* DATE: 1/2/97
 CHIEF, DEVELOPMENT ENGINEERING DIVISION: *[Signature]* DATE: 12/2/96
 CHIEF, DIVISION OF LAND DEVELOPMENT: *[Signature]* DATE: 1/2/97

DATE	NO.	REVISION
OWNER / DEVELOPER		
SECURITY CAPITAL INDUSTRIAL TRUST 14100 EAST 35 TH PLACE AURORA, COLORADO 80011 (303) 375-9292		
PROJECT: MEADOWRIDGE BUSINESS PARK PARCEL J-2 A WAREHOUSE BUILDING		
AREA: TAX MAP NO. 37 PARCEL J-2 1 ST ELECTION DISTRICT ZONED M-1 HOWARD COUNTY, MARYLAND		
TITLE: STORM DRAIN PROFILES		

RIEMER MUEGGE & ASSOCIATES, INC.
 ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
 8818 Centre Park Drive • Suite 200 • Columbia, MD 21045
 410-997-8900 FAX: 410-997-9282

DATE: 12-13-96
 DESIGNED BY: CJR
 DRAWN BY: RPP
 PROJECT NO.: HOCO\96E502
 SDP4.DWG
 DATE: DECEMBER 19, 1996
 SCALE: 1" = 50'
 DRAWING NO.: 4 OF 8

SEDIMENT CONTROL NOTES

1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS AND PERMITS 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 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL AND EROSION CONTROL, AND REVISIONS THERE TO.
3. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES AND ALL SLOPES GREATER THAN 3:1, B) 14 DAYS AS TO 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 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
5. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1991 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL AND EROSION CONTROL FOR PERMANENT SEEDINGS (SEC. 51), SOO (SEC. 54), TEMPORARY SEEDING (SEC. 50) AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONG CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
6. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
7. SITE ANALYSIS:

TOTAL AREA OF SITE	16.40	ACRES
AREA DISTURBED	12.20	ACRES
AREA TO BE ROOFED OR PAVED	9.41	ACRES
AREA TO BE VEGETATIVELY STABILIZED	2.79	ACRES
TOTAL CUT	20,000	CU.YDS.
TOTAL FILL	20,000	CU.YDS.
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. SITE GRADING WILL BEGIN ONLY AFTER ALL PERIMETER SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED AND ARE IN A FUNCTIONING CONDITION.
11. SEDIMENT WILL BE REMOVED FROM TRAPS WHEN ITS DEPTH REACHES CLEAN OUT ELEVATION SHOWN ON THE PLANS.
12. 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.
13. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 AC., 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.
14. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN BE BACKFILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

TEMPORARY SEEDING NOTES

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

Seeded 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 ryegrass (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 15 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 untreated 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.

Seeded 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:

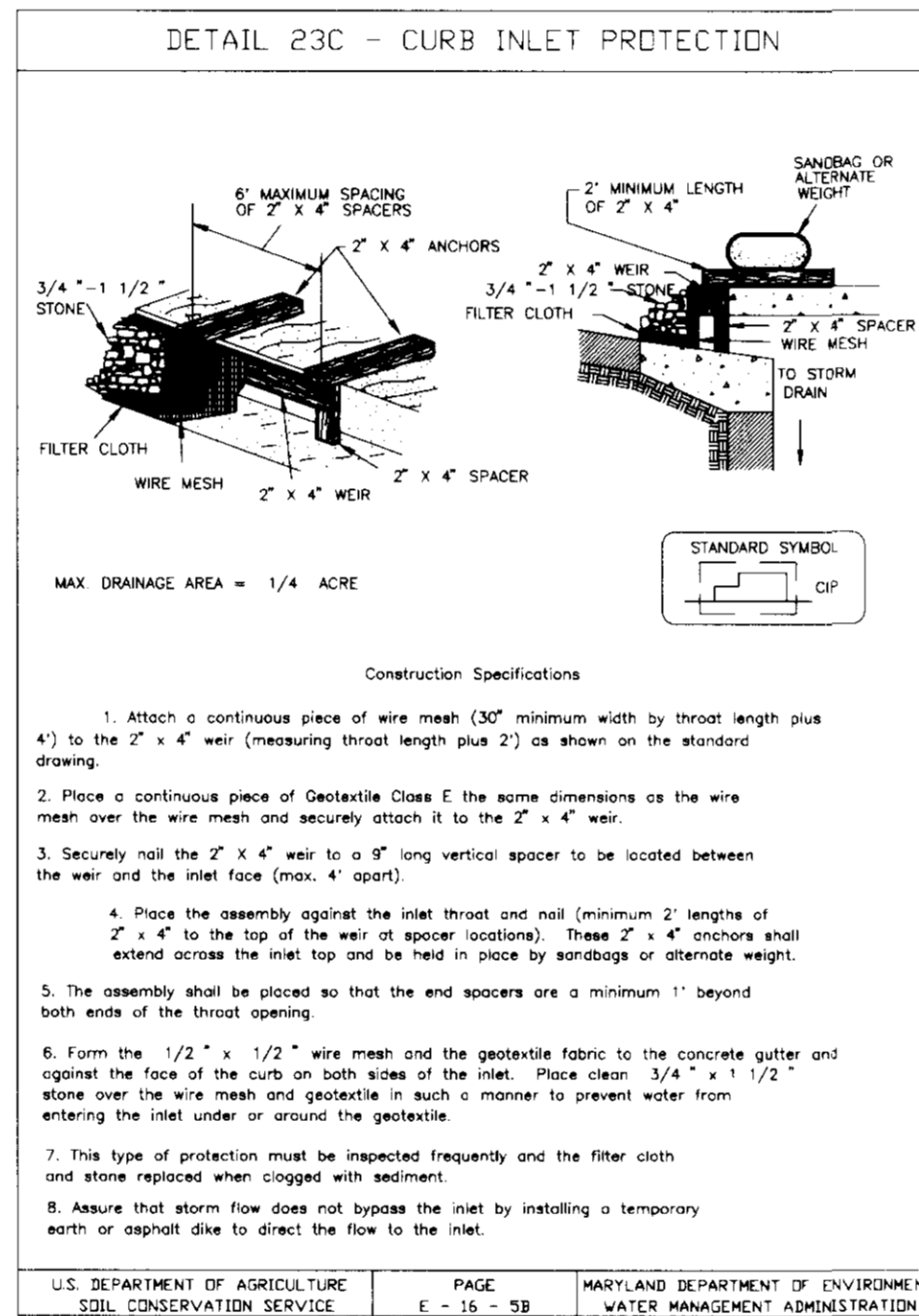
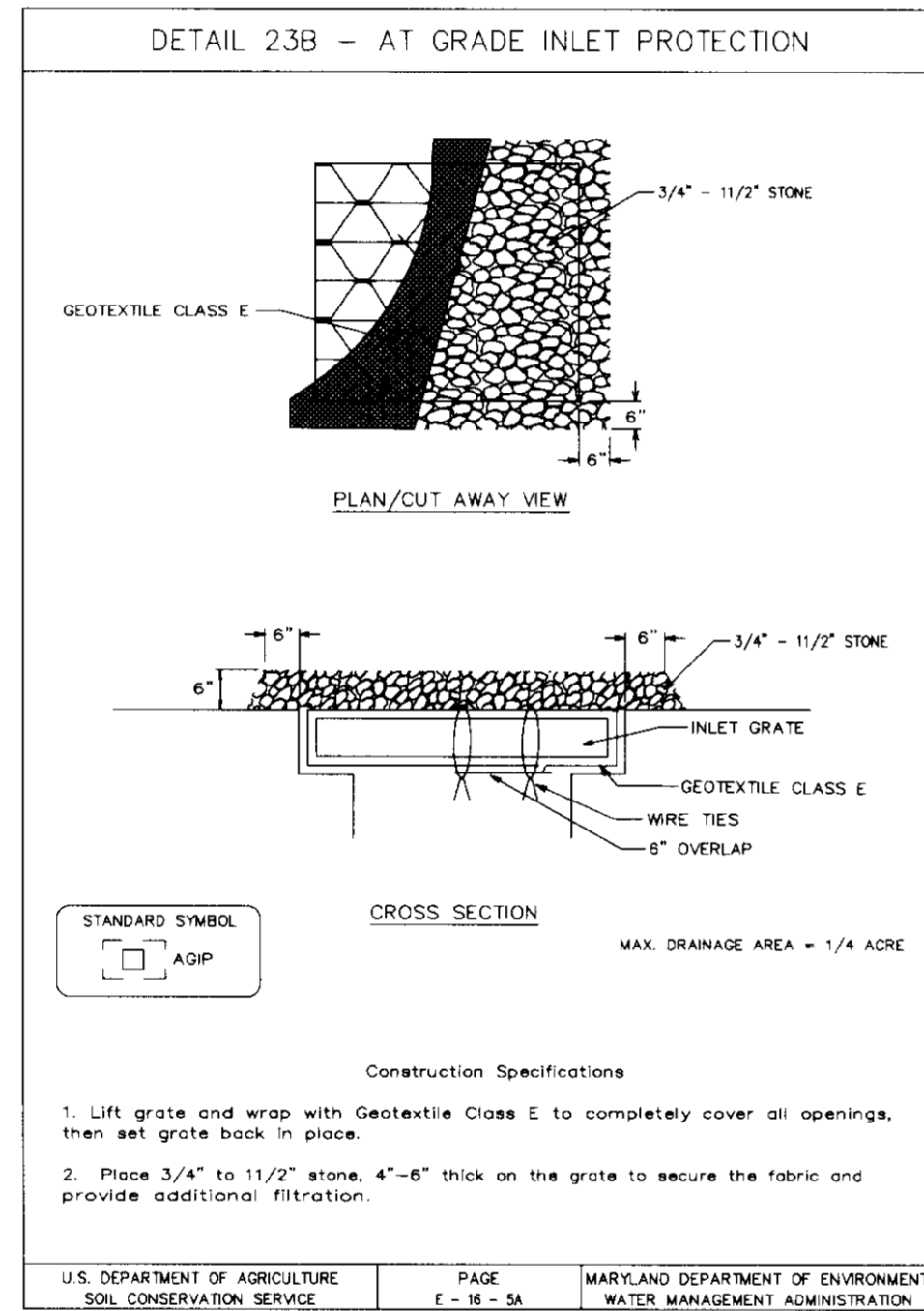
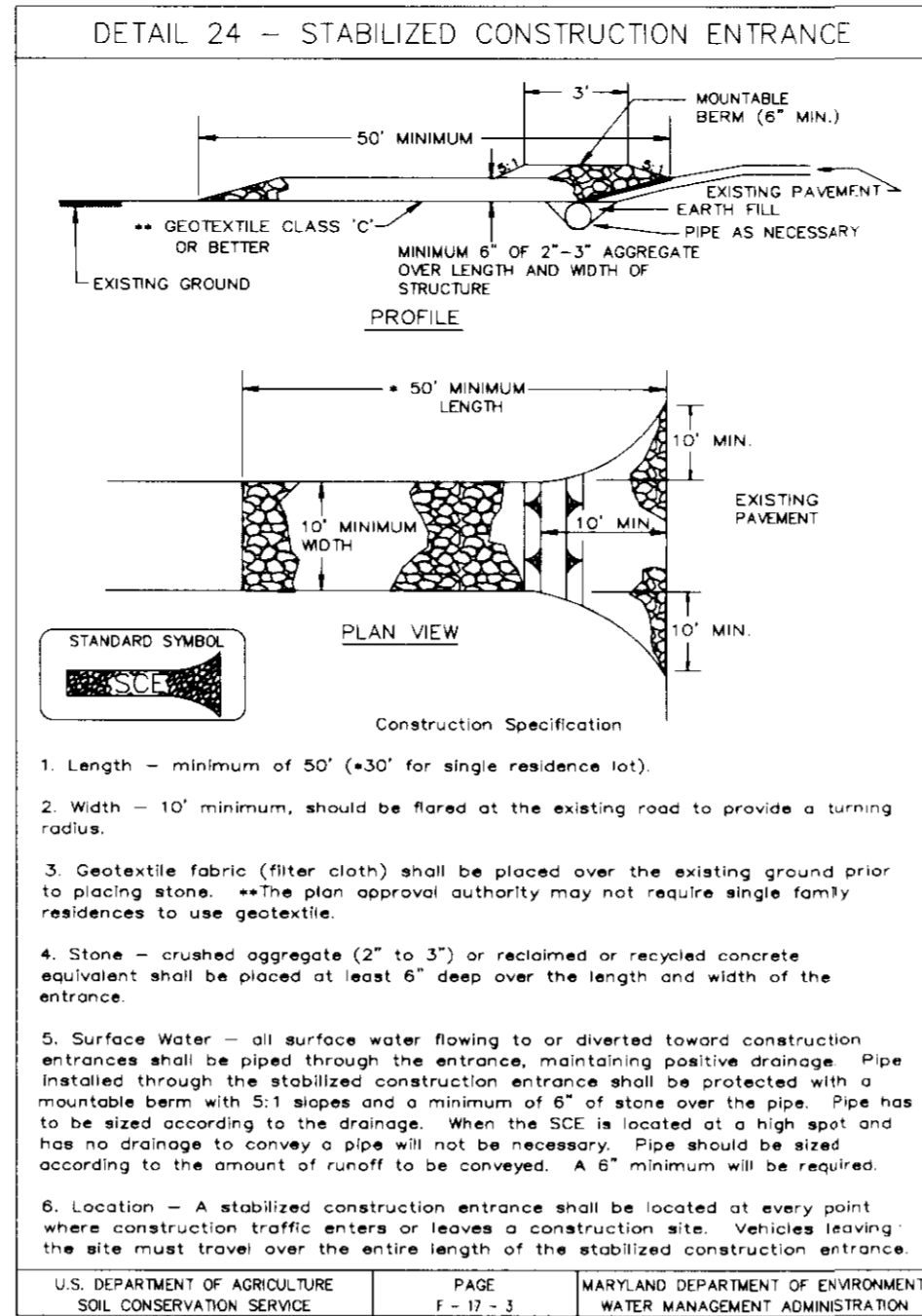
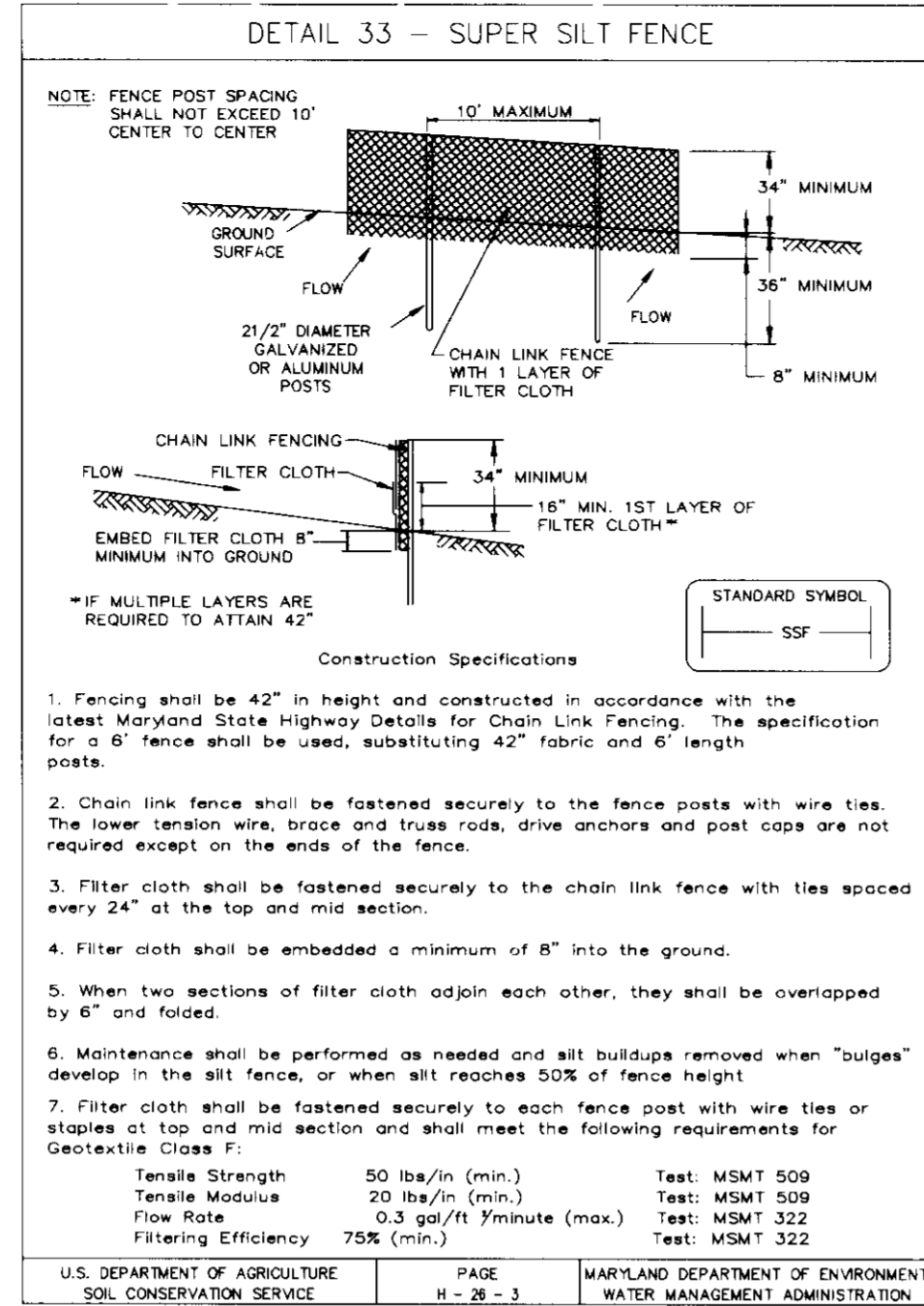
- 1) Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs. per 1000 sq.ft.) and 600 lbs. per acre 10-10-10 fertilizer (14 lbs. per 1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs. per acre 30-0-0 ureaform fertilizer (9 lbs. per 1000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

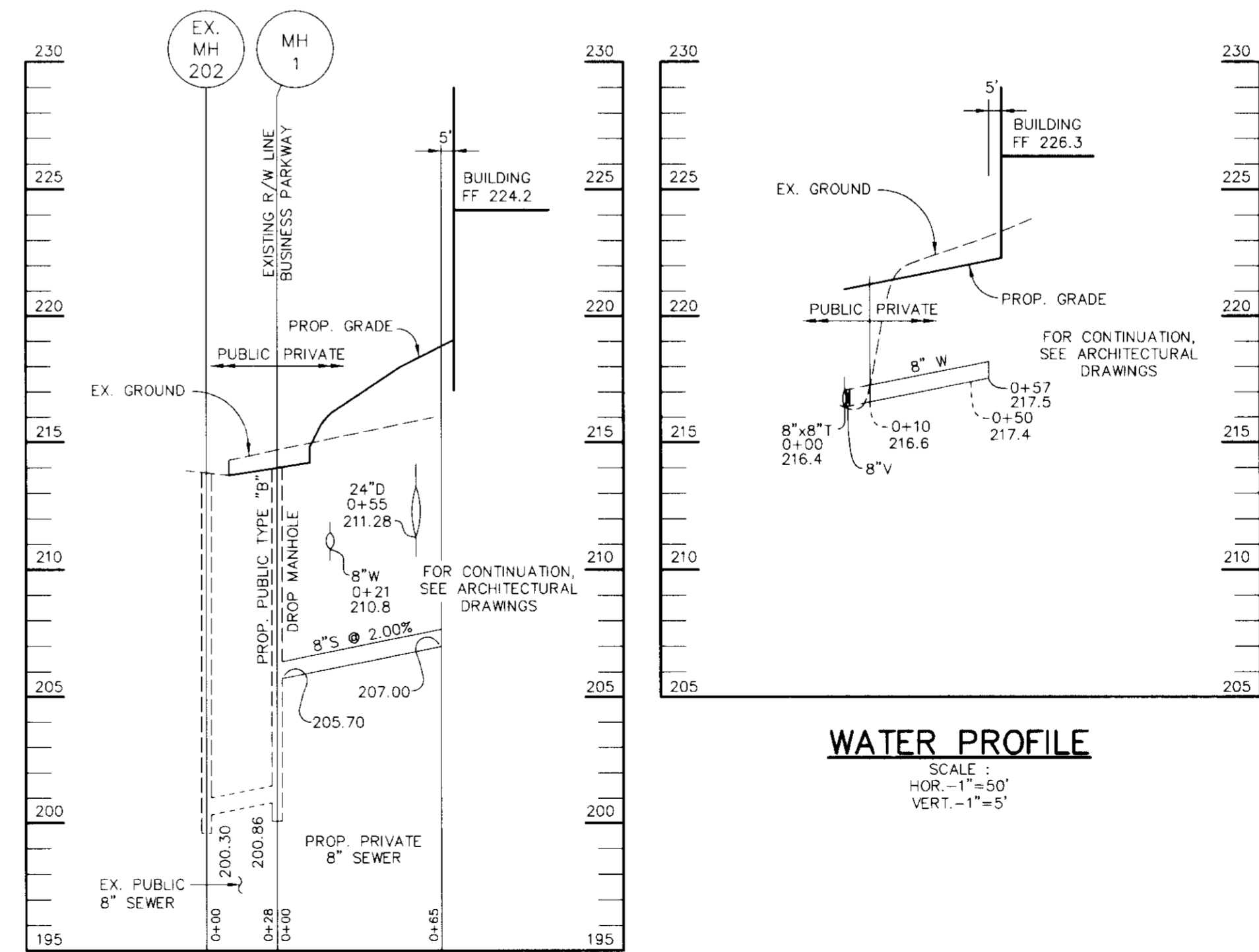
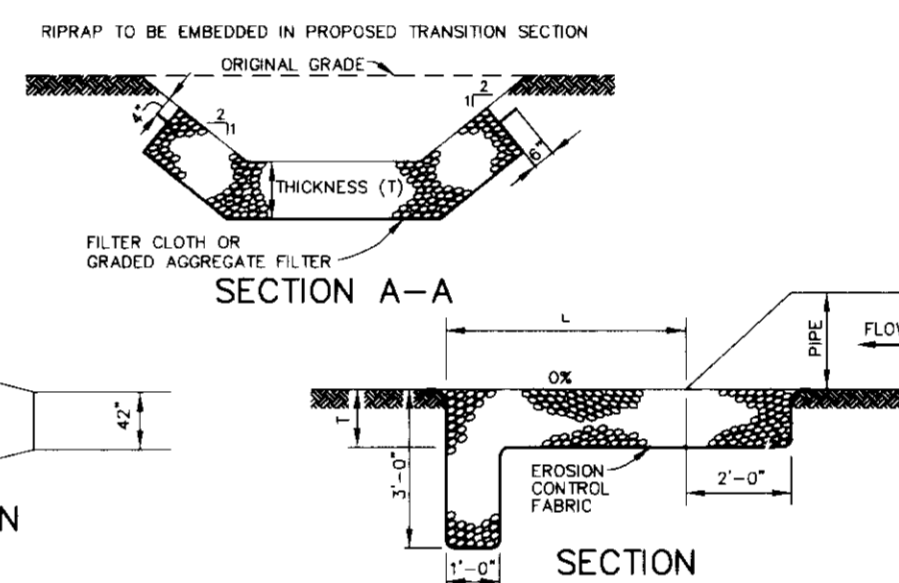
Mulching: Apply 1-1/2 to 2 tons per acre (70 to 90 lbs. per 1000 sq.ft.) of untreated small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal. per acre (5 gal. per 1000 sq.ft.) of emulsified asphalt on flat areas. On slopes, 8 ft.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



STORM DRAIN STRUCTURE SCHEDULE

NO.	TYPE	LOCATION	INV. IN	INV. OUT	TOP ELEV.	REMARKS
I-1	A-5	Q STA 3+91.01, 50.1'L	206.87	206.77	217.1	HOCO STD. DETAIL SD 4.01
I-2	MOD. 5'x5' S W/ RET. GRATE	Q STA 5+45.17, 12.5'L	208.84	208.74	218.0	HOCO STD. DETAIL SD 4.22/4.93
I-3	MOD. 5'x5' S W/ RET. GRATE	Q STA 7+32.68, 12.5'L	210.82	210.72	219.1	HOCO STD. DETAIL SD 4.22/4.93
I-4	MOD. 5'x5' S W/ RET. GRATE	Q STA 9+20.13, 12.5'L	213.70	212.70	220.0	HOCO STD. DETAIL SD 4.22/4.93
I-5	S W/RET. GRATE	Q STA 11+07.63, 12.5'L	216.08	215.58	220.9	HOCO STD. DETAIL SD 4.22/4.93
I-6	A-10	Q STA 12+36.56, 28.2'L	221.30	221.20	225.3	HOCO STD. DETAIL SD 4.02
I-7	A-5	Q STA 13+29.47, 28.0'L	227.15	226.90	231.0	HOCO STD. DETAIL SD 4.01
I-8	D	Q STA 13+77.19, 21.3'R	-	227.77	232.3	HOCO STD. DETAIL SD 4.11
I-9	A-5	Q STA 0+08.63, 27.7'L	216.76	216.66	225.4	HOCO STD. DETAIL SD 4.01
I-10	A-5	Q STA 2+43.28, 27.7'L	219.61	219.11	224.3	HOCO STD. DETAIL SD 4.01
I-11	A-5	Q STA 3+92.45, 31.5'L	221.35	221.10	225.2	HOCO STD. DETAIL SD 4.01
I-12	A-5	Q STA 5+30.26, 31.5'L	-	223.05	226.9	HOCO STD. DETAIL SD 4.01
I-13	S-COMB W/ RET. GRATE	Q STA 0+54.46, 13.4'L	-	211.15	214.5+	HOCO STD. DETAIL SD 4.32/4.93
M-1	72" DIA MH	Q STA 3+71.24, 138.6'L	195.60(24") 194.60(36")	194.10	201.0	MSHA STD. DETAIL MD-384.05
M-2	4' DIA MH	Q STA 1+85.54, 23.0'R	208.41	208.31	220.5	HOCO STD. DETAIL G 5.01
M-3	4' DIA MH	Q STA 0+84.31, 5.7'R	210.79(15") 210.04(24")	209.94	216.1	HOCO STD. DETAIL G 5.01
S-1	STORMCEPTOR MODEL 7200 W/44" INSERT	Q STA 3+86.69, 63.3'L	206.62	206.51	216.3	SEE DETAIL, SHT 6
S-2	STORMCEPTOR MODEL 1800 W/22" INSERT	Q STA 0+98.45, 7.9'R	209.79	209.69	216.9	SEE DETAIL, SHT 6
HW-1	TYPE 'A'	SEE PLAN	194.00	-	-	HOCO STD. DETAIL SD 5.11



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.

Gabe L. Finke 12-12-96
DEVELOPER GABE L. FINKE 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.

J. Parekh 12-13-96
ENGINEER JAYKANT D. PAREKH DATE

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

Rayl Summers 12/19/96
NATURAL RESOURCES CONSERVATION SERVICE DATE

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

John R. Redman 12/13/96
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Joseph J. Butts 11/23/97
DIRECTOR DATE

John D. Pannone 12/24/96
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Richard Blod 12/97
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

OWNER / DEVELOPER

SECURITY CAPITAL INDUSTRIAL TRUST
14100 EAST 35TH PLACE
AURORA, COLORADO 80011
(303) 975-9292

PROJECT

MEADOWRIDGE BUSINESS PARK
PARCEL J-2
A WAREHOUSE BUILDING

AREA TAX MAP NO. 37 PARCEL J-2
1st ELECTION DISTRICT ZONED M-1
HOWARD COUNTY, MARYLAND

TITLE

PROFILES,
NOTES, AND DETAILS

RIEMER MUEGGE & ASSOCIATES, INC.
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
8818 Centre Park Drive • Suite 200 • Columbia, MD 21045
410-997-8900 FAX : 410-997-9282

12-13-96
DATE

GP-96-156 F-89-163
F-96-159

DESIGNED BY : CJR

DRAWN BY: RPP

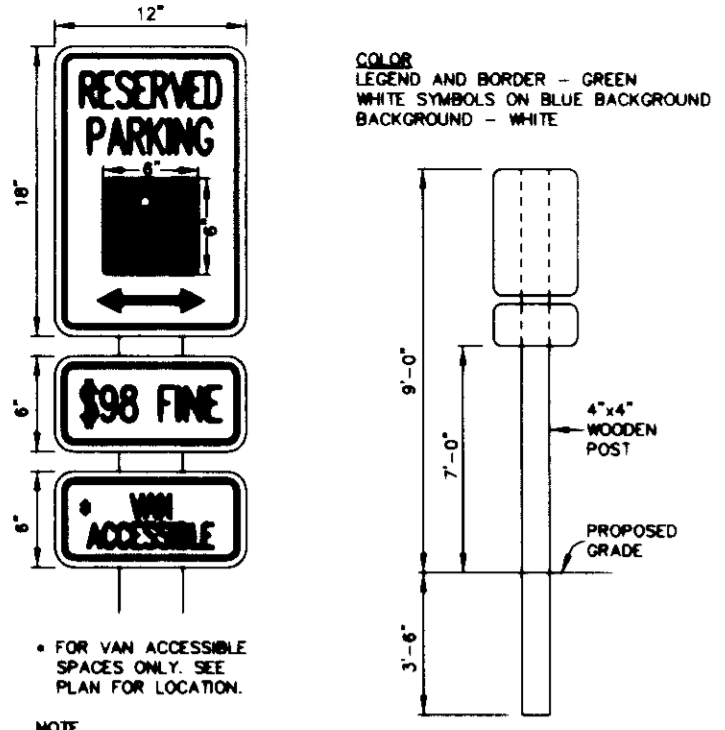
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SDPS.DWG

DATE : DECEMBER 13, 1996

SCALE : AS SHOWN

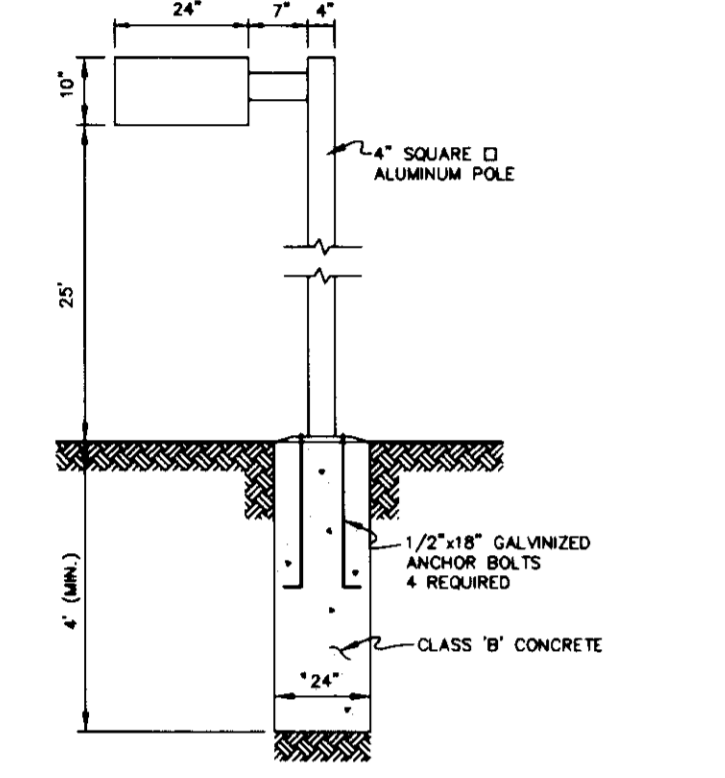
J. Parekh
JAYKANT D. PAREKH #19148

DRAWING NO. 5 OF 8

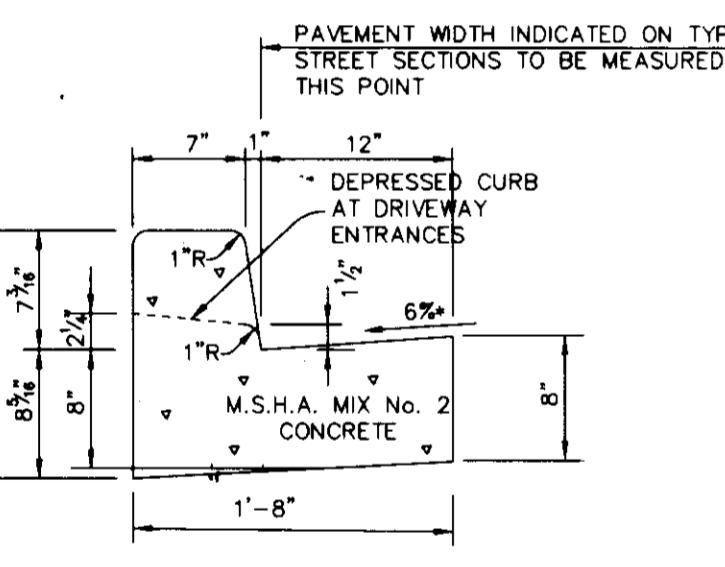


HANDICAP SIGN DETAIL
NO SCALE

- ALL LIGHT FIXTURES TO BE SINGLE LUMINAIRE 400 WATT MERCURY TYPE WITH METAL POLES AND DIRECTED DOWNWARD.
- LOCATIONS OF LIGHT FIXTURES ARE ON THE PLAN AND ARE SHOWN THUS:
- LIGHTS TO BE MODULE # TYPE AS MANUFACTURED BY MOLDCAST OR APPROVED EQUAL.
- POLE AND FIXTURE TO HAVE BLACK POLYESTER ENAMEL FINISH.
- POLE TO BE LOCATED 3' BACK FROM BACK OF CURB.



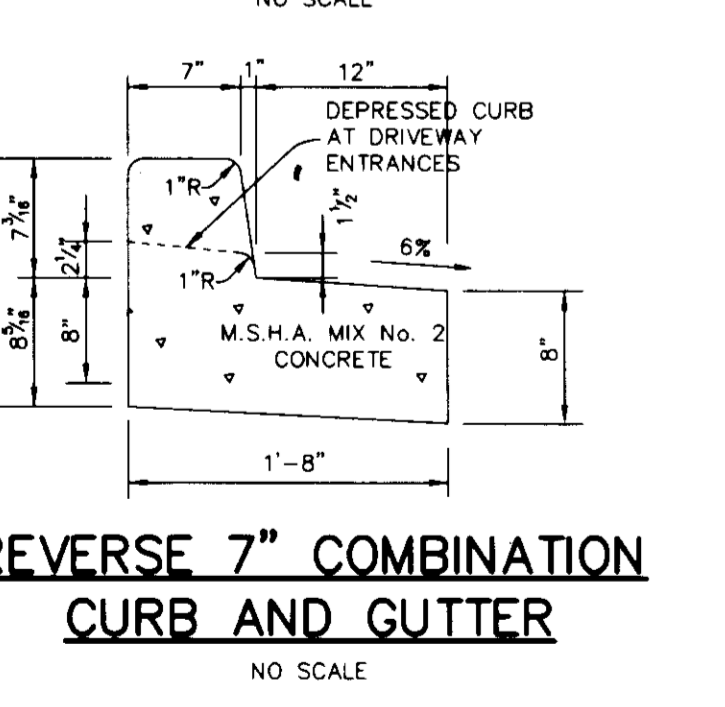
LIGHT POLE DETAIL
NO SCALE



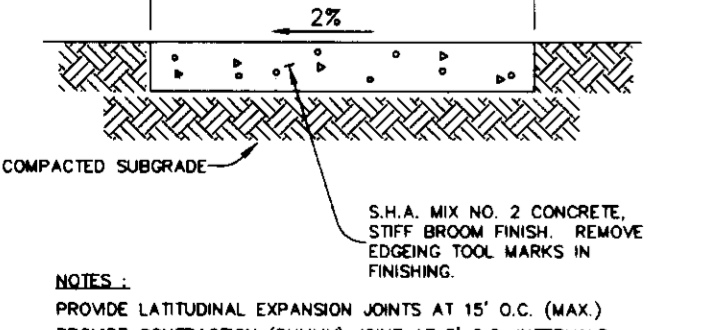
STANDARD 7" COMBINATION CURB AND GUTTER
NO SCALE

- * 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.

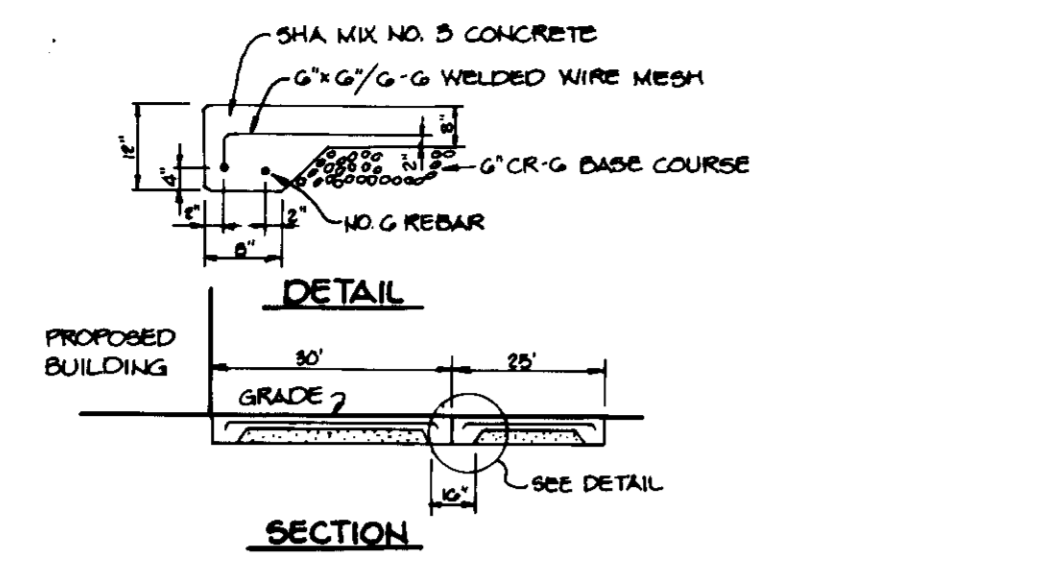
REVERSE 7" COMBINATION CURB AND GUTTER
NO SCALE



REVERSE 7" COMBINATION CURB AND GUTTER
NO SCALE

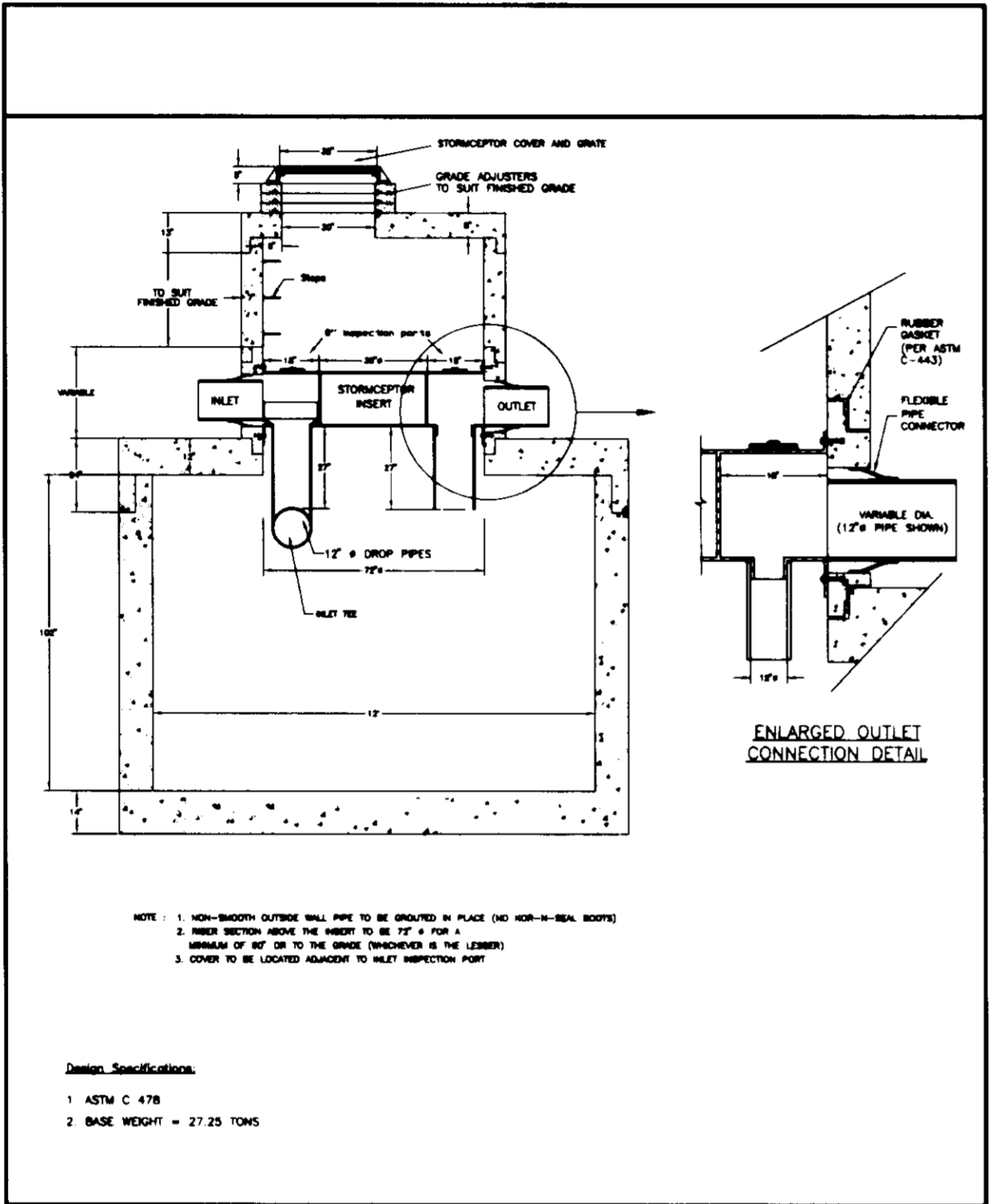


SIDEWALK DETAIL
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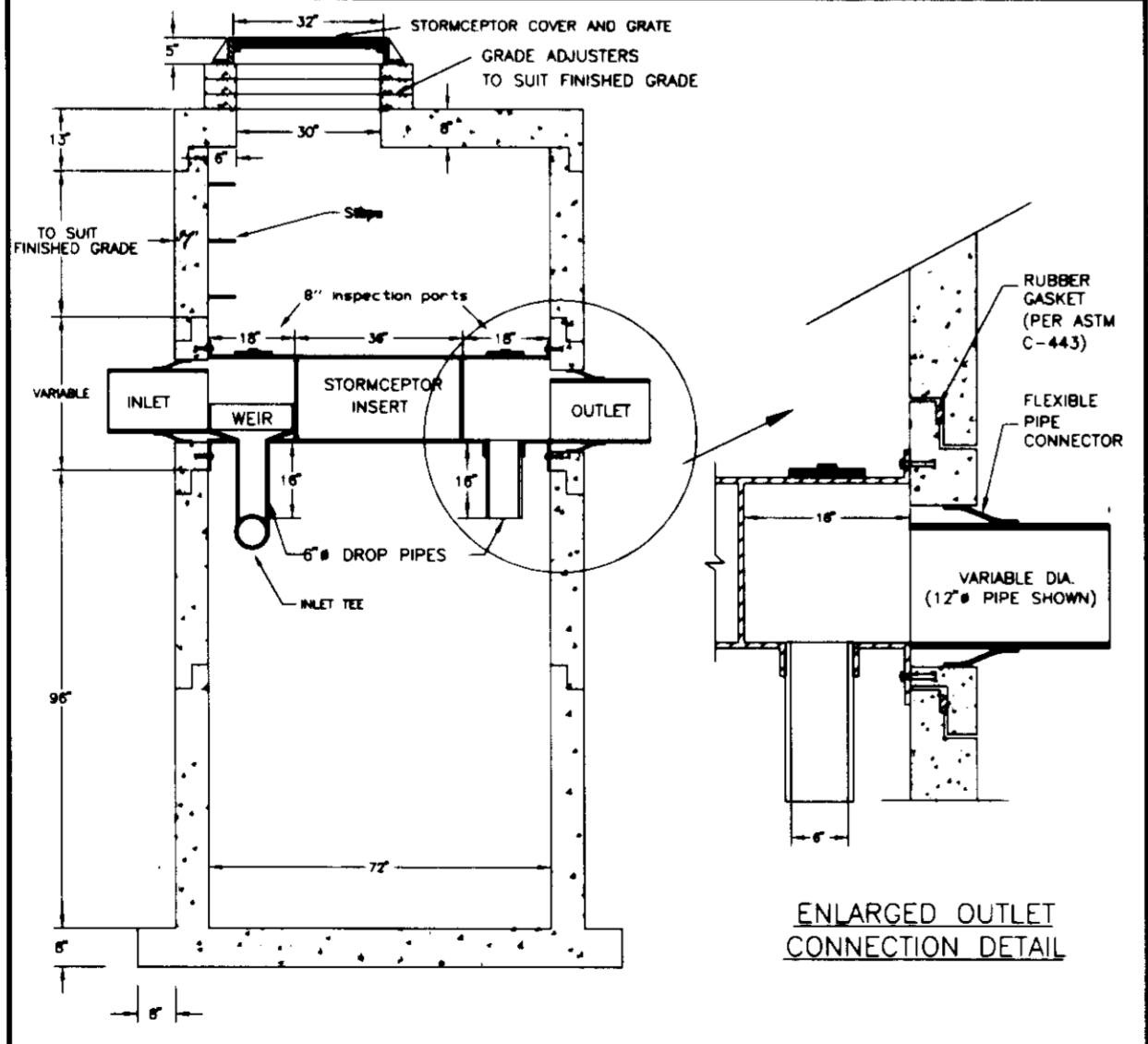


CONCRETE SECTION FOR TRUCKING LOADING AREA
NO SCALE

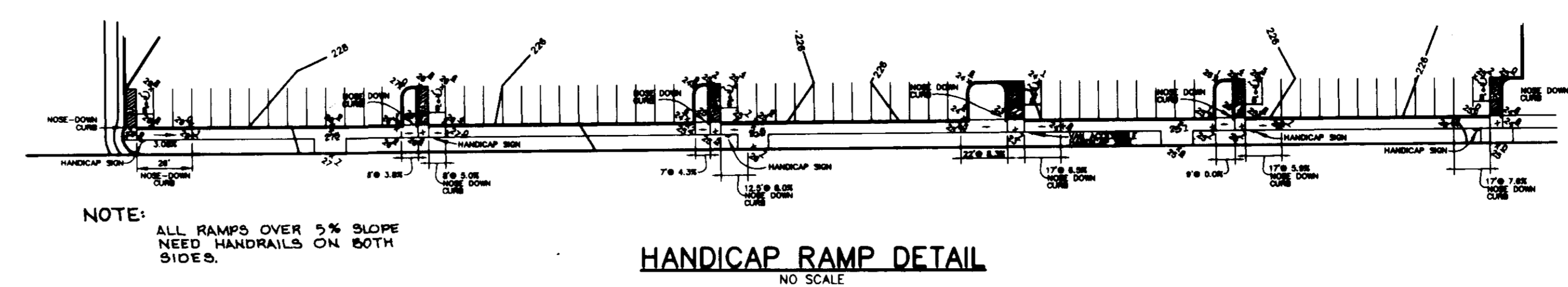
- NOTES: 1. SAW JOINTS AT 15' SPACING IN BOTH DIRECTIONS WITH DEPTH OF JOINT EQUAL TO 1/4 DEPTH OF THE SLAB.
2. CONSTRUCTION JOINTS: AS NEEDED, USING 3/4" SMOOTH DOWELS COATED TO PREVENT BOND @ 12" O.C. (MAX.) WITH SMOOTH CUT EDGE. DOWEL EXTEND 6" INTO CONCRETE ON EACH SIDE OF JOINT.



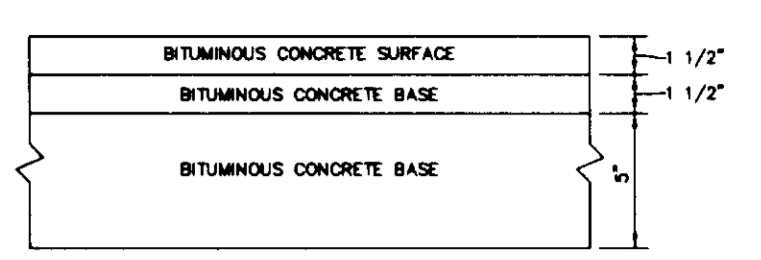
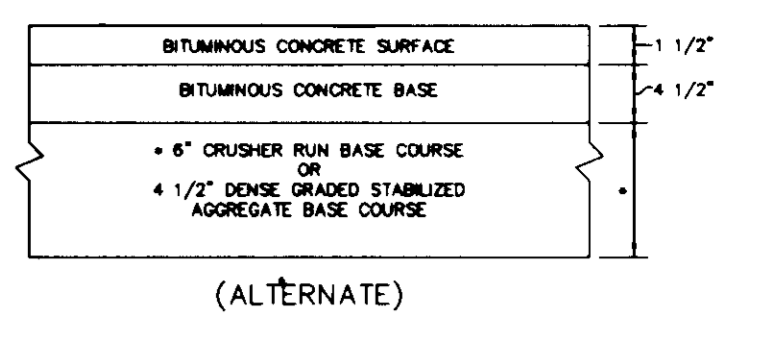
STC 7200 PRECAST CONCRETE STORMCEPTOR
7200 US GALLON CAPACITY (12" dia. bowl)



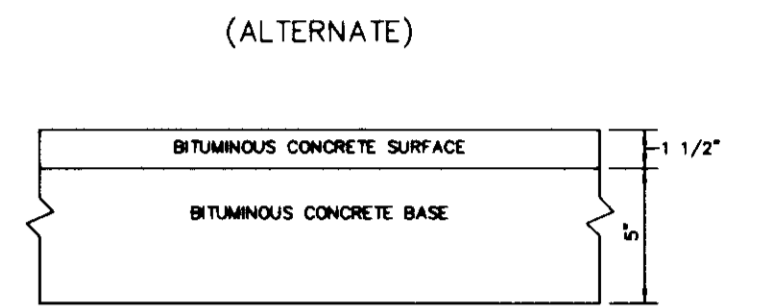
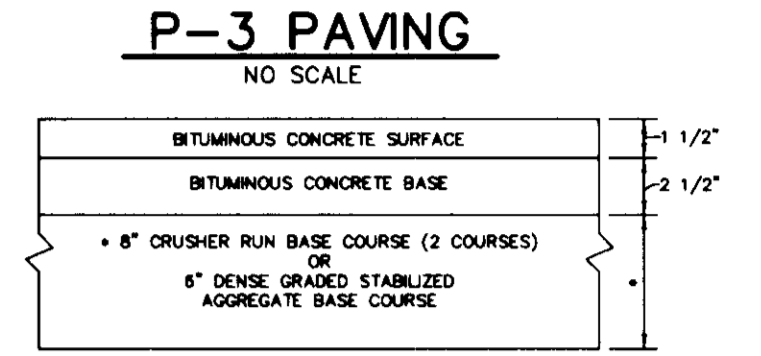
STC 1800 PRECAST CONCRETE STORMCEPTOR
1800 US GALLON CAPACITY



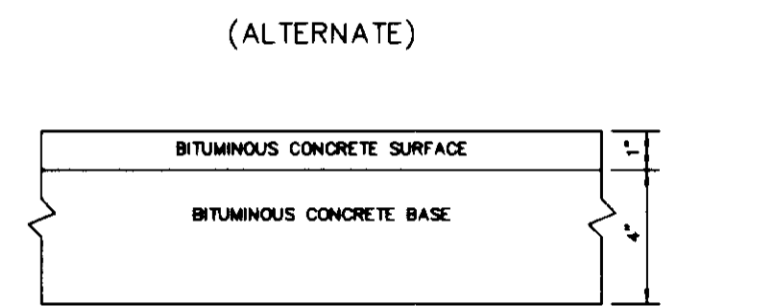
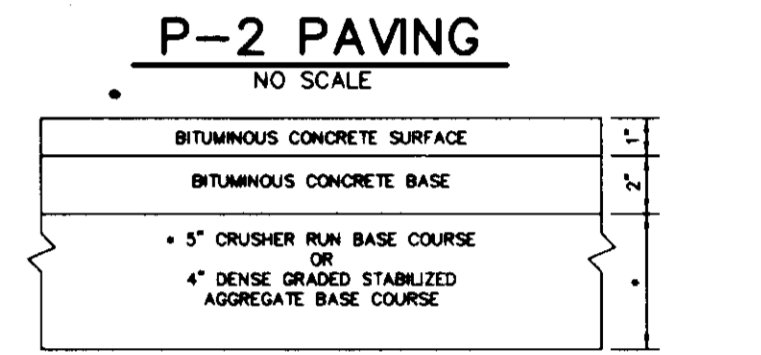
HANDICAP RAMP DETAIL
NO SCALE



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



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



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

- OPERATION AND MAINTENANCE SCHEDULE FOR STORMCEPTOR WATER QUALITY DEVICE**
- Stormceptor water quality structures will require periodic inspection and cleaning to maintain operation and function. Owners will have the Stormceptor unit inspected yearly or as required by Howard County, utilizing the Stormceptor Inspection/Monitoring Form. Inspections can be done by using a clear Plexiglas tube ("sludge judge") to extract a water column sample. When sediment depths exceed the specified level (Table 6 of Technical Manual) then cleaning of the unit is required.
 - Stormceptor water quality structures must be checked and cleaned immediately after petroleum spills, contact appropriate regulatory agencies.
 - Maintenance of Stormceptor units should be done by a vacuum truck which will remove the water, sediment, debris, floating hydrocarbons and other materials in unit. The proper cleaning and disposal of the removed materials and liquid must be followed.
 - Inlet and outlet pipes must be checked for any obstructions and if any obstructions are found they must be removed. Structural parts of the Stormceptor will be repaired as needed.
 - Owner shall retain and make Stormceptor Inspection/Monitoring Forms available to Howard County officials upon their request.

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 - Owner shall retain and make Stormceptor Inspection/Monitoring Forms available to Howard County officials upon their request.

Concrete Stormceptor® Order Request Form

Contractor Information
Name _____
Address _____
City _____
State _____
Zip Code _____
Contact _____
Phone _____
Fax _____

Owner Information
Name SECURITY CAPITAL IND. TRUST
Phone (303) 375-9292
Fax (303) 376-2604

Please draw orientation of inlet and outlet pipes on diagram along with pipe inside diameter (in.) and invert elevation (ft). Clearly mark inlet pipes with an I and outlet pipes with an O and provide the inlet/outlet pipe angle in degrees.

Stormceptor® Model
900 3600
1200 4800
1800 6000
2400 7200

Insert Size
22"
32"
44"
Custom _____

Manhole Number
Top Elevation (ft) _____
Inlet Pipe Invert (ft) _____
Outlet Pipe Invert (ft) _____
Pipe Type: RCCP
Pipe Inside Diameter (in) [ID] _____
Pipe Outside Diameter (in) [OD] _____

Concrete Stormceptor® Order Request Form

Contractor Information
Name _____
Address _____
City _____
State _____
Zip Code _____
Contact _____
Phone _____
Fax _____

Owner Information
Name SECURITY CAPITAL IND. TRUST
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Stormceptor® Model
900 3600
1200 4800
1800 6000
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Insert Size
22"
32"
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Custom _____

Manhole Number
Top Elevation (ft) _____
Inlet Pipe Invert (ft) _____
Outlet Pipe Invert (ft) _____
Pipe Type: RCCP
Pipe Inside Diameter (in) [ID] _____
Pipe Outside Diameter (in) [OD] _____

Project Name MEADOWRIDGE BUSINESS PARK, PARCEL J-2
Approximate time frame until required delivery (weeks) _____
Delivery Address: Street 6635 BUSINESS PARKWAY
City ELK RIDGE State MD Zip Code 21227
Designer Company RIEMER MUEGGE & ASSOCIATES, INC.
Designer Contact CHRIS REID Phone (410) 997-8900 Fax (410) 997-9282

Please fax this sheet back to Hydro Conduit/Virginia Precast at (804) 798-3426
Attn: Dave Brinser / Ed O'Malley (Phone: 1-800-999-2278)

For credit information/applications contact Carole Brodus at (804) 798-6068
For Technical Assistance Please Call Stormceptor Corporation
at (301) 762-8361 or toll free at 1 (800) 762-4703

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APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR _____ DATE 1/2/97

CHIEF, DEVELOPMENT ENGINEERING DIVISION _____ DATE 12/24/96

CHIEF, DIVISION OF LAND DEVELOPMENT _____ DATE 1/2/97

DATE	NO.	REVISION
OWNER / DEVELOPER		
SECURITY CAPITAL INDUSTRIAL TRUST 14100 EAST 35 TH PLACE AURORA, COLORADO 80011 (303) 375-9292		
PROJECT		
MEADOWRIDGE BUSINESS PARK PARCEL J-2 A WAREHOUSE BUILDING		
AREA		
TAX MAP NO. 37 PARCEL J-2 1st ELECTION DISTRICT ZONED M-1 HOWARD COUNTY, MARYLAND		
TITLE		
NOTES AND DETAILS		

RIEMER MUEGGE & ASSOCIATES, INC.
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
8818 Centre Park Drive • Suite 200 • Columbia, MD 21045
410-997-8900 FAX: 410-997-9282

12-13-96
DATE

GP-96-156 F-89-163
F-96-159

DESIGNED BY: CJR

DRAWN BY: RPP

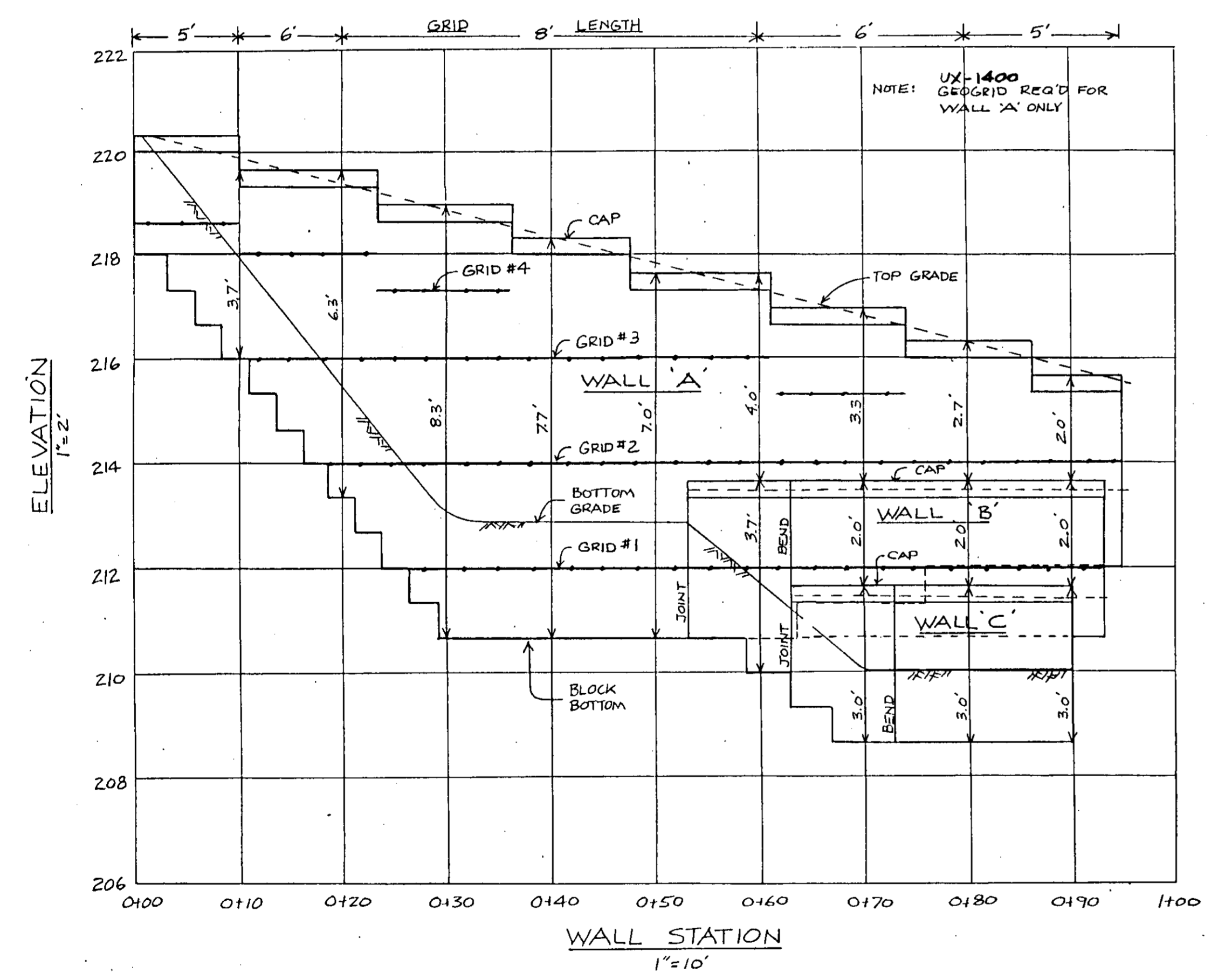
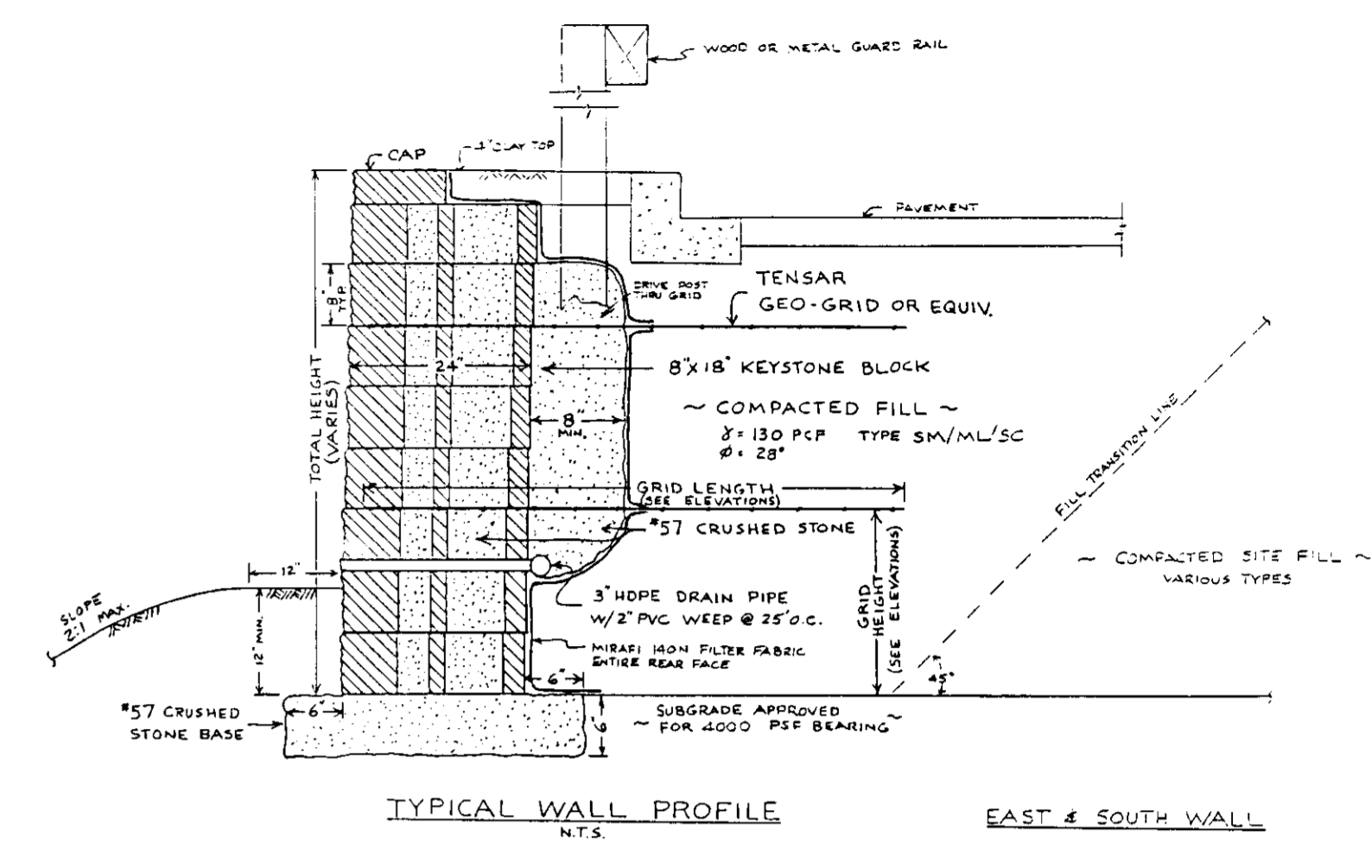
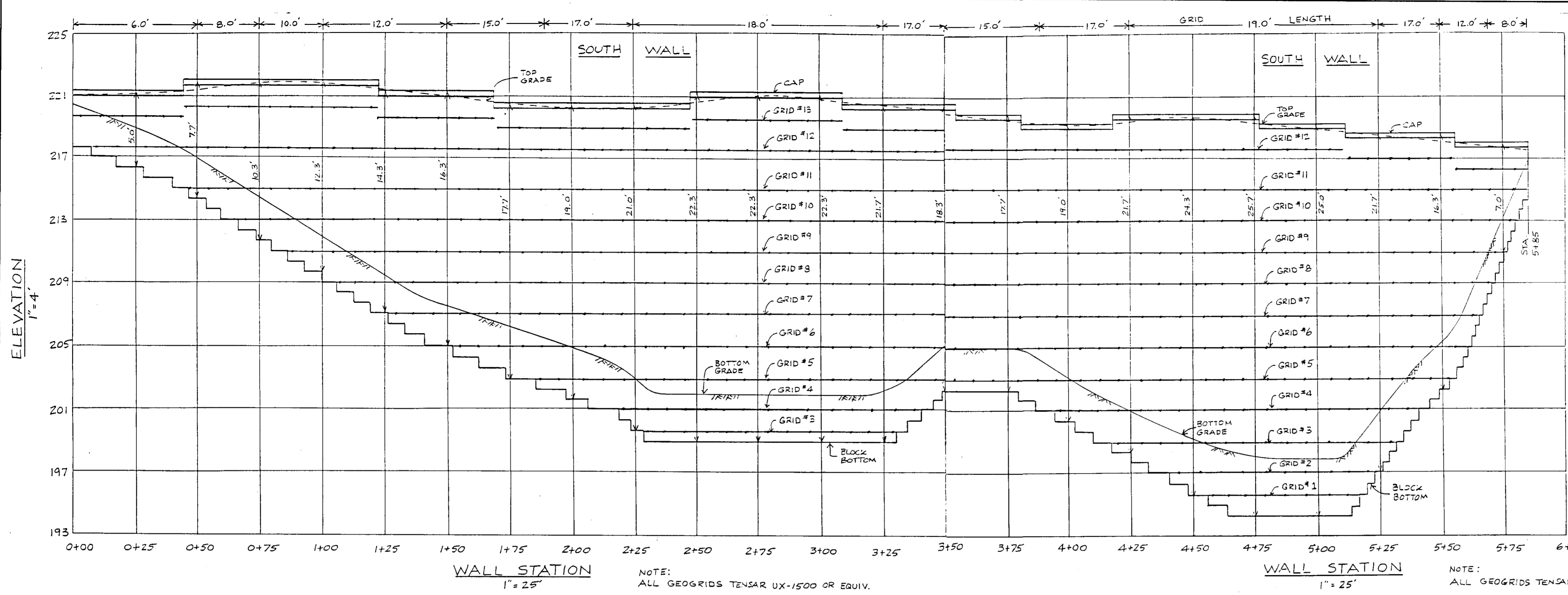
PROJECT NO.: HOCO\96E502
SDP6.DWG

DATE: DECEMBER 13, 1996

SCALE: AS SHOWN

DRAWING NO. 6 OF 8

J. F. PAREKH #19148



**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 affix 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.
- 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 8 to 8 1/2 %.
 - 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 sq ft of wall face area. Fill which is contained within the dimensions of the units may be considered as 80% effective weight.
- 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 paid for and 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.
- 3.03 BASE LEVELING PAD**
- A. Leveling pad materials shall be placed as shown on the construction drawings, upon undisturbed in situ 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 depth and width 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 course 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 wall units with construction adhesive 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.
- E. Units shall have angled sides capable of concave and convex alignment curves with a minimum radius of 35 feet.**
NOTE: Where applicable, for straight walls use non-angled straight side cap units.
- F. Units shall be interlocked with non-corrosive fiberglass pins.**
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 thermoplastic polyester resin/pultruded fiberglass reinforcement rods.
 - B. Pins shall have a minimum flexural strength of 128,000 psi and short beam shear of 8400 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 drawing. 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 in situ 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.

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 affix themselves to the geogridwork, 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 in situ soil.
- 2.02 GEOGRID**
- A. Geogrid shall be the type as shown on the drawings having the property requirements as described within the manufacturer's 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.
- 3.02 BASE LEVELING PAD**
- A. Leveling pad materials shall be placed as shown on the construction drawings, upon undisturbed in situ 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 depth and width 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.
- 3.03 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 course 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.
- 3.04 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 wall units with construction adhesive epoxy. Apply adhesive or epoxy to bottom surface of cap units and install on units below.
- 3.05 GEOGRID INSTALLATION**
- A. Follow the requirements of Section 02275, GEOGRID SOIL REINFORCEMENT.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

James S. ... 11/2/97 DATE
DIRECTOR

Richard Blood 12/24/96 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION

Richard Blood 12/2/97 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT

DATE	NO.	REVISION

OWNER / DEVELOPER

SECURITY CAPITAL INDUSTRIAL TRUST
14100 EAST 35TH PLACE
AURORA, COLORADO 80011
(303) 375-9292

PROJECT: MEADOWRIDGE BUSINESS PARK
PARCEL J-2
A WAREHOUSE BUILDING

AREA: TAX MAP NO. 37 PARCEL J-2
1ST ELECTION DISTRICT ZONED M-1
HOWARD COUNTY, MARYLAND

TITLE: RETAINING WALL DETAILS

RIEMER MUEGGE & ASSOCIATES, INC.
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
8818 Centre Park Drive • Suite 200 • Columbia, MD 21045
410-997-8900 FAX: 410-997-9212

12/15/96 DATE

GP-96-156 F-89-163
F-96-159

DESIGNED BY:

DRAWN BY:

PROJECT NO: HOCO 96E502

DATE: DECEMBER 19, 1996

SCALE: AS SHOWN

DRAWING NO. 7 OF 8

Richard W. Sturtevant

