

ADDRESS CHART			
LOT No.	STREET ADDRESS	LOT No.	STREET ADDRESS
A-3-1	6201 Trumpet Bend Ct.	A-3-32	6203 Distant Bus Bench Ct.
A-3-2	6219	A-3-33	6201
A-3-3	6217	A-3-34	6201 Strutt Lane Ct.
A-3-4	6215	A-3-35	6203
A-3-5	6213	A-3-36	6203
A-3-6	6211	A-3-37	6207
A-3-7	6207	A-3-38	6207
A-3-8	6205	A-3-39	6211
A-3-9	6203	A-3-40	6213
A-3-10	6201	A-3-41	6215
A-3-11	6200	A-3-42	6200
A-3-12	6202	A-3-43	6202
A-3-13	6204	A-3-44	6204
A-3-14	6206	A-3-45	6206
A-3-15	6210	A-3-46	6206
A-3-16	6212	A-3-47	6210
A-3-17	6214	A-3-48	6212
A-3-18	6216	A-3-49	6214
A-3-19	6218	A-3-50	6218
A-3-20	6220	A-3-51	6218
A-3-21	6220 Signal Flame Ct.	A-3-52	6220
A-3-22	6222	A-3-53	6222
A-3-23	6224	A-3-54	6224
A-3-24	6226	A-3-55	6226
A-3-25	6228	A-3-56	6228
A-3-26	6230	A-3-57	6230
A-3-27	6232	A-3-58	6232 Signal Flame Ct.
A-3-28	6234	A-3-59	6234
A-3-29	6203 Distant Bus Bench Ct.	A-3-60	6236
A-3-30	6207	A-3-61	6238
A-3-31	6205		

SITE DEVELOPMENT PLAN

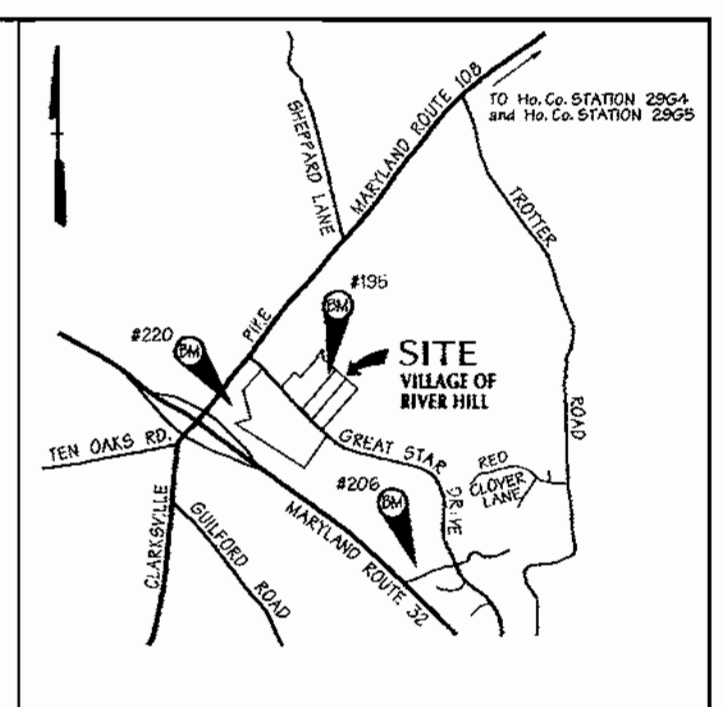
COLUMBIA

VILLAGE OF RIVER HILL

SECTION 4 • AREA 1 • PHASE 1 • PARCEL A-3

5th ELECTION DISTRICT

HOWARD COUNTY, MARYLAND



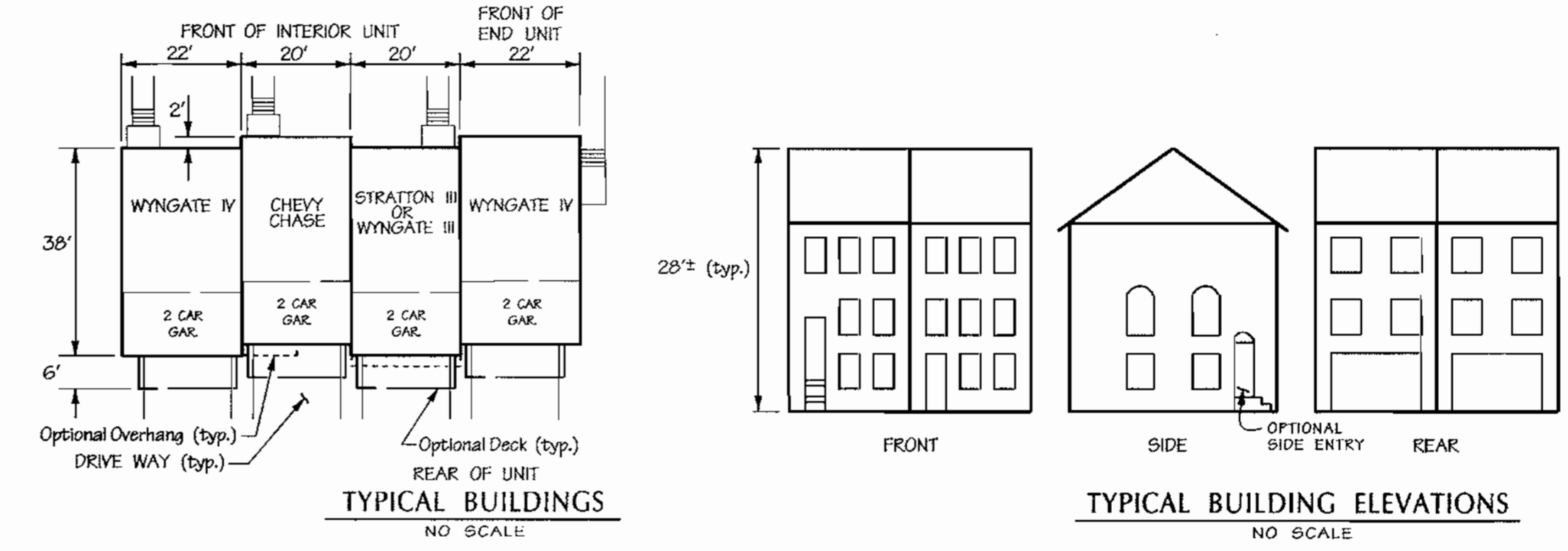
VICINITY MAP
SCALE: 1"=2000'

SHEET INDEX	
SHEET	DESCRIPTION
1	COVER SHEET
2	SITE DEVELOPMENT PLAN
3	SITE DEVELOPMENT PLAN
4	GRADING PLAN
5	GRADING PLAN
6	SITE DETAILS
7	STORM DRAIN PROFILES
8	SEWER PROFILES
9	EROSION & SEDIMENT CONTROL PLAN
10	EROSION & SEDIMENT CONTROL DETAILS
11	EROSION & SEDIMENT CONTROL DETAILS
12	LANDSCAPE PLAN
13	LANDSCAPE PLAN & DETAILS
14	DRAINAGE AREA MAP
15	RETAINING WALL DETAILS
16	RETAINING WALL DETAILS

SITE ANALYSIS :

- Zoning: New Town Per FDP Ph.222-A-1, Part 1
- Project Area: 4.797 Ac. or 208,980 S.F.
- Area of Submission: 5.45 Ac. or 237,531 S.F.
- Proposed Use: Townhouse Condominiums
- Area Tabulation:

Total units allowed	74 townhouses
Total units provided	61 townhouses (20'x 38' interior, 22'x 38' exterior)
A. Building area =	43,560 or 1.0 Ac.
B. Common Open space =	165,420 or 3.79 Ac.
C. Limit of Disturbance	5.45 Ac.
D. Impervious Area	3.13 Ac.
E. Green Area	0.66 Ac.
- Parking Required: 122 sp. (2 sp./unit)
- Parking Provided: 258 sp. (4.2 sp./unit)
244 sp. (garage / driveway)
14 sp. (court)



- GENERAL NOTES**
- All construction shall be in accordance with the latest standards and specifications of Howard County.
 - The contractor shall notify the Bureau of Engineering/Construction Inspection Division at (410) 543-1890 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.
 - 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 the face of curb unless otherwise noted.
 - Topography was field run surveyed by Gutchock, Little & Weber dated 11/99.
 - Coordinates and bearings shown hereon are referred to the Maryland Coordinate system (NAD 83) as projected by Howard County Geodetic Control stations No. 29G4 & 29G5.
 - Stormwater management is provided off-site, for quantity and quality per F-96-110. Existing pond #8 provides 1 year peak management and water quality by shallow marsh. Full peak management is provided elsewhere on F-96-110.
 - No wetlands exist within the limits of disturbance.
 - The existing utilities were located from available records and field survey prepared by Deft-McCune-Walker, Inc. The contractor must dig test pits, by hand, at all utility crossings and connection points at least 5 days prior to starting work to verify exact location.
 - The Soils analysis report was prepared by R. Balter, Inc.
 - Any damage to County owned right-of-way to be corrected at the contractor's expense.
 - All sidewalks shall be cross sloped at 1/4 inch per foot.
 - French bedding for storm drainage structures shall be in accordance with Howard County Standard 02.01.
 - Department of Planning and Zoning reference file numbers: S-93-21, P-95-10, F-96-89 Plat. 12692 F-96-110, FDP Ph. 222A-1, Part 1.
 - All inlets shall be constructed in accordance with Howard County standards or MSHA Standards as specified on the structure schedule.
 - All materials and construction to be in accordance with the Howard County Design Manual Volume IV.
 - The building setback restrictions from the property lines and right-of-way lines of any public road shall be in accordance with FDP Phase 222-A-1, Part 1.
 - All on-site roadways and parking areas to be privately maintained.
 - All curb radii are five feet unless otherwise labeled all curbs to be 6" in height.
 - All equipment and tools shall be placed as not to interfere with vehicular or pedestrian movement unless specified.
 - The contractor shall be responsible for any damage to existing property which may occur as a result of his negligence in the execution of the work.
 - All proposed handicap ramps shall be in accordance with the current A.D.A. Standards.
 - There is no floodplain on this site.
 - Traffic study was prepared by Wells & Associates, dated January 20, 1995 and approved on November 17, 2000.
 - Public Water is utilized for this site. Meters will be located inside the building. Public sewer service provided per contract #34,3089.D, #30,3436D, #34,3436.D and is within the Middle Patuxent drainage area in the Metropolitan District.
 - This plan is exempt from Forest Conservation in accordance with Section 16.1202 (b) (iv).
 - This property is located within the Metropolitan District.
 - There are no slopes greater than 25% greater than 10,000 contiguous S.F.
 - All exterior lighting shall comply with Section 134 of the Howard County Zoning Regulations.
 - The site is previously graded under F-96-110.
 - All driveways shall be concrete.
 - Garages shall be used for parking purposes in accordance with Section 133.D.2 of the Zoning Regulations and FDP Phase 222A-1, Part 1 criterion 9B-2.
 - FDP criteria (FDP Ph.222A-1, Part 1)
 - a. setback from public road.....30'
 - b. parking spaces required.....122 sp. (2 sp./unit)
 - c. units allowed on parcels A-2, B-2 & B-3 = 245 units
 - F-97-168 (parcel B-2) = 54
 - F-98-114 (parcel B-3) = 61
 - F- (parcel A-4) = 56
 - Lots remaining = 74
 - Units provided = 61
 - Tentative allocations were granted with S-93-21 and permanent allocations for 467 units for 1996 and 15 units were granted with F-96-110.
 - This plan has been prepared in accordance with the provisions of Section 16.124 of the Howard County code per the new town alternative compliance method. Financial surety for the required landscaping in the amount of \$37,950.00 must be posted as part of the developer's agreement. (120 shades, 13 evergreen)
 - There will be no trash or recycling collection provided to this area by Howard County. Trash and recycling will be provided privately. All roadways are private.
 - NO AUTOMOBILES PARKED IN DRIVEWAYS MAY NOT EXTEND INTO OR IMPEDE THE USE OF THE PRIVATE ROADS.**

APPROVED
DATE: 1-11-01

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION: *[Signature]* 3/2/01
DATE

CHIEF, DIVISION OF LAND DEVELOPMENT: *[Signature]* 3/9/01
DATE

DIRECTOR: *[Signature]* 3/12/01
DATE

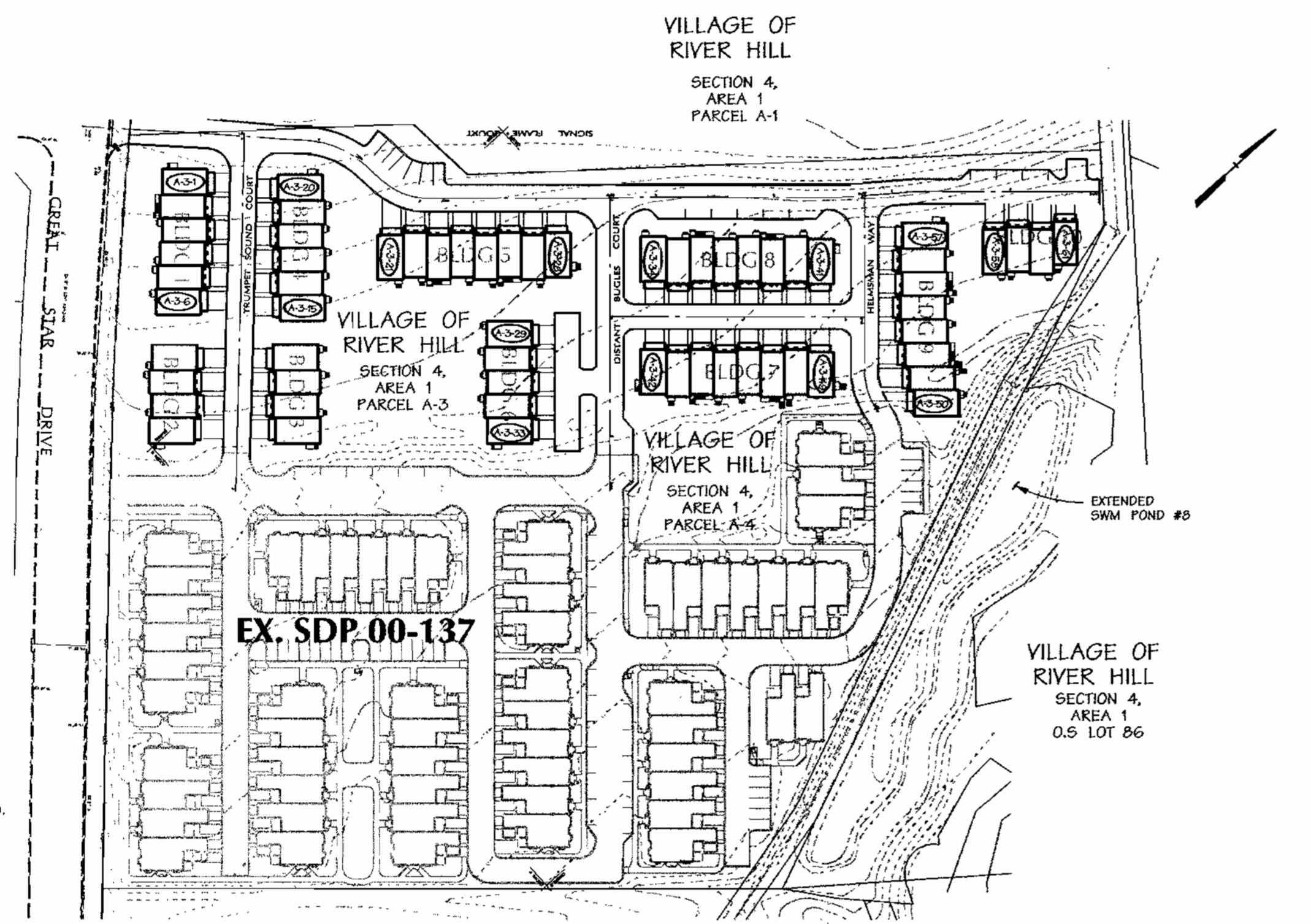
Date	No.	Revision Description

VILLAGE OF RIVER HILL

SECTION 4 AREA 1 PARCEL A-3
BUILDINGS 1-10 UNITS A-3-1 THRU A-3-61

OWNER/DEVELOPER: The Howard Research and Development Company
10275 Little Patuxent Parkway
Columbia, Maryland 21044

CONTRACT PURCHASER: Ryland Homes
7250 Parkway Drive
Suite 520
Columbia, Maryland 21076

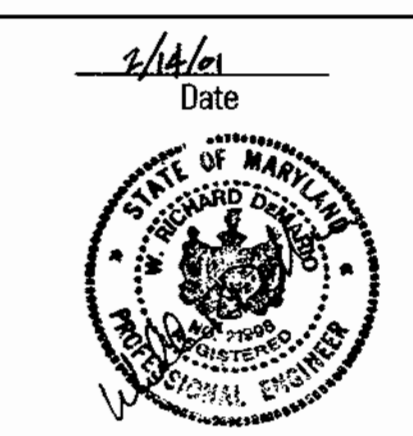


LEGEND

	10' EXISTING CONTOUR
	2' EXISTING CONTOUR
	10' PROPOSED CONTOUR
	2' PROPOSED CONTOUR
	STANDARD CURB & GUTTER
	REVERSE CURB & GUTTER, R-3.01
	DEPRESSED CURB R-3.01
	PROPOSED STORM DRAIN
	PROPOSED SEWER
	PROPOSED WATER
	PARKING COUNT
	MAILBOX/TRASH/RECYCLE PICKUP AREA (BUILT ON A 5'x5' CONC. PAD)
	LIGHTING BY OTHERS
	PROPOSED STREET LIGHT
	PENDANT FIXTURE (CIRCULAR), MOUNTED AT 30' HEIGHT ON A BRONZE FIBER GLASS POLE USING A 12" ARM.

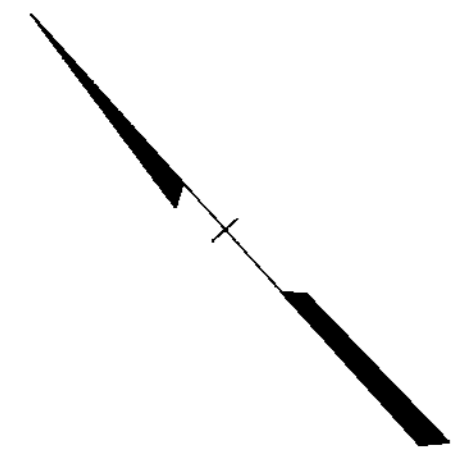
VICINITY MAP
SCALE: 1"=100'

SHEET 3



Professional Engr. No. 21195

Des By	RTS/MSS	Scale	1"=100'	Proj. No.	00023
Dm By	MSS	Date	2/15/01		
Chk By	mf	Approved			1 of 16



SEE SHEET 3

SEE SHEET 3

VILLAGE OF RIVER HILL
SECTION 4 - AREA 1
PARCEL A-1
ZONED N.T.

VILLAGE OF RIVER HILL
SECTION 4 - AREA 3
PARCEL A-4
ZONED N.T.

VILLAGE OF RIVER HILL
SECTION 4 - AREA 1
PARCEL A-4
ZONED N.T.

NOTE:
PROVIDE MAINTENANCE OF TRAFFIC PER SHA STD MD 10404-02
(SHOULDER WORK, 1.2' ANES, 2' WAYS) AND MD 10434-02 (FLAGGING
OPERATIONS (2 LANES, 2 WAYS) SET SHEET 14 FOR DETAILS.

LEGEND:
Sign Legend:
① - Proposed Sign, Support and Sign Identification
RT-1 30" X 30"

GENERAL NOTES:
1. The Contractor shall be governed by the standards and requirements of the following publications:
- Manual on Uniform Traffic Control Devices (MUTCD), 1988 Edition and subsequent revisions.
- AASHTO - Specifications for the Design and Construction of Structural Supports for Highway Signs, April 1975 Edition.
- AASHTO - Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, April 1985 Edition.
2. Standard sign panel layouts shall be based on the MUTCD.
3. Signs shall be located as shown on the plans. Any required changes in the locations of signs necessary due to field conditions shall have the prior approval of the Engineer.
4. It shall be the responsibility of the Contractor to locate and protect all existing facilities that may be affected by this work.
5. All new signs shown on this plan shall have Non Reflective (Black Copy) or High Intensity Reflective Sheeting (All Other Colors) background and copy. Reflective Sheeting shall be Type III-A Encapsulated Lens Reflective Element Material.
6. All new sheet aluminum signs shall have Non-Demountable Copy.
7. The following minimum thicknesses shall be used for the appropriate size of Sheet aluminum sign blanks:
Longest Dimension (Inches) - Minimum Thickness
Up to 12" - 0.040"
12" to 24" - 0.063"
24" to 36" - 0.083"
36" to 48" - 0.100"
Over 48" - 0.125"
8. All traffic control signs shall be mounted on Howard County standard posts. A single post shall be provided for signs with an area of 3.0 square feet or less. For signs with an area of greater than 3.0 square feet, two (2) posts shall be provided. Sign posts shall be installed in the ground to a minimum depth of 3.0 feet and the sign post shall extend to the top of the sign panel.
9. Signs shall be mounted such that the clearance to the bottom edge of the sign panel is a minimum of six (6) feet above finished grade.

NOTE: ALL WATER METERS ARE INSIDE THE UNITS AND ARE PUBLIC.

APPROVED
DATE 1-11-01

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION 3/2/01
CHIEF, DIVISION OF LAND DEVELOPMENT 3/9/01
DIRECTOR 3/12/01

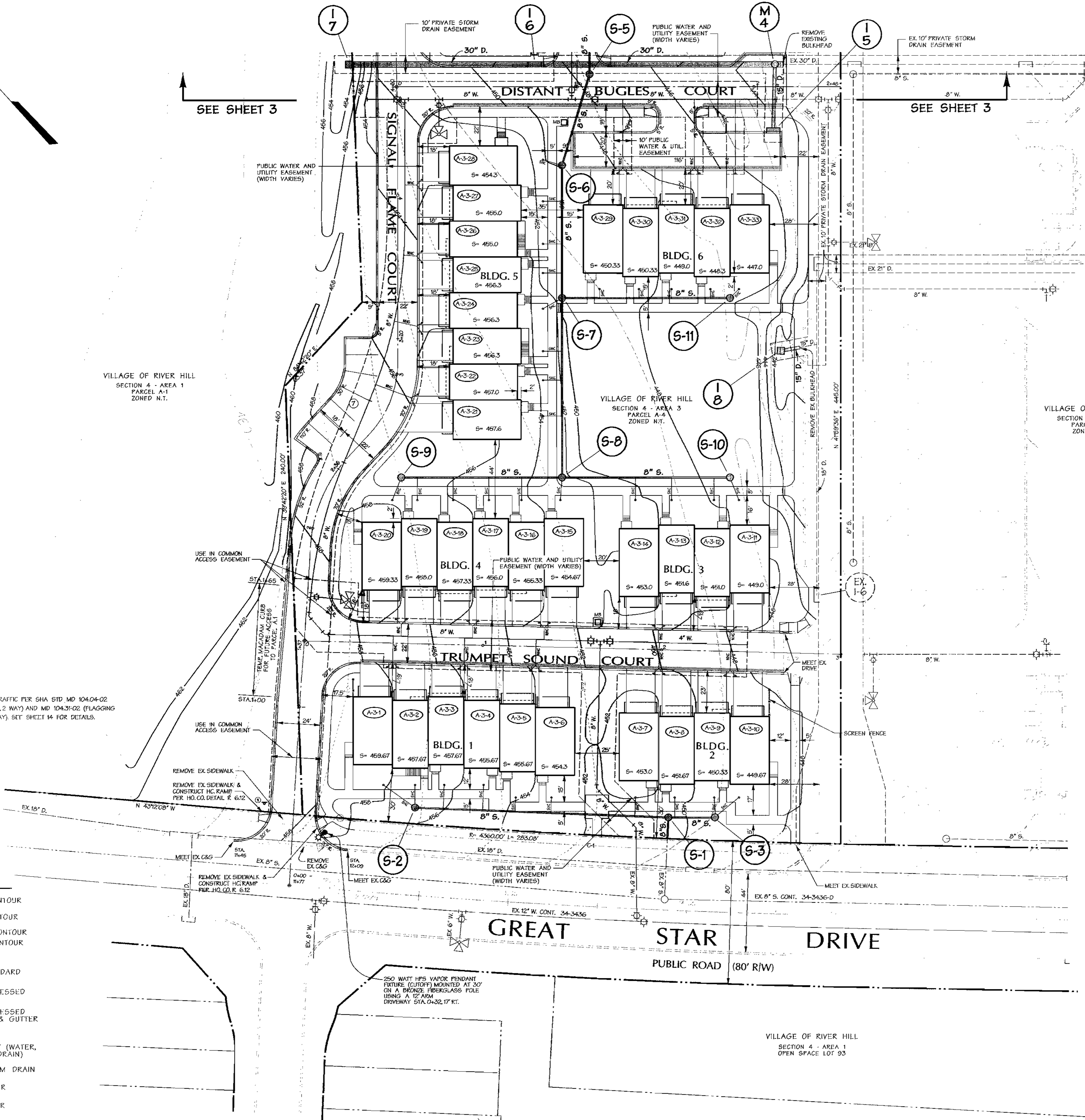
VILLAGE OF RIVER HILL
SECTION 4 AREA 1 PARCEL A-3
BUILDINGS 1-10 UNITS A-3-1 THRU A-3-61
OWNER/DEVELOPER: The Howard Research and Development Company
CONTRACT PURCHASER: Ryland Homes
10275 Little Patuxent Parkway
Columbia, Maryland 21044
7250 Parkway Drive
Suite 520
Columbia, Maryland 21076

DMW
Draft-McCormac-Walkes, Inc.
300 East Pennsylvania Avenue
Towson, Maryland 21286
A Team of Land Planners,
Landscape Architects,
Golf Course Architects,
Engineers, Surveyors &
Environmental Professionals



TITLE
SITE PLAN
Des By RTS/MSS Scale 1"=30' Proj. No. 00023
Dm By MSS Date 2/15/01
Chk By [Signature] Approved
Professional Engr. No. 21980

LEGEND
EXISTING 10' CONTOUR
EXISTING 2' CONTOUR
PROPOSED 10' CONTOUR
PROPOSED 2' CONTOUR
EXISTING CURB
PROPOSED STANDARD CURB & GUTTER
PROPOSED DE-PRESSED CURB R-3.01
PROPOSED DE-PRESSED REVERSE CURB & GUTTER R-3.01
EXISTING UTILITY (WATER, SEWER, STORM DRAIN)
24" D. PROPOSED STORM DRAIN
8" S. PROPOSED SEWER
8" W. PROPOSED WATER
PARKING COUNT
MAILBOX/TRASH/RECYCLE PICKUP AREA (BUILT ON A 5' x 5' CONC. PAD)
LIGHTING BY OTHERS



LEGEND

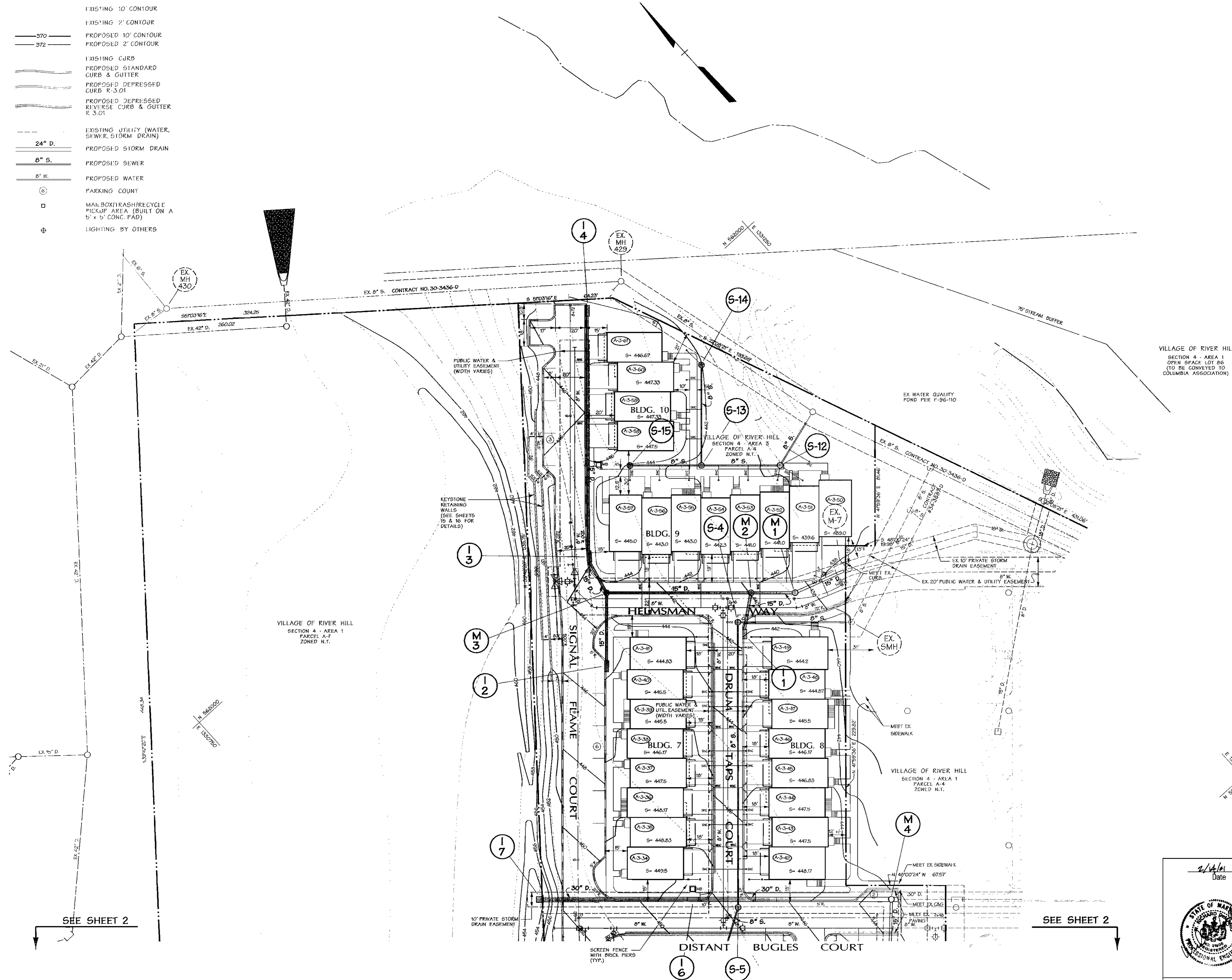
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- PROPOSED 10' CONTOUR
- PROPOSED 2' CONTOUR
- EXISTING CURB
- PROPOSED STANDARD CURB & GUTTER
- PROPOSED DEPRESSED CURB R-3.01
- PROPOSED DEPRESSED REVERSE CURB & GUTTER R-3.01
- EXISTING UTILITY (WATER, SEWER, STORM DRAIN)
- 24" D. PROPOSED STORM DRAIN
- 8" S. PROPOSED SEWER
- 8" W. PROPOSED WATER
- PARKING COUNT
- MAIL BOX/TRASH/RECYCLE PICKUP AREA (BUILT ON A 5' x 5' CONC. PAD)
- LIGHTING BY OTHERS

TRAFFIC SIGN NOTES:

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9. Signs shall be mounted such that the clearance to the bottom edge of the sign panel is a minimum of six (6) feet above finished grade.

NOTE: ALL WATER METERS ARE INSIDE THE UNITS AND ARE PUBLIC.



VILLAGE OF RIVER HILL
SECTION 4 - AREA 1
OPEN SPACE LOT 06
(TO BE CONVEYED TO
COLUMBIA ASSOCIATION)

APPROVED
DATE: 1-11-01

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

[Signature] 3/2/01
CHIEF, DEVELOPMENT ENGINEERING DIVISION & DATE

[Signature] 3/9/01
CHIEF, DIVISION OF LAND DEVELOPMENT & DATE

[Signature] 3/12/01
DIRECTOR & DATE

Date	No.	Revision Description
		COLUMBIA

VILLAGE OF RIVER HILL

SECTION 4 - AREA 1 - PARCEL A-3
BUILDINGS 1-10 UNITS A-3-1 THRU A-3-61

OWNER/DEVELOPER: The Howard Research and Development Company
10275 Little Patuxent Parkway
Columbia, Maryland 21044

CONTRACT PURCHASER: Ryland Homes
7250 Parkway Drive
Suite 520
Columbia, Maryland 21076

DMW
Daft McCusker Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 596-3325
Fax 296-4705

A Team of Land Planners,
Landscape Architects,
Golf Course Architects,
Engineers, Surveyors &
Environmental Professionals

2/14/01
Date

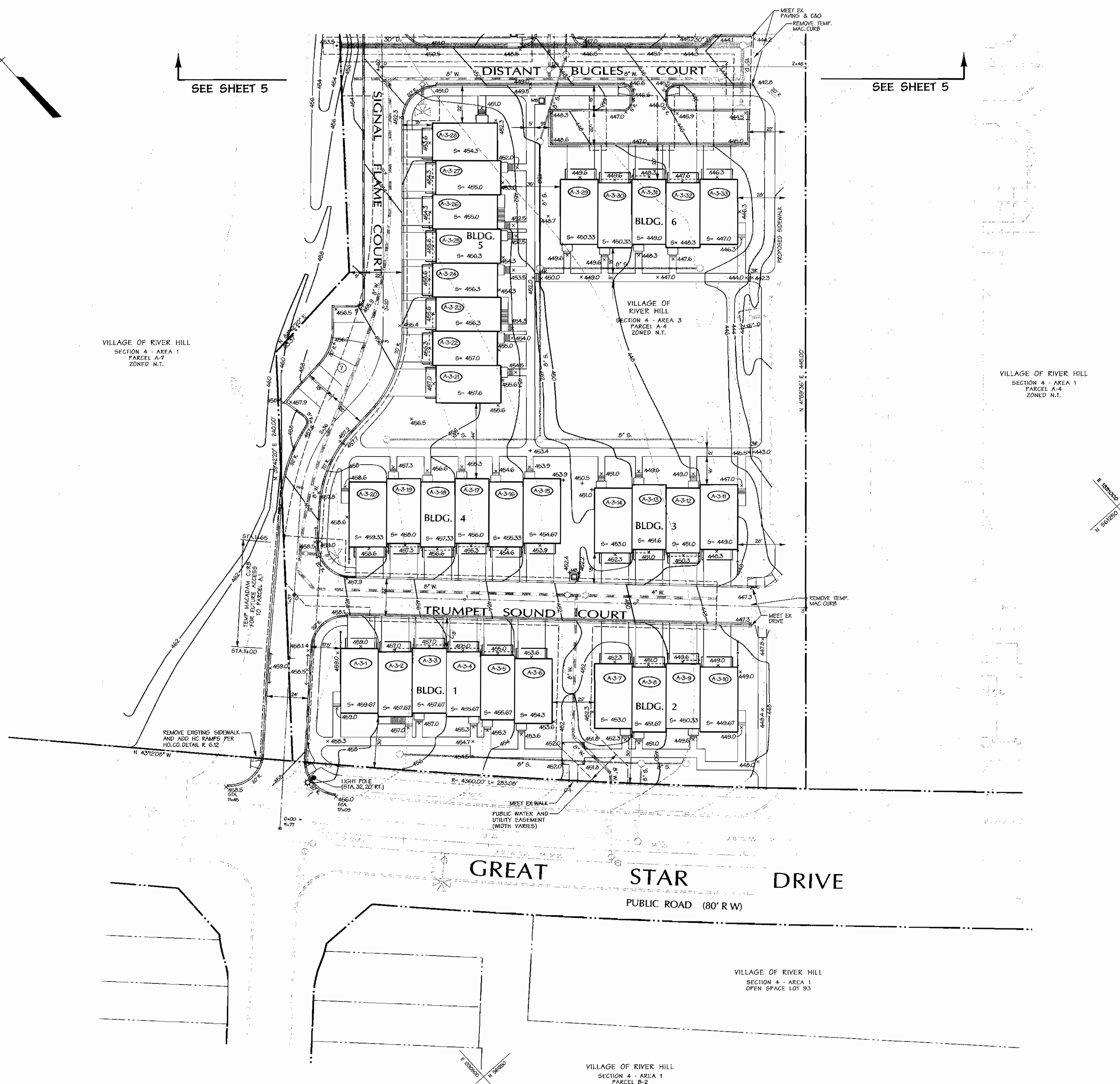
Professional Engr. No. 21493

TITLE: **SITE PLAN**

Des By: KTS/MSS	Scale: 1"=30'	Proj. No.: 00023
Drn By: MSS	Date: 2/15/01	3 of 16
Chk By: <i>[Signature]</i>	Approved	

LEGEND

- 370 --- EXISTING 10' CONTOUR
- 372 --- EXISTING 2' CONTOUR
- 370 --- PROPOSED 10' CONTOUR
- 372 --- PROPOSED 2' CONTOUR
- EXISTING CURB
- PROPOSED STANDARD CURB & GUTTER
- PROPOSED DEPRESSED CURB R-3.01
- PROPOSED DEPRESSED REVERSE CURB & GUTTER R-3.01
- 24" D. --- EXISTING UTILITY (WATER, SEWER, STORM DRAIN)
- 24" D. --- PROPOSED STORM DRAIN
- 8" S. --- PROPOSED SEWER
- 8" W. --- PROPOSED WATER
- ⊙ PARKING COUNT
- MAILBOX/TRASH/RECYCLE PICKUP AREA (BUILT ON A 5' x 5' CONG. PAD)
- ⊕ LIGHTING BY OTHERS



SEE SHEET 5

SEE SHEET 5

VILLAGE OF RIVER HILL
SECTION 4 - AREA 1
PARCEL A-7
ZONED N.T.

VILLAGE OF RIVER HILL
SECTION 4 - AREA 1
PARCEL A-4
ZONED N.T.

APPROVED
DATE: 1-11-01

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

[Signature] 3/2/01
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 3/9/01
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 3/12/01
DIRECTOR DATE

Date No. Revision Description

COLUMBIA

VILLAGE OF RIVER HILL

SECTION 4 AREA 1 PARCEL A-3
BUILDINGS 1-10 UNITS A-3-1 THRU A-3-61

OWNER/DEVELOPER: The Howard Research and Development Company
10275 Little Patuxent Parkway
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CONTRACT PURCHASER: Ryland Homes
7250 Parkway Drive
Suite 520
Columbia, Maryland 21076

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Duff McCune-Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3200
Fax 296-4705

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Landscape Architects,
Golf Course Architects,
Engineers, Surveyors &
Environmental Professionals



TITLE: GRADING PLAN

Des By: MJP Scale: 1"=30' Proj. No: 00023

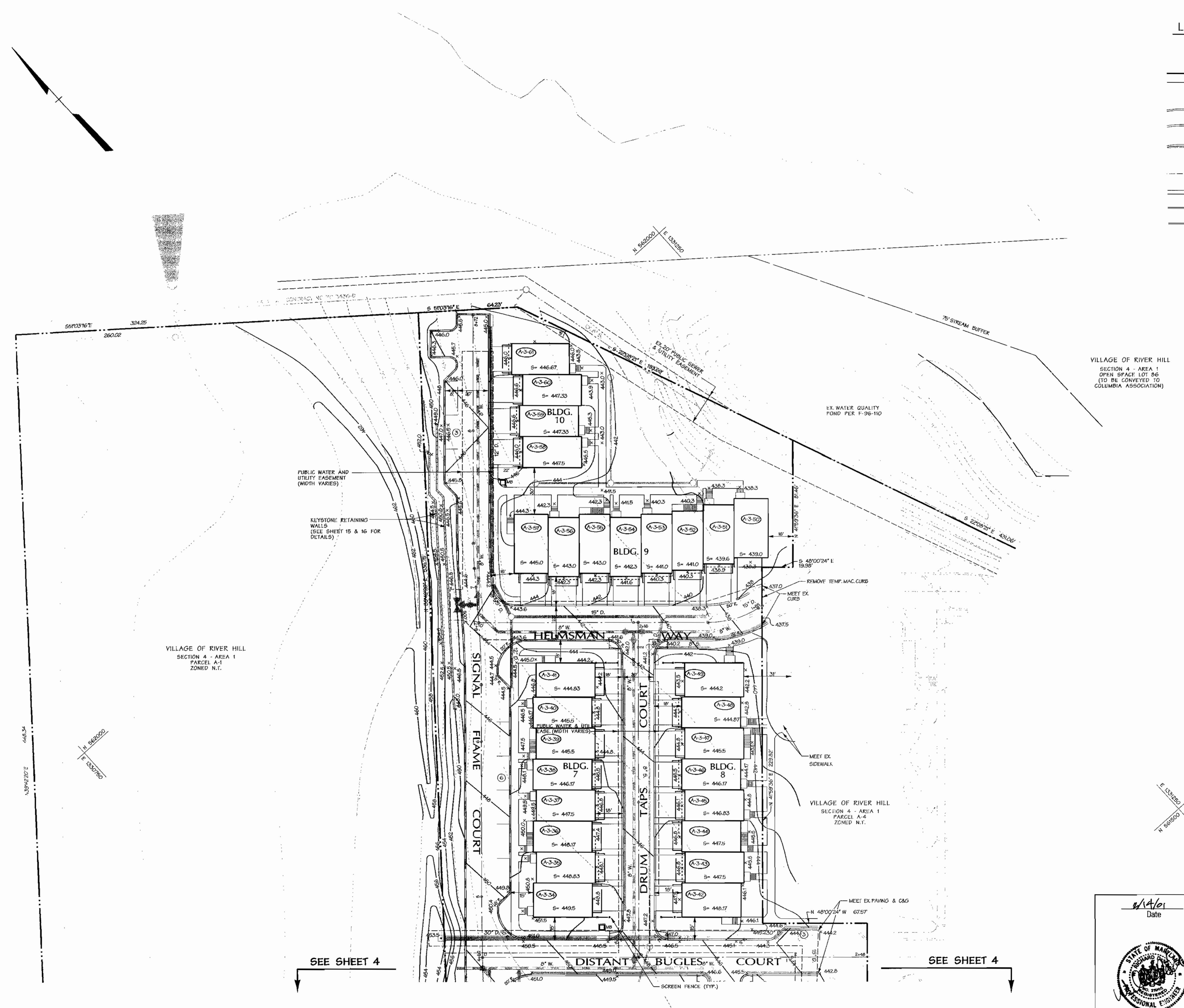
Dm By: MSS Date: 2/15/01

Chk By: *[Signature]* Approved

Professional Engr. No. 21498

4 of 16

- LEGEND**
- EXISTING 10' CONTOUR
 - EXISTING 2' CONTOUR
 - PROPOSED 10' CONTOUR
 - PROPOSED 2' CONTOUR
 - EXISTING CURB
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 - PROPOSED DEPRESSED CURB R-3.01
 - PROPOSED DEPRESSED REVERSE CURB & GUTTER R-3.01
 - EXISTING UTILITY (WATER, SEWER, STORM DRAIN)
 - 24" D. PROPOSED STORM DRAIN
 - 8" S. PROPOSED SEWER
 - 8" W. PROPOSED WATER
 - PARKING COUNT
 - MAILBOX/TRASH/RECYCLE PICKUP AREA (BUILT ON A 5' x 5' CONC. PAD)
 - LIGHTING BY OTHERS



VILLAGE OF RIVER HILL
SECTION 4 - AREA 1
OPEN SPACE LOT 86
(TO BE CONVEYED TO
COLUMBIA ASSOCIATION)

EX. WATER QUALITY
POND PER F-96-110

VILLAGE OF RIVER HILL
SECTION 4 - AREA 1
PARCEL A-1
ZONED N.T.

VILLAGE OF RIVER HILL
SECTION 4 - AREA 1
PARCEL A-4
ZONED N.T.

APPROVED
DATE 1-11-01

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING	
<i>[Signature]</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	3/2/01 DATE
<i>[Signature]</i> CHIEF, DIVISION OF LAND DEVELOPMENT	3/9/01 DATE
<i>[Signature]</i> DIRECTOR	3/14/01 DATE

Date	No.	Revision Description
		COLUMBIA
VILLAGE OF RIVER HILL		
SECTION 4 AREA 1 PARCEL A-3 BUILDINGS 1-10 UNITS A-3-1 THRU A-3-61		
OWNER/DEVELOPER: The Howard Research and Development Company 10275 Little Patuxent Parkway Columbia, Maryland 21044	CONTRACT PURCHASER: Ryland Homes 7250 Parkway Drive Suite 520 Columbia, Maryland 21076	

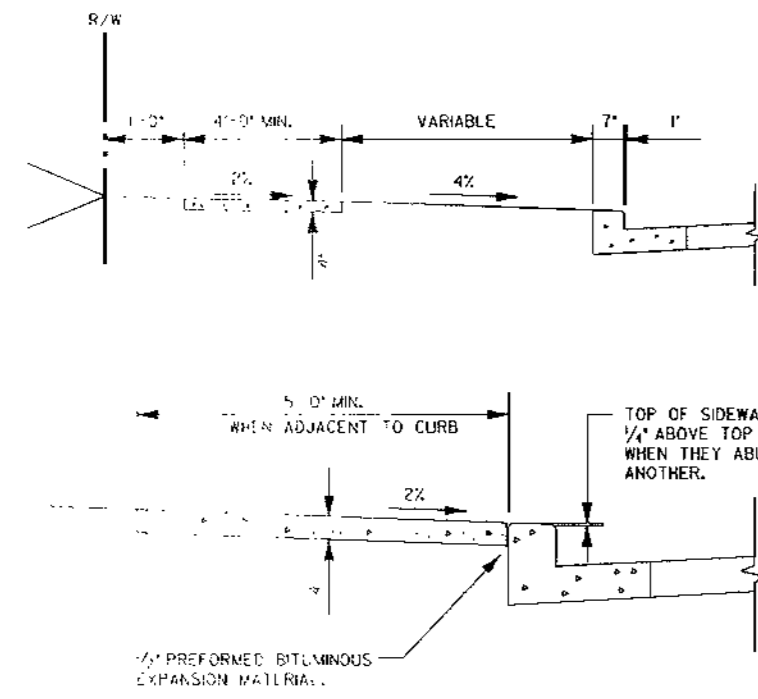
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Fax 296-4706

A Team of Land Planners,
Landscape Architects,
Golf Course Architects,
Engineers, Surveyors &
Environmental Professionals

3/14/01
Date

Professional Engr. No. 2199B

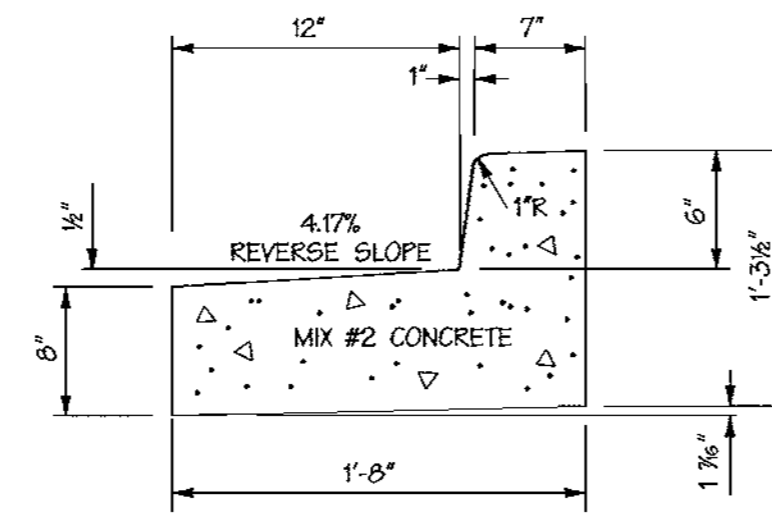
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Des By	MJP	Scale 1"=30'
Drn By	MSS	Date 2/15/01
Chk By	<i>[Signature]</i>	Approved
		Proj. No. 00023
		5 of 16



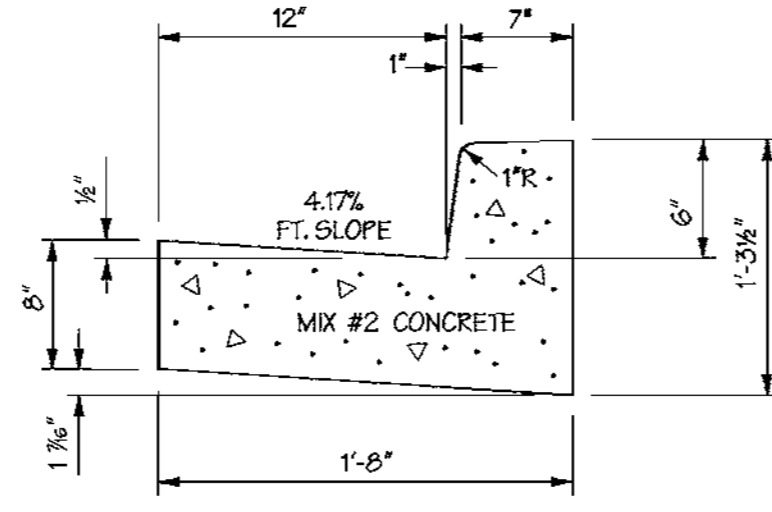
Concrete Walk

R.3.05

NOT TO SCALE



SECTION

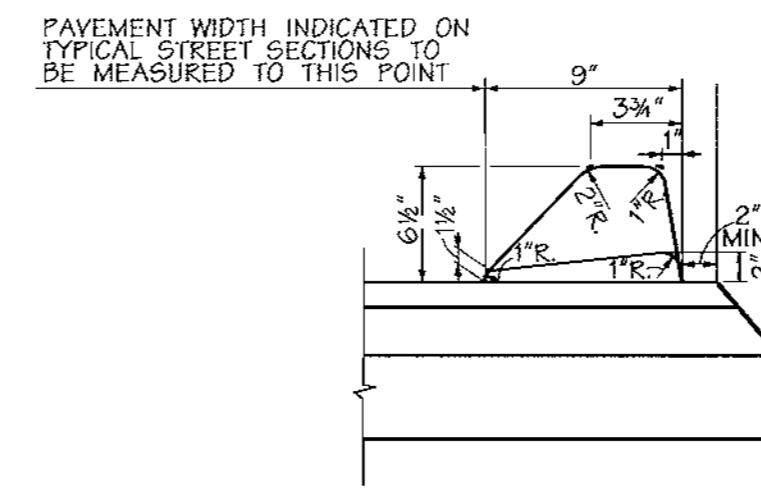


SECTION

Concrete Curb

R.3.01

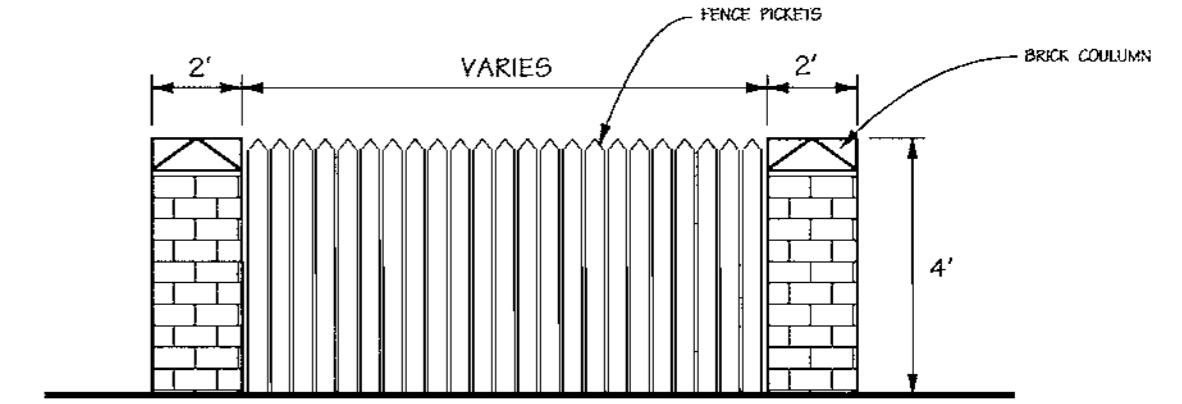
NOT TO SCALE



Temp. Macadam Curb

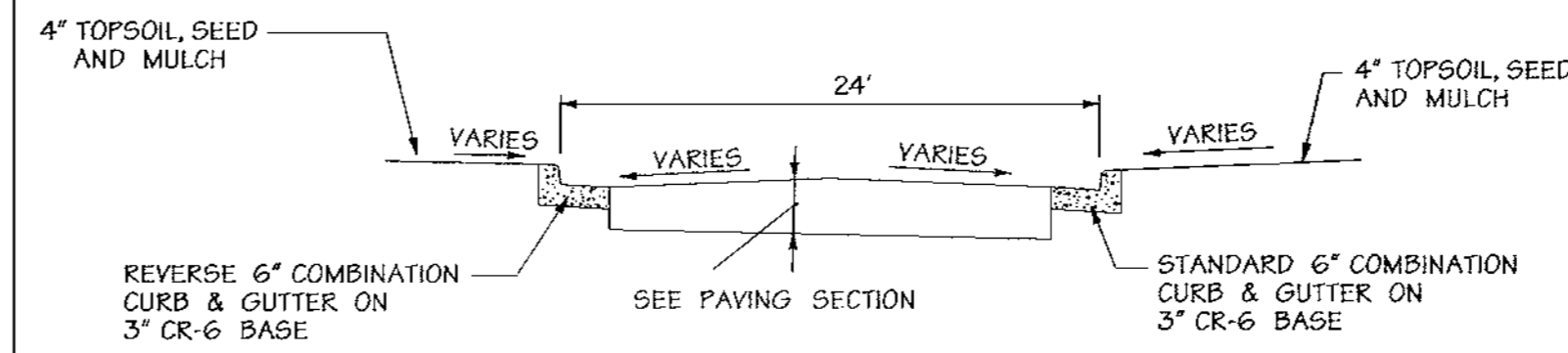
Not To Scale

R.3.03



Screen Fence Detail

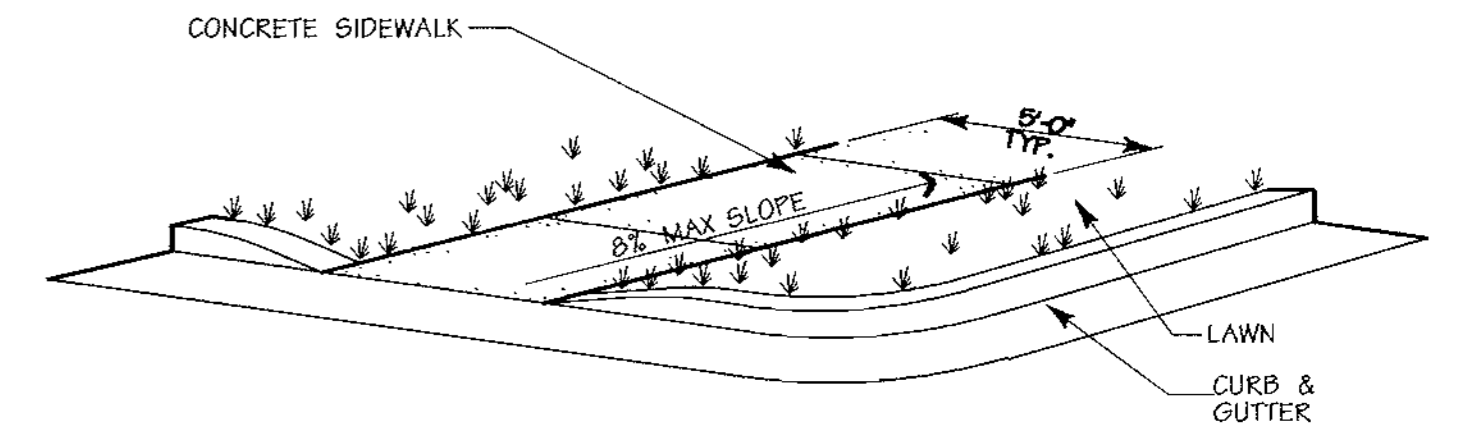
Not To Scale



Typical Section

(PRIVATE DRIVE)

NOT TO SCALE

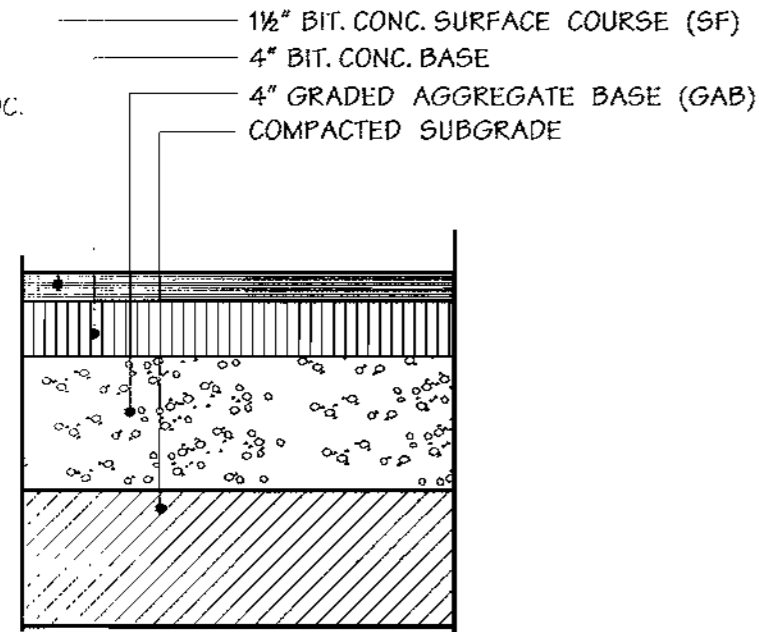


Modified Sidewalk Ramp - Type A

Not To Scale

NOTE: RAMP TO MEET CURRENT ADA SPECIFICATIONS.

NOTE: PAVING SECTION TAKEN FROM GEOTECHNICAL ENGINEERING REPORT BY HILLIS CARNES & ASSOC. DATED 3/24/00

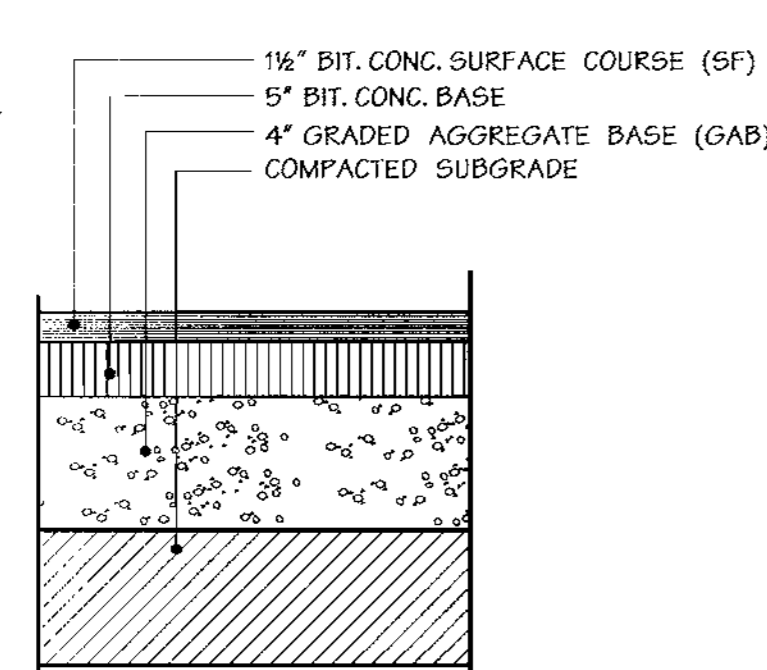


Paving Section

(ALL OTHER PRIVATE ROADS)

NOT TO SCALE

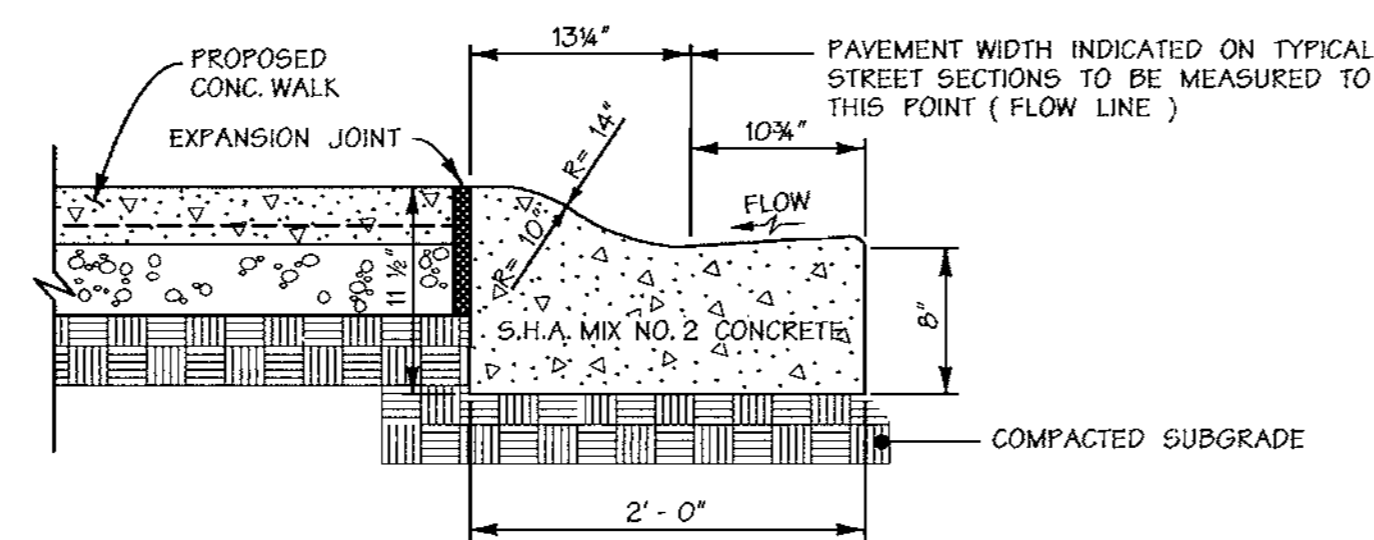
NOTE: PAVING SECTION TAKEN FROM GEOTECHNICAL ENGINEERING REPORT BY HILLIS CARNES & ASSOC. DATED 3/24/00



Paving Section

(SIGNAL FLAME COURT FROM STA. 0+00 TO STA. 4+75)

NOT TO SCALE

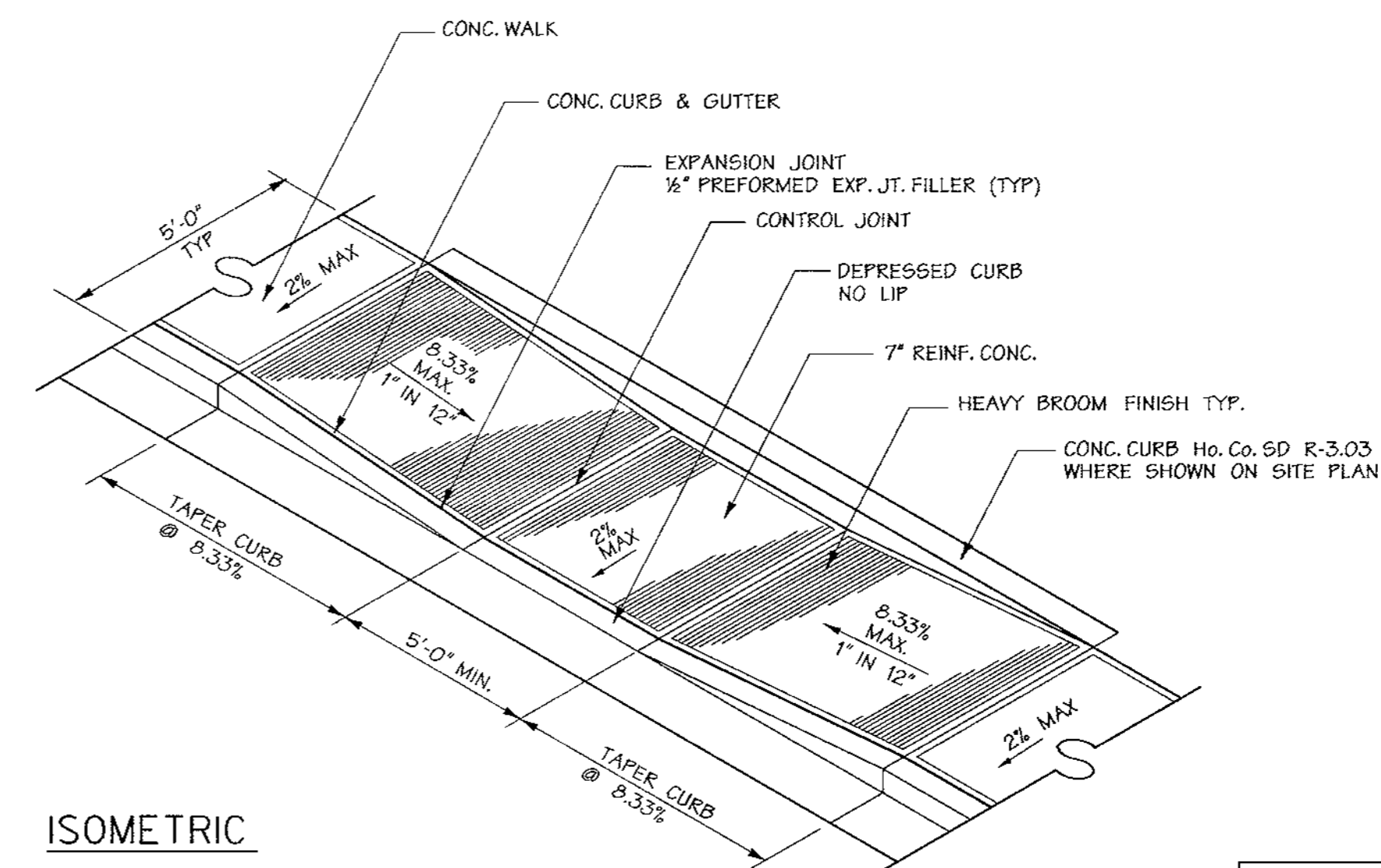


SECTION

Depressed Curb

R.3.01

NOT TO SCALE



ISOMETRIC

Handicapped Ramp - Type C

Not To Scale

R.6.12

APPROVED
DATE: 1-11-01

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
 [Signature] 2/2/01
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
 [Signature] 3/4/01
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE
 [Signature] 3/12/01
 DIRECTOR DATE

Date No. Revision Description

COLUMBIA

VILLAGE OF RIVER HILL

SECTION 4 AREA 1 PARCEL A-3
 BUILDINGS 1-10 UNITS A-3-1 THRU A-3-61

OWNER/DEVELOPER: The Howard Research and Development Company
 10275 Little Patuxent Parkway
 Columbia, Maryland 21044

CONTRACT PURCHASER: Ryland Homes
 7250 Parkway Drive
 Suite 520
 Columbia, Maryland 21076

DMW
 Draft McCune-Walkes, Inc.
 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 296-3333
 Fax 296-4705

A Team of Land Planners,
 Landscape Architects,
 Golf Course Architects,
 Engineers, Surveyors &
 Environmental Professionals



Professional Engr. No. 21995

TITLE

SITE DETAILS

Des By RTG Scale As Shown Proj. No. 00023
 Dwn By MSS Date 2/15/01
 Chk By [Signature] Approved 6 of 16

INLET SCHEDULE

NO.	TYPE	Q 2yr	INV. OUT	TOP ELEV. (TC)	WIDTH	LOCATION	DETAIL
I-1	'A-5'	1.61	434.50	441.80	3'	DRUM TAPS COURT & STA. 1+91.87, 10' RT.	HO. CO. STD. DET. SD 4.02
I-2	'A-10'	1.24	440.01	445.10	3'	SIGNAL FLAME COURT & STA. 6+55.78, 18' RT.	HO. CO. STD. DET. SD 4.02
I-3	'A-10'	0.38	437.77	444.74	3'	HELLSMAN WAY & STA. 0+21.07, 4' LT.	HO. CO. STD. DET. SD 4.02
I-4	'A-10'	0.37	439.97	445.50	3'	SIGNAL FLAME COURT & STA. 8+70.93, 10' RT.	HO. CO. STD. DET. SD 4.02
I-5	'A-10'	0.46	439.79	445.10	3'	SEE PLAN FOR LOCATION	HO. CO. STD. DET. SD 4.02
I-6	'A-10'	2.34	441.92	449.10	3'	DISTANT BUGLES COURT & STA. 0+77.19, 11' LT.	HO. CO. STD. DET. SD 4.14
I-7	YARD INLET	6.19	445.18	* 454.33	4'	N 561,756.93 E 1,330,840.68	HO. CO. STD. DET. SD 4.14
I-8	YARD INLET	2.92	437.56	* 442.33	4'	N 561,476.29 E 1,330,913.22	HO. CO. STD. DET. SD 4.14

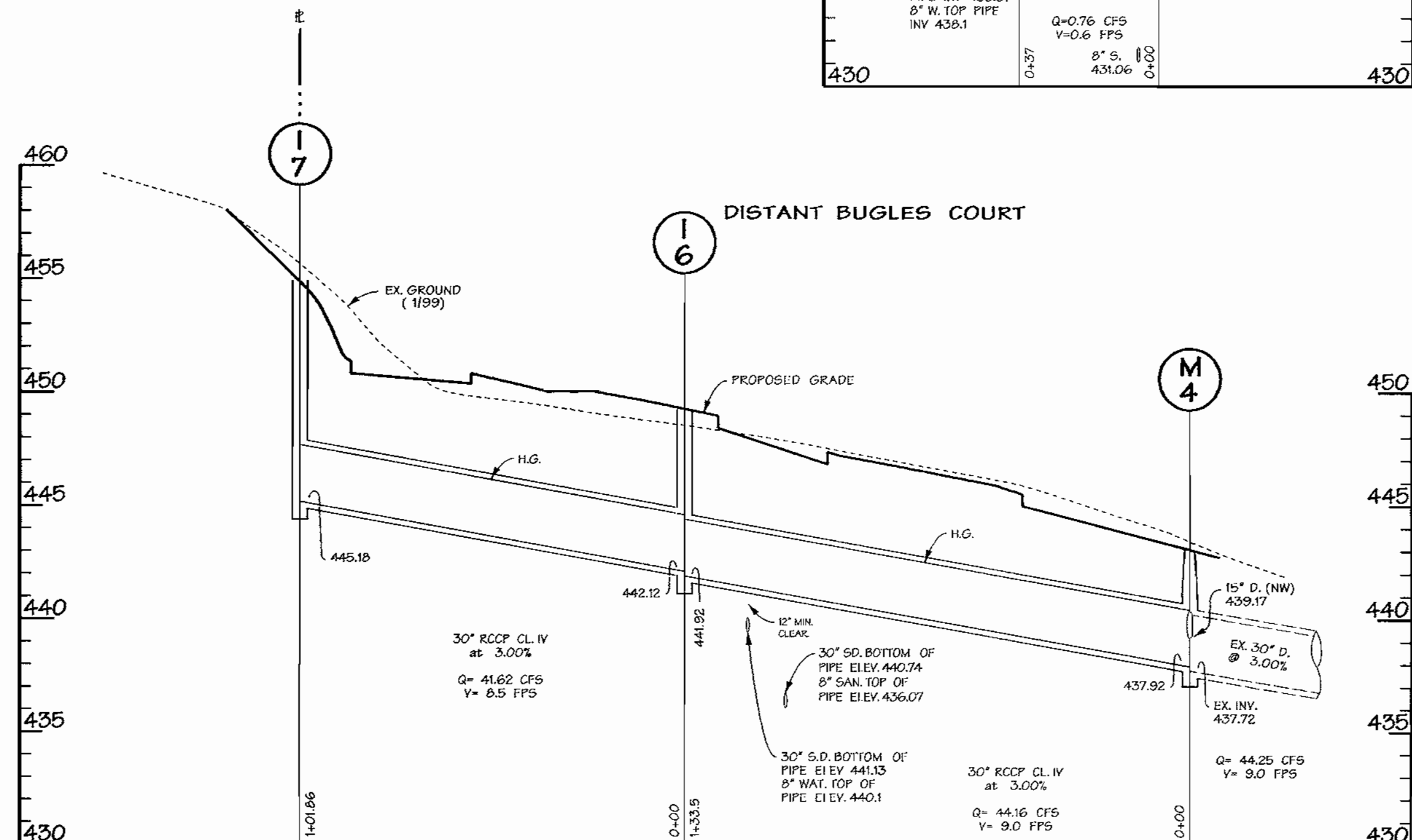
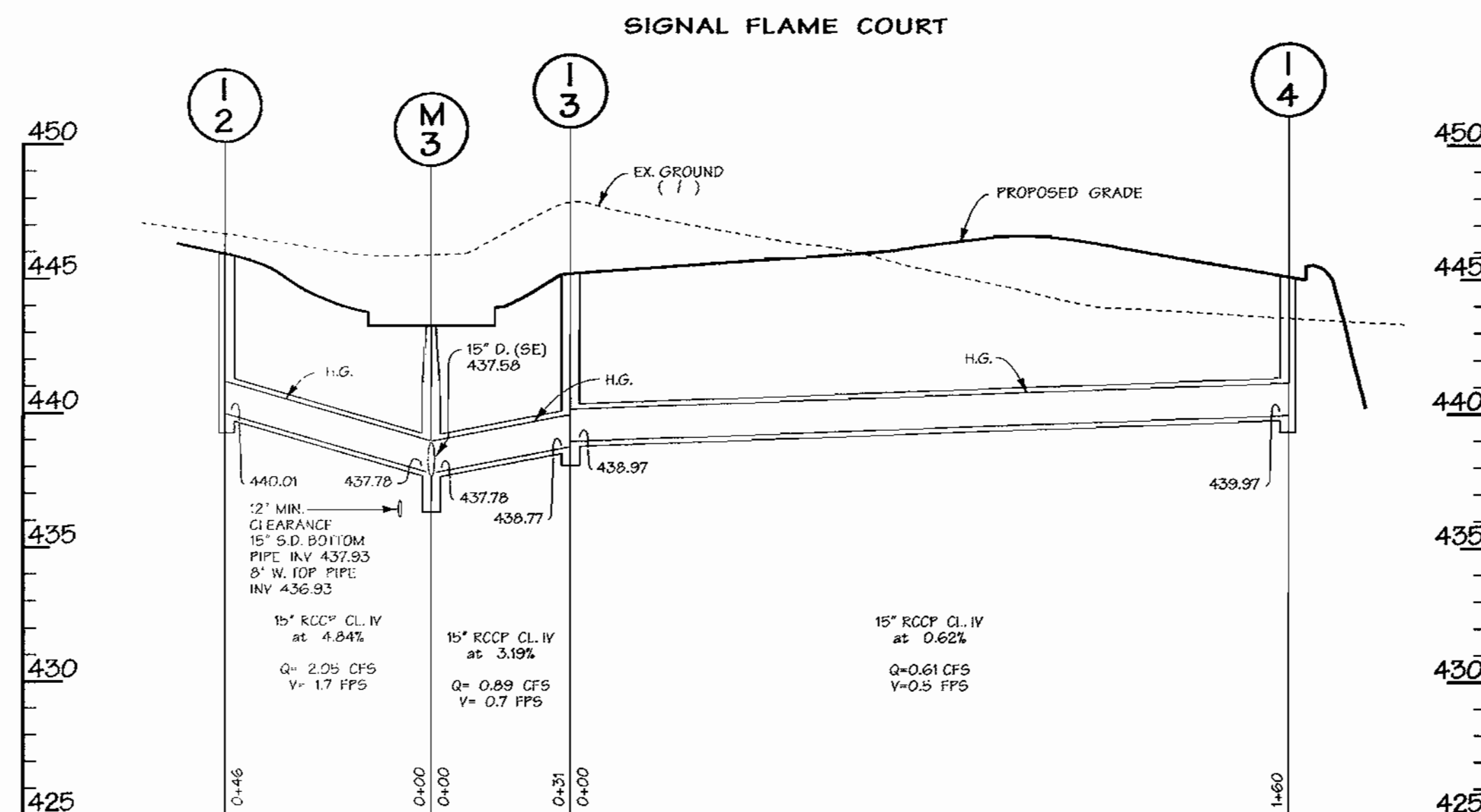
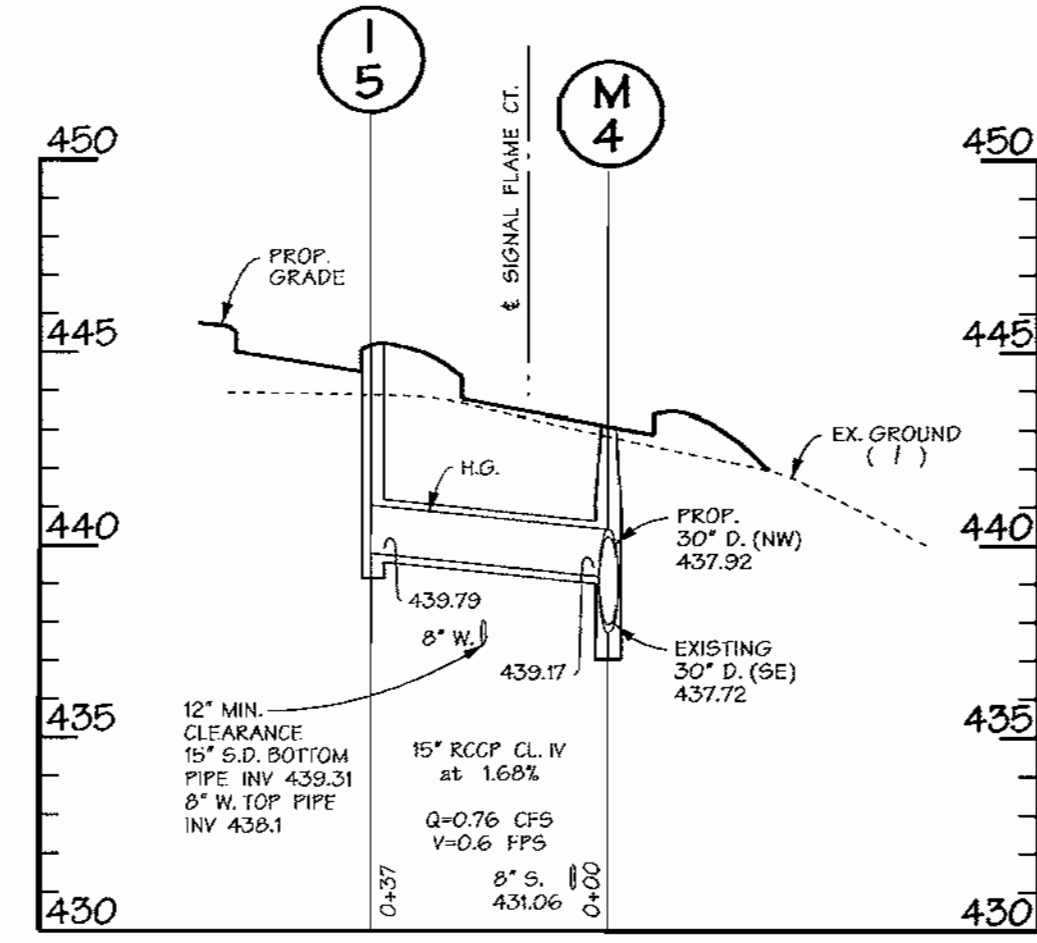
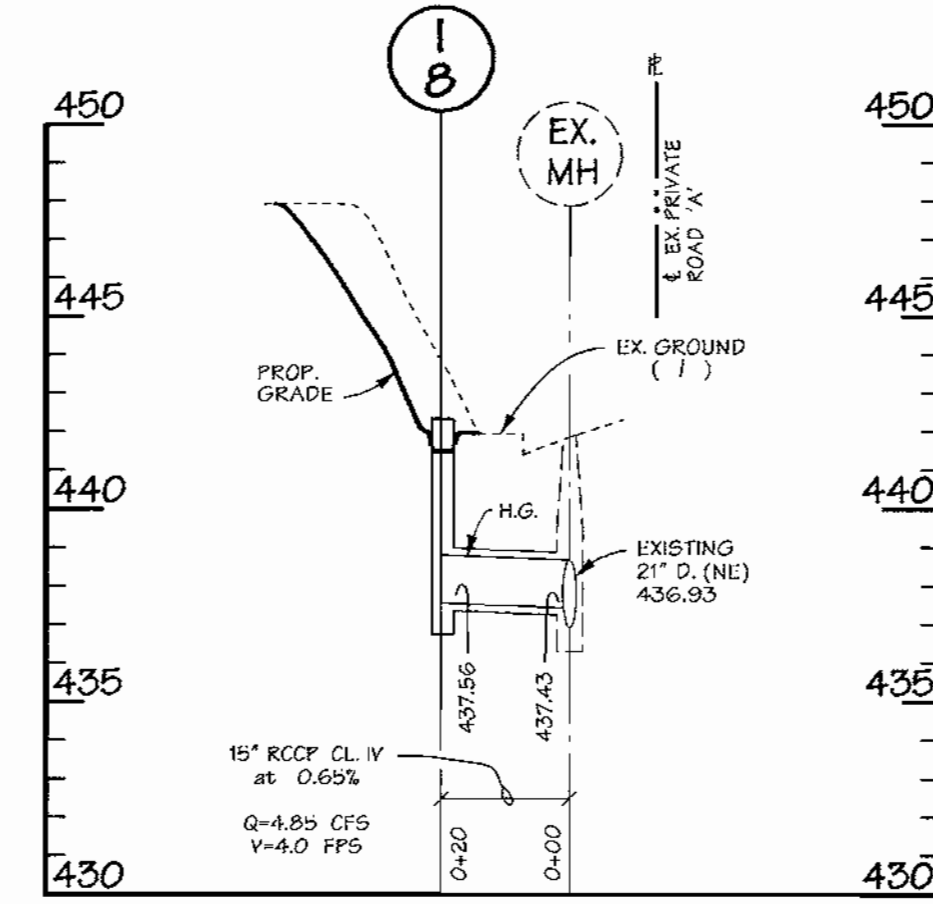
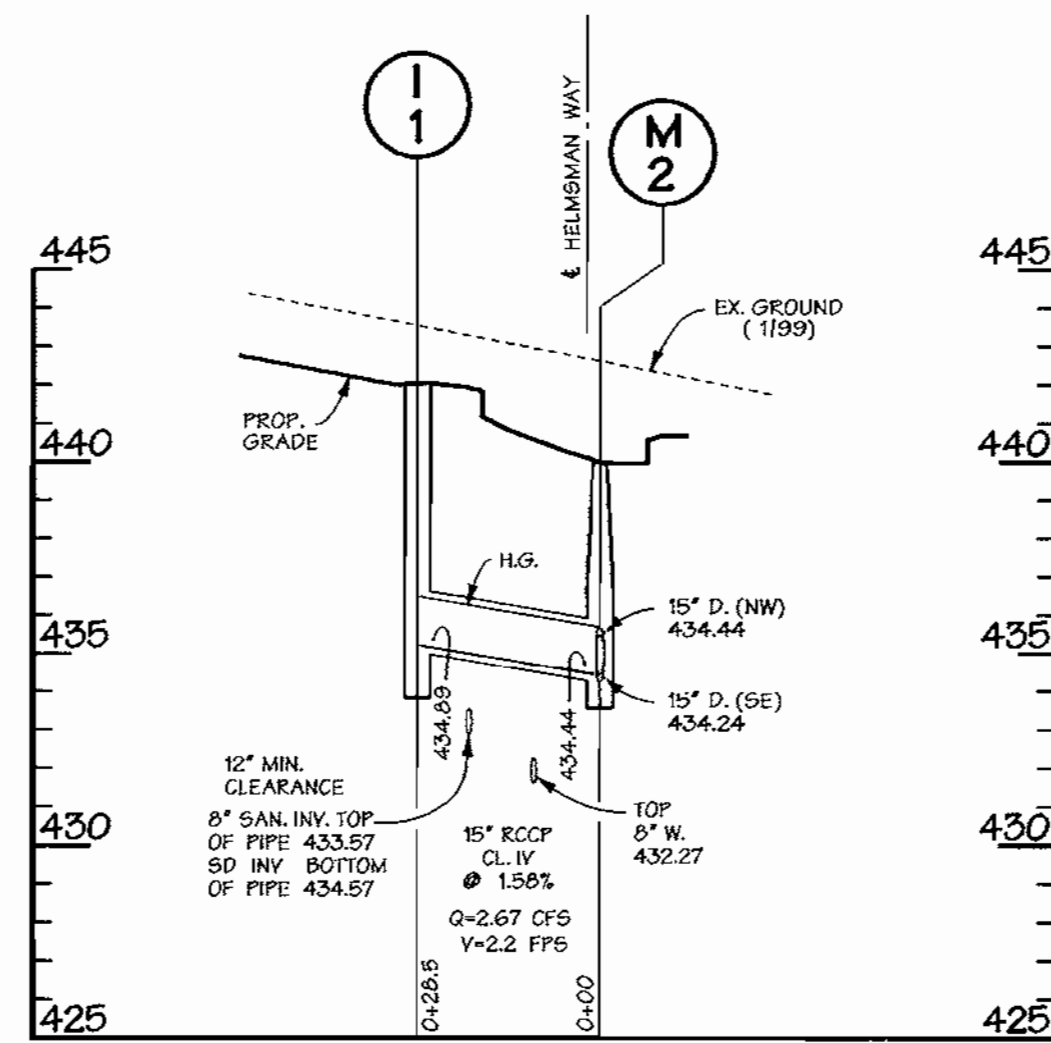
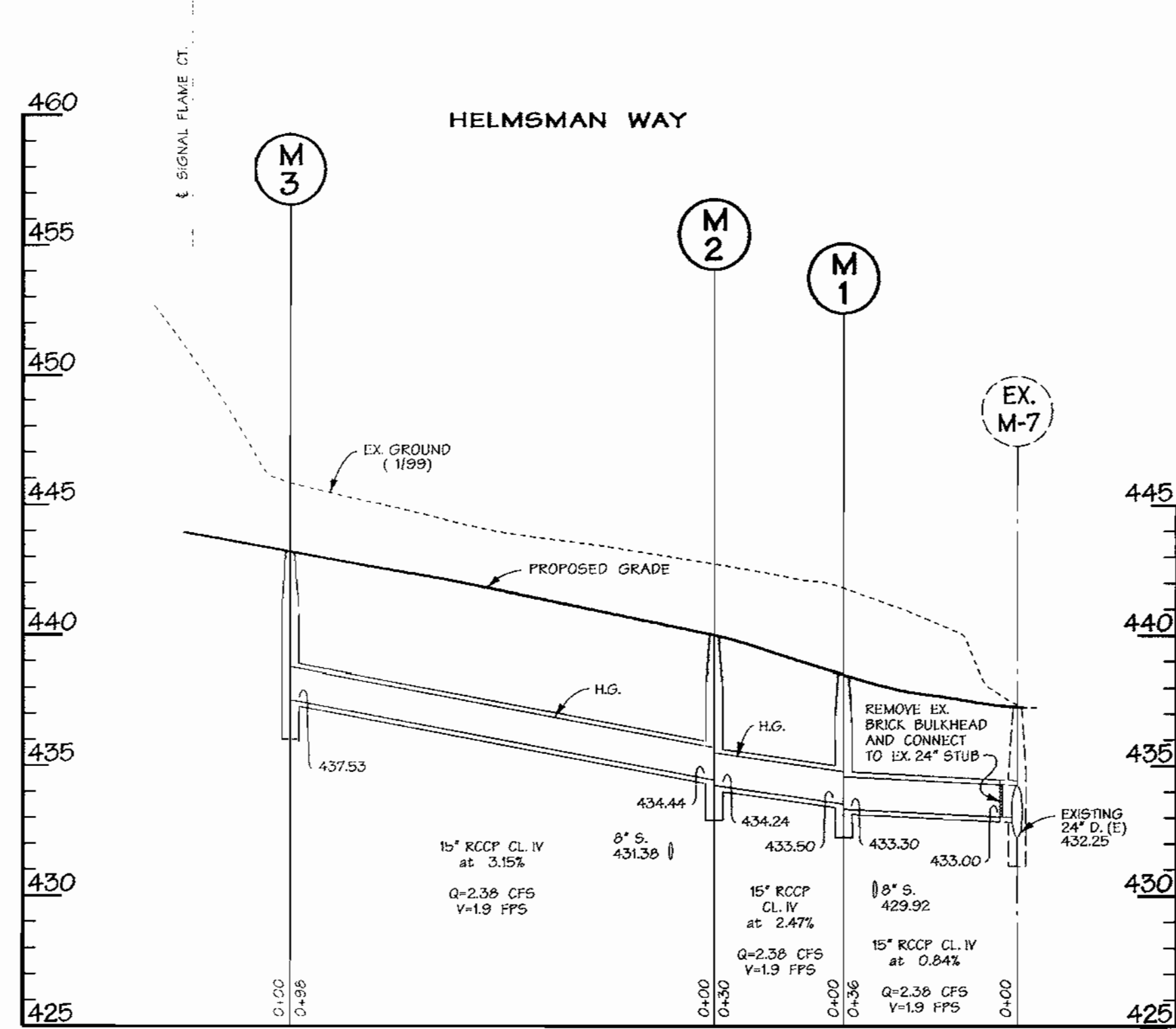
ALL INVERTS TO BE FULLY DEVELOPED
* ELEVATION IS TO TOP OF SLAB

MANHOLE SCHEDULE

NO.	TYPE	SIZE	INV. OUT	TOP ELEV.	LOCATION	DETAIL
M-1	'C'	48"	433.50	438.55	HELLSMAN WAY & STA. 1+39.80, 4' LT.	HO. CO. STD. DET. G5.12
M-2	'C'	48"	434.24	439.90	HELLSMAN WAY & STA. 1+18.91, 4' LT.	HO. CO. STD. DET. G5.12
M-3	'C'	48"	437.58	443.25	SIGNAL FLAME COURT & STA. 1+36.95, ON E	HO. CO. STD. DET. G5.12
M-4	'C'	48"	437.72	443.10	DISTANT BUGLES COURT & STA. 2+11.73, 12.5' LT.	HO. CO. STD. DET. G5.12

PIPE SCHEDULE

SIZE	TYPE & CLASS	LENGTH
15"	RCCP CLASS IV	486.5
30"	RCCP CLASS IV	235.36



APPROVED
DATE 1-11-01

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
 [Signature] 3/2/01
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 [Signature] 3/9/01
 CHIEF, DIVISION OF LAND DEVELOPMENT
 [Signature] 3/14/01
 DIRECTOR

Date	No.	Revision Description

COLUMBIA

VILLAGE OF RIVER HILL

SECTION 4 AREA 1 PARCEL A-3
 BUILDINGS 1-10 UNITS A-3-1 THRU A-3-61

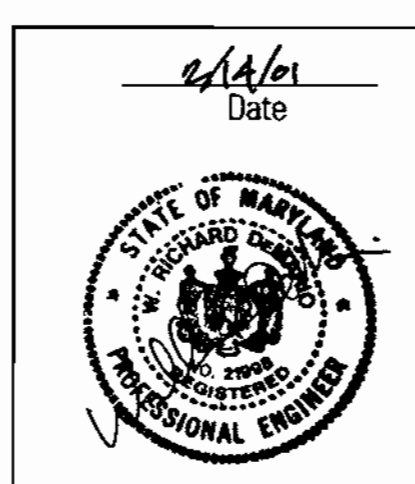
OWNER/DEVELOPER: The Howard Research and Development Company
 10275 Little Patuxent Parkway
 Columbia, Maryland 21044

CONTRACT PURCHASER: Ryland Homes
 7250 Parkway Drive
 Suite 520
 Columbia, Maryland 21076

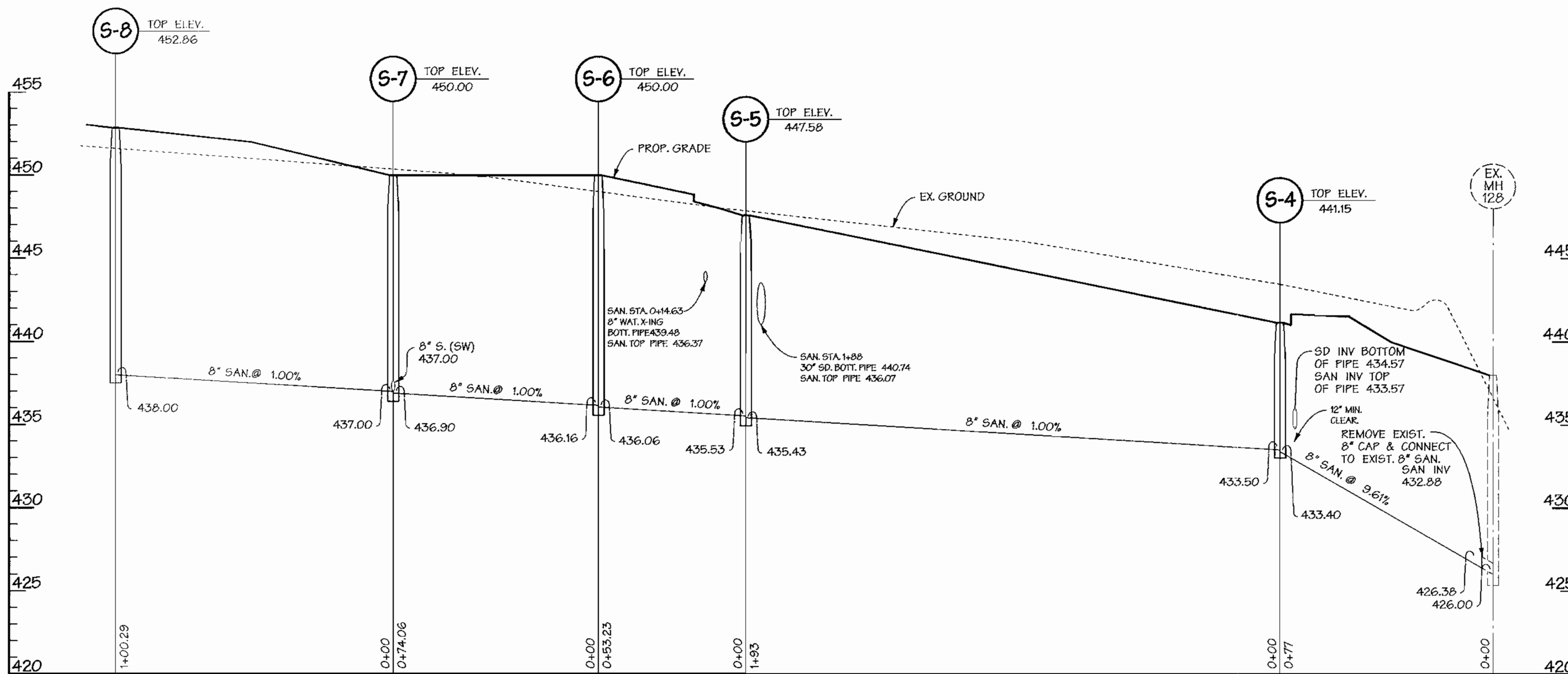
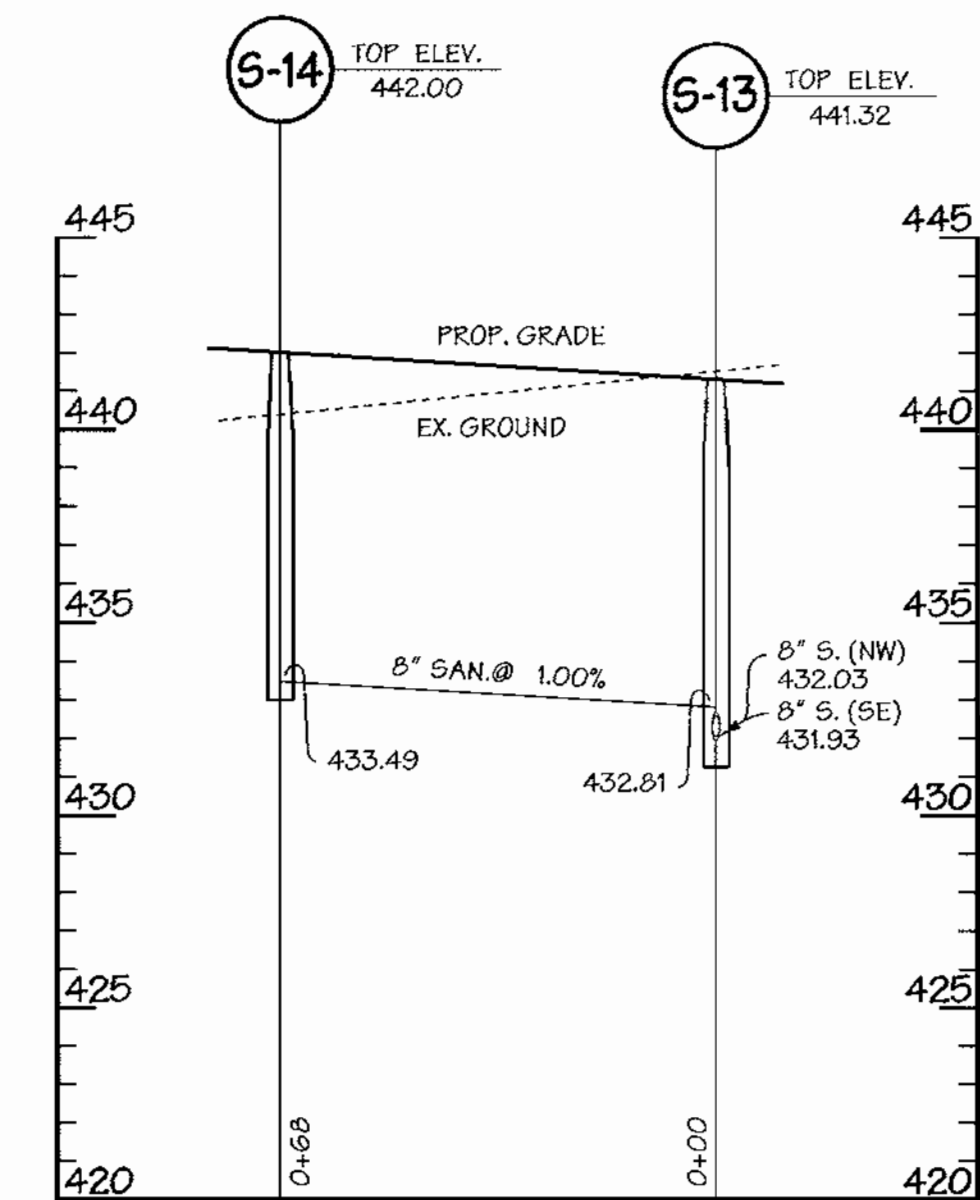
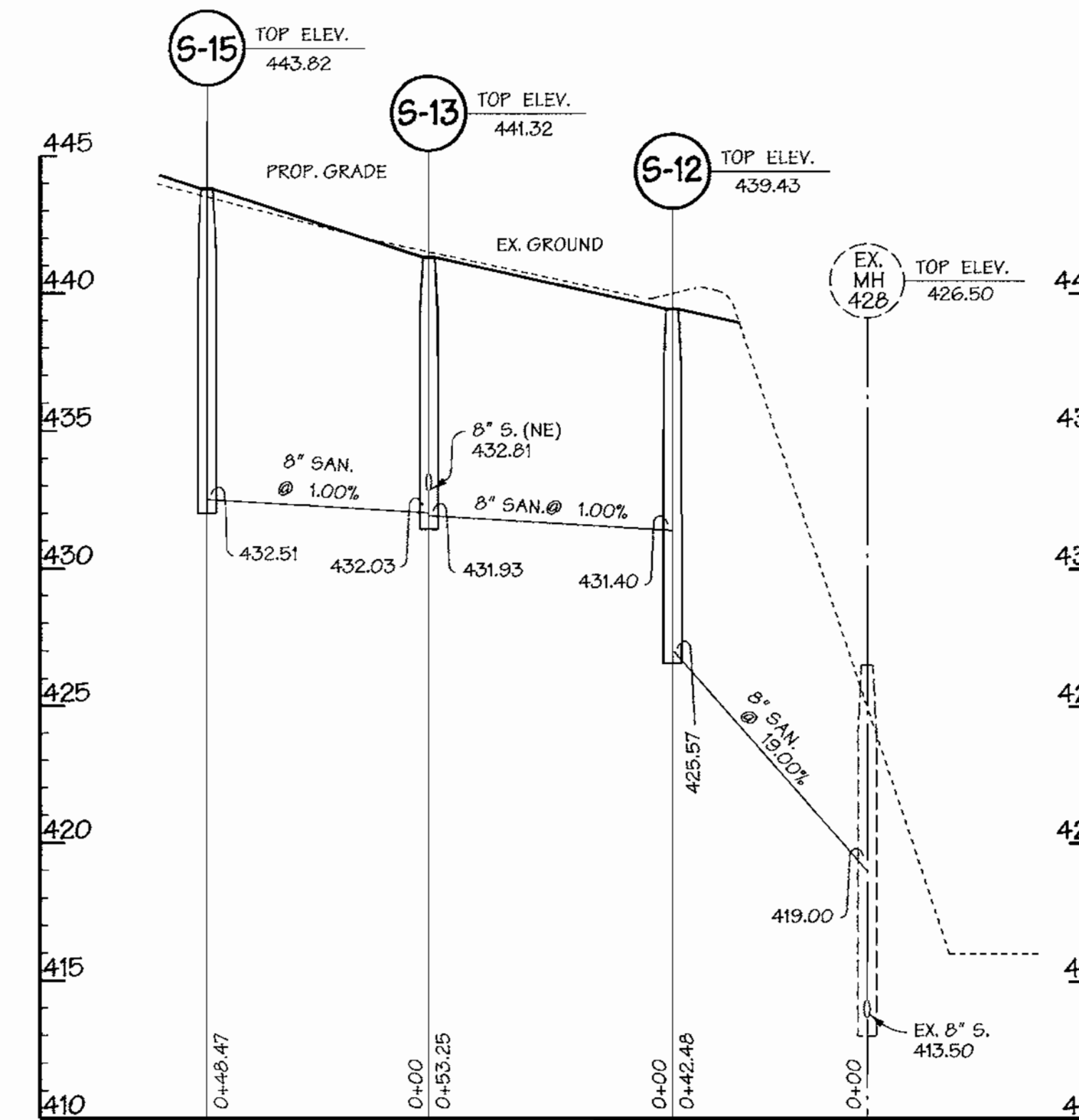
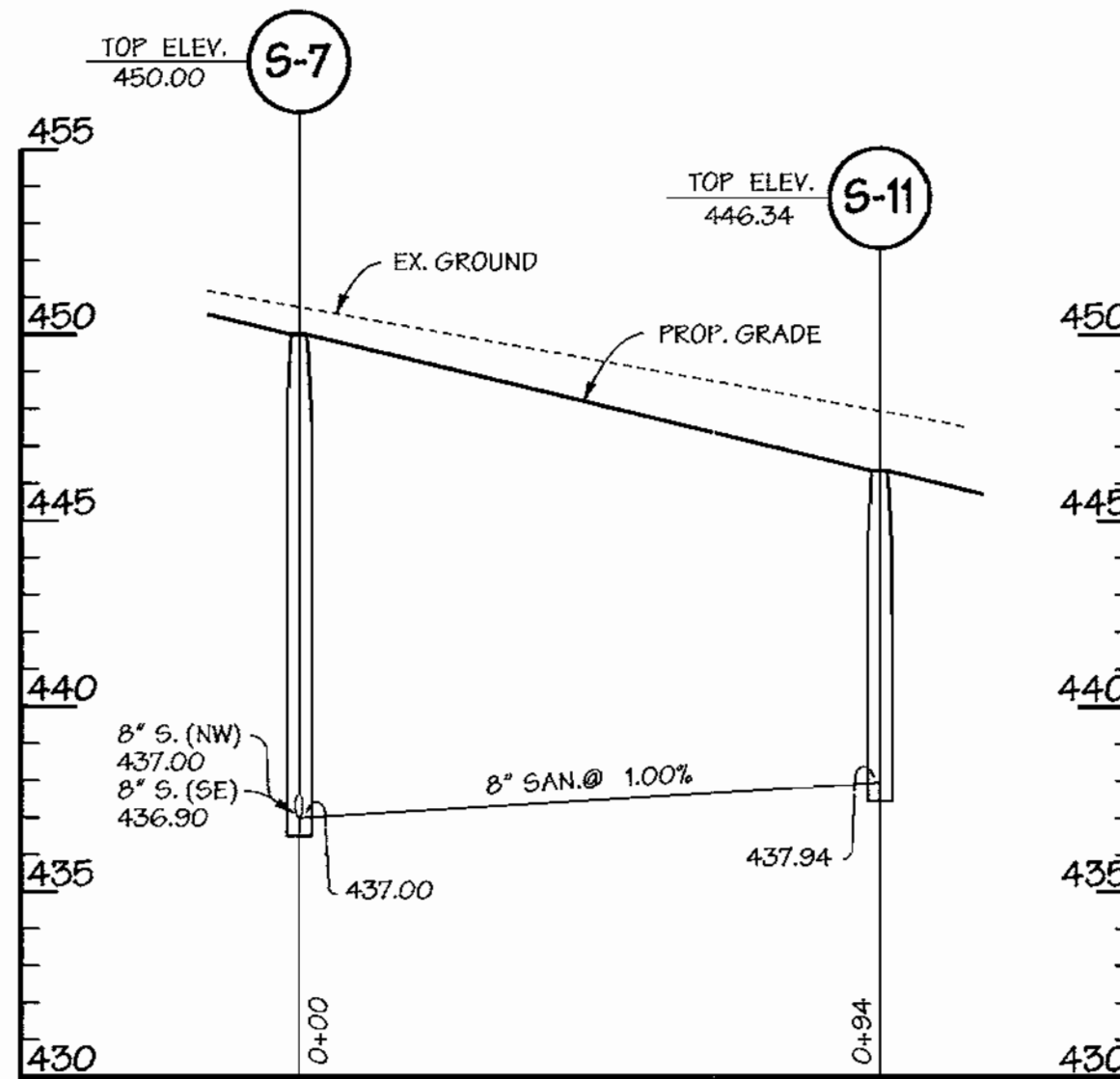
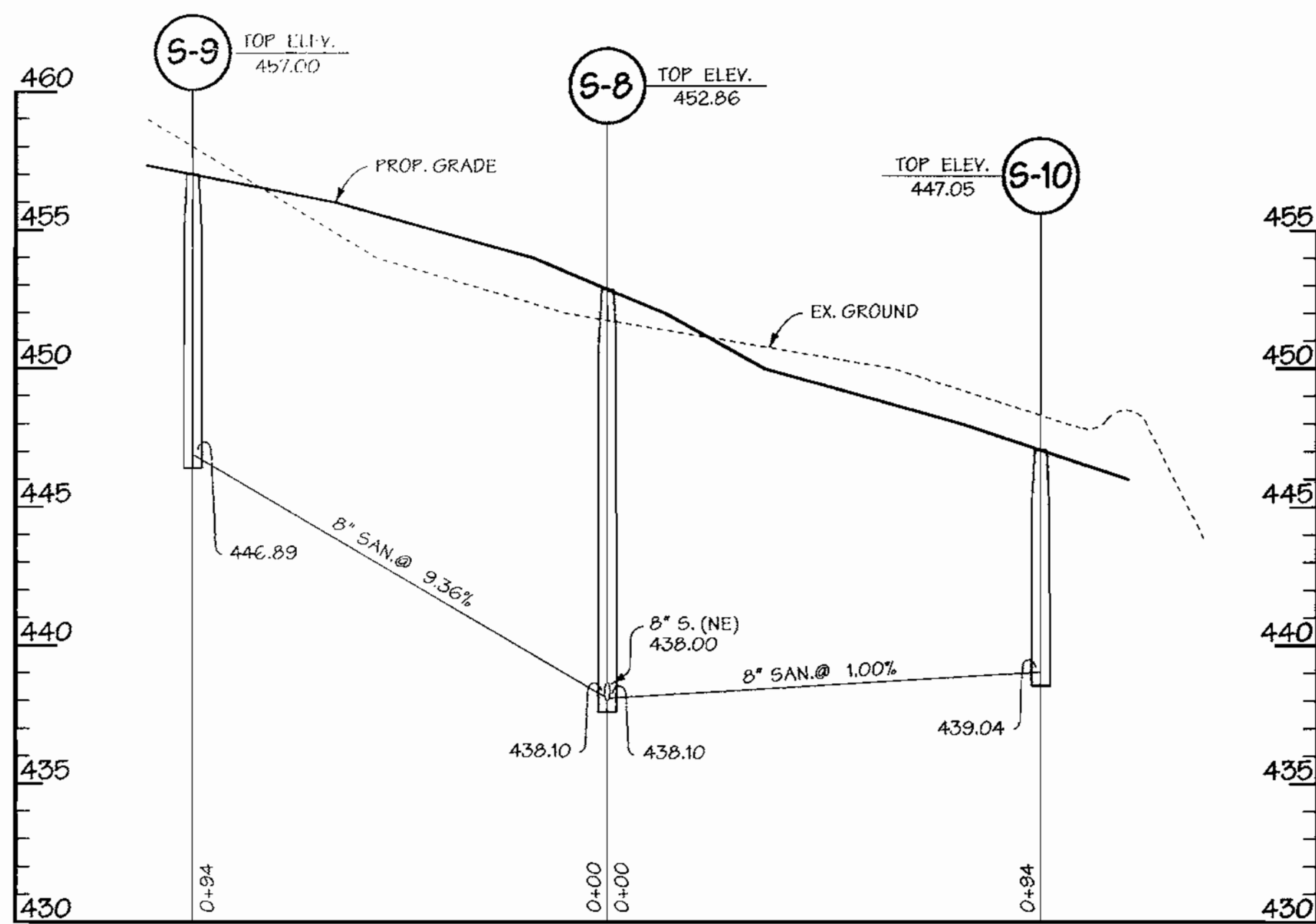
DMW
 Daft-McCune-Walker, Inc.
 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 296-3333
 Fax 296-4706

A Team of Land Planners,
 Landscape Architects,
 Golf Course Architects,
 Engineers, Surveyors &
 Environmental Professionals

PROFILES
 SCALE: HORIZ. 1"=30'
 VERT. 1"=5'



TITLE			
STORM DRAIN PROFILES			
Des By	MSS	Scale	As Shown
Dm By	MSS	Date	2/15/01
Chk By	[Signature]	Approved	
Professional Engr. No. 21996			7 of 16



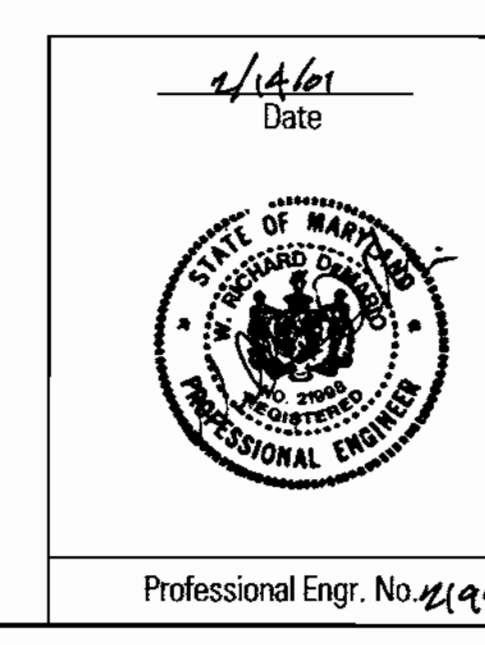
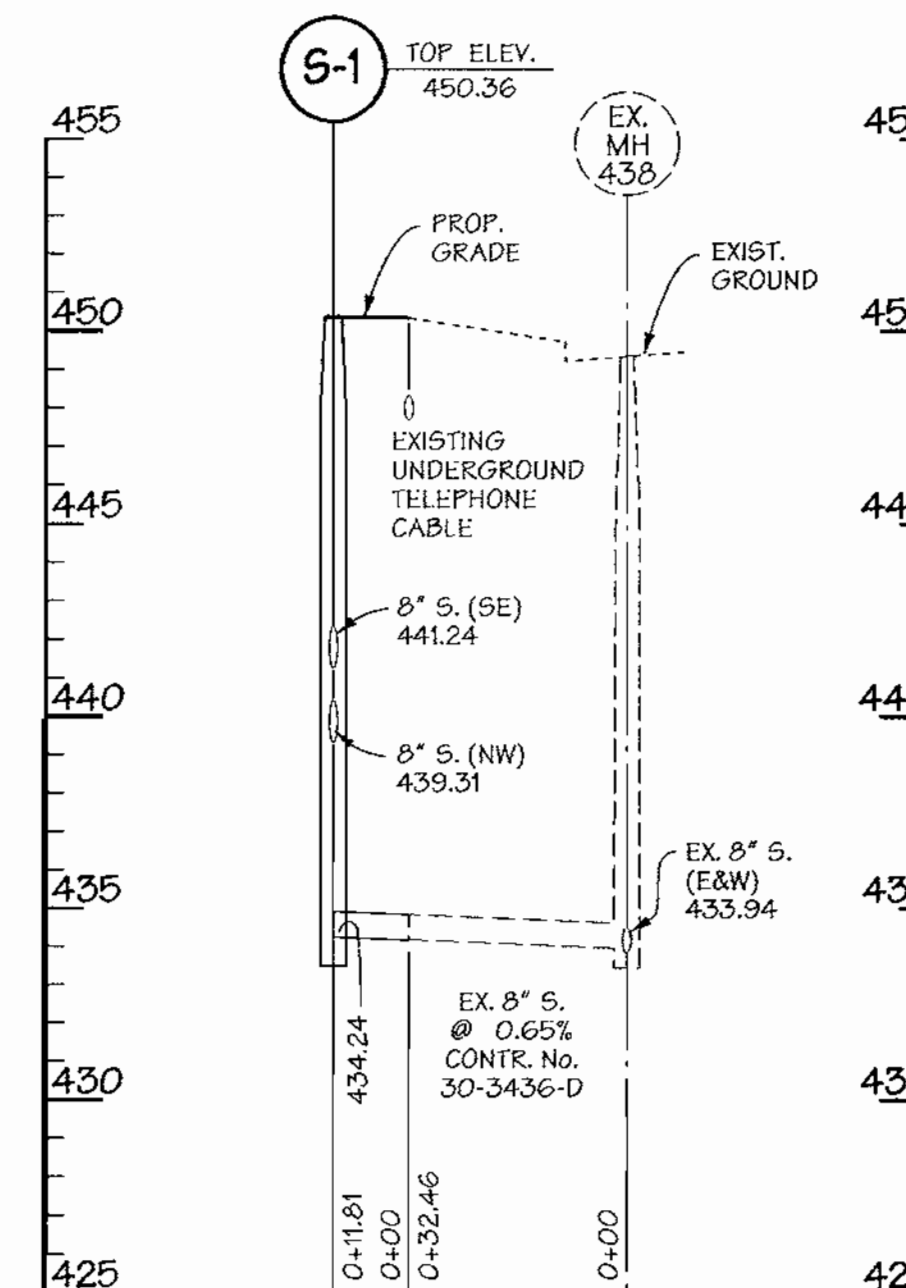
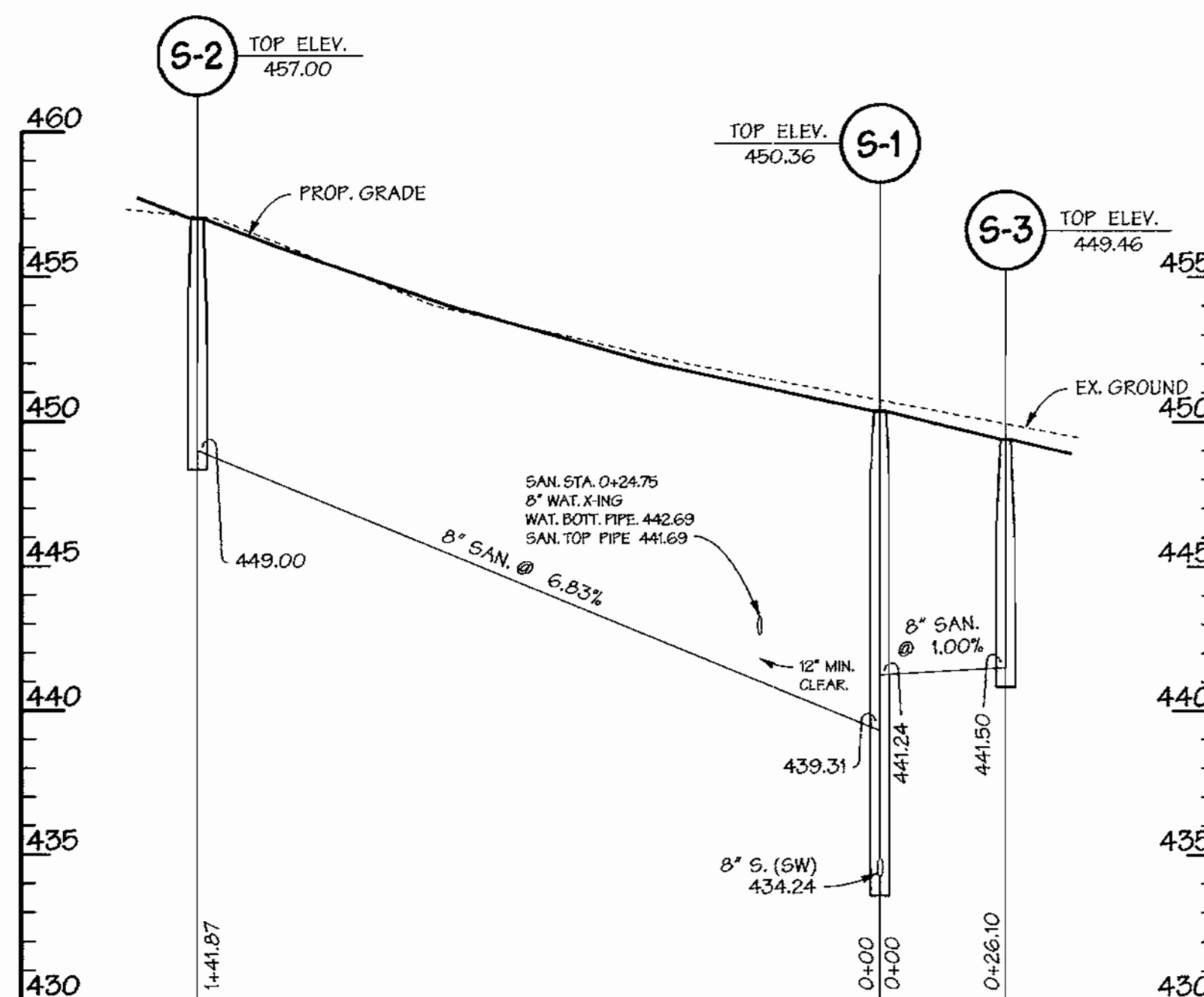
APPROVED
DATE 1-11-01

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
 Chief, Development Engineering Division: [Signature] 3/2/01
 Chief, Division of Land Development: [Signature] 3/4/01
 Director: [Signature] 3/2/01

NO.	LOCATION
5-1	N 561,324.73 E 1,330,691.94
5-2	N 561,423.64 E 1,330,590.23
5-3	N 561,307.27 E 1,330,711.34
5-4	N 561,806.23 E 1,331,066.18
5-5	N 561,662.79 E 1,330,937.05
5-6	N 561,635.26 E 1,330,891.50
5-7	N 561,580.21 E 1,330,841.95
5-8	N 561,505.67 E 1,330,774.85
5-9	N 561,565.89 E 1,330,707.94
5-10	N 561,442.79 E 1,330,844.72
5-11	N 561,517.32 E 1,330,911.82
5-12	N 561,865.81 E 1,331,158.42
5-13	N 561,901.43 E 1,331,118.85
5-14	N 561,951.96 E 1,331,164.34
5-15	N 561,933.86 E 1,331,082.83

PROFILES

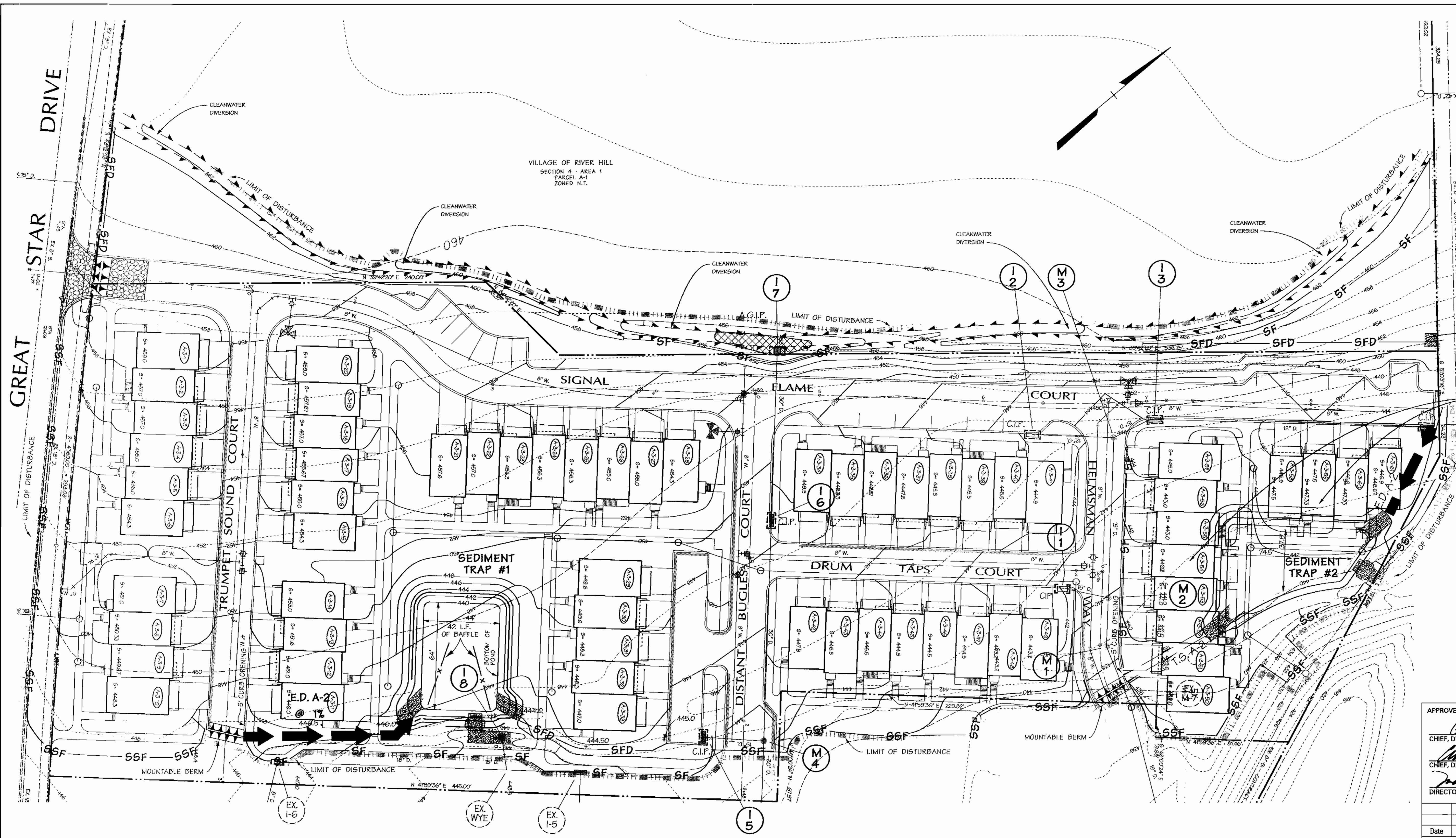
SCALE: HORIZ. 1"=30'
VERT. 1"=5'



Revision Description
 COLUMBIA
VILLAGE OF RIVER HILL
 SECTION 4 AREA 1 PARCEL A-3
 BUILDINGS 1-10 UNITS A-3-1 THRU A-3-61
 OWNER/DEVELOPER: The Howard Research and Development Company
 CONTRACT PURCHASER: Ryland Homes
 10275 Little Patuxent Parkway, Suite 520, Columbia, Maryland 21044

DMW
 Date: 2/14/01
 A Team of Land Planners, Landscape Architects, Golf Course Architects, Engineers, Surveyors & Environmental Professionals

TITLE: **SANITARY SEWER PROFILES**
 Des By: MGS Scale: As Shown Proj. No. 00023
 Dwn By: MGS Date: 2/15/01
 Chk By: [Signature] Approved: [Signature] 8 of 16



- LEGEND**
- SF SILT FENCE
 - SSF SUPER SILT FENCE
 - SFD SILT FENCE DIVERSION
 - EARTH DIKE
 - LIMIT OF DISTURBANCE
 - TEMPORARY SWALE
 - PROPOSED ESC DRAINAGE AREA
 - EXISTING ESC DRAINAGE AREA
 - G.M.I.P. GABION MATTRESS INFLOW PROTECTION
 - RPS REMOVABLE PUMPING STATION
 - AGR/DIR INLET PROTECTION
 - MOUNTABLE BERM
 - SCE STABILIZED CONSTRUCTION ENTRANCE
 - EROSION CONTROL MATTING

ROCK OUTLET PROTECTION
L=8' W=8' T=19' d50=9.5"

CONSTRUCTION FOR LOTS A-3-58 THRU A-3-61 AND LOTS A-3-50 THRU A-3-57 SHALL NOT BE PERMITTED UNTIL SUCH TIME AS PERMISSION IS GIVEN BY THE SEDIMENT CONTROL INSPECTOR TO REMOVE SEDIMENT TRAP #2. TRAP #2 NOT TO BE REMOVED UNTIL ENTIRE DRAINAGE AREA TO TRAP IS STABILIZED.

APPROVED
DATE 1-11-01

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

Howard County 3/2/01
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Linda Hanft 3/9/01
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Frank D. Layer 3/12/01
DIRECTOR DATE

Date	No.	Revision Description
		COLUMBIA
		VILLAGE OF RIVER HILL
		SECTION 4 AREA 1 PARCEL A-3 BUILDINGS 1-10 UNITS A-3-1 THRU A-3-61
		OWNER/DEVELOPER: The Howard Research and Development Company 10275 Little Patuxent Parkway Columbia, Maryland 21044
		CONTRACT PURCHASER: Ryland Homes 7250 Parkway Drive Suite 520 Columbia, Maryland 21076

SITE DATA

TOTAL AREA: 208.4631 SF - 4.791 AC
TOTAL DISTURBED AREA: 237,529 SF - 5.451 AC
TOTAL IMPERVIOUS AREA: 136,343 SF - 3.131 AC
AREA TO VEG. STAB.: 72,027 SF - 1.637 AC
CIE: 6500 CY
FILL: 6500 CY

VILLAGE OF RIVER HILL
SECTION 4 - AREA 1
PARCEL A-4
ZONED N.T.

ESC TRAP TABLE		ESC TRAP TABLE	
TRAP NUMBER	1	TRAP NUMBER	2
TRAP TYPE	SF-II	TRAP TYPE	SF-II
EXISTING DRAINAGE AREA AC.	2.0	EXISTING DRAINAGE AREA AC.	3.0
INTERIM DRAINAGE AREA AC.	1.4	INTERIM DRAINAGE AREA AC.	2.0
PROPOSED DRAINAGE AREA AC.	1.4	PROPOSED DRAINAGE AREA AC.	1.1
STORAGE REQUIRED C.F.	WET 3600 DRY 3600 TOTAL 7200	STORAGE REQUIRED C.F.	WET 6400 DRY 6400 TOTAL 12800
STORAGE PROVIDED C.F.	WET 4177.5 DRY 4177.5 TOTAL 8355	STORAGE PROVIDED C.F.	WET 5454 DRY 5454 TOTAL 10908
EXISTING GROUND ELEV.	444.0	EXISTING GROUND ELEV.	438.0
TOP EMBANKMENT ELEV.	443.00	TOP EMBANKMENT ELEV.	439.0
WEIR CREST ELEV.	442.0	WEIR CREST ELEV.	438.5
WET STORAGE/OUTLET ELEV.	441.17	WET STORAGE/OUTLET ELEV.	437.14
CLEANOUT ELEV.	440.61	CLEANOUT ELEV.	436.37
BOTTOM ELEV.	440.0	BOTTOM ELEV.	435.50
DEPTH OF CHANNEL (A)	N/A	DEPTH OF CHANNEL (A)	N/A
OUTLET WIDTH (B)	N/A	OUTLET WIDTH (B)	12'
BOTTOM DIMENSION	44'x64'	BOTTOM DIMENSION	37.5x74.5
TRAP SIDESLOPES	2:1	TRAP SIDESLOPES	2:1
TRAP DEPTH	WET 1.25 DRY 1.25 TOTAL 2.50	TRAP DEPTH	WET 1.5 DRY 1.5 TOTAL 3.0
BARREL DIAMETER	N/A	BARREL DIAMETER	N/A
RISER DIAMETER	N/A	RISER DIAMETER	N/A
WET STORAGE ZONE ELEV.	440.0-441.17	WET STORAGE ZONE ELEV.	435.5-437.14
DRY STORAGE ZONE ELEV.	441.17-442.5	DRY STORAGE ZONE ELEV.	437.14-438.50

MISS UTILITY
CALL "MISS UTILITY" AT 1-800-257-7777 48 HOURS TO THE START OF WORK. THE EXCAVATOR MUST NOTIFY ALL PUBLIC UTILITY COMPANIES WITH UNDERGROUND FACILITIES IN THE AREA OF PROPOSED EXCAVATION AND HAVE THOSE FACILITIES LOCATED BY THE UTILITY COMPANIES PRIOR TO COMMENCING EXCAVATION. THE EXCAVATOR IS RESPONSIBLE FOR COMPLIANCE WITH REQUIREMENTS OF CHAPTER 26A OF THE MONTGOMERY COUNTY CODE.

REVIEWED FOR HOWARD S.C.D. AND MIF 5 TECHNICAL REQUIREMENTS

Jim Meyer 3/1/01
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL & SOIL CONSERVATION SERVICE DATE

John K. Roberts 3/1/01
HOWARD S.C.D. DATE

DEVELOPER'S CERTIFICATION:
"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 INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

Doug Eschelman 2/14/01
SIGNATURE OF DEVELOPER DATE
PRINT NAME BELOW SIGNATURE

ENGINEER'S CERTIFICATION:
"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."

Will R. D. Mani 2-14-01
SIGNATURE OF ENGINEER DATE
PRINT NAME BELOW SIGNATURE



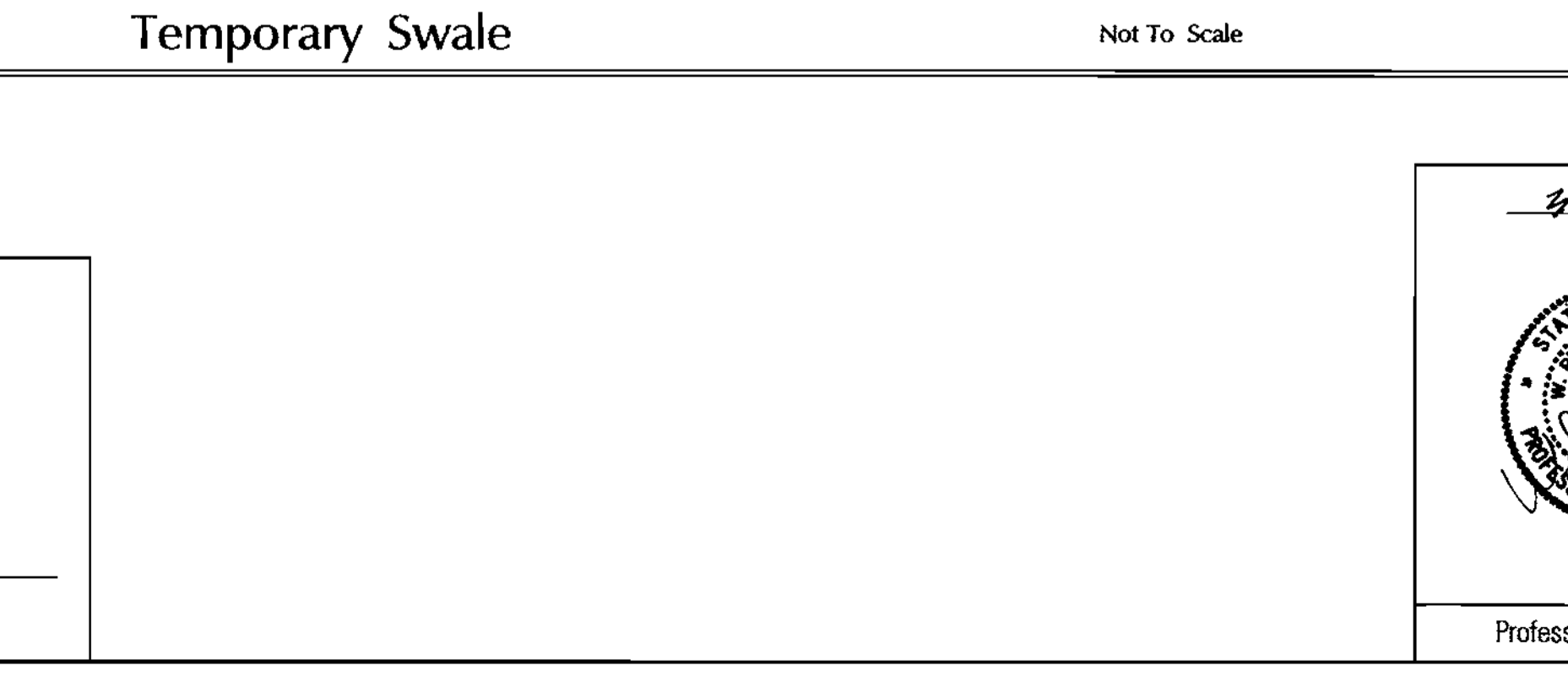
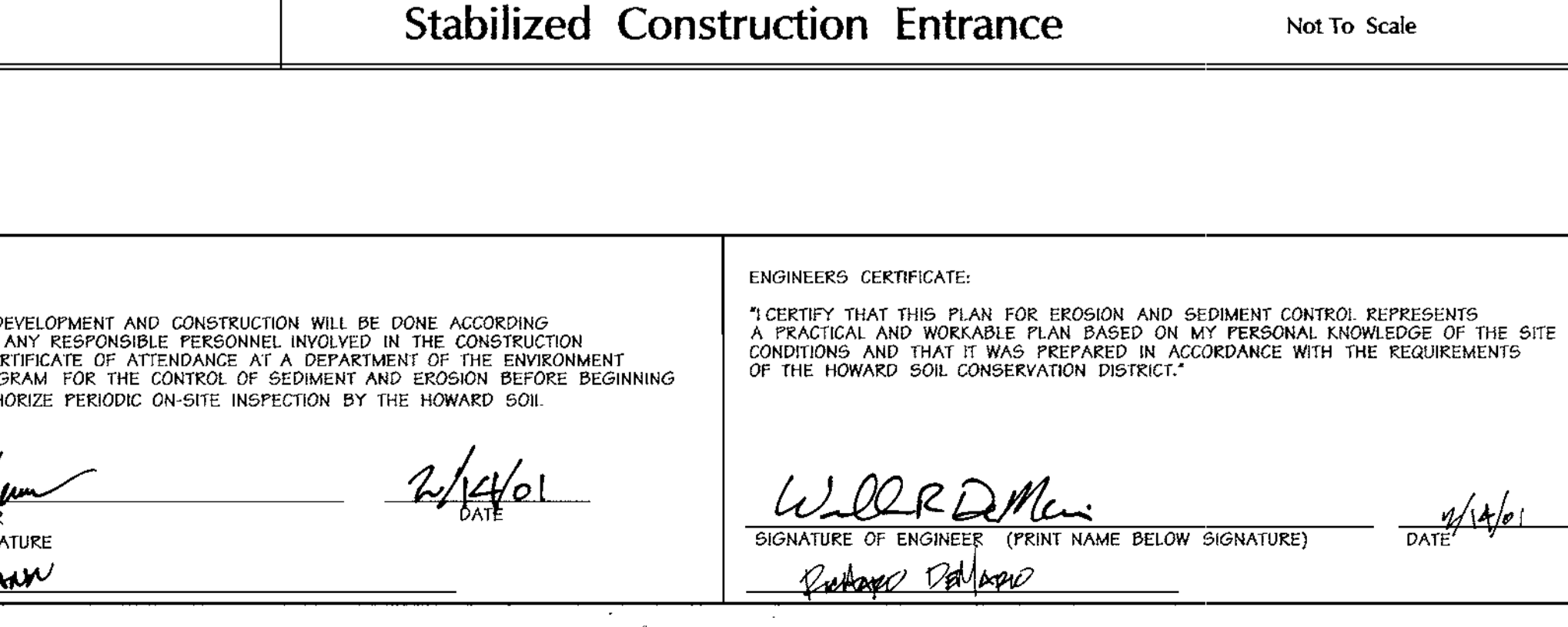
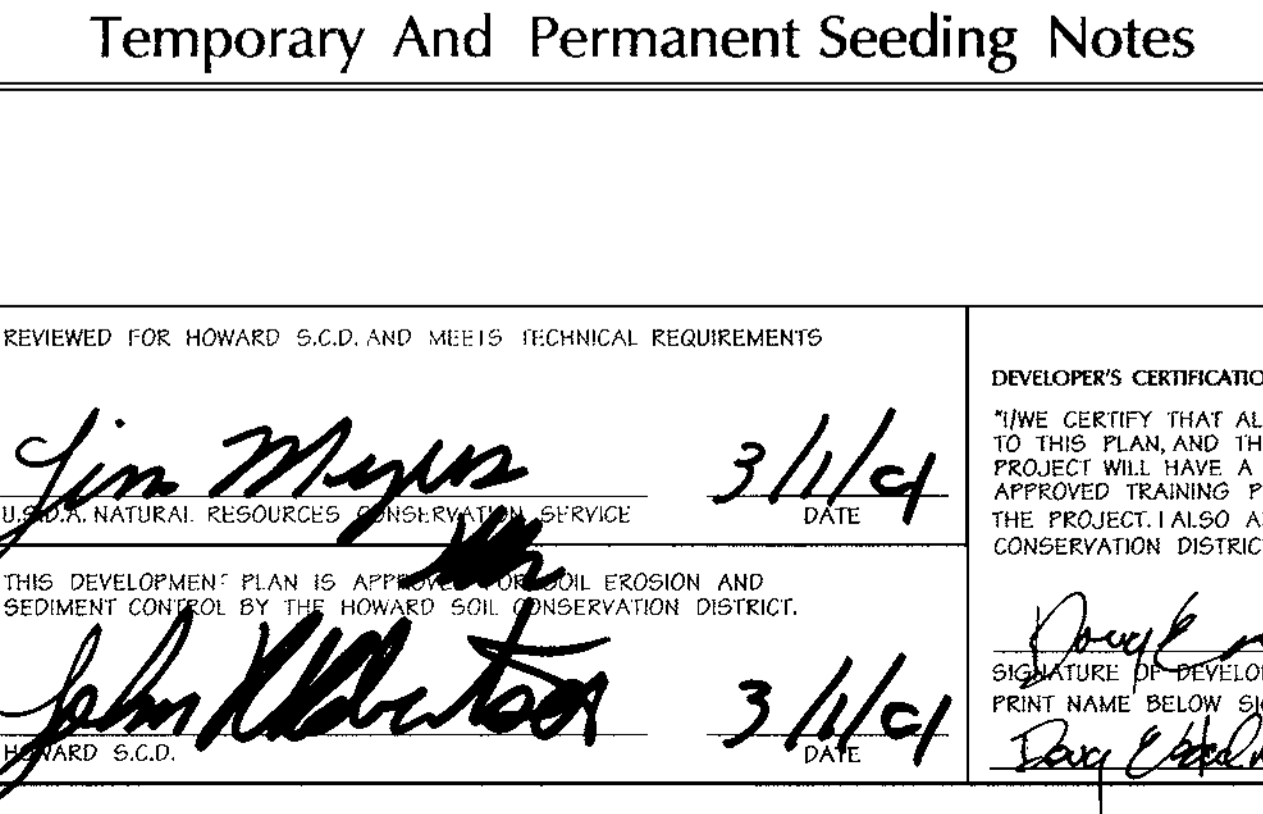
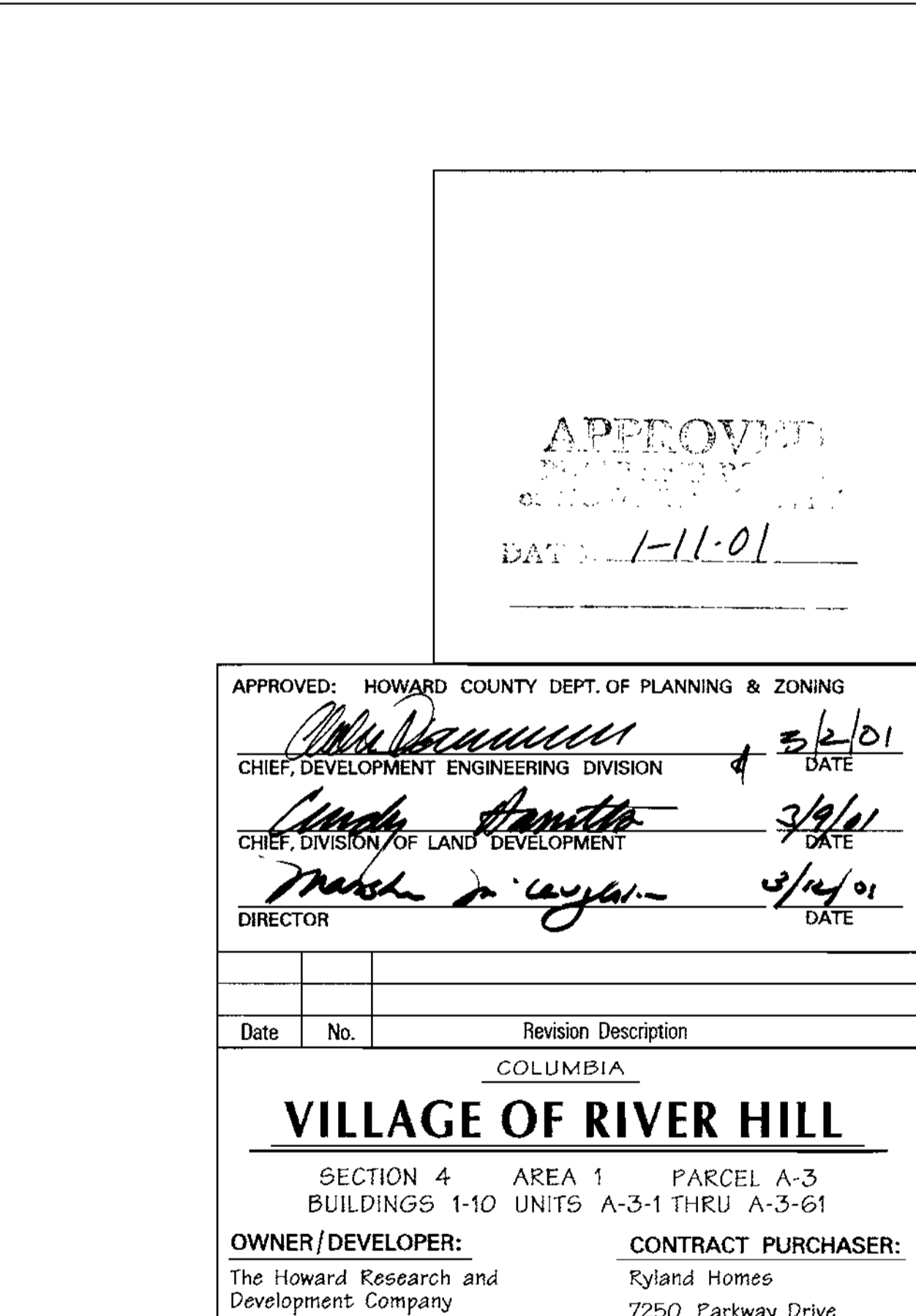
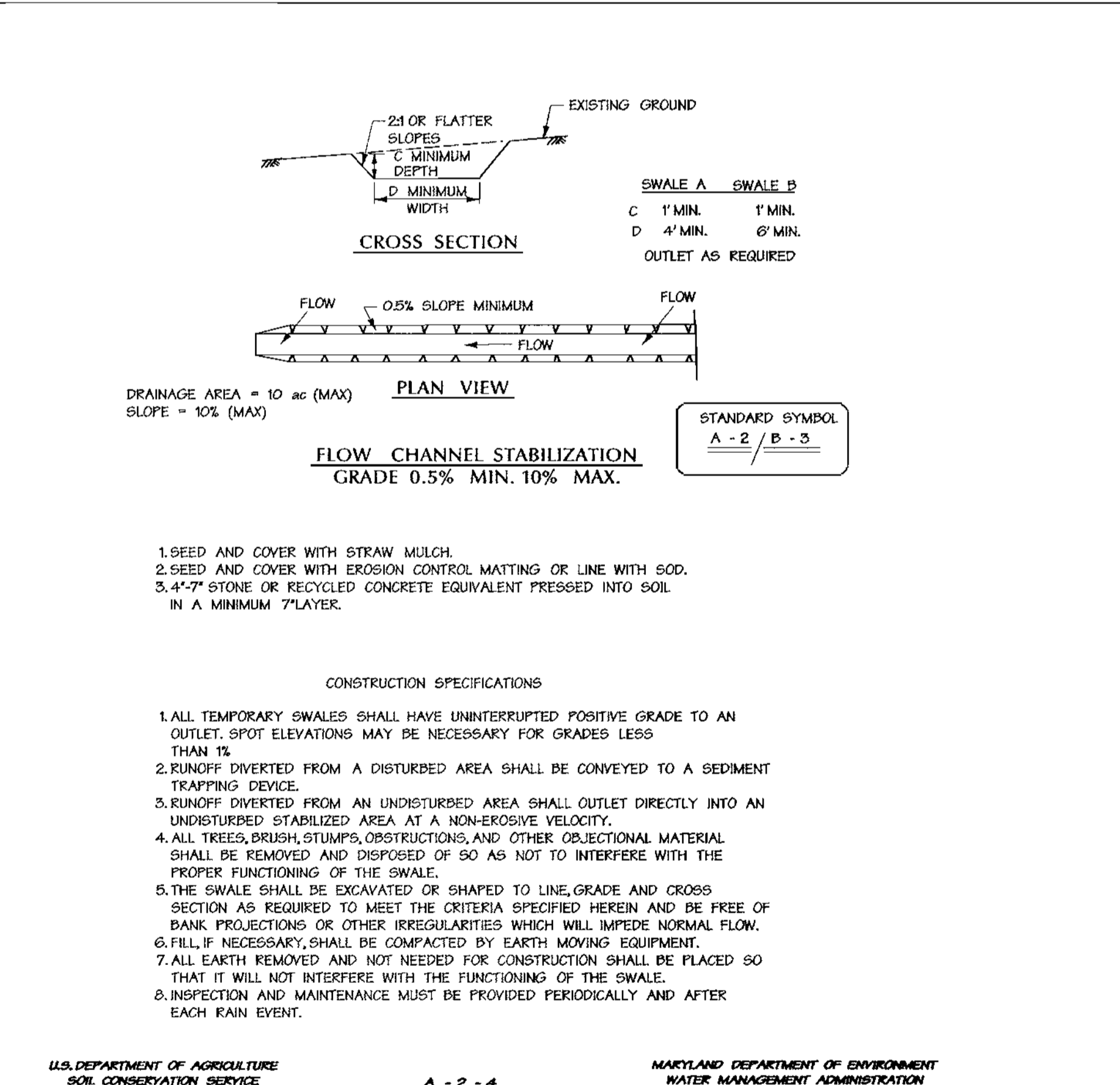
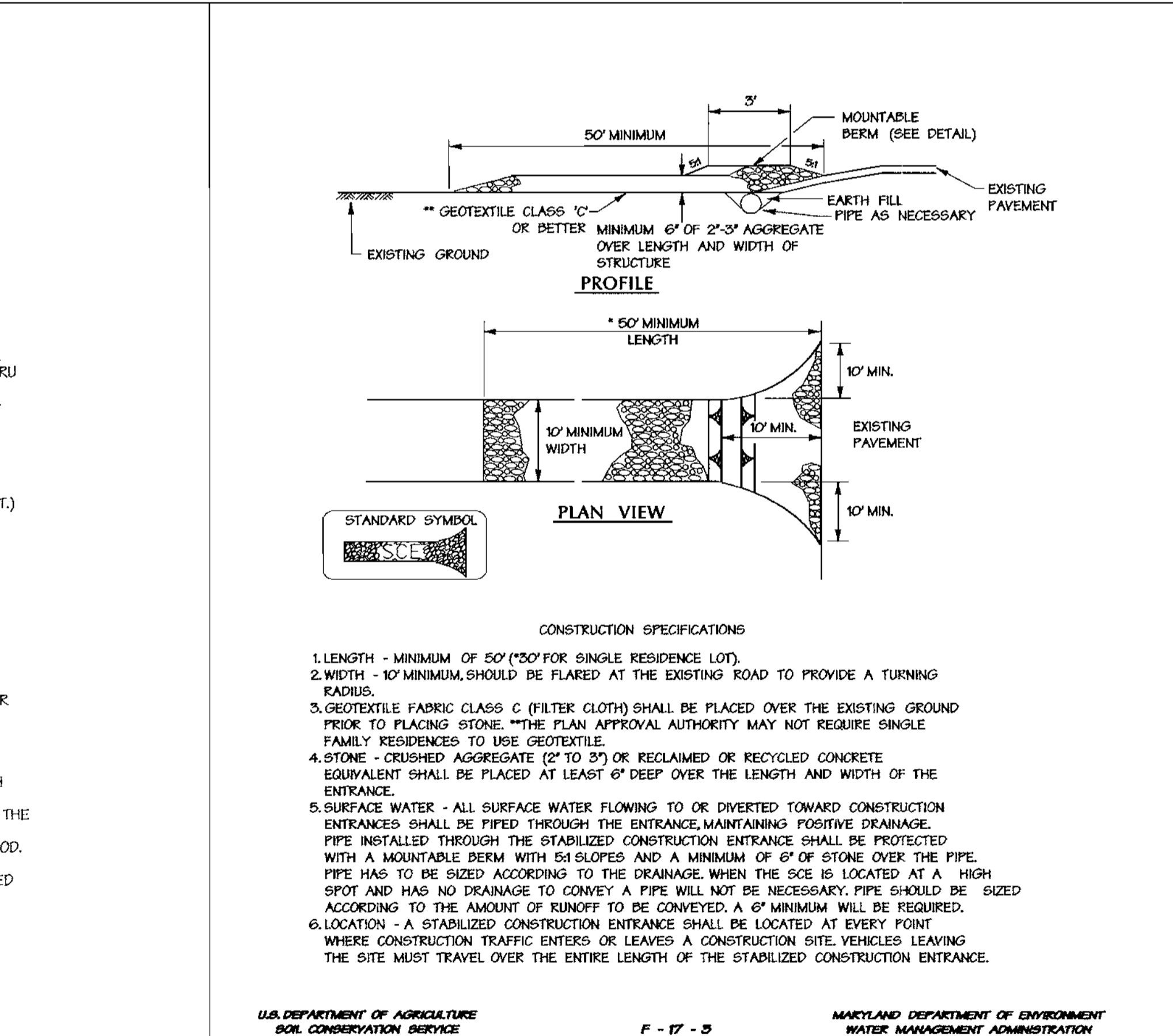
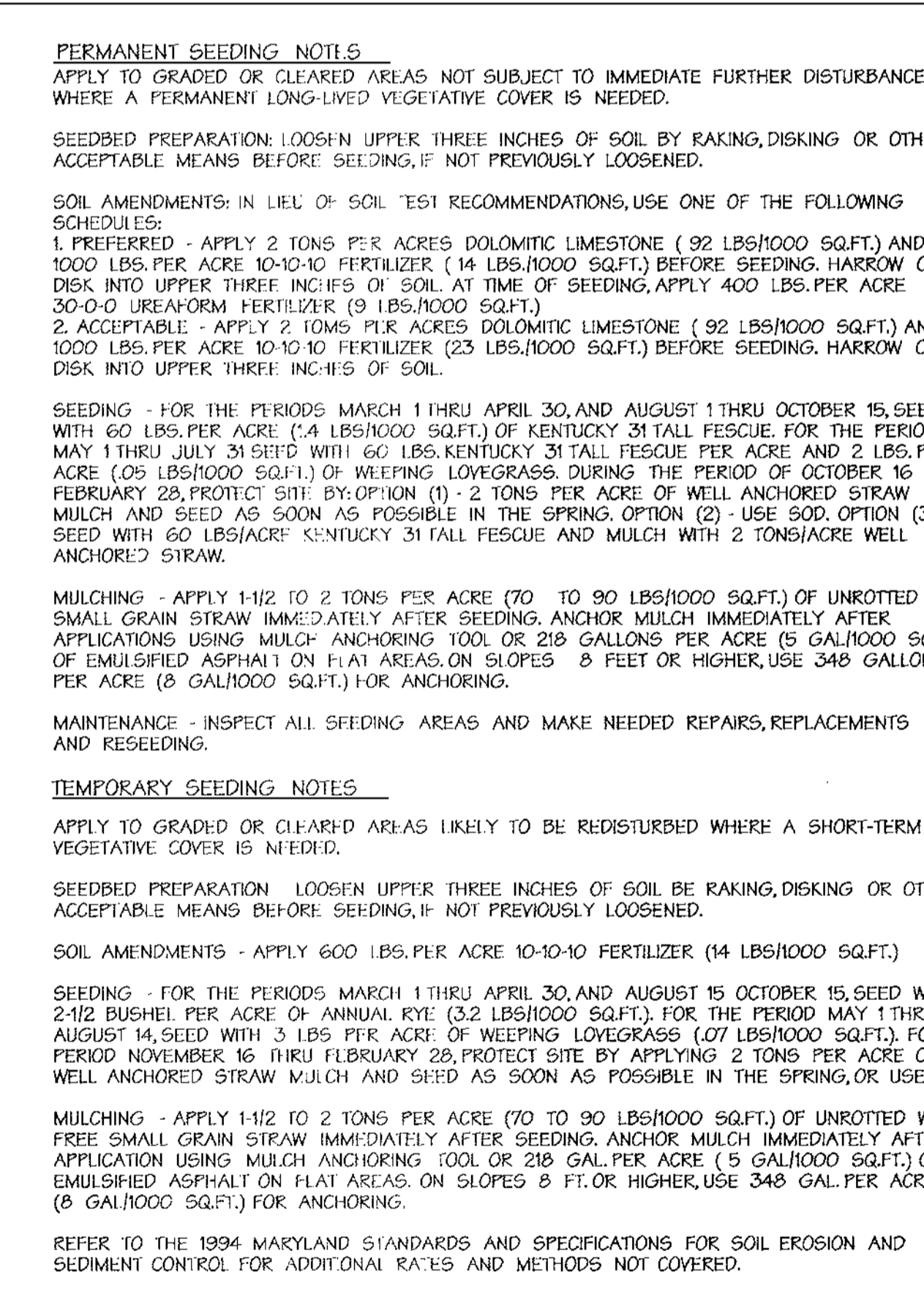
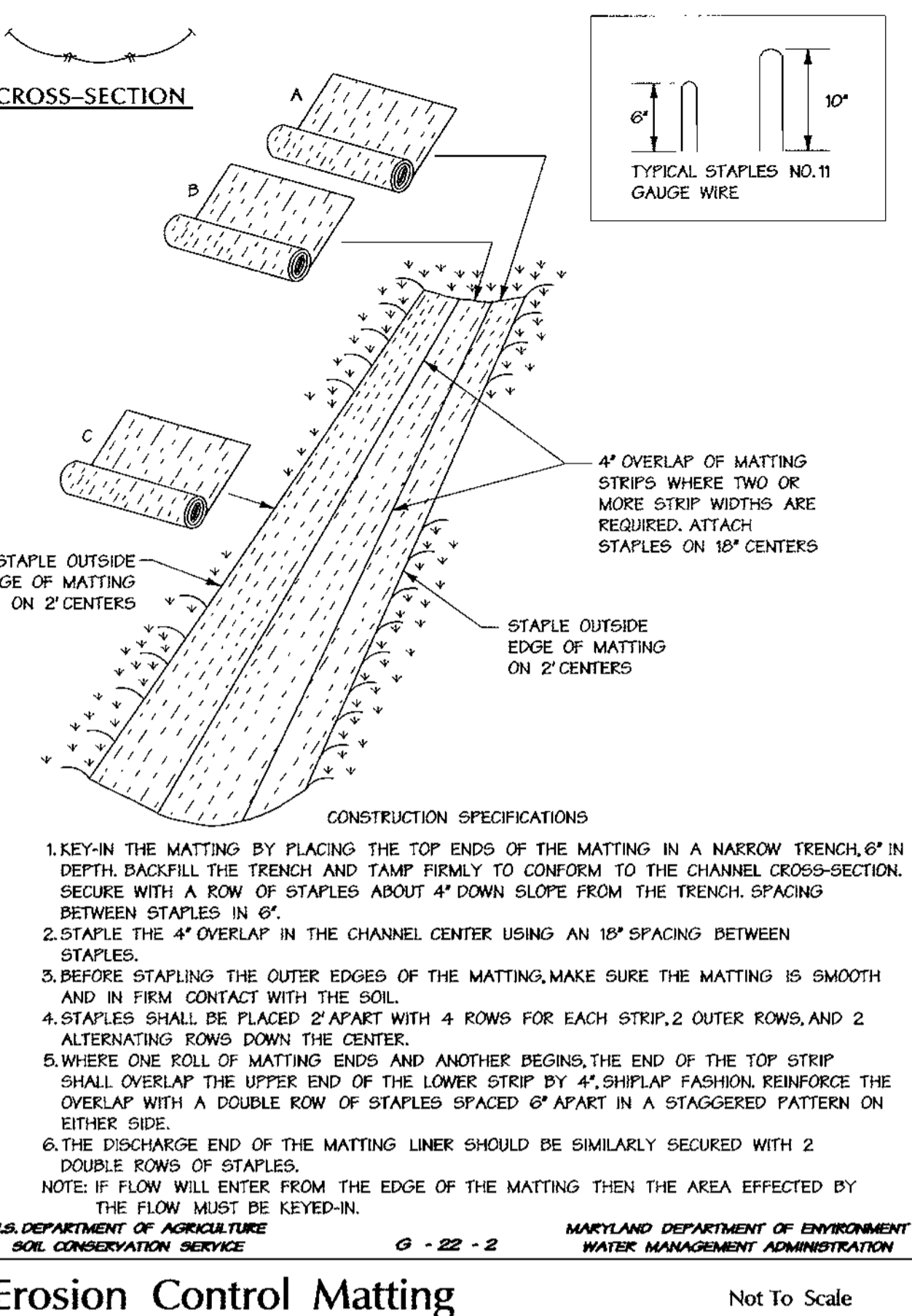
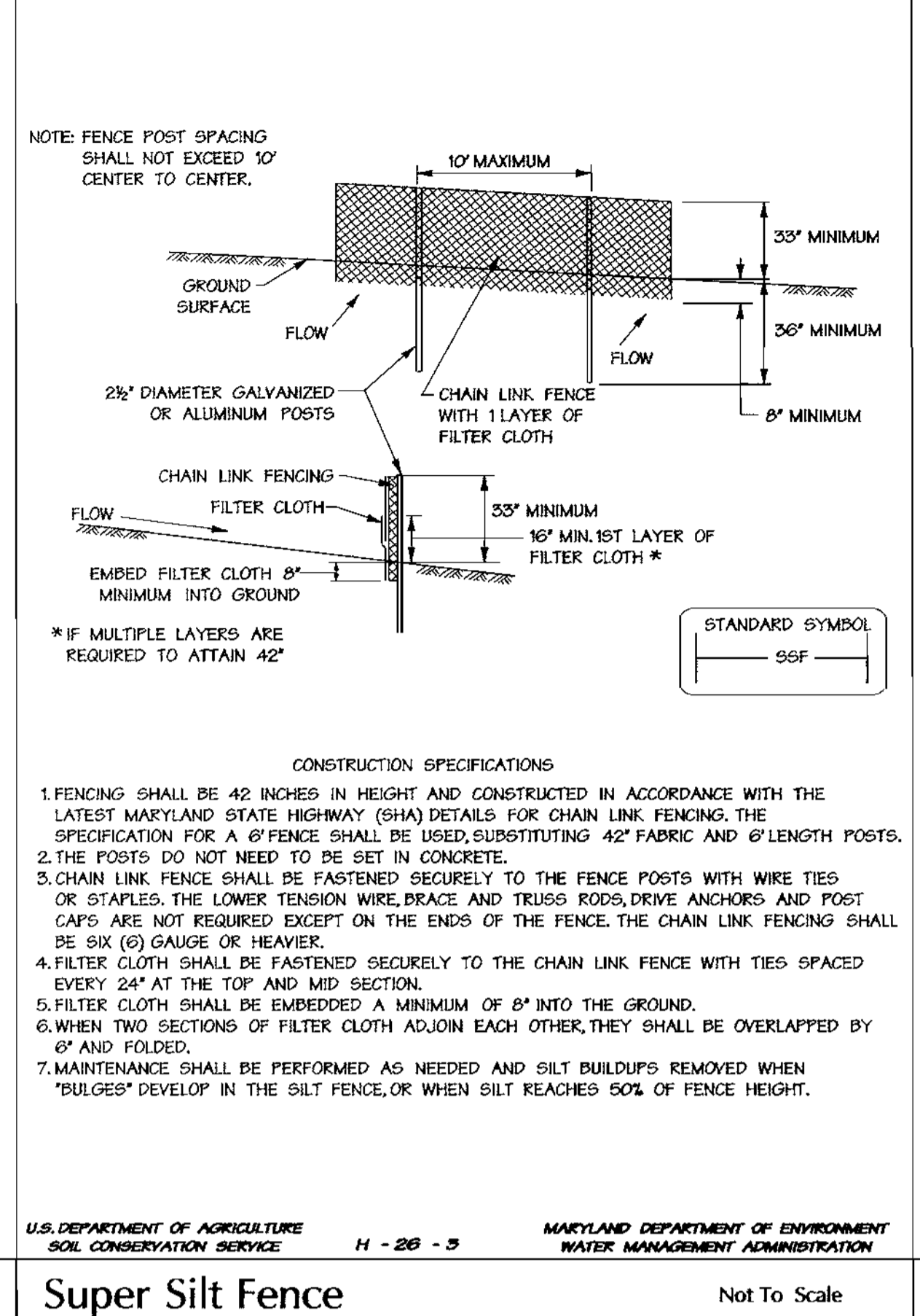
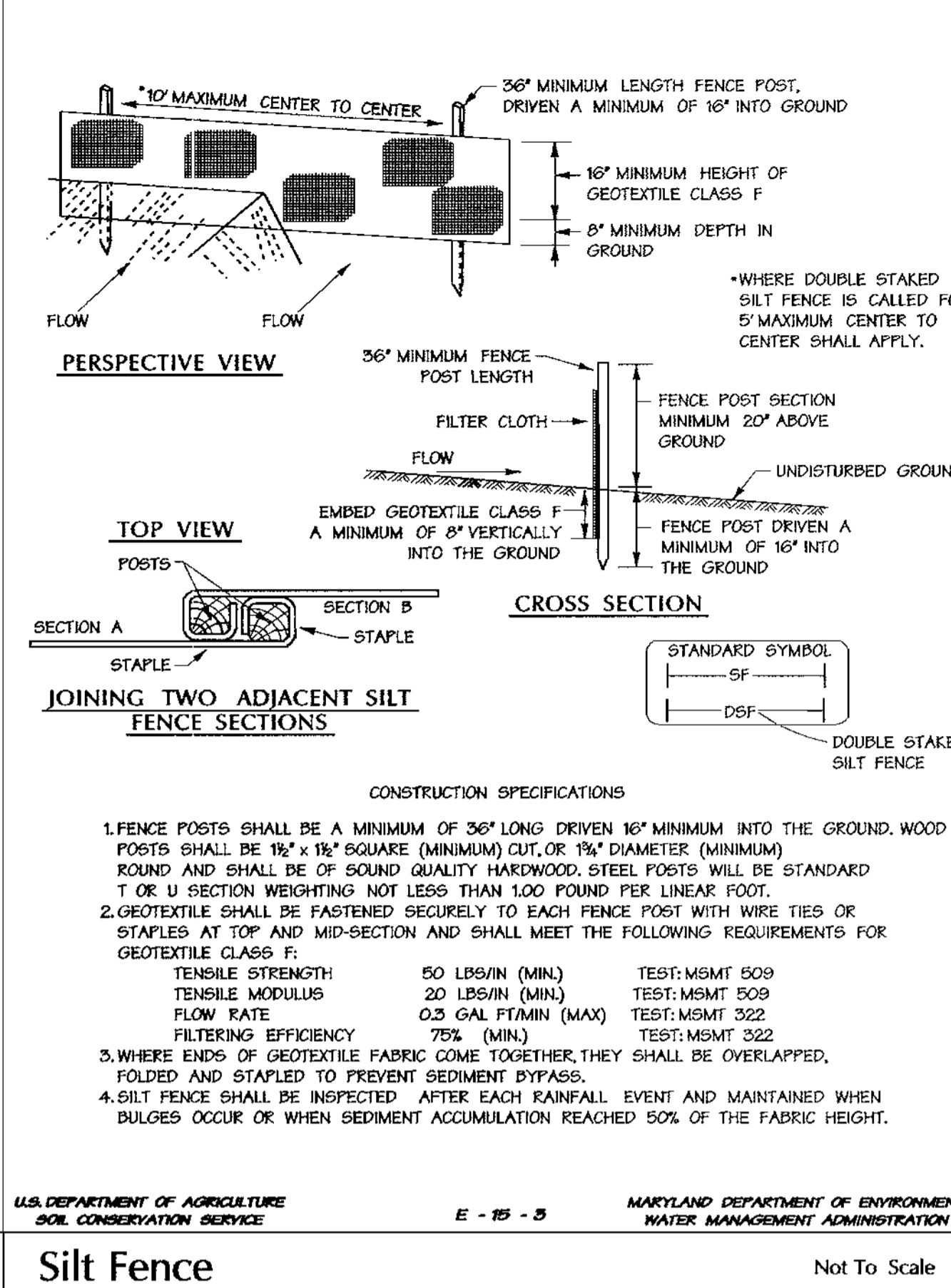
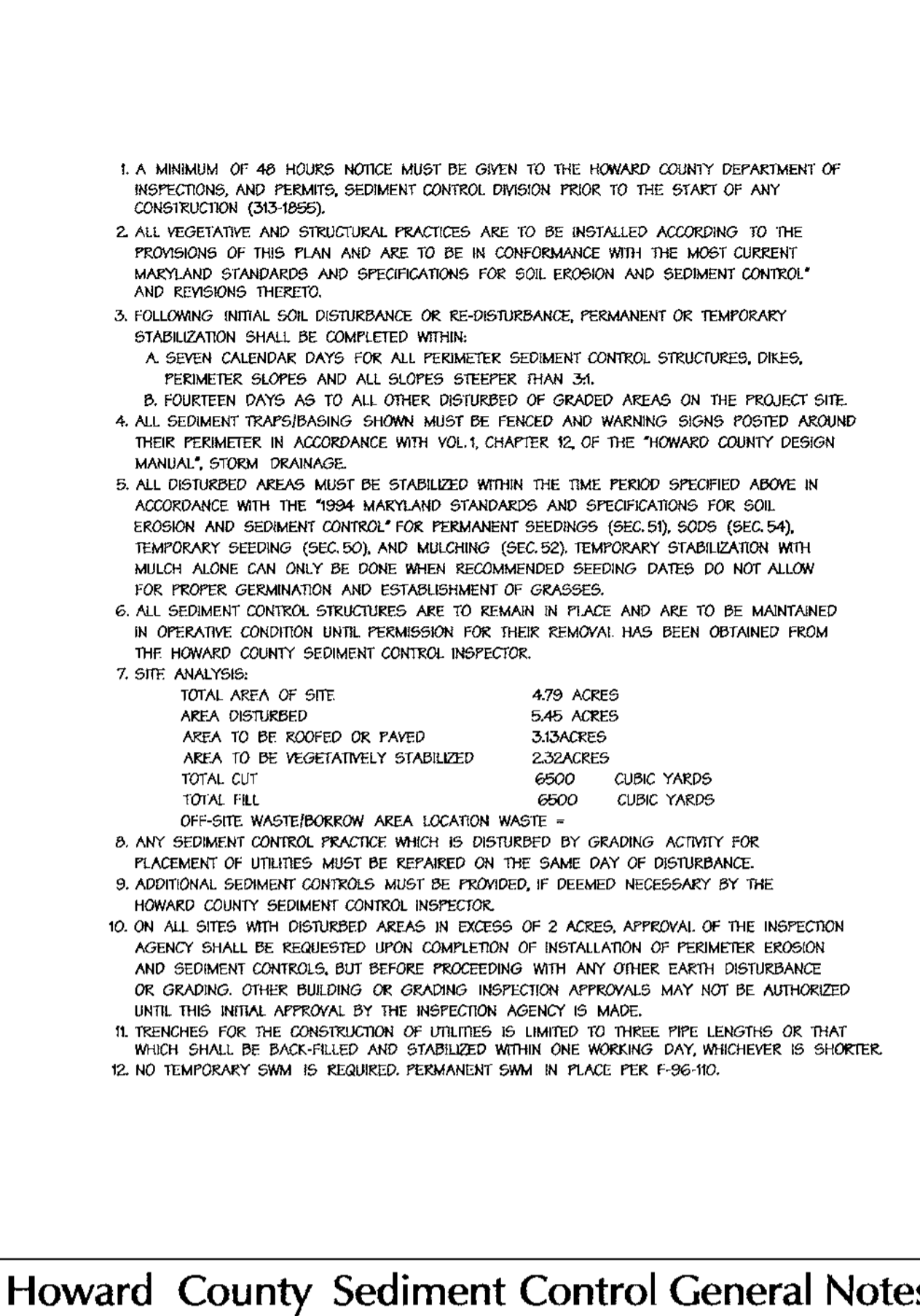
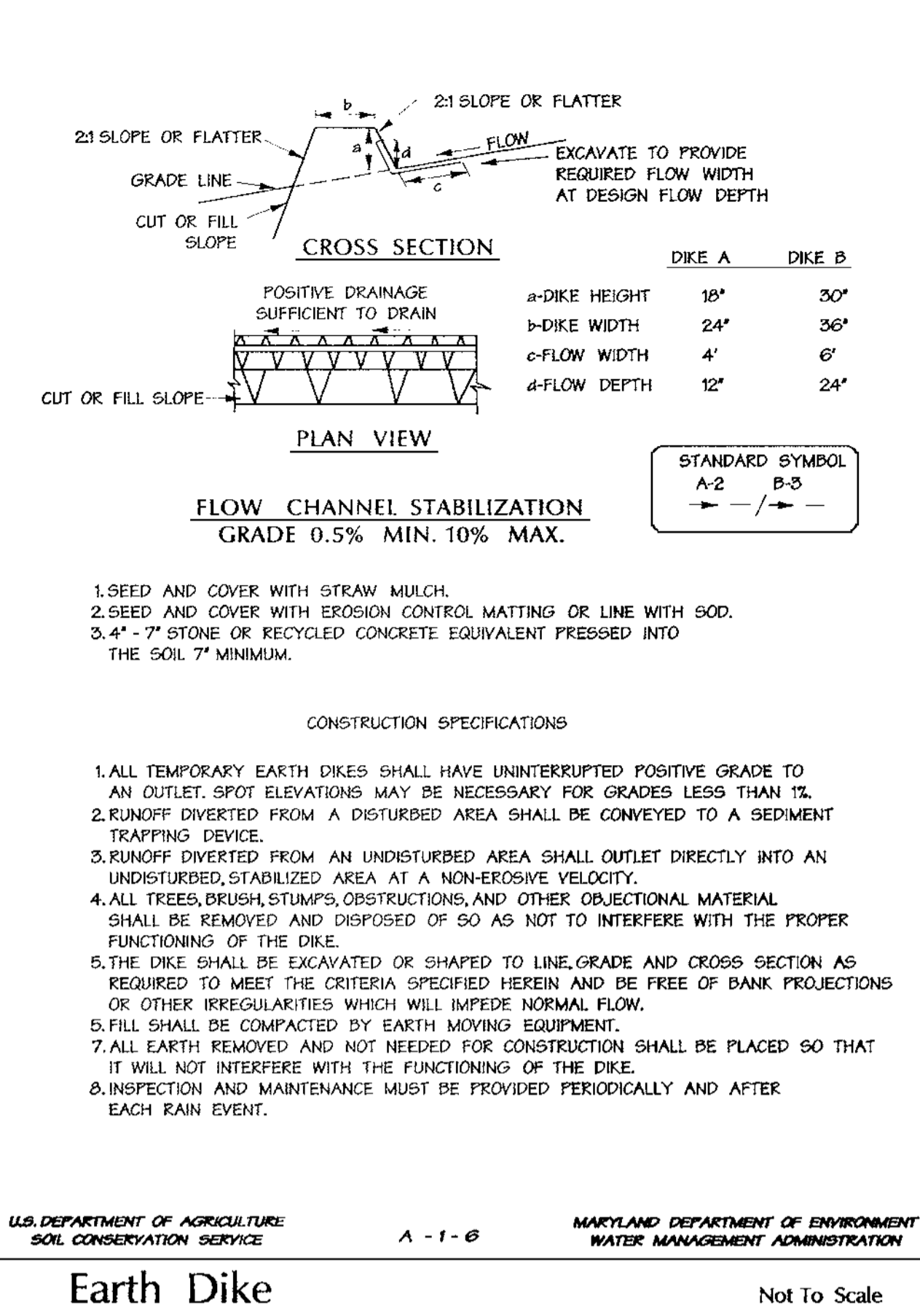
2/14/01 Date

DMW
Duff-McCune-Walker, Inc.
300 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4705

A Team of Land Planners, Landscape Architects, Golf Course Architects, Engineers, Surveyors & Environmental Professionals

TITLE: **EROSION and SEDIMENT CONTROL PLAN**

Des By: RTS Scale: 1"=30' Proj. No.: 00023
Dwn By: RTS Date: 2/15/01
Chk By: *tm* Approved: 9 of 16



DMW
Dart McCune Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3233
Fax 296-4705

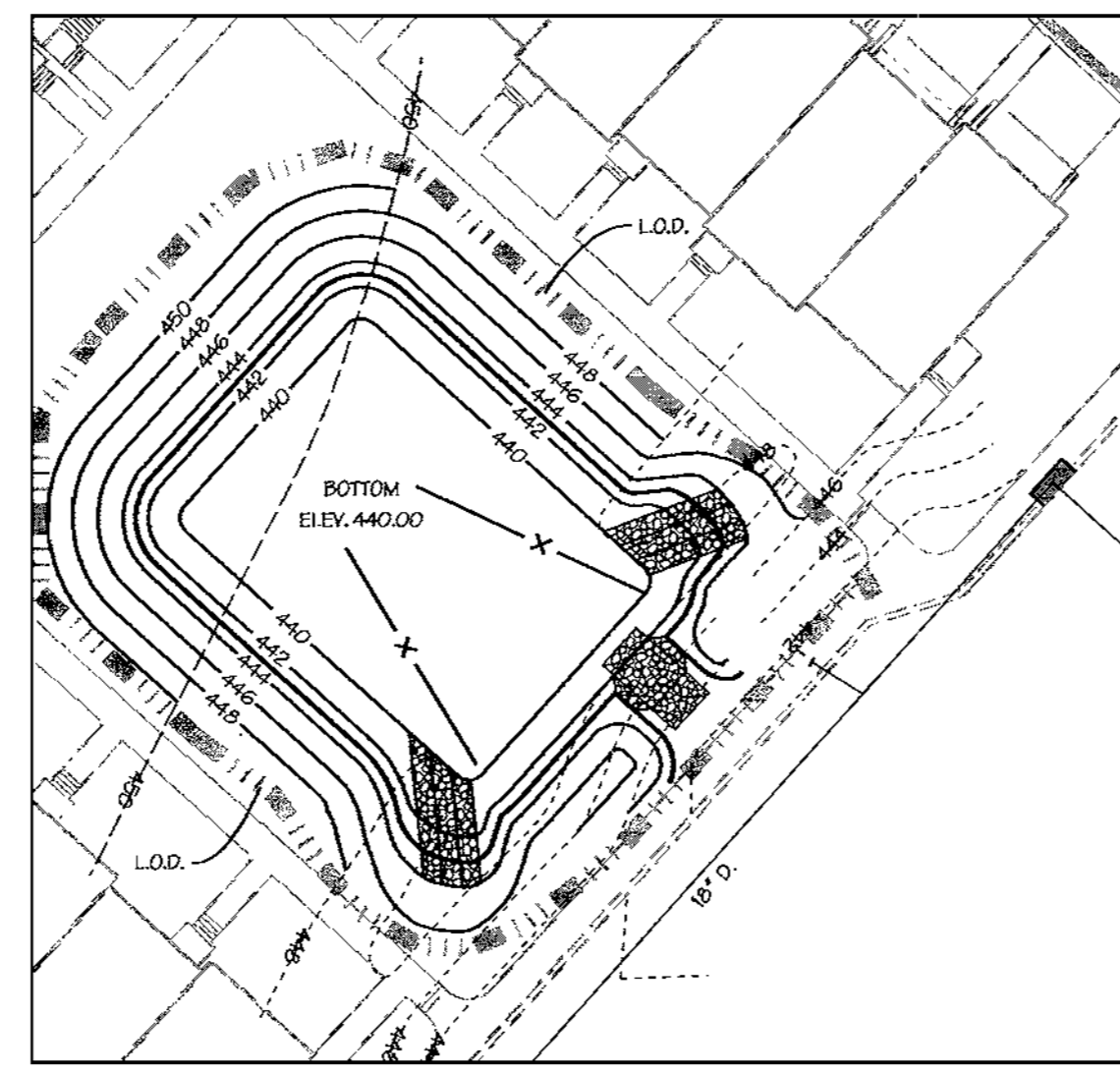
A Team of Land Planners, Landscape Architects, Golf Course Architects, Engineers, Surveyors & Environmental Professionals

Professional Engr. No. 2199B

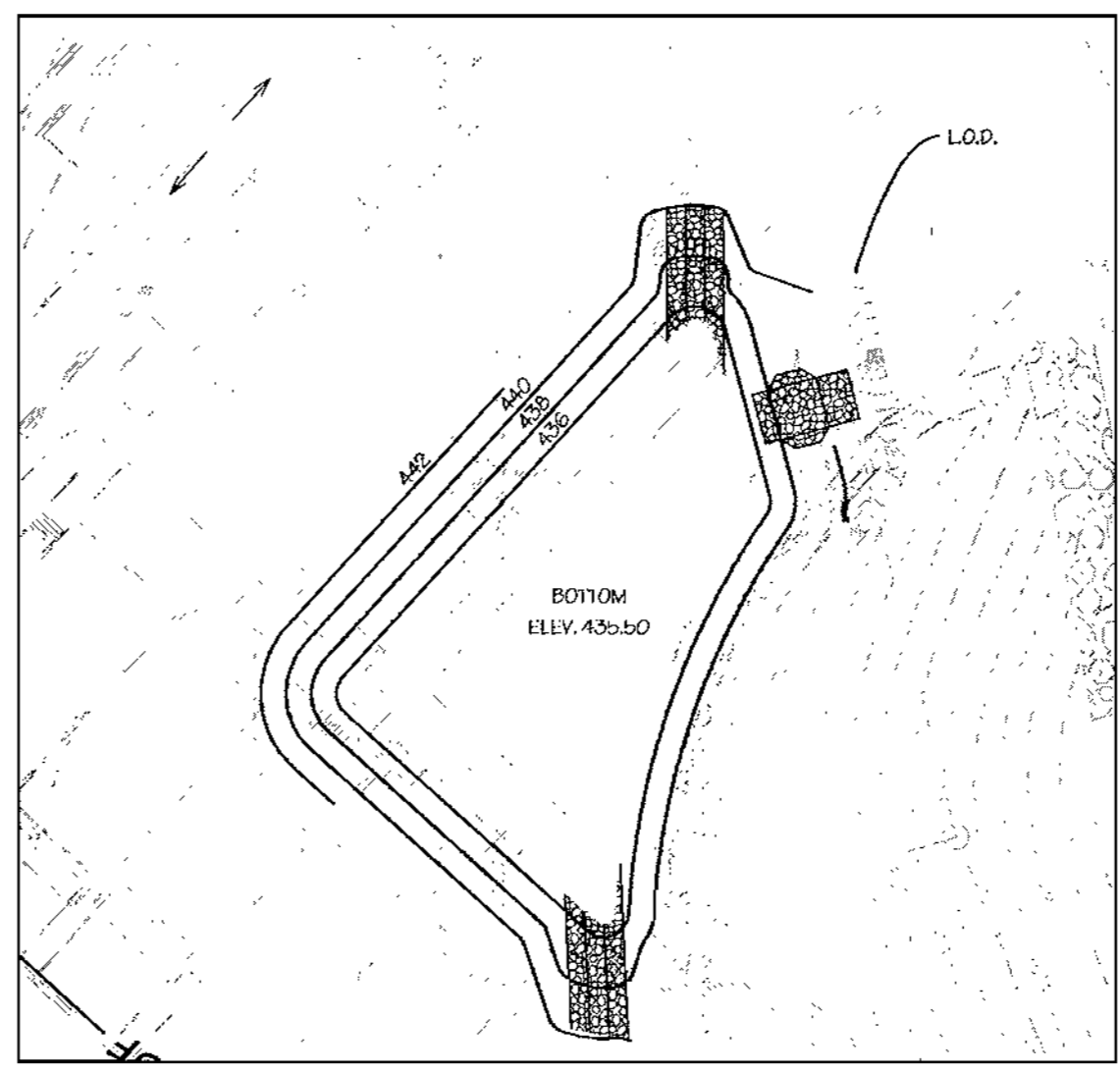
SDP 01-12

Tue Feb 13 22:04:42 2001 m:\00023\00023.scs

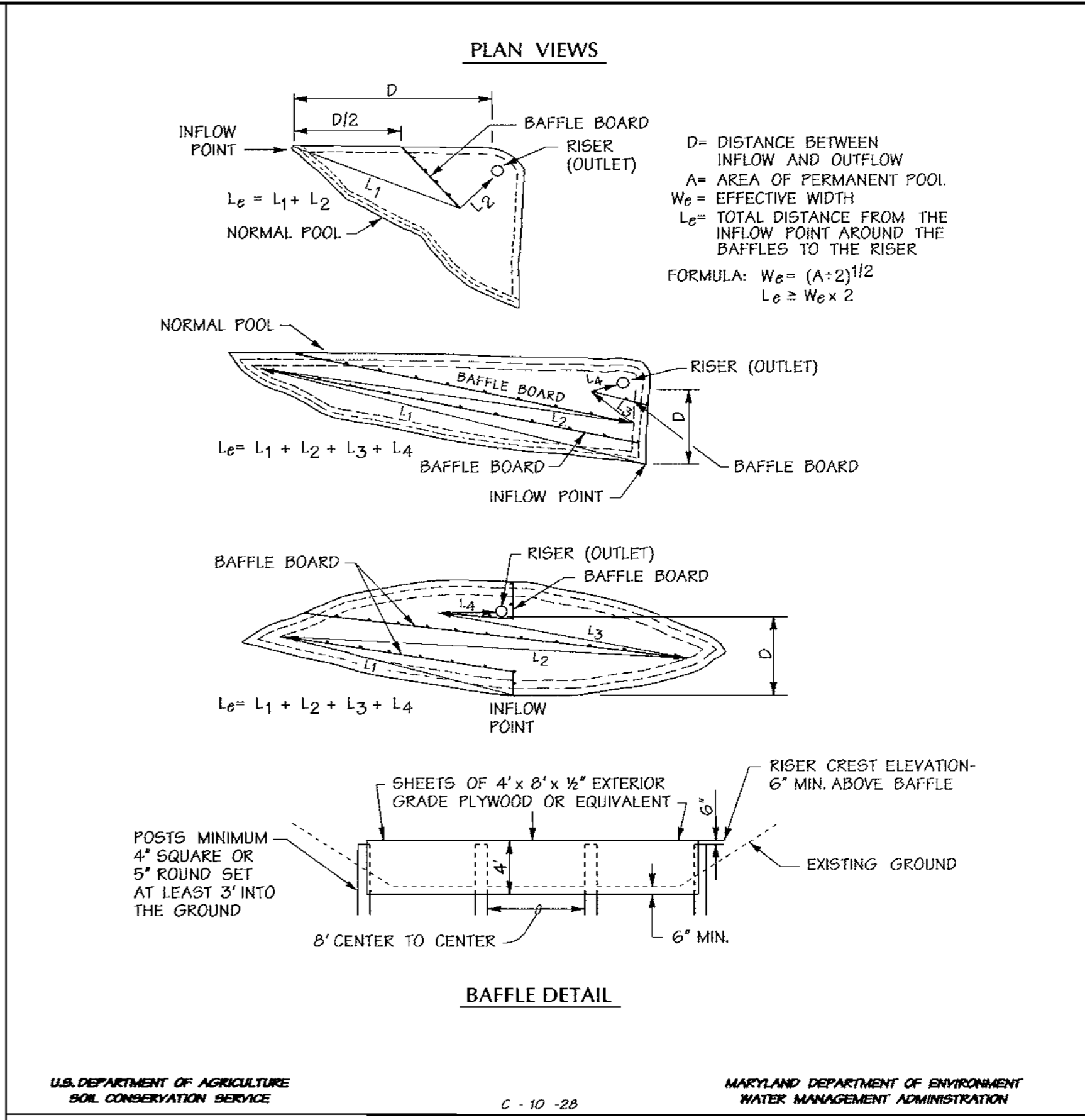
SEQUENCE	NO. OF DAYS
1. OBTAIN A GRADING PERMIT AND NOTIFY ALL APPROPRIATE AGENCIES 48 HOURS PRIOR TO BEGINNING ANY WORK.	7
2. CLEAR AND GRUB FOR CONSTRUCTION OF SEDIMENT TRAP #1 & #2 PER INITIAL TRAP GRADING DETAIL THIS SHEET. CONSTRUCT OUTFALL FOR SEDIMENT TRAP #1 AS INDICATED. INSTALL STORM DRAIN FROM I-7 TO I-6, I-6 TO M-4, I-5 TO M-4, M-4 TO EX. STUB AND I-8 TO EX. WYE. INSTALL INLET PROTECTION FOR I-8, I-7, I-6 AND I-5. EXTEND RIP-RAP TO I-8 AS SHOWN ON SHEET 9 OF '16. INSTALL TEMPORARY SWALE, SUPER FENCE DIVERSION, SILT FENCE AND EROSION CONTROL MATTING ALONG NORTHWEST PROPERTY LINE. TEMPORARY SWALE AND SUPER FENCE DIVERSION SHALL REMAIN IN PLACE UNTIL SUCH TIME AS VILLAGE OF RIVER HILL, SECTION 4, AREA 1, PARCEL A-1 IS DEVELOPED.	7
3. CLEAR AND GRUB FOR AND INSTALL REMAINING SEDIMENT CONTROL MEASURES.	14
4. WITH PERMISSION TO PROCEED FROM THE SEDIMENT CONTROL INSPECTOR, CLEAR, GRUB AND MASS GRADE SITE. ADJUST TRAP GRADING AS SHOWN ON ESC SHEET 9. PROVIDE DUST CONTROL PER CURRENT SPECIFICATIONS.	14
5. PROVIDE TEMPORARY SITE STABILIZATION AND BEGIN BUILDING FOUNDATION EXCAVATION AND ROUGH GRADING, EXCEPT IN AREA OF SEDIMENT TRAP.	30
6. INSTALL UTILITIES, PLACE INLET PROTECTION AT ALL INLETS. USE EXTREME CARE WORKING IN AREA OF WATER QUALITY FACILITY TO AVOID DEPOSITION OF SPOIL INTO THIS AREA.	45
7. FINE GRADE AND CONSTRUCT ROADS AND PARKING. STABILIZE ALL AREAS IMMEDIATELY AFTER COMPLETION.	45
8. CONSTRUCT SIDEWALKS AND INSTALL SURFACE PAVING FOR SITE.	30
9. WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT TRAP #2 AND CONSTRUCT REMAINING BUILDINGS AND INSTALL SILT FENCE BEHIND CURB ON HELMSMAN WAY AS SHOWN ON SHEET 9.	14
10. FINE GRADE AND STABILIZE DISTURBED AREAS ONSITE IN ACCORDANCE WITH CURRENT STANDARDS AND SPECIFICATIONS.	10
11. WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, REMOVE ALL SEDIMENT CONTROL MEASURES AND STABILIZE ALL REMAINING DISTURBED AREAS ONSITE.	14



INITIAL GRADING SEDIMENT TRAP #1
SCALE: 1"=30'



INITIAL GRADING SEDIMENT TRAP #2
SCALE: 1"=30'



Sediment Basin Baffles
Not To Scale

Sequence of Construction

2.0 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.

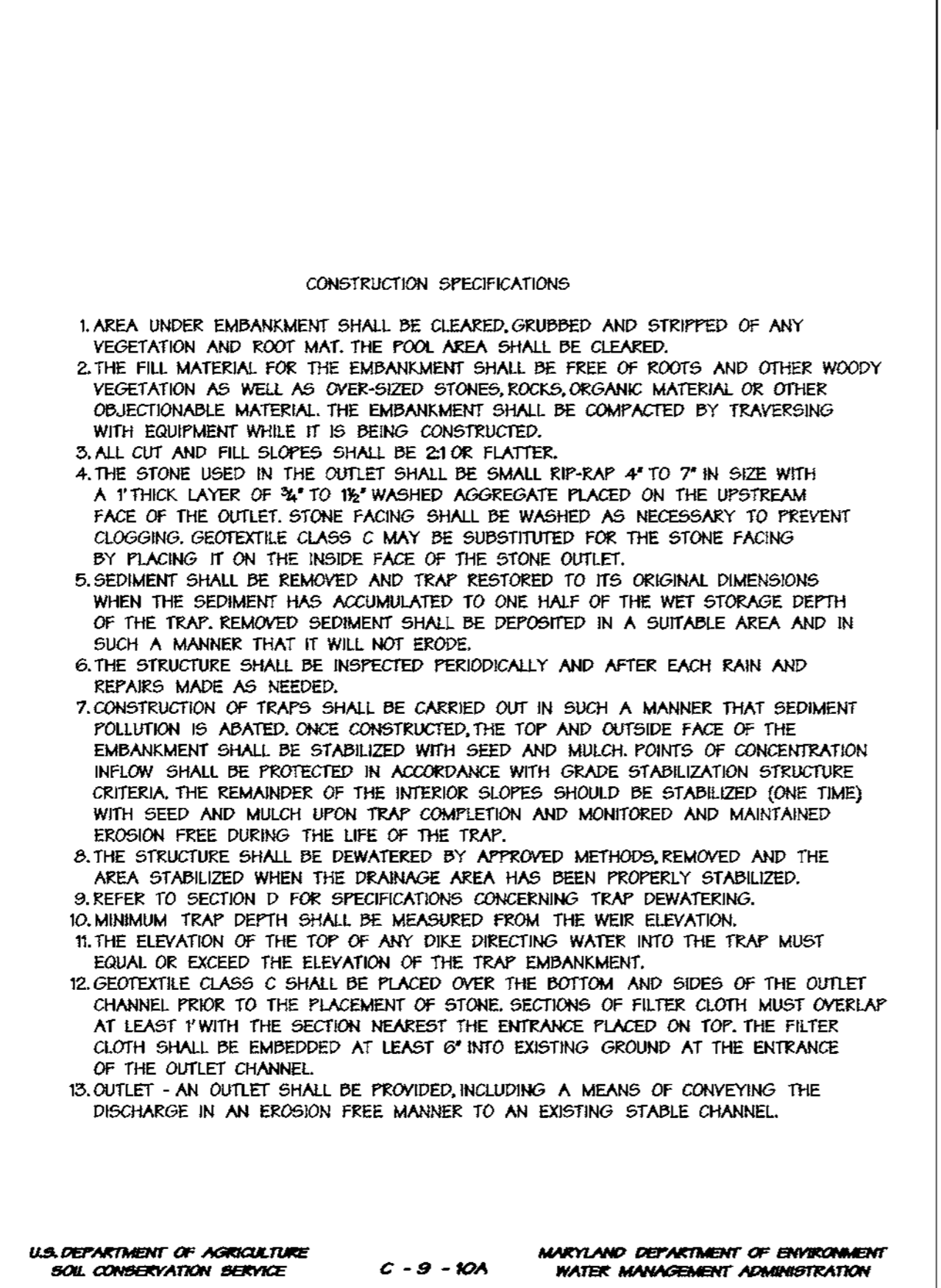
Conditions Where Practice Applies

- This practice is limited to areas having 2:1 or flatter slopes where:
 - The texture of the exposed subsoil parent material is not adequate to produce vegetative growth.
 - 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.
 - The original soil to be vegetated contains material toxic to plant growth.
 - The soil is so acidic that treatment with limestone is not feasible.
- 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.

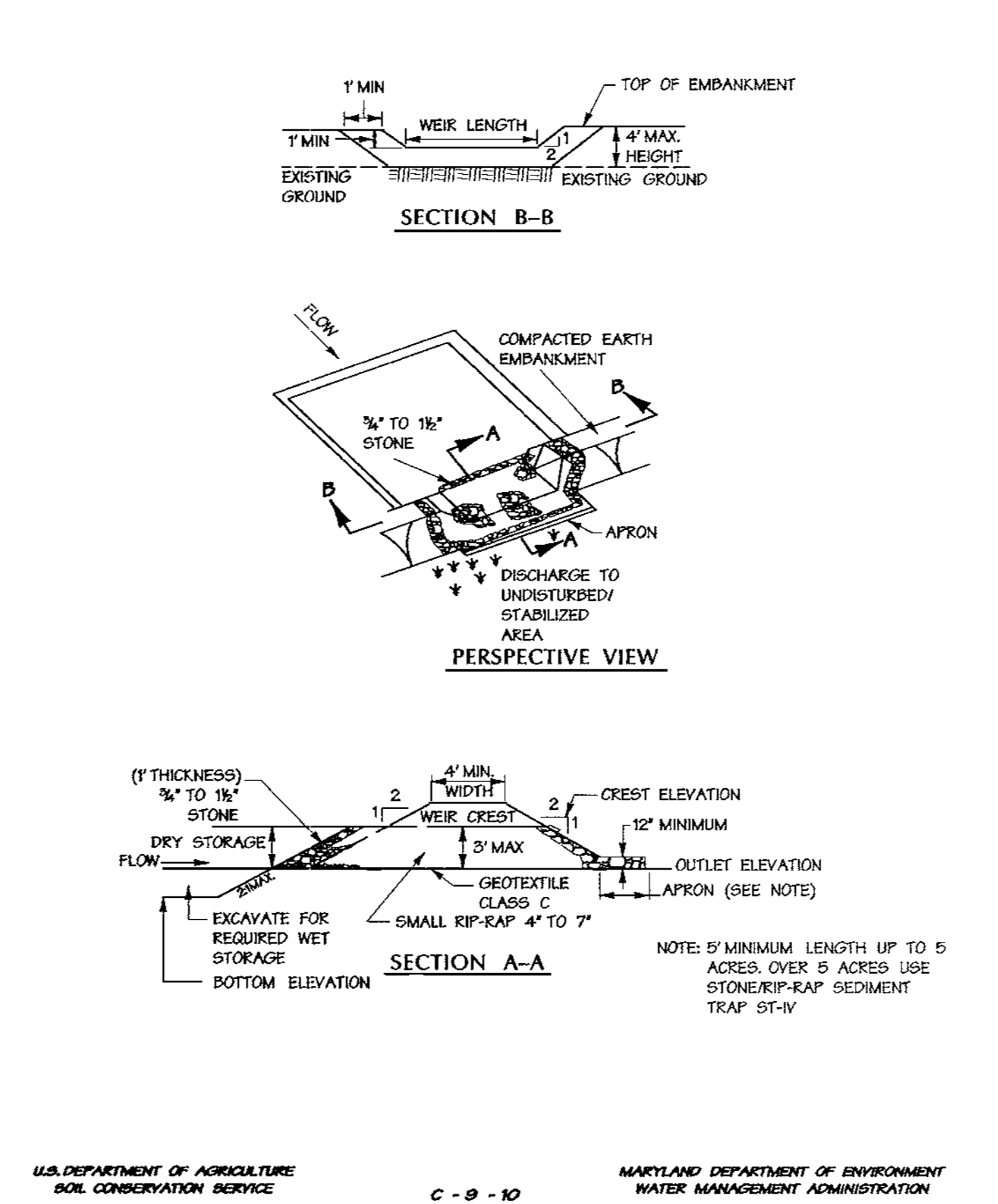
Construction and Material Specifications

- 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 Experiment Station.
- Topsoil Specifications - Soil to be used as topsoil must meet the following:
 - Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be mixture of contrasting textures, colors and shall contain less than 2% by volume of cinders, stones, glass, coarse fragments, gravel sticks, roots, trash, and other materials larger than 1/2" in diameter.
 - Topsoil must be free of plants or plant parts such as Bermuda grass, quackgrass, Johnsongrass, nutcracker, polio, ivy, thistle, or others as specified.
 - Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Limestone shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.
- For sites having disturbed areas under 5 acres:
 - Place topsoil (if required) and apply soil amendments as specified in 2.0.0 Vegetative Stabilization - Section I. Vegetative Stabilization Methods and Materials.
- For sites having disturbed areas over 5 acres:
 - 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.
 - Organic contents of topsoil shall be not less than 1.5 percent by weight.
 - Topsoil having soluble salt content greater than 500 parts per million shall not be used.
 - When topsoiling, maintain needed erosion and sediment control practices such as diversions, grade stabilization structures, farm dikes, silt fence and sediment traps and basins.
 - Grades on the areas to be topsoiled which have been previously established, shall be maintained, albeit 4% - 8% higher in elevation.
 - Topsoil shall be uniformly distributed in a 4% - 8% layer and lightly compacted to a minimum thickness of 2%. Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
 - Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

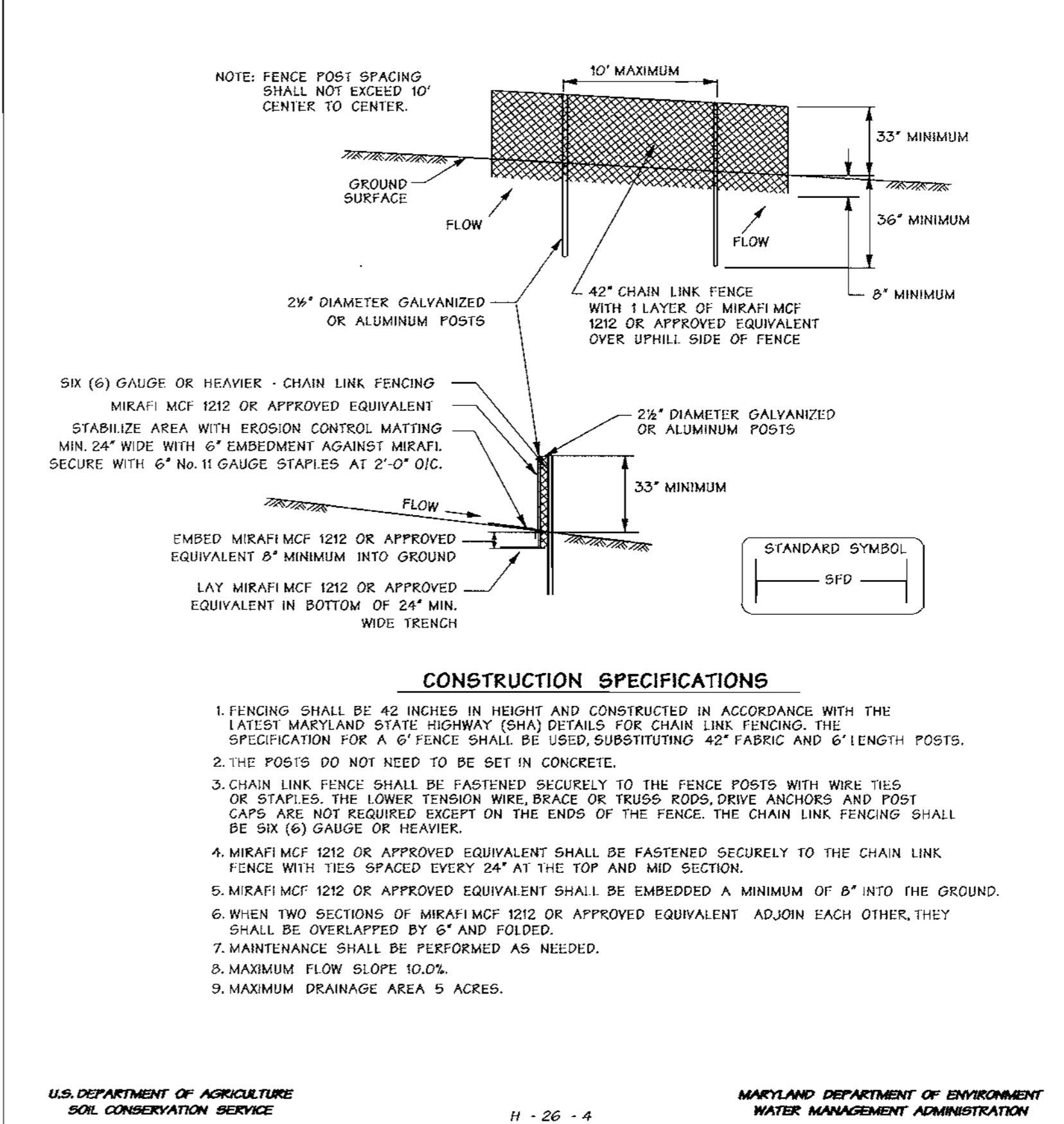
Top Soil Specifications



Stone Outlet Sediment Trap - ST II
Not To Scale



Stone Outlet Sediment Trap - ST II
Not To Scale



Super Fence Diversion
Not To Scale

REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS

Jim Mena 3/1/16
 U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE DATE

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

John Mena 3/1/16
 HOWARD S.C.D. DATE

DEVELOPER'S CERTIFICATION:

"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 INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

David Schiller 2/14/16
 SIGNATURE OF DEVELOPER PRINT NAME BELOW SIGNATURE DATE

Will R. DeHaven 2/14/16
 SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE) DATE

ENGINEERS CERTIFICATE:

"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."

Will R. DeHaven 2/14/16
 SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE) DATE

Professional Engr. No. 21998

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

Chris Hamilton 3/2/16
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Mark R. Layton 3/2/16
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Mark R. Layton 3/2/16
 DIRECTOR DATE

Date No. Revision Description

COLUMBIA

VILLAGE OF RIVER HILL

SECTION 4 AREA 1 PARCEL A-3
 BUILDINGS 1-10 UNITS A-3-1 THRU A-3-61

OWNER/DEVELOPER: The Howard Research and Development Company
 10275 Little Patuxent Parkway
 Columbia, Maryland 21044

CONTRACT PURCHASER: Ryland Homes
 7250 Parkway Drive
 Suite 520
 Columbia, Maryland 21076

DMW
 Dan McCune-Walker, Inc.
 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 296-3333
 Fax: 296-4706

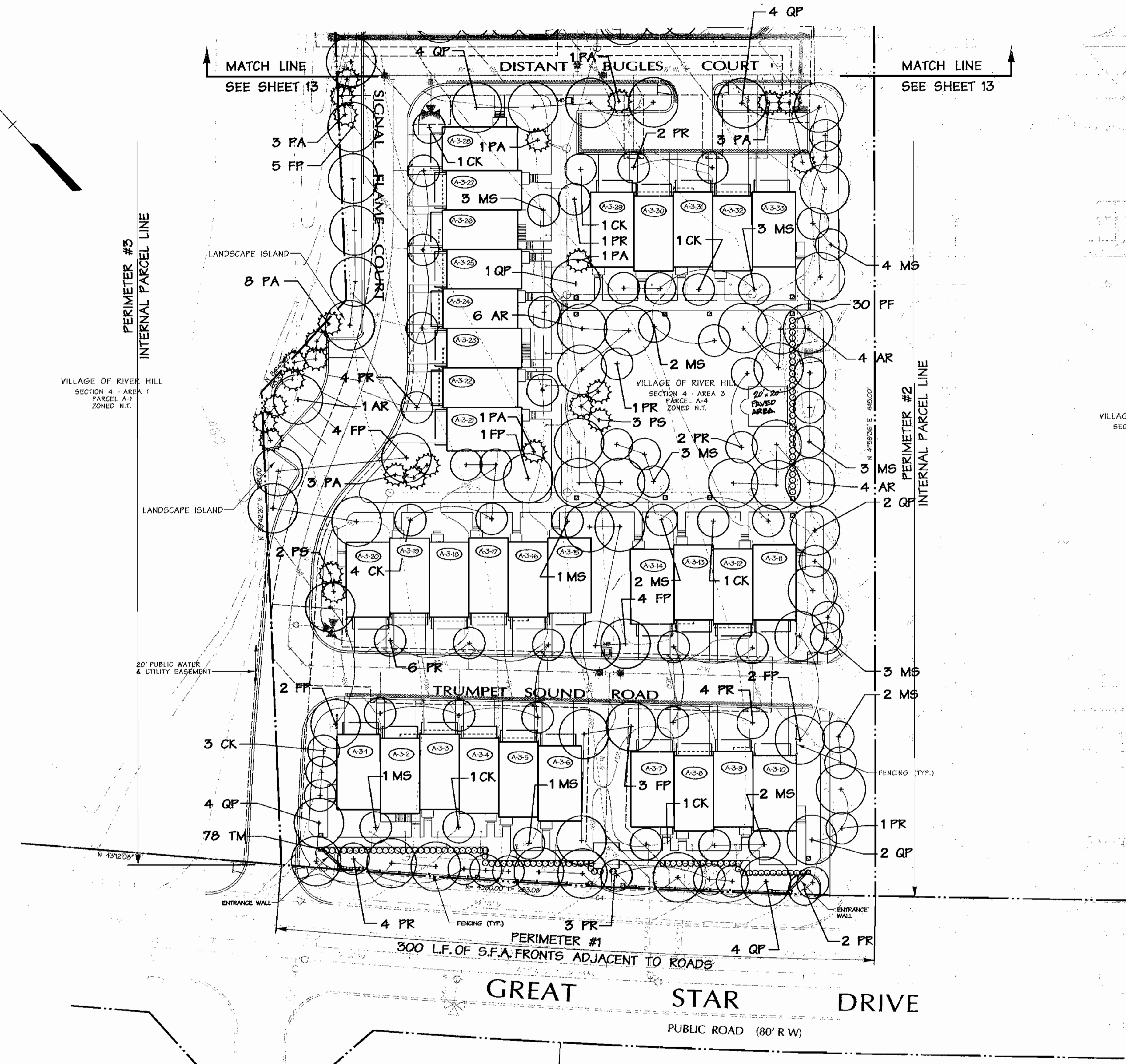
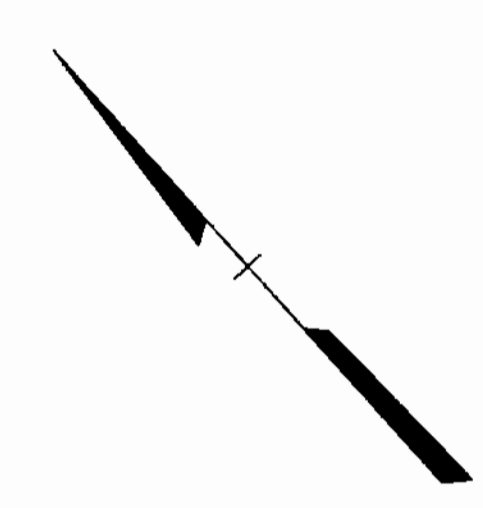
A Team of Land Planners, Landscape Architects, Golf Course Architects, Engineers, Surveyors & Environmental Professionals

TITLE: EROSION and SEDIMENT CONTROL DETAILS

Des By: RTS Scale: As Shown Proj. No.: 00023

Dwn By: MSS Date: 2/15/16

Chk By: *my* Approved: 11 of 16



- GENERAL PLANTING NOTES**
- All plant material to meet A.A.N. Standards, *and* County Landscape Manual
 - Landscape Contractor to follow landscape specification guidelines for Baltimore Washington Metro area approved by LCAMW *and* County Landscape Manual.
 - No substitutions to be made without consent of Landscape Architect or Owner, and approved by the Co. Dept. of Planning & Zoning.
 - All beds to be topped with three inches of hardwood mulch.
 - Landscape Contractor to verify location of utilities with Owner before planting.
 - Landscape Architect/Owner shall select, verify and/or approve all plant material. At Owner's discretion, specimen and other plant material will be selected. **Any changes must be approved by the Co. P.Z.**
 - Landscape Contractor shall coordinate plant bed filling operations and plant material installation with General Contractor and Utilities Contractor. At the time of final inspection with acceptance, all electric, water, drainage, and fountain utilities, as well as all plant materials, shall remain undamaged. Likewise, Landscape Contractor and Utilities Contractor shall coordinate efforts to ensure that surface utilities are at the proper elevation relative to final grades.
 - Contractor shall notify Miss Utility 72 hours prior to construction.
 - The owner, tenant, and/or their agents shall be responsible for maintenance of the required landscaping, including both plant materials and berms, fences and walls. All plant materials shall be maintained in good growing condition, and when necessary, replaced with new materials to ensure continued compliance with applicable regulations. All other required landscaping shall be permanently maintained in good condition, and when necessary, repaired or replaced.
 - Lighting shown is approximate.
 - This plan has been prepared in accordance with the provisions of Section 16.124 of the Ho. Co. code per the new 10th alternative compliance method. Financial surety for the required landscaping in the amount of \$37,950.00 must be posted as part of the developer's agreement. (120 shade and 13 overgreen)

DEVELOPERS/BUILDERS CERTIFICATION

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 material, will be submitted to the Department of Planning and Zoning.

NAME: *David Callahan* DATE: *3/14/01*

APPROVED: *[Signature]*
DATE: *1-11-01*

SCHEDULE A
PERIMETER LANDSCAPE EDGE
(PERIMETER #4)

Category	Adjacent to Perimeter Properties (Perimeter #4)
Landscape Type	C
Linear Feet of Roadway Frontage/Perimeter	265
Credit for Existing Vegetation (Yes, No, Linear Feet) (Describe below if needed)	NA
Credit for Wall, Fence or Berm (Yes, No, Linear Feet) (Describe below if needed)	NA
Number of Plants Required Shade Trees Evergreen Trees Shrubs	7 13
Number of Plants Provided Shade Trees Evergreen Trees Other Trees (2:1 substitution) Shrubs (10:1 substitution)	7 13

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

[Signature] 3/2/01
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 3/9/01
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 3/14/01
DIRECTOR DATE

Date	No.	Revision Description
		COLUMBIA

VILLAGE OF RIVER HILL

SECTION 4 AREA 1 PARCEL A-3
BUILDINGS 1-10 UNITS A-3-1 THRU A-3-61

OWNER/DEVELOPER: The Howard Research and Development Company
10275 Little Patuxent Parkway
Columbia, Maryland 21044

CONTRACT PURCHASER: Ryland Homes
7250 Parkway Drive
Suite 520
Columbia, Maryland 21076

PLANT LIST

KEY	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	CONDITION	REMARKS
Major Deciduous Tree:						
AR	25	Acer rubrum 'October Glory'	Red Maple	3'-3 1/2' Cal.	D&B	Full
FP	27	Fraxinus pennsylvanica 'Marshall's Seedless'	Marshall's Seedless Ash	3'-3 1/2' Cal.	D&B	Full
QP	24	Quercus phellos	Willow Oak	3'-3 1/2' Cal.	D&B	Full
Minor Deciduous Tree:						
CK	22	Cornus kousa	Kousa Dogwood	2'-2 1/2' Cal.	D&B	Full
MS	36	Magnolia soulangeana	Saucer Magnolia	2'-2 1/2' Cal.	D&B	Full
PR	55	Prunus serrulata 'Kwanzan'	Kwanzan Cherry	2'-2 1/2' Cal.	D&B	Full
Evergreen:						
PA	22	Picea abies excelsa	Norway Spruce	7'-9' Ht.	D&B	Full
PS	45	Pinus strobus	White Pine	7'-9' Ht.	D&B	Full
Shrub:						
FP	30	Photinia x fraseri	Fraser Photinia Red Tip	24' Ht.	Container	3' O.C.
TM	180	Taxus x media 'Hicksii'	Upright Yew	24' Ht.	Container	3' O.C.

PRIVATE DRIVE REQUIREMENTS

REQUIRED =
1900' L.F. OF PRIVATE DRIVE
(SIGNAL FLAME COURT, DISTANT BUGLES COURT,
HELMSMAN WAY) DIVIDED BY 40 = 50

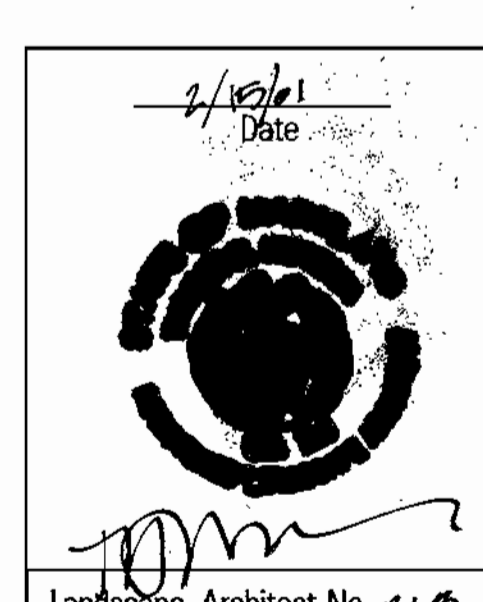
PROVIDED = 50 SHADE TREES

SCHEDULE B
PARKING LOT INTERNAL LANDSCAPING

Number of Parking Spaces	14
Number of Trees Required (1 Tree/10 sp.)	1.5
Number of Trees Provided Shade Trees Other Trees (2:1 substitution)	2

SCHEDULE C
RESIDENTIAL DEVELOPMENT INTERNAL LANDSCAPING

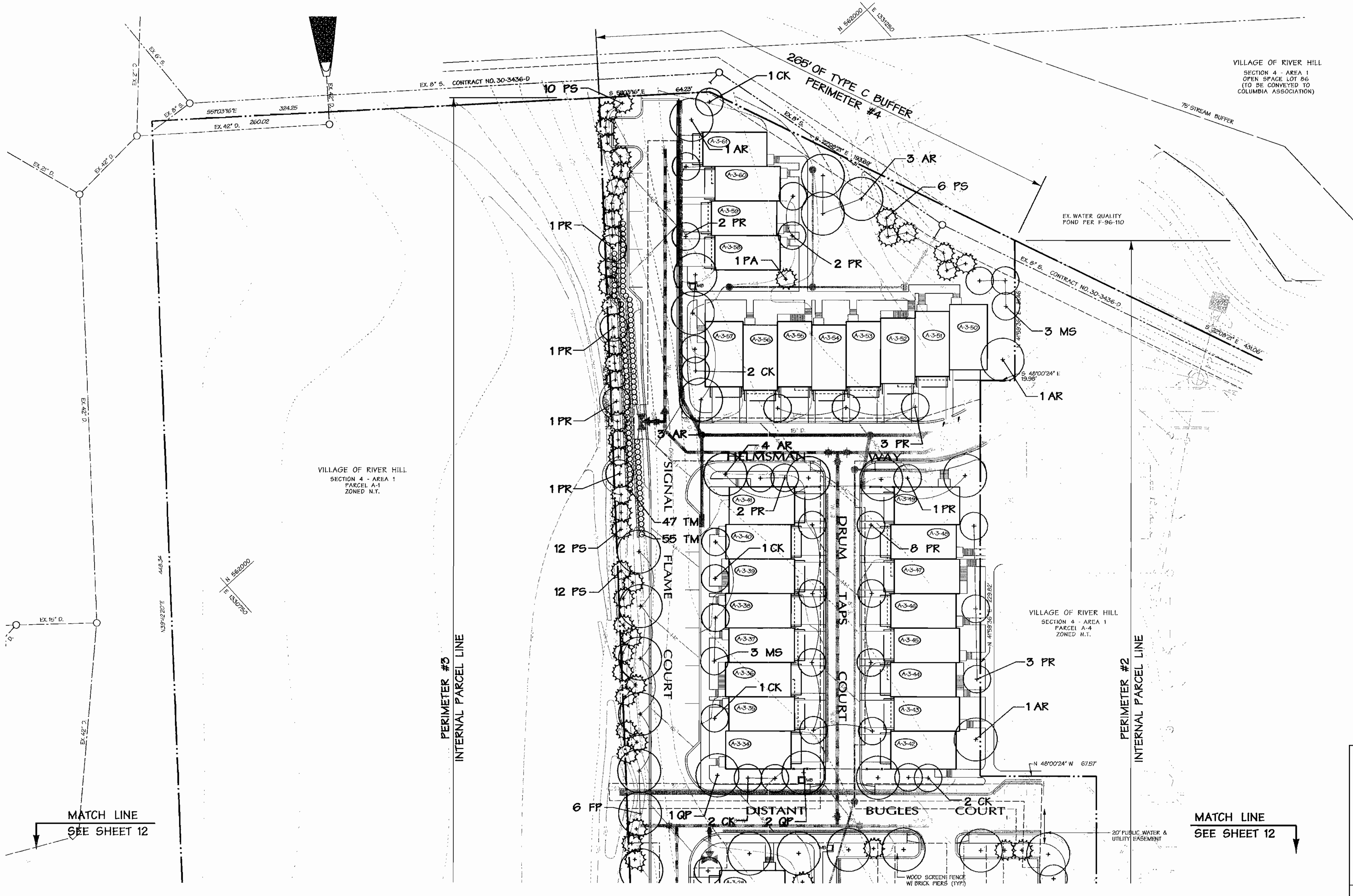
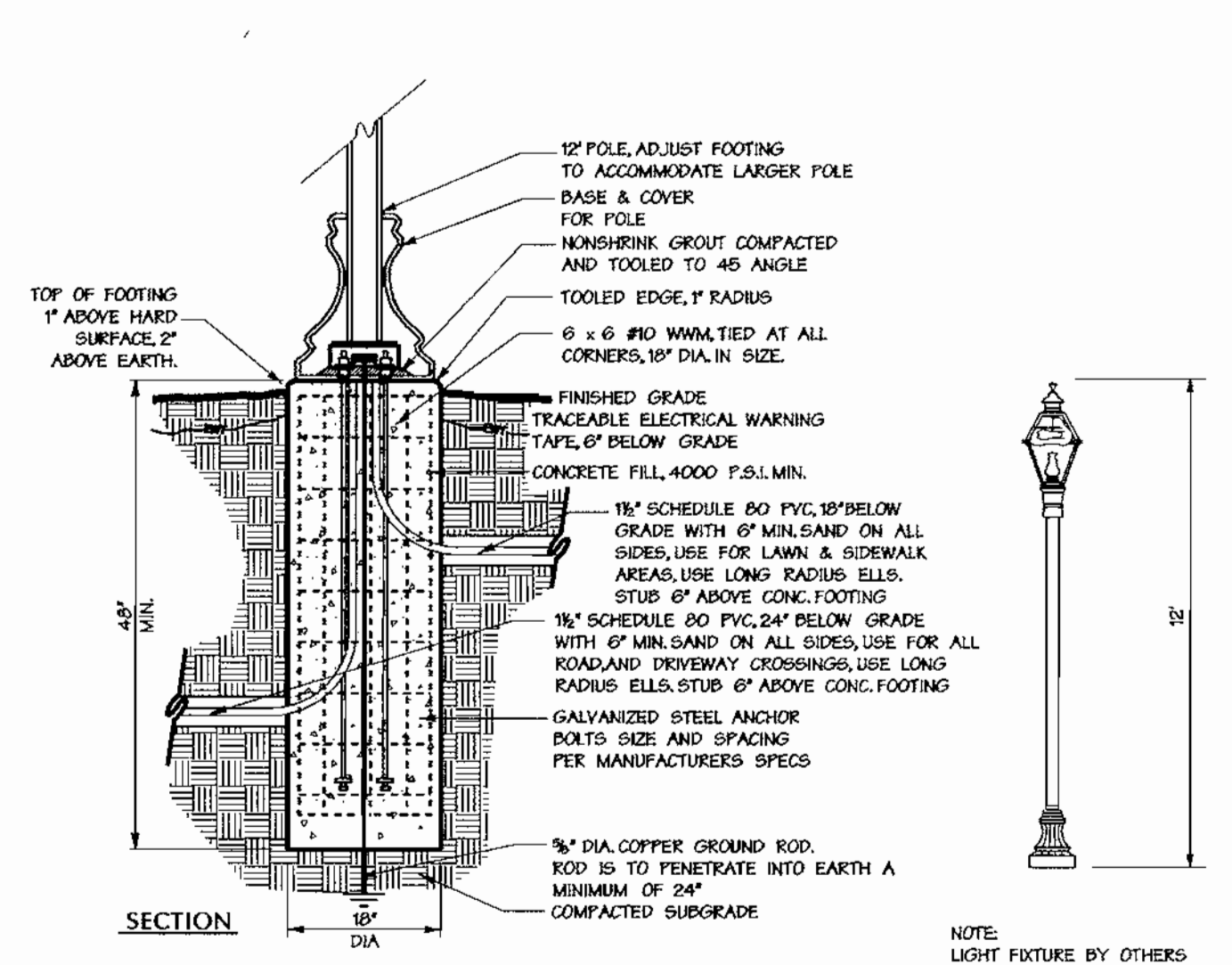
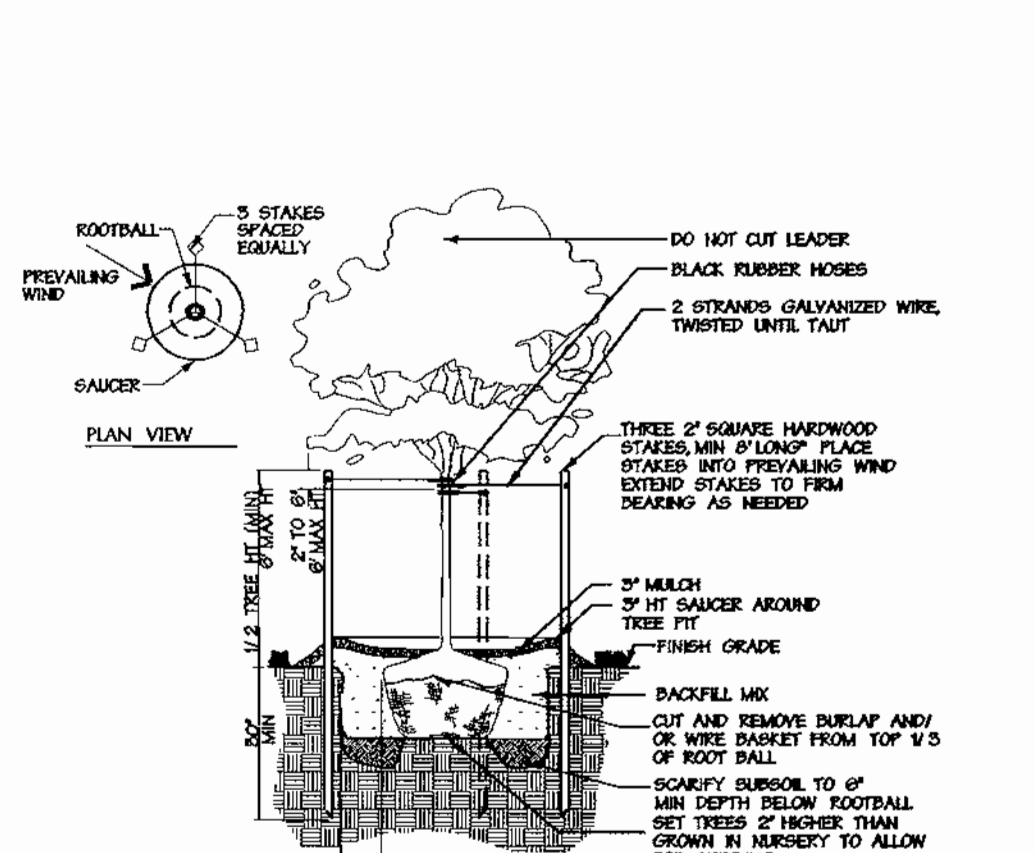
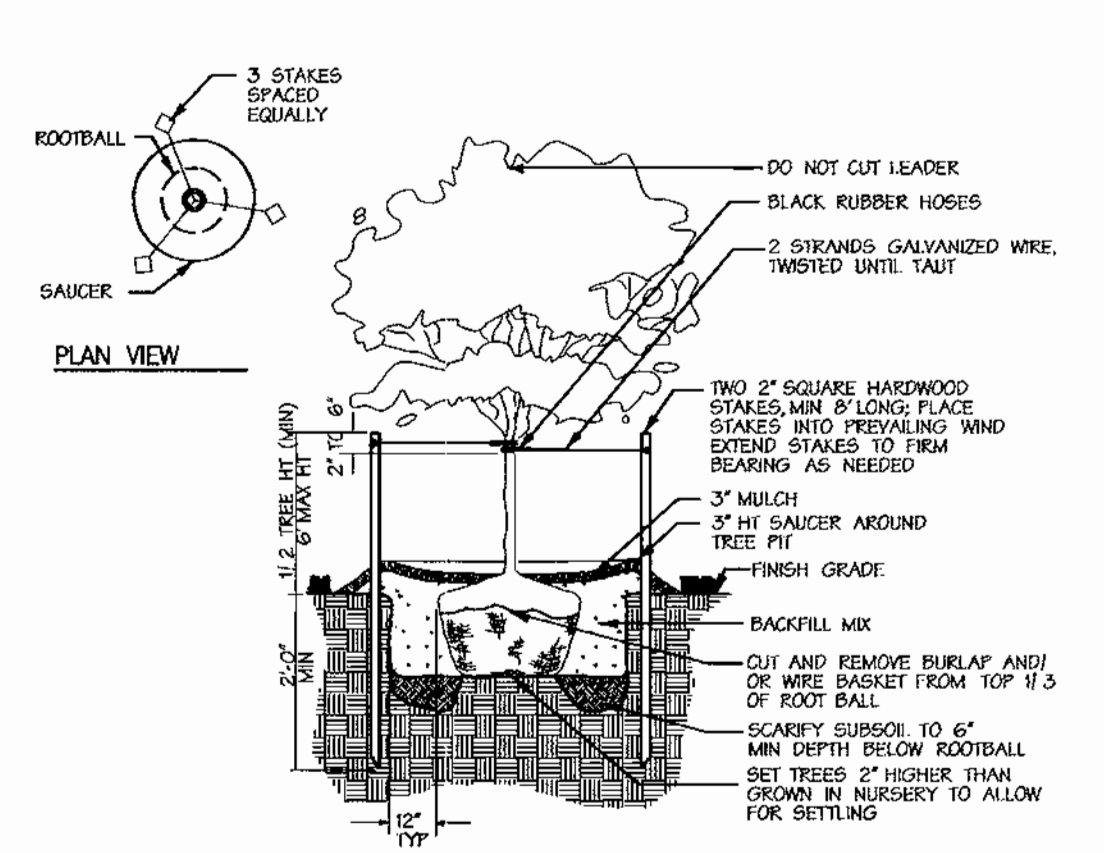
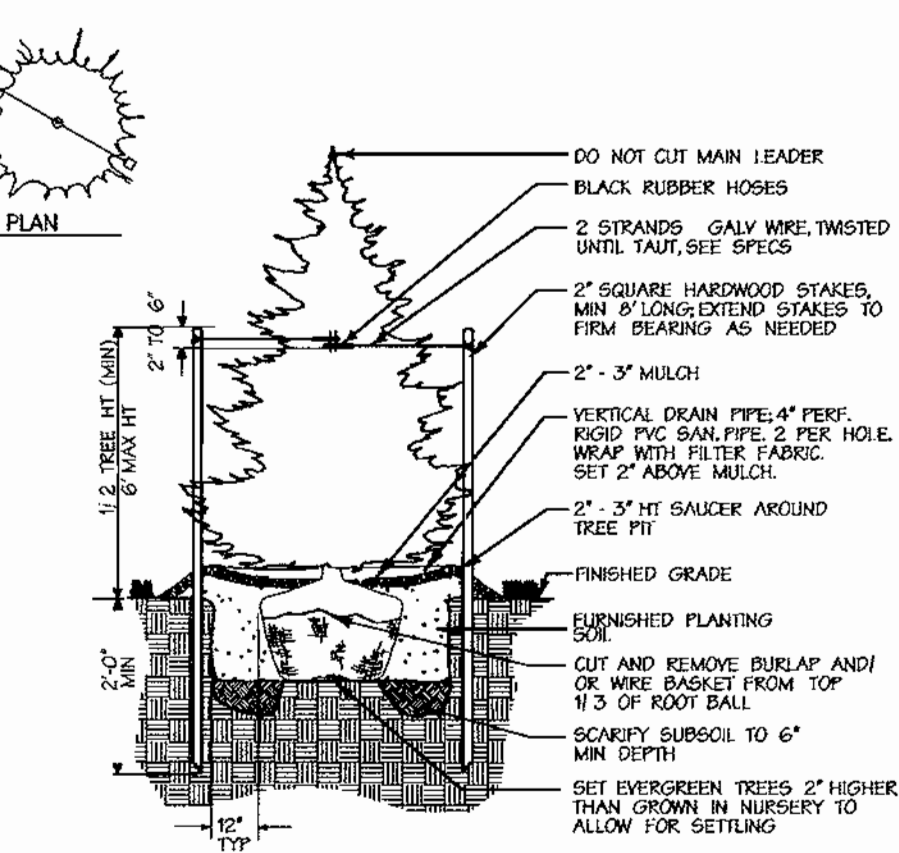
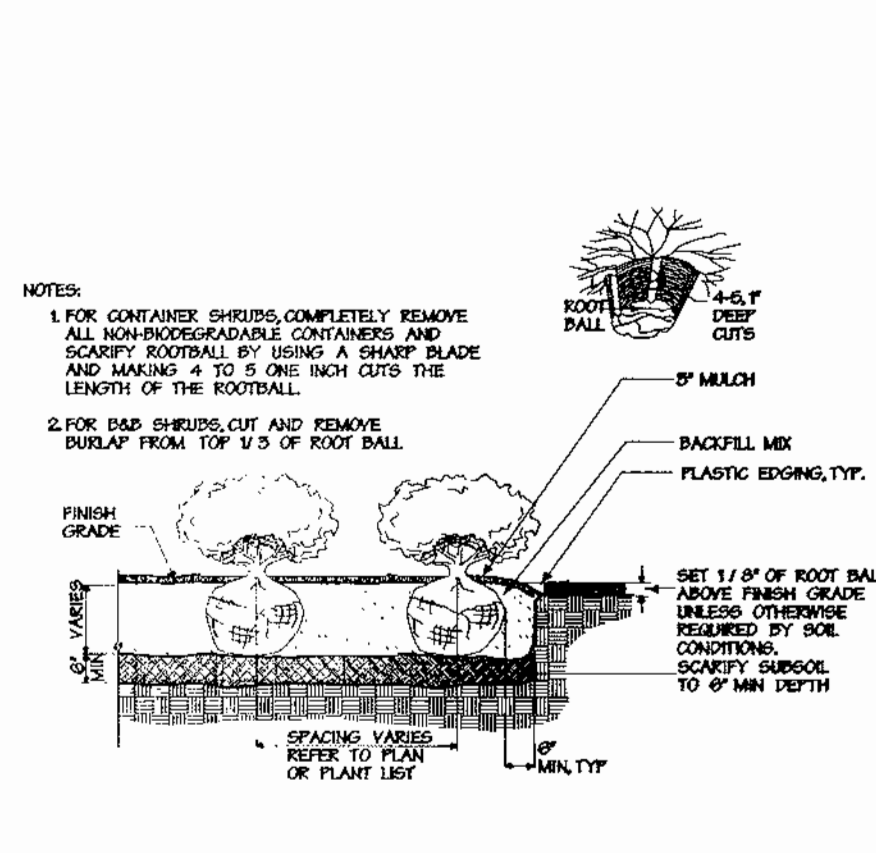
Number of Dwelling Units	61
Number of Trees Required (1:1 DU SFA / 1:3 DU APTS)	61
Number of Trees Provided Shade Trees Other Trees (2:1 substitution)	61



TITLE: **LANDSCAPE PLAN**

Des By: MJP Scale: 1"=30' Proj. No. 00023
 Dm By: FWK/MSS Date: 2/15/01
 Ck By: [Signature] Approved: [Signature]

12 of 16



APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

Howard County 3/2/01 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION

Cindy Hammett 3/9/01 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT

Frank J. Laugel 3/12/01 DATE
DIRECTOR

Date No. Revision Description

COLUMBIA

VILLAGE OF RIVER HILL

SECTION 4 AREA 1 PARCEL A-3
BUILDINGS 1-10 UNITS A-3-1 THRU A-3-61

OWNER/DEVELOPER: The Howard Research and Development Company
10275 Little Patuxent Parkway
Columbia, Maryland 21044

CONTRACT PURCHASER: Ryland Homes
7250 Parkway Drive
Suite 520
Columbia, Maryland 21076

Date 1/10/01

Landscape Architect No. 116

DMW
Darr-McCann-Walker, Inc.
300 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4706

A Team of Land Planners,
Landscape Architects,
Golf Course Architects,
Engineers, Surveyors &
Environmental Professionals

TITLE: **LANDSCAPE PLAN and DETAILS**

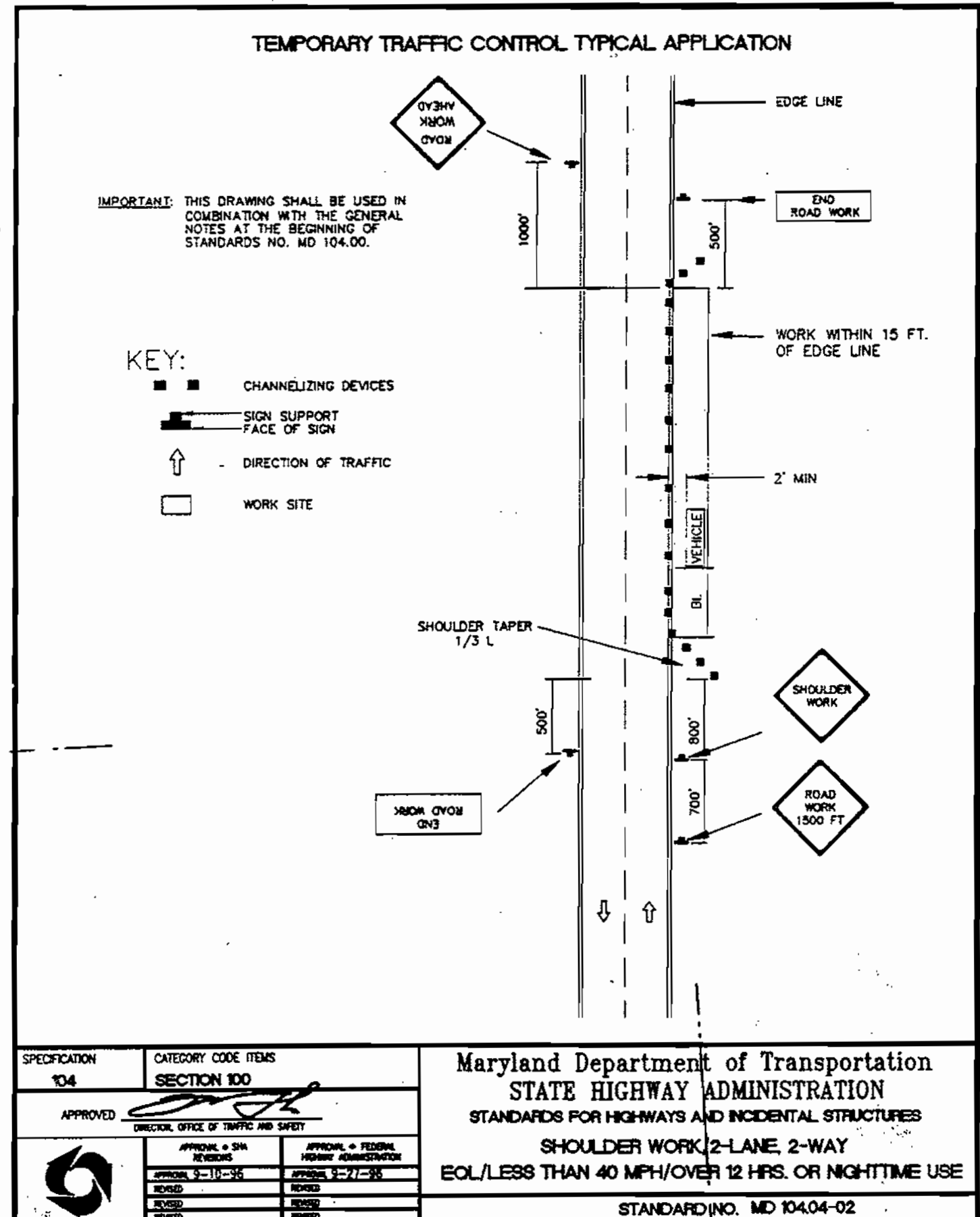
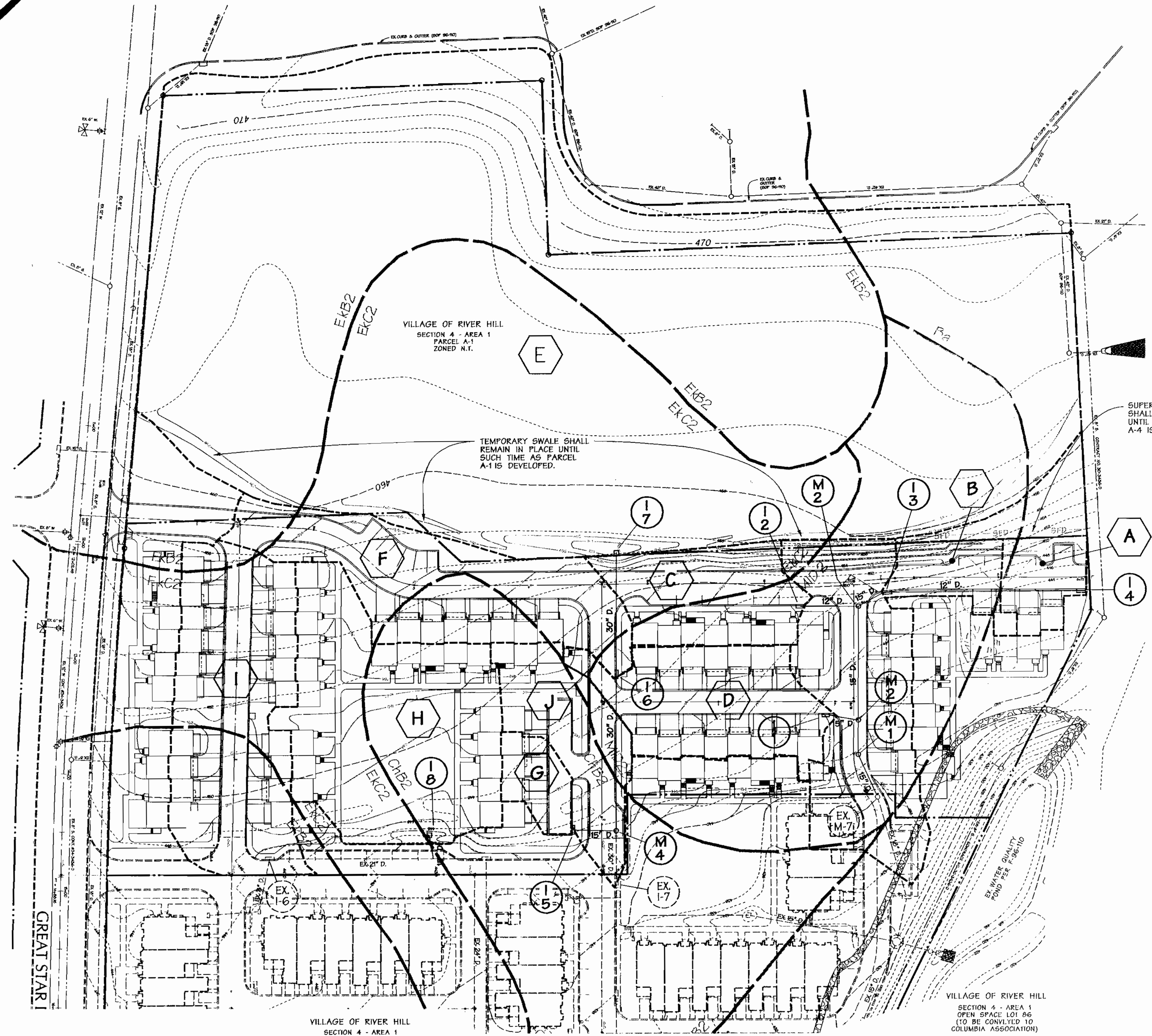
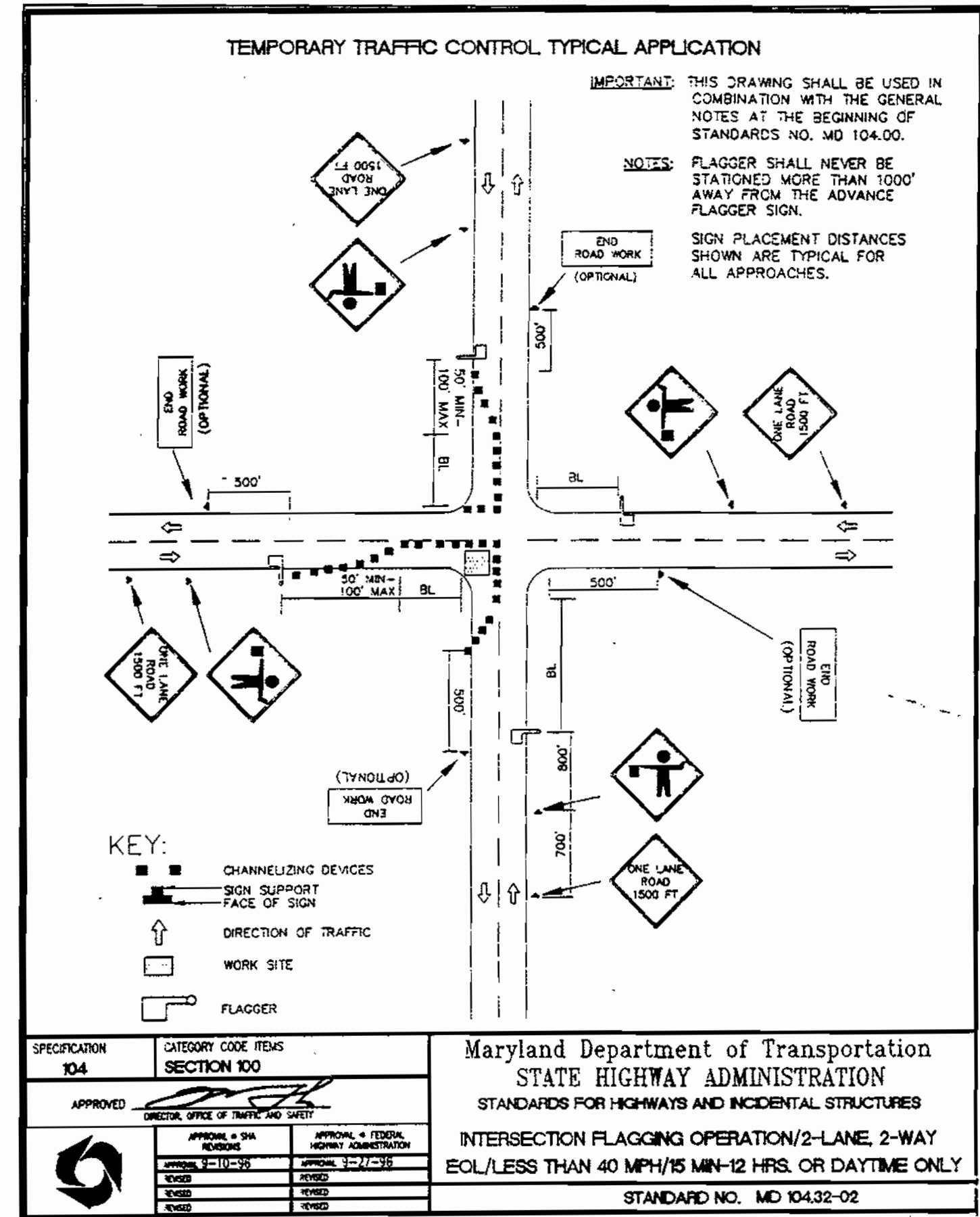
Des By MJP Scale 1"=30' Proj. No. 00023
Dm By FWK/MSS Date 2/15/01
Chk By mjg Approved

13 of 16

E 1302280 N 280200

DRAINAGE AREAS

DRAINAGE AREA	AREA (AC)	"C" FACTOR	% IMPERVIOUS
A	0.09	0.70	67
B	0.10	0.65	60
C	0.28	0.75	73
D	0.38	0.72	69
E	5.80	0.81	89
F	0.55	0.72	69
G	0.09	0.87	89
H	0.76	0.72	69
I	0.23	0.72	69
J	0.64	0.81	81



APPROVED
 DATE 1-11-01

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

[Signature] DATE 2/2/01
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

[Signature] DATE 3/9/01
 CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] DATE 4/12/01
 DIRECTOR

Date No. Revision Description

COLUMBIA

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A Team of Land Planners,
 Landscape Architects,
 Golf Course Architects,
 Engineers, Surveyors &
 Environmental Professionals



TITLE: DRAINAGE AREA MAP, SOIL CLASSIFICATIONS and TRAFFIC MAINTENANCE PLAN

Des By RTG/MSS Scale 1"=50' Proj. No. 00023

Dwn By MSS Date 2/15/01

Chk By [Signature] Approved

Professional Engr. No. 21998

14 of 16

DRAINAGE AREA MAP

SCALE: 1"=50'

E 1302280 N 280200

KEYSTONE RETAINING WALLS PHEASANT RIDGE TOWNS HOWARD COUNTY, MARYLAND

SCOPE OF WORK

DESIGN AND CONSTRUCTION OF MODULAR CONCRETE RETAINING WALLS.

GENERAL NOTES:

- Strip all vegetation and organic soil from the wall and grid alignment.
- Bench cut all excavated slopes.
- Do not over excavate unless directed by site soil engineer to remove unsuitable soil.
- Site soil engineer shall verify that all soils are competent per the design standards and parameters shown.
- Base shall consist of compacted sands and gravel, minimum 6" thick.
- Contractor may opt for a concrete footing. Concrete footing shall be unreinforced. Depth of concrete and base shall not be less than 6" thick.
- Minimum embedment of wall below finish grade shall be 12" for wall heights from 4 ft and up, 6" for wall heights below 4 ft, unless shown differently.
- Follow applicable provisions of the manufacturers installation instructions and attached written specifications.
- Drainage fill 12" thick shall be installed behind the wall to within 12" of the top of the wall.
- Where drain tile is used, provide outlets @ minimum 30 ft. CC.
- Backfill and compact soils in all areas as the wall is installed.
- Compaction tests shall be taken as the wall is installed. The minimum number of tests and location shall be determined by the site soils engineer.
- Compaction shall be to 95% standard proctor density.
- See elevation for geogrid type, length and location required.
- Geogrid shall be the type and length as shown. Pull geogrid tight prior to backfilling.
- Provide lateral drainage swales to direct flows around the ends of the wall.
- Establish turf as soon as the wall is completed.
- Final wall alignment shall be located in the field.
- If conditions are different than those stated in these drawings and specifications, the contractor must contact the engineer prior to proceeding with the construction of the wall.
- An evaluation of all footing excavations should be performed by a geotechnical engineer. If it is determined that the supporting capabilities of the bearing materials are less competent or the materials are unduly disturbed, the unsuitable materials should be removed and the undercut area backfilled and compacted with load-bearing fill. Alternatively, the leveling pad could be lowered to bear on more competent materials.

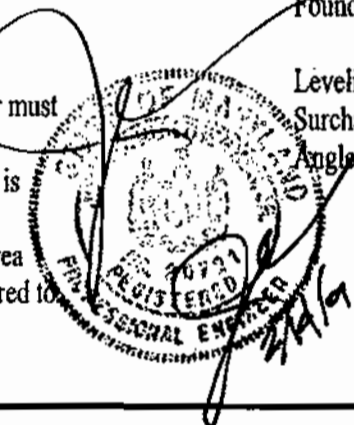
DESIGN ASSUMPTIONS:

- Allowable bearing pressures is 3000 psf.
- Backfill is well drained.
- Reinforced fill type: Silty Sands.
- Unit fill: Crushed stone, 1" minus.
- Grid quantities and lengths based upon assumed soil conditions.

SOIL PARAMETERS

	Phi	c	gamma
Reinforced Fill	30	0	120
Retained Soil	30	0	120
Foundation Soil	30	0	120

Leveling Pad: Crushed Stone
Surcharge: 100 psf
Angle of Face: 1:8 (7.1°)



I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
NAME: JOHN C. KLITHERMES, JR.
DATE: 10-24-00 REG. NO.: 20721

DRAWING LIST

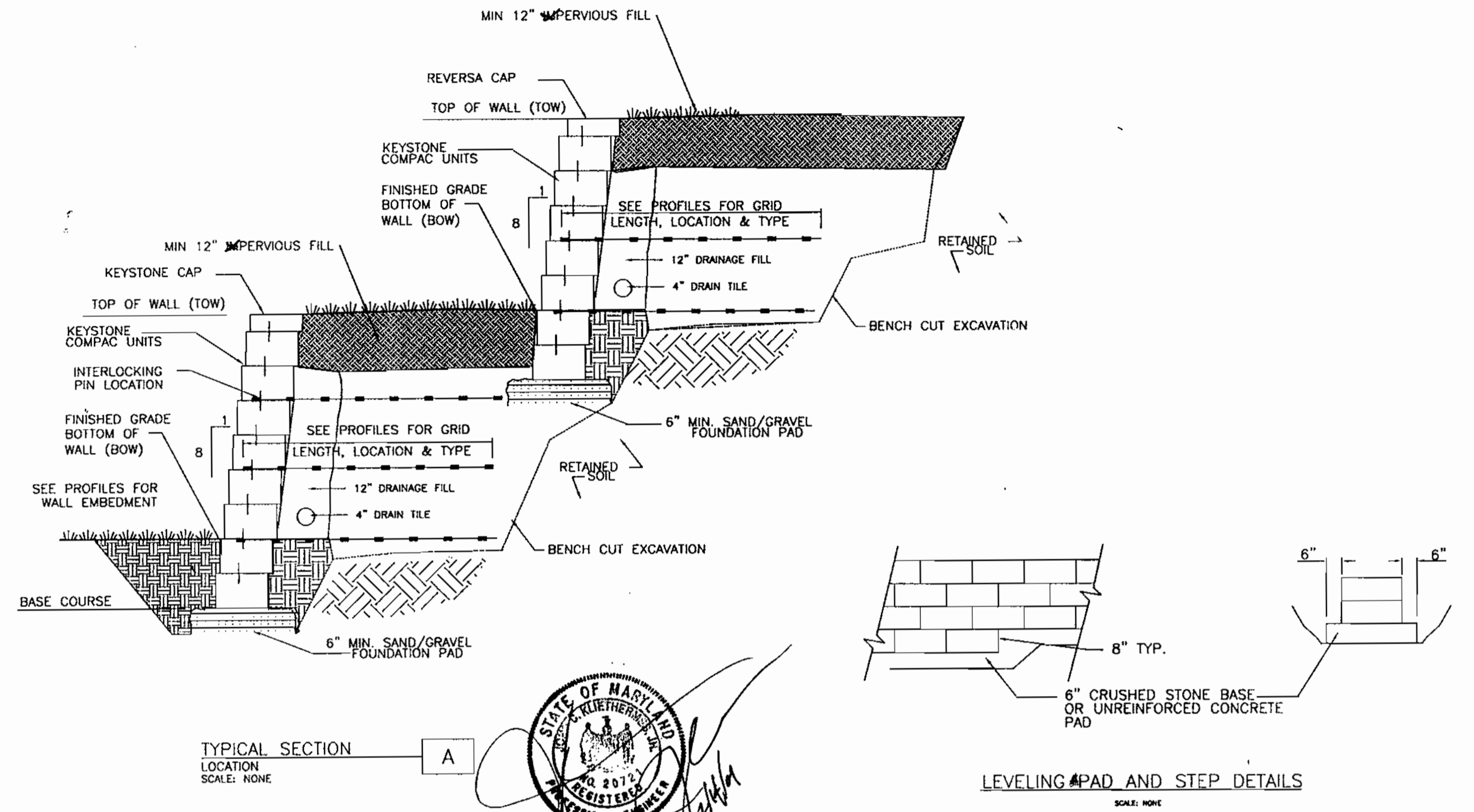
Sheet	Title	Cadd File
1	SCOPE OF WORK & DRAWING LIST	0307CVL.DWG
2	TYPICAL SECTION AND DETAILS	0307DT02.DWG
3	TYPICAL DETAILS	0307DT03.DWG
4	NOT USED	NOTUSED
5	RETAINING WALL PROFILE AND PLAN	0307PR05.DWG
6	RETAINING WALL PROFILE AND PLAN	0307PR06.DWG
7/14	RETAINING WALL GENERAL SPECIFICATION	WRITTEN

The design as presented within the attached documents has been prepared by Service Engineering based on the information received from the client or their representative. The scope of the services which are being provided by Service Engineering is limited to the design, construction drawings and written specifications. While the drawings and specifications are requirements for local Engineering representation and will assist in reducing the actual conditions of the job site and verify that they are equal to or better than those required in the documents, the client understands that Service Engineering will not be providing these services unless specifically noted in writing under separate contract. The client or user of these documents is aware that it is 100% responsible to adhere to these requirements. Failure to do so could result in damages to property and/or personal injury. Failure shall also be understood as a breach of the contract and a release of Service Engineering from any and all claims against it or its employees and employees by the client or user. The documents are considered to be the property of Service Engineering and shall not be loaned or duplicated in any manner without the approval of Service Engineering or one of its agents.

DESIGNED BY: SERVICE ENGINEERING
2720 WASHINGTON DR. SUITE 517
BETHESDA, MD 20814
(301) 787-0250 FAX: (301) 787-0252

PROJECT NAME: PHEASANT RIDGE TOWNS
HOWARD COUNTY, MARYLAND
PROJECT LOCATION: RETAINING WALL
DRAWING LIST
SHEET: 1 OF 7/14
DATE: 10-24-00
DRAWN BY: JCK
CHECKED BY: JCK
SCALE: NONE

PREPARED BY: BARTECH ASSOCIATES, INC.
2720 WASHINGTON DR. SUITE 517
BETHESDA, MD 20814
(301) 787-0250 FAX: (301) 787-0252



I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
NAME: JOHN C. KLITHERMES, JR.
DATE: 10-24-00 REG. NO.: 20721

DESIGNED BY: SERVICE ENGINEERING
2720 WASHINGTON DR. SUITE 517
BETHESDA, MD 20814
(301) 787-0250 FAX: (301) 787-0252

PROJECT NAME: PHEASANT RIDGE TOWNS
HOWARD COUNTY, MARYLAND
PROJECT LOCATION: RETAINING WALL DETAILS
DRAWING LIST
SHEET: 2 OF 7/14
DATE: 10-24-00
DRAWN BY: JCK
CHECKED BY: JCK
SCALE: NONE

PREPARED BY: BARTECH ASSOCIATES, INC.
2720 WASHINGTON DR. SUITE 517
BETHESDA, MD 20814
(301) 787-0250 FAX: (301) 787-0252

APPROVED:
DATE: 1-11-01

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION
CHIEF, DIVISION OF LAND DEVELOPMENT
DIRECTOR

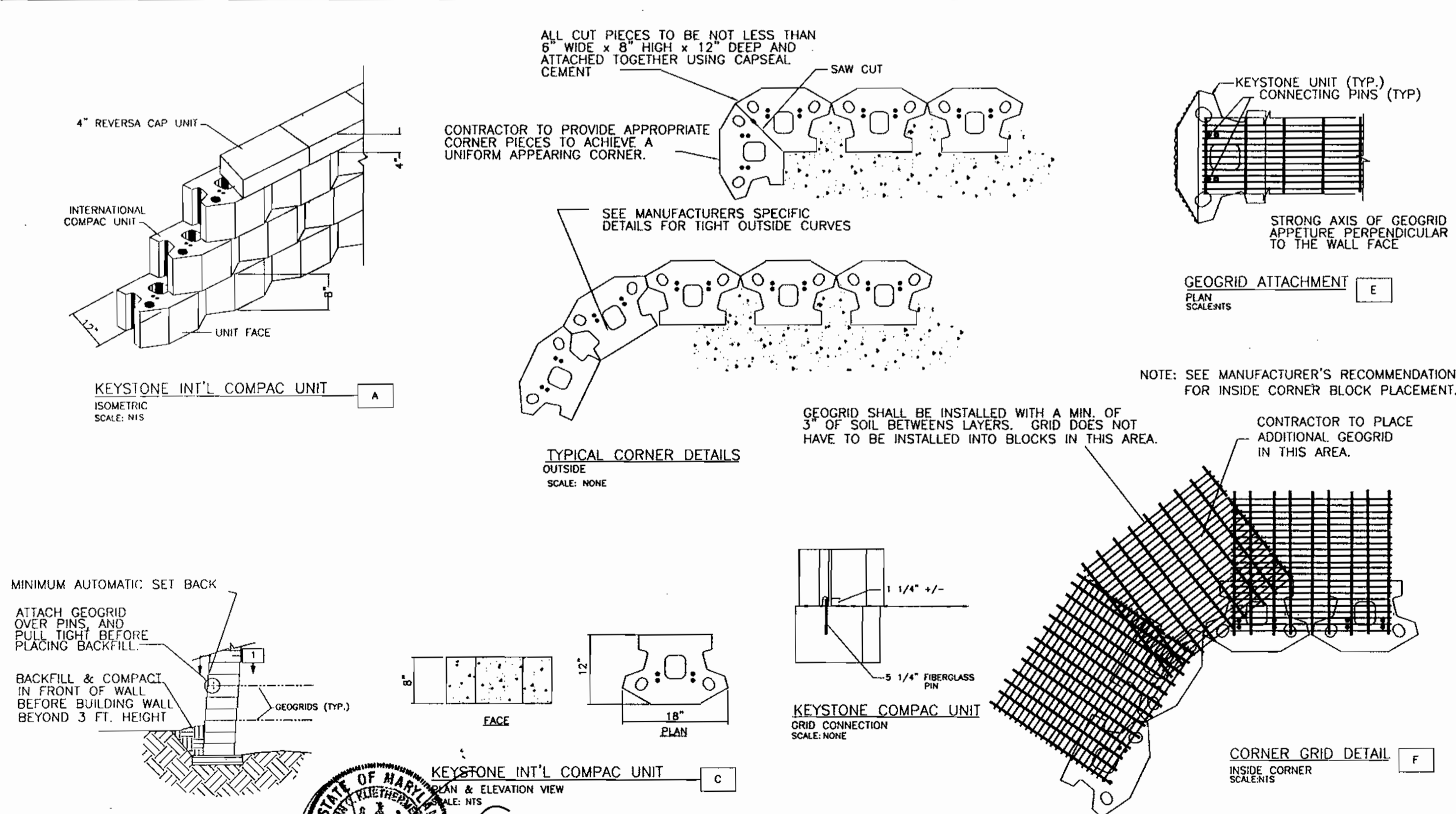
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DATE: 3/12/01
DATE: 3/12/01

COLUMBIA
VILLAGE OF RIVER HILL
SECTION 4 AREA 1 PARCEL A-3
BUILDINGS 1-10 UNITS A-3-1 THRU A-3-61
OWNER/DEVELOPER: The Howard Research and Development Company
CONTRACT PURCHASER: Ryland Homes
10275 Little Patuxent Parkway
7250 Parkway Drive
Columbia, Maryland 21044
Suite 520
Columbia, Maryland 21076

DMW
Duff McCune Walker, Inc.
A Team of Land Planners, Landscape Architects, Golf Course Architects, Engineers, Surveyors & Environmental Professionals
800 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 286-3233
Fax 286-4708

TITLE: **RETAINING WALL DETAILS**

Des By: Scale: As Shown Proj. No.: 00~23
Dwn By: Date: 10/31/00
Chk By: Approved 15 of 16



I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
NAME: JOHN C. KLITHERMES, JR.
DATE: 10-24-00 REG. NO.: 20721

DESIGNED BY: SERVICE ENGINEERING
2720 WASHINGTON DR. SUITE 517
BETHESDA, MD 20814
(301) 787-0250 FAX: (301) 787-0252

PROJECT NAME: PHEASANT RIDGE TOWNS
HOWARD COUNTY, MARYLAND
PROJECT LOCATION: RETAINING WALL DETAILS
DRAWING LIST
SHEET: 3 OF 7/14
DATE: 10-24-00
DRAWN BY: JCK
CHECKED BY: JCK
SCALE: NONE

PREPARED BY: BARTECH ASSOCIATES, INC.
2720 WASHINGTON DR. SUITE 517
BETHESDA, MD 20814
(301) 787-0250 FAX: (301) 787-0252

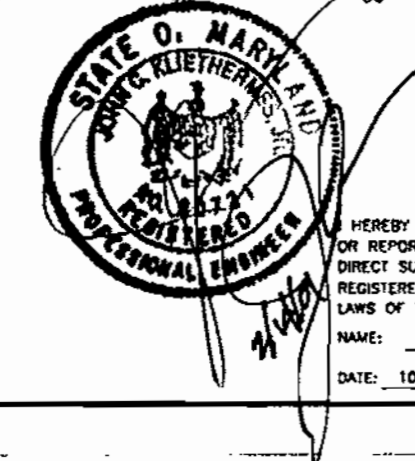
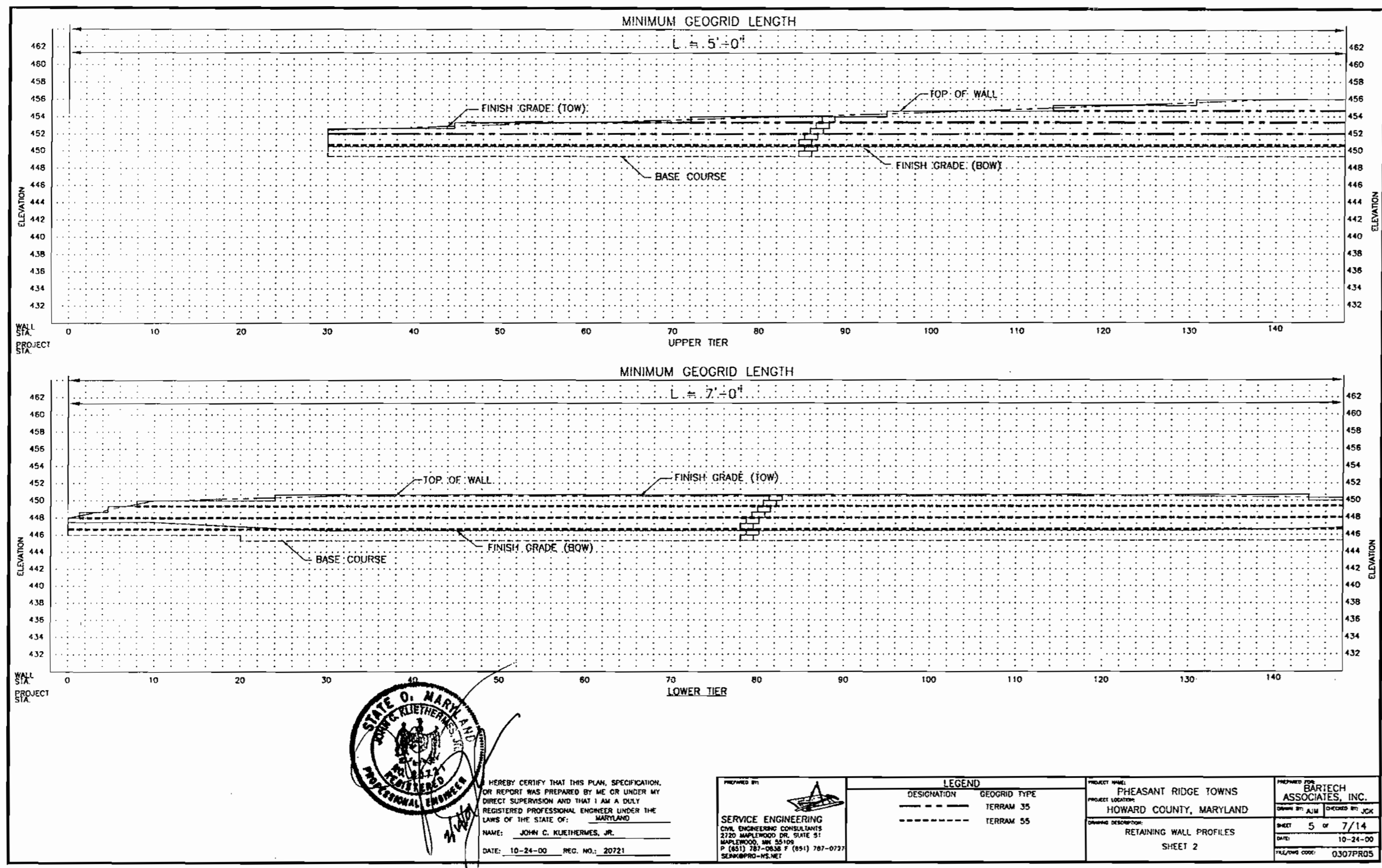
LEGEND
UNDERSLURD SOIL
COMPACTED NATIVE SOIL
PERVIOUS
SAND & GRAVEL
CONCRETE
ANCHOR (GRID)

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J:\AC\203\20307\0307DT02.DWG Tue Oct 24 16:35:53 2000

J:\ACV\03\0307\0307PROS.dwg Tue Oct 24 16:41:34 2000



HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
 NAME: JOHN C. KLEIHEMES, JR.
 DATE: 10-24-00 REG. NO.: 20721

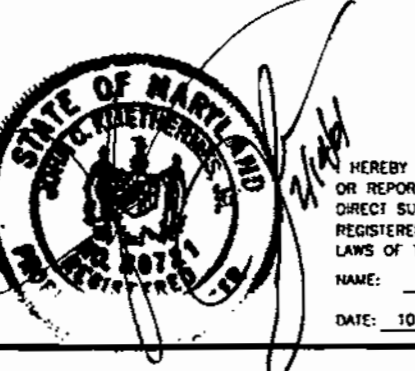
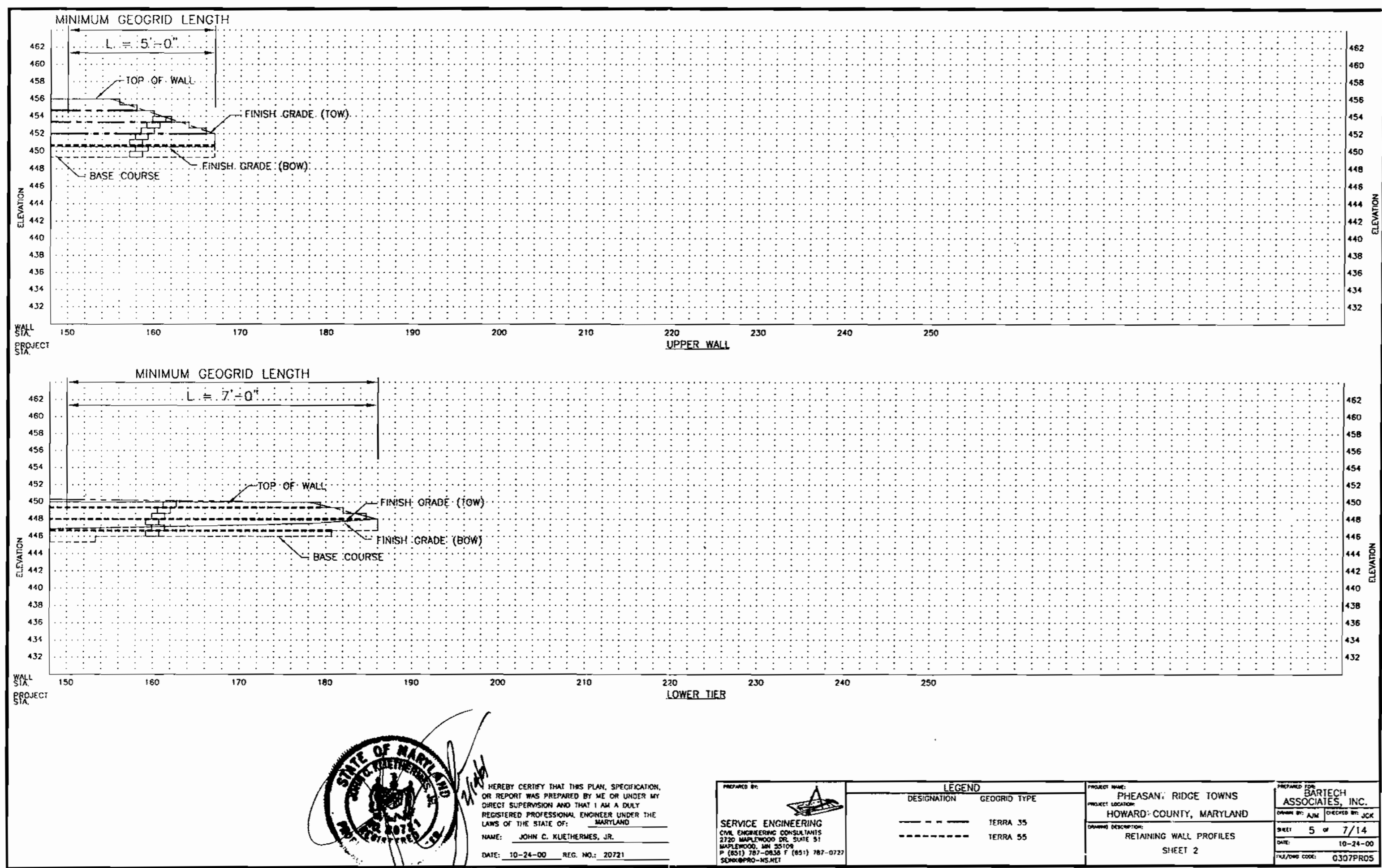
PROVIDED BY: SERVICE ENGINEERING CIVIL ENGINEERING CONSULTANTS 2700 WASHINGTON PIKE SUITE 511 WASHINGTON, MD 20787 P (301) 551-1800 F (301) 787-0727 SCHMIDT-HEISE

LEGEND: DESIGNATION GEOGRID TYPE
 --- TERRAM 35
 - - - - - TERRAM 55

PROJECT NAME: PHEASANT RIDGE TOWNS
 PROJECT LOCATION: HOWARD COUNTY, MARYLAND
 DRAWING DESCRIPTION: RETAINING WALL PROFILES
 SHEET 2

PREPARED BY: BARTTECH ASSOCIATES, INC.
 DRAWN BY: AJM CHECKED BY: JCK
 DATE: 5 of 7/14
 DATE: 10-24-00
 DRAWING CODE: 0307PROS

D:\ACV\03\0307\0307PROS.dwg Tue Oct 24 16:34:25 2000



HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
 NAME: JOHN C. KLEIHEMES, JR.
 DATE: 10-24-00 REG. NO.: 20721

PROVIDED BY: SERVICE ENGINEERING CIVIL ENGINEERING CONSULTANTS 2700 WASHINGTON PIKE SUITE 511 WASHINGTON, MD 20787 P (301) 551-1800 F (301) 787-0727 SCHMIDT-HEISE

LEGEND: DESIGNATION GEOGRID TYPE
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 - - - - - TERRAM 55

PROJECT NAME: PHEASANT RIDGE TOWNS
 PROJECT LOCATION: HOWARD COUNTY, MARYLAND
 DRAWING DESCRIPTION: RETAINING WALL PROFILES
 SHEET 2

PREPARED BY: BARTTECH ASSOCIATES, INC.
 DRAWN BY: AJM CHECKED BY: JCK
 DATE: 5 of 7/14
 DATE: 10-24-00
 DRAWING CODE: 0307PROS

APPROVED
 DATE 1-11-01

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
 Chief, Development Engineering Division: *John D. ...* 3/2/01
 Chief, Division of Land Development: *Cindy ...* 3/9/01
 Director: *Donald ...* 3/12/01

Revision Description
 COLUMBIA
VILLAGE OF RIVER HILL
 SECTION 4 AREA 1 PARCEL A-3
 BUILDINGS 1-10 UNITS A-3-1 THRU A-3-61
 OWNER/DEVELOPER: The Howard Research and Development Company
 CONTRACT PURCHASER: Ryland Homes
 7250 Parkway Drive Suite 520 Columbia, Maryland 21044

DMW
 Draft McCune-Walker, Inc.
 300 East Pennsylvania Avenue Towson, Maryland 21286
 (410) 296-3333 Fax 296-4705
 A Team of Land Planners, Landscape Architects, Golf Course Architects, Engineers, Surveyors & Environmental Professionals

Retaining Wall Details
 PREPARED BY
 BARTTECH ASSOC. INC.

Date
 Professional Engr. No.

TITLE: RETAINING WALL DETAILS
 Des By: Scale: As Shown Proj. No. 00023
 Dwn By: Date: 10/31/00
 Chk By: Approved: 16 of 16