

DI ANT HADDINECC ZONE CH

	·		PLANT HARDINESS ZONE 6b										
MIX	SEED MIX (USE CERTIFIED MATERIAL IF AVAILABLE)	PLANTING		SITE CONDITIONS	USDA HARDI-	USDA RECOMMENDED PLANTING DATES							
	COSE GENTILES MAYERIAE II AVAICAGE.	LBS/AC.	LBS/1000 SQ.FT.	CONDITIONS	NESS ZONES	3/I - 5/I5	3/15- 6/I	5/16- 8/14	6/2- 7/3	8/I - I0/I	8/I5- IO/I5	8/15- 11/15	
ī	TALL FESCUE (75%), CANADA BLUEGRASS (10%),	150	3.4	MOIST TO DRY	5b		х			X			Α
	KENTUCKY BLUEGRASS (10%), REDTOP (5%)				6a		х			Х			
					6Ь	×					Х		
			-		7a	×						х	
					7b	X						х	
2	KENTUCKY BLUEGRASS (50%), CREEPING RED FESCUE OR A HARD FESCUE (40%), REDTOP (10%)	150	3.4	MOIST TO MODERATELY DRY TO DRY	5b		×			x			В
					6a		х			×]
					6Ь	×					×		
3	TALL FESCUE (85%), PERENNIAL RYEGRASS (10%),	125 15	2.9 .34	MOIST TO DRY	5b		x			х			С
	KENTUCKY BLUEGRASS (5%)	10	.23		6a		x			x			
					6Ь	х					х		
					7a	x						x	
					7ь	х						х	
4	RED FESCUE OR	60	.92	MOIST TO DRY	5b		х			×			D
	CHEWINGS FESCUE (80%) PERENNIAL RYEGRASS (20%)	60 15	.92 .34		6a		х			х			
					6b	х					х		
5	TALL FESCUE (85%) OR	110	2.5	MOIST TO DRY	5b		х			х			E
3	PERENNIAL RYEGRASS (50%) PLUS CROWNVETCH OR FLATPEA	20 20	.46 .46		6a		х			×			
		20	.46		6b	×					х		
					7a	х						х	
					7b	×						х	
6	WEEPING LOVEGRASS (17%) SERECIA LESPEDEZA (83%	4 20	.09 .46	DRY TO VERY DRY	6a	×		х					F
Ū					7a	×		х					
					7b	T x		x		<u> </u>			
7	TALL FESCUE (83%) OR	110	2.5	DRY TO VERY	5b		×		×	×			G
'	WEEPING LOVEGRASS (2%) PLUS SERECIA LESPEDEZA (15%)	3 20	.07	DRY	6a		x		×	×			
					6b	×		x			x		
					7a	×		x		1		×	
					7b	l x		×				×	
8	DEED CANADYCDASC (75.7)	40	92	WET TO	5b		×			×			н
0	REED CANARYGRASS (75%) REDTOP (6%) PLUS BIRDSFOOT TREEFOIL (19%)	3 10	.92 .07 .23	MET TO MODERATELY DRY	60		x			×			
					6Ь	T x					×		
					7a	X				1		×	
					7ь	×				1		X	
	TALL FERRUE (OCU) OD	105		wer ro	5b	1	×			×			
9	TALL FESCUE (86%) OR POA TRIVIALIS (7%) BIRDSFOOT TREEFOIL (7%)	125 10 10	2.9 .23 .23	.23 MODERATELY	60		×			×			'
					6b	×					×		
						 	 			 	 ^		
10	TALL FESCUE (80%) HARD FESCUE (20%)	120 30	3.4 .69	WET TO DRY	5b 6a	1	X			X	 		J
					6b	X	<u> </u>		 	 ^	×		
						 				-	+^	-	
					7a	X	ļ				1	×	
					7b	X	<u> </u>	ļ			<u> </u>	×	<u></u>
Н	HARD FESCUE (100%)	.75	1.7	WET TO DRY	5b		×	 		X	<u> </u>		K
					6a	1	X			X	 		
					6b	X			ļ		X		1
					7a	Х						x	

FERTILIZER RATE: (10-20-20) N 2LBS./1000 S.F., 90 LBS./ACRE P205 4LBS./1000 S.F., 175 LBS./ACRE K20 4 LBS./1000 S.F., 175 LBS./ACRE LIME RATE 100 LBS./1000 S.F., 2 TONS/ACRE

- A USED BY SHA ON SLOPED AREAS. ADD A LEGUME FOR SLOPES > 3:1.
- B USED IN MEDIAN AREAS BY SHA. SHADE TOLERANT.
- C POPULAR MIX PRODUCES PERMANENT GROUNDCOVER QUICKLY. BLUEGRASS THICKENS STAND. D - BEST USE ON SHADY SLOPES NOT ON POORLY DRAINED CLAYS.
- E USE ON LOW MAINTENANCE, STEEP SLOPES. USE TALL FESCUE IN DRAUGHTY COND. CROWN VETCH BEST FOR 5b, 6a, 6b. F - SUITABLE FOR SEEDING IN MID-SUMMER.
- G WEEPING LOVEGRASS MAY BE SEEDED WITH TALL FESCUE IN MID-SUMMER. SERECIA LESPEDEZA IS BEST SUITED FOR ZONES 7g AND 7b. H - USE ON POORLY DRAINED SOILS, DITCHES OR WATERWAYS. BIRDSFOOT TREEFOILIS BEST FOR ZONES 56, 6d ABOVE 2,000 FT.
- I- USE IN AREAS OF MOIST SHADE. POA TRIVIALIS THRIVES IN WET SHADY AREAS. J - TALL FESCUE MAY BE SEEDED ALONE. THE HARD FESCUE PROVIDES BETTER SHADE TOLERANCE AND PRODUCES A BETTER STAND.
- K LOW FERTILITY GRASS. REQUIRES INFREQUENT MOWING. GOOD COMPANION FOR WILD FLOWERS.

TABLE 26 - TEMPORARY SEEDING RATES, DEPTHS, AND DATES

						Pl	ANT H	IARDINE	SS ZONE	6b		
	MINIMUM SEEDING	PLANTING DEPTH ³⁶		HARDINESS ZONES 37 AND SEEDING I					ING DA	G DATES 38		
SPECIES				7a and 7b			6b			6a and 5b		
	PER ACRE	LBS/1000 SQ.FT.	INCHES	2/I- 4/30	5/I- 8/I4	8/15- 11/30	3/I- 4/30	5/I- 8/I4	8/15- 11/15	3/I5- 5/3I	6/I- 7/3I	8/I- 10/3I
CHOOSE ONE: BARLEY OATS RYE 39	2.5 BU.(1221bs) 3 BU.(96 lbs) 2.5 BU. (1401bs)	2.80 2.2l 3.22	I-2 I-2 I-2	X X X		BY 10/15 - X	X X X	- - -	BY 10/15 ~ X	X X X	- - -	BY 10/1 - X
BARLEY OR RYE PLUS FOXTAIL MILLET ⁴⁰	150 lbs	3.45	I	×	X	10/15 X	X X	×	10/15 X	×	X X	10/I X
WEEPING LOVEGRASS 41	4 lbs	.09	1/4-1/2	-	Х	-	-	x	-	-	х	-
ANNUAL RYEGRASS	50 lbs	1.15	1/4-1/2	х	-	1171	Х	_	1171	х	_	8/15
MILLET 42	50 lbs	1.15	1/2	-	х	_	_	Х	-	-	Х	-

FERTILIZER RATE: (10-10-10)
15 LBS./1000 S.F., 600 LBS./ACRE LIME RATE 100 LBS./1000 S.F., 2 TONS/ACRE

- APPLICABLE ON SLOPES OF 3:1 OR FLATTER
- 37 REFER TO FIGURE A ADOPTED FROM USDA, ARS MISCELLANEOUS PUBLICATION #1475, JANUARY 1990
- 38 BETWEEN FALL AND SPRING SEEDING DATES, USE MULCH ONLY IF GROUND IS FROZED AND RESEED WHEN THAWED
- 39 MAY BE USED AS A NURSE CROP FOR LATE FALL / EARLY WINTER PERMANENT SEEDINGS, ADD 56 LBS./AC. TO THE PERMANENT SEEDING MIXTURE
- MARYLAND STATE HIGHWAY ADMINISTRATION TEMPORARY SEED MIX
- 42 MAY BE USED AS A NURSE CROP FOR MID-SUMMER PERMANENT SEEDINGS. ADD TO LBS./AC. TO THE PERMANENT SEEDING MIX.

41 MAY BE USED AS A NURSE CROP FOR MID-SUMMER PERMANENT SEEDINGS. ADD 2 LBS./AC. TO PERMANENT SEED MIX

20.0 STANDARD AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

SECTION I- VEGETATIVE STABILIZATION METHODS AND MATERIALS

for sites having disturbed area over 5 acres.

A. Site Preparation

1. Install erosion and sediment control structures (either temporary or permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins. ii. Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding. III. Schedule required soil tests to determine soil amendment composition and application rates

B. Soli Amendments (Fertilizer and Lime Specifications)

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

ii. Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by f. WCFM must conform to the following physical requirements: fiber length to approximately 10 approved equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers shall all be delivered to the site fully labeled according to the applicable State fertilizer laws and shall bear the name, trade name or trademark and

III. Lime materials shall be ground limestone (hydrated or burnt lime may be substituted) which G. Mulching Seeded Areas - Mulch shall be applied to all seeded areas immediately after seeding. contains at least 50% total oxides (calcium oxide plus magnesium oxide). Limestone shall be ground to such fineness that at least 50% will pass through a #100 mesh sieve and 98-100% will i. If grading is completed outside for the seeding season, mulch along should be applied as

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

i. Temporary Seeding a. Seedbed preparation shall consist of loosening soil to a depth of 3" to 5" by means of suitable. Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 lbs. per agricultural or construction equipment, such as disk harrows or chisel plows or rippers mountedgare. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a on construction equipment. After the soil is loosened it should not be rolled or dragged smoothhaximum of 50 lbs. of wood cellulose fiber per 100 gallons of water. but left in the roughened condition. Sloped areas (greater than 3%) should be tracked leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.

b. Apply fertilizer and lime as prescribed on the plans. c. Incorporate lime and fertilizer into the top 3 - 5 of soll by disking or other suitable means.

ii. Permanent Seeding a. Minimum soil conditions required for permanent vegetative establishment:

Soil pH shall be between 6.0 and 7.0

Soll shall contain 1.5% minimum organic matter by weight.
Soll must contain sufficient pore space to permit adequate root penetration.

b. Areas previously graded in conformance with the drawings shall be maintained in a true andv. Lightweight plastic netting may be stapled over the mulch according to manufacturer s even grade, then scarified or otherwise loosened to a depth of 3 - 5 to permit bonding of the commendations. Netting is usually available in rolls 4′ to 15′ feet wide and 300 to 3,000 feet opsoil to the surface area and to create horizontal erosion check slots to prevent topsoil forg. sliding down a slope.

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

d. Mix soil amendments into the top 3 - 5' of topsoil by disking or other suitable means. Lawn areas should be raked to smooth the surface, remove large objects like stones and brangeds; diadprovide quick cover on disturbed areas (2:1 grade or flatter) ready the area for seed application. Where site conditions will not permit normal seedbed

i. All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject shall be cut to the suppliers width and length. Maximum allowable deviation from standard to re-testing by a recognized seed laboratory. All seed used shall have been tested within the Gwidths and lengths shall be 5 percent. Broken pads and torn or uneven ends will not be months immediately preceding the date of sowing such material on this job. Note: Seed tags shall be made available to the inspector to verify type and rate of seed used. iii. Standard size sections of sod shall be strong enough to support their own weight and retain ii. Inoculant - The inoculant for treating legume seed in the seed mixtures shall be a pure cultipation.

of nitrogen-fixing bacteria prepared specifically for the species. Inoculants shall not be used after than the date indicated on the container. Add fresh inoculant as directed on package. Use fourly. Sod shall not be harvested or transplanted when moisture content (excessively dry or wet) times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as may adversely affect it survival. cool as possible until used. Temperatures above 75-80% F can weaken bacteria and make the inoculant less effective.

V. Sod shall be harvested, delivered, and installed within a period of 36 hours. Sod not

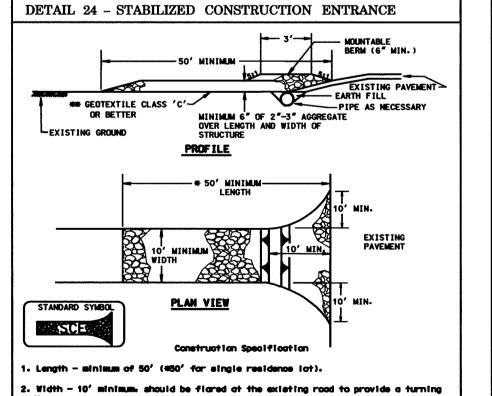
i. <u>Hydroseeding</u>: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), **B. Sod Installation** broadcast or drop seeder, or a cultipacker seeder.

the following: nitrogen; maximum of 100 lbs. per acre total of soluble nitrogen; P205 (phosphorous): 200/lbs/ac.; K20 (potassium): 200 lbs/ac. b. Lime - Use only ground agricultural limestone (up to 3 tons per acre may be applied by growth and strength. Ensure that sod is not stretched or overlapped and the hydroseeding. Normally, not more than 2 tons are applied by hydroseeding at any one time. Datight in order to prevent voids which would cause air drying of the roots. not use burnt or hydrated lime when hydroseeding.

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

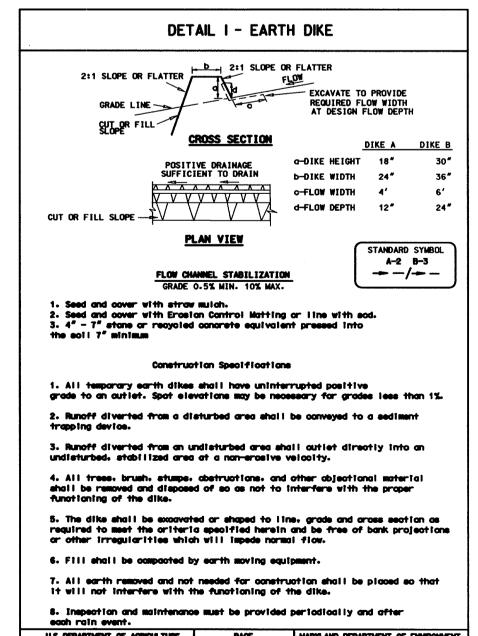
iii. <u>Drill or Cultipacker See</u>ding: Mechanized seeders that apply and cover seed with soil. a. Cultipacking seeders are required to bury the seed in such a fashion as to provide at leastntent inch of soil covering. Seedbed must be firm after planting.

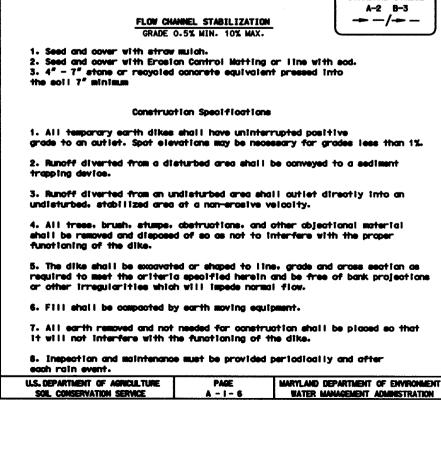
i. Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonably bright in color, and shall not be musty, moldy, caked, decayed, or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland Seed Law.



. Geotextile fabric (filter cloth) shall be placed over the existing ground prior 4. Stone — arushed aggregate (2" to 3") or recialmed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the i. Surface Nater – all surface water flowing to ar diverted toward construction entrances shall be piped through the entrance; maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a countable berm with 5:1 slapes and a minimum of 6" of stane over the pipe. Pipe ha

to be sized according to the drainage. When the SCE is located at a high epot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required. i. Location — A stabilized construction entrance shall be located at every point ruotion traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stablilized construction entrance





ii. Wood Cellulose Fiber Mulch (WCFM)

- a. WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous
- WCFM shall be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry. c. WCFM, including dye, shall contain no germination or growth inhibiting factors.
- d. WCFM materials shall be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous surry. The mulch material shall form a blotter-like ground cover, on application, having moisture absorption and percolation properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
- e. WCFM material shall contain no elements or compounds at concentration levels that will be

mm., diameter approximately I mm., pH range of 4.0 to 8.5, ash content of 1.6% maximum and water holding capacity of 90% minimum.

Note: Only sterile straw mulch should be used in areas where one species of grass is desired. i. If grading is completed outside for the seeding season, mulch along should be applied as prescribed in this section and maintained until the seeding season returns and seeding can be performed in accordance with these specifications.

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

H. Securing Straw Mulch (Mulch Anchoring): Mulch anchoring shall be performed immediately following mulch application to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon size of area and erosion hazard: I. A mulch anchoring tools is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of two (2) inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice

should be used on the contour if possible. ii. Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a 2. Soluble salts shall be less than 500 parts per million (ppm).

3. The soil shall contain less than 40% clay but enough fine grained material (>30% silt plus national contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water, to provide the capacity to hold a moderate amount of moisture. An exception is if lovegrass or serecia lespedeza is to be planted, then a sandy soil (<30% silt plus clay) would be acceptable. Application of liquid binders should be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. The remainder of area should appear uniform after binder application. Synthetic binders—such as Acrylic DLR (Agro-Tack), DCA-70, Petroset, Terra

SECTION IV - SOD

ready the area for seed application. Where site conditions will not permit normal seedbed
preparation, loosen surface soil by dragging with a heavy chain or other equipment to ro**èghamento Specifications**surface. Steep slopes (steeper than 3:1) should be tracked by a dozer leaving the soil in an
irregular condition with ridges running parallel to the contour of the slope. The top I - 3' of isaliass of turfarass sod shall be Maryland or Virginia State Certified or Approved. Sod labels
should be loose and friable. Seedbed loosening may not be necessary on newly disturbed areastall be made available to the job foreman and inspector.

ii. Sod shall be machine cut at a uniform soil thickness of 3/4, plus or minus 1/4, at the time of

their size and shape when suspended vertically with a firm grasp on the upper 10 percent of the

transplanted within this period shall be approved by an agronomist or soil scientist prior to its

i. During periods of excessively high temperature or in areas having dry subsoil, the subsoil shall a. If fertilizer is being applied at the time of seeding, the application rate amounts will not elegable the prior to laying the sod. II. The first row of sod shall be laid in a straight line with subsequent rows placed parallel to and tightly wedged against each other. Lateral joints shall be staggered to promote more uniform growth and strength. Ensure that sod is not stretched or overlapped and that all joints are butted

III. Wherever possible, sod shall be laid with the long edges parallel to the contour and with s. Seed and fertilizer shall be mixed on site and seeding shall be done immediately and withoutstaggering joints. Sod shall be rolled and tamped, pegged or otherwise secured to prevent slippage on slopes and to ensure solid contact between sod roots and the underlying soil surface. iv. Sod shall be watered immediately following rolling or tamping until the underside of the new sod pad and soil surface below the sod are thoroughly wet. The operations of laying, tamping and

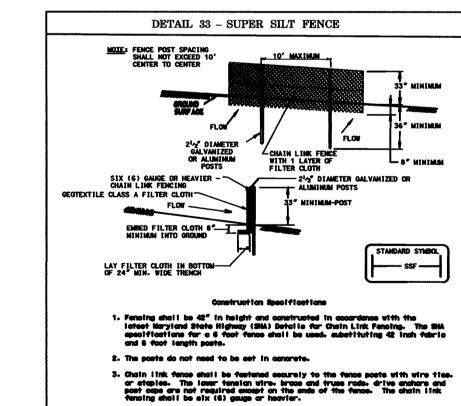
a. Seed spread dry shall be incorporated into the subsoil at the rates prescribed on the Temporiagoying for any piece of sod shall be completed within eight hours. or Permanent Seeding Summaries or Tables 25 or 26. The seeded area shall then be rolled with a weighted roller to provide good seed to soil contact.

C. Sod Maintenance b. Where practical, seed should be applied in two directions perpendicular to each other. Apply in the absence of adequate rainfall, watering shall be performed daily or as often as necessary half the seeding rate in each direction.

| Apply in the absence of adequate rainfall, watering shall be performed daily or as often as necessary during the first week and in sufficient quantities to maintain moist soil to a depth of 4". Watering the direction and insufficient quantities to maintain moist soil to a depth of 4". Watering the direction are also as a second control of the control of should be done during the heat of the day to prevent wilting.

11. After the first week, sod watering is required as necessary to maintain adequate moisture

iii. The first mowing of sod should not be attempted until the sod is firmly rooted. No more than b. Where practical, seed should be applied in two directions perpendicular to each other. Apply/3 of the grass leaf shall be removed by the initial cutting or subsequent cuttings. Grass height shall be maintained between 2 and 3 unless otherwise specified.



DETAIL 22 - SILT FENCE

PERSPECTIVE VIEW

JOINING TWO ADJACENT SILT

FENCE SECTIONS

Tensile Strength

Tensile Modulus

Filtering Efficiency

ILS DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE

folded and stapled to prevent sediment bypass.

Curb Inlet Protection

2'x 4" Web" -

MAX. DRAMAGE AREASIZA ACRE

Construction Specifications

standard T or U section weighting not less than 1.00 pond per linear foot

Fence posts shall be a minimum of 36" long driven 16" minimum into the

ground. Wood posts shall be 11/2" x 11/2" square (minimum) out, or 13/4" diameter

Geotextile shall be fastened securely to each fence post with wire ties

or staples at top and mid-section and shall meet the following requirements

50 lbs/in (min.)

20 lbs/in (min.)

. Where ends of geotextile fabric come together, they shall be overlapped

bulges occur or when sediment occumulation reached 50% of the fabric height.

0.3 gal ft*/ minute (max.) Test: MSMT 3

-- 16" MINIMUM HEIGHT OF GEOTEXTILE CLASS F

CROSS SECTION

FENCE POST SECTION
MINIMUM 20" ABOVE
GROUND

Test: MSMT 50

PAGE MARYLAND DEPARTMENT OF ENVIRONMENT
E - 15 - 3 WATER MANAGEMENT ADMINISTRATION

2' Minimum length of 2" x 4" anchor—

2' x 4' Wetr -

74°-152° Stone ----Filter Cloth

CONSTRUCTION SPECIFICATION

2. PLACE A CONTINUOUS PIECE OF GEOTEXTILE CLASS E THE SAME DIMENSIONS AS THE WIRE MESH OVER THE WIRE MESH AND SECURELY ATTACH IT TO THE 2*X 4*WEIR.

SECURELY NAIL THE 2" X 4" WEIR TO A 9" LONG VERTICAL SPACER TO BE LOCATED BETWEEN THE WEIR AND THE INLET FACE (MAX. 4"

4. PLACE THE ASSEMBLY AGAINST THE INLET THROAT AND NAIL OMNNAUM 2'LENGTHS OF 2'X 4'TO THE TOP OF THE WEIR AT SPACER LOCATIONS). THESE 2'X 4' ANCHORS SHALL EXTEND ACROSS THE NLET TOP AND BE HELD IN PLACE BY SANDBAGS OR ALTERNATE

THE ASSEMBLY SHALL BE PLACED SO THAT THE END SPACERS ARE A MINIMUM I'BEYOND BOTH ENDS OF THE THROAT OPENING.

6. FORM THE!/s' x'/s' WIRE MESH AND THE GEOTEXTILE FABRIC TO THE CONCRETE GUTTER AND AGAINST THE FACE OF CURB ON BOTH SIDES OF THE INLET. PLACE CLEAN 'X's' X'/s' STONE OVER THE WIRE MESH AND GEOTEXTILE IN SUCH A MANNER AS TO PREVENT WATER FROM ENTERING THE INLET UNDER OR AROUND THE GEOTEXTILE.

7. THIS TYPE OF PROTECTION MUST BE INSPECTED FREQUENTLY AND THE FILTER CLOTH AND STONE REPLACED WHEN CLOGGED WITH SEDIMENT. ASSURE THAT STORM FLOW DOES NOT BYPASS INLET BY INSTALLING A TEMPORARY EARTH OR ASPHALT DIKE GO DIRECT FLOW TO THE INLET.

4. Filter cloth shall be fastened securely to the chain link fence with ties aposed every 24° at the tap and mid section. 5. Filter Cloth shall be embedded a minimum of 8" into the ground.

6. When two sections of geotextile fabric adjoin each other, they shall be overlapped by 6" and folded. i. Maintenance shall be performed as needed and silt buildage removed when "bulgee" develop in the silt tence, or when silt reaches 50% of tence height.

U.S. DEPARTMENT OF AGRICULTURE MODIFIED MARYLAND DEPARTMENT OF ENVIRONMENT SOIL CONSERVATION SERVICE MODIFIED WATER MANAGEMENT ADMINISTRATION

APPROVED PLANNING BOARD of HOWARD COUNTY

DATE JULY 1,1999

PERMIT INFORMATION CHART SUBDIVISION NAME LOT/PARCEL 336 \$ 194 VILLAGE OF OWEN BROWN SECTION 2/ AREA 3 AX/ZONING MAP ELECTION DIST CENSUS TRACT 6067.03 PLAT * OR L/F BLOCK • ZONING 13917 6 M-1 € NT WATER CODE SEWER CODE 5202000 E-06

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.

9/2/99 DATE DEVELOPER

BY THE ENGINEER:

I CERTIFY THAT THIS PLAN OF 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

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

ONSERVATION SERVICE Natural Kesources

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

HOW BY SUIL CONSERVATION DISTRICT AS BUILT CERTIFICATE

APPROVED: HOWARD COUNTY DEPARTMENT OF

PLANNING AND ZONING.

CHIEF, DEVELOPMENT ENGINEERING DIVISION / DATE

CHIEF, DIVISION OF LAND DEVELOPMENT

OWNER/DEVELOPER

5/25/99

PLATT & COMPANY, INC. VILLAGE OF CROSS KEYS VILLAGE SQUARE I. SUITE 156 BALTIMORE, MARYLAND 21210

Attn: DWIGHT PLATT, JR. PH 410-532-2205

REVISION

COLUMBIA TECH CENTER

TAX MAP NO. 42 BLOCK No. 4 PARCEL/LOT No.: 194 & 401 ZONING: M-1 & NT

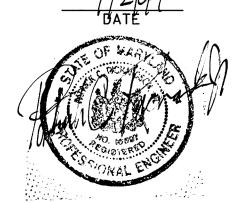
SEDIMENT CONTROL NOTES & DETAILS

6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND



Purdum and Jeschke, LLC

Consulting Engineers and Land Surveyors Civil • Structural • Environmental The Professional Engineering Center 8005 Harford Road - Baltimore, Maryland 21234 Phone: 410-668-8800 - Fax: 410-668-8801

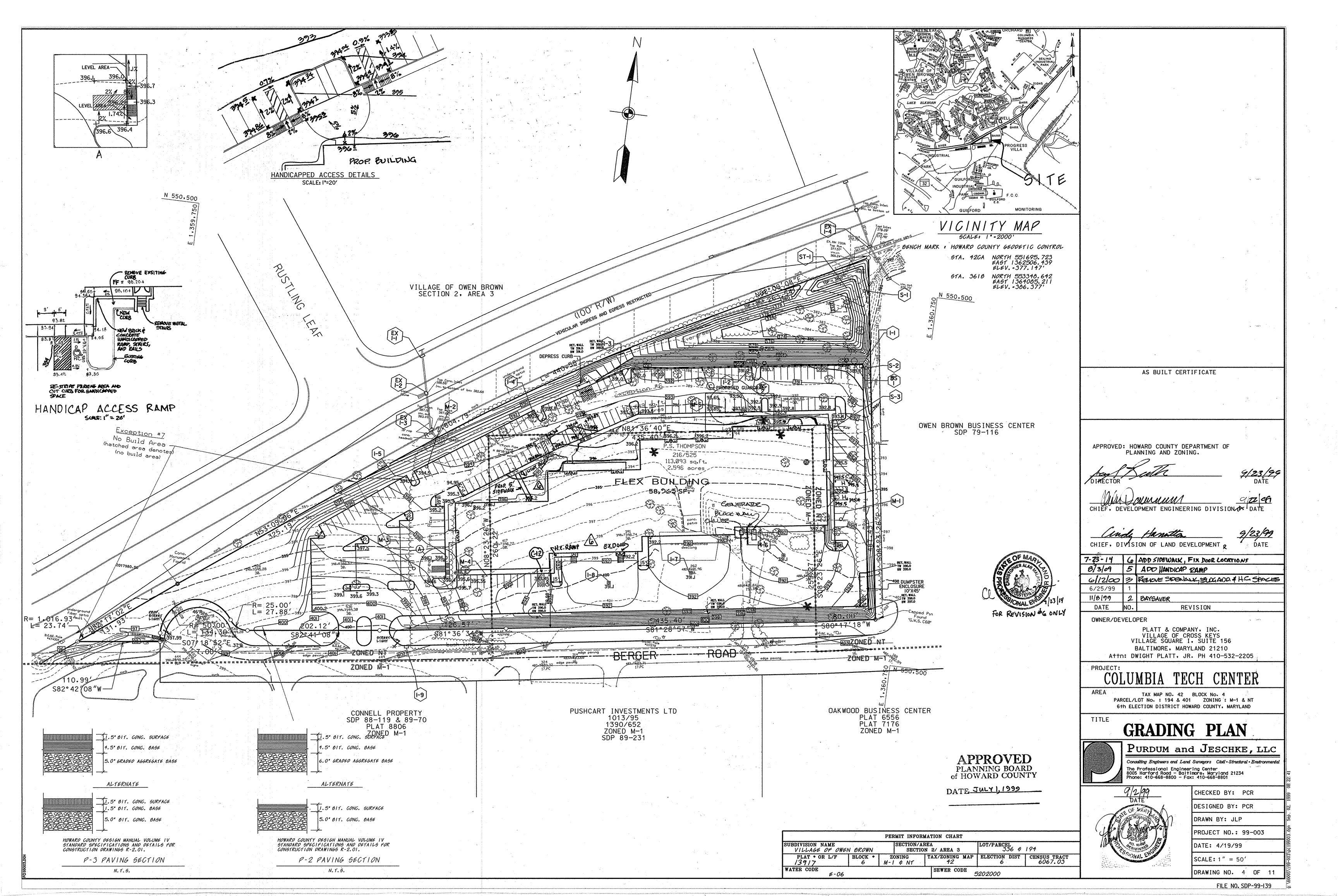


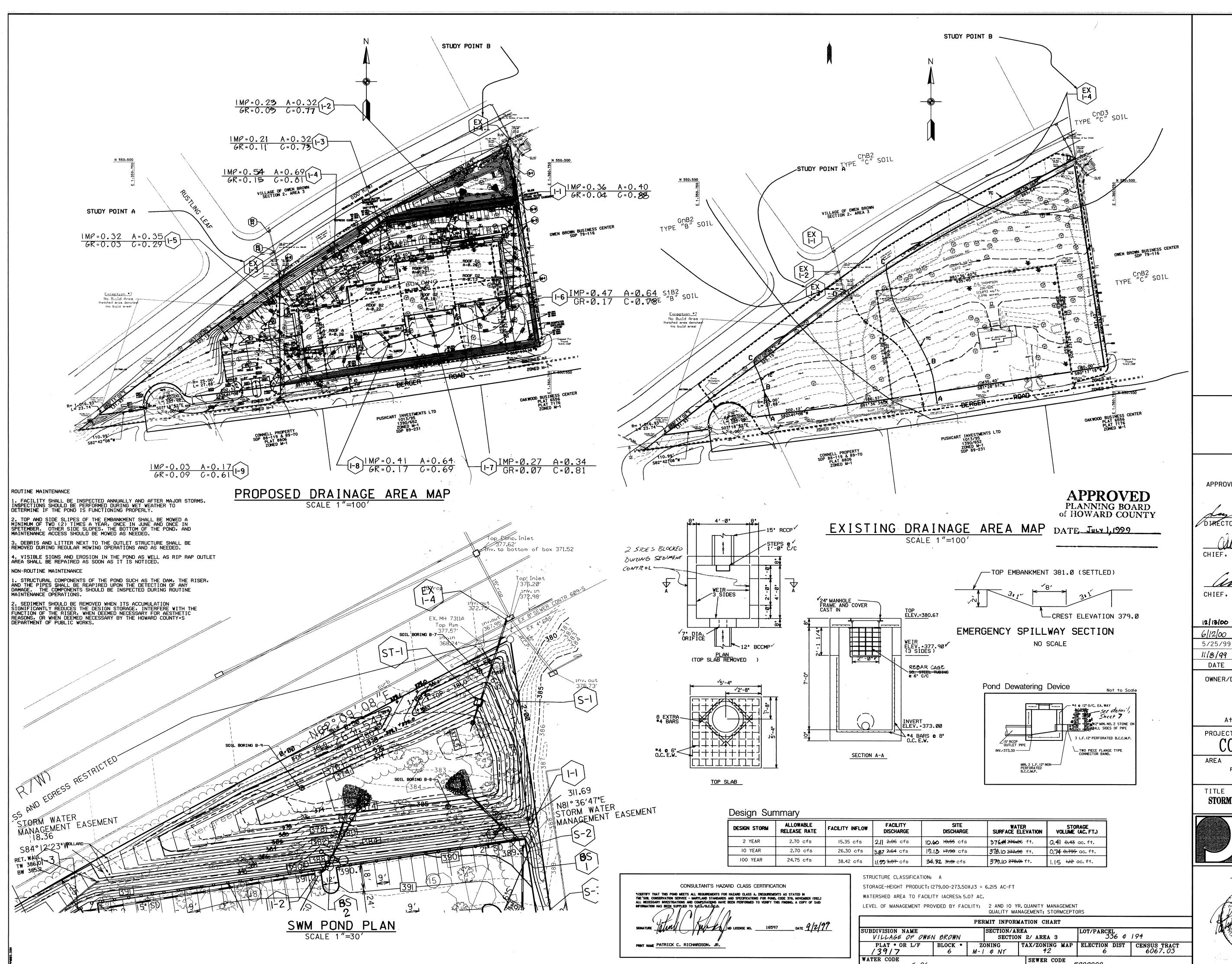
CHECKED BY: PCR DESIGNED BY: PCR RAWN BY: JLP PROJECT NO.: 99-003 DATE: 4/19/99 **SCALE:** 1" = 50'

4/22/cf

FILE NO. SDP-99-139

DRAWING NO. 3 OF 11





AS BUILT CERTIFICATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DATE

9/23/99

DATE

9/22/99 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

CHIEF, DIVISION OF LAND DEVELOPMENT

4 AS-BUILT 3 REMOVE SIDEWALKS, BLDG ADD, & MC SPACES 5/25/99 1118/99 BAYSAVER DATE REVISION

OWNER/DEVELOPER

PLATT & COMPANY, INC. VILLAGE OF CROSS KEYS VILLAGE SQUARE I. SUITE 156 BALTIMORE, MARYLAND 21210 Attn: DWIGHT PLATT, JR. PH 410-532-2205

COLUMBIA TECH CENTER

TAX MAP NO. 42 BLOCK No. 4
PARCEL/LOT No.: 194 & 401 ZONING: M-1 & NT 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

STORMWATER MANAGEMENT AND DRAINAGE AREA PLAN



5202000

E-06

PURDUM and JESCHKE, LLC Consulting Engineers and Land Surveyors Civil • Structural • Environmental

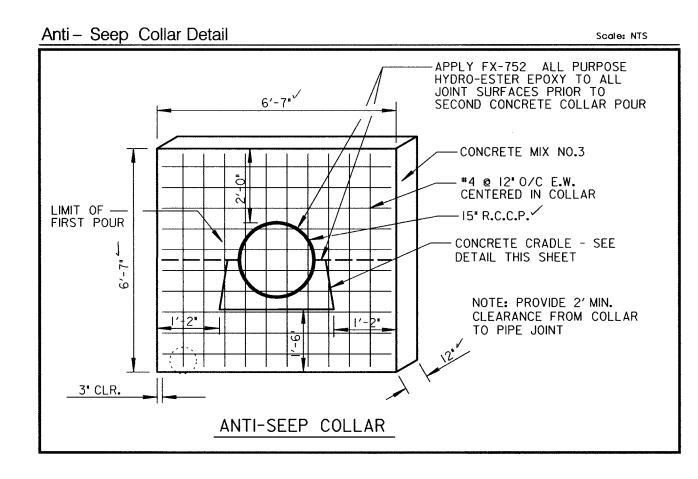
The Professional Engineering Center 8005 Harford Road - Baltimore, Maryland 21234 Phone: 410-668-8800 - Fax: 410-668-8801



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CHECKED BY: PCR
DESIGNED BY: PCR
DRAWN BY: JLP
PROJECT NO.: 99-003
DATE: 4/19/99
SCALE: AS SHOWN

FILE NO. SDP-99-139

DRAWING NO. 5 OF 11



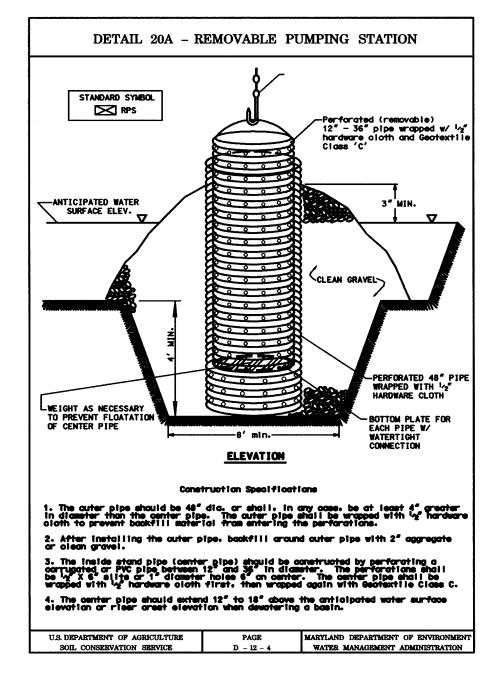
Concrete Cradle Detail SCALE: NTS R.C.C.P. 41" MINIMUM NOTES: . CRADLE TO BE CONTINUOUS ALONG PIPE. 2. CONCRETE FOR CRADLE TO BE MIX NO.I.

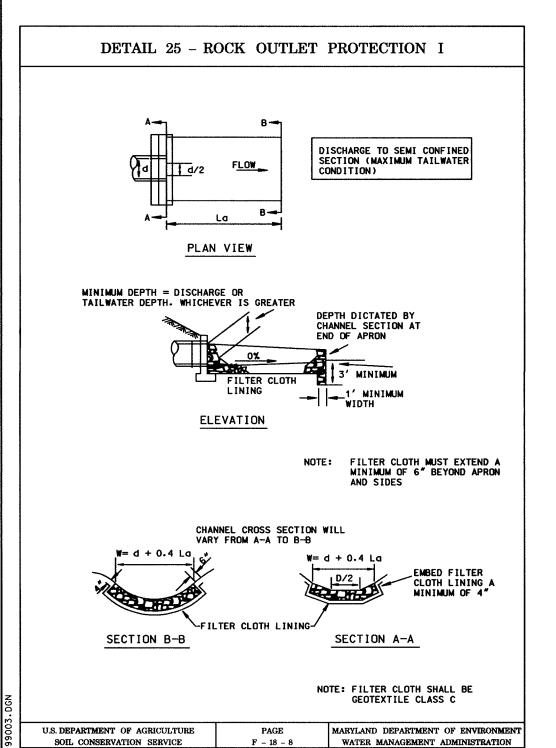
Sequence of Development Stormwater Management Pond

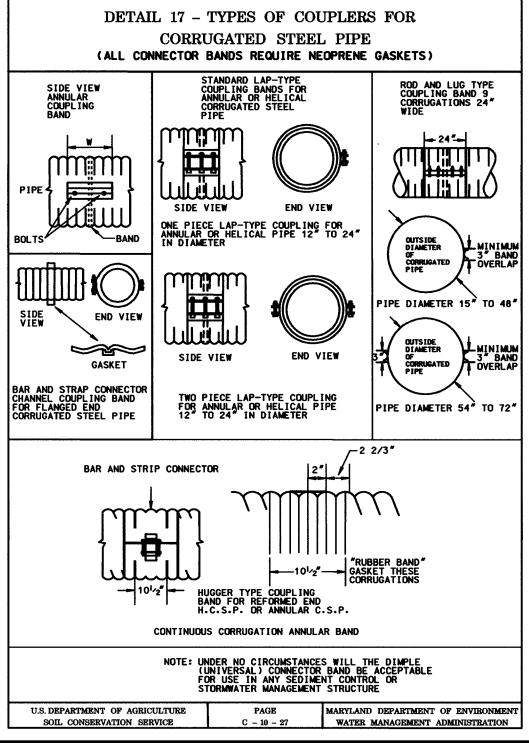
- I. OBTAIN ALL NECESSARY PERMITS.
- 2. NOTIFY HOWARD COUNTY DEPARTMENT OF INSPECTIONS AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION.
- 3. INSTALL ALL NECESSARY SEDIMENT CONTROL MEASURES AS PER THE SEDIMENT AND EROSION CONTROL PLAN.
- 4. EXCAVATE THE POND TO THE REQUIRED DIMENSIONS AND DEPTH.
- 5. INSTALL THE CUTOFF TRENCH AND THE OUTFALL PIPE AS SHOWN. STABILIZE ALL AREAS. INSPECTION OF THE CUTOFF TRENCH IS REQUIRED FOR CERTIFICATION OF THE AS-BUILT POND.

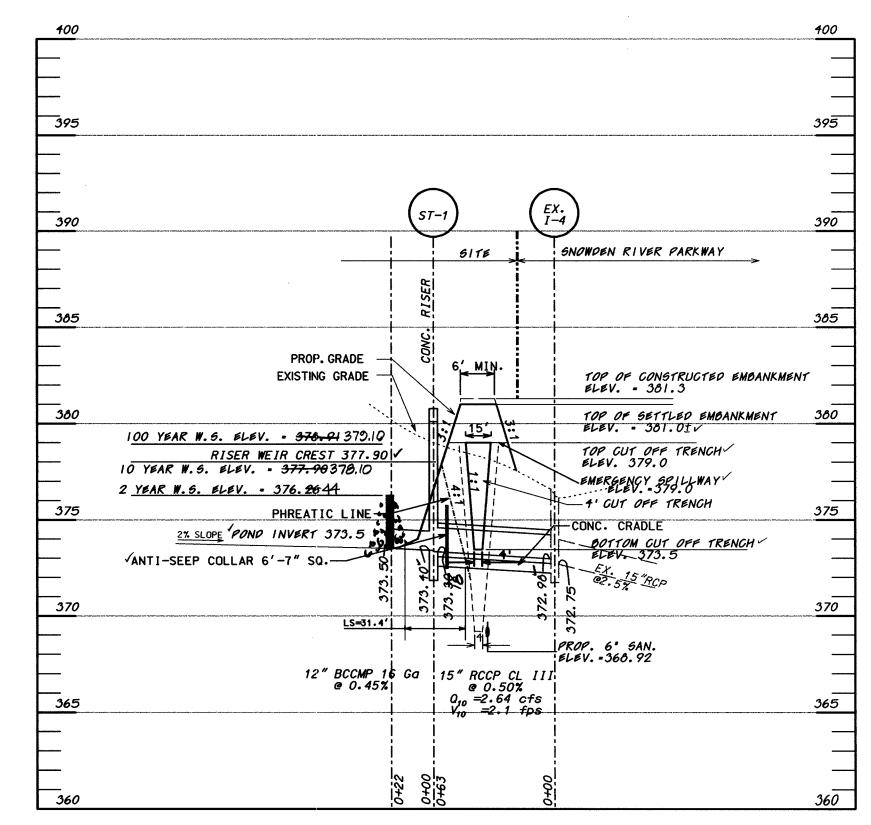
ON THE S.W.M. PLAN. REMOVE BOARDS FROM WEIRS.

- 6. INSTALL THE RISER STRUCTURE, BARREL AND SEDIMENT CONTROL DRAW DOWN DEVICE. INSTALL WOOD OVER 2 WEIRS DURING USE AS A SEDIMENT BASIN.
- 7. AFTER CONSTRUCTION IS COMPLETE AND WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, REMOVE SILT AND DISPOSE OF TO AN APPROVED LOCATION. REMOVE THE DRAW DOWN DEVICE AND INSTALL THE TRASH RACK AS SHOWN
- 8. STABILIZE ALL AREAS THAT ARE DISTURBED USING PERMANENT SEEDING AND AND MULCHING.
- 9. AS-BUILT THE POND WITHIN 30 DAYS AFTER COMPLETION AND SUBMIT AS-BUILT PLANS TO HOWARD COUNTY FOR APPROVAL.

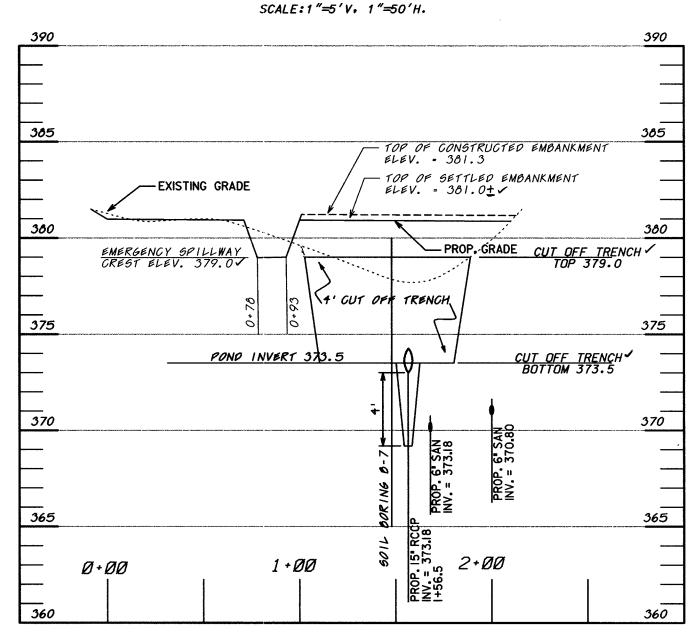






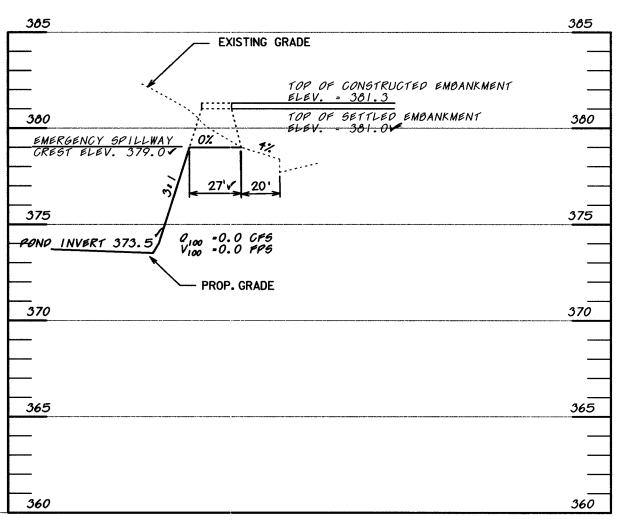


PROFILE THRU PRINCIPAL SPILLWAY



PROFILE ALONG EMBANKMENT

SCALE:1"=5'V. 1"=50'H.



PROFILE ALONG EMERGENCY SPILLWAY SCALE:1"=5'V, 1"=50'H.

SPECIFICATIONS

These specifications are appropriate to all ponds within the scope of the Standard for practice M0-378. All references to ASTM and AASHTO specifications apply to the most recent version.

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and sharp breaks shall be

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of a 50 foot radius around the inlet structure shall be cleared.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

shall be free of roots, stumps, wood, rubbish, stones greater than 6°, frozen or other objectionable materials. Fill material for the center of the embankment and cut off trench shall conform to Unified Soil Classification GC, SC, CH, or CL. Consideration may be given to the use of other materials in the embankment if design and construction are supervised by a geotechnical engineer. Placement - Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8 Inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement and not excavated into the embankment.

Material - The fill material shall be taken from approved designated borrow areas. It

Compaction - The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of the equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble yet not be so wet that water can be squeezed out.

of maximum required density shall not be less than 95% of maximum dry density with a moisture content within *2% of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99.

Cut Off Trench - The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall be at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be I to I or flatter. The backfill shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability. Structure Backfill

Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to appoint a structure linder no circumstances shall equipment be driven over any part to any part of a structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe, unless there is a compacted fill of 24 or greater over the

Pipe Conduits

All pipes shall be circular in cross section.

- Corrugated Metal Pipe All of the following criteria shall apply for corrugated metal pipe: I. Materials - (Steel Pipe) - This pipe and its appurtenances shall be galvanized and fully Materials - (Steel Pipe) - Inis pipe and its appurtenances shall be galvanized and tully bituminous coated and shall conform to the requirements of AASHTO Specification M-190 Type A with watertight coupling bands. Any bituminous coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Steel pipes and polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. The following coatings or an approved equal may be used: Nexon, Plasti-Cote, Blac-Klad, and Beth-Cu-Loy. Coated corrugated steel pipe shall meet the requirements of AASHTO M-245 and M-246.
- Materials (Aluminum Coated Steel Pipe) This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with watertight coupling bands or flanges. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating
- Materials (Aluminum Pipe) This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-196 or M-211 with watertight coupling bands or flanges. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.
- Coupling bands, anti-seep collars, end sections, etc., must be composed of the same material as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 mils in
- 3. Connections All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are metal. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight. Dimple bands are not considered to be watertight.
- All connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled an adequate number or corrugations to accommodate the band width. The following type connections are acceptable for pipes less than 24 in diameter: flanges on both ends of the pipe, a 12 wide standard lap type band with 12 wide by 3 thick closed cell circular neoprene gasket; and a 12 wide hugger type band with 0-ring askets baying a minimum diameter of 6 receiver that the corrugation depth gaskets having a minimum diameter of $\frac{1}{2}$ greater than the corrugation depth. Pipes 24 in diameter and larger shall be connected by a 24 long annular corrugated band using rods and lugs. A 12 wide by thick closed cell circular neoprene gasket will be installed on the end of pipe for a total of 24.
- Helically corrugated pipe shall have either continuously welded seams or have lock seams with internal caulking or a neoprene bead.
- 4. Bedding The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.
- 5. Backfilling shall conform to "Structure Backfill."
- 6. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings. Reinforced Concrete Pipe - All of the following criteria shall apply for reinforced
- Materials Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM Designation C-361.
- Bedding Al reinforced concrete pipe conduits shall be laid in a concrete bedding for their entire length. This bedding shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 10% of its outside diameter with a minimum thickness of 3 inches, or as shown on the drawings. 3. Laying pipe - Bell and spigot pipe shall be placed with the bell end
- upstream. Joints
 shall be made in accordance with recommendations of the manufacturer of the
 material. After the joints are sealed for the entire line, the bedding shall be placed so that
 all spaces under the pipe are filled. Care shall be exercised to prevent any
 deviation from the original line and grade of the pipe. The first joint must be
 located within 2 feet from the riser.
- 4. Backfilling shall conform to "Structure Backfill."
- 5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Care of Water during Construction

All work on permanent structures shall be carried out in areas free from water. The Contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works. The contractor shall also furnish, install, operate, and maintain all necessary pumping and other equipment required for removal of water from the various parts of the work and for maintaining the excavations, foundation, and other parts of the work free from water as required or directed by the engineer for constructing each part of the work. After having served their purpose, all temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and a manner and to the extent that will maintain stability of the excavated slopes and bottom of the required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level at the locations being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water to sumps from which the water shall be pumped.

Stabilization All borrow areas shall be graded to provide proper drainage and left in a slightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Maryland Soil Conservation Service Standards and Specifications for Critical Area Planting (MD-342) or as shown on the accompanying drawings.

Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures to be employed during the construction process.

Construct fencing in accordance with the State Highway Administration Standard Details 690.02. Use specification for a 6-foot fence, substituting 42' fabric and 6'-8' line posts. Construct the gate in accordance with SHA Standard Detail 692.01 with 42' fabric. The fabric used for the fence and gate must conform to AASHTO Designation MI81-74. Dark vinyl coating is required for the fence posts and wire fabric in accordance with the Landscape Manual adopted by resolution 56-90 October 1, 1990.

GENERAL NOTES: SPECIFICATIONS FOR MISCELLANEOUS MATERIAL

- I. BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION 1976, ERRATA & ADDENDA.
- SOIL CONSERVATION SERVICE MARYLAND STANDARDS AND SPECIFICATIONS POND CODE 378 NOVEMBER, 1992.
- 3. MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION JANUARY, 1982, STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIAL.

PERMIT INFORMATION CHART SUBDIVISION NAME CTION/AREA VILLAGE OF OWEN BROWN SECTION 2/ AREA 3 ELECTION DIST CENSUS TRACT 6067.03 PLAT * OR L/F TAX/ZONING MAP ZONING M-I \$ NT 13917 6 WATER CODE SEWER CODE 5202000 E-06

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.

DATE **DEVELOPER**

BY THE ENGINEER:

I CERTIFY THAT THIS PLAN OF 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,

APPROVED PLANNING BOARD of HOWARD COUNTY

DATE JULY 1, 1999

AS BUILT CERTIFICATE

APPROVED: HOWARD COUNTY DEPARTMENT OF

PLANNING AND ZONING.

DATE

92299 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

9/23/99 CHIEF, DIVISION OF LAND DEVELOPMENT

12/13/00 4 AS-BUILT 5/25/99

DATE

OWNER/DEVELOPER PLATT & COMPANY, INC. VILLAGE OF CROSS KEYS
VILLAGE SQUARE I, SUITE 156

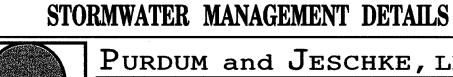
REVISION

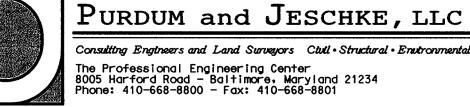
BALTIMORE, MARYLAND 21210 Attn: DWIGHT PLATT, JR. PH 410-532-2205

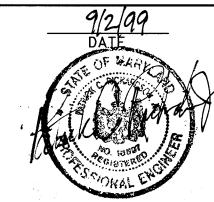
COLUMBIA TECH CENTER

TAX MAP NO. 42 BLOCK No. 4 PARCEL/LOT No.: 194 & 401 ZONING: M-1 & NT 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE







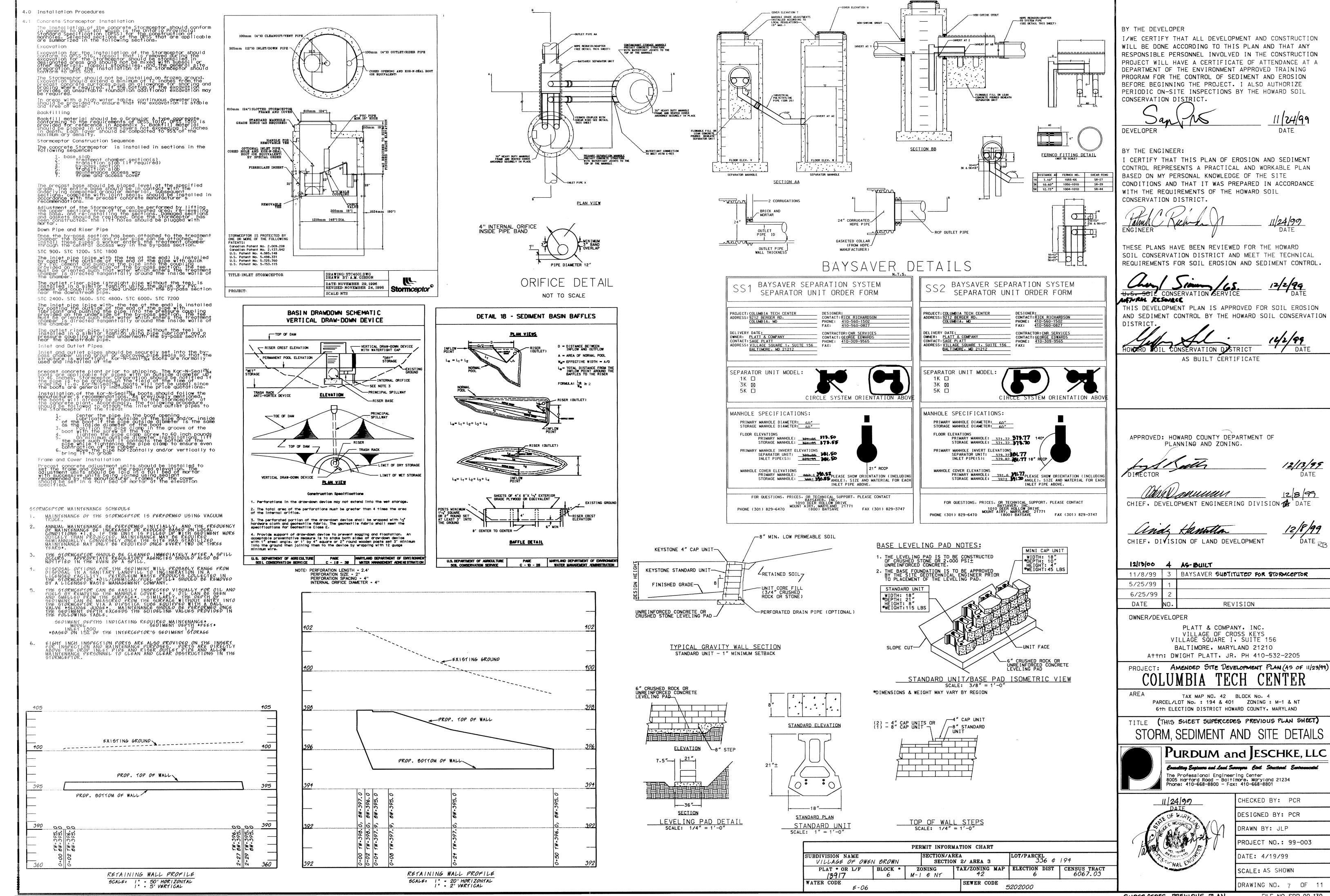
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DRAWN BY: JLP PROJECT NO.: 99-003

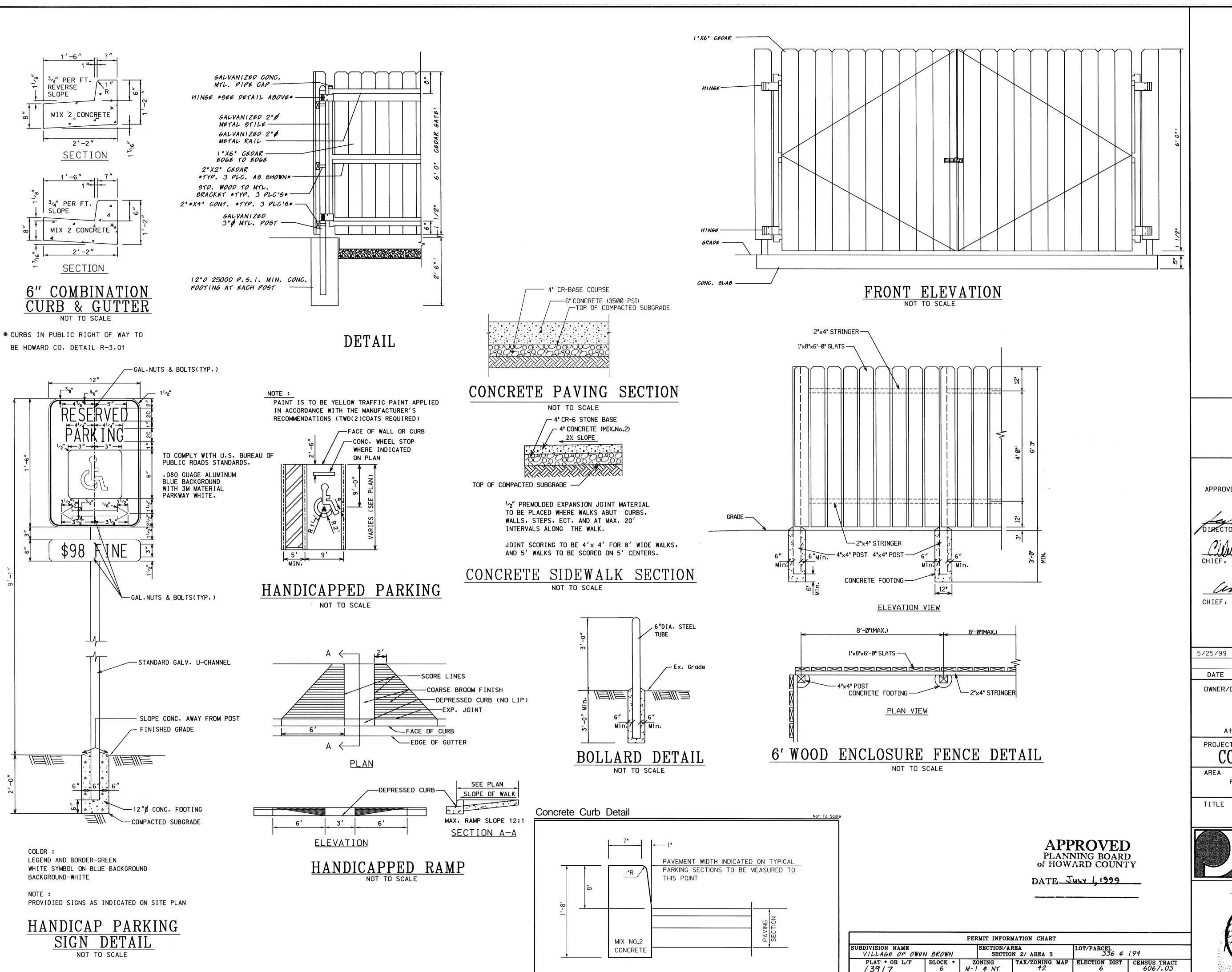
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DRAWING NO. 6 OF 11

FILE NO. SDP-99-139



FILE NO. SDP-99-139 SUPERCEDES PREVIOUS PLAN



AS BUILT CERTIFICATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

7/22/99

(Illy Fullial) CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

CHIEF, DIVISION OF LAND DEVELOPMENT,

NOT TO SCALE

DATE REVISION

OWNER/DEVELOPER

PLATT & COMPANY, INC. VILLAGE OF CROSS KEYS VILLAGE SQUARE I, SUITE 156 BALTIMORE, MARYLAND 21210 Attn: DWIGHT PLATT, JR. PH 410-532-2205

COLUMBIA TECH CENTER

TAX MAP NO. 42 BLOCK No. 4
PARCEL/LOT No.: 194 & 401 ZONING: M-1 & NT 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SITE DETAILS



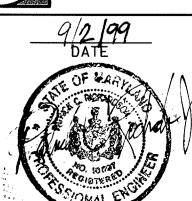
M-I € NT

SEWER CODE

5202000

WATER CODE

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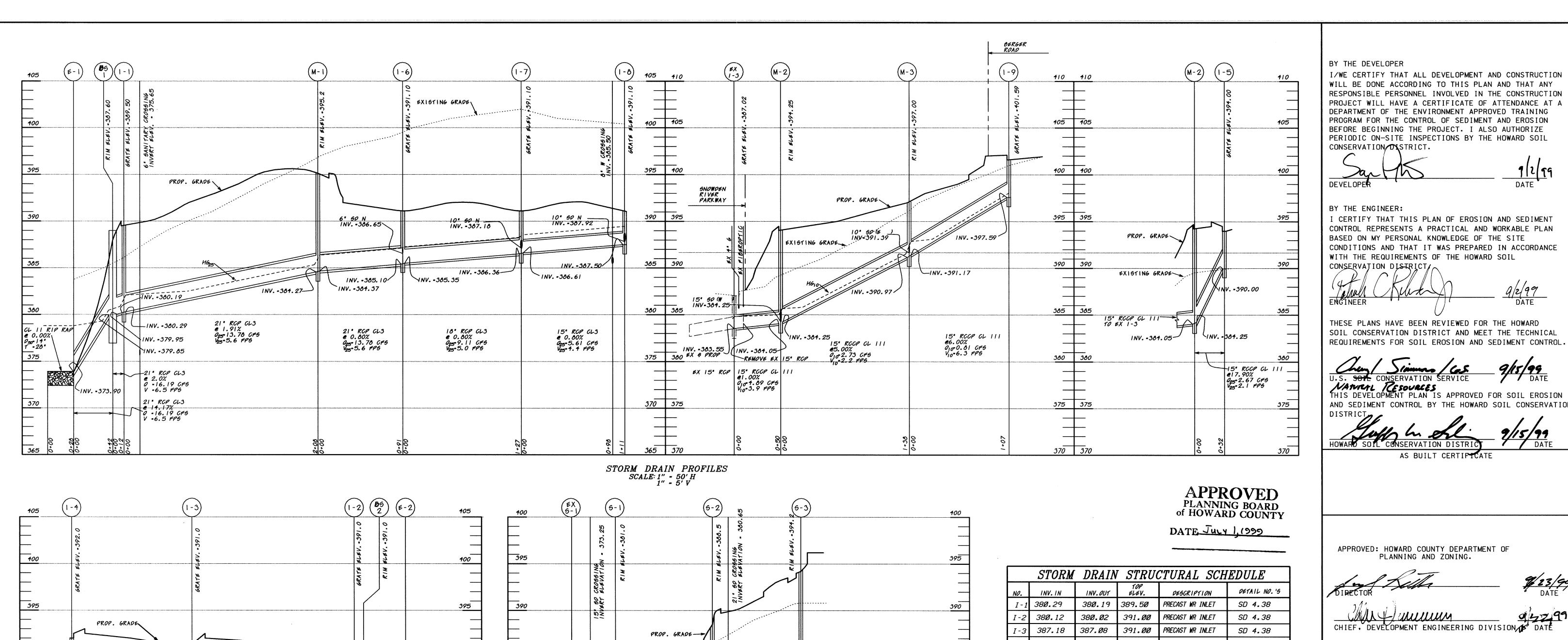
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DRAWING NO. 8 OF 11

SCALE: AS SHOWN

FILE NO. SDP-99-139

9/23/99



EXISTING GRADE --

INV. =370.31

6" 5 e 1.25%

INV. -370.11

6" 5 e 1.25

375

370

365

CL I RIP RAP

365

INV. =379.17

INV. -378.97-

NV. -374.93

SANITARY SEWER PROFILE

SCALE: 1" - 50' H 1" - 5' V

6° 5 e 1.25%

6° 50 5 /INV.=387.83

387.18

15° RGCP GL 111 • 1.00% • 25-3.87GP6 V25-3.0FP6

EXISTING GRADEY

15° RGGP GL 111 **e 1.00%** 0₂₅-6.13GF6 V₂₅-1.8FP6

STORM DRAIN PROFILE

SCALE: 1" = 50' H 1" = 5' V

380.02

379.82-

15" RCCP CL 111 2.00% 45=9.28CF5 V₂₅=5.0FP6

15" RCCP CL 11 **e**12.92% —— 0₂₅-9.28CF5 V₂₅-5.0FP6

390

385

380

375

370

388.17

392.00 388.17 PRECAST WR INLET SD 4.38 390.00 STC 450I 394.00 INLET STORMCEPTOR 391.10 | DBL "S" INLET SD 4.23 386.36 391.10 DBL "S" INLE SD 4.23 *387.50* 391.10 | DBL "S" INLE 387.92 (10" SD 4.23 401.59 PRECAST WR INLET SD 4.38 397.59 384.37 384.27 395.20 48" MH G 5.12 G 5.12 384.05 48" MH 394.25 390.97 397.00 48" MH G 5.12 SHALLOW MH 392.10 392.00 395.30 G 5.05 386.20 393.90 48" MH 386.00 G 5.12 BAYSAVER 379.95 *379.85* 3K SEPARATOR 3K SEPARATOR. BAYSAVER 391.00 379.72 END SECTION SD 5.51 373.50 SD 5.51 END SECTION

* SEE DETAIL SHT

S	ANITAR	Y SEWE	R STR	UCTURAL SCI	HEDULE
NO.	INV. IN	INV.OUT	TOP ELEV.	DESCRIPTION	HO.CO.STO. DETAIL NO.'S
6-1	370.21	370.11	381.0	48" MH	G 5.11
6-2	<i>374.73</i>	37 1 .93	366.5	48" MH	G 5.11
	378.97	379.17	394.2	48" MH	G 5.11

PERMIT INFORMATION CHART SUBDIVISION NAME SECTION/AREA LOT/PARCEL 336 \$ 194 VILLAGE OF OWEN BROWN SECTION 2/ AREA 3 TAX/ZONING MAP ELECTION DIST CENSUS TRACT 6067.03 ZONING M-1 € NT WATER CODE SEWER CODE 5202000

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CONSERVATION DISTRIC

AS BUILT CERTIFICATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

7/2/99

DATE

9/2/99 DATE

9/23/99 CHIEF, DIVISION OF LAND DEVELOPMENT

5/25/99 11/8/99 2 BAYSAVER DATE REVISION

OWNER/DEVELOPER

PLATT & COMPANY, INC. VILLAGE OF CROSS KEYS VILLAGE SQUARE I, SUITE 156 BALTIMORE, MARYLAND 21210 Attn: DWIGHT PLATT, JR. PH 410-532-2205

TAX MAP NO. 42 BLOCK No. 4 PARCEL/LOT No.: 194 & 401 ZONING: M-1 & NT 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

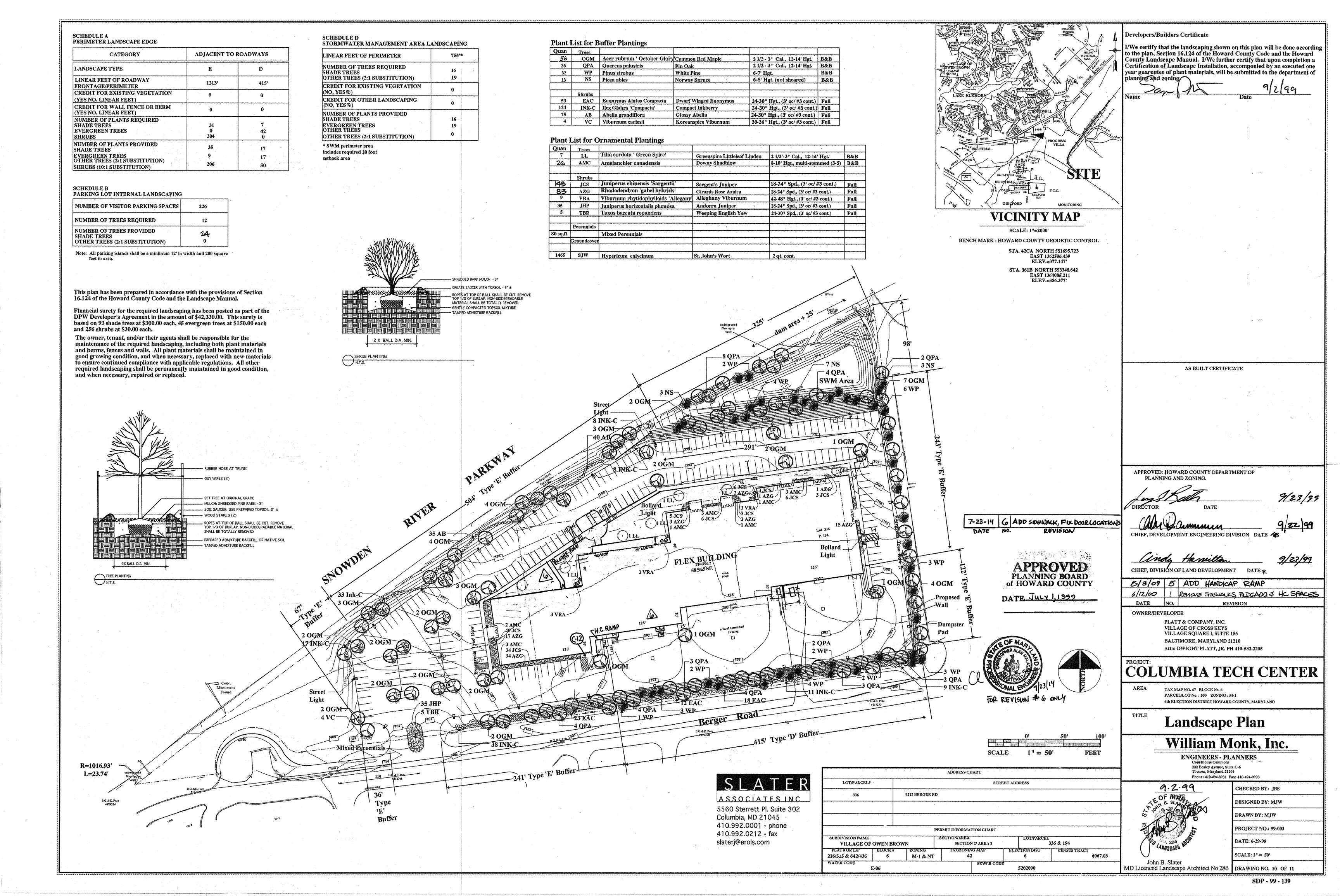
STORM DRAIN & SANITARY PROFILES

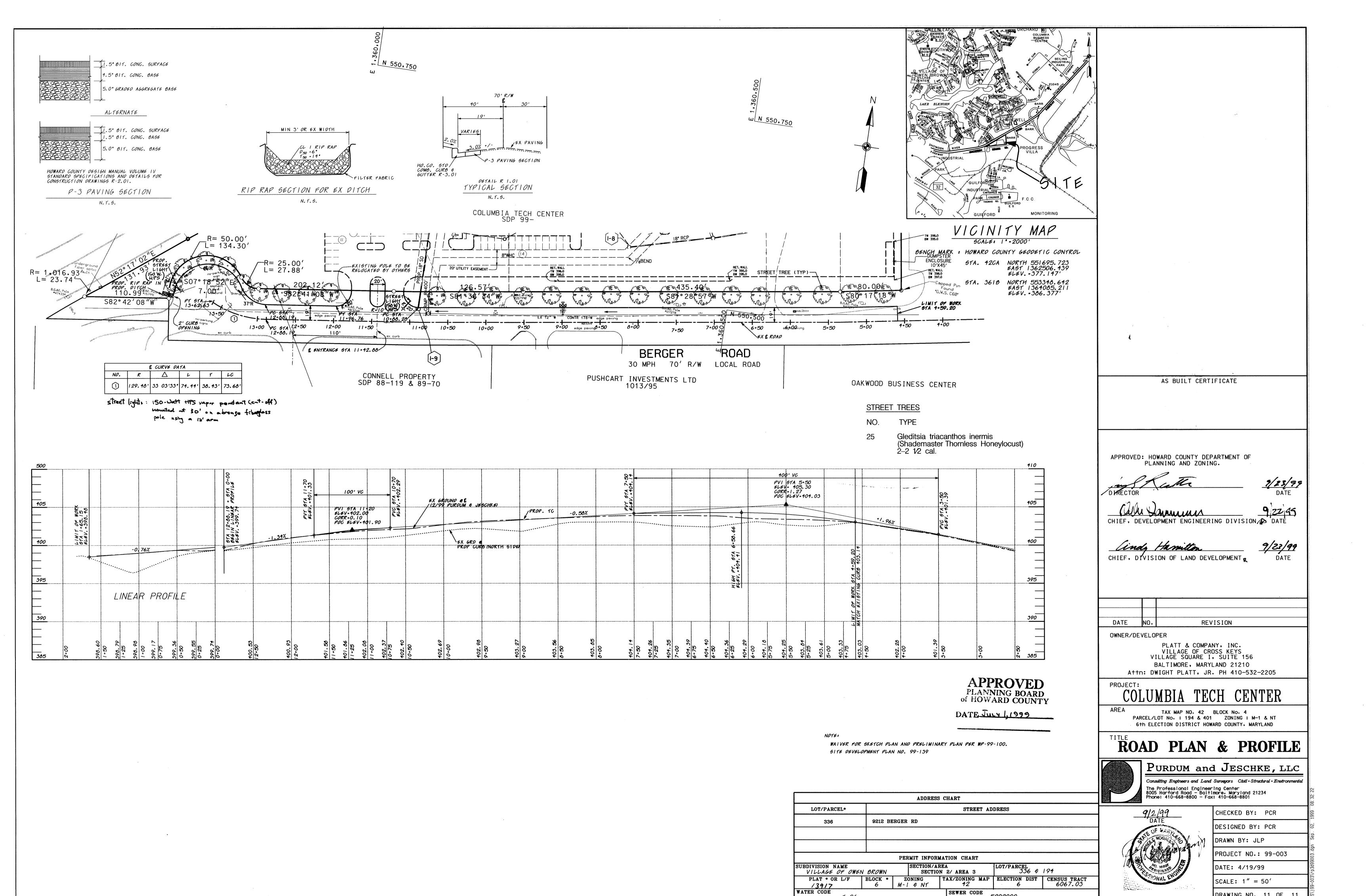


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CHECKED BY: PCR DESIGNED BY: PCR DRAWN BY: JLP PROJECT NO.: 99-003 DATE: 4/19/99 SCALE: AS SHOWN

DRAWING NO. 9 OF 11 FILE NO. SDP-99-139





FILE NO. SDP-99-139

DRAWING NO. 11 OF 11

5202000