# AEQUUS MEDICAL OFFICE BUILDING

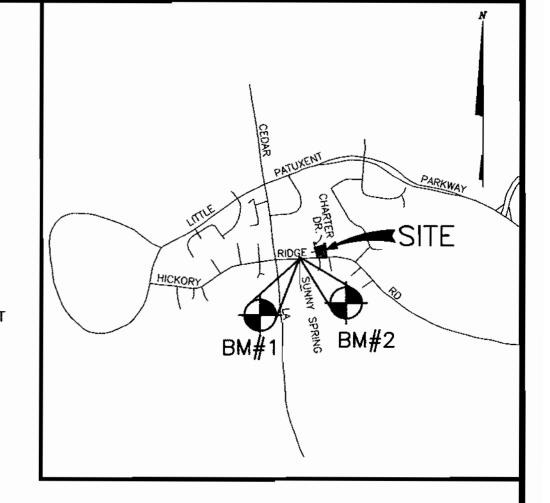
# SITE DEVELOPMENT PLAN

## THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION 3245/2514 4118/16 HOWARD COUNTY MARYLAND DONEGAL ASSOCIATES DEPARTMENT OF PUBLIC WORKS 1309/4 ROAD HICKORY RIDGE

#### BENCHMARKS

P.K. NAIL SET AT THE INTERSECTION OF HICKORY RIDGE ROAD AND SUNNY SPRING ROAD

> FIRE HYDRANT BONNET BOLT ON NORTH SIDE OF HICKORY RIDGE ROAD AT SUNNY SPRING ROAD



VICINITY MAP

SCALE: 1"=2000'

	DRAWING LIST
NO.	
1 OF 11	COVER SHEET
2 OF 11	SITE DEVELOPMENT PLAN
3 OF 11	DRAINAGE AREA MAP
4 OF 11	UTILITY PROFILES
5 OF 11	SEDIMENT CONTROL PLAN
6 OF 11	SEDIMENT CONTROL NOTES & DETAILS
7 OF 11	SEDIMENT_CONTROL NOTES & DETAILS
8 OF 11	DETAIL SHEET
9 OF 11	LANDSCAPE PLAN
10 OF 11	STORMWATER MANAGEMENT DRAINAGE STUDY
11 OF 11	STORMWATER MANAGEMENT NOTES AND DETAILS

	STREET LIGHT INFORMATION	
SYMBOL	DESCRIPTION	QUANTITY
<b>1</b>	TYPE A-SINGLE TYPE III, WITH HORIZONTAL 250 WATT METAL HALIDE LAMP ON A 25 FOOT ROUND POLE (DARK BRONZE)	11
	TYPE X4-QUAD, TYPE X, WITH HORIZONTAL 400 WATT METAL HALIDE LAMP ON A 25 FOOT ROUND POLE (DARK BRONZE)	4

NOTE: ALL EXTERIOR LIGHTING SHALL CONFORM TO SECTION 134 OF THE ZONING REGULATIONS.

#### SITE ANALYSIS

AREA OF SITE = 4.253 Acs. PRESENT ZONING: NT LAND USE: PROPOSED MEDICAL OFFICE NUMBER OF PARKING SPACES REQUIRED: 2/1000 = 120NUMBER OF PARKING SPACES PROVIDED: 4.6/1000 = 276

**APPROVED** PLANNING BOARD of HOWARD COUNTY DATE OCTOBER 4, 2000

> ADDRESS CHART LOT/PARCEL# STREET ADDRESS 10700 CHARTER DRIVE

(INCLUDES 8 HANDICAP SPACES)

WATER CODE:	SEWER COD	SEWER CODE: SUBDIVISION NAME		SEWER CODE: SUBDIVISION NAME SECTION/AREA		PARCEL
			TO	WN CENTER	8/4	D
PLAT	BLOCK		ONE	TAX MAP	ELEC. DIST.	CENSUS TRACT
4804	_	NT	-ECC	35	5TH	6053.02

CENTURY ENGINEERING, INC. CONSULTING ENGINEERS, PLANNERS, SURVEYORS 32 WEST ROAD TOWSON, MARYLAND 21204 (410) 823-8070

APP'R. DATE BY REVISION

AEQUUS LLC 3414 OLANDWOOD COURT OLNEY, MARYLAND 20832 (301) 774-2529

AEQUUS MEDICAL OFFICE BUILDING TOWN CENTER SECTION 8 AREA 4

COVER SHEET AS SHOWN NT-ECC TAX MAP No. SEPT., 2000 HOWARD COUNTY, MARYLAND 5TH ELECTION DISTRICT

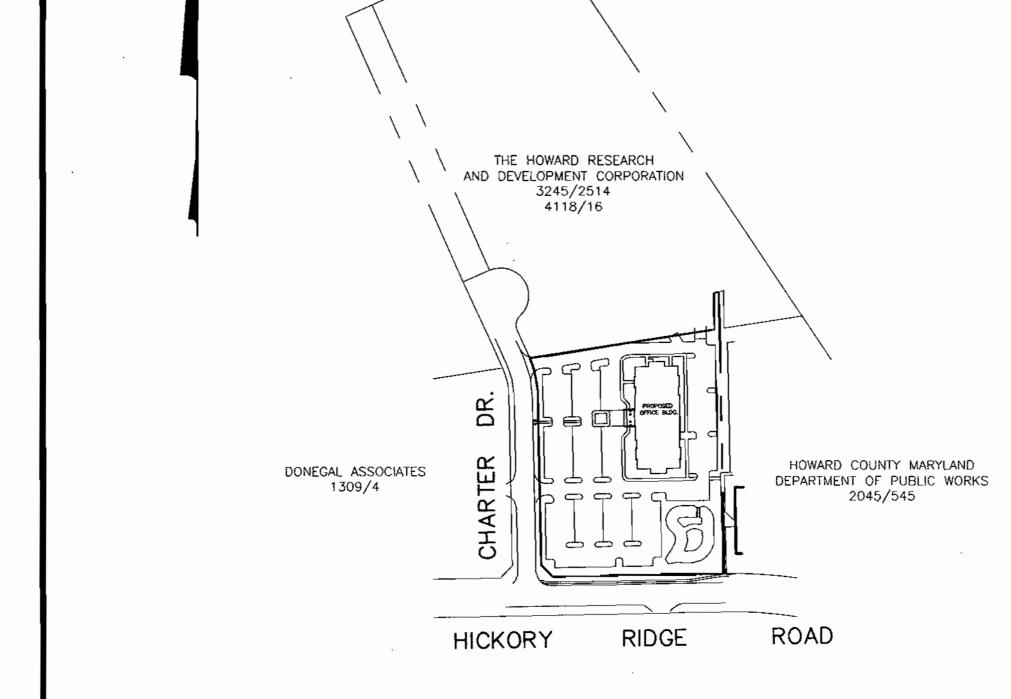
SDP-00-143

OF 11

C.E.I. FILE No.

20066.00

SHEET



28. Forest conservation exemption under Section 16.1202(b)(1)(IV), of the Howard County Subdivision Regulations. 29. There are no wetlands on this site as determined by Environmental

GENERAL NOTES

standard and specifications if applicable.

5. Site area: 4.253 ACRES

an on-site facility.

plans for development.

6" water house connection.

F 83-12, & A-8-4-8111.

entrances and exits.

22. Recording reference: Plat No. 4804

shall be 7' from the back of curb.

and intersections.

1. All construction shall be in accordance with the latest

2. The contractor shall notify the Department of Public Works/Construction Inspection Division at (410) 313-1880 at least five (5) working days prior to the start of work.

at least 48 hours prior to any excavation work.

standards and specifications of Howard County plus MSHA

3. The contractor shall notify "Miss Utility" at 1-800-257-7777

4. The contractor shall notify the Howard County Department of Public Works, Bureau of Utilities at (410) 313-4900 at least

five working days prior to starting any excavation work.

6. 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

8. Existing topography reflects field survey by Century Engineering Jan. 2000.

11. Stormwater Management: Quanity and Quality Management is provided by

12. All existing water and sewer is per Contract #'s: 824-D-W&C, & 24-1079-D)

7. All plan dimensions are to face of curb unless otherwise

Coordinates and bearing are based upon the MD State plan system (NAD '83).

15. Utility information taken from approved final construction

All sidewalks shall be 6' wide except where dimensioned otherwise. Provide 3' radius rounding at all angle breaks

connections. Contractor shall utilize D.I.P. (CL. 51) for

contractor shall remove the existing blocking and maintain.

19. Use Howard County trench bedding class "C" for storm drains.

23. All proposed ramps shall be in accordance with current A.D.A. standards. Maximum sidewalk cross slope shall be two percent. Provide a five-foot by five-foot level (2 percent

25. The limits of public maintenance for water house connections

26. All proposed site utilities are to terminate 5' from the building. The building plumber shall connect to and extend

27. For Gas, Telephone and Electric routing, see separate plan.

21. Project background: See Dept. of Planning & Zoning File Numbers:

max.) landing at the top and bottom of all ramps and building

18. For all storm drain connections at existing stubs, the

20. Paved areas indicated are private except as noted.

24. All water meters shall be located inside buildings.

these utilities to the inside of the building.

10. Existing water and sewer shown is public.

13. All existing public storm drain is per F 82-12

17. Contractor shall utilize PVC for all sewer house

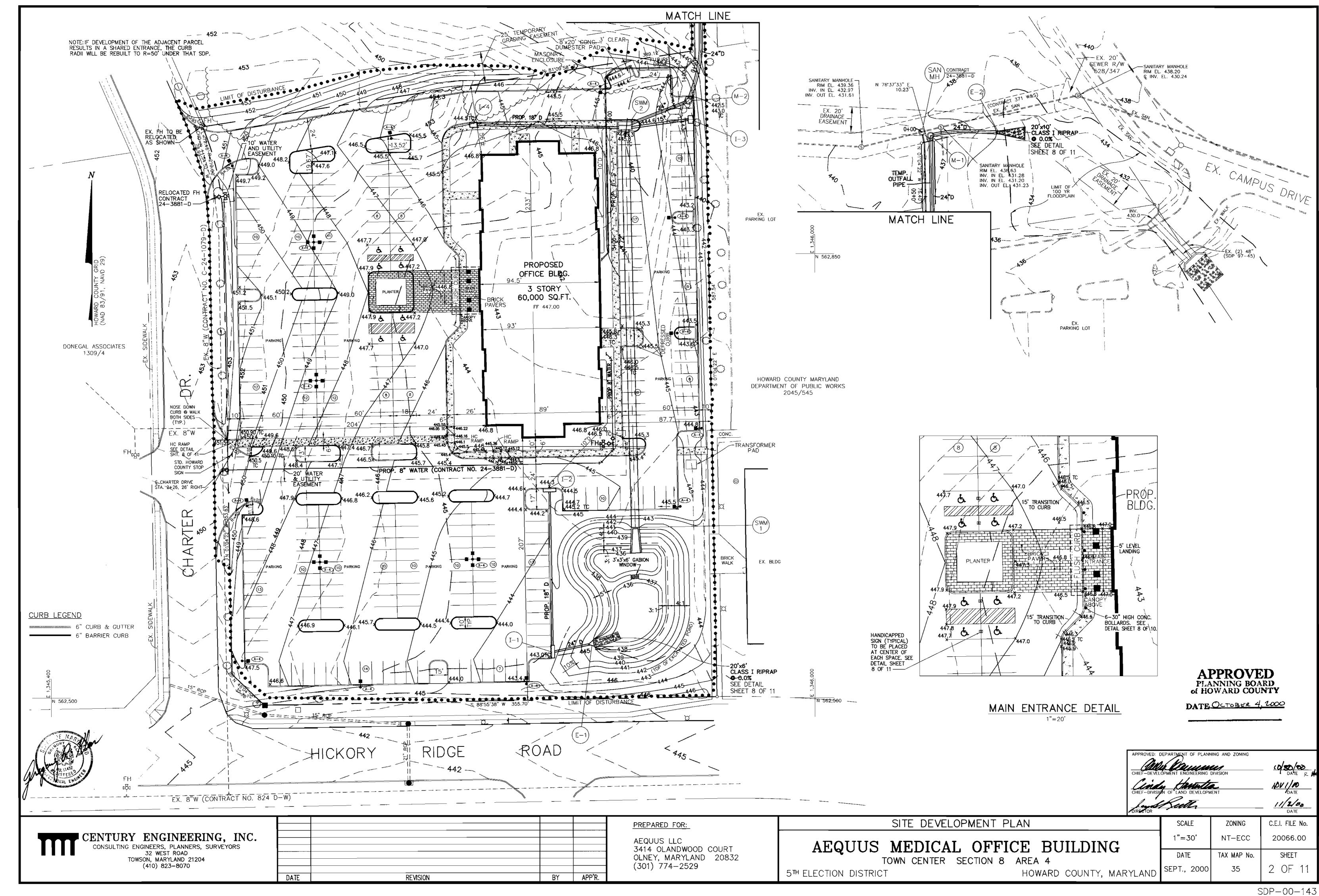
14. All curb radii is 5' unless noted otherwise.

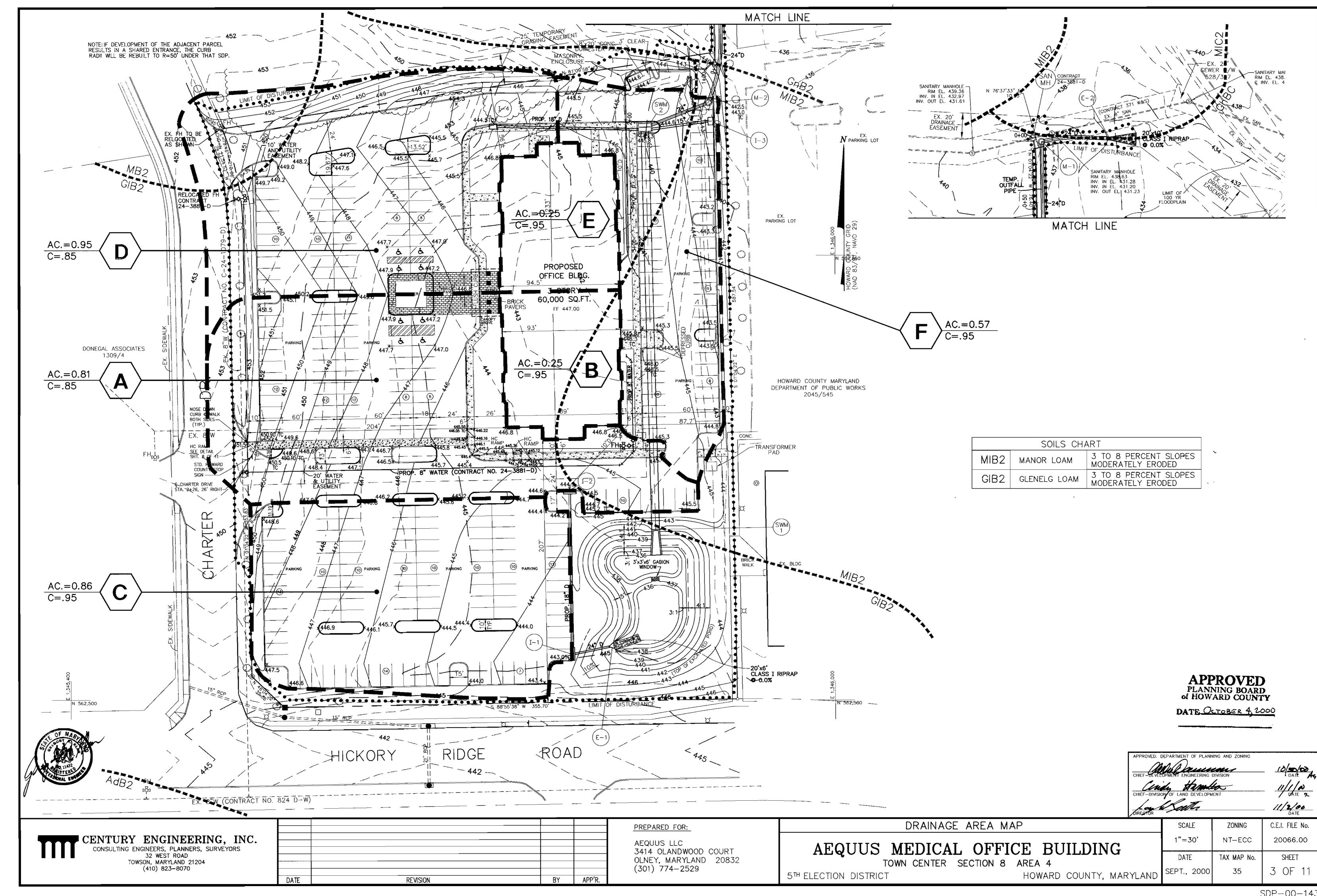
Quality Resources, L.L.C. in January, 2000.

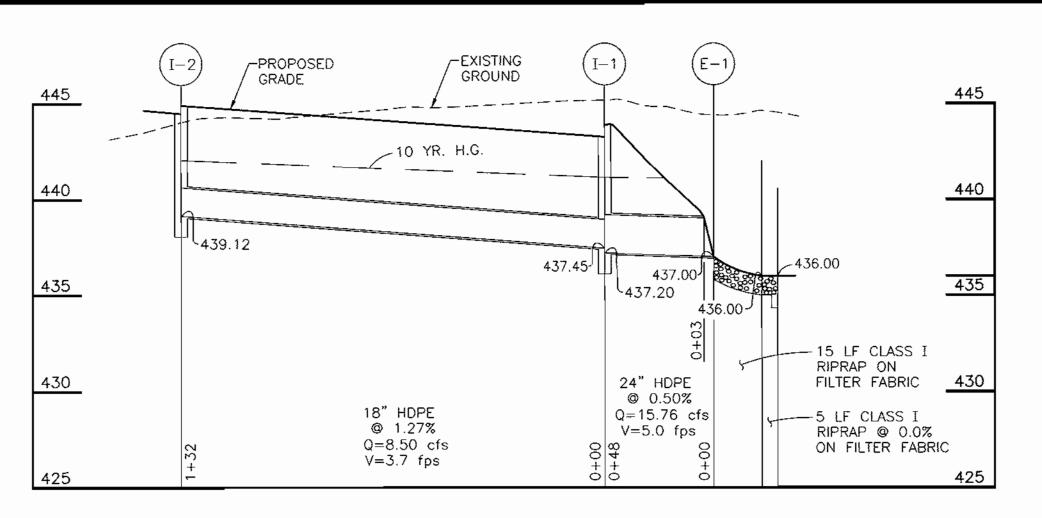
30. A traffic study dated April 2000, has been prepared by Century Engineering, Inc. in accordance with APFO requirements and approved on September 15, 2000.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING //// Date 2

PREPARED FOR:



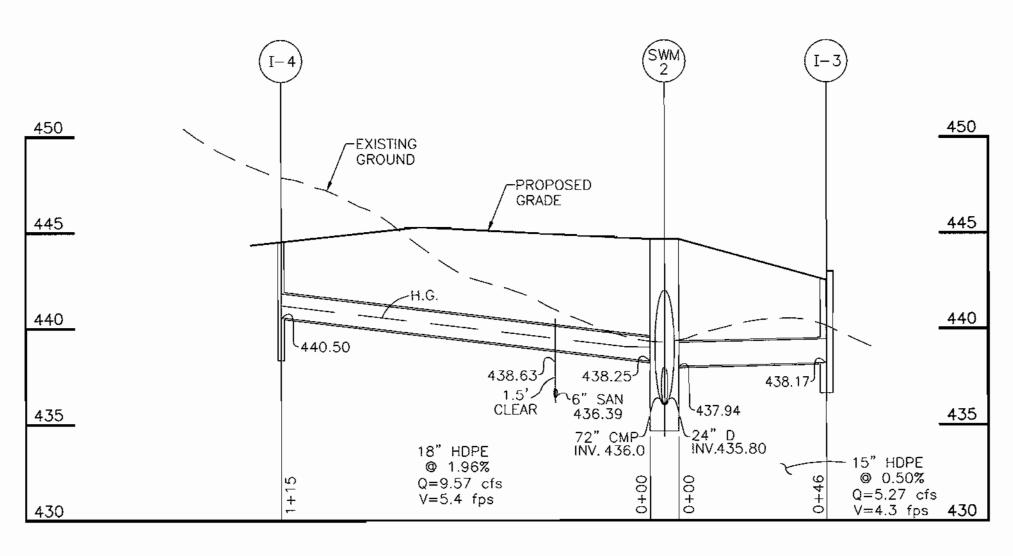


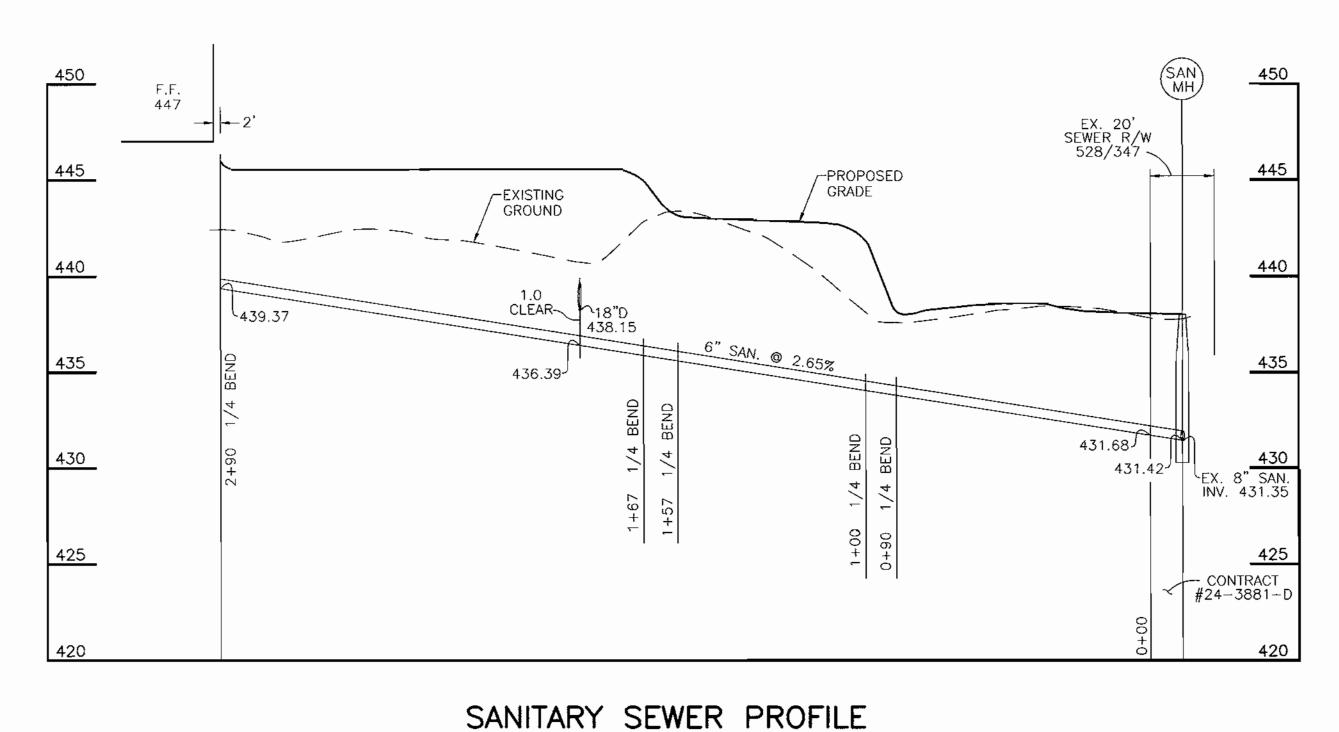


		STRUCTU	RE SCHEDULE		
NO.	TYPE	ELEVATION	STD. DETAIL	LOCATION	REMARKS
I-1	A-10	443.00 GRATE ELEV.	SD4.02	SEE PLAN	
I-2	A-10	444.40 GRATE ELEV.	SD4.02	SEE PLAN	
1–3	DBL.'S'	442.50 GRATE ELEV.	SD4.23	SEE PLAN	
I4	A-10	444.50 GRATE ELEV.	SD4.02	SEE PLAN	
M-!	STD. MANHOLE	TOP ELEV. 438.0	G5.12	SEE PLAN	
M-2	STD. MANHOLE	TOP ELEV. 442.0	G5.12	SEE PLAN	
SWM 1	STD. 'O' HEADWALL	INVERT ELEV. 436.00	HOWARD CO. SD5.41-A	SEE PLAN	
SWM 2	MODIFIED A-10	TOP ELEV. 444.50	SD4.02	SEE DETAIL SHT. 11 OF 11	
E-I	24" FLARED END SECTION	INV. ELEV. 437.00		SEE PLAN	
E-2	24" FLARED END SECTION	INV. ELEV. 434.30		SEE PLAN	

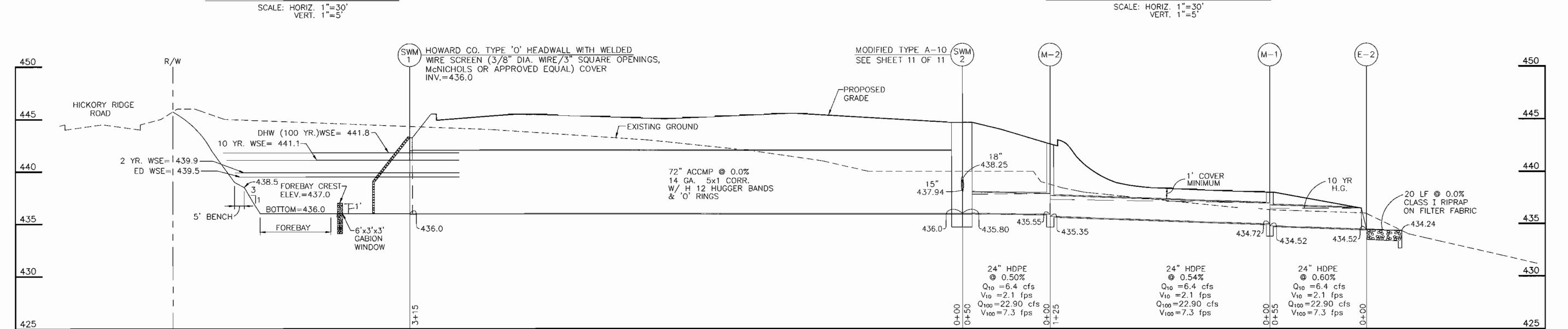
	PIPE SCHE	DULE	
TYPE & SIZE	CLASS	QUANTITY	REMARKS
15"HDPE		46 LF	
18"HDPE		247 LF	
24"HDPE		278 LF	
72"ACCMP		315 LF	







#### STORM DRAIN PROFILE SCALE: HORIZ. 1"=30' VERT. 1"=5'



STORM DRAIN PROFILE SCALE: HORIZ. 1"=30' VERT. 1"=5'

APPROVED
PLANNING BOARD
of HOWARD COUNTY DATE OCT. 4, 2000

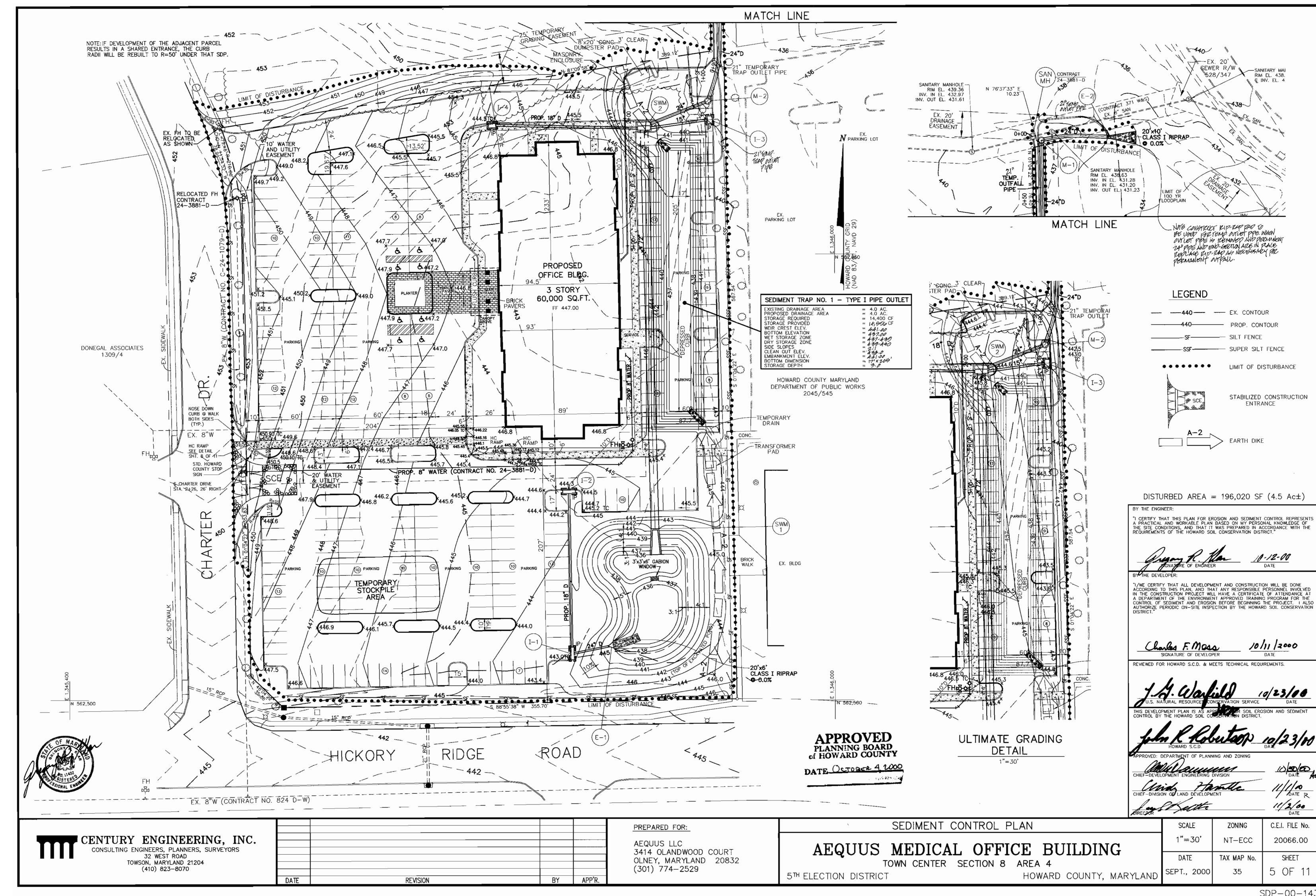
APPROVED: DEPARTMENT OF PLANNING AND ZONING LO/30/00 DATE ///// DATE 1//2/00 DATE

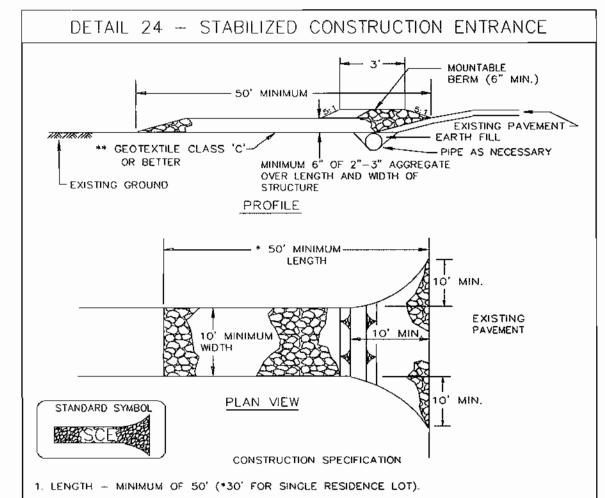
ENTURY ENGINEERING, INC.  CONSULTING ENGINEERS, PLANNERS, SURVEYORS  32 WEST ROAD  TOWSON, MARYLAND 21204
(410) 823–8070

DATE	REVISION	BY	APP'R.	

PREPARED FOR: AEQUUS LLC 3414 OLANDWOOD COURT OLNEY, MARYLAND 20832 (301) 774-2529

UTILITY PROFILES AEQUUS MEDICAL OFFICE BUILDING TOWN CENTER SECTION 8 AREA 4 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND





- WIDTH 10' MINIMUM, SHOULD BE FLARED AT THE EXISTING ROAD TO PROVIDE A TURNING
- GEOTEXTILE FABRIC (FILTER CLOTH) SHALL BE PLACED OVER THE EXISTING GROUND PRIOR TO PLACING STONE. \*\*THE PLAN APPROVAL AUTHORITY MAY NOT REQUIRE SINGLE FAMILY RESIDENCES TO USE GEOTEXTILE.
- 4. STONE CRUSHED AGGREGATE (2" TO 3") OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT SHALL BE PLACED AT LEAST 6" DEEP OVER THE LENGTH AND WIDTH OF THE
- . SURFACE WATER ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED THROUGH THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PIPE INSTALLED THROUGH THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE PROTECTED WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 6" OF STONE OVER THE PIPE. PIPE HAS TO BE SIZED ACCORDING TO THE DRAINAGE. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY A PIPE WILL NOT BE NECESSARY, PIPE SHOULD BE SIZED ACCORDING TO THE AMOUNT OF RUNOFF TO BE CONVEYED. A 6" MINIMUM WILL BE REQUIRED
- 6. LOCATION A STABILIZED CONSTRUCTION ENTRANCE SHALL BE LOCATED AT EVERY POINT WHERE CONSTRUCTION TRAFFIC ENTERS OR LEAVES A CONSTRUCTION SITE. VEHICLES LEAVING

F - 17 - 3

DETAIL 1 - EARTH DIKE

2:1 SLOPE OR FLATTER

o-DIKE HEIGHT

c-FLOW WIDTH

THE SITE MUST TRAVEL OVER THE ENTIRE LENGTH OF THE STABILIZED CONSTRUCTION ENTRANCE. U.S. DEPARTMENT OF AGRICULTURE MARYLAND DEPARTMENT OF ENVIRONMENT

SOIL CONSERVATION SERVICE

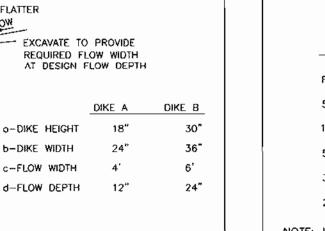
2.1 SLOPE OR FLATTER

GRADE LINE

CUT OR FILL SLOPE

THE SOIL 7" MINIMUM

CUT OR FILL



STANDARD SYMBOL

A-2 8-3

**→ →** / **→ →** 

WATER MANAGEMENT ADMINISTRATION

GRADE 0.5% MIN. 10% MAX. 1. SEED AND COVER WITH STRAW MULCH. 2. SEED AND COVER WITH EROSION CONTROL MATTING OR LINE WITH SOD. 3. 4" - 7" STONE OR RECYCLED CONCRETE EQUIVALENT PRESSED INTO

POSITIVE DRAINAGE

SUFFICIENT TO DRAIN

PLAN VIEW

FLOW CHANNEL STABILIZATION

#### CONSTRUCTION SPECIFICATIONS

- 1. ALL TEMPORARY EARTH DIKES SHALL HAVE UNINTERRUPTED POSITIVE GRADE TO AN OUTLET. SPOT ELEVATIONS MAY BE NECESSARY FOR GRADES LESS THAN 1%.
- 2. RUNOFF DIVERTED FROM A DISTURBED AREA SHALL BE CONVEYED TO A SEDIMENT
- 3. RUNOFF DIVERTED FROM AN UNDISTURBED AREA SHALL OUTLET DIRECTLY INTO AN UNDISTURBED, STABILIZED AREA AT A NON-EROSIVE VELOCITY.
- 4. ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONAL MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE DIKE
- 5. THE DIKE SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN AND BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES WHICH WILL IMPEDE NORMAL FLOW.
- 6. FILE SHALL BE COMPACTED BY EARTH MOVING EQUIPMENT.
- 7 ALL EARTH REMOVED AND NOT NEEDED FOR CONSTRUCTION SHALL BE PLACED SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE DIKE.
- 8 INSPECTION AND MAINTENANCE MUST BE PROVIDED PERIODICALLY AND AFTER EACH RAIN EVENT.
- MARYLAND DEPARTMENT OF ENVIRONMENT U.S. DEPARTMENT OF AGRICULTURE A - 1 - 6 WATER MANAGEMENT ADMINISTRATION SOIL CONSERVATION SERVICE

36" MINIMUM LENGTH FENCE POST, 10' MAXIMUM CENTER TO CENTER \_\_\_\_ DRIVEN A MINIMUM OF 16" INTO -16" MINIMUM HEIGHT OF - 8" MINIMUM DEPTH IN 3/4 "-1 1/2 36" MINIMUM FENCE-PERSPECTIVE VIEW POST LENGTH FILTER CLOTH CLOTH ---FENCE POST SECTION WIRE MESH MINIMUM 20" ABOVE GROUND TISTIKTIKTIKTIKTIK TISTIKTIK UNDISTURBED THE HET HET HE THE THE THE EMBED GEOTEXTILE CLASS F FENCE POST DRIVEN A A MINIMUM OF 8" VERTICALLY MAX. DRAINAGE AREA = 1/4 ACRE MINIMUM OF 16" INTO INTO THE GROUND \_ THE GROUND CROSS SECTION SECTION B SECTION A STANDARD SYMBOL STAPLE

├─── SF —

JOINING TWO ADJACENT SILT FENCE SECTIONS

1. FENCE POSTS SHALL BE A MINIMUM OF 36" LONG DRIVEN 16" MINIMUM INTO THE GROUND. WOOD POSTS SHALL BE 11/2" X 11/2" SQUARE (MINIMUM) CUT, OR 13/4" DIAMETER (MINIMUM) ROUND AND SHALL BE OF SOUND QUALITY HARDWOOD. STEEL POSTS WILL BE STANDARD T OR U SECTION WEIGHTING NOT LESS THAN 1.00 POND PER LINEAR FOOT.

CONSTRUCTION SPECIFICATIONS

DETAIL 22 - SILT FENCE

. GEOTEXTILE SHALL BE FASTENED SECURELY TO EACH FENCE POST WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION AND SHALL MEET THE FOLLOWING REQUIREMENTS FOR GEOTEXTILE CLASS F:

TENSILE STRENGTH	50 LBS/IN (MIN.)	TEST:	MSMT	509
TENSILE MODULUS	20 LBS/IN (MIN.)	TEST:	MSMT	509
FLOW RATE	0.3 GAL FT / MINUTE (MAX.)	TEST:	MSMT	322
FILTERING EFFICIENCY	75% (MIN.)	TEST:	мѕмт	322

- 3. WHERE ENDS OF GEOTEXTILE FABRIC COME TOGETHER, THEY SHALL BE OVERLAPPED, FOLDED AND STAPLED TO PREVENT SEDIMENT BYPASS.
- 4. SILT FENCE SHALL BE INSPECTED AFTER EACH RAINFALL EVENT AND MAINTAINED WHEN BULGES OCCUR OR WHEN SEDIMENT ACCUMULATION REACHED 50% OF THE FABRIC HEIGHT.

U.S. DEPARTMENT OF AGRICULTURE MARYLAND DEPARTMENT OF ENVIRONMENT SOIL CONSERVATION SERVICE E - 15 - 3 WATER MANAGEMENT ADMINISTRATION

#### SILT FENCE

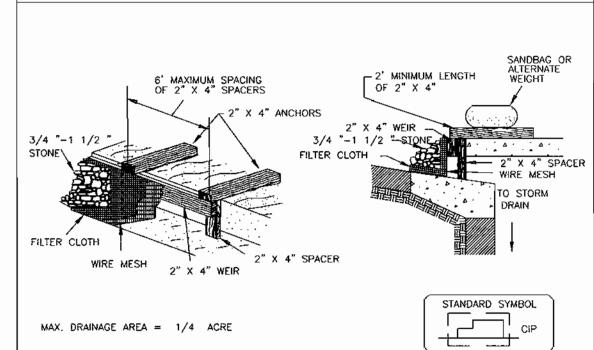
SILT FENCE DESIGN CRITERIA

SLOPE STEEPNESS	(MAXIMUM) SLOPE LENGTH	(MAXIMUM) SILT FENCE LENGTH
FLATTER THAN 50;1	UNLIMITED	UNLIMITED
50:1 TO 10:1	125 FEET	1,000 FEET
10:1 TO 5:1	100 FEET	750 FEET
5:1 TO 3:1	60 FEET	500 FEET
3:1 TO 2:1	40 FEET	250 FEET
2:1 AND STEEPER	20 FEET	125 FEET

NOTE: IN AREAS OF LESS THAN 2% SLOPE AND SANDY SOILS (USDA GENERAL CLASSIFICATION SYSTEM, SOIL CLASS A) MAXIMUM SLOPE LENGTH AND SILT FENCE LENGTH WILL BE UNLIMITED. IN THESE AREAS A SILT FENCE MAY BE THE ONLY PERIMETER CONTROL

U.S. DEPARTMENT OF AGRICULTURE	PAGE	MARYLAND DEPARTMENT OF ENVIRONMENT
SOIL CONSERVATION SERVICE	E - 15 - 3A	WATER MANAGEMENT ADMINISTRATION

#### DETAIL 23C - CURB INLET PROTECTION (COG OR COS INLETS)



#### CONSTRUCTION SPECIFICATIONS

- 1. ATTACH A CONTINUOUS PIECE OF WIRE MESH (30" MINIMUM WIDTH BY THROAT LENGTH PLUS 4') TO THE 2" X 4" WEIR (MEASURING THROAT LENGTH PLUS 2') AS SHOWN ON THE STANDARD
- 2. PLACE A CONTINUOUS PIECE OF GEOTEXTILE CLASS E THE SAME DIMENSIONS AS THE WIRE MESH OVER THE WIRE MESH AND SECURELY ATTACH IT TO THE 2" X 4" WEIR.
- 3. SECURELY NAIL THE 2" X 4" WEIR TO A 9" LONG VERTICAL SPACER TO BE LOCATED BETWEEN THE WEIR AND THE INLET FACE (MAX. 4' APART).
- 4. PLACE THE ASSEMBLY AGAINST THE INLET THROAT AND NAIL (MINIMUM 2' LENGTHS OF 2" X 4" TO THE TOP OF THE WEIR AT SPACER LOCATIONS). THESE 2" X 4" ANCHORS SHALL EXTEND ACROSS THE INLET TOP AND BE HELD IN PLACE BY SANDBAGS OR ALTERNATE WEIGHT.
- 5. THE ASSEMBLY SHALL BE PLACED SO THAT THE END SPACERS ARE A MINIMUM 1' BEYOND BOTH ENDS OF THE THROAT OPENING.
- 6. FORM THE 1/2 " X 1/2 " WIRE MESH AND THE GEOTEXTILE FABRIC TO THE CONCRETE GUTTER AND AGAINST THE FACE OF THE CURB ON BOTH SIDES OF THE INLET. PLACE CLEAN 3/4 " X 1 1/2 ' STONE OVER THE WIRE MESH AND GEOTEXTILE IN SUCH A MANNER TO PREVENT WATER FROM ENTERING THE INLET UNDER OR AROUND THE GEOTEXTILE.
- 7. THIS TYPE OF PROTECTION MUST BE INSPECTED FREQUENTLY AND THE FILTER CLOTH AND STONE REPLACED WHEN CLOGGED WITH SEDIMENT.

NOTE: FENCE POST SPACING

112/12/12

SHALL NOT EXCEED 10'

TINTANIA TINTA

GROUND <

SURFACE

21/2" DIAMETER GALVANIZED

FILTER CLOTH-

EMBED FILTER CLOTH 8"\_\_\_\_\_

MINIMUM INTO GROUND

\*IF MULTIPLE LAYERS ARE

REQUIRED TO ATTAIN 42'

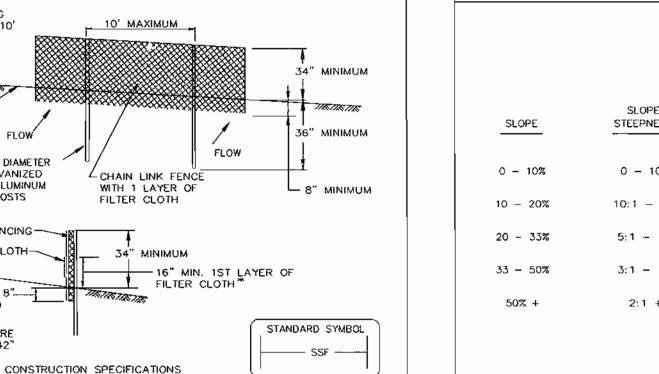
SOIL CONSERVATION SERVICE

CENTER TO CENTER

8. ASSURE THAT STORM FLOW DOES NOT BYPASS THE INLET BY INSTALLING A TEMPORARY EARTH OR ASPHALT DIKE TO DIRECT THE FLOW TO THE INLET.

U.S. DEPARTMENT OF AGRICULTURE	PAGE	MARYLAND DEPARTMENT OF ENVIRONMENT
SOIL CONSERVATION SERVICE	E - 16 - 5B	WATER MANAGEMENT ADMINISTRATION

#### DETAIL 33 - SUPER SILT FENCE



I. FENCING SHALL BE 42" IN HEIGHT AND CONSTRUCTED IN ACCORDANCE WITH THE LATEST MARYLAND STATE HIGHWAY DETAILS FOR CHAIN LINK FENCING. THE SPECIFICATION FOR A 6' FENCE SHALL BE USED, SUBSTITUTING 42" FABRIC AND 6' LENGTH

2. CHAIN LINK FENCE SHALL BE FASTENED SECURELY TO THE FENCE POSTS WITH WIRE TIES. THE LOWER TENSION WIRE, BRACE AND TRUSS RODS, DRIVE ANCHORS AND POST CAPS ARE NOT REQUIRED EXCEPT ON THE ENDS OF THE FENCE.

3. FILTER CLOTH SHALL BE FASTENED SECURELY TO THE CHAIN LINK FENCE WITH TIES SPACED EVERY 24" AT THE TOP AND MID SECTION.

4. FILTER CLOTH SHALL BE EMBEDDED A MINIMUM OF 8" INTO THE GROUND. 5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED

DEVELOP IN THE SILT FENCE, OR WHEN SILT REACHES 50% OF FENCE HEIGHT

7. FILTER CLOTH SHALL BE FASTENED SECURELY TO EACH FENCE POST WITH WIRE TIES OR STAPLES AT TOP AND MID SECTION AND SHALL MEET THE FOLLOWING REQUIREMENTS FOR GEOTEXTILE CLASS F:

6. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND SILT BUILDUPS REMOVED WHEN "BULGES"

TENSILE STRENGTH 50 LBS/IN (MIN.) TEST: MSMT 509 20 LBS/IN (MIN.) TEST: MSMT 509 TENSILE MODULUS FLOW RATE 0.3 GAL/FT<sup>2</sup>/MINUTE (MAX.) TEST: MSMT 322 FILTERING EFFICIENCY 75% (MIN.) TEST: MSMT 322

U.S. DEPARTMENT OF AGRICULTURE MARYLAND DEPARTMENT OF ENVIRONMENT

#### SUPER SILT FENCE

DETAIL 8 - PIPE OUTLET SEDIMENT TRAP - ST I

1'MIN.

CREST

WET STORAGE

B DRY STORAGE 4' MAXIMUM

NOTE: RISER EMBEDDED 9" INTO

CONCRETE OR 1/4" STEEL

PLACED ON STEEL PLATE

MARYLAND DEPARTMENT OF ENVIRONMENT

WATER MANAGEMENT ADMINISTRATION

PLATE ATTACHED TO RISER

WITH A CONTINUOUS WELD

ON BOTTOM AND 2' OF STONE

TWICE THE RISER DIAMETER

HEIGHT (FILL)

EXCAVATE AS

FOR STORAGE

- NECESSARY

1/2" HARDWARE CLOTH (WIRE) WITH

PERFORATED RISER

COMPACTED EARTH

OUTLET PROTECTION -

RIP-RAP PROTECTION

THICKNESS

EMBANKMENT

FILTER CLOTH SECURELY FASTENED TO

PERSPECTIVE VIEW

4' MINIMUM

ANTI-SEEP-

COLLAR

TOP WIDTH TOT

H<del>-- --</del> 10' MINIMUM LENGTH

- GEOTEXTILE CLASS C

WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED.

SUCH A MANNER THAT IT WILL NOT ERODE

MADE AS NECESSARY.

U.S. DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE

EMBANKMENT SECTION

THROUGH RISER

CONSTRUCTION SPECIFICATIONS

2. THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS OR OTHER WOODY

OBJECTIONABLE MATERIAL. THE EMBANKMENT SHALL BE COMPACTED BY TRAVERSING

3. THE TOTAL TRAP VOLUME AS MEASURED FROM THE BOTTOM TO RISER CREST ELEVATION

4 SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS.

SHALL BE 3600 CUBIC FEET PER ACRE OF DRAINAGE AREA (SEE TABLE 9). THE TOP OF

WHEN THE SEDIMENT HAS ACCUMULATED TO ONE HALF OF THE WET STORAGE DEPTH OF THE

TRAP (900CF/AC). THE SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN

5. THE STRUCTURE SHALL BE INSPECTED PERIODICALLY AND AFTER EACH RAIN AND REPAIRS

VEGETATION AS WELL AS OVERSIZED STONES, ROCKS, ORGANIC MATERIAL, OR OTHER

1. THE AREA UNDER THE EMBANKMENT SHALL BE CLEARED, GRUBBED AND STRIPPED OF

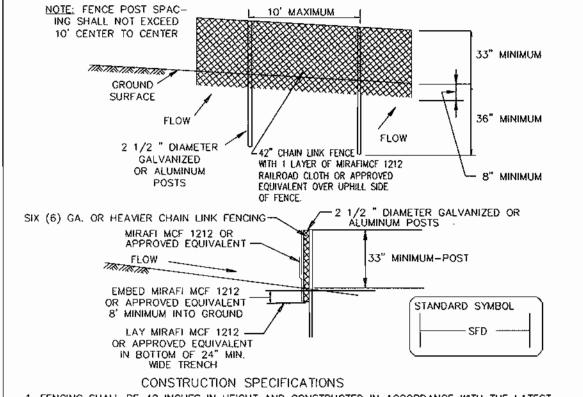
ANY VEGETATION AND ROOT MAT. THE POOL AREA SHALL BE CLEARED.

FMBANKMENT MUST BE ≥ 1' ABOVE THE RISER CREST FLEVATION

	DESIGN	CRITERIA	•
SLOPE	SLOPE STEEPNESS	SLOPE LENGTH (MAXIMUM)	SILT FÉNCE LENGTH (MAXIMUM)
0 - 10%	0 - 10:1	UNLIMITED	UNLIMITED
10 - 20%	10:1 - 5:1	200 FEET	1,500 FEET
0 - 33%	5:1 - 3:1	100 FEET	1,000 FEET
33 - 50%	3:1 - 2:1	100 FEET	500 FEET
50% +	2:1 +	50 FEET	250 FEET

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

#### SUPER FENCE DIVERSION



1. FENCING SHALL BE 42 INCHES IN HEIGHT AND CONSTRUCTED IN ACCORDANCE WITH THE LATEST

MARYLAND STATE HIGHWAY (SHA) DETAILS FOR CHAIN LINK FENCING. THE SHA SPECIFICATIONS FOR A 6 FOOT FENCE SHALL BE USED, SUBSTITUTING 42 INCH FABRIC AND 6 FOOT LENGTH POSTS. 2. THE POSTS DO NOT NEED TO BE SET IN CONCRETE.

3. CHAIN LINK FENCE SHALL BE FASTENED SECURELY TO THE FENCE POSTS WITH WIRE TIES OR STAPLES. THE LOWER TENSION WIRE, BRACE AND TRUSS RODS, DRIVE ANCHORS AND POST CAPS ARE NOT REQUIRED EXCEPT ON THE ENDS OF THE FENCE. THE CHAIN LINK FENCING SHALL BE SIX (6) GAUGE OR HEAVIER.

4. MIRAFI MCF 1212 OR APPROVED EQUIVALENT SHALL BE FASTENED SECURELY TO THE CHAIN LINK FENCE WITH TIES SPACED EVERY 24" AT THE TOP AND MID SECTION.

5. MIRAFI MCF 1212 OR APPROVED EQUIVALENT SHALL BE EMBEDDED A MINIMUM OF 8" INTO THE GROUND. 6. WHEN TWO SECTIONS OF MIRAFI MCF 1212 OR APPROVED EQUIVALENT ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6" AND FOLDED.

7. MAINTENANCE SHALL BE PERFORMED AS NEEDED. 8. MAXIMUM FLOW SLOPE 10.0%. 9. MAXIMUM DRAINAGE AREA 5 ACRES

U.S. DEPARTMENT OF AGRICULTURE

5TH ELECTION DISTRICT

MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION SOIL CONSERVATION SERVICE

AEQUUS MEDICAL OFFICE BUILDING

SEDIMENT CONTROL NOTES AND DETAILS

HOWARD COUNTY, MARYLAND

#### PIPE OUTLET SEDIMENT TRAP - ST I

- 6. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION ARE ABATED. ONCE CONSTRUCTED, THE TOP AND OUTSIDE FACE OF THE EMBANKMENT SHALL BE STABILIZED WITH SEED AND MUICH. POINTS OF CONCENTRATED INFLOW SHALL BE PROTECTED IN ACCORDANCE WITH GRADE STABILIZATION STRUCTURE CRITERIA. THE REMAINDER OF THE INTERIOR SLOPES SHOULD BE STABILIZED (ONE TIME) WITH SEED AND MULCH UPON TRAP COMPLETION AND MONITORED AND MAINTAINED EROSION FREE DURING THE LIFE OF THE TRAP.
- 7. THE STRUCTURE SHALL BE REMOVED AND AREA STABILIZED WHEN THE DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.
- 8. ALL CUT AND FILL SLOPES SHALL BE 2:1 OR FLATTER.
- 9. ALL PIPE CONNECTIONS SHALL BE WATERTIGHT
- 10. ABOVE THE WET STORAGE ELEVATION, THE RISER SHALL BE PERFORATED WITH 1/2" WIDE BY 6" LONG SLITS OR 1" DIAMETER HOLES SPACED 6" VERTICALLY AND HORIZONTALLY. NO PERFORATIONS WILL BE ALLOWED WITHIN 6" OF THE HORIZONTAL BARREL.
- 11. THE RISER SHALL BE WRAPPED WITH 1/2" HARDWARE CLOTH (WIRE) THEN WRAPPED WITH GEOTEXTILE CLASS E. THE FILTER CLOTH SHALL EXTEND 6" ABOVE THE HIGHEST SLIT AND 6" BELOW THE LOWEST SLIT. WHERE ENDS OF FILTER CLOTH COME TOGETHER. THEY SHALL BE OVERLAPPED, FOLDED AND FASTENED TO PREVENT BYPASS. FILTER CLOTH SHALL BE REPLACED AS NECESSARY TO PREVENT CLOGGING.
- 12. STRAPS OR CONNECTING BANDS SHALL BE USED TO HOLD THE FILTER CLOTH AND WRE FABRIC IN PLACE. THEY SHALL BE PLACED AT THE TOP AND BOTTOM OF THE CLOTH.
- 13. FILL MATERIAL AROUND THE PIPE SPILLWAY SHALL BE HAND COMPACTED IN 4" LAYERS. A MINIMUM OF 2' OF HAND-COMPACTED BACKFILL SHALL BE PLACED OVER THE PIPE SPILLWAY BEFORE CROSSING IT WITH CONSTRUCTION EQUIPMENT.
- 14. THE RISER SHALL BE ANCHORED WITH EITHER A CONCRETE BASE OR STEEL PLATE BASE TO PREVENT FLOTATION. CONCRETE BASES SHALL BE AT LEAST TWICE THE RISER DIAMETER AND 12" DEEP WITH THE RISER EMBEDDED 9". STEEL PLATE BASES SHALL BE AT LEAST TWICE THE RISER DIAMETER, 1/4" MINIMUM THICKNESS AND ATTACHED TO THE BOTTOM OF THE RISER BY A CONTINUOUS WELD TO FORM A WATERTIGHT CONNECTION. THEN PLACE 2' OF STONE, GRAVEL OR TAMPED EARTH ON THE PLATE.
- 15. ANTI SEEP COLLARS SHALL BE CONSTRUCTED IN ACCORDANCE WITH PLANS (REF TABLE 16 AND DETAILS 13 AND 14).
- 16. CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE DESIGN DETAILS ARE ON DETAIL 16. 17. REFER TO SECTION D FOR DEWATERING REQUIREMENTS OF SEDIMENT TRAPS.
- 18. OUTLET AN OUTLET SHALL BE PROVIDED, WHICH INCLUDES A MEANS OF CONVEYING
- THE DISCHARGE IN AN EROSION FREE MANNER TO AN EXISTING STABLE CHANNEL.

19. WHERE DISCHARGE OCCURS AT THE PROPERTY LINE, LOCAL ORDINANCES AND DRAINAGE EASEMENT REQUIREMENTS SHALL BE MET.

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

DATE OCTOBER 4, 2000

BY THE ENGINEER:

"I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

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

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

11/2/00

C.E.I. FILE No. ZONING AS SHOWN NT-ECC 20066.00 SHEET TAX MAP No.

CENTURY ENGINEERING, INC. CONSULTING ENGINEERS, PLANNERS, SURVEYORS 32 WEST ROAD TOWSON, MARYLAND 21204 (410) 823-8070

DATE APP'R. REVISION RY

AEQUUS LLC 3414 OLANDWOOD COURT OLNEY, MARYLAND 20832 (301) 774-2529

PREPARED FOR:

WATER MANAGEMENT ADMINISTRATION

SDP-00-143

#### HOWARD SOIL CONSERVATION DISTRICT

#### STANDARD SEDIMENT CONTROL NOTES

- 1. A minimum of 48 hours notice must be given to the Howard County Department of Inspections, Licenses and Permits, Sediment Control Division prior to the start of any construction (313-1855).
- 2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL and revisions thereto.
- 3. Following initial soil disturbance or re-disturbance, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes steeper than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.
- 4. All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 7 of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
- 5. All disturbed areas must be stabilized within the time period specified above in accordance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seeding, sod, temporary seeding and mulching (Sec. G). Temporary stabilization with mulch alone shall only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
- 6. All sediment control structures are in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
- 7. Site Analysis:

Total Area of Site = <u>4.2</u> Acres Area Disturbed \_\_\_4.5\_Acres \_\_\_\_3.6\_Acres Area to be roofed or paved Area to be vegetatively stabilized = 0.9 Acres Total Cut = <u>5,600</u> Cu. Yds. Total Fill = <u>5,600</u> Cu. Yds. Ofsite waste/borrow area location

- 8. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- 9. Additional sediment control must be provided, if deemed necessary, by the Howard County Sediment Control Inspector.
- 10. On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.
- 11. Trenches for the construction of utilities is limited to three pipe lengths or that which shall be backfilled and stabilized within one working day, whichever is shorter.

#### HOWARD SOIL CONSERVATION DISTRICT

#### PERMANENT SEEDING NOTES

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

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

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

- 1. Preferred Apply 2 tons/acre dolomitic limestone (92,000 lbs/1000 sq. ft) and 600 lbs/acre 10-10-10 fertilizer (14 lbs/1000 sq. ft) before seeding. Harrow or disk into upper three inches of soil. At time of seeding, apply 400 lbs/acre 30-0-0 ureaform fertilizer (9 lbs/1000 sq. ft.).
- 2. Acceptable Apply 2 tons/acre dolomitic limestone (92 lbs/1000 sq. ft.) and 1000 lbs/acre 10-10-10 fertilizer (23 lbs/1000 sq. ft.) before seeding. Harrow or disk into upper three inches of soil.

Seeding - For the periods March 1 - April 30 and August 1 - October 15, seed with 60 lbs/acre (1.4 lbs/1000 sq. ft.) of Kentucky 31 Tall Fescue. For the period May — July 31, seed with 60 lbs. Kentucky 31 Tall Fescue per acre and 2 lbs/acre (.05 lbs/1000 sq. ft.) of weeping lovegrass. During the period of October 16 - February 28, protect site by: Option 1 - Two tons per acre of well anchored straw mulch and seed as soon as possible in the spring. Option 2 — Use sod. Option 3 — Seed with 60 lbs/acre Kentucky 30 Tall Fescue and mulch with 2 tons/acre well anchored straw.

Mulching - Apply 1 1/2 to 2 tons per acre (70 to 90 lbs/1000 sq. ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq. ft.) of emulsified asphalt on flat areas. On slope 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq. ft.) for anchoring.

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

#### TEMPORARY SEEDING NOTES

Apply to graded or cleared areas likely to be re-disturbed where a short-term vegetative cover is

Seedbed preparation — Loosen upper three inches of soil by raking, disking or other means before seeding, if not previously loosened.

Soil Amendments - Apply 600 lbs/acre 10-10-10 fertilizer (14 lbs/1000 sq. ft.).

Seeding - For period March 1 - April 30 from August 15 - October 15, seed with 2 1/2 bushel per acre of annual rye (3.2 lbs/1000 sq. ft.). for the period May 1 - August 14, seed with 3 lbs/acre of weeping lovegrass (.07 lbs/1000 sq. ft.). For the period November 16 - February 28, protect site by applying 2 tons/acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

Mulching - Apply 1 1/2 tons/acre (70 to 90 lbs/1000 sq. ft.) of unrotted weed-free, small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal. per acre (5 gal/1000 sq. ft.) of emulsified asphalt on flat areas. On slope 8 ft. or higher, use 348 gal. per acre (8 gal/1000 sq. ft.) for anchoring.

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

SEQUENCE OF CONSTRUCTION	TIMETABLE
1. OBTAIN GRADING PERMIT.	
<ol> <li>NOTIFY HOWARD COUNTY DEPARTMENTS OF PERMITS &amp; LICENSES, GRADING AND SEDIMENT CONTROL INSPECTIONS @ 313-1855 AT LEAST 48 HOURS PRIOR TO BEGINNING WORK.</li> </ol>	1 DAY
<ol><li>CLEAR AND GRUB FOR SEDIMENT AND EROSION CONTROL MEASURES.</li></ol>	1 DAY
4. INSTALL ALL SEDIMENT & EROSION CONTROL MEASURES OR DEVICES ONLY. * COMPLETE TROP *1 TO BLEV. 946.0	5 DAYS
MEASURES OR DEVICES ONLY.* COMPLETE THEORY TO BUEN. 446.0 PKOR TO PUTURE CHEADING/ORADING.  5. NOTIFY HOWARD COUNTY DEPARTMENT OF PERMITS & LICENSES, GRADING AND SEDIMENT CONTROL INSPETIONS @ 414-313-1855 UPON COMPLETION OF SAID INSTALLATION.	1 DAY
<ol> <li>WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, CLEAR AND GRUB REMAINDER OF THE SITE AS REQUIRED.</li> </ol>	2 DAYS
7. ROUGH GRADE SITE AS REQUIRED.	5 DAYS
8. BEGIN BUILDING CONSTRUCTION.	90 DAYS
9. INSTALL UTILITIES AND MAINTAIN POSITIVE DRAINAGE TO SEDIMENT TRAP AS NECESSARY.**	10 DAYS
10. INSTALL PAVING SUBBASE AND MAINTAIN POSITIVE DRAINAGE TO SEDIMENT TRAP AS NECESSARY.	5 DAYS
11. COMPLETE BUILDING CONSTRUCTION, PAVE PARKING AREAS WELL OF BUILDING AND PERMANENTLY STABILIZE LAWN AREAS.	3 DAYS
12. EXCAVATE FOR STORMWATER MANAGEMENT POND.	5 DAYS
13. WITH THE PERMISSION OF SEDIMENT CONTROL INSPECTOR, CLEAN AND REMOVE SEDIMENT TRAP. BEGIN CONSTRUCTION OF 72" DRAIN.	5 DAYS
14. COMPLETE STORM DRAIN CONSTRUCTION AND COMPLETE CONNECTION TO SWM-2.	2 DAYS
15. COMPLETE FINAL GRADING FOR REMAINING PARKING AREA, INSTALL SUBBASE AND PAVE.	5 DAYS
16. STABILIZE ALL REMAINING AREAS.	2 DAYS
17. WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, REMOVE ALL SEDIMENT & EROSIONS CONTROLS MEASURES. STABILIZE ANY AREAS DISTURBED BY THIS PROCESS.	3 DAYS
18. INSTALL LANDSCAPE MATERIALS.	5 DAYS

\*NOTE: THE DIVERSION IS TO BE REMOVED/REPLACED OR RELOCATED AT THE DISCRETION OF THE SEDIMENT CONTROL INSPECTOR WITH SILT FENCE DIVERSION. \*\*NOTE: REPLACE OR REPAIR ANY SEDIMENT CONTROL MEASURE DISTURBED BY UTILITY INSTALLATION

**APPROVED** PLANNING BOARD of HOWARD COUNTY DATE OCTOBER 4, 2000

BY THE ENGINEER:

"I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT." 1/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 A 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." REVIEWED FOR HOWARD S.C.D. & MEETS TECHNICAL REQUIREMENTS.

10 30 DO 11/2/00 C.E.I. FILE No.

CENTURY ENGINEERING, INC. CONSULTING ENGINEERS, PLANNERS, SURVEYORS 32 WEST ROAD TOWSON, MARYLAND 21204 (410) 823-8070

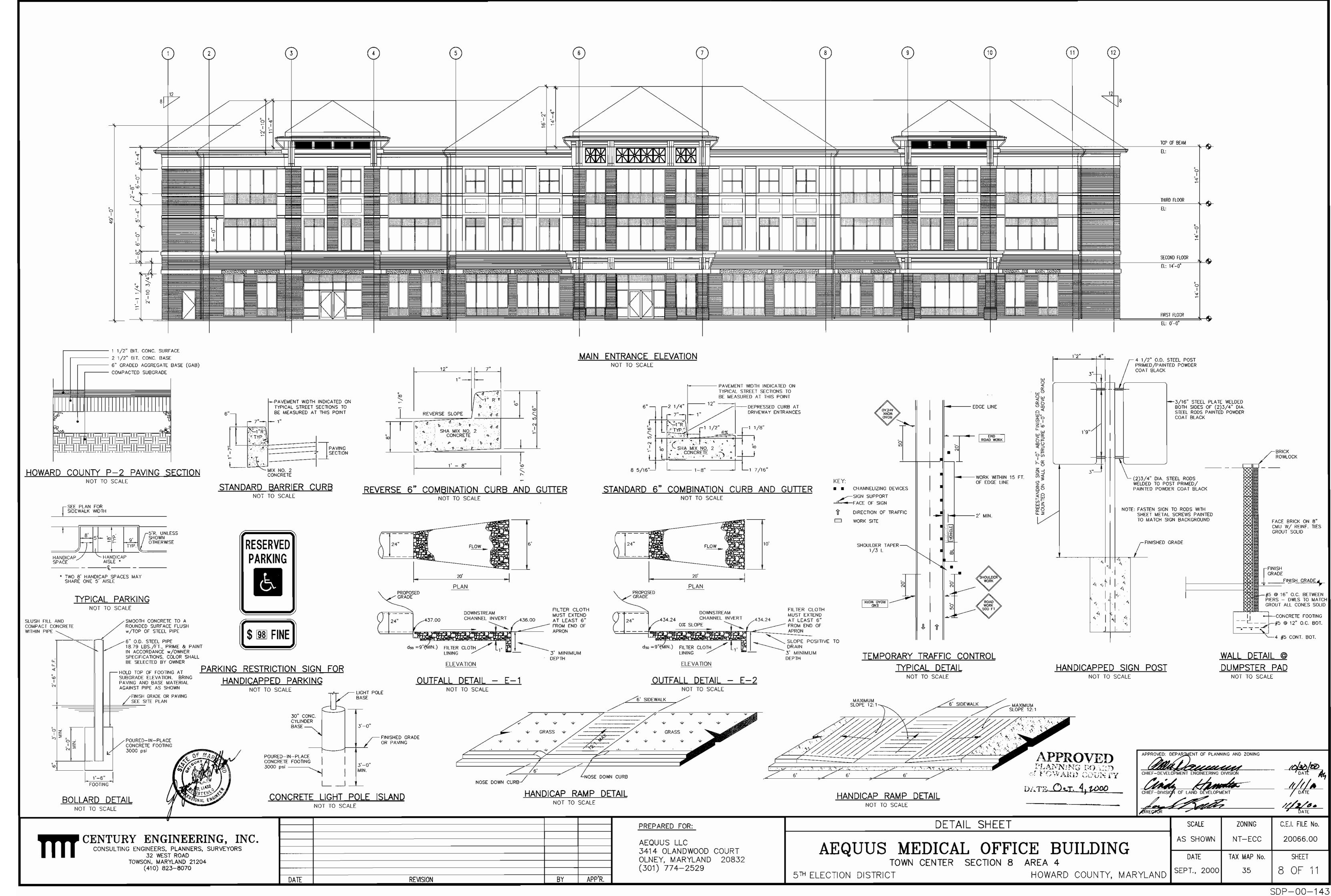
DATE APP'R. REVISION

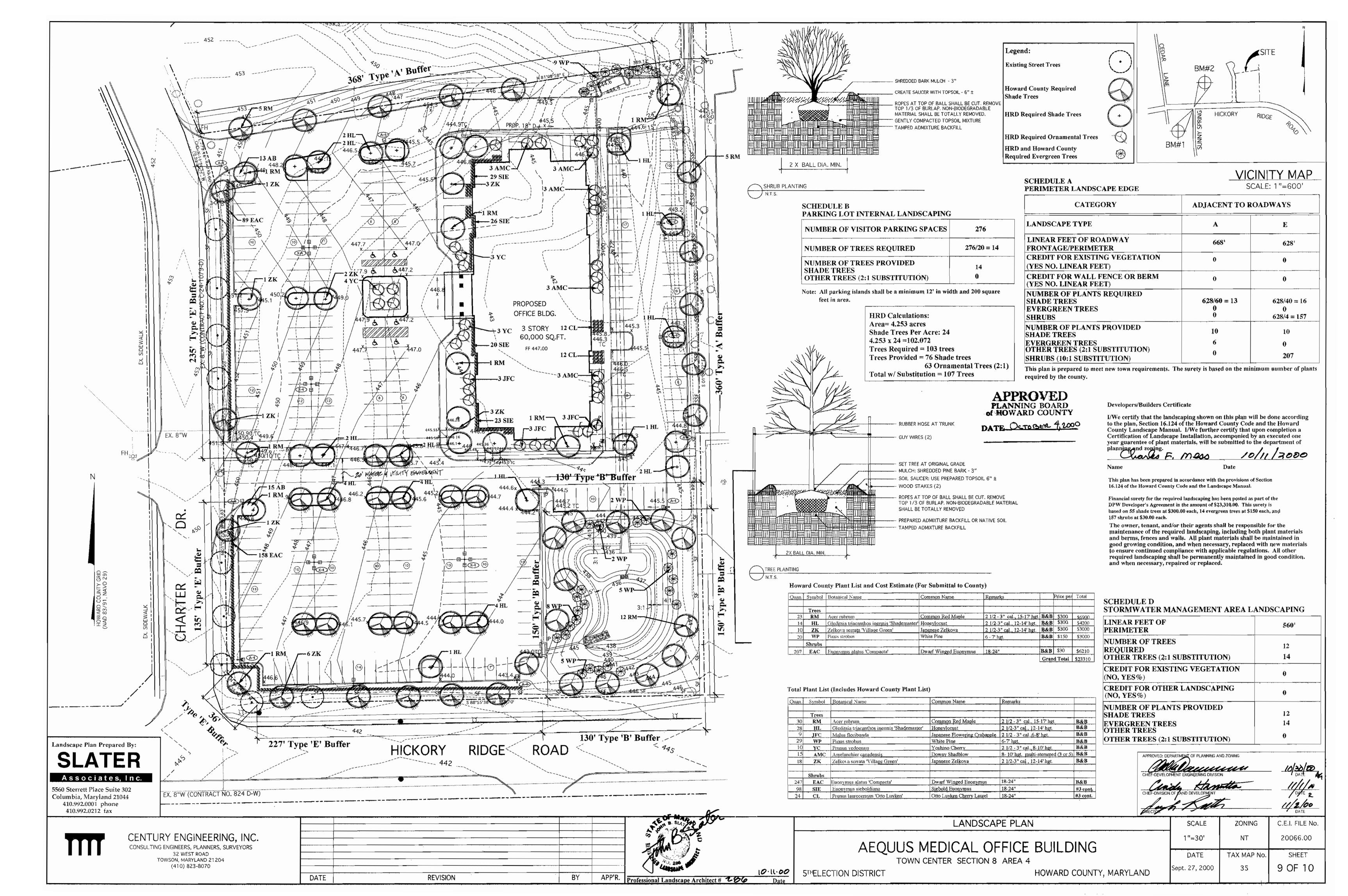
PREPARED FOR: AEQUUS LLC 3414 OLANDWOOD COURT OLNEY, MARYLAND 20832 (301) 774-2529

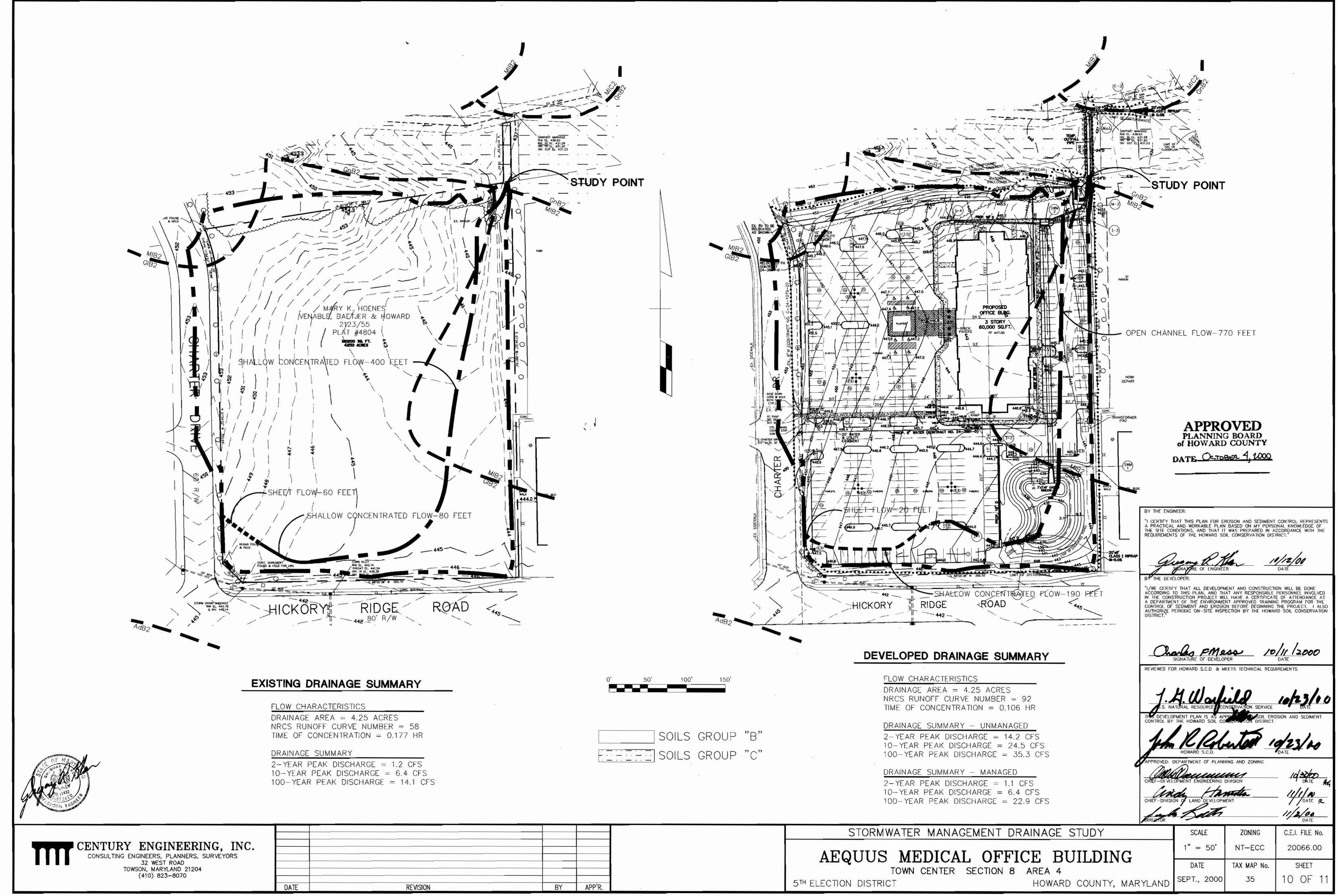
AEQUUS MEDICAL OFFICE BUILDING

5TH ELECTION DISTRICT

SEDIMENT CONTROL NOTES AND DETAILS







#### CONSTRUCTION SPECIFICATIONS

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

#### <u>Site Preparation</u>

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 sloped to no steeper than 1:1. All trees shall be cleared and grubbed within 15 feet of the toe of the embankment.

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 25-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 or use on the embankment and other designated

#### Earth Fill

<u>Material</u> – The fill material shall be taken from approved designated borrow areas. It 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 and must have at least 30% passing the #200 sieve. Consideration may be given to the use of other materials in the embankment if designed by a geotechnical engineer. Such special designs must have construction supervised by a geotechnical engineer.

Materials used in the outer shell of the embankment must have the capability to support vegetation of the quality required to prevent erosion of the embankment.

<u>Placement</u> — 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.

<u>Compaction</u> — 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 heavy 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.

When required by the reviewing agency the minimum required density shall not be less than 95% of maximum dry density with a moisture content within ñ2% 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 (Standard Proctor).

#### 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 any port 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

Structure backfill may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 313 as modified. The mixture shall have a 100-200 psi; 28 day unconfined

compressive strength. The flowable fill shall have a minimum pH of 4.0 and a minimum resistivity of 2,000 ohm-cm. Material shall be placed such that a minimum of 6" (measured perpendicular to the outside of the pipe) of flowable fill shall be under (bedding), over and, on the sides of the pipe. It only needs to extend up to the spring line for rigid conduits. Average slump of the fill shall be 7" to assure flawability of the material. Adequate measures shall be taken (sand bags, etc.) to prevent floating the pipe. When using flowable fill, all metal pipe shall be bituminous coated. Any adjoining soil 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 shall completely fill all voids adjacent to the flowable fill zone. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a structure or pipe unless there is a compacted fill of 24" or greater over the structure or pipe. Backfill material outside the structural backfill (flowable fill) zone shall be of the type and quality conforming to that specified for the core of the embankment or other embankment

#### Pipe Conduits

materials.

All pipes shall be circular in cross section.

Corrugated Metal Pipe - All of the following criteria shall apply for corrugated metal pipe:

1. Materials - (Polymer Coated steel pipe) -Steel pipes with polymeric coatings shall have a minimum cooting thickness of 0.01 inch (10 mil) on both sides of the pipe. This pipe and its appurtenances shall conform to the requirements of AASHTO Specifications M-245 & M-246 with watertight coupling bands or flanges.

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. Aluminum Coated Steel Pipe, when used with flowable fill or when soil and/or water conditions warrant the need for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A.

Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt.

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 Pipe, when used with flowable fill or when soil and/or water conditions warrant for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

- 2. Coupling bands, anti-seep collors, end sections, etc., must be composed of the same material and coatings as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 mils in thickness.
- 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 of corrugations to accommodate the bandwidth. The following type connections are acceptable for pipes less than 24 inches in diameter: flanges on both ends of the pipe with a circular 3/8 inch closed cell neoprene gasket, pre-punched to the flonge bolt circle, sandwiched between adjacent flanges; a 12inch wide standard lap type band with 12inch wide by 3/8-inch thick closed cell circular neoprene gasket; and a 12-inch wide hugger type band with o-ring gaskets having a minimum diameter of 1/2 inch greater than the corrugation depth. Pipes 24 inches in diameter and larger shall be connected by a

neoprene gasket; and a 12-inch wide hugger type band with o-ring gaskets having a minimum diameter of 1/2 inch greater than the corrugation depth. Pipes 24 inches in diameter and larger shall be connected by a 24 inch long annular corrugated band using a minimum of 4 (four) rods and lugs, 2 on each connecting pipe end. A 24-inch wide by 3/8-inch thick closed cell circular neoprene gasket will be installed with 12 inches on the end of each pipe. Flanged joints with 3/8 inch closed cell gaskets the

Helically corrugated pipe shall have either continuously welded seams or have lock seams with internal caulking or a neoprene

full width of the flange is also acceptable.

- 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
- 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 concrete
- 1. Materials Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM
- 2. Bedding Reinforced concrete pipe conduits shall be laid in a concrete bedding / cradle for their entire length. This bedding / cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 50% of its outside diameter with a minimum thickness of 6 inches. Where a concrete cradle is not needed for structural reasons, flowable fill may be used as descibed in the "Structure Backfill" section of this standard. Gravel bedding is not permitted.
- 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 4 feet from the

- 4. Backfilling shall conform to "Structure
- 5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

<u>Plastic Pipe</u> - The following criteria shall apply for plastic pipe:

- 1. Materials PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241. Corrugated High Density Polyethylene (HDPE) pipe, couplins and fittings shall conform to the following: 4" - 10" inch pipe shall meet the requirements of AASHTO M252 Type S, and 12" through 24" inch shall meet the requirements of AASHTO M294 Type S.
- 2. Joints and connections to anti-seep collars shall be completely watertight.
- 3. 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.
- 4. Backfilling shall conform to "Structure
- 5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

<u>Drainage Diaphragms</u> — When a drainage diaphragm is used, a registered professional engineer will supervise the design and construction

#### <u>Concrete</u>

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 414, Mix No. 3.

#### <u>Rock Riprap</u>

Rock riprap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 311.

Geotextile shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 921.09, Class C.

#### Care of Water during Construction

All work on permonent 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 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 bottom 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 sumps from which the water shall be pumped. Stabilization |

All borrow areas shall be graded to provide proper drainage and left in a sightly 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 Natural Resources Conservation Service Standards and Specifications for Critical Area Planting (MD-342) or as shown on the accompanying drawings.

Erosion and Sediment Control

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.

Maintenance Schedule/requirements The Stormwater Management Facility shall be maintained by the the property owner as follows: 1.Removal of foreboy silt shall occur when the accumulation exceeds four (4) inches

2.Removal of accumulated paper, trash and debris as necessary.

3. Corrective maintenance is required any time the forebay does not drain completely within 60 hours. No standing water is allowed. 4.Annual inspection and repair of the structure and

5. Vegetation growing on the embankment top or faces is not allowed to exceed 18 inches at any time.

> **APPROVED** PLANNING BOARD of HOWARD COUNTY DATE OCTOBER 4, LOOO

I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENT

A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE

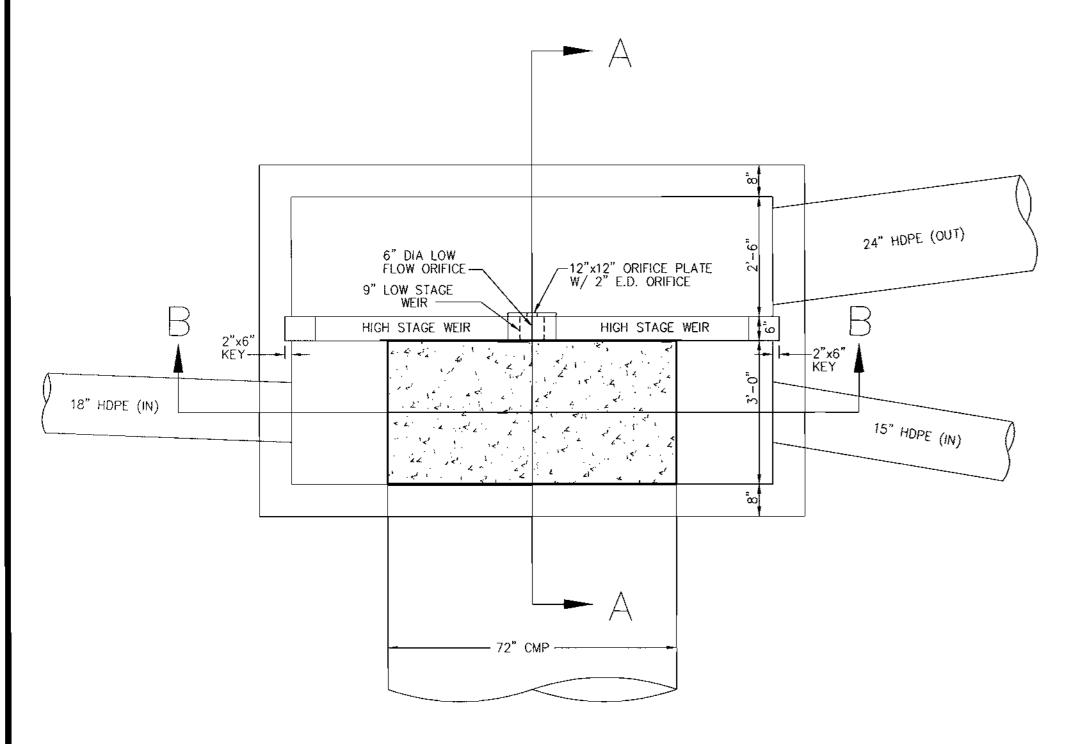
CCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED

N 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

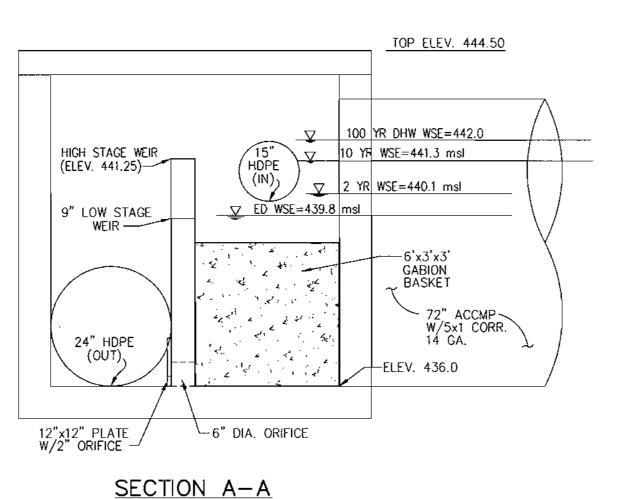
AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION

REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

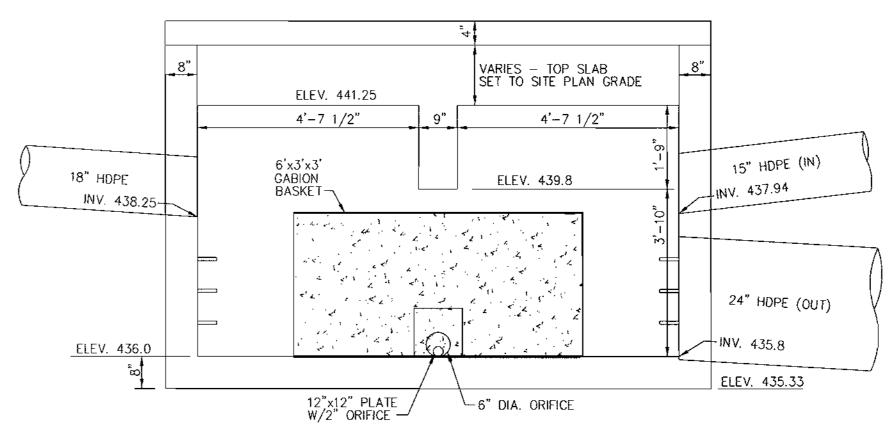
BY THE ENGINEER



PLAN VIEW



SWM-2 CONTROL STRUCTURE (MODIFIED TYPE 'A-10 INLET) NO TO SCALE



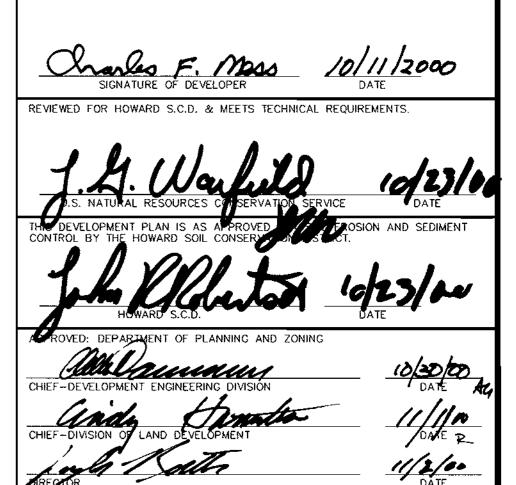
SECTION B-B

#### A-10 INLET STRUCTURE MODIFICATIONS

- 1. USE POURED IN PLACE REINFORCED CONCRETE CONSTRUCTION OPTION PER HOWARD COUNTY STD. DETAIL SD 4.02. CONSTRUCT TO 6'-0"x10'x0" INSIDE WALL DIMENSIONS.
- 2. ELIMINATE ALL REFERENCES TO THROAT OPENING (DETAIL 'A')

5TH ELECTION DISTRICT

CONSTRUCT 6" CONCRETE WEIR WALL AS SHOWN ON THIS SHEET.



CENTURY ENGINEERING, INC. CONSULTING ENGINEERS, PLANNERS, SURVEYORS 32 WEST ROAD

TOWSON, MARYLAND 21204

(410) 823-8070

DATE APP'R. REVISION

PREPARED FOR:

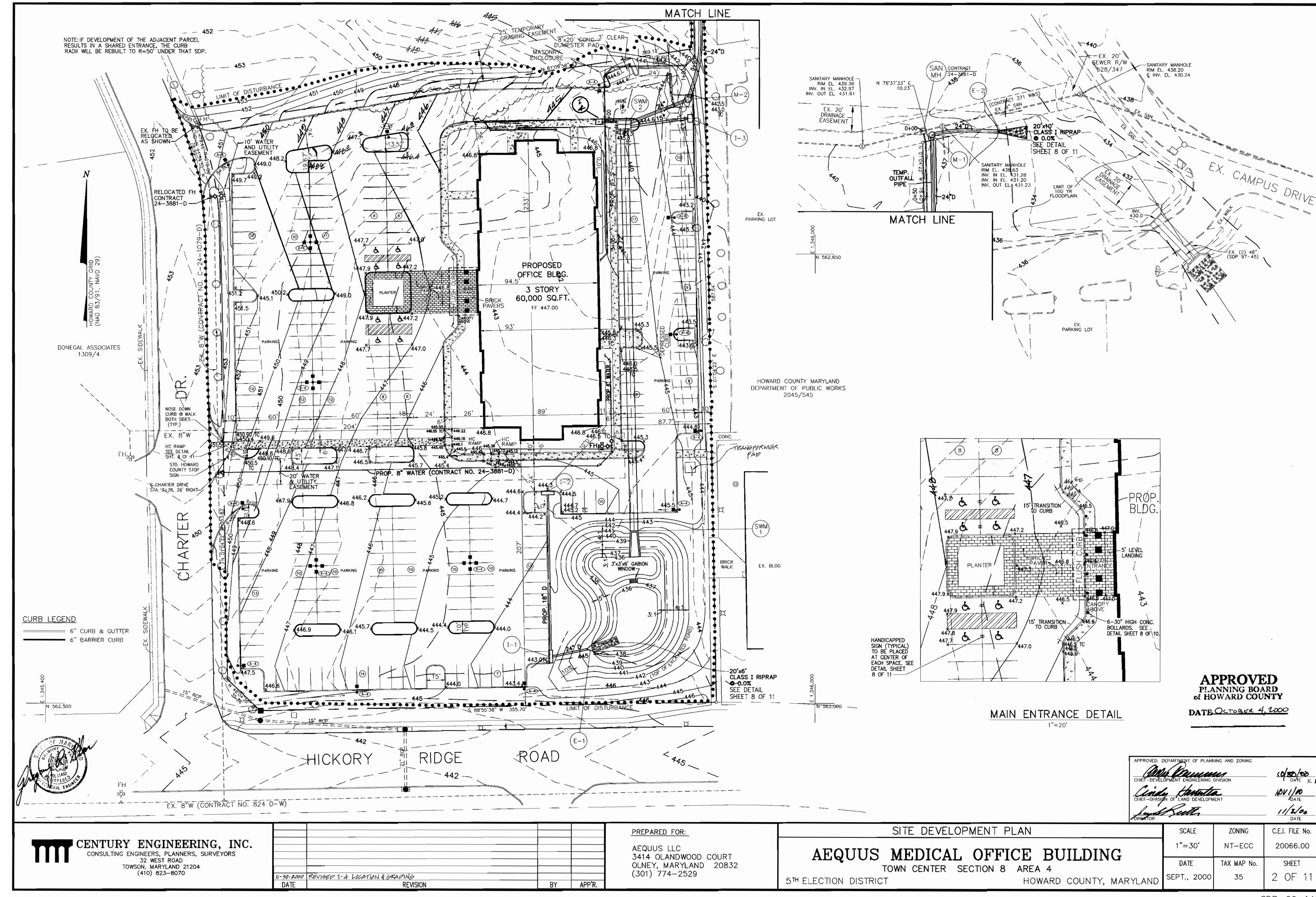
AEQUUS LLC 3414 OLANDWOOD COURT OLNEY, MARYLAND 20832 (301) 774-2529

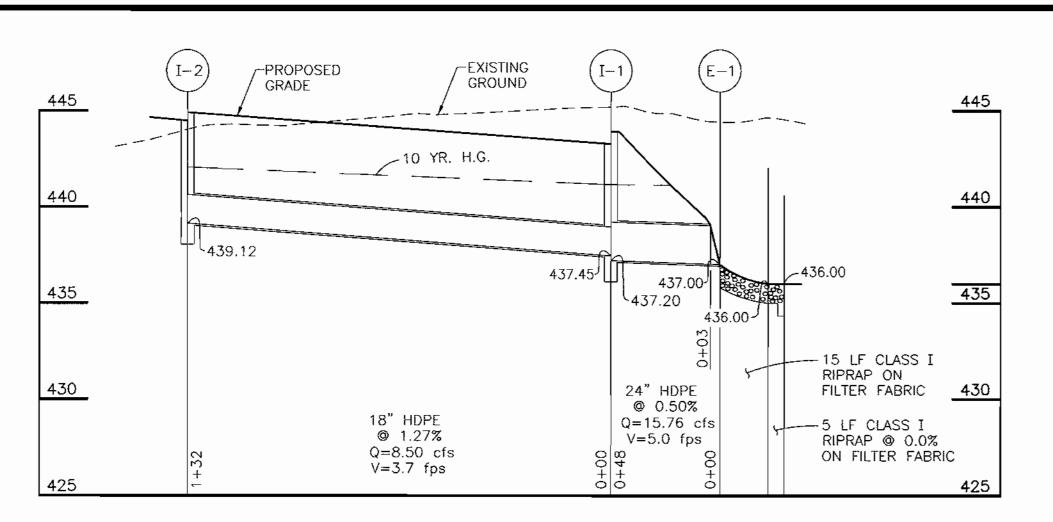
STORMWATER MANAGEMENT NOTES AND DETAILS

AEQUUS MEDICAL OFFICE BUILDING TOWN CENTER SECTION 8 AREA 4

HOWARD COUNTY, MARYLAND

SCALE C.E.I. FILE No. ZONING NT-ECC 20066.00 AS SHOWN DATE TAX MAP No. SHEET OF 1 SEPT., 2000 35

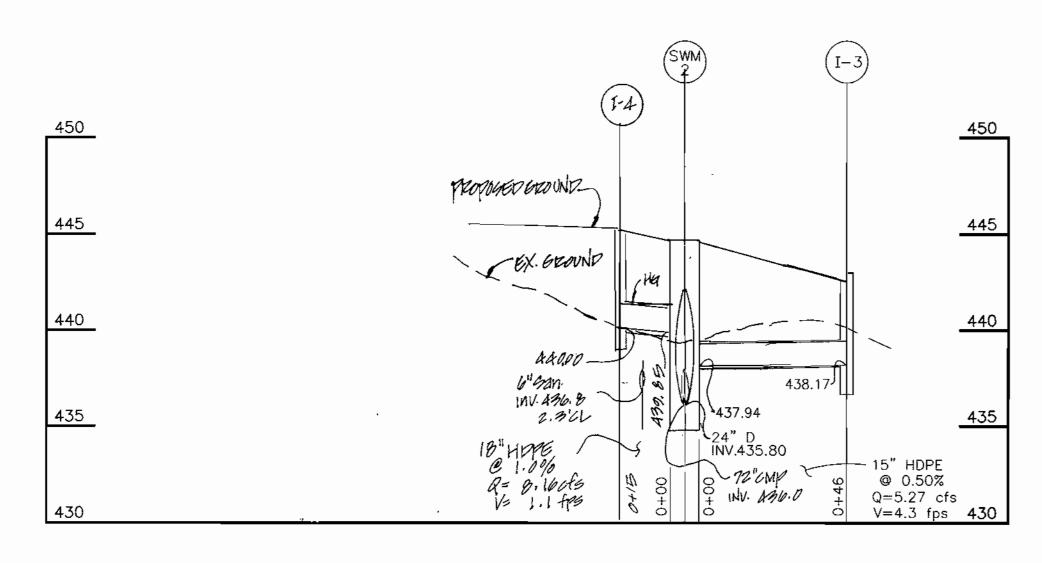


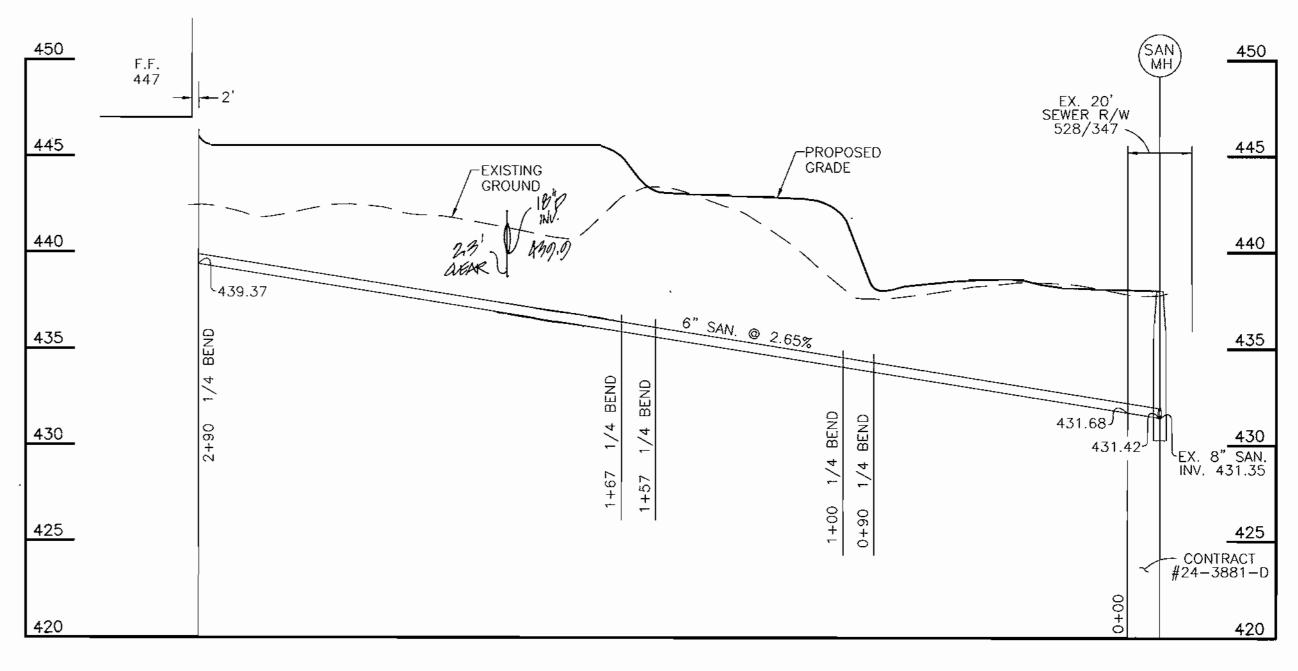


STRUCTURE SCHEDULE							
NO.	TYPE	ELEVATION	STD. DETAIL	LOCATION	REMARKS		
1-1	A-10	443.00 GRATE ELEV.	SD4.02	SEE PLAN			
I-2	A-10	444.40 GRATE ELEV.	SD4.02	SEE PLAN			
I-3	DBL.'S'	442.50 GRATE ELEV.	SD4.23	SEE PLAN			
1-4	A-10	<i>AAD:0</i> GRATE ELEV.	SD4.02	SEE PLAN			
M-I	STD. MANHOLE	TOP ELEV. 438.0	G5.12	SEE PLAN			
M-2	STD. MANHOLE	TOP ELEV. 442.0	G5.12	SEE PLAN			
SWM 1	STD. '0' HEADWALL	INVERT ELEV. 436.00	HOWARD CO. SD5.41-A	SEE PLAN			
SWM 2	MODIFIED A-10	TOP ELEV. 444.50	SD4.02	SEE DETAIL SHT. 11 OF 11			
	24" Flared End Section	INV. ELEV. 437.00		SEE PLAN			
E-2	24" FLARED END SECTION	INV. ELEV. 434.30		SEE PLAN			

PIPE SCHEDULE						
TYPE & SIZE	CLASS	QUANTITY	REMARKS			
15"HDPE		46 LF				
18"HDPE		247 LF				
24"HDPE		278 LF				
72"ACCMP		315 LF				

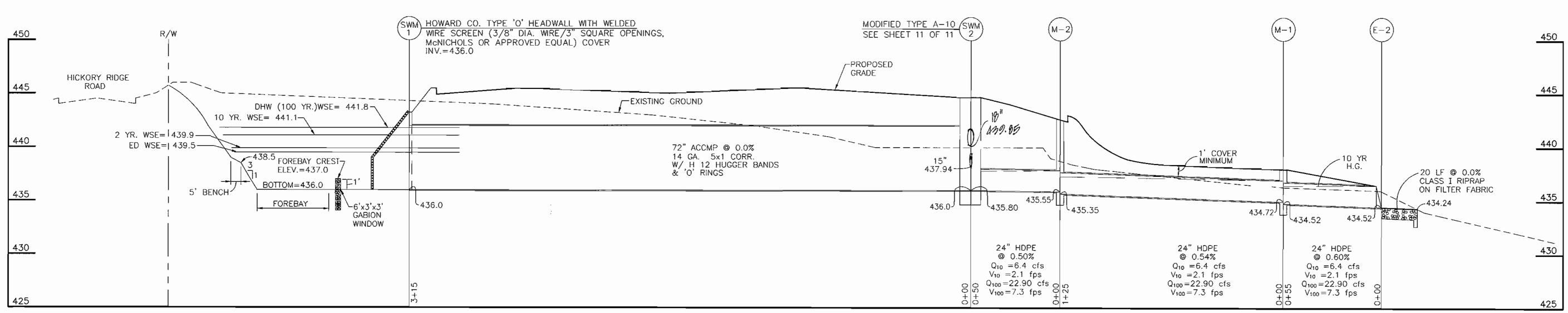






### STORM DRAIN PROFILE SCALE: HORIZ. 1"=30" VERT. 1"=5"







STORM DRAIN PROFILE

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

APPROVED
PLANNING BOARD
of HOWARD COUNTY

DATE Oct. 4, 2000

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF-DEVELOPMENT ENGINEERING DIVISION

CHIEF-DIVISION OF LAND DEVELOPMENT

DATE

PRECIOR

DATE

11-30-2000	REVISED I-4 LOCATION		
DATE	REVISION	BY	APP'R.

PREPARED FOR:

AEQUUS LLC
3414 OLANDWOOD COURT
OLNEY, MARYLAND 20832
(301) 774-2529

AEQUUS MEDICAL OFFICE BUILDING
TOWN CENTER SECTION 8 AREA 4

5TH ELECTION DISTRICT

OSCALE ZONING

AS SHOWN NT-ECC

DATE
TAX MAP NO.

SEPT., 2000 35

C.E.I. FILE No.

20066.00

SHEET

4 OF 1

#### CONSTRUCTION SPECIFICATIONS

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

#### Site Preparation

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 sloped to no steeper than 1:1. All trees shall be cleared and grubbed within 15 feet of the toe of the embankment.

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 25-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 or use on the embankment and other designated

#### <u>Earth Fill</u>

Material — The fill material shall be taken from approved designated borrow areas. It 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 and must have at least 30% passing the #200 sieve. Consideration may be given to the use of other materials in the embankment if designed by a geotechnical engineer. Such special designs must have construction supervised by a geotechnical engineer.

Materials used in the outer shell of the embankment must have the capability to support vegetation of the quality required to prevent erosion of the embankment.

<u>Placement</u> - 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.

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 heavy 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.

When required by the reviewing agency the minimum required density shall not be less than 95% of maximum dry density with a moisture content within ñ2% 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 (Standard Proctor).

#### 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. A no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, 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 structure or pipe.

Structure backfill may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 313 as modified. The mixture shall have a 100-200 psi; 28 day unconfined

compressive strength. The flowable fill shall have a minimum pH of 4.0 and a minimum resistivity of 2,000 ohm-cm. Material shall be placed such that a minimum of 6" (measured perpendicular to the outside of the pipe) of flowable fill shall be under (bedding), over and on the sides of the pipe. It only needs to extend up to the spring line for rigid conduits. Average slump of the fill shall be 7" to assure flawability of the material. Adequate measures shall be taken (sand bags, etc.) to prevent floating the pipe. When using flowable fill, all metal pipe shall be bituminous coated. Any adjoining soil 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 shall completely fill all voids adjacent to the flowable fill zone. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a structure or pipe unless there is a compacted fill of 24" or greater over the structure or pipe. Backfill material outside the structural backfill (flowable fill) zone shall be of the type and quality conforming to that specified for the core of the embankment or other embankment

#### Pipe Conduits

All pipes shall be circular in cross section.

Corrugated Metal Pipe - All of the following criteria shalf apply for corrugated metal pipe:

1. Materials - (Polymer Coated steel pipe) -Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. This pipe and its appurtenances shall conform to the requirements of AASHTO Specifications M-245 & M-246 with watertight coupling bands or flanges.

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. Aluminum Coated Steel Pipe, when used with flowable fill or when soil and/or water conditions warrant the need for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A.

Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt.

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 Pipe, when used with flowable fill or when soil and/or water conditions warrant for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

- 2. Coupling bands, anti-seep collars, end sections, etc., must be composed of the same material and coatings as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 mils in thickness.
- 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 monner 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 of corrugations to accommodate the bandwidth. The following type connections are acceptable for pipes less than 24 inches in diameter: flanges on both ends of the pipe with a circular 3/8 inch closed cell neoprene gasket, pre-punched to the flange bolt circle, sandwiched between adjacent flanges; a 12inch wide standard lap type band with 12inch wide by 3/8-inch thick closed cell circular neoprene gasket; and a 12-inch wide hugger type band with o-ring gaskets having a minimum diameter of 1/2 inch greater than the corrugation depth. Pipes 24 inches in diameter and larger shall be connected by a

neoprene gasket; and a 12-inch wide hugger type band with o-ring gaskets having a minimum diameter of 1/2 inch greater than the corrugation depth. Pipes 24 inches in diameter and larger shall be connected by a 24 inch long annular corrugated band using a minimum of 4 (four) rods and lugs, 2 on each connecting pipe end. A 24-inch wide by 3/8-inch thick closed cell circular neoprene gasket will be installed with 12

Helically corrugated pipe shall have either continuously welded seams or have lock seams with internal caulking or a neoprene

inches on the end of each pipe. Flanged

full width of the flange is also acceptable.

joints with 3/8 inch closed cell gaskets the

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

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 concrete Materials — Reinforced concrete pipe shall have bell and spigot joints with rubber

gaskets and shall equal or exceed ASTM

- 2. Bedding Reinforced concrete pipe conduits shall be laid in a concrete bedding / cradle for their entire length. This bedding / cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 50% of its outside diameter with a minimum thickness of 6 inches. Where a concrete cradle is not needed for structural reasons, flowable fill may be used as descibed in the "Structure Backfill" section of this standard. Gravel bedding is not permitted.
- 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 4 feet from the

- 4. Backfilling shall conform to "Structure
- 5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

<u>Plastic Pipe</u> — The following criteria shall apply for plastic pipe:

- 1. Materials PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241. Corrugated High Density Polyethylene (HDPE) pipe, couplins and fittings shall conform to the following: 4" - 10" inch pipe shall meet the requirements of AASHTO M252 Type S, and 12" through 24" inch shall meet the requirements of AASHTO M294 Type S.
- 2. Joints and connections to anti-seep collars shall be completely watertight.
- 3. 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.
- 4. Backfilling shall conform to "Structure
- 5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

<u>Drainage Diaphragms</u> - When a drainage diaphragm is used, a registered professional engineer will supervise the design and construction inspection.

#### <u>Concrete</u>

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 414,

#### Rock Riprop

Rock riprop shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials Section 311.

Geotextile shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 921.09, Class C.

#### 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 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 bottom 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 sumps from which the water shall be pumped.

#### <u>Stabilization</u>

All borrow areas shall be graded to provide proper drainage and left in a sightly 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 Natural Resources Conservation Service Standards and Specifications for Critical Area Planting (MD-342) or as shown on the accompanying drawings.

#### Erasion and Sediment Control

as necessary.

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. Maintenance Schedule/requirements

The Stormwater Management Facility shall be maintained by the the property owner as follows: 1.Removal of forebay silt shall occur when the accumulation exceeds four (4) inches. 2.Removal of accumulated paper, trash and debris

3. Corrective maintenance is required any time the forebay does not drain completely within 60 hours. No standing water is allowed. 4. Annual inspection and repair of the structure and

storage pipe. 5. Vegetation growing on the embankment top or faces is not allowed to exceed 18 inches at any time.

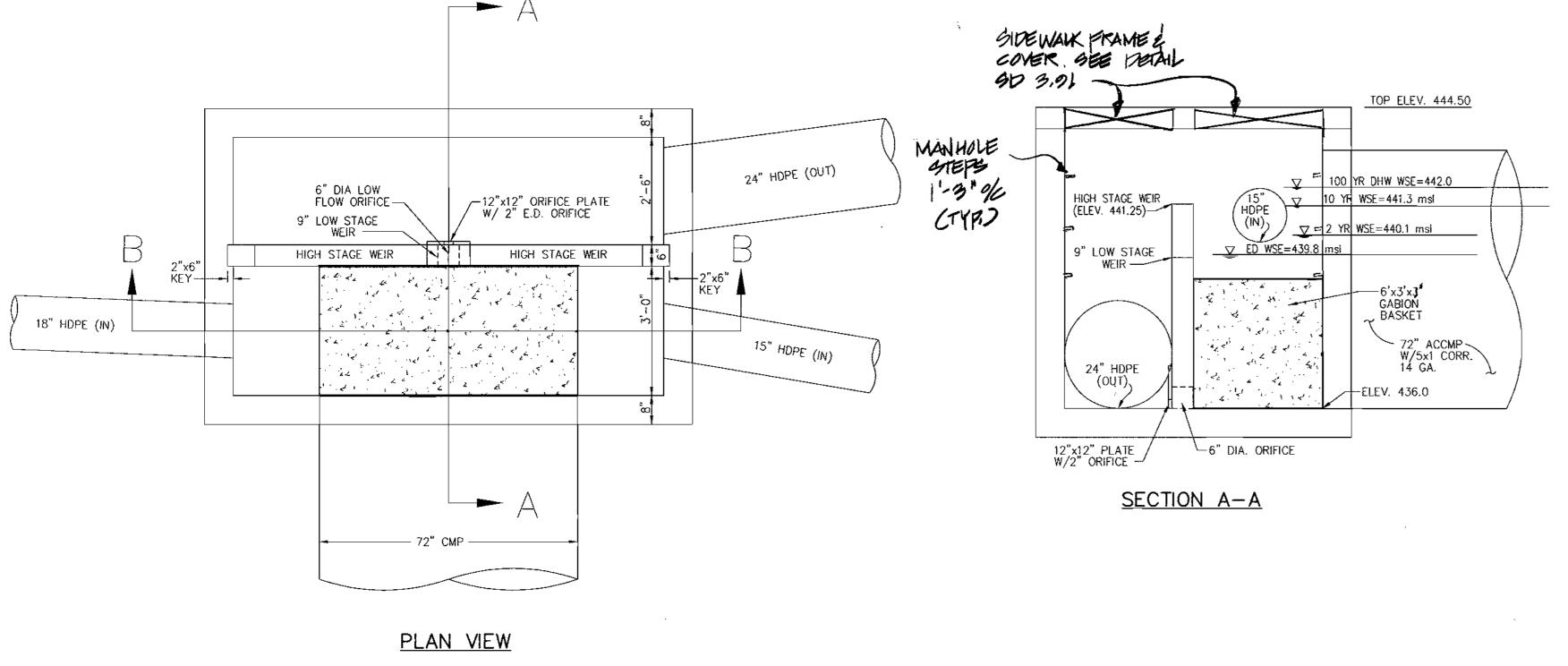
> APPROVED PLANNING BOARD of HOWARD COUNTY DATE OCTOBER 4, LOOO

CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS

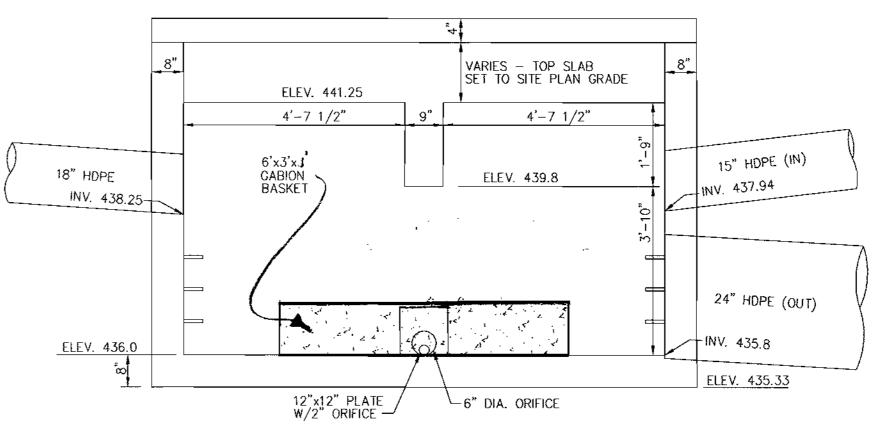
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BY THE ENGINEER:



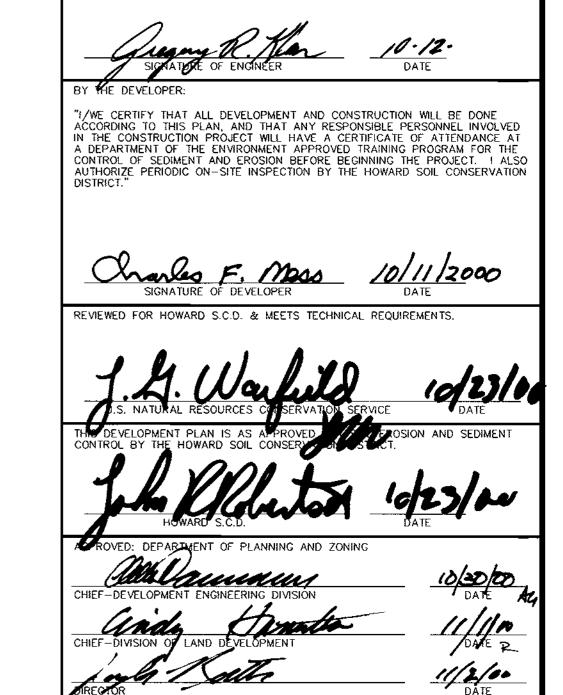
<u>SWM-2 CONTROL STRUCTURE</u> (MODIFIED TYPE 'A-10 INLET) NO TO SCALE



SECTION B-B

#### A-10 INLET STRUCTURE MODIFICATIONS

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- 2. ELIMINATE ALL REFERENCES TO THROAT OPENING (DETAIL 'A')
- 3. CONSTRUCT 6" CONCRETE WEIR WALL AS SHOWN ON THIS SHEET.



CENTURY ENGINEERING, INC.

CONSULTING ENGINEERS, PLANNERS, SURVEYORS 32 WEST ROAD TOWSON, MARYLAND 21204 (410) 823-8070

11-27-2000 SWM -2 REVINED TO GHOW MY COVERS & STEPS & ROW. GARACH BAKKET DATE APP'R. REVISION BY

PREPARED FOR:

AEQUUS LLC 3414 OLANDWOOD COURT OLNEY, MARYLAND 20832 (301) 774-2529

STORMWATER MANAGEMENT NOTES AND DETAILS

AEQUUS MEDICAL OFFICE BUILDING

TOWN CENTER SECTION 8 AREA 4 5TH ELECTION DISTRICT

C.E.I. FILE No. ZONING AS SHOWN NT-ECC 20066.00 DATE TAX MAP No. SHEET OF 11 SEPT., 2000 35 HOWARD COUNTY, MARYLAND

