SITE ANALYSIS

- 1. TOTAL SITE AREA: WITHOUT ROAD R/W: 8.024 AC.
- 2. TOTAL NUMBER OF PARCELS: 4. PARCEL "A" 2.150 AC., PARCEL "B" 1.596 AC. PARCEL "C" 1.984 AC., PARCEL "D" 2.294 AC.
- 3. DEED REFERENCE: 07671/212 F-04-107, P.N. 17018 4. THE SUBJECT PROPERTY IS ZONED M2 PER THE FEBRUARY 2, 2004
- COMPREHENSIVE ZONING PLAN. 5. TAX MAP: 48 GRID: 14 PARCEL: 120
- ELECTION DISTRICT: 6 6. PARKING TABULATION:

220 186 SPACES (INCLUDING 9 HANDICAP SPACES)

7. SITE AREA TABULATION: (WITHOUT ROAD R/W) A. TOTAL PARCEL AREA: 8.024 Ac. (PARCELS A-D) B. TOTAL BUILDING AREA: 2.505 Ac. 31.2% COVERAGE
C. PARCEL AREA: PARCEL"A" 2.150 Ac., PARCEL"B" 1.596 Ac.,
PARCEL"C" 1.984 Ac., PARCEL"D" 2.294 Ac.

D. BUILDING AREA: PARCEL "A"

OFFICE - 11,750 SF @ 3,3/1000 S.F. WAREHOUSE - 20,250 SF @ 0.5 P.S./1000 S.F. 10,300 SF 21,700 SF

10.9 PARCEL "B"

OFFICE - 9,500 SF @ 3.3/1000 S.F. 44.9 - 45

WAREHOUSE - 13,138 SF @ 0.5 P.S./1000 S.F.

PARCEL "C"
OFFICE - 9,500 SF @ 3.3/1000 S.F. WAREHOUSE - 13,000 SF @ 0.5 P.S./1000 S.F. 1,804 SF WAREHOUSE MEZZANINE

> OFFICE - 16,000 SF @ 3.3/1000 S.F. WAREHOUSE - 16,000 SF @ 0.5 P.S./1000 S.F. WAREHOUSE MEZZANINE

> > PARKING REQUIRED:

COUNTY RED LINE REVISION PROCESS FOR APPROVAL.

P.S. 186 215

38.0 = 38 REQ'D

6.5 37.8 = @9.4 =

= 49 REQ'D

THERE IS NO MANUFACTURING OR ASSEMBLY IN THE WAREHOUSE AREAS. ANY FUTURE CHANGES WILL HAVE TO BE ADDRESSED IN THE HOWARD

WILHELM BUSINESS ENTERPRISES, LLC 10979 GUILFORD ROAD ANNAPOLIS JUNCTION, MARYLAND 20701

9. PROPOSED USE IS OFFICE AND WAREHOUSE.

- 10. THE STORMWATER MANAGEMENT FACILITY IS TO CONSIST OF SWM BASINS, UNDERGROUND SAND FILTER FOR WATER QUALITY, CHANNEL PROTECTION AND 10 YEAR STORM VOLUME. STORMWATER MANAGEMENT FOR THE IMPROVEMENTS SHOWN ON THIS PLAN ARE BASED ON MEASURED IMPERVIOUS AREAS USING REDEVELOPMENT CRITERIA. ANY ADDITIONAL CONSTRUCTION ON THIS SITE SHALL REQUIRE FURTHER EVALUATION OF THE STORMWATER MANAGEMENT PROVISIONS.
- 11. TOTAL DISTURBED AREA = 349,351 S.F. = 8.02 Ac±
- 12. PROPOSED BUILDINGS:

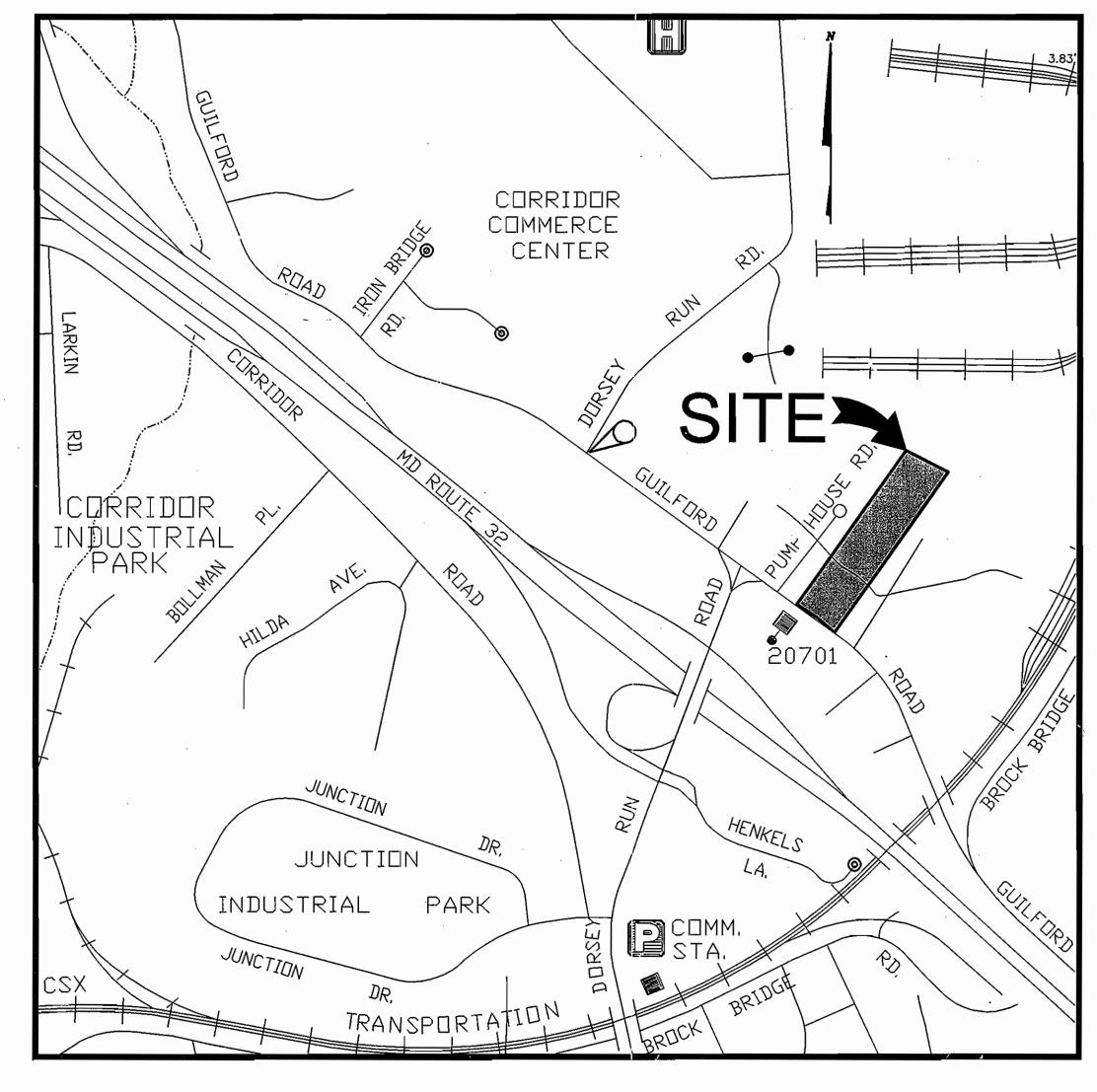
PARCEL "A", BUILDING 1 - 32,000 SF, 1-LEVEL, 34.2% BUILDING COVERAGE "B", BUILDING 2 – 22,638 SF, 1-LEVEL, 32.6% BUILDING COVERAGE PARCEL "C", BUILDING 3 - 22,500 SF, 1-LEVEL, 26% BUILDING COVERAGE PARCEL "D", BUILDING 4 - 32,000 SF, 1-LEVEL, 32% BUILDING COVERAGE

13. THERE ARE NO WETLANDS/WETLANDS BUFFERS WITHIN THE LIMIT OF DISTURBANCE SHOWN FOR DEVELOPMENT ON THIS SITE PLAN.

	ADDRESS CHART
LOT/PARCEL #	STREET ADDRESS
PARCEL "A"	10981 GUILFORD ROAD
PARCEL "B"	10979 GUILFORD ROAD
PARCEL "C"	10977 GUILFORD ROAD
PARCEL "D"	10975 GUILFORD ROAD

	PER	MIT INF	FORMATION	CHART		
SUBDIVISION NAME ANNAPOLIS JUNCTI	SUBDIVISION NAME ANNAPOLIS JUNCTION BUISINESS PARK				LOT/PARCEL NO. PARCEL S A-D	
PLAT # GRID # ZONING 17018 14 M-2		TAX MAP NO. 48	ELECT DISTR 2	CENSUS TRACT 6069.01	4	
WATER CODE B 02		SEWER CODE	415	500 00		

ANNAPOLIS JUNCTION BUSINESS PARK



VICINITY MAP

SCALE: 1"=600'



BENCH MARK

48G4-HOWARD CO. SURVEY CONTROL, BRASS DISK SET IN TOP OF CONC. MONUMENT S/E COR. OF GUILFORD RD. & DORSEY RUN RD. N 531519.243 E 1371653.850 EL. 206.647 FT. 48GB-N 532530,284 E 1370623,784

OWNER/DEVELOPER

WILHELM BUSINESS ENTERPRISES, L.L.C. 10979 GUILFORD ROAD, SUITE A ANNAPOLIS JUNCTION, MD 20701 C/O DIANNA WILHELM 443-661-1400

<u>GENERAL NOTES</u>

- . ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARD AND SPECIFICATIONS IF APPLICABLE.
- 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.
- 3. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777
- AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK. 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.
- 5. SITE AREA: 8.024 Ac. ±
- 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
- 7. ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE
- 8. EXISTING TOPOGRAPHY REFLECTS FIELD SURVEY BY CENTURY ENGINEERING
- 9. COORDINATES AND BEARING ARE BASED UPON THE MD STATE PLAN SYSTEM (NAD '83).
- 10. EXISTING WATER AND SEWER SHOWN IS PUBLIC.
- 11. STORMWATER MANAGEMENT: QUANTITY AND QUALITY MANAGEMENT IS PROVIDED BY ON-SITE FACILITIES. THE FACILITIES CONSIST OF UNDERGROUND SAND FILTER FOR WATER QUALITY AND DRY POND FOR THE CPV VOLUME AND 10 YEAR STORM QUANTITY CONTROL.
- 12. ALL EXISTING WATER AND SEWER IS PER CONTRACT #'S: 653W, 24317 & 44-1829D.
- 13. NO EXISTING PUBLIC STORM DRAIN ON SITE.
- 14. ALL CURB RADII IS 5' UNLESS NOTED OTHERWISE
- 15. UTILITY INFORMATION TAKEN FROM APPROVED FINAL CONSTRUCTION PLANS FOR DEVELOPMENT.CONTRACT NO. 44-1829-D, 44-3367-D, 24-3417 & 653-W.
- 16. ALL SIDEWALKS SHALL BE 5' WIDE EXCEPT WHERE DIMENSIONED
- 17. CONTRACTOR SHALL UTILIZE PVC FOR ALL SEWER HOUSE CONNECTIONS. CONTRACTOR SHALL UTILIZE D.I.P. (CL. 51) FOR WATER SERVICE CONNECTION. (FIRE & DOMESTIC)
- 18. USE HOWARD COUNTY TRENCH BEDDING CLASS "C" FOR STORM DRAINS.
- 19. PAVED AREAS INDICATED ARE PRIVATE EXCEPT AS NOTED.
- 20. PROJECT BACKGROUND: SEE DEPT. OF PLANNING & ZONING FILE NUMBERS: SDP-80-073, WP-04-073, F-04-107
- 21. 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 MAX.) LANDING AT THE TOP AND BOTTOM OF ALL RAMPS AND BUILDING ENTRANCES AND EVITS.
- ENTRANCES AND EXITS. 22. ALL PROPOSED SITE UTILITIES ARE TO TERMINATE 5' FROM THE BUILDING. THE BUILDING PLUMBER SHALL CONNECT TO AND EXTEND THESE UTILITIES TO THE INSIDE OF THE BUILDING.
- 23. FOR GAS, TELEPHONE AND ELECTRIC ROUTING, SEE SEPARATE PLAN.
- 24. TOPOGRAPHY OBTAINED BY CENTURY ENGINEERING ON SEPTEMBER, 2003
- 25. "THE FOREST CONSERVATION OBLIGATION OF 1.49 ACRES OF REFORESTATION FOR THIS PROJECT HAS BEEN MET BY A FEE-IN-LIEU PAYMENT OF \$32,452.20 TO
- THE HO. CO. FOREST CONSERVATION FUND."
- 26. THE LANDSCAPE SURETY IS INCLUDED IN THE DEVELOPERS AGREEMENT. THE SURETY IS IN THE AMOUNT OF \$39,360. 27. LIGHTING FIXTURE DETAILS SHOWN ON SHEET 21 OF 24.
- 28. THIS PLAN IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION REGULATIONS.
- 29. ALL OUTDOOR LIGHTING ON THIS SITE SHALL COMPLY WITH THE REQUIREMENTS OF ZONING SECTION 134.
- 30. THE CONTRACTOR OR DEVELOPER SHALL CONTACT THE CONSTRUCTION INSPECTION
- DIVISION 24 HOURS IN ADVANCE OF COMMENCEMENT OF WORK AT (410)313-1880. 31. WP-04-073 APPROVED ON 1-6-04 FOR SUBDIVISION SECTIONS 16.144(a)
- AND (F) TO NOT BE REQUIRED TO SUBMIT SKETCH AND PRELIMINARY PLANS FOR A MAJOR (NON RESIDENTIAL) SUBDIVISION. CONDITIONS AS FOLLOWS:
- 1. THE PROPOSED PARCELS SHALL HAVE SHARED VEHICULAR ACCESS AND PARKING AND A SHARED VEHICULAR ACCESS AND PARKING EASEMENT INDICATED ON THE FUTURE FINAL PLAT FOR THE PROPERTY.
- 2. THE PROPOSED PARKING LOTS AND PARKING LOT ISLANDS SHALL COMPLY
- WITH THE DESIGN REQUIREMENTS OF THE LANDSCAPE MANUAL. 3. A LOADING/UNLOADING FACILITY THAT COMPLIES WITH THE REQUIREMENTS OF ZONING REGULATIONS SECTION 133.F SHALL BE INDICATED FOR EACH BUILDING
- ON THE FUTURE SITE DEVELOPMENT PLAN(S) FOR THE PROPOSED PARCELS. 4. COMPLIANCE WITH THE WITH THE ENCLOSED HEALTH DEPARTMENT AND DIVISION
- OF ENVIRONMENTAL AND COMMUNITY PLANNING COMMENTS IS REQUIRED. 32. ALL PUBLIC ROAD IMPROVEMENTS, SIDEWALK AND STREET TREES ARE TO BE CONSTRUCTED AS PER CAPITAL PROJECT NO. J-4175 & B-3885.

SHEET INDEX

SHEE	INDLA	L
HEET NUMBER	DRAWING TITLE	ŀ
1	COVER SHEET	
2	SITE PLAN	- [-
3	SITE UTILITY PLAN	-
4	SITE DETAILS	.
5	STORM DRAIN PROFILES	
6	STORM DRAIN PROFILES	.
7	EROSION AND SEDIMENT CONTROL PLAN	-
8	EROSION AND SEDIMENT CONTROL NOTES & DETAILS	
9	EROSION AND SEDIMENT CONTROL DETAILS	
10	EROSION AND SEDIMENT CONTROL DETAILS	
11	STORMWATER MANAGEMENT PLAN	
12	STORMWATER MANAGEMENT NOTES AND DETAILS	-
13	STORMWATER MANAGEMENT DETAILS	
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16	STORMWATER MANAGEMENT PROFILES	
17	STORMWATER VAULT DETAILS	
18	VAULT DETAILS	
19	VAULT DETAILS	
20	DRAINAGE AREA MAP	
21	BUILDING ELEVATIONS & OUTDOOR LIGHTING DETAIL	
22	DEMOLITION PLAN	
23	FINAL LANDSCAPING PLAN	F
24	FOREST STAND DELINEATION PLAN	\vdash
	AS-BUILT	

rank or large ANNAPOLIS JUNCTION BUSINESS PARK PARCELS A-D

TAX MAP 48 GRID 14 PARCEL 120 ELECTION DISTRICT No. 6 HOWARD COUNTY, MARYLAND

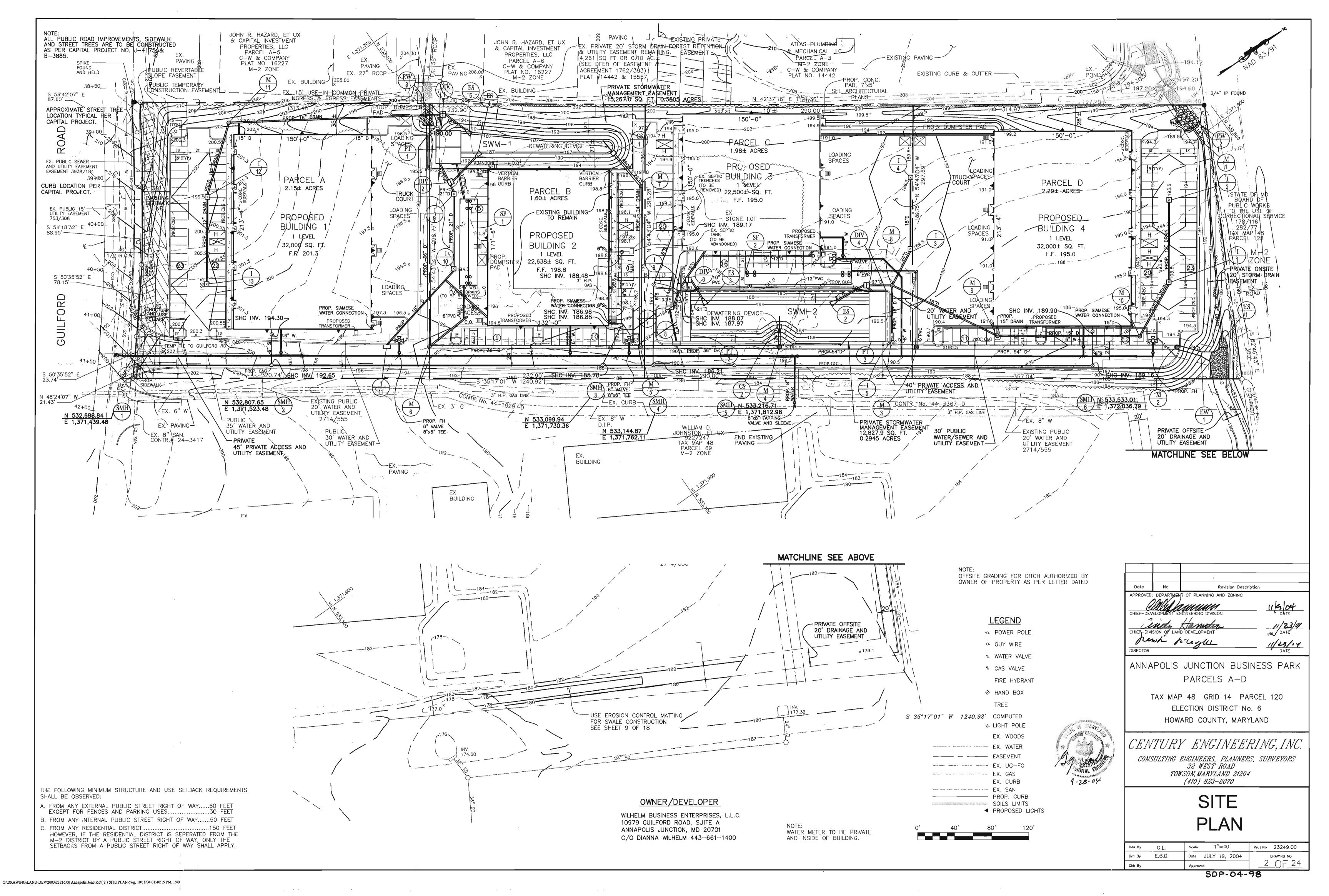
CENTURY ENGINEERING, INC.

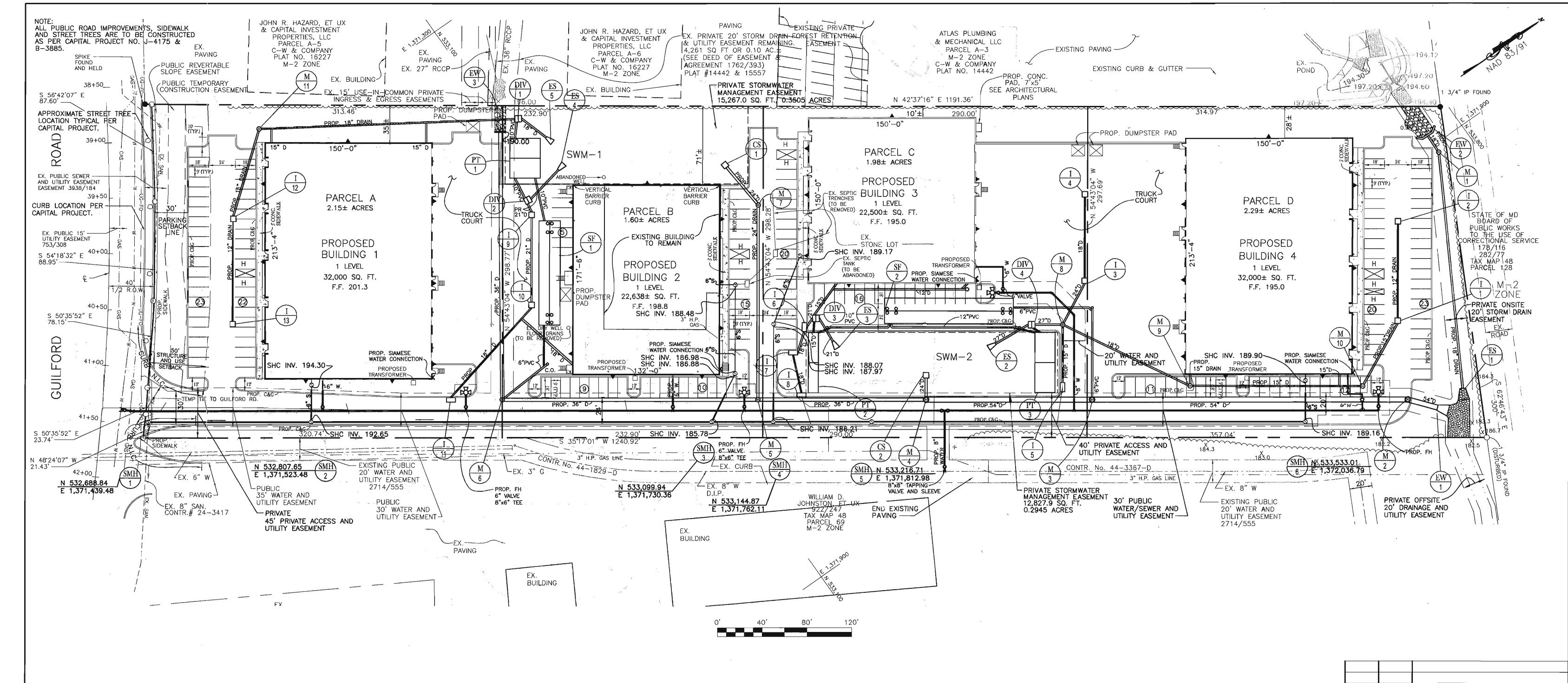
CONSULTING ENGINEERS, PLANNERS, SURVEYORS 32 WEST ROAD TOWSON, MARYLAND 21204

(410) 823-8070

COVER SHEET

Scole 1"=40' Proj No 23249.00 Des By G.L. Drn By E.B.D. Date JULY 19, 2004 DRAWING NO Chk By







OWNER/DEVELOPER

WILHELM BUSINESS ENTERPRISES, L.L.C. 10979 GUILFORD ROAD, SUITE A ANNAPOLIS JUNCTION, MD 20701 C/O DIANNA WILHELM 443-661-1400

Date	No	Revision Description
CHIEF-DEV	AMMA ELOPMENT ER VAS LI	IT OF PLANNING AND ZONING III A D4 INGINEERING DIVISION DATE 1/23/04 DATE 1/23/04 DATE DATE
ANNA	POLIS	JUNCTION BUSINESS PARK PARCELS A-D

CENTURY ENGINEERING, INC.

TAX MAP 48 GRID 14 PARCEL 120

ELECTION DISTRICT No. 6

HOWARD COUNTY, MARYLAND

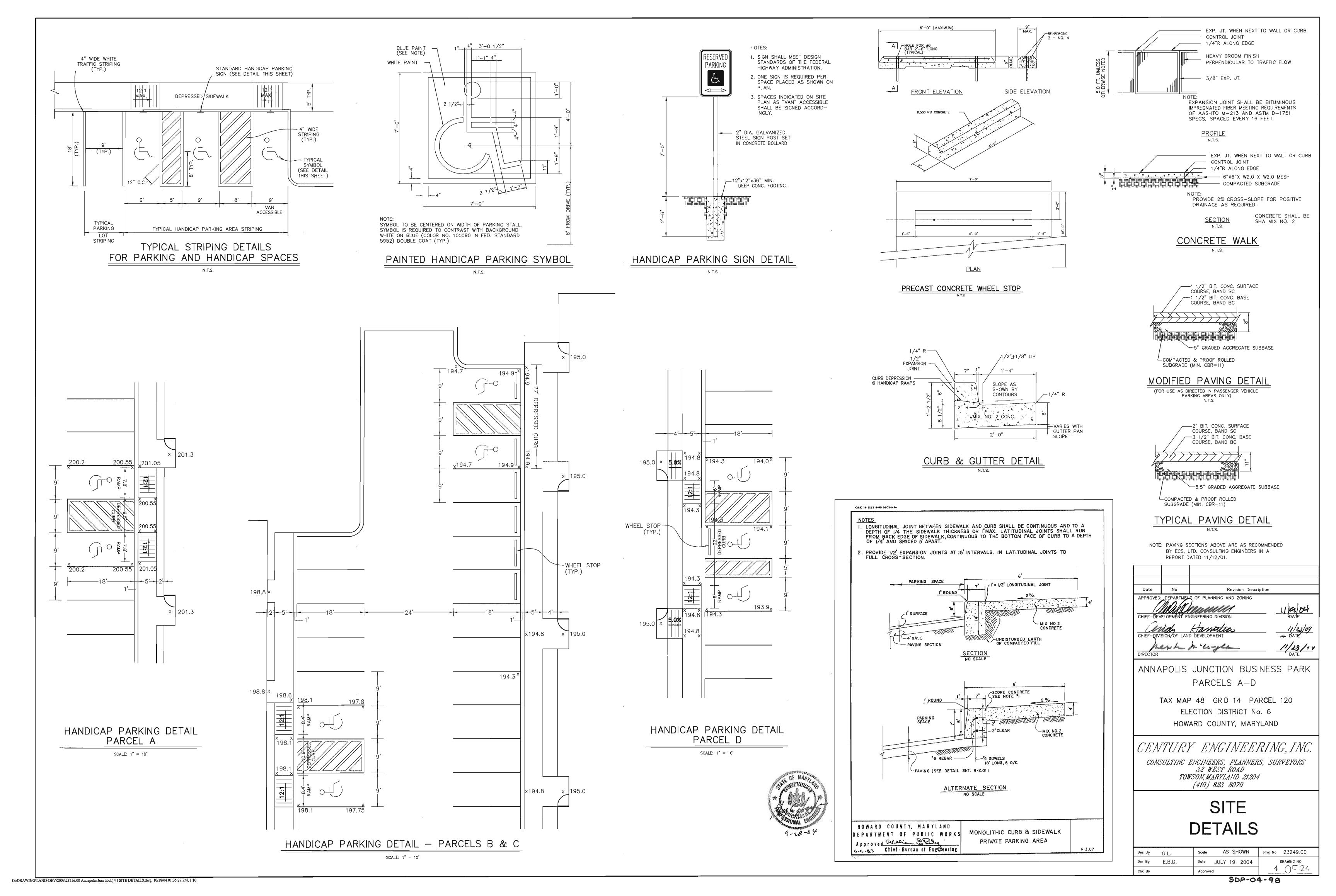
CONSULTING ENGINEERS, PLANNERS, SURVEYORS
32 WEST ROAD
TOWSON, MARYLAND 21204
(410) 823-8070

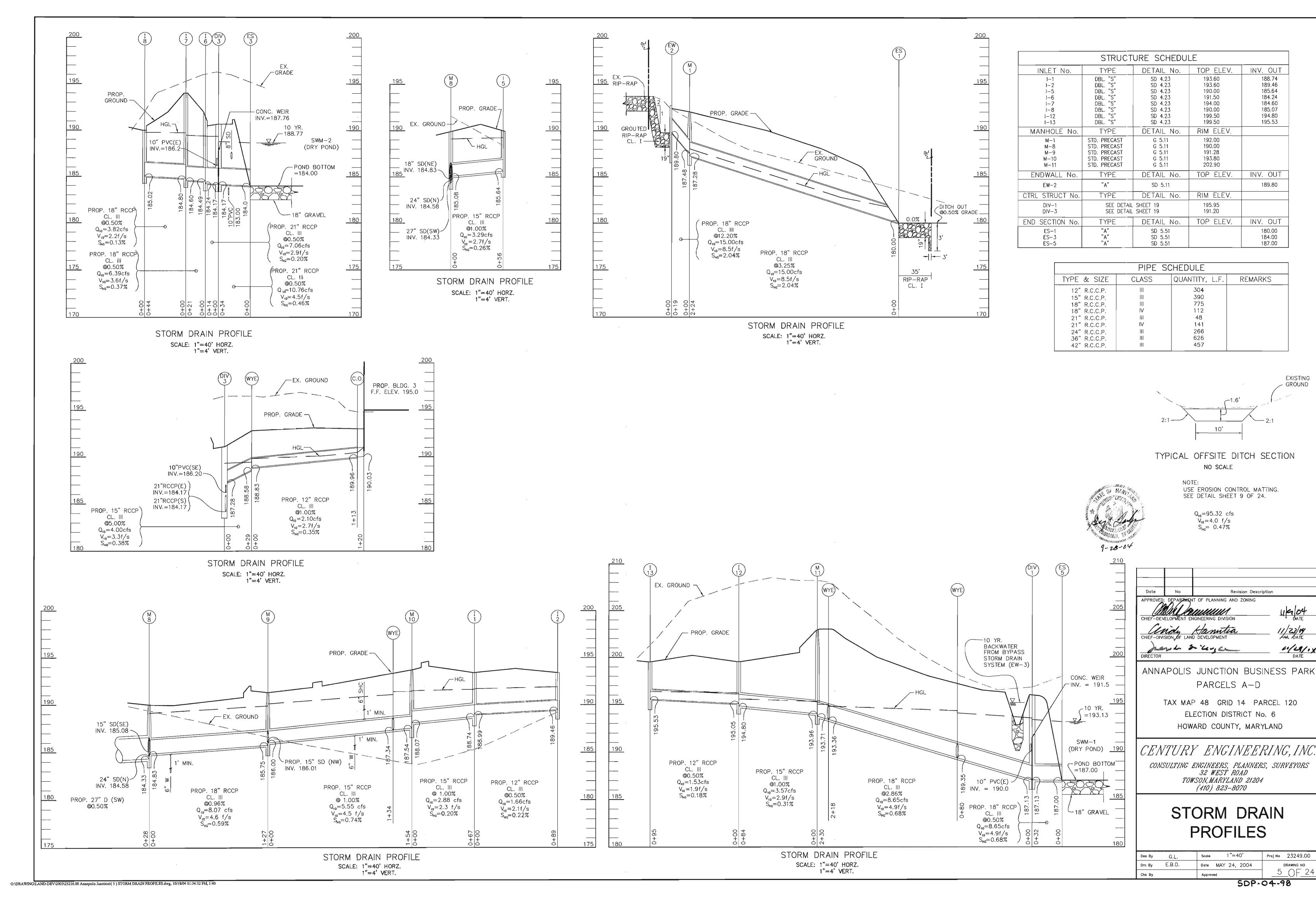
SITE UTILITY PLAN

 Des By
 G.L.
 Scale
 1"=40'
 Proj No
 23249.00

 Drn By
 E.B.D.
 Date
 JULY 19, 2004
 DRAWING NO
 3
 5
 24

 Chk By
 Approved
 3
 5
 24





<u>5 OF 24</u> 5DP-04-98

Proj No 23249.00

DRAWING NO

INV. OUT

188.74

189.46

185.64

184.24

184.60

185.07

194.80

195.53

INV. OUT

INV. OUT

180.00

184.00

187.00

EXISTING

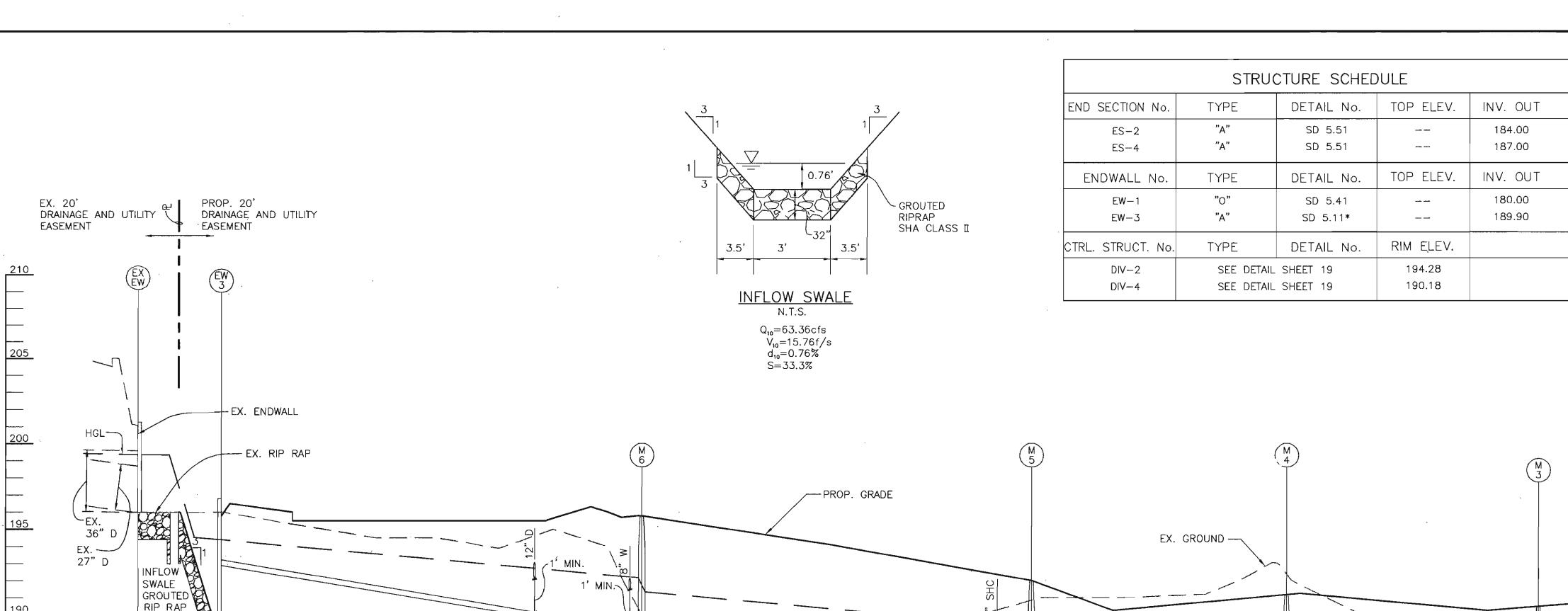
- GROUND

LIGIOH DATE

11/23/04 AMA NOATE

4/29/0X

189.80



CLASS II d₅₀=16.0" d₁₀₀ =24"

T=32"

18" RCCP

INV. 187.59

PROP. 36" RCCP

CL. III

@1.67%

 $Q_{10} = 63.36 cfs$

 $V_{10} = 9.8 f/s$ $S_{HG} = 0.90\%$

EX.

36" D(W)
INV. 196.05
Q₁₀=44.72cfs

 $V_{10} = 6.2 f/s$

EX.

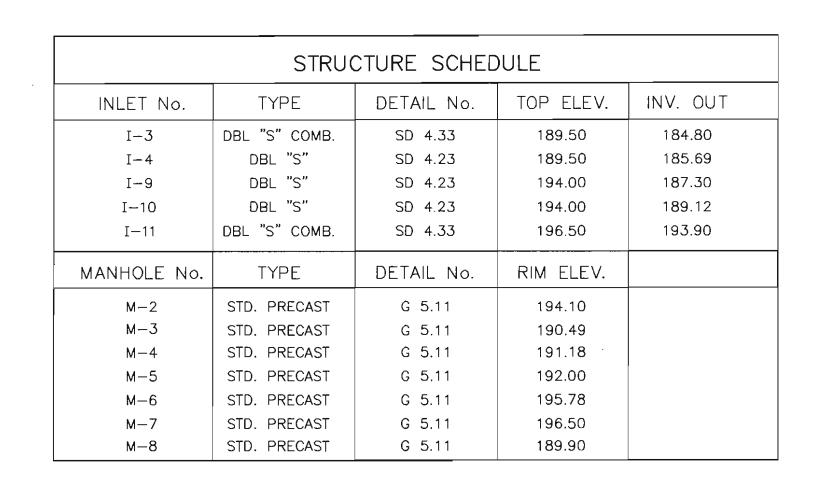
27" D(W)

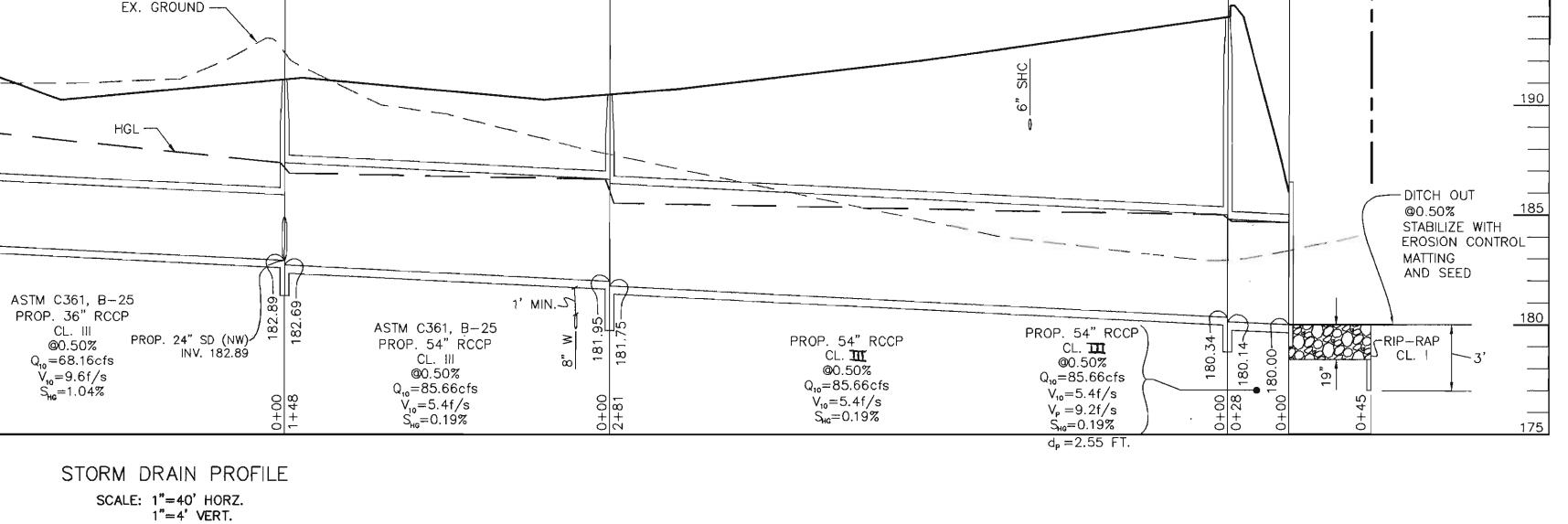
INV. 196.05

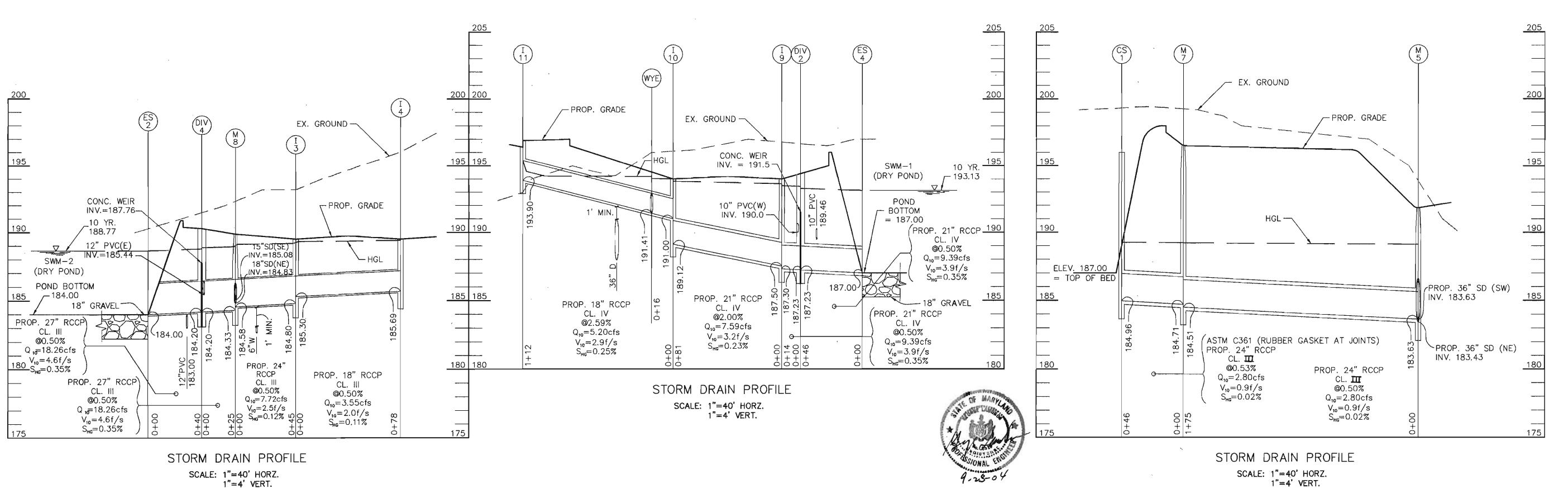
Q₁₀=18.00cfs

 $V_{10} = 4.53 f/s$

O:\DRAWING\LAND-DEV\2003\23216.00 Annapolis Junction\(6) STORM DRAIN PROPILES.dwg, 10/18/04 01:20:12 PM, 1:40







PROP. 24" SD (NW) INV. 183.84

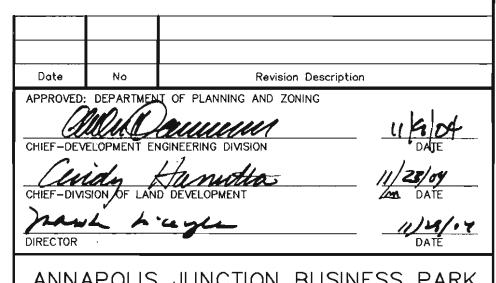
PROP. 36" RCCP

CL. III

©0.76%

 $Q_{10} = 63.36 cfs$

 $V_{10} = 9.8 f/s$ $S_{HG} = 0.90\%$



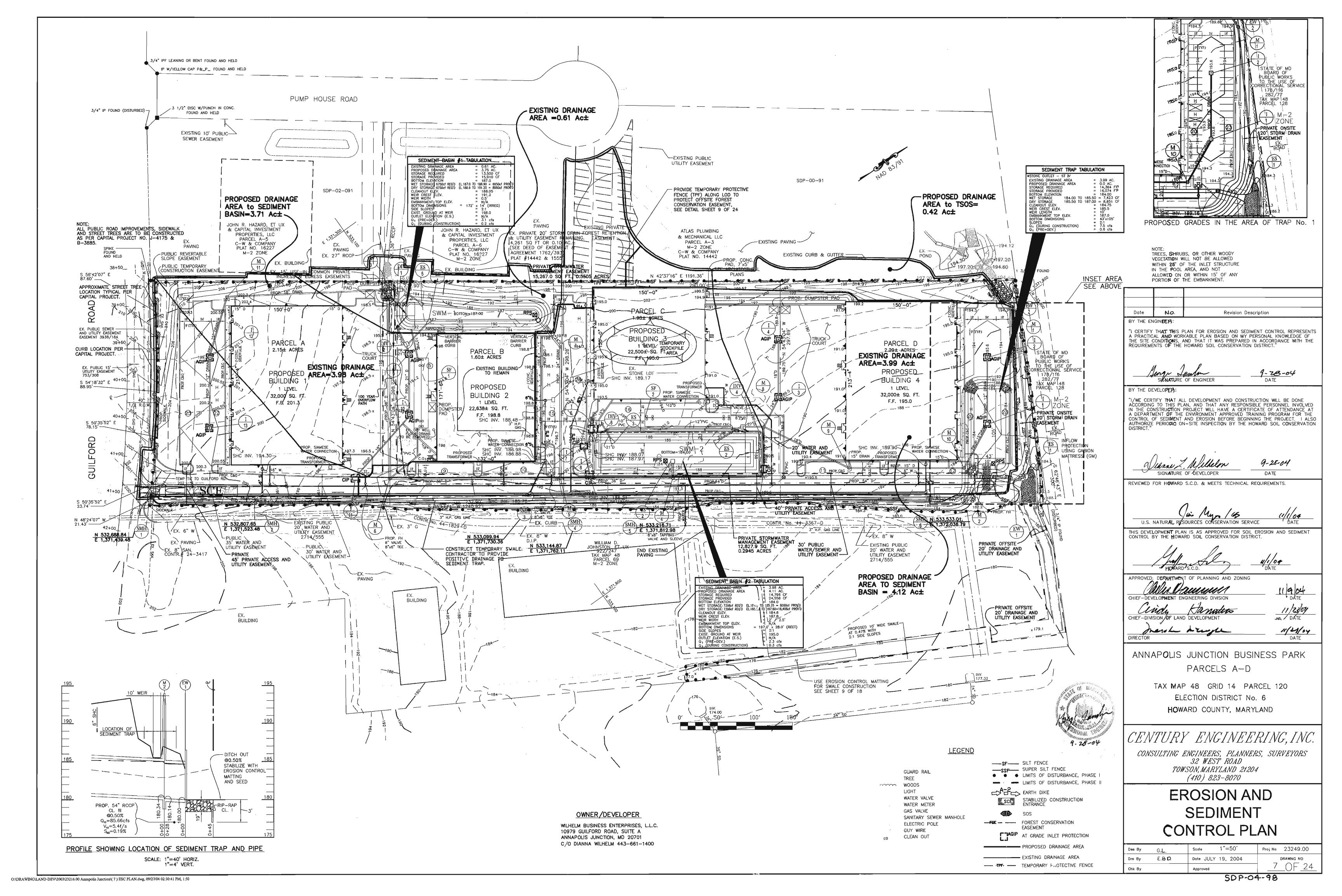
ANNAPOLIS JUNCTION BUSINESS PARK PARCELS A-D

TAX MAP 48 GRID 14 PARCEL 120 ELECTION DISTRICT No. 6 HOWARD COUNTY, MARYLAND

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

STORM DRAIN PROFILES

Des By	G.L.	Scale 1 "=40"	Proj No 23249.00
Dm By	E.B.D.	Date MAY 24, 2004	DRAWING NO
Chk By		Approved	<u>6</u> 0- <u>24</u>



SPECIFICATIONS FOR VEGETATIVE STABILIZATION

FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN SEVEN CALENDAR DAYS FOR THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) AND FOURTEEN DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

1. PERMANENT SEEDING:

- A. SOIL TESTS: LIME AND FERTILIZER WILL BE APPLIED PER SOIL TESTS
 RESULTS FOR SITES GREATER THAN 5 ACRES. SOIL TESTS WILL BE DONE AT
 COMPLETION OF ROUGH GRADING. RATES AND ANALYSES WILL BE PROVIDED TO
 THE GRADING INSPECTOR AS WELL AS THE CONTRACTOR.
- 1. OCCURRENCE OF ACID SULFATE SOILS (GRAYISH BLACK COLOR) WILL REQUIRE COVERING WITH A MINIMUM OF 12 INCHES OF CLEAN SOIL WITH 6 INCHES MINIMUM CAPPING OF TOP SOIL. NO STOCKPILING OF MATERIAL IS ALLOWED. IF NEEDED, SOIL TESTS SHOULD BE DONE BEFORE AND AFTER A 6 WEEK INCUBATION PERIOD TO ALLOW OXIDATION OF SULFATES.
- B. SEEDBED PREPARATION: AREA TO BE SEEDED SHALL BE LOOSE AND FRIABLE TO A DEPTH OF AT LEAST 3 INCHES. THE TOP LAYER SHALL BE LOOSENED BY RACKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING OCCURS. FOR SITES LESS THAN 5 ACRES, APPLY 100 POUNDS OF DOLOMITIC LIMESTONE AND 21 POUNDS OF 10-20-20 FERTILIZER PER 1,000 SQUARE FEET. HARROW OR DISK LIME AND FERTILIZER INTO THE SOIL TO A DEPTH OF AT LEAST 3 INCHES ON SLOPES FLATTER THAN 3:1.
- C. SEEDING: APPLY 5-6 POUNDS PER 1,000 SQUARE FEET OF TALL FESCUE BETWEEN FEBRUARY 1, AND APRIL 30 OR BETWEEN AUGUST 15 AND OCTOBER 31. APPLY SEED UNIFORMLY ON A MOIST FIRM SEEDBED WITH A CYCLONE SEEDED DRILL, CULTIPACKER SEEDER OR HYDROSEEDER (SLURRY INCLUDES SEEDS AND FERTILIZER, RECOMMENDED ON STEEP SLOPES ONLY). MAXIMUM SEED DEPTH SHOULD BE 1/4 INCH IN CLAYEY SOILS AND 1/2 INCH IN SANDY SOILS WHEN USING OTHER THAN THE HYDROSEEDER METHOD. IRRIGATE IF SOIL MOISTURE IS DEFICIENT TO SUPPORT ADEQUATE GROWTH UNTIL VEGETATION IS FIRMLY ESTABLISHED. IF OTHER SEED MIXES ARE TO BE USED, SELECT FROM TABLE 25 ENTITLED "PERMANENT SEEDING FOR LOW MAINTENANCE AREAS" FROM THE 1994 STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. MIXES SUITABLE FOR THIS AREA ARE 1, 3 AND 5-7. MIXES 5-7 ARE SUITABLE IN NON-MOWABLE SITUATIONS.
- D. MULCHING: MULCH SHALL BE APPLIED TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING. DURING THE TIME PERIODS WHEN SEEDING IS NOT PERMITTED, MULCH SHALL BE APPLIED IMMEDIATELY AFTER GRADING.

MULCH SHALL BE UNROTTED, UNCHOPPED, SMALL GRAIN STRAW APPLIED AT A RATE OF 2 TONS PER ACRE OR 90 POUNDS PER 1,000 SQUARE FEET (2 BALES). IF A MULCH ANCHORING TOOL IS USED, APPLY 2.5 TONS PER ACRE. MULCH MATERIALS SHALL BE RELATIVELY FREE OF ALL KINDS OF WEEDS AND SHALL BE COMPETELY FREE OR PROHIBITED NOXIOUS WEEDS. SPREAD MULCH UNIFORMLY, MECHANICALLY OR BY HAND, TO A DEPTH OF 1-2

- E. SECURING STRAW MULCH: STRAW MULCH SHALL BE SECURED IMMEDIATELY FOLLOWING MULCH APPLICATION TO MINIMIZE MOVEMENT BY WIND OR WATER. THE FOLLOWING METHODS ARE PERMITTED:
 - (I) USE A MULCH ANCHORING TOOL WHICH IS DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE TO A MINIMUM DEPTH OF 2 INCHES. THIS IS THE MOST EFFECTIVE METHOD FOR SECURING MULCH, HOWEVER, IT IS LIMITED TO RELATIVELY FLAT AREAS WHERE EQUIPMENT CAN OPERATE SAFELY.
 - (II) WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW.

 APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS

 PER ACRE. IF MIXED WITH WATER, USE 50 POUNDS OF WOOD

 CELLULOSE FIBER PER 100 GALLONS OF WATER.
 - (III) LIQUID BINDERS MAY BE USED AND APPLIED HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF SLOPES. THE REMAINDER OF THE AREA SHOULD IN THE 1994 STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL OR APPROVED EQUAL SHALL BE APPLIED AT RATES RECOMMENDED BY THE MANUFACTURES.
 - (IV) LIGHTWEIGHT PLACTIC NETTING MAY BE USED TO SECURE MULCH. THE NETTING WILL BE STAPLED TO THE GROUND ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

2. TEMPORARY SEEDING:

LIME:

100 POUNDS OF DOLOMITIC LIMESTONE PER 1,000 SQUARE FEET.

FERTILIZER: 15 POUNDS OF 10-10-10 PER 1,000 SQUARE FEET.

SEED: PERENNIAL RYE - 0.92 POUNDS PER 1,000 SQUARE FEET (FEBRUARY 1, THROUGH APRIL 30 OR AUGUST 15 THROUGH NOVEMBER 1).

MILLET ~ 0.92 POUNDS PER 1,000 SQUARE FEET (MAY 1 THROUGH AUGUST 15).

MULCH: SAME AS 1D AND E ABOVE.

N 47'05'30" W 86.82'

3. NO FILLS MAY BE PLACED ON FROZEN GROUND. ALL FILL TO BE PLACED IN APPROXIMATELY HORIZONTAL LAYERS, EACH LAYER HAVING A LOOSE THICKNESS OF NOT MORE THAN 8 INCHES. ALL FILL IN ROADWAYS AND PARKING AREAS IS TO BE CLASSIFIED TYPE 2 AS PER HOWARD COUNTY CODE — ARTICLE 21, SECTION 2-308, AND COMPACTED TO 90% DENSITY: COMPACTION TO BE DETERMINED BY ASTM D-1557-66T (MODIFIED PROTOR). ANY FILL WITHIN THE BUILDING AREA IS TO BE COMPACTED TO A MINIMUM OF 95% AS DETERMINED BY METHODS PREVIOUSLY MENTIONED. FILLS FOR POND EMBANKMENTS SHALL BE COMPACTED AS PER MD-378 CONSTRUCTION SPECIFICATIONS. ALL OTHER

FILLS SHALL BE COMPACTED SUFFICIENTLY SO AS TO BE STABLE AND PREVENT

4. PERMANENT SOD:

EROSION AND SLIPPAGE.

INSTALLATION OF SOD SHOULD FOLLOW PERMANENT SEEDING DATES. PERMANENT SOD IS TO BE TALL FESCUE, STATE APPROVED SOD; LIME AND FERTILIZER PER PERMANENT SEEDING SPECIFICATIONS AND LIGHTLY IRRIGATE SOD PRIOR TO LAYING SOD. SOD IS TO BE LAID ON THE CONTOUR WITH ALL ENDS TIGHTLY ABUTTING. JOINTS ARE TO BE STAGGERED BETWEEN ROWS. WATER AND ROLL OR TAMP SOD TO INSURE POSITIVE ROOT CONTACT WITH THE SOIL. ALL SLOPES STEEPER THAN 3:1, AS SHOWN, ARE TO BE PERMANENTLY SODDED OR PROTECTED WITH AN APPROVED EROSION CONTROL NETTING. ADDITIONAL WATERING FOR STABLISHMENT MAY BE REQUIRED. SOD IS NOT TO BE APPLIED ON FROZEN GROUND. SOD SHALL NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (DRY OR WET) AND/OR EXTREME TEMPERATURE MAY ADVERSELY AFFECT ITS SURVIVAL. IN THE ABSENCE OF ADEQUATE RAINFALL, IRRIGATION SHOULD BE PERFORMED TO INSURE ESTABLISHED SOD.

PERMANENT SEEDING (ENTIRE SITE)

LIME: 100 LBS. DOLOMITIC LIMESTONE PER 1,000 SQ.FT. FERTILIZER: 15 LBS. 10–10–10 PER 1,000 SQ.FT.

SEED MIX (TYPE 3) @ 6 LBS. PER 1,000 SQ.FT.:

30% BONANZA II TALL FESCUE
30% CHIEFTAIN TALL FESCUE
25% CROSS FIRE TALL FESCUE
10% COMMANDER PERENNIAL RYE GRASS

5% FREEDOM KENTUCKY BLUE GRASS
MULCH: SEE 1.D&E.

STANDARD RESPONSIBILITY NOTES:

I (WE) CERTIFY THAT:

1. A. ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE
IN ACCORDANCE WITH THIS SEDIMENT AND EROSION CONTROL
PLAN, AND FURTHER, AUTHORIZE THE RIGHT OF ENTRY FOR
PERIODIC ON—SITE EVALUATION BY THE HOWARD COUNTY SOIL
CONSERVATION DISTRICT BOARD OF SUPERVISORS OR THEIR
AUTHORIZED AGENTS.

B. ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE FROM THE MARYLAND DEPARTMENT OF THE ENVIRONMENT'S APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT.

RESPONSIBLE PERSONNEL ON SITE:

C. THE APPROPRIATE ENCLOSURE WILL BE CONSTRUCTED AND MAINTAINED ON SEDIMENT BASIN(S) INCLUDED IN THIS PLAN. SUCH STRUCTURE(S) WILL BE IN COMPLIANCE WITH ARTICLE 21, SECTION 2-304 OF THE HOWARD COUNTY CODE.

2. THE DEVELOPER IS RESPONSIBLE FOR THE ACQUISITION OF ALL EASEMENTS, RIGHTS, AND/OR RIGHTS-OF-WAY THAT MAY BE REQUIRED FOR THE SEDIMENT AND EROSION CONTROL PRACTICES, STORMWATER MANAGEMENT PRACTICES AND THE DISCHARGE OF STORMWATER ONTO OR ACROSS ADJACENT OR DOWNSTREAM PROPERTIES INCLUDED IN THIS PLAN. HE IS ALSO RESPONSIBLE FOR THE ACQUISITION OF ALL EASEMENTS, RIGHTS, AND/OR RIGHTS-OF-WAY THAT MAY BE REQUIRED FOR GRADING AND/OR WORK ON ADJACENT PROPERTIES INCLUDED IN THIS PLAN.

3. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN SEVEN (7) CALENDER DAYS FOR THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) AND FOURTEEN (14) DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

4. THE SEDIMENT CONTROL APPROVALS ON THIS PLAN EXTEND ONLY TO AREAS AND PRACTICES IDENTIFIED AS PROPOSED WORK.

5. THE APPROVAL OF THIS PLAN FOR SEDIMENT AND EROSION CONTROL DOES NOT RELIEVE THE DEVELOPER/CONSULTANT FROM REQUIREMENTS APPERTAINING TO ENVIRONMENTAL ISSUES.

6. THE DEVELOPER MUST REQUEST THAT THE DEPARTMENT OF INSPECTIONS AND PERMITS APPROVE WORK COMPLETED IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN, THE GRADING OR BUILDING PERMIT, AND THE

7: ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE DEPARTMENT OF INSPECTIONS AND PERMITS SHALL BE REQUIRED ON 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 THE INITIAL APPROVAL BY THE DEPARTMENT OF INSPECTIONS AND PERMITS IS GIVEN.

8. APPROVAL SHALL BE REQUESTED ON FINAL STABILIZATION OF ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES BEFORE REMOVAL OF CONTROLS.

SIGNATURE(S) OF DEVELOPER/OWNER		DATE	
NAME:	TITLE:		
ADDRESS:			
TELEPHONE:			

"THE DEVELOPER'S PLAN TO CONTROL SILT AND EROSION IS ADEQUATE TO CONTAIN THE SILT AND EROSION ON THE PROPERTY COVERED BY THE PLAN. I CERTIFY THAT THIS PLAN OF EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PROFESSIONAL KNOWLEDGE OF THIS SITE, AND WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT PLAN SUBMITTAL GUIDELINES AND THE CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SEDIMENT AND EROSION CONTROL. I HAVE REVIEWED THIS EROSION AND SEDIMENT CONTROL PLAN WITH THE OWNER/DEVELOPER".

361482 SQ. FT.

SIGNATURE

MD P.E. LICENSE#

DATE

MD LAND SURVEYOR LICENSE#

NAME: GEORGE LAMBROS, P.E.

CENTURY ENGINEERING, INC.
32 WEST ROAD

DEVELOPER'S/LANDOWNER'S CERTIFICATION

I/WE HEREBY CERTIFY THAT ALL PROPOSED WORK SHOWN ON THESE CONSTRUCTION DRAWING(S) AND ON THE APPROVED SEDIMENT CONTROL DRAWING(S) WILL BE ACCOMPLISHED PURSUANT TO THESE PLANS. I/WE ALSO UNDERSTAND THAT IT IS MY/OUR RESPONSIBILITY TO HAVE THE CONSTRUCTION SUPERVISED AND CERTIFIED, INCLUDING THE SUBMITTAL OF "AS-BUILT PLANS WITHIN THIRTY (30) DAYS OF COMPLETION, BY A REGISTERED PROFESSIONAL ENGINEER.

SIGNED	 _	DATE	
PRINT NAME			

ENGINEER'S CERTIFICATION

ADDRESS: TOWSON, MD 21204

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED. BY ME OR UNDER MY SUPERVISION AND MEETS THE MINIMUM STANDARDS OF THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS AND THE HOWARD SOIL CONSERVATION DISTRICT.

P.E._____ DATE _____

AS-BUILT CERTIFICATION:

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS

<u> </u>	
SIGNATURE	P.E. NO.
PRINT NAME	DATE

SMALL POND APPROVAL LETTER

As authorized by the Annotated Code of Moryland, Natural Resources, Article 8—803(b), the Howard County Soil Conservation District hereby approves the plans and specifications for SMALL POND NUMBER ___XXXXX ____located at Maryland Coordinates ___533.634 ___feet north and ____1.372.020 _feet east.

A. This opproval is issued under the following conditions. Failure to comply with these Conditions will constitute grounds for withdrowol of our opproval and notification to the Water Resources Administration.

1. The approval is valid only for use by the developer/owner and may not be transferred to another unless written permission for such transfer is obtained from the District.

2. The opproval shall become null and void if the construction under the opproval has not begin one year from the date of the approval and completed within eight (8) months after start of construction, except that these limits may be extended at the discretion of the District

3. Construction shall be in strict occordance with Soil Conservation Service criteria for pand construction and the terms of this approval. The location, dimensions and type of all structures, as well as any excavation or filling, shall be in accordance with the aforementioned plans submitted by the developer/owner, unless written approval for any change is granted by the

4. The pond shall be constructed under the supervision of a registered professional engineer. Within 30 days of the completion of construction, the developer/owner shall provide the District with an "as-built" plan that meets the requirements of the AASCD Small Pond Approval Guidelines. The as-built plan shall be sealed by a Registered Professional Engineer. The registered professional engineer shall certify that the pond was constructed in occordance with the approved plans and specifications.

5. The pond construction shall at all times be in full conformance with the Howard County/City of Annapolis Grading and Sediment Control Ordinance. Any major change or deviation from the approved plans must be redesigned and the revised plans must be approved by the Howard Soil Canservation District prior to the performance of the work.

B. ACCEPTANCE

1. This approval and its conditions are accepted.

2. Permission is hereby granted to representatives of the Howard Soil Conservation District to enter in or upon the subject premises at any reosonable time for the purpose of observing construction progress, reviewing the completed structure and insuring adequate maintenance and repair of the completed structure.

Accepted by(Developer/Owner's Signature)	(Title)	(Date)
Print/Type Name		
Firm	Address	
3. APPROVAL	Monager, Howard Soil Conservation District	-

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
- 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
- 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
- 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		8.02 Ac.±
IDIAL AREA OF SILE		0.02 7.0.2
AREA DISTURBED	\Rightarrow	8.02 Ac. ±
AREA TO BE ROOFED OR PAVED	=	<u>5.59 Ac. ±</u>
EXISTING IMPERVIOUS TO REMAIN	_	0.30 Ac. ±
AREA TO BE VEGETATIVELY STABILIZED	=	2.13
TOTAL CUT	=	33,000 C.Y.
TOTAL FILL	***	33,00D C.Y.
OFFSITE WASTE/BORROW AREA LOCATION		N.A.

ESTABLISHMENT OF GRASSES.

- 8. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- 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

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:

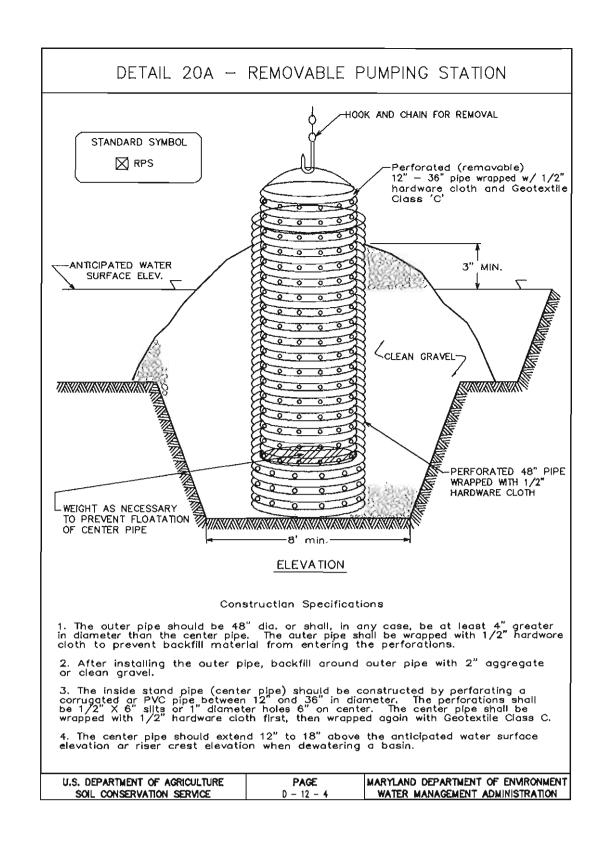
1. PREFERRED - APPLY 2 TONS/ACRE DOLOMITIC LIMESTONE (92,000 LBS/1000 SQ. FT) AND 600 LBS/ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ. FT) BEFORE SEEDING, HARROW OR DISK INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS/ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS/1000 SQ. FT.).

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.

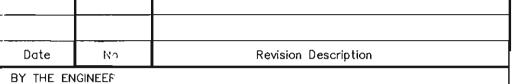
MULCHING -- APPLY 1 1/2 TONS/ACRE (70 TO 90 LBS/1000 SQ. FT.) OF UNROTTED WEED-FREE, SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GAL. PER ACRE (5 GAL/1000 SQ. FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPE 8 FT. OR HIGHER, 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.

D S	SEDIMENT CONTROL FOR ADDITIONAL RATES AND METHODS NOT	COVE	RED.
SE	QUENCE OF CONSTRUCTION	<u>TIM</u>	<u>etable</u>
	PHASE 1		
1.	OBTAIN GRADING PERMIT.		
2.	NOTIFY HOWARD COUNTY DEPARTMENTS OF PERMITS & LICENSES, GRADING AND SEDIMENT CONTROL INSPECTIONS • 313-1855 AT LEAST 48 HOURS PRIOR TO BEGINNING WORK.	1	DAY
	CONSTRUCT OFF SITE SWALE THROUGH JOHNSTON PROPERTY AND STORM DRAIN SYSTEMS FROM EW-1 TO EW-3 AND ES-1 TO EW-2 AS SHOWN ON PLANS. START AT LOWER END STABILIZE AS YOU GO, NO MORE THAN THREE PIPE LENGTHS OF TRENCH OPEN AT A TIME. PHASE 2		DAYS
4.	CLEAR AND GRUB FOR SEDIMENT AND EROSION CONTROL MEASURES.	3	DAYS
5.	INSTALL SCE, SEDIMENT TRAP, SSF AND TEMPORARY SWALE ALONG EAST PROPERTY LINE. CONSTRUCT SEDIMENT BASINS 1 AND 2 AND REMAINING EROSION CONTROL MEASURES.*	10	DAYS
6.	NOTIFY HOWARD COUNTY DEPARTMENT OF PERMITS & LICENSES, GRADING AND SEDIMENT CONTROL INSPECTIONS • 414-313-1855 UPON COMPLETION OF SAID INSTALLATION.	1	DAY
	WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, CLEAR AND GRUB REMAINDER OF THE SITE AS REQUIRED.	5	DAYS
8.	ROUGH GRADE SITE AS REQUIRED. CONSTRUCT TEMPORARY TIE-IN TO GUILFORD ROAD FOR PROPOSED DRIVEWAY TO MAINTAIN SERVICE TO BUILDING 2.	15	DAYS
9.	BEGIN BUILDING CONSTRUCTION.	60	DAYS
10.	INSTALL REMAINING STORM DRAINS AND OTHER UTILITIES AND MAINTAIN POSITIVE DRAINAGE TO SEDIMENT TRAPS AS NECESSARY.**	25	DAYS
11.	INSTALL PAVING SUBBASE AND MAINTAIN POSITIVE DRAINAGE TO SEDIMENT TRAPS AS NECESSARY.	15	DAYS
12.	COMPLETE BUILDING CONSTRUCTION, PAVE PARKING AREAS AND PERMANENTLY STABILIZE LAWN AREAS.	10	DAYS
13.	WITH THE PERMISSION OF SEDIMENT CONTROL INSPECTOR, CLEAN AND CONVERT SEDIMENT TRAPS TO STORM WATER MANAGEMENT PONDS.	5	DAYS
14.	COMPLETE FINAL GRADING.	5	DAYS
15.	WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, REMOVE ALL SEDIMENT & EROSION CONTROL MEASURES. STABILIZE ANY AREAS DISTURBED BY THIS PROCESS.	3	DAYS
16.	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. STORM DRAINS THAT ARE SHOWN IN THE SEDIMENT TRAP TO BE INSTALLED AFTER THE SEDIMENT CONTROL INSPECTOR HAS AUTHORIZED REMOVAL OF THE TRAP (SEE 12 & 14).



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 CERTIFY THAT **TH**IS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS

SIGNATURE OF ENGINE

BY THE DEVELOPER:

9-78-04 DATE

"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

SIGNATURE OF DEVELOPER

9-28-54
DATE

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



CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD'S.C.D. DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

UG

ANNAPOLIS JUNCTION BUSINESS PARK
PARCELS A-D

TAX MAP 48 GRID 14 PARCEL 120
ELECTION DISTRICT No. 6
HOWARD COUNTY, MARYLAND

CENTURY ENGINEERING, INC.

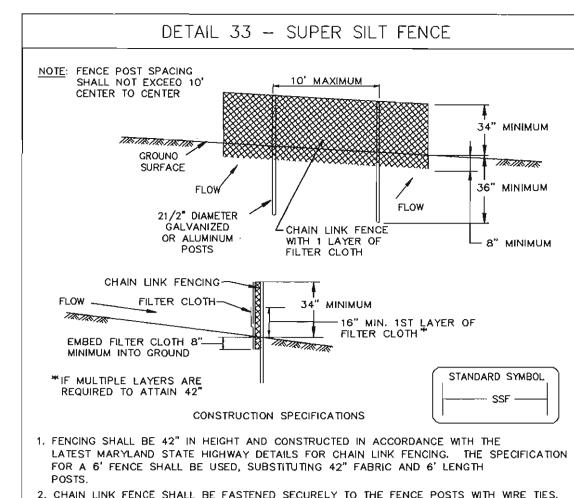
CONSULTING ENGINEERS, PLANNERS, SURVEYORS
32 WEST ROAD
TOWSON, MARYLAND 21204
(410) 823-8070

EROSION AND SEDIMENT CONTROL NOTES & DETAILS

Des By G.L Scale AS SHOWN Praj No 23249.00

Drn By E.B.J. Date JULY 19, 2004 DRAWING NO

Chk By Approved 8 0 7 24



- 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 GROUNO.
- 5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6" AND FOLDED.
- 6. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND SILT BUILDUPS REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE, OR WHEN SILT REACHES 50% DF FENCE HEIGHT
- 7, FILTER CLOTH SHALL BE FASTENED SECURELY TO EACH FENCE POST WITH WIRE TIES OR STAPLES AT TOP AND MID SECTION AND SHALL MEET THE FOLLOWING REQUIREMENTS FOR

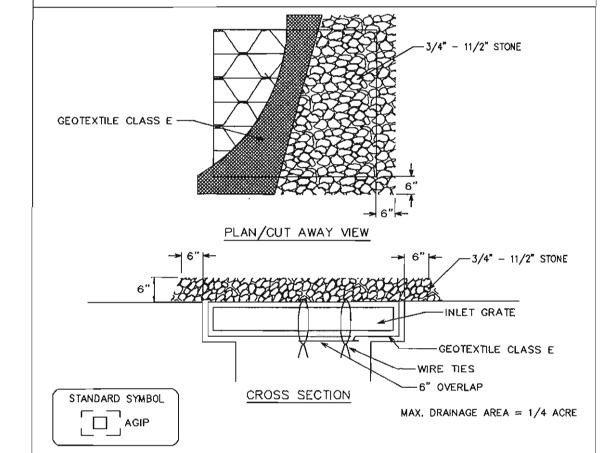
GEOTEXTILE CLASS F: TENSILE STRENGTH TENSILE MODULUS

50 LBS/IN (MIN. 20 LBS/IN (MIN.) 0.3 GAL/FT*/MINUTE (MAX.) TEST: MSMT 322

TEST: MSMT 509 TEST: MSMT 509 TEST: MSMT 322

FILTERING EFFICIENCY 75% (MIN.) MARYLAND DEPARTMENT OF ENVIRONMENT U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE H - 26 - 3 WATER MANAGEMENT ADMINISTRATION

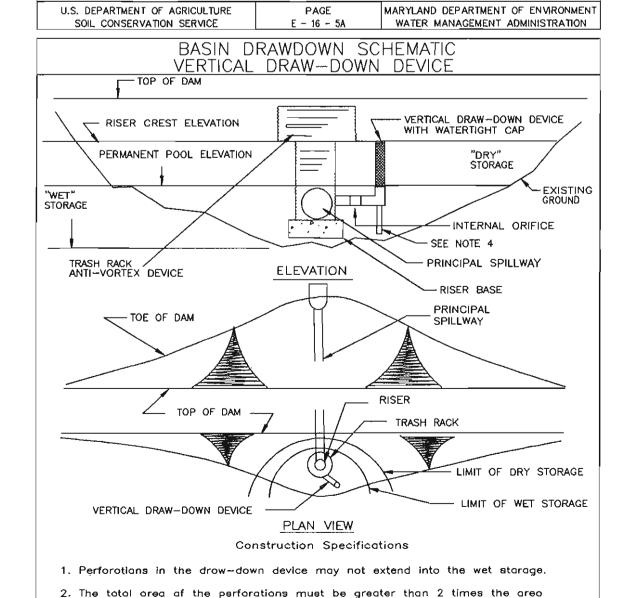
DETAIL 23B - AT GRADE INLET PROTECTION



CONSTRUCTION SPECIFICATIONS

1. LIFT GRATE AND WRAP WITH GEOTEXTILE CLASS E TO COMPLETELY COVER ALL OPENINGS, THEN SET GRATE BACK IN PLACE.

2. PLACE 3/4" TO 11/2" STONE, 4"-6" THICK ON THE GRATE TO SECURE THE FABRIC AND PROVIDE ADDITIONAL FILTRATION.



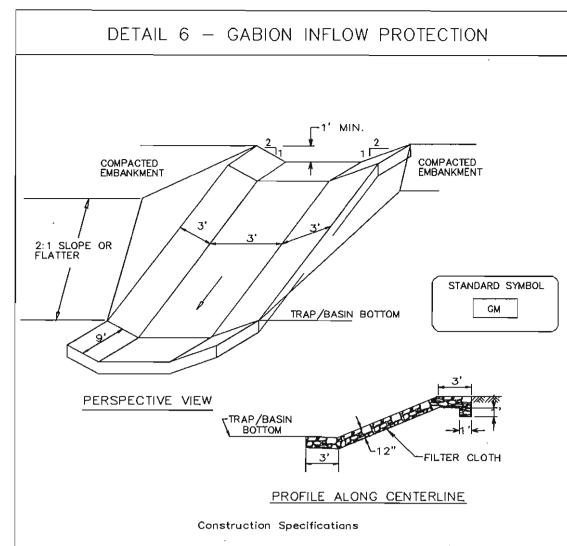
3. The perforated portion of the draw-dawn device shall be wrapped with 1/2"

hardware cloth and geotextile fobric. The geotextile fabric shall mset the

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

MARYLAND DEPARTMENT OF ENVIRONMENT

WATER MANAGEMENT ADMINISTRATION



1. Gabion inflow protection shall be constructed of $9' \times 3' \times 9''$ gabion

2, Geotextile Class C shall be installed under all gabion baskets.

3. The stone used to fill the gabion baskets shall be 4"-7".

and a 3' bottom width.

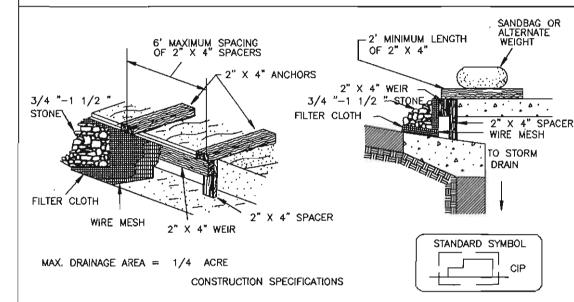
4. Gabions shall be installed in accordance with manufacturers recammendations.

baskets forming a trapezoidal cross section 1' deep, with 2:1 side slopes,

5. Gablon Inflow Protection shall be used where concentrated flow is present on slopes steeper than 4:1.

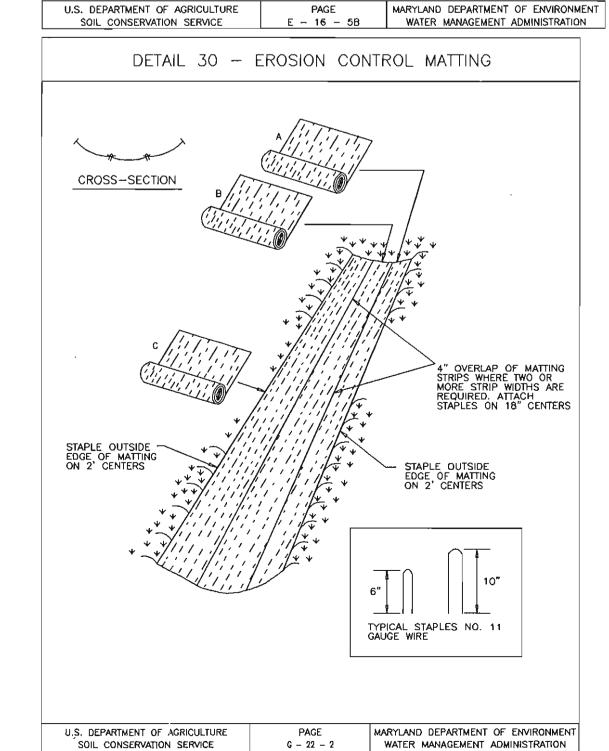
U.S. DEPARTMENT OF AGRICULTURE MARYLAND DEPARTMENT OF ENVIRONMENT SOIL CONSERVATION SERVICE WATER MANAGEMENT ADMINISTRATION

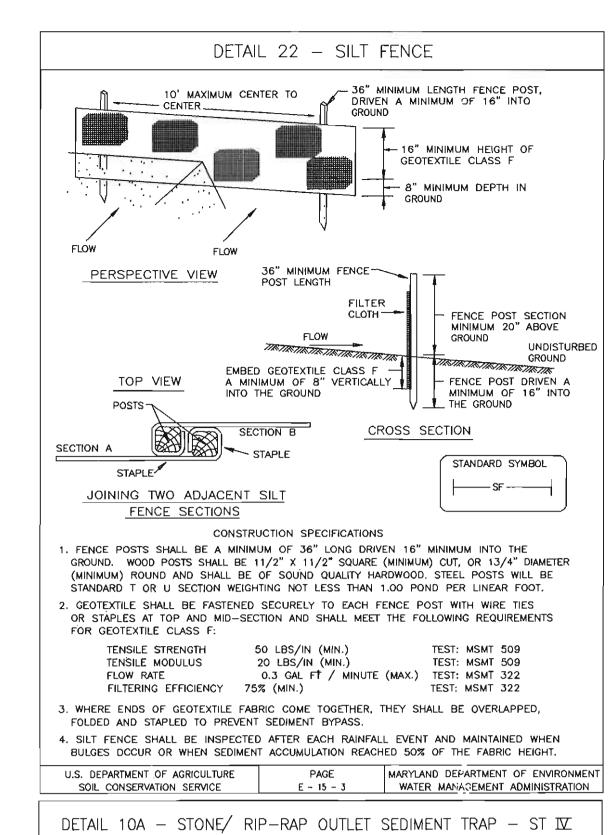
DETAIL 23C - CURB INLET PROTECTION (COG OR COS INLETS)

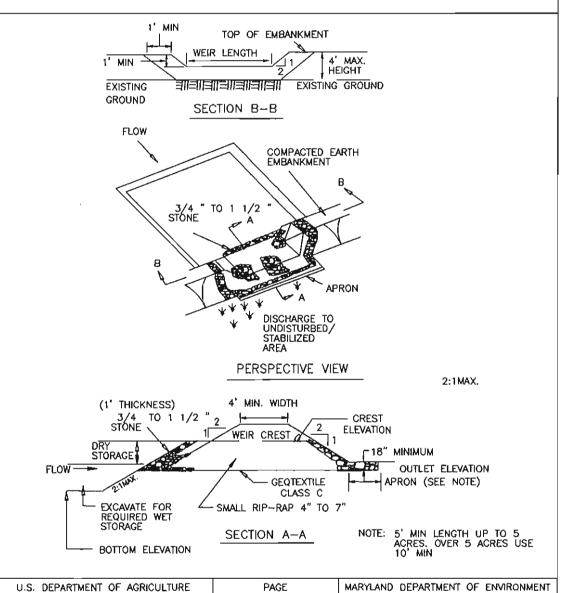


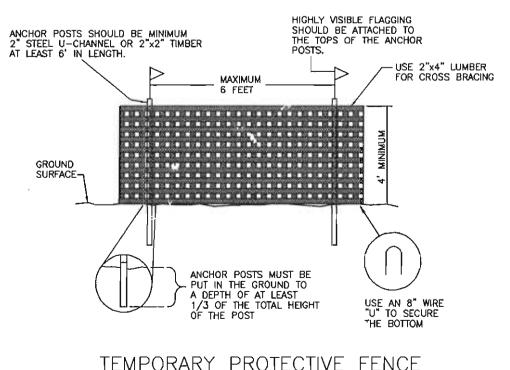
- 1. ATTACH A CONTINUOUS PIECE OF WIRE MESH (30" MINIMUM WIDTH BY THROAT LENGTH PLUS 4') TO THE 2" X 4" WEIR (MEASURING THROAT LENGTH PLUS 2') AS SHOWN ON THE STANDARD
- 2. PLACE A CONTINUOUS PIECE OF GEOTEXTILE CLASS E THE SAME DIMENSIONS AS THE WIRE MESH OVER THE WIRE MESH AND SECURELY ATTACH IT TO 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.
- 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.



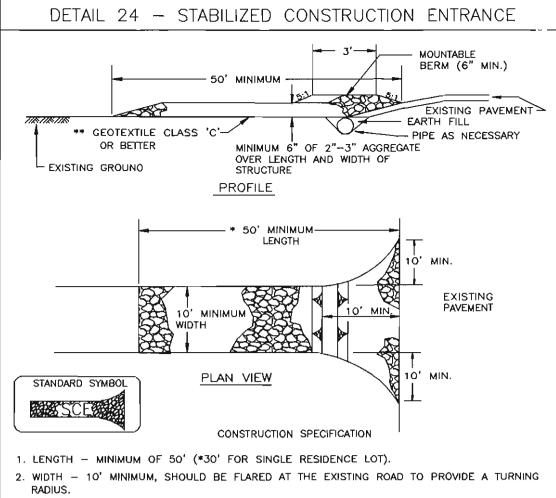






TEMPORARY PROTECTIVE FENCE (BLAZE ORANGE PLASTIC MESH FENCE)

NOT TO SCALE



- 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 THE SITE MUST TRAVEL OVER THE ENTIRE LENGTH OF THE STABILIZED CONSTRUCTION ENTRANCE.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE F - 17 - 3 WATER MANAGEMENT ADMINISTRATION

STONE / RIP-RAP OUTLET SEDIMENT TRAP - ST IV

CONSTUCTION SPECIFICATIONS

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

VEGETATION AND ROOT MAT. THE POOL AREA SHALL BE CLEARED. 2. THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS OR OTHER WOODY VEGETATION AS WELL AS OVER-SIZED STONES, ROCKS, ORGANIC MATERIAL OR OTHER OBJECTIONABLE MATERIAL. THE EMBANKMENT SHALL BE COMPACTED BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED. MAXIMUM HEIGHT OF EMBANKMENT SHALL

BE 4', MEASURED AT CENTERLINE OF EMBANKMENT. 3. ALL CUT AND FILL SLOPES SHALL BE 2:1 OR FLATTER.

4. ELEVATION OF THE TOP OF ANY DIKE DIRECTING WATER INTO TRAP MUST EQUAL OR EXCEED THE HEIGHT OF TRAP EMBANKMENT.

- 5. STORAGE AREA PROVIDED SHALL BE FIGURED BY COMPUTING THE VOLUME MEASURED FROM TOP OF EXCAVATION. (FOR STORAGE REQUIREMENTS SEE TABLE 9). 6. GEOTEXTILE CLASS C SHALL BE PLACED OVER THE BOTTOM AND SIDES OF THE OUTLET CHANNELPRIOR TO PLACEMENT OF STONE. SECTION OF FABRIC MUST OVERLAP AT LEAST 1' WITH SECTION NEAREST THE ENTRANCE PLACED ON TOP. FABRIC SHALL BE EMBEDDED AT LEAST 6" INTO EXISTING GROUND AT ENTRANCE OF OUTLET CHANNEL
- 7. 4" 7" STONE SHALL BE USED TO CONSTRUCT THE WEIR AND 4" 12" OR CLASS I RIP-RAP SHALL BE USED TO CONSTRUCT THE OUTLET CHANNEL.
- B. OUTLET -- AN OUTLET SHALL INCLUDE A MEANS OF CONVEYING THE DISCHARGE IN AN EROSION FREE MANNER TO AN EXISTING STABLE CHANNEL. PROTECTION AGAINST SCOUR AT THE DISCHARGE POINT SHALL BE PROVIDED AS NECESSARY. 9. OUTLET CHANNEL MUST HAVE POSITIVE DRAINAGE FROM THE TRAP.
- 10. SEDIMENT SHALL BE REMOVED AND TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 OF THE WET STORAGE DEPTH OF THE TRAP (900 CF/AC). REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE. 11. THE STRUCTURE SHALL BE INSPECTED PERIODICALLY AFTER EACH RAIN AND REPAIRED
- AS NEEDED. 12. CONSTRUCTION OF TRAPS SHALL BE CARRIED OUT IN SUCH A MANNER THAT SEDIMENT POLLUTION IS ABATED. ONCE CONSTRUCTED. THE TOP AND OUTSIDE FACE OF THE EMBANKMENT SHALL BE STABILIZED WITH SEED AND MULCH. 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
- 13. THE STRUCTURE SHALL BE DEWATERED BY APPROVED METHODS, REMOVED AND THE AREA STABILIZED WHEN THE DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

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

No. Date Revision Description 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.

NATURE OF ENGINEER

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.

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

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DATE DATE

ANNAPOLIS JUNCTION BUSINESS PARK PARCELS A-D

> TAX MAP 48 GRID 14 PARCEL 120 ELECTION DISTRICT No. 6 HOWARD COUNTY, MARYLAND

CENTURY ENGINEERING, INC.

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

> **EROSION AND** SEDIMENT CONTROL DETAILS

AS SHOWN Proj No 23249.00 E.B.D. Date JULY 19, 2004 DRAWING NO

SDP-04-98

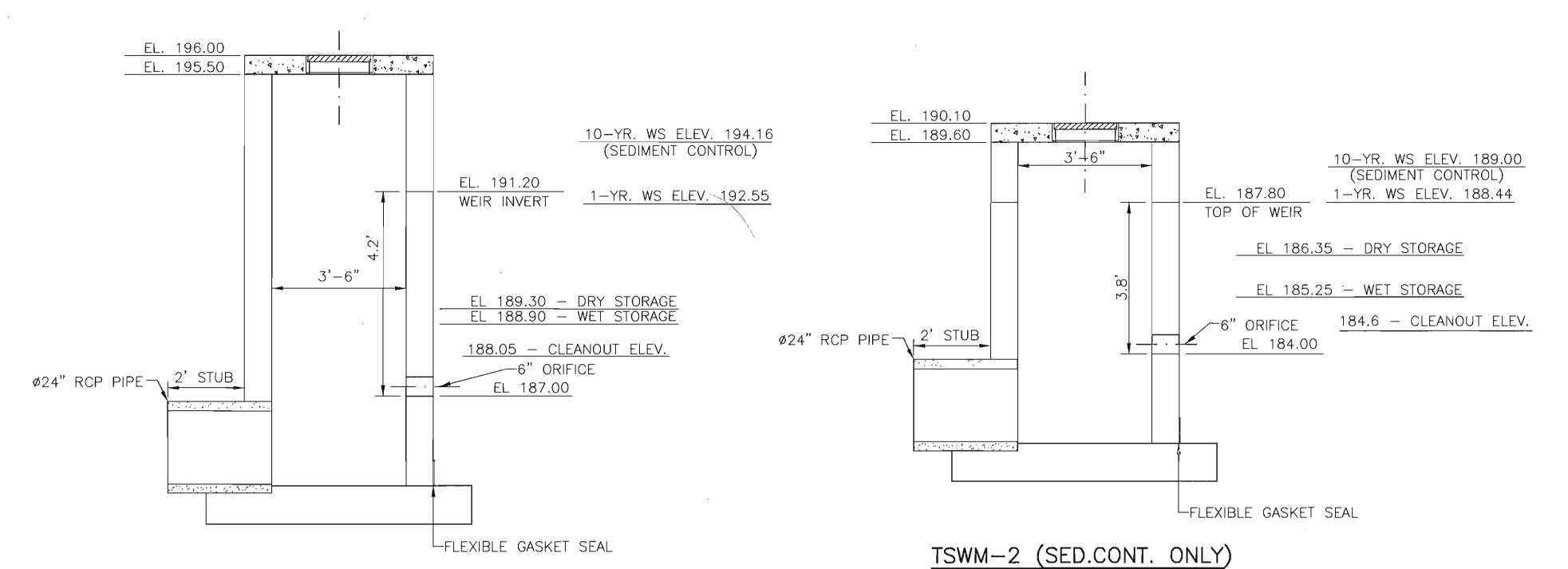
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of the internal orifice

U.S. DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE

specifications for Geotextile Class E.



TSWM-1 (SED. CONT. ONLY) SCALE: 1/2 " = 1'-0"

> CONCRETE -RISER WALL INTERNAL RESTRICTION PLATE SEE SWM DETAIL 1.0" DIA. PERFORATIONS TSWM-1, 2.4" DIA., INV. 187.00 10 PERF./FOOT-TSWM-2, 2.5" DIA., INV. 184.00 (DRY STORAGE) WEIR CREST TSWM-1, 2.30' \setminus TSWM-2, 2.55'/ PERMANENT POOL (WET STORAGE) -FOR CONNECTION 6" P.V.C., SCH 40 -SEE SWM 90° ELBOW DETAIL CPV DEWATERING DEVICE SUPPORT POST ---6" P.V.C., TRAP BOTTOM SCH 40 WITH FLANGE SIDE VIEW

SCALE: 1/2 " = 1'-0"

DRAWDOWN DEVICE DETAIL N.T.S.

FOR CONSTRUCTION SPECIFICATIONS SEE SHEET 9 (BASIN DRAWDOWN SCHEMATIC)

- 6" MIN. CAP OF 2" STONE 3.0' MIN. EXISTING BERM 'A'-18"/ BERM 'B'-30" PAVING ~18" MIN. COMPACTED EXISTING GROUND FILTER CLOTH UNDER-EARTH CORE 6" OF STONE

FILTER CLOTH SHALL BE GEOTEXTILE

CLASS 'C', OR BETTER.

MOUNTABLE BERM

N.T.S.

RISER NOTES:

- 1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE SWM POND/SEDIMENT BASIN CONSTRUCTION SPECIFICATIONS AND THE MSHA STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS SECTIONS 414 AND 416.
- 2. ALL CONCRETE SHALL BE MIX NO. 3 (FC=3500 PSI)
- 3. ALL REINFORCING STEEL SHALL CONFORM TO ASTM DESIGNATION A615, GRADE 60. ALL REINFORCING STEEL SHALL BE AS INDICATED ON THE RISER STRUCTURAL DETAILS. CONCRETE COVER OVER THE REINFORCING STEEL SHALL BE A MINIMUM OF 2" MEASURED FROM THE INSIDE FACE OF WALLS AND FROM THE TOP SURFACE OF THE REINFORCING STEEL IN THE BOTTOM AND SIDES OF THE FOOTING. CUT REINFORCING STEEL AT PIPES AND OPENINGS.
- 4. CONSTRUCTION JOINTS BETWEEN WALLS AND FOOTING SHALL BE ROUGH FLOATED SUFFICIENTLY TO THOROUGHLY CONSOLIDATE THE SURFACE AND SHALL BE INTENTIONALLY LEFT IN A ROUGHENED
- 5. PROVIDE 1 1/4" CHAMFER FOR ALL CORNERS ABOVE GRADE.

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6. CONTRACTOR SHALL USE GALVANIZED OR STAINLESS STEEL BOLTS TO FASTEN TRASH RACK TO CONCRETE WALL.



	Date	N O .	Revision Description		
ĺ	BY THE EN	IGINE ER :			
	"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."				
	_ Aun	VSIGN JURE	of ENGINEER DATE		
ı	BY THE DE	VELOPER:			
	ACCORDING IN THE COI A DEPARTA CONTROL O	S TO THIS PL. NSTRU CT ION I MENT OF THE DF SE DI MENT	L DEVELOPMENT AND CONSTRUCTION WILL BE DONE AN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE AND EROSION BEFORE BEGINNING THE PROJECT. J ALSO N-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION		
		SIGNATURE	S. Mulhelm 9-28-04 OF DEVELOPER DATE		
	REVIEWED I	FOR HOWARD	S.C.D. & MEETS TECHNICAL REQUIREMENTS.		
	U.S.	NATURAL RES	Din Myers (as. 11/1/04) SOURCES CONSERVATION SERVICE DATE		
			N IS AS APPROVED FOR SOIL EROSION AND SEDIMENT ARD SOIL CONSERVATION DISTRICT.		

(190+)

11/25/0x

ANNAPOLIS JUNCTION BUSINESS PARK PARCELS A-D

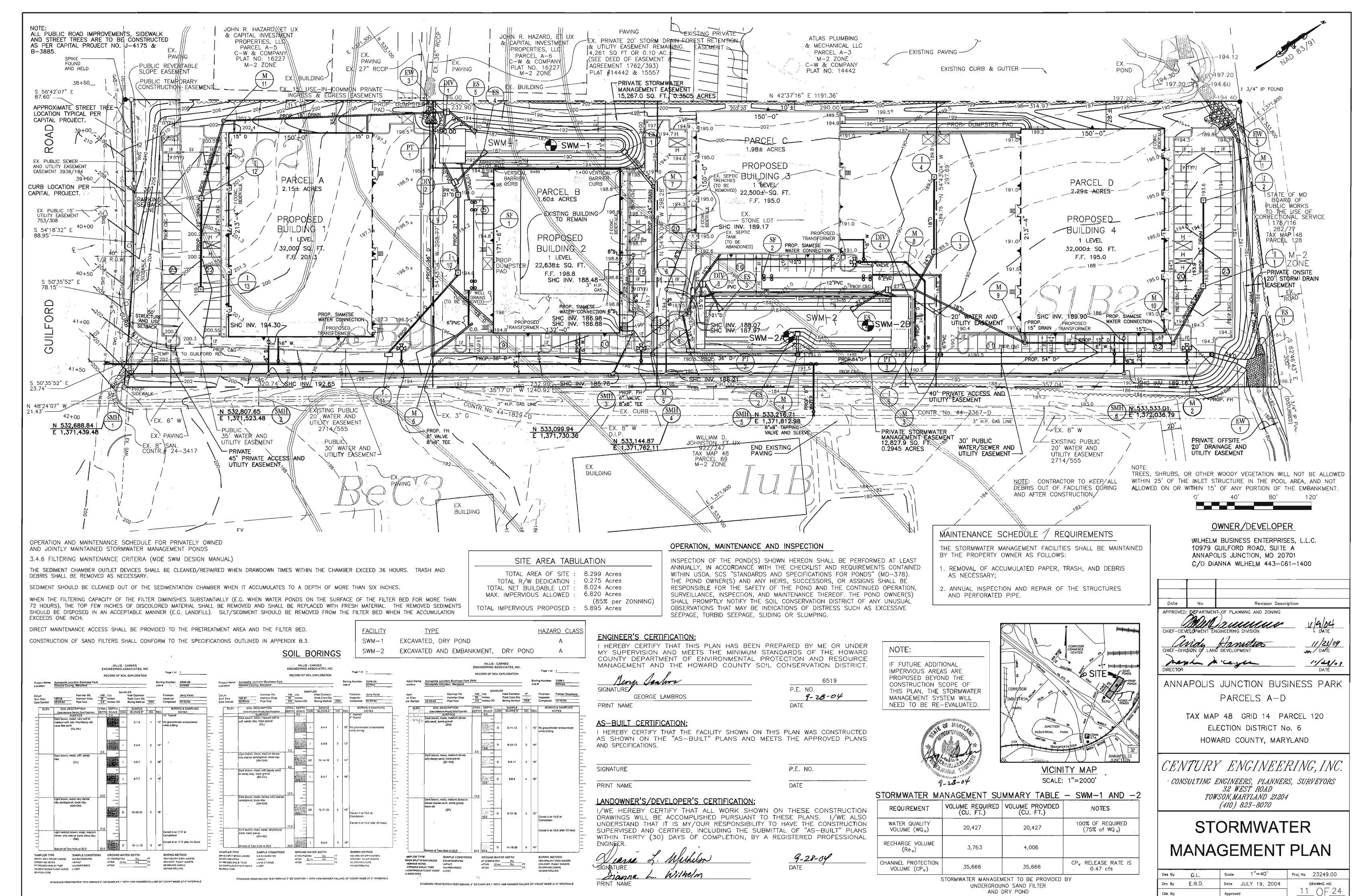
> TAX MAP 48 GRID 14 PARCEL 120 ELECTION DISTRICT No. 6 HOWARD COUNTY, MARYLAND

CENTURY ENGINEERING, INC.

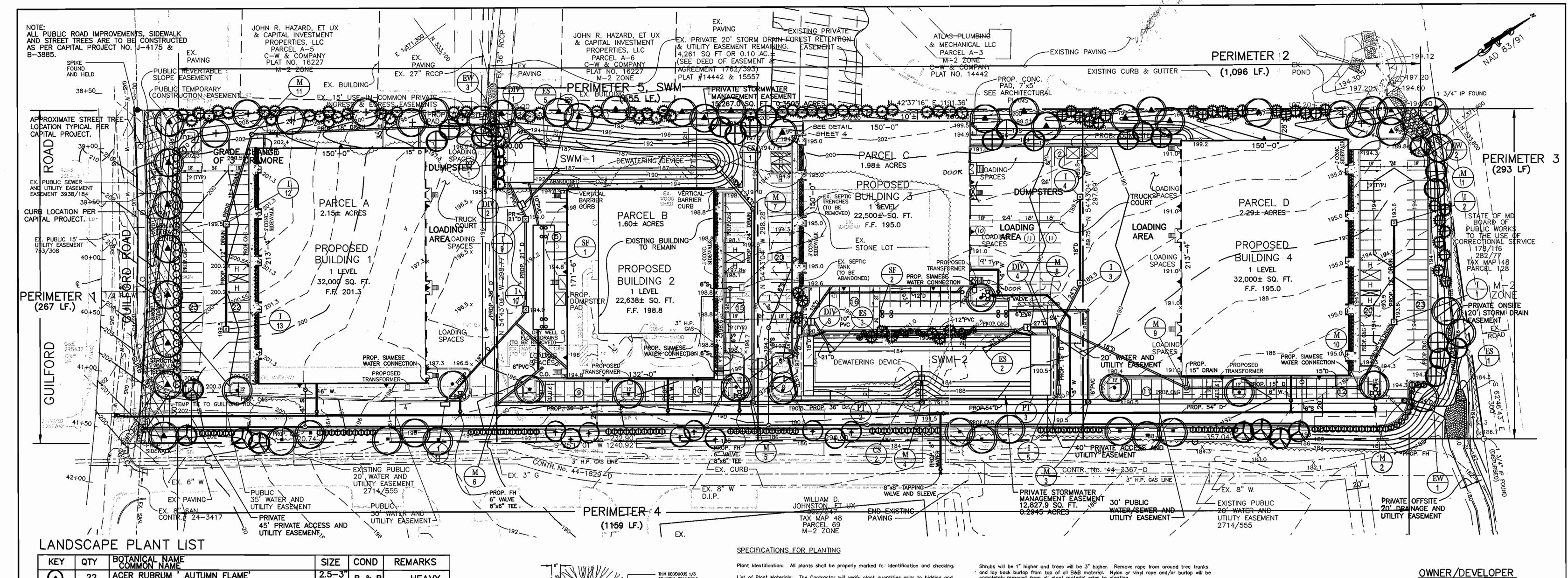
CONSULTING ENGINEERS, PLANNERS, SURVEYORS 32 WEST ROAD TOWSON, MARYLAND 21204 (410) 823-8070

EROSION AND SEDIMENT CONTROL DETAILS

S∞le AS SHOWN Proj No 23249.00 E.B.**D.** Date JULY 19, 2004 DRAWING NO 10 OF 24



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KEY	QTY	BOTANICAL NAME COMMON NAME	SIZE	COND	REMARKS
\odot	22	ACER RUBRUM ', AUTUMN FLAME' AUTUMN FLAME' RED MAPLE	2.5-3" CAL.	B & B	HEAVY
\odot	811	ZELKOVÁ SERRATA VILLAGE GREEN' VILLAGE GREEN ZELKOVÁ	2.5-3" CAL.	B & B	HEAVY
\odot	10	QUERCUS PALUSTRUS PIN_OAK	2.5-3" CAL.	B & B	HEAVY
\odot	11	ACER SACCHARUM 'GREEN MOUNTAIN' SUGAR MAPLE	2.5-3" CAL.	B & B	HEAVY
0	5	FRAXINUS PENNSYLVANICA 'PATMORE' PATMORE' GREEN ASH	2.5-3" CAL	B & B	HEAVY
\otimes	9	PRUNUS X OKAME OKAME CHERRY	1.5-2" HT.	B & B	FULL HEAD
\odot	9	PRUNUS X 'YEDOENSIS' YOSHINO CHERRY	1.5-2" HT.	B & B	FULL HEAD
\oplus	18	AMELANCHIER X GRANDIFLORA 'CUMULUS' CUMULUS' SERVICEBERRY	6-8 HT.	B & B	MULTI-STEM
0	50	PINUS STROBUS EASTERN WHITE PINE	6–8' HT.	B & B	10' O.C.
*	28	PICEA ABIES NORWAY SPRUCE	6–8' HT.	B & B	10' O.C.
₩	9	ILEX OPACA AMERICAN HOLLY	6-8 HT.	B & B	10' O.C.
ΦΦΦΦ	106	EUONYMUS ALATUS 'COMPACTA' WINGED EUONYMUS	24-30° HT.	B & B	5' O.C.
&&&	35	EUONYMUS KIAUTSCHOVICUS 'MANHATTAN' MANHATTAN EUONYMUS'	3036° HT.	B & B	5' O.C.
99999999	180	ILEX GLABRA, 'SHAMROCK' SHAMROCK' INKBERRY	3 GAL.	CONT.	3' o.c.
668	13	MYRICA PENNSYLVANICA NORTHERN BAYBERRY (12 F / 1 M)	30-36° HT.	B & B	5' O.C.

Number of Parking Spaces

Number of Trees Required

Number of Trees Provided

Internal Islands Required

Shade Trees
Other Trees (2:1 substitution)

Internal Islands Provided (Min. 200 Sf.)

Linear Feet of Perimeter

Number of Trees Required

Shade Trees Evergreen Trees

Credit for Existing Vegetation (No, Yes and %)

Credit for Other Landscaping (No, Yes and %)

Number of Trees Provided
Shade Trees
Evergreen Trees
Other Trees (2:1 substitution

DUE TO A GRADE CHANGE OF 3' OR MORE, AS PER HOWARD COUNTY LANDSCAPE MANUAL, PAGE 24

SCHEDULE B
PARKING LOT INTERNAL LANDSCAPING

SCHEDULE D STORMWATER MANAGEMENT AREA LANDSCAPING

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X 11

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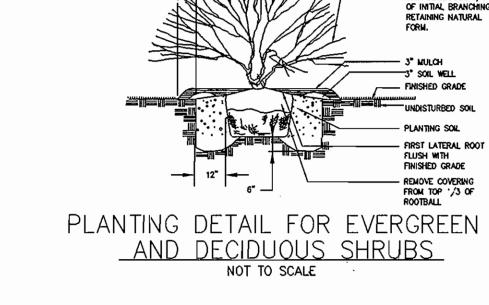
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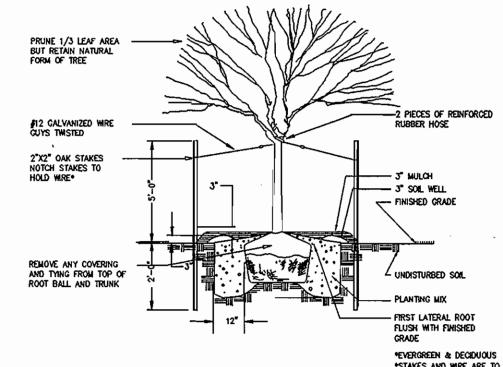
PERIMETER 5

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ΝQ

	SC PERIMETER	HEDULE LANDSCA	A APE EDGI
Category	Adjacent to Roadways	Adjacer Perimeter F	
Perimeter Number	1	2	3,4
Landscape Type	'E'	,C,	'A'
Linear Feet of Roadway Frontage/Perimeter	267 LF.	1096 LF.	1393 LF.
Credit for Existing Vegetation (Yes, Na, Linear Feet) (Describe belaw if needed)	МО	NO	NO
Credit for Wall, Fence or Berm (Yes, Na, Linear Feet) (Describe below if needed)	МО	NO	NO
Number of Plants Required Shade Trees	7	27	23
Evergreen Trees Shrubs	67	54	
Number of Plants Provided Shode Trees	8	18	16
Evergreen Trees		_54	8
Other Trees (2:1 substitu		12 / 6	21 / 10.5
Shrubs (10:1 substitution)			106 / 10.6
(Describe plant substitution credit	:s ∓	••	***





STAKES AND WIRE ARE TO BE REMOVED AT THE COMPLETION OF ONE FULL GROWING SEASON. PLANTING DETAIL FOR TREES - 1 - 4" CALIPER

List of Plant Materials: The Contractor will verify plant quantities prior to bidding and any discrepancies shall be brought to the attention of the Landscape Architect. The Contractor shall furnish and plant all plants required to complete the work as shown on the drawings. Substitutions shall not be made without the written approval of the Landscape Architect. This contract will be based on the bidder having verified, prior to bidding, the availability of the required plant materials as specified on the Plant Liet. Plant Quantity: All shrubs shall be dense, heavy to the ground, and well grown, grawth proportions unless otherwise specified. All plants including container grown shall canform to American Standard far Nursery Stock (ANSI z60.1, latest edition), and shall a well-shaped, heavy branch structure for the species. Evergreen trees are to have an internade no greater than 24" and shall be uniformly well-shaped. All plant sizes shall average at least the middle of the range given in the plant list.

Plant Spacing: Plant spacing is to scale on the plan or as shown on the plant list. Soil Mix: Soil mix will be 2/3 existing soil and 1/3 leaf mold ar equal organic thoroughly mixed ond homogenized

Ball Size: The ball size shall conform to the American Association of Nurserymen's publication entitled American Standard for Nursery Stack, ANSI z60.1, latest edition. Excavation: Holes for all plants shall be 18" larger in diameter than size of ball or cantainer and shall have vertical sides. Hedges shall be planted in a trench 12" wider ball diameter. Beds for moss planting shall be entirely rotatilled to a depth of 8" and be 18" beyond the overage outside edge of plant balls. A 2" layer of organic moterial leaf mold) will be incorporated into plant beds by tilling again.

Planting: Backfilling shall be dane with soil mix, reasonably free of stones, subsoil, lumps, stumps, roots, weeds, bermuda grass, litter, taxic substances, or any other moterial which may be harmful to plant growth or hinder grading, planting, or aperations. Should any unforeseen or unsuitable planting conditions arise, such as soil drainage or chemical residues, they should be called to the attention of the Architect and Owner for adjustments before planting. The plant shall be set plumb and straight and shall be staked at the time of planting. Bookiill shall be well worked raots and settled by watering. Plants will be planted higher than surrounding grade.

LANDSCAPE SURETY NOTE:

FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF:

(60) SHADE TREES @ \$300 EACH = \$18,000 (36) FLOWERING TREES @ \$150 EACH = \$5,400 (78) EVERGREEN TREES @ \$150 = \$11,700 (142) SHRUBS @ \$30 EACH= \$4,260

TOTAL: \$39,360

completely removed from all plant material prior to planting.

Transplonting Trees by Tree Machines: Trees shall be moved by machines that provide a minimum of 9" per 1" of tree caliper. Holes are to be dug by the same size machine as the ane transporting the plant. The plant material shall be transplanted in approximately the same growing condition as it is presently growing, in terms of sail type and moisture content. Fertilize and guy as described in these plans and specifications.

Cultivation: All trenches and shrub beds shall be cultivated, edged and mulched to a depth of 3" with shredded bork. The oreo around isoloted plants shall be mulched to at least 6" greater diameter than that of the hole. Plant beds adjacent to buildings shall be mulched to the building woll.

Mair:tenance: The Cantractor shall be responsible during the contract and up to the time of occeptance for keeping the planting and work incidental thereto in good condition, by replanting, plant replacement, watering, weeding, cultivating, pruning and spraying, restaking and cleaning up and by performing all other necessary operations of care for promotion of good plant growth so that all work is in satisfactory condition at time of acceptance, at no additional cost to the Owner.

Fertilizer: Fertilizer shall be a slow release type contained in polyethylene perforated bags with micropore holes far cantrolled feeding, such as Easy Grow as manufactured by Specialty Fertilizer, Inc., Box 355, Suffern, New York 10901, or approved equal. The bags shall contain 1 ounce of saluble fertilizer analysis 16-18-16 per unit to last three (3) years and shall be applied during planting as recommended by the manufacturer. If fertilizer packets are not used, the Contractor shall apply granular fertilizer to the soil mix with 10-6-4 analysis, 50% organic, at the following rates: Trees @ 2-3 lbs. per caliper inch; Shrub Beds @ 3-5 lbs. per 100 sq. ft.; and Graundcover Beds @ 2-3 lbs.

Groundcover: All areas of groundcover shall be rotatilled to a depth of 6". Apply 2" of organic moterial and rototill until thoroughly mixed. Apply fertilizer as stated above. Guarantee and Replacement: All material shall be uncanditionally guaranteed for one (1) year. The Contractor is responsible for watering but not far lasses or damage caused by



THE OWNER, TENANT, AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSGAPING, INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES AND WALLES. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION,

AND WHEN NECESSARY, REPAIRED OR REPLACED.

SCALE: 1"=40'

the Department of Planning and Zoning.

DEVELOPER/BUILDER AS - BUIL

DEVELOPERS / BUILDERS CERTIFICATE

HUMAN & ROHDE, INC. 512 VIRGINIA AVENUE TOWSON, MARYLAND 21286 PHONE: (410) 825-3885

PREPARED BY:

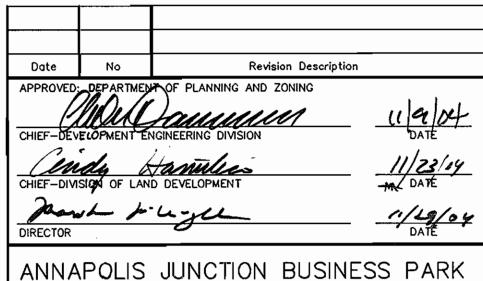
I/We certify that the landscaping shown on this plan will be done according to the plan,

Section 16.124 of the Howard County Code and the Howard County Landscape Manual.

accompanied by an executed one year guarantee of plant materials, will be submitted to

I/We further certify that upon completion, a Certification of Landscape installation,

WILHELM BUSINESS ENTERPRISES, L.L.C. 10979 GUILFORD ROAD. SUITE A ANNAPOLIS JUNCTION, MD 20701 C/O DIANNA WILHELM 443-661-1400



PARCELS A-D

TAX MAP 48 GRID 14 PARCEL 120 ELECTION DISTRICT No. 6 HOWARD COUNTY, MARYLAND

CENTURY ENGINEERING, INC.

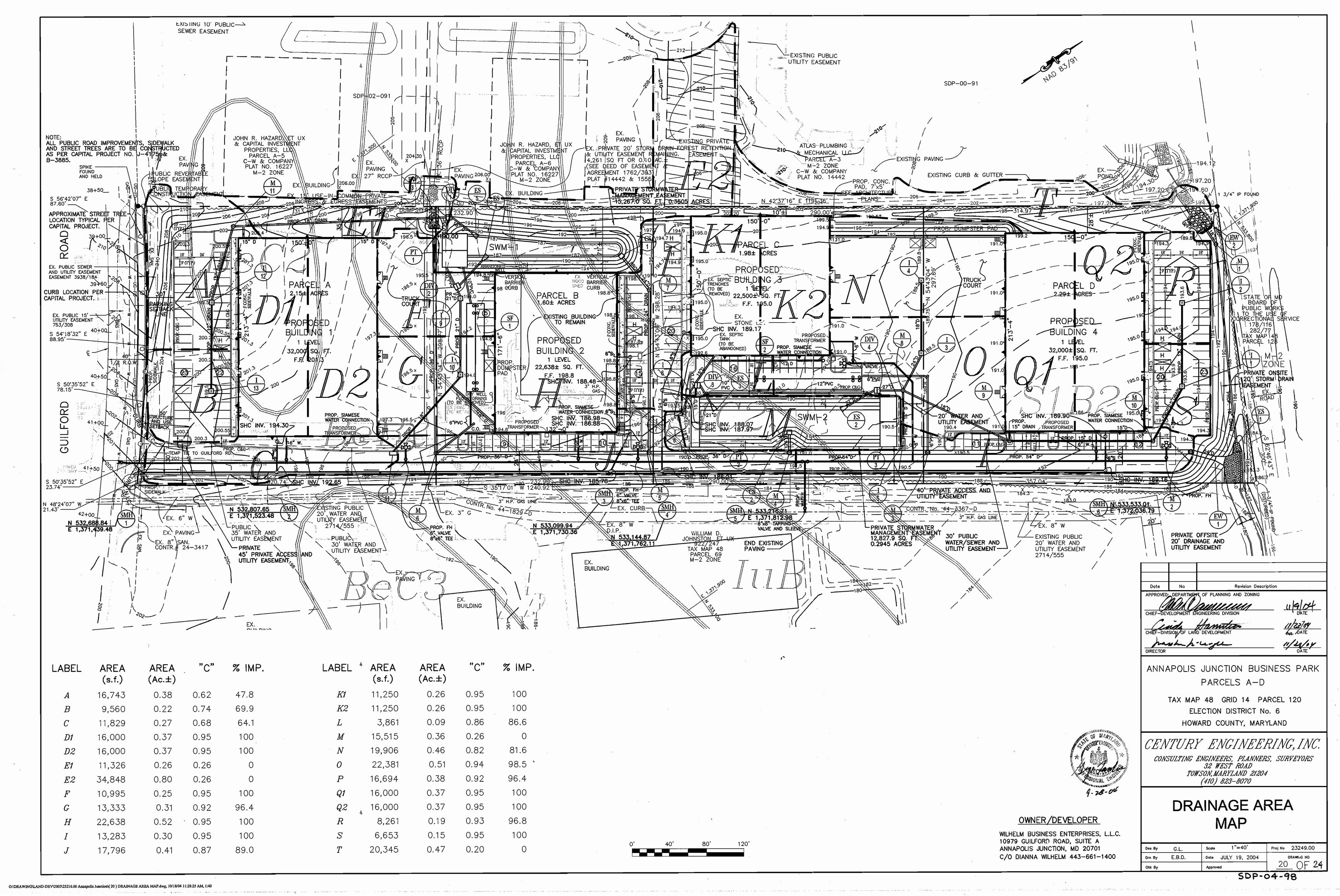
CONSULTING ENGINEERS, PLANNERS, SURVEYORS 32 WEST ROAD TOWSON, MARYLAND 21204 (410) 823-8070

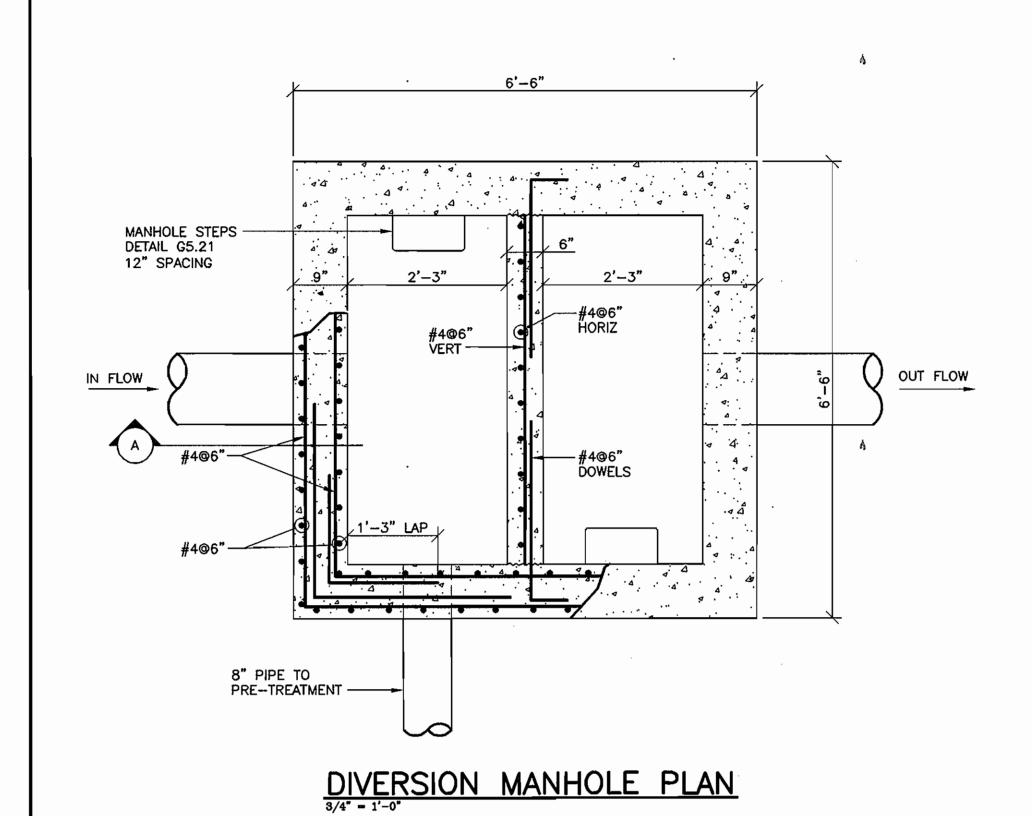
FINAL LANDSCAPE PLAN

Des By	G.L.	Scale	1"=40'	Proj No	23249.00
Om By	M J.R.	Date	JULY 19, 2004		DRAWING NO
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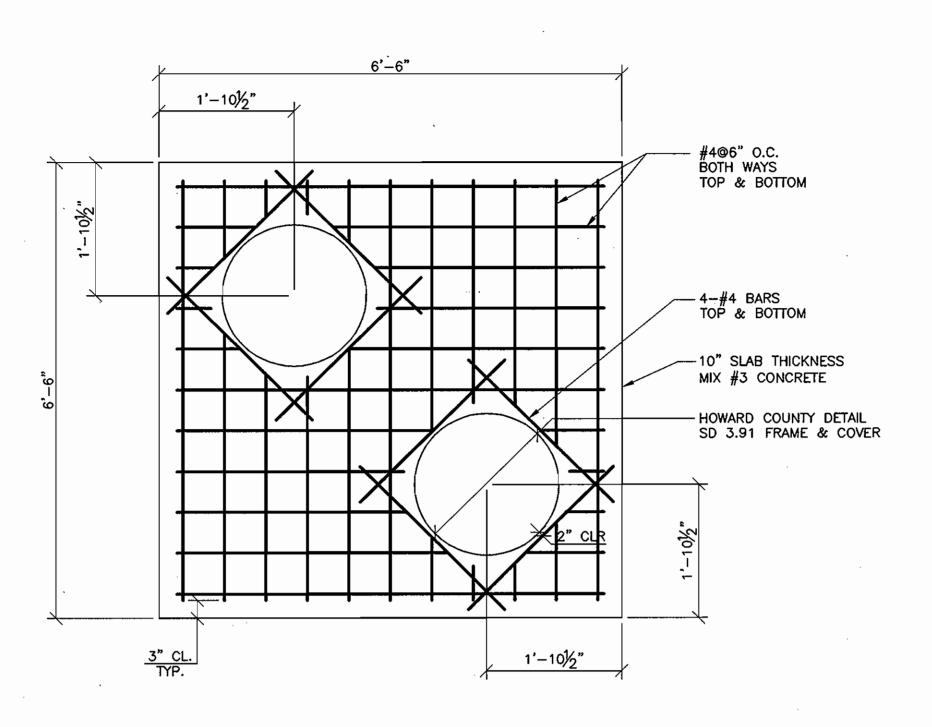
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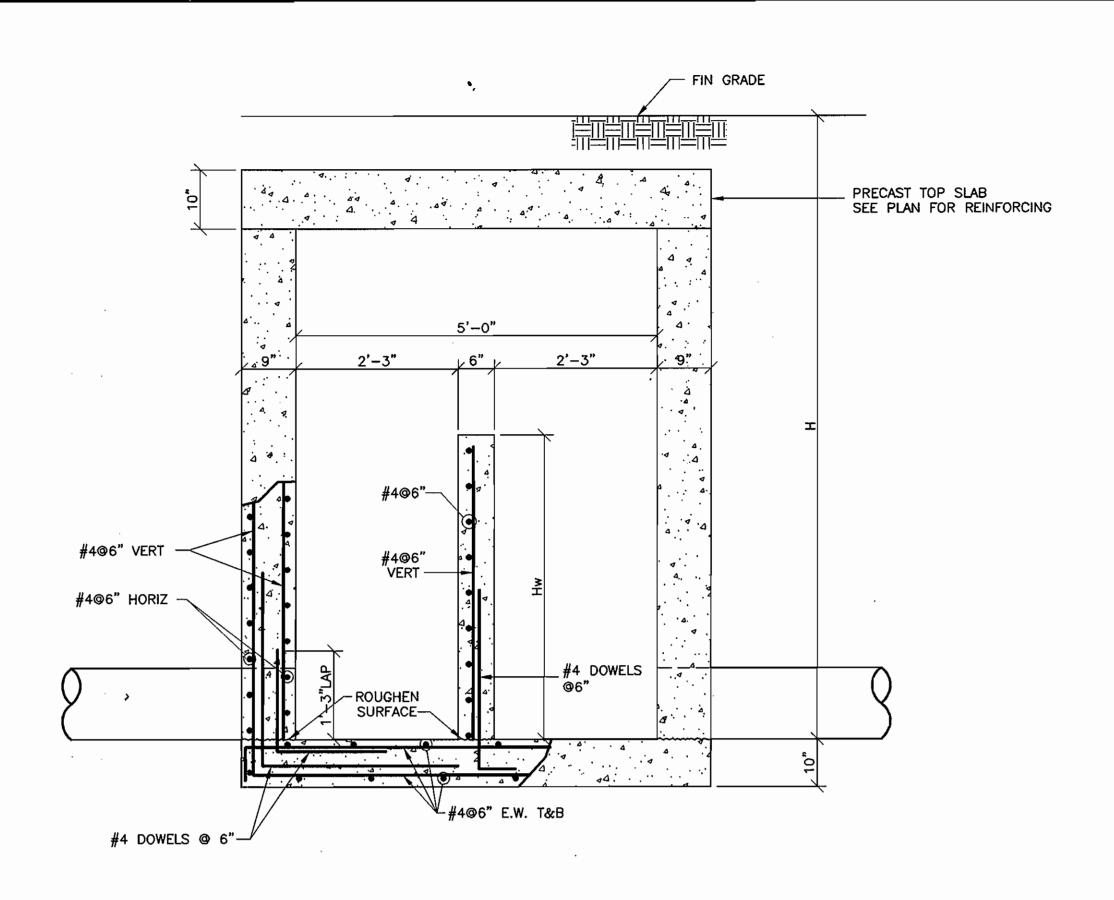




SEE SHEET FOR PIPE SIZES AND INVERTS

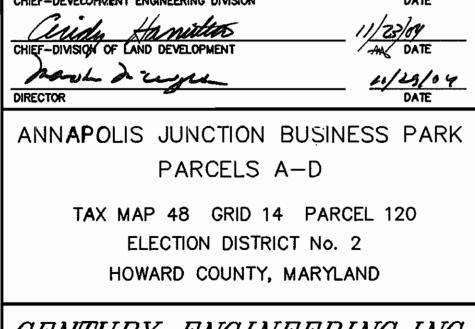


DIVERSION MAHOLE PRECAST TOP SLAB



DIVERSION MANHOLE SECTION A-A

мн#	Н	Hw
DIV #1	8.77'	4.27
DIV #2	6.56'	3.86
DIV #3	6.00'	3.80
DIV #4	6.00'	3.80

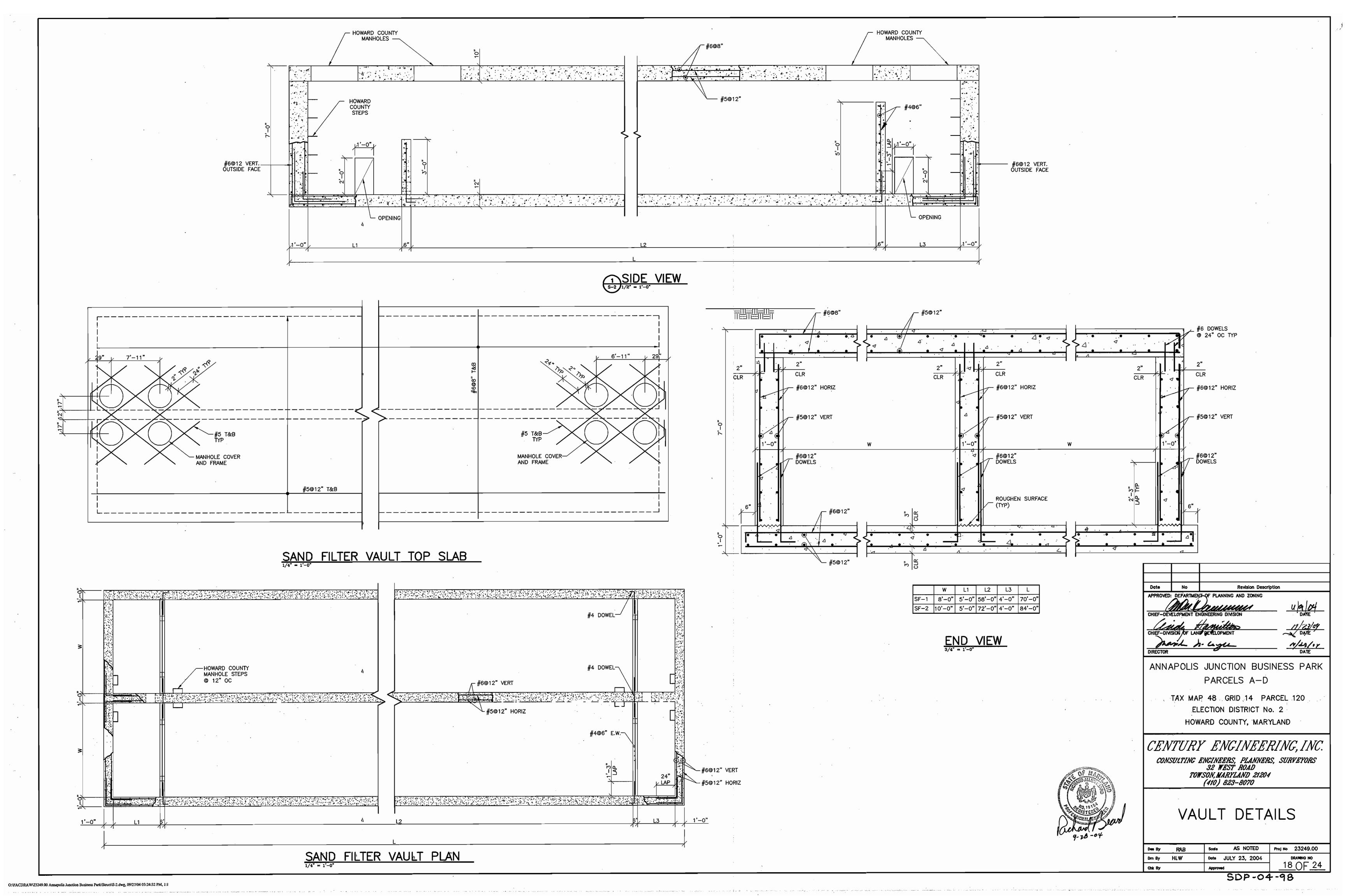


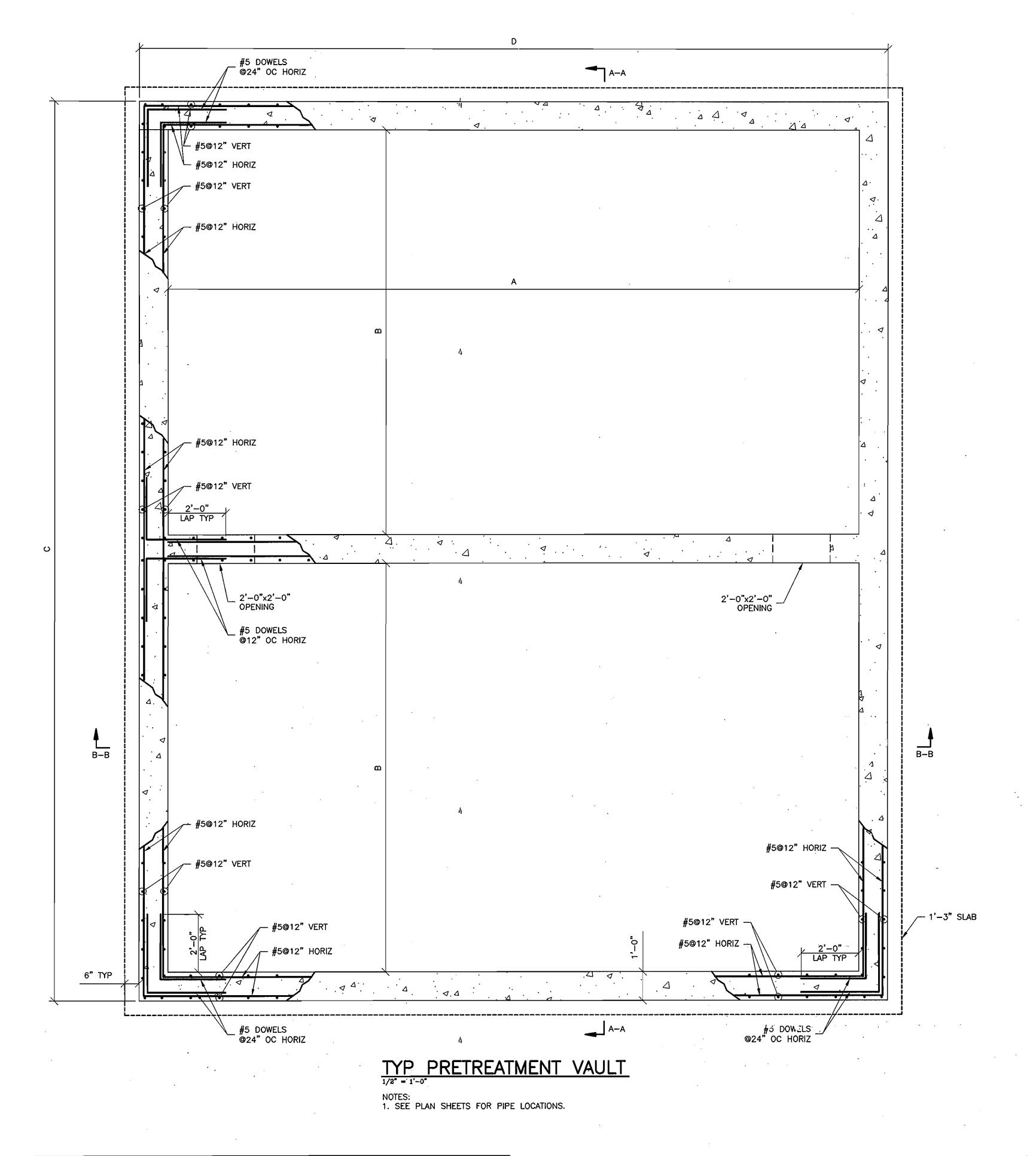
CENTURY ENGINEERS, PLANNERS, SURVEYORS

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

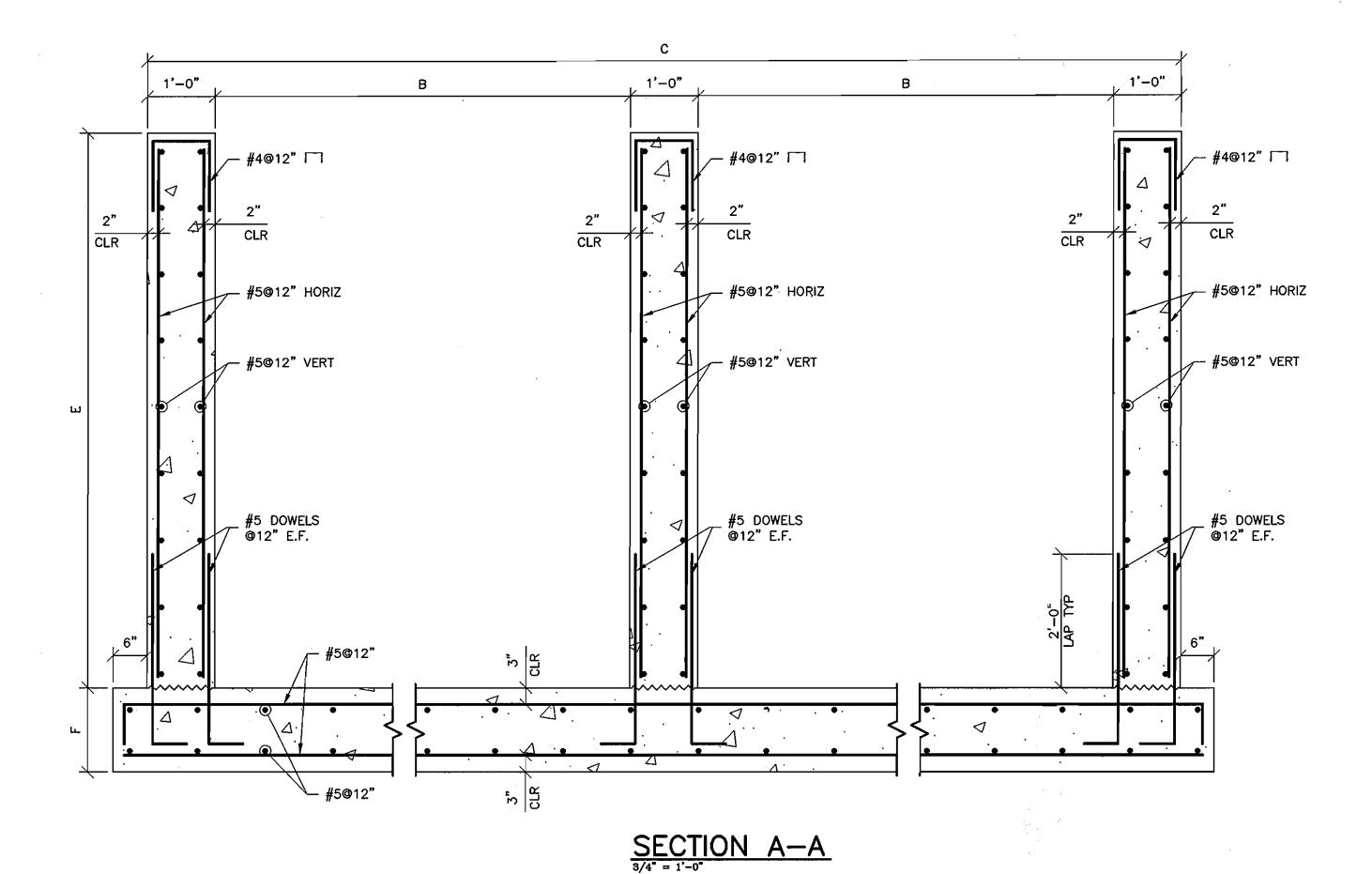
VAULT DETAILS

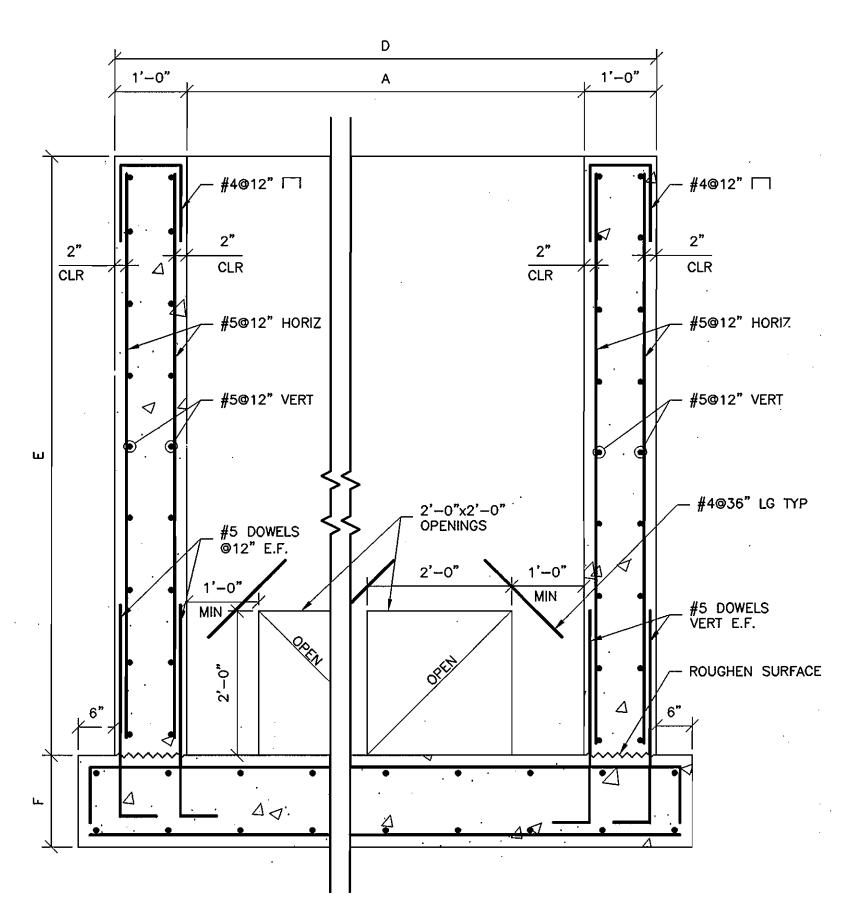
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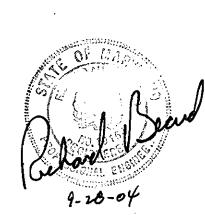


	Α	В	С	D	E	f.	
PT-1	24'-0"	16'-0"	35'-0"	26'-0"	7.8'	3.33'	
PT-2	8'-0"	24'-0"	51'-0"	10'-0"	8.33'	2.00'	
PT-3	16'-0"	24'-0"	51'-0"	18'-0"	8.33'	2.67'	A





<u>SECTION B-B</u>



· ·	1		
Date	No	Revision Descriptio	n
	Melek	TOF PLANNING AND ZONING	11/9/04
an	ids H	IGNEERING DIVISION NOTICE STATES D DEVELOPMENT	11/23/01 11/23/01
DIRECTOR	my L	· Cagli	DATE DATE
ΔΝΝ	APOLIS	JUNCTION BUSIN	FSS PARK

ANNAPOLIS JUNCTION BUSINESS PARK PARCELS A-D

> TAX MAP 48 GRID 14 PARCEL 120 ELECTION DISTRICT No. 2 HOWARD COUNTY, MARYLAND

CENTURY ENGINEERING, INC.

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

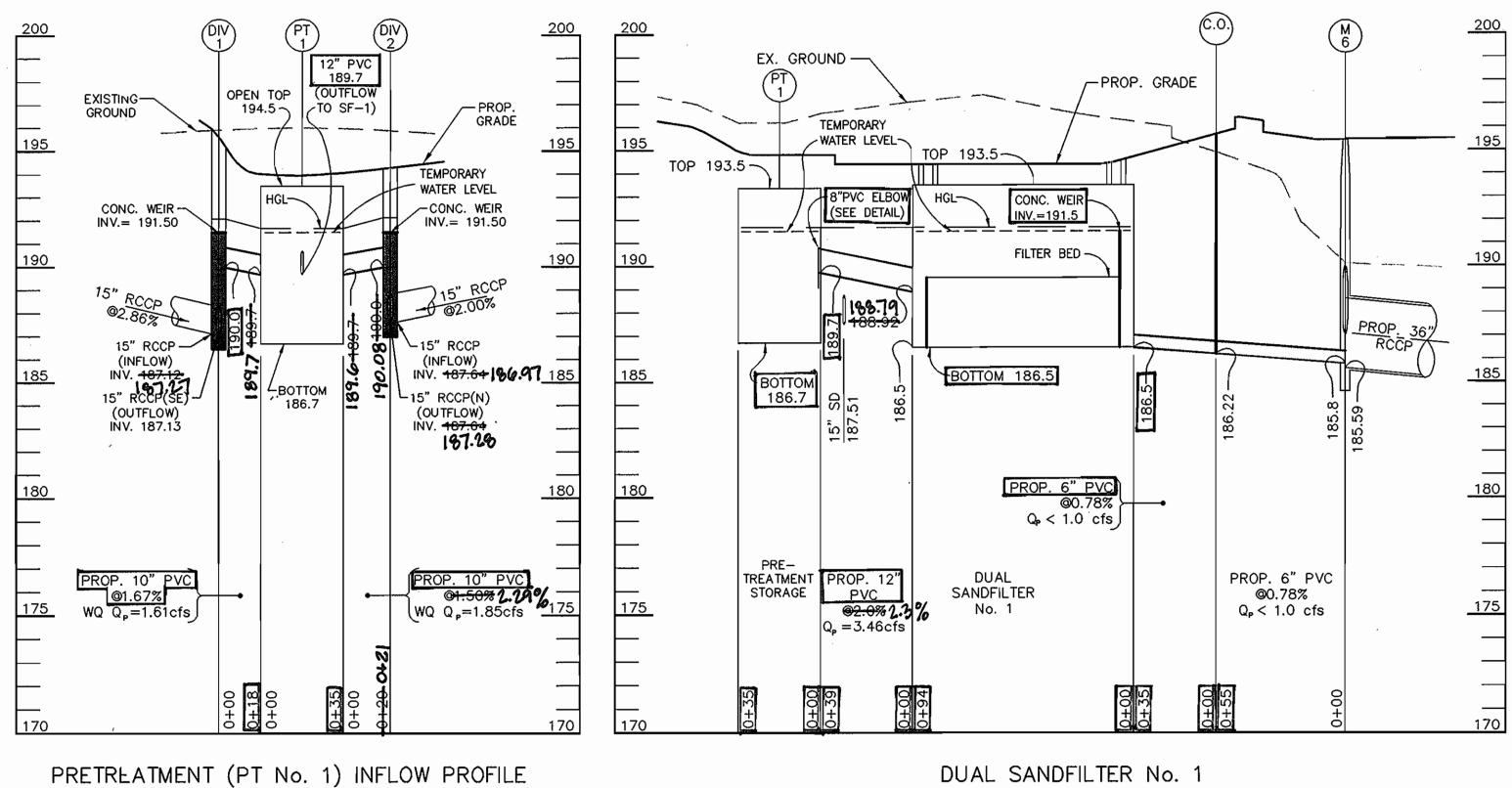
STORMWATER **VAULT** DETAILS

Scale AS NOTED Proj No 23249.00 17 OF 24 Date JUNE 23, 2004

SDP-04-98

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NOTE: ALL PIPE TO STRUCTURE JOINTS TO BE WATERTIGHT. USE NON—SHRINK GROUT OR RUBBER COMPRESSION GASKET JOINTS.



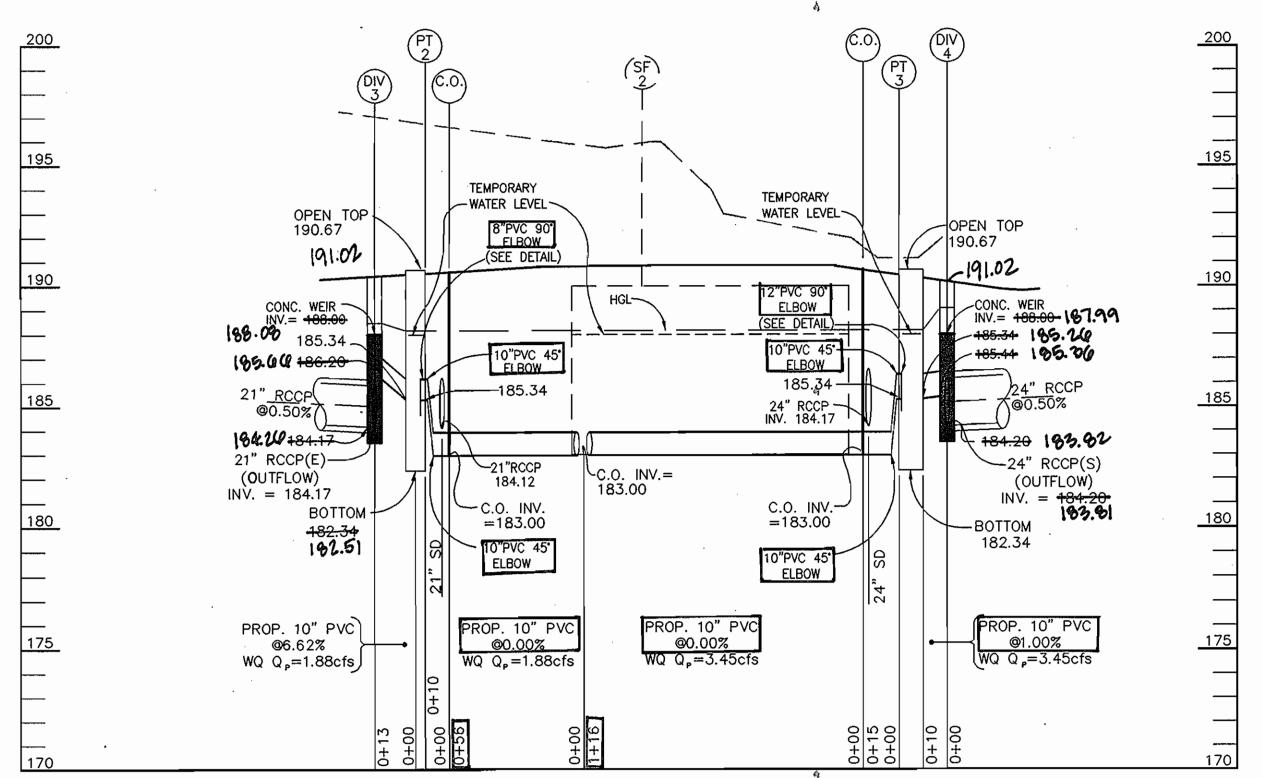
SCALE: 1"=40' HORZ. 1"=4' VERT.

DUAL SANDFILTER No. 1

SCALE: 1"=40' HORZ.

1"=4' VERT.

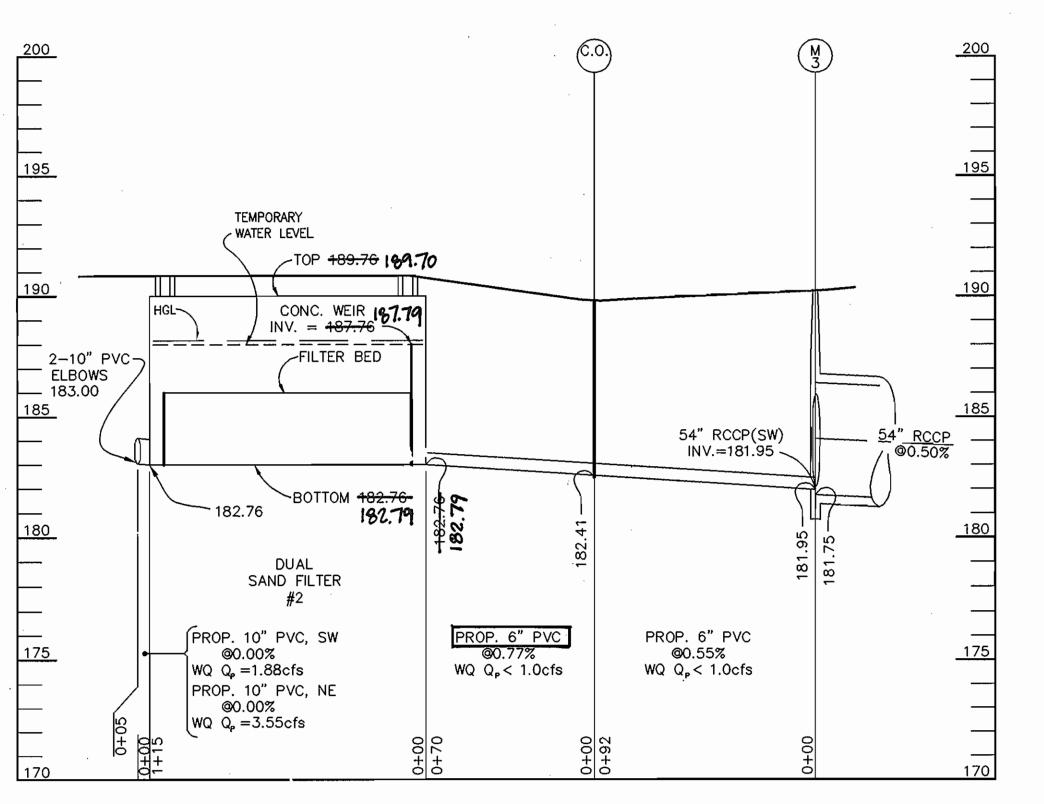
NOTE: ALL PIPE TO STRUCTURE JOINTS TO BE WATERTIGHT. USE NON-SHRINK GROUT OR RUBBER COMPRESSION GASKET JOINTS.



PRETREATMENT (PT No. 2 AND PT No. 3) INFLOW PROFILE

SCALE: 1"=40' HORZ.

1"=4' VERT.



DUAL SANDFILTER No. 2

SCALE: 1"=40' HORZ.

1"=4' VERT.



Date	No	Revision De	escription
APPROVED:	DEPARTMEN	TOF PLANNING AND ZONING	
6	Miller (1	Runnum	11/9/04
CHIEF-DEV	ELOPMENT EN	IGINEERING DIVISION	DATE
in	de &	unato	11/23/09
CHIEF-DIVIS	SION OF LAN	DEVELOPMENT	DATE DATE
por	La	Tayle-	11/29/04
DIRECTOR		<i>-</i>	DATE
ANNA	POLIS	JUNCTION BU	JSINESS PARK
		PARCELS A-	-D

TAX MAP 48 GRID 14 PARCEL 120

ELECTION DISTRICT No. 6

HOWARD COUNTY, MARYLAND

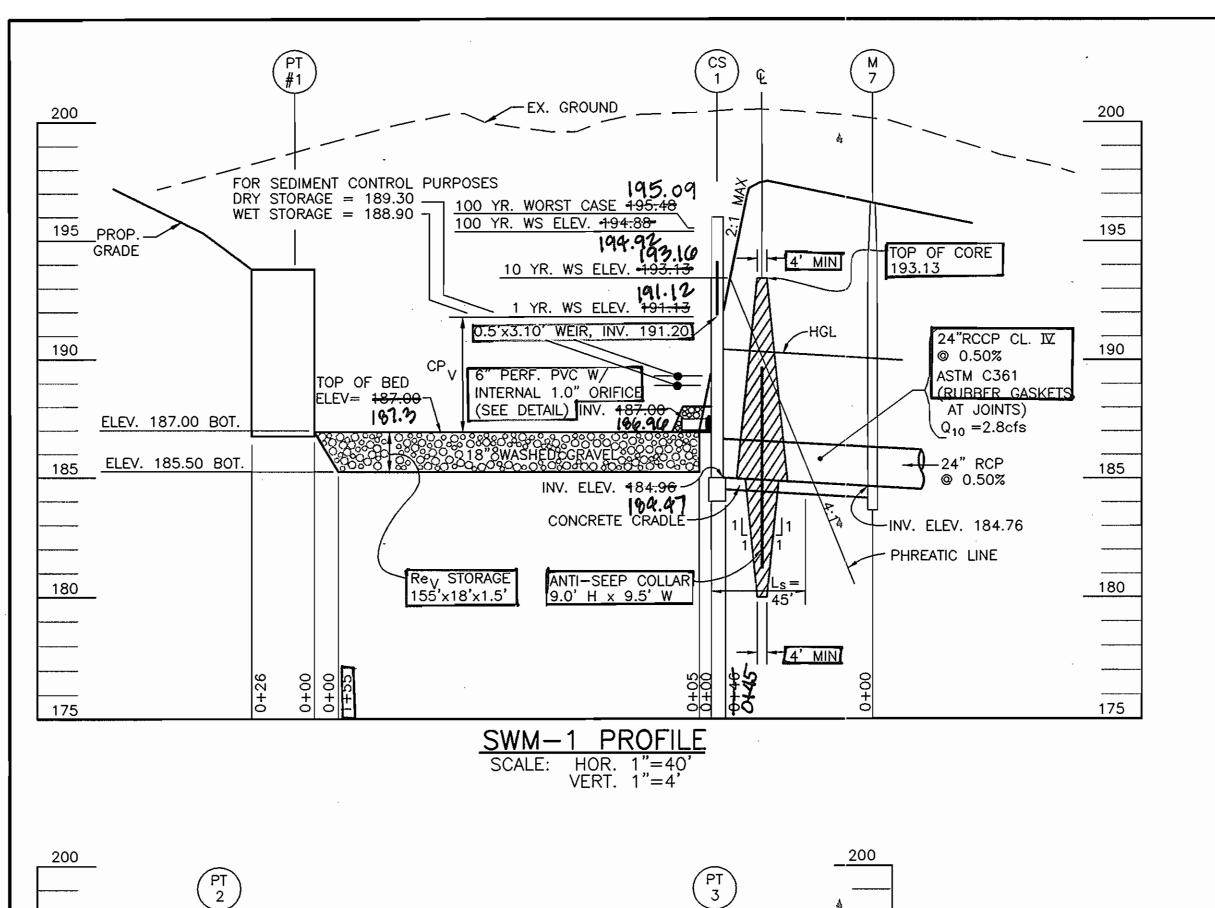
CENTURY ENGINEERING, INC.

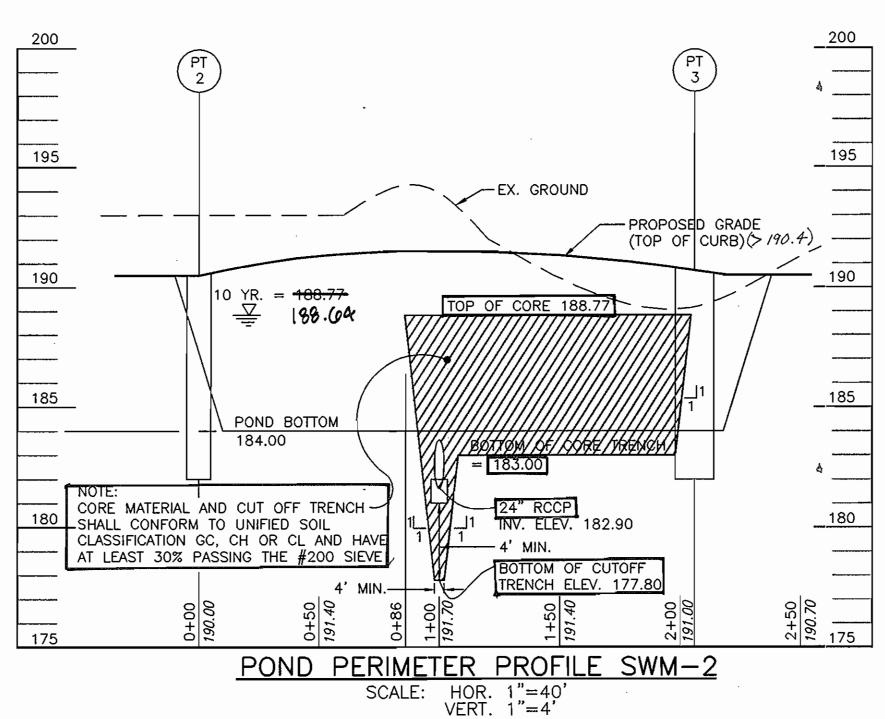
CONSULTING ENGINEERS, PLANNERS, SURVEYORS
32 WEST ROAD
TOWSON, MARYLAND 21204
(410) 823-8070

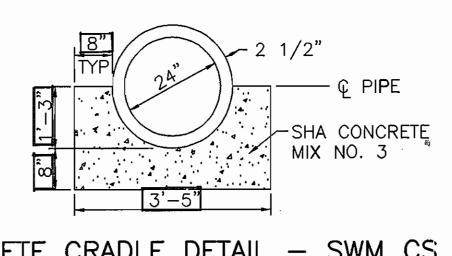
STORMWATER MANAGEMENT PROFILES

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m By	E.B.D.	Date JULY 19, 2004	DRAWING NO		
es By	G.L.	Scale 1"=40'	Proj No 23249.00		

AS-BUILT



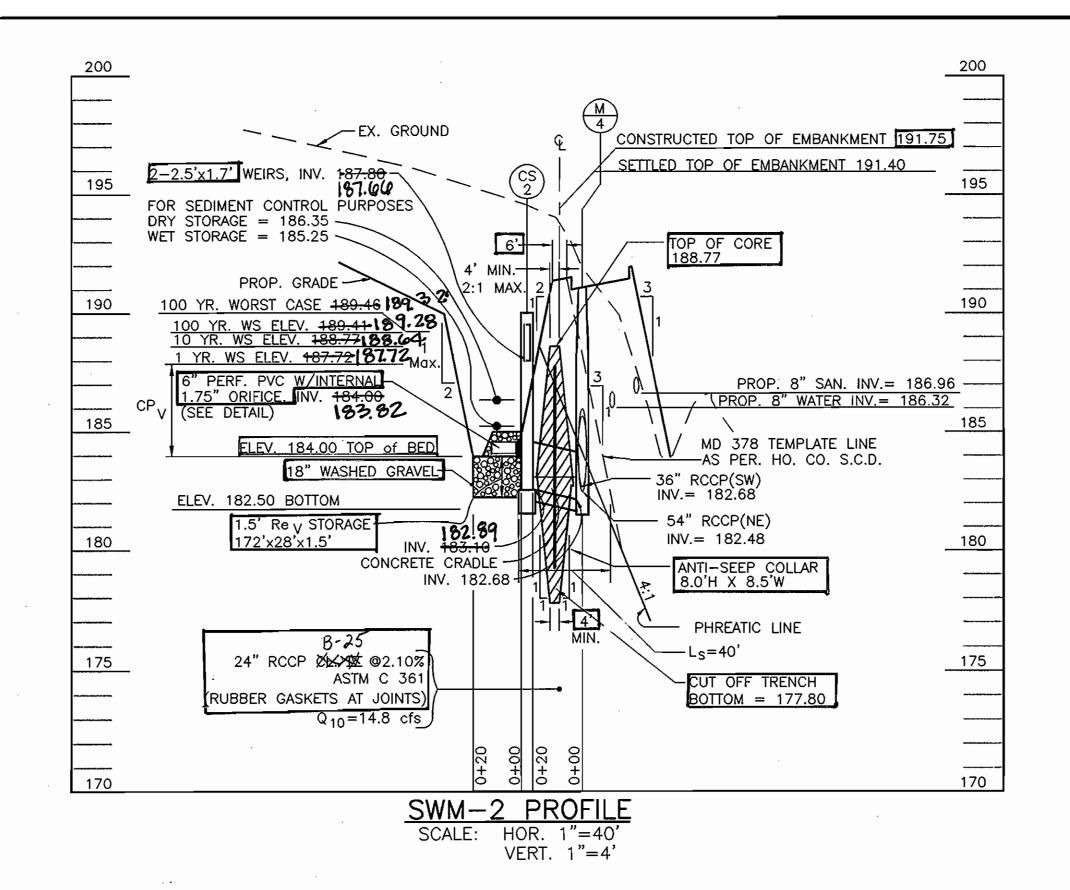


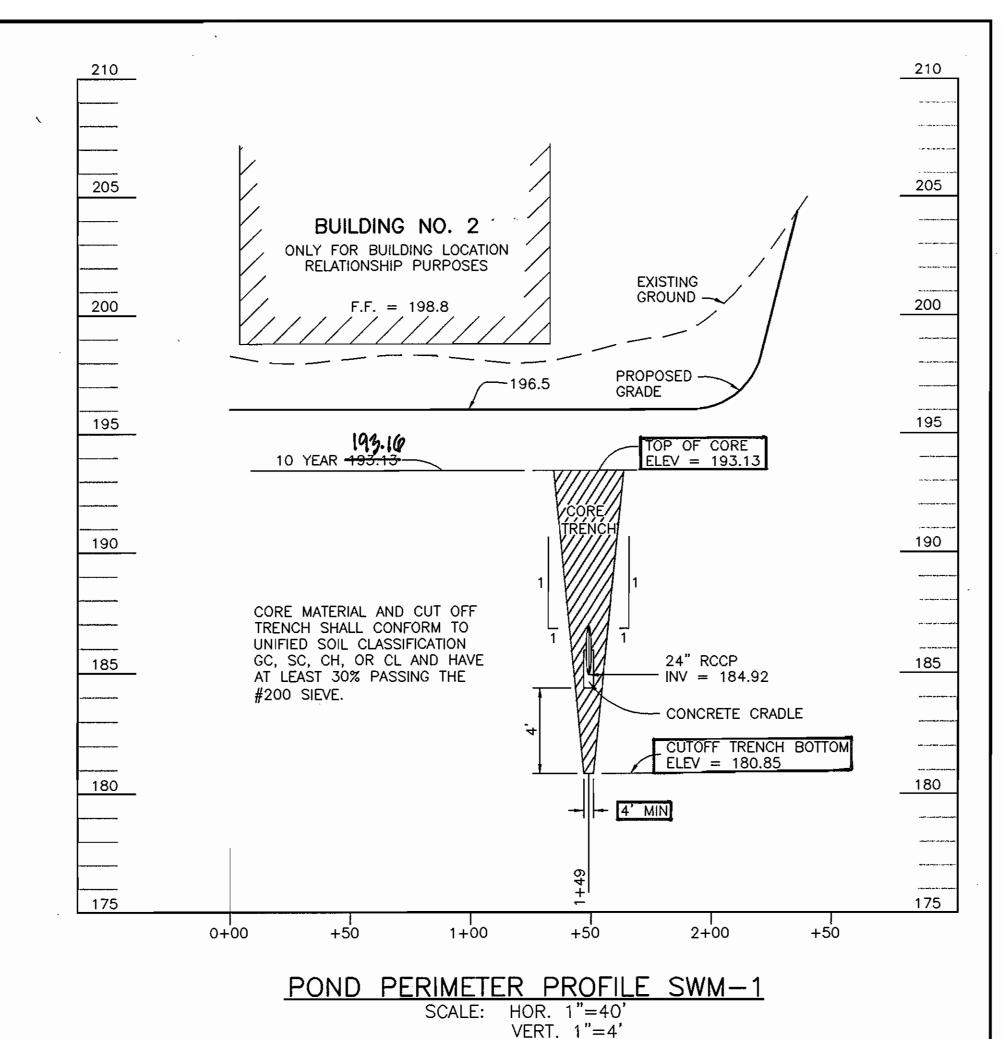


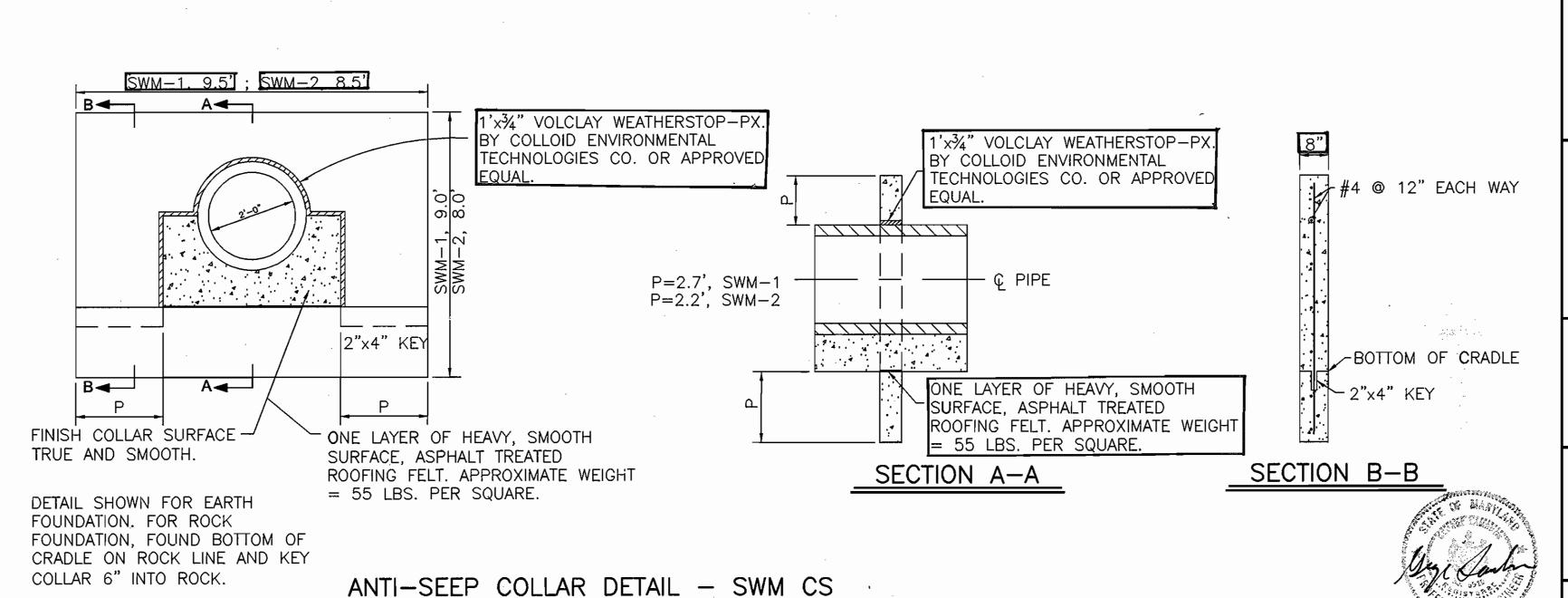
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SCALE: NONE







SCALE: NONE

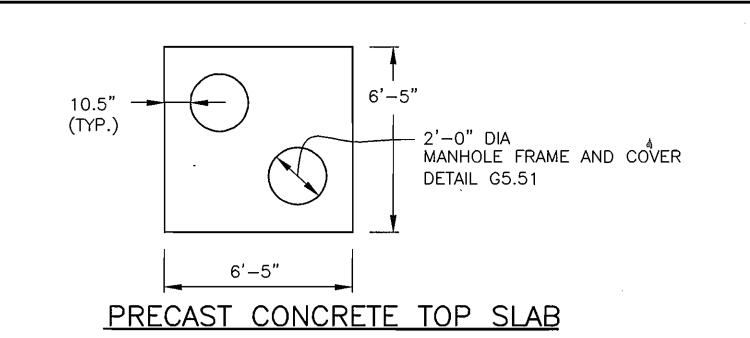
11/23/04 DATE 11/29/09 ANNAPOLIS JUNCTION BUSINESS PARK PARCELS A-D TAX MAP 48 GRID 14 PARCEL 120 ELECTION DISTRICT No. 6 HOWARD COUNTY, MARYLAND CENTURY ENGINEERING, INC. CONSULTING ENGINEERS, PLANNERS, SURVEYORS
32 WEST ROAD TOWSON, MARYLAND 21204 (410) 823-8070

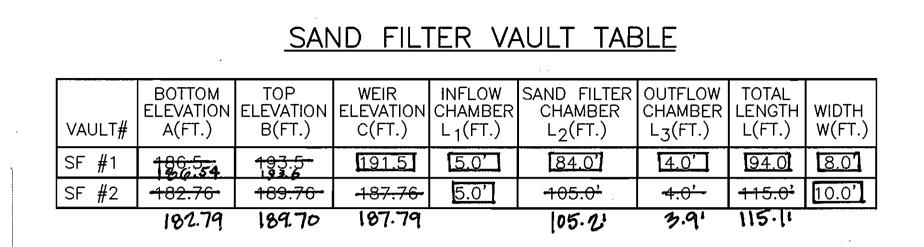
STORMWATER MANAGEMENT PROFILES

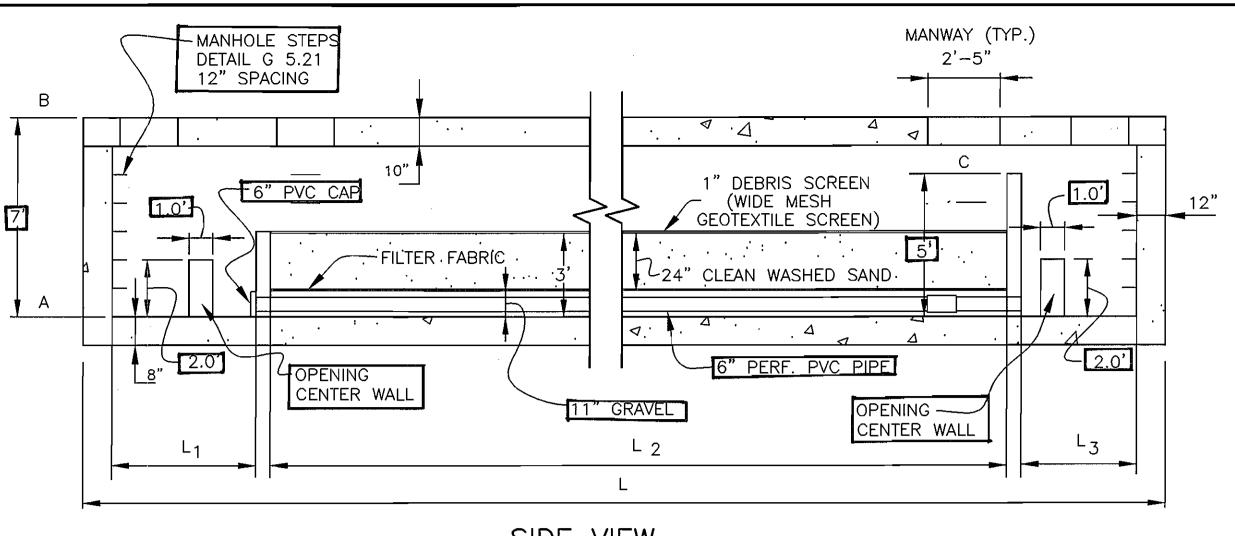
Scale 1"=40' Proj No 23249.00 Des By G.L. Drn By E.B.D. Date JULY 19, 2004 DRAWING NO <u>15 OF 24</u> Approved

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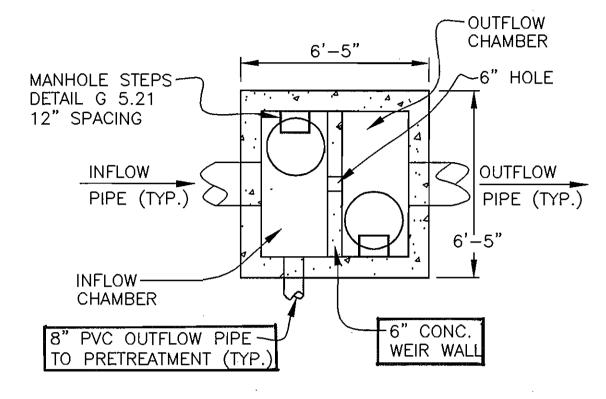
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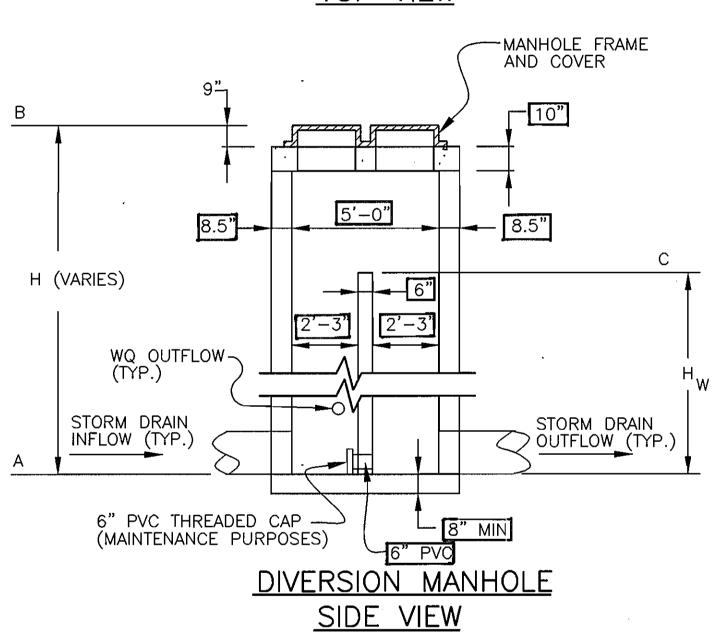


SIDE VIEW



SEE PLAN FOR PIPE ORIENTATION AND TABLE OF INVERTS

TOP VIEW



SCALE: 1"=2"

MH BOTTOM TOP WEIR CONC. WEIR INFLOW ELEVATION ELEVATION ELEVATION C(FT. ELEV.) HW(FT. ELEV.) AND INVERT

196.00

187.12

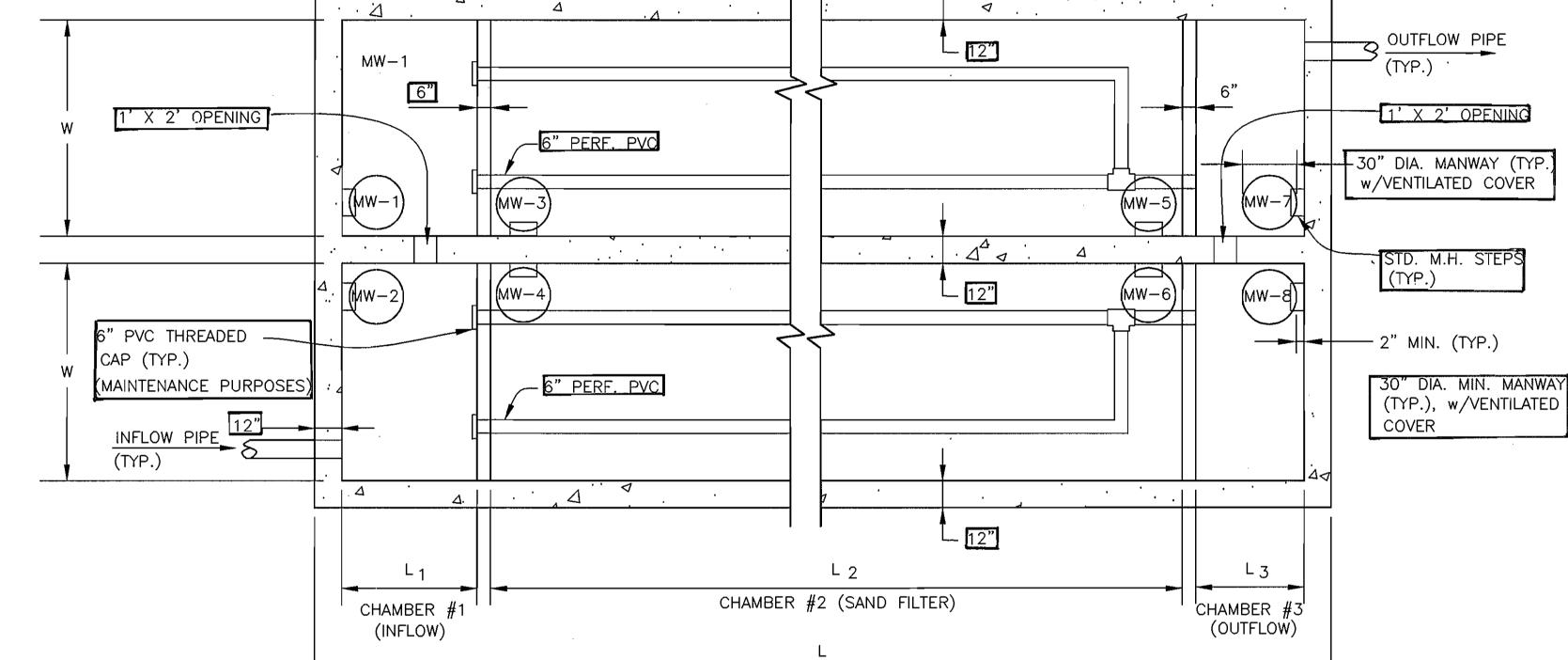
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|DIV #1

MAN	<u>WÁY</u>	ELE\	√ AT	10	N	<u>TAB</u>	<u>LE</u>
ALL	MANWAY	COVERS	ТО	BE	VENT	LATED	

MANWAY	SF-1 (FEET ELEVATION)	ELEVATION DIFFERENCE BETWEEN MANWAY AND VAULT TOP (FEET)	SF-2 (FEET ELEVATION)	ELEVATION DIFFERENCE BETWEEN MANWAY AND VAULT TOP (FEET)
1	194.40	0.90	191.95	2.19
2	194.27	0.77	191.65	1.89
3	194.45	0.95	192.00	2.24
4	_ 194.32	0.82	191.70	1.94
4 5	194.40	0.90	191.18	0.42
6	194.29 ·	0.79	190.23	0.47
7	194.42	0.92	190.14	0.38
8	194.33	0.83	190.16	0.40

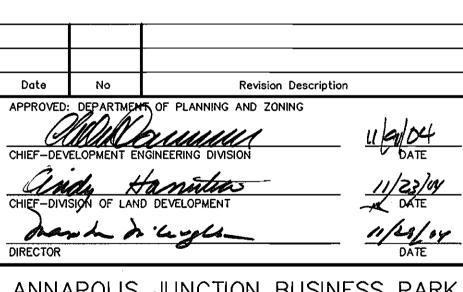


Material	Specification/Test Method	Size	Notes
sand	clean AASHTO-M-6 or ASTM-C- 33 concrete sand	0.02" to 0.04"	Sand substitutions such as Diabase and Graystone #10 are not acceptable. No ca' n carbonated or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.
peat	ash content: < 15% pH range: 5.2 to 4.9 loose bulk density 0.12 to 0.15 g/cc	11/2	The material must be reed-sedge hemic peat, shredded, uncompacted, uniform, and clean.
leaf compost		n/a	
underdrain gravel	AASHTO-M-43	0.375" to 0.75"	
geotextile fabric (if required)	ASTM-D-4833 (puncture strength - 125 lb.) ASTM-D-4632 (Tensile Strength - 300 lb.)	0.08" thick equivalent opening size of #80 sieve	Must maintain 125 gpm per sq. ft. flow rate. Note: a 4" pea gravel layer may be substituted for geotextiles meant to "separate" sand filter layers.
impermeable liner (if required)	ASTM-D-4833 (thickness) ASTM-D-412 (tensile strength 1,100 lb., elongation 200%) ASTM-D-624 (Tear resistance - 150 lb./in) ASTM-D-471 (water adsorption: +8 to -2% mass)	30 mil thickness	Liner to be ultraviolet resistant. A geotextile fabric should be used to protect the liner from puncture.
underdrain piping	F 758, Type PS 28 or AASHTO-M- 278	4" - 6" rigid schedule 40 PVC or SDR35	3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipes; not necessary underneath pipes
concrete (cast-in-place)	MSHA Standards and Specs. Section 902, Mix No. 3, f' _c = 3500 psi, normal weight, air-entrained; re-inforcing to meet ASTM-615-60	n/a	on-site testing of poured-in-place concrete required: 28 day strength and slump test; all concrete design (cast-in-place or precast) not using previously approved State or local standards requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland
concrete (pre-cast)	per pre-cast manufacturer	n/a	SEE ABOVE NOTE
non-rebar steel	ASTM A-36	n∕a	structural steel to be hot-dipped galvanized ASTM-A-123

Table B.3.1 Material Specifications for Sand Filters

UNDERGROUND SAND FILTER VAULT PLAN VIEW

SCALE: N.T.S.



ANNAPOLIS JUNCTION BUSINESS PARK PARCELS A-D

> TAX MAP 48 GRID 14 PARCEL 120 ELECTION DISTRICT No. 6 HOWARD COUNTY, MARYLAND



CENTURY ENGINEERING, INC.

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

STORMWATER **MANAGEMENT DETAILS**

AG-BUILT

Proj No 23249.00

Date JULY 19, 2004

Orn By E.B.D.

<u> 14 OF 24</u> SDP-04-98

DRAWING NO

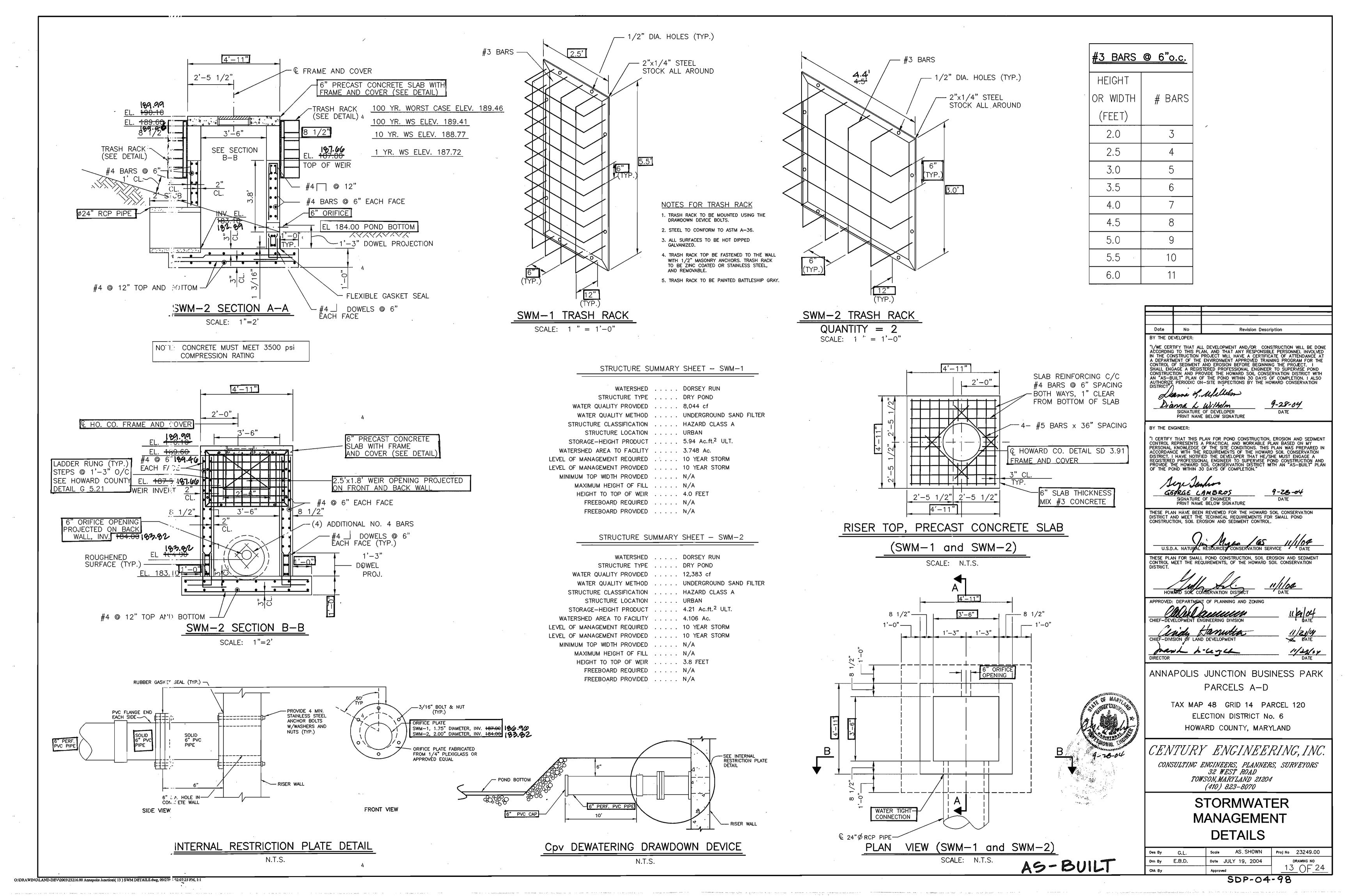
	DIV #2	6.56	187.64	194.20	191.50	3.86	187.64	187.64	190.00	
	DIV #3	6.00	184.17	190 <u>.</u> 70	188.00	3.80	21" RCP 184.17	21," RCP 184.17	10" PVC 186.20	
	DIV #4	6.00	184.20	190.20	188.00	3.80	24" RCP 184.20	24" RCP 184.20	10" PVC 185.44	

191.50

DIVERSION MANHOLE TABLE

4.27

OUTFLOW WO OUTFLOW PIPE SIZE AND INVERT AND INVERT



SITE PREPARATION

AREAS DESIGNATED FOR BORROW AREAS, EMBANKMEN AND STRUCTURAL WORKS SHALL BE CLEARED, GRUBF! ED AND STRIPPED OF TOPSOIL ALL TREES, VEGETATION ROOTS AND OTHER OBJECTIONABLE MATERIAL SHALL EI 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, RUB ISH 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 DISPOSATI 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

MATERIAL — THE FILL MATERIAL SHALL BE TAKEN FR 🖼 APPROVED DESIGNATED BORROW AREAS. IT SHALL BE FREE OF ROOTS, STUMPS, WOOD, RUBBISH, STONES GREATER THAN 6", FROZEN OR OTHER OBJECTIONABI. MATERIALS, FILL MATERIAL FOR THE CENTER OF THE EMBANKMENT, AND CUT OFF TRENCH SHALL CONFORT TO UNIFIED SOIL CLASSIFICATION GC, SC, CH, OR C' AND MUST HAVE AT LEAST 30% PASSING THE #200 SIEVE. CONSIDERATION MAY BE GIVEN TO THE USE OF OTHER MATERIALS IN THE EMBANKMEN 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.

PLACEMENT - AREAS ON WHICH FILL IS TO BE PLACED SHALL BE SCARIFIED PRIOR TO PLACEMENT (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 ('r' 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 E LIFT SHALL BE TRAVERSED BY NOT LESS THAN (1. TREAD TRACK OF HEAVY EQUIPMENT OR COMPACTION SHALL BE ACHIEVED BY A MINIMUM OF FOUR COMPLETE PASSES OF A SHEEPSFOOT, RUBBER TIRED OR VIBRATO ROLLER, FILL MATERIAL SHALL CONTAIN SUFFICIE IF MOISTURE SUCH THAT THE REQUIRED DEGREE O 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 To MINIMUM REQUIRED DENSITY SHALL NOT BE LESS THAN 95% OF MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT WITHIN N2% 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).

CUT OFF TRENCH - THE CUTOFF TRENCH SHAL. SE EXCAVATED INTO IMPERVIOUS MATERIAL ALONG OF PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS! THE BOTTOM WIDT'H 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 FIR FEET BELOW EXISTING GRADE OR AS SHOWN ON THE PLANS. THE SIDE SLOPES OF THE TRENCH SHALL BE 1 TO 1 OR FLATTER. THE BACKFILL SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLL ERS. OR HAND TAMPERS TO ASSURE MAXIMUM DEN-SITY AND MINIMUM PERMEABILITY.

EMBANKMENT CORE - THE CORE SHALL BE PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS. THE TOP WIDTH OF THE CORE SHALL BE A MINIMUM OF FOUR FEET. THE HEIGHT SHALL EXTEND UP TO AT LEAST THE 10 YEAR WATER ELEVATION OR AS SHOWN ON THE PLANS. THE SIDE SLOPES SHALL BE 1 TO 1 OR FLATTER. THE CCR SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TAMPERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY IN ADDITION, THE CORE SHALL BE PLACED CON-CURRENTLY WITH THE OUTER SHELL OF THE EMBANK-

STRUCTURE BACKFILL

BACKFILL ADJACENT TO PIRES OR STRUCTURES SHILL BE OF THE TYPE AND QUALITY CONFORMING TO THA SPECIFIED FOR THE ADJOINING FILL MATERIAL. THE Fil 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 COMPLETEL" ALL SPACES UNDER AND ADJACENT TO THE PIPE. , [NO TIME DURING THE BACKFILLING OPERATION SHALL DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSE? THAN FOUR FEET, MEASURED HORIZONTALLY, TO ANY PART OF A STRUCTURE. UNDER NO CIRCUMSTANCE? 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 Cr 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 RESISTIMTY 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 MATERIALS.

PIPE CONDUITS

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 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
- 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
- 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 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 FLANGE BOLT CIRCLE. SANDWICHED BETWEEN ADJACENT FLANGES; A 12-INCH WIDE STANDARD LAP TYPE BAND WITH 12-INCH 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 FULL WIDTH OF THE FLANGE IS ALSO ACCEPTABLE.
- HELICALLY CORRUGATED PIPE SHALL HAVE EITHER CONTINUOUSLY WELDED SEAMS OR HAVE LOCK SEAMS WITH INTERNAL CAULKING OR A NEOPRENE
- 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 B 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 BACKFILL".
- 5. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

PLASTIC PIPE - 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 -IHE 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
- 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

CONCRETE SHALL MEET THE REQUIREMENTS OF

MARYLAND DEPARTMENT OF TRANSPORTATION, STATE

HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS

FOR CONSTRUCTION AND MATERIALS, SECTION 414, MIX NO. 3.

SECTION 311

ROCK RIPRAP ROCK RIPRAP SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS,

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 AL 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 STABÎLIZED 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

FILTER CLOTH SHALL BE MIRAFI 1405, DUPONT TYPAR #3341 OR APPROVED EQUAL.

HILLIS CARNES 410 880 4098 P.02/04

HILLIS-CARNES

12011 Guilford Road, Suite 106

August 10, 2004

Wilhelm Business Enterprises, LLC 10979 Guilford Road, Suite A Annapolis Junction, Maryland 20701

Re: Additional SWM Recommendations

Attention: Ms. Dianna L. Wilhelm

P.O. Box 241 Annapolis Junction, MD 20701 Balto. 410-880-4788 DC Metro 301-470-4239 Fax 410-880-4098

Annapolis Junction Business Park Howard County, Maryland HCEA Project No. 03704A

AUG-10-2004 11:23

Hillis-Carnes Engineering Associates, Inc. (HCEA) is pleased to submit this letter containing additional recommendations for the proposed SWM facility (SWM-2) for the above-referenced project.

As requested, HCEA is providing additional site preparation and construction recommendations for the proposed SWM pond. The following evaluations have been developed on the basis of the project characteristics and subsurface conditions that were outlined in our original report. If there are any changes to the project characteristics or if different subsurface conditions are encountered during construction, HCEA should be consulted so that the recommendations of this report can be reviewed and revised, if necessary.

Embankment Construction

The following procedures should be utilized to prepare the subgrade for embankment support and to construct the proposed embankments.

All trees, topsoil, organic materials, frozen, wet, soft or loose soils and other deleterious materials should be removed from the areas of proposed new embankment and wasted prior to the placement of fill. These stripping operations should be performed in a manner consistent with good erosion and sediment control practices and in accordance with Soil Conservation Guidelines.

After stripping operations have been completed, the exposed subgrade materials should be proofrolled with a loaded dump truck or similar equipment in the presence of a geotechnical engineer or his representative. For areas that are not accessible to a dump truck, the exposed materials should be observed and tested by a geotechnical engineer or his representative utilizing a Dynamic Cone Penetrometer. Any excessively soft or loose materials identified by proofrolling or penetrometer testing should be excavated to suitable firm soil, and then grades reestablished by backfilling with suitable soil.

Columbia, MD • Frederick, MD • Hagerstown, MD • Salisbury, MD • Waldorf, MD • Manassas, VA

AUG-10-2004 11:24 HILLIS CARNES 418 888 4898 P.83/84

Groundwater levels were monitored in the borings during our field exploration. Groundwater was not encountered within the depths explored at the SWM-2 facility boring locations at the time of our field exploration. It is possible that perched water may be encountered during construction.

Any water infiltration resulting from a shallow interception of the groundwater table, surface run-off, or perched water, if not too extensive, should be able to be controlled by means of sump pit and pump, or by gravity ditching procedures provided that the groundwater level must only be lowered by a depth of 1± ft to 2+ ft. if the groundwater must be lowered by more than 1+ ft to 2+ ft, or if lesser amounts of water cannot be suitability lowered by pumping, then the use of a more extensive dewatering system such as deep wells or well points will be

Fill Material Suitability

All materials to be used as fill in the embankment should be inspected, tested and approved by the Geotechnical Engineer. Based on our evaluation of the soils encountered borings conducted on the site, it appears that the on-site soils that are free from organics and other deleterious materials can be used for construction of the embankment. Moisture conditioning (that is, wetting or drying) of the materials may be required in order to achieve proper compaction depending on the season of the year. The moisture contents of the soils should be properly controlled to avoid extensive construction delays. Additional laboratory tests should be performed on the borrow materials prior to their use in the compacted fill.

Imported fill materials should be of equal or greater quality than the on-site materials and should be approved for use by the Geotechnical Engineer.

Fill Placement and Compaction

All fill materials must be placed and compacted in accordance with NRCS-MD Code No. 378 specifications. In particular, fill materials should be placed in relatively horizontal loose lifts of 8-inch maximum thickness and should be compacted to dry densities of at least 95 percent of the Standard Proctor maximum dry density (ASTM D-698). Moisture contents should be maintained within +2 percent of optimum moisture content, and preferably between optimum moisture content and +2 percent of optimum moisture content.

An experienced soils technician under the direction of a Geotechnical Engineer should perform field density tests on the embankment fill, as necessary, to verify that adequate compaction is achieved. If any compaction problems are encountered during construction, the Geotechnical Engineer should be contacted for advice, as modifications to the compaction procedures may be appropriate.

The state of the s

Cut-off Trench Construction

A representative of the Geotechnical Engineer should be present to monitor placement and compaction of fill for the embankment and cut-off trench. In accordance with NRCS-MD Code No. 378 Pond Standards/Specifications, soils considered suitable for the center of 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.

It is our professional opinion that in addition to the soil materials described above a fine-grained soil, including Silt (ML) with a plasticity index of 10 or more can be utilized for the center of the embankment and core trench.

REMARKS

We appreciate having had the opportunity to provide this consultation. Should you have any questions concerning this letter, please contact this office.

Very truly yours,

HILLIS-CARNES ENGINEERING ASSOCIATES, INC.

RISER NOTES:

- 1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE SWM POND/SEDIMENT BASIN CONSTRUCTION SPECIFICATIONS AND THE MSHA STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS SECTIONS 414 AND 416.
- 2. ALL CONCRETE SHALL BE MIX NO. 3 (FC=3500 PSI)
- 3. ALL REINFORCING STEEL SHALL CONFORM TO ASTM DESIGNATION A615, GRADE 60. ALL REINFORCING STEEL SHALL BE AS INDICATED ON THE RISER STRUCTURAL DETAILS. CONCRETE COVER OVER THE REINFORCING STEEL SHALL BE A MINIMUM OF 2" MEASURED FROM THE INSIDE FACE OF WALLS AND FROM THE TOP SURFACE OF THE REINFORCING STEEL IN THE BOTTOM AND SIDES OF THE FOOTING. CUT REINFORCING STEEL AT PIPES AND OPENINGS.
- 4. CONSTRUCTION JOINTS BETWEEN WALLS AND FOOTING SHALL BE ROUGH FLOATED SUFFICIENTLY TO THOROUGHLY CONSOLIDATE THE SURFACE AND SHALL BE INTENTIONALLY LEFT IN A ROUGHENED
- 5. PROVIDE 1 1/4" CHAMFER FOR ALL CORNERS ABOVE GRADE
- 6. TRASH RACKS TO BE SHOP FABRICATED AND HOT DIPPED GALVANIZED PRIOR TO FIELD ASSEMBLY.
- 7. CONTRACTOR SHALL USE GALVANIZED OR STAINLESS STEEL BOLTS TO FASTEN TRASH RACK TO CONCRETE WALL.

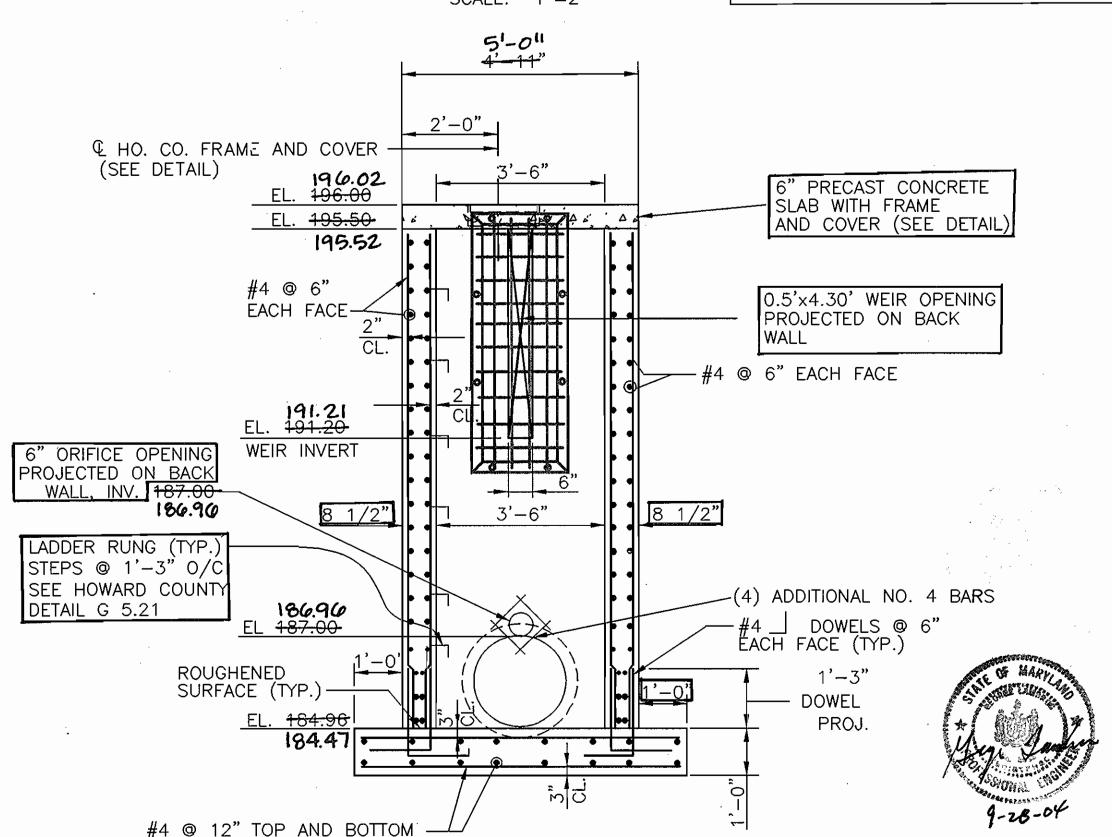
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS 4'-11" STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION. SOIL CONSERVATION SERVICE MARYLAND STANDARDS AND SPECIFICATIONS POND CODE 378 NOVEMBER, 1992 --- € HO. CO. FRAME AND COVER MARYLAND DEPARTMENT OF TRANSPORTATION STATE 2'-5 1/2" HIGHWAY ADMINISTRATION, OCTOBER, 1993, STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIAL. PRECAST CONCRETE SLAB WITH FRAME AND COVER (SEE DETAIL) 196.02 196.00 100 YR. WORST CASE ELEV. 195:48 **195.09** 195.50 100 YR. WS ELEV. 194.88 **194.92** 195.52 ∠TRASH RACK (SEE DETAIL) #4 BARS @ 6"-10 YR. WS ELEV. 193.13 **193.16** SEE SECTION 1 YR. WS ELEV. 191.13 **191.12** WEIR INVERT 3'-6" — #4 BARS @ 6" EACH FACE 8 1/2" 8 1/2" STUB ORIFIC Ø24" RCP PIPE POND BOTTOM 184.96-184.47 DOWELS @ 6" ËACH FACE -1'-3" DOWEL PROJECTION #4 @ 12" TOP AND BOTTOM — LFLEXIBLE GASKET SEAL

SWM-1 SECTION A-A SCALE: 1"=2'

NOTE: CONCRETE MUST MEET 3500 psi COMPRESSION RATING

AS-BUILT

سيع المحمد سيرا مصغرت ومراور والصاع ومعاورتهما والساء المسروا فالهاك أأراء يتجرونها والأراء المستعمونين



SWM-1 SECTION B-B

SCALE: 1"=2'

APPROVED: DEPARTMENT OF PLANNING AND ZONING 11/29/19

GENERAL NOTES

SATISFATION.

BY HOWARD COUNTY.

SHOWN ON THESE PLANS.

SHALL BE IN ACCORDANCE WITH:

UTILITIES AND TOPOGRAPHICAL FEATURES SHOWN ON

OF THE CORRECTNESS OF THE COMPLETENESS OF THE

INFORMATION GIVEN. THE USER OF THESE DRAWINGS

MUST VERIFY ALL SUCH INFORMATION TO HIS OWN

AS-BUILT PLANS AND CERTIFICATION ARE REQUIRED

FOR THIS STORMWATER MANAGEMENT FACILITY. THESE MUST BE PREPARED AND SEALED BY A REGISTERED

PROFESSIONAL ENGINEER. THE STORMWATER MANAGEMENT

PERMIT SECURITY WILL NOT BE RELEASED UNTIL THE

IN ORDER TO PREPARE THE REQUIRED AS-BUILT PLANS AND CERTIFICATION, THIS STORMWATER MANAGEMENT

SPECIFIC STAGES DURING CONSTRUCTION.

FACILITY MUST BE INSPECTED BY THE ENGINEER AT

THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT LEAST

FIVE (5) WORKING DAYS PRIOR TO STARTING ANY WORK

UNLESS OTHERWISE NOTED, ALL CONSTRUCTION AND WORKMANSHIP

AS-BUILT PLANS AND CERTIFICATION ARE APPROVED

THESE PLANS ARE ONLY FOR THE CONVENIENCE OF

THE USER AND THERE IS NO WARRANTY OR GUARANTEE

ANNAPOLIS JUNCTION BUSINESS PARK PARCELS A-D

TAX MAP 48 GRID 14 PARCEL 120 ELECTION DISTRICT No. 6 HOWARD COUNTY, MARYLAND

CENTURY ENGINEERING, INC.

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

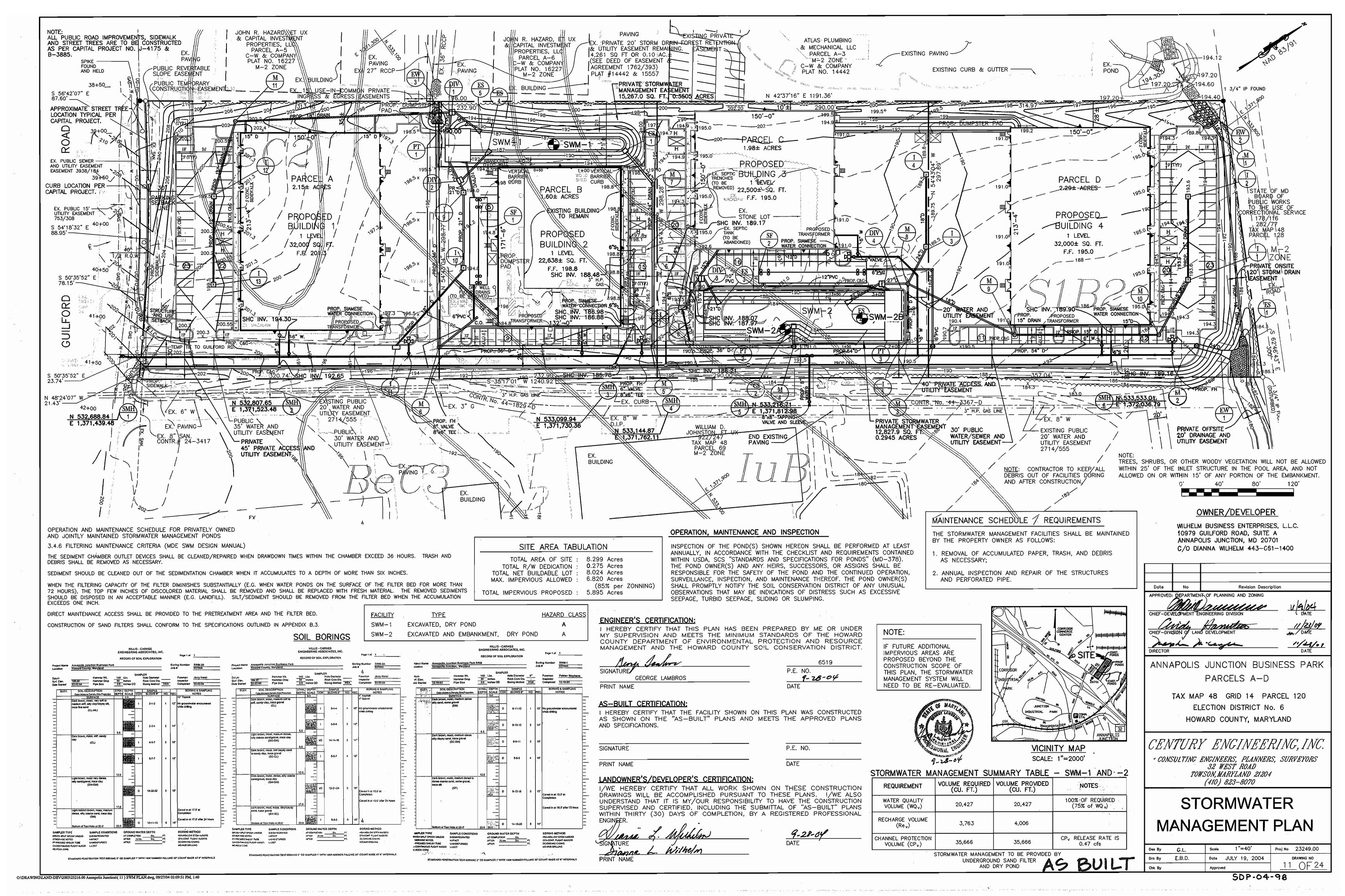
STORMWATER MANAGEMENT NOTES & DETAILS

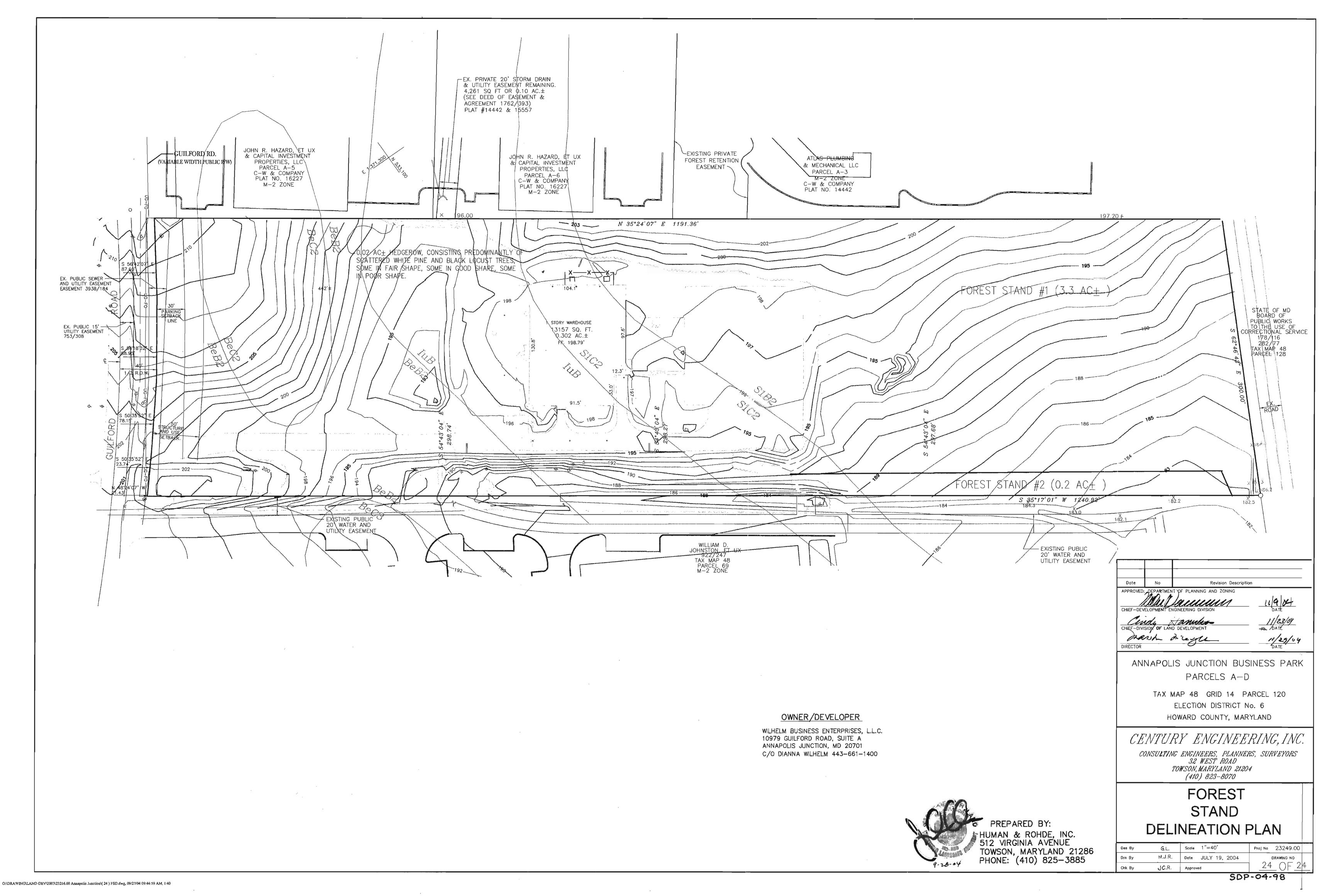
scale AS SHOWN Proj No 23249.00 Des By G.L. Orn By E.B.D. Date JULY 19, 2004 DRAWING NO 12 OF 24

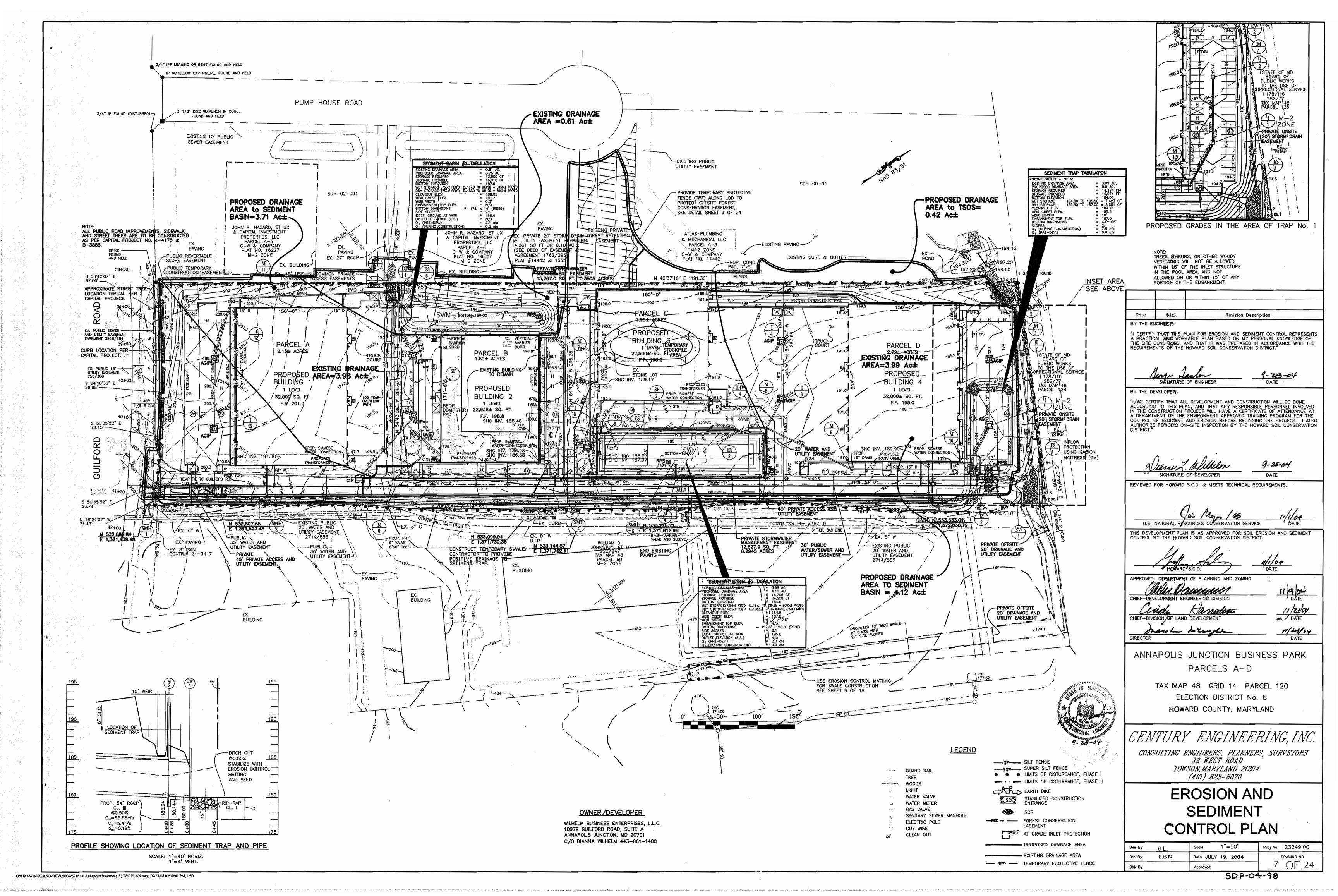
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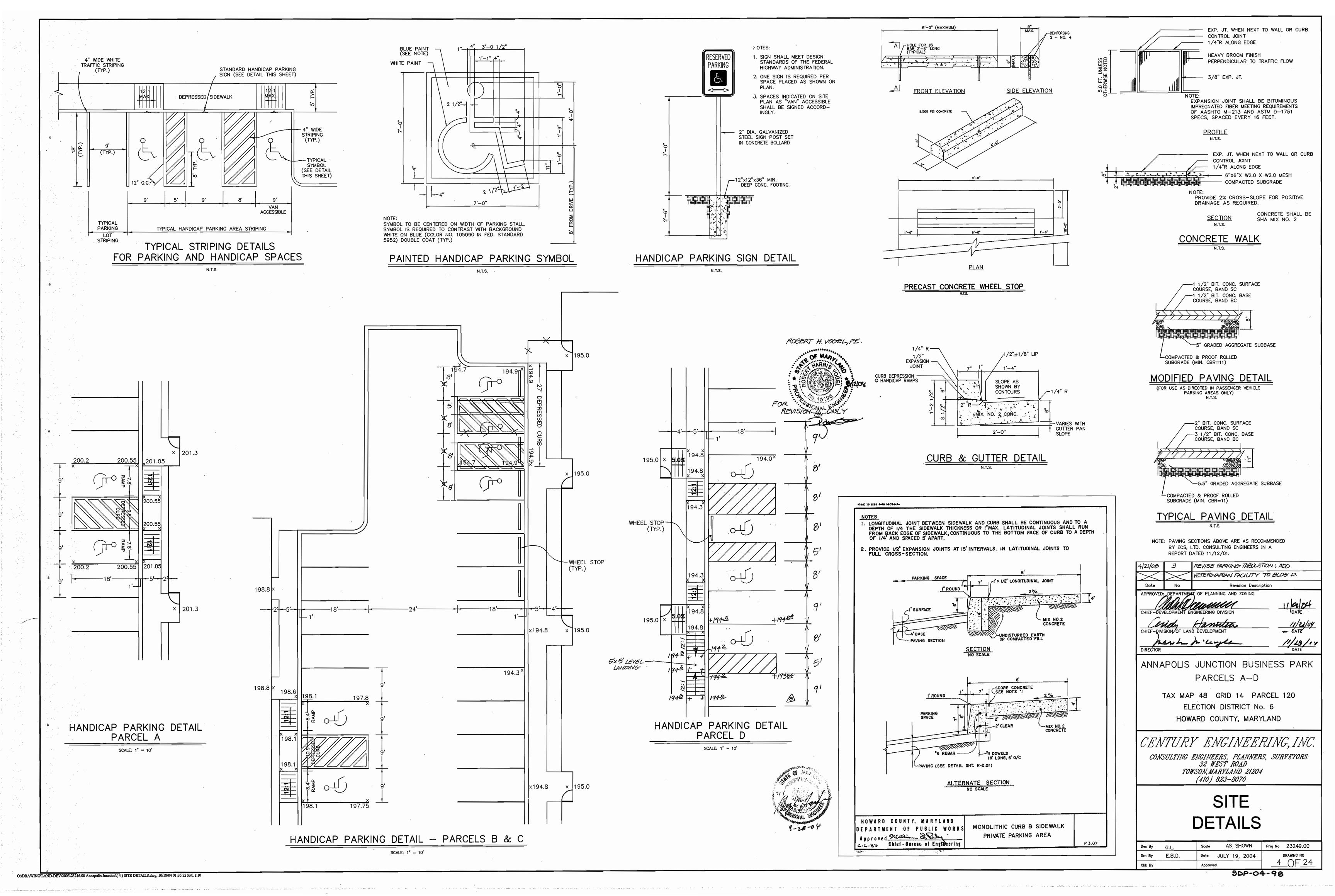
O:\DRAWING\LAND-DEV\2003\23216.00 Annapolis Junction\(\) 12) SWM NOTES & DETAILS.cn. b, 09/27/04 02:08:39 PM, 1:1

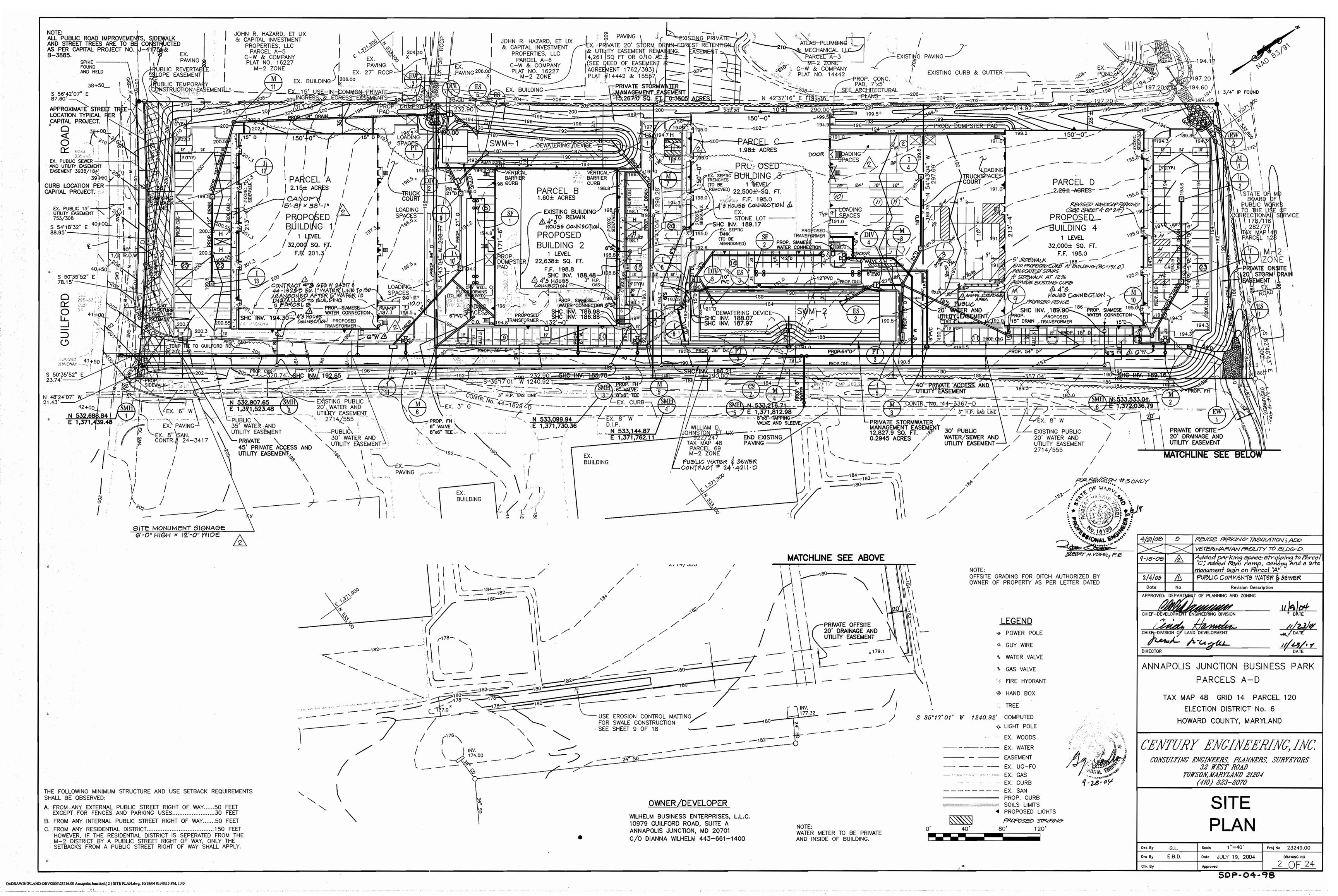
ON THE SIDES OF THE PIPE. IT ONLY NEEDS TO EXTEND











SITE ANALYSIS

- 1. TOTAL SITE AREA: WITHOUT ROAD R/W: 8.024 AC.
- 2. TOTAL NUMBER OF PARCELS: 4. PARCEL "A" 2.150 AC., PARCEL "B" 1.596 AC. PARCEL "C" 1.984 AC., PARCEL "D" 2.294 AC.
- 3. DEED REFERENCE: 07671/212 F-04-107, P.N. 17018
- 4. THE SUBJECT PROPERTY IS ZONED M2 PER THE FEBRUARY 2, 2004 COMPREHENSIVE ZONING PLAN.
- 5. TAX MAP: 48 GRID: 14 PARCEL: 120 ELECTION DISTRICT: 6
- 6. PARKING TABULATION:

240 SPACES (INCLUDING // HANDICAP SPACES)

- 7. SITE AREA TABULATION: (WITHOUT ROAD R/W) A. TOTAL PARCEL AREA: 8.024 Ac. (PARCELS A-D)
 - B. TOTAL BUILDING AREA: 2.505 Ac. 31.2% COVERAGE
 C. PARCEL AREA: PARCEL"A" 2.150 Ac., PARCEL"B" 1.596 Ac.,
 - PARCEL"C" 1.984 Ac., PARCEL"D" 2.294 Ac.
- D. BUILDING AREA:

 PARCEL "A"

 OFFICE 11,750 SF @ 3,3/1000 S.F.

 WAREHOUSE 20,250 SF @ 0.5 P.S./1000 S.F. 10,300 SF 21,700 SF = 38.8 *34.0* $=\frac{10.1}{10.9}$

 - 44.9 45 OFFICE - 9,500 SF @ 3.3/1000 S.F. = 31.3WAREHOUSE - 13,138 SF @ 0.5 P.S./1000 S.F.
- PARCEL "C"
 OFFICE 9,500 SF @ 3.3/1000 S.F.
- WAREHOUSE 13,000 SF @ 0.5 P.S./1000 S.F. 1,804 SF 410 SF WAREHOUSE MEZZANINE
 - PARCEL "D"
 OFFICE //,700 SF @ 3.3/1000 S.F. = 38.6 WAREHOUSE -5,460* SF @ 0.5 P.S./1000 S.F. = 2.74
 - VETERINARY ORTHOPEOIC FACILITY 16,000 SF@ 25/1000 SF. = 40.0 81.34 = 82 REQ'D *WAREHOUSE INCLUDES 1,180SF MEZZANINE PARKING REQUIRED: P.S. 235

THERE IS NO MANUFACTURING OR ASSEMBLY IN THE WAREHOUSE AREAS. ANY FUTURE CHANGES WILL HAVE TO BE ADDRESSED IN THE HOWARD COUNTY RED LINE REVISION PROCESS FOR APPROVAL.

WILHELM BUSINESS ENTERPRISES, LLC 10979 GUILFORD ROAD ANNAPOLIS JUNCTION, MARYLAND 20701

- 9. PROPOSED USE IS OFFICE AND WAREHOUSE.
- 10. THE STORMWATER MANAGEMENT FACILITY IS TO CONSIST OF SWM BASINS, UNDERGROUND SAND FILTER FOR WATER QUALITY. CHANNEL PROTECTION AND 10 YEAR STORM VOLUME.
 STORMWATER MANAGEMENT FOR THE IMPROVEMENTS SHOWN ON THIS PLAN ARE BASED ON MEASURED IMPERVIOUS AREAS USING REDEVELOPMENT CRITERIA. ANY ADDITIONAL CONSTRUCTION ON THIS SITE SHALL REQUIRE FURTHER EVALUATION OF THE STORMWATER MANAGEMENT PROVISIONS.
- 11. TOTAL DISTURBED AREA = 349,351 S.F. = 8.02 Ac±

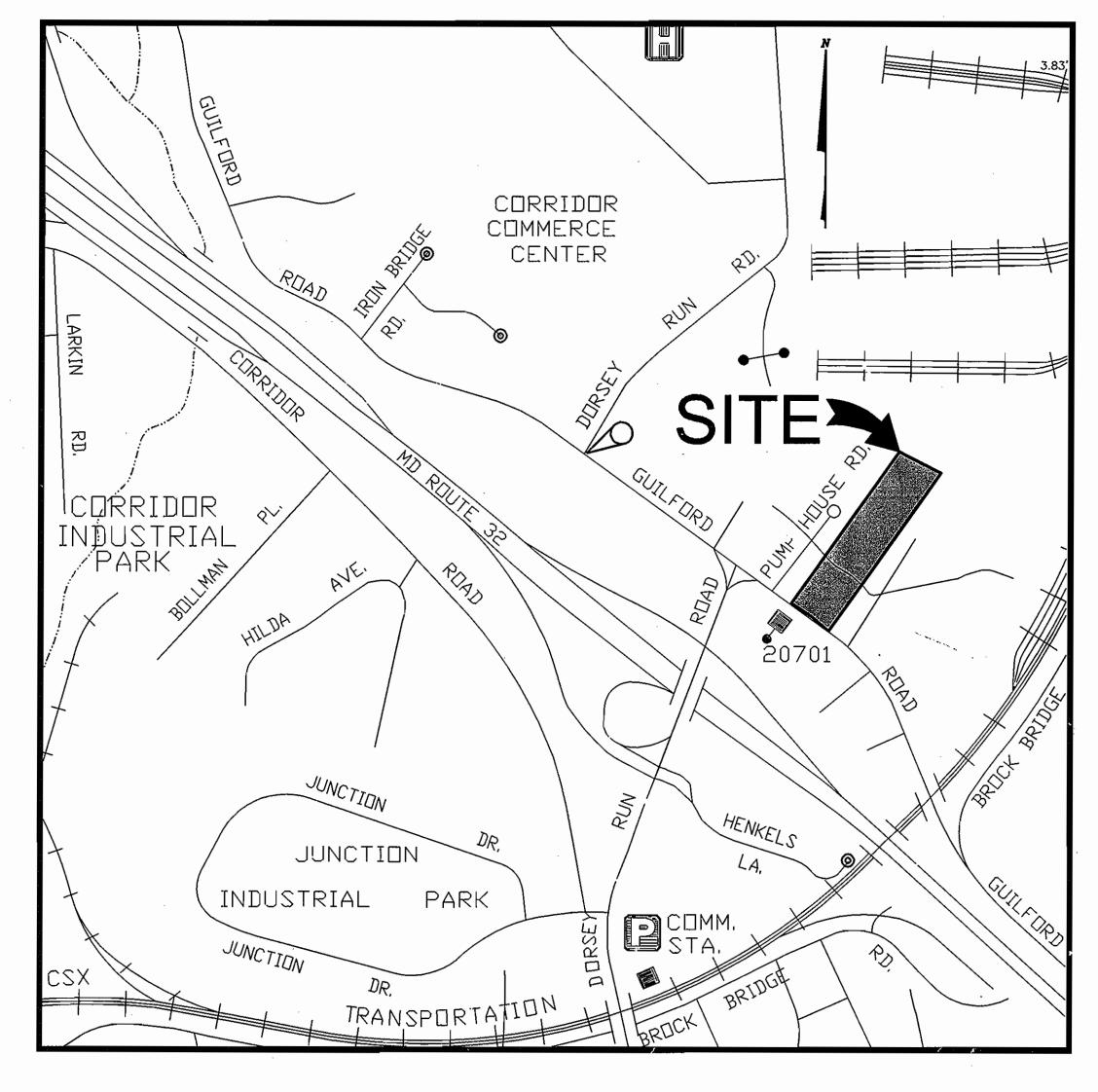
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- PARCEL "A", BUILDING 1 32,000 SF, 1-LEVEL, 34.2% BUILDING COVERAGE PARCEL "B", BUILDING 2 - 22,638 SF, 1-LEVEL, 32.6% BUILDING COVERAGE PARCEL "C", BUILDING 3 - 22,500 SF, 1-LEVEL, 26% BUILDING COVERAGE PARCEL "D", BUILDING 4 - 32,000 SF, 1-LEVEL, 32% BUILDING COVERAGE
- 13. THERE ARE NO WETLANDS/WETLANDS BUFFERS WITHIN THE LIMIT OF DISTURBANCE SHOWN FOR DEVELOPMENT ON THIS SITE PLAN.

	ADDRESS CHART					
LOT/PARCEL #	STREET ADDRESS					
PARCEL "A"	10981 GUILFORD ROAD					
PARCEL "B"	10979 GUILFORD ROAD					
PARCEL "C"	10977 GUILFORD ROAD					
PARCEL "D"	10975 GUILFORD ROAD					

,						
,		CHART				
	SUBDIVISION NAME ANNAPOLIS JUNCTION	ON BUISINES	S PARK	SECTION/AREA		LOT/PARCEL NO. PARCEL S A-D
	PLAT #	GRID # 14	ZONING M-2	TAX MAP NO. 48	ELECT DISTR 2	CENSUS TRACT 6069.01
*	WATER CODE B	02		SEWER CODE	415	60000

ANNAPOLIS JUNCTION BUSINESS PARK



VICINITY MAP SCALE: 1"=600'



BENCH MARK

48G4-HOWARD CO. SURVEY CONTROL, BRASS DISK SET IN TOP OF CONC. MONUMENT S/E COR. OF GUILFORD RD. & DORSEY RUN RD. N 531519.243 E 1371653.850 EL. 206.647 FT. 48GB-N 532530.284 E 1370623.784

OWNER/DEVELOPER

WILHELM BUSINESS ENTERPRISES, L.L.C. 10979 GUILFORD ROAD, SUITE A ANNAPOLIS JUNCTION, MD 20701 C/O DIANNA WILHELM 443-661-1400

STANDARD AND SPECIFICATIONS IF APPLICABLE.

GENERAL NOTES

- 1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA
- 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.
- 3. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777
- AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK. 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.
- 5. SITE AREA: 8.024 Ac. ± 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
- 7. ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE
- 8. EXISTING TOPOGRAPHY REFLECTS FIELD SURVEY BY CENTURY ENGINEERING
- 9. COORDINATES AND BEARING ARE BASED UPON THE MD STATE PLAN SYSTEM (NAD '83).
- 10. EXISTING WATER AND SEWER SHOWN IS PUBLIC.
- 11. STORMWATER MANAGEMENT: QUANTITY AND QUALITY MANAGEMENT IS PROVIDED BY ON-SITE FACILITIES. THE FACILITIES CONSIST OF UNDERGROUND SAND FILTER FOR WATER QUALITY AND DRY POND FOR THE CPV VOLUME AND 10 YEAR STORM QUANTITY CONTROL.
- 12. ALL EXISTING WATER AND SEWER IS PER CONTRACT #'S: 653W, 24317 & 44-1829D. 13. NO EXISTING PUBLIC STORM DRAIN ON SITE.
- 14. ALL CURB RADII IS 5' UNLESS NOTED OTHERWISE. 15. UTILITY INFORMATION TAKEN FROM APPROVED FINAL CONSTRUCTION PLANS FOR DEVELOPMENT.CONTRACT NO. 44-1829-D, 44-3367-D,
- 16. ALL SIDEWALKS SHALL BE 5' WIDE EXCEPT WHERE DIMENSIONED
- 17. CONTRACTOR SHALL UTILIZE PVC FOR ALL SEWER HOUSE CONNECTIONS. CONTRACTOR SHALL UTILIZE D.I.P. (CL. 51) FOR WATER SERVICE CONNECTION. (FIRE & DOMESTIC)
- 18. USE HOWARD COUNTY TRENCH BEDDING CLASS "C" FOR STORM DRAINS.
- 19. PAVED AREAS INDICATED ARE PRIVATE EXCEPT AS NOTED. 20. PROJECT BACKGROUND: SEE DEPT. OF PLANNING & ZONING FILE NUMBERS:
- SDP-80-073, WP-04-073, F-04-107 21. 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
 MAX.) LANDING AT THE TOP AND BOTTOM OF ALL RAMPS AND BUILDING
- 22. ALL PROPOSED SITE UTILITIES ARE TO TERMINATE 5' FROM THE BUILDING. THE BUILDING PLUMBER SHALL CONNECT TO AND EXTEND THESE UTILITIES TO THE INSIDE OF THE BUILDING.
- 23. FOR GAS, TELEPHONE AND ELECTRIC ROUTING, SEE SEPARATE PLAN. 24. TOPOGRAPHY OBTAINED BY CENTURY ENGINEERING ON SEPTEMBER, 2003
- 25. "THE FOREST CONSERVATION OBLIGATION OF 1.49 ACRES OF REFORESTATION FOR THIS PROJECT HAS BEEN MET BY A FEE-IN-LIEU PAYMENT OF \$32,452.20 TO THE HO. CO. FOREST CONSERVATION FUND."
- 26. THE LANDSCAPE SURETY IS INCLUDED IN THE DEVELOPERS AGREEMENT. THE SURETY IS IN THE AMOUNT OF \$39,360.
- 27. LIGHTING FIXTURE DETAILS SHOWN ON SHEET 21 OF 24. 28. THIS PLAN IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION
- REGULATIONS.
- 29. ALL OUTDOOR LIGHTING ON THIS SITE SHALL COMPLY WITH THE REQUIREMENTS OF ZONING SECTION 134.
- 30. THE CONTRACTOR OR DEVELOPER SHALL CONTACT THE CONSTRUCTION INSPECTION DIVISION 24 HOURS IN ADVANCE OF COMMENCEMENT OF WORK AT (410)313-1880.
- 31. WP-04-073 APPROVED ON 1-6-04 FOR SUBDIVISION SECTIONS 16.144(a) AND (F) TO NOT BE REQUIRED TO SUBMIT SKETCH AND PRELIMINARY PLANS FOR A MAJOR (NON RESIDENTIAL) SUBDIVISION. CONDITIONS AS FOLLOWS:
 - 1. THE PROPOSED PARCELS SHALL HAVE SHARED VEHICULAR ACCESS AND PARKING AND A SHARED VEHICULAR ACCESS AND PARKING EASEMENT
 - INDICATED ON THE FUTURE FINAL PLAT FOR THE PROPERTY. 2. THE PROPOSED PARKING LOTS AND PARKING LOT ISLANDS SHALL COMPLY
 - WITH THE DESIGN REQUIREMENTS OF THE LANDSCAPE MANUAL. 3. A LOADING/UNLOADING FACILITY THAT COMPLIES WITH THE REQUIREMENTS OF ZONING REGULATIONS SECTION 133.F SHALL BE INDICATED FOR EACH BUILDING
 - ON THE FUTURE SITE DEVELOPMENT PLAN(S) FOR THE PROPOSED PARCELS. 4. COMPLIANCE WITH THE WITH THE ENCLOSED HEALTH DEPARTMENT AND DIVISION
- OF ENVIRONMENTAL AND COMMUNITY PLANNING COMMENTS IS REQUIRED. ALL PUBLIC ROAD IMPROVEMENTS, SIDEWALK AND STREET TREES ARE TO BE CONSTRUCTED AS PER CAPITAL PROJECT NO. J-4175 & B-3885.

FOR REVISION #30NLY

SHEET	INDEX
SHEET NUMBER	DRAWING TITLE
1	COVER SHEET
2	SITE PLAN
3	SITE UTILITY PLAN
4	SITE DETAILS
5	STORM DRAIN PROFILES
6	STORM DRAIN PROFILES
7	EROSION AND SEDIMENT CONTROL PLAN
8	EROSION AND SEDIMENT CONTROL NOTES & DETAILS
9	EROSION AND SEDIMENT CONTROL DETAILS
10	EROSION AND SEDIMENT CONTROL DETAILS
11	STORMWATER MANAGEMENT PLAN
12	STORMWATER MANAGEMENT NOTES AND DETAILS
13	STORMWATER MANAGEMENT DETAILS
14	STORMWATER MANAGEMENT DETAILS
15	STORMWATER MANAGEMENT PROFILES
16	STORMWATER MANAGEMENT PROFILES
17	STORMWATER VAULT DETAILS
18	VAULT DETAILS
19	VAULT DETAILS
20	DRAINAGE AREA MAP
21	BUILDING ELEVATIONS & OUTDOOR LIGHTING DETAIL
22	DEMOLITION PLAN
23	FINAL LANDSCAPING PLAN
24	FOREST STAND DELINEATION PLAN
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4/21/08 3 REVISE PARKING TABULATION; ADD							
χ	VETERINARIAN FACILITY TO BLOG. D						
Date	Revisian Description						
APPROVED: DEPARTMENT OF PLANNING AND ZONING CHIEF-DEVELOPMENT ENGINEERING DIVISION CHIEF-DIVISION OF LAND DEVELOPMENT DIRECTOR DATE 1/23/64 DATE DATE							
ANNAPOLIS JUNCTION BUSINESS PARK							

PARCELS A-D

TAX MAP 48 GRID 14 PARCEL 120 ELECTION DISTRICT No. 6

HOWARD COUNTY, MARYLAND

CENTURY ENGINEERING, INC.

CONSULTING ENGINEERS, PLANNERS, SURVEYORS 32 WEST ROAD TOWSON, MARYLAND 21204

(410) 823-8070

COVER SHEET

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