

# ALPHA RIDGE PARK

**CAPITAL PROJECT N - 3087**

**HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS**

**OWNER HOWARD COUNTY DEPARTMENT OF RECREATION & PARKS**

3300 North Ridge Road Suite 170, Ellicott City, MD 21043

## CERTIFICATIONS

### HOWARD COUNTY GOVERNMENT

APPROVED: Storm Drainage Systems and Roads  
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

*James J. [Signature]* 1/24/92  
DIRECTOR DATE

*William J. [Signature]* 1-24-92  
CHIEF, BUREAU OF ENGINEERING DATE

### SOIL CONSERVATION DISTRICT

"I/We certify that all development and construction will be done according to this plan, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."

*[Signature]* 1-24-92  
Howard County Department of Public Works Date

3450 Court House Drive, Ellicott City, MD (301) 922-2040

"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."

*John C. Batten* 4/22/89  
John C. Batten Date

8 North Church Street, Westminster, Md. 21157 (301) 876-3383

APPROVED: Howard County DEPT. of Planning and Zoning

*Joseph Batten* 1/27/92  
PLANNING DIRECTOR DATE

*Elmwood Helmuth* 1/27/92  
CHIEF, DIVISION OF COMMUNITY PLANNING & LAND DEVELOPMENT DATE

Reviewed for Howard S.C.D. and meets Technical Requirements.

*John C. Batten* 1/27/92  
Howard S.C.D. Date

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

*John C. Batten* 1/27/92  
Howard S.C.D. Date

APPROVED: Howard County Department of Recreation & Parks

DIRECTOR DATE

APPROVED: HOWARD COUNTY BUREAU OF FACILITIES

CHIEF *NA* DATE

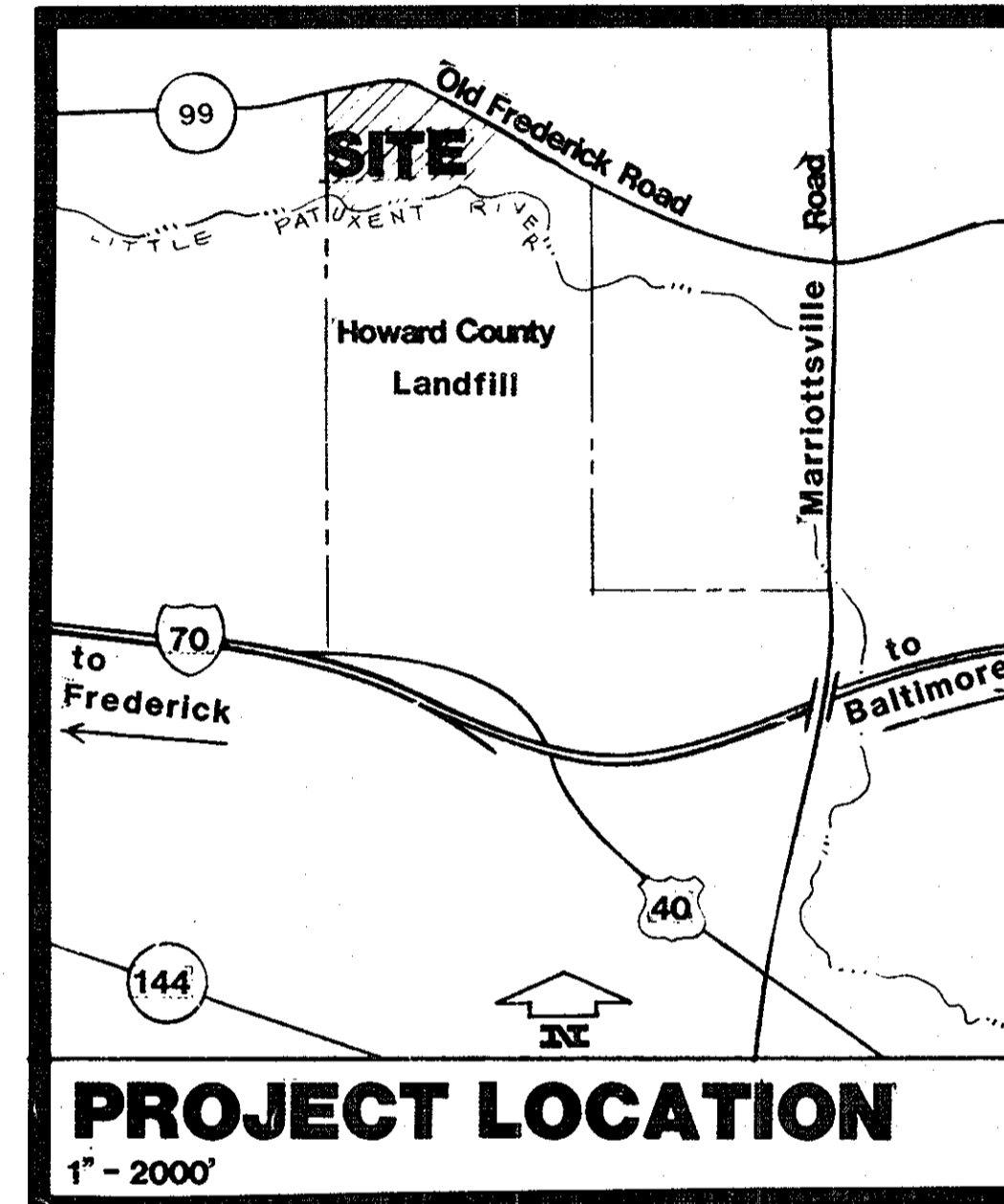
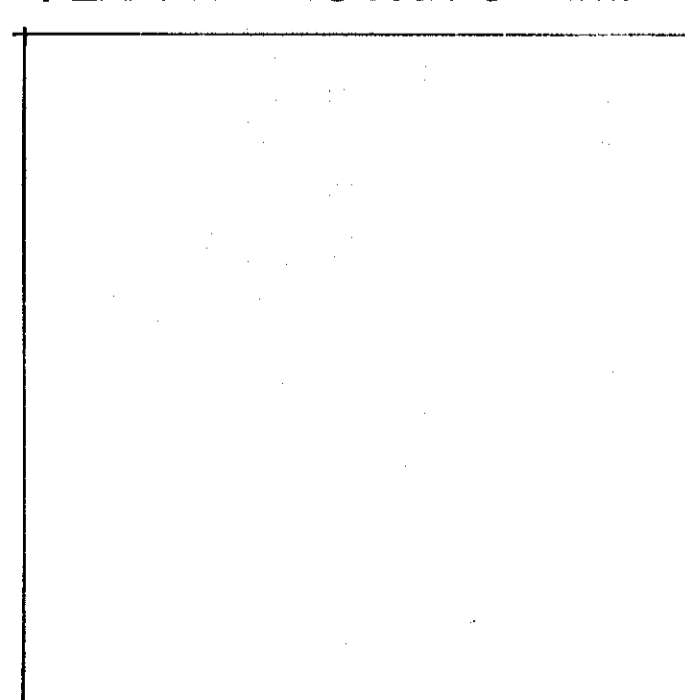
APPROVED: HOWARD COUNTY BUREAU OF HIGHWAYS

CHIEF *NA* DATE

APPROVED: HOWARD COUNTY ROADS BRIDGES STORM DRAINS DIVISION

CHIEF DATE

### PLAN APPROVAL STAMP



### SITE DATA

(PROJECT BACKGROUND)

#### SITE ADDRESS

11685 MD Route 99  
Marriottville, Maryland

#### SITE ANALYSIS

Area of Site	72.4 Acres
Area Disturbed	33.0 Acres
Existing Impervious	0.11 Acres
Proposed Impervious	4.37 Acres
Total Increased Impervious	4.26 Acres
Total Revegetated Area	28.5 Acres
Proposed Use	Recreation
No. of Parking Spaces	201
No. of Handicapped Parking Spaces	10

#### SITE DATA

Liber 847 Folio 606 -  
Tax Map #10  
Election District #3  
Census Tract 6030  
Lot # (None)  
Parcel #29  
Zoning - R

Date final plan approved: 1-27-92

### DESIGN CONSULTANT

**J. Christopher BATTEN, inc.**  
8 N. CHURCH STREET WESTMINSTER, MD. 21157  
301-876-3383

## INDEX OF SHEETS

### Title

T-1 Title Page & Drawing Index with Signature Blocks, Site Analysis, Location Map, General Notes

### Site Plans

- S-1 Existing Conditions - East
- S-2 Existing Conditions - West
- S-3 Sediment Control Plan
- S-4 Sediment Control Plan - East
- S-5 Sediment Control Plan - West
- S-6 Grading Plan - East
- S-7 Grading Plan - West
- S-8 Storm Drain Areas, Data, Details, Structure Schedule
- S-9 Storm Drain Profiles
- S-10 Road Profile
- S-11 Road Profile
- S-12 Road Profile
- S-13 Stormwater Management - Pond 1 Plan
- S-14 Stormwater Management - Pond 1 Profiles
- S-15 Stormwater Management - Pond 3 Plan
- S-16 Stormwater Management - Pond 3 Profiles & Details
- S-17 Stormwater Management - Ponds 1 & 3 Construction Specifications & Details
- S-18 Sediment Control Details
- S-19 Road Sections
- S-20 Site Details
- A-1 Road Layout Coordinates
- A-2 Walkway Layout - East
- A-3 Walkway Layout - West
- A-4 Layout & Locations
- A-5 Portable Toilet Shelters
- A-6 Baseball Fields
- A-7 Pavilions - Soccer Fields - Tot Lots
- A-8 Tennis Courts & Basketball Courts
- A-9 Entrance - Sign, Fence, & Gate
- A-10 Site Details

### GENERAL NOTES

1. All construction shall be in accordance with the latest standards and specifications of Howard County plus MSHA Standards and specifications if applicable.
2. The contractor shall notify the Department of Public Works (Bureau of Construction Inspection) at (301) 792-7372 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. Traffic control devices, markings, and signing shall be in accordance with the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD). All street and regulatory signs shall be in place prior to the placement of any asphalt.
5. All plan dimensions are to the face of curb unless otherwise noted.
6. Stormwater management control is provided by two dry ponds on-site.
7. Wetlands water quality certificate #89-WQ-0317 issued July 1989.
8. No traffic study required. State Highway access permit to be granted based on letter from John Contestabile (SHA) to Elmina Hilsenrath, Howard County, November 4, 1991.
9. Existing utilities located by topographic survey - referenced on Sheet S-1. "Existing Conditions".

## CONSTRUCTION PLANS

OCTOBER 24, 1991 SDP 90-18  
Original Submittal November 27, 1989 SDP 1 of 21  
Revised JANUARY 25, 1992

XXAL-92-001

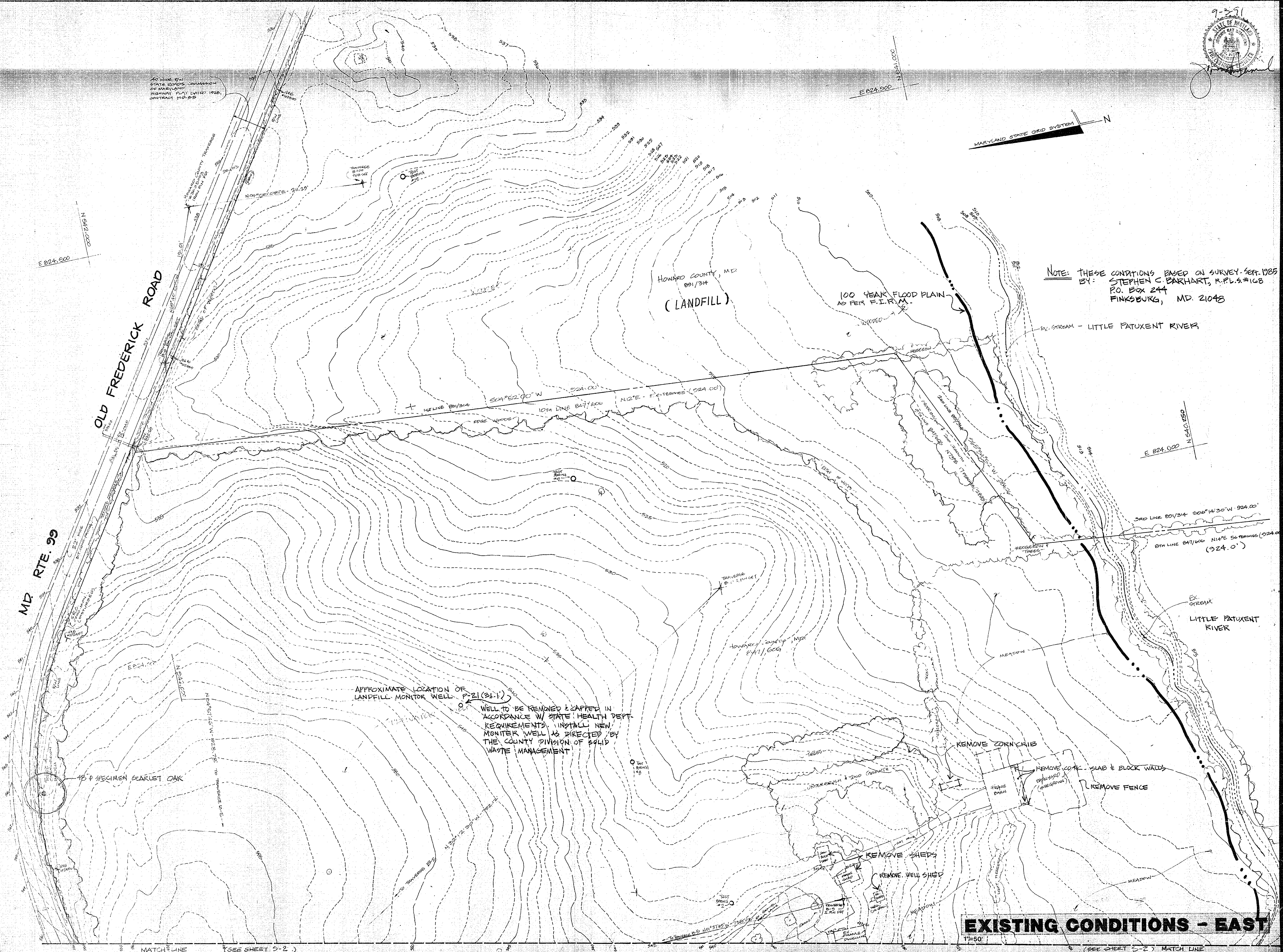
880

REVIEWED NO FACILITIES REQUIRED  
HOWARD COUNTY HEALTH DEPARTMENT  
James M. Bagwell, Jr. 1/24/92  
COLLEGE HEALTH OFFICER DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
DIRECTOR: James S. Reiter 1/27/92  
Emilia Helms 1/27/92  
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

APPROVED: FOR PRIVATE WATER AND NO SEWERAGE, FOR STORM DRAINAGE SYSTEMS AND PUBLIC ROADS  
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
DIRECTOR: James J. Lu 1/27/92  
James E. Rely 1/27/92  
CHIEF, BUREAU OF ENGINEERING DATE

NOTE: THESE CONDITIONS BASED ON SURVEY - SEPT. 1985  
BY: STEPHEN C. BARKHART, R.P.L.S.#168  
P.O. BOX 244  
FINKSBURG, MD. 21048



APPROXIMATE LOCATION OF LANDFILL MONITOR WELL P-21(21.1)  
WELL TO BE REMOVED & CAPPED IN ACCORDANCE W/ STATE HEALTH DEPT. REQUIREMENTS. INSTALL NEW MONITOR WELL AS DIRECTED BY THE COUNTY DIVISION OF SOLID WASTE MANAGEMENT

- REMOVE CORN CRIBS
- REMOVE 100'x100' SLAB & BLOCK WALLS
- REMOVE FENCE
- REMOVE SHEDS
- REMOVE WELL SHED

**EXISTING CONDITIONS - EAST**

**SITE DATA**  
OWNER: HOWARD COUNTY DEPT. OF PUBLIC WORKS  
PROPOSED IMPROVEMENT: PARK  
DEED REF. LIBER 847, FOLIO 606  
TAX MAP #10, PARC:1 #23  
ELECTION DISTRICT #3  
CENSUS TRAC 6030  
WATER: ...  
SEWER: NONE

JANUARY 24, 1992

SHEET  
**S-1**  
of 20

J. CHRISTOPHER BATTEN, INC.  
Land Planning & Design Consultant  
8 North Church Street  
Westminster, Maryland 21157  
301-876-3383

REVIEWED NO FACILITIES REQUIRED  
 HOWARD COUNTY HEALTH DEPARTMENT  
 JAMES M. BOND... 1/24/92  
 COUNTY HEALTH OFFICER DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 JAMES BATTEN 1/27/92  
 DIRECTOR DATE  
 EMMA HILMANN 1/27/92  
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

APPROVED: FOR PRIVATE WATER AND NO SEWERAGE, FOR STORM DRAINAGE SYSTEMS  
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 JAMES P. ... 1/24/92  
 DIRECTOR DATE  
 ... 1-24-92  
 CHIEF, BUREAU OF ENGINEERING DATE

APPROVAL STAMP

**SITE DATA**  
 OWNER: HOWARD COUNTY  
 DEPT. OF PUBLIC WORKS  
 PROPOSED IMPROVEMENT: PARK  
 DEED REF. LIBER 847, FOLIO 606  
 TAX MAP #10, PARCEL #23  
 ELECTION DISTRICT #3  
 CENSUS TRACT 6030  
 WATER:  
 SEWER: NONE

JANUARY 24, 1992

**J. CHRISTOPHER BATTEN, INC.**  
 Land Planning & Design Consultant  
 8 North Church Street  
 Westminster, Maryland 21157  
 301-876-3383

SHEET  
**S-2**  
 of 20  
 SDP 3 of 21



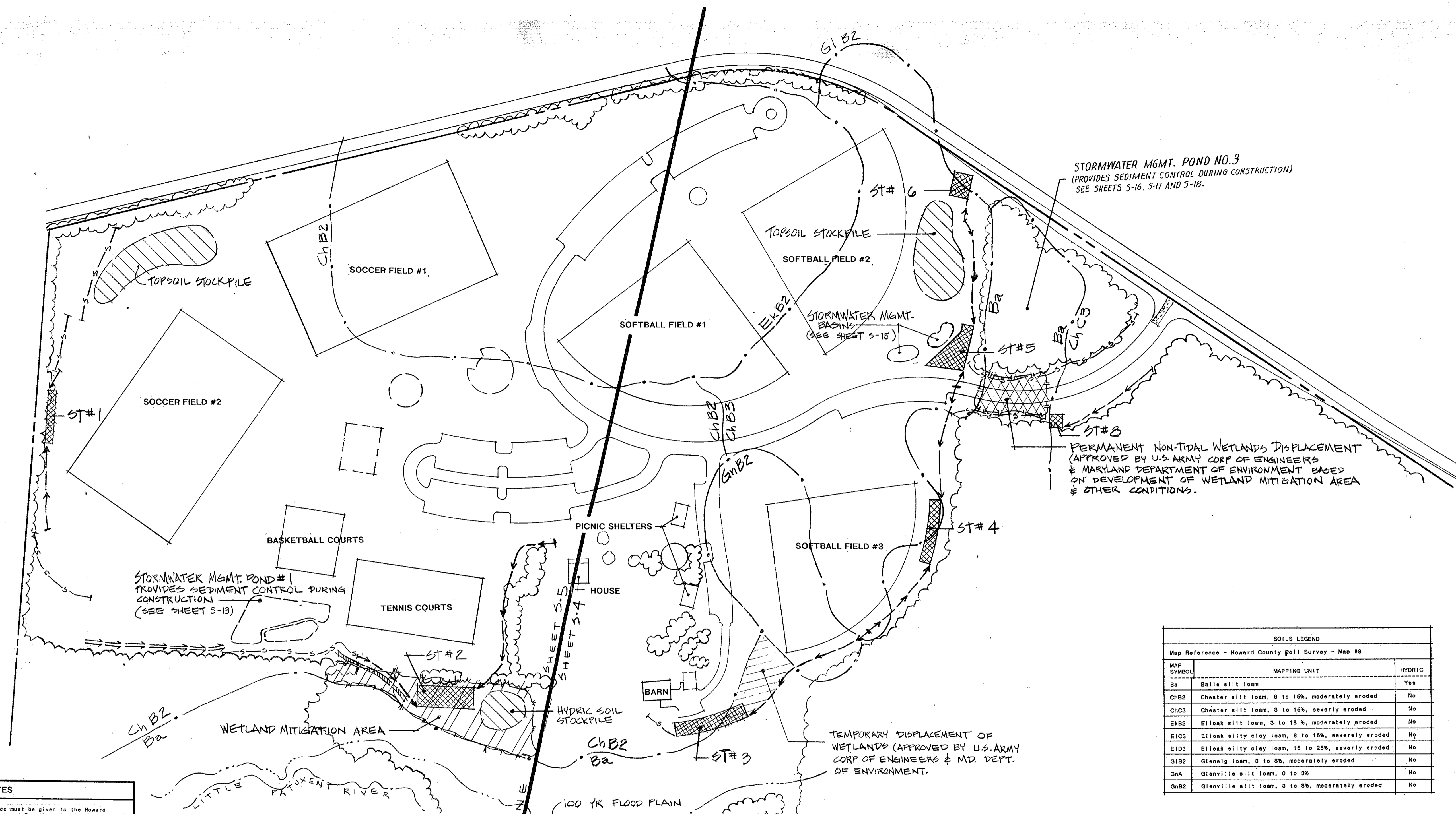
880

REVIEWED NO FACILITIES REQUIRED  
HOWARD COUNTY HEALTH DEPARTMENT  
*James M. ...* 1/24/92  
COUNTY HEALTH OFFICER DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*James S. ...* 1/27/92  
DIRECTOR DATE  
*Elmua ...* 1/27/92  
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

APPROVED: FOR PRIVATE WATER AND NO SEWERAGE, FOR STORM DRAINAGE SYSTEMS AND PUBLIC ROADS  
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*James ...* 1/24/92  
DIRECTOR DATE  
*James ...* 1/24/92  
CHIEF, BUREAU OF ENGINEERING DATE

APPROVAL STAMP



STORMWATER MGMT. POND NO.3  
(PROVIDES SEDIMENT CONTROL DURING CONSTRUCTION)  
SEE SHEETS S-16, S-17 AND S-18.

PERMANENT NON-TIDAL WETLANDS DISPLACEMENT  
(APPROVED BY U.S. ARMY CORP OF ENGINEERS  
& MARYLAND DEPARTMENT OF ENVIRONMENT BASED  
ON DEVELOPMENT OF WETLAND MITIGATION AREA  
& OTHER CONDITIONS.)

TEMPORARY DISPLACEMENT OF  
WETLANDS (APPROVED BY U.S. ARMY  
CORP OF ENGINEERS & MD DEPT.  
OF ENVIRONMENT.)

SOILS LEGEND		
Map Reference - Howard County Soil Survey - Map #8		
MAP SYMBOL	MAPPING UNIT	HYDRIC
Ba	Belle silt loam	Yes
ChB2	Chester silt loam, 8 to 15%, moderately eroded	No
ChC3	Chester silt loam, 8 to 15%, severely eroded	No
EK2	Elloak silt loam, 3 to 18 %, moderately eroded	No
EIC3	Elloak silty clay loam, 8 to 15%, severely eroded	No
EID3	Elloak silty clay loam, 16 to 25%, severely eroded	No
G1B2	Glennig loam, 9 to 8%, moderately eroded	No
GnA	Glennville silt loam, 0 to 3%	No
GnB2	Glennville silt loam, 3 to 8%, moderately eroded	No

- SEDIMENT CONTROL NOTES**
- A minimum of 24 hours notice must be given to the Howard County Office of Inspections and Permits prior to the start of any construction (1992-2437).
  - All vegetative and structural practices are to be installed according to this plan and are to be in conformance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
  - Following initial soil disturbance or redistribution, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes, and all slopes greater than 3:1, b) 14 days for all other disturbed or graded areas on the project site.
  - All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 12, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
  - All disturbed areas must be stabilized within the time period specified above in accordance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seedings (Sec. 51), sod (Sec. 54), temporary seeding (Sec. 50), and mulching (Sec. 52). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
  - All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
  - Site Analysis:  
Total Area of Site: 72.4 acres  
Area Disturbed: 33.0 acres  
Area to be roofed or paved (ultimately): 4.37 acres  
Area to be vegetatively stabilized: 28.5 acres  
Total Cut: 96,000 C.Y. ±  
Total Fill: 87,100 C.Y. ±  
Excess soil (approx. 9,000 C.Y.) to be hauled to landfill for cover material.
  - 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 controls must be provided if deemed necessary by the Howard County DPW Sediment Control Inspector.
  - 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.

**CERTIFICATION**

"I/We certify that all development and construction will be done according to this plan, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Natural Resources approved training course for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."

*John C. Batten* 1/27/92  
Howard County Department of Public Works Date  
3450 Court House Drive, Ellicott City, MD (301) 922-2040

"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."

*John C. Batten* 1/27/92  
John C. Batten, Landscape Architect Date  
8 North Church Street, Westminster, MD (301) 876-3383

Approved for **HOWARD** S.C.D.  
in accordance with the Technical Requirements  
*James M. ...* 1/27/92  
U.S. Soil Conservation Service Date

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

*John C. Batten* 1/27/92  
Howard S.C.D. Date

**SITE DATA**

OWNER: HOWARD COUNTY  
DEPT. OF PUBLIC WORKS

PROPOSED IMPROVEMENT: PARK

DEED REF. LIBER 847, FOLIO 606

TAX MAP #10, PARCEL #23

ELECTION DISTRICT: #3

CENSUS TRACT 6030

WATER: 1

SEWER: NONE

JANUARY 24, 1992

**J. CHRISTOPHER BATTEN, INC.**  
Land Planning & Design Consultant

8 North Church Street  
Westminster, Maryland 21157  
301-876-3383

SHEET  
**S-3**  
of 20

SDP # 90-18

**SEDIMENT CONTROL PLAN**

1"=100'

0880

REVIEWED NO FACILITIES REQUIRED  
 HOWARD COUNTY HEALTH DEPARTMENT

James M. Boyd, Jr. 1/24/92  
 COUNTY HEALTH OFFICER DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

James S. Coates 1/27/92  
 DIRECTOR DATE

Thomas H. Holm 1/27/92  
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

APPROVED: FOR PRIVATE WATER AND NO SEWERAGE, FOR STORM DRAINAGE SYSTEMS AND PUBLIC ROADS  
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

James J. Lu 1/24/92  
 DIRECTOR DATE

William S. Gray 1-24-92  
 CHIEF, BUREAU OF ENGINEERING DATE

APPROVAL STAMP

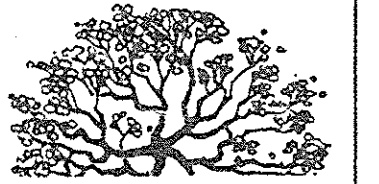
**SITE DATA**

OWNER: HOWARD COUNTY  
 DEPT. OF PUBLIC WORKS

PROPOSED IMPROVEMENT: PARK  
 DEED REF. LIBER 847, FOLIO 606  
 TAX MAP #10, PARCEL #23  
 ELECTION DISTRICT #3  
 CENSUS TRACT 6030  
 WATER: NONE  
 SEWER: NONE

JANUARY 24, 1992

REVISED AUG. 24, 1992  
 (ADD WETLAND MITIGATION AND ARCHEOLOGIC AREAS)



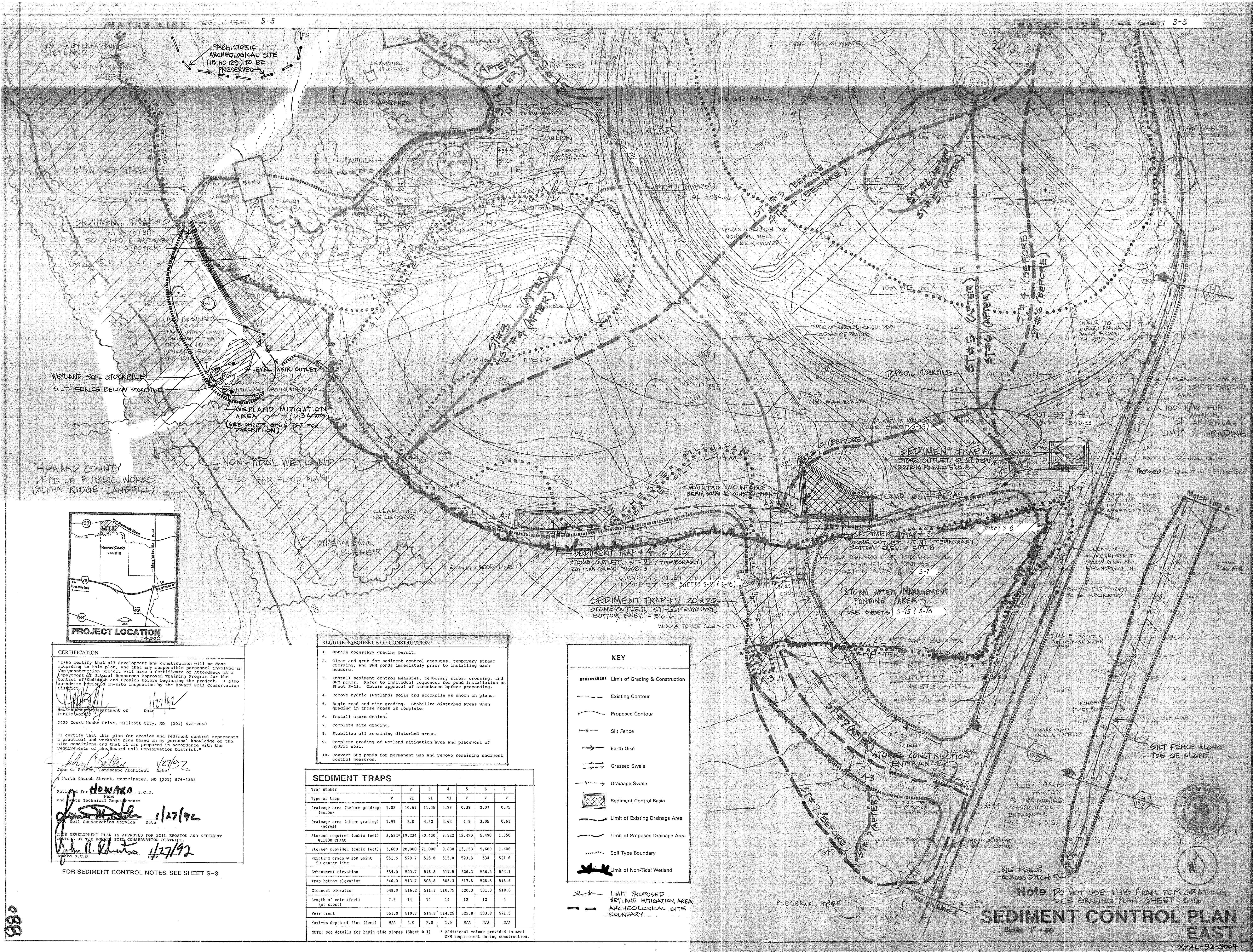
SHEET

**S-4**

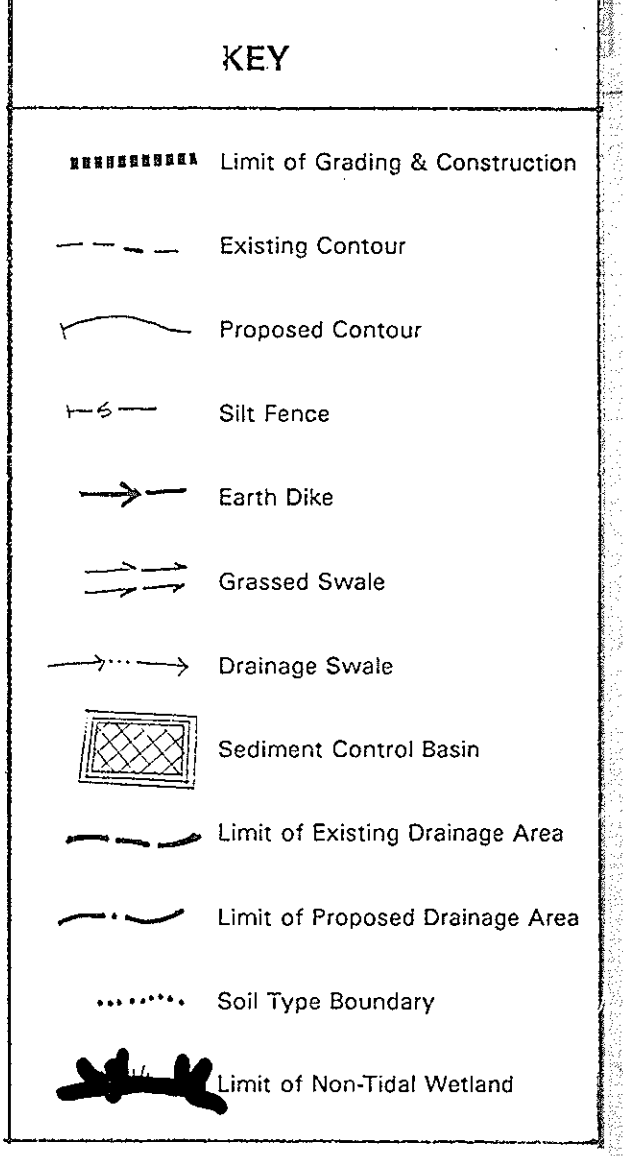
8 North Church Street  
 Westminster, Maryland 21157  
 301-876-3353

of 20

SDP #90-18



- REQUIRED SEQUENCE OF CONSTRUCTION**
1. Obtain necessary grading permit.
  2. Clear and grub for sediment control measures, temporary stream crossing, and SWM ponds immediately prior to installing each measure.
  3. Install sediment control measures, temporary stream crossing, and SWM ponds. Refer to individual sequences for pond installation on Sheet S-2.1. Obtain approval of structures before proceeding.
  4. Remove hydric (wetland) soils and stockpile as shown on plans.
  5. Begin road and site grading. Stabilize disturbed areas when grading in those areas is complete.
  6. Install storm drains.
  7. Complete site grading.
  8. Stabilize all remaining disturbed areas.
  9. Complete grading of wetland mitigation area and placement of hydric soil.
  10. Convert SWM ponds for permanent use and remove remaining sediment control measures.



**SEDIMENT TRAPS**

Trap number	1	2	3	4	5	6	7
Type of trap	V	VI	VI	VI	V	V	V
Drainage area (before grading) (acres)	1.08	10.69	11.35	5.29	0.39	2.07	0.75
Drainage area (after grading) (acres)	1.99	2.0	4.32	2.62	6.9	3.05	0.61
Storage required (cubic feet) @ 1800 CF/AC	3,582	19,234	20,430	9,522	12,420	5,490	1,350
Storage provided (cubic feet)	3,600	20,000	21,000	9,600	13,150	5,600	1,400
Existing grade @ low point ED center line	551.5	520.7	515.8	515.0	523.8	534	521.6
Embankment elevation	554.0	523.7	518.8	517.5	526.3	536.5	524.1
Trap bottom elevation	546.0	513.7	508.8	508.3	517.8	528.8	516.6
Cleanout elevation	548.0	516.2	511.3	510.75	520.3	531.3	518.6
Length of weir (feet) (or crest)	7.5	14	14	14	12	12	4
Weir crest	551.0	519.7	514.8	514.25	522.8	533.8	521.5
Maximum depth of flow (feet)	N/A	2.0	2.0	1.5	N/A	N/A	N/A

NOTE: See details for basin side slopes (Sheet D-1) \* Additional volume provided to meet SWM requirement during construction.

**CERTIFICATION**

"I/We certify that all development and construction will be done according to this plan, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."

Howard County Department of Public Works  
 3450 Court House Drive, Ellicott City, MD (301) 922-2040

"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."

John C. Batten, Landscape Architect  
 8 North Church Street, Westminster, MD (301) 876-3383

Revised for **Howard** S.C.D.  
 and its Technical Requirements  
 1/27/92

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
 1/27/92

FOR SEDIMENT CONTROL NOTES, SEE SHEET S-3

**SEDIMENT CONTROL PLAN EAST**  
 Scale 1" = 50'

XXAL-92-5004

SEDIMENT TRAP NO. 1  
10'x90' STONE OUTLET (ST-XI)  
BOTTOM EL. 546.00  
(TEMPORARY)

- SEQUENCE OF CONSTRUCTION**
1. Obtain necessary grading permit.
  2. Clear & grub for sediment control measures immediately prior to installing each measure.
  3. Install sediment control measures. Obtain approval from Howard County Sediment Control Inspector before proceeding.
  4. Abandon / remove 15" CMP and inlet as shown on plan.
  5. Mass grade the site as shown on plan. Stabilize disturbed areas upon completion.
  6. Install concrete rink and sidewalks.
  7. Fine grade and stabilize all disturbed areas.
  8. With the approval of the Howard County Sediment Control Inspector before proceeding, remove sediment control measures and stabilize all remaining disturbed areas.

SDP #90-18  
**ALPHA RIDGE PARK**

REVIEWED NO FACILITIES REQUIRED  
HOWARD COUNTY HEALTH DEPARTMENT

James M. Boydles, Sr. 1/24/92  
COUNTY HEALTH OFFICER DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
James R. Scott 1/27/92  
DIRECTOR DATE


Emma Holmquist 1/27/92  
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

APPROVED: FOR PRIVATE WATER AND NO SEWERAGE, FOR STORM DRAINAGE SYSTEMS AND PUBLIC ROADS  
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

James M. Boydles, Sr. 1/24/92  
DIRECTOR DATE

James M. Boydles, Sr. 1/24/92  
CHIEF, BUREAU OF ENGINEERING DATE

THIS SEAL CERTIFIES THE REVISION DATED 5/17/00 ONLY



RR&K, LLP PH410 728 2900

FOR SEDIMENT CONTROL NOTES, SEE SHEET S-3

**TEMPORARY SEEDING**

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

**SEEDING PREPARATION:** Loosen upper three inches of soil by raking, disking, or other acceptable means before seeding.

**SOIL AMENDMENTS:** Apply 600 lbs. per acre 10-10-10 fertilizer (14 lbs/1000 sq. ft.).

**SEEDING:** For the periods March 1 thru April 30, and August 15 thru November 15, seed with 2-1/2 bushels/acre of annual ryegrass (3.2 lbs./1000 sq. ft.). For the period May 1 thru August 14, seed with 3 lbs./acre of weeping lovegrass (0.7 lbs./1000 sq. ft.). For the period November 16 thru February 28, protect site by applying 1 ton/acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

**MULCHING:** Apply 1-1/2 to 2 tons per acre (70 to 90 lbs./1000 sq. ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using switch anchoring tool or 210 gal/acre (5 gal/1000 sq. ft.) of emulsified asphalt on flat areas. On slopes 3 ft. or higher, use 348 gal/acre (8 gal/1000 sq. ft.) for anchoring.

Refer to the 1981 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

**PERMANENT SEEDING**

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

**SEEDING PREPARATION:** Loosen upper three inches of soil by raking, disking, or other acceptable means before seeding.

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

**SEEDING:** For the periods March 1 thru April 30, and August 1 thru October 15, seed with 163 lbs./acre Tall Fescue (Pebel 75, Round Dog, Falcon 83-78, or Shannon 45-27), 30 lbs./acre Kentucky Bluegrass (Manly), 20 lbs./acre annual Ryegrass (Pebel 75) and 10 lbs./acre (1) 5 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 31 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 switch anchoring tool or 210 gallons/acre (5 gal/1000 sq. ft.) of emulsified asphalt on flat areas. On slopes 3 feet or higher, use 348 gallons/acre (8 gal/1000 sq. ft.) for anchoring.

**MAINTENANCE:** Inspect all seeded areas and make needed repairs, replacements, and reseedings.

APPROVAL STAMP

REVISION 5/17/00  
SCD J. Christopher Batten 5/17/00  
NRC: J. Christopher Batten 5/17/00  
Professional Review

**SITE DATA**

OWNER: HOWARD COUNTY  
DEPT. OF PUBLIC WORKS

PROPOSED IMPROVEMENT: PARK

DEED REF. LIBER 847, FOLIO 606

TAX MAP #10, PARCEL #23

ELECTION DISTRICT #3

CENSUS TRACT 6830

WATER: NONE

SEWER: NONE

JANUARY 24, 1992

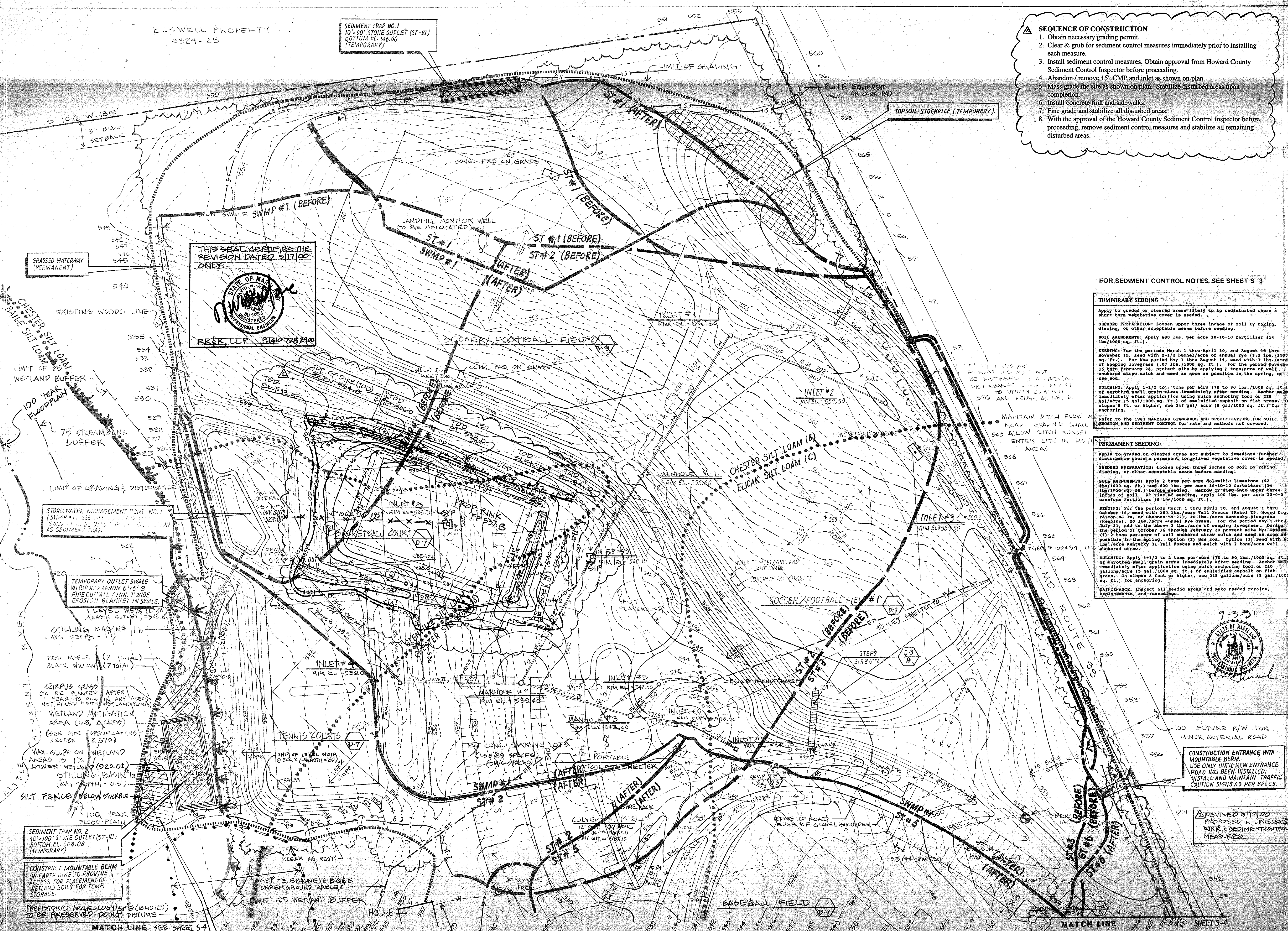
REVISED 8/25/92  
WETLAND MITIGATION AREA  
REVISED TO AVOID  
ARCHAEOLOGICAL SITE

J. CHRISTOPHER BATTEN, INC.  
Land Planning & Design Consultant

8 North Church Street  
Westminster, Maryland 21157  
301-876-3383

SHEET  
**S-5**  
of 20

SDP # 90-18  
SDP 6 of 21



Note DO NOT USE THIS PLAN FOR GRADING  
SEE GRADING PLAN - SHEET S-7

**SEDIMENT CONTROL PLAN - WEST**

Scale 1" = 50'

REVIEWED NO FACILITIES REQUIRED

HOWARD COUNTY HEALTH DEPARTMENT  
James M. ... 1/24/92

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
James B. ... 1/27/92

APPROVED: BUREAU OF COMMUNITY PLANNING AND LAND DEVELOPMENT  
James H. ... 1/27/92

APPROVED: FOR PRIVATE WATER AND NO GENERATE, FOR STORM DRAINAGE SYSTEMS AND PUBLIC DRAIN  
James G. ... 1/24/92

APPROVED: BUREAU OF ENGINEERING  
James G. ... 1/24/92

APPROVAL STAMP

SITE DATA

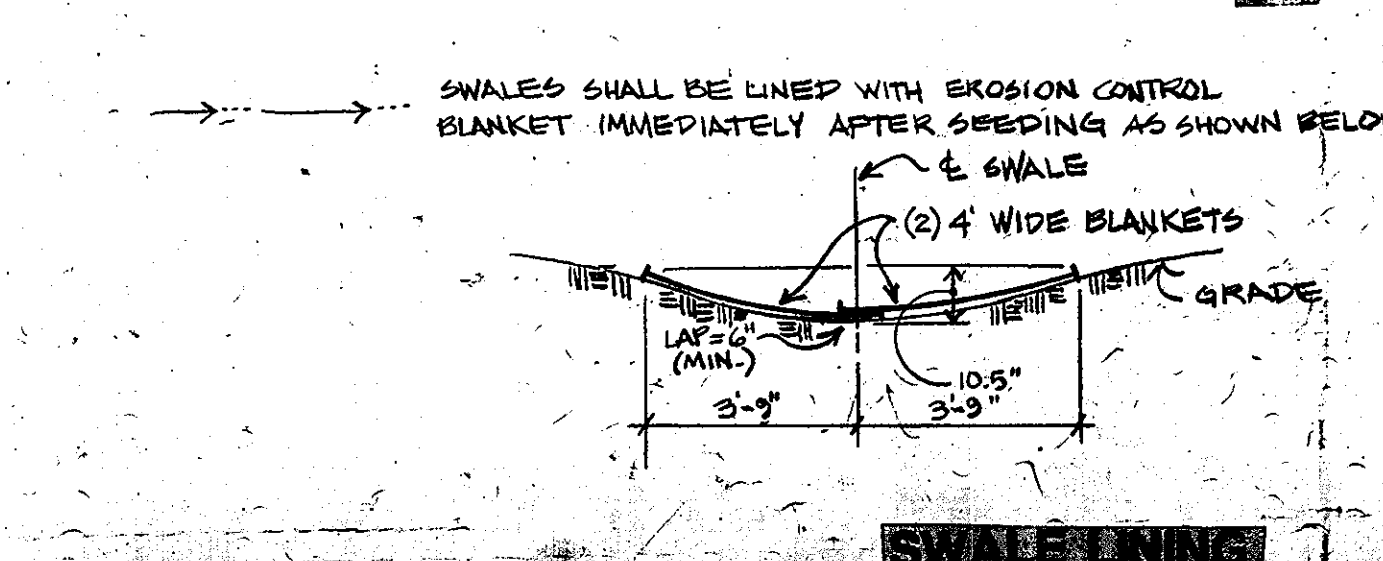
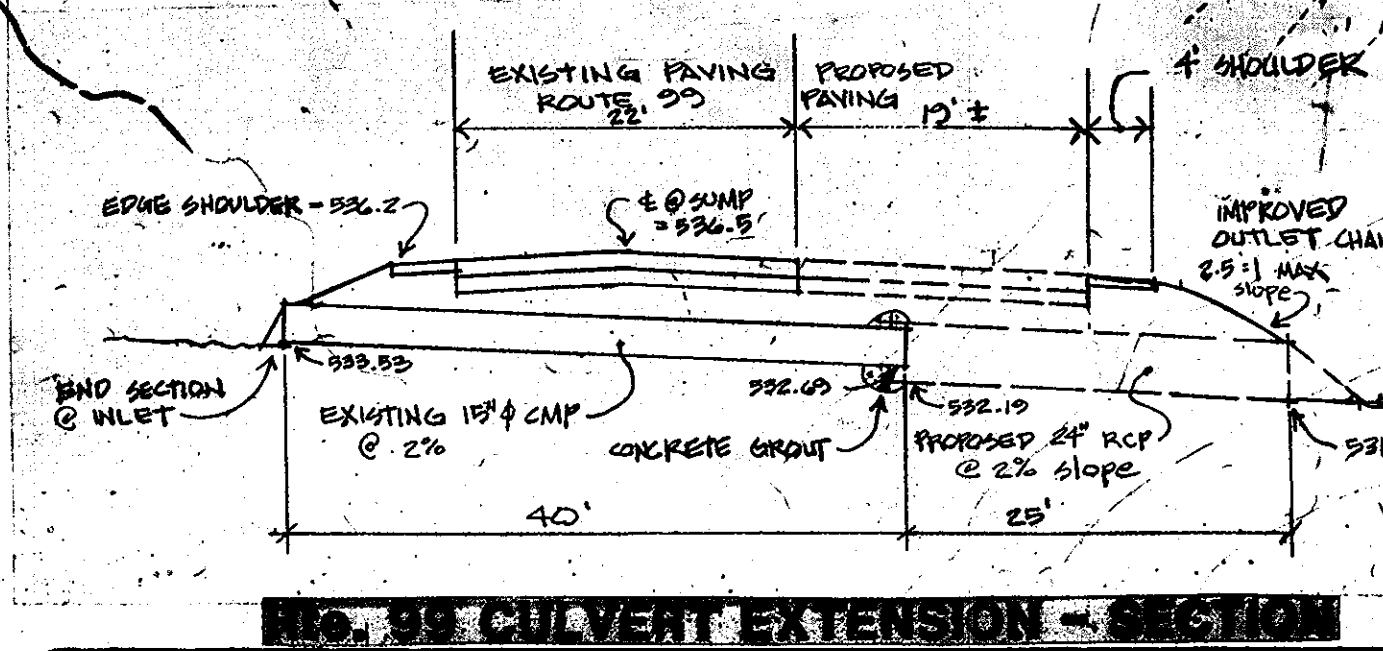
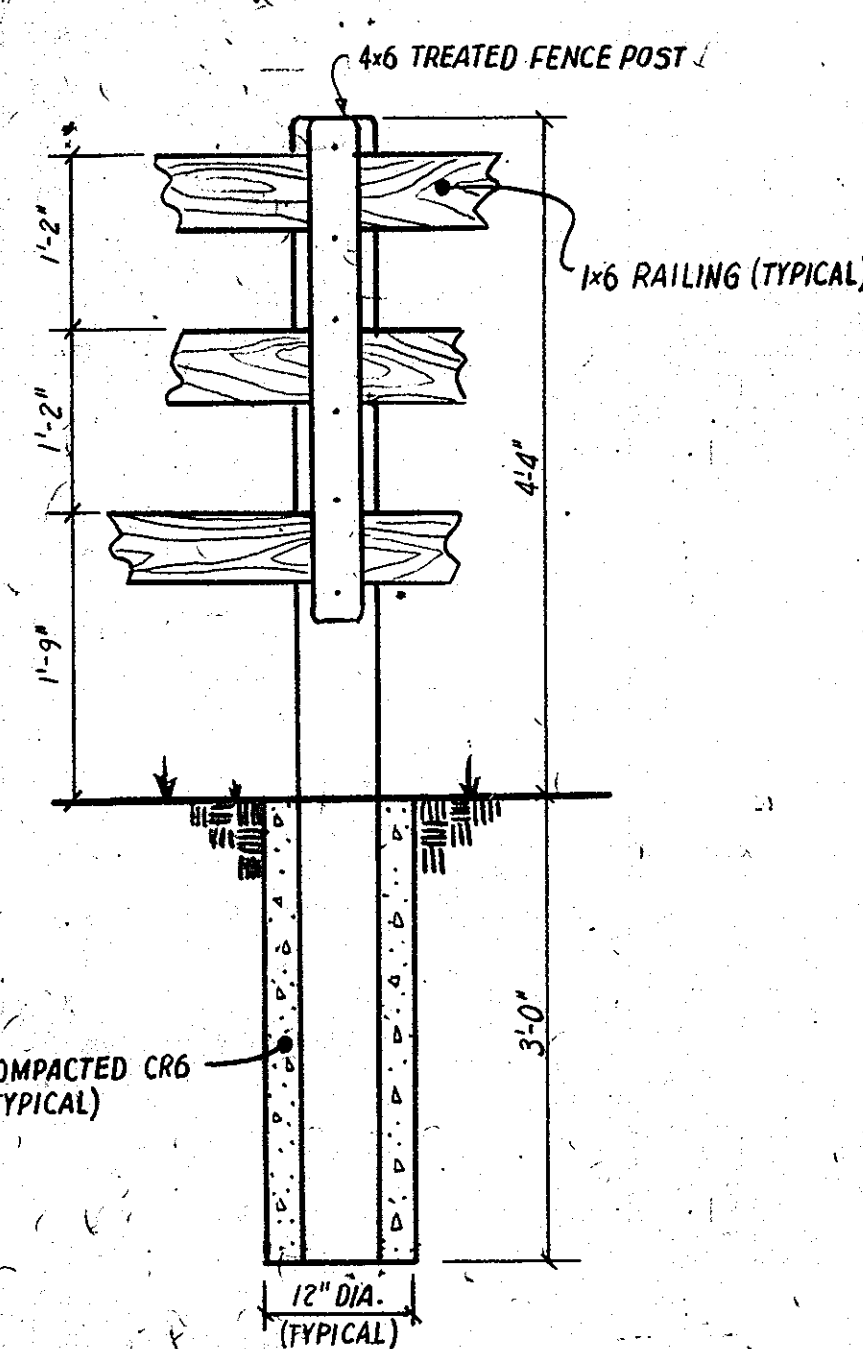
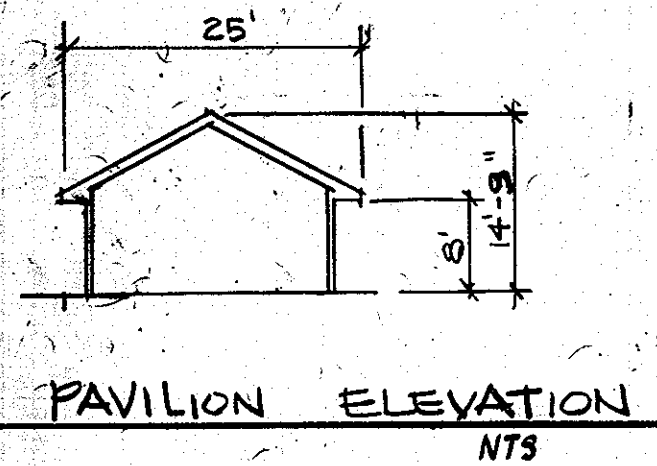
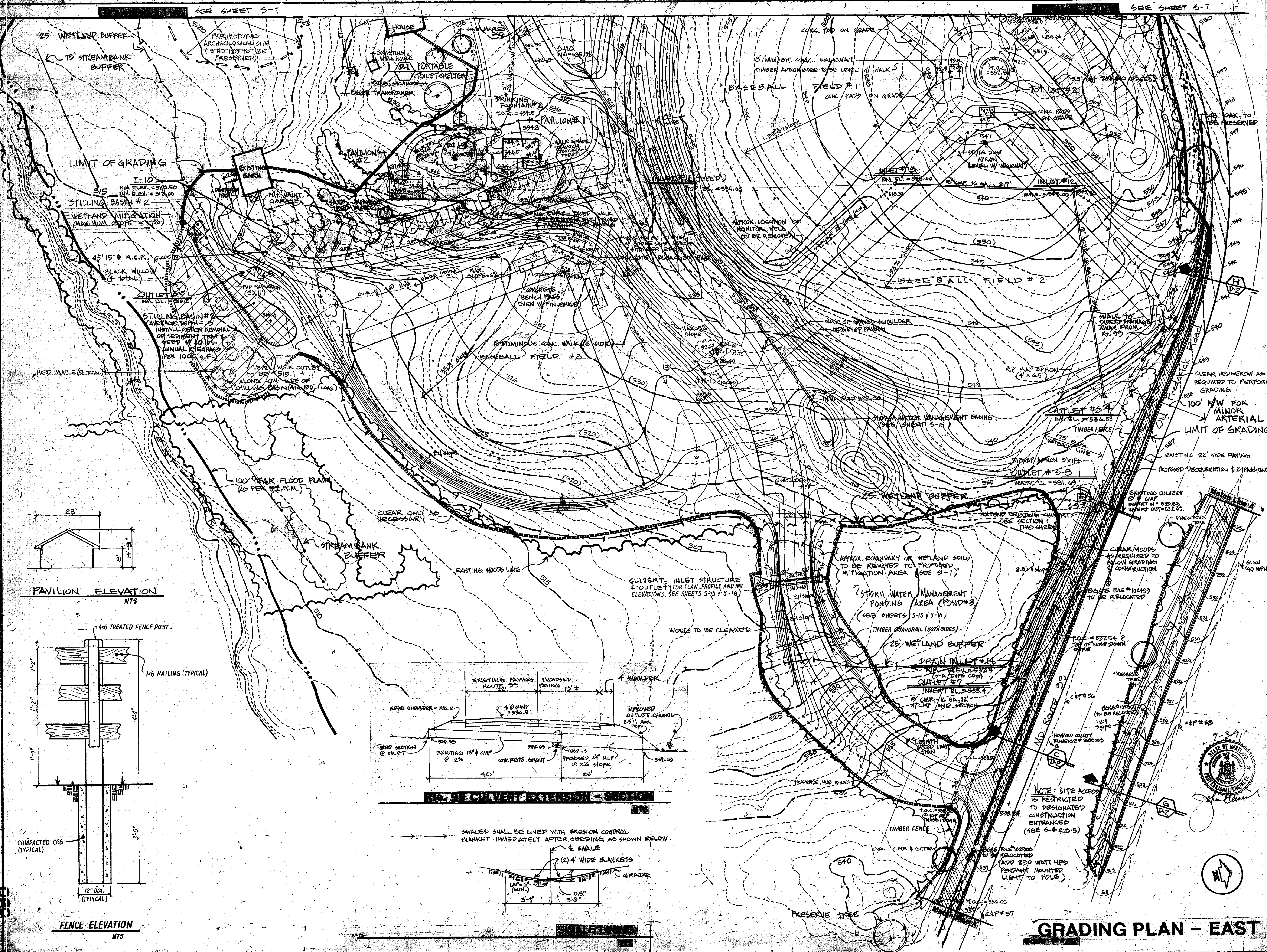
OWNER: HOWARD COUNTY DEPT. OF PUBLIC WORKS  
PROPOSED IMPROVEMENT: PARK  
DEED REF. LIBER 847, FOLIO 606  
TAX MAP #10, PARCEL #23  
ELECTION DISTRICT #3  
CENSUS TRACT 6030  
WATER: NONE  
SEWER: NONE

JANUARY 24, 1992

REVISED AUG. 25, 1992  
ADDED WETLAND MITIGATION AREA & ARCHAEOLOGICAL SITE

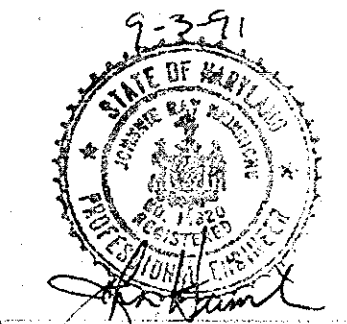
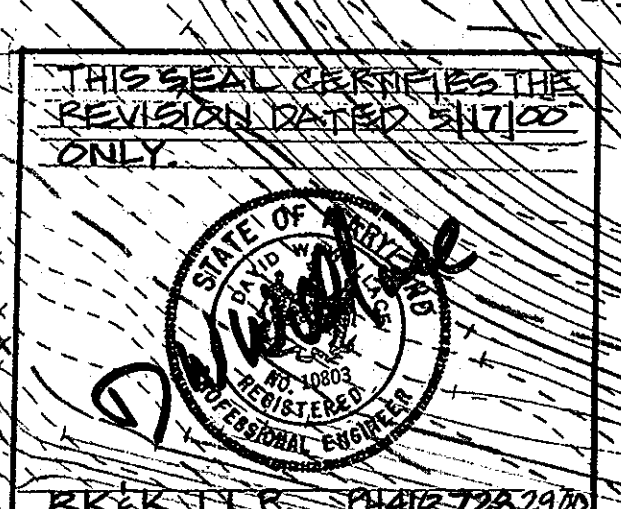
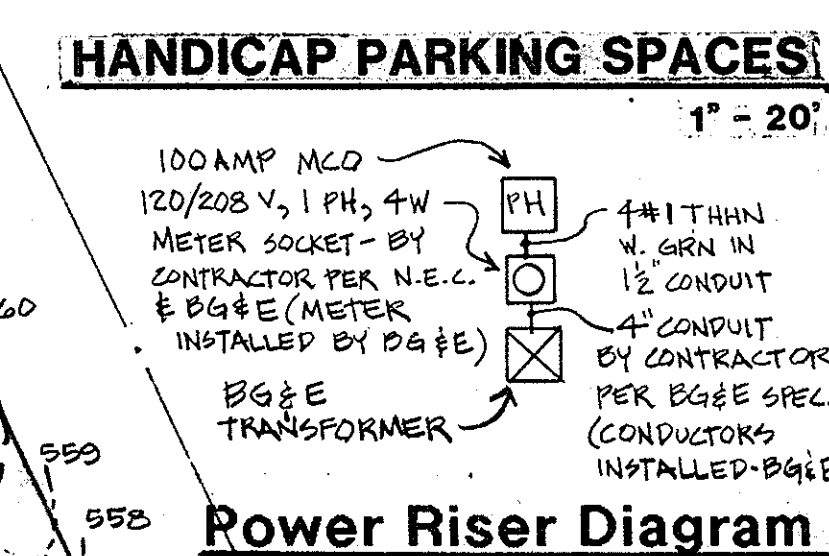
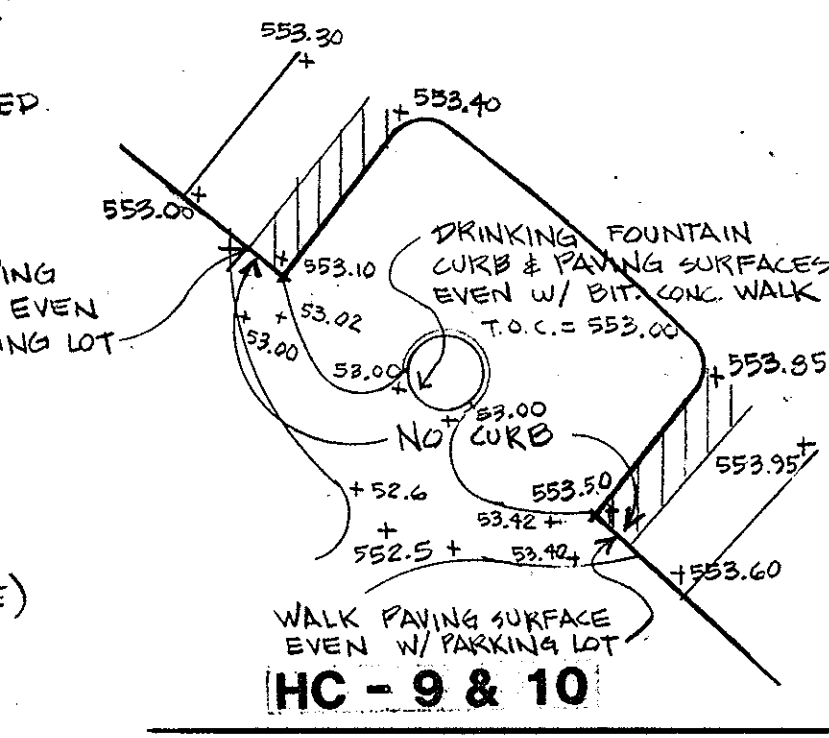
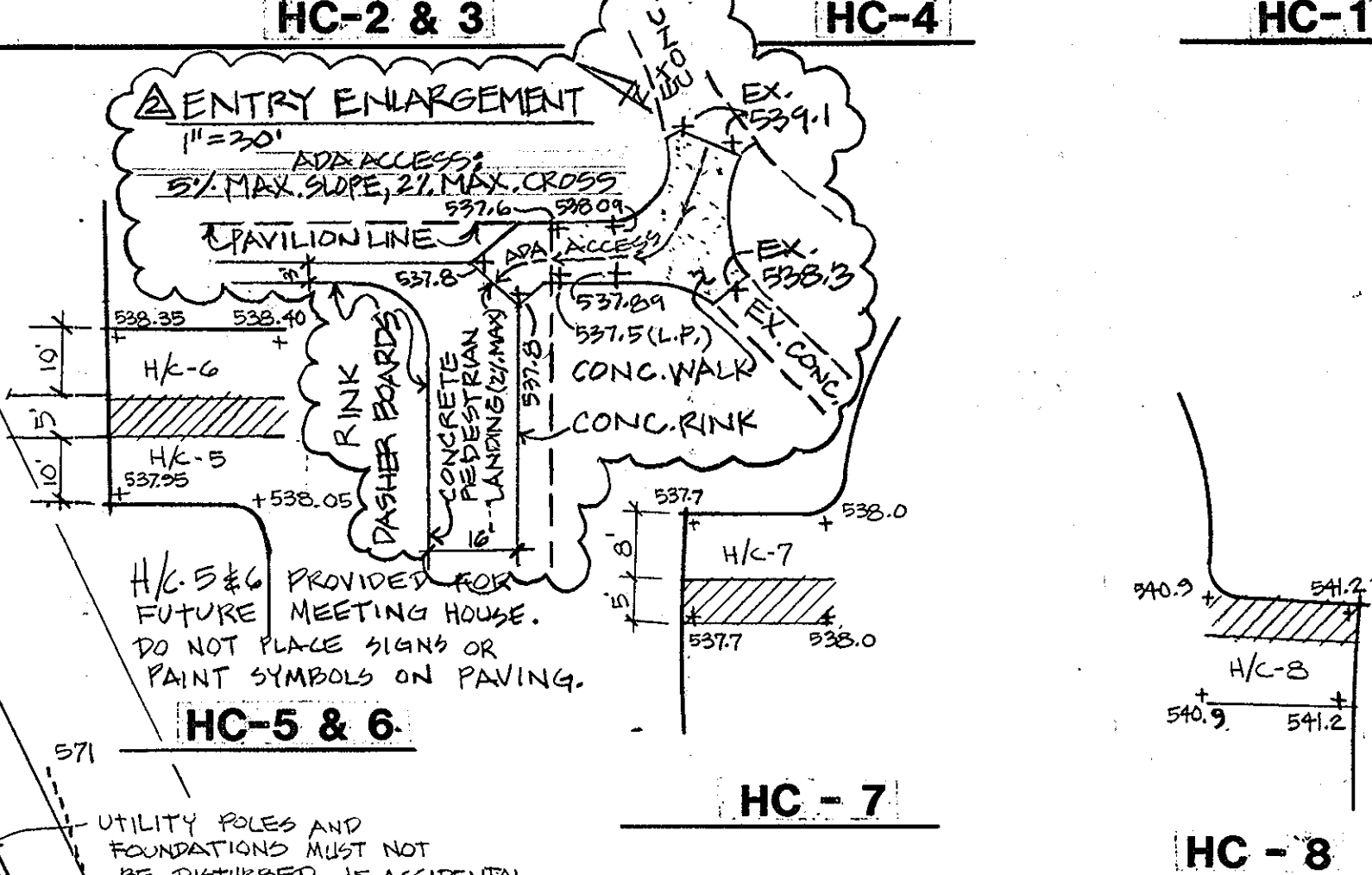
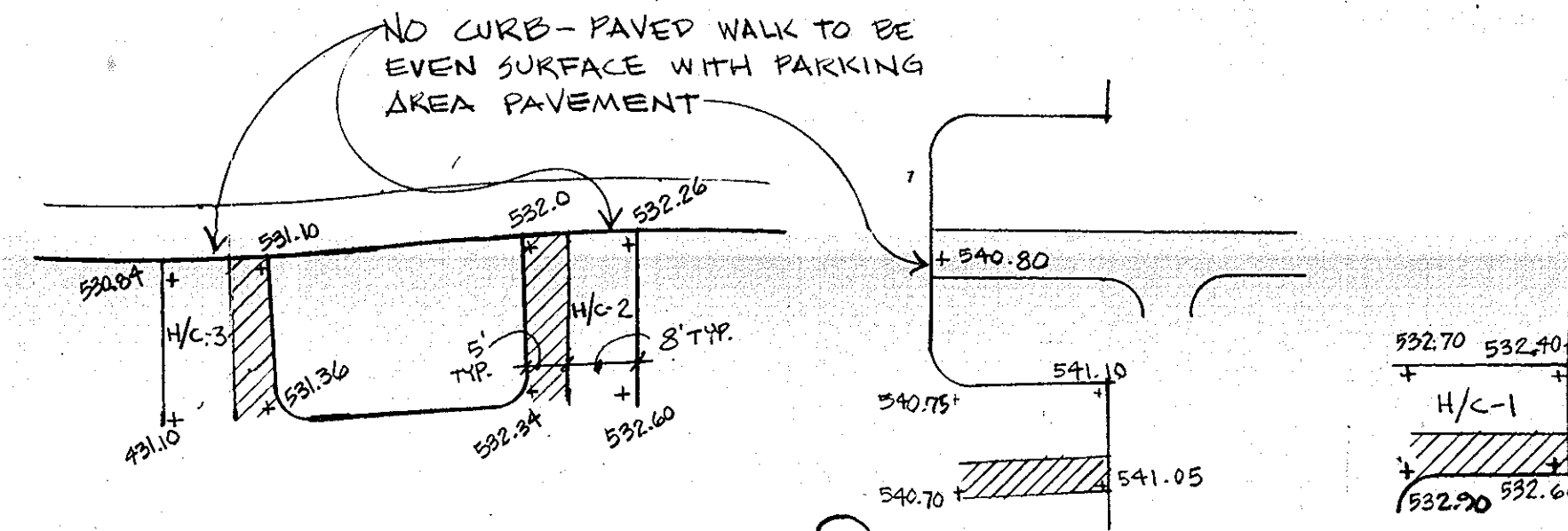
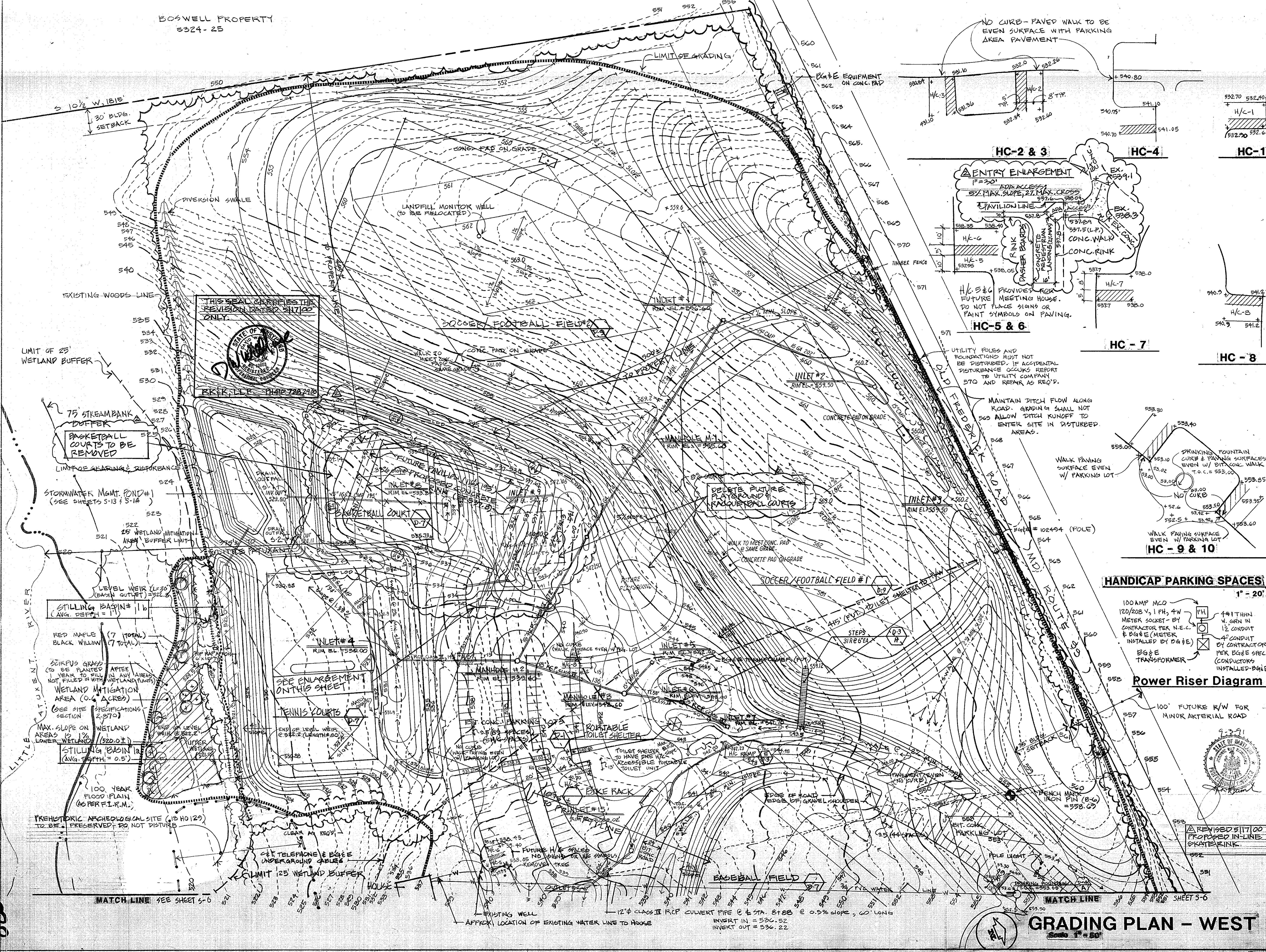
J. CHRISTOPHER BATTEN, INC.  
Land Planning & Design Consultant  
2 North Church Street  
Westminster, Maryland 21157  
301-976-3383

SHEET  
S-6  
of 20  
SDP #90-18



GRADING PLAN - EAST





APPROVED NO FACILITIES REQUIRED  
HOWARD COUNTY HEALTH DEPARTMENT  
Jorge M. Rodriguez 1/24/92  
DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
James Smith 1/27/92  
DATE  
Emma Holmatt 1/27/92  
DATE  
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT

APPROVED: FOR PRIVATE WATER AND NO SEWERAGE, FOR STORM DRAINAGE SYSTEMS AND PUBLIC ROADS  
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
James Smith 1/24/92  
DATE  
Bryan Gray 1/24/92  
DATE  
CHIEF, BUREAU OF ENGINEERING

APPROVAL STAMP

APPROVED FOR REVISION  
SCD 5/1/92  
NRCS 5/1/92  
Technical Review

**SITE DATA**

OWNER: HOWARD COUNTY  
DEPT. OF PUBLIC WORKS

PROPOSED IMPROVEMENT: PARK  
DEED REF. LIBER 847, FOLIO 608  
TAX MAP #10, PARCEL #23  
ELECTION DISTRICT #3  
CENSUS TRACT 6030  
WATER:  
SEWER: NONE

JANUARY 24, 1992

REVISED 3/25/92  
WETLAND MITIGATION AREA  
REVISED TO AVOID  
ARCHAEOLOGICAL SITE

SHEET  
**S.7**  
of 20

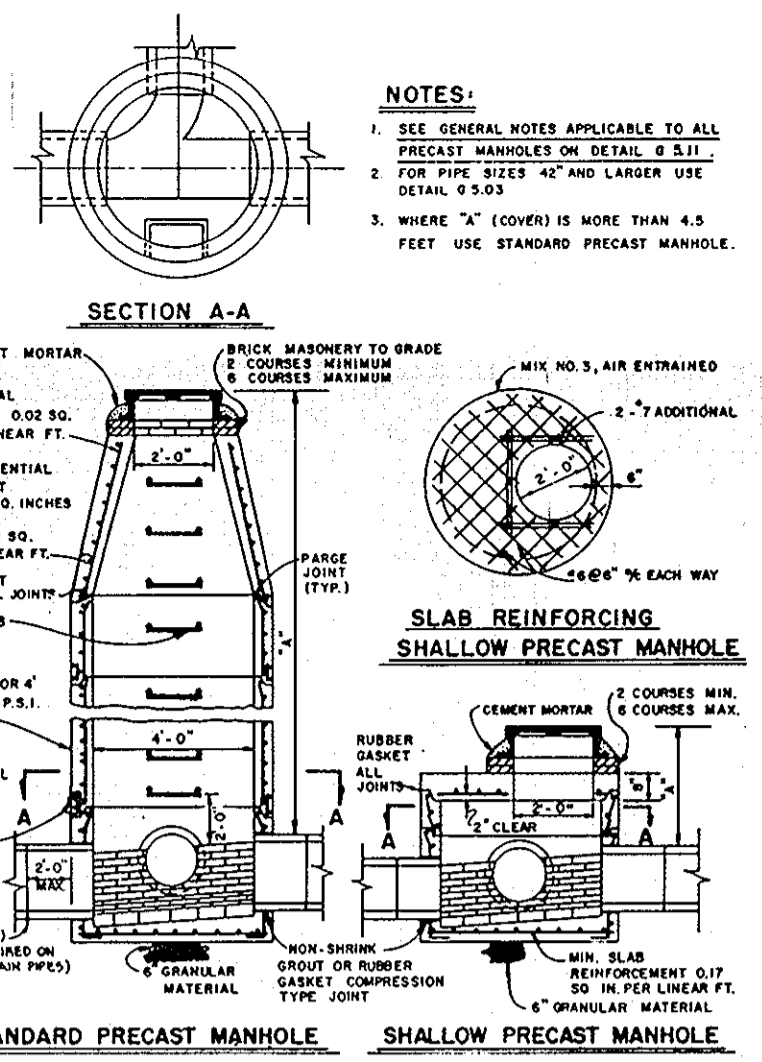
J. CHRISTOPHER BATTEN, INC.  
Land Planning & Design Consultant  
8 North Church Street  
Westminster, Maryland 21157  
301-876-3383

SDP #90-18  
SDP 2 of 21

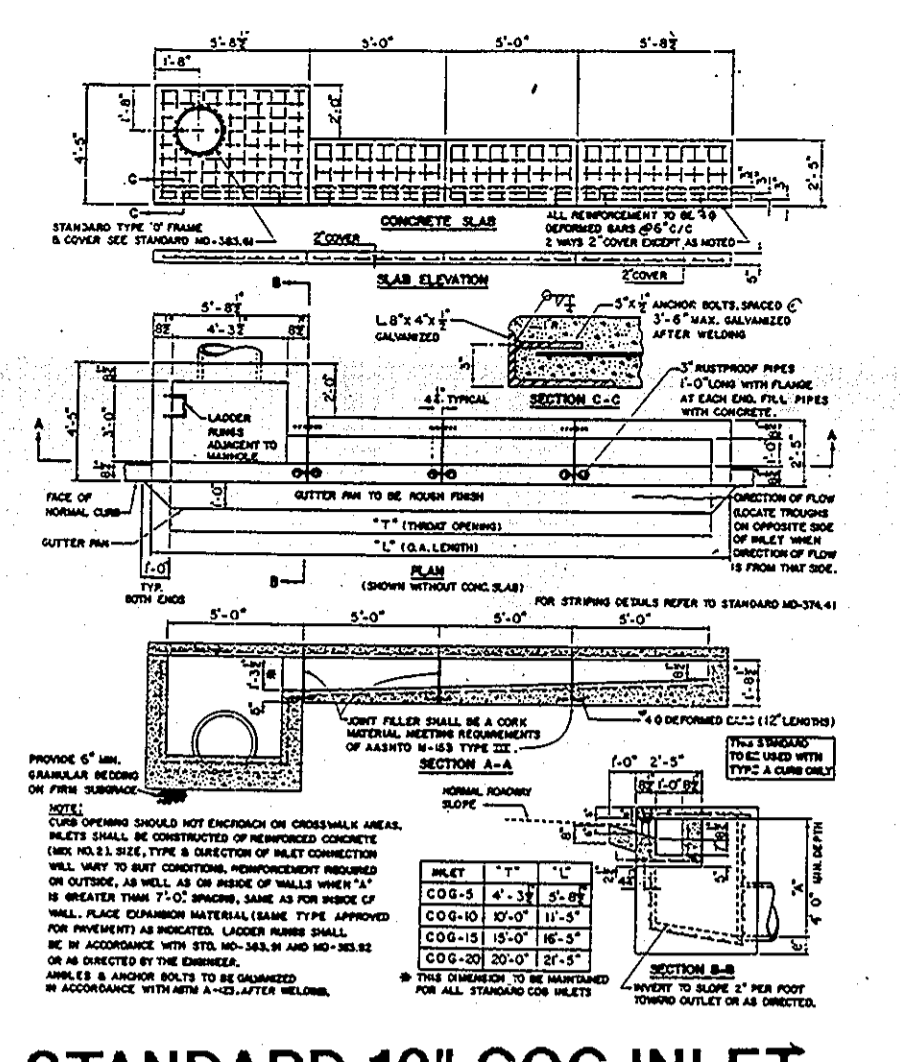
**GRADING PLAN - WEST**  
Scale 1" = 80'

DXAL-92507





**PRECAST MANHOLE**  
NTS



**STANDARD 10" COG INLET**  
NTS MARYLAND S.H.A. STD. NO. MD-374.31

**MANHOLE SCHEDULE**

No.	Type	Size	Inv. Out	Rim Elev.
M-1	Standard Precast	12'-0"	549.82	555.60
M-2	Shallow Precast	---	534.75	539.40
M-3	Shallow Precast	---	536.36	542.60

**INLET SCHEDULE**

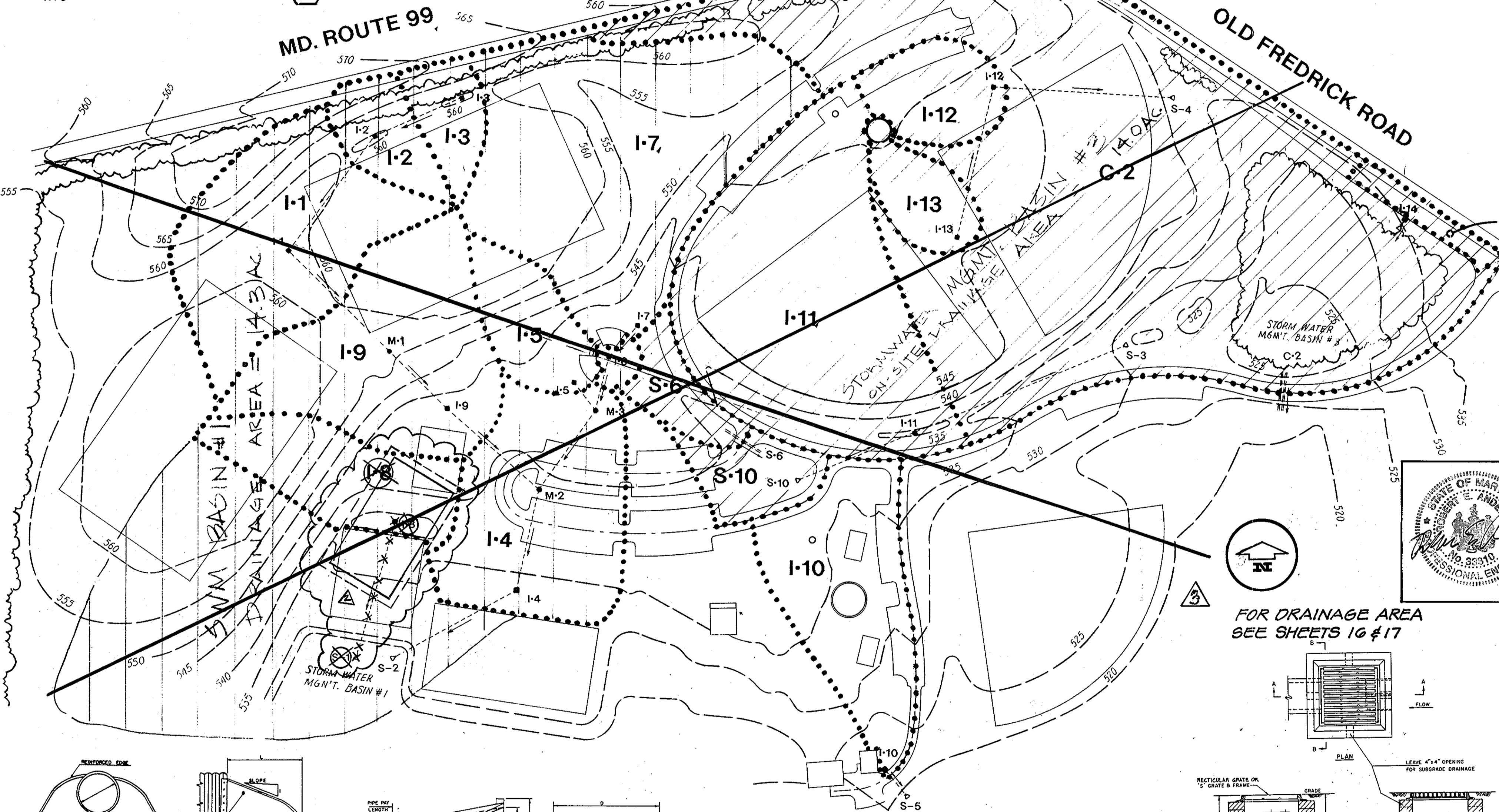
No.	Type	Q cfs	Inv. Out	Rim Elev.
I-1	YARD INLET	2.30	552.27	556.60
I-2	YARD INLET	0.36	554.74	559.50
I-3	YARD INLET	0.27	556.45	559.50
I-4	'S'	13.48	526.28	530.00
I-5	YARD INLET	0.58	538.45	542.00
I-6	YARD INLET**	4.44	537.71	543.00
I-7	'S'	4.75	538.80	541.70
I-8	YARD INLET	1.25	536.25	539.80
I-9	YARD INLET	4.03	537.21	540.75
I-10	'D' INLET	4.39	517.00	520.50
I-11	'S'	5.29	530.78	534.00
I-12	YARD INLET**	1.88	539.83	545.00
I-13	YARD INLET	0.52	542.45	545.00
I-14	COG - 10	0.85	534.00	537.40
I-15	'D' INLET	1.53	536.52	539.02

**OUTLET SCHEDULE**

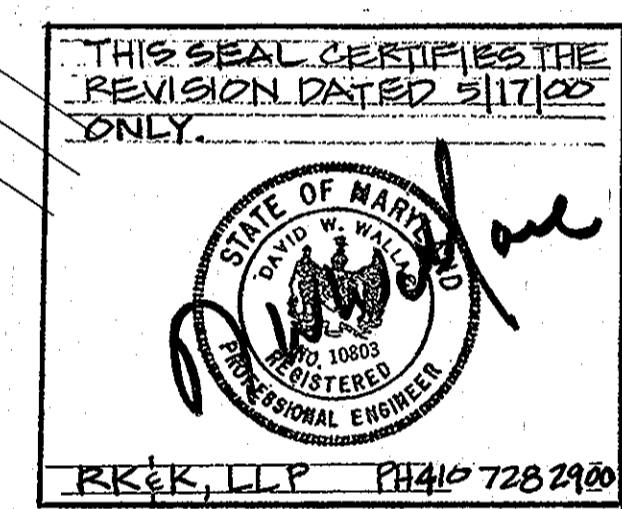
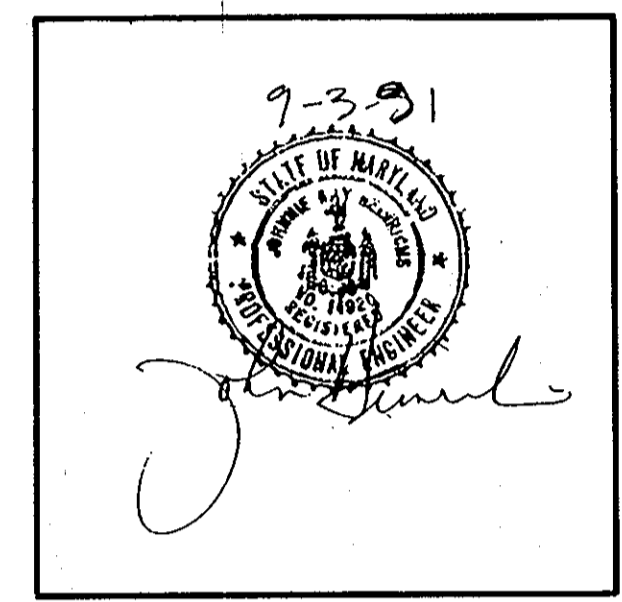
Struct. No.	Disch. (CFS)	Pipe Dia. (in.)	Length of Apron	Width of Apron	Stone Size
S-1	1.25	16	4	6.25	4
S-2	13.5	24	10	12	4
S-3	5.29	15	9	10.5	4
S-4	1.88	15	4	5.25	4
S-5	4.39	15	9	10.3	4
S-8	0.85	15	4	5.25	4

**DRAINAGE AREA RUNOFF DATA**

STRUCTURE	AREA (acres)	C	Q (CFS)
I-1	1.71	0.20	2.30
I-2	0.34	0.20	0.36
I-3	0.27	0.20	0.27
I-4	1.93	0.53	13.48
I-5	0.40	0.27	0.58
I-6	0.08	0.95	4.44
I-7	2.95	0.27	4.06
I-8	0.88	0.20	1.25
I-9	1.53	0.25	4.03
I-10	1.52	0.47	4.39
I-11	3.06	0.29	5.29
I-12	0.54	0.38	1.88
I-13	0.30	0.26	0.52
I-14	0.11	0.95	0.85
I-15	0.33	0.55	1.53
S-10	0.41	0.53	3.36
C-2	8.13	0.29	*

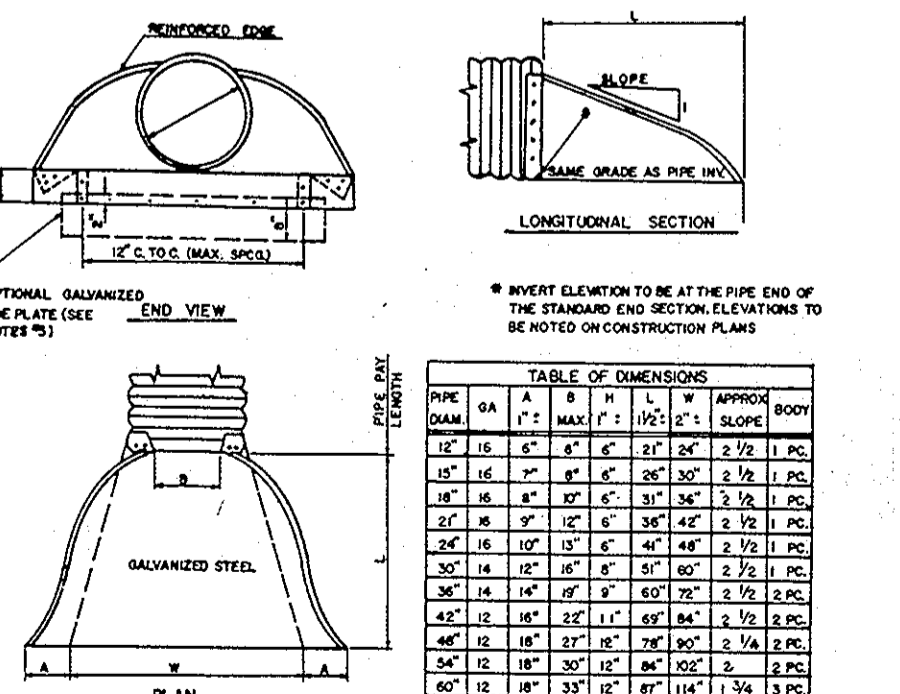


SWM BASIN #3 OFF-LITE DRAINAGE AREA = 23.9 ACRES

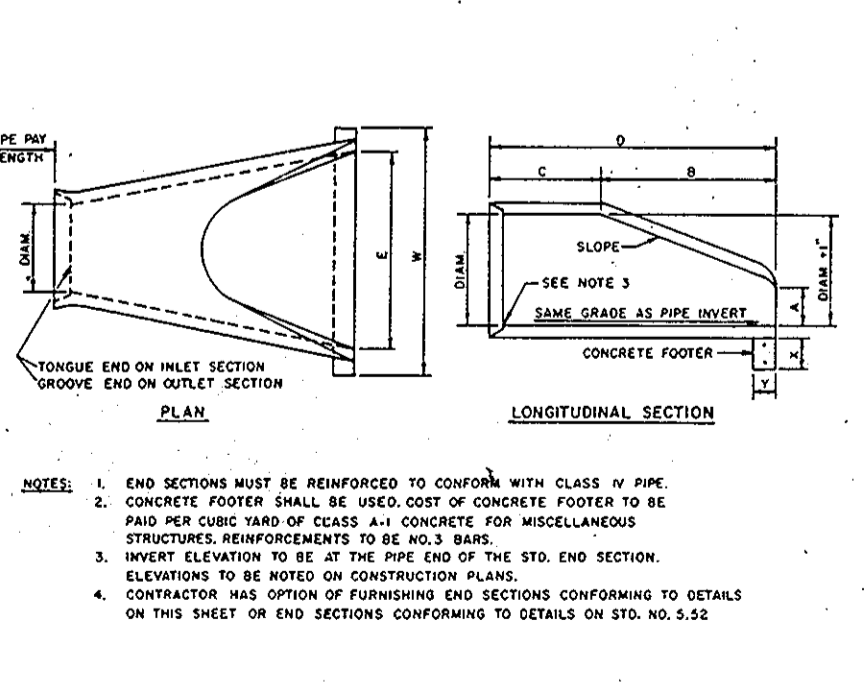


THIS SEAL CERTIFIES THE REVISION DATED 5-29-2012 ONLY  
GPI, Inc. 410-880-3055

**Professional Certification**  
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland License No. 33310 Expiration Date 7-2-2012



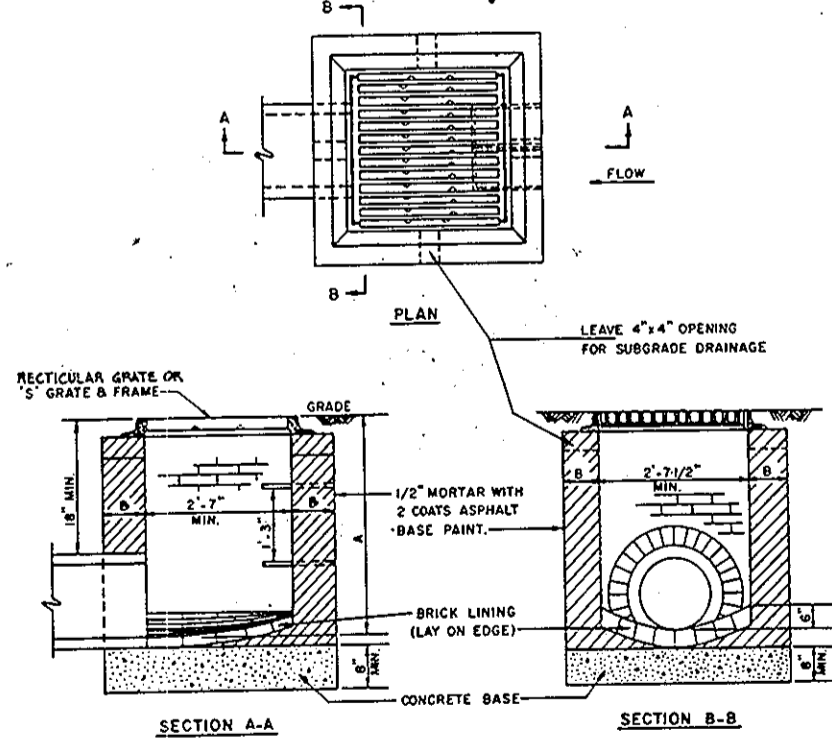
**METAL END SECTION**  
NTS



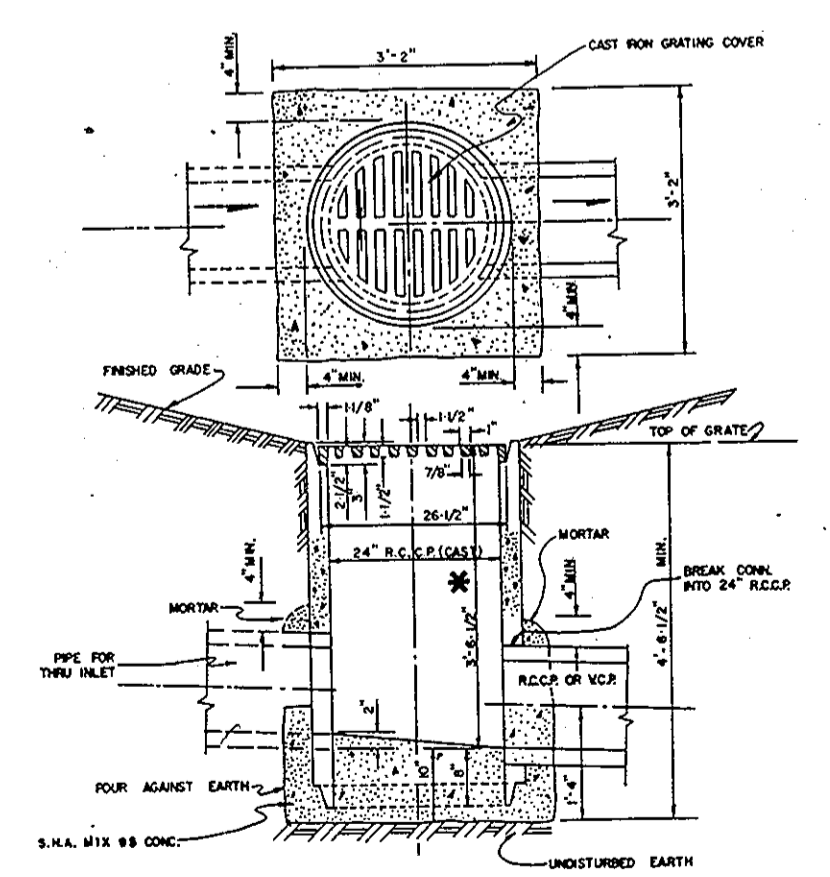
**CONC. END SECTION**  
NTS

**STORM DRAIN COORDINATES**

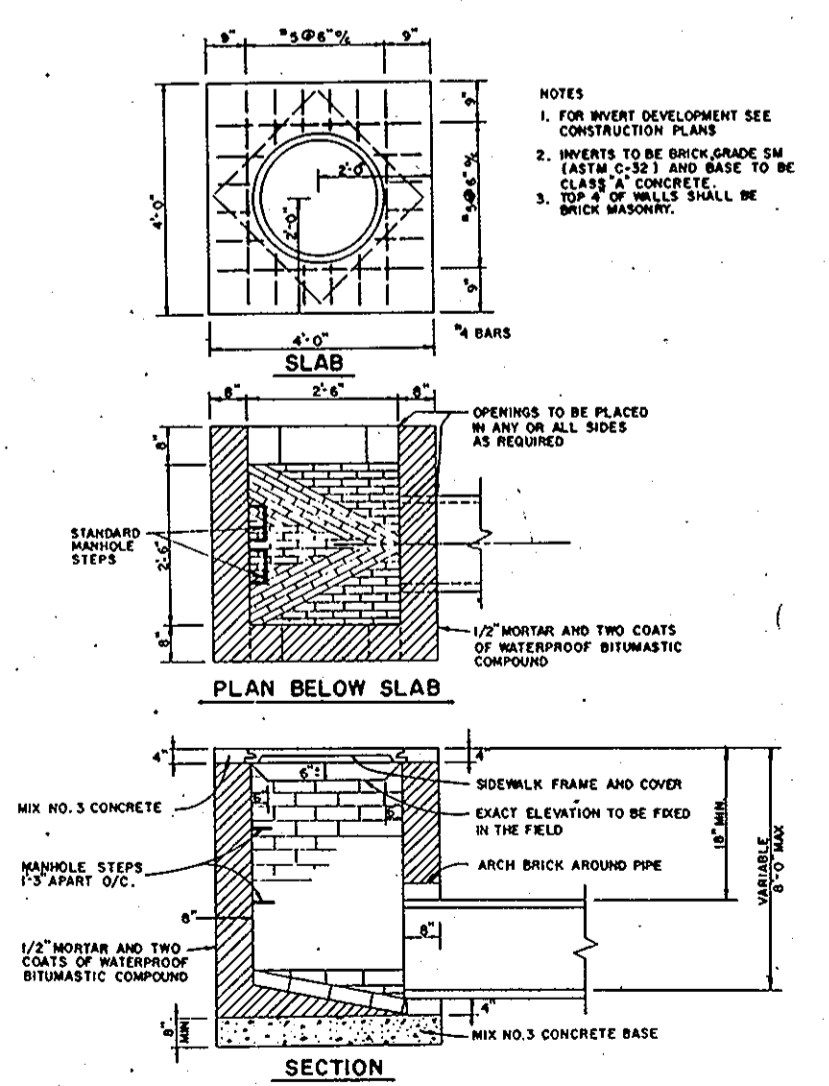
POINT NO.	STRUCTURE	NORTH	EAST
360	I-3	542007.0271	823124.4218
361	I-2	541952.2663	823003.2184
362	I-1	541789.4421	822883.6680
363	M-1	541649.2602	823026.3181
364	S-1	541221.7977	822983.7545
365	I-6	541843.2767	823333.8810
366	M-3	541667.9190	823915.4451
367	I-7	541687.8654	823374.0288
368	I-5	541607.5867	823285.0070
369	I-9	541569.3565	823107.6287
370	M-2	541456.5143	823237.4387
371	I-4	541314.6829	823207.2915
372	I-8	541409.7056	823035.8660
373	S-2	541220.3832	823037.7523
374	I-11	541538.8740	823757.0499
375	I-10	541065.7179	823726.9232
376	S-3	541664.4365	824055.9427
377	I-13	541816.4424	823821.0470
378	I-12	542027.8807	823869.8614
379	S-4	542014.7967	824119.5188
380	I-14	541845.8269	824450.2902
381	S-7	541835.7994	824443.6986
382	S-10	541473.6805	823755.5252
383	S-5	541030.9770	823755.5252
384	I-15	541539.3926	823903.2601



**TYPE "S" INLET**  
NTS



**YARD INLET**  
NTS



**TYPE "D" INLET GRATE**  
NTS

**STORM DRAIN AREAS, DATA, DETAILS AND STRUCTURE SCHEDULE**  
SCALE: 1" = 100'

SDP #90-18  
**ALPHA RIDGE PARK**

REVIEWED NO FACILITIES REQUIRED  
HOWARD COUNTY HEALTH DEPARTMENT  
Council Health Officer  
James M. Boydland per sign 1/24/92 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
Director  
James S. Smith 1/27/92 DATE  
Shirley H. Hunsat 1/27/92 DATE  
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT

APPROVED: FOR PRIVATE WATER AND NO SEWERAGE, FOR STORM DRAINAGE SYSTEMS AND PUBLIC ROADS  
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
Director  
James J. Smith 1/24/92 DATE  
Chief, Bureau of Engineering  
James J. Smith 1/24/92 DATE

APPROVAL STAMP

Added note to see Sheets 10 & 17, Crossed out DA Map, Revising Sheet #s 5-29-2012

**SITE DATA**  
OWNER: HOWARD COUNTY DEPT. OF PUBLIC WORKS  
PROPOSED IMPROVEMENT: PARK  
DEED REF. LIBER 847, FOLIO 606  
TAX MAP #10, PARCEL #23  
ELECTION DISTRICT #3  
CENSUS TRACT 6030  
WATER: NONE  
SEWER: NONE

JANUARY 24, 1992  
A REVISION 5/17/00  
SKATE PARK

**J. CHRISTOPHER BATTEN, INC.**  
Land Planning & Design Consultant  
8 North Church Street  
Westminster, Maryland 21157  
301-876-3383

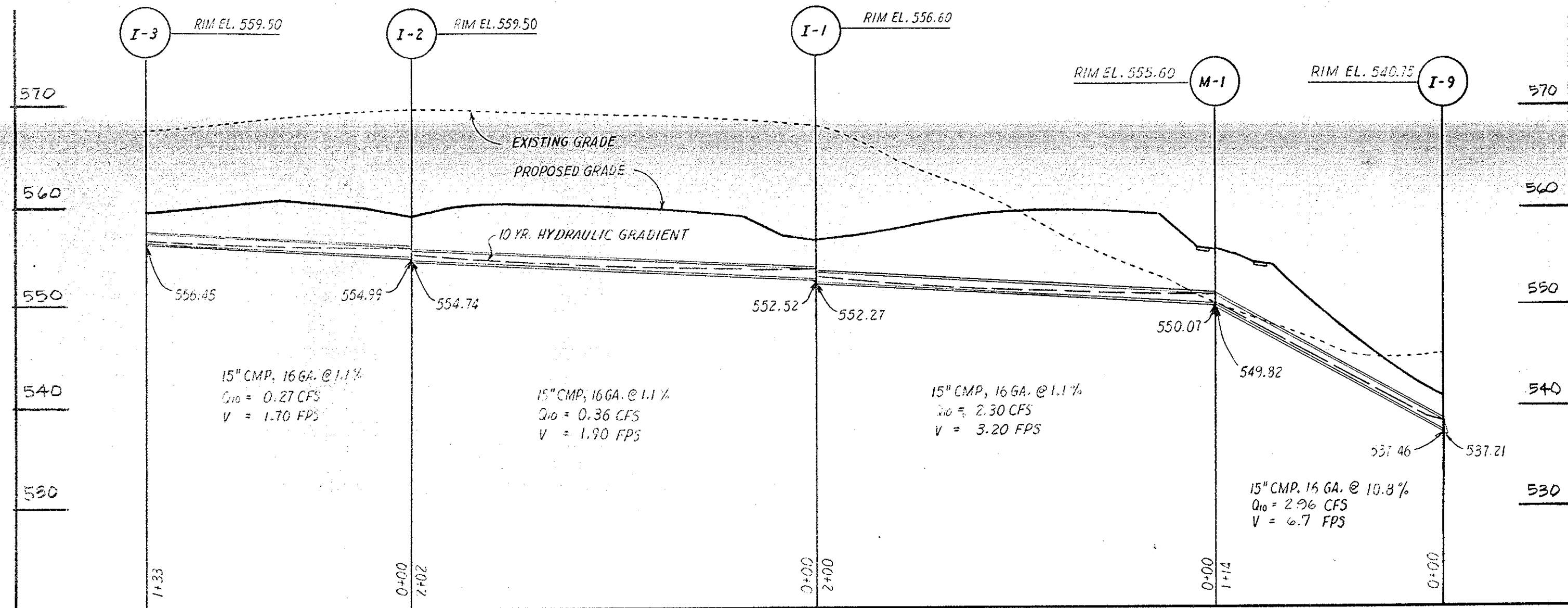
**S-8**  
SDP 26 of 38  
of 20  
SDP 9 of 21

REVIEWED NO FACILITIES REQUIRED

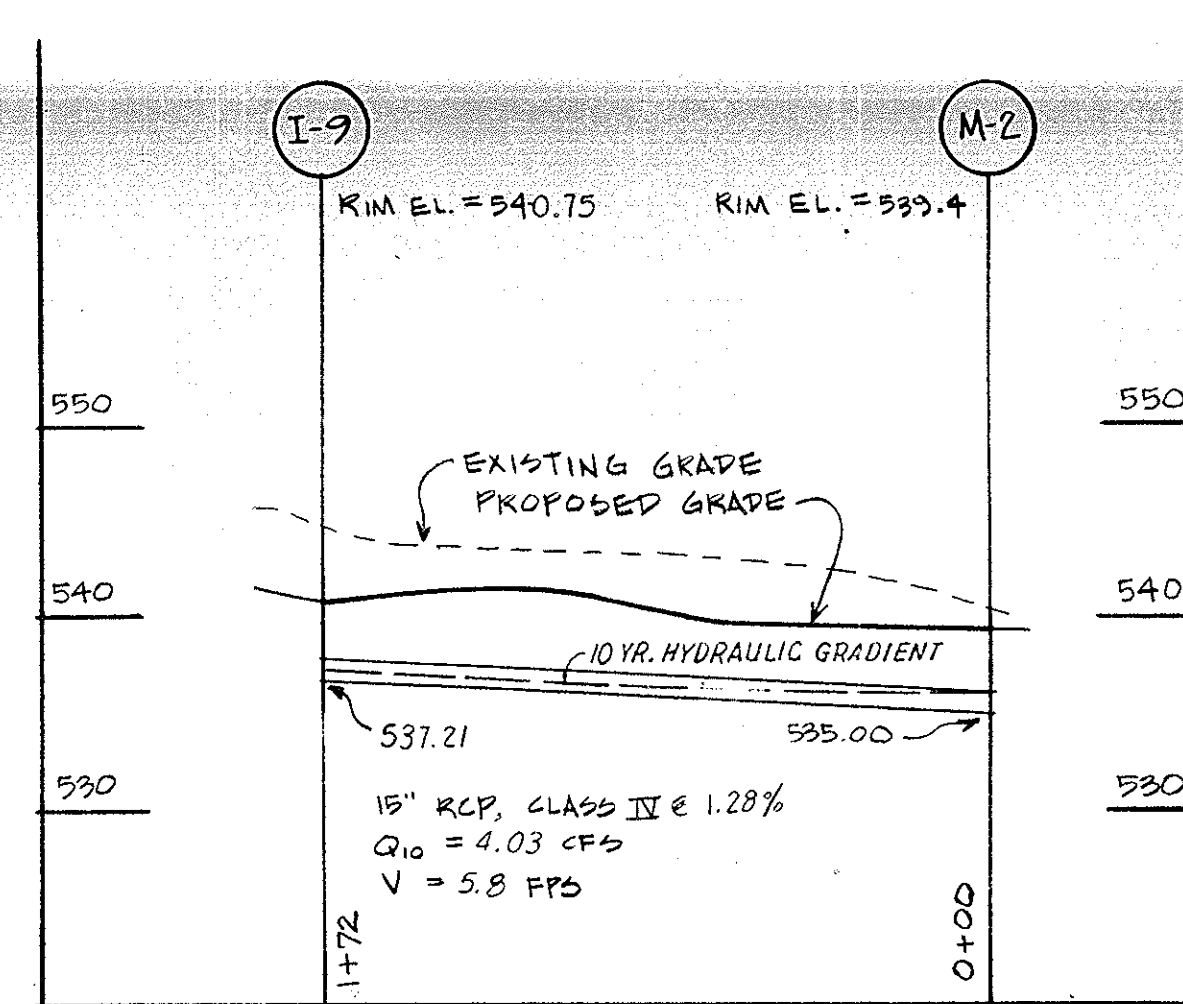
HOWARD COUNTY HEALTH DEPARTMENT  
James M. [Signature] 1/24/92  
DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
[Signature] 1/24/92  
DATE  
EMMA HILBERT  
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT

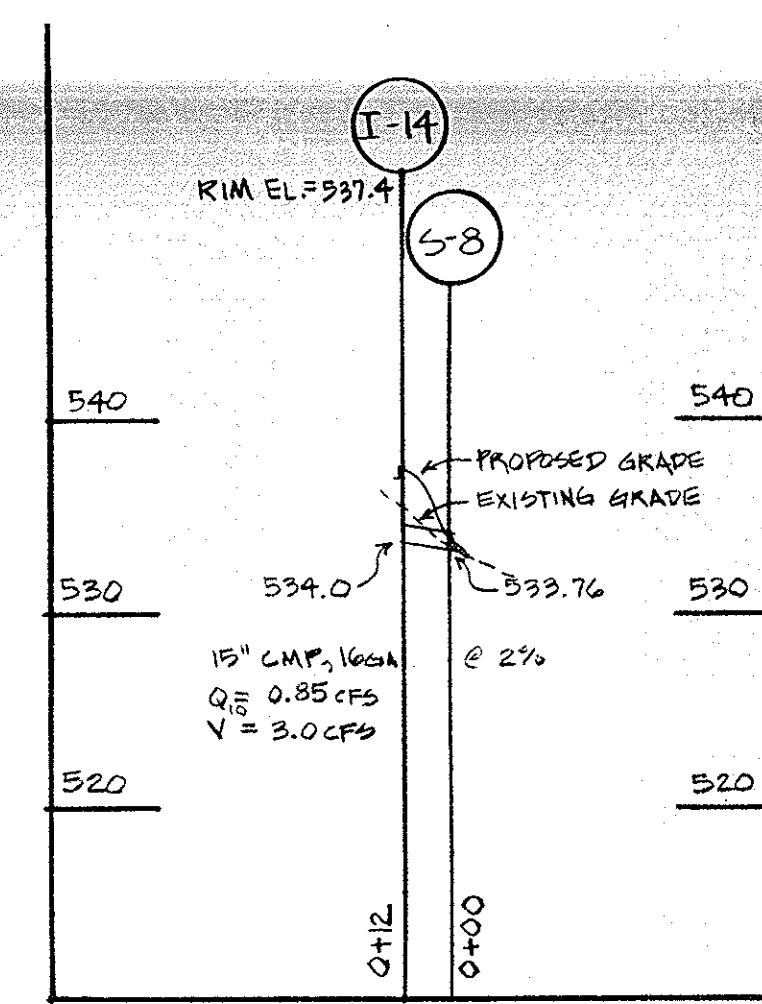
APPROVED: FOR PRIVATE WATER AND NO SEWERAGE, FOR STORM DRAINAGE SYSTEMS AND PUBLIC ROADS  
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
[Signature] 1/24/92  
DATE  
RESERVA [Signature]  
CHIEF, BUREAU OF ENGINEERING



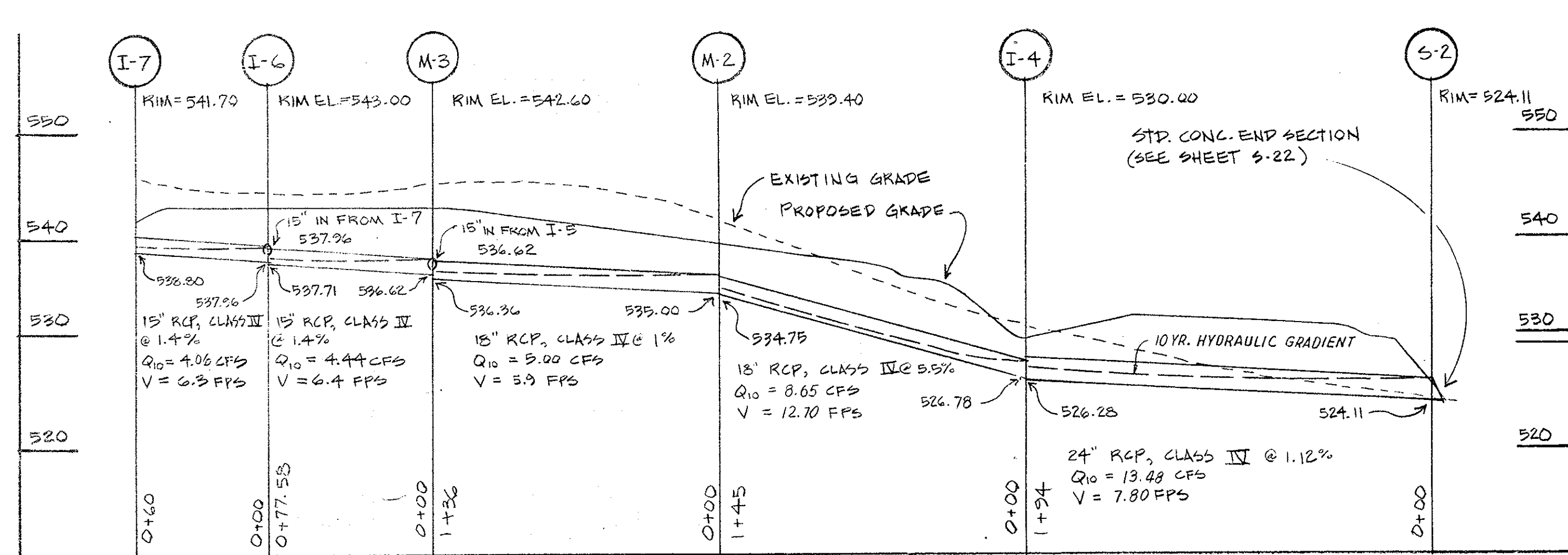
INLET 3 to INLET 9



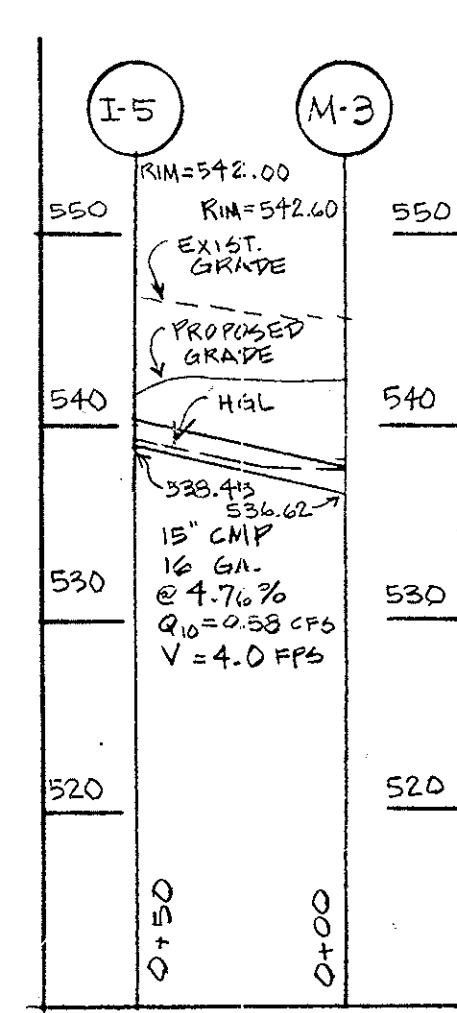
INLET 9 to MANHOLE 2



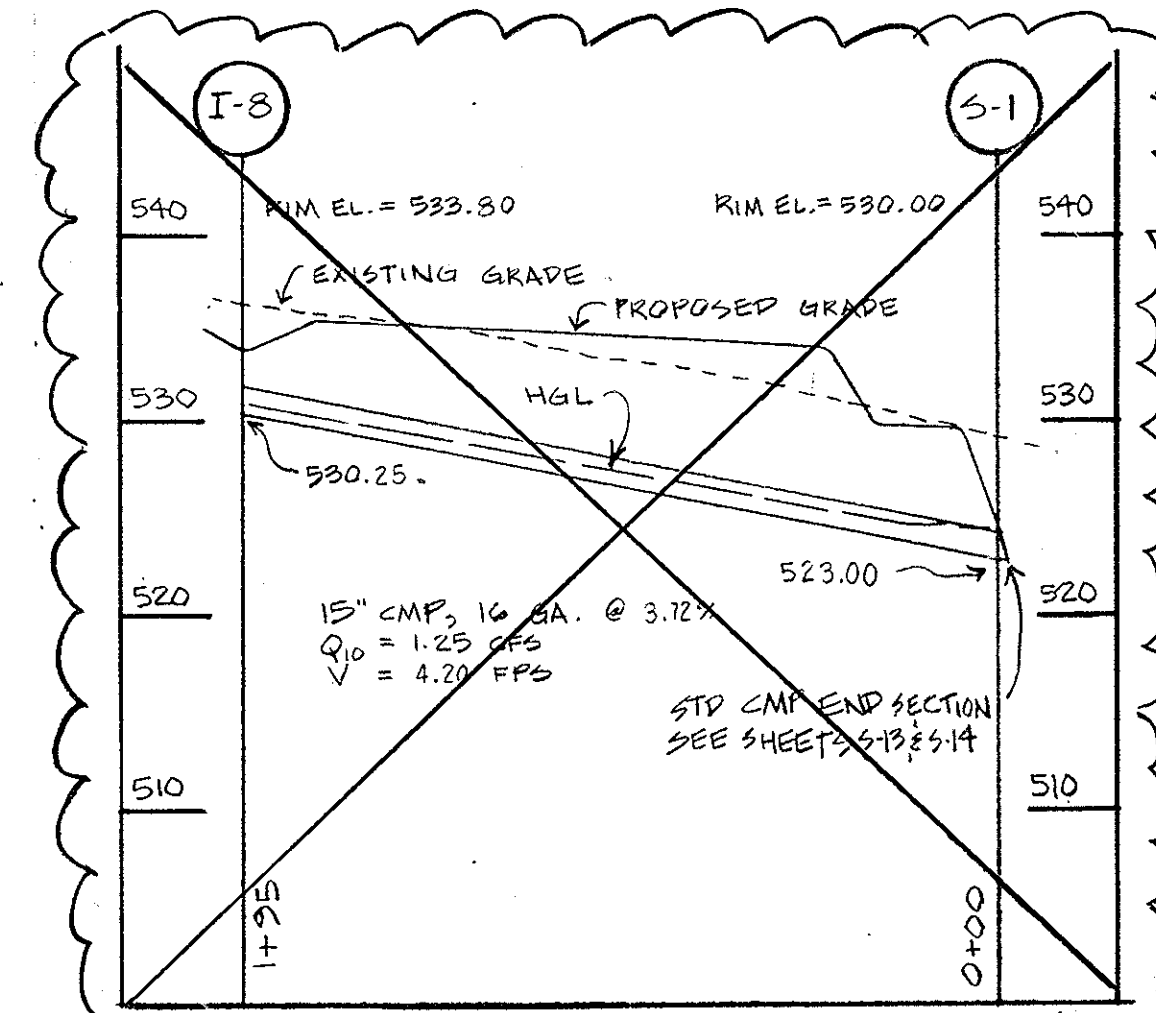
INLET 14 to STRUCTURE 8



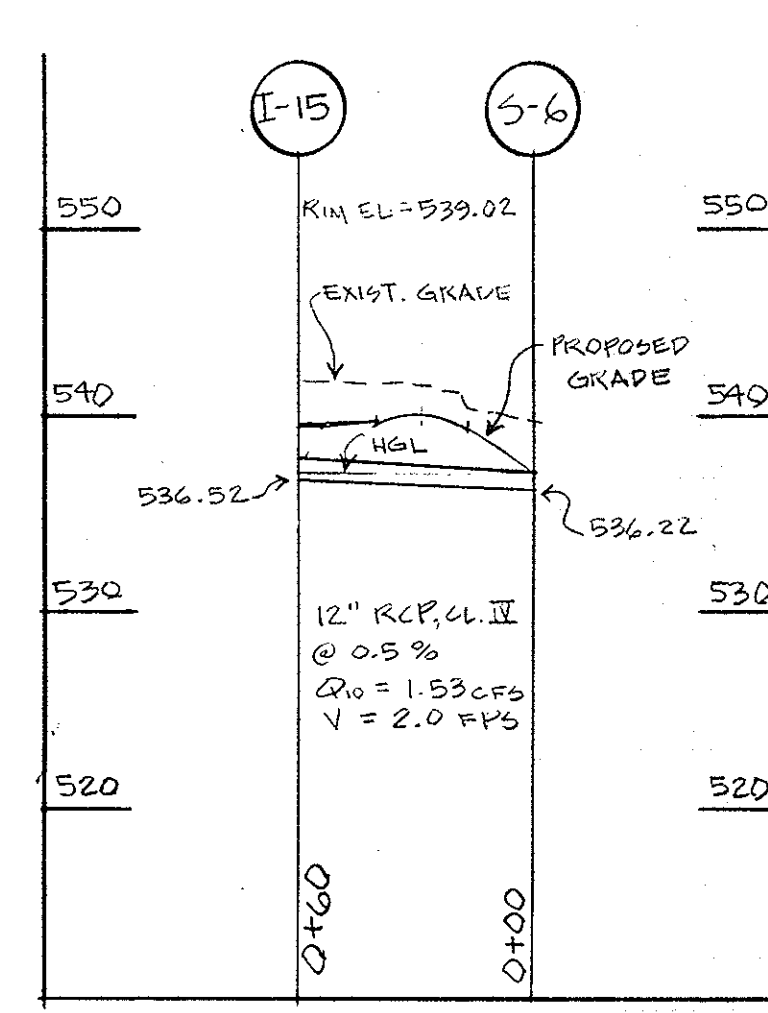
INLET 7 to STRUCTURE 2



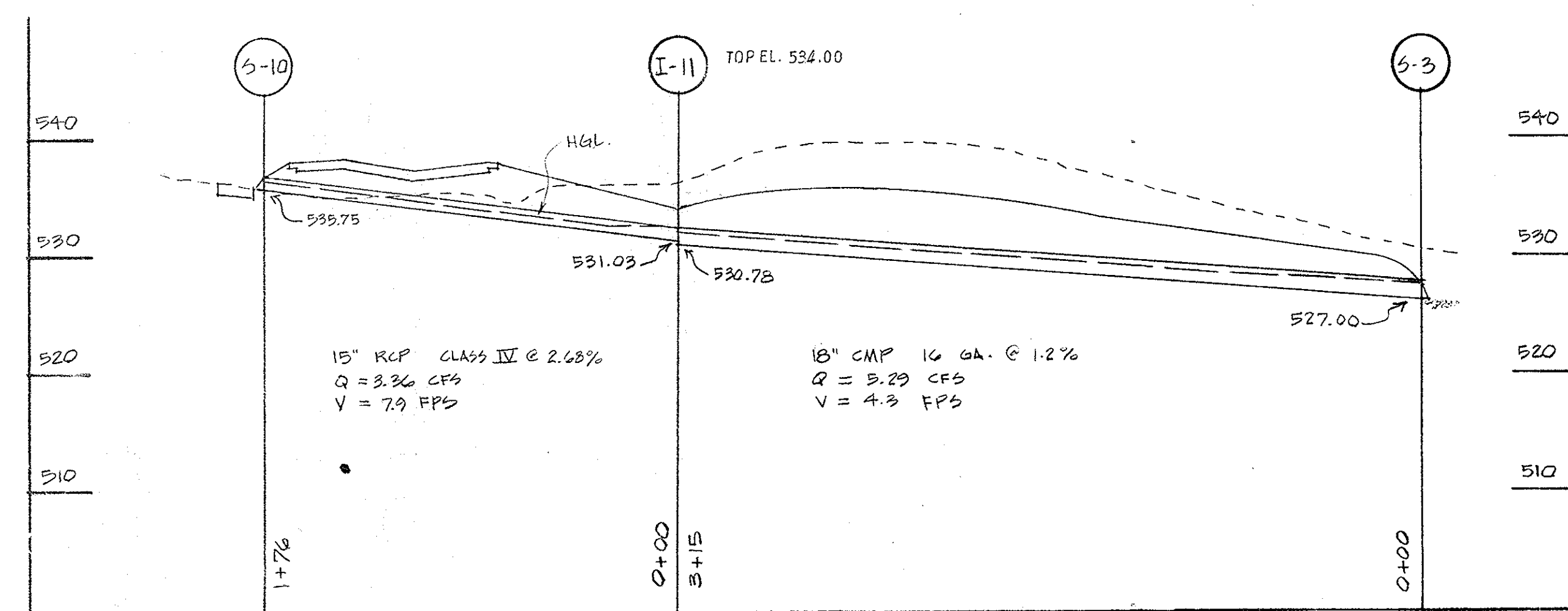
I-5 to M-3



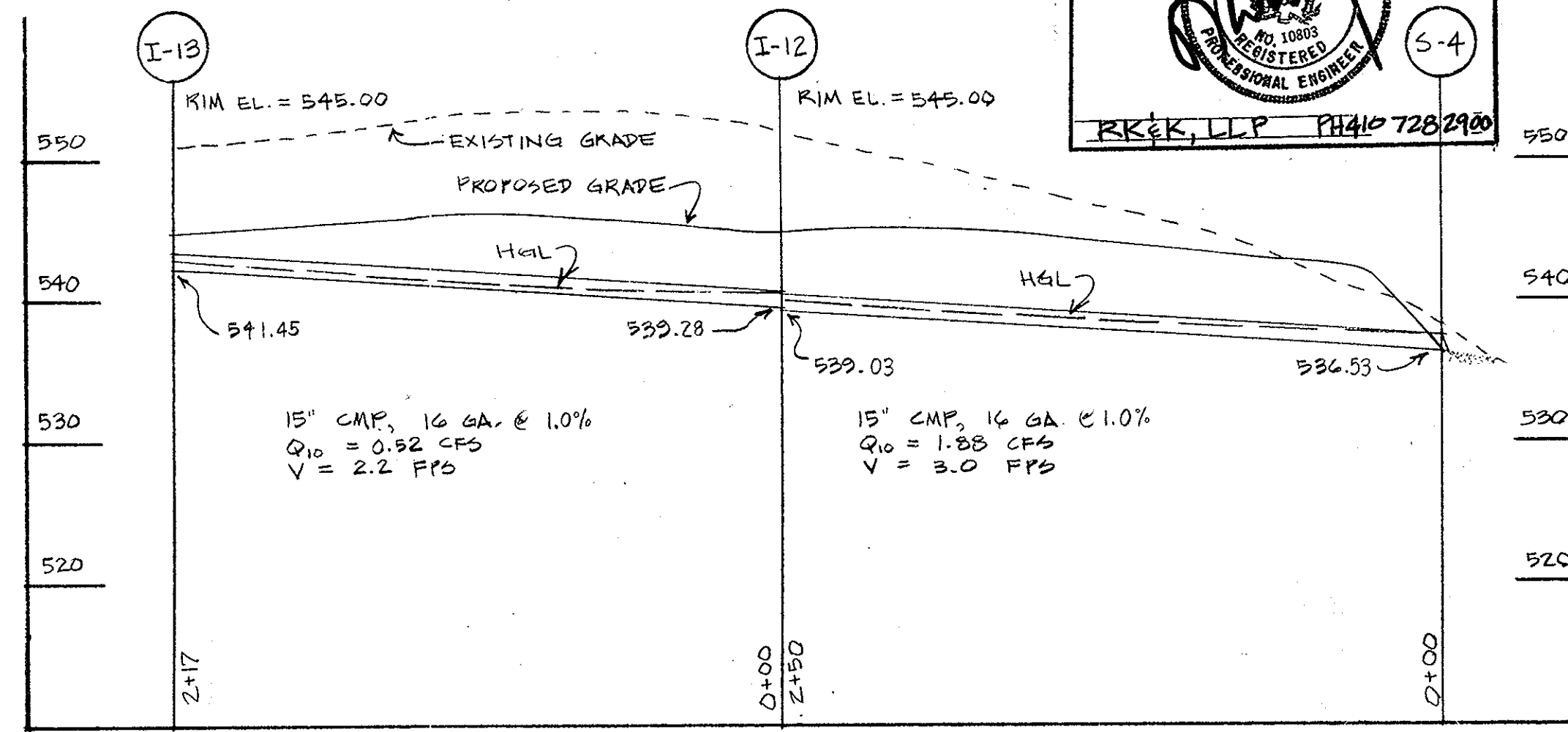
INLET 8 to S-1



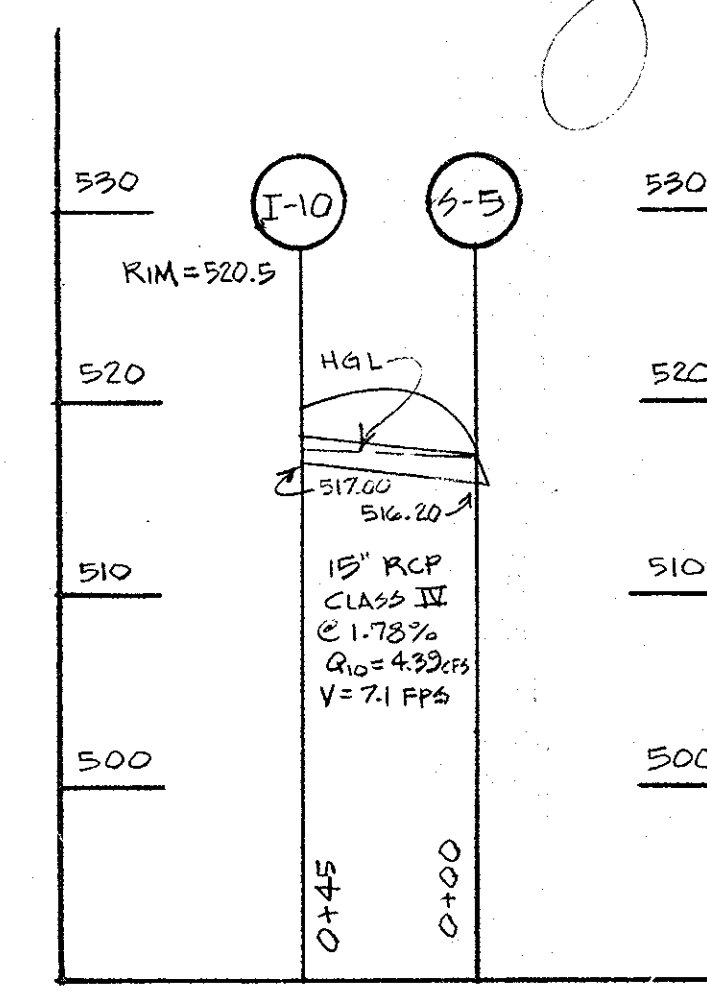
INLET 15 to S-6



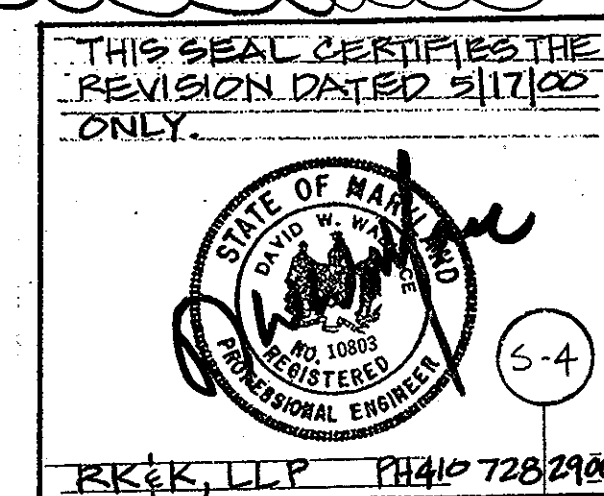
STRUCTURE 10 to STRUCTURE 3



INLET 13 to STRUCTURE 4



INLET 10 to STRUCTURE 5



Professional Certification  
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland License No. 33310 Expiration Date: 7-2-2012

NOTE: FOR OUTLET STRUCTURES & APRONS SEE SHEETS S-8 & S-15

STORM DRAIN PROFILES

SCALES: Vertical 1" = 10' Horizontal 1" = 50'

APPROVAL STAMP

Revised Sheet Numbers  
5-29-2012

SITE DATA

OWNER: HOWARD COUNTY  
DEPT. OF PUBLIC WORKS  
PROPOSED IMPROVEMENT: PARK  
DEED REF. LIBER 847, FOLIO 608  
TAX MAP #10, PARCEL #23  
ELECTION DISTRICT #3  
CENSUS TRACT 6030  
WATER:  
SEWER: NONE

JANUARY 24, 1992

REVISION 5/17/00  
PROPOSED IN-LINE  
SKATE RINK, REMOVE  
S-1 TO I-2

J. CHRISTOPHER  
BATTEN, INC.  
Land Planning &  
Design Consultant  
8 North Church Street  
Westminster, Maryland 21157  
301-876-3383

SHEET

S-9  
SDP 27 of 38  
of 20

# Orengo®

7/18/2014

Peter Podolak  
Leon A. Podolak & Associates, LLC

Subject: Design Review of Alpha Ridge Park  
Peter,

Orengo Systems, Inc. ("Orengo") staff takes the opportunity to review commercial AdvanTex® treatment systems to ensure the designs are compliant with the most current version or Orengo's Design Criteria. Some values in this review that were not provided by the designer have been approximated.

### Design Criteria

The applicable design criteria for this system is document NDA-ATX-1, titled *AdvanTex® Design Criteria Commercial Treatment Systems* rev 1.4 published March of 2014. The link to the design criteria is shown below.

<http://sfdocs.orengo.com/2014/7/nda-atx-1.pdf>

### Design Basis and System Description

Maximum day design flow (Q<sub>MD</sub>): 4000 gal/day  
Assumed average day flow (Q<sub>AD</sub>): 2000 gal/day

Proposed primary treatment: septic tanks  
Proposed secondary treatment: (4) AdvanTex AX20s  
Proposed discharge method: Land Application

Similar Site primary tank effluent BOD<sub>5</sub>: 160 mg/L  
Similar Site primary tank effluent TSS: 220 mg/L

Expected Effluent quality to drainfield  
BOD<sub>5</sub>: 10 mg/L  
TSS: 10 mg/L  
TN: 50% Reduction

### Primary Treatment

Proposed Septic Tank volume: 6000 gallons

Orengo recommended Septic Tank volume: 12,000

### Secondary Treatment

Proposed recirculation tank volume: 3000

Orengo required recirculation volume (0.75 \* Q<sub>M</sub> or 1 \* Q<sub>AD</sub>): 3000 gallons  
Does value meet Orengo's Design Criteria? **YES**

*Changing the Way the World Does Wastewater®*

Orengo Systems®, Incorporated • 814 Airway Avenue, Sutherlin, Oregon 97479 • 800-348-8843 • 541-459-4449 • www.orengo.com

### AdvanTex Hydraulic Loading Rate

4000 gpd Q<sub>M</sub>  
2000 gpd Q<sub>AD</sub>  
80 ft<sup>2</sup> textile media

4000 gpd / 80 ft<sup>2</sup> = 50 gpd / ft<sup>2</sup>  
Orengo Q<sub>M</sub> maximum hydraulic loading rate: 50 gpd / ft<sup>2</sup>  
Does value meet Orengo Design Criteria? **YES**

2000 gpd / 40 ft<sup>2</sup> = 25 gpd / ft<sup>2</sup>  
Orengo Q<sub>AD</sub> maximum hydraulic loading rate: 25 gpd / ft<sup>2</sup>  
Does value meet Orengo Design Criteria? **YES**

### AdvanTex Organic Loading Rate

4000 gpd Q<sub>M</sub>  
2000 gpd Q<sub>AD</sub>  
400 ft<sup>2</sup> textile media  
160 mg/L BOD<sub>5</sub>

4000 gpd \* 160 mg/L BOD<sub>5</sub> \* 8.34x10<sup>-6</sup> / 400 ft<sup>2</sup> = 0.067 lb. BOD<sub>5</sub>/ft<sup>2</sup>\*day  
Orengo maximum organic loading rate: 0.08 lb. BOD<sub>5</sub>/ft<sup>2</sup>\*day  
Does value meet Orengo Design Criteria? **YES**

2000 gpd \* 160 mg/L BOD<sub>5</sub> \* 8.34x10<sup>-6</sup> / 400 ft<sup>2</sup> = 0.033 lb. BOD<sub>5</sub>/ft<sup>2</sup>\*day  
Orengo maximum organic loading rate: 0.04 lb. BOD<sub>5</sub>/ft<sup>2</sup>\*day  
Does value meet Orengo Design Criteria? **YES**

**\*Orengo Design Criteria States that a properly operated and loaded 'standard AdvanTex layout' has the ability to reduce TN by up to 60%.**

### Conclusions

The proposed layout of the Alpha Ridge Park wastewater treatment system has been reviewed and is compliant with the most current version of the system's applicable design criteria and loading rates published by Orengo. Assumed values in this review should be validated.

Once the treatment plant is placed into operation, the influent flows and constituent concentrations to the facility should be monitored, and if they exceed those listed in the design or this letter, measures should be taken to reduce the flow or constituent concentration to those listed or add capacity to match the incoming flow and waste constituents.

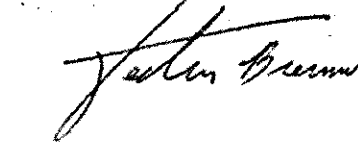
The septic tank capacity is lower than Orengo recommended septic tank volume. If the septic tank capacity proves to be inadequate, Orengo's recommends installing primary tanks to equal 3 days hydraulic retention time of the measured flow (Q<sub>M</sub>).

It is important to note that even though the AdvanTex Treatment System has the capability to meet or exceed the required treatment parameters, Orengo cannot guarantee that a particular system will be operated or maintained in a manner to promote healthy and continuous treatment. Please also note that disposing of toxics or chemicals into the AdvanTex Treatment System is strictly prohibited. Examples of toxins include salt-type water softener brine discharge, restaurant

degreasers, cleansers, wax strippers for linoleum, carpet shampoo, waste products, or any others that may inhibit a healthy biologic population.

If you have any questions about this review process, findings, or conclusions, please feel free to call or e-mail me.

Sincerely,



Jesten Brenner, E.I.T.  
Engineering, Eastern U.S.  
Orengo Systems, Inc.  
814 Airway Avenue  
Sutherlin, OR 97479  
P: (800) 348-9843 ext. 358  
[jbrenner@orengo.com](mailto:jbrenner@orengo.com)

APPROVED: DEPARTMENT OF RECREATION AND PARKS			
<i>John R. Bynum</i>	9/24/14		
DIRECTOR	DATE		
APPROVED: FOR PUBLIC WATER AND PRIVATE SEWERAGE SYSTEMS			
<i>Barbara M. Rossman</i>	10/22/2014		
COUNTY HEALTH OFFICER	DATE		
APPROVED: DEPARTMENT OF PUBLIC WORKS			
<i>James H. ...</i>	9/24/14		
DIRECTOR OF PUBLIC WORKS	DATE		
<i>Thomas B. Suttler</i>	9/23/14		
CHIEF-BUREAU OF ENGINEERING	DATE		
<i>Steve Sharon</i>	9/23/14		
CHIEF, TRANSPORTATION & SPECIAL PROJECTS	DATE		
APPROVED: DEPARTMENT OF PLANNING AND ZONING			
<i>Phil Edick</i>	10-30-14		
CHIEF-DEVELOPMENT ENGINEERING DIVISION	DATE		
<i>Vest Sheehy</i>	10-31-14		
CHIEF-DIVISION OF LAND DEVELOPMENT	DATE		
<i>Jessie K. Taylor</i>	10/31/14		
DIRECTOR	DATE		
ADDRESS CHART			
PARCEL #	STREET ADDRESS		
23	11685 OLD FREDERICK ROAD/MD 99 MARRIOTTSVILLE, MD 21104		
54	11685 OLD FREDERICK ROAD/MD 99 MARRIOTTSVILLE, MD 21104		
PERMIT INFORMATION CHART			
WATER CODE: PUBLIC	SEWER CODE: N/A	BUILDING: N/A	STREET ADDRESS: N/A
PROJECT NAME: ALPHA RIDGE PARK		SECTION/AREA: N/A	PARCEL: 23/54
L/F: 847/606	GRID: 20-21	ZONING: RC-DEO	TAX MAP: 10 ELEC. DIST.: 3 CENSUS TRACT: 6030

GIVEN A DESIGN FLOWRATE OF APPROXIMATELY 2000 GALLONS PER DAY, AVERAGE DAILY FLOW, THE SEWAGE TREATMENT SYSTEM HAS SUFFICIENT SEDIMENTATION CAPACITY TO ACCOMMODATE A SUSTAINED OPERATIONAL FLOWRATE OF 3000 GALLONS PER DAY. BASED ON RECOMMENDATIONS FROM ORENGO AND BASED ON DISCUSSIONS WITH MPE, IT WAS DETERMINED THAT THIS DESIGN SHOULD BE ADEQUATE. SHOULD MONITORING REVEAL HIGHER OPERATIONAL FLOW-RATES, ADDITIONAL SEPTIC TANKAGE MAY BE REQUIRED.

*Peter A. Podolak*  
PE LICENSE NO. 19561


10/21/14  
EXP. DATE 3-3-16



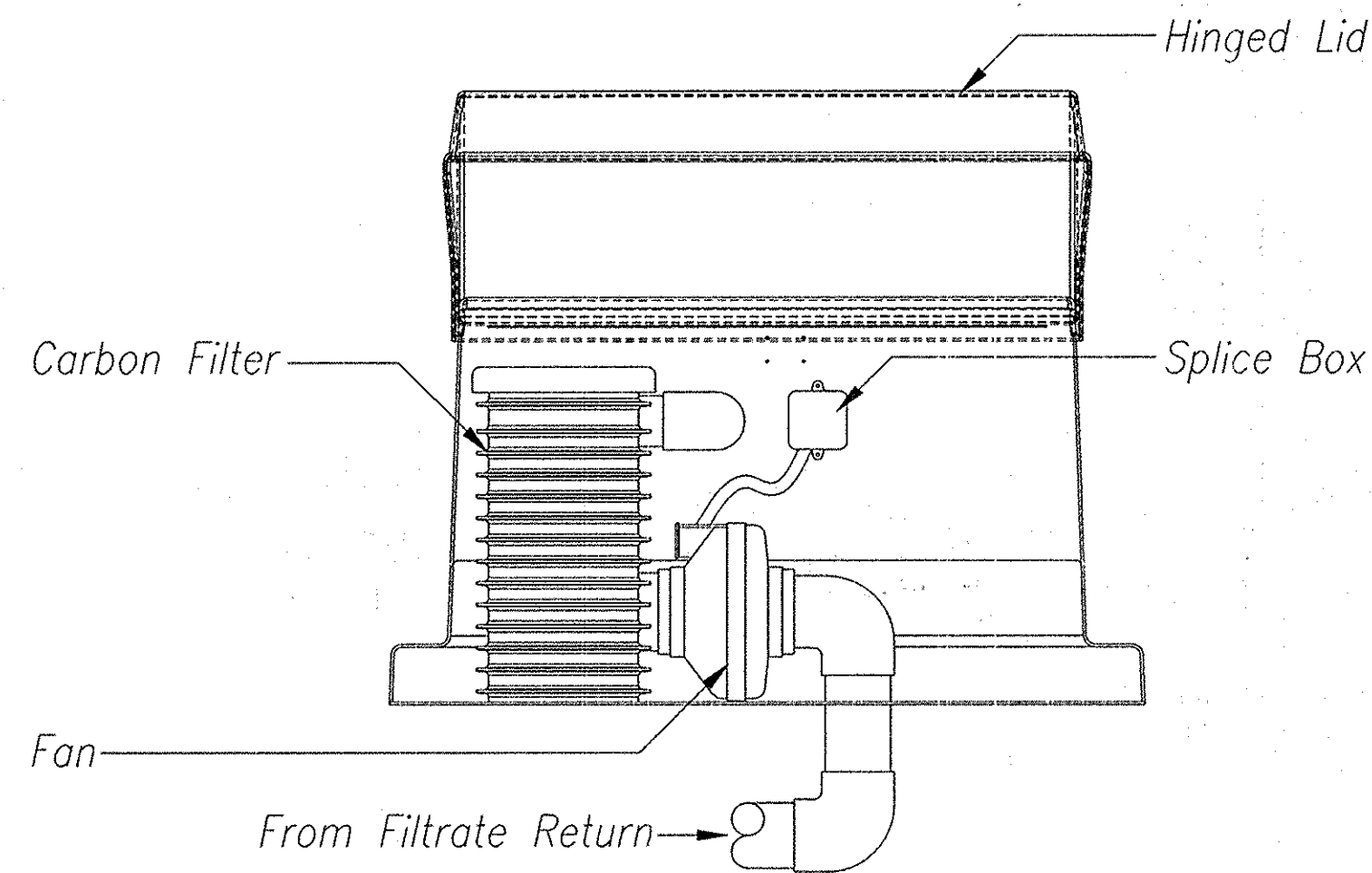
Engineer	
This is to certify that I have designed the sewage treatment and pumping system as depicted on this (revised) Site Development Plan. I have reviewed the details and specifications provided to me by Orengo, the manufacturer of the AdvanTex AX20 treatment units, and based on their representations, as outlined herein, I hereby certify the the treatment system, depicted hereon, shall meet or exceed the target goal of 50 percent nitrogen removal.	
Signed: <i>Peter A. Podolak</i>	Date: 8-27-2014
License No: 19561	Expiration Date: 3-3-2016

## BAT TREATMENT SYSTEM MANUFACTURER'S DESIGN REVIEW and ENGINEER'S DESIGN CERTIFICATION

#11685 OLD FREDERICK ROAD (MD RTE 99) ALPHA RIDGE COMMUNITY PARK  
TAX MAP: 10 GRID: 20 PARCEL: 23 TAX ACCT. NO.: 03-292622  
TAX MAP: 10 GRID: 21 PARCEL: 54 TAX ACCT. NO.: 03-304795

SHEET 10D OF 38		LEON A. PODOLAK and ASSOCIATES, L.L.C.	
		SURVEYING and CIVIL ENGINEERING 147 East Main St. (P.O. Box 266) Westminster, Maryland 21157 (410) 846-2229 - (410) 876-1226	
Date: 8-27-2014 Revision: AS00 3,000 GALLON TANK SEE COMMENTS		Date: 9/15/14 Peter A. Podolak, P.E. I hereby certify that these documents were prepared or approved by me, and I am a duly licensed professional engineer under the laws of the State of Maryland, license no. 19561, expiration date: 3-3-2016.	
Date: July 18, 2014 Scale: AS SHOWN Drawing No.			

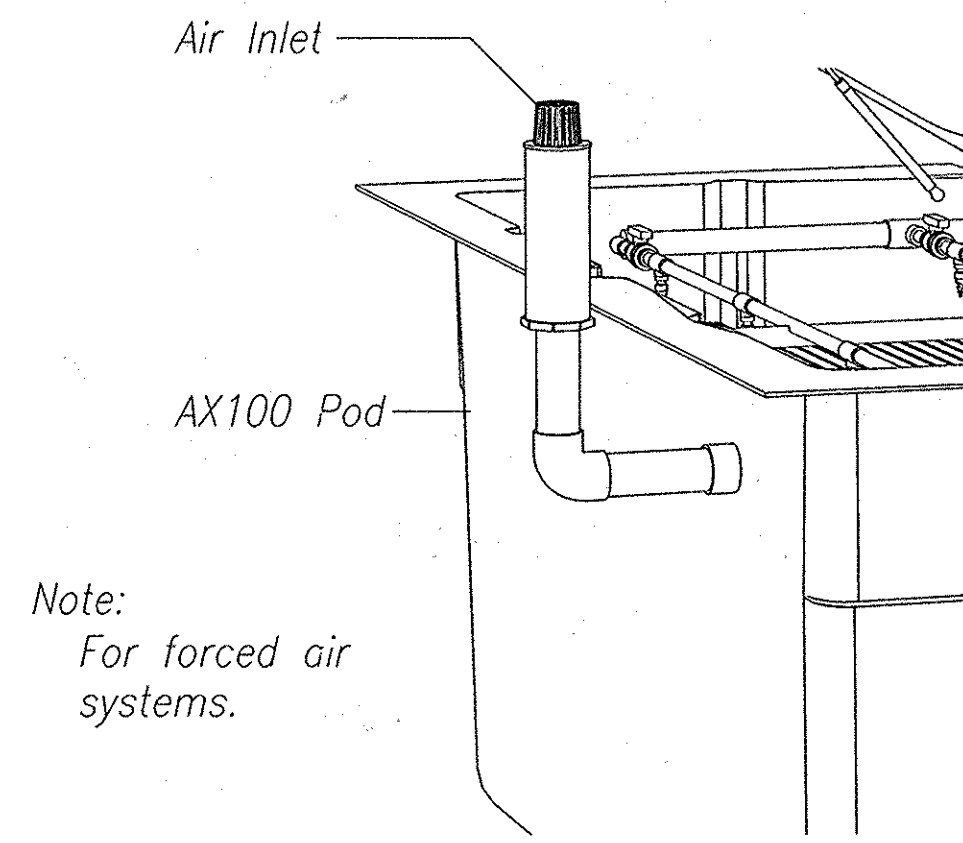
SDP-90-018



**Fan Assembly**

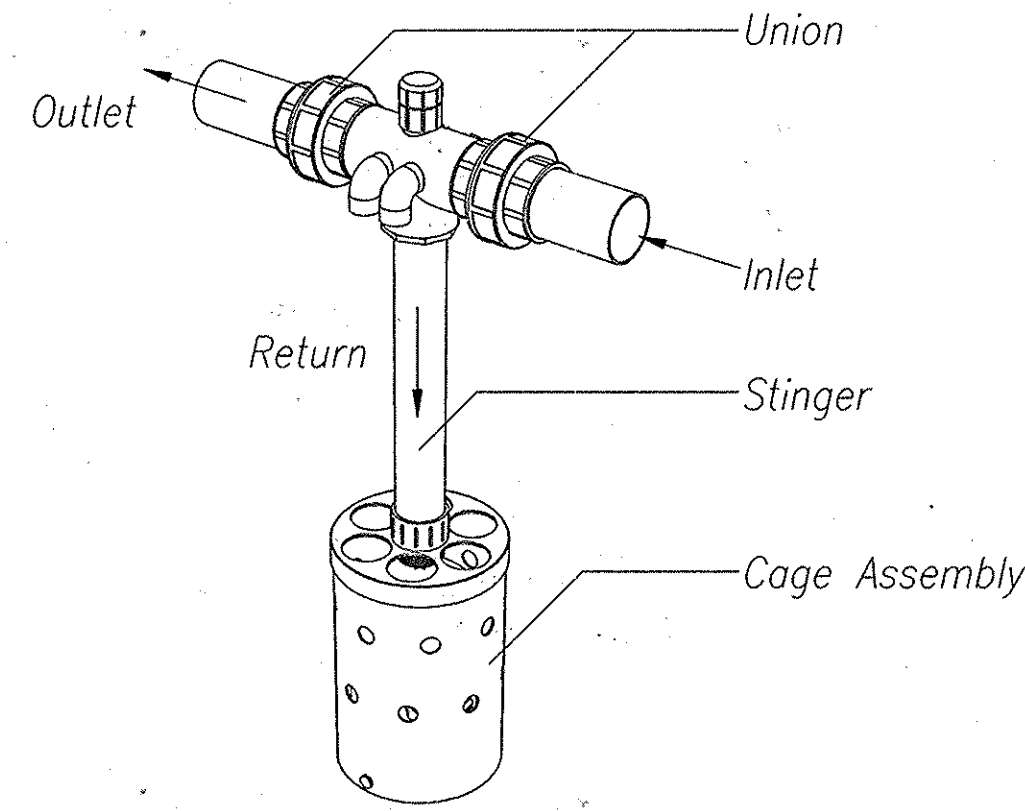
Scale: 1" = 1'-0"

\* OPTIONAL \*



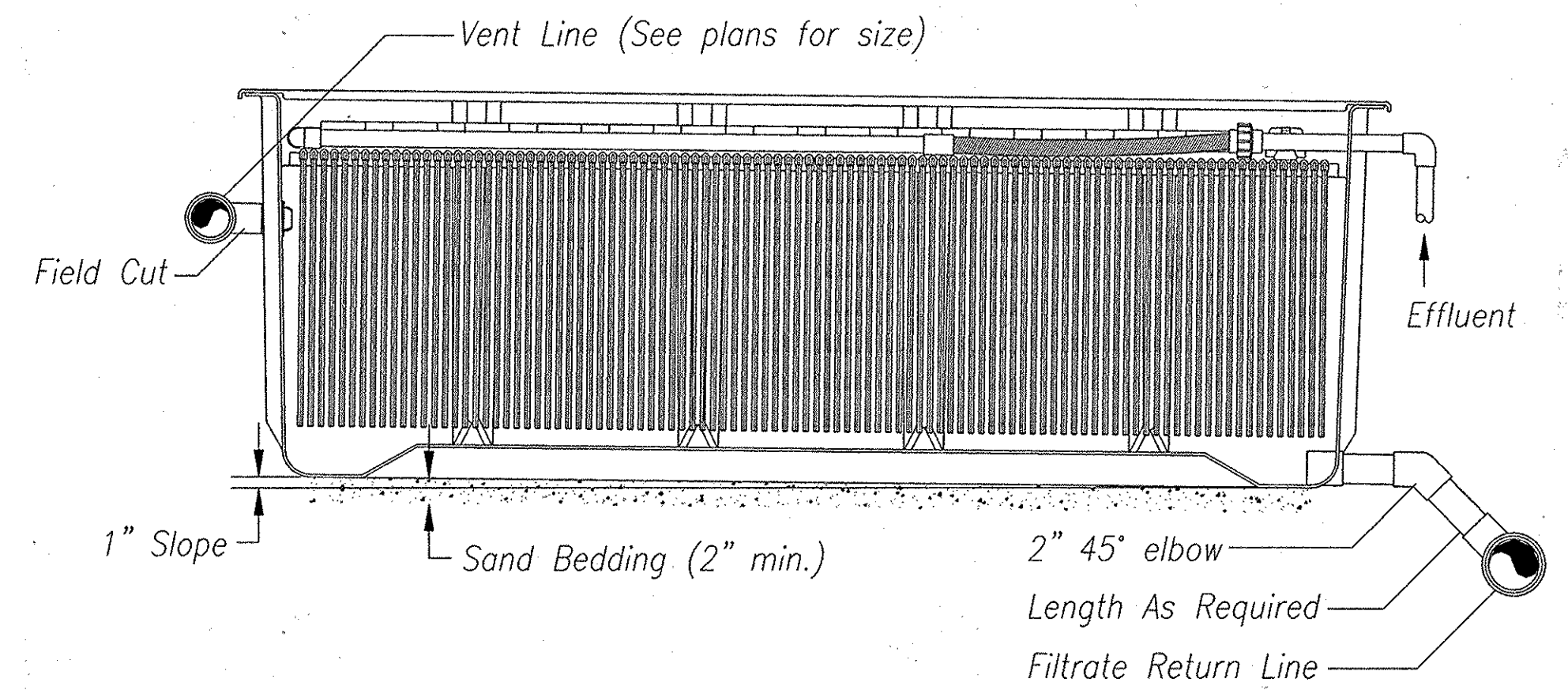
**Individual Air Inlet Option**

Scale: NTS



**Recirculating Splitter Valve Detail**

Scale: NTS

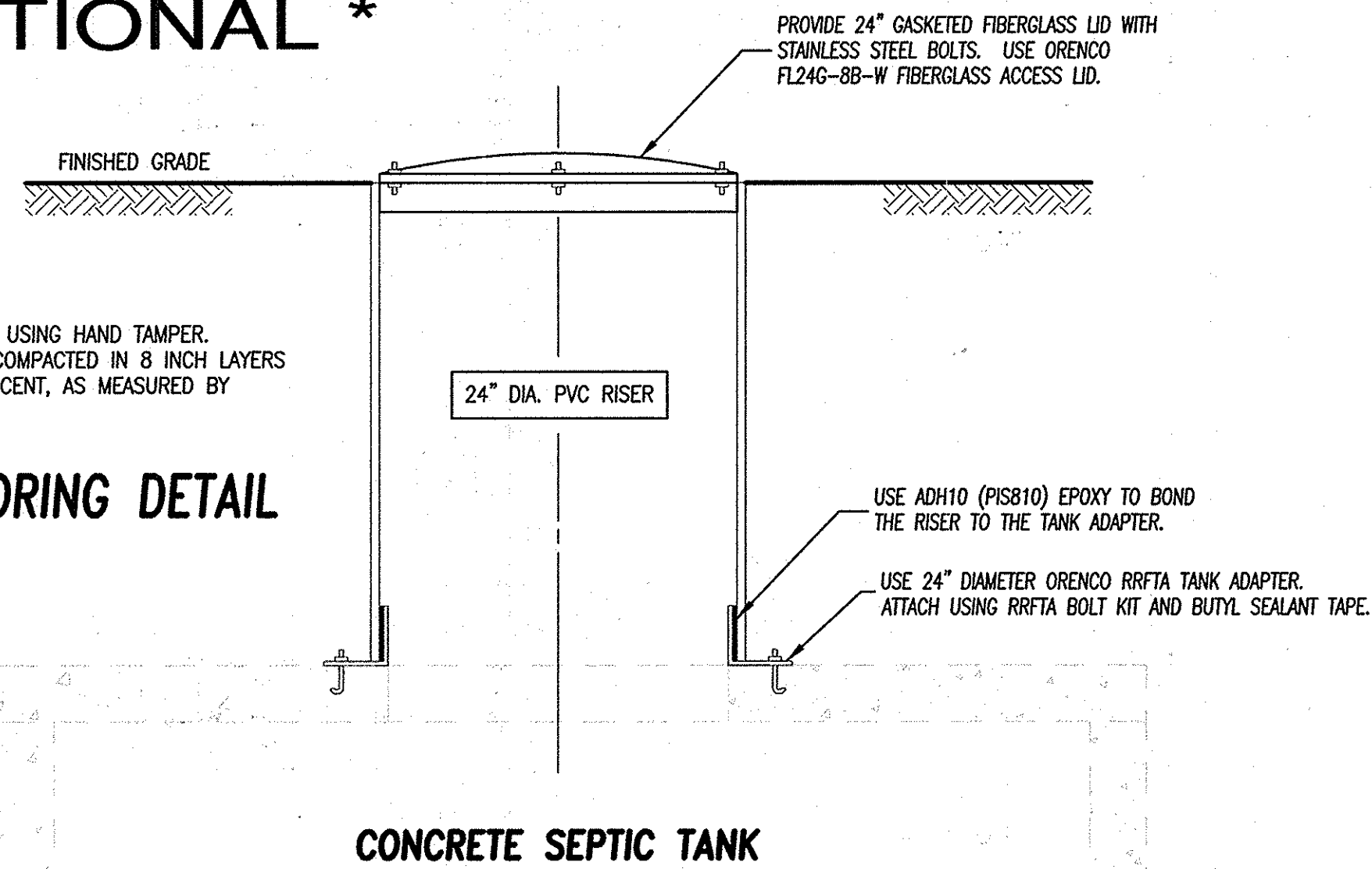


**AX20 Pod Detail**

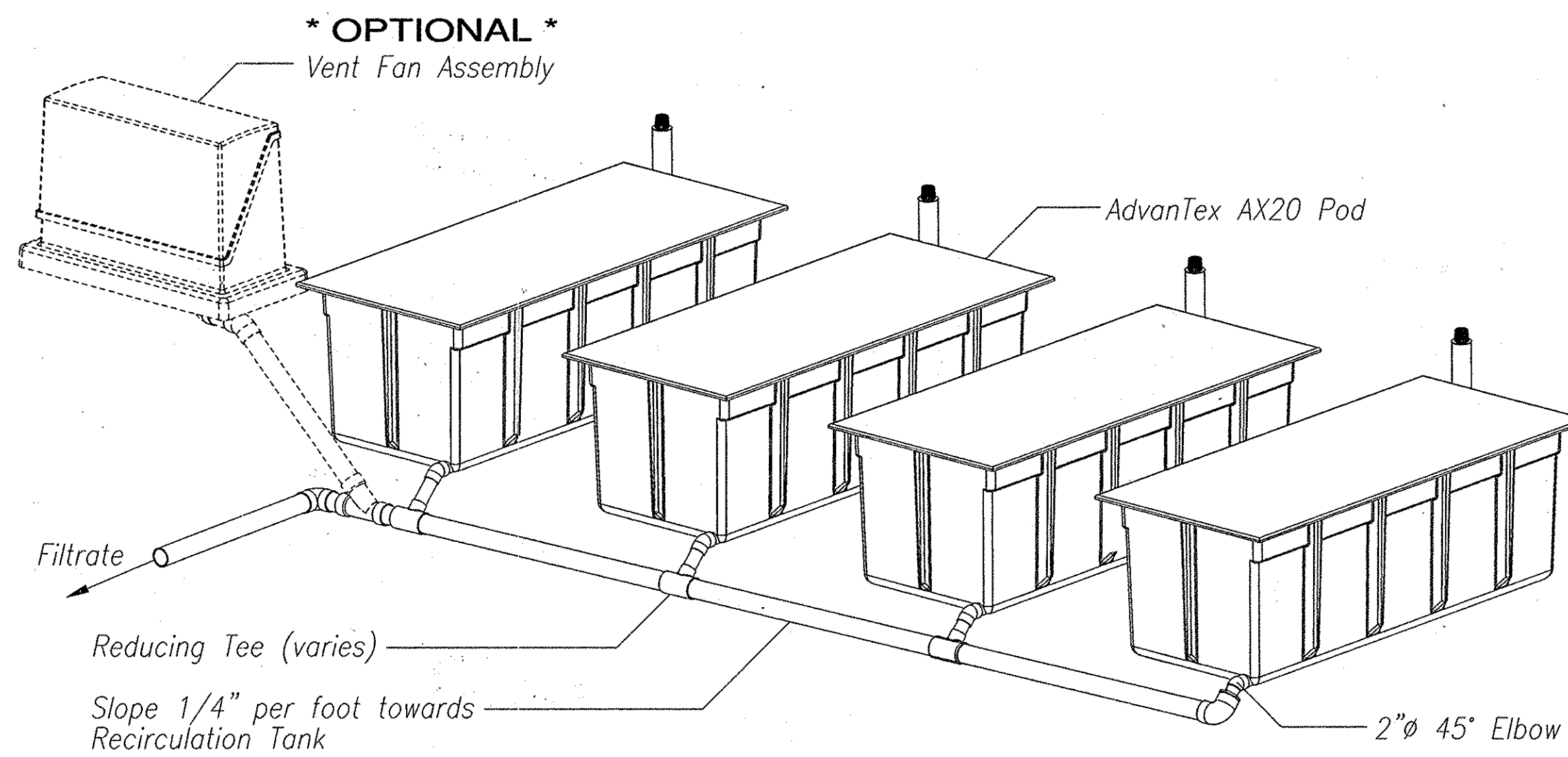
Scale: 1" = 1'-0"

**CONSTRUCTION NOTE:**  
1. COMPACT AROUND TANK AND RISER USING HAND TAMPER. ALL BACKFILL MATERIAL SHALL BE COMPACTED IN 8 INCH LAYERS AND TO A DRY DENSITY OF 95 PERCENT, AS MEASURED BY AASHTO METHOD T-99.

**RISER TANK ANCHORING DETAIL**  
NOT TO SCALE



**CONCRETE SEPTIC TANK**



**Filtrate Return Line ISO**

Scale: NTS

Model: WS-D3	Size:	60Hz	RPM: 1750	Stages: 1
--------------	-------	------	-----------	-----------

Job/ing No.:	Purchaser: GEIGER PUMP & EQUIP XXX	Service:
End User:	Issued by: John Elgert	Date: 07/17/2014
Item/Equip. No.: A	Quotation No.: JE14-07-17 01	Rev.: 0
Order No.:	Certified By:	

Operating Conditions		Pump Performance	
Temp.: 70.0 deg F	Published Efficiency: 40.0 %	Suction Specific Speed: 50.0 gpm	
Design Flow: 125.0 gpm	Rated Pump Efficiency: 40.0 %	Min. Hydraulic Flow: N/A	
Design TDH: 47.0 ft	Rated Total Power: 4.23 hp		
Actual Flow: 125.0 gpm	Non-Overloading Power: 6.0 hp		
Actual TDH: 54.3 ft	Imp. Dia. First 1 Stg(s): 8.000 in		
NPSHr:		Vapor Press:	
Solid size:	Shut off Head: 64.3 ft	Max. Solids Size: 2.5000 in	
Liquid:			
S.G./Visc.:	1.000/1.000 cp		

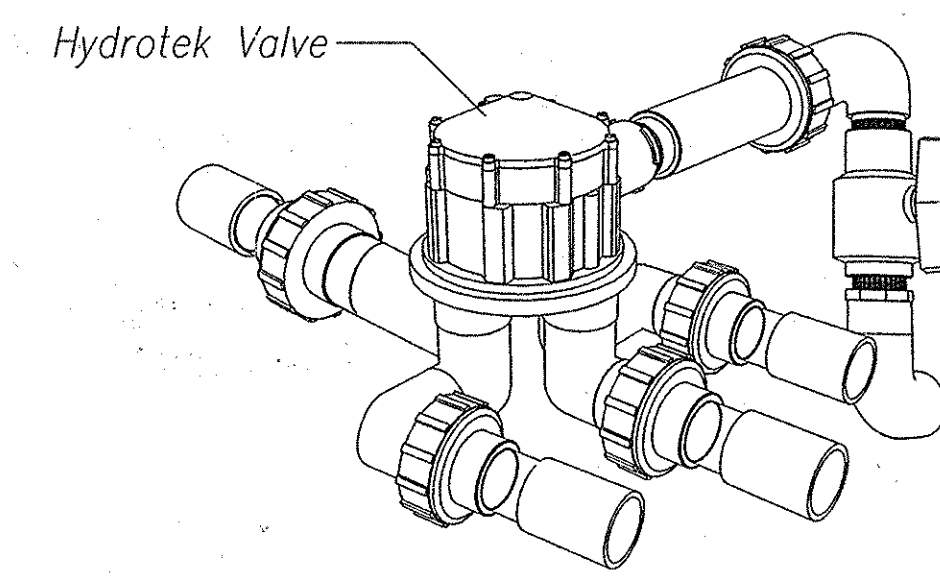
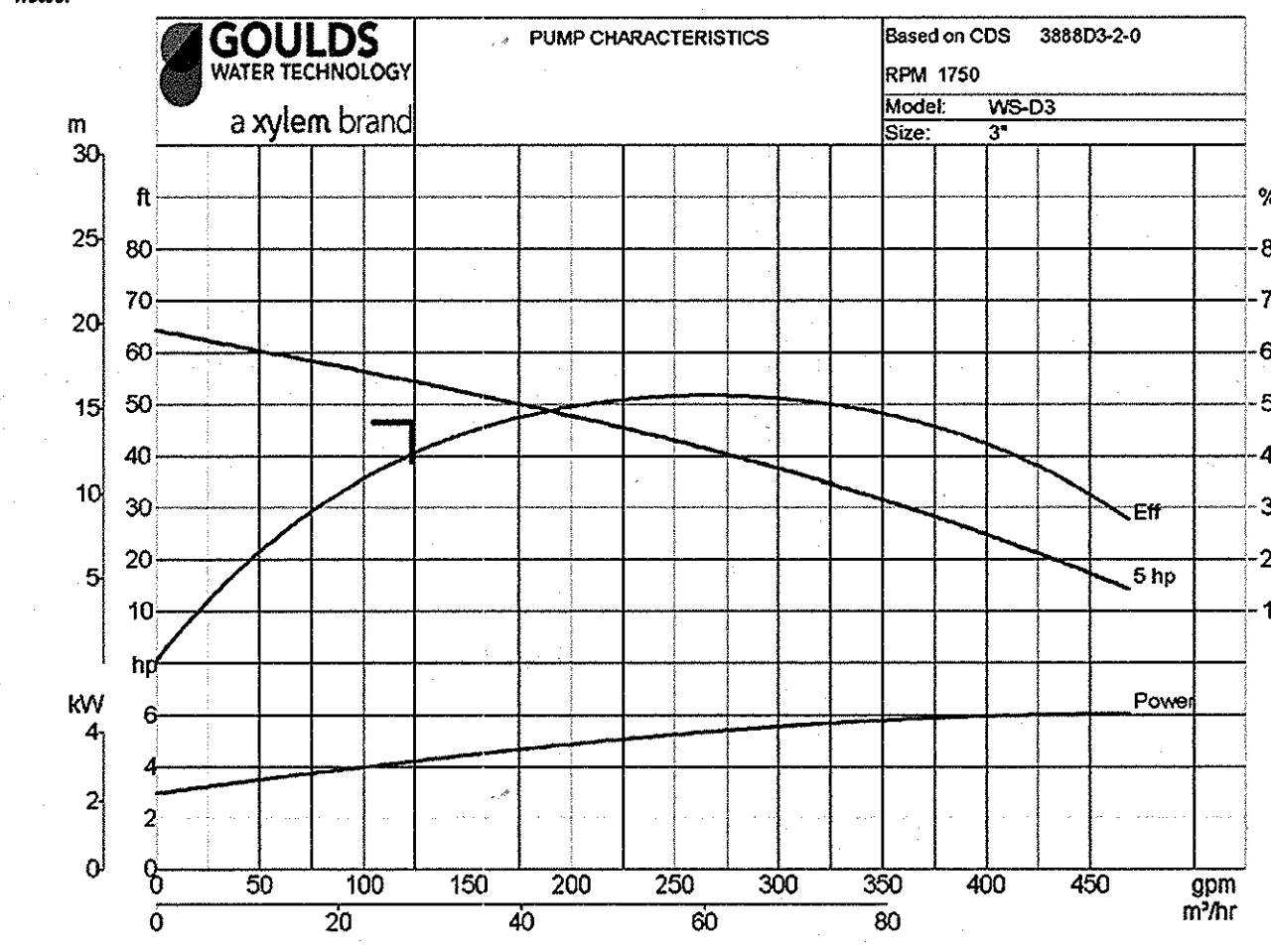
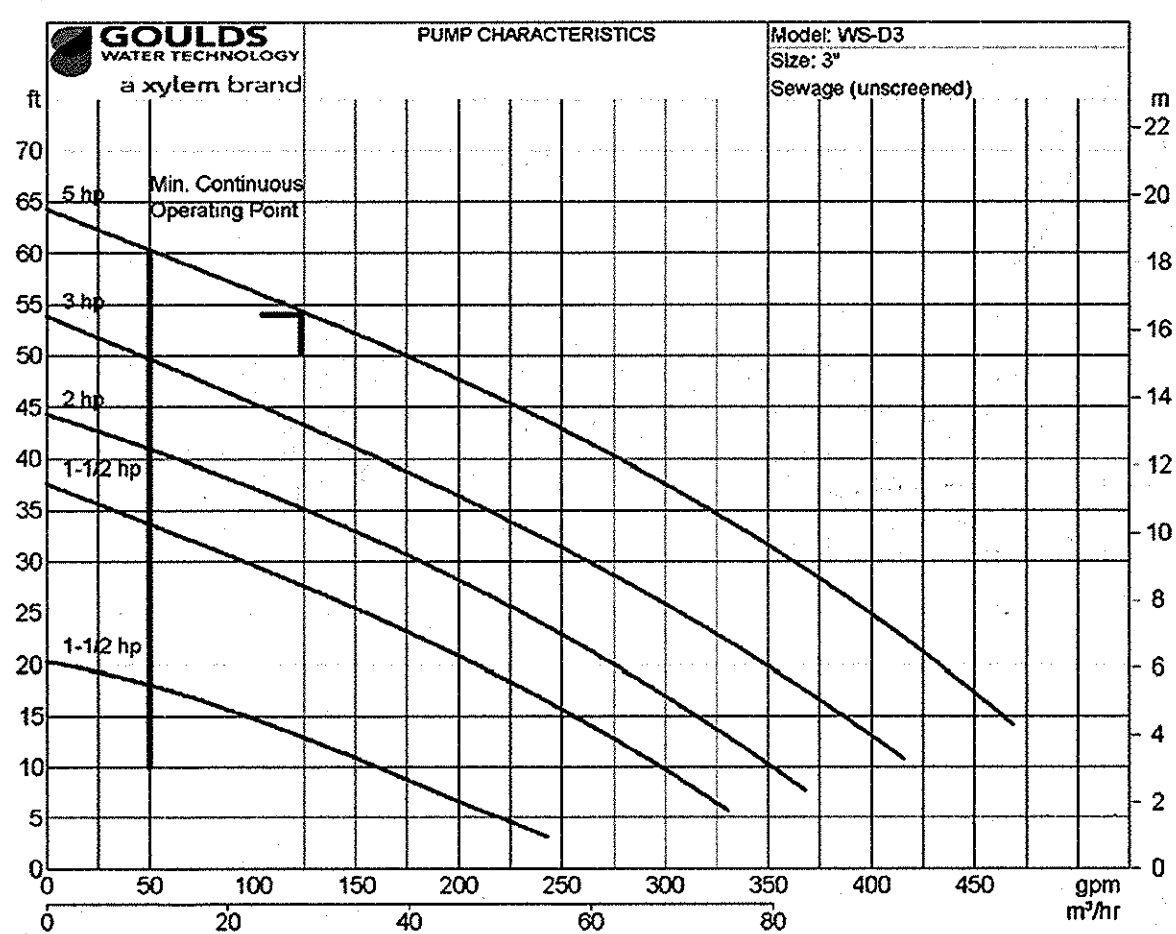
Notes: 1. Power and efficiency losses are not reflected on the curve below.

Model: WS-D3	Size:	60Hz	RPM: 1750	Stages: 1
--------------	-------	------	-----------	-----------

Job/ing No.:	Purchaser: GEIGER PUMP & EQUIP XXX	Service:
End User:	Issued by: John Elgert	Date: 07/17/2014
Item/Equip. No.: A	Quotation No.: JE14-07-17 01	Rev.: 0
Order No.:	Certified By:	

Operating Conditions		Pump Performance	
Temp.: 70.0 deg F	Published Efficiency: 40.0 %	Suction Specific Speed: 50.0 gpm	
Design Flow: 125.0 gpm	Rated Pump Efficiency: 40.0 %	Min. Hydraulic Flow: N/A	
Design TDH: 47.0 ft	Rated Total Power: 4.23 hp		
Actual Flow: 125.0 gpm	Non-Overloading Power: 6.0 hp		
Actual TDH: 54.3 ft	Imp. Dia. First 1 Stg(s): 8.000 in		
NPSHr:		Vapor Press:	
Solid size:	Shut off Head: 64.3 ft	Max. Solids Size: 2.5000 in	
Liquid:			
S.G./Visc.:	1.000/1.000 cp		

Notes:



**Automatic Distributing Valve Detail**

Scale: NTS

APPROVED: DEPARTMENT OF RECREATION AND PARKS	9/24/14		
DIRECTOR	DATE		
APPROVED: FOR PUBLIC WATER AND PRIVATE SEWERAGE SYSTEMS			
By: <i>Maureen Roseman</i>	DATE: 10/22/2014		
COUNTY HEALTH OFFICER	DATE: 10/20		
HOWARD COUNTY HEALTH DEPARTMENT			
APPROVED: DEPARTMENT OF PUBLIC WORKS			
DIRECTOR OF PUBLIC WORKS	DATE		
<i>Thomas E. Butler</i>	9/23/14		
CHIEF-BUREAU OF ENGINEERING	DATE		
<i>Steve Shaven</i>	9/23/14		
CHIEF, TRANSPORTATION & SPECIAL PROJECTS	DATE		
APPROVED: DEPARTMENT OF PLANNING AND ZONING			
CHIEF-DEVELOPMENT ENGINEERING DIVISION	DATE		
<i>Ketelshood</i>	10-31-14		
CHIEF-DIVISION OF LAND DEVELOPMENT	DATE		
<i>Maureen Roseman</i>	10/23/14		
DIRECTOR	DATE		
ADDRESS CHART			
PARCEL #	STREET ADDRESS		
23	11685 OLD FREDERICK ROAD/MD 99 MARRIOTTVILLE, MD 2104		
54	11685 OLD FREDERICK ROAD/MD 99 MARRIOTTVILLE, MD 2104		
PERMIT INFORMATION CHART			
WATER CODE: PUBLIC	SEWER CODE: N/A	BUILDING CODE: N/A	STREET ADDRESS: N/A
PROJECT NAME: ALPHA RIDGE PARK	SECTION/AREA: N/A	PARCEL: 23/54	
L/F: 847/606	GRID: 20-21	ZONING: RC-DEO	TAX MAP: 10
		ELEC. DIST.: 3	CENSUS TRACT: 6030

**BAT TREATMENT SYSTEM SPECIFICATIONS**

#11685 OLD FREDERICK ROAD (MD RTE 99) TAX MAP: 10 GRID: 20 PARCEL: 23 TAX ACCT. NO.: 03-292622  
ALPHA RIDGE COMMUNITY PARK TAX MAP: 10 GRID: 21 PARCEL: 54 TAX ACCT. NO.: 03-304795



**LEON A. PODOLAK and ASSOCIATES, L.L.C.**

SHEET 10C OF 38

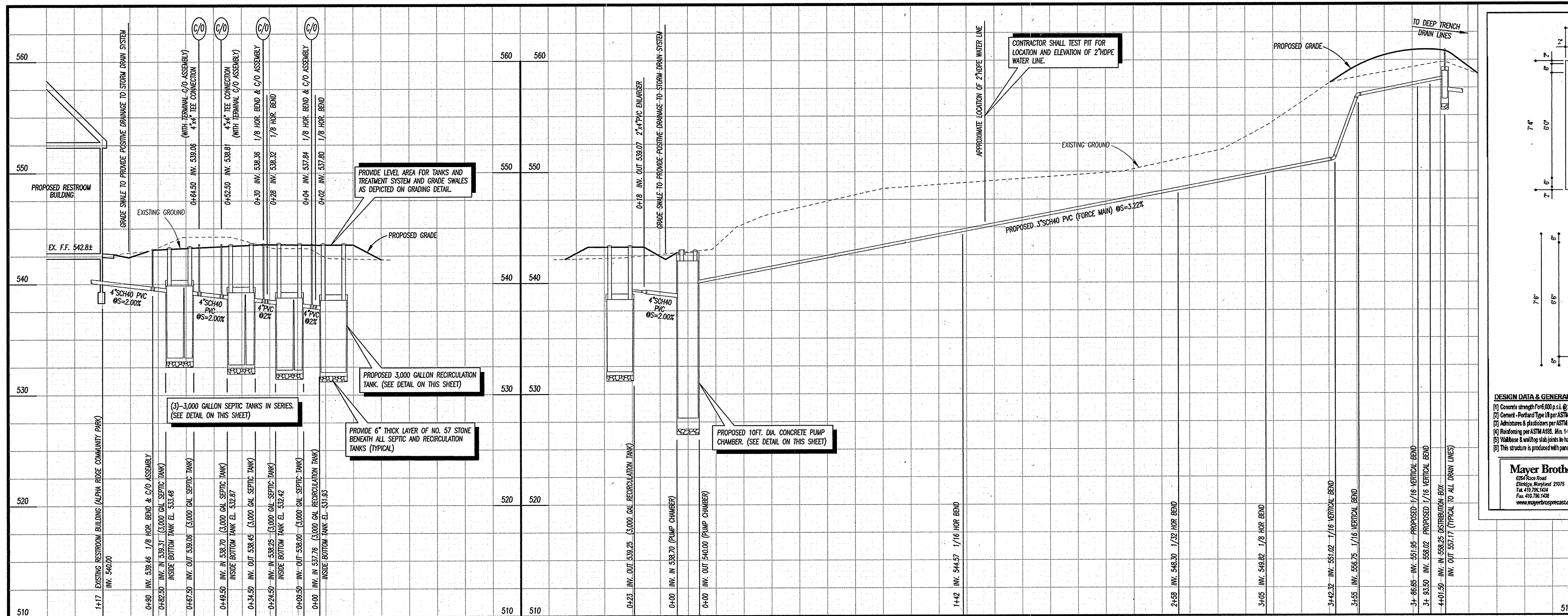
SURVEYING and CIVIL ENGINEERING  
147 East Main St. (P.O. Box 286) Westminster, Maryland 21157  
(410) 848-2228 - (410) 876-1226

Date: 9/18/14  
Revision: ADD 3,000 GALLON TANK, SEE COMMENTS

Peter L. Podolak, P.E.  
I hereby certify that these documents were prepared or approved by me, and I am a duly licensed professional engineer under the laws of the State of Maryland, license no. 19561, expiration date: 3-3-2016.

Date: July 18, 2014  
Scale: AS SHOWN  
Drawing No.

SDP-90-018



**(BAT) TREATMENT SYSTEM AND PUMP SYSTEM PROFILE (FOR BATHROOM BUILDING)**

SCALE: HORIZONTAL: 1"=30'  
VERTICAL: 1"=5'

**DESIGN DATA & GENERAL NOTES**

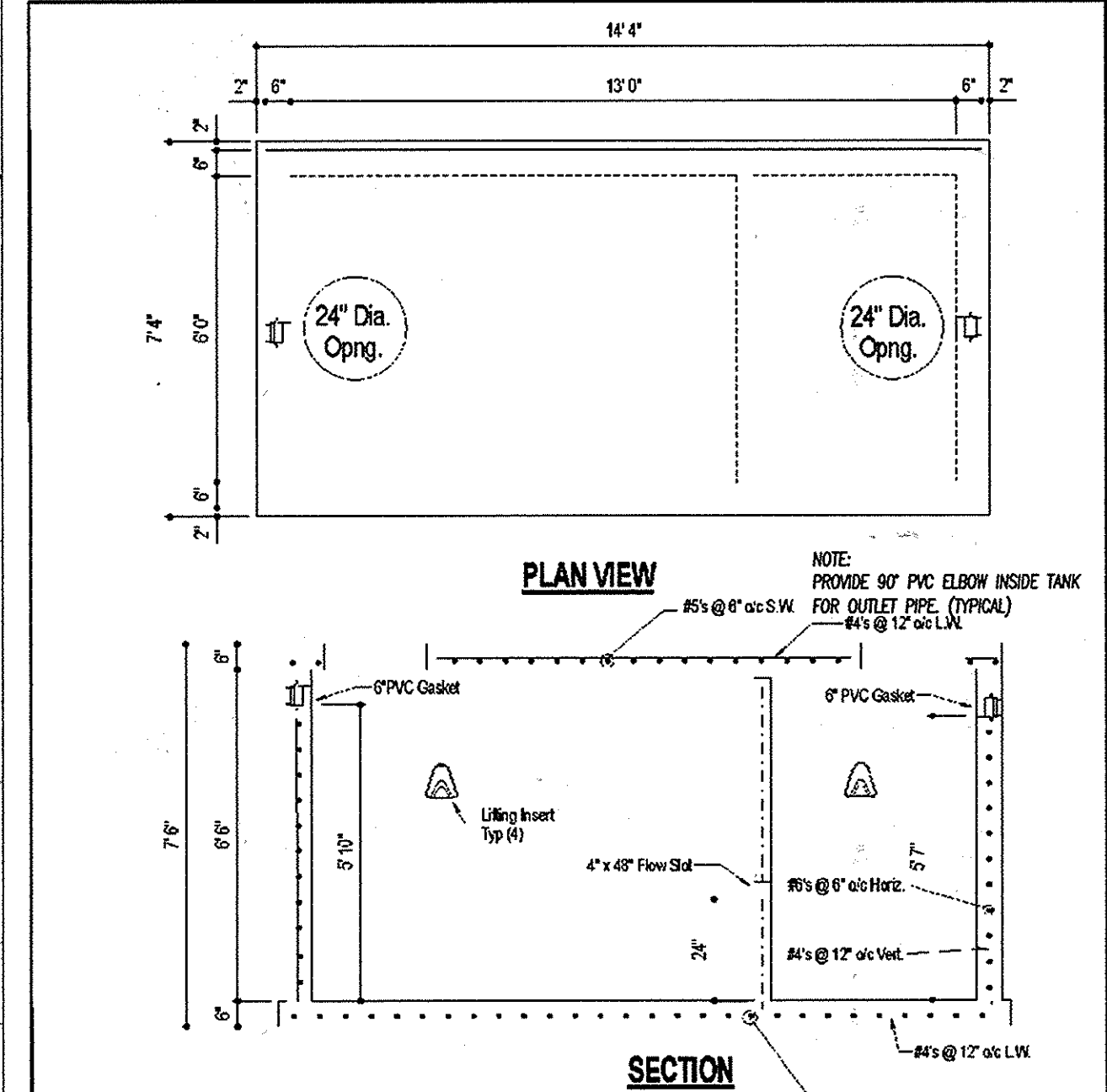
- Concrete strength = 4,000 p.s.i. @ 28 days. Density = 150 pcf.
- Concrete Reinforcing Bars per ASTM C 616 & C 617.
- Adhesives & plasticizers per ASTM C 208-88 & C 404-82.
- Reinforcing per ASTM A 615, Min. 1-1/2" cover.
- Wallbase & walltop slab joints to have built-in sealant.
- This structure is produced with panel forms, tolerances are +/- 1/2"

**Quantity: 3**  
**Box Weight = 30,100 lbs.**  
**Top Slab = 7,160 lbs.**

**Mayer Brothers, Inc.**  
6200 Pine Blvd  
Elkridge, Maryland 21075  
Tel. 410.776.5558  
Fax. 410.776.5438  
www.mayerbrothers.com

**MBI**  
3,000 GALLON SEPTIC TANK  
Alpha Ridge  
MADE TO ORDER

Dwg. No. 3000 Gd No Scale August 28, 2014



APPROVED: DEPARTMENT OF RECREATION AND PARKS <i>[Signature]</i> 9/24/14 DIRECTOR DATE												
APPROVED: FOR PUBLIC WATER AND PRIVATE SEWERAGE SYSTEMS <i>[Signature]</i> 10/22/2014 COUNTY HEALTH OFFICER DATE HOWARD COUNTY HEALTH DEPARTMENT												
APPROVED: DEPARTMENT OF PUBLIC WORKS <i>[Signature]</i> 9/24/14 DIRECTOR OF PUBLIC WORKS DATE												
<i>[Signature]</i> 9/23/14 CHIEF-BUREAU OF ENGINEERING DATE												
<i>[Signature]</i> 9/23/14 CHIEF, TRANSPORTATION & SPECIAL PROJECTS DATE												
APPROVED: DEPARTMENT OF PLANNING AND ZONING <i>[Signature]</i> 10-30-14 CHIEF-DEVELOPMENT ENGINEERING DIVISION DATE												
<i>[Signature]</i> 10-31-14 CHIEF-DIVISION OF LAND DEVELOPMENT DATE												
<i>[Signature]</i> 10/21/14 DIRECTOR DATE												
ADDRESS CHART												
<table border="1"> <tr> <th>PARCEL #</th> <th>STREET ADDRESS</th> </tr> <tr> <td>23</td> <td>11685 OLD FREDERICK ROAD/MD 99 MARRIOTTVILLE, MD 21104</td> </tr> <tr> <td>54</td> <td>11685 OLD FREDERICK ROAD/MD 99 MARRIOTTVILLE, MD 21104</td> </tr> </table>	PARCEL #	STREET ADDRESS	23	11685 OLD FREDERICK ROAD/MD 99 MARRIOTTVILLE, MD 21104	54	11685 OLD FREDERICK ROAD/MD 99 MARRIOTTVILLE, MD 21104						
PARCEL #	STREET ADDRESS											
23	11685 OLD FREDERICK ROAD/MD 99 MARRIOTTVILLE, MD 21104											
54	11685 OLD FREDERICK ROAD/MD 99 MARRIOTTVILLE, MD 21104											
PERMIT INFORMATION CHART												
<table border="1"> <tr> <th>WATER CODE</th> <th>SEWER CODE</th> <th>BUILDING</th> <th>STREET ADDRESS</th> </tr> <tr> <td>PUBLIC</td> <td>PUBLIC</td> <td>N/A</td> <td>N/A</td> </tr> </table>	WATER CODE	SEWER CODE	BUILDING	STREET ADDRESS	PUBLIC	PUBLIC	N/A	N/A				
WATER CODE	SEWER CODE	BUILDING	STREET ADDRESS									
PUBLIC	PUBLIC	N/A	N/A									
<table border="1"> <tr> <th>PROJECT NAME</th> <th>SECTION/AREA</th> <th>PARCEL</th> </tr> <tr> <td>ALPHA RIDGE PARK</td> <td>N/A</td> <td>23/54</td> </tr> </table>	PROJECT NAME	SECTION/AREA	PARCEL	ALPHA RIDGE PARK	N/A	23/54						
PROJECT NAME	SECTION/AREA	PARCEL										
ALPHA RIDGE PARK	N/A	23/54										
<table border="1"> <tr> <th>L/F</th> <th>GRID*</th> <th>ZONING</th> <th>TAX MAP</th> <th>ELEC. DIST.</th> <th>CENSUS TRACT</th> </tr> <tr> <td>847/606</td> <td>20-21</td> <td>RC-BED</td> <td>10</td> <td>3</td> <td>6030</td> </tr> </table>	L/F	GRID*	ZONING	TAX MAP	ELEC. DIST.	CENSUS TRACT	847/606	20-21	RC-BED	10	3	6030
L/F	GRID*	ZONING	TAX MAP	ELEC. DIST.	CENSUS TRACT							
847/606	20-21	RC-BED	10	3	6030							

**BAT TREATMENT SYSTEM PROFILE & SPECIFICATIONS**

#11685 OLD FREDERICK ROAD (MD RTE 99) TAX MAP: 10 GRID: 20 PARCEL: 23 TAX ACCT. NO.: 03-292622  
ALPHA RIDGE COMMUNITY PARK TAX MAP: 10 GRID: 21 PARCEL: 54 TAX ACCT. NO.: 03-304795

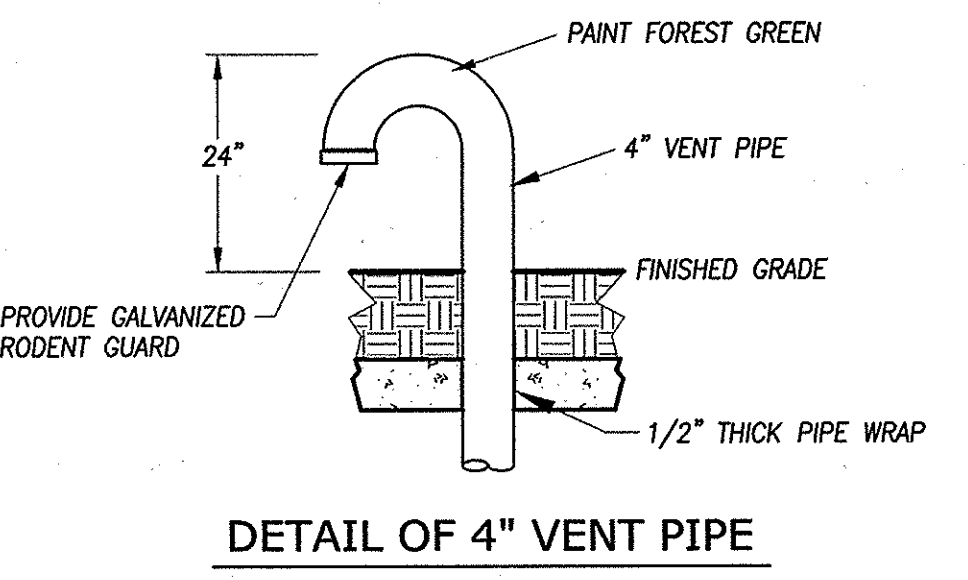
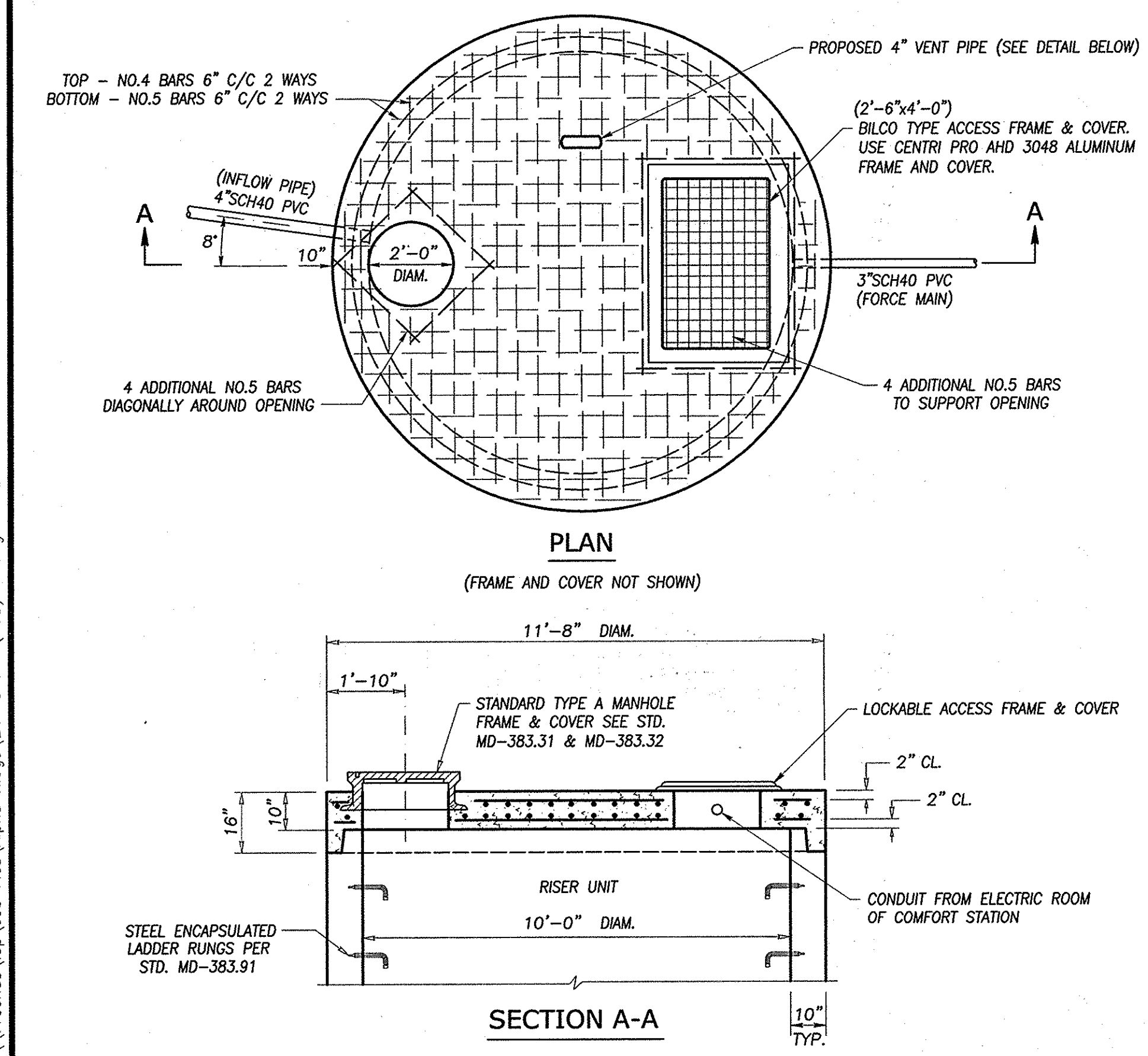
**LEON A. PODOLAK and ASSOCIATES, L.L.C.**

**SHEET 10B OF 38**

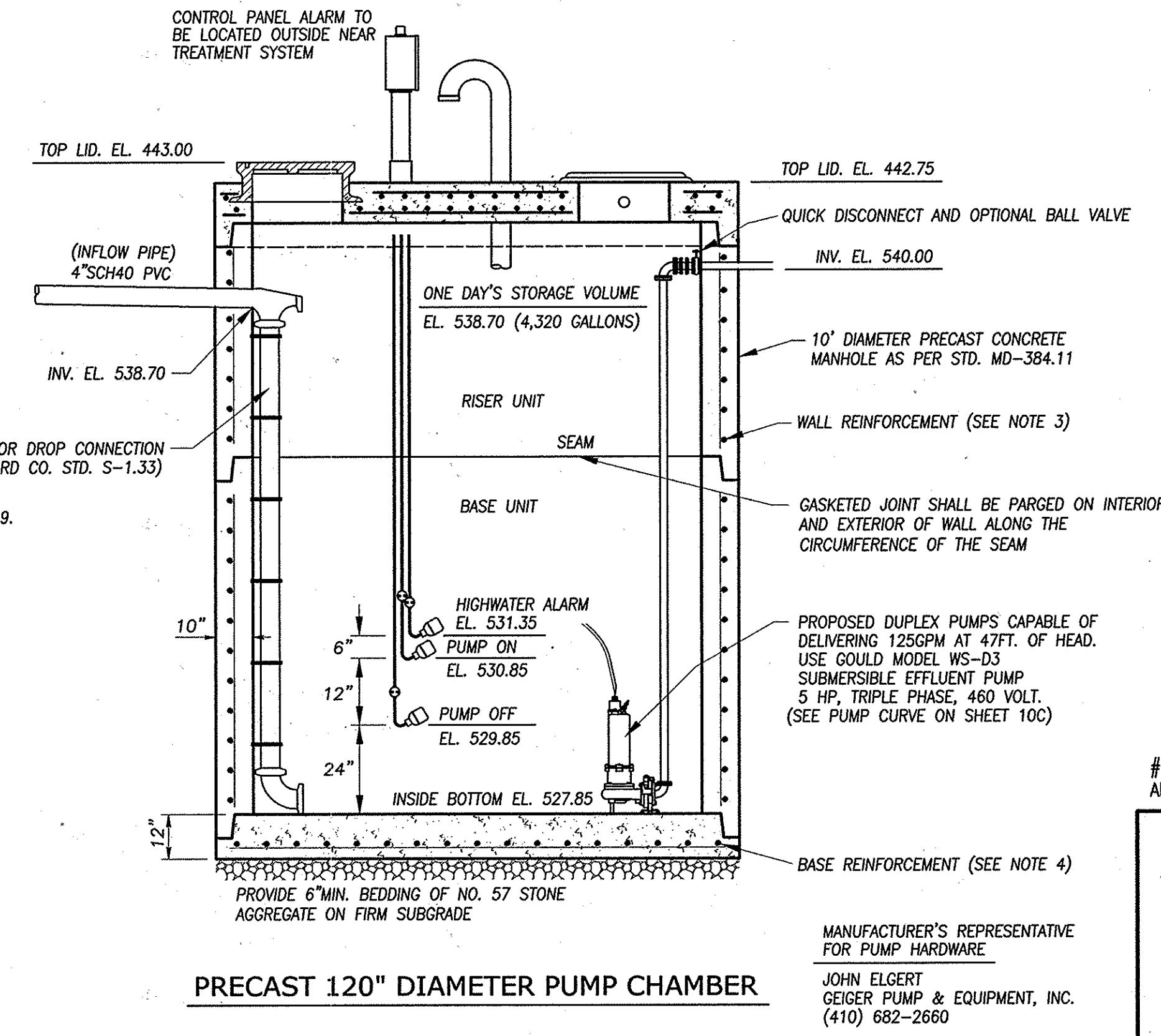
**DATE** 8-27-2014 **REVISION** ADD 3,000 GALLON TANK  
**DATE** 7/18, 2014 **SCALE** AS SHOWN  
**DRAWING NO.**

**SURVEYING and CIVIL ENGINEERING**  
147 East West St. (P.O. Box 288) Westminster, Maryland 21157  
(410) 648-2229 - (410) 676-1226

*[Signature]* 9/18/14  
Peter L. Podolak, P.E.  
I hereby certify that these documents were prepared or approved by me, and I am a duly licensed professional engineer under the laws of the State of Maryland, license no. 19561, expiration date: 3-3-2016.

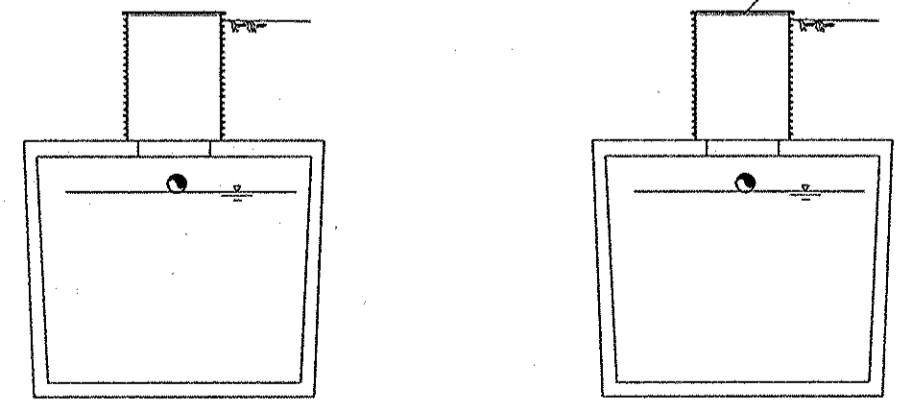
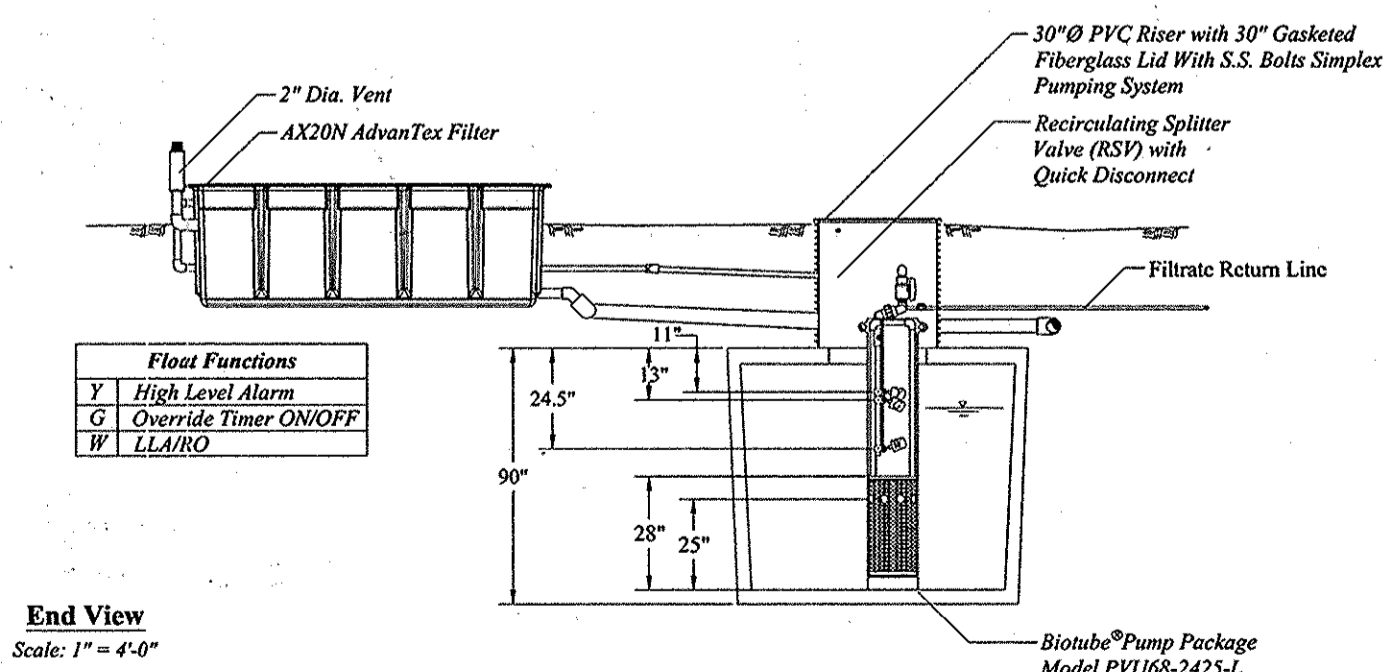
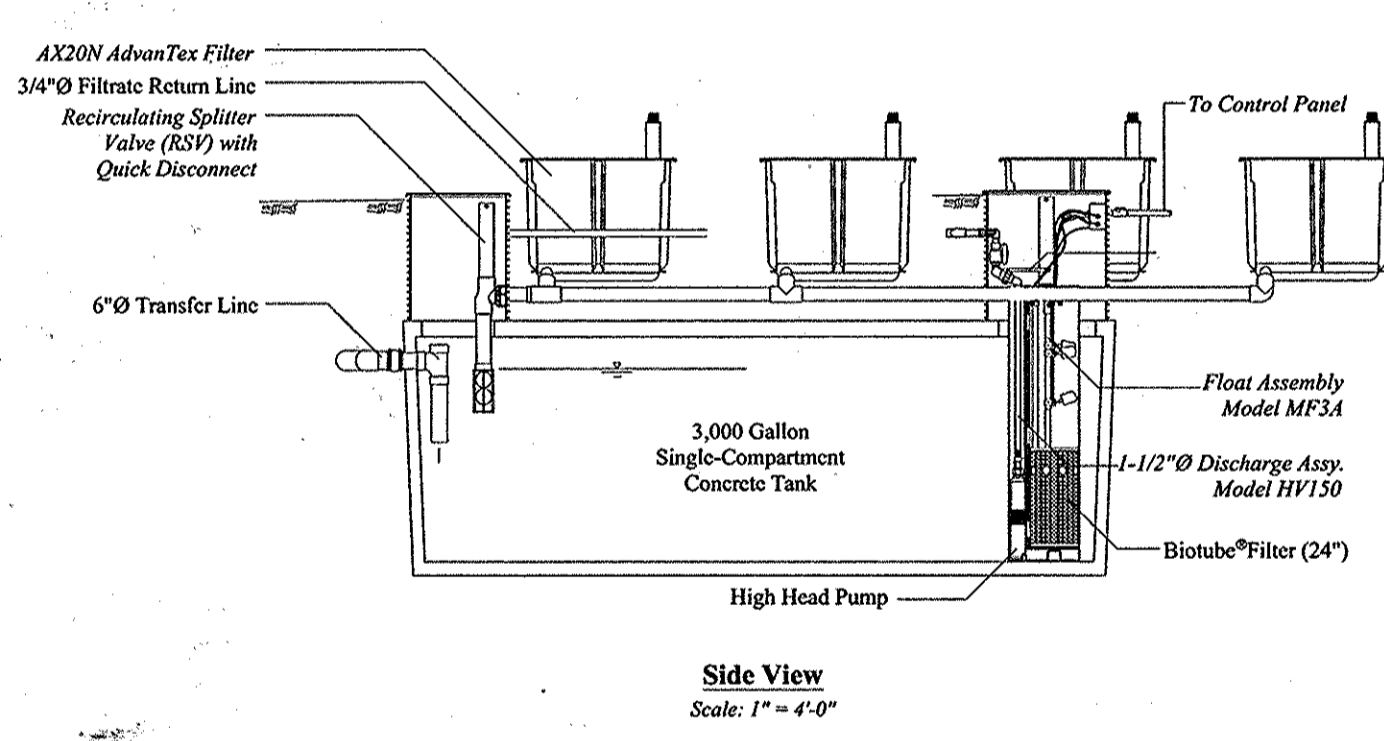
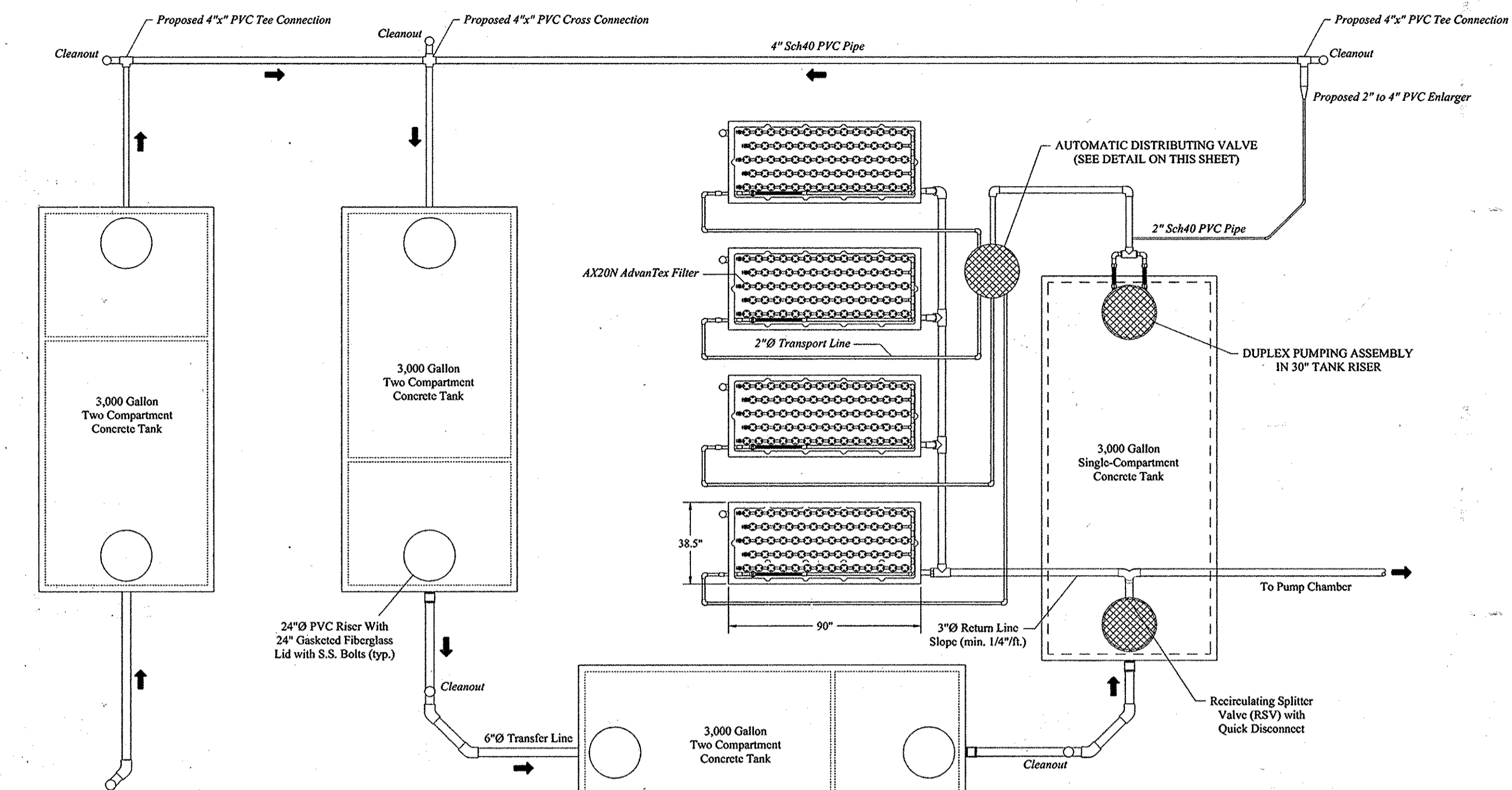
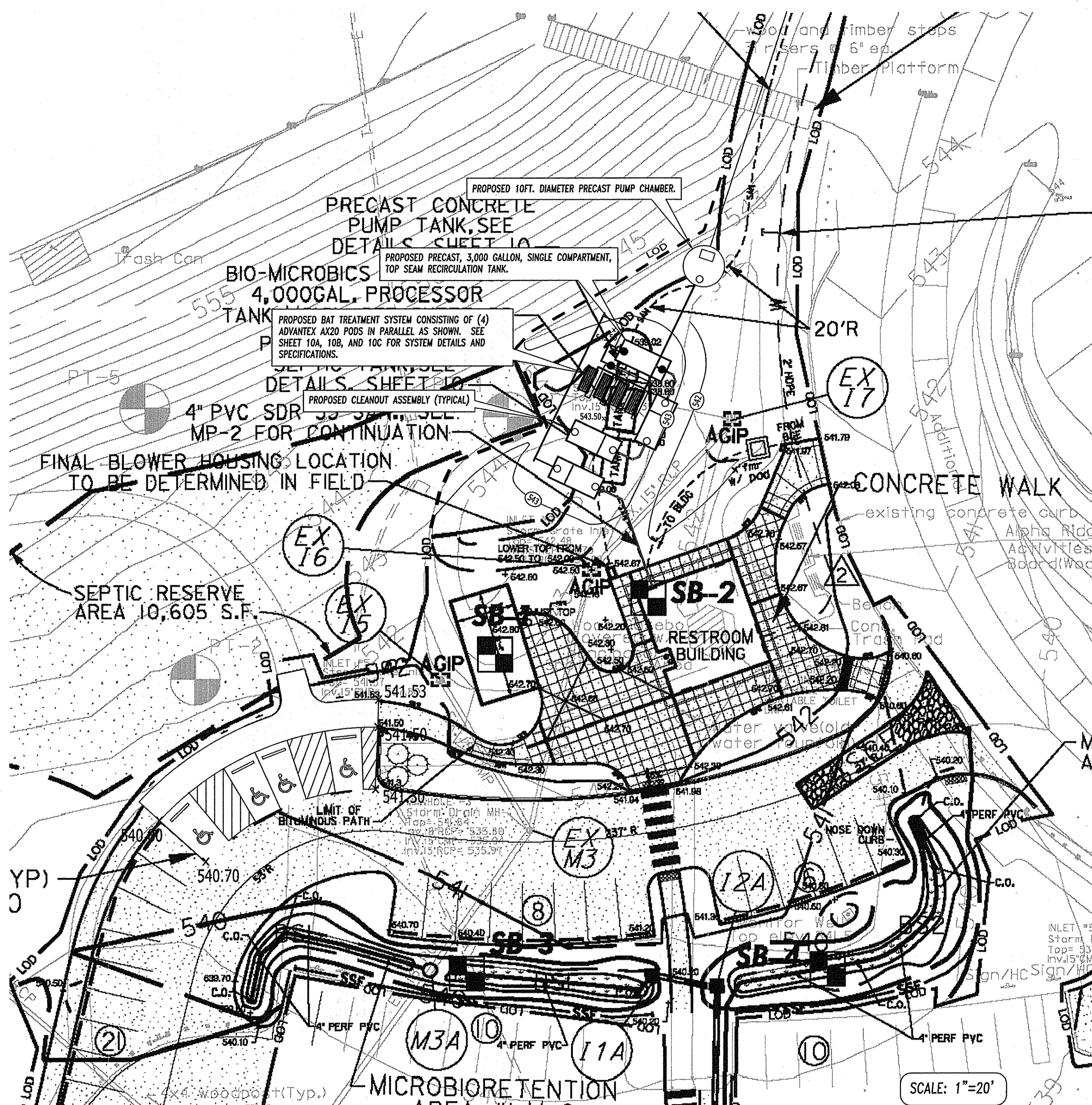


- NOTES**
- PUMP STATION SHALL BE CONSTRUCTED IN ACCORDANCE WITH AASHTO M 199.
  - CONCRETE SHALL BE MIX NO. 6 (4500 PSI).
  - WALL REINFORCEMENT FOR BASE UNIT AND RISER UNITS SHALL BE REINFORCEMENT BARS OR WELDED WIRE FABRIC WITH A MINIMUM AREA OF 0.30 IN.<sup>2</sup>/FT FOR THE 120" DIAMETER MANHOLES. WELDED WIRE FABRIC SHALL MEET ASTM A 185 AND A 82. REINFORCEMENT BARS SHALL MEET ASTM A 615, GRADE 60.
  - BASE REINFORCEMENT TO BE REINFORCEMENT BARS OR WELDED WIRE FABRIC WITH A MINIMUM AREA OF 0.39 IN.<sup>2</sup>/FT. THE BASE SHALL BE CAST MONOLITHIC WITH THE BASE UNIT OR JOINTED PER THE MANUFACTURER'S DESIGN.
  - THE MANUFACTURER SHALL FORM MALE AND FEMALE ENDS OF JOINTS USING THEIR OWN DESIGN. THE JOINTS SHALL BE SEALED BY THE CONTRACTOR AND MADE WATERTIGHT USING (WHERE APPLICABLE) MORTAR, RUBBER O-RING GASKETS MEETING ASTM C 361 & C 443 OR FLEXIBLE PLASTIC GASKETS MEETING AASHTO M 198 TYPE B.
  - LADDER RUNGS SHALL BE INSTALLED IN VERTICAL ALIGNMENT AT 1'-4" MAXIMUM C/C. RUNG TYPES SHALL BE IN ACCORDANCE WITH STANDARDS MD 383.91 OR MD 383.92. LADDER RUNGS SHALL BE INCIDENTAL TO THE COST OF THE MANHOLE.
  - WHEN THE DISTANCE BETWEEN MULTIPLE OPENINGS IN THE BASE UNIT OR ANY RISER UNIT IS LESS THAN 6" ADDITIONAL NO. 3 BARS ARE REQUIRED AROUND OPENINGS.
  - LIFT HOLES OR LIFT EYES SHALL BE PROVIDED IN EACH SECTION FOR HANDLING.



\\Freenas\top\job Files\Alpha Ridge\14P Sht 1 (10B).r1.dwg 8-27-2014

SDP-90-018



Three 3,000 gallon septic tanks in series. (See TOP VIEW above)

APPROVED: DEPARTMENT OF RECREATION AND PARKS <i>John B. Spivey</i> 9/24/14 DIRECTOR DATE			
APPROVED: FOR PUBLIC WATER AND PRIVATE SEWERAGE SYSTEMS <i>Deborah Ann Rossmore</i> 10/22/2014 COUNTY HEALTH OFFICER DATE			
APPROVED: DEPARTMENT OF PUBLIC WORKS <i>John P. ...</i> 9/24/14 DIRECTOR OF PUBLIC WORKS DATE			
APPROVED: DEPARTMENT OF PLANNING AND ZONING <i>W. ...</i> 10-30-14 CHIEF-DEVELOPMENT ENGINEERING DIVISION DATE			
APPROVED: DEPARTMENT OF LAND DEVELOPMENT <i>W. ...</i> 10-31-14 CHIEF-DIVISION OF LAND DEVELOPMENT DATE			
APPROVED: DIRECTOR <i>John B. Spivey</i> 10/1/14 DIRECTOR DATE			
ADDRESS CHART			
PARCEL #	STREET ADDRESS		
23	11685 OLD FREDERICK ROAD/MD 99 MARRIOTTVILLE, MD 2104		
54	11685 OLD FREDERICK ROAD/MD 99 MARRIOTTVILLE, MD 2104		
PERMIT INFORMATION CHART			
WATER CODE: PUBLIC	SEWER CODE: N/A	BUILDING: N/A	STREET ADDRESS: N/A
PROJECT NAME: ALPHA RIDGE PARK	SECTION/AREA: N/A	PARCEL: 23/54	
L/F: 847/606	GRID#: 20-21	ZONING: RC-DEO	TAX MAP: 10 ELEC. DIST.: 3 CENSUS TRACT: 6030

### BAT TREATMENT SYSTEM SPECIFICATIONS

#11685 OLD FREDERICK ROAD (MD RTE 99) ALPHA RIDGE COMMUNITY PARK  
TAX MAP: 10 GRID: 20 PARCEL: 23 TAX ACCT. NO.: 03-292622  
TAX MAP: 10 GRID: 21 PARCEL: 54 TAX ACCT. NO.: 03-304795

SHEET <b>10A</b> OF <b>38</b>		<b>LEON A. PODOLAK and ASSOCIATES, L.L.C.</b> SURVEYING and CIVIL ENGINEERING 147 East Main St. (P.O. Box 266) Westminster, Maryland 21157 (410) 846-2229 - (410) 876-1226		Date: 9/15/14 Revision: ADD 3,000 GALLON TANK SEE COMMENTS
		Date: July 18, 2014 Scale: AS SHOWN Drawing No.	I hereby certify that these documents were prepared or approved by me, and I am a duly licensed professional engineer under the laws of the State of Maryland, license no. 19561, expiration date 3-3-2016.	Date: 9/15/14 Peter L. Podolak, P.E.

SDP-90-018

\\Frenco\lsp\lsp\Fies\Alpha Ridge\lsp\Sht. 1 (10A).r1.dwg 8-27-2014