



## CERTIFICATE OF AUTHENTICITY

THIS IS TO CERTIFY THAT THE FOLLOWING ELECTRONIC RECORDS ARE TRUE AND ACCURATE REPRODUCTIONS OF THE ORIGINAL RECORDS OF JAMES CITY COUNTY GENERAL SERVICES DEPARTMENT- STORMWATER DIVISION; WERE SCANNED IN THE REGULAR COURSE OF BUSINESS PURSUANT TO GUIDELINES ESTABLISHED BY THE LIBRARY OF VIRGINIA AND ARCHIVES; AND HAVE BEEN VERIFIED IN THE CUSTODY OF THE INDIVIDUAL LISTED BELOW.

**BMP NUMBER:** JR050

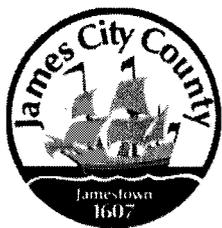
**DATE VERIFIED:** June 20, 2012

**QUALITY ASSURANCE TECHNICIAN:**

Leah Hardenbergh

A handwritten signature in cursive script that reads "Leah Hardenbergh". The signature is written over a horizontal line.

**LOCATION:** WILLIAMSBURG, VIRGINIA



# Stormwater Division

## MEMORANDUM

**DATE:** March 11, 2010  
**TO:** Michael J. Gillis, Virginia Correctional Enterprises Document Management Services  
**FROM:** Jo Anna Ripley, Stormwater  
**PO:** 270712  
**RE:** Files Approved for Scanning

---

**General File ID or BMP ID:** JR050

**PIN:** 5130100006

**Subdivision, Tract, Business or Owner**

**Name (if known):**

Kingsmill

**Property Description:**

Warehams Pond Recreation Center

**Site Address:**

175 Warehams Pond Road

*(For internal use only)*

**Box** 12

**Drawer:** 7

**Agreements:** (in file as of scan date)

Y

**Book or Doc#:**

010022878

**Page:**

010004468

Comments

JR-050

**Contents for Stormwater Management Facilities As-built Files**

Each file is to contain:

- ① As-built plan
2. Completed construction certification
- ③ Construction Plan
- ④ Design Calculations
5. Watershed Map
- ⑥ Maintenance Agreement
7. Correspondence with owners
- ⑧ Inspection Records
9. Enforcement Actions

000017116

DECLARATION OF COVENANTS

INSPECTION/MAINTENANCE OF DRAINAGE SYSTEM

JR008  
JR060  
JR067  
JR012  
JR044  
JR049  
JR050

THIS DECLARATION, made this 7 day of SEPTEMBER, 192000  
between BUSCH PROPERTIES, INC  
and all successors in interest, hereinafter referred to as the "COVENANTOR(S)," owner(s) of the  
following property: KINGSMILL RESORT OPERATIONS BUILDING  
Deed Book \_\_\_\_\_, Page No. \_\_\_\_\_ or Instrument No. TAX MAP/PARCEL NOS.  
and James City County, Virginia, hereinafter referred to as the "COUNTY." 48-2/(50-4)  
PARCEL ID: 5046100001

WITNESSETH:

We, the COVENANTOR(S), with full authority to execute deeds, mortgages, other covenants, and all rights, titles and interests in the property described above, do hereby covenant with the COUNTY as follows:

1. The COVENANTOR(S) shall provide maintenance for the drainage system including any runoff control facilities, conveyance systems and associated easements, hereinafter referred to as the "SYSTEM," located on and serving the above-described property to ensure that the SYSTEM is and remains in proper working condition in accordance with approved design standards, and with the law and applicable executive regulations. The SYSTEM shall not include any elements located within any Virginia Department of Transportation rights-of-way.
2. If necessary, the COVENANTOR(S) shall levy regular or special assessments against all present or subsequent owners of property served by the SYSTEM to ensure that the SYSTEM is properly maintained.
3. The COVENANTOR(S) shall provide and maintain perpetual access from public right-of-ways to the SYSTEM for the COUNTY, its agent and its contractor.
4. The COVENANTOR(S) shall grant the COUNTY, its agent and its contractor a right of entry to the SYSTEM for the purpose of inspecting, operating, installing, constructing, reconstructing, maintaining or repairing the SYSTEM.
5. If, after reasonable notice by the COUNTY, the COVENANTOR(S) shall fail to maintain the SYSTEM in accordance with the approved design standards and with the law and applicable executive regulations, the COUNTY may perform all necessary repair or maintenance work, and the COUNTY may assess the COVENANTOR(S) and/or all property served by the SYSTEM for the cost of the work and any applicable penalties.
6. The COVENANTOR(S) shall indemnify and save the COUNTY harmless from any and all claims for damages to persons or property arising from the installation, construction, maintenance, repair, operation or use of the SYSTEM.
7. The COVENANTOR(s) shall promptly notify the COUNTY when the COVENANTOR(S) legally transfers any of the COVENANTOR(S)' responsibilities for the SYSTEM. The COVENANTOR(S)' shall supply the COUNTY with a copy of any document of transfer, executed by both parties.
8. The covenants contained herein shall run with the land and shall bind the COVENANTOR(S) and the COVENANTOR(S)' heirs, executors, administrators, successors and assignees, and shall bind all present and subsequent owners of property served by the SYSTEM.
9. This COVENANT shall be recorded in the County Land Records.

SEP 18 01 34

IN WITNESS WHEREOF, the COVENANTOR(S) have executed this DECLARATION OF COVENANTS as of this 7 day of SEPTEMBER, 192000

COVENANTOR(S)

Jesse C. Young  
JESSE YOUNG

Print Name/Title DIRECTOR OF COMMUNITY AFFAIRS AND PROJECT DEVELOPMENT

ATTEST:

\_\_\_\_\_

COVENANTOR(S)

\_\_\_\_\_

Print Name/Title \_\_\_\_\_

ATTEST:

\_\_\_\_\_

COMMONWEALTH OF VIRGINIA  
CITY/COUNTY OF James City

I hereby certify that on this 7 day of September, 192000 before the subscribed, a Notary Public of the State of Virginia, and for the City/County of James City, aforesaid personally appeared Jesse C. Young and did acknowledge the foregoing instrument to be their Act.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal this 7 day of September, 192000.

Allison Matthews  
Notary Public

SEP 11 8 01 35

My Commission expires: April 30, 2002

Approved as to form:



This Declaration of Covenants prepared by:

JESSE C. YOUNG  
(Print Name)

DIRECTOR OF COMMUNITY AFFAIRS AND PROJECT DEVELOPMENT  
(Title)

1010 KINGSMILL RD.  
(Address)

WILLIAMSBURG VA. 23185  
(City) (State) (Zip)

VIRGINIA: City of Williamsburg and County of James City, to-wit:  
This Declaration of Covenants was presented with certificate annexed and admitted to record on September 11, 2000 at 1:23 AM/PM in the Clerk's Office of the Circuit Court of the City of Williamsburg and County of James City.

drainage.pre  
Revised 2/97  
by Daisy B. Woolridge Deputy Clerk

COPY

DECLARATION OF COVENANTS

INSPECTION/MAINTENANCE OF DRAINAGE SYSTEM

THIS DECLARATION, made this 26 day of October, 2001, between Kingsmill Community Services Assn and all successors in interest, hereinafter referred to as the "COVENANTOR(S)," owner(s) of the following property: Wareham's Pond Recreation Center, Deed Book \_\_\_\_\_, Page No. \_\_\_\_\_ or Document No. 010004468, and James City County, Virginia, hereinafter referred to as the "COUNTY."

WITNESSETH:

We, the COVENANTOR(S), with full authority to execute deeds, mortgages, other covenants, and all rights, titles and interests in the property described above, do hereby covenant with the COUNTY as follows:

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9. This COVENANT shall be recorded in the County Land Records.

Instrument # 010022878  
Recorded on Dec. 11, 2001

IN WITNESS WHEREOF, the COVENANTOR(S) have executed this DECLARATION OF COVENANTS as of this 26th day of October, 20 01.

**COVENANTOR(S)**

Kingsmill Community Services Association

William B. Voliva, Jr.  
William B. Voliva, Jr.  
President

ATTEST:

\_\_\_\_\_

**COVENANTOR(S)**

\_\_\_\_\_

ATTEST:

\_\_\_\_\_

**COMMONWEALTH OF VIRGINIA**

~~CITY~~/COUNTY OF JAMES CITY

I hereby certify that on this 26th day of October, 20 01, before the subscribed, a Notary Public of the State of Virginia, ~~and for the County of~~ at large, ~~aforsaid~~ personally appeared William B. Voliva, Jr. and did acknowledge the foregoing instrument to be their Act.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal this 26th day of October, 20 01.

Nancy A. Ehly  
Notary Public Nancy A. Ehly

My Commission expires: 1/31/04

Approved as to form:

Lee P. Rogers  
Deputy County Attorney

This Declaration of Covenants prepared by:

Mark Richardson

(Print Name)

Project Manager/AES Consulting Engineer

(Title)

5248 Olde Towne Road

(Address)

Williamsburg, VA 23188

(City) (State) (Zip)

drainage.pre  
Revised 2/97

DECLARATION OF COVENANTS

INSPECTION/MAINTENANCE OF DRAINAGE SYSTEM

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IN WITNESS WHEREOF, the COVENANTOR(S) have executed this DECLARATION OF COVENANTS as of this 26th day of October, 20 01.

**COVENANTOR(S)**

Kingsmill Community Services Association

William B. Voliva, Jr.  
William B. Voliva, Jr  
President

ATTEST:

\_\_\_\_\_

**COVENANTOR(S)**

\_\_\_\_\_

ATTEST:

\_\_\_\_\_

**COMMONWEALTH OF VIRGINIA**

~~CITY~~/COUNTY OF JAMES CITY

I hereby certify that on this 26th day of October, 20 01, before the subscribed, a Notary Public of the State of Virginia, ~~and for the County of~~ at large, ~~aforsaid~~ personally appeared William B. Voliva, Jr. and did acknowledge the foregoing instrument to be their Act.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal this 26th day of October, 20 01.

Nancy A. Ehly  
Notary Public Nancy A. Ehly

My Commission expires: 1/31/04

Approved as to form:

\_\_\_\_\_

This Declaration of Covenants prepared by:

Mark Richardson

(Print Name)

Project Manager/AES Consulting Engineers

(Title)

5248 Olde Towne Road

(Address)

Williamsburg, VA 23188

(City) (State) (Zip)

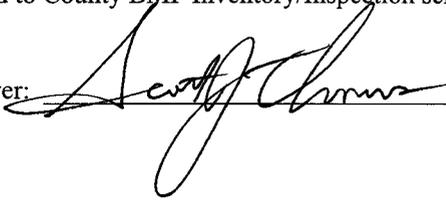
**James City County, Virginia  
Environmental Division**

**Stormwater Management/BMP Facilities  
Record Drawing/Construction Certification**

**Review Tracking Form**

County Plan No.: SP-108-98  
 Project Name: Kingsmill East Community Center  
 Stormwater Management Facility: Timber Crib Wall - Dry Pond  
 Phase:  I  II  III

- Information Received. Date: 2/23/00 ; 7/24/01.
- Administrative Check.
- Record Drawing Date: 2/23/00
- Construction Certification Date: 2/23/00
- RD/CC Standard Forms No
- Other: \_\_\_\_\_
- Standard E&SC Note on Approved Plan Requiring RD/CC.
- Yes  No Sheet : \_\_\_\_\_
- Assign County BMP ID Code Code: JR 050
- Log into Division "As-Built" Tracking Log
- GIS Map (obtain GPIN, Owner, Site Area information)
- Preliminary Log into BMP Database (BMP ID #, Site Plan #, GPIN, Project Name)
- Initial As-Built File setup.
- Forward Inspector Review Form MIKE VERBAL OK.
- Pre-Inspection Drawing Review (Quick look)
- Final Inspection (field observation) Date: 8/09/01
- Record Drawing Review Date: 8/23/01
- Construction Certification Review Date: 8/23/01
- Final Inspection (field observation) Date: \_\_\_\_\_
- Action
  - No comments.
  - Comments. Letter Forwarded. Date: Aug 23<sup>RD</sup> 2001
  - Record Drawing (RD)
  - Construction Certification (CC)
  - Construction-Related (CR)
  - Other : Need i/m Agreement received.
- Second Submission: \_\_\_\_\_
- Third Submission: \_\_\_\_\_
- Approved for stormwater management facility purposes (RD/CC/CR/Other)
- Notify Darryl & Joan of acceptability.
- Clean active file of all stormwater management related material and finish as-built file.
- Add to County BMP Inventory/Inspection schedule.

Plan Reviewer:  Date: 12-10-01



**KINGSMILL**  
*on the James*

# KINGSMILL EAST KINGSMILL COMMUNITY CENTER

FOR

**BUSCH PROPERTIES, INC.**

ORIGINAL SUBMITTAL TO JAMES CITY COUNTY SEPTEMBER 22, 1998

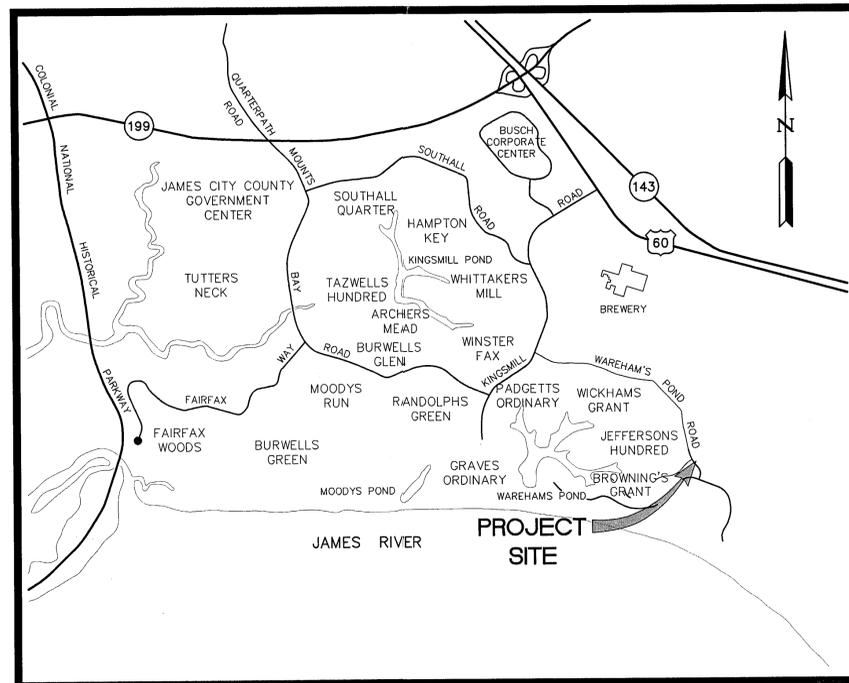
SP#108-98 APPROVED BY JAMES CITY COUNTY 11/25/98

SITE PLAN AMENDMENT #2 REVISED 3/9/99

AES PROJECT #7753-10

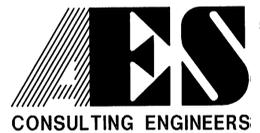
INDEX OF SHEETS

| SHEET NUMBER | DESCRIPTION  |
|--------------|--|
| 1            | COVER SHEET  |
| 2            | OVERALL SITE PLAN  |
| 3            | SITE PLAN  |
| 4            | UTILITY, DRAINAGE, GRADING, AND EROSION/SEDIMENTATION CONTROL PLAN |
| 4A           | GRAVITY SEWER PROFILES   |
| 5            | OVERALL DRAINAGE PLAN AND ENVIRONMENTAL INVENTORY                  |
| 6            | LANDSCAPING PLAN   |
| 7            | EROSION AND SEDIMENT CONTROL NOTES AND DETAILS                     |
| 8            | GENERAL NOTES AND DETAILS  |
| 9            | STANDARD SANITARY SEWER DETAILS (JCSA)                             |
| 10           | STANDARD GRINDER PUMP DETAILS                                      |
| 11           | STANDARD GRINDER PUMP DETAILS                                      |



VICINITY MAP (APROX. SCALE 1"=2000')

I HEREBY CERTIFY TO THE BEST OF MY JUDGEMENT, KNOWLEDGE AND BELIEF THAT THIS AS-BUILT PLAN WAS PREPARED UNDER MY DIRECT SUPERVISION AND CONTROL AND REPRESENTS THE ACTUAL CONDITION OF THE STORMWATER MANAGEMENT/BMP STRUCTURE(S) AND CONTAINS INFORMATION AS REQUIRED FOR CERTIFICATION. THE STORMWATER MANAGEMENT/BMP FACILITY COMPLIES WITH THE APPROVED DESIGN PLAN, JAMES CITY COUNTY GUIDELINES FOR DESIGN AND CONSTRUCTION OF BMP'S AND/OR SPECIFICATIONS ON THE APPROVED STORMWATER MANAGEMENT PLAN, EXCEPT AS SHOWN.



5248 Olde Towne Road, Suite 1  
Williamsburg, Virginia 23188  
(804) 253-0040  
Fax (804) 220-8994



LEGEND

| EXISTING |                            | PROPOSED |
|----------|----------------------------|----------|
| EX. W    | WATER                      | W        |
| EX. S    | SANITARY SEWER             | S        |
| EX. FM   | STORM SEWER                | F.M.     |
|          | FORCE MAIN                 |          |
|          | MANHOLE                    |          |
|          | CURB DROP INLET            |          |
|          | YARD DROP INLET            |          |
|          | FLARED END SECTION         |          |
|          | VALVE                      |          |
|          | FIRE HYDRANT ASSEMBLY      |          |
|          | BLOW-OFF VALVE             |          |
|          | AIR RELEASE ASSEMBLY       |          |
|          | CLEAN OUT                  |          |
|          | WATER METER                |          |
|          | STREETLIGHT                |          |
|          | CENTERLINE/BASELINE        |          |
|          | RIGHT OF WAY               |          |
|          | PROPERTY LINE              |          |
|          | DITCH/SWALE                |          |
|          | CONCRETE LINED DITCH       |          |
|          | EC-2 LINED DITCH           |          |
|          | EXISTING TREELINE          |          |
|          | LIMITS OF CLEARING         |          |
|          | SILT FENCE                 |          |
|          | INLET PROTECTION           |          |
|          | CULVERT INLET PROTECTION   |          |
|          | CHECK DAM                  |          |
|          | DIVERSION                  |          |
|          | STRAW BALE BARRIER         |          |
|          | RIP RAP                    |          |
|          | REVERSE ROLL TOP GUTTER    |          |
|          | GROUND ELEVATION           |          |
|          | PROPOSED TOP OF CURB ELEV. |          |
|          | GRADING LINE TIE-IN        |          |
|          | EXISTING CONTOUR ELEV.     |          |
|          | PROPOSED CONTOUR ELEV.     |          |
|          | GRADING BY OTHERS          |          |
|          | TEMPORARY BENCH MARK (TBM) |          |

2/3/99 ADDED NEW PROFILE SHEET #4A FOR REVISED SANITARY SEWER

**RECORD DRAWING BASED ON INFORMATION AS SURVEYED BY A.E.S. CONSULTING ENGINEERS**

**GENERAL NOTES**

- PROPERTY IS ZONED RESIDENTIAL PLANNED COMMUNITY DISTRICT, R-4.
- ALL UNITS ARE SERVED BY PUBLIC WATER AND PUBLIC SEWER.
- THIS PROPERTY IS PART OF PARCEL (51-4) (1-8).
- SITE SHALL HAVE PRIVATE INDIVIDUAL TRASH PICKUP.
- ALL UTILITIES SHALL BE PLACED UNDERGROUND.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING MISS UTILITY FOR EXISTING UTILITY LOCATIONS PRIOR TO COMMENCING CONSTRUCTION.
- EXISTING UTILITY LOCATIONS SHOWN ARE APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES.
- A LAND DISTURBING PERMIT AND SILTATION AGREEMENT, WITH SURETY ARE REQUIRED FOR THIS PROJECT.
- A CERTIFICATE TO CONSTRUCT SEWER FACILITIES IS REQUIRED FOR THIS PROJECT.
- UNLESS OTHERWISE NOTED ALL ROADWAY AND DRAINAGE IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE MOST CURRENT EDITIONS OF THE VDOT ROAD AND BRIDGE STANDARDS AND SPECIFICATIONS.
- THE ROAD CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL ITEMS OF ROAD WORK AND DRAINAGE WITH EXISTING AND PROPOSED UNDERGROUND UTILITIES (POWER, WATER, SEWER AND TELEPHONE) SUCH THAT NO DUPLICATION OF WORK EFFORT IS INCURRED.
- DEVELOPER:  
BUSCH PROPERTIES, INC.  
100 KINGSMILL ROAD  
WILLIAMSBURG, VIRGINIA 23187

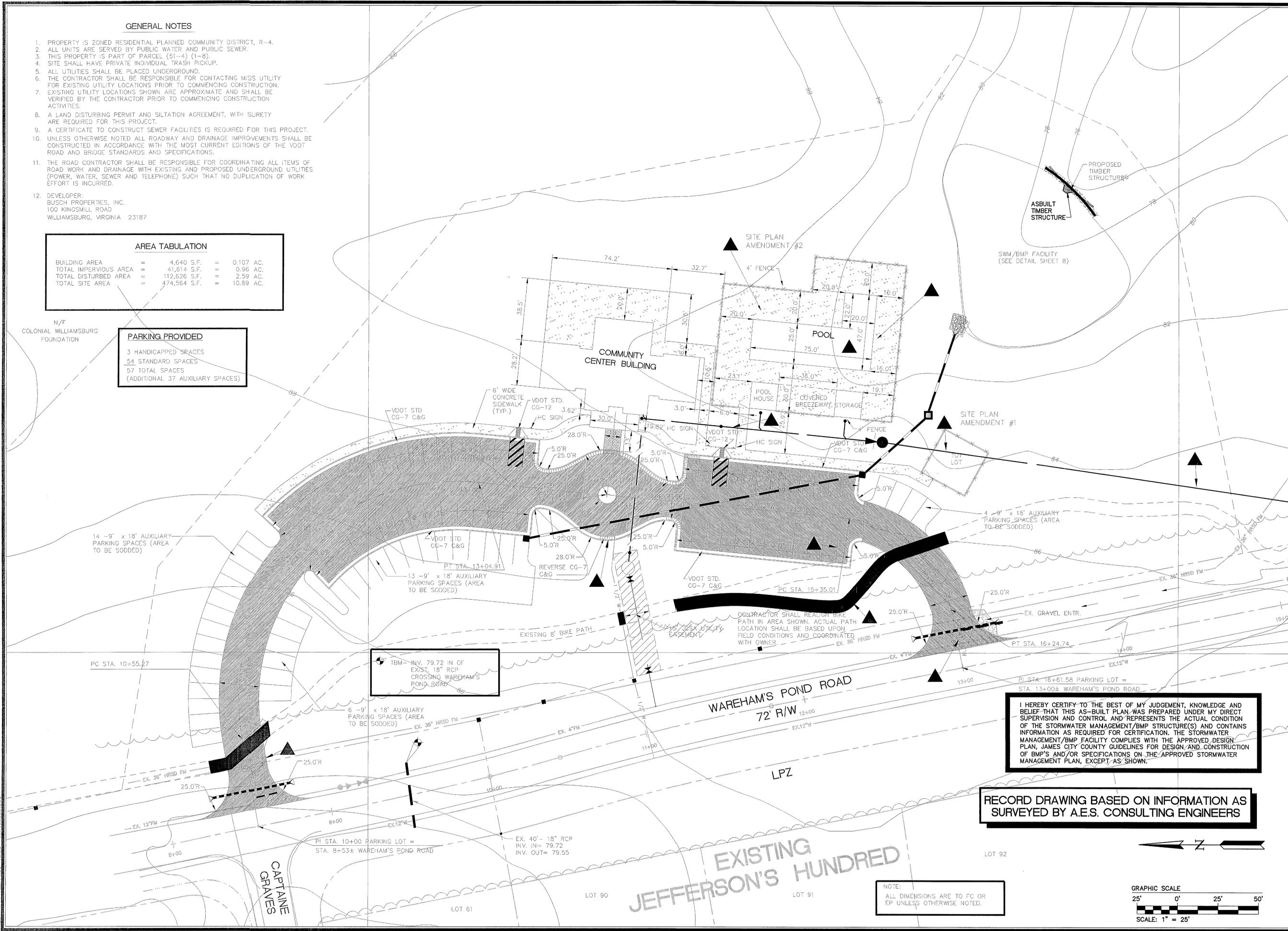
**AREA TABULATION**

|                       |    |              |    |           |
|-----------------------|----|--------------|----|-----------|
| BUILDING AREA         | == | 4,640 S.F.   | == | 0.107 AC. |
| TOTAL IMPERVIOUS AREA | == | 41,614 S.F.  | == | 0.96 AC.  |
| TOTAL DISTURBED AREA  | == | 112,626 S.F. | == | 2.59 AC.  |
| TOTAL SITE AREA       | == | 474,564 S.F. | == | 10.89 AC. |

**PARKING PROVIDED**

3 HANDICAPPED SPACES  
54 STANDARD SPACES  
57 TOTAL SPACES  
(ADDITIONAL 37 AUXILIARY SPACES)

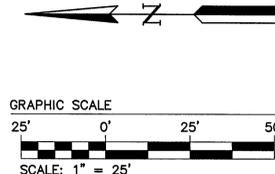
N/F  
COLONIAL WILLIAMSBURG  
FOUNDATION



I HEREBY CERTIFY TO THE BEST OF MY JUDGEMENT, KNOWLEDGE AND BELIEF THAT THIS AS-BUILT PLAN WAS PREPARED UNDER MY DIRECT SUPERVISION AND CONTROL AND REPRESENTS THE ACTUAL CONDITION OF THE STORMWATER MANAGEMENT/BMP STRUCTURE(S) AND CONTAINS INFORMATION AS REQUIRED FOR CERTIFICATION. THE STORMWATER MANAGEMENT/BMP FACILITY COMPLIES WITH THE APPROVED DESIGN PLAN, JAMES CITY COUNTY GUIDELINES FOR DESIGN AND CONSTRUCTION OF BMP'S AND/OR SPECIFICATIONS ON THE APPROVED STORMWATER MANAGEMENT PLAN, EXCEPT AS SHOWN.

**RECORD DRAWING BASED ON INFORMATION AS SURVEYED BY A.E.S. CONSULTING ENGINEERS**

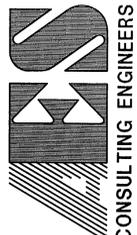
NOTE:  
ALL DIMENSIONS ARE TO FC OR EP UNLESS OTHERWISE NOTED.



| NO. | DATE     | DESCRIPTION                               |
|-----|----------|---|
| 1   | 10/30/08 | REVISIONS PER COMMENTS                    |
| 2   | 1/10/08  | REVISIONS PER COMMENTS                    |
| 3   | 1/30/08  | REVISIONS PER COMMENTS                    |
| 4   | 2/13/09  | REVISIONS TO SANITARY SEWER GRADE         |
| 5   | 2/17/09  | REVISIONS TO SANITARY SEWER GRADE         |
| 6   | 2/23/00  | REMOVED UTILITY EASEMENT PER JCSA COMMENT |



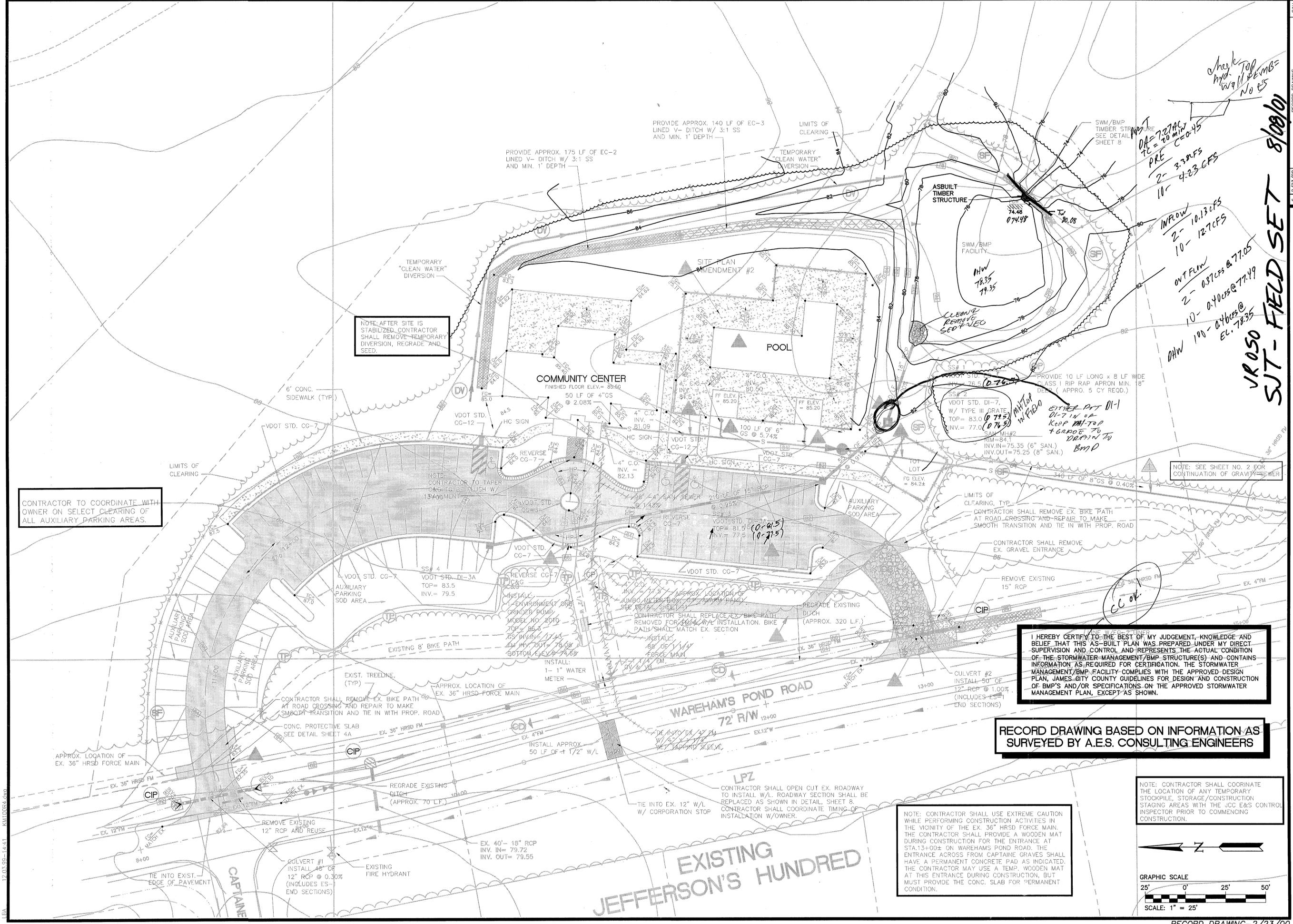
5248 Olde Towne Road, Suite 1  
Williamsburg, Virginia 23188  
(757) 253-0040  
Fax (757) 220-8994



**SITE PLAN**  
**COMMUNITY CENTER**  
**ON THE JAMES**  
**KINGSMILL**  
OWNER/DEVELOPER: BUSCH PROPERTIES, INC.  
JAMES CITY COUNTY, VIRGINIA

|                        |                  |
|------------------------|------------------|
| Designed<br>CAH        | Drawn<br>CWG/EAW |
| Scale<br>1"=25'        | Date<br>9/22/98  |
| Project No.<br>7753-10 |                  |
| Drawing No.<br>3       |                  |





check top  
w/ 11/11/00  
no ES

DAE-72745  
TC=20 min  
C=0.45

PRE  
2- 3.30 CFS  
10- 4.23 CFS

INFLOW  
2- 10.13 CFS  
10- 12.7 CFS

OUTFLOW  
2- 0.87 CFS @ 77.05  
10- 0.40 CFS @ 77.49

DHW  
100- 0.40 CFS @ 77.49  
EL. 78.35

VR050  
SJT - FIELD SET  
8/02/00

CONTRACTOR TO COORDINATE WITH OWNER ON SELECT CLEARING OF ALL AUXILIARY PARKING AREAS.

NOTE: AFTER SITE IS STABILIZED CONTRACTOR SHALL REMOVE TEMPORARY DIVERSION, REGRADE AND SEED.

PROVIDE 10 LF LONG x 8 LF WIDE CLASS 1 RIP RAP APRON MIN. 8" DEEP (APPROX. 5 CY RECD.)

SS# 2  
VDOT STD. DI-7  
W/ TYPE III GRATE  
TOP= 83.0  
INV.= 77.0  
SAN MANH#2  
RIM=84.1  
INV.IN=75.35 (6" SAN.)  
INV.OUT=75.25 (8" SAN.)

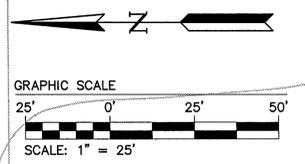
OTHER PRT DI-1  
DI-7 IN OR  
KEEP IN-TOP  
+ GRADE TO  
DRAIN TO  
BMP

I HEREBY CERTIFY TO THE BEST OF MY JUDGEMENT, KNOWLEDGE AND BELIEF THAT THIS AS-BUILT PLAN WAS PREPARED UNDER MY DIRECT SUPERVISION AND CONTROL AND REPRESENTS THE ACTUAL CONDITION OF THE STORMWATER MANAGEMENT/BMP STRUCTURE(S) AND CONTAINS INFORMATION AS REQUIRED FOR CERTIFICATION. THE STORMWATER MANAGEMENT/BMP FACILITY COMPLIES WITH THE APPROVED DESIGN PLAN, JAMES CITY COUNTY GUIDELINES FOR DESIGN AND CONSTRUCTION OF BMP'S AND/OR SPECIFICATIONS ON THE APPROVED STORMWATER MANAGEMENT PLAN, EXCEPT AS SHOWN.

RECORD DRAWING BASED ON INFORMATION AS SURVEYED BY A.E.S. CONSULTING ENGINEERS

NOTE: CONTRACTOR SHALL COORDINATE THE LOCATION OF ANY TEMPORARY STOCKPILE, STORAGE/CONSTRUCTION STAGING AREAS WITH THE JCC E&S CONTROL INSPECTOR PRIOR TO COMMENCING CONSTRUCTION.

NOTE: CONTRACTOR SHALL USE EXTREME CAUTION WHILE PERFORMING CONSTRUCTION ACTIVITIES IN THE VICINITY OF THE EX. 36" HRSD FORCE MAIN. THE CONTRACTOR SHALL PROVIDE A WOODEN MAT DURING CONSTRUCTION FOR THE ENTRANCE AT STA.13+00± ON WAREHAM'S POND ROAD. THE ENTRANCE ACROSS FROM CAPTAIN GRAVES SHALL HAVE A PERMANENT CONCRETE PAD AS INDICATED. THE CONTRACTOR MAY USE A TEMP. WOODEN MAT AT THIS ENTRANCE DURING CONSTRUCTION, BUT MUST PROVIDE THE CONC. SLAB FOR PERMANENT CONDITION.



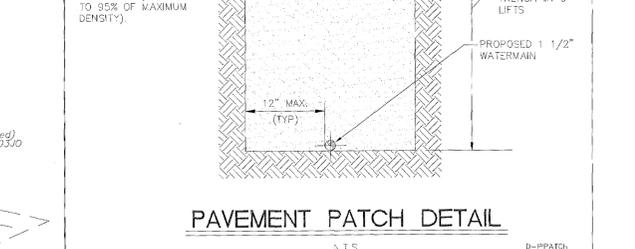
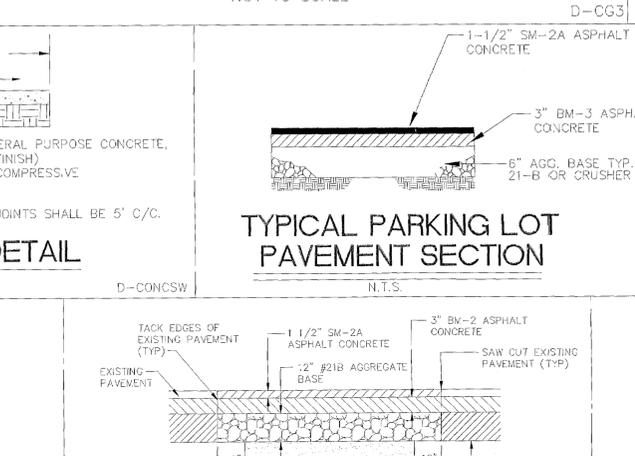
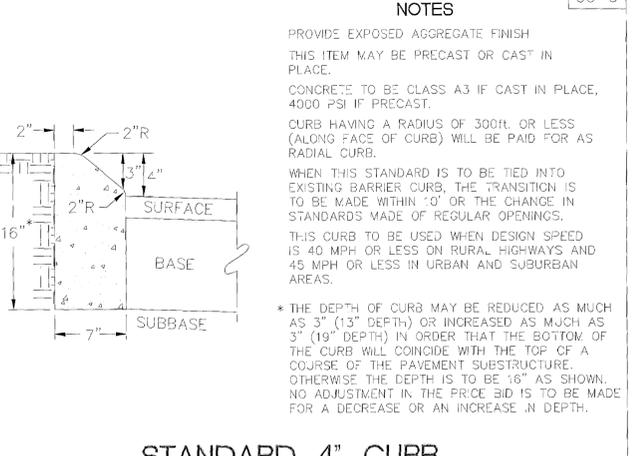
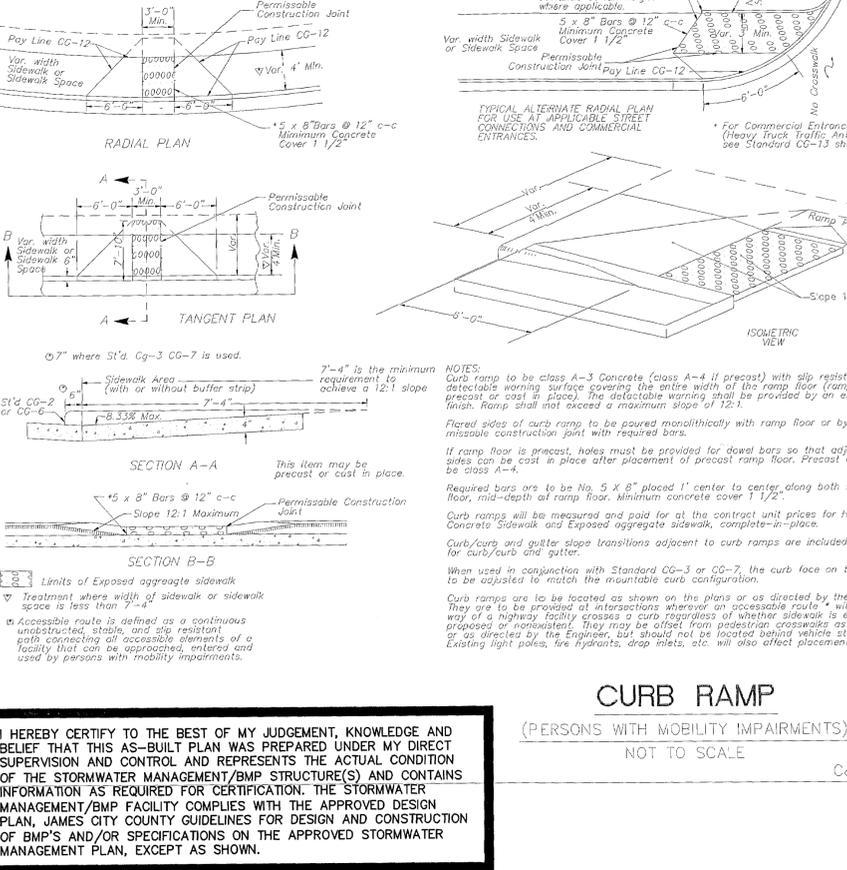
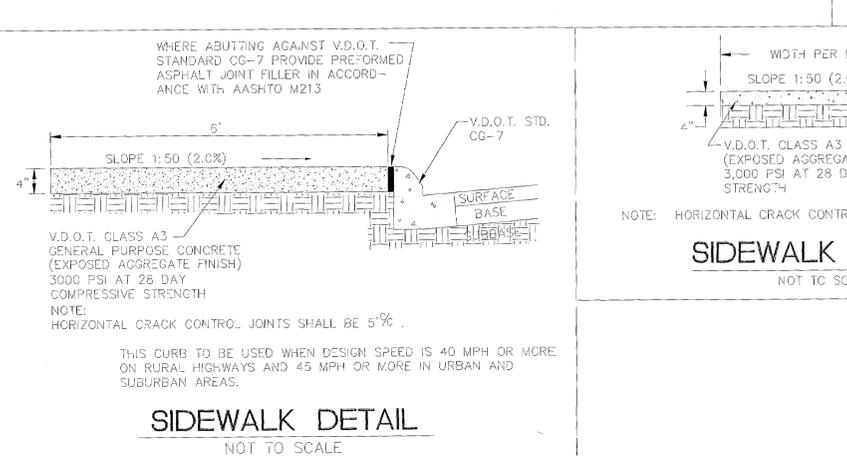
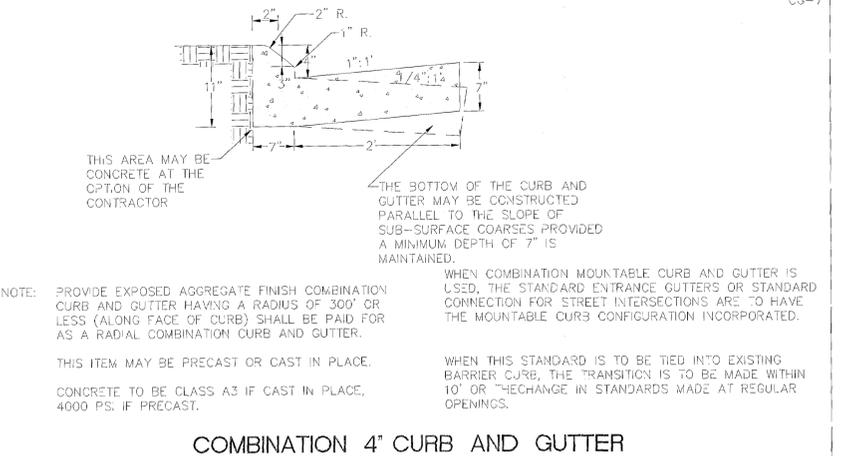
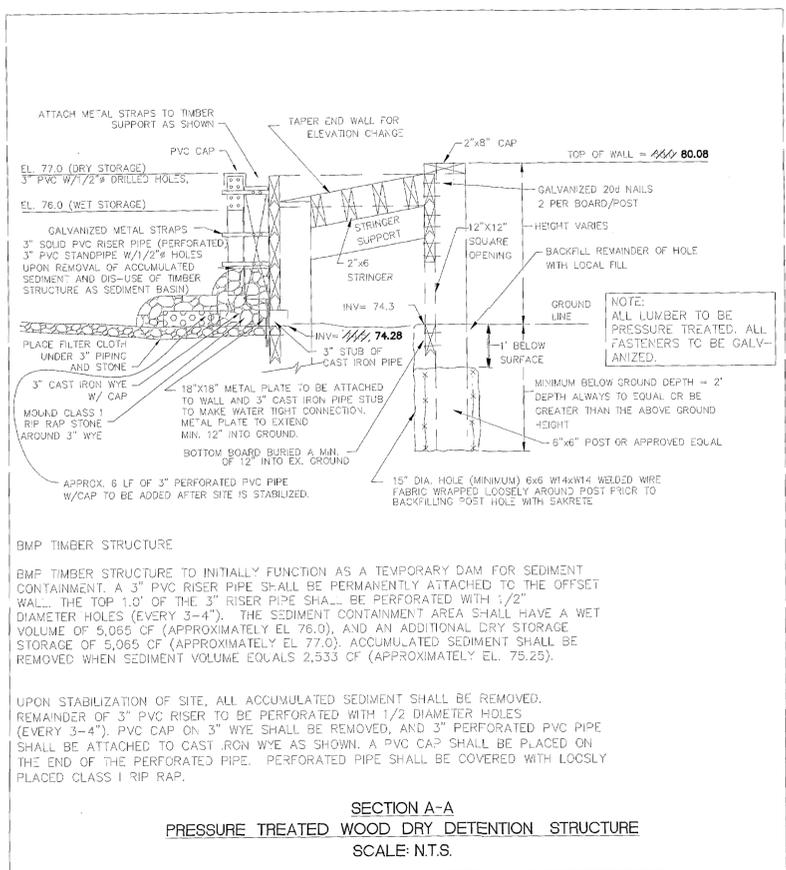
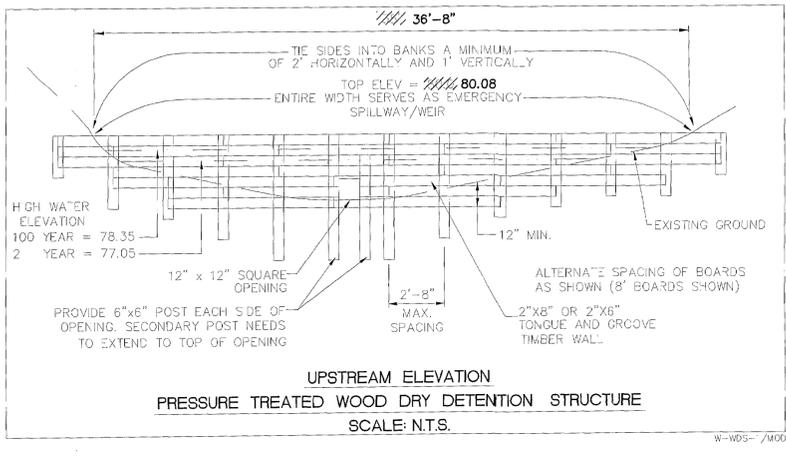
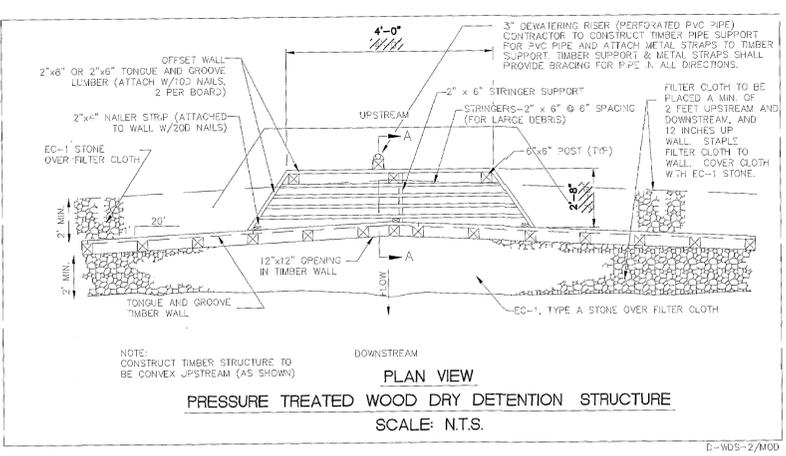
| RECORD DRAWING  | CAH |
|---|-----|
| REMOVED UTILITY EMBLEM PER USEA COMMENT   | CAH |
| REVISION TO POOL AREA LAYOUT AND CLEAN OUT LOCATIONS                                  | CAH |
| REVISIONS TO SANITARY SEWER GRADE   | CAH |
| FIELD CHANGE TO SANITARY SEWER, ENTR. GRADES & PIPE, CIP                              | CAH |
| RELOCATE BIKE PATH, ADD 3 PARKING SPACES & REV CG                                     | CAH |
| REVISION PER CITY OF NEWPORT NEWS WATERWORKS  | CAH |
| REVISIONS PER ADDENDUM #1- ADDED BIKE PATH REPAIR AND OPEN CUT PAVEMENT FOR WATERLINE | CAH |
| REVISIONS PER OWNER/ACC REVIEW COMMENTS   | CAH |



5248 Old Towne Road, Suite 1  
Williamsburg, Virginia 23188  
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Fax (757) 220-8994



|  |   |
|--|---|
| UTILITY, DRAINAGE, GRADING, AND EROSION/SEDIMENTATION CONTROL PLAN | COMMUNITY CENTER                        |
| KINGSMILL ON THE JAMES   | OWNER/DEVELOPER: BUSCH PROPERTIES, INC. |
| DESIGNED<br>CAH  | DRAWN<br>CWG/EAW                        |
| SCALE<br>1"=25'  | DATE<br>9/22/98                         |
|  | PROJECT NO.<br>7753-10                  |
|  | DRAWING NO.<br>4                        |



- UTILITIES INSTALLATION NOTES**
- ALL UTILITIES TO BE INSTALLED IN ACCORDANCE WITH CURRENT JCSA STANDARDS AND SPECIFICATIONS FOR SANITARY SEWER SYSTEMS AND NEWPORT NEWS WATERWORKS STANDARDS FOR WATER DISTRIBUTION SYSTEMS.
  - CONTRACTOR TO OBTAIN NEWPORT NEWS WATERWORKS PLANS FOR CONSTRUCTION OF ALL WATER SYSTEM IMPROVEMENTS.
  - CONTRACTOR SHALL USE PIPE AND/OR JOINT DEFLECTION AS SPECIFIED BY THE PIPE MANUFACTURER OR FITTINGS AS NECESSARY TO OBTAIN THE REQUIRED HORIZONTAL AND VERTICAL ALIGNMENT OF THE PROPOSED UTILITY LINES.
  - ALL MAIN UTILITY LINES SHALL BE INSTALLED A MINIMUM OF 36" BELOW FINISHED GRADE DIRECTLY ABOVE THE MAIN.
  - CONTRACTOR TO NOTIFY "MISS UTILITY" PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES.
  - CONTRACTOR SHALL REFER TO SHEET 20 FOR ADDITIONAL NOTES AND DETAILS APPLICABLE TO SANITARY SEWER SYSTEM INSTALLATION.
  - LOCATIONS OF THE HYDRANTS ON THIS PLAN ARE APPROXIMATE. EXACT FIRE HYDRANT LOCATIONS SHALL BE BASED UPON A FIELD INSPECTION BY THE JAMES CITY COUNTY FIRE DEPARTMENT. FIRE HYDRANTS SHALL BE LOCATED A MINIMUM OF 10' BEHIND THE EDGE OF PAVEMENT.
- NEWPORT NEWS WATERWORKS
- ALL WATER SERVICE METERS TO BE 5/8" UNLESS OTHERWISE NOTED.
  - ALL WATER SERVICE LINES TO BE MIN. 1" TYPE "K" COPPER.
  - 15' NEWPORT NEWS WATERWORKS EASEMENT REQUIRED FOR ALL WATERLINES TO BE DEDICATED TO WATERWORKS.

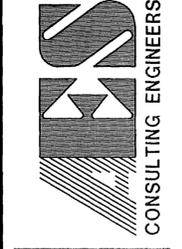
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RECORD DRAWING BASED ON INFORMATION AS SURVEYED BY A.E.S. CONSULTING ENGINEERS

| NO. | REVISION  | DATE     | BY | CHKD. |
|-----|---|----------|----|-------|
| 1   | REVISIONS PER OWNER/ACI REVIEW COMMENTS               | 10/20/98 |    |       |
| 2   | REVISIONS PER CITY OF NEWPORT NEWS WATERWORKS         | 11/09/98 |    |       |
| 3   | REVISIONS PER CITY OF NEWPORT NEWS WATERWORKS         | 11/09/98 |    |       |
| 4   | REVISIONS PER CITY OF NEWPORT NEWS WATERWORKS         | 11/09/98 |    |       |
| 5   | REVISIONS TO SANITARY SEWER ENTR. GRADES & PIPE       | 12/09/98 |    |       |
| 6   | REVISIONS TO POOL AREA LAYOUT AND CLEAR CUT LOCATIONS | 12/09/98 |    |       |
| 7   | REMOVED UTILITY EASEMENT PER JCSA COMMENT             | 12/23/00 |    |       |

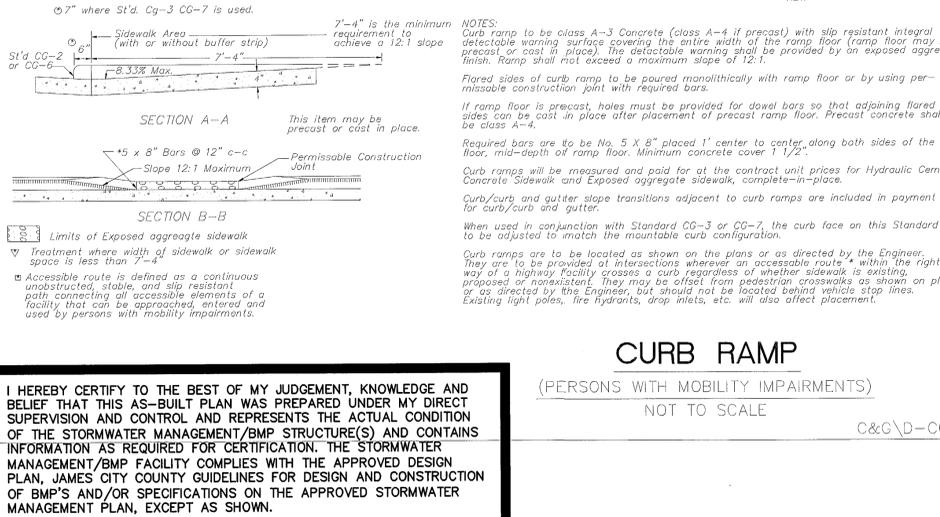
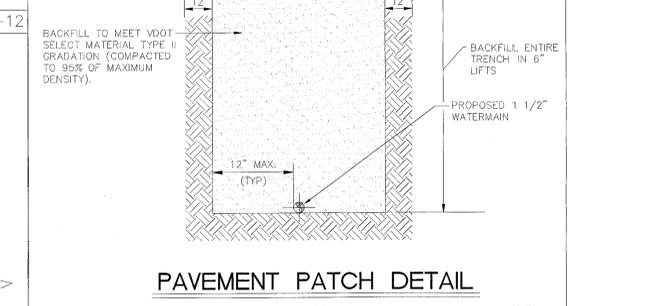
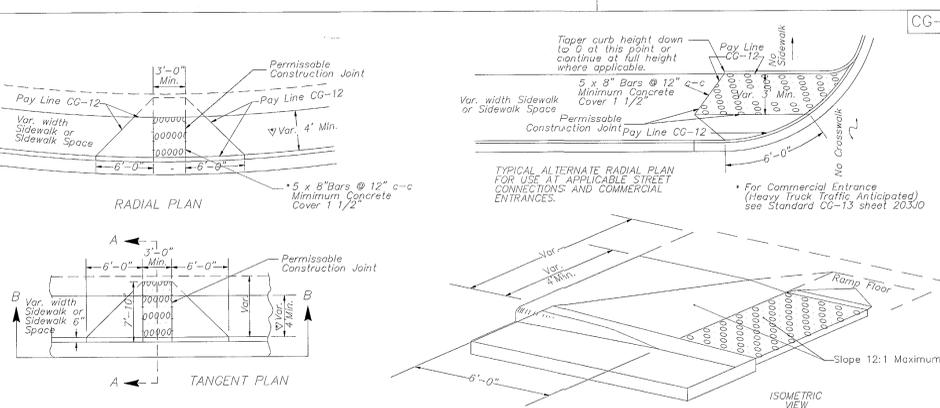
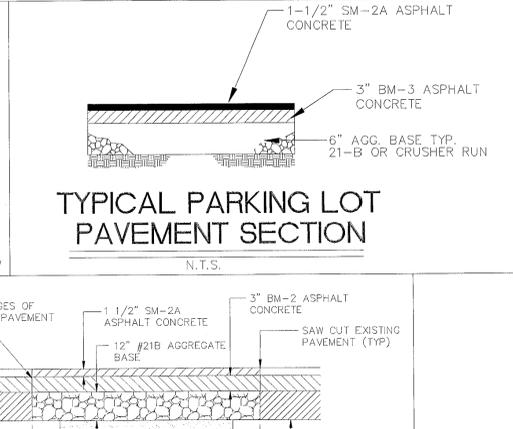
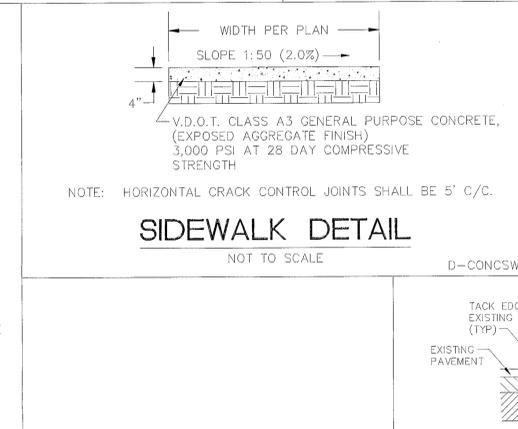
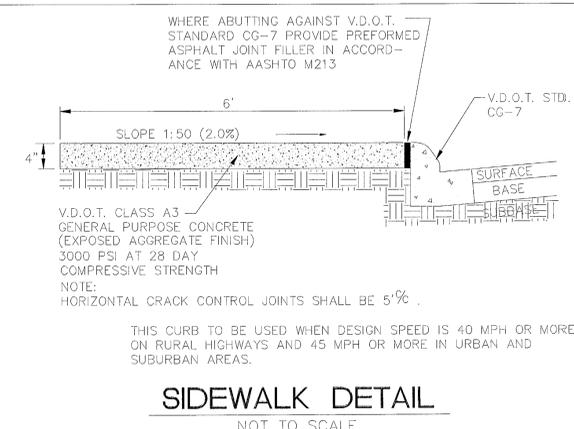
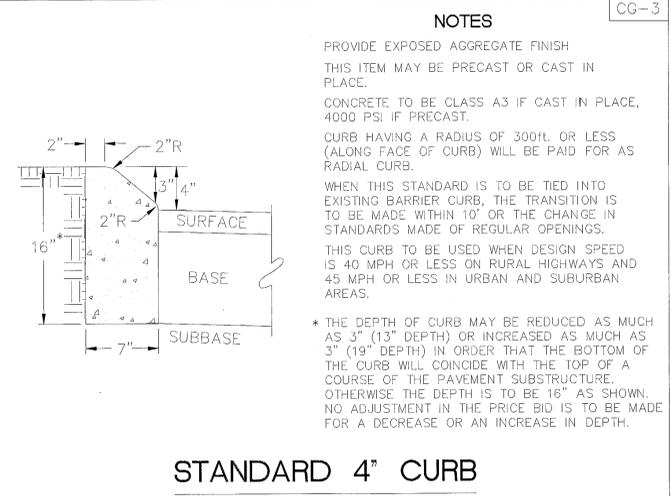
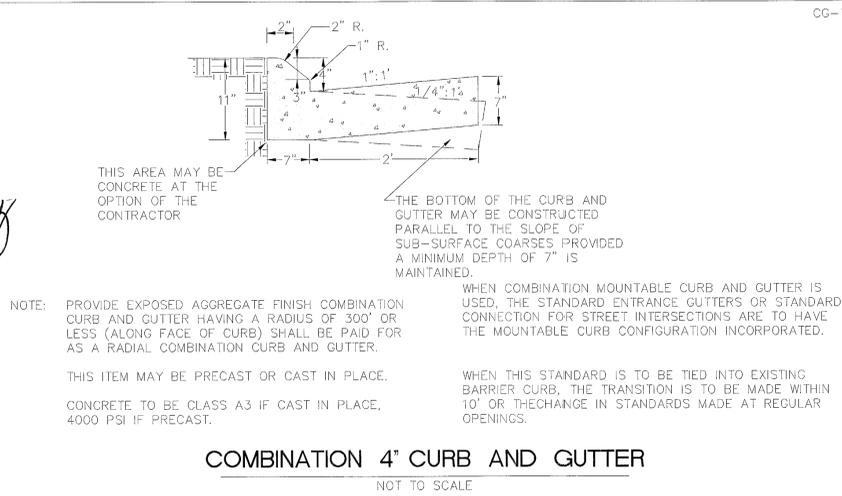
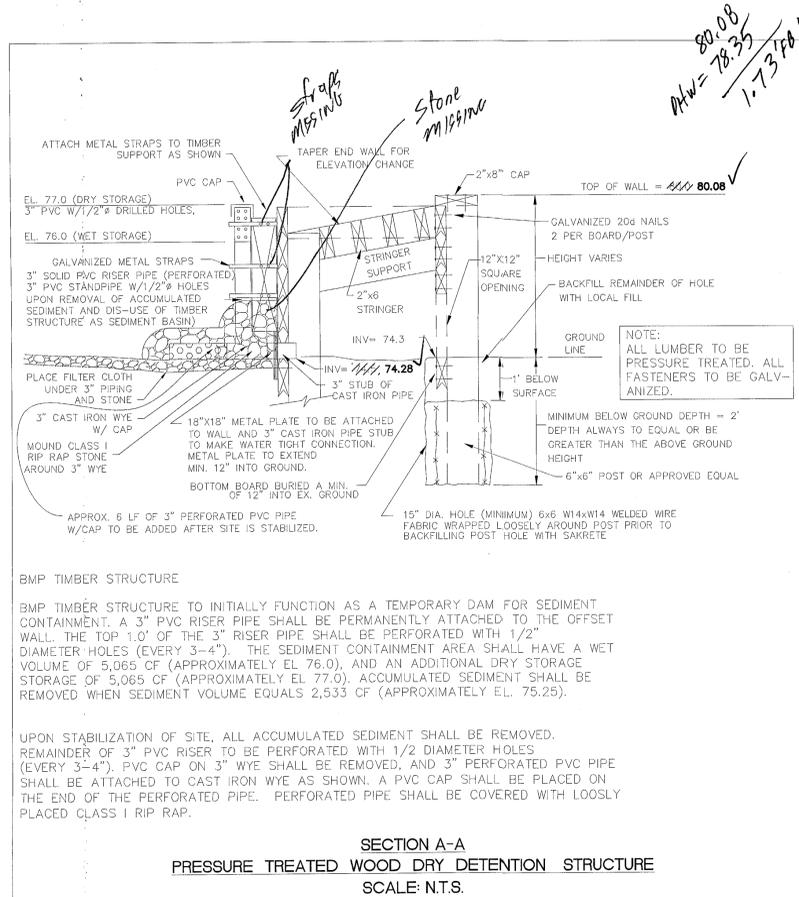
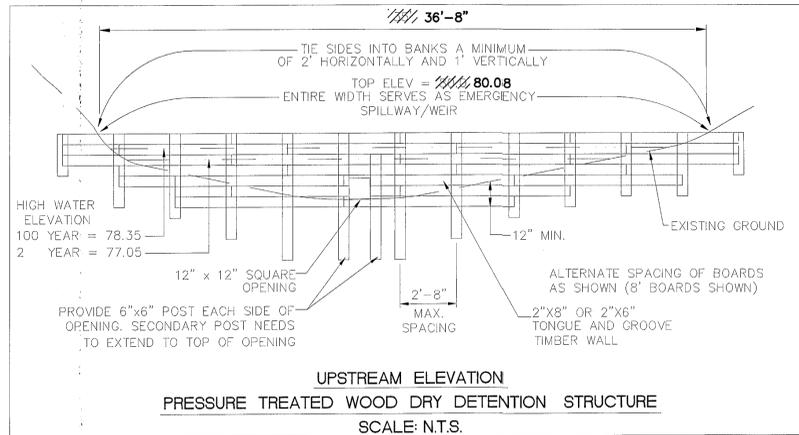
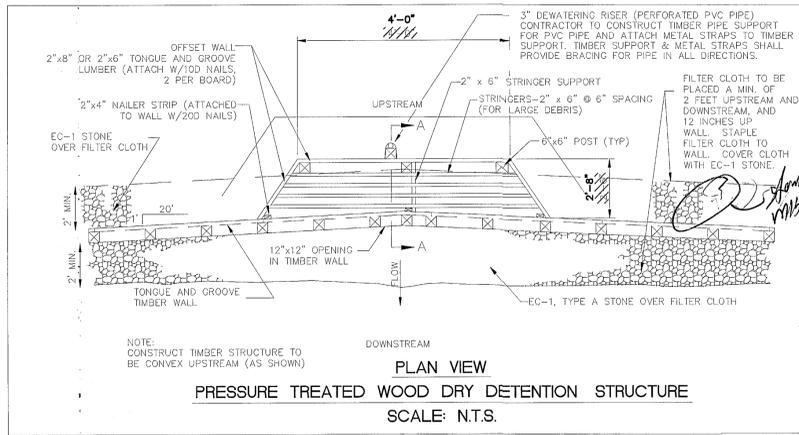


5248 Olde Towne Road, Suite 1  
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(804) 252-0040  
Fax (804) 220-8994



**GENERAL NOTES AND DETAILS**  
**COMMUNITY CENTER**  
**KINGSMILL ON THE JAMES**  
OWNER/DEVELOPER: BUSCH PROPERTIES, INC.  
JAMES CITY COUNTY, VIRGINIA

|             |         |       |         |
|-------------|---------|-------|---------|
| Designed    | CAH     | Drawn | EAW     |
| Scale       | NONE    | Date  | 9/18/98 |
| Project No. | 7753-10 |       |         |
| Drawing No. | 8       |       |         |



- UTILITIES INSTALLATION NOTES**
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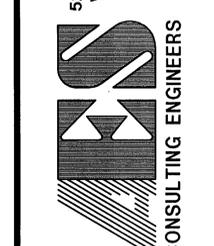
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RECORD DRAWING BASED ON INFORMATION AS SURVEYED BY A.E.S. CONSULTING ENGINEERS

| NO. | DATE     | REVISIONS  |
|-----|----------|--|
| 1   | 10/25/98 | REVISIONS PER OWNER/ACC REVIEW COMMENTS              |
| 2   | 11/10/98 | REVISIONS PER OWNER/ACC REVIEW COMMENTS              |
| 3   | 1/30/99  | REVISION PER CITY OF NEWPORT NEWS WATERWORKS         |
| 4   | 2/23/99  | FIELD CHANGE TO SANITARY SEWER ENTR. GRADES & PIPEL. |
| 5   | 12/10/99 | REVISION TO POOL AREA LAYOUT AND CLEAR CUT LOCATIONS |
| 6   | 12/23/00 | REMOVED UTILITY EASEMENT PER JCSA COMMENT            |



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GENERAL NOTES AND DETAILS  
COMMUNITY CENTER  
KINGSMILL ON THE JAMES  
OWNER/DEVELOPER: BUSCH PROPERTIES, INC.  
JAMES CITY COUNTY, VIRGINIA

|                        |                 |
|------------------------|-----------------|
| Designed<br>CAH        | Drawn<br>EAW    |
| Scale<br>NONE          | Date<br>9/18/98 |
| Project No.<br>7753-10 |                 |
| Drawing No.<br>8       |                 |

(757) 253-0040  
 FAX (757) 220-8994

*Hand Deliver*

TO JCC Environmental

|           |                                   |         |                |
|-----------|-----------------------------------|---------|----------------|
| DATE      | <u>8/13/01</u>                    | JOB NO. | <u>7753-10</u> |
| ATTENTION | <u>Mike Woodson</u>               |         |                |
| RE:       | <u>Kingsmill Community Center</u> |         |                |

WE ARE SENDING YOU  Attached  Under separate cover via \_\_\_\_\_ the following items:

- >  Shop drawings     Prints     Plans     Samples     Specifications  
 Copy of letter     Change order     \_\_\_\_\_

| COPIES   | DATE | NO.      | DESCRIPTION                                 |
|----------|------|----------|---|
| <u>4</u> |      | <u>1</u> | <u>Pond Record Drawings (Dated 2/23/00)</u> |



THESE ARE TRANSMITTED as checked below:

- >  For approval     Approved as submitted     Resubmit \_\_\_\_\_ copies for approval  
 For your use     Approved as noted     Submit \_\_\_\_\_ copies for distribution  
 As requested     Returned for corrections     Return \_\_\_\_\_ corrected prints  
 For review and comment     \_\_\_\_\_  
 FOR BIDS DUE \_\_\_\_\_     PRINTS RETURNED AFTER LOAN TO US

REMARKS

COPY TO \_\_\_\_\_

SIGNED: *Mark Richard*

(757) 253-0040  
 FAX (757) 220-8994

TO JCC ENVIRONMENTAL

|  |                           |
|--|---------------------------|
| DATE<br><u>7/24/01</u>                       | JOB NO.<br><u>7753-1D</u> |
| ATTENTION<br><u>MIKE WOODSON</u>             |                           |
| RE:<br><u>KM Rec, Center Pond as-built's</u> |                           |

WE ARE SENDING YOU  Attached  Under separate cover via \_\_\_\_\_ the following items:

Shop drawings  Prints  Plans  Samples  Specifications

Copy of letter  Change order  \_\_\_\_\_



| COPIES   | DATE | NO.      | DESCRIPTION   |
|----------|------|----------|---|
| <u>2</u> |      | <u>1</u> | <u>Copies of submitted as-built dungs (2/23/00)</u> |

THESE ARE TRANSMITTED as checked below:

- For approval  Approved as submitted  Resubmit \_\_\_\_\_ copies for approval
- For your use  Approved as noted  Submit \_\_\_\_\_ copies for distribution
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- For review and comment  \_\_\_\_\_
- FOR BIDS DUE \_\_\_\_\_  PRINTS RETURNED AFTER LOAN TO US

REMARKS

COPY TO \_\_\_\_\_ SIGNED: Mark K. [Signature]



COMMUNITY OF JAMES CITY  
SITE PLAN

|         | DATE     |
|---------|----------|
| JD/MWM  | 10/7/98  |
| KRD/MWM | 10/2/98  |
| NA      |          |
| AN      | 11/30/98 |
| DEC/MWM | 11/17/98 |
| M       | 11/30/98 |
| DWP/MWM | 11/13/98 |
| WB/MWM  | 10/5/98  |
| NA      |          |



APPROVED  
DESIGN  
PLAN.

SP-108-98  
(JR050)

KI

## INDEX OF SHEETS

### SHEET NUMBER

### DESCRIPTION

|    |   |
|----|---|
| 1  | COVER SHEET   |
| 2  | OVERALL SITE PLAN                                     |
| 3  | SITE PLAN   |
| 4  | UTILITY, DRAINAGE, GRADING, AND EROSION/SEDIMENTATION |
| 5  | OVERALL DRAINAGE PLAN AND ENVIRONMENTAL INVENTORY     |
| 6  | LANDSCAPING PLAN                                      |
| 7  | EROSION AND SEDIMENT CONTROL NOTES AND DETAILS        |
| 8  | GENERAL NOTES AND DETAILS                             |
| 9  | STANDARD SANITARY SEWER DETAILS (JCSA)                |
| 10 | STANDARD GRINDER PUMP DETAILS                         |
| 11 | STANDARD GRINDER PUMP DETAILS                         |

## GENERAL NOTES

1. PROPERTY IS ZONED RESIDENTIAL PLANNED COMMUNITY DISTRICT, R-4.
2. ALL UNITS ARE SERVED BY PUBLIC WATER AND PUBLIC SEWER.
3. THIS PROPERTY IS PART OF PARCEL (51-4) (1-8).
4. SITE SHALL HAVE PRIVATE INDIVIDUAL TRASH PICKUP.
5. ALL UTILITIES SHALL BE PLACED UNDERGROUND.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING MISS UTILITY FOR EXISTING UTILITY LOCATIONS PRIOR TO COMMENCING CONSTRUCTION.
7. EXISTING UTILITY LOCATIONS SHOWN ARE APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES.
8. A LAND DISTURBING PERMIT AND SILTATION AGREEMENT, WITH SURETY ARE REQUIRED FOR THIS PROJECT.
9. A CERTIFICATE TO CONSTRUCT SEWER FACILITIES IS REQUIRED FOR THIS PROJECT.
10. UNLESS OTHERWISE NOTED ALL ROADWAY AND DRAINAGE IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE MOST CURRENT EDITIONS OF THE VDOT ROAD AND BRIDGE STANDARDS AND SPECIFICATIONS.
11. THE ROAD CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL ITEMS OF ROAD WORK AND DRAINAGE WITH EXISTING AND PROPOSED UNDERGROUND UTILITIES (POWER, WATER, SEWER AND TELEPHONE) SUCH THAT NO DUPLICATION OF WORK EFFORT IS INCURRED.

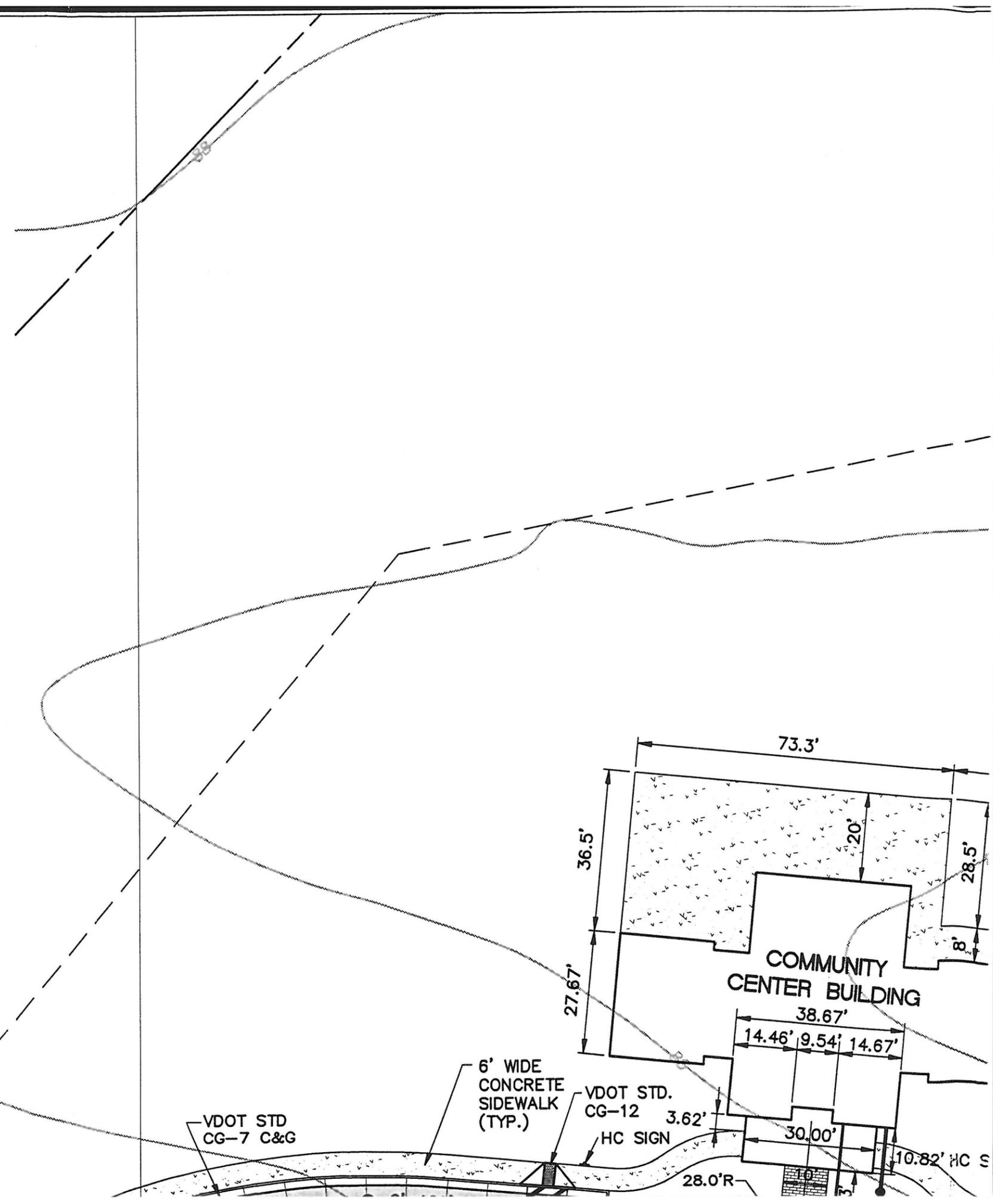
### AREA TABULATION

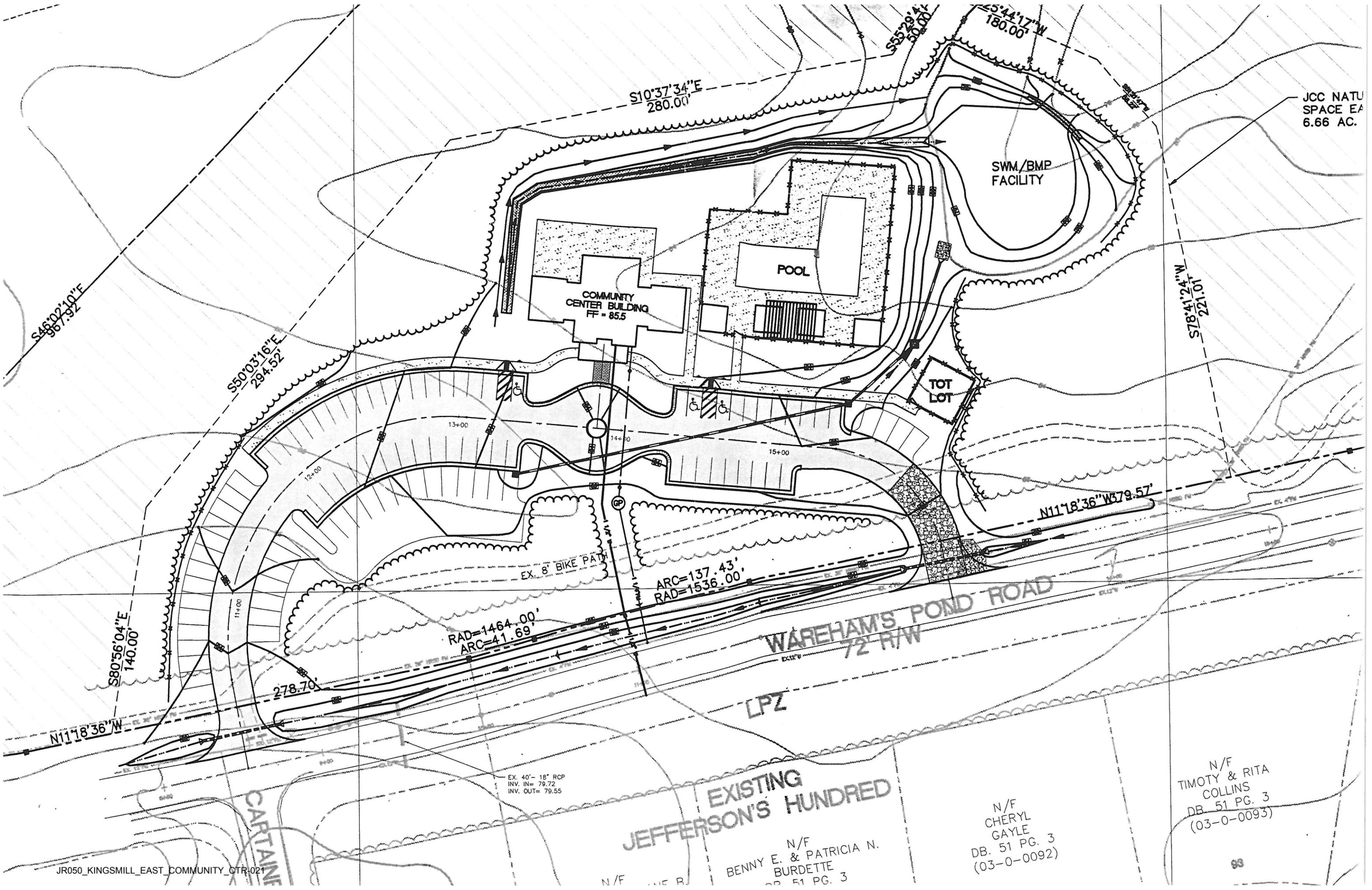
|                       |   |              |   |           |
|-----------------------|---|--------------|---|-----------|
| BUILDING AREA         | = | 4,640 S.F.   | = | 0.107 AC. |
| TOTAL IMPERVIOUS AREA | = | 41,614 S.F.  | = | 0.96 AC.  |
| TOTAL DISTURBED AREA  | = | 112,626 S.F. | = | 2.59 AC.  |
| TOTAL SITE AREA       | = | 474,564 S.F. | = | 10.89 AC. |

### PARKING PROVIDED

**3** HANDICAPPED SPACES  
**51** STANDARD SPACES  
**54** TOTAL SPACES  
 (ADDITIONAL 37 AUXILIARY SPACES)

N/F  
 COLONIAL WILLIAMSBURG  
 FOUNDATION





JCC NATU  
SPACE EA  
6.66 AC.

EXISTING  
JEFFERSON'S HUNDRED

N/F  
BENNY E. & PATRICIA N.  
BURDETTE  
DB. 51 PG. 3

N/F  
CHERYL  
GAYLE  
DB. 51 PG. 3  
(03-0-0092)

N/F  
TIMOTY & RITA  
COLLINS  
DB. 51 PG. 3  
(03-0-0093)

EX. 40'-18" RCP  
INV. IN= 79.72  
INV. OUT= 79.55

DO NOT FALL W/

PROVIDE APPROX. 140 LF OF EC-3 LINED V-DITCH W/ 3:1 SS AND MIN. 1' DEPTH

APPROX. 175 LF OF EC-2 DITCH W/ 3:1 SS 1' DEPTH

LIMITS OF CLEARING

TEMPORARY "CLEAN WATER" DIVERSION

SWM/BMP TIMBER STRUCTURE SEE DETAIL SHEET 8

DV

DV

SF

SF

SWM/BMP FACILITY

OP

SF

COMMUNITY CENTER  
FINISHED FLOOR ELEV. = 85.50

POOL

FF ELEV. = 85.20

FF ELEV. = 85.38

FF ELEV. = 85.38

FF ELEV. = 85.20

SS# 1  
VDOT STD. ES-1  
INV. = 76.5

PROVIDE 10 LF LONG x 8 LF WIDE CLASS I RIP RAP APRON MIN. 18" DEEP (APPRO. 5 CY REQD.)

SS# 2  
VDOT STD. DI-7,  
W/ TYPE III GRATE  
TOP = 79.5  
INV. = 77.0

SS# 3  
VDOT STD. DI-3A  
TOP = 81.5  
INV. = 77.5

VDOT STD. CG-12

VDOT STD. CG-7

TOT LOT  
FG ELEV. = 83.0±

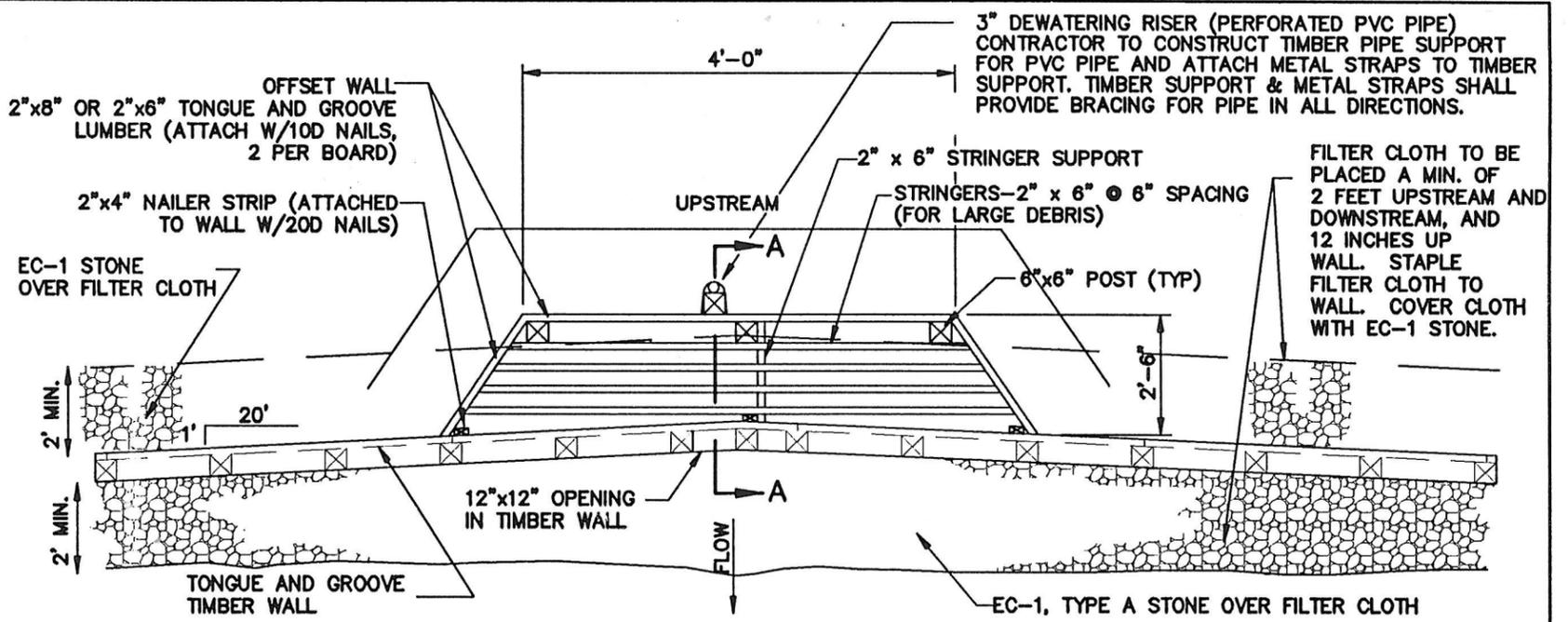
LIMITS OF CLEARING, TYP.

86.60

81.50

83.00





NOTE:  
CONSTRUCT TIMBER STRUCTURE TO  
BE CONVEX UPSTREAM (AS SHOWN)

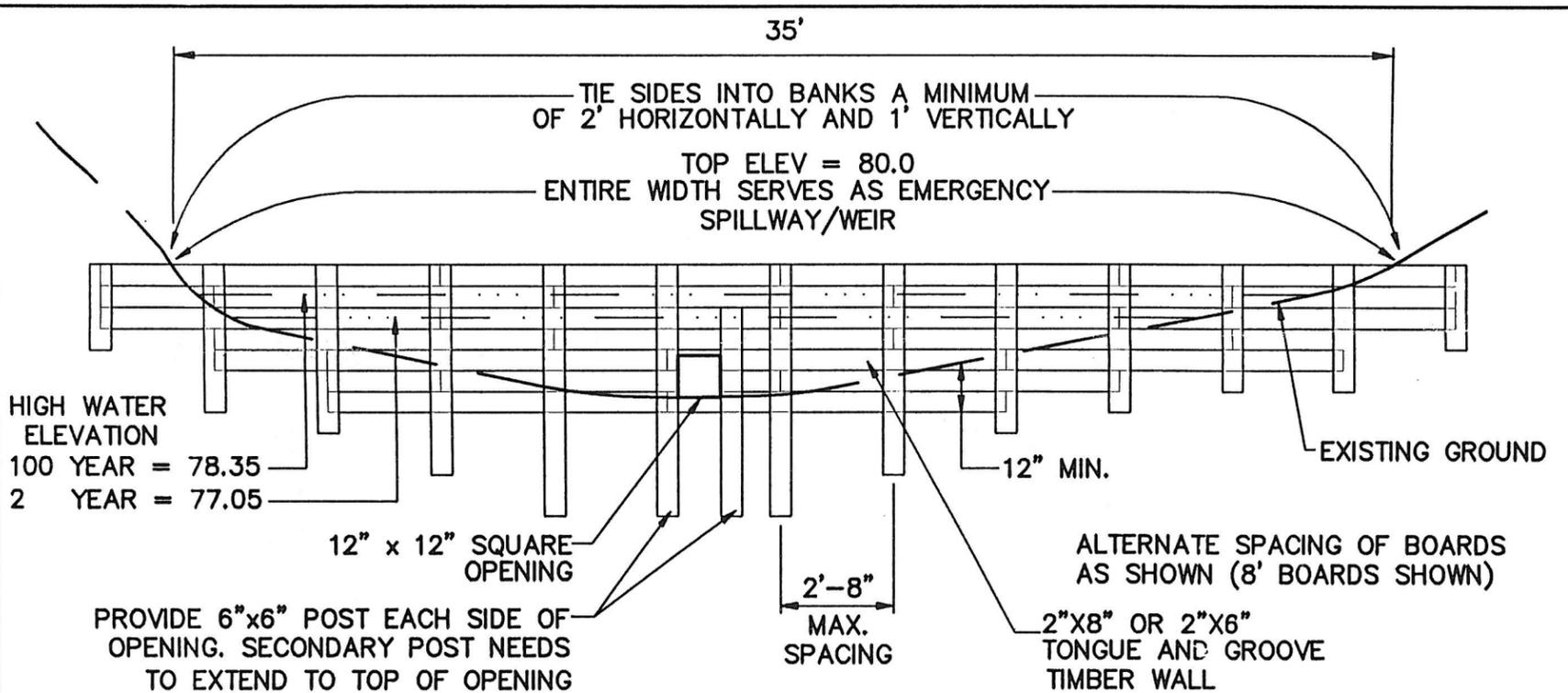
DOWNSTREAM

**PLAN VIEW**

**PRESSURE TREATED WOOD DRY DETENTION STRUCTURE**

SCALE: N.T.S.

D-WDS-2/MOD

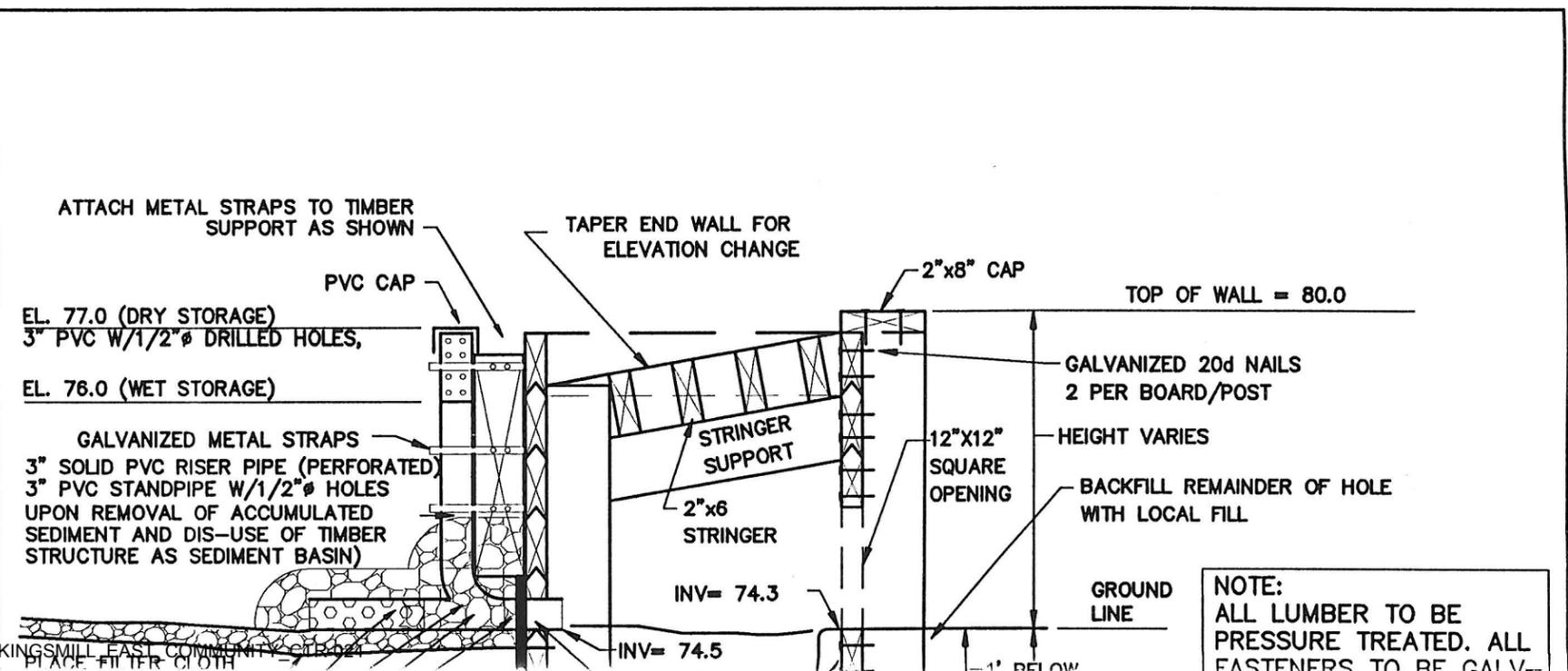


**UPSTREAM ELEVATION**

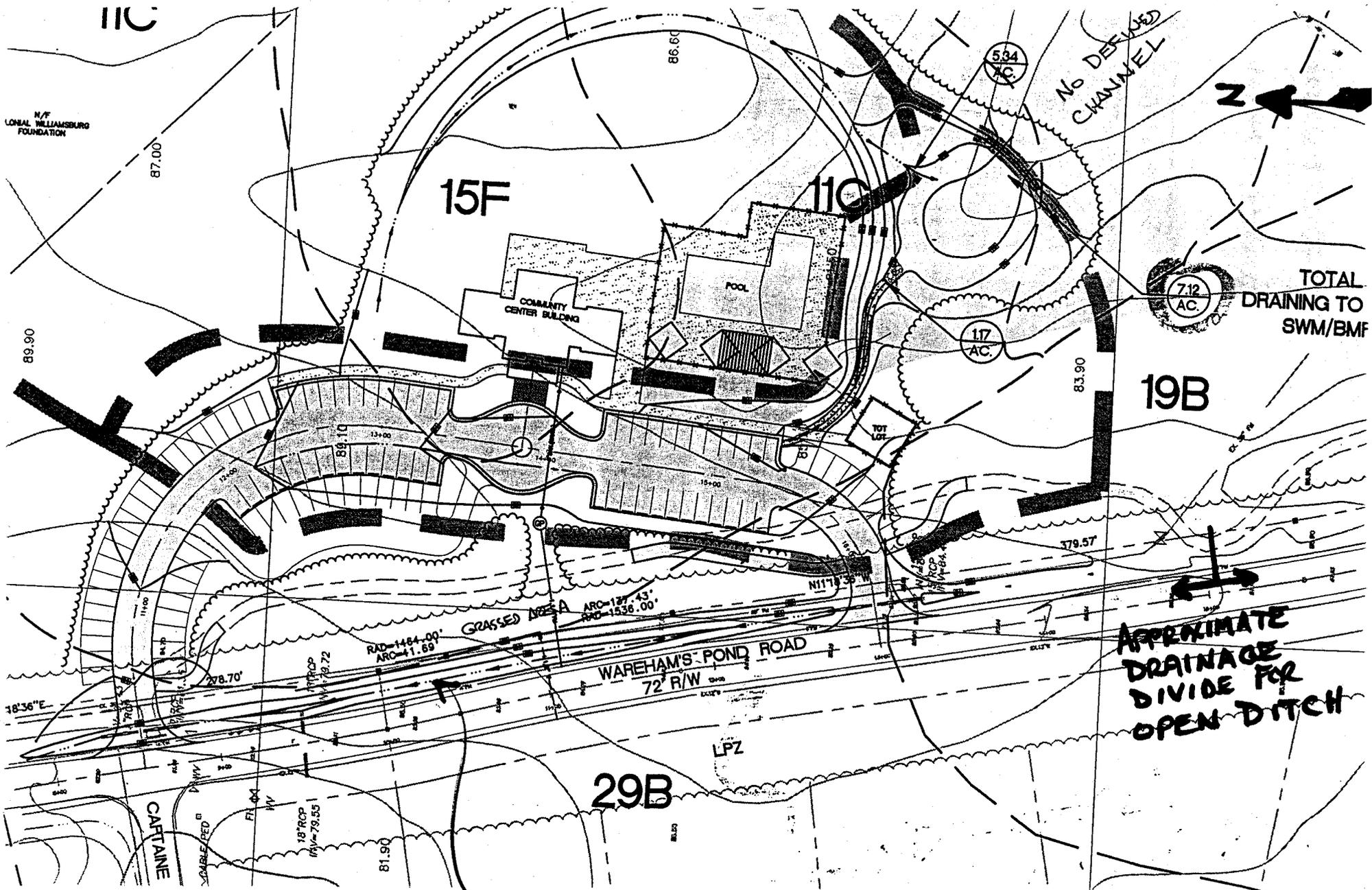
**PRESSURE TREATED WOOD DRY DETENTION STRUCTURE**

SCALE: N.T.S.

W-WDS-1/MOD



NOTE:  
ALL LUMBER TO BE  
PRESSURE TREATED. ALL  
FASTENERS TO BE GALV-



EXISTING DITCH  
IS GRASS LINED  
(WELL MAINTAINED)

KINGSMILL COMMUNITY CENTER  
BH 71748-02  
NOT TO SCALE  
10/8/98



1

HYDRAULIC REPORT FOR

0

KINGSMILL EAST

COMMUNITY CENTER

JOB #7753-10

(JR050)

AES CONSULTING ENGINEERS

5248 OLDE TOWNE ROAD

WILLIAMSBURG, VA. 23188

OCTOBER 30, 1998

Return Period = 10 Yrs  
 Rainfall file: JCC

Run Date: 10-31-1998  
 File: KMCOMCEN.ST3

LINE 1 / Q = 6.37 / HT = 18 / WID = 18 / N = .013 / L = 50 / JLC = 1

#2-#1 (OUTFALL) / Outfall

|        | HGL   | DEPTH | INVERT | VEL  | EGL   | T WID | COVER | AREA |
|--------|-------|-------|--------|------|-------|-------|-------|------|
| DNSTRM | 79.00 | 18.00 | 76.50  | 3.61 | 79.20 | 0.00  | -1.5  | 1.77 |
| UPSTRM | 79.18 | 18.00 | 77.00  | 3.60 | 79.39 | 0.00  | 1     | 1.77 |

|                      |      |                               |        |
|----------------------|------|-------------------------------|--------|
| Drainage area (ac) = | 0.24 | Slope of invert (%) =         | 1.0000 |
| Runoff coefficient = | 0.50 | Slope energy grade line (%) = | 0.3681 |
| Time of conc (min) = | 8.52 | Critical depth (in) =         | 11.56  |
| Inlet time (min) =   | 5.00 | Natural ground elev. (ft) =   | 79.50  |
| Intensity (in/hr) =  | 6.11 | Upstream surcharge (ft) =     | 0.68   |
| Cumulative C*A =     | 1.04 | Additional Q (cfs) =          | 0.00   |
| Q = CA * I (cfs) =   | 6.37 | Line capacity (cfs) =         | 10.50  |
| -----                |      |                               |        |
| Q catchment (cfs) =  | 0.84 | Inlet length (ft) =           | 0.00   |
| Q carryover (cfs) =  | 5.96 | Gutter slope (ft/ft) =        | 0.0000 |
| Q captured (cfs) =   | 0.00 | Cross slope (ft/ft) =         | 0.0000 |
| Q bypassed (cfs) =   | 6.80 | Ponding width (ft) =          | N/A    |

LINE 2 / Q = 5.68 / HT = 15 / WID = 15 / N = .013 / L = 55 / JLC = 1

#3-#2 / DNLN = 1

|        | HGL   | DEPTH | INVERT | VEL  | EGL   | T WID | COVER | AREA |
|--------|-------|-------|--------|------|-------|-------|-------|------|
| DNSTRM | 79.39 | 15.00 | 77.00  | 4.63 | 79.72 | 0.00  | 1.25  | 1.23 |
| UPSTRM | 79.81 | 15.00 | 77.50  | 4.63 | 80.14 | 0.00  | 2.75  | 1.23 |

|                      |      |                               |        |
|----------------------|------|-------------------------------|--------|
| Drainage area (ac) = | 0.55 | Slope of invert (%) =         | 0.9091 |
| Runoff coefficient = | 0.80 | Slope energy grade line (%) = | 0.7731 |
| Time of conc (min) = | 8.32 | Critical depth (in) =         | 11.44  |
| Inlet time (min) =   | 7.00 | Natural ground elev. (ft) =   | 81.50  |
| Intensity (in/hr) =  | 6.15 | Upstream surcharge (ft) =     | 1.06   |
| Cumulative C*A =     | 0.92 | Additional Q (cfs) =          | 0.00   |
| Q = CA * I (cfs) =   | 5.68 | Line capacity (cfs) =         | 6.16   |
| -----                |      |                               |        |
| Q catchment (cfs) =  | 2.84 | Inlet length (ft) =           | 0.00   |
| Q carryover (cfs) =  | 3.12 | Gutter slope (ft/ft) =        | 0.0000 |
| Q captured (cfs) =   | 0.00 | Cross slope (ft/ft) =         | 0.0000 |
| Q bypassed (cfs) =   | 5.96 | Ponding width (ft) =          | N/A    |

LINE 3 / Q = 3.12 / HT = 15 / WID = 15 / N = .013 / L = 210 / JLC = 1

#4-#3 / DNLN = 2

|        | HGL   | DEPTH | INVERT | VEL  | EGL   | T WID | COVER | AREA |
|--------|-------|-------|--------|------|-------|-------|-------|------|
| DNSTRM | 80.14 | 15.00 | 77.50  | 2.54 | 80.24 | 0.00  | 2.75  | 1.23 |
| UPSTRM | 80.71 | 13.09 | 79.50  | 2.75 | 80.82 | 10.00 | 2.75  | 1.14 |

|                    |   |      |                             |   |        |
|--------------------|---|------|-----------------------------|---|--------|
| Drainage area (ac) | = | 0.69 | Slope of invert (%)         | = | 0.9524 |
| Runoff coefficient | = | 0.70 | Slope energy grade line (%) | = | 0.2209 |
| Time of conc (min) | = | 7.00 | Critical depth (in)         | = | 8.48   |
| Inlet time (min)   | = | 7.00 | Natural ground elev. (ft)   | = | 83.50  |
| Intensity (in/hr)  | = | 6.46 | Upstream surcharge (ft)     | = | 0.00   |
| Cumulative C*A     | = | 0.48 | Additional Q (cfs)          | = | 0.00   |
| Q = CA * I (cfs)   | = | 3.12 | Line capacity (cfs)         | = | 6.30   |
| -----              |   |      |                             |   |        |
| Q catchment (cfs)  | = | 3.12 | Inlet length (ft)           | = | 0.00   |
| Q carryover (cfs)  | = | 0.00 | Gutter slope (ft/ft)        | = | 0.0000 |
| Q captured (cfs)   | = | 0.00 | Cross slope (ft/ft)         | = | 0.0000 |
| Q bypassed (cfs)   | = | 3.12 | Ponding width (ft)          | = | N/A    |

Project KINGSMILL EAST  
COMMUNITY CENTER. CULVERT #1

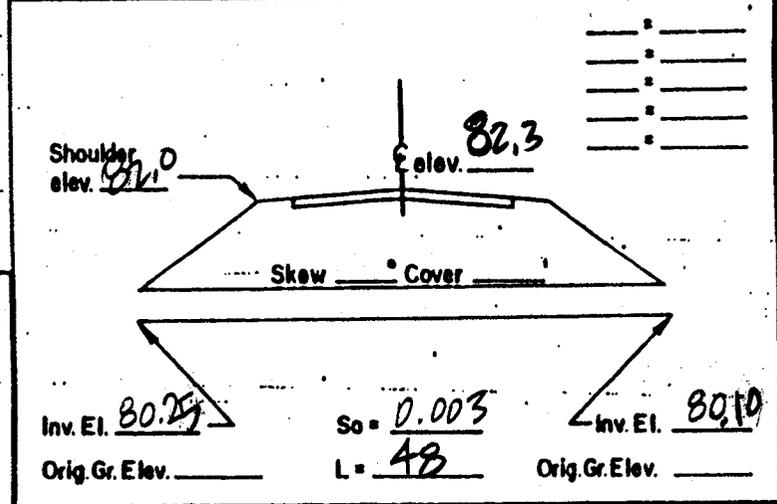
Plan Sheet No. \_\_\_\_\_ Designer \_\_\_\_\_ Sheet \_\_\_\_\_ of \_\_\_\_\_  
Rev. Date: \_\_\_\_\_ Date \_\_\_\_\_

HYDROLOGICAL DATA:  
D.A. = 5.0 AC

$C = 0.2$   
 $T_c = 35 \text{ min}$   
 $I_{10} = 3.0 \text{ in/hr}$   
 $Q = CIA = 3.4 \text{ cfs}$

AHW Controls STATION \_\_\_\_\_  
100yr. Flood plain \_\_\_\_\_ elev. \_\_\_\_\_  
Design AHW depth \_\_\_\_\_ elev. \_\_\_\_\_  
Structures \_\_\_\_\_ elev. \_\_\_\_\_

freq. TW elev.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



DISCHARGES USED  
Q 10 = 3.4 CFS  
Q \_\_\_\_\_ = \_\_\_\_\_ CFS

RISK ASSESSMENT ADT \_\_\_\_\_  
Detours Available \_\_\_\_\_, Length \_\_\_\_\_  
Overtopping Stage \_\_\_\_\_  
Flood Plain Management \_\_\_\_\_  
Criteria and Significant Impact \_\_\_\_\_

2404

| CULVERT TYPE & SIZE | Q   | Q/B | HEADWATER COMPUTATIONS |     |                |                |                     |                |     |                 |      | CONT. HW. ELEV. | OUTLET VELOCITY |        | End Treat. | COMMENTS                         |
|---------------------|-----|-----|------------------------|-----|----------------|----------------|---------------------|----------------|-----|-----------------|------|-----------------|-----------------|--------|------------|----------------------------------|
|                     |     |     | INLET CONT.            |     |                | OUTLET CONTROL |                     |                |     |                 |      |                 | C.M.            | Smooth |            |                                  |
|                     |     |     | HW/D                   | HW  | K <sub>e</sub> | d <sub>c</sub> | $\frac{d_{c,d}}{2}$ | h <sub>o</sub> | H   | L <sub>So</sub> | HW   |                 |                 |        |            |                                  |
| 12" RCP             | 3.4 |     | 1.3                    | 1.3 | 0.5            | 0.6            | 0.8                 | 0.8            | 0.9 | 0.15            | 1.55 | 1.55            |                 |        |            | HW ELEV OK ✓<br>OUTLET CONTROL ✓ |
|                     |     |     |                        |     |                |                |                     |                |     |                 |      |                 |                 |        |            |                                  |
|                     |     |     |                        |     |                |                |                     |                |     |                 |      |                 |                 |        |            |                                  |
|                     |     |     |                        |     |                |                |                     |                |     |                 |      |                 |                 |        |            |                                  |
|                     |     |     |                        |     |                |                |                     |                |     |                 |      |                 |                 |        |            |                                  |
|                     |     |     |                        |     |                |                |                     |                |     |                 |      |                 |                 |        |            |                                  |
|                     |     |     |                        |     |                |                |                     |                |     |                 |      |                 |                 |        |            |                                  |
|                     |     |     |                        |     |                |                |                     |                |     |                 |      |                 |                 |        |            |                                  |
|                     |     |     |                        |     |                |                |                     |                |     |                 |      |                 |                 |        |            |                                  |

Design Flood Exceed Prob. \_\_\_\_\_ Elev. \_\_\_\_\_  
Overtop Flood Exceed Prob. \_\_\_\_\_ Elev. \_\_\_\_\_





ROADSIDE DITCH DESIGN

TC = 13 min

$I_{10} = \frac{5.0 \text{ "/hr}}{2.75 \text{ "/hr}}$

C = 0.6

PROJECT Kingsmill 20c CTR  
 DATE 9-21-98  
 PROJ# 7753-10

NAME OF STREET WAREHAWK POND ROAD

| FROM STATION (DIRECTION) | TO STATION OF FLOW) | LEFT OR RIGHT | A AC       | $Q_2 = CI_2 A$ CFS | CUMULA $Q_2$ CFS | AVG SLOPE FT/FT | ACTUAL VEL <sub>2</sub> FPS | ALLOW VEL <sub>2</sub> FPS | LINING TYPE  | $Q_{10} = CI_{10} A$ CFS | CUM $Q_{10}$ CFS | ACT VEL <sub>10</sub> FPS | DEPTH OF FLOW <sub>10</sub> IN. | REMARKS      |
|--------------------------|---------------------|---------------|------------|--------------------|------------------|-----------------|-----------------------------|----------------------------|--------------|--------------------------|------------------|---------------------------|---------------------------------|--------------|
| <u>~ 13+00</u>           | <u>~ 9+50</u>       | <u>L</u>      | <u>1.1</u> | <u>2.8</u>         | <u>2.8</u>       | <u>.009</u>     | <u>1.8</u>                  | <u>2.5</u>                 | <u>Grass</u> | <u>3.8</u>               | <u>3.8</u>       | <u>2.0</u>                | <u>8.75</u>                     | <u>Grass</u> |
| <u>~ 14+00</u>           | <u>~ 13+50</u>      | <u>L</u>      | <u>.51</u> | <u>1.6</u>         | <u>1.6</u>       | <u>.03</u>      | <u>2.4</u>                  | <u>2.5</u>                 | <u>EC-2</u>  | <u>2.4</u>               | <u>2.4</u>       | <u>2.6</u>                | <u>6.5</u>                      | <u>EC-2</u>  |
|                          |                     |               |            | <u>5.5</u>         |                  |                 |                             |                            |              | <u>8.0</u>               |                  |                           |                                 |              |
|                          |                     |               |            |                    |                  |                 |                             |                            |              |                          |                  |                           |                                 |              |
|                          |                     |               |            |                    |                  |                 |                             |                            |              |                          |                  |                           |                                 |              |
|                          |                     |               |            |                    |                  |                 |                             |                            |              |                          |                  |                           |                                 |              |
|                          |                     |               |            |                    |                  |                 |                             |                            |              |                          |                  |                           |                                 |              |
|                          |                     |               |            |                    |                  |                 |                             |                            |              |                          |                  |                           |                                 |              |
|                          |                     |               |            |                    |                  |                 |                             |                            |              |                          |                  |                           |                                 |              |
|                          |                     |               |            |                    |                  |                 |                             |                            |              |                          |                  |                           |                                 |              |
|                          |                     |               |            |                    |                  |                 |                             |                            |              |                          |                  |                           |                                 |              |
|                          |                     |               |            |                    |                  |                 |                             |                            |              |                          |                  |                           |                                 |              |
|                          |                     |               |            |                    |                  |                 |                             |                            |              |                          |                  |                           |                                 |              |



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HYDROLOGIC REPORT FOR

0

KINGSMILL EAST

SWM/BMP DESIGN

COMMUNITY CENTER

JOB #7753-10

(JR050)

AES CONSULTING ENGINEERS

5248 OLDE TOWNE ROAD

WILLIAMSBURG, VA. 23188

SEPTEMBER 18, 1998

REVISED OCTOBER 30, 1998

TABLE 3

WORKSHEET FOR BMP POINT SYSTEM

A. STRUCTURAL BMP POINT ALLOCATION

| <u>BMP</u>                            | <u>BMP Points</u> | <u>Fraction of Site Served by BMP</u> | <u>Weighted BMP Points</u> |
|---------------------------------------|-------------------|---------------------------------------|----------------------------|
| DESIGN #2                             | 6                 | $\frac{7.27}{10.94}$                  | 3.98                       |
|                                       |                   | x                                     |                            |
|                                       |                   | x                                     |                            |
|                                       |                   | x                                     |                            |
|                                       |                   | x                                     |                            |
| TOTAL WEIGHTED STRUCTURAL BMP POINTS: |                   |                                       |                            |

B. NATURAL OPEN SPACE CREDIT

$$\frac{6.64}{10.94} = 60.7\% \times \frac{(0.1)(60.7)}{(0.1 \text{ per } 1\%)} = 6.07$$

C. TOTAL WEIGHTED POINTS

|                       |   |                           |   |                |
|-----------------------|---|---------------------------|---|----------------|
| <u>3.98</u>           | + | <u>6.07</u>               | = | <u>10.05</u> ✓ |
| Structural BMP Points |   | Natural Open Space Points |   | TOTAL          |

1. RESERVOIR No = 1. 2. RESERVOIR NAME = BMP/SWM POND  
 3.  $S = K_s * Z^b$   
 $K_s = 0.....$   $b = 0.....$   
 START ELEV = 0..... INCREMENT = 0...

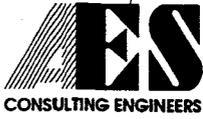
| STAGE | ELEVATION | CO AREA | INC STORAGE | TOT STORAGE |
|-------|-----------|---------|-------------|-------------|
| ft    | ft        | sq ft   | cu ft       | cu ft       |
| 4     | 0.00      | 74.50.  | 0.....      | 0           |
| 5     | 1.50      | 76.00.  | 5712....    | 4284        |
| 6     | 3.50      | 78.00.  | 8159....    | 13871       |
| 7     | 5.50      | 80.00.  | 12189...    | 20348       |
| 8     | 0.00      | 0.00.   | 0.....      | 0           |
| 9     | 0.00      | 0.00.   | 0.....      | 0           |
| 10    | 0.00      | 0.00.   | 0.....      | 0           |
| 11    | 0.00      | 0.00.   | 0.....      | 0           |
| 12    | 0.00      | 0.00.   | 0.....      | 0           |
| 13    | 0.00      | 0.00.   | 0.....      | 0           |
| 14    | 0.00      | 0.00.   | 0.....      | 0           |

CULVERT STRUC A.  $Q = CoA[2gh/k]^{.5}$  CULVERT STRUC B.  $Q = CoA[2gh/k]^{.5}$

1. WIDTH (in) = 3.. ✓ 9. WIDTH (in) = 0..  
 2. HEIGHT (in) = 3.. ✓ 10. HEIGHT (in) = 0..  
 3. No. BARRELS = 1.. ✓ 11. No. BARRELS = 0..  
 4. INVERT ELEV. = 74.5... ✓ 12. INVERT ELEV. = 0.....  
 5.  $Co = 0.60$  13.  $Co = 0.60$   
 6. CULVERT LENGTH (ft) = 0... 14. CULVERT LENGTH (ft) = 0...  
 7. CULVERT SLOPE (%) = 0... 15. CULVERT SLOPE (%) = 0...  
 8. MANNING'S N-VALUE = .013 16. MANNING'S N-VALUE = .013  
 17. MULTI-STAGE OPTION ? (Y/N) N

WEIR STRUCTURE A.  $Q = C_w L H^{EXP}$  WEIR STRUCTURE B.  $Q = C_w L H^{EXP}$

18. CREST LENGTH (ft) = 20..... 23. CREST LENGTH (ft) = 0.....  
 19. CREST ELEVATION = 80..... 24. CREST ELEVATION = 0.....  
 20.  $C_w = 3.00$  25.  $C_w = 3.00$   
 21. EXP = 1.50 26. EXP = 1.50  
 22. MULTI-STAGE OPTION ? (Y/N) N 27. MULTI-STAGE OPTION ? (Y/N) N



5248 Olde Towne Road, Suite 1  
 Williamsburg, Virginia 23188  
 (757) 253-0040  
 Fax: (757) 220-8994

PROJECT KINGSMILL EAST REC. CTR.

PROJECT NO. 7753-10

SUBJECT BMP CALES

SHEET NO. \_\_\_\_\_ OF \_\_\_\_\_

CALCULATED BY CAH DATE 9/17/98

**KINGSMILL RECREATION CENTER  
 SWM/BMP CALCS**

TRY DESIGN TYPE #2 - DRY POND

$$\text{MIN. VOL. REQ} = (1") (DA) \left(\frac{1}{12}''\right) (43,560.5 \text{ AC}) (0.1 \text{ MP.}) =$$

$$= (1)(1.27)\left(\frac{1}{12}\right)(43,560)(0.3)$$

**MIN VOL = 7,917 CF**

**SIZE WATER QUALITY ORIFICE**

$$Q = \frac{7,917}{86,400} = \underline{0.092}$$

$$Q = KA_o \sqrt{2g\Delta h}$$

$$0.092 = 0.73A \sqrt{2(32.2)(2.5)}$$

$$0.092 = 9.26A$$

$$A = 0.0103 \text{ ft}^2 = \pi r^2$$

$$r = 0.052 \text{ ft} = 0.68 \text{ in}$$

**DIA REQ = 1.4"**  
**\* USE MIN 3" ORIFICE**

**SEDIMENT BASIN**

$$(2.8)(67 \text{ CY}) = 5,065 \text{ CF WET} \rightarrow \text{EL} \approx 76.0 \checkmark$$

$$(2.8)(67 \text{ CY}) = 5,065 \text{ CF DRY} \rightarrow \text{EL} \approx 77.0 \checkmark$$

NOTE: AREA DEVELOPED BY USING "CLEAN WATER DIVERSION" (SEE PLANS) 60 TEMP. SED. BASIN SIZING FOR DISTURBED AREA RUNOFF

HYDROLOGIC REPORT

2YR PRE DEVELOPEMENT..  
.....  
.....

Hyd. No. 1

Hydrograph type = RATIONAL  
Storm frequency = 2 yr  
Time of conc. = 20 min  
Runoff coeff. = .15

Peak discharge = 3.38 cfs  
Time interval = 1 min  
Intensity = 3.10 in/hr  
Basin area = 7.27 ac

HYDROGRAPH DISCHARGE TABLE

| TIME--OUTFLOW<br>(hrs cfs) | TIME--OUTFLOW<br>(hrs cfs) | TIME--OUTFLOW<br>(hrs cfs) | TIME--OUTFLOW<br>(hrs cfs) |
|----------------------------|----------------------------|----------------------------|----------------------------|
| 0.08 0.84                  | 0.10 1.01                  | 0.12 1.18                  | 0.13 1.35                  |
| 0.15 1.52                  | 0.17 1.69                  | 0.18 1.86                  | 0.20 2.03                  |
| 0.22 2.19                  | 0.23 2.36                  | 0.25 2.53                  | 0.27 2.70                  |
| 0.28 2.87                  | 0.30 3.04                  | 0.32 3.21                  | 0.33 3.38                  |
| 0.35 3.21                  | 0.37 3.04                  | 0.38 2.87                  | 0.40 2.70                  |
| 0.42 2.53                  | 0.43 2.36                  | 0.45 2.19                  | 0.47 2.03                  |
| 0.48 1.86                  | 0.50 1.69                  | 0.52 1.52                  | 0.53 1.35                  |
| 0.55 1.18                  | 0.57 1.01                  | 0.58 0.84                  | 0.60 0.68                  |

HYDROLOGIC REPORT

10YR PRE DEVELOPEMENT.

.....  
.....

Hyd. No. 2

Hydrograph type = RATIONAL  
Storm frequency = 10 yr  
Time of conc. = 20 min  
Runoff coeff. = .15

Peak discharge = 4.23 cfs  
Time interval = 1 min  
Intensity = 3.88 in/hr  
Basin area = 7.27 ac

HYDROGRAPH DISCHARGE TABLE

| TIME--OUTFLOW |      | TIME--OUTFLOW |      | TIME--OUTFLOW |      | TIME--OUTFLOW |      |
|---------------|------|---------------|------|---------------|------|---------------|------|
| (hrs          | cfs) | (hrs          | cfs) | (hrs          | cfs) | (hrs          | cfs) |
| 0.08          | 1.06 | 0.10          | 1.27 | 0.12          | 1.48 | 0.13          | 1.69 |
| 0.15          | 1.90 | 0.17          | 2.12 | 0.18          | 2.33 | 0.20          | 2.54 |
| 0.22          | 2.75 | 0.23          | 2.96 | 0.25          | 3.17 | 0.27          | 3.39 |
| 0.28          | 3.60 | 0.30          | 3.81 | 0.32          | 4.02 | 0.33          | 4.23 |
| 0.35          | 4.02 | 0.37          | 3.81 | 0.38          | 3.60 | 0.40          | 3.39 |
| 0.42          | 3.17 | 0.43          | 2.96 | 0.45          | 2.75 | 0.47          | 2.54 |
| 0.48          | 2.33 | 0.50          | 2.12 | 0.52          | 1.90 | 0.53          | 1.69 |
| 0.55          | 1.48 | 0.57          | 1.27 | 0.58          | 1.06 | 0.60          | 0.85 |

HYDROLOGIC REPORT

2YR POST DEVELOPEMENT.

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Hyd. No. 3

Hydrograph type = RATIONAL  
Storm frequency = 2 yr  
Time of conc. = 20 min  
Runoff coeff. = .45

Peak discharge = 10.13 cfs  
Time interval = 1 min  
Intensity = 3.10 in/hr  
Basin area = 7.27 ac

HYDROGRAPH DISCHARGE TABLE

| TIME--OUTFLOW |      | TIME--OUTFLOW |      | TIME--OUTFLOW |      | TIME--OUTFLOW |       |
|---------------|------|---------------|------|---------------|------|---------------|-------|
| (hrs          | cfs) | (hrs          | cfs) | (hrs          | cfs) | (hrs          | cfs)  |
| 0.02          | 0.51 | 0.03          | 1.01 | 0.05          | 1.52 | 0.07          | 2.03  |
| 0.08          | 2.53 | 0.10          | 3.04 | 0.12          | 3.54 | 0.13          | 4.05  |
| 0.15          | 4.56 | 0.17          | 5.06 | 0.18          | 5.57 | 0.20          | 6.08  |
| 0.22          | 6.58 | 0.23          | 7.09 | 0.25          | 7.59 | 0.27          | 8.10  |
| 0.28          | 8.61 | 0.30          | 9.11 | 0.32          | 9.62 | 0.33          | 10.13 |
| 0.35          | 9.62 | 0.37          | 9.11 | 0.38          | 8.61 | 0.40          | 8.10  |
| 0.42          | 7.59 | 0.43          | 7.09 | 0.45          | 6.58 | 0.47          | 6.08  |
| 0.48          | 5.57 | 0.50          | 5.06 | 0.52          | 4.56 | 0.53          | 4.05  |
| 0.55          | 3.54 | 0.57          | 3.04 | 0.58          | 2.53 | 0.60          | 2.03  |
| 0.62          | 1.52 | 0.63          | 1.01 | 0.65          | 0.51 | 0.67          | 0.00  |

HYDROLOGIC REPORT

10YR POST DEVELOPEMEN.  
.....  
.....

Hyd. No. 5

Hydrograph type = RATIONAL  
Storm frequency = 10 yr  
Time of conc. = 20 min  
Runoff coeff. = .45

Peak discharge = 12.70 cfs  
Time interval = 1 min  
Intensity = 3.88 in/hr  
Basin area = 7.27 ac

HYDROGRAPH DISCHARGE TABLE

| TIME--OUTFLOW<br>(hrs cfs) | TIME--OUTFLOW<br>(hrs cfs) | TIME--OUTFLOW<br>(hrs cfs) | TIME--OUTFLOW<br>(hrs cfs) |
|----------------------------|----------------------------|----------------------------|----------------------------|
| 0.02 0.63                  | 0.03 1.27                  | 0.05 1.90                  | 0.07 2.54                  |
| 0.08 3.17                  | 0.10 3.81                  | 0.12 4.44                  | 0.13 5.08                  |
| 0.15 5.71                  | 0.17 6.35                  | 0.18 6.98                  | 0.20 7.62                  |
| 0.22 8.25                  | 0.23 8.89                  | 0.25 9.52                  | 0.27 10.16                 |
| 0.28 10.79                 | 0.30 11.43                 | 0.32 12.06                 | 0.33 12.70                 |
| 0.35 12.06                 | 0.37 11.43                 | 0.38 10.79                 | 0.40 10.16                 |
| 0.42 9.52                  | 0.43 8.89                  | 0.45 8.25                  | 0.47 7.62                  |
| 0.48 6.98                  | 0.50 6.35                  | 0.52 5.71                  | 0.53 5.08                  |
| 0.55 4.44                  | 0.57 3.81                  | 0.58 3.17                  | 0.60 2.54                  |
| 0.62 1.90                  | 0.63 1.27                  | 0.65 0.63                  | 0.67 0.00                  |

HYDROLOGIC REPORT

2YR POST ROUTED.....  
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.....

Hyd. No. 4

|                                   |                           |
|-----------------------------------|---------------------------|
| Hydrograph type = RESERVOIR ROUTE | Peak discharge = 0.37 cfs |
| Storm frequency = 2 yr            | Time interval = 1 min     |
| Inflow hyd. no. = 3               | Reservoir no. = 1         |

HYDROGRAPH DISCHARGE TABLE

| TIME<br>hrs | INFLOW (i)<br>cfs | INFLOW (j)<br>cfs | 2S/dt-0 (i)<br>cfs | 2S/dt+0 (j)<br>cfs | OUTFLOW<br>cfs |
|-------------|-------------------|-------------------|--------------------|--------------------|----------------|
| 0.03        | 1.01              | 1.52              | 2.01               | 2.02               | 0.01           |
| 0.05        | 1.52              | 2.03              | 4.51               | 4.54               | 0.01           |
| 0.07        | 2.03              | 2.53              | 8.01               | 8.06               | 0.03           |
| 0.08        | 2.53              | 3.04              | 12.48              | 12.56              | 0.04           |
| 0.10        | 3.04              | 3.54              | 17.95              | 18.05              | 0.05           |
| 0.12        | 3.54              | 4.05              | 24.40              | 24.53              | 0.06           |
| 0.13        | 4.05              | 4.56              | 31.82              | 32.00              | 0.09           |
| 0.15        | 4.56              | 5.06              | 40.18              | 40.43              | 0.12           |
| 0.17        | 5.06              | 5.57              | 49.51              | 49.80              | 0.15           |
| 0.18        | 5.57              | 6.08              | 59.80              | 60.14              | 0.17           |
| 0.20        | 6.08              | 6.58              | 71.07              | 71.45              | 0.19           |
| 0.22        | 6.58              | 7.09              | 83.32              | 83.73              | 0.20           |
| 0.23        | 7.09              | 7.59              | 96.55              | 96.99              | 0.22           |
| 0.25        | 7.59              | 8.10              | 110.75             | 111.23             | 0.24           |
| 0.27        | 8.10              | 8.61              | 125.92             | 126.44             | 0.26           |
| 0.28        | 8.61              | 9.11              | 142.08             | 142.63             | 0.28           |
| 0.30        | 9.11              | 9.62              | 159.23             | 159.80             | 0.28           |
| 0.32        | 9.62              | 10.13             | 177.38             | 177.96             | 0.29           |
| 0.33        | 10.13             | 9.62              | 196.52             | 197.12             | 0.30           |
| 0.35        | 9.62              | 9.11              | 215.65             | 216.27             | 0.31           |
| 0.37        | 9.11              | 8.61              | 233.76             | 234.39             | 0.31           |
| 0.38        | 8.61              | 8.10              | 250.84             | 251.48             | 0.32           |
| 0.40        | 8.10              | 7.59              | 266.89             | 267.54             | 0.33           |
| 0.42        | 7.59              | 7.09              | 281.92             | 282.58             | 0.33           |
| 0.43        | 7.09              | 6.58              | 295.93             | 296.60             | 0.34           |

HYDROGRAPH DISCHARGE TABLE Cont'd

| TIME<br>hrs | INFLOW (i)<br>cfs | INFLOW (j)<br>cfs | 2S/dt-0 (i)<br>cfs | 2S/dt+0 (j)<br>cfs | OUTFLOW<br>cfs |
|-------------|-------------------|-------------------|--------------------|--------------------|----------------|
| 0.45        | 6.58              | 6.08              | 308.91             | 309.60             | 0.34           |
| 0.47        | 6.08              | 5.57              | 320.88             | 321.57             | 0.35           |
| 0.48        | 5.57              | 5.06              | 331.82             | 332.52             | 0.35           |
| 0.50        | 5.06              | 4.56              | 341.75             | 342.45             | 0.35           |
| 0.52        | 4.56              | 4.05              | 350.65             | 351.37             | 0.36           |
| 0.53        | 4.05              | 3.54              | 358.54             | 359.26             | 0.36           |
| 0.55        | 3.54              | 3.04              | 365.41             | 366.14             | 0.36           |
| 0.57        | 3.04              | 2.53              | 371.27             | 372.00             | 0.36           |
| 0.58        | 2.53              | 2.03              | 376.11             | 376.84             | 0.37           |
| 0.60        | 2.03              | 1.52              | 379.93             | 380.67             | 0.37           |
| 0.62        | 1.52              | 1.01              | 382.74             | 383.48             | 0.37           |
| 0.63        | 1.01              | 0.51              | 384.54             | 385.27             | 0.37           |

Maximum outflow (cfs) = 0.37  
 Maximum storage (cu ft) = 11571  
 Maximum elevation (ft) = 77.05

HYDROLOGIC REPORT

10 YR POST ROUTED.....  
.....  
.....

Hyd. No. 6

|                                   |                  |          |
|-----------------------------------|------------------|----------|
| Hydrograph type = RESERVOIR ROUTE | Peak discharge = | 0.40 cfs |
| Storm frequency = 10 yr           | Time interval =  | 1 min    |
| Inflow hyd. no. = 5               | Reservoir no. =  | 1        |

HYDROGRAPH DISCHARGE TABLE

| TIME<br>hrs | INFLOW (i)<br>cfs | INFLOW (j)<br>cfs | 2S/dt-0 (i)<br>cfs | 2S/dt+0 (j)<br>cfs | OUTFLOW<br>cfs |
|-------------|-------------------|-------------------|--------------------|--------------------|----------------|
| 0.03        | 1.27              | 1.90              | 2.52               | 2.54               | 0.01           |
| 0.05        | 1.90              | 2.54              | 5.66               | 5.69               | 0.02           |
| 0.07        | 2.54              | 3.17              | 10.04              | 10.10              | 0.03           |
| 0.08        | 3.17              | 3.81              | 15.66              | 15.75              | 0.05           |
| 0.10        | 3.81              | 4.44              | 22.52              | 22.64              | 0.06           |
| 0.12        | 4.44              | 5.08              | 30.61              | 30.77              | 0.08           |
| 0.13        | 5.08              | 5.71              | 39.89              | 40.13              | 0.12           |
| 0.15        | 5.71              | 6.35              | 50.38              | 50.68              | 0.15           |
| 0.17        | 6.35              | 6.98              | 62.10              | 62.44              | 0.17           |
| 0.18        | 6.98              | 7.62              | 75.04              | 75.43              | 0.19           |
| 0.20        | 7.62              | 8.25              | 89.22              | 89.64              | 0.21           |
| 0.22        | 8.25              | 8.89              | 104.62             | 105.09             | 0.23           |
| 0.23        | 8.89              | 9.52              | 121.25             | 121.76             | 0.25           |
| 0.25        | 9.52              | 10.16             | 139.11             | 139.66             | 0.27           |
| 0.27        | 10.16             | 10.79             | 158.23             | 158.79             | 0.28           |
| 0.28        | 10.79             | 11.43             | 178.59             | 179.17             | 0.29           |
| 0.30        | 11.43             | 12.06             | 200.20             | 200.81             | 0.30           |
| 0.32        | 12.06             | 12.70             | 223.07             | 223.69             | 0.31           |
| 0.33        | 12.70             | 12.06             | 247.19             | 247.83             | 0.32           |
| 0.35        | 12.06             | 11.43             | 271.29             | 271.95             | 0.33           |
| 0.37        | 11.43             | 10.79             | 294.10             | 294.78             | 0.34           |
| 0.38        | 10.79             | 10.16             | 315.63             | 316.32             | 0.34           |
| 0.40        | 10.16             | 9.52              | 335.88             | 336.58             | 0.35           |
| 0.42        | 9.52              | 8.89              | 354.84             | 355.56             | 0.36           |
| 0.43        | 8.89              | 8.25              | 372.52             | 373.25             | 0.36           |

HYDROGRAPH DISCHARGE TABLE Cont'd

| TIME<br>hrs | INFLOW (i)<br>cfs | INFLOW (j)<br>cfs | 2S/dt-0 (i)<br>cfs | 2S/dt+0 (j)<br>cfs | OUTFLOW<br>cfs |
|-------------|-------------------|-------------------|--------------------|--------------------|----------------|
| 0.45        | 8.25              | 7.62              | 388.93             | 389.66             | 0.37           |
| 0.47        | 7.62              | 6.98              | 404.05             | 404.80             | 0.37           |
| 0.48        | 6.98              | 6.35              | 417.89             | 418.65             | 0.38           |
| 0.50        | 6.35              | 5.71              | 430.46             | 431.22             | 0.38           |
| 0.52        | 5.71              | 5.08              | 441.75             | 442.52             | 0.39           |
| 0.53        | 5.08              | 4.44              | 451.76             | 452.54             | 0.39           |
| 0.55        | 4.44              | 3.81              | 460.50             | 461.28             | 0.39           |
| 0.57        | 3.81              | 3.17              | 467.96             | 468.75             | 0.39           |
| 0.58        | 3.17              | 2.54              | 474.15             | 474.94             | 0.40           |
| 0.60        | 2.54              | 1.90              | 479.07             | 479.86             | 0.40           |
| 0.62        | 1.90              | 1.27              | 482.72             | 483.51             | 0.40           |
| 0.63        | 1.27              | 0.63              | 485.09             | 485.89             | 0.40           |

Maximum outflow (cfs) = 0.40  
 Maximum storage (cu ft) = 14598  
 Maximum elevation (ft) = 77.49

HYDROLOGIC REPORT

100 YR POST ROUTED....  
.....  
.....

Hyd. No. 8

|                                   |                  |          |
|-----------------------------------|------------------|----------|
| Hydrograph type = RESERVOIR ROUTE | Peak discharge = | 0.46 cfs |
| Storm frequency = 100 yr          | Time interval =  | 1 min    |
| Inflow hyd. no. = 7               | Reservoir no. =  | 1        |

HYDROGRAPH DISCHARGE TABLE

| TIME<br>hrs | INFLOW (i)<br>cfs | INFLOW (j)<br>cfs | 2S/dt-0 (i)<br>cfs | 2S/dt+0 (j)<br>cfs | OUTFLOW<br>cfs |
|-------------|-------------------|-------------------|--------------------|--------------------|----------------|
| 0.03        | 1.87              | 2.80              | 3.71               | 3.73               | 0.01           |
| 0.05        | 2.80              | 3.74              | 8.33               | 8.38               | 0.03           |
| 0.07        | 3.74              | 4.67              | 14.77              | 14.87              | 0.05           |
| 0.08        | 4.67              | 5.61              | 23.06              | 23.18              | 0.06           |
| 0.10        | 5.61              | 6.54              | 33.15              | 33.34              | 0.09           |
| 0.12        | 6.54              | 7.47              | 45.02              | 45.30              | 0.14           |
| 0.13        | 7.47              | 8.41              | 58.70              | 59.03              | 0.17           |
| 0.15        | 8.41              | 9.34              | 74.20              | 74.58              | 0.19           |
| 0.17        | 9.34              | 10.28             | 91.52              | 91.95              | 0.22           |
| 0.18        | 10.28             | 11.21             | 110.65             | 111.13             | 0.24           |
| 0.20        | 11.21             | 12.14             | 131.61             | 132.14             | 0.27           |
| 0.22        | 12.14             | 13.08             | 154.40             | 154.97             | 0.28           |
| 0.23        | 13.08             | 14.01             | 179.04             | 179.63             | 0.29           |
| 0.25        | 14.01             | 14.95             | 205.53             | 206.13             | 0.30           |
| 0.27        | 14.95             | 15.88             | 233.86             | 234.49             | 0.31           |
| 0.28        | 15.88             | 16.82             | 264.04             | 264.69             | 0.33           |
| 0.30        | 16.82             | 17.75             | 296.06             | 296.73             | 0.34           |
| 0.32        | 17.75             | 18.68             | 329.93             | 330.63             | 0.35           |
| 0.33        | 18.68             | 17.75             | 365.64             | 366.36             | 0.36           |
| 0.35        | 17.75             | 16.82             | 401.33             | 402.07             | 0.37           |
| 0.37        | 16.82             | 15.88             | 435.13             | 435.89             | 0.38           |
| 0.38        | 15.88             | 14.95             | 467.04             | 467.82             | 0.39           |
| 0.40        | 14.95             | 14.01             | 497.06             | 497.87             | 0.40           |
| 0.42        | 14.01             | 13.08             | 525.20             | 526.02             | 0.41           |
| 0.43        | 13.08             | 12.14             | 551.45             | 552.29             | 0.42           |

HYDROGRAPH DISCHARGE TABLE Cont'd

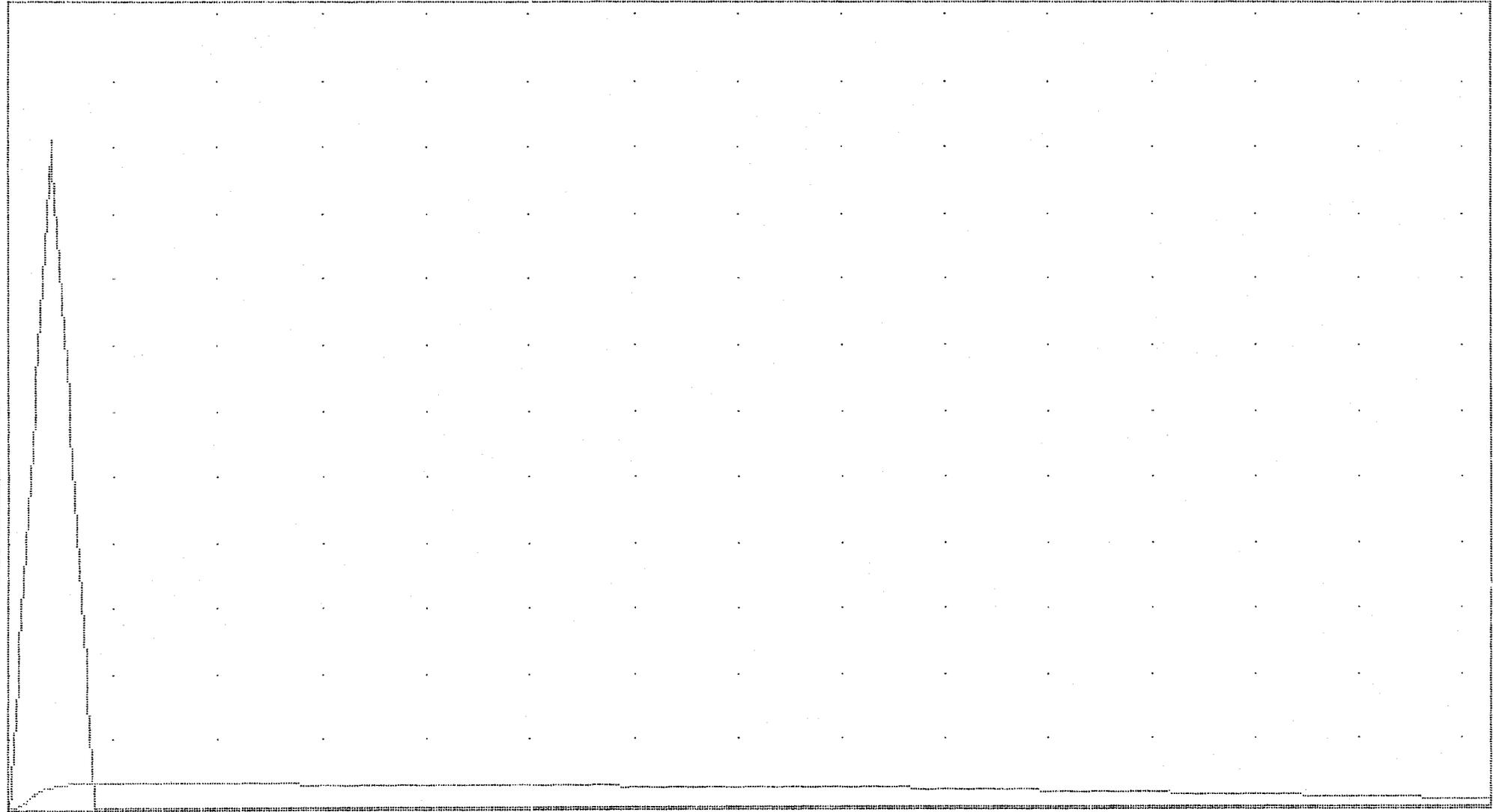
| TIME<br>hrs | INFLOW (i)<br>cfs | INFLOW (j)<br>cfs | 2S/dt-0 (i)<br>cfs | 2S/dt+0 (j)<br>cfs | OUTFLOW<br>cfs |
|-------------|-------------------|-------------------|--------------------|--------------------|----------------|
| 0.45        | 12.14             | 11.21             | 575.82             | 576.68             | 0.43           |
| 0.47        | 11.21             | 10.28             | 598.32             | 599.18             | 0.43           |
| 0.48        | 10.28             | 9.34              | 618.93             | 619.80             | 0.44           |
| 0.50        | 9.34              | 8.41              | 637.67             | 638.55             | 0.44           |
| 0.52        | 8.41              | 7.47              | 654.53             | 655.42             | 0.44           |
| 0.53        | 7.47              | 6.54              | 669.52             | 670.41             | 0.45           |
| 0.55        | 6.54              | 5.61              | 682.64             | 683.53             | 0.45           |
| 0.57        | 5.61              | 4.67              | 693.88             | 694.78             | 0.45           |
| 0.58        | 4.67              | 3.74              | 703.25             | 704.16             | 0.45           |
| 0.60        | 3.74              | 2.80              | 710.75             | 711.66             | 0.45           |
| 0.62        | 2.80              | 1.87              | 716.38             | 717.29             | 0.45           |
| 0.63        | 1.87              | 0.93              | 720.14             | 721.05             | 0.46           |

Maximum outflow (cfs) = 0.46  
 Maximum storage (cu ft) = 21675  
 Maximum elevation (ft) = 78.35

$Q_p = 0.4$

RESERVOIR ROUTE

2 Yr



HGU = 49 min

4

UGU = 1.0 cfs

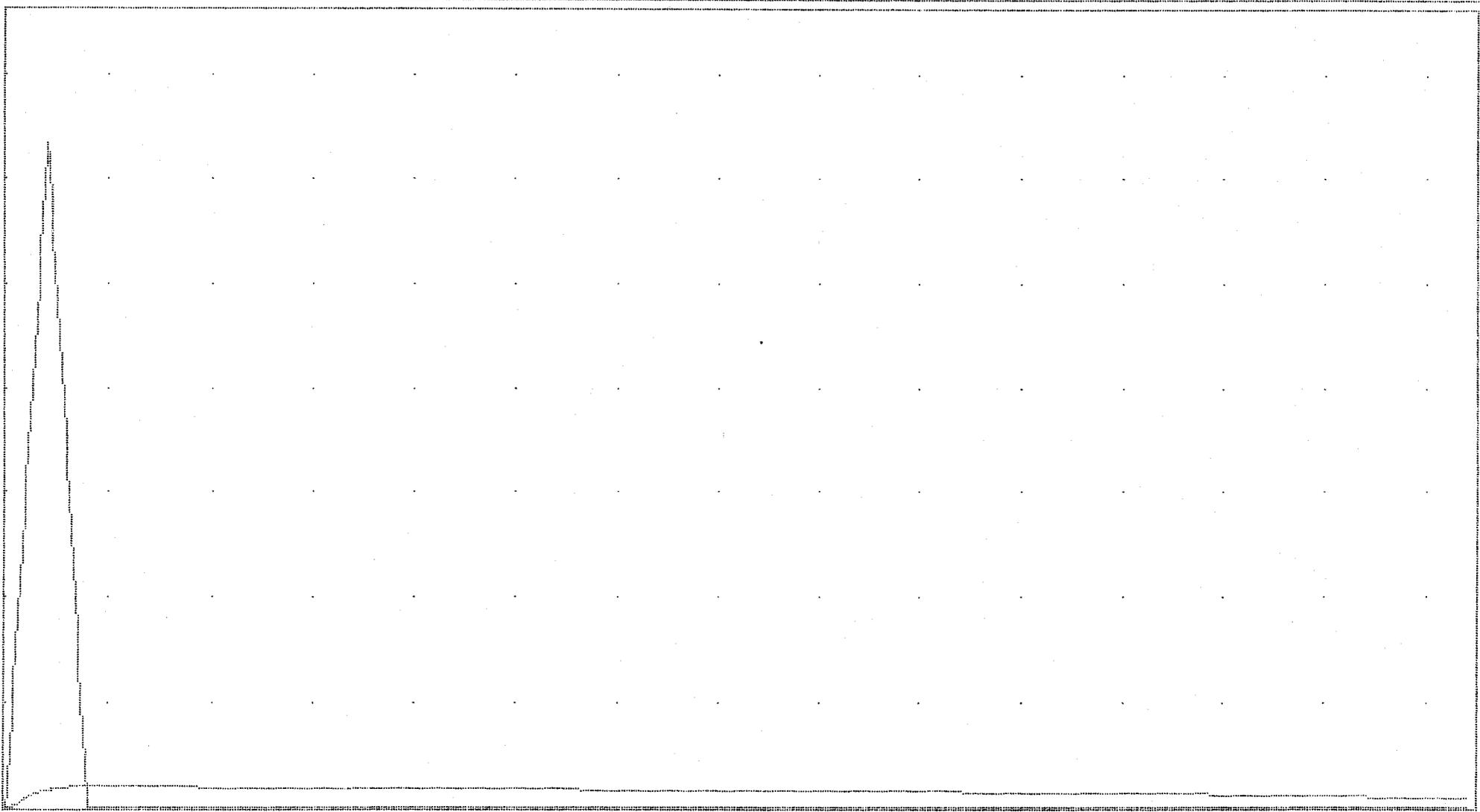
MAX STORAGE = 11571

MAX ELEVATION = 77.05

Op = 0.4

RESERVOIR ROUTE

10 yr



HGU = 50 min

6

UGU = 2.0 cfs

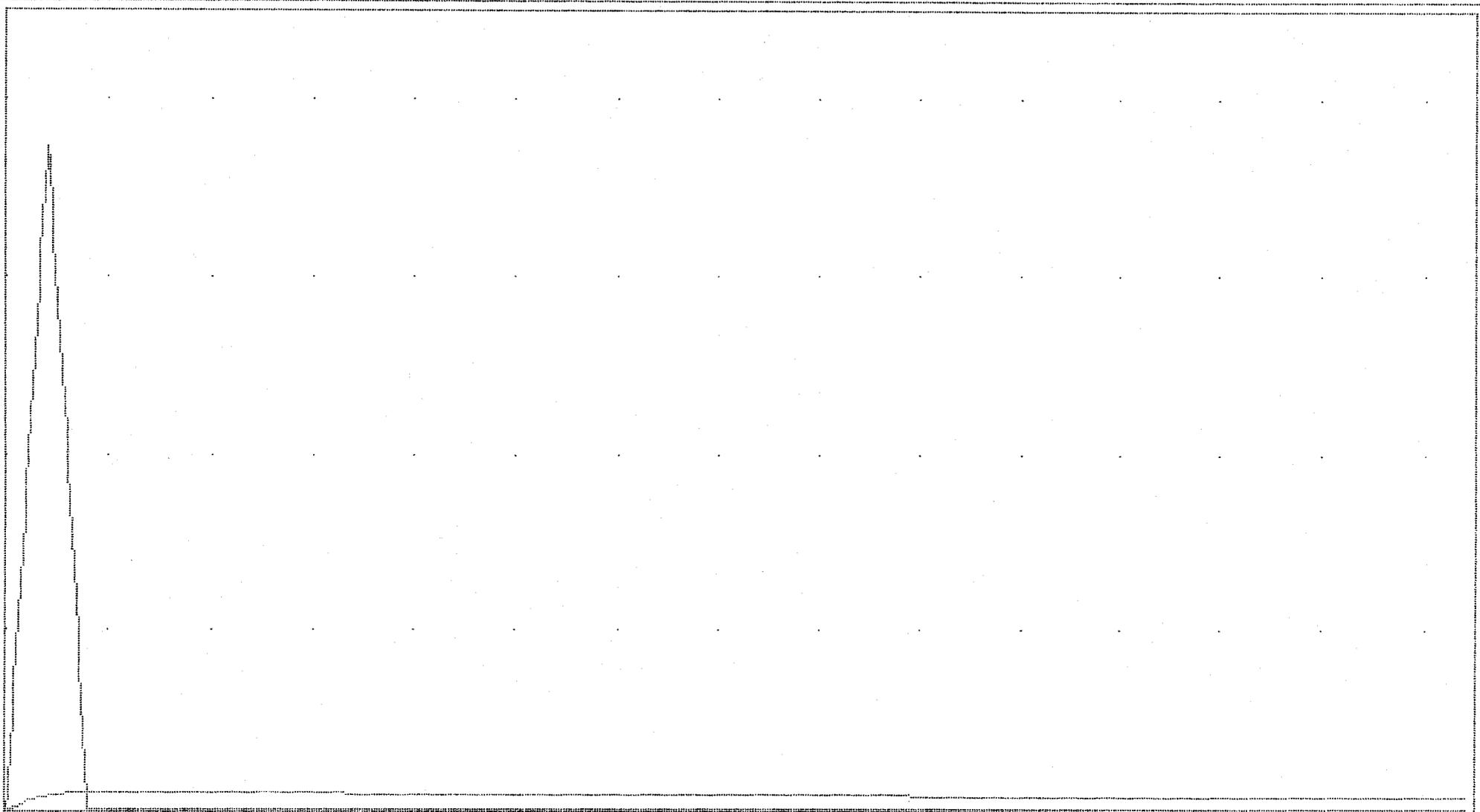
MAX STORAGE = 14598

MAX ELEVATION = 77.49

Op = 0.5

RESERVOIR ROUTE

100 Yr



HGU = 50 min

8

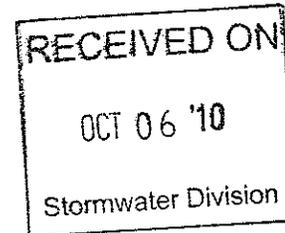
UGU = 5.0 cfs

MAX STORAGE = 21675

MAX ELEVATION = 78.35



BEAUTIFUL PLACES ON EARTH®



August 16, 2010

James City County  
Stormwater Division  
287 McLaws Circle, Suite 1  
Williamsburg, VA 23188

**Re: Kingsmill Drainage System Declarations**

To Whom it May Concern:

On July 31, 2010, Busch Properties, Inc. ("Busch") sold the Kingsmill Resort & Spa located in Williamsburg, VA (the "Resort") to Xanterra Kingsmill, LLC, a Delaware limited liability company ("Xanterra"). On September 7, 2000 and November 27, 2000, Busch executed and recorded in the James City County real property records two documents entitled "Declaration of Covenants, Inspection/Maintenance of Drainage System," copies of which are enclosed herewith (the "Declarations").

As a successor to Busch in the ownership of the Resort, Xanterra hereby provides notice to the County of the legal transfer of the Resort by Busch to Xanterra pursuant to Section 7 of both Declarations. Also pursuant to Section 7 of the Declarations, please find enclosed herewith a copy of that warranty deed recorded in James City County evidencing the legal transfer of the Resort.

To the extent you have any questions or need any additional information regarding the transfer of the Resort, please feel free to contact me directly at (303) 600-3422.

Sincerely,

A handwritten signature in black ink, appearing to read "Shane Harvey". The signature is written over a horizontal line.

Shane Harvey, Director of Business Development & Legal Affairs

w/Enclosures



# DEVELOPMENT MANAGEMENT

101-E MOUNTS BAY ROAD, P.O. BOX 8784, WILLIAMSBURG, VIRGINIA 23187-8784  
(757) 253-6671 Fax: (757) 253-6850 E-MAIL: devtman@james-city.va.us

CODE COMPLIANCE  
(757) 253-6626  
codecomp@james-city.va.us

ENVIRONMENTAL DIVISION  
(757) 253-6670  
environ@james-city.va.us

PLANNING  
(757) 253-6685  
planning@james-city.va.us

COUNTY ENGINEER  
(757) 253-6678  
INTEGRATED PEST MANAGEMENT  
(757) 259-4116

August 23, 2001

Busch Properties Inc.  
100 Kingsmill Road  
Williamsburg, Va. 23185  
Attn: Mr. Thomas E. Dunn,  
Director, Construction

Re: Kingsmill East Community Center  
County Plan SP-108-98, Amended SP-17-99  
Stormwater Management Facility  
County BMP ID Code: JR 050

Dear Mr. Dunn:

The Environmental Division has reviewed a record drawing and construction certification dated February 23<sup>rd</sup> 2000 for the above referenced project. The record drawing provides as-built information for a timber crib wall dry detention facility located in the southeast corner of the community center.

Based on our review of information as submitted and a concurrent field observation as performed on August 8<sup>th</sup> 2001, the following items must be addressed prior to release of the developer's surety instrument for the stormwater management/BMP facility:

**Inspection/Maintenance Agreement:**

1. Based on Environmental Division review comments dated October 16<sup>th</sup> 1998 and subsequent correspondence by the engineer dated November 2<sup>nd</sup> 1998, a Declaration of Covenants, Inspection/Maintenance agreement was to be executed with the County for the BMP facility for this project. Based on a review of our records none was found.

**Construction Certification:**

2. Construction certification as shown on Sheet 4 of the record drawing is **satisfactory**.

**Record Drawing:**

3. On Sheet 4 of the record drawing set, storm drain structure SS # 2 is labeled as a VDOT standard DI-7 with a Type III grate. Based on our field observations, this structure was a manhole unit and no inlet grate was present. Currently the record drawing does not reflect field conditions. If the manhole structure is to remain, provide additional spot elevations to show that positive drainage exists from the area surrounding SS # 2 to the BMP area.

Construction-Related Items:

4. The approved plan called for a VDOT DI-7 inlet with a type III grate at storm drain structure SS # 2. This structure is located in the yard area southwest of the pool.. Based on field observations, the structure was a manhole structure with a solid lid. Either correct the inlet structure to meet the provisions of the approved plan; or if a manhole structure is to be utilized, grade the area surrounding this structure to positively drain the yard area to the BMP. Any variations to the approved plan must be reflected on the record drawing set.
5. Clean and remove localized sediment deposits and vegetation from at the outfall end of the primary 18-inch storm drain into the BMP. Flow into the pond must not be obstructed by sediment and vegetation.
6. Seed and mulch disturbed soil areas present on the upstream portion of the pond embankment north of the timber crib wall (pool side).
7. Remove entrenched silt fence located on the downstream side of the pond embankment.
8. Clean and remove all debris from inside the timber crib overflow (stringer) structure.
9. Clean all perforations in the 3-inch PVC riser as most of the perforations were clogged with debris.
10. Add Class I riprap and metal anchoring straps around the 3-inch low flow drain pipe in accordance with Section A-A on Sheet 8 of the approved plan. The low flow orifice must meet the approved plan configuration.
11. Add geotextile (filter cloth) and EC-1 stone along the upstream side of the timber crib wall in accordance with the wall plan view on Sheet 8 of the approved plan.
12. Clean and remove wood debris on the outlet side of the 12" x 12" rectangular opening in the timber crib wall and from the natural downstream channel within 25 feet of the wall.
13. Fill and repair the animal burrow present on the downstream side of the timber crib structure approximately 10-15 ft. south (left looking upstream) of the timber crib overflow weir.

Once this work is satisfactorily completed, contact our office appropriately. We can then proceed with final release of the surety on the project. Please contact me at 757-253-6639 if you have any further comments or questions.

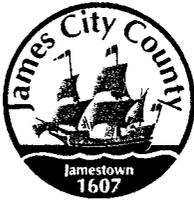
Sincerely,



Scott J. Thomas, P.E.  
Civil Engineer  
Environmental Division

cc: Mark Richardson, AES (fax)

G:\SWMPProg\AsBuilts\SP10898.jr050



## DEVELOPMENT MANAGEMENT

101-E MOUNTS BAY ROAD, P.O. BOX 8784, WILLIAMSBURG, VIRGINIA 23187-8784  
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COUNTY ENGINEER  
(757) 253-6678  
INTEGRATED PEST MANAGEMENT  
(757) 259-4116

August 23, 2001

Busch Properties Inc.  
100 Kingsmill Road  
Williamsburg, Va. 23185  
Attn: Mr. Thomas E. Dunn,  
Director, Construction

*Reinspect with  
Mike.  
LOOKED GOOD.*

Re: Kingsmill East Community Center  
County Plan SP-108-98, Amended SP-17-99  
Stormwater Management Facility  
County BMP ID Code: JR 050

Dear Mr. Dunn:

The Environmental Division has reviewed a record drawing and construction certification dated February 23<sup>rd</sup> 2000 for the above referenced project. The record drawing provides as-built information for a timber crib wall dry detention facility located in the southeast corner of the community center.

Based on our review of information as submitted and a concurrent field observation as performed on August 8<sup>th</sup> 2001, the following items must be addressed prior to release of the developer's surety instrument for the stormwater management/BMP facility:

**Inspection/Maintenance Agreement:**

1. Based on Environmental Division review comments dated October 16<sup>th</sup> 1998 and subsequent correspondence by the engineer dated November 2<sup>nd</sup> 1998, a Declaration of Covenants, Inspection/Maintenance agreement was to be executed with the County for the BMP facility for this project. Based on a review of our records none was found.

**Construction Certification:**

- ✓ 2. Construction certification as shown on Sheet 4 of the record drawing is **satisfactory**.

**Record Drawing:**

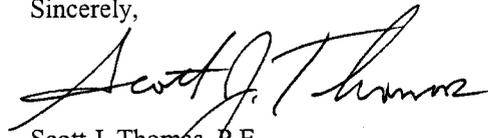
- ✓ 3. On Sheet 4 of the record drawing set, storm drain structure SS # 2 is labeled as a VDOT standard DI-7 with a Type III grate. Based on our field observations, this structure was a manhole unit and no inlet grate was present. Currently the record drawing does not reflect field conditions. If the manhole structure is to remain, provide additional spot elevations to show that positive drainage exists from the area surrounding SS # 2 to the BMP area.

Construction-Related Items:

- ✓ 4. The approved plan called for a VDOT DI-7 inlet with a type III grate at storm drain structure SS # 2. This structure is located in the yard area southwest of the pool. Based on field observations, the structure was a manhole structure with a solid lid. Either correct the inlet structure to meet the provisions of the approved plan; or if a manhole structure is to be utilized, grade the area surrounding this structure to positively drain the yard area to the BMP. Any variations to the approved plan must be reflected on the record drawing set.
- ✓ 5. Clean and remove localized sediment deposits and vegetation from at the outfall end of the primary 18-inch storm drain into the BMP. Flow into the pond must not be obstructed by sediment and vegetation.
- ✓ 6. Seed and mulch disturbed soil areas present on the upstream portion of the pond embankment north of the timber crib wall (pool side).
- ✓ 7. Remove entrenched silt fence located on the downstream side of the pond embankment.
- ✓ 8. Clean and remove all debris from inside the timber crib overflow (stringer) structure.
- ✓ 9. Clean all perforations in the 3-inch PVC riser as most of the perforations were clogged with debris.
- ✓ 10. Add Class I riprap and metal anchoring straps around the 3-inch low flow drain pipe in accordance with Section A-A on Sheet 8 of the approved plan. The low flow orifice must meet the approved plan configuration.
- ✓ 11. Add geotextile (filter cloth) and EC-1 stone along the upstream side of the timber crib wall in accordance with the wall plan view on Sheet 8 of the approved plan.
- ✓ 12. Clean and remove wood debris on the outlet side of the 12" x 12" rectangular opening in the timber crib wall and from the natural downstream channel within 25 feet of the wall.
- ✓ 13. Fill and repair the animal burrow present on the downstream side of the timber crib structure approximately 10-15 ft. south (left looking upstream) of the timber crib overflow weir.

Once this work is satisfactorily completed, contact our office appropriately. We can then proceed with final release of the surety on the project. Please contact me at 757-253-6639 if you have any further comments or questions.

Sincerely,



Scott J. Thomas, P.E.  
Civil Engineer  
Environmental Division

cc: Mark Richardson, AES (fax)

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**James City County Environmental Division  
Stormwater Management / BMP Inspection Report  
Detention and Retention Pond Facilities**

SP-17-99 AMEND.  
SP-108-98

Database Inventory No. (if known): JR050

Name of Facility: KINGSMILL COMMUNITY CENTER BMP No.: 1 of 1 Date: 08/08/01

Location: WAREHAM'S POND ROAD AT POOL

Name of Owner: BUSCH PROPERTIES INC.

Inspector: ST THOMAS, MIKE WOODSON

Type of Facility: TIMBER CRIB WALL

Weather Conditions: HOT, SUNNY 90'S

If an inspection item is not applicable, mark NA, otherwise mark the appropriate column.

- O.K. - The item checked is in adequate condition and the maintenance program is currently satisfactory.
- Routine - The item checked requires attention, but does not present an immediate threat to the function of the BMP.
- Urgent - The item checked requires immediate attention to keep the BMP operational and prevent damage to the facility.

Provide an explanation and details in the comment column, if routine or urgent are marked.

| Facility Item  | O.K. | Routine | Urgent | Comments                                |
|--|------|---------|--------|---|
| <b>Embankments and Side Slopes:</b> <u>Timber Crib Wall w/ EMBANKMENT North &amp; South</u>  |      |         |        |   |
| Grass Height   | X    |         |        |   |
| Vegetation Condition   |      | X       |        | <u>BARE SPOTS ON NORTH EMB U/S SIDE</u> |
| Tree Growth  | X    |         |        |   |
| Erosion  |      | X       |        | <u>BARE SPOTS ON NORTH EMB.</u>         |
| Trash & Debris   |      | X       |        | <u>SF D/S NORTH SIDE</u>                |
| Seepage  | X    |         |        | <u>NONE OBSERVED.</u>                   |
| Fencing or Benches   | X    |         |        | <u>NONE</u>                             |
| <b>Interior Landscaping/Planted Areas:</b> <input type="checkbox"/> None <input type="checkbox"/> Constructed Wetland/Shallow Marsh <input checked="" type="checkbox"/> Naturally Established Vegetation |      |         |        |   |
| Vegetated Conditions   | X    |         |        | <u>NATURAL GRASS 2-4" HEIGHT</u>        |
| Trash & Debris   | X    |         |        | <u>MOWN</u>                             |
| Floating Material  | X    |         |        |   |
| Erosion  | X    |         |        |   |
| Sediment   | X    |         |        |   |
| Dead Plant   | X    |         |        |   |
| Aesthetics   | X    |         |        | <u>WELL-GROOMED LOOK</u>                |
| Other  |      |         |        |   |

SERVICES POOL AREA BUILDINGS & PARKING AREA.

| Facility Item  | O.K. | Routine | Urgent | Comments                         |
|--|------|---------|--------|----------------------------------|
| <b>Water Pools</b> <input type="checkbox"/> Permanent Pool (Retention Basin) <input type="checkbox"/> Shallow Marsh (Detention Basin) <input checked="" type="checkbox"/> None (Detention Basin) |      |         |        |                                  |
| Shoreline Erosion  | X    |         |        | None                             |
| Algae  | X    |         |        | Dry                              |
| Trash & Debris   | X    |         |        | None                             |
| Sediment   | X    |         |        | None.                            |
| Aesthetics   | X    |         |        | OK.                              |
| Other  |      |         |        |                                  |
| <b>Inflow Structures (Describe Locations):</b> 18" RCP west side; SCC north side   |      |         |        |                                  |
| Condition of Structure   | X    |         |        |                                  |
| Erosion  | X    |         |        |                                  |
| Trash and Debris   | X    |         |        |                                  |
| Sediment   |      | X       |        | Clean + Remove Sed from 18" END. |
| Aesthetics   | X    |         |        |                                  |
| Other  |      |         |        |                                  |
| <b>Principal Flow Control Structure - Intake, Riser, etc. (Describe Location):</b> 6' High Timber Crib Wall w/ Poles   |      |         |        |                                  |
| Condition of Structure   | X    |         |        | Discolored but Stable.           |
| Corrosion  | X    |         |        |                                  |
| Trash and Debris   |      | X       |        | Remove Debris, inside structure  |
| Sediment   |      |         |        |                                  |
| Aesthetics   |      |         |        |                                  |
| Other  |      |         |        | 1x1' opening DS                  |
| <b>Principal Outlet Structure - Barrel, Conduit, etc. :</b> 1x1' opening to natural channel  |      |         |        |                                  |
| Condition of Structure   | X    |         |        |                                  |
| Settlement   | X    |         |        |                                  |
| Trash & Debris   |      | X       |        | Clean wood Debris @ slot O/S.    |
| Sediment   | X    |         |        |                                  |
| Erosion  | X    |         |        | Minimal.                         |
| Other  |      |         |        |                                  |
| <b>Emergency Spillway (Overflow):</b> None. Wall @ Top of Embankment   |      |         |        |                                  |
| Vegetation   |      |         |        |                                  |
| Lining   |      |         |        |                                  |
| Erosion  |      |         |        |                                  |
| Trash & Debris   |      |         |        |                                  |
| Other  |      |         |        |                                  |
| Storm Drain System CLEAN. MH Top instead of P1-7<br>At first structure back.   |      |         |        |                                  |

| Facility Item   | O.K. | Routine | Urgent | Comments                                |
|---|------|---------|--------|---|
| <b>Nuisance Type Conditions:</b>  |      |         |        |   |
| Mosquito Breeding   | X    |         |        |   |
| Animal Burrows  |      | X       |        | Animal Burrow Hole n/s 10' LEFT.        |
| Graffiti  | X    |         |        |   |
| Other   |      |         |        |   |
| <b>Surrounding Perimeter Conditions:</b> <i>Wooded + Pool YARD Areas.</i> |      |         |        |   |
| Land Uses   | X    |         |        |   |
| Vegetation  | X    |         |        |   |
| Trash & Debris  | X    |         |        |   |
| Aesthetics  | X    |         |        | Well groomed.                           |
| Access /Maintenance Roads or Paths  | X    |         |        | From PARKING Lot Area. EASILY Accessed. |
| Other   |      |         |        |   |

**Remarks:**

- ▷ DI-7 inlet proposed is MH Top in field. Put in DI-7 or if MH is to be used, grade surface to drain.
- ▷ Seed + Mulch bare spots on north v/s Emb.
- ▷ Remove SF from v/s top.
- ▷ Remove Debris from Inside Riser.
- ▷ Clean Riser perforations + Add CLASS I r. wrap around bottom perforated pipe. Anchor strap to support pert. riser to wall missing.
- ▷ Add geotextile AND EC-1 stone along base of v/s wall missing.
- ▷ CLEAN ALL wood debris from slot v/s end + natural channel.
- ▷ Animal burrow hole, 10-15 Left v/s. FIX.

<sup>#16</sup>  
 NOTE: Per ENV DIV Comments dated 07/16/98 + ENGINEERS RESPONSE DATED 11/2/98. INSP/MAIN. AGREEMENT WAS REQUIRED. NONE OBTAINED.

Overall Environmental Division Internal Rating: 4

Signature: *Scotty Thomas P.E.*  
 Title: Civil Engineer ENV DIV

Date: 08/08/01.

|                     |   |                       |                               |                        |                              |
|---------------------|---|-----------------------|-------------------------------|------------------------|------------------------------|
| WATERSHED           | JR                                      | MAINTENANCE PLAN      | No                            | CTRL STRUC DESC        | Circ Orif                    |
| BMP ID NO           | 050                                     | SITE AREA acre        | 10.89                         | CTRL STRUC SIZE inches | 3                            |
| PLAN NO             | SP-17-99                                | LAND USE              | Community Center              | OTLT BARRL DESC        | Rect Orif                    |
| TAX PARCEL          | (51-04)(01-01)                          | old BMP TYP           | Timber Crib Wall              | OTLT BARRL SIZE Inch   | 12                           |
| PIN NO              | 5040100001                              | JCC BMP CODE          |                               |                        |                              |
| CONSTRUCTION DATE   | 1/1/1999                                | POINT VALUE           | 6                             | EMERG SPILLWAY         | No                           |
| PROJECT NAME        | Kingsmill East Community Center         |                       |                               | DESIGN HW ELEV         | 78.35                        |
| FACILITY LOCATION   | Warehams Pond Rd near Jefferson Hundred |                       |                               | PERM POOL ELEV         | n/a                          |
| CITY-STATE          | Williamsburg, Va. 23187                 | SVC DRAIN AREA acres  | 7.27                          | 2-YR OUTFLOW cfs       | 0.37                         |
| CURRENT OWNER       | Busch Properties Inc.                   |                       |                               | 10-YR OUTFLOW cfs      | 0.40                         |
| OWNER ADDRESS       | 100 Kingsmill Road                      |                       |                               | REC DRAWING            | Yes                          |
| OWNER ADDRESS 2     |   | SERVICE AREA DESCRI   | Building, Pool Area & Parking |                        |                              |
| CITY-STATE-ZIP CODE | Williamsburg, Va. 23187                 | IMPERV AREA acres     | 0.96                          | CONSTR CERTI           | No                           |
| OWNER PHONE         | 253-9317                                | RECV STREAM           | UT of James River             |                        |                              |
| MAINT AGREEMENT     | No                                      | EXT DET-WQ-CTRL       | Yes                           | LAST INSP DATE         | 8/8/2001                     |
| EMERG ACTION PLAN   | No                                      | WTR QUAL VOL acre-ft  | 0.1817                        | INTERNAL RATING        | 4                            |
|                     |   | CHAN PROT CTRL        | No                            | MISC/COMMENTS          | I/M was reqd, none obtained. |
|                     |   | CHAN PROT VOL acre-ft | 0                             |                        |                              |
|                     |   | SW/FLOOD CONTROL      | Yes                           |                        |                              |
|                     |   | GEOTECH REPORT        | No                            |                        |                              |

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Return to Menu

