



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.

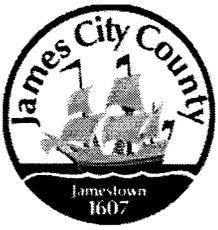
BMP NUMBER: SC022

DATE VERIFIED: April 19, 2012

QUALITY ASSURANCE TECHNICIAN: Leah Hardenbergh

Leah Hardenbergh

LOCATION: WILLIAMSBURG, VIRGINIA



Stormwater Division

MEMORANDUM

DATE: March 10, 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: SC022

PIN: 6010100010

Subdivision, Tract, Business or Owner

Name (if known):

Walmart

Property Description:

Lot 2 Green Mount Associates *was (60-1)(1-4)

Site Address:

9305 Pocahontas Trail

(For internal use only)

Box 8

Drawer: 5

Agreements: (in file as of scan date)

N

Book or Doc#:

Page:

Comments

Section 4 - Professional Certifications:

Certifying Professionals: (Note: A Registered Professional Engineer or Certified Land Surveyor is responsible for preparation of a Record Drawing, sometimes referred to as an As-Built plan, for the drainage system for the project including any Stormwater Management/BMP Facilities. A Registered Professional Engineer is responsible for the inspection, monitoring and certification of Stormwater Management / BMP facilities during its construction.)

Record Drawing and Construction Certifications for Stormwater Management / BMP Facilities

Record Drawing Certification

Construction Certification

Firm Name: RANDY BIEBER, L.S.
Mailing Address: 5401 HILLSBOROUGH ST.
RALEIGH, NC 27606
Business Phone: 919-854-4833
Fax: 919-854-4834

Firm Name: Carter & Burgess, Inc.
Mailing Address: 777 Main Street, Floor
29, Ft. Worth, TX 76102
Business Phone: 817-222-8444
Fax: 817-222-8780

Name: RANDY BIEBER
Title: LAND SURVEYOR

Name: James D. Emerson
Title: Civil Engineer

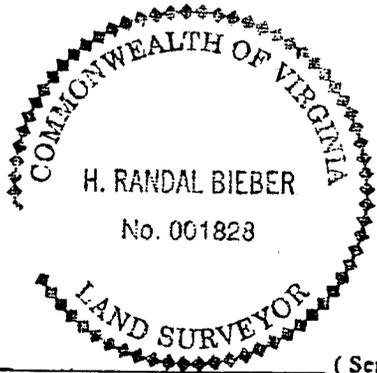
Signature: [Handwritten Signature]
Date: 12-22-05

Signature: [Handwritten Signature]
Date: 1-17-06

I hereby certify to the best of my knowledge and belief that this record drawing represents the actual condition of the Stormwater Management / BMP facility. The facility appears to conform with the provisions of the approved design plan, specifications and stormwater management plan, except as specifically noted.

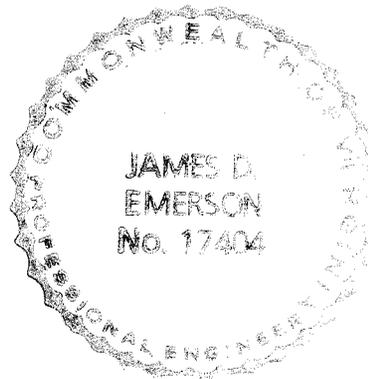
I hereby certify to the best of my knowledge and belief that this Stormwater Management/BMP facility was monitored and constructed in accordance with the provisions of the approved design plan, specifications and stormwater management plan, except as specifically noted.

(WAL-MART BULK STORAGE FACILITY # 6088, PAGE III)
BMP CODES # SC019, SC020, SC021, SC022, SC023, SC024



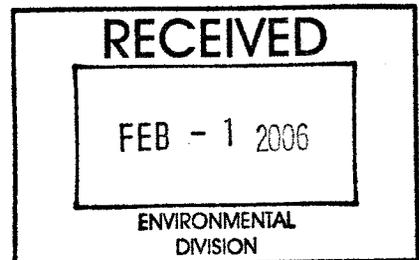
(Seal)

Virginia Registered Professional Engineer or Certified Land Surveyor



(Seal)

Virginia Registered Professional Engineer



Section 4 - Professional Certifications:

Certifying Professionals: (Note: A Registered Professional Engineer or Certified Land Surveyor is responsible for preparation of a Record Drawing, sometimes referred to as an As-Built plan, for the drainage system for the project including any Stormwater Management/BMP Facilities. A Registered Professional Engineer is responsible for the inspection, monitoring and certification of Stormwater Management / BMP facilities during its construction.)

Record Drawing and Construction Certifications for Stormwater Management / BMP Facilities

Record Drawing Certification

Construction Certification

Firm Name: RANDY BIEBER, L.S.
Mailing Address: 5401 HILSBROOK ST.
RALEIGH, NC 27606
Business Phone: 919-854-4833
Fax: 919-854-4834

Firm Name: _____
Mailing Address: _____
Business Phone: _____
Fax: _____

Name: RANDY BIEBER
Title: LAND SURVEYOR

Name: _____
Title: _____

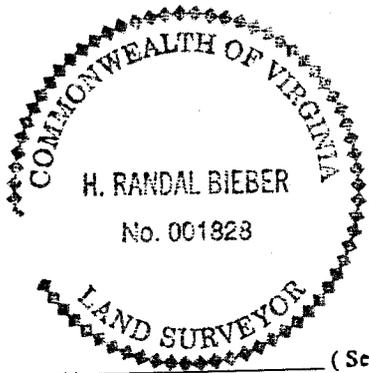
Signature: H. Randal Bieber
Date: 12-22-05

Signature: _____
Date: _____

I hereby certify to the best of my knowledge and belief that this record drawing represents the actual condition of the Stormwater Management / BMP facility. The facility appears to conform with the provisions of the approved design plan, specifications and stormwater management plan, except as specifically noted.

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FACILITY # 6088, PAGE III)
BMP CODES # SC019, SC020, SC021,
SC022, SC023, SC024

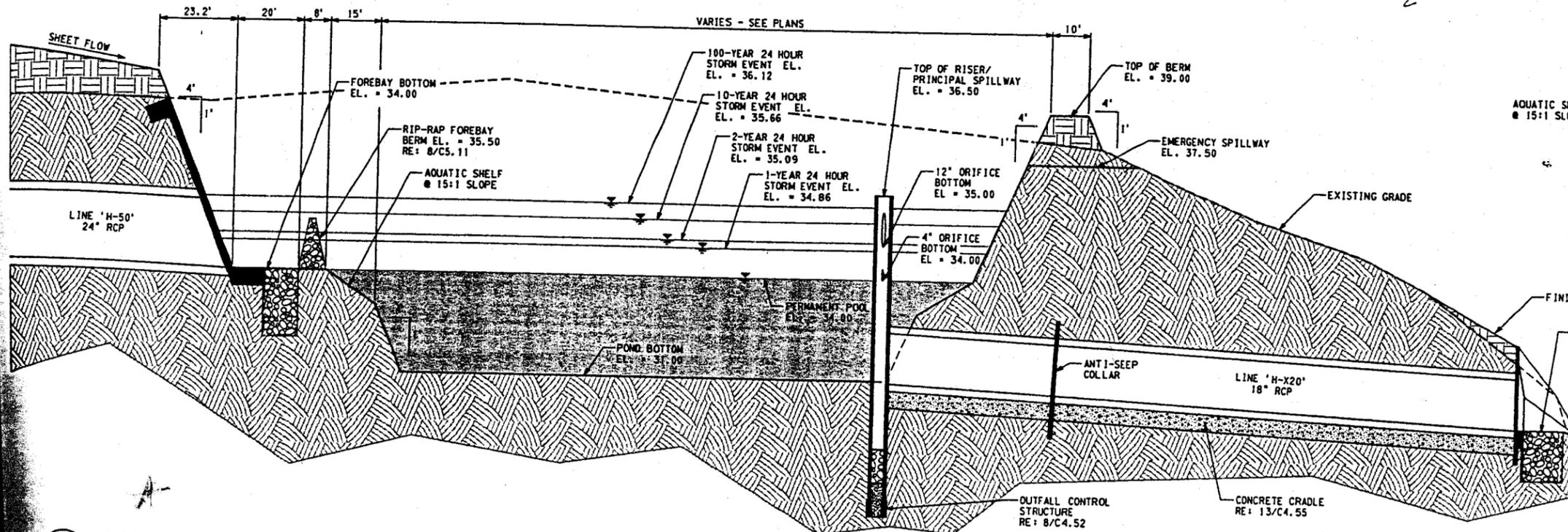


(Seal)

Virginia Registered Professional Engineer
or Certified Land Surveyor

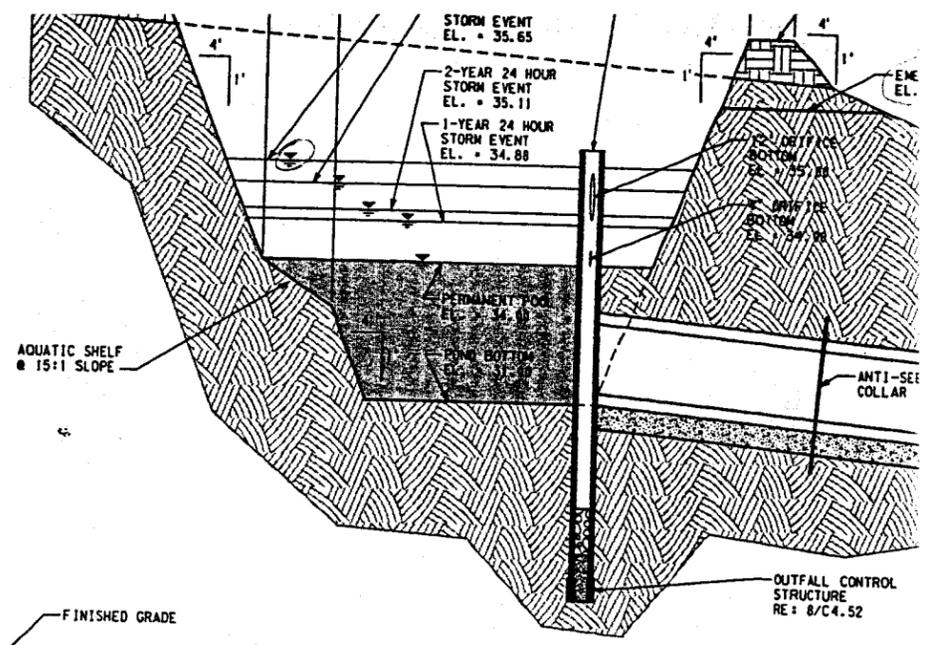
(Seal)

Virginia Registered
Professional Engineer

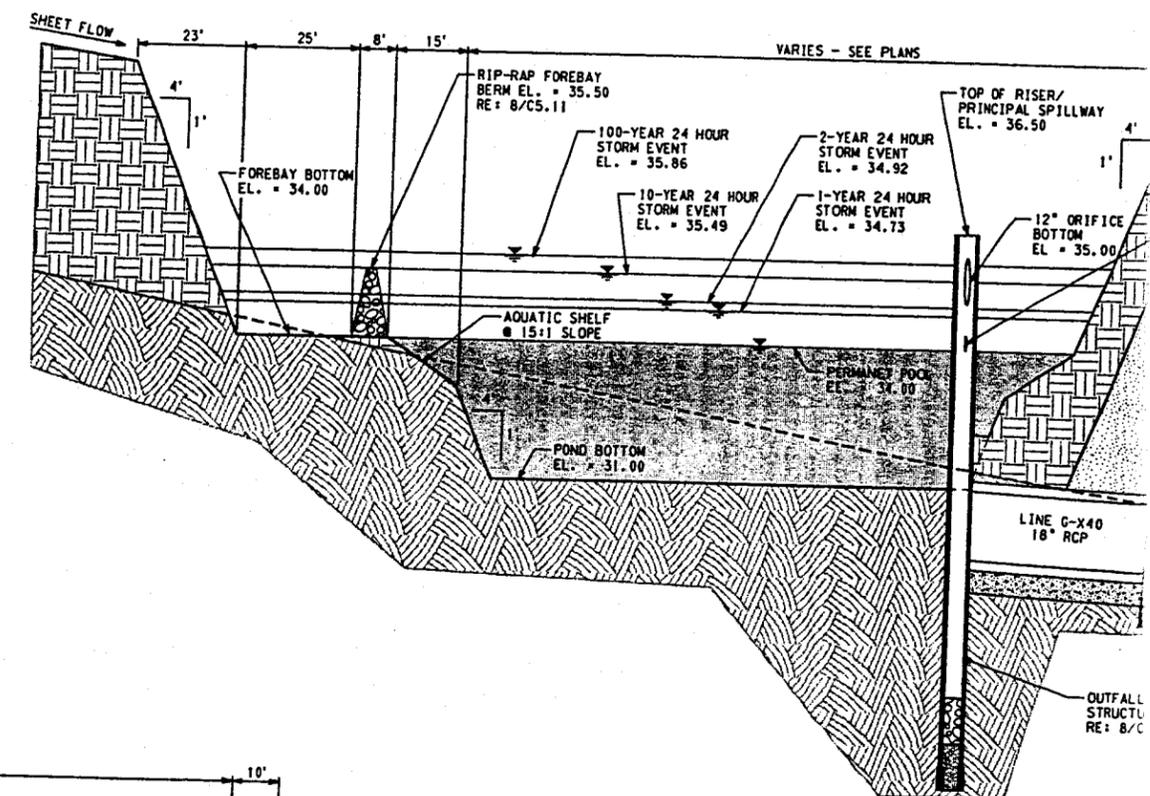


2 POND H WET EXTENDED DETENTION BASIN (TYPE A-3) CROSS-SECTION
 C3.01 1" = 20' HORIZONTALLY, 1" = 2' VERTICALLY

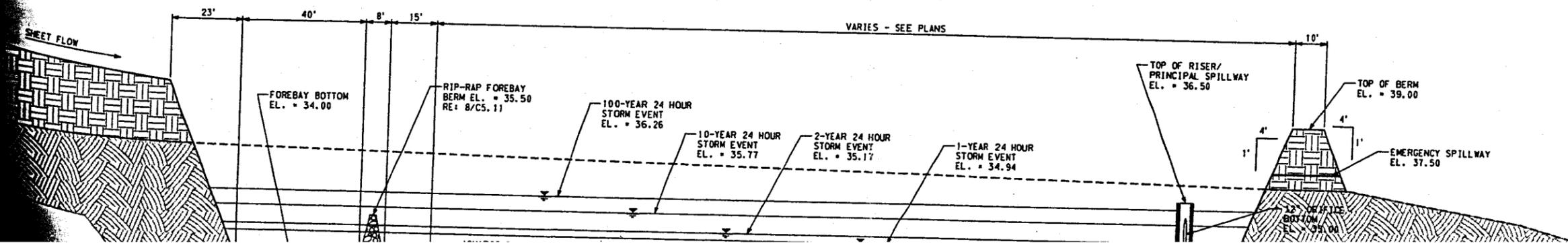
38.00
 36.03
 2.0FB

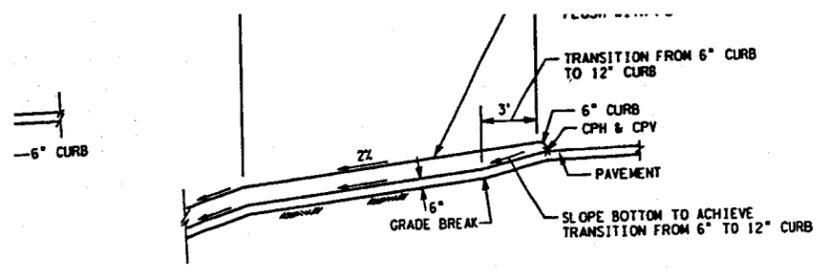


1 POND I WET EXTENDED DETENTION BASIN (TYPE A-3) CROSS-SECTION
 C3.01 1" = 20' HORIZONTALLY, 1" = 2' VERTICALLY

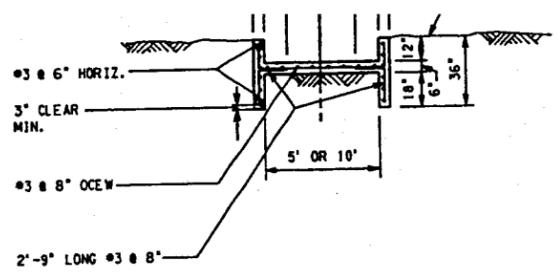


3 POND G WET EXTENDED DETENTION BASIN (TYPE A-3) CROSS-SECTION
 C3.01 1" = 20' HORIZONTALLY, 1" = 2' VERTICALLY

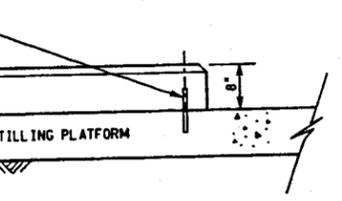
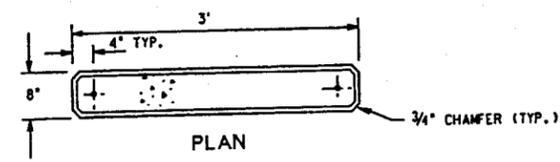




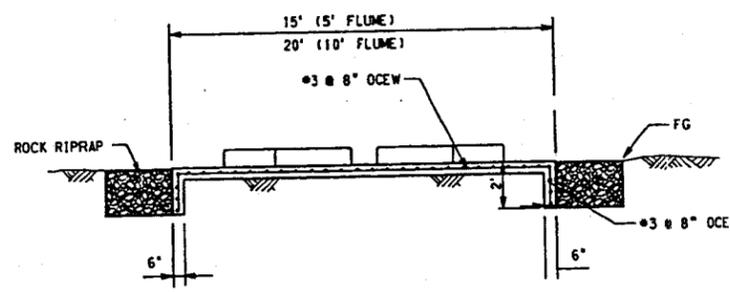
2 SECTION
C4.52 NOT TO SCALE



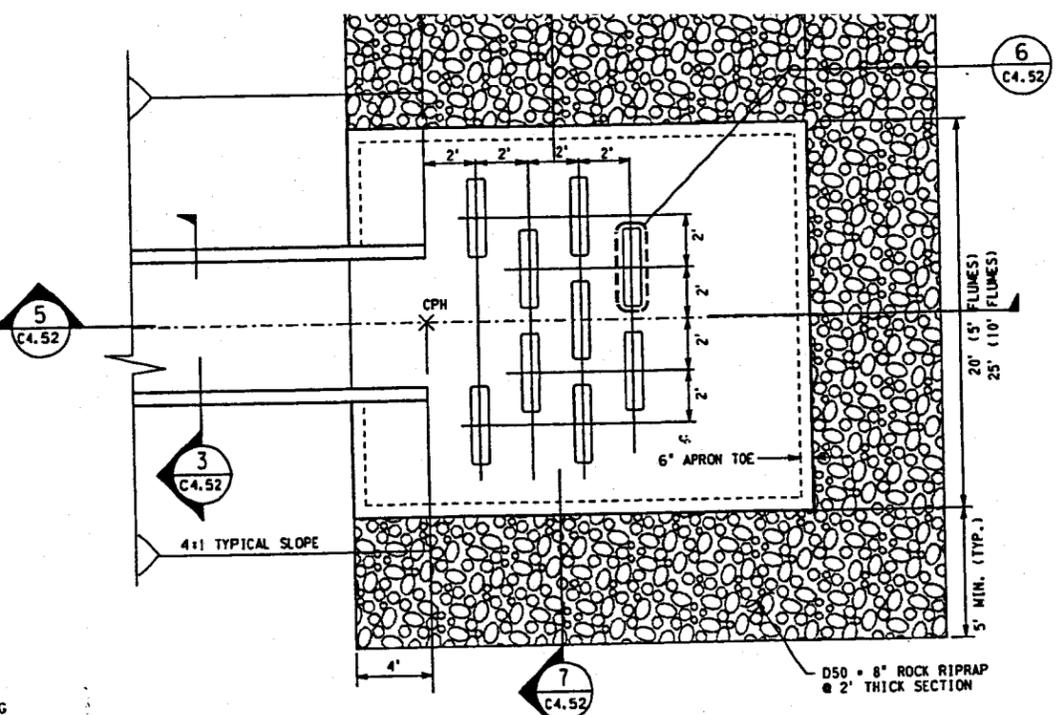
3 SECTION
C4.52 NOT TO SCALE



6 CONCRETE BAFFLE
C4.52 NOT TO SCALE

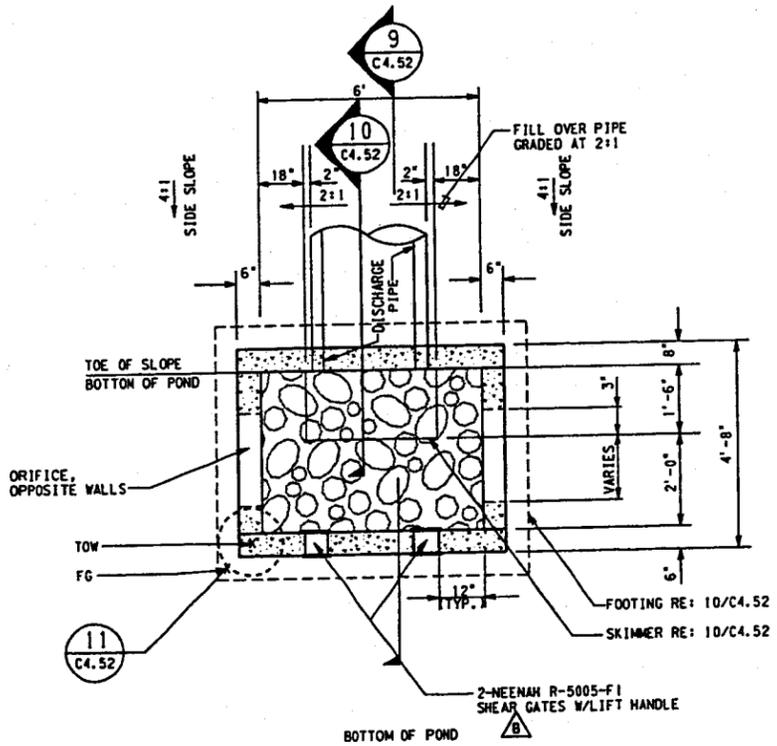
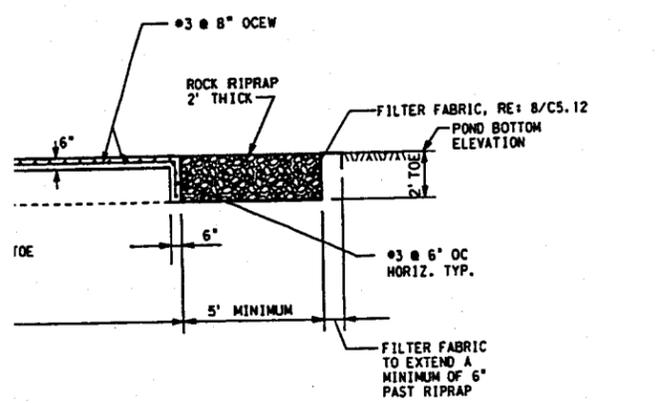


7 SECTION
C4.52 NOT TO SCALE

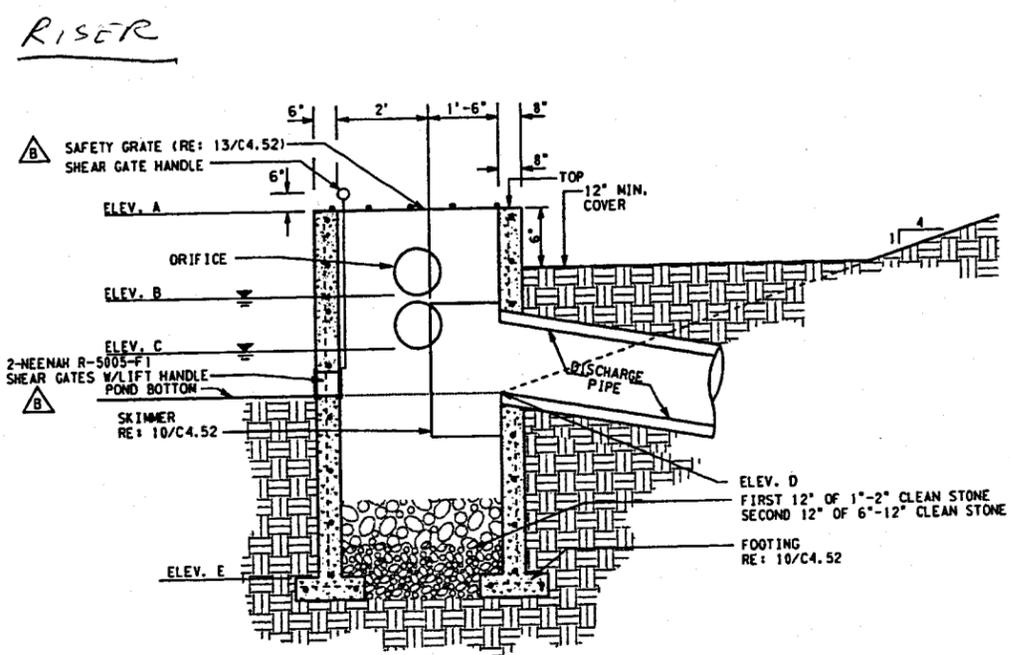


DETAIL NOTES:
1. REFER TO LAYOUT AND DIMENSION PLANS FOR COORDINATE OF CONTROL POINT HORIZONTAL (CPH).

4 FLUME RIPRAP APRON DETAIL
NOT TO SCALE

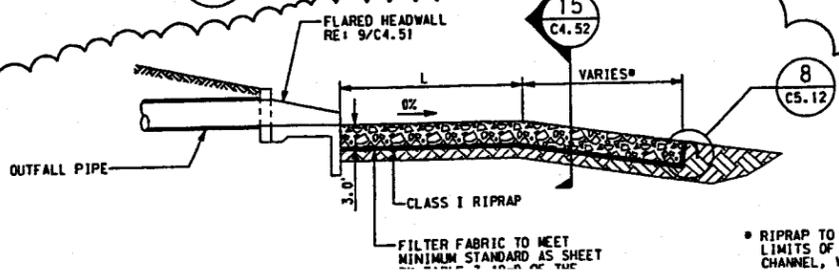
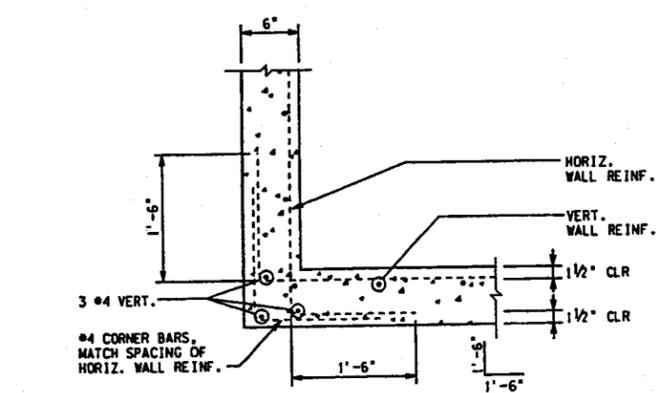


8 OUTFALL CONTROL STRUCTURE
C4.37 NOT TO SCALE
C4.39



DETAIL NOTES:
1. FOOTINGS ARE INTENDED TO BE PERMANENT INSTALLATIONS AT THE OUTFALL STRUCTURES.

9 SECTION
C4.52 NOT TO SCALE



* RIPRAP TO BE EXTENDED TO THE LIMITS OF WETLANDS OR DEFINED CHANNEL, WHICHEVER COME FIRST.

PROJECT NO. 202245.000	REVISION BY S. BULTON	DATE 08/16/24
SECTION S. BULTON	ISSUE FOR LD PERMIT 09/30/24	ISSUE
DRAWN BY S. BULTON	ISSUE FOR BID 08/16/24	DATE
APPROVED BY T. DALFERES	DATE	ISSUE
NO.	DATE	ISSUE

WAL-MART
STORES, INC.
BULK STORAGE NO. 6088
PHASE III
JAMES CITY COUNTY, VA

STORM DRAIN DETAILS -
SHEET 2 OF 6

rgess
Inc., Engineering,
Related Services
Inc.
22-0760

MATCH LINE RE: C3.17

DETENTION
POND H
BOTTOM EL. 31.0

38'

AQUATIC SHELF
TOP OF BERM EL. 39.0

N 17689.64
E 10620.92

N 17687.43
E 10663.21

N 17456.90
E 10234.82

N 17403.17
E 10176.96

61' R

N 17376.90
E 9834.79

N 17392.34
E 9933.34

AQUATIC SHELF

TOP OF BERM EL. 39.0

LIMITS OF
CONSTRUCTION

APPROX. LIMITS OF RESOURCE PROTECTION
AREA (100' BUFFER AREA) "TYP"

EXISTING TREES TO
BE PRESERVED.
RE: LANDSCAPING PLANS

CORNER
N 16838.79
E 9796.94



PROJECT NO.	19/30/04	ISSUE FOR LD PERMIT	1	07/14/04	ISSUE	
DESIGN BY	P. HASSELL	19/09/04	ADDITION C	2	08/18/04	ISSUE FOR BID
DRAWN BY	S. KING	08/18/04	ISSUE FOR PRELIM. APPROV.	3	10/18/04	ISSUE FOR CONSTRUCTION
APPROVED BY	J. BURGESS	07/14/04	ISSUE FOR PRELIM. APPROV.	1	07/14/04	ISSUE
DATE	07/14/04					

WAL-MART
STORES, INC.
BULK STORAGE NO. 6088
PHASE III
JAMES CITY COUNTY, VA

**EROSION & SEDIMENTATION
CONTROL PLAN NOTES**

Carter Burgess
Consultants in Planning, Architecture, Engineering,
Construction Management, and Related Services
Carter & Burgess, Inc.
777 Main Street, Fort Worth, Texas 76102
(817) 222-8500 Fax (817) 222-8780

SHEET
C5.01

R:\Wal_Mar_L_BSF\VA-James City-292245\Civil\Sheets\JCC501.SHT

MAINTENANCE NOTES

ACHIEVED, ALL DISTURBED AREAS AND POLLUTANT CONTROLS AT LEAST ONCE EVERY FOURTEEN CALENDAR DAYS AND FOLLOWING A RAINFALL OF 0.5 INCHES OR GREATER. THE INSPECTIONS IS TO ASSESS PERFORMANCE OF POLLUTANT CONTROLS SHOULD BE CONDUCTED BY THE WAL-MART STORE (WCM) AND/OR THE CONTRACTOR. BASED ON THE WCM WILL DECIDE WHETHER IT IS NECESSARY TO INSTALL CONTROL DEVICES, OR WHATEVER ELSE MAY BE REQUIRED TO PREVENT POLLUTANTS FROM LEAVING THE SITE VIA STORM DRAINAGE. WCM HAS AUTHORITY TO CAUSE POLLUTANT CONTROL DEVICES TO BE INSTALLED, MODIFIED, MAINTAINED, SUPPLEMENTED, OR REPLACED NECESSARY IN ORDER TO ACHIEVE EFFECTIVE POLLUTANT CONTROL.

ITEMS TO EVALUATE DURING SITE INSPECTIONS ARE LISTED IN THIS PLAN. THIS LIST IS NOT INTENDED TO BE COMPREHENSIVE. DURING INSPECTIONS, THE INSPECTOR MUST EVALUATE OVERALL POLLUTANT CONTROL AS WELL AS PARTICULAR DETAILS OF INDIVIDUAL SYSTEM COMPONENTS. ADDITIONAL FACTORS SHOULD BE CONSIDERED AS APPROPRIATE TO THE SITE.

VEHICLES ENTER AND EXIT THE SITE MUST BE INSPECTED FOR OFF-SITE SEDIMENT TRACKING. A STABILIZED CONSTRUCTION ENTRANCE MUST BE CONSTRUCTED WHERE VEHICLES ENTER AND EXIT, AND THIS ENTRANCE MUST BE MAINTAINED OR SUPPLEMENTED AS NECESSARY TO PREVENT TRACKING OF SEDIMENT FROM THE SITE ON VEHICLES.

VEHICLES MUST BE INSPECTED AND, IF NECESSARY, THEY MUST BE CLEANED IN ORDER TO PROVIDE ADDITIONAL CAPACITY. ALL VEHICLES MUST BE KEPT BEHIND SEDIMENT BARRIERS WILL BE STOCKPILED ON THE SIDE. ADDITIONAL SEDIMENT BARRIERS MUST BE CONSTRUCTED AS NECESSARY TO PREVENT TRACKING OF SEDIMENT FROM THE SITE ON VEHICLES.

ALL DISTURBED AREAS AND AREAS USED FOR STORING MATERIALS MUST BE PROTECTED FROM RAINFALL FOR EVIDENCE OF, OR THE POLLUTANTS ENTERING THE DRAINAGE SYSTEM. IF NECESSARY, POLLUTANT CONTROLS MUST BE COVERED OR ORIGINAL COVERS MUST BE REPAIRED OR REPLACED. ALSO, PROTECTIVE BERMS CONFORMING TO DETAIL 4 ON SHEET 05.01 MUST BE CONSTRUCTED, IF NEEDED, IN ORDER TO CONTAIN RUNOFF FROM THESE AREAS.

VEHICLES MUST BE INSPECTED TO CONFIRM THAT A HEALTHY STAND OF GRASS HAS BEEN MAINTAINED ONCE ALL AREAS HAVE BEEN STABILIZED. THE SITE HAS ACHIEVED FINAL STABILIZATION ONCE ALL AREAS HAVE BEEN STABILIZED. THE DENSITY OF 70 PERCENT OR GREATER MUST BE MAINTAINED TO BE CONSIDERED AS STABILIZED. AREAS MUST BE RESEEDING, AND RESEEDING AS NEEDED TO ACHIEVE THIS GOAL.

POINTS MUST BE INSPECTED TO DETERMINE WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATERS.

INSPECTION RESULTS, ANY MODIFICATION NECESSARY TO INCREASE THE EROSION CONTROL MEASURES MUST BE MADE WITHIN SEVEN CALENDAR DAYS. IN ACCORDANCE WITH THE REQUIREMENTS OF THE VPDES GENERAL PERMITS, INSPECTIONS OF STORM WATER FROM CONSTRUCTION ACTIVITIES, AN INSPECTION REPORT MUST BE DOCUMENTED EACH INSPECTION. A FORM FOR RECORDING THESE INSPECTIONS MUST BE USED WITH THE SITE STORM WATER POLLUTION PREVENTION PLAN (SWPPP). REPORTS MUST BE KEPT ON FILE WITH THE SWPPP FOR AT LEAST THREE YEARS AFTER COMPLETION OF THE SITE.

CONSTRUCTION ACCESS PLAN

TO MAINTAIN CONSTRUCTION TRAFFIC ON BLOW FLATS ROAD, ALL TRAFFIC COMPONENTS WILL BE THROUGH THE EXISTING ROADWAY. THIS SHALL BE COORDINATED WITH WAL-MART GENERAL MANAGER. DELIVERIES OF EARTHMOVING (I.E. TRUCKS) AND PASSENGER VEHICLES OF CONSTRUCTION WORKERS AND VISITORS CAN UTILIZE BLOW FLATS ROAD. ANY VEHICLES ENTERING THE SITE WILL NEED TO CLEAR FROM THE ROAD AND ENTER THE SITE IMMEDIATELY TO DESIGNATED AREAS. ALL NECESSARY PERMITS WILL NEED TO BE SECURED FROM THE VIRGINIA DEPARTMENT OF TRANSPORTATION.

STURBER

MS
INC.
7866
CB-15

INDIVIDUAL IS IDENTIFIED AS THE STURBER FOR SITE PLAN APPROVAL ONLY.

TOPOGRAPHIC IMPACT ANALYSIS

SOURCE	IMPACTS
LANGLEY AND McDONALD; OCTOBER 22, 2003 CONFIRMED BY US ARMY CORPS OF ENGINEERS	NO IMPACTS
FIRM MAP PANEL 510201 0060B, DATED 2/6/1991	NO IMPACTS
FIELD SURVEY BY MALCOLM PIRNIE, SEPTEMBER 24, 2004*	NO IMPACTS
FIELD SURVEY BY MALCOLM PIRNIE, SEPTEMBER 24, 2004*	NO IMPACT
ANALYSIS OF TOPOGRAPHIC MAPPING	
1) WITHIN RPA	375 SQ. FEET OF IMPACT
2) UNDEVELOPED AREA**	13,860 SQ. FEET OF IMPACT
3) DEVELOPED AREA**	37,765 SQ. FEET OF IMPACT
COMPUTATION OF SETBACKS FROM RESOURCE PROTECTION FEATURES	4,125 SQ. FEET OF IMPACT

THE SEPTEMBER 24, 2004 REPORT INCLUDES THE FORMER STOCKPILE AREA. DEVELOPED AREA INCLUDES THE FORMER STOCKPILE AREA AND STEEPER FROM THE PREVIOUS CONSTRUCTION.

LONG TERM MAINTENANCE PLAN

A MAINTENANCE PROGRAM IS REQUIRED TO ENSURE THE STORMWATER MANAGEMENT (SWM)/BEST MANAGEMENT PRACTICE (BMP) FACILITY FUNCTIONS AS DESIGNED AND TO PROVIDE FOR REASONABLE AESTHETIC CONDITIONS. PROPER MAINTENANCE IS ENCOURAGED TO PREVENT THE INTRODUCTION OF DEBRIS AND SEDIMENT AT INFLOW LOCATIONS, PRETREATMENT AREAS, THE BMP ITSELF, ITS PRINCIPAL CONTROL STRUCTURES AND DOWNSTREAM WATERWAYS. FOLLOWING INSTALLATION AND ESTABLISHMENT OF VEGETATION IN DISTURBED SITE AREAS, INSPECTIONS FOR SEDIMENT BUILDUPS WILL BE PERFORMED AT LEAST QUARTERLY. IT IS ANTICIPATED THAT UNDER NORMAL CONDITIONS, SEDIMENT REMOVAL WILL BE REQUIRED ONCE EVERY 5 TO 10 YEARS. IF OTHER CONSTRUCTION OR RELATED LAND-DISTURBING ACTIVITIES ARE PERFORMED UPSLOPE OF THE BMP, ADEQUATE PROTECTION MEASURES SHOULD BE IMPLEMENTED WITH INSPECTIONS PERFORMED AT LEAST ONCE WEEKLY.

THE OWNER OR ITS DESIGNATED REPRESENTATIVE WILL INSPECT THE SWM/BMP STRUCTURE AFTER EACH SIGNIFICANT RAINFALL EVENT OR THE FOLLOWING WORKING DAY IF A WEEKEND OR HOLIDAY OCCURS. A SIGNIFICANT RAINFALL FOR THIS STRUCTURE IS DEFINED AS ONE (1) INCH OR MORE OF GAUGED RAINFALL WITHIN A 24 HOUR PERIOD. ONCE PER YEAR (MORE OR LESS) A REPRESENTATIVE OF THE COUNTY MAY JOINTLY INSPECT THE STRUCTURE. APPROPRIATE ACTION, PERFORMED AT THE COST OF THE OWNER WILL BE TAKEN TO ENSURE APPROPRIATE MAINTENANCE. WHERE STRUCTURES ARE TO BE MAINTAINED JOINTLY, ALLOCATION OF MAINTENANCE COSTS WILL BE IN ACCORDANCE WITH TERMS ESTABLISHED IN MAINTENANCE AGREEMENTS. KEYS TO LOCKED ACCESS POINTS OR STRUCTURE SHALL BE MADE AVAILABLE TO THE COUNTY UPON REQUEST.

INSPECTION AND MAINTENANCE OF THE FACILITY WILL CONSIST OF THE FOLLOWING ADDITIONAL MEASURES:

- PERFORM MAINTENANCE MOWING OF POND GRASSES, TO THE EXTENT POSSIBLE, AT LEAST TWICE EACH YEAR. GRASSES SUCH AS TALL FESCUE SHOULD BE MOWED IN EARLY SUMMER AFTER EMERGENCE OF THE HEADS ON COOL SEASON GRASSES AND IN LATE FALL TO PREVENT SEEDS OF ANNUAL WEEDS FROM MATURING. MOWING OF LEGUMES CAN BE LESS FREQUENT. TREES, SHRUBS AND WOODY VEGETATION ARE NOT TO BE PERMITTED TO GROW ALONG OR ON ANY PART OF THE POND EMBANKMENTS.
- PERFORM SOIL SAMPLING ON STABILIZED POND SOIL AREAS AT LEAST ONCE EVERY 4 YEARS. SOIL SAMPLING AND TESTING SHOULD BE PERFORMED BY QUALIFIED INDEPENDENT SOIL TESTING LABORATORY SUCH AS VIP & SU. APPLY ADDITIONAL LIME AND FERTILIZER IN ACCORDANCE TEST RECOMMENDATIONS.
- IN STABILIZED POND AREAS, IF VEGETATION COVERS LESS THAN 40% OF SOIL SURFACES, LIME, FERTILIZE AND SEED IN ACCORDANCE WITH RECOMMENDATIONS FOR NEW SEEDLINGS. IF VEGETATION COVERS MORE THAN 40% BUT LESS THAN 70% OF SOIL SURFACES, LIME, FERTILIZE AND OVER SEED IN ACCORDANCE WITH CURRENT SEEDING RECOMMENDATIONS OR REQUIREMENTS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH).
- PERFORM QUARTERLY INSPECTIONS OF THE OUTFALL CONTROL STRUCTURES FOR THE OBSERVANCE OF COLLECTED TRASH AND DEBRIS. IMMEDIATELY REMOVE ANY TRASH OR DEBRIS THAT PREVENTS THE MOVEMENT OF WATER. REMOVE ANY TRASH AND LITTER DOWNSTREAM AND AT STORM DRAIN OR CHANNEL INFLOW LOCATIONS TO MAINTAIN THE INTEGRITY OF THE STRUCTURE AND PROVIDE AN ATTRACTIVE APPEARANCE.
- PERFORM YEARLY STRUCTURAL INSPECTIONS OF THE FACILITY FOR DAMAGE. STRUCTURAL INSPECTION SHALL BE PERFORMED ON THE OUTFALL CONTROL STRUCTURES AND POND EMBANKMENT. EXPOSED METAL SURFACES SHALL BE RE-PAINTED OR RE-GALVANIZED TO MINIMIZE RUST DAMAGE OR REPLACED IF RUST DAMAGE IS IRREVERSIBLE. IF DAMAGE IS EVIDENT, FURTHER INVESTIGATION BY A PROFESSIONAL ENGINEER MAY BE REQUIRED TO ASSESS THE INTEGRITY OF THE STRUCTURE.
- PERFORM QUARTERLY INSPECTIONS OF THE GRADED SIDE SLOPES OF THE FACILITY FOR SIGNS OF ANIMAL/RODENT BORROWS OR SLOPE EROSION. IMMEDIATELY PERFORM NECESSARY REPAIRS, REFILLING OR RESEEDING.
- PERFORM YEARLY OBSERVATIONS OF PERIMETER AREAS SURROUNDING THE FACILITY TO ENSURE CHANGES IN LAND USE, TOPOGRAPHY OR ACCESS HAVE NOT OCCURRED AND DO NOT AFFECT THE OPERATION, MAINTENANCE, ACCESS OR SAFETY FEATURES AS PROVIDED. APPROPRIATE ACTION IS REQUIRED TO ENSURE ADEQUACY AND TO PROVIDE A CLEAR, SAFE PASSAGE FOR MAINTENANCE VEHICLES TO THE ENGINEERED EMBANKMENT AND PRINCIPAL FLOW CONTROL STRUCTURES.
- POND MAINTENANCE
FOREBAY - REMOVE SEDIMENT WHEN THE DEPOSITION HAS ACCUMULATED TO 0.5 FEET ABOVE THE FOREBAY BOTTOM ELEVATION OF 34.0.
WET POND - AN ANNUAL SURVEY SHALL BE PERFORMED ON THE WET POND BOTTOM AND SIDE SLOPES. WHEN SEDIMENT DEPOSITION HAS ACCUMULATED TO 0.75 FEET ABOVE THE POND BOTTOM ELEVATION OF 31.0, THE SEDIMENT SHALL BE REMOVED TO THE ORIGINAL DESIGN AND PROPERLY DISPOSED.
- RECORD KEEPING. THE OWNER OR DESIGNATED REPRESENTATIVE SHALL KEEP REASONABLE, ACCURATE WRITTEN RECORDS OF INSPECTIONS PERFORMED FOR THE STRUCTURE. RECORDS SHALL DOCUMENT ROUTINE MAINTENANCE AND/OR REPAIRS PERFORMED. COPIES SHALL BE PROVIDED TO COUNTY UPON REQUEST.
- THE FACILITY SHALL NOT ACCEPT ADDITIONAL DRAINAGE OR BE MODIFIED IN ANY WAY WITHOUT PRIOR CONSENT OR APPROVAL BY THE ENVIRONMENTAL DIVISION OF JAMES CITY COUNTY.

1
CB-102

1
CB-102

STORM WATER MANAGEMENT REPORT

for

Wal-Mart Bulk Storage Facility Phase III

in

James City County, Virginia

Prepared by:

Carter Burgess

777 Main Street
Fort Worth, Texas 76102
(817) 222-8500

C&B No. 292245

September 2004

SP-88-07
4TH SUB
(FINAL)

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- Appendix 18 - Hydraulic Calculations – Storm Sewer System
- Appendix 19 - Detention Pond Elevation – Storage Curves
- Appendix 20 - 1-Year, 24-Hour Storm Drawdown Curves
- Appendix 21 - Existing Detention Ponds A and D after Phase III AdICPR Node Maximum Condition
- Appendix 22 - BMP Worksheet Exhibit
- Appendix 23 - James City County Stormwater Detention Basin Design Checklist
- Appendix 24 - Water Quality Volume Calculations
- Appendix 25 - Anti-Seep Collar Calculations

I. INTRODUCTION

Proposed for construction is a Wal-Mart Stores, Inc. Bulk Storage Facility Phase III, which is to be located on an approximately 249-acre site in James City County, Virginia. The project site lies approximately 2500 feet west of Skiffes Creek Reservoir along the south side of State Route 60, and approximately 500 feet south of the Wal-Mart Stores, Inc. Bulk Storage Facility Phase I and Phase II. The main distribution building will consist of approximately one million square feet. Other site construction will include a fire pump house, paved entrance roads and parking areas, and utility construction required to facilitate the site. This report will serve as documentation for the storm water management plan proposed for this development. Included with this report are the project Construction Plans. Refer to them for detailed information on the proposed storm water management system.

II. METHODOLOGY

Standard SCS methodologies were used to estimate pre-development and post-development peak flow rates from the site as modeled with the computer software "AdICPR" by Streamline Technologies, Inc. The post-development peak discharge rates from the site will be limited to pre-development rates or less for the 1-year, 2-year, 10-year, 25-year, and 100-year, 24-hour storm events. In addition, 24-hour extended detention will be provided in each of the outlet ponds for the 1-year, 24-hour storm event. A hydrograph shape factor of 484 was used with an SCS Type II 24-hour rainfall distribution. The time of concentration and runoff curve number calculations were based on procedures outlined in the SCS publication TR-55, and are included in the Appendix of this report. To accomplish the requirement of not increasing peak discharge rates from the site for each of the modeled storm events, a series of six (6) wet extended detention ponds will be constructed. Forebays designed to accommodate the 1.5 inch first flush will be placed in the wet extended detention ponds (Type A-3). Each wet extended detention pond will have three (3) feet of permanent pool to accommodate the 2 inches of water quality volume that will be treated. These detention ponds were designed using "AdICPR". "AdICPR" uses a conservation of mass concept to route flows through the detention ponds and tailwater effects are accounted for. In the program, runoff hydrographs are calculated at critical points which are called "nodes". Flows are then routed between nodes using "links". Storm water runoff will reach the detention ponds by a combination of sheet flow directly to the ponds or via a subsurface drainage system. The subsurface system was designed for a 10-year rational method event, with positive overflow to the ponds for the less frequent storms.

III. PRE-DEVELOPMENT CONDITIONS

Refer to Construction Plan C4.01 in Appendix 1 for the site Pre-Development Drainage Area Map. This map identifies six (6) drainage basins and associated points of concentration for pre-development conditions. The proposed development site is adjacent to 60 acres of Resource Protection Area (RPA). Refer to construction plans for location of RPA Buffer Zone. Area X-10, consisting of 34.07 acres, drains off the site to the southeast property line. Areas X-20, X-30, X-40, X-50 and X-60 consisting of 37.65, 52.01, 86.44, 16.19, and 23.60 acres, respectively, drain to the mouth of five tributaries to the James River located along the project's southern property line. Appendix 3 contains pre-development runoff curve number calculations. The pre-development runoff curve numbers are from 70 to 75, as a result of the site soils and ground cover descriptions. Times of concentration calculations for the pre-developed areas are included in Appendix 4. In the "AdICPR" model, each of these drainage basins concentrates at a "node" of the same name for which all hydrologic and hydraulic calculations are made. Appendix 8 contains the "AdICPR" Node Maximum Conditions Reports for each of the modeled storms. The maximum inflow to each node represents the peak discharge rate at each point of concentration. For area X-10, which concentrates at the southeast property line, the peak discharge rate represents the peak flow rate leaving the site from drainage area X-10, which is shown as the maximum outflow from node "N-

X10" on the Node Maximum Conditions Report. The pre-development peak discharge rates at each point of concentration are summarized in Table 1.

TABLE 1 – PRE-DEVELOPMENT PEAK DISCHARGE RATES (CFS)

Point of Concentration	1-Year 24-Hour	2-Year 24-Hour	10-Year 24-Hour	25-year 24-Hour	100-Year 24-Hour
X-10 (N-X10)	19.01	31.02	81.52	94.56	125.57
X-20 (N-X20)	7.94	14.52	44.34	52.34	71.65
X-30 (N-X30)	19.14	31.71	84.12	97.59	129.64
X-40 (N-X40)	47.19	77.20	200.90	233.16	309.89
X-50 (N-X50)	3.84	7.07	21.54	25.40	34.80
X-60 (N-X60)	4.30	7.63	22.78	26.81	36.49

IV. POST-DEVELOPMENT CONDITIONS

Refer to Construction Plan C4.02 in Appendix 9 for the Developed Drainage Area Map for this site. This map identifies points of concentration for developed drainage areas, such as culverts, channels, roof drain collectors, wet extended detention ponds, or outlet structures. Construction Plans C4.11 and C4.12 in Appendix 18 show the hydraulic calculations for the subsurface system. Included are 10-year rational method calculations for the subsurface system, inlet capacity calculations, culvert calculations, and channel calculations which are labeled according to the contributing drainage area. The wet extended detention ponds were modeled using "AdICPR" with a minimum time of concentration of five minutes and runoff curve number of 98 for all developed areas. Appendix 10 contains revised curve number calculations for areas undisturbed by this development, and Appendix 11 contains the revised time of concentration calculations. Elevation storage curves for each detention pond are provided in Appendix 19. Appendix 20 contains curves and calculations showing the stream channel volume pool is detained for at least 24 hours. The stream channel volume is the volume generated for the 1-year, 24-hour storm event. The volume of runoff for a 1-year, 24-hour event was added to the permanent pool volume and then the drawdown was carried out for 72 hours. As shown by the curves, the elevation in each pond is still decreasing at the 24-hour mark, thus showing that the required extended detention time has been met. Appendix 16 contains the "AdICPR" Node Maximum Conditions report for each of the modeled storms. This report shows the maximum conditions at each node for each modeled storm event. Table 2 shows the peak stage elevations in the detention ponds for each of the modeled storms. Table 3 shows the routed peak discharge for each pond. The detention ponds are designed to hold a 100-year, 24-hour storm with a minimum of one foot of freeboard to the top of berm elevation. An emergency spillway is provided for Ponds E, G, H and I. For Ponds F and J, the gravel road and the entrance road act as emergency spillways, respectively and a minimum of two feet of freeboard is provided between the maximum stage elevation in these ponds for the 100-year, 24-hour storm event and the lowest point along these roads.

TABLE 2 – DETENTION POND/PEAK STAGE ELEVATIONS (ft)

Detention Pond/Culvert	Drainage Area (acres)	1-Year 24-Hour	2-Year 24-Hour	10-Year 24-Hour	100-Year 24-Hour	Top of Berm
Pond E	8.85	34.94	35.17	35.77	36.26	39
Pond F	17.47	34.94	35.18	35.83	36.47	39
Pond G	29.08	34.73	34.92	35.49	35.86	39
Pond H	23.84	34.85	35.08	35.66	36.12	39
Pond I	1.26	34.88	35.11	35.65	36.03	39
Pond J	20.86	34.88	35.11	35.70	36.19	39

TABLE 3 – DETENTION POND/ROUTED PEAK DISCHARGE (CFS)

Detention Pond/Culvert	Drainage Area (acres)	1-Year 24-Hour	2-Year 24-Hour	10-Year 24-Hour	100-Year 24-Hour	Top of Berm
Pond E	8.85	0.74	1.03	4.43	7.78	39
Pond F	17.47	26.25	30.64	42.89	51.71	39
Pond G	29.08	0.63	0.73	2.49	5.08	39
Pond H	23.84	0.70	0.85	3.67	6.89	39
Pond I	1.26	0.71	0.89	3.58	6.14	39
Pond J	20.86	3.08	3.68	5.50	7.17	39

POND F CULVERT CONNECTION TO POND G.

Table 4 shows a comparison of the peak discharge rate from the site at each of the points of concentration identified in Table 1. The nodes identified on the post-development Node Maximum Conditions Report are related to the corresponding pre-development conditions nodes with the same name.

TABLE 4 – POST-DEVELOPMENT PEAK DISCHARGE RATES (CFS)

Point of Concentration	1-Year 24-Hour	2-Year 24-Hour	10-Year 24-Hour	25-Year 24-Hour	100-Year 24-Hour
N-X10	4.92	8.23	22.50	26.40	36.20
N-X20	3.77	6.32	19.50	23.46	32.75
N-X30	19.25	31.82	84.27	97.77	129.73
N-X40	22.12	36.41	98.79	115.64	156.15
N-X50	3.75	6.87	20.91	24.68	33.80
N-X60	3.45	6.39	20.34	24.10	33.19

The total peak discharge rate from the site has been reduced for all modeled storm events and the storm water management design criteria has been met. Appendix 23 contains a completed James City County Storm Water Detention Basic Design Checklist



WAL★MART
realty

Distribution Center Construction Program

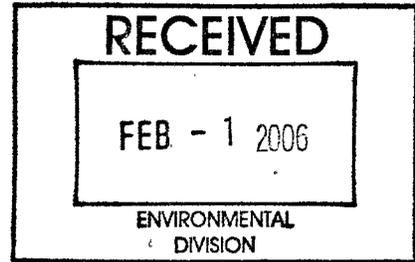
WAL-MART STORES, INC. ★ 2001 SE 10TH STREET, Dept 9562 ★ BENTONVILLE, AR 72716-0550 ★
Phone 479-273-4000 ★ Fax 479-273-1964

January 31, 2006

Attn: Scott Thomas
James City County Environmental Division
101 Mounts Bay Road
Williamsburg, VA 23185

Subj: Professional Certification

Ref: Wal-Mart BSF # 6088-03



Dear Scott,

Please find attached the original stamped Professional Certification for the Stormwater Management / BMP Facilities. I think that this is the last thing we were waiting on to satisfy the requires for release of the bond for the Phase III project.

Please let me know if we have any other outstanding issues. We still have Cindi Pelli on site and in the area, representing Wal-Mart Construction. You may contact her or me at anytime. I am at (479) 903-2468 and Cindi is at (479) 644-9504.

Thanks for all you help and consideration through out the project.

Sincerely,

Bobbie Brown
Wal-Mart Construction Manager

Scott Thomas

From: Scott Thomas
Sent: Tuesday, December 20, 2005 4:57 PM
To: 'Wojnicz, Andy'
Subject: RE: Wal-Mart Ph III - Change to BMP Planting Scheme

1. Punch List Complete

Glover has informed me that this is complete. Do you agree?

YES. I believe field items on the punch-list are done.

2. "As-Built" Drawings complete

Glover has stated that they need to change a few items and will get this in your hands next week.

Have not gotten revised asbuilts yet. There were only a few small corrections needed.

3. Pg. # 4 of packet signed off.

Jim Emerson needs to sign-off and do you also require that the surveyor do the same or are the as-built drawings sufficient?

For the asbuilt drawings, the surveyor must stamp and seal the left side of the form; or alternatively, provide a statement on the asbuilts and stamp and seal it. Once done I need one blue/blackline set for each BMP (total of 6, I think) and as all the BMPs are on one drawing set, I need one reproducible mylar. As far as the construction certification, I have not gotten anything from Emerson yet.

Scott J. Thomas, P.E.

James City County

Environmental Division

Visit:

http://www.james-city.va.us/resources/devmgmt/div_devmgmt_environ.html

and

www.protectedwithpride.org

-----Original Message-----

From: Wojnicz, Andy [mailto:aewojnicz@bucon.com]

Sent: Saturday, December 17, 2005 4:06 PM

To: Scott Thomas

Subject: RE: Wal-Mart Ph III - Change to BMP Planting Scheme

Scott,

I have been in contact with Glover Construction in regards to remaining items for the JCC Wal*Mart BSF phase III project. I would like to get a status report from you if possible.

My understanding is that you basically need 3 items based on our brief conversation on December 2, 2005.

1. Punch List Complete

Glover has informed me that this is complete. Do you agree?

2. "As-Built" Drawings complete

Glover has stated that they need to change a few items and will get this in your hands next week.

3. Pg. # 4 of packet signed off.

Jim Emerson needs to sign-off and do you also require that the surveyor do the same or are the as-built drawings sufficient?

12/20/2005

If there is anything else that needs to be completed or the information above is not accurate and you feel I need to know, I encourage you to contact me. I feel at this point that Glover is providing you with what you require, but if this is not the case and I can help, I will devote whatever resources to the cause.

Thanks for the hands on effort and assistance. Have a good holiday.

Andrew Wojnicz
Project Manager - Butler Construction
(c) 1-816-590-2557
(p) 1-816-245-6582
(f) 1-816-245-6099

From: Scott Thomas [mailto:SCOTTT@james-city.va.us]
Sent: Monday, December 05, 2005 9:25 AM
To: aewojnicz@bucon.com; Emerson, Jim D.
Subject: Wal-Mart Ph III - Change to BMP Planting Scheme

Wal-Mart BSF # 6088
County Plan No. SP-88-04
RE: Change to BMP Planting/Landscape Plan

Can you please both email me your fax number? I've reviewed the request by Emerald Forest dated August 31, 2005 as it pertains to proposed changes in the BMP planting plan. I would like to forward a copy of that letter back to you (including Emerald Forest) stamped as approved. I feel it is important to keep record of this change and was not able to fully process it until I did inspections of the BMPs in the field. I did a final inspection of Ponds F, E, G, H, I and J in the field on Friday December 2, 2005. I have copies of inspection reports available for each of the BMPs and also gave Glover a summary of punch-list items that remain for each pond.

Scott J. Thomas, P.E.
James City County
Environmental Division

Visit:

http://www.james-city.va.us/resources/devmgmt/div_devmgmt_environ.html

and

www.protectedwithpride.org



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

SP-88-04

County BMP ID Code (if known): 50022
 Name of Facility: Walmart Phase 3 BMP No.: 3 of 6 Date: 12-2-05
 Location: Pond H, south central portion of site (near Pond G)
 Name of Owner: Walmart
 Name of Inspector: SJ Thomas
 Type of Facility: wet ext Det Pond
 Weather Conditions: Sunny Cold 50's Type: Final Inspection County BMP Inspection Program Owner Inspection

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. No action required.
- Routine - The item checked requires attention, but does not present an immediate threat to the function/integrity of the BMP.
- Urgent - The item checked requires immediate attention to keep the BMP operational and to 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
Embankments and Side Slopes: <u>10' High earth dam; 4H:1V SS; 15' top width</u>				
Grass Height	✓			<u>2-4" High GRASS.</u>
Vegetation Condition	✓			<u>GRASSED</u>
Tree Growth	✓			<u>None.</u>
Erosion	✓			<u>None observed.</u>
Trash & Debris	✓			
Seepage	✓			<u>None observed.</u>
Fencing or Benches	N/A			
Interior Landscaping/Planted Areas: <input type="checkbox"/> None <input checked="" type="checkbox"/> Constructed Wetland/Shallow Marsh <input type="checkbox"/> Naturally Established Vegetation				
Vegetated Conditions	✓			<u>Pond grasses less visible, higher</u>
Trash & Debris	✓			<u>WL than Pond E & G</u>
Floating Material	✓			<u>None.</u>
Erosion	✓			<u>None.</u>
Sediment	✓			<u>Minor 2-4"</u>
Dead Plant	✓			
Aesthetics	✓			<u>Looks good</u>
Other				
Notes: <u>Med size pond. serves building, Tractor Parking & Truck ROAD.</u>				

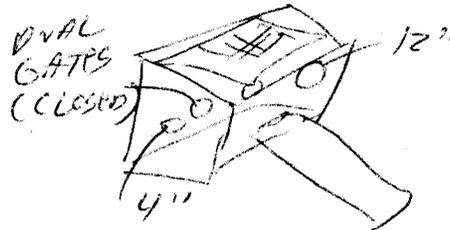
Facility Item	O.K.	Routine	Urgent	Comments
Water Pools: <input checked="" type="checkbox"/> Permanent Pool (Retention Basin) <input type="checkbox"/> Shallow Marsh (Detention Basin) <input type="checkbox"/> None, Dry (Detention Basin)				
Shoreline Erosion	✓			WET ED Pond, pond N.P.R
Algae	✓	None		2' below 4" low flow orifice
Trash & Debris	✓	None		Good shoreline veg.
Sediment	✓	Minor		Cattails
Aesthetics	✓	OK		
Other				Pond Normal/WSEL higher than
Inflows (Describe Types/Locations): 6- Pipe Inflow 24-36" Pond E+6 with special ED				
Condition of Structure	✓			All ok + clean
Erosion	✓			All ok.
Trash and Debris	✓			All ok.
Sediment	✓			All ok.
Outlet Protection	✓			All ok
Other				
Principal Flow Control Structure - Riser, Intake, etc. (Describe Type): Conc. Box box w/ flat grate				
Condition of Structure	✓	OK		Same watig as Pond E+6;
Corrosion	✓	OK		Flat grate w/ 4" open; skimmer (SS)
Trash and Debris	✓	None		plate, dual DRAINS w/ SWICE GATE
Sediment	✓	Minor		(CLOSED); REMOVABLE GRATE
Vegetation	✓	OK		4" LOW FLOW ORIF; 12" HIGH FLOW
Other	✓			ORIF
Principal Outlet Structure - Barrel, Conduit, etc.: 18" RCP 30' x 15' w OP CLI Riprap				
Condition of Structure	✓			
Settlement	✓			
Trash & Debris		✓		Remove SF & SAFETY FENCE
Erosion/Sediment	✓			Remove VEG @ outlet
Outlet Protection	✓			CLI
Other	✓			Natchannel not eroded, Flow 6" deep
Emergency Spillway (Overflow): 35' x 35' CLI Riprap ~ 2' deep				
Vegetation	✓			Minor grass
Lining	✓			CLI RR
Erosion	✓			None
Trash & Debris	✓			None
Other	✓			AND south
Notes:	Water on bench on west side of Bench 15' wide FULL PERIM. Rock forebay CLI full length of north end of basin.			

Facility Item	O.K.	Routine	Urgent	Comments
Nuisance Type Conditions:				
Mosquito Breeding	✓			None
Animal Burrows	✓			None
Graffiti	✓			None
Other	✓			None
Surrounding Perimeter Conditions:				
Land Uses				
Vegetation				
Trash & Debris				
Aesthetics				
Access /Maintenance Roads or Paths				
Other				

Remarks:

POUD H FIELD ITEMS

- need constant
- need sealed AB
- Remove SF & ORANGE SAFETY FRAME AT BARREL OUTFALL + West end of dam
- Remove Jrg from Headwall at 15' barrel outfall end.
-



- NPWL is higher than Pond E+6. COVERING BARREL 2-4"
- No signs of barrel piping.

Overall Environmental Division Internal Rating: 4

Signature: [Handwritten Signature] PE.
 Title: SENIOR ENGINEER JCC ENV DIV

Date: 12-02-05

BMP FINAL INSPECTIONS

★ FIELD-RELATED
ITEM

POND E (SC019)

- Need construction certification for pond.
- ★ Remove silt fence from RPA Buffer Planting Area (between Pond E & G)
- ★ Remove silt fence from pond barrel outfall area
- Need asbuilt certification

POND G (SC021)

- Need construction certification for pond.
- ★ Repair slope erosion at slope below Pipe #3. Pipe #3 is the 24" RCP pipe situated the third from the west end of the pond along the gravel access road.
- Need asbuilt certification

POND H (SC022)

- Need construction certification for pond.
- Need sealed asbuilts.
- ★ Remove silt fence from downstream of 18" barrel pipe thru dam
- ★ Remove all orange safety fence (tree protection) from west end of dam and barrel outfall.

POND I (SC023)

- Need construction certification for pond.
- Need sealed asbuilts.
- ★ ~~Construct emergency spillway at southwest corner of dam per approved plan sheets C4.39 and C4.56. CLASS I riprap at elev 37.50. Not needed. Enough Freeboard. AND 100-YR WSEL never gets to river crest.~~

POND J (SC024)

- Need construction cert for pond.
- Need sealed asbuilt. Correct 24" pipe to 42" size on Sheet 5.
- ★ No field issues to address.

POND F (SC020)

- Need construction cert for pond
- Need sealed asbuilts
- ★ No field-related items.

This summary serves as a punch-list for BMPs for Walmart PHASE 3.

Justin Thomas
12-2-05

Date Record Created:

WS_BMPNO:

SC022

Print Record

Created By:

WATERSHED SC
BMP ID NO 022
PLAN NO SP-88-04

PRINTED ON
Wednesday, March 10, 201
11:05:11 AM

TAX PARCEL
PIN NO
CONSTRUCTION DATE
PROJECT NAME Wal-Mart BSF # 6088

FACILITY LOCATION

CITY-STATE

CURRENT OWNER

OWNER ADDRESS

OWNER ADDRESS 2

CITY-STATE-ZIP CODE

OWNER PHONE

MAINT AGREEMENT No

EMERG ACTION PLAN No

MAINTENANCE PLAN No
SITE AREA acre
LAND USE
old BMP TYP Wet Pond
JCC BMP CODE A3 Wet ED Pond
POINT VALUE

SVC DRAIN AREA acres

SERVICE AREA DESCRI

IMPERV AREA acres 0.00

RECV STREAM

EXT DET-WQ-CTRL No

WTR QUAL VOL acre-ft

CHAN PROT CTRL No

CHAN PROT VOL acre-ft

SW/FLOOD CONTROL No

GEOTECH REPORT No

CTRL STRUC DESC
CTRL STRUC SIZE inches
OTLT BARRL DESC
OTLT BARRL SIZE inch

EMERG SPILLWAY No

DESIGN HW ELEV

PERM POOL ELEV

2-YR OUTFLOW cfs 0.00

10-YR OUTFLOW cfs 0.00

REC DRAWING No

CONSTR CERTIF No

LAST INSP DATE Inspected by:

INTERNAL RATING

MISC/COMMENTS

Phase 3, Pond H.

Get Last BMP No

Return to Menu

Additional Comments:

