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: **PC008**

DATE VERIFIED: **November 1, 2012**

QUALITY ASSURANCE TECHNICIAN: **Leah Hardenbergh**

Leah Hardenbergh

LOCATION: WILLIAMSBURG, VIRGINIA

Stormwater Division

MEMORANDUM

DATE: March 9, 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: PC008

PIN: 3330100037

Subdivision, Tract, Business or Owner Name (if known): Rolling Meadows Apartments

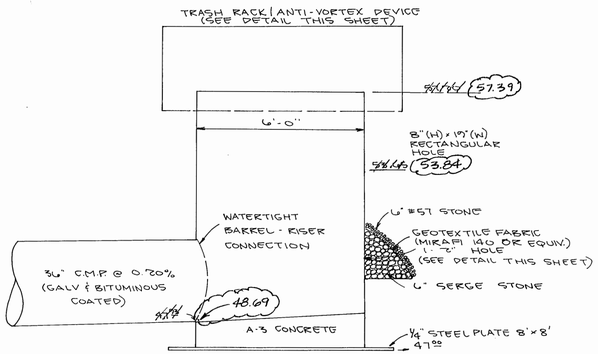
Property Description: Apartments

Site Address: 5194 Longhill Road

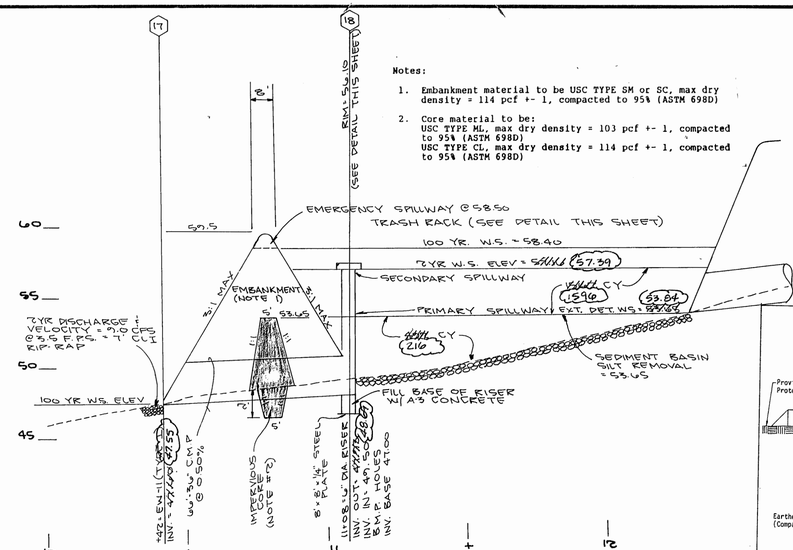
(For internal use only) **Box** 6 **Drawer:** 3

Agreements: (in file as of scan date) **N** **Book or Doc#:** **Page:**

Comments



RISER DETAIL
SCALE: 1" = 2'



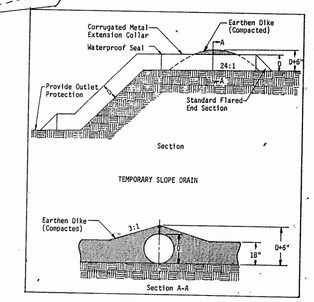
Notes:

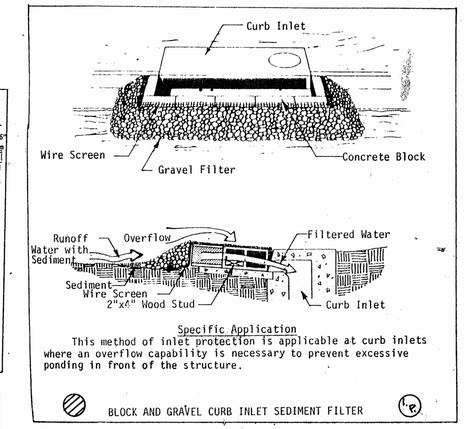
1. Embankment material to be USC TYPE SM or SC, max dry density = 114 pcf +- 1, compacted to 95% (ASTM 698D)
2. Core material to be:
   USC TYPE ML, max dry density = 103 pcf +- 1, compacted to 95% (ASTM 698D)
   USC TYPE CL, max dry density = 114 pcf +- 1, compacted to 95% (ASTM 698D)

STORMWATER MANAGEMENT FACILTY / SEDIMENT BASIN
1" = 25' (H) 1" = 5' (V)

EROSION CONTROL COST TABULATION

QUANTITY	ITEM	UNIT COST	COST
1,050	DIVERSION DIKE	$5 L.F.	5,250.00
860	SILT FENCE	$5 L.F.	4,300.00
15'	INLET PROTECTION	$60 EACH	900.00
1	SEDIMENT BASIN	$20,910 EA.	20,910.00
732	SEDIMENT TRAP	$20.00 L.F	146.40
		TOTAL	31,006.40

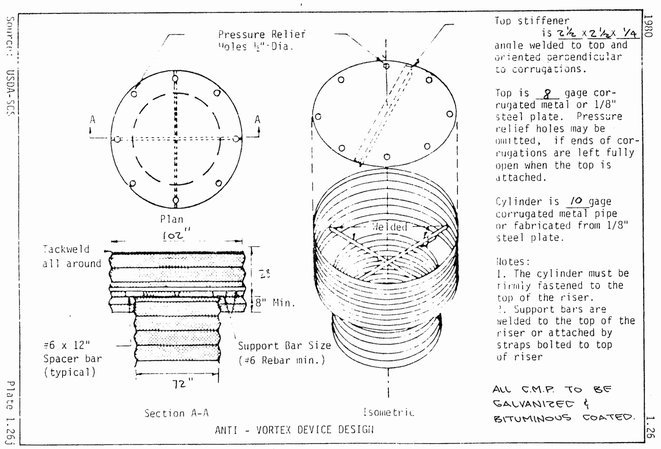




Specific Application

This method of inlet protection is applicable at curb inlets where an overflow capability is necessary to prevent excessive ponding in front of the structure.

BLOCK AND GRAVEL CURB INLET SEDIMENT FILTER



Top stiffener is 2 1/2 x 2 1/2 x 1/4 angle welded to top and oriented perpendicular to corrugations.

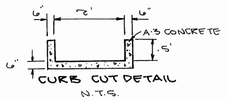
Top is 8 gage corrugated metal or 1/8" steel plate. Pressure relief holes may be omitted, if ends of corrugations are left fully open when the top is attached.

Cylinder is 10 gage corrugated metal pipe or fabricated from 1/8" steel plate.

Notes:
1. The cylinder must be firmly fastened to the top of the riser.
2. Support bars are welded to the top of the riser or attached by straps bolted to top of riser

ALL C.M.P. TO BE GALVANIZED & BITUMINOUS COATED.

ANTI - VORTEX DEVICE DESIGN



CURB CUT DETAIL
N.T.S.

COMPS FOR CURB CUTS #2, #3, #5 AND #6

#2	#3	#5	#6
A = 0.24 Ac	A = 0.18 Ac	A = 0.55 Ac.	A = 0.19 Ac.
C = 0.85	C = 0.85	C = 0.85	C = 0.85
I = 6.8	I = 6.8	I = 6.8	I = 6.8
Q = 1.39 CFS.	Q = 1.04 CFS.	Q = 3.17 CFS.	Q = 1.09 CFS.

$V = \frac{1.49}{n} \cdot R^{2/3} \cdot S^{1/2}$

$V = \frac{1.49}{.013} \cdot .33^{2/3} \cdot .0250^{1/2}$

$V = 114.62 \cdot .48 \cdot .16$

$V = 8.80$

$Q = V \times A$

$Q = 8.80 \times 1.0$

$Q = 8.80$ WHICH IS GREATER THAN 1.39, 1.04, 3.17 AN 1.09 C.F.S.

COMPUTATIONS FOR CURB CUT #1

A = 0.35 Ac
C = 0.85
I = 6.8
Q = 1.44 C.F.S.

$V = \frac{1.49}{n} \cdot R^{2/3} \cdot S^{1/2}$

$V = \frac{1.49}{.013} \cdot .33^{2/3} \cdot .018^{1/2}$

$V = 114.62 \times .48 \times .1342$

$V = 7.38$

$Q = V \times A$

$Q = 7.38 \times 1.0$

$Q = 7.38$ WHICH IS GREATER THAN 1.44 PROPOSED.

COMPUTATIONS FOR CURB CUT #4

A = 0.19 Ac
C = 0.70
I = 6.8
Q = 0.90 C.F.S.

$V = \frac{1.49}{n} \cdot R^{2/3} \cdot S^{1/2}$

$V = \frac{1.49}{.013} \cdot .33^{2/3} \cdot .2236^{1/2}$

$V = 114.62 \cdot .48 \cdot .2236$

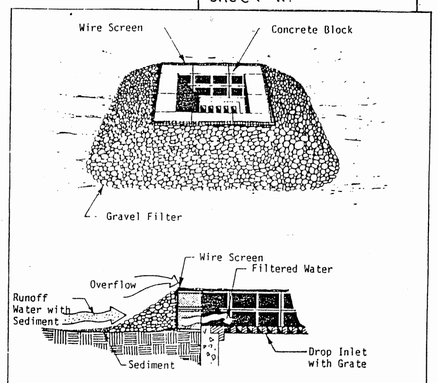
$V = 12.30$

$Q = V \times A$

$Q = 12.30 \times 1.0$

$Q = 12.30$ WHICH IS GREATER THAN 0.90 PROPOSED

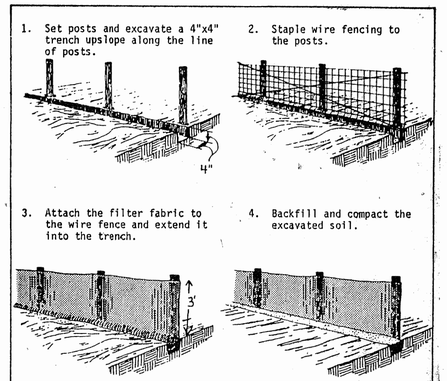
NOTE: FOR CONSTRUCTION ENTRANCE DETAIL SEE SHEET 11.



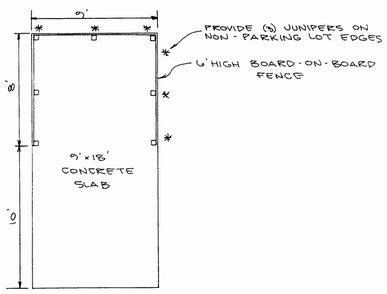
Specific Application

This method of inlet protection is applicable where heavy flows are expected and where an overflow capacity is necessary to prevent excessive ponding around the structure.

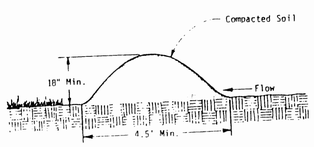
BLOCK AND GRAVEL DROP INLET SEDIMENT FILTER



CONSTRUCTION OF A SILT FENCE



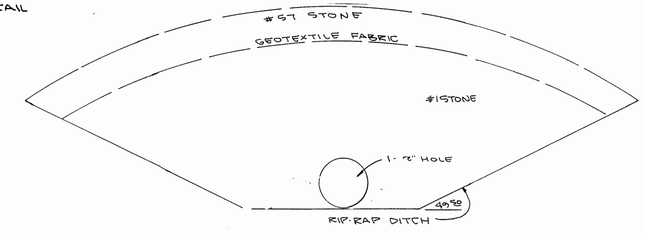
DUMPSTER SITE DETAIL
SCALE: 1" = 5'



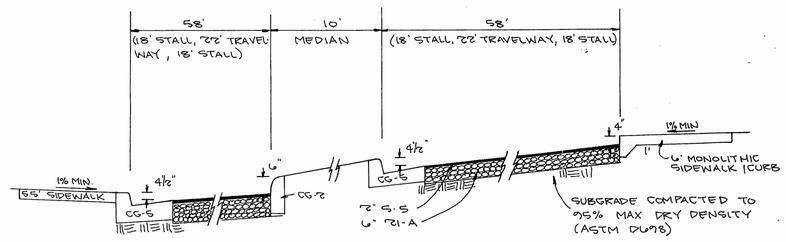
TEMPORARY DIVERSION DIKE

Below drainage areas of 5 acres or less.

The channel behind the dike shall have a positive grade to a stabilized outlet. If the channel slope is less than or equal to 2%, no stabilization is required. If the slope is greater than 2%, the channel shall be stabilized in accordance with Std. & Spec. 1.35 (STORMWATER CONVEYANCE CHANNEL) Virginia Erosion & Sediment Control Handbook, Second Edition, 1980



B.M.P. HOLE LOCATIONS



TYPICAL PARKING BAY DETAIL
NOT TO SCALE

RECORD DRAWING INFORMATION OBTAINED AND PREPARED BY AES CONSULTING ENGINEERS 11/20/98

COMMONWEALTH OF VIRGINIA
THOMAS O. ROBBINS
NO. 14528
PROFESSIONAL ENGINEER

(RECORD DRAWING)

PREPARED BY:
DESIGN / BUILD CONCEPTS
ENGINEERING | SURVEYING
ENVIRONMENTAL ASSESSMENTS | PLANNING
15025 Farm Creek Drive Woodbridge VA 22191
Metro (703) 643-1488 Local 491-2663

SITE PLAN
ROLLING MEADOWS
BERKELEY DISTRICT
JAMES CITY COUNTY, VIRGINIA

NOTES & DETAILS

REVISIONS:
REV. 8/91 FOR RESUBMISSION

PROJECT NO. 5115
SCALE: -
DATE: 6/90
SHEET NO. 9

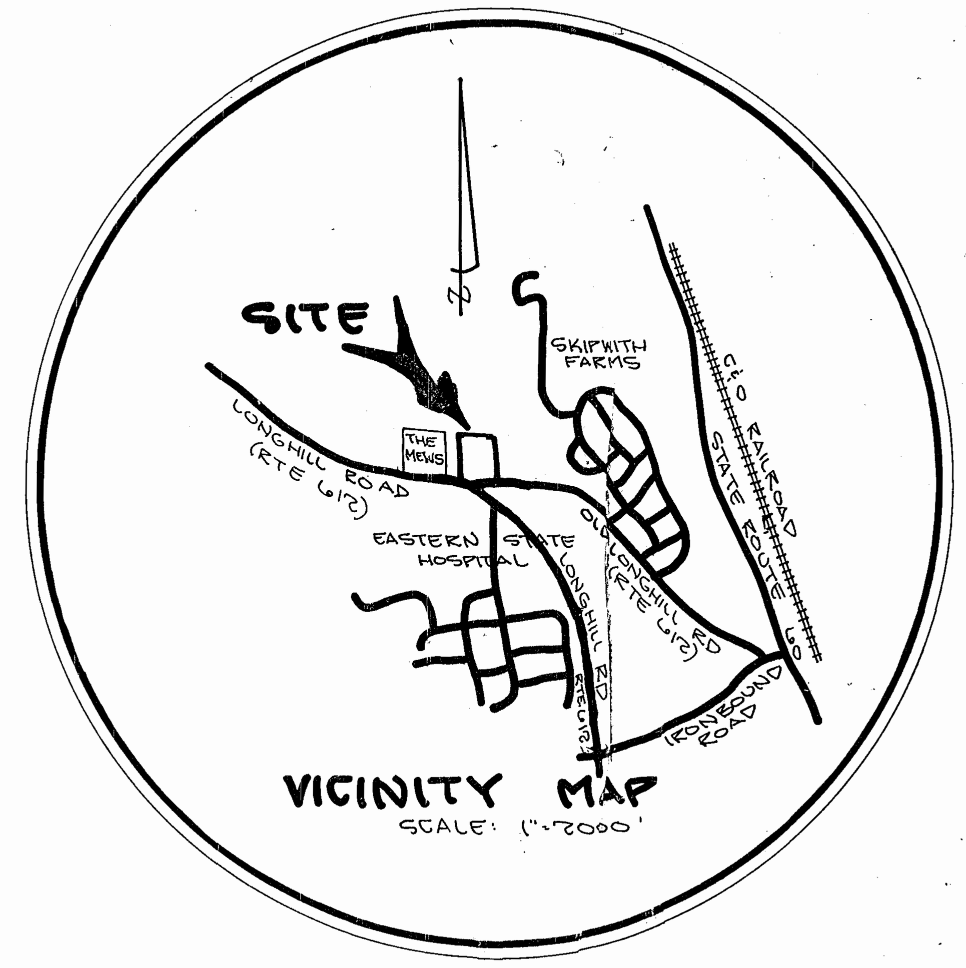
PC008_ROLLING_MEADOWS_APARTMENTS - 003

Construction Sequence

1. Onsite Preconstruction Meeting between Contractor, Developer, Project Engineer and County Engineering Representatives.
2. Install Construction Entrance as shown.
3. Mark Limits of Clearing and Grading and install Silt Fence and diversion dikes as shown. (PRIOR TO ANY CLEARING & GRADING)
4. Construct Sediment Basin as shown. (PRIOR TO ANY CLEARING & GRADING)
5. As inlets are installed provide inlet protection as shown.
6. Temporary seeding and soil stabilization of disturbed areas to be in accordance with Erosion Control Notes (this sheet).
7. Silt to be removed from Sediment Basin periodically (at elevation 53.65) and spread evenly over construction areas.
8. Upon completion of construction and successful stabilization, silt to be removed from Sediment Basin and spread evenly throughout landscape areas. Stone/Fabric filter system to be cleaned or replaced. Sides of facility to be seeded and mulched.
9. Silt fence, Silt trap and diversion dikes to be removed and where necessary seeded or otherwise stabilized.

Construction proposed per this plan falls within a nationwide permit in those areas that may impact non-tidal, above headwater jurisdictional wetlands. Specifically:

Sanitary Sewer #2 to Existing--	330.5(a)(12)
SWM/BMP Facility, Slope toe and rip-rap channel-- (Note: filled area of .70 Acre < 1 Acre so no pre-discharge notification is required)	330.5(a)(26)



AMENDMENT TO THE SITE PLAN

Revision #1 November 20, 1992

The following items were changed to the approved site plan:

Sheet #1: Names, Addresses and Phone Numbers of Owner, Developer and Engineer

Sheet #2: Building templates, building area tabulations; identifying numbers added to buildings (#1, #2 etc); handicap parking moved to the front of the handicap capable building (#9); sidewalk area in front of building #9 widened to allow ramping; valve pits for sprinkler system eliminated (units will be double-walled in accordance with latest State building code criteria); pool shape, deck area; 4" valves added to waterlines serving buildings #13 through #17 to allow for phased construction.

Sheet #3: Shrubs added to sideyard areas in vicinity of buildings.

Sheet #6: Building templates changed; pool deck area shown with clubhouse; valve pit detail deleted.

Sheet #10: Building setback dimensions changed to reflect new building templates.

Amended areas are delineated by cloud markings and referenced by number (△).

Erosion Control Narrative

Project Description: Construction of a 200 unit multi-family residential community. Approximately 14 Acres will be disturbed.

Existing Site Conditions: Most of the site area proposed for construction is meadowland. Areas not wooded are generally characterized by long-stemmed grasses. The site slopes south to north, with 2 to 2% slopes.

Adjacent Areas: On the north side of the site is Chisel Run. This creek, and its adjoining lowland areas, should be protected from siltation through the use of silt fence, diversion dikes and silt traps. On the west side of construction is an existing condominium style residential development, the Mews. This area will not be affected by erosion/siltation of the project due to topography. To the east is a church, Gethsemane Assembly of God. This area will not be affected by erosion/siltation of the project due to topography. To the south is Old Longhill Road and Eastern State Hospital. This area will not be affected by erosion/siltation of the project due to topography.

S/E Control Measures: A combination of Silt Fence, Diversion Dikes, inlet protection, a Silt Trap and a Sediment Basin will be used to control siltation and erosion during construction. Disturbed areas are managed through silt fence, diversion dikes/silt traps, or sediment basin depending upon drainage areas. A 50 ft Construction Entrance should prevent the tracking of dirt onto Old Longhill Road.

Stabilization: Topsoil shall be stripped from graded areas and stockpiled for later use. The stockpile shall be adequately protected by seeding and mulching. Those areas that are rough-graded and will not be final graded for more than 7 days shall be provided temporary seeding per the plan. Upon Final grading all areas shall be provided landscaping or permanent seeding in accordance with the plans. Under no circumstances shall areas be left bare more than 7 days.

Stormwater Management: Stormwater management is being provided by three SWM Facility, which is to be used as a sediment basins during development. This facility has been designed to significantly decrease peak runoff from the site, limiting discharge to predevelopment conditions.

Maintenance: All erosion control devices are to be inspected weekly, and after every major storm. Any failed or overloaded devices shall be cleaned, replaced or repaired as required. Additionally, any failed device shall be repaired upon observation. Additional devices to those shown on these plans may be required by James City County Inspectors and shall be installed by the Contractor upon their request.

SITE PLAN

ROLLING MEADOWS

BERKELEY DISTRICT
JAMES CITY COUNTY, VIRGINIA

```
*** UNIVERSITY OF KENTUCKY PIPE NETWORK ANALYSIS PROGRAM - 1986 VERSION ***
                          RESULTS TO OUTPUT FILE

INPUT DATA FILE NAME FOR THIS SIMULATION = 5773.dat
OUTPUT DATA FILE NAME FOR THIS SIMULATION = 5773.out

NUMBER OF PIPES = 4
NUMBER OF JUNCTION NODES = 4
   FLOW UNITS = GALLONS / MINUTE
   PRESSURE UNITS = PSI

**** SUMMARY OF INPUT DATA ***

PIPE  NODE NODE LENGTH  DIAM. HW-C   SUM-M  PUMP  FGN
 NO.   #1   #2   (FT.)  (IN.) VALUE  FACT.  TYPE  GRADE
  1    0    1    60.0    8.0  110.0   0.0    1.0   70.0
  2    1    2    58.0    4.5  110.0   0.0    0.0
  3    2    3   200.0    8.0  110.0   0.0    0.0
  4    3    4   340.0    8.0  110.0   0.0    0.0

*** DATA FOR PUMPS FOR THIS SYSTEM ***

PUMP TYPE # 1  IS DESCRIBED BY THE FOLLOWING DATA:
 HEAD      DISCHARGE
 139          0
 127        1061
 0          4060

 JUNCTION  ELEVATION  DEMAND  PRESSURE  HYDRAULIC
   NO.       (FT.)             (PSI)      GRADE
   1         82.0      0.0     49.7      196.7
   2         80.0      0.0     40.3      172.9
   3         77.0      0.0     39.4      168.0
   4         68.0   1000.0     39.7      159.5

 JUNCTION  ELEVATION  DEMAND  PRESSURE  HYDRAULIC
   NO.       (FT.)             (PSI)      GRADE
   1         82.0      0.0     49.7      196.7
   2         80.0      0.0     40.3      172.9
   3         77.0   1000.0     39.4      168.0
   4         68.0      0.0     43.3      168.0

 JUNCTION  ELEVATION  DEMAND  PRESSURE  HYDRAULIC
   NO.       (FT.)             (PSI)      GRADE
   1         82.0   2000.0     36.2      165.4
   2         80.0      0.0     37.0      165.4
   3         77.0      0.0     38.3      165.4
   4         68.0      0.0     42.2      165.4

******* END OF THIS SIMULATION *******
```

OWNER:
ROLLING MEADOWS ASSOCIATES, L.P.
15025 FARM CREEK DRIVE
WOODBRIDGE VA. 22191 PH. (703) 491-5042

DEVELOPER:
CASTLE DEVELOPMENT
2801 SOUTHWELL PLACE
MIDLOTHIAN, VA 23113 PH. (804) 794-0553

SHEET INDEX

1. COVER SHEET
2. SITE PLAN
3. LANDSCAPE PLAN
4. S/E CONTROL PLAN
5. STREET AND STORM PROFILES
6. W/L PROFILES, STORM CALCS, HOUSE TYP.
7. S.S. PROFILES
8. NOTES AND DETAILS
9. NOTES AND DETAILS
10. HORIZONTAL CONTROL & LIGHTING PLAN
11. LONGHILL ROAD PROFILE

QUANTITIES

W/L P.V.C.
8" W/L - 610'
4" W/L - 1210'

(1) 8"-45° BEND
(2) 8"-11¼° BEND
(6) STUB-OUTS
(1) 4"-90° BEND
(2) 4"x8" CROSS
(1) 4"x4" TEE
(1) 4"x8" REDUCER
(3) F.H.
(2) 8" VALVES
(3) 6" VALVES
(2) 4" VALVES
(1) MASTER METER
(1402') 2" SERVICE
(37) 3/4" SERVICE
(3) 8"x6" TEE

8" S.S.
D.I.P.C.L. - 418' (CL 50)
P.V.C. - 1776'

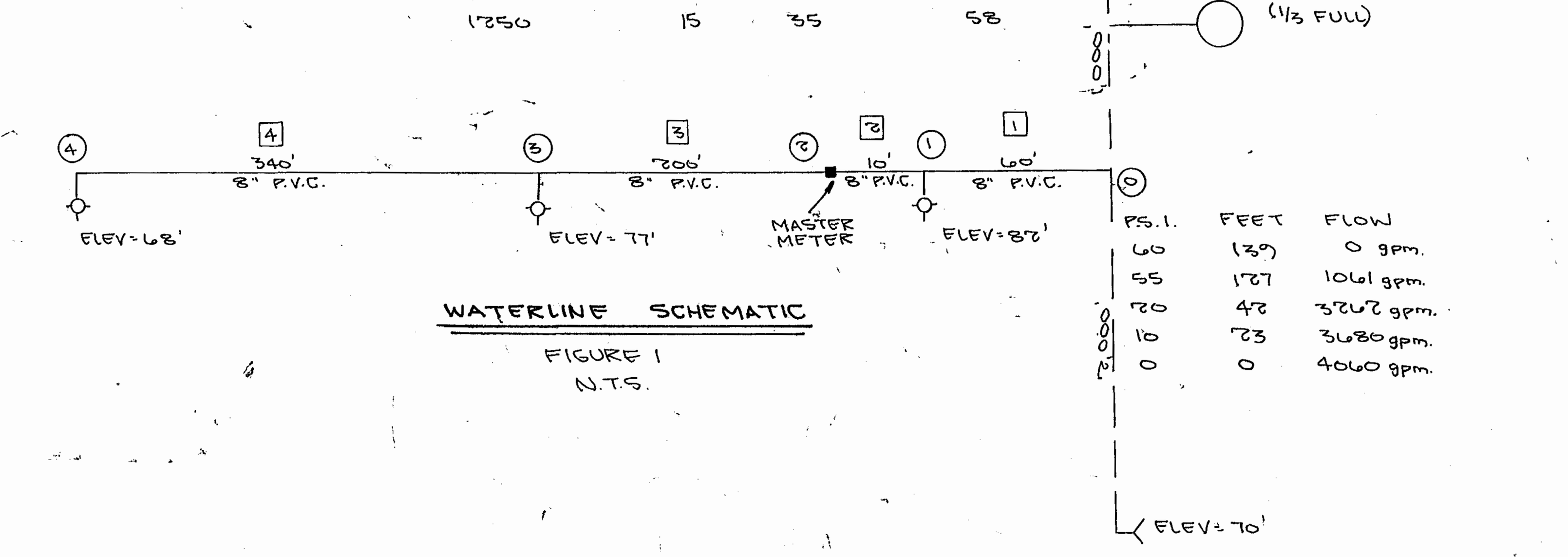
(11) MANHOLES
(804) 6" LATERIALS
(18) CLEAN-OUTS

LINE LOSS EQUIVALENT - MASTER METER

FLOW (G.P.M.)	LOSS (P.S.I.)	(FEET)	EQ = 4.5' LENGTH (FT)
0	0	0	0
600	4	9	
1000	10	23	58
1250	15	35	58

2.31 FT = 1 P.S.I.

TOWER W.S. ELEV=206' (1/3 FULL)



WATERLINE SCHEMATIC
FIGURE 1
N.T.S.

SEEDING SPECIFICATIONS

SEEDING REQUIREMENT 1

SEEDING MIXTURE	Lbs/Acre	Lbs/1000 Sq. Ft.	Feb. 1 – May 15	May 16 – Aug. 15	Aug. 16 – Oct. 15	Oct. 16 – Jan. 31
1. Kentucky 31 Tall Fescue	60	1.37	X		X	
2. Kentucky 31 Tall Fescue / Weeping Lovegrass	60 / 2	1.37 / 0.05		X		
3. Kentucky 31 Tall Fescue / Korean Lespedeza, Inoculated	50 / 15	1.13 / 0.34	X		X	
4. Kentucky 31 Tall Fescue / Sericea Lespedeza, Inoculated	40 / 20	1.00 / 0.46	X	X	X	
5. Kentucky 31 Tall Fescue / Birdsfoot Trefoil, Inoculated	50 / 10	1.13 / 0.23	X		X	
6. Crownvetch, Inoculated / Redtop	15 / 3	0.40 / 0.07	X		X	
7. Crownvetch, Inoculated / Kentucky 31 Tall Fescue	15 / 40	0.34 / 0.92	X		X	
8. Abruzzi Rye	60	1.37				X

HULLED SEED FOR SPRING AND UNHULLED SEED FOR FALL SEEDINGS. INCREASE LISTED SEEDING RATE BY 25% WHEN USING UNHULLED SEED.

NOTE: SEEDINGS WITH SERCEA LESPEDEZA OR BIRDSFOOT TREFOIL SHOULD BE USED ONLY WHEN COVER WILL REMAIN 2 OR MORE YEARS.

SEEDING REQUIREMENT

	SEEDING PERIOD	SEED MIXTURE	MULCH
A	MARCH 1 - APRIL 30	KY FESCUE 60-80 LBS/A; ANNUAL RYEGRASS 5 LBS/A; REDTOP 1.0-1.5 LBS/A	(A) WOODCHIPS 50 CU. YDS/AC; (B) SMALLGRAIN STRAW 4,000 LBS/A TACKED WITH ASPHALT
B	MAY 1 - JULY 30	SAME AS A PLUS 5 LBS. WEEPING LOVEGRASS OR 7-15 LBS GERMAN MILLET	(A) SMALL GRAIN STRAW 4,000 LBS/A TACKED WITH ASPHALT; (B) WOODCHIPS 50 CU. YDS/A
C	AUGUST 1 - SEPTEMBER 30	SAME AS A	
D	OCTOBER 1 - NOVEMBER 15	SAME AS A PLUS CREEPING RED FESCUE OR CEREAL RYE 30-40 LBS/A	(A) SMALL GRAIN STRAW 4,000 LBS/A TACKED WITH ASPHALT.
E	NOVEMBER 16 - FEBRUARY 28	SAME AS A BUT SUBSTITUTE PERENNIAL RYEGRASS FOR ANNUAL RYEGRASS AND ADD 20 LBS CREEPING RED FESCUE AND 40 LBS CEREAL RYE/A	(A) 4,000 LBS STRAW WITH HEAVY ASPHALT TACK; (B) 60 CU. YDS WOODCHIPS/A (OR USE KY 31 FESCUE SOD)

SEEDBED PREPARATION:

FLAT AREAS AND SLOPES UP TO 3 TO 1 GRADE SHALL BE LOOSE AND FRIABLE TO A DEPTH OF AT LEAST (3) INCHES, THE TOP LAYER OF SOIL SHALL BE LOOSENED BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING.

SLOPES OF GREATER THAN 3 TO 1 GRADE SHALL HAVE THE TOP 1-3 INCHES OF SOIL LOOSE AND FRIABLE BEFORE SEEDING.

MULCHING:

MULCH MATERIALS SHALL BE APPLIED IMMEDIATELY AFTER SEEDING. THERE SHALL BE UNROTTED SMALL GRAIN STRAW APPLIED AT THE RATE OF 1 1/4 TO 2 TONS PER ACRE (70 TO 90 POUNDS PER 1,000 SQUARE FEET). MULCH MATERIALS SHALL BE RELATIVELY FREE OF ALL KINDS OF WEEDS AND SHALL BE FREE OF PROHIBITED NOXIOUS WEEDS, OR WOODCHIPS 3/4" TO 1 1/4" IN DIAMETER AT THE RATE OF 50 TO 60 CUBIC YARDS PER ACRE OF 1/4" TO 1 1/2" DEEP.

FERTILIZING - LIMING:

5-10-5 OR AN APPROVED EQUIVALENT 1-2-1 RATIO FERTILIZER SHALL BE APPLIED TO ALL DISTURBED AREAS THAT ARE TO BE SEEDED AT THE RATE OF 1,500 POUNDS PER ACRE.

AGRICULTURAL GROUND LIMESTONE SHALL BE APPLIED TO ALL DISTURBED AREAS THAT ARE TO BE SEEDED AT THE RATE OF 4,000 POUNDS PER ACRE.

COUNTY OF JAMES CITY
FINAL SITE PLAN

Received ....

APPROVALS		DATE
Fire Dept.	RM/MAF	12/15/92
Health Dept.	VB/MAF	12/10/92
Highway Dept.	N/A	
Plan. Comm.	AB	1/22/93
Pub. Wks. Dept.	DEC/MAF	12/10/92
Zoning Adm.	BF	1/25/92
JCSA	MDV/MAF	12/8/92
Other	WB/MAF	12/8/92
Other		

PREPARED BY:
DESIGN/BUILD CONCEPTS
ENGINEERING ENVIRONMENTAL ASSESSMENTS
SURVEYING PLANNING
15025 Farm Creek Drive Woodbridge VA 22191
Metro (703) 690-1488 Local 491-2863

JAN 1993
RECEIVED
PLANNING DEPARTMENT

COMMONWEALTH OF VIRGINIA
THOMAS O. ROBBINS
NO. 14528
PROFESSIONAL ENGINEER

SP-107-92

SHEET NO. 1

PC008_ROLLING_MEADOWS_APARTMENTS - 004

FILE NO:

NOTE: NORTH PROPERTY LINE COINCIDES WITH THE CENTER LINE OF CHISEL RUN.

BUILDING TYPE "A"
8 UNITS (2 BEDROOM)
TOTAL FLOOR AREA - 8,610±
NUMBER OF FLOORS - 2
NUMBER OF BLDGS - 1

BUILDING TYPE "B"
12 UNITS (2 BEDROOM)
TOTAL FLOOR AREA - 10,950±
NUMBER OF FLOORS - 3
NUMBER OF BLDGS - 13

BUILDING TYPE "C"
12 UNITS (3 BEDROOM)
TOTAL FLOOR AREA - 12,650±
NUMBER OF FLOORS - 3
NUMBER OF BLDGS - 2

BUILDING TYPE "D"
12 UNITS (2 & 3 BEDROOM)
TOTAL FLOOR AREA - 10,950±
NUMBER OF FLOORS - 3
NUMBER OF BLDGS - 1

NOTE: ALL SLOPES GREATER THAN 3:1 TO BE SEEDED & COVERED W/ EC-2 MATTING.

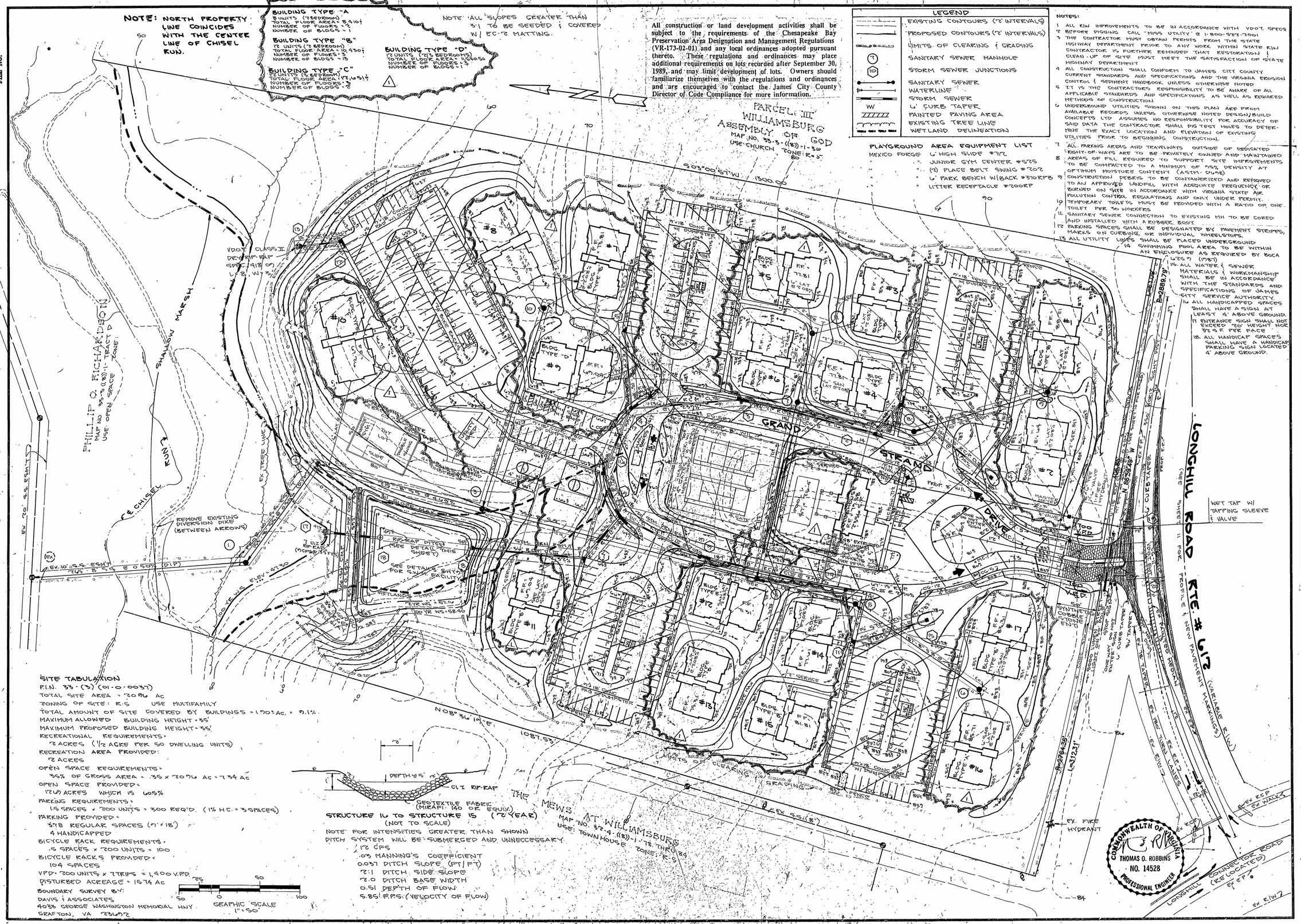
All construction or land development activities shall be subject to the requirements of the Chesapeake Bay Preservation Area Designation and Management Regulations (VR-173-02-01) and any local ordinances adopted pursuant thereto. These regulations and ordinances may place additional requirements on lots recorded after September 30, 1989, and may limit development of lots. Owners should familiarize themselves with the regulations and ordinances and are encouraged to contact the James City County Director of Code Compliance for more information.

LEGEND

	EXISTING CONTOURS (2' INTERVALS)
	PROPOSED CONTOURS (2' INTERVALS)
	LIMITS OF CLEARING & GRADING
	SANITARY SEWER MANHOLE
	STORM SEWER JUNCTIONS
	SANITARY SEWER
	WATERLINE
	STORM SEWER
W	6' CURB TAPER
	PAINTED PAVING AREA
	EXISTING TREE LINE
	WETLAND DELINEATION

PLAYGROUND AREA EQUIPMENT LIST
MEXICO FORGE 6' HIGH SLIDE #712
" " JUNIOR GYM CENTER #525
" " (2) PLACE BELT SWING #702
" " 6' PARK BENCH W/BACK #310RPB
" " LITTER RECEPTACLE #200RP

NOTES:
1. ALL E/W IMPROVEMENTS TO BE IN ACCORDANCE WITH VDOT. SPECS
2. BEFORE DIGGING CALL "MISS UTILITY" @ 1-800-552-7001
3. THE CONTRACTOR MUST OBTAIN PERMITS FROM THE STATE HIGHWAY DEPARTMENT PRIOR TO ANY WORK WITHIN STATE E/W. CONTRACTOR IS FURTHER REMINDED THAT RESTORATION & CLEAN-UP OF SITE MUST MEET THE SATISFACTION OF STATE HIGHWAY DEPARTMENT
4. ALL CONSTRUCTION SHALL CONFORM TO JAMES CITY COUNTY CURRENT STANDARDS AND SPECIFICATIONS AND THE VIRGINIA EROSION CONTROL & SEDIMENT HANDBOOK UNLESS OTHERWISE NOTED
5. IT IS THE CONTRACTORS RESPONSIBILITY TO BE AWARE OF ALL APPLICABLE STANDARDS AND SPECIFICATIONS AS WELL AS REQUIRED METHODS OF CONSTRUCTION
6. UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE FROM AVAILABLE RECORDS UNLESS OTHERWISE NOTED. DESIGN/BUILD CONCEPTS LTD ASSUMES NO RESPONSIBILITY FOR ACCURACY OF SAID DATA. THE CONTRACTOR SHALL DIG TEST HOLES TO DETERMINE THE EXACT LOCATION AND ELEVATION OF EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION.
7. ALL PARKING AREAS AND TRAVELWAYS OUTSIDE OF DEDICATED RIGHT-OF-WAYS ARE TO BE PRIVATELY OWNED AND MAINTAINED
8. AREAS OF FILL REQUIRED TO SUPPORT SITE IMPROVEMENTS TO BE COMPACTED TO A MINIMUM OF 95% DENSITY AT OPTIMUM MOISTURE CONTENT (ASTM-D698)
9. CONSTRUCTION DEBRIS TO BE CONTAINERIZED AND REMOVED TO AN APPROVED LANDFILL WITH ADEQUATE FREQUENCY OR BURIED ON SITE IN ACCORDANCE WITH VIRGINIA STATE AIR POLLUTION CONTROL REGULATIONS AND ONLY UNDER PERMIT.
10. TEMPORARY TOILETS MUST BE PROVIDED WITH A RATIO OF ONE TOILET PER 30 WORKERS
11. SANITARY SEWER CONNECTION TO EXISTING MH TO BE CORED AND INSTALLED WITH A FOSSER BOOT
12. PARKING SPACES SHALL BE DESIGNATED BY PAVEMENT STRIPES, MARKS ON CURBING, OR INDIVIDUAL WHEELSTOPS.
13. ALL UTILITY LINES SHALL BE PLACED UNDERGROUND
14. SWIMMING POOL AREA TO BE WITHIN AN ENCLOSURE AS REQUIRED BY BOCA (725.7) (1987)
15. ALL WATER & SEWER MATERIALS & WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF JAMES CITY SERVICE AUTHORITY.
16. ALL HANDICAPPED SPACES SHALL HAVE A SIGN AT LEAST 4' ABOVE GROUND.
17. ENTRANCE SIGN SHALL NOT EXCEED 32' HEIGHT NOR 32 S.F. PER FACE
18. ALL HANDICAP SPACES SHALL HAVE A HANDICAP PARKING SIGN LOCATED 4' ABOVE GROUND.



SITE TABULATION
P.I.N. 33-(3)(01-0-0037)
TOTAL SITE AREA = 20.96 AC
ZONING OF SITE: R-5 USE MULTIFAMILY
TOTAL AMOUNT OF SITE COVERED BY BUILDINGS = 1.90± AC. = 9.1%
MAXIMUM ALLOWED BUILDING HEIGHT - 35'
MAXIMUM PROPOSED BUILDING HEIGHT - 35'
RECREATIONAL REQUIREMENTS:
2 ACRES (1/2 ACRE PER 50 DWELLING UNITS)
RECREATION AREA PROVIDED:
2 ACRES
OPEN SPACE REQUIREMENTS:
35% OF GROSS AREA = .35 x 20.96 AC = 7.34 AC
OPEN SPACE PROVIDED:
12.0 ACRES WHICH IS 60.5%
PARKING REQUIREMENTS:
1.5 SPACES x 200 UNITS = 300 REQ'D. (1% H.C. = 3 SPACES)
PARKING PROVIDED:
378 REGULAR SPACES (9' x 18')
4 HANDICAPPED
BICYCLE RACK REQUIREMENTS:
.5 SPACES x 200 UNITS = 100
BICYCLE RACKS PROVIDED:
104 SPACES
VPD: 200 UNITS x 7 TRIPS = 1,400 V.P.D.
DISTURBED ACREAGE = 15.74 AC
BOUNDARY SURVEY BY:
DAVIS & ASSOCIATES
4036 GEORGE WASHINGTON MEMORIAL HWY.
GRAFTON, VA. 23692

STRUCTURE 16 TO STRUCTURE 15 (12 YEAR)
(NOT TO SCALE)
NOTE: FOR INTENSITIES GREATER THAN SHOWN DITCH SYSTEM WILL BE SUBMERGED AND UNNECCESSARY.
12 CFS
.03 MANNING'S COEFFICIENT
0.037 DITCH SLOPE (FT/FT)
2:1 DITCH SIDE SLOPE
2.0 DITCH BASE WIDTH
0.51 DEPTH OF FLOW
5.85 F.P.S. (VELOCITY OF FLOW)

GRAPHIC SCALE 1" = 50'

PREPARED BY:
DESIGN / BUILD CONCEPTS
ENGINEERING ENVIRONMENTAL ASSESSMENTS
SURVEYING PLANNING
15025 Farm Creek Drive Woodbridge VA 22191
Metro (703) 643-1438 Local 491-2863

ROLLING MEADOWS
BERKELEY DISTRICT
JAMES CITY COUNTY, VIRGINIA

SITE PLAN

REVISIONS
1 11/9/90 REV. BLDG FOOTPRINTS W/ SERVICE TO BLDG'S, POOL AREA

PROJECT NO. 5115
SCALE 1" = 50'
DATE 5-02-90
SHEET 2

PC008_ROLLING_MEADOWS_APARTMENTS - 005

NOTE: NORTH PROPERTY LINE COINCIDES WITH THE CENTER LINE OF CHISEL RUN.

BUILDING TYPE "A"
8 UNITS (1 BEDROOM)
TOTAL FLOOR AREA - 8,910±
NUMBER OF FLOORS - 3
NUMBER OF BLDGS - 10

BUILDING TYPE "B"
12 UNITS (2 BEDROOM)
TOTAL FLOOR AREA - 10,930±
NUMBER OF FLOORS - 3
NUMBER OF BLDGS - 12

BUILDING TYPE "C"
(4 UNITS (1 BEDROOM)
TOTAL FLOOR AREA - 12,651±
NUMBER OF FLOORS - 3
NUMBER OF BLDGS - 3

BUILDING TYPE "D"
12 UNITS (2 & 3 BEDROOMS)
TOTAL FLOOR AREA - 14,450±
NUMBER OF FLOORS - 3
NUMBER OF BLDGS - 1

BUILDING TYPE "C" MODIFIED
8 UNITS (1 BEDROOM)
TOTAL FLOOR AREA - 12,651±
NUMBER OF FLOORS - 3
NUMBER OF BLDGS - 1
NOTE: FOOTPRINT SAME AS BLDG TYPE "C"

NOTE: ALL SLOPES GREATER THAN 3:1 TO BE SEEDED & COVERED W/ EC-2 MATTING.

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LEGEND
- EXISTING CONTOURS (2' INTERVALS)
- PROPOSED CONTOURS (2' INTERVALS)
- LIMITS OF CLEARING & GRADING
- SANITARY SEWER MANHOLE
- STORM SEWER JUNCTIONS
- SANITARY SEWER
- WATERLINE
- STORM SEWER
- 6' CURB TAPER
- PAINTED PAVING AREA
- EXISTING TREE LINE
- WETLAND DELINEATION

NOTES:
1. ALL EW IMPROVEMENTS TO BE IN ACCORDANCE WITH VDOT SPECS
2. BEFORE DIGGING CALL "MISS UTILITY" @ 1-800-552-7001.
3. THE CONTRACTOR MUST OBTAIN PERMITS FROM THE STATE HIGHWAY DEPARTMENT PRIOR TO ANY WORK WITHIN STATE EW. CONTRACTOR IS FURTHER REMINDED THAT RESTORATION & CLEAN UP OF SITE MUST MEET THE SATISFACTION OF STATE HIGHWAY DEPARTMENT
4. ALL CONSTRUCTION SHALL CONFORM TO JAMES CITY COUNTY CURRENT STANDARDS AND SPECIFICATIONS AND THE VIRGINIA EROSION CONTROL & SEDIMENT HANDBOOK UNLESS OTHERWISE NOTED.
5. IT IS THE CONTRACTORS RESPONSIBILITY TO BE AWARE OF ALL APPLICABLE STANDARDS AND SPECIFICATIONS AS WELL AS REQUIRED METHODS OF CONSTRUCTION.
6. UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE FROM AVAILABLE RECORDS. UNLESS OTHERWISE NOTED DESIGN/BUILD CONCEPTS LTD. ASSUMES NO RESPONSIBILITY FOR ACCURACY OF SAID DATA. THE CONTRACTOR SHALL DIG TEST HOLES TO DETERMINE THE EXACT LOCATION AND ELEVATION OF EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION.
7. ALL PARKING AREAS AND TRAVELWAYS OUTSIDE OF DEDICATED RIGHT-OF-WAYS ARE TO BE PRIVATELY OWNED AND MAINTAINED.
8. AREAS OF FILL REQUIRED TO SUPPORT SITE IMPROVEMENTS TO BE COMPACTED TO A MINIMUM OF 95% DENSITY AT OPTIMUM MOISTURE CONTENT (ASTM-D698)
9. CONSTRUCTION DEBRIS TO BE CONTAINERIZED AND REMOVED TO AN APPROVED LANDFILL WITH ADEQUATE FREQUENCY OR BURNED ON SITE IN ACCORDANCE WITH VIRGINIA STATE AIR POLLUTION CONTROL REGULATIONS AND ONLY UNDER PERMIT.
10. TEMPORARY TOILETS MUST BE PROVIDED WITH A RATIO OF ONE TOILET PER 30 WORKERS.
11. SANITARY SEWER CONNECTION TO EXISTING MH TO BE CORED AND INSTALLED WITH A RUBBER BOOT.
12. PARKING SPACES SHALL BE DESIGNATED BY PAVEMENT STRIPES, MARKS ON CURBING, OR INDIVIDUAL WHEELSTOPS.
13. ALL UTILITY LINES SHALL BE PLACED UNDERGROUND.
14. SWIMMING POOL AREA TO BE WITHIN AN ENCLOSURE AS REQUIRED BY BOCA (424.9. (1987))
15. ALL WATER & SEWER MATERIALS & WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF JAMES CITY SERVICE AUTHORITY.
16. ALL HANDICAPPED SPACES SHALL HAVE A SIGN AT LEAST 4' ABOVE GROUND.
17. ENTRANCE SIGN SHALL NOT EXCEED 20' HEIGHT, NOR 75 S.F. PER FACE
18. ALL HANDICAPPED SPACES SHALL HAVE A HANDICAPPED PARKING SIGN LOCATED 4' ABOVE GROUND.
19. DETECTOR CHECK FIRE DEPT. CONNECTION (DFECD) MUST BE INSTALLED FOR BLDGS 19, 14, 15, & 17 PER JCSA STANDARDS (DRAWING # 2.0)
20. ON-SITE WATER & SEWER TO BE MAINTAINED BY PROPERTY OWNER.

PLAYGROUND AREA EQUIPMENT LIST
MEXICO FORGE 6' HIGH SLIDE #1172
" JUNIOR GYM CENTER #5255
" (2) PLACE BELT SWING #7202
" 6' PARK BENCH W/BACK #310RPB
" LITTER RECEPTACLE #100RP

PARCEL III
WILLIAMSBURG ASSEMBLY OF GOD
MAP NO. 33-3-(1(8))-1-30
USE: CHURCH ZONE: R-5

PHILLIP O. RICHARDSON
MAP NO. 33-3-(1(8))-1-TRACT D
USE: OPEN SPACE ZONE:

THE MEWS AT WILLIAMSBURG
MAP NO. 32-4-((8))-1-18 THRU 89
USE: TOWN HOUSE ZONE: R-5

GRAND STEAND DRIVE

LONGHILL ROAD RTE. #612

SHALLOW MARSH

CHISEL RUN

REMOVE EXISTING DIVERSION DIKE (BETWEEN ARROWS)

RIP-RAP DITCH (SEE DETAIL THIS SHEET)

SEE DETAILS FOR SWIMMING POOL FACILITY

VDOT CLASS II DEVRIP GAP SPEC. 418 (3) L & W = 3'

WET TAP W/ TAPPING SLEEVE & VALVE

EX. FIRE HYDRANT

E.S.H.1 BATHY MONUMENT NEAR WATER TOWER ELEV. = 95.05

K.K. SPIKE IN C.I.P. POLE #10 ELEV. = 84.17

SITE TABULATION
P.I.N. 33-(3)(01-0-0037)
TOTAL SITE AREA = 30.96 AC
ZONING OF SITE: R-5 USE: MULTIFAMILY
TOTAL AMOUNT OF SITE COVERED BY BUILDINGS = 1.70± AC. = 9.1%
MAXIMUM ALLOWED BUILDING HEIGHT - 35'
MAXIMUM PROPOSED BUILDING HEIGHT - 35'
RECREATIONAL REQUIREMENTS:
2.2 ACRES (1/2 ACRE PER 50 DWELLING UNITS)
RECREATION AREA PROVIDED:
2.2 ACRES
OPEN SPACE REQUIREMENTS:
35% OF GROSS AREA = .35 x 30.96 AC = 7.34 AC
OPEN SPACE PROVIDED:
12.00 ACRES WHICH IS 60.5%
PARKING REQUIREMENTS:
1.5 SPACES x 200 UNITS = 300 REQ'D. (1% H.C. = 3 SPACES)
PARKING PROVIDED:
383 REGULAR SPACES (9' x 18')
4 HANDICAPPED

V.P.D. - 200 UNITS x 7 TRIPS = 1,400 V.P.D.
DISTURBED ACREAGE = 15.74 AC
BOUNDARY SURVEY BY:
DAVIS & ASSOCIATES
4038 GEORGE WASHINGTON MEMORIAL HWY.
GRAFTON, VA 23692

GRAPHIC SCALE 1" = 50'

STRUCTURE 10 TO STRUCTURE 15 (2 YEAR)
(NOT TO SCALE)
GEOTEXTILE FABRIC (MIRAFI 140 OR EQUIV)
CL I RIP-RAP
DEPTH 0.5' 2'
NOTE: FOR INTENSITIES GREATER THAN SHOWN DITCH SYSTEM WILL BE SUBMERGED AND UNNECCESSARY
12 CFS
.03 MANNING'S COEFFICIENT
0.037 DITCH SLOPE (FT/FT)
2:1 DITCH SIDE SLOPE
2.0 DITCH BASE WIDTH
0.51 DEPTH OF FLOW
5.85 F.P.S. (VELOCITY OF FLOW)

COUNTY OF JAMES CITY
FINAL SITE PLAN
Received
APPROVALS DATE
Fire Dept. 9/14/95
Health Dept. N/A
Highway Dept. N/A
Elec. Comp. 9/14/95
Pub. Wks. Dept. 9/14/95
Zoning Adm. 9/14/95
Jcsa 9/15/95
Other
Zone

RECEIVED AUG 1995

COMMONWEALTH OF VIRGINIA
THOMAS O. ROBBINS
NO. 14528
PROFESSIONAL ENGINEER

PREPARED BY:
DESIGN / BUILD CONCEPTS
ENGINEERING
SURVEYING
ENVIRONMENTAL ASSESSMENTS
15025 Farm Creek Drive
Woodbridge VA 22191
Metro (703) 643-1488
Local 491-2863

ROLLING MEADOWS
BERKELEY DISTRICT
JAMES CITY COUNTY, VIRGINIA

SITE PLAN

REVISIONS
8/29/95 W/L REVISION
9/15/95 REVISED ON BLDG. 3 (FIRE) ON BLDG. 3 (FIRE) (FDC REMOVED) (9/15/95)
10/20/95 REVISED TO FOCUS TREES & ADDED BOX BLDG. AND
REV. SIDW FOR HANDICAPP ACCESS
11/9/95 REV. BLDG. FOOTPRINTS W/L SERVICE TO BLDGS, POOL AREA
10/15/95 REMOVED BIKE RACKS

PROJECT NO. 5115
SCALE 1" = 50'
DATE 5-02-90
SHEET 2

SP-67-95

FILE NO:

PC008_ROLLING_MEADOWS_APARTMENTS - 006

FILE NO:

BUILDING TYPE "A"
8 UNITS
TOTAL FLOOR AREA: 6,755
NUMBER OF FLOORS: 3
NUMBER OF BLDGS: 4

BUILDING TYPE "B"
12 UNITS
TOTAL FLOOR AREA: 12,151
NUMBER OF FLOORS: 3
NUMBER OF BLDGS: 8

BUILDING TYPE "C"
12 UNITS
TOTAL FLOOR AREA: 10,150
NUMBER OF FLOORS: 3
NUMBER OF BLDGS: 8

NOTE: ALL SLOPES GREATER THAN 3:1 TO BE SEEDED & COVERED W/ EC 2 MATTING

NOTE: SEE SHEET 6 FOR LANDSCAPING ADJACENT TO BLDGS
SEE SHEET 9 FOR LANDSCAPING ADJACENT TO DUMPSTERS

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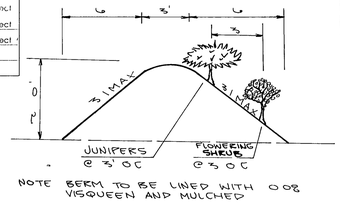
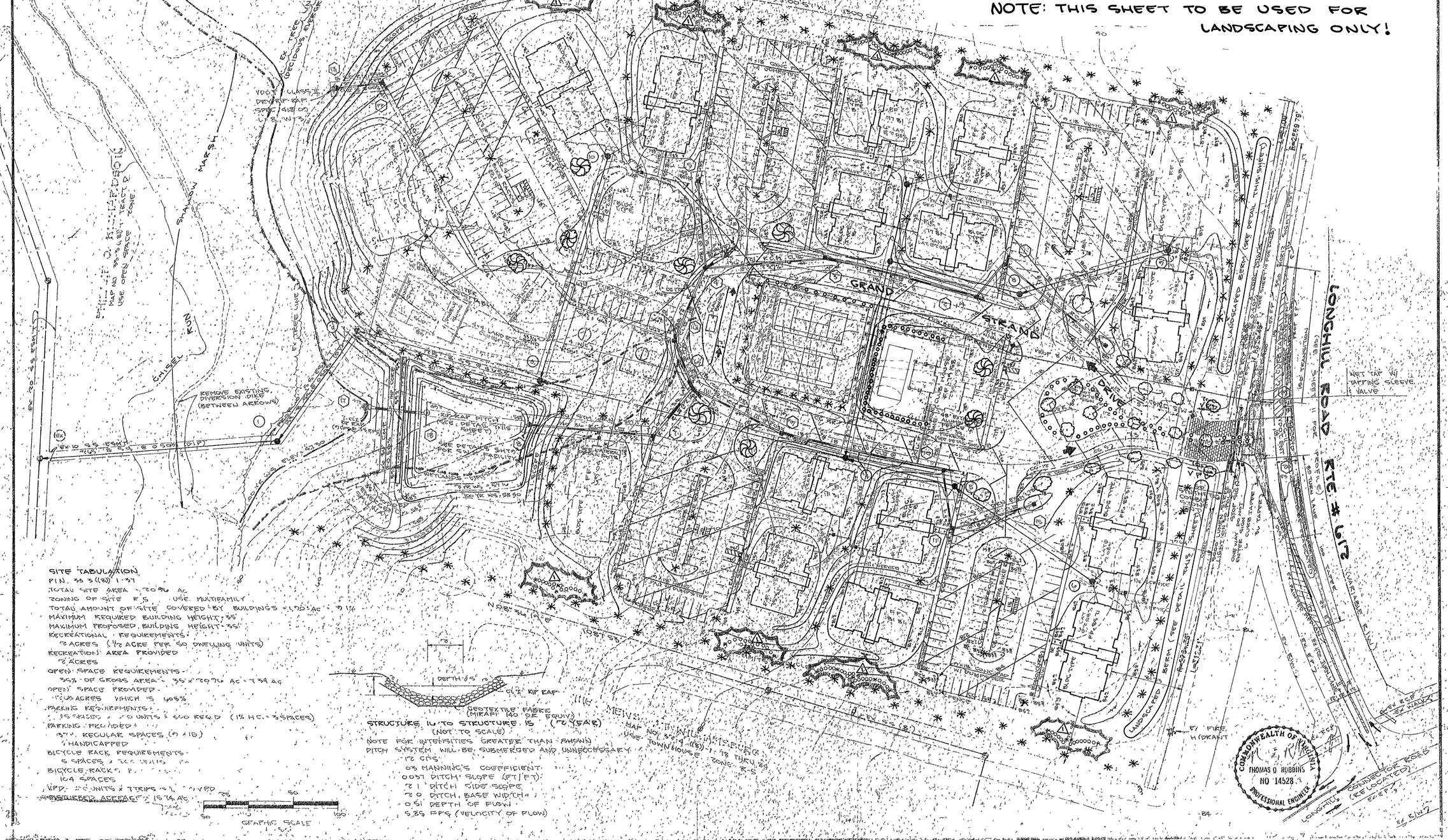
Symbol	Common Name	Quantity	Size	Height	Spacing	Remarks	Landscape Area
*	Southern Pine	98	—	6	As shown	B & B	Throughout Project
	White Oak	18		8	As shown	B & B	Entrance
	White Birch	9		8	As shown	B & B	Throughout Project
*	Junipers	766	1 to 5 Gal.	18	As shown	Container	Throughout Project
o	Flowering Shrubs	975	1 to 5 Gal.	22	As shown	Container	Throughout Project
o	Chinese Photinia	189	1 to 5 Gal.	24	6 (Stagger)	Container	Sideyard
*	Torris Juniper	44	1 to 5 Gal.	18	6 (Stagger)	Container	Sideyard

LANDSCAPED BERM DETAIL



NOTE BERM TO BE LINED WITH 0.08 VISQUEEN AND MULCHED

NOTE: THIS SHEET TO BE USED FOR LANDSCAPING ONLY!



SITE TABULATION
P.I.N. 3 3 3((8)) 1-37
TOTAL SITE AREA = 20.96 AC
ZONING OF SITE R-5 USE: MULTIFAMILY
TOTAL AMOUNT OF SITE COVERED BY BUILDINGS = 1.90 AC = 9.1%
MAXIMUM REQUIRED BUILDING HEIGHT: 35'
MAXIMUM PROPOSED BUILDING HEIGHT: 35'
RECREATIONAL REQUIREMENTS:
2 ACRES (1/2 ACRE PER 50 DWELLING UNITS)
RECREATION AREA PROVIDED
2 ACRES
OPEN SPACE REQUIREMENTS:
35% OF GROSS AREA = 35% x 20.96 AC = 7.34 AC
OPEN SPACE PROVIDED:
12.00 ACRES WHICH IS 60.5%
PARKING REQUIREMENTS:
2.5 SPACES / 2 BR UNITS = 300 REQ'D (1% H.C. = 3 SPACES)
PARKING PROVIDED:
377 REGULAR SPACES (7 x 18)
7 HANDICAPPED
BICYCLE RACK REQUIREMENTS:
5 SPACES / 100 UNITS
BICYCLE RACKS PROVIDED
104 SPACES
AVD: 300 UNITS x 7 TRIPS = 2100 VPD
UNDISTURBED AREA: 15.74 AC

STRUCTURE 16 TO STRUCTURE 15 (12" VSAP)
(NOT TO SCALE)
NOTE FOR INTENSITIES GREATER THAN SHOWN PITCH SYSTEM WILL BE SUBMERGED AND UNNECESSARY
12 CFS
0.3 MANNING'S COEFFICIENT
0.037 DITCH SLOPE (FT/FT)
2:1 DITCH SIDE SLOPE
2.0 DITCH BASE WIDTH
0.51 DEPTH OF FLOW
5.35 FPS (VELOCITY OF FLOW)

GRAPHIC SCALE

PREPARED BY
DESIGN / BUILD CONCEPTS
ENGINEERING SURVEYING
ARCHITECTURE PLANNING
2877-P S. Business Center Woodbridge, VA 22192
Metro (703) 352-1653 Local 880-7555

ROLLING MEADOWS
BERKELEY DISTRICT
JAMES CITY COUNTY, VIRGINIA

LANDSCAPE PLAN

REVISIONS
△ 11/92 REV LANDSCAPING IN SIDE YARD AREA

PROJECT NO. 5773
SCALE 1" = 50'
DATE 5-02-90
SHEET 3

COMMONWEALTH OF VIRGINIA
THOMAS Q. ROBBINS
NO. 14528
PROFESSIONAL ENGINEER

BUILDING TYPE "A"
TOTAL FLOOR AREA: 8,110 +
NUMBER OF FLOORS: 2
NUMBER OF UNITS: 50

BUILDING TYPE "B"
TOTAL FLOOR AREA: 15,154
NUMBER OF FLOORS: 2
NUMBER OF UNITS: 7

BUILDING TYPE "C"
TOTAL FLOOR AREA: 11,451
NUMBER OF FLOORS: 2
NUMBER OF UNITS: 9

TEMPORARY SEDIMENT TRAP

STRUCTURE	DRAINAGE AREA (ACRES)	STORAGE (C.Y.) REQUIRED	STORAGE (C.Y.) PROVIDED	WIRE MESH LENGTH (FEET)	WIRE MESH HEIGHT (FEET)	BERM HEIGHT (FEET)
STR #1	1.22	81	83 (TRAP)	132	2.0	3.5

ALL SLOPES GREATER THAN 3:1 TO BE SEEDED, MULCHED AND WATERED

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SOIL SYMBOL	SOIL NAME	ERODIBILITY (K)	ERODIBILITY (T)	SLOPE	TEXTURE	SERIES TYPE
11C	CRAVEN-UCHEE COMPLEX	.17 (.15 FOR UCHEE)	4	6-10	FINE SANDY LOAM	FINE, KAOLINITIC, THERMIC TYPIC HAPLUDULTS
15E	EMPORIA COMPLEX	.28 (.43 FOR UCHEE)	2	6-14	FINE SANDY LOAM	FINE, MIXED, THERMIC TYPIC HAPLUDULTS
17	JOHNSTON COMPLEX	.24 (.15 FOR UCHEE)	2	0-4	SILT LOAM	FINE, MIXED, MESIC TYPIC HAPLAQUOLLS
18B	KENSVILLE FINE SANDY LOAM	.32 (.43 FOR UCHEE)	2	2-6	FINE SANDY LOAM	FINE, MIXED, MESIC TYPIC HAPLUDULTS
19B	KENSVILLE-EMPORIA FINE SANDY LOAM	.32 (.43 FOR UCHEE)	2	2-6	FINE SANDY LOAM	FINE, MIXED, MESIC TYPIC HAPLUDULTS

NOTES:

1) No slopes shall exceed 3:1. Slopes to be stabilized by seeding and mulching as soon as practicable following grading.

2) Seeding shall be in conformance with the season specific seeding specifications shown in the plans.

3) Contractor shall provide a construction schedule to James City County Inspector upon request. Contractor may provide suggestions for improvement of the Erosion/Sediment Control Plan to James City County Inspector.

4) Contractor shall maintain adequate on site inventories of E/S C material (silt fence, geotextile fabric, strawbales, surge stone, etc.) before, during and after construction.

THIS SHEET TO BE USED FOR SILTATION & EROSION CONTROL AND DRAINAGE DIVIDES ONLY!!!!!

E/S LEGEND

KEY	DISCRIPTION	SYMBOL
SF	SILT FENCE	
IP	INLET PROTECTION	
DD	DIVERSION DIKE	
	CLEARING LIMITS	
	DRAINAGE DIVIDES	
SB	SILT BASIN	
CE	CONSTRUCTION ENTRANCE	
GF	GRAVEL FILTER	
TSD	TEMPORARY SLOPE DRAIN	

TO STR. #5 0.73 Ac.
TO STR. #3 1.17 Ac.
TO STR. #1 1.57 Ac.
TO STR. #4 1.00 Ac.
TO STR. #6 0.16 Ac.
TO STR. #6 0.33 Ac.
TO STR. #2 0.89 Ac.
TO STR. #10 0.80 Ac.
TO STR. #7 0.31 Ac.
TO STR. #9 1.42 Ac.
TO STR. #11 0.74 Ac.
TO CURB CUT 0.73 Ac.
TO CURB CUT #2 0.10
TO CURB CUT #3 0.4 Ac.
TO CURB CUT #4 0.73 Ac.
TO CURB CUT #5 0.4 Ac.
TO CURB CUT #6 0.73 Ac.
11C
15E
17
18B
19B
GRAND STRAND
LONGHILL ROAD RTE #612
REMOVE EXISTING DIVERSION DIKE (BETWEEN A&C)
NEW TAP W/ TAPPING SLEEVE & VALVE
EX. FIRE HYDRANT
SHALLOW MARSH
GAILSEL RUN
WILLIAMSBURG
MARSH III
ASSESSOR'S OFFICE MAP NO. 50-3-(16)-1-51
USE: CHURCH ZONE: R-5
FRIEND OF GOD CHURCH
SITE TABULATION
P.I.N. 50-3-(16)-1-41
TOTAL SITE AREA: 7.09 AC
ZONING OF SITE: R-5 / USE: MULTIFAMILY
TOTAL AMOUNT OF SITE COVERED BY BUILDINGS: 1.09 AC
MAXIMUM REQUIRED BUILDING HEIGHT: 45'
MAXIMUM PROPOSED BUILDING HEIGHT: 42'
RECREATIONAL FEE REQUIRED:
7.0 ACRES (1/4 ACRE PER DWELLING UNIT)
RECREATION AREA PROVIDED:
1.5 ACRES
OPEN SPACE REQUIREMENTS:
35% OF GROSS AREA = 35 x 7.09 AC = 2.48 AC
OPEN SPACE PROVIDED:
2.12 ACRES WHICH IS 30%
PARKING REQUIREMENTS:
1.5 SPACES / 1 UNIT = 50 REQ'D (75 TO 75 SPACES)
PARKING PROVIDED:
75 SPACES REGULAR SPACES (1/1.16)
4 HANDICAPPED
BICYCLE RACK REQUIREMENTS:
1 SPACES / 10 UNITS
BICYCLE RACKS PROVIDED:
10 SPACES
VIRGINIA DOT x TABLE 5 x 1.5 = 2.0
DISTURBED AREA = 1.5 AC
STRUCTURE 1 TO STRUCTURE 15 (10 YEAR)
NOTE: PIPE INVERTS OPERATE THAT SHOWN
PITCH SYSTEM WILL BE PURGED AND UNNECESSARY
TO RUN
Q = MANNING'S COEFFICIENT
COST PITCH SLOPE (FT / FT)
TO INTER SIDE SLOPE
TO PITCH BASE WIDTH
TO DEPTH OF FLOW
FIND ERS (VELOCITY OF FLOW)
GRAPHIC SCALE
NOTE: FOR NOTES & DETAILS SEE SHEETS 8 & 9.
INDICATES SOIL TYPE CHANGE
RECORD DRAWING INFORMATION OBTAINED AND PREPARED BY AES CONSULTING ENGINEERS 1/26/98
COMMONWEALTH OF VIRGINIA
THOMAS O. ROBBINS
NO. 14528
PROFESSIONAL ENGINEER

PREPARED BY:
DESIGN / BUILD CONCEPTS
ENGINEERING
SURVEYING
ENVIRONMENTAL ASSESSMENTS
LAND PLANNING
15025 Farm Creek Drive
Metro (703) 643-1488
Woodbridge VA 22191
Local 491-2863

ROLLING MEADOWS
BERKELEY DISTRICT
JAMES CITY COUNTY, VIRGINIA

RECORD DRAWING

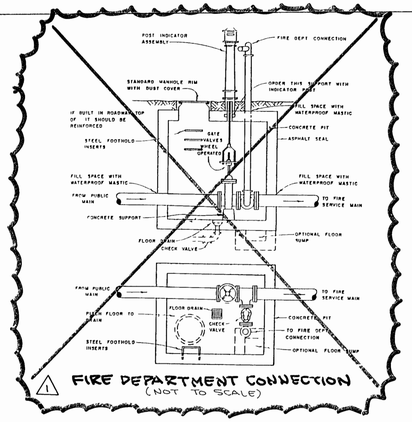
DRAINAGE DIVIDES & SILTATION EROSION CONTROL PLAN

REVISIONS
REV 8/97 FOR RESUBMISSION

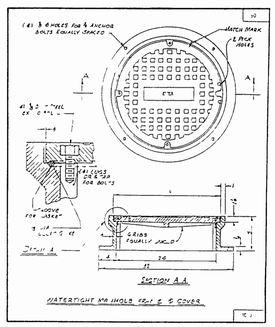
PROJECT NO. 515
SCALE 1" = 50'
DATE 5-02-90
SHEET 4

FILE NO:

PC008_ROLLING_MEADOWS_APARTMENTS - 008



FIRE DEPARTMENT CONNECTION
(NOT TO SCALE)



STORM WATER INLET COMPUTATIONS

Form LD 204
Rev 6-85

RTE _____ PROJ _____ DATE _____

INLET NUMBER	TYPE	STATION	DRAINAGE AREA (AC)	C	Ca	A	I (FROM CURVE) (IN/HR)	Q (CFS)	Q CARRY-OVER (CFS)	Q CAPTURE (CFS)	S CROSS (FT/FT)	S LONG (FT/FT)	S EQUIV (FT/FT)	T (SPREAD)	W (FT)	W/T	Sw (FT/FT)	Sw/So	Eo=Y/(T)	*	Sw=Sw/(T)^2	Sw+Sx (FT/FT)	Sw+Sx+Sw (FT/FT)	Q CROSS (CFS)	Q LONG (CFS)	Q EQUIV (CFS)	E(EQUIV)	Q BYPASS (CFS)	Q CARRY-OVER (CFS)	SPREAD ≤ SAG	SHEET OF ____ REMARKS
1	DS	10+70	0.30	0.80	0.24	0.24	5.35	1.28	-	1.28	0.0178	0.0178		8.0	1.5	.19	.0833	.40	.55	.31	.174	.192	.1721	.52	.80	.2496	0.24	-	TO #7	
2	DS	11+10	1.52	0.65	.72	.72		5.29	0.74	4.55	0.0371			10.0	-	.15			.46			.10	.0346	.57	.80	.4832	.72	-	TO #6	
3	DS	11+15	0.59	0.80	.72	.72		4.09	-	4.09	.0273			9.0	-	.17			.49			.11	.0318	.62	.80	5.35	0.76	-	TO #5	
4	DS	12+55	1.1	0.65	.90	.90		4.31	0.76	5	.0275			10.0		.15			.46			.10	.0282	.64	.83	4.29	0.81	-	TO #4	
5	DS	11+80	1.01	0.70	.70	.70		4.02	0.97	4.99	.0275			10.0		.15			.46			.10	.0271	.63	.83	4.16	0.79	-	TO #16	
6	DS	11+20	0.80	0.80	.64	.64		3.08	0.73	3.81	.0383	T	T	11.0	T	.16	T	T	.43	T	T	.10	.0358	.05	1.0	3.81	-	-		
11	DS	8+81		0.74	0.70	.518	.518		3.78	-	3.78	0.0364	0.0364	6.2				SAG	CONDITION					1.16	.27	.46	5.9	-	8.35	
6	DS	12+70	1.18	0.80	0.85	0.80	6.66		3.79	1.21	5.00	0.0200	0.0200	7.0				SAG	CONDITION					1.16	.27	1	5.9	-	12.98	
7	DS	13+10		-	1.77	0.70	.89	.89		5.12	-	5.12	0.0333	0.0333	7.0				SAG	CONDITION					1.16	.30		6.5	-	7.01	
9	DS	13+15		-	0.23	0.70	.14	.14		1.54	-	1.54	0.0.0	0.0200	-				SAG	CONDITION					1.16	.28		6.1	-	0.09	
10	DS	13+16		-	0.7	0.70	.49	.49		1.84	-	1.84	0.0.0	0.0200	6.0				SAG	CONDITION					-	-	-	-	-	1.95	
12	DS	12+28		-	0.80	0.80	.72	.72		5.09	-	5.09	0.0.0	0.0200	6.5				SAG	CONDITION					1.16	.29	T	6.5	-	9.67	

STORM SEWER DESIGN
L & D 229 COMPUTATIONS

ROUTE _____ PROJ _____
COUNTY _____ DISTRICT _____
DESCRIPTION _____

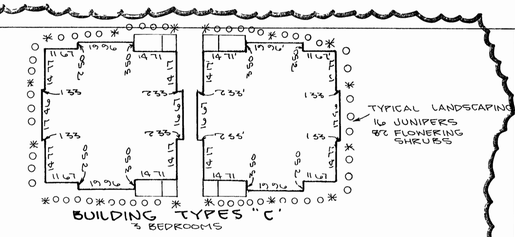
SHEET ____ OF ____

FROM POINT	TO POINT	AREA DRAIN A ACRES	RUN OFF COEF C	CA INCREMENT	CA ACCUMULATED	INLET TIME MINUTES	RAINFALL I IN/HR	RUNOFF Q CFS	INVERT ELEVATIONS INLET END	INVERT ELEVATIONS LOWER END	LENGTH FT	SLOPE FT/FT	DIA IN	CAPACITY CFS	VEL FPS	FLOW TIME SEC	REMARK
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
15	11	1.01	0.65	0.66	-	5	6.8	4.46	73.50	71.75	95	0.0184	15	9.0	7.1		
11	10	0.74	0.70	0.64	1.32		6.8	8.96	71.50	69.50	67	.0290	15	11.2	10.0		
10	9	0.80	0.80	0.64	1.96		6.8	13.33	69.25	68.75	181	.0399	18	21.9	12.5		
9	6	1.42	0.65	0.92	2.88		6.8	19.58	68.50	67.25	111	.0.09	21	25.0	11.0		
14	1	0.82	0.65	0.53	-		6.8	3.60	75.60	72.75	145	.0190	15	7.1	6.7		
1	2	1.21	0.70	0.85	1.42		6.8	9.65	72.50	69.75	71	.0393	15	15.8	1		
2	3	0.87	0.80	0.71	2.13		6.8	14.50	69.50	65.75	191	.0246	21	27.5	9		
3	4	1.17	0.65	0.76	2.89		6.8	19.65	65.50	62.25	136	.0229	21	26.0	11.0		
5	4	0.65	0.70	.441	-		6.8	3.00	64.00	62.25	97	.0180	15	8.9	6.4		
4	16	1.00	0.70	0.70	4.65		6.8	21.90	62.00	60.25	86	.0179	21	44.0	11.7		
16	6	0.80	0.80	0.64	4.63		6.8	31.16	60.00	59.75	59	.0127	21	31.0	10.0		
6	7	0.83	0.80	0.66	8.21		6.8	55.85	57.60	57.50	70	.0214	30	66.0	14.0		
7	8	0.11	0.70	.077	8.71		6.8	59.23	57.25	54.00	140	.0232	36	100.0	15.3		
12	13	0.87	0.80	.712	-		6.8	3.38	56.50	54.00	50	.0500	15	15.0	7.0		
18	17	SEE	SW	M	-		-	7.00	47.73	47.30	64	.0020	36	30.0	2.60		

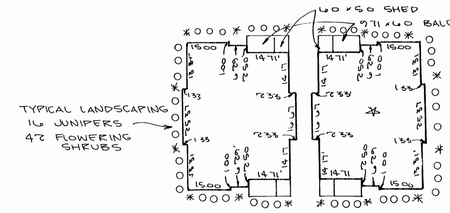
BUILDING CONSTRUCTION TYPES
BUILDINGS B, C, D = 5B
(3 STORY)
BUILDING A = 5B
(2 STORY)

NOTE DIMENSIONS TO BE VERIFIED BY SURVEYOR WITH LATEST REVISED APPROVED ARCHITECTURAL PLANS PRIOR TO STAKEOUT

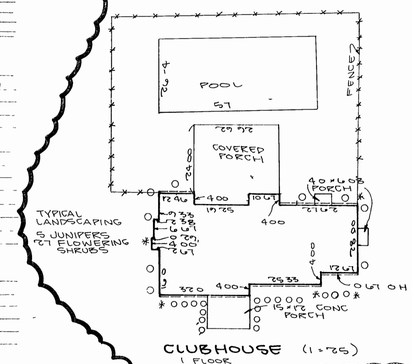
1



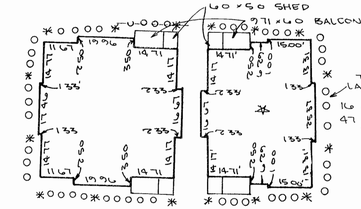
BUILDING TYPES "C'
3 BEDROOMS



BUILDING TYPE "B' & A
2 BEDROOMS



CLUBHOUSE (1"=25')
1 FLOOR



BUILDING TYPE D'
3/2 BEDROOMS

PREPARED BY
DESIGN / BUILD CONCEPTS
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ENVIRONMENTAL ASSESSMENTS PLANNING
15025 Farm Creek Drive Woodbridge VA 22191
Metro [703] 643-1488 Local 491-2863

SITE PLAN
ROLLING MEADOWS
BERKELEY DISTRICT
JAMES CITY COUNTY, VIRGINIA

WATERLINE PROFILES BLDG TYPES AND STORM SEWER CALCULATIONS

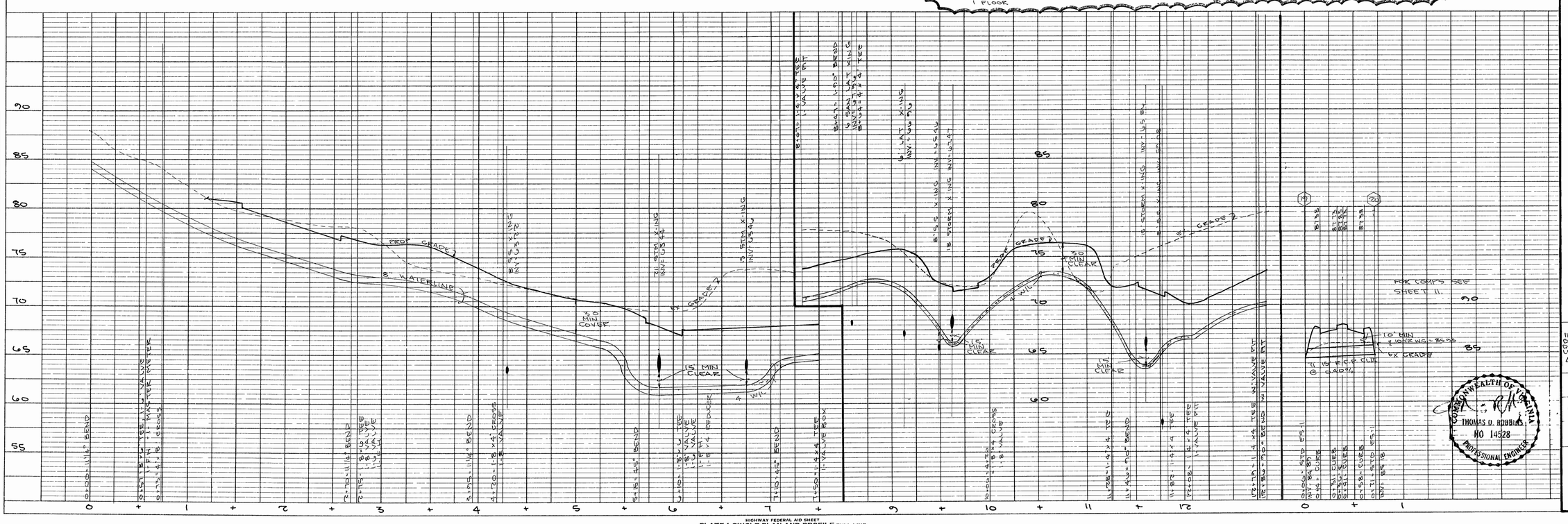
REVISIONS
11/27-REV BLDG DIMENSIONS, DELETE SPRINKLER SYSTEM
1

PROJECT NO 5115
SCALE HORIZ 1"=50' VERT 1"=5'
DATE 3/90
SHEET NO 6

COMMONWEALTH OF VIRGINIA
THOMAS D. HOBBS
NO 14528
PROFESSIONAL ENGINEER

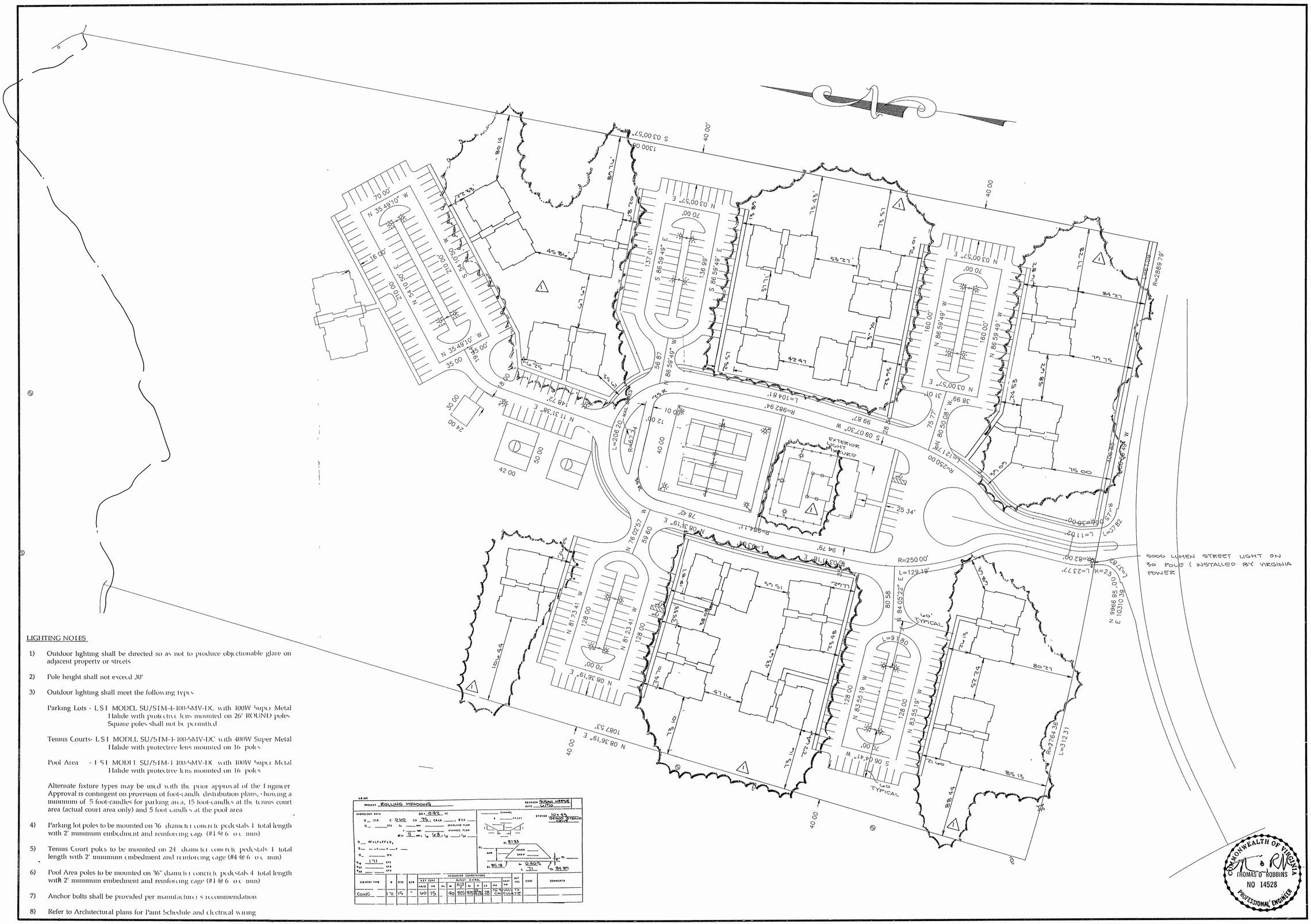
PLAN
SURVEYED
PLOTTED
NOTE BOOK ALIGNMENT CHECKED
BY
NO BY OF WAY CHECKED
BY
DATE

PROFILE
SURVEYED
PLOTTED
NOTE BOOK GRADES CHECKED
B. M. x NOTED
No STRUCTURE NOTATIONS CHECKED
BY
DATE



HIGHWAY FEDERAL AID SHEET
PLATE 1-SINGLE PLAN AND PROFILE FULL LINE
9"BELOWNE
PRINTED IN U S A

PC008_ROLLING_MEADOWS_APARTMENTS - 009



LIGHTING NOTES

1) Outdoor lighting shall be directed so as not to produce objectionable glare on adjacent property or streets

2) Pole height shall not exceed 30'

3) Outdoor lighting shall meet the following types

Parking Lots - LSI MODEL SU/STM-4-100-SMV-DC with 100W Super Metal Halide with protective lens mounted on 26' ROUND poles Square poles shall not be permitted

Tennis Courts- LSI MODEL SU/STM-4-400-SMV-DC with 400W Super Metal Halide with protective lens mounted on 16' poles

Pool Area - LSI MODEL SU/STM-4-100-SMV-DC with 100W Super Metal Halide with protective lens mounted on 16' poles

Alternate fixture types may be used with the prior approval of the Engineer Approval is contingent on provision of foot-candle distribution plans, showing a minimum of .5 foot-candles for parking area, 15 foot-candles at the tennis court area (actual court area only) and 5 foot candles at the pool area

4) Parking lot poles to be mounted on 36" diameter concrete pedestals 4' total length with 2' minimum embedment and reinforcing cage (#14@6" o.c. min)

5) Tennis Court poles to be mounted on 24" diameter concrete pedestals 4' total length with 2' minimum embedment and reinforcing cage (#4 @ 6" o.c. min)

6) Pool Area poles to be mounted on 36" diameter concrete pedestals 4' total length with 2' minimum embedment and reinforcing cage (#14@6" o.c. min)

7) Anchor bolts shall be provided per manufacturer's recommendation

8) Refer to Architectural plans for Paint Schedule and electrical wiring

LD 254

PROJECT ROLLING MEADOWS — DESIGNER SUSAN WEESE — DATE 6/7/90

HYDROLOGIC DATA — DA= 0.92 AC — Q2= ___ CFS — Q10= 0.60 — Q25= 1.25 — Q100= ___ — CA= ___ — CA10= ___ — CA25= ___ — CA100= ___ — OVERLAND FLOW — CHANNEL FLOW — Q= ___ — V= ___ — L= ___ — Q25= ___ — Q100= ___ — Q25 = 1.71 CFS — Q25 = ___ CFS — Q25 = ___ CFS — Q25 = ___ CFS

CHANNEL — B= ___ FT/FT — STATION 104+33 — SEWER STRAND — EL 83.25 — COVER — DEPTH — EL 85.18 — S= 0.50% — L= 71' — EL 84.80

HEADWATER COMPUTATIONS

CULVERT TYPE	n	SIZE	H/D	K.E. CONT HW/D	HW	Hc	Q	OUTLET CONTROL H/D+Z+Y	HW	Ls	HW	CONT HW	OUT VEL	COST	COMMENTS
CONC	.71	15	-	60	15	40	85.5	85.5	85.5	25	10.0	UNCONTROLLED	10		

PREPARED BY
DESIGN / BUILD CONCEPTS
ENGINEERING SURVEYING
ENVIRONMENTAL ASSESSMENTS PLANNING
15025 Farm Creek Drive Woodbridge VA 22191
Metro (703) 643-1488 Local 491-2863

ROLLING MEADOWS
BERKELEY DISTRICT
JAMES CITY COUNTY, VIRGINIA

HORIZONTAL CONTROL & LIGHTING PLAN

REVISIONS
1 10-4-90 REVISED BLDG FOOTPRINTS POOL AREA

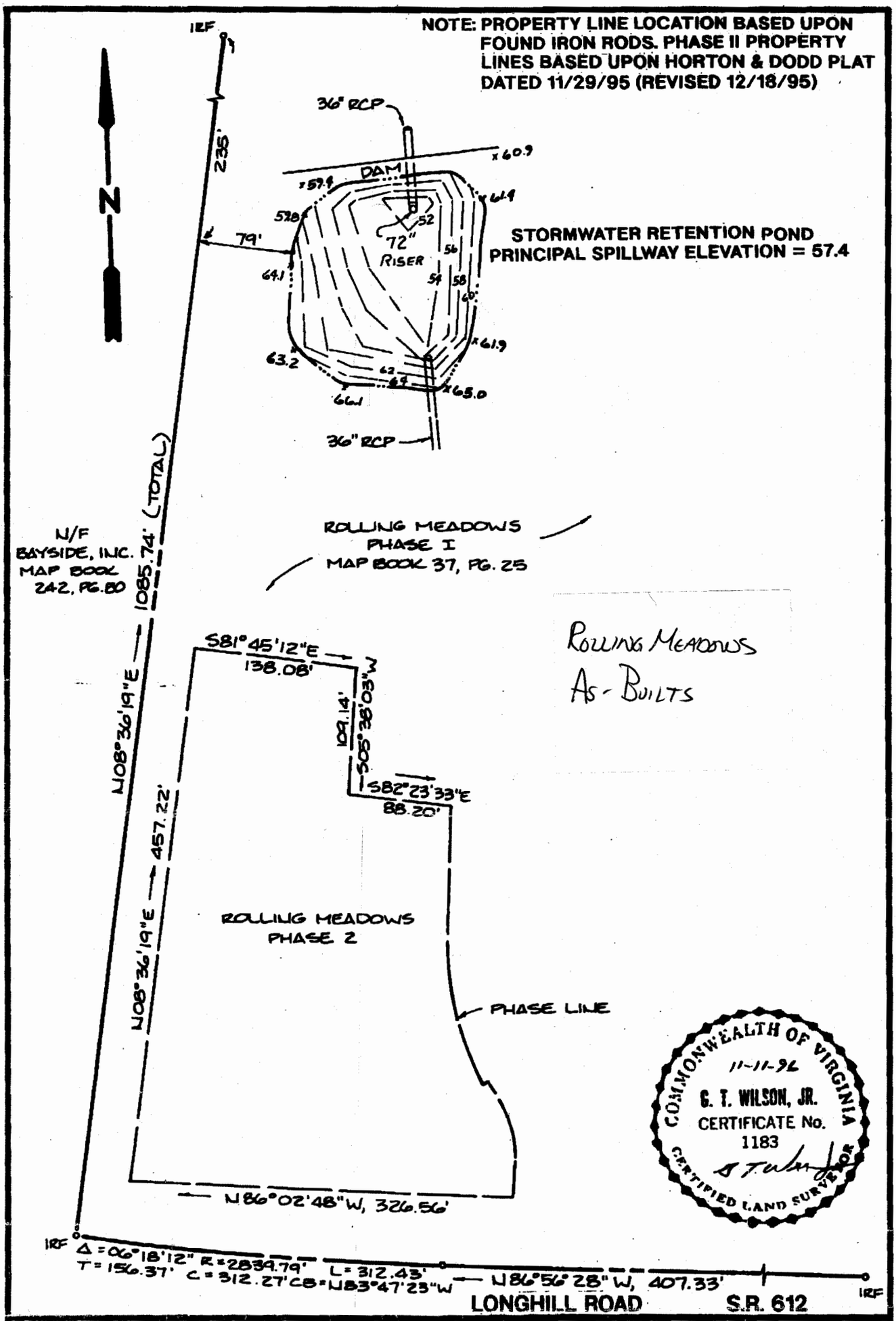
PROJECT NO
5115

SCALE
1" = 50'

DATE
June 1, 1990

SHEET
10

COMMONWEALTH OF VIRGINIA
THOMAS O. ROBBINS
NO 14528
PROFESSIONAL ENGINEER



AES Consulting Engineers
Engineers, Surveyors, Planners

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

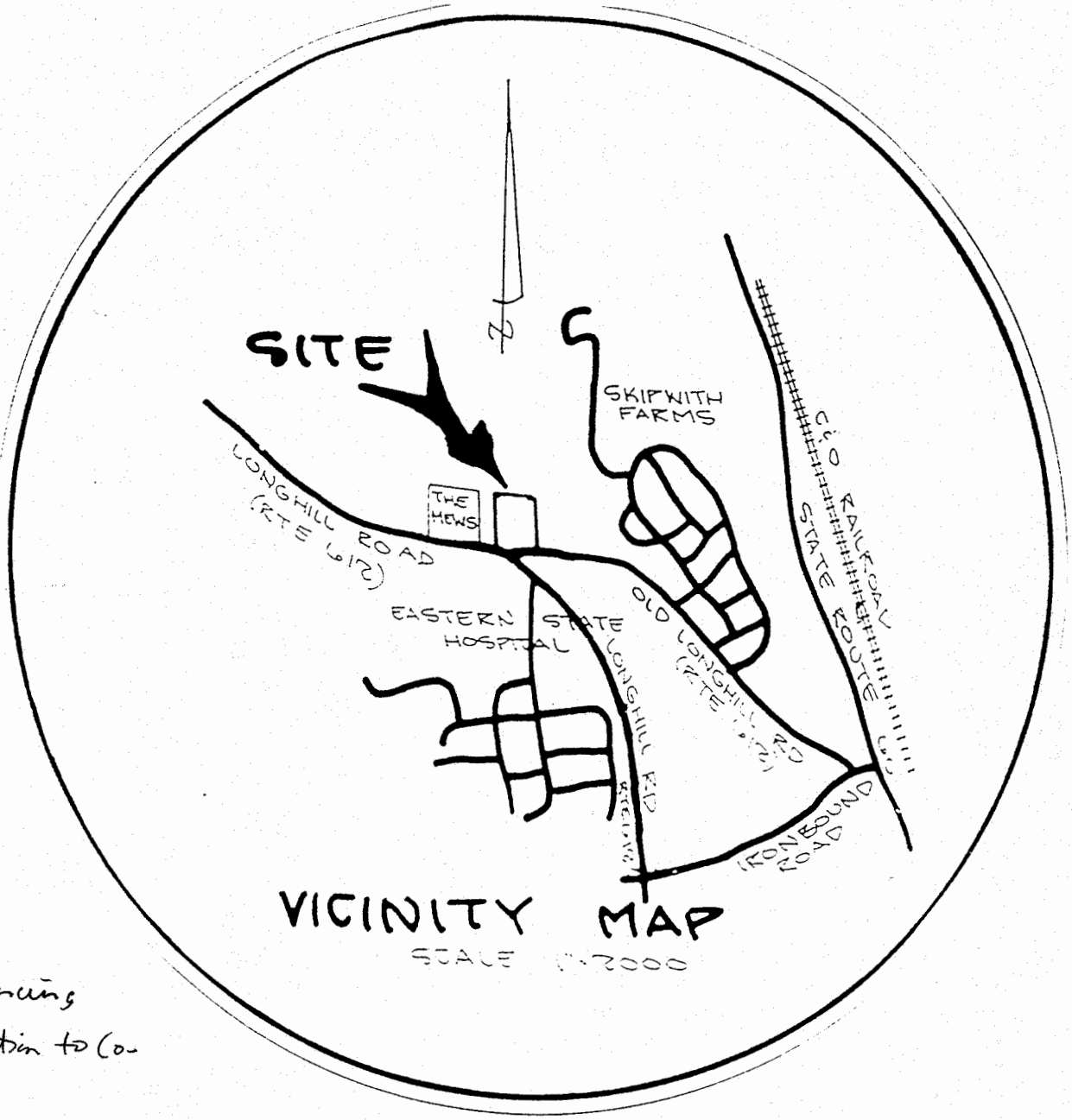
PLAT SHOWING
LOCATION OF STORMWATER RETENTION POND
BEING ROLLING MEADOWS PHASE I

POWHATAN DISTRICT | JAMES CITY COUNTY | VIRGINIA

Scale: 1"=100'	Ref: NOTED	Date: 11/11/96	Job No.: 8159

REVISED 12/17/96 ADDED CONTOURS

ROLLING MEADOWS



1. Safety fencing
2. Restoration to Co-agmt

AMENDMENT TO THE SITE PLAN

Revision #5 July 13, 1995

Sheet #2: Footprints for buildings #16, #17 changed from type "A" & "B" to type "C" (building #16 2 story only). Unit density not changed.
Sidewalks added and grades changed to buildings #13-#17 to facilitate handicap access.
Piping for sprinklers for buildings #13-17 added.

Sheet #10: New offset dimensions shown for buildings #16, #17.

These changes are noted by red circled areas of the plan.

ROLLING MEADOWS

STORM WATER MANAGEMENT

ROLLING MEADOWS

STORM WATER MANAGEMENT

June 11, 1990
Rev. September 24, 1990

by

Design/Build Concepts, Ltd
12656-C Lake Ridge Drive
Woodbridge, VA 22192

for

H & M Investments
12656-C Lake Ridge Drive
Woodbridge, VA 22192

COMMONWEALTH OF VIRGINIA
THOMAS O. ROBBINS
NO. 14528
PROFESSIONAL ENGINEER

OVERVIEW:

Rolling Meadows is a 200 unit apartment complex located on 20+ acres on the north side of Longhill Road. The property drains south to north, with Chisel Run as the northern boundary. Storm water management has been provided to reduce post-development runoff (two year storm event) for the site to pre-development levels.

PROCEDURE:

Post development drainage from the disturbed areas (approx. 16 acres) will discharge at two locations. The disturbed areas are therefore split into two drainage areas (SA 1, SA 2). RCN's were developed for both areas, showing existing and proposed uses (see sheets 3-6). Tc's were developed for each drainage area for existing and proposed conditions (see sheets 7-12). Note that due to the use of lengthy grassed swales at the upper ends of the drainage areas, and the flattening of grades, drastically lower Tc's for proposed conditions were avoided. A TR-55 was then run on both existing and proposed conditions (see sheets 13-22). A facility was then designed to reduce discharge to the existing levels (see sheets 24-31). Since only one facility is proposed (in SA 1) overcompensation was provided for the increased flow from SA 2 (see Summary below). A 100 year storm event was then run through the facility to verify capacity of the spillways (see sheets 32-38). An additional run of the 100 year storm event was performed assuming the primary orifice 100% clogged (see sheets 39-45). Specific structure routing information can be found on sheets 46-57.

WATER QUALITY (B.M.P.'S):

Water quality concerns are addressed through a variety of systems. Apartment area runoff is discharged into shallow, grassed swales. The vast majority of the open space on the property is being left in a natural state or being vigorously landscaped with trees and shrubs. 90% of the parking lot area is discharged into a SWM facility which is designed to hold the first flush from a storm event (1/2" depth over the impervious area) and retain it over a 24 hr discharge period. Flow from the facility and all other areas of the site then flows through a shallow marsh prior to entering Chisel Run.

Storage Required: .5"/12"/FT x 43560 SF/Ac x 7.15 Ac = 12,977 CF
Storage Provided: 13,000 CF

Drawdown area sizing: H_{ave} = (53.65-49.5)/2 = 2.08 ft
Q_{req} = 13,000/24/60/60 = .15 CFS

$$A = \frac{Q}{.6 \times \sqrt{2gh}}$$

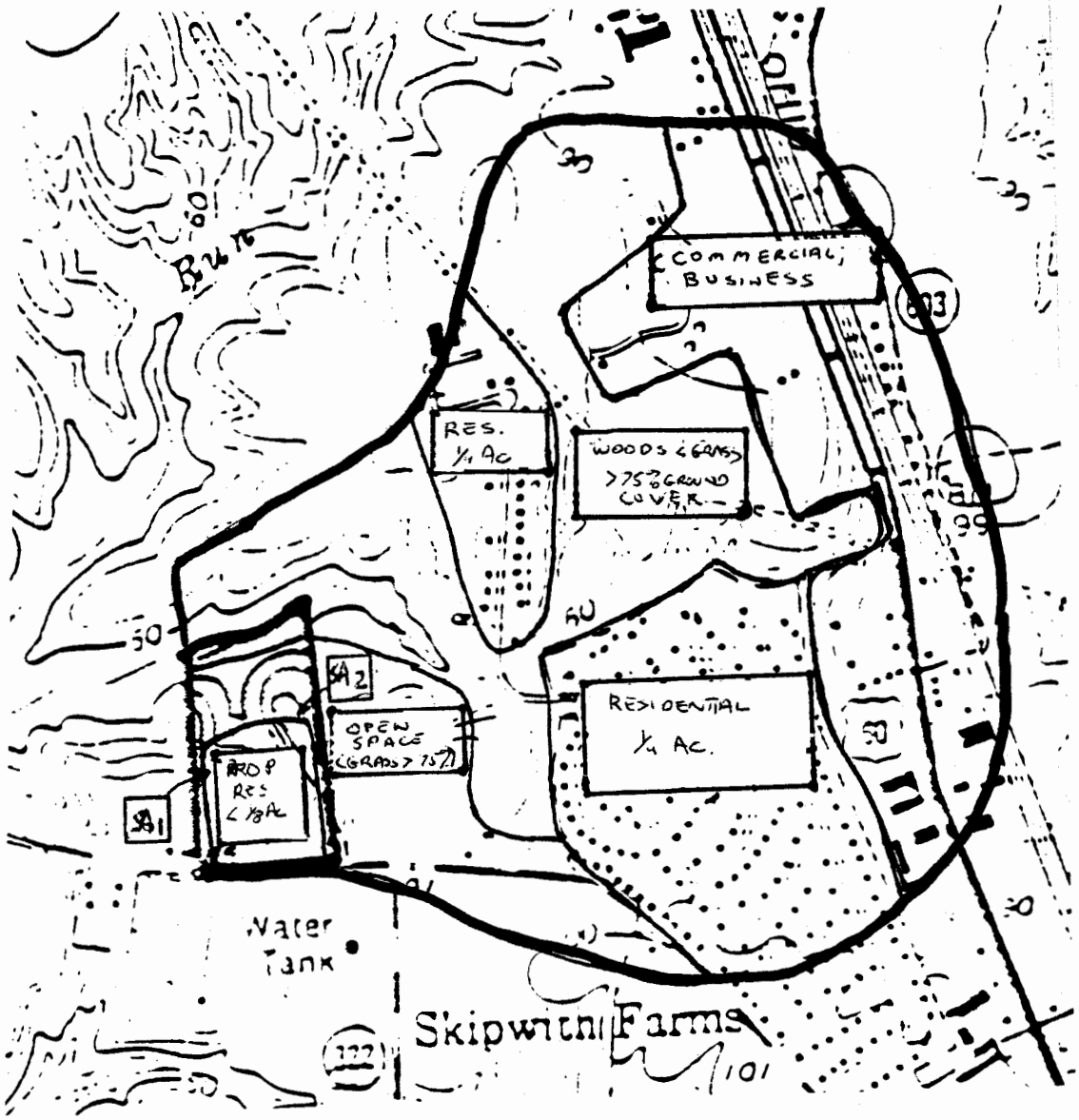
$$A = \frac{.15}{.6 \times \sqrt{64.4 \times 2.08}} = .0217 \quad SF$$

Use (16) 1/2" Holes

The BMP Worksheet can be found on Page 23.

SUMMARY:

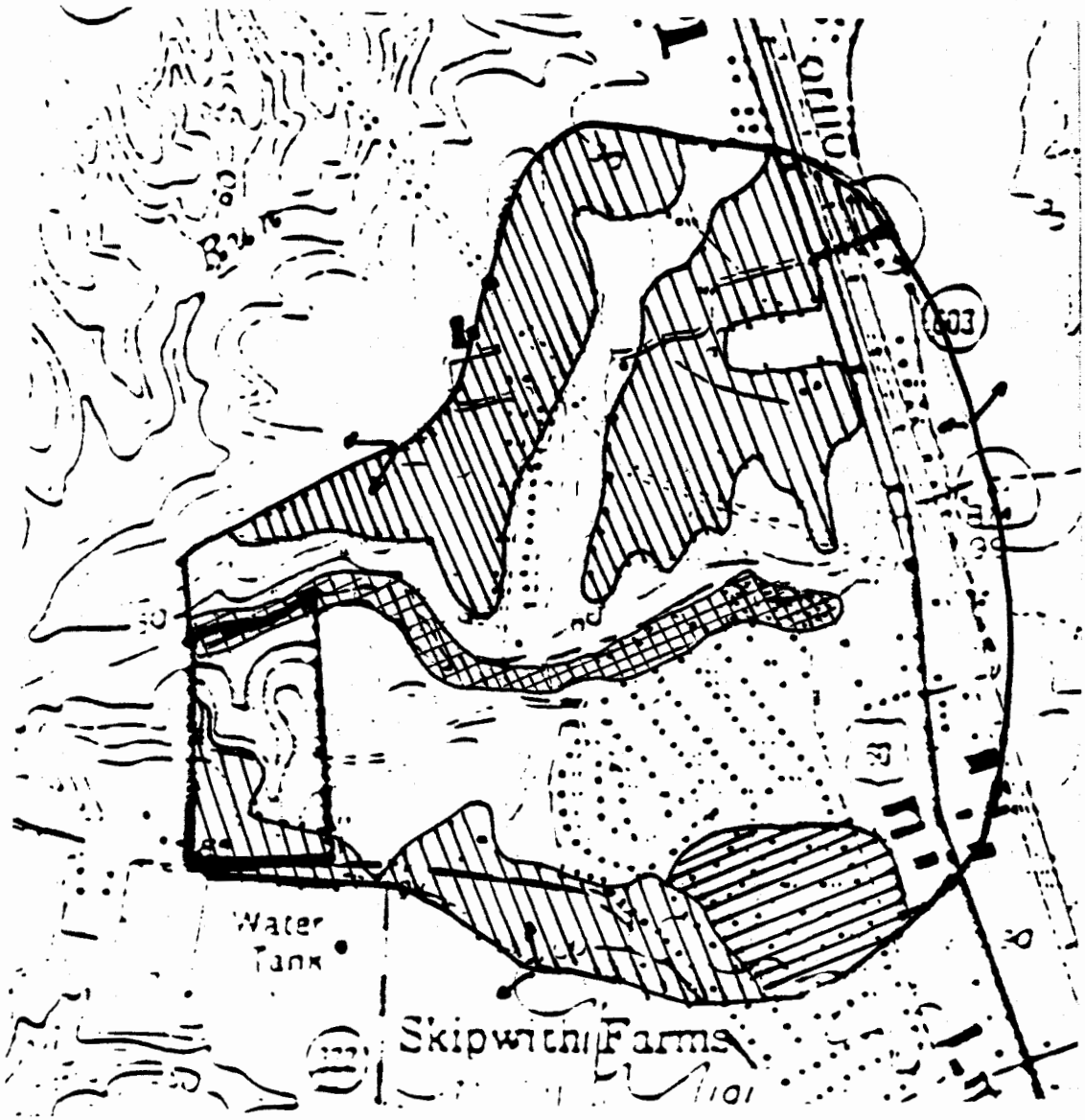
Pre-development runoff:	13 CFS
Post-development runoff:	35 CFS
Post-development uncontrolled runoff (SA 2):	4 CFS
Maximum release from Facility (13 CFS - 4 CFS):	9 CFS
Actual release from Facility (see sheet 40)	9 CFS



USE GROUPS IN DRAINAGE SHED

(1" = 1000')

(NOTE: Acreage of SA 1 & SA 2 taken from site plan)



SOIL USE IN DRAINAGE SHED

(1" = 1000')

SOIL TYPE "A"

SOIL TYPE "C"

SOIL TYPE "B"

SOIL TYPE "D"

R U N O F F C U R V E N U M B E

```
*****************************************************************
*
*  PROJECT: ROLLING MEADOWS
*
*  SUBAREA: SA 1                          BY: TR    DATE: 6-4-90
*
*  LAND STATUS: EXISTING              CHECKED:       DATE:
*
*****************************************************************
```

LAND USE	SOIL GROUP	CURVE NUMBER	DRAINAGE AREA (ACRES)
OPEN SPACE grass cover >75%	B	61	9.15
OPEN SPACE grass cover >75%	C	74	5.25

TOTAL DRAINAGE AREA = 14.4
.0225

WEIGHTED CURVE NUMBER = 65.73959 .

R U N O F F C U R V E N U M B E

```
*********************************************************************
*
*  PROJECT: ROLLING MEADOWS
*
*  SUBAREA: SA 2                          BY: TR    DATE: 6-4-90
*
*  LAND STATUS: EXISTING              CHECKED:       DATE:
*
*********************************************************************
```

LAND USE	SOIL GROUP	CURVE NUMBER	DRAINAGE AREA (ACRES)
OPEN SPACE grass cover >75%	C	74	1.6

TOTAL DRAINAGE AREA = 1.6
.0025

WEIGHTED CURVE NUMBER = 74 .

R U N O F F C U R V E N U M B E

```
*****************************************************************
*
*  PROJECT: ROLLING MEADOWS
*
*  SUBAREA: SA 1                          BY: TR    DATE: 6-1-90
*
*  LAND STATUS: PROPOSED              CHECKED:       DATE:
*
*****************************************************************
```

LAND USE	SOIL GROUP	CURVE NUMBER	DRAINAGE AREA (ACRES)
URBAN RES. <= 1/8 acre lots	B	85	9.15
URBAN RES. <= 1/8 acre lots	C	90	5.25

TOTAL DRAINAGE AREA = 14.4
.0225

WEIGHTED CURVE NUMBER = 86.82292 .

R U N O F F C U R V E N U M B E

```
*****************************************************************
*
*  PROJECT: ROLLING MEADOWS
*
*  SUBAREA: SA 2                          BY: TR    DATE: 6-1-90
*
*  LAND STATUS: PROPOSED              CHECKED:       DATE:
*
*****************************************************************
```

LAND USE	SOIL GROUP	CURVE NUMBER	DRAINAGE AREA (ACRES)
URBAN RES. <= 1/8 acre lots	C	90	1.6

TOTAL DRAINAGE AREA = 1.6
.0025

WEIGHTED CURVE NUMBER = 90 .

Quick TR-55 Ver.5.10 S/N:1240510036
Executed: 16:31:22 06-04-1990 D:\POND2\5774\RLNGEX.TCT

ROLLING MEADOWS
EXISTING CONDITIONS

Tc COMPUTATIONS FOR: SA 1

SHEET FLOW (Applicable to Tc only)

Segment ID		FIELD	
Surface description		GRASS	
Manning's roughness coeff., n		0.2400	
Flow length, L (total < or = 300)	ft	300.0	
Two-yr 24-hr rainfall, P2	in	4.000	
Land slope, s	ft/ft	0.0400	
$T = \frac{.007 * (n*L)^{0.8}}{P2^{0.5} * s^{0.4}}$	hrs	0.39	= 0.39

SHALLOW CONCENTRATED FLOW

Segment ID		SWALE	
Surface (paved or unpaved)?		Unpaved	
Flow length, L	ft	600.0	
Land slope, s	ft/ft	0.0270	
$Avg.V = Csf * (s)^{0.5}$	ft/s	2.6512	
where: Unpaved Csf = 16.1345			
Paved Csf = 20.3282			
T = L / (3600*V)	hrs	0.06	= 0.06

CHANNEL FLOW

Segment ID			
Cross Sectional Flow Area, a	sq.ft	0.00	
Wetted perimeter, Pw	ft	0.00	
Hydraulic radius, r = a/Pw	ft	0.000	
Channel slope, s	ft/ft	0.0000	
Manning's roughness coeff., n		0.0000	
$V = \frac{1.49 * r^{2/3} * s^{1/2}}{n}$	ft/s	0.0000	
Flow length, L	ft	0	
T = L / (3600*V)	hrs	0.00	= 0.00

::

TOTAL TIME (hrs) 0.45

```
Quick TR-55 Ver.5.10   S/N:1240510036
Executed: 16:31:22   06-04-1990    D:\POND2\5774\RLNGEX.TCT

                              ROLLING MEADOWS
                            EXISTING CONDITIONS


                       Tc COMPUTATIONS FOR: SA 2

 SHEET FLOW (Applicable to Tc only)
     Segment ID                                     FIELD
     Surface description                       GRASS
     Manning's roughness coeff., n                   0.2400
     Flow length, L (total < or = 300)      ft      300.0
     Two-yr 24-hr rainfall, P2              in      4.000
     Land slope, s                          ft/ft   0.0400
                                0.8
              .007 * (n*L)
     T =    --------------                  hrs       0.39             =  0.39
                 0.5     0.4
              P2    *   s

 SHALLOW CONCENTRATED FLOW
     Segment ID                                     SWALE
     Surface (paved or unpaved)?                    Unpaved
     Flow length, L                         ft      600.0
     Watercourse slope, s                   ft/ft   0.0370

                                  0.5
     Avg.V =   Csf *  (s)                   ft/s    3.1035
     where:    Unpaved Csf = 16.1345
               Paved   Csf = 20.3282

     T = L / (3600*V)                       hrs       0.05             =  0.05


 CHANNEL FLOW
     Segment ID                                     CREEK
     Cross Sectional Flow Area, a           sq.ft    69.90
     Wetted perimeter, Pw                     ft     75.20
     Hydraulic radius, r = a/Pw               ft     0.930
     Channel slope, s                       ft/ft   0.0025
     Manning's roughness coeff., n                  0.0500

                           2/3    1/2
              1.49   *   r    *   s
     V =    --------------------                  ft/s    1.4191
                         n

     Flow length, L                           ft       500

     T = L / (3600*V)                        hrs      0.10             =  0.10

   :::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
                                                TOTAL TIME (hrs)      0.54
```

Quick TR-55 Ver.5.10 S/N:1240510036
Executed: 16:31:22 06-04-1990 D:\POND2\5774\RLNGEX.TCT

SUMMARY SHEET FOR Tc or Tt COMPUTATIONS
(Solved for Time using TR-55 Methods)

ROLLING MEADOWS
EXISTING CONDITIONS

Subarea descr.	Tc or Tt	Time (hrs)
SA 1	Tc	0.45
SA 2	Tc	0.54

Quick TR-55 Ver.5.10 S/N:1240510036
Executed: 16:34:57 06-04-1990 D:\POND2\5774\RLNGPR.TCT

ROLLING MEADOWS
PROPOSED CONDITION

Tc COMPUTATIONS FOR: SA 1

SHEET FLOW (Applicable to Tc only)

Segment ID		LANDSCP	
Surface description		GRASS	
Manning's roughness coeff., n		0.2400	
Flow length, L (total < or = 300)	ft	180.0	seems long
Two-yr 24-hr rainfall, P2	in	4.000	
Land slope, s	ft/ft	0.0220	

too long

$$T = \frac{.007 * (n*L)^{0.8}}{P2^{0.5} * s^{0.4}}$$ hrs 0.33 = 0.33

SHALLOW CONCENTRATED FLOW

Segment ID		SWALE	STM SWR		
Surface (paved or unpaved)?		Unpaved	Paved		
Flow length, L	ft	360.0	880.0		
Watercourse slope, s	ft/ft	0.0110	0.0260		
Avg.V = Csf * (s)$^{0.5}$	ft/s	1.6922	3.2778		
where: Unpaved Csf = 16.1345					
Paved Csf = 20.3282					
T = L / (3600*V)	hrs	0.06	+ 0.07	=	0.13

CHANNEL FLOW

Segment ID		
Cross Sectional Flow Area, a	sq.ft	0.00
Wetted perimeter, Pw	ft	0.00
Hydraulic radius, r = a/Pw	ft	0.000
Channel slope, s	ft/ft	0.0000
Manning's roughness coeff., n		0.0000

$$V = \frac{1.49 * r^{2/3} * s^{1/2}}{n}$$ ft/s 0.0000

Flow length, L ft 0

T = L / (3600*V) hrs 0.00 = 0.00

::

TOTAL TIME (hrs) 0.46

```
Quick TR-55 Ver.5.10   S/N:1240510036
Executed: 16:34:57   06-04-1990    D:\POND2\5774\RLNGPR.TCT

                                  ROLLING MEADOWS
                                 PROPOSED CONDITION


                           Tc COMPUTATIONS FOR: SA 2

 SHEET FLOW (Applicable to Tc only)
     Segment ID                                     LNDSCP
     Surface description                       GRASS
     Manning's roughness coeff., n                    0.2400  - seems long
     Flow length, L (total < or = 300)      ft        150.0
     Two-yr 24-hr rainfall, P2              in        4.000
     Land slope, s                          ft/ft     0.0170
                             0.8
           .007 * (n*L)
     T =   --------------                   hrs        0.31              =  0.31
                0.5    0.4
              P2    *   s

 SHALLOW CONCENTRATED FLOW
     Segment ID                                     SWALE
     Surface (paved or unpaved)?                    Unpaved
     Flow length, L                         ft        600.0  - long
     Watercourse slope, s                   ft/ft     0.0370

                               0.5
     Avg.V =  Csf *  (s)                    ft/s      3.1035
     where:   Unpaved Csf = 16.1345
              Paved   Csf = 20.3282

     T = L / (3600*V)                       hrs        0.05              =  0.05


 CHANNEL FLOW
     Segment ID                                     CREEK
     Cross Sectional Flow Area, a           sq.ft     69.90
     Wetted perimeter, Pw                   ft        75.20
     Hydraulic radius, r = a/Pw             ft        0.930
     Channel slope, s                       ft/ft     0.0025
     Manning's roughness coeff., n                    0.0500

                          2/3     1/2
           1.49   *   r    *   s
     V =   ----------------------           ft/s      1.4191
                      n

     Flow length, L                         ft          500

     T = L / (3600*V)                       hrs        0.10              =  0.10

    ::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
                                                  TOTAL TIME (hrs)       0.47
```

Quick TR-55 Ver.5.10 S/N:1240510036
Executed: 16:34:57 06-04-1990 D:\POND2\5774\RLNGPR.TCT

SUMMARY SHEET FOR Tc or Tt COMPUTATIONS
(Solved for Time using TR-55 Methods)

ROLLING MEADOWS
PROPOSED CONDITION

Subarea descr.	Tc or Tt	Time (hrs)
SA 1	Tc	0.46 too long
SA 2	Tc	0.47

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 06-04-1990 16:38:13
Watershed file: --> D:\POND2\5774\RLNGEX02.WSD
Hydrograph file: --> D:\POND2\5774\RLNGEX02.HYD

ROLLING MEADOWS
EXISTING CONDITIONS
2 YEAR STORM EVENT

>>>> Input Parameters Used to Compute Hydrograph <<<<

Subarea Description	AREA (acres)	CN	Tc (hrs)	* Tt (hrs)	Precip. (in)	Runoff (in)	Ia/p input	Ia/p used
SA 1	13.90	65.4	0.50 .45	0.00	4.00	1.05	.26	.30
SA 2	2.10	74.0	0.50 .54	0.00 3.5	4.00	1.60	.18	.10

* Travel time from subarea outfall to composite watershed outfall point.
Total area = 16.00 acres or 0.02500 sq.mi
Peak discharge = 13 cfs

WARNING: Drainage areas of two or more subareas differ by a factor of 5 or greater.

>>>> Computer Modifications of Input Parameters <<<<<

Subarea Description	Input Values Tc (hr)	Input Values * Tt (hr)	Rounded Values Tc (hr)	Rounded Values * Tt (hr)	Ia/p Interpolated (Yes/No)	Ia/p Messages
SA 1	0.45	0.00	0.50	0.00	No	--
SA 2	0.54	0.00	0.50	0.00	No	--

* Travel time from subarea outfall to composite watershed outfall point.

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 06-04-1990 16:38:13
Watershed file: --> D:\POND2\5774\RLNGEX02.WSD
Hydrograph file: --> D:\POND2\5774\RLNGEX02.HYD

ROLLING MEADOWS
EXISTING CONDITIONS
2 YEAR STORM EVENT

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
SA 1	10	12.4
SA 2	3	12.4
Composite Watershed	13	12.4

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 06-04-1990 16:38:13
Watershed file: --> D:\POND2\5774\RLNGEX02.WSD
Hydrograph file: --> D:\POND2\5774\RLNGEX02.HYD

ROLLING MEADOWS
EXISTING CONDITIONS
2 YEAR STORM EVENT

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
SA 1	0	0	0	0	0	1	4	7	10
SA 2	0	0	0	0	0	1	2	2	3
Total (cfs)	0	0	0	0	0	2	6	9	13

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
SA 1	10	9	7	5	4	3	2	2	2
SA 2	3	2	2	1	1	1	0	0	0
Total (cfs)	13	11	9	6	5	4	2	2	2

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
SA 1	1	1	1	1	1	1	1	1	1
SA 2	0	0	0	0	0	0	0	0	0
Total (cfs)	1	1	1	1	1	1	1	1	1

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
SA 1	1	1	1	0	0
SA 2	0	0	0	0	0
Total (cfs)	1	1	1	0	0

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 06-04-1990 16:38:13
Watershed file: --> D:\POND2\5774\RLNGEX02.WSD
Hydrograph file: --> D:\POND2\5774\RLNGEX02.HYD

ROLLING MEADOWS
EXISTING CONDITIONS
2 YEAR STORM EVENT

Time (hrs)	Flow (cfs)	Time (hrs)	Flow (cfs)
11.0	0	14.8	1
11.1	0	14.9	1
11.2	0	15.0	1
11.3	0	15.1	1
11.4	0	15.2	1
11.5	0	15.3	1
11.6	0	15.4	1
11.7	0	15.5	1
11.8	0	15.6	1
11.9	0	15.7	1
12.0	0	15.8	1
12.1	2	15.9	1
12.2	6	16.0	1
12.3	9	16.1	1
12.4	13	16.2	1
12.5	13	16.3	1
12.6	11	16.4	1
12.7	9	16.5	1
12.8	6	16.6	1
12.9	5	16.7	1
13.0	5	16.8	1
13.1	4	16.9	1
13.2	4	17.0	1
13.3	3	17.1	1
13.4	2	17.2	1
13.5	2	17.3	1
13.6	2	17.4	1
13.7	2	17.5	1
13.8	2	17.6	1
13.9	1	17.7	1
14.0	1	17.8	1
14.1	1	17.9	1
14.2	1	18.0	1
14.3	1	18.1	1
14.4	1	18.2	1
14.5	1	18.3	1
14.6	1	18.4	1
14.7	1	18.5	1

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 06-04-1990 16:38:13
Watershed file: --> D:\POND2\5774\RLNGEX02.WSD
Hydrograph file: --> D:\POND2\5774\RLNGEX02.HYD

ROLLING MEADOWS
EXISTING CONDITIONS
2 YEAR STORM EVENT

Time (hrs)	Flow (cfs)	Time (hrs)	Flow (cfs)
18.6	1	22.4	0
18.7	1	22.5	0
18.8	1	22.6	0
18.9	1	22.7	0
19.0	1	22.8	0
19.1	1	22.9	0
19.2	1	23.0	0
19.3	1	23.1	0
19.4	1	23.2	0
19.5	1	23.3	0
19.6	1	23.4	0
19.7	1	23.5	0
19.8	1	23.6	0
19.9	1	23.7	0
20.0	1	23.8	0
20.1	1	23.9	0
20.2	1	24.0	0
20.3	1	24.1	0
20.4	1	24.2	0
20.5	1	24.3	0
20.6	1	24.4	0
20.7	1	24.5	0
20.8	1	24.6	0
20.9	1	24.7	0
21.0	1	24.8	0
21.1	0	24.9	0
21.2	0	25.0	0
21.3	0	25.1	0
21.4	0	25.2	0
21.5	0	25.3	0
21.6	0	25.4	0
21.7	0	25.5	0
21.8	0	25.6	0
21.9	0	25.7	0
22.0	0	25.8	0
22.1	0	25.9	0
22.2	0		
22.3	0		

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 06-04-1990 16:40:32
Watershed file: --> D:\POND2\5774\RLNGPR02.WSD
Hydrograph file: --> D:\POND2\5774\RLNGPR02.HYD

ROLLING MEADOWS
PROPOSED CONDITIONS
2 YEAR STORM EVENT

>>>> Input Parameters Used to Compute Hydrograph <<<<

Subarea Description	AREA (acres)	CN	Tc (hrs)	* Tt (hrs)	Precip. (in)	Runoff (in)	Ia/p input	Ia/p used
SA 1	14.40	86.8	0.50	0.00	4.00	2.62	.08	.10
SA 2	1.60	90.0	0.50	0.00	4.00	2.92	.06	.10

* Travel time from subarea outfall to composite watershed outfall point.
Total area = 16.00 acres or 0.02500 sq.mi
Peak discharge = 35 cfs

WARNING: Drainage areas of two or more subareas differ by a factor of 5 or greater.

>>>> Computer Modifications of Input Parameters <<<<<

Subarea Description	Input Values Tc (hr)	Input Values * Tt (hr)	Rounded Values Tc (hr)	Rounded Values * Tt (hr)	Ia/p Interpolated (Yes/No)	Ia/p Messages
SA 1	0.46	0.00	0.50	0.00	No	Computed Ia/p < .1
SA 2	0.47	0.00	0.50	0.00	No	Computed Ia/p < .1

* Travel time from subarea outfall to composite watershed outfall point.

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 06-04-1990 16:40:32
Watershed file: --> D:\POND2\5774\RLNGPR02.WSD
Hydrograph file: --> D:\POND2\5774\RLNGPR02.HYD

ROLLING MEADOWS
PROPOSED CONDITIONS
2 YEAR STORM EVENT

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
SA 1	31	12.4
SA 2	4	12.4
Composite Watershed	35	12.4

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 06-04-1990 16:40:32
Watershed file: --> D:\POND2\5774\RLNGPR02.WSD
Hydrograph file: --> D:\POND2\5774\RLNGPR02.HYD

ROLLING MEADOWS
PROPOSED CONDITIONS
2 YEAR STORM EVENT

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
SA 1	1	1	2	3	6	10	18	28	31
SA 2	0	0	0	0	1	1	2	3	4
Total (cfs)	1	1	2	3	7	11	20	31	35

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
SA 1	30	24	18	13	8	6	4	4	3
SA 2	4	3	2	2	1	1	1	0	0
Total (cfs)	34	27	20	15	9	7	5	4	3

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
SA 1	3	2	2	2	2	2	1	1	1
SA 2	0	0	0	0	0	0	0	0	0
Total (cfs)	3	2	2	2	2	2	1	1	1

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
SA 1	1	1	1	1	0
SA 2	0	0	0	0	0
Total (cfs)	1	1	1	1	0

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 06-04-1990 16:40:32
Watershed file: --> D:\POND2\5774\RLNGPRO2.WSD
Hydrograph file: --> D:\POND2\5774\RLNGPRO2.HYD

ROLLING MEADOWS
PROPOSED CONDITIONS
2 YEAR STORM EVENT

Time (hrs)	Flow (cfs)	Time (hrs)	Flow (cfs)
11.0	1	14.8	2
11.1	1	14.9	2
11.2	1	15.0	2
11.3	1	15.1	2
11.4	1	15.2	2
11.5	2	15.3	2
11.6	2	15.4	2
11.7	2	15.5	2
11.8	3	15.6	2
11.9	3	15.7	2
12.0	7	15.8	2
12.1	11	15.9	2
12.2	20	16.0	2
12.3	31	16.1	2
12.4	35	16.2	2
12.5	34	16.3	1
12.6	27	16.4	1
12.7	20	16.5	1
12.8	15	16.6	1
12.9	12	16.7	1
13.0	9	16.8	1
13.1	8	16.9	1
13.2	7	17.0	1
13.3	6	17.1	1
13.4	5	17.2	1
13.5	5	17.3	1
13.6	4	17.4	1
13.7	3	17.5	1
13.8	3	17.6	1
13.9	3	17.7	1
14.0	3	17.8	1
14.1	3	17.9	1
14.2	2	18.0	1
14.3	2	18.1	1
14.4	2	18.2	1
14.5	2	18.3	1
14.6	2	18.4	1
14.7	2	18.5	1

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 06-04-1990 16:40:32
Watershed file: --> D:\POND2\5774\RLNGPR02.WSD
Hydrograph file: --> D:\POND2\5774\RLNGPR02.HYD

ROLLING MEADOWS
PROPOSED CONDITIONS
2 YEAR STORM EVENT

Time (hrs)	Flow (cfs)	Time (hrs)	Flow (cfs)
18.6	1	22.4	1
18.7	1	22.5	1
18.8	1	22.6	1
18.9	1	22.7	1
19.0	1	22.8	1
19.1	1	22.9	1
19.2	1	23.0	1
19.3	1	23.1	1
19.4	1	23.2	1
19.5	1	23.3	1
19.6	1	23.4	1
19.7	1	23.5	1
19.8	1	23.6	1
19.9	1	23.7	1
20.0	1	23.8	1
20.1	1	23.9	1
20.2	1	24.0	1
20.3	1	24.1	0
20.4	1	24.2	0
20.5	1	24.3	0
20.6	1	24.4	0
20.7	1	24.5	0
20.8	1	24.6	0
20.9	1	24.7	0
21.0	1	24.8	0
21.1	1	24.9	0
21.2	1	25.0	0
21.3	1	25.1	0
21.4	1	25.2	0
21.5	1	25.3	0
21.6	1	25.4	0
21.7	1	25.5	0
21.8	1	25.6	0
21.9	1	25.7	0
22.0	1	25.8	0
22.1	1	25.9	0
22.2	1		
22.3	1		

TABLE 3

WORKSHEET FOR BMP POINT SYSTEM

A. STRUCTURAL BMP POINT ALLOCATION

BMP	BMP Points		Fraction of Site Served by BMP		Weighted BMP Points
EXT DRY DET (2)	6	x	69%	=	4.1
GRASSED SWALES (15)	2	x	26%	=	.5
SHALLOW MARSH (4)	9	x	100%	=	9
		x		=	

TOTAL WEIGHTED STRUCTURAL BMP POINTS: _____

B. NATURAL OPEN SPACE CREDIT

Fraction of Site		Natural Open Space Credit (0.1 per 1%)		Points for Natural Open Space
60%	x	0.1	=	6.0

C. TOTAL WEIGHTED POINTS

Structural BMP Points	+	Natural Open Space Points	=	TOTAL
13.6	+	6.0	=	19.6

POND-2 Version: 5.10
S/N: 1220510026

ROLLING MEADOWS
SWM FACILITY

CALCULATED 09-24-1990 15:39:13
DISK FILE: d:\pond2\5774\RLNGMD .VOL

Planimeter scale: 1 inch = 50 ft.

Elevation (ft)	Planimeter (sq.in.)	Area (sq.ft)	A1+A2+sqr(A1*A2) (sq.ft)	Volume* (cubic-ft)	VolumeSum (cubic-ft)
49.50	0.00	0	0	0	0
50.00	0.22	550	550	92	92
52.00	1.54	3,850	5,855	3,903	3,995
53.65	*I*	7,633	16,904	9,297	13,292
54.00	3.44	8,600	18,204	12,136	16,131
56.00	5.29	13,225	32,490	21,660	37,791
58.00	6.94	17,350	45,723	30,482	68,273
60.00	8.53	21,325	57,910	38,607	106,880

I ---> Interpolated area from closest two planimeter readings.

* Incremental volume computed by the Conic Method for Reservoir Volumes.

```
*************************************************************
*                                                           *
*   Rolling Meadows SWM Facility (2 Yr 24 Hr Storm Event)   *
*     8" x 19" Rect. Orifice @ 53.65 (primary spillway)     *
*   6' Diameter Standpipe @ 57.20  (secondary spillway)     *
*           35' Weir @ 58.50 (emergency spillway)           *
*                                                           *
*************************************************************
```

Inflow Hydrograph: d:\pond2\5774\RLNGP02P.HYD
Rating Table file: d:\pond2\5774\RLNGMD .PND

----INITIAL CONDITIONS----
Elevation = 49.50 ft
Outflow = 0.00 cfs
Storage = 0 cu-ft

GIVEN POND DATA			INTERMEDIATE ROUTING COMPUTATIONS	
ELEVATION (ft)	OUTFLOW (cfs)	STORAGE (cu-ft)	2S/t (cfs)	2S/t + O (cfs)
49.50	0.0	0	0.0	0.0
50.00	0.0	91	0.5	0.5
50.50	0.0	495	2.8	2.8
51.00	0.0	1,218	6.8	6.8
51.50	0.0	2,354	13.1	13.1
52.00	0.0	3,995	22.2	22.2
52.50	0.0	6,168	34.3	34.3
53.00	0.0	8,876	49.3	49.3
53.50	0.0	12,177	67.7	67.7
54.00	0.0	16,131	89.6	89.6
54.50	3.6	20,694	115.0	118.6
55.00	5.1	25,805	143.4	148.5
55.50	6.3	31,493	175.0	181.3
56.00	7.2	37,791	209.9	217.1
56.50	8.1	44,647	248.0	256.1
57.00	8.8	52,001	288.9	297.7
57.20	9.1	55,086	306.0	315.1
57.50	18.8	59,870	332.6	351.4
58.00	50.7	68,273	379.3	430.0
58.20	67.0	71,781	398.8	465.8
58.50	94.6	77,186	428.8	523.4
59.00	143.5	86,582	481.0	624.5
59.50	213.9	96,476	536.0	749.9
60.00	303.5	106,880	593.8	897.3

Time increment (t) = 0.100 hrs.

EXECUTED: 09-24-1990 10:46:39

Pond File: d:\pond2\5774\RLNGMD .PND
Inflow Hydrograph: d:\pond2\5774\RLNGP02P.HYD
Outflow Hydrograph: d:\pond2\5774\OUT .HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (hrs)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
11.000	1.00	-----	0.0	0.0	0.00	49.50
11.100	1.00	2.0	2.0	2.0	0.00	50.33
11.200	1.00	2.0	4.0	4.0	0.00	50.66
11.300	1.00	2.0	6.0	6.0	0.00	50.90
11.400	1.00	2.0	8.0	8.0	0.00	51.10
11.500	2.00	3.0	11.0	11.0	0.00	51.34
11.600	2.00	4.0	15.0	15.0	0.00	51.61
11.700	2.00	4.0	19.0	19.0	0.00	51.82
11.800	3.00	5.0	24.0	24.0	0.00	52.07
11.900	3.00	6.0	30.0	30.0	0.00	52.32
12.000	6.00	9.0	39.0	39.0	0.00	52.66
12.100	10.00	16.0	55.0	55.0	0.00	53.16
12.200	18.00	28.0	83.0	83.0	0.00	53.85
12.300	28.00	46.0	120.8	129.0	4.12	54.67
12.400	31.00	59.0	167.3	179.8	6.24	55.48
12.500	30.00	61.0	213.4	228.3	7.46	56.14
12.600	24.00	54.0	250.8	267.4	8.29	56.63
12.700	18.00	42.0	275.3	292.8	8.72	56.94
12.800	13.00	31.0	288.4	306.3	8.95	57.10
12.900	10.00	23.0	293.4	311.4	9.00	57.16
13.000	8.00	18.0	293.3	311.4	9.00	57.16
13.100	7.00	15.0	290.3	308.3	8.98	57.12
13.200	6.00	13.0	285.5	303.3	8.90	57.06
13.300	5.00	11.0	279.0	296.5	8.78	56.99
13.400	4.00	9.0	270.7	288.0	8.64	56.88
13.500	4.00	8.0	261.7	278.7	8.48	56.77
13.600	4.00	8.0	253.1	269.7	8.33	56.66
13.700	4.00	8.0	244.7	261.1	8.18	56.56
13.800	3.00	7.0	235.7	251.7	8.00	56.44
13.900	3.00	6.0	226.2	241.7	7.77	56.32
14.000	3.00	6.0	217.1	232.2	7.55	56.19
14.100	3.00	6.0	208.4	223.1	7.34	56.08
14.200	2.00	5.0	199.2	213.4	7.11	55.95
14.300	2.00	4.0	189.5	203.2	6.85	55.81
14.400	2.00	4.0	180.3	193.5	6.61	55.67
14.500	2.00	4.0	171.5	184.3	6.38	55.54
14.600	2.00	4.0	163.4	175.5	6.09	55.41
14.700	2.00	4.0	155.8	167.4	5.79	55.29
14.800	2.00	4.0	148.7	159.8	5.51	55.17
14.900	2.00	4.0	142.2	152.7	5.26	55.07
15.000	2.00	4.0	136.3	146.2	4.99	54.96
15.100	2.00	4.0	130.9	140.3	4.69	54.86
15.200	2.00	4.0	126.0	134.9	4.42	54.77
15.300	2.00	4.0	121.7	130.0	4.18	54.69
15.400	2.00	4.0	117.8	125.7	3.96	54.62

EXECUTED: 09-24-1990 10:46:39

Pond File: d:\pond2\5774\RLNGMD .PND
Inflow Hydrograph: d:\pond2\5774\RLNGP02P.HYD
Outflow Hydrograph: d:\pond2\5774\OUT .HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (hrs)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
15.500	2.00	4.0	114.3	121.8	3.76	54.55
15.600	2.00	4.0	111.1	118.3	3.56	54.49
15.700	2.00	4.0	108.8	115.1	3.17	54.44
15.800	2.00	4.0	107.0	112.8	2.88	54.40
15.900	2.00	4.0	105.7	111.0	2.66	54.37
16.000	2.00	4.0	104.7	109.7	2.50	54.35
16.100	2.00	4.0	104.0	108.7	2.37	54.33
16.200	2.00	4.0	103.4	108.0	2.28	54.32
16.300	1.00	3.0	102.2	106.4	2.09	54.29
16.400	1.00	2.0	100.6	104.2	1.82	54.25
16.500	1.00	2.0	99.4	102.6	1.61	54.22
16.600	1.00	2.0	98.4	101.4	1.46	54.20
16.700	1.00	2.0	97.8	100.4	1.35	54.19
16.800	1.00	2.0	97.2	99.8	1.26	54.18
16.900	1.00	2.0	96.8	99.2	1.20	54.17
17.000	1.00	2.0	96.5	98.8	1.15	54.16
17.100	1.00	2.0	96.3	98.5	1.11	54.15
17.200	1.00	2.0	96.2	98.3	1.08	54.15
17.300	1.00	2.0	96.0	98.2	1.06	54.15
17.400	1.00	2.0	95.9	98.0	1.05	54.15
17.500	1.00	2.0	95.9	97.9	1.04	54.14
17.600	1.00	2.0	95.8	97.9	1.03	54.14
17.700	1.00	2.0	95.8	97.8	1.02	54.14
17.800	1.00	2.0	95.7	97.8	1.01	54.14
17.900	1.00	2.0	95.7	97.7	1.01	54.14
18.000	1.00	2.0	95.7	97.7	1.01	54.14
18.100	1.00	2.0	95.7	97.7	1.01	54.14
18.200	1.00	2.0	95.7	97.7	1.00	54.14
18.300	1.00	2.0	95.7	97.7	1.00	54.14
18.400	1.00	2.0	95.7	97.7	1.00	54.14
18.500	1.00	2.0	95.7	97.7	1.00	54.14
18.600	1.00	2.0	95.7	97.7	1.00	54.14
18.700	1.00	2.0	95.7	97.7	1.00	54.14
18.800	1.00	2.0	95.7	97.7	1.00	54.14
18.900	1.00	2.0	95.7	97.7	1.00	54.14
19.000	1.00	2.0	95.7	97.7	1.00	54.14
19.100	1.00	2.0	95.7	97.7	1.00	54.14
19.200	1.00	2.0	95.7	97.7	1.00	54.14
19.300	1.00	2.0	95.7	97.7	1.00	54.14
19.400	1.00	2.0	95.7	97.7	1.00	54.14
19.500	1.00	2.0	95.7	97.7	1.00	54.14
19.600	1.00	2.0	95.7	97.7	1.00	54.14
19.700	1.00	2.0	95.7	97.7	1.00	54.14
19.800	1.00	2.0	95.7	97.7	1.00	54.14
19.900	1.00	2.0	95.7	97.7	1.00	54.14
20.000	1.00	2.0	95.7	97.7	1.00	54.14

Pond File: d:\pond2\5774\RLNGMD .PND
Inflow Hydrograph: d:\pond2\5774\RLNGP02P.HYD
Outflow Hydrograph: d:\pond2\5774\OUT .HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (hrs)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
20.100	1.00	2.0	95.7	97.7	1.00	54.14
20.200	1.00	2.0	95.7	97.7	1.00	54.14
20.300	1.00	2.0	95.7	97.7	1.00	54.14
20.400	1.00	2.0	95.7	97.7	1.00	54.14
20.500	1.00	2.0	95.7	97.7	1.00	54.14
20.600	1.00	2.0	95.7	97.7	1.00	54.14
20.700	1.00	2.0	95.7	97.7	1.00	54.14
20.800	1.00	2.0	95.7	97.7	1.00	54.14
20.900	1.00	2.0	95.7	97.7	1.00	54.14
21.000	1.00	2.0	95.7	97.7	1.00	54.14
21.100	1.00	2.0	95.7	97.7	1.00	54.14
21.200	1.00	2.0	95.7	97.7	1.00	54.14
21.300	1.00	2.0	95.7	97.7	1.00	54.14
21.400	1.00	2.0	95.7	97.7	1.00	54.14
21.500	1.00	2.0	95.7	97.7	1.00	54.14
21.600	1.00	2.0	95.7	97.7	1.00	54.14
21.700	1.00	2.0	95.7	97.7	1.00	54.14
21.800	1.00	2.0	95.7	97.7	1.00	54.14
21.900	1.00	2.0	95.7	97.7	1.00	54.14
22.000	1.00	2.0	95.7	97.7	1.00	54.14
22.100	1.00	2.0	95.7	97.7	1.00	54.14
22.200	1.00	2.0	95.7	97.7	1.00	54.14
22.300	1.00	2.0	95.7	97.7	1.00	54.14
22.400	1.00	2.0	95.7	97.7	1.00	54.14
22.500	1.00	2.0	95.7	97.7	1.00	54.14
22.600	1.00	2.0	95.7	97.7	1.00	54.14
22.700	1.00	2.0	95.7	97.7	1.00	54.14
22.800	1.00	2.0	95.7	97.7	1.00	54.14
22.900	1.00	2.0	95.7	97.7	1.00	54.14
23.000	1.00	2.0	95.7	97.7	1.00	54.14
23.100	1.00	2.0	95.7	97.7	1.00	54.14
23.200	1.00	2.0	95.7	97.7	1.00	54.14
23.300	1.00	2.0	95.7	97.7	1.00	54.14
23.400	1.00	2.0	95.7	97.7	1.00	54.14
23.500	1.00	2.0	95.7	97.7	1.00	54.14
23.600	1.00	2.0	95.7	97.7	1.00	54.14
23.700	1.00	2.0	95.7	97.7	1.00	54.14
23.800	1.00	2.0	95.7	97.7	1.00	54.14
23.900	1.00	2.0	95.7	97.7	1.00	54.14
24.000	0.00	1.0	94.9	96.7	0.88	54.12
24.100	0.00	0.0	93.6	94.9	0.66	54.09
24.200	0.00	0.0	92.6	93.6	0.49	54.07
24.300	0.00	0.0	91.9	92.6	0.37	54.05
24.400	0.00	0.0	91.3	91.9	0.28	54.04
24.500	0.00	0.0	90.9	91.3	0.21	54.03
24.600	0.00	0.0	90.6	90.9	0.16	54.02

EXECUTED: 09-24-1990 10:46:39

Pond File: d:\pond2\5774\RLNGMD .PND
Inflow Hydrograph: d:\pond2\5774\RLNGP02P.HYD
Outflow Hydrograph: d:\pond2\5774\OUT .HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (hrs)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
24.700	0.00	0.0	90.3	90.6	0.12	54.02
24.800	0.00	0.0	90.2	90.3	0.09	54.01
24.900	0.00	0.0	90.0	90.2	0.07	54.01
25.000	0.00	0.0	89.9	90.0	0.05	54.01
25.100	0.00	0.0	89.8	89.9	0.04	54.01
25.200	0.00	0.0	89.8	89.8	0.03	54.00
25.300	0.00	0.0	89.7	89.8	0.02	54.00
25.400	0.00	0.0	89.7	89.7	0.02	54.00
25.500	0.00	0.0	89.7	89.7	0.01	54.00
25.600	0.00	0.0	89.7	89.7	0.01	54.00
25.700	0.00	0.0	89.7	89.7	0.01	54.00
25.800	0.00	0.0	89.6	89.7	0.01	54.00
25.900	0.00	0.0	89.6	89.6	0.00	54.00

********** SUMMARY OF ROUTING COMPUTATIONS **********

Pond File: d:\pond2\5774\RLNGMD .PND
Inflow Hydrograph: d:\pond2\5774\RLNGP02P.HYD
Outflow Hydrograph: d:\pond2\5774\OUT .HYD

Starting Pond W.S. Elevation = 49.50 ft

***** Summary of Peak Outflow and Peak Elevation *****

Peak Inflow = 31.00 cfs
Peak Outflow = 9.00 cfs
Peak Elevation = 57.16 ft

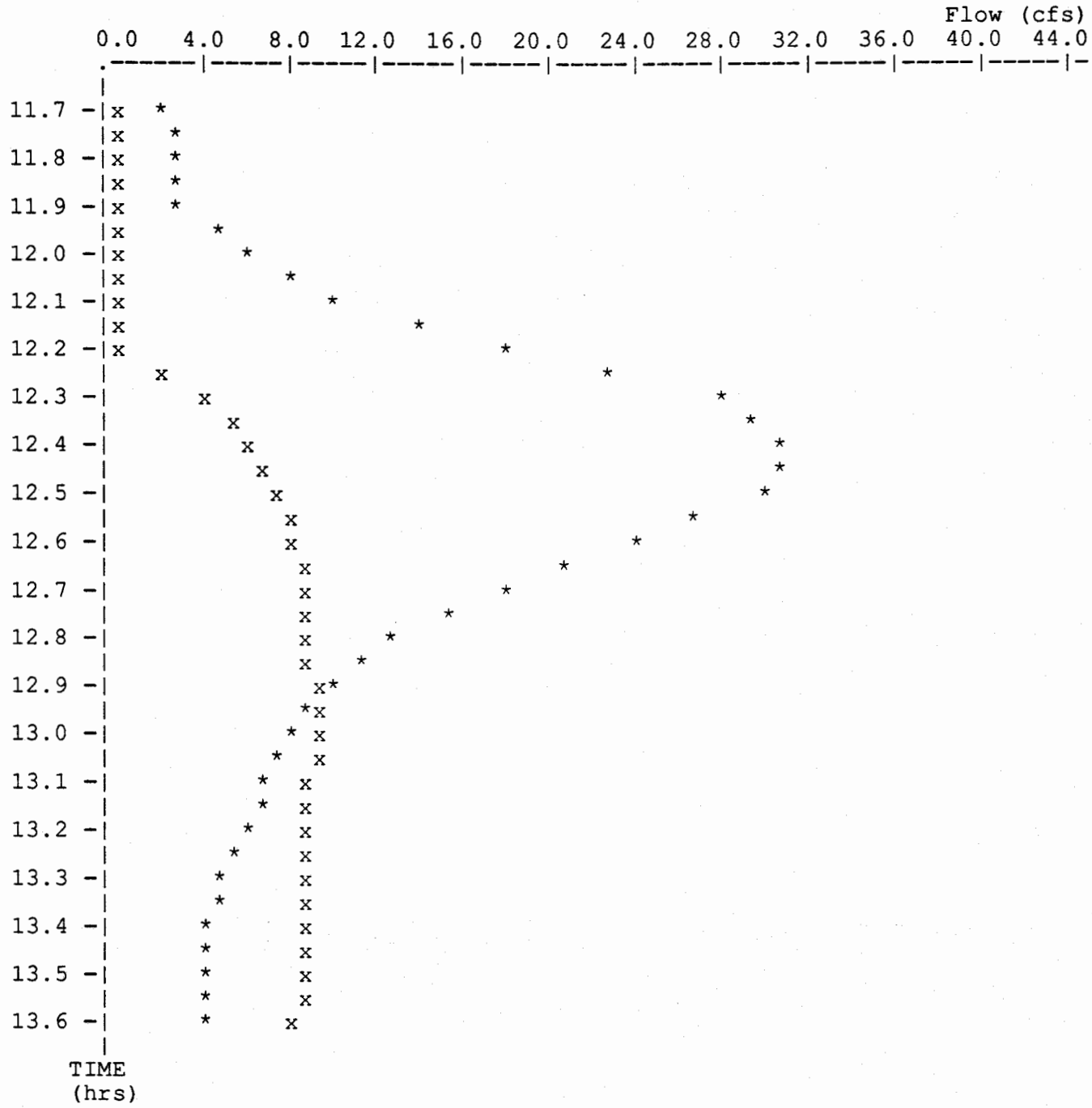
***** Summary of Approximate Peak Storage *****

Initial Storage = 0 cu-ft
Peak Storage From Storm = 54,433 cu-ft

Total Storage in Pond = 54,433cu-ft

Warning: Inflow hydrograph truncated on left side.

```
Pond File:           d:\pond2\5774\RLNGMD   .PND
Inflow Hydrograph:   d:\pond2\5774\RLNGP02P.HYD
Outflow Hydrograph:  d:\pond2\5774\OUT     .HYD
                                                EXECUTED: 09-24-1990
Peak Inflow     =    31.00 cfs                            10:46:39
Peak Outflow    =     9.00 cfs
Peak Elevation  =    57.16 ft
```




```
 *  File:  d:\pond2\5774\RLNGP02P.HYD   Qmax =    31.0 cfs
 x  File:  d:\pond2\5774\OUT     .HYD   Qmax =     9.0 cfs
```

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*************************************************************
*                                                           *
* Rolling Meadows SWM Facility (100 Yr 24 Hr Storm Event)   *
*     8" x 19" Rect. Orifice @ 53.65 (primary spillway)     *
*   6' Diameter Standpipe @ 57.20  (secondary spillway)     *
*           35' Weir @ 58.50 (emergency spillway)           *
*                                                           *
*************************************************************
```

Inflow Hydrograph: d:\pond2\5774\RLNGP99P.HYD
Rating Table file: d:\pond2\5774\RLNGMD .PND

----INITIAL CONDITIONS----
Elevation = 49.50 ft
Outflow = 0.00 cfs
Storage = 0 cu-ft

GIVEN POND DATA			INTERMEDIATE ROUTING COMPUTATIONS	
ELEVATION (ft)	OUTFLOW (cfs)	STORAGE (cu-ft)	2S/t (cfs)	2S/t + O (cfs)
49.50	0.0	0	0.0	0.0
50.00	0.0	91	0.5	0.5
50.50	0.0	495	2.8	2.8
51.00	0.0	1,218	6.8	6.8
51.50	0.0	2,354	13.1	13.1
52.00	0.0	3,995	22.2	22.2
52.50	0.0	6,168	34.3	34.3
53.00	0.0	8,876	49.3	49.3
53.50	0.0	12,177	67.7	67.7
54.00	0.0	16,131	89.6	89.6
54.50	3.6	20,694	115.0	118.6
55.00	5.1	25,805	143.4	148.5
55.50	6.3	31,493	175.0	181.3
56.00	7.2	37,791	209.9	217.1
56.50	8.1	44,647	248.0	256.1
57.00	8.8	52,001	288.9	297.7
57.20	9.1	55,086	306.0	315.1
57.50	18.8	59,870	332.6	351.4
58.00	50.7	68,273	379.3	430.0
58.20	67.0	71,781	398.8	465.8
58.50	94.6	77,186	428.8	523.4
59.00	143.5	86,582	481.0	624.5
59.50	213.9	96,476	536.0	749.9
60.00	303.5	106,880	593.8	897.3

Time increment (t) = 0.100 hrs.

POND-2 Version: 5.10 S/N: 1220510026 Page 2
EXECUTED: 09-24-1990 10:45:27

Pond File: d:\pond2\5774\RLNGMD .PND
Inflow Hydrograph: d:\pond2\5774\RLNGP99P.HYD
Outflow Hydrograph: d:\pond2\5774\OUT .HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (hrs)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
11.000	3.00	-----	0.0	0.0	0.00	49.50
11.100	3.00	6.0	6.0	6.0	0.00	50.90
11.200	4.00	7.0	13.0	13.0	0.00	51.49
11.300	4.00	8.0	21.0	21.0	0.00	51.93
11.400	4.00	8.0	29.0	29.0	0.00	52.28
11.500	5.00	9.0	38.0	38.0	0.00	52.62
11.600	5.00	10.0	48.0	48.0	0.00	52.96
11.700	6.00	11.0	59.0	59.0	0.00	53.26
11.800	8.00	14.0	73.0	73.0	0.00	53.62
11.900	9.00	17.0	89.9	90.0	0.05	54.01
12.000	16.00	25.0	108.6	114.9	3.14	54.44
12.100	28.00	44.0	142.1	152.6	5.25	55.06
12.200	51.00	79.0	206.5	221.1	7.29	56.05
12.300	78.00	129.0	306.4	335.5	14.55	57.37
12.400	88.00	166.0	332.1	472.4	70.18	58.23
12.500	84.00	172.0	333.4	504.1	85.33	58.40
12.600	67.00	151.0	332.6	484.4	75.91	58.30
12.700	49.00	116.0	330.2	448.6	59.16	58.10
12.800	38.00	87.0	326.2	417.2	45.53	57.92
12.900	30.00	68.0	321.9	394.2	36.17	57.77
13.000	23.00	53.0	318.2	374.9	28.32	57.65
13.100	20.00	43.0	315.7	361.2	22.78	57.56
13.200	16.00	36.0	313.9	351.7	18.90	57.50
13.300	14.00	30.0	310.3	343.9	16.78	57.44
13.400	12.00	26.0	306.8	336.3	14.76	57.38
13.500	11.00	23.0	303.7	329.8	13.02	57.32
13.600	10.00	21.0	301.4	324.7	11.67	57.28
13.700	9.00	19.0	299.4	320.4	10.51	57.24
13.800	9.00	18.0	298.0	317.4	9.70	57.22
13.900	8.00	17.0	296.8	315.0	9.10	57.20
14.000	8.00	16.0	294.7	312.8	9.06	57.17
14.100	8.00	16.0	292.6	310.7	9.02	57.15
14.200	7.00	15.0	289.7	307.6	8.97	57.11
14.300	7.00	14.0	285.9	303.7	8.90	57.07
14.400	7.00	14.0	282.2	299.9	8.84	57.02
14.500	6.00	13.0	277.7	295.2	8.76	56.97
14.600	6.00	12.0	272.4	289.7	8.67	56.90
14.700	6.00	12.0	267.2	284.4	8.58	56.84
14.800	6.00	12.0	262.2	279.2	8.49	56.78
14.900	5.00	11.0	256.4	273.2	8.39	56.71
15.000	5.00	10.0	249.9	266.4	8.27	56.62
15.100	5.00	10.0	243.6	259.9	8.16	56.55
15.200	5.00	10.0	237.5	253.6	8.04	56.47
15.300	5.00	10.0	231.7	247.5	7.90	56.39
15.400	5.00	10.0	226.2	241.7	7.77	56.31

Pond File: d:\pond2\5774\RLNGMD .PND
Inflow Hydrograph: d:\pond2\5774\RLNGP99P.HYD
Outflow Hydrograph: d:\pond2\5774\OUT .HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (hrs)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
15.500	5.00	10.0	220.9	236.2	7.64	56.24
15.600	5.00	10.0	215.8	230.9	7.52	56.18
15.700	5.00	10.0	211.0	225.8	7.40	56.11
15.800	4.00	9.0	205.5	220.0	7.27	56.04
15.900	4.00	8.0	199.3	213.5	7.11	55.95
16.000	4.00	8.0	193.4	207.3	6.95	55.86
16.100	4.00	8.0	187.8	201.4	6.80	55.78
16.200	4.00	8.0	182.5	195.8	6.66	55.70
16.300	4.00	8.0	177.4	190.5	6.53	55.63
16.400	4.00	8.0	172.6	185.4	6.40	55.56
16.500	4.00	8.0	168.0	180.6	6.28	55.49
16.600	4.00	8.0	163.8	176.0	6.11	55.42
16.700	4.00	8.0	159.9	171.8	5.95	55.36
16.800	3.00	7.0	155.4	166.9	5.77	55.28
16.900	3.00	6.0	150.2	161.4	5.57	55.20
17.000	3.00	6.0	145.4	156.2	5.38	55.12
17.100	3.00	6.0	141.0	151.4	5.21	55.05
17.200	3.00	6.0	137.0	147.0	5.03	54.98
17.300	3.00	6.0	133.3	143.0	4.82	54.91
17.400	3.00	6.0	130.0	139.3	4.64	54.85
17.500	3.00	6.0	127.1	136.0	4.48	54.79
17.600	3.00	6.0	124.4	133.1	4.33	54.74
17.700	3.00	6.0	122.0	130.4	4.20	54.70
17.800	3.00	6.0	119.9	128.0	4.08	54.66
17.900	3.00	6.0	118.0	125.9	3.97	54.62
18.000	3.00	6.0	116.2	124.0	3.87	54.59
18.100	3.00	6.0	114.6	122.2	3.78	54.56
18.200	3.00	6.0	113.2	120.6	3.70	54.53
18.300	3.00	6.0	112.0	119.2	3.63	54.51
18.400	3.00	6.0	110.9	118.0	3.53	54.49
18.500	3.00	6.0	110.1	116.9	3.39	54.47
18.600	3.00	6.0	109.5	116.1	3.30	54.46
18.700	3.00	6.0	109.1	115.5	3.22	54.45
18.800	3.00	6.0	108.8	115.1	3.17	54.44
18.900	3.00	6.0	108.5	114.8	3.13	54.43
19.000	3.00	6.0	108.3	114.5	3.09	54.43
19.100	3.00	6.0	108.2	114.3	3.07	54.43
19.200	3.00	6.0	108.1	114.2	3.05	54.42
19.300	3.00	6.0	108.0	114.1	3.04	54.42
19.400	3.00	6.0	107.9	114.0	3.03	54.42
19.500	2.00	5.0	107.1	112.9	2.90	54.40
19.600	2.00	4.0	105.8	111.1	2.67	54.37
19.700	2.00	4.0	104.8	109.8	2.51	54.35
19.800	2.00	4.0	104.0	108.8	2.38	54.33
19.900	2.00	4.0	103.4	108.0	2.29	54.32
20.000	2.00	4.0	103.0	107.4	2.22	54.31

Pond File: d:\pond2\5774\RLNGMD .PND
Inflow Hydrograph: d:\pond2\5774\RLNGP99P.HYD
Outflow Hydrograph: d:\pond2\5774\OUT .HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (hrs)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
20.100	2.00	4.0	102.7	107.0	2.16	54.30
20.200	2.00	4.0	102.4	106.7	2.12	54.29
20.300	2.00	4.0	102.3	106.4	2.09	54.29
20.400	2.00	4.0	102.1	106.3	2.07	54.29
20.500	2.00	4.0	102.0	106.1	2.05	54.28
20.600	2.00	4.0	101.9	106.0	2.04	54.28
20.700	2.00	4.0	101.9	105.9	2.03	54.28
20.800	2.00	4.0	101.8	105.9	2.02	54.28
20.900	2.00	4.0	101.8	105.8	2.02	54.28
21.000	2.00	4.0	101.8	105.8	2.01	54.28
21.100	2.00	4.0	101.8	105.8	2.01	54.28
21.200	2.00	4.0	101.7	105.8	2.01	54.28
21.300	2.00	4.0	101.7	105.7	2.01	54.28
21.400	2.00	4.0	101.7	105.7	2.00	54.28
21.500	2.00	4.0	101.7	105.7	2.00	54.28
21.600	2.00	4.0	101.7	105.7	2.00	54.28
21.700	2.00	4.0	101.7	105.7	2.00	54.28
21.800	2.00	4.0	101.7	105.7	2.00	54.28
21.900	2.00	4.0	101.7	105.7	2.00	54.28
22.000	2.00	4.0	101.7	105.7	2.00	54.28
22.100	2.00	4.0	101.7	105.7	2.00	54.28
22.200	2.00	4.0	101.7	105.7	2.00	54.28
22.300	2.00	4.0	101.7	105.7	2.00	54.28
22.400	2.00	4.0	101.7	105.7	2.00	54.28
22.500	2.00	4.0	101.7	105.7	2.00	54.28
22.600	2.00	4.0	101.7	105.7	2.00	54.28
22.700	2.00	4.0	101.7	105.7	2.00	54.28
22.800	2.00	4.0	101.7	105.7	2.00	54.28
22.900	2.00	4.0	101.7	105.7	2.00	54.28
23.000	2.00	4.0	101.7	105.7	2.00	54.28
23.100	1.00	3.0	101.0	104.7	1.88	54.26
23.200	1.00	2.0	99.6	103.0	1.66	54.23
23.300	1.00	2.0	98.6	101.6	1.49	54.21
23.400	1.00	2.0	97.9	100.6	1.37	54.19
23.500	1.00	2.0	97.3	99.9	1.28	54.18
23.600	1.00	2.0	96.9	99.3	1.21	54.17
23.700	1.00	2.0	96.6	98.9	1.16	54.16
23.800	1.00	2.0	96.4	98.6	1.12	54.16
23.900	1.00	2.0	96.2	98.4	1.09	54.15
24.000	1.00	2.0	96.1	98.2	1.07	54.15
24.100	1.00	2.0	96.0	98.1	1.05	54.15
24.200	1.00	2.0	95.9	98.0	1.04	54.14
24.300	1.00	2.0	95.8	97.9	1.03	54.14
24.400	1.00	2.0	95.8	97.8	1.02	54.14
24.500	1.00	2.0	95.8	97.8	1.02	54.14
24.600	1.00	2.0	95.7	97.8	1.01	54.14

Pond File: d:\pond2\5774\RLNGMD .PND
Inflow Hydrograph: d:\pond2\5774\RLNGP99P.HYD
Outflow Hydrograph: d:\pond2\5774\OUT .HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (hrs)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
24.700	1.00	2.0	95.7	97.7	1.01	54.14
24.800	1.00	2.0	95.7	97.7	1.01	54.14
24.900	1.00	2.0	95.7	97.7	1.01	54.14
25.000	0.00	1.0	94.9	96.7	0.88	54.12
25.100	0.00	0.0	93.6	94.9	0.66	54.09
25.200	0.00	0.0	92.6	93.6	0.50	54.07
25.300	0.00	0.0	91.9	92.6	0.37	54.05
25.400	0.00	0.0	91.3	91.9	0.28	54.04
25.500	0.00	0.0	90.9	91.3	0.21	54.03
25.600	0.00	0.0	90.6	90.9	0.16	54.02
25.700	0.00	0.0	90.3	90.6	0.12	54.02
25.800	0.00	0.0	90.2	90.3	0.09	54.01
25.900	0.00	0.0	90.0	90.2	0.07	54.01

********** SUMMARY OF ROUTING COMPUTATIONS **********

Pond File: d:\pond2\5774\RLNGMD .PND
Inflow Hydrograph: d:\pond2\5774\RLNGP99P.HYD
Outflow Hydrograph: d:\pond2\5774\OUT .HYD

Starting Pond W.S. Elevation = 49.50 ft

***** Summary of Peak Outflow and Peak Elevation *****

Peak Inflow = 88.00 cfs
Peak Outflow = 85.33 cfs
Peak Elevation = 58.40 ft

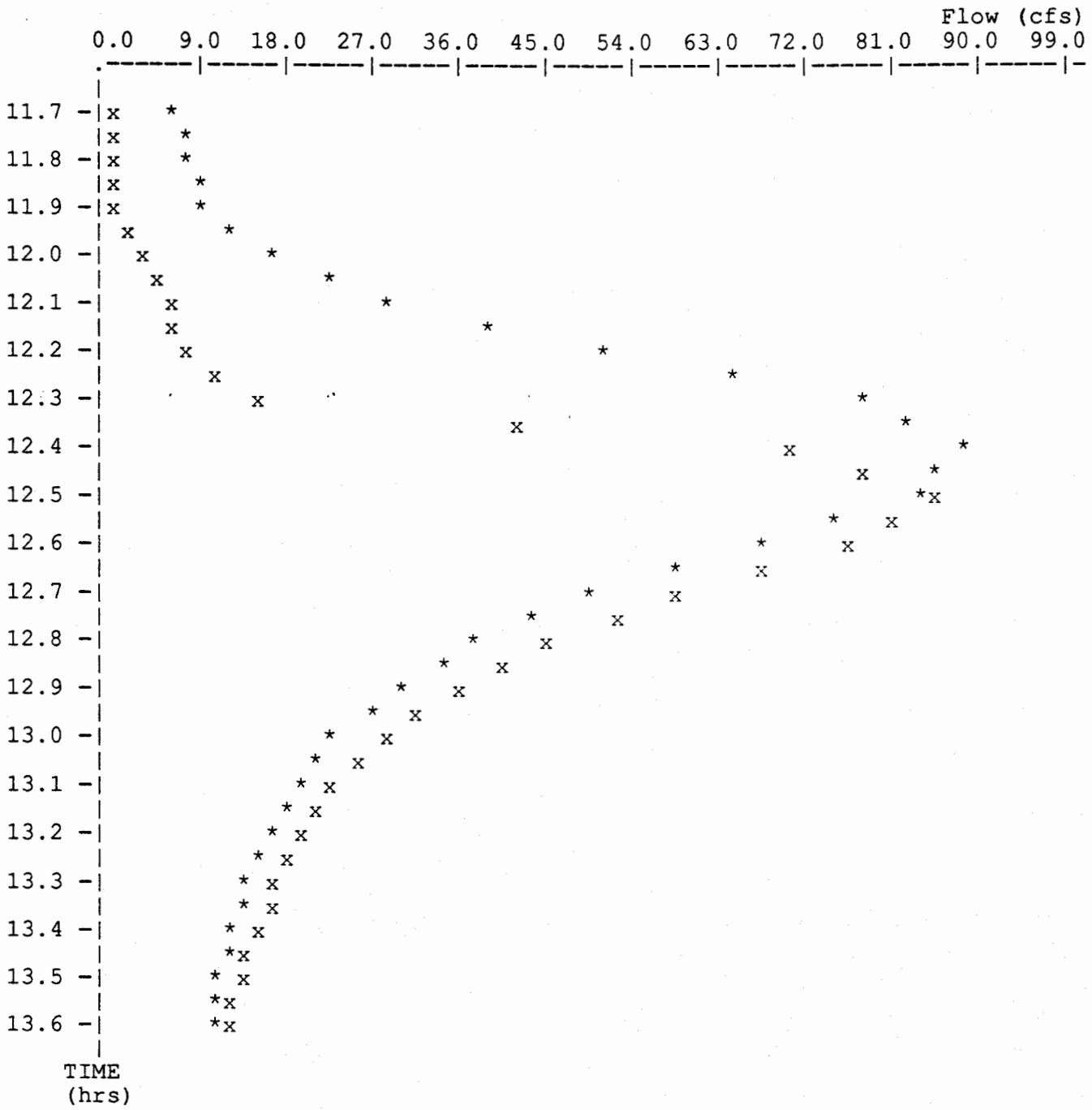
***** Summary of Approximate Peak Storage *****

Initial Storage = 0 cu-ft
Peak Storage From Storm = 75,371 cu-ft

Total Storage in Pond = 75,371cu-ft

Warning: Inflow hydrograph truncated on left side.

```
Pond File:           d:\pond2\5774\RLNGMD  .PND
Inflow Hydrograph:   d:\pond2\5774\RLNGP99P.HYD
Outflow Hydrograph:  d:\pond2\5774\OUT     .HYD
                                          EXECUTED: 09-24-1990
Peak Inflow     =    88.00 cfs                        10:45:27
Peak Outflow    =    85.33 cfs
Peak Elevation  =    58.40 ft
```




```
*  File:  d:\pond2\5774\RLNGP99P.HYD   Qmax =    88.0 cfs
x  File:  d:\pond2\5774\OUT     .HYD   Qmax =    85.3 cfs
```

```
*************************************************************
*                                                           *
* Rolling Meadows SWM Facility (100 Yr 24 Hr Storm Event)   *
*   8" x 19" Rect. Orifice @ 53.65 (Assumed 100% clogged)   *
*   6' Diameter Standpipe @ 57.20  (secondary spillway)     *
*           35' Weir @ 58.50 (emergency spillway)           *
*                                                           *
*************************************************************
```

Inflow Hydrograph: d:\pond2\5774\RLNGP99P.HYD
Rating Table file: d:\pond2\5774\RLNGMDX .PND

----INITIAL CONDITIONS----
Elevation = 49.50 ft
Outflow = 0.00 cfs
Storage = 0 cu-ft

GIVEN POND DATA			INTERMEDIATE ROUTING COMPUTATIONS	
ELEVATION (ft)	OUTFLOW (cfs)	STORAGE (cu-ft)	2S/t (cfs)	2S/t + O (cfs)
49.50	0.0	0	0.0	0.0
50.00	0.0	91	0.5	0.5
50.50	0.0	495	2.8	2.8
51.00	0.0	1,218	6.8	6.8
51.50	0.0	2,354	13.1	13.1
52.00	0.0	3,995	22.2	22.2
52.50	0.0	6,168	34.3	34.3
53.00	0.0	8,876	49.3	49.3
53.50	0.0	12,177	67.7	67.7
54.00	0.0	16,131	89.6	89.6
54.50	0.0	20,694	115.0	115.0
55.00	0.0	25,805	143.4	143.4
55.50	0.0	31,493	175.0	175.0
56.00	0.0	37,791	209.9	209.9
56.50	0.0	44,647	248.0	248.0
57.00	0.0	52,001	288.9	288.9
57.20	0.0	55,086	306.0	306.0
57.50	9.3	59,870	332.6	341.9
58.00	40.5	68,273	379.3	419.8
58.20	56.5	71,781	398.8	455.3
58.50	83.8	77,186	428.8	512.6
59.00	143.5	86,582	481.0	624.5
59.50	213.9	96,476	536.0	749.9
60.00	303.5	106,880	593.8	897.3

Time increment (t) = 0.100 hrs.

POND-2 Version: 5.10 S/N: 1220510026
EXECUTED: 09-24-1990 10:42:38

Pond File: d:\pond2\5774\RLNGMDX .PND
Inflow Hydrograph: d:\pond2\5774\RLNGP99P.HYD
Outflow Hydrograph: d:\pond2\5774\OUT .HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (hrs)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
11.000	3.00	-----	0.0	0.0	0.00	49.50
11.100	3.00	6.0	6.0	6.0	0.00	50.90
11.200	4.00	7.0	13.0	13.0	0.00	51.49
11.300	4.00	8.0	21.0	21.0	0.00	51.93
11.400	4.00	8.0	29.0	29.0	0.00	52.28
11.500	5.00	9.0	38.0	38.0	0.00	52.62
11.600	5.00	10.0	48.0	48.0	0.00	52.96
11.700	6.00	11.0	59.0	59.0	0.00	53.26
11.800	8.00	14.0	73.0	73.0	0.00	53.62
11.900	9.00	17.0	90.0	90.0	0.00	54.01
12.000	16.00	25.0	115.0	115.0	0.00	54.50
12.100	28.00	44.0	159.0	159.0	0.00	55.25
12.200	51.00	79.0	238.0	238.0	0.00	56.37
12.300	78.00	129.0	328.3	367.0	19.35	57.66
12.400	88.00	166.0	344.1	494.3	75.08	58.40
12.500	84.00	172.0	344.8	516.1	85.68	58.52
12.600	67.00	151.0	344.2	495.8	75.78	58.41
12.700	49.00	116.0	342.5	460.2	58.85	58.23
12.800	38.00	87.0	339.7	429.5	44.88	58.05
12.900	30.00	68.0	336.4	407.7	35.67	57.92
13.000	23.00	53.0	332.8	389.4	28.32	57.80
13.100	20.00	43.0	330.0	375.8	22.86	57.72
13.200	16.00	36.0	328.1	366.0	18.97	57.65
13.300	14.00	30.0	326.5	358.1	15.79	57.60
13.400	12.00	26.0	325.4	352.5	13.55	57.57
13.500	11.00	23.0	324.6	348.4	11.91	57.54
13.600	10.00	21.0	324.0	345.6	10.78	57.52
13.700	9.00	19.0	323.5	343.0	9.75	57.51
13.800	9.00	18.0	323.1	341.5	9.20	57.50
13.900	8.00	17.0	322.5	340.1	8.84	57.49
14.000	8.00	16.0	321.6	338.5	8.40	57.47
14.100	8.00	16.0	321.3	337.6	8.19	57.46
14.200	7.00	15.0	320.6	336.3	7.83	57.45
14.300	7.00	14.0	319.8	334.6	7.40	57.44
14.400	7.00	14.0	319.4	333.8	7.19	57.43
14.500	6.00	13.0	318.7	332.4	6.83	57.42
14.600	6.00	12.0	317.9	330.7	6.40	57.41
14.700	6.00	12.0	317.5	329.9	6.19	57.40
14.800	6.00	12.0	317.4	329.5	6.09	57.40
14.900	5.00	11.0	316.8	328.4	5.79	57.39
15.000	5.00	10.0	316.0	326.8	5.38	57.37
15.100	5.00	10.0	315.7	326.0	5.18	57.37
15.200	5.00	10.0	315.5	325.7	5.09	57.36
15.300	5.00	10.0	315.4	325.5	5.04	57.36
15.400	5.00	10.0	315.4	325.4	5.02	57.36

Pond File: d:\pond2\5774\RLNGMDX .PND
Inflow Hydrograph: d:\pond2\5774\RLNGP99P.HYD
Outflow Hydrograph: d:\pond2\5774\OUT .HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (hrs)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
15.500	5.00	10.0	315.3	325.4	5.01	57.36
15.600	5.00	10.0	315.3	325.3	5.00	57.36
15.700	5.00	10.0	315.3	325.3	5.00	57.36
15.800	4.00	9.0	314.8	324.3	4.74	57.35
15.900	4.00	8.0	314.1	322.8	4.36	57.34
16.000	4.00	8.0	313.8	322.1	4.17	57.33
16.100	4.00	8.0	313.6	321.8	4.08	57.33
16.200	4.00	8.0	313.5	321.6	4.04	57.33
16.300	4.00	8.0	313.5	321.5	4.02	57.33
16.400	4.00	8.0	313.5	321.5	4.01	57.33
16.500	4.00	8.0	313.5	321.5	4.00	57.33
16.600	4.00	8.0	313.5	321.5	4.00	57.33
16.700	4.00	8.0	313.5	321.5	4.00	57.33
16.800	3.00	7.0	313.0	320.5	3.74	57.32
16.900	3.00	6.0	312.3	319.0	3.36	57.31
17.000	3.00	6.0	311.9	318.3	3.17	57.30
17.100	3.00	6.0	311.8	317.9	3.08	57.30
17.200	3.00	6.0	311.7	317.8	3.04	57.30
17.300	3.00	6.0	311.6	317.7	3.02	57.30
17.400	3.00	6.0	311.6	317.6	3.01	57.30
17.500	3.00	6.0	311.6	317.6	3.00	57.30
17.600	3.00	6.0	311.6	317.6	3.00	57.30
17.700	3.00	6.0	311.6	317.6	3.00	57.30
17.800	3.00	6.0	311.6	317.6	3.00	57.30
17.900	3.00	6.0	311.6	317.6	3.00	57.30
18.000	3.00	6.0	311.6	317.6	3.00	57.30
18.100	3.00	6.0	311.6	317.6	3.00	57.30
18.200	3.00	6.0	311.6	317.6	3.00	57.30
18.300	3.00	6.0	311.6	317.6	3.00	57.30
18.400	3.00	6.0	311.6	317.6	3.00	57.30
18.500	3.00	6.0	311.6	317.6	3.00	57.30
18.600	3.00	6.0	311.6	317.6	3.00	57.30
18.700	3.00	6.0	311.6	317.6	3.00	57.30
18.800	3.00	6.0	311.6	317.6	3.00	57.30
18.900	3.00	6.0	311.6	317.6	3.00	57.30
19.000	3.00	6.0	311.6	317.6	3.00	57.30
19.100	3.00	6.0	311.6	317.6	3.00	57.30
19.200	3.00	6.0	311.6	317.6	3.00	57.30
19.300	3.00	6.0	311.6	317.6	3.00	57.30
19.400	3.00	6.0	311.6	317.6	3.00	57.30
19.500	2.00	5.0	311.1	316.6	2.74	57.29
19.600	2.00	4.0	310.4	315.1	2.36	57.28
19.700	2.00	4.0	310.1	314.4	2.17	57.27
19.800	2.00	4.0	309.9	314.1	2.08	57.27
19.900	2.00	4.0	309.8	313.9	2.04	57.27
20.000	2.00	4.0	309.8	313.8	2.02	57.27

EXECUTED: 09-24-1990 10:42:38

Pond File: d:\pond2\5774\RLNGMDX .PND
Inflow Hydrograph: d:\pond2\5774\RLNGP99P.HYD
Outflow Hydrograph: d:\pond2\5774\OUT .HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (hrs)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
20.100	2.00	4.0	309.8	313.8	2.01	57.26
20.200	2.00	4.0	309.8	313.8	2.00	57.26
20.300	2.00	4.0	309.8	313.8	2.00	57.26
20.400	2.00	4.0	309.7	313.8	2.00	57.26
20.500	2.00	4.0	309.7	313.7	2.00	57.26
20.600	2.00	4.0	309.7	313.7	2.00	57.26
20.700	2.00	4.0	309.7	313.7	2.00	57.26
20.800	2.00	4.0	309.7	313.7	2.00	57.26
20.900	2.00	4.0	309.7	313.7	2.00	57.26
21.000	2.00	4.0	309.7	313.7	2.00	57.26
21.100	2.00	4.0	309.7	313.7	2.00	57.26
21.200	2.00	4.0	309.7	313.7	2.00	57.26
21.300	2.00	4.0	309.7	313.7	2.00	57.26
21.400	2.00	4.0	309.7	313.7	2.00	57.26
21.500	2.00	4.0	309.7	313.7	2.00	57.26
21.600	2.00	4.0	309.7	313.7	2.00	57.26
21.700	2.00	4.0	309.7	313.7	2.00	57.26
21.800	2.00	4.0	309.7	313.7	2.00	57.26
21.900	2.00	4.0	309.7	313.7	2.00	57.26
22.000	2.00	4.0	309.7	313.7	2.00	57.26
22.100	2.00	4.0	309.7	313.7	2.00	57.26
22.200	2.00	4.0	309.7	313.7	2.00	57.26
22.300	2.00	4.0	309.7	313.7	2.00	57.26
22.400	2.00	4.0	309.7	313.7	2.00	57.26
22.500	2.00	4.0	309.7	313.7	2.00	57.26
22.600	2.00	4.0	309.7	313.7	2.00	57.26
22.700	2.00	4.0	309.7	313.7	2.00	57.26
22.800	2.00	4.0	309.7	313.7	2.00	57.26
22.900	2.00	4.0	309.7	313.7	2.00	57.26
23.000	2.00	4.0	309.7	313.7	2.00	57.26
23.100	1.00	3.0	309.3	312.7	1.74	57.26
23.200	1.00	2.0	308.6	311.3	1.36	57.24
23.300	1.00	2.0	308.2	310.6	1.17	57.24
23.400	1.00	2.0	308.0	310.2	1.08	57.23
23.500	1.00	2.0	308.0	310.0	1.04	57.23
23.600	1.00	2.0	307.9	310.0	1.02	57.23
23.700	1.00	2.0	307.9	309.9	1.01	57.23
23.800	1.00	2.0	307.9	309.9	1.00	57.23
23.900	1.00	2.0	307.9	309.9	1.00	57.23
24.000	1.00	2.0	307.9	309.9	1.00	57.23
24.100	1.00	2.0	307.9	309.9	1.00	57.23
24.200	1.00	2.0	307.9	309.9	1.00	57.23
24.300	1.00	2.0	307.9	309.9	1.00	57.23
24.400	1.00	2.0	307.9	309.9	1.00	57.23
24.500	1.00	2.0	307.9	309.9	1.00	57.23
24.600	1.00	2.0	307.9	309.9	1.00	57.23

Pond File: d:\pond2\5774\RLNGMDX .PND
Inflow Hydrograph: d:\pond2\5774\RLNGP99P.HYD
Outflow Hydrograph: d:\pond2\5774\OUT .HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (hrs)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
24.700	1.00	2.0	307.9	309.9	1.00	57.23
24.800	1.00	2.0	307.9	309.9	1.00	57.23
24.900	1.00	2.0	307.9	309.9	1.00	57.23
25.000	0.00	1.0	307.4	308.9	0.74	57.22
25.100	0.00	0.0	306.7	307.4	0.36	57.21
25.200	0.00	0.0	306.4	306.7	0.17	57.21
25.300	0.00	0.0	306.2	306.4	0.08	57.20
25.400	0.00	0.0	306.1	306.2	0.04	57.20
25.500	0.00	0.0	306.1	306.1	0.02	57.20
25.600	0.00	0.0	306.0	306.1	0.01	57.20
25.700	0.00	0.0	306.0	306.0	0.00	57.20
25.800	0.00	0.0	306.0	306.0	0.00	57.20
25.900	0.00	0.0	306.0	306.0	0.00	57.20

********** SUMMARY OF ROUTING COMPUTATIONS **********

Pond File: d:\pond2\5774\RLNGMDX .PND
Inflow Hydrograph: d:\pond2\5774\RLNGP99P.HYD
Outflow Hydrograph: d:\pond2\5774\OUT .HYD

Starting Pond W.S. Elevation = 49.50 ft

***** Summary of Peak Outflow and Peak Elevation *****

Peak Inflow = 88.00 cfs
Peak Outflow = 85.68 cfs
Peak Elevation = 58.52 ft

***** Summary of Approximate Peak Storage *****

Initial Storage = 0 cu-ft
Peak Storage From Storm = 77,482 cu-ft

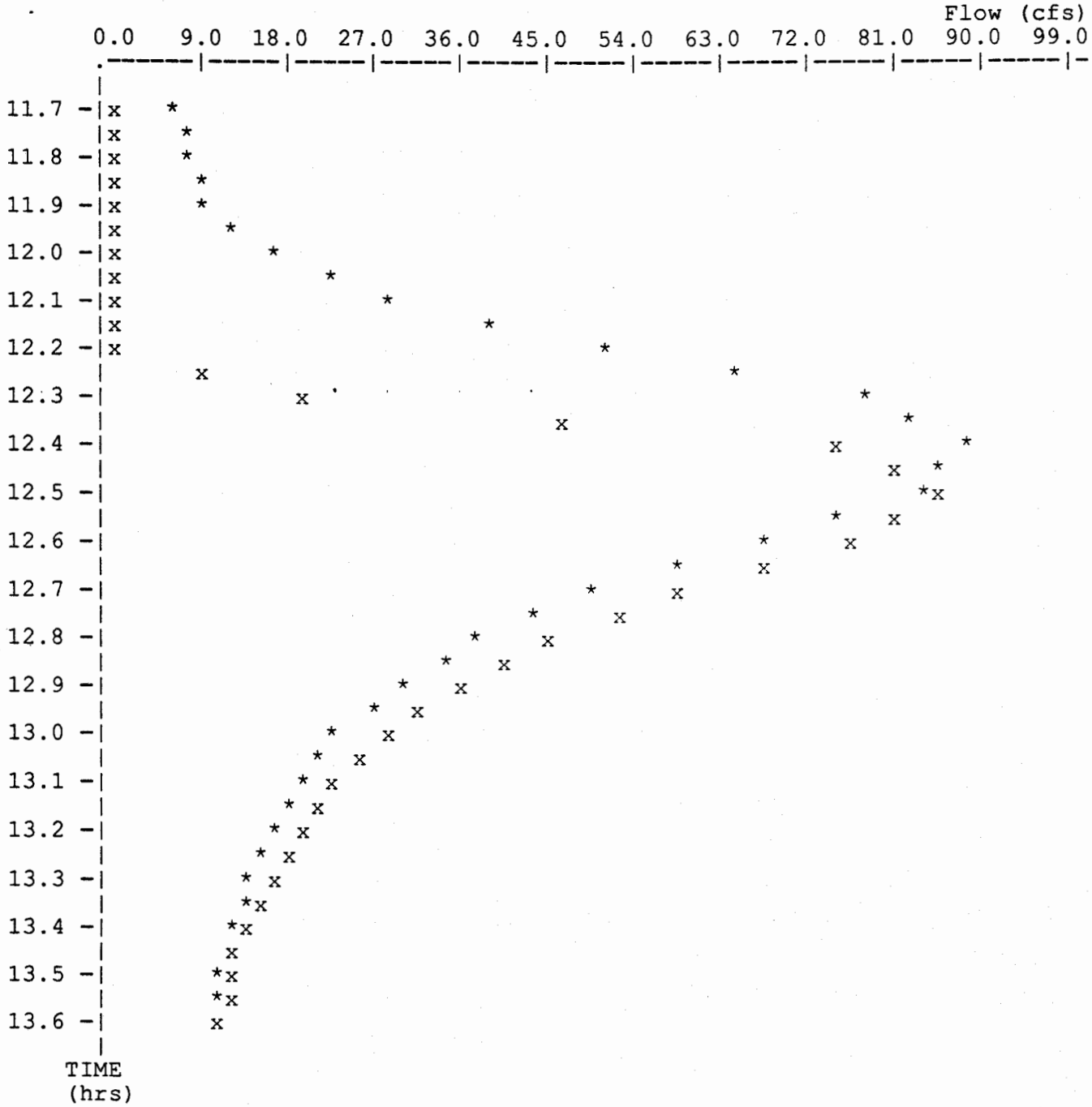
Total Storage in Pond = 77,482cu-ft

Warning: Inflow hydrograph truncated on left side.

Pond File: d:\pond2\5774\RLNGMDX .PND
Inflow Hydrograph: d:\pond2\5774\RLNGP99P.HYD
Outflow Hydrograph: d:\pond2\5774\OUT .HYD

EXECUTED: 09-24-1990
10:42:38

Peak Inflow = 88.00 cfs
Peak Outflow = 85.68 cfs
Peak Elevation = 58.52 ft



* File: d:\pond2\5774\RLNGP99P.HYD Qmax = 88.0 cfs
x File: d:\pond2\5774\OUT .HYD Qmax = 85.7 cfs

Outlet Structure File: RLNG1 .STR

POND-2 Version: 5.10 S/N: 1220510026
Date Executed: Time Executed:

```
*************************************************
            Rolling Meadows SWM Facility
  8" x 19" Rect. Orifice @ 53.65 (primary spillway)
6' Diameter Standpipe @ 57.20  (secondary spillway)
        35' Weir @ 58.50 (emergency spillway)
*************************************************
```

***** COMPOSITE OUTFLOW SUMMARY ****

Elevation (ft)	Q (cfs)	Contributing Structures
49.50	0.0	
50.00	0.0	
50.50	0.0	
51.00	0.0	
51.50	0.0	
52.00	0.0	
52.50	0.0	
53.00	0.0	
53.50	0.0	
54.00	0.0	1
54.50	3.6	1
55.00	5.1	1
55.50	6.3	1
56.00	7.2	1
56.50	8.1	1
57.00	8.8	1
57.20	9.1	2 +1
57.50	18.8	2 +1
58.00	50.7	2 +1
58.20	67.0	2 +1
58.50	94.6	4 +2 +1
59.00	143.5	4 +5
59.50	213.9	4 +5
60.00	303.5	4 +5

Outlet Structure File: RLNG1 .STR

POND-2 Version: 5.10 S/N: 1220510026
Date Executed: Time Executed:

```
**************************************************
          Rolling Meadows SWM Facility
   8" x 19" Rect. Orifice @ 53.65 (primary spillway)
  6' Diameter Standpipe @ 57.20  (secondary spillway)
         35' Weir @ 58.50 (emergency spillway)
**************************************************
```

Outlet Structure File: d:\pond2\5774\RLNG1 .STR
Planimeter Input File: d:\pond2\5774\RLNGMD .VOL
Rating Table Output File: d:\pond2\5774\RLNGMD .PND

Min. Elev.(ft) = 49.5 Max. Elev.(ft) = 60 Incr.(ft) = .5

Additional elevations (ft) to be included in table:
* *
57.2 58.2

```
*********************************************
              SYSTEM CONNECTIVITY
*********************************************
```

Structure	No.	Q Table		Q Table
WEIR-VR	4		->	4
STAND PIPE	2		->	2
ORIFICE	1	+ 2	->	A
CULVERT-CR	5	? A	->	3

Outflow rating table summary was stored in file:
d:\pond2\5774\RLNGMD .PND

Outlet Structure File: RLNG1 .STR

POND-2 Version: 5.10 S/N: 1220510026
Date Executed: Time Executed:

```
*****************************************************
            Rolling Meadows SWM Facility
  8" x 19" Rect. Orifice @ 53.65 (primary spillway)
6' Diameter Standpipe @ 57.20  (secondary spillway)
        35' Weir @ 58.50 (emergency spillway)
*****************************************************
```

>>>>>> Structure No. 4 <<<<<<
(Input Data)

WEIR-VR
Weir - Vertical Rectangular

E1 elev.(ft)?	58.5
E2 elev.(ft)?	60.001
Weir coefficient?	3
Weir elev.(ft)?	58.5
Length (ft)?	35
Contracted/Suppressed (C/S)?	C

Outlet Structure File: RLNG1 .STR

POND-2 Version: 5.10 S/N: 1220510026
Date Executed: Time Executed:

```
*****************************************************
            Rolling Meadows SWM Facility
  8" x 19" Rect. Orifice @ 53.65 (primary spillway)
 6' Diameter Standpipe @ 57.20  (secondary spillway)
        35' Weir @ 58.50 (emergency spillway)
*****************************************************
```

>>>>>> Structure No. 2 <<<<<<
(Input Data)

STAND PIPE
Stand Pipe with weir or orifice flow

E1 elev.(ft)?	57.20
E2 elev.(ft)?	60.001
Crest elev.(ft)?	57.20
Diameter (ft)?	6
Weir coefficient?	3
Orifice coefficient?	.6
Start transition elev.(ft) @ ?	59.
Transition height (ft)?	1

Outlet Structure File: RLNG1 .STR

POND-2 Version: 5.10 S/N: 1220510026
Date Executed: Time Executed:

```
**************************************************
            Rolling Meadows SWM Facility
  8" x 19" Rect. Orifice @ 53.65 (primary spillway)
6' Diameter Standpipe @ 57.20  (secondary spillway)
        35' Weir @ 58.50 (emergency spillway)
**************************************************
```

>>>>>> Structure No. 1 <<<<<<
(Input Data)

ORIFICE
Orifice - Based on Area and Datum Elevation

E1 elev.(ft)?	53.65
E2 elev.(ft)?	60.001
Orifice coeff.?	.6
Invert elev.(ft)?	53.66
Datum elev.(ft) ?	54.0
Orifice area (sq ft)?	1.06

5D

Outlet Structure File: RLNG1 .STR

POND-2 Version: 5.10 S/N: 1220510026
Date Executed: Time Executed:

```
*************************************************
            Rolling Meadows SWM Facility
  8" x 19" Rect. Orifice @ 53.65 (primary spillway)
6' Diameter Standpipe @ 57.20  (secondary spillway)
        35' Weir @ 58.50 (emergency spillway)
*************************************************
```

>>>>>> Structure No. 5 <<<<<<
(Input Data)

CULVERT-CR
Circular Culvert (With Inlet Control)

E1 elev.(ft)?	54
E2 elev.(ft)?	60.001
Diam. (ft)?	3
Inv. el.(ft)?	47.95
Slope (ft/ft)?	.002
T1 ratio?	
T2 ratio?	
K Coeff.?	.0098
M Coeff.?	2
c Coeff.?	.0398
Y Coeff.?	.67
Form 1 or 2?	1
Slope factor?	-.5

Outlet Structure File: RLNG1 .STR

POND-2 Version: 5.10 S/N: 1220510026
Date Executed: Time Executed:

```
*****************************************************
            Rolling Meadows SWM Facility
  8" x 19" Rect. Orifice @ 53.65 (primary spillway)
 6' Diameter Standpipe @ 57.20  (secondary spillway)
        35' Weir @ 58.50 (emergency spillway)
*****************************************************
```

Outflow Rating Table for Structure #4
WEIR-VR Weir - Vertical Rectangular

***** INLET CONTROL ASSUMED *****

Elevation (ft)	Q (cfs)	Computation Messages
49.50	0.0	E < Inv.El.= 58.5
50.00	0.0	E < Inv.El.= 58.5
50.50	0.0	E < Inv.El.= 58.5
51.00	0.0	E < Inv.El.= 58.5
51.50	0.0	E < Inv.El.= 58.5
52.00	0.0	E < Inv.El.= 58.5
52.50	0.0	E < Inv.El.= 58.5
53.00	0.0	E < Inv.El.= 58.5
53.50	0.0	E < Inv.El.= 58.5
54.00	0.0	E < Inv.El.= 58.5
54.50	0.0	E < Inv.El.= 58.5
55.00	0.0	E < Inv.El.= 58.5
55.50	0.0	E < Inv.El.= 58.5
56.00	0.0	E < Inv.El.= 58.5
56.50	0.0	E < Inv.El.= 58.5
57.00	0.0	E < Inv.El.= 58.5
57.20	0.0	E < Inv.El.= 58.5
57.50	0.0	E < Inv.El.= 58.5
58.00	0.0	E < Inv.El.= 58.5
58.20	0.0	E < Inv.El.= 58.5
58.50	0.0	H =0.0
59.00	37.0	H =.5
59.50	104.4	H =1.0
60.00	191.2	H =1.5

C = 3 L (ft) = 35
H (ft) = Table elev. - Invert elev. (58.5 ft)
Q (cfs) = C * (L-.2H) * (H**1.5) -- Contracted Weir

Outlet Structure File: RLNG1 .STR

POND-2 Version: 5.10 S/N: 1220510026
Date Executed: Time Executed:

```
*************************************************
          Rolling Meadows SWM Facility
  8" x 19" Rect. Orifice @ 53.65 (primary spillway)
6' Diameter Standpipe @ 57.20  (secondary spillway)
       35' Weir @ 58.50 (emergency spillway)
*************************************************
```

Outflow Rating Table for Structure #2
STAND PIPE Stand Pipe with weir or orifice flow

***** INLET CONTROL ASSUMED *****

Elevation (ft)	Q (cfs)	Computation Messages
49.50	0.0	E < Inv.El.= 57.2
50.00	0.0	E < El=57.20
50.50	0.0	E < El=57.20
51.00	0.0	E < El=57.20
51.50	0.0	E < El=57.20
52.00	0.0	E < El=57.20
52.50	0.0	E < El=57.20
53.00	0.0	E < El=57.20
53.50	0.0	E < El=57.20
54.00	0.0	E < El=57.20
54.50	0.0	E < El=57.20
55.00	0.0	E < El=57.20
55.50	0.0	E < El=57.20
56.00	0.0	E < El=57.20
56.50	0.0	E < El=57.20
57.00	0.0	E < El=57.20
57.20	0.0	Weir: H =0.0
57.50	9.3	Weir: H =.3
58.00	40.5	Weir: H =.8
58.20	56.5	Weir: H =1.0
58.50	83.8	Weir: H =1.3
59.00	136.6	Transition: H =1.8
59.50	182.2	Transition: H =2.3
60.00	227.8	Transition: H =2.8

Weir Cw = 3 Weir length = 18.84956 ft
Orifice Co = .6 Orifice area = 28.27434 sq.ft.
Q (cfs) = (Cw * L * H**1.5) or (Co * A * sqr(2*g*H))
Transition interpolated between elev. 59 and 60 ft
Weir equation = Orifice equation @ elev.= 59.60749 ft

Outlet Structure File: RLNG1 .STR

POND-2 Version: 5.10 S/N: 1220510026
Date Executed: Time Executed:

```
*************************************************
            Rolling Meadows SWM Facility
  8" x 19" Rect. Orifice @ 53.65 (primary spillway)
6' Diameter Standpipe @ 57.20  (secondary spillway)
        35' Weir @ 58.50 (emergency spillway)
*************************************************
```

Outflow Rating Table for Structure #1
ORIFICE Orifice - Based on Area and Datum Elevation

Elevation (ft)	Q (cfs)	Computation Messages
49.50	0.0	E < E1=53.65
50.00	0.0	E < E1=53.65
50.50	0.0	E < E1=53.65
51.00	0.0	E < E1=53.65
51.50	0.0	E < E1=53.65
52.00	0.0	E < E1=53.65
52.50	0.0	E < E1=53.65
53.00	0.0	E < E1=53.65
53.50	0.0	E < E1=53.65
54.00	0.0	H =0.0
54.50	3.6	H =.5
55.00	5.1	H =1.0
55.50	6.3	H =1.5
56.00	7.2	H =2.0
56.50	8.1	H =2.5
57.00	8.8	H =3.0
57.20	9.1	H =3.2
57.50	9.5	H =3.5
58.00	10.2	H =4.0
58.20	10.5	H =4.2
58.50	10.8	H =4.5
59.00	11.4	H =5.0
59.50	12.0	H =5.5
60.00	12.5	H =6.0

C = .6 A = 1.06 sq.ft.
H (ft) = Table elev. - Datum elev. (54 ft)
Q (cfs) = C * A * sqr(2g * H)

Outlet Structure File: RLNG1 .STR

POND-2 Version: 5.10 S/N: 1220510026
Date Executed: Time Executed:

****
Rolling Meadows SWM Facility
8" x 19" Rect. Orifice @ 53.65 (primary spillway)
6' Diameter Standpipe @ 57.20 (secondary spillway)
35' Weir @ 58.50 (emergency spillway)
****

Outflow Rating Table for Structure #5
CULVERT-CR Circular Culvert (With Inlet Control)

***** INLET CONTROL ASSUMED *****

Elevation (ft)	Q (cfs)	Computation Messages
49.50	0.0	E < E1=54
50.00	0.0	E < E1=54
50.50	0.0	E < E1=54
51.00	0.0	E < E1=54
51.50	0.0	E < E1=54
52.00	0.0	E < E1=54
52.50	0.0	E < E1=54
53.00	0.0	E < E1=54
53.50	0.0	E < E1=54
54.00	71.2	Submerged: HW =6.05
54.50	75.5	Submerged: HW =6.55
55.00	79.5	Submerged: HW =7.05
55.50	83.4	Submerged: HW =7.55
56.00	87.2	Submerged: HW =8.05
56.50	90.6	Submerged: HW =8.55
57.00	94.0	Submerged: HW =9.05
57.20	95.4	Submerged: HW =9.25
57.50	97.3	Submerged: HW =9.55
58.00	100.5	Submerged: HW =10.05
58.20	101.8	Submerged: HW =10.25
58.50	103.6	Submerged: HW =10.55
59.00	106.5	Submerged: HW =11.05
59.50	109.5	Submerged: HW =11.55
60.00	112.2	Submerged: HW =12.05

Used Unsubmerged Equ. Form (1) for elev. less than 51.43 ft
Used Submerged Equation for elevations greater than 51.87 ft
HW=Headwater (ft) dc=Critical depth (ft) Ac=Area (sq.ft) at dc

Transition flows interpolated from the following values:
E1=51.43 ft; Q1=42.85 cfs; Dc=2.13 ft; E2=51.87 ft; Q2=48.97cfs

Outlet Structure File: RLNG1 .STR

POND-2 Version: 5.10 S/N: 1220510026
Date Executed: Time Executed:

****
Rolling Meadows SWM Facility
8" x 19" Rect. Orifice @ 53.65 (primary spillway)
6' Diameter Standpipe @ 57.20 (secondary spillway)
35' Weir @ 58.50 (emergency spillway)
****

Outflow Rating Table A
Table A = 2 + 1

Elevation (ft)	Q (cfs)	Contributing Structures
49.50	0.0	-
50.00	0.0	-
50.50	0.0	-
51.00	0.0	-
51.50	0.0	-
52.00	0.0	-
52.50	0.0	-
53.00	0.0	-
53.50	0.0	-
54.00	0.0	1
54.50	3.6	1
55.00	5.1	1
55.50	6.3	1
56.00	7.2	1
56.50	8.1	1
57.00	8.8	1
57.20	9.1	2 +1
57.50	18.8	2 +1
58.00	50.7	2 +1
58.20	67.0	2 +1
58.50	94.6	2 +1
59.00	148.0	2 +1
59.50	194.2	2 +1
60.00	240.3	2 +1

Outlet Structure File: RLNG1 .STR

POND-2 Version: 5.10 S/N: 1220510026
Date Executed: Time Executed:

****
Rolling Meadows SWM Facility
8" x 19" Rect. Orifice @ 53.65 (primary spillway)
6' Diameter Standpipe @ 57.20 (secondary spillway)
35' Weir @ 58.50 (emergency spillway)
****

Outflow Rating Table 3
Table 3 = A ? 5

Elevation (ft)	Q (cfs)	Contributing Structures
49.50	0.0	-
50.00	0.0	-
50.50	0.0	-
51.00	0.0	-
51.50	0.0	-
52.00	0.0	-
52.50	0.0	-
53.00	0.0	-
53.50	0.0	-
54.00	0.0	1
54.50	3.6	1
55.00	5.1	1
55.50	6.3	1
56.00	7.2	1
56.50	8.1	1
57.00	8.8	1
57.20	9.1	2 +1
57.50	18.8	2 +1
58.00	50.7	2 +1
58.20	67.0	2 +1
58.50	94.6	2 +1
59.00	106.5	5
59.50	109.5	5
60.00	112.2	5

ROLLING MEADOWS

1. Prin Spw = 56.1' - 36" barrel - 60" riser
   Orifice - 49.5" - 11.25"
   Emergency Spill - 57.4 - 35'

2. Elev Stor ROLLMEAD.DAT

Elev	Stor
49.5	0
52.0	
~~54~~.0	.09
~~FOREBAY~~ 54.0	.41
56	.68
56.0	.98
58	1.75

3.

STORM	Pre	Consult.	POST		OUT		ELEV		V_s
2-24	4.9	10	15.6	31	7.9	8.9	54.5	56.06	0.6
10-24	12.7		26.5		15.8		56.3		1.1
100-24	19.2		34.3	88	28.1	86	56.9	57.3	1.3
2-24 w/9" orif.					5.7		55.1		0.7

From TR-55 Program

Pre RCN - 61 - open space ; grass - B soils

Post RCN - 72

Pre Q_2 = 6 cfs

Q_{10} = 22 cfs

Post Q_2 = 21 cfs 1.0

Q_{10} = 48 cfs 2.2

Q_{25} = 70 cfs 3.2

Q_{100} = 98 cfs 4.4

For $Q_{out\,2}$ = 6 cfs Stor = .7 ac ft

ROLLING MEADOWS

DRAINAGE AREA = .034 SQUARE MILES
TIME OF CONCENTRATION = .5 HOURS
RUNOFF CURVE NUMBER = 79
STORM DURATION = 24 HOURS
SCS TYPE 2 STORM
RAINFALL = 6 INCHES
RUNOFF = 3.68 INCHES = 6.67 ACRE FEET

VOLUME ADJUSTMENT FACTOR = 1.00

*** MAXIMUM FLOW = 68.01 CFS AT 12.2 HOURS ***

TIME (HOURS)	CUM. RAINFALL (INCHES)	CUM. RUNOFF (INCHES)	FLOW (CFS)
0.00	0.00	0.00	0.00
0.50	0.03	0.00	0.00
1.00	0.06	0.00	0.00
1.50	0.10	0.00	0.00
2.00	0.13	0.00	0.00
2.50	0.17	0.00	0.00
3.00	0.21	0.00	0.00
3.50	0.25	0.00	0.00
4.00	0.29	0.00	0.00
4.50	0.33	0.00	0.00
5.00	0.38	0.00	0.00
5.50	0.43	0.00	0.00
6.00	0.48	0.00	0.00
6.50	0.54	0.00	0.00
7.00	0.59	0.00	0.04
7.50	0.66	0.01	0.15
8.00	0.72	0.01	0.27
8.50	0.79	0.02	0.43
9.00	0.88	0.04	0.69
9.50	0.98	0.06	0.97
10.00	1.09	0.10	1.28
10.50	1.22	0.14	1.89
11.00	1.41	0.22	2.96
11.50	1.70	0.36	5.24
12.00	3.98	1.95	49.95
12.50	4.41	2.30	31.92
13.00	4.63	2.49	10.99
13.50	4.79	2.63	6.67
14.00	4.92	2.73	5.08
14.50	5.03	2.82	4.17
15.00	5.12	2.91	3.73
15.50	5.21	2.98	3.34
16.00	5.28	3.04	2.95
16.50	5.35	3.10	2.64
17.00	5.41	3.16	2.48
17.50	5.47	3.21	2.34
18.00	5.53	3.26	2.20
18.50	5.58	3.31	2.06
19.00	5.63	3.35	1.92
19.50	5.67	3.39	1.77
20.00	5.71	3.42	1.63
20.50	5.75	3.46	1.52
21.00	5.79	3.49	1.49
21.50	5.83	3.52	1.46
22.00	5.86	3.56	1.43
22.50	5.90	3.59	1.40
23.00	5.93	3.62	1.38
23.50	5.97	3.65	1.35
24.00	6.00	3.68	1.32
24.50	6.00	3.68	0.30
25.00	6.00	3.68	0.02

22.0
15.7
6.3

ROLLING MEADOWS

STAGE (FT)	STORAGE (AC-FT)	DISCHARGE (CFS)
46.1	.02	.05
46.4	.14	.9
46.7	.32	2.55
47	.5	4.51
47.3	.78	6.01
47.5	.92	6.5
48	1.58	6.8
48.5	2.05	7.3
49	2.55	7.9
49.5	3.1	8.45
50	4	9.1
50.6		

Basin Design
- $Q_{2\,OUT}$ = 6 cfs
  V_s = 0.7 ac ft req'd
  ACTUAL - 47.2 elev
  - Q_{OUT} = 5.5 cfs
Q_{10} - out = 8 cfs
  V_s needed = 2.0 ac ft
  ACTUAL - ELEV 48.5 - V_s = 2.05
  Q_{OUT} = 7.3 cfs
Q_{25} - out = 9 cfs
  ACTUAL ELEV = 49.5
  V_s = 3.1 ac ft
Q_{100} -

MAXIMUM INFLOW = 68.01 CFS AT 12.20 HOURS.
MAXIMUM RESERVOIR ELEVATION = 49.60 FEET AT 13.20 HOURS.
MAXIMUM OUTFLOW = 8.58 CFS AT 13.20 HOURS.

TIME (HRS)	INFLOW (CFS)	ELEVATION (FT)	STORAGE (A-FT)	OUTFLOW (CFS)	NOTES
0.00	0.00	46.10	0.02	0.05	----
2.00	0.00	46.10	0.02	0.05	----
4.00	0.00	46.10	0.02	0.05	----
6.00	0.00	46.10	0.02	0.05	----
8.00	0.27	46.12	0.03	0.10	
10.00	1.28	46.29	0.10	0.59	
12.00	49.95	47.41	0.86	6.28	
14.00	5.08	49.52	3.14	8.48	
16.00	2.95	48.87	2.42	7.75	
18.00	2.20	48.06	1.63	6.86	
20.00	1.63	47.40	0.85	6.26	
22.00	1.43	46.74	0.34	2.82	
24.00	1.32	46.54	0.22	1.67	
26.00	0.00	46.27	0.09	0.54	
28.00	0.00	46.14	0.04	0.17	
30.00	0.00	46.10	0.02	0.05	
32.00	0.00	46.10	0.02	0.05	----
34.00	0.00	46.10	0.02	0.05	----
36.00	0.00	46.10	0.02	0.05	----
38.00	0.00	46.10	0.02	0.05	----
40.00	0.00	46.10	0.02	0.05	----
42.00	0.00	46.10	0.02	0.05	----
44.00	0.00	46.10	0.02	0.05	----
46.00	0.00	46.10	0.02	0.05	----
48.00	0.00	46.10	0.02	0.05	----
50.00	0.00	46.10	0.02	0.05	----
52.00	0.00	46.10	0.02	0.05	----
54.00	0.00	46.10	0.02	0.05	----
56.00	0.00	46.10	0.02	0.05	----
58.00	0.00	46.10	0.02	0.05	----
60.00	0.00	46.10	0.02	0.05	----
62.00	0.00	46.10	0.02	0.05	----
64.00	0.00	46.10	0.02	0.05	----
66.00	0.00	46.10	0.02	0.05	----
68.00	0.00	46.10	0.02	0.05	----
70.00	0.00	46.10	0.02	0.05	----
72.00	0.00	46.10	0.02	0.05	----
74.00	0.00	46.10	0.02	0.05	----
76.00	0.00	46.10	0.02	0.05	----
78.00	0.00	46.10	0.02	0.05	----
80.00	0.00	46.10	0.02	0.05	----
82.00	0.00	46.10	0.02	0.05	----
84.00	0.00	46.10	0.02	0.05	----
86.00	0.00	46.10	0.02	0.05	----
88.00	0.00	46.10	0.02	0.05	----
90.00	0.00	46.10	0.02	0.05	----
92.00	0.00	46.10	0.02	0.05	----
94.00	0.00	46.10	0.02	0.05	----
96.00	0.00	46.10	0.02	0.05	----
98.00	0.00	46.10	0.02	0.05	----
100.00	0.00	46.10	0.02	0.05	----
102.00	0.00	46.10	0.02	0.05	----
104.00	0.00	46.10	0.02	0.05	----
106.00	0.00	46.10	0.02	0.05	----
108.00	0.00	46.10	0.02	0.05	----
110.00	0.00	46.10	0.02	0.05	----
112.00	0.00	46.10	0.02	0.05	----
114.00	0.00	46.10	0.02	0.05	----

116.00	0.00	46.10	0.02	0.05	---
118.00	0.00	46.10	0.02	0.05	---
120.00	0.00	46.10	0.02	0.05	---
122.00	0.00	46.10	0.02	0.05	---
124.00	0.00	46.10	0.02	0.05	---
126.00	0.00	46.10	0.02	0.05	---
128.00	0.00	46.10	0.02	0.05	---
130.00	0.00	46.10	0.02	0.05	---
132.00	0.00	46.10	0.02	0.05	---
134.00	0.00	46.10	0.02	0.05	---
136.00	0.00	46.10	0.02	0.05	---
138.00	0.00	46.10	0.02	0.05	---
140.00	0.00	46.10	0.02	0.05	---
142.00	0.00	46.10	0.02	0.05	---
144.00	0.00	46.10	0.02	0.05	---
146.00	0.00	46.10	0.02	0.05	---
148.00	0.00	46.10	0.02	0.05	---
150.00	0.00	46.10	0.02	0.05	---
152.00	0.00	46.10	0.02	0.05	---
154.00	0.00	46.10	0.02	0.05	---
156.00	0.00	46.10	0.02	0.05	---
158.00	0.00	46.10	0.02	0.05	---
160.00	0.00	46.10	0.02	0.05	---
162.00	0.00	46.10	0.02	0.05	---
164.00	0.00	46.10	0.02	0.05	---
166.00	0.00	46.10	0.02	0.05	---
168.00	0.00	46.10	0.02	0.05	---
170.00	0.00	46.10	0.02	0.05	---
172.00	0.00	46.10	0.02	0.05	---
174.00	0.00	46.10	0.02	0.05	---
176.00	0.00	46.10	0.02	0.05	---
178.00	0.00	46.10	0.02	0.05	---
180.00	0.00	46.10	0.02	0.05	---
182.00	0.00	46.10	0.02	0.05	---
184.00	0.00	46.10	0.02	0.05	---
186.00	0.00	46.10	0.02	0.05	---
188.00	0.00	46.10	0.02	0.05	---
190.00	0.00	46.10	0.02	0.05	---
192.00	0.00	46.10	0.02	0.05	---
194.00	0.00	46.10	0.02	0.05	---
196.00	0.00	46.10	0.02	0.05	---
198.00	0.00	46.10	0.02	0.05	---
200.00	0.00	46.10	0.02	0.05	---
202.00	0.00	46.10	0.02	0.05	---
204.00	0.00	46.10	0.02	0.05	---
206.00	0.00	46.10	0.02	0.05	---
208.00	0.00	46.10	0.02	0.05	---
210.00	0.00	46.10	0.02	0.05	---
212.00	0.00	46.10	0.02	0.05	---
214.00	0.00	46.10	0.02	0.05	---
216.00	0.00	46.10	0.02	0.05	---
218.00	0.00	46.10	0.02	0.05	---
220.00	0.00	46.10	0.02	0.05	---
222.00	0.00	46.10	0.02	0.05	---
224.00	0.00	46.10	0.02	0.05	---
226.00	0.00	46.10	0.02	0.05	---
228.00	0.00	46.10	0.02	0.05	---
230.00	0.00	46.10	0.02	0.05	---
232.00	0.00	46.10	0.02	0.05	---
234.00	0.00	46.10	0.02	0.05	---
236.00	0.00	46.10	0.02	0.05	---
238.00	0.00	46.10	0.02	0.05	---
240.00	0.00	46.10	0.02	0.05	---
242.00	0.00	46.10	0.02	0.05	---
244.00	0.00	46.10	0.02	0.05	---
246.00	0.00	46.10	0.02	0.05	---
248.00	0.00	46.10	0.02	0.05	---
250.00	0.00	46.10	0.02	0.05	---

THE *** NOTE MEANS THAT THE RESERVOIR ELEVATION IS >= THE LARGEST VALUE ON THE

Date Record Created:

Created By:

WS_BMPNO: PC008

Print Record

PRINTED ON
Tuesday, March 09, 2010
9:55:59 AM

WATERSHED	PC
BMP ID NO	008
PLAN NO	SP-67-95
TAX PARCEL	(33-3)(1-37)
PIN NO	33301000037
CONSTRUCTION DATE	12/15/1992
PROJECT NAME	Rolling Meadows
FACILITY LOCATION	5194 Longhill Road
CITY-STATE	Williamsburg, VA
CURRENT OWNER	Rolling Meadows Associates
OWNER ADDRESS	P.O.Box Drawer 816638
OWNER ADDRESS 2	Dallas, TX 75381
CITY-STATE-ZIP CODE	
OWNER PHONE	
MAINT AGREEMENT	No
EMERG ACTION PLAN	No

Get Last BMP No

Return to Menu

MAINTENANCE PLAN	No	CTRL STRUC DESC	
SITE AREA acre	21.8	CTRL STRUC SIZE inches	
LAND USE	MFRS	OTLT BARRL DESC	CMP
old BMP TYP	Dry Pond	OTLT BARRL SIZE inch	36
JCC BMP CODE	F2 Dry ED with forebay		
POINT VALUE	6	EMERG SPILLWAY	No
		DESIGN HW ELEV	
		PERM POOL ELEV	
SVC DRAIN AREA acres	21.8	2-YR OUTFLOW cfs	
		10-YR OUTFLOW cfs	
		REC DRAWING	No
SERVICE AREA DESCRI	Grassed Swales and Shallow Marsh		
IMPERV AREA acres		CONSTR CERTIF	No
RECV STREAM	Pow Ck. Tributary		
EXT DET-WQ-CTRL	No	LAST INSP DATE 8/15/2000	Inspected by:
WTR QUAL VOL acre-ft	0.3	INTERNAL RATING	3
CHAN PROT CTRL	No	MISC/COMMENTS	
CHAN PROT VOL acre-ft	1.25		
SW/FLOOD CONTROL	No		
GEOTECH REPORT	No		

Additional Comments: