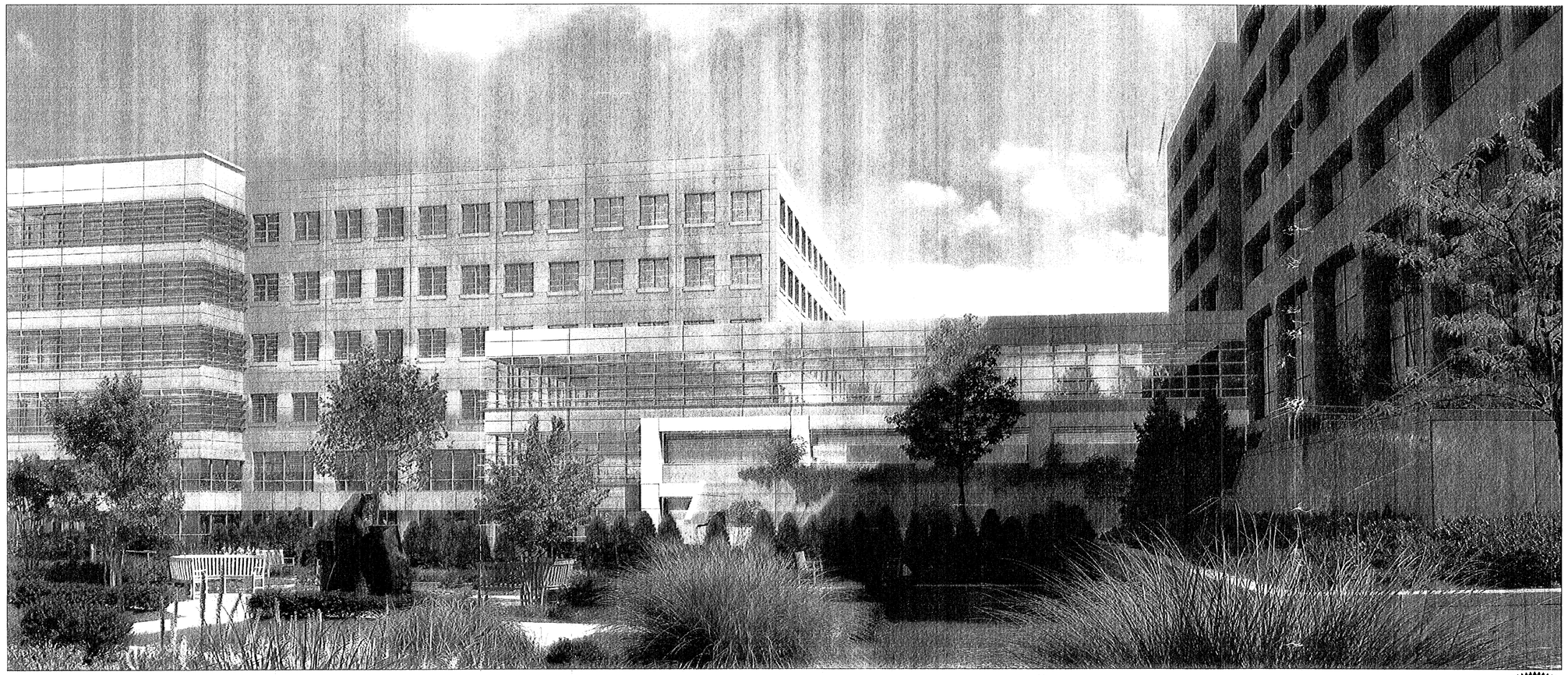
MITRE 4

PROFFERED CONDITION AMENDMENT/ REZONING / GENERALIZED DEVELOPMENT PLAN

PCA 92-P-001-05



RECEIVED
Department of Planning & Zoning
JUN 30 2008
Zoning Evaluation Division

COMMONWEALTH OF VIRGINIA
DAVID H. STEIGLER
Cert. No. 609
JUNE 27, 2008
LANDSCAPE ARCHITECT

COMMONWEALTH OF VIRGINIA
ROBERT A. MUNSE
Lic. No. 15338
JUNE 27, 2008
PROFESSIONAL ENGINEER

ATTORNEYS:
Cooley Godward Kronish LLP
ONE FREEDOM SQUARE
11951 FREEDOM DRIVE
RESTON VA 20190-5601
T 703.456.8609
F 703.456.8100

PLANNING/ARCHITECTURE:
Perkins + Will
2100 M Street, NW, Ste. 800
WASHINGTON, D.C.
T 202.737.1020
F 202.223.1570

OWNER / APPLICANT:
THE MITRE Corporation
7515 Colshire Drive
McLean, VA 22202
T 703.580.0672

PLANNING/CIVIL ENGINEERING/LANDSCAPE ARCHITECTURE:
Patton Harris Rust & Associates
14532 LEE ROAD
CHANTILLY, VIRGINIA 20151-1679
T 703.449.8700
F 703.449.6714

Jones Application No. PCA-92-P-001-05 Staff P.B.
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP)
SEE PROFFERS DATED 10/02/08
Date of (BOS) (PC) approval 10/20/08

Sheet 1 of 18
See also RZ-2008-PR-011

Revised June 27, 2008
Revised April 30, 2008
Revised March 13, 2008
Revised February 8, 2007
August 16, 2006

SHEET 1 OF 18
P-01A-COV
PHR+A FILE # 10022-1-5

GENERAL NOTES

1. THE AREA SUBJECT TO PCA /RZ IS LOCATED ON FAIRFAX COUNTY TAX ASSESSMENT MAP 30-3 ((28)) PARCEL 3A1 AND PARCEL 4A3, AND IS IN THE NAME OF MITRE CORPORATION AS RECORDED IN DEED BOOK 14774 PAGE 1546. THE PROPERTY CONSISTS OF 19.63 ACRES (854,013 SF + 1,288 SF OF DEDICATED ROW) AND IS CURRENTLY ZONED C-3. THIS APPLICATION REQUESTS THE SUBJECT PROPERTY BE REMOVED FROM THE WEST GATE GDP AND BE CONSIDERED AN INDEPENDENT GDP.

2. THE SITE IS DEVELOPED WITH EXISTING OFFICE USES.

3. THE SUBJECT PROPERTY IS LOCATED IN PLANNING AREA II, TYSON'S CORNER URBAN CENTER, LAND UNIT R-2 OF THE FAIRFAX COUNTY COMPREHENSIVE PLAN. THE LAND USE RECOMMENDATION FOR THE SUBJECT AND ADJACENT PROPERTIES IS FOR RESEARCH AND DEVELOPMENT USE, LIGHT INDUSTRIAL USE AND OFFICE USE WITH SUPPORT RETAIL AND SERVICES UP TO AN AVERAGE .65 FAR FOR THE SUB-UNIT, WITH A MAXIMUM INTENSITY OF 1.0 FAR ON INDIVIDUAL PARCELS.

4. THE COMPREHENSIVE PLAN DOES NOT INDICATE ANY TRAILS ON THE SITE.

5. FIELD SURVEY BY PHR+A, DATED 11-1-01.

6. THE TOPOGRAPHIC INFORMATION IS BASED UPON AVAILABLE INFORMATION FROM PREVIOUS SITE PLANS AND TWO (2) FOOT CONTOUR INTERVALS ARE PROVIDED. EXISTING VEGETATION SHOWN IS FROM AVAILABLE RECORDS AND FIELD REVIEW AND MAY NOT BE INCLUSIVE OF ALL VEGETATION ON THE SITE.

7. THE PLAN HAS BEEN PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT. ANY KNOWN MAJOR UNDERGROUND UTILITY EASEMENTS LOCATED ON THE SUBJECT PROPERTY AND WITH A WIDTH GREATER THAN TWENTY-FIVE (25) FEET ARE SHOWN ON THE PLAN.

8. THE SITE IS IN THE SCOTTS RUN WATERSHED.

9. TO THE BEST OF OUR KNOWLEDGE, NO GRAVE SITE EXISTS ON THIS SITE.

10. TO THE BEST OF OUR KNOWLEDGE, NO HAZARDOUS OR TOXIC SUBSTANCES ARE PRESENT ON SITE AS SET FORTH IN TITLE 40, CODE OF FEDERAL REGULATIONS PARTS 116.4, 302.4, AND 355; ALL HAZARDOUS WASTE AS SET FORTH IN COMMONWEALTH OF VIRGINIA /DEPARTMENT OF WASTE MANAGEMENT REGULATIONS VR 672-10-1- VIRGINIA HAZARDOUS WASTE MANAGEMENT REGULATIONS; AND /OR PETROLEUM PRODUCTS AS DEFINED IN TITLE 40, CODE OF FEDERAL REGULATIONS, PART 280. TO THE BEST OF OUR KNOWLEDGE THE PROPOSED DEVELOPMENT WILL NOT GENERATE, UTILIZE, STORE, TREAT OR DISPOSE OF ANY SUCH SUBSTANCES ON SITE. THE SITE IS A DEVELOPED SITE AND HAS NO SCENIC ASSETS OR NATURAL FEATURES DESERVING OF PROTECTION AND PRESERVATION.

11. NO FLOOD PLAIN RESOURCE PROTECTION AREAS OR ENVIRONMENTAL QUALITY CORRIDORS EXIST ON SITE.

12. PARKING SHALL CONFORM TO PROVISIONS OF ARTICLE 11 OF THE FAIRFAX COUNTY ZONING ORDINANCE. THE APPLICANT RESERVES THE RIGHT TO PROVIDE MORE PARKING THAN SHOWN ON THE PLAN BASED ON MARKET CONDITIONS, PHASE THE PROPOSED UNDERGROUND PARKING SHOWN, OR SEEK A REDUCTION FROM THAT SHOWN.

13. PUBLIC SANITARY SEWER SERVICE AND WATER WILL BE PROVIDED TO THE PROPOSED DEVELOPMENT BY EXTENSION OF EXISTING SANITARY SEWER MAINS. DETAILED DESIGN SHALL BE COMPLETED DURING FINAL SITE PLAN ENGINEERING.

14. INGRESS AND EGRESS TO THE PROPERTY IS VIA DARTFORD DRIVE AND COLSHIRE DRIVE.

15. THE BUILDINGS REPRESENTED ON THE GDP PLAN ARE ILLUSTRATIVE AND SUBJECT TO VARYING FOOTPRINTS BASED ON MARKET CONDITIONS, FINAL ARCHITECTURE AND ENGINEERING. FOOTPRINTS MAY CHANGE AS LONG AS MINIMUM BUILDING SETBACKS SHOWN ON THE GDP AND MAXIMUM FAR ARE MAINTAINED. MINOR MODIFICATIONS TO ALL FEATURES SHOWN ON THE GDP PLAN MAY BE PERMITTED AS DETERMINED BY THE ZONING ADMINISTRATOR IN ACCORDANCE WITH THE PROVISIONS SET FORTH IN PARAGRAPH 5 OF SECTION 18-204 OF THE ZONING ORDINANCE. ADDITIONAL SITE FEATURES SUCH AS ENTRANCE SIGNS, FLAGPOLES, FENCES AND WALLS NOT SHOWN ON THE GDP PLAN MAY BE PROVIDED.

16. PROPOSED SIGNS WILL CONFORM TO ARTICLE 12 OF THE ZONING ORDINANCE OR SE 2002-PR-031.

17. THE DEVELOPMENT OF THIS PROJECT SHALL COMMENCE AT SUCH TIME AS APPROPRIATE COUNTY APPROVALS HAVE BEEN OBTAINED AND SUBJECT TO OWNER DISCRETION. THE APPLICANT RESERVES THE RIGHT PHASE THE DEVELOPMENT AS DETERMINED BY FINAL ENGINEERING AND MARKET CONDITIONS.

18. APPROXIMATE LIMITS OF CLEARING AND GRADING ARE SHOWN ON THE GDP, AND WILL VARY BASED UPON FINAL ENGINEERING AND DESIGN.

19. BIKE RACKS (FOR 8± BIKES) AND LOCKERS (FOR 6± BIKES) WILL BE PROVIDED WITHIN THE PROPOSED MITRE 4 PARKING GARAGE. EXISTING BIKE RACKS (FOR 24± BIKES) ARE LOCATED WITHIN THE PHASE 2 & 3 PARKING GARAGES. THE EXISTING MITRE I BUILDING, IMMEDIATELY ADJACENT TO PROPOSED MITRE 4, HAS A FITNESS CENTER WITH SHOWERS AND LOCKERS.

WAIVERS:

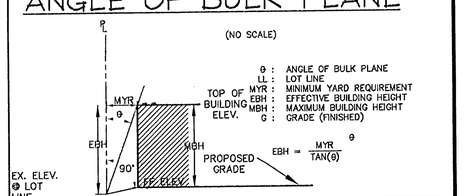
TO THE BEST OF OUR KNOWLEDGE, THE PROPOSED DEVELOPMENT WILL BE IN CONFORMANCE WITH APPLICABLE ORDINANCES, REGULATIONS, AND ADOPTED STANDARDS WITH THE EXCEPTION OF THE FOLLOWING:

1. A TRANSITIONAL SCREENING YARD MODIFICATION IS HEREBY REQUESTED TO ALLOW THE EXISTING VEGETATION AND PROPOSED LANDSCAPING AS SHOWN (SEE SHEET 5).

2. A WAIVER FROM THE REQUIRED 5 LOADING SPACES FOR AN INDIVIDUAL BUILDING. THIS APPLICATION IS PROPOSING TO PROVIDE 5 LOADING SPACES TOTAL FOR THE EXISTING MITRE BUILDING I AND THE PLANNED MITRE 4 BUILDINGS.

ANGLE OF BULK PLANE

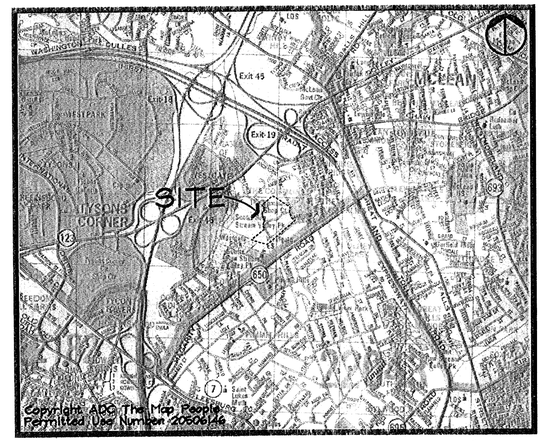
(NO SCALE)



ABP REF. NO.	YARD	LOCATION	EX. ELEV. @ PL	θ REQ'D.*	θ PROV.	MYR REQ'D.*	MYR PROV.	EBH	MBH
ABP1	FRONT	MITRE 4 OFFICE	373'	25°	67°	40'	220'	93'	90'
ABP2	REAR	HAYES		20°	68°	25'	276'	91'	90'
ABP3	SIDE	NA							
ABP4	SIDE	NA							

SHEET INDEX

NO.	DESCRIPTION
1.	COVER SHEET
2.	NOTES & TABULATIONS
3.	EXISTING CONDITIONS/EVM
4.	GENERALIZED DEVELOPMENT PLAN
5.	LANDSCAPE PLAN
6.	PEDESTRIAN CIRCULATION PLAN
7.	PROPOSED LOW IMPACT DEVELOPMENT (LID) PLAN
8.	DRAINAGE DIVIDES
9.	OUTFALL DRAINAGE SHED MAP
10.	WET-POND SWM FACILITY ANALYSIS/TR-55
11.	UNDERGROUND SWM FACILITY ANALYSIS/TR-55
12.	EXISTING HYDROLOGIC MODELING AT SCOTTS RUN STUDY POINT
13.	PROPOSED HYDROLOGIC MODELING AT SCOTTS RUN STUDY POINT
14.-17.	SITE RUNOFF ANALYSIS PREVIOUSLY APPROVED PLAN
18.	SITE RUNOFF ANALYSIS PREVIOUSLY APPROVED PLAN AND SWM CHECKLIST



VICINITY MAP 1"=2000'

GFA TABULATIONS

EXISTING BUILDING AREA (GFA)		CELLAR
MITRE 1		
FLOOR AREA	255,752 SQ. FT.	19,860 SQ. FT.
MITRE 2		
FLOOR AREA	262,110 SQ. FT.	42,869 SQ. FT.
MITRE 3		
FLOOR AREA	180,000 SQ. FT.	30,000 SQ. FT.
MITRE 1, :2 & 3 GFA		
TOTAL FLOOR AREA	697,862 SQ. FT.	122,729 SQ. FT.
PROPOSED BUILDING AREA (GFA)		
MITRE 4		
FLOOR AREA	157,439 SQ. FT.	22,000 SQ. FT.
MITRE CAMPUS (BLDG 1,2,3 &4)		
FLOOR AREA (FOR FAR)	855,301 SQ. FT.	144,729 SQ. FT.

SITE TABULATIONS

EXISTING ZONING: C-3
USE: OFFICE BUILDINGS

	PERMITTED/REQUIRED	PROVIDED
LOT SIZE REQUIREMENTS:		
MINIMUM LOT AREA:	20,000 SF	855,301 S.F, OR 19.63 AC.
MINIMUM LOT WIDTH:	100 FEET	
LOT 4A3:		
SITE AREA:		159,552 S.F, OR 3.66 AC.
AREA OF DENSITY CREDIT FOR DEDICATED ROW: (DB: 12513 PG: 0435)		1,288 S.F, OR .03 AC
TOTAL LOT AREA FOR DENSITY CALCULATIONS:		160,840 S.F, OR 3.69 AC.
MINIMUM LOT WIDTH:		420± FEET
LOT 3A1:		
SITE AREA:		694,461 S.F, OR 15.94 AC.
MINIMUM LOT WIDTH:		390± FEET
TOTAL MITRE CAMPUS:		855,301 S.F, OR 19.63 AC.
MAXIMUM BUILDING HEIGHT	90 FEET SUBJECT TO INCREASE AS MAY BE PERMITTED BY THE BOARD IN ACCORDANCE WITH THE PROVIDIONS OF SECT. 9-607 (SPECIAL EXCEPTION REQUIRED)	90 FEET * MITRE 3 BUILDING HEIGHT 103' PURSUANT TO APPROVED SE 01-P-011
MINIMUM YARD REQUIREMENTS:		
FRONT YARD:	CONTROLLED BY A 25° ANGLE OF BULK PLANE, BUT NOT LESS THAN 40 FEET	220'
SIDE YARD:	NO REQUIREMENT	
REAR YARD:	CONTROLLED BY A 20° ANGLE OF BULK PLANE, BUT NOT LESS THAN 25 FEET	276'
MAXIMUM FLOOR AREA RATIO: (SEE GFA TABULATIONS)	1.0	1.0
OPEN SPACE:	15% OR 128,102 .SF.	23 ±% OR 196,400 S.F.

PARKING:
STANDARD SPACES:
2.6 SPACES/1000 SF OF GROSS FLOOR AREA INCLUDING 50% OF CELLAR AREA

MITRE I - 4 . . . . . 2,412 SPACES . . . . THE OWNER SHALL PROVIDE THE MINIMUM, CODE - REQUIRED NUMBER OF SPACES. OWNER RESERVES THE RIGHT TO PROVIDE ADDITIONAL PARKING, AS NECESSARY, FOR ITS EMPLOYEES, GUEST AND VISITORS.

LOADING SPACES: 5 SPACES COMBINED FOR MITRE I & 4

ONE SPACE FOR THE FIRST 10,000 SF OF GFA, PLUS 1 SPACE FOR EACH ADDITIONAL 20,000 SF OR MAJOR FRACTION THEREOF

MITRE I & 4	5 SPACES (1)
MITRE 2	3 SPACES (2)
MITRE 3	2 SPACES (2)

(1) PROPOSED MITRE 4 BUILDING TO SHARE LOADING SPACES WITH MITRE I BUILDING. APPLICANT REQUESTS A MODIFICATION DUE TO THE COMMON OWNERSHIP OF THE BUILDINGS, THE PROXIMITY OF THE SPACES TO BOTH BUILDINGS AND THE RELATED SHARED USE OF THE LOADING SPACES.

(2) NOTE: A REDUCTION TO THE MITRE 2 & 3 LOADING SPACE QUANTITIES HAVE BEEN PREVIOUSLY APPROVED BY THE COUNTY.

Application No. PCA-92-P-001-05 Staff P.B.
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP)
SEE PROFFERS DATED 10/02/08
Date of (BOS) (PC) approval 10/20/08

Sheet 2 of 18
See also RZ-2008-PR-011

NO.	DESCRIPTION	DATE	REVS'D	REVW'D	APRV'D	DATE
	REVISION					

PROFESSIONAL SEAL
COMMONWEALTH OF VIRGINIA
DAVID H. STEIGLER
Cert. No. 609
JUNE 27, 2008
LANDSCAPE ARCHITECT

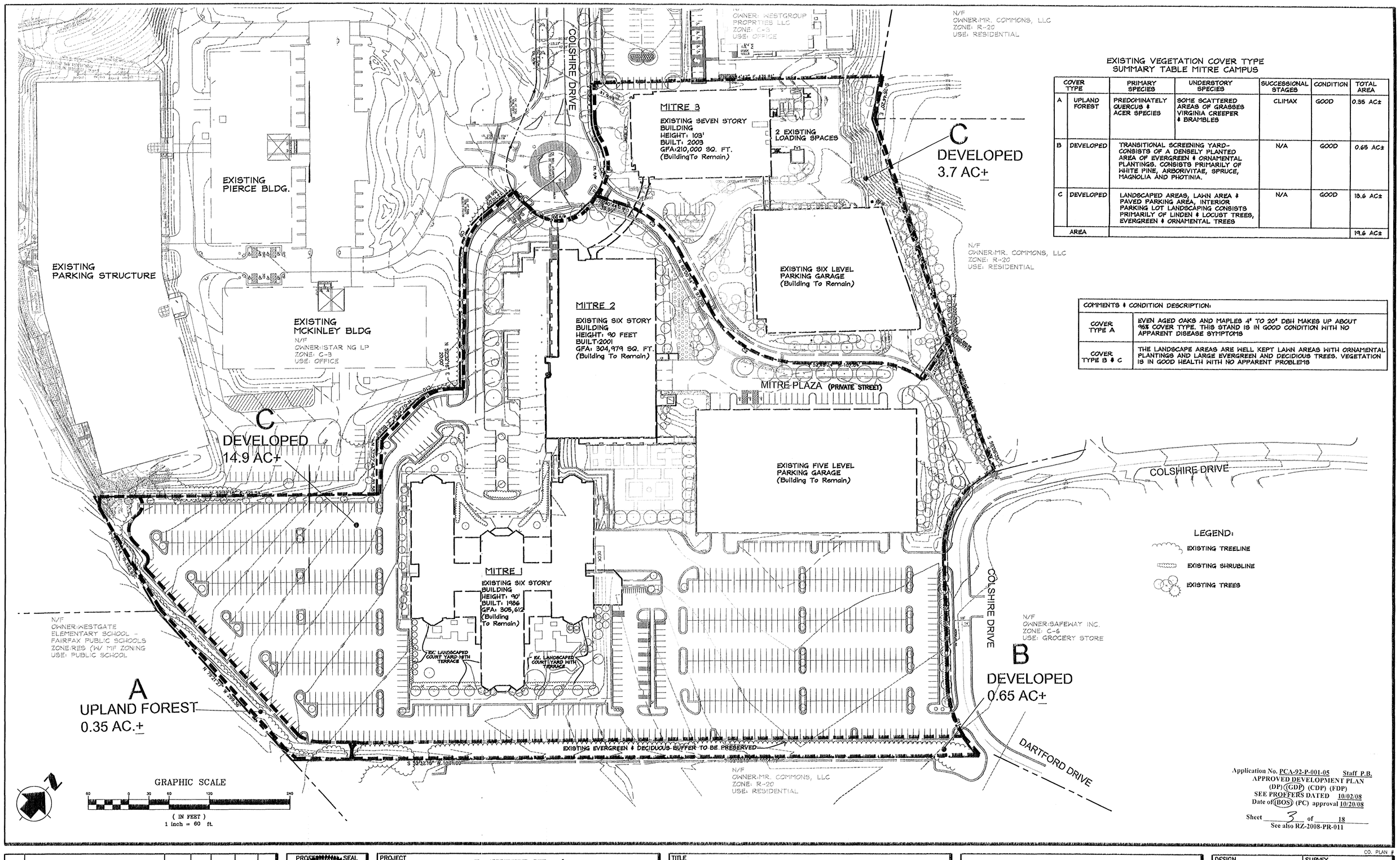
PROJECT
MITRE 4
PROFFERED CONDITION AMENDMENT / REZONING / GENERALIZED DEVELOPMENT PLAN
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VIRGINIA

TITLE
NOTES & TABULATIONS

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
14532 Lee Road
Chantilly, VA 20151-1679
T 703.449.6700
F 703.449.6714

CO. PLAN #

DESIGN	SURVEY
DRAWN: PMH	DATE: JUNE 27, 2008
CHECKED: DHS	SCALE
SHEET 2 OF 18	FILE NO. 10022 1-5



EXISTING VEGETATION COVER TYPE SUMMARY TABLE MITRE CAMPUS

COVER TYPE		PRIMARY SPECIES	UNDERSTORY SPECIES	SUCCESSIONAL STAGES	CONDITION	TOTAL AREA
A	UPLAND FOREST	PREDOMINATELY QUERCUS & ACER SPECIES	SOME SCATTERED AREAS OF GRASSES VIRGINIA CREEPER & BRAMBLES	CLIMAX	GOOD	0.35 AC±
B	DEVELOPED	TRANSITIONAL SCREENING YARD- CONSISTS OF A DENSELY PLANTED AREA OF EVERGREEN & ORNAMENTAL PLANTINGS. CONSISTS PRIMARILY OF WHITE PINE, ARBORIVITAE, SPRUCE, MAGNOLIA AND PHOTINIA.		N/A	GOOD	0.65 AC±
C	DEVELOPED	LANDSCAPED AREAS, LAWN AREA & PAVED PARKING AREA, INTERIOR PARKING LOT LANDSCAPING CONSISTS PRIMARILY OF LINDEN & LOCUST TREES, EVERGREEN & ORNAMENTAL TREES		N/A	GOOD	18.6 AC±
AREA						19.6 AC±

COMMENTS & CONDITION DESCRIPTION:	
COVER TYPE A	EVEN AGED OAKS AND MAPLES 4" TO 20" DBH MAKES UP ABOUT 95% COVER TYPE. THIS STAND IS IN GOOD CONDITION WITH NO APPARENT DISEASE SYMPTOMS
COVER TYPE B & C	THE LANDSCAPE AREAS ARE WELL KEPT LAWN AREAS WITH ORNAMENTAL PLANTINGS AND LARGE EVERGREEN AND DECIDIOUS TREES. VEGETATION IS IN GOOD HEALTH WITH NO APPARENT PROBLEMS

Application No. PCA-92-P-001-05 Staff P.B.
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP)
SEE PROFFERS DATED 10/02/08
Date of (BOS) (PC) approval 10/20/08
Sheet 3 of 18
See also RZ-2008-PR-011

NO.	DESCRIPTION	DATE	REVS'D	REVW'D	APRV'D	DATE

REVISION

PROFESSIONAL SEAL
COMMONWEALTH OF VIRGINIA
DAVID H. STEIGLER
Cert. No. 609
JUNE 27, 2008
LANDSCAPE ARCHITECT

PROJECT

MITRE 4

PROFFERED CONDITION AMENDMENT / REZONING / GENERALIZED DEVELOPMENT PLAN

PROVIDENCE DISTRICT
FAIRFAX COUNTY, VIRGINIA

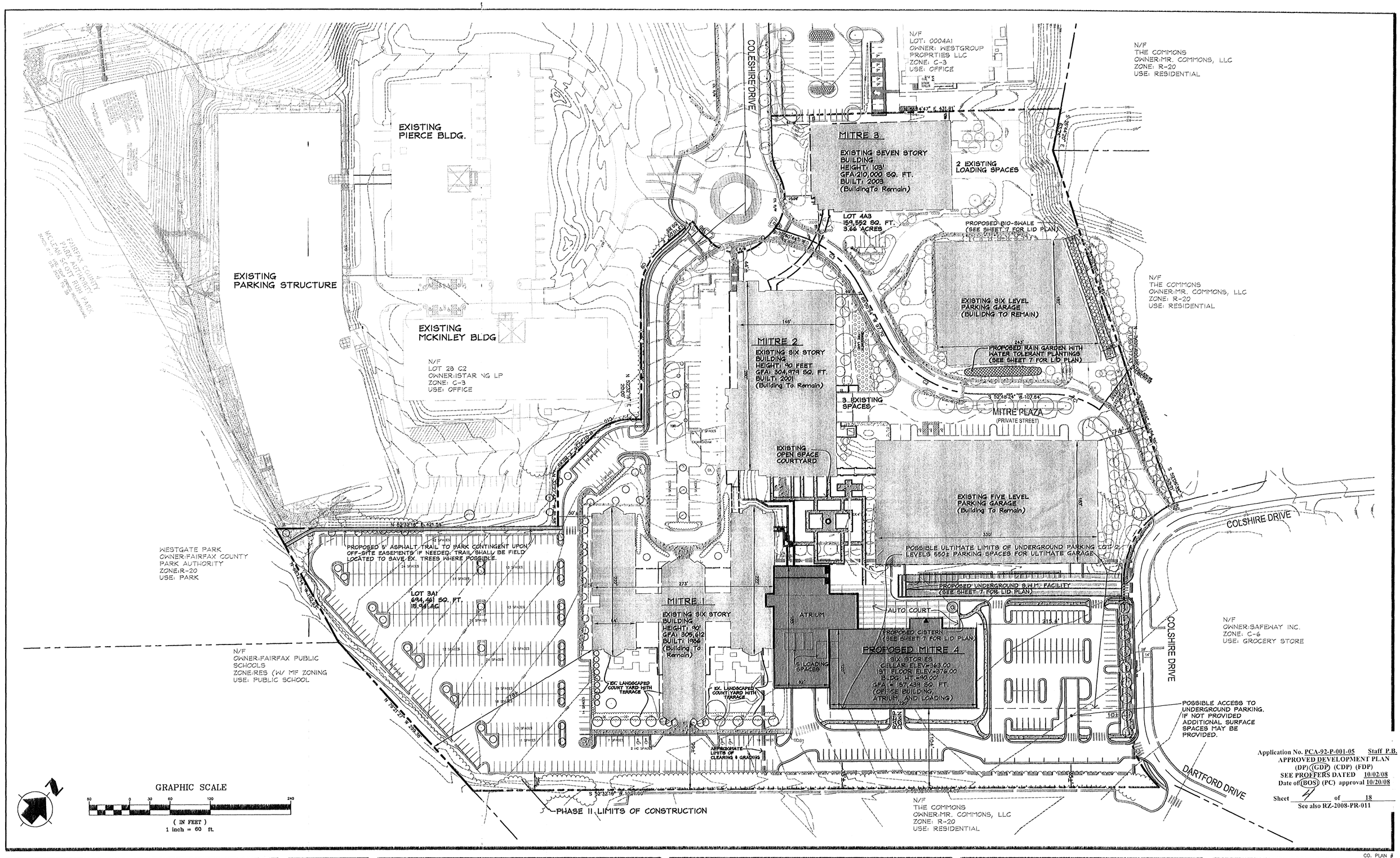
TITLE

EXISTING CONDITIONS/ EXISTING VEGETATION MAP

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
14532 Lee Road
Chantilly, VA 20151-1679
T 703.449.6700
F 703.449.6714

CO. PLAN #

DESIGN NA	SURVEY NA
DRAWN PMH	DATE JUNE 27, 2008
CHECKED DHS	SCALE 1" = 60'
SHEET 3 OF 18	FILE NO. 10022 1-5



Application No. PCA-92-P-001-05 Staff P.B.
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP)
SEE PROFFERS DATED 10/02/08
Date of (BOS) (PC) approval 10/20/08
Sheet 4 of 18
See also RZ-2008-PR-011

NO.	DESCRIPTION	DATE	REVS'D	REVW'D	APRV'D	DATE

REVISION

PROFESSIONAL SEAL
COMMONWEALTH OF VIRGINIA
DAVID H. STEIGLER
Cert. No. 609
JUNE 27, 2008
LANDSCAPE ARCHITECT

PROJECT

MITRE 4

PROFFERED CONDITION AMENDMENT / REZONING / GENERALIZED DEVELOPMENT PLAN

PROVIDENCE DISTRICT
FAIRFAX COUNTY, VIRGINIA

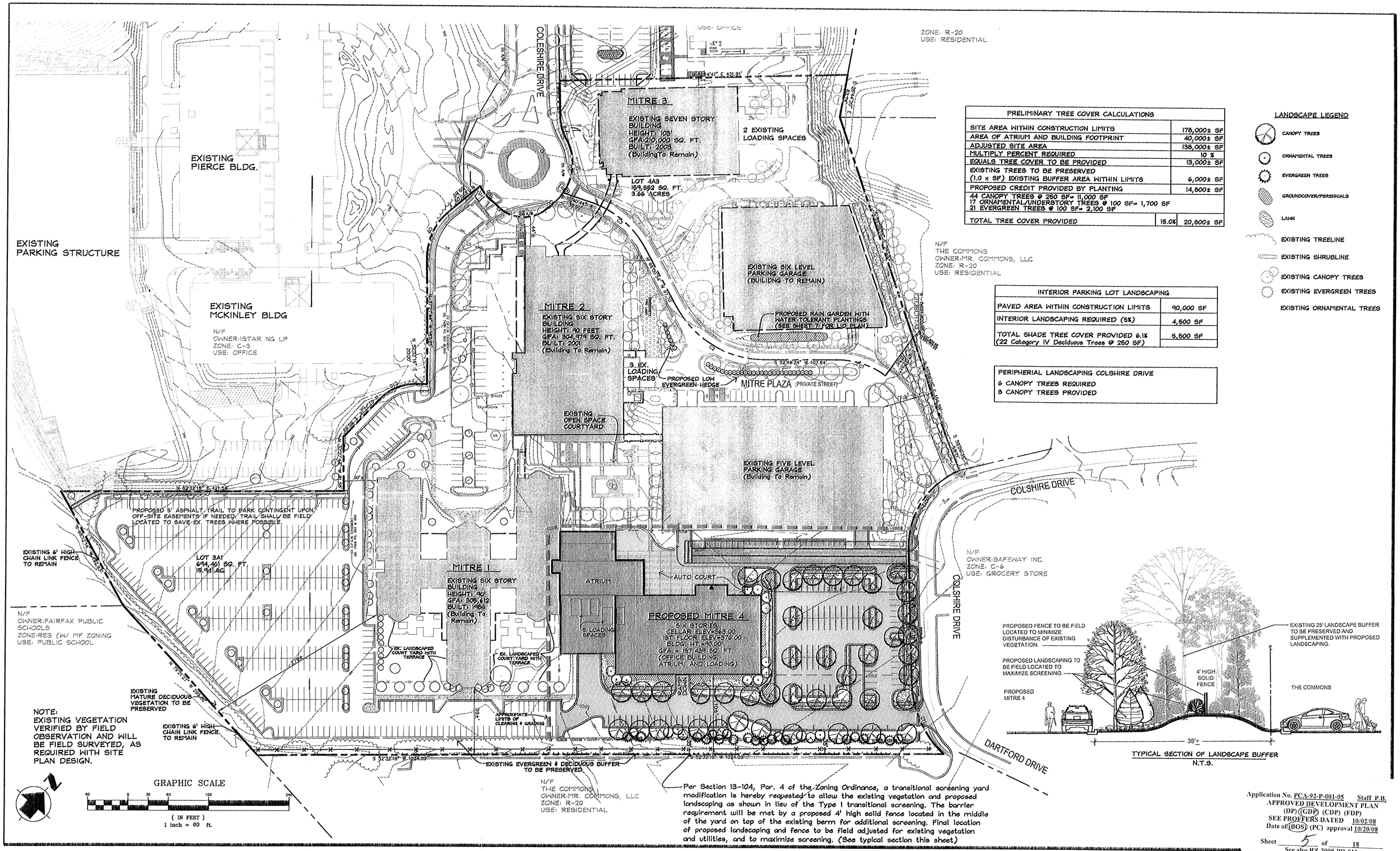
TITLE

GENERALIZED DEVELOPMENT PLAN

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
14532 Lee Road
Chantilly, VA 20151-1679
T 703.449.6700
F 703.449.6714

CO. PLAN #

DESIGN PHR+A	SURVEY NA
DRAWN PMH	DATE JUNE 27, 2008
CHECKED DHS	SCALE
SHEET 4 OF 18	FILE NO. 10022 1-5



NOTE:
EXISTING VEGETATION VERIFIED BY FIELD OBSERVATION AND WILL BE FIELD SURVEYED, AS REQUIRED WITH SITE PLAN DESIGN.

PRELIMINARY TREE COVER CALCULATIONS		
SITE AREA WITHIN CONSTRUCTION LIMITS		178,000± SF
AREA OF ATRIUM AND BUILDING FOOTPRINT		40,000± SF
ADJUSTED SITE AREA		138,000± SF
MULTIPLY PERCENT REQUIRED		10 %
EQUALS TREE COVER TO BE PROVIDED		13,000± SF
EXISTING TREES TO BE PRESERVED (1.0 x SF) EXISTING BUFFER AREA WITHIN LIMITS		6,000± SF
PROPOSED CREDIT PROVIDED BY PLANTING		14,800± SF
44 CANOPY TREES @ 250 SF= 11,000 SF 17 ORNAMENTAL/UNDERSTORY TREES @ 100 SF= 1,700 SF 21 EVERGREEN TREES @ 100 SF= 2,100 SF		
TOTAL TREE COVER PROVIDED	15.0%	20,800± SF

INTERIOR PARKING LOT LANDSCAPING	
PAVED AREA WITHIN CONSTRUCTION LIMITS	90,000 SF
INTERIOR LANDSCAPING REQUIRED (5%)	4,500 SF
TOTAL SHADE TREE COVER PROVIDED 6.1% (22 Category IV Deciduous Trees @ 250 SF)	5,500 SF

PERIPHERIAL LANDSCAPING COLSHIRE DRIVE
6 CANOPY TREES REQUIRED
8 CANOPY TREES PROVIDED

LANDSCAPE LEGEND

- CANOPY TREES
- ORNAMENTAL TREES
- EVERGREEN TREES
- GROUNDCOVER/PERENNIALS
- LAWN
- EXISTING TREELINE
- EXISTING SHRUBLINE
- EXISTING CANOPY TREES
- EXISTING EVERGREEN TREES
- EXISTING ORNAMENTAL TREES

TYPICAL SECTION OF LANDSCAPE BUFFER
N.T.S.

Per Section 13-104, Par. 4 of the Zoning Ordinance, a transitional screening yard modification is hereby requested to allow the existing vegetation and proposed landscaping as shown in lieu of the Type 1 transitional screening. The barrier requirement will be met by a proposed 4' high solid fence located in the middle of the yard on top of the existing berm for additional screening. Final location of proposed landscaping and fence to be field adjusted for existing vegetation and utilities, and to maximize screening. (See typical section this sheet)

Application No. PCA-92-P-001-05 Staff P.B.
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP)
SEE PROFFERS DATED 10/02/08
Date of (BOS) (PC) approval 10/20/08
Sheet 5 of 18
See also RZ-2008-PR-011

NO.	DESCRIPTION	DATE	REVS'D	REVW'D	APRV'D	DATE

REVISION

PROFESSIONAL SEAL
COMMONWEALTH OF VIRGINIA
DAVID H. STEIGLER
Cert. No. 609
JUNE 27, 2008
LANDSCAPE ARCHITECT

PROJECT
MITRE 4
PROFFERED CONDITION AMENDMENT / REZONING / GENERALIZED DEVELOPMENT PLAN
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VIRGINIA

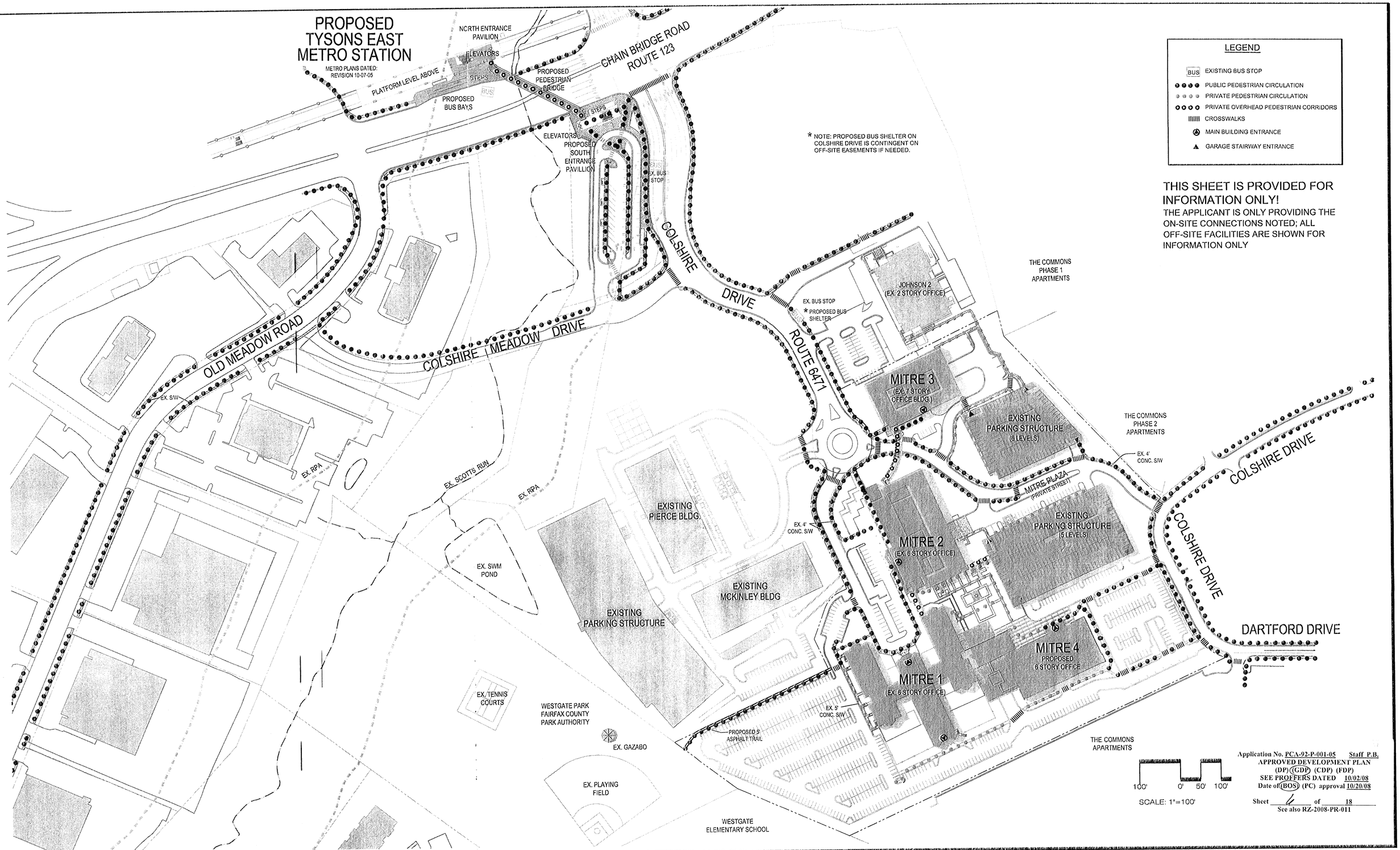
TITLE
LANDSCAPE PLAN

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
14532 Lee Road
Chantilly, VA 20151-1679
T 703.449.6700
F 703.449.6714

DESIGN: PHR+A	SURVEY
DRAWN: PMH	DATE: JUNE 27, 2008
CHECKED: DHS	SCALE
SHEET: 5 OF 18	FILE NO. 10022 1-5

PROPOSED TYSONS EAST METRO STATION

METRO PLANS DATED:
REVISION 10-07-05



LEGEND

- BUS — EXISTING BUS STOP
- PUBLIC PEDESTRIAN CIRCULATION
- PRIVATE PEDESTRIAN CIRCULATION
- PRIVATE OVERHEAD PEDESTRIAN CORRIDORS
- CROSSWALKS
- MAIN BUILDING ENTRANCE
- GARAGE STAIRWAY ENTRANCE

THIS SHEET IS PROVIDED FOR INFORMATION ONLY!

THE APPLICANT IS ONLY PROVIDING THE ON-SITE CONNECTIONS NOTED; ALL OFF-SITE FACILITIES ARE SHOWN FOR INFORMATION ONLY

Application No. PCA-92-P-001-05 Staff P.B.
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP)
SEE PROFFERS DATED 10/02/08
Date of (BOS) (PC) approval 10/20/08
Sheet 6 of 18
See also RZ-2008-PR-011

CO. PLAN #

NO.	DESCRIPTION	DATE	REVS'D	REVW'D	APRV'D	DATE
	REVISION					

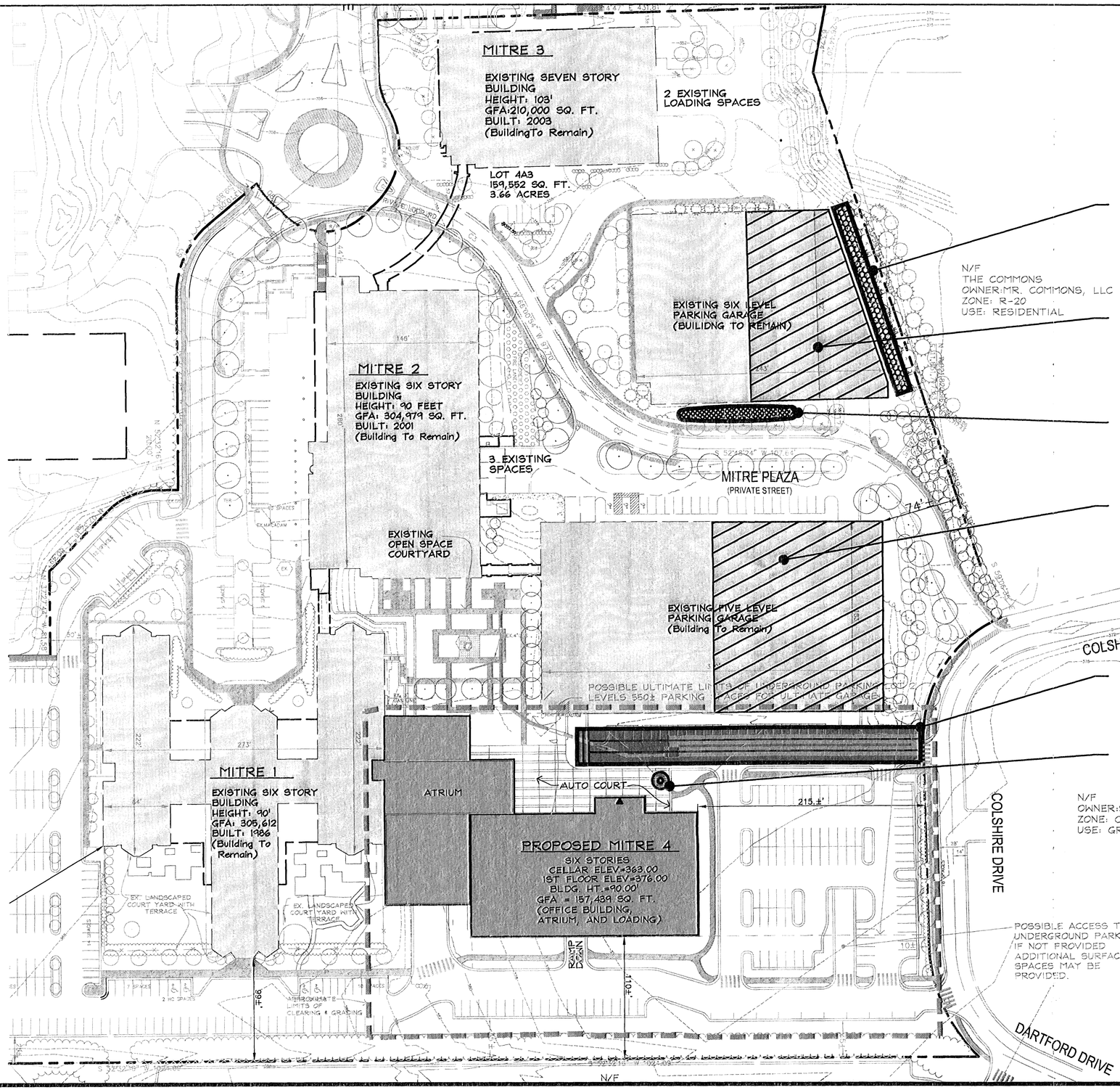
PROFESSIONAL SEAL
COMMONWEALTH OF VIRGINIA
DAVID H. STEIGLER
Cert. No. 609
JUNE 27, 2008
LANDSCAPE ARCHITECT

PROJECT
MITRE 4
PROFFERED CONDITION AMENDMENT / REZONING / GENERALIZED DEVELOPMENT PLAN
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VIRGINIA

TITLE
PEDESTRIAN CIRCULATION PLAN

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
14532 Lee Road
Chantilly, VA 20151-1679
T 703.449.6700
F 703.449.6714

DESIGN PHR+A	SURVEY NA
DRAWN PMH	DATE JUNE 27, 2008
CHECKED DHS	SCALE 1" = 100'
SHEET 6 OF 18	FILE NO. 10022 1-5



PROPOSED WATER QUALITY BIO-SWALE

- TREATS IMPERVIOUS PARKING DECK AREA. (MAX. 50% OF PHOS. REMOVAL)
- SLOWS RUN-OFF.
- WATER QUALITY FILTERS THROUGH CHECK DAMS.

RUN-OFF FROM APPROXIMATELY ONE HALF OF EXISTING PARKING STRUCTURE'S TOP LEVEL SHALL BE REDIRECTED TO, AND TREATED BY, PROPOSED BIO-SWALE AND / OR RAIN GARDEN.

PROPOSED RAIN GARDEN

- TREATS IMPERVIOUS PARKING DECK AREA. (MAX. 50% PHOS. REMOVAL)
- WATER TOLERANT NATIVE PLANTINGS.

RUN-OFF FROM APPROXIMATELY ONE HALF OF EXISTING PARKING STRUCTURE'S TOP LEVEL SHALL BE RE-DIRECTED TO PROPOSED UNDERGROUND STORM WATER FACILITY FOR PEAK SHAVING REDUCTION. THIS AREA CURRENTLY DRAINS INTO SCOTTS RUN UNTREATED.

PROPOSED UNDERGROUND STORM WATER MANAGEMENT FACILITY

PROPOSED RELEASE RATE REDUCTION FROM 10 YEAR TO 2 YEAR STORM.

PROPOSED CISTERN

- COLLECTS THE "FIRST FLUSH" OF ROOF RUNOFF.
- PROVIDES IRRIGATION WATER

Application No. PCA-92-P-001-05 Staff P.B.
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP)
SEE PROFFERS DATED 10/02/08
Date of (BOS) (PC) approval 10/20/08
Sheet 7 of 18
See also RZ-2008-PR-011

NOTES:

1. THE INTENT OF THE FACILITIES SHOWN ON THIS PLAN IS TO SUPPORT THE PRELIMINARY STORMWATER MANAGEMENT PLAN PREPARED FOR THE REZONING APPLICATION. DURING SITE PLAN, EXACT LOCATIONS, SIZES AND FACILITIES MAY VARY WITH FINAL ENGINEERING AS LONG AS THE GOALS (I.E., SWM, BMP) OF THE PROFFERS ARE MET.
2. THIS SHEET SHALL BE USED FOR STORM WATER MANAGEMENT PURPOSES ONLY.

GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)
1 inch = 50 ft.

NO.	DESCRIPTION	DATE	REVS'D	REVW'D	APRV'D	DATE
	REVISION					

PROFESSIONAL SEAL
COMMONWEALTH OF VIRGINIA
DAVID H. STEIGLER
Cert. No. 609
JUNE 27, 2008
LANDSCAPE ARCHITECT

PROJECT
MITRE 4
PROFFERED CONDITION AMENDMENT / REZONING / GENERALIZED DEVELOPMENT PLAN
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VIRGINIA

TITLE
PROPOSED LOW IMPACT DEVELOPMENT (LID) PLAN

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
14532 Lee Road
Chantilly, VA 20151-1679
T 703.449.6700
F 703.449.6714

CO. PLAN #

DESIGN PHR+A	SURVEY NA
DRAWN PMH	DATE JUNE 27, 2008
CHECKED DHS	SCALE
SHEET 7 OF 18	FILE NO. 10022 1-5

STUDY NARRATIVE

EXISTING CONDITIONS:
THE 19.6 ACRE MITRE CAMPUS FALLS WITHIN THE PROPERTY KNOW AS "WESTGATE INDUSTRIAL PARK", WHICH INCLUDES A COMMERCIAL/OFFICE COMPLEX ALONG COLESHIRE DRIVE AND A CUL-DE-SAC ROADWAY OFF OF CHAIN BRIDGE ROAD (RTE 123). THE WESTGATE INDUSTRIAL PARK (PROPERTY) IS LOCATED APPROXIMATELY 2,500 FEET EAST OF I-495/RTE 123 INTERCHANGE. THE PROPERTY DRAINS NORTHWARD BY WAY OF SCOTTS RUN (A MAJOR FLOODPLAIN).

THERE ARE TWO DETENTION FACILITIES SERVING THE PROPERTY: A WET-POND AND AN UNDERGROUND DETENTION FACILITY THAT UTILIZES PIPE-STORAGE. A PORTION OF THE PROPERTY IS UNCONTROLLED. DISCHARGE FROM THESE FACILITIES AND THE UNCONTROLLED AREAS OF THE SITE DRAIN TO THE SCOTTS RUN FLOODPLAIN, WHICH IS REPORTED TO HAVE DRAINAGE-RELATED PROBLEMS. THE INTENT OF THIS STUDY IS TO DETERMINE THE IMPACT OF THE EXISTING AND THE PROPOSED SITE IMPROVEMENTS ON THE SCOTTS RUN CHANNEL AT A POINT JUST UPSTREAM OF WHERE THE EXISTING CHANNEL CROSSES UNDER RTE 123. IT IS NOTED THAT THE SELECTED STUDY POINT IS AT A LOCATION WHERE THE TOTAL CONTRIBUTING DRAINAGE AREA EXCEEDS 640 AC (1 SQ MI).

WET POND:
A PRIVATELY OWNED AND MAINTAINED WET POND PROVIDES BOTH BMP AND DETENTION FOR 26.87-ACRES OF THE WESTGATE PROPERTY, AND DISCHARGES DIRECTLY INTO THE SCOTTS RUN FLOODPLAIN AT A POINT APPROXIMATELY 1,000 FEET UPSTREAM OF STUDY POINT. THIS FACILITY WAS DESIGNED AND APPROVED UNDER A SITE PLAN PREPARED BY HUNTLEY NYCE & ASSOCIATES, DATED APRIL 1999 (#1702-SP-05-2). THE SOFTWARE USED IN THE ORIGINAL DESIGN IS CALLED "I.S.W.M. V1.35", RECOGNIZING AN ASSUMED CN-VALUE OF 85, AND A TIME CONCENTRATION OF 0.15 HRS.

FOR THE PURPOSES OF THIS STUDY, THE POND IS RE-ANALYZED UNDER THE FOLLOWING SCENARIOS:
1. THE ORIGINAL DESIGN CONDITIONS ARE REPEATED, AS THEY WERE SHOWN WITH THE ORIGINALLY APPROVED PLANS.
2. THE ORIGINAL DESIGNS (SCENARIO #1, ABOVE) ARE RE-ANALYZED USING "TR-55" AND "PONDPACK V.10" SOFTWARE PACKAGES (CURRENT INDUSTRY-STANDARD SOFTWARE PACKAGES). RUNOFF CURVE NUMBERS AND TIMES OF CONCENTRATION ARE RECOMPUTED BASED UPON CURRENT CONDITIONS.
3. THE INFLOW CONDITIONS DETERMINED UNDER "SCENARIO #2" (ABOVE) ARE RE-ANALYZED USING AS-BUILT POND CONDITIONS.

UNDERGROUND DETENTION FACILITY:
A PRIVATELY OWNED AND MAINTAINED UNDERGROUND DETENTION FACILITY NOW SERVES A 11.09-ACRE DRAINAGE AREA. IT WAS DESIGNED AND APPROVED UNDER THE "MITRE AT WESTGATE" SITE PLAN (#1702-SP-07-2), PREPARED BY PATTON HARRIS RUST & ASSOCIATES, DATED MAY 1999. THIS FACILITY UTILIZES PIPE-STORAGE AND WAS DESIGNED TO ACCOMMODATE THE 2-YR AND 10-YR STORM EVENTS (2-HOUR RAINFALL DISTRIBUTION). INFLOW CALCULATIONS WERE BASED ON THE RATIONAL METHOD, AND "POND V.2" WAS USED TO ROUTE THE FLOW. THE FACILITY DISCHARGES THROUGH A STORM PIPE SYSTEM (APPROX 1,920 FEET IN LENGTH) WHICH EVENTUALLY OUTFALLS TO SCOTTS RUN AT THE STUDY POINT.

A NEW, LARGER UNDERGROUND FACILITY IS NOW PROPOSED WHICH EXPANDS THE TREATED AREA TO ACCOMODATE APPROXIMATELY HALF OF THE DRAINAGE AREA FROM THE MITRE 2 PARKING GARAGE STRUCTURE.

FOR THE PURPOSES OF THIS STUDY, THE UNDERGROUND FACILITY IS RE-ANALYZED AND A NEW DESIGN IS PROPOSED UNDER THE FOLLOWING SCENARIOS:
1. THE ORIGINAL DESIGN CONDITIONS ARE REPEATED, AS THEY WERE SHOWN WITH THE ORIGINALLY APPROVED PLANS.
2. THE ORIGINAL DESIGNS (SCENARIO #1, ABOVE) ARE RE-ANALYZED USING "TR-55" AND "PONDPACK v.10" SOFTWARE PACKAGES (AS WERE USED WHEN RE-ANALYZING THE WET POND, ABOVE). RUNOFF CURVE NUMBERS AND TIMES OF CONCENTRATION ARE RECOMPUTED BASED UPON THE CURRENT CONDITIONS. IT IS NOTED THAT THIS FACILITY WAS NOT ORIGINALLY DESIGNED FOR A 24 HOUR DISTRIBUTION (TR-55), AND IT WILL NOT ACCOMMODATE THE 10 YEAR EVENT. HOWEVER, AND FOR REASONS OF CONSISTENCY IN OUR OVERALL INVESTIGATIONS, WE HOLD TO THE "TR-55 APPROACH".
3. THE INFLOW CONDITIONS DETERMINED UNDER "SCENARIO #2" (ABOVE) ARE RE-ANALYZED USING AS-BUILT CONDITIONS.
4. THE 10-YEAR, 24-HOUR STORM IN POST-DEVELOPMENT CONDITIONS IS DETAINED TO THE 2-YEAR PRE-DEVELOPMENT CONDITIONS RELEASE RATE RECOGNIZING THE INTENDED "MITRE-4" DEVELOPMENT CONDITIONS, WHICH WILL REDUCE THE PRESENT ON-SITE IMPERVIOUS COVER

WITH SCENARIOS #2, #3, AND #4, THE FACILITY IS RE-ROUTED FOR THE 2, 10 & 100YR STORM EVENTS, SHOWING RELEASE RATES THAT DIFFER FROM THE ORIGINALLY APPROVED CONDITIONS. THE DISCREPANCIES ARE ATTRIBUTED TO THE CONSIDERATION OF A 24-HOUR RAINFALL DISTRIBUTION (2-HOUR USED IN ORIGINAL DESIGNS), AND OUR RECALCULATED CN-VALUES AND TIMES OF CONCENTRATION. SCENARIO #4 SHOWS THE PROPOSED DESIGN SUCCESSFULLY OVER-DETAINING 10-YEAR FLOWS TO 2-YEAR CONDITIONS.

UNCONTROLLED WESTGATE INDUSTRIAL PARK AREA:
AN AREA OF 22.99 ACRES IS UN-DETAINED AND DISCHARGES DIRECTLY TO SCOTTS RUN EITHER BY PIPE OR SHEET FLOWS.

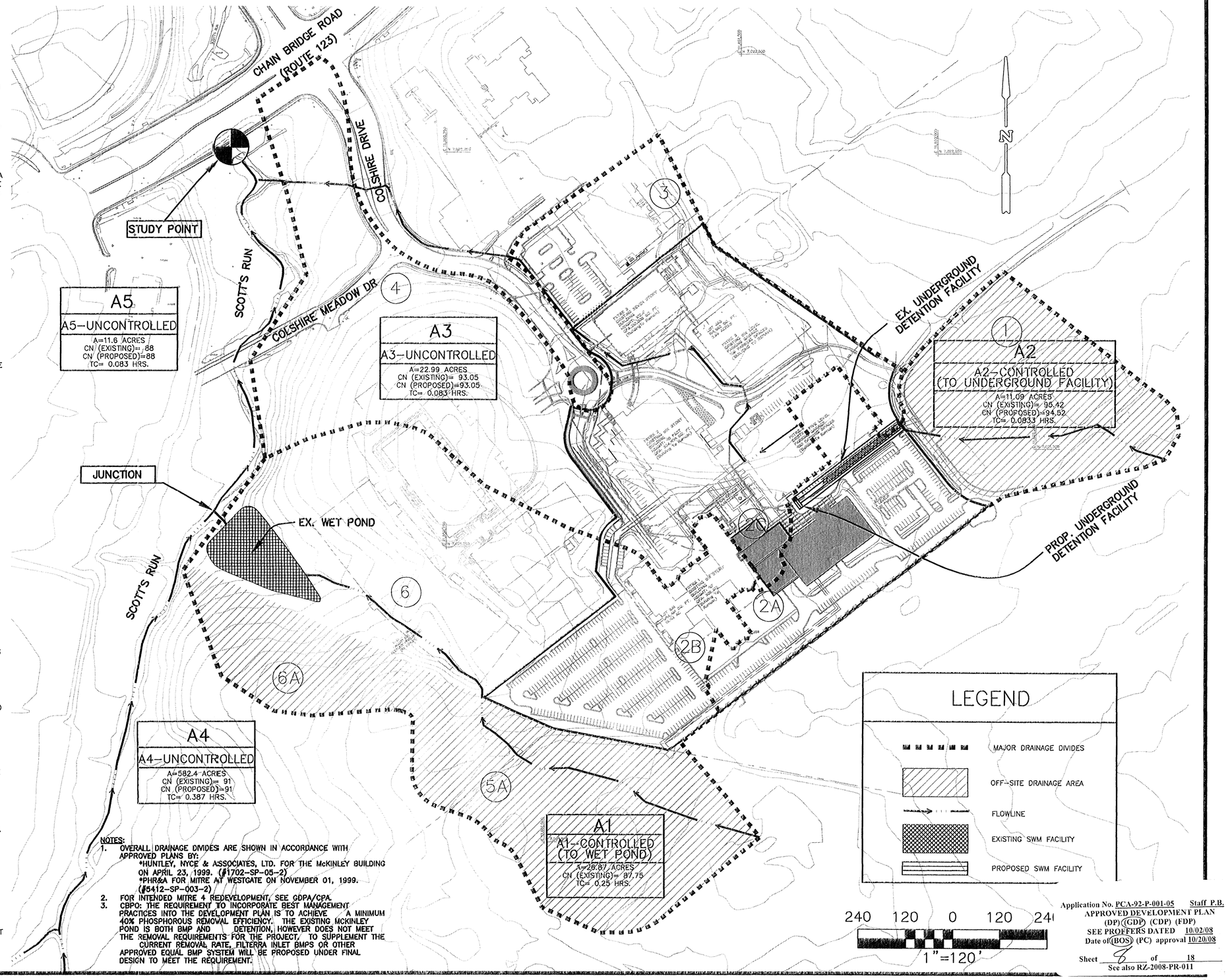
OFF-SITE AREAS UPSTREAM OF THE WESTGATE INDUSTRIAL PARK:
AN UPSTREAM / OFF-SITE AREA TOTALING APPROXIMATELY 594 ACRES (582.4 ACRES ABOVE THE AFOREMENTIONED WET POND'S DISCHARGE POINT INTO SCOTTS RUN, AND 11.6 ACRES ON THE OTHER SIDE OF SCOTTS RUN AND ALONG THE WESTGATE PROPERTY) WILL ALSO DRAIN THROUGH THE SCOTTS RUN FLOOD PLAIN TO THE SUBJECT STUDY POINT. THESE AREAS ARE OF MIXED DEVELOPMENT TYPES, AND WERE PREVIOUSLY CONSIDERED BY FAIRFAX COUNTY AS A PART OF A SIMILAR BUT SEPARATE ZONING APPLICATION. PARAMETERS SUCH AS CURVE NUMBERS AND FLOW RATES FOR THESE OFF-SITE AREAS ARE CONSISTENT WITH THAT PREVIOUS SUBMISSION. THESE FLOWS ARE INCLUDED WHEN ASSESSING THE OVERALL FLOW CONDITIONS AT THE STUDY POINT IN SCOTTS RUN. THE WESTGATE PROPERTY HAS LITTLE IMPACT ON THE OVERALL PEAK RATE ASSOCIATED WITH THE LARGER UPSTREAM AREA DUE TO A DIFFERENCE IN PEAK FLOW TIMES.

OUTFALL CHANNEL DESCRIPTION:
AT THE OUTFALL OF THE PROPERTY, SCOTTS RUN IS A MEANDERING CHANNEL APPROXIMATELY 15-20 FEET WIDE AND 4-5 FEET DEEP FROM WATER SURFACE TO TOP OF LOW-FLOW BANKS. DRY CONDITIONS YIELD A 1.0 FOOT WATER DEPTH FOR BASEFLOW AND VERY LOW VELOCITY (<1 FPS). THE CHANNEL HAS SIDE SLOPES CLOSE TO 1:1. THE CHANNEL IS NATURALLY LINED WITH SEDIMENT AND ROCK. EROSION IS OCCURING BECAUSE PORTIONS OF THE CHANNEL HAVE NEGATIVE SIDE SLOPES, EXPOSED TREE ROOTS, AND DOWNED TREES DUE TO ROOT UNDERCUTTING. THIS IS TAKING PLACE BOTH DOWNSTREAM AND UPSTREAM OF THE PROPERTY. THE OVERBANK CONDITIONS VARY BUT ARE GENERALLY HEAVY BRUSH AND TREED.

STUDY POINT AND SUMMARY:
THE STUDY POINT IS SITUATED IN SCOTTS RUN, APPROXIMATELY 150 FEET UPSTREAM (SOUTH) OF CHAIN BRIDGE ROAD. THE STUDY POINT IS SITUATED WHERE THE FLOWS FROM ALL THREE OF THE ABOVE-DESCRIBED "WESTGATE" SUB-AREAS AND THE LARGER "OFF-SITE" SUB-AREA CONVERGE. THE HYDROLOGIC SOFTWARE "TR-20" IS USED TO MODEL ALL SUB-AREAS DISCHARGING TO THE STUDY POINT, GIVEN AN SCS-TYPE II 24-HOUR RAINFALL DISTRIBUTION, AND CONSIDERING THE 2-YR, 10-YR, AND 100-YR EVENTS. THE SCHEMATIC DIAGRAM SHOWS RELATIVE LOCATIONS OF SUB-AREAS, THEIR PROXIMITY TO THE STUDY POINT, AND THE CN-VALUES USED. THE ROUTED SWM HYDROGRAPHS ARE MODIFIED IN RECOGNITION OF THE FLOW PATHS BETWEEN EACH SWM FACILITY AND THE STUDY POINT, THEN COMBINED INTO A TOTAL FLOW AT THE STUDY POINT. THE EXISTING CHANNEL AT THAT LOCATION IS THEN ANALYZED TO DETERMINE ITS ABILITY TO ACCOMMODATE THE CALCULATED PEAK FLOW CONDITIONS.

CONCLUSION:
BASED ON THE ABOVE ASSUMPTIONS AND OUR NEW COMPUTATIONS, WE BELIEVE THAT THE RECEIVING SCOTTS RUN CHANNEL IS ADEQUATE FOR THE POST-DEVELOPED FLOWS FROM THE WESTGATE INDUSTRIAL PARK, INCLUDING THE INTENDED IMPROVEMENTS ASSOCIATED WITH THE MITRE-4 PROJECT. THIS IS DUE PRIMARILY TO THE TIME DIFFERENCES BETWEEN THE PEAK FLOWS FROM THE WESTGATE INDUSTRIAL PARK AND THOSE FROM THE LARGER UPSTREAM AREAS WITHIN THE OVERALL CONTRIBUTING DRAINAGE SHED. THE LESSER "WESTGATE" PEAK WILL HAVE PASSED BY THE STUDY POINT BEFORE THE LARGER PEAK.

IT IS OUR UNDERSTANDING THAT DRAINAGE RELATED PROBLEMS HAVE BEEN REPORTED WITHIN THE SCOTTS RUN FLOOD PLAIN AREA, UP STREAM OF THE WESTGATE PROPERTY. AS SUCH, IT IS THE INTENTION OF THIS PROJECT TO UPGRADE THE EXISTING UNDERGROUND DETENTION FACILITY; TO BE REDESIGNED IN A "TR-55 FORMAT", AND TO OVER-DETAIN THE 10 YEAR STORM EVENT – RELEASING THE PEAK 10 YEAR FLOWS AT A 2 YEAR RATE.



NOTES:
1. OVERALL DRAINAGE DIVIDES ARE SHOWN IN ACCORDANCE WITH APPROVED PLANS BY:
   *HUNTLEY, NYCE & ASSOCIATES, LTD. FOR THE McKINLEY BUILDING ON APRIL 23, 1999. (#1702-SP-05-2)
   *PHR&A FOR MITRE AT WESTGATE ON NOVEMBER 01, 1999. (#5412-SP-003-2)
2. FOR INTENDED MITRE 4 REDEVELOPMENT, SEE GDPA/CPA.
3. CBPO: THE REQUIREMENT TO INCORPORATE BEST MANAGEMENT PRACTICES INTO THE DEVELOPMENT PLAN IS TO ACHIEVE A MINIMUM 40% PHOSPHOROUS REMOVAL EFFICIENCY. THE EXISTING McKINLEY POND IS BOTH BMP AND DETENTION, HOWEVER DOES NOT MEET THE REMOVAL REQUIREMENTS FOR THE PROJECT. TO SUPPLEMENT THE CURRENT REMOVAL RATE, FILTERRA INLET BMPS OR OTHER APPROVED EQUAL BMP SYSTEM WILL BE PROPOSED UNDER FINAL DESIGN TO MEET THE REQUIREMENT.

Application No. PCA-92-P-001-05 Staff P.B.
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP)
SEE PROFFERS DATED 10/02/08
Date of (BOS) (PC) approval 10/20/08
Sheet 8 of 18
See also RZ-2008-PR-011

NO.	DESCRIPTION	DATE	REVS'D	REVW'D	APRV'D	DATE

REVISION

PROFESSIONAL SEAL
COMMONWEALTH OF VIRGINIA
ROBERT A. MUNSE
Lic. No. 15338
JUNE 27, 2008
PROFESSIONAL ENGINEER

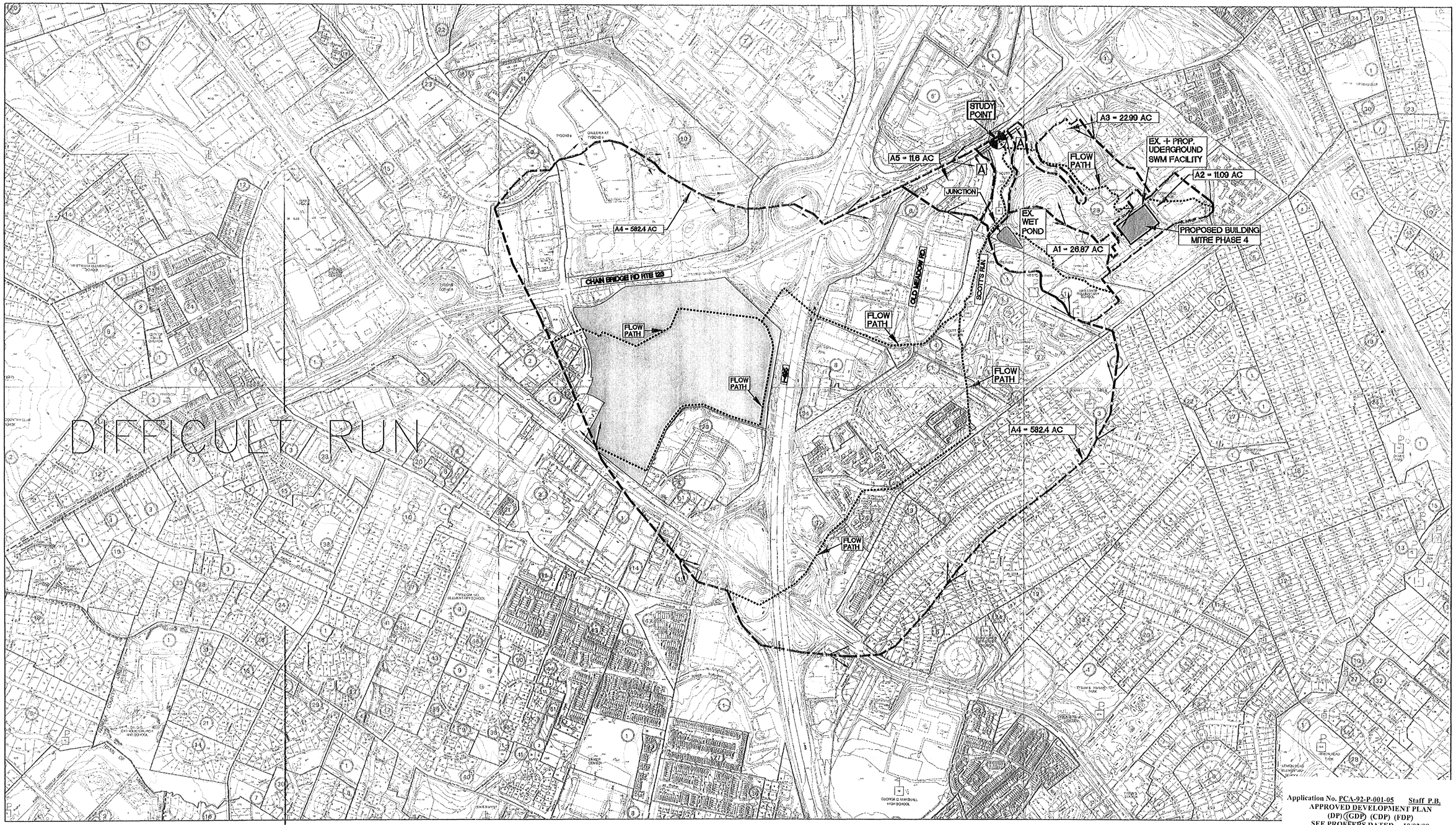
PROJECT
MITRE 4
PROFFERED CONDITION AMENDMENT / REZONING / GENERALIZED DEVELOPMENT PLAN
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VIRGINIA

TITLE
DRAINAGE DIVIDES AND STUDY NARRATIVE

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
14532 Lee Road
Chantilly, VA 20151-1679
T 703.449.6700
F 703.449.6714

DESIGN PHR+A	SURVEY N/A
DRAWN PHR+A	DATE JUNE 27, 2008
CHECKED RAM	SCALE 1"=120'
SHEET C001EXH 8 OF 18	FILE NO. 10022 1-5

CO. PLAN #



Application No. PCA-92-P-001-05 Staff P.B.
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP)
SEE PROFFERS DATED 10/02/08
Date of (BOS) (PC) approval 10/20/08

Sheet 9 of 18
See also RZ-2008-PR-011

NO.	DESCRIPTION	DATE	REVS'D	REVW'D	APRV'D	DATE

REVISION

PROFESSIONAL SEAL
COMMONWEALTH OF VIRGINIA
ROBERT A. MUNSE
Lic. No. 15338
JUNE 27, 2008
PROFESSIONAL ENGINEER

PROJECT
MITRE 4
PROFFERED CONDITION AMENDMENT / REZONING / GENERALIZED DEVELOPMENT PLAN
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VIRGINIA

TITLE
OUTFALL DRAINAGE SHED MAP

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
14532 Lee Road
Chantilly, VA 20151-1679
T 703.449.6700
F 703.449.6714

CO. PLAN #

DESIGN PHR+A	SURVEY PHR&A
DRAWN PHR+A	DATE JUNE 27, 2008
CHECKED RAM	SCALE 1" = 500'
SHEET C007A 9 OF 18	FILE NO. 10022 1-5

WET POND (McKINLEY POND)

DESIGNED CONDITIONS (SUMMARY TABLE #2)

Type.... Pond Routing Calcs (Total Out) Page 14.31
Name.... MCKINLEY PONDOUT Tag: 2 Event: 2 yr
File.... P:\PROJECT\10022\1-5\Engr\COMPS\WET POND\EXISTING CONDITIONS\Per Original Design\POND 2&10 5-12-2006.PPW
Storm... TypeII 24hr Tag: 2
LEVEL POOL ROUTING CALCULATIONS
HYG Dir = P:\PROJECT\10022\1-5\Engr\COMPS\WET POND\EXISTING CONDITIONS\Per Original Design\
Inflow HYG file = NONE STORED - MCKINLEY PONDIN 2
Outflow HYG file = NONE STORED - MCKINLEY PONDOUT 2

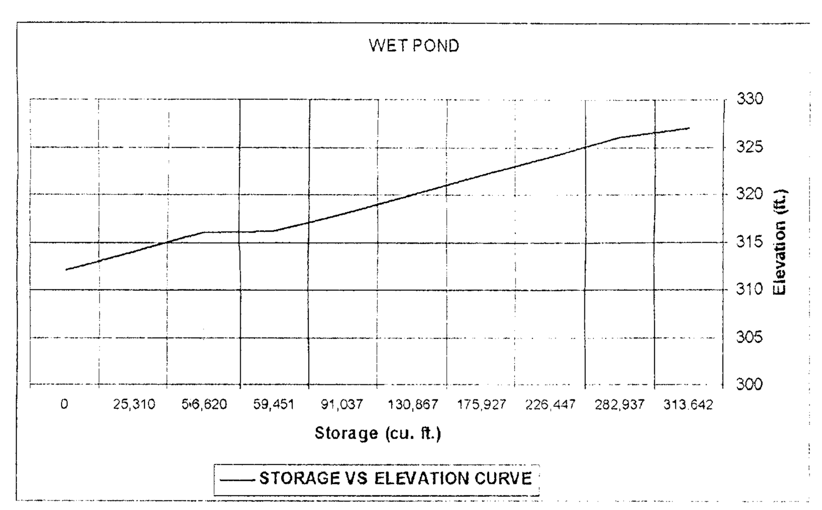
	Time hrs	Inflow cfs	2S/t - O cfs	2S/t + O cfs	Infilt. cfs	Outflow cfs	Storage cu.ft	Elev. ft	
	11.5000	4.40	2478.97	2479.53	.00	.28	74378	317.05	
	11.5167	4.51	2487.31	2487.88	.00	.29	74628	317.06	
	11.5334	4.65	2495.90	2496.48	.00	.29	74886	317.08	
	11.5500	4.84	2504.81	2505.39	.00	.29	75153	317.09	
	11.5667	5.08	2514.14	2514.73	.00	.29	75433	317.11	
	11.5834	5.40	2524.02	2524.62	.00	.30	75730	317.13	
	11.6000	5.80	2534.63	2535.23	.00	.30	76048	317.15	
	11.6167	6.31	2546.14	2546.74	.00	.30	76393	317.17	
	11.6334	6.93	2558.76	2559.37	.00	.31	76772	317.19	
	11.6500	7.66	2572.72	2573.35	.00	.31	77191	317.21	
	11.6667	8.53	2588.28	2588.91	.00	.32	77658	317.24	
	11.6834	9.55	2605.71	2606.36	.00	.32	78181	317.27	
	11.7000	10.73	2625.33	2625.99	.00	.33	78770	317.30	
	11.7167	12.08	2647.47	2648.15	.00	.34	79434	317.34	
	11.7334	13.59	2672.46	2673.15	.00	.34	80184	317.38	
	11.7500	15.24	2700.59	2701.29	.00	.35	81028	317.43	
	11.7667	17.03	2732.13	2732.86	.00	.36	81975	317.48	
	11.7834	19.01	2767.44	2768.18	.00	.37	83034	317.54	
	11.8000	21.17	2806.86	2807.62	.00	.38	84217	317.61	
	11.8167	23.57	2850.82	2851.60	.00	.39	85537	317.69	
	11.8334	26.24	2899.82	2900.63	.00	.40	87007	317.77	
	11.8500	29.18	2954.41	2955.24	.00	.42	88645	317.86	
	11.8667	32.46	3015.19	3016.05	.00	.43	90469	317.97	
	11.8834	36.19	3082.95	3083.84	.00	.44	92502	318.07	
	11.9000	40.39	3158.62	3159.53	.00	.46	94772	318.19	
	11.9167	44.88	3242.94	3243.89	.00	.47	97303	318.31	
	11.9334	49.40	3336.25	3337.22	.00	.49	100102	318.46	
	11.9500	53.70	3438.33	3439.34	.00	.51	103165	318.61	
	11.9667	57.58	3548.55	3549.61	.00	.53	106473	318.78	
	11.9834	60.88	3664.83	3667.01	.00	1.09	109978	318.95	
	12.0000	63.46	3783.06	3789.16	.00	3.05	113584	319.13	
	12.0167	65.23	3901.72	3911.75	.00	5.01	117202	319.31	
Qpeak Inflow	12.0334	66.10	4020.18	4033.05	.00	6.43	120799	319.49	
	12.0500	65.99	4137.73	4152.27	.00	7.27	124350	319.67	
	12.0667	64.89	4252.60	4268.61	.00	8.01	127819	319.85	
	12.0834	62.77	4363.00	4380.26	.00	8.63	131149	320.01	
	12.1000	59.71	4467.20	4485.48	.00	9.14	134290	320.15	
	12.1167	55.91	4563.68	4582.82	.00	9.57	137198	320.28	
	12.1334	51.69	4651.37	4671.29	.00	9.96	139840	320.40	
	12.1500	47.36	4727.74	4750.42	.00	11.34	142173	320.50	
	12.1667	43.07	4789.29	4818.17	.00	14.44	144112	320.59	
	12.1834	38.94	4837.52	4871.29	.00	16.88	145632	320.66	
	12.2000	35.08	4874.08	4911.54	.00	18.73	146785	320.71	
	12.2167	31.55	4900.59	4940.71	.00	20.06	147620	320.74	
	12.2334	28.42	4918.64	4960.56	.00	20.96	148188	320.77	
	12.2500	25.77	4929.79	4972.83	.00	21.52	148539	320.78	
	12.2667	23.57	4935.51	4979.13	.00	21.81	148720	320.79	
	12.2834	21.69	4937.02	4980.78	.00	21.88	148767	320.79	Qpeak Outflow
	12.3000	20.07	4935.20	4978.78	.00	21.79	148710	320.79	
	12.3167	18.67	4930.80	4973.94	.00	21.57	148572	320.79	
	12.3334	17.43	4924.39	4966.89	.00	21.25	148370	320.78	
	12.3500	16.33	4916.44	4958.15	.00	20.85	148119	320.77	
	12.3667	15.38	4907.36	4948.16	.00	20.40	147833	320.75	
	12.3834	14.54	4897.48	4937.29	.00	19.90	147522	320.74	
	12.4000	13.78	4887.04	4925.80	.00	19.38	147193	320.72	
	12.4167	13.10	4876.23	4913.91	.00	18.84	146852	320.71	
	12.4334	12.48	4865.23	4901.80	.00	18.29	146506	320.69	
	12.4500	11.91	4854.16	4889.62	.00	17.73	146157	320.68	
	12.4667	11.40	4843.14	4877.47	.00	17.17	145810	320.66	
	12.4834	10.93	4832.23	4865.46	.00	16.62	145468	320.65	
	12.5000	10.48	4821.50	4853.64	.00	16.07	145127	320.63	

Type.... Pond Routing Calcs (Total Out) Page 14.92
Name.... MCKINLEY PONDOUT Tag: 10 Event: 10 yr
File.... P:\PROJECT\10022\1-5\Engr\COMPS\WET POND\EXISTING CONDITIONS\Per Original Design\POND 2&10 5-12-2006.PPW
Storm... TypeII 24hr Tag: 10
LEVEL POOL ROUTING CALCULATIONS
HYG Dir = P:\PROJECT\10022\1-5\Engr\COMPS\WET POND\EXISTING CONDITIONS\Per Original Design\
Inflow HYG file = NONE STORED - MCKINLEY PONDIN 10
Outflow HYG file = NONE STORED - MCKINLEY PONDOUT 10

	Time hrs	Inflow cfs	2S/t - O cfs	2S/t + O cfs	Infilt. cfs	Outflow cfs	Storage cu.ft	Elev. ft	
	11.3000	7.77	3215.81	3216.74	.00	.47	96489	318.27	
	11.3167	7.93	3230.56	3231.51	.00	.47	96931	318.30	
	11.3334	8.10	3245.65	3246.60	.00	.47	97384	318.32	
	11.3500	8.27	3261.06	3262.01	.00	.48	97846	318.34	
	11.3667	8.43	3276.81	3277.76	.00	.48	98319	318.37	
	11.3834	8.61	3292.88	3293.85	.00	.48	98801	318.39	
	11.4000	8.78	3309.30	3310.27	.00	.48	99294	318.41	
	11.4167	8.96	3326.07	3327.04	.00	.49	99797	318.44	
	11.4334	9.14	3343.19	3344.17	.00	.49	100311	318.47	
	11.4500	9.32	3360.66	3361.65	.00	.49	100835	318.49	
	11.4667	9.50	3378.48	3379.48	.00	.50	101370	318.52	
	11.4834	9.68	3396.66	3397.66	.00	.50	101915	318.55	
	11.5000	9.87	3415.21	3416.21	.00	.50	102471	318.57	
	11.5167	10.09	3434.15	3435.16	.00	.51	103040	318.60	
	11.5334	10.38	3453.59	3454.61	.00	.51	103623	318.63	
	11.5500	10.76	3473.70	3474.73	.00	.51	104227	318.66	
	11.5667	11.26	3494.69	3495.72	.00	.52	104856	318.69	
	11.5834	11.93	3516.84	3517.88	.00	.52	105521	318.73	
	11.6000	12.78	3540.51	3541.56	.00	.53	106231	318.76	
	11.6167	13.84	3566.08	3567.13	.00	.53	106999	318.80	
	11.6334	15.14	3594.00	3595.06	.00	.53	107836	318.84	
	11.6500	16.67	3624.74	3625.81	.00	.54	108759	318.89	
	11.6667	18.47	3657.94	3659.89	.00	.98	109768	318.94	
	11.6834	20.59	3693.86	3697.01	.00	1.57	110863	319.00	
	11.7000	23.03	3733.03	3737.48	.00	2.22	112058	319.06	
	11.7167	25.79	3775.98	3781.85	.00	2.94	113368	319.12	
	11.7334	28.85	3823.18	3830.62	.00	3.72	114807	319.19	
	11.7500	32.16	3875.05	3884.20	.00	4.57	116389	319.27	
	11.7667	35.74	3931.91	3942.95	.00	5.52	118123	319.36	
	11.7834	39.64	3994.82	4007.29	.00	6.24	120032	319.46	
	11.8000	43.88	4064.81	4078.34	.00	6.77	122148	319.56	
	11.8167	48.52	4142.60	4157.21	.00	7.30	124498	319.68	
	11.8334	53.65	4229.04	4244.77	.00	7.86	127107	319.81	
	11.8500	59.22	4325.06	4341.91	.00	8.42	130005	319.96	
	11.8667	65.38	4431.71	4449.67	.00	8.98	133221	320.10	
	11.8834	72.32	4550.39	4569.41	.00	9.51	136797	320.28	
	11.9000	80.08	4682.62	4702.79	.00	10.09	140782	320.44	
	11.9167	88.31	4819.11	4851.01	.00	15.95	145052	320.63	
	11.9334	96.50	4958.05	5003.91	.00	22.93	149430	320.82	
	11.9500	104.18	5098.79	5158.73	.00	29.97	153863	321.02	
	11.9667	111.02	5242.53	5313.99	.00	35.73	158348	321.22	
	11.9834	116.68	5391.74	5470.22	.00	39.24	162930	321.42	
	12.0000	120.96	5544.45	5629.38	.00	42.46	167608	321.63	
	12.0167	123.71	5698.19	5789.12	.00	45.46	172310	321.84	
	12.0334	124.77	5850.35	5946.87	.00	48.16	176955	322.04	
	12.0500	124.04	5998.28	6099.16	.00	50.44	181462	322.22	
	12.0667	121.48	6138.89	6243.80	.00	52.46	185741	322.39	
Qpeak Inflow	12.0834	117.12	6268.79	6377.49	.00	54.35	189695	322.55	
	12.1000	111.07	6377.02	6496.98	.00	59.98	193111	322.68	
	12.1167	103.74	6458.37	6591.84	.00	66.73	195754	322.78	
	12.1334	95.71	6513.23	6657.82	.00	72.30	197566	322.86	
	12.1500	87.52	6545.15	6696.46	.00	75.65	198625	322.90	
	12.1667	79.44	6557.78	6712.11	.00	77.16	199049	322.92	
	12.1834	71.70	6555.22	6708.93	.00	76.85	198962	322.91	
	12.2000	64.51	6541.00	6691.43	.00	75.22	198487	322.89	
	12.2167	57.93	6517.87	6663.44	.00	72.78	197720	322.86	Qpeak Outflow
	12.2334	52.09	6488.50	6627.90	.00	69.70	196746	322.82	
	12.2500	47.17	6454.90	6587.76	.00	66.43	195641	322.78	
	12.2667	43.08	6418.63	6545.14	.00	63.26	194457	322.73	
	12.2834	39.58	6380.83	6501.28	.00	60.23	193232	322.69	
	12.3000	36.56	6341.58	6456.97	.00	57.69	191979	322.64	
	12.3167	33.94	6301.21	6412.09	.00	55.44	190700	322.58	
	12.3334	31.64	6258.36	6366.79	.00	54.21	189378	322.53	
	12.3500	29.61	6212.52	6319.63	.00	53.55	187983	322.48	
	12.3667	27.84	6164.31	6269.97	.00	52.83	186514	322.42	
	12.3834	26.28	6114.22	6218.43	.00	52.10	184990	322.36	
	12.4000	24.86	6082.65	6165.38	.00	51.36	183421	322.30	
	12.4167	23.61	6009.93	6111.14	.00	50.61	181817	322.23	
	12.4334	22.46	5956.39	6056.00	.00	49.81	180186	322.17	
	12.4500	21.43	5902.34	6000.28	.00	48.97	178540	322.10	
	12.4667	20.48	5848.00	5944.25	.00	48.12	176884	322.04	
	12.4834	19.61	5793.65	5888.09	.00	47.22	175226	321.97	
	12.5000	18.79	5739.57	5832.05	.00	46.24	173575	321.90	

Type.... Pond Routing Calcs (Total Out) Page 14.28
Name.... MCKINLEY PONDOUT Tag: 100 Event: 100 yr
File.... P:\PROJECT\10022\1-5\Engr\COMPS\WET POND\EXISTING CONDITIONS\Per Original Design\PERDESIGN 100.PPW
Storm... TypeII 24hr Tag: 100
LEVEL POOL ROUTING CALCULATIONS
HYG Dir = P:\PROJECT\10022\1-5\Engr\COMPS\WET POND\EXISTING CONDITIONS\Per Original Design\
Inflow HYG file = NONE STORED - MCKINLEY PONDIN 100
Outflow HYG file = NONE STORED - MCKINLEY PONDOUT 100

	Time hrs	Inflow cfs	2S/t - O cfs	2S/t + O cfs	Infilt. cfs	Outflow cfs	Storage cu.ft	Elev. ft	
	11.6500	28.29	7132.46	7173.00	.00	20.27	214583	323.53	
	11.6667	30.97	7147.70	7191.72	.00	22.01	215092	323.55	
	11.6834	35.08	7165.65	7213.75	.00	24.06	215692	323.57	
	11.7000	39.18	7186.94	7239.91	.00	26.48	216403	323.60	
	11.7167	43.29	7210.96	7269.41	.00	29.22	217206	323.63	
	11.7334	47.39	7237.21	7301.64	.00	32.22	218083	323.67	
	11.7500	52.14	7265.79	7336.74	.00	35.47	219038	323.71	
	11.7667	58.53	7298.14	7376.46	.00	39.16	220120	323.75	
	11.7834	64.93	7333.08	7421.60	.00	44.26	221321	323.80	
	11.8000	71.32	7370.02	7469.33	.00	49.66	222590	323.85	
	11.8167	77.72	7408.49	7519.06	.00	55.28	223914	323.90	
	11.8334	84.87	7448.75	7571.08	.00	61.17	225298	323.95	
	11.8500	93.95	7492.33	7627.57	.00	67.62	226799	324.01	
	11.8667	103.03	7539.53	7689.32	.00	74.89	228433	324.07	
	11.8834	112.11	7589.50	7754.68	.00	82.59	230163	324.13	
	11.9000	121.19	7641.57	7822.80	.00	90.61	231966	324.20	
	11.9167	129.98	7694.72	7892.74	.00	99.01	233813	324.26	
	11.9334	138.06	7746.37	7962.77	.00	108.20	235637	324.33	
	11.9500	146.14	7796.37	8030.57	.00	117.10	237404	324.39	
	11.9667	154.22	7845.17	8096.74	.00	125.79	239129	324.45	
	11.9834	162.30	7892.83	8161.69	.00	134.43	240819	324.51	
Qpeak Inflow	12.0000	167.85	7936.54	8222.98	.00	143.22	242393	324.56	
	12.0167	167.11	7971.15	8271.51	.00	150.18	243641	324.61	
	12.0334	166.38	7994.78	8304.84	.00	154.93	244492	324.64	
	12.0500	165.64	8010.59	8326.81	.00	158.11	245061	324.66	
	12.0667	164.91	8020.82	8341.15	.00	160.16	245430	324.67	
	12.0834	161.77	8025.35	8347.50	.00	161.08	245593	324.68	Qpeak Outflow
	12.1000	152.73	8019.89	8339.84	.00	159.98	245397	324.67	
	12.1167	143.68	8003.09	8316.30	.00	156.60	244791	324.65	
	12.1334	134.64	7978.22	8281.41	.00	151.60	243895	324.62	
	12.1500	125.59	7947.57	8238.44	.00	145.44	242791	324.58	
	12.1667	116.71	7912.93	8189.88	.00	138.47	241543	324.53	
	12.1834	108.24	7875.52	8137.89	.00	131.19	240201	324.49	
	12.2000	99.78	7835.43	8083.54	.00	124.05	238785	324.44	
	12.2167	91.31	7793.38	8026.51	.00	116.57	237299	324.38	
	12.2334	82.84	7749.87	7967.52	.00	108.82	235761	324.33	
	12.2500	75.44	7706.08	7908.14	.00	101.03	234214	324.28	
	12.2667	70.62	7664.00	7852.13	.00	94.07	232742	324.22	
	12.2834	65.80	7624.45	7800.41	.00	87.98	231373	324.17	
	12.3000	60.97	7586.86	7751.22	.00	82.18	230072	324.13	
	12.3167	56.15	7550.75	7703.98	.00	76.62	228822	324.08	
	12.3334	51.94	7516.24	7658.84	.00	71.30	227627	324.04	



AS-BUILT CURRENT CONDITIONS (SUMMARY TABLE #3)

Type.... Pond Routing Calcs (Total Out) Page 14.32
Name.... ASBUILT MCKINOUT Tag: 2 Event: 2 yr
File.... P:\PROJECT\10022\1-5\Engr\COMPS\WET POND\EXISTING CONDITIONS\Per As-Built\ORIG-ASBUILT-POND 2&10.PPW
Storm... TypeII 24hr Tag: 2
LEVEL POOL ROUTING CALCULATIONS
HYG Dir = P:\PROJECT\10022\1-5\Engr\COMPS\WET POND\EXISTING CONDITIONS\Per As-Built\
Inflow HYG file = NONE STORED - ASBUILT MCKININ 2
Outflow HYG file = NONE STORED - ASBUILT MCKINOUT 2

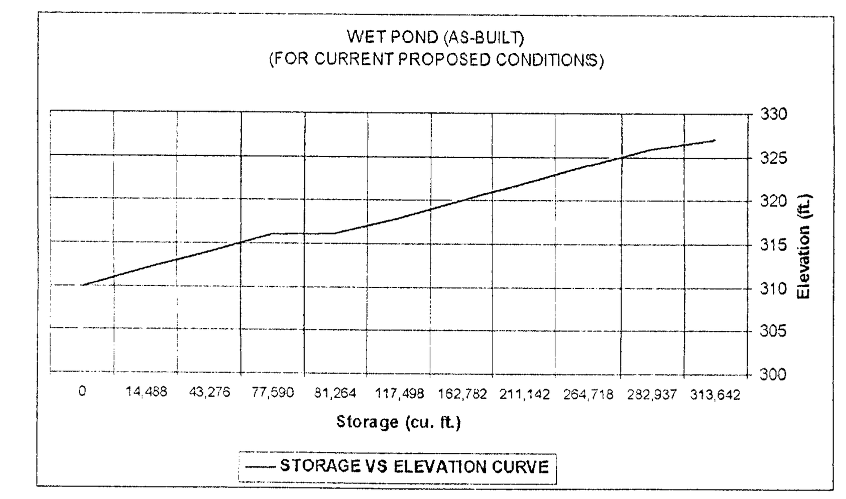
	Time hrs	Inflow cfs	2S/t - O cfs	2S/t + O cfs	Infilt. cfs	Outflow cfs	Storage cu.ft	Elev. ft	
	11.9000	40.40	3949.37	3950.24	.00	.43	118494	318.04	
	11.9167	43.69	4032.56	4033.46	.00	.45	120990	318.15	
	11.9334	46.88	4122.20	4123.13	.00	.46	123680	318.27	
	11.9500	50.07	4218.20	4219.16	.00	.48	126581	318.40	
	11.9667	53.27	4318.52	4321.54	.00	1.51	129601	318.53	
	11.9834	56.46	4422.21	4428.25	.00	3.02	132757	318.67	
	12.0000	58.75	4528.29	4537.42	.00	4.56	135988	318.82	
	12.0167	58.81	4634.04	4645.85	.00	5.91	139199	318.96	
	12.0334	58.87	4738.31	4751.71	.00	6.70	142350	319.10	
	12.0500	58.92	4841.44	4856.10	.00	7.33	145463	319.24	
Qpeak Inflow	12.0667	58.98	4943.56	4959.35	.00	7.89	148544	319.37	
	12.0834	58.12	5043.85	5060.67	.00	8.41	151568	319.50	
	12.1000	55.01	5139.20	5156.98	.00	8.89	154443	319.63	
	12.1167	51.89	5227.51	5246.10	.00	9.30	157104	319.75	
	12.1334	48.77	5308.85	5328.17	.00	9.66	159558	319.86	
	12.1500	45.66	5383.33	5403.28	.00	9.97	161799	319.96	
	12.1667	42.56	5451.06	5471.55	.00	10.24	163839	320.04	
	12.1834	39.54	5512.21	5533.16	.00	10.48	165681	320.12	
	12.2000	36.51	5566.90	5588.26	.00	10.68	167328	320.19	
	12.2167	33.48	5615.17	5636.89	.00	10.86	168781	320.25	
	12.2334	30.46	5657.08	5679.11	.00	11.02	170043	320.30	
	12.2500	27.81	5693.07	5715.34	.00	11.14	171126	320.35	
	12.2667	26.08	5724.46	5746.95	.00	11.25	172072	320.38	
	12.2834	24.34	5752.20	5774.88	.00	11.34	172907	320.42	
	12.3000	22.61	5775.77	5799.16	.00	11.70	173624	320.45	
	12.3167	20.88	5794.16	5819.26	.00	12.55	174201	320.47	
	12.3334	19.37	5808.01	5834.40	.00	13.19	174637	320.49	
	12.3500	18.37	5818.40	5845.75	.00	13.68	174963	320.50	
	12.3667	17.38	5826.08	5854.15	.00	14.03	175204	320.51	
	12.3834	16.39	5831.30	5859.85	.00	14.28	175368	320.52	
	12.4000	15.39	5834.26	5863.08	.00	14.41	175460	320.52	
	12.4167	14.51	5835.24	5864.16	.00	14.46	175491	320.53	Qpeak Outflow
	12.4334	13.89	5834.77	5863.65	.00	14.44	175476	320.53	
	12.4500	13.27	5833.21	5861.94	.00	14.36	175428	320.52	
	12.4667	12.65	5830.65	5859.13	.00	14.24	175347	320.52	
	12.4834	12.03	5827.16	5855.33	.00	14.08	175238	320.52	
	12.5000	11.47	5822.89	5850.66	.00	13.88	175104	320.51	

Type.... Pond Routing Calcs (Total Out) Page 14.94
Name.... ASBUILT MCKINOUT Tag: 10 Event: 10 yr
File.... P:\PROJECT\10022\1-5\Engr\COMPS\WET POND\EXISTING CONDITIONS\Per As-Built\ORIG-ASBUILT-POND 2&10.PPW
Storm... TypeII 24hr Tag: 10
LEVEL POOL ROUTING CALCULATIONS
HYG Dir = P:\PROJECT\10022\1-5\Engr\COMPS\WET POND\EXISTING CONDITIONS\Per As-Built\
Inflow HYG file = NONE STORED - ASBUILT MCKININ 10
Outflow HYG file = NONE STORED - ASBUILT MCKINOUT 10

	Time hrs	Inflow cfs	2S/t - O cfs	2S/t + O cfs	Infilt. cfs	Outflow cfs	Storage cu.ft	Elev. ft	
	11.8500	61.20	5097.37	5114.74	.00	8.68	153182	319.58	
	11.8667	67.35	5207.51	5225.92	.00	9.21	156502	319.72	
	11.8834	73.50	5328.87	5348.36	.00	9.75	160159	319.88	
	11.9000	79.65	5461.45	5482.02	.00	10.28	164152	320.06	
	11.9167	85.65	5605.10	5626.74	.00	10.82	168478	320.24	
	11.9334	91.26	5759.27	5782.00	.00	11.36	173120	320.43	
	11.9500	96.87	5911.41	5947.40	.00	17.99	177883	320.62	
	11.9667	102.48	6060.88	6110.75	.00	24.94	182575	320.82	
	11.9834	108.09	6208.03	6271.45	.00	31.71	187192	321.01	
Qpeak Inflow	12.0000	112.00	6354.31	6428.12	.00	36.90	191737	321.20	
	12.0167	111.69	6498.01	6578.01	.00	40.00	196140	321.38	
	12.0334	111.39	6635.67	6721.09	.00	42.71	200352	321.55	
	12.0500	111.08	6767.83	6858.15	.00	45.16	204390	321.72	
	12.0667	110.78	6895.02	6989.70	.00	47.34	208271	321.88	
	12.0834	108.82	7016.02	7114.62	.00	49.30	211960	322.03	
	12.1000	102.82	7125.96	7227.66	.00	50.85	215305	322.16	
	12.1167	96.81	7221.20	7325.58	.00	52.19	218202	322.26	
	12.1334	90.80	7302.25	7408.81	.00	53.28	220666	322.36	
	12.1500	84.79	7369.51	7477.84	.00	54.17	222711	322.43	
	12.1667	78.88	7423.38	7533.17	.00	54.90	224349	322.49	
	12.1834	73.19	7464.63	7575.45	.00	55.41	225601	322.54	
	12.2000	67.50	7492.41	7605.32	.00	56.45	226466	322.57	
	12.2167	61.81	7507.66	7621.72	.00	57.03	226941	322.59	
	12.2334	56.12	7511.26	7625.59	.00	57.17	227053	322.59	Qpeak Outflow
	12.2500	51.15	7504.69	7618.53	.00	56.92	226849	322.59	
	12.2667	47.91	7490.95	7603.75	.00	56.40	226421	322.57	
	12.2834	44.66	7472.15	7583.52	.00	55.69	225836	322.55	
	12.3000	41.42	7447.83	7558.23	.00	55.20	225091	322.52	
	12.3167	38.17	7417.78	7527.42	.00	54.82	224179	322.49	
	12.3334	35.34	7382.61	7491.30	.00	54.34	223109	322.45	
	12.3500	33.49	7343.80	7451.44	.00	53.82	221929	322.40	
	12.3667	31.64	7302.37	7408.93	.00	53.28	220670	322.36	
	12.3834	29.79	7258.38	7363.80	.00	52.71	219333	322.31	
	12.4000	27.93	7211.98	7316.10	.00	52.06	217922	322.25	

Type.... Pond Routing Calcs (Total Out) Page 14.25
Name.... ASBUILT MCKINOUT Tag: 100 Event: 100 yr
File.... P:\PROJECT\10022\1-5\Engr\COMPS\WET POND\EXISTING CONDITIONS\Per As-Built\ORIG-ASBUILT-POND 100.PPW
Storm... TypeII 24hr Tag: 100
LEVEL POOL ROUTING CALCULATIONS
HYG Dir = P:\PROJECT\10022\1-5\Engr\COMPS\WET POND\EXISTING CONDITIONS\Per As-Built\
Inflow HYG file = NONE STORED - ASBUILT MCKININ 100
Outflow HYG file = NONE STORED - ASBUILT MCKINOUT 100

	Time hrs	Inflow cfs	2S/t - O cfs	2S/t + O cfs	Infilt. cfs	Outflow cfs	Storage cu.ft	Elev. ft	
	11.8000	71.32	8620.31	8718.79	.00	49.24	260087	323.83	
	11.8167	77.72	8659.42	8769.35	.00	54.97	261433	323.88	
	11.8334	84.87	8700.14	8822.01	.00	60.93	262833	323.93	
	11.8500	93.95	8744.19	8878.97	.00	67.39	264348	323.99	
	11.8667	103.03	8773.36	8941.18	.00	83.91	265719	324.11	
	11.8834	112.11	8791.39	8988.50	.00	98.56	266699	324.22	
	11.9000	121.19	8803.82	9024.69	.00	110.44	267428	324.30	
	11.9167	129.98	8813.48	9054.99	.00	120.76	268028	324.36	
	11.9334	138.06	8821.94	9081.53	.00	129.79	268552	324.42	
	11.9500	146.14	8829.79	9106.15	.00	138.18	269040	324.47	
	11.9667	154.22	8836.78	9130.16	.00	146.69	269505	324.53	
	11.9834	162.30	8842.88	9153.30	.00	155.21	269943	324.57	
Qpeak Inflow	12.0000	167.85	8848.09	9173.03	.00	162.47	270318	324.61	
	12.0167	167.11	8850.74	9183.06	.00	166.16	270507	324.64	
	12.0334	166.38	8851.05	9184.23	.00	166.59	270530	324.64	Qpeak Outflow
	12.0500	165.64	8850.74	9183.07	.00	166.16	270508	324.64	
	12.0667	164.91	8850.27	9181.30	.00	165.51	270474	324.63	
	12.0834	161.77	8849.13	9176.95	.00	163.91	270392	324.62	
	12.1000	152.73	8845.61	9163.62	.00	159.01	270139	324.60	
	12.1167	143.68	8839.91	9142.02	.00	151.06	269729	324.55	
	12.1334	134.64	8833.63	9118.22	.00	142.30	269278	324.50	
	12.1500	125.59	8825.87	9093.85	.00	133.99	268796	324.45	
	12.1667	116.71	8817.69	9068.18	.00	125.25	268288	324.39	
	12.1834	108.24	8809.54	9042.64	.00	116.55	267783	324.34	
	12.2000	99.78	8801.55	9017.56	.00	108.01	267287	324.28	
	12.2167	91.31	8792.96	8992.63	.00	99.83	266784	324.23	
	12.2334	82.84	8783.24	8967.11	.00	91.93	266256	324.17	
	12.2500	75.44	8773.48	8941.51	.00	84.01	265728	324.11	
	12.2667	70.62	8765.11	8919.54	.00	77.21	265270	324.06	
	12.2834	65.80	8758.25	8901.52	.00	71.64	264897	324.02	
	12.3000	60.97	8748.87	8885.02	.00	68.07	264509	323.99	



WET POND SUMMARY TABLE

EXISTING WET POND FACILITY Approved Maximum Release (MR): 2year ALLOWABLE RELEASE=10cfs 10year ALLOWABLE RELEASE=51CFS	Drainage Area (Ac)	Runoff Curve # (CN)	Time of Concentration (Tc), Hrs	2-year PEAK INFLOW (CFS)	2-year PEAK RELEASE RATE / WSE	(Comparison to approved MR)	10-year PEAK INFLOW (CFS)	10-year PEAK RELEASE RATE / WSE	(Comparison to approved MR)	100-year PEAK INFLOW (CFS)	100-year PEAK RELEASE RATE / WSE
#1 Original/Approved ***DESIGN*** by Huntley Nyce & Assoc's. (Using I.S.W.M., Ver 1.35) Per Plan # 1702-SP-05-2	26.87	85	0.15	58.7	9.32 / 320.47	[-]	119.4	49.46 / 322.58	[-]	186.1	174.98 / 324.96
#2 ***Designed Conditions*** Recreated Hydrological Model by PHR+A / May 2006 (Using PondPack Ver 10.0 & TR-55)	26.87	87.75	0.25	66.1	21.88 / 320.79	[218.80%]	124.77	77.16 / 322.93	[151.29%]	167.85	161.08 / 324.68
#3 ***As-Built, Existing Conditions*** Recreated Hydrological Model by PHR+A / May 2006 (Using PondPack Ver 10.0 & TR-55)	26.87	87.75	0.25	58.98	14.46 / 320.53	[144.60%]	112	57.17 / 322.59	[12.10%]	167.85	166.59 / 324.64

Application No. PCA-92-P-001-05 Staff P.B.
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP)
SEE PROFFERS DATED 10/02/08
Date of (BOS) (PC) approval 10/20/08
Sheet 10 of 18
See also RZ-2008-PR-011

NO.	DESCRIPTION	DATE	REVS'D	REVW'D	APRV'D	DATE
	REVISION					

PROFESSIONAL SEAL
COMMONWEALTH OF VIRGINIA
ROBERT A. MUNSE
Lic. No. 15338
JUNE 27, 2008
PROFESSIONAL ENGINEER

PROJECT
MITRE 4
PROFFERED CONDITION AMENDMENT / REZONING / GENERALIZED DEVELOPMENT PLAN
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VIRGINIA

TITLE
WET-POND SWM FACILITY ANALYSIS/TR-55

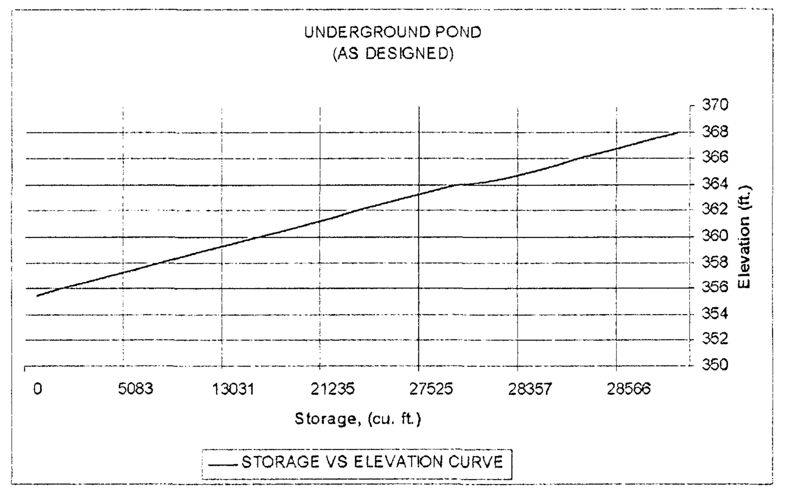
Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
14532 Lee Road
Chantilly, VA 20151-1679
T 703.449.6700
F 703.449.6714

CO. PLAN #

DESIGN OBY	SURVEY N/A
DRAWN JC	DATE JUNE 27, 2008
CHECKED RAM	SCALE N/A
SHEET C002EXH 10 OF 18	FILE NO. 10022 1-5

UNDERGROUND POND

DESIGNED CONDITIONS (SUMMARY TABLE #2)



Type.... Pond Routing Calcs (Total Out) Page 14.59
Name.... UG POND OUT Tag: Pre 2 Event: 2 yr
File.... P:\PROJECT\10022\1-5\Engr\COMPS\UNDERGRND POND\PER DESIGN\MITRE IV_TR55.PPW
Storm... TypeII 24hr Tag: Pre 2

LEVEL POOL ROUTING CALCULATIONS

HYG Dir = P:\PROJECT\10022\1-5\Engr\COMPS\UNDERGRND POND\PER DESIGN\
Inflow HYG file = NONE STORED - UG POND IN Pre 2
Outflow HYG file = NONE STORED - UG POND OUT Pre 2

	Time min	Inflow cfs	2S/t - O cfs	2S/t + O cfs	Infilt. cfs	Outflow cfs	Storage cu.ft	Elev. ft	
	710.00	19.34	652.15	657.90	.00	2.88	9825	358.73	
	710.50	20.39	685.96	691.88	.00	2.96	10334	358.85	
	711.00	21.45	721.75	727.80	.00	3.03	10870	358.98	
	711.50	22.49	759.54	765.69	.00	3.08	11439	359.12	
	712.00	23.53	799.23	805.56	.00	3.17	12036	359.26	
	712.50	24.58	840.86	847.34	.00	3.24	12661	359.41	
	713.00	25.62	884.47	891.05	.00	3.29	13316	359.57	
	713.50	26.66	929.95	936.74	.00	3.39	14000	359.73	
	714.00	27.70	977.42	984.32	.00	3.45	14713	359.90	
Qpeak Inflow	714.50	[27.51]	1025.53	1032.63	.00	3.55	15436	360.07	
	715.00	27.30	1073.10	1080.35	.00	3.62	16151	360.24	
	715.50	27.09	1120.09	1127.48	.00	3.69	16857	360.41	
	716.00	26.87	1166.51	1174.05	.00	3.77	17554	360.58	
	716.50	26.66	1212.38	1220.04	.00	3.83	18243	360.75	
	717.00	26.45	1257.69	1265.49	.00	3.90	18924	360.92	
	717.50	25.95	1302.12	1310.08	.00	3.98	19591	361.08	
	718.00	25.45	1345.47	1353.52	.00	4.03	20242	361.25	
	718.50	24.95	1387.66	1395.86	.00	4.10	20876	361.41	
	719.00	24.45	1428.72	1437.06	.00	4.17	21493	361.57	
	719.50	23.94	1468.68	1477.11	.00	4.21	22093	361.73	
	720.00	23.44	1507.50	1516.07	.00	4.29	22677	361.89	
	720.50	22.19	1544.43	1553.13	.00	4.35	23232	362.04	
	721.00	20.92	1578.75	1587.54	.00	4.39	23747	362.19	
	721.50	19.64	1610.47	1619.31	.00	4.42	24223	362.33	
	722.00	18.37	1639.50	1648.49	.00	4.49	24663	362.46	
	722.50	17.10	1665.89	1674.98	.00	4.54	25056	362.58	
	723.00	15.83	1689.67	1698.83	.00	4.58	25414	362.70	
	723.50	14.57	1710.88	1720.08	.00	4.60	25732	362.81	
	724.00	13.31	1729.47	1738.76	.00	4.65	26012	362.90	
	724.50	12.05	1745.45	1754.82	.00	4.69	26262	362.98	
	725.00	10.79	1758.87	1768.28	.00	4.71	26453	363.06	
	725.50	9.52	1769.71	1779.18	.00	4.73	26617	363.13	
	726.00	8.26	1778.00	1787.50	.00	4.75	26741	363.18	
	726.50	7.79	1784.54	1794.06	.00	4.76	26839	363.22	
	727.00	7.33	1790.12	1799.66	.00	4.77	26923	363.25	
	727.50	6.88	1794.78	1804.33	.00	4.78	26993	363.28	
	728.00	6.42	1798.51	1808.07	.00	4.78	27049	363.30	
	728.50	5.96	1801.32	1810.89	.00	4.78	27092	363.32	
	729.00	5.50	1803.22	1812.79	.00	4.79	27120	363.33	
	729.50	5.32	1804.47	1814.04	.00	4.79	27139	363.34	
	730.00	5.13	1805.34	1814.92	.00	[4.79]	27152	363.35	Qpeak Outflow
	730.50	4.95	1805.85	1815.43	.00	4.79	27159	363.35	
	731.00	4.77	1805.99	1815.57	.00	4.79	27162	363.35	
	731.50	4.58	1805.77	1815.34	.00	4.79	27158	363.35	
	732.00	4.40	1805.18	1814.75	.00	4.79	27149	363.35	
	732.50	4.31	1804.31	1813.89	.00	4.79	27136	363.34	
	733.00	4.21	1803.26	1812.83	.00	4.79	27121	363.33	
	733.50	4.12	1802.02	1811.59	.00	4.78	27102	363.33	
	734.00	4.02	1800.60	1810.16	.00	4.78	27081	363.32	
	734.50	3.93	1798.99	1808.55	.00	4.78	27056	363.31	
	735.00	3.83	1797.19	1806.75	.00	4.78	27029	363.30	
	735.50	3.78	1795.25	1804.80	.00	4.78	27000	363.28	
	736.00	3.72	1793.20	1802.75	.00	4.77	26970	363.27	
	736.50	3.67	1791.04	1800.59	.00	4.77	26937	363.26	
	737.00	3.61	1788.78	1798.32	.00	4.77	26903	363.24	
	737.50	3.55	1786.41	1795.94	.00	4.76	26868	363.23	

Type.... Pond Routing Summary Page 14.73
Name.... UG POND OUT Tag: Pre 10 Event: 10 yr
File.... P:\PROJECT\10022\1-5\Engr\COMPS\UNDERGRND POND\PER DESIGN\MITRE IV_TR55.PPW
Storm... TypeII 24hr Tag: Pre 10

LEVEL POOL ROUTING SUMMARY

HYG Dir = P:\PROJECT\10022\1-5\Engr\COMPS\UNDERGRND POND\PER DESIGN\
Inflow HYG file = NONE STORED - UG POND IN Pre 10
Outflow HYG file = NONE STORED - UG POND OUT Pre 10

Pond Node Data = UG POND
Pond Volume Data = UG POND
Pond Outlet Data = Outlet 1

No Infiltration

INITIAL CONDITIONS

Starting WS Elev = 355.44 ft
Starting Volume = 0 cu.ft
Starting Outflow = .00 cfs
Starting Infiltr. = .00 cfs
Starting Total Qout= .00 cfs
Time Increment = .50 min

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow = 46.95 cfs at 714.00 min
Peak Outflow = 47.34 cfs at 714.50 min

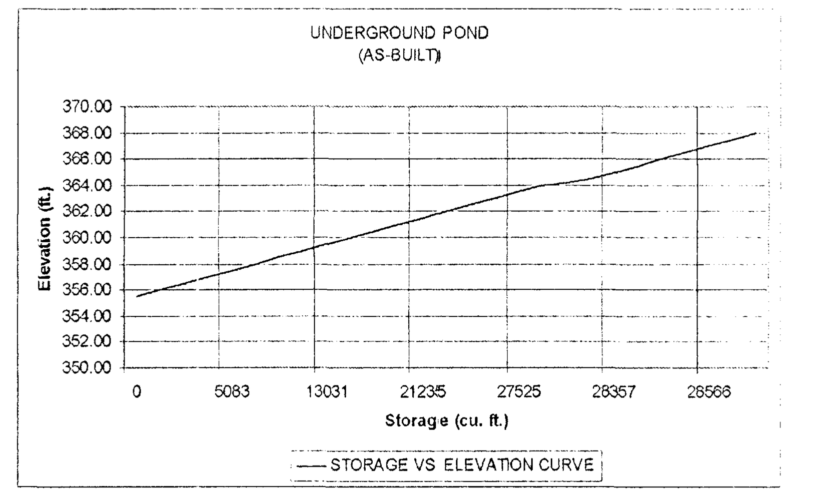
Peak Elevation = 366.10 ft
Peak Storage = 28472 cu.ft

MASS BALANCE (cu.ft)

+ Initial Vol = 0
+ HYG Vol IN = 125550
- Infiltration = 0
- HYG Vol OUT = 125231
- Retained Vol = 320

Unrouted Vol = - cu.ft (.000% of Inflow Volume)

AS-BUILT CURRENT CONDITIONS (SUMMARY TABLE #3)



Type.... Pond Routing Calcs (Total Out) Page 14.59
Name.... UG POND OUT Tag: Pre 2 Event: 2 yr
File.... P:\PROJECT\10022\1-5\Engr\COMPS\UNDERGRND POND\PER AS-BUILT\As-Built EX\MITRE IV AS-BUILT TR55.PPW
Storm... TypeII 24hr Tag: Pre 2

LEVEL POOL ROUTING CALCULATIONS

HYG Dir = P:\PROJECT\10022\1-5\Engr\COMPS\UNDERGRND POND\PER AS-BUILT\As-Built EX\
Inflow HYG file = NONE STORED - UG POND IN Pre 2
Outflow HYG file = NONE STORED - UG POND OUT Pre 2

	Time min	Inflow cfs	2S/t - O cfs	2S/t + O cfs	Infilt. cfs	Outflow cfs	Storage cu.ft	Elev. ft	
	710.00	19.34	664.63	670.37	.00	2.87	10012	358.77	
	710.50	20.39	698.47	704.36	.00	2.95	10521	358.90	
	711.00	21.45	734.28	740.31	.00	3.02	11059	359.03	
	711.50	22.49	772.08	778.21	.00	3.07	11627	359.16	
	712.00	23.53	811.80	818.10	.00	3.15	12224	359.31	
	712.50	24.58	853.45	859.91	.00	3.23	12850	359.46	
	713.00	25.62	897.09	903.64	.00	3.28	13505	359.61	
Qpeak Inflow	713.50	[26.66]	942.60	949.37	.00	3.38	14190	359.78	
	714.00	27.70	990.07	996.96	.00	3.45	14903	359.95	
	714.50	27.51	1038.21	1045.28	.00	3.54	15626	360.12	
	715.00	27.30	1085.79	1093.02	.00	3.62	16341	360.29	
	715.50	27.09	1132.82	1140.18	.00	3.68	17048	360.46	
	716.00	26.87	1179.25	1186.78	.00	3.76	17745	360.63	
	716.50	26.66	1225.14	1232.78	.00	3.82	18434	360.80	
	717.00	26.45	1270.48	1278.24	.00	3.88	19116	360.96	
	717.50	25.95	1314.93	1322.87	.00	3.97	19783	361.13	
	718.00	25.45	1358.28	1366.33	.00	4.02	20435	361.30	
	718.50	24.95	1400.49	1408.68	.00	4.09	21070	361.46	
	719.00	24.45	1441.56	1449.88	.00	4.16	21686	361.62	
	719.50	23.94	1481.53	1489.95	.00	4.21	22286	361.78	
	720.00	23.44	1520.35	1528.91	.00	4.28	22870	361.94	
	720.50	22.19	1557.30	1565.98	.00	4.34	23425	362.10	
	721.00	20.92	1591.62	1600.40	.00	4.39	23940	362.25	
	721.50	19.64	1623.34	1632.18	.00	4.42	24416	362.39	
	722.00	18.37	1652.38	1661.36	.00	4.49	24853	362.52	
	722.50	17.10	1678.78	1687.86	.00	4.54	25250	362.65	
	723.00	15.83	1702.56	1711.71	.00	4.58	25607	362.77	
	723.50	14.57	1723.77	1732.96	.00	4.60	25925	362.87	
	724.00	13.31	1742.36	1751.65	.00	4.64	26208	362.97	
	724.50	12.05	1758.34	1767.72	.00	4.69	26445	363.06	
	725.00	10.79	1771.75	1781.18	.00	4.71	26647	363.14	
	725.50	9.52	1782.59	1792.06	.00	4.74	26810	363.21	
	726.00	8.26	1790.88	1800.38	.00	4.75	26934	363.26	
	726.50	7.79	1797.40	1806.93	.00	4.76	27032	363.30	
	727.00	7.33	1802.98	1812.52	.00	4.77	27116	363.33	
	727.50	6.88	1807.63	1817.19	.00	4.78	27186	363.36	
	728.00	6.42	1811.36	1820.93	.00	4.78	27242	363.38	
	728.50	5.96	1814.17	1823.75	.00	4.79	27284	363.40	
	729.00	5.50	1816.07	1825.64	.00	[4.79]	27313	363.41	Qpeak Outflow
	729.50	5.32	1817.31	1826.89	.00	4.79	27332	363.42	
	730.00	5.13	1818.18	1827.76	.00	4.79	27346	363.43	
	730.50	4.95	1818.68	1828.26	.00	4.79	27354	363.43	
	731.00	4.77	1818.82	1828.40	.00	4.79	27356	363.43	
	731.50	4.58	1818.59	1828.17	.00	4.79	27353	363.43	
	732.00	4.40	1818.00	1827.58	.00	4.79	27343	363.43	
	732.50	4.31	1817.13	1826.71	.00	4.79	27330	363.42	
	733.00	4.21	1816.07	1825.65	.00	4.79	27313	363.41	
	733.50	4.12	1814.83	1824.40	.00	4.79	27294	363.40	
	734.00	4.02	1813.40	1822.97	.00	4.78	27273	363.40	
	734.50	3.93	1811.79	1821.35	.00	4.78	27248	363.39	
	735.00	3.83	1809.99	1819.55	.00	4.78	27221	363.38	
	735.50	3.78	1808.04	1817.60	.00	4.78	27192	363.36	

Type.... Pond Routing Summary Page 2.60
Name.... UG POND OUT Tag: Pre 10 Event: 10 yr
File.... P:\PROJECT\10022\1-5\Engr\COMPS\UNDERGRND POND\PER AS-BUILT\As-Built PROP\MITRE IV AS-BUILT PROP__BUILDING CHANGE.PPW
Storm... TypeII 24hr Tag: Pre 10

LEVEL POOL ROUTING SUMMARY

HYG Dir = P:\PROJECT\10022\1-5\Engr\COMPS\UNDERGRND POND\PER AS-BUILT\As-Built PROP\
Inflow HYG file = NONE STORED - UG POND IN Pre 10
Outflow HYG file = NONE STORED - UG POND OUT Pre 10

Pond Node Data = UG POND
Pond Volume Data = UG POND
Pond Outlet Data = Outlet 1

No Infiltration

INITIAL CONDITIONS

Starting WS Elev = 355.51 ft
Starting Volume = 0 cu.ft
Starting Outflow = .00 cfs
Starting Infiltr. = .00 cfs
Starting Total Qout= .00 cfs
Time Increment = .50 min

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow = 45.66 cfs at 714.00 min
Peak Outflow = 46.89 cfs at 715.50 min

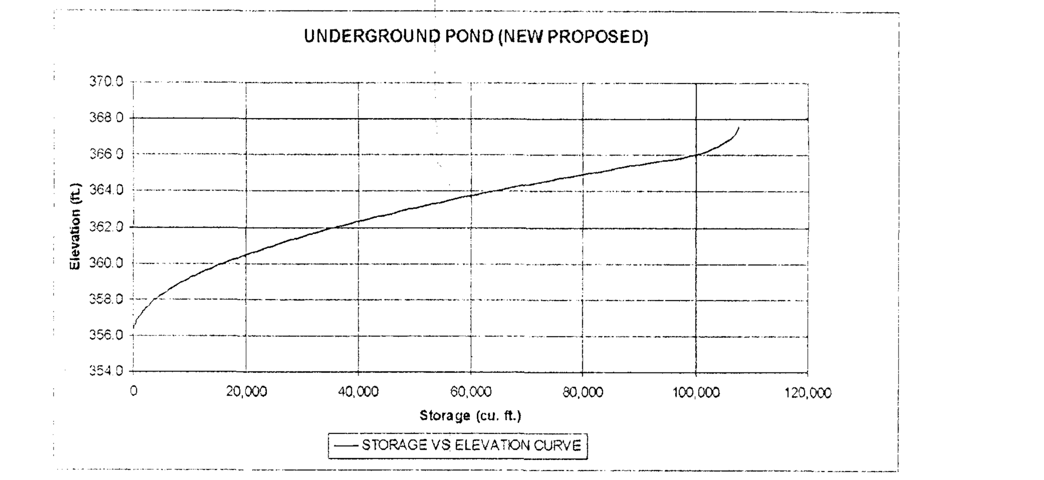
Peak Elevation = 366.32 ft
Peak Storage = 28495 cu.ft

MASS BALANCE (cu.ft)

+ Initial Vol = 0
+ HYG Vol IN = 119480
- Infiltration = 0
- HYG Vol OUT = 119096
- Retained Vol = 384

Unrouted Vol = - cu.ft (.000% of Inflow Volume)

NEW PROPOSED CONDITIONS (SUMMARY TABLE #4)



Type.... Pond Routing Calcs (Total Out) Page 1.03
Name.... UG POND OUT Tag: Dev 2 Event: 2 yr
File.... P:\PROJECT\10022\1-5\Engr\COMPS\UNDERGRND POND\PER DESIGN\UG POND APRIL REVISIONS.PPW
Storm... TypeII 24hr Tag: Dev 2

LEVEL POOL ROUTING CALCULATIONS

HYG Dir = P:\PROJECT\10022\1-5\Engr\COMPS\UNDERGRND POND\PER DESIGN\
Inflow HYG file = NONE STORED - UG POND IN Dev 2
Outflow HYG file = NONE STORED - UG POND OUT Dev 2

	Time min	Inflow cfs	2S/t - O cfs	2S/t + O cfs	Infilt. cfs	Outflow cfs	Storage cu.ft	Elev. ft	
	599.76	.96	2.14	3.88	.00	.87	451	356.67	
	604.76	1.01	2.30	4.11	.00	.91	481	356.69	
	609.76	1.06	2.50	4.37	.00	.94	515	356.72	
	614.75	1.12	2.74	4.68	.00	.97	557	356.74	
	619.75	1.18	3.03	5.04	.00	1.00	605	356.78	
	624.75	1.24	3.36	5.45	.00	1.04	660	356.81	
	629.75	1.31	3.75	5.91	.00	1.08	724	356.85	
	634.75	1.39	4.19	6.44	.00	1.12	797	356.89	
	639.74	1.48	4.73	7.06	.00	1.17	884	356.94	
	644.74	1.57	5.35	7.78	.00	1.22	984	356.99	
	649.74	1.67	6.06	8.59	.00	1.26	1098	357.05	
	654.74	1.78	6.88	9.51	.00	1.32	1228	357.11	
	659.74	1.89	7.81	10.55	.00	1.37	1376	357.17	
	664.73	2.06	8.91	11.76	.00	1.42	1550	357.24	
	669.73	2.27	10.27	13.25	.00	1.49	1763	357.33	
	674.73	2.50	11.94	15.05	.00	1.55	2023	357.42	
	679.73	2.73	13.92	17.17	.00	1.63	2330	357.53	
	684.73	2.99	16.24	19.64	.00	1.70	2690	357.64	
	689.72	3.27	18.95	22.51	.00	1.78	3108	357.76	
	694.72	5.93	24.34	28.16	.00	1.91	3936	357.98	
	699.72	10.76	36.75	41.03	.00	2.14	5831	358.41	
	704.72	16.97	59.59	64.48	.00	2.44	9302	359.05	
	709.72	25.62	98.63	102.19	.00	2.78	14905	359.86	
Qpeak Inflow	714.71	[41.85]	157.77	164.10	.00	3.17	24131	360.91	
	719.71	33.53	226.19	233.15	.00	3.48	34437	361.87	
	724.71	13.75	266.20	273.47	.00	3.63	40459	362.36	
	729.71	6.52	279.12	286.47	.00	3.68	42402	362.51	
	734.71	5.38	283.63	291.01	.00	3.69	43081	362.56	
	739.70	4.77	286.37	293.77	.00	3.70	43494	362.59	
	744.70	4.12	287.85	295.26	.00	[3.71]	43716	362.61	Qpeak Outflow
	749.70	3.43	287.99	295.40	.00	3.71	43737	362.61	
	754.70	2.97	286.99	294.39	.00	3.70	43586	362.60	
	759.70	2.75	285.31	292.71	.00	3.70	43334	362.58	
	764.69	2.61	283.28	290.66	.00	3.69	43029	362.56	
	769.69	2.47	281.00	288.36	.00	3.68	42685	362.53	
	774.69	2.32	278.45	285.79	.00	3.67	42301	362.50	
	779.69	2.17	275.61	282.94	.00	3.66	41874	362.47	
	784.69	2.04	272.51	279.82	.00	3.65	41408	362.43	
	789.68	1.98	269.22	276.51	.00	3.64	40913	362.40	
	794.68	1.88	265.80	273.06	.00	3.63	40399	362.36	
	799.68	1.81	262.26	269.50	.00	3.62	39866	362.31	
	804.68	1.73	258.60	265.80	.00	3.60	39314	362.27	

Type.... Pond Routing Summary Page 1.08
Name.... UG POND OUT Tag: Dev 10 Event: 10 yr
File.... P:\PROJECT\10022\1-5\Engr\COMPS\UNDERGRND POND\PER DESIGN\UG POND APRIL REVISIONS.PPW
Storm... TypeII 24hr Tag: Dev 10

LEVEL POOL ROUTING SUMMARY

HYG Dir = P:\PROJECT\10022\1-5\Engr\COMPS\UNDERGRND POND\PER DESIGN\
Inflow HYG file = NONE STORED - UG POND IN Dev 10
Outflow HYG file = NONE STORED - UG POND OUT Dev 10

Pond Node Data = UG POND
Pond Volume Data = UG POND
Pond Outlet Data = OUTLET

No Infiltration

INITIAL CONDITIONS

Starting WS Elev = 356.00 ft
Starting Volume = 0 cu.ft
Starting Outflow = .00 cfs
Starting Infiltr. = .00 cfs
Starting Total Qout= .00 cfs
Time Increment = 5.00 min

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow = 66.84 cfs at 714.71 min
Peak Outflow = 4.31 cfs at 754.70 min

Peak Elevation = 364.84 ft
Peak Storage = 78129 cu.ft

MASS BALANCE (cu.ft)

+ Initial Vol = 0
+ HYG Vol IN = 168555
- Infiltration = 0
- HYG Vol OUT = 168554
- Retained Vol = 1

Unrouted Vol = - cu.ft (.000% of Inflow Volume)

UNDERGROUND POND SUMMARY TABLE

EXISTING UNDERGROUND FACILITY Approved Maximum Release (MR): 2year ALLOWABLE RELEASE=5.31cfs 10year ALLOWABLE RELEASE=16.74CF	Drainage Area (Ac)	$C_{effective}$	CN-Value	Time of Concentration (Tc), Hrs	2-year PEAK INFLOW (CFS)	2-year PEAK RELEASE RATE / WSE	(Comparison to approved MR)	10-year PEAK INFLOW (CFS)	10-year PEAK RELEASE RATE / WSE	(Comparison to approved MR)	100-year PEAK INFLOW (CFS)	100-year PEAK RELEASE RATE / WSE
#1 *Original/Approved* ***DESIGN*** by PHR+A (Using Pond-2 Ver 5.20 & Rational Method) Per Plan # 1702-SP-07-2	7.49	0.827	-	0.083	33.43	5.15 / 363.56	[-]	44.6	16.00 / 364.95	[-]	NO DATA	NO DATA
#2 ***Designed Conditions*** Recreated Hydrological Model by PHR+A / May 2006 (Using PondPack Ver 10.0 & TR-55)	7.49	-	95.42	0.083	27.7	4.79 / 363.35	[100.00%]	46.95	47.34 / 366.10*	[988.31%]	-	-
#3 ***As-Built, Existing Conditions*** Recreated Hydrological Model by PHR+A / May 2006 (Using PondPack Ver 10.0 & TR-55	7.49	-	95.42	0.0833	27.7	4.79 / 363.43	[100.00%]	46.95	51.40 / 367.57*	[073.07%]	-	-
#4 ***New, Proposed Conditions*** Hydrological Model by PHR+A / April 2008 (Using PondPack Ver 10.0 & TR-55)	11.09	-	94.71	0.0833	41.85	3.71 / 362.61	[77.45%]	66.84	4.31 / 364.84**	[89.98%]	-	-

*UNDERGROUND POND WAS ORIGINALLY DESIGNED USING RATIONAL METHOD AND A 2-HOUR RAINFALL EVENT. ANALYSIS IS BASED ON 'TR-55' (24-HOUR EVENT, TYPE IIA SCS)

**UNDERGROUND POND DETAINING 10-HOUR RAINFALL EVENT TO 2-YEAR PRE-DEVELOPMENT CONDITIONS.

Allowable Q_2= 4.79
Allowable Q_{10}= 4.79

Application No. PCA-92-P-001-05 Staff P.B.
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP)
SEE PROFFERS DATED 10/02/08
Date of (BOS) (PC) approval 10/20/08
Sheet 11 of 18
See also RZ-2008-PR-011

NO.	DESCRIPTION	DATE	REVS'D	REVW'D	APRV'D	DATE

REVISION

PROFESSIONAL SEAL
COMMONWEALTH OF VIRGINIA
ROBERT A. MUNSE
Lic. No. 15338
JUNE 27, 2008
PROFESSIONAL ENGINEER

PROJECT
MITRE 4
PROFFERED CONDITION AMENDMENT /
REZONING / GENERALIZED DEVELOPMENT PLAN
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VIRGINIA

TITLE
UNDERGROUND SWM FACILITY ANALYSIS/TR-55

Patton Harris Rust & Associates,pc
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
14532 Lee Road
Chantilly, VA 20151-1679
T 703.449.6700
F 703.449.6714

CO. PLAN #

DESIGN PHR+A	SURVEY N/A
DRAWN PHR+A	DATE JUNE 27, 2008
CHECKED RAM	SCALE N/A
SHEET C003EXH 11 OF 18	FILE NO. 10022 1-5

**************80-80 LIST OF INPUT DATA FOR TR-20 HYDROLOGY**************

```
JOB TR-20                    FULLPRINT PASS=      SUMMARY
TITLE   SCOTT'S RUN HYDROLOGIC MODELING: AS-BUILT
TITLE   A1=26.87AC A2=7.49AC A3=20.84AC
STRUCT       01
```

WET POND RATING TABLE

316.24	0.0	0.
317.	.1	.36
317.5	.36	.59
318.	.43	.82
318.5	1.13	1.08
319.5	8.39	1.6
320.	10.11	1.86
320.5	13.54	2.13
321.	31.38	2.41
321.5	41.91	2.69
322.	48.92	2.97
322.5	54.98	3.27
323.	86.78	3.58
323.5	143.67	3.89
324.	194.64	4.2
324.5	222.56	4.3
325.	228.55	4.41
325.5	234.39	4.51
326.	240.09	4.62
327.	251.1	5.32

```
ENDTBL
STRUCT       02
```

UG POND RATING TABLE

355.51	0.0	0.
356.	.54	.02
356.5	1.28	.04
357.5	2.11	.12
359.	3.	.25
360.	3.49	.35
361.	3.92	.44
362.	4.31	.53
363.	4.67	.6
363.5	4.84	.63
364.	5.01	.65
364.2	5.06	.6501
364.5	6.75	.6502
365.	12.04	.6503
365.46	18.48	.6504
366.	39.8	.6505
366.5	47.98	.6506
367.	49.81	.66
367.5	51.23	.6601
367.99	52.46	.6602

```
ENDTBL
XSECTN      001          1.
```

RATING TABLE FOR STORM PIPE CONNECTING DOWNSTREAM OF UG POND

301.92	0.0	0.0
302.1	.89	.19
302.29	3.88	.54
302.47	9.06	.98
302.66	16.27	1.47
302.84	25.38	2.02
303.03	36.18	2.61
303.21	48.44	3.22
303.39	61.96	3.85
303.58	76.31	4.49
303.76	91.24	5.13
303.95	106.41	5.77
304.13	121.45	6.4
304.31	136.02	7.02
304.5	149.52	7.6
304.68	161.5	8.15
304.87	171.29	8.65
305.05	171.99	9.08
305.24	179.99	9.62
305.42	180.	9.621

```
ENDTBL
RUNOFF       01     1  .04198438   87.75     .25        1 1     1 1 IN PND
RESVOR       01 1   2  316.24                             1 1 1 1    1 OUT PND
REACH    002    2   3  1000.       .43       1.38       1 1    1    1 RT TO SP
SAVMOV   002    3   1
RUNOFF       02     4  .01170312   95.42     .0833      1 1     1 1 IN UG
RESVOR       02 4   5  355.51                             1 1 1 1    1 OUT UG
REACH    001    5   6  1920.                            1 1    1    1 RT TO SP
SAVMOV   004    6   3
SAVMOV   004    1   4
ADDHYD   004    3 4 5                                     1 1 1 1    1
RUNOFF   005        6  .0325625    93.05     .08333     1 1    1    1 UNCONT A
ADDHYD   005    5 6 7                                     1 1 1 1    1 AT SP
ENDATA
INCREM              .05
COMPUT       01 005               3.2         1.          2 2  01  02
ENDCMP
COMPUT       01 005               5.2         1.          2 2  01  10
ENDCMP
COMPUT       01 005               7.3         1.          2 2  01  99
ENDCMP
ENDJOB
```

********************************END OF 80-80 LIST********************************

```
EXECUTIVE CONTROL  COMPUT      FROM STRUCTURE  1  TO XSECTION  5
     STARTING TIME =   .00          RAIN DEPTH =  7.30        RAIN DURATION =  1.00
     ANT. RUNOFF COND. = 2          MAIN TIME INCREMENT =   .050 HOURS
     ALTERNATE NO. = 1              STORM NO. =99               RAIN TABLE NO. = 2

OPERATION REACH      XSECTION  2
          INPUT HYDROGRAPH 2          OUTPUT HYDROGRAPH 3
          CHANNEL LENGTH  1000.00 FT
          INPUT = COEFFICIENTS RELATED TO XSECTION AREA,  X=   .43,   M= 1.38

     MODIFIED ATT-KIN ROUTING COEFFICIENT =  .42,  PEAK TRAVEL TIME =   .15 HOURS

     PEAK TIME(HRS)           PEAK DISCHARGE(CFS)           PEAK ELEVATION(FEET)
        12.23                       128.3                          (NULL)
```

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99
MAIN TIME INCREMENT = .050 hr, DRAINAGE AREA = .04 SQ.MI.

WET POND 100YR HYDOGRAPH AT STUDY POINT

HRS								
10.05 CFS	.48	.52	.56	.61	.65	.70	.75	.81
10.45 CFS	.86	.92	.98	1.04	1.19	1.41	1.67	1.95
10.85 CFS	2.24	2.55	2.85	3.16	3.47	3.79	4.10	4.42
11.25 CFS	4.75	5.09	5.45	5.82	6.20	6.61	7.04	7.50
11.65 CFS	7.94	8.37	8.88	9.69	11.21	18.22	27.63	37.19
12.05 CFS	53.17	83.67	111.57	126.62	127.21	117.16	102.82	89.59
12.45 CFS	77.43	67.62	61.14	56.51	52.84	49.60	46.64	43.53
12.85 CFS	40.35	37.26	34.13	30.80	27.66	24.85	22.42	20.35
13.25 CFS	18.61	17.14	15.91	14.90	14.26	13.82	13.50	13.24
13.65 CFS	13.03	12.83	12.64	12.45	12.27	12.08	11.90	11.72
14.05 CFS	11.53	11.35	11.17	10.98	10.80	10.62	10.44	10.28
14.45 CFS	10.16	10.05	9.94	9.85	9.76	9.67	9.58	9.50
14.85 CFS	9.41	9.33	9.24	9.16	9.08	9.00	8.91	8.83
15.25 CFS	8.75	8.67	8.59	8.51	8.40	8.27	8.13	7.99
15.65 CFS	7.84	7.70	7.56	7.43	7.29	7.16	7.04	6.91
16.05 CFS	6.80	6.68	6.56	6.45	6.34	6.24	6.14	6.04
16.45 CFS	5.95	5.86	5.77	5.68	5.60	5.53	5.45	5.38
16.85 CFS	5.31	5.24	5.18	5.12	5.06	5.00	4.95	4.89
17.25 CFS	4.84	4.79	4.74	4.69	4.65	4.60	4.56	4.51
17.65 CFS	4.47	4.43	4.39	4.35	4.32	4.28	4.24	4.21
18.05 CFS	4.17	4.14	4.10	4.07	4.04	4.01	3.97	3.94
18.45 CFS	3.91	3.88	3.85	3.82	3.79	3.76	3.73	3.70
18.85 CFS	3.68	3.65	3.62	3.59	3.57	3.54	3.51	3.49
19.25 CFS	3.46	3.43	3.41	3.38	3.36	3.33	3.30	3.28
19.65 CFS	3.25	3.23	3.20	3.17	3.15	3.13	3.10	3.08
20.05 CFS	3.05	3.03	3.00	2.97	2.95	2.93	2.90	2.88
20.45 CFS	2.86	2.84	2.82	2.80	2.78	2.76	2.74	2.73
20.85 CFS	2.71	2.70	2.68	2.67	2.65	2.64	2.63	2.62
21.25 CFS	2.60	2.59	2.58	2.57	2.56	2.55	2.54	2.53
21.65 CFS	2.52	2.51	2.50	2.50	2.49	2.48	2.47	2.46
22.05 CFS	2.46	2.45	2.44	2.43	2.43	2.42	2.41	2.41
22.45 CFS	2.40	2.39	2.39	2.38	2.38	2.37	2.37	2.36
22.85 CFS	2.35	2.35	2.34	2.34	2.33	2.32	2.32	

```
OPERATION REACH      XSECTION  1
          INPUT HYDROGRAPH 5          OUTPUT HYDROGRAPH 6
          CHANNEL LENGTH =  1920.00 FT
          INPUT = RATING CURVE REPRESENTATIVE OF REACH

     COMPUTED COEFFICIENTS RELATED TO CROSS SECTION AREA,  X =  9.451, M = 1.39
     MODIFIED ATT-KIN ROUTING COEFFICIENT = 1.00,  PEAK TRAVEL TIME =   .00 HOURS

     PEAK TIME(HRS)           PEAK DISCHARGE(CFS)           PEAK ELEVATION(FEET)
        11.87                       67.8                          303.47
        11.94                       72.5                          303.53
        12.15                       20.6                          302.74
        12.26                        9.8                          302.49
        12.34                        8.4                          302.45
        12.44                        7.1                          302.40
        12.55                        5.5                          302.35
```

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99
MAIN TIME INCREMENT = .050 hr, DRAINAGE AREA = .01 SQ.MI.

UNDERGROUND POND 100YR HYDROGRAPH AT STUDY POINT

HRS								
4.85 CFS	.49	.50	.51	.52	.52	.53	.54	.55
5.25 CFS	.56	.57	.58	.59	.60	.60	.61	.62
5.65 CFS	.63	.64	.65	.65	.66	.67	.68	.69
6.05 CFS	.69	.70	.71	.72	.72	.73	.74	.75
6.45 CFS	.75	.76	.77	.78	.78	.79	.80	.81
6.85 CFS	.81	.82	.83	.83	.84	.85	.86	.86
7.25 CFS	.87	.88	.89	.89	.90	.91	.91	.92
7.65 CFS	.93	.94	.94	.95	.96	.96	.97	.98
8.05 CFS	.99	.99	1.00	1.02	1.03	1.05	1.06	1.08
8.45 CFS	1.10	1.12	1.14	1.17	1.19	1.21	1.24	1.26
8.85 CFS	1.28	1.29	1.30	1.31	1.32	1.33	1.34	1.35
9.25 CFS	1.36	1.37	1.37	1.38	1.39	1.40	1.41	1.42
9.65 CFS	1.43	1.44	1.45	1.46	1.48	1.49	1.51	1.53
10.05 CFS	1.55	1.57	1.59	1.62	1.64	1.67	1.70	1.73
10.45 CFS	1.76	1.79	1.83	1.86	1.90	1.95	1.99	2.04
10.85 CFS	2.09	2.13	2.17	2.20	2.25	2.29	2.34	2.40
11.25 CFS	2.46	2.52	2.59	2.67	2.75	2.84	2.96	3.12
11.65 CFS	3.34	3.67	4.11	4.72	61.33	59.65	72.09	49.29
12.05 CFS	46.00	9.08	20.48	4.94	9.70	7.15	8.35	5.96
12.45 CFS	7.05	5.01	5.50	5.00	4.99	4.97	4.95	4.92
12.85 CFS	4.89	4.85	4.82	4.79	4.76	4.73	4.70	4.66
13.25 CFS	4.63	4.60	4.56	4.52	4.49	4.45	4.41	4.37
13.65 CFS	4.33	4.30	4.26	4.23	4.19	4.16	4.12	4.09
14.05 CFS	4.05	4.02	3.98	3.95	3.91	3.87	3.83	3.80
14.45 CFS	3.76	3.72	3.69	3.65	3.61	3.58	3.54	3.51
14.85 CFS	3.47	3.44	3.40	3.37	3.33	3.30	3.27	3.23
15.25 CFS	3.20	3.17	3.13	3.10	3.07	3.04	3.01	2.98
15.65 CFS	2.92	2.88	2.84	2.80	2.76	2.72	2.68	2.64
16.05 CFS	2.60	2.56	2.53	2.49	2.46	2.42	2.39	2.36
16.45 CFS	2.32	2.29	2.26	2.23	2.20	2.17	2.15	2.12
16.85 CFS	2.08	2.04	2.00	1.97	1.93	1.90	1.87	1.83
17.25 CFS	1.80	1.77	1.74	1.72	1.69	1.66	1.64	1.61
17.65 CFS	1.59	1.57	1.54	1.52	1.50	1.48	1.46	1.44
18.05 CFS	1.42	1.40	1.39	1.37	1.35	1.33	1.32	1.30
18.45 CFS	1.29	1.25	1.21	1.17	1.13	1.10	1.07	1.04
18.85 CFS	1.02	1.00	.98	.96	.95	.93	.92	.91
19.25 CFS	.90	.89	.88	.87	.86	.85	.84	.83
19.65 CFS	.82	.81	.81	.80	.79	.78	.78	.77
20.05 CFS	.76	.75	.75	.74	.74	.73	.73	.73
20.45 CFS	.72	.72	.72	.71	.71	.71	.71	.70
20.85 CFS	.70	.70	.70	.70	.70	.69	.69	

```
OPERATION RUNOFF     XSECTION  5
          OUTPUT HYDROGRAPH =  6        AREA =     .03 SQ MI
          INPUT RUNOFF CURVE = 93.      TIME OF CONCENTRATION =    .08 HOURS
          COMPUTED INTERNAL TIME INCREMENT =  .0200 HOURS

     PEAK TIME(HRS)           PEAK DISCHARGE(CFS)           PEAK ELEVATION(FEET)
        11.91                       189.5                          (RUNOFF)
```

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99
MAIN TIME INCREMENT = .050 hr, DRAINAGE AREA = .03 SQ.MI.

UNCONTROLLED AREA 100YR HYDROGRAPH AT STUDY POINT

HRS								
3.20 CFS	.50	.52	.54	.56	.57	.59	.61	.63
3.60 CFS	.65	.66	.68	.70	.72	.74	.76	.77
4.00 CFS	.79	.81	.82	.85	.87	.89	.91	.93
4.40 CFS	.95	.97	.99	1.01	1.03	1.05	1.07	1.09
4.80 CFS	1.11	1.13	1.16	1.18	1.20	1.22	1.24	1.26
5.20 CFS	1.28	1.30	1.32	1.35	1.37	1.39	1.41	1.43
5.60 CFS	1.45	1.47	1.50	1.52	1.54	1.56	1.58	1.60
6.00 CFS	1.62	1.65	1.67	1.69	1.71	1.73	1.75	1.77
6.40 CFS	1.79	1.82	1.84	1.86	1.88	1.90	1.92	1.94
6.80 CFS	1.97	1.99	2.01	2.03	2.05	2.07	2.09	2.11
7.20 CFS	2.14	2.16	2.18	2.20	2.22	2.24	2.26	2.28
7.60 CFS	2.30	2.33	2.35	2.37	2.39	2.41	2.43	2.45
8.00 CFS	2.47	2.51	2.55	2.61	2.68	2.75	2.81	2.88
8.40 CFS	2.95	3.02	3.09	3.16	3.23	3.30	3.38	3.45
8.80 CFS	3.52	3.59	3.67	3.74	3.81	3.87	3.91	3.93
9.20 CFS	3.95	3.96	3.98	3.99	4.00	4.01	4.02	4.07
9.60 CFS	4.13	4.23	4.34	4.45	4.57	4.68	4.80	4.92
10.00 CFS	5.03	5.17	5.31	5.48	5.64	5.82	5.99	6.17
10.40 CFS	6.34	6.52	6.69	6.91	7.14	7.41	7.69	7.99
10.80 CFS	8.28	8.57	8.86	9.16	9.46	9.91	10.38	11.02
11.20 CFS	11.69	12.40	13.09	13.80	14.50	15.23	15.95	22.73
11.60 CFS	31.00	46.00	62.00	83.00	104.00	144.00	187.00	176.00
12.00 CFS	151.00	102.0	48.00	32.00	27.00	24.00	22.00	21.00
12.40 CFS	18.84	17.10	15.42	14.17	13.09	12.51	12.08	11.67
12.80 CFS	11.28	10.89	10.50	10.11	9.72	9.39	9.09	8.85
13.20 CFS	8.64	8.42	8.22	8.00	7.80	7.58	7.38	7.18
13.60 CFS	7.00	6.84	6.69	6.54	6.39	6.24	6.09	5.94
14.00 CFS	5.79	5.68	5.58	5.50	5.44	5.39	5.35	5.29
14.40 CFS	5.23	5.18	5.14	5.08	5.02	4.97	4.93	4.87
14.80 CFS	4.81	4.76	4.71	4.66	4.60	4.55	4.50	4.45
15.20 CFS	4.39	4.34	4.29	4.24	4.18	4.13	4.08	4.02
15.60 CFS	3.97	3.92	3.87	3.81	3.75	3.71	3.66	3.60
16.00 CFS	3.54	3.51	3.47	3.45	3.43	3.41	3.39	3.37
16.40 CFS	3.35	3.33	3.32	3.30	3.27	3.26	3.24	3.22
16.80 CFS	3.20	3.18	3.17	3.15	3.12	3.11	3.09	3.07
17.20 CFS	3.05	3.03	3.02	2.99	2.97	2.96	2.94	2.92
17.60 CFS	2.90	2.88	2.86	2.84	2.82	2.81	2.79	2.77
18.00 CFS	2.75	2.73	2.71	2.69	2.67	2.65	2.64	2.62
18.40 CFS	2.60	2.58	2.56	2.54	2.52	2.50	2.49	2.47
18.80 CFS	2.44	2.43	2.41	2.39	2.37	2.35	2.34	2.32
19.20 CFS	2.29	2.28	2.26	2.24	2.22	2.20	2.19	2.16
19.60 CFS	2.14	2.13	2.11	2.09	2.07	2.05	2.03	2.01
20.00 CFS	1.99	1.98	1.97	1.96	1.96	1.95	1.95	1.95
20.40 CFS	1.94	1.94	1.94	1.93	1.93	1.92	1.92	1.92
20.80 CFS	1.91	1.91	1.91	1.90	1.90	1.89	1.89	1.89
21.20 CFS	1.88	1.88	1.88	1.87	1.87	1.86	1.86	1.86
21.60 CFS	1.85	1.85	1.85	1.84				

```
OPERATION ADDHYD     XSECTION  5
          INPUT HYDROGRAPHS 5,6        OUTPUT HYDROGRAPH 7

     PEAK TIME(HRS)           PEAK DISCHARGE(CFS)           PEAK ELEVATION(FEET)
        11.94                       277.7                          (NULL)
        12.16                       165.6                          (NULL)
        12.23                       162.0                          (NULL)
```

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99
MAIN TIME INCREMENT = .050 hr, DRAINAGE AREA = .09 SQ.MI.

CUMULATIVE 100YR HYDROGRAPH AT STUDY POINT

HRS								
2.70 CFS	.49	.52	.54	.57	.60	.63	.65	.68
3.10 CFS	.71	.73	.76	.78	.81	.84	.86	.89
3.50 CFS	.92	.94	.96	.99	1.02	1.04	1.06	1.09
3.90 CFS	1.11	1.14	1.16	1.18	1.21	1.24	1.26	1.29
4.30 CFS	1.32	1.35	1.37	1.40	1.43	1.46	1.49	1.52
4.70 CFS	1.54	1.57	1.60	1.63	1.66	1.69	1.71	1.74
5.10 CFS	1.77	1.80	1.83	1.86	1.89	1.93	1.96	2.00
5.50 CFS	2.03	2.06	2.09	2.12	2.15	2.18	2.21	2.24
5.90 CFS	2.27	2.30	2.33	2.36	2.39	2.42	2.45	2.48
6.30 CFS	2.51	2.55	2.57	2.61	2.64	2.67	2.70	2.73
6.70 CFS	2.76	2.79	2.82	2.85	2.88	2.91	2.94	2.97
7.10 CFS	3.00	3.03	3.06	3.09	3.12	3.15	3.18	3.21
7.50 CFS	3.24	3.27	3.30	3.33	3.36	3.39	3.42	3.45
7.90 CFS	3.48	3.51	3.54	3.59	3.64	3.72	3.80	3.89
8.30 CFS	3.99	4.08	4.18	4.28	4.38	4.48	4.59	4.69
8.70 CFS	4.80	4.91	5.02	5.13	5.22	5.31	5.41	5.49
9.10 CFS	5.56	5.60	5.64	5.67	5.70	5.73	5.75	5.78
9.50 CFS	5.81	5.87	5.94	6.05	6.18	6.31	6.44	6.58
9.90 CFS	6.71	6.85	7.01	7.20	7.40	7.63	7.86	8.11
10.30 CFS	8.36	8.62	8.88	9.14	9.40	9.72	10.04	10.50
10.70 CFS	11.05	11.65	12.26	12.90	13.54	14.18	14.82	15.62
11.10 CFS	16.46	17.47	18.51	19.61	20.70	21.84	22.99	24.18
11.50 CFS	25.00	33.00	41.00	57.00	74.00	98.00	118.0	216.0
11.90 CFS	265	276	238	201	141	164.0	158.0	161.0
12.30 CFS	147	132	114	102	88.00	81.00	75.00	70.00
12.70 CFS	66.65	63.26	59.74	56.12	52.62	49.06	45.32	41.81
13.10 CFS	38.67	35.97	33.65	31.66	29.96	28.48	27.22	26.33
13.50 CFS	25.65	25.10	24.62	24.20	23.82	23.44	23.07	22.70
13.90 CFS	22.33	21.96	21.60	21.26	20.94	20.65	20.37	20.10
14.30 CFS	19.84	19.57	19.31	19.10	18.90	18.71	18.52	18.34
14.70 CFS	18.17	17.99	17.81	17.64	17.48	17.30	17.13	16.96
15.10 CFS	16.80	16.63	16.45	16.29	16.13	15.96	15.79	15.60
15.50 CFS	15.39	15.16	14.92	14.68	14.45	14.21	13.98	13.75
15.90 CFS	13.54	13.32	13.10	12.90	12.71	12.54	12.37	12.21
16.30 CFS	12.05	11.90	11.75	11.60	11.46	11.33	11.19	11.06
16.70 CFS	10.94	10.82	10.70	10.57	10.45	10.33	10.21	10.10
17.10 CFS	9.99	9.88	9.77	9.67	9.58	9.48	9.38	9.29
17.50 CFS	9.20	9.11	9.03	8.94	8.86	8.78	8.70	8.62
17.90 CFS	8.55	8.47	8.39	8.32	8.25	8.18	8.11	8.04
18.30 CFS	7.98	7.91	7.84	7.78	7.70	7.60	7.51	7.42
18.70 CFS	7.35	7.27	7.19	7.12	7.06	6.99	6.93	6.87
19.10 CFS	6.81	6.75	6.69	6.63	6.58	6.52	6.46	6.41
19.50 CFS	6.36	6.31	6.25	6.20	6.15	6.10	6.04	5.99
19.90 CFS	5.94	5.89	5.83	5.79	5.75	5.71	5.67	5.64
20.30 CFS	5.61	5.58	5.55	5.52	5.50	5.47	5.44	5.41
20.70 CFS	5.39	5.37	5.34	5.32	5.31	5.28	5.26	5.24
21.10 CFS	5.23	5.21						

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

RAINFALL OF 3.20 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.
RAINTABLE NUMBER 2, ARC 2
MAIN TIME INCREMENT .050 HOURS

ALTERNATE 1 STORM 2 — 2YR RUNOFF SUMMARY TABLE

XSECTION/STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	ELEVATION (FT)	PEAK DISCHARGE TIME (HR)	RATE (CFS)	RATE (CSM)	
STRUCTURE 1	RUNOFF	.04	1.97	---	12.04	64	1600.0	
STRUCTURE 1	RESVOR	.04	1.57	320.51	12.41	14	350.0	
XSECTION 2	REACH	.04	1.57	---	12.69	13	325.0	WET POND
STRUCTURE 2	RUNOFF	.01	2.63	---	11.92	29	2900.0	
STRUCTURE 2	RESVOR	.01	2.61	363.67	12.17	5	500.0	UG POND
XSECTION 1	REACH	.01	2.60	302.32	12.26T	5T	500.0	
XSECTION 4	ADDHYD	.05	1.69	---	12.66	17	340.0	
XSECTION 5	RUNOFF	.03	2.44	---	11.92	76	2533.3	UNCONTROLLED AREA
XSECTION 5	ADDHYD	.09	1.96	---	11.92	79	877.8	

RAINFALL OF 5.20 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 1 STORM 10 — 10YR RUNOFF SUMMARY TABLE

XSECTION/STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	ELEVATION (FT)	PEAK DISCHARGE TIME (HR)	RATE (CFS)	RATE (CSM)	
STRUCTURE 1	RUNOFF	.04	3.83	---	12.03	121	3025.0	
STRUCTURE 1	RESVOR	.04	3.34	322.65	12.21	65	1625.0	
XSECTION 2	REACH	.04	3.33	---	12.32	55	1375.0	WET POND
STRUCTURE 2	RUNOFF	.01	4.51	---	11.92	48	4800.0	
STRUCTURE 2	RESVOR	.01	4.70	377.86	11.95	77	7700.0	UG POND
XSECTION 1	REACH	.01	4.70	303.59	11.95	77	7700.0	
XSECTION 4	ADDHYD	.05	3.50	---	11.95	84	1680.0	
XSECTION 5	RUNOFF	.03	4.29	---	11.92	132	4400.0	UNCONTROLLED AREA
XSECTION 5	ADDHYD	.09	3.78	---	11.95	207	2300.0	

RAINFALL OF 7.30 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 1 STORM 99

XSECTION/STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	ELEVATION (FT)	PEAK DISCHARGE TIME (HR)	RATE (CFS)	RATE (CSM)
STRUCTURE 1	RUNOFF	.04	5.77	---	12.03	181	4525.0

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

ALTERNATE 1 STORM 99 — 100YR RUNOFF SUMMARY TABLE

XSECTION/STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	ELEVATION (FT)	PEAK DISCHARGE TIME (HR)	RATE (CFS)	RATE (CSM)
STRUCTURE 1	RESVOR	.04	5.25	323.58	12.12	152	3800.0
XSECTION 2	REACH	.04	5.23	---	12.23	128	3200.0
STRUCTURE 2	RUNOFF	.01	6.48	---	11.91	69	6900.0
STRUCTURE 2	RESVOR	.01	6.63	375.96	11.94	72	7200.0
XSECTION 1	REACH	.01	6.63	303.53	11.94	72	7200.0
XSECTION 4	ADDHYD	.05	5.40	---	12.17	137	2740.0
XSECTION 5	RUNOFF	.03	6.26	---	11.91	189	6300.0
XSECTION 5	ADDHYD	.09	5.70	---	11.94	278	3088.9

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK – RISING TRUNCATED HYDROGRAPH.

XSECTION/STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.......... 2	10	99
STRUCTURE 2	.01			
ALTERNATE 1		5	77	72
STRUCTURE 1	.04			
ALTERNATE 1		14	65	152
XSECTION 1	.01			
ALTERNATE 1		5	77	72
XSECTION 2	.04			
ALTERNATE 1		13	55	128
XSECTION 4	.05			
ALTERNATE 1		17	84	137
XSECTION 5	.09			
ALTERNATE 1		79	207	278

END OF 1 JOBS IN THIS RUN
JOB ENDED AT 17:36:46
*** TR-20 RUN COMPLETED ***

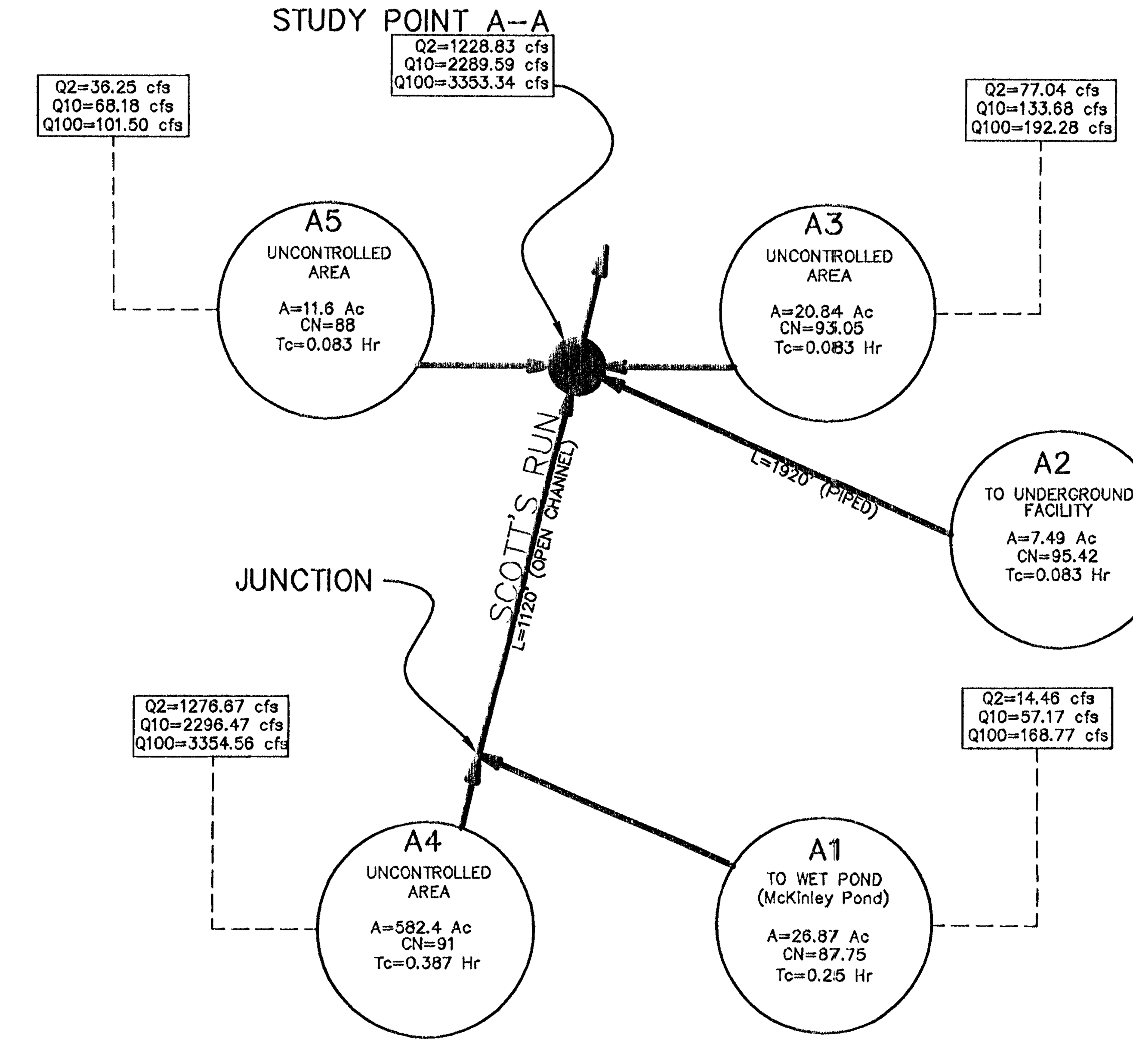
DRAINAGE SHED DETAIL: EXISTING CONDITIONS

	Drainage Area/Description	Area*	CN-Value (HSG**)	Land Use
A1 (@ Wet Pond Outfall)				
ONSITE	McKinley Bldg	11.83 Ac	92	(Commercial)
	Wet Pond Location - Open Space	1.52 Ac	67.65	(B & D-soils: Open Space- Good Cond)
	Part of Hayes Bldg *(Incl Mitre I Bldg)******	1.91 Ac	92	(Commercial)
	Mitre I Parking Lot	2.43 Ac	98	Impervious Area
OFFSITE	School	6.22 Ac	92	(Commercial)
	Park	2.96 Ac	61	(Open Space- Good Cond)
	TOTAL SUB-AREA=	**26.87 Ac**		
	$CN_{effective}$=	**87.75**		
A2 (@ Underground Detention)				
ONSITE	Mitre 2 Parking Lot	4.27 Ac	98	(B & C-soils: Impervious Area)
OFFSITE	The Commons	3.22 Ac	92	(Commercial)
	TOTAL SUB-AREA=	**7.49 Ac**		
	$CN_{effective}$=	**95.42**		
A3 (Rest of Drainage Area-UNCONTROLLED)				
ONSITE	Pierce Bldg	5.94 Ac	93.35	(B & D-soils: Commercial)
	Johnson Bldg	9.6 Ac	93.14	(B & C-soils: Commercial)
	Part of Hayes Bldg *(Incl Mitre I Bldg)******	4.92 Ac	92.58	(B & C-soils: Commercial)
OFFSITE	Common's Village	.38 Ac	92	(Commercial)
	TOTAL SUB-AREA=	**20.84 Ac**		
	$CN_{effective}$=	**93.05**		

*Approximate values only.

**Assumed to be 'B-soils', unless otherwise noted in combination with other soils type (See exhibit sheet 6 of 9).

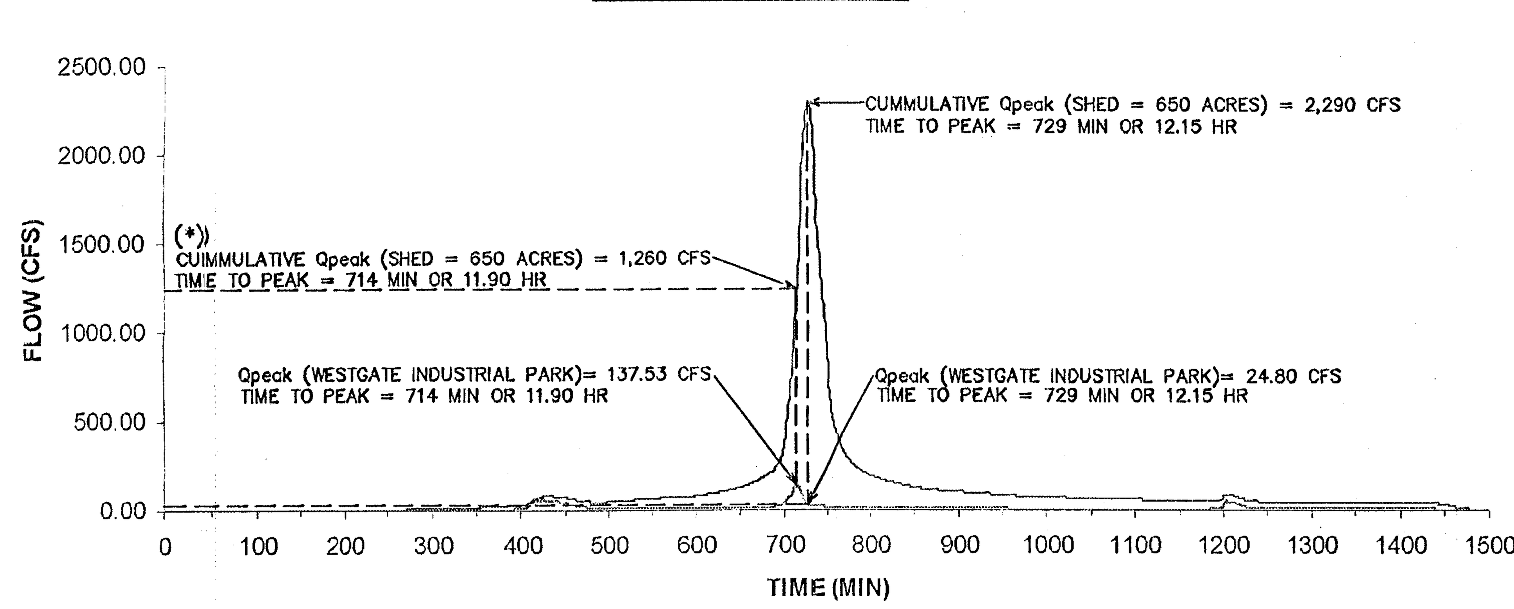
***Per subsequent development of Mitre and more detailed divides delineation, approx 2.0 Acre of Mitre I Bldg drains to the existing wet pond.



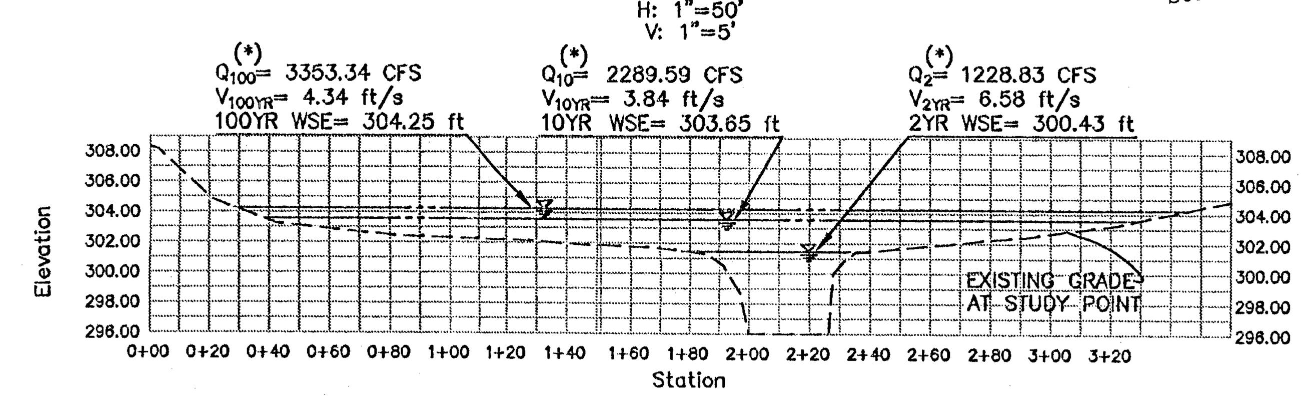
TR-20 SCHEMATIC DIAGRAM: EXISTING CONDITIONS
(N.T.S.)

Application No. PCA-92-P-001-05 Staff P.B.
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP)
SEE PROFFERS DATED 10/02/08
Date of (BOS) (PC) approval 10/20/08
Sheet 12 of 18
See also RZ-2008-PR-011

10 YR PEAK HYDROGRAPHS AT THE STUDY POINT (CROSS-SECTION A-A) EXISTING CONDITIONS



SECTION A–A
H: 1"=50'
V: 1"=5'



(*) TOTAL EXISTING FLOW CONDITIONS AT TIME OF PEAK DISCHARGE FROM THE WESTGATE INDUSTRIAL PARK PROPERTY (11.90 HRS):

2-YR EVENT: Q2 = 652.90 CFS, V2 = 5.95 FPS (WITHIN EX BED & BANKS)
10-YR EVENT: Q10 = 1,260.00 CFS, WSE = 302.80

NO.	DESCRIPTION	DATE	REVS'D	REVW'D	APRV'D	DATE
	REVISION					

PROFESSIONAL SEAL: COMMONWEALTH OF VIRGINIA — ROBERT A. MUNSE — Lic. No. 15338 — JUNE 27, 2008 — PROFESSIONAL ENGINEER

PROJECT
MITRE 4
PROFFERED CONDITION AMENDMENT / REZONING / GENERALIZED DEVELOPMENT PLAN
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VIRGINIA

TITLE
EXISTING HYDROLOGIC MODELING AT SCOTTS RUN STUDY POINT

Patton Harris Rust & Associates,pc
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
14532 Lee Road
Chantilly, VA 20151-1679
T 703.449.6700
F 703.449.6714

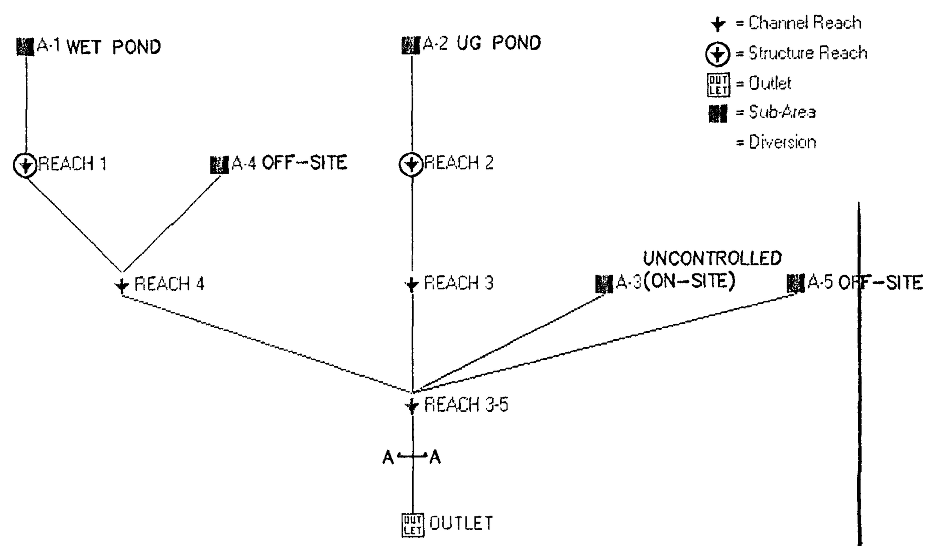
CO. PLAN #

DESIGN YB	SURVEY N/A
DRAWN JC	DATE JUNE 27, 2008
CHECKED RAM/OBY	SCALE N/A
SHEET C004EXH 12 OF 18	FILE NO. 10022 1-5

```
WinTR-20: Version 1.0                       0         0         1.0       0
PROPOSED MITRE CONDITIONS
FIRST TRY, APRIL 2008

SUB-AREA:
          A-1       REACH 1               0.0420    87.75     0.25      YY  Y
          A-2       REACH 2               0.0173    94.52     0.083     YY  Y
          A-4       REACH 4               0.9100    91.00     0.387     YY  Y
          A-3       REACH 3-5             0.0359    93.05     0.083     YY  Y
          A-5       REACH 3-5             0.0181    88.       0.083     YY  Y

STREAM REACH:
          REACH 1   REACH 4               ST 1                          YY  Y
          REACH 2   REACH 3               ST 3                          YY  Y
          REACH 4   REACH 3-5 A - A                 1120.               YY  Y
          REACH 3   REACH 3-5 A-A                   1920.               YY  Y
          REACH 3-5 Outlet    A - A                 1.                  YY  Y


STORM ANALYSIS:
          2-year                          3.11      Type II   2
          10-year                         4.78      Type II   2
          100-year                        8.25      Type II   2

STREAM CROSS SECTION:
          A-A       305.00                302.00
                    301.92    0.00        0.00      3.50      0.01
                    302.10    0.89        0.19      3.50      0.01
                    302.29    3.88        0.54      3.50      0.01
                    302.47    9.06        0.98      3.50      0.01
                    302.66    16.27       1.47      3.50      0.01
                    302.84    25.38       2.02      3.50      0.01
                    303.03    36.18       2.61      3.50      0.01
                    303.21    48.44       3.22      3.50      0.01
                    303.39    61.96       3.85      3.50      0.01
                    303.58    76.31       4.49      3.50      0.01
                    303.76    91.24       5.13      3.50      0.01
                    303.95    106.41      5.77      3.50      0.01
                    304.13    121.45      6.40      3.50      0.01
                    304.31    136.02      7.02      3.50      0.01
                    304.50    149.52      7.60      3.50      0.01
                    304.68    161.50      8.15      3.50      0.01
                    304.87    171.29      8.65      3.50      0.01
                    305.05    171.99      9.08      3.50      0.01
                    305.24    179.99      9.62      3.50      0.01
                    305.42    180.00      9.621     3.50      0.01
          A - A     305.9                 296.6
                    296.0     0.          0.        0.        0.00806
                    296.5     23.43       12.90     26.60     0.00806
                    297.0     74.76       26.60     28.19     0.00806
                    297.5     147.93      41.09     29.79     0.00806
                    298.0     240.82      56.39     31.39     0.00806
                    298.5     352.38      72.48     32.99     0.00806
                    299.0     482.06      89.38     34.58     0.00806
                    299.5     629.63      107.07    36.18     0.00806
                    300.0     749.99      125.56    37.78     0.00806
                    300.5     978.18      144.84    39.38     0.00806
                    301.0     1117.95     165.66    45.36     0.00806
                    301.5     1251.39     190.75    55.00     0.00806
                    303.0     1464.85     426.92    240.67    0.00806
                    303.5     2075.72     555.81    273.25    0.00806
                    304.0     2859.19     698.5     297.50    0.00806
                    304.5     3893.92     848.81    303.75    0.00806
                    305.0     5056.97     1002.25   310.00    0.00806
                    305.5     6388.05     1157.88   312.50    0.00806
                    306.0     7840.97     1314.75   315.00    0.00806
```

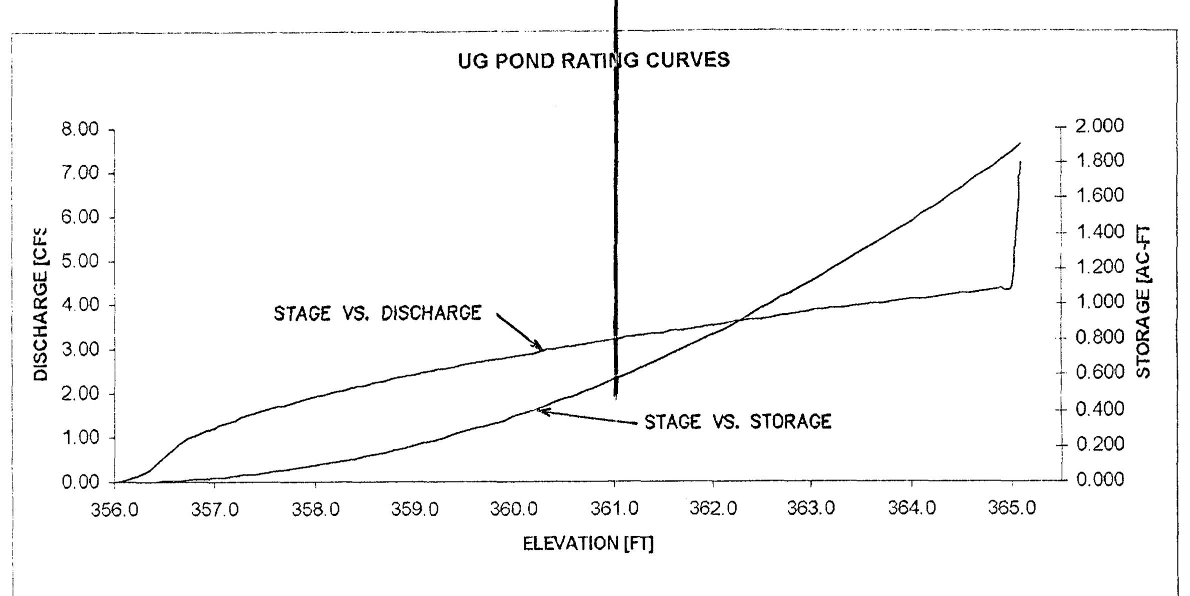
PIPED CROSS SECTION FROM UG POND

STUDY POINT CROSS SECTION



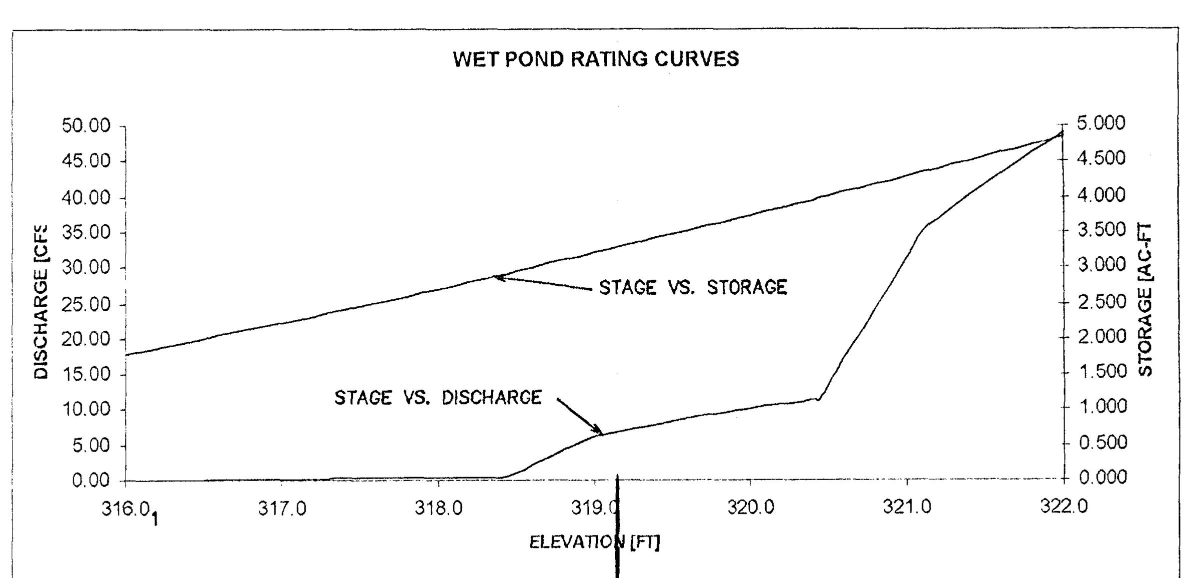
UG POND RATING TABLE

ELEV. [FT.]	DISCHARGE [CFS]	STORAGE [AC-FT]
356	0	0
357	1.22	0.023
358	1.92	0.092
359	2.42	0.207
360	2.84	0.367
361	3.2	0.574
362	3.52	0.826
363	3.82	1.125
364	4.09	1.469
365	4.35	1.86
366	94.6	2.296
367	259.39	2.447
367.6	382.28	2.472



WET POND RATING TABLE

ELEV. [FT.]	DISCHARGE [CFS]	STORAGE [AC-FT]
ST	1	316.3
310	0	0
311	0	0.166
312	0	0.333
313	0	0.663
314	0	0.993
315	0	1.387
316	0	1.781
317	0.26	2.235
318	0.43	2.697
319	6.22	3.217
320	10.11	3.737
321	31.38	4.292
322	48.92	4.847
323	86.85	5.462
324	194.64	6.077
325	228.55	6.286
326	240.09	6.495
327	251.1	7.2



1 STORAGE DISCHARGE BEGINS AT THE PERMANENT WSE

WET POND 100 YR HYDROGRAPH AT STUDY POINT

HRS	CFS	CFS	CFS	CFS	CFS
10.60	4.9	5.0	5.1	5.2	5.3
10.68	5.4	5.5	5.6	5.6	5.7
10.76	5.8	5.9	5.9	6.0	6.1
10.84	6.2	6.2	6.3	6.3	6.4
10.92	6.4	6.5	6.6	6.6	6.7
11.00	6.7	6.8	6.8	6.9	7.0
11.08	7.0	7.1	7.2	7.2	7.3
11.16	7.3	7.4	7.5	7.5	7.6
11.24	7.7	7.8	7.8	7.9	8.0
11.32	8.1	8.1	8.2	8.3	8.4
11.40	8.5	8.5	8.6	8.7	8.8
11.48	8.9	9.0	9.1	9.2	9.3
11.56	9.4	9.6	9.7	9.9	10.0
11.64	10.2	10.4	10.7	10.9	11.2
11.72	12.8	17.1	21.4	26.1	30.9
11.80	35.5	38.4	41.3	44.1	47.1
11.88	50.0	52.9	56.8	72.3	91.9
11.96	117.4	138.2	155.2	168.1	175.6
12.04	180.9	183.9	**184.7**	183.4	180.0
12.12	174.9	168.3	158.7	148.1	137.6
12.20	127.3	117.3	108.3	98.4	91.6
12.28	87.4	81.9	76.8	72.4	68.4
12.36	65.0	62.0	59.6	57.4	56.3
12.44	55.2	54.5	54.0	53.4	52.8
12.52	52.2	51.5	50.9	50.2	49.5
12.60	48.9	48.1	47.3	46.5	45.6
12.68	44.8	44.0	43.2	42.3	41.5
12.76	40.7	39.8	39.0	38.1	37.3
12.84	36.5	35.5	34.5	33.1	31.7
12.92	30.5	29.3	28.2	27.2	26.3
13.00	25.4	24.6	23.8	23.0	22.4
13.08	21.7	21.1	20.5	20.0	19.5
13.16	19.0	18.6	18.2	17.8	17.4
13.24	17.0	16.7	16.4	16.1	15.8
13.32	15.5	15.2	15.0	14.8	14.5
13.40	14.3	14.1	13.9	13.7	13.6
13.48	13.4	13.2	13.1	12.9	12.8
13.56	12.6	12.5	12.3	12.2	12.1

UNDERGROUND POND 100 YR HYDROGRAPH AT STUDY POINT

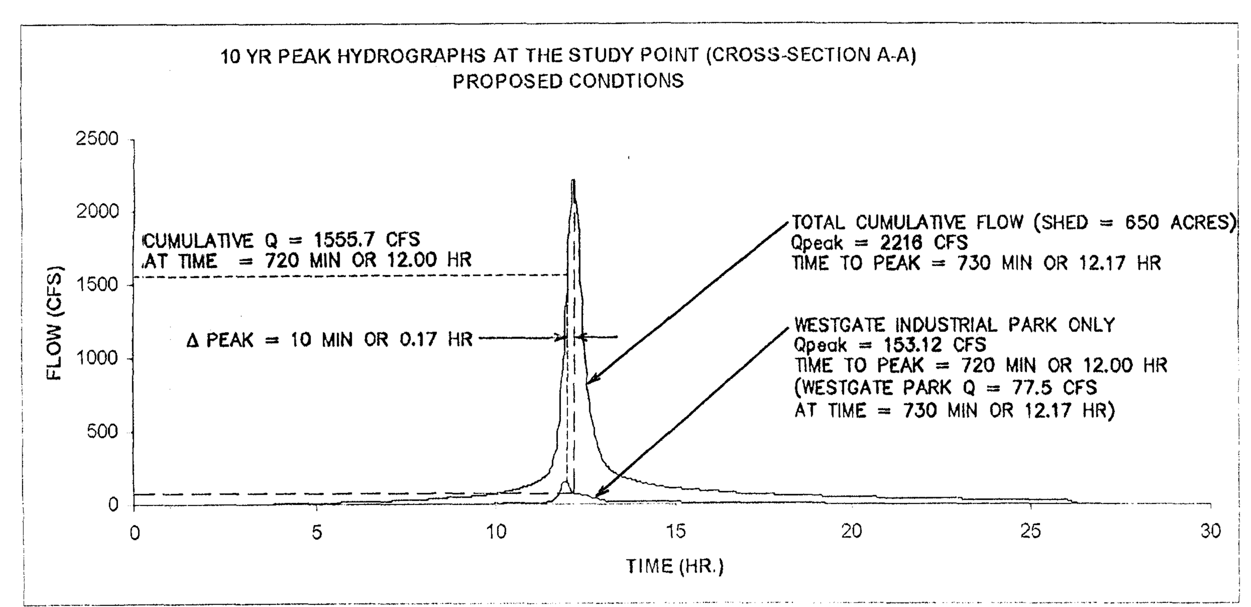
HRS	CFS	CFS	CFS	CFS	CFS
11.54	3.2	3.2	3.2	3.2	3.2
11.57	3.2	3.2	3.3	3.3	3.3
11.60	3.3	3.3	3.3	3.3	3.3
11.63	3.4	3.4	3.4	3.4	3.4
11.66	3.4	3.5	3.5	3.5	3.5
11.69	3.5	3.5	3.6	3.6	3.6
11.72	3.6	3.6	3.6	3.7	3.7
11.75	3.7	3.7	3.7	3.8	3.8
11.78	3.8	3.8	3.9	3.9	3.9
11.81	3.9	3.9	4.0	4.0	4.0
11.84	4.0	4.1	4.1	4.1	4.1
11.87	4.2	4.2	4.2	4.3	4.3
11.90	4.5	5.2	7.2	11.1	17.0
11.93	24.3	32.2	40.2	47.6	54.4
11.96	60.7	66.3	71.1	75.3	78.7
11.99	81.5	83.7	85.5	86.8	87.8
12.02	88.5	89.0	89.4	89.5	**89.6**
12.05	89.4	89.1	88.4	87.5	86.2
12.08	84.4	82.3	79.9	77.2	74.2
12.11	71.0	67.8	64.6	61.4	58.3
12.14	55.4	52.6	49.9	47.4	45.1
12.17	43.0	41.0	39.1	37.4	35.7
12.20	34.3	32.9	31.7	30.5	29.3
12.23	28.3	27.2	26.2	25.2	24.2
12.26	23.4	22.6	21.9	21.2	20.7
12.29	20.1	19.6	19.2	18.9	18.7
12.32	18.5	18.3	18.0	17.8	17.6
12.35	17.4	17.2	17.0	16.8	16.7
12.38	16.5	16.3	16.1	16.0	15.8
12.41	15.7	15.5	15.4	15.2	15.1
12.44	14.9	14.8	14.6	14.5	14.3
12.47	14.2	14.1	13.9	13.8	13.6
12.50	13.5	13.4	13.3	13.2	13.0
12.53	12.9	12.8	12.7	12.6	12.4
12.56	12.3	12.2	12.1	11.9	11.8

UNCONTROILLED AREA 100 YR HYDROGRAPH AT STUDY POINT

HRS	CFS	CFS	CFS	CFS	CFS
11.53	36.6	37.6	38.4	39.0	39.6
11.56	40.2	40.9	41.8	43.1	44.8
11.59	47.0	49.8	52.9	56.2	59.5
11.62	62.8	65.9	68.8	71.5	73.8
11.65	75.7	77.3	78.7	79.8	80.9
11.68	82.1	83.5	85.3	87.6	90.5
11.71	94.0	97.9	102.1	106.4	110.6
11.74	114.5	118.2	121.6	124.5	127.0
11.77	129.1	130.8	132.3	133.8	135.6
11.80	137.9	141.0	145.3	151.0	158.1
11.83	166.1	174.7	183.5	192.2	200.5
11.86	208.2	215.3	221.5	226.8	231.2
11.89	234.9	238.0	240.6	242.5	243.6
11.92	**243.8**	242.8	240.7	237.3	233.0
11.95	228.1	223.0	217.7	212.6	207.9
11.98	203.5	199.6	196.3	193.7	191.4
12.01	189.6	187.8	185.7	182.9	179.2
12.04	174.1	167.3	158.7	148.7	138.0
12.07	126.9	115.9	105.4	95.6	86.6
12.10	78.6	71.9	66.3	61.7	57.8
12.13	54.5	51.6	49.1	47.0	45.1
12.16	43.4	41.9	40.5	39.3	38.2
12.19	37.3	36.4	35.7	35.0	34.4
12.22	33.9	33.5	33.2	32.9	32.6
12.25	32.4	32.2	32.0	31.7	31.4
12.28	31.1	30.7	30.4	30.0	29.7
12.31	29.3	29.0	28.7	28.5	28.3
12.34	28.1	28.0	27.8	27.7	27.6
12.37	27.5	27.4	27.2	27.0	26.7
12.40	26.4	26.1	25.7	25.4	25.1
12.43	24.8	24.5	24.2	24.0	23.8
12.46	23.7	23.6	23.5	23.3	23.2
12.49	23.1	22.9	22.7	22.4	22.1

CUMULATIVE 100 YR HYDROGRAPH AT STUDY POINT

HRS	CFS	CFS	CFS	CFS	CFS
11.52	495.6	500.6	505.9	512.0	519.2
11.55	527.1	536.3	546.4	556.8	567.9
11.58	579.6	591.0	602.8	615.0	626.7
11.61	638.7	651.0	663.0	675.5	688.9
11.64	702.4	717.1	733.3	750.3	769.2
11.67	790.1	811.7	834.6	859.0	883.4
11.70	908.5	934.8	960.5	986.9	1014.4
11.73	1041.3	1068.9	1098.1	1127.2	1157.9
11.76	1191.3	1226.0	1263.4	1304.9	1348.5
11.79	1394.6	1443.8	1493.2	1543.7	1595.9
11.82	1647.3	1698.9	1751.8	1803.2	1854.5
11.85	1907.4	1959.4	2011.8	2066.1	2119.8
11.88	2174.7	2232.6	2290.4	2348.7	2408.7
11.91	2467.7	2526.7	2587.5	2648.0	2709.0
11.94	2772.5	2835.9	2900.4	2967.5	3034.7
11.97	3102.5	3171.8	3240.3	3307.7	3373.8
12.00	3437.8	3498.5	3554.9	3609.1	3660.9
12.03	3708.1	3755.1	3801.0	3841.7	3883.3
12.06	3924.6	3960.0	3997.0	4033.6	4062.8
12.09	4092.9	4122.1	4142.8	4164.2	4184.6
12.12	4195.8	4207.4	4218.0	4219.0	4220.2
12.15	**4220.5**	4210.9	4201.6	4191.4	4171.4
12.18	4151.6	4131.0	4101.0	4071.0	4040.4
12.21	4001.2	3961.9	3922.2	3875.2	3828.1
12.24	3780.7	3727.4	3674.2	3620.8	3563.5
12.27	3506.2	3449.0	3389.4	3329.9	3270.4
12.30	3209.9	3149.5	3089.1	3029.1	2969.0
12.33	2909.0	2850.5	2792.0	2733.4	2677.1
12.36	2620.9	2564.5	2510.9	2457.3	2403.7
12.39	2353.0	2302.4	2251.9	2204.5	2157.3
12.42	2110.1	2066.2	2022.6	1979.0	1938.7
12.45	1898.8	1858.8	1822.0	1785.5	1749.0
12.48	1715.3	1682.1	1648.8	1618.2	1587.9

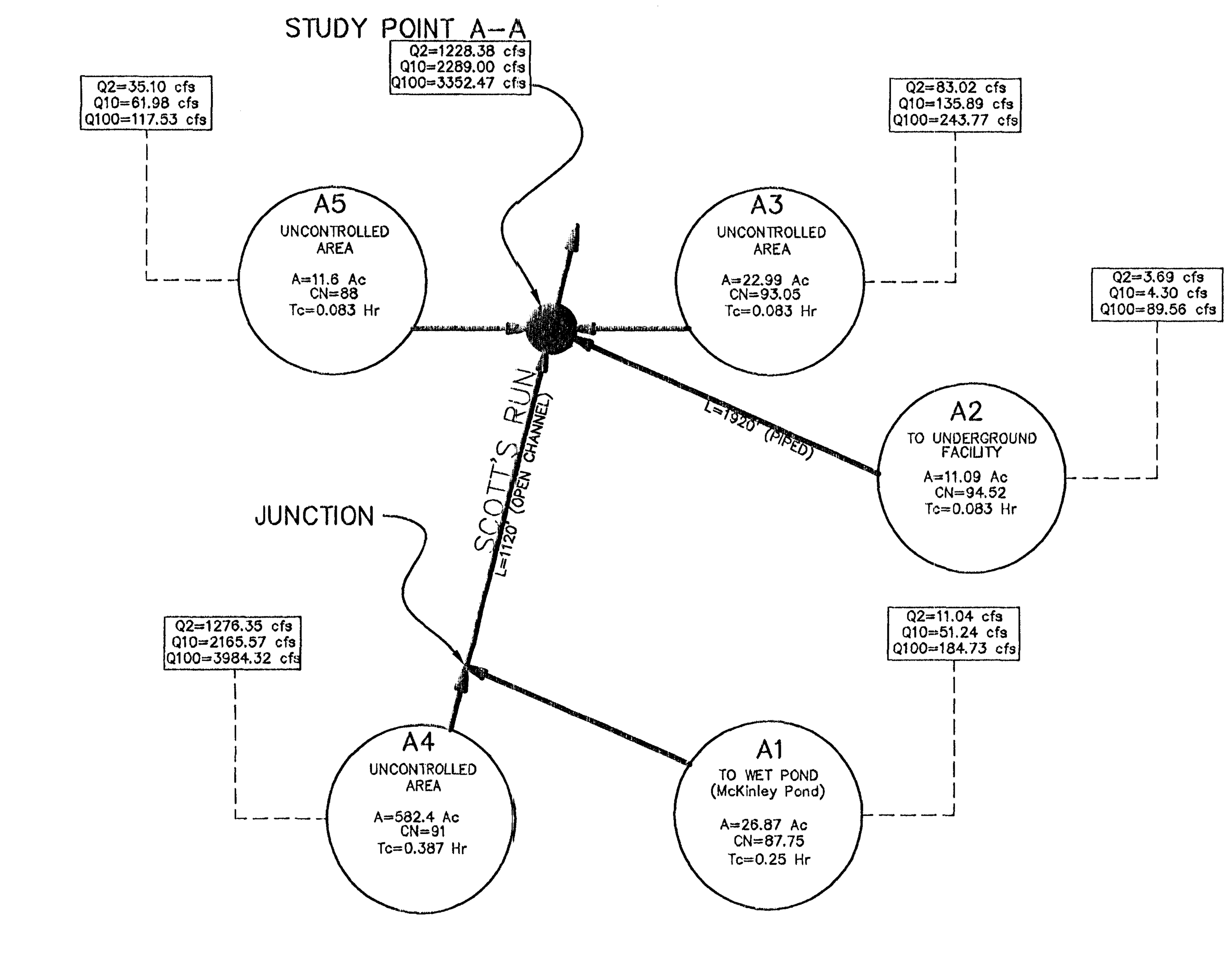


DRAINAGE SHED DETAIL: POST-DEVELOPED CONDITIONS				
	Drainage Area/Description	Area*	CN-Value (HSG**)	Land Use
A1 (@ Wet Pond Outfall)				
ONSITE	McKinley Bldg	11.83 Ac	92	(Commercial)
	Wet Pond Location - Open Space	1.52 Ac	67.65	(B & D-soils: Open Space- Good Cond)
	Part of Hayes Bldg *(Incl Mitre I Bldg)******	1.91 Ac	92	(Commercial)
	Mitre I Parking Lot	2.43 Ac	98	Impervious Area
OFFSITE	School	6.22 Ac	92	(Commercial)
	Park	2.96 Ac	61	(Open Space- Good Cond)
		26.87 Ac		
	TOTAL SUB-AREA=	26.87 Ac		
	$CN_{effective}$=	87.75		
A2 (@ Underground Detention)				
ONSITE	Proposed Mitre 4 Bldg	.6 Ac	98	(B & C-soils: Impervious Area)
	Proposed Mitre 3 Parking Deck	.69 Ac	98	Impervious Area
	Parking Lot	3.4 Ac	98	Impervious Area
	Proposed landscaping around Mitre 4 bldg	.65 Ac	74	(C-soils: Open Space-Good Cond)
OFFSITE	The Commons	5.75 Ac	94	(Commercial)
	TOTAL SUB-AREA=	11.09 Ac		
	$CN_{effective}$=	94.52		
A3 (Rest of Drainage Area-UNCONTROLLED)				
ONSITE	Pierce Bldg	5.94 Ac	93.35	(B & D-soils: Commercial)
	Johnson Bldg	11.7 Ac	93.14	(B & C-soils: Commercial)
	Part of Hayes Bldg *(Incl Mitre I Bldg)******	4.97 Ac	92.58	(B & C-soils: Commercial)
OFFSITE	Common's Village	.38 Ac	92	(Commercial)
	TOTAL SUB-AREA=	22.99 Ac		
	$CN_{effective}$=	93.05		

*Approximate values only.

**Assumed to be 'B-soils', unless otherwise noted in combination with other soils type (See exhibit sheet 6 of 9).

***Per subsequent development of Mitre and more detailed divides delineation, approx 2.0 Acre of Mitre I Bldg drains to the existing wet pond.



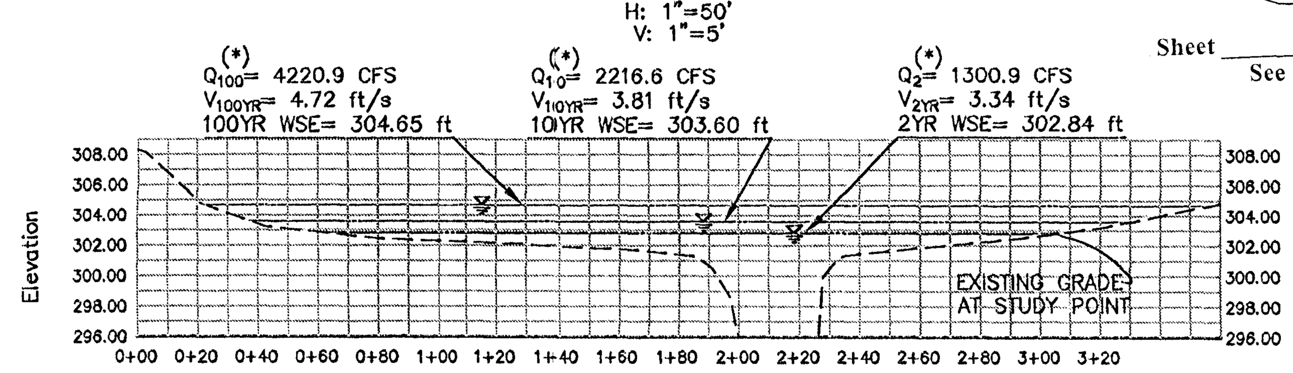
TR-20 SCHEMATIC DIAGRAM: PROPOSED CONDITIONS

(N.T.S.)

Application No. PCA-92-P-001-05 Staff P.B.
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP)
SEE PROFFERS DATED 10/02/08
Date of (BOS) (PC) approval 10/20/08
Sheet 13 of 18
See also RZ-2008-PR-011

SECTION A-A

H: 1"=50'
V: 1"=5'



(*) FLOWS SHOWN ON THE ABOVE CROSS SECTION ARE FOR TOTAL COMBINED CUMALITIVE FLOW AT THE OUTFALL AT THE TIME OF PEAK (12.17 HRS)

BELOW ARE THE TOTAL COMBINED CUMALITIVE FLOWS AT THE OUTFALL AT THE TIME OF PEAK FOR THE WESTGATE INDUSTRIAL PARK PROPERTY (12.05 HRS):

2-YR EVENT: Q2 = 1143 CFS,
V2 = 6.69 FPS
(WITHIN EX BED & BANKS)

10-YR EVENT: Q10 = 1853 CFS
WSE = 303.34

NO.	DESCRIPTION	DATE	REVS'D	REVW'D	APRV'D	DATE
REVISION						

PROFESSIONAL SEAL
COMMONWEALTH OF VIRGINIA
ROBERT A. MUNSE
Lic. No. 15338
JUNE 27, 2008
PROFESSIONAL ENGINEER

PROJECT

MITRE 4

PROFFERED CONDITION AMENDMENT /
REZONING / GENERALIZED DEVELOPMENT PLAN
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VIRGINIA

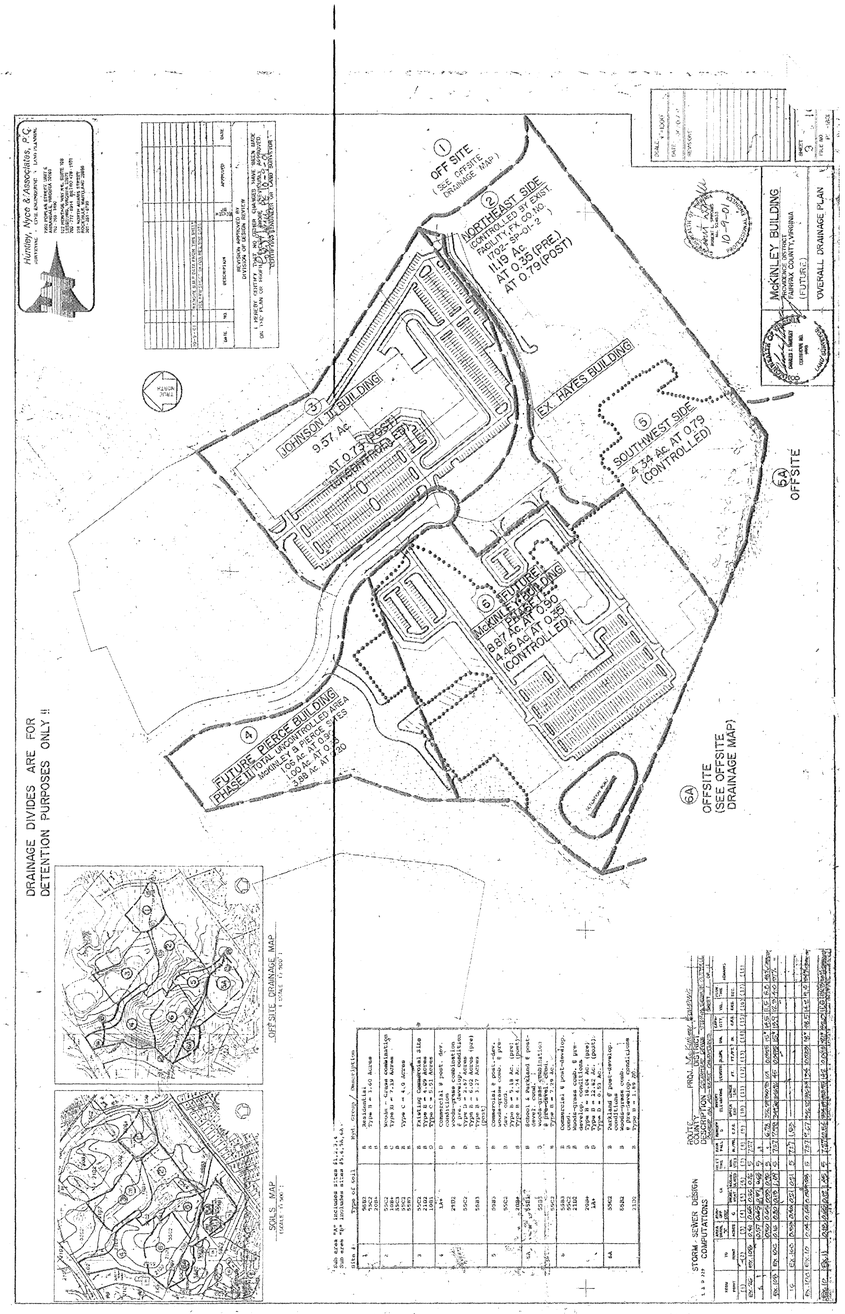
TITLE

PROPOSED HYDROLOGIC MODELING AT SCOTTS RUN STUDY POINT

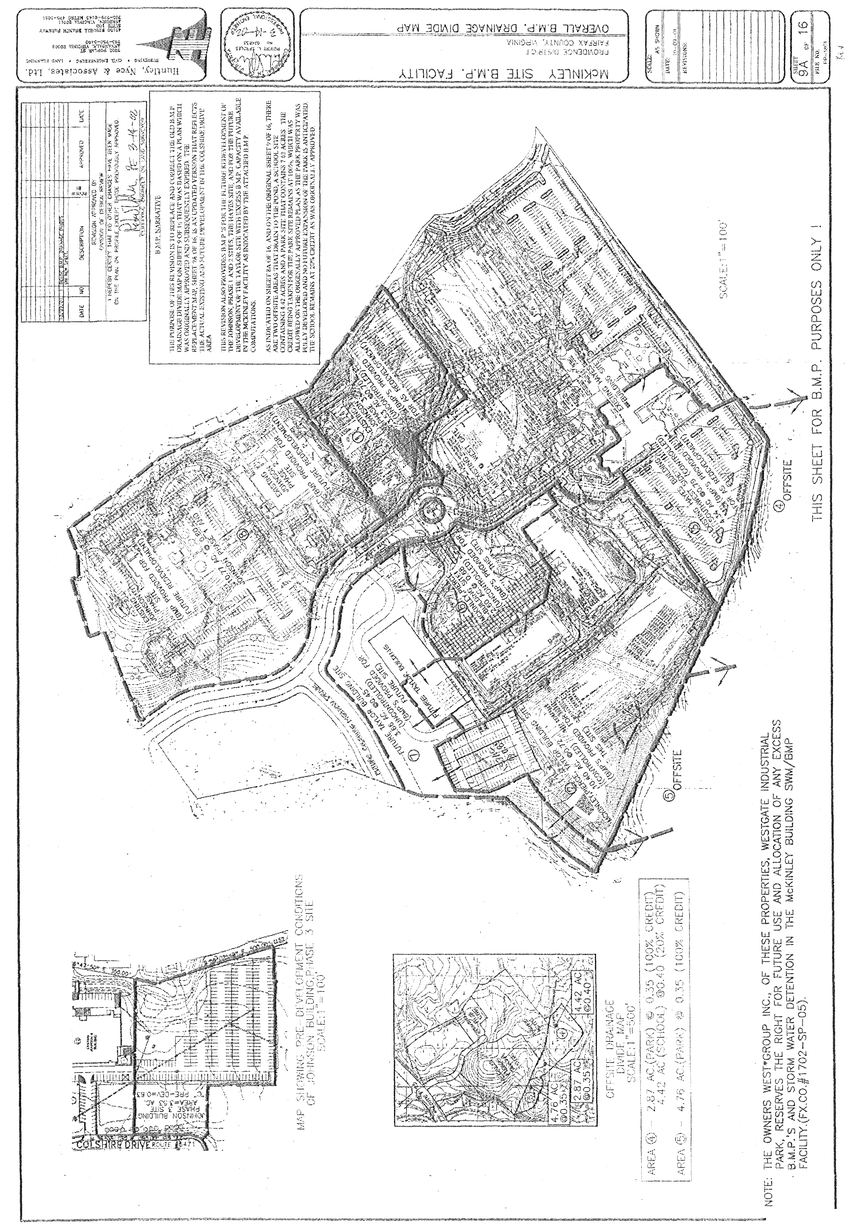
Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
14532 Lee Road
Chantilly, VA 20151-1679
T 703.449.6700
F 703.449.6714

CO. PLAN #

DESIGN	YB	SURVEY	N/A
DRAWN	JC	DATE	JUNE 27, 2008
CHECKED	RAM/OBY	SCALE	N/A
SHEET	13 OF 18	FILE NO.	10022 1-5



FYI SHEET



FYI SHEET

Application No. PCA-92-P-001-05 Staff P.B.
APPROVED DEVELOPMENT PLAN
(DP) (CDP) (CDP) (FDP)
SEE PROFFERS DATED 10/02/08
Date of (BOS) (PC) approval 10/20/08

Sheet 14 of 18
See also RZ-2008-PR-011

CO. PLAN #

NO.	DESCRIPTION	DATE	REVS'D	REVW'D	APRV'D	DATE

REVISION

PROFESSIONAL SEAL
COMMONWEALTH OF VIRGINIA
ROBERT A. MUNSE
Lic. No. 15338
JUNE 27, 2008
PROFESSIONAL ENGINEER

PROJECT

MITRE 4

PROFFERED CONDITION AMENDMENT / REZONING / GENERALIZED DEVELOPMENT PLAN

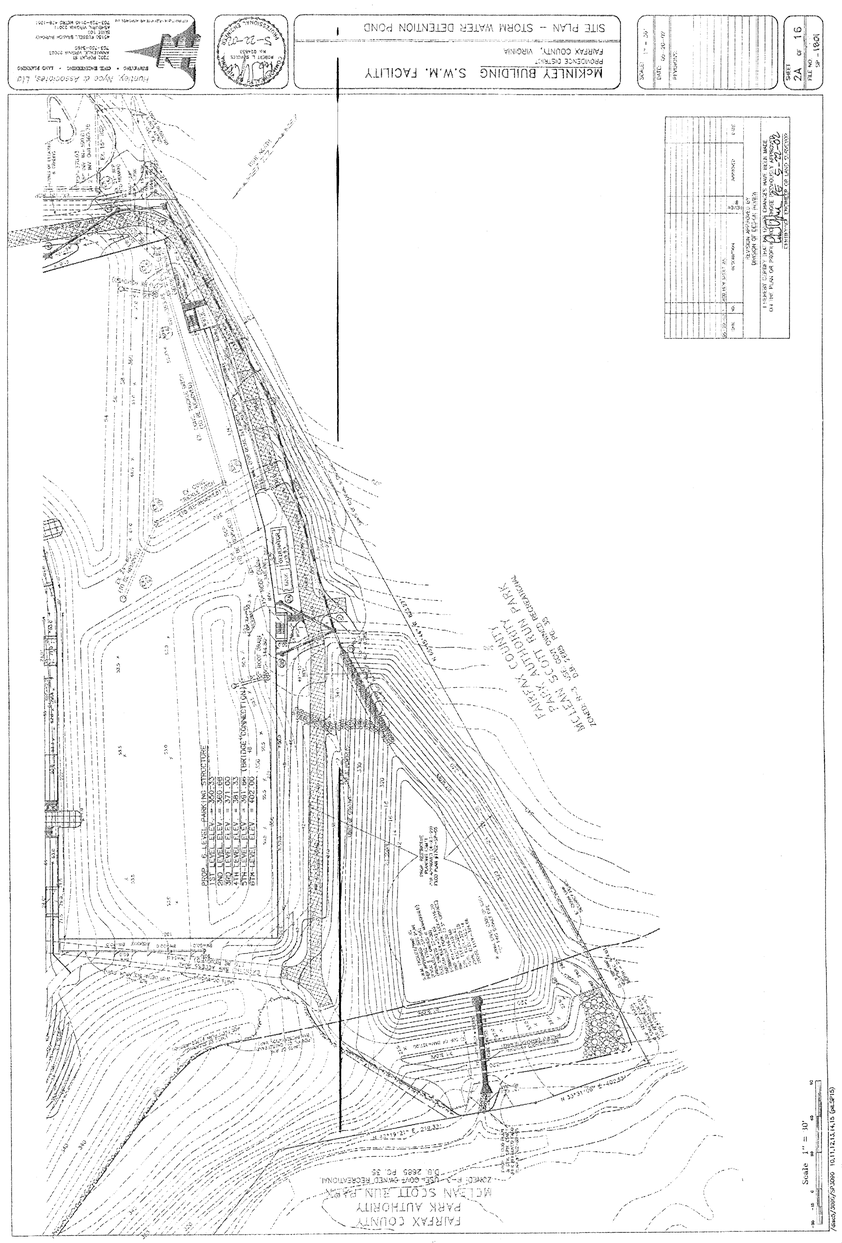
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VIRGINIA

TITLE

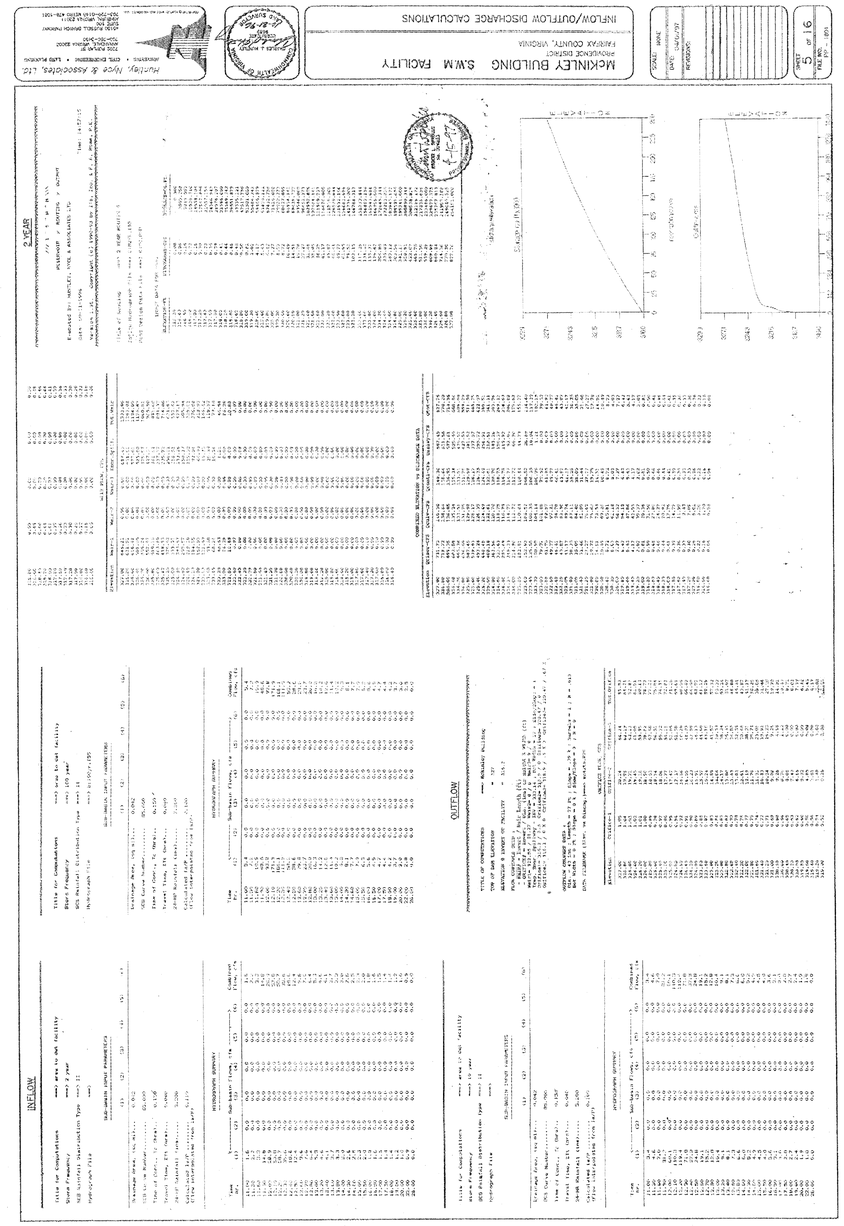
SITE RUNOFF ANALYSIS PREVIOUSLY APPROVED PLAN

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
14532 Lee Road
Chantilly, VA 20151-1679
T 703.449.6700
F 703.449.6714

DESIGN HUNTLEY, NYCE & ASSOC.	SURVEY HUNTLEY, NYCE & ASSOC
DRAWN	DATE JUNE 27, 2008
CHECKED RAM	SCALE N/A
SHEET C001FYI 14 OF 18	FILE NO. 10022 1-5



FYI SHEET



FYI SHEET

Application No. PCA-92-P-001-05 Staff P.B.
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP)
SEE PROFFERS DATED 10/02/08
Date of (BOS) (PC) approval 10/20/08

Sheet 15 of 18
See also RZ-2008-PR-011

NO.	DESCRIPTION	DATE	REVS'D	REVW'D	APRV'D	DATE
	REVISION					

PROFESSIONAL SEAL
COMMONWEALTH OF VIRGINIA
ROBERT A. MUNSE
Lic. No. 15338
JUNE 27, 2008
PROFESSIONAL ENGINEER

PROJECT

MITRE 4

PROFFERED CONDITION AMENDMENT / REZONING / GENERALIZED DEVELOPMENT PLAN

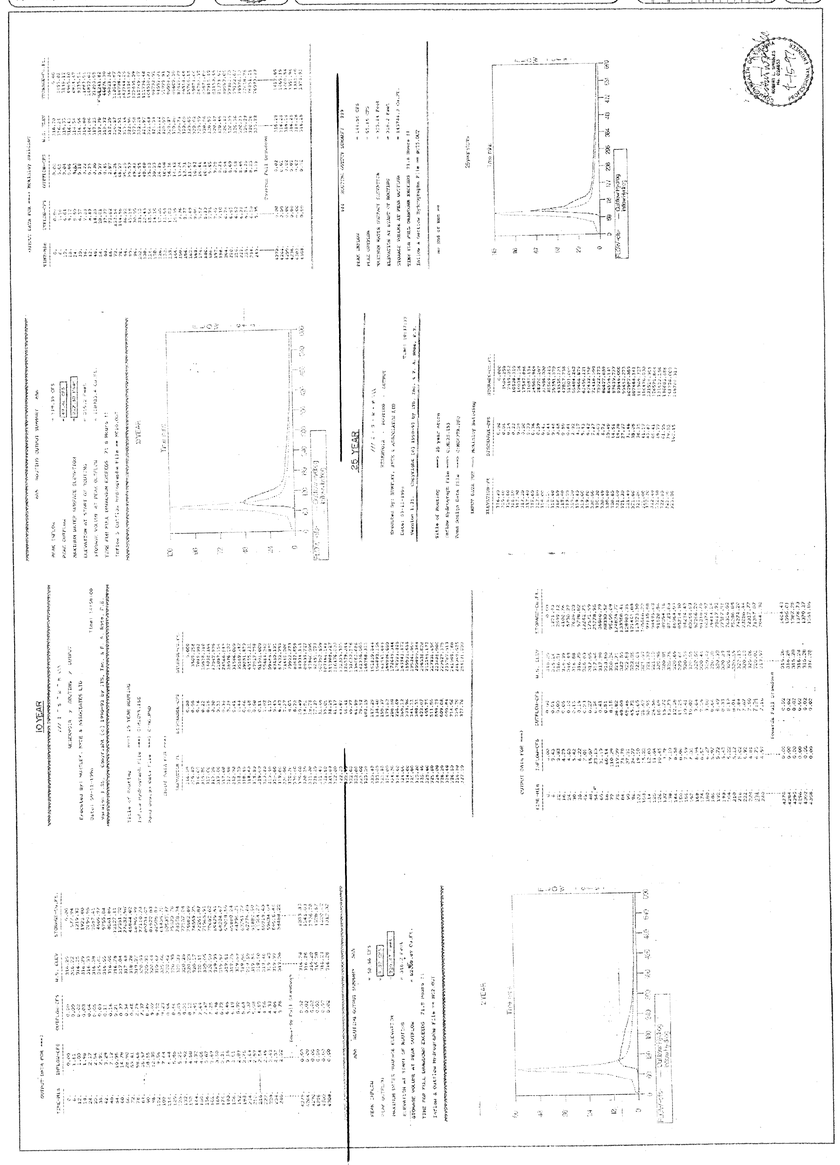
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VIRGINIA

TITLE

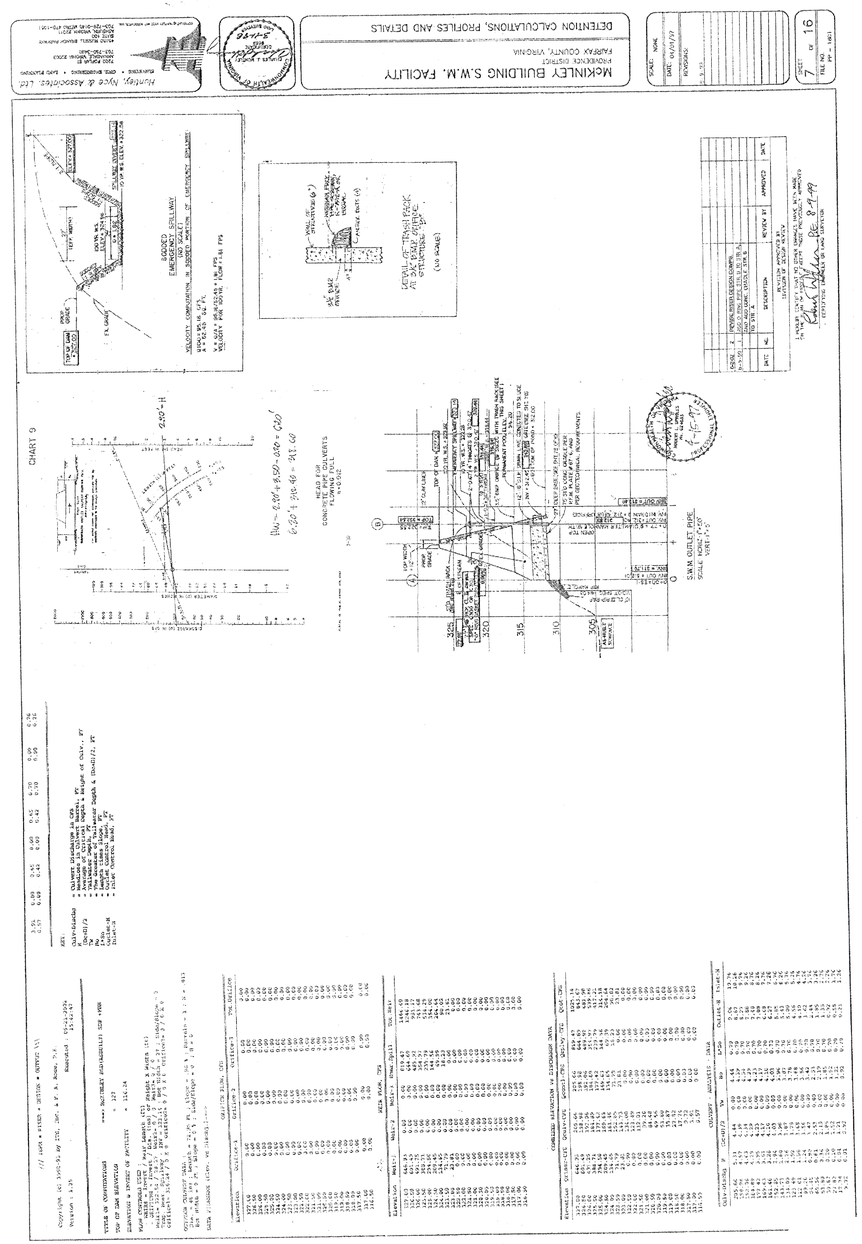
SITE RUNOFF ANALYSIS PREVIOUSLY APPROVED PLAN

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
14532 Lee Road
Chantilly, VA 20151-1679
T 703.449.6700
F 703.449.6714

DESIGN HUNTLEY, NYCE & ASSOC.	SURVEY HUNTLEY, NYCE & ASSOC.
DRAWN	DATE JUNE 27, 2008
CHECKED RAM	SCALE N/A
SHEET C002FYI 15 OF 18	FILE NO. 10022 1-5



FYI



FYI

Application No. PCA-92-P-001-05 Staff P.B.
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP)
SEE PROFFERS DATED 10/02/08
Date of (BOS) (PC) approval 10/20/08

Sheet 16 of 18
See also RZ-2008-PR-011

CO. PLAN #

NO.	DESCRIPTION	DATE	REVS'D	REVW'D	APRV'D	DATE

REVISION

PROFESSIONAL SEAL
COMMONWEALTH OF VIRGINIA
ROBERT A. MUNSE
Lic. No. 15338
JUNE 27, 2008
PROFESSIONAL ENGINEER

PROJECT

MITRE 4

PROFFERED CONDITION AMENDMENT / REZONING / GENERALIZED DEVELOPMENT PLAN

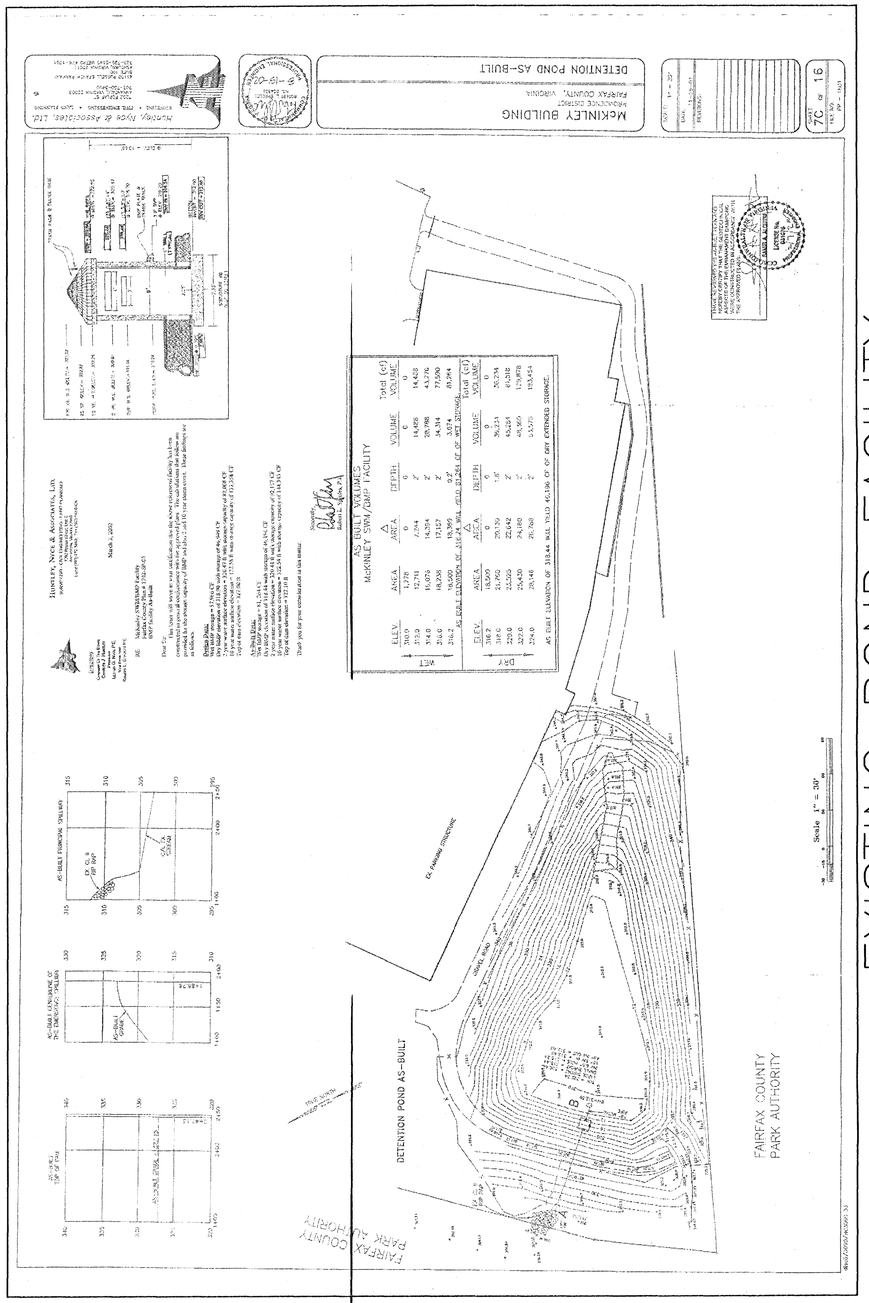
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VIRGINIA

TITLE

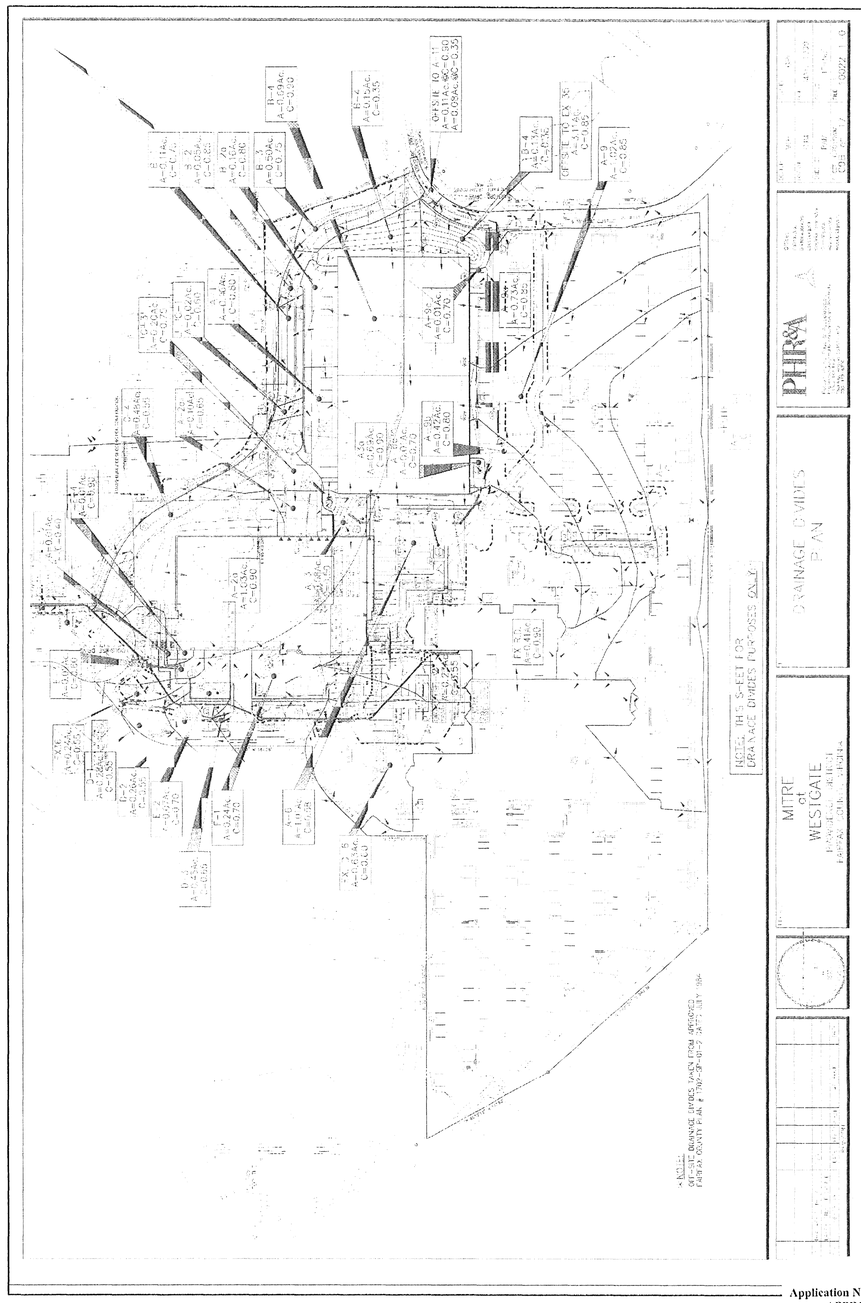
SITE RUNOFF ANALYSIS PREVIOUSLY APPROVED PLAN

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
14532 Lee Road
Chantilly, VA 20151--1679
T 703.449.6700
F 703.449.6714

DESIGN	SURVEY
HUNTLEY, NYCE & ASSOC.	HUNTLEY, NYCE & ASSOC
DRAWN	DATE JUNE 27, 2008
CHECKED RAM	SCALE N/A
SHEET C003FYI 16 OF 18	FILE NO. 10022 1--5



EXISTING POND FACILITY
FYI SHEET



EXISTING DRAINAGE DIVIDES
FYI SHEET

Application No. PCA-92-P-001-05 Staff P.B.
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP)
SEE PROFFERS DATED 10/02/08
Date of (BOS) (PC) approval 10/20/08

Sheet 17 of 18
See also RZ-2008-PR-011

NO.	DESCRIPTION	DATE	REVS'D	REVW'D	APRV'D	DATE

REVISION

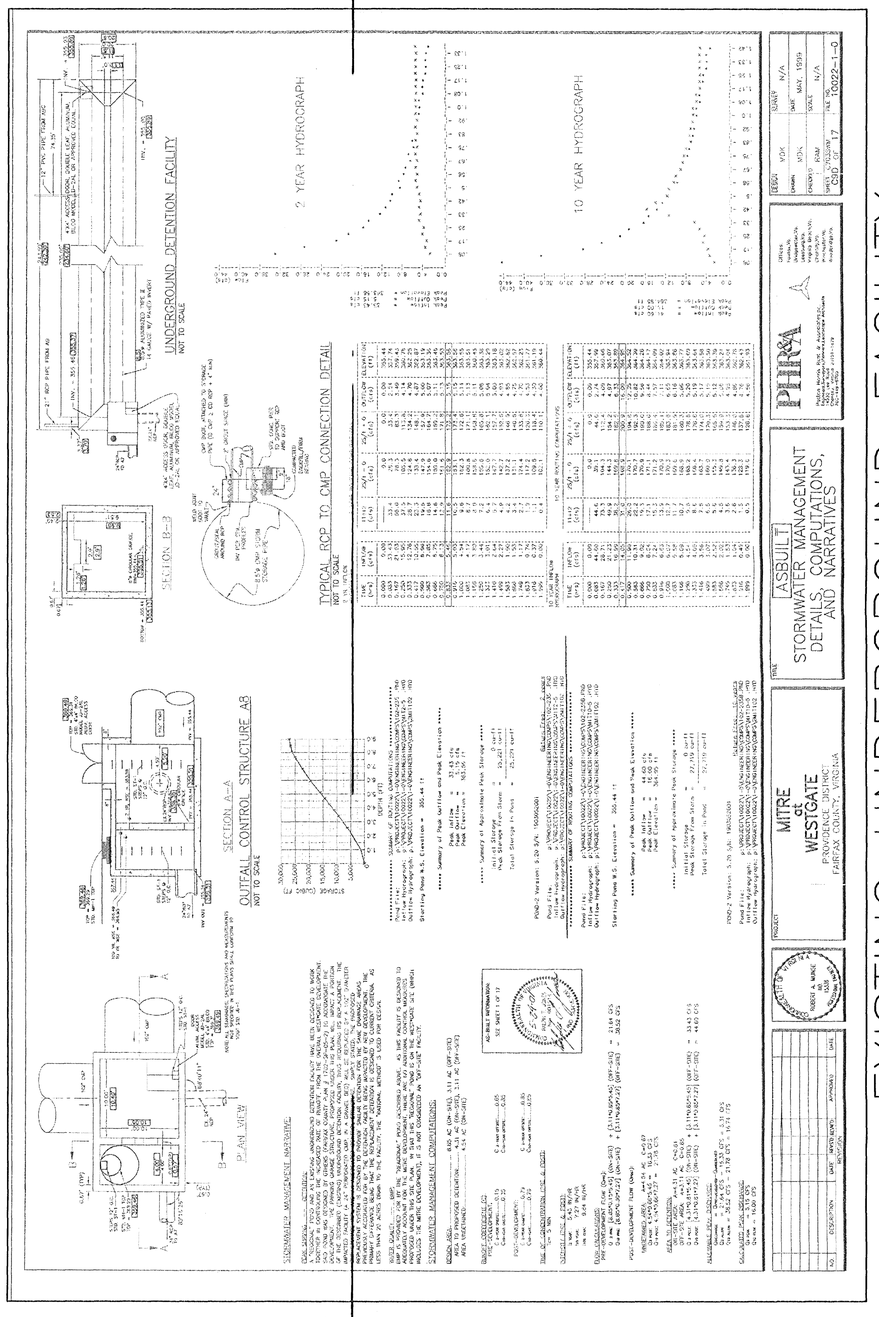
PROFESSIONAL SEAL
COMMONWEALTH OF VIRGINIA
ROBERT A. MUNSE
Lic. No. 15338
JUNE 27, 2008
PROFESSIONAL ENGINEER

PROJECT
MITRE 4
PROFFERED CONDITION AMENDMENT / REZONING / GENERALIZED DEVELOPMENT PLAN
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VIRGINIA

TITLE
SITE RUNOFF ANALYSIS PREVIOUSLY APPROVED PLAN

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
14532 Lee Road
Chantilly, VA 20151-1679
T 703.449.6700
F 703.449.6714

DESIGN HUNTLEY, NYCE/PHR+A	SURVEY HUNTLEY, NYCE/PHR+A
DRAWN	DATE JUNE 27, 2008
CHECKED RAM	SCALE N/A
SHEET C004FYI 17 OF 18	FILE NO. 10022 1-5



EXISTING UNDERGROUND FACILITY

FYI SHEET

SWM CHECKLIST

MINIMUM STORMWATER INFORMATION FOR REZONING, SPECIAL EXCEPTION, SPECIAL PERMIT AND DEVELOPMENT PLAN APPLICATIONS

The following information is required to be shown or provided in all zoning applications, or a waiver request of the submission requirement with justification shall be attached. Note: Waivers will be acted upon separately. Failure to adequately address the required submission information may result in a delay in processing this application.

This information is required under the following Zoning Ordinance paragraphs:

Special Permits (8-011 2J & 2L)	Special Exceptions (9-011 2J & 2L)
Cluster Subdivision (9-615 1G & 1N)	Commercial Revitalization Districts (9-622 2A (12) & (14))
Development Plans PRC District (16-302 3 & 4L)	PRC Plan (16-303 1E & 1O)
FDP P Districts (except PRC) (16-502 1F & 1Q)	Amendments (18-202 10F & 10I)

☐ 1. Plat is at a minimum scale of 1"=50' (unless it is depicted on one sheet with a minimum scale of 1"=100').

☑ 2. A graphic depicting the stormwater management facility(ies) and limits of clearing and grading accommodate the stormwater management facility(ies), storm drainage pipe systems and outlet protection, pond spillways, access roads, site outfalls, energy dissipation devices, and stream stabilization measures as shown on Sheet 4,7,8,9

☑ 3. Provide:

Facility Name/ Type & No.	On-site area served (acres)	Off-site area served (acres)	Drainage area (acres)	Footprint area (sf)	Storage Volume (cf)	If pond, dam height (ft)
McKinley Pond (e.g. dry pond A, wet trench, underground vault, etc.) (Wet Pond-Private)	17.69	9.18	26.87	32,658	313,642	14.60
Mitre Underground Pond (Private)	4.27	3.22	7.49	4,924	27,365	N/A
Totals	21.96	12.40	34.36	37,582	341,007	14.60

☑ 4. Onsite drainage channels, outfalls and pipe systems are shown on Sheet 8.
Pond inlet and outlet pipe systems are shown on Sheet 15,16,17

☑ 5. Maintenance access (road) to stormwater management facility(ies) are shown on Sheet 8.
Type of maintenance access road surface noted on the plat is NA (asphalt, geoblock, gravel, etc.).

☑ 6. Landscaping and tree preservation shown in and near the stormwater management facility is shown on Sheet 5.

☑ 7. A 'stormwater managament narrative' which contains a description of how detention and best management practices requirements will be met is provided on Sheet 8.

☑ 8. A description of the existing conditions of each numbered site outfall extended downstream from the site to a point which is at least 100 times the site area or which has a drainage area of at least one square mile (640 acres) is provided on Sheet 8.

☑ 9. A description of how the outfall requirements, including known changes to contributing drainage areas (i.e. drainage diversions), of the Public Facilities Manual will be satisfied is provided on Sheet 8,9,10,11,12,13.

☑ 10. Existing topography with maximum contour intervals of two (2) feet and a note as to whether it is an air survey or field run is provided on Sheets 8,10,11.

☐ 11. A submission waiver is requested for _____

☐ 12. Stormwater management is not required because _____.

Revised 2-21-2006

Application No. PCA-92-P-001-05 Staff P.B.
APPROVED DEVELOPMENT PLAN
(DP)(GDP) (CDP) (FDP)
SEE PROFFERS DATED 10/02/08
Date of (BOS) (PC) approval 10/20/08
Sheet 18 of 18
See also RZ-2008-PR-011

NO.	DESCRIPTION	DATE	REVS'D	REVW'D	APRV'D	DATE

REVISION

PROFESSIONAL SEAL
COMMONWEALTH OF VIRGINIA
ROBERT A. MUNSE
Lic. No. 15338
JUNE 27, 2008
PROFESSIONAL ENGINEER

PROJECT

MITRE 4

PROFFERED CONDITION AMENDMENT / REZONING / GENERALIZED DEVELOPMENT PLAN

PROVIDENCE DISTRICT
FAIRFAX COUNTY, VIRGINIA

TITLE

SITE RUNOFF ANALYSIS PREVIOUSLY APPROVED PLAN AND SWM CHECKLIST

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
14532 Lee Road
Chantilly, VA 20151-1679
T 703.449.6700
F 703.449.6714

DESIGN	OBY	SURVEY	PHR&A
DRAWN	WG	DATE	JUNE 27, 2008
CHECKED	RAM	SCALE	N/A
SHEET	C0010FYI 18 OF 18	FILE NO.	10022 1-5

CO. PLAN #