

# MITRE 4

## SPECIAL EXCEPTION PLAT

SE 10-PR-023



### SHEET INDEX

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Application No. SE 10-PR-023 Staff S.W.  
 APPROVED SE / SP PLAN  
 SEE DEV CONDS DATED \_\_\_\_\_  
 Date of (BOS) (BZA) approval \_\_\_\_\_  
 Sheet 1 of 17



APPLICANT:  
**Cityline Partners LLC**  
 1651 OLD MEADOW ROAD, SUITE 650  
 McLEAN, VA 22102

OWNER:  
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 C/O CITYLINE PARTNERS LLC  
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**JULY 30, 2010**  
 SHEET 1 OF 17  
 P-01-COV

# GENERAL NOTES

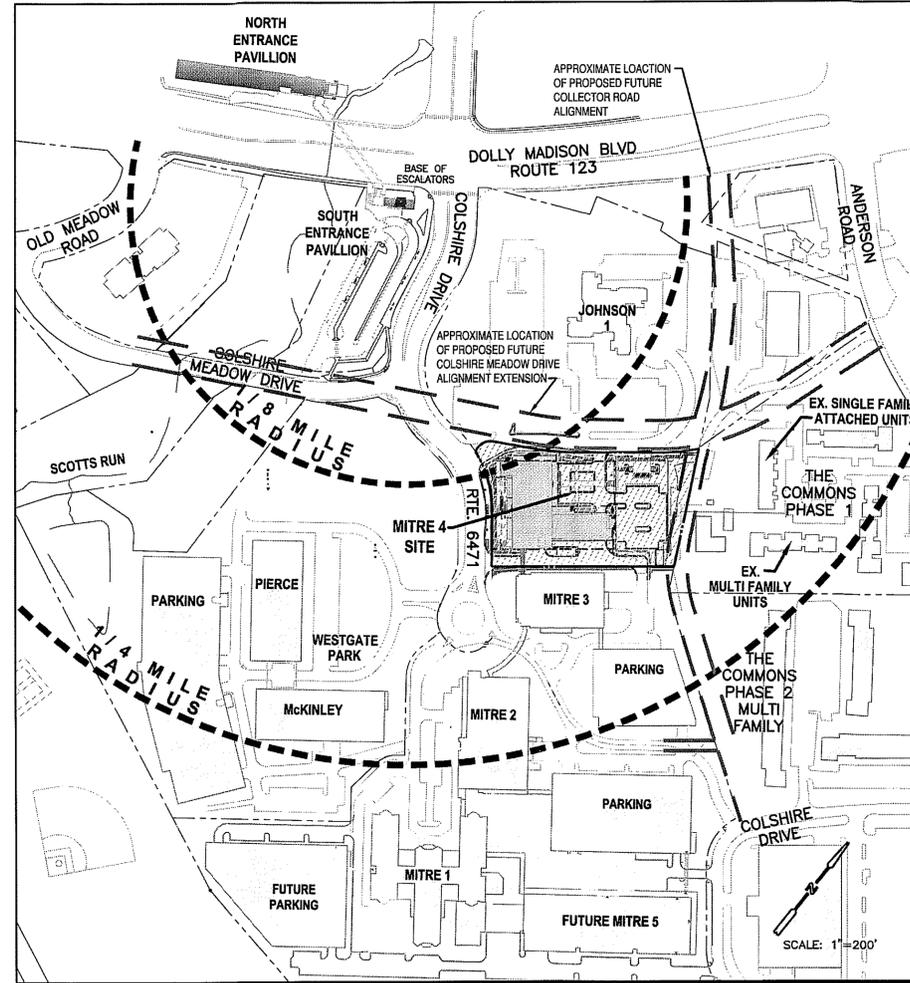
- THIS APPLICATION COMPRISES ONE PROPOSED OFFICE BUILDING REFERRED TO AS MITRE 4. A SPECIAL EXCEPTION IS REQUESTED FOR ADDITIONAL BUILDING HEIGHT PER SECTION 9-607 OF THE ZONING ORDINANCE.
- THE AREA SUBJECT TO SPECIAL EXCEPTION IS LOCATED ON A PORTION OF FAIRFAX COUNTY TAX ASSESSMENT MAP 30-3 (28) PARCEL 4C, AND IS IN THE NAME OF JOHNSON I 7600 COLSHIRE LLC, AS RECORDED IN DEED BOOK 21665 PAGE 1592. THE PROPERTY CONSISTS OF 2.936 ACRES (127,882 SF) AND IS CURRENTLY ZONED C-3.
- THE SITE IS DEVELOPED WITH EXISTING OFFICE USES.
- THE SUBJECT PROPERTY IS LOCATED WITHIN THE COLSHIRE SUBDISTRICT OF THE FAIRFAX COUNTY COMPREHENSIVE PLAN FOR TYSONS CORNER URBAN CENTER. THE LAND USE RECOMMENDATION FOR THE SUBJECT PROPERTY IS OFFICE.
- THE COMPREHENSIVE PLAN DOES NOT INDICATE ANY TRAILS ON THE SITE. IN ACCORDANCE WITH THE DRAFT BIKE LANE PLAN, BIKE LANES ARE PLANNED FOR COLSHIRE DRIVE AND NO ADDITIONAL ROAD IMPROVEMENTS ARE REQUIRED TO ACCOMMODATE THIS.
- FIELD SURVEY WAS PERFORMED BY PHR+A IN JUNE 2010. TWO (2) FOOT CONTOUR INTERVALS ARE PROVIDED.
- 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.
- THE SITE IS IN THE SCOTTS RUN WATERSHED.
- TO THE BEST OF OUR KNOWLEDGE, NO GRAVE SITE EXISTS ON THIS SITE.
- 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 STORED UNDERGROUND 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.
- NO FLOOD PLAINS, RESOURCE PROTECTION AREAS (RPA) OR ENVIRONMENTAL QUALITY CORRIDORS EXIST ON THE SITE.
- MECHANICAL EQUIPMENT IS LOCATED IN THE UNDERGROUND GARAGE AND PENTHOUSE, AND IS EXCLUDED FROM GROSS FLOOR AREA (GFA) AND FLOOR AREA RATIO (FAR) COMPUTATIONS. ACCESSORY STRUCTURES MAY BE PLACED ON THE ROOF OF THE PENTHOUSE IN ACCORDANCE WITH SECTION 2-508 OF THE ZONING ORDINANCE.
- PUBLIC SANITARY SEWER SERVICE WILL BE PROVIDED TO THE PROPOSED DEVELOPMENT BY AN EXTENSION FROM THE RELOCATED MAIN IN COLSHIRE DRIVE. PUBLIC WATER WILL BE PROVIDED BY AN EXTENSION FROM THE EXISTING MAIN IN COLSHIRE DRIVE. DETAILED DESIGN SHALL BE COMPLETED DURING FINAL SITE PLAN ENGINEERING.
- INGRESS AND EGRESS TO THE PROPERTY IS VIA AN EXISTING TRAVEL WAY LOCATED TO THE NORTH OF THE SITE AS WELL AS COLSHIRE DRIVE (RTE 6471).
- THE BUILDINGS REPRESENTED ON THE SPECIAL EXCEPTION PLAT (SEP) ARE ILLUSTRATIVE AND SUBJECT TO VARYING FOOTPRINTS BASED ON FINAL ARCHITECTURE AND ENGINEERING. FOOTPRINTS MAY CHANGE AS LONG AS BUILDING SETBACKS SHOWN ON THE SEP AND MAXIMUM FAR ARE MAINTAINED. MINOR MODIFICATIONS TO ALL FEATURES SHOWN ON THE SEP 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. (ON-SITE LANDSCAPE AND STREETScape DESIGNS AND ELEMENTS SHALL BE CONSISTENT WITH SHEETS 5 AND 6 SUBJECT TO FINAL APPROVAL BY THE URBAN FORESTRY BRANCH AT THE TIME OF SITE PLAN.) ADDITIONAL SITE FEATURES SUCH AS SIGNS, FLAGPOLES, FENCES AND WALLS NOT SHOWN ON THE SEP MAY BE PROVIDED.
- FINAL LOCATION OF BUILDING MOUNTED AND FREESTANDING SIGNS TO BE DETERMINED DURING SITE PLAN REVIEW. ALL SIGNAGE TO COMPLY WITH ARTICLE 12 OF THE ZONING ORDINANCE.
- THE DEVELOPMENT OF THIS PROJECT SHALL COMMENCE AT SUCH TIME AS APPROPRIATE COUNTY APPROVALS HAVE BEEN OBTAINED AND SUBJECT TO OWNER DISCRETION. REGARDING PHASING, THE APPLICANT DOES NOT ANTICIPATE PHASING THE CONSTRUCTION OF THE BUILDING OR PARKING SHOWN ON SHEET 4.
- LIMITS OF CLEARING AND GRADING EXTEND TO AND GENERALLY COINCIDE WITH THE PROPERTY LINES WITH THE EXCEPTION OF THE PRESERVATION AREA ALONG THE NORTHEAST BOUNDARY, ROAD TIE-INS, AND UTILITY EXTENSIONS THAT MAY REQUIRE WORK OFF-SITE AS DETERMINED BY FINAL ENGINEERING AND DESIGN.
- TO ACCOMMODATE BICYCLE USERS, BIKE RACKS TO FACILITATE 62 BIKES WILL BE PROVIDED IN THE UNDERGROUND GARAGE. IN ADDITION, SHOWER AND LOCKER FACILITIES WILL BE PROVIDED WITHIN THE PROPOSED BUILDING.
- THE ARCHITECTURAL DESIGN SHOWN WILL BE IN SUBSTANTIAL CONFORMANCE WITH THE ELEVATIONS AND RENDERINGS SHOWN HEREIN, AND CONSISTENT WITH EXISTING BUILDINGS ON THE MITRE CAMPUS.

### 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:

- A WAIVER OF THE FRONT YARD AND ANGLE OF BULK PLANE REQUIREMENT IS REQUESTED ALONG COLSHIRE DRIVE AS SHOWN ON THE PLAN IN ACCORDANCE WITH SECTION 2-418 OF THE ZONING ORDINANCE.
- A WAIVER FROM THE REQUIRED 5 LOADING SPACES FOR AN INDIVIDUAL BUILDING. THIS APPLICATION IS PROPOSING TO PROVIDE 2 LOADING SPACES.
- A TRANSITIONAL SCREENING YARD MODIFICATION AND BARRIER WAIVER IS HEREBY REQUESTED ALONG THE NORTHEAST BOUNDARY OF THE SITE. REFER TO SHEET 5 FOR THE DETAILS AND JUSTIFICATION OF THIS REQUEST.

# VICINITY MAP



# SITE TABULATIONS

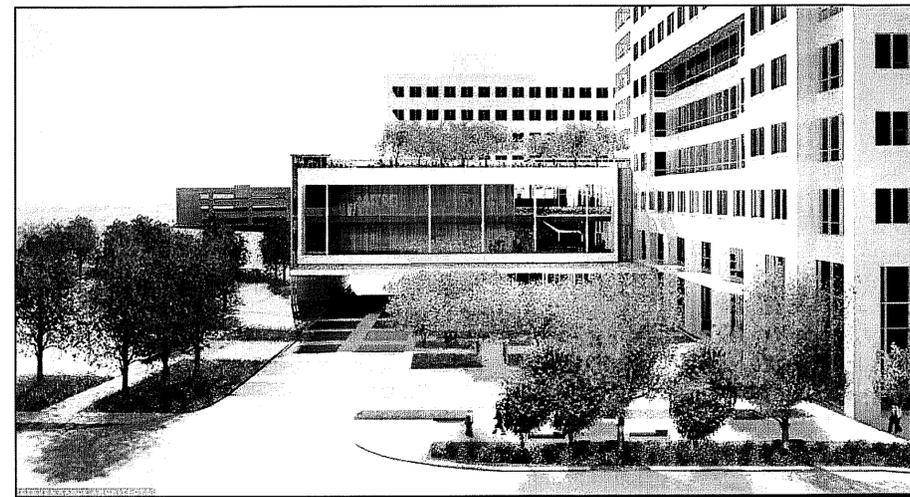
<b>ZONE:</b>	C-3/HC		
<b>USE:</b>	OFFICE		
<b>GROSS FLOOR AREA:</b>	340,000 S.F. (1)		
<b>LOT SIZE</b>	<b>REQUIRED</b>	<b>PROVIDED</b>	
	AREA	20,000 S.F.	127,882 S.F. / 2.936 AC.
	WIDTH	100 FT.	303 FT.
<b>FAR</b>	1.00 (1)	0.65 (2)	
<b>BUILDING HEIGHT</b>	90 FT.	225 FT. (3)	
<b>YARDS</b>	<b>FRONT</b>	CONTROLLED BY A 25 DEGREE ANGLE OF BULK PLANE, BUT NOT LESS THAN 40 FT.	33 FT. +/- (4)
	<b>SIDE</b>	NO REQUIREMENT	10 FT. +/-
	<b>REAR</b>	CONTROLLED BY A 20 DEGREE ANGLE OF BULK PLANE, BUT NOT LESS THAN 25 FT.	155 FT. +/-
<b>OPEN SPACE</b>	15 %	24 % +/-	
<b>PARKING</b>	506 SPACES (5)	506 SPACES (5)	

### FOOTNOTES:

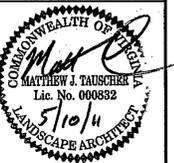
- FOR THE PURPOSES OF CALCULATING FAR AND PARKING, 340,000 S.F. OF GROSS FLOOR AREA EXCLUDES CELLAR SPACE, THE OVERHEAD PEDESTRIAN CORRIDOR CONNECTION WITH THE MITRE 3 BUILDING, MECHANICAL EQUIPMENT ENCLOSURES, AND THE MECHANICAL EQUIPMENT IN THE UNDERGROUND PARKING GARAGE AND PENTHOUSE.
- IN ACCORDANCE WITH THE PROFFERS, THE TOTAL FAR FOR WESTGATE SHALL NOT EXCEED 0.65 FAR, BUT INDIVIDUAL PARCELS MAY EXCEED 1.0 FAR. FAR FOR THE SUBJECT INDIVIDUAL PARCEL IS 2.66.
- MAXIMUM BUILDING HEIGHT MAY BE INCREASED AS PERMITTED BY THE BOARD IN ACCORDANCE WITH THE PROVISION OF SECTION 9-607, WHICH IS THE SUBJECT OF THIS SPECIAL EXCEPTION.
- FRONT YARD ANGLE OF BULK PLANE AND SETBACK MAY BE REDUCED IN ACCORDANCE WITH SECTION 2-418. WAIVER IS REQUESTED.
- PARKING PROVISIONS ARE ESTABLISHED FOR THIS PROPOSED USE IN THE PARKING REDESIGNATION PLAN, IN ACCORDANCE WITH ZONING ORDINANCE ARTICLE 11-102, PAR. 12. APPLICANT RESERVES THE RIGHT TO ADJUST THE NUMBER OF PARKING SPACES PROVIDED UPWARDS OR DOWNWARDS BY 15 SPACES (THAT IS, LESS THAN 3%) DEPENDING ON FINAL ENGINEERING, COLUMN SPACING, SIZE AND CAPACITY OF MECHANICAL EQUIPMENT AND OTHER SIMILAR REASONS.

### NOTE:

AT THE TIME OF FINAL SITE PLAN SUBMISSION FOR THE SUBJECT PROPERTY, TABULATIONS WILL BE PROVIDED FOR LAND BAY B-3 (LAND BAY B-3 AS REFERENCED IS IDENTIFIED ON PCA-92-P-001-07) TO DEMONSTRATE THAT THE F.A.R. FOR LAND BAY B-3 DOES NOT EXCEED 1.0. FOR ZONING PURPOSES, LAND BAY 3 WILL BE TREATED AS ONE LOT UNTIL SUCH TIME AS THE LOT IS REZONED.



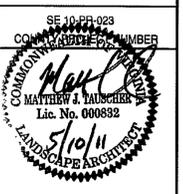
MITRE 4 COURTYARD  
LOOKING SOUTH



PLAN STATUS	
09/24/10	RESUBMISSION
10/25/10	RESUBMISSION
12/15/10	RESUBMISSION
03/15/11	RESUBMISSION
04/18/11	RESUBMISSION
05/10/11	RESUBMISSION

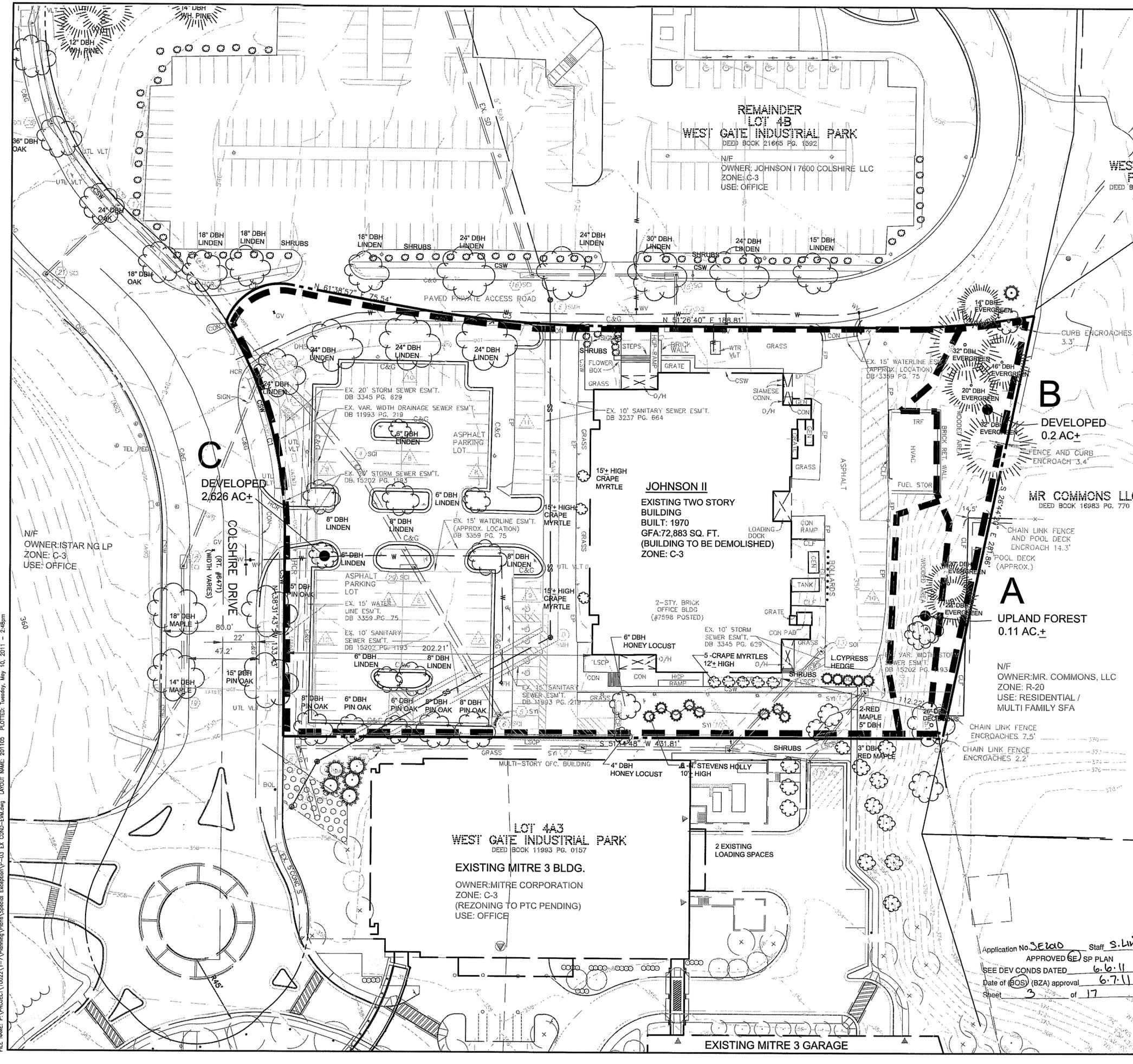
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JOB No.	
DATE:	JULY 30, 2010
FILE No.	
P-02-NOTES	
SHEET	2 OF 17

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Sheet 2 of 17



PLAN STATUS	
08/24/10	RESUBMISSION
10/25/10	RESUBMISSION
12/15/10	RESUBMISSION
03/15/11	RESUBMISSION
04/18/11	RESUBMISSION
05/10/11	RESUBMISSION

DATE	DESCRIPTION
DESIGN	DRAWN
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JOB No.	
DATE:	JULY 30, 2010
FILE No.	
P-03-EX COND-EVM	
SHEET	3 OF 17



**LEGEND:**

- EXISTING TREELINE
- DECIDUOUS TREES
- EVERGREEN TREES
- EXISTING SHRUBLINE

GROSS SITE AREA	127,882 SF / 2.936 AC.
SUBTRACT AREA DEDICATED TO PARKS, ROAD FRONTAGE	0.0 AC.
ADJUSTED GROSS SITE AREA	127,882 SF / 2.936 AC.

**EXISTING VEGETATION COVER TYPE SUMMARY TABLE MITRE 4**

COVER TYPE	PRIMARY SPECIES	UNDERSTORY SPECIES	SUCCESSIONAL STAGES	CONDITION	TOTAL AREA
A UPLAND FOREST	PREDOMINATELY CARYA SPP., ASH, ACER SPP., PRUNUS SEROTINA AND LONDON PLANE	UNDERSTORY OF DENSE INVASIVE VINES AND LONICERA SPP. SOME DOGWOOD AND PRIMARY SPP. SEEDLINGS, DEVELOPING.	SUB-CLIMAX	GOOD / FAIR	0.11 AC±
B DEVELOPED	LANDSCAPED SCREENING PLANTINGS NOT MAINTAINED PRIMARILY OF LARGE WHITE PINES AND A HEDGE OF JUNIPER VIRGINIANA WITH INVASIVE UNDERSTORY. JUNIPERS PLANTED TO SCREEN RETAINING WALL ARE IN FAIR CONDITION.		N/A	GOOD / FAIR	0.20 AC±
C DEVELOPED	LANDSCAPED AREAS, LAWN AREA, BUILDING, PAVED PARKING AREA, INTERIOR PARKING LOT. LANDSCAPING CONSISTS PRIMARILY OF LINDEN & PIN OAKS. LAWN AREAS HAVE PREDOMINATELY NELLY STEVENS HOLLY AND CRAPE MYRTLES & VARIOUS SHRUB HEDGES.		N/A	GOOD	2.626 AC±
<b>TOTAL COVER AREA</b>					<b>2.936 AC±</b>

**ADDITIONAL COMMENTS & CONDITION DESCRIPTION:**

A UPLAND FOREST	VARIOUS AGED LINDEN AND PIN OAKS 6" TO 24" DBH MAKES UP ABOUT 95% COVER TYPE. THIS STAND IS IN GOOD CONDITION WITH NO APPARENT VISIBL SYMPTOMS
B DEVELOPED	THE LANDSCAPE PLANTINGS ARE OVERGROWN WITH INVASIVE VINES & SHRUBS (POISON IVY, WILD GRAPE, AND LONICERA SPP.). SEVERAL WHITE PINES ARE LARGE BETWEEN 32" & 22" DBH REQUIRING SOME MINOR PRUNING AND VINE REMOVAL. VEGETATION IS IN GOOD HEALTH WITH NO APPARENT PROBLEMS.
C DEVELOPED	THE LANDSCAPE AREAS ARE WELL KEPT LAWN AREAS WITH ORNAMENTAL PLANTINGS AND LARGE EVERGREEN AND DECIDUOUS TREES. VEGETATION IS IN GOOD HEALTH WITH NO APPARENT PROBLEMS

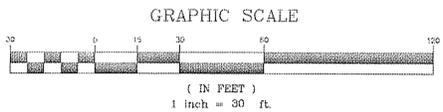
**TREE PRESERVATION TARGET CALCULATION:**

PRE-DEVELOPMENT AREA OF EXISTING TREE CANOPY FROM EXISTING VEGETATION MAP	0.61 AC±
PERCENTAGE OF GROSS SITE AREA COVERED BY EXISTING TREE CANOPY	20.78%
PERCENTAGE OF 10 YEAR CANOPY REQUIRED FOR SITE ZONING C-3	10%
PERCENTAGE OF THE 10 YEAR TREE CANOPY REQUIREMENT THAT SHOULD BE MET THROUGH TREE PRESERVATION	2.08%
PROPOSED PERCENTAGE OF THE TREE CANOPY REQUIREMENT THAT WILL BE MET THROUGH TREE PRESERVATION	5.16% *
HAS THE TREE PRESERVATION TARGET MINIMUM BEEN MET?	YES

\* FOR TREE SAVE AREA AND 10 YEAR CANOPY CALCULATIONS SEE LANDSCAPE PLAN (SHEET 05).

**CURVE TABLE**

CURVE	LENGTH	RADIUS	TANGENT	DELTA	CHORD BEARING	CHORD
C1	143.78	256.00	73.84	32°10'44"	N54°37'05"W	142.89
C2	52.28	37.00	31.57	80°57'03"	N21°10'25"E	48.03
C3	132.95	746.50	66.65	10°12'16"	N56°32'49"E	132.78
C4	92.36	496.50	46.32	10°39'31"	N46°06'55"E	92.36



Application No. SE100 Staff S.Lin  
 APPROVED 6/6/11 SP PLAN  
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 Date of (BOS) (BZA) approval 6.7.11  
 Sheet 3 of 17

FILE NAME: P:\PROJECTS\10222\1-7\Planning\Plan\Sheet\03-EX COND-EVM.dwg LAYOUT NAME: 201105\_PLOT03 Tuesday, May 10, 2011 - 2:48pm

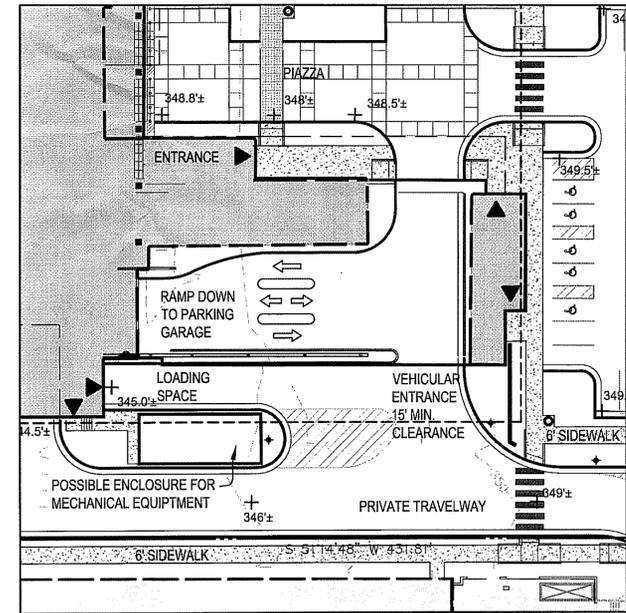


DATE	DESCRIPTION
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10/25/10	RESUBMISSION
12/15/10	RESUBMISSION
03/15/11	RESUBMISSION
04/18/11	RESUBMISSION
05/10/11	RESUBMISSION

DATE	DESCRIPTION	
DESIGN	DRAWN	CHKD
SCALE	H: 1" = 30'-0"	V: 1" = 30'-0"
JOB No.		
DATE	JULY 30, 2010	
FILE No.		
SHEET	4	OF 17

CURVE	LENGTH	RADIUS	TANGENT	DELTA	CHORD BEARING	CHORD
C1	143.76	256.00	73.84	32°10'44"	N54°37'05"W	142.89
C2	52.28	37.00	31.57	80°57'03"	N21°10'25"E	48.03
C3	132.95	746.50	66.65	10°12'16"	N56°32'49"E	132.78
C4	92.36	496.50	46.32	10°39'31"	N46°06'55"E	92.36

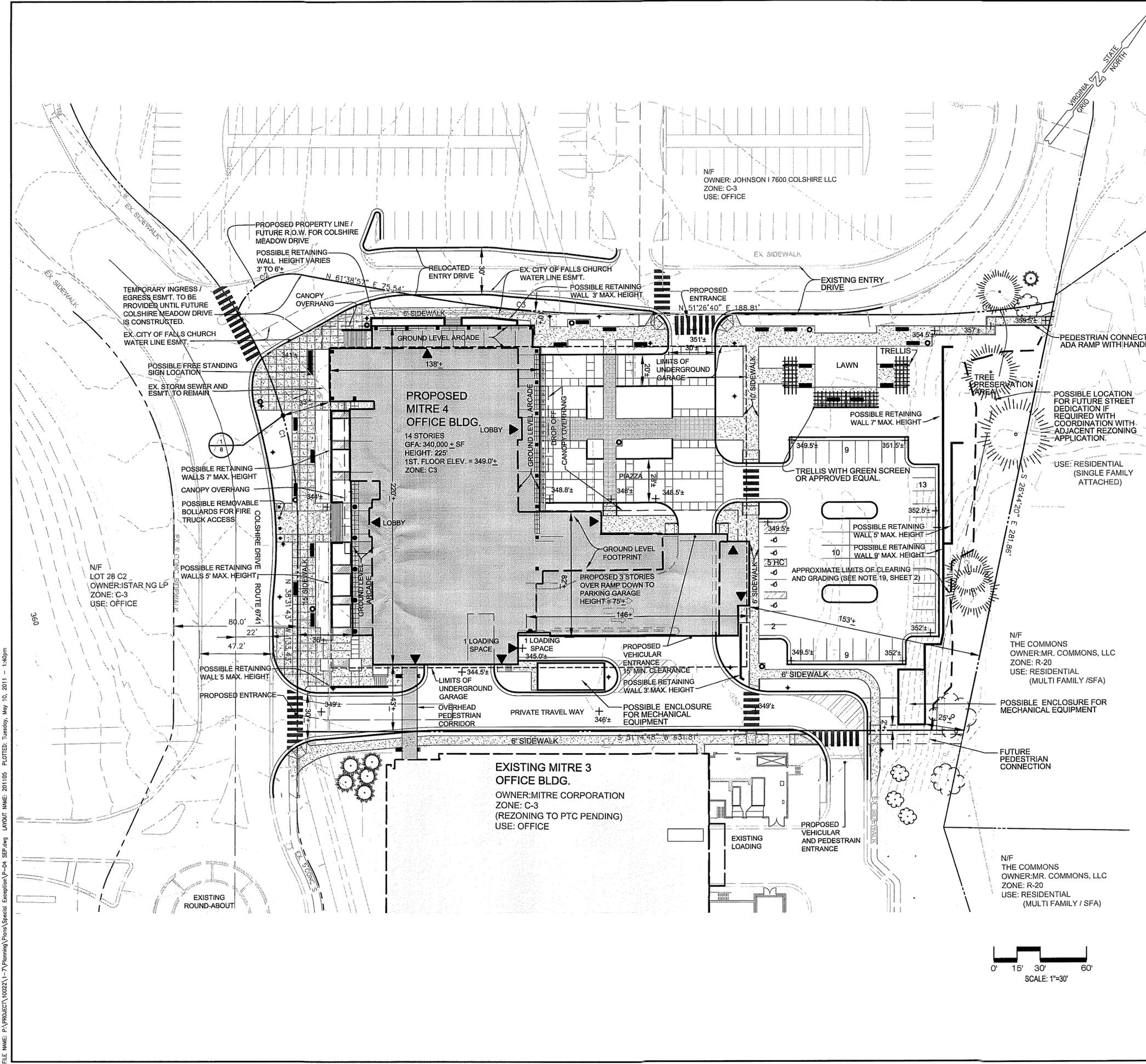
- LEGEND**
- ◆ PEDESTRIAN LIGHT
  - BENCH
  - TRASH RECEPTACLE
  - ▼ BUILDING ENTRANCE



GROUND LEVEL PLAN  
AT GARAGE ENTRANCE

SCALE: 1"=30'

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Sheet 4 of 17



SCALE: 1"=30'

FILE NAME: P:\PROJECT\10022\1-7\Planning\Plans\Special Exception\P-04\_SSP.dwg LAYOUT NAME: 201105\_PLOTTED: Tuesday, May 10, 2011 - 1:40pm

**LANDSCAPE LEGEND**

- CANOPY TREES (CATEGORY IV, 3" CAL.)**
  - RED MAPLE, *ACER RUBRUM*
  - SWEET GUM, *LIQUIDAMBAR STYRACIFLUA 'CHEROKEE'*
  - TULIP POPLAR, *LIRIODENDRON TULIPIFERA*
  - SWAMP WHITE OAK, *QUERCUS BICOLOR*
  - SCARLET OAK, *QUERCUS COCCINEA*
  - PIN OAK, *PALUSTRIS*
  - WILLOW OAK, *QUERCUS PHELLOS*
  - ZELKOVA, *ZELKOVA SERRATA*
- INTERIOR PARKING LOT LANDSCAPING PROVIDED (CATEGORY IV, 3" CAL.)**
  - ZELKOVA, *ZELKOVA SERRATA*
- EVERGREEN TREES (CATEGORY I, II, AND IV)**
  - AMERICAN HOLLY, *ILEX OPACA*
  - FOSTER HOLLY, *BILEX X ATTENUATA 'FOSTER'S #2'*
  - AMERICAN ARBORVITAE, *THUJA OCCIDENTALIS 'NIGRA'*
  - MAGNOLIA GRANDIFLORA, *SOUTHERN MAGNOLIA*
- MEDIUM ORNAMENTAL TREES (CATEGORY III, 3" CAL.)**
  - RIVER BIRCH, *BETULA NIGRA*
  - BLACK GUM, *NYSSA SYLVAICA*
  - AMERICAN YELLOWWOOD, *CLADRASTIS LUTEA*
- SMALL ORNAMENTAL TREES (CATEGORY I AND II, 2" CAL.)**
  - JAPANESE MAPLE, *ACER PALMATUM*
  - DOWNY SERVICEBERRY, *AMELANCHIER LAEVIS*
  - EUROPEAN UPRIGHT HORNBEAM, *CARPINUS BETULUS 'FASTIGIATA'*
  - REDBUD, *CERCUS CANADENSIS*
  - CRAPENMYRTLE, *LAGERSTROEMIA X LIPAN'*
  - SAUCER MAGNOLIA, *MAGNOLIA SOULANSIANA*
  - SWEETBAY MAGNOLIA, *MAGNOLIA VIRGINIANA*
  - SOURWOOD, *OXYDENDRUM ARBOREUM*
- SHRUBS**
  - DWARF SUMMERSWEET, *CLETHRA ALNIFOLIA 'HUMMINGBIRD'*
  - SLENDER DEUTZIA, *DEUTZIA GRACILLIS 'NIKKO'*
  - LIMELIGHT HYDRANGEA, *HYDRANGEA PANICULATA 'LIMELIGHT'*
  - OAKLEAF HYDRANGEA, *HYDRANGEA QUERCIFOLIA*
  - VIRGINIA SWEETSPICE, *ITEA VIRGINICA 'HENRY'S GARNET'*
  - HEAVENLY BAMBOO, *NANDINA DOMESTICA 'MOON BAY'*
  - DWARF CHERRY LAUREL, *PRUNUS LAUROCERASUS 'OTTO LUYKEV'*
  - SCHIP LAUREL, *PRUNUS LAUROCERASUS 'SCHIPKAENSIS'*
  - WHITE AZALEA, *RHODODENDRON X 'HARDY GARDENIA'*
  - TIGER EYES SUMAC, *RHUS TYPHINA 'TIGER EYES'*
  - DRIFT ROSES, *ROSA X 'CORAL DRIFT' AND 'PEACH DRIFT'*
  - KNOCKOUT ROSE, *ROSA X 'KNOCKOUT'*
  - EUONYMUS KLAUSCHOVICUS 'MANHATTAN', 'MANHATTAN' EUONYMUS
- EXISTING TREES TO BE PRESERVED**
- ALTERNATE LOCATION FOR TREES IN UTILITY EASEMENT (SEE NOTE 3)**
- PERENNIALS AND GROUNDCOVERS**
- LAWN**
- PEDESTRIAN LIGHT**
- BENCH**
- TRASH RECEPTACLE**
- BOLLARDS**
- BUILDING ENTRANCES**

THE ABOVE PLANT LIST SHOWS THE INTENT AND CHARACTER OF THE PROPOSED DEVELOPMENT. FINAL DESIGN AND PLANT MATERIALS WILL BE DETERMINED PRIOR TO ISSUANCE OF THE BUILDING PERMIT.

Application No. SE 2016-26523 Staff S.Lin  
 APPROVED SP / SP PLAN  
 SEE DEV CONDS DATED 6-6-11  
 Date of (BOS) (BZA) approval 6-7-11  
 Sheet 5 of 17

PRELIMINARY TREE COVER CALCULATIONS	
SITE AREA	127,882 SF
MULTIPLY PERCENT REQUIRED	10%
EQUALS TOTAL TREE COVER TO BE PROVIDED	12,788 SF
EXISTING TREE COVER TO BE PRESERVED = 6,600 SF / 127,882 SF = 5.16%	6,600 SF
ADDITIONAL TREE COVER REQUIRED BY PLANTINGS	6,188 SF
PROPOSED CREDIT PROVIDED BY PLANTING ON SITE	14,210 SF
11 CAT. I DECIDUOUS TREES = 1,100 SF	
18 CAT. II DECIDUOUS TREES = 2,225 SF	
15 CAT. III DECIDUOUS TREES = 2,625 SF	
18 CAT. IV DECIDUOUS TREES = 4,500 SF	
19 CAT. I EVERGREEN TREES = 760 SF	
12 CAT. II EVERGREEN TREES = 1,500 SF	
6 CAT. IV EVERGREEN TREES = 1,500 SF	
TOTAL TREE COVER PROVIDED	16.2% 20,810 SF

INTERIOR PARKING LOT LANDSCAPING	
PAVED AREA WITHIN CONSTRUCTION LIMITS	32,400 SF
INTERIOR LANDSCAPING REQUIRED (5%)	1,620 SF
TOTAL SHADE TREE COVER PROVIDED 6.9% (9 CATEGORY IV DECIDUOUS TREES @ 250 SF)	2,250 SF

**NOTES:**

- LANDSCAPING ALONG THE NORTHERN PROPERTY LINE (SOUTH SIDE OF THE EXISTING ENTRY DRIVE BETWEEN EXISTING JOHNSON I AND PROPOSED MITRE 4) INCLUDES LARGE DECIDUOUS TREES AND SIX FOOT CONCRETE SIDEWALK.
- COLSHIRE MEADOW DRIVE EXTENSION IS NOT PROPOSED WITH THIS APPLICATION, STREETSCAPE IMPROVEMENTS ASSOCIATED WITH THE PROPOSED FUTURE COLSHIRE MEADOW DRIVE EXTENSION ARE SHOWN ON SHEET 6 AND WILL BE PROVIDED WITH THAT PUBLIC IMPROVEMENT PLAN AT THE TIME OF APPLICATION.
- TREES SHOWN IN AN EXISTING UTILITY EASEMENT ARE CONTINGENT UPON OBTAINING A LETTER OF PERMISSION FROM OWNER OF THAT EASEMENT DURING FINAL SITE PLAN IN ACCORDANCE WITH SECTION 12-0515.6B-C OF THE PUBLIC FACILITIES MANUAL. WHERE PERMISSION IS NOT GRANTED, THE TREES WILL BE PLANTED IN LOCATIONS SHOWN.
- LAYOUT FOR ROOF TOP TERRACE IS SHOWN FOR ILLUSTRATIVE PURPOSES ONLY AND MAY CHANGE WITH FINAL DESIGN.

**TRANSITIONAL SCREENING YARD REQUIREMENTS:**

A. CALCULATIONS:		
35' T.S.Y.	REQUIRED	PROVIDED
1. CANOPY COVERAGE	35' * 146 LF = 5,110 SF 3,833 SF (75% OF 5,110 SF)	5,110 SF 2,300 SF EX. TREES 1,575 SF PROP. TREES 3,875 SF TOTAL TREES
2. EVERGREEN TREES & DECIDUOUS TREES	2,683 SF (70% OF 3,833 SF) 1,150 SF (30% OF 3,833 SF)	1,700 SF EX. EVERGREEN TREES 1,000 SF PROP. EVERGREEN CAT IV 2,700 SF TOTAL EVERGREEN TREES 600 SF EX. DECIDUOUS TREES 575 SF PROP. DECIDUOUS TREES 1,175 SF TOTAL DECIDUOUS TREES
3. MEDIUM EVERGREEN SHRUBS:	45 SHRUBS (3 / 10 LF @ 146')	14 SHRUBS
25' T.S.Y.		
1. CANOPY COVERAGE	25' * 136 LF = 3,400 SF 2,550 SF (75% OF 3,400 SF)	3,400 SF 1,075 SF EX. TREES 1,550 SF PROP. TREES 2,625 SF TOTAL TREES
2. EVERGREEN TREES & DECIDUOUS TREES	1,785 SF (70% OF 2,550 SF) 765 SF (30% OF 2,550 SF)	750 SF EX. EVERGREEN TREES 1,050 SF PROP. EVERGREEN CAT IV 1,800 SF TOTAL EVERGREEN TREES 325 SF EX. DECIDUOUS TREES 500 SF PROP. DECIDUOUS TREES 825 SF TOTAL DECIDUOUS TREES
3. MEDIUM EVERGREEN SHRUBS:	41 SHRUBS (3 / 10 LF @ 136')	15 SHRUBS

**B. JUSTIFICATION FOR PLANTING MODIFICATION:**

BASED ON THE CALCULATIONS ABOVE, THE PROPOSED LANDSCAPE PLAN DOES NOT MEET THE REQUIRED NUMBER OF MEDIUM HEIGHT EVERGREEN SHRUBS WITHIN THE TRANSITIONAL SCREENING YARDS. THEREFORE, THE APPLICANT HEREBY REQUESTS A MODIFICATION TO THE PLANTING REQUIREMENTS FOR THAT SHOWN ON THE PROPOSED LANDSCAPE PLAN BASED ON THE FOLLOWING JUSTIFICATION:

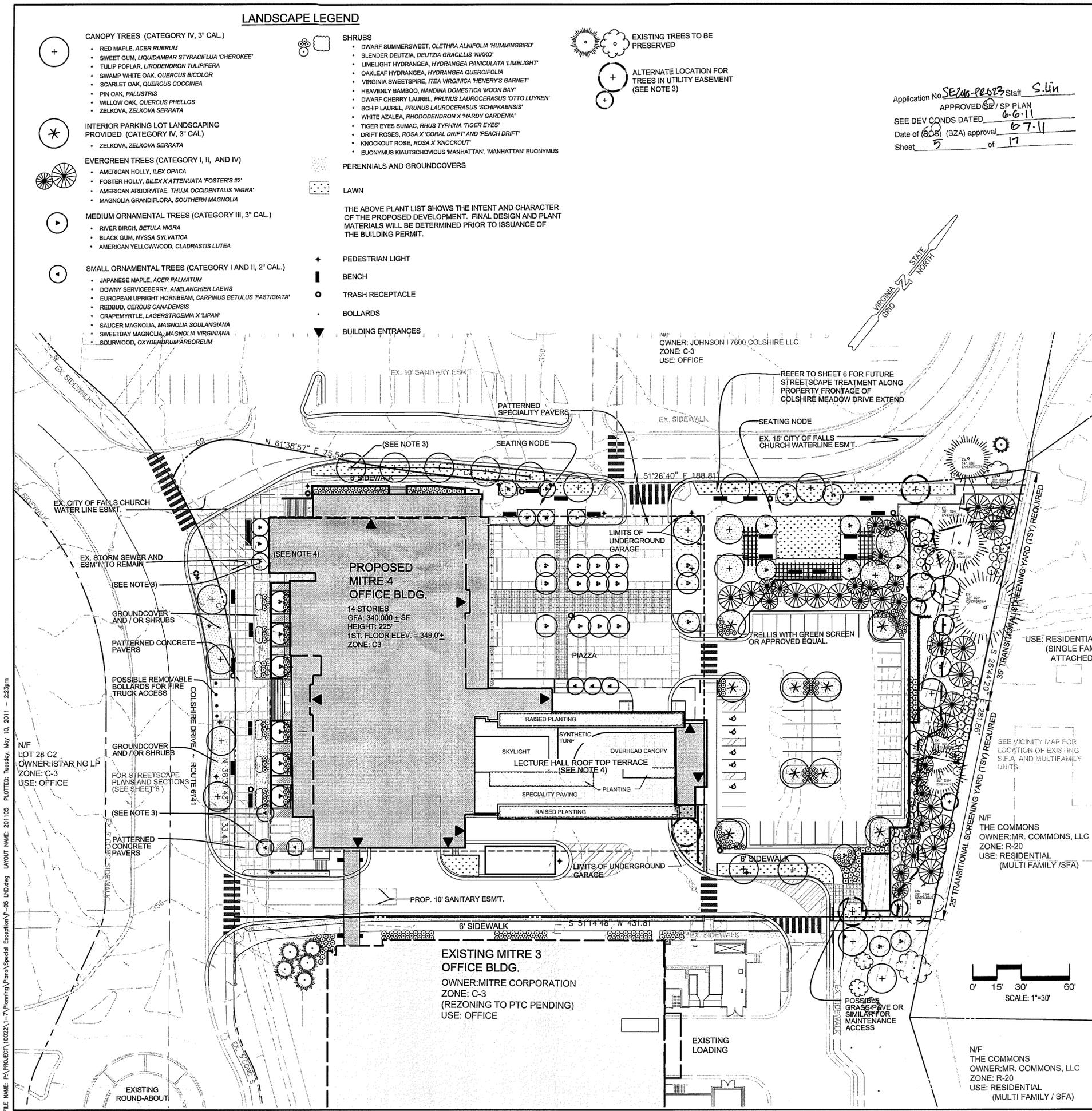
- 13-305 3. THE SITE HAS BEEN DESIGNED TO PRESERVE EXISTING, MATURE TREES AND VEGETATION WITHIN THE YARD WHICH PROVIDES A MORE EFFECTIVE SCREEN THAN THE REQUIRED NUMBER OF NEW EVERGREEN SHRUBS WOULD PROVIDE.
- 13-305 5. THE ADOPTED COMPREHENSIVE PLAN FOR THIS AREA CALLS FOR A MIX OF USES IN AN URBAN ENVIRONMENT WHERE SCREENING BETWEEN USES IS NOT ENCOURAGED.
- 13 305 12. THE EXISTING TOPOGRAPHY OF THE YARD (SLOPING DOWN INTO THE SITE FROM THE PROPERTY LINE) WOULD MAKE ADDITIONAL PLANTINGS WITHIN THE YARD INEFFECTIVE.

**C. JUSTIFICATION FOR A BARRIER WAIVER:**

THE APPLICANT HEREBY REQUESTS A WAIVER OF THE REQUIRED TYPE D, E, OR F BARRIER BASED ON THE FOLLOWING JUSTIFICATION:

13-305 5. THE ADOPTED COMPREHENSIVE PLAN FOR THIS AREA CALLS FOR A MIX OF USES IN AN URBAN ENVIRONMENT WHERE A BARRIER BETWEEN USES IS NOT ENCOURAGED.

13 305 12. THE EXISTING TOPOGRAPHY OF THE YARD (SLOPING DOWN INTO THE SITE FROM THE PROPERTY LINE) MAKES A BARRIER LOCATED IN THE MIDDLE OR OFFICE SIDE PORTION OF THE YARD INEFFECTIVE, AND PLACING THE BARRIER ON THE PROPERTY LINE WOULD SCREEN THE LANDSCAPING.



# Bowman CONSULTING

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LANDSCAPE PLAN  
**MITRE 4**  
 PROVIDENCE DISTRICT, FAIRFAX COUNTY, VIRGINIA

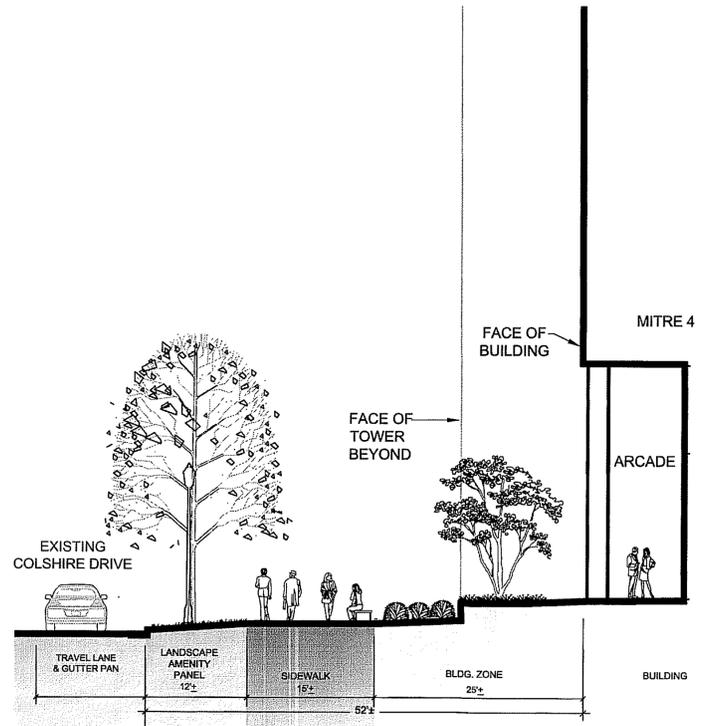
SE 10-PR-023	
COUNTY PROJECT NUMBER	
	
PLAN STATUS	
08/24/10	RESUBMISSION
10/25/10	RESUBMISSION
12/15/10	RESUBMISSION
03/15/11	RESUBMISSION
04/18/11	RESUBMISSION
05/10/11	RESUBMISSION
DATE	DESCRIPTION
DESIGN	DRAWN
SCALE	CHKD
H: 1" = 30'-0"	
V:	
JOB No.	
DATE:	JULY 30, 2010
FILE No.	
P-05 LND	
SHEET	5 OF 17

FILE NAME: P:\PROJECT\100221\7-Planning\Plans\Special\Exemption\10-05 LND.dwg LAYOUT NAME: 201105 Tuesday, May 10, 2011 - 2:23pm

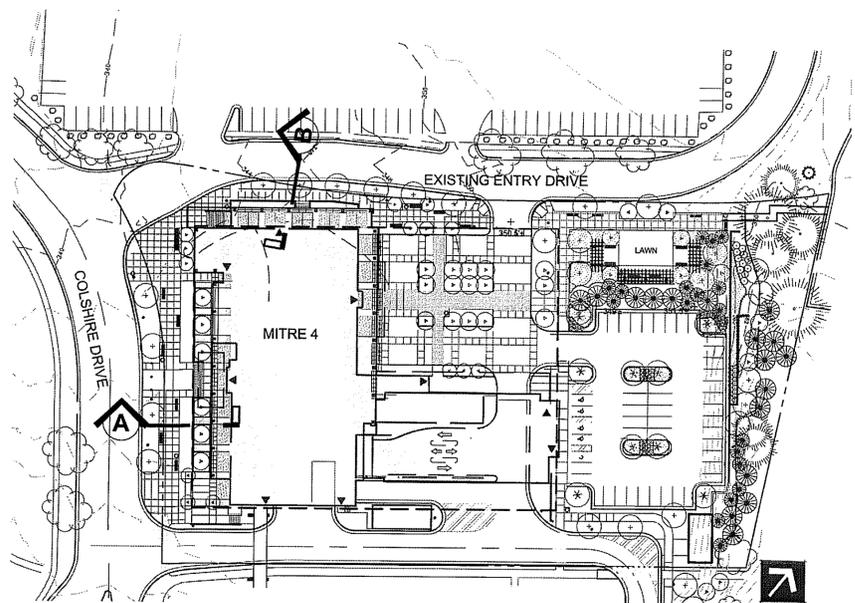


PLAN STATUS	
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10/25/10	RESUBMISSION
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05/10/11	RESUBMISSION

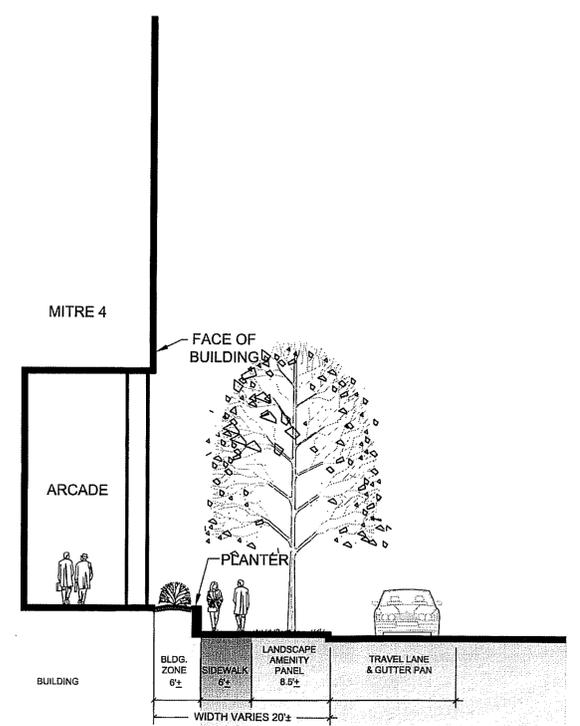
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DESIGN	DRAWN
SCALE	H: AS SHOWN V:
JOB No.	
DATE	JULY 30, 2010
FILE No.	P-06 LND-DET
SHEET	6 OF 17



SECTION A-A SCALE: 1"=10'-0"

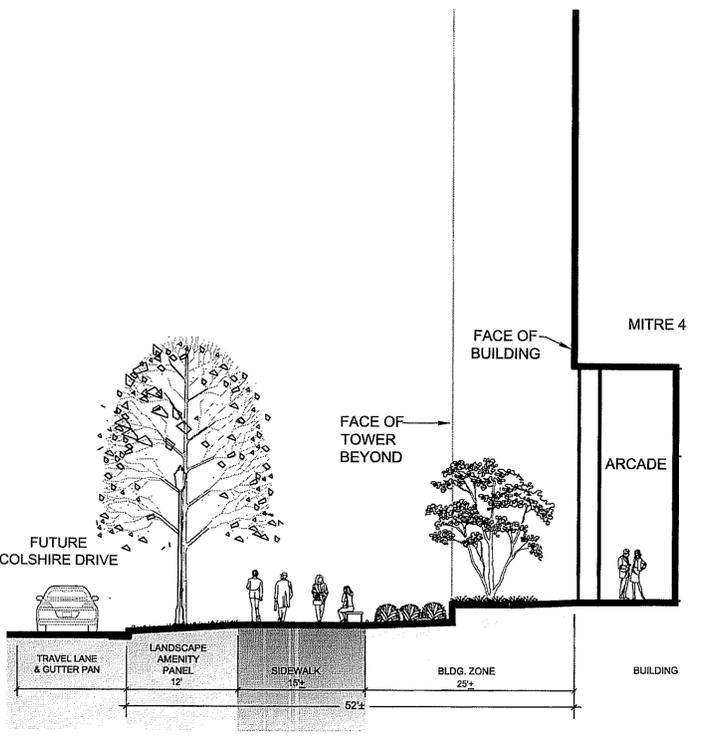


KEY MAP SCALE: 1" = 60'-0"

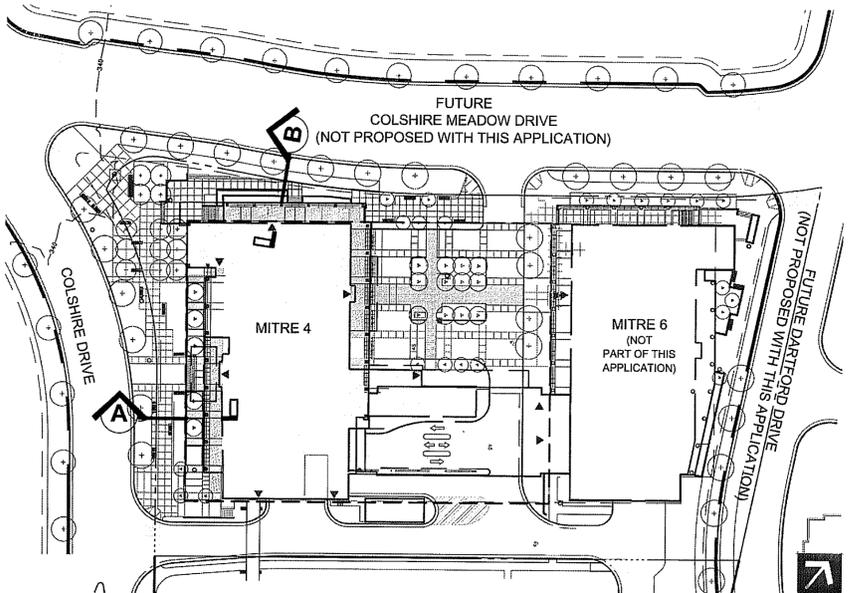


SECTION B-B SCALE: 1"=10'-0"

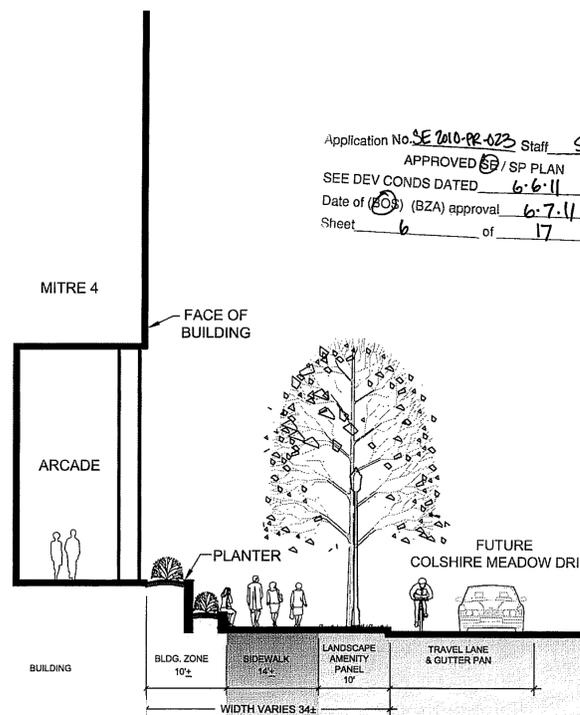
## PROPOSED CONDITION



SECTION A-A SCALE: 1"=10'-0"



KEY MAP SCALE: 1" = 60'-0"



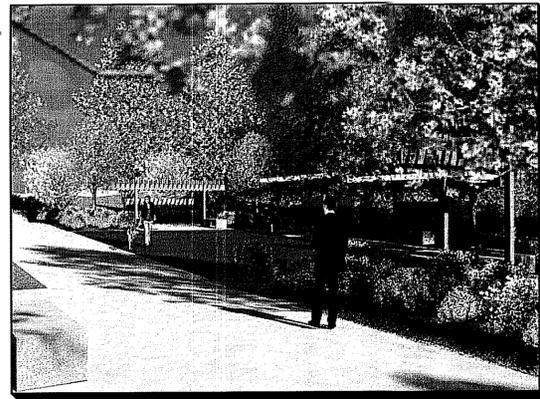
SECTION B-B SCALE: 1"=10'-0"

## FUTURE CONDITION WITH COLSHIRE DRIVE

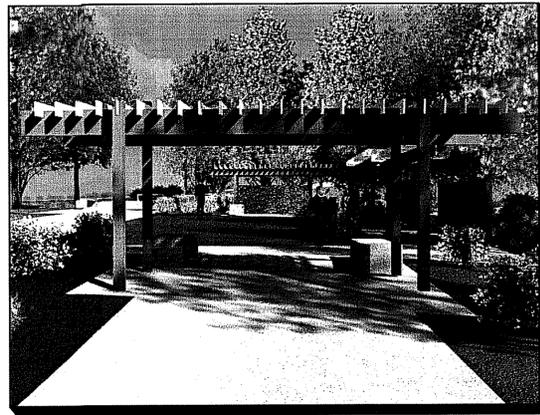
STREETSCAPE PLAN SHOWN ABOVE IS CONCEPTUAL AND IS SUBJECT TO CHANGE WITH FINAL DESIGN.

NOTE:  
 THIS DRAWING SHOWS THE INTENT, CHARACTER AND QUALITY OF THE PROPOSED DEVELOPMENT.  
 FINAL DESIGN AND MATERIALS WILL BE DETERMINED PRIOR TO ISSUANCE OF BUILDING PERMIT.

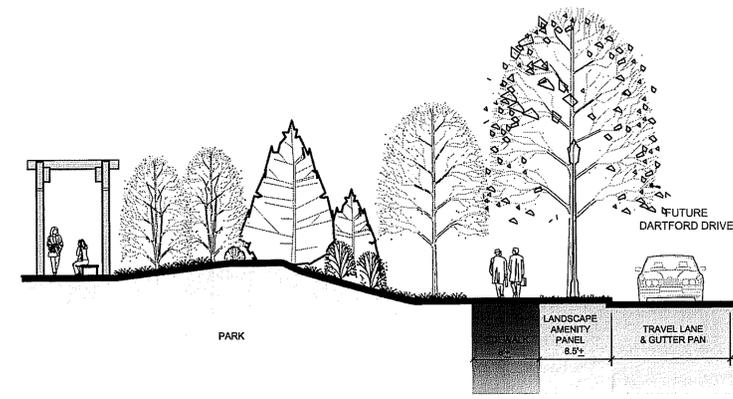
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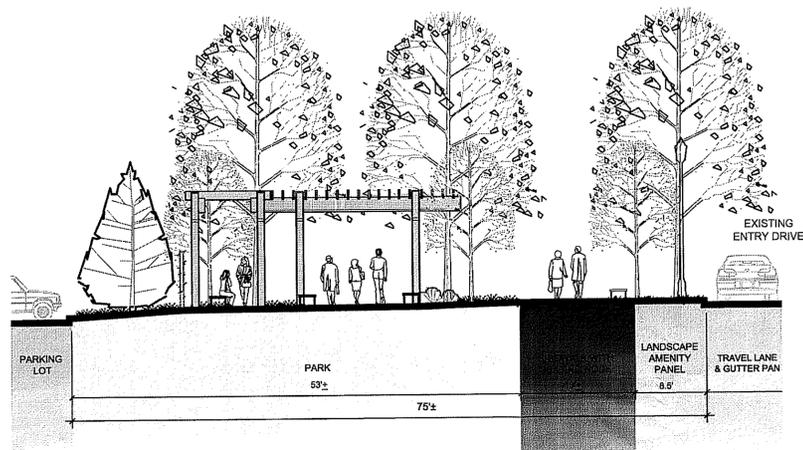
LANDSCAPE PARK LOOKING NORTH EAST



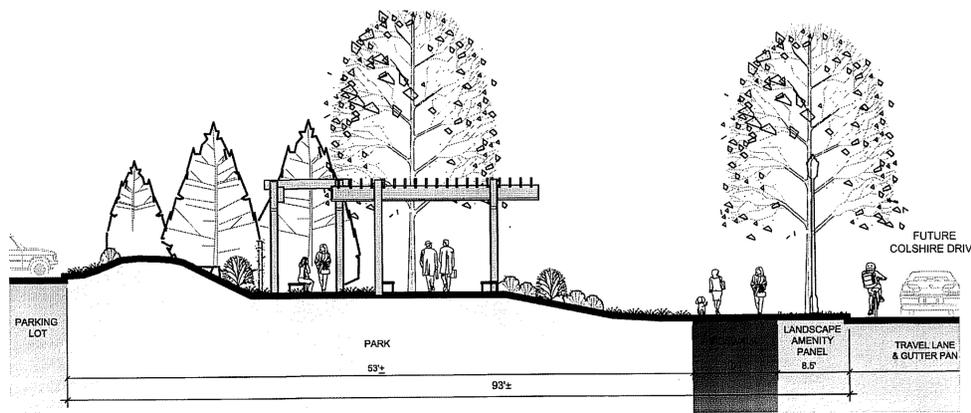
LANDSCAPE PARK ENTRY LOOKING NORTH EAST



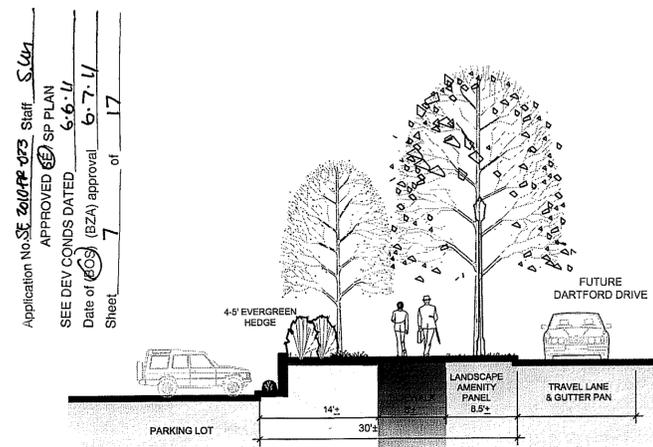
SECTION C-C SCALE: 1"=10'-0"



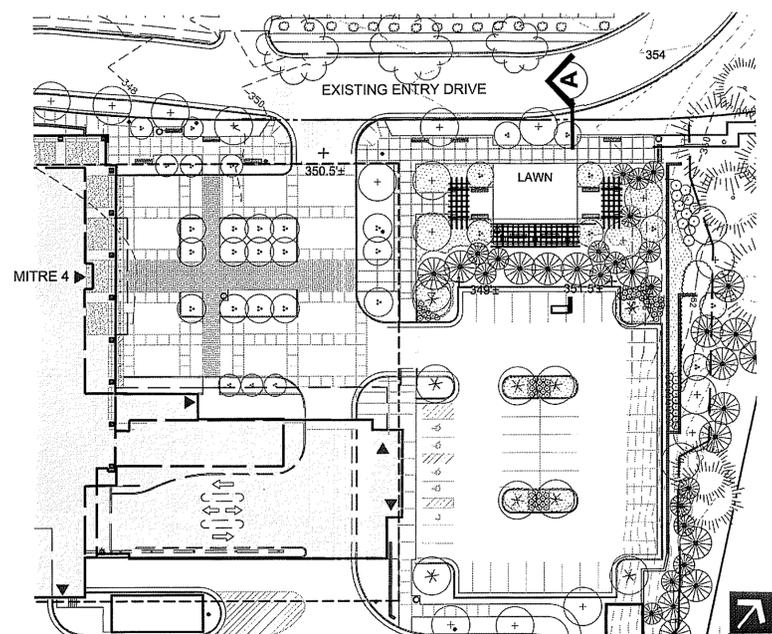
SECTION A-A SCALE: 1"=10'-0"



SECTION B-B SCALE: 1"=10'-0"

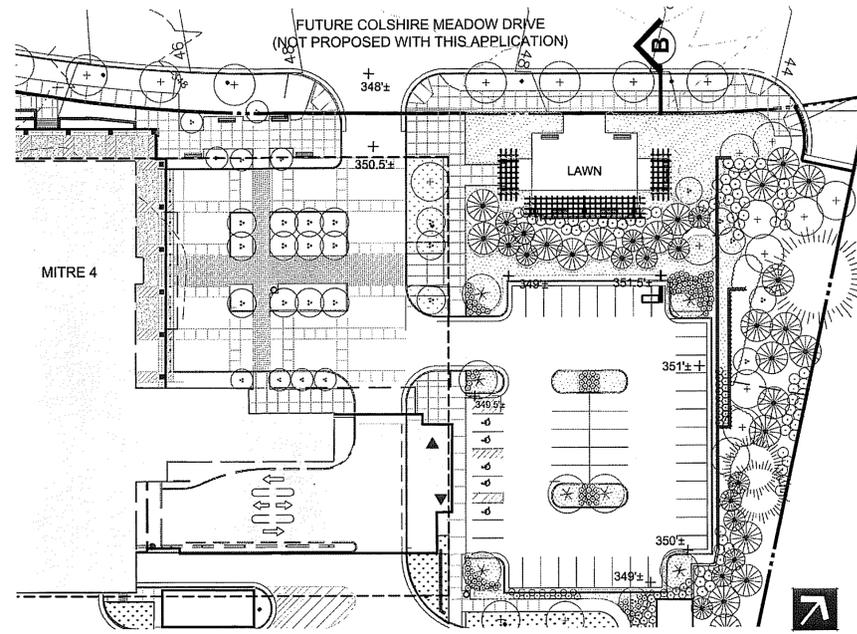


SECTION D-D SCALE: 1"=10'-0"



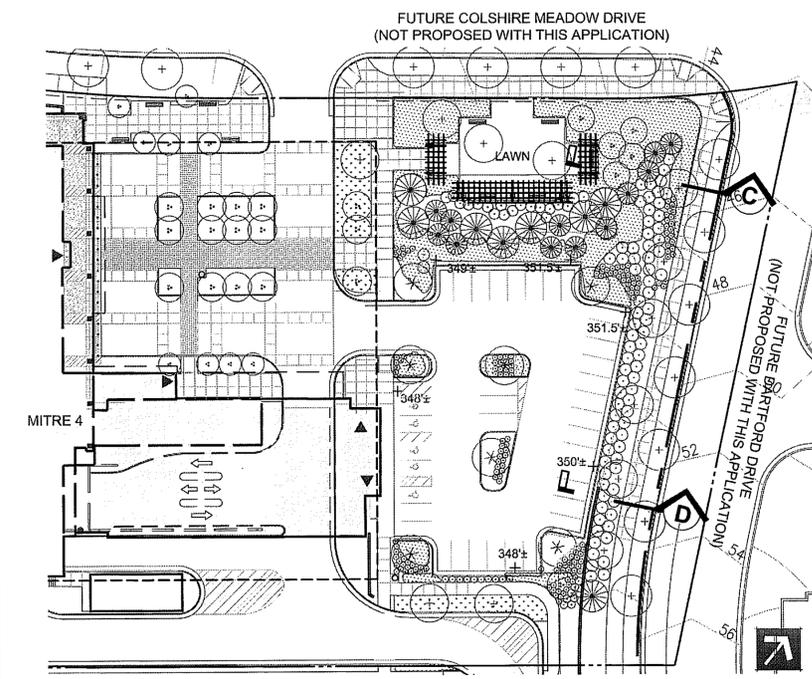
KEY MAP SCALE: 1"=40'-0

PROPOSED CONDITION



KEY MAP SCALE: 1"=40'-0

FUTURE CONDITION WITH COLSHIRE DRIVE



KEY MAP SCALE: 1"=40'-0

FUTURE CONDITION WITH DARTFORD DRIVE

NOTE:  
THESE DRAWINGS SHOWS THE INTENT, CHARACTER AND QUALITY OF THE PROPOSED DEVELOPMENT.  
FINAL DESIGN AND MATERIALS WILL BE DETERMINED PRIOR TO ISSUANCE OF BUILDING PERMIT.

SE 10-PR-023  
COUNTY PROJECT NUMBER



PLAN STATUS	
08/24/10	RESUBMISSION
10/25/10	RESUBMISSION
12/15/10	RESUBMISSION
03/15/11	RESUBMISSION
04/18/11	RESUBMISSION
05/10/11	RESUBMISSION

DATE	DESCRIPTION

DESIGN	DRAWN	CHKD

SCALE: H: AS SHOWN  
V:  

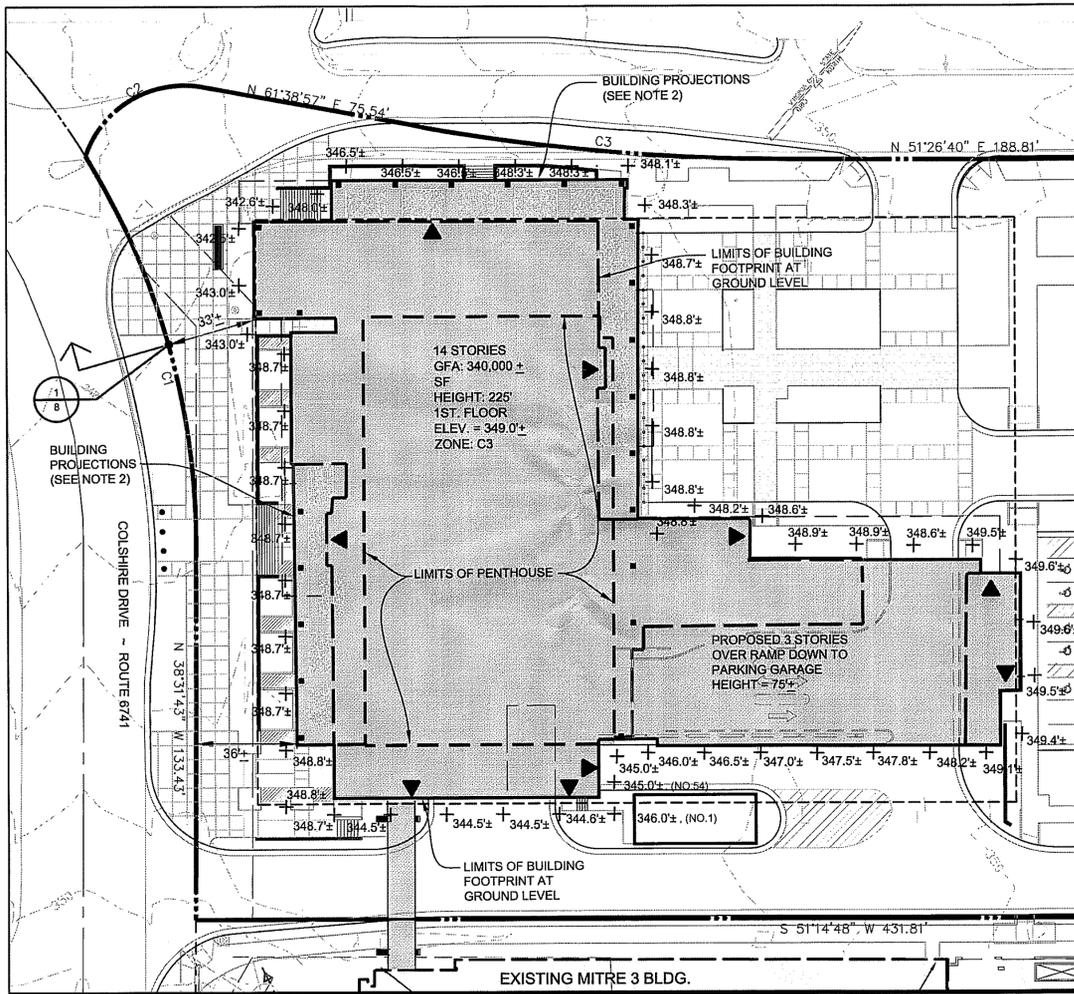
JOB No.    
DATE: JULY 30, 2010  
FILE No.    
P-07 LND-DET

FILE NAME: P:\PROJECT\10022\1-7\Planning\Plan\Special\_Excemption\P-07\_LND-DET.dwg LAYOUT NAME: 201105\_PLOTTED: Tuesday, May 10, 2011 - 2:27pm



PLAN STATUS	
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10/25/10	RESUBMISSION
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03/15/11	RESUBMISSION
04/18/11	RESUBMISSION
05/10/11	RESUBMISSION

DATE	DESCRIPTION
DESIGN	DRAWN
SCALE	H: AS SHOWN
JOB No.	
DATE	JULY 30, 2010
FILE No.	P-08 BLDG-HT



### AVERAGE GRADE PLAN

SCALE: 1" = 30'-0"

#### NOTES:

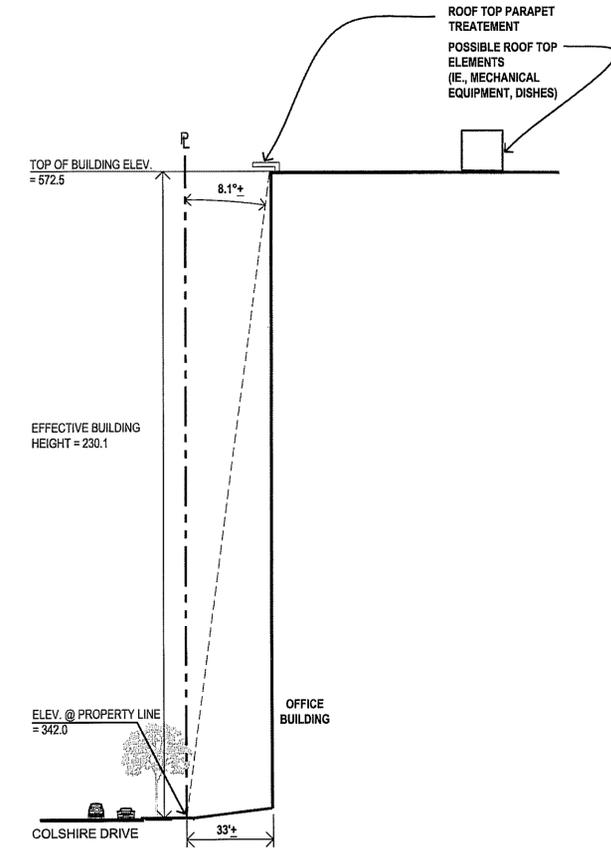
1. PROPOSED GRADES MAY VARY WITH FINAL ENGINEERING.
2. SEE BUILDING ELEVATIONS SHEET 8 FOR ADDITIONAL INFORMATION.

### AVERAGE GRADE TABULATIONS

NUMBER	GRADE ELEVATION +/-
1	346.0
2	344.6
3	344.5
4	344.5
5	344.5
6	348.8
7	348.7
8	348.7
9	348.7
10	348.7
11	348.7
12	348.7
13	348.7
14	348.7
15	348.7
16	343.0
17	343.0
18	342.5
19	342.5
20	348.0
21	346.5
22	346.5
23	346.5
24	348.3
25	348.3
26	348.1
27	348.3
28	348.7
29	348.8
30	348.8
31	348.8
32	348.8
33	348.8
34	348.8
35	348.8
36	348.2
37	348.6
38	348.9
39	348.9
40	348.6
41	349.5
42	349.6
43	349.6
44	349.5
45	349.4
46	349.1
47	348.2
48	347.8
49	347.5
50	347.0
51	346.5
52	346.0
53	345.0
54	345.0
AVERAGE=	347.5

### BUILDING HEIGHT TABULATIONS

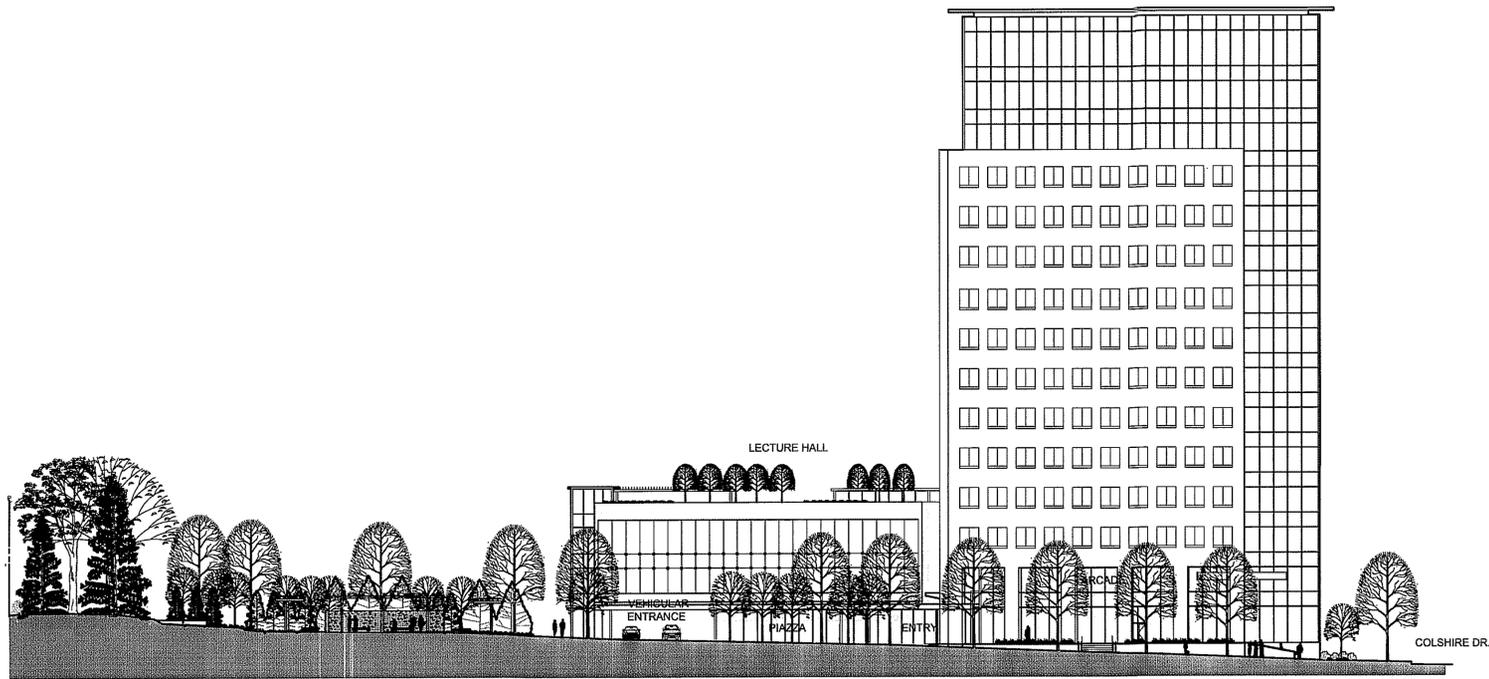
AVERAGE GRADE ELEVATION AROUND BUILDING	= 347.5
BUILDING HEIGHT	= + 225.0
TOP OF BUILDING ELEVATION	= 572.5



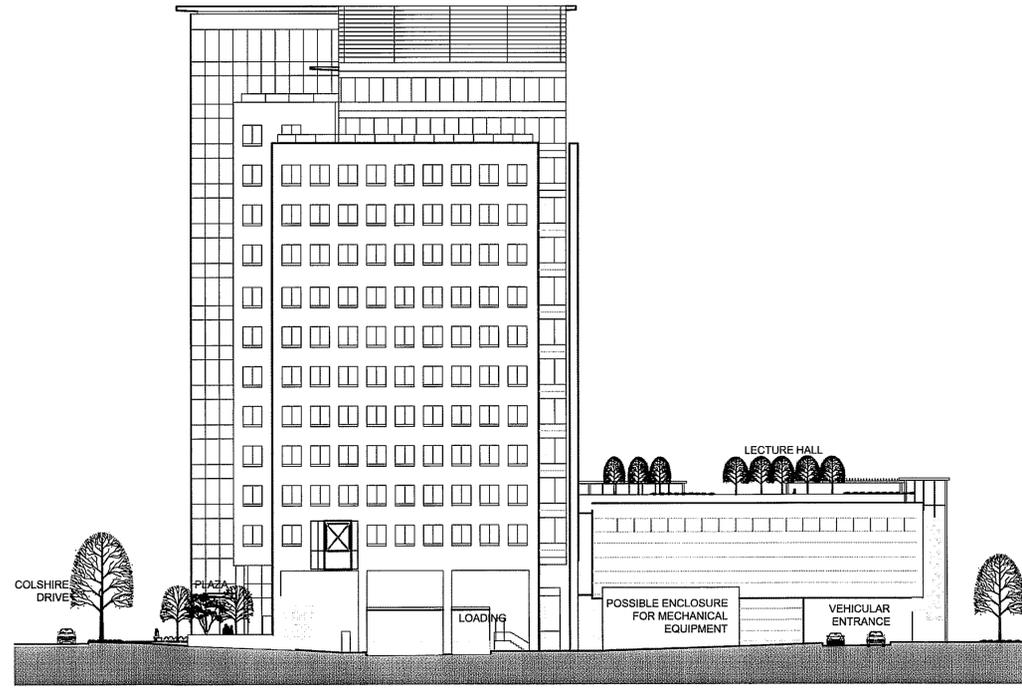
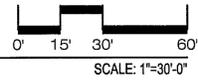
### 1 ANGLE BULK PLANE

SCALE: 1" = 30'-0"

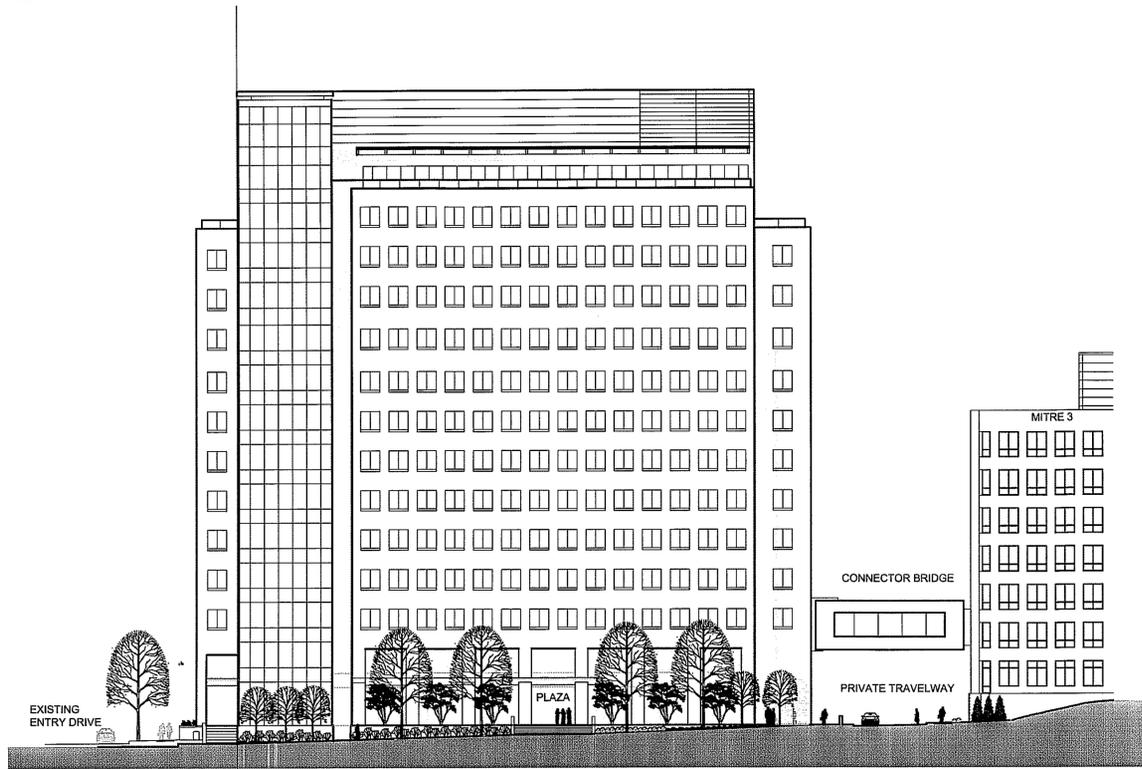
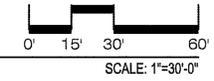
Application No. SE 10-PR-023 Staff SUN  
 APPROVED (Signature) SP PLAN  
 SEE DEV CONDS DATED 6.6.11  
 Date of (BOS) (BZA) approval 6.7.11  
 Sheet 8 of 17



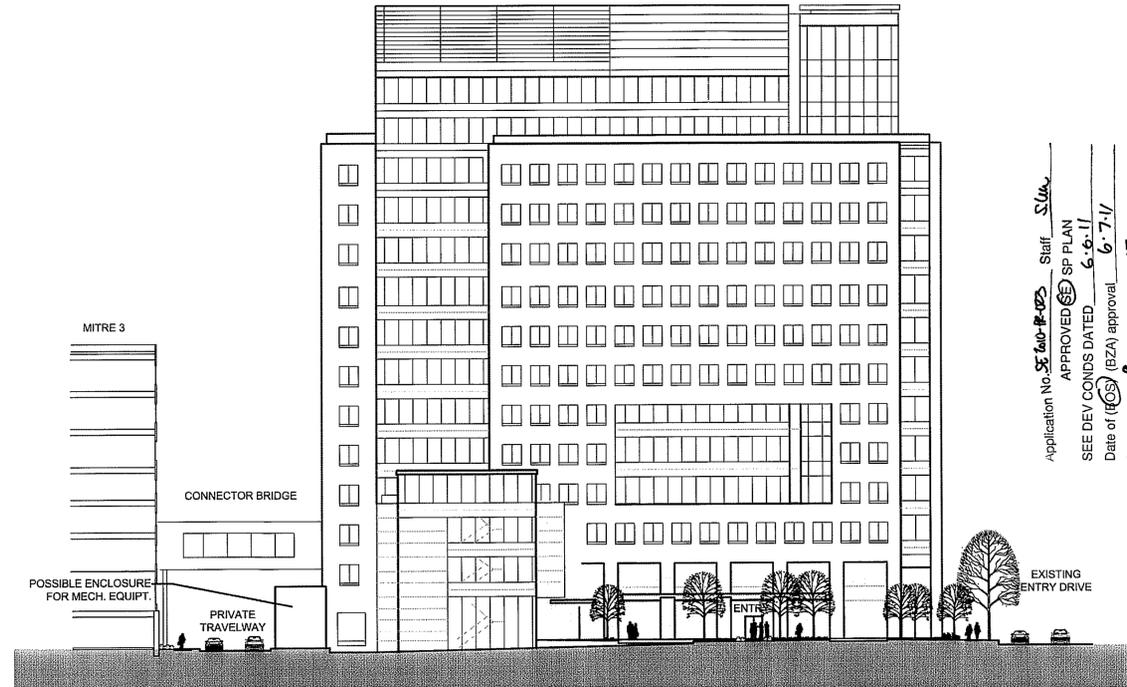
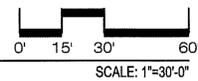
1 NORTH ELEVATION



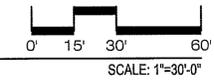
2 SOUTH ELEVATION



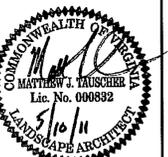
3 WEST ELEVATION



4 EAST ELEVATION



NOTE: THESE ELEVATIONS SHOW THE INTENT, CHARACTER AND QUALITY OF THE PROPOSED DEVELOPMENT. FINAL DESIGN AND MATERIALS WILL BE DETERMINED PRIOR TO ISSUANCE OF BUILDING PERMIT.

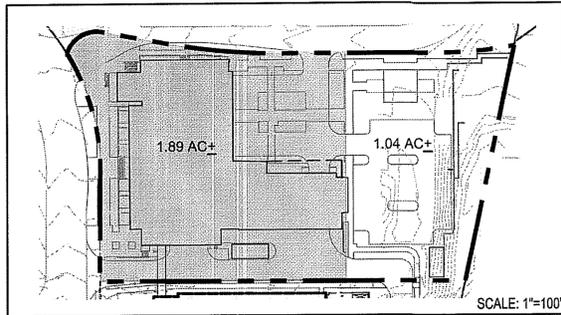


PLAN STATUS	
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10/25/10	RESUBMISSION
12/15/10	RESUBMISSION
03/15/11	RESUBMISSION
04/18/11	RESUBMISSION
05/10/11	RESUBMISSION

DATE	DESCRIPTION
DESIGN	DRAWN
SCALE	CHKD
	FR: AS SHOWN
	V:

JOB No.	
DATE:	JULY 30, 2010
FILE No.	
	P-09 ELEV
SHEET	9 OF 17

**MITRE 4**  
**LOW IMPACT DEVELOPMENT (LID) PLAN NARRATIVE**



**PROPOSED LID PLAN BOUNDARY**

**PURPOSE/OVERVIEW:**  
IN ACCORDANCE WITH THE ENVIRONMENTAL STEWARDSHIP GUIDELINES WITHIN THE COUNTY'S COMPREHENSIVE MASTER PLAN FOR THE TYSONS CORNER URBAN CENTER, THE PROPOSED LOW IMPACT DEVELOPMENT (LID) PLAN FOR THE MITRE 4 APPLICATION REDUCES STORMWATER RUNOFF VOLUME BY METHODS THAT ARE MOST APPROPRIATE FOR THIS SITE. IT SHOULD BE NOTED THAT THE COUNTY'S STORMWATER MANAGEMENT AND BEST MANAGEMENT PRACTICE (BMP) REQUIREMENTS ENFORCED BY THE PUBLIC FACILITIES MANUAL ARE SATISFIED BY THE EXISTING WET POND CONSTRUCTED BEHIND THE EXISTING MCKINLEY BUILDING EAST OF THE SITE (REFER TO SHEETS 11-17). PRIOR TO REDEVELOPMENT, THE RUNOFF FROM THE SITE CONVEYS DIRECTLY INTO SCOTT RUN WITHOUT CONTROL. THE REDEVELOPMENT OF THIS SITE CAPTURES THE FIRST INCH OF RAIN WATER FROM THE BUILDING ROOF AND PORTIONS OF THE SITE AND REUSES IT FOR THE BUILDING'S COOLING TOWER AND THROUGH THE USE OF PLANTER BEDS AND EVAPOTRANSPIRATION THROUGH PLANTS.

**LID PLAN AREA:**  
THE PROPOSED MITRE 4 OFFICE BUILDING IS THE FIRST PHASE OF DEVELOPMENT FOR THIS SITE. AT THIS TIME, A SECOND OFFICE BUILDING IS PLANNED IN THE EASTERN PORTION OF THIS SITE, WHICH WILL REQUIRE A SEPARATE REZONING APPLICATION FOR THE SITE. THE MITRE 4 PORTION OF THE SITE IS APPROXIMATELY 82,500 S.F. (1.89 ACRES), AS SHOWN ON THE PLANS FOUND ON THIS SHEET. COMPUTATIONS PROVIDED FOR THE MITRE 4 LID PLAN BELOW REFLECT THIS FIRST PHASE AREA OF THE SITE ONLY.

FOR THE PROPOSED INTERIM POCKET PARK AND SURFACE PARKING LOT IMPROVEMENTS THAT ARE WITHIN THE FUTURE PHASE (OUTSIDE THE LID PLAN BOUNDARIES), PERVIOUS PAVERS ARE PROPOSED TO PROVIDE AN INTERIM LID SOLUTION FOR THESE IMPROVEMENTS. EVEN THOUGH THE SOILS DO NOT APPEAR TO HAVE GOOD INFILTRATION RATES, SOME STORM WATER BENEFIT WILL OCCUR THROUGH THE PERVIOUS PAVERS AND BASE AGGREGATE THAT WARRANTS THEIR USE.

**PROPOSED PROGRAM:**  
THE SITE'S FIRST INCH OF RAINFALL IS CAPTURED BY THE BUILDING'S ROOF AND THE PLANTING BEDS. RAIN WATER FROM THE BUILDING ROOF IS CAPTURED, FILTERED AND CONVEYED TO AN UNDERGROUND STORAGE FACILITY (CISTERN(S)), TO COMPENSATE FOR SITE AREAS THAT ARE NOT CAPTURED (GENERALLY THESE ARE THE STREETSCAPES AND THE LOADING/SERVICE DRIVE LOCATED ALONG THE SOUTHERN BOUNDARY OF THE SITE), THE ROOF RAIN WATER STORAGE HAS BEEN OVERSIZED FOR EXTRA CAPACITY.

**ROOF RAIN WATER CAPTURE AND WATER HARVESTING:** THE ROOF AREAS CAN CAPTURE APPROXIMATELY 38,100 S.F. OF THE SITE. THIS RESULTS IN APPROXIMATELY 3,162 C.F. OF WATER FOR THE FIRST INCH OF RAINFALL (38,100 S.F. \* 0.083 FT.). APPROXIMATELY 29,475 S.F. OF THE SITE CAN NOT BE CAPTURED OR USED FOR WATER HARVESTING. APPROXIMATELY 86% OF THIS AREA IS IMPERVIOUS, RESULTING IN APPROXIMATELY 2,104 C.F. FOR THE FIRST INCH OF RAINFALL (29,475 S.F. \* 0.86 \* 0.083 FT.). THE TOTAL STORAGE PROVIDED FOR WATER HARVESTING INCLUDES BOTH VOLUMES, APPROXIMATELY 5,266 C.F. (3,162 C.F. + 2,104 C.F.).

THE PROPOSED BUILDING'S COOLING TOWER REQUIRES MAKE-UP WATER FOR ITS CONDENSERS. THE DEMANDS FOR MAKE-UP WATER ARE YEAR ROUND DUE TO THE AIR CONDITIONING REQUIREMENTS FOR THE LABS, SERVER ROOMS AND OTHER MISSION CRITICAL SPACES THAT NEED TO BE CONDITIONED 24 HOURS A DAY, 7 DAYS A WEEK, 365 DAYS A YEAR. IN ADDITION, COMFORT COOLING FOR OFFICE SPACES, CONFERENCE ROOMS, AND THE LIKE IS REQUIRED YEAR ROUND, BUT IN HIGHER DEMAND IN THE HOTTER MONTHS. WHEN AVAILABLE, CAPTURED RAIN WATER WILL BE USED FOR THE COOLING TOWER'S MAKE-UP WATER.

WE REVIEWED THE MONTHS OF THE YEAR THAT RESULT IN THE LOWEST MAKE-UP WATER REUSE DEMANDS AND THE MOST RAIN FALL AS RECORDED FROM DULLES AIRPORT (SLIGHTLY HIGHER THAN REAGAN NATIONAL AIRPORT). JANUARY HAS THE LOWEST COOLING TOWER DEMAND WHICH IS APPROXIMATELY 2,073 C.F. PER

DAY. IF THE ENTIRE STORAGE FACILITY IS FULL (5,266 C.F.), IT WOULD TAKE APPROXIMATELY 2.5 DAYS TO EMPTY THE TANK THUS MAKING ROOM FOR A NEW STORM EVENT (5,266 C.F./2.073 C.F. PER DAY). MAY HAS THE HIGHEST PRECIPITATION AND COOLING TOWER DEMAND, APPROXIMATELY 2,861 C.F. PER DAY, RESULTING IN ROUGHLY A 1.8 DAY CYCLE TO EMPTY THE STORAGE (5,266 C.F./2,861 C.F. PER DAY.)

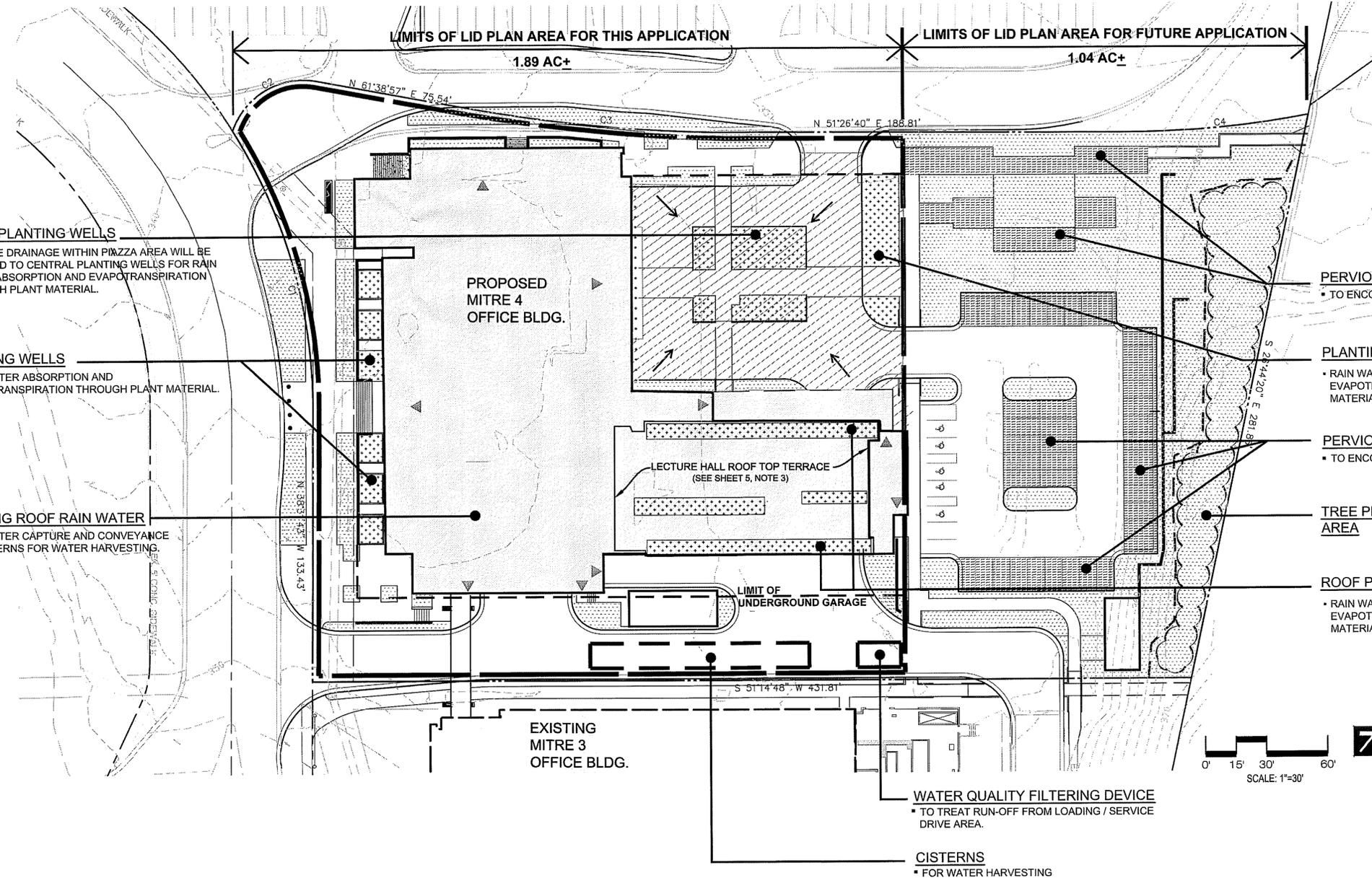
PLANTERS AND PLANTING WELLS CAPTURE RAIN WATER FOR VOLUME REDUCTION THROUGHOUT THE SITE, BUT ARE QUANTIFIED IN TWO LOCATIONS: 1. TREE WELLS IN THE PIAZZA AREA, AND 2. TREE WELL PLANTERS ADJACENT TO THE BUILDINGS ARCADE THAT FRONTS COLSHIRE DRIVE.

**PIAZZA AREA:** SURFACE DRAINAGE FROM THE PIAZZA AREA IS DESIGNED TO BE DIRECTED TO THE CENTRAL TREE WELLS. THE FIRST INCH OF RAINFALL FOR THIS AREAS IS APPROXIMATELY 1,037 C.F. (12,500 SF +/- \* 0.083 FT.). THE PROPOSED PLANTING MEDIUM (SOIL) HAS 40% VOIDS. WHEN SATURATED AFTER A RAINFALL, ONE HALF OF THE VOIDS, OR APPROXIMATELY 20% OF THE TOTAL SOIL VOLUME, TYPICALLY RETAINS WATER. THE WATER IS LOST THROUGH PLANT EVAPOTRANSPIRATION AND SURFACE EVAPORATION. TO CAPTURE THE FIRST INCH OF RAIN FALL, APPROXIMATELY 5,185 C.F. OF PLANTING MEDIUM IS REQUIRED. BASED ON THE PRELIMINARY ARCHITECTURAL DESIGN OF THE PIAZZA PLANTING WELLS, THIS VOLUME OF PLANTING MEDIUM CAN BE ACCOMMODATED. ADDITIONAL PLANTING WELLS ARE LOCATED AROUND THE PERIPHERY OF THE PIAZZA AREA. THESE PLANTERS DO NOT HAVE CONTRIBUTING DRAINAGE AREAS OTHER THAN THE RAIN FALLING ON THEM. CONSEQUENTLY, THEY WILL ADEQUATELY STORE AND LOSE THEIR FIRST ONE INCH OF RAINFALL.

**COLSHIRE DRIVE PLANTERS:** SIX PLANTING WELLS ARE PROPOSED ADJACENT TO THE BUILDING'S ARCADE FACING COLSHIRE DRIVE. THE AREA DRAINING TO THESE PLANTERS IS APPROXIMATELY 1,100 S.F.. THE FIRST INCH RESULTS IN APPROXIMATELY 91 C.F. OF RAINFALL. TO CAPTURE THE FIRST INCH OF RAIN FALL, APPROXIMATELY 455 C.F. OF PLANTING MEDIUM IS REQUIRED. BASED ON THE PRELIMINARY ARCHITECTURAL DESIGN OF THESE PLANTING WELLS, THIS VOLUME OF PLANTING MEDIUM CAN BE ACCOMMODATED.

ADDITIONAL PLANTERS ARE PROPOSED THROUGHOUT THE PROJECT, SUCH AS ON THE LECTURE HALL TERRACE, WHICH WILL PROVIDE ADDITIONAL RAIN WATER STORAGE AND EVAPOTRANSPIRATION. FOR THE PURPOSES OF THIS LID PROGRAM, THE BENEFITS OF THESE ADDITIONAL PLANTERS ARE NOT QUANTIFIED AT THIS TIME SINCE.

**LEED CREDIT 6.1 AND 6.2 COMPLIANCE:** THE STORMWATER VOLUME REDUCTION FROM THE CAPTURE AND REUSE OF THE FIRST INCH OF RAIN FALL IS SUFFICIENT TO MEET THE LEED CREDIT 6.1 STORMWATER DESIGN-QUANTITY CONTROL CRITERIA AND LEED CREDIT 6.2 STORMWATER DESIGN-WATER QUALITY CRITERIA. HOWEVER, IN ORDER TO INCREASE THE SITES WATER QUALITY MEASURES, AN ADDITIONAL WATER QUALITY FILTERING DEVICE IS PROPOSED TO TREAT THE RUN-OFF FROM THE LOADING DOCK/SERVICE DRIVE AREA.



**PIAZZA PLANTING WELLS**  
• SURFACE DRAINAGE WITHIN PIAZZA AREA WILL BE DIRECTED TO CENTRAL PLANTING WELLS FOR RAIN WATER ABSORPTION AND EVAPOTRANSPIRATION THROUGH PLANT MATERIAL.

**PLANTING WELLS**  
• RAIN WATER ABSORPTION AND EVAPOTRANSPIRATION THROUGH PLANT MATERIAL.

**BUILDING ROOF RAIN WATER**  
• RAIN WATER CAPTURE AND CONVEYANCE TO CISTERNS FOR WATER HARVESTING.

**PERVIOUS PAVER SIDEWALKS**  
• TO ENCOURAGE RAIN WATER INFILTRATION.

**PLANTING WELLS**  
• RAIN WATER ABSORPTION AND EVAPOTRANSPIRATION THROUGH PLANT MATERIAL.

**PERVIOUS PAVING PARKING SPACES**  
• TO ENCOURAGE RAIN WATER INFILTRATION.

**TREE PRESERVATION AREA**

**ROOF PLANTERS**  
• RAIN WATER ABSORPTION AND EVAPOTRANSPIRATION THROUGH PLANT MATERIAL.

**WATER QUALITY FILTERING DEVICE**  
• TO TREAT RUN-OFF FROM LOADING / SERVICE DRIVE AREA.

**CISTERNS**  
• FOR WATER HARVESTING

Application No. SE 10-PR-023 Staff SUN  
APPROVED SE SP PLAN  
SEE DEV CONDS DATED 6-6-11  
Date of BCS (BZA) approval 6-7-11  
Sheet 10 of 17

**LEGEND**

	PERVIOUS PAVERS
	PERVIOUS LANDSCAPE AREA
	PLANTING WELLS
	BUILDING ROOF RAIN WATER
	ROOF PLANTERS

**NOTES:**  
1. THE FACILITIES AND PRELIMINARY COMPUTATIONS SHOWN ARE INTENDED TO ACKNOWLEDGE AND SUPPORT THE COMPREHENSIVE PLAN'S INITIATIVES WITH REGARDS TO ENHANCED STORM WATER MANAGEMENT AND LID TECHNIQUES TO BE SHOWN ON THE FINAL ENGINEERING SITE PLAN. DURING THE PREPARATION OF THE FINAL SITE PLAN, EXACT LOCATIONS, SIZES AND FACILITIES MAY CHANGE AS LONG AS THEY MAXIMIZE THE POTENTIAL TO ACHIEVE THE GOALS OF THE COMPREHENSIVE PLAN.  
2. THIS SHEET SHALL BE USED AS SUPPLEMENTAL PURPOSES ONLY TO THE FINAL STORM WATER MANAGEMENT DESIGN PROPOSED WITH THE FINAL SITE PLAN.



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LOW IMPACT DEVELOPMENT PLAN  
**MITRE 4**  
PROVIDENCE DISTRICT, FAIRFAX COUNTY, VIRGINIA

SE 10-PR-023  
COUNTY PROJECT NUMBER



**PLAN STATUS**

08/24/10	RESUBMISSION
10/25/10	RESUBMISSION
12/15/10	RESUBMISSION
03/15/11	RESUBMISSION
04/18/11	RESUBMISSION
05/10/11	RESUBMISSION

DATE	DESCRIPTION	
DESIGN	DRAWN	CHKD
SCALE	H: 1" = 30'-0"	V:
JOB No.		
DATE:	JULY 30, 2010	
FILE No.		
	P-10 LID	
SHEET	10	OF 17

NOTES/CONDITIONS

- 1. THE APPROVAL OF THESE PLANS SHALL IN NO WAY RELIEVE THE DEVELOPER OR HIS AGENT OF ANY LEGAL RESPONSIBILITIES WHICH MAY BE REQUIRED BY THE CODE OF VIRGINIA OR ANY ORDINANCE ENACTED BY THE COUNTY OF FAIRFAX.

CURRENT/SUBSEQUENT INFORMATION REQUIRED PRIOR TO PLAN APPROVAL

Table with columns: INFORMATION, REQUIRED, NOT REQ, ID NUM, COMMENTS/SHEET NO. Lists items like SPECIAL PERMITS, SUBDIVISION PLANS, etc.

VICINITY MAP



ENGINEER'S/SURVEYOR'S CERTIFICATE

THIS PROPERTY IS IN THE NAME OF WESTGATE A VIRGINIA LIMITED PARTNERSHIP AS RECORDED IN DEED BOOK 2571 PAGE 261 OF THE LAND RECORDS OF FAIRFAX COUNTY, VA

DEM REVIEW FEE COMPUTATION

Table for DEM Review Fee Computation with columns: PLAN TYPE, SUBDIVISION PLANS (SD), SITE PLANS (SP), PUBLIC IMPROV. (PI), COUNTY USE ONLY. Includes base fees and various surcharges.

SOILS MAP/DATA

Soils map/data table with columns: SOIL ID, SERIES, PARENT MATERIAL, SUBSTRATE, SOIL DEPTH, STURDINESS, MODERATE, SEVERE, GEOTECHNICAL REPORT REQ.

DESIGNATED PLANS EXAMINER CERTIFICATE

Signature and Title of the designated plans examiner. Includes a section for 'APPROVED' with date and signature.

FIRE MARSHAL NOTES

REQUIRED FIRE FLOW TO BE DETERMINED BY FIRE PREVENTION DIVISION. AVAILABLE FIRE FLOW: GPM. SOURCE OF FIRE FLOW INFO: N/A.

SOLID WASTE STATEMENT

REFUSE COLLECTION AGENCY: TYPE & SIZE OF CONTAINERS OR EQUIPMENT: N/A. FREQUENCY OF COLLECTION: N/A.

WATER AUTHORITY NOTES

- 1. ALL WATER MAIN CONSTRUCTION SHALL COMPLY WITH THE REQUIREMENTS OF THE STANDARD SPECIFICATION AND PLANS OF FPM AND THE REQUIREMENTS OF THE FAIRFAX COUNTY PUBLIC UTILITIES DEPARTMENT.

SITE TABULATIONS (SD PLANS)

Site tabulations table for SD plans with columns: 1) SITE AREA, 2) NO. OF LOTS, 3) AREA OF LOTS, 4) AVERAGE LOT AREA, 5) AREA OF PARCEL, 6) AREA OF PARCEL.

SITE TABULATIONS (SP PLANS)

Site tabulations table for SP plans with columns: 1) AREA IN ACRES, 2) AREA OF STREET DEDICATION, 3) USE, 4) NO. OF LOTS, 5) EXISTING BUILDING GROSS FLOOR AREA, etc.

CERTIFICATE OF NO CHANGE

I HEREBY CERTIFY THAT NO CHANGES HAVE BEEN MADE THAT WOULD AFFECT THE PRIOR APPROVAL BY THE FIRE MARSHAL DATED WATER AUTHORITY DATED HEALTH DEPARTMENT DATED VDOT DATED

SHEET INDEX

- 1. COVER SHEET
2. SITE PLAN FOR S.W.M. FACILITY
3. ACCESS ROAD AND GRADING PLAN
4-6. STORM WATER DETENTION COMPUTATIONS
7,7A,7B. STORM WATER DETENTION COMPS, PROFILES AND DETAILS
8. B.M.P. CALCULATIONS AND STORM NARRATIVE
9-12. DRAINAGE DIVIDES
13-14. EROSION - SILTATION CONTROLS PHASE I & II
15-16. EROSION - SILTATION CONTROL COMPUTATIONS
16B,16C,16D. PROFFERS
16E,16F. EXISTING STORM SEWER OUTFALL IMPROVEMENTS AND COMPS.

ZONING REQUIREMENTS

Zoning requirements table with columns: 1) ZONING, 2) AVG LOT AREA, 3) MIN LOT AREA, 4) MIN LOT WIDTH, 5) MAX BUILDING HEIGHT, 6) MIN YARD REQUIREMENTS, 7) MAXIMUM FAR, 8) MAXIMUM DENSITY, 9) OPEN SPACE REQUIRED, 10) ANGLE OF BULK PLANE, 11) OVERLAY DISTRICT.

COMPUTATIONS FOR INTERIOR PARKING LOT LANDSCAPING

Table for interior parking lot landscaping with columns: AREA OF PARKING LOT, LANDSCAPING REQUIRED (% OF ABOVE), LANDSCAPING PROVIDED.

TAX MAP REFERENCE NUMBER(S)

Tax map reference table with columns: BASE #, DOUBLE CIRCLE #, LOT/PL. Includes entries for 30-3 2B B and 29-4 2B B.

SANITARY TREATMENT PLANT

Table for sanitary treatment plant with columns: DATE, AGREEMENTS, PERMITS, ETC. Includes entries for CONSTRUCTION PERMIT RECEIVED, SANITARY SEWER AGREEMENT, etc.

AGREEMENTS, PERMITS, ETC.

Table for agreements and permits with columns: DATE, AGREEMENTS, PERMITS, ETC. Includes entries for CONSTRUCTION PERMIT RECEIVED, SANITARY SEWER AGREEMENT, etc.

APPROVED

DATE BY DIRECTOR OF ENVIRONMENTAL MANAGEMENT, FAIRFAX COUNTY, VA. THIS PLAN SHALL BE IN FULL FORCE AND EFFECT FROM THE DATE OF APPROVAL. THIS APPROVAL IS NOT A COMMITMENT TO PROVIDE PUBLIC SANITARY SEWER.

McKINLEY BUILDING SITE S.W.M. FACILITY AT WESTGATE. PROJECT NUMBER: 1702-SP-05-2. COUNTY: FAIRFAX COUNTY, VIRGINIA. DISTRICT: PROVIDENCE.

Bowman CONSULTING logo and contact information: Bowman Consulting Group, Ltd., 5420 Timberloch Place, Chantilly, Virginia 20151. Phone: (703) 484-1000.

STORMWATER MANAGEMENT MITRE 4 logo and contact information: MITRE 4, PROVIDENCE DISTRICT, FAIRFAX COUNTY, VIRGINIA.

Table with columns: DATE, DESCRIPTION, DESIGN, DRAWN, CHKD. Includes entries for 08/24/10 RESUBMISSION, 10/25/10 RESUBMISSION, etc.

S.E. APPLICATION THIS SHEET IS FOR INFORMATION PURPOSES



**BMP Facility Design Calculations**

Plan Name: McKinley Site B.M.P. Facility  
 Plan Number: 1702-SP-05  
 Date: February 11, 2002  
 Engineer: Reza Hakimi

**I. Water Quality Narrative**

The site consists of 35.30 ac. of commercial/office development. A 18.40 acre developed/disturbed area will be draining into the proposed detention/BMP facility. The remaining 16.90 acre is uncontrolled. There is a 4.42 acre school site and 7.63 acre parkland offsite of the property which is naturally draining into the existing swale where the detention facility is proposed to be located. BMP/detention is also provided for this offsite area. The BMP facility will be privately maintained by the owner/developer. The site is preferred to provide 40% BMP in accordance with the Chesapeake Bay Ordinance.

**II. Watershed Information**

**Part 1: List all of the Subareas and "C" Factors used in the BMP Computations**

Subarea Designation and Description	"C"	Acres	Product
(1)	(2)	(3)	(4)
1. Johnson III (uncont.)	0.70	3.53	2.47
2. McKinley, Pierce & Future Taylor (cont.)	0.72	10.40	7.49
3. Southwest of Hayes Bldg. (cont.)	0.72	4.34	3.23
4. School (Offsite) (cont.)	0.49	4.42	2.37
5. Park (Offsite) (cont.)	0.35	7.63	2.67
6. McKinley Bldg (uncont.)	0.68	2.60	1.77
7. Park (Offsite) (cont.)	0.35	4.76	1.67
8. Future Taylor Bldg. (cont.)	0.45	3.66	1.65
9. Future Johnson I, II (uncont.)	0.80	10.77	8.62

**Part 2: Compute the Weighted Average "C" Factor for the Site**

(A) Area of the site (a) 35.30 acres

(B) Subarea Designation (1) "C" (2) Acres (3) Product (4)

1. Johnson III (uncont.)	0.70	3.53	2.47
2. McKinley, Pierce & Future Taylor (cont.)	0.72	10.40	7.49
3. Hayes (cont.)	0.72	4.34	3.23
6. McKinley (uncont.)	0.68	2.60	1.77
7. Taylor (uncont.)	0.45	3.66	1.65
5. Johnson I, II (uncont.)	0.80	10.77	8.62

(C) Weighted average "C" factor (b) Total = 25.43 (b)/(a) = (c) 0.72

**Part 3: Compute the Total Phosphorus Removal for the Site**

Subarea Designation (1)	BMP Type (2)	Removal Eff. (%) (3)	Area Ratio (4)	"C" Factor Ratio (5)	Product (6)
2.	wet	50	10.4/35.30	0.72/0.72	14.73
4.	wet	20	4.42/35.30	0.49/0.72	0.70
3.	wet	50	4.34/35.30	0.72/0.72	6.74
5.	wet	50	4.76/35.30	0.35/0.72	3.28
4.	wet	50	2.87/35.30	0.35/0.68	1.98
(b) Total =					27.43 %

**Part 4: Determine Compliance with Phosphorus Removal Requirement**

- (A) Select Requirement (for new development) (a) 40% Except Redevelopment Areas (See Below)
- Water Supply Overlay District (Ocoquan Watershed) = 50% (Fairfax County and Prince William County)
  - Chesapeake Bay Preservation Area (New Development) = 40% (Fairfax County) 50% (Prince William County)
  - Chesapeake Bay Preservation Area (Redevelopment) = (See Redevelopment Comps. Below)

**Redevelopment calc. for:**

1. Johnson III  
 "C" pre=0.63 "C" post=0.70  
 Redevelopment=[1-0.9x("C" pre/"C" post)]x100=19%  
 (See Johnson 3 pre-development map, sheet 9A of 16)
2. Johnson I & II (Future)  
 "C" pre=0.71 "C" post=0.80  
 Redevelopment=[1-0.9x("C" pre/"C" post)]x100=20.125%
- "BMP" Requirement Calc.  
 Site Area Eff. C Ratio Area Ratio Eff.
- |                             |         |           |             |          |
|-----------------------------|---------|-----------|-------------|----------|
| 2. McKinley, Pierce, Taylor | 40%     | 0.72/0.72 | 10.40/35.30 | = 11.78% |
| 1. Johnson III              | 19%     | 0.70/0.72 | 3.53/35.30  | = 1.85%  |
| 3. Hayes                    | 10%     | 0.72/0.72 | 4.34/35.30  | = 1.35%  |
| 6. McKinley                 | 40%     | 0.68/0.72 | 2.60/35.30  | = 2.78%  |
| 7. Taylor                   | 40%     | 0.45/0.72 | 3.66/35.30  | = 2.59%  |
| 8. Johnson I, II            | 20.125% | 0.80/0.72 | 10.77/35.30 | = 6.89%  |
| Total                       |         |           |             | 27.17%   |

(B) If line 3(a) 27.43% Line 4(a) 27.17% then Phosphorus removal requirement is satisfied.

**V. Storage**

**Part 7: Compute The Weighted Average "C" Factor for Each Proposed BMP Facility**

(A) List the areas to be controlled by the proposed BMP.

Subarea Designation (1)	"C" (2)	Acres (3)	Product (4)
2. McKinley, Pierce & Future Taylor	0.72	10.40	7.49
4. School @ 20% CREDIT	0.40	4.42	1.77
3. Hayes	0.72	4.34	3.23
6. Park	0.35	4.76	1.67
8. Park	0.35	2.87	1.09

(B) (a) 23.25  
 (b) 15.96  
 (C) Weighted average "C" factor (b)/(a) = (c) 0.60

**Part 8: Determine the Storage Required for Each Proposed Facility**

\*\* (A) Extended Detention Dry Pond  
 Chart A6-40 value (Appendix 4-3) for BMP storage per acre [(4375 x "C") - 875] or [31.25 x %imp.] = (a) 1,730 CU FT./AC.

Design 1 (48 hour drawdown)  
 Line 7(a) 23.25 Line 8(a) 1,730 = 40,688 cf

(B) Wet Pond  
 Volume of runoff per acre from mean storm [1452 x "C"] = 1452 x Line 7(a) = (b) 871.20 cf/ac

Design 1 (2.5 x Volume of runoff from mean storm event in wet storage with extended detention above the permanent pool)  
 Wet Storage 2.5 x Line 7(a) x Line 8(b) = cf  
 Extended Detention Line 7(a) x Line 8(b) = cf

\* Design 2 (4.0 x Volume of runoff from mean storm).  
 4.0 x Line 7(a) 23.25 x Line 8(b) 871.20 = 81021.60 cf

- (C) Infiltration Trench
- Design 1 (0.50 inch per impervious acre) 0.50 x 36.30 x (% imp.) x Line 7(a) = cf
  - Design 2 (1.0 inch per impervious acre) 1.0 x 36.30 x (% imp.) x Line 7(a) = cf
  - Design 3 (2-year 2-hour storm) (2.0/12) x 43,560 x "C" x Line 7(a) = cf

\* Wet storage available per ac built (see this sheet for storage calc.) = 81,264 cf  
 \*\* Dry storage of 46,196 cf is also provided @ elevation 316.44 ft (see as built shown on this sheet)

**VI. Orifice Characteristics**

**Part 9: Determine The Required Orifice Size for Each Extended Detention Facility**

- (A) BMP storage requirement (S) from Part 8. (a) 46,196 cf\*\*
- (B) Maximum Head (h) at the required BMP storage from the elevation-storage curve for the facility. (b) 2.24
- (C) Peak outflow rate (Qp) at the maximum head for a drawdown time of 48 hrs. [Qp = S/(0.5 x 3600 x 48)]  
 0.0000116 x Line 9(a) 46,196 = (c) 0.53
- (D) Required orifice area (A) [A = Qp / (0.6 x (64.4 x h)<sup>0.5</sup>)]  
 Line 9 (c) 0.53 / (0.6 x (64.4 x Line 9(b) 2.24)<sup>0.5</sup>) = (d) 0.0735 sq ft  
 Per as built 6.5" Dia. Orifice provided @ elev. 316.24
- (E) Diameter of a circular orifice.  
 2.0 x (Line 9(d) 0.0735 / 3.1415927)<sup>0.5</sup> = (e) 0.3059"  
 = 3.67 inch required  
 use 3.5" dia. orifice

NOTE: ALL NUMBERS IN PART 9 ARE FROM AS-BUILT DATA BELOW!

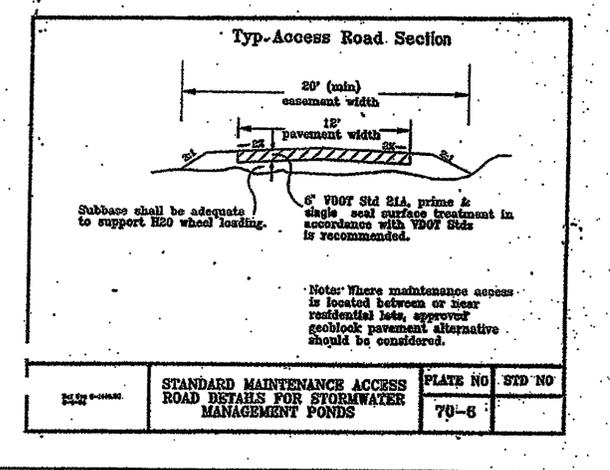
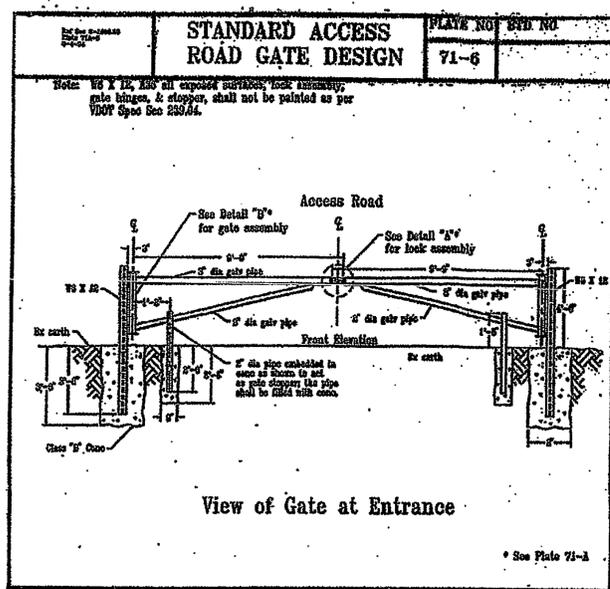
**AS BUILT VOLUMES  
 MCKINLEY SWM/BMP FACILITY**

ELEV.	AREA	AREA	DEPTH	VOLUME	Total (cf) VOLUME
310.0	1,778	0	0	0	0
312.0	12,711	7,244	2'	14,488	14,488
314.0	16,076	14,394	2'	28,788	43,276
316.0	18,238	17,157	2'	34,314	77,590
316.2	18,500	18,369	0.2'	3,674	81,264

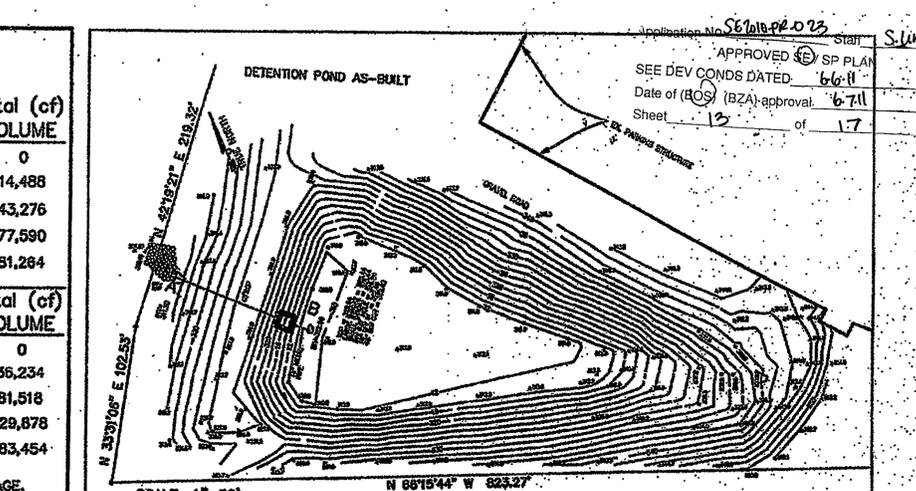
AS BUILT ELEVATION OF 316.24 WILL YIELD 81,264 CF OF WET STORAGE.

ELEV.	AREA	AREA	DEPTH	VOLUME	Total (cf) VOLUME
316.2	18,500	0	0	0	0
318.0	21,760	20,130	1.5'	36,234	36,234
320.0	23,525	22,642	2'	45,284	81,518
322.0	25,430	24,180	2'	48,360	129,878
324.0	28,146	26,788	2'	53,576	183,454

AS BUILT ELEVATION OF 318.44 WILL YIELD 46,196 CF OF DRY EXTENDED STORAGE.



S.E. APPLICATION THIS SHEET IS FOR INFORMATION PURPOSES



**STORM DRAINAGE NARRATIVE**

**LOCATION**  
 THE SITE IS LOCATED ON THE SOUTH SIDE OF ROUTE #123, DOLLEY MADISON BOULEVARD, BETWEEN COL SHIRE DRIVE AND THE FAIRFAX COUNTY PARK AUTHORITY PROPERTY. STORM WATER RUNOFF FROM THE SITE DISCHARGES INTO SCOTT'S RUN ABOVE (SOUTH) OF ROUTE #123 AND DRAINS VIA SCOTT'S RUN NORTHEAST UNDER DOLLEY MADISON BOULEVARD, ROUTE #123, UNDER THE DULLES AIRPORT ACCESS ROAD, THRU THE MCLAN ARBA AND FINALLY INTO THE POTOMAC RIVER.

**STORM WATER DETENTION/DRAINAGE**  
 THE STORM WATER MANAGEMENT FACILITY IS LOCATED IN AN EXISTING DRAINAGE SWALE AT THE REAR OF THE MCKINLEY SITE ADJACENT TO THE SCOTT'S RUN FLOOD PLAIN. IT IS A WET POND FACILITY WHICH WILL BE PRIVATELY MAINTAINED. THE STORAGE VOLUME OF THE DETENTION FACILITY A PERMANENT POOL ELEVATION OF 316.20 IS 81,264 CF. AT B.M.P. ELEVATION OF 318.44 IS 44,666 CF. 2 YEAR PEAK DISCHARGE OF 8.18 CFS @ ELEVATION 321.34, AND 10 YEAR PEAK DISCHARGE OF 30.81 CFS @ ELEVATION 324.04. A COMPARISON OF THE PRE AND POST DEVELOPMENT RUNOFF IS CALCULATED AS FOLLOWS:

**10 YR. STORM**  
 PRE-DEV. RUNOFF = 207.00 CFS  
 POST-DEV. RUNOFF = 186.81 CFS

**2 YR. STORM**  
 PRE-DEV. RUNOFF = 84.0 CFS  
 POST-DEV. RUNOFF = 82.18 CFS

**COMPARISON**  
 10 YEAR STORM = 20.19 CFS REDUCTION  
 2 YEAR STORM = 1.82 CFS REDUCTION

**NOTE:**  
 SEE SHEET 15, 15A, 15B OF 26 FOR OVERALL STORM WATER DETENTION CALCULATIONS. ALTHOUGH NOT SHOWN IN THE CALCULATIONS, A SIMILAR REDUCTION IN THE 100 YEAR STORM DISCHARGE IS ANTICIPATED.

**OUTFALL ADEQUACY**  
 STRUCTURE A IS LOCATED AT THE LOWER END OF THE STORM SEWER PIPE OUTLET AT THE STORM WATER DETENTION FACILITY. STRUCTURE A OUTFALLS INTO AN EXISTING BED AND BANKS OUTLET LOCATED AT THE EDGE OF THE SCOTT'S RUN FLOOD PLAIN WHERE A GROUDED RIP RAP DITCH OF 25 LINEAR FEET HAS BEEN PROVIDED TO TRANSITION AND PROTECT AGAINST EROSION.

THE OUTFALL VELOCITY AT STRUCTURE A IS 12.8 FPS AT A DISCHARGE OF 30.81 CFS. THE RECEIVING DITCH IS A 3' BOTTOM WITH 2:1 SIDE SLOPES LINED WITH GROUDED RIP RAP. IT HAS A CAPACITY OF 46.81 CFS AT A DEPTH OF 0.75' AND A VELOCITY OF 8.11 FPS. THIS TRANSITIONS INTO A 4' BOTTOM DITCH WITH 2:1 SIDE SLOPES LINED WITH CLASS II RIP RAP WHICH HAS A CAPACITY OF 33.88 CFS AT A DEPTH OF 0.75' AND A VELOCITY OF 7.46 FPS (SEE SHEET 15 OF 26 FOR COMPUTATIONS). THIS IS NON-EROSIVE AND WILL NOT ADVERSELY AFFECT THE EXISTING BED AND BANKS OF THE CHANNEL.

THE 100 YEAR STORM (OVERFLOW) AT THE STORM DETENTION FACILITY IS DISCHARGED THRU THE EMERGENCY SPILLWAY AT A MAXIMUM HIGH WATER ELEVATION OF 325.81 WHICH IS APPROX. 20' BELOW THE LOWEST POINT OF THE PARKING FUTURE AREA, AND 39.20' BELOW THE CELLAR ELEVATION OF THE FUTURE MCKINLEY BUILDING. THE BUILDING WILL NOT BE FLOODED BY THE 100 YEAR STORM AS IT FOLLOWS THE PATH OF OVERLAND FLOW THRU THE SITE AND DETENTION FACILITY.

ONCE THE ABOVE INFORMATION IS OBTAINED THE OUTFALL FROM THE SITE (AT STRUCTURE A) WHICH DISCHARGES INTO THE EXISTING FLOOD PLAIN, IS ASSESSABLE AND WILL HAVE NO ADVERSE IMPACT ON THE EXISTING CHANNEL. THE RIP RAP LINED DITCH IS PROPOSED ALONG THE FLOOD PLAIN AT THE SUBMERSE POINT AT STRUCTURE A CLASS II RIP RAP PROTECTION IS PROPOSED TO REDUCE VELOCITY.

REVISION NO.	DATE	DESCRIPTION	APPROVED BY
1	10-09-01	AS SHOWN	
2	10/25/10	RESUBMISSION	
3	12/15/10	RESUBMISSION	
4	03/15/11	RESUBMISSION	
5	04/18/11	RESUBMISSION	
6	05/19/11	RESUBMISSION	

DATE: JULY 30, 2010  
 FILE NO. PP-1801

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MCKINLEY SITE B.M.P. FACILITY  
 PROVIDENCE DISTRICT, VIRGINIA  
 FAIRFAX COUNTY, VIRGINIA  
 BMP FACILITY DESIGN CALCULATIONS/DRAINAGE NARRATIVE

SE 10-PR-023  
 COUNTY PROJECT NUMBER

COMPREHENSIVE HEALTH OF THE POTOMAC RIVER  
 MATTHEW P. HANSEN  
 No. 0000832  
 4/18/11  
 LAURENCE W. APPELBY  
 5/19/11

DATE DESCRIPTION  
 DESIGN DRAWN CHKD  
 SCALE H: N.T.S.  
 V:  
 JOB No.  
 DATE: JULY 30, 2010  
 FILE No.  
 P-10C SWM  
 SHEET 13 OF 17

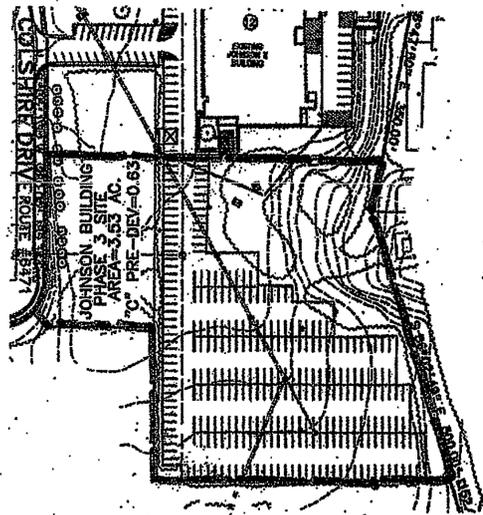
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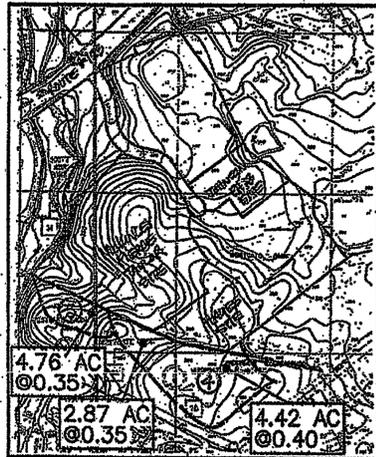
STORMWATER MANAGEMENT  
 MITRE 4  
 PROVIDENCE DISTRICT, VIRGINIA  
 FAIRFAX COUNTY, VIRGINIA

THIS SHEET FOR B.M.P. PURPOSES ONLY!





MAP SHOWING PRE-DEVELOPMENT CONDITIONS OF JOHNSON BUILDING PHASE 3 SITE  
SCALE: 1"=100'

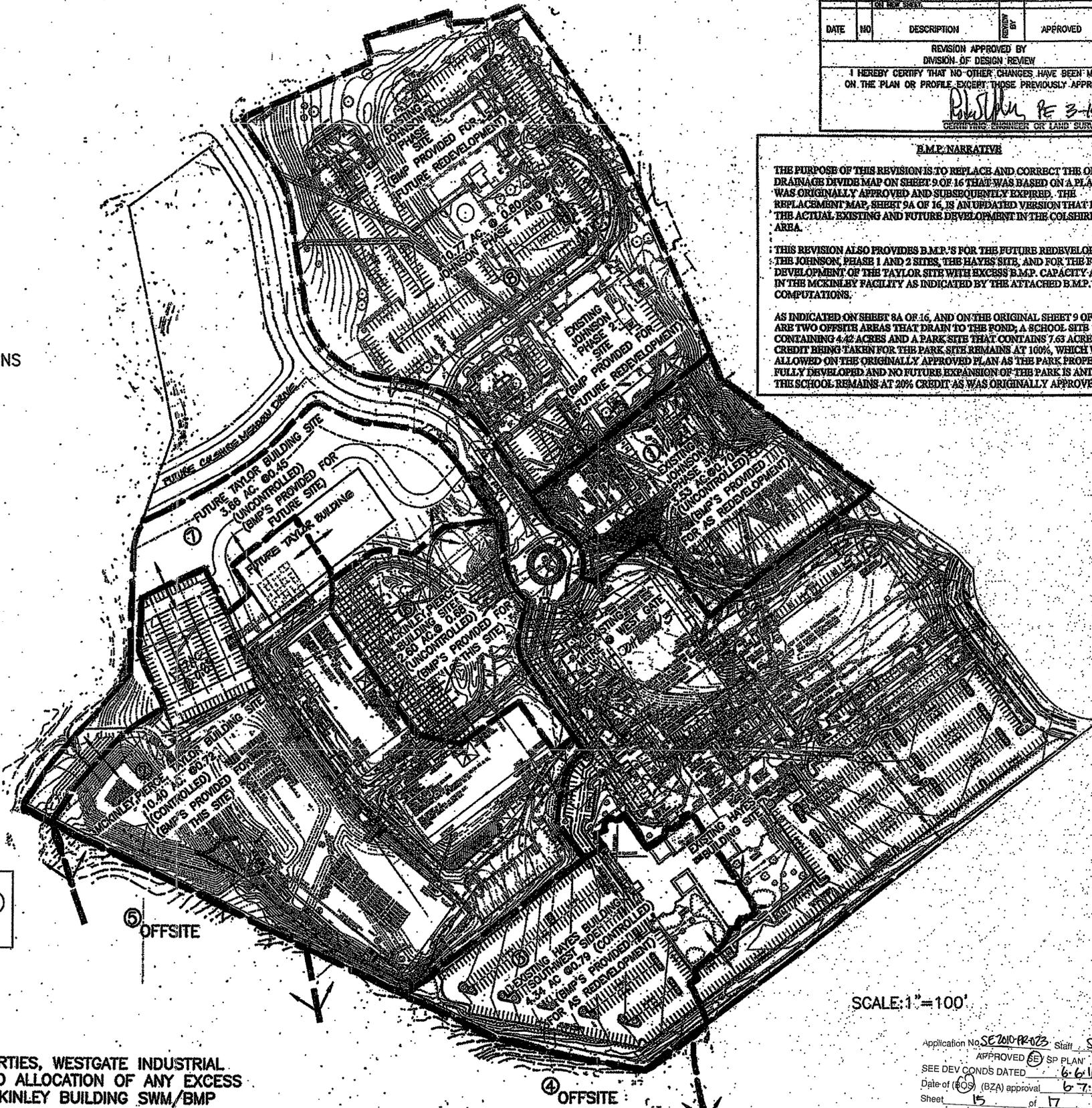


OFFSITE DRAINAGE DIVIDE MAP  
SCALE: 1"=500'

- AREA ④ - 2.87 AC. (PARK) @ 0.35 (100% CREDIT)  
4.42 AC. (SCHOOL) @ 0.40 (20% CREDIT)
- AREA ⑤ - 4.76 AC. (PARK) @ 0.35 (100% CREDIT)

NOTE: THE OWNERS WEST\*GROUP INC., OF THESE PROPERTIES, WESTGATE INDUSTRIAL PARK, RESERVES THE RIGHT FOR FUTURE USE AND ALLOCATION OF ANY EXCESS B.M.P.'S AND STORM WATER DETENTION IN THE MCKINLEY BUILDING SWM/BMP FACILITY. (FX.CO.#1702-SP-05).

S.E. APPLICATION THIS SHEET IS FOR INFORMATION PURPOSES



DATE	NO.	DESCRIPTION	REVISION BY	APPROVED	DATE
10/08/01	1	HOUSE B.M.P. DRAINAGE DIVIDES ON MAP SHEET			

REVISION APPROVED BY  
DIVISION OF DESIGN REVIEW

I HEREBY CERTIFY THAT NO OTHER CHANGES HAVE BEEN MADE ON THE PLAN OR PROFILE EXCEPT THOSE PREVIOUSLY APPROVED.

*[Signature]* PE 3-14-02  
CERTIFYING ENGINEER OR LAND SURVEYOR

**B.M.P. NARRATIVE**

THE PURPOSE OF THIS REVISION IS TO REPLACE AND CORRECT THE OLD B.M.P. DRAINAGE DIVIDE MAP ON SHEET 9 OF 16 THAT WAS BASED ON A PLAN WHICH WAS ORIGINALLY APPROVED AND SUBSEQUENTLY EXPIRED. THE REPLACEMENT MAP, SHEET 9A OF 16, IS AN UPDATED VERSION THAT REFLECTS THE ACTUAL EXISTING AND FUTURE DEVELOPMENT IN THE COLSHIRE DRIVE AREA.

THIS REVISION ALSO PROVIDES B.M.P.'S FOR THE FUTURE REDEVELOPMENT OF THE JOHNSON, PHASE 1 AND 2 SITES, THE HAYES SITE, AND FOR THE FUTURE DEVELOPMENT OF THE TAYLOR SITE WITH EXCESS B.M.P. CAPACITY AVAILABLE IN THE MCKINLEY FACILITY AS INDICATED BY THE ATTACHED B.M.P. COMPUTATIONS.

AS INDICATED ON SHEET 8A OF 16, AND ON THE ORIGINAL SHEET 9 OF 16, THERE ARE TWO OFFSITE AREAS THAT DRAIN TO THE POND, A SCHOOL SITE CONTAINING 4.42 ACRES AND A PARK SITE THAT CONTAINS 7.63 ACRES. THE CREDIT BEING TAKEN FOR THE PARK SITE REMAINS AT 100%, WHICH WAS ALLOWED ON THE ORIGINALLY APPROVED PLAN AS THE PARK PROPERTY WAS FULLY DEVELOPED AND NO FUTURE EXPANSION OF THE PARK IS ANTICIPATED. THE SCHOOL REMAINS AT 20% CREDIT AS WAS ORIGINALLY APPROVED.

Huntley, Nyce & Associates, Ltd.  
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FAIRFAX, VIRGINIA 22033  
703-660-3660

4510 HOSSELL BRANCH PARKWAY  
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703-298-0148 FAX 703-298-0861



MCKINLEY SITE B.M.P. FACILITY  
PROVIDENCE DISTRICT,  
FAIRFAX COUNTY, VIRGINIA

OVERALL B.M.P. DRAINAGE DIVIDE MAP

SCALE: AS SHOWN

DATE: 10-09-01

REVISIONS:

DATE	DESCRIPTION
08/24/10	RESUBMISSION
10/25/10	RESUBMISSION
12/15/10	RESUBMISSION
03/15/11	RESUBMISSION
04/19/11	RESUBMISSION
05/16/11	RESUBMISSION

DESIGN DRAWN CHKD  
SCALE H: N.T.S.  
V:

JOB NO.  
DATE: JULY 30, 2010  
FILE NO.  
PP-1801

SHEET 9A OF 16

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STORMWATER MANAGEMENT  
MITRE 4  
PROVIDENCE DISTRICT, FAIRFAX COUNTY, VIRGINIA

SE 10-PR-023  
COUNTY PROJECT NUMBER



DATE	DESCRIPTION
08/24/10	RESUBMISSION
10/25/10	RESUBMISSION
12/15/10	RESUBMISSION
03/15/11	RESUBMISSION
04/19/11	RESUBMISSION
05/16/11	RESUBMISSION

DESIGN DRAWN CHKD  
SCALE H: N.T.S.  
V:

JOB NO.  
DATE: JULY 30, 2010  
FILE NO.  
PP-1801

SHEET 15 OF 17

**STORMWATER MANAGEMENT NARRATIVE**

STORMWATER MANAGEMENT (DETENTION) REQUIREMENTS FOR THE SUBJECT SITE (JOHNSON II) ARE CURRENTLY SATISFIED VIA AN EXISTING OFFSITE POND WHICH IS LOCATED APPROXIMATELY 850 FEET SOUTH OF THE SUBJECT SITE. THE POND WAS DESIGNED AND CONSTRUCTED PER FAIRFAX COUNTY PLAN #1702-SP-005-2, APPROVED 4/23/1999, COMPLETED 5/21/2003, AND IS ENTITLED "MCKINLEY BUILDING SITE SWM FACILITY AT WESTGATE". THE SUBJECT SITE IS LOCATED WITHIN THE AREA ACCOUNTED FOR BY THE OVERALL DRAINAGE PLAN FOR THE MCKINLEY SWM FACILITY (SEE SHEET 14, INCLUDED WITH THIS SUBMISSION FOR INFORMATION ONLY). IDENTIFIED AS "SITE 3" IN "SUB AREA A" OF THE RUNOFF COMPUTATIONS, THE PLAN ASSUMES THE SUBJECT SITE TO BE DEVELOPED, AND RUNOFF FROM THE SITE IS UNCONTROLLED. ALTHOUGH THE RUNOFF FROM THE SUBJECT SITE DOES NOT DIRECTLY OUTFALL INTO THE SWM FACILITY, THE RUNOFF FLOWS GENERATED BY THE SITE ARE INCLUDED IN THE ALLOWABLE DISCHARGE COMPUTATIONS FOR THE POND. SCS HYDROLOGY WAS UTILIZED IN THE DESIGN COMPUTATIONS FOR THE POND, WITH THE ENTIRE JOHNSON II SITE BEING ANALYZED AS AN URBAN DISTRICT - COMMERCIAL AND BUSINESS, AT 85% AVERAGE IMPERVIOUSNESS WITH BOTH TYPE B AND C SOILS. THEREFORE, AS LONG AS THE AVERAGE IMPERVIOUSNESS OF THE JOHNSON II SITE REMAINS BELOW 85% IMPERVIOUSNESS, THE EXISTING MCKINLEY SWM POND SATISFIES THE SWM DETENTION REQUIREMENTS FOR THE SUBJECT SITE. AS THE PERVIOUS AREA ANALYSIS ON SHEET 17 DEMONSTRATES, THE PROPOSED IMPERVIOUS AREA IS 75%, WHICH IS LESS THAN 85%. ADDITIONAL PLAN SHEETS FROM COUNTY PLAN #1702-SP-005-2 HAVE BEEN INCLUDED WITH THIS SUBMISSION TO PROVIDE ADDITIONAL INFORMATION ON THE DESIGN OF THE MCKINLEY SWM FACILITY. SEE SHEETS 11-15.

**BMP NARRATIVE**

BEST MANAGEMENT PRACTICES (WATER QUALITY) REQUIREMENTS FOR THE SUBJECT SITE (JOHNSON II) ARE CURRENTLY SATISFIED VIA AN EXISTING OFFSITE POND WHICH IS LOCATED APPROXIMATELY 850 FEET SOUTH OF THE SUBJECT SITE. THE POND WAS DESIGNED AND CONSTRUCTED PER FAIRFAX COUNTY PLAN #1702-SP-005-2, APPROVED 4/23/1999, COMPLETED 5/21/2003, AND IS ENTITLED "MCKINLEY BUILDING SITE SWM FACILITY AT WESTGATE".

ALTHOUGH RUNOFF FROM THE SITE DOES NOT DIRECTLY OUTFALL INTO THE SWM FACILITY, THIS SITE CONDITION IS UTILIZED IN THE BMP CALCULATIONS SHOWING THE OVERALL DRAINAGE AREA IS IN CONFORMANCE WITH FAIRFAX COUNTY AND CHESAPEAKE BAY PRESERVATION AREA REQUIREMENTS. THE MCKINLEY SWM FACILITY IS A WET POND (PROVIDING FOUR TIMES THE VOLUME OF RUNOFF FROM THE MEAN STORM) WITH DRY EXTENDED STORAGE PROVIDED ABOVE THE PERMANENT POOL ELEVATION. THIS DESIGN ALLOWED FOR THE UTILIZATION OF A 50% PHOSPHOROUS REMOVAL EFFICIENCY RATE IN THE DESIGN COMPUTATIONS. SINCE THE JOHNSON II SITE IS UNCONTROLLED, BMP IS PROVIDED VIA "CREDIT" OBTAINED BY THE TREATMENT OF THOSE AREAS WHICH DO DRAIN TO THE POND AT A HIGHER PHOSPHOROUS REMOVAL RATE THAN REQUIRED. THE SUBJECT SITE IS LOCATED WITHIN THE AREA COVERED BY THE OVERALL DRAINAGE PLAN FOR THE MCKINLEY SWM FACILITY (SEE SHEET 15, INCLUDED WITH THIS SUBMISSION FOR INFORMATION ONLY). IDENTIFIED AS "SUB AREA B" (FUTURE JOHNSON I AND II) OF THE BMP COMPUTATIONS, THE PLAN ASSUMES THE SITE IS TO BE REDEVELOPED, AND RUNOFF FROM THE SITE IS UNCONTROLLED. THE JOHNSON II SITE IS ASSUMED TO HAVE AN EXISTING C-VALUE OF 0.71 WITH A REDEVELOPED C-VALUE OF 0.80 AND A REQUIRED PHOSPHOROUS REMOVAL EFFICIENCY OF 20.125%.

THE BMP REQUIREMENT COMPUTATIONS FOR THE JOHNSON I AND JOHNSON II SITES SHOWN ON SHEET 17 ARE BASED ON THE PFM'S (IN EFFECT IN 1999) REDEVELOPMENT EQUATION WHICH USED C(PRE) AND C(POST). THE TOTAL REQUIRED PHOSPHOROUS REMOVAL UNDER THAT METHODOLOGY IS SHOWN TO BE 27.17%. THE CURRENT REDEVELOPMENT FORMULA (PFM SECTION 6-401.2B) UTILIZES I(PRE) AND I(POST), WHERE "I" IS THE PERCENT IMPERVIOUS, AS OPPOSED TO C-FACTOR. THE REDEVELOPMENT COMPUTATIONS HAVE BEEN REVISED (SEE SHEET 17) TO REFLECT THE USE OF "I" INSTEAD OF "C". FOR THE JOHNSON I AND JOHNSON II SITES, AN IMPERVIOUS AREA ANALYSIS WAS PERFORMED. THE EXHIBITS ON SHEET 17 SHOW THAT THE EXISTING IMPERVIOUS PERCENTAGE FOR JOHNSON I AND II IS 65%. THE PROPOSED IMPERVIOUS PERCENTAGE FOR THE JOHNSON I AND II SITES IS BASED UPON THE FUTURE PROPOSED REDEVELOPMENT ON THE JOHNSON II (SUBJECT) SITE AND IS 58% IMPERVIOUS. USING I(PRE) OF 55% AND I(POST) OF 58% DECREASES THE REQUIRED PHOSPHOROUS REMOVAL PERCENTAGE FOR THE JOHNSON I AND II SITES FROM 6.89% TO 4.04%. THIS CHANGES THE TOTAL REQUIRED PHOSPHOROUS REMOVAL PERCENTAGE FROM 27.17% TO 25.08%. SINCE THE ACTUAL PHOSPHOROUS REMOVAL PERCENTAGE PROVIDED BY THE MCKINLEY POND IS 27.43% (>25.08%), THE SITE WILL BE IN CONFORMANCE WITH THE MCKINLEY SWM FACILITY DESIGN AND ADEQUATE WATER QUALITY CONTROL REQUIREMENTS SET FORTH BY FAIRFAX COUNTY.

IT IS THE OPINION OF BOWMAN CONSULTING THAT BMP REQUIREMENTS HAVE BEEN SATISFIED AND ARE IN COMPLIANCE WITH THE COUNTY REGULATIONS AND PROFFER CONDITIONS. ADDITIONAL PLAN SHEETS FROM THE #1702-SP-005-2 HAVE BEEN INCLUDED WITH THIS SUBMISSION TO PROVIDE ADDITIONAL INFORMATION ON THE DESIGN OF THE MCKINLEY SWM FACILITY. SEE SHEETS 11-15.

**OUTFALL NARRATIVE**

**DESCRIPTION**  
THE SUBJECT SITE IS LOCATED IN TYSONS CORNER, SOUTH OF ROUTE 123, AND IS ADDRESSED 7598 COLSHIRE DRIVE. THE PROPERTY IS IDENTIFIED ON THE FAIRFAX COUNTY TAX ASSESSMENT MAPS AS 30-3-(28)-04A1. THE SUBJECT PROPERTY IS BORDERED BY COLSHIRE DRIVE TO THE WEST, ROUTE 123 TO THE NORTH, EXISTING OFFICE BUILDINGS TO THE SOUTH (ZONED C-3), AND EXISTING MULTI-FAMILY RESIDENTIAL BUILDINGS TO THE EAST (ZONED R-20). VEHICULAR ACCESS TO THE SITE IS PROVIDED VIA AN EXISTING ENTRANCE OFF OF COLSHIRE DRIVE. THE PRESENT DEVELOPMENT ON THE SITE CONSISTS OF EXISTING OFFICE BUILDINGS AND SURFACE PARKING LOTS.

PER THE "MINIMUM STORMWATER INFORMATION FOR REZONING, SPECIAL EXCEPTION, SPECIAL PERMIT AND DEVELOPMENT PLAN APPLICATIONS" CHECKLIST, THE SITE'S STORM OUTFALL MUST BE DESCRIBED DOWNSTREAM TO A POINT WHICH HAS A DRAINAGE AREA OF AT LEAST ONE SQUARE MILE (640 ACRES). STORMWATER LEAVES THE SUBJECT SITE VIA AN EXISTING CLOSED CONDUIT SYSTEM THAT RUNS UNDER COLSHIRE DRIVE AND RUNS IN A NORTHWESTERLY DIRECTION TOWARDS ROUTE 123. SOUTH OF ROUTE 123, THE EXISTING CLOSED CONDUIT SYSTEM CROSSES COLSHIRE DRIVE IN A 48" RCP AND THEN DAYLIGHTS INTO SCOTTS RUN. FROM THIS POINT, SCOTTS RUN GENERALLY FLOWS NORTH AND IS A NATURAL CHANNEL, WITH SANDY/GRAVELLY CHANNEL BOTTOM AND HEAVILY VEGETATED CHANNEL BANKS. AS SHOWN ON THE OUTFALL MAP ON THIS SHEET, SCOTTS RUN CONTINUES NORTH, CROSSES UNDER THE DULLES TOLL ROAD, AND THEN PARALLELS THE BELTWAY TO POINT 'X'. AS SHOWN ON THE OUTFALL MAP, THE DRAINAGE AREA AT POINT 'X' IS 705 ACRES (> 640 ACRES). THEREFORE, THE ABOVE OUTFALL DESCRIPTION SATISFIES THE REQUIREMENTS OF THE SWM CHECKLIST.

**PFM REQUIREMENTS**

THE ADEQUATE OUTFALL REQUIREMENTS OF THE PFM SHALL BE FORMALLY ADDRESSED AT THE TIME OF FINAL ENGINEERING. FOR THIS PROJECT, THE DOWNSTREAM EXTENT OF ANALYSIS SHALL BE DETERMINED BY PFM SECTION 6-0203.2A WHICH DEFINES THE EXTENT TO BE TO A POINT THAT IS AT LEAST 150 FEET DOWNSTREAM OF A POINT WHERE THE RECEIVING PIPE OR CHANNEL IS JOINED BY ANOTHER THAT HAS A DRAINAGE AREA THAT IS AT LEAST 90% OF THE SIZE OF THE FIRST DRAINAGE AREA AT THE POINT OF CONFLUENCE. STORM SEWER COMPUTATIONS SHALL BE PROVIDED FOR THE EXISTING CLOSED CONDUIT SYSTEM FROM THE SUBJECT SITE TO THE POINT OF DAYLIGHT IN SCOTTS RUN, WHICH SHALL BE ALSO THE POINT OF CONFLUENCE. THEN FIELD MEASURED CROSS-SECTIONS OF SCOTTS RUN 150' DOWNSTREAM FROM THE POINT OF CONFLUENCE SHALL BE ANALYZED WITH THE 2-YEAR STORM TO VERIFY ADEQUACY, PER PFM SECTION 6-0203.3B(1).

**SUMMARY**

IT IS THE OPINION OF BOWMAN CONSULTING GROUP THAT AFTER ANALYZING THE DOWNSTREAM STORM SYSTEM, THIS PROJECT WILL HAVE NO ADVERSE EFFECT NOR CAUSE FLOODING OF ANY DOWNSTREAM PROPERTY OR STRUCTURE. ADDITIONALLY, AT THE TIME OF FINAL ENGINEERING, IT SHALL BE DEMONSTRATED THAT THE OUTFALL IS ADEQUATE PER THE REQUIREMENTS AND CRITERIA SET FORTH IN THE PFM.



PHOTO OF EXISTING SWM FACILITY, PER FAIRFAX COUNTY PLAN #1702-SP-005-02

**1 OFFSITE SWM FACILITY PHOTO**

Application No. SE 200-02 Staff S-LW  
 APPROVED [Signature] / SP PLAN  
 SEE DEV CONDS DATED 6-6-11  
 Date of (EOP) (BZA) approval 6-7-11  
 met 16 of 17

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

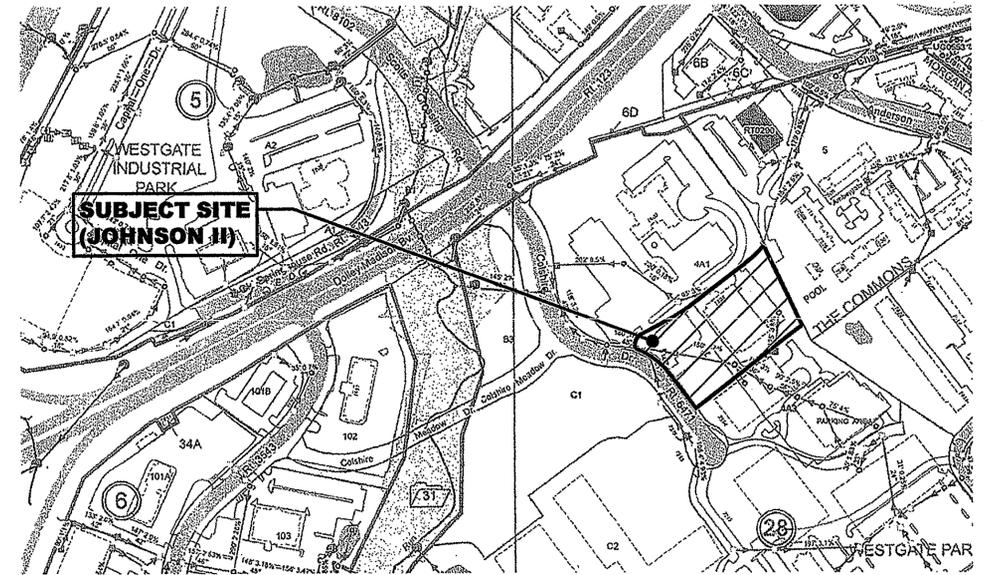
The following information is required to be shown or provided in all zoning applications, or a waiver request of the submission requirement with justification shall be attached. Note: Waivers will be acted upon separately. Failure to adequately address the required submission information may result in 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 & 1C)  
 FDP P Districts (except PRC) (16-502 1F & 1Q) Amendments (18-202 10F & 10I)

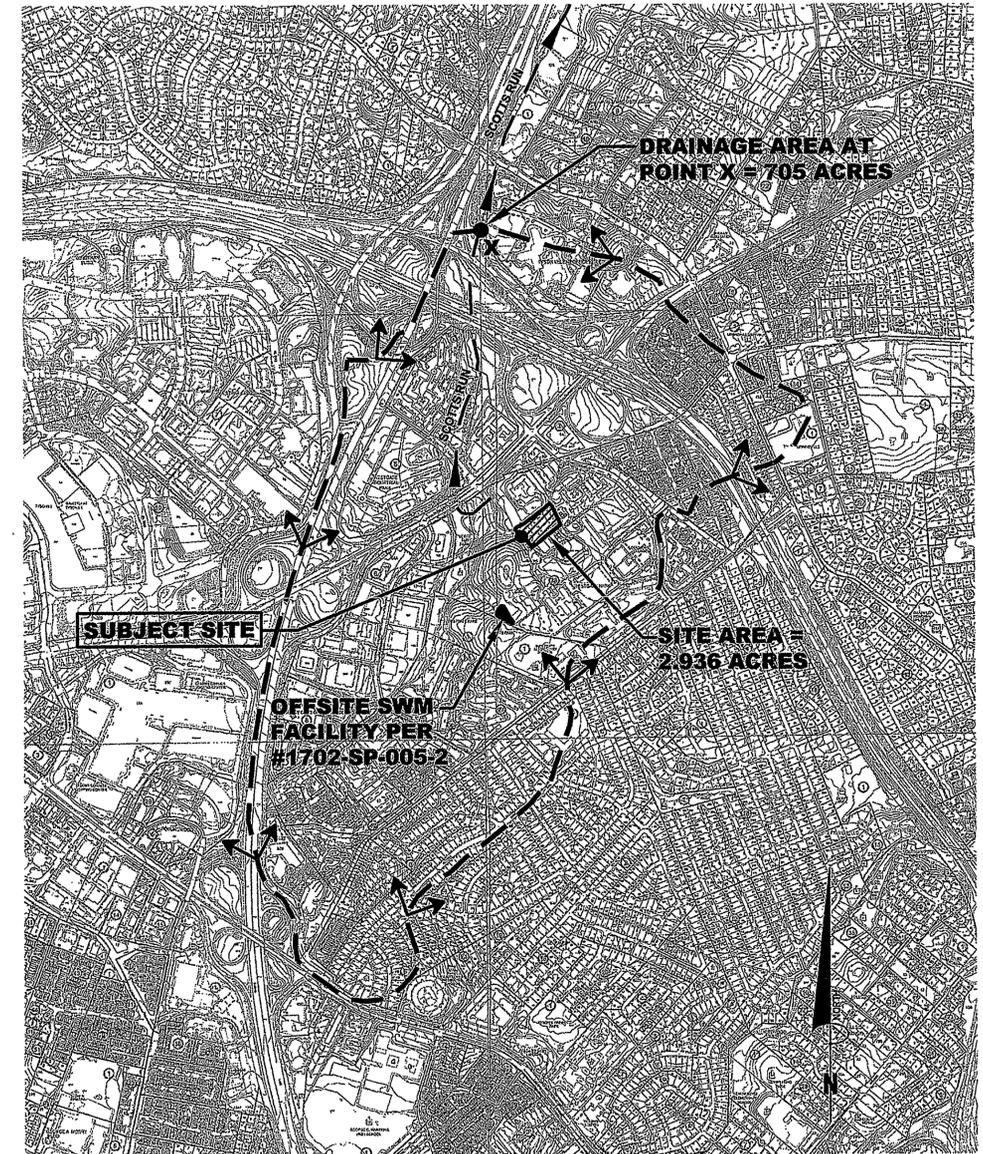
- 1. Plat is at a minimum scale of 1"=50' (unless it is depicted on one sheet with a minimum scale of 1"=100').
- 2. A graphic depicting the stormwater management facility(ies) and limits of clearing and grading accommodate the stormwater management facility(ies), storm drainage pipe systems and outlet protection, pond spillways, access roads, site outfalls, energy dissipation devices, and stream stabilization measures as shown on Sheet 12.
- 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)
<u>EX WET POND (SEE SHEETS 11-15 FOR DESIGN INFO)</u>						
Totals						
- 4. Onsite drainage channels, outfalls and pipe systems are shown on Sheet 16. Pond inlet and outlet pipe systems are shown on Sheet 13.
- 5. Maintenance access (road) to stormwater management facility(ies) are shown on Sheet 12. Type of maintenance access road surface noted on the plat is GRAVEL (asphalt, gravel, etc.).
- 6. Landscaping and tree preservation shown in and near the stormwater management facility is shown on Sheet N/A.
- 7. A 'stormwater management narrative' which contains a description of how detention and best management practices requirements will be met is provided on Sheet 16.
- 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 16.
- 9. A description of how the outfall requirements, including contributing drainage areas of the Public Facilities Manual will be satisfied is provided on Sheet 16.
- 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 2,3.
- 11. A submission waiver is requested for N/A.
- 12. Stormwater management is not required because N/A.

**2 STORMWATER CHECKLIST**



**4 STORM SEWER MAP**  
NOT TO SCALE



**3 OUTFALL MAP**  
SCALE: 1"=1,000'

**Bowman**  
CONSULTING

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STORMWATER MANAGEMENT  
 MITRE 4  
 PROVIDENCE DISTRICT, FAIRFAX COUNTY, VIRGINIA

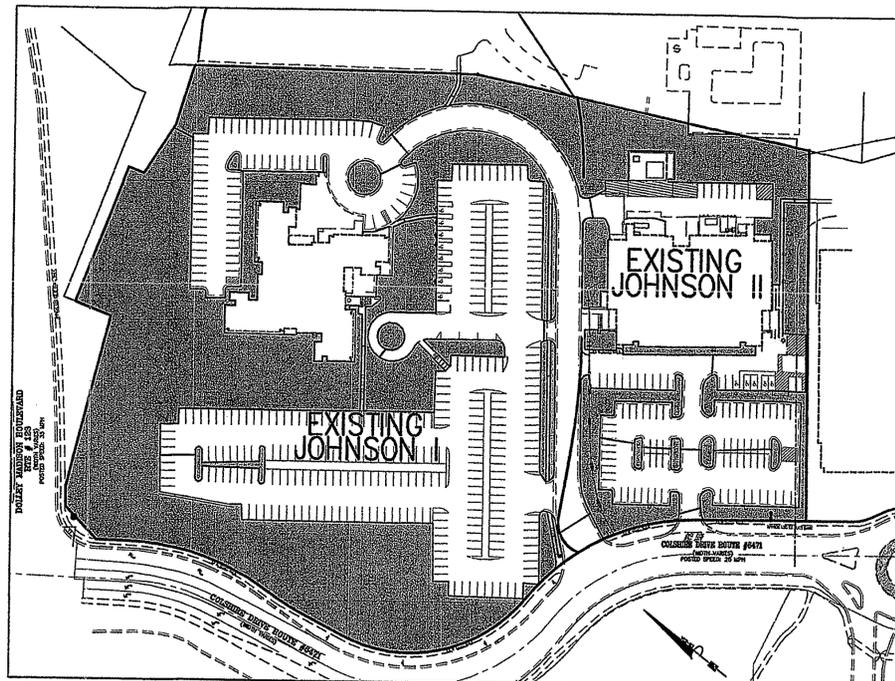
SE 10-PR-023  
 COUNTY PROJECT NUMBER



PLAN STATUS

08/24/10	RESUBMISSION
10/26/10	RESUBMISSION
12/15/10	RESUBMISSION
03/18/11	RESUBMISSION
04/18/11	RESUBMISSION
05/10/11	RESUBMISSION

DATE	DESCRIPTION	
DESIGN	DRAWN	CHKD
SCALE	H: N.T.S.	
V:		
JOB No.		
DATE: JULY 30, 2010		
FILE No.		
P-10F SWM		
SHEET	16	OF 17

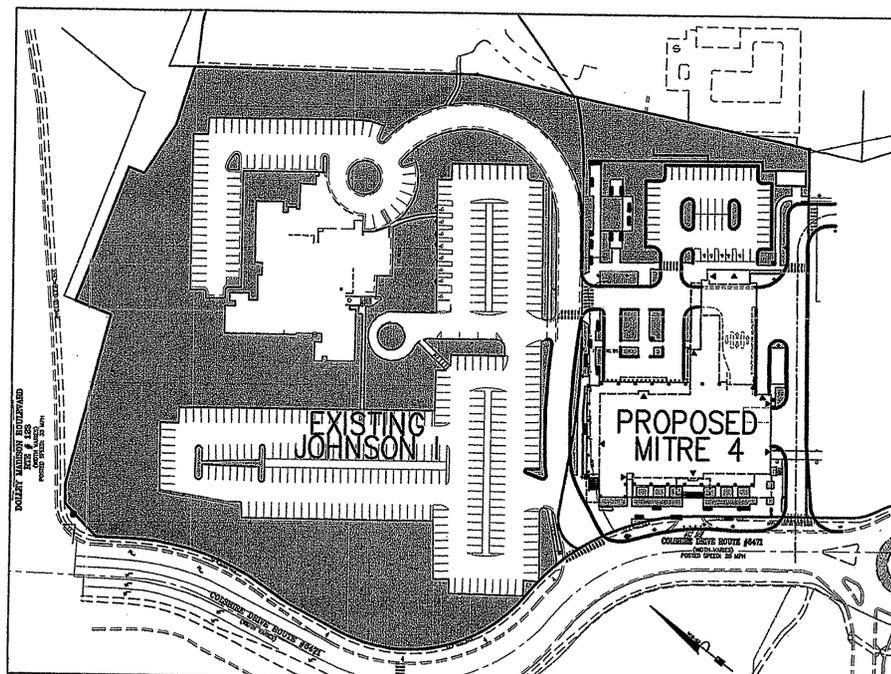


**1 EXISTING PERVIOUS AREA EXHIBIT**  
SCALE: 1"=100'

NOTE: THIS EXHIBIT SHOWS THE ACTUAL EXISTING PERVIOUS AREA ON THE JOHNSON I AND JOHNSON II SITES.

JOHNSON I AND JOHNSON II SITES:  
EXISTING CONDITIONS:  
SITE AREA: 10.77 ACRES  
PERVIOUS AREA: 209,095 SF  
% PERVIOUS: 45%  
% IMPERVIOUS: 55%  
C-FACTOR: 0.63

█ = PERVIOUS AREA



**2 PROPOSED PERVIOUS AREA EXHIBIT**  
SCALE: 1"=100'

NOTE: THIS EXHIBIT SHOWS THE PERVIOUS AREA BASED ON THE EXISTING CONDITIONS OF THE JOHNSON I SITE AND THE PROPOSED REDEVELOPMENT OF THE JOHNSON II SITE.

JOHNSON I AND JOHNSON II SITES:  
PROPOSED CONDITIONS:  
SITE AREA: 10.77 ACRES  
PERVIOUS AREA: 197,474 SF  
% PERVIOUS: 42%  
% IMPERVIOUS: 58%  
C-FACTOR: 0.65

JOHNSON II SITE ONLY:  
PROPOSED CONDITIONS:  
% IMPERVIOUS: 75%

**Part 3: Compute the Total Phosphorus Removal for the Site**

Subarea Designation (1)	BMP Type (2)	Removal Eff. (%) (3)	Area Ratio (4)	"C" Factor Ratio (5)	Product (6)
2.	wet	50	X 10.4/35.30	X 0.72/0.72	= 14.73
4.	wet	(2) 50	X 4.42/35.30	X 0.40/0.72	= 0.70
3.	wet	50	X 4.34/35.30	X 0.79/0.72	= 6.74
5.	wet	50	X 4.76/35.30	X 0.35/0.72	= 3.28
4.	wet	50	X 2.87/35.30	X 0.35/0.663	= 1.98
(a) Total =					27.43 %

**Part 4: Determine Compliance with Phosphorus Removal Requirement**

- (A) Select Requirement (for new development) (a) 40% Except Redevelopment Areas (See Below)
- Water Supply Overlay District (Occoquan Watershed) = 50% (Fairfax County and Prince William County)
  - Chesapeake Bay Preservation Area (New Development) = 40% (Fairfax County) 50% (Prince William County)
  - Chesapeake Bay Preservation Area (Redevelopment) = (See Redevelopment Comps. Below)

**Redevelopment Calc. for:**

1-Johnson III  
"C" pre=0.63 "C" post=0.70  
Redevelopment=[1-0.9\*(C pre/C post)]x100=19%  
(See Johnson 3 pre-development map, sheet 9A of 16)

2-Johnson I & II (Future)  
"C" pre=0.71 "C" post=0.80  
Redevelopment=[1-0.9\*(C pre/C post)]x100=20.125%

**"BMP" Requirement Calc.**

Site Area	Eff.	C Ratio	Area Ratio	Eff.
2. McKinley, Pierce, Taylor	40%	x 0.72/0.72	x 10.40/35.30	= 11.78%
1. Johnson III	19%	x 0.70/0.72	x 3.53/35.30	= 1.85%
3. Hayes	10%	x 0.79/0.72	x 4.34/35.30	= 1.35%
6. McKinley	40%	x 0.68/0.72	x 2.60/35.30	= 2.78%
7. Taylor	40%	x 0.45/0.72	x 3.66/35.30	= 2.59%
8-Johnson I, II	20.125%	x 0.80/0.72	x 10.77/35.30	= 6.82%
Total				27.17%

(B) If line 3(a) 27.43% > Line 4(a) 27.17% then Phosphorus removal requirement is satisfied.

**3 PORTION OF BMP COMPUTATIONS FROM SHEET 12**  
SCALE: 1"=100'

NOTE: THE ABOVE BMP COMPUTATIONS ARE TAKEN FROM SHEET 12 OF THIS PLAN SET (SHEET 8 OF 16 FROM THE MCKINLEY POND PLAN #1702-SP-005-2), AND ARE SHOWN ON THIS SHEET AS REFERENCE ONLY. THE COMPUTATIONS ARE BASED UPON THE PFM'S (IN EFFECT IN 1999) REDEVELOPMENT FORMULA WHICH UTILIZED C(PRE) AND C(POST). SEE BELOW FOR REVISED BMP COMPUTATIONS BASED UPON THE CURRENT PFM REDEVELOPMENT FORMULA WHICH UTILIZES I(PRE) AND I(POST).

Redevelopment Calculation for:	I (PRE)	I (POST)	Redevelopment
Johnson III	= 55%	= 67%	26.12%
Johnson I & II (Future)	= 55%	= 58%	14.66%

"BMP" Requirement Calc.	Eff.	C Ratio	Area Ratio	Eff.
2. McKinley, Pierce Taylor	40.00%	x 0.72 / 0.72	x 10.40 / 35.30	= 11.78%
1. Johnson III	26.12%	x 0.70 / 0.72	x 3.53 / 35.30	= 2.54%
3. Hayes	10.00%	x 0.79 / 0.72	x 4.34 / 35.30	= 1.35%
6. McKinley	40.00%	x 0.68 / 0.72	x 2.60 / 35.30	= 2.78%
7. Taylor	40.00%	x 0.45 / 0.72	x 3.66 / 35.30	= 2.59%
8. Johnson I, II	14.66%	x 0.65 / 0.72	x 10.77 / 35.30	= 4.04%
Total				25.08%

Phosphorous Removal Requirement = 25.08%  
Phosphorous Removal Provided = 27.43%

**4 UPDATED BMP COMPUTATIONS PER CURRENT PFM STANDARDS**  
SCALE: 1"=100'

NOTE: THE PURPOSE OF THE ABOVE BMP COMPUTATIONS ARE TO DEMONSTRATE THAT THE BMP REQUIREMENTS FOR THE JOHNSON I AND JOHNSON II SITES ARE STILL SATISFIED VIA THE MCKINLEY POND, WHEN UTILIZING THE PFM'S CURRENT REDEVELOPMENT FORMULA FROM SECTION 6-401.2B.

Application No. SE 2010-PR-423 Staff: S.L.H.  
APPROVED [Signature] SP PLAN  
SEE DEV CONDS DATED 6-6-11  
Date of (B)S (BZA) approval 6-7-11  
Sheet 17 of 17



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STORMWATER MANAGEMENT  
MITRE 4  
PROVIDENCE DISTRICT, FAIRFAX COUNTY, VIRGINIA

SE 10-PR-023  
COUNTY PROJECT NUMBER



DATE	DESCRIPTION
02/24/10	RESUBMISSION
10/25/10	RESUBMISSION
12/15/10	RESUBMISSION
03/15/11	RESUBMISSION
04/17/11	RESUBMISSION
05/10/11	RESUBMISSION

DATE	DESCRIPTION
DESIGN	DRAWN CHKD
SCALE	H: N.T.S. V:
JOB No.	
DATE:	JULY 30, 2010
FILE No.	
P-10G SWM	
SHEET	17 OF 17