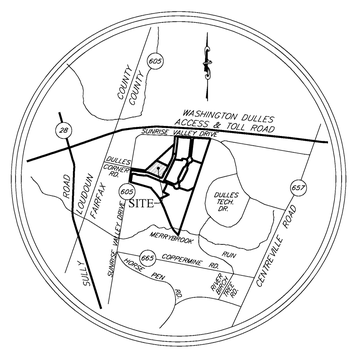
PROFFER CONDITION AMENDMENT (PCA)
CONCEPTUAL DEVELOPMENT PLAN (CDP)/
FINAL DEVELOPMENT PLAN (FDP)/
FOR
DULLES STATION AT DULLES CORNER
PARCEL 5A
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA



VICINITY MAP
SCALE: 1" = 2000'

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03	GENERAL NOTES & DETAILS
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05	EXISTING CONDITIONS
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08	CDP–FDP – GEOMETRY PLAN
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40	LANDSCAPE CONCEPT
41	LANDSCAPE CONCEPT

APPLICANT/DEVELOPER
DULLES ROCKHILL PARTNERS, LP
c/o CRIMSON PARTNERS
455 SPRING PARK PLACE
SUITE 100
HERNDON, VA. 20170
(703) 834–9700
ATTN: RYAN WHITTIER

ATTORNEY
McGUIREWOODS
1750 TYSONS BOULEVARD
SUITE 1800
TYSONS CORNER, VA. 22102
(703) 712–5360
ATTN: GREG RIEGLE

ARCHITECT
RTKL
2101 L STREET NW
SUITE #200
WASHINGTON, DC 20037
(202) 912–8100
ATTN: NICK CORCORAN

LANDSCAPE ARCHITECT
STUDIO 39
6416 GROVEDALE DRIVE
SUITE 100–A
ALEXANDRIA, VA. 22310
(703) 719–6500
ATTN: JOE PLUMPE

ENGINEER
URBAN, LTD.
4200D TECHNOLOGY COURT
CHANTILLY, VA. 20151
(703) 642–2306
ATTN: CLAYTON C. TOCK, P.E.

Application No: RZ / FDP 2012-DR-016 Staff: W' OD
With/ PCA C-696-09
PCA C-696-03
APPROVED DEVELOPMENT PLAN
(_GDP) (X CDP) (X FDP) (_PRC) (_PP) (_CP) (_SE) (_CSP) (_SP) (_VC)
SEE PROFFERS DATED: Nov 19, 2013
SEE CONDITIONS DATED:
Date of Final Approval: Dec 3, 2013 (X BOS) (_PC) (_BZA)
Comments: On 1/14/2014, CDP /Dev. Conds Dated 1/14/2014 were added by the BOS
Sheet 1 of 41

DEPARTMENT OF PLANNING & ZONING

No.	DATE	DESCRIPTION
		REVISIONS

PLAN DATE
12–13–11
2–2–12
4–20–12
6–12–12
7–19–12
8–3–12
11–29–12
06–25–13
08–13–13
10–07–13

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COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
LIC. No. 038700
10/7/13
PROFESSIONAL ENGINEER

COVER SHEET
DULLES STATION
PARCEL 5A
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

DATE: DEC., 2011
SCALE: N/A
CLI.= N/A

SHEET
01
OF
41

FILE No.
SP-1158-12

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GENERAL NOTES

1. THE PROPERTY IS IDENTIFIED AS FAIRFAX COUNTY TAX MAP NUMBER: 15-4-((5))-5A & 15-2-((01))-13(PART).
2. PARCEL 15-4-((5))-5A & 15-2-((01))-13(PART) ARE CURRENTLY ZONED PDC.
3. BOUNDARY AND TOPOGRAPHY INFORMATION HEREON IS BASED ON FIELD RUN SURVEY PREPARED BY URBAN LTD. AND IS REFERENCED HORIZONTALLY TO NAD 1983 AND VERTICALLY TO NAVD 1929.
4. THE TOPOGRAPHY SHOWN HEREON IS AT A TWO-FOOT CONTOUR INTERVAL, COMPILED BY URBAN LTD.
5. THE PROPERTY SHOWN ON THIS CDP/FDP IS LOCATED IN THE DRANESVILLE DISTRICT.
6. THIS PROPOSED DEVELOPMENT IS IN CONFORMANCE WITH THE COMPREHENSIVE PLAN AND ALL APPLICABLE ORDINANCES, REGULATIONS AND ADOPTED CONDITIONS, EXCEPT AS NOTED HEREIN.
7. THE SUBJECT PROPERTY HAS NO EXISTING FLOOD PLAINS OR RESOURCE PROTECTION AREAS.
8. THIS SITE IS SERVED BY PUBLIC SEWER AND WATER.
9. A WAIVER TO PROVIDE STORM WATER MANAGEMENT (SWM) AND BEST MANAGEMENT PRACTICES (BMP) IN AN OFFSITE POND IS HEREBY REQUESTED.
10. UTILITY LOCATIONS SHOWN ARE APPROXIMATE. THE PROPOSED LOCATION IS SUBJECT TO CHANGE BASED ON FINAL DESIGN AND COORDINATION WITH PUBLIC WORKS.
11. INDIVIDUAL UTILITY PLANS AND PROFILES WILL BE SUBMITTED DURING THE SITE PLAN STAGE FOR CONSTRUCTION PURPOSES.
12. THERE ARE NO KNOWN HAZARDOUS OR TOXIC SUBSTANCES ON THIS SITE PER THE GEOTECHINCAL STUDY.
13. THERE ARE NO KNOWN BURIAL SITES OR EXISTING GRAVES FOUND ON THIS SITE.
14. ALL PUBLIC STREETS SHALL CONFORM TO FAIRFAX COUNTY AND/OR VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) STANDARDS AND SPECIFICATIONS UNLESS MODIFIED AS DESCRIBED IN GENERAL NOTE 6 ABOVE.
15. IN ACCORDANCE WITH PARAGRAPH 5 OF SECTION 18-204 OF THE ZONING ORDINANCE, MINOR MODIFICATIONS TO THE SIZE, DIMENSIONS, FOOTPRINTS, AND LOCATION OF BUILDINGS, PARKING SPACES, GARAGES AND SIDEWALKS MAY OCCUR WITH FINAL ENGINEERING AND DESIGN.
16. THERE ARE NO DESIGNATED ENVIRONMENTAL QUALITY CORRIDORS (EQC) ON THE SUBJECT SITE PER THE COUNTY OF FAIRFAX MAPS.
17. THERE ARE NO SCENIC ASSETS OR NATURAL FEATURES ON THE SUBJECT SITE WHICH WOULD DESERVE PROTECTION OR PRESERVATION.
18. THE DEVELOPMENT SCHEDULE AND PROPOSED SITE PLAN SUBMISSIONS SHALL BE DETERMINED BY THE APPLICANT BASED UPON MARKET CONDITIONS. THE DEVELOPMENT MAY BE PHASED.
19. NOTWITHSTANDING THAT WHICH IS SHOWN OR DESCRIBED ON THIS CDP/FDP, THE APPLICANT RESERVES THE RIGHT TO MAKE MINOR MODIFICATIONS TO THE LOCATION AND CONFIGURATION OF THE APPROVED DEVELOPMENT AND ALL COMPONENT PARTS OF THE SAME BASED ON FINAL ENGINEERING AND/OR REQUIREMENT IMPOSED IN CONNECTION WITH ANY POST ZONING APPROVALS, PROVIDED THE SAME ARE IN SUBSTANTIAL CONFORMANCE WITH THIS CDP/FDP.
20. DIMENSIONS AND SIZES AS SCALED ARE APPROXIMATE AND MAY VARY DEPENDING ON THE FINAL USE AND ARCHITECTURAL/ENGINEERING DESIGN DURING SITE PLANNING. THE FINAL DESIGN SHALL BE IN SUBSTANTIAL CONFORMANCE WITH THE CDP/FDP PLAN.
21. NO ATTEMPT HAS BEEN MADE AS A PART OF THIS SURVEY TO OBTAIN OR SHOW DATA CONCERNING EXISTENCE, SIZE DEPTH, CONDITION, CAPACITY OR LOCATION OF ANY UTILITIES OR MUNICIPAL/PUBLIC SERVICE FACILITY. FOR INFORMATION REGARDING THESE UTILITIES OR FACILITIES CONTACT "MISS UTILITY" 1 (800) 257 -7777.
22. BUILDINGS WILL BE LOCATED APPROPRIATELY OUTSIDE THE REQUIRED SETBACKS AND BULK PLANE LIMITS.
23. THE FOLLOWING ARE THE OWNERS OF THE PARCELS INCLUDED IN THIS ZONING APPLICATION:

MAP # 15-4-((5))-5A	MAP # 15-2-((1))-13(PART)
DULLES ROCKHILL PARTNERS LP	NUGGET JOINT VENTURE
455 SPRING PARK PL.	1960 GALLOWS RD.
SUITE 100	SUITE 300
HERNDON, VA. 20170	VIENNA, VA. 22182

Application No: RZ / FDP 2012-DR-016 Staff: W' OD
With/ PCA C-696-09
PCA C-698-03
APPROVED DEVELOPMENT PLAN
(_GDP) (X CDP) (X FDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC)
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Sheet 2 of 41
FAIRFAX COUNTY DEPARTMENT OF PLANNING & ZONING

EXISTING APPROVED DULLES STATION ZONING DETAIL

DULLES STATION BUILDING DATA

LANDBAY	BUILDING	COMMERCIAL GROSS FLOOR AREA (SF)	RESIDENTIAL GROSS FLOOR AREA (SF)	OPEN SPACE (SF)	STATUS
I	BUILDING A	191,355*	0	78,799.70	APPROVED & BUILT
I	BUILDING B	348,735*	0	22,673.15	APPROVED & PROPOSED
I	BUILDING C	186,969*	0	37,599.55	APPROVED & BUILT
I	BUILDING D	352,941*	0	25,590.66	APPROVED & PROPOSED
LANDBAY I TOTAL		**1,080,000**	**0**	**164,663.06**	
II	BUILDING G	16,515*	210,173*	36,980.72	APPROVED & BUILT
II	BUILDING H	20,603*	163,676*	27,812.81	APPROVED & BUILT
II	BUILDING I	8,032*	226,610*	39,840.14	APPROVED & BUILT
II	BUILDING J	4,671*	242,208*	30,945.79	APPROVED & BUILT
II	BUILDING K	9,060*	296,632*	84,149.81	APPROVED & BUILT
LANDBAY II TOTAL		**58,881**	**1,139,299**	**219,729.27**	
III	Vacant	0	0	185,862.00	
LANDBAY III TOTAL		**0**	**0**	**185,862.00**	
IV	HOTEL #1	94,215*	0	48,560.03	APPROVED & BUILT
IV	HOTEL #2	92,620*	0	56,065.56	APPROVED & BUILT
LANDBAY IV TOTAL		**186,835**	**0**	**104,625.59**	
V	POND	0	0	512,564.06	APPROVED & BUILT
LANDBAY V TOTAL		**0**	**0**	**512,564.06**	
VI	DEDICATION AREA	0	0	0.00	
LANDBAY VI TOTAL		**0**	**0**	**0.00**	
DULLES STATION TOTAL		**1,325,716**	**1,139,299**	**1,187,443.98**	
TOTAL GROSS SQUARE FEET		**2,465,015**			
TOTAL SITE AREA (SF)		**2,749,580.80**			
ADJUSTED SITE AREA EXCLUDING LANDBAY III (SF)		**2,563,718.80**			
F.A.R. excluding Landbay III		**0.9615**	PROFFERED F.A.R.: 0.99		
Open Space excluding Landbay III		**39.08%**	PROFFERED OPEN SPACE: 23%		

* BUILDING GSF DATA HAS BEEN OBTAINED FROM APPROVED SITE PLANS

LANDBAY III (REZONING AREA)

	PARCEL	AREA
EXISTING SITE AREA	5A (TOTAL)	185,862 S.F. OR 4.2668 AC.
EXISTING SITE AREA TO REMAIN (TO BE REZONED PRM)	5A (PART)	163,590.93 S.F. OR 3.755 AC.
PORTION OF PARCEL 15-2-((01))-0013 TO PARCEL 5A (TO BE REZONED PRM)	0013 (PART)	22,271.07 SF OR 0.511 AC.
ADJUSTED SITE AREA	5A	185,862.00 S.F. OR 4.2668 AC.
EXISTING ZONING		PDC (OFFICE)
PROPOSED ZONING		PRM (MULTI-FAMILY)
EXISTING USE		VACANT LAND
PROPOSED USE		MULTI-FAMILY RESIDENTIAL/GARAGE PARKING

LANDBAY III-B (REZONING AREA)

	PARCEL	AREA
EXISTING SITE AREA TO BE RESERVED FOR FUTURE DEDICATION TO PARCEL 15-2-((01))-0013	5A (PART)	22,271.07 SF OR 0.511 AC.
EXISTING ZONING		PDC (OFFICE)
PROPOSED ZONING		PRM
EXISTING USE		VACANT LAND
PROPOSED USE		VACANT LAND

AREA OF REZONING APPLICATION

	AREA	
LANDBAY III	185,862 S.F.	4.2668 Ac.
LANDBAY III-B	22,271.07 S.F.	0.511 Ac.
TOTAL AREA:	208,133.07	4.7781 Ac.

LANDBAY III (PCA AREA)

	PARCEL	AREA	DESCRIPTION
PORTION OF PARCEL 15-2-((1))-13 TO PARCEL 15-4-((5))-5A	0013 (PART)	22,271.07 SF OR 0.511 AC.	AREA TO BE ADDED TO DULLES STATION (SUBJECT TO DULLES STATION PCA)
PORTION OF PARCEL 15-4-((5))-5A EXISTING SITE AREA TO REMAIN	0005A (PART)	163,590.93 S.F. OR 3.755 AC.	AREA TO REMAIN WITHIN DULLES STATION (SUBJECT TO DULLES STATION PCA)
PORTION OF PARCEL 15-4-((5))-5A TO PARCEL 15-2-((1))-13	0005A (PART)	22,271.07 SF OR 0.511 AC.	AREA TO BE REMOVED FROM DULLES STATION
ADJUSTED SITE AREA	0005A	185,862.00 S.F. OR 4.2668 AC.	TOTAL AREA SUBJECT TO DULLES STATION PCA

NOTE: LANDBAY BREAKDOWN IS EXCLUSIVE OF RIGHT-OF-WAY DEDICATION

DULLES STATION EXISTING APPROVED ZONING PER: PCA C-696-6/FDPA C-696-3

	PROPOSED USE	LAND AREA ACRES	LAND AREA SQ. FT.	GROSS FLOOR AREA PROPOSED	PROPOSED F.A.R.
LAND BAY I	OFFICE	12.64	550,800	1,080.000.00	*1.96*
LAND BAY II	RESIDENTIAL	18.51	806,220.92	1,210,000.00	*1.50*
LAND BAY III	OFFICE	4.39	191,310	180,000.00	*0.94*
LAND BAY IV	HOTEL / OFFICE	7.45	324,431.08	245,000.00	*0.76*
LAND BAY V	DEDICATION TO BOARD OF SUPERVISORS FOR REGIONAL S.W.M. POND & PARK	12.14	528,820	--------	
LAND BAY VI	DEDICATION TO BOARD OF SUPERVISORS FOR TRANSIT PARKING	3.02	131,551	--------	
OTHER	R.OW., ETC.	*4.97*	*216,447.80*	--------	
	TOTAL	*63.12*	*2,749,580.8*	*2,715,000.00*	*0.99*

DULLES STATION LANDBAY III EXISTING VS. PROPOSED ZONING COMPARISON

DULLES STATION BUILDING DATA

LANDBAY	BUILDING	COMMERCIAL GROSS FLOOR AREA (SF)	RESIDENTIAL GROSS FLOOR AREA (SF)	LAND AREA (SF)	FAR	NUMBER OF STORIES
III - APPROVED	BUILDING L	180,000	0	186,564	APPROVED FAR: 0.96	6
III - PROPOSED	BUILDING L	0	415,000	185,862	PROPOSED FAR: 2.23	6

WAIVERS & MODIFICATIONS

MODIFICATIONS	DESCRIPTION
REDUCTION OF REQUIRED LOADING SPACES	LOADING SPACE MODIFICATION IS REQUESTED FOR REDUCTION IN LOADING SPACES REQUIRED IN SECTION 11-202.3 OF THE ZONING ORDINANCE
TREE PRESERVATION TARGET DEVIATION	PER SECTION 12-0508.3A(1) OF THE PFM: TREE PRESERVATION TARGET WOULD PRECLUDE THE DEVELOPMENT OF USES OR DENSITIES OTHERWISE ALLOWED BY THE ZONING ORDINANCE
CORNER LOT	MODIFY SECTION 2-505 OF THE ZONING ORDINANCE FOR CORNER LOTS IN A P-DISTRICT
WAIVERS	**DESCRIPTION**
OFFSITE STORM WATER MANAGEMENT AND BEST MANAGEMENT PRACTICE	WAIVER IS REQUESTED FOR THE USE OF THE OFFSITE POND TO PROVIDE SWM AND BMP FOR THE SUBJECT SITE

LANDBAY III PARKING TABULATIONS:

REQUIRED PARKING:	RESIDENTIAL USE: 1.6 SPACE / UNIT** (1.6 SPACE / UNIT**) X (411 UNITS) = 657.6 SPACES
TOTAL REQUIRED PARKING:	= 658 SPACES
PROVIDED PARKING:***	
RESIDENTIAL GARAGE PARKING PROVIDED	= 658 SPACES (1.6 SPACES/UNIT**)
REQUIRED LOADING:	RESIDENTIAL USE: 1 SPACE FOR FIRST 25,000 S.F. + 1 SPACE/100,000 S.F. 1 SPACE + 390,000 SF X 1 SPACE/100,000 S.F. = 5 SPACES
TOTAL REQUIRED LOADING:	= 5 SPACES (PER SECT. 11-202.15)
PROVIDED LOADING:	= 2 SPACES*

* LOADING SPACE MODIFICATION IS REQUESTED FOR REDUCTION IN LOADING SPACES REQUIRED IN SECTION 11-202.3 OF THE ZONING ORDINANCE, THE LOADING SPACE MODIFICATION IS IN CONFORMANCE WITH THE PREVIOUSLY APPROVED PCA C-696-06 FOR THE OHER RESIDENTIAL BUILDINGS IN DULLES STATION
** IF PRIOR TO THE ISSUANCE OF THE FIRST RUP FOR THE BUILDING, THE FAIRFAX COUNTY ZONING ORDINANCE RECOMMENDS A LOWER MINIMUM PARKING SPACE TO DWELLING UNIT RATIO, OR IF FAIRFAX COUNTY OTHERWISE APPROVES A PARKING REDUCTION, APPLICANT MAY CONSTRUCT THE MINIMUM NUMBER OF RECOMMENDED SPACES AT THAT TIME, WHICH MAY BE LESS THAN 1.6 PARKING SPACES PER DWELLING UNIT.

LANDBAY III ZONING TABULATIONS:

	ALLOWABLE/MINIMUM	PROPOSED-RESIDENTIAL
PROPOSED BUILDING SQUARE FOOTAGE	N/A	415,000
MINIMUM LOT AREA	NONE	4.26
MINIMUM LOT WIDTH	NONE	NONE
BUILDING HEIGHT	N/A	75' MAX (6 STORY RESIDENTIAL BUILDING) 90' MAX (8.5 STORY GARAGE)
FLOOR AREA RATIO (FAR)	2.4	2.23 (415,000/185,862)
DENSITY (DU/AC.)	N/A	96.34 (411/4.266)
YARD REQUIREMENTS FRONT YARD SIDE YARD REAR YARD	 N/A N/A N/A	 16.19' SAYWARD BLVD R.O.W. / 8.93' CARTA WAY R.O.W. N/A 16.37' PROP. WESTERN R.O.W. / 13.1' PROP. NORTHERN R.O.W.
LANDSCAPE OPEN SPACE**	20% (36,923 S.F.)	21.26% (39,529 S.F.)*
RECREATIONAL OPEN SPACE**		6.01% (11,172.8 S.F.)
PARCEL 5A URBAN PARK LAND**		14.72% (27,359.4 S.F.)

* LANDSCAPE OPEN SPACE IS INCLUSIVE OF RECREATIONAL OPEN SPACE.
** SEE SHEET 11 FOR OPEN SPACE EXHIBIT.

LEGEND:

- EXISTING WATER LINE (W)
- PROPOSED WATER LINE (W)
- EX. FIRE HYDRANT
- PROP. FIRE HYDRANT
- EXISTING WATER METER (WM)
- PROPOSED WATER METER (WM)
- EXISTING WATER VALVE (WV)
- PROPOSED WATER VALVE (WV)
- EXISTING STORM DRAIN
- PROPOSED STORM DRAIN
- EXISTING SANITARY SEWER
- PROPOSED SANITARY SEWER
- EXISTING GAS LINE (G)
- PROPOSED GAS LINE (G)
- EXISTING GAS VALVE (GV)
- PROPOSED GAS VALVE (GV)
- EXISTING OVERHEAD WIRE
- EXISTING LIGHTING
- PROPOSED LIGHTING
- EXISTING FENCE
- PROPOSED FENCE
- EXISTING TREE LINE
- EXISTING CONTOURS (08, 10)
- PROPOSED CONTOURS (08, 10)
- PROPOSED PHASE LINE
- PROPOSED LIMITS OF CLEARING & GRADING (LCG)
- EXISTING WETLANDS
- PROP. RET. WALL
- EX. RET. WALL
- ROAD SIGN
- EX. POWER POLE
- EXISTING SPOT ELEVATION
- PROP. SPOT ELEVATION (+25 60)
- SPILL AND TRANSITION CURB AND GUTTER (CG-6 CG-6R)
- PROPOSED CURB
- MAIN BULDING ENTERANCE
- EX. STREET LIGHTS
- PROP. STREET LIGHTS
- PROPOSED CG-12
- EXISTING TREE
- PROPOSED TREE
- WATER FITTING IDENTIFIER (#)
- LOADING AREA (L)
- BENCHMARK
- TEST PIT REQUIRED
- PROJECTED TRAFFIC COUNT (???? VPD)
- OVERLAND RELIEF (O.R.)

PROP.	PROPOSED
EX.	EXISTING
SF	SQUARE FEET
GSF	GROSS SQUARE FEET
NSF	NET SQUARE FEET
T.B.R.	TO BE REMOVED
FF	FINISHED FLOOR
V	VISITOR PARKING SPACE
S, C, HC	STANDARD, COMPACT, AND HANDICAP PARKING SPACE DESIGNATOR

REVISIONS

No.	DATE	DESCRIPTION

PLAN DATE
12-13-11
2-2-12
4-20-12
6-12-12
7-19-12
8-3-12
11-29-12
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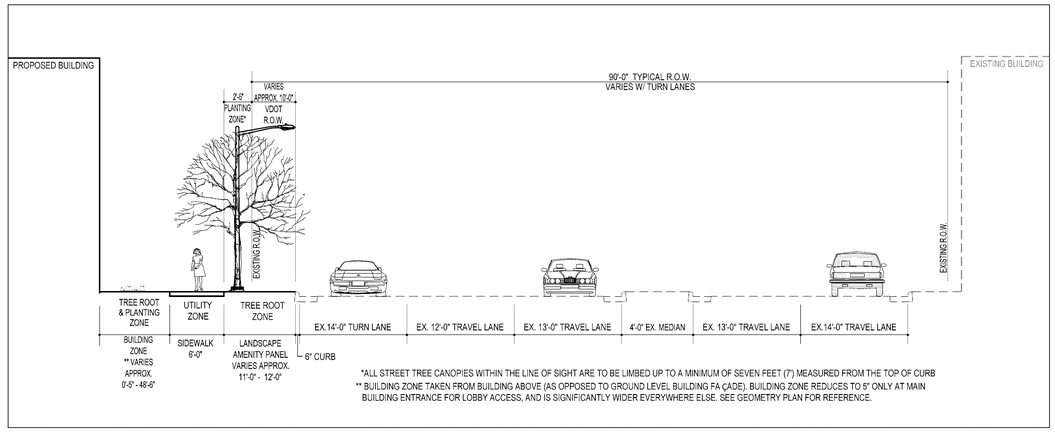
COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
Lic. No. 036790
10/7/13
PROFESSIONAL ENGINEER

GENERAL NOTES & DETAILS
DULLES STATION PARCEL 5A
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SCALE: AS NOTED C.I.= N/A DATE: DEC., 2011

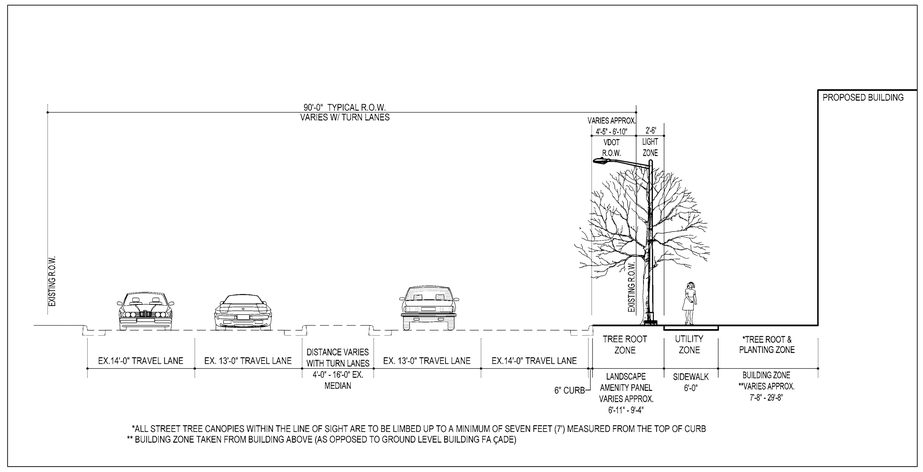
FILE No. SP-1158-12

Urban, Ltd. - J:\JOBS\Dulles Station\FDP-CDP\FDPA-CDPA-Buildings L&M\1158-11-02-GNOTES.dwg [GNOTES] October 09, 2013 - 3:37pm mdoyle



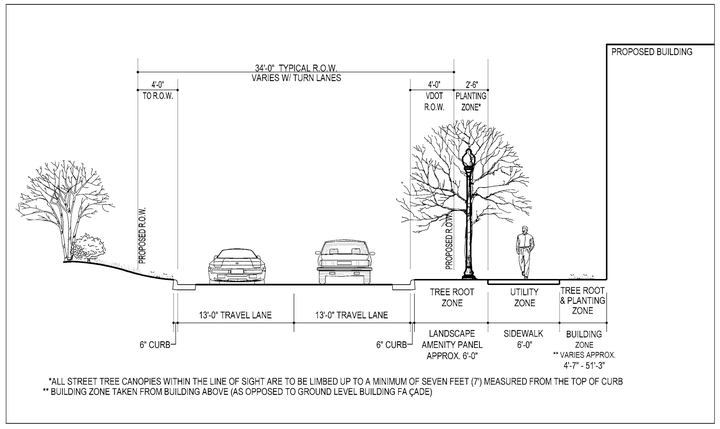
TYPICAL EX. CARTA WAY SECTION (FACING NORTH TOWARDS METRO STATION)

NTS



TYPICAL EX. SAYWARD BOULEVARD SECTION (FACING WEST TOWARDS SUNRISE VALLEY DR)

NTS



TYPICAL PUBLIC ROAD "A" & "B" SECTION

NTS

Application No: **RZ / FDP 2012-DR-016** Staff: **W' OD**
With/ PCA C-696-09
PCA C-698-03
APPROVED DEVELOPMENT PLAN
(_GDP) (X CDP) (X FDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC)
SEE PROFFERS DATED: **Nov 19, 2013**
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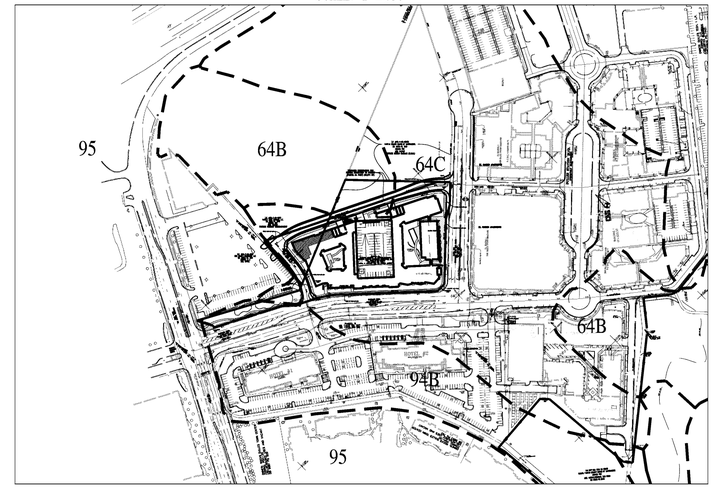
Comments: **On 1/14/2014, CDP Dev. Conds Dated 1/14/2014 were added by the BOS**
Sheet **3** of **41**

ZONING

SOILS MAP

SCALE: 1"=250'

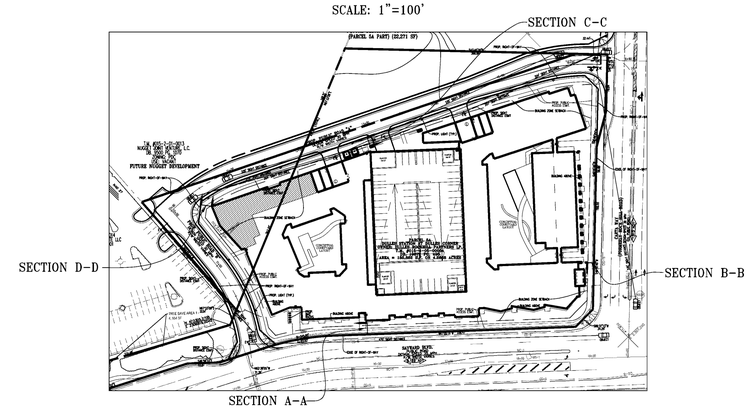


SOILS LEGEND

SOIL ID NUMBERS	SOIL SERIES NAME	FOUNDATION SUPPORT	SOIL DRAINAGE	EROSION POTENTIAL	PROBLEM CLASS
64B	JACKLAND & HAYMARKET SOILS, VERY STONY	POOR – P, C, B	POOR – P, C, S	MEDIUM	III
64C	JACKLAND & HAYMARKET SOILS, VERY STONY	POOR – P, C, B	POOR – P, C, S	MEDIUM	III
94B	SYCOLINE – KELLY COMPLEX	POOR – P, C, B	POOR – P, R, S, C	HIGH	III
95	URBAN LAND	N/A	N/A	N/A	N/A

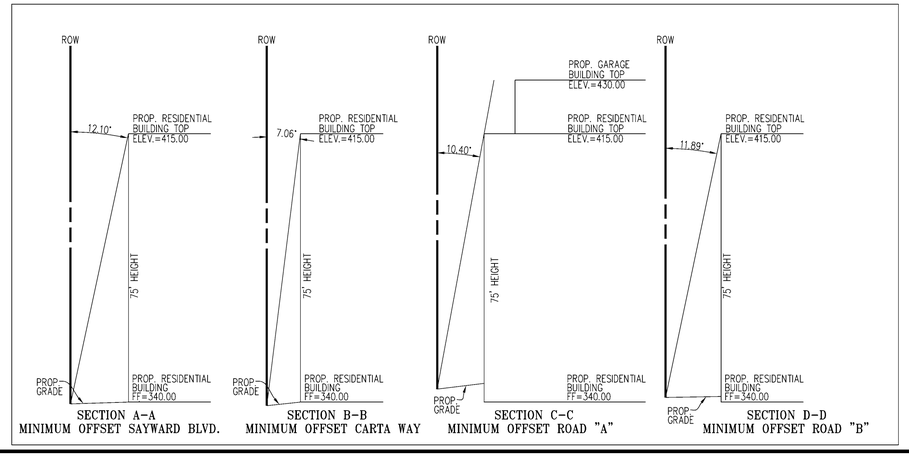
BULK PLAIN KEY MAP

SCALE: 1"=100'



BULK PLANE DIAGRAMS

SCALE: 1"=20'



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CLAYTON C. PORTER
LIC. No. 0407701
10/7/13
PROFESSIONAL ENGINEER

GENERAL NOTES & DETAILS

DULLES STATION PARCEL 5A

DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

DATE: DEC., 2011
SCALE: AS NOTED
CL= N/A

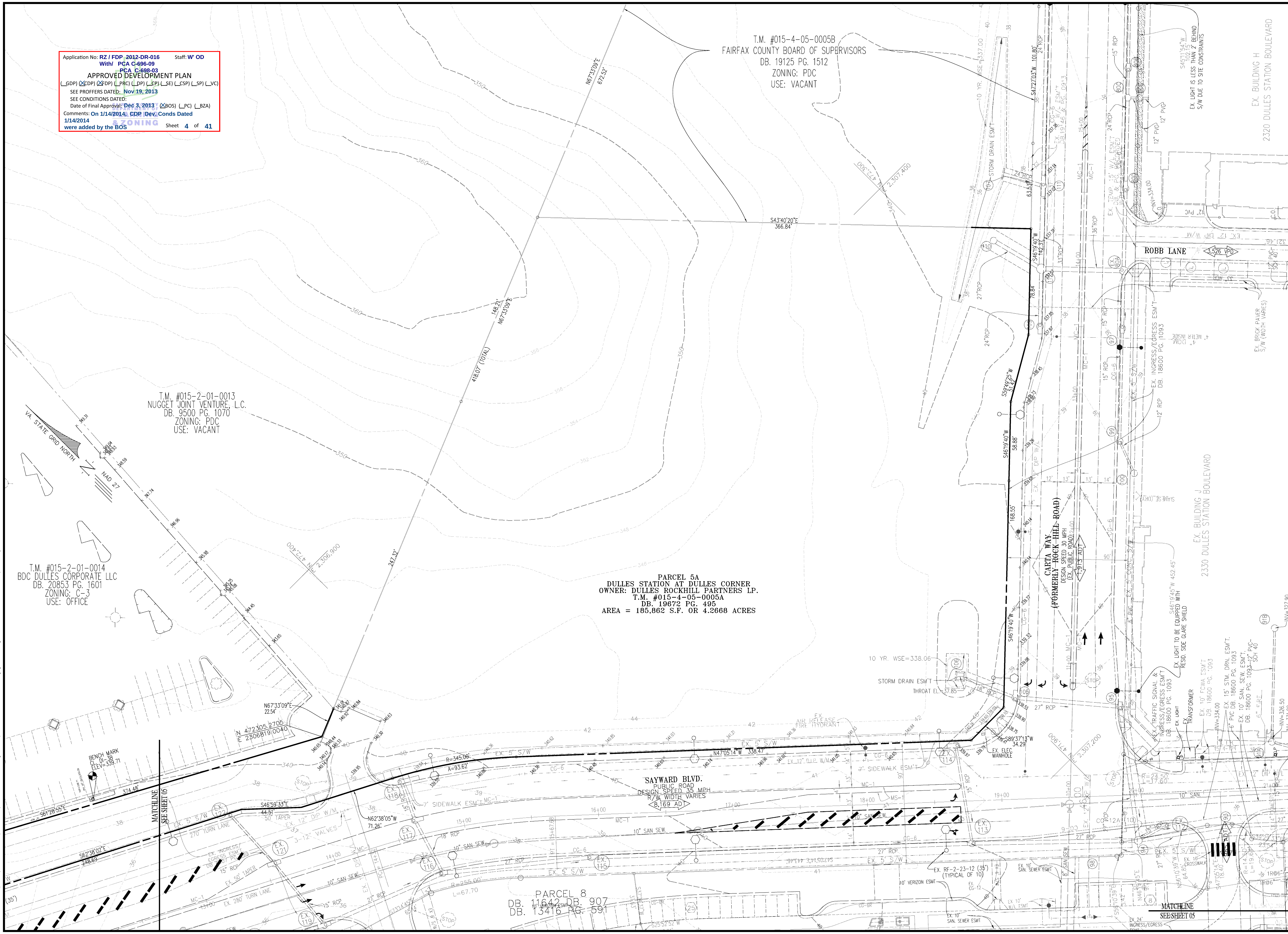
SHEET 03 OF 41

FILE No. SP-1158-12

Urban, Ltd. – J:\JOBS\Dulles Station\FDP-CDP\FDPA-CDPA-Buildings L&M\1158-11-02-GNOTES.dwg [GNOTES (2)] October 09, 2013 – 3:38pm mdoyle

Application No: RZ / FDP 2012-DR-016 Staff: W' OD
With/ PCA C-696-09
PCA C-698-03
APPROVED DEVELOPMENT PLAN
(_GDP) (X CDP) (X FDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC)
SEE PROFFERS DATED: Nov 19, 2013
SEE CONDITIONS DATED:
Date of Final Approval: Dec 3, 2013 (X BOS) (_PC) (_BZA)
Comments: On 1/14/2014, CDP Dev. Conds Dated 1/14/2014 were added by the BOS
Sheet 4 of 41

FAIRFAX COUNTY DEPARTMENT OF PLANNING & ZONING



REVISIONS

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COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
Lic. No. 036790
10/7/13
PROFESSIONAL ENGINEER

EXISTING CONDITIONS
DULLES STATION PARCEL 5A
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

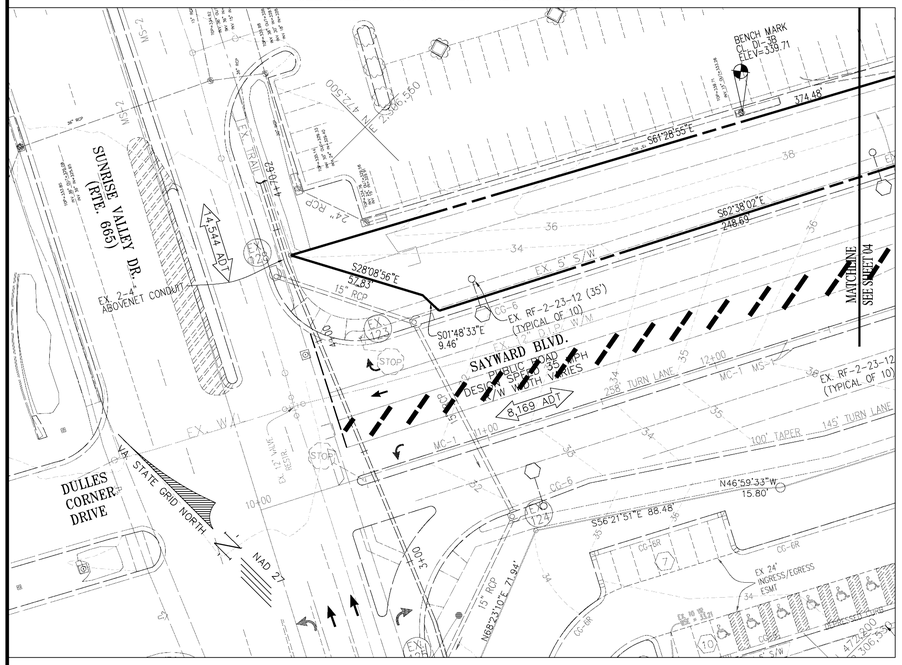
SCALE: 1"=30' C.I.=2' DATE: DEC., 2011

SHEET 04 OF 41

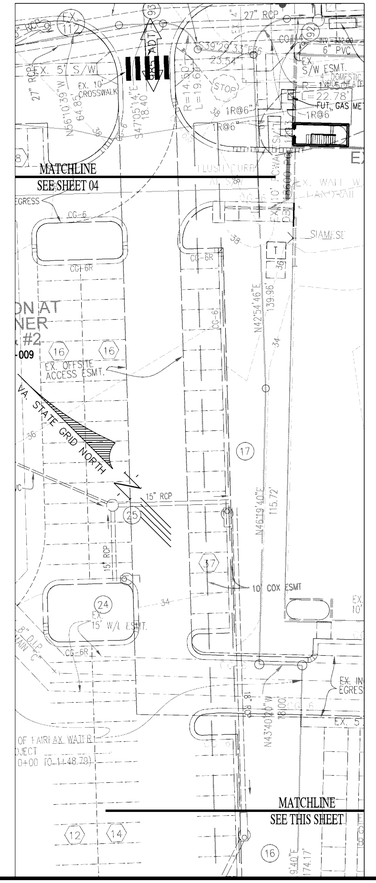
FILE No. SP-1158-12

Urban, Ltd. - J:\JOBS\Dulles Station\FDP-CDP\FDPA-CDPA-Buildings L&M\1158-11-03-EXCOND.dwg [EX. COND] October 09, 2013 - 3:38pm mdoyle

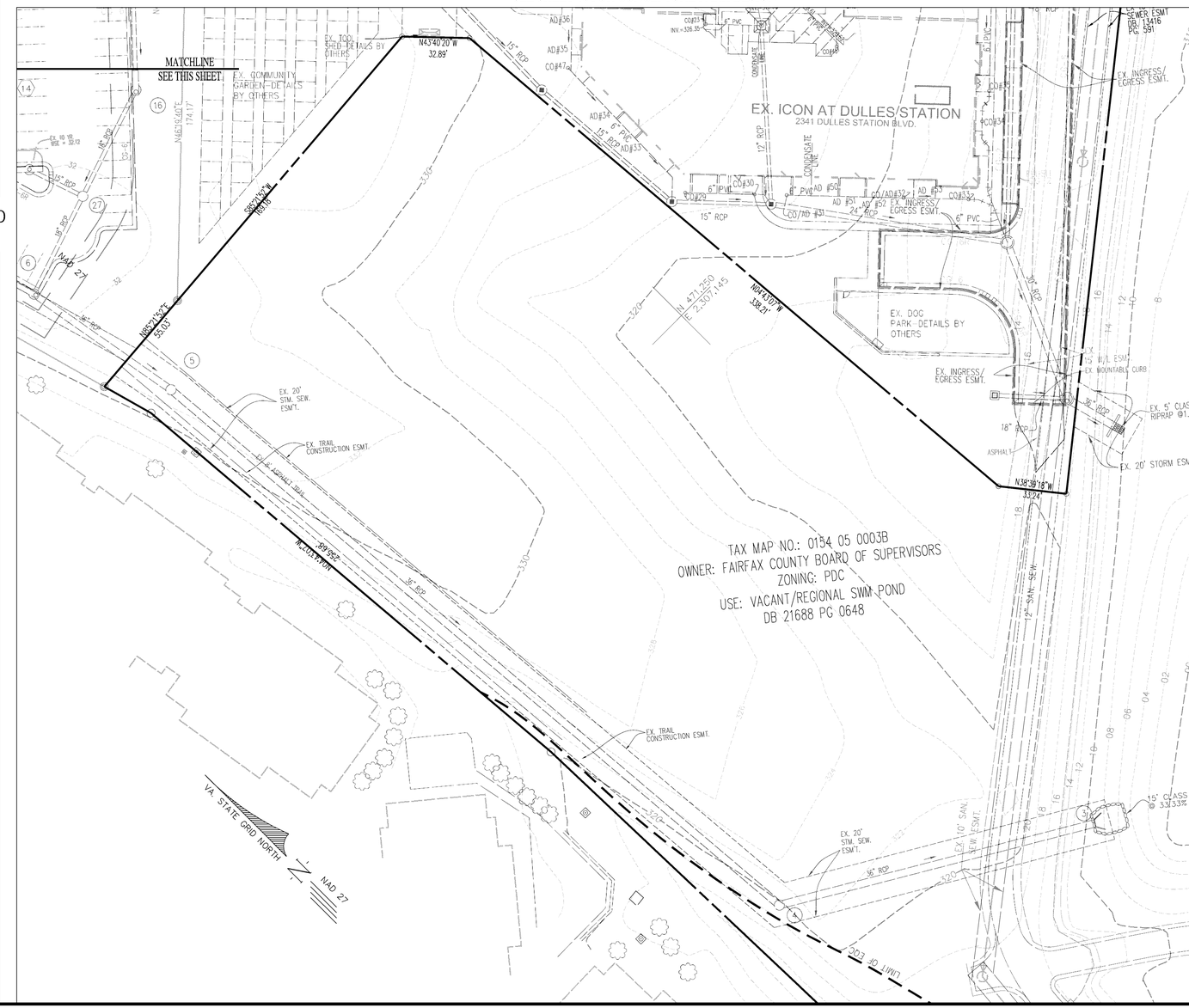
INSET - PROPOSED LINEAR PARK
SEE SHEET 37 FOR CONCEPTUAL PARK DESIGN



INSET - PROPOSED STORM DRAIN PIPES TO BE UP-SIZED
SEE SHEET 07 FOR CONTINUATION



INSET - PROPOSED COMMUNITY PARK & CONTINUATION OF STORM PIPES TO BE UP-SIZED
SEE SHEET 40 FOR CONCEPTUAL PARK DESIGN



Application No: RZ / FDP 2012-DR-016 Staff: W' OD
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Sheet 5 of 41
ZONING

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COMMONWEALTH OF VIRGINIA
CLAYTON E. TOPPER
LIC. NO. 0080706
10/7/13
PROFESSIONAL ENGINEER

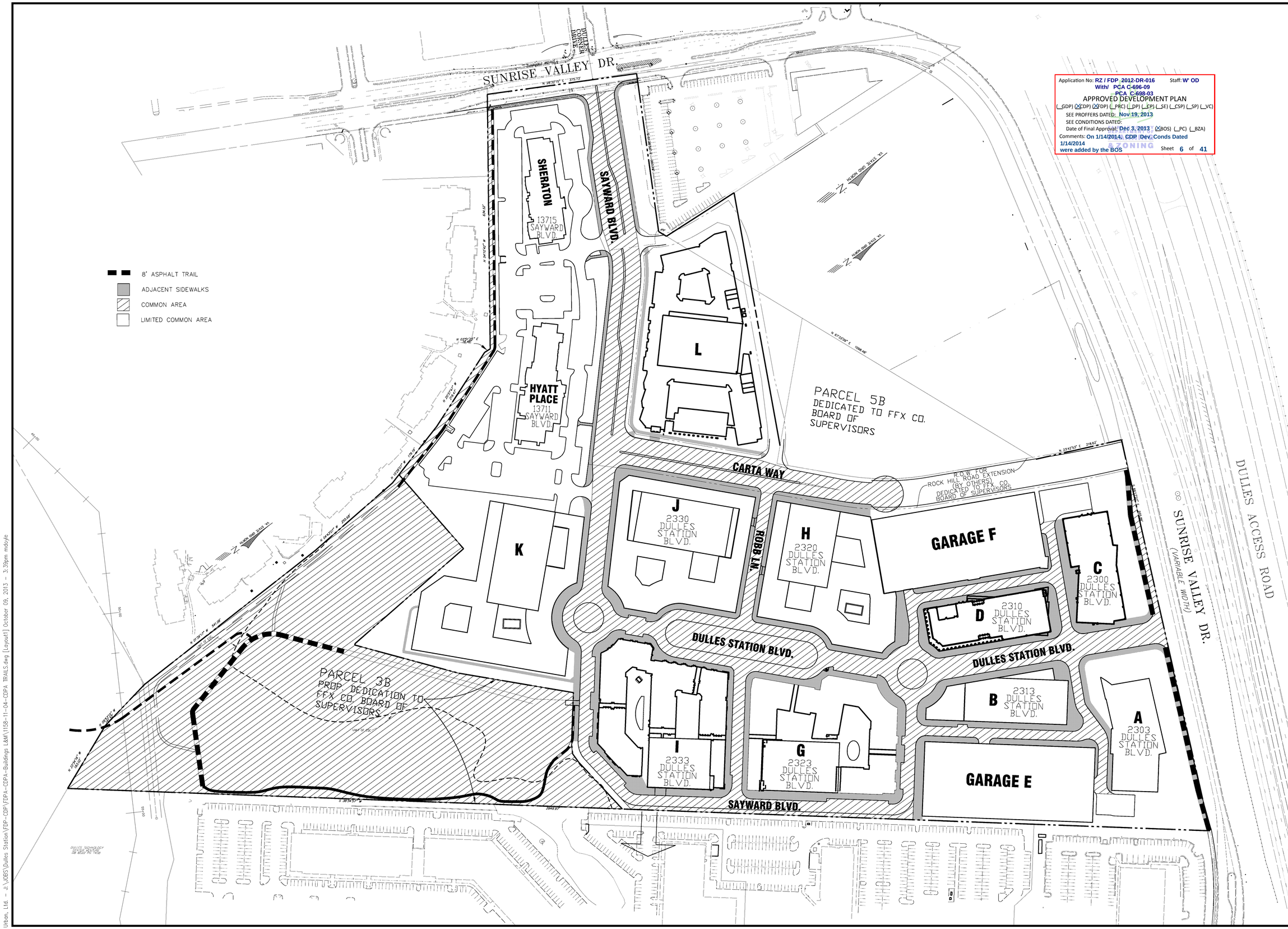
EXISTING CONDITIONS
DULLES STATION
PARCEL 5A
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SCALE: 1"=30' C.I.= 2' DATE: DEC., 2011

SHEET 05 OF 41

FILE No. SP-1158-12

Urban, Ltd. – J:\JOBS\Dulles Station\FDP-CDP\FDPA-CDPA-Buildings L&M\1158-11-03-EXCOND.dwg [EX. COND (2)] October 09, 2013 – 3:39pm mdoyle



Application No: RZ / FDP 2012-DR-016 Staff: W' OD
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Sheet 6 of 41

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CLAYTON C. TOCK
Lic. No. 036790
10/7/13
PROFESSIONAL ENGINEER

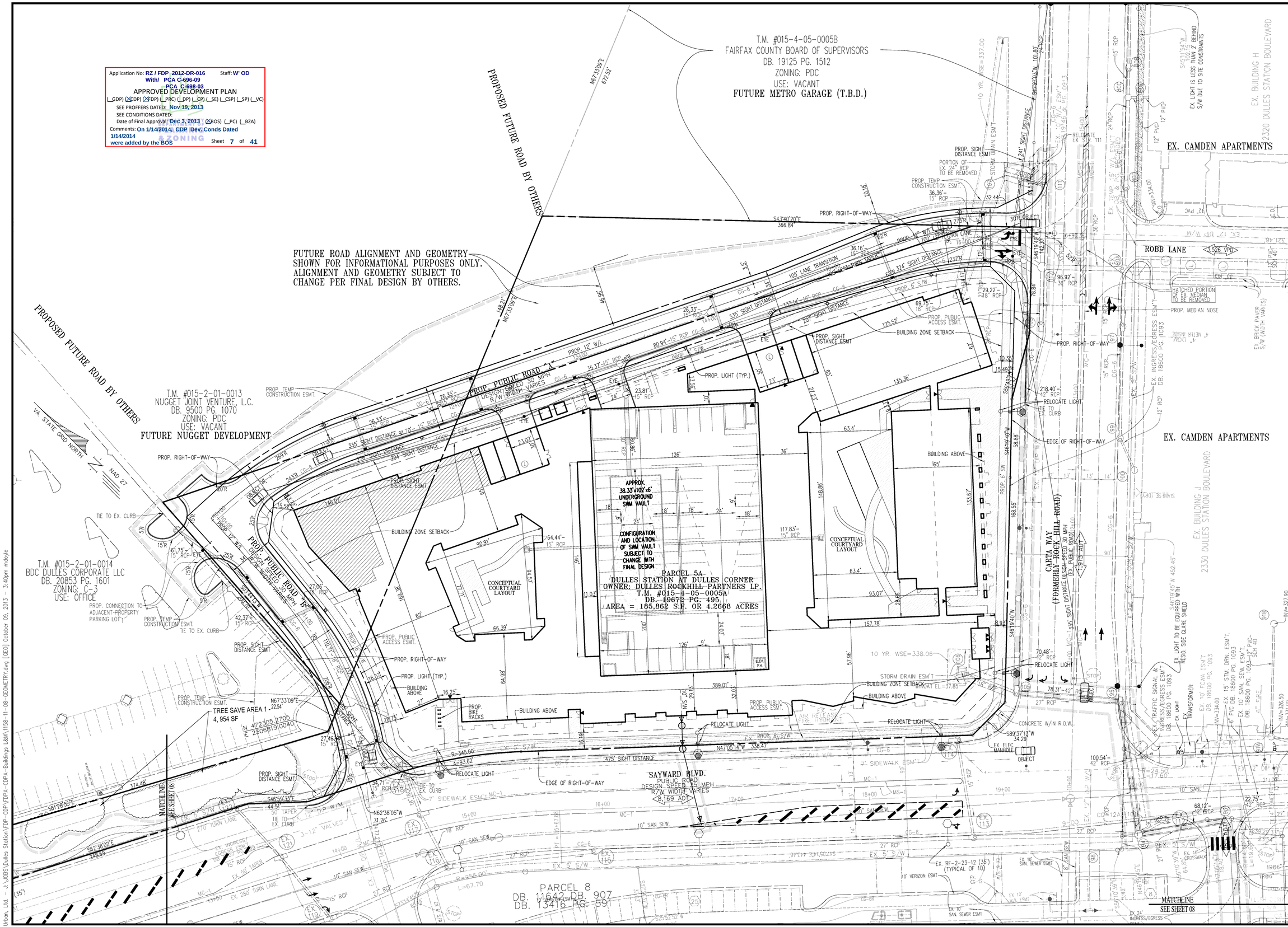
CDPA - EXISTING TRAILS
DULLES STATION
PARCEL 5A
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SCALE: 1"=100' C.I.=2' DATE: DEC., 2011

SHEET 06 OF 41

FILE No. SP-1158-12

Urban, Ltd. - J:\JOBS\Dulles Station\FDP-CDP\FDPA-CDPA-Buildings L&M\1158-11-04-CDPA TRAILS.dwg [Layout1] October 09, 2013 - 3:39pm mdoyle



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PROFESSIONAL ENGINEER

CDP-FDP - GEOMETRY PLAN

DULLES STATION PARCEL 5A

DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SCALE: 1"=30'
C.I.= N/A
DATE: DEC., 2011

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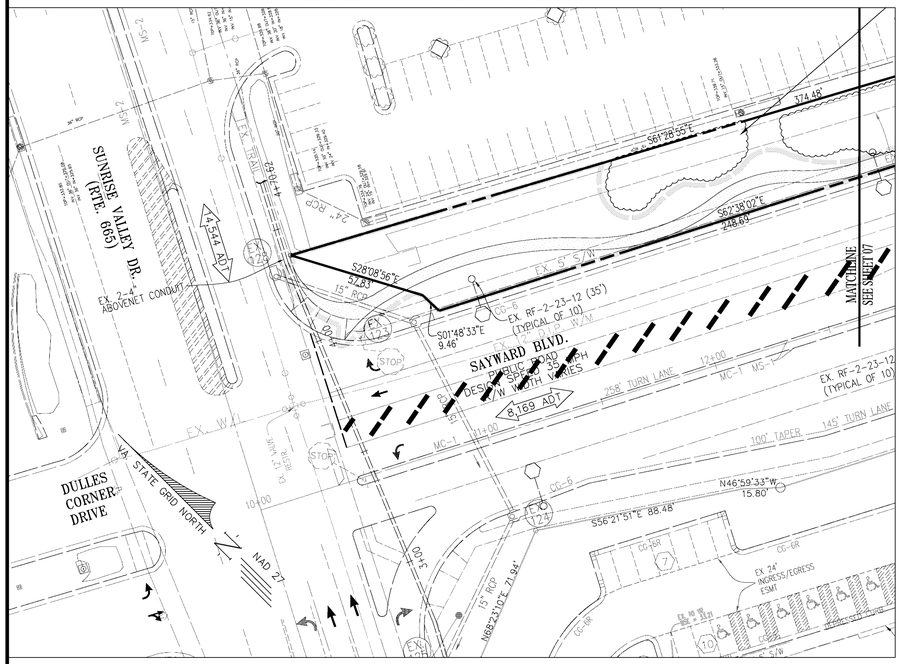
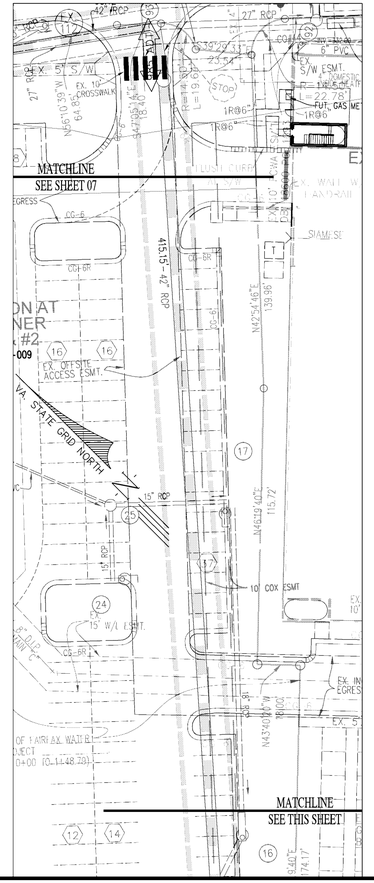
FILE No. SP-1158-12

Urban, Ltd. - J:\JOBS\Dulles Station\FDP-CDP\FDPA-CDPA-Buildings L&M\1158-11-08-GEOMETRY.dwg [GEO] October 09, 2013 - 3:40pm mdoyle

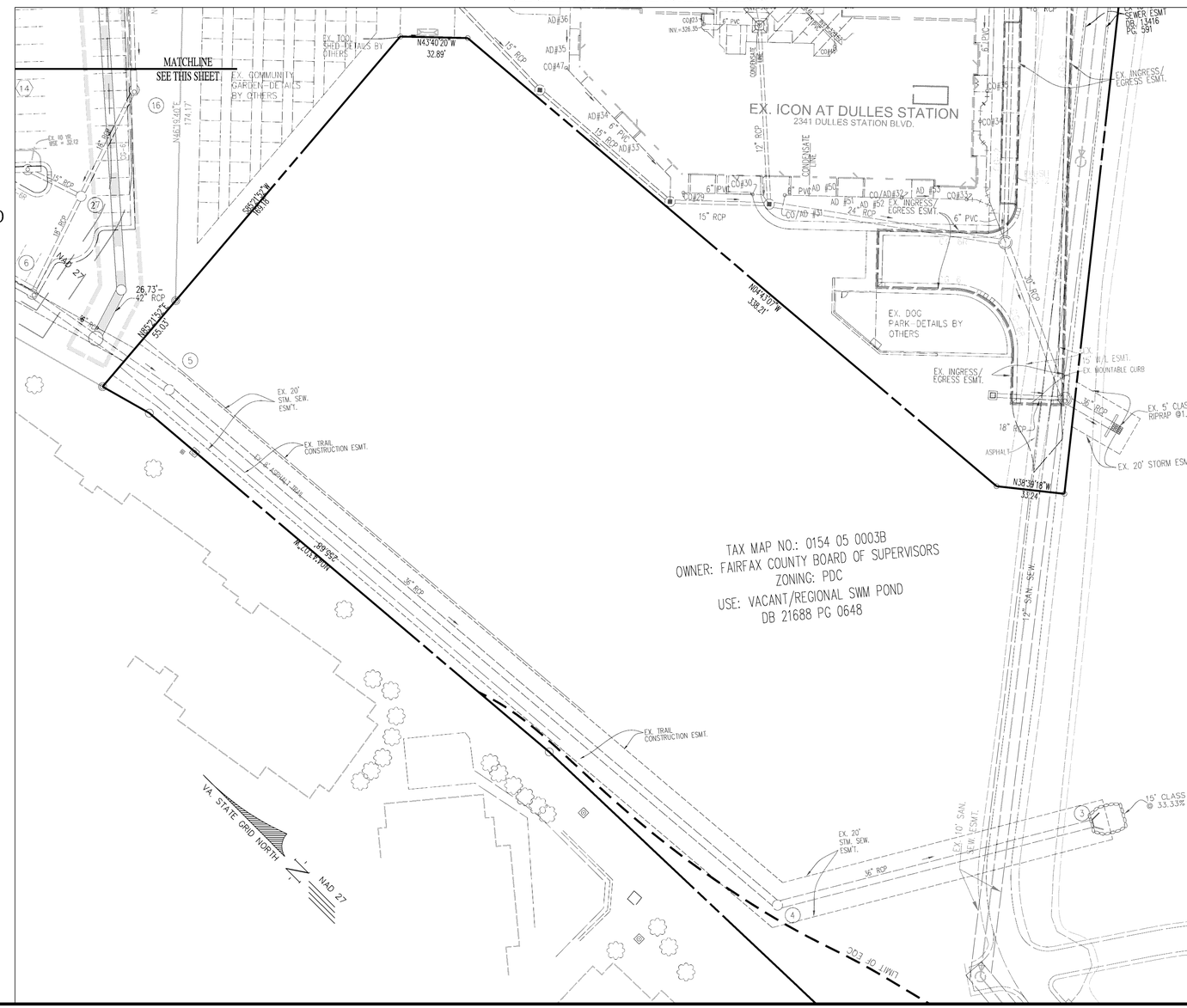
INSET - PROPOSED LINEAR PARK
SEE SHEET 37 FOR CONCEPTUAL PARK DESIGN



INSET - PROPOSED STORM DRAIN PIPES TO BE UP-SIZED
SEE SHEET 07 FOR CONTINUATION



INSET - PROPOSED COMMUNITY PARK & CONTINUATION OF STORM PIPES TO BE UP-SIZED
SEE SHEET 40 FOR CONCEPTUAL PARK DESIGN



Application No: RZ / FDP 2012-DR-016 Staff: W' OD
With/ PCA C-696-09
PCA C-698-03
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Sheet 8 of 41

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PROFESSIONAL ENGINEER

CDP-FDP - GEOMETRY PLAN
DULLES STATION
PARCEL 5A
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SCALE: 1"=30' C.I.= N/A DATE: DEC., 2011

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FILE No.
SP-1158-12

Urban, Ltd. - J:\JOBS\Dulles Station\FDP-CDP\FDPA-CDPA-Buildings L&M\1158-11-08-GEOMETRY.dwg [GEO (2)] October 09, 2013 - 3:41pm mdoyle

Application No: RZ / FDP 2012-DR-016 Staff: W' OD
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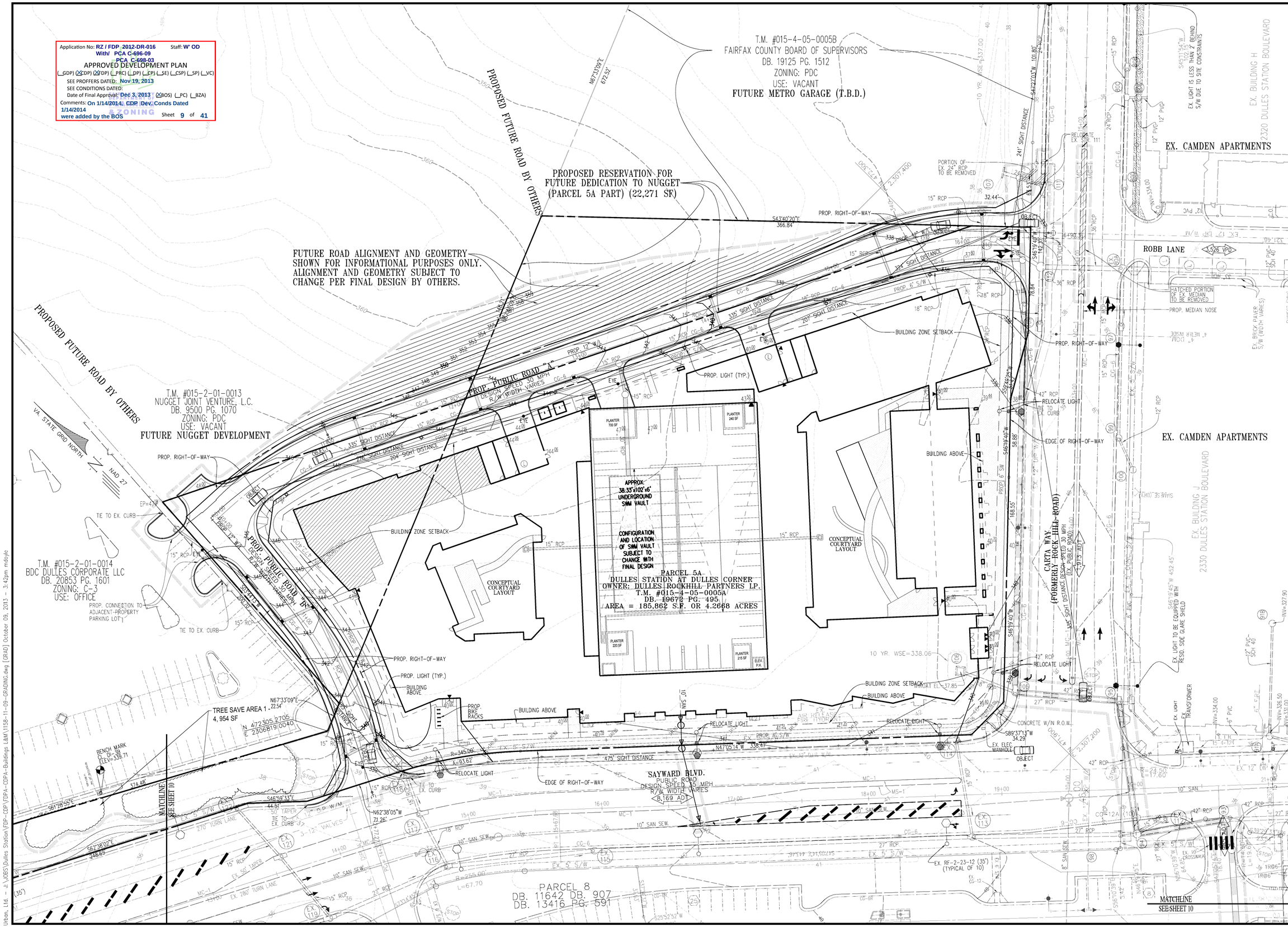

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CDP-FDP - GRADING PLAN

DULLES STATION
PARCEL 5A

DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

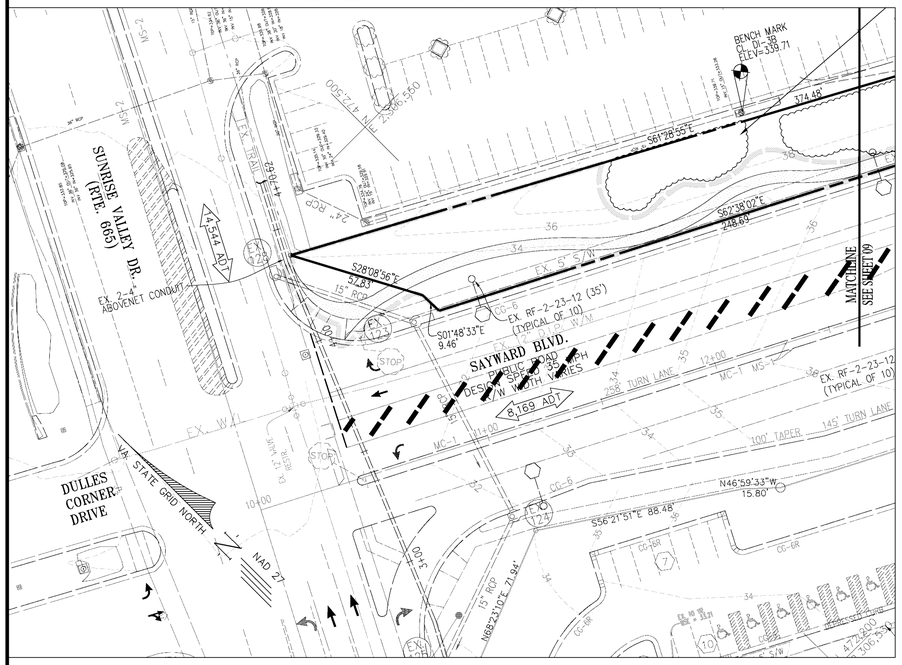
SCALE: 1"=30' | CI.=2' | DATE: DEC., 2011

SHEET 09 OF 41

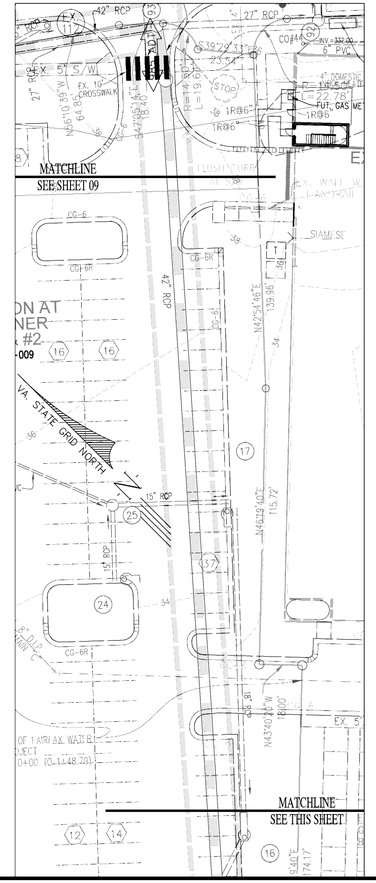
FILE No. SP-1158-12

Urban, Ltd. - J:\JOBS\Dulles Station\FDP-CDP\FDPA-CDPA-Buildings L&M\1158-11-09-GRADING.dwg [GRAD] October 09, 2013 - 3:42pm mdoyle

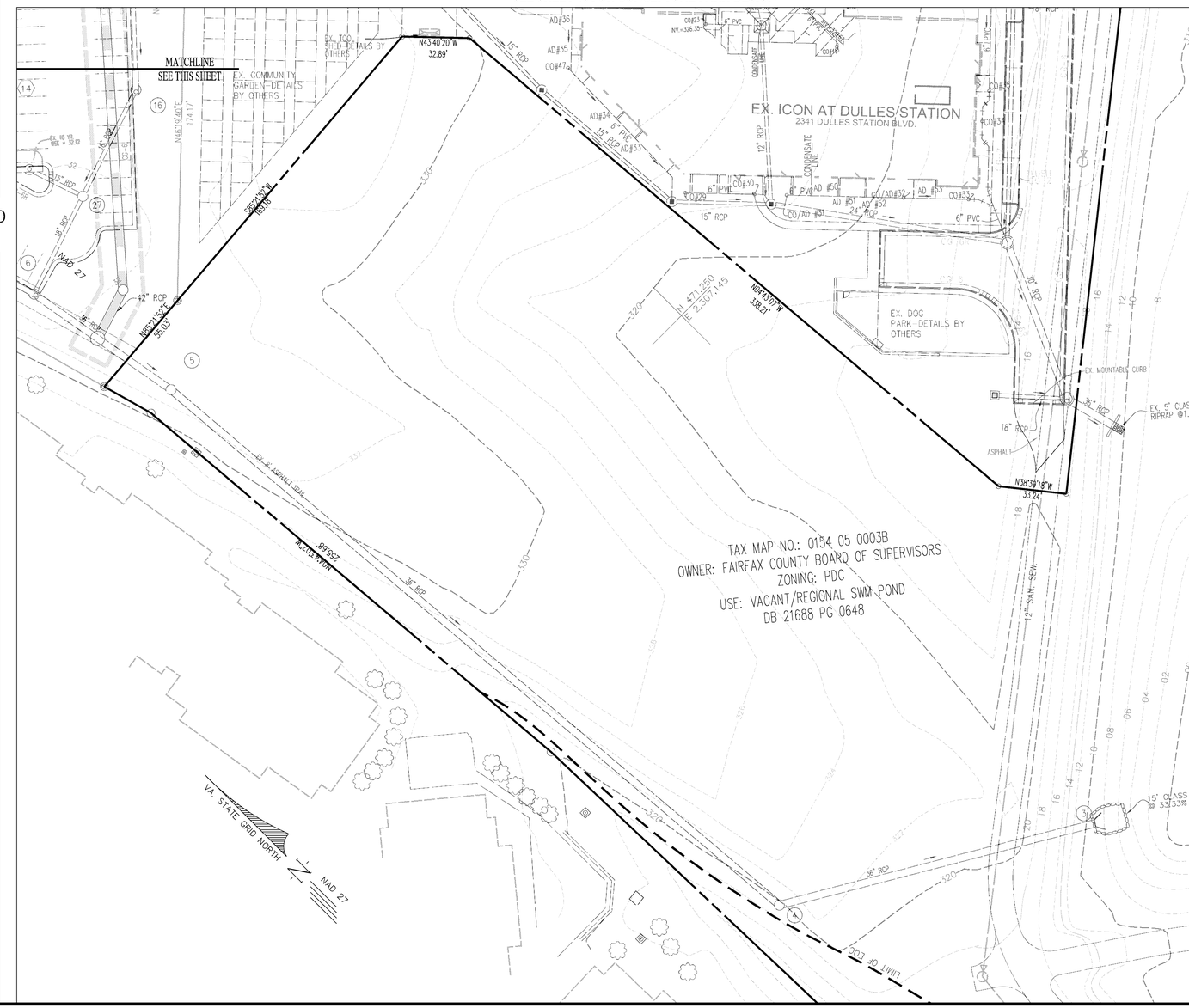
INSET - PROPOSED LINEAR PARK
SEE SHEET 37 FOR CONCEPTUAL PARK DESIGN



INSET - PROPOSED STORM DRAIN PIPES TO BE UP-SIZED
SEE SHEET 07 FOR CONTINUATION



INSET - PROPOSED COMMUNITY PARK & CONTINUATION OF STORM PIPES TO BE UP-SIZED
SEE SHEET 40 FOR CONCEPTUAL PARK DESIGN



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ZONING
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COMMONWEALTH OF VIRGINIA
CLAYTON K. GOSTICK
LIC. NO. 0080706
10/7/13
PROFESSIONAL ENGINEER

CDP-FDP - GRADING PLAN
DULLES STATION
PARCEL 5A
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SCALE: 1"=30' C.I.= 2' DATE: DEC., 2011

SHEET 10 OF 41

FILE No. SP-1158-12

Urban, Ltd. – J:\JOBS\Dulles Station\FDP-CDP\FDPA-CDPA-Buildings L&M\1158-11-09-GRADING.dwg [GRAD (2)] October 09, 2013 – 3:42pm mdoyle

ONSITE OPEN SPACE (EXCLUSIVE OF ONSITE URBAN PARK LAND) = 39,529 S.F. (0.92 AC.) OR 21.26%

ONSITE (PARCEL 5A) URBAN PARK LAND (NOT INCLUDED IN OPEN SPACE) = 26,489.66 S.F. (0.61 AC.)

OFFSITE (RELATIVE TO PARCEL 5A) URBAN PARK LAND = 113,423 S.F. (2.60 AC.)

RECREATIONAL OPEN SPACE (INCLUDED IN TOTAL OPEN SPACE) = 11,172.80 S.F. (0.26 AC.)

PARCEL 5A
DULLES STATION AT DULLES CORNER
OWNER: DULLES ROCKHILL PARTNERS LP
T.M. #015-4-05-0005A
DB. 19675 PG. 495
AREA = 180,862 S.F. OR 4.2500 ACRES

T.M. #015-2-01-0013
NUGGET JOINT VENTURE, L.C.
DB. 9500 PG. 1970
ZONING: C-7
USE: VACANT
FUTURE NUGGET DEVELOPMENT

T.M. #015-2-01-0014
BDC DULLES CORPORATE LLC
DB. 20863 PG. 1601
ZONING: C-7
USE: OFFICE

EX. CAMDEN APARTMENTS

EX. BUILDING I
2330 DULLES STATION BOULEVARD

EX. BUILDING II
2310 DULLES STATION BOULEVARD
R-2 (MULTI-FAMILY DWELLINGS 60 FT.)

BUILDING I
FF=333.33

ROBB LANE

DULLES STATION (PRIVATE)

SAYWARD BLVD.

DULLES CORNER DRIVE

SHOWER VALLEY DR.

PARCEL 8
DB. 11612 DB. 907
DB. 13416 PG. 591

HOTEL #1

HOTEL #2

DULLES STATION AT DULLES CORNER

EX. PARKING GARAGE

Retail

EX. ICON AT DULLES STATION

EX. PRIVATE DRIVE

EX. DOG PARK - DETAILS BY ICON/DS

TAX MAP NO.: 0154 05 0003B
OWNER: FAIRFAX COUNTY BOARD OF SUPERVISORS
ZONING: PDC
USE: VACANT/REGIONAL SWM POND
DB 21488 PG 0648

OWNER: ROCKS DULLES TOWN CENTER
ZONING: PDH-20
USE: RESOURCES AND VACANT
DB 9891 PG 929

OWNER: ROCKS DULLES TOWN CENTER
ZONING: PDH-20
USE: RESOURCES AND VACANT
DB 9893 PG 762

THE VOSS RUN L.P.
DB 15156 PG 1307

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COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
LIC. No. 0397001
10/7/13
PROFESSIONAL ENGINEER

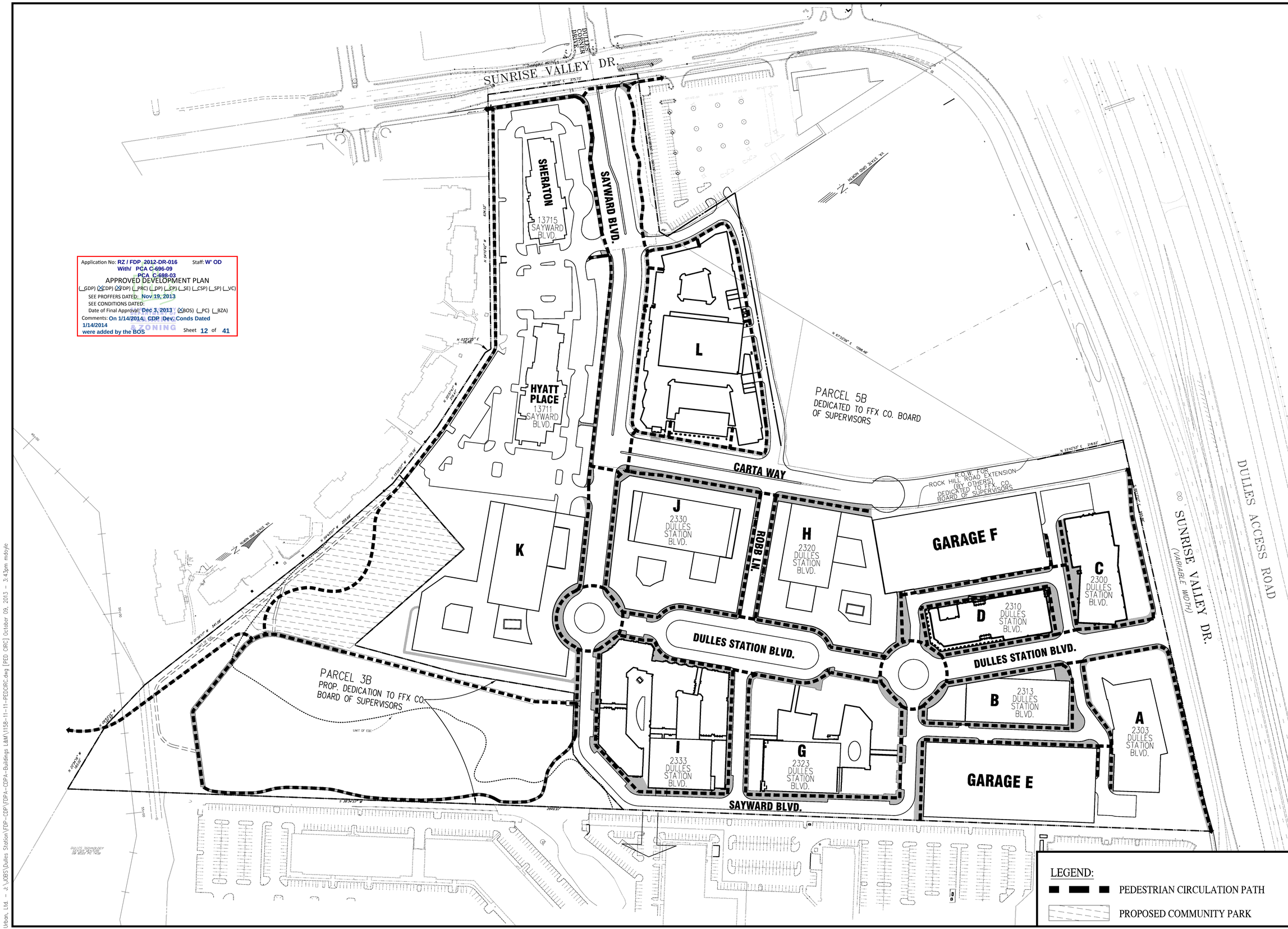
OPEN SPACE EXHIBIT
DULLES STATION
PARCEL 5A
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SCALE: 1"=60'
CL= N/A
DATE: DEC., 2011

SHEET 11 OF 41

FILE No. SP-1158-12

Urban, Ltd. – J:\JOBS\Dulles Station\FDP-CDP\FDPA-CDPA-Buildings L&M\1158-11-10-Open Space Exhibit.dwg [CEO] October 09, 2013 – 3:43pm mdoyle



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Sheet 12 of 41

No.	DATE	DESCRIPTION

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COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
Lic. No. 036790
10/7/13
PROFESSIONAL ENGINEER

PEDESTRIAN CIRCULATION PLAN
DULLES STATION
PARCEL 5A
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

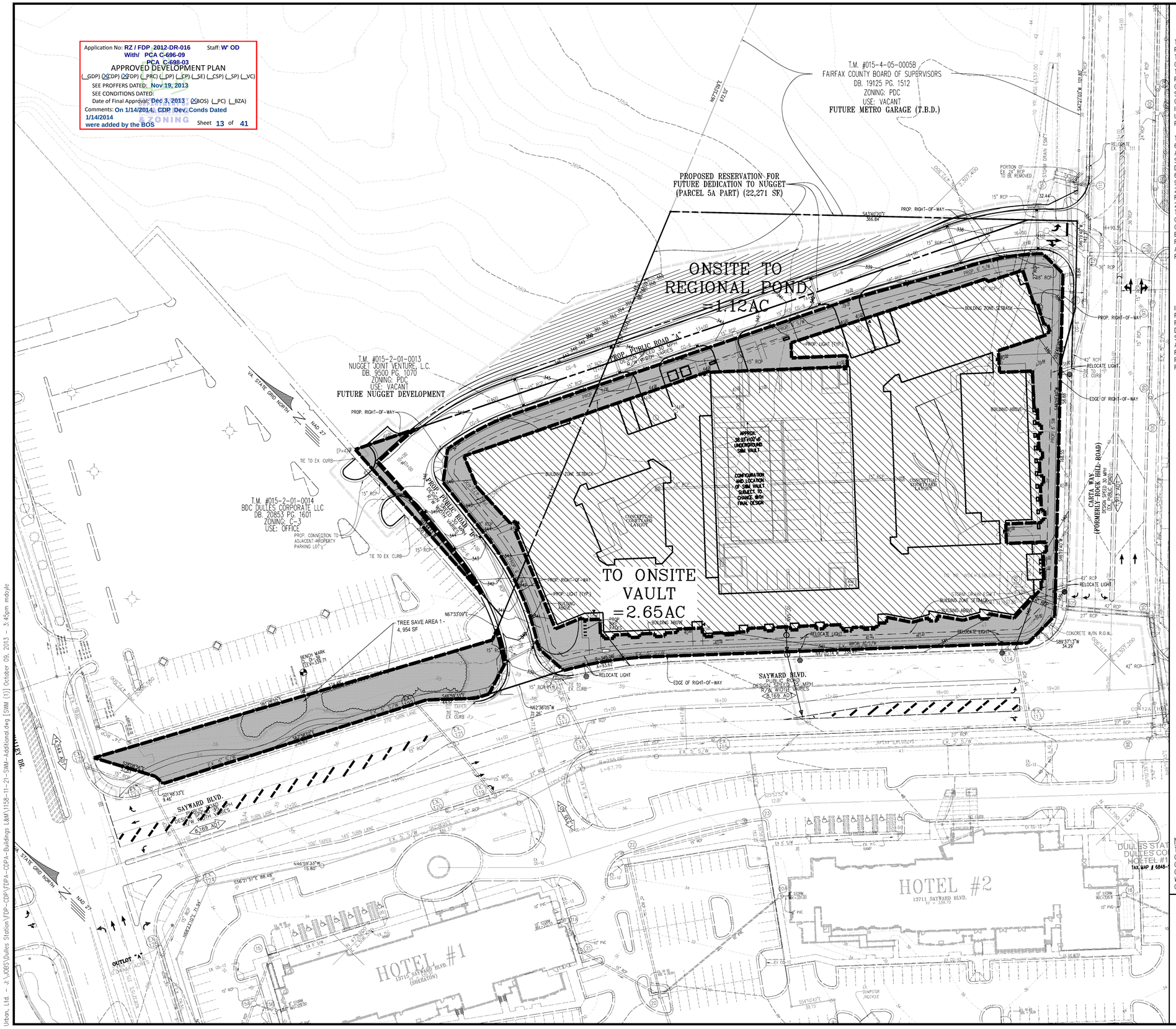
SCALE: 1"=100' C.I.=2' DATE: DEC., 2011

SHEET 12 OF 41

FILE No. SP-1158-12

Urban, Ltd. - J:\JOBS\Dulles Station\FDP-CDP\FDPA-CDPA-Buildings L&M\1158-11-11-PEDCIRC.dwg [PED CIRC] October 09, 2013 - 3:43pm mdoyle

Application No: RZ / FDP 2012-DR-016 Staff: W' OD
With/ PCA C-696-09
PCA C-698-03
APPROVED DEVELOPMENT PLAN
(_GDP) (XCDP) (XFDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC)
SEE PROFFERS DATED: Nov 19, 2013
SEE CONDITIONS DATED:
Date of Final Approval: Dec 3, 2013 (XBOS) (_PC) (_BZA)
Comments: On 1/14/2014, CDP Dev. Conds Dated 1/14/2014 were added by the BOS
DEPT OF PLANNING & ZONING
Sheet 13 of 41



S.W.M. NARRATIVE
OFFSITE SWM / BMP POND

THE SUBJECT SITE IS LOCATED ON FAIRFAX COUNTY TAX MAP 015-4-((5))-0005A AND A PORTION OF 015-2-((1))-0013. THE SITE WAS PART OF THE ORIGINAL DRAINAGE AREA FOR THE REGIONAL POND WHICH WAS BEEN CONSTRUCTED ON PARCEL 3 AS SHOWN IN THE EXHIBIT ON SHEET 19. A TOTAL OF 3.75 ACRES WILL BE COLLECTED IN THE CLOSED CONDUIT SYSTEM THROUGHOUT PARCEL 5A, AND CONVEYED TO THE EXISTING REGIONAL POND LOCATED ON PARCEL 3. THE CLOSED CONDUIT SYSTEM WITHIN PARCEL 5A WILL BE DESIGNED AND CONSTRUCTED UNDER A SITE PLAN FOR THE PROPOSED BUILDINGS. THE CLOSED CONDUIT SYSTEM WILL BE PIPED FROM PARCEL 5A, ACROSS SAYWARD BLVD., BEHIND BUILDING K, AND CONNECT TO THE EXISTING 30" RCP UNDER THE POND ACCESS ROAD. THE RUNOFF INTERCEPTED BY THESE INLETS IS CONVEYED WITH A CLOSED CONDUIT SYSTEM, WHICH ULTIMATELY DISCHARGES INTO THE POND VIA A 54" RCP. THE 54" RCP INLET PIPE WAS PROPOSED WITH 6848-SP-05.

THE EXISTING REGIONAL POND WAS DESIGNED UNDER FAIRFAX COUNTY PLAN NUMBER 6848-PI-02. THE POND WAS DESIGNED TO CONTROL A TOTAL DRAINAGE AREA OF 116.95 ACRES. THE POND WAS DESIGNED TO HANDLE THE INTENSIVE IMPERVIOUS AREA THAT THE SUBJECT PARCELS HAVE PROPOSED ALONG WITH THE OTHER DEVELOPMENT THROUGHOUT DULLES STATION. THIS IS EVIDENT BY THE CURVE NUMBER EVALUATION ON SHEET 5 OF 6848-PI-02. A CURVE NUMBER OF 57.9 WAS USED FOR EXISTING CONDITIONS, WHEREAS A 91.60 WAS USED FOR POST DEVELOPMENT CONDITIONS. THE PRE DEVELOPMENT 2, 10, AND 25 YEAR RUNOFFS FOR THE DRAINAGE DIVIDE ARE 20.69 CFS, 127.39 CFS, AND 182.34 CFS RESPECTIVELY. THE POST DEVELOPMENT 2, 10, AND 25 YEAR OUTFLOWS FROM THE POND ARE 20.28 CFS, 123.99 CFS, AND 188.22 CFS. THE 100-YEAR WATER SURFACE ELEVATION FOR THE EXISTING POND IS 312.97. THE OUTFLOW FROM THE POND IS CONTROLLED BY A COMBINED OUTFLOW STRUCTURE. THE OUTFLOW FROM THE POND IS CONVEYED TO HORSEPEN CREEK VIA DUAL 8'X7' BOX CULVERTS. THE OUTFLOW FROM THE BOX CULVERT ENTERS AN EXISTING FLOODPLAIN IN HORSEPEN CREEK, FOR WHICH A FLOODPLAIN STUDY WAS PERFORMED FOR THE PROPOSED IMPROVEMENTS (6848-FP-02). WE FEEL THE EXISTING POND SERVES AS AN ADEQUATE OUTFALL FOR THE SUBJECT SITE. SEE SHEET 17-22 FOR ADDITIONAL DETAILS REGARDING THE EXISTING REGIONAL POND AND ASSOCIATED CALCULATIONS

S.W.M. NARRATIVE
ONSITE SWM VAULT

IN ADDITION TO THE MINIMUM REQUIREMENTS FOR SWM AND BMP'S PROVIDED BY THE EXISTING REGIONAL STORMWATER MANAGEMENT FACILITY, THE APPLICANT IS PROPOSING TO REDUCE THE PEAK RELEASE RATE AND VOLUME FOR THE 1 AND 2 YEAR, 24 HOUR STORM FROM THE POST DEVELOPED CONDITION TO BE EQUAL OR LESS THAN THE EXISTING CONDITION FOR THE SAME STORMS. THE APPLICANT IS ALSO PROPOSING TO CONTROL THE STORMWATER RUNOFF ASSOCIATED WITH THE DEVELOPMENT SUCH THAT THE FIRST ONE (1) INCH OF RAINFALL IS REUSED OR TREATED IN A MANNER THROUGH WHICH 80% OF THE AVERAGE ANNUAL POST-DEVELOPMENT TOTAL SUSPENDED SOLIDS ARE REMOVED. CALCULATIONS ARE PROVIDED FOR THESE REQUIREMENT SHEET 14.

NOTE:
THIS MAP AND THE DIVIDES AND AREAS SHOWN THEREIN SHOW THE RETENTION OF THE VOLUME OF THE 2 YEAR, 24 HOUR STORM AND THE FIRST 1" OF RUNOFF (SEE SUPPORTING COMPUTATIONS ON SHEET 14). THE 2 YEAR AND 10 YEAR STORMWATER RUNOFF QUANTITY AND QUALITY IS TREATED BY THE EXISTING REGIONAL POND ON PARCEL 3. THE REGIONAL POND WAS DESIGNED BASED ON THE FINAL BUILDOUT OF THE SUBJECT SITE. SEE THE SUPPORTING COMPUTATIONS ON SHEETS 15-22.

LEGEND:

- ONSITE CONTROLLED
- ONSITE UNCONTROLLED
- DRAINAGE DIVIDE

No.	DATE	DESCRIPTION
		REVISIONS

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STORMWATER MANAGEMENT PLAN
DULLES STATION
PARCEL 5A
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SCALE: 1"=30' C.I.= 2' DATE: DEC., 2011

SHEET 13 OF 41

FILE No. SP-1158-12

Urban, Ltd. - z:\VJ65\Dulles Station\FDP-CDP\CDPA-CDPA-Buildings L&M\1158-11-21-SWM-Additional.dwg [SWM (1)] October 09, 2013 - 3:45pm mdoyle

Catchment Detailed Report: Subarea 1

<General>			
ID	32	Notes	
Label	Subarea 1	Hyperlinks	<Collection: 0 items>
Runoff			
Runoff Method	Unit Hydrograph	SCS CN (Composite)	74.000
Loss Method	SCS CN	Unit Hydrograph Method	SCS Unit Hydrograph
Use Scaled Area?	False	Tc Input Type	Composite Tc
Area (User Defined)	4.270 acres	Time of Concentration (Composite)	0.100 hours
CN Input Type	Composite CN		

CN Area Collection

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil C	74.000	4.270	0.0	0.0

Tc Data Collection			
User Defined Tc			
Time of Concentration	0.100 hours		
Unit Hydrograph (Advanced)			
SCS Unit Hydrograph Method	Default Curvilinear	Use Directly Connected Impervious Area	False
Flow (Base)	0.00 ft³/s	Calculation Increment (Catchment)	0.000 hours
Results (Computed)			
Computational Time Increment	0.013 hours	Time to Peak (Computed)	11.947 hours
Flow (Peak, Computed)	6.49 ft³/s		
Results (Interpolated)			
Flow (Peak Interpolated Output)	6.48 ft³/s	Time to Flow (Peak Interpolated Output)	11.950 hours
Volume	16,079.000 ft³		
Results (SCS Unit Hydrograph)			
Unit Hydrograph Shape Factor	483.432	Unit peak time, Tp	0.067 hours
K Factor	0.749	Unit receding limb, Tr	0.267 hours
Receding/Rising, Tr/Tp	1.670	Total unit time, Tb	0.333 hours
Unit peak, qp	48.38 ft³/s	Percent Volume under Rising Limb	37.5 %
Results			
Flow (Total)	0.00 ft³/s	Flow (Peak) + Flow (Base)	6.49 ft³/s
Results			
Cumulative Runoff Depth (Pervious)	1.0 in	Maximum Retention (Pervious)	3.5 in
Runoff Volume (Impervious)	0.000 ft³	Maximum Retention (Pervious, 20 percent)	0.7 in
Runoff Volume (Pervious)	16,082.395 ft³	Maximum Retention (Impervious)	(N/A) in
Cumulative Runoff Depth (Impervious)	0.0 in	Maximum Retention (Impervious, 20 percent)	(N/A) in

Catchment Detailed Report: Subarea 1

<General>			
ID	32	Notes	
Label	Subarea 1	Hyperlinks	<Collection: 0 items>
Runoff			
Runoff Method	Unit Hydrograph	SCS CN (Composite)	94.000
Loss Method	SCS CN	Unit Hydrograph Method	SCS Unit Hydrograph
Use Scaled Area?	False	Tc Input Type	Composite Tc
Area (User Defined)	4.270 acres	Time of Concentration (Composite)	0.100 hours
CN Input Type	Composite CN		

CN Area Collection

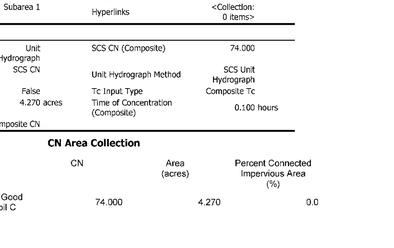
Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Urban Districts - Commercial & Business - Soil C	94.000	4.270	0.0	0.0

Tc Data Collection			
User Defined Tc			
Time of Concentration	0.100 hours		
Unit Hydrograph (Advanced)			
SCS Unit Hydrograph Method	Default Curvilinear	Use Directly Connected Impervious Area	False
Flow (Base)	0.00 ft³/s	Calculation Increment (Catchment)	0.000 hours
Results (Computed)			
Computational Time Increment	0.013 hours	Time to Peak (Computed)	11.933 hours
Flow (Peak, Computed)	15.74 ft³/s		
Results (Interpolated)			
Flow (Peak Interpolated Output)	15.28 ft³/s	Time to Flow (Peak Interpolated Output)	11.950 hours
Volume	39,429.000 ft³		
Results (SCS Unit Hydrograph)			
Unit Hydrograph Shape Factor	483.432	Unit peak time, Tp	0.067 hours
K Factor	0.749	Unit receding limb, Tr	0.267 hours
Receding/Rising, Tr/Tp	1.670	Total unit time, Tb	0.333 hours
Unit peak, qp	48.38 ft³/s	Percent Volume under Rising Limb	37.5 %
Results			
Flow (Total)	0.00 ft³/s	Flow (Peak) + Flow (Base)	15.74 ft³/s
Results			
Cumulative Runoff Depth (Pervious)	2.5 in	Maximum Retention (Pervious)	0.6 in
Runoff Volume (Impervious)	0.000 ft³	Maximum Retention (Pervious, 20 percent)	0.1 in
Runoff Volume (Pervious)	39,430.265 ft³	Maximum Retention (Impervious)	(N/A) in
Cumulative Runoff Depth (Impervious)	0.0 in	Maximum Retention (Impervious, 20 percent)	(N/A) in

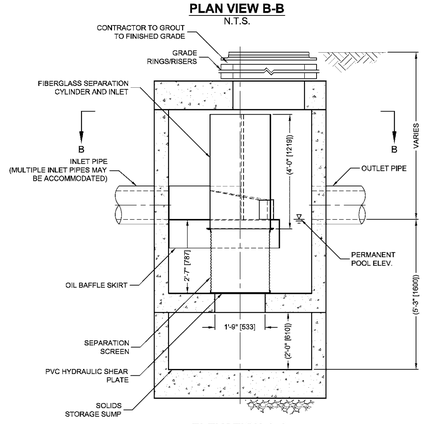
DETENTION VOLUME CALCULATIONS	
Required Detention for 1st One (1) Inch of Rainfall	
Effective Site Area = 4.27 ac =	186,001.20 sf
1st one (1) inch of rainfall = (181,209.60 sf)(0.0833 ft) =	15,500.04 cf
Required Detention for 2-Year, 24 Hour Storm	
Pre-Development Runoff =	16,082.40 cf
Post-Development Runoff =	39,430.27 cf
Required Minimum Detention Volume =	23,347.87 cf
Proposed Detention Volume =	23,460.00 cf

TOTAL SUSPENDED SOLIDS (TSS) CALCULATIONS	
Onsite Detained Area for Reuse =	2.65 ac
TSS Removal Rate for Onsite Detention =	100 %
Onsite Undetained Area to Existing Regional Pond =	1.62 ac
TSS Removal Rate for Offsite Pond	50 %*
Total TSS Removal = = [(2.65 ac)(1.0) + (1.73 ac)(0.50)] / 4.38 ac =	81.03 %

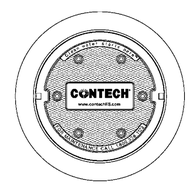
* A TSS Removal of 50% has been taken from the latest addition of the LEED Reference Guide for Green Building and Construction based on the existing ponds storage volume, detention time, and pond shape.



PLAN VIEW B-B
N.T.S.



ELEVATION A-A
N.T.S.



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

CDS2020-5-C DESIGN NOTES

CDS2020-5-C RATED TREATMENT CAPACITY IS 1.1 CFS [31.2 L/s], OR PER LOCAL REGULATIONS. MAXIMUM HYDRAULIC INTERNAL BYPASS CAPACITY IS 14.0 CFS [396 L/s]. IF THE SITE CONDITIONS EXCEED 14.0 CFS [396 L/s], AN UPSTREAM BYPASS STRUCTURE IS REQUIRED.

THE STANDARD CDS2020-5-C CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

CONFIGURATION DESCRIPTION
GRATED INLET ONLY (NO INLET PIPE)
GRATED INLET WITH INLET PIPE OR PIPES
CURB INLET ONLY (NO INLET PIPE)
CURB INLET WITH INLET PIPE OR PIPES
SEPARATE OIL BAFFLE (SINGLE INLET PIPE REQUIRED FOR THIS CONFIGURATION)
SEDIMENT WEIR FOR NJDEP / NJCAT CONFORMING UNITS

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID			
WATER QUALITY FLOW RATE (CFS OR L/s)			*
PEAK FLOW RATE (CFS OR L/s)			*
RETURN PERIOD OF PEAK FLOW (YRS)			*
SCREEN APERTURE (2400 OR 4700)			*
PIPE DATA:	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	*	*	*
INLET PIPE 2	*	*	*
OUTLET PIPE	*	*	*
RIM ELEVATION			*
ANTI-FLOTATION BALLAST		WIDTH	HEIGHT
		*	*
NOTES/SPECIAL REQUIREMENTS:			

* PER ENGINEER OF RECORD

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.contechES.com
4. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE SHALL MEET AASHTO HS20 AND CASTINGS SHALL MEET HS20 (AASHTO M 306) LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.
6. PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

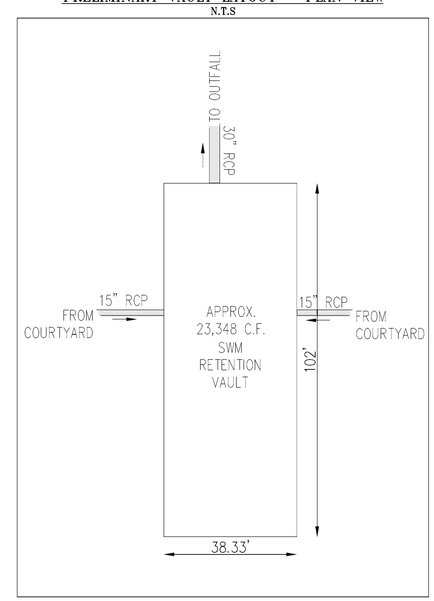
INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
C. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

CONTECH® ENGINEERED SOLUTIONS LLC
www.contechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

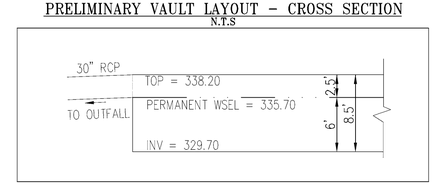
CDS2020-5-C
INLINE CDS
STANDARD DETAIL

NOTE: AT LEAST ONE CDS UNIT TO BE UTILIZED WITH THIS DEVELOPMENT

PRELIMINARY VAULT LAYOUT – PLAN VIEW
N.T.S



PRELIMINARY VAULT LAYOUT – CROSS SECTION
N.T.S



* PROPOSED UNDERGROUND RETENTION VAULT TO BE PLACED IN VOID SPACE BENEATH GARAGE RAMP. VAULT DIMENSIONS, ARCHITECTURAL DESIGN OF GARAGE RAMP AND FOOTPRINT AND LOCATION OF VAULT ARE SHOWN FOR PRELIMINARY PURPOSES AND ARE SUBJECT TO CHANGE WITH FINAL SITE PLAN SUBMISSION.

Application No: RZ / FDP 2012-DR-016 Staff: W' OD
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PCA C-698-03
APPROVED DEVELOPMENT PLAN
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ZONING
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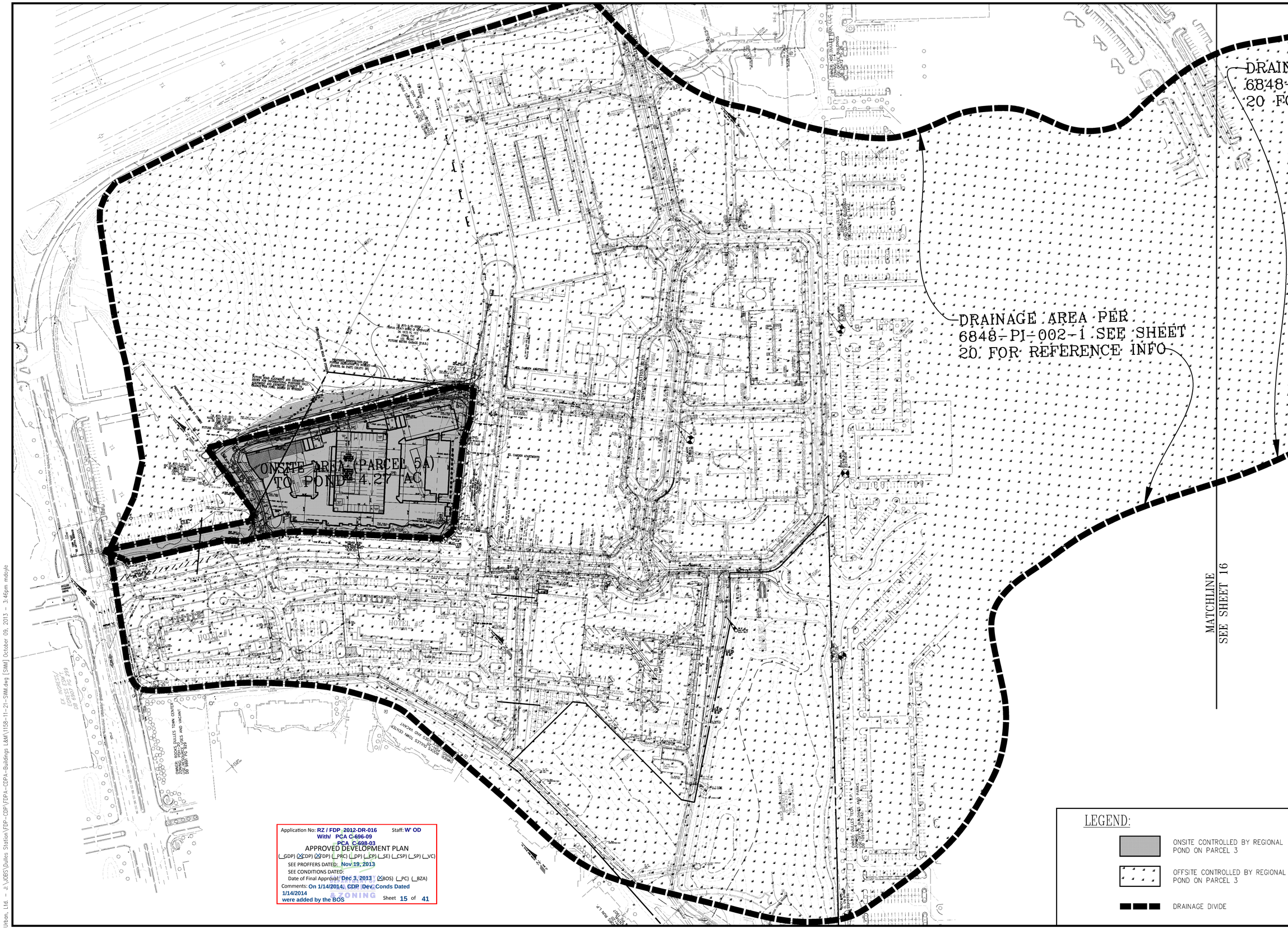
STORMWATER MANAGEMENT COMPUTATIONS
DULLES STATION
PARCEL 5A
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SCALE: 1"=100'
C.I.= 2'
DATE: DEC., 2011

SHEET 14 OF 41

FILE No. SP-1158-12

Urban, Ltd. – J:\0855\Dulles Station\FDP-CDP\FDPA-CDPA-Buildings L&M\1158-11-21-SWM-Additional.dwg [SWM (1-2)] October 09, 2013 – 3:45pm mdoyle



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OFFSITE STORMWATER MANAGEMENT PLAN
DULLES STATION
PARCEL 5A
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SCALE: 1"=100' C.I.=2' DATE: DEC., 2011

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OF
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FILE No.
SP-1158-12

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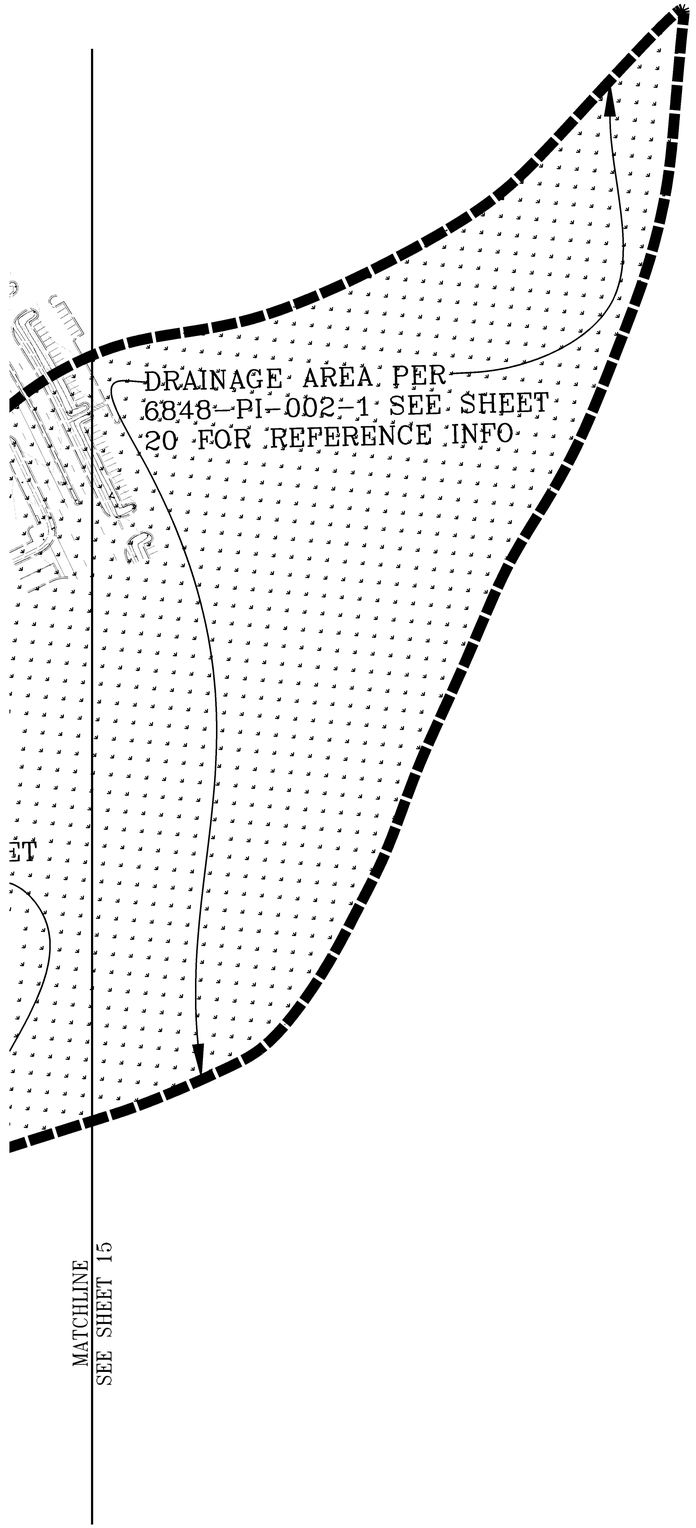

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Sheet 16 of 41

DEPARTMENT OF ZONING

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 23 .

☒ 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)
REGIONAL POND (H9)	4.27 AC	113.20 AC	116.95 AC	248,722 SF	248,722 SF	18.4'
(e.g. dry pond A, infl. trench, underground vault, etc.)						
Totals						

☒ 4. Onsite drainage channels, outfalls and pipe systems are shown on Sheet ____.
Pond inlet and oulet pipe systems are shown on Sheet 23 .

☒ 5. Maintenance access (road) to stormwater management facility(ies) are shown on Sheet 23 .
Type of maintenance access road surface noted on the plat is 23 (asphalt, geoblock, gravel, etc.).

☒ 6. Landscaping and tree preservation shown in and near the stormwater management facility is shown on Sheet 23 .*

☒ 7. A 'stormwater management narrative' which contains a description of how detention and best management practices requirements will be met is provided on Sheet 23 .

☒ 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 23 .**

☒ 9. A description of how the outfall requirements, including contributing drainage areas of the Public Facilities Manual will be satisfied is provided on Sheet 23 .

☒ 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 07 & 09 .

☒ 11. A submission waiver is requested for OFFSITE SWM WAIVER.

☒ 12. Stormwater management is not required because SWM PROVIDED IN OFFSITE REGIONAL POND.

* ALL PLANTINGS WITHIN THE RPA LIMITS WERE SAVED DURING CONSTRUCTION.

** THE EXISTING POND OUTFALLS INTO THE EXISTING HORSEPEN FLOODPLAIN. AT THE TIME WHEN THE POND WAS DESIGNED, A FLOODPLAIN STUDY WAS PERFORMED TO DEMONSTRATE THAT THE OUTFLOW FROM THE POND WAS ACCEPTABLE TO DOWNSTREAM STRUCTURES. THE DOWNSTREAM ANALYSIS WAS PROVIDED WITH 6848-FP-01.

LEGEND:

- ONSITE CONTROLLED BY REGIONAL POND ON PARCEL 3
- OFFSITE CONTROLLED BY REGIONAL POND ON PARCEL 3
- DRAINAGE DIVIDE

No.	DATE	DESCRIPTION

REVISIONS

PLAN DATE
12-13-11
2-2-12
4-20-12
6-12-12
7-19-12
8-3-12
11-29-12
06-25-13
08-14-13
10-07-13

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COMMONWEALTH OF VIRGINIA
CLAYTON E. COOK
LIC. No. 0680F80
10/7/13
PROFESSIONAL ENGINEER

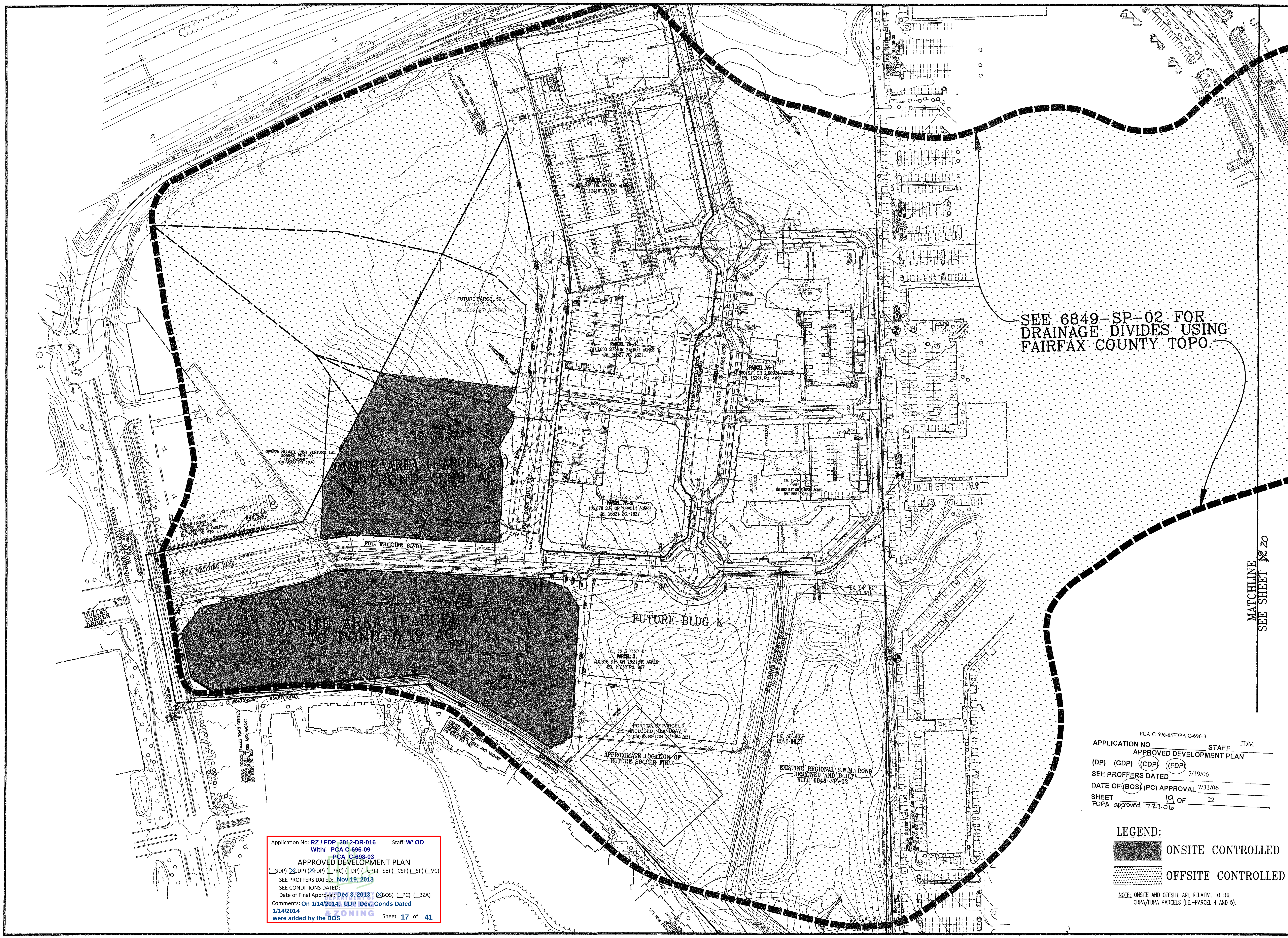
OFFSITE STORMWATER MANAGEMENT PLAN
DULLES STATION
PARCEL 5A
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SCALE: 1"=100' C.I.= 2' DATE: DEC., 2011

SHEET 16 OF 41

FILE No. SP-1158-12

Urban, Ltd. – J:\JOBS\Dulles Station\FDP-CDP\FDPA-CDPA-Buildings L&M\1158-11-21-SWM.dwg [SWM (2)] October 09, 2013 – 3:47pm mdoyle



Application No: RZ / FDP 2012-DR-016 Staff: W' OD
With/ PCA C-696-09
PCA C-698-03
APPROVED DEVELOPMENT PLAN
(_GDP) (XCDP) (XFDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC)
SEE PROFFERS DATED: Nov 19, 2013
SEE CONDITIONS DATED:
Date of Final Approval: Dec 3, 2013 (XBOS) (_PC) (_BZA)
Comments: On 1/14/2014, CDP Dev. Conds Dated 1/14/2014 were added by the BOS
Sheet 17 of 41

REFERENCE APPROVED FAIRFAX COUNTY PLAN: PCA C696-6/FDPA C-696-3 (7/31/06) FOR INFORMATIONAL PURPOSES ONLY!!

No.	DATE	DESCRIPTION	REV.BY	APPROVED	DATE

REVISION APPROVED BY DIVISION OF DESIGN REVIEW

PLAN DATE
02-07-06
03-07-06
03-30-06
06-15-06
07-05-06

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COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
No. 036790
07/05/06
PROFESSIONAL ENGINEER

STORMWATER MANAGEMENT PLAN
DULLES STATION AT DULLES CORNER
HOTELS
HUNTER MILL DISTRICT
FAIRFAX COUNTY, VIRGINIA
SCALE: 1"=100'
C.I. = 2'
DATE: FEB., 2006

SHEET 19 OF 22
FILE No. ZP-1158-1

No.	DATE	DESCRIPTION
		REVISIONS

PLAN DATE
12-13-11
2-2-12
4-20-12
6-12-12
7-19-12
8-3-12
11-29-12
06-25-13
08-19-13
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COMMONWEALTH OF VIRGINIA
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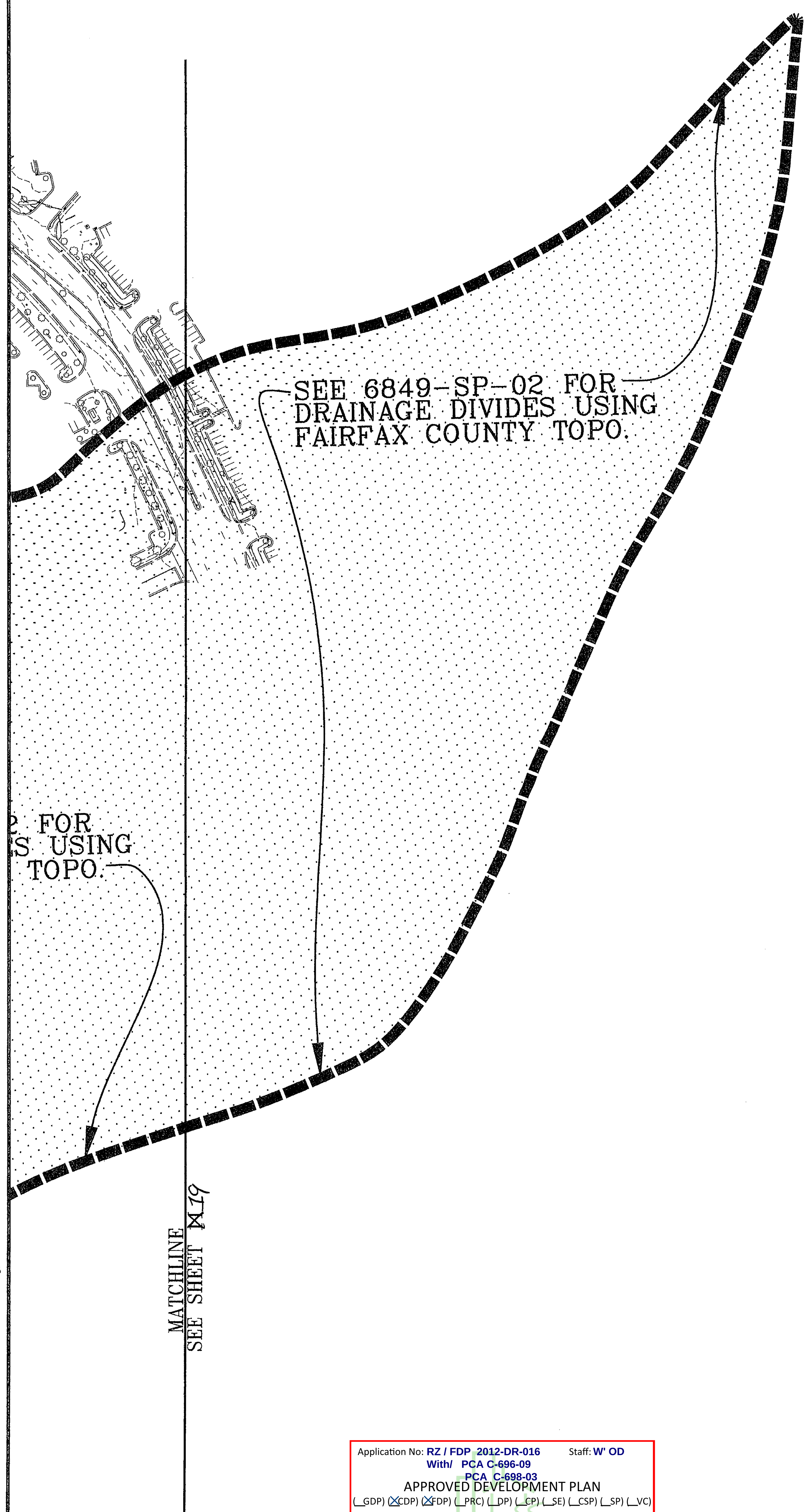
Lic. No. 036790
10/7/13
PROFESSIONAL ENGINEER

STORMWATER MANAGEMENT REFERENCE SHEET
DULLES STATION
PARCEL 5A
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA
SCALE: N/A
C.I.= N/A
DATE: DEC., 2011

SHEET 17 OF 41

FILE No. SP-1158-12

Urban, Ltd. - J:\JOBS\Dulles Station\FDP-CDP\FDPA-CDPA-Buildings L&M\1158-11-21-SWM.dwg [REF 1 (2)] October 09, 2013 - 3:47pm mdoyle
M:\Jobs\Dulles Station\FDP-CDP\FDPA-CDPA-Hotel\PCA-1158-1-SWMPlan.dwg, 07/06/2006 07:57:39 AM



Application No: RZ / FDP 2012-DR-016 Staff: W' OD
With/ PCA C-696-09
PCA C-698-03
APPROVED DEVELOPMENT PLAN
(_GDP) (☒CDP) (☒FDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC)
SEE PROFFERS DATED: Nov 19, 2013
SEE CONDITIONS DATED:
Date of Final Approval: Dec 3, 2013 (☒BOS) (_PC) (_BZA)
Comments: On 1/14/2014, CDP Dev. Conds Dated 1/14/2014 were added by the BOS
Sheet 18 of 41

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)

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

[X] 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 8 & 9.

[X] 3. Provide:

Facility Name/ Type & No. (e.g. dry pond A, infil. trench, underground vault, etc.)	On-site area served (acres)	Off-site area served (acres)	Drainage area (acres)	Footprint area (sf)	Storage Volume (cf)	If pond, dam height (ft)
REGIONAL POND (H9)	9.88 AC	107.07 AC	116.95 AC	248,722 SF	248,722 SF	18.4'
Totals	9.88 AC	107.07 AC	116.95 AC	248,722 SF	248,722 SF	18.4'

[X] 4. Onsite drainage channels, outfalls and pipe systems are shown on Sheet 8,9,&12. Pond inlet and oulet pipe systems are shown on Sheet 12.

[X] 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 12 (asphalt, geoblock, gravel, etc.).

[X] 6. Landscaping and tree preservation shown in and near the stormwater management facility is shown on Sheet 12 *.

[X] 7. A 'stormwater management narrative' which contains a description of how detention and best management practices requirements will be met is provided on Sheet 12.

[X] 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 12 **.

[X] 9. A description of how the outfall requirements, including contributing drainage areas of the Public Facilities Manual will be satisfied is provided on Sheet 12.

[X] 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 & 9.

[X] 11. A submission waiver is requested for OFFSITE SWM WAIVER.

[X] 12. Stormwater management is not required because SWM PROVIDED IN OFFSITE REGIONAL POND.

* ALL PLANTINGS WITHIN THE RPA LIMITS WERE SAVED DURING CONSTRUCTION.

** THE EXISTING POND OUTFALLS INTO THE EXISTING HORSEPEN FLOODPLAIN. AT THE TIME WHEN THE POND WAS DESIGNED, A FLOODPLAIN STUDY WAS PERFORMED TO DEMONSTRATE THAT THE OUTFLOW FROM THE POND WAS ACCEPTABLE TO DOWNSTREAM STRUCTURES. THE DOWNSTREAM ANALYSIS WAS PROVIDED WITH 6848-FP-01.

S.W.M. NARRATIVE

THE SUBJECT SITE IS LOCATED ON FAIRFAX COUNTY TAX MAP 015-4-((5))-PARCELS 4 AND 5. THE SITE WAS PART OF THE ORIGINAL DRAINAGE AREA FOR THE REGIONAL POND WHICH WAS BEEN CONSTRUCTED ON PARCEL 3 AS SHOWN IN THE EXHIBIT ON SHEET 12. A TOTAL OF 9.88 ACRES WILL BE COLLECTED IN THE CLOSED CONDUIT SYSTEM THROUGHOUT PARCEL 4 AND 5, AND CONVEYED TO THE EXISTING REGIONAL POND LOCATED ON PARCEL 3. THE CLOSED CONDUIT SYSTEM WITHIN PARCEL 4 WILL BE DESIGNED AND CONSTRUCTED UNDER A SITE PLAN FOR THE PROPOSED BUILDINGS. THE CLOSE CONDUIT SYSTEM WILL BE PIPED FROM PARCEL 4, BEHIND BUILDING K AND CONNECT TO THE EXISTING 30" RCP UNDER THE POND ACCESS ROAD. THE RUNOFF FROM PARCEL 5 DRAINS TO YARD INLETS NORTH OF THE FUTURE WHITTIER BLVD AND WEST OF ROCK HILL EXTENSION. THE RUNOFF INTERCEPTED BY THESE INLETS IS CONVEYED WITH A CLOSED CONDUIT SYSTEM, WHICH ULTIMATELY DISCHARGES INTO THE POND VIA A 54" RCP. THE 54" RCP INLET PIPE WAS PROPOSED WITH 6848-SP-05.

THE EXISTING REGIONAL POND WAS DESIGNED UNDER FAIRFAX COUNTY PLAN NUMBER 6848-SP-02. THE POND WAS DESIGNED TO CONTROL A TOTAL DRAINAGE AREA OF 116.95 ACRES. THE POND WAS DESIGNED TO HANDLE THE INTENSIVE IMPERVIOUS AREA THAT THE SUBJECT PARCELS HAVE PROPOSED ALONG WITH THE OTHER DEVELOPMENT THROUGHOUT DULLES STATION. THIS IS EVIDENT BY THE CURVE NUMBER EVALUATION ON SHEET 5 OF 6848-SP-02. AN CURVE NUMBER OF 57.9 WAS USED FOR EXISTING CONDITIONS, WHEREAS A 91.60 WAS USED FOR POST DEVELOPMENT CONDITIONS. THE PRE DEVELOPMENT 2, 10, AND 25 YEAR RUNOFFS FOR THE DRAINAGE DIVIDE ARE 20.69 CFS, 127.39 CFS, AND 182.34 CFS RESPECTIVELY. THE POST DEVELOPMENT 2, 10, AND 25 YEAR OUTFLOWS FROM THE POND ARE 20.28 CFS, 123.99 CFS, AND 188.22 CFS. THE 100-YEAR WATER SURFACE ELEVATION FOR THE EXISTING POND IS 312.97. THE OUTFLOW FROM THE POND IS CONTROLLED BY A COMBINED OUTFLOW STRUCTURE. THE OUTFLOW FROM THE POND IS CONVEYED TO HORSEPEN CREEK VIA DUAL 8'X7' BOX CULVERTS. THE OUTFLOW FROM THE BOX CULVERT ENTERS AN EXISTING FLOODPLAIN IN HORSEPEN CREEK, FOR WHICH A FLOODPLAIN STUDY WAS PERFORMED FOR THE PROPOSED IMPROVEMENTS (6848-FP-02). WE FEEL THE EXISTING POND SERVES AS AN ADEQUATE OUTFALL FOR THE SUBJECT SITE.

S.W.M. ANALYSIS

PARCEL 4 SITE AREA = 312,380 S.F. (OR 7.1712 AC)

ORIGINAL FDP APPLICATION=
PROP. IMPERVIOUS AREA = 211,586 S.F.
WEIGHTED 'C' FACTOR = 0.72

ENCLOSED FDPA APPLICATION=
PROP. IMPERVIOUS AREA = 240,047 S.F.
WEIGHTED 'C' FACTOR = 0.77

SUMMARY:
THE ORIGINAL FDP HAD A TOTAL IMPERVIOUS AREA OF 211,586 S.F. ON THE SUBJECT SITE. BASED ON A SITE AREA OF 312,380 S.F., THE SAID IMPERVIOUS AREA RESULTS IN A WEIGHTED 'C' FACTOR OF 0.72. THE PROPOSED APPLICATION INCREASES THE IMPERVIOUS AREA TO 240,047 S.F., WHICH IS A 13.45% INCREASE IN IMPERVIOUS AREA. WITH THE SAME SITE AREA OF 312,380 S.F., THE IMPERVIOUS AREA OF 240,047 S.F. PROPOSED WITH THIS APPLICATION RESULTS IN A WEIGHTED 'C' FACTOR OF 0.77.

THE FIRST PLAN SUBMITTED FOR THE DULLES STATION PROJECT WAS THE REGIONAL STORMWATER MANAGEMENT POND PLAN; 6848-PI-02. THE POST DEVELOPMENT DRAINAGE DIVIDE FOR THE POND ENCOMPASSED THE ENTIRE DULLES STATION DEVELOPMENT, AS SHOWN ON SHEET 12A. SINCE THE DRAINAGE AREA DRAINING TO THE POND REQUIRED THE USE OF TR-20 FOR THE POND ROUTING, THE 'C' FACTOR ANALYSIS OUTLINED ABOVE CAN'T BE DIRECTLY RELATED TO THE ROUTING OF THE POND. HOWEVER, AS SHOWN ON SHEET 12B, THE CURVE NUMBERS USED FOR THE POND ROUTING WERE CONSISTENT WITH COMMERCIAL DEVELOPMENT IN THE TR-55 MANUAL. A LAND-USE CLASSIFICATION OF COMMERCIAL/BUSINESS DEVELOPMENT HAS A 85% IMPERVIOUS AREA ASSOCIATED WITH THE DEVELOPMENT. BASED SOLEY ON THE PARCEL THE HOTEL SITS ON, THE PERCENT IMPERVIOUS AREA IS ONLY 76.8%. FURTHERMORE, THE OVERALL DULLES STATION DEVELOPMENT WILL HAVE FAR LESS THAN AN AVERAGE IMPERVIOUS AREA OF 85%. AS SUCH, THE POND IS OVERDESIGNED FOR THE INTENSITY OF THE DEVELOPMENT AT DULLES STATION, CONSEQUENTLY, THE SAID POND IS ABLE TO HANDLE THE 13% INCREASE IN IMPERVIOUS AREA ASSOCIATED WITH THE HOTEL FDPA.

PCA C-696-6/FDPA C-696-3
APPLICATION NO ______ STAFF JDM
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP)
SEE PROFFERS DATED 7/19/06
DATE OF (BOS) (PC) APPROVAL 7/31/06
SHEET 20 OF 22
FDPA approved 7.27.06

No.	DATE	DESCRIPTION	REV.BY	APPROVED	DATE

REVISION APPROVED BY DIVISION OF DESIGN REVIEW

PLAN DATE
02-07-06
03-07-06
03-30-06
06-15-06
07-05-06

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COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
No. 036790
07/05/06
PROFESSIONAL ENGINEER

STORMWATER MANAGEMENT PLAN
DULLES STATION AT DULLES CORNER HOTELS
HUNTER MILL DISTRICT
FAIRFAX COUNTY, VIRGINIA
SCALE: 1"=100' C.I. = 2' DATE: FEB., 2006

SHEET 20 OF
FILE No. ZP-1158-1

No.	DATE	DESCRIPTION

REVISIONS

PLAN DATE
12-13-11
2-2-12
4-20-12
6-12-12
7-19-12
8-3-12
11-29-12
06-25-13
08-19-13
10-07-13

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COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
Lic. No. 036790
10/7/13
PROFESSIONAL ENGINEER

STORMWATER MANAGEMENT REFERENCE SHEET
DULLES STATION
PARCEL 5A
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA
SCALE: N/A C.I.= N/A DATE: DEC., 2011

SHEET 18 OF 41

FILE No. SP-1158-12

REFERENCE APPROVED FAIRFAX COUNTY PLAN: PCA C696-6/FDPA C-696-3 (7/31/06) FOR INFORMATIONAL PURPOSES ONLY!!

M:\Jobs\Dulles Station\FDP-CDP\FDPA-CDPA-Hotel\PCA-1158-1-SWMPlan.dwg, 07/06/2006 07:58:39 AM

Urban, Ltd. - J:\JOBS\Dulles Station\FDP-CDP\FDPA-CDPA-Buildings L&M\1158-11-21-SWM.dwg [REF 2 (2)] October 09, 2013 - 3:48pm mdoyle

GENERAL NOTES

1. THE TAX MAP REFERENCE FOR THIS PARCEL IS 15–4–((1)), PARCELS 2&4
2. THESE PARCELS ARE CURRENTLY ZONED PDC.
3. THIS PLAN CONFORMS TO THE "CONCEPTUAL DEVELOPMENT PLAN, DULLES GATEWAY PLAZA" AS APPROVED BY THE FAIRFAX COUNTY PLANNING COMMISION. THESE PLANS ARE INCLUDED FOR REFERENCE WITHIN THIS SUBMISSION.
4. STORM WATER MANAGEMENT AND BEST MANAGEMENT PRACTICES FOR THIS SITE ARE PROVIDED ON SITE.
5. BOUNDARY AND TOPOGRAPHIC SURVAY DATA HAS BEEN PROVIDED BY CRIMSON PARTNERS HORIZONTAL GRID: VIRGINIA STATE GRID NORTH; VERTICAL DATUM: U.S.G.S. (NGVD).
6. AIR QUALITY PERMIT NOT REQUIRED PER STATE AIR POLLUTION CONTROL BOARD REGULATION ACCR VII, SECTION 2.706 (g)(2)(i).
7. VEGETATIVE COVER CONSISTS PARTIALLY OF MODERATELY DENSE HARDWOODS AND PINES WITH THE BALLANCE OF THE SITE IN WEEDS AND SOME GRASS AREAS.
8. THE DISTURBANCE ASSOCIATED WITH THESE PROPOSED IMPROVEMENTS DOES NOT ENCROACH WITHIN ANY FAIRFAX COUNTY MAPPED RESOURCE PROTECTION AREAS.
9. FOR OUTFALL NARRATIVE, SEE THIS SHEET.
10. THESE PLANS SHOW THE APPROXIMATE LOCATION OF EXISTING UTILITIES. CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UNDERGROUND OR AERIAL UTILITIES BY CALLING "MISS UTILITY" 48 HOURS PRIOR TO BEGINNING ANY EXCAVATION OR CONSTRUCTION. IF THERE IS A CONFLICT WITH EXISTING UTILITIES, THE ENGINEER MUST BE CONTACTED IMMEDIATELY SO AS NOT TO IMPEDE CONSTRUCTION.
11. ALL FINISHED GRADING, SEEDING, SODDING OR PAVING SHALL BE DONE IN SUCH A MANNER TO PRECLUDE THE PONDING OF WATER ON THE SITE.
12. THE CONTRACTOR SHALL INSURE THAT ALL CONSTRUCTION CONFORMS WITH CURRENT FEDERAL, STATE AND LOCAL LAWS AND REGULATIONS, INCLUDING FEDERAL REGULATIONS CONTAINED WITHIN "THE AMERICANS WITH DISABILITIES ACT", ENACTED ON JULY 26, 1990 (AKA "ADA").
13. ALL EARTHWORK OPERATOINS SHALL CONFORM TO THE GEOTECHNICAL NOTES AND DETAILS INCLUDED HEREON.
14. THE SWM/BMP POND ARE TO BE PRIVATELY MAINTAINED.
15. THERE ARE NO GRAVE SITES KNOWN TO EXIST ON THIS SITE.
16. THE PURPOSE OF THIS PLAN IS TO CONSTRUCT A SWM/BMP POND AS CONSISTENT WITH THE APPROVED CONCEPTUAL DEVELOPMENT PLAN.
17. ALL OTHER PROFFERS (EXCLUDING THE CONSTRUCTION OF THE REGIONAL SWM/BMP POND) WILL BE ADDRESSED AT DURING THE CONSTRUCTION OF THE FIRST OCCUPIABLE BUILDING.
18. TEMPORARY SOUTHEAST STORM DRAIN PIPE TO BE REMOVED DURING CONSTRUCTION OF BUILDING K AND NORTHWEST TEMPORARY STORM DRAIN PIPE TO BE REMOVED WITH THE CONSTRUCTION OF BUILDING D.
19. THE TRAIL AND SOCCER FIELD LABELED AS "FUTURE" WILL BE PROVIDED FUTURE PHASES OF THE DULLES STATION AT DULLES CORNER PROJECT.
20. THE ASPHALT TRAIL EXTENSION AND FAIR WEATHER CROSSING IN THE RPA/WETLAND AREA, AS SHOWN ON SHEET 6, WILL BE CONSTRUCTED BY THE OWNER AFTER THE REQUIRED WETLAND PERMIT IS OBTAINED FOR SUCH IN THE NAME OF FAIRFAX COUNTY. THE OWNER SHALL PREPARE AND SUBMIT THE WETLAND PERMIT APPLICATION ON BEHALF OF THE COUNTY. SHOULD THE PERMIT BE DENIED, THERE SHALL BE NO OBLIGATION ON THE PART OF THE OWNER TO CONSTRUCT SUCH TRAIL EXTENSION AND FAIR WEATHER CROSSING.

SWM/BMP & OUTFALL NARRATIVE

THIS SITE IS LOCATED ON TAX MAP ASSESSMENT NUMBER 15-4 ((1)), PARCELS 02 & 04. THE TOTAL SITE AREA BEING DISTURBED DURING THE CONSTRUCTION OF THIS REGIONAL POND IS 6.79 ACRES.

THE PROPOSED PROJECT HAS BEEN DESIGNED TO PROVIDE ADEQUATE ENGINEERED OVERLAND FLOW TO A PROPOSED REGIONAL S.W.M./B.M.P. POND. THE REGIONAL S.W.M./B.M.P. POND IS INDICATED AS H-9 IN THE FAIRFAX COUNTY POND INVENTORY. THE REQUIRED B.M.P. VOLUME FOR THIS POND IS 376,604 CUBIC FEET, WHICH IS OBTAINED AT A STAGE STORAGE ELEVATION OF 307.62. THE TOTAL PHOSPHORUS REMOVAL FOR THE SITE IS 50.4% (SEE BMP CALCS ON SHEET 17).

THE EMERGENCY AND PRINCIPLE SPILLWAY HAS BEEN DESIGNED TO ADEQUATELY OUTFALL INTO AN EXISTING FLOODPLAIN. THE PRINCIPLE SPILLWAY DISCHARGES INTO A BED & BANK OUTFALL DESIGNED WITH HEC14.

THIS POND PROVIDES B.M.P./S.W.M. FOR AN EXISTING DRAINAGE AREA OF 105.13 ACRES, BUT HAS BEEN DESIGNED TO ACCOMMODATE FUTURE DEVELOPMENT. A CONSERVATIVE ESTIMATE OF 138.84 ACRES WAS USED TO DESIGN THE POND. AS THE DRAINAGE DIVIDE MAP SHOWS ON SHEET 3, THIS ESTIMATE OF 138.84 ACRES PROVIDES CAPACITY FOR THE DULLES GATEWAY SITE AND FUTURE OFF-SITE DEVELOPMENT.

DUE TO SITE CONSTRAINTS AND HYDROLOGIC ISSUES, THE GRADING OF THE PROPOSED POND ENCROACHES INTO THE MERRYBROOK RUN FLOODPLAIN. AS A RESULT, A FLOODPLAIN STUDY HAS BEEN PREPARED AND IS CURRENTLY BEING REVIEWED BY FAIRFAX COUNTY. THE FAIRFAX COUNTY PLAN NUMBER FOR THE SAID FLOODPLAIN STUDY IS 6848-FP-01-1. AS THE FLOODPLAIN STUDY INDICATES, THE LOCATION OF THE PROPOSED POND DOES EFFECT THE EXISTING WATER SURFACE ELEVATION, HOWEVER THE INCREASE DOES NOT HAVE A SIGNIFICANT IMPACT ON THE SURROUNDING PARCELS.

IT IS THE OPINION OF URBAN ENGINEERING AND ASSOCIATES THAT THE SITE IS ADEQUATELY DRAINED ONSITE AND OUTFALLS ADEQUATELY OFFSITE IN AN ADEQUATE BED AND BANKS SYSTEM.

SIGNATURE *Eric S Siegel* DATE 06/22/04

ERIC S. SIEGEL, P.E., PRINCIPAL

COMBINED SPILLWAY NARRATIVE

WE HEREBY REQUEST A WAIVER OF PUBLIC FACILITIES MANUAL SECTION 6–1604.6 TO ALLOW A COMBINED PRINCIPAL/EMERGENCY SPILLWAY FOR THE PROPOSED REGIONAL SWM/BMP POND PROPOSED IN THIS PLAN. OUR JUSTIFICATION FOR THE WAIVER IS AS FOLLOWS:

THE DEVELOPMENTS TO THE EAST WERE DESIGNED WITH THE ASSUMPTION THAT THE SAID POND IS GOING TO SERVE THEIR SITES. AS SUCH, THE PLACEMENT OF THE PROPOSED POND HAS TO BE IN THE MOST SOUTHEAST CORNER OF THE SITE. FROM A HYDROLOGIC AND ENGINEERING VIEWPOINT, THIS IS AN IDEAL LOCATION DUE TO THE RELATIVE ELEVATION OF THE POND TO THE EXISTING INFRASTRUCTURE. HOWEVER, PLACING THE POND IN THIS LOCATION ENCROACHES INTO AN EXISTING FLOODPLAIN AND RPA. ELIMINATING THE NEED TO PROVIDE A SEPARATE EMERGENCY SPILLWAY REDUCES THE OVERALL IMPACT ON THE FLOODPLAIN AND RPA.

IN ADDITION TO THE EXISTING FLOODPLAIN AND RPA, THERE IS ALSO AN EXISTING ENVIRONMENTAL QUALITY CORRIDOR (E.Q.C.) IN THE PROXIMITY OF THE PROPOSED POND. DUE TO THIS ENVIRONMENTALLY SENSITIVE AREA, GRADING OF THE POND, WITHIN THE E.Q.C., HAS BEEN MINIMIZED TO REDUCE THE AMOUNT OF DISTURBANCE TO THE E.Q.C. PROVIDING A COMBINATION PRINCIPAL/EMERGENCY SPILLWAY FURTHER REDUCES THE DISTURBANCE OF THE E.Q.C.

DURING THE REZONING OF THE PARCEL A PORTION OF THE SITE IS GOING TO BE DEDICATED TO THE PARK AUTHORITY (THE SOUTHWEST CORNER OF THE PROPERTY). THE PARK AUTHORITY IS PROPOSING A WALKWAY/TRAIL ON THE SOUTHWEST CORNER OF THE SITE. THIS IS THE SAME LOCATION WERE AN EMERGENCY SPILLWAY WOULD BE PROPOSED. FROM AN AESTHETICS AND SAFETY PERSPECTIVE, IT WOULD NOT BE DESIRABLE TO HAVE AN EMERGENCY SPILLWAY PLACED 5' FROM A WALKWAY.

THIS SITE HAS A SIGNIFICANT AMOUNT OF ROCK BELOW TOPSOIL. SINCE PLACEMENT OF EMERGENCY SPILLWAYS DICTATE THAT THERE MUST BE A CERTAIN LEVEL OF CUT, THERE WOULD BE A SUBSTANTIAL AMOUNT OF BLASTING. SINCE THIS IS AN ENVRIONMENTALLY SENSITIVE AREA, IT WOULD BE PREFERABLE TO MINIMIZE THE AMOUNT OF BLASTING. IMPLEMENTING A COMBINED SPILLWAY WOULD ELIMINATE THE BLASTING REQUIRED FOR AN EMERGENCY SPILLWAY.

IT IS WITH THESE JUSTIFICATIONS THAT WE FORMALLY REQUESTED A COMBINED SPILLWAY WAIVER.

ERIC S. SIEGEL, P.E., PRINCIPAL DATE

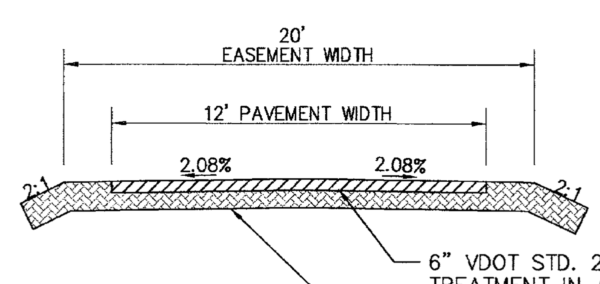
ROAD CONSTRUCTION NOTES

1. ALL CONSTRUCTION SHALL CONFORM TO CURRENT FAIRFAX COUNTY AND VDOT STANDARDS AND SPECIFICATIONS.
2. THE LOCATIONS OF EXISTING UTILITIES ON THESE DRAWINGS ARE GENERALLY APPROXIMATE. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE ALL UTILITIES WITHIN THE AREA OF CONSTRUCTION PRIOR TO COMMENCING WORK. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THE EXACT HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES IN THE AREA OF CONSTRUCTION PRIOR TO COMMENCING WORK. THE CONTRACTOR SHALL NOTIFY THE OWNER AND URBAN ENGINEERING & ASSOC. OF ANY POTENTIAL CONFLICTS PRIOR TO COMMENCING CONSTRUCTION.
3. THE CONTRACTOR SHALL CAREFULLY EXAMINE THE SITE AND MAKE ALL INSPECTIONS NECESSARY IN ORDER TO DETERMINE THE FULL EXTENT OF WORK REQUIRED TO MAKE THE COMPLETED WORK CONFORM TO THE DRAWINGS AND SPECIFICATIONS.
4. WHERE CONFLICTS REQUIRE RELOCATION OF EXISTING UTILITIES (i.e.: AT&T, MCI, C&P, VEPCO, MEDIA GENERAL) UTILITY COMPANIES WILL BE NOTIFIED.
5. ALL EXISTING SIGNS, FENCES, ETC. DISTURBED BY THIS CONSTRUCTION SHALL BE RELOCATED AS PER VDOT AND FFX. CO. REQUIREMENTS.
6. ALL EXISTING VDOT TRAFFIC CONTROL EQUIPMENT WILL BE RELOCATED BY THE CONTRACTOR AS NECESSARY PER VDOT REQUIREMENTS.
7. THE CONTRACTOR IS RESPONSIBILE FOR ANY DAMAGE TO EXISTING ROADS AND UTILITIES WHICH OCCUR AS A RESULT OF PROJECT CONSTRUCTION WITHIN OR CONTIGUOUS TO THE SITE.
8. ANY EXISTING C&G AND PAVEMENT TO REMAIN THAT IS DAMAGED DURING CONSTRUCTION SHALL BE REPLACED/REPAIRED TO VDOT SATISFACTION. C&G TO BE SAW CUT, OTHERWISE REMOVE TO THE NEAREST JOINT.
9. A SMOOTH GRADE SHALL BE MAINTAINED FROM THE CENTERLINE OF THE EX. ROAD TO THE PROPOSED EDGE OF PAVEMENT TO PRECLUDE THE FORMING OF FALSE GUTTERS AND/OR PONDING OF ANY WATER IN THE ROADWAY.
10. THE CONTRACTOR IS RESPONSIBILE FOR ALL PAVEMENT MARKINGS. THE CONTRACTOR SHALL OBTAIN VDOT APPROVAL PRIOR TO THE APPLICATION OF PAVEMENT MARKING.
11. FOR GRADING PLANS, SEE SHEETS 4 & 5.
12. THE CONTRACTOR SHALL CONTACT MISS UTILITY COMPANY REPRESENTATIVES, REVIEW TEST PIT DATA AND WHATEVER OTHER OPERATIONS AVAILABLE TO ENSURE ALL UTILITIES IN THE AREA OF CONSTRUCTION ARE SHOWN ON THE PLANS PRIOR TO CONSTRUCTION.

PAVEMENT DETAILS

FOR GRADING PLAN SEE SHEETS 6&7

A TYPICAL SECTION FOR MAINTENANCE ACCESS ROAD



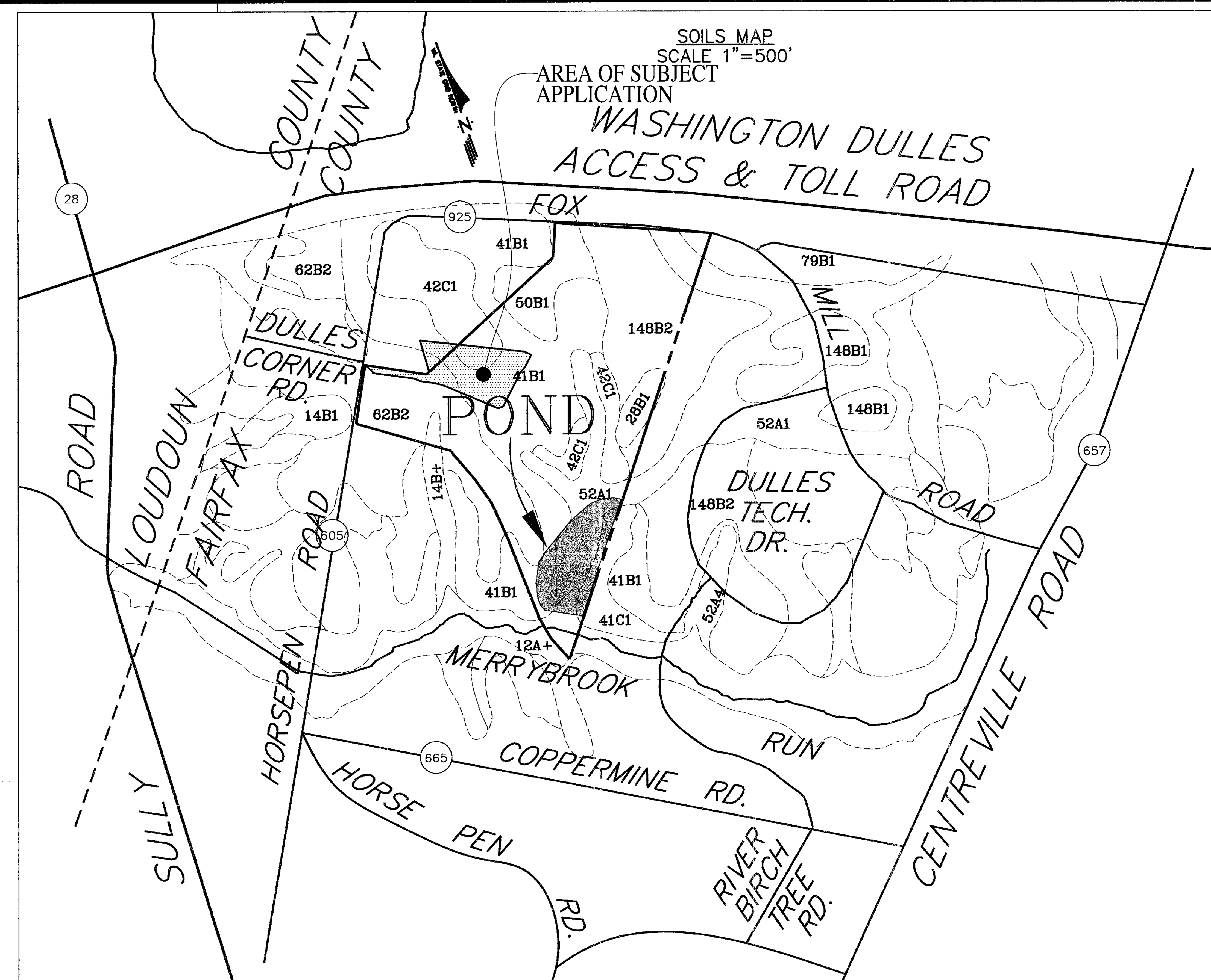
6" VDOT STD. 21A, PRIME & DOUBLE SEAL SURFACE TREATMENT IN ACCORDANCE WITH VDOT STDS IS RECOMMENDED.

SUBBASE SHALL BE ADEQUATE TO SUPPORT H20 WHEEL LOADING.

Application No: RZ / FDP 2012-DR-016 Staff: W' OD
With/ PCA C-696-09
PCA C-698-03
APPROVED DEVELOPMENT PLAN
(_GDP) (X CDP) (X FDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC)
SEE PROFFERS DATED: Nov 19, 2013
SEE CONDITIONS DATED:
Date of Final Approval: Dec 3, 2013 (X BOS) (_PC) (_BZA)
Comments: On 1/14/2014, CDP Dev. Conds Dated 1/14/2014 were added by the BOS
Sheet 19 of 41

SOILS MAP

SCALE 1"=500'



SOIL ID NUMBERS	SERIES NAME	FOUNDATION SUPPORT	SUBSURFACE DRAINAGE	SLOPE STABILITY	ERODABILITY	GEOTECHNICAL REPORT REQD
12A+	ROWLAND	POOR	POOR	GOOD	LOW	A
14B+	MANASSAS	FAIR	MARGINAL	GOOD	LOW	B
28B1	MONTALTO	GOOD	FAIR	GOOD	LOW	C
41B1	ROCKY LAND	MARGINAL	MARGINAL	GOOD	LOW	A
41C1	ROCKY LAND	MARGINAL	MARGINAL	FAIR	LOW	A
42C1	VERY ROCKY	MARGINAL	MARGINAL	FAIR	LOW	B
50B1	IREDELL–MECKLENBURG STONY	MARGINAL	MARGINAL	GOOD	LOW	A
52A1	ELBERT–IREDELL	POOR	POOR	GOOD	LOW	A
62B2	BRECKNOCK	GOOD	FAIR	GOOD	MODERATE	C
148B2	IREDELL–MECKLENBURG	POOR	MARGINAL	GOOD	MODERATE	A

SOILS WITH IDENTIFICATION NUMBERS 59, 66, 69, 141, 142, AND 152 MAY OVERLIE PARENT BEDROCK FORMATIONS WHICH HAVE BEEN FOUND TO CONTAIN NATURALLY OCCURRING ASBESTOS MINERALS, SPECIAL MINIMUM CONSTRUCTION MEASURES AND PRECAUTIONS ARE REQUIRED IN COMPLIANCE WITH HEALTH DEPARTMENT DIRECTIVES WITHIN THESE SOILS OR WITHIN FILL ORIGINATING FROM THESE SOILS.

REFERENCE APPROVED FAIRFAX COUNTY PLAN: 6848–PI–002–1 (3/31/04) FOR INFORMATIONAL PURPOSES ONLY!!

No. | DATE | DESCRIPTION REVISIONS

PLAN DATE 03–27–00 01–30–01 04–25–01 06–22–04

URBAN ENGINEERING & ASSOC.,INC.
CIVIL ENGINEERS • LANDSCAPE ARCHITECTS • LAND SURVEYORS
7712 LITTLE RIVER TURNPIKE
ANNANDALE, VIRGINIA 22003 (703) 642-8080

COMMONWEALTH OF VIRGINIA — ERIC S. SIEGEL No. 20416 06/22/04 — PROFESSIONAL ENGINEER

GENERAL NOTES AND DETAILS
DULLES STATION AT DULLES CORNER REGIONAL S.W.M. POND
HUNTER MILL DISTRICT
FAIRFAX COUNTY, VIRGINIA
SCALE: N/A C.I. N/A DATE: MARCH, 2000

SHEET 2 OF 31
FILE No. SP-1158

No. | DATE | DESCRIPTION REVISIONS

PLAN DATE 12–13–11 2–2–12 4–20–12 6–12–12 7–19–12 8–3–12 11–29–12 06–25–13 08–19–13 10–07–13

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COMMONWEALTH OF VIRGINIA — CLAYTON C. TOCK Lic. No. 036790 10/7/13 — PROFESSIONAL ENGINEER

STORMWATER MANAGEMENT REFERENCE SHEET
DULLES STATION
PARCEL 5A
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA
SCALE: N/A C.I.= N/A DATE: DEC., 2011

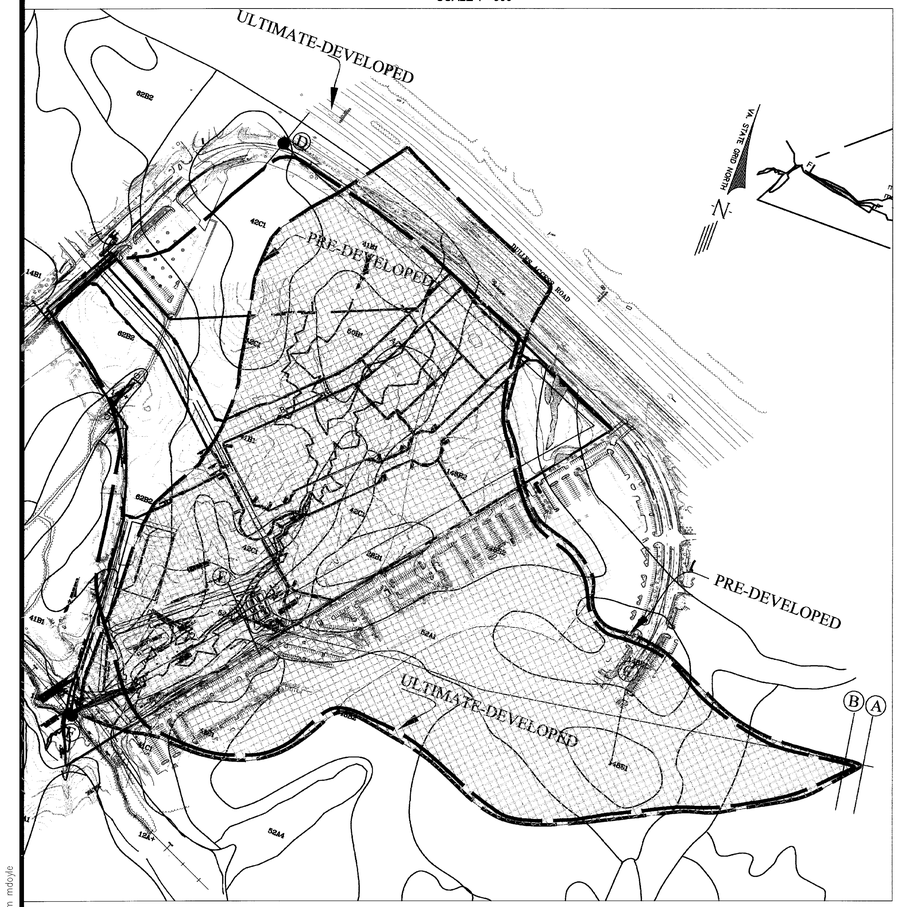
SHEET 19 OF 41

FILE No. SP-1158-12

Urban, Ltd. – J:\JOBS\Dulles Station\FDP-CDP\FDPA-CDPA-Buildings L&M\1158-11-21-SWM.dwg [REF 1] October 09, 2013 – 3:49pm mdoyle

HYDROLOGIC SOIL GROUPS & LAND USES

SCALE 1"=300'



PRE-DEVELOPMENT LAND USE LEGEND:

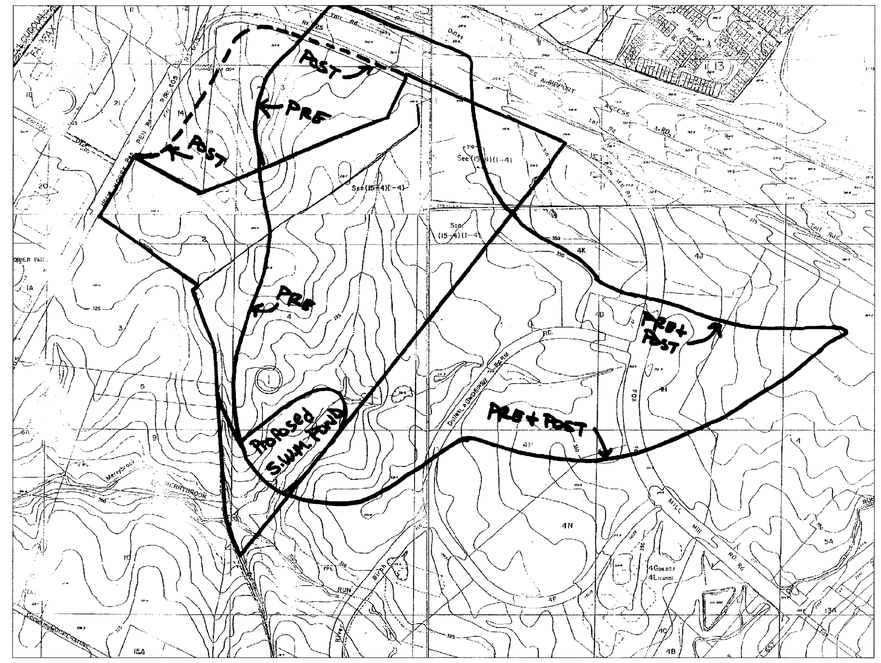
WOODS-FAIR

POST-DEVELOPMENT LAND USE LEGEND:

NOTE: SEE EXPLANATION OF POST DEVELOPMENT LAND USE IN OUTFALL NARRATIVE

DRAINAGE DIVIDE MAP

SCALE 1"=300'



NOTE: THE ABOVE MAP WAS OBTAINED USING FAIRFAX COUNTY TOPOGRAPHY

Application No: RZ / FDP 2012-DR-016 Staff: W' OD
With/ PCA C-696-09
PCA C-698-03
APPROVED DEVELOPMENT PLAN
(_GDP) (X CDP) (X FDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC)
SEE PROFFERS DATED: Nov 19, 2013
SEE CONDITIONS DATED:
Date of Final Approval: Dec 3, 2013 (X BOS) (_PC) (_BZA)
Comments: On 1/14/2014, CDP Dev. Conds Dated 1/14/2014
were added by the BOS
Sheet 20 of 41

No.	DATE	DESCRIPTION
		REVISIONS

PLAN DATE
03-27-00
09-08-00

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ANNANDALE, VIRGINIA 22003 (703) 642-8080

No.	DATE	DESCRIPTION
		REVISIONS

PLAN DATE
12-13-11
2-2-12
4-20-12
6-12-12
7-19-12
8-3-12
11-29-12
06-25-13
08-19-13
10-07-13

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COMMONWEALTH OF VIRGINIA
ERIC S. SIEGEL
No. 0024416
PROFESSIONAL ENGINEER
10/19/13

COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
Lic. No. 036790
PROFESSIONAL ENGINEER
10/17/13

DRAINAGE DIVIDE AND LAND & SOIL MAP
DULLES STATION AT DULLES CORNER
REGIONAL S.W.M. POND
HUNTER MILL DISTRICT
FAIRFAX COUNTY, VIRGINIA

SCALE: AS NOTED C.I. N/A DATE: MARCH, 2000

STORMWATER MANAGEMENT REFERENCE SHEET
DULLES STATION
PARCEL 5A
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SCALE: N/A C.I.= N/A DATE: DEC., 2011

SHEET 4 OF 33
FILE No. SP-1158

SHEET 20 OF 41
FILE No. SP-1158-12

REFERENCE APPROVED FAIRFAX COUNTY PLAN: 6848-PI-002-1 (3/31/04) FOR INFORMATIONAL PURPOSES ONLY!!

Urban, Ltd. - J:\JOBS\Dulles Station\FDP-CDP\FDPA-CDPA-Buildings L&M\1158-11-21-SWM.dwg [REF 2] October 09, 2013 - 3:49pm mdoyle

CURVE NUMBERS

PRE-DEVELOPMENT CONDITIONS					
LAND USE	TOTAL AREA	SUB-AREA	SOIL TYPE	CN	CN * AREA
WOODS-FAIR	105.13	16.77	A	36	603.72
		74.65	B	60	4479.00
		13.71	C	73	1000.83
TOTALS	105.13	105.13			6083.55

CN (WEIGHTED) = TOTAL PRODUCT/TOTAL AREA = 57.9

ULTIMATE- DEVELOPMENT CONDITIONS					
LAND USE	TOTAL AREA	SUB-AREA	SOIL TYPE	CN	CN * AREA
COMMERCIAL	58.63	6.58	A	89	585.62
		44.73	B	92	41115.16
		7.32	C	94	688.08
OPEN	1.95	1.95	B	69	134.55
COMMERCIAL	58.34	12.78	A	89	1137.42
		34.84	B	92	3205.28
		10.72	C	94	1007.68
ROADWAY	2.15	0.29	A	98	28.42
		0.50	B	98	49.00
		1.36	BALNK	98	133.28
TOTALS	121.07	121.07			11084.49

CN (WEIGHTED) = TOTAL PRODUCT/TOTAL AREA = 91.60

TIME OF CONCENTRATION

			PRESENT	ULTIMATE
SHEET FLOW	SEGEMENT ID	UNIT	A-B	A-B
1 SURFACE DESCRIPTION (TABLE 3-1)			LIGHT BRUSH	LIGHT BRUSH
2 MANNING'S ROUGHNESS COEFF., n (TABLE 3-1)			0.1	0.1
3 FLOW LENGTH, L (TOTAL L < 300 ft)		ft	50	20
4 TWO-YR 24-HR RAINFALL, P		in	3.2	3.2
5 LAND SLOPE, s		ft/ft	0.0185	0.01
6 T = .0007(nL)^.8/P^.5s^.4	COMPUTE T	hr	0.069	0.04
SHALLOW CONCENTRATED FLOW	SEGMENT ID		B-C	B-C
7 SURFACE DESCRIPTION (PAVED OR UNPAVED)				
8 FLOW LENGTH, L		ft	1020	850
9 WATERCOURSE SLOPE, s		ft/ft	0.0396	0.0285
10 AVERAGE VELOCITY, V (FIGURE 3-1)		ft/s	3.2	2.65
11 T = L/(3600*V)	COMPUTE T	hr	0.089	0.089
PIPE FLOW	SEGMENT ID			D-E
12 CROSS SECTIONAL FLOW AREA, a		ft^2		ASSUME
13 WETTED PERIMETER, pw		ft		
14 HYDRAULIC RADIUS, r = a/pw	COMPUTE r	ft		
15 CHANNEL SLOPE, s		ft/ft		
16 MANNING'S ROUGHNESS COEFF., n				
17 V = (1.49*r^(2/3)*s^(1/2))/n	COMPUTE V	ft/s		5.0
18 FLOW LENGTH, L		ft		2700
19 T = L/(3600*V)	COMPUTE T	hr		0.15
CHANNEL FLOW	SEGMENT ID		C-F	E-F
20 CROSS SECTIONAL FLOW AREA, a		ft^2		
21 WETTED PERIMETER, pw		ft		
22 HYDRAULIC RADIUS, r = a/pw	COMPUTE r	ft		
23 CHANNEL SLOPE, s		ft/ft	0.021	0.021
24 MANNING'S ROUGHNESS COEFF., n				
25 V = (1.49*r^(2/3)*s^(1/2))/n	COMPUTE V	ft/s		
26 FLOW LENGTH, L		ft	4.75	4.75
27 T = L/(3600*V)	COMPUTE T	hr	2700	200
			0.158	0.0146
28 WATERSHED OR SUBAREA, T	TOTAL T	hr	0.316	0.279

POST DEVELOPMENT-TR-20 INPUT/OUTPUT : 2,10,25 YEAR STORM

```
*****************80-80 LIST OF INPUT DATA FOR TR-20 HYDROLOGY*****************
 JOB TR-20                 FULLPRINT            SUMMARY   NOPLOTS
TITLE 001 Dulles Gateway
TITLE 002 POST-Development  2,10,25 Yr Storms
 3 STRUCT     01
 8                      297.80      0.0000      0.0000
 8                      298.00      0.6235      0.0020
 8                      300.00      2.0958      0.3035
 8                      302.00      2.8977      1.1067
 8                      304.00      3.5214      2.7050
 8                      306.00      4.0502      5.6972
 8                      307.05      4.3019      7.2525
 8                      308.00      8.1843      8.8063
 8                      309.45      19.551      13.964
 8                      310.00      25.005      15.921
 8                      311.52      121.37      22.660
 8                      312.00      167.73      24.789
 8                      312.19      184.43      25.500
 8                      313.00      456.75      29.655
 8                      314.00      983.31      34.841
 8                      316.00      2053.5      46.347
 8                      316.20      2067.6      47.651
 9 ENDTBL
 6 RUNOFF 1     01      1 0.1891      91.60       0.279
 6 RESVOR 2     01 1    2 297.80                             1 1 1 1    1
 6 RUNOFF 1 002         3 0.0070      91.20       0.083      1 1    1    1
 6 ADDHYD 4 002    2 3 4                                     1 1 1 1    1
   ENDATA
 7 INCREM 6             0.10
 7 COMPUT 7     01 002                3.20        1.0        2 2  01  02
   ENDCMP 1
 7 COMPUT 7     01 002                5.25        1.0        2 2  01  10
   ENDCMP 1
 7 COMPUT 7     01 002                6.00        1.0        2 2  01  25
   ENDCMP 1
   ENDJOB 2
0*******************************END OF 80-80 LIST*******************************

 SUMMARY TABLE 1 - SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL INSTRUCTIONS IN THE ORDER PERFORMED
                  (A STAR(*) AFTER THE PEAK DISCHARGE TIME AND RATE (CFS) VALUES INDICATES A FLAT TOP HYDROGRAPH
                   A QUESTION MARK(?) INDICATES A HYDROGRAPH WITH PEAK AS LAST POINT.)
 SECTION/    STANDARD               RAIN  ANTEC  MAIN            PRECIPITATION                                  PEAK DISCHARGE
 STRUCTURE    CONTROL    DRAINAGE  TABLE  MOIST  TIME   ------------------------- RUNOFF   -------------------------------------
   ID        OPERATION     AREA      #    COND  INCREM  BEGIN   AMOUNT  DURATION  AMOUNT   ELEVATION    TIME       RATE       RATE
                          (SQ MI)                (HR)   (HR)    (IN)     (HR)     (IN)       (FT)      (HR)       (CFS)      (CSM)
   ALTERNATE     1    STORM    2
+ ________________________________
 STRUCTURE  1  RUNOFF       .19     2      2     .10     .0     3.20    24.00     2.31       ---      12.06     300.85     1590.9
 STRUCTURE  1  RESVOR       .19     2      2     .10     .0     3.20    24.00     1.69     309.45     13.52      19.59      103.6
 XSECTION   2  RUNOFF       .01     2      2     .10     .0     3.20    24.00     2.24       ---      11.96      14.70     2100.0
 XSECTION   2  ADDHYD       .20     2      2     .10     .0     3.20    24.00     1.71       ---      13.47      20.28      103.4
   ALTERNATE     1    STORM   10
+ ________________________________
 STRUCTURE  1  RUNOFF       .19     2      2     .10     .0     5.25    24.00     4.29       ---      12.06     539.55     2853.2
 STRUCTURE  1  RESVOR       .19     2      2     .10     .0     5.25    24.00     3.59     311.52     12.45     121.53      642.7
 XSECTION   2  RUNOFF       .01     2      2     .10     .0     5.25    24.00     4.18       ---      11.96      26.24     3748.8
 XSECTION   2  ADDHYD       .20     2      2     .10     .0     5.25    24.00     3.61       ---      12.45     123.99      632.3
   ALTERNATE     1    STORM   25
+ ________________________________
 STRUCTURE  1  RUNOFF       .19     2      2     .10     .0     6.00    24.00     5.02       ---      12.06     626.07     3310.8
 STRUCTURE  1  RESVOR       .19     2      2     .10     .0     6.00    24.00     4.31     312.19     12.39     185.14      979.1
 XSECTION   2  RUNOFF       .01     2      2     .10     .0     6.00    24.00     4.91       ---      11.96      30.42     4346.1
 XSECTION   2  ADDHYD       .20     2      2     .10     .0     6.00    24.00     4.33       ---      12.38     188.22      959.8

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES
 XSECTION/          DRAINAGE
 STRUCTURE            AREA      STORM NUMBERS..........
  ID                (SQ MI)         2         10         25
0 STRUCTURE   1          .19
+_____________________________
   ALTERNATE    1                 19.59     121.53     185.14
0 XSECTION    2          .20
+_____________________________
   ALTERNATE    1                 20.28     123.99     188.22
1END OF  1 JOBS IN THIS RUN
```

POST DEVELOPMENT-TR-20 INPUT/OUTPUT : 100 AND 1.5*100 YEAR STORM

```
*****************80-80 LIST OF INPUT DATA FOR TR-20 HYDROLOGY*****************
 JOB TR-20                 FULLPRINT            SUMMARY   NOPLOTS
 TITLE 001 Dulles Gateway
 TITLE 002 POST-Development  100,1.5*100,2.5*100 Yr Storms
  3 STRUCT     01
  8                      312.19      0.0000      0.0000
  8                      313.00      166.21      29.655
  8                      314.00      555.20      34.841
  8                      316.00      1695.6      46.347
  8                      316.20      1830.8      47.651
  9 ENDTBL
  6 RUNOFF 1     01      1 0.1891      91.60       0.279      1 1    1    1
  6 RESVOR 2     01 1    2 312.16                             1 1 1 1    1
  6 RUNOFF 1 002         3 0.0070      91.20       0.083      1 1    1    1
  6 ADDHYD 4 002    2 3 4                                     1 1 1 1    1
    ENDATA
  7 INCREM 6             0.10
  7 COMPUT 7     01 002                7.30        1.0        2 2  01  98
    ENDCMP 1
  7 COMPUT 7     01 002                10.95       1.0        2 2  01  15
    ENDCMP 1
  7 COMPUT 7     01 002                18.25       1.0        2 2  01  25
    ENDCMP 1
    ENDJOB 2
0*******************************END OF 80-80 LIST*******************************
 SUMMARY TABLE 1 - SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL INSTRUCTIONS IN THE ORDER PERFORMED
                  (A STAR(*) AFTER THE PEAK DISCHARGE TIME AND RATE (CFS) VALUES INDICATES A FLAT TOP HYDROGRAPH
                   A QUESTION MARK(?) INDICATES A HYDROGRAPH WITH PEAK AS LAST POINT.)
  SECTION/    STANDARD               RAIN  ANTEC  MAIN            PRECIPITATION                                  PEAK DISCHARGE
 STRUCTURE    CONTROL    DRAINAGE  TABLE  MOIST  TIME   ------------------------- RUNOFF   -------------------------------------
    ID        OPERATION     AREA      #    COND  INCREM  BEGIN   AMOUNT  DURATION  AMOUNT   ELEVATION    TIME       RATE       RATE
                           (SQ MI)                (HR)   (HR)    (IN)     (HR)     (IN)       (FT)      (HR)       (CFS)      (CSM)

    ALTERNATE     1    STORM   98
+ ________________________________
 STRUCTURE  1  RUNOFF       .19     2      2     .10     .0     7.30    24.00     6.30       ---      12.06     775.16     4099.2
 STRUCTURE  1  RESVOR       .19     2      2     .10     .0     7.30    24.00     6.28     312.97     12.48     159.85      845.3
 XSECTION   2  RUNOFF       .01     2      2     .10     .0     7.30    24.00     6.17       ---      11.95      37.63     5375.1
 XSECTION   2  ADDHYD       .20     2      2     .10     .0     7.30    24.00     6.28       ---      12.47     163.51      833.8
    ALTERNATE     1    STORM   15
+ ________________________________
 STRUCTURE  1  RUNOFF       .19     2      2     .10     .0    10.95    24.00     9.92       ---      12.06    1189.66     6291.2
 STRUCTURE  1  RESVOR       .19     2      2     .10     .0    10.95    24.00     9.89     314.28     12.24     715.35     3782.9
 XSECTION   2  RUNOFF       .01     2      2     .10     .0    10.95    24.00     9.73       ---      11.95      57.65     8236.4
 XSECTION   2  ADDHYD       .20     2      2     .10     .0    10.95    24.00     9.88       ---      12.24     723.07     3687.3
    ALTERNATE     1    STORM   25
+ ________________________________
 STRUCTURE  1  RUNOFF       .19     2      2     .10     .0    18.25    24.00    17.19       ---      12.06    2009.95    10629.0
 STRUCTURE  1  RESVOR       .19     2      2     .10     .0    18.25    24.00    17.12     315.87     12.16    1622.05     8577.7
 XSECTION   2  RUNOFF       .01     2      2     .10     .0    18.25    24.00    16.91       ---      11.95      97.31    13900.9
 XSECTION   2  ADDHYD       .20     2      2     .10     .0    18.25    24.00    17.11       ---      12.16    1640.14     8363.8
1
 SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES
 XSECTION/          DRAINAGE
 STRUCTURE            AREA      STORM NUMBERS..........
  ID                (SQ MI)        15         25         98
0 STRUCTURE   1          .19
+_____________________________
    ALTERNATE    1                715.35    1622.05     159.85
0 XSECTION    2          .20
+_____________________________
    ALTERNATE    1                723.07    1640.14     163.51
1END OF  1 JOBS IN THIS RUN
```

PRE DEVELOPMENT

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

 JOB TR-20                    FULLPRINT            SUMMARY   NOPLOTS
 TITLE 001 Dulles Gateway - Pre-Development
 TITLE 002 2,10,25,100,1.5X100 Yr Storms
  6 RUNOFF 1 041       1 0.1624      57.90       0.316        1 1    1    1
    ENDATA
  7 INCREM 6             0.1
  7 COMPUT 7 041    041              3.2         1.0          2 2  01  02
    ENDCMP 1
  7 COMPUT 7 041    041              5.2         1.0          2 2  01  10
    ENDCMP 1
  7 COMPUT 7 041    041              6.0         1.0          2 2  01  25
    ENDCMP 1
  7 COMPUT 7 041    041              7.3         1.0          2 2  01  98
    ENDCMP 1
  7 COMPUT 7 041    041              10.95       1.0          2 2  01  99
    ENDCMP 1
    ENDJOB 2
0*******************************END OF 80-80 LIST*******************************

 SUMMARY TABLE 1 - SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL INSTRUCTIONS IN THE ORDER PERFORMED
                  (A STAR(*) AFTER THE PEAK DISCHARGE TIME AND RATE (CFS) VALUES INDICATES A FLAT TOP HYDROGRAPH
                   A QUESTION MARK(?) INDICATES A HYDROGRAPH WITH PEAK AS LAST POINT.)

 SECTION/    STANDARD               RAIN  ANTEC  MAIN            PRECIPITATION                                  PEAK DISCHARGE
 STRUCTURE    CONTROL    DRAINAGE  TABLE  MOIST  TIME   ------------------------- RUNOFF   -------------------------------------
   ID        OPERATION     AREA      #    COND  INCREM  BEGIN   AMOUNT  DURATION  AMOUNT   ELEVATION    TIME       RATE       RATE
                          (SQ MI)                (HR)   (HR)    (IN)     (HR)     (IN)       (FT)      (HR)       (CFS)      (CSM)

    ALTERNATE     1    STORM    2
+ ________________________________
 XSECTION  41  RUNOFF       .16     2      2     .10     .0     3.20    24.00      .34       ---      12.17      20.69      127.4
    ALTERNATE     1    STORM   10
+ ________________________________
 XSECTION  41  RUNOFF       .16     2      2     .10     .0     5.20    24.00     1.27       ---      12.12     127.39      784.4
    ALTERNATE     1    STORM   25
+ ________________________________
 XSECTION  41  RUNOFF       .16     2      2     .10     .0     6.00    24.00     1.75       ---      12.11     182.34     1122.8
    ALTERNATE     1    STORM   98
+ ________________________________
 XSECTION  41  RUNOFF       .16     2      2     .10     .0     7.30    24.00     2.60       ---      12.10     280.65     1728.1
    ALTERNATE     1    STORM   99
+ ________________________________
 XSECTION  41  RUNOFF       .16     2      2     .10     .0    10.95    24.00     5.38       ---      12.09     592.76     3650.0
1
 SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

 XSECTION/          DRAINAGE
 STRUCTURE            AREA      STORM NUMBERS..........
  ID                (SQ MI)         2         10         25         98         99

0 XSECTION   41          .16
+_____________________________
    ALTERNATE    1                20.69     127.39     182.34     280.65     592.76
1END OF  1 JOBS IN THIS RUN
```

SWM TABULATIONS: REGIONAL DRY POND

I. DRAINAGE AREA
PRE =105.13
ULTIMATE =121.07

II. PRE DEVELOPED DISCHARGES (TR-20)

A. Q_2 = 20.69 CFS
B. Q_{10} = 127.39 CFS
C. Q_{25} = 182.34 CFS

III. POST DEVELOPED DISCHARGES (TR-20)

A. Q_2 = 20.28 CFS
B. Q_{10} = 123.99 CFS
C. Q_{25} = 188.22 CFS

IV. BMP VOLUME (DRY POND)

A. REQUIRED = 312,505.88 C.F.
A. PROVIDED = 318,505.88 C.F.

Application No: RZ / FDP 2012-DR-016 Staff: W' OD
With/ PCA C-696-09
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(_GDP) (X CDP) (X FDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC)
SEE PROFFERS DATED: Nov 19, 2013
SEE CONDITIONS DATED:
Date of Final Approval: Dec 3, 2013 (X BOS) (_PC) (_BZA)
Comments: On 1/14/2014, CDP Dev. Conds Dated 1/14/2014 were added by the BOS
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Sheet 21 of 41

REFERENCE APPROVED FAIRFAX COUNTY PLAN: 6848-PI-002-1 (3/31/04) FOR INFORMATIONAL PURPOSES ONLY!!

No.	DATE	DESCRIPTION

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03-27-00
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COMMONWEALTH OF VIRGINIA
ERIC S. SIEGEL
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9/19/01
PROFESSIONAL ENGINEER

CURVE NUMBERS, TIME OF CONCENTRATION, AND TR-20
DULLES STATION AT DULLES CORNER
REGIONAL S.W.M. POND
HUNTER MILL DISTRICT
FAIRFAX COUNTY, VIRGINIA
SCALE: N/A C.I. N/A DATE: MARCH, 2000

SHEET 5 OF 31
FILE No. SP-1158

No.	DATE	DESCRIPTION

REVISIONS

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STORMWATER MANAGEMENT REFERENCE SHEET
DULLES STATION
PARCEL 5A
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA
SCALE: N/A C.I.= N/A DATE: DEC., 2011

SHEET 21 OF 41

FILE No. SP-1158-12

Urban, Ltd. - J:\JOBS\Dulles Station\FDP-CDP\FDPA-CDPA-Buildings L&M\1158-11-21-SWM.dwg [REF 3] October 09, 2013 - 3:49pm mdoyle

BMP FACILITY DESIGN FORMAT

DULLES STATION AT DULLES CORNER — Date: 02/22/00

Plan Number: _____ Engineer: CCT

Water Quality Control Narrative

SEE SHEET 2 FOR NARRATIVE

Watershed Data

Part 1 List All of the Subareas and "C" Factors Used in the BMP Computations.

Subarea Designation and Description (1)	"C" (2)	Acres (3)
ONSITE BUSINESS/COMMERCIAL TO DRY POND	0.80	116.97
ONSITE OPEN	0.30	1.95
ONSITE ROAD TO DRY POND	0.90	2.15
		Total Area=121.07

NOTE: *"C" Factors developed using % Imperviousness for existing and proposed conditions.* "C" Factors for future uses were developed using PFM Table 6.6.

Phosphorus Removal

Part 2 Compute the Weighted Average "C" Factor For the Site.

(A)*Area of Site* (a) 121.07 acres

(B)Subarea Designation and Description (1)	(2)	"C" (3)	x	Acres	=	Product (4)
ONSITE BUSINESS/COMMERCIAL TO DRY POND		0.80	x	116.97	=	93.58
ONSITE OPEN		0.30	x	1.95	=	0.59
ONSITE ROAD TO DRY POND		0.90	x	2.15	=	1.94
			x		=	
			x		=	
			x		=	
			x		=	
			x		=	
			x		=	
			x		=	
			x		=	
			x		=	
				TOTAL AREA = 121.07		96.11

(C)Weighted average "C" factor (b) / (a) (C)

96.11/121.07 0.79

Part 3 Compute the Total Phosphorus Removal for the Site.

Subarea Designation (1)	BMP Type (2)	Removal Eff.(%) (3)	x	Area Ratio (4)	x	"C" Factor Ratio (5)	=	Product (6)
ON BS/COM	DRY POND	50.0	x	0.97	x	1.012	=	49.082
ON POND	DRY POND	50.0	x	0.016	x	0.379	=	0.3032
ON ROAD	DRY POND	50.0	x	0.17	x	1.139	=	0.968
			x		x		=	
			x		x		=	
			x		x		=	
			x		x		=	
			x		x		=	
			x		x		=	
			x		x		=	
			x		x		=	
			x		x		=	
			x		x		=	
			x		x		=	
			x		x		=	

(A)*Total Phosphorus Removal* (a) Total 50.35%

Part 4 Determine Compliance with Phosphorus Removal Requirement.

(A)Select Requirement (a) 50%

Water Supply Overlay District (Occoquan) 50%
Chesapeake Bay Resourse Preservation Area (New Develo 40%
Chesapeake Bay Resourse Preservation Area (Redevelopment) %

[1-0.9 x ("1"pre / "1"post)] x 100

(B)If Line 3 (a) is greater than or equal to Line 4 (a), then the Phosphorus removal requirement is satisfied. Line 3 (a) Line 4 (a)

50.35% > 50% Requirement is Satisfied

Site Coverage

Part 5 Determine Compliance with Site Coverage Requirement.

Sum all the uncontrolled onsite areas and compute a weighted average "C" factor. Do not include qualifying open space.

Subgrade Designation (1)	"C" (2)	x	Acres (3)	=	Product (4)
--	--	x	--	=	--
		x		=	
		x		=	
		x		=	
		x		=	
				(a)	--

(A)Total equivalent uncontrolled area

(B)Total uncontrolled area (b) --

(C)Weighted average "C" factor (b) / (a (c) --

(D)If Line 5 (b) < 20% of Line 2 (a), then the site coverage requirement is satisfied. Line 5 (a) is the equivalent offsite area for which coverage may be required.

100 x Line -- / -- = (d) --

Part 6 Determine the Offsite Areas for which Coverage is Required.

(A)For the offsite areas listed in Part 1 which flow to proposed onsite BMP's, compute the equivalent areas.

Subgrade Designation (1)	"C" (2)	x	Acres (3)	=	Product (4)
		x		=	
		x		=	
		x		=	
		x		=	
		x		=	
			Total	= (a)	

If the equivalent offsite area, Line 6 (a), *draining to all proposed BMP facilities is greater than the* equivalent uncontrolled area of the site shown in Line 5 (a); then, the offsite area controlled by the proposed BMP facilities may be reduced until the two are equal. Otherwise, all uncontrolled offsite areas draining to the proposed BMP facilities must be included. All offsite areas thus reduced should be marked with an "*" whenever they appear in the computations.

Storage for SWM/BMP DRY POND

Part 7 Compute the Weighted Average "C" Factor for Each Proposed BMP

(A)List the areas to be controlled by BMP

Subarea Designation (1)	"C" (2)	x	Acres (3)	=	Product (4)
ONSITE TO DRY POND	0.79	x	121.07	=	95.64
		x		=	
		x		=	
		x		=	
		x		=	
		(a)	121.07		
				(b)	95.64

(C)Weighted average "C" factor (b) / (a) (c) 0.79

Part 8 Determine the Storage Required for SWM/BMP Ponds (Dry Pond)

(A)Extended Detention [ ]
Chart A6-40 value for BMP storage per acre
[(4375 x "C") - 875] or [31.25 x % (a) 2581.2 cf / ac

Design 1 (48 hour drawdown)
Line 7 (a) 121.07 x 2,581.2 = 312,505.88 cf

Outlet Computations

Part 9 Determine the Required Orifice Size for Each Extended Detention Facility.

(A.1)BMP storage requirement (S) from Part 8. (a.1) 312,505.88 cf

(A.2)*BMP storage provided* (a.2) 319,505.88 cf

(B)*Maximum Head (h)* at the required BMP storage from the elevation-storage curve for the facility. (b) 9.25 ft

(C)Peak Outflow rate (Q) at the maximum head for a drawdown time of 48 hours [Q = S / (0.5 x 3600 x 48)].

1.16E-05 x 319,505.88 = (c) 3.706cfs

(D)Required Orifice Area line 9(C)/ [0.6 x (64.4 x h) to the0.5]

3.706/[0.6 * (64.4 * 9.25) to the 0.5] = 0.253 sq. ft.

(E)Diameter of a circular orifice

12 x 2.0 x [(line 9 (d) 0.253 / 3.1415927) to the 0.5] 6.81 inches

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PCA C-698-03
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SEE CONDITIONS DATED:
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Sheet 22 of 41

ZONING

No.	DATE	DESCRIPTION

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B.M.P. COMPUTATIONS
DULLES STATION AT DULLES CORNER
REGIONAL S.W.M. POND
HUNTER MILL DISTRICT
FAIRFAX COUNTY, VIRGINIA

SCALE: N/A C.I. N/A DATE: MARCH, 2000

SHEET 17 OF 51

FILE No. SP-1158

No.	DATE	DESCRIPTION
1	12-13-11	ADDED SITE TECHNOLOGY CT.
2	2-2-12	
3	4-20-12	
4	6-12-12	
5	7-19-12	
6	8-3-12	
7	11-29-12	
8	06-25-13	
9	08-23-13	
10	10-07-13	

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STORMWATER MANAGEMENT REFERENCE SHEET

DULLES STATION
PARCEL 5A
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SCALE: N/A C.I.= N/A DATE: DEC., 2011

SHEET 22 OF 41

FILE No. SP-1158-12

REFERENCE APPROVED FAIRFAX COUNTY PLAN: 6848-PI-002-1 (3/31/04) FOR INFORMATIONAL PURPOSES ONLY!!

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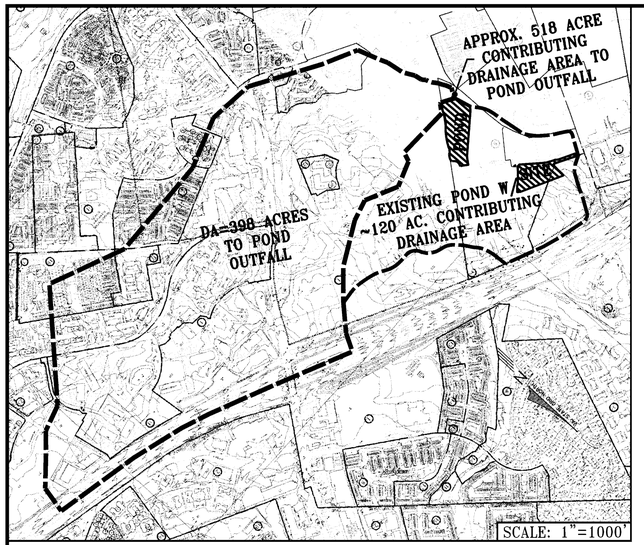

Application No: RZ / FDP 2012-DR-016 Staff: W' OD
With/ PCA C-696-09
PCA C-698-03
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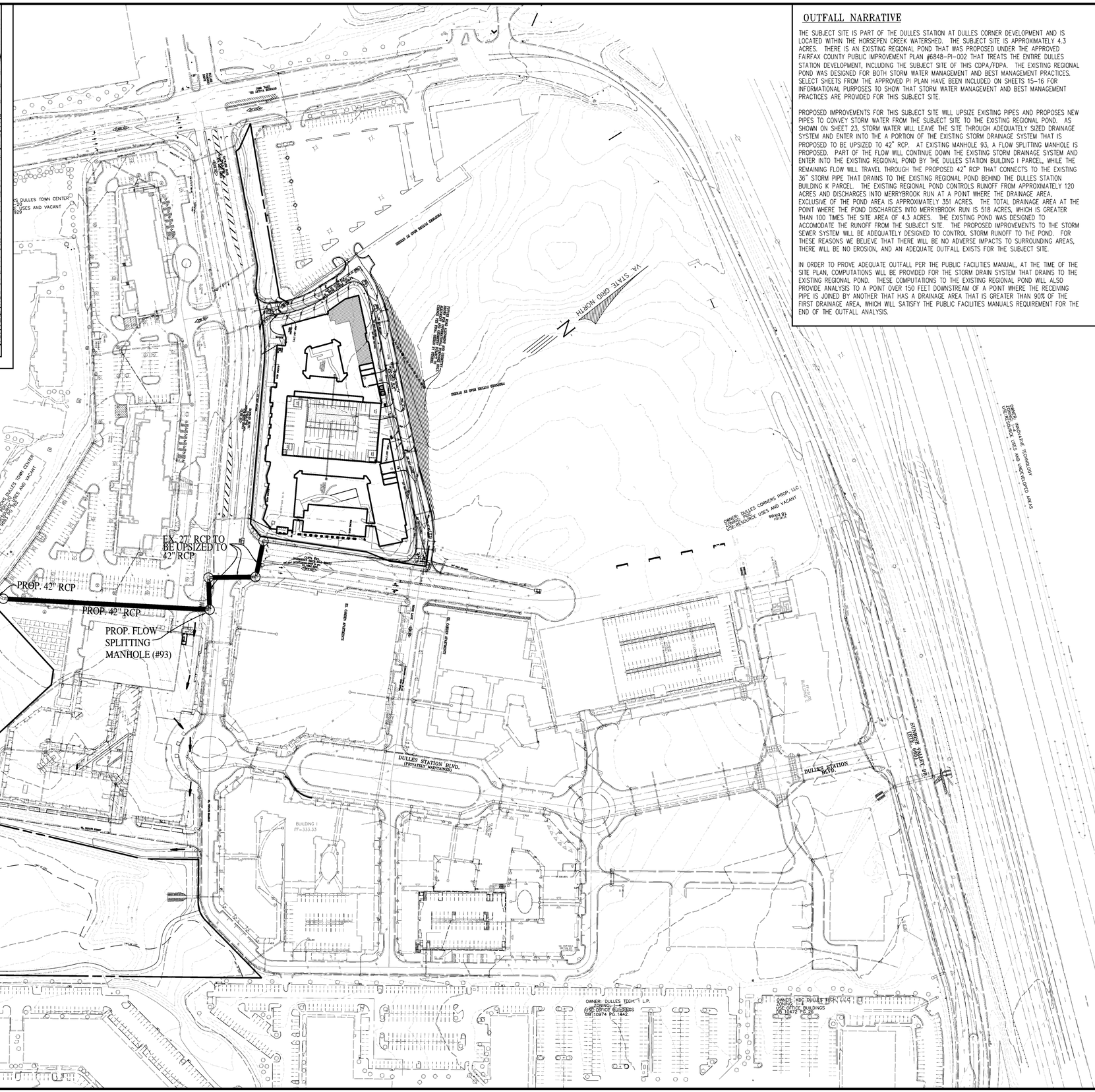
Comments: On 1/14/2014, CDP/Dev. Conds Dated 1/14/2014 were added by the BOS
Sheet 23 of 41
DEPARTMENT OF PLANNING & ZONING

OUTFALL NARRATIVE

THE SUBJECT SITE IS PART OF THE DULLES STATION AT DULLES CORNER DEVELOPMENT AND IS LOCATED WITHIN THE HORSEPEN CREEK WATERSHED. THE SUBJECT SITE IS APPROXIMATELY 4.3 ACRES. THERE IS AN EXISTING REGIONAL POND THAT WAS PROPOSED UNDER THE APPROVED FAIRFAX COUNTY PUBLIC IMPROVEMENT PLAN #6848-PI-002 THAT TREATS THE ENTIRE DULLES STATION DEVELOPMENT, INCLUDING THE SUBJECT SITE OF THIS CDPA/FDPA. THE EXISTING REGIONAL POND WAS DESIGNED FOR BOTH STORM WATER MANAGEMENT AND BEST MANAGEMENT PRACTICES. SELECT SHEETS FROM THE APPROVED PI PLAN HAVE BEEN INCLUDED ON SHEETS 15-16 FOR INFORMATIONAL PURPOSES TO SHOW THAT STORM WATER MANAGEMENT AND BEST MANAGEMENT PRACTICES ARE PROVIDED FOR THIS SUBJECT SITE.

PROPOSED IMPROVEMENTS FOR THIS SUBJECT SITE WILL UPSIZE EXISTING PIPES AND PROPOSES NEW PIPES TO CONVEY STORM WATER FROM THE SUBJECT SITE TO THE EXISTING REGIONAL POND. AS SHOWN ON SHEET 23, STORM WATER WILL LEAVE THE SITE THROUGH ADEQUATELY SIZED DRAINAGE SYSTEM AND ENTER INTO THE A PORTION OF THE EXISTING STORM DRAINAGE SYSTEM THAT IS PROPOSED TO BE UPSIZED TO 42" RCP. AT EXISTING MANHOLE 93, A FLOW SPLITTING MANHOLE IS PROPOSED. PART OF THE FLOW WILL CONTINUE DOWN THE EXISTING STORM DRAINAGE SYSTEM AND ENTER INTO THE EXISTING REGIONAL POND BY THE DULLES STATION BUILDING I PARCEL, WHILE THE REMAINING FLOW WILL TRAVEL THROUGH THE PROPOSED 42" RCP THAT CONNECTS TO THE EXISTING 36" STORM PIPE THAT DRAINS TO THE EXISTING REGIONAL POND BEHIND THE DULLES STATION BUILDING K PARCEL. THE EXISTING REGIONAL POND CONTROLS RUNOFF FROM APPROXIMATELY 120 ACRES AND DISCHARGES INTO MERRYBROOK RUN AT A POINT WHERE THE DRAINAGE AREA, EXCLUSIVE OF THE POND AREA IS APPROXIMATELY 351 ACRES. THE TOTAL DRAINAGE AREA AT THE POINT WHERE THE POND DISCHARGES INTO MERRYBROOK RUN IS 518 ACRES, WHICH IS GREATER THAN 100 TIMES THE SITE AREA OF 4.3 ACRES. THE EXISTING POND WAS DESIGNED TO ACCOMODATE THE RUNOFF FROM THE SUBJECT SITE. THE PROPOSED IMPROVEMENTS TO THE STORM SEWER SYSTEM WILL BE ADEQUATELY DESIGNED TO CONTROL STORM RUNOFF TO THE POND. FOR THESE REASONS WE BELIEVE THAT THERE WILL BE NO ADVERSE IMPACTS TO SURROUNDING AREAS, THERE WILL BE NO EROSION, AND AN ADEQUATE OUTFALL EXISTS FOR THE SUBJECT SITE.

IN ORDER TO PROVE ADEQUATE OUTFALL PER THE PUBLIC FACILITIES MANUAL, AT THE TIME OF THE SITE PLAN, COMPUTATIONS WILL BE PROVIDED FOR THE STORM DRAIN SYSTEM THAT DRAINS TO THE EXISTING REGIONAL POND. THESE COMPUTATIONS TO THE EXISTING REGIONAL POND WILL ALSO PROVIDE ANALYSIS TO A POINT OVER 150 FEET DOWNSTREAM OF A POINT WHERE THE RECEIVING PIPE IS JOINED BY ANOTHER THAT HAS A DRAINAGE AREA THAT IS GREATER THAN 90% OF THE FIRST DRAINAGE AREA, WHICH WILL SATISFY THE PUBLIC FACILITIES MANUALS REQUIREMENT FOR THE END OF THE OUTFALL ANALYSIS.



No.	DATE	DESCRIPTION

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LIC. No. 0680-B
10/7/13
PROFESSIONAL ENGINEER

OUTFALL ANALYSIS
DULLES STATION PARCEL 5A
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SCALE: 1"=100' (U.N.O.) C.I.= 2' DATE: DEC., 2011

SHEET 23 OF 41

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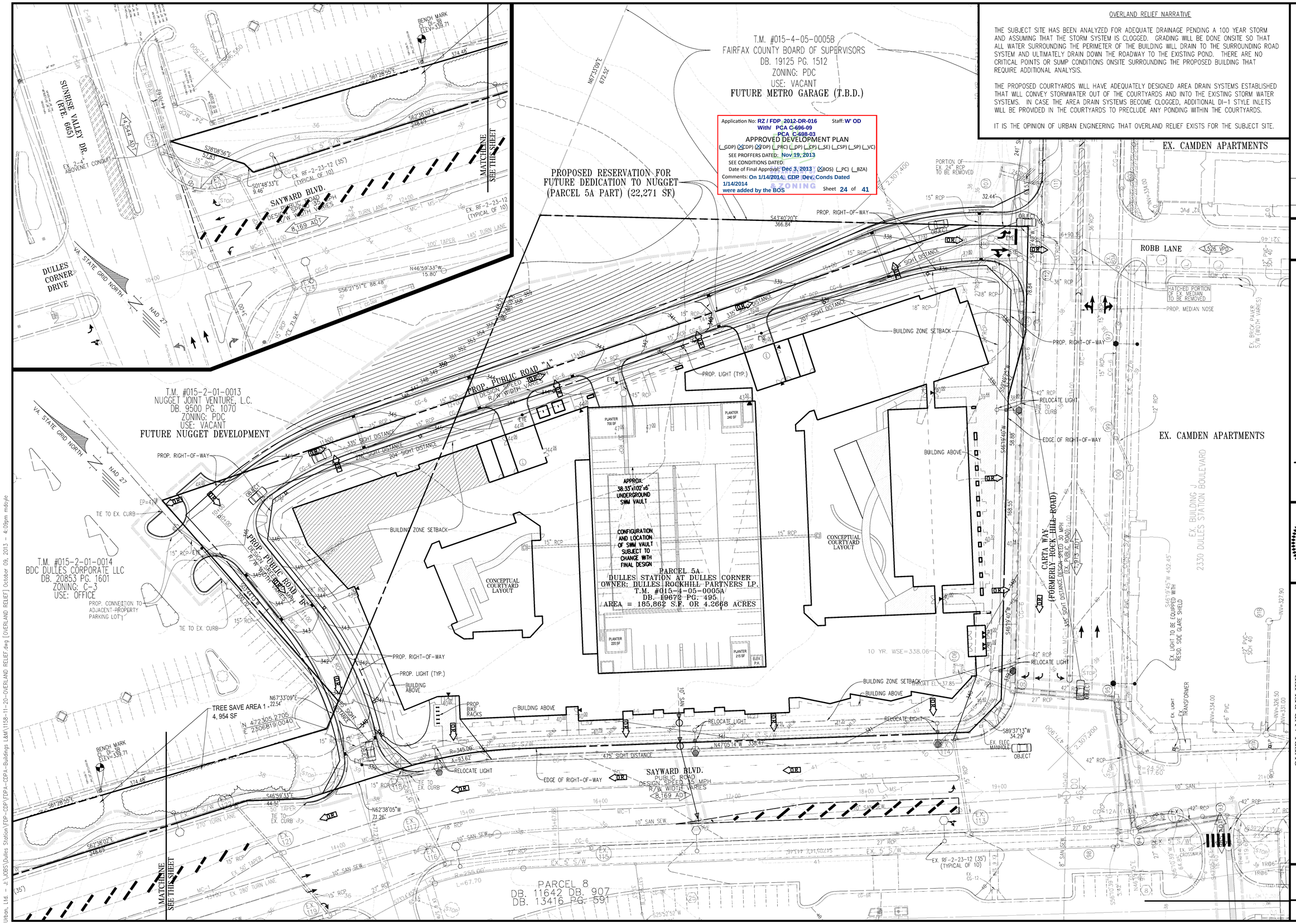

OVERLAND RELIEF NARRATIVE

THE SUBJECT SITE HAS BEEN ANALYZED FOR ADEQUATE DRAINAGE PENDING A 100 YEAR STORM AND ASSUMING THAT THE STORM SYSTEM IS CLOGGED. GRADING WILL BE DONE ONSITE SO THAT ALL WATER SURROUNDING THE PERIMETER OF THE BUILDING WILL DRAIN TO THE SURROUNDING ROAD SYSTEM AND ULTIMATELY DRAIN DOWN THE ROADWAY TO THE EXISTING POND. THERE ARE NO CRITICAL POINTS OR SUMP CONDITIONS ONSITE SURROUNDING THE PROPOSED BUILDING THAT REQUIRE ADDITIONAL ANALYSIS.

THE PROPOSED COURTYARDS WILL HAVE ADEQUATELY DESIGNED AREA DRAIN SYSTEMS ESTABLISHED THAT WILL CONVEY STORMWATER OUT OF THE COURTYARDS AND INTO THE EXISTING STORM WATER SYSTEMS. IN CASE THE AREA DRAIN SYSTEMS BECOME CLOGGED, ADDITIONAL DI-1 STYLE INLETS WILL BE PROVIDED IN THE COURTYARDS TO PRECLUDE ANY PONDING WITHIN THE COURTYARDS.

IT IS THE OPINION OF URBAN ENGINEERING THAT OVERLAND RELIEF EXISTS FOR THE SUBJECT SITE.

No.	DATE	DESCRIPTION

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PLAN DATE
12-13-11
2-2-12
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CLAYTON C. TOOK
LIC. NO. 038700
PROFESSIONAL ENGINEER
10/7/13

OVERLAND RELIEF
DULLES STATION PARCEL 5A
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SCALE: 1"=30' | CL.=2' | DATE: DEC., 2011

SHEET 24 OF 41

FILE No. SP-1158-12

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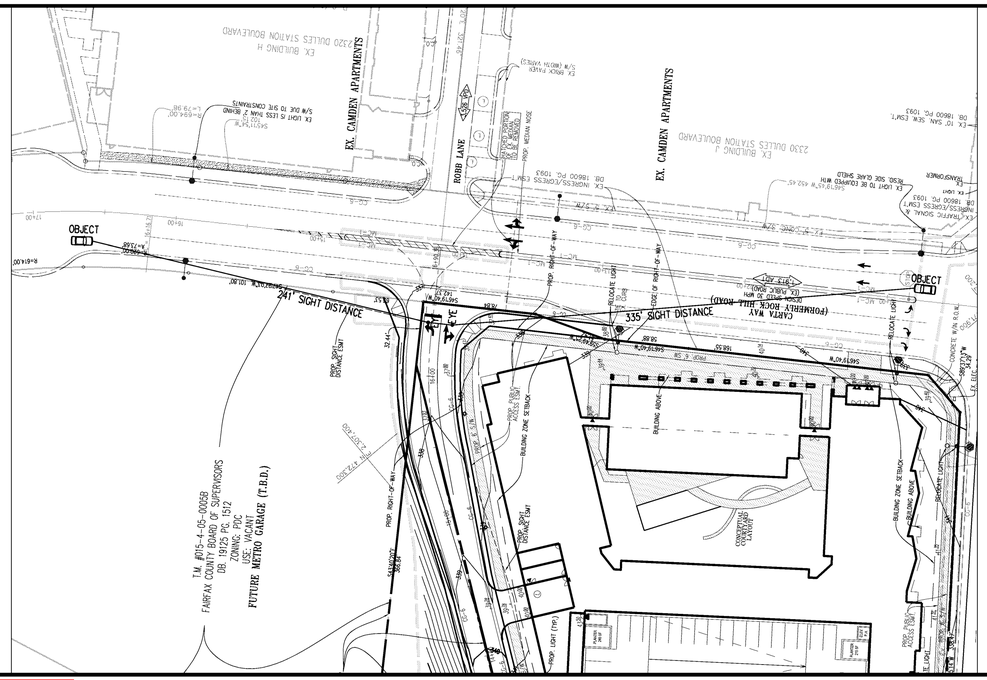

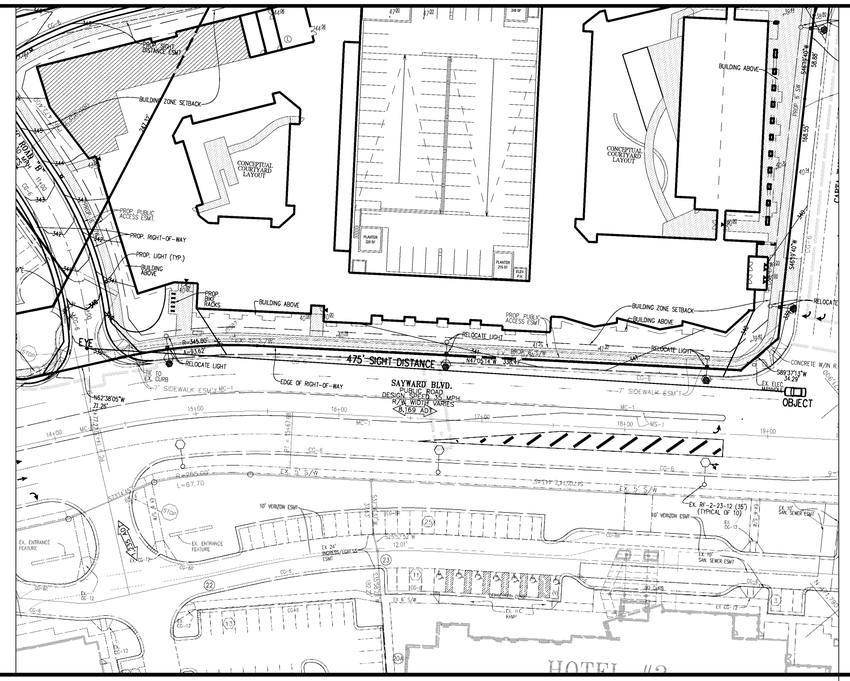

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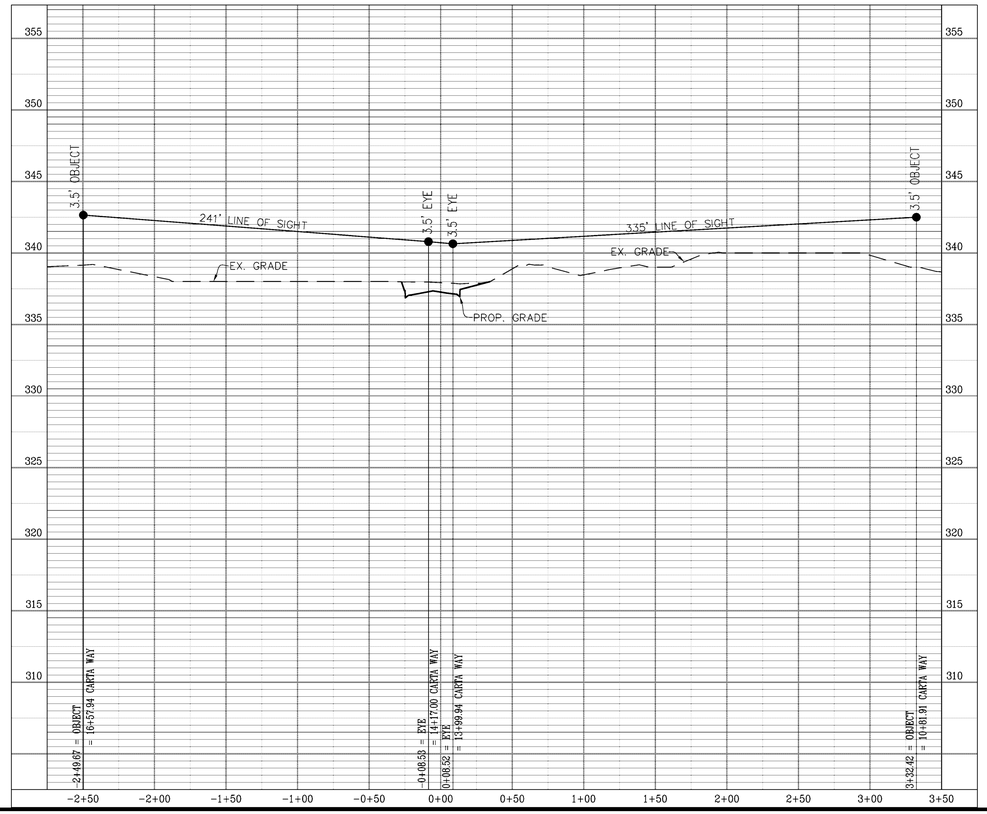
Sheet 25 of 41

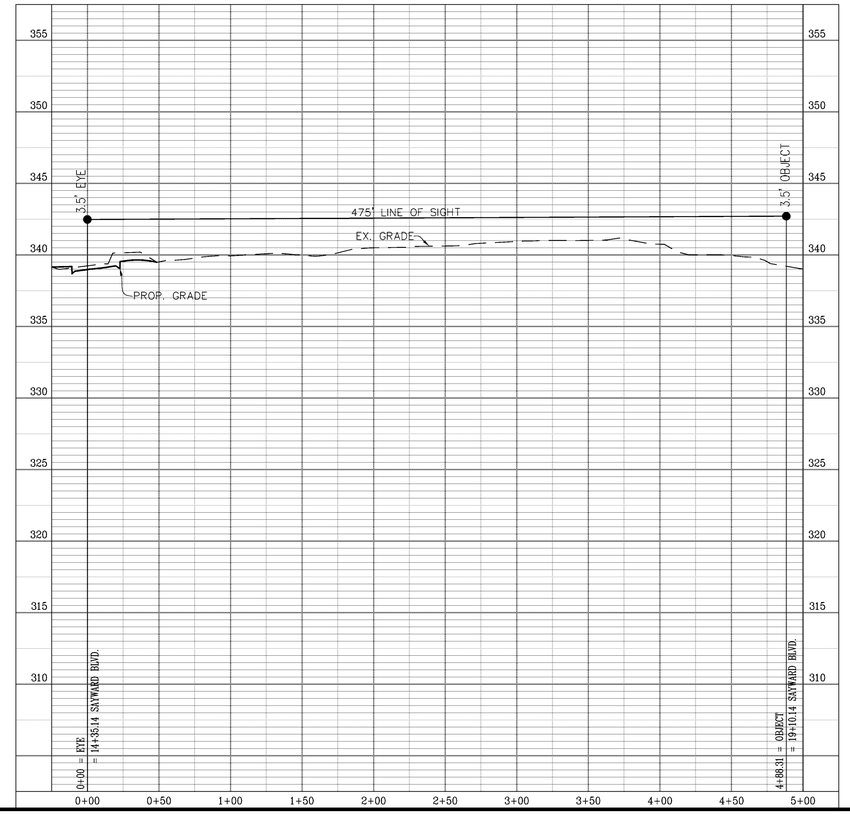
CARTA WAY
DESIGN SPEED=40 MPH
R/W WIDTH VARIES

SAYWARD BLVD.
DESIGN SPEED=40 MPH
R/W WIDTH VARIES

PLAN VIEW
SCALE: 1"=50'

PROFILE VIEW
SCALE: H:1"=50'; V:1"=5'





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SIGHT DISTANCE PROFILES
DULLES STATION
PARCEL 5A
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SCALE: AS NOTED
C.I.= N/A
DATE: DEC., 2011

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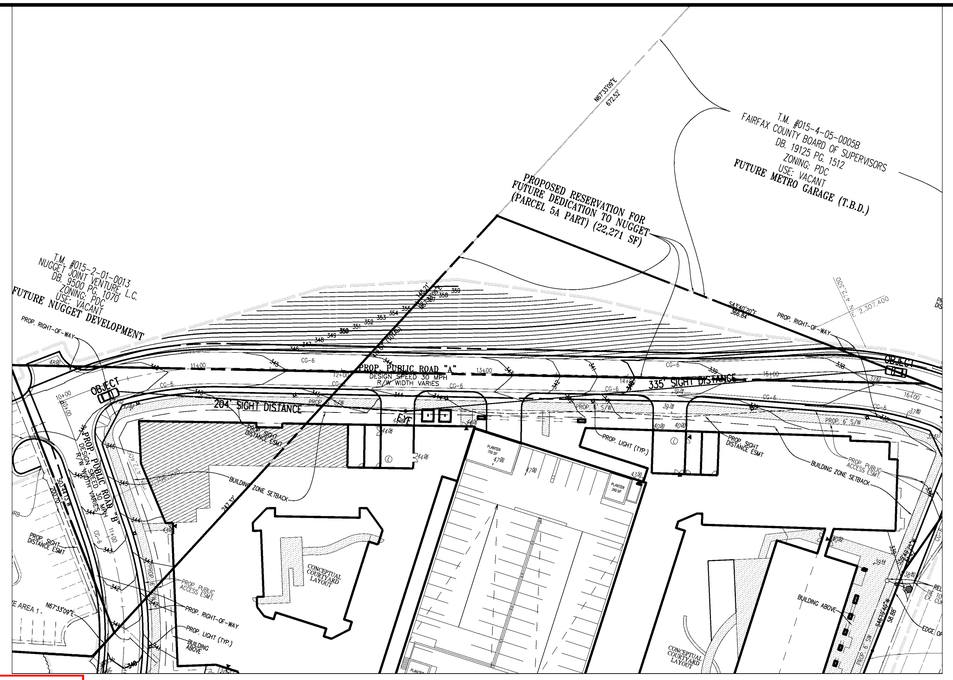
FILE No.
SP-1158-12

Urban, Ltd. – J:\JOBS\Dulles Station\FDP-CDP\FDPA-CDPA-Buildings L&M\1158-11-31-SIGHTD.dwg [SIGHT DIST] October 09, 2013 – 4:10pm mdoyle



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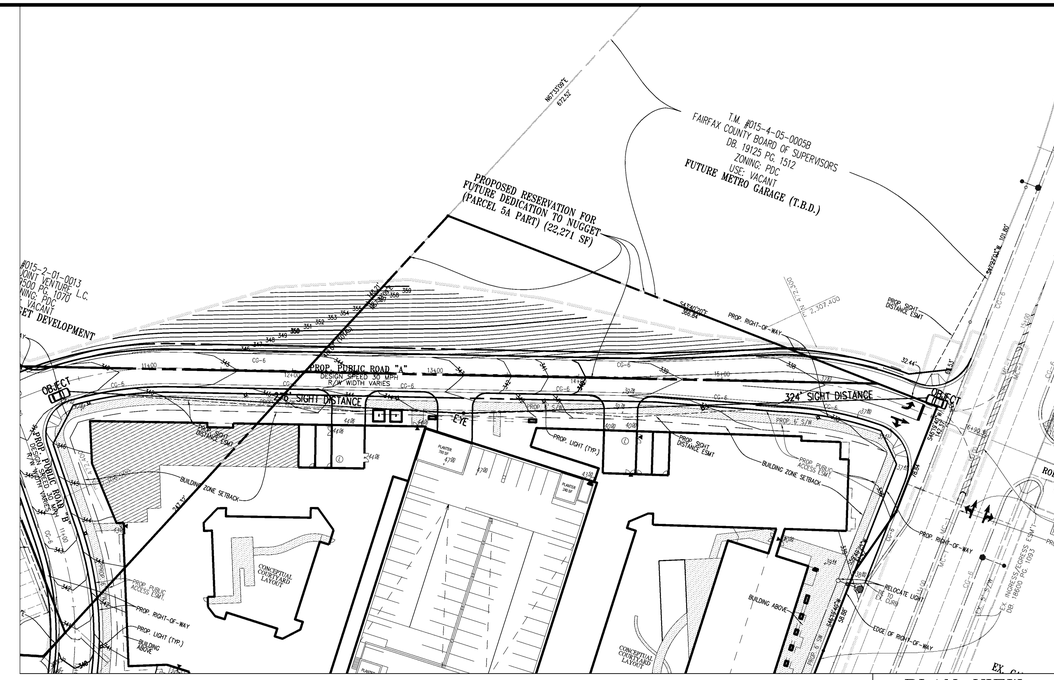
R/W WIDTH VARIES



PROP. ENTRANCE 2
DESIGN SPEED=30 MPH
R/W WIDTH VARIES

PLAN VIEW
SCALE: 1"=50'

PROFILE VIEW
SCALE: H:1"=50'; V:1"=5'

Application No: RZ / FDP 2012-DR-016 Staff: W' OD
With/ PCA C-696-09
PCA C-698-03
APPROVED DEVELOPMENT PLAN
(_GDP) (X_CDP) (X_FDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC)
SEE PROFFERS DATED: Nov 19, 2013
SEE CONDITIONS DATED:
Date of Final Approval: Dec 3, 2013 (X_BOS) (_PC) (_BZA)
Comments: On 1/14/2014, CDP Dev. Conds Dated 1/14/2014 were added by the BOS
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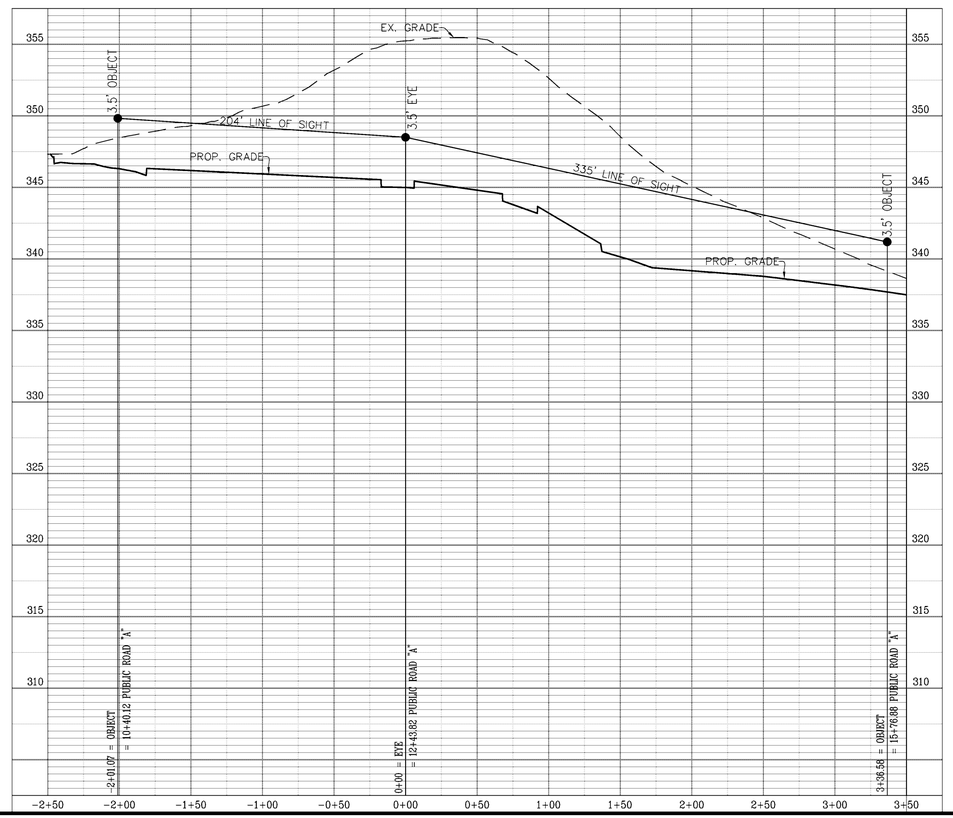

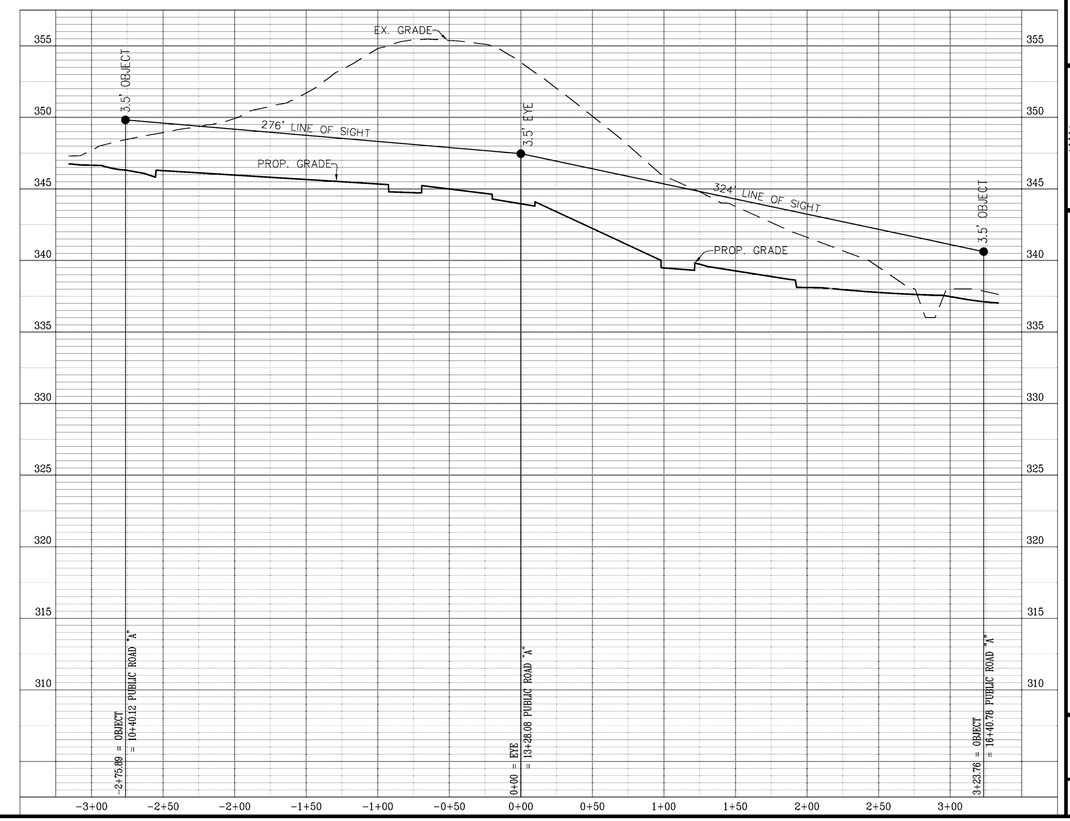

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SIGHT DISTANCE PROFILES
DULLES STATION
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FAIRFAX COUNTY, VIRGINIA

SCALE: AS NOTED
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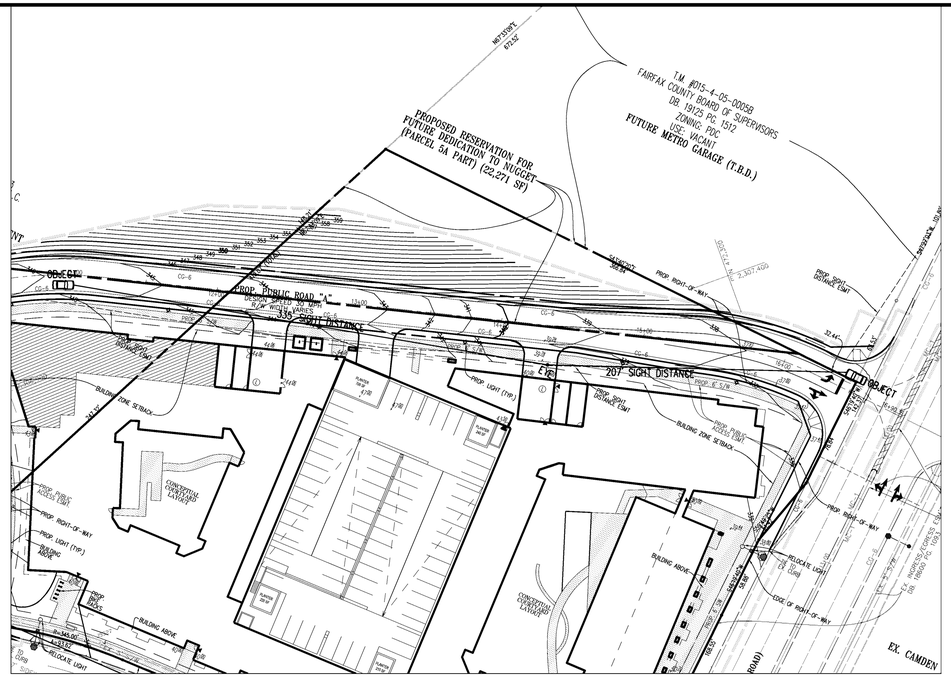

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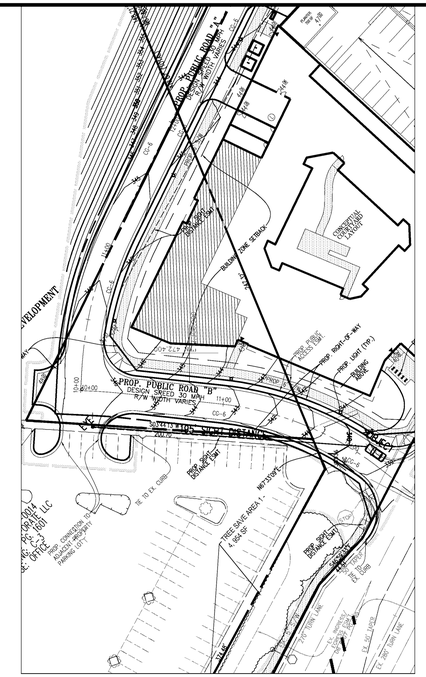
R/W WIDTH VARIES



CORPORATE LLC ENTRANCE
DESIGN SPEED=30 MPH
R/W WIDTH VARIES

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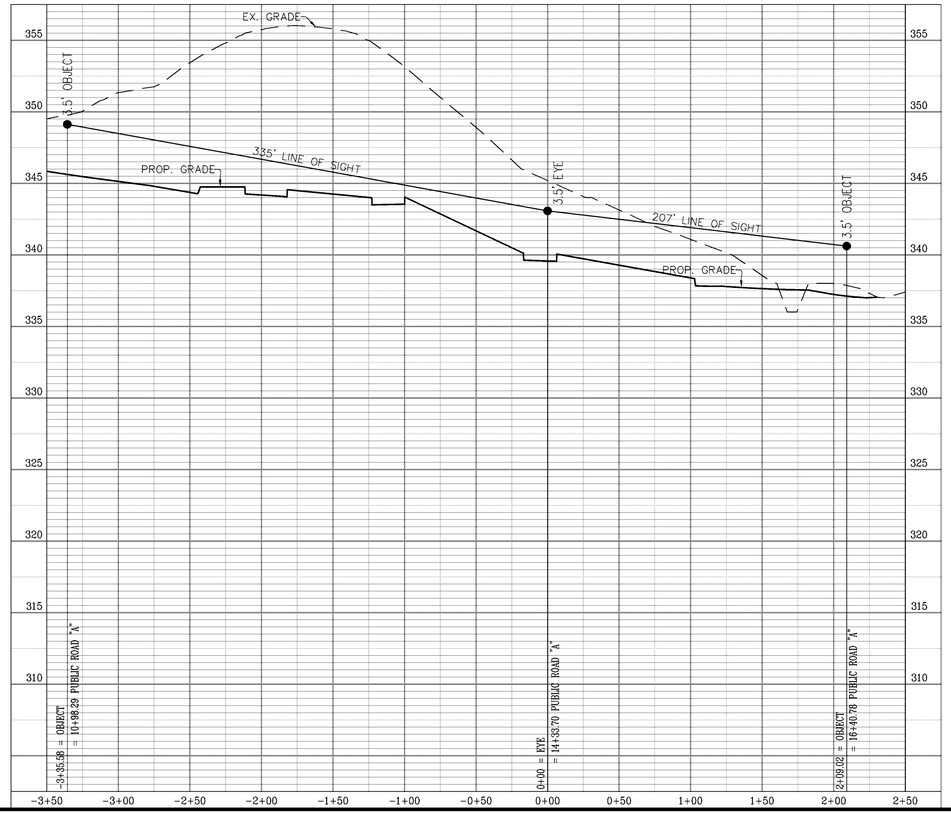
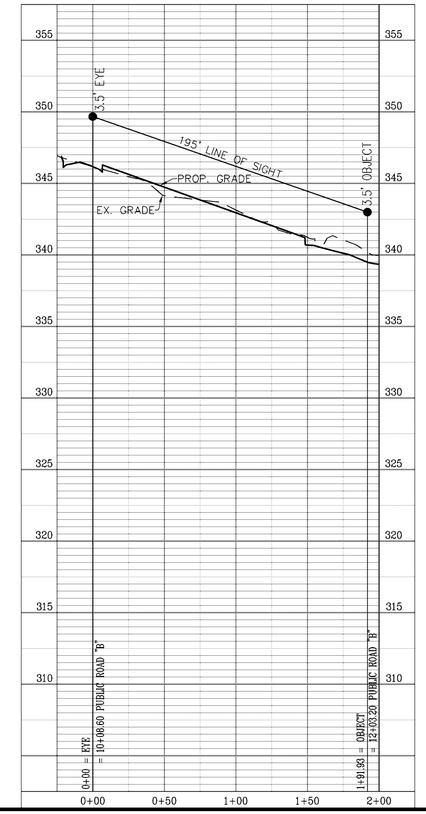
SCALE: 1"=50'

PROFILE VIEW
SCALE: H:1"=50'; V:1"=5'





Application No: RZ / FDP 2012-DR-016 Staff: W' OD
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SIGHT DISTANCE PROFILES
DULLES STATION
PARCEL 5A
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SCALE: AS NOTED
C.I.= N/A
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FILE No.
SP-1158-12

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EXISTING VEGETATION SUMMARY

	Cover Type	Primary Species	Successional Stage	Condition	Acreage	Comments
A	Upland Forest	Northern Red Oak, Tulip Poplar and Red Maple	climax	fair-good	2.97 ac.	This cover type contains trees between 6"-30" DBH that dominate the canopy, mostly the Oaks and Tulip Poplar. The understory consists of some Eastern Red Cedar and a thick shrub layer. Along the southeast and southwest edges of the forest, significant amounts of invasive hoeysuckle and brambles are present.
B	Developed	None	n.a.	N/A	1.18 ac.	This cover type consists solely of lawn.
C	Developed	Northern Red Oak, Tulip Poplar, and American Holly	n.a.	fair-good	.11 ac.	This cover type exists as developed land and is mostly lawn with the exception of the areas at the tree trunks, which is left unmowed. The trees in this cover type range from 6" to 30" DBH.
				total acreage:	4.26 ac.	

*DBH = Diameter at Breast Height (measured 4.5 feet above the ground)

NOTE: Existing vegetation data provided through field study on November 30, 2011.

Application No: RZ / FDP 2012-DR-016 Staff: W' OD
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PCA C-698-03
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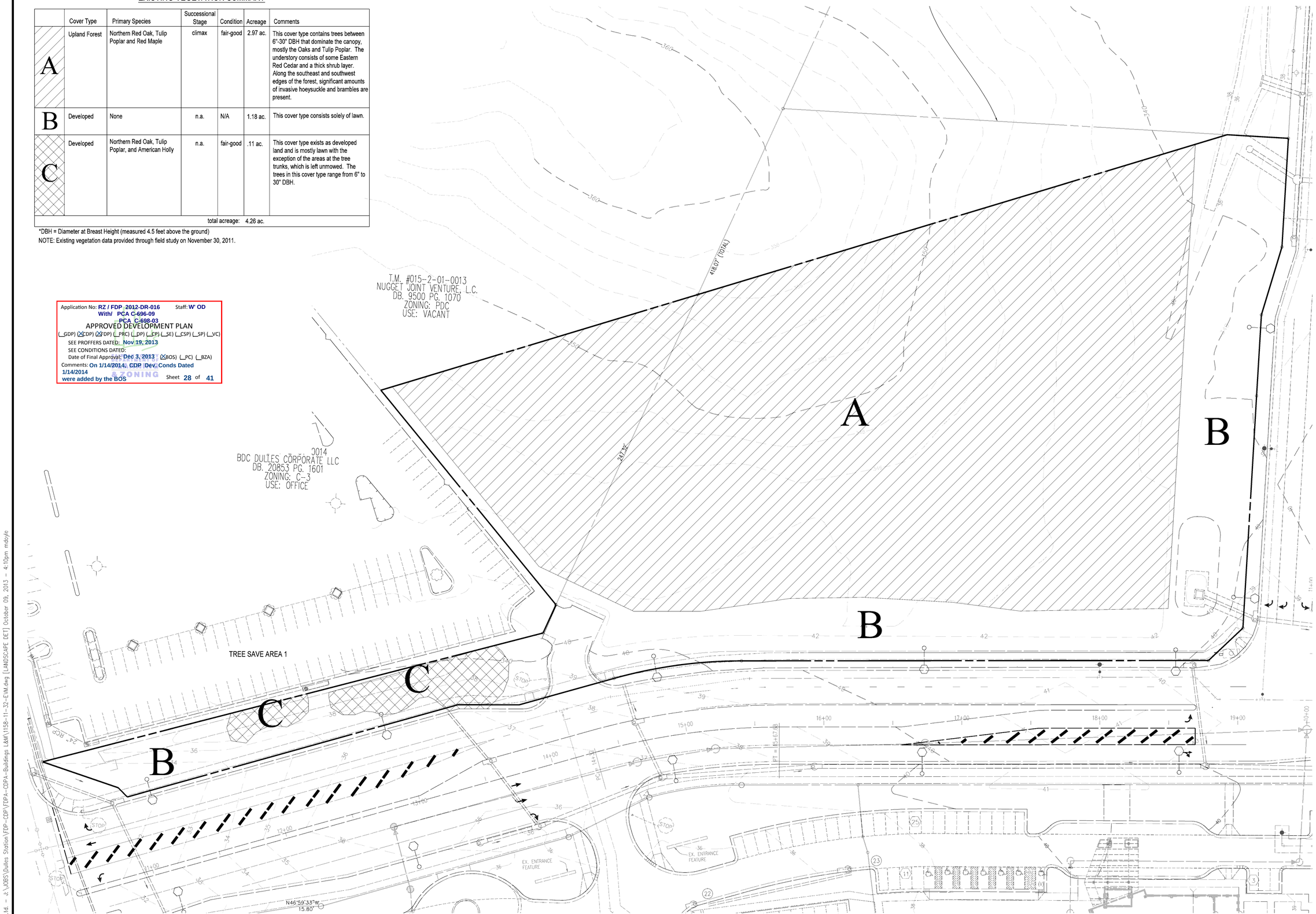

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PROFESSIONAL ENGINEER

EXISTING VEGETATION MAP
DULLES STATION
PARCEL 5A
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SCALE: 1"=30'
C.I.=2'
DATE: DEC., 2011

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FILE No.
SP-1158-12

Urban, Ltd. - J:\JOBS\Dulles Station\FDP-CDP\FDPA-CDPA-Buildings L&M\1158-11-32-EVM.dwg [LANDSCAPE DET] October 09, 2013 - 4:10pm mdoyle

Application No: RZ / FDP 2012-DR-016 Staff: W' OD
With/ PCA C-696-09
PCA C-698-03
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Comments: On 1/14/2014, CDP Dev.Conds Dated 1/14/2014 were added by the BOS
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ZONING

Table 12.10 10-year Tree Canopy Calculation Worksheet

Step	tab	Totals	Reference
A. Tree Preservation Target and Statement			
A1	Place the Tree Preservation Target calculations and statement here preceding the 10-year tree canopy calculations	See table 12.3 on this sheet	see § 12-0508.2 for list of required elements and worksheet
B. Tree Canopy Requirement			
B1	Identify gross site area =	185,862	§ 12-0511.1A
B2	Subtract area dedicated to parks, road frontage		§ 12-0511.1B
B3	Subtract area of exemptions =		§ 12-0511.1C(1) through § 12-0511.1C(6)
B4	Adjusted gross site area (B1 – B2) =	185,862	
B5	Identify site's zoning and/or use	PRM	
B6	Percentage of 10-year tree canopy required =	10%	§ 12-0510.1 and Table 12.4
B7	Area of 10-year tree canopy required (B4 x B6) =	18,586	
B8	Modification of 10-year Tree Canopy Requirements requested?	N	Yes or No
B9	If B8 is yes, then list plan sheet where modification request is located		See correspondent sheet
C. Tree Preservation			
C1	Tree Preservation Target Area =	7.20%	
C2	Total canopy area meeting standards of § 12-0400 =	4,792	
C3	C2 x 1.25 =	5,990	§ 12-0510.3B
C4	Total canopy area provided by unique or valuable forest or woodland communities =		
C5	C4 x 1.5 =		§ 12-0510.3B(1)
C6	Total of canopy area provided by "Heritage,""Memorial," "Specimen," or "Street" trees =		
C7	C6 x 1.5 to 3.0 =		§ 12-0510.3B(2)
C8	Canopy area of trees within Resource Protection Areas and 100-year floodplains =		
C9	C8 x 1.0 =		§ 12-0510.3C(1)
C10	Total of C3, C5, C7 and C9 =	5,990	If area of C10 is less than B7 then remainder of requirement must be met through tree planting - go to D
D. Tree Planting			
D1	Area of canopy to be met through tree planting (D7-C10) =	12,596	
D2	Area of canopy planted for air quality benefits =	1,400	
D3	x 1.5 =	2,100	§ 12-0510.4B(1)
D4	Area of canopy planted for energy conservation =		
D5	x 1.5 =		§ 12-0510.4B(2)
D6	Area of canopy planted for water quality benefits =		
D7	x 1.25 =		§ 12-0510.4D(3)
D8	Area of canopy planted for wildlife benefits =	8,350	
D9	x 1.5 =	12,525	§ 12-0510.4B(4)
D10	Area of canopy provided by native trees =		
D11	x 1.5 =		§ 12-0510.4B(5)
D12	Area of canopy provided by improved cultivars and varieties =	2,650	
D13	x 1.5 (Per PFM Manual)	3,975	§ 12-0510.4B(6)
D14	Area of canopy provided through tree seedlings =		
D15	x 1.0		§ 12-0510.4D(1)
D16	Percentage of D14 represented by D15=		Must not exceed 33% of D14
D17	Total of canopy area provided through tree planting =	18,600	
D18	Is an off-site planting relief requested?	N	Yes or No
D19	Tree Bank or Tree Fund?		§ 12-0512
D20	Canopy area requested to be provided through off-site banking or tree fund		
D21	Amount to be deposited into the Tree Preservation and Planting Fund		
E. Total of 10-year Tree Canopy Provided			
E1	Total of canopy area provided through tree preservation (C10) =	5,990	
E2	Total of canopy area provided through tree planting (D17) =	18,600	
E3	Total of canopy area provided through off-site mechanism (D19) =	0	
E4	Total of 10-year Tree Canopy Provided = (E1+E2+E3)	24,590	Total of E1 through E3. Area should meet or exceed area required by B7

INTERIOR PARKING LOT LANDSCAPING CALCULATIONS

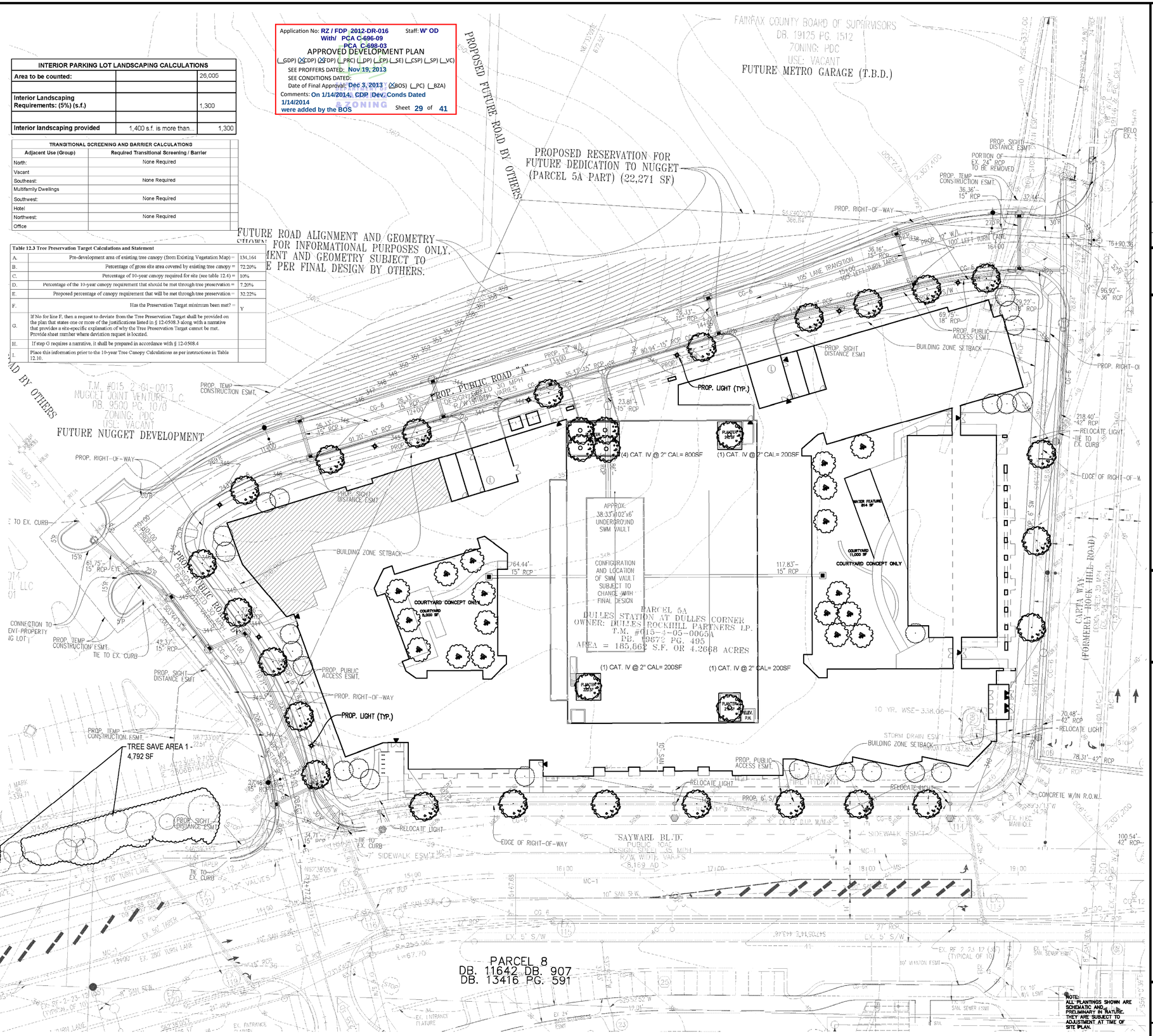
Area to be counted:		26,005
Interior Landscaping Requirements: (5%) (s.f.)		1,300
Interior landscaping provided	1,400 s.f. is more than...	1,300

TRANSITIONAL SCREENING AND BARRIER CALCULATIONS

Adjacent Use (Group)	Required Transitional Screening / Barrier
North:	None Required
Vacant	
Southeast:	None Required
Multifamily Dwellings	
Southwest:	None Required
Hotel	
Northwest:	None Required
Office	

Table 12.3 Tree Preservation Target Calculations and Statement

A.	Pre-development area of existing tree canopy (from Existing Vegetation Map) =	134,164
B.	Percentage of gross site area covered by existing tree canopy =	72.20%
C.	Percentage of 10-year canopy required for site (see table 12.4) =	10%
D.	Percentage of the 10-year canopy requirement that should be met through tree preservation =	7.20%
E.	Proposed percentage of canopy requirement that will be met through tree preservation =	32.22%
F.	Has the Preservation Target minimum been met? =	Y
G.	If No for line F, then a request to deviate from the Tree Preservation Target shall be provided on the plan that states one or more of the justifications listed in § 12-0508.3 along with a narrative that provides a site-specific explanation of why the Tree Preservation Target cannot be met. Provide sheet number where deviation request is located.	
H.	If step G requires a narrative, it shall be prepared in accordance with § 12-0508.4	
I.	Place this information prior to the 10-year Tree Canopy Calculations as per instructions in Table 12.10.	



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LANDSCAPE ARCHITECT

LANDSCAPE PLAN & TREE CALCULATIONS
DULLES STATION
PARCEL 5A
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SCALE: 1"=30' C.I.= 2' DATE: DEC., 2011

SHEET 29 OF 41

FILE No. SP-1158-12

Urban, Ltd. – z:\JOBS\Dulles Station\FDP-CDP\CDPA-CDPA-Buildings L&M\1158-11-33-LANDSCAPE.dwg [TREE CALCULATIONS] October 09, 2013 – 4:11pm mdoyle

PLANTING SPECIFICATIONS

1. QUALITY ASSURANCE:
   A. Landscape planting and related work shall be performed by a firm with a minimum of five years experience specializing in this type and scale of work.
   B. Applicable Specifications and Standards:
      Fairfax County Zoning Ordinance,
      American Joint Committee on Horticultural Nomenclature
      American Standard for Nursery Stock, latest edition
      American Association of Nurserymen Landscape Specification Guidelines for Baltimore Washington Metropolitan Areas, latest edition, Landscape Contractors Association.

2. SUBMITTALS: Submit the following to the Owner's Representative prior to beginning work:
   A. Copies of manufacturer's data for all materials required.
   B. Samples of required mulch material.
   C. Chemical and mechanical analysis and samples of all existing soil, topsoil, organic matter and soil mix to be used.
   D. Planting schedule showing the dates (earliest and latest) proposed for each type of plant specified, schedule each type of planting within the normal planting seasons for such work. Include requests for any proposed changes in the approved planting season and a list of proposed sources for all plant materials.
   E. List of proposed sources for all plant material.
3. DELIVERY, HANDLING, AND STORAGE:
   A. Deliver packaged materials in manufacturer's unopened containers or bundles, fully identified with name, brand, type, weight, and analysis. Store packaged materials in such a manner as to prevent damage or intrusion of foreign matter.
   B. Dig balled and burlapped (B&B) plants with firm, natural balls of earth, of a diameter not less than that shown on the plant list nor less than recommended by the American Standard for Nursery Stock, and of sufficient depth to include the fibrous and feeding roots. B&B plants will not be accepted if the ball is cracked or broken before or during planting operation.
   C. Deliver trees and shrubs after preparations for planting have been completed. Do not bend, bind, or tie trees or shrubs in such a manner as to damage bark, break branches or destroy natural shape. If planting is delayed more than 6 hours after delivery, set trees and shrubs in shade, protect from weather and mechanical damage, and keep roots moist by heeling-in bare root stock and covering plant balls with soil, peat moss or other acceptable material for balled stock. Plants shall be kept well watered and shall not remain unplanted for longer than ten (10) days after delivery.
   D. Plants shall be lifted and handled from the bottom of the ball only.
   E. Do not remove container-grown stock from containers until planting time.
4. DRAINAGE: Before planting, determine that areas to receive plant material have adequate subdrainage.
   A. The landscape contractor is responsible for drainage tests as necessary to identify any problems prior to beginning planting operations. Upon commencement of planting operations the landscape contractor assumes responsibility for soil conditions.
   B. Dig planting pits to full depth and dimensions indicated on drawings.
   C. At bottom of planting pit, excavate rectangular pit 12 inches by 12 inches by 18 inches deep. Quickly pour water into pit to a depth of 6 inches (approximately 3-3 3/4 gallon). Note time required for water to be completely absorbed. Divide time noted by 6 to achieve average rate of absorption for 1 inch of water. Where rate of absorption exceeds 60 minutes per inch, notify owner immediately for directions on how to proceed.
5. PLANTING DATES: Planting shall be done only within the following dates except as approved by Owner.
   A. Deciduous Trees and Shrubs: March 1 to May 31 and October 15 to December 15.
   B. Evergreen Trees, Shrubs and Vines: March 1 to May 31 and September 1 to November 15.
   C. All plant material shall be guaranteed by the Contractor for a period of 1 year from the date final acceptance to be in good, healthy and flourishing condition.
6. MATERIALS FOR PLANTING:
   A. Topsoil: shall be a fertile, friable natural loam, uniform in composition, free of stones, lumps, plants and their roots, debris and other extraneous matter over 1 inch in diameter, capable of sustaining vigorous plant growth. Soil shall be harvested at a single source from the O and/or A horizons of the soil profile.
      1) Topsoil shall have a pH range of 5.5 to 7.5.
      2) Topsoil shall contain 1.5-5% organic matter by dry weight.
      3) Soil Texture: sandy loam, sandy clay loam with the following particle size distribution:

Gravel	Less than 10%
Silt	15-30%
Clay	20-35%

      Chemical Levels shall be:

Magnesium Mg	100+ units
Phosphorus P205	150+ units
Potassium - K20	120+ units

      4) Soluble Salts/ Conductivity - Not to exceed 900 ppm/0.9 mmhos/cm (in soil); not to exceed 3000 ppm/2.5 mmhos/cm (in high organic mix)
      5) Cation exchange capacity shall be a minimum of 8 meq/100g.
   B. Clay Loam to Sandy Clay Loam Soil: shall be a fertile, friable natural loam, uniform in composition, free of stones, lumps, plants and their roots, debris and other extraneous matter over 1 inch in diameter, capable of sustaining vigorous plant growth.
      1) Soil shall have a pH range of 5.5 to 6.5.
      2) Soil shall contain 2-5% organic content by volume.
      3) Soil Texture: Clay loam to sandy clay loam with the following particle size distribution:

Gravel	Less than 10%
Sand	20-50%
Silt	<35%%
Clay	20-40%

      4) Chemical Levels shall be:

Magnesium Mg	100+ units
Phosphorus P205	150+ units
Potassium - K20	120+ units

      5) Soluble Salts/ Conductivity - Not to exceed 900 ppm/0.9 mmhos/cm (in soil); not to exceed 3000 ppm/2.5 mmhos/cm (in high organic mix)
      6) Cation exchange capacity shall be 20-35 meq/100g.
   C. Compost: Compost shall be mature, stable, weed free, and produced by aerobic decomposition of organic matter. Compost feedstock shall be plant matter, such as high lignin forestry products or yard waste (leaves, brush and yard trimmings).
      1) The product must not contain any visible refuse or other physical contaminants, substances toxic to plants, or over 5% sand, silt, clay or rock material by dry weight.
      2) Compost shall be sampled and tested as required by the Seal of Testing Assurance Program of the United States Composting Council (USCC) and shall meet the physical requirements for compost as determined by USCC.
      3) The product shall possess no objectionable odors. The product must meet all applicable USEPA CFR, Title 40, Part 503 Standards for Class A biosolids.
      4) The moisture level shall be such that no visible water or dust is produced when handling the material.
   D. Composted Pine Bark Fines: Shall be approved composted, ground pine bark having no particle with a dimension greater than 3/4 inch. No more than 10% shall be wood.
   E. Sand: Shall be quartz based sharp concrete sand, ASTM C-33 Fine Aggregate, with a Fines Modulus Index between 2.8 and 3.2.
   F. Trace Elements: Shall be commercially available slow release materials containing zinc (Zn), Molybdenum (Mo), Copper (Cu), Boron (B), and Magnesium (Mn).
   G. Fertilizer: A commercial fertilizer for ornamental trees, shrubs and ground cover with an analysis of 10% Nitrogen, 6% Phosphorus and 4% Potassium shall be used. This fertilizer shall be granular with a minimum of 50% of the total Nitrogen in organic form. 14-14-14-Osmocote (or approved equal) shall be applied at a rate of 10 lbs. per square foot, tilled to a depth of 8 inch, shall be used for perennials.
   H. Soil Separator: Shall be rot resistant non-woven polypropylene filter fabric, water permeable, and unaffected by freezing and thawing. Acceptable products include: Mirafi 140N, Mirafi Civil Engineering Co., or Stabilenka Type T-80, American Enka Co., Enka, N.C.
   I. Planter Drainage Fabric: Shall be prefabricated planter drainage fabric Miredrain 9000, a composite system consisting of a Mirafi drainage fabric bonded to a three-dimensional highly impact-resistant plastic core. The core shall have the following attributes:
      1) Compressive Strength: (ASTM D-1621), 15,000 + PSF.
      2) Overlaps: Shall be capable of mechanically interlocking so as to prevent separation of the overlaps during backfill.
7. PLANT MATERIALS: (Refer to the PLANT LIST on the drawings for specific types and quantities of plants):
   H. Plants shall be nursery grown in accordance with good horticultural practices. Plants shall either be obtained from local nurseries and/or others, which have soil (heavy clay) and climatic conditions similar to those in the locality of the project.
   I. Plant material grown in sandy, well-drained soil will not be approved for this project. Plants shall be true to species and variety and unless specifically noted otherwise, all plants shall be of specimen quality, exceptionally heavy, symmetrical, tightly-knit plants, so trained or favored in their development and appearance as to be superior in form, number of branches, compactness and symmetry.
   C. Plants shall be sound, healthy and vigorous, well branched and densely foliated when in leaf, free of disease, insect pests, eggs or larvae and shall have healthy, well-developed root systems. They shall be free from physical damage or any conditions that would prevent thriving health and the desired appearance.
   D. Trees, which have a damaged or crooked leader, or multiple leaders, unless specified in the plant list, will be rejected. Trees with abrasion of the bark, sun scald, disfiguring knots, or pruning cuts more than 1 1/4 inch diameter which have not completely callused, will be rejected.
   E. Plants shall conform to measurements specified in the plant schedules except that plants larger than specified may be used if acceptable to the Landscape Architect or owner. Use of such plants shall not increase the contract price. If larger plants are accepted, the root ball shall be sized for the larger plant.
   F. Caliper Measurement: Shall be taken at a point on the trunk 6 inches above natural ground line for trees up to 4 inches diameter, and at a point 12 inches above the natural ground line for trees over 4 inches diameter.
   G. Plants shall be measured when branches are in the normal position. Height and spread dimensions specified refer to the main body of the plant and not from branch tip to tip.
8. SOIL MIXING PROCEDURES:
   A. Topsoil used in sand/soil mixes shall be screened or shredded prior to mixing in sands. Maximum clod inclusion for soil mixes shall not exceed:

Clod size (largest dimension)	% of the soil mix volume
Less than 1"	Unlimited
1 to 3 inches	20%
3 to 6 inches	5%
>6 inches	Less than 2%

   B. Source material and soil mix stockpiles shall be protected from rain by covering with filter cloth.
9. INSPECTION:
   A. Examine the areas and conditions where soil mix is to be installed and notify the Architect of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work.
   B. Cooperate with other Contractors and trades working in and adjacent to other work areas. Examine drawings which show development of entire project and become familiar with scope of other work required.
10. SOIL INSTALLATION - GENERAL PROCEDURES:
   A. If subgrade soil compaction exceeds 80%, existing soil shall be ripped to a depth of 12 inch to alleviate compaction which has taken place during construction. Prior to loosening of soil, Contractor must locate existing utilities and coordinate with Owner any underground electric lines, drainage pipes, conduits, etc.
   B. Prepare the subgrade by roughening the top 3" of the subsoil by dragging the teeth of a backhoe bucket across the surface.
   C. Begin soil installation as soon as subsoil is prepared. Use low impact equipment with track belts, large tires, or low tire pressure to lower compaction and soil damage during installation.
   D. Monitor compaction during installation and loosen soils as needed if compaction exceeds 80%.
   E. Install specified soil in 12"-18" thick lifts. Compact each lift sufficiently to reduce settling but not enough to prevent the movement of water and feeder roots through the soil. The soils in each lift should feel firm to the foot in all areas and make only slight heel prints.
11. INSTALLATION OF SOIL MIX FOR LAWN AREAS ON GRADE:
   A. Soil Mix for Lawns on Grade: shall consist of 10% compost and 90% topsoil, by volume. These materials must meet specifications described in Section 2.00.
   B. Loosen subgrade lawn areas to a minimum of 3". Remove stones more than 1-1/2" in any dimension and sticks, roots, rubbish, and other extraneous matter. Limit preparation to areas which will be planted promptly after preparation.
   C. Spread soil mix for lawn areas on grade to a minimum depth of 8" as required to meet grade and elevations shown on drawings, after lightly rolling and natural settlement. Allow for sod thickness in areas to be sodded.
12. INSTALLATION OF SOIL MIX FOR TREE PITS ON GRADE
   A. Confirm that native subsoil drains at a rate of at least ½" per hour. If drainage is less than ½" per hour, provide subsurface drainage lines.
   B. Install 30-36" of Soil Mix for Tree Pit Backfill on Grade:
      1) Shall consist of clay loam to sandy clay loam soil, sand, and composted pine bark fines at a rate of 5.5:1 to 10:5:1.5 to achieve the following:
         (a) Clay content of Soil Mix shall be 10-20% of the soil mix, by volume.
         (b) Minimum amount of coarse to medium sand in the mix shall be 55%
         (c) Minimum infiltration rate at 80-85% compaction shall be 1-3 inches per hour.
   A. Composted pine bark fines shall not exceed 10% of the total soil mix by volume.
   B. Till 4" of compost into the top 6" of the installed Soil Mix for Tree Pit Backfill on Grade.
13. INSTALLATION OF SOIL MIX FOR MULCHED SHRUB AND PERENNIAL BEDS:
   A. Confirm that native subsoil drains at a rate of at least ½" per hour. If drainage is less than ½" per hour, provide subsurface drainage lines.
   B. Install 14" of Soil Mix for Mulched Shrub and Perennial Beds on Grade:
      1) Shall consist of clay loam to sandy clay loam soil, sand, and composted pine bark fines at a rate of 5.5:1 to 10:5:1.5 to achieve the following:
         (a) Clay content of Soil Mix shall be 10-20% of the soil mix, by volume.
         (b) Minimum amount of coarse to medium sand in the mix shall be 55%
         (c) Minimum infiltration rate at 80-85% compaction shall be 1-3 inches per hour.
      2) Composted pine bark fines shall not exceed 10% of the total soil mix by volume.
   C. Till 4" of compost into the top 6" of the installed Soil Mix for Tree Pit Backfill on Grade.
14. INSTALLATION OF SILVA CELL PLANTING SOIL MIX:
   A. Soil Mix shall be installed per Manufacturer's recommendations.
   B. Planting Soil Mix shall consist of Topsoil, Compost, and coarse sand mixed to the following proportion:

Material	% by volume
Compost	12-17%
Coarse Sand	35-50%
Topsoil	35-50%

      1) Ratio shall be adjusted to achieve a water permeability between 0.75 and 1.75 inches per hour when compacted to 80-85% of maximum dry density. The permeability of the allowable topsoil materials will vary the overall permeability of the final mix. Submit multiple mix ratios for permeability to establish the correct mix ratio for the available topsoil.
      2) Final Mix shall have a pH between 5.5 and 6.5.
      3) Final mix shall have an organic matter content of between 3 and 5%.
15. GENERAL PLANT INSTALLATION:
   A. Excavation: Excavate all tree pits and planting areas to the width and depth shown in the planting details.
   B. Center plant in pit and orient for the best visual effect. Set plants plumb and hold rigidly in position until soil has been tamped firmly around root ball.
   C. Mulch within 48 hours after planting and after applying the pre-emergent herbicide, except ground cover areas (which shall have organic material placed before planting) with a 2" layer of mulch immediately after planting. All bed lines shall be cut with a smooth consistent edge to a minimum depth of 3 inches. Keep mulch out of the crowns of shrubs and off buildings, sidewalks, light standards, and other structures.
   D. All planting areas to conform to specified grades after full settlement has occurred and mulch has been applied. Provide saucers around tree pits as shown on planting details. Remove all tags, labels, strings, etc. from all plants.
16. PERMANENT SEEDING OR SODDING FOR GRASS AREAS :
   A. Lawn Seed or Sod varieties shall be an improved variety turf-type tall fescue blend. The landscape contractor shall select from varieties approved by the Maryland or Virginia Department of Agriculture.
   B. Refer to the Virginia Erosion and Sediment Control Handbook, for guidelines, specifications and installation techniques of seed and sod.
   C. Maintenance shall begin immediately after each plant and lawn area is installed and shall continue until 90 days after final acceptance of the last section.

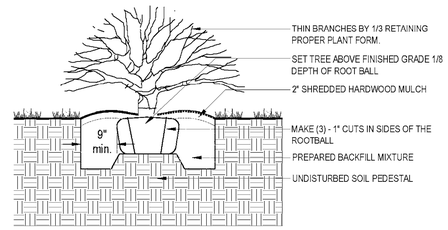
Application No: RZ / FDP_2012-DR-016	Staff: W' OD
With/ PCA C-696-09	
PCA C-688-03	

APPROVED DEVELOPMENT PLAN
(_GDP) (X CDP) (X FDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC)
SEE PROFFERS DATED: Nov 19, 2013
SEE CONDITIONS DATED:
Date of Final Approval: Dec 3, 2013 (X BOS) (_PC) (_BZA)
Comments: On 1/14/2014, CDP Dev. Conds Dated 1/14/2014 were added by the BOS
DEPARTMENT OF ZONING
Sheet 30 of 41

PLANT SCHEDULE						
Symbol	Botanical Name	Common Name	Size	Type	Remarks	Multiplier
	Cat. IV Deciduous Trees					
	Acer rubrum 'October Glory'	October Glory Red Maple	3" Cal.	B & B	Uniform Branching Pattern	1.5 : Air Quality, Wildlife
	Liriodendron tulipifera	Tulip Poplar	3" Cal.	B & B	Uniform Branching Pattern	1.5 : Air Quality, Wildlife
	Plantanus x acerfolia 'Bloodgood'	London Planetree 'Bloodgood'	3" Cal.	B & B	Uniform Branching Pattern	1.5 : Improved Cultivar
	Quercus phellos	Willow Oak	3" Cal.	B & B	Uniform Branching Pattern	1.5 : Wildlife
	Tilia americana	American Linden	3" Cal.	B & B	Uniform Branching Pattern	1.5 : Air Quality, Wildlife
	Zelkova serrata	Japanese Zelkova	3" Cal.	B & B	Uniform Branching Pattern	1.5 : Air Quality
	Cat. IV Deciduous Trees					
	Acer rubrum 'October Glory'	October Glory Red Maple	2" Cal.	B & B	Uniform Branching Pattern	1.5 : Air Quality, Wildlife
	Liriodendron tulipifera	Tulip Poplar	2" Cal.	B & B	Uniform Branching Pattern	1.5 : Air Quality, Wildlife
	Plantanus x acerfolia 'Bloodgood'	London Planetree 'Bloodgood'	2" Cal.	B & B	Uniform Branching Pattern	1.5 : Improved Cultivar
	Quercus phellos	Willow Oak	2" Cal.	B & B	Uniform Branching Pattern	1.5 : Wildlife
	Tilia americana	American Linden	2" Cal.	B & B	Uniform Branching Pattern	1.5 : Air Quality, Wildlife
	Zelkova serrata	Japanese Zelkova	2" Cal.	B & B	Uniform Branching Pattern	1.5 : Air Quality
	Cat. III Deciduous Trees					
	Betula nigra	River Birch	2" Cal.	B & B	Uniform Branching Pattern	1.5 : Wildlife
	Gymnocladus dioicus	Kentucky Coffee Tree	2" Cal.	B & B	Uniform Branching Pattern	1.5 : Wildlife
	Celtis occidentalis	Hackberry	2" Cal.	B & B	Uniform Branching Pattern	1.5 : Wildlife
	Nyssa sylvatica	Black Gum	2" Cal.	B & B	Uniform Branching Pattern	1.5 : Wildlife
	Tilia cordata	Little Leaf Linden	2" Cal.	B & B	Uniform Branching Pattern	1.5 : Air Quality
	Cat. II Deciduous Trees					
	Amelanchier arborea	Downy Serviceberry	2" Cal.	B & B	Multi-stem, Min. 3 heavy stems	1.5 : Wildlife
	Carpinus caroliniana	American Hornbean	2" Cal.	B & B	Multi-stem, Min. 3 heavy stems	
	Chionanthus virginicus	Fringetree	2" Cal.	B & B	Multi-stem, Min. 3 heavy stems	
	Cornus florida 'Appalachian Spring'	Flowering Dogwood 'Appalachian Spring'	2" Cal.	B & B	Multi-stem, Min. 3 heavy stems	1.5 : Improved Cultivar

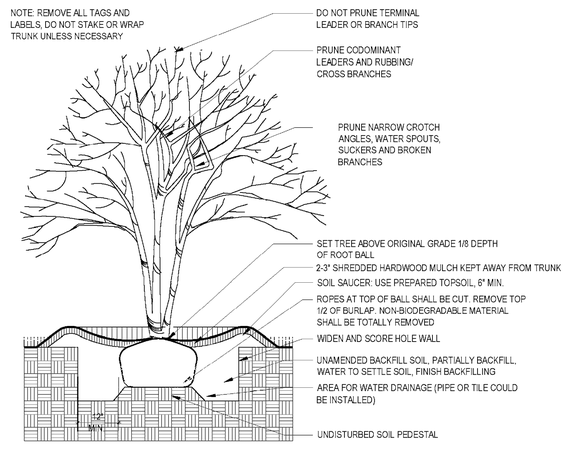
* PLANT SCHEDULE SUBJECT TO CHANGE AT FINAL SITE PLAN. PLANTS USED AS SUGGESTION ONLY.

NOTE: REMOVE ALL TAGS AND LABELS, DO NOT STAKE OR WRAP TRUNK UNLESS NECESSARY



1 TYP. B&B SHRUB PLANTING
N.T.S.

NOTE: REMOVE ALL TAGS AND LABELS, DO NOT STAKE OR WRAP TRUNK UNLESS NECESSARY

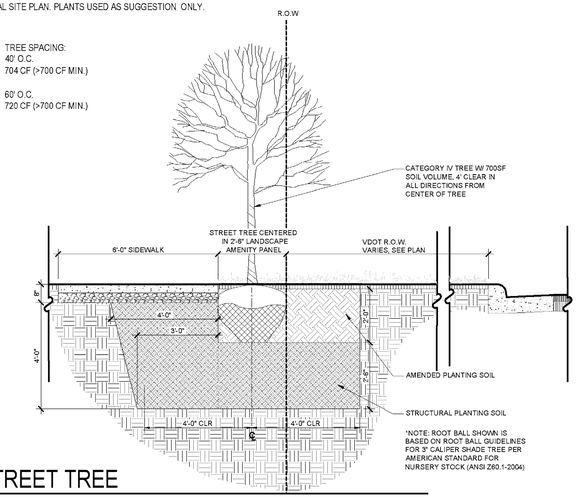


2 ORNAMENTAL TREE PLANTING
NTS

NOTE: REMOVE ALL TAGS AND LABELS, DO NOT STAKE OR WRAP TRUNK UNLESS NECESSARY

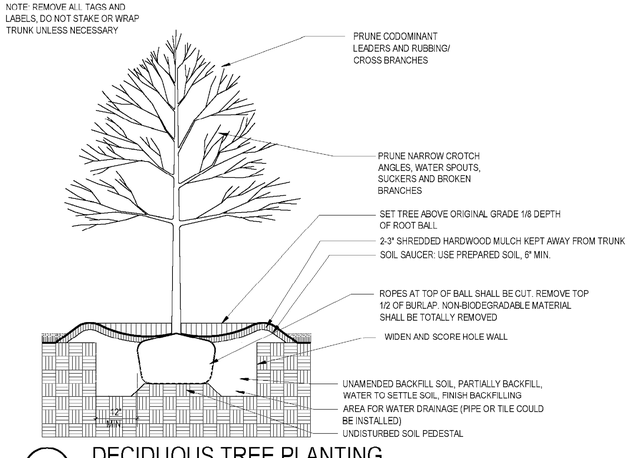
TREE SPACING:
40' O.C.
704 CF (>700 CF MIN.)

60' O.C.
720 CF (>700 CF MIN.)



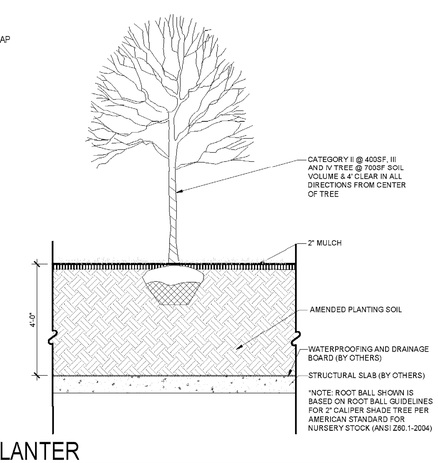
4 STREET TREE
NTS

NOTE: REMOVE ALL TAGS AND LABELS, DO NOT STAKE OR WRAP TRUNK UNLESS NECESSARY



3 DECIDUOUS TREE PLANTING
NTS

NOTE: REMOVE ALL TAGS AND LABELS, DO NOT STAKE OR WRAP TRUNK UNLESS NECESSARY



5 GARAGE PLANTER
NTS

No.	DATE	DESCRIPTION
		REVISIONS

PLAN DATE
12-13-11
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COMMONWEALTH OF VIRGINIA
JOSEPH J. PLUMPE
Lic. No. 000802
10/7/13
LANDSCAPE ARCHITECT

PLANTING DETAILS NOTES & SCHEDULE
DULLES STATION
PARCEL 5A
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SCALE: AS NOTED | C.I.= N/A | DATE: DEC., 2011

SHEET 30 OF 41

FILE No. SP-1158-12

Urban, Ltd. – J:\JOBS\Dulles Station\FDP-CDP\FDP-CDP-Buildings L&M\1158-11-33-LANDSCAPEDETAILS.dwg [L2.02 PLANTING DETAILS] October 09, 2013 – 4:11pm mdoyle

STUDIO39

LANDSCAPE ARCHITECTURE | PLANNING | URBAN DESIGN | GRAPHIC DESIGN

August 15, 2013

Mr. Michael Knapp
Director, Urban Forestry Management
Land Development Services
Department of Public Works & Environmental Services
County of Fairfax
12055 Government Center Parkway, Suite 518
Fairfax, VA 22035

Re: Dulles Station at Dulles Corner Parcel 5A – Tree Preservation Deviation Request

Dear Mike,

This letter and attachments shall serve to reaffirm the request for a deviation of tree preservation target for the above noted project. This request is made pursuant to Section 12-508 of the Public Facilities Manual (PFM) and requests that the tree preservation target for the site be modified for portion of the site to be zoned PRM. Specifically the PRM portion of the site is requested to be 7.20% of the existing tree cover, whereas the target as calculated would be 3.22%.

As a background, this is a 4.26 acre site at Dulles Corner Parcel 5A and is zoned PRM. The property is proposed to be redeveloped with multi family residential dwellings.

Currently, the site has 134,164 square feet of existing tree canopy. Therefore, and in consideration of the foregoing, this request for a deviation of the tree preservation requirement is based on and justified by the following:

- Meeting the tree preservation target would preclude development of the property as allowed by the underlying PRM zoning district.
- Significant new plantings are to be utilized to meet the tree cover requirements.

We trust that this information will be helpful in your review of this request and look forward to your favorable response. In the interim, please feel free to contact me, should you have any questions or need additional information.

Sincerely,

Loren Helgason, ASLA, PLA, LEED AP BD+C

STUDIO39 LANDSCAPE ARCHITECTURE, P.C. 6416 GROVEDALE DR., SUITE 100-A ALEXANDRIA, VIRGINIA 22310
TEL: 703.719.6500 FAX: 703.719.6503 WEB: WWW.STUDIO39.COM

Application No: RZ / FDP 2012-DR-016 Staff: W' OD
With/ PCA C-696-09
PCA C-698-03
APPROVED DEVELOPMENT PLAN
(__GDP) (XCDP) (XFDP) (__PRC) (__PD) (__CP) (__SE) (__CSP) (__SP) (__VC)
SEE PROFFERS DATED: Nov 19, 2013
SEE CONDITIONS DATED:
Date of Final Approval: Dec 3, 2013 (XBOS) (__PC) (__BZA)
Comments: On 1/14/2014, CDP Dev. Conds Dated 1/14/2014 were added by the BOS
Sheet 31 of 41
DEPARTMENT OF PLANNING & ZONING

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LAND SURVEYORS

July 29, 2013

Bijan Sistani
Branch Chief
Fairfax County DPW&ES
Office of Site Development Services
12055 Government Center Parkway
Suite 535
Fairfax, Virginia 22035

Re: Dulles Station Building L
Waiver of Underground SWM in Residential Neighborhood
RZ 2012-DR-016, PCA C-696-09, and PCA C-698-3

Mr. Sistani:

In conjunction with pending zoning application RZ 2012-DR-016, PCA C-696-09, and PCA C-698-3, we hereby request a waiver of Fairfax County Public Facilities Manual Section 6-0303.8, restricting the use of underground stormwater detention facilities for the proposed development on this site. The site is currently a vacant / wooded site. The pending applications will develop the site with a multi-family development with a parking structure.

Our justification for this waiver is as follows:

a) The below grade SWM facility is to be a cast-in place structure, located within the footprint of the garage. The structure will have a minimum clear height of 6'. Further, adequate man-access utilizing manholes, Bilco doors or approved equals shall be provided based on the final design parameters at the time of final site plan. The underground SWM facility shall be provided at grade in the private drive aisle and parking stalls.

b) Based on Fairfax County unit prices, we estimate the cost of the vault to be approximately $460,000; which includes the vault construction, weir structure, bilco doors, and access manholes.

c) The routine maintenance is expected to cost about $3,000.00 per year. The replacement cost is the installation cost above. Over a budgeted 75 year lifespan of the facility, this averages $6,133.33 per year for a total annual cost of

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$9133.33. Split by the minimum of 411 residential units, the maintenance and future replacement costs for this SWM facility is roughly $14.92 per year.

d) The preliminary stormwater layout plan is included with this request.

e) Two copies of the development plan are included with this request.

f) A copy of the draft proffers are included with this request.

Based on the above information, we feel there is sufficient justification to approve this waiver request. Thank you for your time and attention to this matter. If you have any questions or concerns, please do not hesitate to call.

Sincerely,

Urban, Ltd.

Clayton C. Tock, P.E.
Associate

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June 25, 2013

Ken Williams
Fairfax County - Public Works and Environmental Services
12055 Government Center Parkway, Suite 507
Fairfax, VA 22035-5503

Re: Onsite SWM and BMP Waiver
Dulles Station at Dulles Corner
Parcel 5A (Tax Map #16-4-((5))-5A)
Dranesville District

Dear Mr. Williams:

This letter shall serve as a formal request to allow the use of an offsite regional stormwater management facility (Regional Pond H-9) under Section 6-0301.3 of the Fairfax County Public Facilities Manual and Best Management Practices for onsite treatment. The regional dry pond was designed under Fairfax County Plan Number 6848-PI-02 (approved on 3/31/04) to accommodate the entire Dulles Station Development and roughly 70 acres of offsite area. The regional dry pond was designed to satisfy the Stormwater Management (SWM) and Best Management Practice (BMP) requirements for the entire Dulles Station development, including the subject site; which is located on Fairfax County Tax Map #16-4((5))-5A. Reference sheets have been provided in the enclosed CDP/FDP that show the drainage area to the existing pond with the area of the subject site shaded for illustrative purposes. The pre- and post-development Curve Number values that the pond has been designed for have also been provided which documents that the pond was designed to accommodate the amount of imperviousness proposed with the subject site.

In addition to the minimum requirements for Stormwater Management and Best Management Practices provided by the existing regional stormwater management facility, the applicant is proposing to reduce the peak release rate and volume for the 1 and 2 year, 24 hour storm from the post developed condition to be equal or less than the existing condition for the same storms. the applicant is also proposing to control the stormwater runoff associated with the development such that the first one (1) inch of rainfall is reused or treated in a manner through which 80% of the average annual post-development total suspended solids are removed.

We believe that this is sufficient justification to permit the use of off-site SWM and BMP pond for the Stormwater Management and Best Management Practice needs of the above referenced project.

If you have any questions or concerns, please do not hesitate to call me at (703) 642-2306. We would welcome the opportunity to meet with you to discuss this request and the site plan if needed. Thank you for your time and consideration.

Sincerely,
URBAN, LTD.

Clayton Tock, P.E.
Associate

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No.	DATE	DESCRIPTION

REVISIONS

PLAN DATE
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10–07–13

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COMMONWEALTH OF VIRGINIA
CLAYTON CHARLES TOCK
Lic. No. 036706
10/7/13
PROFESSIONAL ENGINEER

CORRESPONDENCE

DULLES STATION
PARCEL 5A
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SCALE: AS NOTED
C.I.= N/A
DATE: DEC., 2011

SHEET
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OF
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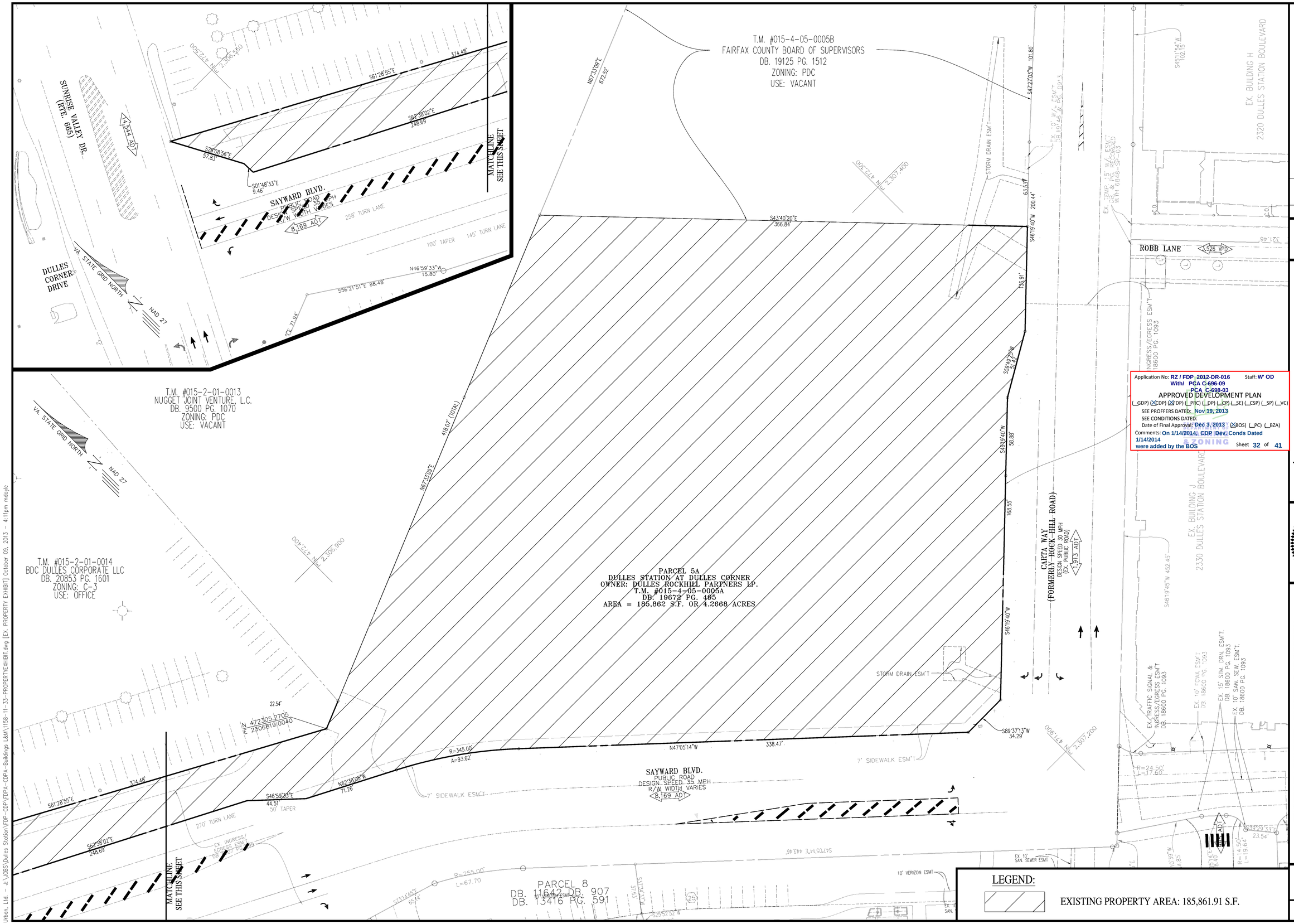
FILE No.
SP-1158-12

Urban, Ltd. – J:\JOBS\Dulles Station\FDP-CDP\FDPA-CDPA-Buildings L&M\1158-11-36-CORRESPONDENCE.dwg [QNOTES] October 09, 2013 – 4:11pm mdoyle



Application No: RZ / FDP 2012-DR-016 Staff: W' OD
With/ PCA C-696-09
PCA C-698-03
APPROVED DEVELOPMENT PLAN
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SEE PROFFERS DATED: Nov 19, 2013
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Date of Final Approval: Dec 3, 2013 (X BOS) (_PC) (_BZA)
Comments: On 1/14/2014, CDP Dev. Conds Dated 1/14/2014 were added by the BOS
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LEGEND:

EXISTING PROPERTY AREA: 185,861.91 S.F.

No.	DATE	DESCRIPTION

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CLAYTON C. TOCK
Lic. No. 036790
10/7/13
PROFESSIONAL ENGINEER

PROPERTY EXHIBIT - EXISTING PROPERTY

DULLES STATION
PARCEL 5A

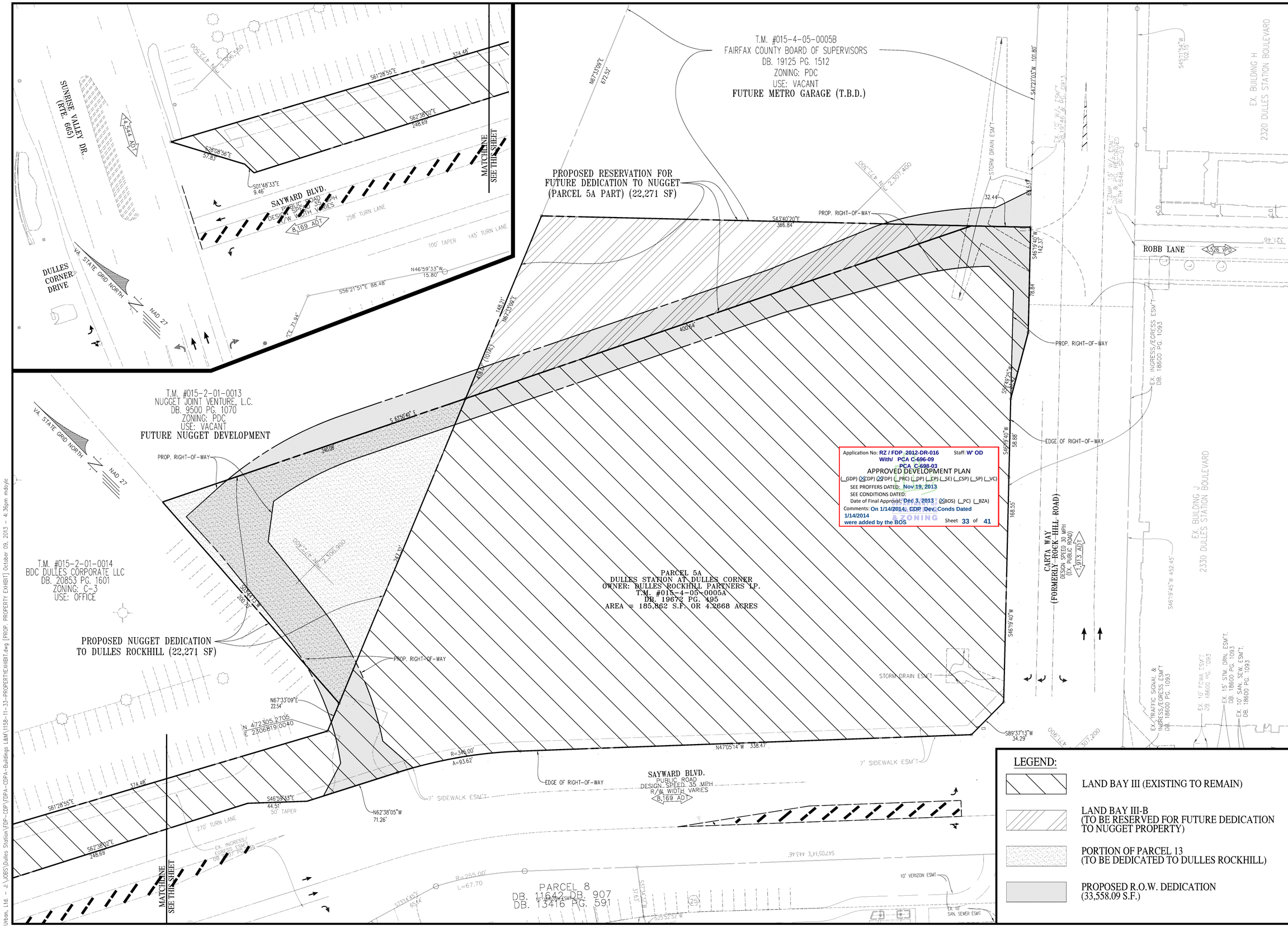
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SCALE: 1"=30' C.I.=N/A DATE: DEC., 2011

SHEET 32 OF 41

FILE No. SP-1158-12

Urban, Ltd. - J:\JOBS\Dulles Station\FDP-CDP\FDPA-CDPA-Buildings L&M\1158-11-33-PROPERTYEXHIBIT.dwg [EX. PROPERTY EXHIBIT] October 09, 2013 - 4:11pm mdoyle



LEGEND:

- LAND BAY III (EXISTING TO REMAIN)
- LAND BAY III-B (TO BE RESERVED FOR FUTURE DEDICATION TO NUGGET PROPERTY)
- PORTION OF PARCEL 13 (TO BE DEDICATED TO DULLES ROCKHILL)
- PROPOSED R.O.W. DEDICATION (33,558.09 S.F.)

No.	DATE	DESCRIPTION
		REVISIONS

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11-29-12
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Lic. No. 036790
10/17/13
PROFESSIONAL ENGINEER

PROPERTY EXHIBIT - PROPOSED PROPERTY

DULLES STATION PARCEL 5A

DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SCALE: 1"=30'
C.I.=N/A
DATE: DEC., 2011

SHEET 33 OF 41

FILE No. SP-1158-12

Urban, Ltd. - J:\JOBS\Dulles Station\FDP-CDP\FDPA-CDPA-Buildings L&M\1158-11-33-PROPERTYEXHIBIT.dwg [PROP. PROPERTY EXHIBIT] October 09, 2013 - 4:36pm mdoyle

DULLES STATION BUILDING L

CONCEPTUAL VIEW FROM S.E. ALONG CARTA

DULLES ROCKHILL PARTNERS, LP

FAIRFAX COUNTY, VA
JUNE 25, 2013

Application No: RZ / FDP 2012-DR-016 Staff: W' OD
With/ PCA C-696-09
PCA C-698-03
APPROVED DEVELOPMENT PLAN
(_GDP) (X CDP) (X FDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC)
SEE PROFFERS DATED: Nov 19, 2013
SEE CONDITIONS DATED:
Date of Final Approval: Dec 3, 2013 (X BOS) (_PC) (_BZA)
Comments: On 1/14/2014, CDP Dev. Conds Dated 1/14/2014
were added by the BOS
Sheet 34 of 41

RTKL ASSOCIATES INC.
2101 L STREET NW
SUITE 200
WASHINGTON, DC 20037

RTKL
AN ARCADIS COMPANY

No.	DATE	DESCRIPTION

REVISIONS

PLAN DATE
12-13-11
2-2-12
4-20-12
6-12-12
7-19-12
8-3-12
11-29-12
06-25-13
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COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
Lic. No. 036790
10/7/13
PROFESSIONAL ENGINEER

PERSPECTIVE - SE EAST ELEVATION
DULLES STATION
PARCEL 5A
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SCALE: AS NOTED
C.I.= N/A
DATE: DEC., 2011

SHEET
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OF
41

FILE No.
SP-1158-12

Urban, Ltd. - J:\JOBS\Dulles Station\FDP-CDP\FDPA-CDPA-Buildings L&M\1158-11-40-ILLUSTRATIVE.dwg [ILLUS1] October 09, 2013 - 4:12pm mdoyle

DULLES STATION BUILDING L

CONCEPTUAL VIEW FROM S.E. ALONG SAYWARD

DULLES ROCKHILL PARTNERS, LP

FAIRFAX COUNTY, VA

JUNE 25, 2013

Application No: RZ / FDP 2012-DR-016 Staff: W' OD
With/ PCA C-696-09
PCA C-698-03
APPROVED DEVELOPMENT PLAN
(_GDP) (X CDP) (X FDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC)
SEE PROFFERS DATED: Nov 19, 2013
SEE CONDITIONS DATED:
Date of Final Approval: Dec 3, 2013 (X BOS) (_PC) (_BZA)
Comments: On 1/14/2014, CDP Dev. Conds Dated 1/14/2014 were added by the BOS
Sheet 35 of 41

RTKL ASSOCIATES INC.
2101 L STREET NW
SUITE 200
WASHINGTON, DC 20037

RTKL
AN ARCADIS COMPANY

No.	DATE	DESCRIPTION

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PLAN DATE
12-13-11
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COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
Lic. No. 036790
10/17/13
PROFESSIONAL ENGINEER

PERSPECTIVE - SE SOUTH ELEVATION

DULLES STATION
PARCEL 5A
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SCALE: AS NOTED
C.I.= N/A
DATE: DEC., 2011

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41

FILE No.
SP-1158-12

Urban, Ltd. - J:\JOBS\Dulles Station\FDP-CDP\FDPA-CDPA-Buildings L&M\1158-11-40-ILLUSTRATIVE.dwg [ILLUS2] October 09, 2013 - 4:12pm mdoyle

ENTRY

GARAGE ENTRY

(GARAGE ROOF ELEVATION SHOWN REPRESENTATIVE OF REDUCED PARKING RATIO)
NOTE: GARAGE VOLUME DEPICTED ASSUMES APPROVAL OF PARKING REDUCTION.
COLORATION AND ORGANIZATION OF ELEMENTS IS CONCEPTUAL.

Application No: RZ / FDP 2012-DR-016 Staff: W' OD
With/ PCA C-696-09
PCA C-698-03
APPROVED DEVELOPMENT PLAN
(_GDP) (X CDP) (X FDP) (_PRC) (_DP) (_SP) (_SE) (_CSP) (_SP) (_VC)
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Sheet 36 of 41
ZONING

DULLES STATION BUILDING L

DULLES ROCKHILL PARTNERS, LP

CONCEPTUAL PARTIAL VIEWS

FAIRFAX COUNTY, VA
JUNE 25, 2013

RTKL ASSOCIATES INC.
2101 L STREET NW
SUITE 200
WASHINGTON, DC 20037
RTKL
AN ARCADIS COMPANY

No.	DATE	DESCRIPTION
		REVISIONS

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COMMONWEALTH OF VIRGINIA
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LIC. No. 039700
10/7/13
PROFESSIONAL ENGINEER

PERSPECTIVE - GARAGE ELEVATION
DULLES STATION
PARCEL 5A
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SCALE: AS NOTED
CI.= N/A
DATE: DEC., 2011

SHEET
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41

FILE No.
SP-1158-12

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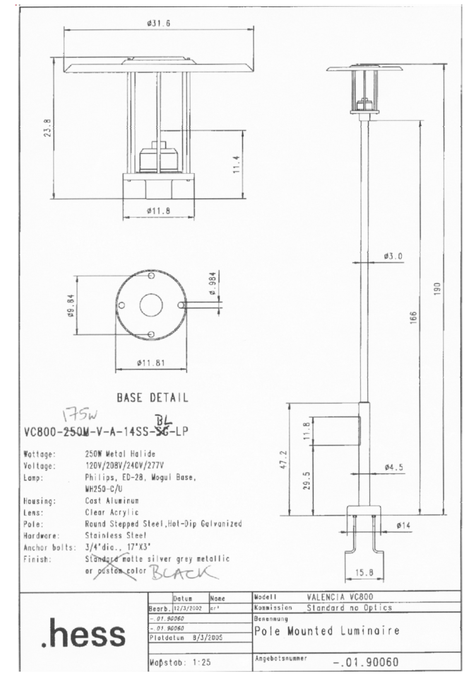

HESS LIGHTS TO BE UTILIZED ALONG ROAD "A" & ROAD "B"
(TYPICAL OF DULLES STATION)

CONCEPTUAL BACKLESS BENCH (TYPICAL OF DULLES STATION)

CONCEPTUAL PICNIC BENCH
(BLACK METAL)

CONCEPTUAL BIKE RACK

CONCEPTUAL TRASH RECEPTACLE
(TYPICAL OF DULLES STATION)

Application No: RZ / FDP 2012-DR-016 Staff: W' OD
With/ PCA C-696-09
PCA C-698-03
APPROVED DEVELOPMENT PLAN
(_GDP) (X CDP) (X FDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC)
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Date of Final Approval: Dec 3, 2013 (X BOS) (_PC) (_BZA)
Comments: On 1/14/2014, CDP Dev. Conds Dated 1/14/2014 were added by the BOS
ZONING
Sheet 37 of 41

NOTE: ALL AMENITIES SHOWN HEREIN ARE CONCEPTUAL.
AMENITIES ARE SUBJECT TO CHANGE WITH FINAL SITE PLAN.

No.	DATE	DESCRIPTION

REVISIONS

PLAN DATE
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10/7/13
PROFESSIONAL ENGINEER

CONCEPTUAL AMENITIES SHEET
DULLES STATION
PARCEL 5A
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SCALE: AS NOTED C.I.= N/A DATE: DEC., 2011

SHEET
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FILE No.
SP-1158-12

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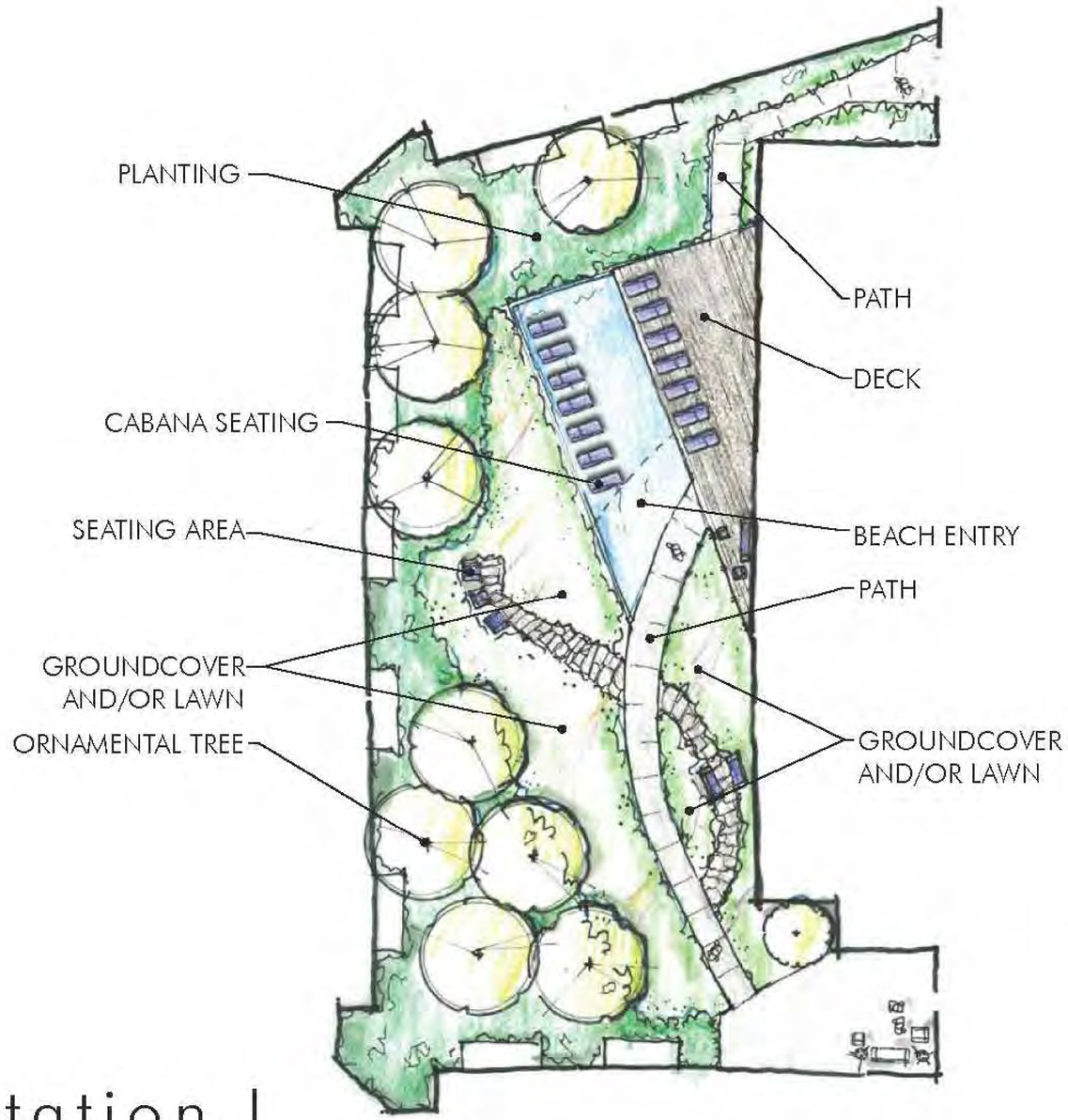

Application No: RZ / FDP 2012-DR-016 Staff: W' OD
With/ PCA C-696-09
PCA C-698-03
APPROVED DEVELOPMENT PLAN
(_GDP) (X_CDP) (X_FDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC)
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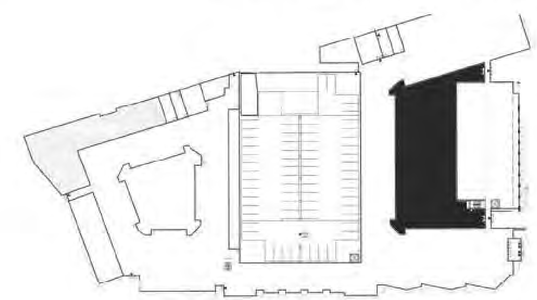
Date of Final Approval: Dec 3, 2013 (X_BOS) (_PC) (_BZA)
Comments: On 1/14/2014, CDP Dev. Conds Dated 1/14/2014 were added by the BOS
Sheet 38 of 41

Water Feature : Approx 814 sf
Courtyard: Approx 11,000 sf



KEY PLAN

NORTH

STUDIO39

Dulles Station L
East Courtyard Conceptual Design

June 21, 2013

STUDIO39 Landscape Architecture, P.C. 6416 Grovedale Drive, Suite 100-A Alexandria, Virginia 22310 703.719.6500 www.studio39.com LANDSCAPE ARCHITECTURE PLANNING URBAN DESIGN GRAPHIC DESIGN

No.	DATE	DESCRIPTION

REVISIONS

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11-29-12
06-25-13
08-19-13
10-07-13

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Lic. No. 036790
10/7/13
PROFESSIONAL ENGINEER

LANDSCAPE CONCEPT
DULLES STATION
PARCEL 5A
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SCALE: AS NOTED C.I.= N/A DATE: DEC., 2011

SHEET 38 OF 41

FILE No. SP-1158-12

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Application No: RZ / FDP 2012-DR-016 Staff: W' OD
With/ PCA C-696-09
PCA C-698-03
APPROVED DEVELOPMENT PLAN
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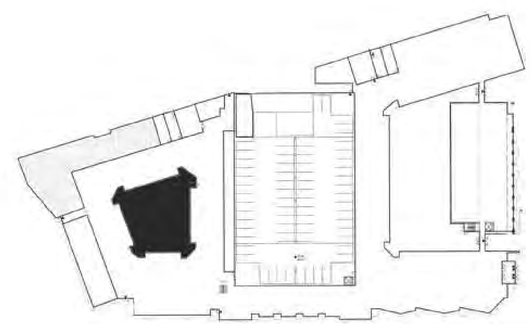
Comments: On 1/14/2014, CDP Dev. Conds Dated 1/14/2014 were added by the BOS
Sheet 39 of 41

Courtyard: Approx 5,000 sf



KEY PLAN

NORTH

STUDIO39

Dulles Station L
West Courtyard Conceptual Design

June 21, 2013

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No.	DATE	DESCRIPTION

REVISIONS

PLAN DATE
12-13-11
2-2-12
4-20-12
6-12-12
7-19-12
8-3-12
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08-25-13
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LANDSCAPE CONCEPT
DULLES STATION
PARCEL 5A
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SCALE: AS NOTED C.I.= N/A DATE: DEC., 2011

SHEET 39 OF 41

FILE No. SP-1158-12

Urban, Ltd. - J:\JOBS\Dulles Station\FDP-CDP\FDPA-CDPA-Buildings L&M\1158-11-40-ILLUSTRATIVE.dwg [ILLUS6 (2)] October 09, 2013 - 4:13pm mdoyle

Application No: RZ / FDP 2012-DR-016 Staff: W' OD
With/ PCA C-696-09
PCA C-698-03
APPROVED DEVELOPMENT PLAN
(_GDP) (X CDP) (X FDP) (_PRC) (_PP) (_CP) (_SE) (_CSP) (_SP) (_VC)
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SEE CONDITIONS DATED:
Date of Final Approval: Dec 3, 2013 (X BOS) (_PC) (_BZA)
Comments: On 1/14/2014, CDP Dev. Conds Dated 1/14/2014 were added by the BOS
Sheet 40 of 41

LANDSCAPE CONCEPT
FOR ILLUSTRATIVE PURPOSES ONLY

½ SIZE OUTDOOR BASKETBALL COURT

Scale: 1" = 20'-0"
0 10' 20' 40'

NORTH

STUDIO39 Landscape Architecture, P.C. 6416 Grovedale Drive, Suite 100-A Alexandria, Virginia 22310 703.719.6500 www.studio39.com LANDSCAPE ARCHITECTURE ■ PLANNING ■ URBAN DESIGN ■ GRAPHIC DESIGN JUNE 20, 2013

NOTE: FINAL URBAN PARK DESIGN SUBJECT TO CHANGE WITH SITE PLAN. LAYOUT FOR CONCEPTUAL PURPOSES ONLY.

No.	DATE	DESCRIPTION

REVISIONS

PLAN DATE
12-13-11
2-22-12
4-20-12
5-21-12
7-19-12
8-3-12
11-29-12
08-23-13
09-25-13
10-07-13

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COMMONWEALTH OF VIRGINIA
CLAYTON T. OTOOK
LIC. No. 036700
10/7/13
PROFESSIONAL ENGINEER

LANDSCAPE CONCEPT
DULLES STATION
PARCEL 5A
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SCALE: AS NOTED
CL= N/A
DATE: DEC., 2011

SHEET 40 OF 41

FILE No. SP-1158-12

Urban, Ltd. – J:\JOBS\Dulles Station\FDP-CDP\FDPA-CDPA-Buildings L&M\1158-11-40-ILLUSTRATIVE.dwg [ILLUS7] October 09, 2013 – 4:13pm mdoyle

Application No: RZ / FDP 2012-DR-016 Staff: W' OD
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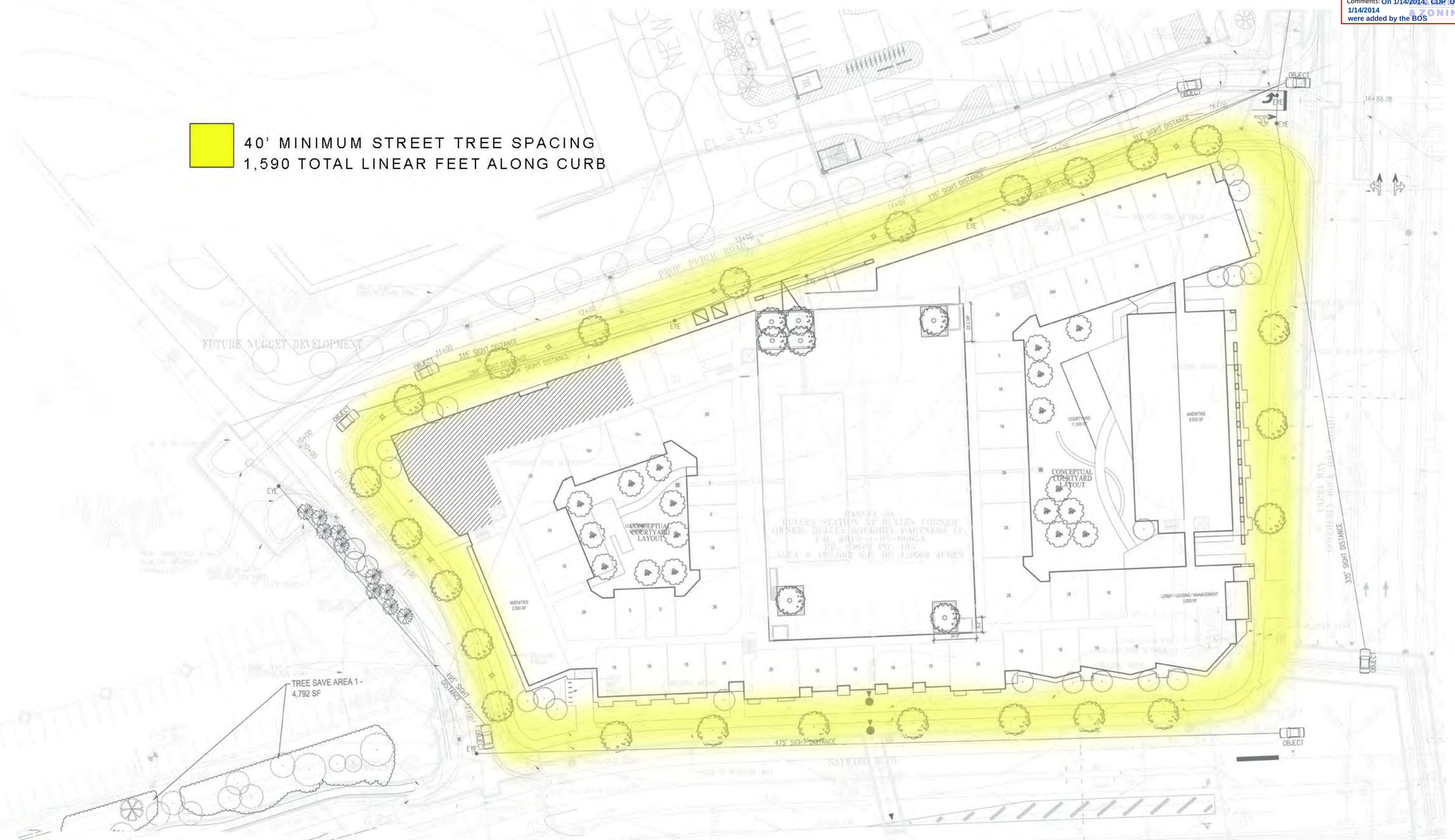
Sheet 41 of 41



STUDIO39

Dulles Station L

FIRE (LADDER TRUCK) ACCESS PLAN

Scale: 1" = 30'-0"
0 15' 30' 60'
NORTH

STUDIO39 Landscape Architecture, P.C. 6416 Grovedale Drive, Suite 100-A Alexandria, Virginia 22310 703.719.6500 www.studio39.com LANDSCAPE ARCHITECTURE ■ PLANNING ■ URBAN DESIGN ■ GRAPHIC DESIGN JUNE 19, 2013

No.	DATE	DESCRIPTION

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COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
Lic. No. 036790
10/17/13
PROFESSIONAL ENGINEER

LANDSCAPE CONCEPT
DULLES STATION
PARCEL 5A
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SCALE: AS NOTED C.I.= N/A DATE: DEC., 2011

SHEET 41 OF 41

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