Idylwood Substation

Fairfax County, VA

Special Exception Plat and 2232 Plan

Client:
Dominion Virginia Power

Drawing Index

Civil

OVERALL SITE PHOTO

PROJECT INFORMATION

CIVIL ENGINEER:

DEWBERRY ENGINEERS INC.
4805 LAKE BROOK DRIVE, SUITE 200
GLEN ALLEN, VA 23060

CONTACT: KEN WAGNER, SENIOR PROJECT MANAGER
PHONE: 804-205-3350
FAX: 804-290-7928
EMAIL: kwagner@dewberry.com

APPLICANT:

DOMINION VIRGINIA POWER
701 EAST CARY STREET, 12TH FLOOR
RICHMOND, VA 23219

CONTACT: COURTNEY FISHER, PERMIT SPECIALIST
PHONE: 804-771-6408
FAX: 804-771-6303
EMAIL: courtney.r.fisher@dom.com

CODE INFORMATION

TAX MAP #: 0492-01-0151, 0492-12-0001A

ZONING: R-3

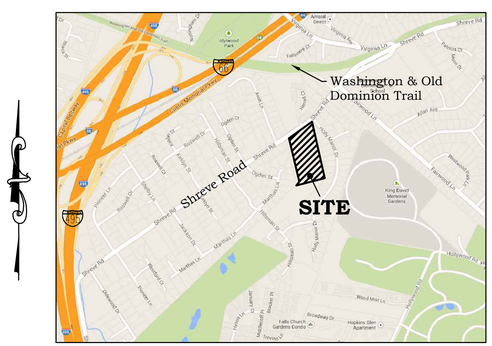
DISTRICT: PROVIDENCE

USE: LIGHT PUBLIC UTILITY USE (CATEGORY 1), ELECTRIC SUBSTATION, TELECOMMUNICATIONS FACILITY

PARCEL AREA: 7.148 ACRES (TOTAL)

	REQUIRED	PROVIDED
MINIMUM LOT SIZE	10,500 S.F.	311,367 S.F.
MINIMUM LOT WIDTH	80 FT.	425 FT.
MAXIMUM BUILDING HEIGHT	EXEMPT	32± FT.
MAXIMUM FLOOR AREA RATIO	EXEMPT	.043
OPEN SPACE	25%	33%

VICINITY MAP



SCALE:
1" = 1000'

SE 2014-PR-032

Dewberry

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Dominion

DOMINION VIRGINIA POWER
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SPECIAL EXCEPTION PLAT
2232 PLAN
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SEAL

COMMONWEALTH OF VIRGINIA
BENJAMIN K. JACKSON
Lic. No. 049015
04/06/15
PROFESSIONAL ENGINEER

KEY PLAN

SCALE

No.	DATE	BY	Description

REVISIONS

DRAWN BY	BKJ
APPROVED BY	KWW
CHECKED BY	KWW
DATE	APRIL 2015

TITLE

COVER SHEET

PROJECT NO. 50058411

1

SHEET NO. 1 OF 21

SITE USE NOTES

A. TYPE OF OPERATION: ELECTRIC SUBSTATION; TELECOMMUNICATIONS FACILITY–TOWER AND CONTROL ENCLOSURE (EXISTING AND PROPOSED)

B. HOURS OF OPERATION: 24 HOURS A DAY FOR BOTH ELECTRIC SUBSTATION AND TELECOMMUNICATIONS FACILITY (EXISTING AND PROPOSED)

C. ESTIMATED NUMBERS OF PATRONS/CLIENTS/PATIENTS/PUPILS/ETC: ZERO (0) FOR BOTH ELECTRICAL SUBSTATION AND TELECOMMUNICATIONS FACILITY (EXISTING AND PROPOSED)

D. PROPOSED NUMBER OF EMPLOYEES/ATTENDANTS/TEACHERS/ETC: ZERO (0) EMPLOYEES WILL BE ON SITE FULL–TIME. IT IS EXPECTED THAT A DOMINION EMPLOYEE WILL VISIT THE ELECTRIC SUBSTATION ONE TO TIMES PER MONTH, AND AN AT&T EMPLOYEE WILL VISIT THE TELECOMMUNICATIONS FACILITY ONE TO TWO TIMES PER MONTH. (EXISTING AND PROPOSED)

E. ESTIMATE OF TRAFFIC IMPACT OF PROPOSED USE: (INCLUDE MAXIMUM EXPECTED TRIP GENERATION AND THE DISTRIBUTION OF SUCH TRIPS BY MODE AND TIME OF DAY) TRAFFIC IMPACT WILL BE NONE TO VERY MINIMAL. IT IS EXPECTED THAT DOMINION EMPLOYEES WILL VISIT THE ELECTRIC SUBSTATION SITE ONE TO TWO TIMES PER MONTH, USUALLY DURING DAYLIGHT HOURS; AND AN AT&T EMPLOYEE WILL VISIT THE TELECOMMUNICATIONS FACILITY ONE TO TWO TIMES PER MONTH. (EXISTING AND PROPOSED)

F. AREA TO BE SERVED BY PROPOSED USE: SURROUNDING COMMUNITIES – THE ELECTRIC SUBSTATION WILL SERVE FAIRFAX COUNTY, CITY OF FALLS CHURCH, CITY OF FAIRFAX, AND METRORAIL. THE TELECOMMUNICATIONS FACILITY WILL SERVE THE SURROUNDING AREA. (EXISTING AND PROPOSED)

G. DESCRIPTION OF BUILDING FACADE/ARCHITECTURE OF PROPOSED NEW BUILDINGS: THE ELECTRIC SUBSTATION EQUIPMENT ENCLOSURES WILL BE METAL AND ANSI GRAY IN COLOR, AND LOCATED COMPLETELY WITHIN THE 16' TO 20' TALL SOLID SCREENING WALL AROUND THE PERIMETER OF THE SITE. THE TELECOMMUNICATIONS CONTROL ENCLOSURE WILL BE PANELED AND LIGHT BROWN/TAN IN COLOR. (EXISTING AND PROPOSED)

H. LISTING OF BELOW HAZARDOUS OR TOXIC SUBSTANCES TO BE GENERATED, UTILIZED, STORED, TREATED, AND/OR DISPOSED OF ON SITE AND THE SIZE AND CONTENTS OF ANY EXISTING OR PROPOSED STORAGE TANKS OR CONTAINERS:

ALL HAZARDOUS OR TOXIC SUBSTANCES AS SET FORTH IN TITLE 40, CODE OF FEDERAL REGULATIONS PARTS 116.4, 302.4, AND 355:
ELECTRIC SUBSTATION:
–ELECTRICAL INSULATING OIL (TRANSFORMER OIL) IS PRESENT IN EACH TRANSFORMER AND REACTOR. WHENEVER THIS EQUIPMENT IS REPLACED, THE OIL IS REMOVED AND PLACED INTO TANK TRAILERS. THERE IS NO OIL STORAGE ONSITE. (EXISTING AND PROPOSED)
TELECOMMUNICATIONS FACILITY:
–NO HAZARDOUS OR TOXIC SUBSTANCES (EXISTING AND PROPOSED)

ALL HAZARDOUS WASTE AS SET FORTH IN VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY HAZARDOUS WASTE MANAGEMENT REGULATIONS:
ELECTRIC SUBSTATION:
–NO HAZARDOUS WASTE ON–SITE (EXISTING AND PROPOSED)
TELECOMMUNICATIONS FACILITY:
–NO HAZARDOUS WASTE ON–SITE (EXISTING AND PROPOSED)

PETROLEUM PRODUCTS AS DEFINED IN TITLE 40, CODE OF FEDERAL REGULATIONS PART 280
ELECTRIC SUBSTATION:
–ELECTRICAL INSULATING OIL (TRANSFORMER OIL) IS PRESENT IN EACH TRANSFORMER AND REACTOR. WHENEVER THIS EQUIPMENT IS REPLACED, THE OIL IS REMOVED AND PLACED INTO TANK TRAILERS. THERE IS NO OIL STORAGE ONSITE. (EXISTING AND PROPOSED)
TELECOMMUNICATIONS FACILITY:
–NO PETROLEUM PRODUCTS ON–SITE (EXISTING AND PROPOSED)

I. THE PROPOSED USE HEREIN CONFORMS TO THE PROVISIONS OF ALL APPLICABLE ORDINANCES, REGULATIONS, ADOPTED STANDARDS, AND ANY APPLICABLE CONDITIONS; EXCEPT THE FOLLOWING:

1. TREE PRESERVATION: A DEVIATION FROM PUBLIC FACILITY MANUAL (PFM) 12–0508.3A (3). A DEVIATION REQUEST IS BEING SUBMITTED FOR A CHANGE FROM THE TREE PRESERVATION TARGET. THIS REQUEST IS REQUIRED DUE TO THE CLEARING AND GRADING AND PROVISION OF UTILITIES FOR THE DEVELOPMENT PROGRAM FOR AN ELECTRICAL SUBSTATION PRECLUDING THE ACCOMMODATION OF THE TREE PRESERVATION TARGET. THE FEDERAL ENERGY REGULATORY COMMISSION (FERC) AND NORTH AMERICAN ELECTRICAL RELIABILITY (NERC) TREE MANAGEMENT STANDARDS DOES NOT ALLOW LARGE TREES TO REMAIN IN AND AROUND THE SUBSTATION AND TRANSMISSION LINES. SEE EXISTING VEGETATION MAP SHEET FOR DETAILS.

2. REDUCTION IN TRANSITIONAL SCREENING: A MODIFICATION REQUEST IS BEING SUBMITTED FOR A 2/3 REDUCTION IN THE TRANSITIONAL SCREENING YARD WIDTH. SEE PROPOSED LANDSCAPING SHEET FOR DETAILS.

3. FENCE/WALL HEIGHT: A WAIVER REQUEST IS BEING SUBMITTED FOR THE HEIGHT OF THE SCREENING WALL AROUND THE PERIMETER OF THE SUBSTATION PROPERTY. SEE PROPOSED FACILITY SHEET FOR WALL HEIGHTS (16' TO 20' HIGH, MEASURED FROM THE OUTSIDE OF THE WALL)

SITE NOTES:

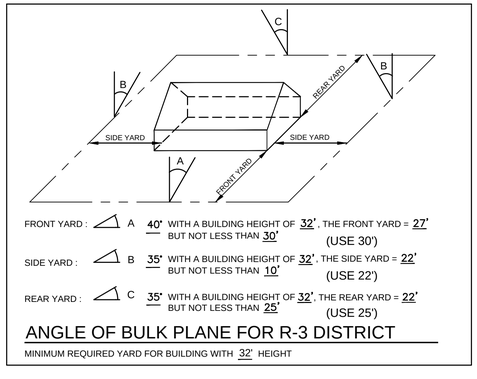
1. THIS PARCEL LIES IN FLOOD ZONE "X" (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN), AS DEFINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY, MAP NUMBER 51059C0165E, EFFECTIVE DATE: SEPTEMBER 17, 2010.

2. THIS SITE IS NOT WITHIN OR ADJACENT TO A RESOURCE PROTECTION AREA AS SHOWN ON THE CHESAPEAKE BAY PRESERVATION AREA MAP (SHEET 49–2) PREPARED BY COUNTY OF FAIRFAX.

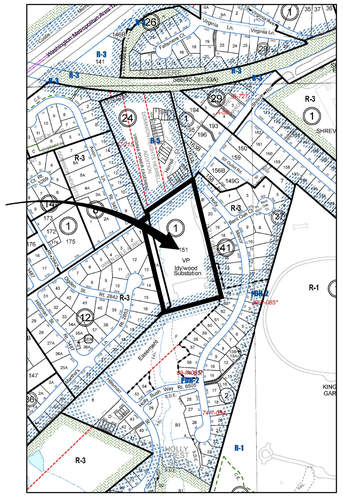
3. TOPOGRAPHIC SURVEY (FIELD–RUN) PERFORMED BY BURGESS & NIPLE, INC. IN JUNE AND JULY, 2013 AND SUPPLEMENTED BY DEWBERRY ON FEBRUARY 13, 2015.

4. EXISTING SITE ZONING IS R–3. BUILDING SETBACKS: FRONT = 30', REAR = 25', SIDES = 10'. SETBACKS BASED ON FAIRFAX COUNTY ZONING ORDINANCE, SEC. 3–307. ADDITIONAL SETBACKS OR BUFFERS MAY BE REQUIRED, REFER TO FAIRFAX COUNTY ZONING ORDINANCES PART 3.

5. PROPERTY LINES SHOWN HEREON ARE BASED UPON FIELD MONUMENTATION, REFERENCED DEEDS, AND PLATS.

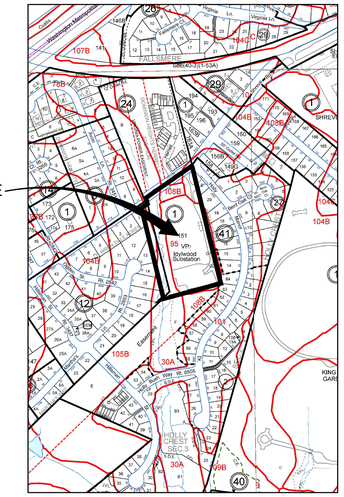


AREA SUBJECT OF SPECIAL EXCEPTION APPLICATION



OVERALL SITE ZONING MAP
SCALE: 1" = 500'

SITE



SOILS MAP
SCALE: 1" = 500'

SOIL LEGEND:

30A: CODORUS AND HATBORO SOILS

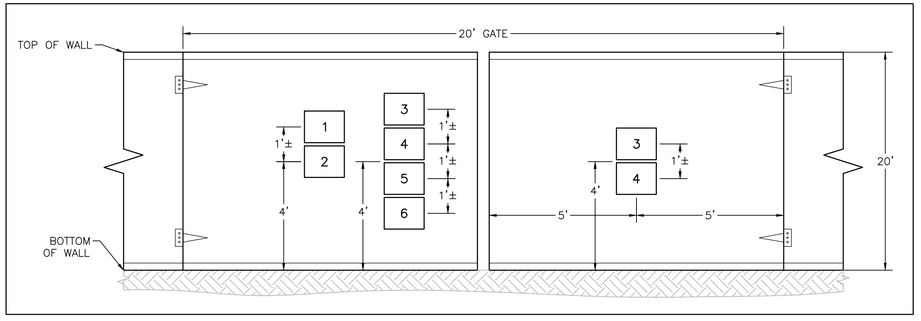
95: URBAN LAND

101: URBAN LAND–WHEATON COMPLEX

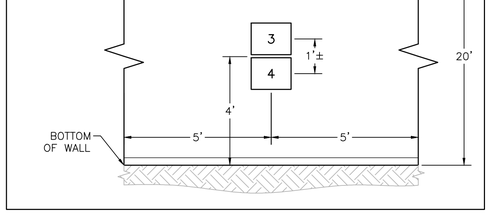
104B: WHEATON–FAIRFAX COMPLEX

105B: WHEATON–GLENELG COMPLEX

108B: WHEATON–SUMERDUCK COMPLEX



TYPICAL 20' GATE SIGNAGE DETAIL
NOT TO SCALE



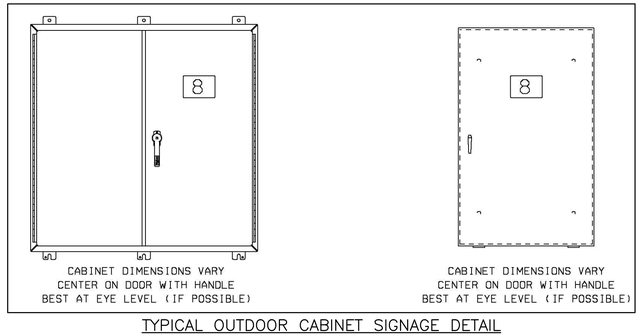
TYPICAL WALL PANEL SIGNAGE DETAIL
NOT TO SCALE
NOTE: SIGNS WILL BE SPACED NOMINALLY EVERY 30' ALONG WALL.

CONSTRUCTION ACCESS NOTE:

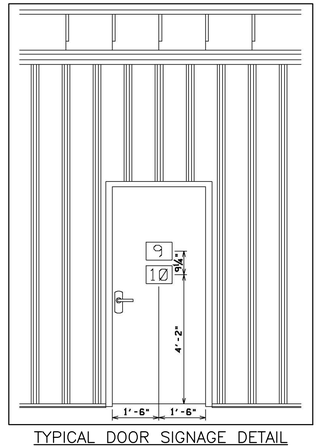
1. THE STAGING AND PARKING OF CONSTRUCTION VEHICLES SHALL OCCUR ON THE PROPERTY, INCLUDING PERSONAL VEHICLES UTILIZED BY CONSTRUCTION WORKERS. THE HOURS OF CONSTRUCTION SHALL BE POSTED IN ENGLISH AND IN SPANISH AND SHALL BE SET FORTH IN THE DEVELOPMENT CONDITIONS. THE APPLICANT SHALL PROVIDE THE PROVIDENCE DISTRICT SUPERVISOR'S OFFICE WITH A POINT OF CONTACT FOR CONSTRUCTION RELATED ISSUES. THE APPLICANT SHALL PROVIDE AN INITIAL RESPONSE TO CONSTRUCTION RELATED ISSUES WITHIN 24 HOURS OF RECEIVING NOTICE.

GENERAL PLAN NOTE:

1. PROPOSED EQUIPMENT, WALL, LANDSCAPING, STORMWATER FACILITIES AND IMPROVEMENTS SHOWN ON THIS PLAN ARE SUBJECT TO FINAL ENGINEERING. FINAL CONFIGURATION OF STORMWATER MANAGEMENT DEVICES (SHOWN OR EQUIVALENT) TO BE DETERMINED DURING SITE PLAN REVIEW BUT SHALL REMAIN IN SUBSTANTIAL CONFORMANCE AS DEPICTED.



TYPICAL OUTDOOR CABINET SIGNAGE DETAIL



TYPICAL DOOR SIGNAGE DETAIL

SIGN NUMBER	DISCRIPTION	STOCK NUMBER
REQUESTED BY SUBSTATION ENGINEERING		
1	SIGN, SITE IDENTIFICATION	N/A SEE NOTE
2	SIGN, ACCESS INSTRUCTIONS	42214023
3	SIGN, NOTICE NO TRESPASSING PROPERTY OF DOMINION	76711000
4	SIGN, DANGER HAZARDOUS VOLTAGE, KEEP OUT	42009566
REQUESTED BY SUBSTATION SUPERVISOR		
5	SIGN, WARNING ARC FLASH HAZARD	42211775
6	SIGN, WARNING ELECTRIC FENCE INSIDE	42114440
7	LABEL, DANGER ELECTRIC FENCE (ON SUPPORTING PVC)	42211867
8	LABEL, DANGER ARC FLASH HAZARD (ON BOX/CABINET)	42211776
9	LABEL, ACCESS INSTRUCTIONS, ENTRY DOORS ONLY	42214630
10	LABEL, WARNING ENERGIZED BATTERY SYSTEM (ENTRY DOOR)	42211868

SUBSTATION SIGNAGE LEGEND

Dewberry

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4805 Lake Brook Drive, Suite 200
Glen Allen, Virginia 23060
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SEAL

COMMONWEALTH OF VIRGINIA
BENJAMIN K. JACKSON
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04/06/15
PROFESSIONAL ENGINEER

KEY PLAN

SCALE

No.	DATE	BY	Description

REVISIONS

DRAWN BY BKJ
APPROVED BY KWW
CHECKED BY KWW
DATE APRIL 2015

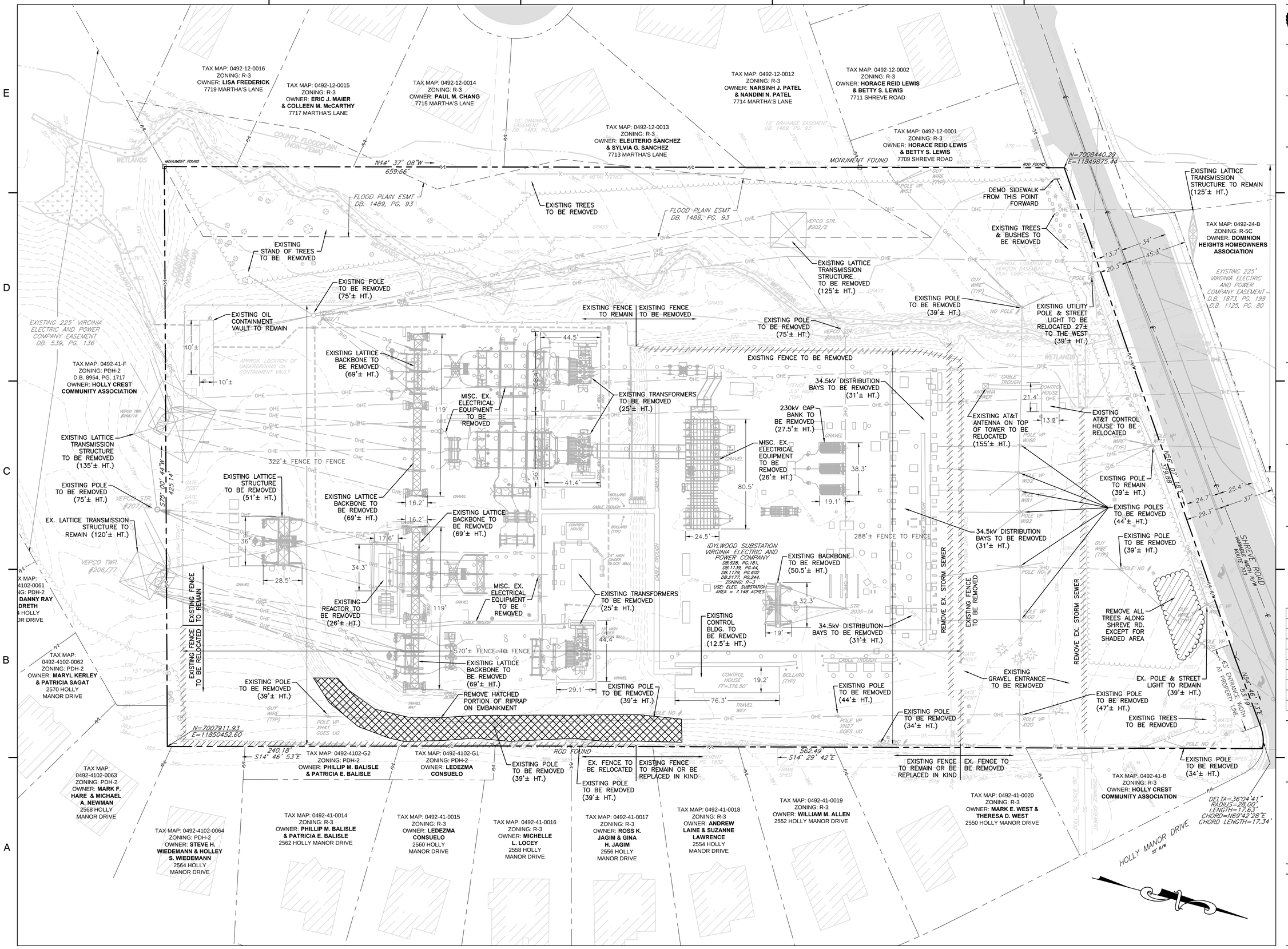
TITLE

GENERAL NOTES & SOILS MAP

PROJECT NO. 50058411

2

SHEET NO. 2 OF 21



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BENJAMIN K. JACKSON
Lic. No. 049015
04/06/15
PROFESSIONAL ENGINEER

KEY PLAN

SCALE

0' 30' 60'
GRAPHIC SCALE

No.	DATE	BY	Description

REVISIONS

DRAWN BY	BKJ
APPROVED BY	KWW
CHECKED BY	KWW
DATE	APRIL 2015

TITLE

EXISTING CONDITIONS & DEMOLITION PLAN

PROJECT NO. 50058411

3

SHEET NO. 3 OF 21

NOTES:
1. SEE ADDITIONAL DIMENSIONS ON SHEET 16.
2. STRUCTURE & EQUIPMENT SPECIFICS ARE SUBJECT TO FINAL ENGINEERING.
3. ALL ACCESS ROAD CENTERLINE RADII ARE 55' UNLESS OTHERWISE NOTED.

*REGULATED BY THE STATE CORPORATION COMMISSION 56-46.1

TAX MAP: 0492-12-0016
ZONING: R-3
OWNER: **LISA FREDERICK**
7719 MARTHA'S LANE

TAX MAP: 0492-12-0015
ZONING: R-3
OWNER: **ERIC J. MAIER & COLLEEN M. McCARTHY**
7717 MARTHA'S LANE

TAX MAP: 0492-12-0014
ZONING: R-3
OWNER: **PAUL M. CHANG**
7715 MARTHA'S LANE

TAX MAP: 0492-12-0013
ZONING: R-3
OWNER: **ELEUTERIO SANCHEZ & SYLVIA G. SANCHEZ**
7713 MARTHA'S LANE

TAX MAP: 0492-12-0012
ZONING: R-3
OWNER: **NARSINH J. PATEL & NANDINI N. PATEL**
7714 MARTHA'S LANE

TAX MAP: 0492-12-0002
ZONING: R-3
OWNER: **HORACE REID LEWIS & BETTY S. LEWIS**
7711 SHREVE ROAD

TAX MAP: 0492-12-0001
ZONING: R-3
OWNER: **HORACE REID LEWIS & BETTY S. LEWIS**
7709 SHREVE ROAD

TAX MAP: 0492-24-B
ZONING: R-5C
OWNER: **DOMINION HEIGHTS HOMEOWNERS ASSOCIATION**

TAX MAP: 0492-41-F
ZONING: PDH-2
D.B. 8954, PG. 1717
OWNER: **HOLLY CREST COMMUNITY ASSOCIATION**

TAX MAP: 0492-4102-0061
ZONING: PDH-2
OWNER: **DANNY RAY DRETH**
HOLLY DR DRIVE

TAX MAP: 0492-4102-0062
ZONING: PDH-2
OWNER: **MARYL KERLEY & PATRICIA SAGAT**
2570 HOLLY MANOR DRIVE

TAX MAP: 0492-4102-0063
ZONING: PDH-2
OWNER: **MARK F. HARE & MICHAEL A. NEWMAN**
2568 HOLLY MANOR DRIVE

TAX MAP: 0492-4102-0064
ZONING: PDH-2
OWNER: **STEVE H. WIEDEMANN & HOLLEY S. WIEDEMANN**
2564 HOLLY MANOR DRIVE

TAX MAP: 0492-4102-G2
ZONING: PDH-2
OWNER: **PHILLIP M. BALISLE & PATRICIA E. BALISLE**

TAX MAP: 0492-4102-G1
ZONING: PDH-2
OWNER: **LEDEZMA CONSUELO**

TAX MAP: 0492-41-0014
ZONING: R-3
OWNER: **PHILLIP M. BALISLE & PATRICIA E. BALISLE**
2562 HOLLY MANOR DRIVE

TAX MAP: 0492-41-0015
ZONING: R-3
OWNER: **LEDEZMA CONSUELO**
2560 HOLLY MANOR DRIVE

TAX MAP: 0492-41-0016
ZONING: R-3
OWNER: **MICHELLE L. LOCEY**
2558 HOLLY MANOR DRIVE

TAX MAP: 0492-41-0017
ZONING: R-3
OWNER: **ROSS K. JAGIM & GINA H. JAGIM**
2556 HOLLY MANOR DRIVE

TAX MAP: 0492-41-0018
ZONING: R-3
OWNER: **ANDREW LAINE & SUZANNE LAWRENCE**
2554 HOLLY MANOR DRIVE

TAX MAP: 0492-41-0019
ZONING: R-3
OWNER: **WILLIAM M. ALLEN**
2552 HOLLY MANOR DRIVE

TAX MAP: 0492-41-0020
ZONING: R-3
OWNER: **MARK E. WEST & THERESA D. WEST**
2550 HOLLY MANOR DRIVE

TAX MAP: 0492-41-B
ZONING: R-3
OWNER: **HOLLY CREST COMMUNITY ASSOCIATION**

UNDERGROUND DISTRIBUTION LINE PROJECT BY OTHERS (NOT PART OF THIS SPECIAL EXCEPTION)
NEW OVERHEAD TRANSMISSION LINES
NEW TRANSMISSION TOWER (120'± HT.)*
AT&T CELL ANTENNA (BY OTHERS) TO BE PLACED ON NEW TRANSMISSION STRUCTURE (135'± HT.)*
NEW PROPERTY/ ROW LINE
PLATFORM ELEVATED RELOCATED 12'x20' AT&T CONTROL BUILDING (10'± HT.) (BY OTHERS)
REPAVE AND RESTORE DRIVEWAY ENTRANCE AS NECESSARY
SEE SHEET 5 FOR DETAILS ON R/W DEDICATION, SIGHT DISTANCE CALCULATIONS, & ROADWAY IMPROVEMENTS
POLE W142 (RELOCATED WEST 27'±)
4' SIDEWALK
VDOT STD CG-11 ENTRANCE
NEW TRANSMISSION TOWERS (120'± HT.)*
NEW PERIMETER SCREENING WALL (20' HT.)
NEW 14' EQUIPMENT ACCESS ROAD (GRAVEL)
EXISTING 7' CHAIN-LINK FENCE TO REMAIN IN PLACE
APPROX. LOCATION OF UNDERGROUND OIL CONTAINMENT VAULT
LIMITS OF CONCRETE PANEL TIP-UP WALL
34.5kV CAP BANK
NEW 34.5 kV CAP. BANKS (TYP. OF 4)
45' (TYP. OF 4)
38' (TYP. OF 8)
NEW BACKBONE STRUCTURES (75'± HT.)* (TYP. OF 8)
NEW 230 kV GIS ENCLOSURE (32'± HT.)
NEW TRANSFORMERS (TYP. OF 4) (18.5'± HT.)
RELOCATED POLE W173. ADD NEW STREET LIGHT
UNDERGROUND DISTRIBUTION LINE PROJECT BY OTHERS (NOT PART OF SPECIAL EX.)
NEW PERIMETER SCREENING WALL(16' HT. AT FRONT OF SITE ONLY)
RELOCATED POLE W195 W/ EX. STREET LIGHT
EXISTING TREES TO BE MANAGED/ MAINTAINED
NEW PROPERTY/ ROW LINE
NEW 230 kV CAP. BANKS (27.5'± HT.)
NEW 230kV EQUIPMENT ENCLOSURE (17'± HT.)
NEW 25' SLIDING GATE
NEW TRANSMISSION TOWER (120'± HT.)
NEW TRANSMISSION TOWERS (120'± HT.)*
7' TALL CHAIN LINK FENCE W/ MAN-GATE
NEW 230 kV CONTROL ENCLOSURE (14'± HT.) PORCH LIGHT SHALL BE AIMED DOWNWARD
NEW 14' EQUIPMENT ACCESS ROAD (GRAVEL)
CONNECT NEW FENCE TO EX. FENCE
NEW DISTRIBUTION GIS EQUIPMENT ENCLOSURE (18'± HT.)
NEW 20' SLIDING GATE
UNDERGROUND DISTRIBUTION LINE PROJECT BY OTHERS (NOT PART OF THIS SPECIAL EXCEPTION)
EXISTING CONTROL BLDG. TO BE DEMO'ED. BLDG. DEMOLITION WILL OCCUR LAST IN DECOMMISSIONING SEQUENCE; THEREFORE, NEW SCREENING WALL CONSTRUCTION WILL TAKE PLACE LAST.
EXISTING GATE IN CHAIN LINK FENCE TO REMAIN
LOWER YARD (VACANT)
NEW CONCRETE PANEL TIP-UP PERIMETER SCREENING WALL (20' HT.)
EXISTING 7' CHAIN-LINK FENCE TO REMAIN IN PLACE
EXISTING 7' CHAIN-LINK FENCE TO REMAIN IN PLACE UNTIL DECOMMISSIONING OF LOWER YARD EQUIPMENT IS COMPLETE. AT THAT POINT, RELOCATE FENCE AS SHOWN ON SHEET 7B.
EX. 7' CHAIN-LINK FENCE TO REMAIN IN PLACE UNTIL DECOMMISSIONING OF LOWER YARD EQUIPMENT IS COMPLETE. AT THAT POINT, RELOCATE FENCE AS SHOWN ON SHEET 7B.
EXISTING 7' CHAIN LINK FENCE TO REMAIN OR BE REPLACED IN KIND
UNDERGROUND DISTRIBUTION LINE PROJECT BY OTHERS (NOT PART OF THIS SPECIAL EXCEPTION)
UNDERGROUND DISTRIBUTION LINE PROJECT BY OTHERS (NOT PART OF THIS SPECIAL EXCEPTION)
UNDERGROUND DISTRIBUTION LINE PROJECT BY OTHERS (NOT PART OF THIS SPECIAL EXCEPTION)
COUNTY FLOODPLAIN (NON-FEMA)
WETLANDS
FLOOD PLAIN ESMT DB. 1489, PG. 93
10' DRAINAGE EASEMENT DB. 1489, PG. 93
EXISTING 225' VIRGINIA ELECTRIC AND POWER COMPANY EASEMENT DB. 539, PG. 136
EXISTING 225' VIRGINIA ELECTRIC AND POWER COMPANY EASEMENT DB. 1873, PG. 198 DB. 1125, PG. 80
VEPCO TWR. #206/177
FRAME SHED
DRAINAGE EASEMENT
HOLLY MANOR DRIVE 50' R/W

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PROFESSIONAL ENGINEER

KEY PLAN

SCALE
0' 30' 60'
GRAPHIC SCALE

No.	DATE	BY	Description

REVISIONS

DRAWN BY	BKJ
APPROVED BY	KWW
CHECKED BY	KWW
DATE	APRIL 2015

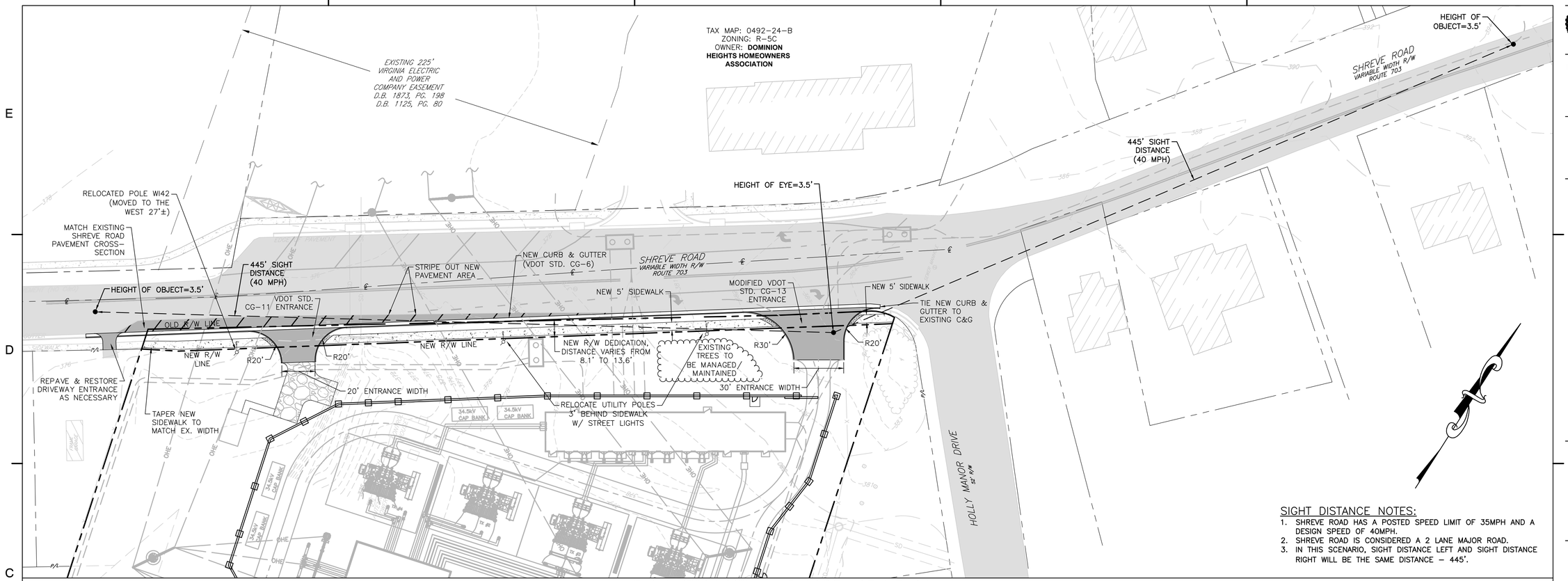
TITLE

PROPOSED FACILITY PLAN

PROJECT NO. 50058411

4

SHEET NO. 4 OF 21

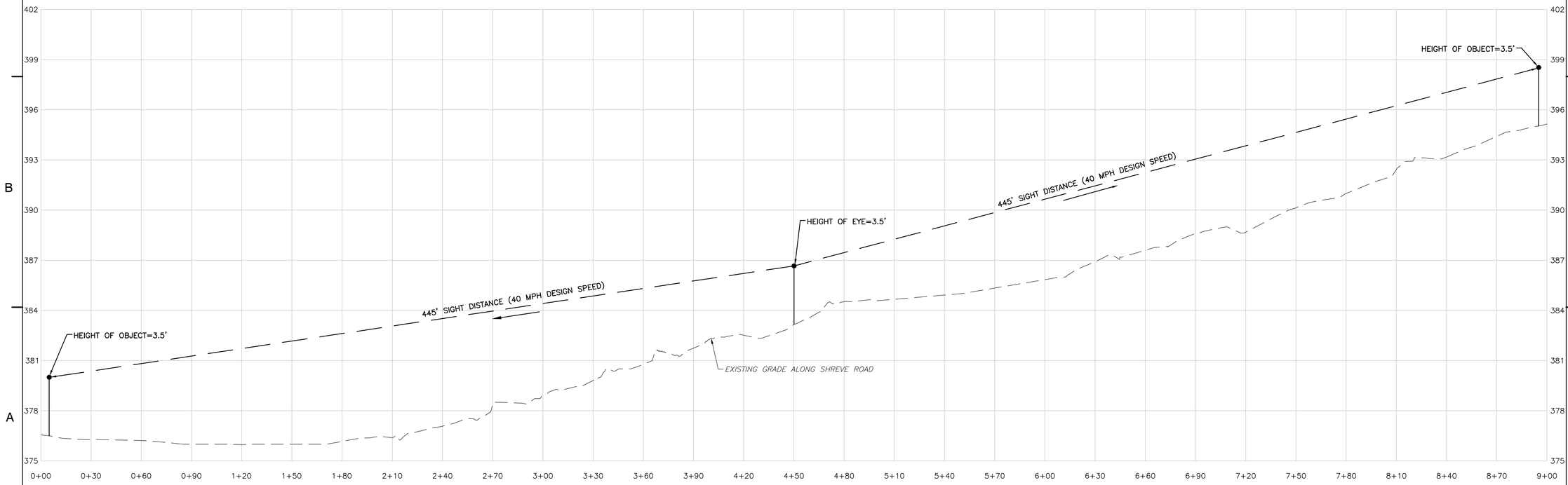


SIGHT DISTANCE NOTES:

1. SHREVE ROAD HAS A POSTED SPEED LIMIT OF 35MPH AND A DESIGN SPEED OF 40MPH.
2. SHREVE ROAD IS CONSIDERED A 2 LANE MAJOR ROAD.
3. IN THIS SCENARIO, SIGHT DISTANCE LEFT AND SIGHT DISTANCE RIGHT WILL BE THE SAME DISTANCE – 445'.

SHREVE ROAD IMPROVEMENTS AND SIGHT DISTANCE PLAN

SCALE:
H: 1" = 30'



SUBSTATION ENTRANCE - SIGHT DISTANCE PROFILE

SCALES:
H: 1" = 30', V: 1" = 3'

Dewberry

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Glen Allen, Virginia 23060
PHONE: 804.290.7957
FAX: 804.290.7928
www.dewberry.com

Dominion

DOMINION VIRGINIA POWER
Idylwood Substation
SE 2014-PR-032
SPECIAL EXCEPTION PLAT
2232 PLAN

PROVIDENCE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SEAL

COMMONWEALTH OF VIRGINIA
BENJAMIN K. JACKSON
Lic. No. 049015
04/06/15
PROFESSIONAL ENGINEER

KEY PLAN

SCALE
0' 30' 60'
HORIZONTAL SCALE
0' 3' 6'
VERTICAL SCALE

No.	DATE	BY	Description

REVISIONS

DRAWN BY	BKJ
APPROVED BY	KWW
CHECKED BY	KWW
DATE	APRIL 2015

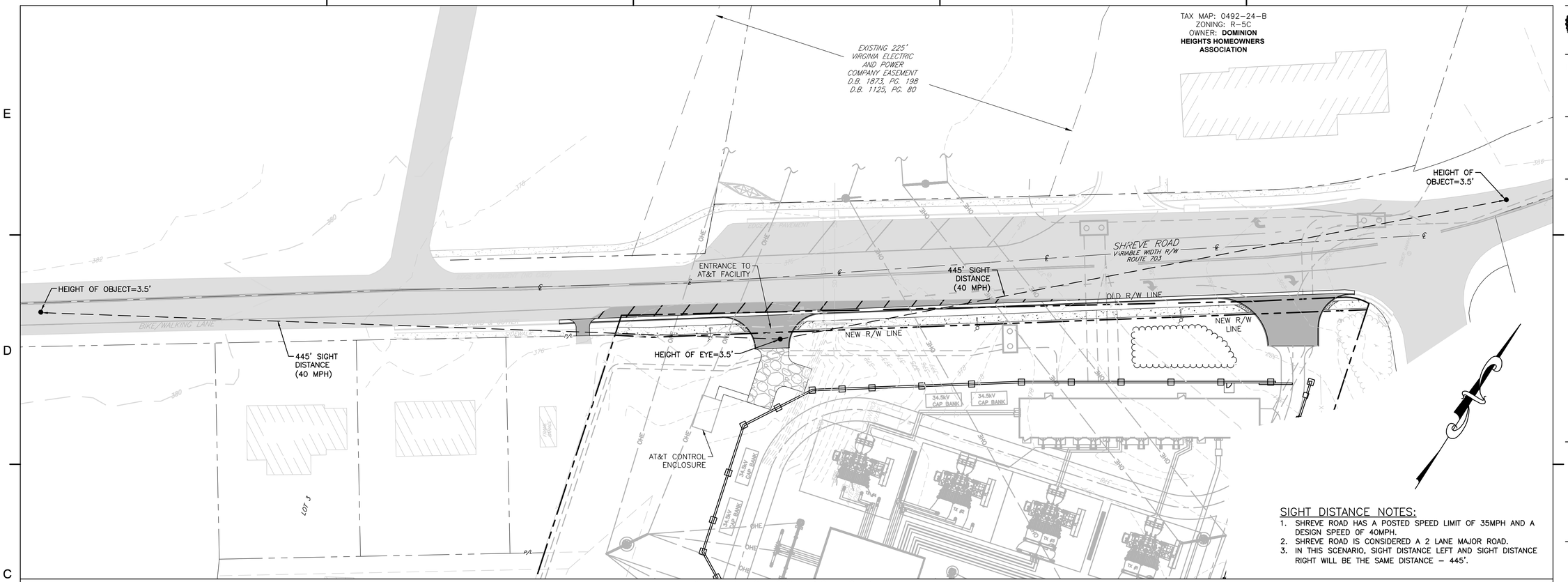
TITLE

ROADWAY IMPROVEMENTS & SIGHT DISTANCE PLAN

PROJECT NO. 50058411

5

SHEET NO. 5 OF 21

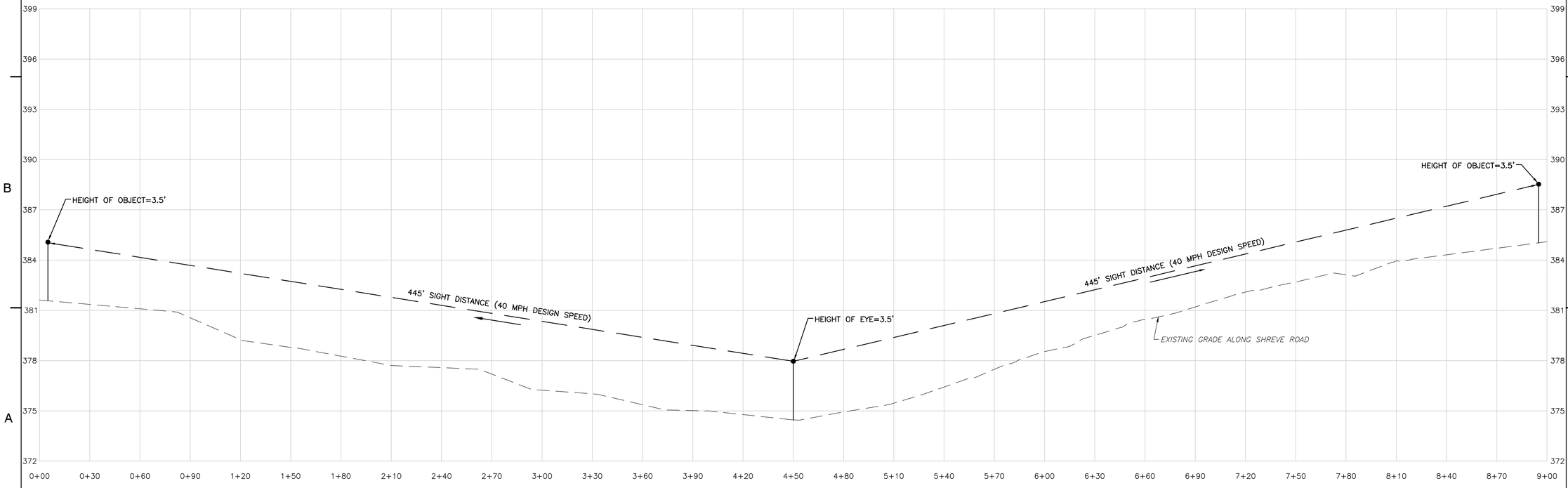


AT&T ENTRANCE - SIGHT DISTANCE PLAN

SCALE:
H: 1" = 30'

SIGHT DISTANCE NOTES:

1. SHREVE ROAD HAS A POSTED SPEED LIMIT OF 35MPH AND A DESIGN SPEED OF 40MPH.
2. SHREVE ROAD IS CONSIDERED A 2 LANE MAJOR ROAD.
3. IN THIS SCENARIO, SIGHT DISTANCE LEFT AND SIGHT DISTANCE RIGHT WILL BE THE SAME DISTANCE – 445'.



AT&T ENTRANCE - SIGHT DISTANCE PROFILE

SCALES:
H: 1" = 30', V: 1" = 3'

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SEAL

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BENJAMIN K. JACKSON
Lic. No. 049015
04/06/15
PROFESSIONAL ENGINEER

KEY PLAN

SCALE
0' 30' 60'
HORIZONTAL SCALE
0' 3' 6'
VERTICAL SCALE

No.	DATE	BY	Description

REVISIONS

DRAWN BY	BKJ
APPROVED BY	KWW
CHECKED BY	KWW
DATE	APRIL 2015

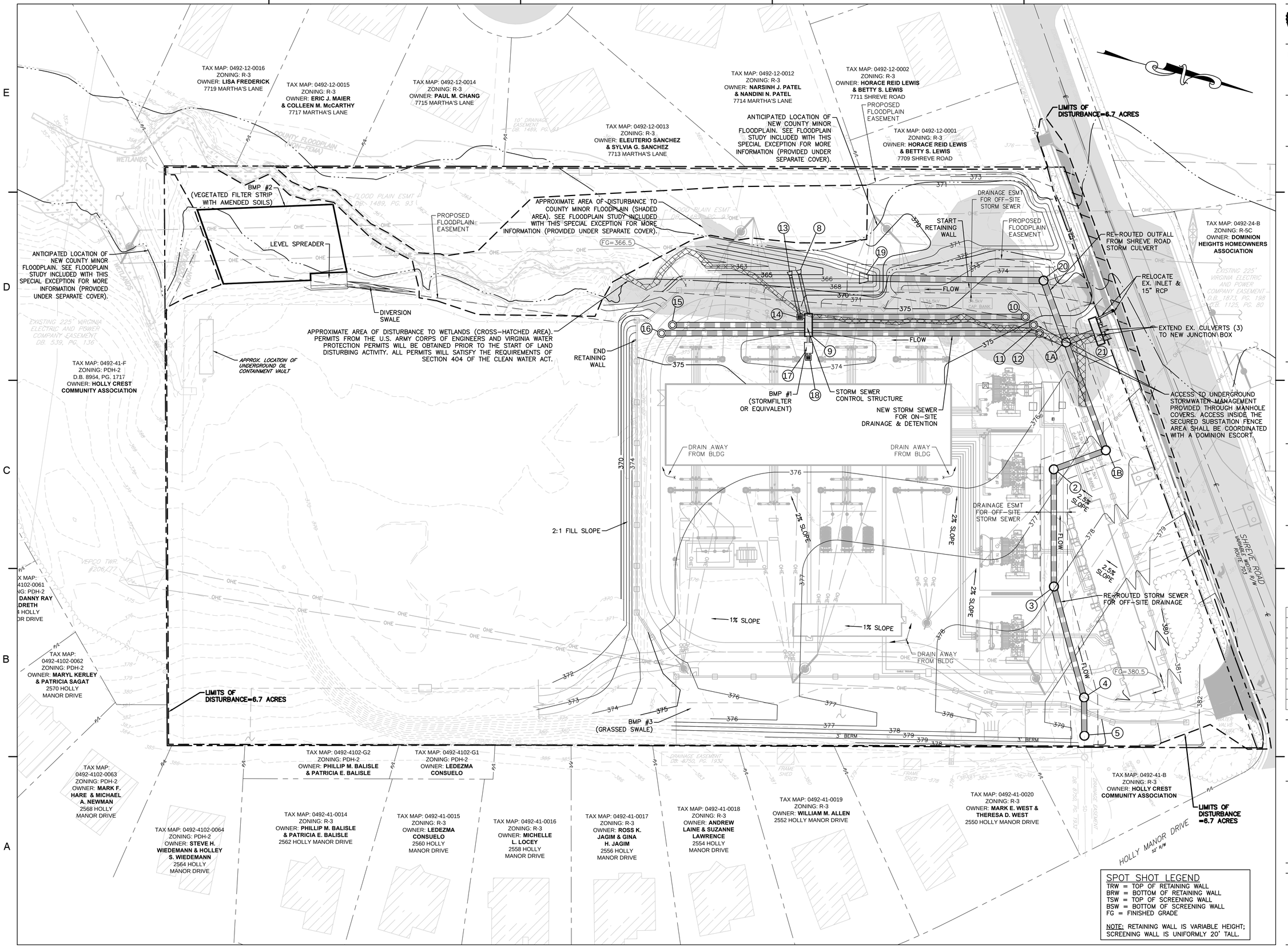
TITLE

AT&T ENTRANCE SIGHT DISTANCE PLAN

PROJECT NO. 50058411

6

SHEET NO. 6 OF 21



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SEAL

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BENJAMIN K. JACKSON
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04/06/15
PROFESSIONAL ENGINEER

KEY PLAN

SCALE

0' 30' 60'
GRAPHIC SCALE

No.	DATE	BY	Description

REVISIONS

DRAWN BY	BKJ
APPROVED BY	KWW
CHECKED BY	KWW
DATE	APRIL 2015

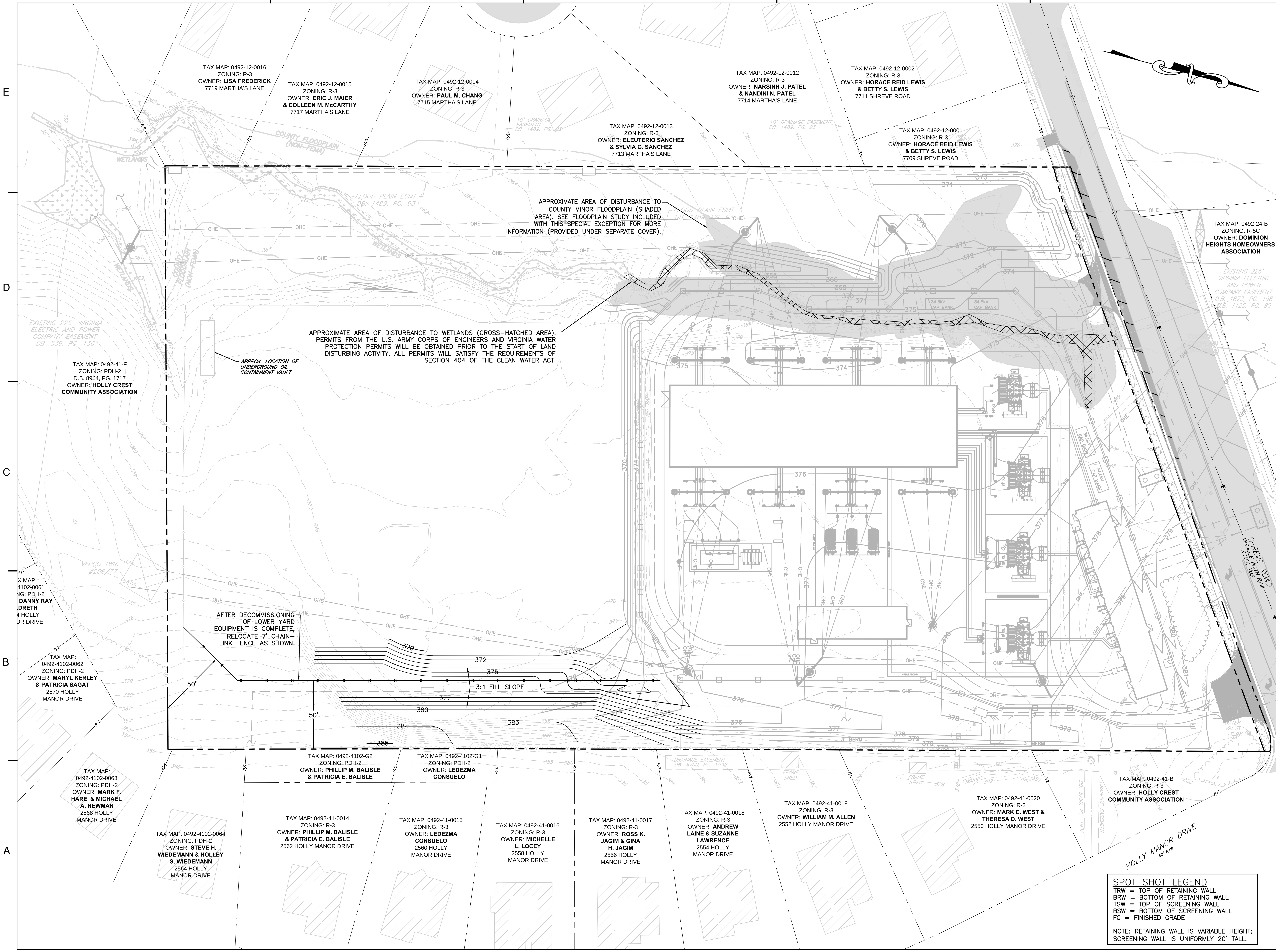
TITLE

UPPER YARD GRADING PLAN

PROJECT NO. 50058411

7A

SHEET NO. 7 OF 21


TAX MAP: 0492-12-0016
ZONING: R-3
OWNER: LISA FREDERICK
7719 MARTHA'S LANE
TAX MAP: 0492-12-0015
ZONING: R-3
OWNER: ERIC J. MAIER & COLLEEN M. McCARTHY
7717 MARTHA'S LANE
TAX MAP: 0492-12-0014
ZONING: R-3
OWNER: PAUL M. CHANG
7715 MARTHA'S LANE
TAX MAP: 0492-12-0013
ZONING: R-3
OWNER: ELEUTERIO SANCHEZ & SYLVIA G. SANCHEZ
7713 MARTHA'S LANE
TAX MAP: 0492-12-0012
ZONING: R-3
OWNER: NARSINH J. PATEL & NANDINI N. PATEL
7714 MARTHA'S LANE
TAX MAP: 0492-12-0002
ZONING: R-3
OWNER: HORACE REID LEWIS & BETTY S. LEWIS
7711 SHREVE ROAD
TAX MAP: 0492-12-0001
ZONING: R-3
OWNER: HORACE REID LEWIS & BETTY S. LEWIS
7709 SHREVE ROAD
TAX MAP: 0492-24-B
ZONING: R-5C
OWNER: DOMINION HEIGHTS HOMEOWNERS ASSOCIATION
EXISTING 225' VIRGINIA ELECTRIC AND POWER COMPANY EASEMENT
COUNTY FLOODPLAIN (NON-FEMA)
WETLANDS
FLOOD PLAIN ESMT DB. 1489, PG. 93
10' DRAINAGE EASEMENT DB. 1489, PG. 93
APPROXIMATE AREA OF DISTURBANCE TO COUNTY MINOR FLOODPLAIN (SHADED AREA). SEE FLOODPLAIN STUDY INCLUDED WITH THIS SPECIAL EXCEPTION FOR MORE INFORMATION (PROVIDED UNDER SEPARATE COVER).
APPROXIMATE AREA OF DISTURBANCE TO WETLANDS (CROSS-HATCHED AREA). PERMITS FROM THE U.S. ARMY CORPS OF ENGINEERS AND VIRGINIA WATER PROTECTION PERMITS WILL BE OBTAINED PRIOR TO THE START OF LAND DISTURBING ACTIVITY. ALL PERMITS WILL SATISFY THE REQUIREMENTS OF SECTION 404 OF THE CLEAN WATER ACT.
EXISTING 225' VIRGINIA ELECTRIC AND POWER COMPANY EASEMENT DB. 539, PG. 136
APPROX. LOCATION OF UNDERGROUND OIL CONTAINMENT VAULT
TAX MAP: 0492-41-F
ZONING: PDH-2
D.B. 8964, PG. 1717
OWNER: HOLLY CREST COMMUNITY ASSOCIATION
34.5kV CAP BANK
VEPCO TWR #206/77
AFTER DECOMMISSIONING OF LOWER YARD EQUIPMENT IS COMPLETE, RELOCATE 7' CHAIN-LINK FENCE AS SHOWN.
3:1 FILL SLOPE
50'
3' BERM
SHREVE ROAD
ROUTE 703
TAX MAP: 0492-4102-0062
ZONING: PDH-2
OWNER: MARYL KERLEY & PATRICIA SAGAT
2570 HOLLY MANOR DRIVE
TAX MAP: 0492-4102-0063
ZONING: PDH-2
OWNER: MARK F. HARE & MICHAEL A. NEWMAN
2568 HOLLY MANOR DRIVE
TAX MAP: 0492-4102-0064
ZONING: PDH-2
OWNER: STEVE H. WIEDEMANN & HOLLEY S. WIEDEMANN
2564 HOLLY MANOR DRIVE
TAX MAP: 0492-4102-G2
ZONING: PDH-2
OWNER: PHILLIP M. BALISLE & PATRICIA E. BALISLE
TAX MAP: 0492-4102-G1
ZONING: PDH-2
OWNER: LEDEZMA CONSUELO
TAX MAP: 0492-41-0014
ZONING: R-3
OWNER: PHILLIP M. BALISLE & PATRICIA E. BALISLE
2562 HOLLY MANOR DRIVE
TAX MAP: 0492-41-0015
ZONING: R-3
OWNER: LEDEZMA CONSUELO
2560 HOLLY MANOR DRIVE
TAX MAP: 0492-41-0016
ZONING: R-3
OWNER: MICHELLE L. LOCEY
2558 HOLLY MANOR DRIVE
TAX MAP: 0492-41-0017
ZONING: R-3
OWNER: ROSS K. JAGIM & GINA H. JAGIM
2556 HOLLY MANOR DRIVE
TAX MAP: 0492-41-0018
ZONING: R-3
OWNER: ANDREW LAINE & SUZANNE LAWRENCE
2554 HOLLY MANOR DRIVE
TAX MAP: 0492-41-0019
ZONING: R-3
OWNER: WILLIAM M. ALLEN
2552 HOLLY MANOR DRIVE
TAX MAP: 0492-41-0020
ZONING: R-3
OWNER: MARK E. WEST & THERESA D. WEST
2550 HOLLY MANOR DRIVE
TAX MAP: 0492-41-B
ZONING: R-3
OWNER: HOLLY CREST COMMUNITY ASSOCIATION
HOLLY MANOR DRIVE

SPOT SHOT LEGEND

TRW = TOP OF RETAINING WALL
BRW = BOTTOM OF RETAINING WALL
TSW = TOP OF SCREENING WALL
BSW = BOTTOM OF SCREENING WALL
FG = FINISHED GRADE

NOTE: RETAINING WALL IS VARIABLE HEIGHT; SCREENING WALL IS UNIFORMLY 20' TALL.

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Dominion

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Idylwood Substation
SE 2014-PR-032
SPECIAL EXCEPTION PLAT
2232 PLAN

PROVIDENCE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SEAL

COMMONWEALTH OF VIRGINIA
BENJAMIN K. JACKSON
Lic. No. 049015
04/06/15
PROFESSIONAL ENGINEER

KEY PLAN

SCALE

0' 30' 60'
GRAPHIC SCALE

No.	DATE	BY	Description

REVISIONS

DRAWN BY BKJ
APPROVED BY KWW
CHECKED BY KWW
DATE APRIL 2015

TITLE

LOWER YARD GRADING PLAN

PROJECT NO. 50058411

7B

SHEET NO. 8 OF 21

Dewberry

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804.290.7928 fax
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Dominion Virginia Power
Idylwood Substation
Fairfax County, Virginia

STORMWATER NARRATIVE

Project Description

Dominion Virginia Power (Dominion) will be expanding an existing electrical substation in Fairfax County, Virginia on a 7.148 acre parcel of land located just southeast of Shreve Road and southwest of Holly Manor Drive.

Stormwater runoff from the site will enter a proposed stormwater quality BMP (Stormfilter) to help meet water quality requirements. Just downstream of the Stormfilter structure, an underground detention system is proposed to meet stormwater quantity control requirements. This system consists of 700 feet of 48"-diameter pipe laid out in 3 rows with 2-24"-diameter pipes at the outlet through 2 separate structures. In order to detain runoff for the various requirements for different storm events, a 8"-diameter orifice would be attached at the upstream end of the first 24"-diameter pipe and a 15"-diameter orifice would be attached at the upstream end of the second 24"-diameter pipe (at a higher invert elevation than the first 24"-diameter pipe).

The total drainage area to the stormwater BMP/underground detention system is 2.21 acres. The total volume of storage within the underground pipe system being provided to control runoff is 8,799 cubic feet.

Stormwater discharge from the underground detention system will outlet into a non-FEMA county floodplain. A formal floodplain study has been done to analyze the effect of the proposed development on the floodplain and will be submitted under a separate cover.

This project also involves the re-routing of offsite drainage around the majority of the proposed development. An existing set of culverts (under Shreve Road) will be extended and a section of storm sewer running through the site will be removed and replaced with a new series of pipes. The outlets of these new these pipes will also outlet into the same non-FEMA county floodplain referenced earlier.

Hydrology:

The SCS Method was used to determine flows for this project. For both pre- and post-developed conditions, the following "C" coefficients were used: 0.35 used for all non-road gravel areas, 0.90 for impervious areas (i.e. roads, foundations, etc.) and 0.20 for all lawn and vegetative areas. Computations are included in this report that show that show the breakdown of the different land cover characteristics needed to calculate the weighted runoff coefficients.

Also included in this report are computations for times of concentration for the pre- and post-developed drainage areas and computations that show the reduction in peak runoff for the various storms.

Water Quality

This project site meets state requirements for stormwater quality control through a manufactured BMP (Stormfilter) that will collect runoff from the site prior to entering the underground detention system, the designation of one area of the site as a Conserved Open Space BMP area that is to remain undisturbed throughout construction, and a Grass Swale. The Virginia Runoff Reduction Method Re-Development Worksheet (version 2.8) has been completed and included in this report. This worksheet shows that the site meets the requirement for phosphorus load reduction by exceeding the target reduction requirement by 0.1 lb/year.

Water Quantity

An underground stormwater detention system has been designed which will control the post-developed runoff rates to pre-developed conditions for the 2-year and 10-year storms. The detention system also over-detains the 1-year storm. The table below shows this reduction in the runoff rates.

Pre-Developed			Post-Developed			Controlled Release		
Q1 (ft^3/s)	Q2 (ft^3/s)	Q10 (ft^3/s)	Q1 (ft^3/s)	Q2 (ft^3/s)	Q10 (ft^3/s)	Q1 (ft^3/s)	Q2 (ft^3/s)	Q10 (ft^3/s)
5.2	7.3	14.1	2.37	3.82	14.06	2.83	3.48	0.04

The post-developed 2 and 10-year peak discharges from the site have been reduced from the pre-developed values and will discharge to an existing waterway along the southwestern property boundary. In order to comply with requirements of Fairfax County Code Section 124-4-4(b)(3)c, the detention system also over-detains the 1-year storm to a flow rate as required by the code section since it has been shown (computations included in this report) that the outfall channel at the limit of analysis is able to convey the 2-year 24-hour storm without causing erosion.

The project also meets state requirements for flood protection (per Fairfax County Code Section 124-4-4(c)(1)) since it has been shown (computations included in this report) that the 10-year 24-hour storm can be contained in the outfall channel at the limit of analysis.

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 7A,7B

[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)
		SEE TABLE BELOW				
Totals						

[X] 4. Onsite drainage channels, outfalls and pipe systems are shown on Sheet 7A,7B
Pond inlet and oulet pipe systems are shown on Sheet 7A,7B

[X] 5. Maintenance access (road) to stormwater management facility(ies) are shown on Sheet 7A,7B
Type of maintenance access road surface noted on the plat is GRAVEL (asphalt, geoblock, gravel, etc.).

[X] 6. Landscaping and tree preservation shown in and near the stormwater management facility is shown on Sheet 13

[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 8.

[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 10.

[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 10.

[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 2,3.

[X] 11. A submission waiver is requested for N/A.

[X] 12. Stormwater management is not required because N/A.

STORMWATER/BMP FACILITY SUMMARY

FACILITY NAME/TYPE	ON-SITE AREA SERVED (AC.)	OFF-SITE AREA SERVED (AC.)	DRAINAGE AREA (AC.)	FOOTPRINT AREA (SF)	STORAGE VOLUME (CF)	IF POND, DAM HEIGHT (FT)
UNDERGROUND DETENTION (48"-DIAMETER PIPE)	2.21	N/A	2.21	N/A (UNDER-GROUND)	8,799	N/A
BMP #1-STORMFILTER	2.21	N/A	2.21	48	N/A	N/A
BMP #2-VEGETATED FILTER STRIP	0.86	0.20	1.06	4,996	N/A	N/A
BMP #3-GRASS SWALE	0.19	0.77	0.96	0.19	N/A	N/A

C-FACTOR COMPUTATIONS

Pre-Developed

	Land Cover	C	Area (Ac.)	C*Area
LINE OF ANALYSIS	Forest (Pervious)	0.2	0.420	0.08
	Turf (Pervious)	0.2	0.420	0.08
	Substation Pad (Impervious,Road)	0.9	0.000	0.00
	Substation Pad (Impervious,other)	0.9	1.370	1.23
	Substation Pad (Gravel)	0.35	0.000	0.00
	Other Impervious	0.9	0.000	0.00
	Total	**3.45**	**2.21**	**1.40**
	Weighted C	0.63		
	Total Area	2.21		

C-FACTOR COMPUTATIONS

Post-Developed

	Land Cover	C	Area (Ac.)	C*Area
SWM BASIN	Turf (Pervious)	0.2	0.200	0.04
	Graded/Ditch (Pervious)	0.2	0.000	0.00
	Substation Pad (Impervious,Road)	0.9	0.000	0.00
	Substation Pad (Impervious,other)	0.9	2.010	1.81
	Substation Pad (Gravel)	0.35	0.000	0.00
	Other Impervious	0.9	0.000	0.00
	Total	**3.45**	**2.21**	**1.85**
	Weighted C	0.84		
	Total Area	2.21		

FLOWS	Pre-Developed Q (Pre)	Post-Developed Q (BMP)	Post-Developed Q (Routed)	Controlled Release Q(Pre)-Q(Routed)	Water Elevation	Storage Volume (ac-ft)
Q1 (ft^3/s)	5.2	7.6	2.37	2.83	370.01	0.120
Q2 (ft^3/s)	7.30	9.90	3.82	3.48	370.57	0.154
Q10 (ft^3/s)	14.10	17.20	14.06	0.04	373.56	0.202

VRRM SITE DATA SHEET:

Virginia Runoff Reduction Method ReDevelopment Worksheet - v2.8 - June 2014
To be used w/ DRAFT 2013 BMP Standards and Specifications
Site Data

Project Name: Idylwood Substation	
Date: 9/23/14	

data input cells
calculation cells
constant values

Post-ReDevelopment Project & Land Cover Information — **Total Disturbed Acreage** 6.50

Constants

Annual Rainfall (inches)	43		
Target Rainfall Event (inches)	1.00		
Phosphorus EMC (mg/L)	0.26	Nitrogen EMC (mg/L)	1.86
Target Phosphorus Target Load (lb/acre/yr)	0.41		
Pj	0.90		

Pre-ReDevelopment Land Cover (acres)

	A soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) -- undisturbed, protected forest/open space or reforested land	0.00	0.00	2.34	0.00	2.34
Managed Turf (acres) -- disturbed, graded for yards or other turf to be mowed/managed	0.00	0.00	0.45	0.00	0.45
Impervious Cover (acres)	0.00	0.00	4.36	0.00	4.36
				Total	7.15

Post-ReDevelopment Land Cover (acres)

	A soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) -- undisturbed, protected forest/open space or reforested land	0.00	0.00	0.98	0.00	0.98
Managed Turf (acres) -- disturbed, graded for yards or other turf to be mowed/managed	0.00	0.00	1.42	0.00	1.42
Impervious Cover (acres)	0.00	0.00	4.75	0.00	4.75
				Total	7.15
Area Check	Okay	Okay	Okay	Okay	

Rv Coefficients

	A soils	B Soils	C Soils	D Soils
Forest/Open Space	0.02	0.03	0.04	0.05
Managed Turf	0.15	0.20	0.22	0.25
Impervious Cover	0.95	0.95	0.95	0.95

Land Cover Summary Pre-ReDevelopment	**Listed**	**Adjusted[1]**
Forest/Open Space Cover (acres)	2.34	1.95
Composite Rv(forest)	0.04	0.04
% Forest	33%	29%
Managed Turf Cover (acres)	0.45	0.45
Composite Rv(turf)	0.22	0.22
% Managed Turf	6%	7%
Impervious Cover (acres)	4.36	4.36
Rv(impervious)	0.95	0.95
% Impervious	61%	64%
Total Site Area (acres)	7.15	6.76
Site Rv	0.61	0.64
Pre-Development Treatment Volume (acre-ft)	0.3612	0.3599
Pre-Development Treatment Volume (cubic feet)	15,735	15,678
Pre-Development Load (TP) (lb/yr)	9.89	9.85

Land Cover Summary Post-ReDevelopment	
Forest/Open Space Cover	0.98
Composite Rv(forest)	0.04
% Forest	14%
Managed Turf Cover (acres)	1.42
Composite Rv(turf)	0.22
% Managed Turf	21%
ReDev. Impervious Cover (acres)	4.36
Rv(impervious)	0.95
% Impervious	64%
Total ReDev. Site Area (acres)	6.76
ReDev. Site Rv	0.66
Post-ReDevelopment Treatment Volume (acre-ft)	0.3745
Post-ReDevelopment Treatment Volume (cubic feet)	16,312
Post-ReDevelopment Load (TP) (lb/yr)	10.25

Land Cover Summary Post-ReDevelopment New Impervious	
New Impervious Cover (acres)	0.39
Rv(impervious)	0.95
% Impervious	100%
Total New Dev. Site Area (acres)	0.39
New Dev. Site Rv	0.95
Post-Development Treatment Volume (acre-ft)	0.0309
Post-Development Treatment Volume (cubic feet)	1,345
Post-Development Load (TP) (lb/yr)	0.85

[1]*Adjusted* **Land Cover Summary** reflects the pre redevelopment land cover minus the pervious land cover (forest/open space or managed turf) acreage proposed for new impervious cover. The adjusted total acreage is consistent with the Post Redevelopment acreage (minus the acreage of new impervious cover). The load reduction requirement for the new impervious cover to meet the new development load limit is computed in **Column I**.

Maximum % Reduction Required Below Pre-ReDevelopment Load	20%
TP Load Reduction Required for Redeveloped Area (lb/yr)	2.37
TP Load Reduction Required for New Impervious Area (lb/yr)	0.69
Total Load Reduction Required (lb/yr)	3.05
Pre-Development Load (TN) (lb/yr)	70.72
Post-Development Load (TN) (lb/yr)	79.36

VRRM WATER QUALITY COMPLIANCE SHEET:

Site Results

	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	AREA CHECK
IMPERVIOUS COVER	2.01	0.88	0.06	0.00	0.00	OK.
IMPERVIOUS COVER TREATED	2.01	0.88	0.06	0.00	0.00	OK.
TURF AREA	0.20	0.21	0.90	0.00	0.00	OK.
TURF AREA TREATED	0.20	0.21	0.90	0.00	0.00	OK.
AREA CHECK	OK.	OK.	OK.	OK.	OK.	

Phosphorous

TOTAL PHOSPHOROUS LOAD REDUCTION REQUIRED (LB/YEAR)	3.05
RUNOFF REDUCTION (cf)	1694
PHOSPHOROUS LOAD REDUCTION ACHIEVED (LB/YR)	3.14
ADJUSTED POST-DEVELOPMENT PHOSPHOROUS LOAD (TP) (lb/yr)	7.95
REMAINING PHOSPHOROUS LOAD REDUCTION (LB/YR) NEEDED	CONGRATULATIONS!! YOU EXCEEDED THE TARGET REDUCTION BY 0.1 LB/YEAR!!

Nitrogen (for information purposes)

RUNOFF REDUCTION (cf)	1694
NITROGEN LOAD REDUCTION ACHIEVED (LB/YR)	8.35
ADJUSTED POST-DEVELOPMENT NITROGEN LOAD (TP) (lb/yr)	71.01

SUBJECT TO FINAL ENGINEERING

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Dominion

DOMINION VIRGINIA POWER
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SPECIAL EXCEPTION PLAT
2232 PLAN
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SEAL

COMMONWEALTH OF VIRGINIA
BENJAMIN K. JACKSON
Lic. No. 049015
04/06/15
PROFESSIONAL ENGINEER

KEY PLAN

SCALE

No.	DATE	BY	Description

REVISIONS

DRAWN BY TT
APPROVED BY KWW
CHECKED BY KWW
DATE APRIL 2015

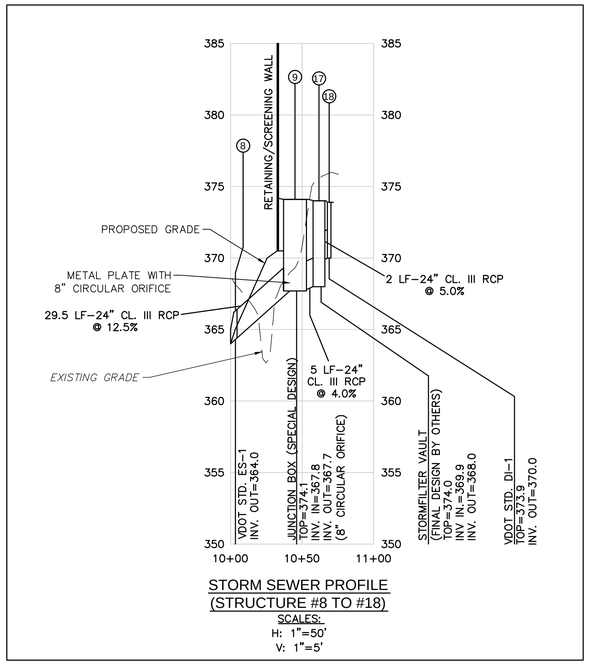
TITLE

STORMWATER MANAGEMENT INFORMATION

PROJECT NO. 50058411

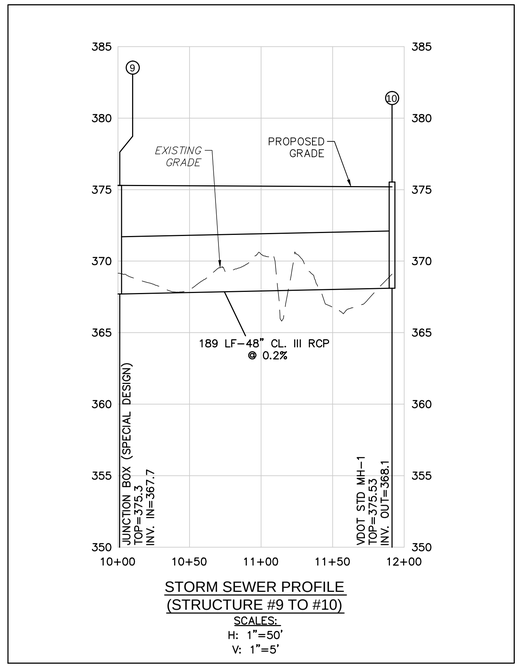
8

SHEET NO. 9 OF 21



STORM SEWER PROFILE
(STRUCTURE #8 TO #18)

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



STORM SEWER PROFILE
(STRUCTURE #9 TO #10)

SCALES:
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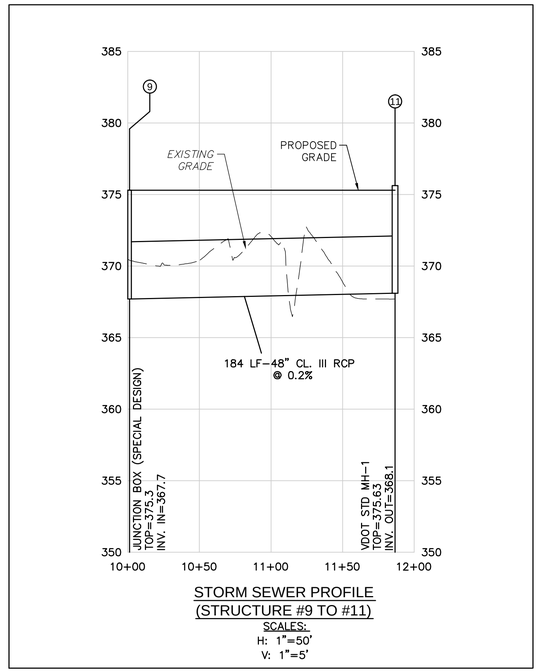
V: 1"=5'



STORM SEWER PROFILE
(STRUCTURE #9 TO #11)

SCALES:
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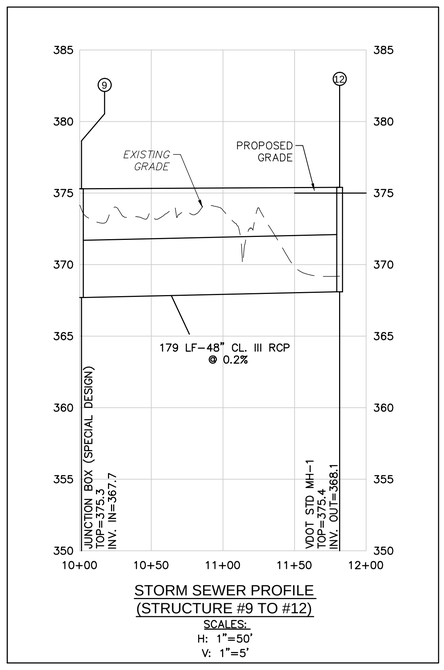
V: 1"=5'



STORM SEWER PROFILE
(STRUCTURE #9 TO #12)

SCALES:
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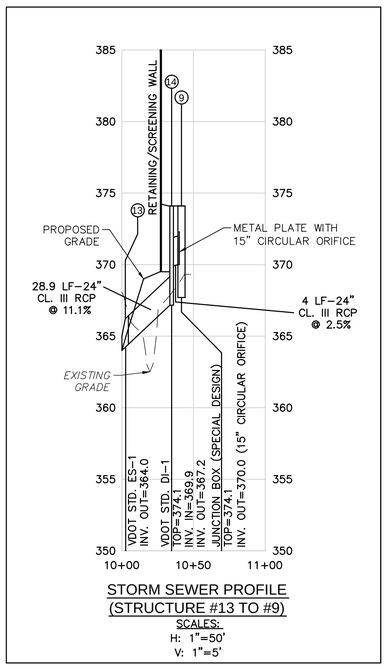
V: 1"=5'



STORM SEWER PROFILE
(STRUCTURE #13 TO #9)

SCALES:
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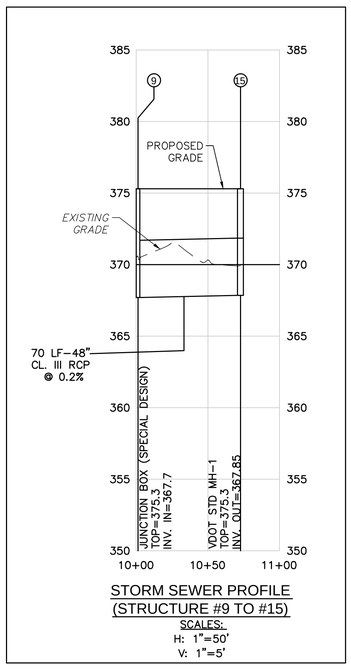
V: 1"=5'



STORM SEWER PROFILE
(STRUCTURE #9 TO #15)

SCALES:
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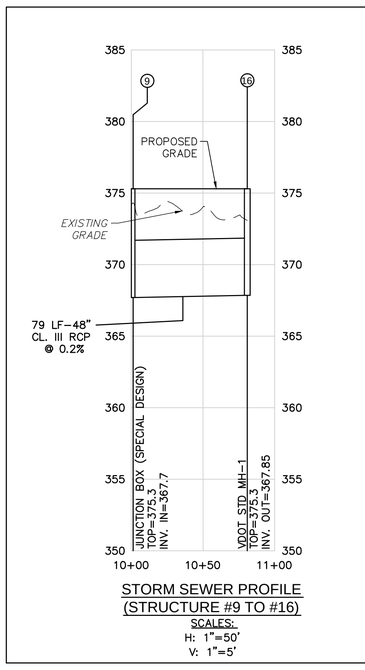
V: 1"=5'



STORM SEWER PROFILE
(STRUCTURE #9 TO #16)

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

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SEAL

COMMONWEALTH OF VIRGINIA
BENJAMIN K. JACKSON
Lic. No. 049015
04/06/15
PROFESSIONAL ENGINEER

KEY PLAN

SCALE
0' 25' 50' 100'
HORIZONTAL
0' 2.5' 5' 10'
VERTICAL

No.	DATE	BY	Description

REVISIONS

DRAWN BY	BKJ
APPROVED BY	KWW
CHECKED BY	KWW
DATE	FEB 27, 2015

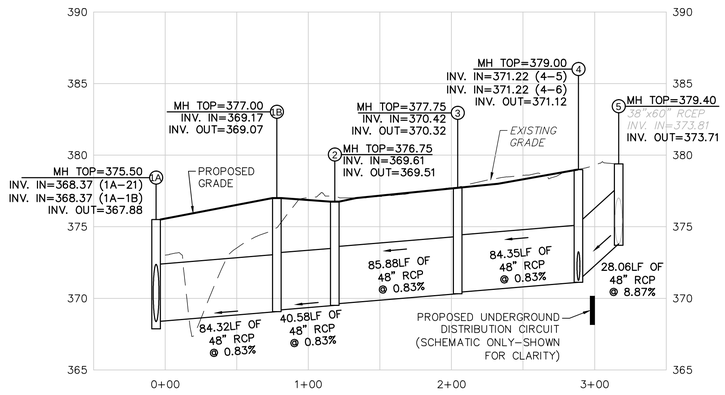
TITLE

DETENTION SYSTEM PROFILES

PROJECT NO. 50058411

9

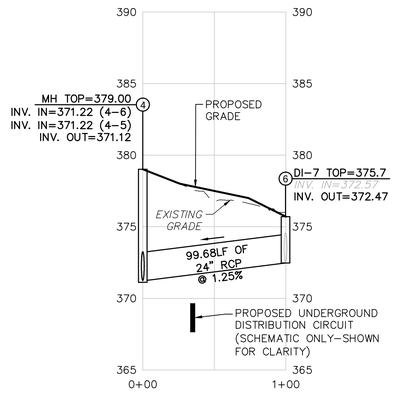
SHEET NO. 10 OF 21



STORM SEWER PROFILE (#1A - #5)

SCALES:

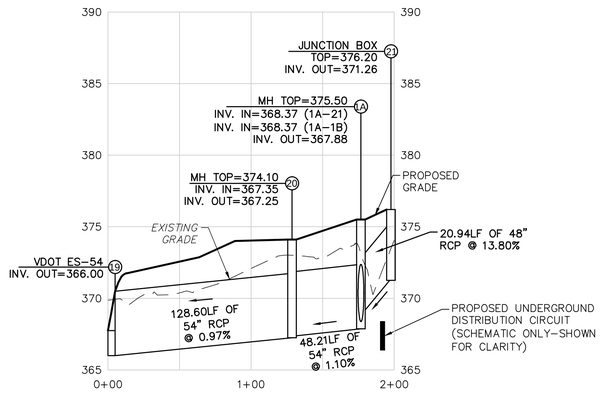
H: 1"=50' V: 1"=5'



STORM SEWER PROFILE (#4 - #6)

SCALES:

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



STORM SEWER PROFILE (#19 - #21)

SCALES:

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

ADEQUATE OUTFALL INFORMATION:

DESCRIPTION OF EACH NUMBERED OUTFALL:

OUTFALL #8

OUTFALL #8 IS A 24" RCP STORM SEWER. THIS STORM SEWER IS THE 2-YEAR STORM OUTLET FROM THE STORMWATER CONTROL STRUCTURE/JUNCTION BOX. THE TOTAL FLOW IS 3.82cfs. THIS OUTFALL DISCHARGES INTO AN UNNAMED TRIBUTARY OF HOLMES RUN. THIS TRIBUTARY HAS BEEN CONFIRMED BY THE USACE AS AN ESTABLISHED PERENNIAL STREAM.

OUTFALL #13

OUTFALL #13 IS A 24" RCP STORM SEWER. THIS STORM SEWER IS THE 10-YEAR STORM OUTLET FROM THE STORMWATER CONTROL STRUCTURE/JUNCTION BOX. THE TOTAL FLOW IS 14.06cfs. THIS OUTFALL DISCHARGES INTO AN UNNAMED TRIBUTARY OF HOLMES RUN. THIS TRIBUTARY HAS BEEN CONFIRMED BY THE USACE AS AN ESTABLISHED PERENNIAL STREAM.

OUTFALL #19

OUTFALL #19 IS A 54" RCP STORM SEWER. THIS STORM SEWER COMBINES FLOW FROM THE OFF-SITE DRAINAGE UPSTREAM OF SHREVE ROAD (80.1cfs ROUTED THROUGH A TWIN 30"x44" CULVERT UNDER SHREVE ROAD) AND HOLLY CREST SUBDIVISION (88.9cfs ROUTED THROUGH A 48" RCP ACROSS THE IDYLWOOD SUBSTATION SITE). THE TOTAL FLOW IS 169cfs. THIS OUTFALL DISCHARGES INTO AN UNNAMED TRIBUTARY OF HOLMES RUN. THIS TRIBUTARY HAS BEEN CONFIRMED BY THE USACE AS AN ESTABLISHED PERENNIAL STREAM.

CHANNEL PROTECTION:

PER FAIRFAX COUNTY CODE CHAPTER 124-4-4(b)(3)(c), THE MAXIMUM PEAK FLOW RATE FOR THE 2-YEAR 24-HOUR STORM (455cfs) CAN BE CONVEYED WITHIN THE SYSTEM FROM THE POINT OF DISCHARGE TO THE LIMIT OF ANALYSIS (SEE MAP TO THE RIGHT) WITHOUT CAUSING EROSION. THUS, THE MAXIMUM PEAK FLOW RATE FROM THE ONE-YEAR 24-HOUR STORM FOLLOWING THE LAND-DISTURBING ACTIVITY MAY BE CALCULATED IN ACCORDANCE WITH THE FOLLOWING METHODOLOGY:

$Q_{Developed} \leq I.F. * (Q_{Pre-Developed} * RV_{Pre-Developed}) / RV_{Developed}$

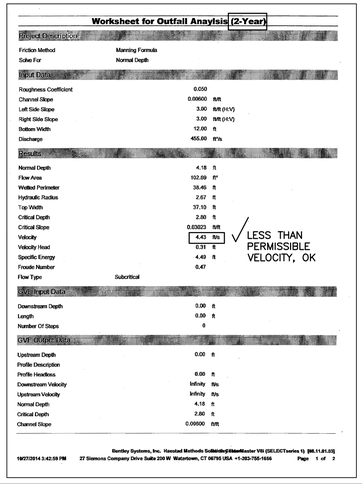
$Q_{Developed} = (0.8 * 5.2cfs * 1.5in) / 2.2in = 2.8cfs$; 2.8cfs < 5.2cfs OK

FLOOD PROTECTION:

STORMWATER FLOWS FROM THE IDYLWOOD SUBSTATION SITE IMMEDIATELY DISCHARGE INTO AN ESTABLISHED COUNTY NON-FEMA FLOODPLAIN. A FLOODPLAIN STUDY (SUBMITTED UNDER SEPARATE COVER) HAS BEEN PERFORMED THAT PROVES THAT DESPITE LAND DISTURBANCE AND GRADING OPERATIONS WITHIN THE LIMITS OF THIS FLOODPLAIN, THE EXTENTS OF THE RISE OF THE FLOODPLAIN WILL BE CONTAINED WITHIN THE DOMINION PROPERTY AND WILL HAVE NO ADVERSE IMPACTS TO ADJACENT PROPERTY OWNERS. THEREFORE, PER FAIRFAX COUNTY CODE CHAPTER 124-4-4(c)(5)(c), FLOOD PROTECTION REQUIREMENTS HAVE BEEN MET.

MISCELLANEOUS:

SEE DRAINAGE REPORT BOOKLET SUBMITTED UNDER SEPARATE COVER FOR FURTHER INFORMATION, INCLUDING CALCULATIONS OF RUNOFF CURVE NUMBERS, TIME OF CONCENTRATION, AND THE SCS TR-55 GRAPHICAL PEAK DISCHARGE METHOD USED TO DETERMINE 2-YEAR AND 10-YEAR FLOWS TO THE ANALYSIS POINT.



Worksheet for Outfall Anaylsis (2-Year)

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.050	
Channel Slope	0.00600	ft/ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Bottom Width	12.00	ft
Discharge	455.00	ft^3/s

Results

Normal Depth	4.18	ft
Flow Area	102.69	ft^2
Wetted Perimeter	38.46	ft
Hydraulic Radius	2.67	ft
Top Width	37.19	ft
Critical Depth	2.80	ft
Critical Slope	0.02623	ft/ft
Velocity	4.43	ft/s
Velocity Head	0.31	ft
Specific Energy	4.49	ft
Froude Number	0.47	
Flow Type	Subcritical	

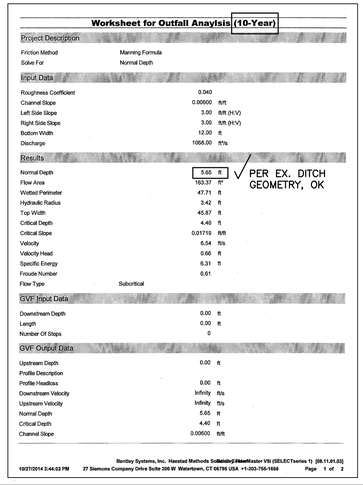
GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	4.18	ft
Critical Depth	2.80	ft
Channel Slope	0.00600	ft/ft

✓ LESS THAN PERMISSIBLE VELOCITY, OK



Worksheet for Outfall Anaylsis (10-Year)

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.040	
Channel Slope	0.00600	ft/ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Bottom Width	12.00	ft
Discharge	1068.00	ft^3/s

Results

Normal Depth	5.65	ft
Flow Area	163.37	ft^2
Wetted Perimeter	47.71	ft
Hydraulic Radius	3.42	ft
Top Width	45.87	ft
Critical Depth	4.40	ft
Critical Slope	0.01719	ft/ft
Velocity	6.54	ft/s
Velocity Head	0.66	ft
Specific Energy	6.31	ft
Froude Number	0.61	
Flow Type	Subcritical	

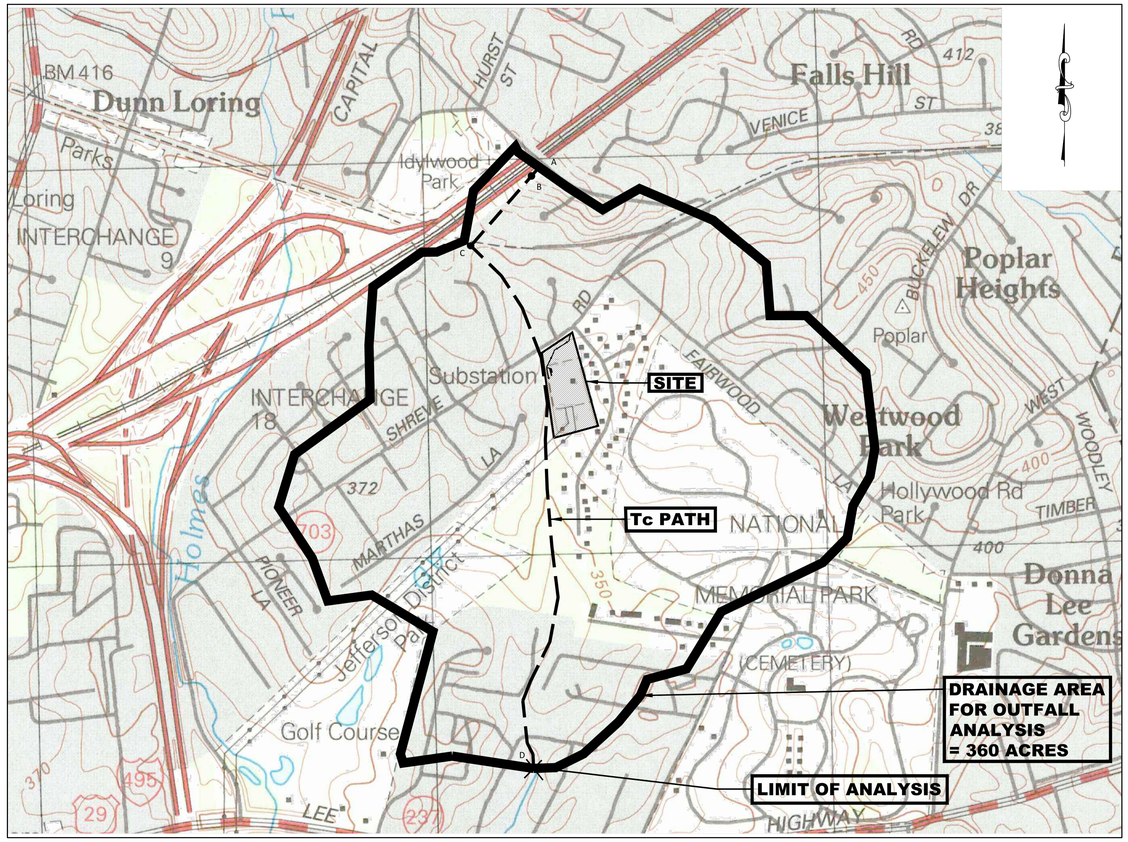
GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	5.65	ft
Critical Depth	4.40	ft
Channel Slope	0.00600	ft/ft

✓ PER EX. DITCH GEOMETRY, OK



OVERALL DRAINAGE AREA/LIMITS OF ANALYSIS MAP

NOT TO SCALE

ADEQUATE OUTFALL SUMMARY

Cross-Section	Channel Slope	2-Year Discharge (cfs)	10 Year Discharge (cfs)	Soil Type	Permissible Velocity (fps)	2 Year Velocity (fps)	10 Year Flow Depth (ft)
LIMIT OF ANALYSIS	0.006%	455.00	1068.00	103A Wheaton-Codorus complex	6.0 (Loam)	4.4	5.7

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FAIRFAX COUNTY, VIRGINIA

SEAL

COMMONWEALTH OF VIRGINIA
BENJAMIN K. JACKSON
Lic. No. 049015
04/06/15
PROFESSIONAL ENGINEER

KEY PLAN

SCALE

0' 25' 50' 100'
HORIZONTAL

0' 2.5' 5' 10'
VERTICAL

No.	DATE	BY	Description

REVISIONS

DRAWN BY TT
APPROVED BY KWW
CHECKED BY KWW
DATE APRIL 2015

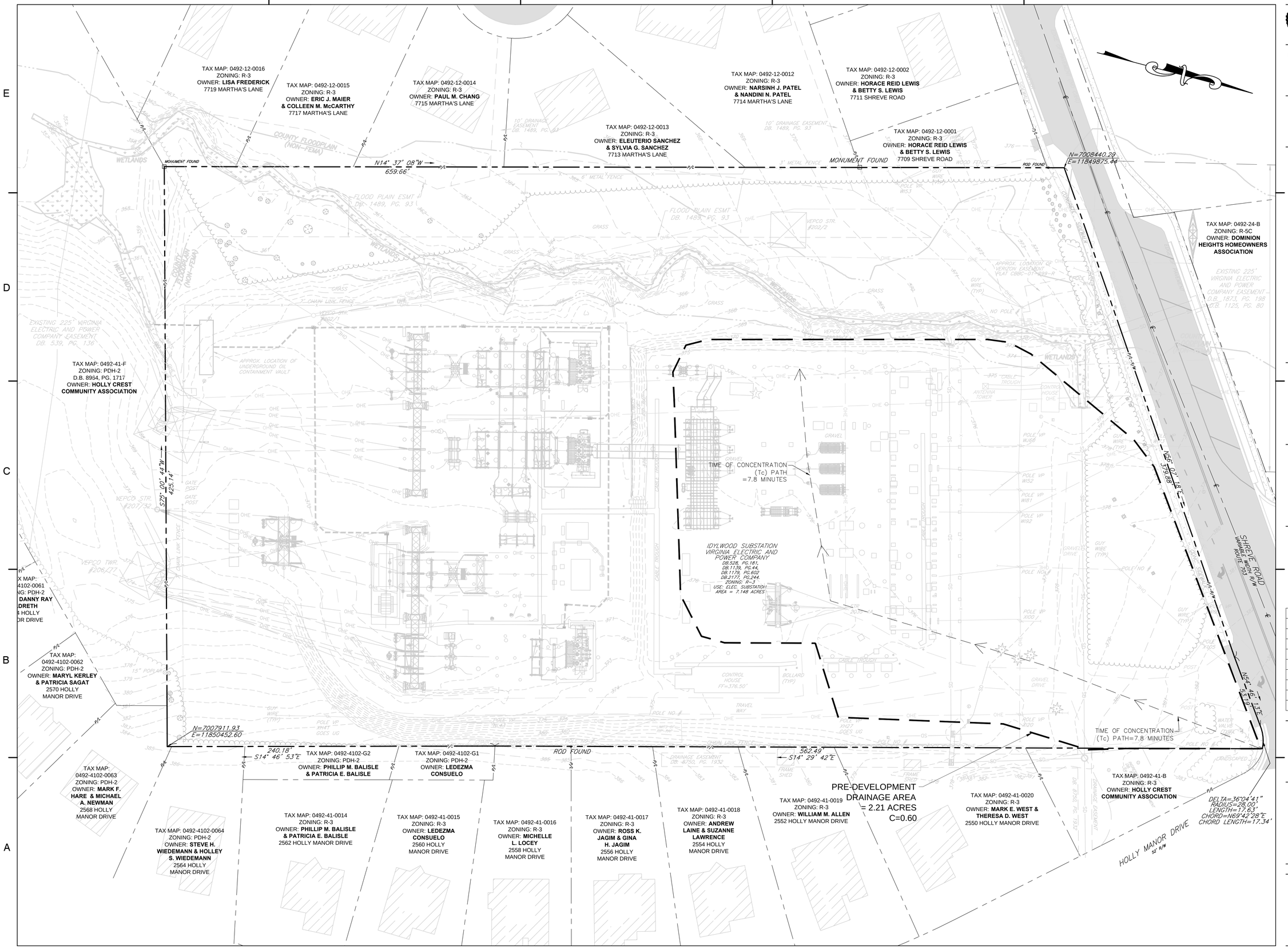
TITLE

STORM SEWER PROFILES

PROJECT NO. 50058411

10

SHEET NO. 11 OF 21



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04/06/15
PROFESSIONAL ENGINEER

KEY PLAN

SCALE

0' 30' 60'
GRAPHIC SCALE

No.	DATE	BY	Description

REVISIONS

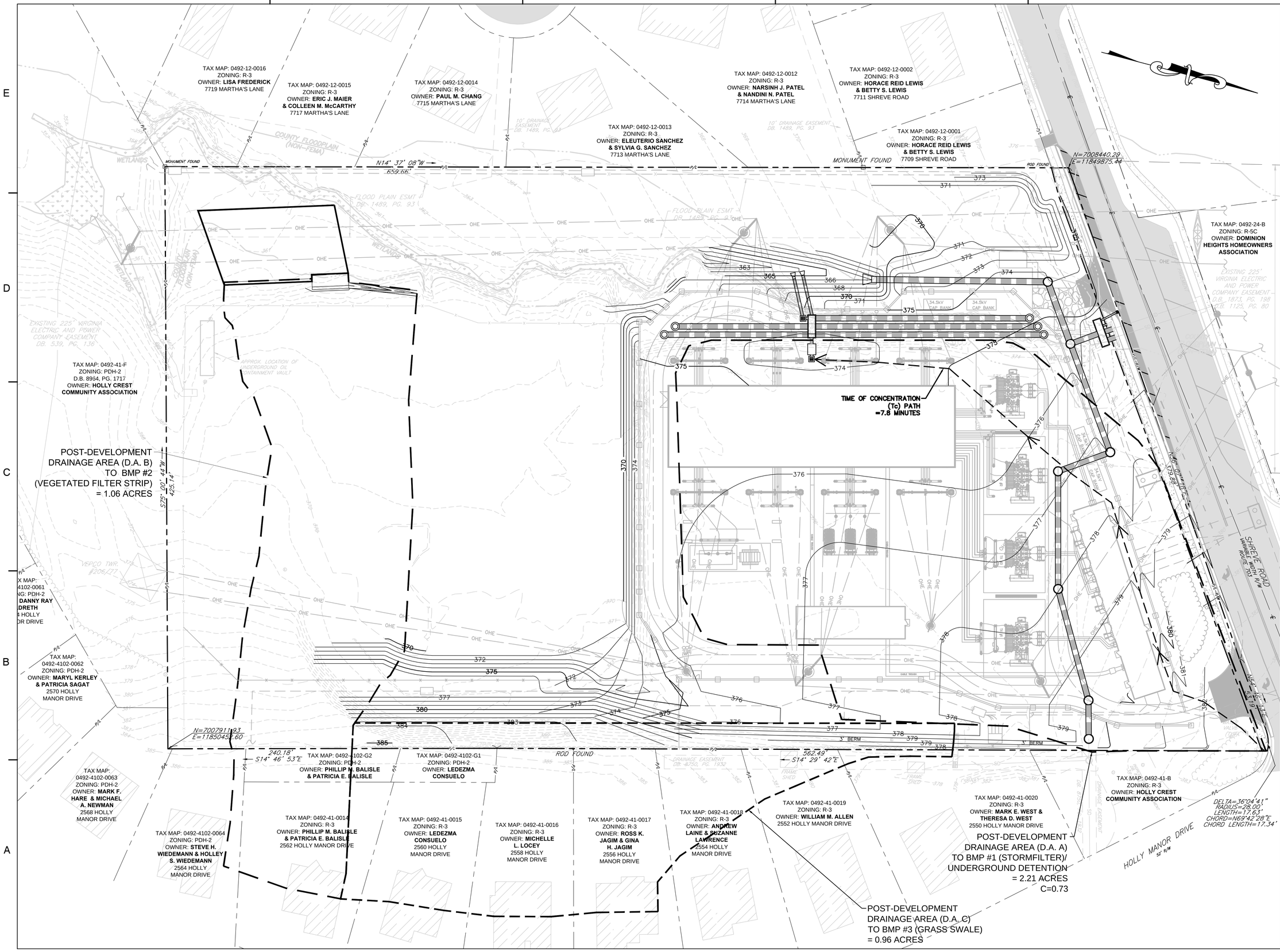
DRAWN BY	TT
APPROVED BY	KWW
CHECKED BY	KWW
DATE	APRIL 2015

TITLE

PRE-DEVELOPED DRAINAGE AREA MAP

PROJECT NO. 50058411

11



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04/06/15
PROFESSIONAL ENGINEER

KEY PLAN

SCALE

0' 30' 60'
GRAPHIC SCALE

No.	DATE	BY	Description

REVISIONS

DRAWN BY	TT
APPROVED BY	KWW
CHECKED BY	KWW
DATE	APRIL 2015

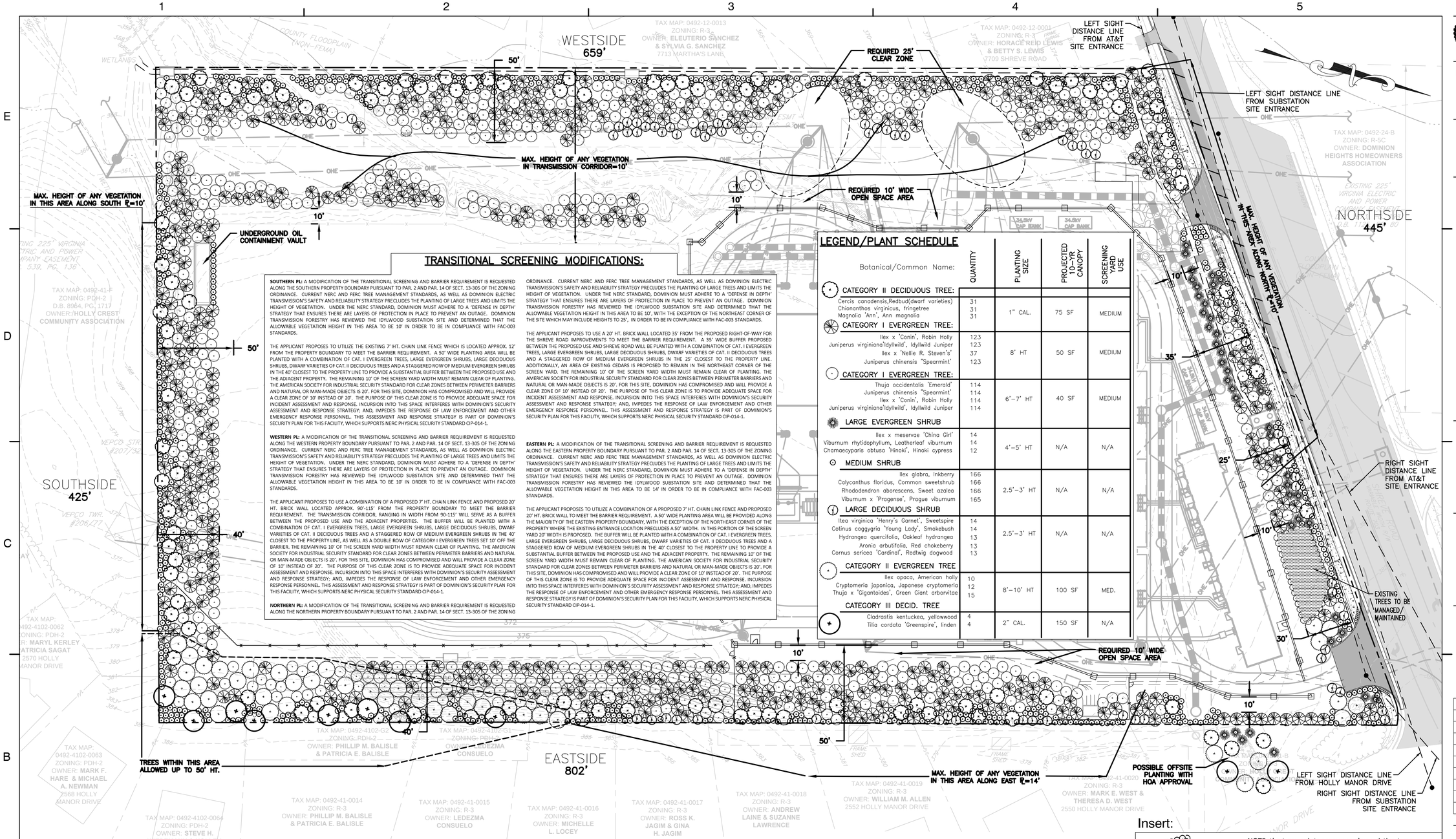
TITLE

POST-DEVELOPED DRAINAGE AREA MAP

PROJECT NO. 50058411

12

SHEET NO. 13 OF 21



TRANSITIONAL SCREENING MODIFICATIONS:

SOUTHERN PL: A MODIFICATION OF THE TRANSITIONAL SCREENING AND BARRIER REQUIREMENT IS REQUESTED ALONG THE SOUTHERN PROPERTY BOUNDARY PURSUANT TO PAR. 2 AND PAR. 14 OF SECT. 13-305 OF THE ZONING ORDINANCE. CURRENT NERC AND FERC TREE MANAGEMENT STANDARDS, AS WELL AS DOMINION ELECTRIC TRANSMISSION'S SAFETY AND RELIABILITY STRATEGY PRECLUDES THE PLANTING OF LARGE TREES AND LIMITS THE HEIGHT OF VEGETATION. UNDER THE NERC STANDARD, DOMINION MUST ADHERE TO A 'DEFENSE IN DEPTH' STRATEGY THAT ENSURES THERE ARE LAYERS OF PROTECTION IN PLACE TO PREVENT AN OUTAGE. DOMINION TRANSMISSION FORESTRY HAS REVIEWED THE IDYLWOOD SUBSTATION SITE AND DETERMINED THAT THE ALLOWABLE VEGETATION HEIGHT IN THIS AREA TO BE 10' IN ORDER TO BE IN COMPLIANCE WITH FAC-003 STANDARDS.

THE APPLICANT PROPOSES TO UTILIZE THE EXISTING 7' HT. CHAIN LINK FENCE WHICH IS LOCATED APPROX. 12' FROM THE PROPERTY BOUNDARY TO MEET THE BARRIER REQUIREMENT. A 50' WIDE PLANTING AREA WILL BE PLANTED WITH A COMBINATION OF CAT. I EVERGREEN TREES, LARGE EVERGREEN SHRUBS, LARGE DECIDUOUS SHRUBS, DWARF VARIETIES OF CAT. II DECIDUOUS TREES AND A STAGGERED ROW OF MEDIUM EVERGREEN SHRUBS IN THE 40' CLOSEST TO THE PROPERTY LINE TO PROVIDE A SUBSTANTIAL BUFFER BETWEEN THE PROPOSED USE AND THE ADJACENT PROPERTY. THE REMAINING 10' OF THE SCREEN YARD WIDTH MUST REMAIN CLEAR OF PLANTING. THE AMERICAN SOCIETY FOR INDUSTRIAL SECURITY STANDARD FOR CLEAR ZONES BETWEEN PERIMETER BARRIERS AND NATURAL OR MAN-MADE OBJECTS IS 20'. FOR THIS SITE, DOMINION HAS COMPROMISED AND WILL PROVIDE A CLEAR ZONE OF 10' INSTEAD OF 20'. THE PURPOSE OF THIS CLEAR ZONE IS TO PROVIDE ADEQUATE SPACE FOR INCIDENT ASSESSMENT AND RESPONSE. INCURSION INTO THIS SPACE INTERFERES WITH DOMINION'S SECURITY ASSESSMENT AND RESPONSE STRATEGY; AND, IMPEDES THE RESPONSE OF LAW ENFORCEMENT AND OTHER EMERGENCY RESPONSE PERSONNEL. THIS ASSESSMENT AND RESPONSE STRATEGY IS PART OF DOMINION'S SECURITY PLAN FOR THIS FACILITY, WHICH SUPPORTS NERC PHYSICAL SECURITY STANDARD CIP-014-1.

WESTERN PL: A MODIFICATION OF THE TRANSITIONAL SCREENING AND BARRIER REQUIREMENT IS REQUESTED ALONG THE WESTERN PROPERTY BOUNDARY PURSUANT TO PAR. 2 AND PAR. 14 OF SECT. 13-305 OF THE ZONING ORDINANCE. CURRENT NERC AND FERC TREE MANAGEMENT STANDARDS, AS WELL AS DOMINION ELECTRIC TRANSMISSION'S SAFETY AND RELIABILITY STRATEGY PRECLUDES THE PLANTING OF LARGE TREES AND LIMITS THE HEIGHT OF VEGETATION. UNDER THE NERC STANDARD, DOMINION MUST ADHERE TO A 'DEFENSE IN DEPTH' STRATEGY THAT ENSURES THERE ARE LAYERS OF PROTECTION IN PLACE TO PREVENT AN OUTAGE. DOMINION TRANSMISSION FORESTRY HAS REVIEWED THE IDYLWOOD SUBSTATION SITE AND DETERMINED THAT THE ALLOWABLE VEGETATION HEIGHT IN THIS AREA TO BE 10' IN ORDER TO BE IN COMPLIANCE WITH FAC-003 STANDARDS.

THE APPLICANT PROPOSES TO USE A COMBINATION OF A PROPOSED 7' HT. CHAIN LINK FENCE AND PROPOSED 20' HT. BRICK WALL LOCATED APPROX. 90'-115' FROM THE PROPERTY BOUNDARY TO MEET THE BARRIER REQUIREMENT. THE TRANSMISSION CORRIDOR, RANGING IN WIDTH FROM 90'-115' WILL SERVE AS A BUFFER BETWEEN THE PROPOSED USE AND THE ADJACENT PROPERTIES. THE BUFFER WILL BE PLANTED WITH A COMBINATION OF CAT. I EVERGREEN TREES, LARGE EVERGREEN SHRUBS, LARGE DECIDUOUS SHRUBS, DWARF VARIETIES OF CAT. II DECIDUOUS TREES AND A STAGGERED ROW OF MEDIUM EVERGREEN SHRUBS IN THE 40' CLOSEST TO THE PROPERTY LINE, AS WELL AS A DOUBLE ROW OF CATEGORY I EVERGREEN TREES SET 10' OFF THE BARRIER. THE REMAINING 10' OF THE SCREEN YARD WIDTH MUST REMAIN CLEAR OF PLANTING. THE AMERICAN SOCIETY FOR INDUSTRIAL SECURITY STANDARD FOR CLEAR ZONES BETWEEN PERIMETER BARRIERS AND NATURAL OR MAN-MADE OBJECTS IS 20'. FOR THIS SITE, DOMINION HAS COMPROMISED AND WILL PROVIDE A CLEAR ZONE OF 10' INSTEAD OF 20'. THE PURPOSE OF THIS CLEAR ZONE IS TO PROVIDE ADEQUATE SPACE FOR INCIDENT ASSESSMENT AND RESPONSE. INCURSION INTO THIS SPACE INTERFERES WITH DOMINION'S SECURITY ASSESSMENT AND RESPONSE STRATEGY; AND, IMPEDES THE RESPONSE OF LAW ENFORCEMENT AND OTHER EMERGENCY RESPONSE PERSONNEL. THIS ASSESSMENT AND RESPONSE STRATEGY IS PART OF DOMINION'S SECURITY PLAN FOR THIS FACILITY, WHICH SUPPORTS NERC PHYSICAL SECURITY STANDARD CIP-014-1.

NORTHERN PL: A MODIFICATION OF THE TRANSITIONAL SCREENING AND BARRIER REQUIREMENT IS REQUESTED ALONG THE NORTHERN PROPERTY BOUNDARY PURSUANT TO PAR. 2 AND PAR. 14 OF SECT. 13-305 OF THE ZONING ORDINANCE. CURRENT NERC AND FERC TREE MANAGEMENT STANDARDS, AS WELL AS DOMINION ELECTRIC TRANSMISSION'S SAFETY AND RELIABILITY STRATEGY PRECLUDES THE PLANTING OF LARGE TREES AND LIMITS THE HEIGHT OF VEGETATION. UNDER THE NERC STANDARD, DOMINION MUST ADHERE TO A 'DEFENSE IN DEPTH' STRATEGY THAT ENSURES THERE ARE LAYERS OF PROTECTION IN PLACE TO PREVENT AN OUTAGE. DOMINION TRANSMISSION FORESTRY HAS REVIEWED THE IDYLWOOD SUBSTATION SITE AND DETERMINED THAT THE ALLOWABLE VEGETATION HEIGHT IN THIS AREA TO BE 10', WITH THE EXCEPTION OF THE NORTHEAST CORNER OF THE SITE WHICH MAY INCLUDE HEIGHTS TO 25', IN ORDER TO BE IN COMPLIANCE WITH FAC-003 STANDARDS.

THE APPLICANT PROPOSES TO USE A 20' HT. BRICK WALL LOCATED 35' FROM THE PROPOSED RIGHT-OF-WAY FOR THE SHREVE ROAD IMPROVEMENTS TO MEET THE BARRIER REQUIREMENT. A 35' WIDE BUFFER PROPOSED BETWEEN THE PROPOSED USE AND SHREVE ROAD WILL BE PLANTED WITH A COMBINATION OF CAT. I EVERGREEN TREES, LARGE EVERGREEN SHRUBS, LARGE DECIDUOUS SHRUBS, DWARF VARIETIES OF CAT. II DECIDUOUS TREES AND A STAGGERED ROW OF MEDIUM EVERGREEN SHRUBS IN THE 25' CLOSEST TO THE PROPERTY LINE. ADDITIONALLY, AN AREA OF EXISTING CEDARS IS PROPOSED TO REMAIN IN THE NORTHEAST CORNER OF THE SCREEN YARD. THE REMAINING 10' OF THE SCREEN YARD WIDTH MUST REMAIN CLEAR OF PLANTING. THE AMERICAN SOCIETY FOR INDUSTRIAL SECURITY STANDARD FOR CLEAR ZONES BETWEEN PERIMETER BARRIERS AND NATURAL OR MAN-MADE OBJECTS IS 20'. FOR THIS SITE, DOMINION HAS COMPROMISED AND WILL PROVIDE A CLEAR ZONE OF 10' INSTEAD OF 20'. THE PURPOSE OF THIS CLEAR ZONE IS TO PROVIDE ADEQUATE SPACE FOR INCIDENT ASSESSMENT AND RESPONSE. INCURSION INTO THIS SPACE INTERFERES WITH DOMINION'S SECURITY ASSESSMENT AND RESPONSE STRATEGY; AND, IMPEDES THE RESPONSE OF LAW ENFORCEMENT AND OTHER EMERGENCY RESPONSE PERSONNEL. THIS ASSESSMENT AND RESPONSE STRATEGY IS PART OF DOMINION'S SECURITY PLAN FOR THIS FACILITY, WHICH SUPPORTS NERC PHYSICAL SECURITY STANDARD CIP-014-1.

EASTERN PL: A MODIFICATION OF THE TRANSITIONAL SCREENING AND BARRIER REQUIREMENT IS REQUESTED ALONG THE EASTERN PROPERTY BOUNDARY PURSUANT TO PAR. 2 AND PAR. 14 OF SECT. 13-305 OF THE ZONING ORDINANCE. CURRENT NERC AND FERC TREE MANAGEMENT STANDARDS, AS WELL AS DOMINION ELECTRIC TRANSMISSION'S SAFETY AND RELIABILITY STRATEGY PRECLUDES THE PLANTING OF LARGE TREES AND LIMITS THE HEIGHT OF VEGETATION. UNDER THE NERC STANDARD, DOMINION MUST ADHERE TO A 'DEFENSE IN DEPTH' STRATEGY THAT ENSURES THERE ARE LAYERS OF PROTECTION IN PLACE TO PREVENT AN OUTAGE. DOMINION TRANSMISSION FORESTRY HAS REVIEWED THE IDYLWOOD SUBSTATION SITE AND DETERMINED THAT THE ALLOWABLE VEGETATION HEIGHT IN THIS AREA TO BE 14' IN ORDER TO BE IN COMPLIANCE WITH FAC-003 STANDARDS.

THE APPLICANT PROPOSES TO UTILIZE A COMBINATION OF A PROPOSED 7' HT. CHAIN LINK FENCE AND PROPOSED 20' HT. BRICK WALL TO MEET THE BARRIER REQUIREMENT. A 50' WIDE PLANTING AREA WILL BE PROVIDED ALONG THE MAJORITY OF THE EASTERN PROPERTY BOUNDARY, WITH THE EXCEPTION OF THE NORTHEAST CORNER OF THE PROPERTY WHERE THE EXISTING ENTRANCE LOCATION PRECLUDES A 50' WIDTH. IN THIS PORTION OF THE SCREEN A 40' WIDTH IS PROPOSED. THE BUFFER WILL BE PLANTED WITH A COMBINATION OF CAT. I EVERGREEN TREES, LARGE EVERGREEN SHRUBS, LARGE DECIDUOUS SHRUBS, DWARF VARIETIES OF CAT. II DECIDUOUS TREES AND A STAGGERED ROW OF MEDIUM EVERGREEN SHRUBS IN THE 40' CLOSEST TO THE PROPERTY LINE TO PROVIDE A SUBSTANTIAL BUFFER BETWEEN THE PROPOSED USE AND THE ADJACENT PROPERTY. THE REMAINING 10' OF THE SCREEN YARD WIDTH MUST REMAIN CLEAR OF PLANTING. THE AMERICAN SOCIETY FOR INDUSTRIAL SECURITY STANDARD FOR CLEAR ZONES BETWEEN PERIMETER BARRIERS AND NATURAL OR MAN-MADE OBJECTS IS 20'. FOR THIS SITE, DOMINION HAS COMPROMISED AND WILL PROVIDE A CLEAR ZONE OF 10' INSTEAD OF 20'. THE PURPOSE OF THIS CLEAR ZONE IS TO PROVIDE ADEQUATE SPACE FOR INCIDENT ASSESSMENT AND RESPONSE. INCURSION INTO THIS SPACE INTERFERES WITH DOMINION'S SECURITY ASSESSMENT AND RESPONSE STRATEGY; AND, IMPEDES THE RESPONSE OF LAW ENFORCEMENT AND OTHER EMERGENCY RESPONSE PERSONNEL. THIS ASSESSMENT AND RESPONSE STRATEGY IS PART OF DOMINION'S SECURITY PLAN FOR THIS FACILITY, WHICH SUPPORTS NERC PHYSICAL SECURITY STANDARD CIP-014-1.

LEGEND/PLANT SCHEDULE

Botanical/Common Name:	QUANTITY	PLANTING SIZE	PROJECTED 10-YR CANOPY	SCREENING YARD USE
CATEGORY II DECIDUOUS TREE:				
Cercis canadensis,Redbud(dwarf varieties)	31	1" CAL.	75 SF	MEDIUM
Chionanthos virginicus, fringetree	31			
Magnolia 'Ann', Ann magnolia	31			
CATEGORY I EVERGREEN TREE:				
Ilex x 'Conin', Robin Holly	123	8' HT	50 SF	MEDIUM
Juniperus virginiana'Idyllwild', Idyllwild Juniper	123			
Ilex x 'Nellie R. Steven's'	37			
Juniperus chinensis 'Spearmint'	123			
CATEGORY I EVERGREEN TREE:				
Thuja occidentalis 'Emerald'	114	6'-7' HT	40 SF	MEDIUM
Juniperus chinensis 'Spearmint'	114			
Ilex x 'Conin', Robin Holly	114			
Juniperus virginiana'Idyllwild', Idyllwild Juniper	114			
LARGE EVERGREEN SHRUB				
Ilex x meserve 'China Girl'	14	4'-5' HT	N/A	N/A
Viburnum rhytidophyllum, Leatherleaf viburnum	14			
Chamaecyparis obtusa 'Hinoki', Hinoki cypress	12			
MEDIUM SHRUB				
Ilex glabra, Inkberry	166	2.5'-3' HT	N/A	N/A
Calycanthus floridus, Common sweetshrub	166			
Rhododendron aborescens, Sweet azalea	166			
Viburnum x 'Pragense', Prague viburnum	165			
LARGE DECIDUOUS SHRUB				
Itea virginica 'Henry's Garnet', Sweetspire	14	2.5'-3' HT	N/A	N/A
Cotinus caggygria 'Young Lady', Smokebush	14			
Hydrangea quercifolia, Oakleaf hydrangea	13			
Aronia arbutifolia, Red chokeberry	13			
Cornus sericea 'Cardinal', Redtwig dogwood	13			
CATEGORY II EVERGREEN TREE				
Ilex opaca, American holly	10	8'-10' HT	100 SF	MED.
Cryptomeria japonica, Japanese cryptomeria	12			
Thuja x 'Gigantoides', Green Giant arborvitae	15			
CATEGORY III DECID. TREE				
Cladrastis kentuckea, yellowwood	4	2" CAL.	150 SF	N/A
Tilia cordata 'Greenspire', linden	4			

Transitional Screening Map

Scale: 1"=30'

SCREENING INFORMATION FOR ALL YARDS (NORTH/SOUTH/EAST/WEST):

REQUIRED:
- TRANSITIONAL SCREENING 3 – 50' WIDTH
- –10–YEAR TREE CANOPY OF 75% OR GREATER
- –AT LEAST 70% EVERGREEN TREES; NO MORE THAN 35% OF ANY SINGLE SPECIES
- –3 MEDIUM EVERGREEN SHRUBS FOR EVERY 10 LF
- –BARRIER D, E, OR F

PROVIDED:
- –PURSUANT TO PAR. 4 OF SECT. 13–305 OF THE ZONING ORDINANCE, A 2/3 REDUCTION IN TRANSITIONAL SCREENING YARD WIDTH IS REQUESTED IN THE SOUTH & EAST YARDS. THEREFORE, MINIMUM YARD WIDTHS IN THESE AREAS WILL BE 16.67'. PLEASE SEE WAIVER REQUEST ON FOLLOWING SHEET.
- –SEE YARD–BY–YARD BREAKDOWN OF TREE CANOPY CALCULATIONS BELOW.
- –20' TALL PERIMETER SCREENING WALL (EAST, SOUTH, WEST SIDES OF YARD); 16' TALL PERIMETER SCREENING WALL (NORTH)

NORTHERN PROPERTY LINE – 445' LENGTH

REQUIRED: 35' WIDTH
- TREE CANOPY: 445'L X 35'W X 0.75= 11,681 SF
- SHRUBS: (445/10) X 3 SHRUBS= 134

PROVIDED: 35' WIDTH

– 4 CAT. II EVERGREEN TREES @ 100 SF	4 X 100 = 400 SF
–34 CAT. I EVERGREEN TREES @ 50 SF	34 X 50 = 1,700 SF
–29 CAT. I EVERGREEN TREES @ 40 SF	29 X 40 = 1,160 SF
–40 LARGE EVEGREEN SHRUB	
–98 MEDIUM EVERGREEN SHRUBS	
– 7 CAT. II DECIDUOUS TREES @ 75 SF	7 X 75 = 525 SF
–17 LARGE DECIDUOUS SHRUBS	
TOTAL =	3,785 SF

EASTERN PROPERTY LINE – 802' LENGTH

REQUIRED: 50' WIDTH
- TREE CANOPY: 802'L X 50'W X 0.75= 30,075 SF
- SHRUBS: (802/10) X 3 SHRUBS= 240

PROVIDED: 18'–50' WIDTH

– 28 CAT. II EVERGREEN TREES @ 100 SF	28 X 100 = 2,800 SF
–132 CAT. I EVERGREEN TREES @ 50 SF	132 X 50 = 6,600 SF
–149 CAT. I EVERGREEN TREES @ 40 SF	149 X 40 = 5,960 SF
–240 MEDIUM EVERGREEN SHRUBS	
– 7 CAT. III DECDUOUS TREES @ 150 SF	
– 28 CAT. II DECIDUOUS TREES @ 75 SF	7 X 150 = 1,050 SF
– 18 LARGE DECIDUOUS SHRUBS	28 X 75 = 2,100 SF
TOTAL =	18,510 SF

SOUTHERN PROPERTY LINE – 425' LENGTH

REQUIRED: 50' WIDTH
- TREE CANOPY: 425'L X 50'W X 0.75= 15,938 SF
- SHRUBS: (425/10) X 3 SHRUBS= 127

PROVIDED: 40' WIDTH

– 5 CAT. II EVERGREEN TREES @ 100 SF	5 X 100 = 500 SF
– 85 CAT. I EVERGREEN TREES @ 50 SF	85 X 50 = 4,250 SF
– 80 CAT. I EVERGREEN TREES @ 40 SF	80 X 40 = 3,200 SF
–127 MEDIUM EVERGREEN SHRUBS	
– 1 CAT. III DECIDUOUS TREES @ 150 SF	
– 20 CAT. II DECIDUOUS TREES @ 75 SF	1 X 150 = 150 SF
	20 X 75 = 1,500 SF
TOTAL =	9,600 SF

WESTERN PROPERTY LINE – 659' LENGTH

REQUIRED: 50' WIDTH
- TREE CANOPY: 659'L X 50'W X 0.75= 24,713 SF
- SHRUBS: (659/10) X 3 SHRUBS= 198

PROVIDED: 90'±–103'± WIDTH

–155 CAT. I EVERGREEN TREES @ 50 SF	155 X 50 = 7,750 SF
–198 CAT. I EVERGREEN TREES @ 40 SF	198 X 40 = 7,920 SF
–198 MEDIUM EVERGREEN SHRUBS	
– 38 CAT. II DECIDUOUS TREES @ 75 SF	
– 32 LARGE DECIDUOUS SHRUBS	38 X 75 = 2,850 SF
TOTAL =	18,520 SF

GRAND TOTAL 50,415 SF

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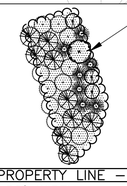

NOTE: the tree maintenance area has existing trees that are currently considered to be in fair to poor health. During construction, tree protection fencing will be installed around this area and reasonable construction method will be considered at the pre-construction site walk-thru to minimize root disturbance to this stand of trees. Although, should these trees health be further compromised by the close proximity of the substation construction the applicant will remove and replant the tree maintenance area per the plan insert

Dewberry

Dewberry Engineers Inc.
4805 Lake Brook Drive, Suite 200
Glen Allen, Virginia 23060
PHONE: 804.290.7957
FAX: 804.290.7928
www.dewberry.com

Dominion

DOMINION VIRGINIA POWER
Idylwood Substation
SE 2014-PR-032
SPECIAL EXCEPTION PLAT
2232 PLAN

PROVIDENCE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SEAL

COMMONWEALTH OF VIRGINIA
BENJAMIN K. JACKSON
Lic. No. 049015
04/06/15
PROFESSIONAL ENGINEER

KEY PLAN

SCALE

0' 30' 60'
GRAPHIC SCALE

No.	DATE	BY	Description

REVISIONS

DRAWN BY	LM
APPROVED BY	JC
CHECKED BY	KWW
DATE	APRIL 2015

TITLE

PROPOSED LANDSCAPING PLAN

PROJECT NO. 50058411

13

SHEET NO. 14 OF 21

NOTES:

1. THE PROPERTIES THAT ARE THE SUBJECT OF THIS SPECIAL EXCEPTION PLAT IS IDENTIFIED ON THE FAIRFAX COUNTY ZONING MAP AS 49-2 ((1)) 151 AND 49-2 ((12)) 0001A, BOTH OF WHICH ARE ZONED R-3.
2. THE TOTAL LAND AREA OF THIS SPECIAL EXCEPTION APPLICATION IS APPROXIMATELY 7.15 ± ACRES.
3. THIS SPECIAL EXCEPTION PLAT ACCOMPANIES AN APPLICATION TO PERMIT THE EXPANSION OF AN EXISTING ELECTRIC SUBSTATION.
4. THE BOUNDARY INFORMATION SHOWN HEREON IS BASED UPON FIELD MONUMENTATION, REFERENCED DEEDS, AND PLATS. IT IS ESTABLISHED TO INCLUDE ALL THE FACILITIES SUBJECT TO THIS SPECIAL EXCEPTION AS DEFINED BY VIRGINIA ELECTRIC AND POWER COMPANY DURING SUPPLEMENTAL ENGINEERING.
5. THE TOPOGRAPHY SHOWN HEREON IS AT A CONTOUR INTERVAL OF ONE (1) FOOT FROM SURVEY INFORMATION PROVIDED BY BURGESS & NIPLE, INC. IN JUNE AND JULY 2013.
6. A STATEMENT WHICH CONFIRMS THE OWNERSHIP OF THE SUBJECT PROPERTIES AND THE NATURE OF THE APPLICANT'S INTEREST IN SAME IS PRESENTED IN A SEPARATE DOCUMENT.
7. MINIMUM YARD REQUIREMENTS FOR "ALL OTHER STRUCTURES" (NON-RESIDENTIAL) IN THE R-3 DISTRICTS ARE AS FOLLOWS:
   FRONT: CONTROLLED BY A 40° ANGLE OF BULK PLANE, BUT NOT LESS THAN 30 FEET.
   SIDE: CONTROLLED BY A 35º ANGLE OF BULK PLANE, BUT NOT LESS THAN 10 FEET.
   REAR: CONTROLLED BY A 35º ANGLE OF BULK PLANE, BUT NOT LESS THAN 25 FEET.
8. AS STATED IN SECT. 9-104 OF THE FAIRFAX COUNTY ZONING ORDINANCE, THIS USE NEED NOT COMPLY WITH THE BULK REGULATIONS OR THE MINIMUM LOT SIZE REQUIREMENTS OF THE ZONING DISTRICT IN WHICH THE USE IS LOCATED.
9. SANITARY SEWER AND PUBLIC WATER WILL NOT BE PROVIDED TO SITE.
10. NO PERMANENT PARKING AREAS ARE PROPOSED ON SITE.
11. THERE IS COUNTY MINOR FLOODPLAIN (NON-FEMA) LOCATED ON THE SUBJECT PROPERTIES. THIS FLOODPLAIN WILL BE IMPACTED WITH THIS SPECIAL EXCEPTION. EXTENTS OF IMPACT AND SUBSEQUENT MITIGATION ARE OUTLINED IN SEPARATE FLOODPLAIN STUDY.
12. WETLANDS HAVE BEEN DELINEATED AND ARE LOCATED ON THE SUBJECT PROPERTIES. THESE WETLANDS WILL BE IMPACTED WITH THIS SPECIAL EXCEPTION. THESE WETLANDS HAVE BEEN CONFIRMED BY THE U.S. ARMY CORPS OF ENGINEER. A PERMIT WILL BE FILED WITH THE U.S. ARMY CORPS OF ENGINEERS PRIOR TO THE START OF LAND DISTURBING ACTIVITY. MITIGATION WILL NOT BE REQUIRED DUE TO LIMITED AMOUNT OF DISTURBANCE TO THE WETLANDS.
13. THERE IS NOT RESOURCE PROTECTION AREA (RPA) LOCATED WITHIN THE SUBJECT PROPERTIES. HOWEVER, RPA IS PRESENT ON PARCEL 49-2 41 F TO THE SOUTH. RPA MAPPING IS BASED ON FAIRFAX COUNTY INFORMATION REVISED 08.01.05 AND PREPARED BY THE DEPARTMENT OF INFORMATION TECHNOLOGY, ENTERPRISE SERVICE DIVISION-GEOGRAPHIC INFORMATION SERVICES.
14. STORMWATER MANAGEMENT IS SHOWN HEREON ON SHEETS 6 AND 7 IN THE FORM OF A STORMFILTER (QUALITY) AND UNDERGROUND DETENTION (QUANTITY). THE SUPPORTING COMPUTATIONS ARE PRESENTED ON SHEETS 8-9.
15. THERE ARE EXISTING UTILITY AND DRAINAGE EASEMENTS ON THE SUBJECT PROPERTIES SHOWN ON SHEET 3. THE LOCATION OF THE EASEMENTS SHOWN HEREON ARE TAKEN FROM TAX RECORDS AND/OR DEEDS AND OTHER PUBLIC INFORMATION. A TITLE REPORT WAS NOT FURNISHED AT THE TIME OF TOPOGRAPHICAL SURVEY. THEREFORE, NOT ALL EASEMENTS OF RECORD MAY BE SHOWN HEREON.
16. PURSUANT TO PAR. 3, 4 & 14 OF SECT. 13-305 OF THE ZONING ORDINANCE, A MODIFICATION OF THE TRANSITIONAL SCREENING AND BARRIER REQUIREMENTS ARE HEREBY REQUESTED IN FAVOR OF THAT SHOWN HEREON. SEE SHEET 12.
17. NOT ALL UNDERGROUND UTILITIES ARE SHOWN. UNDERGROUND UTILITIES WHICH ARE SHOWN ARE APPROXIMATE ONLY, CONTRACTOR SHALL VERIFY DEPTH, TYPE, AND LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.
18. BASED ON HISTORICAL AND ARCHEOLOGICAL INVESTIGATIONS PERFORMED, THERE ARE NO GRAVES LOCATED ON THE SUBJECT PROPERTY.
19. EXCEPT AS QUALIFIED ON THIS SHEET, THE PROPOSED DEVELOPMENT CONFORMS TO ALL CURRENT APPLICABLE LAND DEVELOPMENT ORDINANCES AND ADOPTED STANDARDS.
20. A DEVIATION FROM THE TREE PRESERVATION TARGET IS BEING REQUESTED. SEE WAIVER REQUEST THIS SHEET.
21. ANY TREE THAT IS IMPROPERLY PRUNED SO AS TO CAUSE DISEASE OR DEATH, AS DETERMINED BY THE URBAN FOREST MANAGEMENT DIVISION, OR REMOVED TO AVOID CONFLICTS WITH THE MAXIMUM 14 FT. HEIGHT RESTRICTION OF THE NERC AND FERC STANDARDS, SHALL BE REPLACED BY THE APPLICANT.

LANDSCAPING WAIVER REQUESTS

Dewberry

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8401 Arlington Boulevard
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703.849.0100
703. 849.0118 fax
www.dewberry.com

April 2, 2015

James Patteson, Director
Fairfax County Department of Public Works and Environmental Services
12055 Government Center Parkway
Suite 659
Fairfax VA 22035

RE: Tax Map 49-2 ((1)) 151 and 49-2 ((12)) 0001A

- Request for a Tree Preservation Target Deviation
- Request for a Modification of the 10-Year Tree Canopy Requirement

Dear Mr. Patteson:

May this letter serve as a request for:

- A deviation from the Tree Preservation Target as provided for in the provisions set forth in Sect. 12-0508 of the Public Facilities Manual (PFM)
- A modification of the 10-Year Tree Canopy Requirement as provided for in the provisions set forth in Sect. 12-0513 of the Public Facilities Manual (PFM)

The proposed development program at issue is located on the properties referenced as 49-2 ((1)) 151 and 49-2 ((12)) 0001A. It is located south of Shreve Road and west of the Holly Manor Drive subdivision. The properties (7.15 AC) are currently zoned to the R-3 District and are the subject of a Special Exception, a copy of which is attached for your reference. The pending Special Exception has been filed to allow for the expansion of an existing electrical substation on the site.

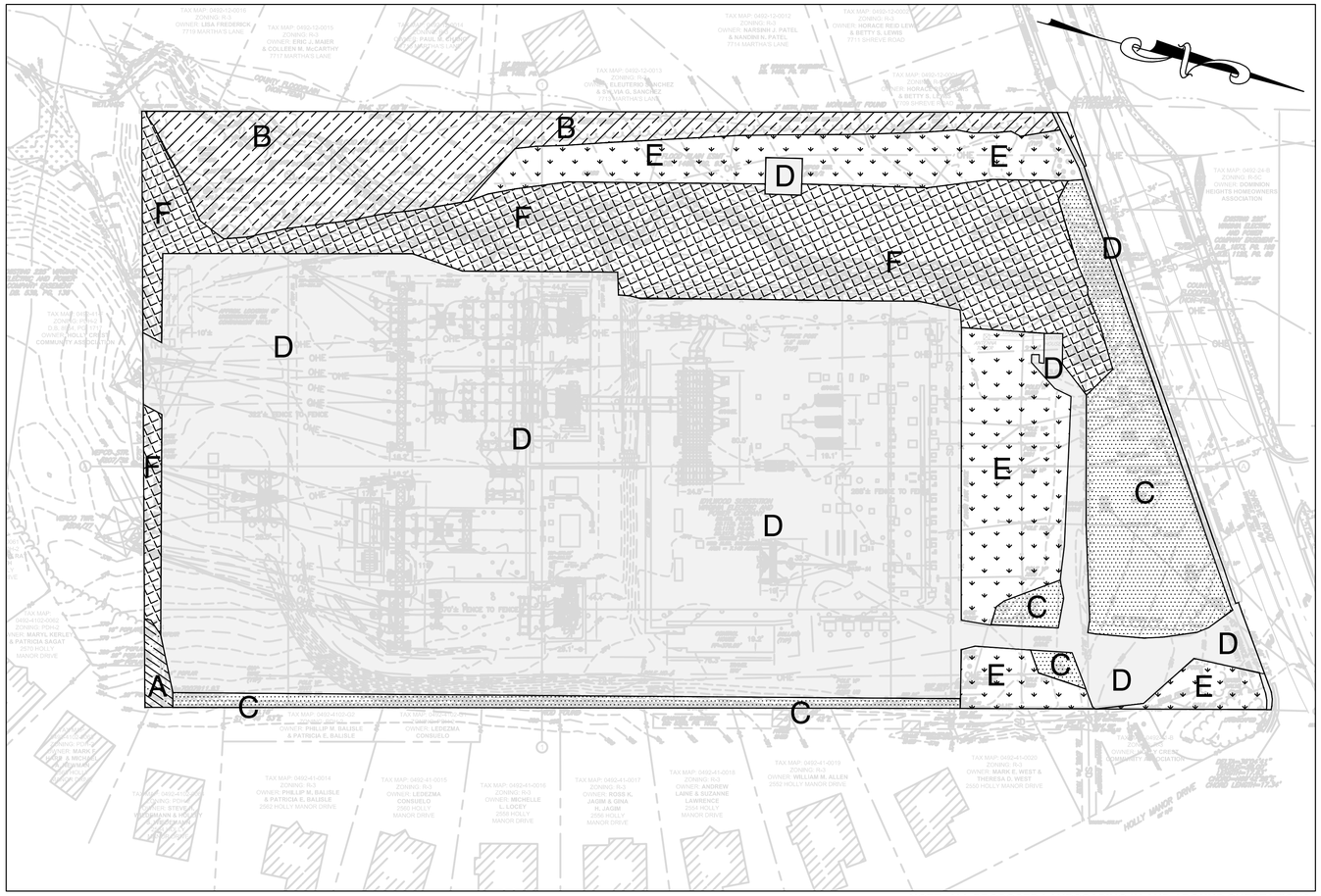
Based on the provisions set forth in Sect. 12-0508 of the PFM and more particularly the calculations set forth in Table 12.3, copy attached, 12,501 square feet is the requisite Tree Preservation Target. A deviation from the Tree Preservation Target requirement is requested, for as demonstrated by the attached copy of the proposed development program, the clearing and grading, and provision of utilities for the development program for an electrical substation will preclude the accommodation of the Tree Preservation Target. The Federal Energy Regulatory Commision (FERC) and North American Electric Reliability Corporation (NERC) standards for tree preservation at substations does not allow for large trees to remain in and around the substation and transmission lines. It is our judgment that the proposed development program is a reasonable development program for the subject property which is zoned to the R-3 District.

Based on the provisions set forth in Sect. 12-0513.2, a modification of the 10-year tree canopy requirement is requested, for as demonstrated by the attached copy of the proposed development program, the clearing and grading, and provision of utilities for the development program for an electrical substation will limit the planting of trees in and around the substation. The Federal Energy Regulatory Commision (FERC) and North American Electric Reliability Corporation (NERC) standards for tree preservation at substations does not allow for large trees to be planted in and around the substation and transmission lines. The Dominion Forestry Coordinator for this region has determined that maximum allowable mature tree heights for the majority of the site are limited to between 10' and 14' by reviewing the maximum sag rating and radial distances for the sections of power line on this site. Under the NERC Standard, Dominion must adhere to a "Defense in Depth" strategy that ensures layers of protection in place to prevent an outage. The tree height limitations are part of adherence to the NERC Standards. Strict application of the tree canopy requirements for the R-3 district (25%) would reduce the usable area of the property due to the equipment and substation layout and would cause an unreasonable or unnecessary hardship to the applicant. The tree canopy calculations (Table 12.10), included with this application proposes approximately 50,415 SF of proposed tree planting, which equals 16.5% tree canopy coverage of the adjusted gross site area of 305,861± SF. It is our judgment that the proposed development program is a reasonable development program for the subject property.

We trust that this statement is sufficient to support our request for a deviation from the Tree Preservation Target for the development program proposed for the subject property. Should you have any questions or the need for additional information, please contact me at 703-849-0144 or jcena@dewberry.com.

Sincerely,

Janice M. Cena, PLA, CA
Senior Landscape Architect
ISA Certified Arborist



EXISTING VEGETATION INVENTORY

KEY	COVER TYPE	PRIMARY SPECIES	SUCCESSIONAL STAGES	CONDITION	ACREAGE
A	UPLAND FOREST	POPLAR	SUB-CLIMAX	GOOD TO FAIR	0.02± AC
B	BOTTOMLAND FOREST	GUM, POPLAR	SUB-CLIMAX	GOOD TO FAIR	0.58± AC
C	LANDSCAPED TREE CANOPY	OAK, CEDAR, POPLAR	N/A	GOOD TO FAIR	0.55± AC
D	DEVELOPED LAND	N/A	N/A	N/A	4.17± AC
E	MAINTAINED GRASSLAND	N/A	N/A	N/A	0.74± AC
F	OPEN FIELD	N/A	N/A	N/A	1.07± AC
				TOTAL ACREAGE:	7.13± AC

EXISTING VEGETATION MAP

Scale: 1"=50'

NOTE: ALL PROPOSED LANDSCAPING IN AND AROUND SUBSTATIONS AND TRANSMISSION LINES ARE SUBJECT TO FEDERAL ENERGY REGULATORY COMMISSION (FERC) AND NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION (NERC) STANDARDS AND REGULATIONS.

TREE PRESERVATION CALCULATIONS

Table 12.3 Tree Preservation Target Calculations and Statement		
A	Pre-development area of existing tree canopy (from Existing Vegetation Map) =	1.15 AC
B	Percentage of gross site area covered by existing tree canopy =	16.1%
C	Percentage of 10-year tree canopy required for site (see Table 12.4) =	25% = 77,920 SF
D	Percentage of the 10-year tree canopy requirement that should be met through tree preservation =	16.1% = 12,545 SF
E	Proposed percentage of canopy requirement that will be met through tree preservation =	0
F	Has the Tree Preservation Target minimum been met?	Provide Yes or No: NO
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 § 12-0507.3 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.	SEE REQUEST TO DEVIATE, THIS SHEET
H	If step G requires a narrative, it shall be prepared in accordance with § 12-0507.4	
I	Place this information prior to the 10-year Tree Canopy Calculations as per instructions in Table 12.12.	

TABULATION FOR SUBSTATION SPECIAL EXCEPTION AREA:

–EXISTING/PROPOSED ZONING: R–3; R–3
–EXISTING/PROPOSED TOTAL LAND AREA: 7.15AC; 7.15AC
–MAXIMUM FLOOR AREA RATIO PERMITTED: EXEMPT
PROPOSED FLOOR AREA RATIO: 0.043
–MAXIMUM GROSS FLOOR AREA PERMITTED: EXEMPT
PROPOSED GROSS FLOOR AREA: 13,504 SF
–PARKING SPACES PROVIDED: 0
–MAXIMUM BUILDING HEIGHT PERMITTED: EXEMPT
MAXIMUM BUILDING HEIGHT PROPOSED: 32± FT
–OPEN SPACE REQUIRED: 25% (1.79AC)
OPEN SPACE PROVIDED: 33% (2.39AC)

10-YEAR TREE CANOPY CALCULATIONS

Table 12.10 10-year Tree Canopy Calculation Worksheet		
A. Tree Preservation Target and Statement		
	SEE SHEET C-6	
B. Tree Canopy Requirement		
B1	Identify gross site area =	311,682 SF
B2	Subtract area dedicated to parks, road frontage, and	5,821 SF
B3	Subtract area of exemptions =	0 SF
B4	Adjusted gross site area (B1-B2) =	305,861 SF
B5	Identify site's zoning and/or use	R-3
B6	Percentage of 10-year tree canopy required =	25%
B7	Area of 10-year tree canopy required (B4 x B6) =	76,465 SF
B8	Modification of 10-year Tree Canopy Requirements requested?	NO
B9	If B8 is yes, then list plan sheet where modification request is located	
C. Tree Preservation		
C1	Tree Preservation Target Area =	12,545 SF
C2	Total canopy area meeting standards of 12-0400 =	0
C3	C2 x 1.25 =	0
C4	Total canopy area provided by unique or valuable forest or woodland communities =	0
C5	C4 x 1.5 =	0
C6	Total of canopy area provided by "Heritage," "Memorial," "Specimen," or "Street" trees =	0
C7	C6 x 1.5 to 3.0 =	0
C8	Canopy of trees within Resource Protection Areas and 100-year floodplains =	0
C9	C8 x 1.0 =	0
C10	Total of C3, C5, C7 and C9 =	0

D. Tree Planting		
D1	Area of canopy to be met through tree planting (B7-C10) =	76,465 SF
D2	Area of canopy planted for air quality benefits =	0 SF
D3	x 1.5 =	0 SF
D4	Area of canopy planted for energy conservation =	0
D5	x 1.5 =	0
D6	Area of canopy planted for water quality benefits =	0 SF
D7	x 1.25 =	0 SF
D8	Area of canopy planted for wildlife benefits =	0 SF
D9	x 1.5 =	0 SF
D10	Area of canopy provided by native trees =	0
D11	x 1.5 =	0
D12	Area of canopy provided by improved cultivars and varieties =	0
D13	x 1.5 =	0
D14	Area of canopy provided through tree seedlings =	0
	x 1.0 =	0
D15	Area of canopy provided through native shrubs or woody seed mix =	0
	x 1.0 =	0
D16	Percentage of D14 represented by D15 =	NA
D16a	Area of canopy provided with no multipliers =	50,415 SF
D17	Total of canopy area provided through tree planting =	50,415 SF
D18	Is an offsite planting relief requested?	NO
D19	Tree Bank or Tree Fund?	NO
D20	Canopy area to be requested to be provided through offsite banking or tree fund	NA
D21	Amount to be deposited into the Tree Preservation and Planting Fund	NA
E. Total of 10-year Tree Canopy Provided		
E1	Total of canopy area provided through tree preservation (C10) =	0
E2	Total of canopy area provided through tree planting (D17) =	50,415 SF
E3	Total of canopy area provided through offsite mechanism (D19) =	0
E4	Total of 10-year Tree Canopy Provided =	50,415 SF

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Idylwood Substation
SE 2014-PR-032
SPECIAL EXCEPTION PLAT
2232 PLAN
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SEAL

COMMONWEALTH OF VIRGINIA
BENJAMIN K. JACKSON
Lic. No. 049015
04/06/15
PROFESSIONAL ENGINEER

KEY PLAN

SCALE
0' 50' 100'
GRAPHIC SCALE

No.	DATE	BY	Description

REVISIONS

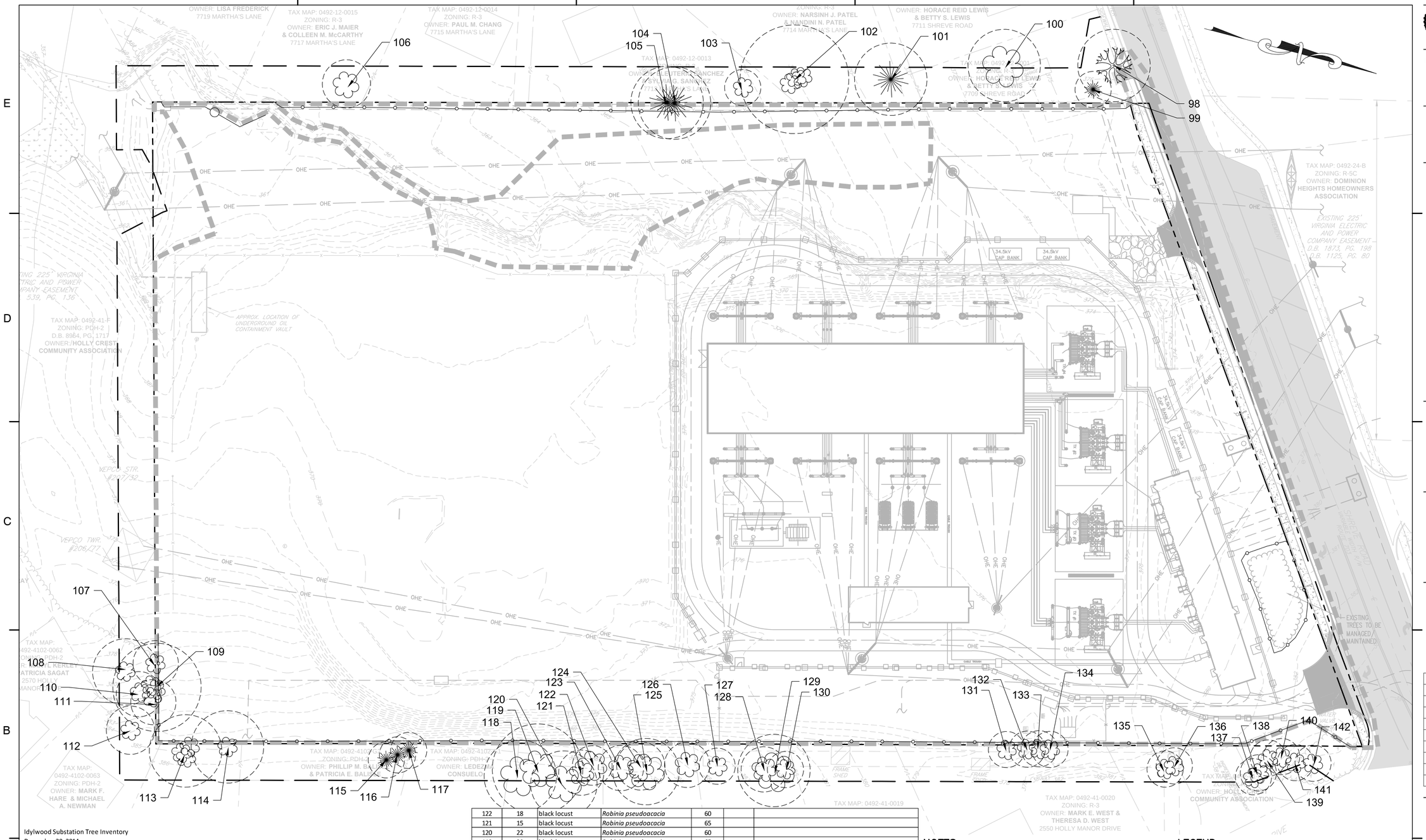
DRAWN BY: LM
APPROVED BY: JC
CHECKED BY: KWW
DATE: APRIL 2015

TITLE
NOTES, TABULATION, & EXISTING VEGETATION MAP

PROJECT NO. 50058411

14A

SHEET NO. 15 OF 21



Idylwood Substation Tree Inventory
December 30, 2014

Tree #	Size (DBH)	Common Name	Scientific Name	Condition	Remove	Notes
142	12	blue spruce	*Picea pungens*	80		
141	12	leyland cypress	*x Cupressocyparis leylandii*	70		
140	12	leyland cypress	*x Cupressocyparis leylandii*	70		
139	12	leyland cypress	*x Cupressocyparis leylandii*	70		
138	12	leyland cypress	*x Cupressocyparis leylandii*	70		
137	12	leyland cypress	*x Cupressocyparis leylandii*	70		
136	12	leyland cypress	*x Cupressocyparis leylandii*	70		
135	12	leyland cypress	*x Cupressocyparis leylandii*	70		
134	12	leyland cypress	*x Cupressocyparis leylandii*	70		
133	12	leyland cypress	*x Cupressocyparis leylandii*	70		
132	12	leyland cypress	*x Cupressocyparis leylandii*	70		
131	12	leyland cypress	*x Cupressocyparis leylandii*	70		
130	12	red maple	*Acer rubrum*	75		
129	24	red maple	*Acer rubrum*	70		
128	15	red maple	*Acer rubrum*	70		
127	12	cherry	*Prunus species*	65		
126	15	cherry	*Prunus species*	70		
125	22	black locust	*Robinia pseudoacacia*	65		
124	16	red maple	*Acer rubrum*	80		
123	15	black locust	*Robinia pseudoacacia*	60		
122	18	black locust	*Robinia pseudoacacia*	60		
121	15	black locust	*Robinia pseudoacacia*	65		
120	22	black locust	*Robinia pseudoacacia*	60		
119	30	black locust	*Robinia pseudoacacia*	65		
118	24	black locust	*Robinia pseudoacacia*	65		
117	12	white pine	*Pinus strobus*	60		
116	12	white pine	*Pinus strobus*	60		
115	12	white pine	*Pinus strobus*	60		
114	24	red maple	*Acer rubrum*	80		may be jointly owned, no grade change proposed
113	24	tulip poplar	*Liriodendron tulipifera*	70		twin, no grade change proposed within crz
112	16	tulip poplar	*Liriodendron tulipifera*	70		
111	14	black cherry	*prunus serotina*	60		
110	15/15	tulip poplar	*Liriodendron tulipifera*	65		twin, may be jointly owned, no grade change within crz
109	15	tulip poplar	*Liriodendron tulipifera*	80		may be jointyly owned, no grade change proposed
108	22	tulip poplar	*Liriodendron tulipifera*	70		
107	15	tulip poplar	*Liriodendron tulipifera*	70		may be jointly owned, no grade change proposed
106	16	tulip poplar	*Liriodendron tulipifera*	70		
105	24	white pine	*Pinus strobus*	80		no grade change proposed within crz
104	24	white pine	*Pinus strobus*	80		no grade change proposed within crz
103	12	red maple	*Acer rubrum*	65		
102	12/12/14	red maple	*Acer rubrum*	75		triple trunk
101	24	white pine	*Pinus strobus*	60		
100	24	leyland cypress	*x Cupressocyparis leylandii*	75		
99	12	white pine	*Pinus strobus*	75		
98	24	red oak	*Quercus rubra*	80		

NOTES

1. TREE INVENTORY AND CONDITION EVALUATION PERFORMED BY JANICE M. CENA (MA–4469A) ON DECEMBER 17, 2014.
2. TREE CONDITION EVALUATION WAS PERFORMED FROM THE SUBSTATION PROPERTY FOR ALL OFFSITE TREES.
3. CONDITION EVALUATION PER 9TH EDITION OF THE GUIDE FOR PLANT APPRAISAL, PUBLISHED BY THE ISA.
4. CRITICAL ROOT ZONE (CRZ) IS EQUAL TO 1 FOOT OF RADIUS FOR EVER INCH CALIPER.
5. TREE LOCATIONS ARE APPROXIMATE AND WERE LOCATED BY GPS FROM THE SUBSTATION PROPERTY.

LEGEND

- WXYZ — EX. EVERGREEN TREE TO REMAIN
- WXYZ — EX. DECIDUOUS TREE TO REMAIN
- EX. TREE TO BE REMOVED
- EX. TREE CRITICAL ROOT ZONE (CRZ)
- TREE PROTECTION FENCING
- LIMITS OF CLEARING AND GRADING
- 25' OFFSET FROM LOCG

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03/07/15
PROFESSIONAL ENGINEER

KEY PLAN

SCALE

0' 30' 60'
GRAPHIC SCALE

No.	DATE	BY	Description

REVISIONS

DRAWN BY	LM
APPROVED BY	JC
CHECKED BY	KWW
DATE	APRIL 2015

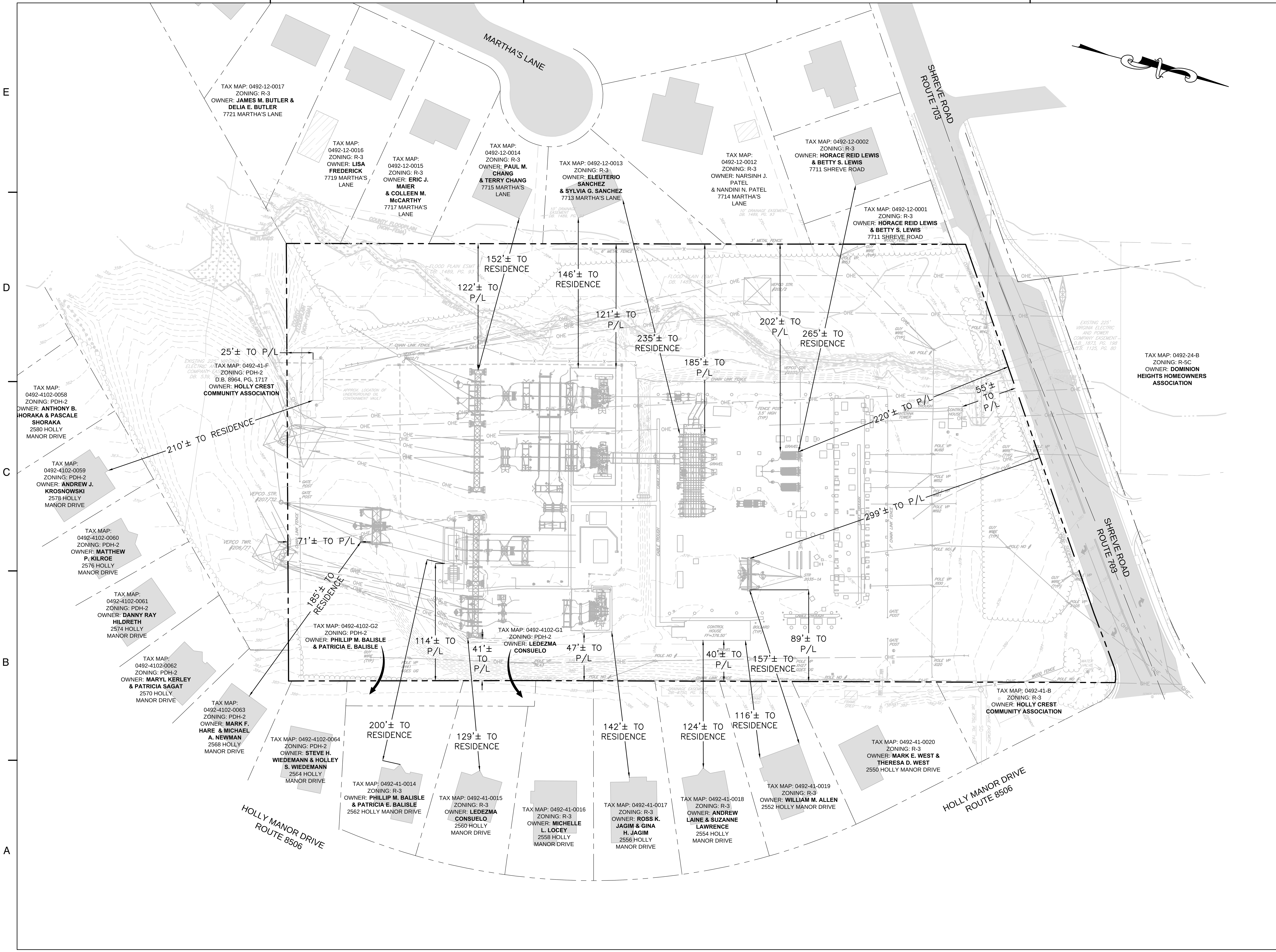
TITLE

OFF-SITE TREE SURVEY

PROJECT NO. 50058411

14B

SHEET NO. 16 OF 21



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Lic. No. 049015
04/06/15
PROFESSIONAL ENGINEER

KEY PLAN

SCALE
0' 40' 80'
GRAPHIC SCALE

No.	DATE	BY	Description

REVISIONS

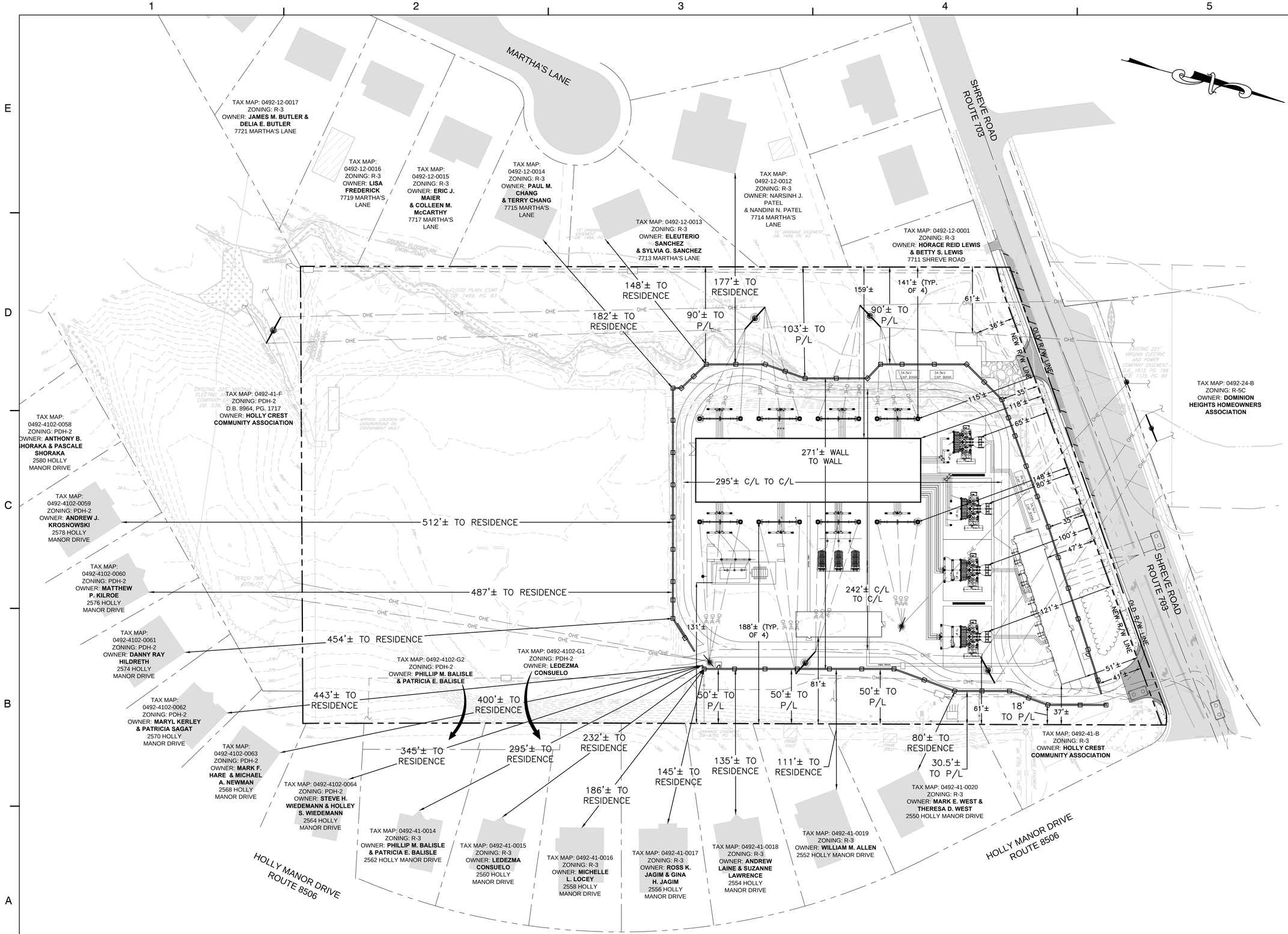
DRAWN BY BKJ
APPROVED BY KWW
CHECKED BY KWW
DATE APRIL 2015

TITLE
EXISTING DIMENSION PLAN FROM ADJACENT PROPERTY LINES & RESIDENCES

PROJECT NO. 50058411

15

SHEET NO. 17 OF 21



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KEY PLAN

SCALE

0' 40' 80'
GRAPHIC SCALE

No.	DATE	BY	Description

REVISIONS

DRAWN BY	BKJ
APPROVED BY	KWW
CHECKED BY	KWW
DATE	APRIL 2015

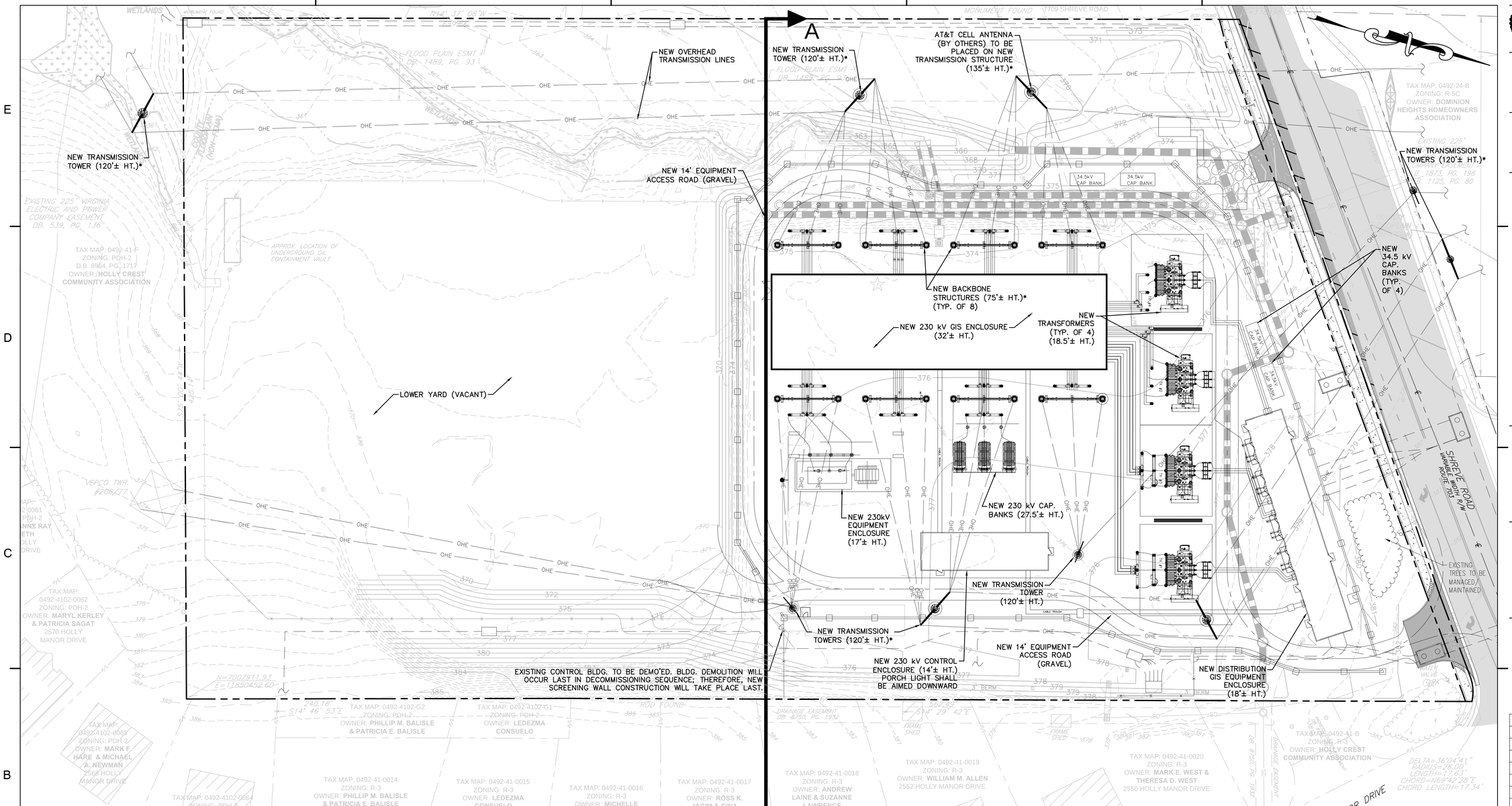
TITLE

PROPOSED DIMENSION PLAN FROM ADJACENT PROPERTY LINES & RESIDENCES

PROJECT NO. 50058411

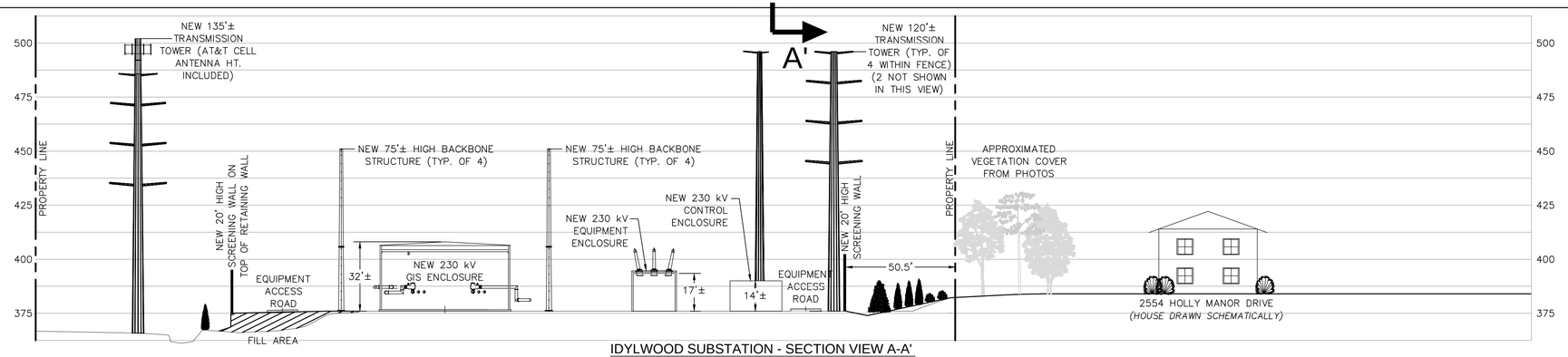
16

SHEET NO. 18 OF 21



IDYLWOOD SUBSTATION - PLAN VIEW

SCALE: 1" = 30'



IDYLWOOD SUBSTATION - SECTION VIEW A-A'

SCALES: H: 1" = 30', V: 1" = 30'

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KEY PLAN

SCALE

0' 30' 60'
GRAPHIC SCALE

No.	DATE	BY	Description

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CHECKED BY	KWW
DATE	APRIL 2015

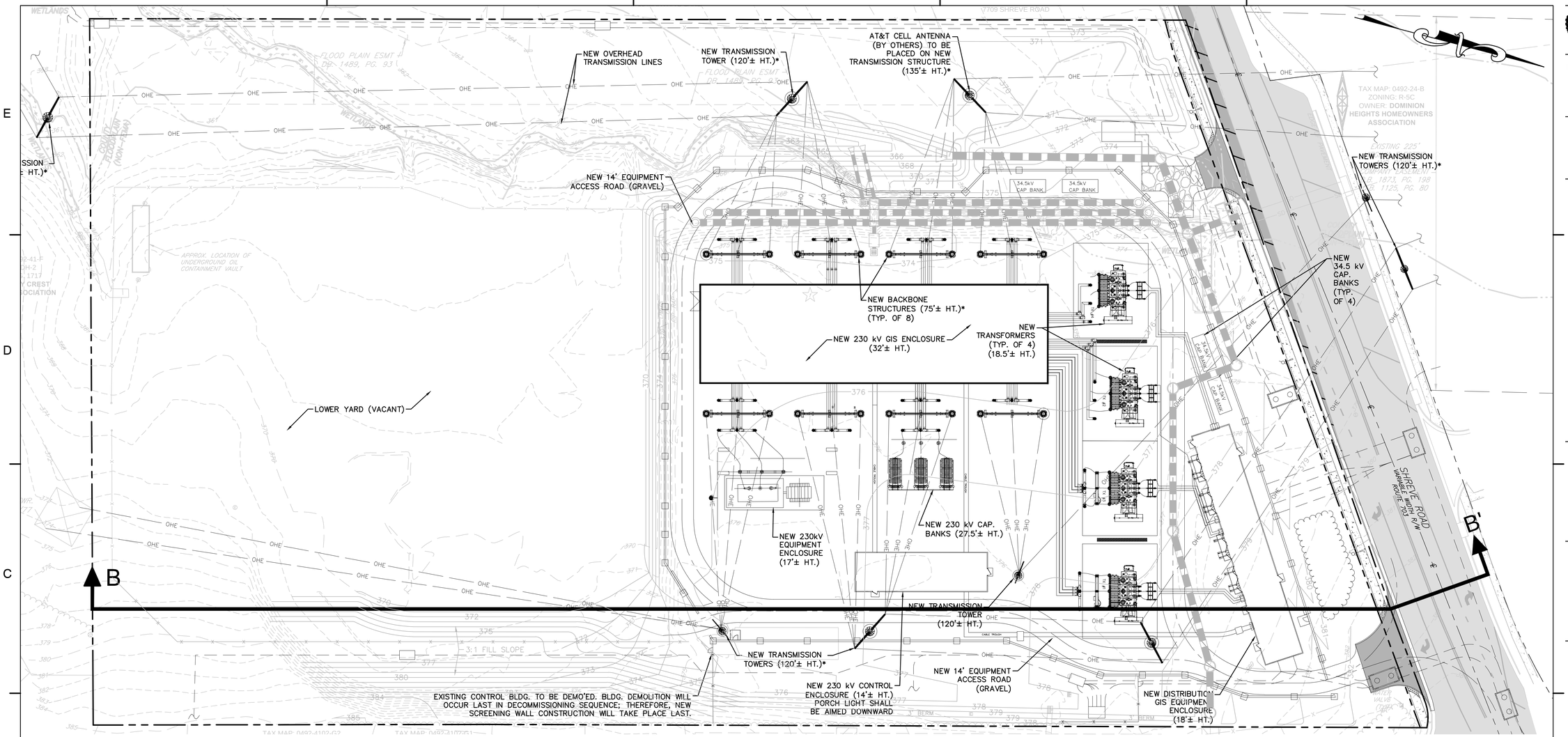
TITLE

SUBSTATION SECTION VIEW A-A'

PROJECT NO. 50058411

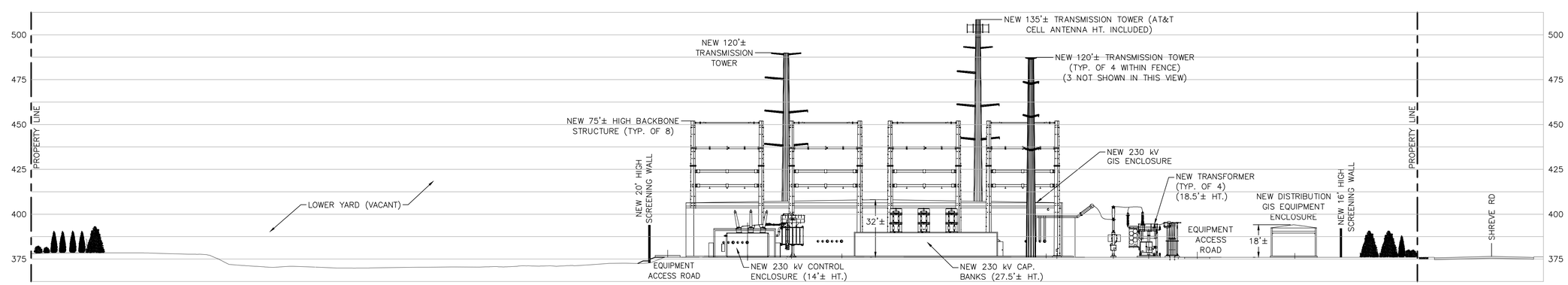
17

SHEET NO. 17 OF 19



IDYLWOOD SUBSTATION - PLAN VIEW

SCALE: 1" = 30'



IDYLWOOD SUBSTATION - SECTION VIEW B-B'

SCALES: H: 1" = 30', V: 1" = 30'

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SCALE

0' 30' 60'
GRAPHIC SCALE

No.	DATE	BY	Description

REVISIONS

DRAWN BY	BKJ
APPROVED BY	KWW
CHECKED BY	KWW
DATE	APRIL 2015

TITLE

SUBSTATION SECTION VIEW B-B'

PROJECT NO. 50058411

18

SHEET NO. 18 OF 19

FORESTRY DEVELOPMENT CONDITIONS:

TREE PRESERVATION:

THE APPLICANT SHALL SUBMIT A TREE PRESERVATION PLAN AND NARRATIVE AS PART OF THE FIRST AND ALL SUBSEQUENT SITE PLAN SUBMISSIONS. THE PRESERVATION PLAN AND NARRATIVE SHALL BE PREPARED BY A CERTIFIED ARBORIST OR A REGISTERED CONSULTING ARBORIST, AND SHALL BE SUBJECT TO THE REVIEW AND APPROVAL OF THE URBAN FOREST MANAGEMENT DIVISION, DPWES. THE TREE PRESERVATION PLAN SHALL INCLUDE A TREE INVENTORY THAT IDENTIFIES THE LOCATION, SPECIES, CRITICAL ROOT ZONE, SIZE, CROWN SPREAD AND CONDITION ANALYSIS PERCENTAGE RATING FOR ALL INDIVIDUAL TREES TO BE PRESERVED, AS WELL AS ALL ON AND OFF-SITE TREES, LIVING OR DEAD WITH TRUNKS 12 INCHES IN DIAMETER AND GREATER (MEASURED AT 4 ½ -FEET FROM THE BASE OF THE TRUNK OR AS OTHERWISE ALLOWED IN THE LATEST EDITION OF THE GUIDE FOR PLANT APPRAISAL PUBLISHED BY THE INTERNATIONAL SOCIETY OF ARBORICULTURE) LOCATED WITHIN 25 FEET OF THE LIMITS OF CLEARING AND GRADING WITHIN THE UNDISTURBED AREA. THE TREE PRESERVATION PLAN SHALL PROVIDE FOR THE PRESERVATION OF THOSE AREAS SHOWN FOR TREE PRESERVATION, THOSE AREAS OUTSIDE OF THE LIMITS OF CLEARING AND GRADING SHOWN ON THE SE AND THOSE ADDITIONAL AREAS IN WHICH TREES CAN BE PRESERVED AS A RESULT OF FINAL ENGINEERING. THE TREE PRESERVATION PLAN AND NARRATIVE SHALL INCLUDE ALL ITEMS SPECIFIED IN PFM 12-0507 AND 12-0509. SPECIFIC TREE PRESERVATION ACTIVITIES THAT WILL MAXIMIZE THE SURVIVABILITY OF ANY TREE IDENTIFIED TO BE PRESERVED, SUCH AS: CROWN PRUNING, ROOT PRUNING, MULCHING, FERTILIZATION, AND OTHERS AS NECESSARY, SHALL BE INCLUDED IN THE PLAN.

TREE PRESERVATION WALK-THROUGH:

THE APPLICANT SHALL RETAIN THE SERVICES OF A CERTIFIED ARBORIST OR REGISTERED CONSULTING ARBORIST, AND SHALL HAVE THE LIMITS OF CLEARING AND GRADING MARKED WITH A CONTINUOUS LINE OF FLAGGING PRIOR TO THE WALK-THROUGH MEETING. DURING THE TREE-PRESERVATION WALK-THROUGH MEETING, THE APPLICANT'S CERTIFIED ARBORIST OR REGISTERED CONSULTING ARBORIST SHALL WALK THE LIMITS OF CLEARING AND GRADING WITH AN UFMD, DPWES, REPRESENTATIVE TO DETERMINE WHERE ADJUSTMENTS TO THE CLEARING LIMITS CAN BE MADE TO INCREASE THE AREA OF TREE PRESERVATION AND/OR TO INCREASE THE SURVIVABILITY OF TREES AT THE EDGE OF THE LIMITS OF CLEARING AND GRADING, AND SUCH ADJUSTMENT SHALL BE IMPLEMENTED. TREES THAT ARE IDENTIFIED AS DEAD OR DYING MAY BE REMOVED AS PART OF THE CLEARING OPERATION. ANY TREE THAT IS SO DESIGNATED SHALL BE REMOVED USING A CHAIN SAW AND SUCH REMOVAL SHALL BE ACCOMPLISHED IN A MANNER THAT AVOIDS DAMAGE TO SURROUNDING TREES AND ASSOCIATED UNDERSTORY VEGETATION. IF A STUMP MUST BE REMOVED, THIS SHALL BE DONE USING A STUMP-GRINDING MACHINE IN A MANNER CAUSING AS LITTLE DISTURBANCE AS POSSIBLE TO ADJACENT TREES AND ASSOCIATED UNDERSTORY VEGETATION AND SOIL CONDITIONS.

LIMITS OF CLEARING AND GRADING:

THE APPLICANT SHALL CONFORM STRICTLY TO THE LIMITS OF CLEARING AND GRADING AS SHOWN ON THE SE, SUBJECT TO ALLOWANCES SPECIFIED IN THESE PROFFERED CONDITIONS AND FOR THE INSTALLATION OF UTILITIES AND/OR TRAILS AS DETERMINED NECESSARY BY THE DIRECTOR OF DPWES, AS DESCRIBED HEREIN. IF IT IS DETERMINED NECESSARY TO INSTALL UTILITIES AND/OR TRAILS IN AREAS PROTECTED BY THE LIMITS OF CLEARING AND GRADING AS SHOWN ON THE SE, THEY SHALL BE LOCATED IN THE LEAST DISRUPTIVE MANNER NECESSARY AS DETERMINED BY THE UFMD, DPWES. A REPLANTING PLAN SHALL BE DEVELOPED AND IMPLEMENTED, SUBJECT TO APPROVAL BY THE UFMD, DPWES, FOR ANY AREAS PROTECTED BY THE LIMITS OF CLEARING AND GRADING THAT MUST BE DISTURBED FOR SUCH TRAILS OR UTILITIES.

TREE PRESERVATION FENCING:

ALL TREES SHOWN TO BE PRESERVED ON THE TREE PRESERVATION PLAN SHALL BE PROTECTED BY TREE PROTECTION FENCE. TREE PROTECTION FENCING IN THE FORM OF FOUR (4) FOOT HIGH, FOURTEEN (14) GAUGE WELDED WIRE ATTACHED TO SIX (6) FOOT STEEL POSTS DRIVEN EIGHTEEN (18) INCHES INTO THE GROUND AND PLACED NO FURTHER THAN TEN (10) FEET APART OR, SUPER SILT FENCE TO THE EXTENT THAT REQUIRED TRENCHING FOR SUPER SILT FENCE DOES NOT SEVER OR WOUND COMPRESSION ROOTS WHICH CAN LEAD TO STRUCTURAL FAILURE AND/OR UPROOTING OF TREES SHALL BE ERECTED AT THE LIMITS OF CLEARING AND GRADING AS SHOWN ON THE DEMOLITION, AND PHASE I & II EROSION AND SEDIMENT CONTROL SHEETS, AS MAY BE MODIFIED BY THE "ROOT PRUNING" PROFFER BELOW.

ALL TREE PROTECTION FENCING SHALL BE INSTALLED AFTER THE TREE PRESERVATION WALK-THROUGH MEETING BUT PRIOR TO ANY CLEARING AND GRADING ACTIVITIES, INCLUDING THE DEMOLITION OF ANY EXISTING STRUCTURES. THE INSTALLATION OF ALL TREE PROTECTION FENCING SHALL BE PERFORMED UNDER THE SUPERVISION OF A CERTIFIED ARBORIST, AND ACCOMPLISHED IN A MANNER THAT DOES NOT HARM EXISTING VEGETATION THAT IS TO BE PRESERVED. THREE (3) DAYS PRIOR TO THE COMMENCEMENT OF ANY CLEARING, GRADING OR DEMOLITION ACTIVITIES, BUT SUBSEQUENT TO THE INSTALLATION OF THE TREE PROTECTION DEVICES, THE UFMD, DPWES, SHALL BE NOTIFIED AND GIVEN THE OPPORTUNITY TO INSPECT THE SITE TO ENSURE THAT ALL TREE PROTECTION DEVICES HAVE BEEN CORRECTLY INSTALLED. IF IT IS DETERMINED THAT THE FENCING HAS NOT BEEN INSTALLED CORRECTLY, NO GRADING OR CONSTRUCTION ACTIVITIES SHALL OCCUR UNTIL THE FENCING IS INSTALLED CORRECTLY, AS DETERMINED BY THE UFMD, DPWES.

ROOT PRUNING:

THE APPLICANT SHALL ROOT PRUNE, AS NEEDED TO COMPLY WITH THE TREE PRESERVATION REQUIREMENTS OF THESE DEVELOPMENT CONDITIONS. ALL TREATMENTS SHALL BE CLEARLY IDENTIFIED, LABELED, AND DETAILED ON THE EROSION AND SEDIMENT CONTROL SHEETS OF THE SUBDIVISION PLAN SUBMISSION. THE DETAILS FOR THESE TREATMENTS SHALL BE REVIEWED AND APPROVED BY THE UFMD, DPWES, ACCOMPLISHED IN A MANNER THAT PROTECTS AFFECTED AND ADJACENT VEGETATION TO BE PRESERVED, AND MAY INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:

- ---ROOT PRUNING SHALL BE DONE WITH A TRENCHER OR VIBRATORY PLOW TO A DEPTH OF 18 INCHES.
- ---ROOT PRUNING SHALL TAKE PLACE PRIOR TO ANY CLEARING AND GRADING, OR DEMOLITION OF STRUCTURES.
- ---ROOT PRUNING SHALL BE CONDUCTED WITH THE SUPERVISION OF A CERTIFIED ARBORIST.
- ---AN UFMD, DPWES, REPRESENTATIVE SHALL BE INFORMED WHEN ALL ROOT PRUNING AND TREE PROTECTION FENCE INSTALLATION IS COMPLETE.

SITE MONITORING:

DURING AND CLEARING OR TREE/VEGETATION/STRUCTURE REMOVAL ON THE APPLICANT PROPERTY, A REPRESENTATIVE OF THE APPLICANT SHALL BE PRESENT TO MONITOR THE PROCESS TO ENSURE THAT THE ACTIVITIES ARE CONDUCTED AS PROFFERED AND AS APPROVED BY THE UFMD. THE APPLICANT SHALL RETAIN THE SERVICES OF A CERTIFIED ARBORIST OR REGISTERED CONSULTING ARBORIST TO MONITOR ALL CONSTRUCTION AND DEMOLITION WORK AND TREE PRESERVATION EFFORTS IN ORDER TO ENSURE CONFORMANCE WITH ALL TREE PRESERVATION PROFFERS, AND UFMD APPROVALS. THE MONITORING SCHEDULE SHALL BE DESCRIBED AND DETAILED IN THE LANDSCAPING AND TREE PRESERVATION PLAN, AND REVIEWED AND APPROVED BY THE UFMD, DPWES.

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COMMONWEALTH OF VIRGINIA
BENJAMIN K. JACKSON
Lic. No. 049015
04/06/15
PROFESSIONAL ENGINEER

KEY PLAN

SCALE

No.	DATE	BY	Description

REVISIONS

DRAWN BY	BKJ
APPROVED BY	KWW
CHECKED BY	KWW
DATE	APRIL 2015

TITLE

DEVELOPMENT CONDITIONS

PROJECT NO. 50058411

19

SHEET NO. 21 OF 21