

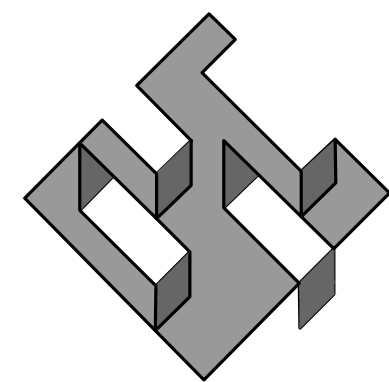
PRELIMINARY DEVELOPMENT SPECIAL USE PERMIT  
STAGE I  
HOFFMAN TOWN CENTER  
BLOCKS 4 & 5  
ALEXANDRIA, VIRGINIA

NARRATIVE DESCRIPTION OF DEVELOPMENT

THIS SITE IS BORDERED TO THE NORTH BY MILL ROAD; TO THE SOUTH AND EAST BY MANDEVILLE LANE; AND TO THE WEST BY STOVALL STREET.

THIS PROJECT CONSISTS OF THE DEVELOPMENT OF RESIDENTIAL MULTI-FAMILY UNITS, CONDOMINIUMS, SENIOR LIVING, GROUND AND 2ND LEVEL RETAIL SPACE INCLUDING GROCERY.

SITE ACCESS: THE PRIMARY ACCESS TO THE SITE WILL BE FROM MILL ROAD, STOVALL STREET AND MANDEVILLE LANE.



PREPARED BY:

**christopher consultants**

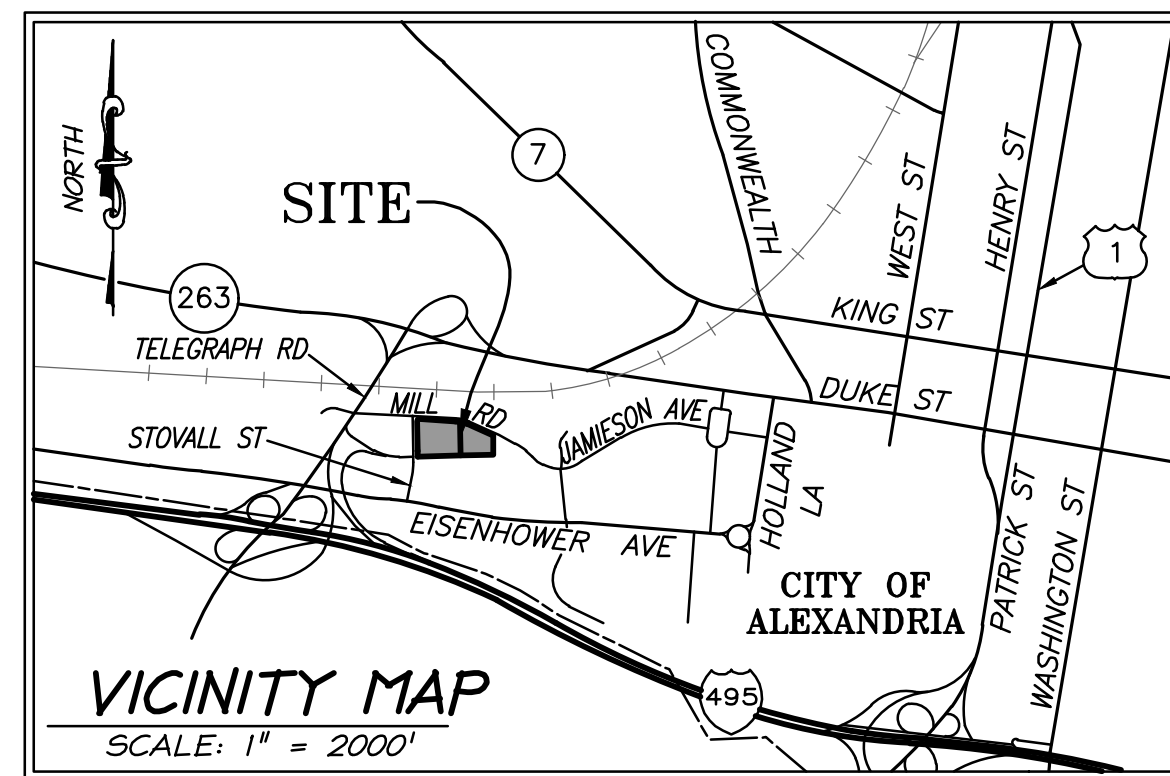
engineering · surveying · land planning  
christopher consultants, ltd.  
9900 main street (fourth floor) · fairfax, va 22031-3907  
703.273.6820 · fax 703.273.7636

SPECIAL USE PERMITS/ZONING MODIFICATIONS/WAIVERS

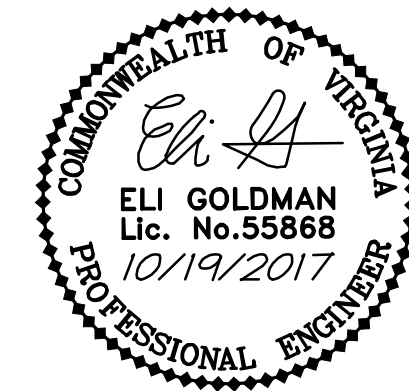
1. STAGE I DEVELOPMENT SPECIAL USE PERMIT WITH SITE PLAN.
2. AMENDMENT TO THE CDD #2 DEVELOPMENT CONCEPT PLAN.
3. VACATION OF RIGHT-OF-WAY.
4. TIER 3 TRANSPORTATION MANAGEMENT PLAN SPECIAL USE PERMIT

COMPLETE STREETS

	New	Upgraded
Crosswalks (number)		
Standard	0	3
High Visibility	0	7
Curb Ramps	2	12
Sidewalks (LF)	0	1,864
Bicycle Parking (number of spaces)		
Public/Visitor	TBD	N/A
Private/Garage	TBD	N/A
Bicycle / Side Paths (LF)	810	N/A
Pedestrian Signals	0	0



DATE	REVISION
02-24-2017	CONCEPT II SUBMISSION
06-02-2017	CONCEPT III SUBMISSION
07-28-2017	CONCEPT IV SUBMISSION
09-15-2017	PRELIMINARY DSUP STAGE I
10-19-2017	COMPLETENESS - DSUP STAGE I



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C502	TURNING MOVEMENTS
C503	TURNING MOVEMENTS
C504	TURNING MOVEMENTS - LEVELS 1 & 2
C505	TURNING MOVEMENTS - LEVELS 4 & 5
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L7.0	DETAILS - PLANTING
L8.0	PUBLIC ART NARRATIVE

<b>APPROVED</b>		
<b>SPECIAL USE PERMIT NO. 2016-0043</b>		
DEPARTMENT OF PLANNING & ZONING		
DIRECTOR _____	DATE _____	
DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES		
SITE PLAN NO. _____		
DIRECTOR _____	DATE _____	
CHAIRMAN, PLANNING COMMISSION _____		
DATE RECORDED _____		
INSTRUMENT NO. _____	DEED BOOK NO. _____	PAGE NO. _____

OWNER  
HOFFMAN BUILDING II, LLC  
HOFFMAN FAMILY, LLC  
2034 EISENHOWER AVENUE, SUITE 290  
ALEXANDRIA, VA 22331  
(703) 960-4700

APPLICANT  
S/C EISENHOWER, LLC  
7200 WISCONSIN AVENUE  
SUITE 700  
BETHESDA, MD 20814  
(301) 913-9610

CIVIL ENGINEER  
christopher consultants, ltd.  
9900 MAIN STREET  
FOURTH FLOOR  
FAIRFAX, VIRGINIA 22031  
(703) 273-6820

TRAFFIC ENGINEER  
GOROVE/SLADE ASSOCIATES, INC.  
1140 CONNECTICUT AVE, NW  
SUITE 600  
WASHINGTON, DC 20036  
(202) 296-8625

ATTORNEY  
LAND, CARROLL,  
& BLAIR, PC.  
524 KING STREET  
ALEXANDRIA, VA 22314  
(703) 836-1000

ARCHITECT  
COOPER CARRY  
625 NORTH WASHINGTON STREET  
SUITE 200  
ALEXANDRIA, VA. 22314  
(703) 519-7127

LANDSCAPE ARCHITECT  
LANDDESIGN  
200 SOUTH PEYTON STREET  
ALEXANDRIA, VA 22314  
(703) 549-7784



GENERAL NOTES

1. THE BOUNDARY INFORMATION FOR THE SUBJECT SITE IS BASED ON A CURRENT FIELD SURVEY PREPARED BY THIS FIRM IN MARCH 2016.
2. EXISTING SITE INFORMATION FOR THE SUBJECT SITE IS BASED ON A CURRENT FIELD SURVEY PREPARED BY THIS FIRM IN MARCH 2016 AND APPROVED PLANS.
3. THE SUBJECT SITE IS LOCATED ON CITY OF ALEXANDRIA ASSESSMENT MAP 072.04-03-25 AND 072.04-03-28, ZONED CDD #2.
4. THE PROPERTY SHOWN HEREON IS LOCATED ON F.E.M.A. MAP COMMUNITY PANEL NUMBER 515519 0037 E, REVISED JUNE 16, 2011, ZONE X, AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
5. OWNER: HOFFMAN BUILDING II, LLC  
HOFFMAN FAMILY, LLC  
INSTRUMENT NO. 150015496
6. IN ACCORDANCE WITH THE CITY OF ALEXANDRIA'S MARINE CLAY AREAS MAP DATED NOVEMBER 1976, THERE ARE NO AREAS OF MARINE CLAY LOCATED IN THE VICINITY OF THIS SITE.
7. IN ACCORDANCE WITH THE RESOURCE PROTECTION AREAS MAP ADOPTED JUNE 12, 2004 BY THE CITY COCIL OF ALEXANDRIA, THERE ARE NO RESOURCE PROTECTION AREAS LOCATED ON THIS PROPERTY.
8. THIS PROJECT IS NOT LOCATED IN A COMBINED SEWER AREA.
9. TO THE BEST OF OUR KNOWLEDGE THERE ARE NO KNOWN UNDERGROUND STORAGE TANKS CURRENTLY LOCATED AT THE PROPERTY. SHOULD ANY UNANTICIPATED UNDERGROUND STORAGE TANKS OR DRUMS BE ENCOUNTERED AT THE SITE, THE APPLICANT SHALL IMMEDIATELY NOTIFY THE CITY OF ALEXANDRIA FIRE DEPARTMENT AND DEPARTMENT OF TRANSPORTATION AND ENVIRONMENTAL SERVICES, OFFICE OF ENVIRONMENTAL QUALITY. THE SITE IS LOCATED PROXIMATE TO A KNOWN HISTORIC OLD LANDFILL.
10. TO THE BEST OF OUR KNOWLEDGE THERE ARE AREAS ON-SITE CONTAINING CONTAMINATED SOILS OR CONTAMINATED GROUNDWATER.
11. THERE IS NO OBSERVABLE EVIDENCE OF CEMETERIES OR BURIAL GROUNDS.

SOIL DATA:

A DRAFT GEOTECHNICAL ENGINEERING REPORT FOR THE SUBJECT PROPERTY WAS PREPARED BY ECS ON JUNE 2, 2016. SOIL BORING TESTS WERE DONE ON SITE TO EVALUATE THE SUBSURFACE CONDITIONS. THREE MAJOR SOIL STRATA WERE ENCOUNTERED WITHIN THE SOIL BORINGS TAKEN. STRATUM I (FILL - EL. +23.5 TO + 17.5) - FILL SOILS THAT CONSISTED OF CLAY AND SILT. STRATUM II (QUATERNARY AGE DEPOSITS - EL. +12.0 TO -20.0) - SOIL GENERALLY CONSISTED OF CLAY, SILT, SAND AND GRAVEL WITH A WIDE RANGE OF STRENGTHS. STRATUM III (POTOMAC GROUP - EL. -20.0 TO BELOW) - SOIL CONSISTS OF CLAY AND SAND.

ENVIRONMENTAL SITE ASSESSMENT

THERE ARE NO RPA'S, TIDAL WETLANDS, SHORES, TRIBUTARY STREAMS, FLOODPLAINS, CONNECTED WETLANDS, ISOLATED WETLANDS, HIGHLY ERODIBLE/PERMEABLE SOILS OR BUFFER AREAS ASSOCIATED WITH SHORES, STREAMS OR WETLANDS LOCATED ON THIS SITE.

ARCHAEOLOGY NOTES

1. THE APPLICANT/DEVELOPER SHALL CALL ALEXANDRIA ARCHAEOLOGY IMMEDIATELY (703-746-4399) IF ANY BURIED STRUCTURAL REMAINS (WALL FOUNDATIONS, WELLS, PRIVIES, CISTERNS, ETC.) OR CONCENTRATIONS OF ARTIFACTS ARE DISCOVERED DURING DEVELOPMENT. WORK MUST CEASE IN THE AREA OF THE DISCOVERY UNTIL A CITY ARCHAEOLOGIST COMES TO THE SITE AND RECORDS THE FINDS.
2. THE APPLICANT/DEVELOPER SHALL NOT ALLOW ANY METAL DETECTION TO BE CONDUCTED ON THE PROPERTY , UNLESS AUTHORIZED BY ALEXANDRIA ARCHAEOLOGY.

SANITARY STRUCTURE DATA

\* PIPE MATERIAL TYPE AS PER CITY OF ALEXANDRIA GIS

1. RIM EL. = 17.22  
INV IN (24" RCP# FROM NORTHWEST) = 7.72  
INV OUT (24" RCP# TO 370) = 7.62
2. RIM EL. = 16.61  
INV IN (24" RCP# FROM 340) = 7.11  
INV OUT (24" RCP# TO 400) = 7.01
3. RIM EL. = 17.66  
INV IN (24" RCP# FROM 370) = 6.26  
INV OUT (24" PVC# TO 410) = 6.16
4. RIM EL. = 16.82  
INV IN (24" PVC# FROM 400) = 5.82  
INV IN (8" PVC FROM NORTHEAST) = 7.32  
INV OUT (24" PVC# TO 411) = 5.72

STORM STRUCTURE DATA

\* PIPE SIZE AS PER PREVIOUS AS-BUILT SURVEY CONDUCTED BY THIS FIRM ON JUNE 16th, 2003, DRAWING #C-4242  
\*\* PIPE SIZE PER PLAN

1. RIM EL. = 31.45  
INACCESSIBLE - UNABLE TO OPEN
2. RIM EL. = 30.52  
INV IN (21" RCP FROM 481) = 22.94  
INV IN (18" RCP FROM 482) = 22.84  
INV OUT (21" RCP TO 500) = 21.95
3. RIM EL. = 31.22  
INV OUT (18" RCP TO 480) = 26.12
4. RIM EL. = 29.74  
INV IN (21" RCP FROM 480) = 21.20  
INV IN (18" RCP FROM 501) = 21.99  
INV IN (24" RCP FROM 500) = 21.74  
INV OUT (21"x35" RCP TO 6072) = 20.84
5. RIM EL. = 30.00  
INV OUT (18" RCP TO 500) = 22.25
6. RIM EL. = 30.60  
INV OUT (15" RCP TO 553) = 26.19

7. RIM EL. = 29.85  
INV IN (15" RCP FROM 554) = 25.61  
INV IN (10" STEEL FROM NORTHEAST) = 27.21  
INV OUT (15" RCP TO 552) = 25.36
8. RIM EL. = 29.38  
INV IN (15" RCP FROM 553) = 25.38  
INV IN (24" RCP FROM NORTH) = 25.23  
INV OUT (24" RCP TO 551) = 25.08
9. RIM EL. = 29.37  
INV IN (15" RCP FROM 552) = 24.57  
INV IN (15" RCP FROM 710) = 24.67  
INV OUT (21" RCP TO 550) = 24.47
10. RIM EL. = 30.54  
INV OUT (15" RCP TO 551) = 25.84
11. RIM EL. = 28.95  
INV IN (21" RCP FROM 551) = 23.74  
INV IN (18" RCP FROM 549) = 23.90  
INV OUT (24" RCP TO 500) = 23.59
12. RIM EL. = 28.99  
INV OUT (18" RCP TO 549) = 24.47

13. RIM EL. = 28.65  
INV IN (15" RCP FROM 548) = 23.86  
INV IN (21" DIP FROM EAST) = 23.90  
INV OUT (18" RCP TO 550) = 23.74
14. RIM EL. = 17.86  
INV IN (8" PVC FROM SOUTH) = 14.34  
INV OUT (15" RCP TO 1530) = 14.31
15. RIM EL. = 19.60  
INV IN (15" RCP FROM 1670) = 13.11  
INV OUT (24" RCP TO 1410) = 12.59
16. RIM EL. = 19.22  
INV IN (24" RCP FROM 1530) = 12.24  
INV IN (18" RCP FROM 1630) = 13.04  
INV OUT (30" RCP TO 1400) = 11.94
17. RIM EL. = 17.94  
INV IN (4" PVC FROM SOUTH) = 14.62  
INV IN (8" PVC FROM SOUTH) = 13.80  
INV OUT (18" RCP TO 1410) = 13.72
18. RIM EL. = 19.68  
INV IN (30" RCP FROM 1410) = 11.49  
INV IN (15" RCP FROM 1420) = 12.97  
INV OUT (15" RCP# TO 1220) = 11.41

19. RIM EL. = 19.92  
INV IN (15" RCP FROM 1400) = 11.02  
INV IN (21" RCP FROM 1180) = 12.40  
INV OUT (30" RCP TO 1200) = 10.90
20. RIM EL. = 21.82  
INV OUT (21" RCP TO 1220) = 14.12
21. RIM EL. = 17.96  
INV IN (15" RCP FROM 1210) = 11.46  
INV IN (24" RCP FROM 1220) = 10.56  
INV OUT (24" RCP TO 1310) = 10.55
22. RIM EL. = 17.89  
INV IN (5" RCP FROM WEST) = 12.87  
INV IN (4" PVC FROM SOUTH) = 14.05  
INV OUT (15" RCP TO 1200) = 12.24
23. RIM EL. = 17.93  
INV IN (36" RCP FROM 1200) = 10.13  
INV IN (10" IRON FROM EAST) = 12.88  
INV OUT (36" RCP TO SOUTH) = 10.03
24. RIM EL. = 16.77  
INV OUT (15" RCP TO 350) = 13.37
25. RIM EL. = 16.77  
INV IN (15" RCP FROM 349) = 12.77  
INV OUT (18" RCP TO 380) = 12.62

26. RIM EL. = 16.51  
INV OUT (TO 380) = 12.11
27. RIM EL. = 16.68  
INV IN (18" RCP FROM 380) = FLOODED AT THE TIME OF SURVEY  
INV IN (FROM 381) = FLOODED AT THE TIME OF SURVEY  
INV OUT (18" RCP TO 401) = FLOODED AT THE TIME OF SURVEY
28. RIM EL. = 16.99  
INV IN (18" RCP FROM 380) = 9.35  
INV IN (6" PVC FROM 5503) = 11.59  
INV IN (15" RCP FROM 402) = 12.85  
INV OUT (24" RCP TO 5408) = 9.19
29. RIM EL. = 17.43  
INV OUT (15" RCP TO 401) = 13.58
30. RIM EL. = 17.52
31. RIM EL. = 17.53  
INV IN (30" RCP FROM 5790) = 12.33  
INV OUT (36" RCP TO 315) = 11.88
32. RIM EL. = 17.88  
INV OUT (30" RCP# TO 5414) = 10.16  
INV OUT (30" RCP TO 5509) = 10.12

PARKING TABULATION CHART

USE	GFA	PARKING SPACES PROVIDED	PARKING RATIO PROVIDED	EESAP MAX. PARKING RATIO
NON-GROCERY RETAIL	126,091 SF	352 SPACES	2.79 SPACES PER 1,000 SF	3.0 SPACES PER 1,000 SF *
GROCERY RETAIL	84,412 SF	500 SPACES	5.92 SPACES PER 1,000 SF	3.0 SPACES PER 1,000 SF *
SUB-TOTAL (RETAIL)		852 SPACES	4.05 SPACES PER 1,000 SF	3.0 SPACES PER 1,000 SF *
RESIDENTIAL	785,097 SF	694 SPACES	0.88 SPACES PER 1,000 SF	1.1 SPACES PER 1,000 SF
GRAND TOTAL		1,546 SPACES		

\* PER THE CURRENT EESAP, THE MAXIMUM RETAIL PARKING RATE IS 3.0 / 1,000 SF  
\*UNTIL SUCH TIME THAT 2,000,000 GSF OF OFFICE EXISTS WITHIN 750 FEET OF THE INTERSECTION OF SWAMP FOX ROAD AND EISENHOWER AVENUE..."

ZONING TABULATIONS

SITE LOCATION/ADDRESS:

2410 & 2460 MILL ROAD

EXISTING ZONE:

COORDINATED DEVELOPMENT DISTRICT #2 (CDD)

PROPOSED ZONE:

COORDINATED DEVELOPMENT DISTRICT #2 (CDD)

SMALL AREA PLAN DISTRICT:

EISENHOWER EAST PLAN

EXISTING SITE AREA:

TAX MAP #072.04-03-25 96,503 S.F. OR 2.22 AC.  
TAX MAP #072.04-03-28 166,104 S.F. OR 3.81 AC.  
TOTAL 262,607 S.F. OR 6.03 AC.

PROPOSED SITE AREA:

220,940 S.F. OR 5.07 AC.

EXISTING USE:

PARKING LOT

PROPOSED USE:

MULTI-FAMILY RESIDENTIAL, CONDOMINIUM, SENIOR LIVING, GROUND AND 2ND LEVEL RETAIL INCLUDING GROCERY

EXISTING IMPERVIOUS AREA:

184,393 SF OR 4.23 AC.

PROPOSED IMPERVIOUS AREA:

220,940 SF OR 5.07 AC.

MAXIMUM FLOOR AREA RATIO:

N/A\*

PROPOSED FLOOR AREA RATIO:

N/A\*

ALLOWABLE FLOOR AREA:

N/A\*

GROSS FLOOR AREA PROPOSED:

GROCERY	NON-GROCERY RETAIL	RESIDENTIAL	BOH	TOTAL GFA	PARKING/LOADING
84,412 SF	126,091 SF	785,097 SF	39,331 SF	1,034,931 SF	660,282 SF

NET FLOOR AREA:

TBD

LOT AREA REQUIRED:

N/A

LOT AREA PROVIDED:

220,940 SF OR 5.07 ACRES

BUILDING SETBACK REQUIRED:

0'

BUILDING SETBACK PROVIDED:

0'

LOT FRONTAGE REQUIRED:

N/A

LOT FRONTAGE PROVIDED:

NORTH: 757'  
EAST: 173'  
SOUTH: 717'  
WEST: 349'

PROPOSED MAXIMUM

NUMBER OF UNITS:

750 UNITS

UNITS PER ACRE:

750 UNITS/5.07 ACRES = 148 UNITS/ACRE

OPEN SPACE REQUIRED:

10,900 SF (PER APPROVED CDD #2)

OPEN SPACE PROVIDED:

10,900 SF (SEE SHEET C600)

MAXIMUM BUILDING HEIGHT:

220'

PROPOSED BUILDING HEIGHT:

SEE SHEET A4.01 & A4.02

AVERAGE FINISHED GRADE:

25.5' (SEE SHEET C403)

YARDS:

N/A

PARKING MAXIMUMS:

2,201 SPACES (FROM APPROVED CDD #2)

PARKING PROVIDED:

STANDARD 1317 SPACES  
COMPACT 194 SPACES  
HANDICAP 35 SPACES  
TOTAL 1,546 SPACES

LOADING REQUIRED:

5

LOADING PROVIDED:

10

APPROXIMATE AREA OF DISTURBANCE

DURING CONSTRUCTION: 7.21 AC OR 314,000 SF

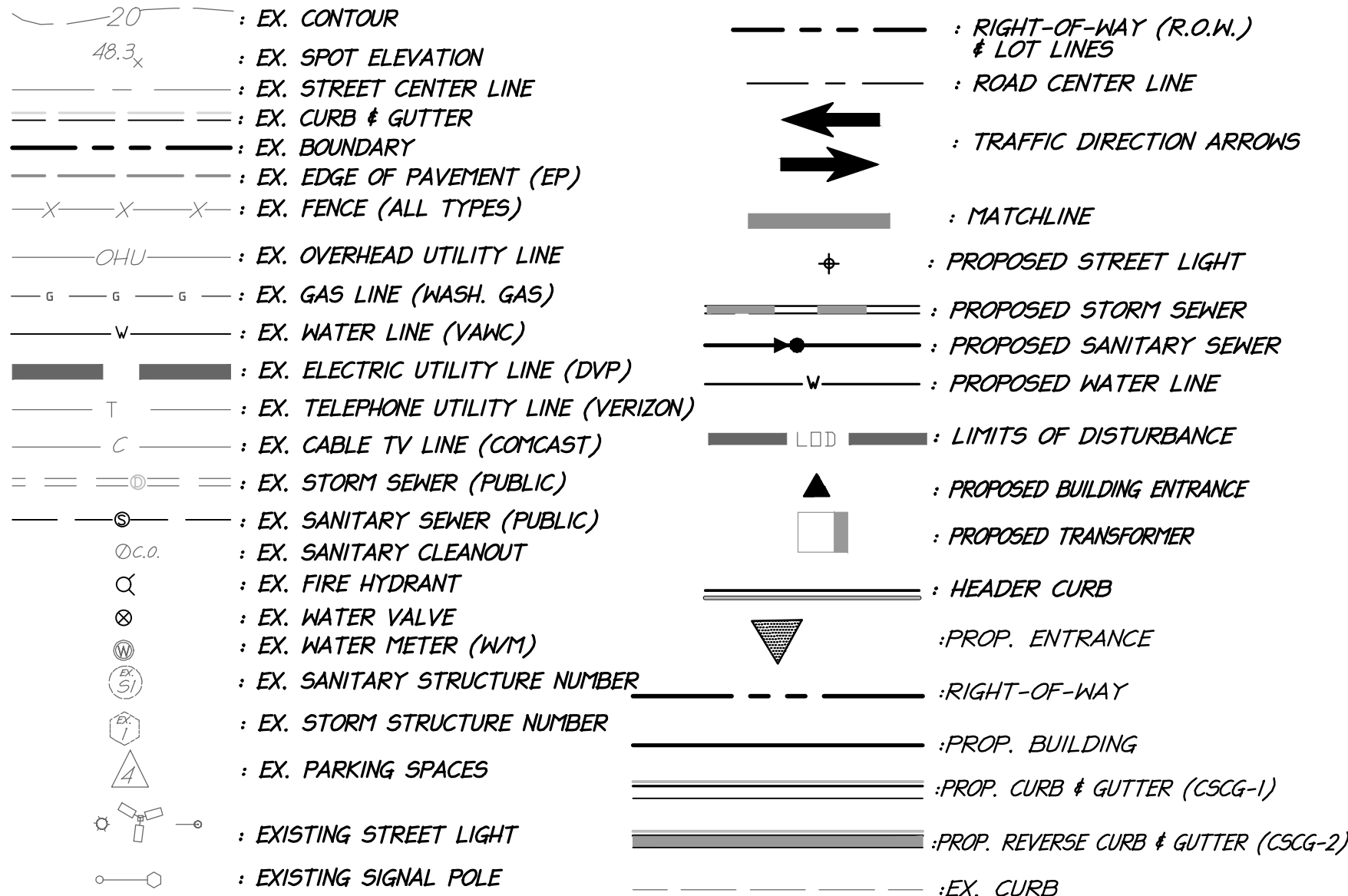
EXISTING TRIP GENERATION:

0 VEHICLES

PROPOSED TRIP GENERATION:

A TRAFFIC STUDY WAS SUBMITTED ON 8/29 BY GOROVE/SLADE TO CITY STAFF FOR THE EISENHOWER EAST SAP DENSITY CONVERSION.

LEGEND



ENVIRONMENTAL SITE ASSESSMENT

THERE ARE NO TIDAL WETLANDS, TIDAL SHORES, TRIBUTARY STREAMS, FLOODPLAINS, CONNECTED TIDAL WETLANDS, ISOLATED WETLANDS, HIGHLY ERODIBLE/PERMEABLE SOILS OR BUFFER AREAS ASSOCIATED WITH SHORES, STREAMS OR WETLANDS LOCATED IN THIS AREA OF THE SITE. FURTHER, THERE ARE NO WETLAND PERMITS REQUIRED FOR THIS DEVELOPMENT PROJECT. ADDITIONALLY, THERE ARE NO KNOWN UNDERGROUND STORAGE TANKS OR AREAS OF SOIL OR GROUNDWATER CONTAMINATION ON THE SITE. A PORTION OF THIS SITE IS WITHIN A POTENTIALLY HAZARDOUS AREA AS SHOWN ON THE CITY'S CONTAMINATED LANDS MAP DUE TO THE PROXIMITY TO A HISTORIC LANDFILL.

THE CITY OF ALEXANDRIA DEPARTMENT OF TRANSPORTATION AND ENVIRONMENT SERVICES, DIVISION OF ENVIRONMENT QUALITY MUST BE NOTIFIED IF UNUSUAL OR UNANTICIPATED CONTAMINATION OR UNDERGROUND STORAGE TANKS, DRUMS AND CONTAINERS ARE ENCOUNTERED AT THE SITE. IF THERE IS ANY DOUBT ABOUT PUBLIC SAFETY OR A RELEASE TO THE ENVIRONMENT, THE ALEXANDRIA FIRE DEPARTMENT MUST BE CONTACTED IMMEDIATELY BY CALLING 911. THE TANK OR CONTAINER'S REMOVAL, ITS CONTENTS, AND SOIL CONTAMINATION AND RELEASES TO THE ENVIRONMENT WILL BE HANDLED IN ACCORDANCE WITH FEDERAL, STATE AND CITY REGULATIONS.

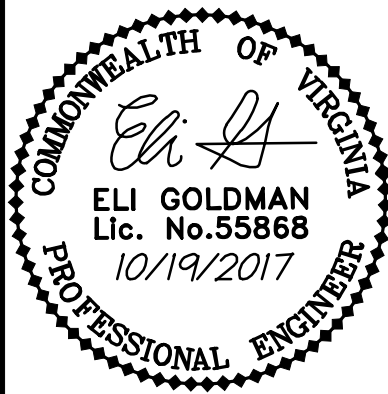
ALL WELLS INCLUDING MONITORING WELLS MUST BE CLOSED IN ACCORDANCE WITH STATE WELL REGULATION. CONTACT JOE FINDER AND COORDINATE WITH THE ALEXANDRIA HEALTH DEPARTMENT AT 703-838-4400 EX. 255.

ALL CONSTRUCTION ACTIVITIES MUST COMPLY WITH THE ALEXANDRIA NOISE CONTROL CODE TITLE II, CHAPTER 5, WHICH PERMITS CONSTRUCTION ACTIVITIES TO OCCUR BETWEEN THE FOLLOWING HOURS:

MONDAY THROUGH FRIDAY FROM 7:00 AM - 6:00 PM  
SATURDAYS FROM 9:00 AM TO 6:00 PM  
NO CONSTRUCTION ACTIVITIES ARE PERMITTED ON SUNDAYS.

PILE DRIVING IS FURTHER RESTRICTED TO THE FOLLOWING HOURS:

MONDAY THROUGH FRIDAY FROM 9:00 AM TO 6:00 PM AND  
SATURDAYS FROM 10:00 AM TO 4:00 PM



NOTES AND  
TABULATIONS

PRELIMINARY PLAN - STAGE I  
HOFFMAN TOWN CENTER  
BLOCKS 4 & 5

CITY OF ALEXANDRIA, VIRGINIA

<b>APPROVED</b> <b>SPECIAL USE PERMIT NO. 2016-0043</b> DEPARTMENT OF PLANNING & ZONING	
DIRECTOR _____	DATE _____
DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES <b>SITE PLAN NO. _____</b>	
DIRECTOR _____	DATE _____
CHAIRMAN, PLANNING COMMISSION _____	
DATE RECORDED _____	
INSTRUMENT NO. _____	DEED BOOK NO. _____ PAGE NO. _____

PROJECT NO: 98085.049.00

SCALE: 1"=30'

DATE: 05/02/17

DESIGN: EG  
DRAWN: EG  
CHECKED: KMW

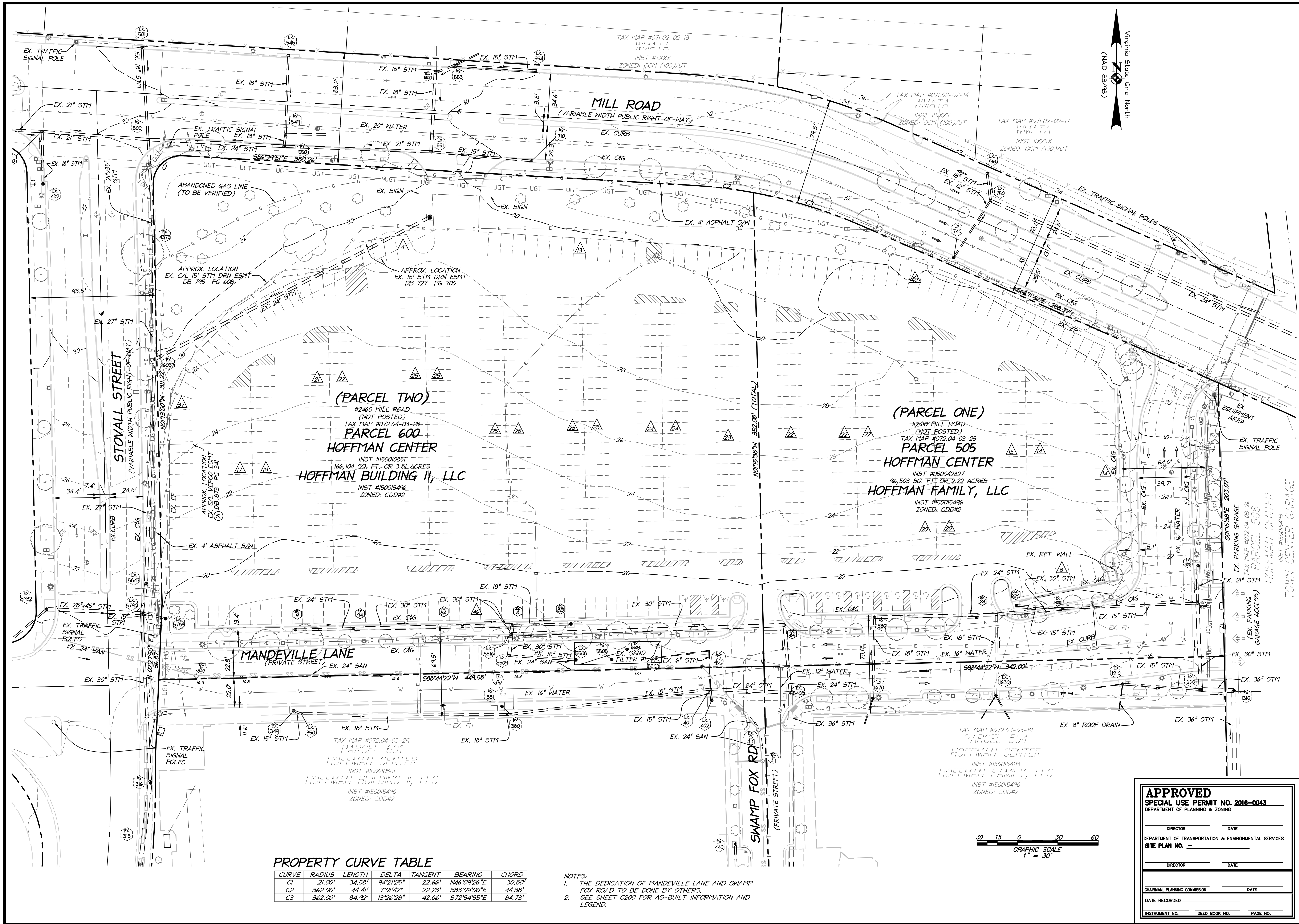
SHEET No.

C200

107540



P:\Projects\8885 Hoffman\0400 Block 4 & 5\107540 Prelim C300 EXISTING CONDITIONS PLAT.dwg, 10/18/2017 5:30:21 PM, jannone, 1:1, christopher consultants, Ltd



**christopher consultants**

9900 main street (suite 400) • fairfax, va 22031  
phone 703.273.6820 • fax 703.273.6820

COMMONWEALTH OF VIRGINIA

ELI GOLDMAN  
Lic. No. 55868  
10/19/2017

PROFESSIONAL ENGINEER

EXISTING CONDITIONS  
PLAN

PRELIMINARY PLAN - STAGE 1  
HOFFMAN TOWN CENTER  
BLOCKS 4 & 5

CITY OF ALEXANDRIA, VIRGINIA

**APPROVED**  
SPECIAL USE PERMIT NO. 2016-0043  
DEPARTMENT OF PLANNING & ZONING

DIRECTOR \_\_\_\_\_ DATE \_\_\_\_\_

DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES  
SITE PLAN NO. \_\_\_\_\_

DIRECTOR \_\_\_\_\_ DATE \_\_\_\_\_

CHAIRMAN, PLANNING COMMISSION \_\_\_\_\_ DATE \_\_\_\_\_

DATE RECORDED \_\_\_\_\_

INSTRUMENT NO. \_\_\_\_\_ DEED BOOK NO. \_\_\_\_\_ PAGE NO. \_\_\_\_\_

PROJECT NO. 98085.049.00

SCALE: 1"=30'

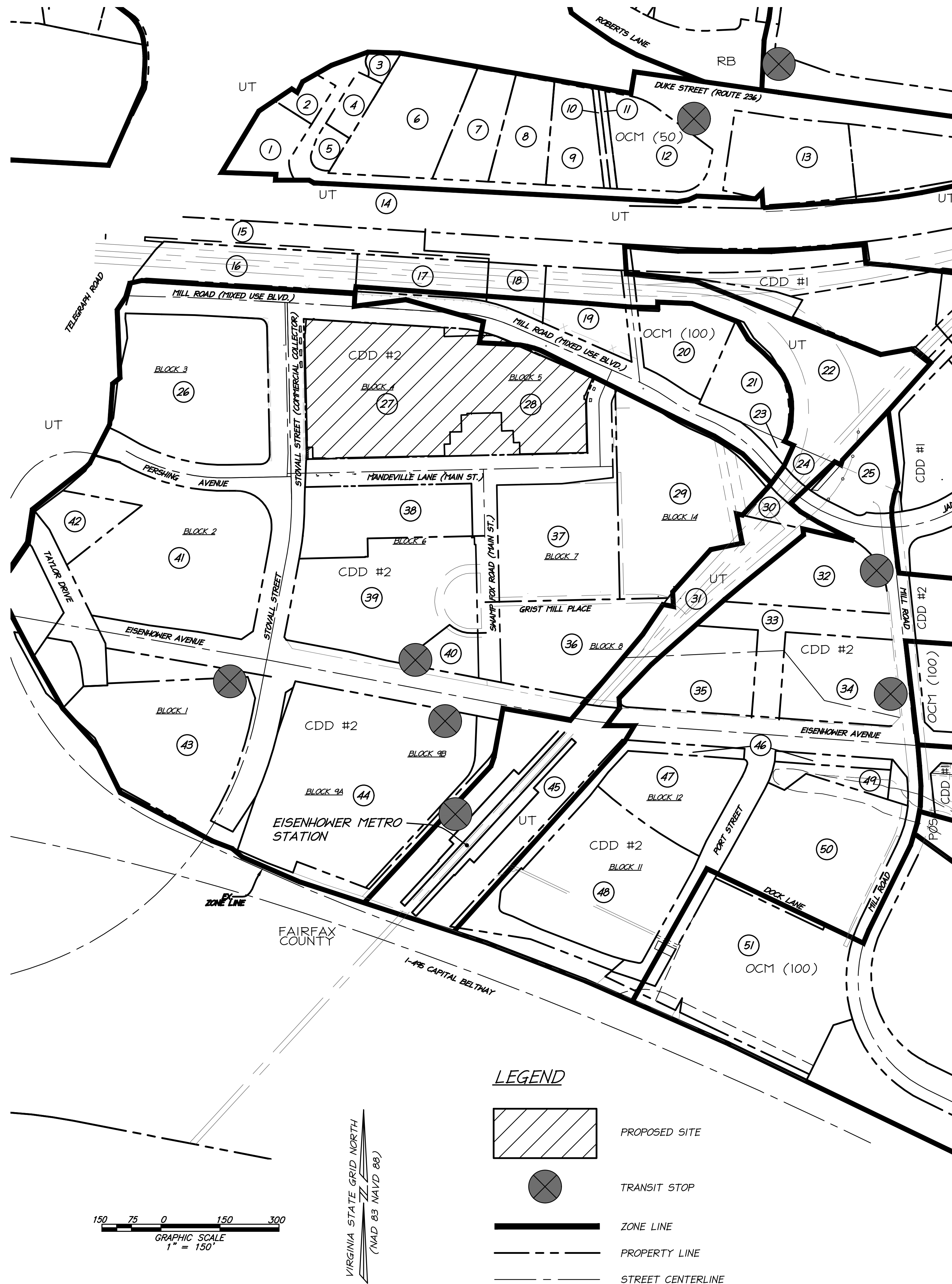
DATE: 05/02/17

DESIGN: EG  
DRAWN: A.IB  
CHECKED: K.M.W.

SHEET No.

**C300**  
107540





- |   |  |  |
|---|--|--|
| 1<br>100 TELEGRAPH ROAD<br>EXTRA SPACE PROPERTIES 102 LLC<br>USE: SELF STORAGE FACILITY<br>ZONE: OCM (50)<br>TM 072.02-01-02      | 21<br>2355 MILL ROAD<br>CITY OF ALEXANDRIA<br>USE: CITY GOVERNMENT BUILDINGS<br>ZONE: OCM (100)<br>TM 072.02-02-10                           | 41<br>315 STOVALL STREET<br>HOFFMAN FAMILY LLC<br>USE: VACANT/SURFACE PARKING<br>ZONE: CDD-2<br>TM 072.04-04-08                                    |
| 2<br>25 DOVE STREET<br>DOVE STREET HOLDINGS LLC<br>USE: COMMERCIAL BUILDING<br>ZONE: OCM (50)<br>TM 072.02-01-03                  | 22<br>2393 MILL ROAD<br>WASHINGTON METRO AREA<br>TRANSIT AUTHORITY (WMATA)<br>USE: WMATA TRACKS<br>ZONE: UT<br>TM 072.02-02-19               | 42<br>312 TAYLOR DRIVE<br>HOFFMAN MANAGEMENT INC<br>USE: VACANT LAND/COMMERCIAL<br>ZONE: CDD-2<br>TM 072.03-04-09                                  |
| 3<br>2438 DUKE STREET<br>MIL LLC<br>USE: VACANT LAND COMMERCIAL<br>ZONE: OCM (50)<br>TM 072.02-01-04                              | 23<br>2375 MILL ROAD<br>CITY OF ALEXANDRIA<br>USE: CITY VACANT LAND<br>ZONE: OCM (100)<br>TM 072.04-02-14                                    | 43<br>2460 EISENHOWER AVENUE<br>ALEXANDRIA VA HOTEL PARTNERS LLC<br>USE: HOTEL AND SURFACE PARKING<br>ZONE: CDD-2<br>TM 072.04-04-07               |
| 4<br>20 DOVE STREET<br>MIL LLC<br>USE: AUTOMOTIVE CENTER<br>ZONE: OCM (50)<br>TM 072.02-01-05                                     | 24<br>2365 MILL ROAD<br>WASHINGTON METRO AREA<br>TRANSIT AUTHORITY (WMATA)<br>USE: WMATA TRACKS<br>ZONE: CDD-2<br>TM 072.04-02-20            | 44<br>2400 EISENHOWER AVENUE<br>HOFFMAN FAMILY LLC<br>USE: VACANT LAND/SURFACE PARKING<br>ZONE: CDD-2<br>TM 078.02-01-08                           |
| 5<br>26 DOVE STREET<br>DAREZZO REAL ESTATE NO 1 LLC<br>USE: AUTO SALES<br>ZONE: OCM (50)<br>TM 072.02-01-06                       | 25<br>2345 MILL ROAD<br>THF ALEXANDRIA V LLC<br>USE: EXTENDED STAY HOTEL<br>ZONE: CDD-2<br>TM 072.04-02-19                                   | 45<br>2300 EISENHOWER AVENUE<br>WASHINGTON METROPOLITAN AREA<br>TRANSIT AUTHORITY (WMATA)<br>USE: WMATA RAIL TRACKS<br>ZONE: UT<br>TM 078.02-01-02 |
| 6<br>100 DOVE STREET<br>AITCHESON REAL ESTATE INC<br>USE: DISTRIBUTION WAREHOUSE<br>ZONE: OCM (50)<br>TM 072.02-01-07             | 26<br>2425 MILL ROAD<br>HOFFMAN FAMILY, LLC<br>USE: VACANT LAND COMMERCIAL<br>ZONE: CDD-2<br>TM 072.02-02-12                                 | 46<br>2310 EISENHOWER AVENUE<br>HOFFMAN FAMILY LLC<br>USE: VACANT LAND/APARTMENTS<br>ZONE: CDD-2<br>TM 078.02-01-19                                |
| 7<br>2412 DUKE STREET<br>AITCHESON REAL ESTATE INC<br>USE: VACANT LAND/COMMERCIAL<br>ZONE: OCM (50)<br>TM 072.02-01-08            | 27<br>2460 MILL ROAD<br>HOFFMAN BUILDING II, LLC<br>USE: SURFACE PARKING/COMMERCIAL<br>ZONE: CDD-2<br>TM 072.04-03-28                        | 47<br>2356 EISENHOWER AVENUE<br>HOFFMAN TONERS BLOCK 12 LLC<br>USE: VACANT LAND/APARTMENTS<br>ZONE: CDD-2<br>TM 078.02-01-09                       |
| 8<br>2387 DUKE STREET<br>2350 DUKE STREET ASSOCIATES, LC<br>USE: COMMERCIAL WAREHOUSE<br>ZONE: OCM (50)<br>TM 072.02-01-09        | 28<br>2410 MILL ROAD<br>HOFFMAN FAMILY, LLC<br>USE: SURFACE PARKING/COMMERCIAL<br>ZONE: CDD-2<br>TM 072.04-03-25                             | 48<br>2300 DOCK LANE<br>HOFFMAN TONERS BLOCK II LLC<br>USE: VACANT LAND/APARTMENTS<br>ZONE: CDD-2<br>TM 078.02-01-13                               |
| 9<br>2350 DUKE STREET<br>2350 DUKE STREET ASSOCIATES, LC<br>USE: COMMERCIAL WAREHOUSE<br>ZONE: OCM (50)<br>TM 072.02-01-10        | 29<br>2380 MILL ROAD<br>TOWN CENTER GARAGE, LLC<br>USE: TOWN CENTER GARAGE<br>ZONE: CDD-2<br>TM 072.04-03-26                                 | 49<br>2250 EISENHOWER AVENUE<br>HOFFMAN FAMILY LLC<br>USE: VACANT LAND/APARTMENTS<br>ZONE: CDD-2<br>TM 078.02-01-15                                |
| 10<br>2328 DUKE STREET<br>2350 DUKE STREET ASSOCIATES, LC<br>USE: SURFACE PARKING<br>ZONE: OCM (50)<br>TM 072.02-01-11            | 30<br>2360 MILL ROAD<br>WASHINGTON METRO AREA<br>TRANSIT AUTHORITY (WMATA)<br>USE: WMATA TRACKS<br>ZONE: CDD-2<br>TM 072.04-03-08            | 50<br>750 PORT STREET<br>PARADIGM 2230 MILL LLC<br>USE: HI-RISE RESIDENTIAL<br>ZONE: CDD-2<br>TM 078.02-01-20                                      |
| 11<br>2326 DUKE STREET<br>J.T. MARTYN JR. AND E.F. CANNON<br>USE: VACANT LAND/COMMERCIAL<br>ZONE: OCM (100)<br>TM 072.02-01-12    | 31<br>2299 EISENHOWER AVENUE<br>WASHINGTON METRO AREA<br>TRANSIT AUTHORITY (WMATA)<br>USE: WMATA TRACKS<br>ZONE: UT<br>TM 072.04-03-12       | 51<br>2200A MILL ROAD<br>LSREF2 CLOVER PROPERTY 12 LLC<br>USE: VACANT LAND/COMMERCIAL<br>ZONE: OCM (100)<br>TM 078.02-01-18                        |
| 12<br>2324 DUKE STREET<br>J.T. MARTYN JR. AND E.F. CANNON<br>USE: AUTOMOTIVE CENTER<br>ZONE: OCM (50)<br>TM 072.02-01-13          | 32<br>2318 MILL ROAD<br>CARLYLE OVERLOOK LLC<br>USE: OFFICE BUILDING/RETAIL<br>ZONE: CDD-2<br>TM 072.04-04-00                                |  |
| 13<br>2226 DUKE STREET<br>UNITED STATES POSTAL SERVICE<br>USE: U.S. POST OFFICE<br>ZONE: OCM (50)<br>TM 072.02-01-14.C            | 33<br>2316 MILL ROAD<br>MILL RACE PROPERTY OWNERS ASSOCIATION<br>USE: VACANT LAND/COMMERCIAL<br>ZONE: CDD-2<br>TM 072.04-03-22               |  |
| 14<br>CSX TRANSPORTATION, INC<br>USE: CSX TRACKS<br>ZONE: OCM (100)<br>TM 071.01-03-01  | 34<br>2251 EISENHOWER AVENUE<br>CARLYLE PLACE ASSOCIATES LLC<br>USE: HI-RISE RESIDENTIAL<br>ZONE: CDD-2<br>TM 072.04-03-21                   |  |
| 15<br>WASHINGTON METRO AREA<br>TRANSIT AUTHORITY (WMATA)<br>USE: WMATA<br>ZONE: OCM (100)<br>TM 072.02-02-XX                      | 35<br>2351 EISENHOWER AVENUE<br>EISENHOWER RESIDENTIAL LP<br>USE: HI-RISE RESIDENTIAL<br>ZONE: CDD-2<br>TM 072.04-03-23                      |  |
| 16<br>108 TELEGRAPH ROAD<br>WASHINGTON METRO AREA<br>TRANSIT AUTHORITY (WMATA)<br>USE: WMATA<br>ZONE: UT<br>TM 071.02-02-01       | 36<br>2415 EISENHOWER AVENUE<br>US&BF NSF LLC<br>USE: OFFICE BUILDING<br>ZONE: CDD-2<br>TM 072.04-03-27                                      |  |
| 17<br>2421 MILL ROAD<br>WASHINGTON METRO AREA<br>TRANSIT AUTHORITY (WMATA)<br>USE: WMATA<br>ZONE: OCM (100)/UT<br>TM 071.02-02-13 | 37<br>206 SWAMP FOX ROAD<br>HOFFMAN FAMILY, LLC<br>USE: AMC HOFFMAN CENTER 22<br>THEATER & SURFACE PARKING<br>ZONE: CDD-2<br>TM 072.04-03-19 |  |
| 18<br>2415 MILL ROAD<br>WASHINGTON METRO AREA<br>TRANSIT AUTHORITY (WMATA)<br>USE: WMATA<br>ZONE: OCM (100)/UT<br>TM 072.02-02-14 | 38<br>200 STOVALL STREET<br>HOFFMAN BUILDING II LLC<br>USE: OFFICE BUILDING/SURFACE PARKING<br>ZONE: CDD-2<br>TM 072.04-03-29                |  |
| 19<br>2403 MILL ROAD<br>WASHINGTON METRO AREA<br>TRANSIT AUTHORITY (WMATA)<br>USE: WMATA<br>ZONE: OCM (100)/UT<br>TM 072.02-02-17 | 39<br>2461 EISENHOWER AVENUE<br>2461 EISENHOWER ACQUISITIONS LLC<br>USE: OFFICE BUILDING/SURFACE PARKING<br>ZONE: CDD-2<br>TM 072.04-03-30   |  |
| 20<br>2395 MILL ROAD<br>WASHINGTON METRO AREA<br>TRANSIT AUTHORITY (WMATA)<br>USE: WMATA<br>ZONE: OCM (100)<br>TM 072.02-02-18    | 40<br>2425 EISENHOWER AVENUE<br>2425 EISENHOWER ACQUISITIONS LLC<br>USE: VACANT LAND/COMMERCIAL<br>ZONE: CDD-2<br>TM 072.04-03-31            |  |

**STREET TYPOLOGY:**

MILL ROAD (MIXED-USE BOULEVARD): SERVE AREAS THAT GENERALLY HAVE TALLER (FIVE STORIES OR MORE) BUILDINGS THAT HOUSE A MIX OF RETAIL, RESIDENTIAL, OFFICE AND ENTERTAINMENT USES.

STOVALL STREET (COMMERCIAL CONNECTOR): TYPICALLY SERVE EMPLOYMENT AND ENTERTAINMENT CENTER, CIVIC, COMMERCIAL, AND INSTITUTIONAL LAND USES.

MANDEVILLE LANE (MAIN STREET): TEND TO SERVE SMALL AND MEDIUM SIZED BUSINESSES, RESTAURANTS, CIVIC BUILDINGS OR RESIDENCES.

<b>APPROVED</b> <b>SPECIAL USE PERMIT NO. 2016-0043</b> DEPARTMENT OF PLANNING & ZONING	
DIRECTOR _____	DATE _____
DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES	
<b>SITE PLAN NO. _____</b>	
DIRECTOR _____	DATE _____
CHAIRMAN, PLANNING COMMISSION _____	
DATE RECORDED _____	
INSTRUMENT NO. _____	DEED BOOK NO. _____
PAGE NO. _____	

**christopher consultants**

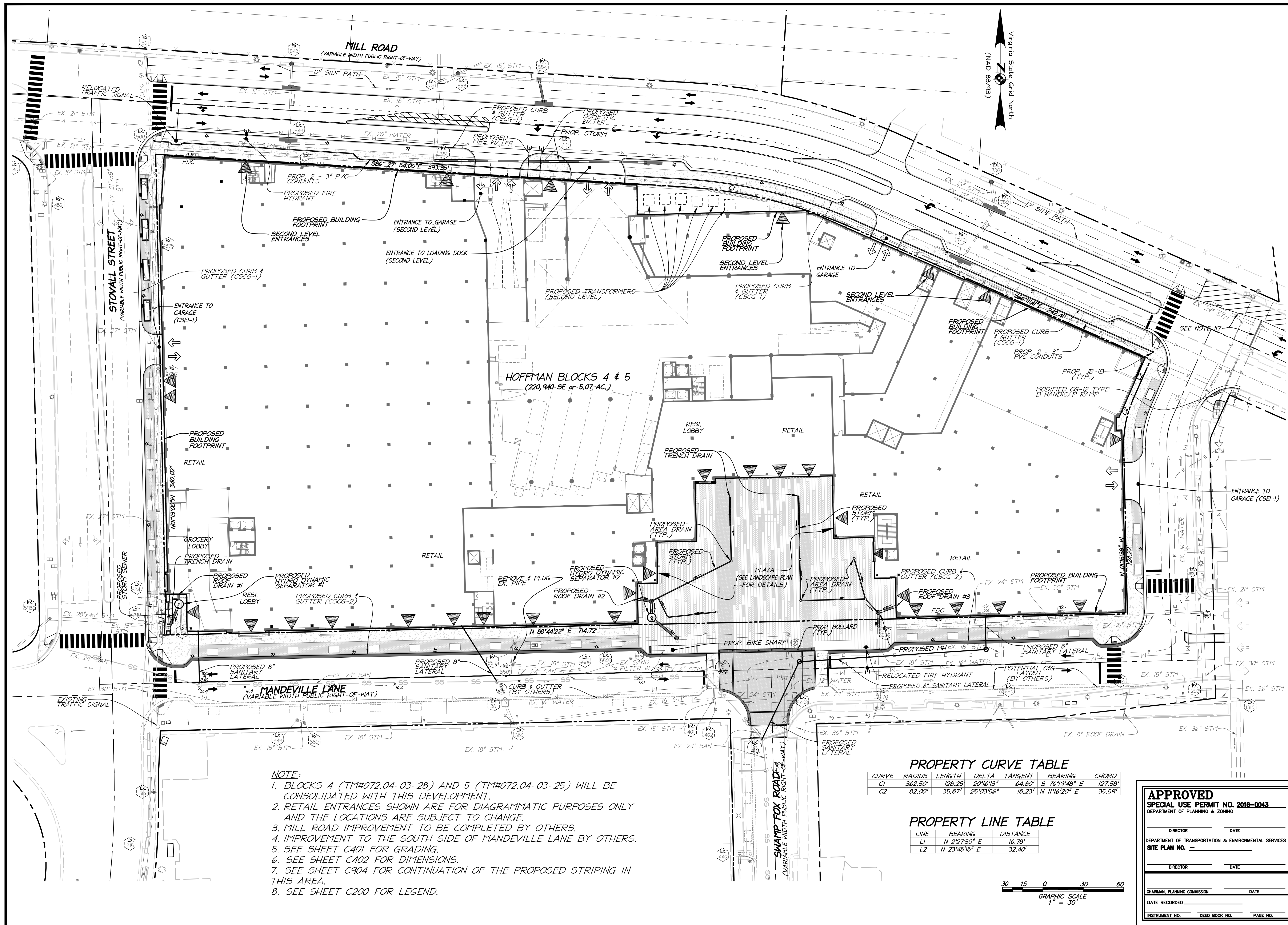
9900 main street (suite 400) • fairfax, va 22031  
phone 703.273.6820 • fax 703.273.6820

COMMONWEALTH OF VIRGINIA  
ELI GOLDMAN  
Lic. No. 55868  
10/19/2017  
PROFESSIONAL ENGINEER

PRELIMINARY PLAN - STAGE 1  
**HOFFMAN TOWN CENTER  
BLOCKS 4 & 5**  
CITY OF ALEXANDRIA, VIRGINIA

PROJECT NO. 98085.049.00  
SCALE: 1"=150'  
DATE: 05/02/17  
DESIGN: EG  
DRAWN: AJB  
CHECKED: KMW  
SHEET No.  
**C301**  
107540





PROPERTY CURVE TABLE						
CURVE	RADIUS	LENGTH	DELTA	TANGENT	BEARING	CHORD
C1	362.50'	128.25'	20°16'13"	64.80'	S 76°19'48" E	127.58'
C2	82.00'	35.87'	25°03'56"	18.23'	N 11°16'20" E	35.59'

### PROPERTY LINE TABLE

LINE	BEARING	DISTANCE
L1	N 2°27'50" E	16.78'
L2	N 23°48'18" E	32.40'

APPROVED	
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DEPARTMENT OF ENVIRONMENTAL & COMMUNITY SERVICES	
SITE PLAN NO. ____	
DIRECTOR _____	DATE _____
CHAIRMAN, PLANNING COMMISSION _____ DATE _____	
DATE RECORDED _____	
INSTRUMENT NO. _____	PAGE NO. _____

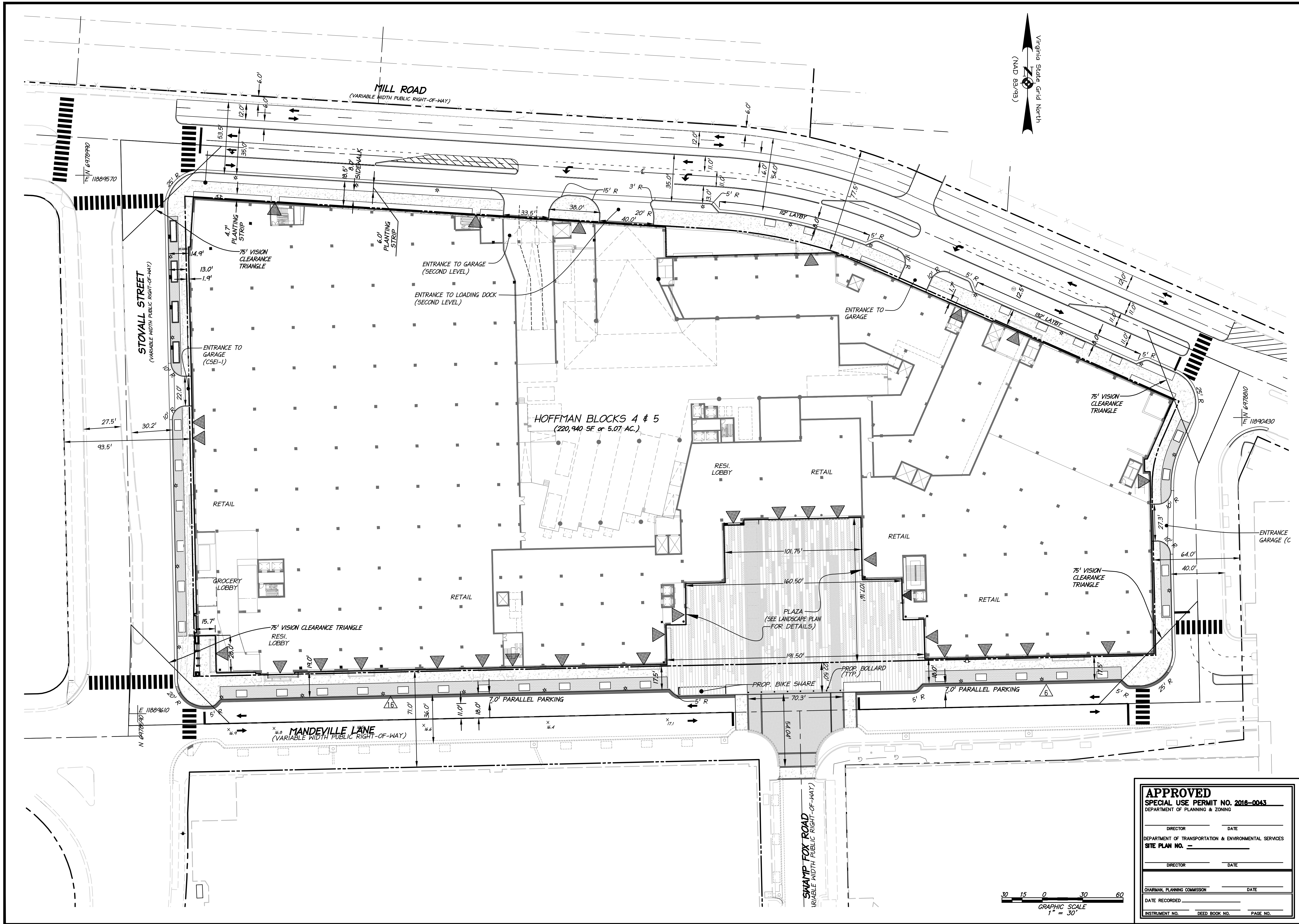
 <p>christopher consultants</p> <p>9900 main street (suite 400) · fairfax, va 22031 phone 703.273.6820 · fax 703.273.6820</p>		<p>PRELIMINARY SITE PLAN</p>	<p>PRELIMINARY PLAN - STAGE 1 HOFFMAN TOWN CENTER BLOCKS 4 &amp; 5</p> <p>CITY OF ALEXANDRIA, VIRGINIA</p>	<p>PROJECT NO: 98085.049.00</p>	<p>SCALE: 1"=30'</p>	<p>DATE: 05/02/17</p>	<p>DESIGN: EG DRAWN: EG CHECKED: KMW</p>	<p>SHEET No.</p>	<p>C400</p>
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P:\Projects\98085 Hoffman\04000 Block 4 & 5\107540 Prelim\0402 PRELIMINARY DIMENSION PLAN.dwg, 10/18/2017 5:31:12 PM, jason.com, 11, christopher consultants, ltd



<b>APPROVED</b>	
SPECIAL USE PERMIT NO. 2016-0043	
DEPARTMENT OF PLANNING & ZONING	
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PROJECT NO. 98085.049.00  
SCALE: 1"=30'  
DATE: 05/02/17  
DESIGN: EG  
DRAWN: AJB  
CHECKED: KMW  
SHEET No.

C402  
107540

PRELIMINARY DIMENSION  
PLAN

PRELIMINARY PLAN - STAGE 1  
HOFFMAN TOWN CENTER  
BLOCKS 4 & 5  
CITY OF ALEXANDRIA, VIRGINIA



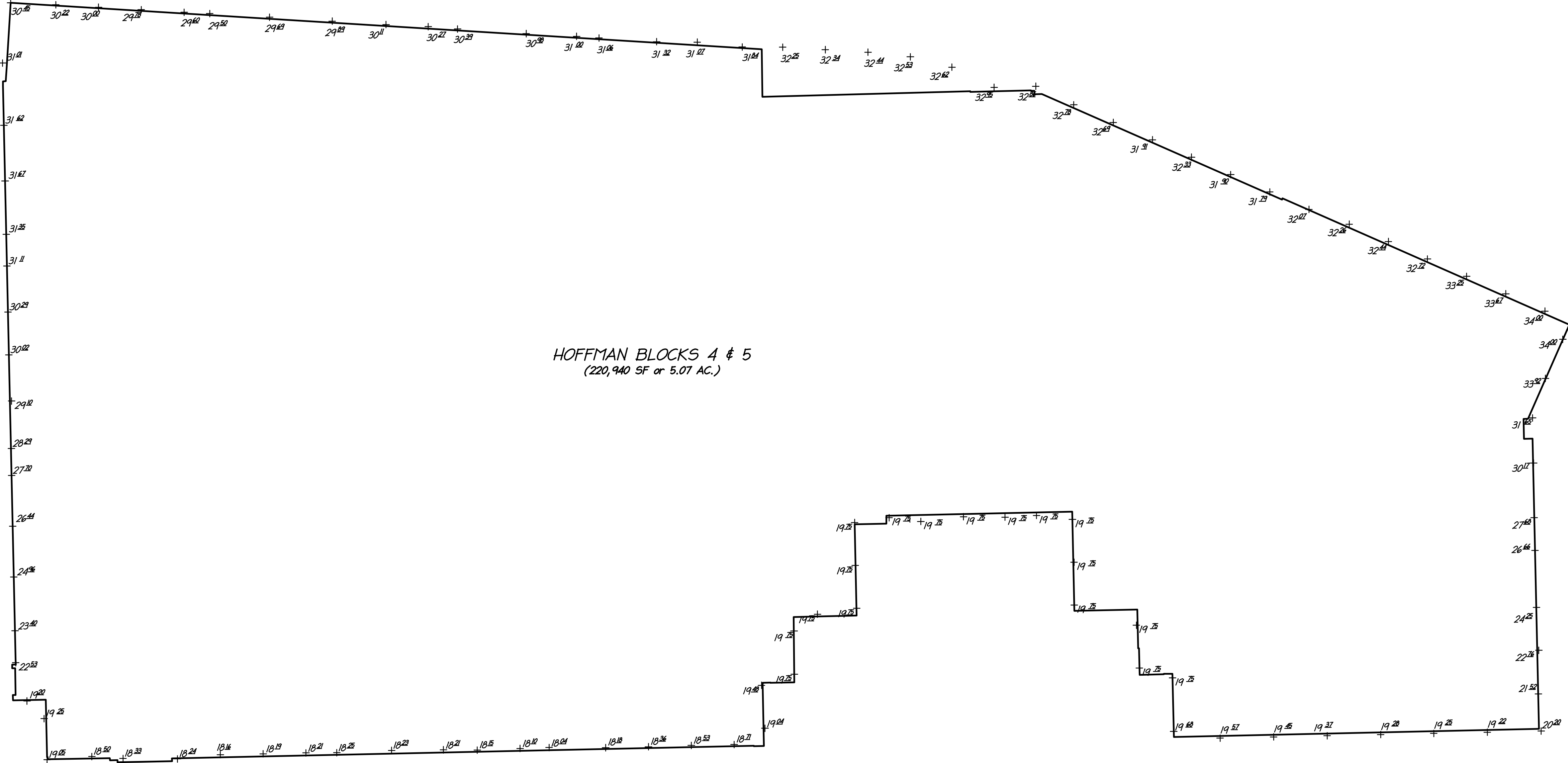


\* starts at southeast corner and goes counterclockwise

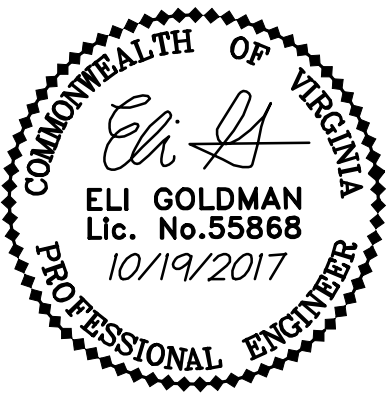
AFG Point	Elevation
1 *	20.20
2	21.52
3	22.76
4	24.25
5	26.66
6	27.68
7	30.17
8	31.65
9	33.92
10	34.00
11	34.00
12	33.67
13	33.25
14	32.72
15	32.44
16	32.26
17	32.07
18	31.79
19	31.90
20	32.33
21	31.91
22	32.69
23	32.78
24	32.86
25	32.95
26	32.62
27	32.53
28	32.44
29	32.34
30	32.25
31	31.84
32	31.07
33	31.32
34	31.06
35	31.00
36	30.98
37	30.39
38	30.27
39	30.11
40	29.89
41	29.69
42	29.50
43	29.60
44	29.78
45	30.00
46	30.22
47	30.45
48	31.01
49	31.62
50	31.67
51	31.35
52	31.11
53	30.29

AFG Point	Elevation
54	30.02
55	29.10
56	28.29
57	27.70
58	26.44
59	24.96
60	23.40
61	22.53
62	19.20
63	19.25
64	19.05
65	18.50
66	18.33
67	18.24
68	18.16
69	18.19
70	18.21
71	18.25
72	18.23
73	18.21
74	18.15
75	18.10
76	18.04
77	18.18
78	18.36
79	18.53
80	18.71
81	19.04
82	19.48
83	19.75
84	19.75
85	19.75
86	19.75
87	19.75
88	19.75
89	19.75
90	19.75
91	19.75
92	19.75
93	19.75
94	19.75
95	19.75
96	19.75
97	19.75
98	19.75
99	19.75
100	19.68
101	19.57
102	19.45
103	19.37
104	19.28
105	19.25
106	19.22

AFG = 25.5'



<b>APPROVED</b>	
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AVERAGE FINISHED  
GRADE

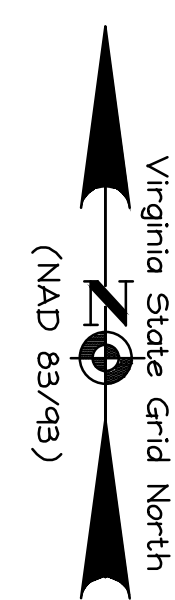
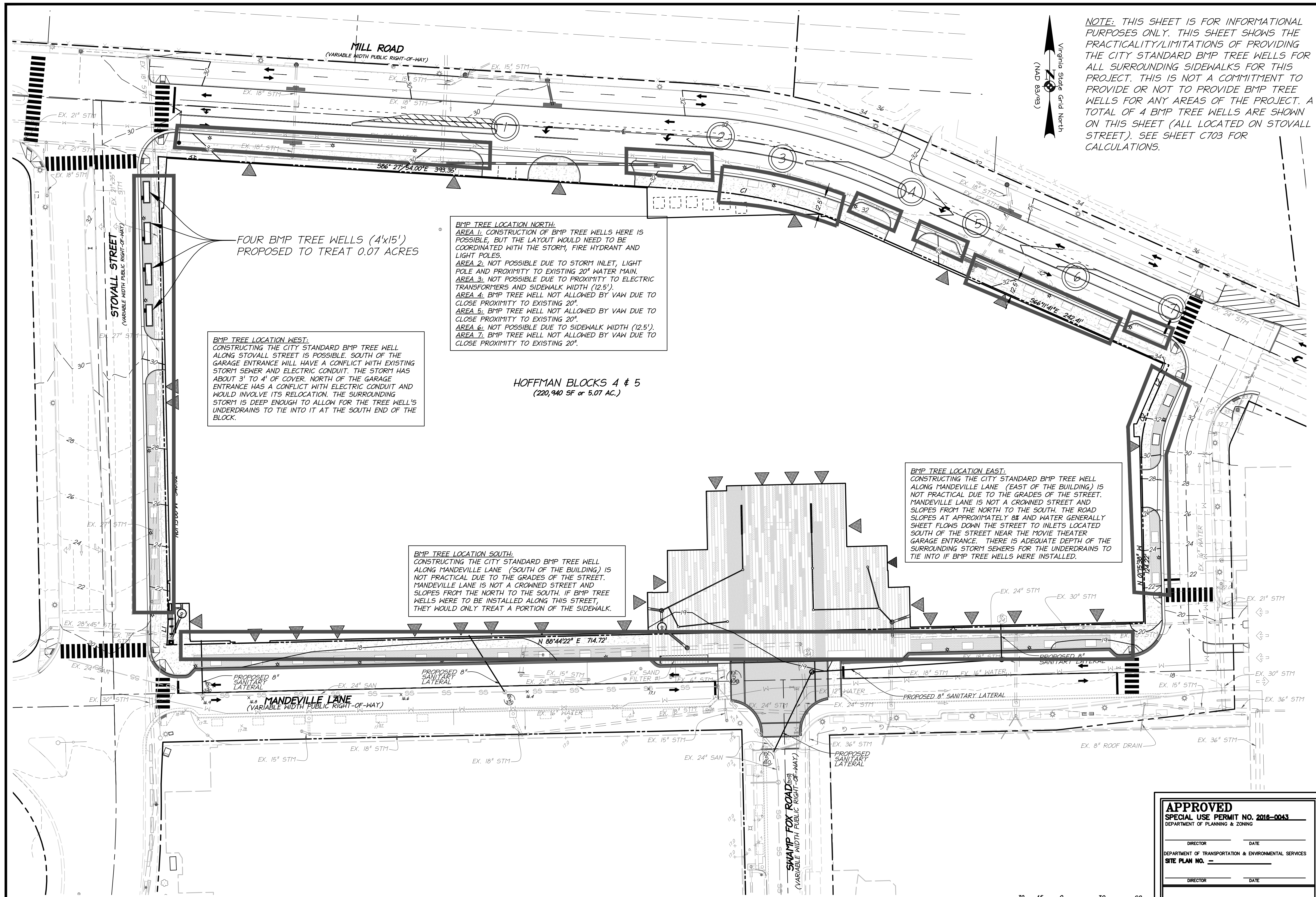
PRELIMINARY PLAN - STAGE 1  
HOFFMAN TOWN CENTER  
BLOCKS 4 & 5  
CITY OF ALEXANDRIA, VIRGINIA

PROJECT NO: 98085.049.00  
SCALE: 1"=30'  
DATE: 05/02/17  
DESIGN: EG  
DRAWN: AJB  
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SHEET No.

C403  
107540

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NOTE: THIS SHEET IS FOR INFORMATIONAL PURPOSES ONLY. THIS SHEET SHOWS THE PRACTICALITY/LIMITATIONS OF PROVIDING THE CITY STANDARD BMP TREE WELLS FOR ALL SURROUNDING SIDEWALKS FOR THIS PROJECT. THIS IS NOT A COMMITMENT TO PROVIDE OR NOT TO PROVIDE BMP TREE WELLS FOR ANY AREAS OF THE PROJECT. A TOTAL OF 4 BMP TREE WELLS ARE SHOWN ON THIS SHEET (ALL LOCATED ON STOVALL STREET). SEE SHEET C703 FOR CALCULATIONS.

FOUR BMP TREE WELLS (4'x15') PROPOSED TO TREAT 0.07 ACRES

**BMP TREE LOCATION WEST:**  
CONSTRUCTING THE CITY STANDARD BMP TREE WELL ALONG STOVALL STREET IS POSSIBLE. SOUTH OF THE GARAGE ENTRANCE WILL HAVE A CONFLICT WITH EXISTING STORM SEWER AND ELECTRIC CONDUIT. THE STORM HAS ABOUT 3' TO 4' OF COVER. NORTH OF THE GARAGE ENTRANCE HAS A CONFLICT WITH ELECTRIC CONDUIT AND WOULD INVOLVE ITS RELOCATION. THE SURROUNDING STORM IS DEEP ENOUGH TO ALLOW FOR THE TREE WELL'S UNDERDRAINS TO TIE INTO IT AT THE SOUTH END OF THE BLOCK.

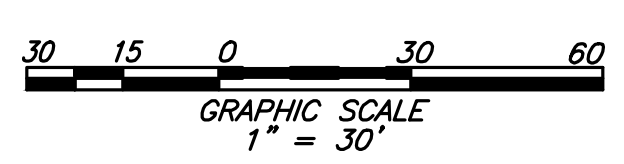
**BMP TREE LOCATION NORTH:**  
AREA 1: CONSTRUCTION OF BMP TREE WELLS HERE IS POSSIBLE, BUT THE LAYOUT WOULD NEED TO BE COORDINATED WITH THE STORM, FIRE HYDRANT AND LIGHT POLES.  
AREA 2: NOT POSSIBLE DUE TO STORM INLET, LIGHT POLE AND PROXIMITY TO EXISTING 20" WATER MAIN.  
AREA 3: NOT POSSIBLE DUE TO PROXIMITY TO ELECTRIC TRANSFORMERS AND SIDEWALK WIDTH (12.5').  
AREA 4: BMP TREE WELL NOT ALLOWED BY VAW DUE TO CLOSE PROXIMITY TO EXISTING 20".  
AREA 5: BMP TREE WELL NOT ALLOWED BY VAW DUE TO CLOSE PROXIMITY TO EXISTING 20".  
AREA 6: NOT POSSIBLE DUE TO SIDEWALK WIDTH (12.5').  
AREA 7: BMP TREE WELL NOT ALLOWED BY VAW DUE TO CLOSE PROXIMITY TO EXISTING 20".

HOFFMAN BLOCKS 4 & 5  
(220,940 SF or 5.07 AC.)

**BMP TREE LOCATION SOUTH:**  
CONSTRUCTING THE CITY STANDARD BMP TREE WELL ALONG MANDEVILLE LANE (SOUTH OF THE BUILDING) IS NOT PRACTICAL DUE TO THE GRADES OF THE STREET. MANDEVILLE LANE IS NOT A CROWNED STREET AND SLOPES FROM THE NORTH TO THE SOUTH. IF BMP TREE WELLS WERE TO BE INSTALLED ALONG THIS STREET, THEY WOULD ONLY TREAT A PORTION OF THE SIDEWALK.

**BMP TREE LOCATION EAST:**  
CONSTRUCTING THE CITY STANDARD BMP TREE WELL ALONG MANDEVILLE LANE (EAST OF THE BUILDING) IS NOT PRACTICAL DUE TO THE GRADES OF THE STREET. MANDEVILLE LANE IS NOT A CROWNED STREET AND SLOPES FROM THE NORTH TO THE SOUTH. THE ROAD SLOPES AT APPROXIMATELY 8% AND WATER GENERALLY SHEET FLOWS DOWN THE STREET TO INLETS LOCATED SOUTH OF THE STREET NEAR THE MOVIE THEATER GARAGE ENTRANCE. THERE IS ADEQUATE DEPTH OF THE SURROUNDING STORM SEWERS FOR THE UNDERDRAINS TO TIE INTO IF BMP TREE WELLS WERE INSTALLED.

<b>APPROVED</b>	
SPECIAL USE PERMIT NO. 2016-0043	
DEPARTMENT OF PLANNING & ZONING	
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PAGE NO. _____	



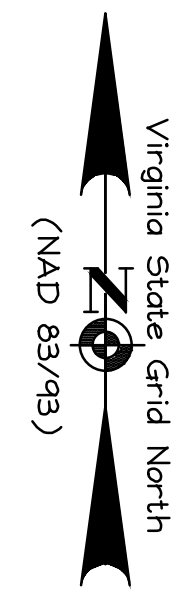
9900 main street (suite 400) • fairfax, va 22031  
phone 703.273.6820 • fax 703.273.6820

**BMP TREE WELL EXHIBIT**

PRELIMINARY PLAN - STAGE 1  
**HOFFMAN TOWN CENTER**  
**BLOCKS 4 & 5**  
CITY OF ALEXANDRIA, VIRGINIA

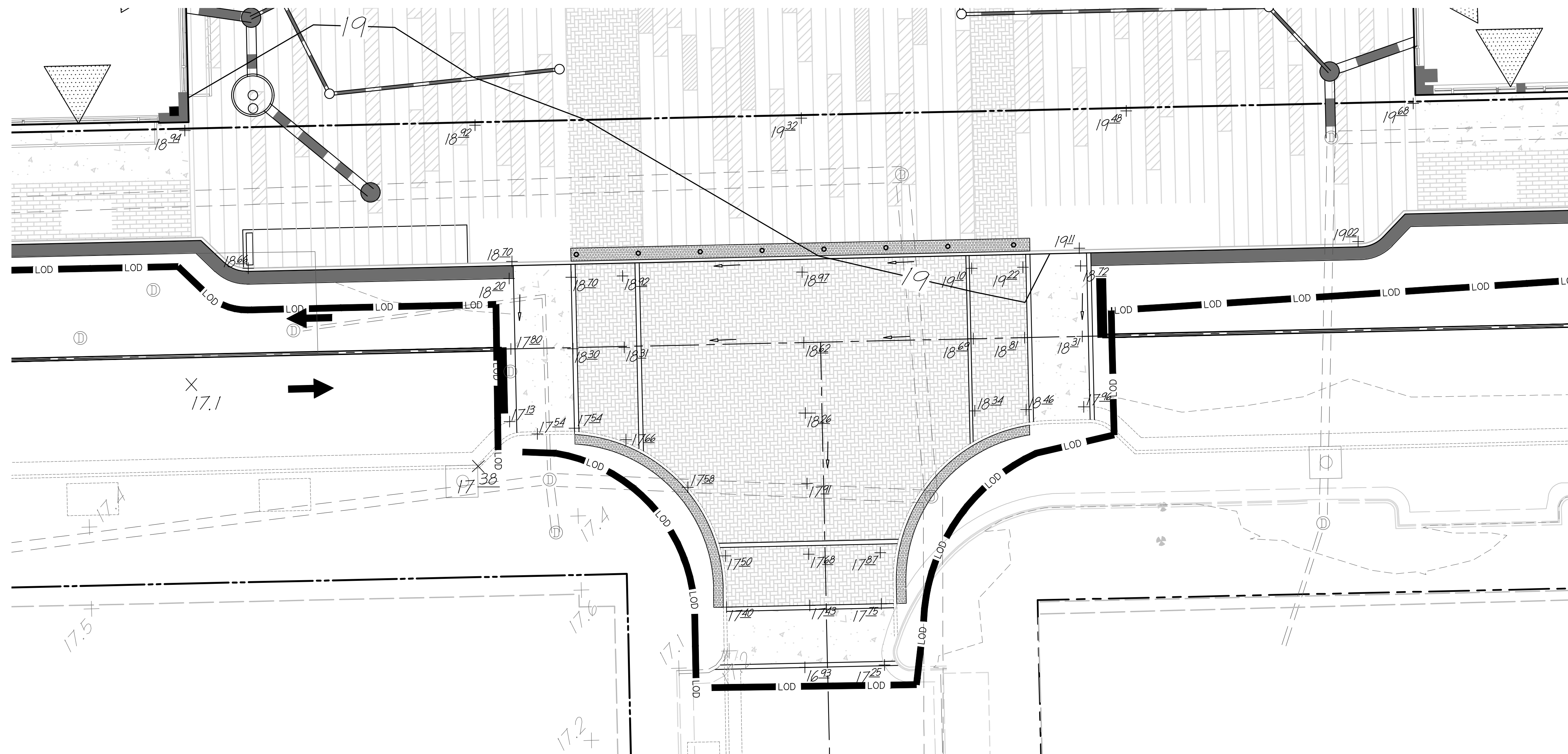
PROJECT NO: 98085.049.00  
SCALE: 1"=30'  
DATE: 05/02/17  
DESIGN: EG  
DRAWN: EG  
CHECKED: KMW  
SHEET No.  
**C405**  
107540





LEGEND

- :PROP. ENTRANCE
- :RIGHT-OF-WAY
- :PROP. BUILDING
- :PROP. CURB
- :PROP. EDGE OF PAVEMENT
- :EX. CURB
- :EX. SPOT SHOT
- :PROP. SPOT SHOT
- :EX. CONTOUR
- :PROP. CONTOUR
- :LIMITS OF DISTURBANCE



NOTE:  
1. SEE SHEET C401 FOR GRADING OF THE ENTIRE SITE.  
2. SEE SHEET C404 FOR AFG EXHIBIT.



<b>APPROVED</b>	
SPECIAL USE PERMIT NO. 2016-0043	
DEPARTMENT OF PLANNING & ZONING	
DIRECTOR _____	DATE _____
DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES	
SITE PLAN NO. _____	
DIRECTOR _____	DATE _____
CHAIRMAN, PLANNING COMMISSION _____	
DATE RECORDED _____	
INSTRUMENT NO. _____	DEED BOOK NO. _____
PAGE NO. _____	

PROJECT NO: 98085.049.00

SCALE: 1"=30'

DATE: 05/02/17

DESIGN: EG  
DRAWN: AJB  
CHECKED: KMW

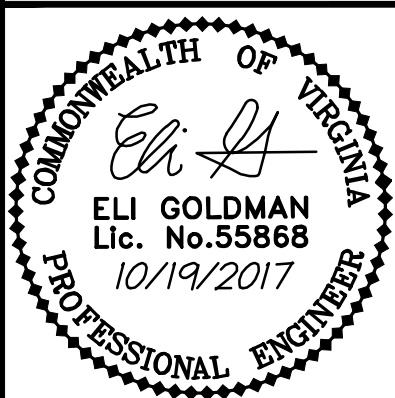
SHEET No.

C406

107540

PRELIMINARY PLAN - STAGE 1  
HOFFMAN TOWN CENTER  
BLOCKS 4 & 5  
CITY OF ALEXANDRIA, VIRGINIA

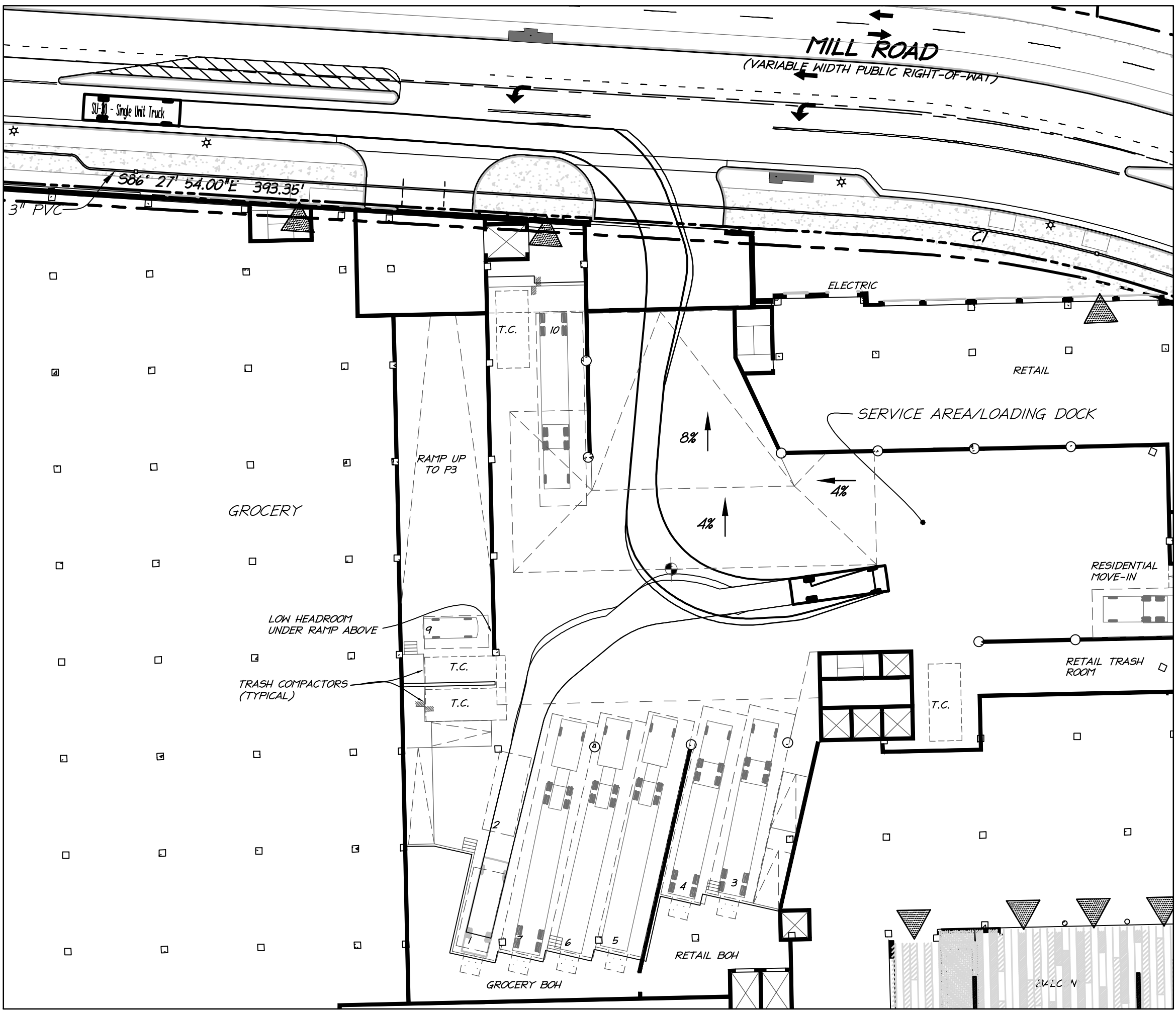
FINE GRADING PLAN



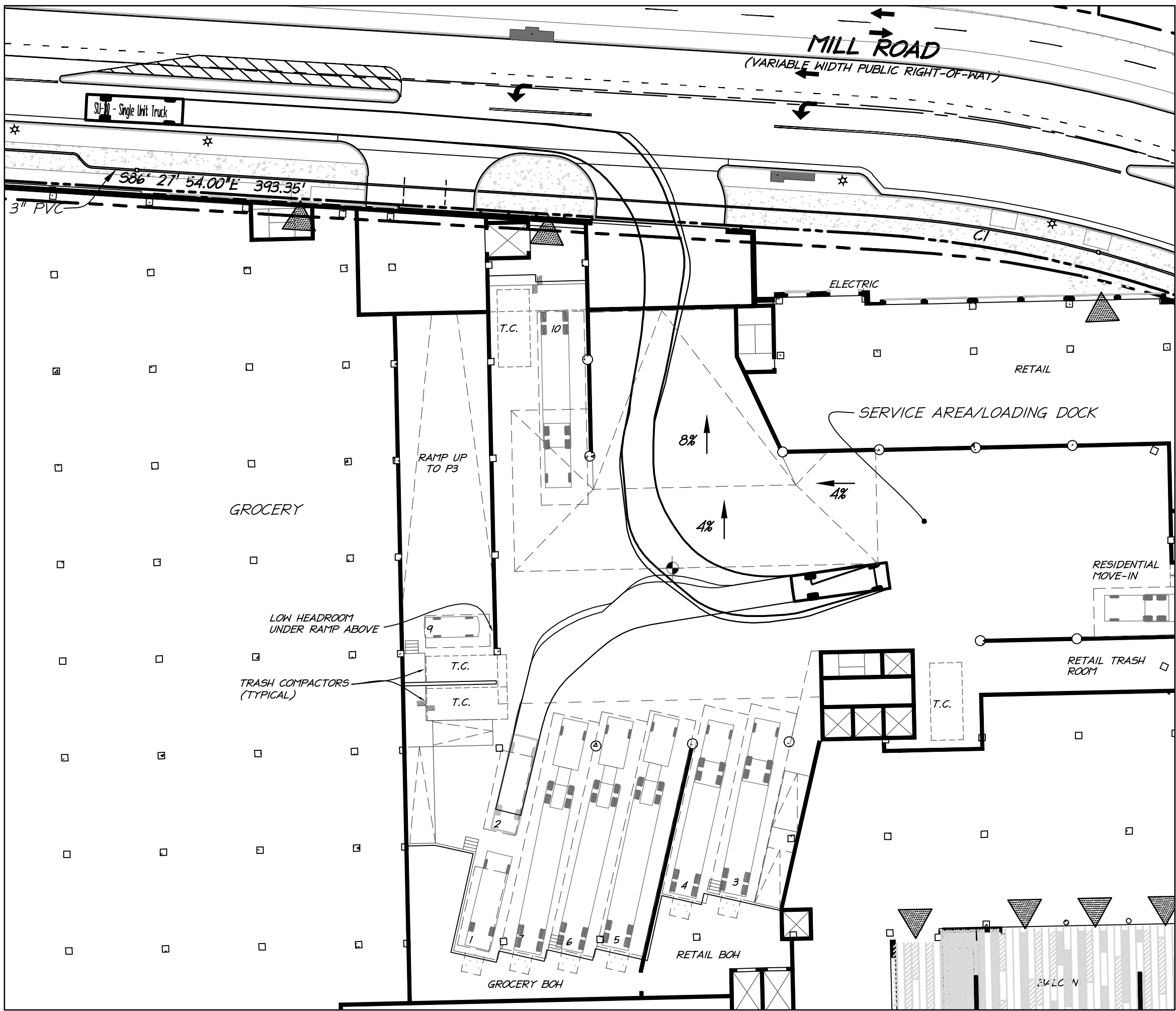
**christopher consultants**  
9900 main street (suite 400) · fairfax, va 22031  
phone 703.273.6820 · fax 703.273.6820



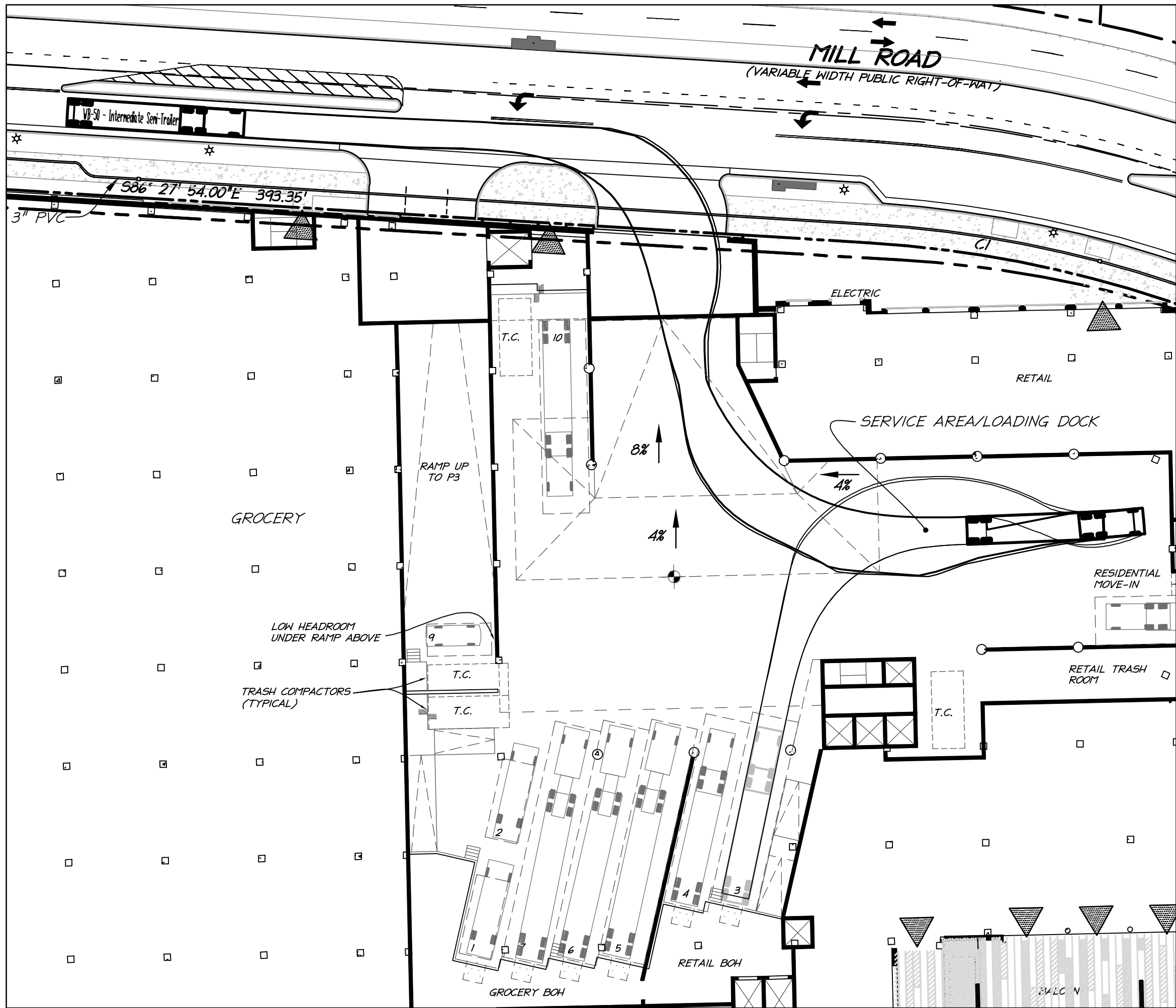
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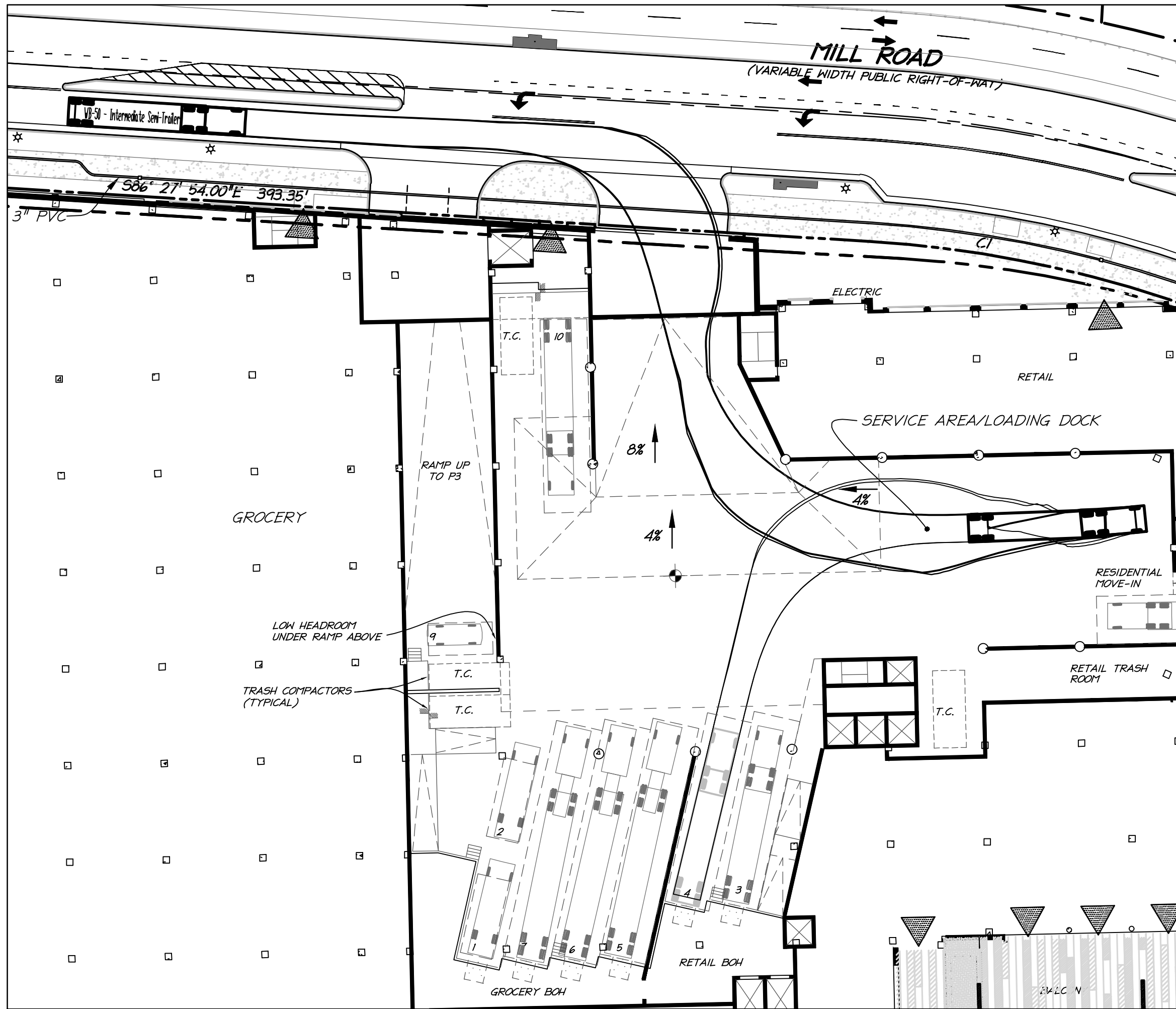
SU-30 TRUCK - ENTERING BAY #1



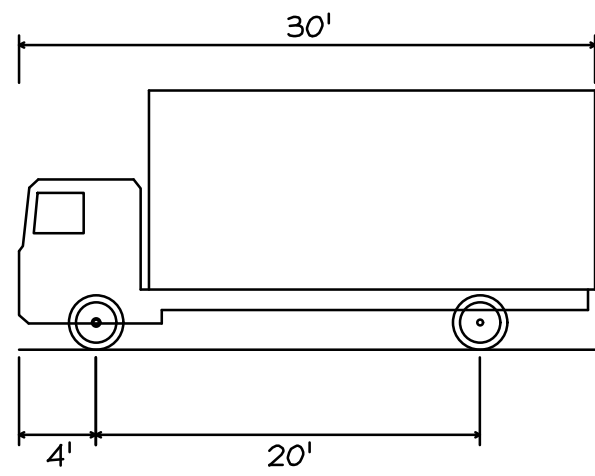
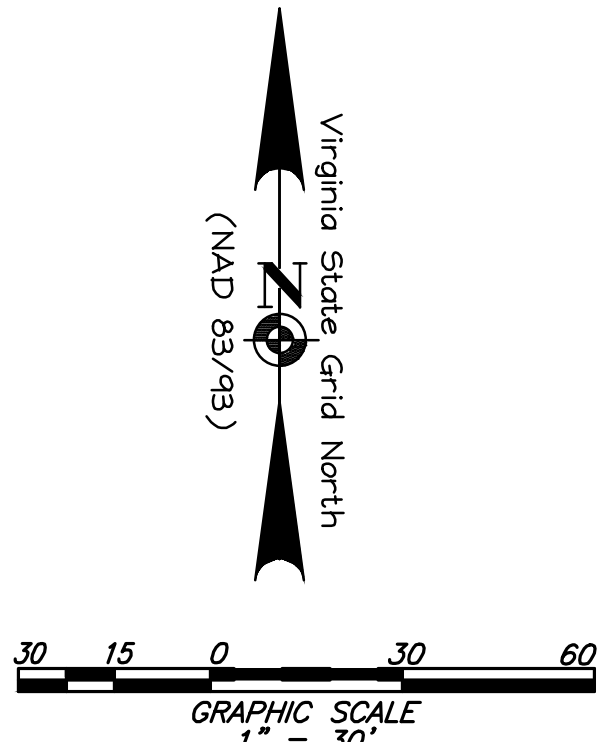
SU-30 TRUCK - ENTERING BAY #2



WB-50 TRUCK - ENTERING BAY #3

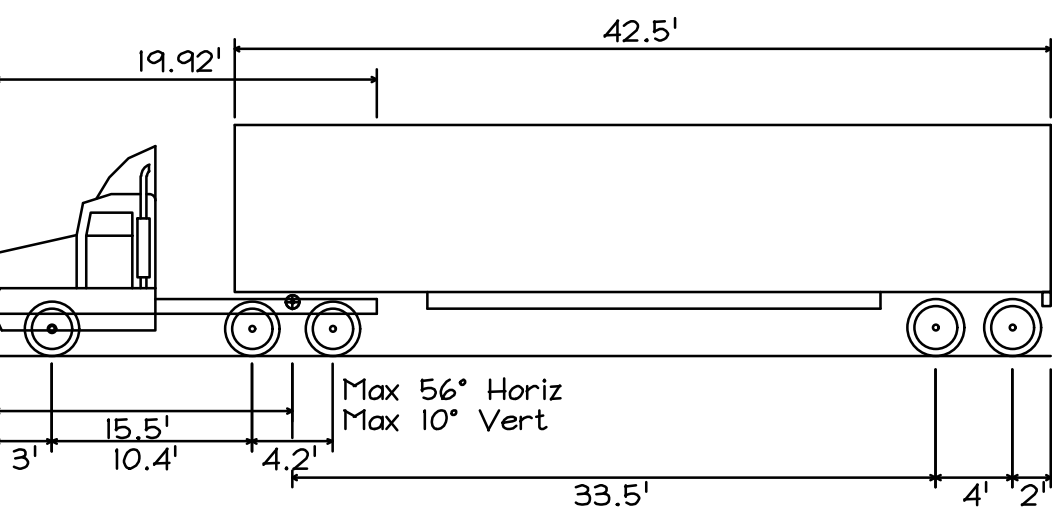


WB-50 TRUCK - ENTERING BAY #4



Overall Length 30.00ft  
Overall Width 8.00ft  
Overall Body Height 13.50ft  
Min Body Ground Clearance 1.367ft  
Track Width 8.00ft  
Lock-to-lock time 5.00s  
Max Steering Angle (Virtual) 31.80°

SU-30 - Single Unit Truck



Overall Length 55.00ft  
Overall Width 8.50ft  
Overall Body Height 12.052ft  
Min Body Ground Clearance 1.334ft  
Max Track Width 8.50ft  
Lock-to-lock time 6.00s  
Max Steering Angle (Virtual) 17.90°

WB-50 - Intermediate Semi-Trailer

<b>APPROVED</b>	
SPECIAL USE PERMIT NO. 2016-0043	
DEPARTMENT OF PLANNING & ZONING	
DIRECTOR _____	DATE _____
DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES	
SITE PLAN NO. _____	
DIRECTOR _____	DATE _____
CHAIRMAN, PLANNING COMMISSION _____	
DATE RECORDED _____	
INSTRUMENT NO. _____	DEED BOOK NO. _____
PAGE NO. _____	

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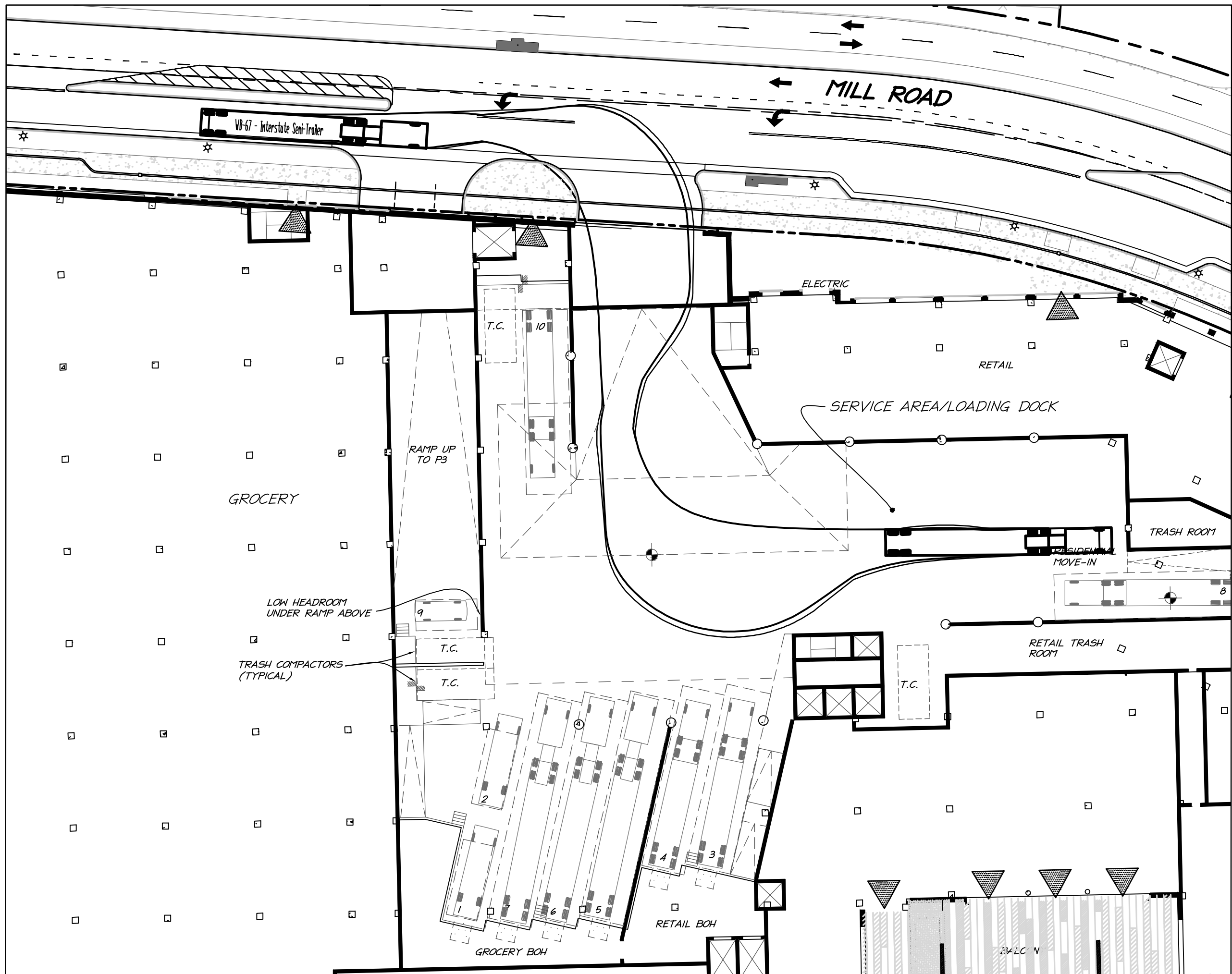
**TURNING MOVEMENTS**

PRELIMINARY PLAN - STAGE 1  
**HOFFMAN TOWN CENTER**  
**BLOCKS 4 & 5**  
CITY OF ALEXANDRIA, VIRGINIA

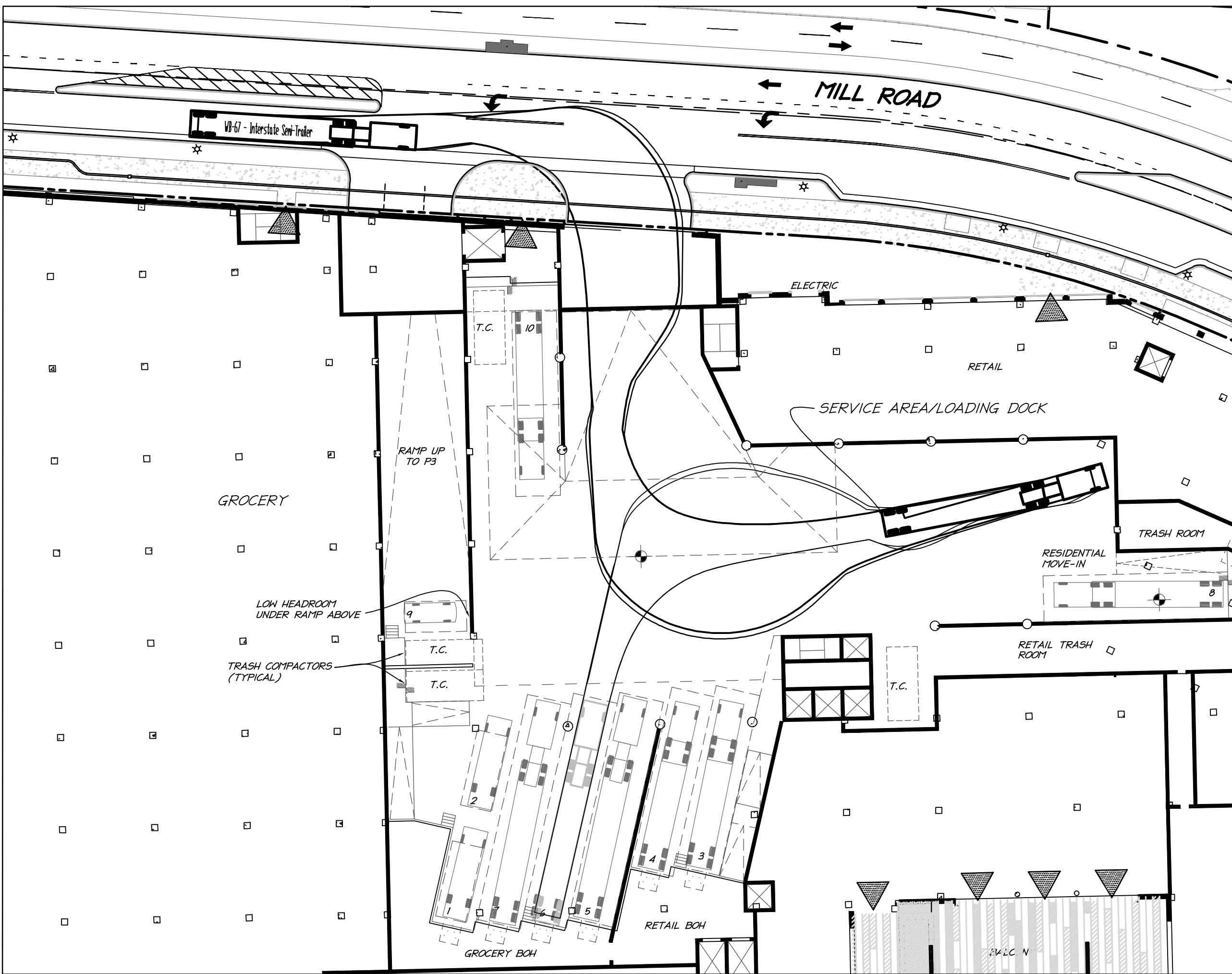
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SHEET No.  
**C500**  
107540



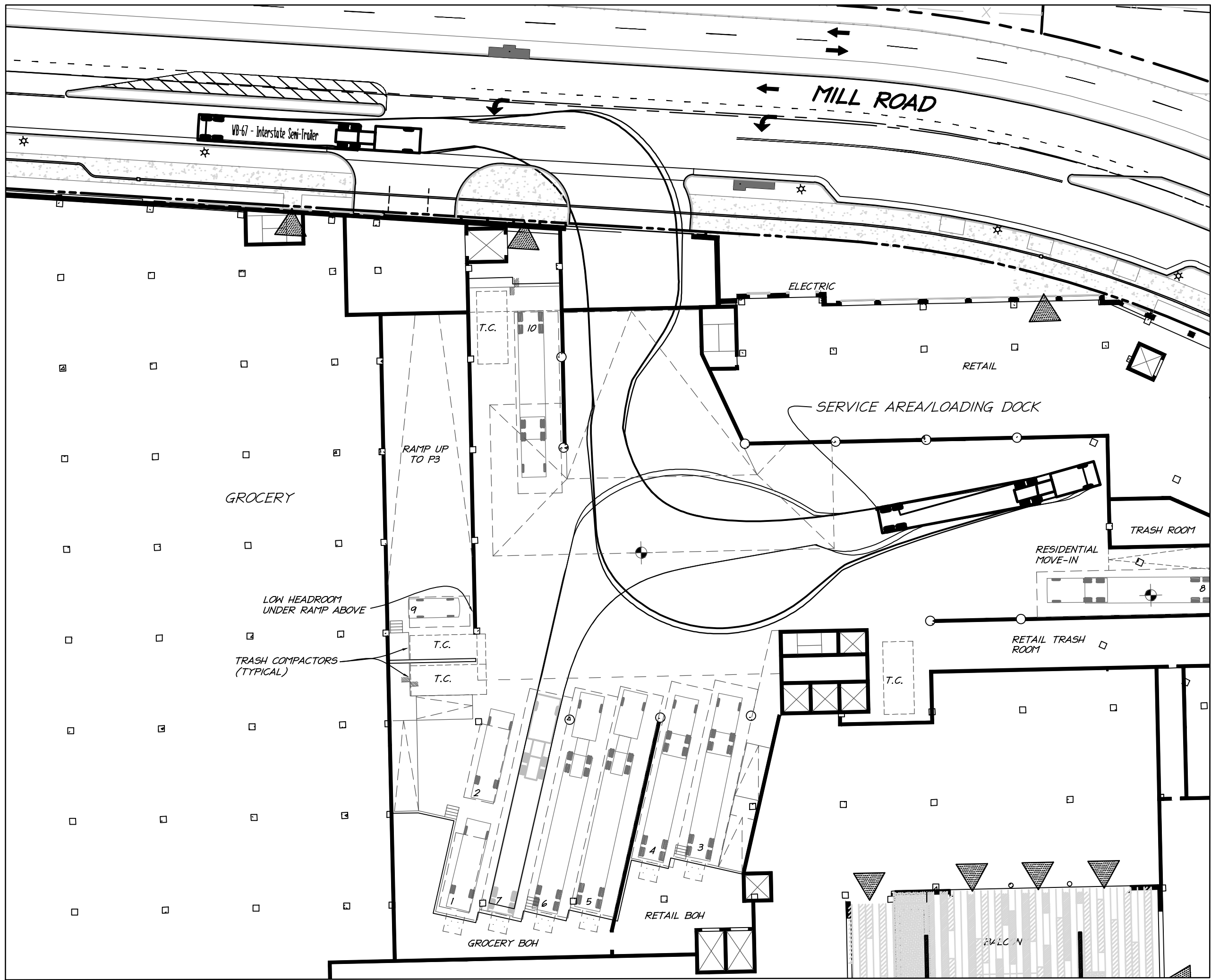
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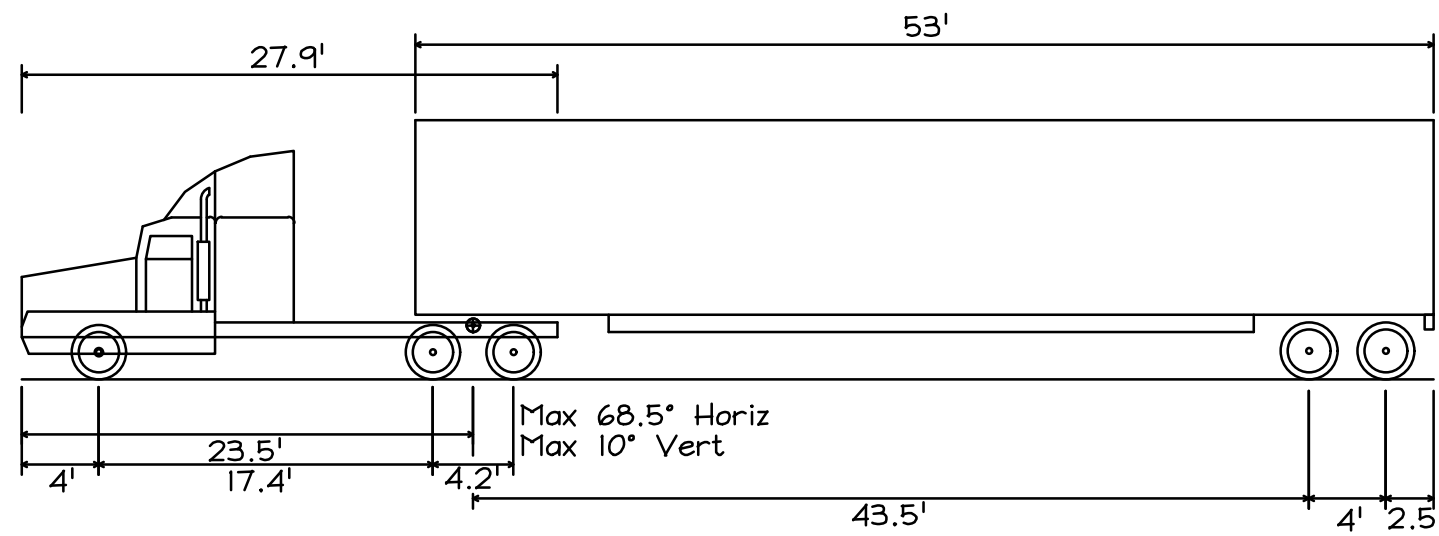
WB-67 TRUCK - ENTERING BAY #5



WB-67 TRUCK - ENTERING BAY #6

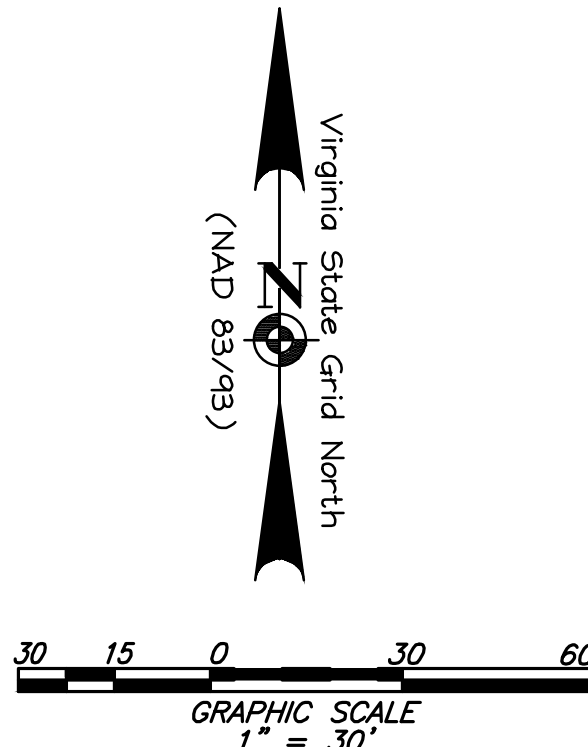


WB-67 TRUCK - ENTERING BAY #7

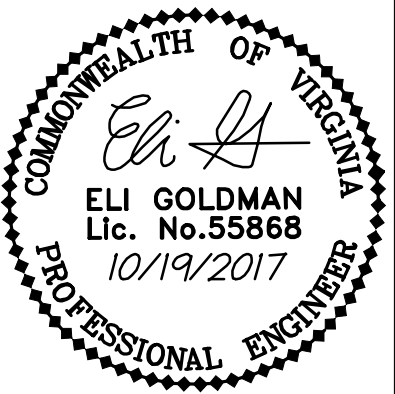


Overall Length 73.50ft  
Overall Width 8.50ft  
Overall Body Height 13.50ft  
Min Body Ground Clearance 1.334ft  
Max Track Width 8.50ft  
Lock-to-lock time 6.00s  
Max Steering Angle (Virtual) 28.40°

WB-67 - Interstate Semi-Trailer



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TURNING MOVEMENTS

PRELIMINARY PLAN - STAGE 1  
HOFFMAN TOWN CENTER  
BLOCKS 4 & 5  
CITY OF ALEXANDRIA, VIRGINIA

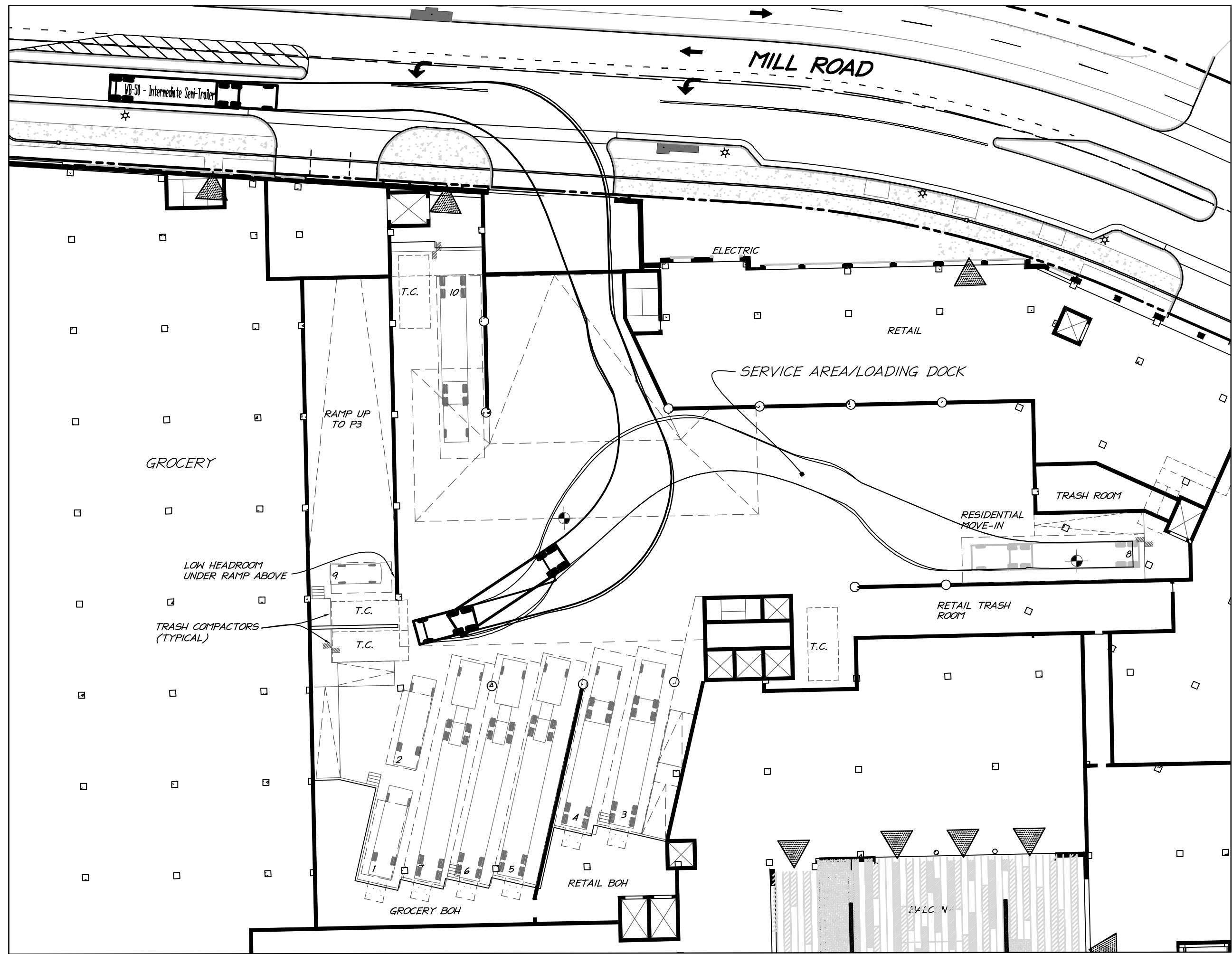
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DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES	
SITE PLAN NO. _____	
DIRECTOR _____	DATE _____
CHAIRMAN, PLANNING COMMISSION _____	
DATE RECORDED _____	
INSTRUMENT NO. _____	DEED BOOK NO. _____
PAGE NO. _____	

PROJECT NO: 98085.049.00  
SCALE: 1"=30'  
DATE: 05/02/17  
DESIGN: EG  
DRAWN: EG  
CHECKED: KMW  
SHEET No.

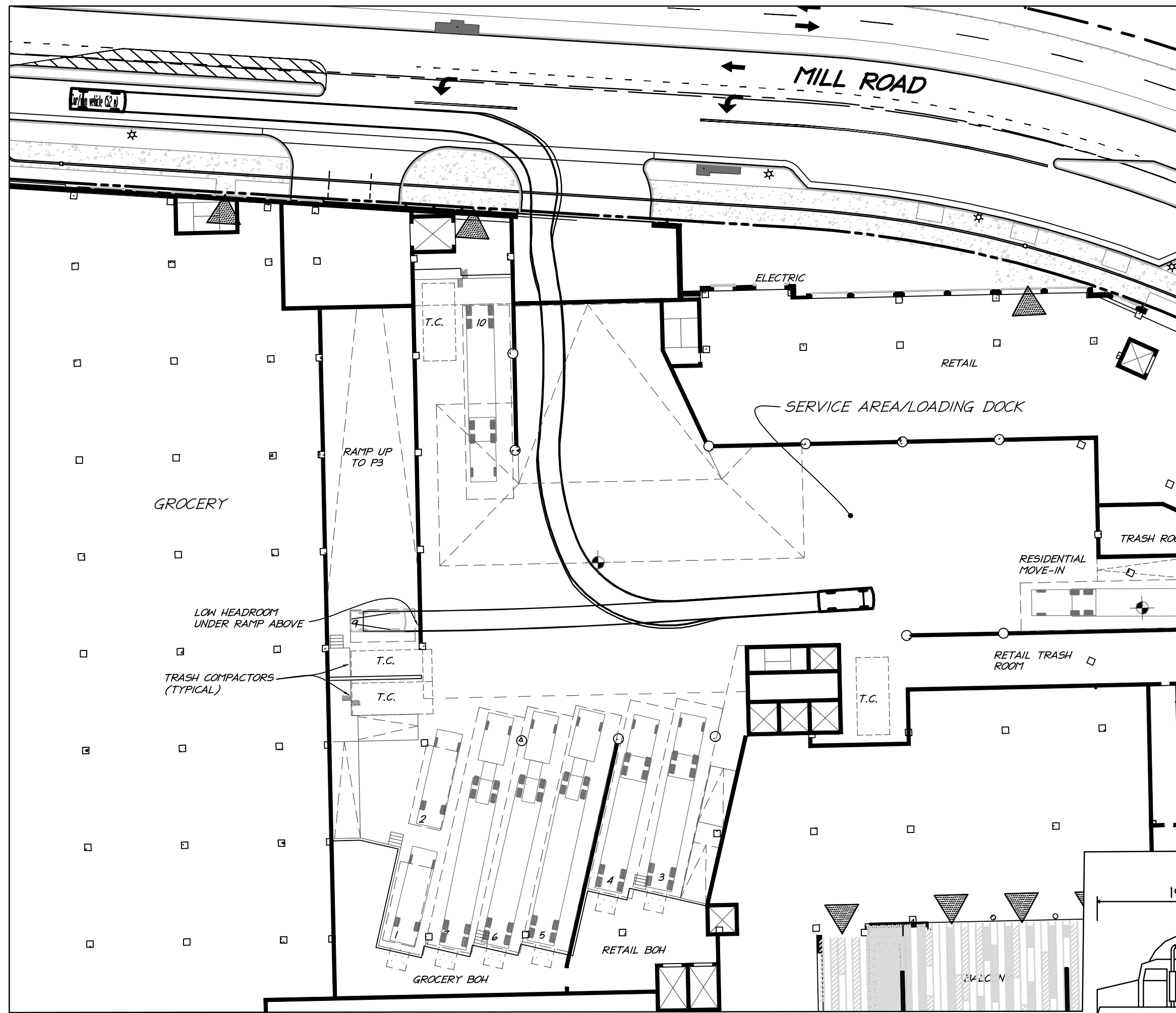
C501  
107540



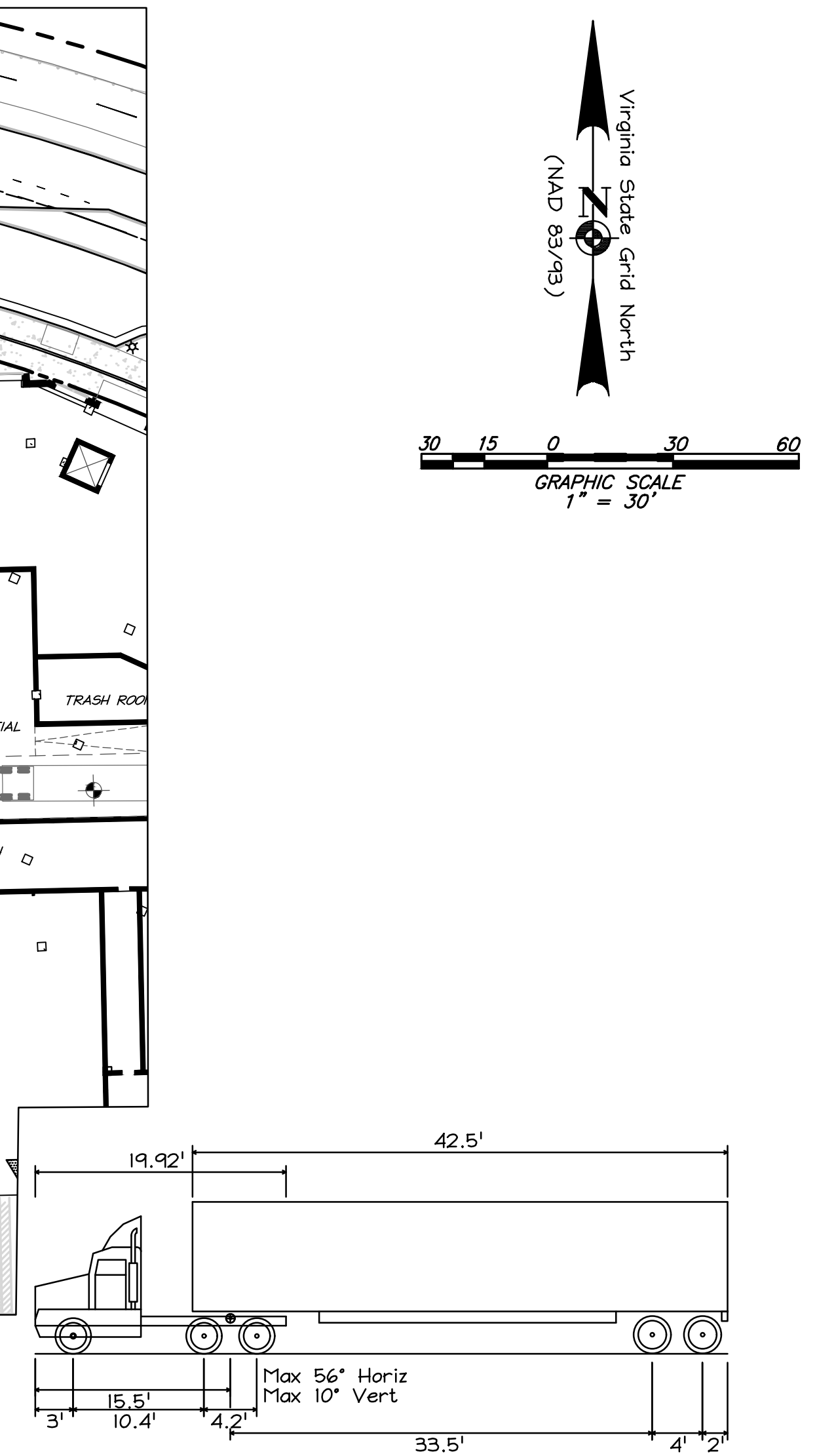
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WB-50 TRUCK - ENTERING BAY #8

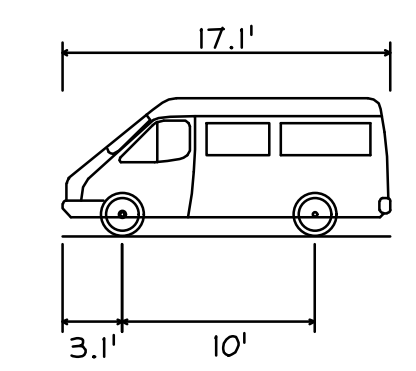


CARGO VAN - ENTERING BAY #9



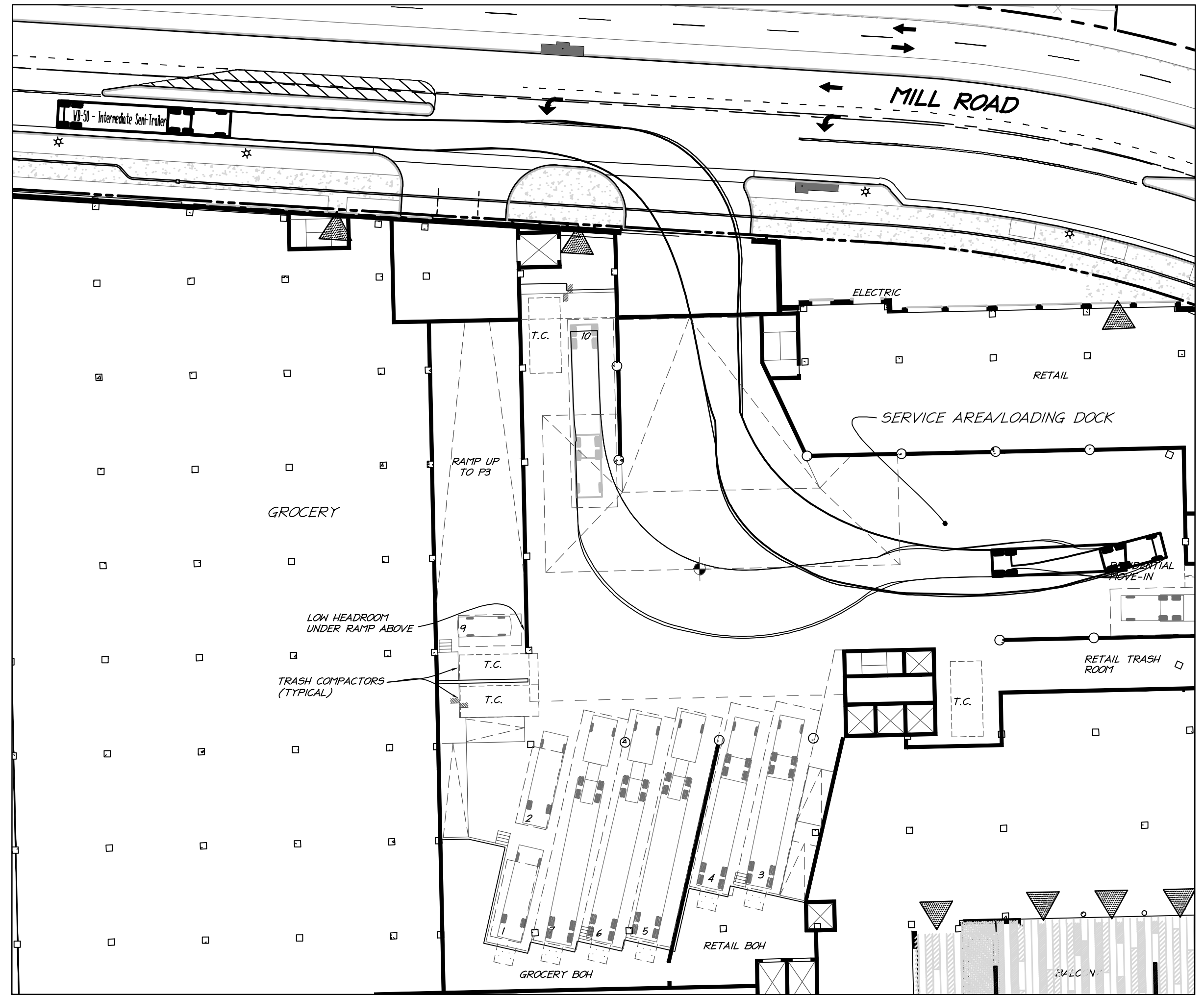
Overall Length 55.00ft  
Overall Width 8.50ft  
Overall Body Height 12.052ft  
Min Body Ground Clearance 1.334ft  
Max Track Width 8.50ft  
Lock-to-lock time 6.00s  
Max Steering Angle (Virtual) 17.90°

WB-50 - Intermediate Semi-Trailer

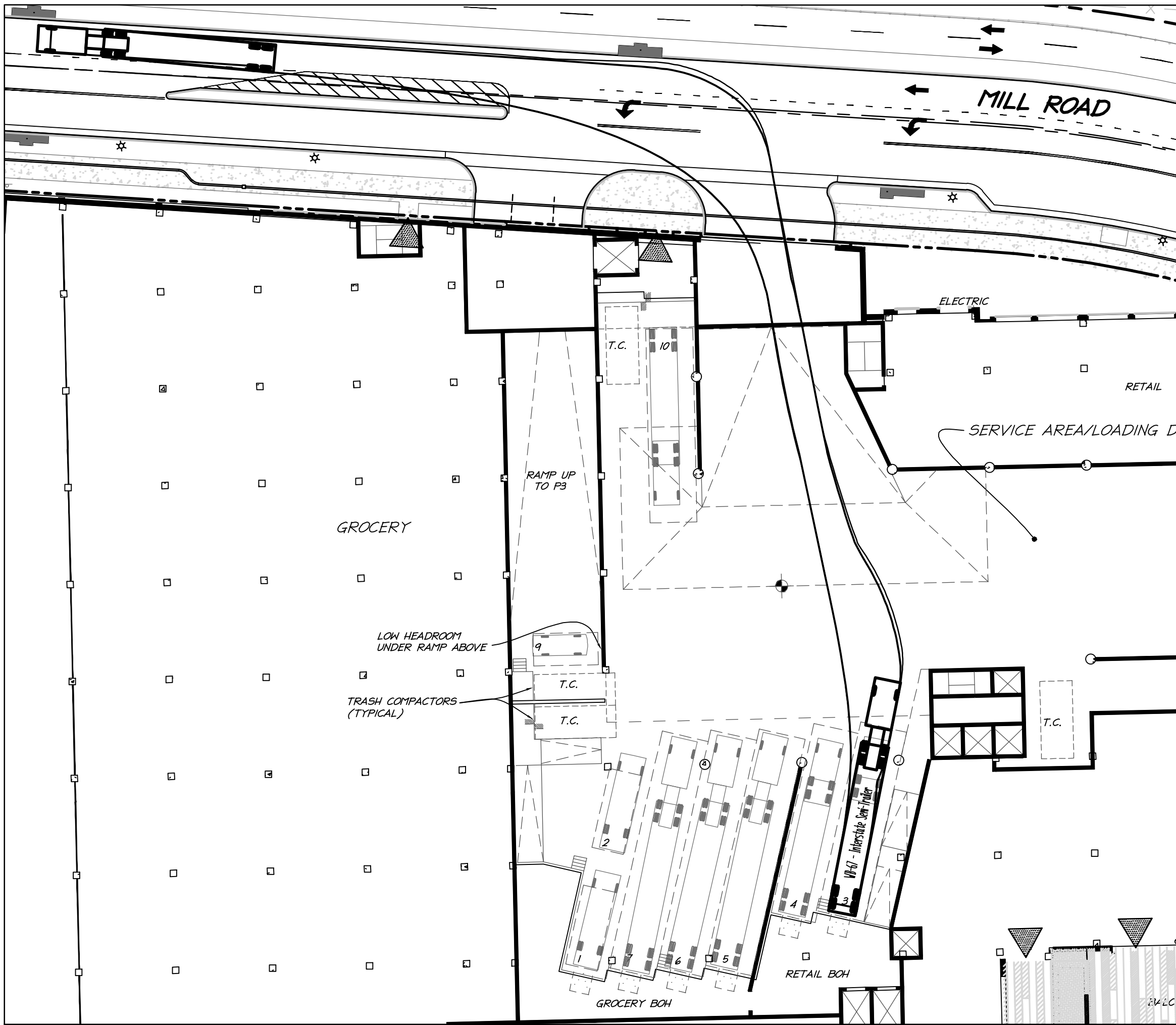


Overall Length 17.06ft  
Overall Width 6.37ft  
Overall Body Height 7.22ft  
Min Body Ground Clearance 1.024ft  
Track Width 6.04ft  
Lock-to-lock time 4.00s  
Curb to Curb Turning Radius 20.67ft

Passenger/Cargo Van



WB-50 - ENTERING BAY #10



WB-67 - EXITING

<b>APPROVED</b>	
SPECIAL USE PERMIT NO. 2016-0043	
DEPARTMENT OF PLANNING & ZONING	
DIRECTOR _____	DATE _____
DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES	
SITE PLAN NO. _____	
DIRECTOR _____	DATE _____
CHAIRMAN, PLANNING COMMISSION _____	
DATE RECORDED _____	
INSTRUMENT NO. _____	DEED BOOK NO. _____
PAGE NO. _____	

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10/19/2017  
PROFESSIONAL ENGINEER

TURNING MOVEMENTS

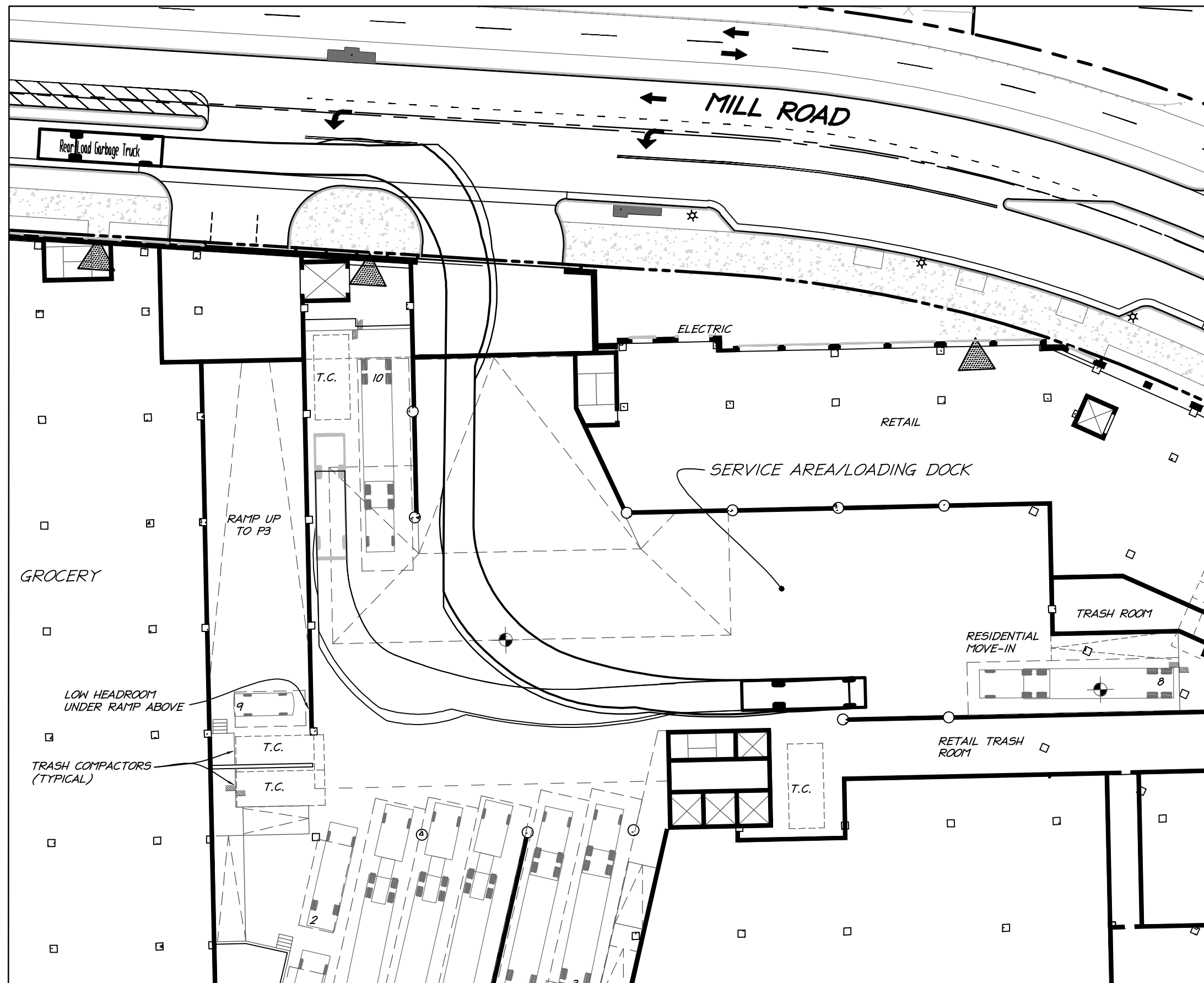
PRELIMINARY PLAN - STAGE 1  
HOFFMAN TOWN CENTER  
BLOCKS 4 & 5  
CITY OF ALEXANDRIA, VIRGINIA

PROJECT NO. 98085.049.00  
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DATE: 05/02/17  
DESIGN: EG  
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CHECKED: KMW  
SHEET No.  
**C502**

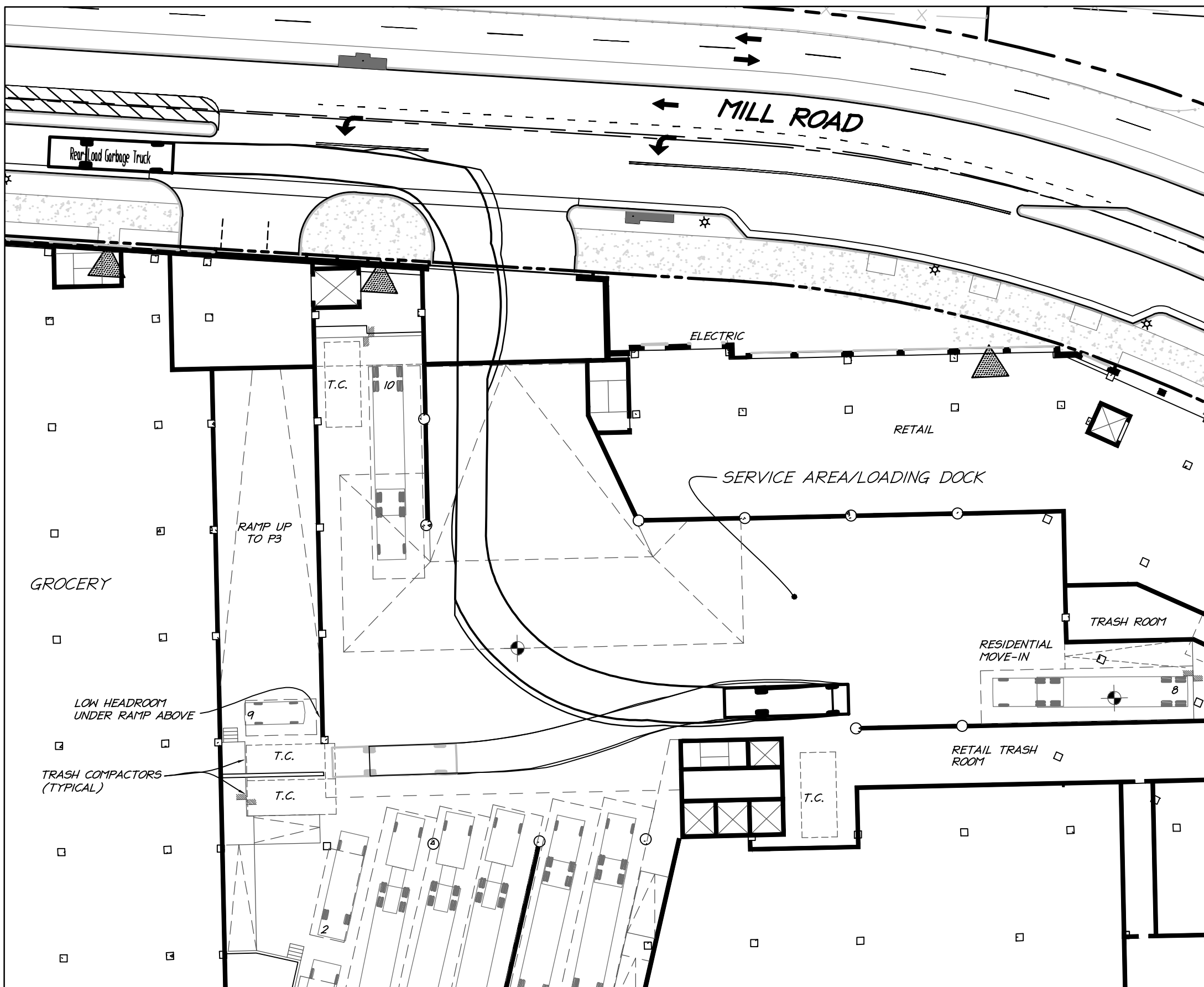
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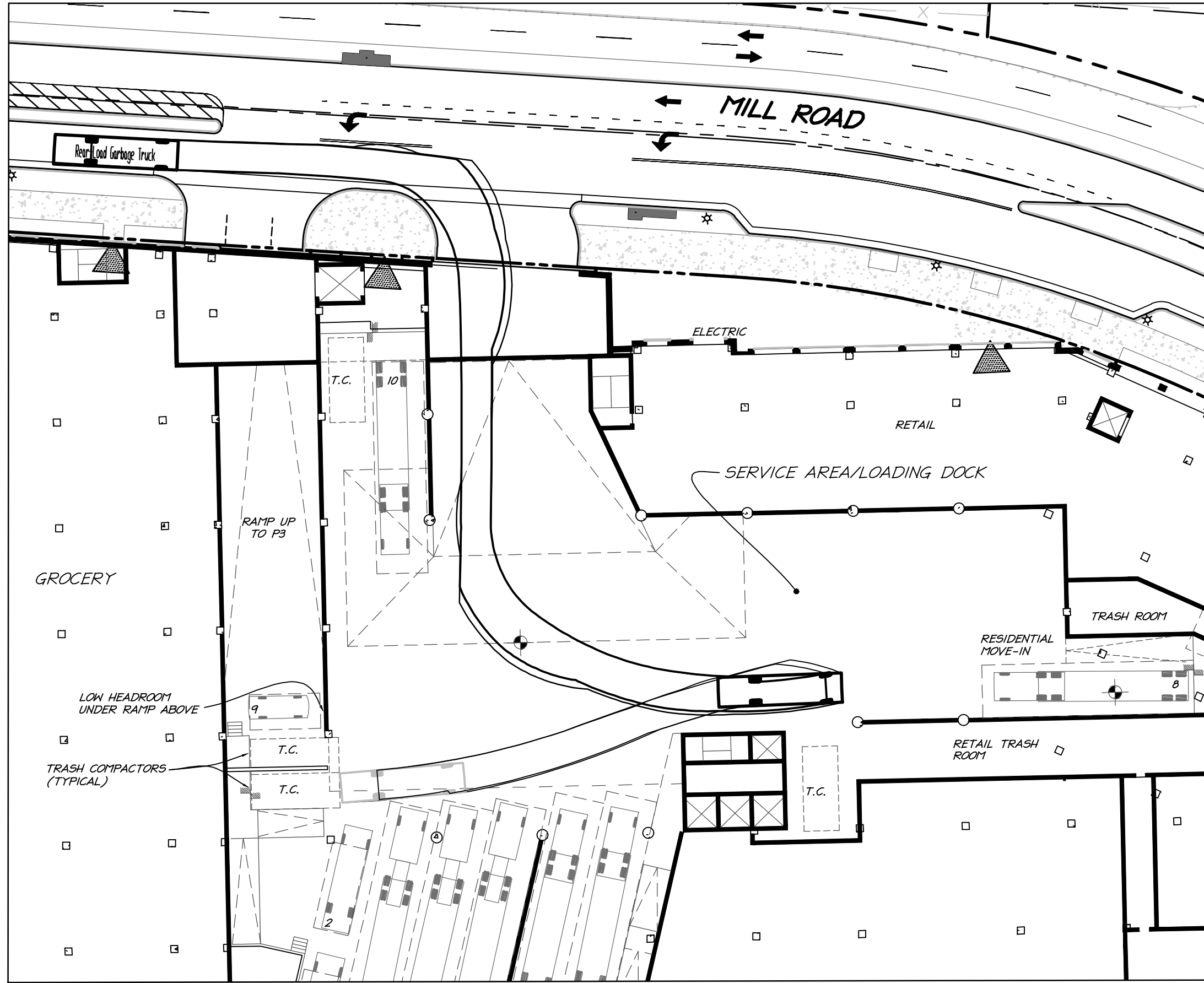
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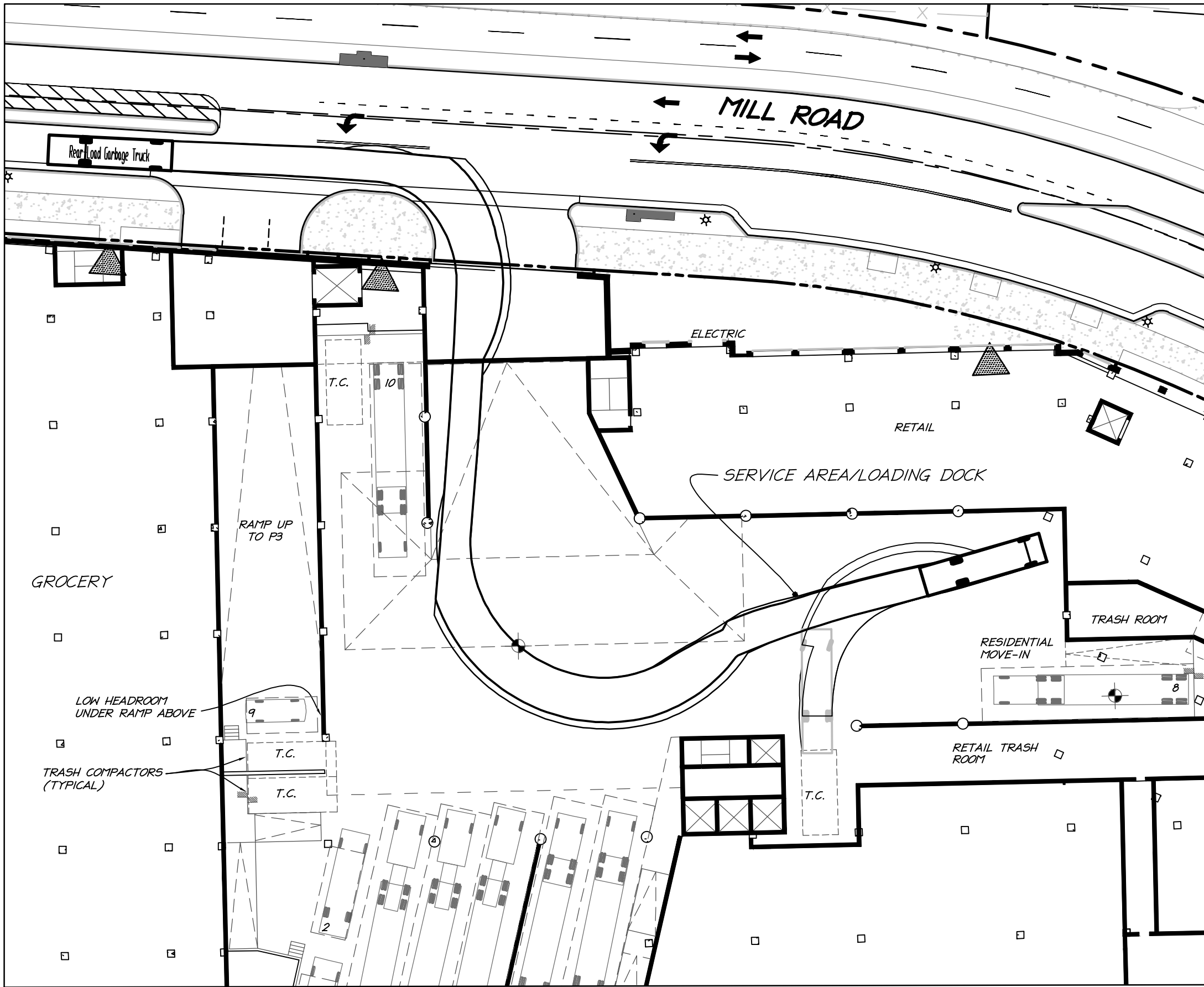
GARBAGE TRUCK - ENTERING



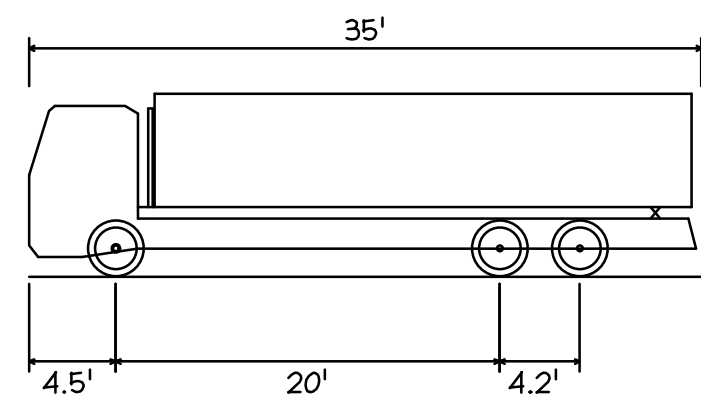
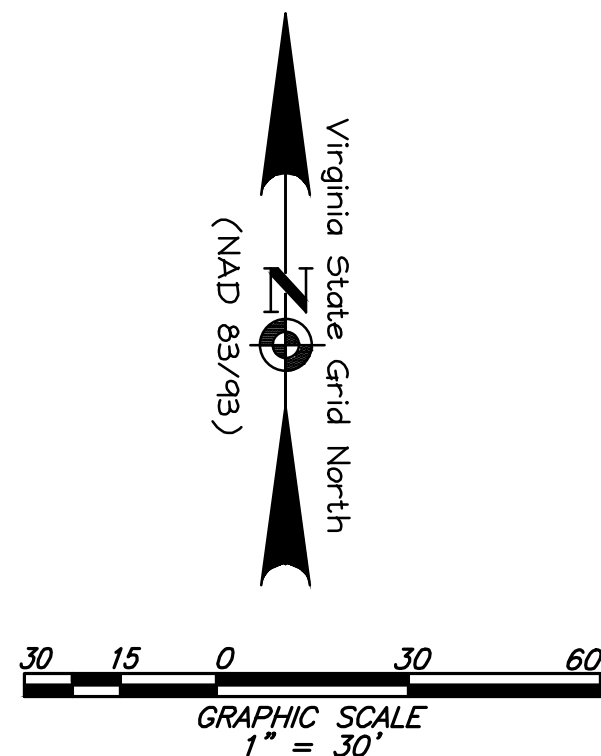
GARBAGE TRUCK - ENTERING



GARBAGE TRUCK - ENTERING



GARBAGE TRUCK - ENTERING



Overall Length 35.00ft  
Overall Width 8.375ft  
Overall Body Height 9.53ft  
Min Body Ground Clearance 1.00ft  
Track Width 8.375ft  
Lock-to-lock time 6.00s  
Curb to Curb Turning Radius 29.30ft

Roll-Off Garbage Truck

<b>APPROVED</b>	
SPECIAL USE PERMIT NO. 2016-0043	
DEPARTMENT OF PLANNING & ZONING	
DIRECTOR _____	DATE _____
DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES	
SITE PLAN NO. _____	
DIRECTOR _____	DATE _____
CHAIRMAN, PLANNING COMMISSION _____	
DATE RECORDED _____	
INSTRUMENT NO. _____	DEED BOOK NO. _____
PAGE NO. _____	

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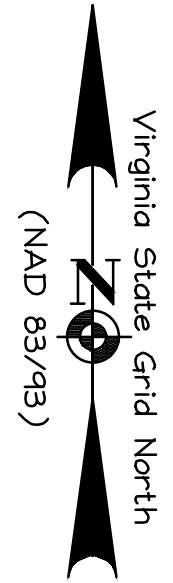
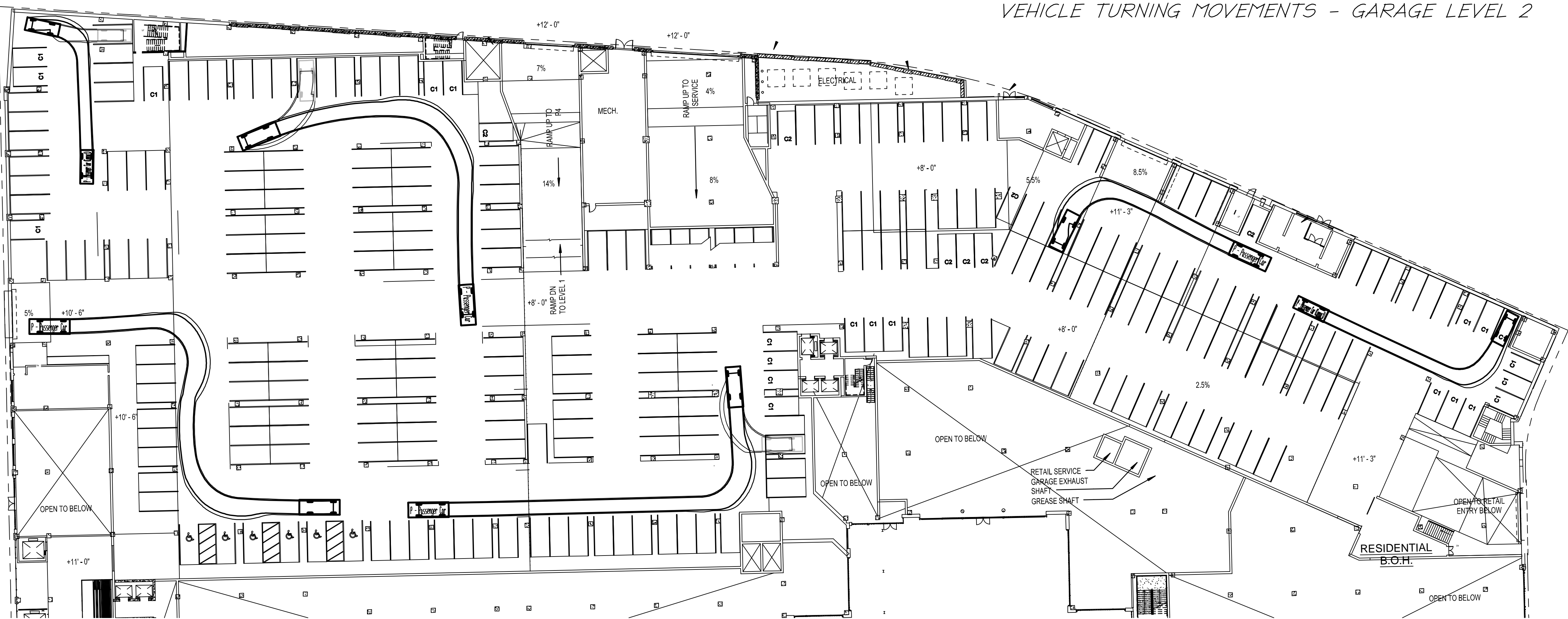
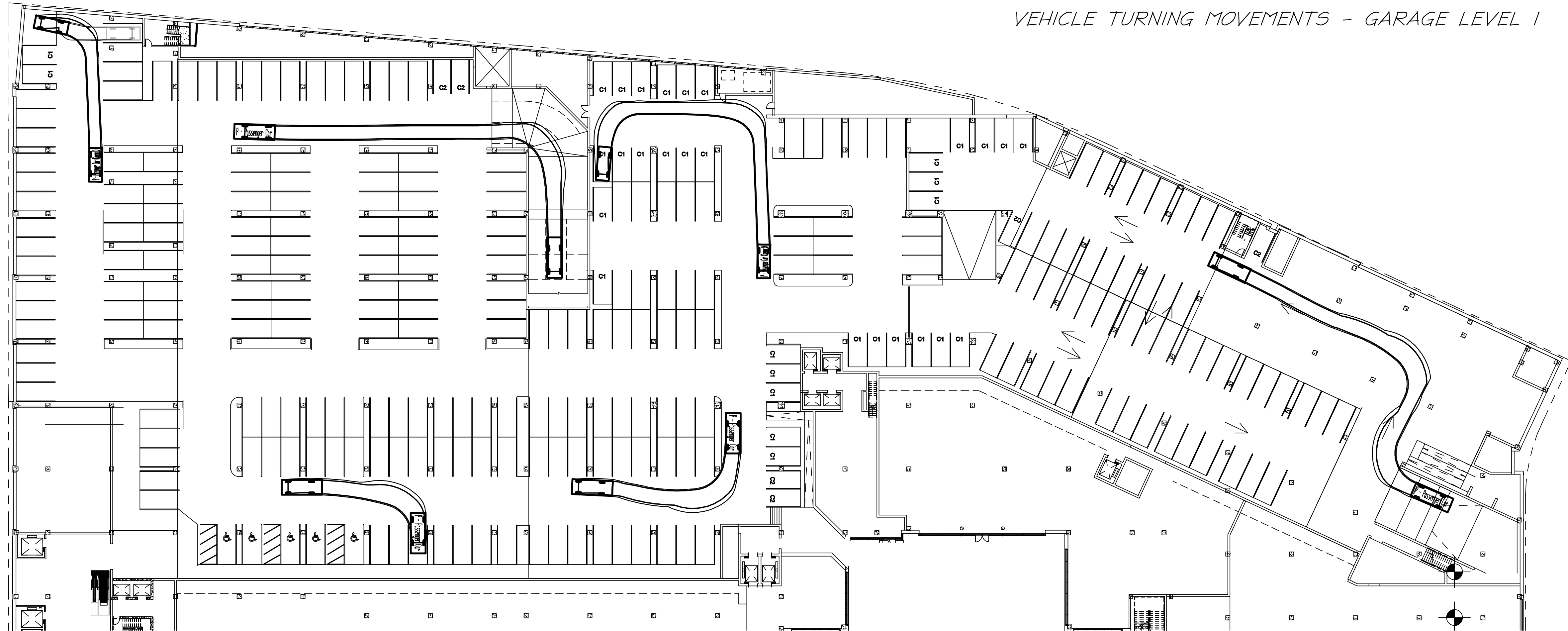
TURNING MOVEMENTS

PRELIMINARY PLAN - STAGE 1  
HOFFMAN TOWN CENTER  
BLOCKS 4 & 5  
CITY OF ALEXANDRIA, VIRGINIA

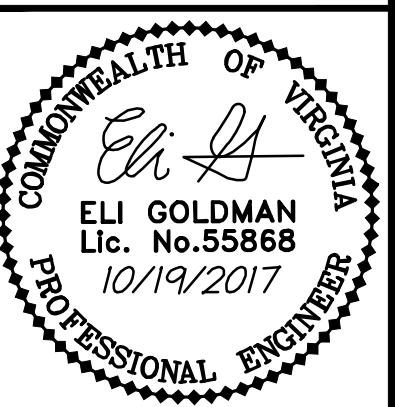
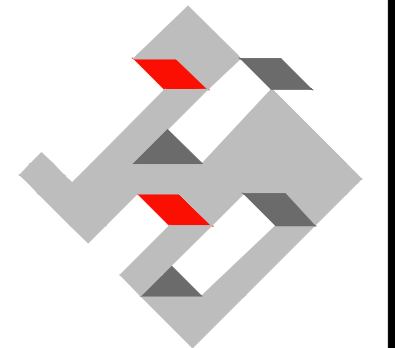
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C503  
107540



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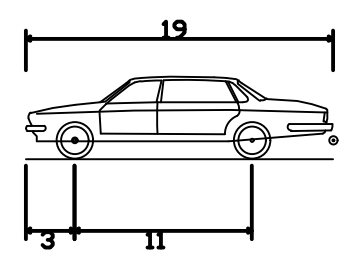
TURNING MOVEMENTS -  
LEVELS 1 & 2

PRELIMINARY PLAN - STAGE 1  
**HOFFMAN TOWN CENTER**  
**BLOCKS 4 & 5**  
CITY OF ALEXANDRIA, VIRGINIA

PROJECT NO: 88085.049.00  
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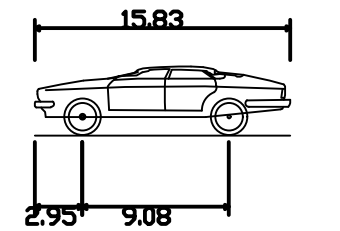
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PASSENGER CAR - NOT TO SCALE

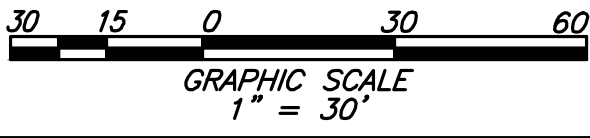


P - Passenger Car  
Overall Length 19.000ft  
Overall Width 7.000ft  
Overall Body Height 5.101ft  
Min Body Ground Clearance 1.116ft  
Track Width 6.000ft  
Lock-to-lock time 4.00s  
Max Steering Angle (Virtual) 31.60°

COMPACT CAR - NOT TO SCALE



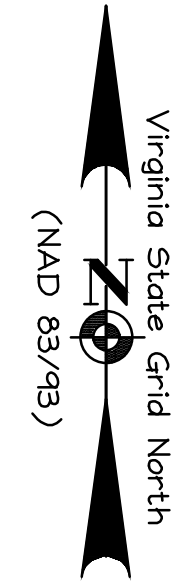
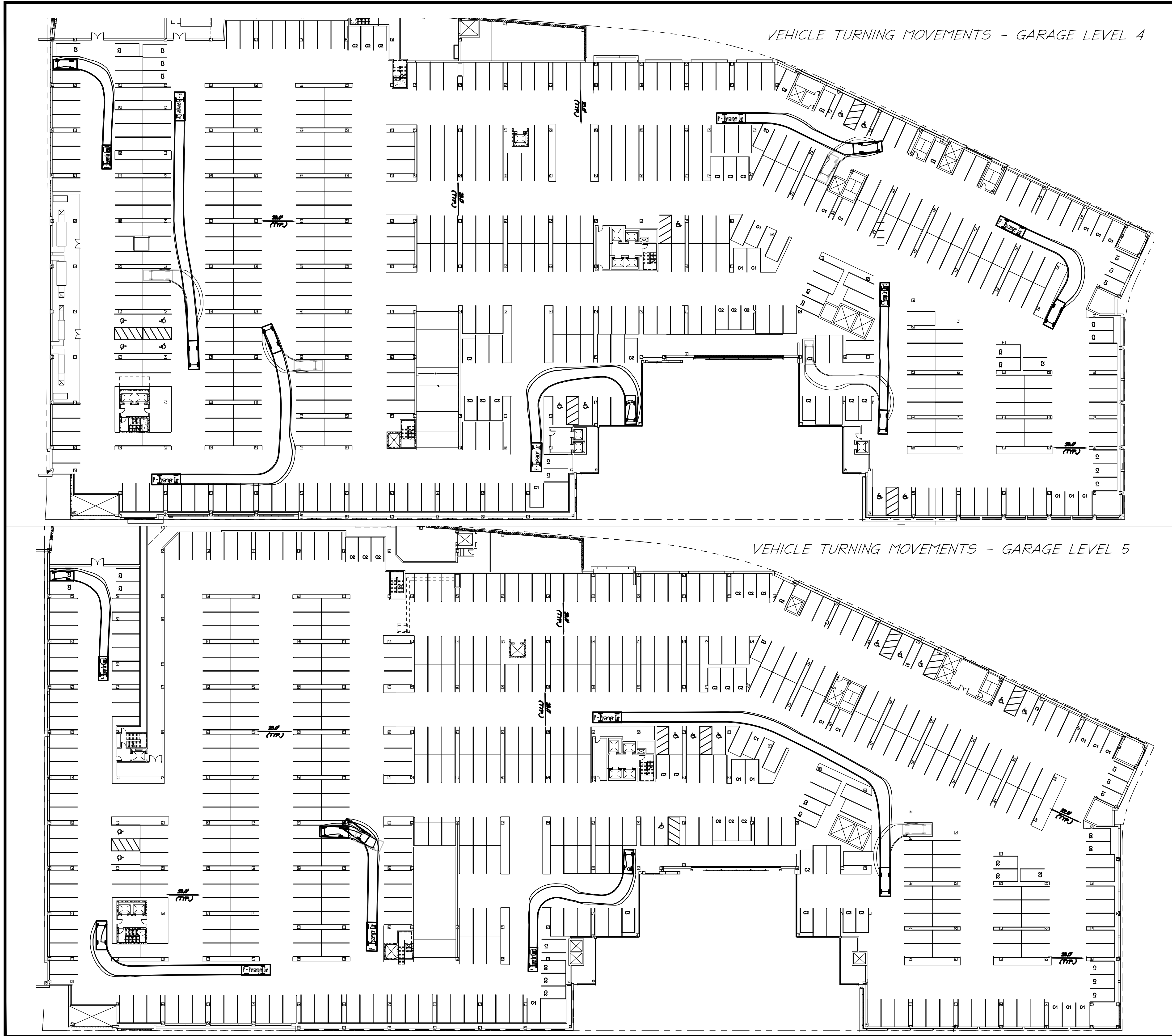
P - Passenger Car (Compact)  
Overall Length 15.830ft  
Overall Width 6.080ft  
Overall Body Height 4.265ft  
Min Body Ground Clearance 1.155ft  
Track Width 5.230ft  
Lock-to-lock time 3.00s  
Curb to Curb Turning Radius 19.500ft



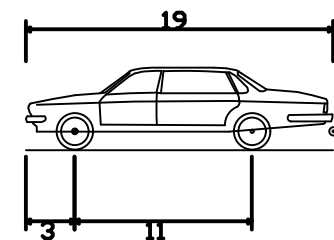
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DIRECTOR _____	DATE _____
DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES	
<b>SITE PLAN NO. _____</b>	
DIRECTOR _____	DATE _____
CHAIRMAN, PLANNING COMMISSION _____	
DATE RECORDED _____	
INSTRUMENT NO. _____	DEED BOOK NO. _____
PAGE NO. _____	



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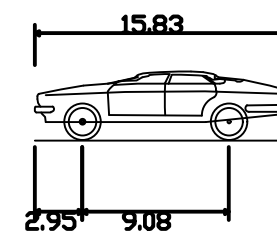


PASSENGER CAR - NOT TO SCALE

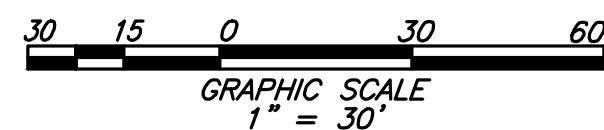


P - Passenger Car	19.000ft
Overall Length	7.000ft
Overall Width	5.101ft
Overall Body Height	1.116ft
Min Body Ground Clearance	6.000ft
Track Width	4.00s
Lock-to-lock time	31.60°
Max Steering Angle (Virtual)	

COMPACT CAR - NOT TO SCALE



P - Passenger Car (Compact)	15.830ft
Overall Length	6.080ft
Overall Width	4.265ft
Overall Body Height	1.155ft
Min Body Ground Clearance	5.230ft
Track Width	3.00s
Lock-to-lock time	19.500ft
Curb to Curb Turning Radius	



<b>APPROVED</b>	
SPECIAL USE PERMIT NO. 2016-0043	
DEPARTMENT OF PLANNING & ZONING	
DIRECTOR _____	DATE _____
DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES	
SITE PLAN NO. _____	
DIRECTOR _____	DATE _____
CHAIRMAN, PLANNING COMMISSION _____	
DATE RECORDED _____	
INSTRUMENT NO. _____	DEED BOOK NO. _____
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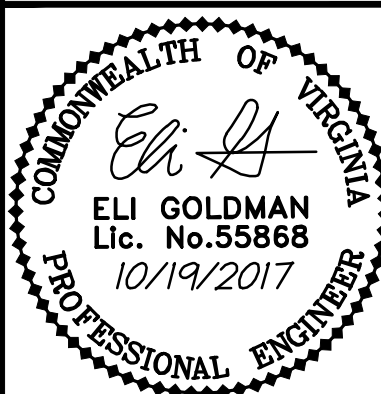
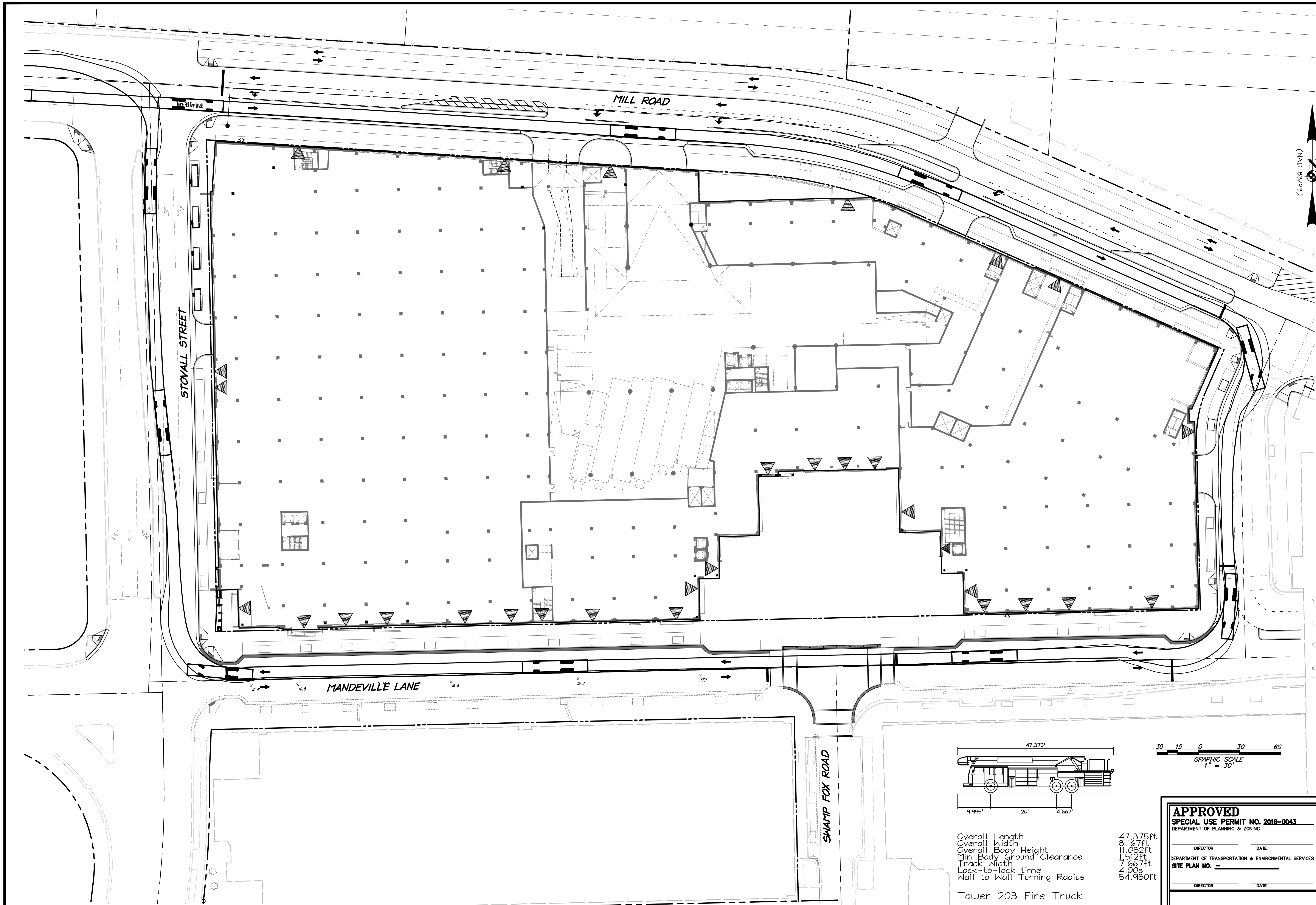
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**HOFFMAN TOWN CENTER**  
**BLOCKS 4 & 5**  
CITY OF ALEXANDRIA, VIRGINIA

PROJECT NO: 98085.049.00  
SCALE: 1"=30'  
DATE: 05/02/17  
DESIGN: EG  
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CHECKED: KMW  
SHEET No. **C505**  
107540

TURNING MOVEMENTS -  
LEVELS 4 & 5



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HOFFMAN TOWN CENTER  
BLOCKS 4 & 5  
CITY OF ALEXANDRIA, VIRGINIA

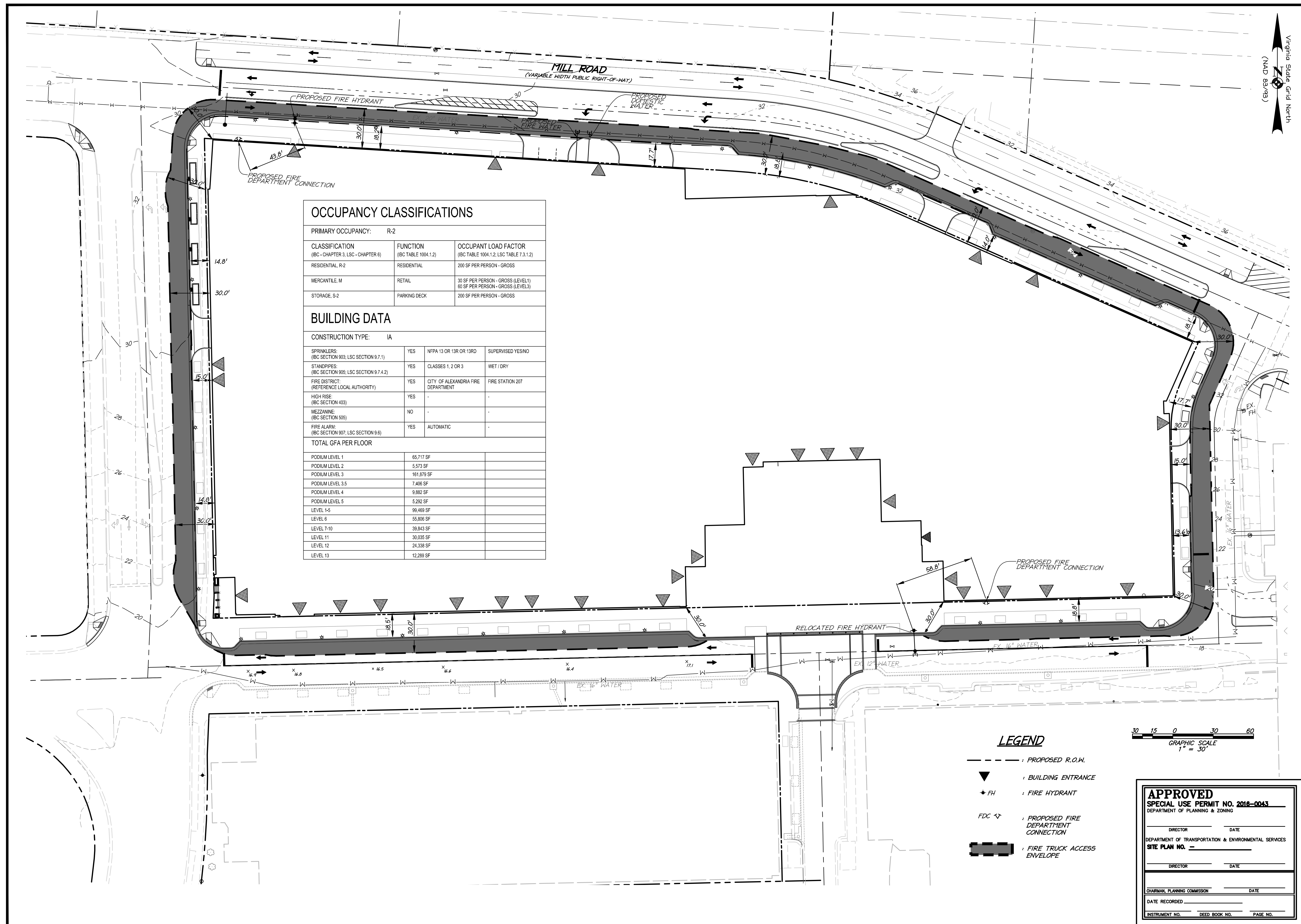
TURNING MOVEMENTS -  
FIRE TRUCK

<b>APPROVED</b> SPECIAL USE PERMIT NO. 2016-0043 DEPARTMENT OF PLANNING & ZONING	
DIRECTOR _____	DATE _____
DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES	
SITE PLAN NO. _____	
DIRECTOR _____	DATE _____
CHAIRMAN, PLANNING COMMISSION _____	
DATE RECORDED _____	
INSTRUMENT NO. _____	DEED BOOK NO. _____
PAGE NO. _____	

PROJECT NO: 98085.049.00  
SCALE: 1"=30'  
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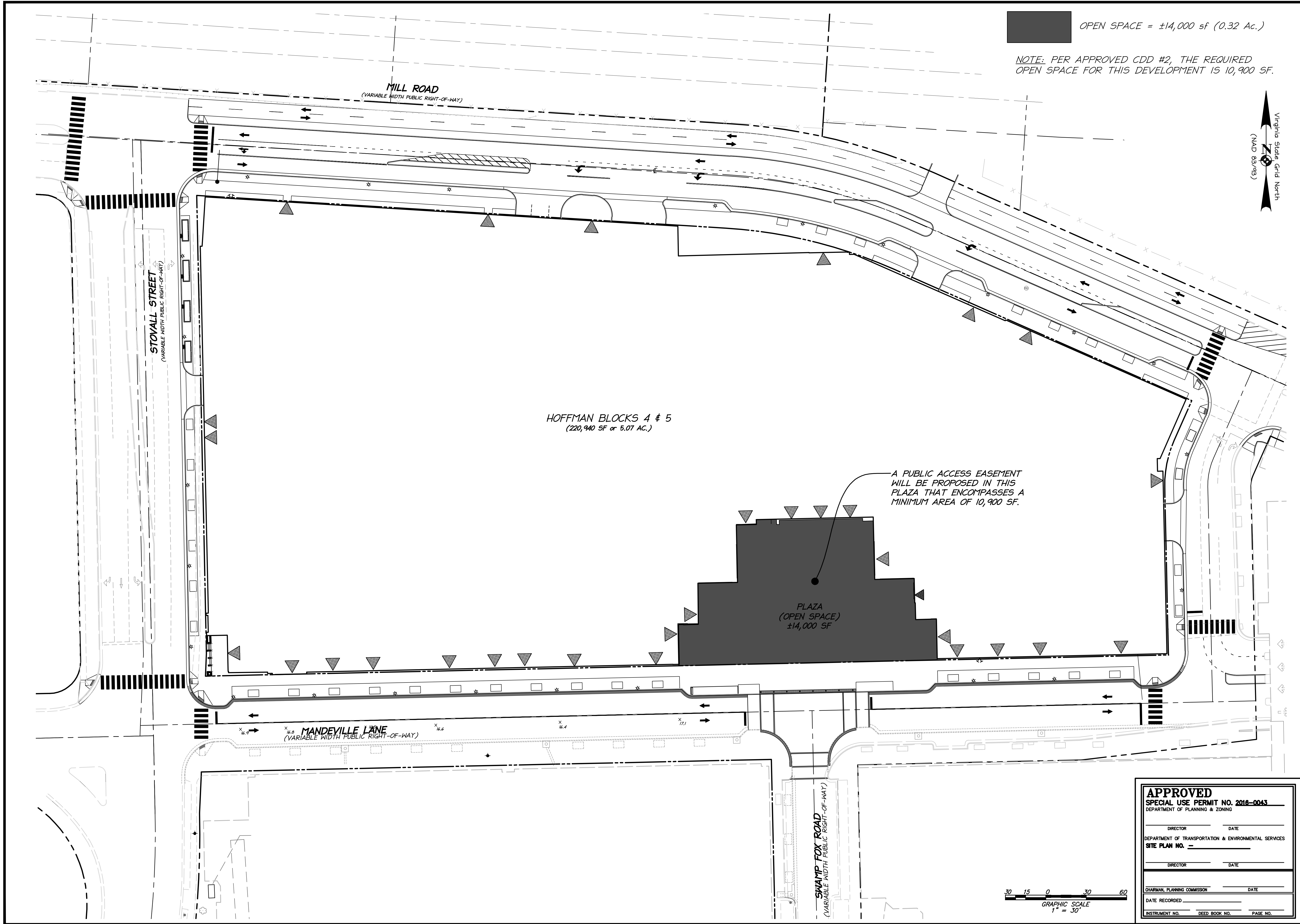
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COMMONWEALTH OF VIRGINIA  
ELI GOLDMAN  
Lic. No. 55868  
10/19/2017  
PROFESSIONAL ENGINEER

OPEN SPACE PLAN

PRELIMINARY PLAN - STAGE 1  
HOFFMAN TOWN CENTER  
BLOCKS 4 & 5  
CITY OF ALEXANDRIA, VIRGINIA

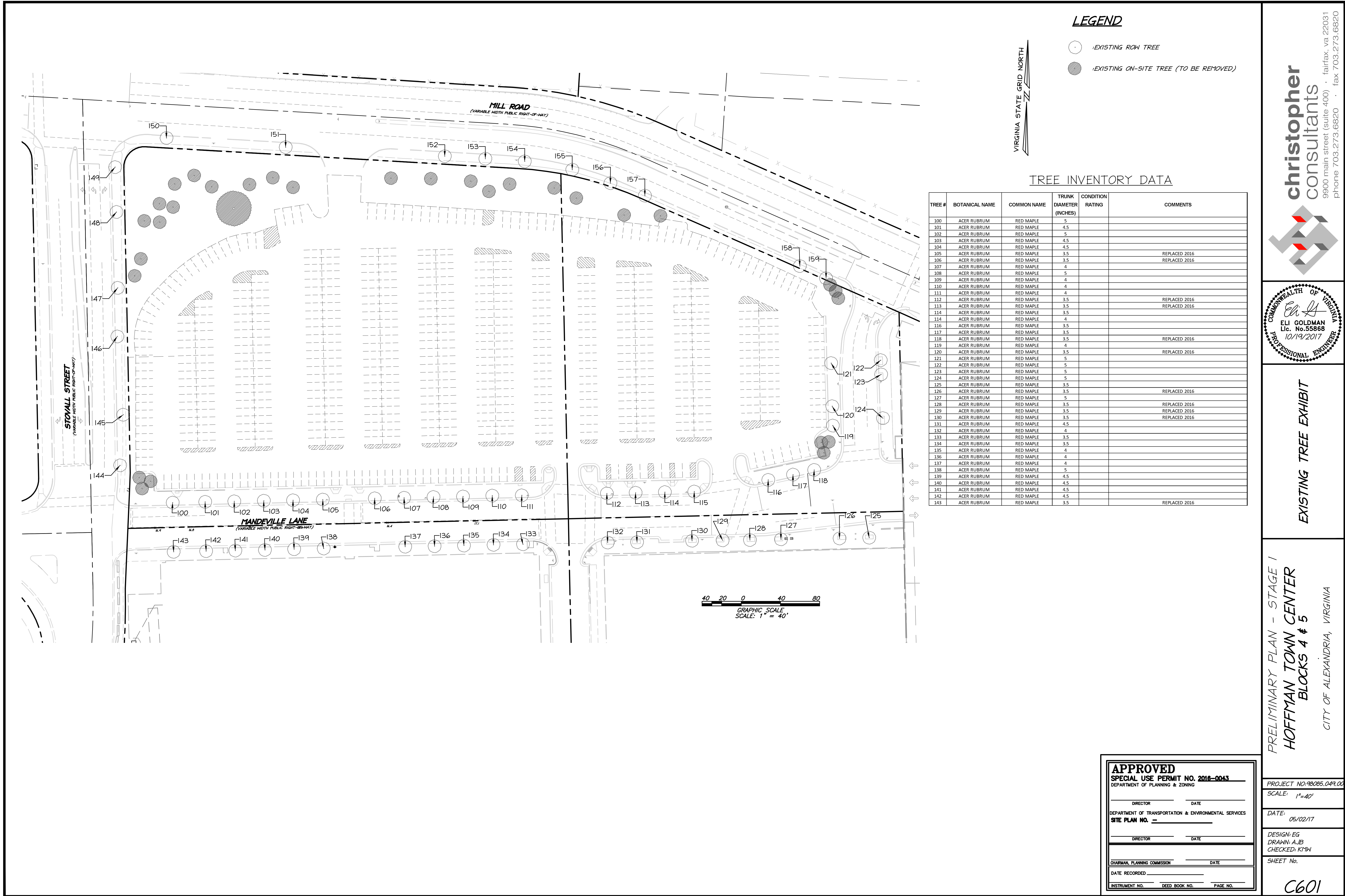
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DIRECTOR	DATE
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SITE PLAN NO. _____	
DIRECTOR	DATE
CHAIRMAN, PLANNING COMMISSION	
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PROJECT NO. 98085.049.00
SCALE: 1"=30'
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C600  
107540



P:\Projects\98085 Hoffman\04000 Block 4 & 5\107540 Prelim\020 TREE EXHIBIT.dwg, 10/18/2017 5:35:01 PM, jacksons, l.t. christopher consultants, ltd









Drainage Area A (ON-SITE)

Drainage Area A Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals	Land Cover Rv
Forest/Open Space (acres)					0.00	0.00
Managed Turf (acres)				0.00	0.00	0.00
Impervious Cover (acres)				0.20	0.20	0.95
Total				0.20		

CLEAR BMP AREAS

Total Phosphorus Available for Removal in D.A. A (lb/yr)	0.43
Post Development Treatment Volume in D.A. A (ft³)	690

Practice	Runoff Reduction Credit (%)	Managed Turf Credit Area (acres)	Impervious Cover Credit Area (acres)	Volume from Upstream Practice (ft³)	Runoff Reduction (ft³)	Remaining Runoff Volume (ft³)	Total BMP Treatment Volume (ft³)	Phosphorus Removal Efficiency (%)	Phosphorus Load from Upstream Practices (lb)	Untreated Phosphorus Load to Practice (lb)	Phosphorus Removed By Practice (lb)	Remaining Phosphorus Load (lb)	Downstream Practice to be Employed
14. Manufactured Treatment Devices (no RR)													
14.a. Manufactured Treatment Device- Hydrodynamic	0	0.00	0.18	0	0	621	621	20	0.00	0.39	0.08	0.31	

Drainage Area B (ON-SITE)

Drainage Area A Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals	Land Cover Rv
Forest/Open Space (acres)					0.00	0.00
Managed Turf (acres)				0.00	0.00	0.00
Impervious Cover (acres)				3.26	3.26	0.95
Total				3.26		

CLEAR BMP AREAS

total Phosphorus Available for Removal in D.A. B (lb/yr)	7.06
Post Development Treatment Volume in D.A. B (ft³)	11,242

Practice	Runoff Reduction Credit (%)	Managed Turf Credit Area (acres)	Impervious Cover Credit Area (acres)	Volume from Upstream Practice (ft³)	Runoff Reduction (ft³)	Remaining Runoff Volume (ft³)	Total BMP Treatment Volume (ft³)	Phosphorus Removal Efficiency (%)	Phosphorus Load from Upstream Practices (lb)	Untreated Phosphorus Load to Practice (lb)	Phosphorus Removed By Practice (lb)	Remaining Phosphorus Load (lb)	Downstream Practice to be Employed
1. Vegetated Roof (RR)													
1.b. Vegetated Roof #2 (Spec #5)	60		0.98		2,028	1,352	3,380	0		2.12	1.27	0.85	14.a. MTD - Hydrodynamic
14. Manufactured Treatment Devices (no RR)													
14.a. Manufactured Treatment Device- Hydrodynamic	0		2.26	1,352	0	9,145	9,145	20	0.85	4.89	1.15	4.59	

Drainage Area C (ON-SITE)

Drainage Area A Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals	Land Cover Rv
Forest/Open Space (acres)					0.00	0.00
Managed Turf (acres)				0.00	0.00	0.00
Impervious Cover (acres)				1.60	1.60	0.95
Total				1.60		

CLEAR BMP AREAS

total Phosphorus Available for Removal in D.A. C (lb/yr)	3.47
Post Development Treatment Volume in D.A. C (ft³)	5,518

Practice	Runoff Reduction Credit (%)	Managed Turf Credit Area (acres)	Impervious Cover Credit Area (acres)	Volume from Upstream Practice (ft³)	Runoff Reduction (ft³)	Remaining Runoff Volume (ft³)	Total BMP Treatment Volume (ft³)	Phosphorus Removal Efficiency (%)	Phosphorus Load from Upstream Practices (lb)	Untreated Phosphorus Load to Practice (lb)	Phosphorus Removed By Practice (lb)	Remaining Phosphorus Load (lb)	Downstream Practice to be Employed
1. Vegetated Roof (RR)													
1.b. Vegetated Roof #2 (Spec #5)	60		0.40		828	552	1,379	0		0.87	0.52	0.35	11.a. Filtering Practice #1
11. Filtering Practices (no RR)													
11.a. Filtering Practice #1 (Spec #12)	0		0.39	552	0	1,897	1,897	60	0.35	0.84	0.71	0.48	

ACTUAL IMPERVIOUS AREA = 0.81 AC.

ACTUAL IMPERVIOUS AREA = 0.78 AC.

NOTE: SINCE THE SANDFILTER DRAINAGE AREA 'C' IS EXISTING AND WAS DESIGNED AND BUILT FOR A 1/4" STORM AS OPPOSED TO A 1" STORM (PER DEO SPEC. #11), THE TOTAL DRAINAGE AREAS DRAINING TO THE FILTER IS DIVIDED IN HALF TO ACCOUNT FOR THIS DESIGN CHANGE. THE VEGETATED ROOF IS ALSO DIVIDED IN HALF TO BE CONSERVATIVE AS IT ALSO DRAINS TO THE EXISTING SANDFILTER.

VIRGINIA RUNOFF REDUCTION METHOD SPREADSHEET (OFF-SITE FOR BMP TREE WELLS)

Practice	Runoff Reduction Credit (%)	Managed Turf Credit Area (acres)	Impervious Cover Credit Area (acres)	Volume from Upstream Practice (ft³)	Runoff Reduction (ft³)	Remaining Runoff Volume (ft³)	Total BMP Treatment Volume (ft³)	Phosphorus Removal Efficiency (%)	Phosphorus Load from Upstream Practices (lb)	Untreated Phosphorus Load to Practice (lb)	Phosphorus Removed By Practice (lb)	Remaining Phosphorus Load (lb)	Downstream Practice to be Employed
6. Bioretention (RR)													
6.a. Bioretention #1 or Micro-Bioretention #1 or Urban Bioretention (Spec #9)	40		0.03	0	41	62	103	25	0.00	0.06	0.04	0.03	

ACTUAL IMPERVIOUS AREA = 0.07 AC.

PHOSPHORUS REMOVED FROM OFF-SITE PRACTICE

Site Results (Water Quality Compliance)

Area Checks	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	AREA CHECK
FOREST/OPEN SPACE (ac)	0.00	0.00	0.00	0.00	0.00	OK.
IMPERVIOUS COVER (ac)	0.20	3.26	1.60	0.00	0.00	OK.
IMPERVIOUS COVER TREATED (ac)	0.18	3.24	0.79	0.00	0.00	OK.
MANAGED TURF AREA (ac)	0.00	0.00	0.00	0.00	0.00	OK.
MANAGED TURF AREA TREATED (ac)	0.00	0.00	0.00	0.00	0.00	OK.
AREA CHECK	OK.	OK.	OK.	OK.	OK.	

Site Treatment Volume (ft³)

17,484

Runoff Reduction Volume and TP By Drainage Area

	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	TOTAL
RUNOFF REDUCTION VOLUME ACHIEVED (ft³)	0	2,028	828	0	0	2,855
TP LOAD AVAILABLE FOR REMOVAL (lb/yr)	0.43	7.06	3.47	0.00	0.00	10.96
TP LOAD REDUCTION ACHIEVED (lb/yr)	0.08	2.42	1.23	0.00	0.00	3.73
TP LOAD REMAINING (lb/yr)	0.36	4.64	2.23	0.00	0.00	7.23
NITROGEN LOAD REDUCTION ACHIEVED (lb/yr)						
	0.00	9.10	6.27	0.00	0.00	15.37

Total Phosphorus

FINAL POST-DEVELOPMENT TP LOAD (lb/yr)	10.99
TP LOAD REDUCTION REQUIRED (lb/yr)	3.31
TP LOAD REDUCTION ACHIEVED (lb/yr)	3.73
TP LOAD REMAINING (lb/yr)	7.25
REMAINING TP LOAD REDUCTION REQUIRED (lb/yr)	0.00

\*\* TARGET TP REDUCTION EXCEEDED BY 0.42 LB/YEAR \*\*

Total Nitrogen (For Information Purposes)

POST-DEVELOPMENT LOAD (lb/yr)	78.59
NITROGEN LOAD REDUCTION ACHIEVED (lb/yr)	15.37
REMAINING POST-DEVELOPMENT NITROGEN LOAD (lb/yr)	63.21

PHOSPHORUS REMOVED ON-SITE = 3.73 LB/YR  
PHOSPHORUS REMOVED OFF-SITE = 0.04 LB/YR  
TOTAL PHOSPHORUS REMOVED = 3.77 LB/YR > 3.35 LB/YR

SEE SHEET C700 FOR PHOSPHORUS REMOVAL REQUIREMENT OF 3.35 LB/YR

Site Land Cover Summary

Pre-ReDevelopment Land Cover (acres)

	A soils	B Soils	C Soils	D Soils	Totals	% of Total
Forest/Open (acres)	0.00	0.00	0.00	0.00	0.00	0
Managed Turf (acres)	0.00	0.00	0.00	0.84	0.84	17
Impervious Cover (acres)	0.00	0.00	0.00	4.23	4.23	83
				5.07	5.07	100

Post-ReDevelopment Land Cover (acres)

	A soils	B Soils	C Soils	D Soils	Totals	% of Total
Forest/Open (acres)	0.00	0.00	0.00	0.00	0.00	0
Managed Turf (acres)	0.00	0.00	0.00	0.00	0.00	0
Impervious Cover (acres)	0.00	0.00	0.00	5.07	5.07	100
				5.07	5.07	100

Site Tv and Land Cover Nutrient Loads

	Final Post-Development (Post-ReDevelopment & New Impervious)	Post-ReDevelopment	Post-Development (New Impervious)	Adjusted Pre-ReDevelopment
Site Rv	0.95	0.95	0.95	0.95
Treatment Volume (ft³)	17,484	14,587	2,897	14,587
TP Load (lb/yr)	10.99	9.17	1.82	9.17

Total TP Load Reduction Required (lb/yr)	3.31	1.83	1.48
--	------	------	------

	Final Post-Development Load (Post-ReDevelopment & New Impervious)	Pre-ReDevelopment
TN Load (lb/yr)	78.59	68.99

Pre-ReDevelopment TP Load per acre (lb/acre/yr)	Final Post-Development TP Load per acre (lb/acre/yr)	Post-ReDevelopment TP Load per acre (lb/acre/yr)
2.17	2.17	2.17

	BMP Area Tabulations						Total - On-Site		Off-Site		Grand Total	
	DA 'A'	Acres	SF	Acres	DA 'B'	Acres	SF	Acres	SF	Acres	SF	Acres
Green Roof (level 2)	0	0.00	42,689	0.98	35,284	0.81	77,972	1.79	-	-	77,972	1.79
HDS	7,841	0.18	98,446	2.26	0	0.00	106,286	2.44	-	-	106,286	2.44
To Ex. SF #2 Only	0	0.00	0	0.00	33,977	0.78	33,977	0.78	-	-	33,977	0.78
BMP Tree Wells	0	0.00	0	0.00	0	0.00	0	0.00	3,049	0.07	3,049	0.07
Total Treated	7,841	0.18	141,134	3.24	69,260	1.59	218,236	5.01	3,049	0.07	221,285	5.08
Untreated (on-site)	871	0.02	871	0.02	436	0.01	2,178	0.05	-	-		
Total Area	8,712	0.20	142,006	3.26	69,696	1.60	220,414	5.06	-	-		

Notes:

1. All green roof area for DA 'B' flow in series to the hydrodynamic separators.
2. All green roof areas for DA 'C' flow in series to Existing Sandfilter #2.
3. All untreated area is assumed to be impervious.
4. The off-site impervious area being treated is greater than the untreated on-site area, therefore, the WQVd is met and not contribution to the WQIF is required.

WQVd CALCULATIONS

REQUIRED = (1816 CU FT/ACRE) \* (5.07 ACRES) = 9,207 CU FT

PROVIDED (ON-SITE) = (1816 CU FT/ACRE) \* (5.01 ACRES) = 9,098 CU FT

PROVIDED (OFF-SITE) = (1816 CU FT/ACRE) \* (0.07 ACRES) = 127 CU FT

TOTAL CAPTURED WQVd = 9,098 + 127 = 9,225 CU FT > 9,207 CU FT OK

IMPERVIOUS AREA COVERAGE

TOTAL IMPERVIOUS AREA = 5.07 ACRES

TOTAL IMPERVIOUS TREATED (ON-SITE) = 5.01 ACRES

TOTAL IMPERVIOUS TREATED (OFF-SITE) = 0.07 ACRES

TOTAL IMPERVIOUS AREA TREATED = 5.01 + .07 = 5.08 AC > 5.07 AC OK

NOTE: A CONTRIBUTION TO THE WQIF IS NOT REQUIRED BECAUSE THE WQVd IS SATISFIED THROUGH TREATMENT PROVIDED BY THIS PLAN.

APPROVED  
SPECIAL USE PERMIT NO. 2016-0043  
DEPARTMENT OF PLANNING & ZONING

DIRECTOR \_\_\_\_\_ DATE \_\_\_\_\_  
DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES  
SITE PLAN NO. \_\_\_\_\_

DIRECTOR \_\_\_\_\_ DATE \_\_\_\_\_

CHAIRMAN, PLANNING COMMISSION \_\_\_\_\_ DATE \_\_\_\_\_  
DATE RECORDED \_\_\_\_\_  
INSTRUMENT NO. \_\_\_\_\_ DEED BOOK NO. \_\_\_\_\_ PAGE NO. \_\_\_\_\_

PROJECT NO. 98085.049.00

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DATE: 05/02/17

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DRAWN: AJB

CHECKED: K1W

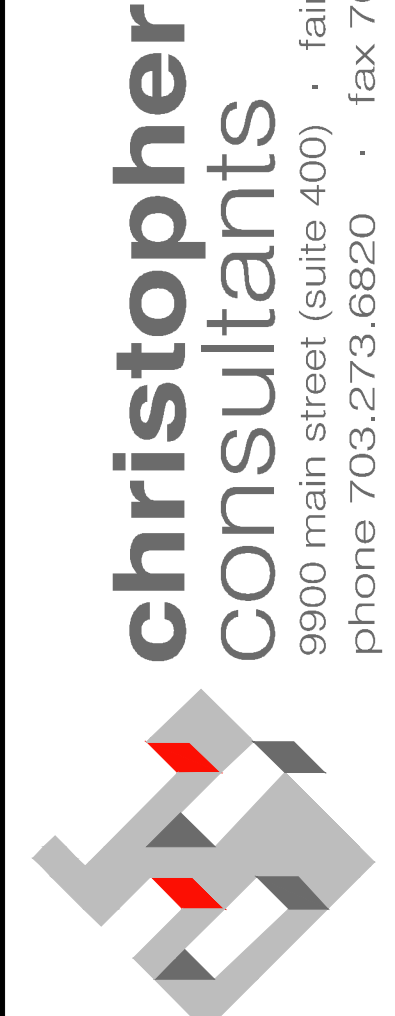
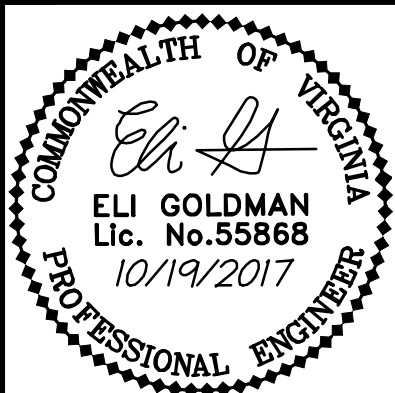
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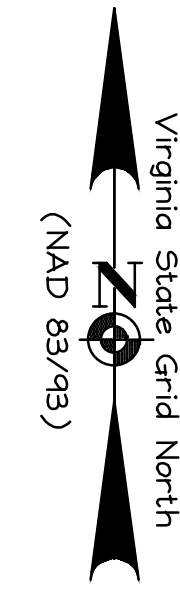
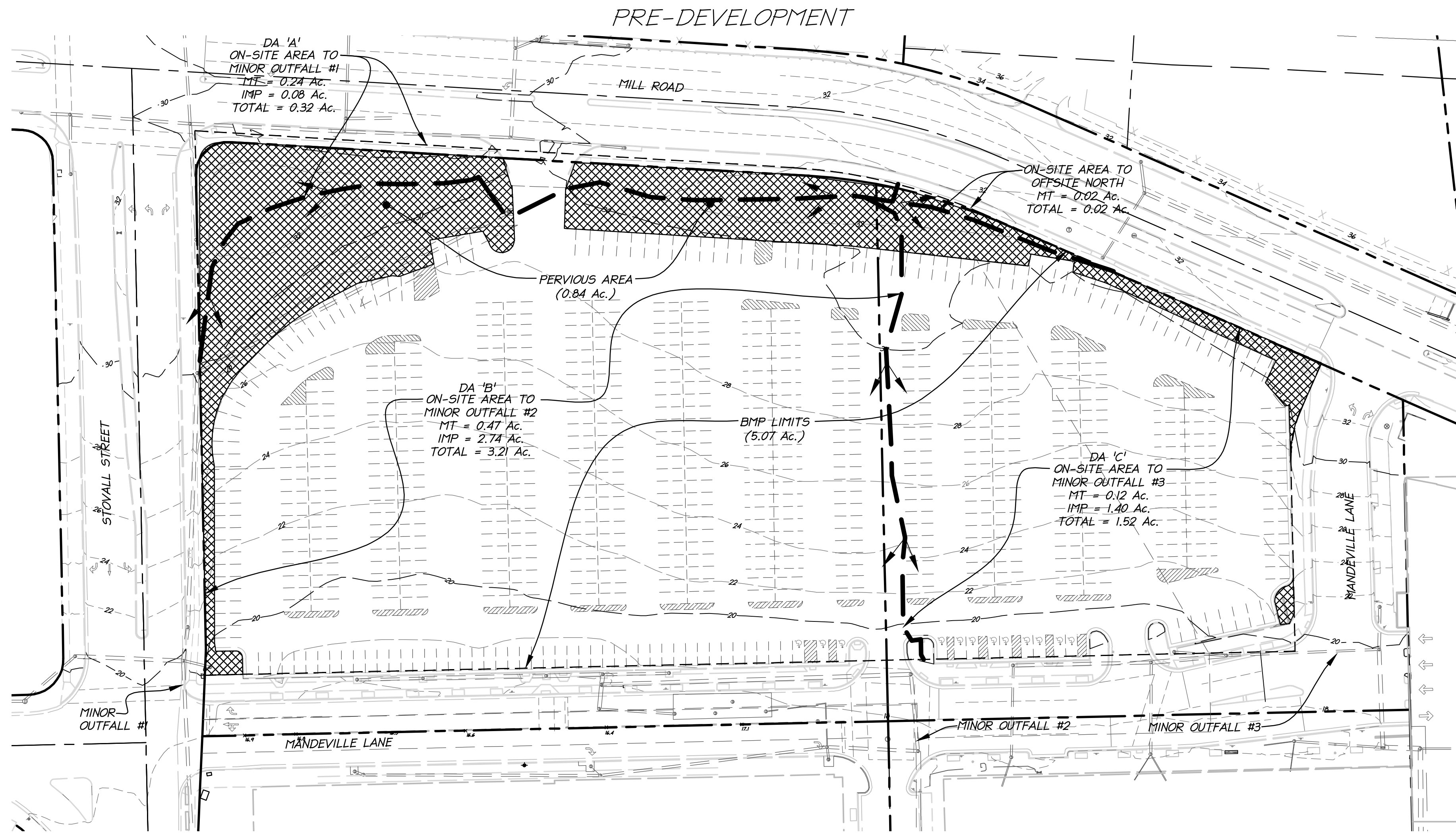
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PRELIMINARY PLAN - STAGE 1  
HOFFMAN TOWN CENTER  
BLOCKS 4 & 5  
CITY OF ALEXANDRIA, VIRGINIA

PRELIMINARY BMP  
COMPUTATIONS



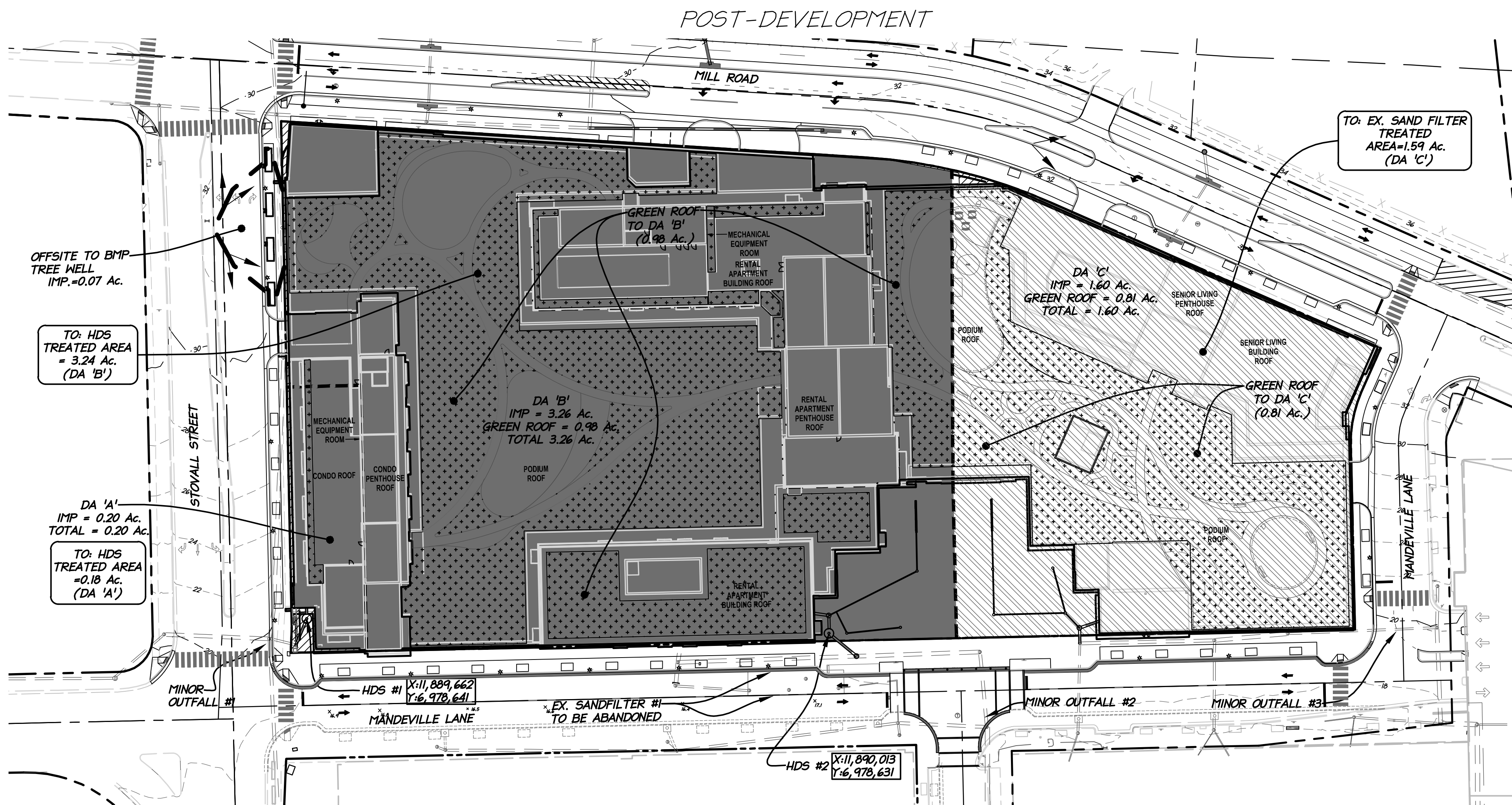




LEGEND

MANAGED TURF GROUND COVER

NOTE: IT IS ASSUMED THAT THE ENTIRE ON-SITE DRAINAGE AREAS 'B' AND 'C' DRAIN TO THE EXISTING SANDFILTERS.



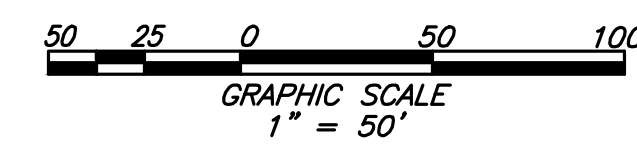
LEGEND

GREEN ROOF AREA

AREA TO HYDRODYNAMIC SEPARATOR (HDS)

AREA TO SAND FILTER

UNTREATED IMPERVIOUS AREA



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DATE RECORDED _____	
INSTRUMENT NO. _____	DEED BOOK NO. _____
PAGE NO. _____	

PRELIMINARY PLAN - STAGE 1

HOFFMAN TOWN CENTER

BLOCKS 4 & 5

CITY OF ALEXANDRIA, VIRGINIA

PROJECT NO. 98085.049.00

SCALE: 1"=50'

DATE: 05/02/17

DESIGN: EG

DRAWN: AJB

CHECKED: KMW

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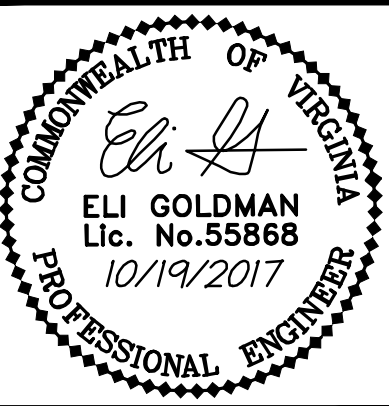
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christopher consultants

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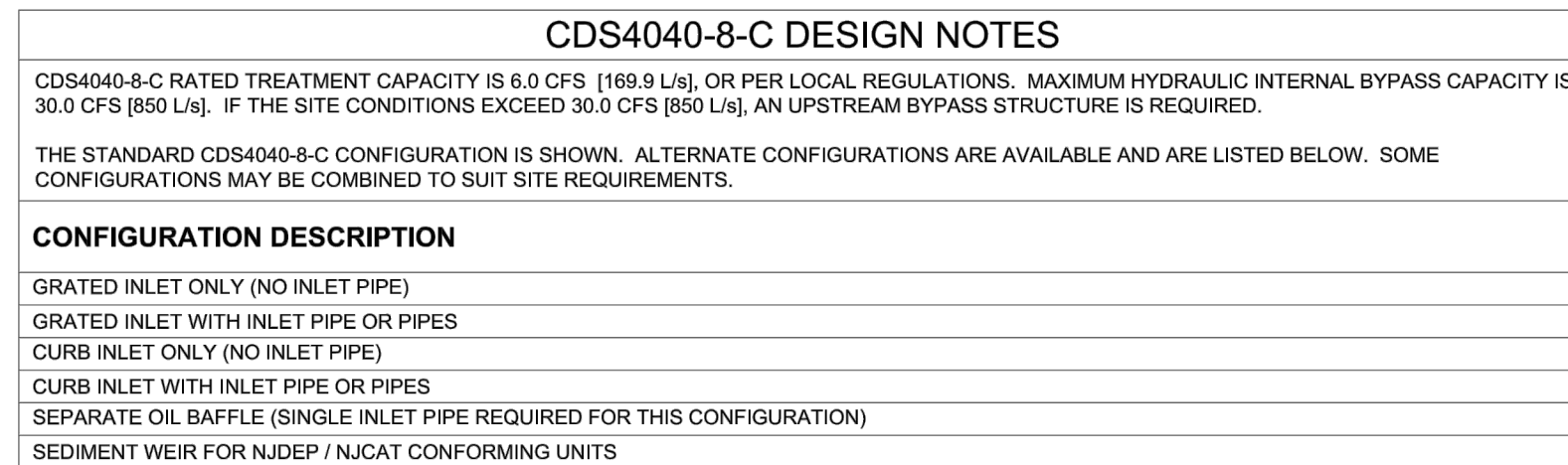
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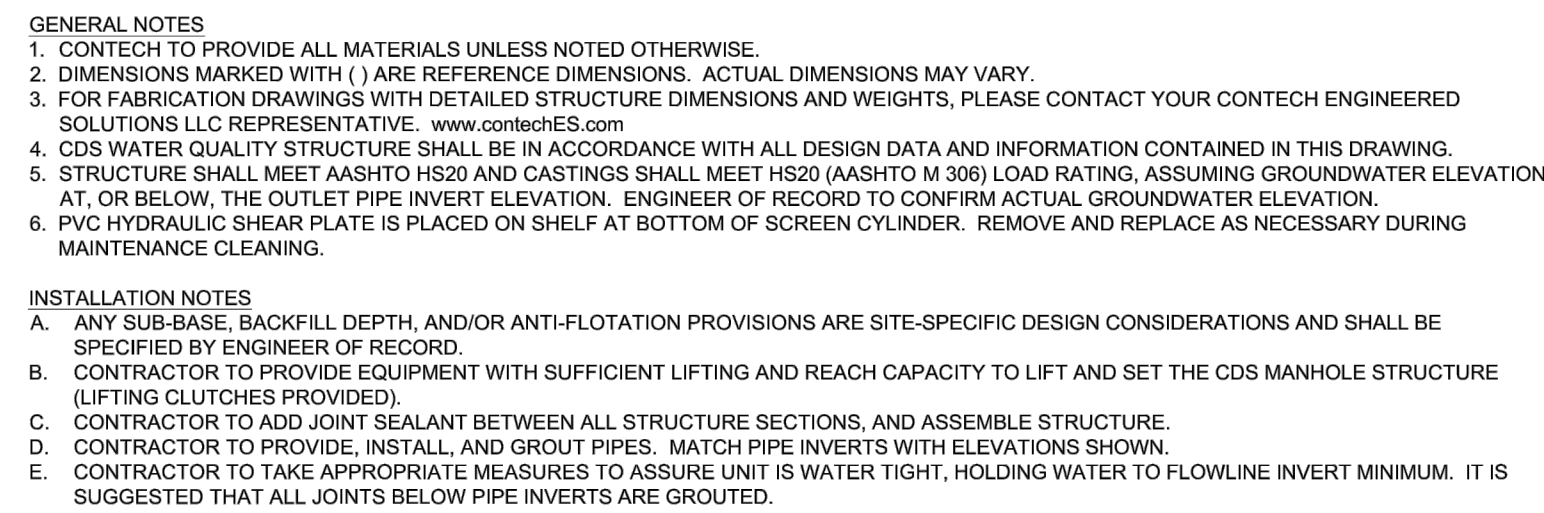
BMP MAP



SEE LANDSCAPE SHEET L4.4



<h1 style="text-align: center;">SITE SPECIFIC DATA REQUIREMENTS</h1>			
STRUCTURE ID			
WATER QUALITY FLOW RATE (CFS OR L/s)			*
PEAK FLOW RATE (CFS OR L/s)			*
RETURN PERIOD OF PEAK FLOW (YRS)			*
SCREEN APERTURE (2400 OR 4700)			
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	*	*	*
INLET PIPE 2	*	*	*
OUTLET PIPE	*	*	*
RIM ELEVATION			*
ANTI-FLUTATION BALLAST	WIDTH		HEIGHT
	*		*
NOTES/SPECIAL REQUIREMENTS:			
* PER ENGINEER OF RECORD			



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CDS4040-8-C  
ONLINE CDS  
STANDARD DETAIL

Row ID		Assumptions	Measurement	Unit	Notes and Instructions
Contributing Drainage Area					
A	Area of roadway to be treated		1745	SF	Area of roadway to be treated
B	Area of sidewalk to be treated	Include driveway entrance	1125	SF	Sidewalk area to be treated (deduct tree wells and planting strips)
C	Total area contributing drainage area		2870	SF	Row A + Row B
D	Total Water quality Volume	First 0.5 in. required to be treated	120	CF	Row C x 0.5 in (0.04167 Ft)
Water Quality Sizing Requirements					
E	Ponding area required (Gross)	8 in. ponding depth	179	SF	Divide Row D by avg ponding depth (0.667 ft)
F	Ponding area required line 1 (Net after infiltration)		0.18		1 hr fill time x Infiltration rate x (depth of soil x (ponding depth / 2) / depth of soil) = H x J x (K (L/2)/K)
G	Ponding area required Line 2 (Net after infiltration)	Total Water Quality volume	141	SF	Row D / (Ponding depth + Row F)
H	Fill time	1 hour standard	1	Hour	Use standard 1 hour fill time
J	Infiltration rate	Soil specific range	0.167	FT/HOUR	Use value from within the soil specification rang 2 to 3.5 in/hr (0.167 to .292 (ft./hr))
K	Depth of soil (Avg)	project specific	4	FT	See section 2.A and 2.C
L	Ponding Depth	Maximum ponding depth	0.667	FT	See section 2.A
Landscape Sizing Requirement					
M1	Type of Landscape treatment proposed		Tree Wells		
M2	Tree Spacing		28.5	FT O.C.	
N	Number of trees per block face		4		**Total number of trees
P	Open area per tree well (required)		35	SF	Row G / Row N
Q	Width		4	FT	Refer to section 2.B
R1	Length (min. open length)		9	FT	Row P / Row Q for min length or use length suitable for site
R2	Design Length		15	FT	
S	Avg soil depth		4	FT	Row K
T	Soil volume per tree provided		240	CF	(Row Q x Row R x Row S)
U	Additional soil volume required per tree		210	CF	450 CF - Row T. A negative value means the soil requirement has been met.

SEE LANDSCAPE SHEET L4.4 FOR DETAIL

<b>APPROVED</b>	
<b>SPECIAL USE PERMIT NO. 2018-0043</b>	
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<b>SITE PLAN NO. --</b>	
DIRECTOR _____	DATE _____
CHAIRMAN, PLANNING COMMISSION _____	DATE _____
DATE RECORDED _____	
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PROJECT NO: 98085.049.00

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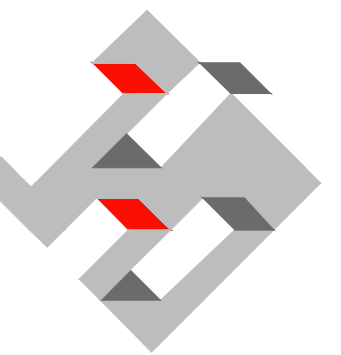
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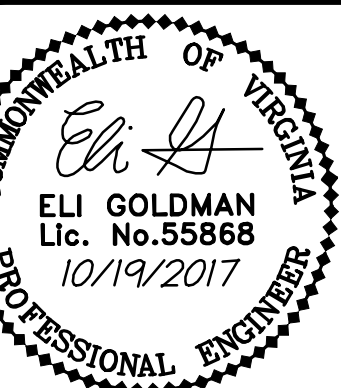
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**christopher**  
consultants  
9900 main street (suite 400) • fair

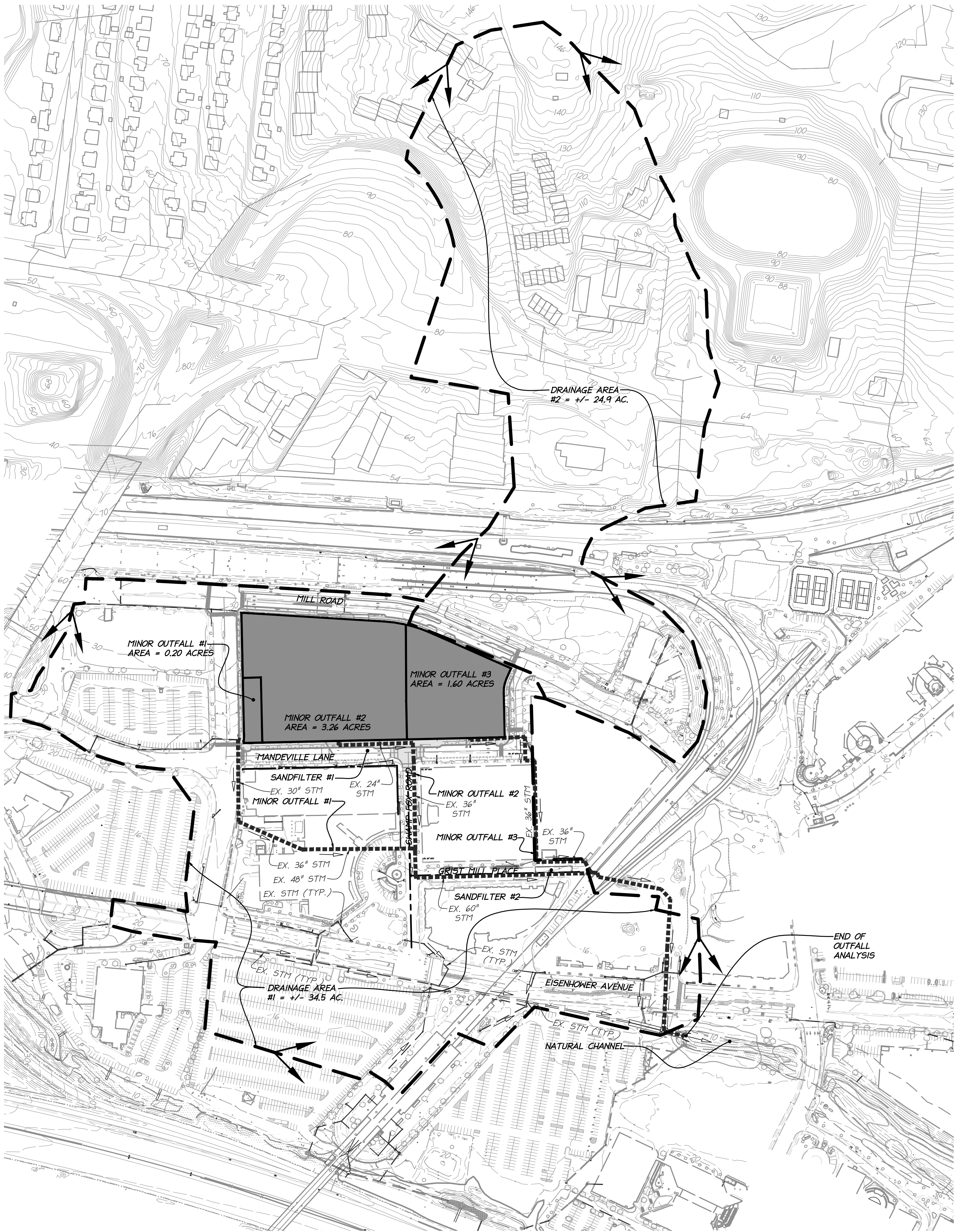
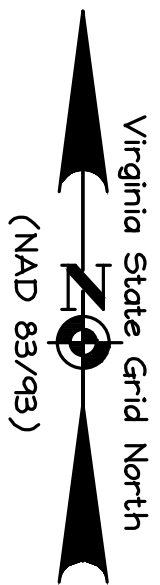


# PRELIMINARY BMP DETAILS

**HOFFMAN TOWN CENTER**  
**BLOCKS 4 & 5**



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### CONCEPTUAL STORM WATER MANAGEMENT NARRATIVE

TO MEET THE CITY STORMWATER MANAGEMENT REQUIREMENTS FOR CHANNEL PROTECTION AND FLOOD PROTECTION, EACH OF THE 3 OUTFALLS WERE ANALYZED SEPARATELY. THE CHANNEL PROTECTION FOR ONE OF THE THREE OUTFALLS (#1) IS MET BY BEING PIPED THE ENTIRE DURATION OF THE EXTENT OF THE REVIEW (13-109-F-1-a-1). THE CHANNEL PROTECTION FOR TWO OF THE THREE OUTFALLS (#2 AND #3) ARE MET BY USING THE ENERGY BALANCE EQUATION WITH THE IMPROVEMENT FACTOR (13-109-F-1-c-1). BY USING THIS EQUATION IT WAS DETERMINED NO DETENTION IS REQUIRED FOR THE 1-YEAR 24-HOUR STORM. THE FLOOD PROTECTION IS MET BY THE POST-DEVELOPMENT 10-YEAR 24-HOUR STORM EVENT BEING LOWER THAN THE PRE-DEVELOPMENT. THE 10-YEAR 24-HOUR STORM EVENT IS REDUCED FOR ALL THREE OUTFALLS, THEREFORE NO DETENTION IS REQUIRED.

#### STORMWATER QUANTITY (CHANNEL PROTECTION / FLOOD PROTECTION)

THE SITE HAS THREE OUTFALLS THAT WERE ALL ANALYZED FOR BOTH CHANNEL PROTECTION AND FLOOD PROTECTION. REFER TO THE MAP ON THIS SHEET FOR LOCATION OF THE OUTFALLS.

##### OUTFALL 1

**CHANNEL PROTECTION** - EQUATION 13-109-F-1-a-1 IN THE CITY CODE WAS USED TO DETERMINE THAT THE POST-DEVELOPMENT 2-YEAR 24-HOUR STORM DOES NOT CAUSE ANY EROSION TO THE SYSTEM SINCE IT IS PIPE FOR THE DURATION OF THE EXTENT OF REVIEW.

**FLOOD PROTECTION** - THE POST-DEVELOPMENT PEAK FLOW RATE FOR THE 10-YEAR 24-HOUR STORM EVENT IS REQUIRED TO BE LESS THAN THE PREDEVELOPMENT PEAK FLOW RATE OF THE SAME STORM EVENT. THE PRE-DEVELOPMENT FLOW RATE AT THIS OUTFALL WAS 2.03 CFS AND THE POST DEVELOPMENT FLOW RATE IS 1.54 CFS. SINCE THE POST-DEVELOPMENT RATE IS LESS THAN THE PRE-DEVELOPMENT, NO DETENTION IS REQUIRED.

##### OUTFALL 2

**CHANNEL PROTECTION** - EQUATION 13-109-F-1-c-1 IN THE CITY CODE WAS USED TO DETERMINE THAT THE POST-DEVELOPMENT 1-YEAR 24-HOUR STORM MEETS THE REQUIREMENTS AND DOES NOT NEED ANY DETENTION.

**FLOOD PROTECTION** - THE POST-DEVELOPMENT PEAK FLOW RATE FOR THE 10-YEAR 24-HOUR STORM EVENT IS REQUIRED TO BE LESS THAN THE PREDEVELOPMENT PEAK FLOW RATE OF THE SAME STORM EVENT. THE PRE-DEVELOPMENT FLOW RATE AT THIS OUTFALL WAS 24.12 CFS AND THE POST DEVELOPMENT FLOW RATE IS 22.44 CFS. SINCE THE POST-DEVELOPMENT RATE IS LESS THAN THE PRE-DEVELOPMENT, NO DETENTION IS REQUIRED.

##### OUTFALL 3

**CHANNEL PROTECTION** - EQUATION 13-109-F-1-c-1 IN THE CITY CODE WAS USED TO DETERMINE THAT THE POST-DEVELOPMENT 1-YEAR 24-HOUR STORM MEETS THE REQUIREMENTS AND DOES NOT NEED ANY DETENTION.

**FLOOD PROTECTION** - THE POST-DEVELOPMENT PEAK FLOW RATE FOR THE 10-YEAR 24-HOUR STORM EVENT IS REQUIRED TO BE LESS THAN THE PREDEVELOPMENT PEAK FLOW RATE OF THE SAME STORM EVENT. THE PRE-DEVELOPMENT FLOW RATE AT THIS OUTFALL WAS 11.62 CFS AND THE POST DEVELOPMENT FLOW RATE IS 11.58 CFS. SINCE THE POST-DEVELOPMENT RATE IS LESS THAN THE PRE-DEVELOPMENT, NO DETENTION IS REQUIRED.

	Pre-Development		Post - Development		
	Area	CN	Area	CN (1-yr)	CN (10-yr)
DA 'A'	0.32	85	0.2	98	98
DA 'B'	3.21	95	3.26	88	90
DA 'C'	1.52	97	1.6	81	85

**NOTE:** PER THE DEQ STORMWATER SPEC #5, THE FOLLOWING CURVE NUMBER (CN) SHOULD BE USED FOR THE DESIGNATED DESIGN STORM:

- 1-YEAR STORM: 64
- 2-YEAR STORM: 66
- 10-YEAR STORM: 72
- 100-YEAR STORM: 75

	Pre-Development				Post - Development			
	1 - Year		10 - Year		1 - Year		10 - Year	
	Q (cfs)	Rv (cf)	Q (cfs)	Rv (cf)	Q (cfs)	Rv (cf)	Q (cfs)	Rv (cf)
DA 'A'	0.8	1605	2.03	4257	0.79	1849	N/A	1.54
DA 'B'	11.83	25922	24.12	55488	8.87	18062	17785	22.44
DA 'C'	5.89	13436	11.62	27576	5.15	10741	10204	11.58

#### Channel Protection (1-year storm):

DA 'A':	review ends in a pipe	No Detention Required
DA 'B':	Improvement Factor Equation	
	$Q_{dev} < IF * (Q_{pre} * RV_{pre}) / RV_{dev}$	
9.27	<	13.7939729
DA 'C':	Improvement Factor Equation	
	$Q_{dev} < IF * (Q_{pre} * RV_{pre}) / RV_{dev}$	
3.24	<	6.20447197

#### Flood Protection (10-year storm):

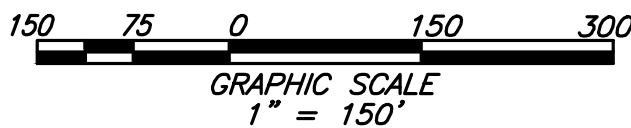
DA 'A'	$Q_{post} < Q_{pre}$			
1.54	<	2.03	No Detention Required	-0.49
DA 'B'	$Q_{post} < Q_{pre}$			
22.84	<	24.12	No Detention Required	-1.28
DA 'C'	$Q_{post} < Q_{pre}$			
10.14	<	11.62	No Detention Required	-1.48

#### NOTES:

1. THE RUNOFF CALCULATIONS ABOVE DO NOT TAKE INTO ACCOUNT ANY FLOW ROUTINGS THROUGH THE LEVEL 2 GREEN ROOFS. THE GREEN ROOFS ARE ACCOUNTED FOR IN THE REDUCED CURVE NUMBERS.

2. THE FOLLOWING RAINFALL VALUES WERE USED TO CALCULATE THE ABOVE NOTED PEAK RUNOFFS USING THE NRCS TR-55 METHOD:

- 1-YEAR 24-HOUR: 2.7 INCHES
- 2-YEAR 24-HOUR: 3.2 INCHES
- 10-YEAR 24-HOUR: 5.2 INCHES



### APPROVED

SPECIAL USE PERMIT NO. 2016-0043

DEPARTMENT OF PLANNING & ZONING

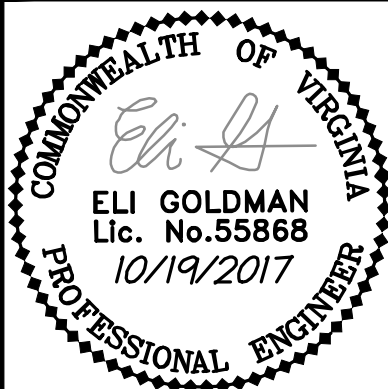
DIRECTOR \_\_\_\_\_ DATE \_\_\_\_\_  
DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES  
SITE PLAN NO. \_\_\_\_\_

DIRECTOR \_\_\_\_\_ DATE \_\_\_\_\_

CHAIRMAN, PLANNING COMMISSION \_\_\_\_\_ DATE \_\_\_\_\_

DATE RECORDED \_\_\_\_\_

INSTRUMENT NO. \_\_\_\_\_ DEED BOOK NO. \_\_\_\_\_ PAGE NO. \_\_\_\_\_



PRELIMINARY SWM AND  
OUTFALL ANALYSIS

PRELIMINARY PLAN - STAGE 1  
HOFFMAN TOWN CENTER  
BLOCKS 4 & 5  
CITY OF ALEXANDRIA, VIRGINIA

PROJECT NO. 98085.049.00

SCALE: 1"=150'

DATE: 05/02/17

DESIGN: EG  
DRAWN: AJB  
CHECKED: KYN

SHEET No.

C704  
107540



PRE-DEVELOPMENT HYDROGRAPHS

<div>Hydrograph Report</div> <div>Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5</div> <div>Thursday, 09 / 14 / 2017</div> <div>Hyd. No. 1</div> <div>Site - Pre (Outfall 'A')</div> <div><div><div>Hydrograph type = SCS Runoff</div><div>Storm frequency = 1 yrs</div><div>Time interval = 1 min</div><div>Drainage area = 0.320 ac</div><div>Basin Slope = 0.0 %</div><div>Tc method = User</div><div>Total precip. = 2.70 in</div><div>Storm duration = 24 hrs</div></div><div><div>Peak discharge = 0.795 cfs</div><div>Time to peak = 718 min</div><div>Hyd. volume = 1,605 cuft</div><div>Curve number = 85*</div><div>Hydraulic length = 0 ft</div><div>Time of conc. (Tc) = 5.00 min</div><div>Distribution = Type II</div><div>Shape factor = 484</div></div></div> <div>* Composite (Area/CN) = [(0.080 x 98) + (0.240 x 80)] / 0.320</div>			<div>Hydrograph Report</div> <div>Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5</div> <div>Thursday, 09 / 14 / 2017</div> <div>Hyd. No. 2</div> <div>Site - Pre (Outfall 'B')</div> <div><div><div>Hydrograph type = SCS Runoff</div><div>Storm frequency = 1 yrs</div><div>Time interval = 1 min</div><div>Drainage area = 3.210 ac</div><div>Basin Slope = 0.0 %</div><div>Tc method = User</div><div>Total precip. = 2.70 in</div><div>Storm duration = 24 hrs</div></div><div><div>Peak discharge = 11.83 cfs</div><div>Time to peak = 717 min</div><div>Hyd. volume = 25,922 cuft</div><div>Curve number = 95*</div><div>Hydraulic length = 0 ft</div><div>Time of conc. (Tc) = 5.00 min</div><div>Distribution = Type II</div><div>Shape factor = 484</div></div></div> <div>* Composite (Area/CN) = [(2.740 x 98) + (0.470 x 80)] / 3.210</div>			<div>Hydrograph Report</div> <div>Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5</div> <div>Thursday, 09 / 14 / 2017</div> <div>Hyd. No. 3</div> <div>Site - Pre (Outfall 'C')</div> <div><div><div>Hydrograph type = SCS Runoff</div><div>Storm frequency = 1 yrs</div><div>Time interval = 1 min</div><div>Drainage area = 1.520 ac</div><div>Basin Slope = 0.0 %</div><div>Tc method = User</div><div>Total precip. = 2.70 in</div><div>Storm duration = 24 hrs</div></div><div><div>Peak discharge = 5.890 cfs</div><div>Time to peak = 717 min</div><div>Hyd. volume = 13,436 cuft</div><div>Curve number = 97*</div><div>Hydraulic length = 0 ft</div><div>Time of conc. (Tc) = 5.00 min</div><div>Distribution = Type II</div><div>Shape factor = 484</div></div></div> <div>* Composite (Area/CN) = [(1.400 x 98) + (0.120 x 80)] / 1.520</div>		
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26			27			28		
Hydrograph Report			Hydrograph Report			Hydrograph Report		
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5			Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5			Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5		
Thursday, 09 / 14 / 2017			Thursday, 09 / 14 / 2017			Thursday, 09 / 14 / 2017		
Hyd. No. 1			Hyd. No. 2			Hyd. No. 3		
Site - Pre (Outfall 'A')			Site - Pre (Outfall 'B')			Site - Pre (Outfall 'C')		
Hydrograph type	=	SCS Runoff	Hydrograph type	=	SCS Runoff	Hydrograph type	=	SCS Runoff
Storm frequency	=	10 yrs	Storm frequency	=	10 yrs	Storm frequency	=	10 yrs
Time interval	=	1 min	Time interval	=	1 min	Time interval	=	1 min
Drainage area	=	0.320 ac	Drainage area	=	3.210 ac	Drainage area	=	1.520 ac
Basin Slope	=	0.0 %	Basin Slope	=	0.0 %	Basin Slope	=	0.0 %
Tc method	=	User	Tc method	=	User	Tc method	=	User
Total precip.	=	5.20 in	Total precip.	=	5.20 in	Total precip.	=	5.20 in
Storm duration	=	24 hrs	Storm duration	=	24 hrs	Storm duration	=	24 hrs
Peak discharge	=	2.028 cfs	Peak discharge	=	24.12 cfs	Peak discharge	=	11.62 cfs
Time to peak	=	717 min	Time to peak	=	717 min	Time to peak	=	717 min
Hyd. volume	=	4,257 cuft	Hyd. volume	=	55,488 cuft	Hyd. volume	=	27,576 cuft
Curve number	=	85*	Curve number	=	95*	Curve number	=	97*
Hydraulic length	=	0 ft	Hydraulic length	=	0 ft	Hydraulic length	=	0 ft
Time of conc. (Tc)	=	5.00 min	Time of conc. (Tc)	=	5.00 min	Time of conc. (Tc)	=	5.00 min
Distribution	=	Type II	Distribution	=	Type II	Distribution	=	Type II
Shape factor	=	484	Shape factor	=	484	Shape factor	=	484
* Composite (Area/CN) = [(0.080 x 98) + (0.240 x 80)] / 0.320			* Composite (Area/CN) = [(2.740 x 98) + (0.470 x 80)] / 3.210			* Composite (Area/CN) = [(1.400 x 98) + (0.120 x 80)] / 1.520		

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POST-DEVELOPMENT HYDROGRAPHS

<div>9</div> <div>Hydrograph Report</div> <div>Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5</div> <div>Thursday, 09 / 14 / 2017</div> <div>Hyd. No. 6</div> <div>Site - Post (Outfall 'A')</div> <div><table><tr><td>Hydrograph type</td><td>=</td><td>SCS Runoff</td><td>Peak discharge</td><td>=</td><td>0.789 cfs</td></tr><tr><td>Storm frequency</td><td>=</td><td>1 yrs</td><td>Time to peak</td><td>=</td><td>717 min</td></tr><tr><td>Time interval</td><td>=</td><td>1 min</td><td>Hyd. volume</td><td>=</td><td>1,849 cuft</td></tr><tr><td>Drainage area</td><td>=</td><td>0.200 ac</td><td>Curve number</td><td>=</td><td>98*</td></tr><tr><td>Basin Slope</td><td>=</td><td>0.0 %</td><td>Hydraulic length</td><td>=</td><td>0 ft</td></tr><tr><td>Tc method</td><td>=</td><td>User</td><td>Time of conc. (Tc)</td><td>=</td><td>5.00 min</td></tr><tr><td>Total precip.</td><td>=</td><td>2.70 in</td><td>Distribution</td><td>=</td><td>Type II</td></tr><tr><td>Storm duration</td><td>=</td><td>24 hrs</td><td>Shape factor</td><td>=</td><td>484</td></tr></table></div> <div>* Composite (Area/CN) = [(0.200 x 98)] / 0.200</div>			Hydrograph type	=	SCS Runoff	Peak discharge	=	0.789 cfs	Storm frequency	=	1 yrs	Time to peak	=	717 min	Time interval	=	1 min	Hyd. volume	=	1,849 cuft	Drainage area	=	0.200 ac	Curve number	=	98*	Basin Slope	=	0.0 %	Hydraulic length	=	0 ft	Tc method	=	User	Time of conc. (Tc)	=	5.00 min	Total precip.	=	2.70 in	Distribution	=	Type II	Storm duration	=	24 hrs	Shape factor	=	484	<div>7</div> <div>Hydrograph Report</div> <div>Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5</div> <div>Thursday, 09 / 14 / 2017</div> <div>Hyd. No. 4</div> <div>Site - Post (Outfall 'B') [1-yr]</div> <div><table><tr><td>Hydrograph type</td><td>=</td><td>SCS Runoff</td><td>Peak discharge</td><td>=</td><td>9.267 cfs</td></tr><tr><td>Storm frequency</td><td>=</td><td>1 yrs</td><td>Time to peak</td><td>=</td><td>718 min</td></tr><tr><td>Time interval</td><td>=</td><td>1 min</td><td>Hyd. volume</td><td>=</td><td>18,966 cuft</td></tr><tr><td>Drainage area</td><td>=</td><td>3.260 ac</td><td>Curve number</td><td>=</td><td>88*</td></tr><tr><td>Basin Slope</td><td>=</td><td>0.0 %</td><td>Hydraulic length</td><td>=</td><td>0 ft</td></tr><tr><td>Tc method</td><td>=</td><td>User</td><td>Time of conc. (Tc)</td><td>=</td><td>5.00 min</td></tr><tr><td>Total precip.</td><td>=</td><td>2.70 in</td><td>Distribution</td><td>=</td><td>Type II</td></tr><tr><td>Storm duration</td><td>=</td><td>24 hrs</td><td>Shape factor</td><td>=</td><td>484</td></tr></table></div> <div>* Composite (Area/CN) = [(2.280 x 98) + (0.980 x 84)] / 3.260</div>			Hydrograph type	=	SCS Runoff	Peak discharge	=	9.267 cfs	Storm frequency	=	1 yrs	Time to peak	=	718 min	Time interval	=	1 min	Hyd. volume	=	18,966 cuft	Drainage area	=	3.260 ac	Curve number	=	88*	Basin Slope	=	0.0 %	Hydraulic length	=	0 ft	Tc method	=	User	Time of conc. (Tc)	=	5.00 min	Total precip.	=	2.70 in	Distribution	=	Type II	Storm duration	=	24 hrs	Shape factor	=	484	<div>8</div> <div>Hydrograph Report</div> <div>Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5</div> <div>Thursday, 09 / 14 / 2017</div> <div>Hyd. No. 5</div> <div>Site - Post (Outfall 'C') [1-yr]</div> <div><table><tr><td>Hydrograph type</td><td>=</td><td>SCS Runoff</td><td>Peak discharge</td><td>=</td><td>3.244 cfs</td></tr><tr><td>Storm frequency</td><td>=</td><td>1 yrs</td><td>Time to peak</td><td>=</td><td>718 min</td></tr><tr><td>Time interval</td><td>=</td><td>1 min</td><td>Hyd. volume</td><td>=</td><td>6,513 cuft</td></tr><tr><td>Drainage area</td><td>=</td><td>1.600 ac</td><td>Curve number</td><td>=</td><td>81*</td></tr><tr><td>Basin Slope</td><td>=</td><td>0.0 %</td><td>Hydraulic length</td><td>=</td><td>0 ft</td></tr><tr><td>Tc method</td><td>=</td><td>User</td><td>Time of conc. (Tc)</td><td>=</td><td>5.00 min</td></tr><tr><td>Total precip.</td><td>=</td><td>2.70 in</td><td>Distribution</td><td>=</td><td>Type II</td></tr><tr><td>Storm duration</td><td>=</td><td>24 hrs</td><td>Shape factor</td><td>=</td><td>484</td></tr></table></div> <div>* Composite (Area/CN) = [(0.790 x 98) + (0.810 x 84)] / 1.600</div>			Hydrograph type	=	SCS Runoff	Peak discharge	=	3.244 cfs	Storm frequency	=	1 yrs	Time to peak	=	718 min	Time interval	=	1 min	Hyd. volume	=	6,513 cuft	Drainage area	=	1.600 ac	Curve number	=	81*	Basin Slope	=	0.0 %	Hydraulic length	=	0 ft	Tc method	=	User	Time of conc. (Tc)	=	5.00 min	Total precip.	=	2.70 in	Distribution	=	Type II	Storm duration	=	24 hrs	Shape factor	=	484
Hydrograph type	=	SCS Runoff	Peak discharge	=	0.789 cfs																																																																																																																																																			
Storm frequency	=	1 yrs	Time to peak	=	717 min																																																																																																																																																			
Time interval	=	1 min	Hyd. volume	=	1,849 cuft																																																																																																																																																			
Drainage area	=	0.200 ac	Curve number	=	98*																																																																																																																																																			
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft																																																																																																																																																			
Tc method	=	User	Time of conc. (Tc)	=	5.00 min																																																																																																																																																			
Total precip.	=	2.70 in	Distribution	=	Type II																																																																																																																																																			
Storm duration	=	24 hrs	Shape factor	=	484																																																																																																																																																			
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Storm frequency	=	1 yrs	Time to peak	=	718 min																																																																																																																																																			
Time interval	=	1 min	Hyd. volume	=	18,966 cuft																																																																																																																																																			
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Drainage area	=	1.600 ac	Curve number	=	81*																																																																																																																																																			
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft																																																																																																																																																			
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Total precip.	=	2.70 in	Distribution	=	Type II																																																																																																																																																			
Storm duration	=	24 hrs	Shape factor	=	484																																																																																																																																																			

31			34			35		
Hydrograph Report			Hydrograph Report			Hydrograph Report		
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5			Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5			Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5		
Thursday, 09 / 14 / 2017			Thursday, 09 / 14 / 2017			Thursday, 09 / 14 / 2017		
Hyd. No. 6			Hyd. No. 9			Hyd. No. 10		
Site - Post (Outfall 'A')			Site - Post (Outfall 'B') [10-yr]			Site - Post (Outfall 'C') [10-yr]		
Hydrograph type	=	SCS Runoff	Hydrograph type	=	SCS Runoff	Hydrograph type	=	SCS Runoff
Storm frequency	=	10 yrs	Storm frequency	=	10 yrs	Storm frequency	=	10 yrs
Time interval	=	1 min	Time to peak	=	717 min	Time to peak	=	717 min
Drainage area	=	0.200 ac	Hyd. volume	=	3,716 cuft	Hyd. volume	=	21,283 cuft
Curve number	=	98*	Time interval	=	1 min	Time interval	=	1 min
Basin Slope	=	0.0 %	Drainage area	=	3.260 ac	Drainage area	=	1,600 ac
Curve number	=	98*	Curve number	=	90*	Curve number	=	85*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min	Time of conc. (Tc)	=	5.00 min
Total precip.	=	5.20 in	Distribution	=	Type II	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484	Shape factor	=	484
* Composite (Area/CN) = [(0.200 x 98)] / 0.200			* Composite (Area/CN) = [(2.260 x 98) + (0.980 x 72)] / 3.260			* Composite (Area/CN) = [(0.790 x 98) + (0.810 x 72)] / 1.600		

HYDROGRAPH SUMMARY

2

# Hydrograph Return Period Recap

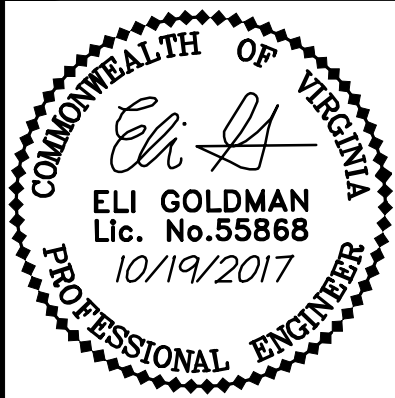
Hydrograph Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)			Hydrograph Description						
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr		
1	SCS Runoff	----	0.795	1.034	----	----	2.028	----	----	----	Site - Pre (Outfall 'A')	
2	SCS Runoff	----	11.83	14.32	----	----	24.12	----	----	----	Site - Pre (Outfall 'B')	
3	SCS Runoff	----	5.890	7.044	----	----	11.62	----	----	----	Site - Pre (Outfall 'C')	
4	SCS Runoff	----	9.267	11.779	----	----	22.84	----	----	----	Site - Post (Outfall 'B') [1-yr]	
5	SCS Runoff	----	3.244	4.094	----	----	6.513	----	----	----	Site - Post (Outfall 'B') [1-yr]	
6	SCS Runoff	----	0.789	0.940	----	----	1.538	----	----	----	Site - Post (Outfall 'A')	
7	SCS Runoff	----	8.738	10.448	----	----	18.966	----	----	----	Site - Post (Outfall 'B') [1-yr] Pre A Post CN	
8	SCS Runoff	----	4.888	5.902	----	----	10.05	----	----	----	Site - Post (Outfall 'C') Pre A Post CN	
9	SCS Runoff	----	10.05	12.09	----	----	22.84	----	----	----	Site - Post (Outfall 'B') [10-yr]	
10	SCS Runoff	----	9.994	11.944	----	----	10.14	----	----	----	Site - Post (Outfall 'C') [10-yr]	

Proj. file: Site pre-post (107540) - 3 outfalls.gpw

Thursday, 09 / 14 / 2017

christopher consultants  
9900 main street (suite 400) · fairfax, va 22031  
phone 703.273.6820 · fax 703.273.6820



SWM COMPUTATIONS

PRELIMINARY PLAN - STAGE I  
HOFFMAN TOWN CENTER  
BLOCKS 4 & 5  
CITY OF ALEXANDRIA, VIRGINIA

PROJECT NO: 98085.049.02  
SCALE: 1"=150'  
DATE: 05/02/17  
DESIGN: EG  
DRAWN: AJB  
CHECKED: KYN  
SHEET No.

C705  
107540

<b>APPROVED</b>	
SPECIAL USE PERMIT NO. 2016-0043	
DEPARTMENT OF PLANNING & ZONING	
DIRECTOR _____	DATE _____
DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES	
SITE PLAN NO. ____	
DIRECTOR _____	DATE _____
CHAIRMAN, PLANNING COMMISSION _____	
DATE RECORDED _____	
INSTRUMENT NO. _____	DEED BOOK NO. _____
PAGE NO. _____	



SANITARY DESIGN FLOWS

EXISTING: 0 SF (PARKING LOT)  
PROPOSED: 730 MULTI-FAMILY/RESIDENTIAL/SENIOR LIVING UNITS  
220,000 SF RETAIL/COMMERCIAL

CITY OF ALEXANDRIA RECOMMENDED AVERAGE DESIGN FLOWS:

300 GPD/UNIT (FOR MULTIFAMILY/RESIDENTIAL)  
200 GPD/1000 SF (FOR RETAIL/COMMERCIAL)

EXISTING FLOW:

$Q = (0 \text{ GPD} / 7.48 \text{ GAL/CF}) * (\text{DAY}/86,400 \text{ SEC}) = 0 \text{ C.F.S.}$

PEAK FACTOR FOR LATERALS = 4.0  
DESIGN FLOW =  $0 * 4.0 = 0 \text{ C.F.S. (0 GPD)}$

PROPOSED FLOW:

300 GPD/UNIT X 730 UNITS = 219,000 GPD  
200 GPD/1000 SF X 220,000 SF = 44,000 GPD  
SUB-TOTAL = 219,000 GPD + 44,000 GPD = 263,000 GPD

$Q = (263,000 \text{ GPD} / 7.48 \text{ GAL/CF}) * (\text{DAY}/86,400 \text{ SEC}) = 0.407 \text{ C.F.S.}$

PEAK FACTOR FOR LATERALS = 4.0  
DESIGN FLOW =  $0.407 * 4.0 = 1.628 \text{ C.F.S. (1,052,000 GPD)}$

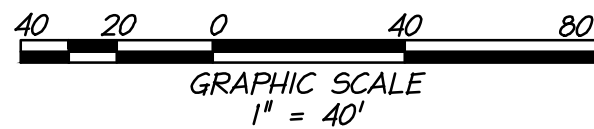
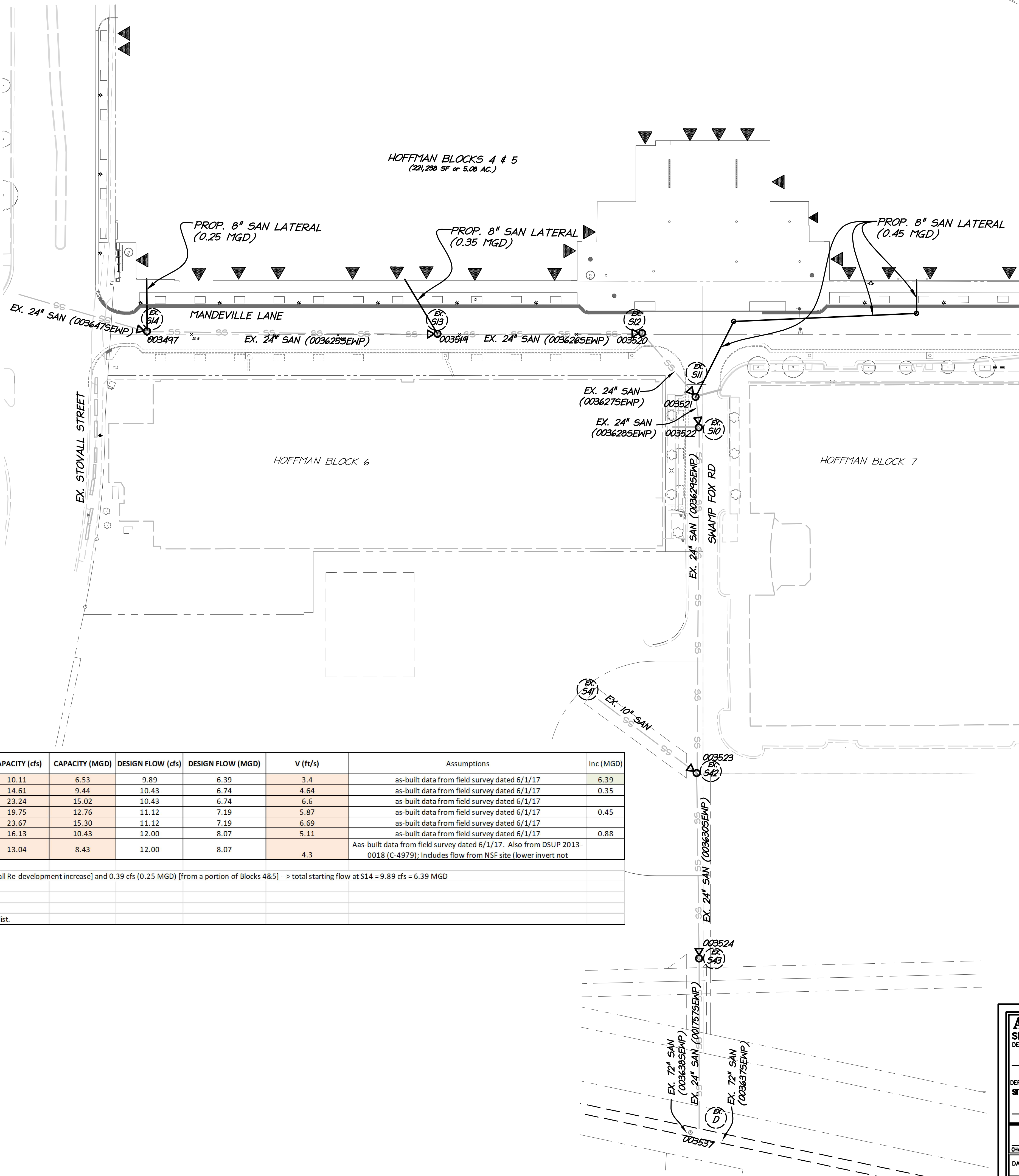
NET INCREASE IN FLOW =  $1,052,000 \text{ GPD} - 0 \text{ GPD} = 1,052,000 \text{ GPD}$

SANITARY COMPUTATION:

FROM	TO	UPPER INV	LOWER INV	L (FT)	SLOPE (%)	DIA (IN)	MATERIAL	N	CAPACITY (cfs)	CAPACITY (MGD)	DESIGN FLOW (cfs)	DESIGN FLOW (MGD)	V (ft/s)	Assumptions	Inc (MGD)
Ex. S14 (003497)	Ex. S13 (003519)	7.62	7.11	220.63	0.23	24	RCP	0.015	10.11	6.53	9.89	6.39	3.4	as-built data from field survey dated 6/1/17	6.39
Ex. S13 (003519)	Ex. S12 (003520)	7.01	6.26	155.29	0.48	24	RCP	0.015	14.61	9.44	10.43	6.74	4.64	as-built data from field survey dated 6/1/17	0.35
Ex. S12 (003520)	Ex. S11 (003521)	6.16	5.82	62.59	0.54	24	PVC	0.010	23.24	15.02	10.43	6.74	6.6	as-built data from field survey dated 6/1/17	
Ex. S11 (003521)	Ex. S10 (003522)	5.72	5.63	23.34	0.39	24	PVC	0.010	19.75	12.76	11.12	7.19	5.87	as-built data from field survey dated 6/1/17	0.45
Ex. S10 (003522)	Ex. S42 (003523)	5.53	4.06	262.66	0.56	24	PVC	0.010	23.67	15.30	11.12	7.19	6.69	as-built data from field survey dated 6/1/17	
Ex. S42 (003523)	Ex. S43 (003524)	3.96	3.60	140.53	0.26	24	PVC	0.010	16.13	10.43	12.00	8.07	5.11	as-built data from field survey dated 6/1/17	0.88
Ex. S43 (003524)	Ex. D (003537)	3.40	3.18	132.74	0.17	24	PVC	0.010	13.04	8.43	12.00	8.07	4.3	As-built data from field survey dated 6/1/17. Also from DSUP 2013-0018 (C-4979). Includes flow from NSF site (lower invert not	

Notes:

- Assumption for starting flow: 9.46 cfs (6.11MGD) given with DSUP 2013-0018 and a increase of 0.04 cfs (0.03 MGD) [From 200 Stovall Re-development increase] and 0.39 cfs (0.25 MGD) [from a portion of Blocks 4&5] --> total starting flow at S14 = 9.89 cfs = 6.39 MGD
- All capacities shown on the chart are full flow capacities, approximately 93% of the maximum capacity.
- Information shown above was gathered during topographic survey performed June 2017.
- All velocities shown are calculated per a partial flow analysis.
- A 'n' value of 0.010 was used for all smooth pipes and a value of 0.15 for concrete pipes (diameter smaller than 36") per the ESI checklist.



<b>APPROVED</b> <b>SPECIAL USE PERMIT NO. 2018-0043</b> DEPARTMENT OF PLANNING & ZONING	
DIRECTOR _____	DATE _____
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SITE PLAN NO. _____	
DIRECTOR _____	DATE _____
CHAIRMAN, PLANNING COMMISSION _____	
DATE RECORDED _____	
INSTRUMENT NO. _____	DEED BOOK NO. _____
PAGE NO. _____	

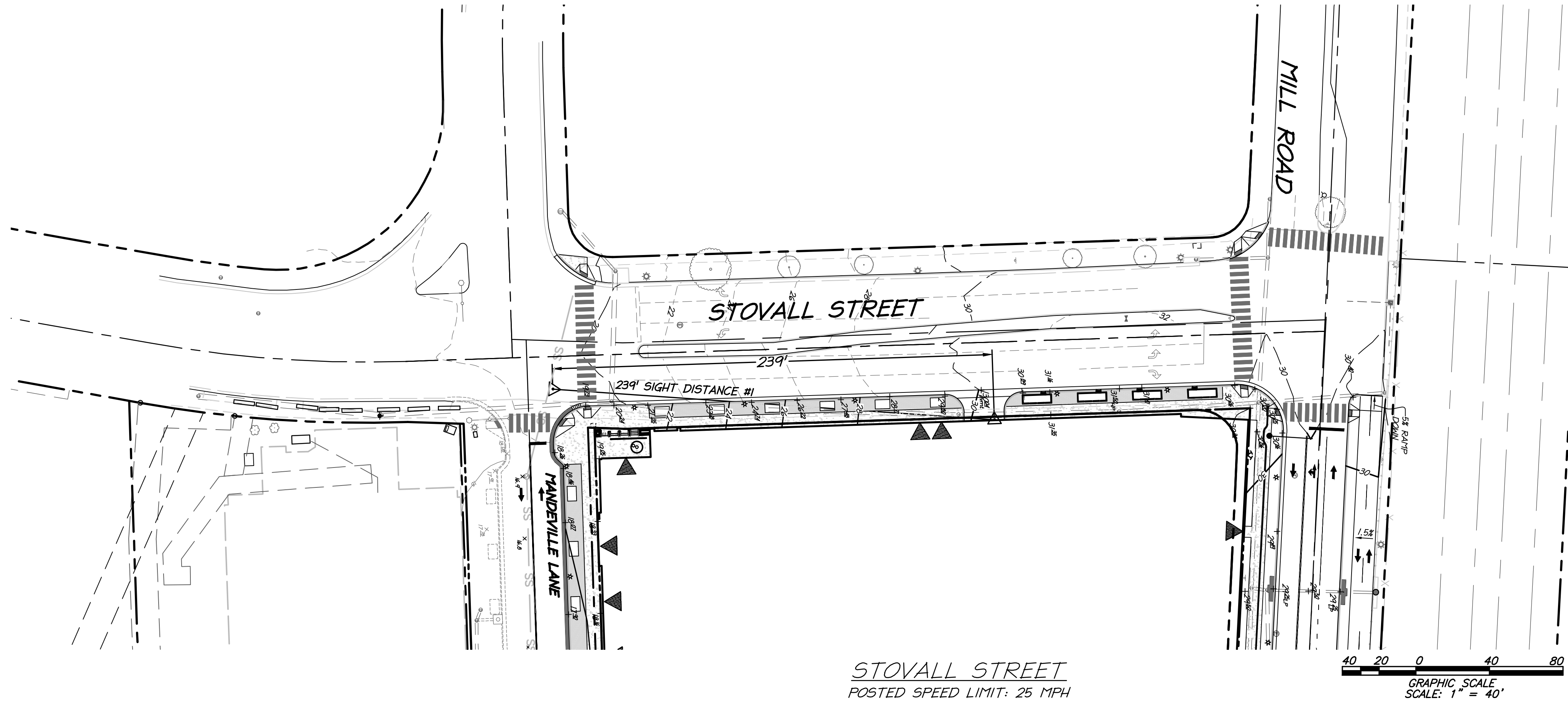
9900 main street (suite 400) · fairfax, va 22031  
phone 703.273.6820 · fax 703.273.6820

SANITARY SEWER AND  
OUTFALL ANALYSIS

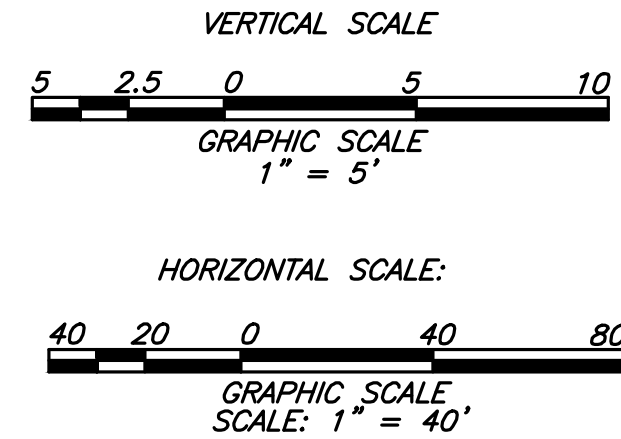
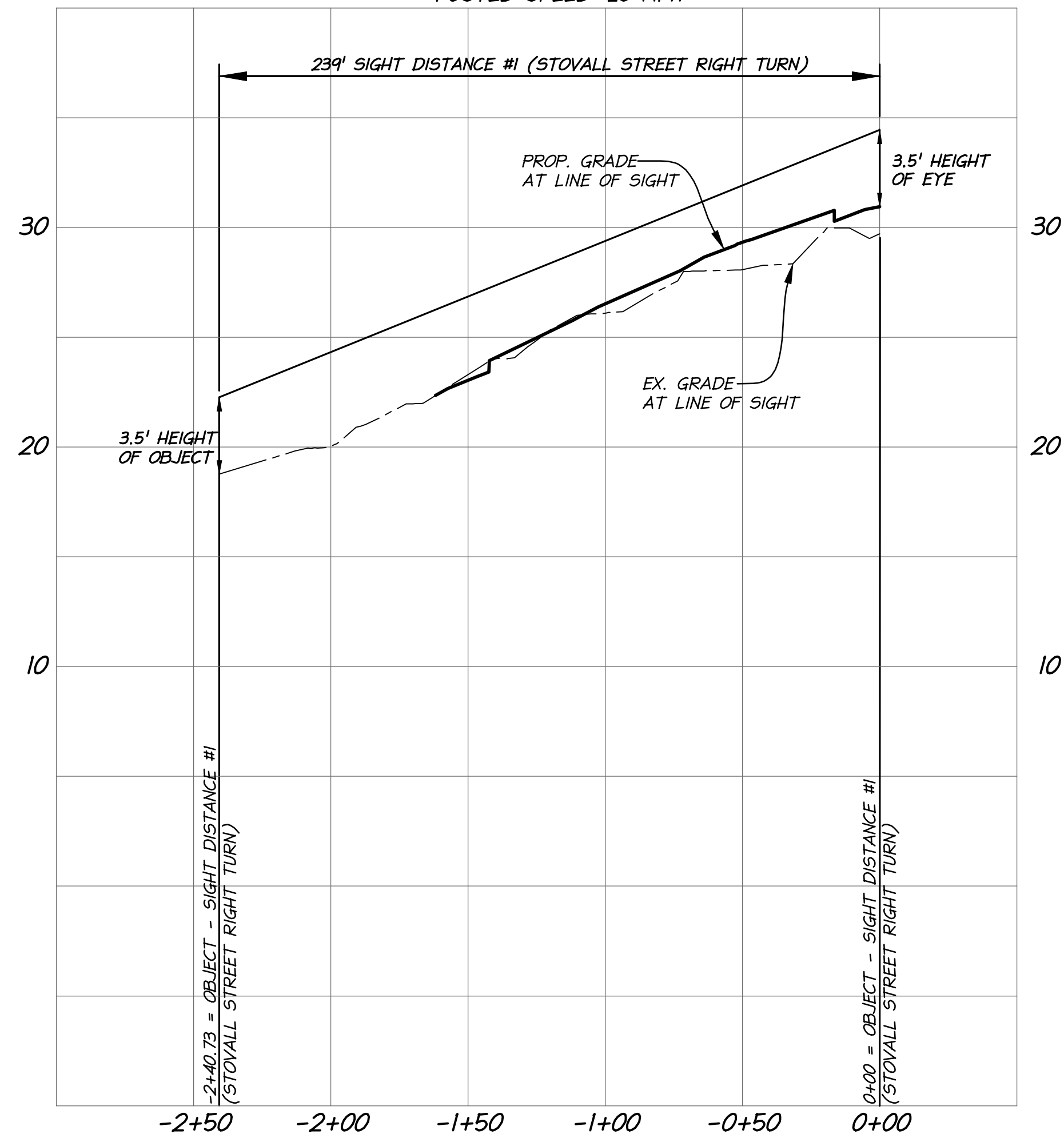
PRELIMINARY PLAN - STAGE 1  
HOFFMAN TOWN CENTER  
BLOCKS 4 & 5  
CITY OF ALEXANDRIA, VIRGINIA

PROJECT NO: 98085.049.00  
SCALE: 1"=40'  
DATE: 05/02/17  
DESIGN: EG  
DRAWN: AJB  
CHECKED: KMW  
SHEET No.  
**C800**





STOVALL STREET SIGHT DISTANCE  
POSTED SPEED: 25 MPH

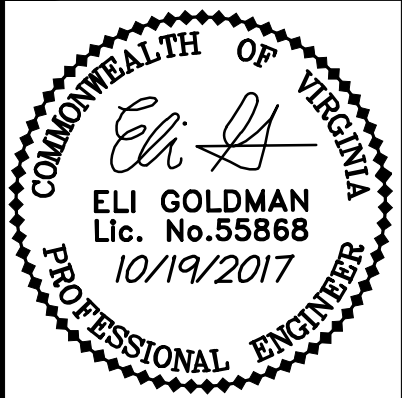


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SPECIAL USE PERMIT NO. 2016-0043	
DEPARTMENT OF PLANNING & ZONING	
DIRECTOR _____	DATE _____
DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES	
SITE PLAN NO. _____	
DIRECTOR _____	DATE _____
CHAIRMAN, PLANNING COMMISSION _____	
DATE RECORDED _____	
INSTRUMENT NO. _____	DEED BOOK NO. _____
PAGE NO. _____	

PROJECT NO. 98085.049.02  
SCALE: N/A  
DATE: 05/02/17  
DESIGN: EG  
DRAWN: AJB  
CHECKED: KTW  
SHEET No.

C900  
107540

PRELIMINARY PLAN - STAGE 1  
HOFFMAN TOWN CENTER  
BLOCKS 4 & 5  
CITY OF ALEXANDRIA, VIRGINIA

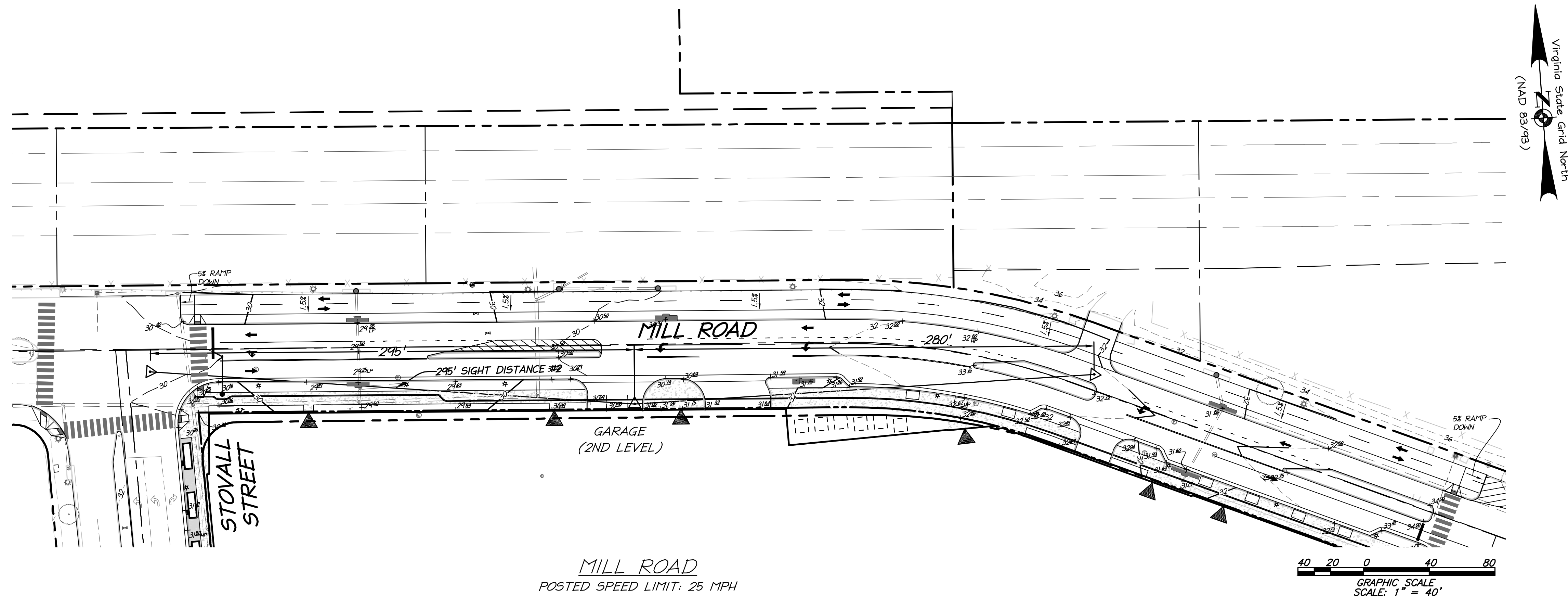


SIGHT DISTANCE  
PROFILE



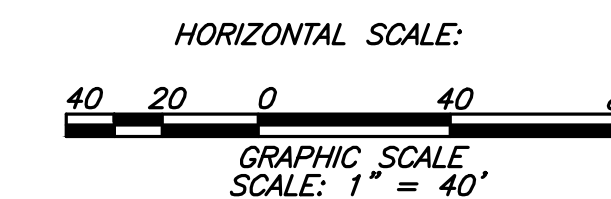
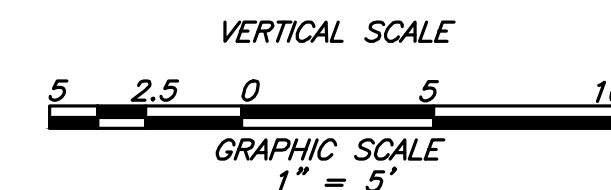
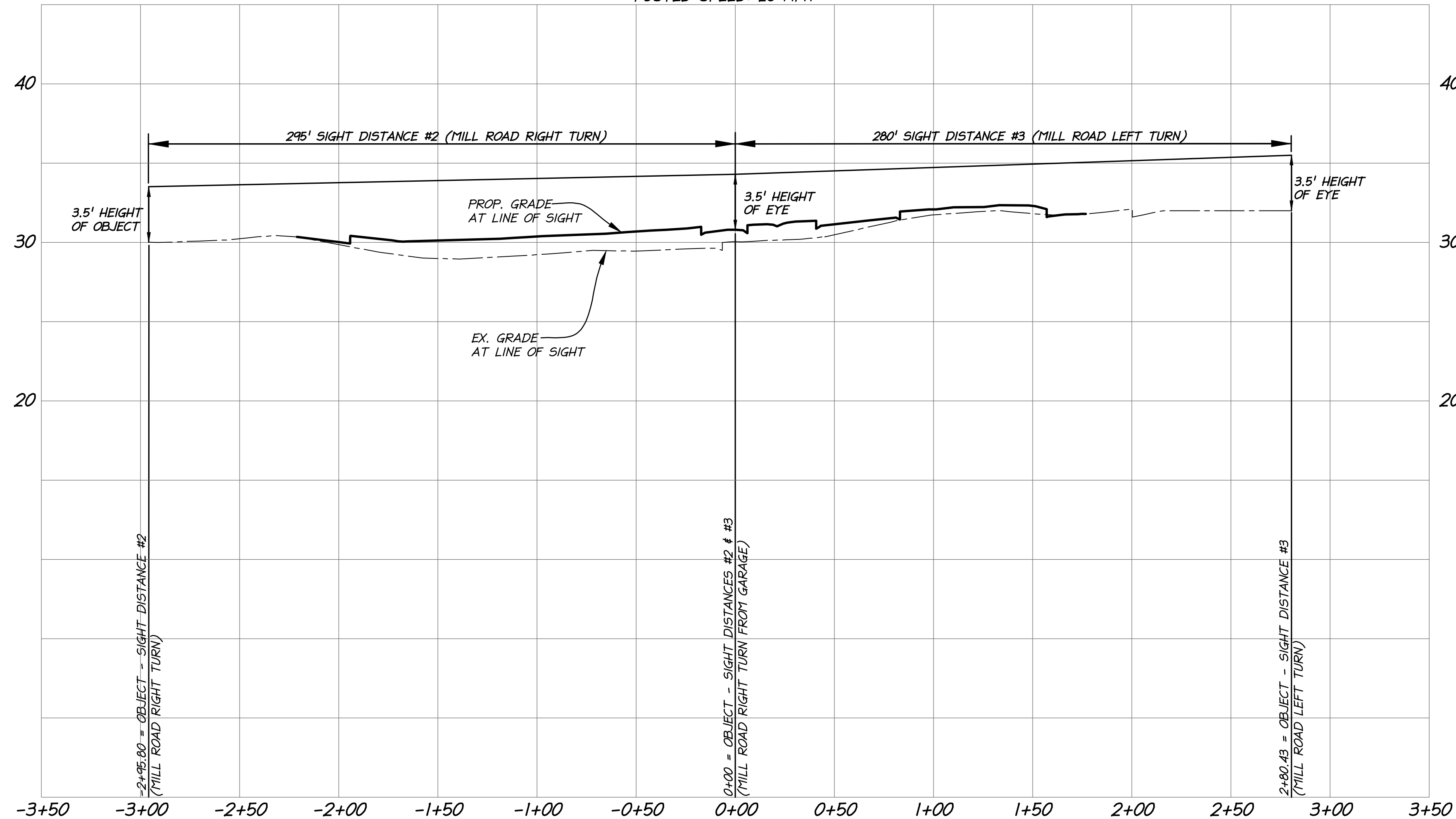
christopher  
consultants  
9900 main street (suite 400) · Fairfax, VA 22031  
phone 703.273.6820 · fax 703.273.6820





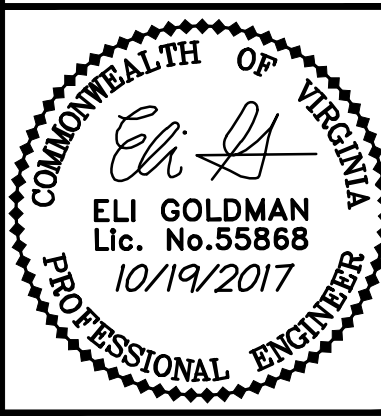
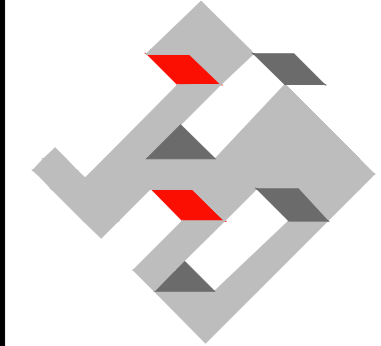
MILL ROAD SIGHT DISTANCE (FROM GARAGE)

POSTED SPEED: 25 MPH



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DIRECTOR _____	DATE _____
CHAIRMAN, PLANNING COMMISSION _____	
DATE RECORDED _____	
INSTRUMENT NO. _____	DEED BOOK NO. _____
PAGE NO. _____	



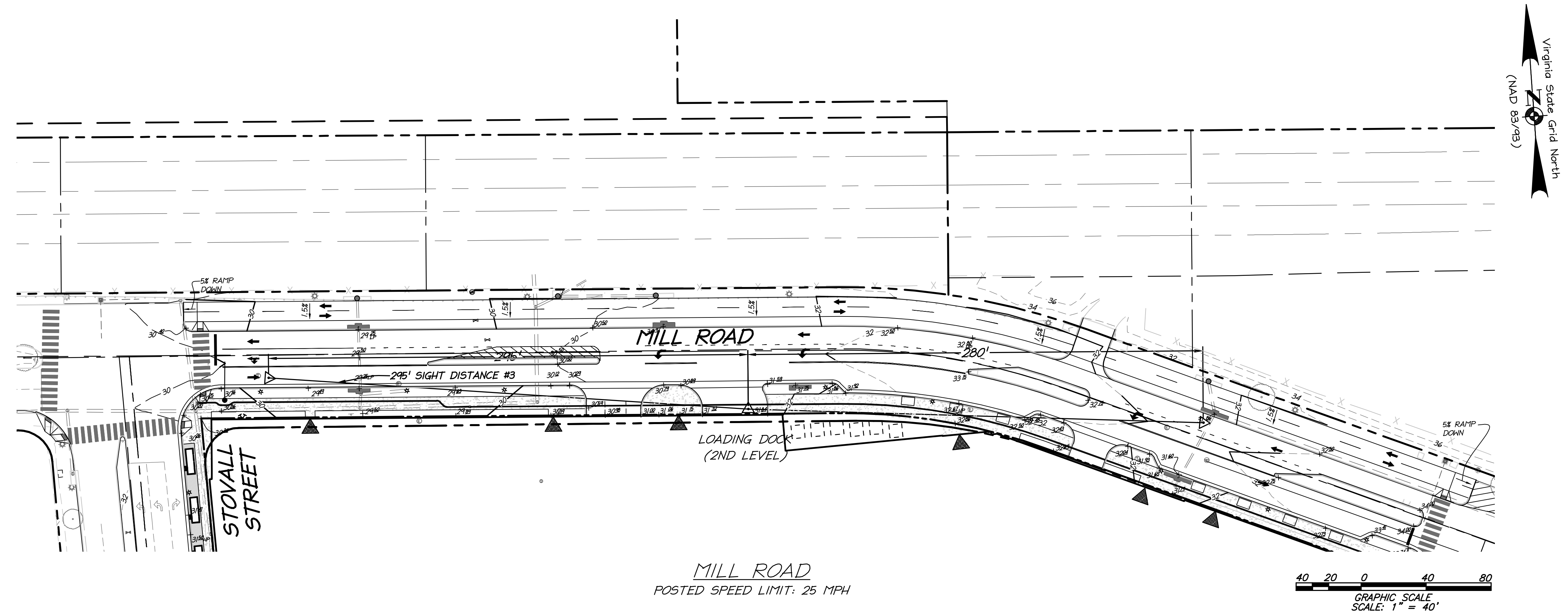


SIGHT DISTANCE  
PROFILE

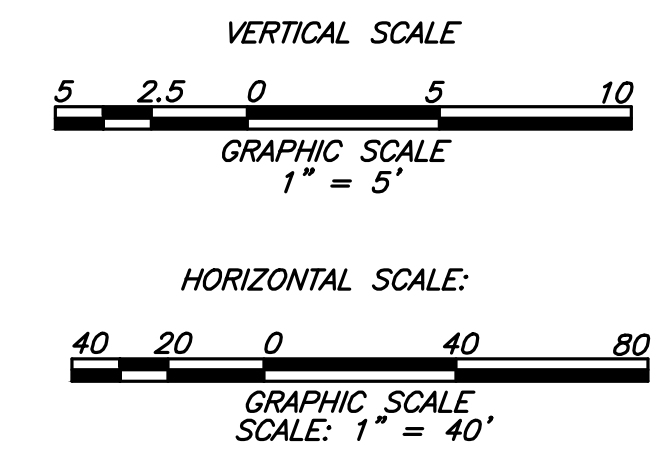
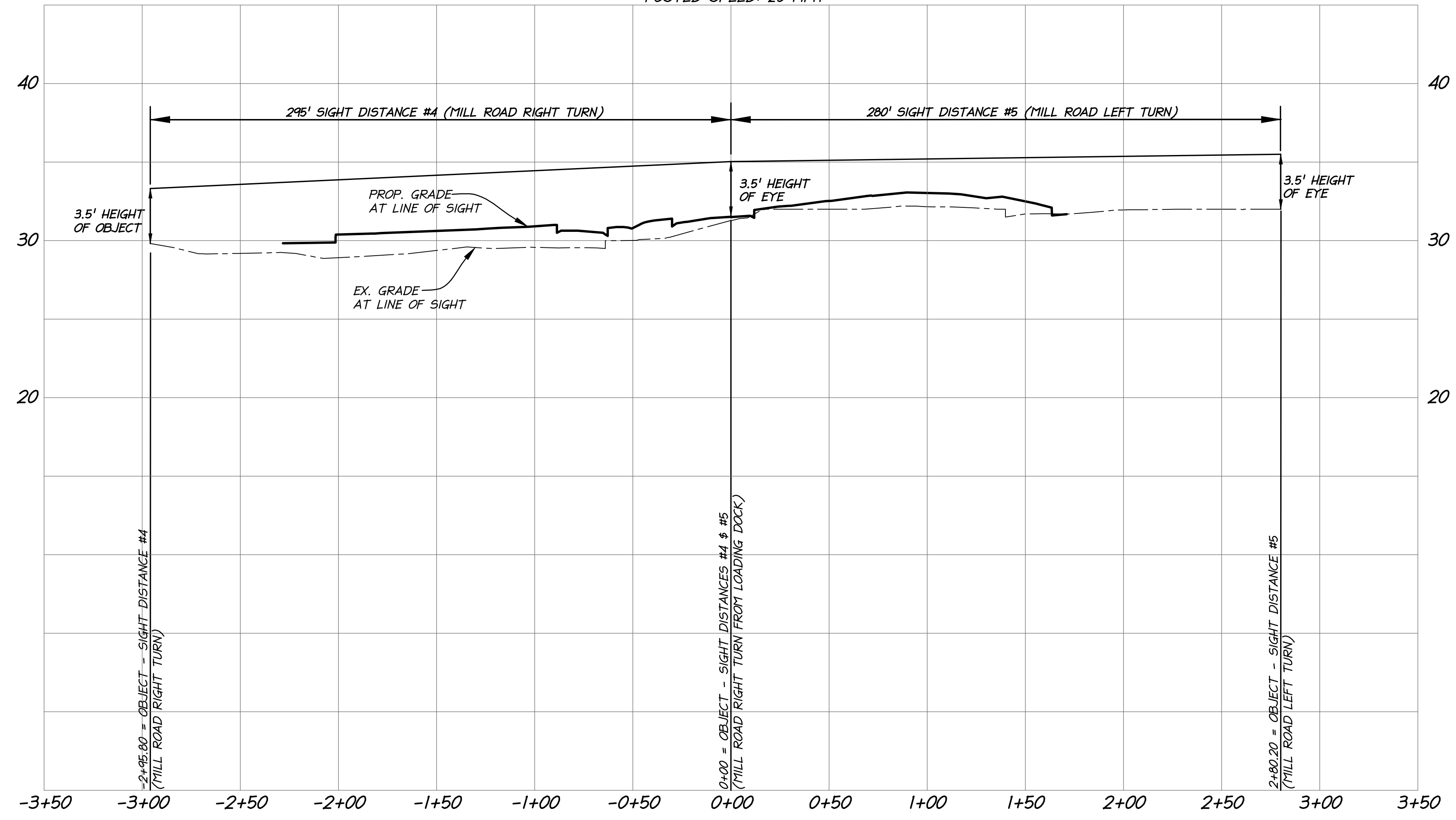
PRELIMINARY PLAN - STAGE 1  
HOFFMAN TOWN CENTER  
BLOCKS 4 & 5  
CITY OF ALEXANDRIA, VIRGINIA

PROJECT NO. 98085.049.02  
SCALE: N/A  
DATE: 05/02/17  
DESIGN: EG  
DRAWN: AJB  
CHECKED: KTM  
SHEET No.

C902  
107540

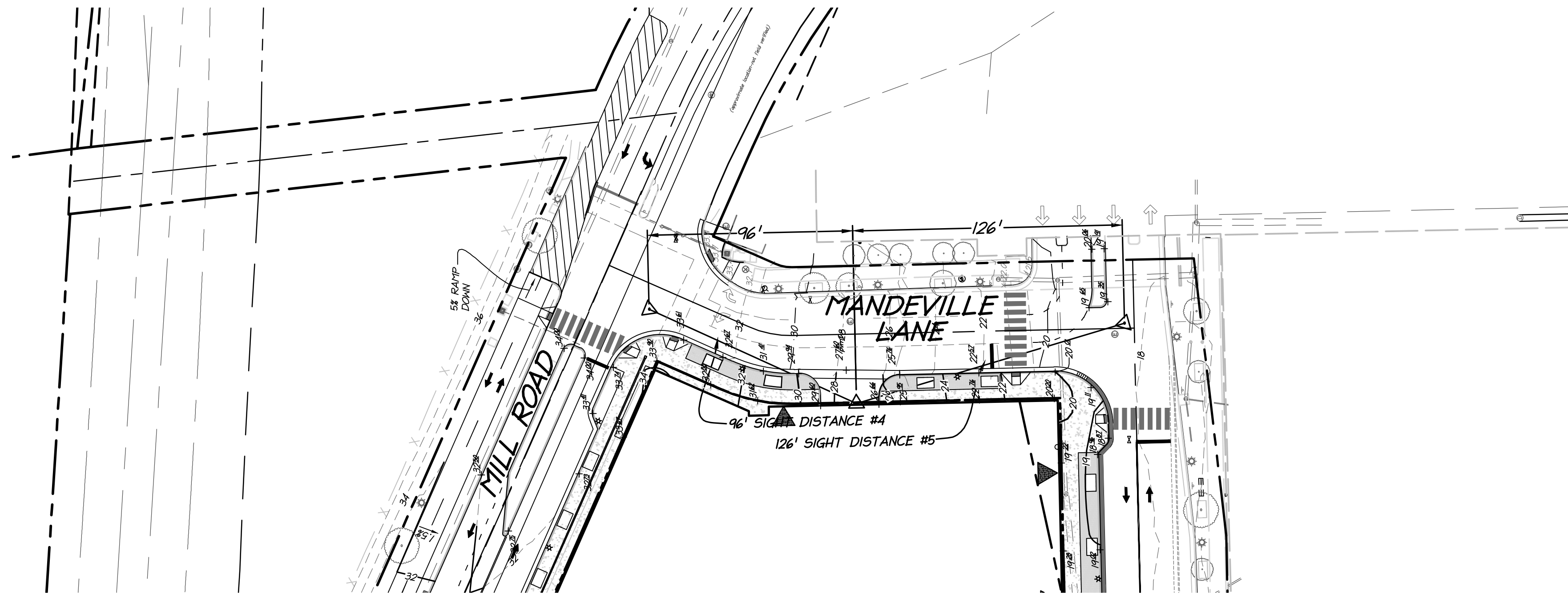


MILL ROAD SIGHT DISTANCE (FROM LOADING DOCK)  
POSTED SPEED: 25 MPH

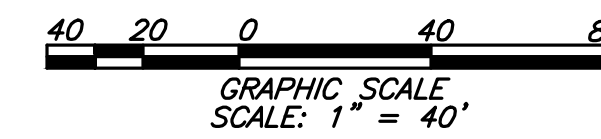


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DEPARTMENT OF PLANNING & ZONING	
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DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES	
SITE PLAN NO. -	
DIRECTOR _____	DATE _____
CHAIRMAN, PLANNING COMMISSION _____	
DATE RECORDED _____	
INSTRUMENT NO. _____	DEED BOOK NO. _____
PAGE NO. _____	

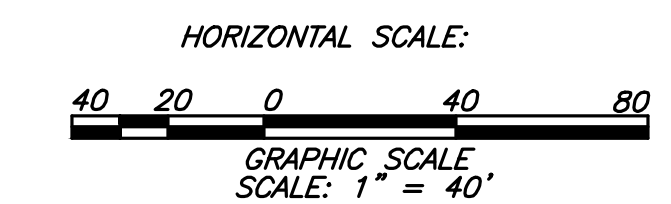
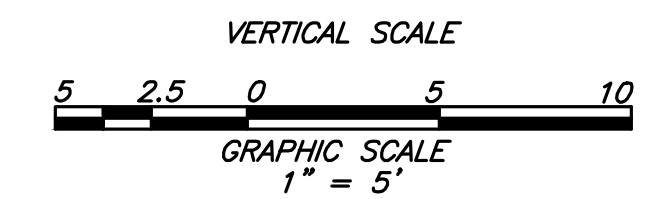
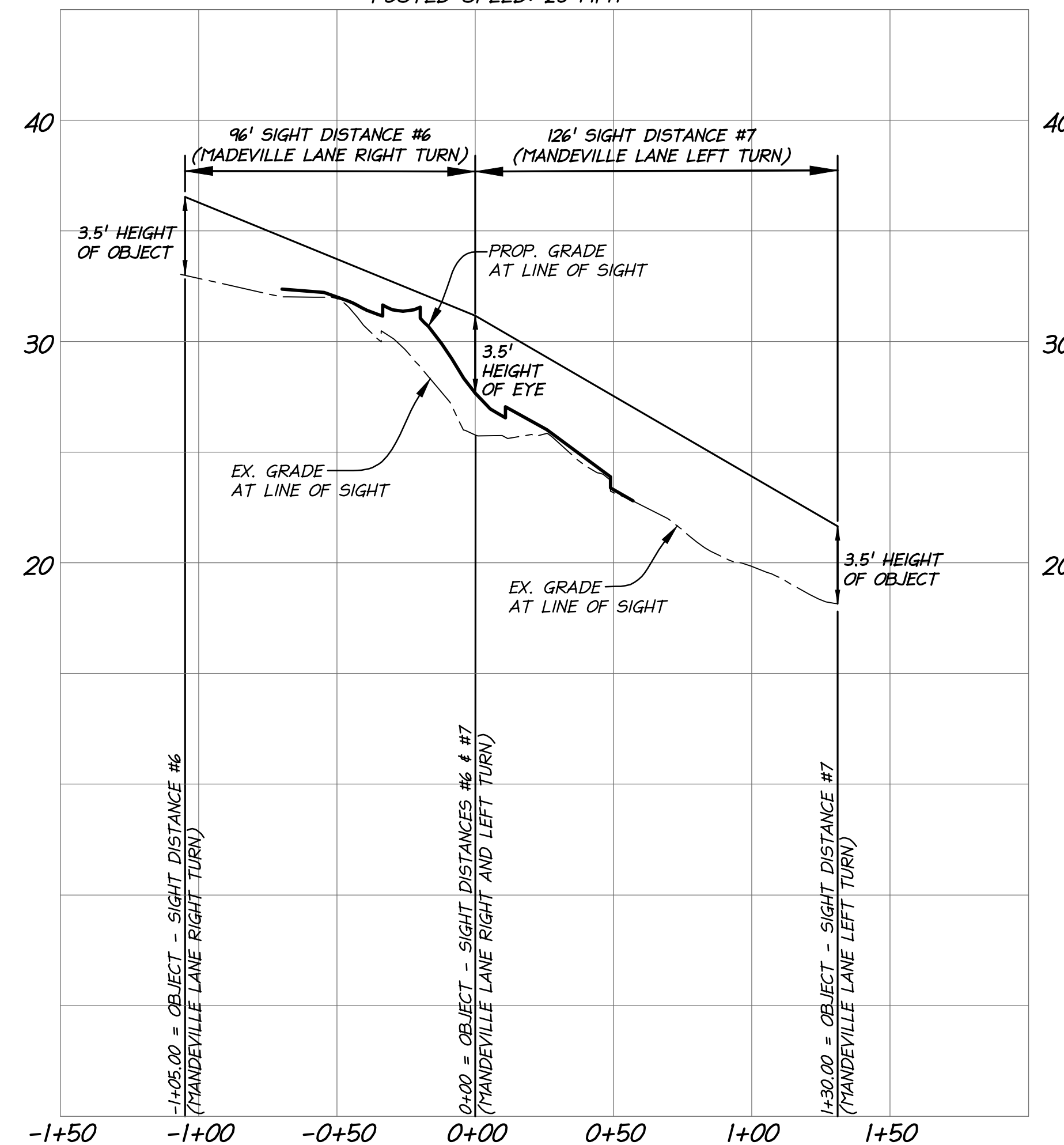




MANDEVILLE LANE  
SPEED LIMIT: 25 MPH



MANDEVILLE LANE SIGHT DISTANCE  
POSTED SPEED: 25 MPH



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DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES	
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CHAIRMAN, PLANNING COMMISSION _____	
DATE RECORDED _____	
INSTRUMENT NO. _____	DEED BOOK NO. _____
PAGE NO. _____	

PROJECT NO. 98085.049.00  
SCALE: N/A

DATE: 05/02/17

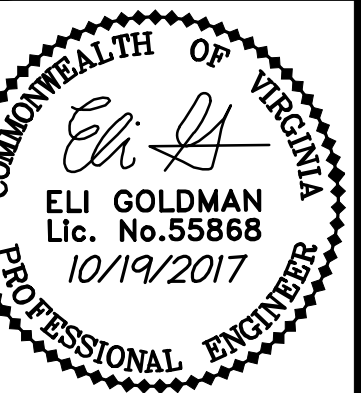
DESIGN: EG  
DRAWN: AJB  
CHECKED: KTW

SHEET No.

C903  
107540

SIGHT DISTANCE  
PROFILE

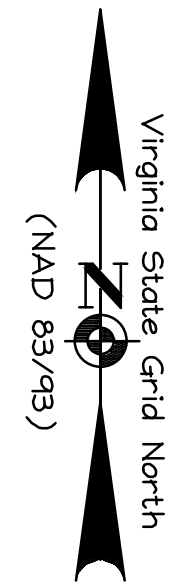
PRELIMINARY PLAN - STAGE 1  
HOFFMAN TOWN CENTER  
BLOCKS 4 & 5  
CITY OF ALEXANDRIA, VIRGINIA



**christopher**  
consultants  
9900 main street (suite 400) · Fairfax, VA 22031  
phone 703.273.6820 · fax 703.273.6820



P:\Projects\98085 Hoffman Blocks\04000 Block 4 & 5\107540 Prelim\040 PRELIM STRIPING AND SIGNAGE PLAN.dwg, 10/10/2017 5:26:40 PM, jstinson, 1:1, christopher consultants, ltd



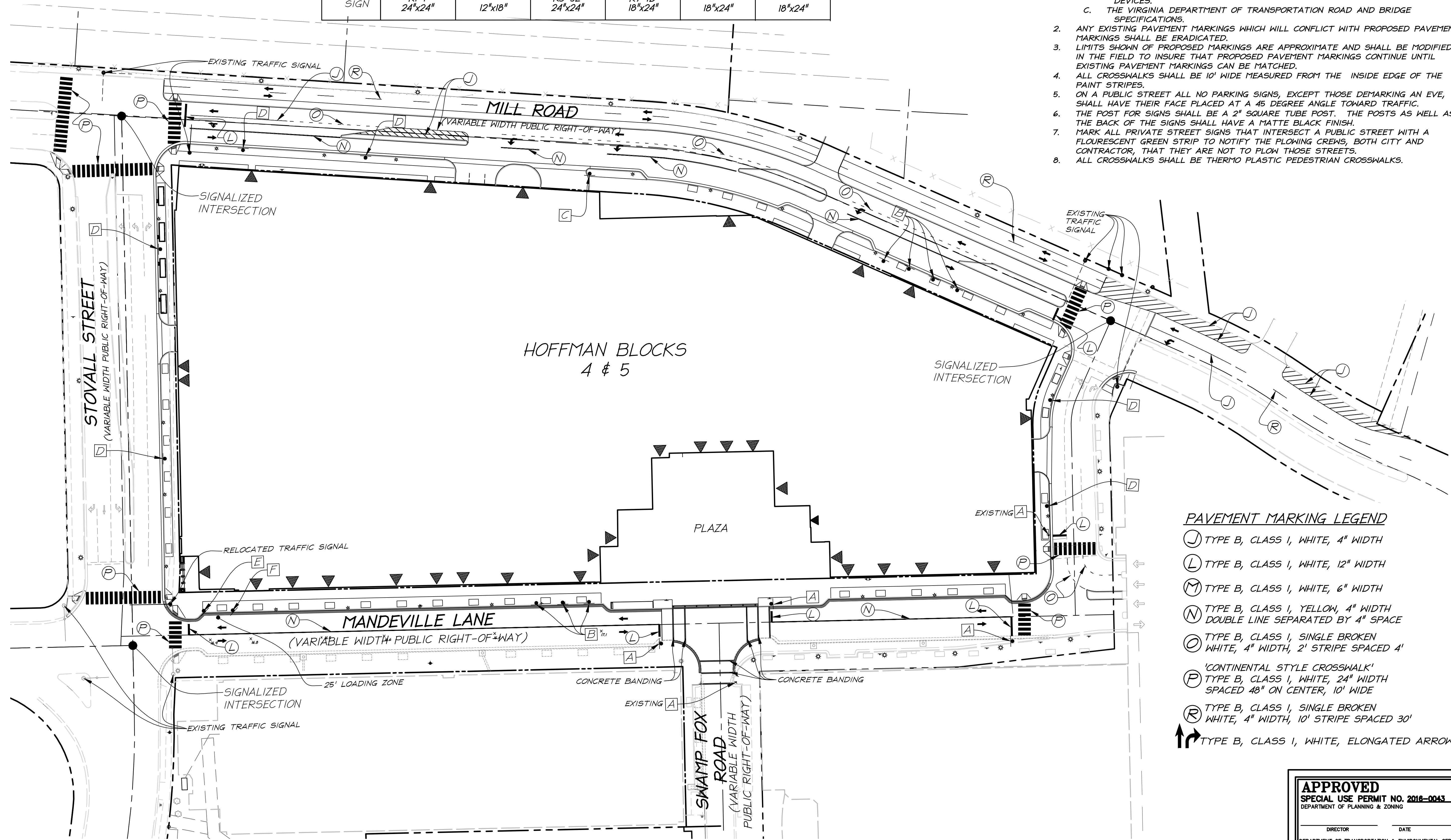
### SIGN LEGEND

SIGN	A	B	C	D	E	F
SYMBOL						
SIGN	R1-1 24"x24"	12"x18"	R3-5L 24"x24"	R7-1D 18"x24"	18"x24"	18"x24"

### SIGNING & PAVEMENT MARKING NOTES:

PROPOSED SIGN LOCATIONS ARE APPROXIMATE AND SHALL BE MODIFIED IN THE FIELD TO AVOID CONFLICT WITH THE UNDERGROUND UTILITIES OR OTHER OBSTRUCTIONS AND TO COMPLY WITH STANDARDS REFERENCED IN NOTE 1.  
FOR COLOR COMBINATION AND/OR LETTERING SIZE, REFER TO THE VIRGINIA SUPPLEMENT TO THE MUTCD.

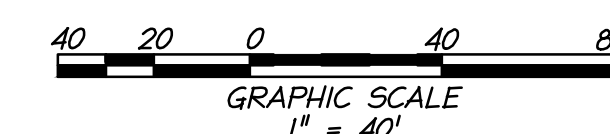
- ALL PROPOSED SIGNING AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE MOST CURRENT EDITION OF EACH OF THE FOLLOWING AND ANY REVISION THERETO:
  - MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
  - THE VIRGINIA SUPPLEMENT TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
  - THE VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE SPECIFICATIONS.
- ANY EXISTING PAVEMENT MARKINGS WHICH WILL CONFLICT WITH PROPOSED PAVEMENT MARKINGS SHALL BE ERADICATED.
- LIMITS SHOWN OF PROPOSED MARKINGS ARE APPROXIMATE AND SHALL BE MODIFIED IN THE FIELD TO INSURE THAT PROPOSED PAVEMENT MARKINGS CONTINUE UNTIL EXISTING PAVEMENT MARKINGS CAN BE MATCHED.
- ALL CROSSWALKS SHALL BE 10' WIDE MEASURED FROM THE INSIDE EDGE OF THE PAINT STRIPES.
- ON A PUBLIC STREET ALL NO PARKING SIGNS, EXCEPT THOSE DEMARKING AN EVE, SHALL HAVE THEIR FACE PLACED AT A 45 DEGREE ANGLE TOWARD TRAFFIC.
- THE POST FOR SIGNS SHALL BE A 2" SQUARE TUBE POST. THE POSTS AS WELL AS THE BACK OF THE SIGNS SHALL HAVE A MATTE BLACK FINISH.
- MARK ALL PRIVATE STREET SIGNS THAT INTERSECT A PUBLIC STREET WITH A FLOURESCENT GREEN STRIP TO NOTIFY THE FLOWING CREWS, BOTH CITY AND CONTRACTOR, THAT THEY ARE NOT TO FLOW THOSE STREETS.
- ALL CROSSWALKS SHALL BE THERMO PLASTIC PEDESTRIAN CROSSWALKS.



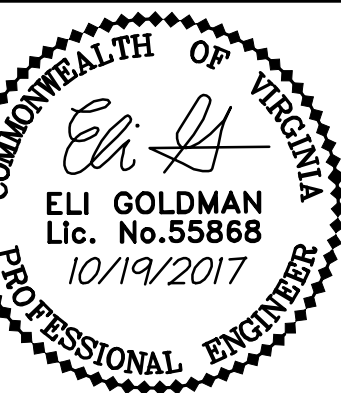
### PAVEMENT MARKING LEGEND

- J TYPE B, CLASS 1, WHITE, 4" WIDTH
- L TYPE B, CLASS 1, WHITE, 12" WIDTH
- M TYPE B, CLASS 1, WHITE, 6" WIDTH
- N TYPE B, CLASS 1, YELLOW, 4" WIDTH
- O TYPE B, CLASS 1, SINGLE BROKEN WHITE, 4" WIDTH, 2' STRIPE SPACED 4'
- P 'CONTINENTAL STYLE CROSSWALK' TYPE B, CLASS 1, WHITE, 24" WIDTH SPACED 48" ON CENTER, 10' WIDE
- R TYPE B, CLASS 1, SINGLE BROKEN WHITE, 4" WIDTH, 10' STRIPE SPACED 30'
- ↑ TYPE B, CLASS 1, WHITE, ELONGATED ARROW.

THIS SHEET IS FOR PAVEMENT STRIPING AND MARKING PURPOSES ONLY!



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CHAIRMAN, PLANNING COMMISSION _____ DATE _____	
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PRELIMINARY STRIPING  
AND SIGNAGE PLAN

PRELIMINARY PLAN - STAGE 1  
HOFFMAN TOWN CENTER  
BLOCKS 4 & 5  
CITY OF ALEXANDRIA, VIRGINIA

PROJECT NO: 98085.049.00

SCALE: 1"=40'

DATE: 05/02/17

DESIGN: EG  
DRAWN: AJB  
CHECKED: KMW

SHEET No.

C904

107540

**christopher**  
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9900 main street (suite 400) • fairfax, va 22031  
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