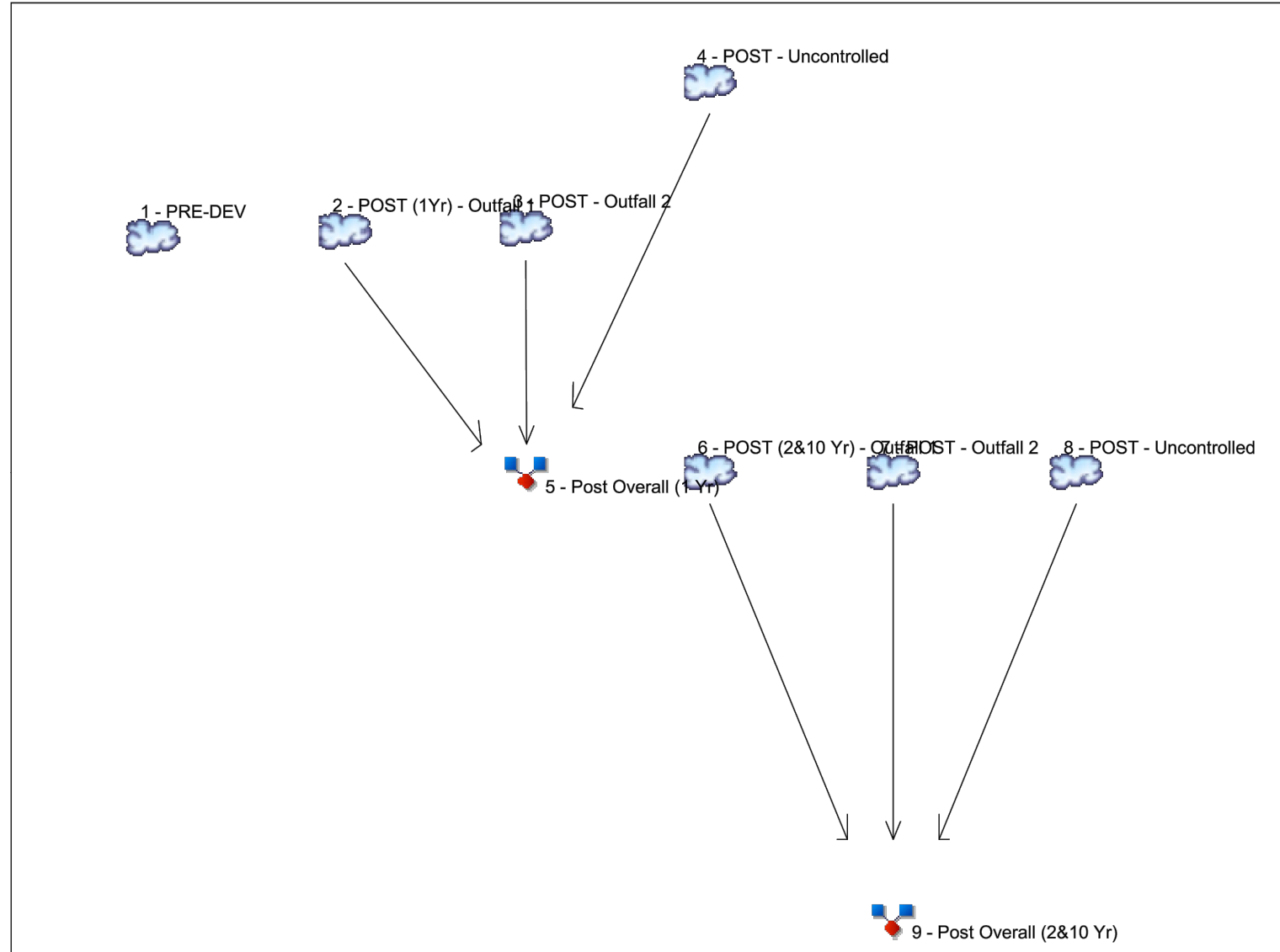


Watershed Model Schematic

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022



Project: SWM - Phase 1.gpw

Monday, 11 / 28 / 2022

Hydrograph Report

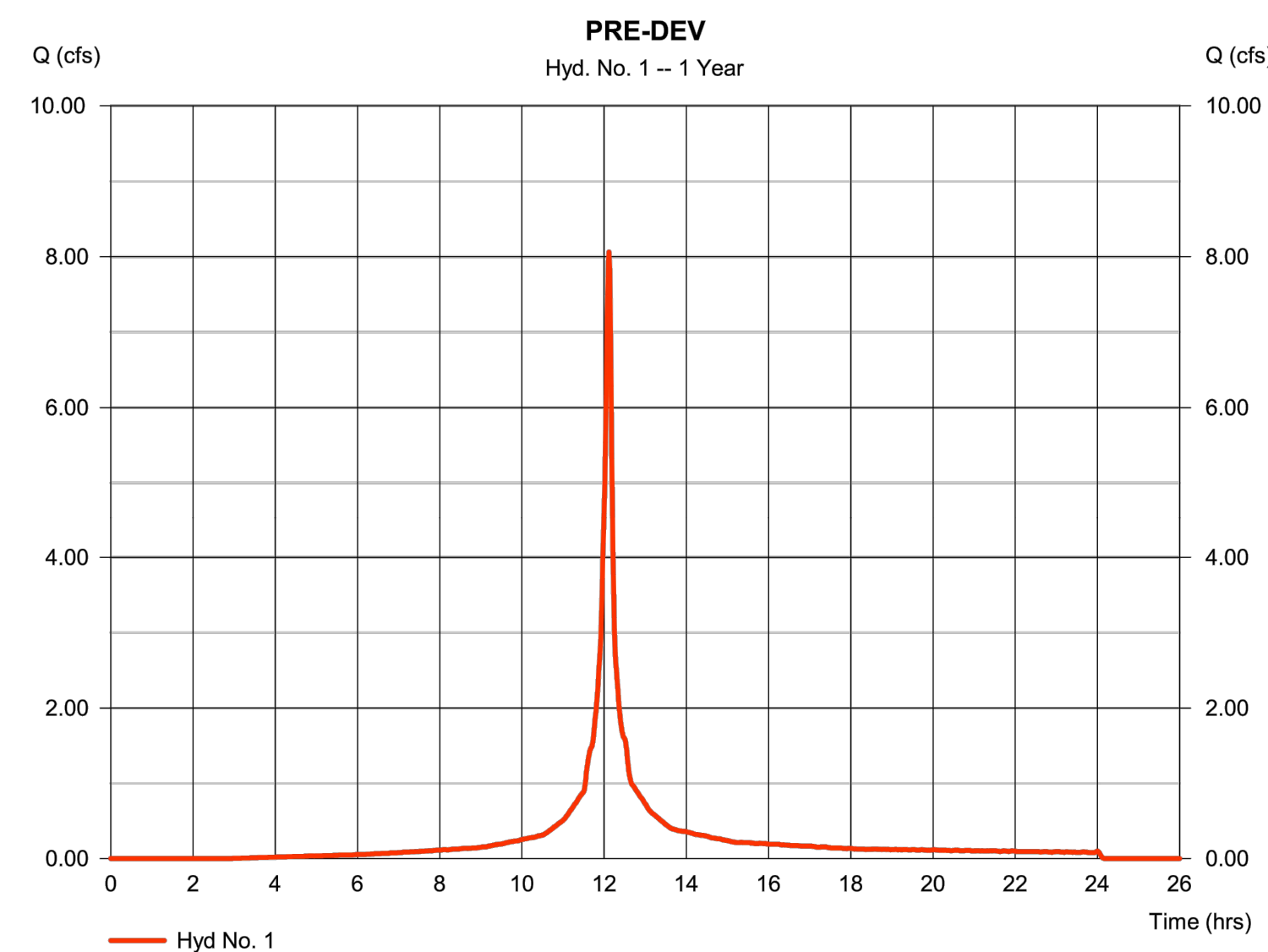
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

Thursday, 11 / 24 / 2022

Hyd. No. 1

PRE-DEV

Hydrograph type	= SCS Runoff	Peak discharge	= 8.061 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.12 hrs
Time interval	= 1 min	Hyd. volume	= 24,224 cuft
Drainage area	= 2.970 ac	Curve number	= 96
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 2.62 in	Distribution	= Custom
Storm duration	= P:\FX\Projects\18043\00200\18043-01-ANDESIGN\BGR\pond\24Hr_Dist-		



Hydrograph Report

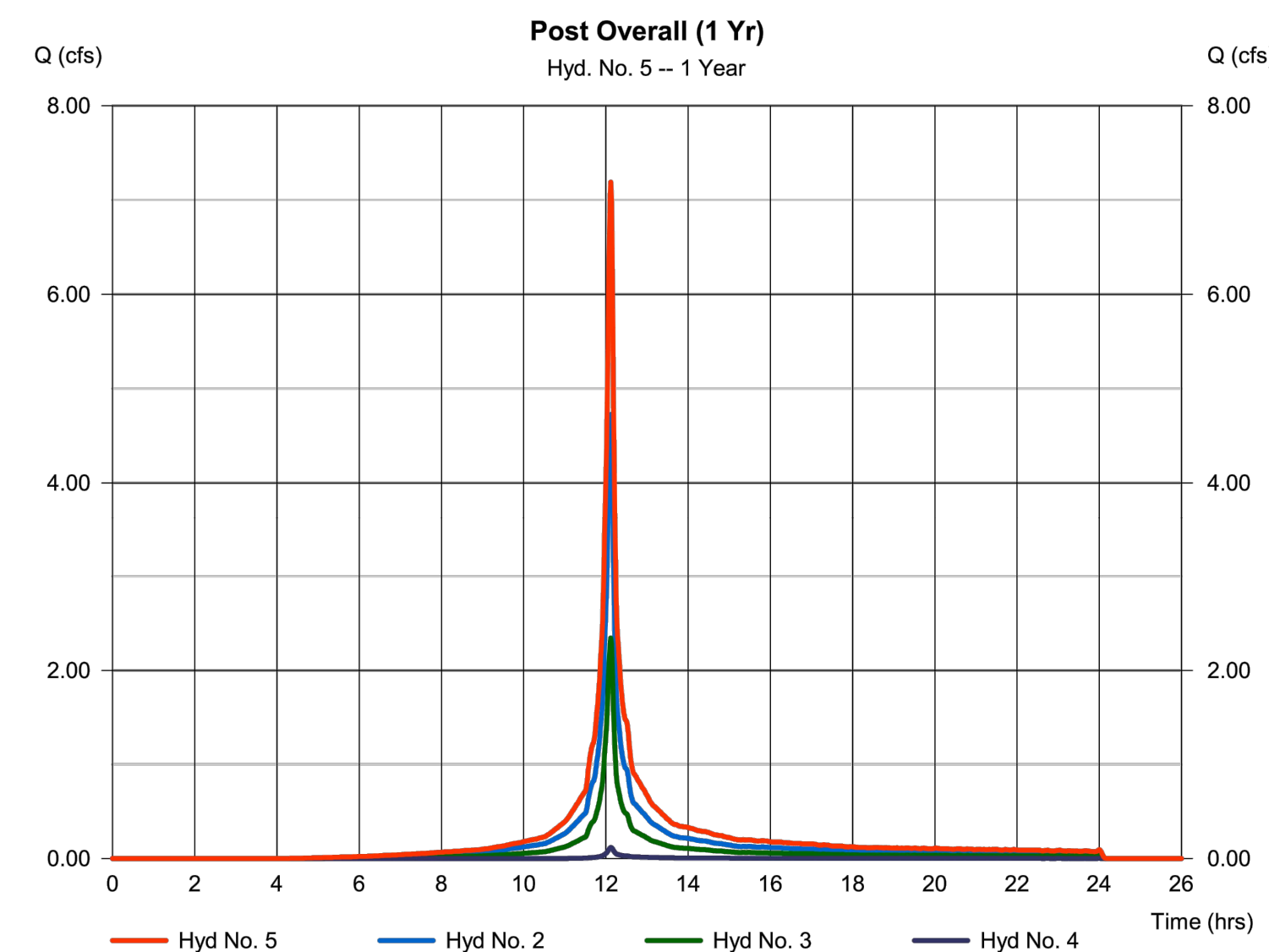
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

Monday, 11 / 28 / 2022

Hyd. No. 5

Post Overall (1 Yr)

Hydrograph type	= Combine	Peak discharge	= 7.190 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.12 hrs
Time interval	= 1 min	Hyd. volume	= 20,800 cuft
Inflow hyds.	= 2, 3, 4	Contrib. drain. area	= 2,890 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

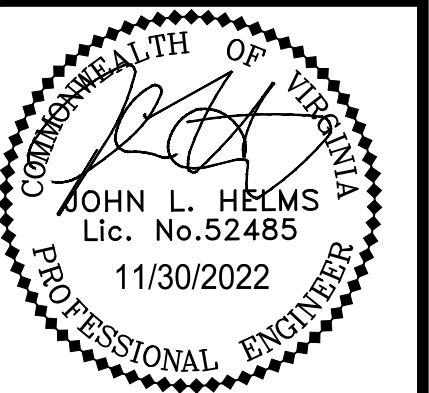
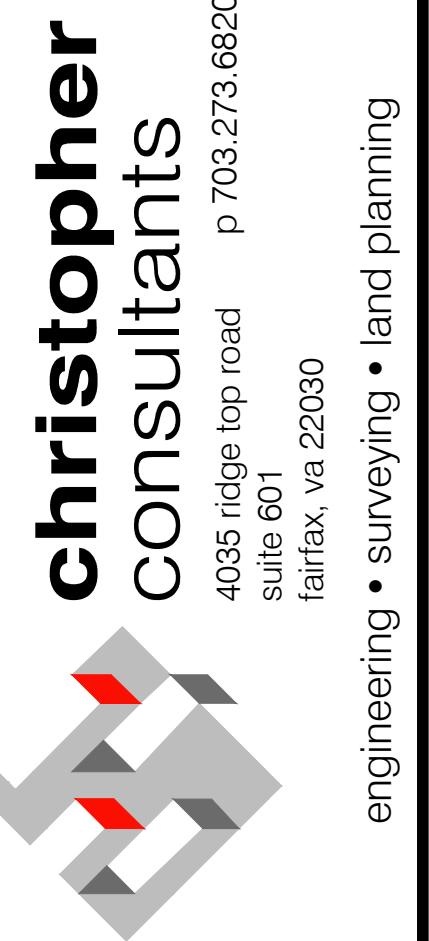
2

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	8.061	1	727	24,224				PRE-DEV
2	SCS Runoff	4.728	1	727	13,741				POST (1Yr) - Outfall 1
3	SCS Runoff	2.345	1	727	6,731				POST - Outfall 2
4	SCS Runoff	0.118	1	727	328				POST - Uncontrolled
5	Combine	7.190	1	727	20,800	2, 3, 4			Post Overall (1 Yr)
6	SCS Runoff	4.881	1	727	14,404				POST (2&10 Yr) - Outfall 1
7	SCS Runoff	2.188	1	727	6,215				POST - Outfall 2
8	SCS Runoff	0.118	1	727	328				POST - Uncontrolled
9	Combine	7.185	1	727	20,044	6, 7, 8			Post Overall (2&10 Yr)

SWM - Phase 1.gpw

Return Period: 1 Year

Monday, 11 / 28 / 2022



N29 APARTMENTS
 GENERAL DEVELOPMENT PLAN
 CITY OF FAIRFAX, VA

ADDRESSED PER CITY COMMENTS

11/30/2022

1

MARK DATE

DESCRIPTION

PROJECT No.: 21082.002.00
 DRAWING No.: 111772
 DATE: 2022-07-15
 SCALE: NOT TO SCALE
 DESIGN: JH
 DRAWN: YH
 CHECKED: JH

SHEET TITLE:
HYDROGRAPHS

SHEET No.
PI_503

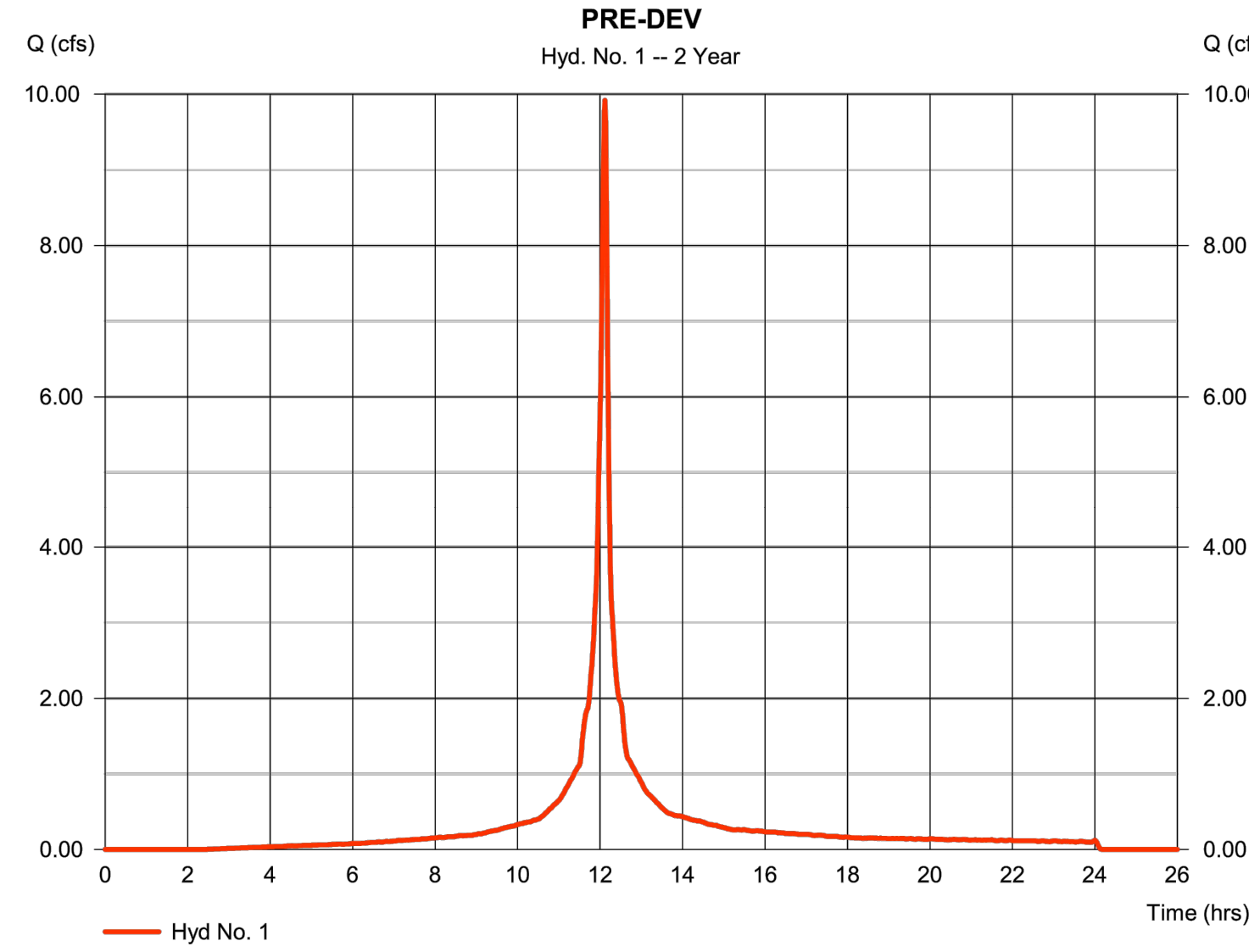
Hydrograph Report

Hydroflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022 Monday, 11 / 28 / 2022

Hyd. No. 1

PRE-DEV

Hydrograph type	= SCS Runoff	Peak discharge	= 9.918 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.12 hrs
Time interval	= 1 min	Hyd. volume	= 30,236 cuft
Drainage area	= 2.970 ac	Curve number	= 96
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.17 in	Distribution	= Custom
Storm duration	= P:\FX\Projects\18043\00200\18043-36-PLAN\DESIGN\BGR\pond\24Hr_Dist-		



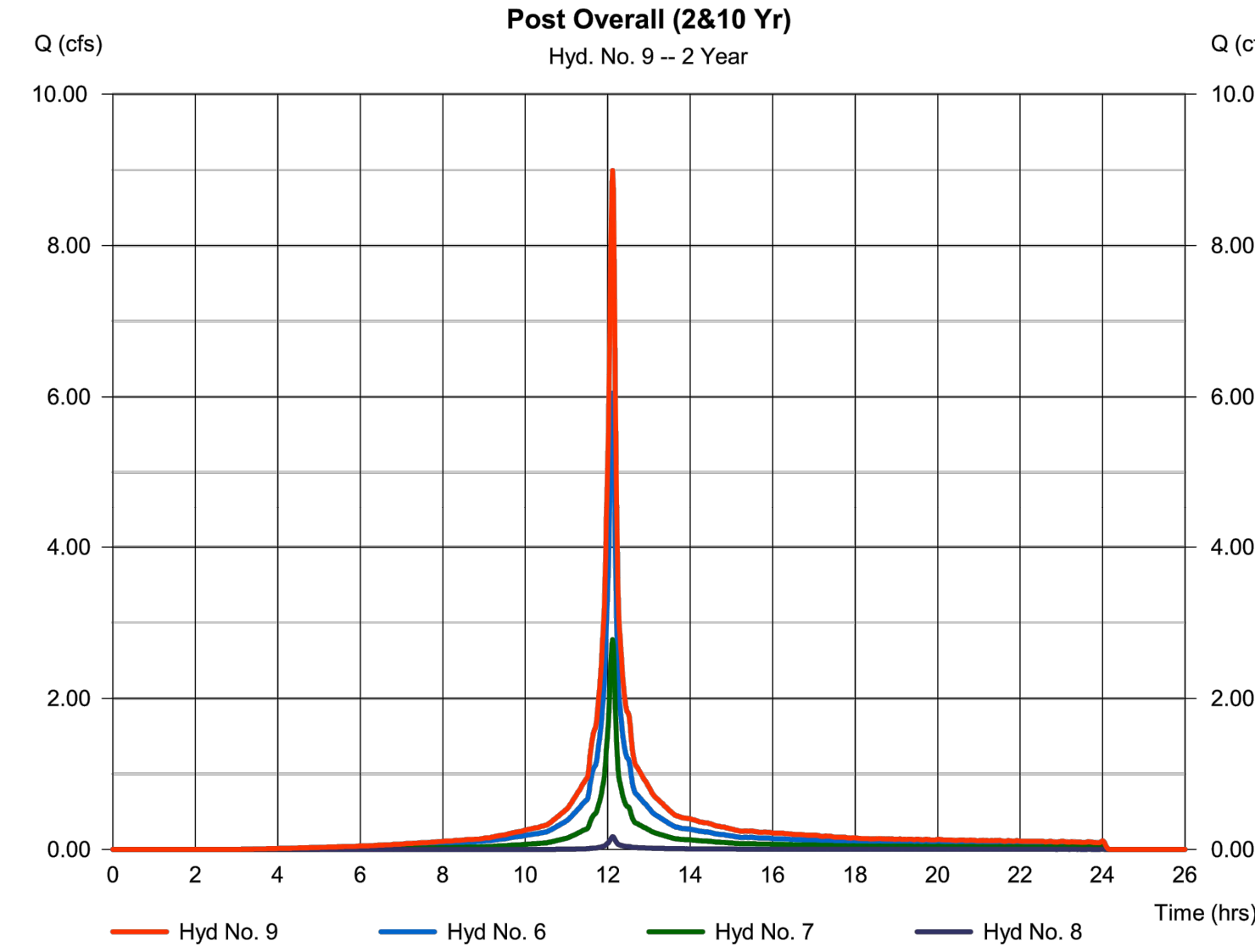
Hydrograph Report

Hydroflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022 Monday, 11 / 28 / 2022

Hyd. No. 9

Post Overall (2&10 Yr)

Hydrograph type	= Combine	Peak discharge	= 8.993 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.12 hrs
Time interval	= 1 min	Hyd. volume	= 26,576 cuft
Inflow hyds.	= 6, 7, 8	Contrib. drain. area	= 2.860 ac



Hydrograph Summary Report

Hydroflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	9.918	1	727	30,236	-----	-----	-----	PRE-DEV
2	SGS Runoff	5.903	1	727	17,415	-----	-----	-----	POST (1Yr) - Outfall 1
3	SGS Runoff	2.951	1	727	8,595	-----	-----	-----	POST - Outfall 2
4	SGS Runoff	0.168	1	727	465	-----	-----	-----	POST - Uncontrolled
5	Combine	9.923	1	727	26,475	2, 3, 4	-----	-----	Post Overall (1 Yr)
6	SCS Runoff	6.048	1	727	18,114	-----	-----	-----	POST (2&10 Yr) - Outfall 1
7	SCS Runoff	2.777	1	727	7,997	-----	-----	-----	POST - Outfall 2
8	SCS Runoff	0.168	1	727	465	-----	-----	-----	POST - Uncontrolled
9	Combine	8.993	1	727	26,576	6, 7, 8	-----	-----	Post Overall (2&10 Yr)

SWM - Phase 1.gpw Return Period: 2 Year Monday, 11 / 28 / 2022

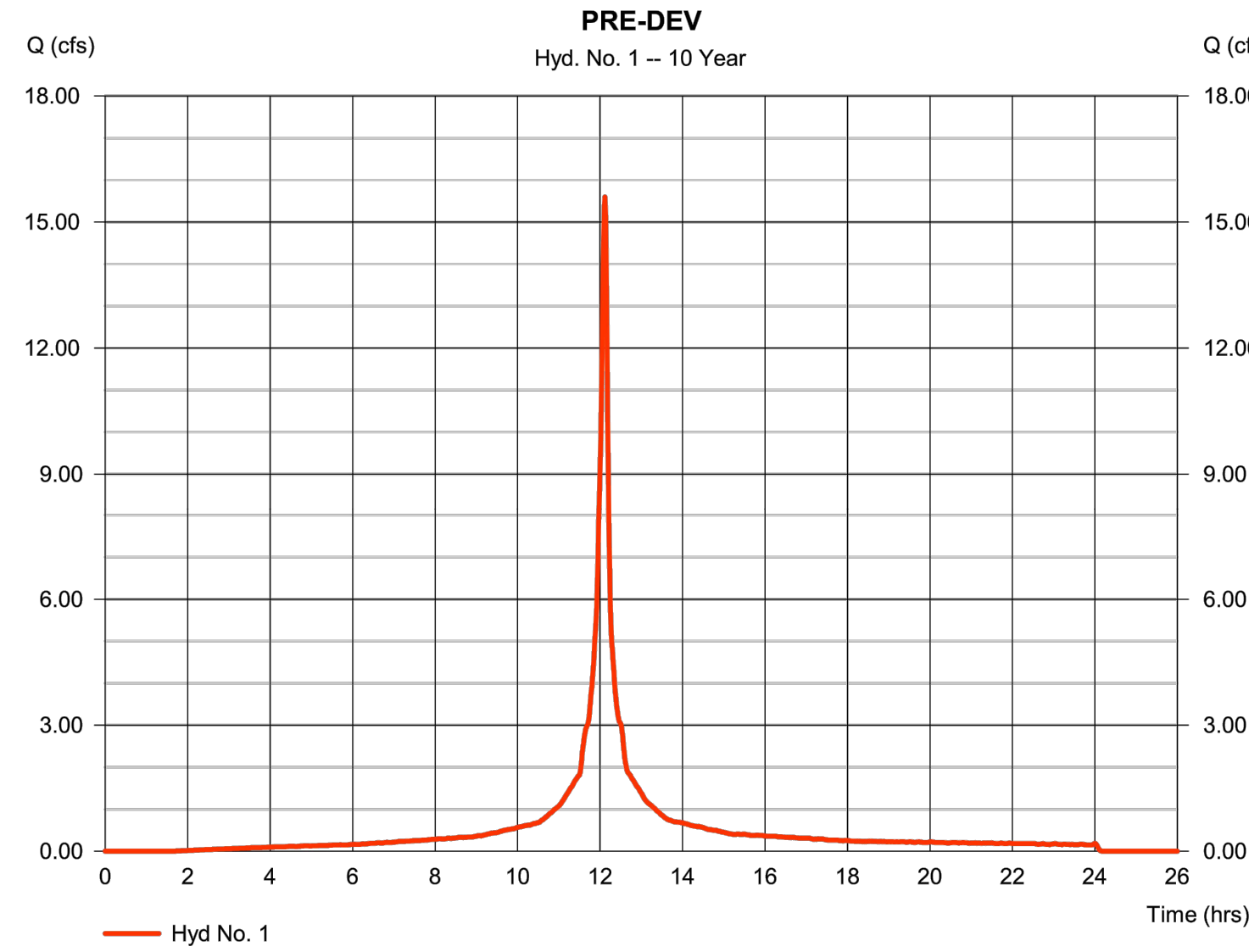
Hydrograph Report

Hydroflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022 Thursday, 11 / 24 / 2022

Hyd. No. 1

PRE-DEV

Hydrograph type	= SCS Runoff	Peak discharge	= 15.60 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.12 hrs
Time interval	= 1 min	Hyd. volume	= 48,957 cuft
Drainage area	= 2.970 ac	Curve number	= 96
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.87 in	Distribution	= Custom
Storm duration	= P:\FX\Projects\18043\00200\18043-36-PLAN\DESIGN\BGR\pond\24Hr_Dist-		



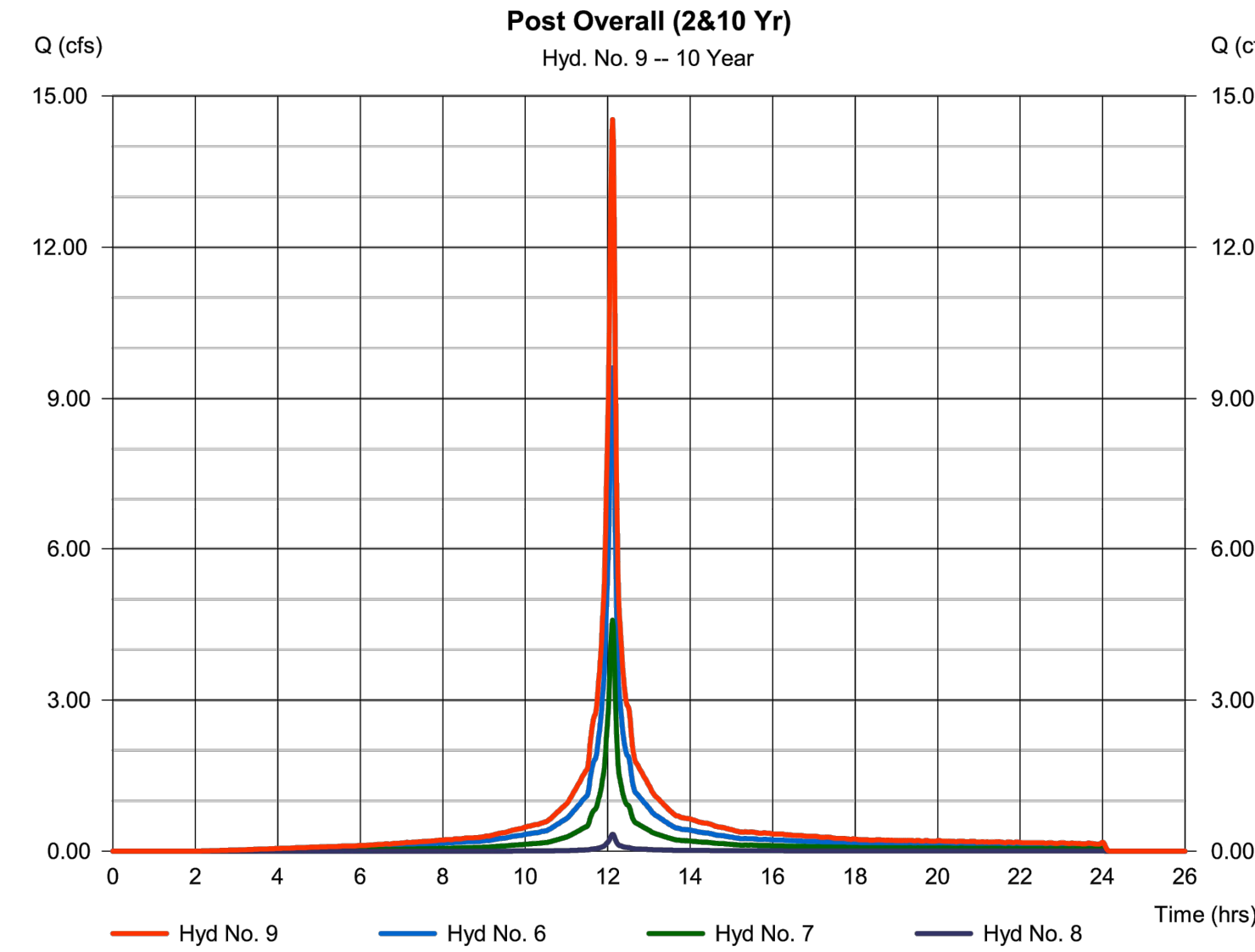
Hydrograph Report

Hydroflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022 Monday, 11 / 28 / 2022

Hyd. No. 9

Post Overall (2&10 Yr)

Hydrograph type	= Combine	Peak discharge	= 14.53 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.12 hrs
Time interval	= 1 min	Hyd. volume	= 44,298 cuft
Inflow hyds.	= 6, 7, 8	Contrib. drain. area	= 2.860 ac

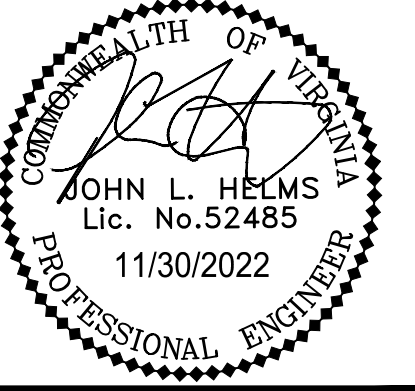


Hydrograph Summary Report

Hydroflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	15.60	1	727	48,957	-----	-----	-----	PRE-DEV
2	SGS Runoff	9.493	1	727	28,946	-----	-----	-----	POST (1Yr) - Outfall 1
3	SGS Runoff	4.806	1	727	14,475	-----	-----	-----	POST - Outfall 2
4	SGS Runoff	0.338	1	727	937	-----	-----	-----	POST - Uncontrolled
5	Combine	14.64	1	727	44,368	2, 3, 4	-----	-----	Post Overall (1 Yr)
6	SCS Runoff	9.613	1	727	29,715	-----	-----	-----	POST (2&10 Yr) - Outfall 1
7	SCS Runoff	4.582	1	727	13,646	-----	-----	-----	POST - Outfall 2
8	SCS Runoff	0.338	1	727	937	-----	-----	-----	POST - Uncontrolled
9	Combine	14.53	1	727	44,298	6, 7, 8	-----	-----	Post Overall (2&10 Yr)

SWM - Phase 1.gpw Return Period: 10 Year Monday, 11 / 28 / 2022



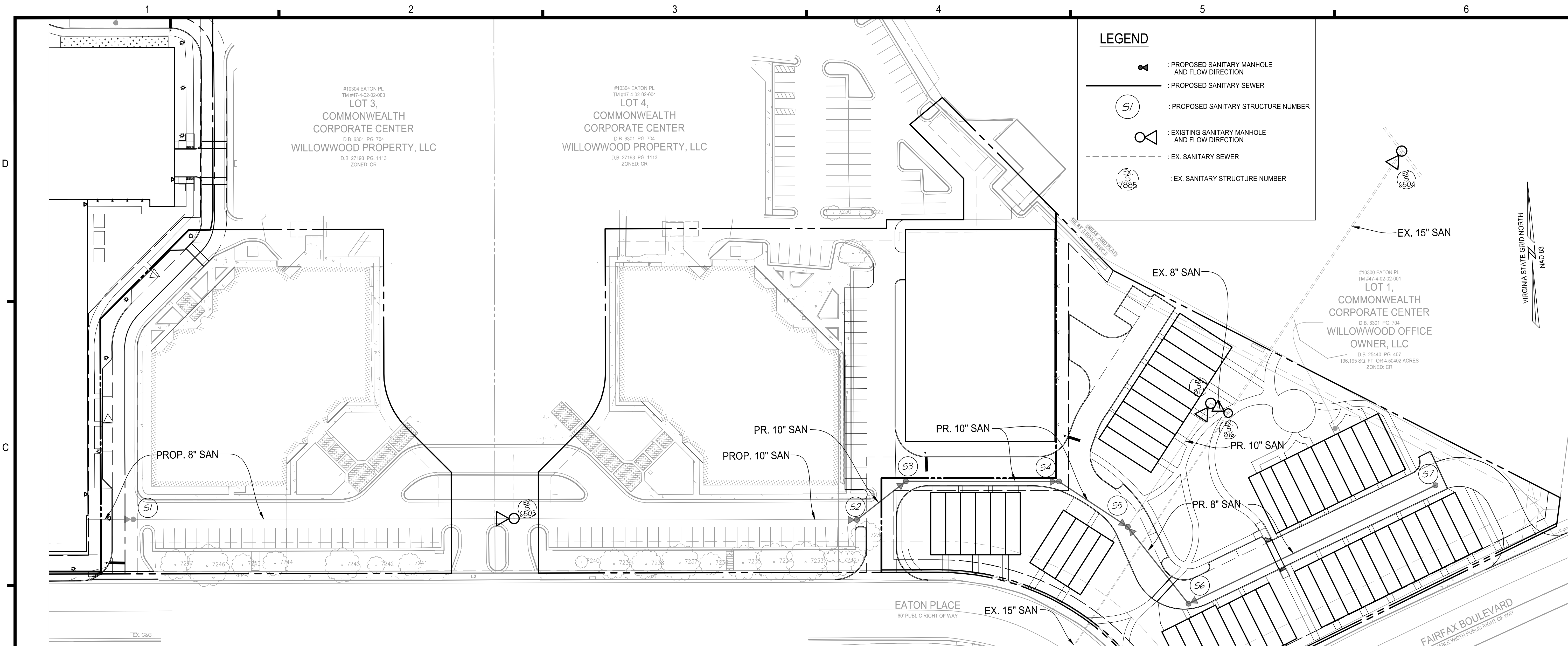
N29 APARTMENTS
GENERAL DEVELOPMENT PLAN
CITY OF FAIRFAX, VA

MARK	DATE	DESCRIPTION
1	11-30-2022	ADDRESSED PER CITY COMMENTS

PROJECT No.: 21082.002.00
DRAWING No.: 111772
DATE: 2022-07-15
SCALE: NOT TO SCALE
DESIGN: JH
DRAWN: YH
CHECKED: JH

SHEET TITLE:
HYDROGRAPHS

SHEET No.
PI_504



christopher consultants
 4035 ridge top road suite 601
 fairfax, va 22030
 engineering • surveying • land planning

COMMONWEALTH OF VIRGINIA
 JOHN L. HELMS
 Lic. No. 52485
 11/30/2022
 PROFESSIONAL ENGINEER

N29 APARTMENTS
 GENERAL DEVELOPMENT PLAN
 CITY OF FAIRFAX, VA

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 _{FULL} (ft/s)	V (ft/s)	Q/Q _{FULL}	V/V _{FULL}	Assumptions	Flow Inc. (MGD)	Peak Flow Factor	Design Flow Inc. (MGD)
Prop. Bldg	S1	340.00	339.63	37.39	0.99	8	PVC	0.013	1.20	0.78	0.232	0.150	3.4	2.57	0.193	0.75	Flow from Phase I Bldg	0.0375	4.0	0.150
S1	Ex. 6503	339.53	336.47	305.61	1.00	8	PVC	0.013	1.21	0.78	0.232	0.150	3.5	2.59	0.192	0.75				
Ex. 6503	S2	326.81	325.49	275.79	0.48	10	PVC	0.013	1.52	0.98	0.921	0.595	2.8	2.91	0.608	1.05	Estimated flows from existing office buildings. Ex. 8" upgraded to new 10"	0.1113	4.0	0.445
S2	S3	325.48	325.24	49.97	0.48	10	PVC	0.013	1.52	0.98	0.921	0.595	2.8	2.91	0.607	1.05	Flows from Phase II Res. Units	0.0018	4.0	0.007
S3	S4	325.23	324.64	123.12	0.48	10	PVC	0.013	1.52	0.98	0.932	0.602	2.8	2.91	0.615	1.05	Flows from Phase II Res. Units	0.0012	4.0	0.005
S4	S5	324.63	324.32	65.74	0.47	10	PVC	0.013	1.50	0.97	0.939	0.607	2.8	2.89	0.624	1.05	Flows from Phase II Res. Units	0.0084	4.0	0.034
S5	S6	330.00	327.80	220.08	1.00	8	PVC	0.013	1.21	0.78	0.052	0.034	3.5	1.71	0.043	0.50	Flows from Phase II Res. Units	0.0006	4.000	0.002
S6	S5	327.70	326.91	78.69	1.00	8	PVC	0.013	1.21	0.78	0.056	0.036	3.5	1.72	0.046	0.50	Flows from Phase II Res. Units	0.0150	4.0	0.060
S5	Ex. 817	324.22	323.64	119.56	0.49	10	PVC	0.013	1.53	0.99	1.088	0.703	2.8	3.03	0.713	1.08	Flows from Phase II Res. Units			
Ex. 817	Ex. 816	323.60	323.38	16.04	1.37	8	PVC	0.013	1.41	0.91	1.088	0.703	4.1	4.44	0.769	1.09				
Ex. 816	Ex. 6504	316.55	314.97	252.63	0.63	15	RCP	0.013	5.11	3.30	3.376	2.182	4.2	4.41	0.661	1.06	Estimated offsite sanitary flows	0.3698	4.0	1.479

- Notes:
 1. See contributing sewage flow estimates below.
 2. Peaking factor of 4.0 used.
 3. Existing office building areas obtained from City of Fairfax Real Estate Assessment Database.
 4. See Sanitary Sewer Off-Site Map sheet for offsite flow estimates.

Contributing Sewage Flow Estimate (Existing)

Discharge Facility (Ex. Office Buildings)	SF	Estimated Flow (gpd/1000 SF)	Total Incremental Flow (gpd)	Sanitary From	Sanitary To
10300 Eaton Pl	138,860	200	27,772	Ex. 6503	Ex. 3168
10302 Eaton Pl	142,648	200	28,530	Ex. 6503	Ex. 3168
10304 Eaton Pl	135,942	200	27,188	Ex. 6503	Ex. 3168
10306 Eaton Pl	138,860	200	27,772	Ex. 6503	Ex. 3168
Total SF	556,310	Estimated Cumulative Existing Flow	111,262	Ex. 6503	Ex. 3168

PHASE I
 Contributing Sewage Flow Estimate (Proposed)

Discharge Facility	No. of People	Design Flow (gpd/person)	Total Incremental Flow (gpd)	Total Cumulative Flow (gpd)	Sanitary From	Sanitary To
Multifamily	375	100	37,500	37,500	S1	Ex. 6503

PHASE II
 Contributing Sewage Flow Estimate (Proposed)

Discharge Facility	# of Units	No. of People	Design Flow (gpd/person)	Total Incremental Flow (gpd)	Total Cumulative Flow (gpd)	Sanitary From	Sanitary To
Phase II Res.	6	18	100	1,800	1,800	S3	S4
Phase II Res.	4	12	100	1,200	3,000	S4	S5
Phase II Res.	28	84	100	8,400	8,400	S7	S6
Phase II Res.	2	6	100	600	9,000	S6	S5
Phase II Res.	10	30	100	3,000	15,000	S5	S817

SANITARY SEWER ANALYSIS

THE PURPOSE OF THIS ANALYSIS IS TO DEMONSTRATE THE CAPACITY AND HYDRAULIC ADEQUACY OF THE DOWN STREAM SANITARY SEWER MAIN.
 EXISTING CONDITIONS:
 CURRENTLY, THE EXISTING SITE CONSISTS OF AN EXISTING ASPHALT PARKING LOT WITH NO EXISTING SANITARY SEWER MAIN ON SITE.
 THE UPSTREAM FOR THIS SEWER-SHED IS SHOWN ON THIS SHEET, EAST OF THE SITE, DESIGNATED AS ESTIMATED FLOW.

PHASE I
 PROPOSED CONDITIONS:
 NEW LATERALS AND SANITARY MAIN WILL BE CONSTRUCTED ON-SITE AND CONNECT TO THE EXISTING MANHOLE S8503.

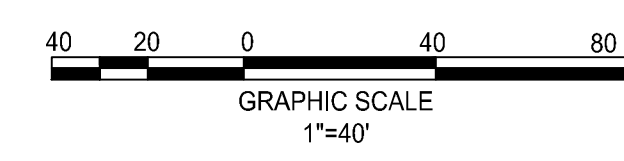
CAPACITY AND HYDRAULIC ANALYSIS:
 THE SANITARY SEWER WAS ANALYZED FROM THE ON-SITE 8-INCH SEWER TO EXISTING MANHOLE S816.
 THE VOLUME OF FLOW USED IN THIS ANALYSIS HAS BEEN COMPUTED IN ACCORDANCE WITH STATE CODE 9VAC25-790-460 AND 9VAC25-790-310. SEE COMPUTATIONS ON THIS SHEET.

CONCLUSION:
 IT IS OUR CONCLUSION THAT THE EXISTING DOWNSTREAM 8-INCH SEWERS NOTED IN THE SANITARY COMPUTATION CHART NEEDS TO BE UPGRADED TO 10-INCH PIPES TO MEET CAPACITY AND HYDRAULIC ADEQUACY OF THE ADDED REDEVELOPMENT FLOWS.

PHASE II
 PROPOSED CONDITIONS:
 EXISTING 10" SANITARY SEWER WILL BE REMOVED AND RELOCATED FOR THE CONSTRUCTION OF PROPOSED TOWNHOMES. PROPOSED 10" SANITARY SEWER NETWORK WILL CONNECT TO THE EXISTING 10" SANITARY WHICH CONNECTS TO EXISTING MANHOLE S817.

CAPACITY AND HYDRAULIC ANALYSIS:
 THE SANITARY SEWER WAS ANALYZED FROM THE EX. 8-INCH SEWER TO FROM THE PHASE I DEVELOPMENT TO EXISTING MANHOLE S816.
 THE VOLUME OF FLOW USED IN THIS ANALYSIS HAS BEEN COMPUTED IN ACCORDANCE WITH STATE CODE 9VAC25-790-460 AND 9VAC25-790-310. SEE COMPUTATIONS ON THIS SHEET.

CONCLUSION:
 IT IS OUR CONCLUSION THAT THE EXISTING DOWNSTREAM 8-INCH SEWERS NOTED IN THE SANITARY COMPUTATION CHART NEEDS TO BE UPGRADED TO 10-INCH PIPES TO MEET CAPACITY AND HYDRAULIC ADEQUACY OF THE ADDED REDEVELOPMENT FLOWS.



ADDRESS PER CITY COMMENTS	MARK	DATE	DESCRIPTION
1		11-30-2022	

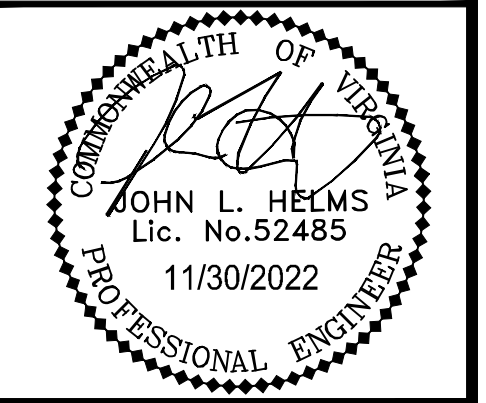
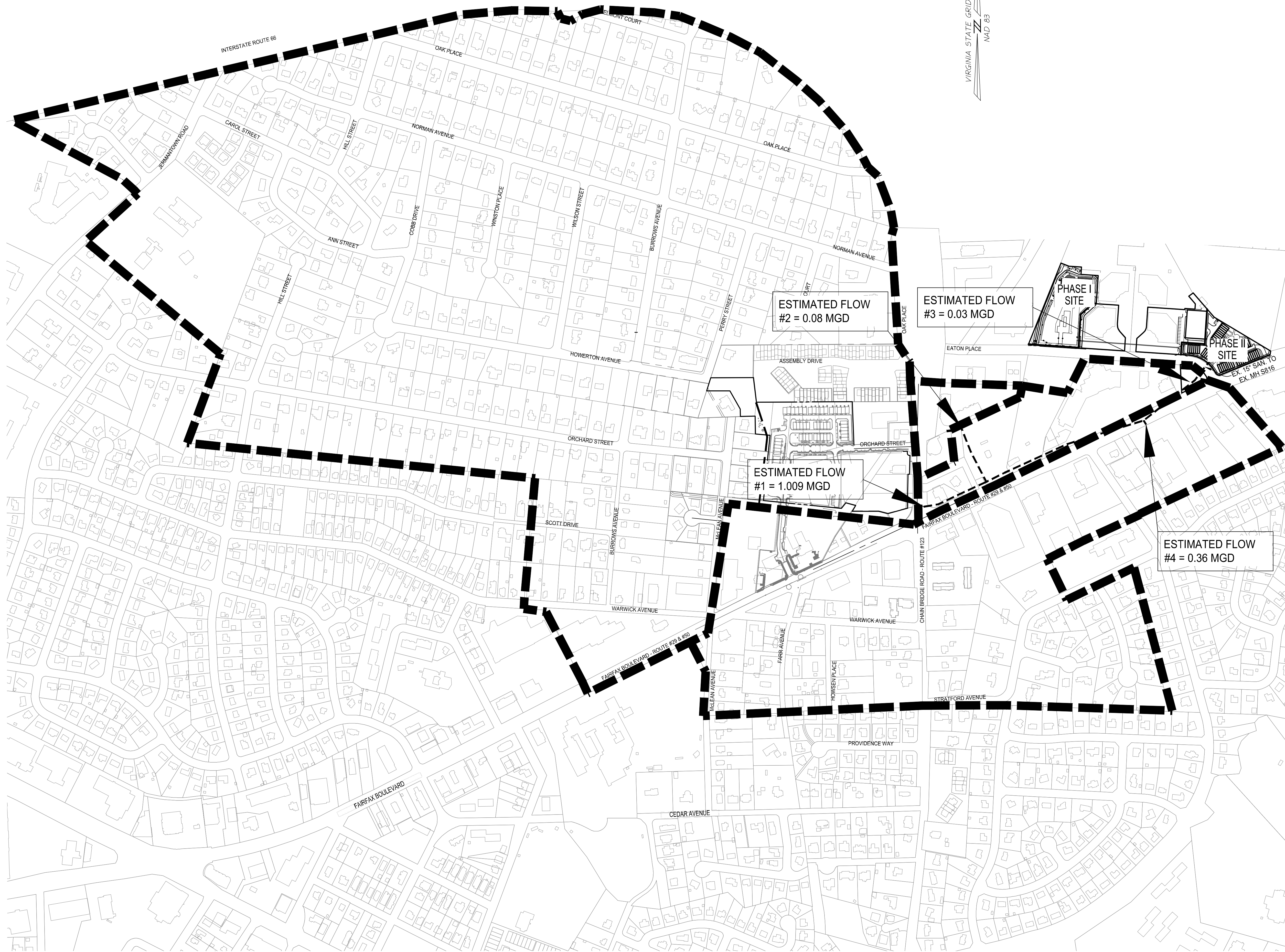
PROJECT No.: 21082.002.00
 DRAWING No.: ---
 DATE: 2022-07-15
 SCALE: 1" = 30'
 DESIGN: JH
 DRAWN: YH
 CHECKED: JH

SANITARY SEWER ANALYSIS

SHEET No.
PI_600

OFFSITE SANITARY FLOW ESTIMATES:

AREA #1
FLOW ESTIMATES: FROM NORTHFAX WEST PUBLIC IMPROVEMENT PLAN (SP-20-00300)
TOTAL PEAK FLOW = 1.009 MGD
AREA #2
EXISTING DEVELOPMENT ESTIMATES: HOTEL= 152 ROOMS
FLOW ESTIMATES: 152 UNITS x 130 GPD/UNIT = 19,760 GPD
TOTAL FLOW = 19,760 GPD
TOTAL PEAK FLOW = 79,040 GPD = 0.08 MGD
AREA #3
EXISTING DEVELOPMENT ESTIMATES: OFFICE/RETAIL = 41,161 SF
FLOW ESTIMATES: 41,161 SF OFFICE/RETAIL x 200 GPD/1000 SF = 8,232 GPD
TOTAL FLOW = 8,232 GPD
TOTAL PEAK FLOW = 32,929 GPD = 0.03 MGD
AREA #4
EXISTING DEVELOPMENT ESTIMATES: RESIDENTIAL= 63 DWELLING UNITS OFFICE/RETAIL = 344,446 SF
FLOW ESTIMATES: 63 UNITS x 350 GPD/UNIT = 22,050 GPD 344,446 SF OFFICE/RETAIL x 200 GPD/1000 SF = 68,889 GPD
TOTAL FLOW = 90,939 GPD
TOTAL PEAK FLOW = 363,757 GPD = 0.36 MGD



**N29 APARTMENTS
GENERAL DEVELOPMENT PLAN**

CITY OF FAIRFAX, VA

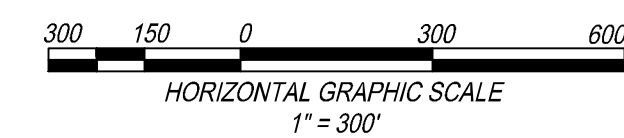
ADDRESS PER CITY COMMENTS	MARK	DATE	DESCRIPTION
1 11-30-2022			

PROJECT No.: 21082.002.00
DRAWING No.:
DATE: 2022-07-15
SCALE: 1"=300'
DESIGN: LBD,ZY
DRAWN: ZY
CHECKED: LBD

SHEET TITLE:
**SANITARY SEWER
OFF-SITE MAP**

SHEET No.
PI_601

- NOTES:
- SEE SHEET PI_600 FOR SANITARY SEWER ANALYSIS.
 - SEE THIS SHEET FOR EXISTING FLOW ESTIMATES.
 - A PEAK FACTOR OF 4.0 WAS USED FOR ALL OFFSITE SANITARY FLOWS.





#10306 EATON PL
TM #47-4-02-002
LOT 2, COMMONWEALTH CORPORATE CENTER
D.B. 6301 PG. 704
WILLOWOOD OFFICE OWNER, LLC
D.B. 25440 PG. 407
195,743 SQ. FT. OR 4.49384 ACRES
ZONED: CR

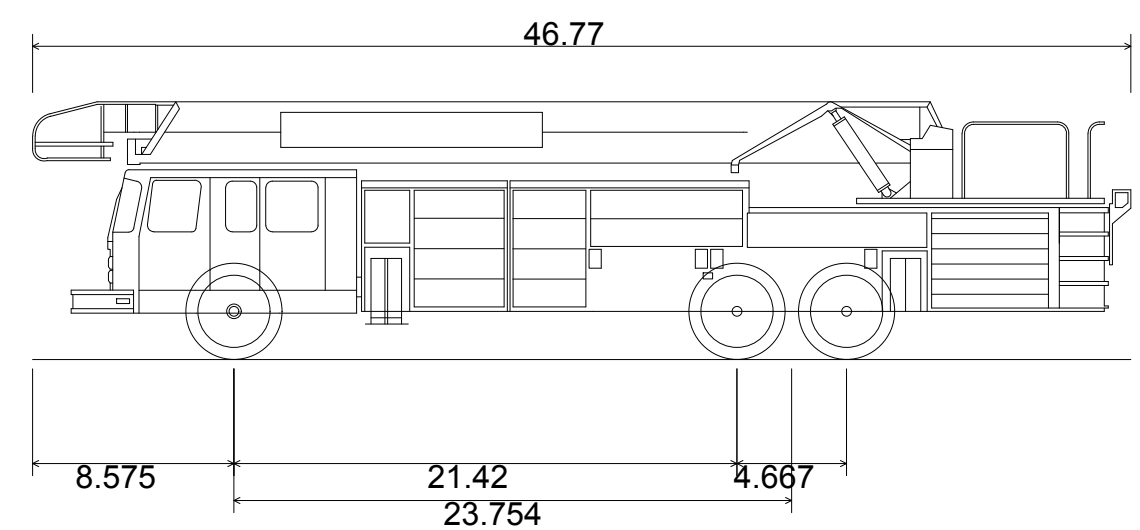
#10400 EATON PL
TM #47-4-02-002-C
KENWOOD EATON PLACE, LLC
D.B. 25967 PG. 559
ZONED: CR

#10304 EATON PL
TM #47-4-02-003
LOT 3, COMMONWEALTH CORPORATE CENTER
D.B. 6301 PG. 704
WILLOWOOD PROPERTY, LLC
D.B. 27193 PG. 1113
ZONED: CR

- LEGEND**
- - - - - : PROPOSED R.O.W.
 - ▽ : BUILDING ENTRANCE
 - FDC ∇ : PROPOSED FIRE DEPARTMENT CONNECTION
 - : PROPOSED FIRE LANE
 - : PROPOSED WATERLINE
 - W- : EXISTING WATERLINE
 - ⊕ : EXISTING FIRE HYDRANT
 - ⊕ : PROPOSED FIRE HYDRANT

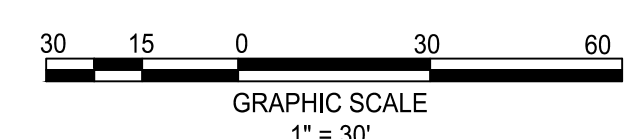
MULTIFAMILY BUILDING:
BUILDING TYPE: R-2
OCCUPANCY TYPE: R-2 (NOTE - THERE WILL ALSO BE ASSEMBLY USE IN AMENITY AREA)
CONSTRUCTION TYPE: 3A
SPRINKLER TYPE: NFPA 13
BUILDING AREA: 282,695 GSF
BUILDING HEIGHT: 80' MAX

GARAGE BUILDING:
BUILDING TYPE: S-2
OCCUPANCY TYPE: S-2
CONSTRUCTION TYPE: 1A
SPRINKLER TYPE: CLASS I MANUAL STANDPIPE - DRY
BUILDING AREA: 190,550 GSF
BUILDING HEIGHT: 80' MAX

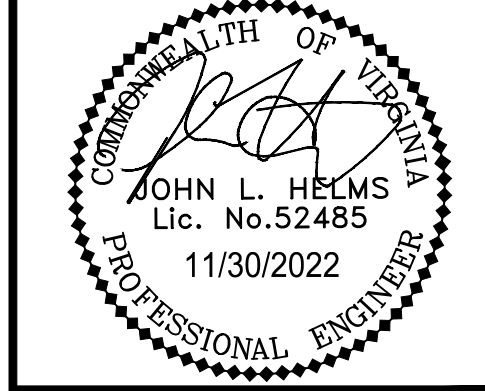


Customized Tower 403 Fire Truck
Overall Length 46.770ft
Overall Width 10.160ft
Overall Body Height 10.976ft
Min Body Ground Clearance 1.512ft
Track Width 7.667ft
Lock-to-lock time 4.00s
Wall to Wall Turning Radius 45.000ft

NOTE:
NO LOADING, DELIVERY, OR REFUSE TRUCKS WILL BE LARGER THAN THE FIRE TRUCK.



christopher consultants
4035 ridge top road p 703.273.6820
suite 601 fairfax, va 22030
engineering • surveying • land planning



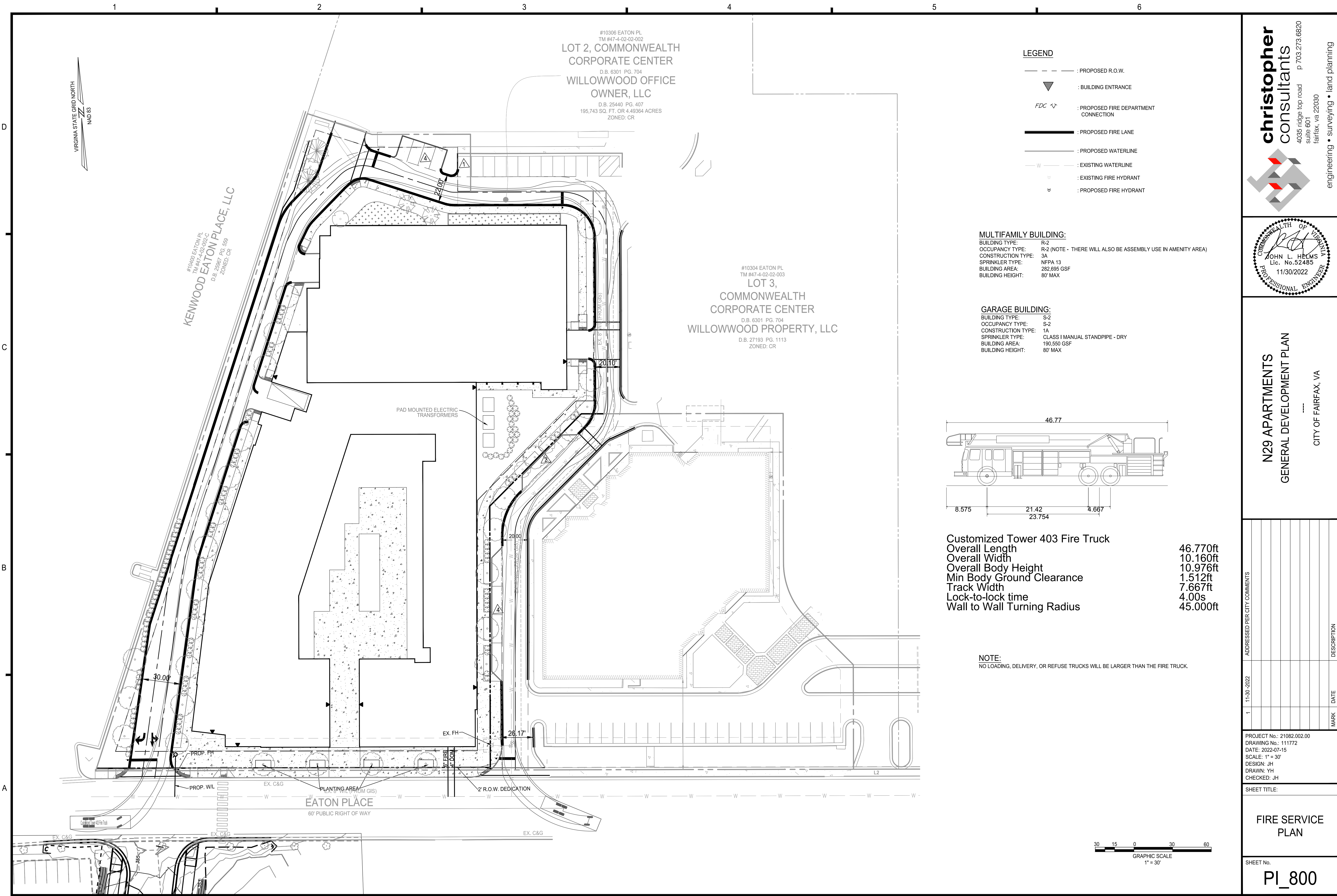
N29 APARTMENTS
GENERAL DEVELOPMENT PLAN
CITY OF FAIRFAX, VA

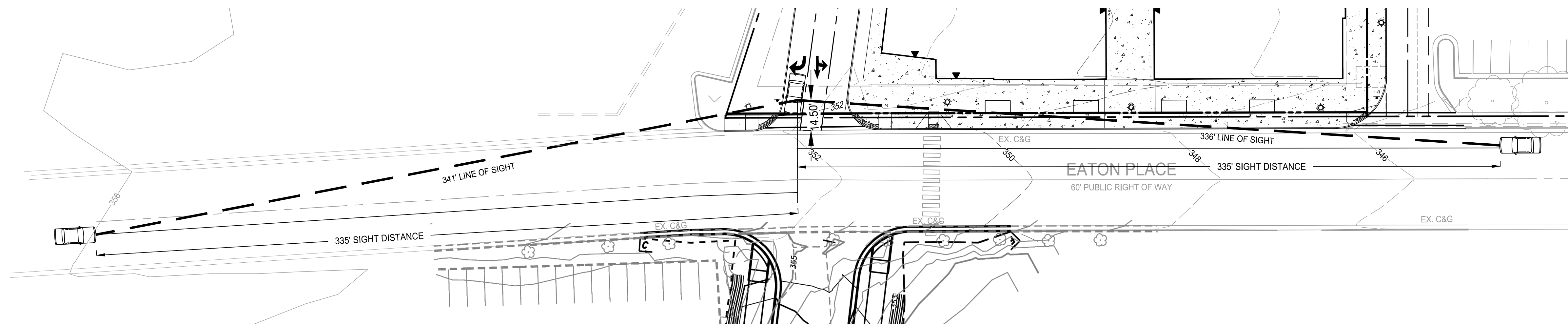
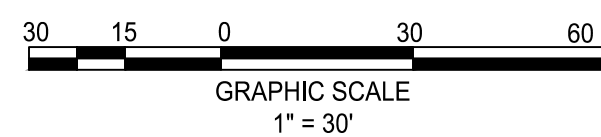
MARK	DATE	DESCRIPTION
1	11-30-2022	ADDRESSED PER CITY COMMENTS

PROJECT No.: 21082.002.00
DRAWING No.: 111772
DATE: 2022-07-15
SCALE: 1" = 30'
DESIGN: JH
DRAWN: YH
CHECKED: JH

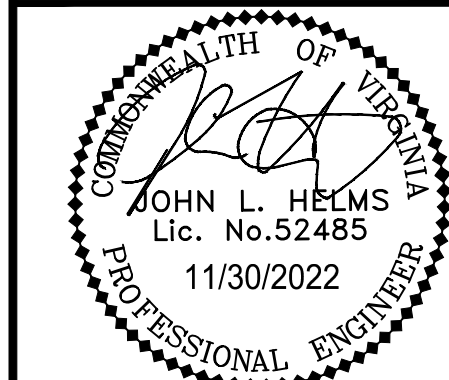
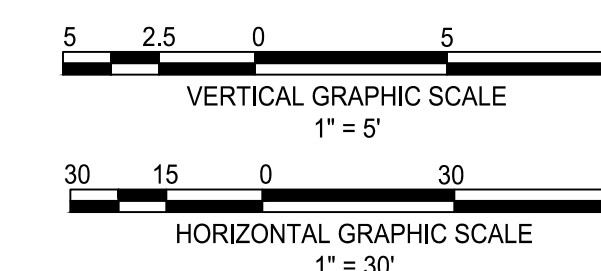
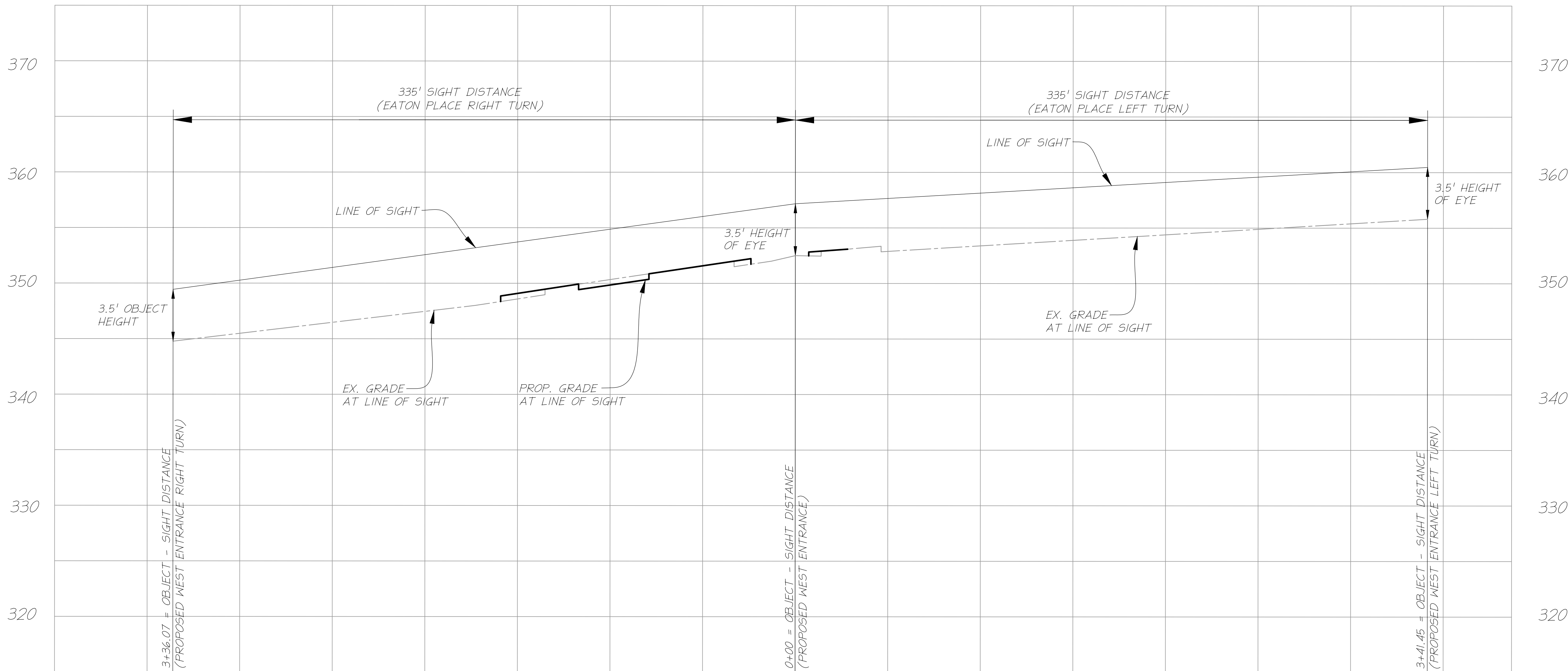
SHEET TITLE:
FIRE SERVICE PLAN

SHEET No.
PI_800





EATON PLACE SIGHT DISTANCE
 WEST ENTRANCE
 (VARIABLE WIDTH)
 POSTED SPEED: 25 MPH, DESIGN SPEED: 30 MPH



N29 APARTMENTS
 GENERAL DEVELOPMENT PLAN
 CITY OF FAIRFAX, VA

ADDRESSED PER CITY COMMENTS		MARK	DATE	DESCRIPTION
1	11-30-2022			

PROJECT No.: 21082.002.00
 DRAWING No.: 111772
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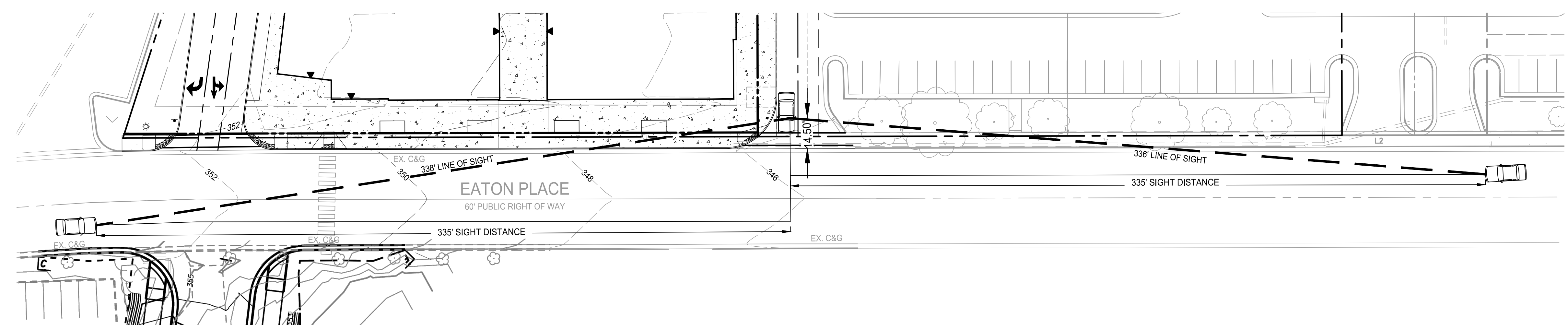
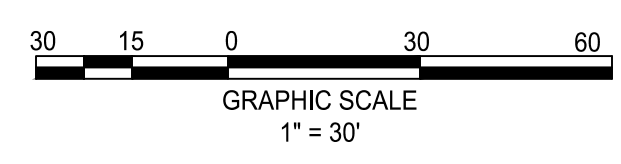
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SIGHT DISTANCE

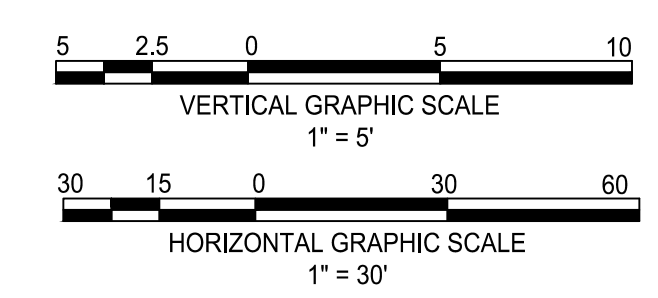
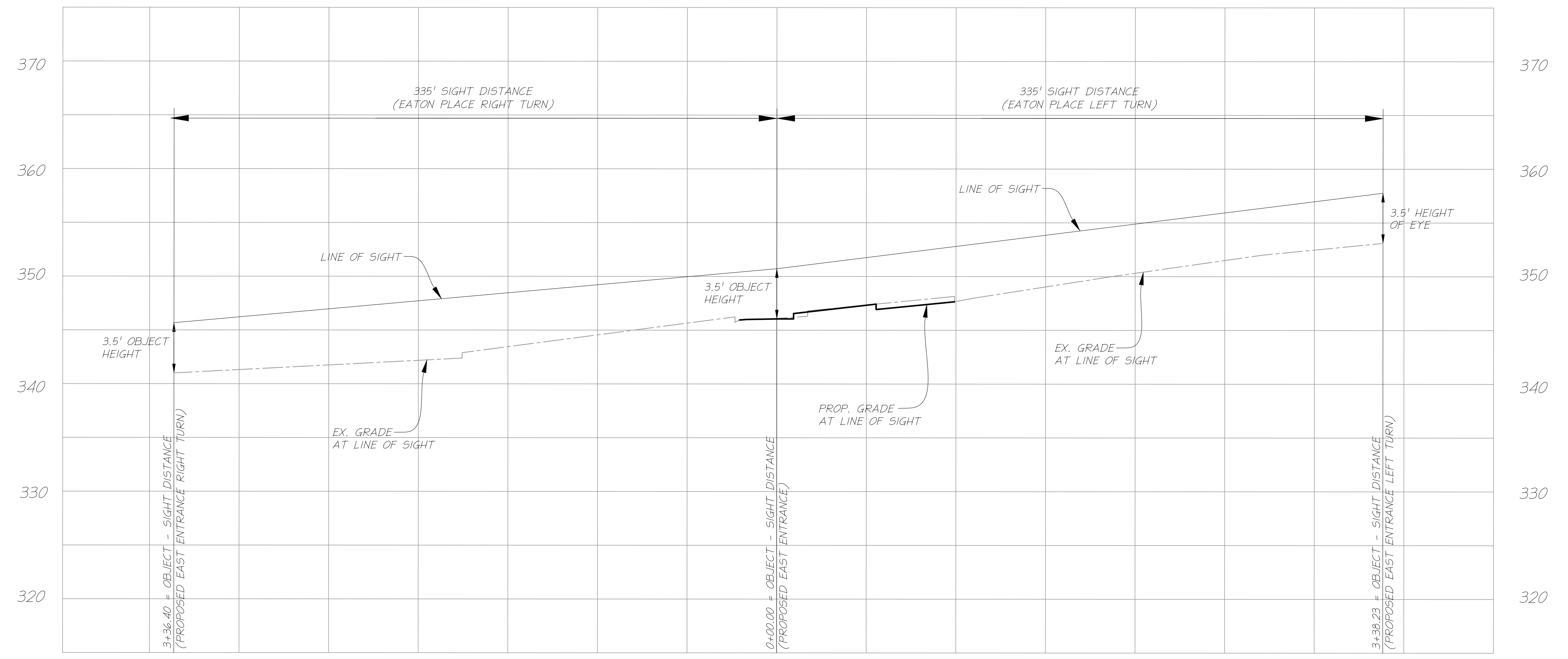
SHEET No.

PI_830

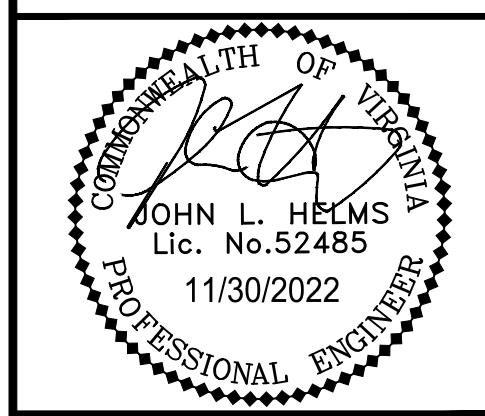
1 2 3 4 5 6



*EATON PLACE SIGHT DISTANCE
EAST ENTRANCE
(VARIABLE WIDTH)
POSTED SPEED: 25 MPH, DESIGN SPEED: 30 MPH*



christopher consultants
 4035 ridge top road p 703.273.6620
 suite 601 fairfax, va 22030
 engineering • surveying • land planning



**N29 APARTMENTS
GENERAL DEVELOPMENT PLAN**
 CITY OF FAIRFAX, VA

MARK	DATE	DESCRIPTION
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PROJECT No.: 21082.002.00
 DRAWING No.: 111772
 DATE: 2022-07-15
 SCALE: 1" = 30'
 DESIGN: JH
 DRAWN: YH
 CHECKED: JH

SHEET TITLE:
SIGHT DISTANCE

SHEET No.
PI_831

1 2 3 4 5 6

D
C
B
A

#10306 EATON PL
TM #47-4-02-002
**LOT 2, COMMONWEALTH
CORPORATE CENTER**
D.B. 6301 PG. 704
**WILLOWOOD OFFICE
OWNER, LLC**
D.B. 25440 PG. 407
195,743 SQ. FT. OR 4.49384 ACRES
ZONED: CR

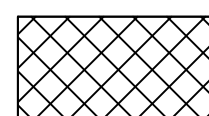
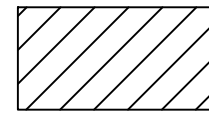

#10400 EATON PL
TM #47-4-02-002-C
KENWOOD EATON PLACE, LLC
D.B. 25987 PG. 559
ZONED: CR

#10304 EATON PL
TM #47-4-02-003
**LOT 3,
COMMONWEALTH
CORPORATE CENTER**
D.B. 6301 PG. 704
WILLOWOOD PROPERTY, LLC
D.B. 27193 PG. 1113
ZONED: CR

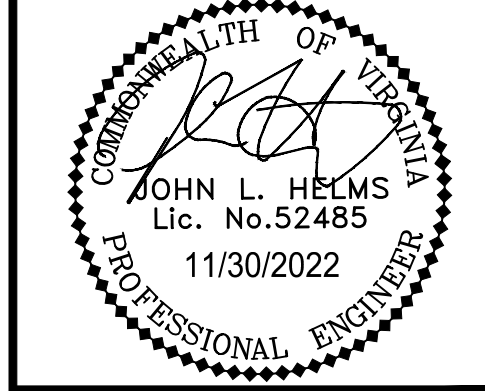
#10306 EATON PLACE
EX. 5-STORY BRICK BUILDING
24,408 SQ. FT.

LEGEND & TABULATIONS

PROPOSED SITE AREA: ± 2.97 ac.
OPEN SPACE REQUIRED: NO REQUIREMENT
OPEN SPACE PROVIDED: ± 30% (± 0.9 ac.)

- PHASE 1**
-  OPEN SPACE, 50' WIDE OPEN SPACE
20% + (± 0.6 ac.)
 -  OPEN SPACE, 0' - 49' WIDE OPEN SPACE
10% + (± 0.3 ac.)
 -  PEDESTRIAN CIRCULATION

**christopher
consultants**
4035 ridge top road p 703.273.6820
suite 601
fairfax, va 22030
engineering • surveying • land planning

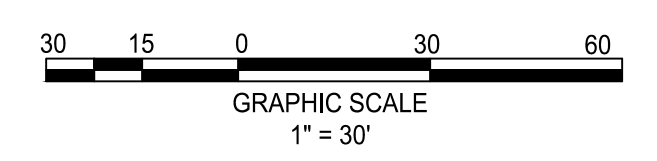
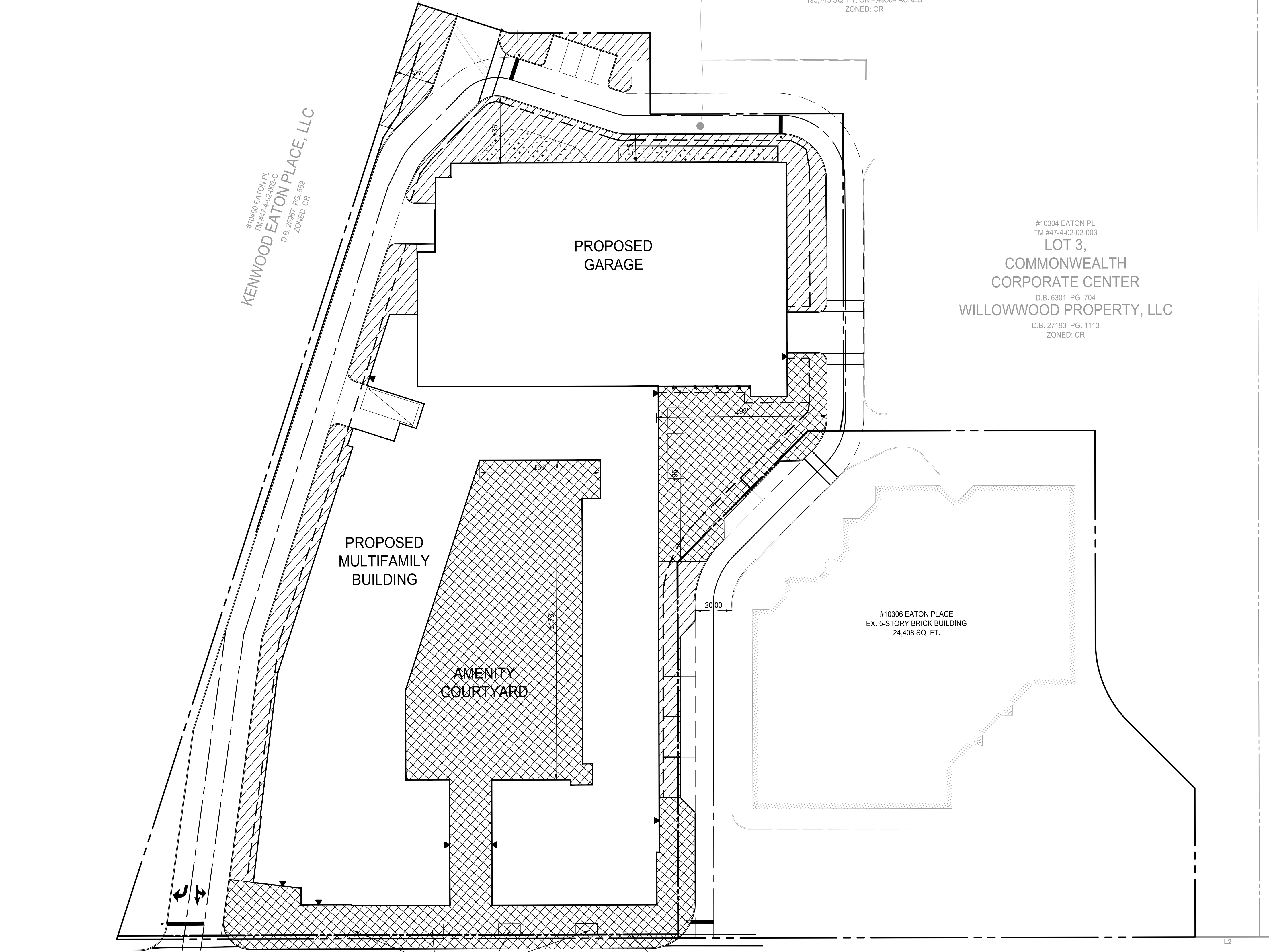
**N29 APARTMENTS
GENERAL DEVELOPMENT PLAN**
CITY OF FAIRFAX, VA

MARK	DATE	DESCRIPTION
1	11-30-2022	ADDRESSED PER CITY COMMENTS



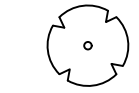

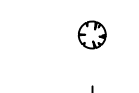

PROJECT No.: 21082.002.00
DRAWING No.: 111772
DATE: 2022-07-15
SCALE: 1" = 30'
DESIGN: ZY
DRAWN: ZY
CHECKED: JR

SHEET TITLE:
**OPEN SPACE
PLAN**

SHEET No.
PI_900



LEGEND

-  CANOPY TREE - DECIDUOUS
-  CANOPY TREE - EVERGREEN
-  UNDERSTORY TREE - DECIDUOUS
-  UNDERSTORY TREE - EVERGREEN
-  SHRUB
-  PROPOSED LIGHT

#10306 EATON PL
TM #47-4-02-02-002
**LOT 2, COMMONWEALTH
CORPORATE CENTER**
D.B. 6301 PG. 704
**WILLOWOOD OFFICE
OWNER, LLC**
D.B. 25440 PG. 407
195,743 SQ. FT. OR 4.49384 ACRES
ZONED: CR

#10304 EATON PL
TM #47-4-02-02-003
**LOT 3,
COMMONWEALTH
CORPORATE CENTER**
D.B. 6301 PG. 704
WILLOWOOD PROPERTY, LLC
D.B. 27193 PG. 1113
ZONED: CR

#10306 EATON PLACE
EX. 5-STORY BRICK BUILDING
24,408 SQ. FT.

10-YEAR TREE CANOPY CALCULATIONS				
TREE CANOPY REQUIRED		128,100 SF		
GROSS SITE AREA		128,100 SF		
TREE CANOPY COVERAGE REQUIRED		NO REQUIREMENT		
TREE CANOPY PROVIDED				
PLANT TYPE	STOCK SIZE	QUANTITY	CANOPY PER TREE	CANOPY PER TYPE
CANOPY TREE	3" CALIPER	31	250 SF	7,750 SF
UNDERSTORY TREE - DECIDUOUS	1" CALIPER	6	125 SF	750 SF
SHRUB		123		
SUBTOTAL CANOPY AREA PROVIDED THROUGH TREE PLANTING				8,500 SF
TOTAL CANOPY AREA PROVIDED				8,500 SF
TOTAL CANOPY COVERAGE PROVIDED				6.6 %

NOTE
AS PER ZONING ORDINANCE §4.5.6., CU DISTRICT (COMMERCIAL URBAN), STREET TREES ARE NOT REQUIRED.

AS PER ZONING ORDINANCE §4.5.5.C.1, TRANSITIONAL YARDS ON THE WEST, NORTH AND EAST SIDE ARE NOT REQUIRED.

CONCEPTUAL PLANT SCHEDULE

NATIVE SPECIES AND NATIVE CULTIVARS, TO THE GREATEST EXTENT FEASIBLE, AND NON-INVASIVE SPECIES TO BE USED. SPECIES ARE SUBJECT TO CHANGE AT THE TIME OF SITE PLAN DUE TO FINAL ENGINEERING, SUITABILITY OF GROWING CONDITIONS, AND AVAILABILITY. PROPOSED VEGETATION LOCATIONS SUBJECT TO CHANGE AT THE TIME OF SITE PLAN AND FINAL ENGINEERING. PROPOSED SPECIES MAY INCLUDE BUT NOT LIMITED TO:

CANOPY TREES - DECIDUOUS

ACER RUBRUM	RED MAPLE
BETULA NIGRA	RIVER BIRCH
CERCIS CANADENSIS	EASTERN REDBLUD
CORNUS FLORIDA	FLOWERING DOGWOOD
FAGUS GRANDIFOLIA	AMERICAN BEECH
GINKGO BILOBA	GINKGO
GLEDITSIA TRIACANTHOS INERMIS	THORNLESS HONEYLOCUST
LIQUIDAMBAR STYRACIFLUA	SWEETGUM
LIRIODENDRON TULIPIFERA	TULIP POPLAR
MAGNOLIA VIRGINIANA	SWEETBAY MAGNOLIA
MALUS SPP.	FLOWERING CRABAPPLE
NYSSA SYLVATICA	BLACKGUM
OSTRYA VIRGINIANA	EASTERN HOPHORNBEAM
PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE
QUERCUS ALBA	WHITE OAK
QUERCUS BICOLOR	SWAMP WHITE OAK
QUERCUS FALCATA	SOUTHERN RED OAK
QUERCUS PALUSTRIS	PIN OAK
QUERCUS PHELLOS	WILLOW OAK
TILIA AMERICANA	AMERICAN LINDEN
ULMUS AMERICANA	AMERICAN ELM

CANOPY TREES - EVERGREEN

MAGNOLIA GRANDIFLORA	SOUTHERN MAGNOLIA
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UNDERSTORY TREES - DECIDUOUS

BETULA NIGRA 'BNMT'	DURA-HEAT RIVER BIRCH
CARPINUS CAROLINA	AMERICAN HORNBEAM
CERCIS CANADENSIS 'APPALACHIAN RED'	EASTERN REDBLUD
CORNUS FLORIDA 'APPALACHIAN SPRING'	FLOWERING DOGWOOD

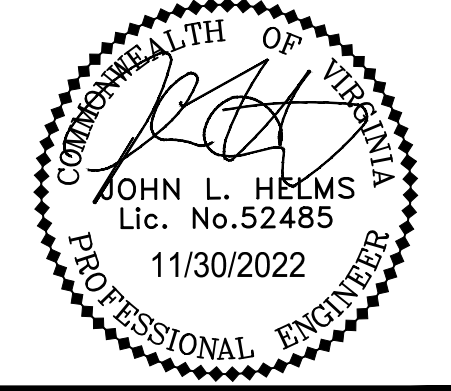
UNDERSTORY TREES - EVERGREEN

ILEX OPACA 'JERSEY KNIGHT' (male)	AMERICAN HOLLY
ILEX OPACA 'SATYR HILL' (female)	AMERICAN HOLLY
JUNIPERUS VIRGINIANA	EASTERN REDCEDAR
THUJA 'GREEN GIANT'	GREEN GIANT ARBORVITAE

SHRUBS

ABELIA x GRANDIFLORA	GLOSSY ABELIA
CLETHRA ALNIFOLIA	SUMMERSWEET
FOTHERGILLA GARDENII	DWARF FOTHERGILLA
HAMAMELIS VIRGINIANA	WITCH-HAZEL
ILEX GLABRA	INKBERRY
ILEX VERTICILLATA	WINTERBERRY
ITEA VIRGINICA	VIRGINIA SWEETSPIRE
JUNIPERUS VIRGINIANA 'GREY OWL'	GREY OWL JUNIPER
KALMA LATIFOLIA 'MINUET'	DWARF MOUNTAIN LAUREL
LEUCOTHOE FONTANESIANA	DROOPING FETTERBUSH
LINDERA BENZOIN	SPICEBUSH
MYRICA CERIFERA	WAX MYRTLE
PICEA ABIES 'NIDIFORMIS'	BIRD'S NEST SPRUCE
PRUNUS CAROLINIANA	CAROLINA CHERRY LAUREL
PRUNUS LAUROCERASUS	CHERRY LAUREL
RHODODENDRON MAXIMUM	ROSEBAY RHODODENDRON
RHUS AROMATICA 'GRO-LOW'	FRAGRANT SUMAC
THUJA OCCIDENTALIS	EASTERN ARBORVITAE
VACCINIUM ANGUSTIFOLIUM	LOWBUSH BLUEBERRY
VIBURNUM ACERIFOLIUM	MAPLELEAF VIBURNUM

christopher consultants
4035 ridge top road p 703.273.6620
suite 601 fairfax, va 22030
engineering • surveying • land planning



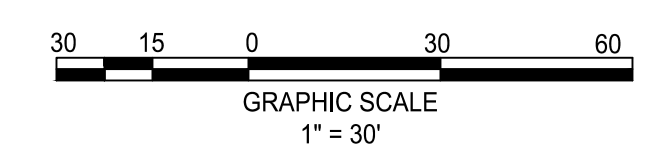
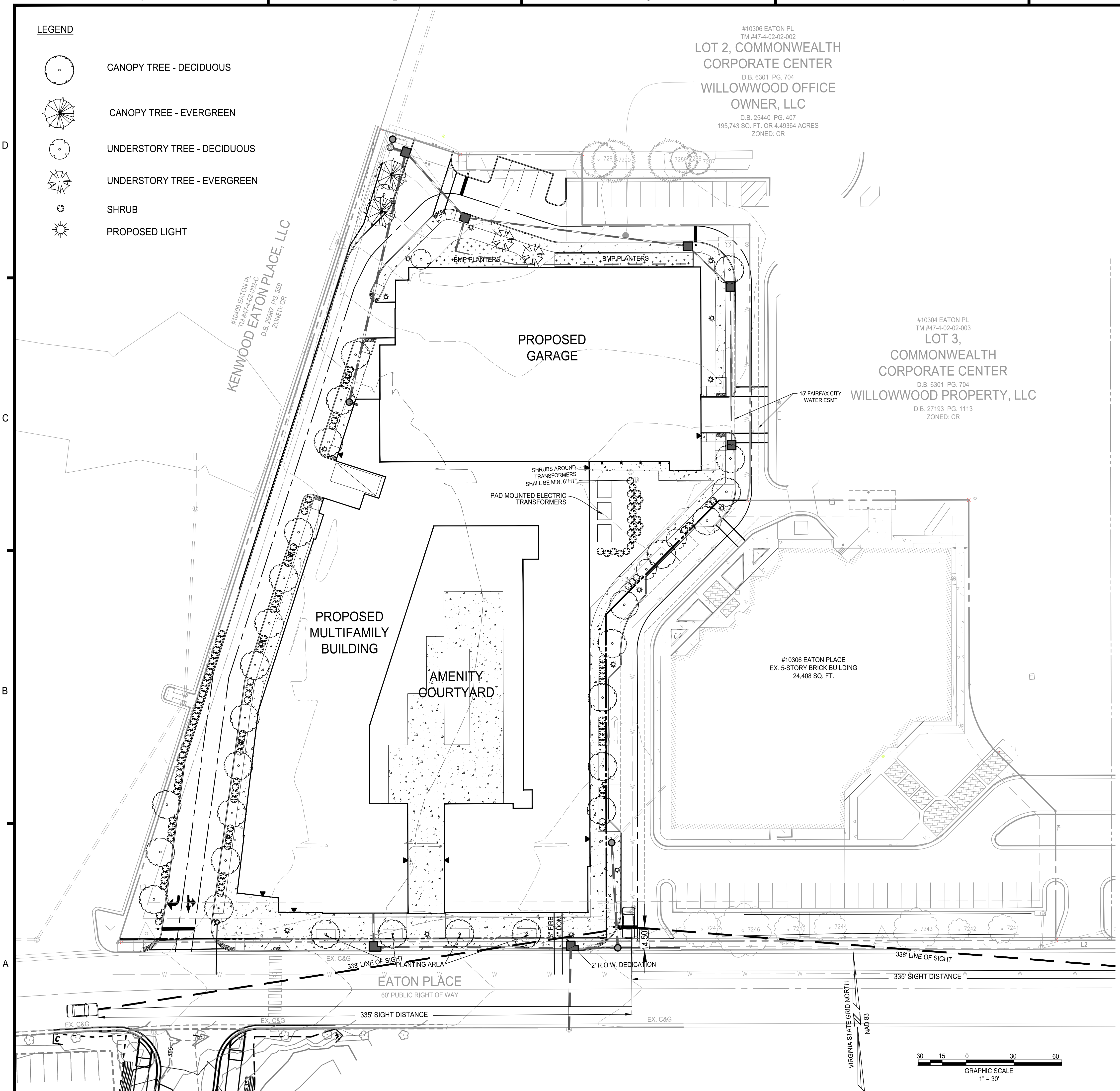
**N29 APARTMENTS
GENERAL DEVELOPMENT PLAN**
CITY OF FAIRFAX, VA

ADDRESS PER CITY COMMENTS	MARK	DATE	DESCRIPTION
1 11-30-2022			

PROJECT No.: 21082.002.00
DRAWING No.: 111772
DATE: 2022-07-15
SCALE: 1" = 30'
DESIGN: CM/ZY
DRAWN: ZY
CHECKED: CM

SHEET TITLE:
LANDSCAPE PLAN

SHEET No.
PI_910



Specification: This is a summary of christopher consultants, Ltd. general landscape specification. All work shall follow the procedures outlined in the specifications and details contained herein, which are designed to exceed current industry standards. Should there exist a discrepancy between this specification and the included construction details, the written specification shall take precedence.

References: In lieu of providing comprehensive proprietary specifications, the following are referenced to be general default specifications with the following modifications. These modifications and the construction details shown in this plan set shall take precedence over the general referenced specifications.

- "Landscape Specification Guidelines" Landscape Contractors Association of MD, DC, VA - Most current edition.
- "American Standard for Nursery Stock - ANSI Z60.1" by AmericanHort - Most Current Edition
- "TT-77 Recommended Turfgrass Cultivars for Certified Sod Production in Maryland" - Maryland Turfgrass Council
- "Landscape Architecture/Design Specifications for Compost Use" - US Composting Council

If there are discrepancies or contradictions in specification sections or details, the stricter specification shall take precedence. A Request for Information (RFI) can also be submitted for clarification.

List of Plant Material: The contractor will verify plant quantities prior to bidding and any discrepancies shall be brought to the attention of the Owner's Representative. The Contractor shall furnish and install all plant materials required to complete the work as shown on the drawings. Quantities in the planting schedule shall take precedence over quantities graphically shown on the plan. Substitutions shall not be made without the written approval of the Owner's Representative.

Plant Identification: All trees shall be true to name as on plant schedule or shown on planting plans and shall be correctly labeled individually or in groups by genus, species, variety and cultivar. Labels are to remain intact until site is approved through agency inspection, substantial completion approval, or per Owner's Representative's instruction.

Plant Quality: All plant materials shall conform to the size and form standards set forth in the latest edition of AmericanHort's "American Standard for Nursery Stock - ANSI Z60.1". Above Ground: Trees shall be healthy with the color, shape, size, and distribution of trunk, stems, branches, buds and leaves typical of the plant specified. Any signs of stress, improper handling (wounds or broken branches), insect or disease damage, or dead/distorted branches should not be present. Trees shall have one central leader (unless otherwise specified) and grafts should be fully closed and visible above the soil line. Below Ground: A minimum of 3 structural roots should be reasonably distributed around the trunk (reject a tree with structural roots only on one side), the root crown should not be more than 2 inches below the soil line, the top 2 structural roots should not be more than 3 inches below the soil line when measured 4 inches away from the trunk. The top of the other structural root should not be more than 5 inches below the surface. The root system should be free of potentially stem-girdling or kinked roots above the root collar and main structural roots.

Inspection: Plants are to be inspected upon delivery to contractor by a contractor's representative and/or owner's representative. Trees not presenting proper form, incorrect variety, signs of poor health or over-stress, and girdling roots are to be rejected.

Storage & Transport: Plant materials should be protected from desiccation during transport via breathable fabric covering the canopy and by watering rootball/pot thoroughly immediately prior to transport. Plant materials should be installed on day of delivery to site. If that is not possible, a temporary storage area can be constructed on-site. Plants are not to be stored on bare asphalt. If storage area is asphalt, cover bare asphalt with a layer of woodchips. Storage should be in shade, and plants be regularly watered at root-ball level, and spaced so foliage from one plant does not interfere with foliage of another. Tall plant materials are to remain upright during storage. Longer term storage plants are to be heeled-in or stored in mulch to the top of the container/root ball. Plant materials shall not be stored on-site for more than two weeks. Plants stored improperly or for too long may be subject to rejection and replacement dependent on ultimate planting condition.

Planting: Plantings shall be installed in accordance with details and specifications on this sheet. Details and specifications for other specific landscape items, such as tree preservation or erosion control may be found elsewhere in this drawing set on their own respective sheet. For items not specifically addressed by this plan set, refer to the latest edition of the "Landscape Specification Guidelines" developed by the Landscape Contractors Association of MD, DC, and VA. Should there be any ambiguities or questions, please utilize the formal RFI/Submittal process.

Trees: The planting hole diameter is to be at a minimum three times the diameter of the root ball. The depth of the planting hole shall be dug so that the shoulder of the root flare is at the level of the existing grade leaving the root flare slightly higher. When planting on a slope, the depth of the hole shall be dug so that the bottom of the root flare is at the level of the existing grade at the sides of the hole. If the planting hole is mechanically dug, the hole is to be scarified by slightly enlarging hole by hand digging the sides and bottom to prevent glazing. The sides of the hole should be vertical or sloping outward. Holes are not to be dug when soil is saturated. For balled and burlapped trees, the wire root ball cage is to be removed and burlap is to be cut and completely removed from the top and a minimum of 8" to 12" down the side of the root ball. Do not fold burlap down into hole, it must be removed. Any synthetic materials are to be completely removed from the trunk and root ball. Backfill in lifts using the same soil dug to create the hole, being careful not to over-compact the soil. Inoculate backfill soil or rootball with an approved balanced (Endo/Ecto) commercial mycorrhizae application. Do not amend or add fertilizer unless expressly specified to do so or is part of the approved mycorrhizae inoculant product. Do not place any soil on top of root ball. Trees are to be mulched to full depth specified immediately after planting. A 1/2" layer of approved compost is to be placed under the mulch layer. Do not place mulch against tree trunk.

Staking: Staking (if any) is to be installed per the accompanying details, utilizing tree webbing straps with grommets to prevent wire from coming in contact with the tree. While not preferred, full tree webbing systems are also permissible if approved through submittal, and installed per manufacturer's instructions. Wire is to be tensioned to allow for 1/2 inch of deflection up or down, and tension shall be rechecked and adjusted on a regular basis. Staking is to be removed as soon as possible after one year. GARDEN HOSE IS NOT TO BE UTILIZED FOR STAKING.

Irrigation: For permanent systems, irrigation should be largely installed prior to plant installation to avoid having to disturb planting beds or move plants to accommodate the installation of the irrigation system. For sites with no permanent irrigation system, Trees are to be irrigated until established by the use of temporary water bags through one growing year or until established. Shrubs, perennial beds, and lawns are to be thoroughly hand-watered or by movable temporary irrigation (sprinklers or drip hose) as necessary to reflect local weather conditions. Watering is to be deep into the soil and infrequent, as opposed to light surficial watering performed often.

Shrubs: For container shrubs, the planting hole is to be dug 3 times the width of the intact container. The container is to be completely removed and the sides of the soil/root clump scarified with a sterile sharp knife. They shall be planted so that the top of the soil level of the container is no more than 1.5" above the original grade. For balled and burlapped shrubs, remove as much burlap as possible from the top and sides of the rootball. Do not fold burlap into hole. Plant with the root flare slightly higher than the surrounding grade. Backfill with soil dug to create the hole. Do not cover top of root ball/clump.

Ground Covers/Perennials: Beds are to be prepared by tilling well to a minimum depth of 6", and soils shall be amended by incorporating 1" of compost meeting the US Composting Council reference specification, 1" of worm castings and/or well decomposed commercially produced compost, or a Class A biosolid also meeting the referenced US Composting Council specification prior to planting. Apply 3" of shredded non-dyed hardwood mulch immediately after planting.

Compacted or Poorly Drained Soils: For sites with heavily compacted or poorly draining soils, alternate planting methods will need to be employed. Contact project Landscape Architect for additional planting details and specifications should either unforeseen condition be encountered.

Conflicts with Existing Roots: Proposed landscape may be shown to be planted in the Critical Root Zones of existing large trees. Should, in the course of planting, large woody roots be discovered belonging to adjacent large trees that are to be preserved, shift the planting location of the tree to be planted to avoid cutting the woody root. Should a suitable planting location not be found within the proximity of where a proposed tree is to be planted, contact the project landscape architect for alternate planting location and recording of the discrepancy for landscape inspection/approval purposes.

Irrigation: New plant materials are to be watered as necessary to maintain health. If no permanent irrigation system is installed, trees are to be watered until established through the use of temporary water bags. Shrubs, perennials, and ground covers shall be hand-watered. Infrequent deep watering is preferred to more frequent quick/shallow watering.

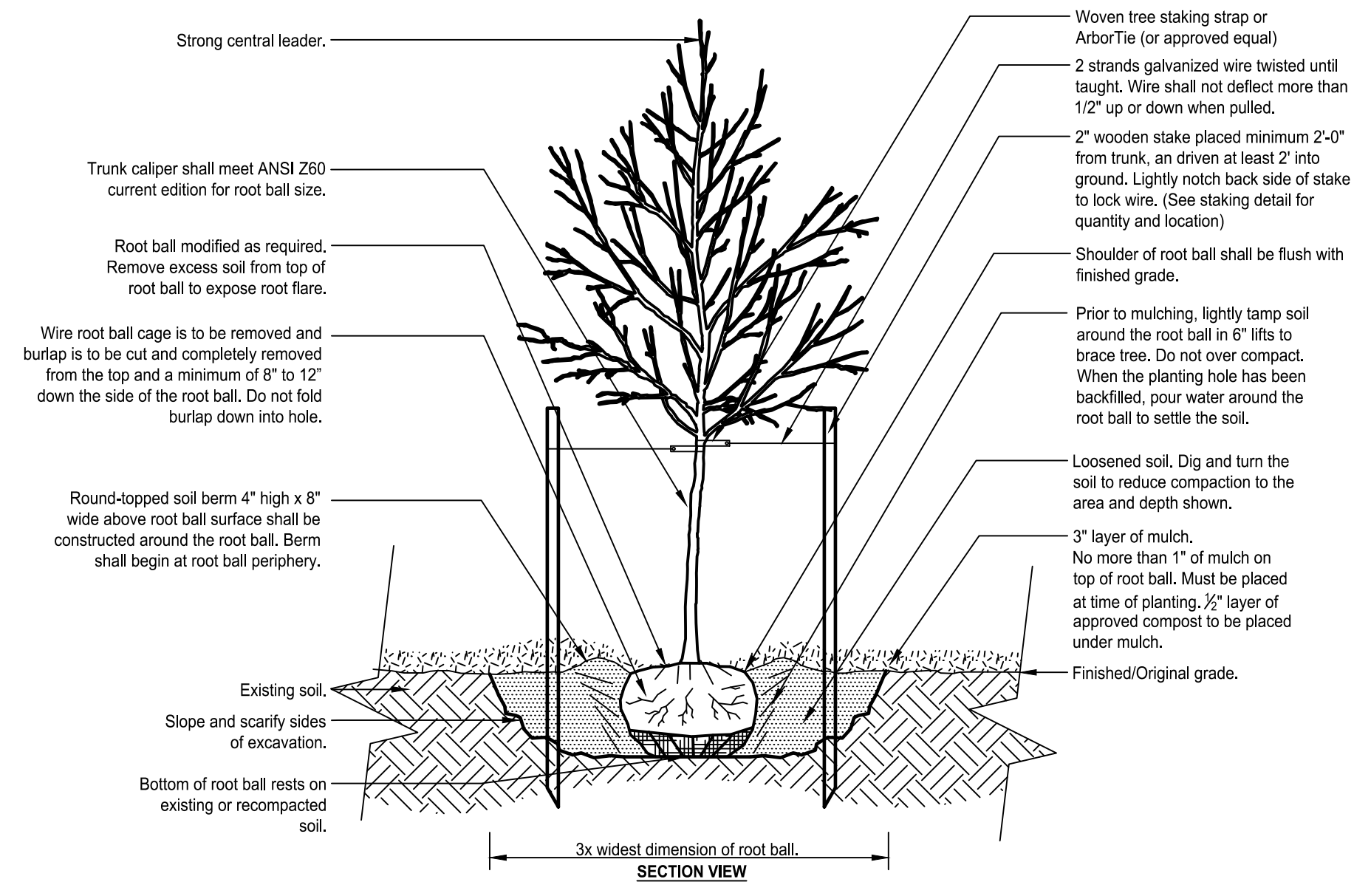
Lawn Areas:

Seeded Lawn Area: Areas to be seeded shall have planting soil tilled to a depth of 6" and free of stones greater than 1" diameter or length. Any amendments that are to be added should be tilled into soil prior to seeding. A seed mix composition chart shall be submitted for review prior to installation. Unless specified by the Owner's Representative, the seed mix must contain a minimum of three cultivars or types of grass in the blend, chosen from the recommended cultivars list of the most recent "TT-77 Recommended Turfgrass Cultivars for Certified Sod Production in Maryland" document produced by the University of Maryland and the Maryland Turfgrass Council. Use of cultivars also appearing on the Turfgrass Water Conservation Alliance approved list is encouraged. Seeds coatings that aid in germination, moisture retention and prevent loss to bird consumption are acceptable. Seeded areas are to be covered by a light and loose layer of rapidly degradable mulch such as straw or hydraulically applied cellulose. Use of erosion control blankets or any synthetic webbing is not permissible for lawn areas unless specified by the Owner's Representative.

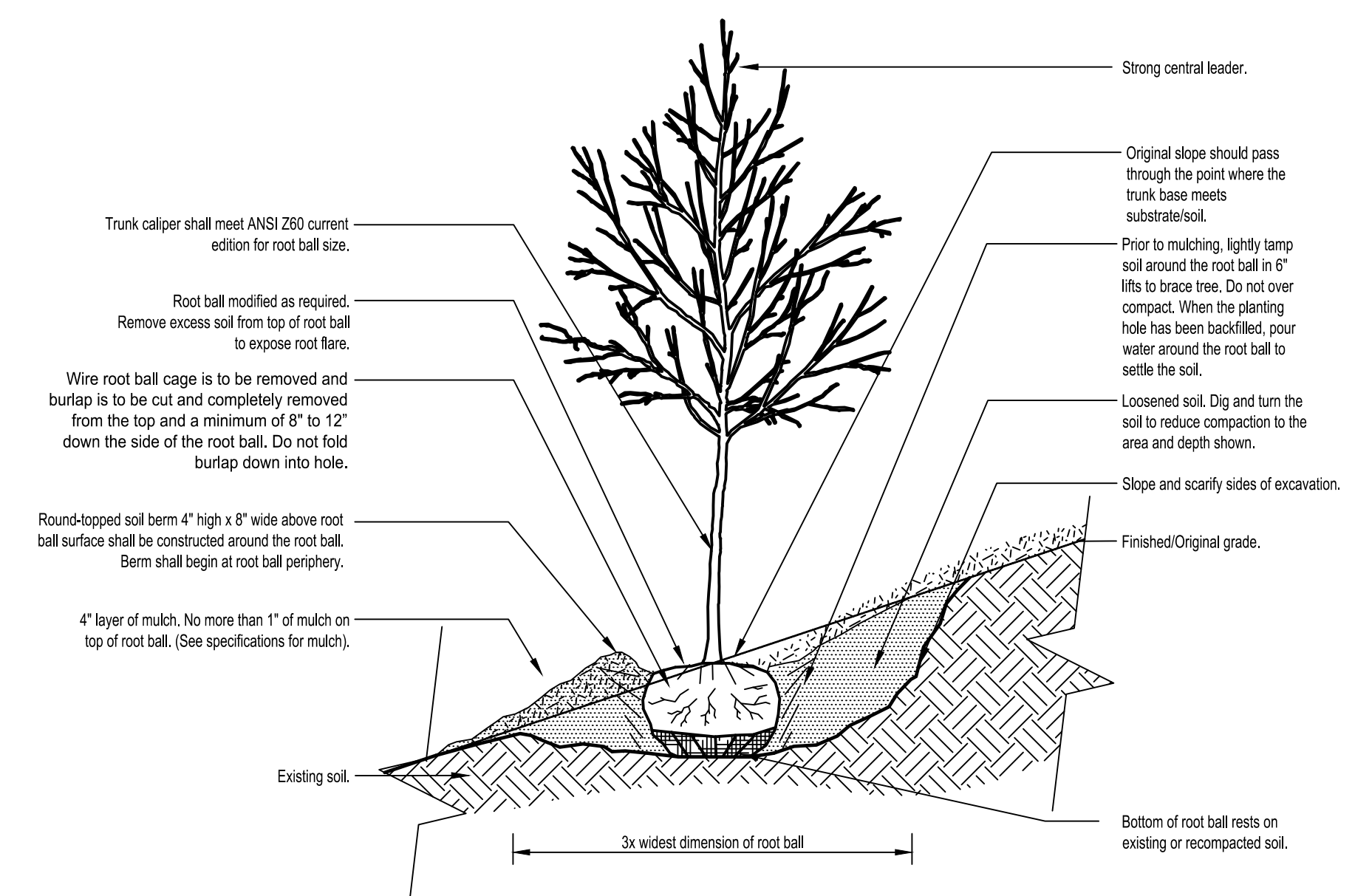
Sodded Lawn Area: Unless a proprietary sod is specified by the Owner's Representative, sod must be of a Maryland or Virginia certified variety suited to the specific growing requirements of where it is to be installed. Grower and variety to be submitted to Owner's Representative for review prior to ordering. Certification documentation for all sod is to be provided to the Owner's Representative upon delivery. For installation on slopes, the Contractor shall use biodegradable sod spikes to secure sod in place. Metal sod staples are not to be utilized for installation.

Invasive Species: Existing invasive species are to be removed utilizing appropriate approved methods including in the invasive species management plan (if applicable) prior to the installation of new plant materials, and is subject to inspection, and is a factor in the Certification of Installation.

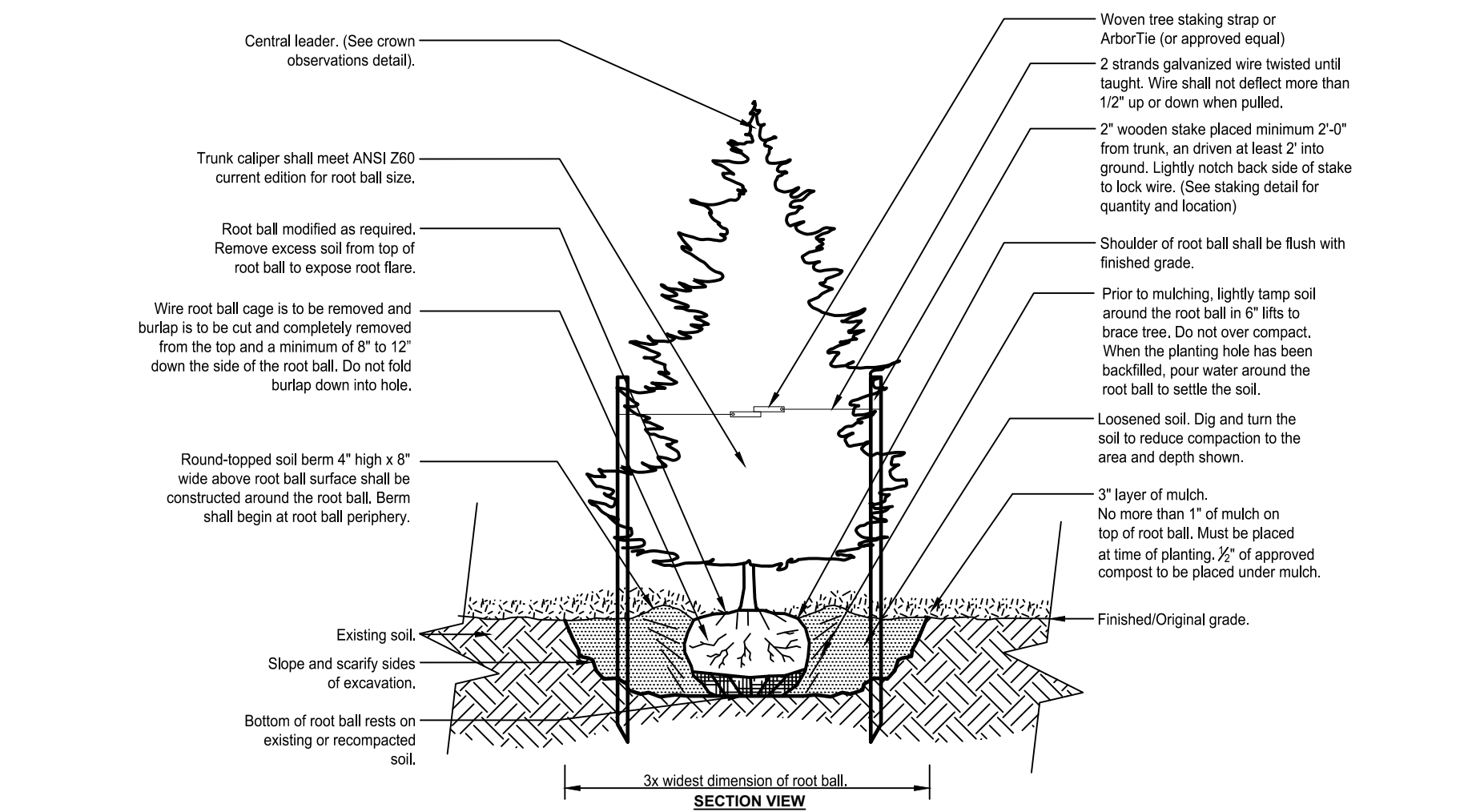
NOTE: These specifications and details are based on those developed by the Urban Tree Foundation, and have been improved to reflect current research and in planting. The ISA has also accepted and reference the UTF details in place of their own. The specifications and details illustrated in this plan set exceed the standards set in the ISA, LCA, and local jurisdictional planting details and specifications.



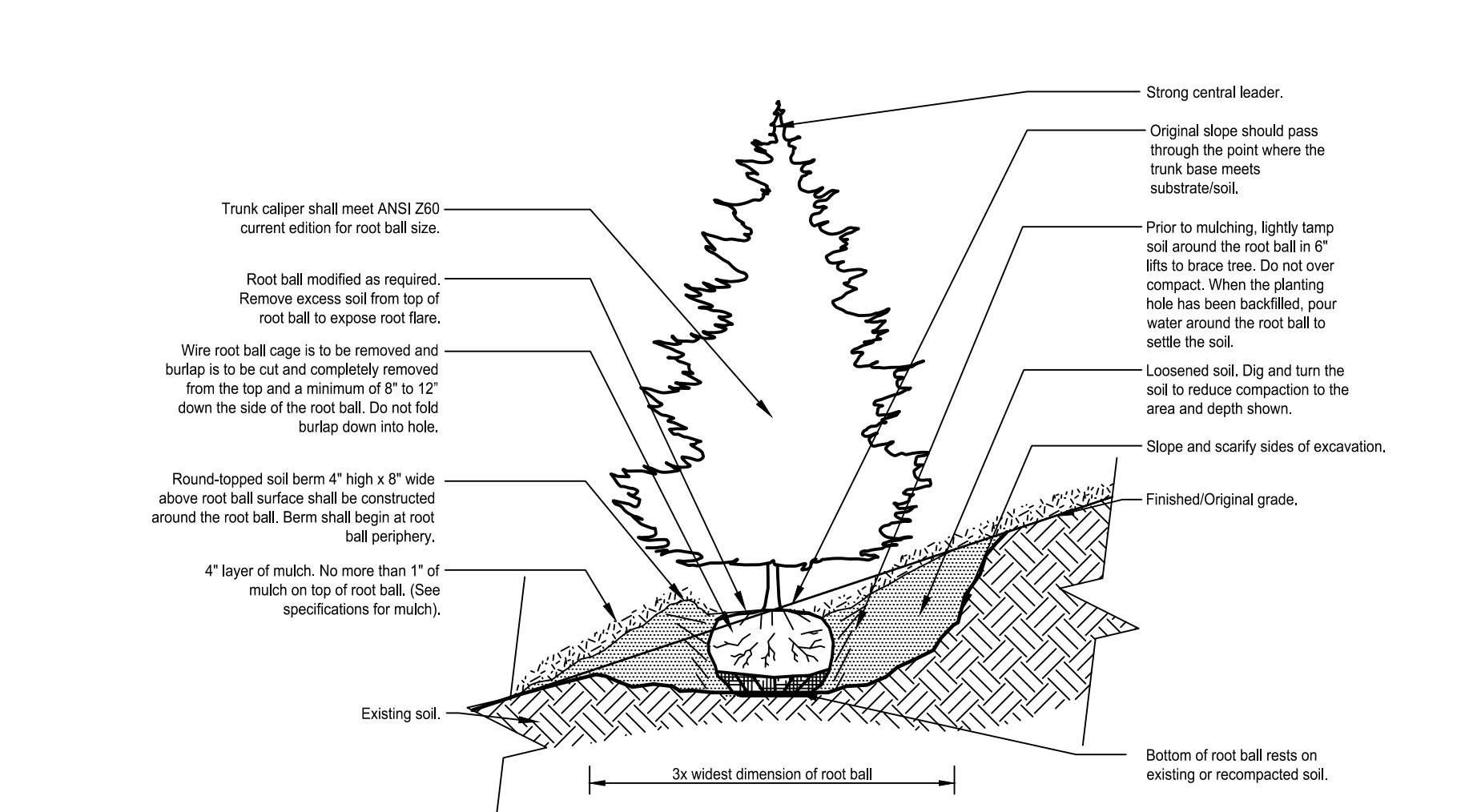
DECIDUOUS TREE PLANTING DETAIL
SCALE: NOT TO SCALE



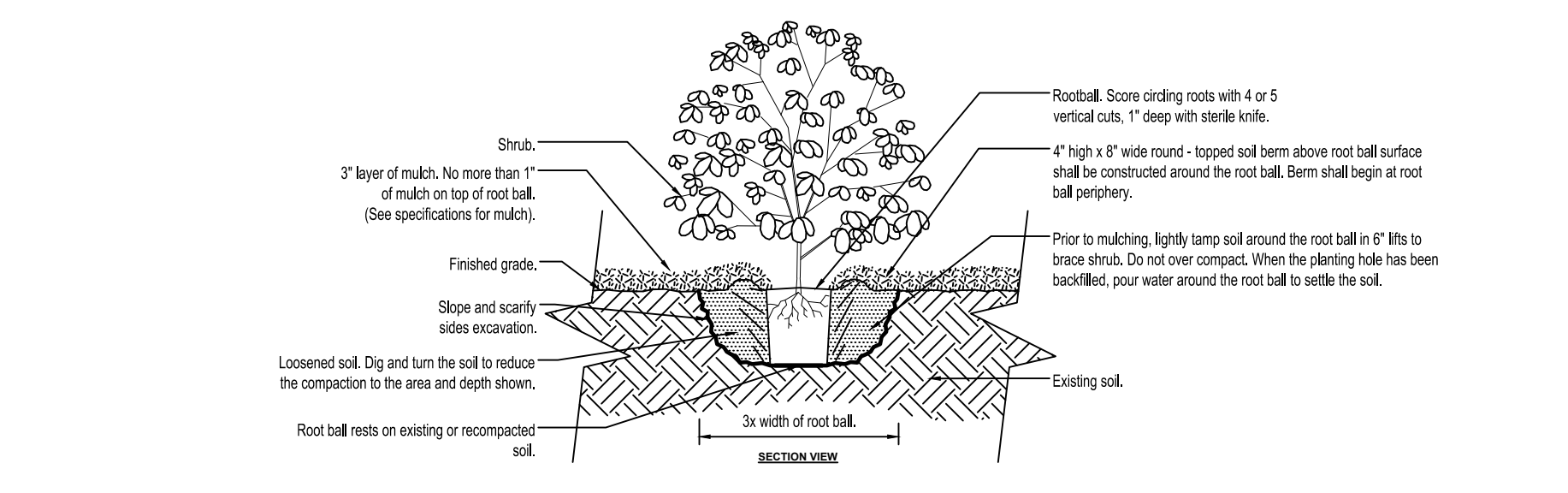
DECIDUOUS TREE SLOPE PLANTING DETAIL
SCALE: NOT TO SCALE



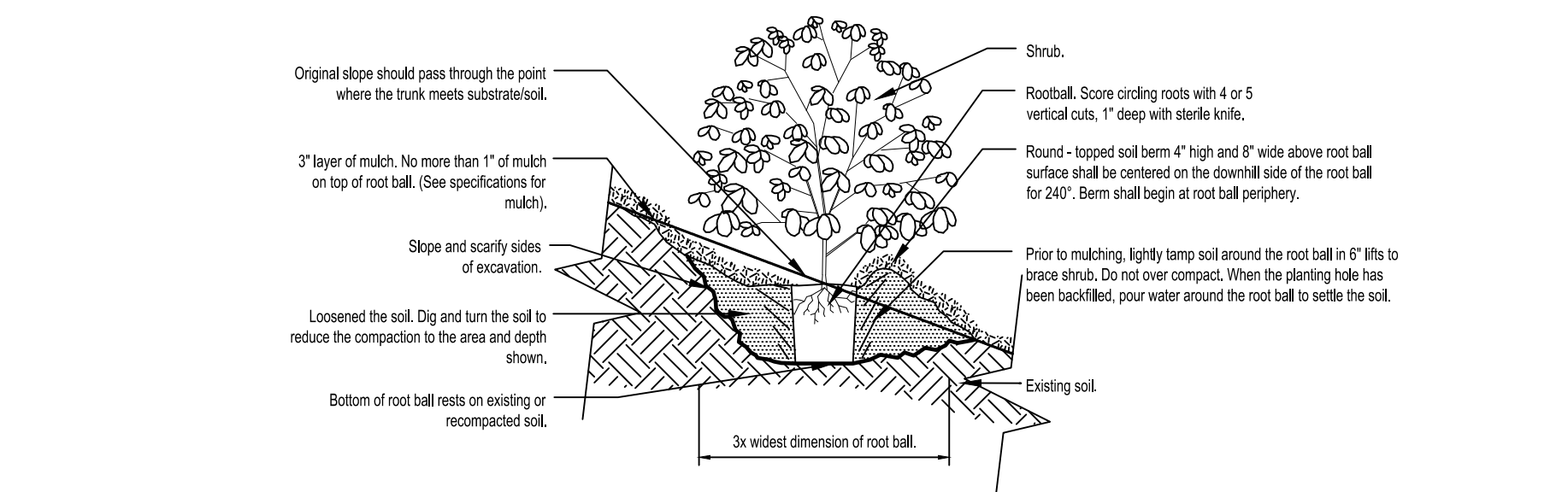
EVERGREEN TREE PLANTING DETAIL
SCALE: NOT TO SCALE



EVERGREEN TREE SLOPE PLANTING DETAIL
SCALE: NOT TO SCALE



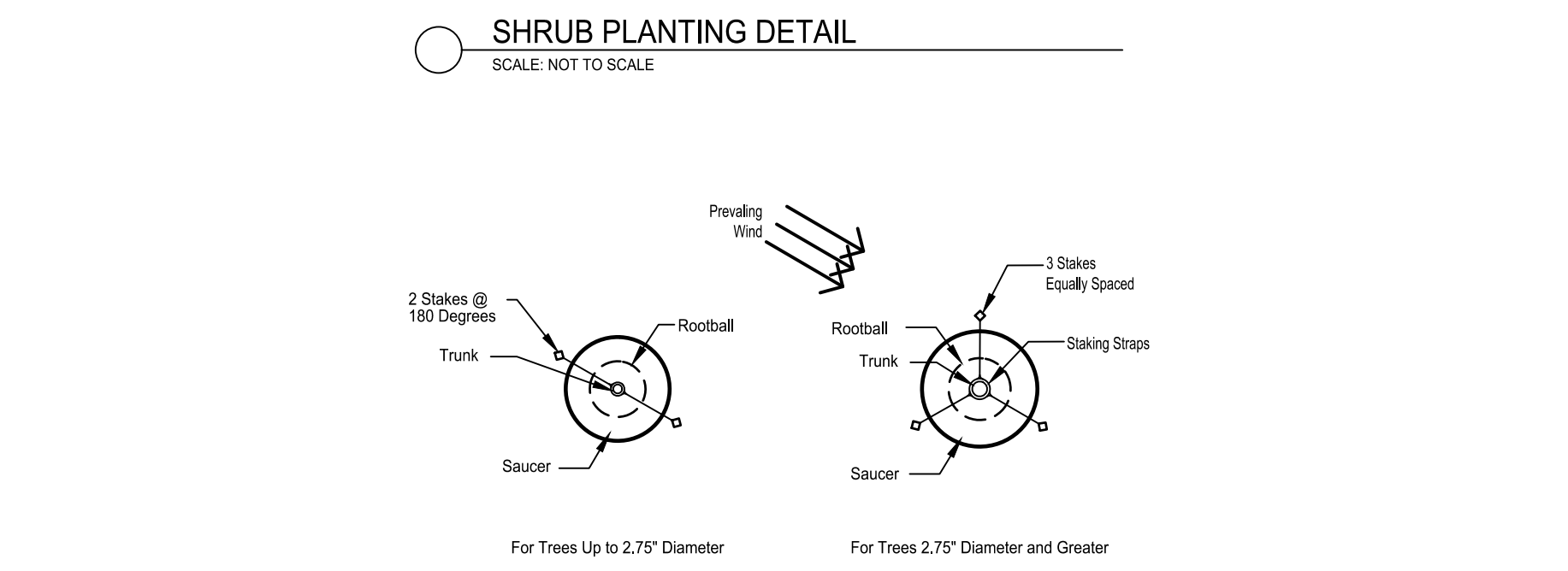
SHRUB PLANTING DETAIL
SCALE: NOT TO SCALE



SHRUB SLOPE PLANTING DETAIL
SCALE: NOT TO SCALE

Notes:
1. For balled and burlapped shrubs, remove completely as much burlap as possible, minimum halfway down the side of the rootball. Do not fold burlap down into hole.
2. See specifications for further requirements related to this detail.

Notes:
1. For balled and burlapped shrubs, remove completely as much burlap as possible, minimum halfway down the side of the rootball. Do not fold burlap down into hole.
2. See written specifications for further requirements related to this detail.



TREE STAKING DETAIL
SCALE: NOT TO SCALE

Notes:
1. Utilize only ArborTie or approved equal or staking straps against tree trunks.
2. Reference manufacturer's detail of approved system for installation instructions.
3. Wire tension (if used) should not allow greater than 10\"/>

christopher consultants
4035 ridge top road p. 703.273.6620
suite 601 fairfax, va 22030
engineering • surveying • land planning

JOHN L. HELMS
Lic. No. 52485
11/30/2022
PROFESSIONAL ENGINEER

N29 APARTMENTS
GENERAL DEVELOPMENT PLAN
CITY OF FAIRFAX, VA

MARK	DATE	DESCRIPTION
1	11-30-2022	ADDRESSED PER CITY COMMENTS

PROJECT No.: 21082.002.00
DRAWING No.: 111772
DATE: 2022-07-15
SCALE: NOT TO SCALE
DESIGN: LBD
DRAWN: ZY
CHECKED: CM

SHEET TITLE:
LANDSCAPE DETAILS

SHEET No.
PI_911