

## CRYSTAL TOWERS 3

### 4.1 PRELIMINARY SITE PLAN ARLINGTON COUNTY, VIRGINIA



SUBMISSIONS		
NO.	DESCRIPTION	DATE
1	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/29/2022
2	4.1 SITE PLAN PRELIMINARY SUBMISSION	08/03/2022
3	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/03/2023
4	4.1 SITE PLAN PRELIMINARY SUBMISSION	05/05/2023

SCALE: N/A

SHEET TITLE:  
ABBREVIATIONS AND LEGEND

SHEET #:

C02.00

#### SANITARY TABLE

EX 10775	RIM=41.57 IN=34.92 (8" PVC FRM CLEAN OUT) OUT=34.91 (8" PVC TO EX41261)
EX 41261	RIM=41.76 NO ACCESS DUE TO TRAFFIC
EX 8515	RIM=47.54 NO ACCESS DUE TO TRAFFIC
EX 3229	RIM=47.89 IN=32.47 (15" PVC FRM EX8515) IN=32.51 (UNK SIZE FRM UNK) OUT=32.37 (15" PVC TO EX10582)
EX 10582	DATR UNABLE TO LOCATE
EX 10581	RIM=54.33 IN=32.26 (15" PVC FRM EX10582) IN=33.10 (UNK SIZE FRM UNK) OUT=32.08 (15" PVC TO EX10580)
EX 10580	RIM=48.21 IN=31.63 (15" PVC FRM EX10581) OUT=31.57 (15" PVC TO EX10579)
EX 10579	RIM=47.23 IN=32.69 (UNK SIZE FRM BLDG) IN=31.51 (15" PVC FRM EX10580) OUT=31.47 (15" PVC TO EX10578)
EX 10578	RIM=37.86 NO ACCESS FULL OF WATER
EX 8514	RIM=44.30 NO ACCESS DUE TO TRAFFIC
EX 683	RIM=44.88 IN=31.30 (UNK SIZE FRM UNK) IN=27.48 (36" PIPE FRM EX1327) OUT=27.40 (36" PIPE TO EX13668)
EX 684	RIM=42.86 IN=29.74 (UNK SIZE FRM UNK) IN=28.31 (36" PIPE FRM EX11622) OUT=28.25 (36" PIPE TO EX41264)

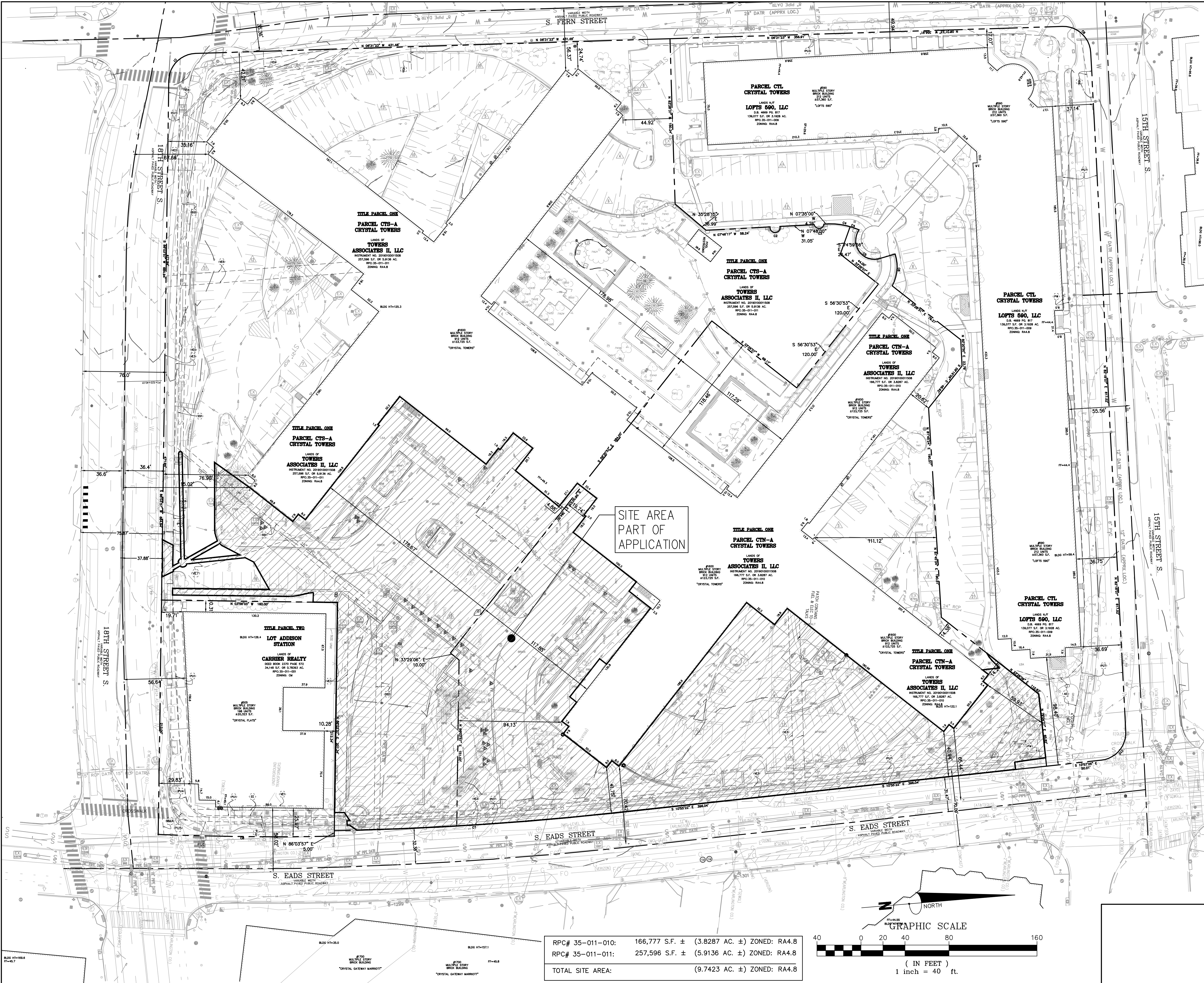
#### STORM SEWER TABLE

EX 1262	RIM=39.52 IN=33.15 (UNK SIZE FRM BLDG) OUT=33.07 (8" PVC TO UNK)
EX 7050	RIM=43.02 OUT=34.34 (21" RCP TO EX16956)
EX 16956	RIM=38.66 IN=35.18 (15" RCP FRM EX17050) OUT=34.56 (21" RCP TO EX17020)
EX 7020	RIM=41.44 IN=34.38 (21" RCP FRM EX16956) OUT=34.34 (21" RCP TO EX17042)
EX 7042	RIM=45.72 IN=34.35 (21" RCP FRM EX17020) OUT=34.07 (21" RCP TO EX16736)
EX 16929	RIM=42.31 IN=38.78 (UNK SIZE FRM BLDG) OUT=38.01 (15" RCP TO EX16906)
EX 16906	DATR UNABLE TO LOCATE
EX 16887	RIM=38.53 IN=32.51 (24" RCP FRM EX16906) IN=33.18 (12" RCP FRM BLDG) OUT=32.25 (27" RCP TO EX16736)
EX 16736	RIM=45.31 IN=31.62 (18" RCP FRM EX16759) IN=36.45 (15" RCP FRM EX16811) IN=31.10 (27" RCP FRM EX16887) IN=33.68 (UNK SIZE FRM UNK) OUT=30.72 (30" RCP TO EX16502)
EX 16759	RIM=44.79 OUT=34.96 (18" RCP TO EX16736)
EX 1197	RIM=44.58 IN=38.74 (UNK SIZE FRM BLDG) OUT=38.60 (UNK SIZE TO EX16904)
EX 16904	RIM=43.82 IN=38.40 (UNK SIZE FRM EX1197) OUT=37.36 (15" RCP TO EX16811)
EX 16811	RIM=44.42 IN=37.63 (15" RCP FRM EX16904) OUT=32.23 (15" RCP TO EX16736)
EX 16542	RIM=37.68 OUT=33.96 (15" RCP TO EX16502)
EX 16502	RIM=42.26 IN=28.97 (30" RCP FRM EX16736) IN=33.06 (15" RCP FRM EX16545) OUT=28.82 (33" RCP TO EX16838)
EX 16838	RIM=42.15 IN=35.53 (15" RCP FRM EX16417) IN=27.85 (33" RCP FRM EX16502) IN=29.08 (UNK SIZE FRM UNK) OUT=27.55 (36" RCP TO EX16262)
EX 16262	RIM=40.56 NO INVERT, TRAFFIC
EX 16471	RIM=42.89 NO INVERT, FULL OF DEBRIS
EX 17057	RIM=44.33 OUT=39.80 (15" RCP TO EX17071)
EX 17071	RIM=44.22 NO INVERT, TRAFFIC
EX 7104	RIM=45.13 NO INVERT, TRAFFIC
EX 16339	RIM=38.79 OUT=35.40 (15" RCP TO EX16309)
EX 16309	RIM=38.67 NO INVERT, TRAFFIC
EX 15469	RIM=37.99 NO INVERT, TRAFFIC
EX 15109	RIM=38.86 OUT=33.14 (15" RCP TO EX16297)
EX 15107	RIM=38.35 OUT=32.96 (15" RCP TO EX16297)
EX 16419	RIM=40.72 OUT=37.14 (15" RCP TO EX16416)
EX 16419	RIM=40.64 IN=35.88 (UNK SIZE FRM BLDG) IN=36.82 (15" RCP FRM EX16416) OUT=34.84 (15" RCP TO UNK)
EX 16422	RIM=40.82 IN=34.08 (24" RCP FRM EX15045)
EX 13042	RIM=40.86 IN=34.26 (24" RCP FRM UNK) OUT=34.09 (24" RCP TO EX16425)
EX 4763	RIM=39.71 OUT=34.64 (15" RCP TO UNK)
EX 4693	RIM=42.39 IN=38.48 (8" PVC FRM UNK) OUT=38.26 (8" PVC TO EX4963)
EX 4963	RIM=39.94 IN=33.01 (8" PVC FRM EX4695) OUT=32.93 (24" RCP TO UNK)
EX 8899	RIM=37.90 OUT=33.17 (8" PVC TO UNK)
EX 8794	RIM=39.95 IN=32.55 (8" PVC TO UNK) OUT=32.18 (8" PVC TO EX8774)
EX 4044	RIM=41.80 NO INVERT, SEALED
EX 8774	RIM=39.95 IN=31.04 (8" PVC TO UNK) IN=31.04 (8" PVC FRM EX8794) OUT=31.28 (24" RCP TO UNK)
EX 4104	RIM=41.99 OUT=37.87 (UNK SIZE TO EX4044) PIPES RECESSED
EX 3987	RIM=41.80 IN=37.37 (UNK SIZE FRM EX4044) OUT=37.19 (UNK SIZE TO EX16608) PIPES RECESSED
EX 16669	RIM=42.44 IN=39.39 (UNK SIZE FRM EX3987) OUT=36.27 (18" RCP TO EX16674)
EX 16674	RIM=42.37 IN=35.66 (18" RCP FRM EX16680) IN=35.63 (18" RCP FRM UNK) OUT=35.44 (18" RCP TO UNK)

#### TREE TABLE

Tag	Trunk	Drip	Desc.	Tag	Trunk	Drip	Desc.	Tag	Trunk	Drip	Desc.	Tag	Trunk	Drip	Desc.	Tag	Trunk	Drip	Desc.
T420	4"	7"	DECIDUOUS TREE	T669	7"	15"	DECIDUOUS TREE	T716	4"	8"	DECIDUOUS TREE	T770	11"	11"	DECIDUOUS TREE	T1587	3"	3"	DECIDUOUS TREE
T421	5"	9"	DECIDUOUS TREE	T669	23"	23"	DECIDUOUS TREE	T717	5"	10"	DECIDUOUS TREE	T771	8"	8"	DECIDUOUS TREE	T1588	4"	4"	DECIDUOUS TREE
T422	10"	12"	DECIDUOUS TREE	T670	4"	8"	DECIDUOUS TREE	T718	4"	10"	DECIDUOUS TREE	T772	13"	13"	DECIDUOUS TREE	T1589	4"	4"	DECIDUOUS TREE
T423	10"	12"	DECIDUOUS TREE	T671	4"	7"	DECIDUOUS TREE	T719	4"	8"	CONFEROUS TREE	T773	16"	16"	DECIDUOUS TREE	T1590	4"	4"	DECIDUOUS TREE
T424	12"	14"	DECIDUOUS TREE	T672	4"	8"	DECIDUOUS TREE	T720	6"	20"	DECIDUOUS TREE	T774	18"	18"	DECIDUOUS TREE	T1591	3"	3"	DECIDUOUS TREE
T425	10"	12"	DECIDUOUS TREE	T673	4"	8"	DECIDUOUS TREE	T721	7"	20"	DECIDUOUS TREE	T775	26"	26"	DECIDUOUS TREE	T1592	4"	4"	DECIDUOUS TREE
T426	8"	12"	DECIDUOUS TREE	T674	4"	6"	DECIDUOUS TREE	T722	6"	18"	DECIDUOUS TREE	T776	11"	11"	DECIDUOUS TREE	T1593	3"	3"	DECIDUOUS TREE
T426	6"	8"	DECIDUOUS TREE	T675	24"	21"	DECIDUOUS TREE	T723	8"	19"	DECIDUOUS TREE	T777	13"	13"	DECIDUOUS TREE	T1594	4"	4"	DECIDUOUS TREE
T428	12"	16"	DECIDUOUS TREE	T676	16"	15"	DECIDUOUS TREE	T724	3"	15"	DECIDUOUS TREE	T778	12"	12"	DECIDUOUS TREE	T1595	3"	3"	DECIDUOUS TREE
T429	12"	16"	DECIDUOUS TREE	T677	14"	15"	DECIDUOUS TREE	T726	18"	32"	DECIDUOUS TREE	T801	14"	15"	DECIDUOUS TREE	T1596	4"	4"	DECIDUOUS TREE
T460	26"	35"	DECIDUOUS TREE	T678	12"	12"	DECIDUOUS TREE	T727	11"	24"	DECIDUOUS TREE	T955	12"	24"	DECIDUOUS TREE	T1597	4"	4"	DECIDUOUS TREE
T461	13"	18"	DECIDUOUS TREE	T679	13"	13"	DECIDUOUS TREE	T728	14"	20"	DECIDUOUS TREE	T956	11"	11"	DECIDUOUS TREE	T1598	4"	4"	DECIDUOUS TREE
T462	10"	10"	DECIDUOUS TREE	T680	12"	12"	DECIDUOUS TREE	T729	14"	20"	DECIDUOUS TREE	T957	5"	5"	DECIDUOUS TREE	T1599	4"	4"	DECIDUOUS TREE
T463	15"	15"	DECIDUOUS TREE	T681	11"	12"	DECIDUOUS TREE	T730	7"	7"	DECIDUOUS TREE	T958	4"	4"	DECIDUOUS TREE	T1601	8"	8"	DECIDUOUS TREE
T464	12"	12"	DECIDUOUS TREE	T682	9"	10"	DECIDUOUS TREE	T731	6"	6"	DECIDUOUS TREE	T959	4"	4"	DECIDUOUS TREE	T1602	6"	6"	DECIDUOUS TREE
T465	11"	11"	DECIDUOUS TREE	T683	26"	30"	DECIDUOUS TREE	T732	8"	5"	DECIDUOUS TREE	T960	5"	5"	DECIDUOUS TREE	T1603	5"	5"	DECIDUOUS TREE
T466	7"	5"	DECIDUOUS TREE	T684	6"	7"	DECIDUOUS TREE	T733	3"	8"	DECIDUOUS TREE	T961	6"	6"	DECIDUOUS TREE	T1604	9"	9"	DECIDUOUS TREE
T467	7"	5"	DECIDUOUS TREE	T684	7"	7"	DECIDUOUS TREE	T734	16"	20"	DECIDUOUS TREE	T962	6"	6"	DECIDUOUS TREE	T1605	8"	8"	DECIDUOUS TREE
T468	16"	16"	DECIDUOUS TREE	T685	1"	11"	DECIDUOUS TREE	T735	21"	21"	DECIDUOUS TREE	T963	7"	7"	DECIDUOUS TREE	T1606	14"	14"	DECIDUOUS TREE
T477	5"	5"	DECIDUOUS TREE	T686	8"	12"	DECIDUOUS TREE	T736	22"	15"	DECIDUOUS TREE	T964	5"	5"	DECIDUOUS TREE	T1607	11"	11"	DECIDUOUS TREE
T479	3"	8"	DECIDUOUS TREE	T687	14"	8"	DECIDUOUS TREE	T737	35"	32"	DECIDUOUS TREE	T965	9"	9"	DECIDUOUS TREE	T1608	19"	19"	DECIDUOUS TREE
T480	5"	5"	DECIDUOUS TREE	T688	9"	12"	DECIDUOUS TREE	T738	10"	10"	DECIDUOUS TREE	T966	7"	7"	DECIDUOUS TREE	T1609	20"	20"	DECIDUOUS TREE
T481	4"	5"	DECIDUOUS TREE	T1697	18"	18"	DECIDUOUS TREE	T739	12"	12"	DECIDUOUS TREE	T967	8"	8"	DECIDUOUS TREE	T1610	21"	21"	DECIDUOUS TREE
T482	7"	8"	DECIDUOUS TREE	T689	10"	12"	DECIDUOUS TREE	T740	14"	15"	DECIDUOUS TREE	T968	8"	8"	DECIDUOUS TREE	T1611	6"	6"	DECIDUOUS TREE
T483	3"	5"	DECIDUOUS TREE	T690	11"	12"	DECIDUOUS TREE	T741	40"	30"	DECIDUOUS TREE	T969	12"	12"	DECIDUOUS TREE	T1612	22"	22"	DECIDUOUS TREE
T484	3"	5"	DECIDUOUS TREE	T1698	30"	30"	DECIDUOUS TREE	T742	13"	14"	DECIDUOUS TREE	T970	9"	9"	DECIDUOUS TREE	T1613	18"	18"	DECIDUOUS TREE
T485	3"	5"	DECIDUOUS TREE	T691	11"	12"	DECIDUOUS TREE	T743	8"	8"	DECIDUOUS TREE	T1035	11"	12"	DECIDUOUS TREE	T1614	14"	14"	DECIDUOUS TREE
T486	4"	5"	DECIDUOUS TREE	T692	8"	12"	DECIDUOUS TREE	T744	7"	7"	DECIDUOUS TREE	T1036	3"	6"	DECIDUOUS TREE	T1615	15"	15"	DECIDUOUS TREE
T488	3"	8"	DECIDUOUS TREE	T693	13"	13"	DECIDUOUS TREE	T745	11"	12"	DECIDUOUS TREE	T1037	3"	6"	DECIDUOUS TREE	T1616	20"	20"	DECIDUOUS TREE
T489	3"	8"	DECIDUOUS TREE	T694	12"	13"	DECIDUOUS TREE	T746	22"	23"	DECIDUOUS TREE	T1038	3"	6"	DECIDUOUS TREE	T1617	17"	17"	DECIDUOUS TREE
T490	4"	8"	DECIDUOUS TREE	T695	4"	6"	DECIDUOUS TREE	T747	6"	6"	DECIDUOUS TREE	T1040	10"	15"	DECIDUOUS TREE	T1618	18"	18"	DECIDUOUS TREE
T493	4"	8"	DECIDUOUS TREE	T696	20"	11"	DECIDUOUS TREE	T748	6"	6"	DECIDUOUS TREE	T1041	10"	15"	DECIDUOUS TREE	T1621	20"	20"	DECIDUOUS TREE
T494	26"	32"	DECIDUOUS TREE	T697	13"	11"	DECIDUOUS TREE	T749	4"	5"	DECIDUOUS TREE	T1042	10"	15"	DECIDUOUS TREE	T1623	3"	3"	DECIDUOUS TREE
T495	7"	8"	DECIDUOUS TREE	T698	11"	11"	DECIDUOUS TREE	T750	4"	4"	DECIDUOUS TREE	T1043	10"	15"	DECIDUOUS TREE	T1624	3"	3"	DECIDUOUS TREE
T496	3"	6"	DECIDUOUS TREE	T699	14"	15"	DECIDUOUS TREE	T751	5"	6"	DECIDUOUS TREE	T1044	5"	8"	DECIDUOUS TREE	T1625	3"	3"	DECIDUOUS TREE
T626	7"	6"	CONFEROUS TREE	T700	13"	12"	DECIDUOUS TREE	T752	5"	5"	DECIDUOUS TREE	T1045	12"	14"	DECIDUOUS TREE	T1626	3"	3"	DECIDUOUS TREE
T635	44"	44"	DECIDUOUS TREE	T701	4"	4"	DECIDUOUS TREE	T753	11"	12"	DECIDUOUS TREE	T1046	10"	12"	DECIDUOUS TREE	T1627	3"	3"	DECIDUOUS TREE
T643	28"	28"	DECIDUOUS TREE	T702	4"	5"	CONFEROUS TREE	T754	45"	45"	DECIDUOUS TREE	T1047	10"	12"	DECIDUOUS TREE	T1628	4"	4"	DECIDUOUS TREE
T649	19"	19"	DECIDUOUS TREE	T703	5"	8"	DECIDUOUS TREE	T755	18"	18"	DECIDUOUS TREE	T1048	12"	14"	DECIDUOUS TREE	T1629	3"	3"	DECIDUOUS TREE
T658	6"	10"	DECIDUOUS TREE	T704	5"	7"	DECIDUOUS TREE	T756	10"	9"	DECIDUOUS TREE	T1049	4"	8"	DECIDUOUS TREE	T1630	3"	3"	DECIDUOUS TREE
T659	6"	10"	DECIDUOUS TREE	T705	5"	7"	DECIDUOUS TREE	T757	36"	34"	DECIDUOUS TREE	T1050	12"	14"	DECIDUOUS TREE	T1631	3"	3"	DECIDUOUS TREE
T660	7"	12"	DECIDUOUS TREE	T706	5"	7"	DECIDUOUS TREE	T758	4"	8"	DECIDUOUS TREE	T1051	3"	6"	DECIDUOUS TREE	T1632	3"	3"	DECIDUOUS TREE
T661	6"	10"	DECIDUOUS TREE	T707	5"	8"	DECIDUOUS TREE	T759	17"	12"	DECIDUOUS TREE	T1052	3"	6"	DECIDUOUS TREE	T1633	4"	4"	DECIDUOUS TREE
T662	5"	12"	DECIDUOUS TREE	T708	3"	3"	DECIDUOUS TREE	T761	4"	12"	DECIDUOUS TREE	T1053	3"	6"	DECIDUOUS TREE	T1634	3"	3"	DECIDUOUS TREE
T663	4"	10"	DECIDUOUS TREE	T709	3"	4"	DECIDUOUS TREE	T763	4"	10"	DECIDUOUS TREE	T1581	5"	5"	DECIDUOUS TREE	T1635	7"	7"	DECIDUOUS TREE
T664	4"	10"	DECIDUOUS TREE	T710	3"	3"	DECIDUOUS TREE	T764	5"	3"	DECIDUOUS TREE	T1582	5"	5"	DECIDUOUS TREE	T1636	7"	7"	DECIDUOUS TREE
T665	4"	8"	DECIDUOUS TREE	T711	3"	4"	DECIDUOUS TREE	T766	11"	10"	DECIDUOUS TREE	T1583	5"	5"	DECIDUOUS TREE	T1637			





**METES AND BOUNDS**

ALL THOSE PIECES OR PARCELS OF LAND, TOGETHER WITH THE IMPROVEMENTS THEREON AND THE APPURTENANCES THEREUNTO BELONGING, LYING, BEING, AND SITUATE IN ARLINGTON COUNTY, VIRGINIA, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

**PARCEL ONE:**

ALL OF PARCEL C.T.N.-A AND PARCEL C.T.S.-A, CRYSTAL TOWERS, AS SHOWN ON PLAT ENTITLED "PLAT SHOWING CRYSTAL TOWERS BEING THE RESUBDIVISION, VACATION AND REDEDICATION OF PARCELS C.T.N AND C.T.S. THE PROPERTY OF WASHINGTON BRICK AND TERRA COTTA CO. DEED BOOK 1604, PAGE 448" DATED SEPTEMBER 24, 2012 AND LAST REVISED NOVEMBER 9, 2012, PREPARED BY DELASHMUTT ASSOCIATES LTD., WHICH PLAT IS ATTACHED TO THE DEED OF RESUBDIVISION, VACATION AND REDEDICATION RECORDED IN DEED BOOK 4636 AT PAGE 1900, AMONG THE LAND RECORDS OF ARLINGTON COUNTY, VIRGINIA.

TOGETHER WITH THE BENEFICIAL, NON-EXCLUSIVE EASEMENTS AS SET FORTH IN THAT CERTAIN DECLARATION OF RECIPROCAL EASEMENTS, COVENANTS, CONDITIONS AND RESTRICTIONS RECORDED IN DEED BOOK 4659 AT PAGE 2400, AMONG THE AFORESAID LAND RECORDS.

**PARCEL TWO:**

BEGINNING AT THE POINT LYING IN THE NORTH LINE OF 18TH STREET SOUTH, 20 FEET FROM THE CENTERLINE THEREOF; SAID POINT OF BEGINNING BEING THE FRONT CORNER COMMON TO PROPERTY OF CARRIER REALTY CORP. AS SAME APPEARS DULY RECORDED AMONG THE LAND RECORDS OF ARLINGTON COUNTY, VIRGINIA, AND PARCEL C.T.S. OF A RESUBDIVISION OF PARCELS A-1, A-2 AND B-1, PROPERTY OF WASHINGTON BRICK AND TERRA COTTA COMPANY; AS SAME APPEARS DULY PLATTED AND RECORDED IN DEED BOOK 1604 AT PAGE 449, OF THE AFORESAID LAND RECORDS; THENCE DEPARTING FROM SAID STREET LINE AND RUNNING WITH THE SIDE LINES COMMON TO THE PROPERTY OF CARRIER REALTY CORP. AND PARCEL C.T.S. N 01 DEGREES 43' E 160.00 FEET AND S 88 DEGREES 17' E -212.34 FEET TO A POINT LYING IN THE WESTERLY LINE OF SOUTH EADS STREET; THENCE RUNNING WITH SAID WESTERLY LINE OF SOUTH EADS STREET 160.02 FEET ON THE ARC OF A CURVE TO THE RIGHT, WHICH CURVE HAS A RADIUS OF 2,839.79 FEET, THE CHORD OF WHICH ARC BEARS S 03 DEGREES 18' 16.5" E 160.00 FEET TO ITS INTERSECTION WITH THE AFORESAID NORTHERLY LINE OF 18TH STREET SOUTH; THENCE RUNNING WITH SAID NORTHERLY LINE OF 18TH STREET SOUTH N 88 DEGREES 17' W 213.00 FEET TO THE POINT OF BEGINNING; CONTAINING 34,148 SQUARE FEET OF LAND, MORE OR LESS.

**Bowman**

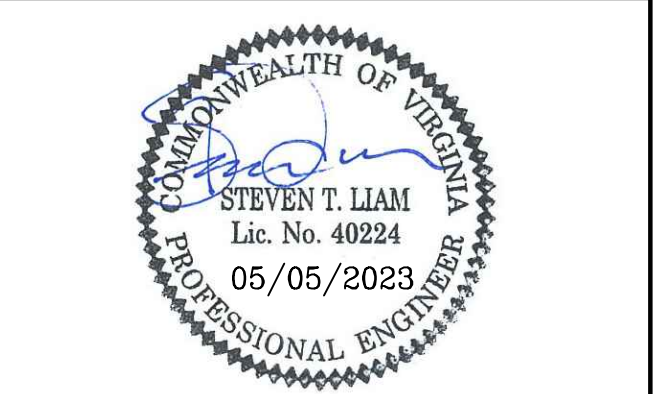
Checked: STL  
 Drawn: CA  
 Date: 08/03/2023

Bowman Consulting Group, Ltd.  
 13461 Sunrise Valley Drive, Suite 500  
 Herndon, Virginia 20171  
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 Phone: (703) 464-1000  
 Fax: (703) 461-9720  
 www.bowman.com

**CRYSTAL TOWERS 3**

**4.1 PRELIMINARY SITE PLAN**

**ARLINGTON COUNTY, VIRGINIA**



Submissions

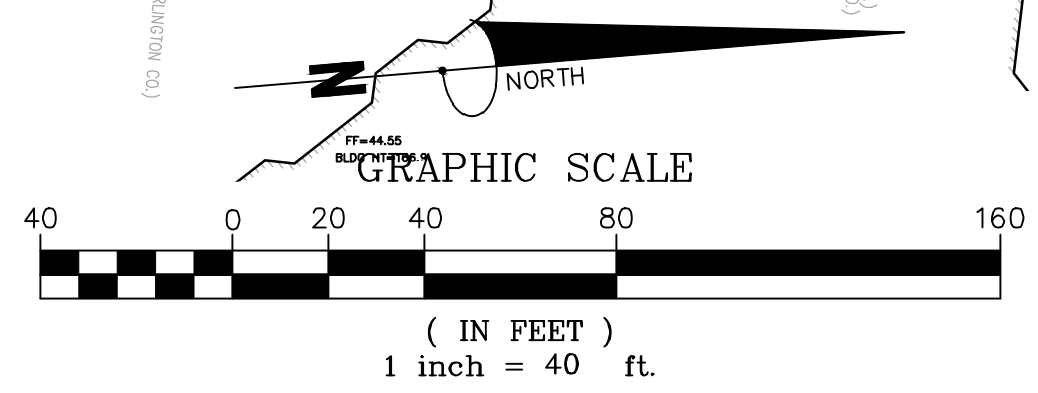
NO.	DESCRIPTION	DATE
1	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/29/2023
2	4.1 SITE PLAN PRELIMINARY SUBMISSION	05/03/2023
3	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/03/2023
4	4.1 SITE PLAN PRELIMINARY SUBMISSION	05/05/2023

SCALE: 1"=40'

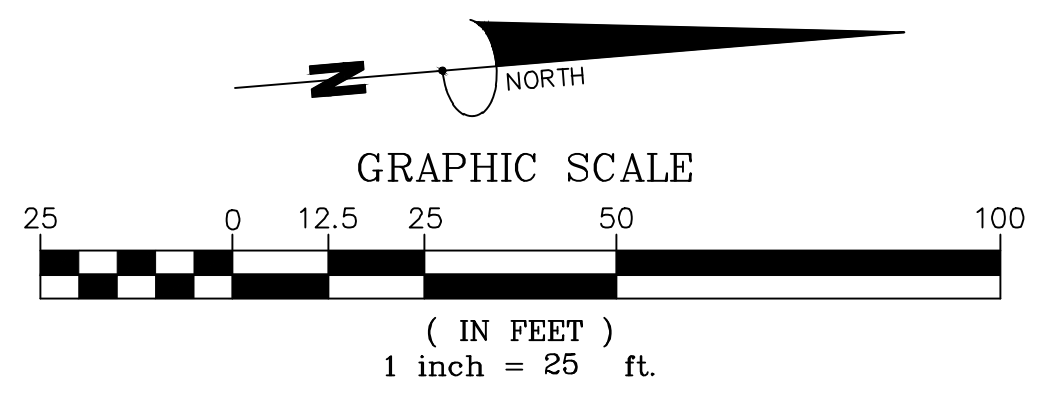
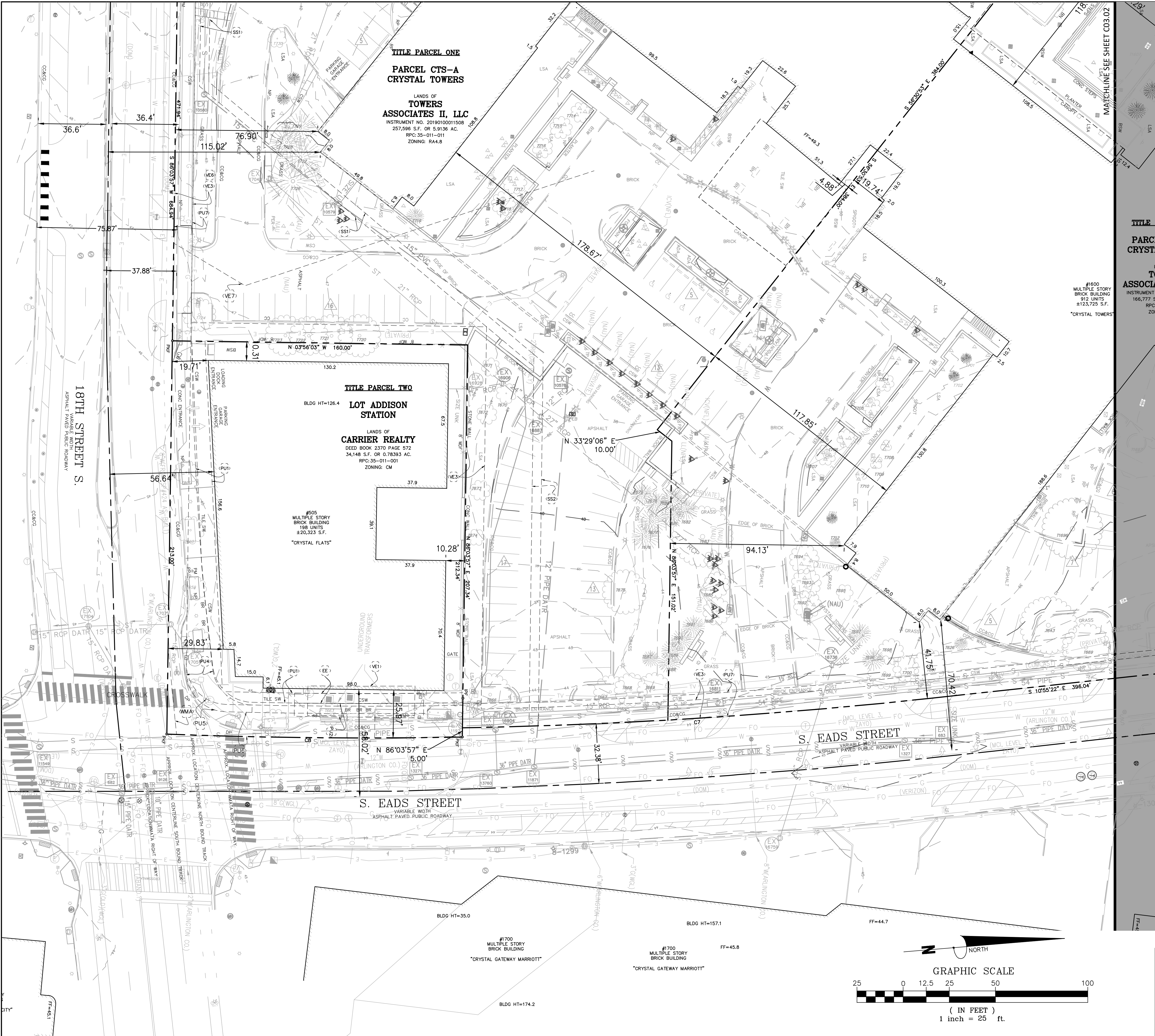
SHEET TITLE: **OVERALL CERTIFIED SURVEY**

SHEET #: **C03.00**

RPC# 35-011-010:	166,777 S.F. ± (3.8287 AC. ±)	ZONED: RA-4.8
RPC# 35-011-011:	257,596 S.F. ± (5.9136 AC. ±)	ZONED: RA-4.8
<b>TOTAL SITE AREA:</b>	<b>(9.7423 AC. ±)</b>	<b>ZONED: RA-4.8</b>







**Bowman**

Checked: STL  
 Drawn: CA  
 Date: 08/03/2022

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**CRYSTAL TOWERS 3**

**4.1 PRELIMINARY SITE PLAN**  
**ARLINGTON COUNTY, VIRGINIA**

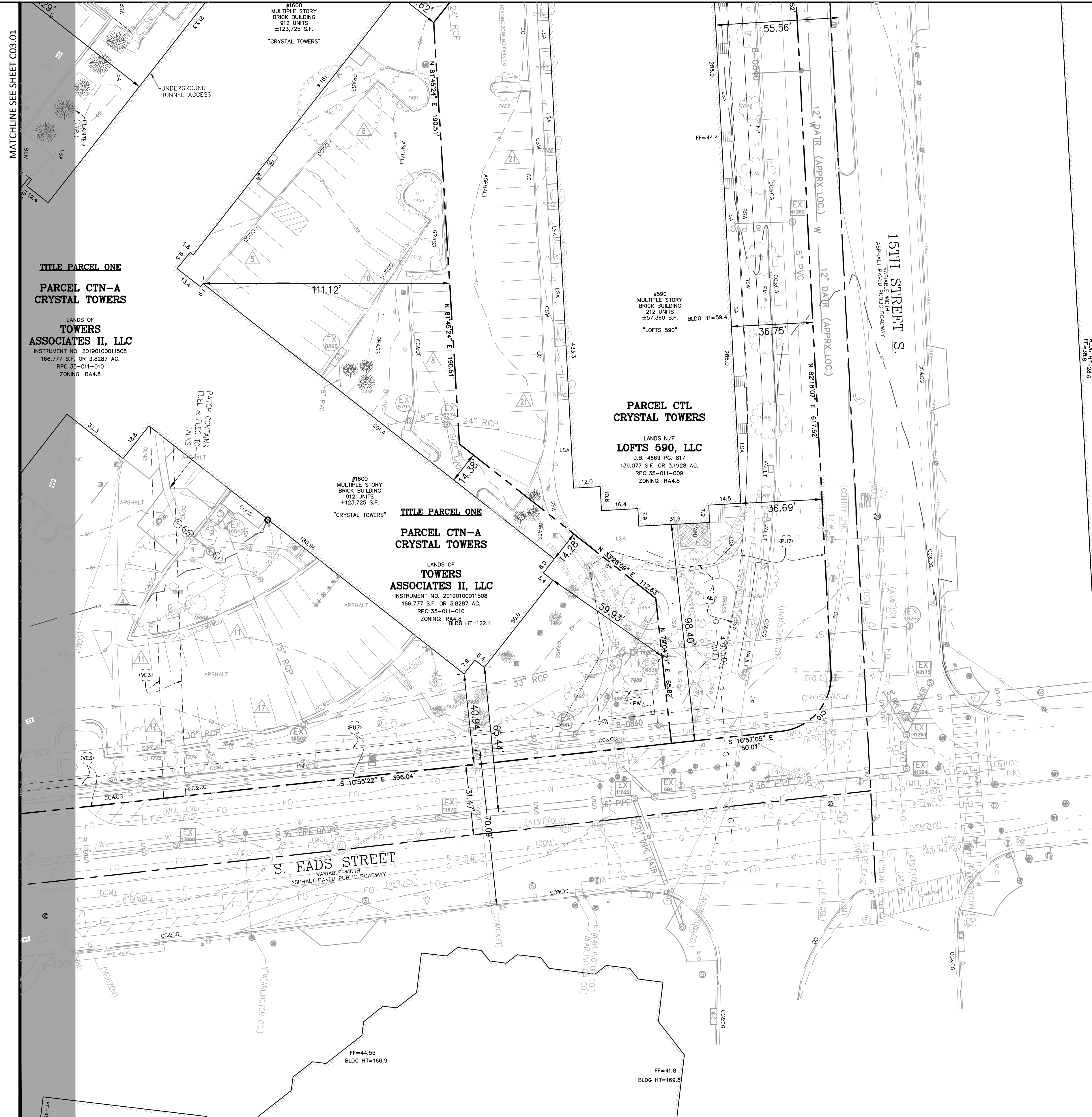


SUBMISSIONS		
NO.	DESCRIPTION	DATE
1	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/29/2022
2	4.1 SITE PLAN PRELIMINARY SUBMISSION	03/03/2022
3	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/03/2023
4	4.1 SITE PLAN PRELIMINARY SUBMISSION	05/05/2023

SCALE: 1"=25'  
 SHEET TITLE:  
**CERTIFIED SURVEY**

SHEET #:  
**C03.01**





MATCHLINE SEE SHEET C03.01

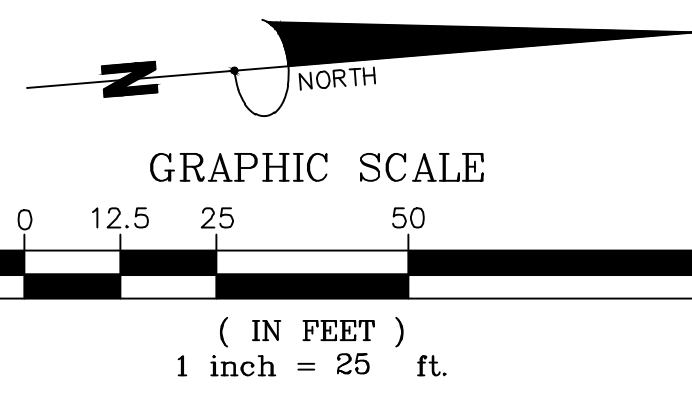
**TITLE PARCEL ONE**  
**PARCEL CTN-A**  
**CRYSTAL TOWERS**  
 LANDS OF  
**TOWERS ASSOCIATES II, LLC**  
 INSTRUMENT NO. 20190100011508  
 166,777 S.F. OR 3.8287 AC.  
 RPC: 35-011-010  
 ZONING: RA4.8

#1600  
 MULTIPLE STORY  
 BRICK BUILDING  
 912 UNITS  
 ±123,725 S.F.  
 \*CRYSTAL TOWERS\*

**PARCEL CTL**  
**CRYSTAL TOWERS**  
 LANDS N/W  
**LOFTS 590, LLC**  
 D.B. 4669 P.C. 817  
 139,077 S.F. OR 3.1928 AC.  
 RPC: 35-011-009  
 ZONING: RA4.8

#1600  
 MULTIPLE STORY  
 BRICK BUILDING  
 912 UNITS  
 ±123,725 S.F.  
 \*CRYSTAL TOWERS\*

**TITLE PARCEL ONE**  
**PARCEL CTN-A**  
**CRYSTAL TOWERS**  
 LANDS OF  
**TOWERS ASSOCIATES II, LLC**  
 INSTRUMENT NO. 20190100011508  
 166,777 S.F. OR 3.8287 AC.  
 RPC: 35-011-010  
 ZONING: RA4.8



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 Fax: (703) 461-9720  
 www.bowman.com

## CRYSTAL TOWERS 3

4.1 PRELIMINARY SITE PLAN  
 ARLINGTON COUNTY, VIRGINIA



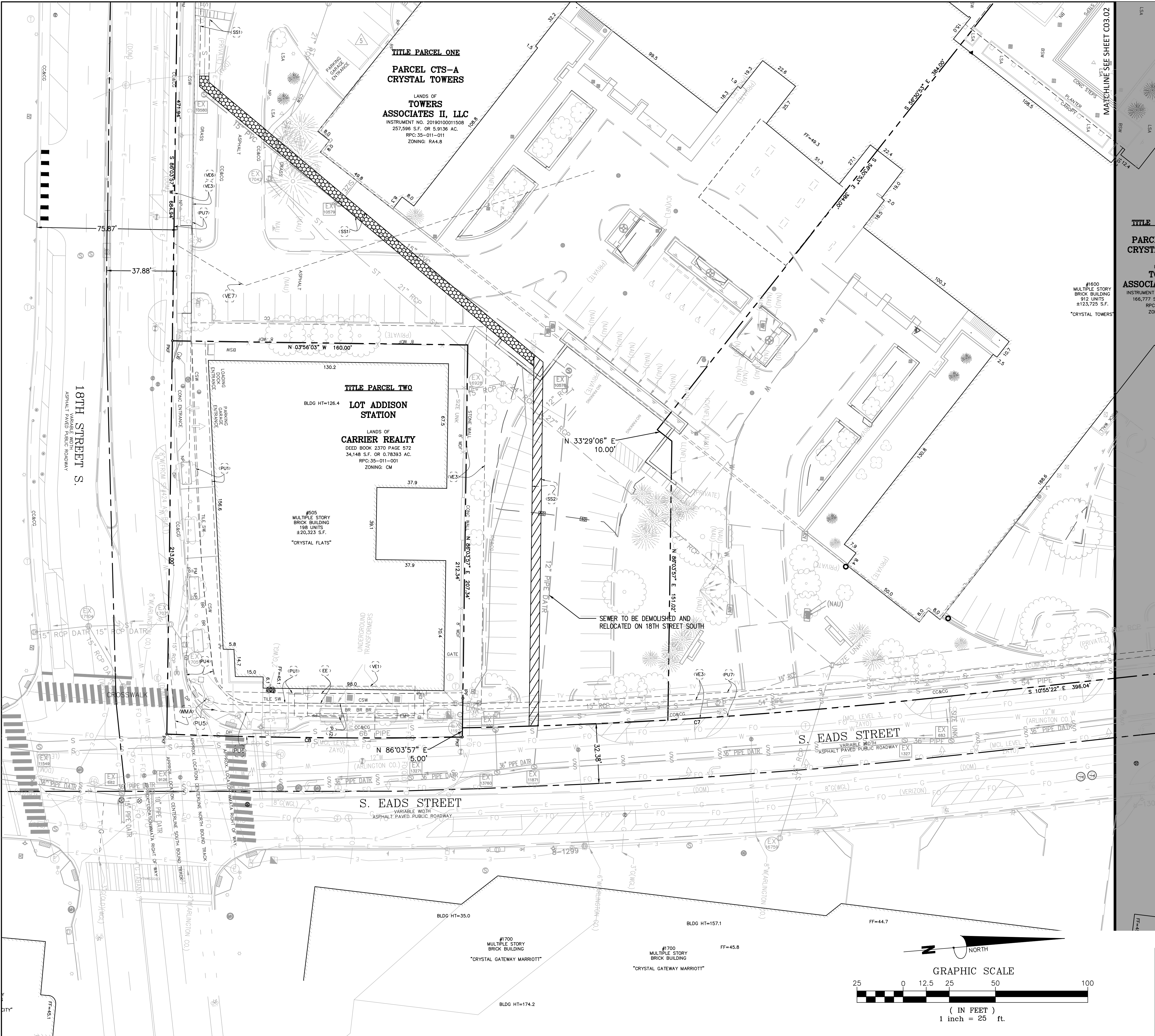
SUBMISSIONS		
NO.	DESCRIPTION	DATE
1	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/29/2022
2	4.1 SITE PLAN PRELIMINARY SUBMISSION	05/03/2022
3	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/03/2023
4	4.1 SITE PLAN PRELIMINARY SUBMISSION	05/05/2023

SCALE: 1"=25'  
 SHEET TITLE:

CERTIFIED SURVEY

SHEET #:  
**C03.02**





**LEGEND**

VACATION OF 5' SANITARY SEWER EASEMENT DEED BOOK 1604 PAGE 449 = ±1187 SF OR ±0.027 AC

VACATION OF 5' SANITARY SEWER EASEMENT DEED BOOK 1159 PAGE 233 = ±1,000 SF OR ±0.023 AC

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**CRYSTAL TOWERS 3**

**4.1 PRELIMINARY SITE PLAN**  
**ARLINGTON COUNTY, VIRGINIA**



SUBMISSIONS

NO.	DESCRIPTION	DATE
1	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/29/2022
2	4.1 SITE PLAN PRELIMINARY SUBMISSION	05/03/2022
3	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/03/2023
4	4.1 SITE PLAN PRELIMINARY SUBMISSION	05/05/2023

SCALE: 1"=25'

SHEET TITLE:  
**VACATION EXHIBIT**

SHEET #:  
**C03.10**

P:\030231 - Crystal Promenade\030231-02-004 (ENG) - Crystal Towers 4.1 and CEP Submission\Engineering\Plans\4.1 Plan\030231-02-004-VACATION EXHIBIT.dwg



MATCHLINE SEE SHEET C03.01

**TITLE PARCEL ONE**  
**PARCEL CTN-A**  
**CRYSTAL TOWERS**

LANDS OF  
**TOWERS**  
**ASSOCIATES II, LLC**  
INSTRUMENT NO. 20190100011508  
166,777 S.F. OR 3.8287 AC.  
RPC: 35-011-010  
ZONING: RA4.8

**TITLE PARCEL ONE**  
**PARCEL CTN-A**  
**CRYSTAL TOWERS**

LANDS OF  
**TOWERS**  
**ASSOCIATES II, LLC**  
INSTRUMENT NO. 20190100011508  
166,777 S.F. OR 3.8287 AC.  
RPC: 35-011-010  
ZONING: RA4.8

**PARCEL CTL**  
**CRYSTAL TOWERS**

LANDS W/ F  
**LOFTS 590, LLC**  
D.B. 4669 P.C. 817  
139,077 S.F. OR 3.1928 AC.  
RPC: 35-011-009  
ZONING: RA4.8

#590  
MULTIPLE STORY  
BRICK BUILDING  
212 UNITS  
±57,360 S.F.  
"LOFTS 590"  
BLDG HT=59.4'

#1600  
MULTIPLE STORY  
BRICK BUILDING  
912 UNITS  
±123,725 S.F.  
"CRYSTAL TOWERS"

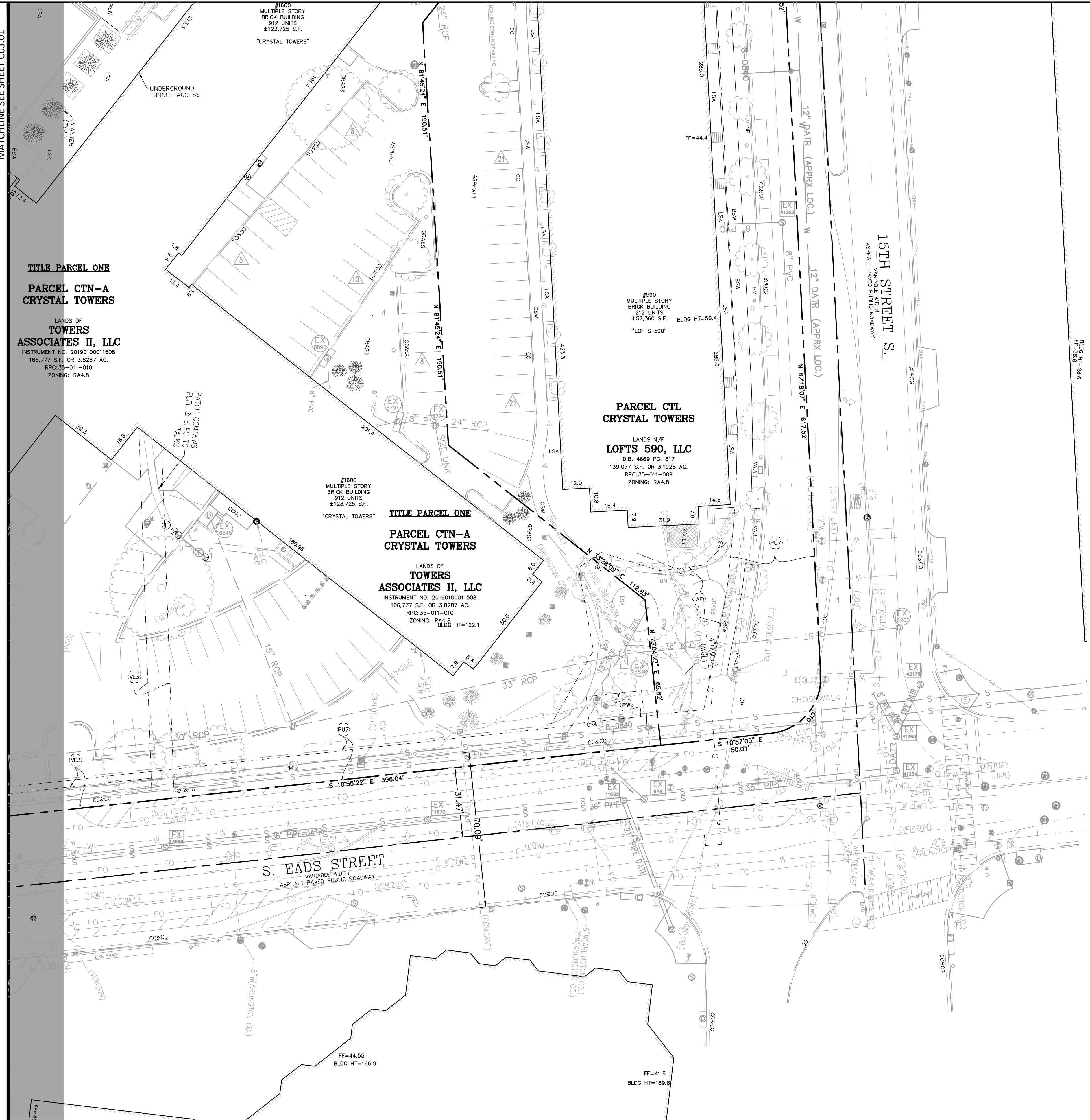
#1600  
MULTIPLE STORY  
BRICK BUILDING  
912 UNITS  
±123,725 S.F.  
"CRYSTAL TOWERS"

#1600  
MULTIPLE STORY  
BRICK BUILDING  
912 UNITS  
±123,725 S.F.  
"CRYSTAL TOWERS"

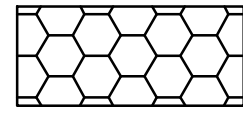
#1600  
MULTIPLE STORY  
BRICK BUILDING  
912 UNITS  
±123,725 S.F.  
"CRYSTAL TOWERS"

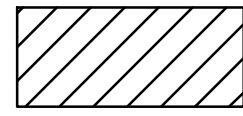
FF=44.55  
BLDG HT=169.8

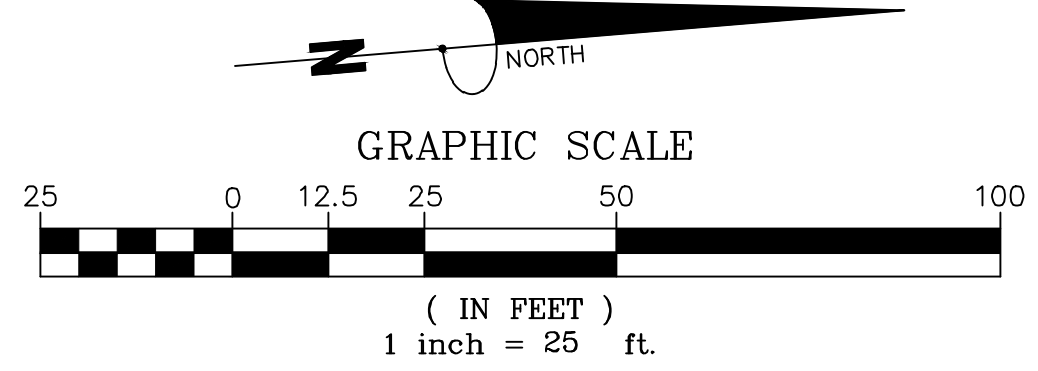
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BLDG HT=169.8



**LEGEND**

 VACATION OF 5' SANITARY SEWER EASEMENT DEED BOOK 1604 PAGE 449 = ±1187 SF OR ±0.027 AC

 VACATION OF 5' SANITARY SEWER EASEMENT DEED BOOK 1159 PAGE 233 = ±1,000 SF OR ±0.023 AC



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**CRYSTAL TOWERS 3**

**4.1 PRELIMINARY SITE PLAN**  
**ARLINGTON COUNTY, VIRGINIA**

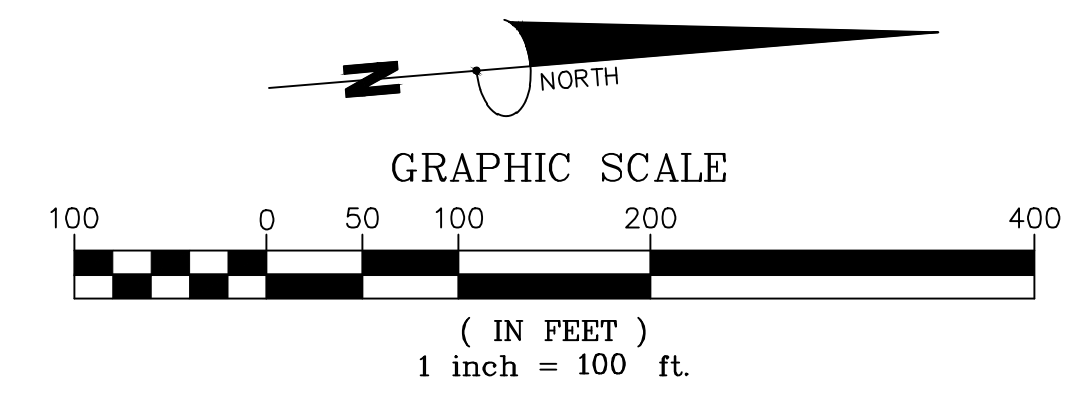
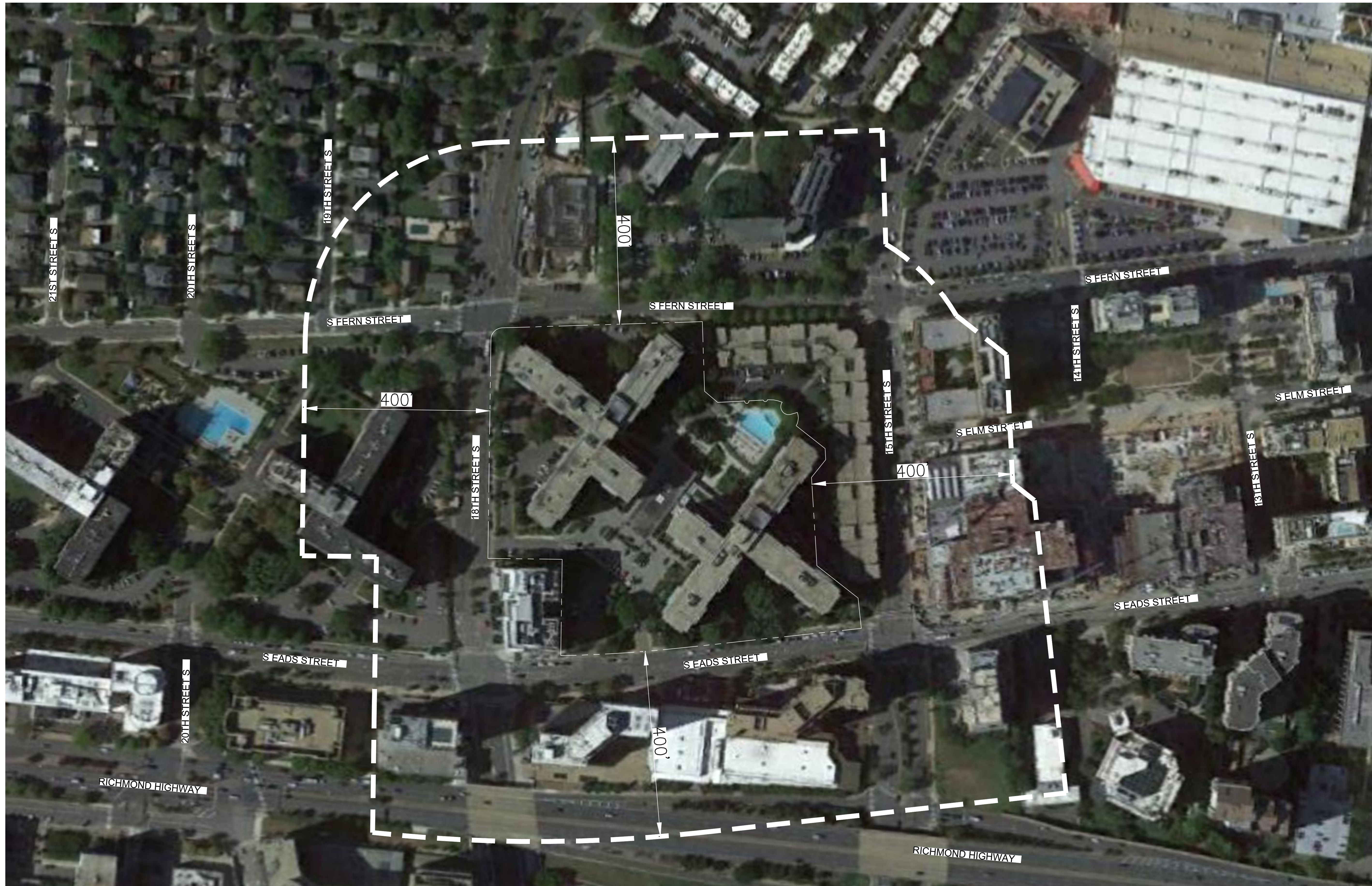


SUBMISSIONS

NO.	DESCRIPTION	DATE
1	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/29/2022
2	4.1 SITE PLAN PRELIMINARY SUBMISSION	03/03/2022
3	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/03/2023
4	4.1 SITE PLAN PRELIMINARY SUBMISSION	05/05/2023

SCALE: 1"=25'  
SHEET TITLE:  
**VACATION EXHIBIT**  
SHEET #:  
**C03.11**





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**CRYSTAL TOWERS 3**

4.1 PRELIMINARY SITE PLAN  
 ARLINGTON COUNTY, VIRGINIA



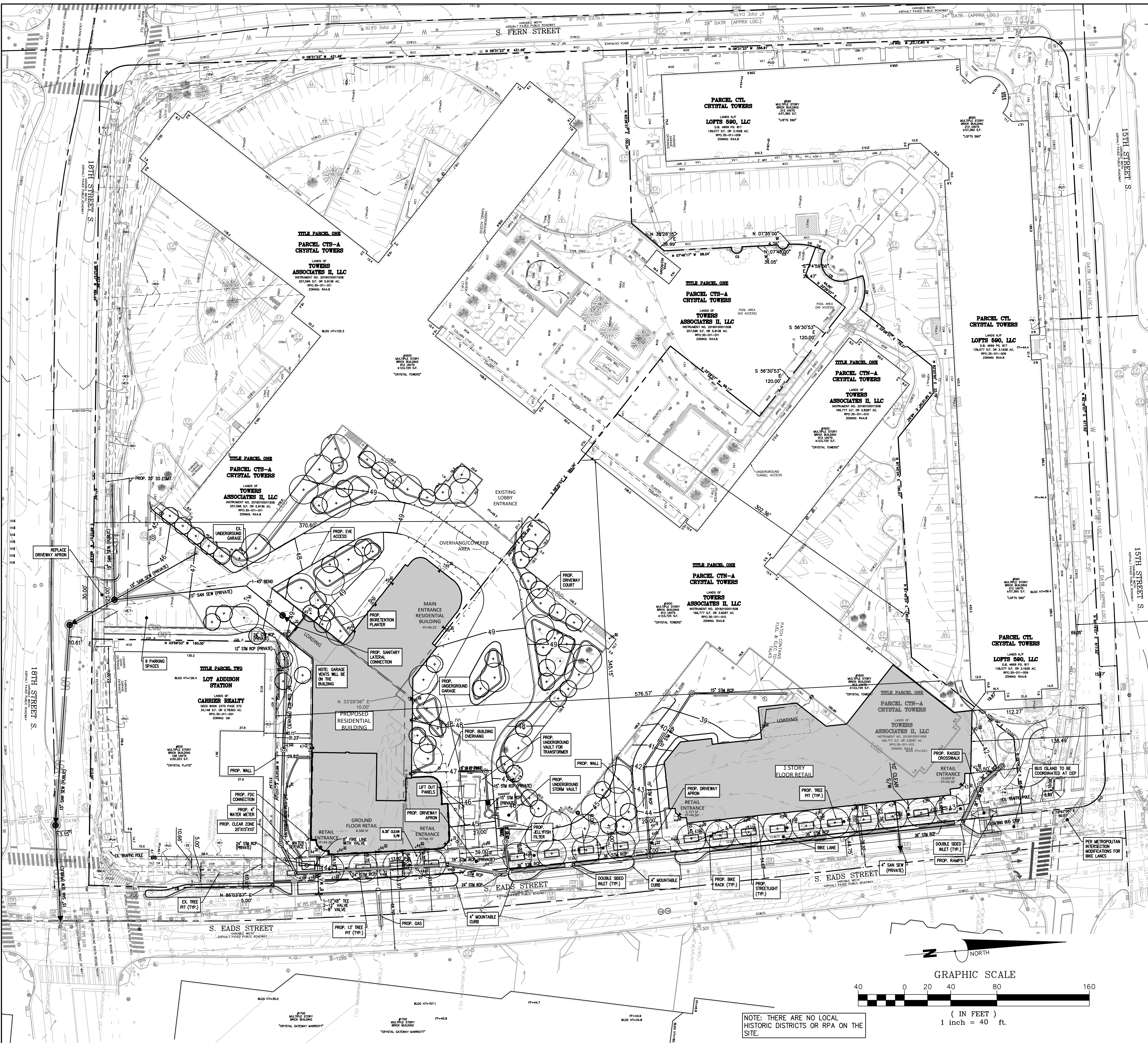
SUBMISSIONS		
NO.	DESCRIPTION	DATE
1	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/29/2022
2	4.1 SITE PLAN PRELIMINARY SUBMISSION	03/03/2022
3	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/03/2023
4	4.1 SITE PLAN PRELIMINARY SUBMISSION	05/05/2023

SCALE: 1"=100'  
 SHEET TITLE:  
 AERIAL PHOTO  
 SHEET #:  
**C04.00**









EXISTING	LEGEND DESCRIPTION	PROPOSED
350	INDEX CONTOUR	350
352	INTERMEDIATE CONTOUR	352
EX. E.P.	EDGE OF PAVEMENT	PROP. E.P.
EX. C & G	CURB AND GUTTER	CG-6
	PROPOSED HEADER CURB	
	PROPERTY LINE	
	DEPARTING PROPERTY LINE	
	LOT LINE	
	RIGHT-OF-WAY	
	CENTERLINE	
	FLOOD PLAIN	
	CLEARING AND GRADING	LOD
	TREE LINE	
	FLOW LINE OF SWALE	
	STREAM	
	OVERLAND RELIEF PATHWAY	
X	FENCE LINE	X
W	EASEMENT	W 8" DIP W/W
W	WATER LINE	W
W	WATER VALVE	W
W	REDUCER	W
W	SANITARY SEWER	8" SAN
W	STORM SEWER	18" RCP
W	CABLE TV	CATV
E	ELECTRIC SERVICE	E
T	TELEPHONE SERVICE	T
G	GAS LINE	G
+ 25.32	SPOT ELEVATION	25.32
	UTILITY POLE	
	SIGN	
EX 8" W/W	SANITARY SEWER IDENTIFIER	A A
EX 18" RCP	STORM DRAIN IDENTIFIER	2
	EASEMENT IDENTIFIER	W
	WATER METER	0
	FIRE HYDRANT	H
	PARKING NUMBER INDICATOR	25
	STREET LIGHT	*
	HANDICAP RAMP (CG-12)	
	CLEAR SIGHT TRIANGLE	
EX 15" OAK	TREE	
	BENCHMARK	BM #1 TRV #1 ELEV=101.62
	ASPHALT TRAIL	
	CONCRETE SIDEWALK	
	SIGN	
OHE	OVERHEAD ELECTRIC	OHE
OHT	OVERHEAD TELEPHONE	OHT
	HANDICAP PARKING SPACE (VAN)	
	RIP RAP	

**SITE TABULATIONS**

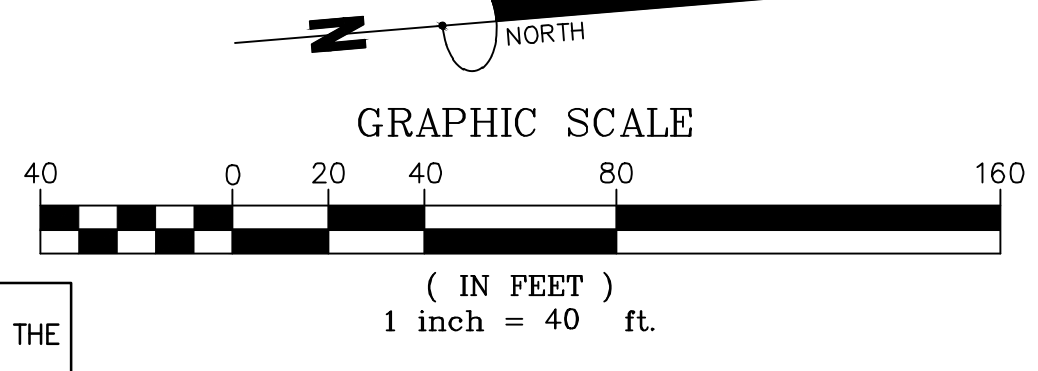
- SITE AREA: 563,450 SF ± (12.9351 AC. ±)
- AVERAGE SITE ELEVATION AT PERIMETER (ENTIRE SITE): 44.34'
- SIDEWALK WIDTHS:
 

SOUTH EADS STREET	16' MIN.
15TH STREET SOUTH	15' MIN.
18TH STREET SOUTH	16' MIN.
- ZONING:
 

CURRENT ZONING:	RA-4.8
PROPOSED ZONING:	RA-4.8
- SITE COVERAGE (EXISTING):
 

EXISTING BUILDING AREA:	181,085 SF
EXISTING VEHICULAR AREA:	149,897 SF
TOTAL EXISTING COVERAGE AREA:	330,982 SF
TOTAL AREA SF	563,450 SF
	= 58.7% COVERAGE (EXISTING)
- SITE COVERAGE (PROPOSED):
 

PROPOSED BUILDING AREA:	233,027 SF
PROPOSED VEHICULAR AREA:	121,599 SF
TOTAL PROPOSED COVERAGE AREA:	354,626 SF
TOTAL AREA SF	563,450 SF
	= 62.9% COVERAGE (PROPOSED)



NOTE: THERE ARE NO LOCAL HISTORIC DISTRICTS OR RPA ON THE SITE.

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## CRYSTAL TOWERS 3

### 4.1 PRELIMINARY SITE PLAN

### ARLINGTON COUNTY, VIRGINIA

SUBMISSIONS		
NO.	DESCRIPTION	DATE
1	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/29/2022
2	4.1 SITE PLAN PRELIMINARY SUBMISSION	03/03/2022
3	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/03/2022
4	4.1 SITE PLAN PRELIMINARY SUBMISSION	05/05/2023

SCALE: 1"=40'

SHEET TITLE:  
OVERALL PLOT AND LOCATION PLAN

SHEET #:  
**C06.00**

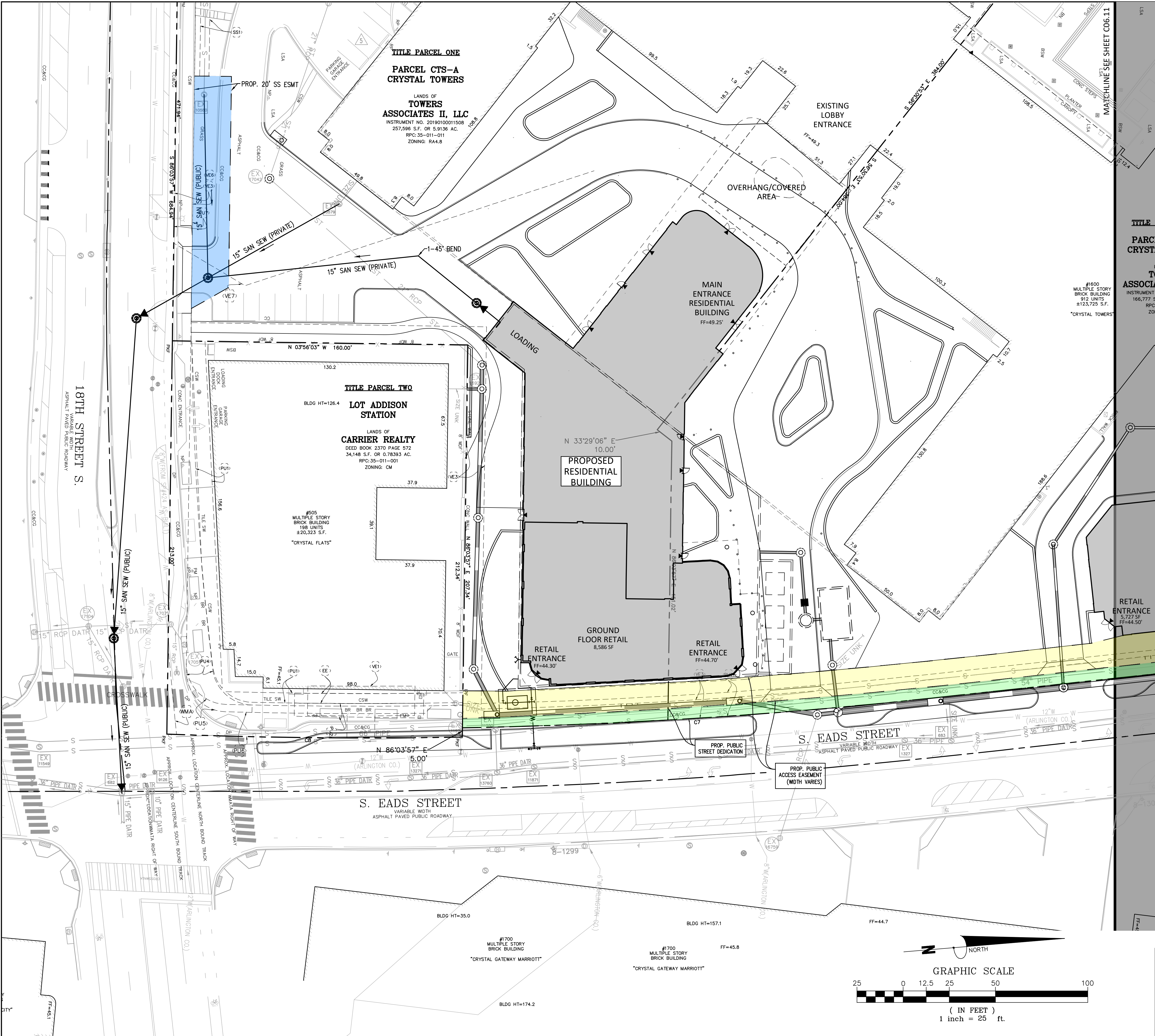












**LEGEND**

- PUBLIC ACCESS EASEMENT TO BE GRANTED = ±9308 SF OR ±0.214 AC
- PUBLIC STREET TO BE DEDICATED = ±4117 SF OR ±0.095 AC
- 20' SANITARY SEWER EASEMENT TO BE GRANTED = ±2403 SF OR ±0.055 AC

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## CRYSTAL TOWERS 3

4.1 PRELIMINARY SITE PLAN  
 ARLINGTON COUNTY, VIRGINIA



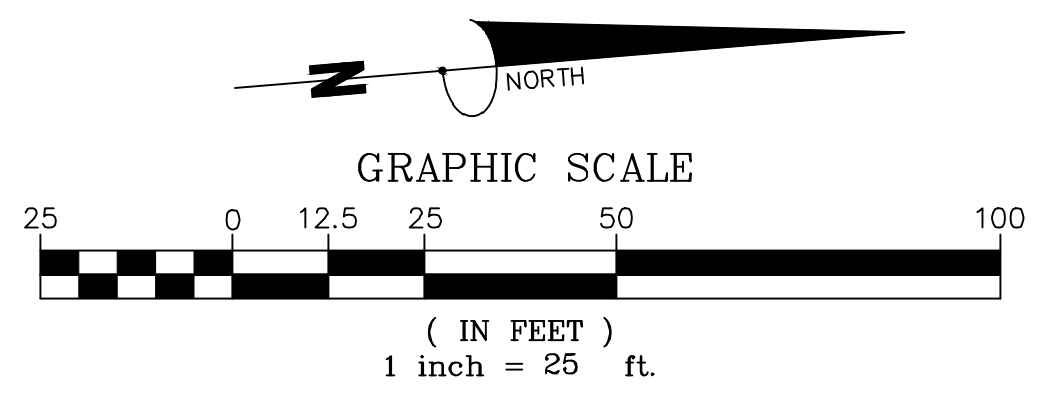
SUBMISSIONS

NO.	DESCRIPTION	DATE
1	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/29/2022
2	4.1 SITE PLAN PRELIMINARY SUBMISSION	05/03/2022
3	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/03/2023
4	4.1 SITE PLAN PRELIMINARY SUBMISSION	05/05/2023

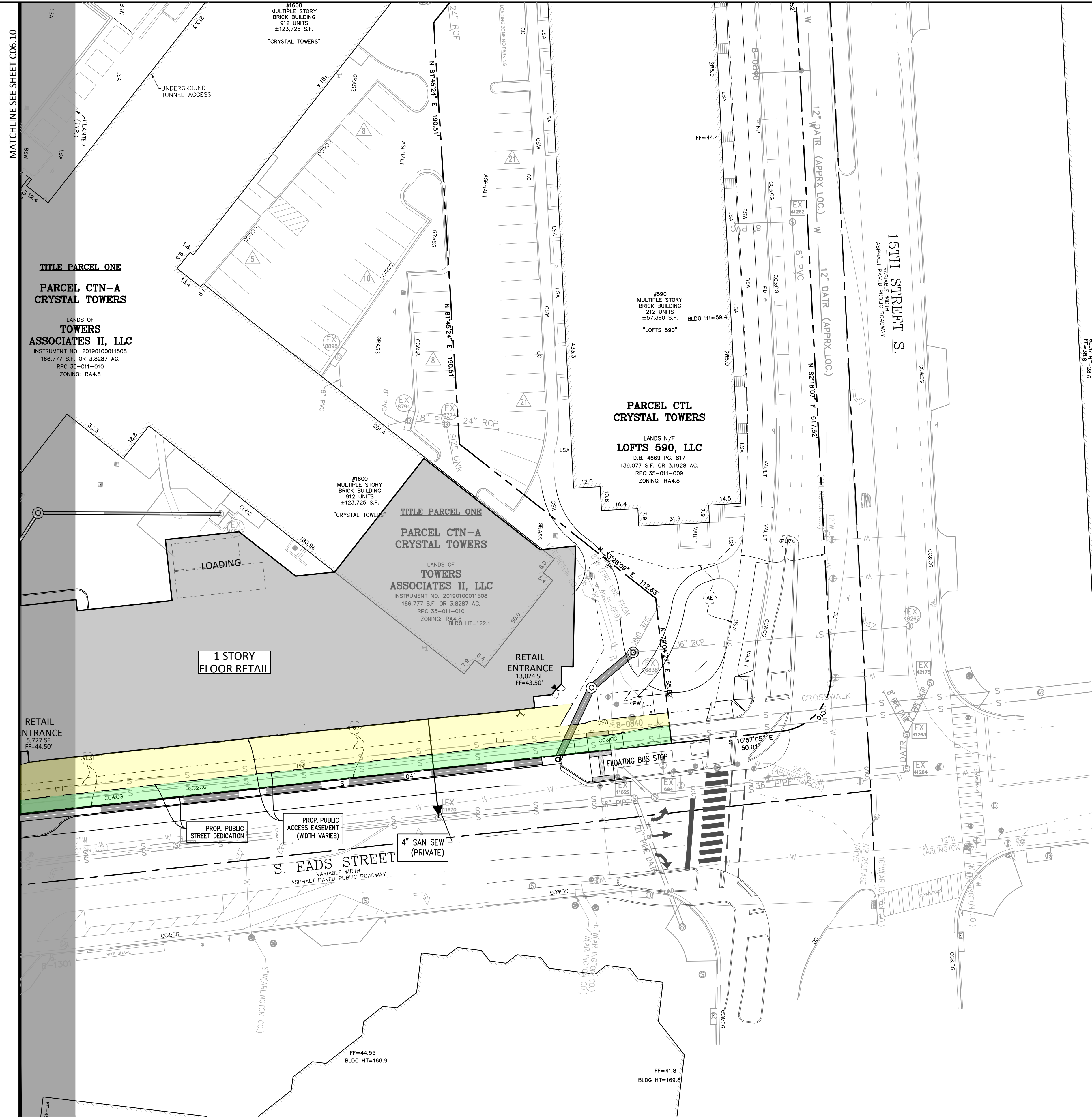
SCALE: 1"=25'

SHEET TITLE:  
 PROPOSED EASEMENT AND DEDICATION PLAN

SHEET #:  
**C06.10**

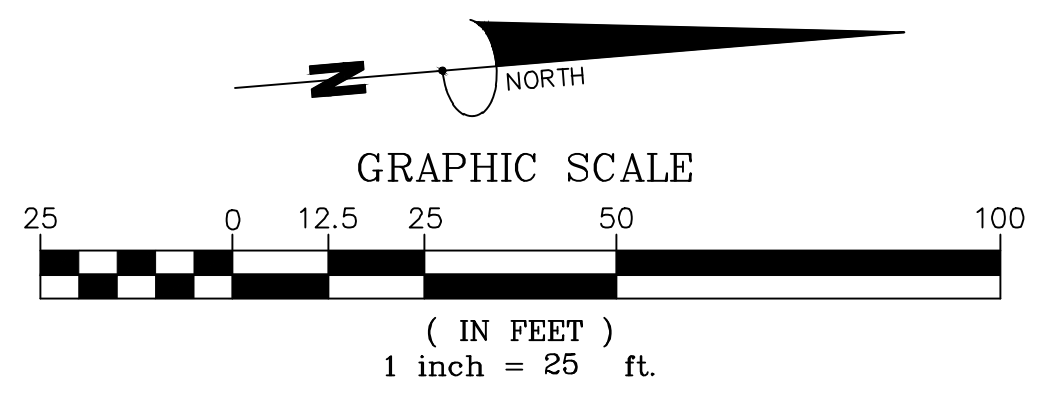






**LEGEND**

- PUBLIC ACCESS EASEMENT TO BE GRANTED = ±9308 SF OR ±0.214 AC
- PUBLIC STREET TO BE DEDICATED = ±4117 SF OR ±0.095 AC
- 20' SANITARY SEWER EASEMENT TO BE GRANTED = ±2403 SF OR ±0.055 AC



MATCHLINE SEE SHEET C06.10

**TITLE PARCEL ONE**  
**PARCEL CTN-A**  
**CRYSTAL TOWERS**

LANDS OF  
**TOWERS**  
**ASSOCIATES II, LLC**  
 INSTRUMENT NO. 20190100011508  
 166,777 S.F. OR 3.8287 AC.  
 RPC:35-011-010  
 ZONING: RA4.8

**PARCEL CTL**  
**CRYSTAL TOWERS**

LANDS W/ F  
**LOFTS 590, LLC**  
 D.B. 4669 P.C. 817  
 139,077 S.F. OR 3.1928 AC.  
 RPC:35-011-009  
 ZONING: RA4.8

**TITLE PARCEL ONE**  
**PARCEL CTN-A**  
**CRYSTAL TOWERS**

LANDS OF  
**TOWERS**  
**ASSOCIATES II, LLC**  
 INSTRUMENT NO. 20190100011508  
 166,777 S.F. OR 3.8287 AC.  
 RPC:35-011-010  
 ZONING: RA4.8

**RETAIL ENTRANCE**  
 5,727 S.F.  
 FF=44.50'

**1 STORY FLOOR RETAIL**

**RETAIL ENTRANCE**  
 13,024 S.F.  
 FF=43.50'

PROP. PUBLIC ACCESS EASEMENT (WIDTH VARIES)

PROP. PUBLIC STREET DEDICATION

4" SAN SEW (PRIVATE)

**S. EADS STREET**  
 VARIABLE WIDTH  
 ASPHALT PAVED PUBLIC ROADWAY

**Bowman**

CHECKED: STL  
 DRAWN: CA  
 DATE: 08/03/2023

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**CRYSTAL TOWERS 3**

**4.1 PRELIMINARY SITE PLAN**  
**ARLINGTON COUNTY, VIRGINIA**



SUBMISSIONS

NO.	DESCRIPTION	DATE
1	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/29/2022
2	4.1 SITE PLAN PRELIMINARY SUBMISSION	03/03/2022
3	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/03/2023
4	4.1 SITE PLAN PRELIMINARY SUBMISSION	05/05/2023

SCALE: 1"=25'

SHEET TITLE:  
**PROPOSED EASEMENT AND DEDICATION PLAN**

SHEET #:  
**C06.11**





EXISTING	DESCRIPTION	PROPOSED
350	INDEX CONTOUR	350
352	INTERMEDIATE CONTOUR	352
EX. E.P.	EDGE OF PAVEMENT	PROP. E.P.
EX. C & G	CURB AND GUTTER	CG-6
	PROPOSED HEADER CURB	
	PROPERTY LINE	
	DEPARTING PROPERTY LINE	
	LOT LINE	
	RIGHT-OF-WAY	
	CENTERLINE	
	FLOOD PLAIN	
	CLEARING AND GRADING	LOD
	TREE LINE	
	FLOW LINE OF SWALE	
	STREAM	
	OVERLAND RELIEF PATHWAY	
	FENCE LINE	X
	EASEMENT	W 8" DIP W/W
	WATER LINE	W 8" W/V
	WATER VALVE	W W
	REDUCER	W W
	SANITARY SEWER	8" SAN
	STORM SEWER	18" RCP
	CABLE TV	CATV
	ELECTRIC SERVICE	E
	TELEPHONE SERVICE	T
	GAS LINE	G
	SPOT ELEVATION	25.32
	UTILITY POLE	
	SIGN	
	SANITARY SEWER IDENTIFIER	A A
	STORM DRAIN IDENTIFIER	2 +
	EASEMENT IDENTIFIER	W
	WATER METER	0
	FIRE HYDRANT	H
	PARKING NUMBER INDICATOR	25
	STREET LIGHT	*
	HANDICAP RAMP (CG-12)	
	CLEAR SIGHT TRIANGLE	
	TREE	15" OAK
	BENCHMARK	BM #1 IRV #1 ELEV=101.62
	ASPHALT TRAIL	
	CONCRETE SIDEWALK	
	SIGN	
	OHE OVERHEAD ELECTRIC	OHE
	OHT OVERHEAD TELEPHONE	OHT
	HANDICAP PARKING SPACE (VAN)	
	RIP RAP	

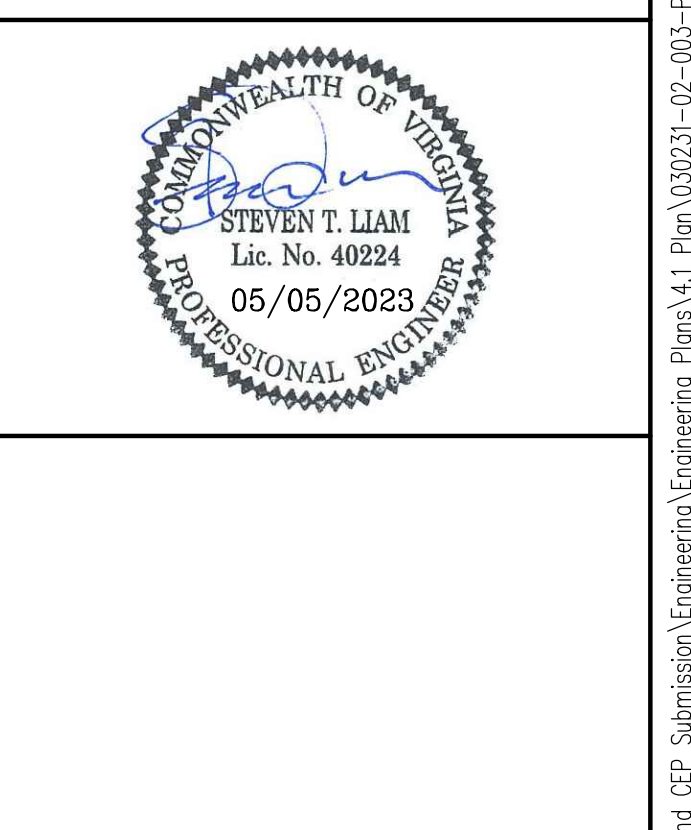
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 Drawn: CA  
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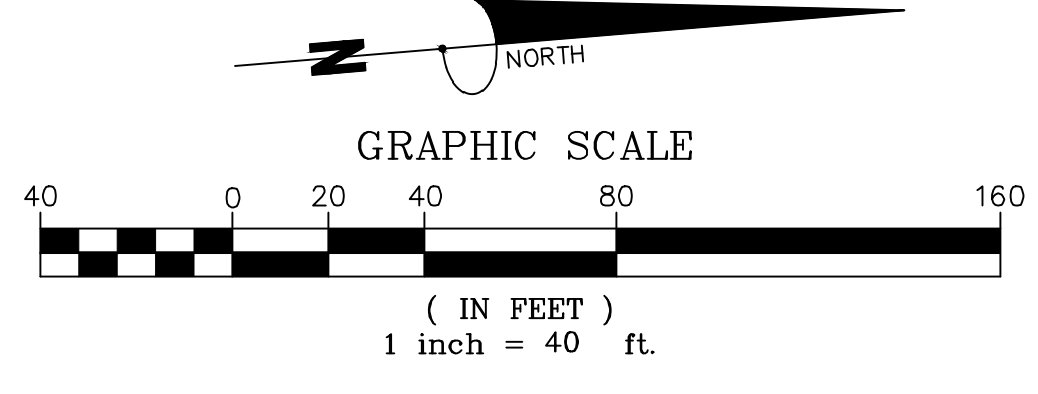
**CRYSTAL TOWERS 3**

4.1 PRELIMINARY SITE PLAN  
 ARLINGTON COUNTY, VIRGINIA



SUBMISSIONS		
NO.	DESCRIPTION	DATE
1	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/29/2023
2	4.1 SITE PLAN PRELIMINARY SUBMISSION	05/03/2023
3	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/03/2023
4	4.1 SITE PLAN PRELIMINARY SUBMISSION	05/05/2023

SCALE: 1"=40'  
 SHEET TITLE:  
**OVERALL PRESENTATION PLAN**  
 SHEET #:  
**C07.00**



P:\030231 - Crystal Promenade\030231-02-004 (ENG) - Crystal Towers 4.1 and CEP-Submission\Engineering\Plans\4.1 Plan\030231-02-004-003-PRESENTATION PLAN.dwg



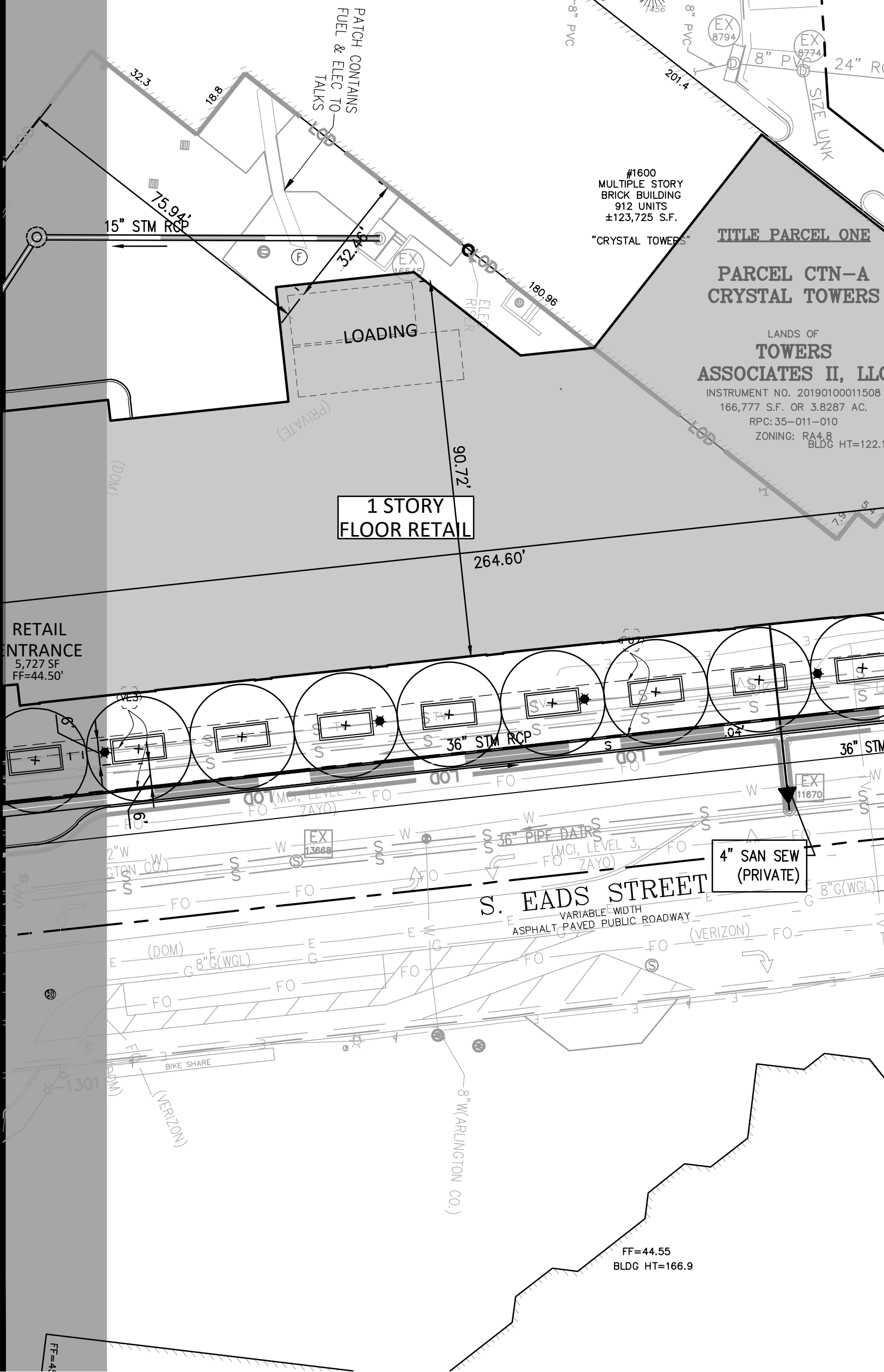




MATCHLINE SEE SHEET C06.01

**TITLE PARCEL ONE**  
**PARCEL CTN-A**  
**CRYSTAL TOWERS**

LANDS OF  
**TOWERS**  
**ASSOCIATES II, LLC**  
INSTRUMENT NO. 20190100011508  
166,777 S.F. OR 3.8287 AC.  
RPC: 35-011-010  
ZONING: RA4.8



**PARCEL CTL**  
**CRYSTAL TOWERS**

LANDS W/ F  
**LOFTS 590, LLC**  
D.B. 4669 PC. 817  
139,077 S.F. OR 3.1928 AC.  
RPC: 35-011-009  
ZONING: RA4.8

#1600  
MULTIPLE STORY  
BRICK BUILDING  
912 UNITS  
±123,725 S.F.  
"CRYSTAL TOWERS"

#1600  
MULTIPLE STORY  
BRICK BUILDING  
912 UNITS  
±123,725 S.F.  
"CRYSTAL TOWERS"

**TITLE PARCEL ONE**  
**PARCEL CTN-A**  
**CRYSTAL TOWERS**

LANDS OF  
**TOWERS**  
**ASSOCIATES II, LLC**  
INSTRUMENT NO. 20190100011508  
166,777 S.F. OR 3.8287 AC.  
RPC: 35-011-010  
ZONING: RA4.8

#590  
MULTIPLE STORY  
BRICK BUILDING  
212 UNITS  
±57,360 S.F.  
"LOFTS 590"

BLDG HT=59.4'

BLDG HT=122.1'

BLDG HT=169.8'

BLDG HT=28.6'

BLDG HT=28.6'

BLDG HT=28.6'

BLDG HT=28.6'

BLDG HT=28.6'

BLDG HT=28.6'

BLDG HT=28.6'

BLDG HT=28.6'

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BLDG HT=28.6'

BLDG HT=28.6'

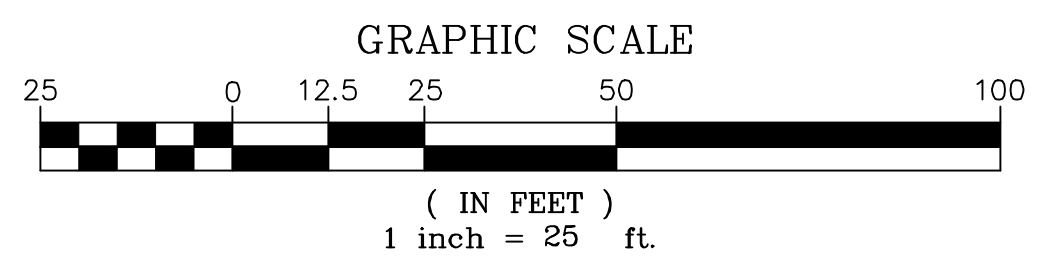
BLDG HT=28.6'

BLDG HT=28.6'

BLDG HT=28.6'

BLDG HT=28.6'

BLDG HT=28.6'



# Bowman

CHECKED: STL  
DRAWN: CA  
DATE: 08/03/2022  
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13461 Sunrise Valley Drive, Suite 500  
Herndon, Virginia 20171  
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Fax: (703) 461-9720  
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## CRYSTAL TOWERS 3

4.1 PRELIMINARY SITE PLAN  
ARLINGTON COUNTY, VIRGINIA



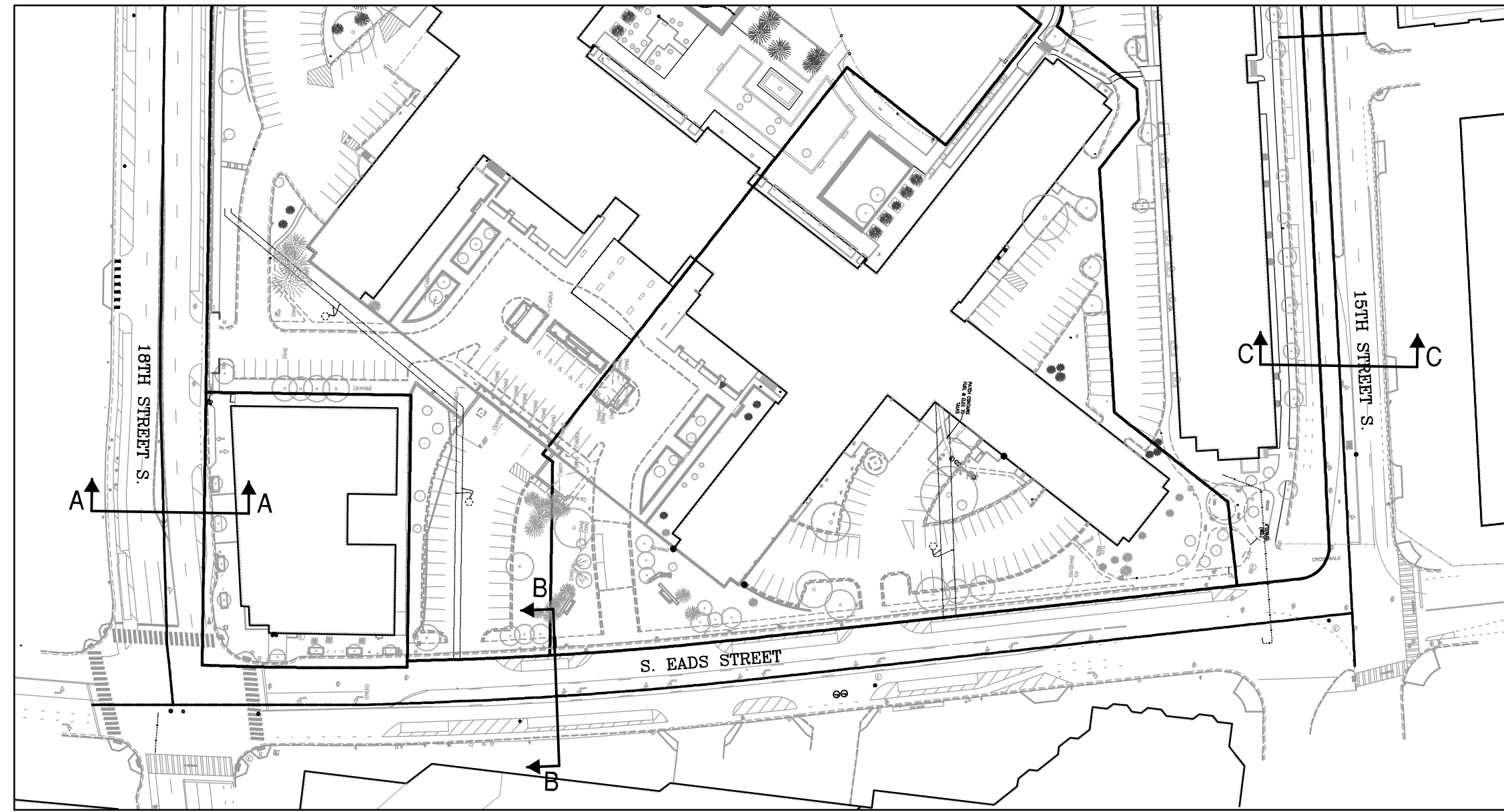
SUBMISSIONS		
NO.	DESCRIPTION	DATE
1	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/29/2022
2	4.1 SITE PLAN PRELIMINARY SUBMISSION	03/03/2022
3	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/03/2023
4	4.1 SITE PLAN PRELIMINARY SUBMISSION	05/05/2023

SCALE: 1"=25'

SHEET TITLE:  
**PRESENTATION PLAN**

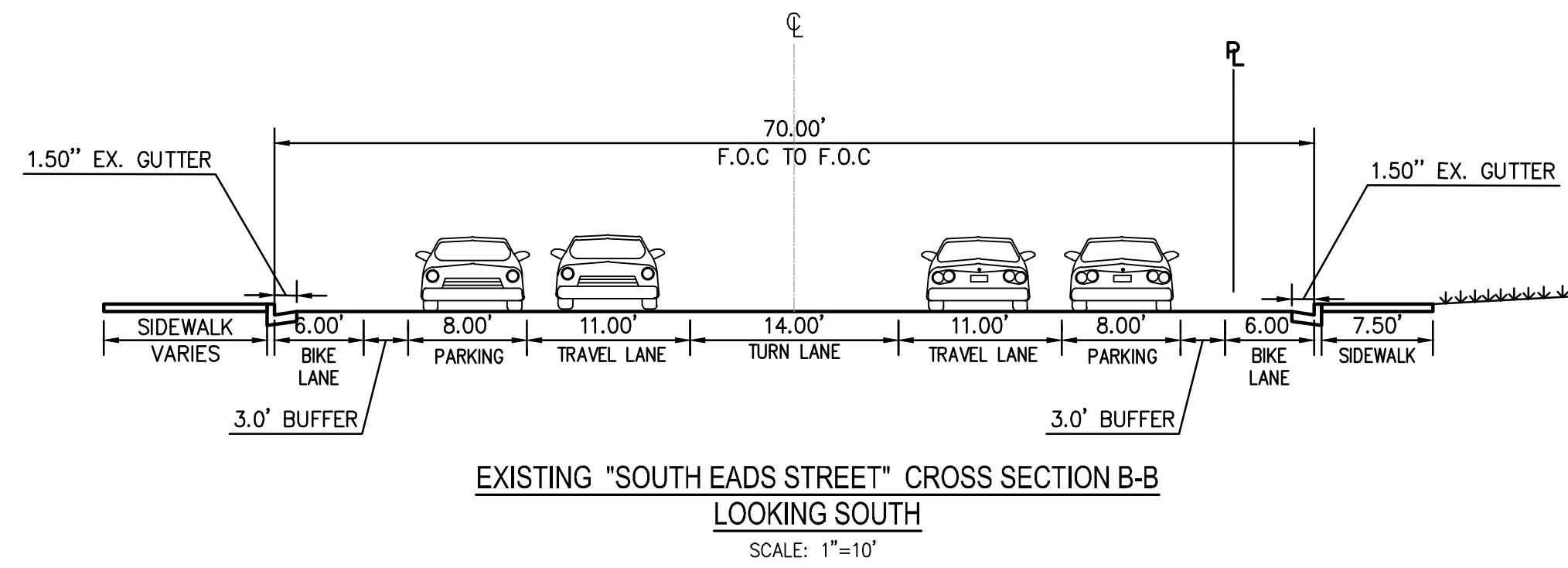
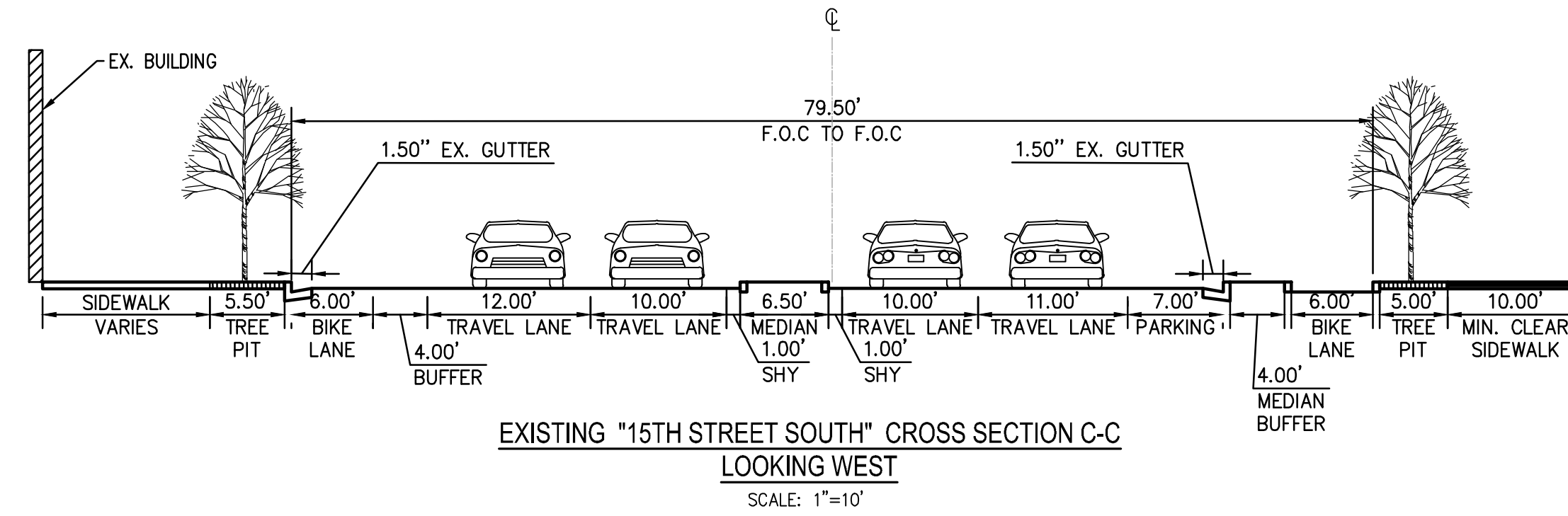
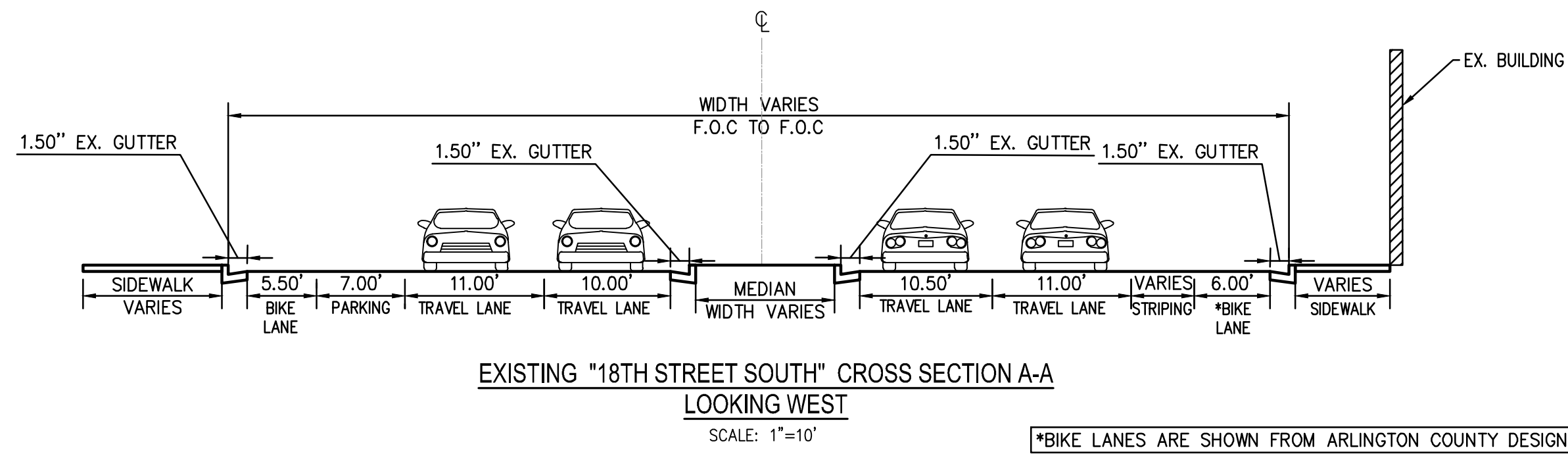
SHEET #:  
**C07.02**





**KEY PLAN**

SCALE: 1"=100'



**Bowman**

CHECKED: STL

DRAWN: CA

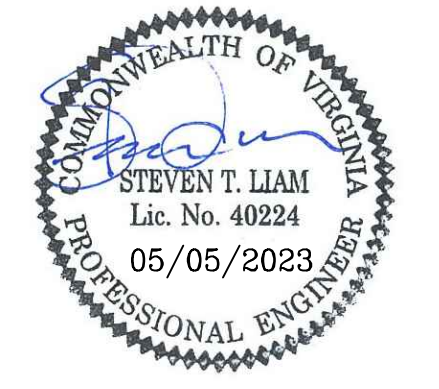
DATE: 08/03/2022

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**CRYSTAL TOWERS 3**

4.1 PRELIMINARY SITE PLAN  
ARLINGTON COUNTY, VIRGINIA



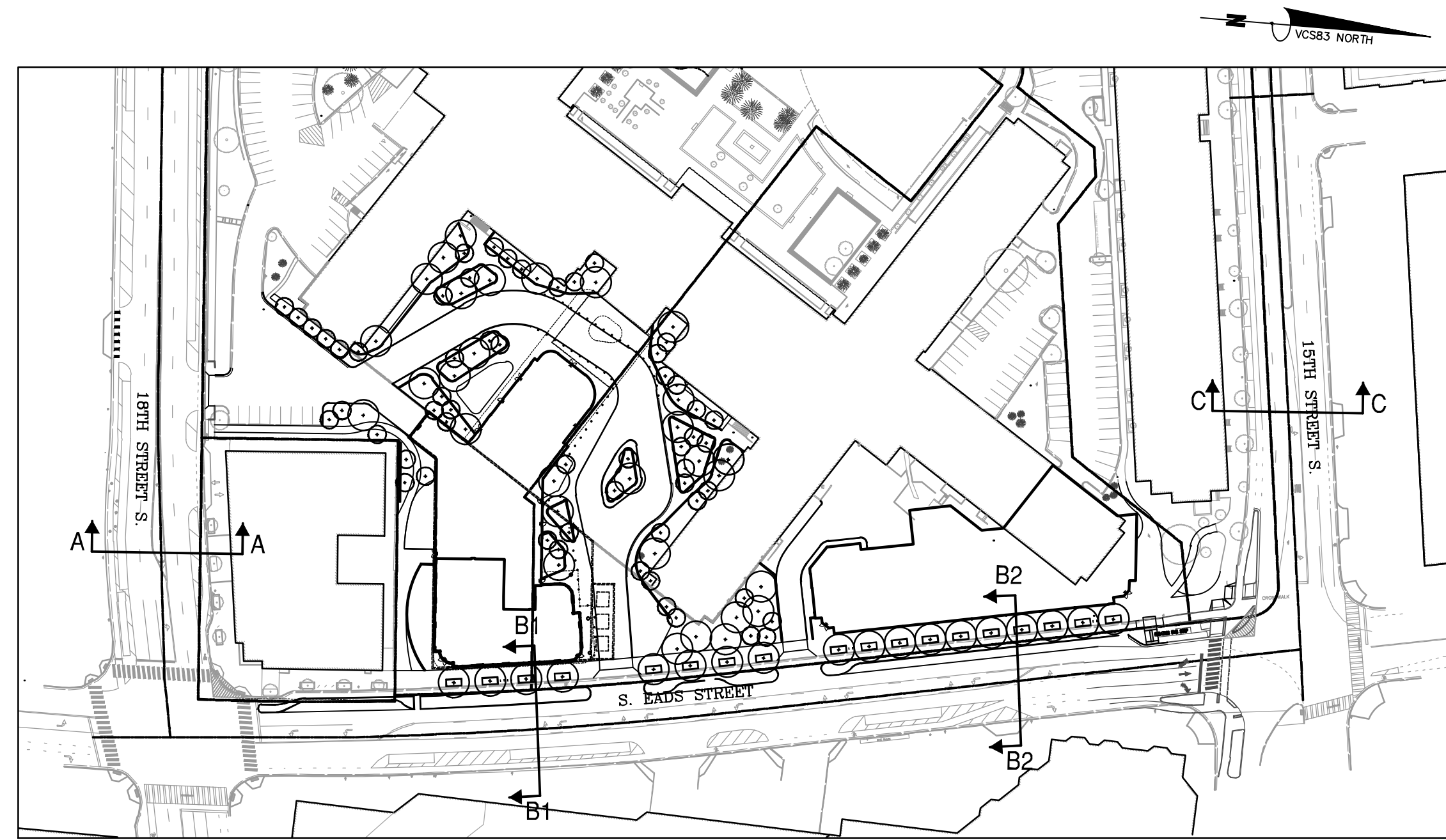
SUBMISSIONS		
NO.	DESCRIPTION	DATE
1	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/29/2022
2	4.1 SITE PLAN PRELIMINARY SUBMISSION	03/03/2022
3	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/03/2023
4	4.1 SITE PLAN PRELIMINARY SUBMISSION	05/05/2023

SCALE: AS SHOWN

SHEET TITLE:  
EXISTING STREET SECTIONS

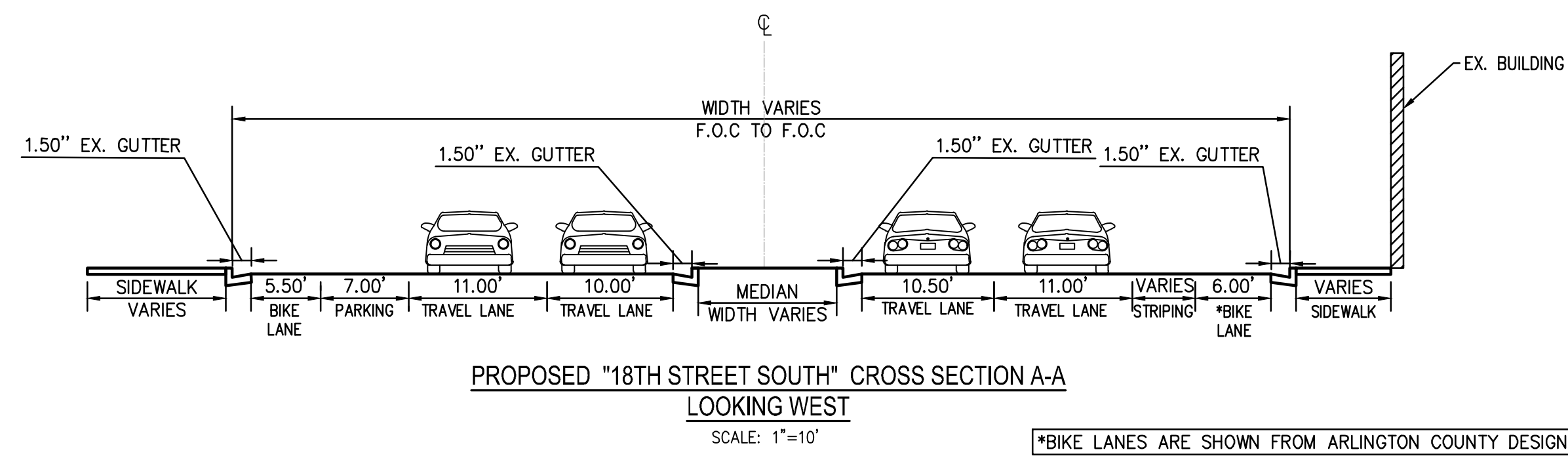
SHEET #:  
C08.00





**KEY PLAN**

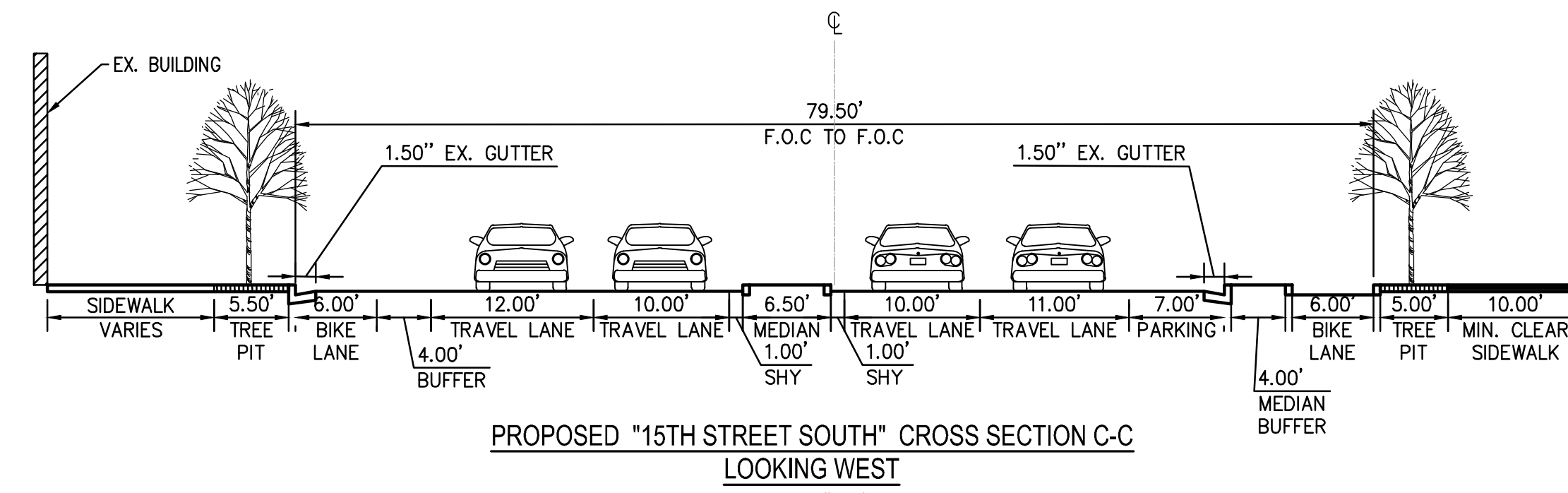
SCALE: 1"=100'



PROPOSED "18TH STREET SOUTH" CROSS SECTION A-A  
LOOKING WEST

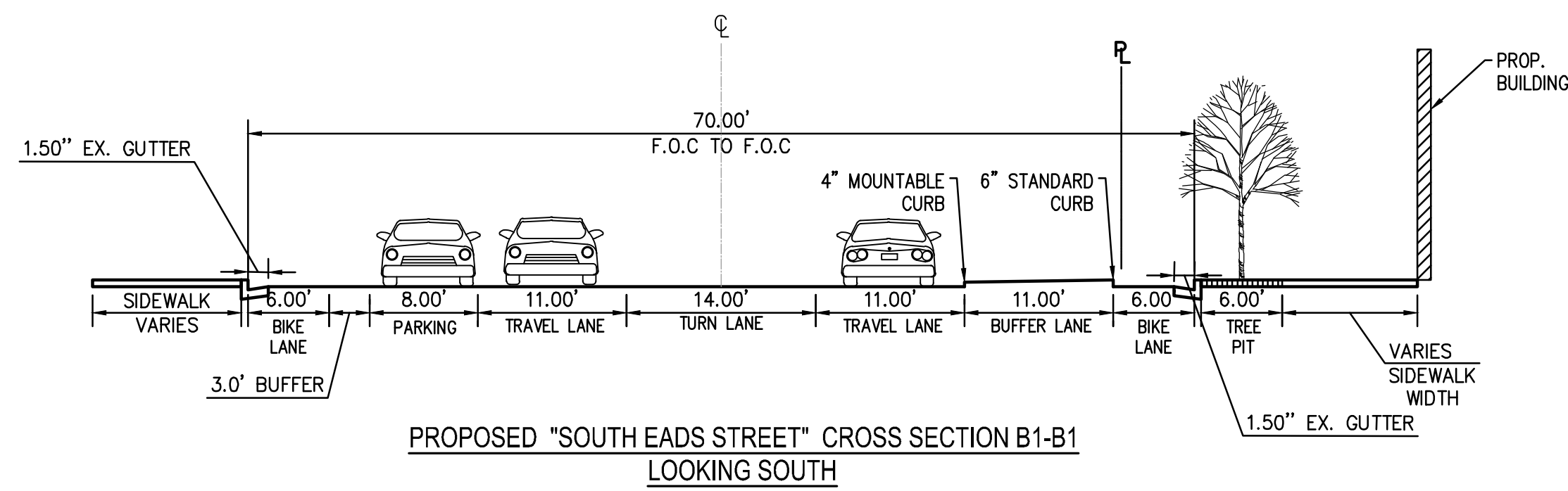
SCALE: 1"=10'

\*BIKE LANES ARE SHOWN FROM ARLINGTON COUNTY DESIGN



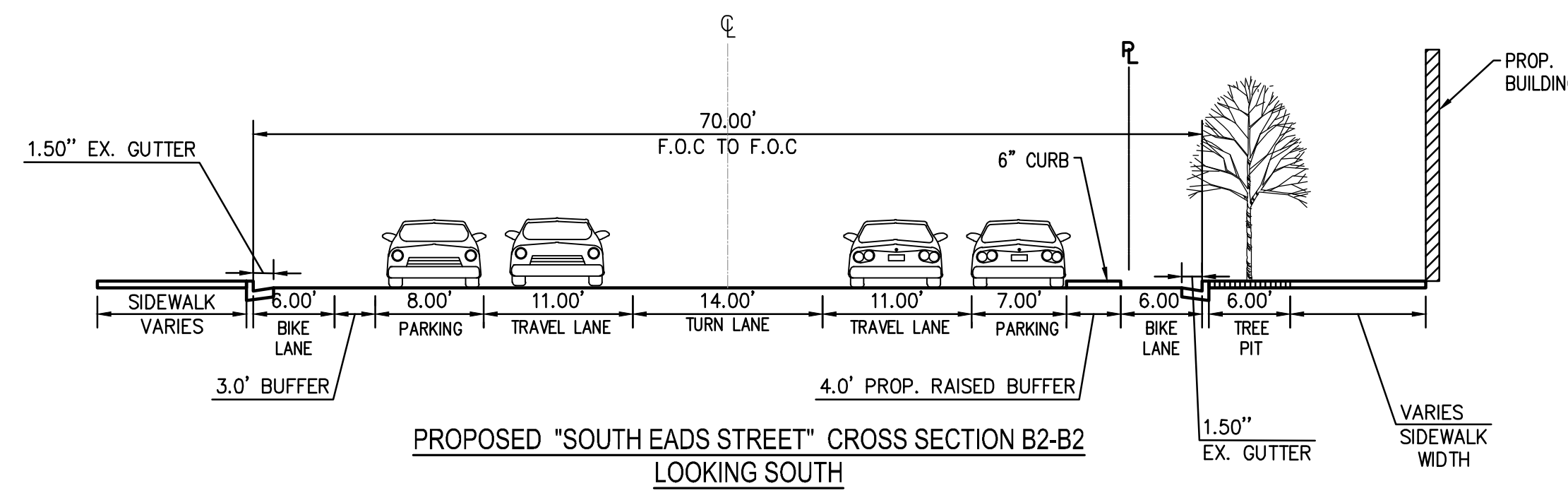
PROPOSED "15TH STREET SOUTH" CROSS SECTION C-C  
LOOKING WEST

SCALE: 1"=10'



PROPOSED "SOUTH EADS STREET" CROSS SECTION B1-B1  
LOOKING SOUTH

SCALE: 1"=10'

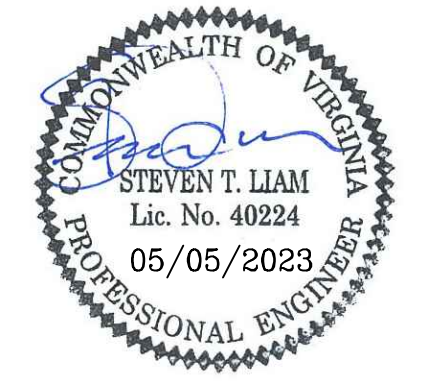


PROPOSED "SOUTH EADS STREET" CROSS SECTION B2-B2  
LOOKING SOUTH

SCALE: 1"=10'

**CRYSTAL TOWERS 3**

4.1 PRELIMINARY SITE PLAN  
ARLINGTON COUNTY, VIRGINIA



SUBMISSIONS		
NO.	DESCRIPTION	DATE
1	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/29/2022
2	4.1 SITE PLAN PRELIMINARY SUBMISSION	03/03/2022
3	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/03/2023
4	4.1 SITE PLAN PRELIMINARY SUBMISSION	05/05/2023

SCALE: AS SHOWN

SHEET TITLE:  
PROPOSED STREET SECTIONS

SHEET #:  
**C08.01**



## CRYSTAL TOWERS 3

4.1 PRELIMINARY SITE PLAN  
 ARLINGTON COUNTY, VIRGINIA

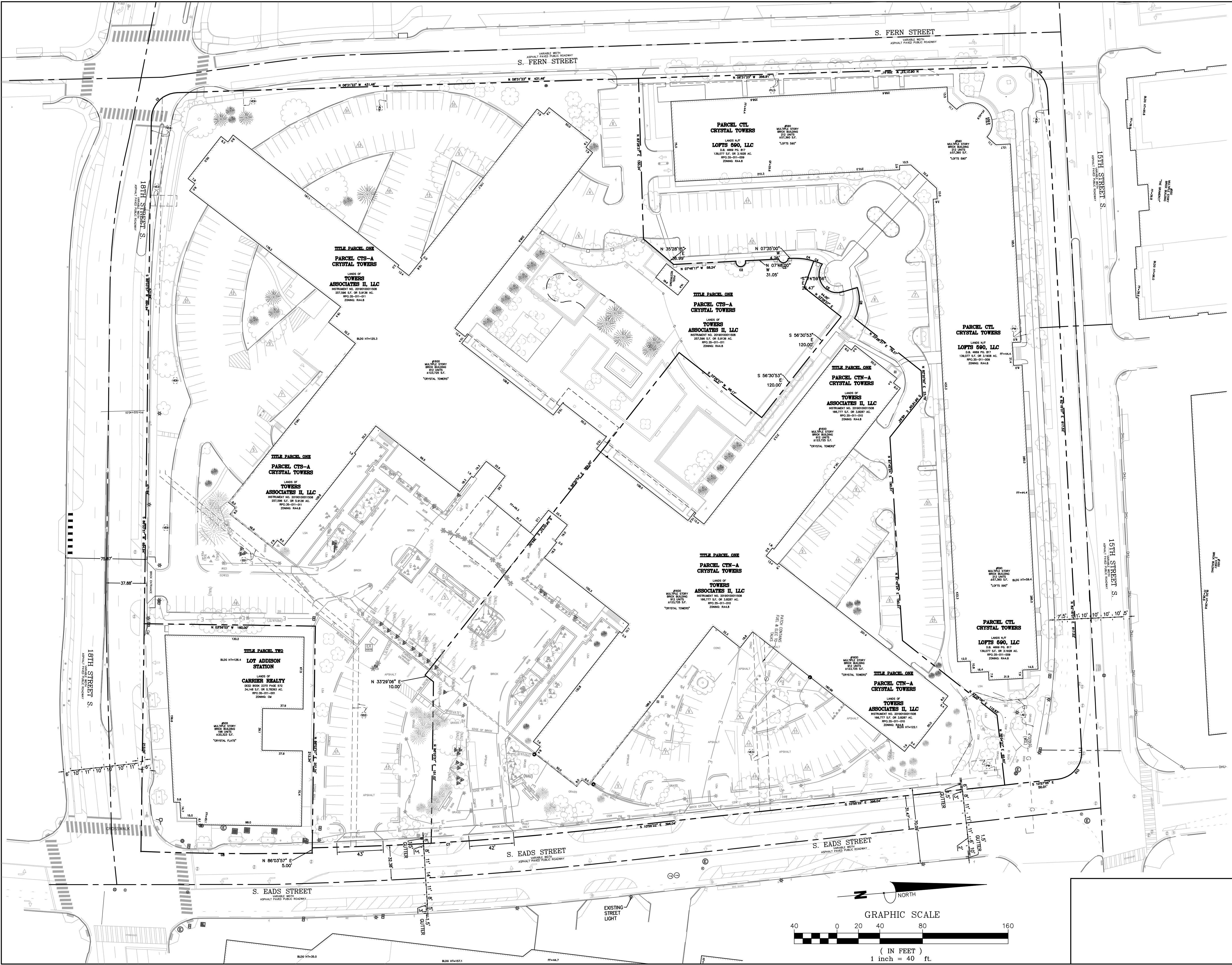


SUBMISSIONS		
NO.	DESCRIPTION	DATE
1	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/29/2022
2	4.1 SITE PLAN PRELIMINARY SUBMISSION	03/03/2022
3	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/03/2023
4	4.1 SITE PLAN PRELIMINARY SUBMISSION	05/05/2023

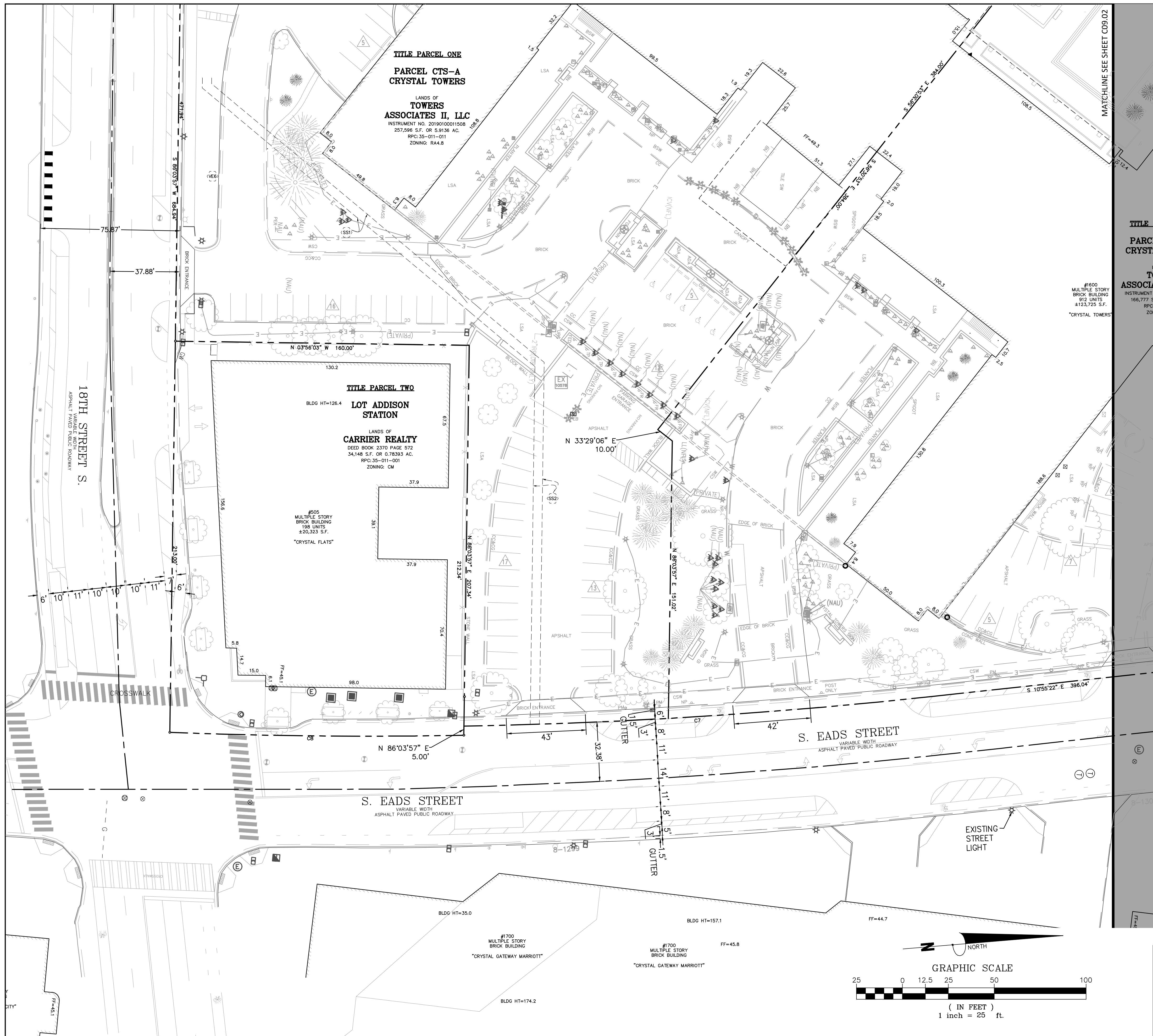
SCALE: 1"=40'

SHEET TITLE:  
 OVERALL EXISTING STRIPING  
 AND MARKING PLAN

SHEET #:  
**C09.00**







TITLE P  
PARCE  
CRYSTA  
LAN  
TO  
ASSOCIAT

#1600  
MULTIPLE STORY  
BRICK BUILDING  
912 UNITS  
±123,726 S.F.  
RPC: S  
ZONING

MATCHLINE SEE SHEET C09.02

# Bowman

DRAWN: CA  
DATE: 08/03/2023  
Bowman Consulting Group, Ltd.  
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Herndon, Virginia 20171  
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## CRYSTAL TOWERS 3

4.1 PRELIMINARY SITE PLAN  
ARLINGTON COUNTY, VIRGINIA



SUBMISSIONS		
NO.	DESCRIPTION	DATE
1	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/29/2022
2	4.1 SITE PLAN PRELIMINARY SUBMISSION	03/03/2022
3	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/03/2022
4	4.1 SITE PLAN PRELIMINARY SUBMISSION	05/05/2023

SCALE: 1"=25'  
SHEET TITLE:  
EXISTING STRIPING AND  
MARKING PLAN

SHEET #:  
**C09.01**



MATCHLINE SEE SHEET C09.01

**TITLE PARCEL ONE**  
**PARCEL CTN-A**  
**CRYSTAL TOWERS**

LANDS OF  
**TOWERS**  
**ASSOCIATES II, LLC**  
 INSTRUMENT NO. 20190100011508  
 166,777 S.F. OR 3.8287 AC.  
 RPC: 35-011-010  
 ZONING: RA4.8

#1600  
 MULTIPLE STORY  
 BRICK BUILDING  
 912 UNITS  
 ±123,725 S.F.  
 "CRYSTAL TOWERS"

#1600  
 MULTIPLE STORY  
 BRICK BUILDING  
 912 UNITS  
 ±123,725 S.F.  
 "CRYSTAL TOWERS"

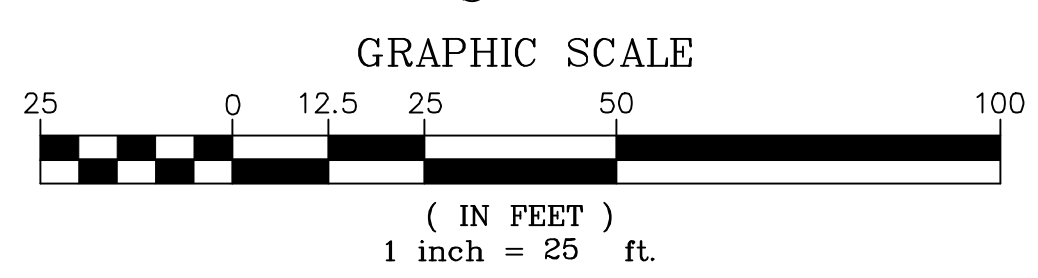
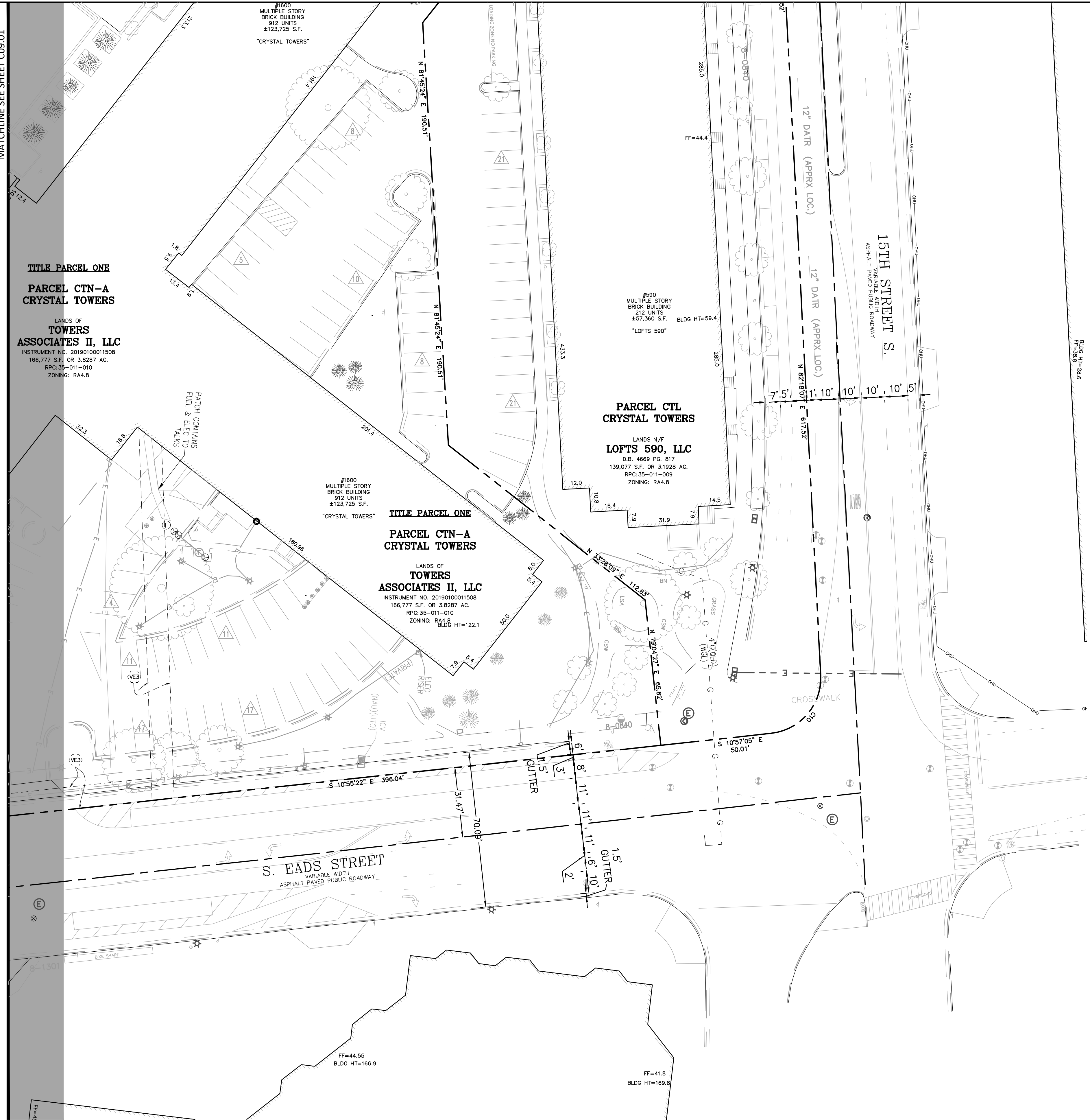
**TITLE PARCEL ONE**  
**PARCEL CTN-A**  
**CRYSTAL TOWERS**

LANDS OF  
**TOWERS**  
**ASSOCIATES II, LLC**  
 INSTRUMENT NO. 20190100011508  
 166,777 S.F. OR 3.8287 AC.  
 RPC: 35-011-010  
 ZONING: RA4.8

**PARCEL CTL**  
**CRYSTAL TOWERS**

LANDS N/W  
**LOFTS 590, LLC**  
 D.B. 4669 PC. 817  
 139,077 S.F. OR 3.1928 AC.  
 RPC: 35-011-009  
 ZONING: RA4.8

#590  
 MULTIPLE STORY  
 BRICK BUILDING  
 212 UNITS  
 ±57,360 S.F.  
 "LOFTS 590"



# Bowman

CHECKED: STL  
 DRAWN: CA  
 DATE: 08/03/2023  
 Bowman Consulting Group, Ltd.  
 13461 Sunrise Valley Drive, Suite 500  
 Herndon, Virginia 20171  
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 Phone: (703) 464-1000  
 Fax: (703) 461-9720  
 www.bowman.com

## CRYSTAL TOWERS 3

4.1 PRELIMINARY SITE PLAN  
 ARLINGTON COUNTY, VIRGINIA

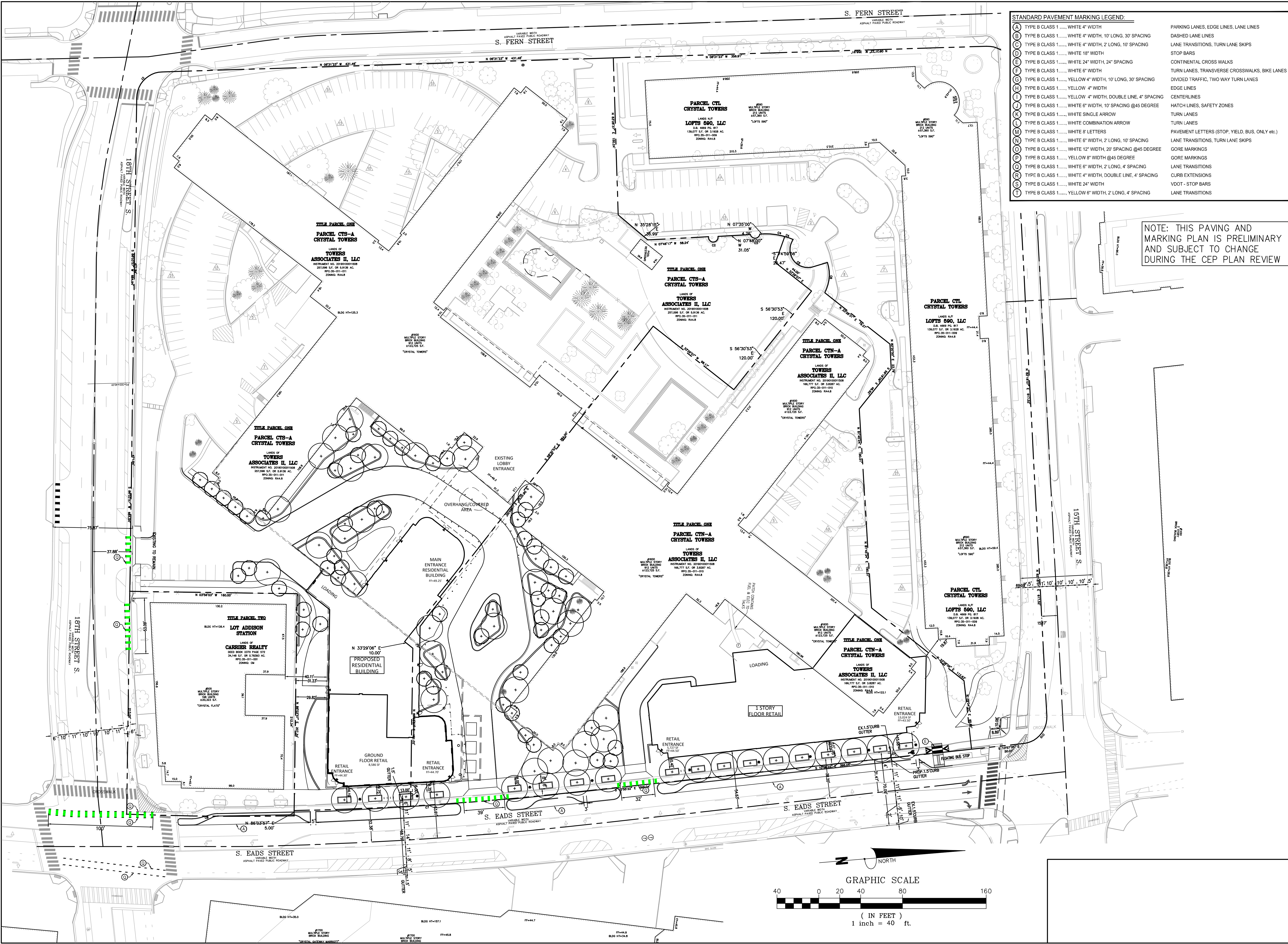


SUBMISSIONS		
NO.	DESCRIPTION	DATE
1	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/29/2022
2	4.1 SITE PLAN PRELIMINARY SUBMISSION	03/03/2022
3	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/03/2023
4	4.1 SITE PLAN PRELIMINARY SUBMISSION	05/05/2023

SCALE: 1"=25'  
 SHEET TITLE:  
 EXISTING STRIPING AND  
 MARKING PLAN

SHEET #:  
**C09.02**





**STANDARD PAVEMENT MARKING LEGEND**

(A)	TYPE B CLASS 1..... WHITE 4" WIDTH	PARKING LANES, EDGE LINES, LANE LINES
(B)	TYPE B CLASS 1..... WHITE 4" WIDTH, 10' LONG, 30' SPACING	DASHED LANE LINES
(C)	TYPE B CLASS 1..... WHITE 4" WIDTH, 2' LONG, 10' SPACING	LANE TRANSITIONS, TURN LANE SKIPS
(D)	TYPE B CLASS 1..... WHITE 18" WIDTH	STOP BARS
(E)	TYPE B CLASS 1..... WHITE 24" WIDTH, 24" SPACING	CONTINENTAL CROSS WALKS
(F)	TYPE B CLASS 1..... WHITE 6" WIDTH	TURN LANES, TRANSVERSE CROSSWALKS, BIKE LANES
(G)	TYPE B CLASS 1..... YELLOW 4" WIDTH, 10' LONG, 30' SPACING	DIVIDED TRAFFIC, TWO WAY TURN LANES
(H)	TYPE B CLASS 1..... YELLOW 4" WIDTH	EDGE LINES
(I)	TYPE B CLASS 1..... YELLOW 4" WIDTH, DOUBLE LINE, 4" SPACING	CENTERLINES
(J)	TYPE B CLASS 1..... WHITE 6" WIDTH, 10' SPACING @45 DEGREE	HATCH LINES, SAFETY ZONES
(K)	TYPE B CLASS 1..... WHITE SINGLE ARROW	TURN LANES
(L)	TYPE B CLASS 1..... WHITE COMBINATION ARROW	TURN LANES
(M)	TYPE B CLASS 1..... WHITE 8" LETTERS	PAVEMENT LETTERS (STOP, YIELD, BUS, ONLY etc.)
(N)	TYPE B CLASS 1..... WHITE 6" WIDTH, 2' LONG, 10' SPACING	LANE TRANSITIONS, TURN LANE SKIPS
(O)	TYPE B CLASS 1..... WHITE 12" WIDTH, 20' SPACING @45 DEGREE	GORE MARKINGS
(P)	TYPE B CLASS 1..... YELLOW 6" WIDTH @45 DEGREE	GORE MARKINGS
(Q)	TYPE B CLASS 1..... WHITE 6" WIDTH, 2' LONG, 4" SPACING	LANE TRANSITIONS
(R)	TYPE B CLASS 1..... WHITE 4" WIDTH, DOUBLE LINE, 4" SPACING	CURB EXTENSIONS
(S)	TYPE B CLASS 1..... WHITE 24" WIDTH	VDOT - STOP BARS
(T)	TYPE B CLASS 1..... YELLOW 6" WIDTH, 2' LONG, 4" SPACING	LANE TRANSITIONS

NOTE: THIS PAVING AND MARKING PLAN IS PRELIMINARY AND SUBJECT TO CHANGE DURING THE CEP PLAN REVIEW

**Bowman**

Checked: STL  
 Drawn: CA  
 Date: 08/03/2022

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 Herndon, Virginia 20171  
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**CRYSTAL TOWERS 3**

**4.1 PRELIMINARY SITE PLAN**

**ARLINGTON COUNTY, VIRGINIA**



SUBMISSIONS

NO.	DESCRIPTION	DATE
1	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/29/2022
2	4.1 SITE PLAN PRELIMINARY SUBMISSION	03/03/2022
3	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/03/2023
4	4.1 SITE PLAN PRELIMINARY SUBMISSION	05/05/2023

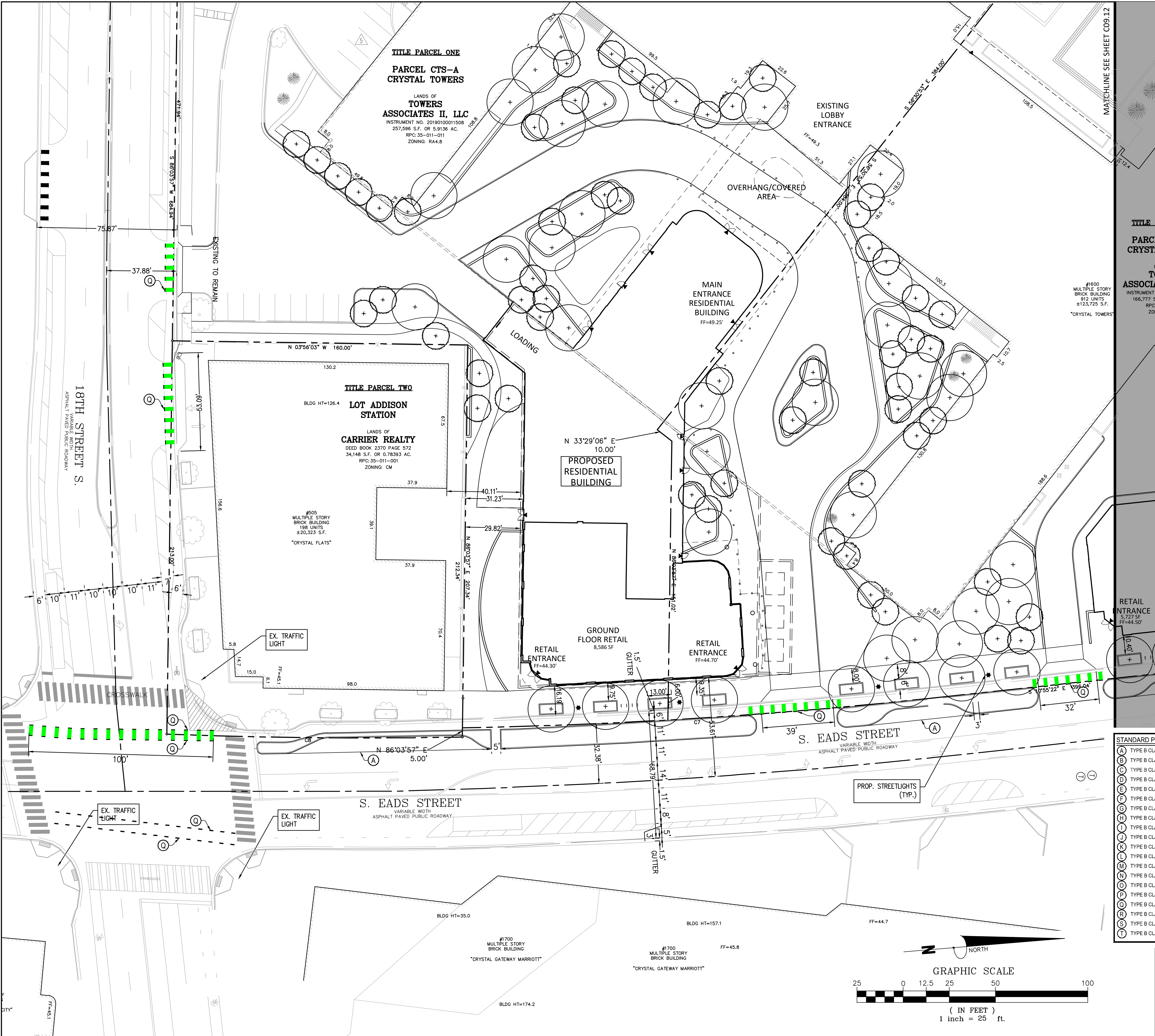
SCALE: 1"=40'

SHEET TITLE:  
**OVERALL PROPOSED STRIPING AND MARKING**

SHEET #:  
**C09.10**

P:\030231 - Crystal Promenade\030231-02-004 (ENG) - Crystal Towers 4.1 and CEP Submission\Engineering\Plans\4.1 Plan\030231-02-004-PROPOSED STRIPING.dwg





TITLE PARCEL ONE  
 PARCEL CTS-A  
 CRYSTAL TOWERS  
 LANDS OF  
 TOWERS  
 ASSOCIATES II, LLC  
 INSTRUMENT NO. 20190100011508  
 257,596 S.F. OR 5.9136 AC.  
 RPC: 35-011-011  
 ZONING: RA4.8

TITLE PARCEL TWO  
 PARCEL CRYSTAL  
 LOT  
 TO  
 ASSOCIAT  
 INSTRUMENT NO.  
 166,777 S.F.  
 4123,726 S.F.  
 RPC: 35-011-001  
 ZONING: CM

#1600  
 MULTIPLE STORY  
 BRICK BUILDING  
 912 UNITS  
 ±123,726 S.F.  
 \*CRYSTAL TOWERS

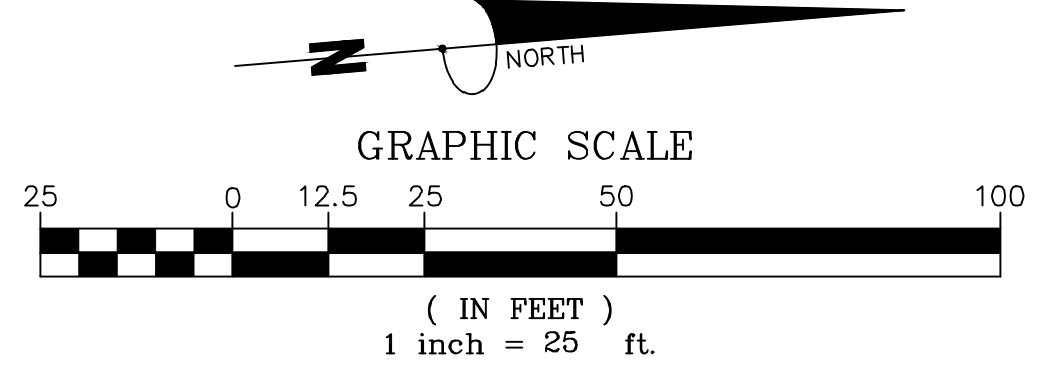
#505  
 MULTIPLE STORY  
 BRICK BUILDING  
 158 UNITS  
 ±20,323 S.F.  
 \*CRYSTAL FLATS

#1700  
 MULTIPLE STORY  
 BRICK BUILDING  
 \*CRYSTAL GATEWAY MARRIOTT

#1700  
 MULTIPLE STORY  
 BRICK BUILDING  
 \*CRYSTAL GATEWAY MARRIOTT

**STANDARD PAVEMENT MARKING LEGEND**

(A)	TYPE B CLASS 1..... WHITE 4" WIDTH	PARKING LINES, EDGE LINES, LANE LINES
(B)	TYPE B CLASS 1..... WHITE 4" WIDTH, 10' LONG, 30' SPACING	DASHED LANE LINES
(C)	TYPE B CLASS 1..... WHITE 4" WIDTH, 2' LONG, 10' SPACING	LANE TRANSITIONS, TURN LANE SKIPS
(D)	TYPE B CLASS 1..... WHITE 18" WIDTH	STOP BARS
(E)	TYPE B CLASS 1..... WHITE 24" WIDTH, 24" SPACING	CONTINENTAL CROSS WALKS
(F)	TYPE B CLASS 1..... WHITE 6" WIDTH	TURN LINES, TRANSVERSE CROSSWALKS, BIKE LANES
(G)	TYPE B CLASS 1..... YELLOW 4" WIDTH, 10' LONG, 30' SPACING	DIVIDED TRAFFIC, TWO WAY TURN LANES
(H)	TYPE B CLASS 1..... YELLOW 4" WIDTH	EDGE LINES
(I)	TYPE B CLASS 1..... YELLOW 4" WIDTH, DOUBLE LINE, 4" SPACING	CENTERLINES
(J)	TYPE B CLASS 1..... WHITE 6" WIDTH, 10' SPACING @45 DEGREE	HATCH LINES, SAFETY ZONES
(K)	TYPE B CLASS 1..... WHITE SINGLE ARROW	TURN LINES
(L)	TYPE B CLASS 1..... WHITE COMBINATION ARROW	TURN LINES
(M)	TYPE B CLASS 1..... WHITE 8" LETTERS	PAVEMENT LETTERS (STOP, YIELD, BUS, ONLY etc.)
(N)	TYPE B CLASS 1..... WHITE 6" WIDTH, 2' LONG, 10' SPACING	LANE TRANSITIONS, TURN LANE SKIPS
(O)	TYPE B CLASS 1..... WHITE 12" WIDTH, 20' SPACING @45 DEGREE	GORE MARKINGS
(P)	TYPE B CLASS 1..... YELLOW 6" WIDTH @45 DEGREE	GORE MARKINGS
(Q)	TYPE B CLASS 1..... WHITE 6" WIDTH, 2' LONG, 4" SPACING	LANE TRANSITIONS
(R)	TYPE B CLASS 1..... WHITE 4" WIDTH, DOUBLE LINE, 4" SPACING	CURB EXTENSIONS
(S)	TYPE B CLASS 1..... WHITE 24" WIDTH	VDOT - STOP BARS
(T)	TYPE B CLASS 1..... YELLOW 6" WIDTH, 2' LONG, 4" SPACING	LANE TRANSITIONS



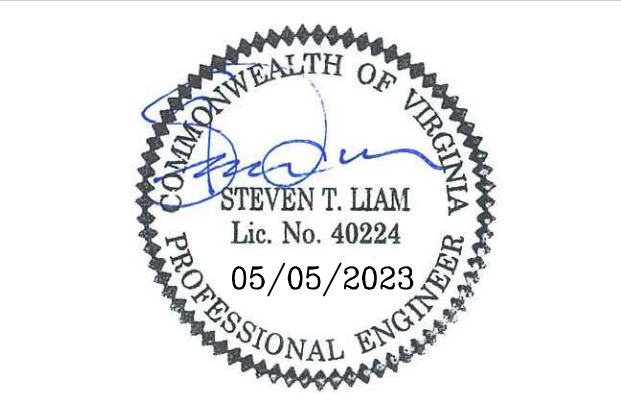
**Bowman**

DRAWN: CA  
 CHECKED: STL  
 DATE: 08/03/2023

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 Herndon, Virginia 20171  
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**CRYSTAL TOWERS 3**

**4.1 PRELIMINARY SITE PLAN**  
 ARLINGTON COUNTY, VIRGINIA



**SUBMISSIONS**

NO.	DESCRIPTION	DATE
1	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/29/2022
2	4.1 SITE PLAN PRELIMINARY SUBMISSION	03/03/2022
3	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/03/2023
4	4.1 SITE PLAN PRELIMINARY SUBMISSION	05/05/2023

SCALE: 1"=25'

SHEET TITLE:  
**PROPOSED STRIPING AND MARKING PLAN**

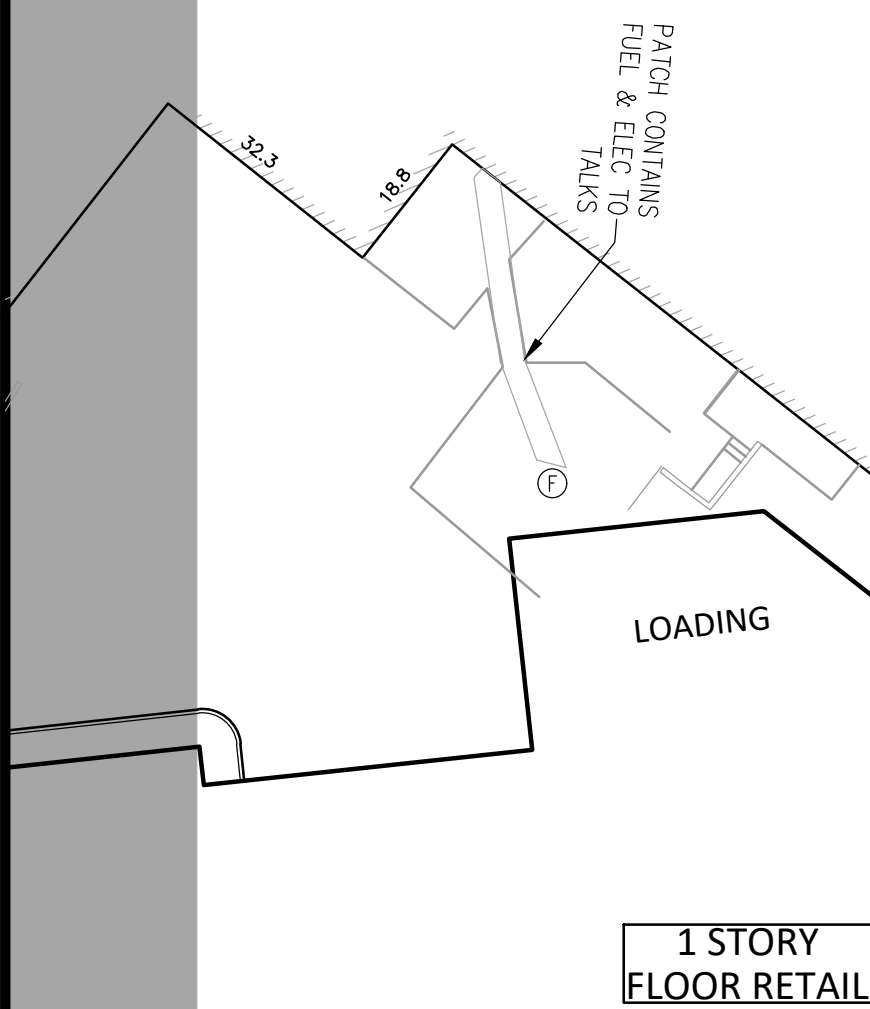
SHEET #:  
**C09.11**



MATCHLINE SEE SHEET C09.11

**TITLE PARCEL ONE**  
**PARCEL CTN-A**  
**CRYSTAL TOWERS**

LANDS OF  
**TOWERS**  
**ASSOCIATES II, LLC**  
INSTRUMENT NO. 20190100011508  
166,777 S.F. OR 3.8287 AC.  
RPC:35-011-010  
ZONING: RA4.8



PROP. STREETLIGHTS (TYP.)

EX. 1.5' CURB GUTTER

RETAIL ENTRANCE  
33,024 S.F.  
FF=43.50'

EX. 1.5' CURB GUTTER

EX. 1.5' CURB GUTTER

EX. 1.5' CURB GUTTER

EX. 1.5' CURB GUTTER

EX. 1.5' CURB GUTTER

EX. 1.5' CURB GUTTER

EX. 1.5' CURB GUTTER

EX. 1.5' CURB GUTTER

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EX. 1.5' CURB GUTTER

EX. 1.5' CURB GUTTER

EX. 1.5' CURB GUTTER

EX. 1.5' CURB GUTTER

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EX. 1.5' CURB GUTTER

EX. 1.5' CURB GUTTER

EX. 1.5' CURB GUTTER

EX. 1.5' CURB GUTTER

EX. 1.5' CURB GUTTER

EX. 1.5' CURB GUTTER

EX. 1.5' CURB GUTTER

EX. 1.5' CURB GUTTER

RETAIL ENTRANCE  
5,727 S.F.  
FF=44.50'

EX. 1.5' CURB GUTTER

EX. 1.5' CURB GUTTER

EX. 1.5' CURB GUTTER

EX. 1.5' CURB GUTTER

EX. 1.5' CURB GUTTER

EX. 1.5' CURB GUTTER

EX. 1.5' CURB GUTTER

EX. 1.5' CURB GUTTER

EX. 1.5' CURB GUTTER

EX. 1.5' CURB GUTTER

EX. 1.5' CURB GUTTER

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EX. 1.5' CURB GUTTER

EX. 1.5' CURB GUTTER

EX. 1.5' CURB GUTTER

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EX. 1.5' CURB GUTTER

EX. 1.5' CURB GUTTER

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EX. 1.5' CURB GUTTER

EX. 1.5' CURB GUTTER

**S. EADS STREET**  
VARIABLE WIDTH  
ASPHALT PAVED PUBLIC ROADWAY

BIKE SHARE

EX. 1.5' CURB GUTTER

EX. 1.5' CURB GUTTER

EX. 1.5' CURB GUTTER

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EX. 1.5' CURB GUTTER

EX. 1.5' CURB GUTTER

EX. 1.5' CURB GUTTER

EX. 1.5' CURB GUTTER

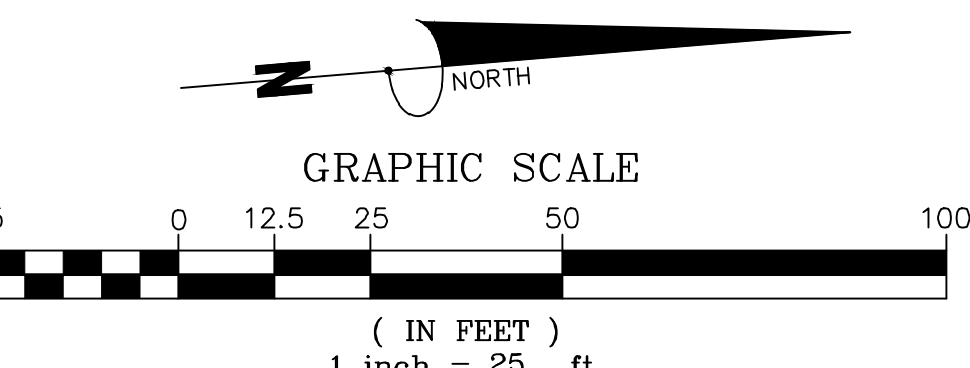
EX. TRAFFIC LIGHT

EX. TRAFFIC LIGHT

EX. TRAFFIC LIGHT

EX. TRAFFIC LIGHT

EX. TRAFFIC LIGHT



**STANDARD PAVEMENT MARKING LEGEND**

(A) TYPE B CLASS 1..... WHITE 4" WIDTH	PARKING LANES, EDGE LINES, LANE LINES
(B) TYPE B CLASS 1..... WHITE 4" WIDTH, 10' LONG, 30' SPACING	DASHED LANE LINES
(C) TYPE B CLASS 1..... WHITE 4" WIDTH, 2' LONG, 10' SPACING	LANE TRANSITIONS, TURN LANE SKIPS
(D) TYPE B CLASS 1..... WHITE 18" WIDTH	STOP BARS
(E) TYPE B CLASS 1..... WHITE 24" WIDTH, 24" SPACING	CONTINENTAL CROSS WALKS
(F) TYPE B CLASS 1..... WHITE 6" WIDTH	TURN LANES, TRANSVERSE CROSSWALKS, BIKE LANES
(G) TYPE B CLASS 1..... YELLOW 4" WIDTH, 10' LONG, 30' SPACING	DIVIDED TRAFFIC, TWO WAY TURN LANES
(H) TYPE B CLASS 1..... YELLOW 4" WIDTH	EDGE LINES
(I) TYPE B CLASS 1..... YELLOW 4" WIDTH, DOUBLE LINE, 4" SPACING	CENTERLINES
(J) TYPE B CLASS 1..... WHITE 6" WIDTH, 10' SPACING @45 DEGREE	HATCH LINES, SAFETY ZONES
(K) TYPE B CLASS 1..... WHITE SINGLE ARROW	TURN LANES
(L) TYPE B CLASS 1..... WHITE COMBINATION ARROW	TURN LANES
(M) TYPE B CLASS 1..... WHITE 8" LETTERS	PAVEMENT LETTERS (STOP, YIELD, BUS, ONLY etc.)
(N) TYPE B CLASS 1..... WHITE 6" WIDTH, 2' LONG, 10' SPACING	LANE TRANSITIONS, TURN LANE SKIPS
(O) TYPE B CLASS 1..... WHITE 12" WIDTH, 20' SPACING @45 DEGREE	GORE MARKINGS
(P) TYPE B CLASS 1..... YELLOW 8" WIDTH @45 DEGREE	GORE MARKINGS
(Q) TYPE B CLASS 1..... WHITE 6" WIDTH, 2' LONG, 4" SPACING	LANE TRANSITIONS
(R) TYPE B CLASS 1..... WHITE 4" WIDTH, DOUBLE LINE, 4" SPACING	CURB EXTENSIONS
(S) TYPE B CLASS 1..... WHITE 24" WIDTH	VDOT - STOP BARS
(T) TYPE B CLASS 1..... YELLOW 6" WIDTH, 2' LONG, 4" SPACING	LANE TRANSITIONS

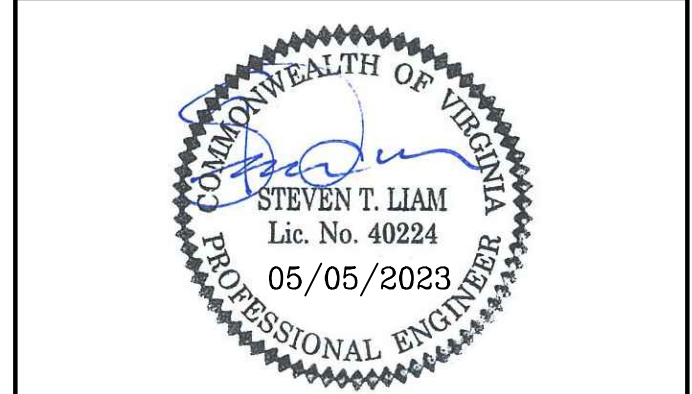
**Bowman**

Checked: STL  
 Drawn: CA  
 Date: 08/03/2023

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 www.bowman.com

**CRYSTAL TOWERS 3**

**4.1 PRELIMINARY SITE PLAN**  
**ARLINGTON COUNTY, VIRGINIA**



**SUBMISSIONS**

NO.	DESCRIPTION	DATE
1	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/29/2022
2	4.1 SITE PLAN PRELIMINARY SUBMISSION	03/03/2022
3	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/03/2023
4	4.1 SITE PLAN PRELIMINARY SUBMISSION	05/05/2023

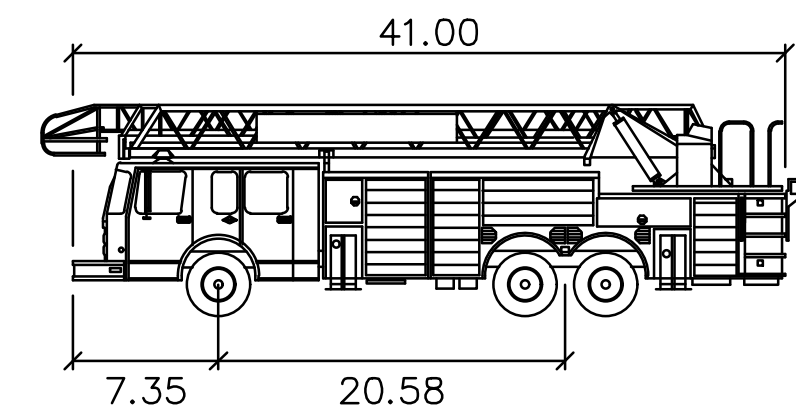
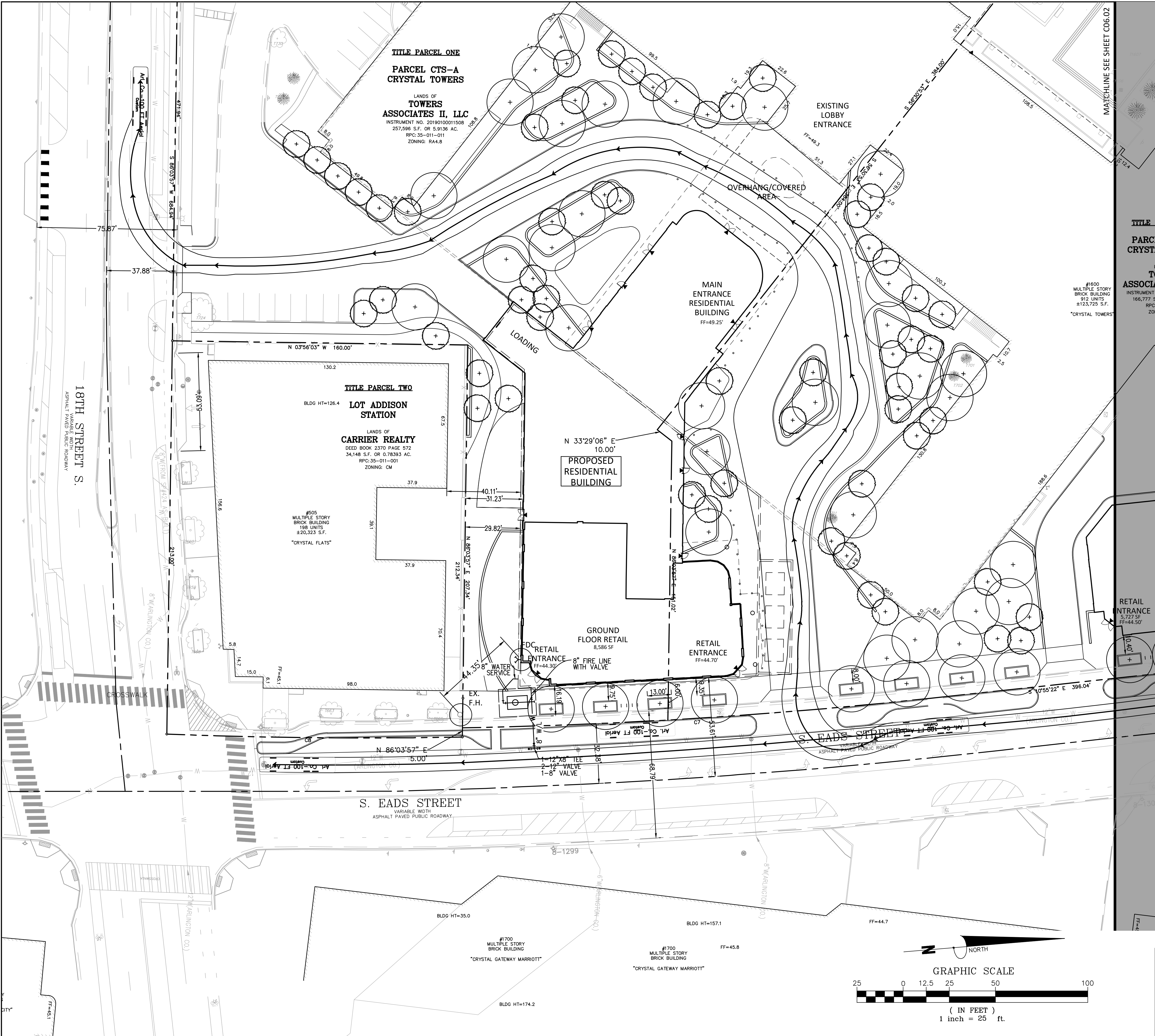
SCALE: 1"=25'

SHEET TITLE:  
**PROPOSED STRIPING AND MARKING PLAN**

SHEET #:  
**C09.12**

P:\030231 - Crystal Promenade\030231-02-004 (ENG) - Crystal Towers 4.1 and CEP-Submission\Engineering\Plans\4.1 Plan\030231-02-004-PROPOSED STRIPING.dwg





Arl. Co.—100 FT Aerial  
feet  
Width : 8.00  
Track : 8.00  
Lock to Lock Time : 6.0  
Steering Angle : 39.5

**LEGEND**

- INDICATES LOCATION OF FDC
- INDICATES LOCATION OF PROPOSED FIRE HYDRANT
- INDICATES LOCATION OF EXISTING FIRE HYDRANT

# Bowman

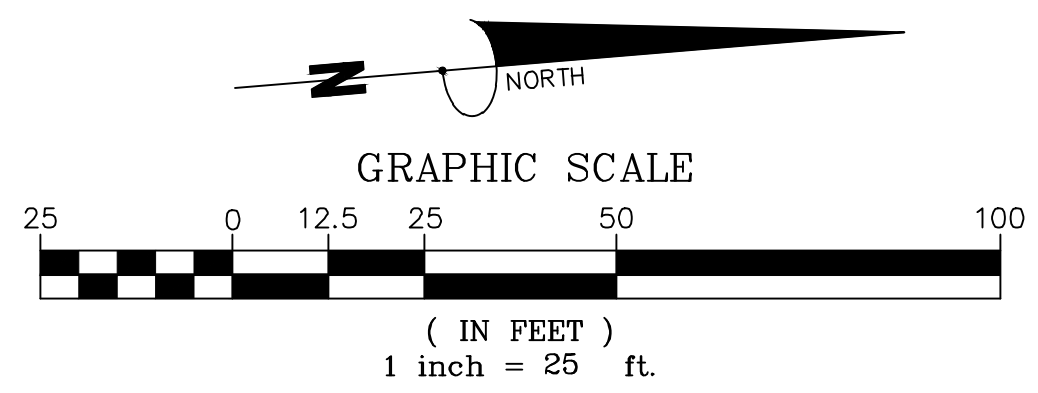
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DRAWN: CA  
DATE: 08/03/2022  
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Herndon, Virginia 20171  
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## CRYSTAL TOWERS 3

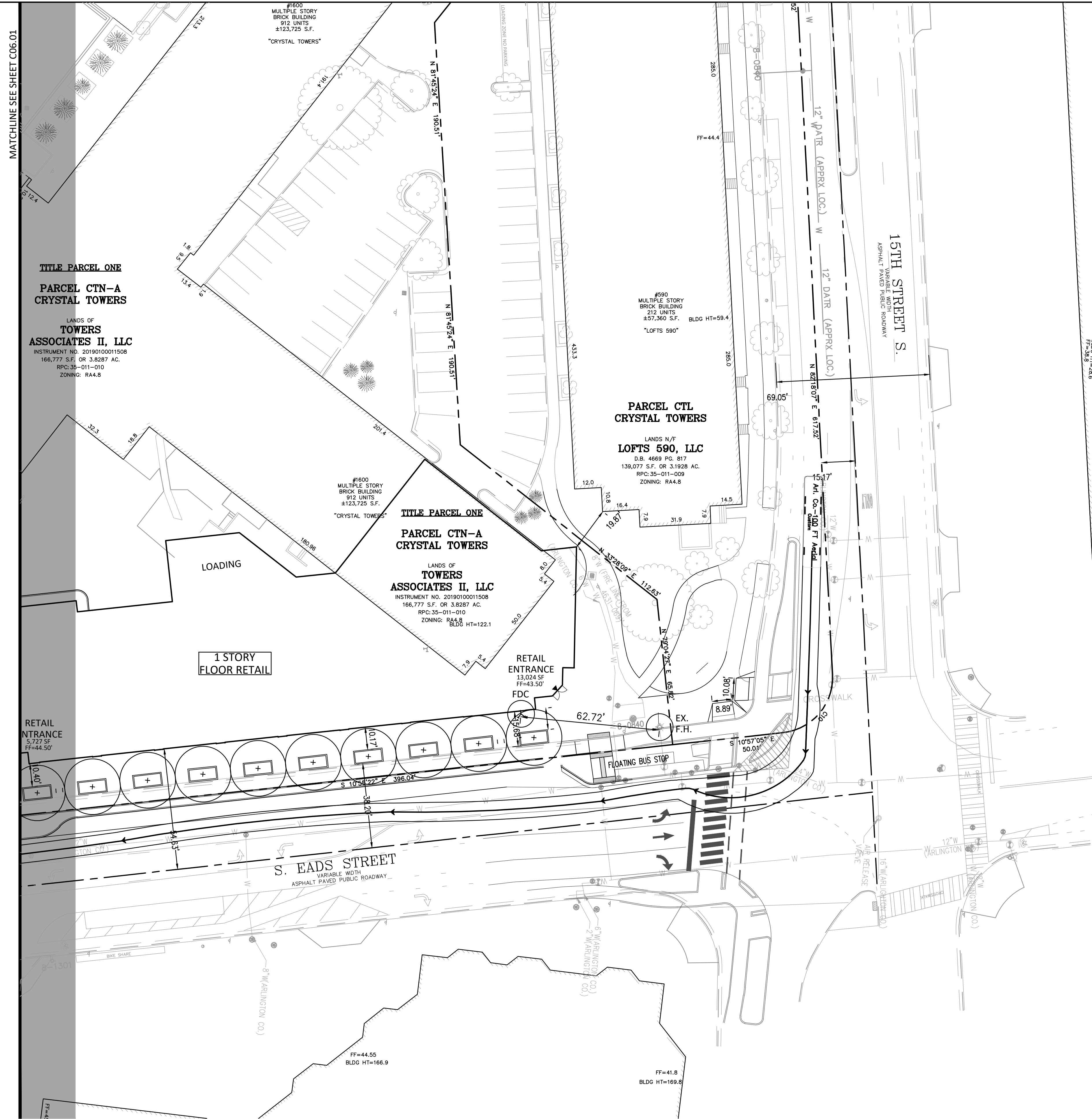
4.1 PRELIMINARY SITE PLAN  
ARLINGTON COUNTY, VIRGINIA

SUBMISSIONS		
NO.	DESCRIPTION	DATE
1	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/29/2022
2	4.1 SITE PLAN PRELIMINARY SUBMISSION	05/03/2022
3	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/03/2023
4	4.1 SITE PLAN PRELIMINARY SUBMISSION	05/05/2023

SCALE: 1"=25'  
SHEET TITLE:  
**FIRE SERVICE PLAN**  
SHEET #:  
**C10.00**







MATCHLINE SEE SHEET C06.01

**TITLE PARCEL ONE**  
**PARCEL CTN-A**  
**CRYSTAL TOWERS**  
 LANDS OF  
**TOWERS**  
**ASSOCIATES II, LLC**  
 INSTRUMENT NO. 20190100011508  
 166,777 S.F. OR 3.8287 AC.  
 RPC: 35-011-010  
 ZONING: RA4.8

#1600  
 MULTIPLE STORY  
 BRICK BUILDING  
 912 UNITS  
 ±123,725 S.F.  
 "CRYSTAL TOWERS"

**PARCEL CTL**  
**CRYSTAL TOWERS**  
 LANDS W/ F  
**LOFTS 590, LLC**  
 D.B. 4669 P.C. 817  
 139,077 S.F. OR 3.1928 AC.  
 RPC: 35-011-009  
 ZONING: RA4.8

**TITLE PARCEL ONE**  
**PARCEL CTN-A**  
**CRYSTAL TOWERS**  
 LANDS OF  
**TOWERS**  
**ASSOCIATES II, LLC**  
 INSTRUMENT NO. 20190100011508  
 166,777 S.F. OR 3.8287 AC.  
 RPC: 35-011-010  
 ZONING: RA4.8  
 BLDG HT=122.1

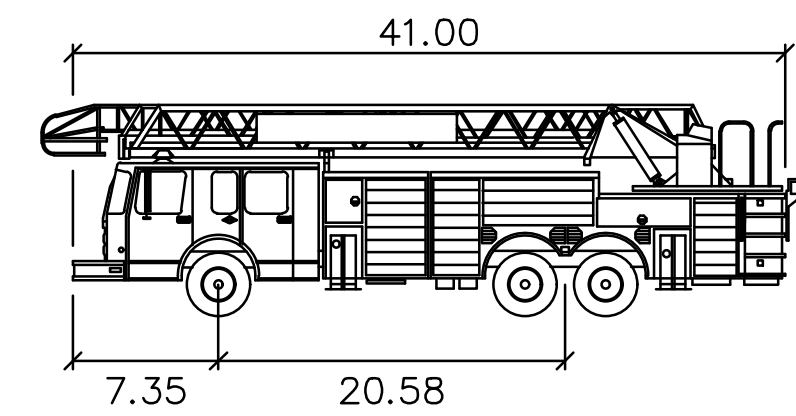
1 STORY  
 FLOOR RETAIL

RETAIL  
 ENTRANCE  
 33,024 S.F.  
 FF=43.50'

RETAIL  
 ENTRANCE  
 5,727 S.F.  
 FF=44.50'

**S. EADS STREET**  
 VARIABLE WIDTH  
 ASPHALT PAVED PUBLIC ROADWAY

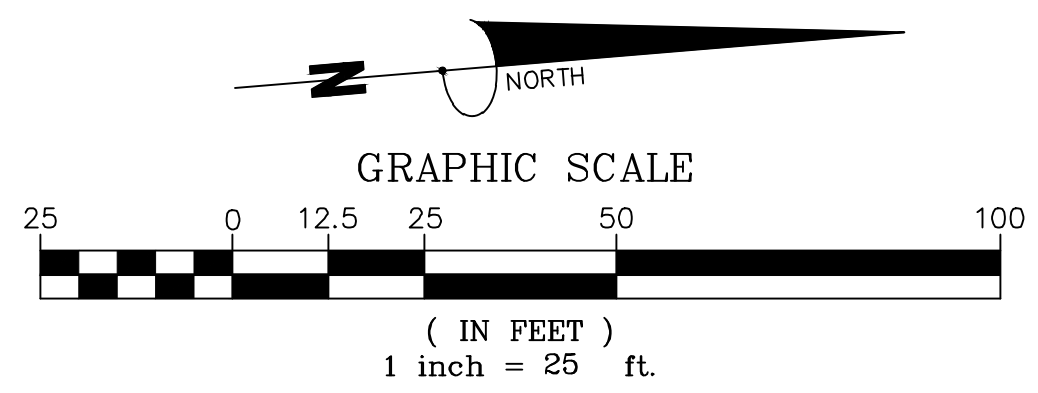
**15TH STREET S.**  
 ASPHALT PAVED PUBLIC ROADWAY



Arl. Co.—100 FT Aerial  
 feet  
 Width : 8.00  
 Track : 8.00  
 Lock to Lock Time : 6.0  
 Steering Angle : 39.5

**LEGEND**

- INDICATES LOCATION OF FDC
- INDICATES LOCATION OF PROPOSED FIRE HYDRANT
- INDICATES LOCATION OF EXISTING FIRE HYDRANT



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## CRYSTAL TOWERS 3

4.1 PRELIMINARY SITE PLAN  
 ARLINGTON COUNTY, VIRGINIA

SUBMISSIONS		
NO.	DESCRIPTION	DATE
1	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/29/2022
2	4.1 SITE PLAN PRELIMINARY SUBMISSION	08/03/2022
3	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/03/2023
4	4.1 SITE PLAN PRELIMINARY SUBMISSION	05/05/2023

SCALE: 1"=25'

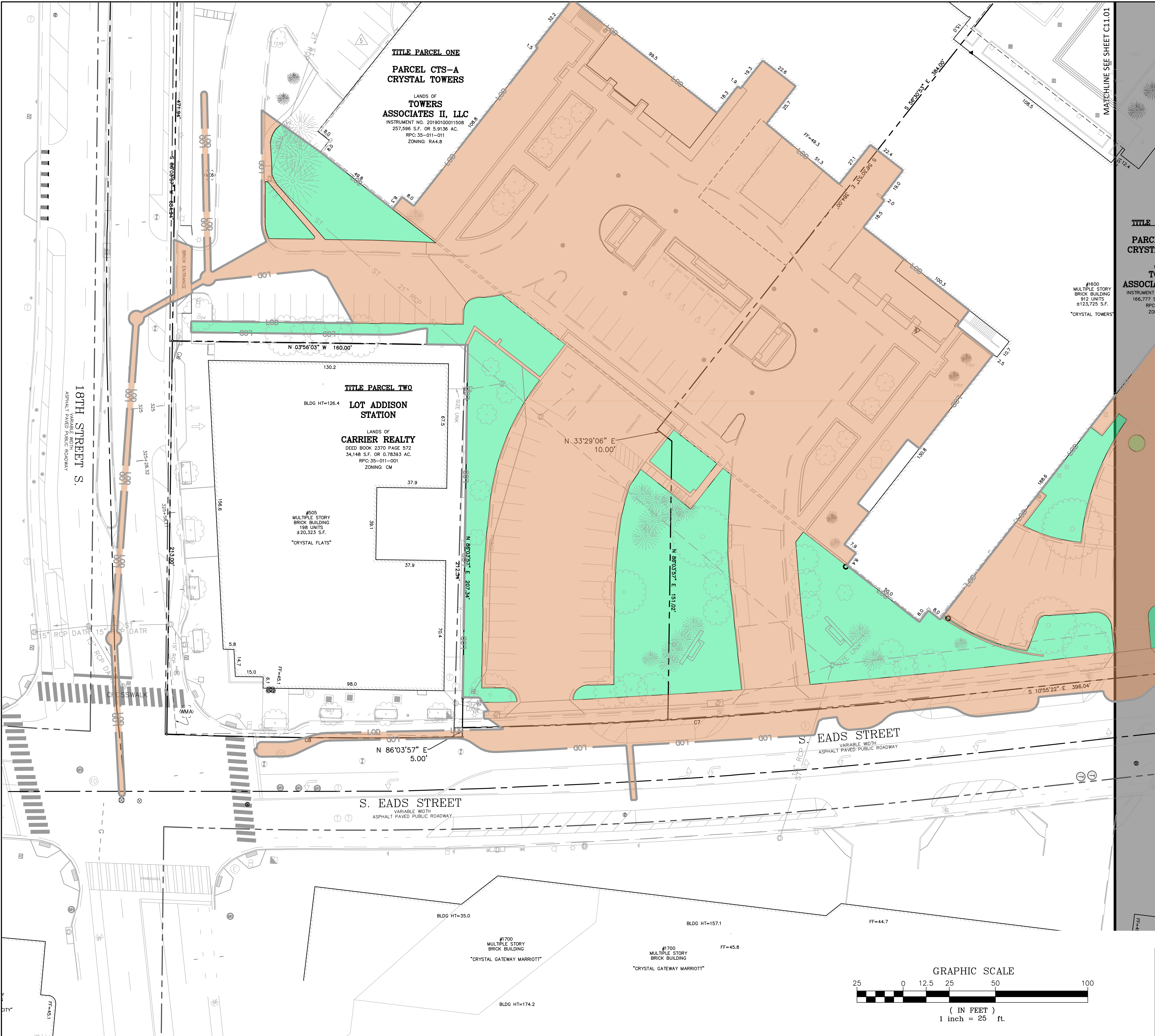
SHEET TITLE:

FIRE SERVICE PLAN

SHEET #:

C10.01





**LEGEND**

IMPERVIOUS AREA (107,412 SF OR 2.4658 AC.)

PERVIOUS AREA (32,963 SF OR 0.7567 AC.)

TOTAL LIMITS OF DISTURBED AREA (140,375 SF OR 3.2225 AC.)

CN=  $[(107,412 \times 98) + (32,963 \times 80)] / 140,375 = 94$

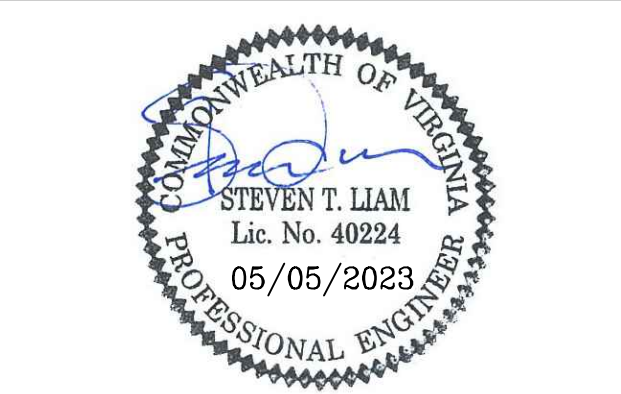
**Bowman**

Checked: STL  
 Drawn: CA  
 Date: 08/03/2023

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**CRYSTAL TOWERS 3**

4.1 PRELIMINARY SITE PLAN  
 ARLINGTON COUNTY, VIRGINIA



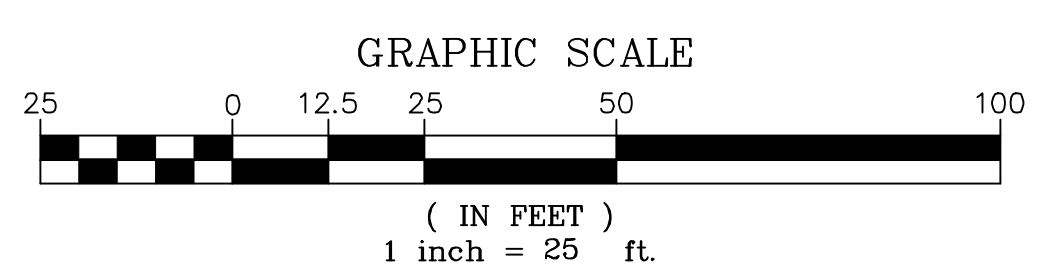
SUBMISSIONS

NO.	DESCRIPTION	DATE
1	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/29/2022
2	4.1 SITE PLAN PRELIMINARY SUBMISSION	03/03/2022
3	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/03/2023
4	4.1 SITE PLAN PRELIMINARY SUBMISSION	05/05/2023

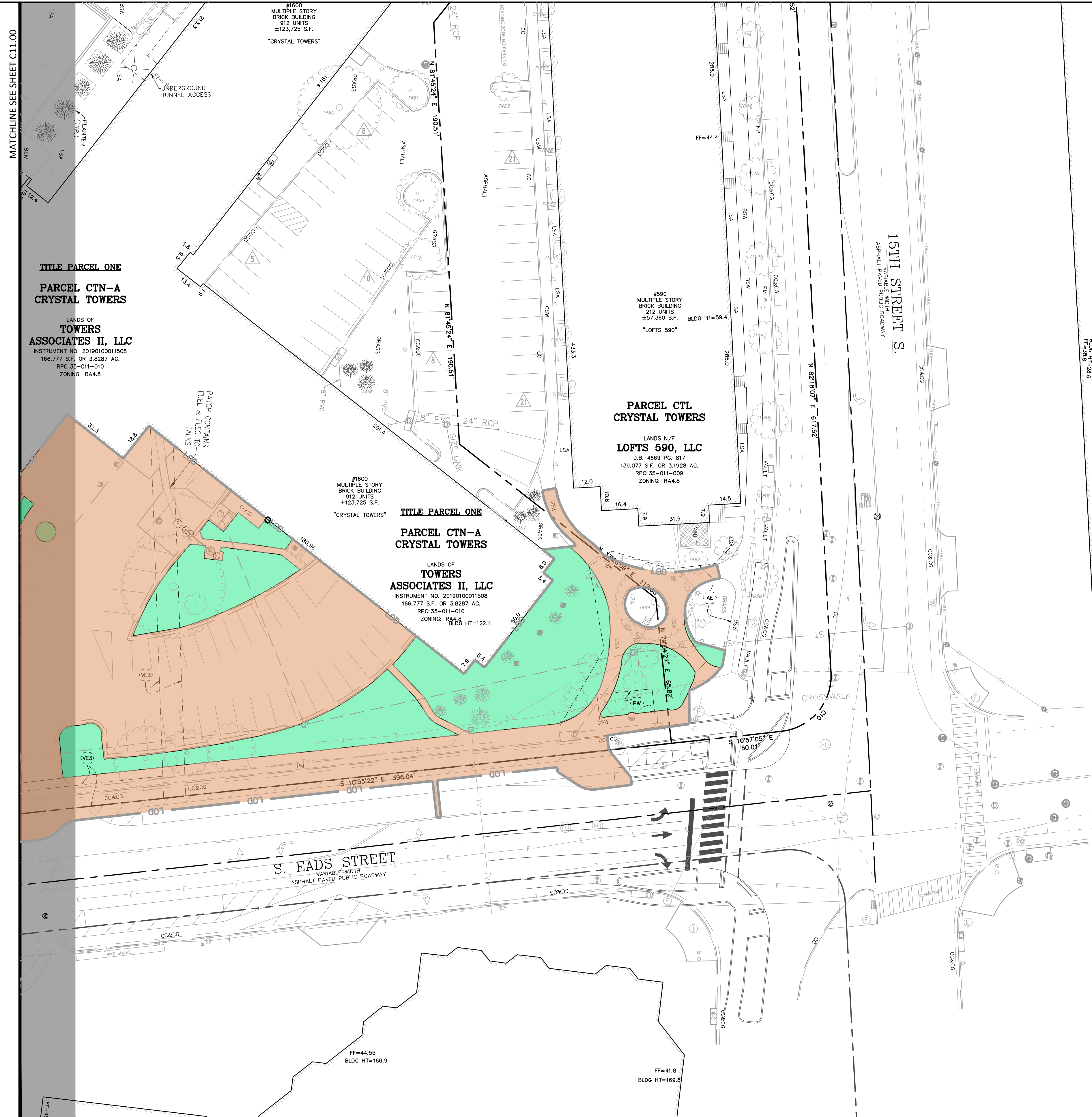
SCALE: 1"=25'

SHEET TITLE:  
**PRE-DEVELOPMENT  
 CONDITIONS**

SHEET #:  
**C11.00**







MATCHLINE SEE SHEET C11.00

**TITLE PARCEL ONE**  
**PARCEL CTN-A**  
**CRYSTAL TOWERS**  
 LANDS OF  
**TOWERS**  
**ASSOCIATES II, LLC**  
 INSTRUMENT NO. 20190100011508  
 166,777 S.F. OR 3.8287 AC.  
 RPC: 35-011-010  
 ZONING: RA4.8

#1600  
 MULTIPLE STORY  
 BRICK BUILDING  
 912 UNITS  
 ±123,725 S.F.  
 "CRYSTAL TOWERS"

**PARCEL CTL**  
**CRYSTAL TOWERS**  
 LANDS N/W/  
**LOFTS 590, LLC**  
 D.B. 4669 P.C. 817  
 139,077 S.F. OR 3.1928 AC.  
 RPC: 35-011-009  
 ZONING: RA4.8

#1600  
 MULTIPLE STORY  
 BRICK BUILDING  
 912 UNITS  
 ±123,725 S.F.  
 "CRYSTAL TOWERS"

**TITLE PARCEL ONE**  
**PARCEL CTN-A**  
**CRYSTAL TOWERS**  
 LANDS OF  
**TOWERS**  
**ASSOCIATES II, LLC**  
 INSTRUMENT NO. 20190100011508  
 166,777 S.F. OR 3.8287 AC.  
 RPC: 35-011-010  
 ZONING: RA4.8  
 BLDG HT=122.1

#590  
 MULTIPLE STORY  
 BRICK BUILDING  
 212 UNITS  
 ±57,360 S.F.  
 "LOFTS 590"

**S. EADS STREET**  
 VARIABLE WIDTH  
 ASPHALT PAVED PUBLIC ROADWAY

**15TH STREET S.**  
 ASPHALT PAVED PUBLIC ROADWAY

**LEGEND**

IMPERVIOUS AREA (107,412 SF OR 2.4658 AC.)

PERVIOUS AREA (32,963 SF OR 0.7567 AC.)

TOTAL LIMITS OF DISTURBED AREA (140,375 SF OR 3.2225 AC.)

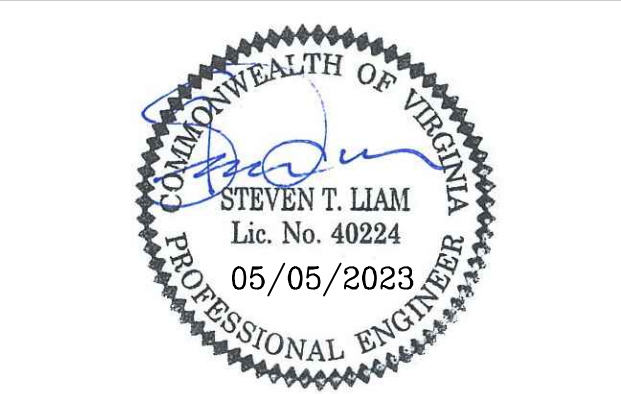
CN= [(107,412 X 98) + (32,963 X 80)] / 140,375 = 94

DRAWN: CA  
 CHECKED: STL  
 DATE: 08/03/2023

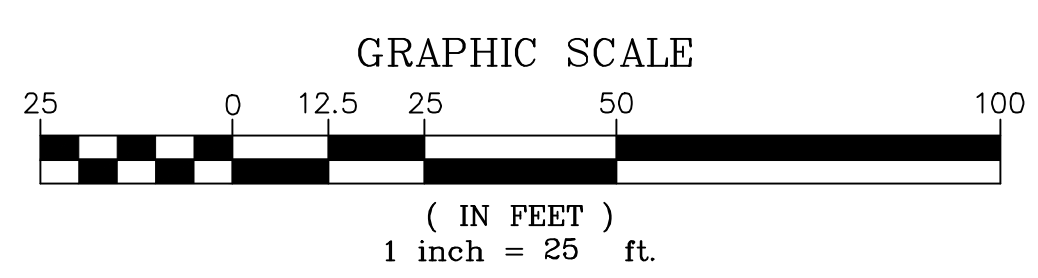
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 Phone: (703) 464-1000  
 Fax: (703) 461-9720  
 www.bowman.com

**CRYSTAL TOWERS 3**

4.1 PRELIMINARY SITE PLAN  
 ARLINGTON COUNTY, VIRGINIA

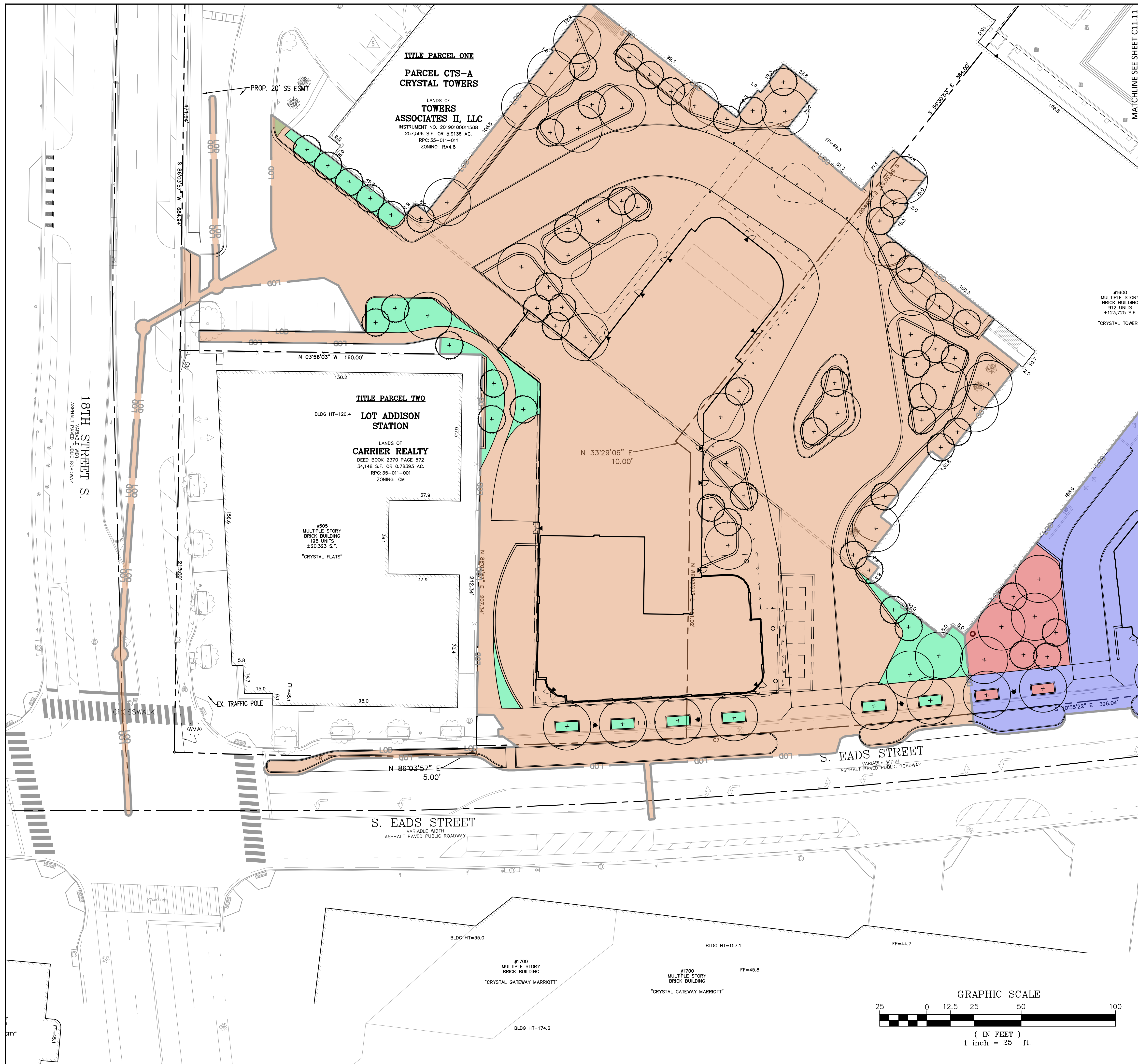


SUBMISSIONS		
NO.	DESCRIPTION	DATE
1	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/29/2022
2	4.1 SITE PLAN PRELIMINARY SUBMISSION	03/03/2022
3	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/03/2023
4	4.1 SITE PLAN PRELIMINARY SUBMISSION	05/05/2023



SCALE: 1"=25'  
 SHEET TITLE:  
**PRE-DEVELOPMENT  
 CONDITIONS**  
 SHEET #:  
**C11.01**





### LEGEND

	DRAINAGE AREA A IMPERVIOUS AREA (92,277 SF OR 2.1184 AC.)
	DRAINAGE AREA A PERVIOUS AREA (4,193 SF OR 0.0962 AC.)
	DRAINAGE AREA B IMPERVIOUS AREA (39,477 SF OR 0.9063 AC.)
	DRAINAGE AREA B PERVIOUS AREA (4,428 SF OR 0.1016 AC.)

TOTAL LIMITS OF DISTURBED AREA (140,375 SF OR 3.2225 AC.)

**DRAINAGE A**  
 CN (1-YEAR) = 95 (SEE VRRM SPREADSHEET - C11.32)  
 CN (2-YEAR) = 95 (SEE VRRM SPREADSHEET - C11.32)  
 CN (10-YEAR) = 95 (SEE VRRM SPREADSHEET - C11.32)

**DRAINAGE B**  
 CN (1-YEAR) = 94 (SEE VRRM SPREADSHEET - C11.32)  
 CN (2-YEAR) = 94 (SEE VRRM SPREADSHEET - C11.32)  
 CN (10-YEAR) = 94 (SEE VRRM SPREADSHEET - C11.32)

**OVERALL CN**  
 CN (1-YEAR) = 94  
 CN (2-YEAR) = 94  
 CN (10-YEAR) = 94

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DRAWN: CA  
DATE: 08/03/2022

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CHECKED: STL

## CRYSTAL TOWERS 3

4.1 PRELIMINARY SITE PLAN  
ARLINGTON COUNTY, VIRGINIA

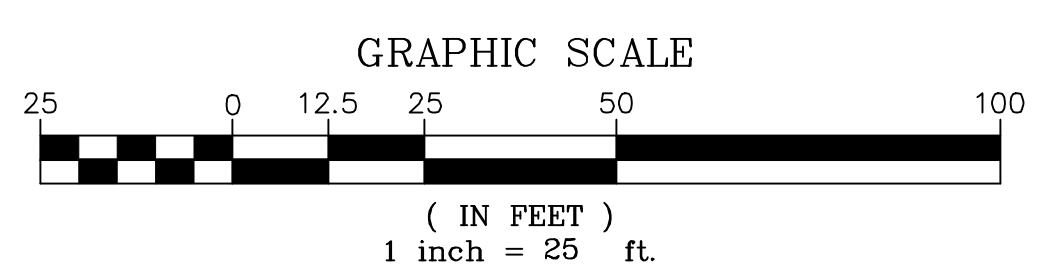


SUBMISSIONS		
NO.	DESCRIPTION	DATE
1	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/29/2022
2	4.1 SITE PLAN PRELIMINARY SUBMISSION	05/03/2022
3	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/03/2023
4	4.1 SITE PLAN PRELIMINARY SUBMISSION	05/05/2023

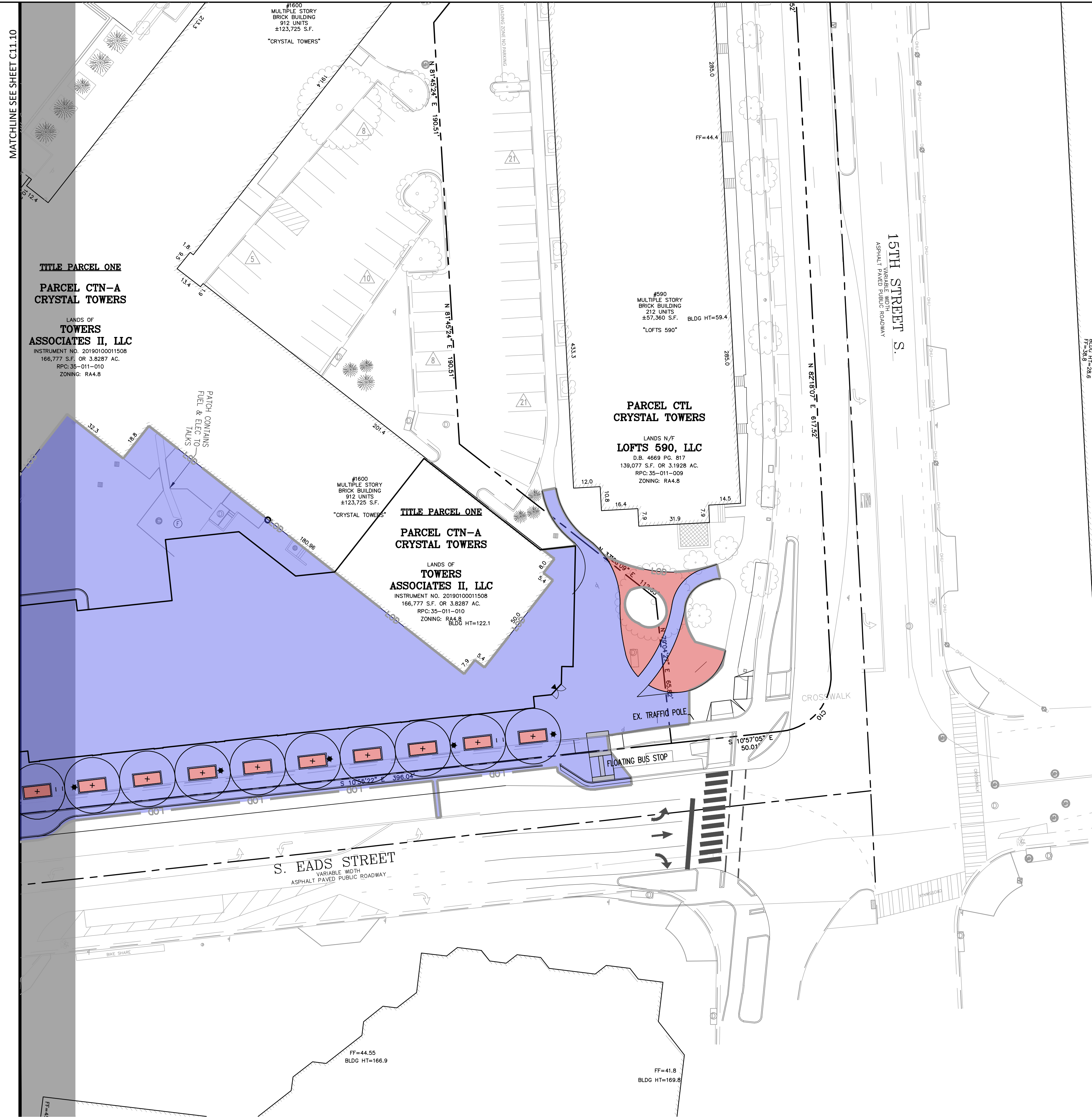
SCALE: 1"=25'

SHEET TITLE:  
POST-DEVELOPMENT  
CONDITIONS

SHEET #:  
**C11.10**







MATCHLINE SEE SHEET C11.10

**TITLE PARCEL ONE**  
**PARCEL CTN-A**  
**CRYSTAL TOWERS**  
 LANDS OF  
**TOWERS**  
**ASSOCIATES II, LLC**  
 INSTRUMENT NO. 20190100011508  
 166,777 S.F. OR 3.8287 AC.  
 RPC: 35-011-010  
 ZONING: RA4.8

#1600  
 MULTIPLE STORY  
 BRICK BUILDING  
 912 UNITS  
 ±123,725 S.F.  
 "CRYSTAL TOWERS"

**PARCEL CTL**  
**CRYSTAL TOWERS**  
 LANDS N/F  
**LOFTS 590, LLC**  
 D.B. 4669 P.C. 817  
 139,077 S.F. OR 3.1928 AC.  
 RPC: 35-011-009  
 ZONING: RA4.8

#1600  
 MULTIPLE STORY  
 BRICK BUILDING  
 912 UNITS  
 ±123,725 S.F.  
 "CRYSTAL TOWERS"

**TITLE PARCEL ONE**  
**PARCEL CTN-A**  
**CRYSTAL TOWERS**  
 LANDS OF  
**TOWERS**  
**ASSOCIATES II, LLC**  
 INSTRUMENT NO. 20190100011508  
 166,777 S.F. OR 3.8287 AC.  
 RPC: 35-011-010  
 ZONING: RA4.8

#590  
 MULTIPLE STORY  
 BRICK BUILDING  
 212 UNITS  
 ±57,360 S.F.  
 "LOFTS 590"

**S. EADS STREET**  
 VARIABLE WIDTH  
 ASPHALT PAVED PUBLIC ROADWAY

**15TH STREET S.**  
 ASPHALT PAVED PUBLIC ROADWAY

**LEGEND**

	DRAINAGE AREA A IMPERVIOUS AREA (92,277 SF OR 2.1184 AC.)
	DRAINAGE AREA A PERVIOUS AREA (4,193 SF OR 0.0962 AC.)
	DRAINAGE AREA B IMPERVIOUS AREA (39,477 SF OR 0.9063 AC.)
	DRAINAGE AREA B PERVIOUS AREA (4,428 SF OR 0.1016 AC.)

TOTAL LIMITS OF DISTURBED AREA (140,375 SF OR 3.2225 AC.)

DRAINAGE A  
 CN (1-YEAR) = 95 (SEE VRRM SPREADSHEET - C11.32)  
 CN (2-YEAR) = 95 (SEE VRRM SPREADSHEET - C11.32)  
 CN (10-YEAR) = 95 (SEE VRRM SPREADSHEET - C11.32)

DRAINAGE B  
 CN (1-YEAR) = 94 (SEE VRRM SPREADSHEET - C11.32)  
 CN (2-YEAR) = 94 (SEE VRRM SPREADSHEET - C11.32)  
 CN (10-YEAR) = 94 (SEE VRRM SPREADSHEET - C11.32)

OVERALL CN  
 CN (1-YEAR) = 94  
 CN (2-YEAR) = 94  
 CN (10-YEAR) = 94

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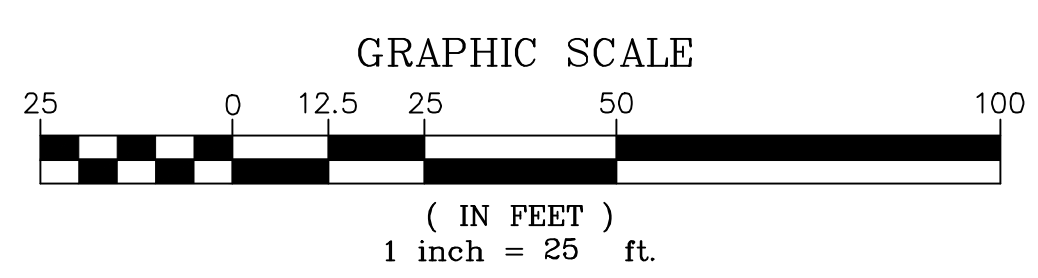
DRAWN: CA  
 CHECKED: STL  
 DATE: 08/03/2023

CRYSTAL TOWERS 3

4.1 PRELIMINARY SITE PLAN  
 ARLINGTON COUNTY, VIRGINIA



SUBMISSIONS		
NO.	DESCRIPTION	DATE
1	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/29/2022
2	4.1 SITE PLAN PRELIMINARY SUBMISSION	03/03/2022
3	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/03/2023
4	4.1 SITE PLAN PRELIMINARY SUBMISSION	05/05/2023



SCALE: 1"=25'

SHEET TITLE:  
**POST-DEVELOPMENT  
 CONDITIONS**

SHEET #:  
**C11.11**





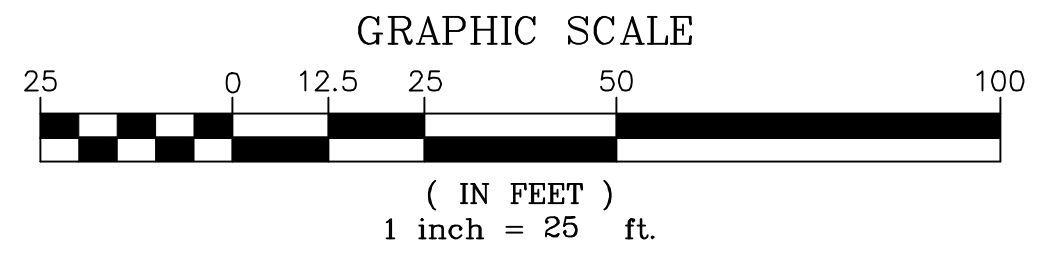
**LEGEND**

**DRAINAGE AREA A**

- GREEN ROOF LEVEL 2 AREA (20,384 SF OR 0.4680 AC.)
- AREA TO BIORETENTION (19,948 SF OR 0.4579 AC.)
- STORMWATER PLANTERS (1,115 SF OR 0.0256 AC.)
- MANUFACTURED HYDRODYNAMIC DEVICE - JELLYFISH FILTER (14,238 SF OR 0.3269 AC.)

**DRAINAGE AREA B**

- GREEN ROOF LEVEL 2 AREA (13,000 SF OR 0.2984 AC.)



**Bowman**

DRAWN: CA  
 CHECKED: STL  
 DATE: 08/03/2023

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 13461 Sunrise Valley Drive, Suite 500  
 Herndon, Virginia 20171  
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 Phone: (703) 464-1000  
 Fax: (703) 461-9720  
 www.bowman.com

**CRYSTAL TOWERS 3**

**4.1 PRELIMINARY SITE PLAN**  
**ARLINGTON COUNTY, VIRGINIA**

COMMONWEALTH OF VIRGINIA  
**STEVEN T. LIAM**  
 Lic. No. 40224  
 05/05/2023  
 PROFESSIONAL ENGINEER

**SUBMISSIONS**

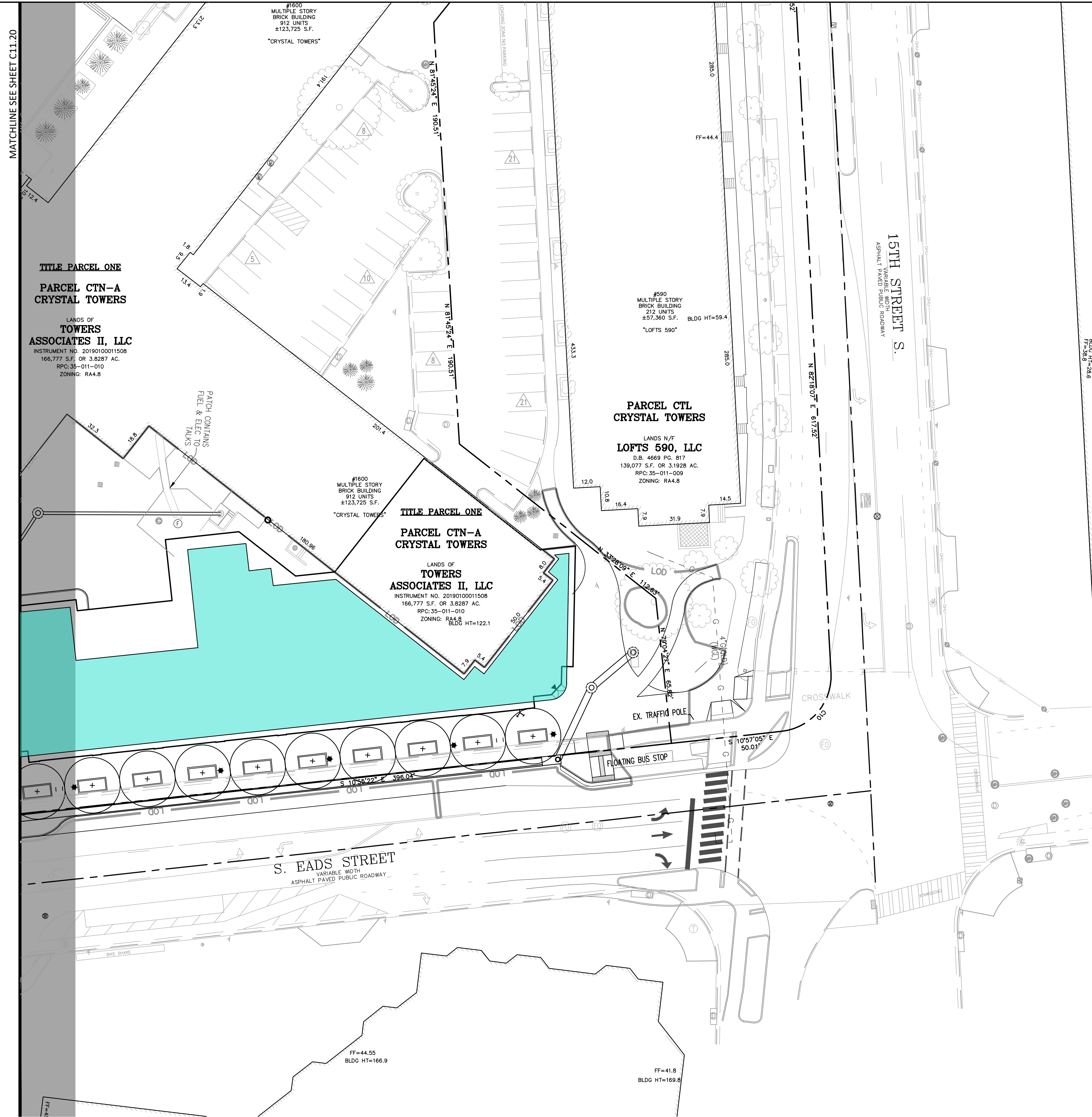
NO.	DESCRIPTION	DATE
1	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/29/2022
2	4.1 SITE PLAN PRELIMINARY SUBMISSION	03/03/2022
3	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/03/2023
4	4.1 SITE PLAN PRELIMINARY SUBMISSION	05/05/2023

SCALE: 1"=25'

SHEET TITLE:  
**STORMWATER MANAGEMENT PLAN**

SHEET #:  
**C11.20**





MATCHLINE SEE SHEET C11.20

**TITLE PARCEL ONE**  
**PARCEL CTN-A**  
**CRYSTAL TOWERS**

LANDS OF  
**TOWERS**  
**ASSOCIATES II, LLC**  
 INSTRUMENT NO. 20190100011508  
 166,777 S.F. OR 3.8287 AC.  
 RPC:35-011-010  
 ZONING: RA4.8

**TITLE PARCEL ONE**  
**PARCEL CTN-A**  
**CRYSTAL TOWERS**

LANDS OF  
**TOWERS**  
**ASSOCIATES II, LLC**  
 INSTRUMENT NO. 20190100011508  
 166,777 S.F. OR 3.8287 AC.  
 RPC:35-011-010  
 ZONING: RA4.8  
 BLDG HT=122.1

**PARCEL CTL**  
**CRYSTAL TOWERS**

LANDS N/W  
**LOFTS 590, LLC**  
 D.B. 4669 P.C. 817  
 139,077 S.F. OR 3.1928 AC.  
 RPC:35-011-009  
 ZONING: RA4.8

#1600  
 MULTIPLE STORY  
 BRICK BUILDING  
 912 UNITS  
 ±123,725 S.F.  
 "CRYSTAL TOWERS"

#590  
 MULTIPLE STORY  
 BRICK BUILDING  
 212 UNITS  
 ±57,360 S.F.  
 "LOFTS 590"

#1600  
 MULTIPLE STORY  
 BRICK BUILDING  
 912 UNITS  
 ±123,725 S.F.  
 "CRYSTAL TOWERS"

FF=44.55  
 BLDG HT=166.9

FF=41.8  
 BLDG HT=169.8

**LEGEND**

**DRAINAGE AREA A**

- GREEN ROOF LEVEL 2 AREA  
(20,384 SF OR 0.4680 AC.)
- AREA TO BIORETENTION  
(19,948 SF OR 0.4579 AC.)
- STORMWATER PLANTERS  
(1,115 SF OR 0.0256 AC.)
- MANUFACTURED HYDRODYNAMIC  
DEVICE - JELLYFISH FILTER  
(14,238 SF OR 0.3269 AC.)

**DRAINAGE AREA B**

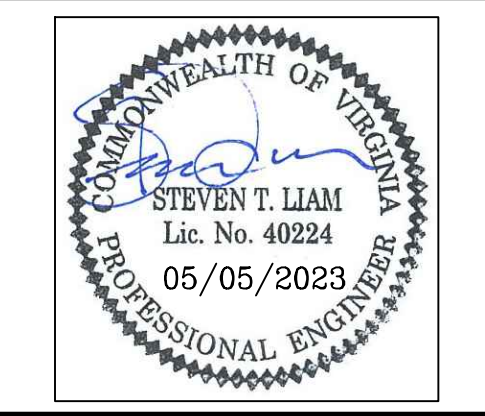
- GREEN ROOF LEVEL 2 AREA  
(13,000 SF OR 0.2984 AC.)

Bowman

CHECKED: STL  
 DRAWN: CA  
 DATE: 08/03/2023  
 Bowman Consulting Group, Ltd.  
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CRYSTAL TOWERS 3

4.1 PRELIMINARY SITE PLAN  
 ARLINGTON COUNTY, VIRGINIA

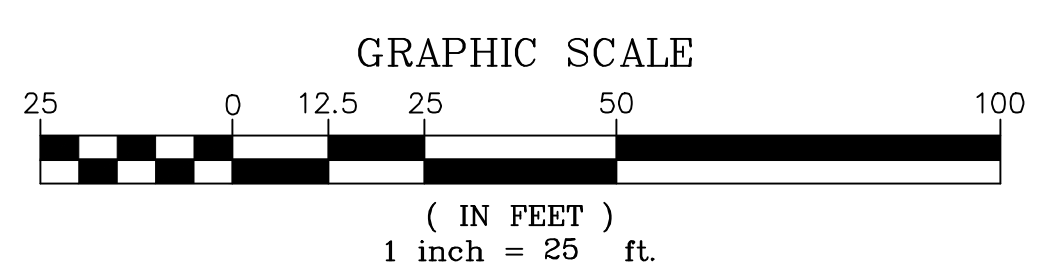


SUBMISSIONS		
NO.	DESCRIPTION	DATE
1	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/29/2022
2	4.1 SITE PLAN PRELIMINARY SUBMISSION	03/03/2022
3	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/03/2023
4	4.1 SITE PLAN PRELIMINARY SUBMISSION	05/05/2023

SCALE: 1"=25'

SHEET TITLE:  
**STORMWATER MANAGEMENT  
 PLAN**

SHEET #:  
**C11.21**





Project Name: **Crystal Towers**  
 Date: **5/4/2023**  
 Linear Development Project? **No**

**CLEAR ALL**  
 (Ctrl+Shift+R)

**data input cells**  
**constant values**  
**calculation cells**  
**final results**

**Site Information**

**Post-Development Project (Treatment Volume and Loads)**

Enter Total Disturbed Area (acres) → **3.2225**

Maximum reduction required:	<b>20%</b>
The site's net increase in impervious cover (acres) is:	<b>0.5589</b>
Post-Development TP Load Reduction for Site (lb/yr):	<b>2.0729</b>

**Check:**  
 BMP Design Specifications List: **2013 Draft Stds & Specs**  
 Linear project? **No**  
 Land cover areas entered correctly? **✓**  
 Total disturbed area entered? **✓**

**Pre-ReDevelopment Land Cover (acres)**

	A Soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) -- undisturbed forest/open space					0.0000
Managed Turf (acres) -- disturbed, graded for yards or other turf to be				0.7567	0.7567
Impervious Cover (acres)				2.4658	2.4658
					3.2225

**Post-Development Land Cover (acres)**

	A Soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) -- undisturbed, protected forest/open space or reforested					0.0000
Managed Turf (acres) -- disturbed, graded for yards or other turf to be				0.1978	0.1978
Impervious Cover (acres)				3.0247	3.0247
<b>Area Check</b>	<b>OK.</b>	<b>OK.</b>	<b>OK.</b>	<b>OK.</b>	<b>3.2225</b>

**Constants**

Annual Rainfall (inches)	<b>43</b>
Target Rainfall Event (inches)	<b>1.00</b>
Total Phosphorus (TP) EMC (mg/L)	<b>0.26</b>
Total Nitrogen (TN) EMC (mg/L)	<b>1.86</b>
Target TP Load (lb/acre/yr)	<b>0.41</b>
Pj (unitless correction factor)	<b>0.90</b>

**Runoff Coefficients (Rv)**

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

**LAND COVER SUMMARY – PRE-REDEVELOPMENT**

Land Cover Summary-Pre		
Pre-ReDevelopment	Listed	Adjusted <sup>1</sup>
Forest/Open Space Cover (acres)	0.0000	0.0000
Weighted Rv(forest)	0.0000	0.0000
% Forest	0%	0%
Managed Turf Cover (acres)	0.7567	0.1978
Weighted Rv(turf)	0.2500	0.2500
% Managed Turf	23%	7%
Impervious Cover (acres)	2.4658	2.4658
Rv(impervious)	0.9500	0.9500
% Impervious	77%	93%
<b>Total Site Area (acres)</b>	<b>3.2225</b>	<b>2.6636</b>
<b>Site Rv</b>	<b>0.7856</b>	<b>0.8980</b>

**Treatment Volume and Nutrient Load**

Pre-ReDevelopment Treatment Volume (acre-ft)	0.2110	0.1993
Pre-ReDevelopment Treatment Volume (cubic feet)	9,190.0166	8,682.8148
Pre-ReDevelopment TP Load (lb/yr)	<b>5.7741</b>	<b>5.4554</b>
Pre-ReDevelopment TP Load per acre (lb/acre/yr)	1.7900	2.0500
Baseline TP Load (lb/yr) (0.41 lbs/acre/yr applied to pre-redevelopment area excluding pervious land proposed for new impervious cover)		1.0921

**LAND COVER SUMMARY – POST DEVELOPMENT**

Land Cover Summary-Post (Final)		Land Cover Summary-Post		Land Cover Summary-Post	
Post ReDev. & New Impervious		Post-ReDevelopment		Post-Development New Impervious	
Forest/Open Space Cover (acres)	0.0000	Forest/Open Space Cover (acres)	0.0000		
Weighted Rv(forest)	0.0000	Weighted Rv(forest)	0.0000		
% Forest	0%	% Forest	0%		
Managed Turf Cover (acres)	0.1978	Managed Turf Cover (acres)	0.1978		
Weighted Rv (turf)	0.2500	Weighted Rv (turf)	0.2500		
% Managed Turf	6%	% Managed Turf	7%		
Impervious Cover (acres)	3.0247	ReDev. Impervious Cover (acres)	2.4658	New Impervious Cover (acres)	0.5589
Rv(impervious)	0.9500	Rv(impervious)	0.9500	Rv(impervious)	0.9500
% Impervious	94%	% Impervious	93%		
<b>Final Site Area (acres)</b>	<b>3.2225</b>	<b>Total ReDev. Site Area (acres)</b>	<b>2.6636</b>		
<b>Final Post Dev Site Rv</b>	<b>0.9070</b>	<b>ReDev Site Rv</b>	<b>0.8980</b>		

**Treatment Volume and Nutrient Load**

Final Post-Development Treatment Volume (acre-ft)	0.2436	Post-ReDevelopment Treatment Volume (acre-ft)	0.1993	Post-Development Treatment Volume (acre-ft)	0.0442
Final Post-Development Treatment Volume (cubic feet)	10,610.1815	Post-ReDevelopment Treatment Volume (cubic feet)	8,682.8148	Post-Development Treatment Volume (cubic feet)	1,927.3667
Final Post-Development TP Load (lb/yr)	<b>6.6664</b>	Post-ReDevelopment TP Load (lb/yr)*	<b>5.4554</b>	Post-Development TP Load (lb/yr)	<b>1.2110</b>
Final Post-Development TP Load per acre (lb/acre/yr)	2.0700	Post-ReDevelopment TP Load per acre (lb/acre/yr)	2.0500		
		Max. Reduction Required (Below Pre-ReDevelopment Load)	<b>20%</b>		
		TP Load Reduction Required for Redeveloped Area (lb/yr)	<b>1.0911</b>	TP Load Reduction Required for New Impervious Area (lb/yr)	<b>0.9818</b>

**SWM/BMP NARRATIVE**

**EXISTING CONDITIONS:**

THE TOTAL PARCEL AREA OF THE SITE IS 563,450 SF OR 12.9351 ACRES. THE LIMITS OF DISTURBANCE AREA FOR THE PROJECT IS 140,375 SF OR 3.2225 ACRES. THE LIMITS OF DISTURBANCE AREA WILL BE USED FOR STORMWATER COMPUTATIONS WHICH EQUATES TO 140,375 SF OR 3.2225 ACRES.

THE SITE CONSISTS OF EXISTING RESIDENTIAL TOWERS, SURFACE PARKING AND LANDSCAPE AREAS. THE SITE DRAINS TOWARDS S. EADS STREET AND CONVEYS INTO THE PUBLIC STORM SEWER PER PUBLIC INLETS THROUGHOUT THE SITE AND ROADWAY. THERE ARE NO VISIBLE STORMWATER SYSTEMS ON SITE.

**PROPOSED CONDITIONS:**

THE PROJECT CONSISTS OF THE CONSTRUCTION OF A RESIDENTIAL BUILDING TOWER, A 1 STORY RETAIL BUILDING, DRIVE AISLE, LEAD WALKS, UTILITY INFRASTRUCTURE AND STORMWATER MANAGEMENT BMP'S. THE PROPOSED STORMWATER MANAGEMENT BMP'S WILL CONSIST OF URBAN BIORETENTION PLANTER LOCATED BY THE RESIDENTIAL BUILDING AT THE COURTYARD AREA, GREEN ROOF AREAS ON THE RESIDENTIAL BUILDING AND RETAIL BUILDING AND A MANUFACTURED BMP (JELLYFISH FILTER) AT THE DRIVE AISLE TO CAPTURE THE INTERNAL LOOP ROADWAY RUNOFF.

**STORMWATER QUALITY:**

THE SITE COMPLIES WITH THE ARLINGTON COUNTY STORMWATER ORDINANCE VIA URBAN BIORETENTIONS, GREEN ROOF AND MANUFACTURED BMP. SEE SHEETS C11.30--C11.31 FOR COMPUTATIONS.

**STORMWATER QUANTITY:**

IN ORDER TO MEET STORMWATER QUANTITY REGULATIONS AN ENERGY BALANCE COMPUTATION HAS BEEN CALCULATED ON SHEET C11.32. THE SITE WILL PROVIDE A DETENTION STORAGE IN A VAULT UNDER THE DRIVE AISLE BY THE RESIDENTIAL BUILDING IN ORDER TO HANDLE THE 2-YEAR AND 10-YEAR, 24-HOUR STORM DISCHARGE RATE. DETENTION STORAGE WILL SATISFY THE CHANNEL AND FLOOD PROTECTION REQUIREMENTS.

**ADJACENT PROPERTIES:**

THE PROPOSED SITE WILL NOT HAVE ANY ADVERSE EFFECTS ON ADJACENT PROPERTIES. ALL SHEET FLOW UNDETAINED BY THE SITE WILL BE ROUTED TO THE PUBLIC RIGHT OF WAY EXISTING STORM SEWER SYSTEM.

**FLOODPLAIN BOUNDARY:**

THIS SITE IS LOCATED OUTSIDE OF THE 100-YEAR FLOODPLAIN BOUNDARY

**RESOURCE PROTECTION AREAS:**

THERE ARE NO RESOURCE PROTECTION AREAS TO EXIST ON SITE.

THE SITE IS LOCATED IN THE ROACHES RUN WATERSHED.

BMP FINAL DETAILS AND COMPUTATIONS ARE SUBJECT TO CHANGE AT FINAL ENGINEERING.

**Bowman**

CHECKED: STL

DATE: 08/02/2023

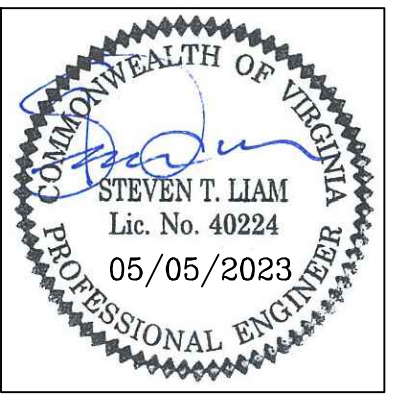
DRAWN: CA

DATE: 08/02/2023

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**CRYSTAL TOWERS 3**

**4.1 PRELIMINARY SITE PLAN  
 ARLINGTON COUNTY, VIRGINIA**



SUBMISSIONS		
NO.	DESCRIPTION	DATE
1	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/29/2022
2	4.1 SITE PLAN PRELIMINARY SUBMISSION	03/03/2022
3	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/03/2023
4	4.1 SITE PLAN PRELIMINARY SUBMISSION	05/05/2023

SCALE: 1"=25'

SHEET TITLE:  
**STORMWATER COMPUTATIONS**

SHEET #:  
**C11.30**



**Drainage Area A**

Drainage Area A Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals	Land Cover Rv
Forest/Open Space (acres)					0.0000	0.0000
Managed Turf (acres)				0.0962	0.0962	0.2500
Impervious Cover (acres)				2.1184	2.1184	0.9500
<b>Total</b>				<b>2.2146</b>		

CLEAR BMP AREAS

Total Phosphorus Available for Removal in D.A. A (lb/yr)	4.6448
Post Development Treatment Volume in D.A. A (ft <sup>3</sup> )	7,392.6039

**Stormwater Best Management Practices (RR = Runoff Reduction)**

--Select from dropdown lists--

Practice	Runoff Reduction Credit (%)	Managed Turf Credit Area (acres)	Impervious Cover Credit Area (acres)	Volume from Upstream Practice (ft <sup>3</sup> )	Runoff Reduction (ft <sup>3</sup> )	Remaining Runoff Volume (ft <sup>3</sup> )	Total BMP Treatment Volume (ft <sup>3</sup> )	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
<b>1. Vegetated Roof (RR)</b>													
1.a. Vegetated Roof #1 (Spec #5)	45				0.0000	0.0000	0.0000	0		0.0000	0.0000	0.0000	
1.b. Vegetated Roof #2 (Spec #5)	60		0.4680		968.3388	645.5592	1,613.8980	0		1.0129	0.6077	0.4051	14.a. MTD - Hydrodynamic
<b>6. Bioretention (RR)</b>													
6.a. Bioretention #1 or Micro-Bioretention #1 or Urban Bioretention (Spec #9)	40		0.4835	0.0000	666.9399	1,000.4099	1,667.3498	25	0.0000	1.0464	0.5755	0.4709	
<b>14. Manufactured Treatment Devices (no RR)</b>													
14.a. Manufactured Treatment Device-Hydrodynamic	0		0.3269	645.5592	0.0000	1,772.8739	1,772.8739	65	0.4051	0.7075	0.7232	0.3894	

Nitrogen Removal Efficiency (%)	Nitrogen Load from Upstream Practices (lbs)	Untreated Nitrogen Load to Practice (lbs)	Nitrogen Removed By Practice (lbs)	Remaining Nitrogen Load (lbs)
<b>1. Vegetated Roof (RR)</b>				
0		0.0000	0.0000	0.0000
0		7.2458	4.3475	2.8983
<b>6. Bioretention (RR)</b>				
40	0.0000	7.4858	4.7909	2.6949
<b>14. Manufactured BMP (no RR)</b>				
0	2.8983	5.0613	0.0000	7.9596

**Drainage Area B**

Drainage Area A Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals	Land Cover Rv
Forest/Open Space (acres)					0.0000	0.0000
Managed Turf (acres)				0.1016	0.1016	0.2500
Impervious Cover (acres)				0.9063	0.9063	0.9500
<b>Total</b>				<b>1.0079</b>		

CLEAR BMP AREAS

Total Phosphorus Available for Removal in D.A. B (lb/yr)	2.0216
Post Development Treatment Volume in D.A. B (ft <sup>3</sup> )	3,217.5776

**Stormwater Best Management Practices (RR = Runoff Reduction)**

--Select from dropdown lists--

Practice	Runoff Reduction Credit (%)	Managed Turf Credit Area (acres)	Impervious Cover Credit Area (acres)	Volume from Upstream Practice (ft <sup>3</sup> )	Runoff Reduction (ft <sup>3</sup> )	Remaining Runoff Volume (ft <sup>3</sup> )	Total BMP Treatment Volume (ft <sup>3</sup> )	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
<b>1. Vegetated Roof (RR)</b>													
1.a. Vegetated Roof #1 (Spec #5)	45				0.0000	0.0000	0.0000	0		0.0000	0.0000	0.0000	
1.b. Vegetated Roof #2 (Spec #5)	60		0.2984		617.4194	411.6130	1,029.0324	0		0.6458	0.3875	0.2583	

Nitrogen Removal Efficiency (%)	Nitrogen Load from Upstream Practices (lbs)	Untreated Nitrogen Load to Practice (lbs)	Nitrogen Removed By Practice (lbs)	Remaining Nitrogen Load (lbs)
<b>1. Vegetated Roof (RR)</b>				
0		0.0000	0.0000	0.0000
0		4.6200	2.7720	1.8480

**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)	0.0000	0.0000	0.0000	0.0000	0.0000	OK.
IMPERVIOUS COVER (ac)	2.1184	0.9063	0.0000	0.0000	0.0000	OK.
IMPERVIOUS COVER TREATED (ac)	1.2784	0.2984	0.0000	0.0000	0.0000	OK.
MANAGED TURF AREA (ac)	0.0962	0.1016	0.0000	0.0000	0.0000	OK.
MANAGED TURF AREA TREATED (ac)	0.0000	0.0000	0.0000	0.0000	0.0000	OK.
AREA CHECK	OK.	OK.	OK.	OK.	OK.	

Site Treatment Volume (ft<sup>3</sup>) 10,610.1815

**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 (ft <sup>3</sup> )	1,635.2787	617.4194	0.0000	0.0000	0.0000	2,252.6981
TP LOAD AVAILABLE FOR REMOVAL (lb/yr)	4.6448	2.0216	0.0000	0.0000	0.0000	6.6664
TP LOAD REDUCTION ACHIEVED (lb/yr)	1.9064	0.3875	0.0000	0.0000	0.0000	2.2939
TP LOAD REMAINING (lb/yr)	2.7383	1.6341	0.0000	0.0000	0.0000	4.3724
NITROGEN LOAD REDUCTION ACHIEVED (lb/yr)	9.1384	2.7720	0.0000	0.0000	0.0000	11.9104

**Total Phosphorus**

FINAL POST-DEVELOPMENT TP LOAD (lb/yr)	6.6664
TP LOAD REDUCTION REQUIRED (lb/yr)	2.0729
TP LOAD REDUCTION ACHIEVED (lb/yr)	2.2939
TP LOAD REMAINING (lb/yr)	4.3724

REMAINING TP LOAD REDUCTION REQUIRED (lb/yr): 0.0000 \*\*  
 \*\* TARGET TP REDUCTION EXCEEDED BY 0.221 LB/YEAR \*\*

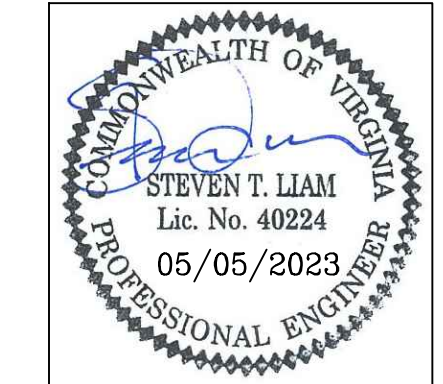
**Total Nitrogen (For Information Purposes)**

POST-DEVELOPMENT LOAD (lb/yr)	47.6900
NITROGEN LOAD REDUCTION ACHIEVED (lb/yr)	11.9104
REMAINING POST-DEVELOPMENT NITROGEN LOAD (lb/yr)	35.7796

July 2014 (Revised April 2015). Sizing spreadsheet for SW planters for compliance with Arlington County Stormwater Management Ordinance

Enter data into highlighted cells. WQV needs to > 100% for credit.

Facility name/type	Impervious Area to Facility	Pervious Area to Facility	Total Drainage Area	Total Drainage Area	Rainfall Depth (P)	Rv	Target storage (WQV)	Width	Length	Ponding depth	Filter depth	Gravel depth	Surface Area	Ponding Volume (1.00 void)	Soil Storage Volume (0.25 void)	Gravel Storage Volume (0.4 void)	Available Storage	% Water Quality Volume Captured
Stormwater Planter Box #1	(SF)	(SF)	(SF)	(acre)	(in)		(CF)	(ft)	(ft)	(in)	(in)	(in)	(SF)	(CF)	(CF)	(CF)	(CF)	Must be ≥ 100% (Max. 200%)
	21063	0	21063	0.4835	1.00	0.95	1667.49	16.00	69.69	6	48	12	1115.04	557.52	1115.04	446.02	2118.58	127.1%



SUBMISSIONS		
NO.	DESCRIPTION	DATE
1	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/29/2022
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4	4.1 SITE PLAN PRELIMINARY SUBMISSION	05/05/2023

SCALE: 1"=25'

SHEET TITLE: STORMWATER COMPUTATIONS

SHEET #: C11.31

CRYSTAL TOWERS 3  
 4.1 PRELIMINARY SITE PLAN  
 ARLINGTON COUNTY, VIRGINIA



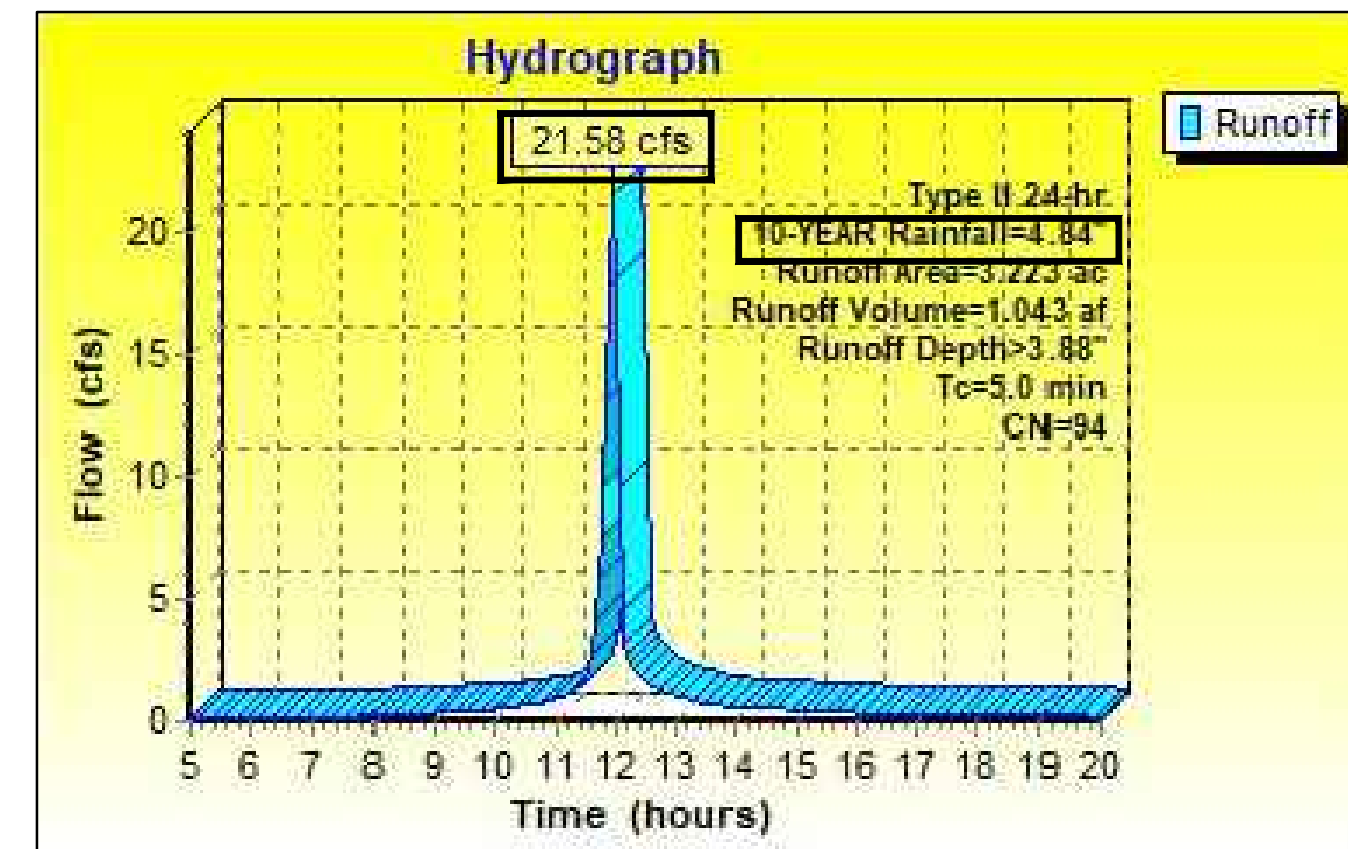
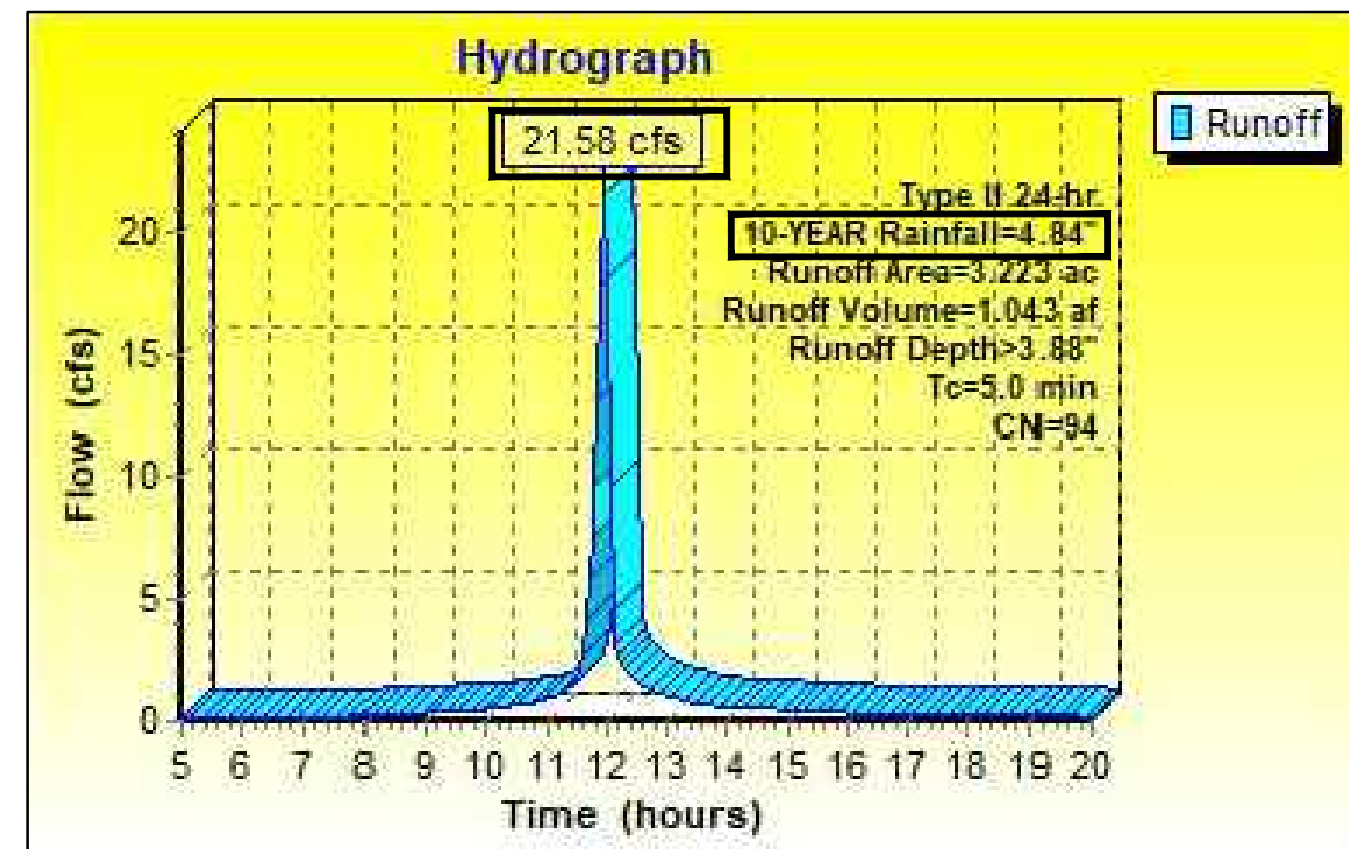
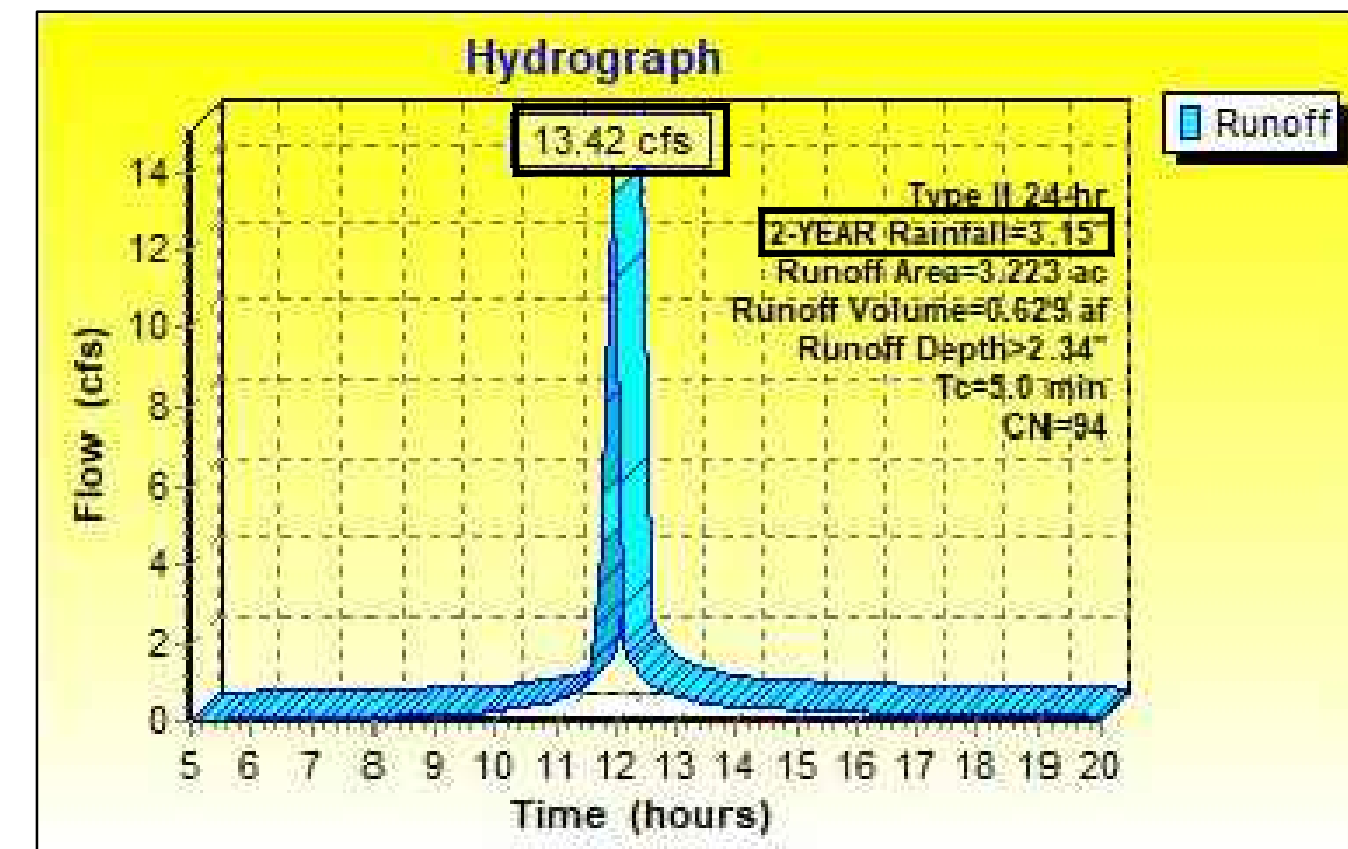
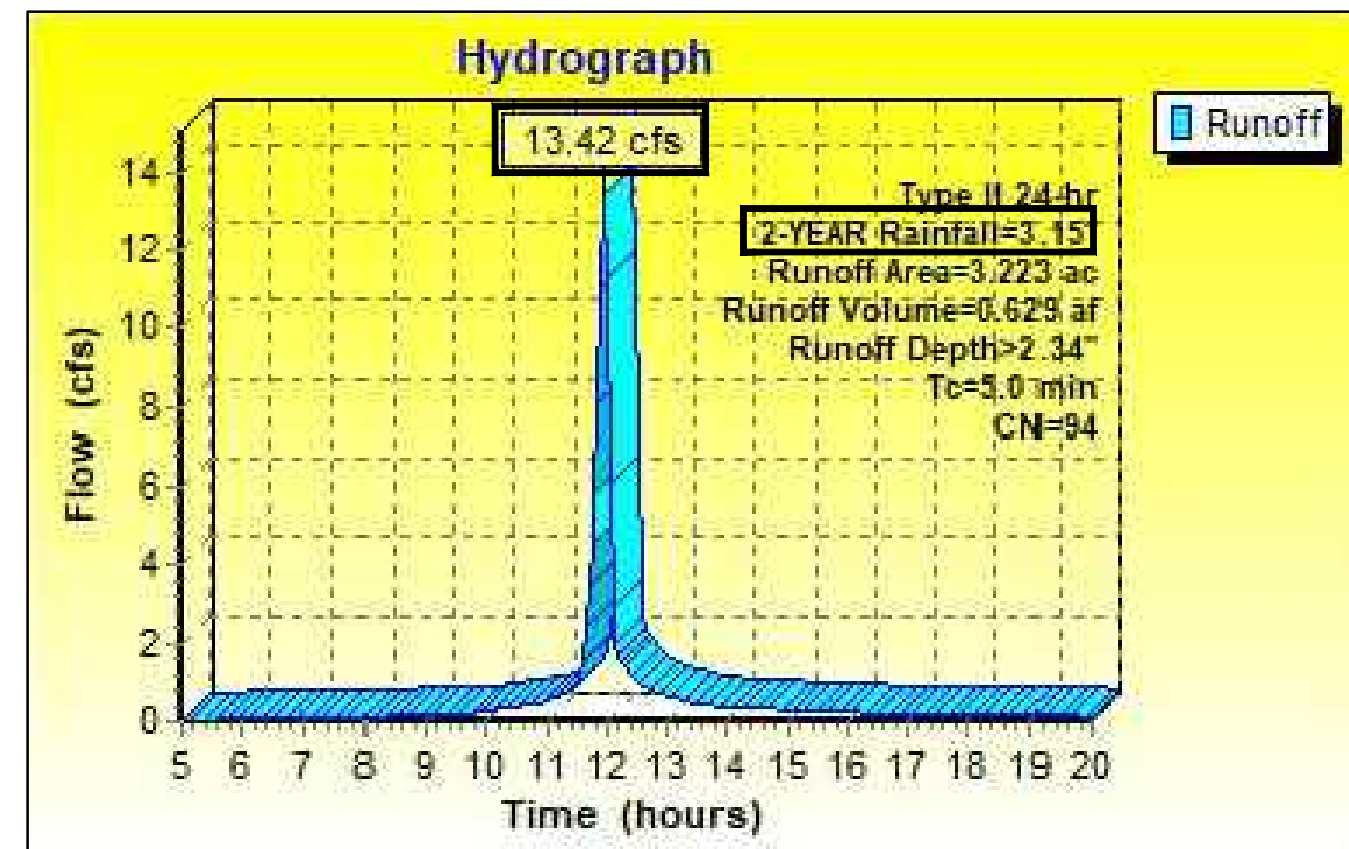
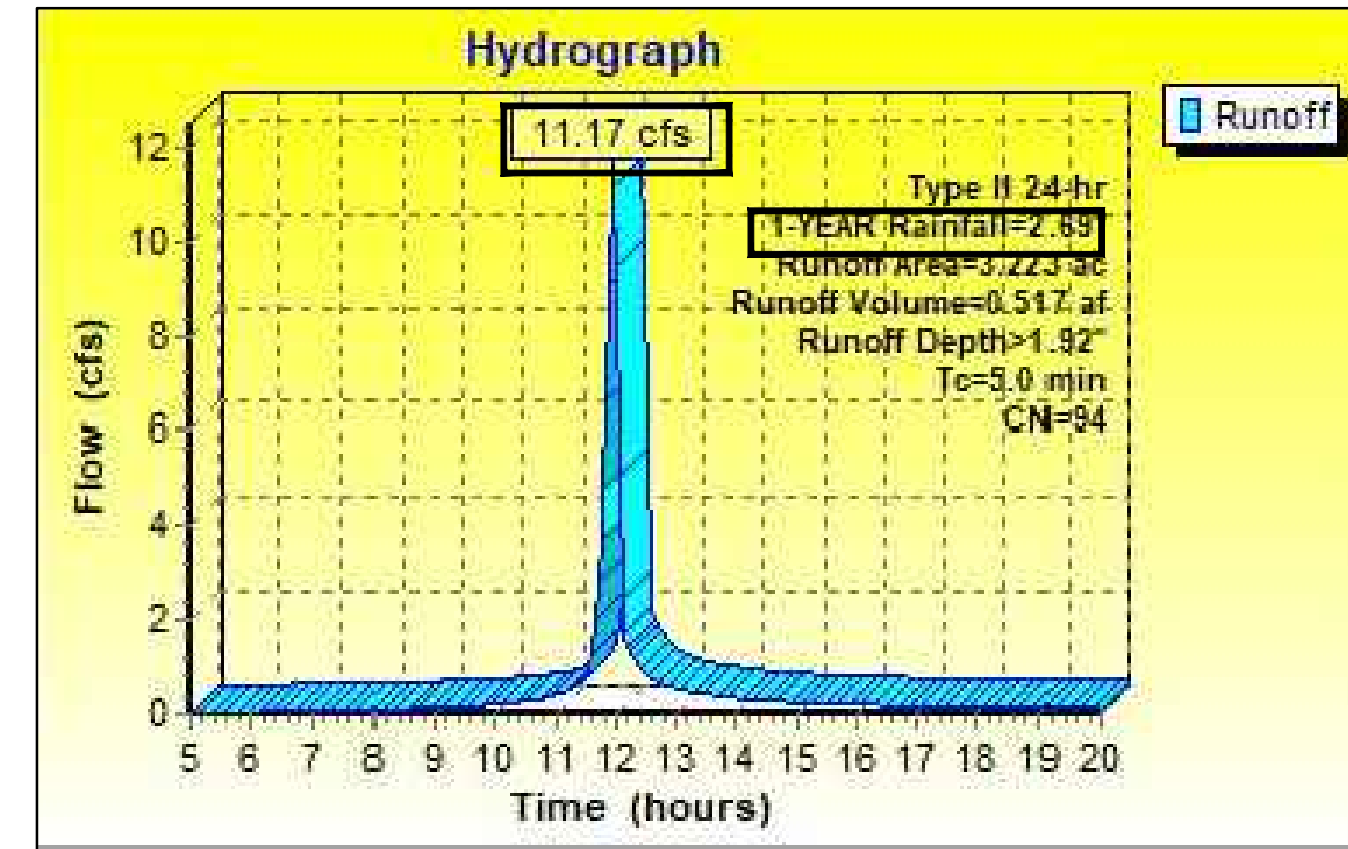
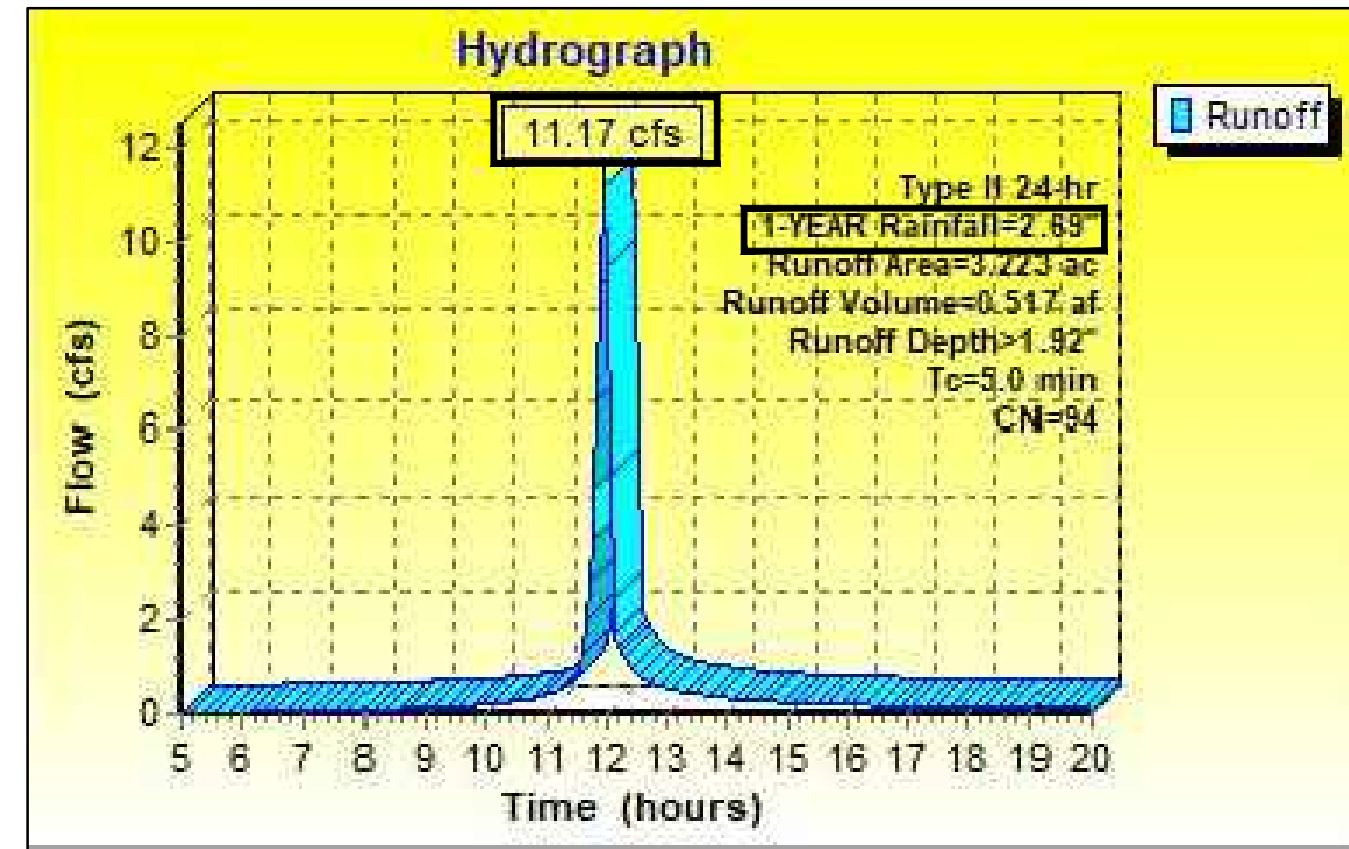
CHECKED: STL  
 DRAWN: CA  
 DATE: 08/03/2022  
 Bowman Consulting Group, Ltd.  
 13461 Sunrise Valley Drive, Suite 500  
 Herndon, Virginia 20171  
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# SITE RUNOFF HYDROGRAPHS

## PRE-DEVELOPMENT

## POST-DEVELOPMENT



# SITE CURVE NUMBERS

## PRE-DEVELOPMENT

CURVE NUMBER = 94 (SEE SHEET C11.00-C11.01)

## POST-DEVELOPMENT

**Drainage Area Curve Numbers and Runoff Depths\***  
Curve numbers (CN, CNadj) and runoff depths (RV<sub>Developed</sub>) are computed with and without reduction practices.

Drainage Area A		A Soils	B Soils	C Soils	D Soils	Total Area (acres):	2.2146
Forest/Open Space -- undisturbed, protected forest/open space or reforested land	Area (acres)	0.0000	0.0000	0.0000	0.0000	Runoff Reduction	
	CN	30	55	70	77	Volume (ft <sup>3</sup> ):	1,635.2787
Managed Turf -- disturbed, graded for yards or other turf to be mowed/managed	Area (acres)	0.0000	0.0000	0.0000	0.0962		
	CN	39	61	74	80		
Impervious Cover	Area (acres)	0.0000	0.0000	0.0000	2.1184		
	CN	98	98	98	98		
CN <sub>(D.A. A)</sub>							
97							
		1-year storm	2-year storm	10-year storm			
RV <sub>Developed</sub> (watershed-inch) with no Runoff Reduction*		2.3514	2.8070	4.4877			
RV <sub>Developed</sub> (watershed-inch) with Runoff Reduction*		2.1480	2.6036	4.2842			
Adjusted CN*		95	95	95			

\*See Notes above

Drainage Area B		A Soils	B Soils	C Soils	D Soils	Total Area (acres):	1.0079
Forest/Open Space -- undisturbed, protected forest/open space or reforested land	Area (acres)	0.0000	0.0000	0.0000	0.0000	Runoff Reduction	
	CN	30	55	70	77	Volume (ft <sup>3</sup> ):	617.4194
Managed Turf -- disturbed, graded for yards or other turf to be mowed/managed	Area (acres)	0.0000	0.0000	0.0000	0.1016		
	CN	39	61	74	80		
Impervious Cover	Area (acres)	0.0000	0.0000	0.0000	0.9063		
	CN	98	98	98	98		
CN <sub>(D.A. B)</sub>							
96							
		1-year storm	2-year storm	10-year storm			
RV <sub>Developed</sub> (watershed-inch) with no Runoff Reduction*		2.2474	2.6998	4.3736			
RV <sub>Developed</sub> (watershed-inch) with Runoff Reduction*		2.0787	2.5311	4.2048			
Adjusted CN*		94	94	94			

\*See Notes above

	1-year storm	2-year storm	10-year storm
	2.69	3.15	4.84

# ENERGY BALANCE WORKSHEET

## SWM Water Quantity Energy Balance Worksheet

SITE AREA (acre)	1-year		10-year	
	PRE	POST (adjusted)	PRE	POST (adjusted)
P	2.69	2.69	4.84	4.84
CN	94.00	94.00	94.00	94.00
S=1000/CN-10	0.64	0.64	0.64	0.64
0.2S	0.13	0.13	0.13	0.13
RV=(P-0.2S)/(P-0.2S)+S	2.05	2.05	4.15	4.15

$$Q_{Post\ Development} \leq I.F. * (Q_{pre-development} * RV_{pre-development} / RV_{Developed})$$

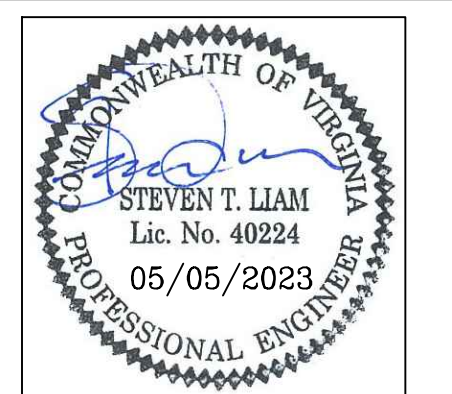
I.F.		0.8	
<b>CHANNEL PROTECTION</b>			
Qpre-development	11.17	From TR55	
QPost Development	11.17	From TR55	
RVPost Development (with runoff reduction)	2.1480	From RRM	
Qallowable	8.53		
Qallowable/QPost Development	0.76		
Vs/Vr	0.19	Fig 11.7 of DEQ Manual	
Vs	0.40		
Storage required (cf)	4729		
<b>FLOOD CONTROL</b>			
Qpre-development	21.58		
QPost Development	21.58		
RVPost Development (with runoff reduction)	4.2842		
Qallowable	20.90		
Qallowable/QPost Development	0.97		
Vs/Vr	0.10		
Vs	0.45		
Storage required (cf)	5255		

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## CRYSTAL TOWERS 3

### 4.1 PRELIMINARY SITE PLAN ARLINGTON COUNTY, VIRGINIA



SUBMISSIONS		
NO.	DESCRIPTION	DATE
1	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/29/2022
2	4.1 SITE PLAN PRELIMINARY SUBMISSION	03/03/2022
3	4.1 SITE PLAN PRELIMINARY SUBMISSION	04/03/2023
4	4.1 SITE PLAN PRELIMINARY SUBMISSION	05/05/2023

SCALE: 1"=25'

SHEET TITLE:  
STORMWATER COMPUTATIONS

SHEET #:  
C11.32