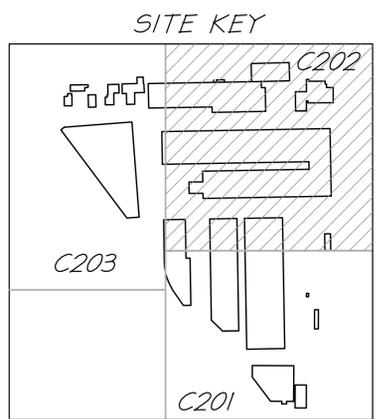


| DATE | REVISION |
|----------|-------------------------|
| 9-4-20 | DSUP SUBMISSION #1 |
| 10-20-20 | DSUP SUBMISSION #2 |
| 11-3-20 | DSUP SUBMISSION #3 |
| 12-04-20 | VERIFICATION SUBMISSION |



- NOTE:
- FOR EXISTING TREE INVENTORY LIST, SEE SHEET C101.
 - FOR SANITARY AND STORM STRUCTURE DATA, SEE SHEET C203.
 - FOR PROPERTY LINE AND CURVE TABLES, SEE SHEET C203.
 - SEE SHEET C200 FOR LEGEND.

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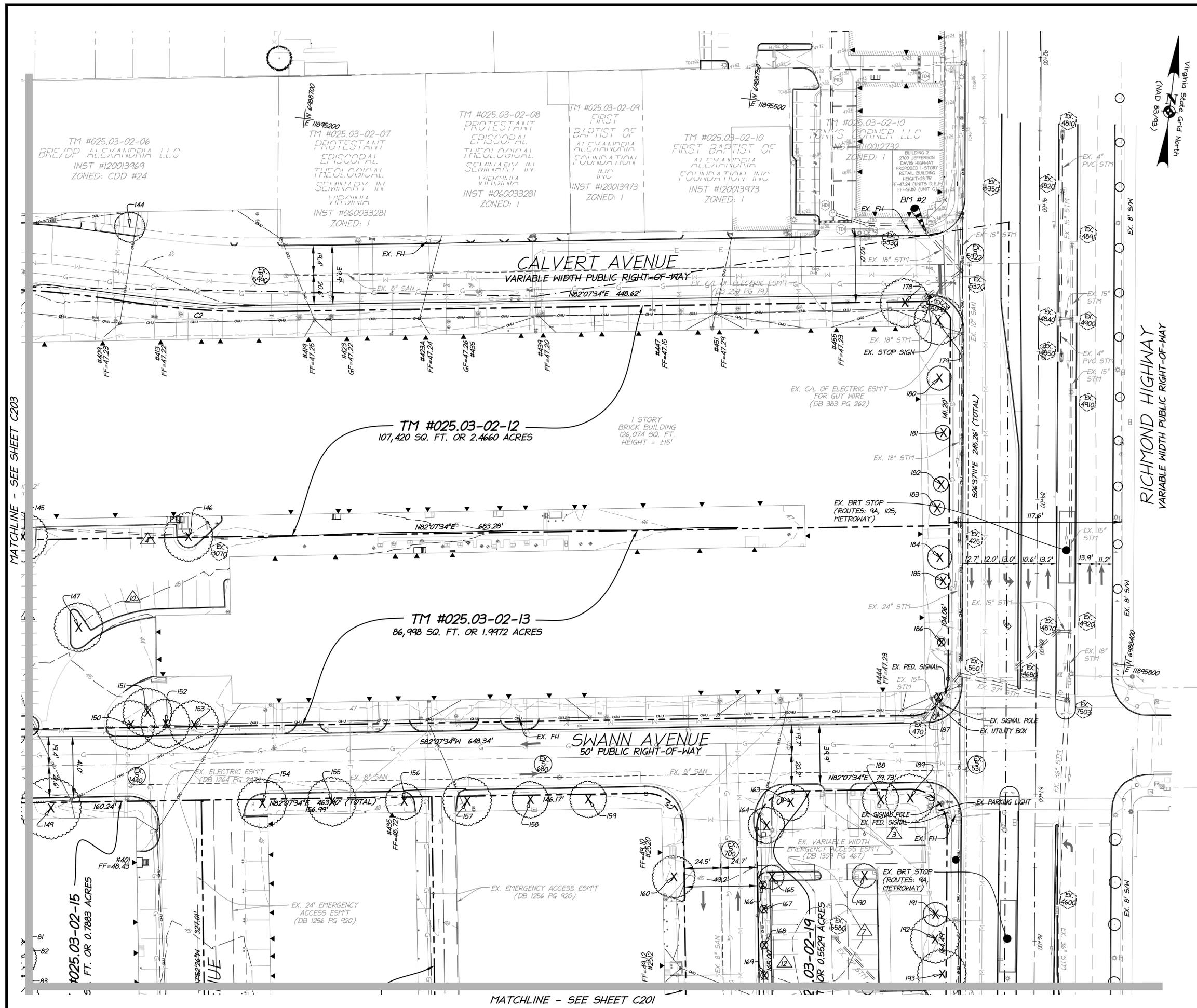
ELI GOLDMAN
 Lic. No. 55868
 12/04/2020
 PROFESSIONAL ENGINEER

EXISTING CONDITIONS
 PLAN

OAKVILLE INFRASTRUCTURE
 DEVELOPMENT SITE PLAN
 CITY OF ALEXANDRIA, VIRGINIA

PROJECT NO: 14007.011.00
 SCALE: 1"=30'
 DATE: 09-04-20
 DESIGN: EG
 DRAWN: JS
 CHECKED: K1W
 SHEET No.

C202
 110164



APPROVED
 DEVELOPMENT SITE PLAN NO. 2020-00031
 DEPARTMENT OF PLANNING & ZONING

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

MATCHLINE - SEE SHEET C203

MATCHLINE - SEE SHEET C201

PROPERTY LINE TABLE

| LINE | BEARING | DISTANCE |
|------|-------------|----------|
| L1 | N46°09'59"E | 50.62' |
| L2 | S34°01'59"E | 65.00' |
| L3 | S82°07'34"W | 24.16' |
| L4 | S43°50'21"E | 37.06' |
| L5 | S07°52'26"E | 2.01' |
| L6 | N83°22'49"E | 13.24' |
| L7 | S07°52'26"E | 34.99' |
| L8 | S07°52'26"E | 25.01' |
| L9 | N83°22'49"E | 2.36' |
| L10 | S07°52'26"E | 40.68' |
| L11 | S07°47'12"E | 28.65' |
| L12 | S46°04'34"W | 19.99' |

PROPERTY CURVE TABLE

| CURVE | RADIUS | LENGTH | DELTA | TANGENT | BEARING | CHORD |
|-------|---------|---------|-----------|---------|-------------|---------|
| C1 | 800.00' | 136.51' | 9°46'35" | 68.42' | N87°02'09"E | 136.34' |
| C2 | 567.14' | 96.98' | 9°47'50" | 48.61' | N87°01'30"E | 96.86' |
| C3 | 18.00' | 19.10' | 60°47'51" | 10.56' | S67°33'05"E | 18.22' |
| C4 | 26.00' | 38.70' | 88°41'18" | 24.43' | S37°42'15"W | 34.95' |
| C5 | 26.00' | 39.28' | 90°00'54" | 25.01' | S52°52'26"E | 35.36' |
| C6 | 25.00' | 39.27' | 90°00'00" | 25.00' | N87°07'34"E | 35.36' |
| C7 | 25.00' | 39.82' | 91°15'15" | 25.55' | S52°14'49"E | 35.74' |
| C8 | 25.00' | 39.27' | 90°00'00" | 25.00' | S38°22'49"W | 35.36' |
| C9 | 25.00' | 38.72' | 88°44'45" | 24.46' | N52°14'49"W | 34.97' |
| C10 | 25.00' | 39.76' | 91°06'50" | 25.49' | S37°49'05"W | 35.70' |
| C11 | 242.81' | 63.53' | 14°59'24" | 31.95' | S15°16'56"E | 63.35' |
| C12 | 271.56' | 162.43' | 34°16'12" | 83.72' | N26°42'15"W | 160.02' |
| C13 | 850.00' | 145.04' | 9°46'35" | 72.70' | N87°02'09"E | 144.86' |
| C14 | 517.14' | 88.43' | 9°47'50" | 44.32' | N87°01'30"E | 88.32' |

SANITARY SEWER STRUCTURE DATA

SAN MH 336
TOP=38.48
IN=30.03 10" DIP FR 531
IN=30.78 10" LINED FR 1760
OUT=24.98 12" DIP TO 7505

SAN MH 531
TOP=45.57
IN=35.02 10" DIP FR 5322
IN=35.52 10" CLAY FR 680
OUT=34.79 10" DIP TO 336

SAN MH 680
TOP=46.71
IN=38.91 10" DIP FR 1440
OUT=38.88 10" CLAY TO 531

SAN MH 700
TOP=45.40
OUT=39.72 8" PVC TO 7502

SAN MH 1440
TOP=45.68
OUT=42.19 10" DIP TO E

SAN MH 1760
TOP=42.63
IN=37.23 LAT FR 5
IN=37.13 8" RCP FR 7502
IN=37.13 10" RCP FR 1811
OUT=37.03 10" LINED TO 336

SAN MH 1811
TOP=45.81
IN=38.10 10" RCP FR 2220
OUT=38.10 10" RCP TO 1760

SAN MH 2220
TOP=51.05
IN=41.65 8" PVC FR 2580
OUT=41.55 8" PVC TO 1811

SAN MH 2580
TOP=45.18
IN=42.53 8" PVC FR N
OUT=42.91 8" PVC TO 2220

SAN MH 5322
TOP=46.21
IN=38.07 10" PVC FR N
IN=38.47 10" RCP FR 5990
OUT=38.07 10" RCP TO 531

SAN MH 5990
TOP=45.55
OUT=41.85 10" RCP TO 5322

SAN MH 6785
TOP=38.48
IN=33.97 FR E
IN=33.97 FR W
IN=33.97 FR S
OUT=33.77 TO N

SAN MH 7502
TOP=45.65
IN=38.90 LAT FR E
IN=38.53 8" PVC FR 700
OUT=38.50 8" RCP TO 1760

SAN MH 7505
TOP=37.00
IN=27.55 10" PVC FR W
IN=27.20 12" DIP FR 336
OUT=27.15 14" DIP TO 7506

SAN MH 7506
TOP=37.86
IN=32.16 FR W
IN=25.31 14" DIP FR 7505
OUT=25.26 8" DIP TO 7509

SAN MH 7509
TOP=38.74
IN=24.94 10"
IN=24.99 8" DIP FR 7506
OUT=24.69 12" CONC TO 7518

SAN MH 7511
TOP=38.76
IN=21.66 12" PVC FR 7514
OUT=21.56 12" PVC TO 7512

SAN MH 7512
TOP=39.76
IN=20.65 12" PVC FR 7511
OUT=20.57 12" PVC TO 7515

SAN MH 7514
TOP=37.40
IN=22.90 12" CONC. FR 7518
OUT=22.80 12" PVC TO 7511

SAN MH 7515
TOP=40.26
IN=20.40 12" PVC FR 7512
OUT=20.30 12" PVC TO 7516

SAN MH 7518
TOP=38.48
IN=24.28 12" RCP FR 7509
OUT=23.98 12" RCP TO 7514

STORM STRUCTURE DATA

STM CB 334
TOP=39.36
IN=34.36 15" RCP FR 393
OUT=32.67 27" RCP TO 4540

STM MH 359
TOP=40.01
FULL OF DEBRIS
NOT ACCESSIBLE

STM CB 393
TOP=39.56
IN=36.51 15" RCP FR 359
OUT=35.76 15" RCP TO 334

STM MH 425
TOP=46.09
COVERED
NOT ACCESSIBLE

STM CB 470
TOP=45.73
OUT=41.78 15" RCP TO 550

STM CB 550
TOP=45.95
IN=34.51 15" RCP FR 470
IN=38.50 24" RCP FR 425
OUT=38.46 27" RCP TO 7503

STM DI 2210
TOP=47.19
BOTTOM=40.14
FULL OF DEBRIS

STM GI 2581
TOP=43.47
BOTTOM=41.07
FULL OF DEBRIS

STM CB 2828
TOP=43.47
IN=39.81 15" RCP FR 2829
IN=39.89 15" RCP FR 2890
OUT=39.82 24" RCP TO 6220

STM MH 2829
TOP=43.69
IN=39.79 15" RCP FR 4150
OUT=39.72 15" RCP TO 2828

STM GI 2890
TOP=43.22
IN=40.07 12" PVC FR 2920
OUT=39.92 24" RCP TO 2828

STM CB 2920
TOP=44.00
IN=41.50 12" PVC FR 3070
OUT=41.45 12" PVC TO 2890

STM GI 2590
TOP=44.07
OUT=41.97 10" PVC TO 2581

STM GI 3070
TOP=43.60
OUT=42.35 12" PVC TO 2920

STM GI 4150
TOP=42.70
IN=40.53 12" RCP FR 4300
OUT=40.50 12" RCP TO 2829

STM GI 4215
TOP=42.18
IN=39.69 15" RCP FR 6540
OUT=39.51 15" RCP TO 6424

HEADWALL 4300
INV IN=42.23 12" PVC TO 4150

STM CB 4540
TOP=39.14
IN=32.14 15" RCP FR 334
OUT=32.04 15" RCP TO 5530

STM MH 4568
TOP=41.53
FILTERRA TREENELL
NOT ACCESSIBLE

STM CB 4580
TOP=43.04
IN=35.84 36" RCP FR 4600
IN=34.94 15" RCP FR 6424
OUT=34.89 42" RCP TO 4650

STM GI 4600
TOP=44.99
UNDER CONSTRUCTION
INACCESSIBLE

STM CB 4650
TOP=43.33
IN=34.90 42" RCP FR 4580
OUT=34.80 42" RCP TO 4670

STM CB 4670
TOP=40.90
IN=34.30 36" RCP FR 4650
IN=35.90 18" RCP FR 5543
OUT=34.20 36" RCP TO 7504

STM MH 4680
TOP=46.04
OUT=43.34 15" RCP TO 4870

STM MH 4810
TOP=36.84
FILTERRA TREENELL
NOT ACCESSIBLE

STM MH 4820
TOP=46.65
IN=42.75 4" PVC FR 4810
OUT=42.60 15" RCP TO 4840

STM MH 4840
TOP=46.33
IN=42.17 15" RCP FR 4820
IN=42.37 4" PVC FR 4850
OUT=42.15 15" RCP TO 4900

STM CB 4850
TOP=46.30
FILTERRA TREENELL
NOT ACCESSIBLE

STM CB 4870
TOP=46.33
IN=42.68 15" RCP FR 4680
OUT=42.63 15" RCP TO 4920

STM CB 4891
TOP=46.70
OUT=42.61 15" RCP TO 4900

STM CB 4900
TOP=43.91
IN=42.08 15" RCP FR 4891
IN=42.08 15" RCP FR 4840
OUT=42.02 15" RCP TO 4910

STM CB 4910
TOP=46.67
IN=41.62 15" RCP FR 4900
OUT=41.52 15" RCP TO 4920

STM CB 4920
TOP=46.39
IN=40.39 15" RCP FR 4910
IN=38.43 15" RCP FR 4870
OUT=40.33 16" RCP TO 7508

STM MH 5320
TOP=46.18
IN=40.83 18" RCP FR 5350
IN=40.83 18" RCP FR 5330
IN=40.83 18" RCP FR 5090
OUT=40.78 18" RCP TO 425

STM CB 5330
TOP=46.35
OUT=41.75 18" RCP TO 5320

STM MH 5330
TOP=46.67
COVERED
INACCESSIBLE

STM CB 5502
TOP=36.84
FILTERRA TREENELL
NOT ACCESSIBLE

STM CB 5510
TOP=37.35
IN=30.65 30" RCP FR 5530
IN=32.45 18" RCP FR 5640
OUT=30.55 30" RCP TO 5502

STM CB 5530
TOP=39.28
IN=32.01 24" RCP FR 4540
OUT=31.90 30" RCP TO 5510

STM CB 5543
TOP=40.73
IN=36.73 4" PVC FR 4568
OUT=36.08 18" RCP TO 4670

STM CB 5640
TOP=37.15
IN=33.15 4" PVC FR 5650
OUT=32.75 15" RCP TO 5510

STM CB 5650
TOP=37.51
FILTERRA TREENELL
NOT ACCESSIBLE

STM GI 6220
TOP=42.23
IN=39.31 24" RCP FR 2828
IN=39.73 15" RCP FR 6240
OUT=39.23 24" RCP TO N

STM GI 6240
TOP=43.91
OUT=39.91 12" PVC TO 6220

STM GI 6424
TOP=43.10
IN=38.89 15" RCP FR 6430
IN=38.96 15" RCP FR 4218
OUT=38.56 24" RCP TO 4580

STM MH 6430
TOP=44.43
IN=39.18 15" RCP FR 6580
OUT=39.16 15" RCP TO 6424

STM MH 6540
TOP=44.69
COVERED
NOT ACCESSIBLE

STM MH 6580
TOP=43.97
COVERED
NOT ACCESSIBLE

STM CB 6763
TOP=46.69
OUT=43.54 TO N

STM CB 6842
TOP=46.68
OUT=43.73 TO S

STM DI 6974
TOP=44.76
OUT=41.78 18" CMP TO 7353

STM DI 7353
TOP=44.97
IN=40.94 18" CMP FR 6974
IN=42.27 15" CMP FR W
OUT=40.89 18" CMP TO 7400

STM DI 7400
TOP=45.94
IN=36.54 18" CMP FR 7353
OUT=39.44 18" CMP TO 7501

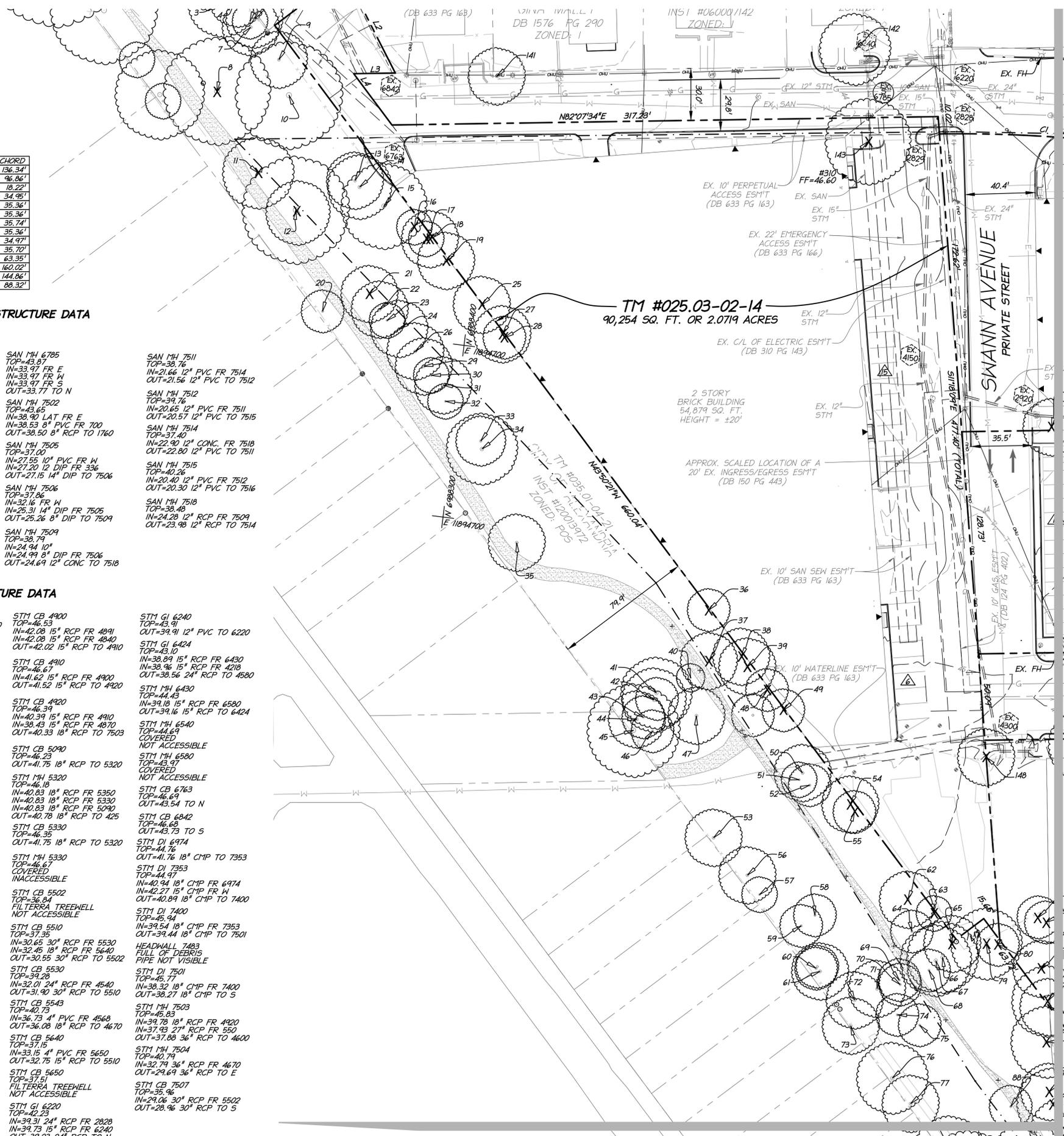
HEADWALL 7483
FULL OF DEBRIS
PIPE NOT VISIBLE

STM DI 7501
TOP=45.77
IN=38.32 18" CMP FR 7400
OUT=38.27 18" CMP TO S

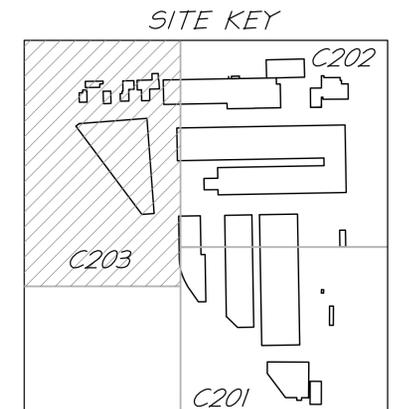
STM MH 7503
TOP=45.83
IN=39.78 18" RCP FR 4920
IN=37.93 27" RCP FR 550
OUT=37.88 36" RCP TO 4600

STM MH 7504
TOP=40.79
IN=32.79 36" RCP FR 4670
OUT=29.69 36" RCP TO E

STM CB 7507
TOP=35.96
IN=29.06 30" RCP FR 5502
OUT=28.96 30" RCP TO S

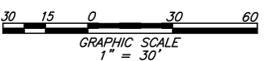


| DATE | REVISION |
|----------|-------------------------|
| 9-4-20 | DSUP SUBMISSION #1 |
| 10-20-20 | DSUP SUBMISSION #2 |
| 11-3-20 | DSUP SUBMISSION #3 |
| 12-04-20 | VERIFICATION SUBMISSION |



NOTE:

- FOR EXISTING TREE INVENTORY LIST, SEE SHEET C101.
- FOR SANITARY AND STORM STRUCTURE DATA, SEE SHEET C203.
- FOR PROPERTY LINE AND CURVE TABLES, SEE SHEET C203.
- SEE SHEET C200 FOR LEGEND.



APPROVED
DEVELOPMENT SITE PLAN NO. 2020-00031
DEPARTMENT OF PLANNING & ZONING

| | |
|--|------|
| DIRECTOR | DATE |
| DEPT. OF TRANSPORTATION & ENVIRONMENTAL SERVICES | |
| SITE PLAN No. _____ | |

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

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ELI GOLDMAN
Lic. No. 55868
12/04/2020
PROFESSIONAL ENGINEER

**EXISTING CONDITIONS
PLAN**

**OAKVILLE INFRASTRUCTURE
DEVELOPMENT SITE PLAN**
CITY OF ALEXANDRIA, VIRGINIA

PROJECT NO: 14007.011.00
SCALE: 1"=30'
DATE: 09-04-20
DESIGN: EG
DRAWN: JS
CHECKED: K1W
SHEET No.
C203
110164

| DATE | REVISION |
|----------|-------------------------|
| 9-4-20 | DSUP SUBMISSION #1 |
| 10-20-20 | DSUP SUBMISSION #2 |
| 11-3-20 | DSUP SUBMISSION #3 |
| 12-04-20 | VERIFICATION SUBMISSION |
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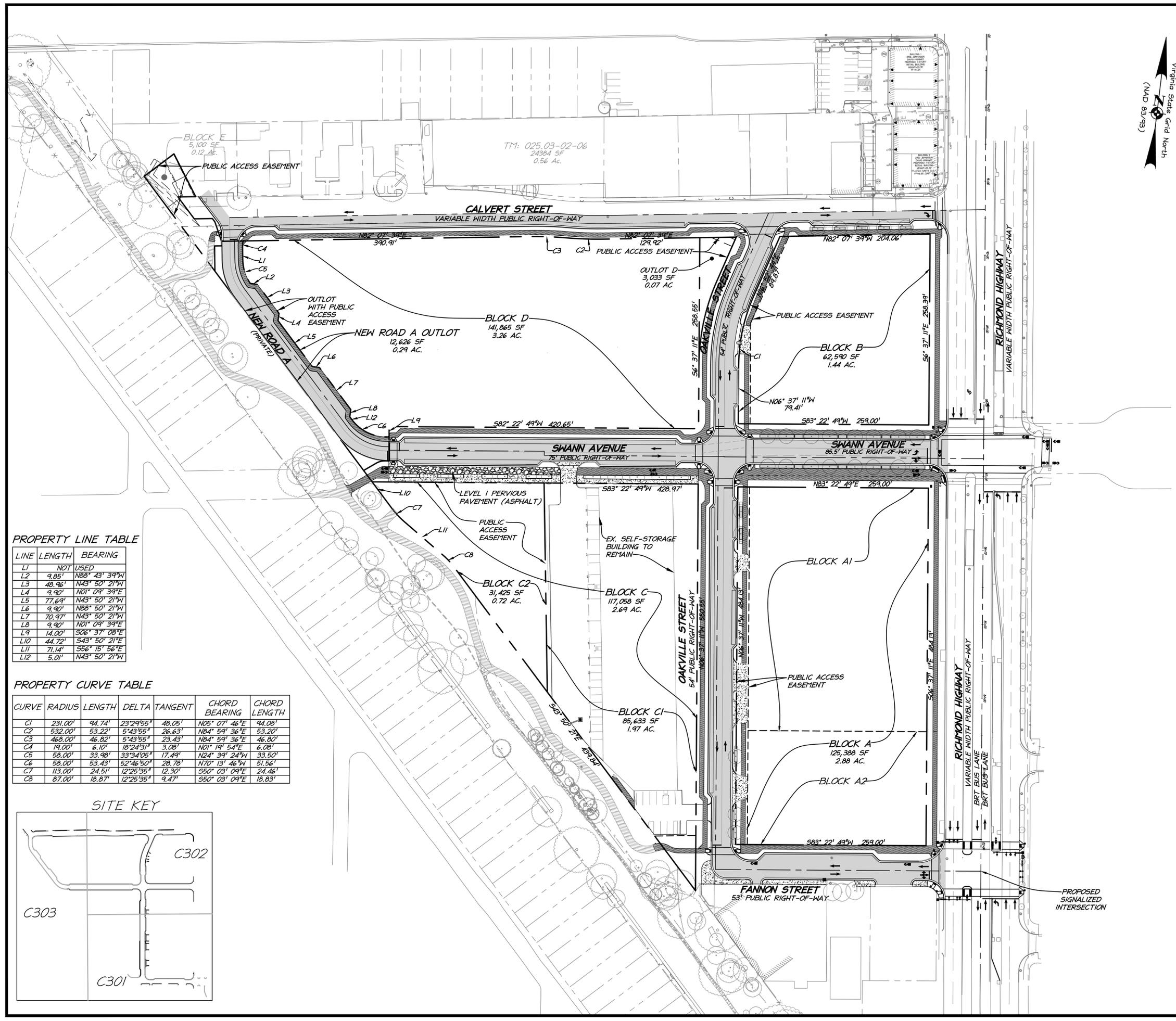
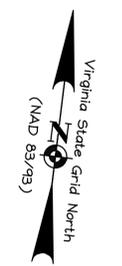


COMMONWEALTH OF VIRGINIA
 ELI GOLDMAN
 Lic. No. 55868
 12/04/2020
 PROFESSIONAL ENGINEER

OVERALL PRELIMINARY SITE PLAN

OAKVILLE INFRASTRUCTURE DEVELOPMENT SITE PLAN
 CITY OF ALEXANDRIA, VIRGINIA

PROJECT NO: 14007.011.00
 SCALE: 1"=60'
 DATE: 09-04-20
 DESIGN: EG
 DRAWN: JS
 CHECKED: K1W
 SHEET No.
C300
 110164



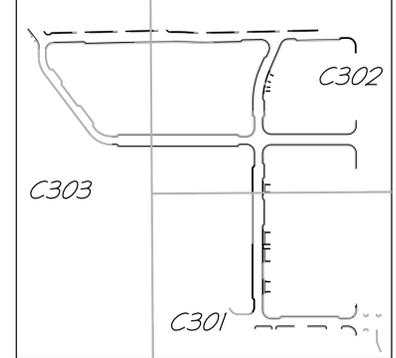
PROPERTY LINE TABLE

| LINE | LENGTH | BEARING |
|------|----------|---------------|
| L1 | NOT USED | |
| L2 | 9.85' | N88° 43' 39"W |
| L3 | 48.96' | N43° 50' 21"W |
| L4 | 9.90' | N01° 09' 39"E |
| L5 | 77.69' | N43° 50' 21"W |
| L6 | 9.90' | N43° 50' 21"W |
| L7 | 70.91' | N43° 50' 21"W |
| L8 | 9.90' | N01° 09' 39"E |
| L9 | 14.00' | S06° 37' 08"E |
| L10 | 44.72' | S43° 50' 21"E |
| L11 | 71.14' | S56° 15' 56"E |
| L12 | 5.01' | N43° 50' 21"W |

PROPERTY CURVE TABLE

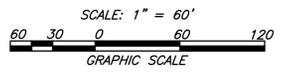
| CURVE | RADIUS | LENGTH | DELTA | TANGENT | CHORD BEARING | CHORD LENGTH |
|-------|---------|--------|-----------|---------|---------------|--------------|
| C1 | 231.00' | 94.74' | 23°29'55" | 48.05' | N05° 07' 46"E | 94.08' |
| C2 | 532.00' | 53.22' | 5°43'55" | 26.63' | N84° 59' 36"E | 53.20' |
| C3 | 468.00' | 46.82' | 5°43'55" | 23.43' | N84° 59' 36"E | 46.80' |
| C4 | 19.00' | 6.10' | 18°24'51" | 3.08' | N01° 19' 54"E | 6.08' |
| C5 | 58.00' | 33.98' | 33°34'05" | 17.49' | N24° 39' 24"W | 33.50' |
| C6 | 58.00' | 53.43' | 52°46'50" | 28.78' | N70° 13' 46"W | 51.56' |
| C7 | 113.00' | 24.51' | 12°25'35" | 12.30' | S50° 03' 09"E | 24.46' |
| C8 | 87.00' | 18.87' | 12°25'35" | 9.47' | S50° 03' 09"E | 18.83' |

SITE KEY



LEGEND

- CURB AND GUTTER
- HEADER CURB
- CENTERLINE OF STREET
- PROPERTY BOUNDARY



APPROVED
 DEVELOPMENT SITE PLAN NO. 2020-00031
 DEPARTMENT OF PLANNING & ZONING

DIRECTOR _____ DATE _____
 DEPT. OF TRANSPORTATION & ENVIRONMENTAL SERVICES

SITE PLAN No. _____

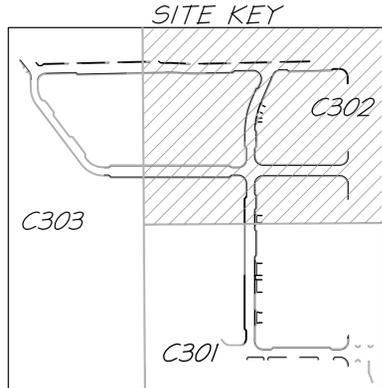
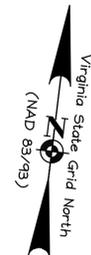
DIRECTOR _____ DATE _____

CHAIRMAN, PLANNING COMMISSION _____ DATE _____

DATE RECORDED _____

INSTRUMENT NO. _____ DEED BOOK NO. _____ PAGE NO. _____

| DATE | REVISION |
|----------|-------------------------|
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| 12-04-20 | VERIFICATION SUBMISSION |



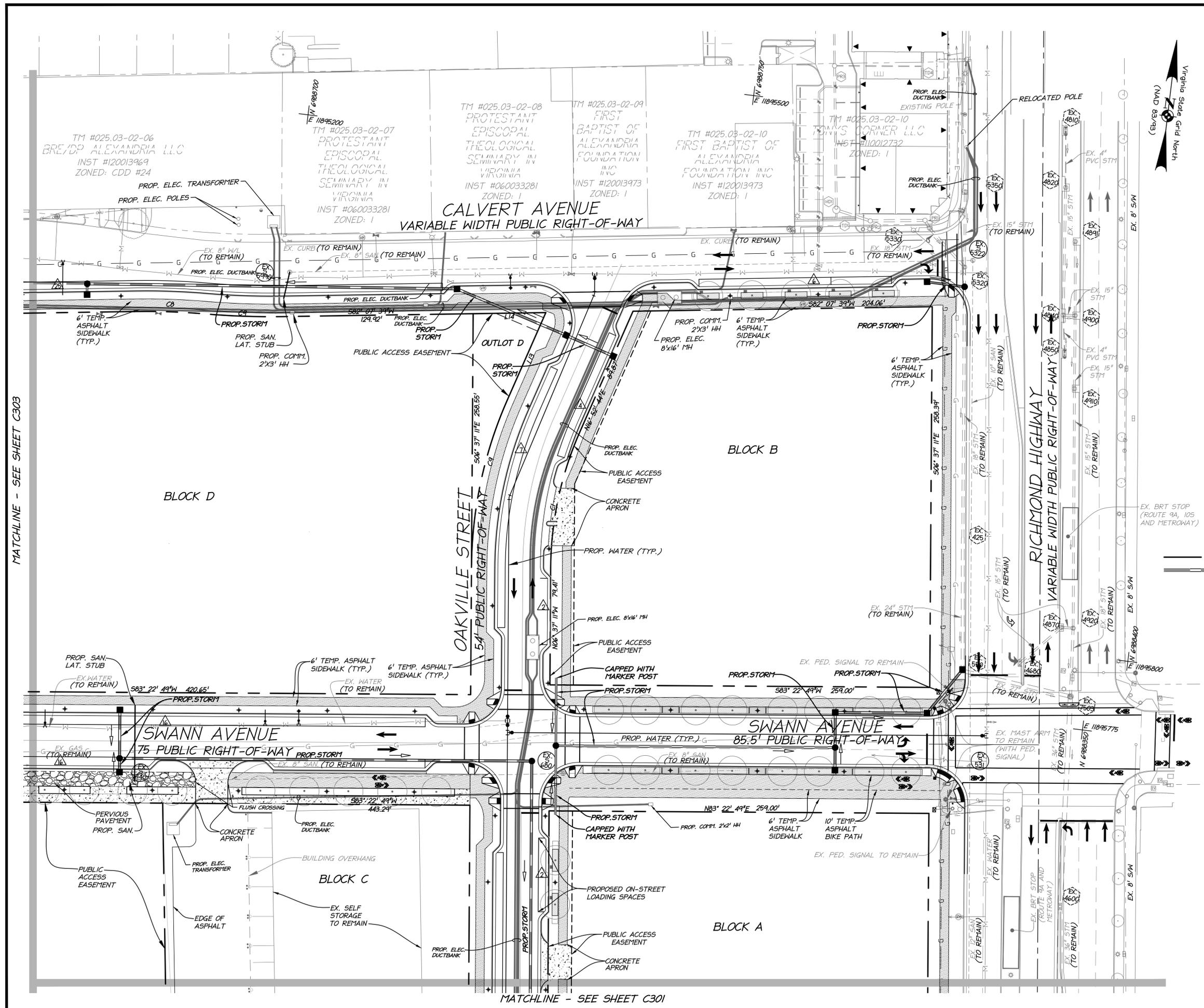
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 phone 703.273.6820 · fax 703.273.6820



PRELIMINARY SITE PLAN

OAKVILLE INFRASTRUCTURE DEVELOPMENT SITE PLAN
 CITY OF ALEXANDRIA, VIRGINIA

PROJECT NO: 14007.011.00
 SCALE: 1" = 30'
 DATE: 09-04-20
 DESIGN: EG
 DRAWN: JS
 CHECKED: K1W
 SHEET No.
C302
 110164



LEGEND

- # DENOTES NUMBER OF STANDARD PARKING SPACES
- CURB AND GUTTER
- HEADER CURB
- - - CENTERLINE OF STREET
- - - PROPERTY BOUNDARY
- - - STORM WATER LINE
- ▨ PROPOSED ASPHALT SIDEWALK
- ▨ PROPOSED TREE PITS
- PROPOSED TREE

NOTE:
 1. SEE SHEET C303 FOR LINE AND CURVE TABLE.

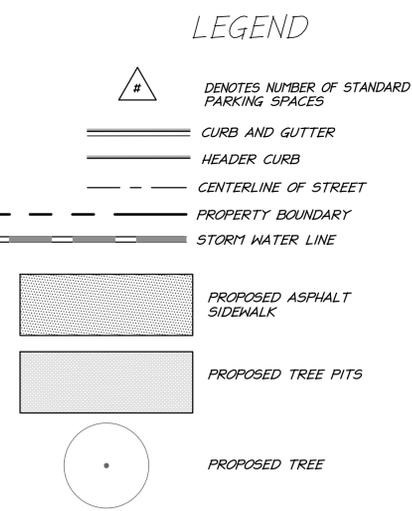
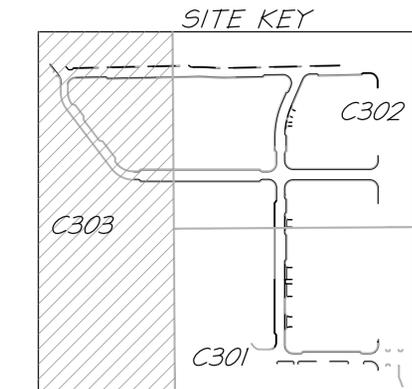


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|--|---------------|
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| DEVELOPMENT SITE PLAN No. 2020-00031 | |
| DEPARTMENT OF PLANNING & ZONING | |
| DIRECTOR | DATE |
| DEPT. OF TRANSPORTATION & ENVIRONMENTAL SERVICES | |
| SITE PLAN No. _____ | |
| DIRECTOR | DATE |
| CHAIRMAN, PLANNING COMMISSION | |
| DATE RECORDED _____ | |
| INSTRUMENT NO. | DEED BOOK NO. |
| _____ | _____ |
| PAGE NO. | _____ |

MATCHLINE - SEE SHEET C303

MATCHLINE - SEE SHEET C301

| DATE | REVISION |
|----------|-------------------------|
| 9-4-20 | DSUP SUBMISSION #1 |
| 10-20-20 | DSUP SUBMISSION #2 |
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 DEVELOPMENT SITE PLAN NO. 2020-00031
 DEPARTMENT OF PLANNING & ZONING

DIRECTOR _____ DATE _____
 DEPT. OF TRANSPORTATION & ENVIRONMENTAL SERVICES
 SITE PLAN No. _____

DIRECTOR _____ DATE _____

CHAIRMAN, PLANNING COMMISSION DATE _____
 DATE RECORDED _____

INSTRUMENT NO. _____ DEED BOOK NO. _____ PAGE NO. _____

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

COMMONWEALTH OF VIRGINIA
 ELI GOLDMAN
 Lic. No. 55868
 12/04/2020
 PROFESSIONAL ENGINEER

PRELIMINARY SITE PLAN

OAKVILLE INFRASTRUCTURE DEVELOPMENT SITE PLAN
 CITY OF ALEXANDRIA, VIRGINIA

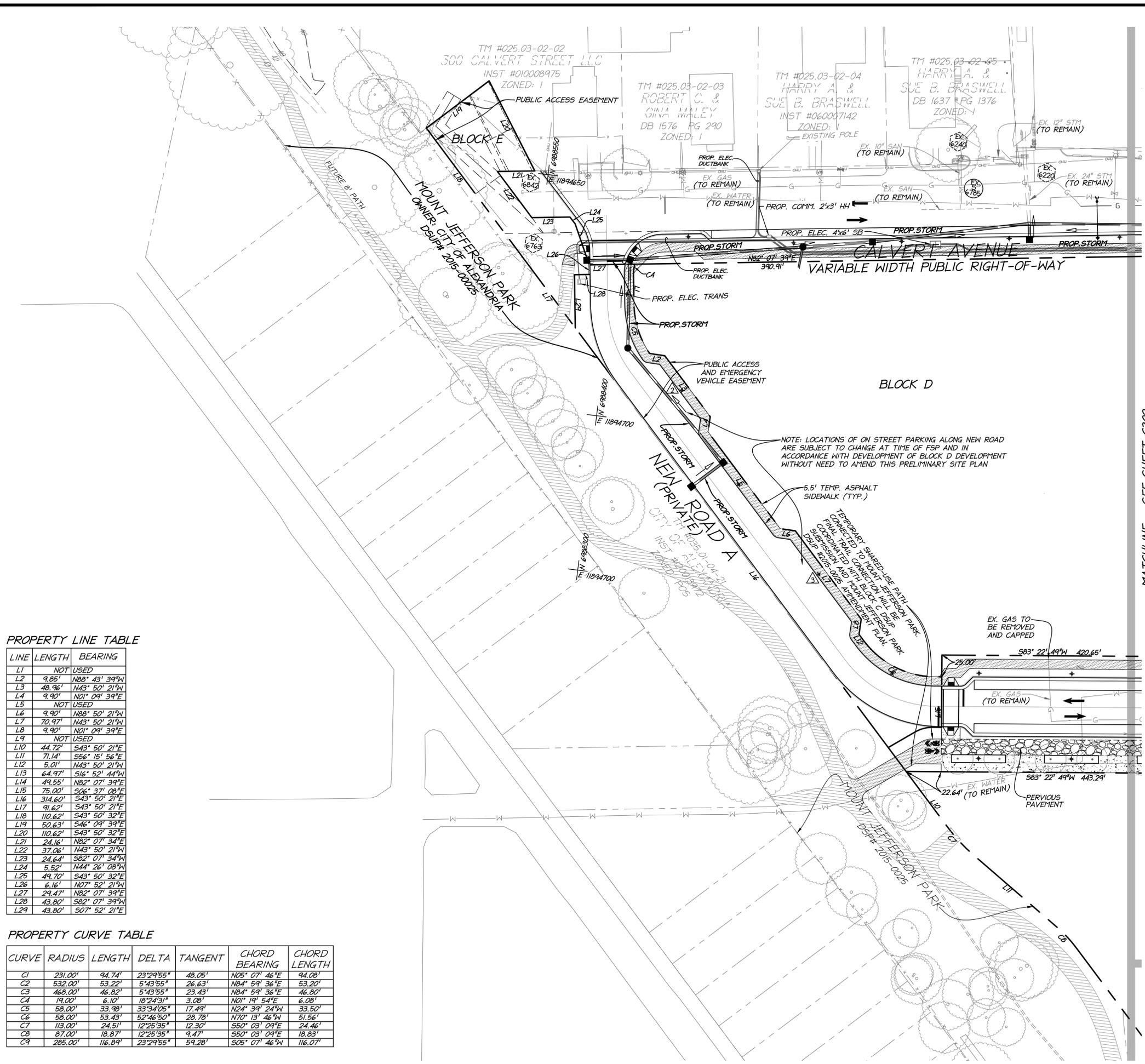
PROJECT NO: 14007.011.00
 SCALE: 1"=30'
 DATE: 09-04-20
 DESIGN: EG
 DRAWN: JS
 CHECKED: KMW
 SHEET NO.
C303
 110164

PROPERTY LINE TABLE

| LINE | LENGTH | BEARING |
|------|----------|---------------|
| L1 | NOT USED | |
| L2 | 9.85' | N88° 43' 39"W |
| L3 | 48.96' | N43° 50' 21"W |
| L4 | 9.90' | N01° 09' 39"E |
| L5 | NOT USED | |
| L6 | 9.90' | N88° 50' 21"W |
| L7 | 70.97' | N43° 50' 21"W |
| L8 | 9.90' | N01° 09' 39"E |
| L9 | NOT USED | |
| L10 | 44.72' | S43° 50' 21"E |
| L11 | 71.14' | S56° 15' 56"E |
| L12 | 5.01' | N43° 50' 21"W |
| L13 | 64.97' | S16° 52' 44"W |
| L14 | 49.55' | N82° 07' 39"E |
| L15 | 75.00' | S06° 37' 08"E |
| L16 | 314.60' | S43° 50' 21"E |
| L17 | 91.62' | S43° 50' 21"E |
| L18 | 110.62' | S43° 50' 32"E |
| L19 | 50.63' | S46° 09' 39"E |
| L20 | 110.62' | S43° 50' 32"E |
| L21 | 24.16' | N43° 50' 21"W |
| L22 | 37.06' | N43° 50' 21"W |
| L23 | 24.64' | S82° 07' 34"W |
| L24 | 5.52' | N44° 26' 08"W |
| L25 | 49.70' | S43° 50' 32"E |
| L26 | 6.16' | N07° 52' 21"W |
| L27 | 29.47' | N82° 07' 39"E |
| L28 | 43.80' | S82° 07' 39"W |
| L29 | 43.80' | S07° 52' 21"E |

PROPERTY CURVE TABLE

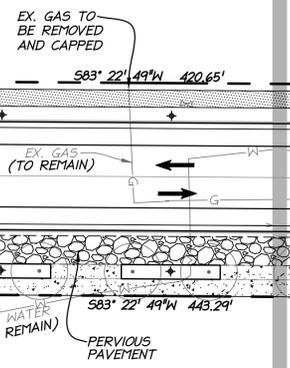
| CURVE | RADIUS | LENGTH | DELTA | TANGENT | CHORD BEARING | CHORD LENGTH |
|-------|---------|---------|-----------|---------|---------------|--------------|
| C1 | 231.00' | 94.74' | 23°29'55" | 48.05' | N05° 07' 46"E | 94.08' |
| C2 | 532.00' | 53.22' | 5°43'55" | 26.63' | N84° 59' 36"E | 53.20' |
| C3 | 468.00' | 46.82' | 5°43'55" | 23.43' | N84° 59' 36"E | 46.80' |
| C4 | 19.00' | 6.10' | 18°24'31" | 3.08' | N01° 19' 54"E | 6.08' |
| C5 | 58.00' | 33.98' | 33°34'05" | 17.49' | N24° 39' 24"W | 33.50' |
| C6 | 58.00' | 53.43' | 52°46'50" | 28.78' | N70° 13' 46"W | 51.56' |
| C7 | 113.00' | 24.51' | 12°25'35" | 12.30' | S50° 03' 09"E | 24.46' |
| C8 | 87.00' | 18.87' | 12°25'35" | 9.47' | S50° 03' 09"E | 18.83' |
| C9 | 285.00' | 116.89' | 23°29'55" | 59.28' | S05° 07' 46"W | 116.07' |



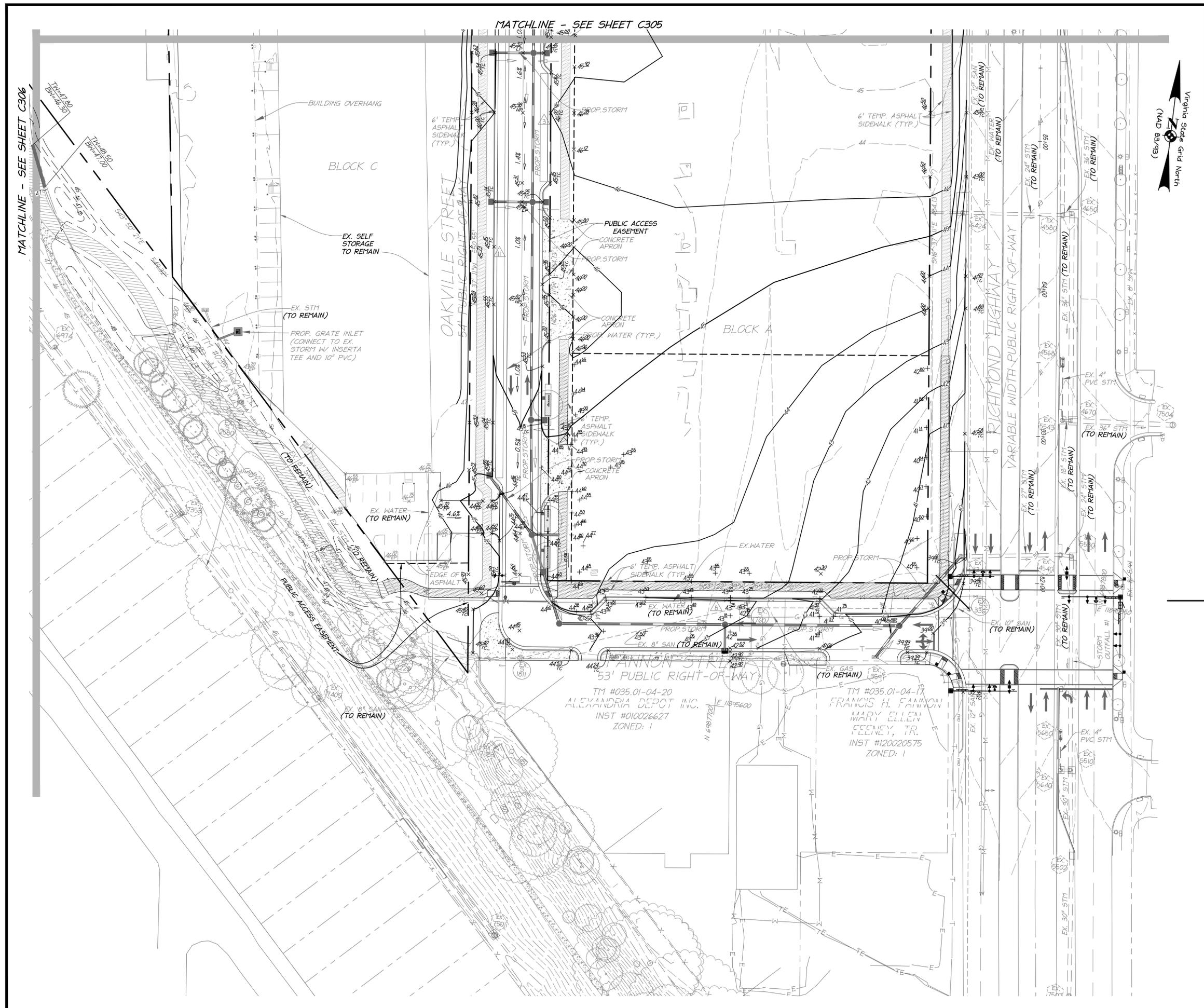
MATCHLINE - SEE SHEET C302



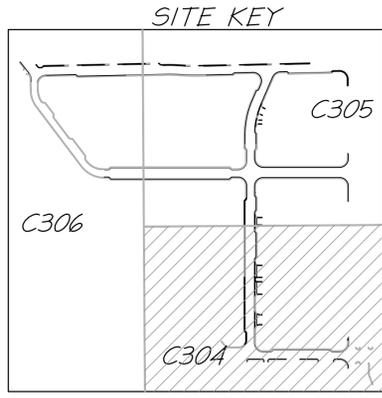
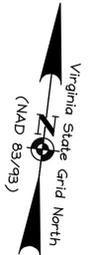
NOTE: LOCATIONS OF ON STREET PARKING ALONG NEW ROAD ARE SUBJECT TO CHANGE AT TIME OF FSP AND IN ACCORDANCE WITH DEVELOPMENT OF BLOCK D DEVELOPMENT WITHOUT NEED TO AMEND THIS PRELIMINARY SITE PLAN



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| DATE | REVISION |
|----------|-------------------------|
| 9-4-20 | DSUP SUBMISSION #1 |
| 10-20-20 | DSUP SUBMISSION #2 |
| 11-3-20 | DSUP SUBMISSION #3 |
| 12-04-20 | VERIFICATION SUBMISSION |
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LEGEND

- # DENOTES NUMBER OF STANDARD PARKING SPACES
- ==== CURB AND GUTTER
- ==== HEADER CURB
- CENTERLINE OF STREET
- PROPERTY BOUNDARY
- ▲ PROPOSED SPOT SHOT
- PROPOSED CONTOUR



| | |
|--|---------------|
| APPROVED | |
| DEVELOPMENT SITE PLAN NO. 2020-00031 | |
| DEPARTMENT OF PLANNING & ZONING | |
| DIRECTOR | DATE |
| DEPT. OF TRANSPORTATION & ENVIRONMENTAL SERVICES | |
| SITE PLAN No. _____ | |
| DIRECTOR | DATE |
| CHAIRMAN, PLANNING COMMISSION | |
| DATE RECORDED _____ | |
| INSTRUMENT NO. | DEED BOOK NO. |
| | PAGE NO. |

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PRELIMINARY GRADING PLAN

OAKVILLE INFRASTRUCTURE DEVELOPMENT SITE PLAN

CITY OF ALEXANDRIA, VIRGINIA

PROJECT NO: 14007.011.00

SCALE: 1"=30'

DATE: 09-04-20

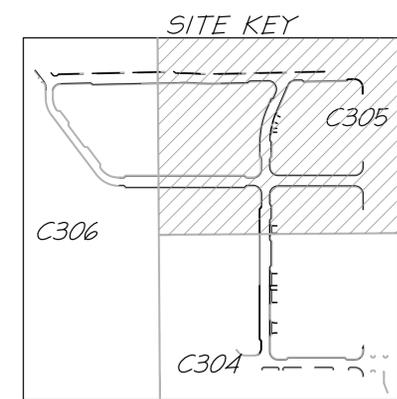
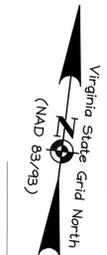
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DRAWN: JS
CHECKED: K1W

SHEET No.

C304

110164

| DATE | REVISION |
|----------|-------------------------|
| 9-4-20 | DSUP SUBMISSION #1 |
| 10-20-20 | DSUP SUBMISSION #2 |
| 11-3-20 | DSUP SUBMISSION #3 |
| 12-04-20 | VERIFICATION SUBMISSION |



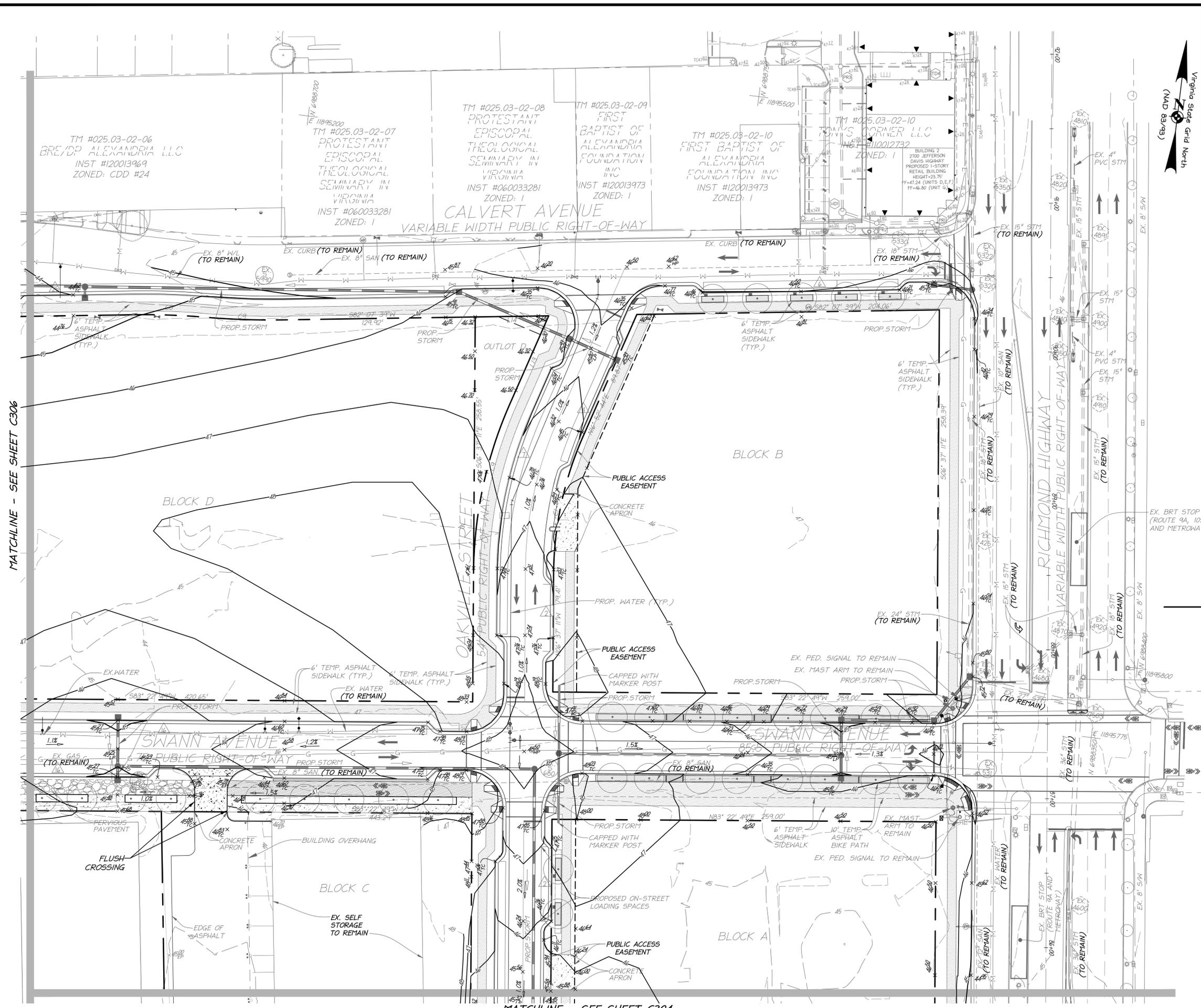
christopher consultants
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PRELIMINARY GRADING PLAN

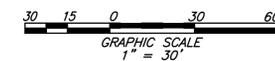
OAKVILLE INFRASTRUCTURE DEVELOPMENT SITE PLAN
 CITY OF ALEXANDRIA, VIRGINIA

PROJECT NO: 14007.011.00
 SCALE: 1"=30'
 DATE: 09-04-20
 DESIGN: EG
 DRAWN: JS
 CHECKED: K1W
 SHEET NO.
C305
 110164



LEGEND

| | |
|-----------|---|
| # | DENOTES NUMBER OF STANDARD PARKING SPACES |
| — — | CURB AND GUTTER |
| — — — | HEADER CURB |
| - - - - | CENTERLINE OF STREET |
| - - - - - | PROPERTY BOUNDARY |
| ▲ | PROPOSED SPOT SHOT |
| — | PROPOSED CONTOUR |



APPROVED
 DEVELOPMENT SITE PLAN NO. 2020-00031
 DEPARTMENT OF PLANNING & ZONING

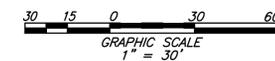
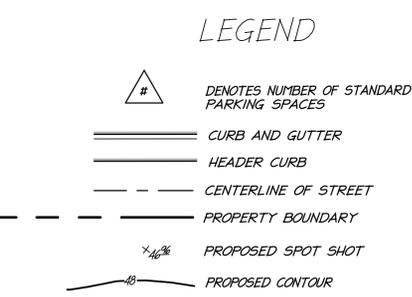
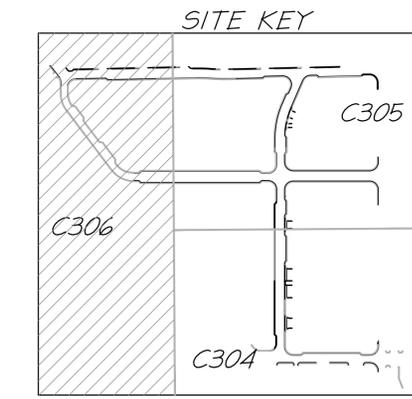
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| DIRECTOR | DATE |
| DEPT. OF TRANSPORTATION & ENVIRONMENTAL SERVICES | |
| SITE PLAN No. _____ | |
| DIRECTOR | DATE |
| CHAIRMAN, PLANNING COMMISSION | DATE |
| DATE RECORDED _____ | |
| INSTRUMENT NO. _____ | DEED BOOK NO. _____ |
| | PAGE NO.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

MATCHLINE - SEE SHEET C306

MATCHLINE - SEE SHEET C304

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| 10-20-20 | DSUP SUBMISSION #2 |
| 11-3-20 | DSUP SUBMISSION #3 |
| 12-04-20 | VERIFICATION SUBMISSION |
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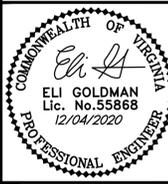
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| APPROVED | |
| DEVELOPMENT SITE PLAN NO. 2020-00031 | |
| DEPARTMENT OF PLANNING & ZONING | |
| DIRECTOR | DATE |
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| CHAIRMAN, PLANNING COMMISSION | |
| DATE RECORDED _____ | |
| INSTRUMENT NO. | DEED BOOK NO. |
| | PAGE NO. |

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| PROJECT NO: 14007.011.00 |
| SCALE: 1" = 30' |
| DATE: 09-04-20 |
| DESIGN: EG |
| DRAWN: JS |
| CHECKED: KJW |
| SHEET No. |

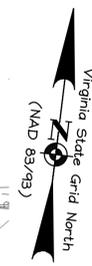
C306
110164

**OAKVILLE INFRASTRUCTURE
DEVELOPMENT SITE PLAN**
CITY OF ALEXANDRIA, VIRGINIA

**PRELIMINARY GRADING
PLAN**



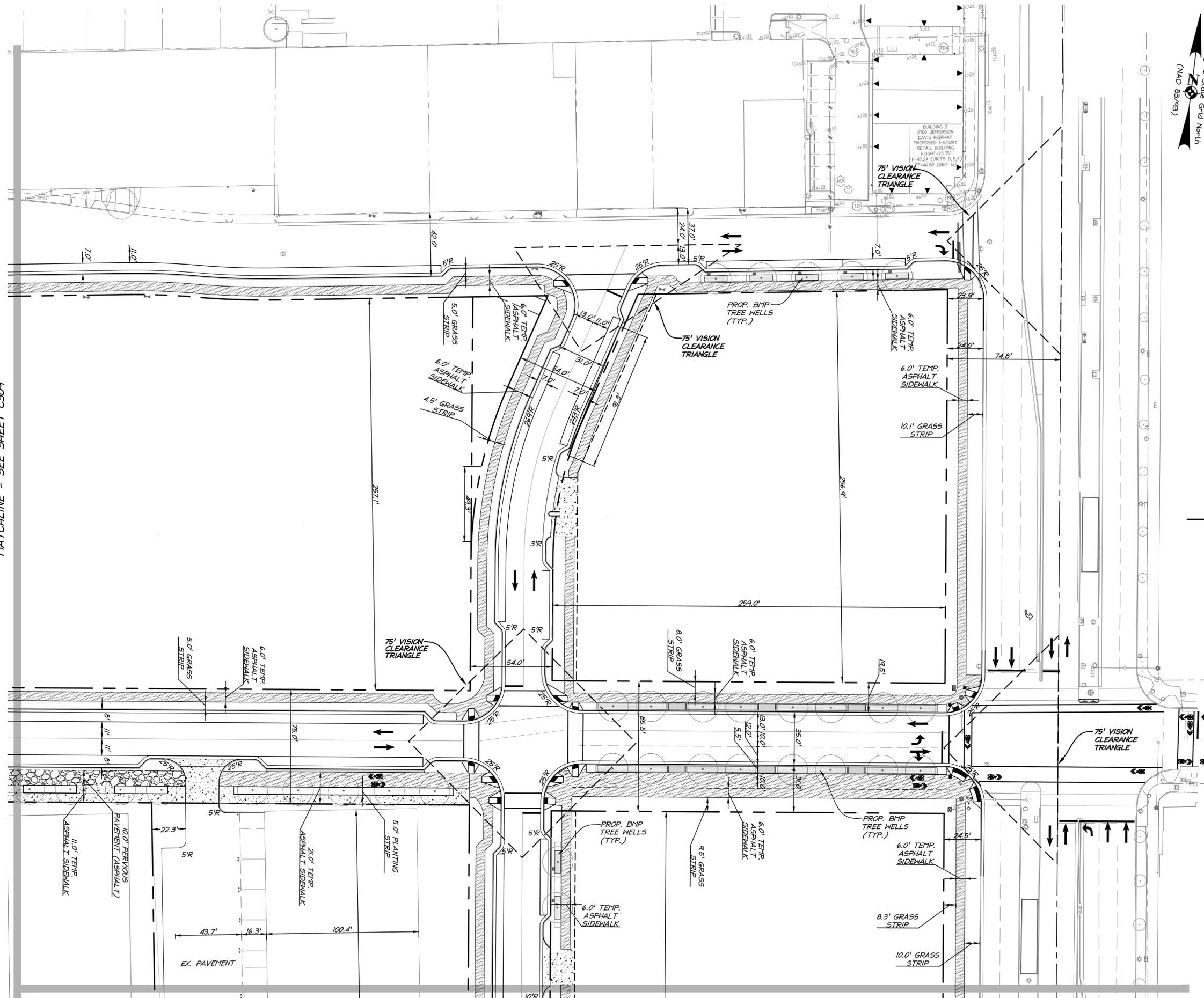
**christopher
consultants**
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phone 703.273.6820 · fax 703.273.6820



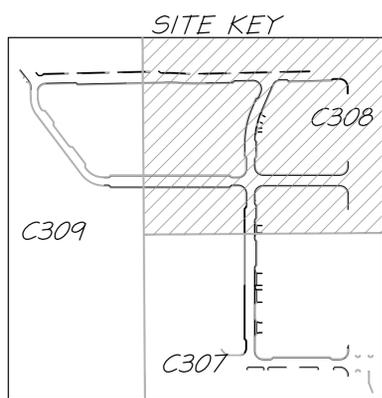
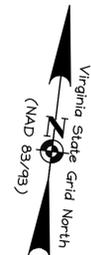
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MATCHLINE - SEE SHEET C309

MATCHLINE - SEE SHEET C307



| DATE | REVISION |
|----------|-------------------------|
| 9-4-20 | DSUP SUBMISSION #1 |
| 10-20-20 | DSUP SUBMISSION #2 |
| 11-3-20 | DSUP SUBMISSION #3 |
| 12-04-20 | VERIFICATION SUBMISSION |
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LEGEND

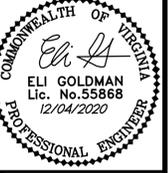
| | |
|--|-------------------------------------|
| | CURB AND GUTTER |
| | HEADER CURB |
| | CENTERLINE OF STREET |
| | PROPERTY BOUNDARY |
| | PROPOSED TEMPORARY ASPHALT SIDEWALK |
| | PROPOSED TREE PITS |
| | PROPOSED TREE |



APPROVED
 DEVELOPMENT SITE PLAN NO. 2020-00031
 DEPARTMENT OF PLANNING & ZONING

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|--|---------------------|
| DIRECTOR | DATE |
| DEPT. OF TRANSPORTATION & ENVIRONMENTAL SERVICES | |
| SITE PLAN No. _____ | |
| DIRECTOR | DATE |
| CHAIRMAN, PLANNING COMMISSION | DATE |
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| INSTRUMENT NO. _____ | DEED BOOK NO. _____ |
| | PAGE NO. _____ |

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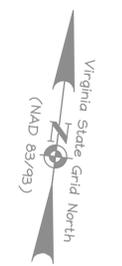
DIMENSION PLAN

OAKVILLE INFRASTRUCTURE DEVELOPMENT SITE PLAN
 CITY OF ALEXANDRIA, VIRGINIA

PROJECT NO: 14007.011.00
 SCALE: 1"=30'
 DATE: 09-04-20
 DESIGN: EG
 DRAWN: JS
 CHECKED: KIM
 SHEET No.

C308
 110164

| DATE | REVISION |
|----------|-------------------------|
| 9-4-20 | DSUP SUBMISSION #1 |
| 10-20-20 | DSUP SUBMISSION #2 |
| 11-3-20 | DSUP SUBMISSION #3 |
| 12-04-20 | VERIFICATION SUBMISSION |
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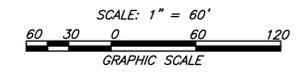
SIGN LEGEND

| SIGN | X | Y | Z |
|--------|---------------------------------|---------------------------------|---------------------------------|
| SYMBOL | NO PARKING & STANDING FIRE LANE | NO PARKING & STANDING FIRE LANE | NO PARKING & STANDING FIRE LANE |
| SIZE | 12"x18" | 12"x18" | 12"x18" |

LEGEND

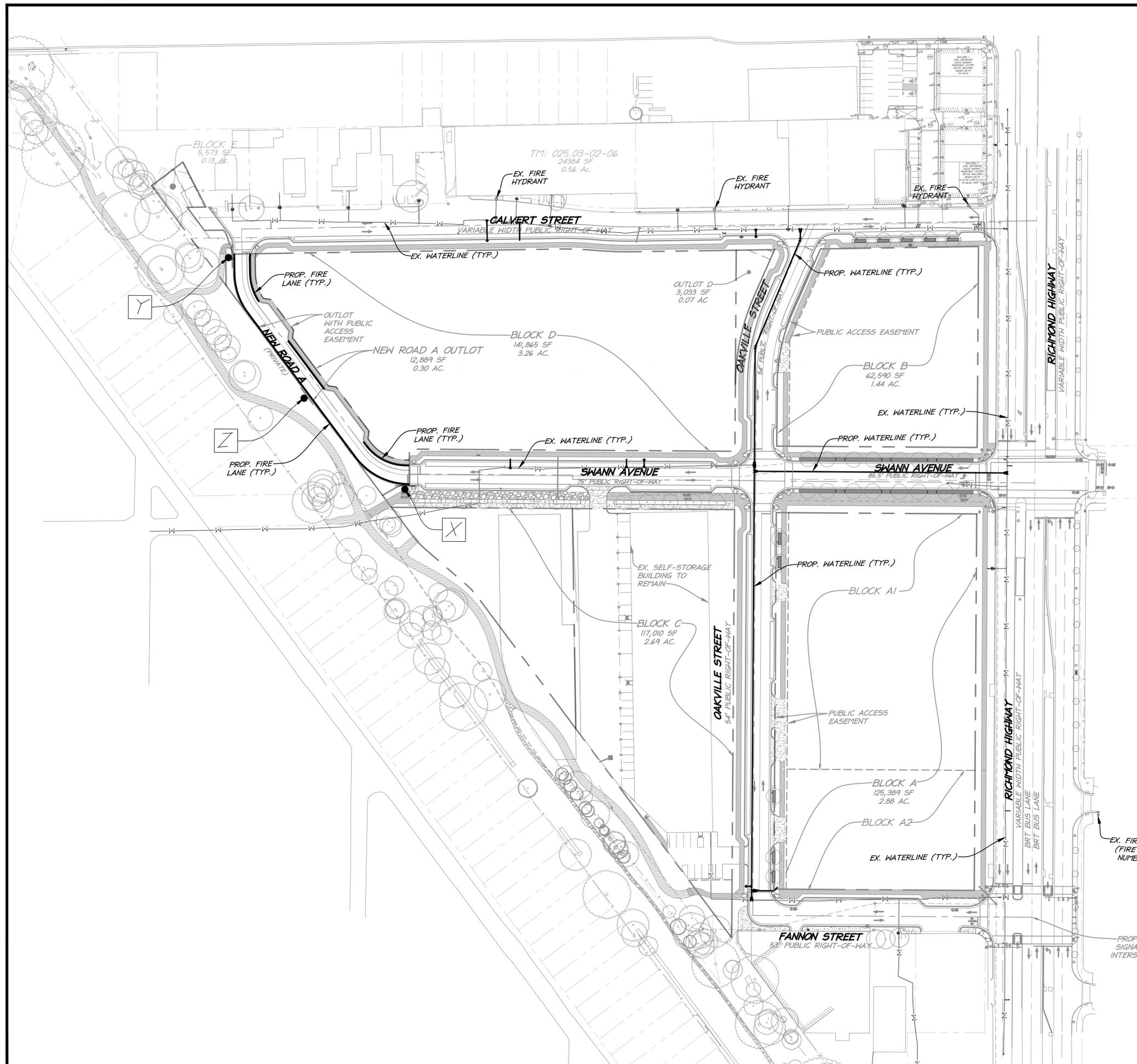
- : PROPOSED R.O.W.
- : PROPOSED FIRE LANE
- : PROPOSED WATERLINE
- : EXISTING WATERLINE
- : EXISTING FIRE HYDRANT
- : PROPOSED FIRE LANE SIGN

- NOTES:**
- SEE SHEETS C900-C902 FOR STRIPING AND SIGNAGE PLAN.
 - FIRE HYDRANTS PROPOSED WITH THE DSUPS OF EACH INDIVIDUAL BLOCK



APPROVED
 DEVELOPMENT SITE PLAN NO. 2020-00031
 DEPARTMENT OF PLANNING & ZONING

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



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FIRE SAFETY PLAN

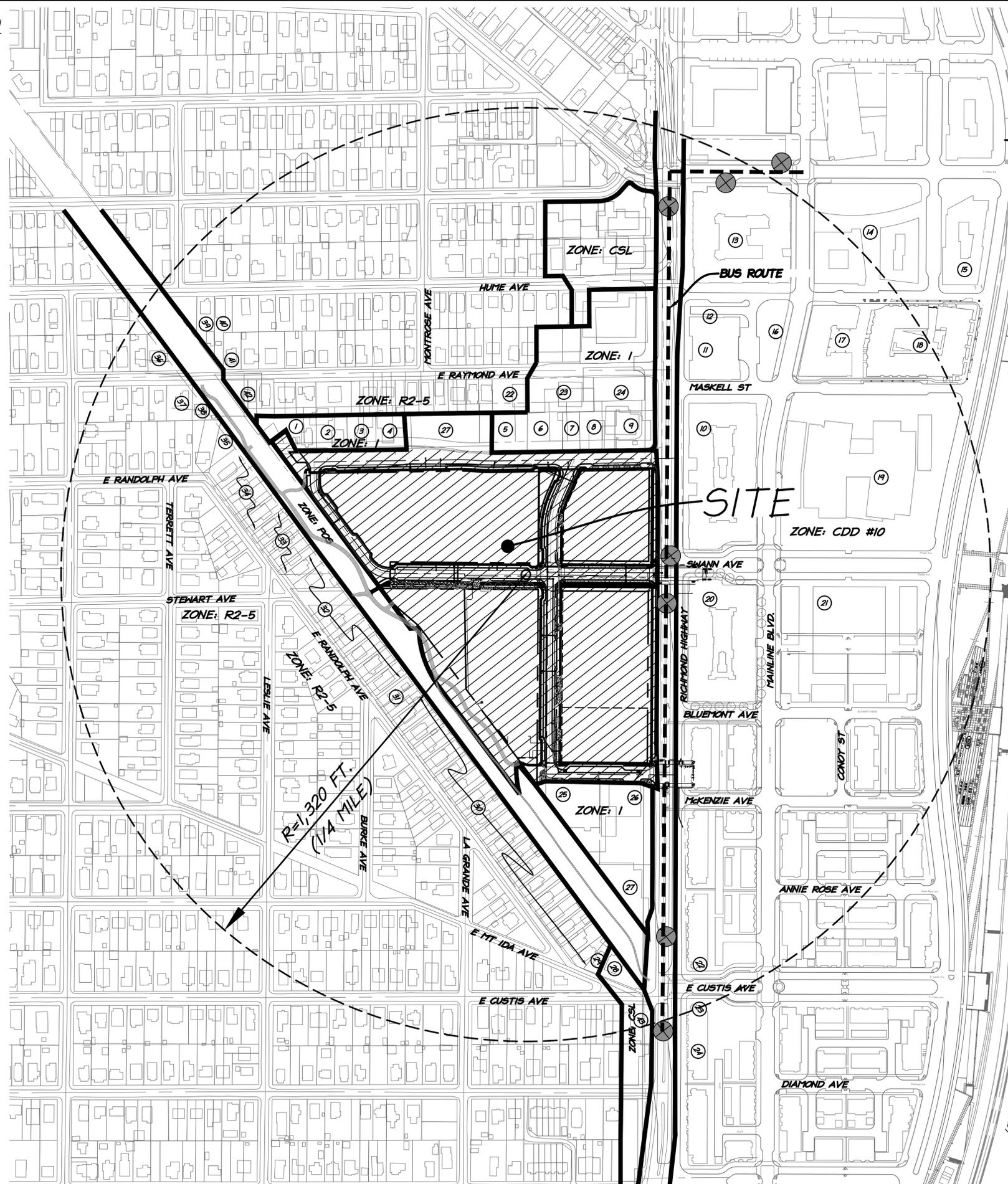
OAKVILLE INFRASTRUCTURE
 DEVELOPMENT SITE PLAN
 CITY OF ALEXANDRIA, VIRGINIA

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|---|
| PROJECT NO: H007.011.00 |
| SCALE: 1"=30' |
| DATE: 09-04-20 |
| DESIGN: EG DRAWN: JS CHECKED: KJW |
| SHEET No. |

C310
110164

OWNERSHIP INFORMATION

- 28. DEL RAY CENTRE LLC AND KNIPLING GARY D ET AL TR
522 E MT IDA AVE
USE: JR OFFICE BUILDING
ZONE: CSL
- 29. SOLOMON THOMAS JR OR JESSIE M
520 E MT IDA AVE
USE: DETACHED HOUSE
ZONE: R 2-5
- 30. ABINGDON HOMES
2205-2413 RANDOLPH AVE
USE: DETACHED HOUSES
ZONE: R 2-5
- 31. ABINGDON HOMES
2501-2503 RANDOLPH AVE
USE: SEMI-DETACHED HOUSE
ZONE: R 2-5
- 32. ABINGDON HOMES
2505-2605 RANDOLPH AVE
USE: DETACHED HOUSES
ZONE: R 2-5
- 33. ABINGDON HOMES
2607-2611 A RANDOLPH AVE
USE: SEMI-DETACHED HOUSES
ZONE: R 2-5
- 34. ABINGDON HOMES
2613-2619 RANDOLPH AVE
USE: DETACHED HOUSES
ZONE: R 2-5
- 35. HALLORAN CHARLES
2621 RANDOLPH AVE
USE: VACANT LAND - RESID.
ZONE: R 2-5
- 36. LEWIS JESSICA ANN AND SCHLOESSER CHRISTOPHER J
208 E RAYMOND AVE
USE: DETACHED HOUSE
ZONE: R 2-5
- 37. MAIN ROBERT W TR
211 E RAYMOND AVE
USE: DETACHED HOUSE
ZONE: R 2-5
- 38. LEMAITRE ELFIJE OR RAFAEL E
213 E RAYMOND AVE
USE: DETACHED HOUSE
ZONE: R 2-5
- 39. ATTIDORE JOSEPH E OR SELMA N
303 HUME AVE
USE: DETACHED HOUSE
ZONE: R 2-5
- 40. SMYTHE AUGUSTINE OR KATHERINE D
305 HUME AVE
USE: DETACHED HOUSE
ZONE: R 2-5
- 41. KAISER CHRISTOPHER P OR KATHRYN B
300 E RAYMOND AVE
USE: DETACHED HOUSE
ZONE: R 2-5
- 42. ROWAN SUZETTE
297-299 E RAYMOND AVE
USE: SEMI-DETACHED HOUSE
ZONE: R 2-5
- 43. POTOMAC AIRGAS CO INC
2200 JEFFERSON DAVIS HY
USE: GENERAL COMMERCIAL
ZONE: CSL



LEGEND

- SITE
- OWNER INFORMATION NUMBER
- BUS STOP (BRT)
- PROPERTY LINE
- STREET CENTER LINE
- ZONING LINE

| DATE | REVISION |
|----------|-------------------------|
| 9-4-20 | DSUP SUBMISSION #1 |
| 10-20-20 | DSUP SUBMISSION #2 |
| 11-3-20 | DSUP SUBMISSION #3 |
| 12-04-20 | VERIFICATION SUBMISSION |
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OWNERSHIP INFORMATION

- 1. 300 CALVERT STREET LLC
300 CALVERT AVE E
USE: GENERAL COMMERCIAL
ZONE: I
- 2. MALEY ROBERT C III OR GINA
304 CALVERT AVE
USE: GENERAL COMMERCIAL
ZONE: I
- 3. BRASWELL HARRY A OR SUE B
308 CALVERT AVE
USE: OFFICE/COMMERCIAL WAREHOUSE
ZONE: I
- 4. BRASWELL HARRY A OR SUE B
312 CALVERT AVE
USE: OFFICE/COMMERCIAL WAREHOUSE
ZONE: I
- 5. 410-420 CALVERT AVENUE LLC
410 CALVERT AVE
USE: OFFICE COMMERCIAL WAREHOUSE
ZONE: I
- 6. 410-420 CALVERT AVENUE LLC
420 CALVERT AVE
USE: OFFICE COMMERCIAL WAREHOUSE
ZONE: I
- 7. FIRST BAPTIST OF ALEXANDRIA FOUNDATION INC
434 CALVERT AVE
USE: VACANT LAND-INDUSTRIAL
ZONE: I
- 8. FIRST BAPTIST OF ALEXANDRIA FOUNDATION INC
446 CALVERT AVE
USE: OFFICE/COMMERCIAL WAREHOUSE
ZONE: I
- 9. TONY'S CORNER LLC
2700 JEFFERSON DAVIS HY
USE: VACANT LAND COMMERCIAL
ZONE: I
- 10. POTOMAC YARD DEVELOPMENT LLC
2600 MAIN LINE BV
USE: VACANT LAND COMMERCIAL
ZONE: CDD #10
- 11. STATION AT POTOMAC YARD CONDOMINIUM
2801 JEFFERSON DAVIS HY
USE: CONDO MASTER CARDS
ZONE: CDD #10
- 12. LBG PARCEL H LLC
601 SEATON AV
USE: VACANT LAND COMMERCIAL
ZONE: CDD #10
- 13. NOTCH 8 RESIDENTIAL LLC
2900 MAIN LINE BV
USE: MED RISE ELEV (4-65)
ZONE: CDD#10
- 14. LBG PARCEL E LLC
2901 MAIN LINE BV
USE: VACANT LAND COMMERCIAL
ZONE: CDD #10
- 15. LBG PARCEL B LLC
2900 POTOMAC AV
USE: VACANT LAND COMMERCIAL
ZONE: CDD #10
- 16. POTOMAC YARD HOMEOWNERS ASSOCIATION INC
2802 MAIN LINE BV
USE: VACANT LAND COMMERCIAL
ZONE: CDD #10
- 17. GATEWAY RESIDENCES AT EXCHANGE LLC
701 SEATON AV
USE: MED RISE ELEV (4-65)
ZONE: CDD #10
- 18. GATEWAY RESIDENCES AT EXCHANGE LLC
731 SEATON AV
USE: MED RISE ELEV (4-65)
ZONE: CDD #10
- 19. POTOMAC YARD DEVELOPMENT LLC
2601 MAIN LINE BV
USE: VACANT LAND COMMERCIAL
ZONE: CDD #10
- 20. POTOMAC YARD APARTMENTS LLC
2500 MAIN LINE BV
USE: MED RISE ELEV (4-65)
ZONE: CDD #10
- 21. POTOMAC YARD DEVELOPMENT LLC
MAIN LINE BV
USE: VACANT LAND-RESID
ZONE: CDD #10
- 22. POTOMAC FLATS CONDOMINIUM
409 E RAYMOND AV
USE: CONDO MASTER CARDS
ZONE: R 2-5
- 23. SKINKER THOMAS C AND MARJORIE B TR
415 E RAYMOND AV
USE: OFFICE/COMMERCIAL WAREHOUSE
ZONE: I
- 24. TONY'S CORNER LLC
2706 JEFFERSON DAVIS HY
USE: SUB-PARCEL
ZONE: I
- 25. ALEXANDRIA DEPOT INC
405 FANNON ST
USE: OFFICE/COMMERCIAL WAREHOUSE
ZONE: I
- 26. FANNON FRANCIS H III FEENEY MARY
2320 JEFFERSON DAVIS HY
USE: REPAIR SERVICES
ZONE: I
- 27. BRE/DP ALEXANDRIA PROPERTY OWNER LLC
400 CALVERT AV
USE: OFFICE COMMERCIAL WAREHOUSE
ZONE: CDD #24

NOTE:
1.) TRANSIT STOPS FOR THE BRT ARE LOCATED IN THE MIDDLE OF ROUTE 1.



APPROVED
DEVELOPMENT SITE PLAN NO. 2020-00031
DEPARTMENT OF PLANNING & ZONING

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

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

CONTEXTUAL PLAN

OAKVILLE INFRASTRUCTURE
DEVELOPMENT SITE PLAN

CITY OF ALEXANDRIA, VIRGINIA

PROJECT NO: 14007.011.00

SCALE: 1"=30'
DATE: 09-04-20
DESIGN: EG
DRAWN: JS
CHECKED: K1W
SHEET No.

C400

110164

BMP OVERALL APPROACH:

THIS PLAN IS PART OF A BMP MASTER PLAN THAT INCLUDES BLOCK A1, A2, BLOCK B, AND BLOCK C, SEE 'CONCEPTUAL BMP NARRATIVE' BELOW FOR MORE INFORMATION.

PRELIMINARY BMP/SWM TABULATIONS
LIMITS OF DISTURBANCE = 13.89 AC.

EXISTING IMPERVIOUS AREA = 12.74 AC.
EXISTING PERVIOUS AREA = 1.15 AC.

PROPOSED IMPERVIOUS AREA = 3.80 AC.
PROPOSED PERVIOUS AREA = 10.09 AC.

TOTAL PHOSPHORUS REMOVED = 1.17 LBS/YEAR

BMP PRACTICES PROVIDED = TREE WELLS AND PERVIOUS PAVEMENT (LEVEL 1)

BMP NARRATIVE:

THE SITE IS DESIGNED TO UTILIZED TREE WELLS AND PERVIOUS PAVEMENT TO MEET THE BMP REQUIREMENTS OUTLINED BELOW. THE BMP TREE WELLS ALONG OAKVILLE STREET FRONTING BLOCK C ARE NOT DESIGNED OR CONSTRUCTED AS PART OF THIS PLAN. THOSE BMP TREE WELLS WILL BE PART OF THE FUTURE BLOCK C DSUP. ALL OTHER BMP TREE WELLS ARE DESIGNED AND CONSTRUCTED WITH THIS PLAN.

STATE REQUIREMENT:

THIS SITE IS PART OF A BMP MASTER PLAN FOR A PORTION OF THE OAKVILLE TRIANGLE WHICH WILL INCLUDE BLOCK A1, BLOCK A2, BLOCK B, BLOCK C, BLOCK E, AND OUTLOT D. REFER TO BMP MASTER PLAN (DSUP 2020-00024) FOR ALL MASTER PLAN REQUIREMENTS.

MEMO TO INDUSTRY 01-18 REQUIREMENT:

THIS REQUIREMENT WILL BE MET AS A WHOLE FOR THE BMP MASTER PLAN (SEE BMP VRRM DRAINAGE AREA BREAKDOWN ON SHEET C501). THIS PORTION OF THE MASTER PLAN WILL INCLUDE NON-PROPRIETARY PHOSPHORUS REMOVAL CREDIT FOR THE PORTION OF THE BMP TREE WELLS AND PERVIOUS PAVEMENT.

CITY WQVD REQUIREMENT (13-109-F-1):

THIS REQUIREMENT IS FOR THE ENTIRE BMP MASTER PLAN AREA. REFER TO SHEET C200 OF THE BMP MASTER PLAN FOR WQVD CALCULATIONS.

NOTE:

BMP FACILITIES AND LAYOUT SHOWN ON THIS ARE PRELIMINARY AND ARE SUBJECT TO CHANGE.

INFRASTRUCTURE PROJECT SITE RUNOFF COMPUTATIONS:

PRE-DEVELOPMENT

A = 13.89 ACRES
C = (1.15)(0.35) + (12.74)(0.90)
13.89

C = 0.85

T = 5 MINUTES
I_s = 6.2 INCHES/HOUR
I_p = 9.0 INCHES/HOUR

Q_s = (0.85)(6.2)(13.89) = 73.20 CFS
Q_p = (0.85)(9.0)(13.89) = 106.26 CFS

POST-DEVELOPMENT

A = 13.89 ACRES
C = (10.09)(0.35) + (3.80)(0.90)
13.89

C = 0.50

T_c = 5 MINUTES
I_s = 6.2 INCHES/HOUR
I_p = 9.0 INCHES/HOUR

Q_s = (0.50)(6.2)(13.89) = 43.06 CFS
Q_p = (0.50)(9.0)(13.89) = 62.51 CFS

NET DECREASE IN RUNOFF

Q_s = 73.20 CFS - 43.06 CFS = 30.14 CFS
Q_p = 106.26 CFS - 62.51 CFS = 43.75 CFS

Project Description

| Drainage Area | Impervious | Pervious | Total |
|----------------------|------------|----------|-------|
| Site Area (LOD) | 10.09 | 3.80 | 13.89 |
| On-Site Area Treated | 0.90 | 0.31 | 1.21 |
| Off-Site Treated | 0 | 0 | 0 |
| Total Treated | 0.90 | 0.31 | 1.21 |

Miscellaneous Information

Total WQV treated: yes no
Detention on Site: yes no
Project is within which watershed? FOUR MILE RUN / POTOMAC RIVER
Project Discharges to which body of water? FOUR MILE RUN / POTOMAC RIVER

BMP MASTER PLAN SITE RUNOFF COMPUTATIONS:

PRE-DEVELOPMENT

A = 12.23 ACRES
C = (1.05)(0.35) + (11.80)(0.90)
12.23

C = 0.85

T = 5 MINUTES
I_s = 6.2 INCHES/HOUR
I_p = 9.0 INCHES/HOUR

Q_s = (0.85)(6.2)(12.23) = 64.45 CFS
Q_p = (0.85)(9.0)(12.23) = 93.56 CFS

NET DECREASE IN RUNOFF

Q_s = 64.45 CFS - 60.66 CFS = 3.79 CFS
Q_p = 93.56 CFS - 88.06 CFS = 5.50 CFS

POST-DEVELOPMENT

A = 12.23 ACRES
C = (1.05)(0.35) + (9.99)(0.90)
12.23

C = 0.80

T_c = 5 MINUTES
I_s = 6.2 INCHES/HOUR
I_p = 9.0 INCHES/HOUR

Q_s = (0.80)(6.2)(12.23) = 60.66 CFS
Q_p = (0.80)(9.0)(12.23) = 88.06 CFS

THIS VRRM SPREADSHEET IS BASED ON THE LIMITS OF DISTURBANCE FOR JUST THIS PLAN AND IS SHOWN FOR INFORMATION PURPOSES ONLY!

DEQ Virginia Runoff Reduction Method Re-Development Compliance Spreadsheet - Version 3.0

2011 BMP Standards and Specifications | 2013 Draft BMP Standards and Specifications

Project Name: Oakville Infrastructure Prelim DSUP
Date: 10/20/2020
Linear Development Project? No

CLEAR ALL (Ctrl+Shift+F8)

data input cells
constant values
calculation cells
final results

Site Information

Post-Development Project (Treatment Volume and Loads)

Enter Total Disturbed Area (acres) → 13.89

Check: BMP Design Specifications List: 2013 Draft Stds & Specs
Linear project? No
Land cover areas entered correctly?
Total disturbed area entered?
TP LOAD REDUCTION NOT REQUIRED

| Pre-ReDevelopment Land Cover (acres) | A Soils | B Soils | C Soils | D Soils | Totals |
|---|---------|---------|---------|---------|--------|
| Forest/Open Space (acres) -- undisturbed, protected forest/open space or reforested | | | | | 0.00 |
| Managed Turf (acres) -- disturbed, graded for yards or other turf to be | | | | 1.15 | 1.15 |
| Impervious Cover (acres) | | | | 12.74 | 12.74 |
| | | | | | 13.89 |

| 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 | | | | | 0.00 |
| Managed Turf (acres) -- disturbed, graded for yards or other turf to be | | | | 10.09 | 10.09 |
| Impervious Cover (acres) | | | | 3.80 | 3.80 |
| Area Check | OK | OK | OK | OK | 13.89 |

| 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 |

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

| LAND COVER SUMMARY -- PRE-REDEVELOPMENT | Listed | Adjusted ¹ |
|---|--------|-----------------------|
| Forest/Open Space Cover (acres) | 0.00 | 0.00 |
| Weighted Rv(forest) | 0.00 | 0.00 |
| % Forest | 0% | 0% |
| Managed Turf Cover (acres) | 1.15 | 1.15 |
| Weighted Rv(turf) | 0.25 | 0.25 |
| % Managed Turf | 8% | 8% |
| Impervious Cover (acres) | 12.74 | 12.74 |
| Rv(impervious) | 0.95 | 0.95 |
| % Impervious | 92% | 92% |
| Total Site Area (acres) | 13.89 | 13.89 |
| Site Rv | 0.89 | 0.89 |

| LAND COVER SUMMARY -- POST DEVELOPMENT | Final Post-Dev. & New Impervious | Post-ReDevelopment | Post-Development New Impervious |
|--|----------------------------------|--------------------|-----------------------------------|
| Forest/Open Space Cover (acres) | 0.00 | 0.00 | |
| Weighted Rv(forest) | 0.00 | 0.00 | |
| % Forest | 0% | 0% | |
| Managed Turf Cover (acres) | 10.09 | 10.09 | |
| Weighted Rv (turf) | 0.25 | 0.25 | |
| % Managed Turf | 73% | 73% | |
| Impervious Cover (acres) | 3.80 | 3.80 | New Impervious Cover (acres) 0.00 |
| Rv(impervious) | 0.95 | 0.95 | Rv(impervious) -- |
| % Impervious | 27% | 27% | |
| Final Site Area (acres) | 13.89 | 13.89 | |
| Final Post Dev Site Rv | 0.44 | 0.44 | |

| Treatment Volume and Nutrient Load | Pre-ReDevelopment | Post-Development |
|--|-------------------|------------------|
| Final Post-Development Treatment Volume (acre-ft) | 0.5110 | 0.5110 |
| Final Post-Development Treatment Volume (cubic feet) | 22,261 | 22,261 |
| Final Post-Development TP Load (lb/yr) | 13.99 | 13.99 |
| Final Post-Development TP Load per acre (lb/acre/yr) | 1.01 | 1.01 |
| Max. Reduction Required (Below Pre-Development Load) | 20% | |
| TP Load Reduction Required for Redeveloped Area (lb/yr) | -8.62 | |
| TP Load Reduction Required for New Impervious Area (lb/yr) | 0 | |

| Treatment Volume and Nutrient Load | Pre-ReDevelopment | Post-Development |
|---|-------------------|------------------|
| Pre-ReDevelopment Treatment Volume (acre-ft) | 1.0325 | 1.0325 |
| Pre-ReDevelopment Treatment Volume (cubic feet) | 44,978 | 44,978 |
| Pre-ReDevelopment TP Load (lb/yr) | 28.26 | 28.26 |
| Pre-ReDevelopment TP Load per acre (lb/acre/yr) | 2.03 | 2.03 |
| Baseline TP Load (lb/yr) | 5.69 | |

¹Adjusted Land Cover Summary: Pre-Development land cover minus pervious land cover (forest/open space or managed turf) acreage proposed for new impervious cover.

Adjusted total acreage is consistent with Post-Development acreage (minus acreage of new impervious cover).

Column I shows load reduction requirement for new impervious cover (based on new development load limit, 0.41 lbs/acre/year).

Post-Development Requirement for Site Area

TP Load Reduction Required (lb/yr) -8.62 ** TP LOAD REDUCTION NOT REQUIRED

Nitrogen Loads (Informational Purposes Only)

| Pre-ReDevelopment TN Load (lb/yr) | 202.16 | Final Post-Development TN Load (Post-ReDevelopment & New Impervious) (lb/yr) | 100.06 |
|-----------------------------------|--------|--|--------|
|-----------------------------------|--------|--|--------|

| DATE | REVISION |
|----------|-------------------------|
| 9-4-20 | DSUP SUBMISSION #1 |
| 10-20-20 | DSUP SUBMISSION #2 |
| 11-3-20 | DSUP SUBMISSION #3 |
| 12-04-20 | VERIFICATION SUBMISSION |

BMP PHASING NARRATIVE

THIS DEVELOPMENT IS BEING CONSTRUCTED IN TWO PHASES:
- PHASE 1 - THE FOLLOWING AREAS WILL BE DESIGNED AND CONSTRUCTED CONCURRENTLY AS PHASE 1: INFRASTRUCTURE, BLOCK A1, BLOCK A2, BLOCK B, NEW ROAD A OUTLOT, BLOCK C OPEN SPACE, BLOCK E.
- PHASE 2 - THE REMAINING PORTION OF THE SITE WILL BE DESIGNED AND CONSTRUCTED AS PHASE 2: BLOCK C RESIDENTIAL BUILDING AND THE OPEN SPACE SOUTH OF THE BUILDING.

NOTE: BLOCK D (TOWNHOUSES) WILL BE DESIGNED BY OTHERS AS A STANDALONE DSUP INDEPENDENT OF ANYTHING BEING COMPLETED IN PHASE 1 OR 2 LISTED ABOVE.

STATE WATER QUALITY COMPLIANCE (VRRM SPREADSHEET): THIS MASTER PLAN WILL SHOW COMPLIANCE FOR BOTH PHASE 1 AND PHASE 2. EACH INDIVIDUAL DSUP FOR EACH PLAN WILL PROVIDE A VRRM SPREADSHEET FOR INFORMATIONAL PURPOSES ONLY.

MEMO TO INDUSTRY 01-18 COMPLIANCE: THIS MASTER PLAN WILL SHOW COMPLIANCE FOR BOTH PHASE 1 AND PHASE 2. THE PHASE 1 MUST PROVIDE THE MINIMUM REQUIRED FOR THAT PHASE TO BE COMPLIANT. AS CURRENTLY DESIGNED, THE REQUIREMENT FOR THE ENTIRE DEVELOPMENT (PHASE 1 AND PHASE 2) IS MET AT THE CONCLUSION OF PHASE 1.

WATER QUALITY VOLUME DEFAULT (WQVD): THIS REQUIREMENT IS ANALYZED BASED ON THE MASTER PLAN. ALL IMPERVIOUS AREA ON PRIVATE PROPERTY MUST BE TREATED. ANY UNTREATED IMPERVIOUS AREA CAN BE OFF-SET BY IMPERVIOUS AREA TREATED IN THE RIGHT-OF-WAY. A FEE IN LIEU OF CAN BE PAID FOR ANY REMAINING UNTREATED IMPERVIOUS AREA.

MEMO TO INDUSTRY 04-14: THE MAXIMUM AMOUNT OF GREEN SIDEWALK INFRASTRUCTURE HAS BEEN PROVIDED BY THE BMP TREE WELLS AND PERMEABLE PAVEMENT SHOWN ON THE MASTER PLAN.



PRELIMINARY BMP COMPUTATIONS

OAKVILLE INFRASTRUCTURE DEVELOPMENT SITE PLAN
CITY OF ALEXANDRIA, VIRGINIA

APPROVED
DEVELOPMENT SITE PLAN NO. 2020-00031
DEPARTMENT OF PLANNING & ZONING

DIRECTOR DATE
DEPT. OF TRANSPORTATION & ENVIRONMENTAL SERVICES
SITE PLAN No. _____

DIRECTOR DATE

CHAIRMAN, PLANNING COMMISSION DATE

DATE RECORDED _____

INSTRUMENT NO. DEED BOOK NO. PAGE NO.

PROJECT NO: 14007.011.00
SCALE: NONE
DATE: 07-29-20
DESIGN: EG
DRAWN: JS
CHECKED: K1W
SHEET No.
C500
110164

THIS VRRM IS BASED ON THIS PLAN AND FOR INFORMATION PURPOSES ONLY.

Drainage Area A (ROW - BMP TREE WELLS)

Drainage Area A Land Cover (acres)

| | A Soils | B Soils | C Soils | D Soils | Totals | Land Cover Rv |
|---------------------------|---------|---------|---------|-------------|--------|---------------|
| Forest/Open Space (acres) | | | | | 0.00 | 0.00 |
| Managed Turf (acres) | | | | 0.31 | 0.31 | 0.25 |
| Impervious Cover (acres) | | | | 0.82 | 0.82 | 0.95 |
| Total | | | | 1.13 | | |

CLEAR BMP AREAS

| | |
|--|-------|
| Total Phosphorus Available for Removal in D.A. A (lb/yr) | 1.95 |
| Post Development Treatment Volume in D.A. A (ft ³) | 3,109 |

Stormwater Best Management Practices (RR = Runoff Reduction)

| Practice | Runoff Reduction Credit (%) | Managed Turf Credit Area (acres) | Impervious Cover Credit Area (acres) | Volume from Upstream Practice (ft ³) | Runoff Reduction (ft ³) | Remaining Runoff Volume (ft ³) | Total BMP Treatment Volume (ft ³) | Phosphorus Removal Efficiency (%) | Phosphorus Load from Upstream Practices (lb) | Untreated Phosphorus Load to Practice (lb) | Phosphorus Removed By Practice (lb) | Remaining Phosphorus Load (lb) | Downstream Practice to be Employed |
|---|-----------------------------|----------------------------------|--------------------------------------|--|-------------------------------------|--|---|-----------------------------------|--|--|-------------------------------------|--------------------------------|------------------------------------|
| 6. Bioretention (RR) | | | | | | | | | | | | | |
| 6.a. Bioretention #1 or Micro-Bioretention #1 or Urban Bioretention (Spec #9) | 40 | 0.31 | 0.82 | 0 | 1,244 | 1,865 | 3,109 | 25 | 0.00 | 1.95 | 1.07 | 0.88 | |

Drainage Area B (ROW - BMP PERMEABLE PAVEMENT)

Drainage Area A Land Cover (acres)

| | A Soils | B Soils | C Soils | D Soils | Totals | Land Cover Rv |
|---------------------------|---------|---------|---------|-------------|--------|---------------|
| Forest/Open Space (acres) | | | | | 0.00 | 0.00 |
| Managed Turf (acres) | | | | 0.02 | 0.02 | 0.25 |
| Impervious Cover (acres) | | | | 0.08 | 0.08 | 0.95 |
| Total | | | | 0.10 | | |

CLEAR BMP AREAS

| | |
|--|------|
| Total Phosphorus Available for Removal in D.A. B (lb/yr) | 0.18 |
| Post Development Treatment Volume in D.A. B (ft ³) | 294 |

Stormwater Best Management Practices (RR = Runoff Reduction)

| Practice | Runoff Reduction Credit (%) | Managed Turf Credit Area (acres) | Impervious Cover Credit Area (acres) | Volume from Upstream Practice (ft ³) | Runoff Reduction (ft ³) | Remaining Runoff Volume (ft ³) | Total BMP Treatment Volume (ft ³) | 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 |
|--------------------------------------|-----------------------------|----------------------------------|--------------------------------------|--|-------------------------------------|--|---|-----------------------------------|--|--|-------------------------------------|--------------------------------|------------------------------------|
| 3. Permeable Pavement (RR) | | | | | | | | | | | | | |
| 3.a. Permeable Pavement #1 (Spec #7) | 45 | | 0.08 | 0 | 124 | 152 | 276 | 25 | 0.00 | 0.17 | 0.10 | 0.07 | |

THIS VRRM IS BASED ON THIS PLAN AND FOR INFORMATION PURPOSES ONLY.

Site Results (Water Quality Compliance)

| Area Checks | D.A. A | D.A. B | D.A. C | D.A. D | D.A. E | AREA CHECK |
|--------------------------------|--------|--------|--------|--------|--------|------------|
| FOREST/OPEN SPACE (ac) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | OK. |
| IMPERVIOUS COVER (ac) | 0.82 | 0.08 | 0.00 | 0.00 | 0.00 | OK. |
| IMPERVIOUS COVER TREATED (ac) | 0.82 | 0.08 | 0.00 | 0.00 | 0.00 | OK. |
| MANAGED TURF AREA (ac) | 0.31 | 0.02 | 0.00 | 0.00 | 0.00 | OK. |
| MANAGED TURF AREA TREATED (ac) | 0.31 | 0.00 | 0.00 | 0.00 | 0.00 | OK. |
| AREA CHECK | OK. | OK. | OK. | OK. | OK. | |

Site Treatment Volume (ft³) 22,261

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 ³) | 1,244 | 124 | 0 | 0 | 0 | 1,368 |
| TP LOAD AVAILABLE FOR REMOVAL (lb/yr) | 1.95 | 0.18 | 0.00 | 0.00 | 0.00 | 2.14 |
| TP LOAD REDUCTION ACHIEVED (lb/yr) | 1.07 | 0.10 | 0.00 | 0.00 | 0.00 | 1.17 |
| TP LOAD REMAINING (lb/yr) | 0.88 | 0.08 | 0.00 | 0.00 | 0.00 | 0.96 |

NITROGEN LOAD REDUCTION ACHIEVED (lb/yr) 8.93 0.73 0.00 0.00 0.00 9.66

Total Phosphorus

| | |
|--|-------|
| FINAL POST-DEVELOPMENT TP LOAD (lb/yr) | 13.99 |
| TP LOAD REDUCTION REQUIRED (lb/yr) | -8.62 |
| TP LOAD REDUCTION ACHIEVED (lb/yr) | 1.17 |
| TP LOAD REMAINING (lb/yr) | 12.81 |

REMAINING TP LOAD REDUCTION REQUIRED (lb/yr): 0.00 **
 ** TARGET TP REDUCTION EXCEEDED BY 9.8 LB/YEAR **

Total Nitrogen (For Information Purposes)

| | |
|--|--------|
| POST-DEVELOPMENT LOAD (lb/yr) | 100.06 |
| NITROGEN LOAD REDUCTION ACHIEVED (lb/yr) | 9.66 |
| REMAINING POST-DEVELOPMENT NITROGEN LOAD (lb/yr) | 90.40 |

BMP VRRM Drainage Area Breakdown / Tracking Chart

| Drainage Area | BMP Device | Total Area Treated | Impervious Area Treated | Pervious Area Treated | TP Removed | TP Removed (nonproprietary) | Notes |
|---|--|--------------------|-------------------------|-----------------------|-------------|-----------------------------|--|
| Drainage Area 'A' (Block A1) | BMP Device | | | | | | |
| | 2.i. To Stormwater Planter, Urban Bioretention (Spec #9, Appendix A) | 0.23 | 0.23 | 0.00 | 0.27 | 0.27 | |
| | 14.a. Manufactured Treatment Device-Hydrodynamic | 1.60 | 1.60 | 0.00 | 0.74 | 0 | 0.23 Acres to (2.i. To Stormwater Planter) in series to (14.a. Manufactured Treatment Device-Hydrodynamic) |
| | Total Treated | 1.83 | 1.83 | 0.00 | 1.01 | 0.27 | |
| | Untreated | 0.00 | 0.00 | 0.00 | | | |
| Total | 1.83 | 1.83 | 0.00 | | | | |
| Drainage Area 'B' (Block A2) | BMP Device | | | | | | |
| | 1.b. Vegetated Roof #2 (Spec #5) | 0.20 | 0.20 | 0.00 | 0.26 | 0.26 | |
| | 14.a. Manufactured Treatment Device-Hydrodynamic | 0.62 | 0.62 | 0.00 | 0.30 | 0.00 | 0.2 Acres to (1.b. Vegetated Roof #2 (Sp) in series to (14.a. Manufactured Treatment Device-Hydrodynamic) |
| | Total Treated | 0.82 | 0.82 | 0.00 | 0.56 | 0.26 | |
| | Untreated | 0.00 | | | | | |
| Total | 0.82 | 0.82 | 0.00 | | | | |
| Drainage Area 'C' (Block B) | BMP Device | | | | | | |
| | 2.i. To Stormwater Planter, Urban Bioretention (Spec #9, Appendix A) | 0.15 | 0.15 | 0 | 0.18 | 0.18 | |
| | 14.a. Manufactured Treatment Device-Hydrodynamic | 1.19 | 1.19 | 0.00 | 0.54 | 0.00 | |
| | Total Treated | 1.34 | 1.34 | 0.00 | 0.72 | 0.18 | |
| | Untreated | 0.00 | | | | | |
| Total | 1.19 | 1.34 | 0.00 | | | | |
| Drainage Area 'D' (Block C) | BMP Device | | | | | | |
| | 14.a. Manufactured Treatment Device-Hydrodynamic | 1.09 | 1.09 | 0.00 | 0.47 | 0.00 | |
| | Total Treated | 1.09 | 1.09 | 0.00 | 0.47 | 0.00 | |
| | Untreated | 0.00 | | | | | |
| | Total | 1.09 | 1.09 | 0.00 | | | |
| Sub-total Treated (Blocks A, B and C) | | 5.08 | 5.08 | 0.00 | | | |
| | Sub-total Un-Treated (Blocks A, B and C) | 0.00 | 0.00 | 0.00 | | | |
| Drainage Area 'E' (ROW and Park Road Outlot) | BMP Device | | | | | | |
| | BMP Tree Filters - ROW | 1.13 | 1.07 | 0.06 | 1.29 | 1.29 | |
| | 3.a. Permeable Pavement #1 (Spec #7) | 0.08 | 0.08 | 0.00 | 0.10 | 0.10 | |
| | Total Treated | 1.21 | 1.15 | 0.06 | 1.39 | 1.39 | |
| | Untreated | 0.00 | 0.00 | 0.00 | | | |
| Total | 1.21 | 1.15 | 0.06 | | | | |
| Grand Total Phosphorus Removed | | | | | 4.16 | 2.11 | |
| Total Phosphorus Requirement | | | | | 3.06 | 1.99 | |

BMP TREE WELL AND BMP PERMEABLE PAVEMENT
 SEE SHEET C503 FOR ULTIMATE POST BMP MAP.

| Phosphorus Load Reduction Requirements | | | | | | | |
|--|-----------|-----------|------------|------------|-------------|-----------------------|--|
| DA | Area (ac) | Pre - Imp | Pre - Perv | Post - Imp | Post - Perv | TP Reduction Required | TP Reduction Required with nonproprietary BMPs (1) |
| BMP Limits | 12.23 | 11.18 | 1.05 | 9.99 | 2.24 | 3.06 | 1.99 |

Notes:
 (1) Per City's memo-to-industry 01-18, 65% of the total phosphorus removal required by the VRRM must be achieved through
 (2) City's WQIF requirement that 100% of the site's impervious area be treated or pay a fee in lieu of (\$2/sf) for any untreated

NOTE: THE DISTURBED AREAS ON BLOCKS A, B, C AND D ARE TEMPORARY DISTURBANCES. THE FINAL DISTURBANCE WILL BE PROVIDED BY THE DSUP ASSOCIATED WITH THAT INDIVIDUAL BLOCK.

APPROVED
 DEVELOPMENT SITE PLAN NO. 2020-00031
 DEPARTMENT OF PLANNING & ZONING

DIRECTOR DATE
 DEPT. OF TRANSPORTATION & ENVIRONMENTAL SERVICES
 SITE PLAN No. _____

DIRECTOR DATE

CHAIRMAN, PLANNING COMMISSION DATE

DATE RECORDED _____

INSTRUMENT NO. DEED BOOK NO. PAGE NO.

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

COMMONWEALTH OF VIRGINIA
 ELI GOLDMAN
 Lic. No. 55868
 12/04/2020
 PROFESSIONAL ENGINEER

PRELIMINARY BMP COMPUTATIONS

OAKVILLE INFRASTRUCTURE DEVELOPMENT SITE PLAN
 CITY OF ALEXANDRIA, VIRGINIA

PROJECT NO: 14007.011.00
 SCALE: NONE
 DATE: 07-29-20
 DESIGN: EG
 DRAWN: JS
 CHECKED: KMW
 SHEET No.
C501
 110164

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| DATE | REVISION |
|----------|-------------------------|
| 9-4-20 | DSUP SUBMISSION #1 |
| 10-20-20 | DSUP SUBMISSION #2 |
| 11-3-20 | DSUP SUBMISSION #3 |
| 12-04-20 | VERIFICATION SUBMISSION |
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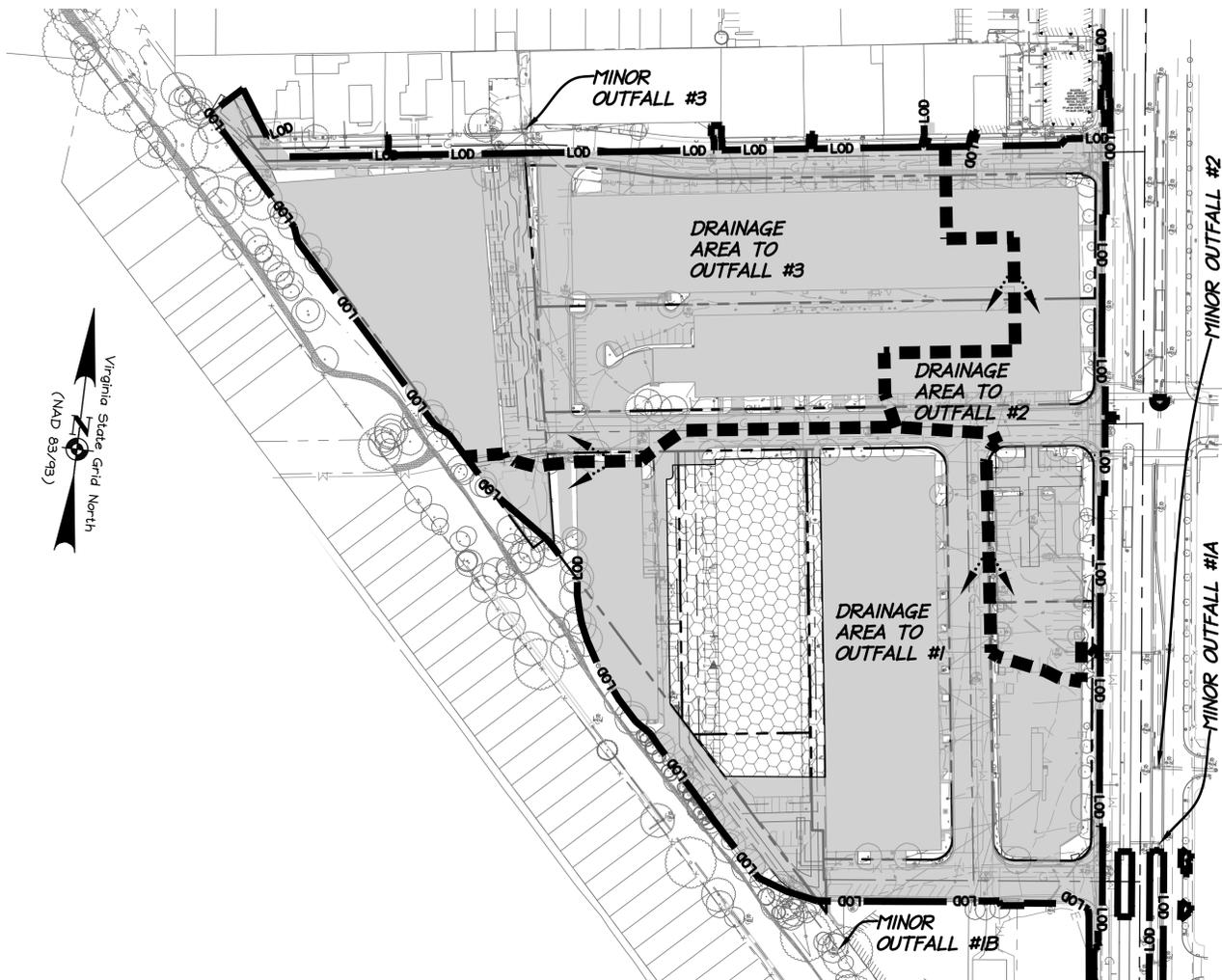


PRE-POST BMP MAP

OAKVILLE INFRASTRUCTURE DEVELOPMENT SITE PLAN
 CITY OF ALEXANDRIA, VIRGINIA

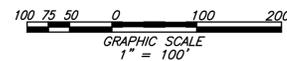
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 SCALE: NONE
 DATE: 09-04-20
 DESIGN: EG
 DRAWN: JS
 CHECKED: KMW
 SHEET No.
C502
 110164

OVERALL PRE-DEVELOPMENT BMP MAP



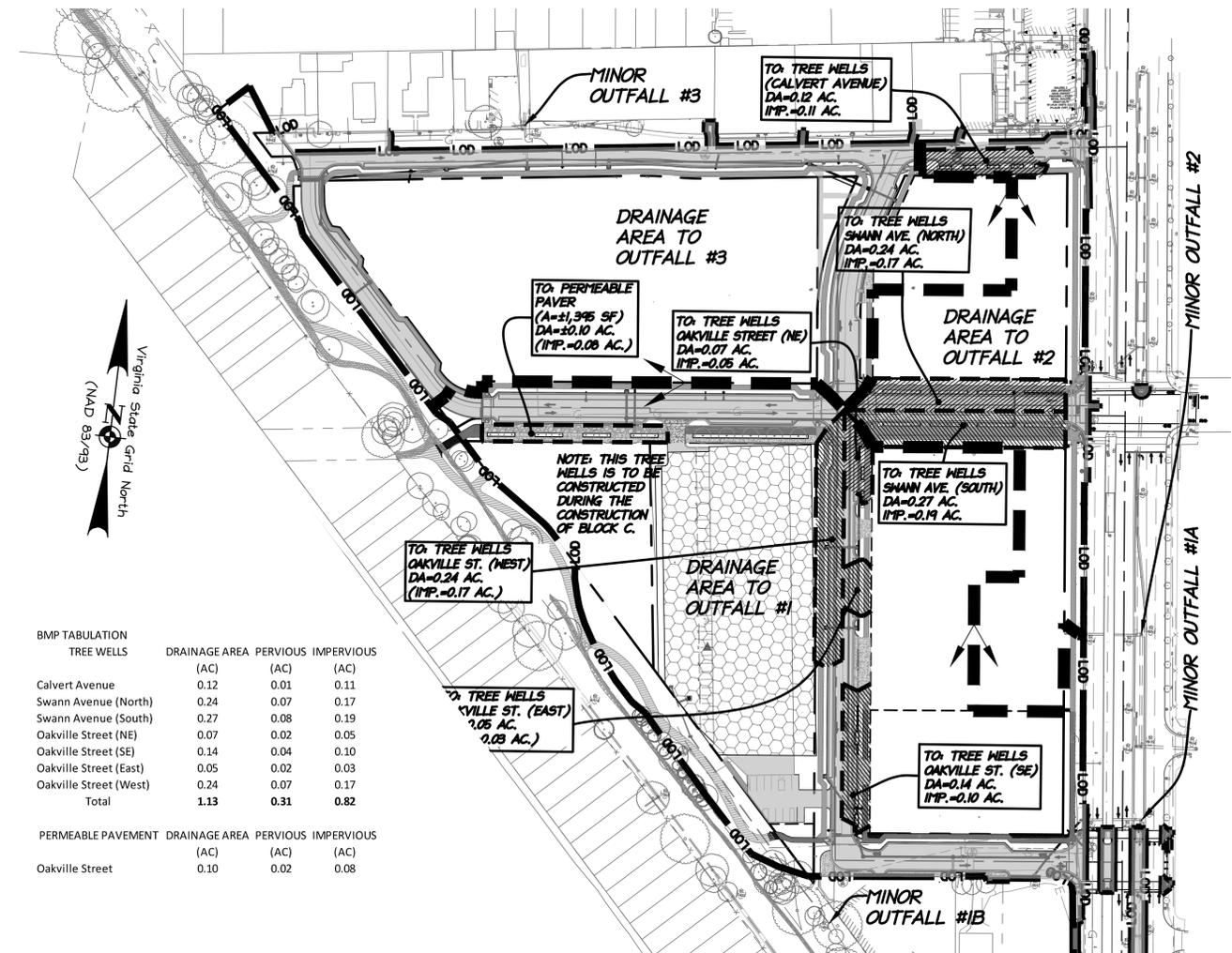
LEGEND

| SYMBOL | TITLE |
|-------------------|---|
| --- | : PROPERTY LIMITS |
| LOD | : LIMITS OF DISTURBANCE = 13.89 AC. (IMP.=12.74 AC., TURF=1.15 AC.) |
| ---> | : DRAINAGE DIVIDES FOR OUTFALLS |
| Hexagonal pattern | : EX. WAREHOUSE AREA (1.60 AC.) TO REMAIN AND NOT BE DISTURBED WITH THIS PHASE. THIS AREA WAS NOT INCLUDED IN VRRM SPREADSHEET BUT IS INCLUDED IN THE STORMWATER MANAGEMENT CALCULATIONS. |
| Grey fill | : IMPERVIOUS AREA =12.74 AC. |
| White fill | : MANAGED TURF AREA =1.15 AC. |



NOTE: SEE DRAINAGE AREA BREAKDOWNS ON C506 FOR THE PRE-DEVELOPED AND POST-DEVELOPED AREA AND CN CALCULATIONS

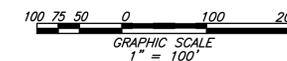
OVERALL POST-DEVELOPMENT BMP MAP



| BMP TABULATION | DRAINAGE AREA (AC) | PERVIOUS (AC) | IMPERVIOUS (AC) |
|------------------------|--------------------|---------------|-----------------|
| TREE WELLS | | | |
| Calvert Avenue | 0.12 | 0.01 | 0.11 |
| Swann Avenue (North) | 0.24 | 0.07 | 0.17 |
| Swann Avenue (South) | 0.27 | 0.08 | 0.19 |
| Oakville Street (NE) | 0.07 | 0.02 | 0.05 |
| Oakville Street (SE) | 0.14 | 0.04 | 0.10 |
| Oakville Street (East) | 0.05 | 0.02 | 0.03 |
| Oakville Street (West) | 0.24 | 0.07 | 0.17 |
| Total | 1.13 | 0.31 | 0.82 |
| PERMEABLE PAVEMENT | DRAINAGE AREA (AC) | PERVIOUS (AC) | IMPERVIOUS (AC) |
| Oakville Street | 0.10 | 0.02 | 0.08 |

LEGEND

| SYMBOL | TITLE |
|-------------------|---|
| --- | : PROPERTY LIMITS |
| LOD | : LIMITS OF DISTURBANCE = 13.89 AC. (IMP.=3.80 AC., TURF=10.09 AC.) |
| ---> | : DRAINAGE DIVIDES FOR OUTFALLS |
| Hexagonal pattern | : EX. WAREHOUSE AREA (1.60 AC.) TO REMAIN AND NOT BE DISTURBED WITH THIS PHASE. THIS AREA WAS NOT INCLUDED IN VRRM SPREADSHEET BUT IS INCLUDED IN THE STORMWATER MANAGEMENT CALCULATIONS. |
| Grey fill | : IMPERVIOUS AREA = 3.80 AC. |
| White fill | : MANAGED TURF AREA = 10.09 AC. |



APPROVED
 DEVELOPMENT SITE PLAN NO. 2020-00031
 DEPARTMENT OF PLANNING & ZONING

| | |
|--|---------------------|
| DIRECTOR | DATE |
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| SITE PLAN No. _____ | |
| DIRECTOR | DATE |
| CHAIRMAN, PLANNING COMMISSION | DATE |
| DATE RECORDED _____ | |
| INSTRUMENT NO. _____ | DEED BOOK NO. _____ |
| | PAGE NO. _____ |

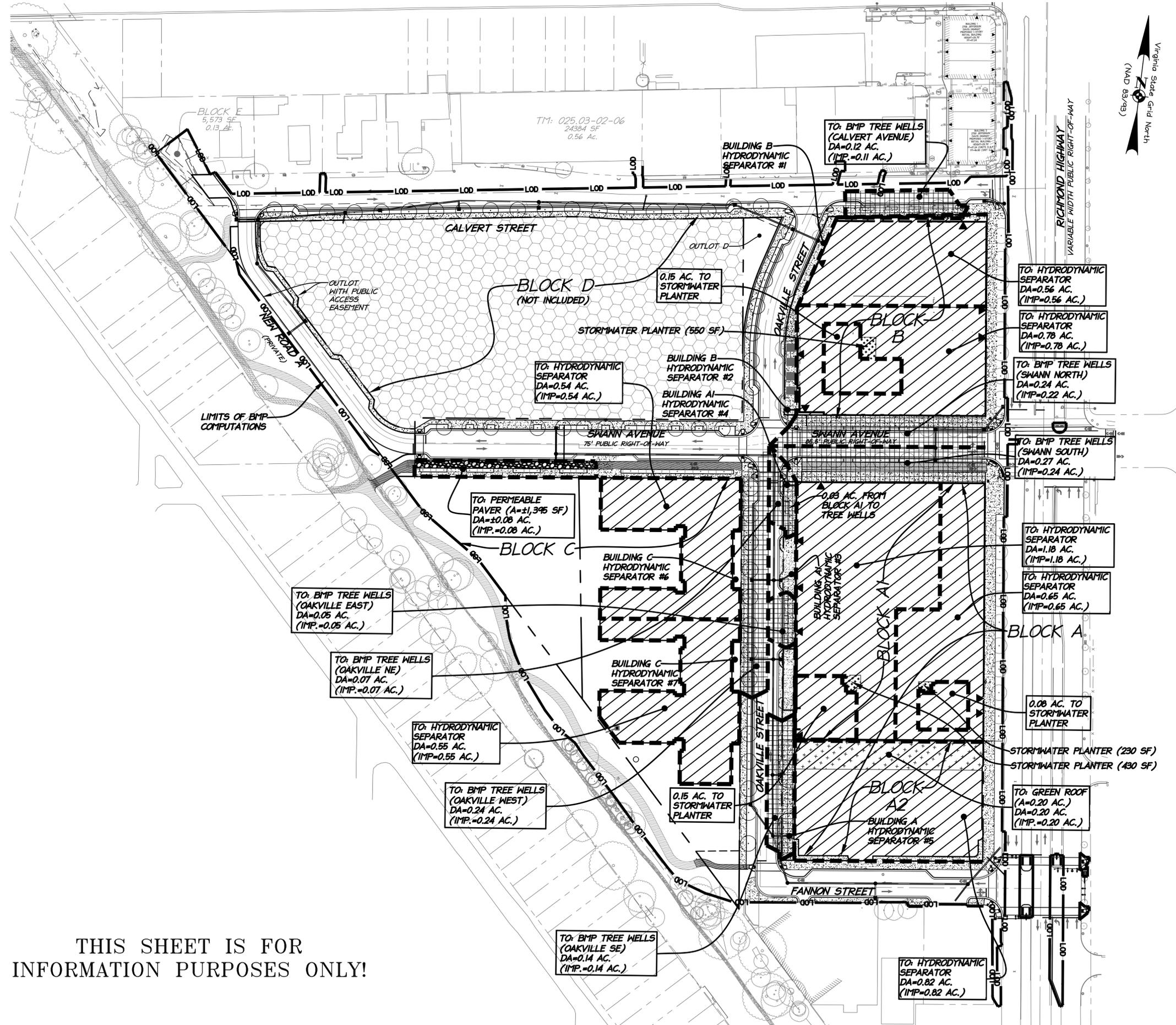
| DATE | REVISION |
|----------|-------------------------|
| 9-4-20 | DSUP SUBMISSION #1 |
| 10-20-20 | DSUP SUBMISSION #2 |
| 11-3-20 | DSUP SUBMISSION #3 |
| 12-04-20 | VERIFICATION SUBMISSION |
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christopher consultants
 9900 main street (suite 400) · fairfax, va 22031
 phone 703.273.6820 · fax 703.273.6820



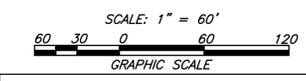
ULTIMATE POST-BMP MAP

OAKVILLE INFRASTRUCTURE BMP MASTER PLAN
 THE CITY OF ALEXANDRIA, VIRGINIA



LEGEND

| SYMBOL | TITLE |
|--------|--|
| --- | PROPERTY LIMITS |
| LOD | LIMITS OF DISTURBANCE (12.23 Ac.) |
| --- | VRRM SUB-DRAINAGE AREA DIVIDE (TREE WELLS / PERMEABLE PAVEMENT / HYDRODYNAMIC SEPARATOR) |
| + | GREEN ROOF (LEVEL 2) A=±0.20 AC. (BUILDING A2) |
| ••• | STORMWATER PLANTER DA=0.38 AC. (BUILDINGS A1 & B) |
| /// | HYDRODYNAMIC SEPARATOR BLOCKS RUNOFF TREATED = 5.08 AC (5.08 AC. IMP.) |
| □ | BMP TREE WELLS RUNOFF TREATED = 1.13 AC (1.07 AC. IMP.) |
| ■ | BMP PERMEABLE PAVEMENT ROW RUNOFF TREATED = 0.08 AC (0.08 AC. IMP.) |
| ○ | BLOCK D (3.26 AC) NOT INCLUDED IN LOD |



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 DEVELOPMENT SITE PLAN NO. 2020-00031
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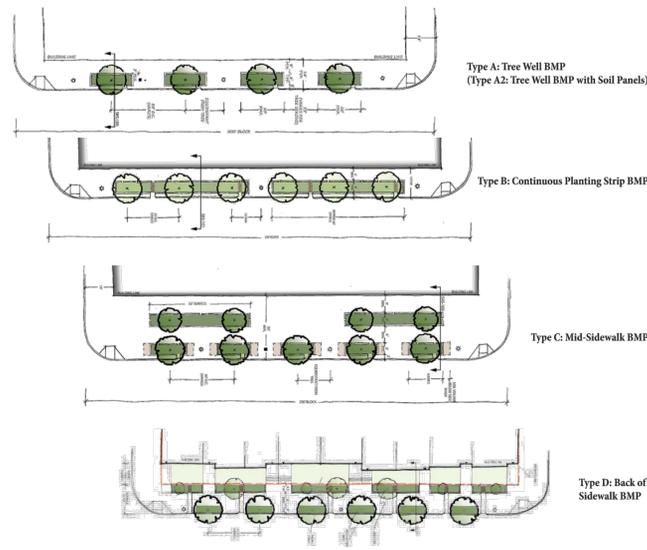
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|--|---------------|----------|
| DIRECTOR | DATE | |
| DEPT. OF TRANSPORTATION & ENVIRONMENTAL SERVICES | | |
| SITE PLAN No. _____ | | |
| DIRECTOR | DATE | |
| CHAIRMAN, PLANNING COMMISSION | DATE | |
| DATE RECORDED | | |
| INSTRUMENT NO. | DEED BOOK NO. | PAGE NO. |

PROJECT NO: 14007.011.00
 SCALE: 1"=60'
 DATE: 09/09/20
 DESIGN: EG
 DRAWN: JS
 CHECKED: K1W
 SHEET NO.

THIS SHEET IS FOR INFORMATION PURPOSES ONLY!

C503
11013

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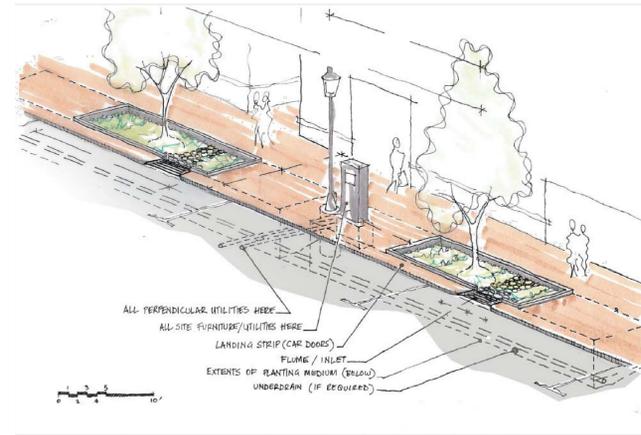


TYPICAL TYPES OF SIDEWALK BMP TREE WELLS
NOT TO SCALE

TYPE A TREE WELL (CONTINUED)

iii. Dimensions

- The open area of individual wells shall be a minimum of 10 feet in length and 4 feet in width
- The open area of individual wells shall be a maximum of 20 feet in length and 7 feet in width

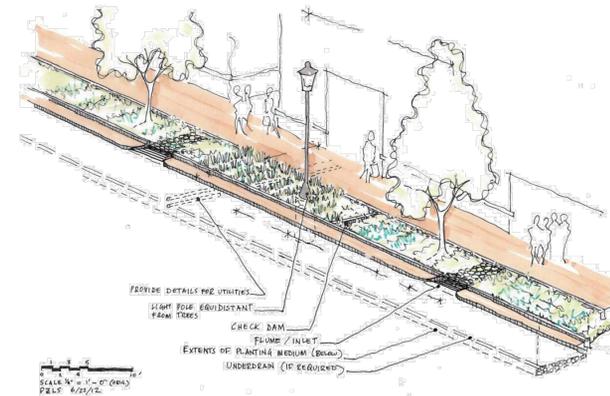


SK-110: BMP Tree Well Diagrammatic Perspective. This version shows soil panels extending from the well.

TYPE B: CONTINUOUS PLANTING STRIP (CONTINUED)

iii. Dimensions & Notes

- The open area of planting strips shall be a minimum of 4 feet in width.
- The open area of individual wells shall be a maximum of 7 feet in width.
- Due to their large size, a sloped soil profile is preferred which includes a shallower soil depth on the pedestrian side of the continuous strip (see section SKS-101).



SK-111: BMP Continuous Planting Strip Diagrammatic Perspective

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| 12-04-20 | VERIFICATION SUBMISSION |
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NOTE: ADD STORM DRAIN MARKER TO ALL PUBLIC CURB INLETS WITHIN 50 FEET OF THE PROPERTY LINE

PERVIOUS PAVEMENT TYPICAL DETAIL (LEVEL 1)
NOT TO SCALE

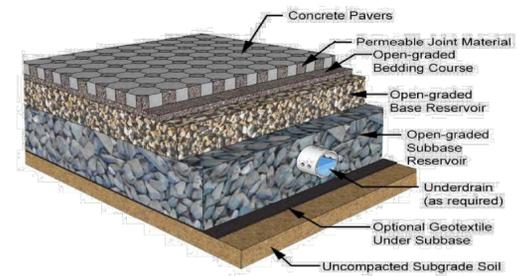


Figure 7.2. Typical Detail (Source: Smith, 2009)

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BMP AND SWM DETAILS

OAKVILLE INFRASTRUCTURE
DEVELOPMENT SITE PLAN
CITY OF ALEXANDRIA, VIRGINIA

APPROVED
DEVELOPMENT SITE PLAN NO. 2020-00031
DEPARTMENT OF PLANNING & ZONING

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DEPT. OF TRANSPORTATION & ENVIRONMENTAL SERVICES
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CHAIRMAN, PLANNING COMMISSION DATE _____

DATE RECORDED _____

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PROJECT NO: 14007.011.00
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DATE: 07-29-20
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CHECKED: KMW
SHEET No.
C504

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| DATE | REVISION |
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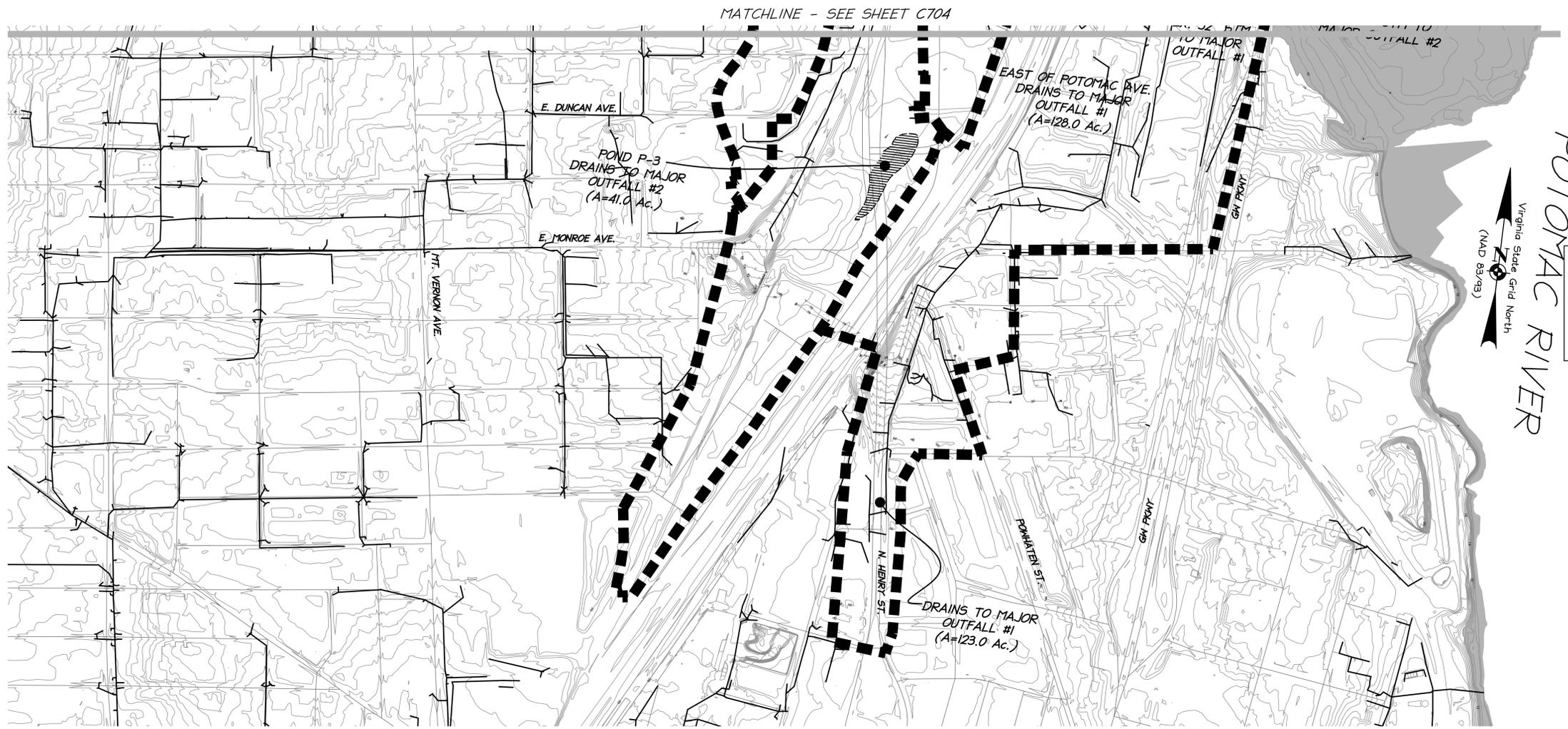


COMMONWEALTH OF VIRGINIA
 ELI GOLDMAN
 Lic. No. 55868
 12/04/2020
 PROFESSIONAL ENGINEER

OVERALL OUTFALL MAP

OAKVILLE INFRASTRUCTURE DEVELOPMENT SITE PLAN
 CITY OF ALEXANDRIA, VIRGINIA

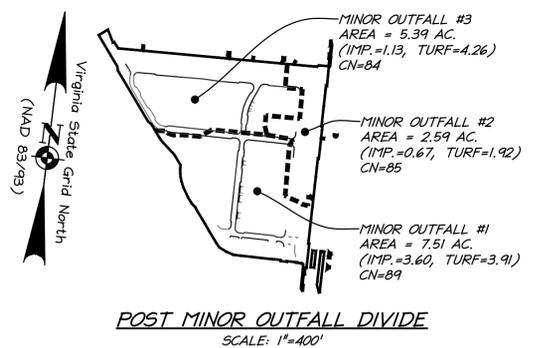
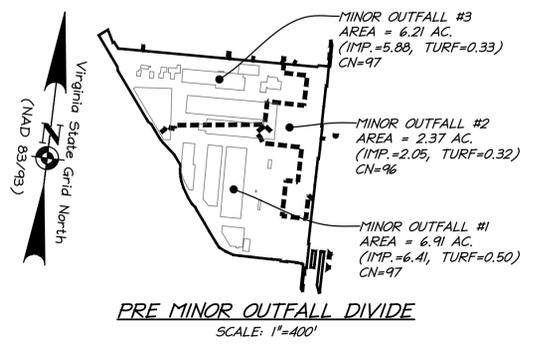
PROJECT NO: 14007.011.00
 SCALE: NONE
 DATE: 09-04-20
 DESIGN: EG
 DRAWN: JS
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 SHEET No.
C506
 110164



LEGEND

- 100-YEAR FLOODPLAIN
- OUTFALL STORM PIPE
- STORM PIPE
- DRAINAGE DIVIDE

NOTE:
 THIS PLAN IS FOR INFORMATIONAL PURPOSES ONLY. ALL INFORMATION SHOWS IS FROM THE CITY OF ALEXANDRIA GIS OR PREVIOUSLY APPROVED PLANS FROM POTOMAC YARD (DSUP # 2007-0022, DSUP # 2005-0038 AND DSUP # 2005-0039).



Outfall #1

| | On-Site | | | |
|------|---------|--------|-------|---------|
| | Q1 | RV1 | Q10 | RV10 |
| Pre | 26.78 | 61,081 | 52.83 | 125,363 |
| Post | 22.26 | 45,852 | 51.69 | 111,432 |

Channel Protection
 $Q_{dev} < IF (Q_{pre} * R_{vpre}) / R_{vdev}$
 $< 0.80 (26.78 * 61081) / 45852$
 22.26 < 28.54
 Detention required: -6.28 CFS
 $Q_{10\ post} < Q_{10\ pre}$
 51.69 < 52.83
 Detention required: -1.14 CFS

Outfall #2

| | On-Site | | | |
|------|---------|--------|-------|--------|
| | Q1 | RV1 | Q10 | RV10 |
| Pre | 8.98 | 20,026 | 17.98 | 41,976 |
| Post | 6.43 | 12,989 | 16.42 | 34,452 |

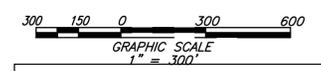
Channel Protection
 $Q_{dev} < IF (Q_{pre} * R_{vpre}) / R_{vdev}$
 $< 0.80 (8.98 * 20026) / 12989$
 6.43 < 11.08
 Detention required: -4.65 CFS
 $Q_{10\ post} < Q_{10\ pre}$
 16.42 < 17.98
 Detention required: -1.56 CFS

Outfall #3

| | On-Site | | | |
|------|---------|--------|-------|---------|
| | Q1 | RV1 | Q10 | RV10 |
| Pre | 24.07 | 54,893 | 47.48 | 112,664 |
| Post | 12.76 | 25,691 | 33.38 | 69,689 |

Channel Protection
 $Q_{dev} < IF (Q_{pre} * R_{vpre}) / R_{vdev}$
 $< 0.80 (24.07 * 54893) / 25691$
 12.76 < 41.14
 Detention required: -28.38 CFS
 $Q_{10\ post} < Q_{10\ pre}$
 33.38 < 47.48
 Detention required: -14.1 CFS

NOTE: THE EXISTING WAREHOUSE AREA (1.60 ACRES) IS NOT INCLUDED IN THE LIMITS OF DISTURBANCE, BUT IT IS INCLUDED WITHIN THE STORMWATER MANAGEMENT CALCULATIONS FOR OUTFALL #1.



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 SITE PLAN No. _____

DIRECTOR _____ DATE _____

CHAIRMAN, PLANNING COMMISSION _____ DATE _____

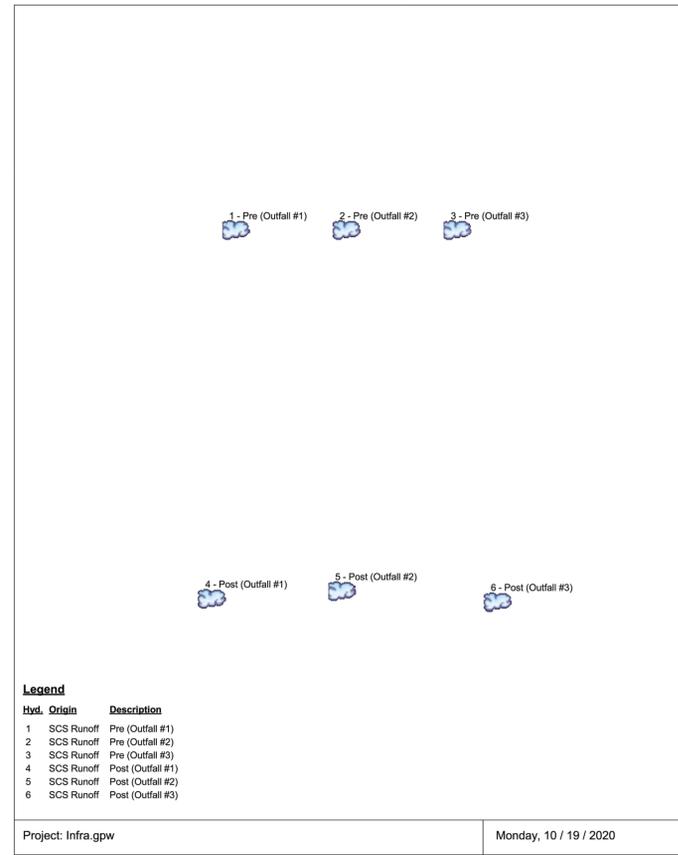
DATE RECORDED _____

INSTRUMENT NO. _____ DEED BOOK NO. _____ PAGE NO. _____

P:\P\Projects\14007\01100\110164 Infra Prelim DSUP\C505 OVERALL OUTFALL MAP.dwg, 12/3/2020 11:44:36 PM, AutoCAD PDF (General Documentation).pc3

Watershed Model Schematic

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020



Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

| Hyd. No. | Hydrograph type (origin) | Inflow hyd(s) | Peak Outflow (cfs) | | | | | | | Hydrograph Description | |
|----------|--------------------------|---------------|--------------------|-------|-------|-------|-------|-------|-------|------------------------|-------------------|
| | | | 1-yr | 2-yr | 3-yr | 5-yr | 10-yr | 25-yr | 50-yr | | 100-yr |
| 1 | SCS Runoff | ----- | 26.78 | 32.02 | ----- | ----- | 52.83 | ----- | ----- | ----- | Pre (Outfall #1) |
| 2 | SCS Runoff | ----- | 8.976 | 10.79 | ----- | ----- | 17.98 | ----- | ----- | ----- | Pre (Outfall #2) |
| 3 | SCS Runoff | ----- | 24.07 | 28.78 | ----- | ----- | 47.48 | ----- | ----- | ----- | Pre (Outfall #3) |
| 4 | SCS Runoff | ----- | 22.26 | 28.13 | ----- | ----- | 51.69 | ----- | ----- | ----- | Post (Outfall #1) |
| 5 | SCS Runoff | ----- | 6.433 | 8.371 | ----- | ----- | 16.42 | ----- | ----- | ----- | Post (Outfall #2) |
| 6 | SCS Runoff | ----- | 12.76 | 16.74 | ----- | ----- | 33.38 | ----- | ----- | ----- | Post (Outfall #3) |

Proj. file: Infra.gpw Monday, 10 / 19 / 2020

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

| 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 | 26.78 | 1 | 717 | 61,081 | ----- | ----- | ----- | Pre (Outfall #1) |
| 2 | SCS Runoff | 8.976 | 1 | 717 | 20,026 | ----- | ----- | ----- | Pre (Outfall #2) |
| 3 | SCS Runoff | 24.07 | 1 | 717 | 54,893 | ----- | ----- | ----- | Pre (Outfall #3) |
| 4 | SCS Runoff | 22.26 | 1 | 717 | 45,852 | ----- | ----- | ----- | Post (Outfall #1) |
| 5 | SCS Runoff | 6.433 | 1 | 718 | 12,989 | ----- | ----- | ----- | Post (Outfall #2) |
| 6 | SCS Runoff | 12.76 | 1 | 718 | 25,691 | ----- | ----- | ----- | Post (Outfall #3) |

Infra.gpw Return Period: 1 Year Monday, 10 / 19 / 2020

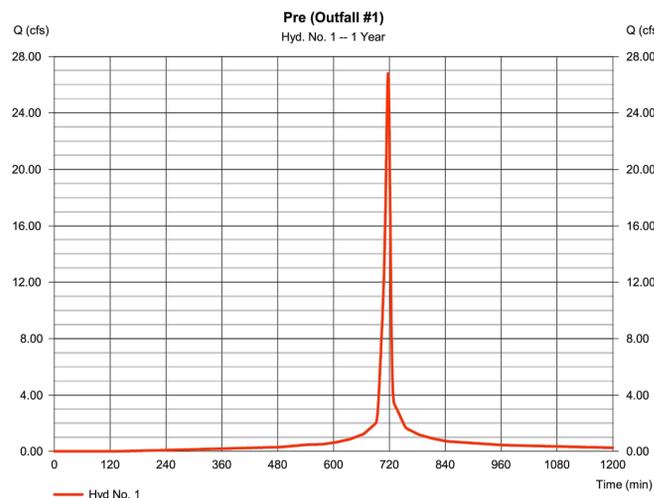
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 10 / 19 / 2020

Hyd. No. 1
Pre (Outfall #1)

| | |
|------------------------------|-------------------------------|
| Hydrograph type = SCS Runoff | Peak discharge = 26.78 cfs |
| Storm frequency = 1 yrs | Time to peak = 717 min |
| Time interval = 1 min | Hyd. volume = 61,081 cuft |
| Drainage area = 6.910 ac | Curve number = 97* |
| Basin Slope = 0.0 % | Hydraulic length = 0 ft |
| Tc method = User | Time of conc. (Tc) = 5.00 min |
| Total precip. = 2.70 in | Distribution = Type II |
| Storm duration = 24 hrs | Shape factor = 484 |

* Composite (Area/CN) = [(0.080 x 98) + (0.240 x 80)] / 6.910



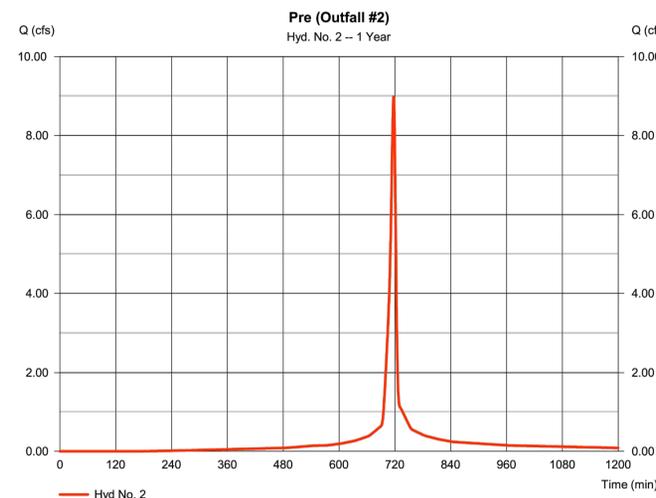
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 10 / 19 / 2020

Hyd. No. 2
Pre (Outfall #2)

| | |
|------------------------------|-------------------------------|
| Hydrograph type = SCS Runoff | Peak discharge = 8.976 cfs |
| Storm frequency = 1 yrs | Time to peak = 717 min |
| Time interval = 1 min | Hyd. volume = 20,026 cuft |
| Drainage area = 2.370 ac | Curve number = 96* |
| Basin Slope = 0.0 % | Hydraulic length = 0 ft |
| Tc method = User | Time of conc. (Tc) = 5.00 min |
| Total precip. = 2.70 in | Distribution = Type II |
| Storm duration = 24 hrs | Shape factor = 484 |

* Composite (Area/CN) = [(2.740 x 98) + (0.470 x 80)] / 2.370



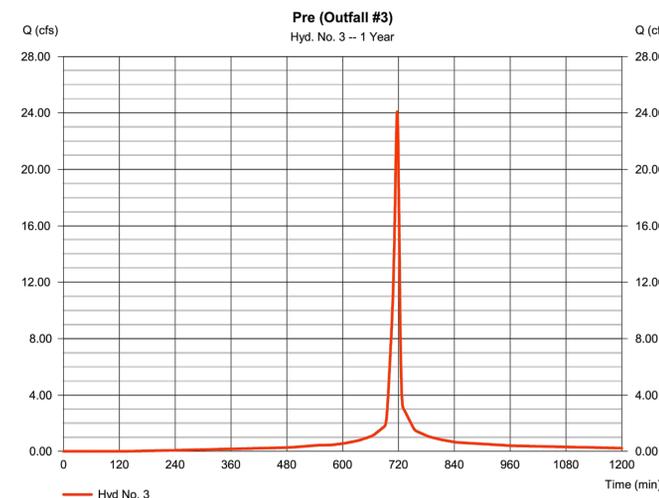
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 10 / 19 / 2020

Hyd. No. 3
Pre (Outfall #3)

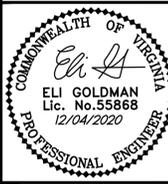
| | |
|------------------------------|-------------------------------|
| Hydrograph type = SCS Runoff | Peak discharge = 24.07 cfs |
| Storm frequency = 1 yrs | Time to peak = 717 min |
| Time interval = 1 min | Hyd. volume = 54,893 cuft |
| Drainage area = 6.210 ac | Curve number = 97* |
| Basin Slope = 0.0 % | Hydraulic length = 0 ft |
| Tc method = User | Time of conc. (Tc) = 5.00 min |
| Total precip. = 2.70 in | Distribution = Type II |
| Storm duration = 24 hrs | Shape factor = 484 |

* Composite (Area/CN) = [(1.400 x 98) + (0.120 x 80)] / 6.210



| DATE | REVISION |
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| 12-04-20 | VERIFICATION SUBMISSION |

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PRE AND POST HYDROGRAPH

OAKVILLE INFRASTRUCTURE DEVELOPMENT SITE PLAN
CITY OF ALEXANDRIA, VIRGINIA

APPROVED
DEVELOPMENT SITE PLAN NO. 2020-00031
DEPARTMENT OF PLANNING & ZONING

DIRECTOR _____ DATE _____
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SITE PLAN No. _____

DIRECTOR _____ DATE _____

CHAIRMAN, PLANNING COMMISSION DATE _____

DATE RECORDED _____

INSTRUMENT NO. _____ DEED BOOK NO. _____ PAGE NO. _____

PROJECT NO: 14007.011.00
SCALE: NONE
DATE: 07-29-20
DESIGN: EG
DRAWN: JS
CHECKED: KJW
SHEET No.

C507
110164

Hydrograph Report

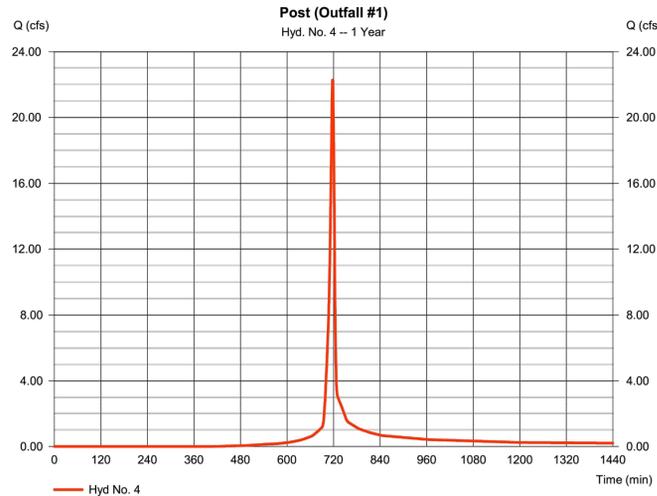
Hydroflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 10 / 19 / 2020

Hyd. No. 4

Post (Outfall #1)

| | | | |
|-----------------|--------------|--------------------|---------------|
| Hydrograph type | = SCS Runoff | Peak discharge | = 22.26 cfs |
| Storm frequency | = 1 yrs | Time to peak | = 717 min |
| Time interval | = 1 min | Hyd. volume | = 45,852 cuft |
| Drainage area | = 7.510 ac | Curve number | = 89* |
| Basin Slope | = 0.0 % | Hydraulic length | = 0 ft |
| Tc method | = User | Time of conc. (Tc) | = 5.00 min |
| Total precip. | = 2.70 in | Distribution | = Type II |
| Storm duration | = 24 hrs | Shape factor | = 484 |

* Composite (Area/CN) = [(1.970 x 98) + (1.290 x 64)] / 7.510



Hydrograph Report

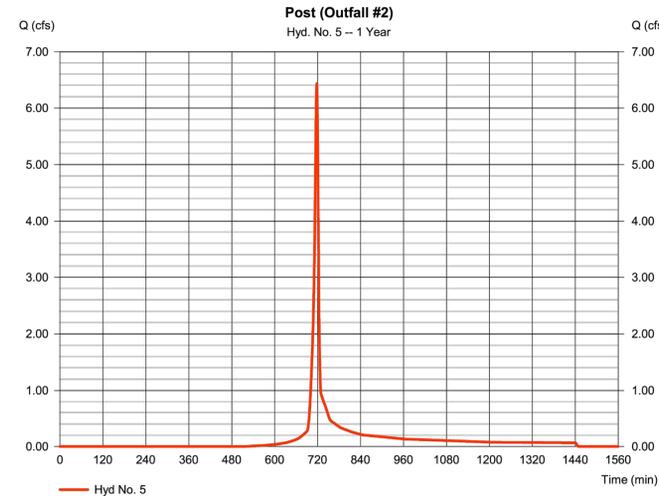
Hydroflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 10 / 19 / 2020

Hyd. No. 5

Post (Outfall #2)

| | | | |
|-----------------|--------------|--------------------|---------------|
| Hydrograph type | = SCS Runoff | Peak discharge | = 6.433 cfs |
| Storm frequency | = 1 yrs | Time to peak | = 718 min |
| Time interval | = 1 min | Hyd. volume | = 12,989 cuft |
| Drainage area | = 2.590 ac | Curve number | = 85* |
| Basin Slope | = 0.0 % | Hydraulic length | = 0 ft |
| Tc method | = User | Time of conc. (Tc) | = 5.00 min |
| Total precip. | = 2.70 in | Distribution | = Type II |
| Storm duration | = 24 hrs | Shape factor | = 484 |

* Composite (Area/CN) = [(2.740 x 98) + (0.470 x 80)] / 2.590



Hydrograph Report

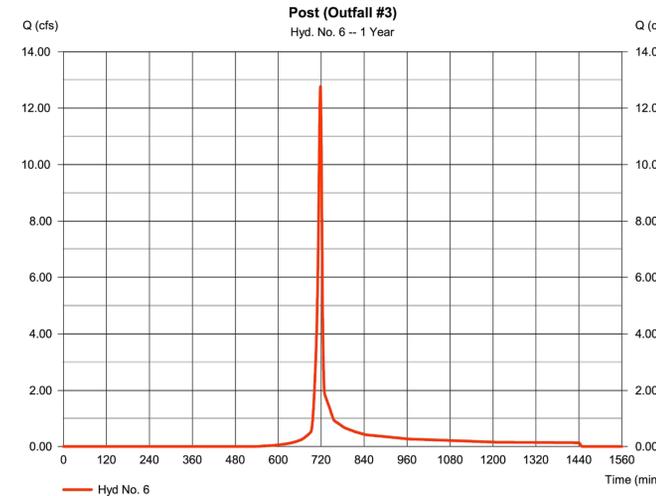
Hydroflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 10 / 19 / 2020

Hyd. No. 6

Post (Outfall #3)

| | | | |
|-----------------|--------------|--------------------|---------------|
| Hydrograph type | = SCS Runoff | Peak discharge | = 12.76 cfs |
| Storm frequency | = 1 yrs | Time to peak | = 718 min |
| Time interval | = 1 min | Hyd. volume | = 25,691 cuft |
| Drainage area | = 5.390 ac | Curve number | = 84* |
| Basin Slope | = 0.0 % | Hydraulic length | = 0 ft |
| Tc method | = User | Time of conc. (Tc) | = 5.00 min |
| Total precip. | = 2.70 in | Distribution | = Type II |
| Storm duration | = 24 hrs | Shape factor | = 484 |

* Composite (Area/CN) = [(1.400 x 98) + (0.120 x 80)] / 5.390

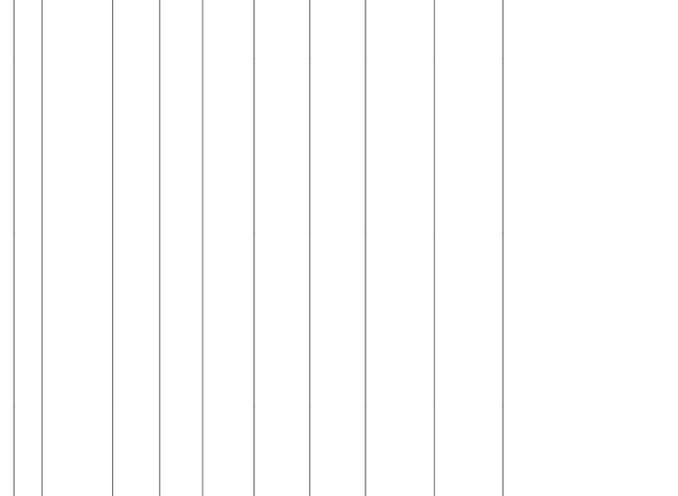


Hydrograph Summary Report

Hydroflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

| 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 | 52.83 | 1 | 717 | 125,363 | ----- | ----- | ----- | Pre (Outfall #1) |
| 2 | SCS Runoff | 17.98 | 1 | 717 | 41,976 | ----- | ----- | ----- | Pre (Outfall #2) |
| 3 | SCS Runoff | 47.48 | 1 | 717 | 112,664 | ----- | ----- | ----- | Pre (Outfall #3) |
| 4 | SCS Runoff | 51.69 | 1 | 717 | 111,432 | ----- | ----- | ----- | Post (Outfall #1) |
| 5 | SCS Runoff | 16.42 | 1 | 717 | 34,452 | ----- | ----- | ----- | Post (Outfall #2) |
| 6 | SCS Runoff | 33.38 | 1 | 717 | 69,669 | ----- | ----- | ----- | Post (Outfall #3) |

* Composite (Area/CN) = [(0.080 x 98) + (0.240 x 80)] / 6.910



Hydrograph Report

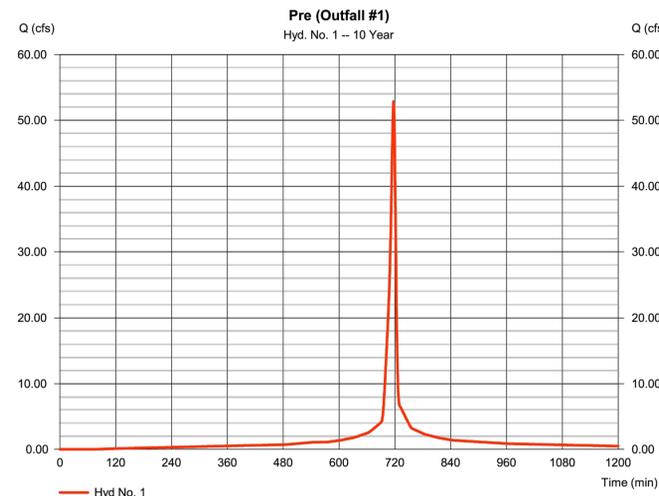
Hydroflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 10 / 19 / 2020

Hyd. No. 1

Pre (Outfall #1)

| | | | |
|-----------------|--------------|--------------------|----------------|
| Hydrograph type | = SCS Runoff | Peak discharge | = 52.83 cfs |
| Storm frequency | = 10 yrs | Time to peak | = 717 min |
| Time interval | = 1 min | Hyd. volume | = 125,363 cuft |
| Drainage area | = 6.910 ac | Curve number | = 97* |
| Basin Slope | = 0.0 % | Hydraulic length | = 0 ft |
| Tc method | = User | Time of conc. (Tc) | = 5.00 min |
| Total precip. | = 5.20 in | Distribution | = Type II |
| Storm duration | = 24 hrs | Shape factor | = 484 |

* Composite (Area/CN) = [(0.080 x 98) + (0.240 x 80)] / 6.910



Hydrograph Report

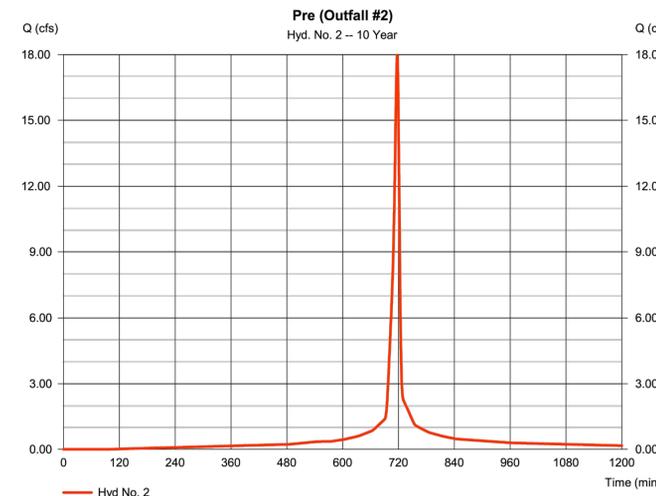
Hydroflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Monday, 10 / 19 / 2020

Hyd. No. 2

Pre (Outfall #2)

| | | | |
|-----------------|--------------|--------------------|---------------|
| Hydrograph type | = SCS Runoff | Peak discharge | = 17.98 cfs |
| Storm frequency | = 10 yrs | Time to peak | = 717 min |
| Time interval | = 1 min | Hyd. volume | = 41,976 cuft |
| Drainage area | = 2.370 ac | Curve number | = 96* |
| Basin Slope | = 0.0 % | Hydraulic length | = 0 ft |
| Tc method | = User | Time of conc. (Tc) | = 5.00 min |
| Total precip. | = 5.20 in | Distribution | = Type II |
| Storm duration | = 24 hrs | Shape factor | = 484 |

* Composite (Area/CN) = [(2.740 x 98) + (0.470 x 80)] / 2.370



| DATE | REVISION |
|----------|-------------------------|
| 9-4-20 | DSUP SUBMISSION #1 |
| 10-20-20 | DSUP SUBMISSION #2 |
| 11-3-20 | DSUP SUBMISSION #3 |
| 12-04-20 | VERIFICATION SUBMISSION |
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| | |

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



PRE AND POST HYDROGRAPH

OAKVILLE INFRASTRUCTURE DEVELOPMENT SITE PLAN
 CITY OF ALEXANDRIA, VIRGINIA

APPROVED
 DEVELOPMENT SITE PLAN NO. 2020-00031
 DEPARTMENT OF PLANNING & ZONING

DIRECTOR _____ DATE _____
 DEPT. OF TRANSPORTATION & ENVIRONMENTAL SERVICES
 SITE PLAN No. _____

DIRECTOR _____ DATE _____

CHAIRMAN, PLANNING COMMISSION DATE _____

DATE RECORDED _____

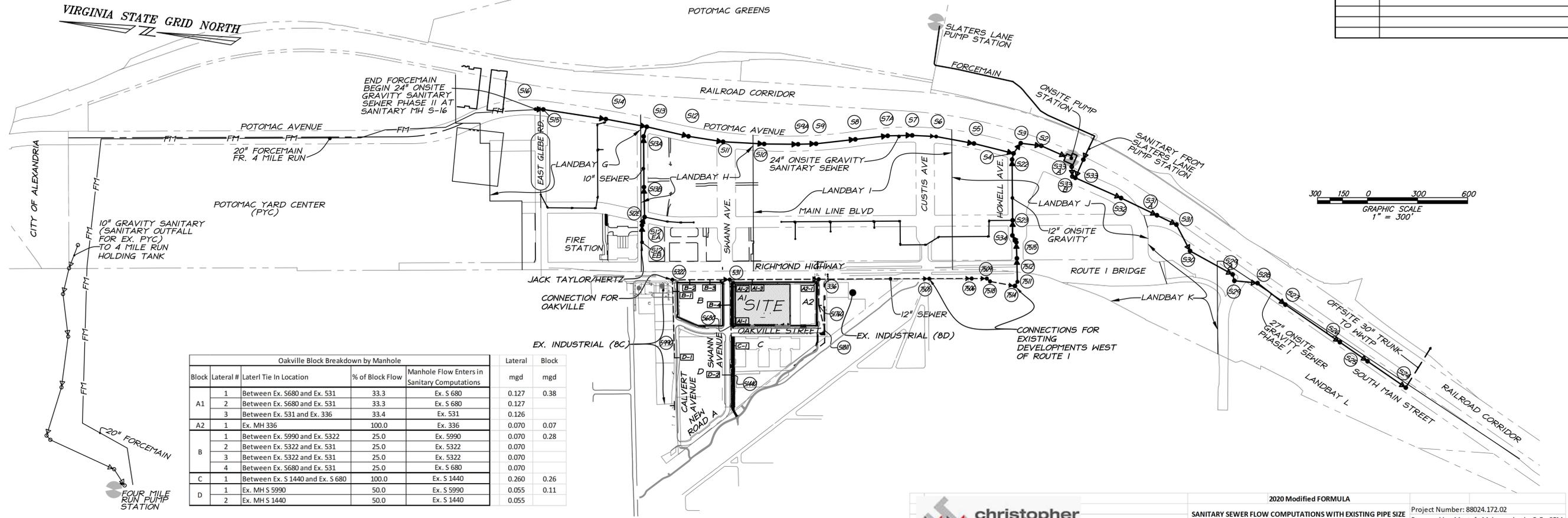
INSTRUMENT NO. _____ DEED BOOK NO. _____ PAGE NO. _____

PROJECT NO: 14007.011.00
 SCALE: NONE
 DATE: 07-29-20
 DESIGN: EG
 DRAWN: JS
 CHECKED: KMW
 SHEET No.
C508

110164

| DATE | REVISION |
|----------|-------------------------|
| 9-4-20 | DSUP SUBMISSION #1 |
| 10-20-20 | DSUP SUBMISSION #2 |
| 11-3-20 | DSUP SUBMISSION #3 |
| 12-04-20 | VERIFICATION SUBMISSION |
| | |
| | |
| | |
| | |
| | |
| | |

NOTES:
 1. CONTRACTOR SHALL ENSURE ALL DISCHARGES ARE IN ACCORDANCE WITH CITY OF ALEXANDRIA CODE TITLE 5, CHAPTER 6, ARTICLE B.
 2. DEWATERING AND OTHER CONSTRUCTION RELATED DISCHARGE LIMITS TO THE SEWER SYSTEM ARE REGULATED BY ALEXRENEW PRETREATMENT. CONTRACTOR IS REQUIRED TO CONTACT ALEXRENEW'S PRETREATMENT COORDINATOR AT 703-549-3381 x2020.



| Block | Laterl # | Laterl Tie In Location | % of Block Flow | Manhole Flow Enters in Sanitary Computations | mgd | mgd |
|-------|----------|---------------------------------|-----------------|--|-------|------|
| A1 | 1 | Between Ex. S680 and Ex. S31 | 33.3 | Ex. S 680 | 0.127 | 0.38 |
| | 2 | Between Ex. S680 and Ex. S31 | 33.3 | Ex. S 680 | 0.127 | 0.38 |
| | 3 | Between Ex. S31 and Ex. S36 | 33.4 | Ex. S31 | 0.126 | 0.38 |
| A2 | 1 | Ex. MH 336 | 100.0 | Ex. S336 | 0.070 | 0.07 |
| | 2 | Between Ex. S990 and Ex. S322 | 25.0 | Ex. S990 | 0.070 | 0.28 |
| | 3 | Between Ex. S322 and Ex. S31 | 25.0 | Ex. S322 | 0.070 | 0.28 |
| | 4 | Between Ex. S680 and Ex. S31 | 25.0 | Ex. S 680 | 0.070 | 0.28 |
| C | 1 | Between Ex. S1440 and Ex. S 680 | 100.0 | Ex. S 1440 | 0.260 | 0.26 |
| | 2 | Ex. MH S 5990 | 50.0 | Ex. S 5990 | 0.055 | 0.11 |
| D | 1 | Ex. MH S 5990 | 50.0 | Ex. S 5990 | 0.055 | 0.11 |
| | 2 | Ex. MH S 1440 | 50.0 | Ex. S 1440 | 0.055 | 0.11 |

OAKVILLE TRIANGLE
SANITARY FLOW CALCULATIONS - DRAFT MODIFIED FORMULA

| BLOCKS | BUILDING GFA | OFFICE SANITARY FLOW | OFFICE S.F. (GROSS) | RESIDENTIAL MULTI-FAMILY | MULTI-FAMILY HOUSING UNITS | RESIDENTIAL TOWNHOUSE | TOWNHOUSE UNITS** | RETAIL SANITARY FLOW | RETAIL S.F. (GROSS) | TOTAL PROPOSED SANITARY FLOW (GPD) |
|--------|--------------|----------------------|---------------------|--------------------------|----------------------------|-----------------------|-------------------|----------------------|---------------------|------------------------------------|
| A1 | 450,000 | 200 GPD/1,000 S.F. | 0 | 300 GPD/UNIT | 324 | 350 GPD/UNIT | 0 | 200 GPD/1,000 S.F. | 30,000 | 103,200 |
| A2 | 93,012 | 200 GPD/1,000 S.F. | 93,012 | 300 GPD/UNIT | 0 | 350 GPD/UNIT | 0 | 200 GPD/1,000 S.F. | 0 | 18,602 |
| B | 335,000 | 200 GPD/1,000 S.F. | 0 | 300 GPD/UNIT | 248 | 350 GPD/UNIT | 0 | 200 GPD/1,000 S.F. | 15,000 | 77,400 |
| C | 220,000 | 200 GPD/1,000 S.F. | 0 | 300 GPD/UNIT | 240 | 350 GPD/UNIT | 0 | 200 GPD/1,000 S.F. | 0 | 72,000 |
| D | 250,000 | 200 GPD/1,000 S.F. | 0 | 300 GPD/UNIT | 0 | 350 GPD/UNIT | 84 | 200 GPD/1,000 S.F. | 0 | 29,400 |
| | | 1,128,012 | 93,012 | | 572 | | 84 | | 45,000 | 228,602 |
| | | 220,000 | 0 | | 240 | | 0 | | 0 | 72,000 |
| | | 1,348,012 | 93,012 | | 812 | | 84 | | 45,000 | 300,602 |

| PEAKING FACTOR | 2.5 |
|-------------------------------|------|
| PHASE I PEAK FLOW RATE (MGD) | 0.57 |
| PHASE II PEAK FLOW RATE (MGD) | 0.18 |
| TOTAL PEAK FLOW RATE (MGD) | 0.75 |

| LF F FACTOR | 35% |
|-------------------------------|------|
| SE I PEAK FLOW REDUCTION (M) | 0.08 |
| SE II PEAK FLOW REDUCTION (M) | 0.03 |
| AL PEAK FLOW REDUCTION (M) | 0.11 |

| PHASE I PEAK FLOW RATE (MGD) | 0.49 |
|-------------------------------|------|
| PHASE II PEAK FLOW RATE (MGD) | 0.15 |
| TOTAL PEAK FLOW RATE (MGD) | 0.64 |

| PEAKING FACTOR | 4.0 |
|-------------------------------|------|
| PHASE I PEAK FLOW RATE (MGD) | 0.91 |
| PHASE II PEAK FLOW RATE (MGD) | 0.29 |
| TOTAL PEAK FLOW RATE (MGD) | 1.20 |

| PHASE I PEAK FLOW RATE (MGD) | 0.83 |
|-------------------------------|------|
| PHASE II PEAK FLOW RATE (MGD) | 0.26 |
| TOTAL PEAK FLOW RATE (MGD) | 1.09 |

NOTES:
 1. CALCULATIONS SHOWN ARE PRELIMINARY AND WILL BE FURTHER REFINED AS THE DESIGN PROGRESSES.
 2. SOME INVERTS SHOWN ARE BASED ON DESIGN PLANS AND WILL NEED TO BE FIELD VERIFIED PRIOR TO FINALIZING COMPUTATIONS.
 3. REFER TO SHEET C203 AND THIS SHEET FOR SANITARY SEWER AS-BUILT DATA. ADDITIONAL AS-BUILT INFORMATION WAS TAKEN FROM THE POTOMAC YARD-OFFSITE SANITARY SEWER (30") AND THE POTOMAC YARD ONSITE SANITARY SEWER COLLECTION SYSTEM PHASE I (27").

christopher consultants
 2020 Modified FORMULA
 SANITARY SEWER FLOW COMPUTATIONS WITH EXISTING PIPE SIZE
 PHASE I & II - DRAFT
 Project Number: 88024.172.02
 Prepared by: Mustafa Mahmoodzada, P.E., CFM
 Revised by: Eli Goldman, P.E.
 Checked by: Kevin Washington
 Date Prepared: 4/16/2020, rev 10/20/2020

| FLOWS FROM | TO MANHOLE NUMBER | AVERAGE DAILY FLOW RATE (MGD) | PEAK FLOW RATE (MGD) | 35% ADF REDUCTION | ULTIMATE BUILD-OUT FLOWS (MGD) |
|--|-------------------|-------------------------------|----------------------|-------------------|--------------------------------|
| 1 FOUR MILE RUN PUMP STATION | S16 | N/A | 4.000 | N/A | 4.000 |
| 2 POTOMAC AVENUE REDEVELOPMENT - PHASE I & II PEAKED AT 2.5 - LFF ELIGIBLE | S16 | 2.192 | 5.480 | 0.767 | 4.713 |
| 3 LANDBAY G - PEAKED AT 2.5 | S14 | 0.454 | 1.135 | N/A | 1.135 |
| 4 FIRE STATION - PEAKED AT 2.5 | S12E/S13 | 0.019 | 0.060 | N/A | 0.060 |
| 5 LANDBAY H - PEAKED AT 2.5 | S13 | 0.370 | 0.940 | N/A | 0.940 |
| 6 JACK TAYLOR/HERTZ (CDD #7) - PEAKED AT 2.5 - LFF ELIGIBLE | S16 | 0.200 | 0.500 | 0.070 | 0.430 |
| 7 LANDBAY I - PEAKED AT 2.5 | S8 | 0.100 | 0.240 | N/A | 0.240 |
| 8 LANDBAY J - PEAKED AT 2.5 | S23/S4 | 0.100 | 0.240 | N/A | 0.240 |
| 9 ROUTE 1 N OAKVILLE - PEAKED AT 2.5 - LFF ELIGIBLE | S16 | 0.210 | 0.525 | 0.074 | 0.452 |
| 10 OAKVILLE TRIANGLE (CDD #24) - PEAKED AT 2.5 - LFF ELIGIBLE | S322/S4 | 0.301 | 0.750 | 0.110 | 0.640 |
| 11 RIVER ROAD PUMP STATION - PEAKED AT 3 | S705/S4 | 0.170 | 0.520 | N/A | 0.520 |
| 12 SLATER LANE - PEAKED AT 3 | S33 | 0.250 | 0.750 | N/A | 0.750 |
| 13 LANDBAY C - PEAKED AT 2.5 | S33 | 0.003 | 0.010 | N/A | 0.010 |
| 14 LANDBAY L - PEAKED AT 2.5 | S27 | 0.120 | 0.310 | N/A | 0.310 |
| 15 BRADDOCK METRO NEIGHBORHOOD PLAN - PEAKED AT 3 - LFF ELIGIBLE | SHAFT 20 | 0.840 | 2.520 | 0.294 | 2.226 |
| 16 BRADDOCK FIELDS - PEAKED AT 3 - LFF ELIGIBLE | SHAFT 20 | 0.014 | 0.042 | 0.005 | 0.037 |
| 17 EXISTING DEVELOPMENT - PEAKED AT 3 - LFF ELIGIBLE | SHAFT 17 | 0.178 | 0.534 | N/A | 0.534 |
| 18 SEPERATION COMPLETED BY DECEMBER 2019 - PEAKED AT 3 | SHAFT 17 | 0.183 | 0.549 | N/A | 0.549 |
| 19 REMAINING SEPERATION - PEAKED AT 3 | SHAFT 13 | 0.368 | 1.104 | N/A | 1.104 |
| TOTAL | | | 20.21 | | 18.89 |

SANITARY OUTFALL NARRATIVE:
 PER MEMO TO INDUSTRY 06-14, THIS OUTFALL ANALYSIS SHALL ANALYZE THE SEWER SYSTEM UNTIL THE SEWER TIES TO A 24" OR LARGER PIPE. THE OAKVILLE SITE WILL TIE INTO THE EXISTING 12" SEWER MAIN RUNNING NORTH TO SOUTH ALONG ROUTE 1. FROM THE INTERSECTION OF ROUTE 1 AND EAST HOWELL AVENUE, THE SEWER GOES EAST UNTIL IT CONNECTS TO THE 24" SEWER IN POTOMAC AVENUE. REFER TO THE 'OAKVILLE BLOCK BREAKDOWN BY MANHOLE' CHART ON THIS SHEET FOR DISTRIBUTION OF BLOCK FLOWS TO THE ON-SITE COLLECTOR SEWER.

BASED ON THIS ANALYSIS, IT IS DETERMINED THAT TWO SANITARY SEWER PIPE RUNS WILL NEED TO BE UPGRADED. PIPE RUN FROM 7506 TO 7509 WILL BE UPGRADED TO A 12" PVC PIPE AND PIPE RUN 7512 - 7515 WILL BE UPGRADED TO A 16" PVC PIPE. THIS UPGRADE WILL BE DESIGNED AND CONSTRUCTED WITH THIS PLAN FOR THE OAKVILLE DEVELOPMENT. FOR INFORMATIONAL PURPOSES ONLY, THE ANALYSIS IS CONTINUED FOR THE 24" PIPE IN POTOMAC AVENUE TO THE 27" ON-SITE SANITARY SEWER AND TO THE 30" POTOMAC YARD OFF-SITE TRUNK SEWER. REFER TO SHEET C603 AND C604 FOR THIS ANALYSIS.

BASED ON THIS ANALYSIS COMPLETED, IT IS OUR ENGINEERING OPINION THAT THIS SEWER HAS AN ADEQUATE OUTFALL.

THIS SHEET IS FOR INFORMATION PURPOSES ONLY!

SANITARY SEWER STRUCTURE DATA

- SAN MH 7505
TOP=37.00
IN=27.28 12" PVC FR W
IN=27.20 12" DIP FR 336
OUT=27.10 14" DIP TO 7506
- SAN MH 7506
TOP=37.86
IN=32.16 FR W
IN=26.31 12" DIP FR 7505
OUT=25.26 8" DIP TO 7509
- SAN MH 7509
TOP=38.74
IN=24.94
IN=24.94 8" DIP FR 7506
OUT=24.69 12" RCP TO 7518
- SAN MH 7511
TOP=38.76
IN=21.66 12" PVC FR 7514
IN=21.56 12" PVC TO 7512
- SAN MH 7512
TOP=39.76
IN=20.65 12" PVC FR 7515
OUT=20.57 12" PVC TO 7511
- SAN MH 7514
TOP=37.40
IN=22.90 12" RCP FR 7518
OUT=22.80 12" PVC TO 7511
- SAN MH 7515
TOP=40.26
IN=20.40 12" PVC FR 7512
OUT=20.30 12" PVC TO 7516
- SAN MH 7518
TOP=38.48
IN=24.28 12" RCP FR 7509
OUT=24.00 12" RCP TO 7514
- SAN MH 9309 (S34)
TOP=41.02
IN=20.07 12" PVC FR 7515
OUT=19.91 12" PVC TO 9310
- SAN MH 9310 (S23)
TOP=45.17
IN=19.25 12" PVC FR 9309
IN=19.24 10" PVC FR S24
OUT=19.20 12" PVC TO 10385
- SAN MH 10383 (S2)
TOP=46.29
IN=13.29 12" PVC FR 10384
OUT=13.19 12" PVC TO 5
- SAN MH 10384 (S3)
TOP=45.33
IN=13.83 12" PVC FR S4
OUT=13.73 12" PVC TO 10383
- SAN MH 10385 (S22)
TOP=44.59
IN=17.32 12" PVC FR 9310
OUT=17.30 12" PVC TO S4
- SAN MH 10386 (S4)
TOP=44.75
IN=17.11 12" PVC FR S22
IN=14.32 24" PVC FR S5
OUT=14.22 24" PVC TO S3

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ELI GOLDMAN
 Lic. No. 55868
 12/04/2020
 PROFESSIONAL ENGINEER

SANITARY SEWER OUTFALL ANALYSIS

OAKVILLE INFRASTRUCTURE BLOCK A1 PRELIMINARY DSUP

PROJECT NO: 14007.011.00
 SCALE: 1"=300'
 DATE: 07-20-20
 DESIGN: EG
 DRAWN: JS
 CHECKED: K1W
 SHEET NO. C600
 110150

APPROVED
 DEVELOPMENT SITE PLAN NO. 2020-00031
 DEPARTMENT OF PLANNING & ZONING
 DIRECTOR DATE
 DEPT. OF TRANSPORTATION & ENVIRONMENTAL SERVICES
 SITE PLAN No. _____
 DIRECTOR DATE
 CHAIRMAN, PLANNING COMMISSION DATE
 DATE RECORDED _____
 INSTRUMENT NO. DEED BOOK NO. PAGE NO.

**SANITARY SEWER PIPE COMPUTATIONS
(ULTIMATE CONDITION WITH UPGRADES)**

| On-site Gravity Sewers | | | | | | | | | | | | | | | |
|---|-------|-----------|-----------|--------|-----------|----------|----------|-------|----------------|----------------|-------------------|-------------------|----------|--|---------------------|
| FROM | TO | UPPER INV | LOWER INV | L (FT) | SLOPE (%) | DIA (IN) | MATERIAL | N | CAPACITY (cfs) | CAPACITY (MGD) | DESIGN FLOW (cfs) | DESIGN FLOW (MGD) | V (ft/s) | Assumptions / Comments | Flow Increase (MGD) |
| 5990 | 5322 | 41.85 | 38.47 | 465 | 0.73 | 10 | RCP | 0.015 | 1.73 | 1.12 | 0.27 | 0.175 | 2.1 | Ex. North of Calvert (0.05), 1/2 Block D (0.055) and 1/4 Block B (0.070) | 0.175 |
| S1440 | S680 | 42.19 | 38.91 | 292 | 1.12 | 10 | DIP | 0.013 | 2.47 | 1.60 | 0.49 | 0.315 | 3.3 | Block C (0.26) and 1/2 Block D (0.055) | 0.315 |
| S680 | S531 | 38.88 | 35.52 | 277.4 | 1.21 | 10 | CLAY | 0.013 | 2.38 | 1.54 | 0.99 | 0.639 | 4.1 | 2/3 Block A1 (0.254) and 1/4 Block B (0.070) | 0.324 |
| S1811 | S1760 | 38.1 | 37.13 | 153.2 | 0.63 | 10 | RCP | 0.015 | 1.49 | 0.96 | 0.19 | 0.12 | 2.3 | Existing South of Fannon (0.03) | 0.12 |
| S1760 | S336 | 37.03 | 30.78 | 156.7 | 3.99 | 10 | LINED | 0.010 | 5.63 | 3.64 | 0.19 | 0.12 | 6.1 | | |
| Oakville Off-Site Sewer - S31 to S4 (Route 1 --> E. Howell --> Potomac Ave) | | | | | | | | | | | | | | | |
| FROM | TO | UPPER INV | LOWER INV | L (FT) | SLOPE (%) | DIA (IN) | MATERIAL | N | CAPACITY (cfs) | CAPACITY (MGD) | DESIGN FLOW (cfs) | DESIGN FLOW (MGD) | V (ft/s) | Assumptions / Comments | Flow Increase (MGD) |
| 5322 | 531 | 38.07 | 35.02 | 343.2 | 0.89 | 10 | DIP | 0.013 | 2.20 | 1.42 | 0.49 | 0.315 | 4.2 | 1/2 Block B (0.14) + Flow from 5990 | 0.14 |
| 531 | 336 | 34.79 | 30.03 | 533.70 | 0.89 | 10 | DIP | 0.013 | 2.20 | 1.42 | 1.67 | 1.08 | 4.2 | 1/3 Block A1 (0.126) + Flow from S680 | 0.126 |
| 336 | 7505 | 29.98 | 27.20 | 658.20 | 0.42 | 12 | DIP | 0.013 | 2.48 | 1.60 | 1.96 | 1.27 | 3.2 | Block A2 (0.07) + Flow from S1760 | 0.07 |
| 7505 | 7506 | 27.10 | 25.31 | 254.00 | 0.70 | 14 | DIP | 0.013 | 4.87 | 3.15 | 2.77 | 1.79 | 4.6 | Development west of RT 1 | 0.52 |
| 7506 | 7509 | 25.26 | 24.79 | 95.20 | 0.49 | 12 | PVC | 0.010 | 3.49 | 2.26 | 2.77 | 1.79 | 2.6 | | |
| 7509 | 7518 | 24.69 | 24.28 | 26.00 | 1.58 | 12 | CONC. | 0.015 | 4.17 | 2.70 | 2.77 | 1.79 | 5.4 | | |
| 7518 | 7514 | 24.00 | 22.90 | 151.00 | 0.73 | 12 | RCP | 0.015 | 2.84 | 1.84 | 2.77 | 1.79 | 3.7 | | |
| 7514 | 7511 | 22.80 | 21.66 | 29.50 | 3.86 | 12 | PVC | 0.010 | 9.70 | 6.27 | 2.77 | 1.79 | 10.5 | | |
| 7511 | 7512 | 21.56 | 20.65 | 138.20 | 0.66 | 12 | PVC | 0.010 | 4.05 | 2.62 | 2.77 | 1.79 | 5.3 | | |
| 7512 | 7515 | 20.57 | 20.40 | 97.60 | 0.17 | 16 | PVC | 0.010 | 4.39 | 2.84 | 2.77 | 1.79 | 3.2 | | |
| 7515 | S34 | 20.30 | 20.07 | 47.00 | 0.49 | 12 | PVC | 0.010 | 3.49 | 2.26 | 2.77 | 1.79 | 4.6 | | |
| S34 | S23 | 19.91 | 19.25 | 92.00 | 0.72 | 12 | PVC | 0.010 | 4.23 | 2.73 | 2.77 | 1.79 | 5.5 | | |
| S23 | S22 | 19.20 | 17.32 | 360.90 | 0.52 | 12 | PVC | 0.010 | 3.59 | 2.32 | 2.96 | 1.91 | 4.3 | 85 Townhouse units from LB I and J | 0.12 |
| S22 | S4 | 17.30 | 17.11 | 38.00 | 0.50 | 12 | PVC | 0.010 | 3.27 | 2.11 | 2.96 | 1.91 | 4.2 | | |

Note 1: All calculated capacities are at full flow capacity, when the pipe is approximately 93% full.

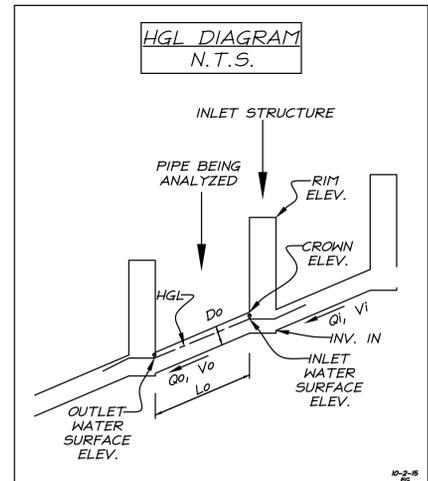
| DATE | REVISION |
|----------|-------------------------|
| 9-4-20 | DSUP SUBMISSION #1 |
| 10-20-20 | DSUP SUBMISSION #2 |
| 11-3-20 | DSUP SUBMISSION #3 |
| 12-04-20 | VERIFICATION SUBMISSION |

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phone 703.273.6820 · fax 703.273.6820

COMMONWEALTH OF VIRGINIA
ELI GOLDMAN
Lic. No. 55868
12/04/2020
PROFESSIONAL ENGINEER

**SANITARY SEWER HGL COMPUTATIONS
(ULTIMATE CONDITION WITH UPGRADES)**

| Inlet Str. | Outlet Water Surf Elev (ft) | Do (in) | Qo (cfs) | Lo (ft) | Sfo (%) | Hf (ft) | Vo (fps) | Ho (ft) | Qi (cfs) | Vi (fps) | Qi/Vi | Vi ² /2g | Hi (ft) | Angle (deg) | Ha (ft) | Ht (ft) | 1.3Ht (ft) | 0.5Ht (ft) | Final H (ft) | Inlet Water Surf Elev (ft) | Crown Elev (ft) | Surcharge Depth (ft) | Rim Elev (ft) | |
|--|-----------------------------|---------|----------|---------|---------|---------|----------|---------|----------|----------|-------|---------------------|---------|-------------|---------|---------|------------|------------|--------------|----------------------------|-----------------|----------------------|---------------|---------------|
| | | | | | | | | | | | | | | | | | | | | | | | | JUNCTION LOSS |
| Oakville Off-Site Sewer (Route 1 -> Howell -> Potomac) | | | | | | | | | | | | | | | | | | | | | | | | |
| S22 | 17.91 | 12 | 2.96 | 38.00 | 0.41 | 0.15 | 4.2 | 0.07 | 2.96 | 4.3 | 12.59 | 0.28 | 0.10 | 14 | 0.03 | 0.19 | 0.00 | 0.10 | 0.25 | 18.16 | 18.30 | 0.14 | 44.59 | |
| S23 | 18.16 | 12 | 2.96 | 360.90 | 0.41 | 1.47 | 4.3 | 0.07 | 2.77 | 5.5 | 15.26 | 0.47 | 0.17 | 0 | 0.00 | 0.24 | 0.00 | 0.12 | 1.59 | 19.75 | 20.20 | 0.45 | 43.17 | |
| S34 | 20.05 | 12 | 2.77 | 92.00 | 0.36 | 0.33 | 5.5 | 0.12 | 2.77 | 4.6 | 12.60 | 0.32 | 0.11 | 30 | 0.09 | 0.32 | 0.00 | 0.16 | 0.49 | 20.54 | 20.91 | 0.37 | 41.02 | |
| 7515 | 20.87 | 12 | 2.77 | 47.00 | 0.36 | 0.17 | 4.6 | 0.08 | 2.77 | 3.2 | 8.97 | 0.16 | 0.06 | 30 | 0.05 | 0.18 | 0.00 | 0.09 | 0.26 | 21.13 | 21.33 | 0.20 | 40.26 | |
| 7512 | 21.20 | 12 | 2.77 | 97.60 | 0.36 | 0.35 | 3.2 | 0.04 | 2.77 | 5.3 | 14.62 | 0.43 | 0.15 | 0 | 0.00 | 0.19 | 0.00 | 0.10 | 0.45 | 21.65 | 21.67 | 0.02 | 39.76 | |
| 7511 | 21.65 | 12 | 2.77 | 138.20 | 0.36 | 0.49 | 5.3 | 0.11 | 2.77 | 10.5 | 28.97 | 1.70 | 0.59 | 33 | 0.53 | 1.23 | 0.00 | 0.61 | 1.11 | 22.75 | 22.56 | -0.19 | 38.76 | |
| 7514 | 22.75 | 12 | 2.77 | 29.50 | 0.36 | 0.11 | 10.5 | 0.42 | 2.77 | 3.7 | 10.25 | 0.21 | 0.07 | 66 | 0.12 | 0.62 | 0.00 | 0.31 | 0.42 | 23.17 | 23.80 | 0.63 | 37.40 | |
| 7518 | 23.70 | 12 | 2.77 | 151.36 | 0.36 | 0.54 | 3.7 | 0.05 | 2.77 | 5.4 | 15.07 | 0.46 | 0.16 | 33 | 0.14 | 0.56 | 0.00 | 0.18 | 0.72 | 24.42 | 24.98 | 0.56 | 38.48 | |
| 7509 | 24.81 | 8 | 2.77 | 26.00 | 3.11 | 0.81 | 5.4 | 0.11 | 2.77 | 2.6 | 7.31 | 0.11 | 0.04 | 0 | 0.00 | 0.15 | 0.00 | 0.08 | 0.88 | 25.70 | 25.69 | -0.01 | 38.79 | |
| 7506 | 25.72 | 14 | 2.77 | 95.20 | 0.16 | 0.15 | 2.6 | 0.03 | 2.77 | 4.6 | 12.85 | 0.33 | 0.12 | 0 | 0.00 | 0.14 | 0.00 | 0.07 | 0.22 | 25.94 | 26.26 | 0.32 | 37.86 | |
| 7505 | 26.11 | 12 | 2.77 | 254.00 | 0.36 | 0.91 | 4.6 | 0.08 | 1.96 | 3.2 | 6.37 | 0.16 | 0.06 | 0 | 0.00 | 0.14 | 0.00 | 0.07 | 0.98 | 27.09 | 28.10 | 1.01 | 37.00 | |
| 336 | 27.87 | 10 | 1.96 | 658.20 | 0.48 | 3.13 | 3.2 | 0.04 | 1.67 | 4.2 | 6.95 | 0.27 | 0.09 | 0 | 0.00 | 0.13 | 0.00 | 0.07 | 3.20 | 31.07 | 30.98 | -0.09 | 38.48 | |
| 531 | 31.07 | 10 | 1.67 | 533.70 | 0.34 | 1.84 | 4.2 | 0.07 | 0.49 | 4.2 | 2.03 | 0.27 | 0.09 | 0 | 0.00 | 0.16 | 0.00 | 0.08 | 1.92 | 32.98 | 35.79 | 2.81 | 45.57 | |
| S322 | 35.69 | 10 | 0.49 | 343.20 | 0.03 | 0.10 | 4.2 | 0.07 | | | | | | | 0.00 | 0.07 | 0.00 | 0.03 | 0.13 | 35.82 | 39.07 | 3.25 | 46.27 | |
| Oakville On-Site Sewer | | | | | | | | | | | | | | | | | | | | | | | | |
| 5990 | 38.45 | 8 | 0.27 | 465.00 | 0.03 | 0.14 | 2.1 | 0.02 | 0.00 | 0.0 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0.02 | 0.00 | 0.01 | 0.15 | 38.60 | 41.72 | 3.12 | 45.55 | |
| S680 | 36.05 | 8 | 0.99 | 277.40 | 0.40 | 1.10 | 4.1 | 0.07 | | | | | | | 0 | 0.00 | 0.07 | 0.00 | 0.03 | 1.13 | 37.18 | 39.55 | 2.37 | 46.71 |
| S1760 | 31.45 | 10 | 0.19 | 156.70 | 0.00 | 0.01 | 6.1 | 0.15 | 0.45 | 2.3 | 1.05 | 0.09 | 0.03 | 20 | 0.01 | 0.19 | 0.00 | 0.09 | 0.10 | 31.55 | 37.86 | 6.31 | 42.63 | |
| S1811 | 37.66 | 8 | 0.19 | 153.20 | 0.01 | 0.02 | 2.3 | 0.02 | | | | | | | 0 | 0.00 | 0.02 | 0.00 | 0.01 | 0.03 | 37.70 | 38.77 | 1.07 | 44.81 |



SANITARY SEWER UPGRADE NARRATIVE:
BASED ON THIS SANITARY SEWER ANALYSIS THE FOLLOWING UPGRADES WILL BE NEEDED FOR THE SANITARY SEWER SYSTEM TO ADEQUATELY HANDLE THE FLOWS AT FULL BUILD OUT.

- UPSIZE 8" DIP SEWER TO 12" PVC FROM MANHOLE 7506 TO MANHOLE 7509 (95 LF)
- UPSIZE 12" RCP SEWER TO 16" PVC FROM MANHOLE 7512 TO MANHOLE 7515 (98 LF)

THIS SHEET IS FOR INFORMATION PURPOSES ONLY!

APPROVED
DEVELOPMENT SITE PLAN NO. 2020-00031
DEPARTMENT OF PLANNING & ZONING

DIRECTOR _____ DATE _____
DEPT. OF TRANSPORTATION & ENVIRONMENTAL SERVICES
SITE PLAN No. _____

DIRECTOR _____ DATE _____

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

SANITARY SEWER
ANALYSIS (ULTIMATE
FLOW - WITH
UPGRADES)

OAKVILLE
INFRASTRUCTURE
BLOCK A1 PRELIMINARY DSUP
CITY OF ALEXANDRIA, VIRGINIA

PROJECT NO: 14007.011.00
SCALE: N/A
DATE: 07-20-20
DESIGN: EG
DRAWN: JS
CHECKED: KMW
SHEET No.
C602
110150

2020 MODIFIED ULTIMATE BUILD-OUT FLOWS WITH UPGRADES
(PHASE I & PHASE II)



2020 MODIFIED ULTIMATE BUILD-OUT FLOWS WITH PIPE UPGRADES

PHASE I & PHASE II - DRAFT

Project Number: 88024.172.02
Prepared by: Mustafa Mahmoodzada, P. E. CFM
Checked by: Kevin M. Washington
Date Prepared: 4/16//2020

| DATE | REVISION |
|----------|-------------------------|
| 9-4-20 | DSUP SUBMISSION #1 |
| 10-20-20 | DSUP SUBMISSION #2 |
| 11-3-20 | DSUP SUBMISSION #3 |
| 12-04-20 | VERIFICATION SUBMISSION |
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| | 24" Gravity Sewer - S16 to S33 (Potomac Ave) | | | | | | | | | | | | | | Use Total Sanitary Sewer Flow Computations (Trunk Line) | |
|-----------------------|--|-------------|-----------|-----------|--------|-----------|----------|----------|-------|----------------|----------------|-------------------|-------------------|--------------------------|--|-------|
| | 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) | Assumptions | Inc |
| design | S16 | S15 | 27.74 | 27.15 | 14.30 | 4.13 | 24 | PVC | 0.011 | 54.31 | 35.10 | 6.18 | 3.99 | 17.29 | 4 mile run, North Potomac Yard Phase I & II, JACK TAYLOR, AND ROUTE 1 N OAKVILLE Note: 5.6 MGD of flow from the new pumping station diverted to the downstream of the existing Potomac Yard Pumping Station via the 20-inch force main extension was removed from the design flow. | 9.594 |
| design | S15 | S14 | 27.05 | 23.83 | 397.20 | 0.81 | 24 | PVC | 0.011 | 24.07 | 15.56 | 6.18 | 3.99 | 7.66 | | |
| design | S14 | S13 | 23.58 | 22.75 | 251.80 | 0.33 | 24 | PVC | 0.011 | 15.35 | 9.92 | 7.94 | 5.13 | 4.89 | Landbay G | 1.135 |
| design | S13 | S12 | 22.65 | 21.81 | 254.20 | 0.33 | 24 | PVC | 0.011 | 15.37 | 9.93 | 9.48 | 6.13 | 4.89 | Fire Station, Landbay H | 1.000 |
| design | S12 | S11 | 21.71 | 21.02 | 210.10 | 0.33 | 24 | PVC | 0.011 | 15.32 | 9.90 | 9.48 | 6.13 | 4.88 | | |
| design | S11 | S10 | 20.92 | 20.10 | 246.40 | 0.33 | 24 | PVC | 0.011 | 15.42 | 9.97 | 9.48 | 6.13 | 4.91 | | |
| design | S10 | S9A | 20.00 | 19.33 | 203.40 | 0.33 | 24 | PVC | 0.011 | 15.35 | 9.92 | 9.48 | 6.13 | 4.88 | | |
| design | S9A | S9 | 19.23 | 18.88 | 107.80 | 0.32 | 24 | PVC | 0.011 | 15.24 | 9.85 | 9.48 | 6.13 | 4.85 | | |
| design | S9 | S8 | 18.78 | 17.99 | 237.00 | 0.33 | 24 | PVC | 0.011 | 15.44 | 9.98 | 9.48 | 6.13 | 4.91 | | |
| design | S8 | S7A | 17.89 | 17.25 | 195.00 | 0.33 | 24 | PVC | 0.011 | 15.32 | 9.90 | 9.85 | 6.37 | 4.88 | Landbay I | 0.240 |
| design | S7A | S7 | 17.15 | 16.67 | 146.90 | 0.33 | 24 | PVC | 0.011 | 15.28 | 9.88 | 9.85 | 6.37 | 4.86 | | |
| design | S7 | S6 | 16.57 | 16.09 | 144.00 | 0.33 | 24 | PVC | 0.011 | 15.44 | 9.98 | 9.85 | 6.37 | 4.91 | | |
| design | S6 | S5 | 15.99 | 15.23 | 230.30 | 0.33 | 24 | PVC | 0.011 | 15.36 | 9.93 | 9.85 | 6.37 | 4.89 | | |
| design | S5 | S4 | 15.13 | 14.32 | 244.40 | 0.33 | 24 | PVC | 0.011 | 15.39 | 9.95 | 9.85 | 6.37 | 4.90 | | |
| design/as-built | S4 | S3 | 14.22 | 13.83 | 74.40 | 0.52 | 24 | PVC | 0.011 | 19.36 | 12.51 | 12.01 | 7.76 | 6.16 | Landbay J, Oakville Triangle, and River RD | 1.390 |
| as-built | S3 | S2 | 13.73 | 13.29 | 124.20 | 0.35 | 24 | PVC | 0.011 | 15.91 | 10.29 | 12.01 | 7.76 | 5.07 | | |
| as-built/design slope | S2 | S33A (PUMP) | 13.19 | 12.70 | 151.90 | 0.32 | 24 | PVC | 0.011 | 15.19 | 9.81 | 12.01 | 7.76 | 4.83 | On-site pump station, Calculated normal depth = 1.80', Max Flow = 17.89 cfs | |
| | S33A | S33B | -- | -- | -- | -- | 24 | PVC | 0.011 | - | - | 12.01 | 7.76 | | Force Main | |
| | S33B | S33 | -- | -- | -- | -- | 24 | PVC | 0.011 | - | - | 12.01 | 7.76 | | Force Main | |
| | 27" Gravity Sewer - S33 to S24 (Potomac Ave) | | | | | | | | | | | | | | | |
| | FROM | TO | UPPER INV | LOWER INV | L (FT) | SLOPE (%) | DIA (IN) | MATERIAL | N | CAPACITY (cfs) | CAPACITY (MGD) | DESIGN FLOW (cfs) | DESIGN FLOW (MGD) | V (ft/s) | Assumptions | Inc |
| as-built | S33 | S32 | 27.23 | 26.37 | 300.50 | 0.29 | 36 | PVC | 0.011 | 42.17 | 27.26 | 13.18 | 8.52 | 5.97 | Slater's lane pump station and Landbay C | 0.760 |
| as-built | S32 | S31A | 26.28 | 25.56 | 237.50 | 0.30 | 36 | PVC | 0.011 | 43.40 | 28.05 | 13.18 | 8.52 | 6.14 | | |
| as-built | S31A | S31 | 25.45 | 25.02 | 133.00 | 0.32 | 36 | PVC | 0.011 | 44.82 | 28.97 | 13.18 | 8.52 | 6.34 | | |
| as-built | S31 | S30 | 24.89 | 24.41 | 173.00 | 0.28 | 36 | PVC | 0.011 | 41.52 | 26.84 | 13.18 | 8.52 | 5.87 | | |
| as-built | S30 | S29A | 24.30 | 23.34 | 295.00 | 0.33 | 36 | PVC | 0.011 | 44.97 | 29.06 | 13.18 | 8.52 | 6.36 | | |
| as-built | S29A | S29 | 23.29 | 22.60 | 39.50 | 1.75 | 36 | PVC | 0.011 | 104.19 | 67.34 | 13.18 | 8.52 | 14.74 | | |
| as-built | S29 | S28 | 22.57 | 22.08 | 140.00 | 0.35 | 36 | PVC | 0.011 | 46.64 | 30.14 | 13.18 | 8.52 | 6.60 | | |
| as-built | S28 | S27 | 21.93 | 21.14 | 209.50 | 0.38 | 36 | PVC | 0.011 | 48.41 | 31.29 | 13.18 | 8.52 | 6.85 | | |
| as-built | S27 | S26 | 21.09 | 20.10 | 402.00 | 0.25 | 36 | PVC | 0.011 | 39.12 | 25.28 | 13.66 | 8.83 | 5.53 | Landbay L | 0.310 |
| as-built | S26 | S25 | 19.90 | 19.33 | 197.50 | 0.29 | 36 | PVC | 0.011 | 42.35 | 27.37 | 13.66 | 8.83 | 5.99 | | |
| as-built | S25 | S24 | 19.21 | 18.28 | 276.00 | 0.34 | 36 | PVC | 0.011 | 45.76 | 29.58 | 13.66 | 8.83 | 6.47 | | |

NOTE: THE OFFSITE IMPROVEMENTS OF POTOMAC YARD PHASE I WILL BE COORDINATED AND IMPLEMENTED BY THE CITY AND ALEXRENEW.

POTOMAC YARD PHASE TWO SANITARY SEWER IMPROVEMENTS NARRATIVE:

IN ACCORDANCE WITH CONDITION 4B FOR PHASE II DEVELOPMENT, A 20-INCH FORCE MAIN EXTENSION SHALL BE DESIGNED AND CONSTRUCTED BY THE APPLICANT FROM THE DOWNSTREAM END OF THE PHASE I 16-INCH FORCE MAIN TO THE EXISTING 27-INCH GRAVITY SEWER DOWNSTREAM OF THE EXISTING PYP. IN ADDITION, THE APPLICANT SHALL REPURPOSE THE EXISTING FOUR MILE RUN (FMR) PUMP STATION 20-INCH FORCE MAIN TO SERVE NORTH POTOMAC YARD PHASE I AND 2 DEVELOPMENT AND REPURPOSE THE PHASE I 16-INCH FORCE MAIN TO SERVE THE FMR PUMP STATION. THE APPLICANT WILL ALSO UPGRADE THE 27" SEWER TO A 36" AND WILL BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION. ANY OFFSETS DUE TO THE APPLICANT WILL BE IN ACCORDANCE WITH THIS CONDITION.

NOTE: THIS NARRATIVE IS INCLUDED FOR INFORMATIONAL PURPOSES ONLY. ALL PROPOSED WORK MENTIONED IN THIS NARRATIVE WILL BE COMPLETED BY OTHERS.



OFF-SITE SANITARY SEWER ANALYSIS

OAKVILLE INFRASTRUCTURE BLOCK A1 PRELIMINARY DSUP CITY OF ALEXANDRIA, VIRGINIA

APPROVED
DEVELOPMENT SITE PLAN NO. 2020-00031
DEPARTMENT OF PLANNING & ZONING

DIRECTOR _____ DATE _____
DEPT. OF TRANSPORTATION & ENVIRONMENTAL SERVICES
SITE PLAN No. _____

DIRECTOR _____ DATE _____

CHAIRMAN, PLANNING COMMISSION _____ DATE _____
DATE RECORDED _____

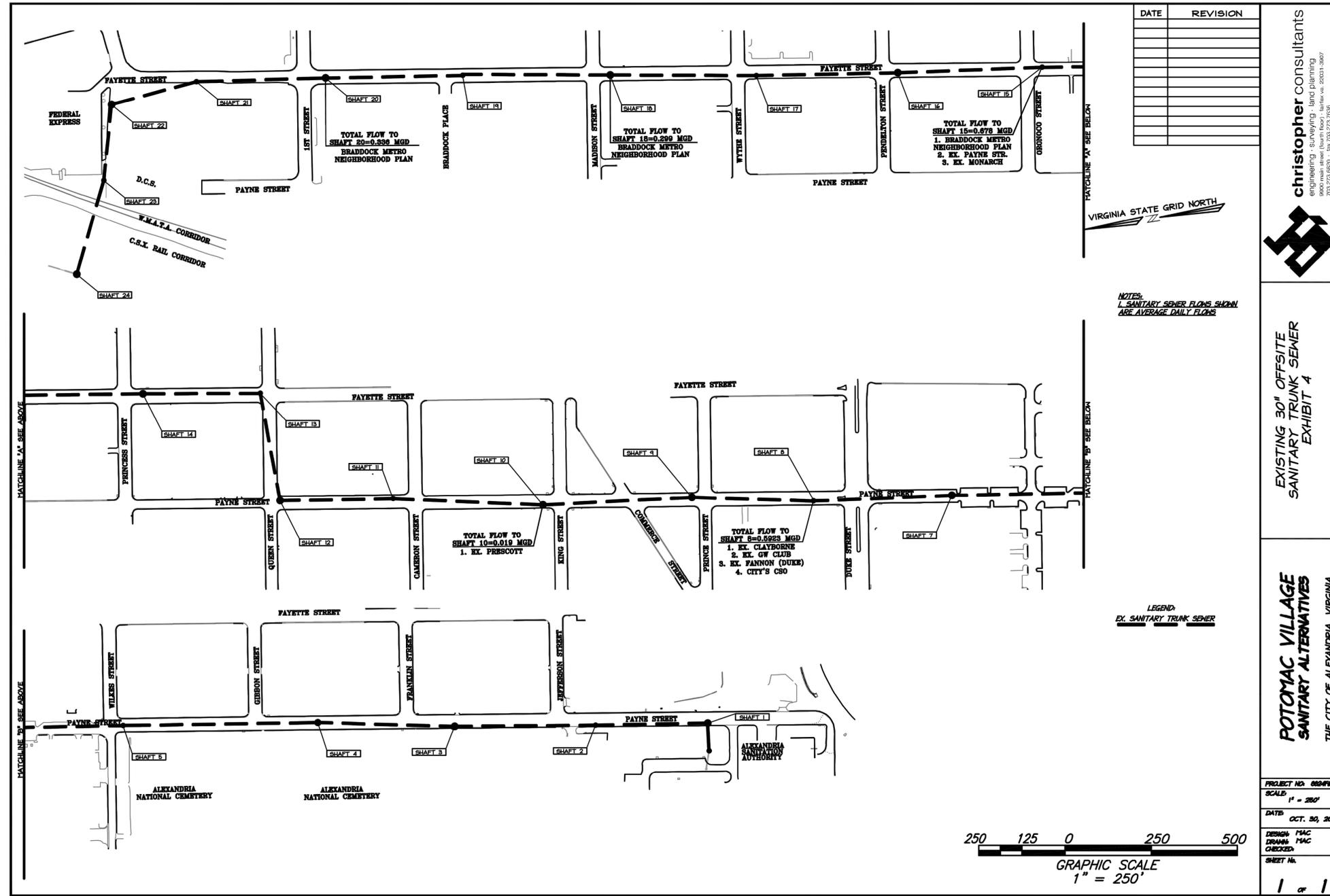
INSTRUMENT NO. _____ DEED BOOK NO. _____ PAGE NO. _____

PROJECT NO: H007.011.00
SCALE: 1"=150'
DATE: 07-20-20
DESIGN: EG
DRAWN: JS
CHECKED: KMW
SHEET No.
C603

THIS SHEET IS FOR INFORMATION PURPOSES ONLY!

TRUNK SEWER TO WASTEWATER TREATMENT PLANT
(SHAFT 24 - SHAFT 1)

| DATE | REVISION |
|----------|-------------------------|
| 9-4-20 | DSUP SUBMISSION #1 |
| 10-20-20 | DSUP SUBMISSION #2 |
| 11-3-20 | DSUP SUBMISSION #3 |
| 12-04-20 | VERIFICATION SUBMISSION |
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christopher consultants
engineering • surveying • land planning
9900 main street (suite 400) • Fairfax, VA 22031-3807
phone 703.273.6820 • fax 703.273.7686



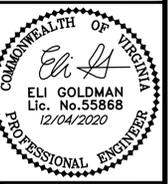
EXISTING 30" OFFSITE
SANITARY TRUNK SEWER
EXHIBIT 4

POTOMAC VILLAGE
SANITARY ALTERNATIVES
THE CITY OF ALEXANDRIA, VIRGINIA

| | |
|-------------|---------------|
| PROJECT NO. | 68046.00 |
| SCALE | 1" = 250' |
| DATE | OCT. 30, 2009 |
| DESIGN | MAC |
| DRAWN | MAC |
| CHECKED | |
| SHEET No. | 1 of 1 |

A-832

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



EXISTING 30-INCH
SANITARY TRUNK
SEWER EXHIBIT

OAKVILLE
INFRASTRUCTURE
BLOCK A1 PRELIMINARY DSUP
CITY OF ALEXANDRIA, VIRGINIA

| | |
|--|------|
| APPROVED | |
| DEVELOPMENT SITE PLAN NO. 2020-00031 | |
| DEPARTMENT OF PLANNING & ZONING | |
| DIRECTOR | DATE |
| DEPT. OF TRANSPORTATION & ENVIRONMENTAL SERVICES | |
| SITE PLAN No. _____ | |
| DIRECTOR | DATE |
| CHAIRMAN, PLANNING COMMISSION | |
| DATE RECORDED | DATE |
| INSTRUMENT NO. DEED BOOK NO. PAGE NO. | |

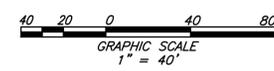
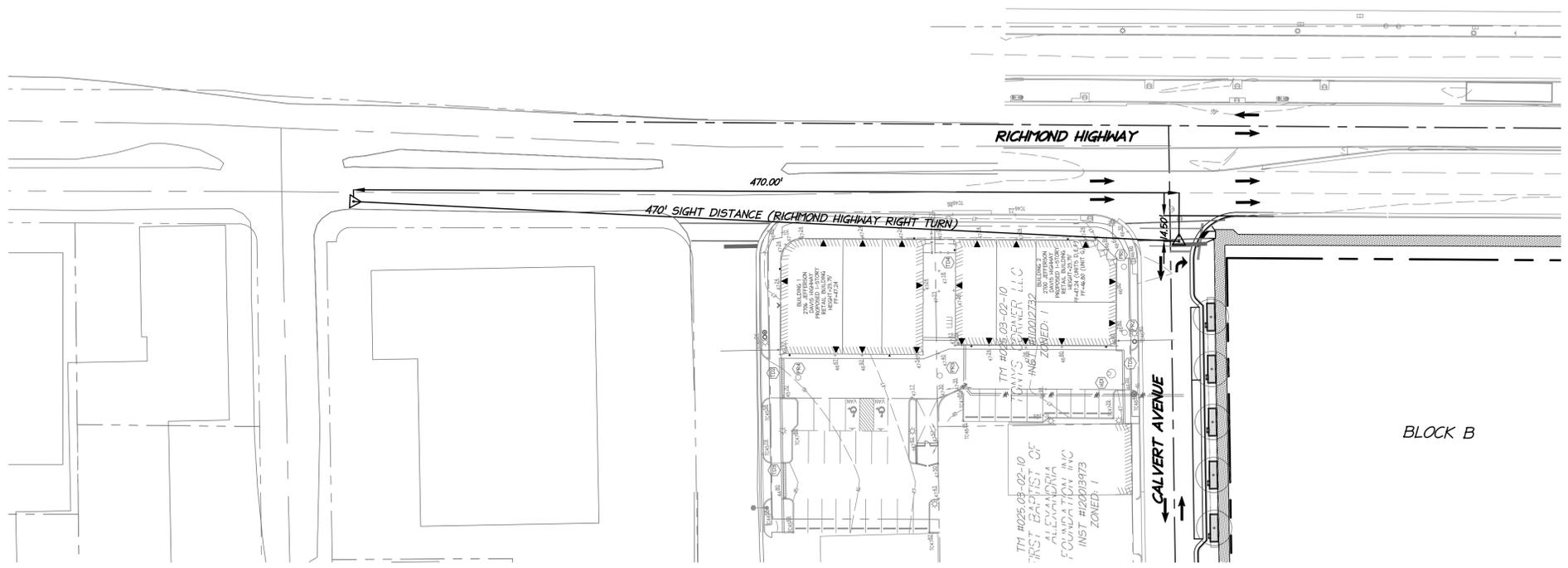
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|-------------|--------------|
| PROJECT NO. | 14007.011.00 |
| SCALE: | 1"=150' |
| DATE: | 07-20-20 |
| DESIGN: | EG |
| DRAWN: | JS |
| CHECKED: | KYW |
| SHEET No. | |

THIS SHEET IS FOR INFORMATION PURPOSES ONLY!

C605
110150

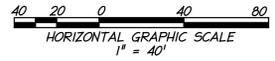
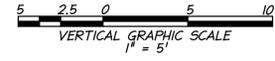
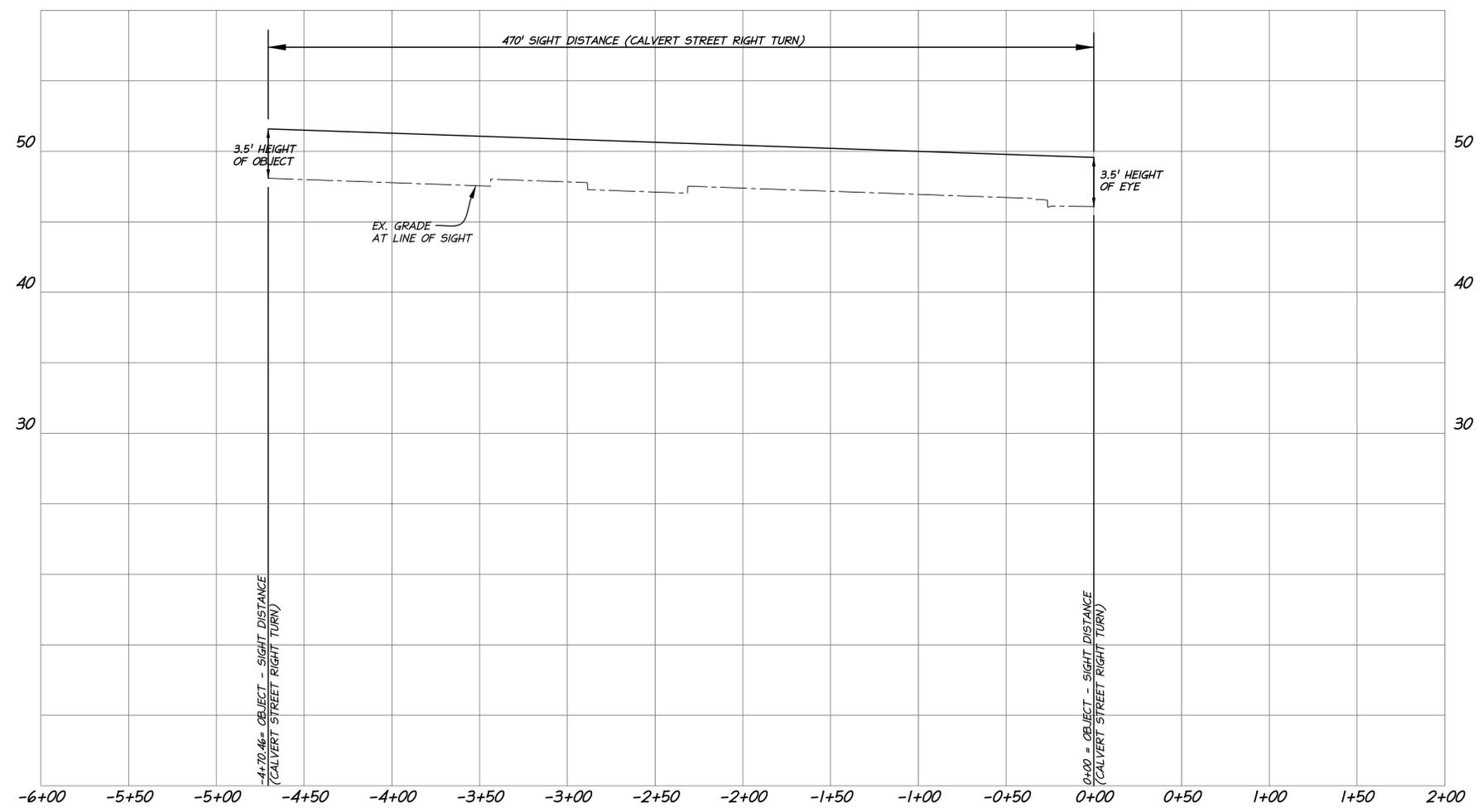
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| DATE | REVISION |
|----------|-------------------------|
| 9-4-20 | DSUP SUBMISSION #1 |
| 10-20-20 | DSUP SUBMISSION #2 |
| 11-3-20 | DSUP SUBMISSION #3 |
| 12-04-20 | VERIFICATION SUBMISSION |
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RICHMOND HIGHWAY SIGHT DISTANCE

POSTED SPEED: 35 MPH



NOTE: A PORTION OF THE EXISTING INFORMATION WEST OF CALVERT AVENUE IS SHOWN FOR INFORMATIONAL PURPOSES ONLY AND IS FROM THE CITY OF ALEXANDRIA GIS.

APPROVED
 DEVELOPMENT SITE PLAN NO. 2020-00031
 DEPARTMENT OF PLANNING & ZONING

DIRECTOR _____ DATE _____
 DEPT. OF TRANSPORTATION & ENVIRONMENTAL SERVICES
 SITE PLAN No. _____

DIRECTOR _____ DATE _____

CHAIRMAN, PLANNING COMMISSION DATE _____
 DATE RECORDED _____

INSTRUMENT NO. _____ DEED BOOK NO. _____ PAGE NO. _____

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



SIGHT DISTANCE

OAKVILLE INFRASTRUCTURE
 DEVELOPMENT SITE PLAN
 CITY OF ALEXANDRIA, VIRGINIA

PROJECT NO: H007.011.00
 SCALE: NONE
 DATE: 09-04-20
 DESIGN: EG
 DRAWN: JS
 CHECKED: KMW
 SHEET No.
C700

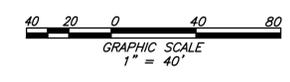
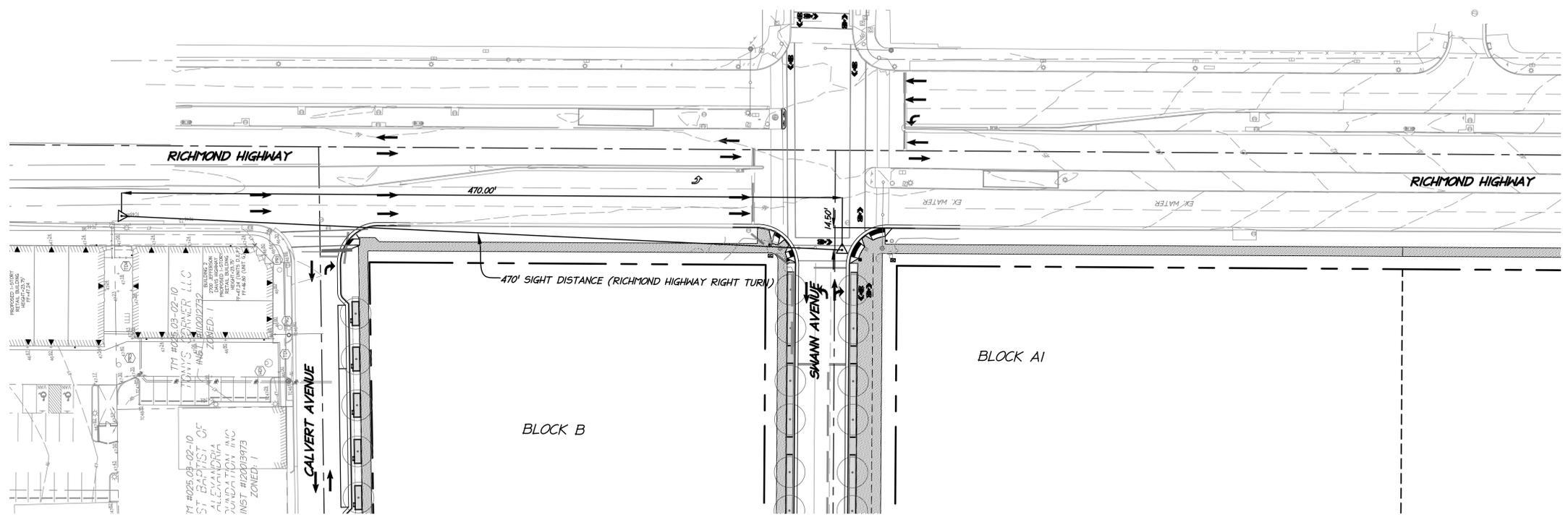
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| DATE | REVISION |
|----------|-------------------------|
| 9-4-20 | DSUP SUBMISSION #1 |
| 10-20-20 | DSUP SUBMISSION #2 |
| 11-3-20 | DSUP SUBMISSION #3 |
| 12-04-20 | VERIFICATION SUBMISSION |
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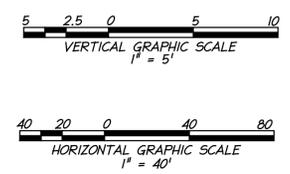
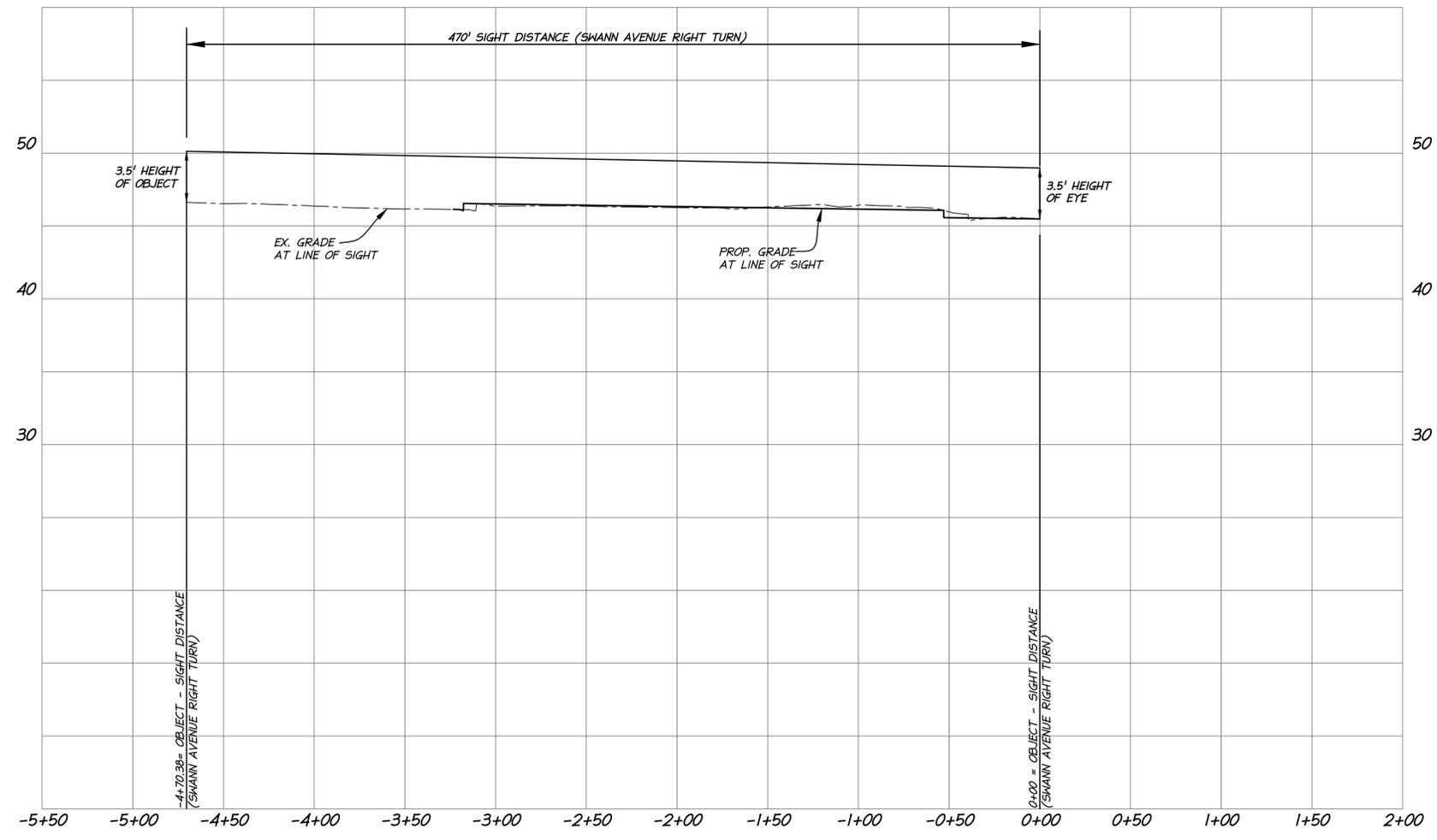
christopher consultants
 9900 main street (suite 400) · Fairfax, VA 22031
 phone 703.273.6820 · fax 703.273.6820



COMMONWEALTH OF VIRGINIA
 ELI GOLDMAN
 Lic. No. 55868
 12/04/2020
 PROFESSIONAL ENGINEER



RICHMOND HIGHWAY SIGHT DISTANCE - RIGHT TURN ONLY
 POSTED SPEED: 35 MPH



APPROVED
 DEVELOPMENT SITE PLAN NO. 2020-00031
 DEPARTMENT OF PLANNING & ZONING

| | |
|--|---------------------|
| DIRECTOR | DATE |
| DEPT. OF TRANSPORTATION & ENVIRONMENTAL SERVICES | |
| SITE PLAN No. _____ | |
| DIRECTOR | DATE |
| CHAIRMAN, PLANNING COMMISSION | DATE |
| DATE RECORDED _____ | |
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| | PAGE NO. _____ |

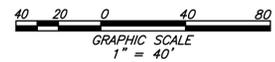
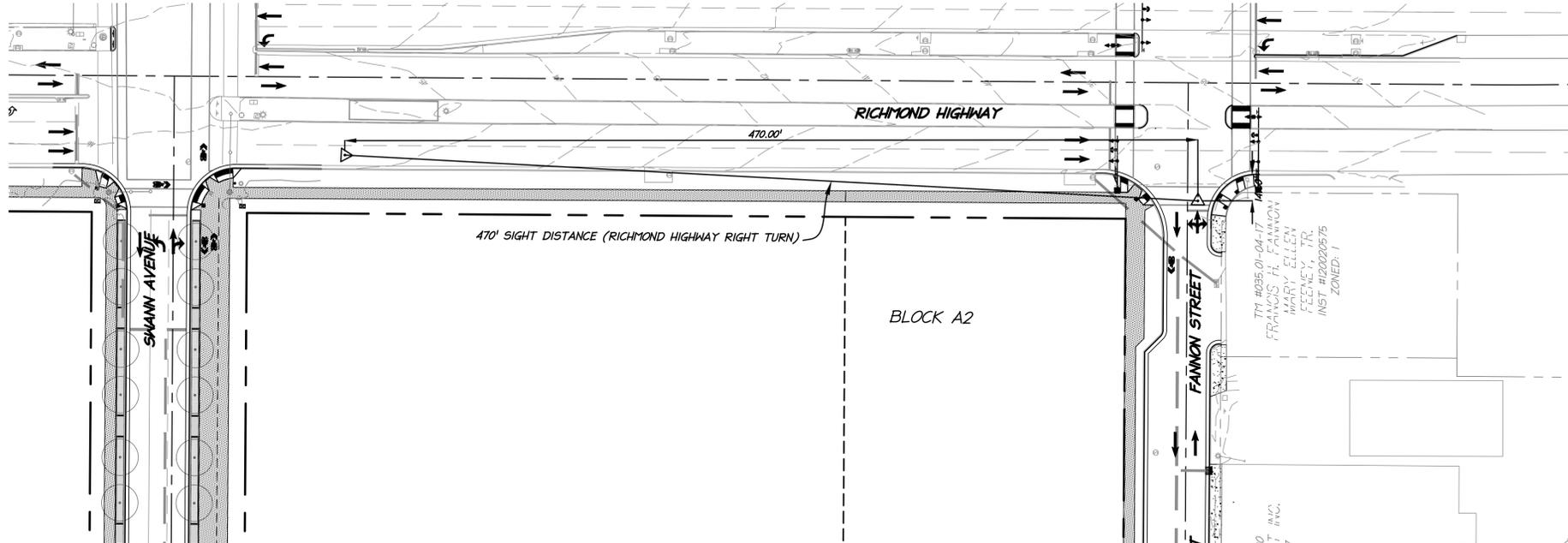
SIGHT DISTANCE

OAKVILLE INFRASTRUCTURE
 DEVELOPMENT SITE PLAN
 CITY OF ALEXANDRIA, VIRGINIA

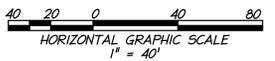
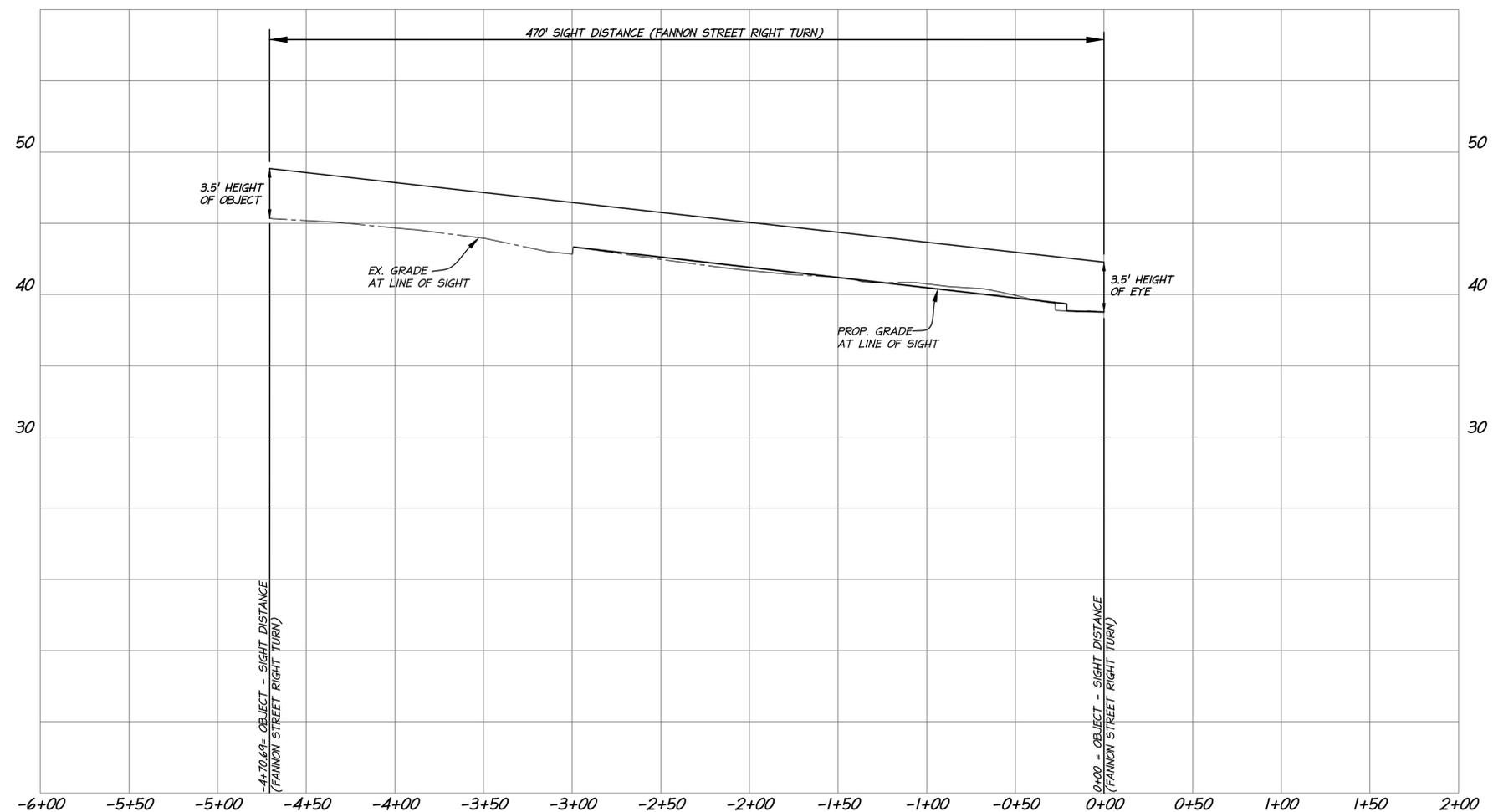
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| DATE | REVISION |
|----------|-------------------------|
| 9-4-20 | DSUP SUBMISSION #1 |
| 10-20-20 | DSUP SUBMISSION #2 |
| 11-3-20 | DSUP SUBMISSION #3 |
| 12-04-20 | VERIFICATION SUBMISSION |
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RICHMOND HIGHWAY DISTANCE - RIGHT TURN ONLY
POSTED SPEED: 35 MPH



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DEVELOPMENT SITE PLAN NO. 2020-00031

DEPARTMENT OF PLANNING & ZONING

DIRECTOR _____ DATE _____

DEPT. OF TRANSPORTATION & ENVIRONMENTAL SERVICES

SITE PLAN No. _____

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CHAIRMAN, PLANNING COMMISSION DATE _____

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INSTRUMENT NO. _____ DEED BOOK NO. _____ PAGE NO. _____

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COMMONWEALTH OF VIRGINIA

ELI GOLDMAN
Lic. No. 55868
12/04/2020
PROFESSIONAL ENGINEER

SIGHT DISTANCE

OAKVILLE INFRASTRUCTURE
DEVELOPMENT SITE PLAN
CITY OF ALEXANDRIA, VIRGINIA

PROJECT NO: H007.011.00

SCALE: NONE

DATE: 09-04-20

DESIGN: EG
DRAWN: JS
CHECKED: KMW

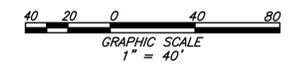
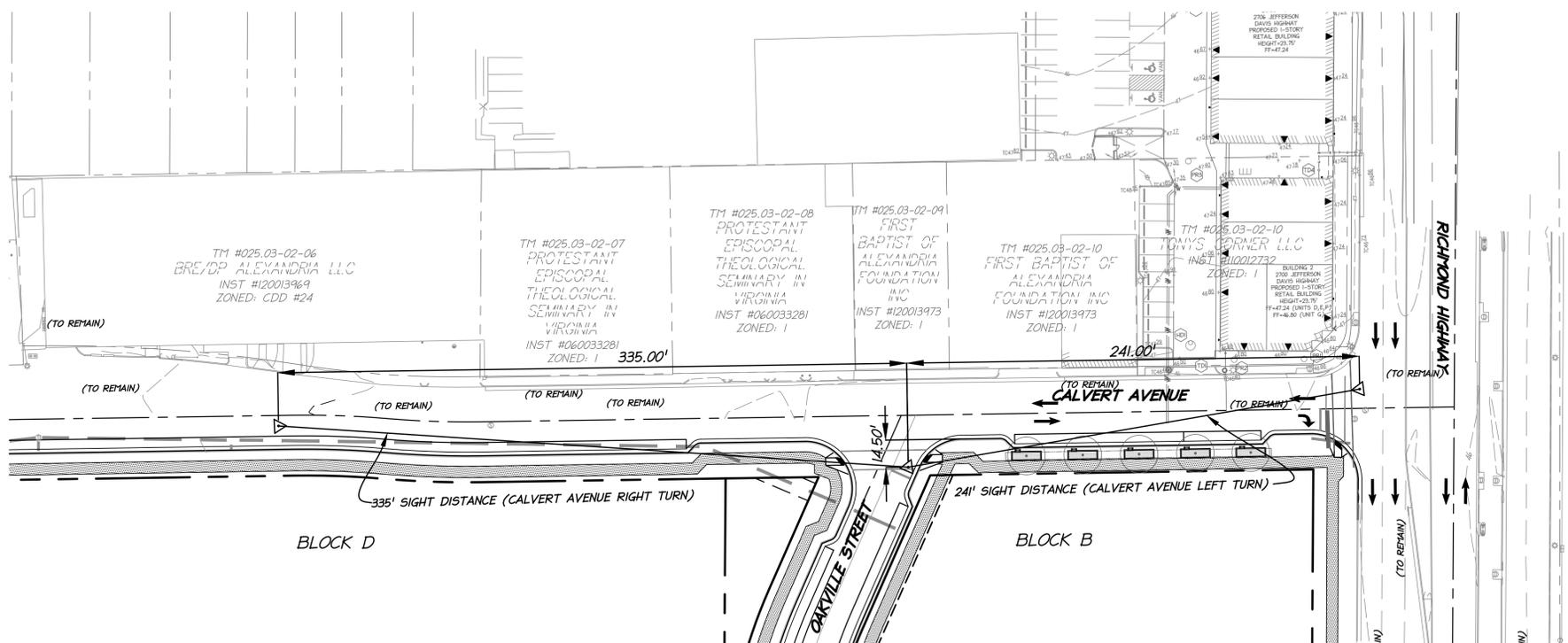
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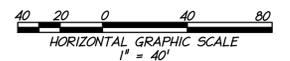
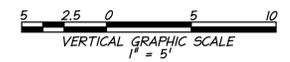
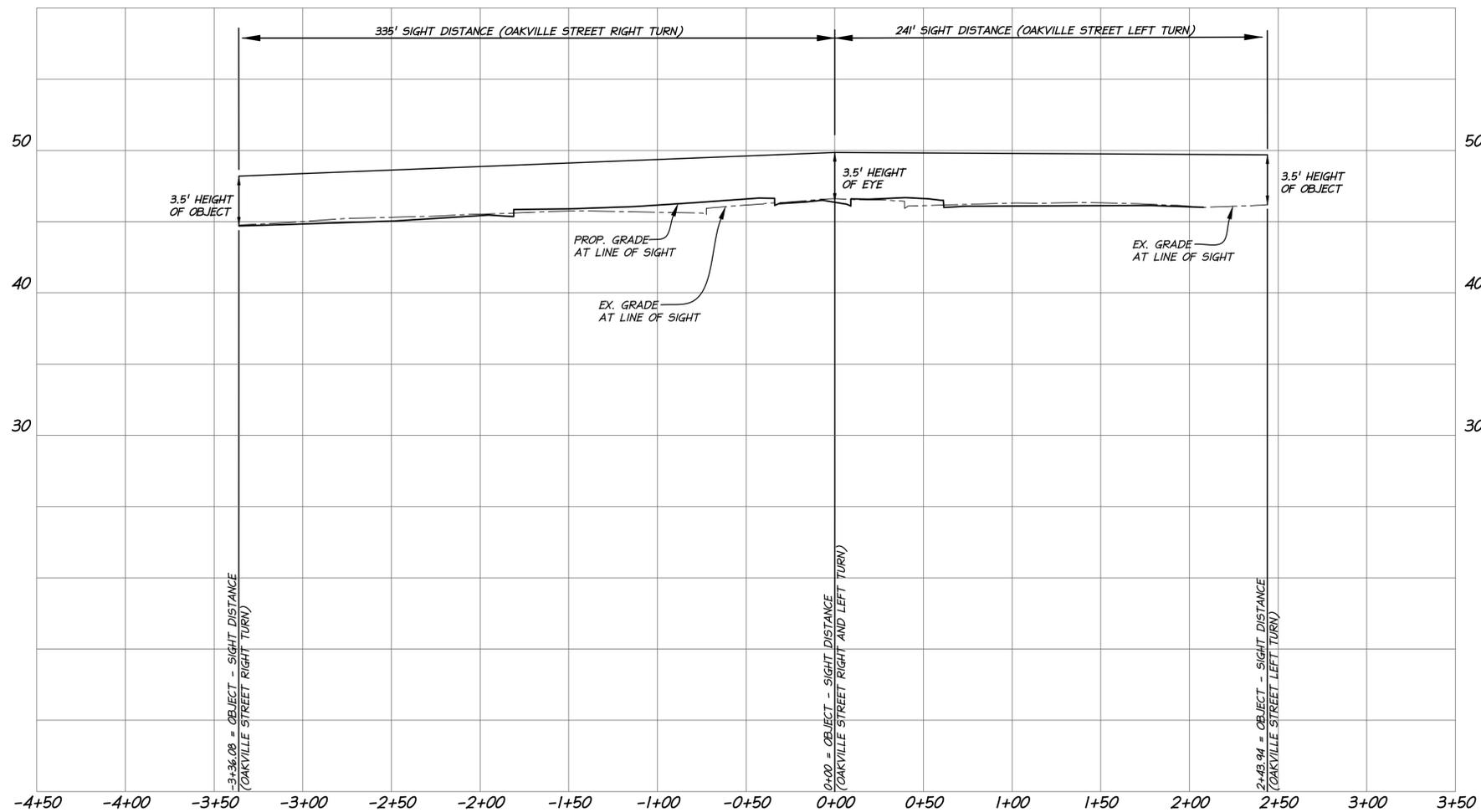
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| DATE | REVISION |
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| 10-20-20 | DSUP SUBMISSION #2 |
| 11-3-20 | DSUP SUBMISSION #3 |
| 12-04-20 | VERIFICATION SUBMISSION |
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CALVERT AVENUE SIGHT DISTANCE
POSTED SPEED: 25 MPH



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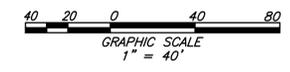
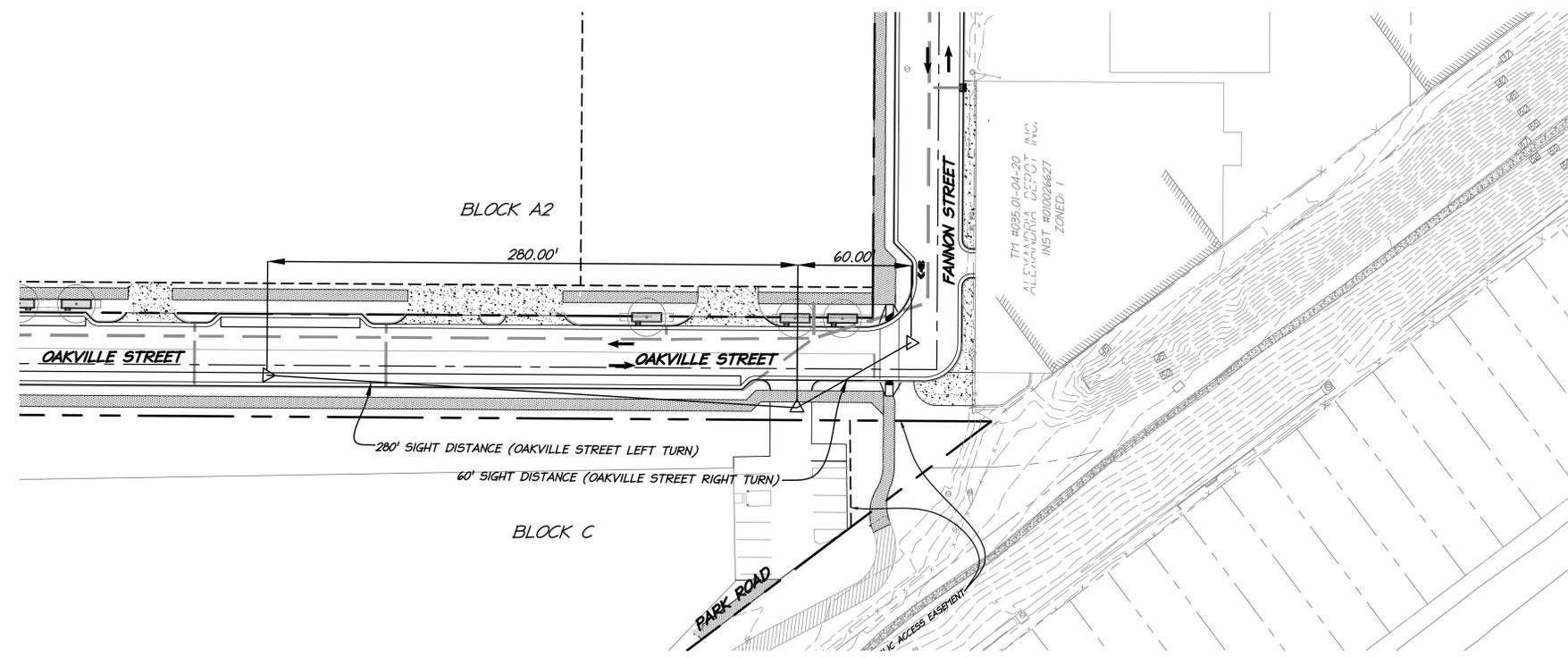
SIGHT DISTANCE

**OAKVILLE INFRASTRUCTURE
DEVELOPMENT SITE PLAN**
CITY OF ALEXANDRIA, VIRGINIA

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| PROJECT NO: 14007.011.00 |
| SCALE: NONE |
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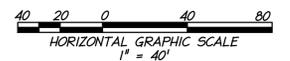
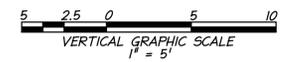
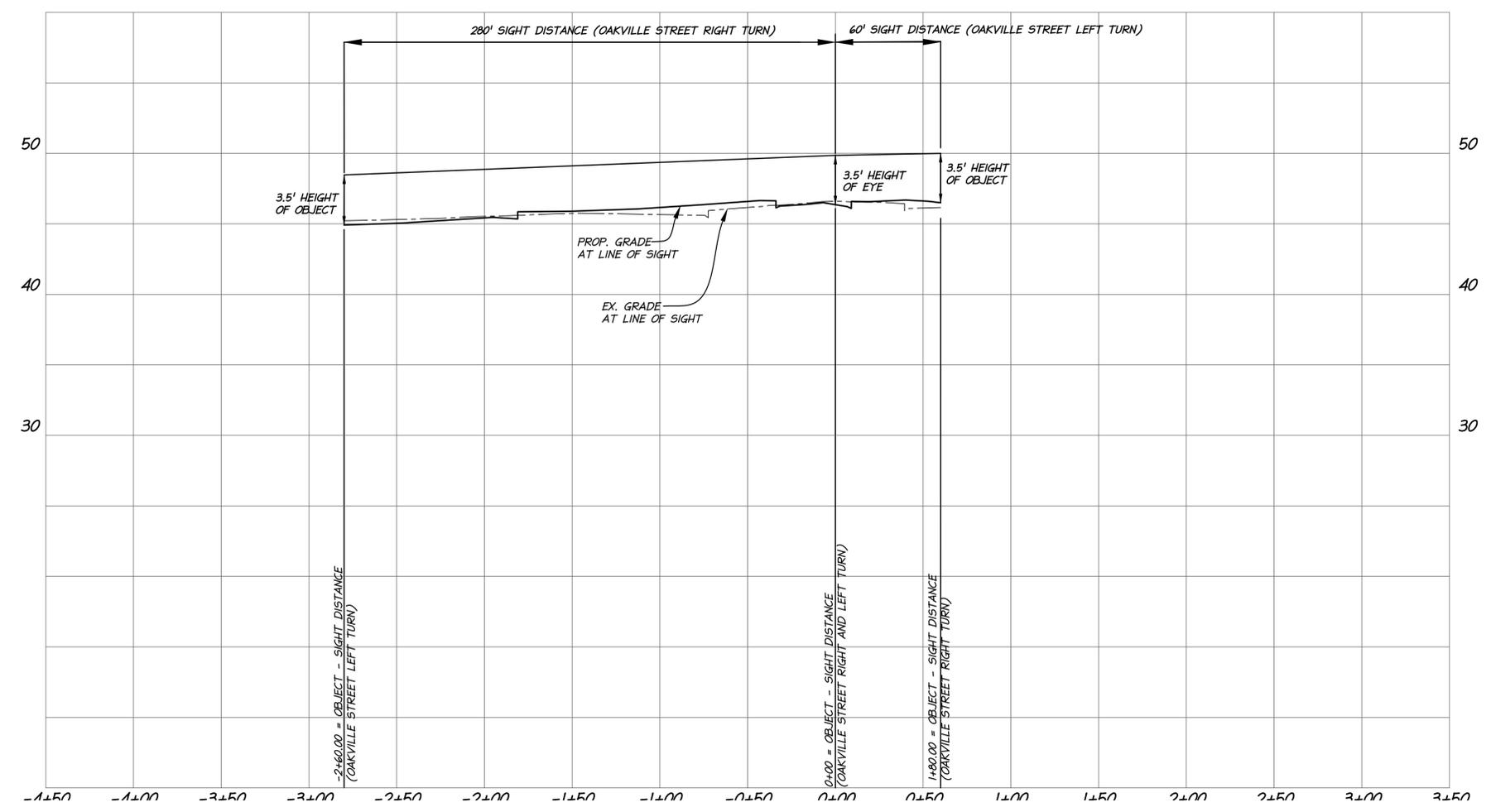
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| 11-3-20 | DSUP SUBMISSION #3 |
| 12-04-20 | VERIFICATION SUBMISSION |
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BLOCK "C" DRIVEWAY ON OAKVILLE STREET SIGHT DISTANCE

POSTED SPEED: 25 MPH



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| DEPARTMENT OF PLANNING & ZONING | |
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| DEPT. OF TRANSPORTATION & ENVIRONMENTAL SERVICES | |
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| PAGE NO. | |

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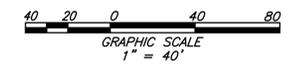
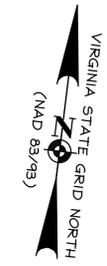
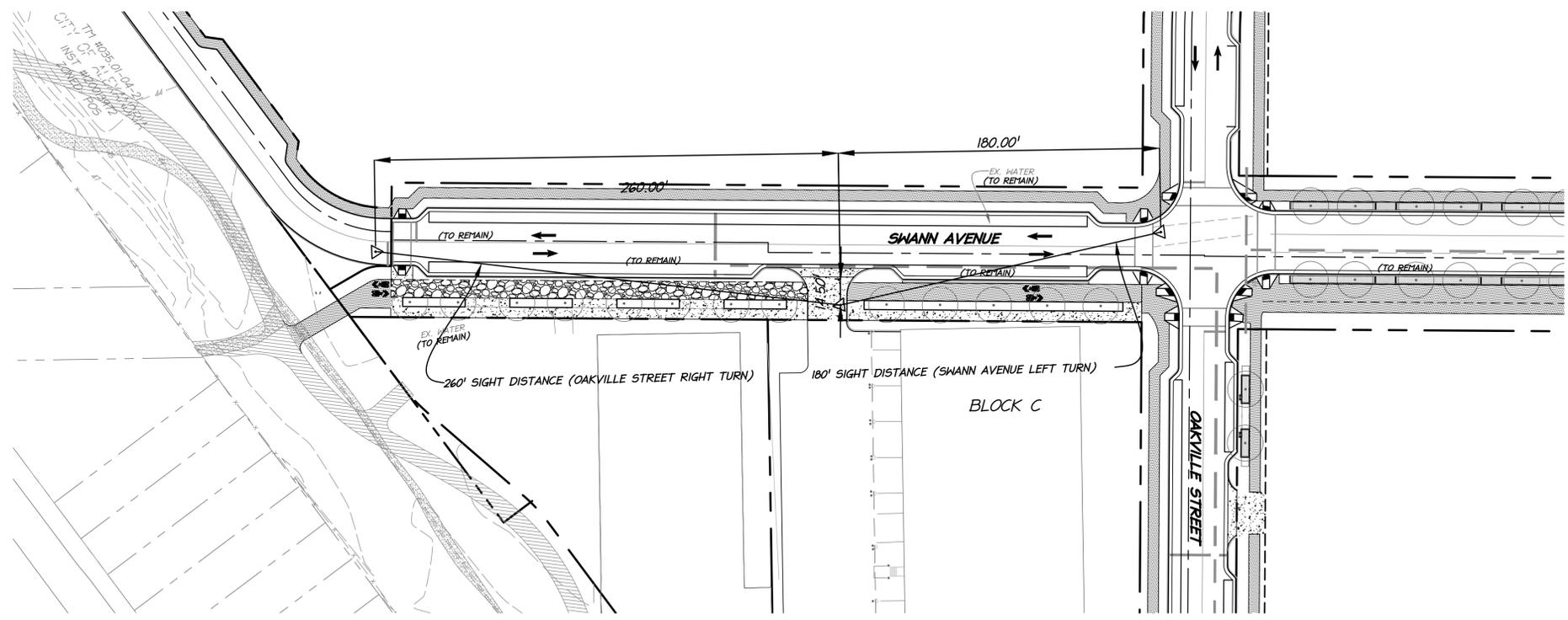
SIGHT DISTANCE

OAKVILLE INFRASTRUCTURE DEVELOPMENT SITE PLAN
 CITY OF ALEXANDRIA, VIRGINIA

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| PROJECT NO: 14007.011.00 |
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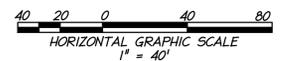
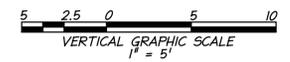
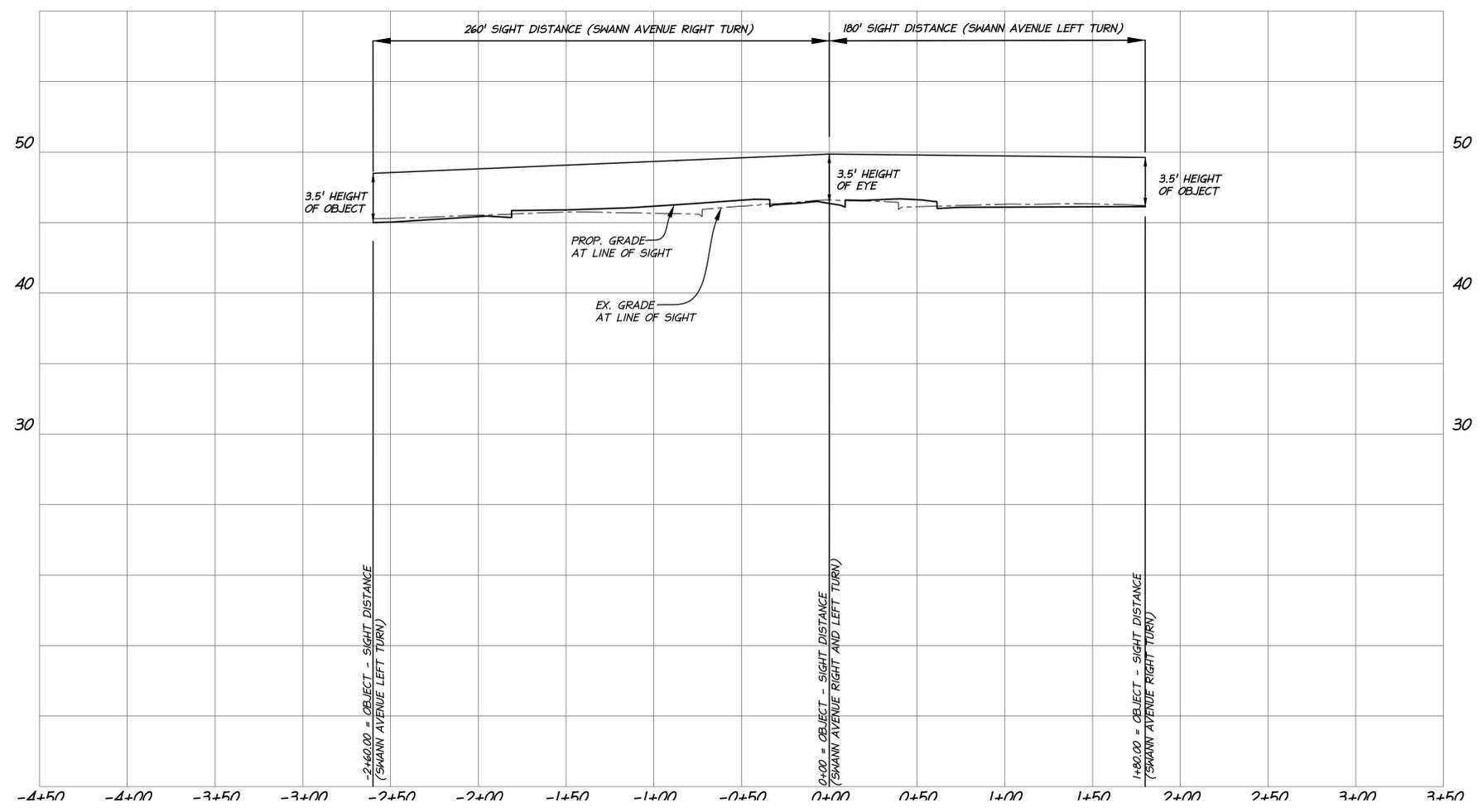
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| DATE | REVISION |
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| 10-20-20 | DSUP SUBMISSION #2 |
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| 12-04-20 | VERIFICATION SUBMISSION |
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BLOCK "C" DRIVEWAY ON SWANN AVENUE SIGHT DISTANCE

POSTED SPEED: 25 MPH



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 DEPARTMENT OF PLANNING & ZONING

DIRECTOR _____ DATE _____
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SIGHT DISTANCE

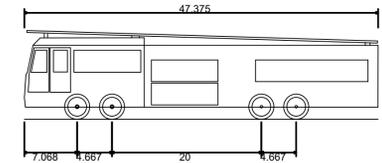
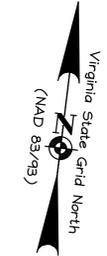
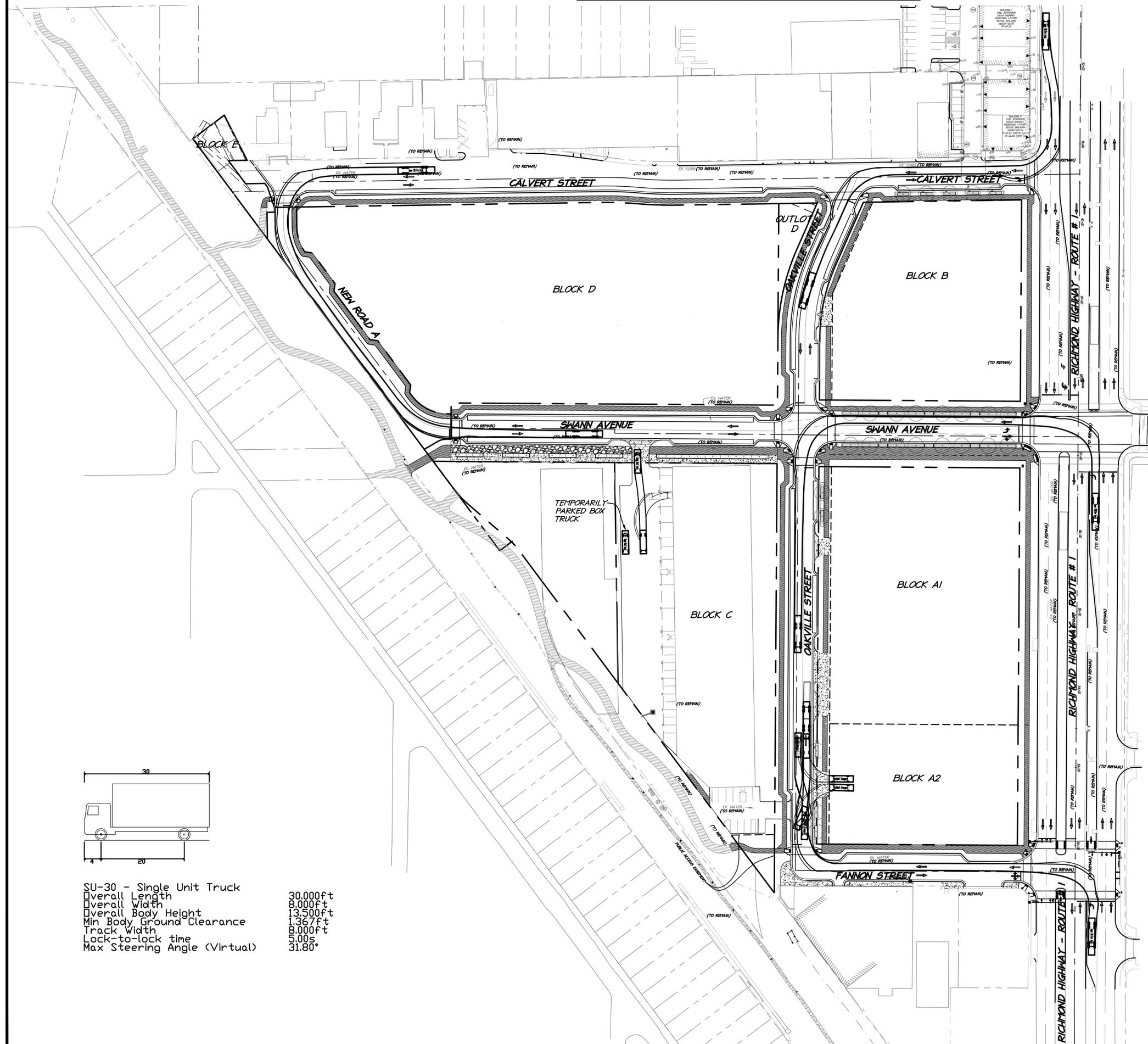
OAKVILLE INFRASTRUCTURE
 DEVELOPMENT SITE PLAN
 CITY OF ALEXANDRIA, VIRGINIA

PROJECT NO: 14007.011.00
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 DESIGN: EG
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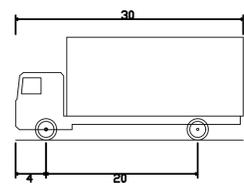
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FIRE TRUCK TURNS THROUGH OUT THE SITE

| DATE | REVISION |
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Tower 203 Fire Truck
 Overall Length 47.375ft
 Overall Width 8.167ft
 Overall Body Height 11.831ft
 Min Body Ground Clearance 1.612ft
 Track Width 9.583ft
 Lock-to-lock time 4.00s
 Wall to Wall Turning Radius 54.980ft



SU-30 - Single Unit Truck
 Overall Length 30.000ft
 Overall Width 8.000ft
 Overall Body Height 13.500ft
 Min Body Ground Clearance 1.367ft
 Track Width 8.000ft
 Lock-to-lock time 5.00s
 Max Steering Angle (Virtual) 31.80°



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| INSTRUMENT NO. _____ | DEED BOOK NO. _____ |
| | PAGE NO. _____ |

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 ELI GOLDMAN
 Lic. No. 55868
 12/04/2020
 PROFESSIONAL ENGINEER

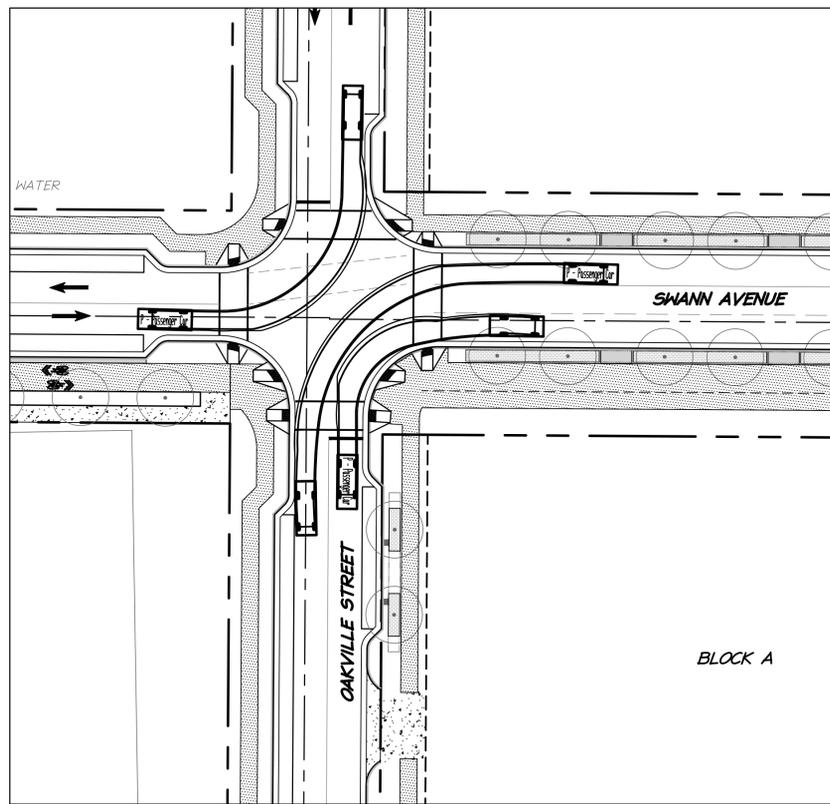
TURNING MOVEMENT ANALYSIS

OAKVILLE INFRASTRUCTURE DEVELOPMENT SITE PLAN
 CITY OF ALEXANDRIA, VIRGINIA

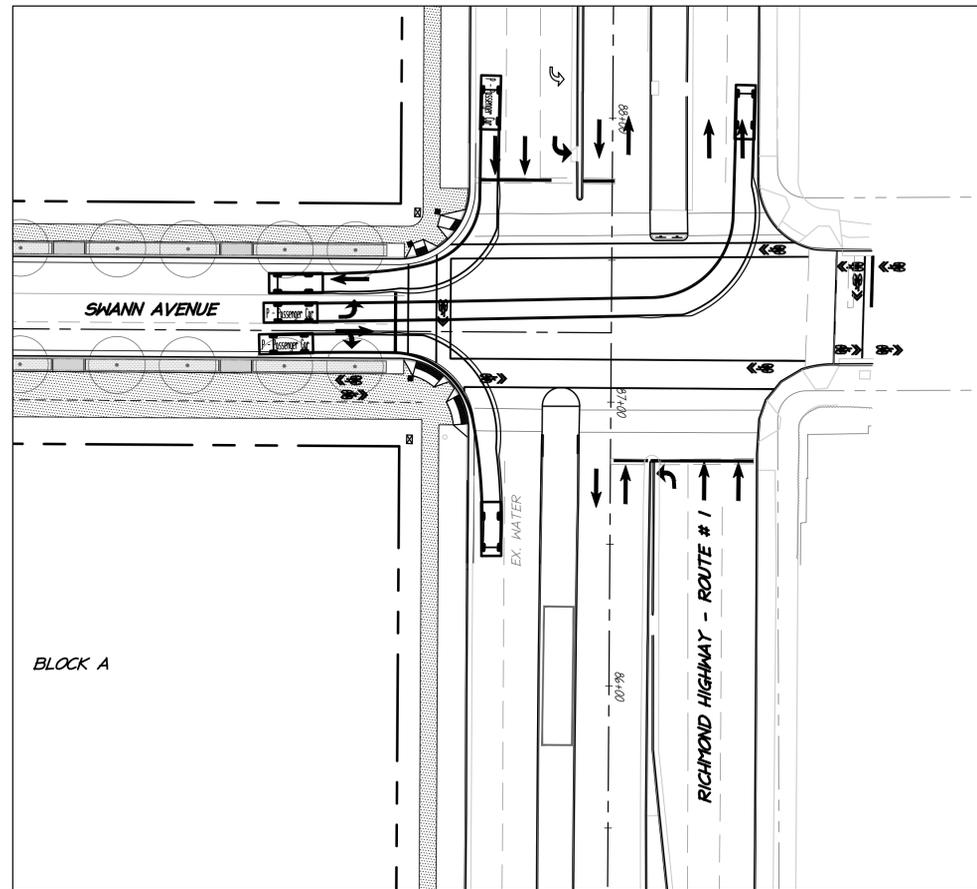
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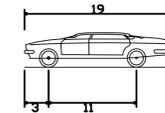
PASSENGER CAR (SWANN AVENUE/OAKVILLE STREET)



PASSENGER CAR (RICHMOND HIGHWAY/SWANN AVENUE)

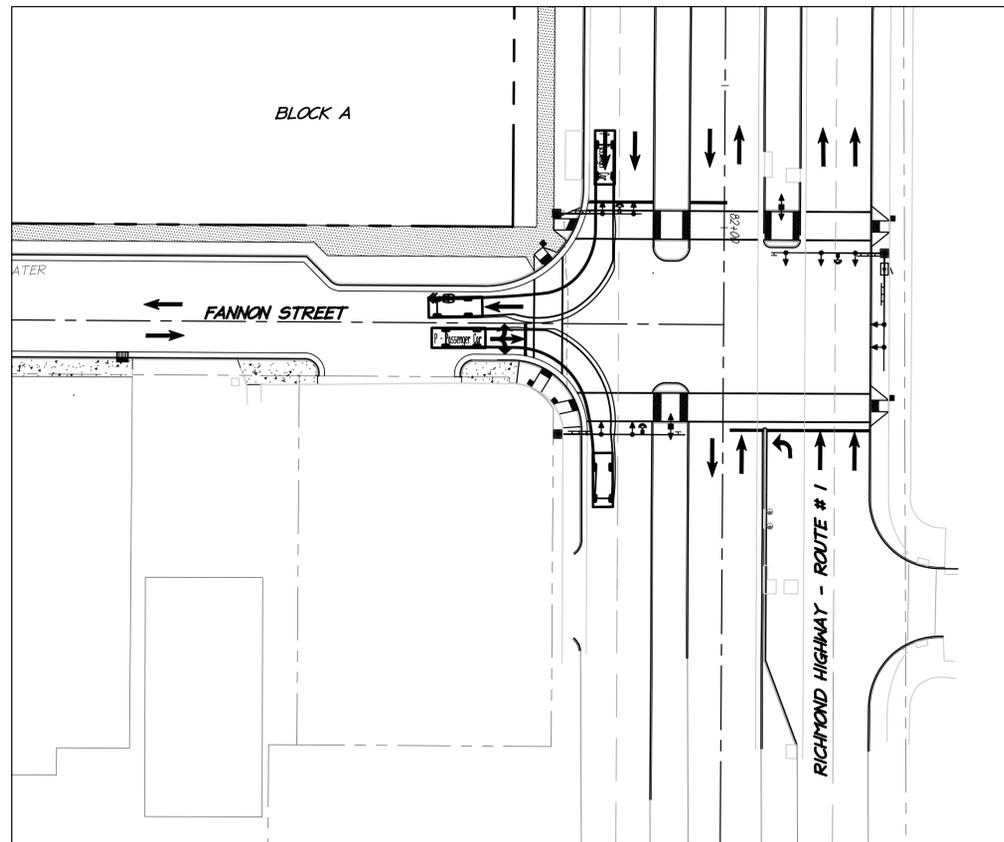


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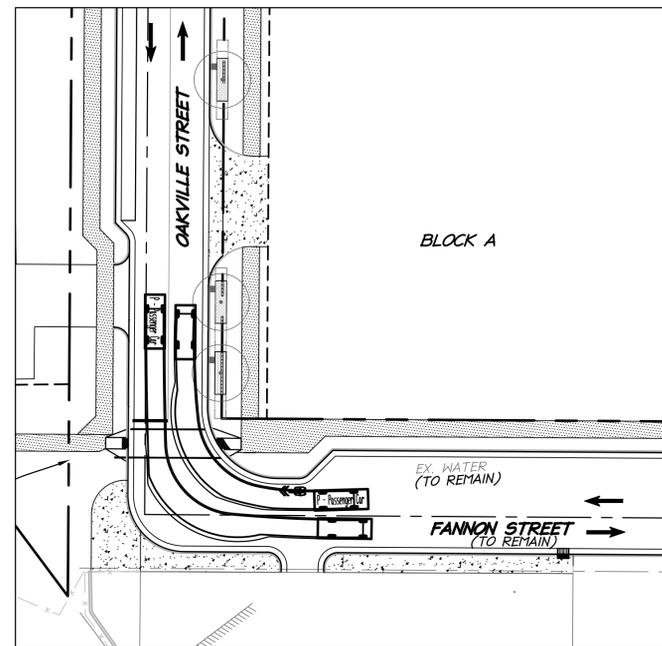


- P - Passenger Car
- Overall Length 19.000ft
- Overall Width 7.000ft
- Overall Body Height 4.300ft
- Min Body Ground Clearance 1.15ft
- Track Width 6.000ft
- Lock-to-lock time 4.00s
- Max Steering Angle (Virtual) 31.60°

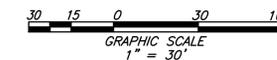
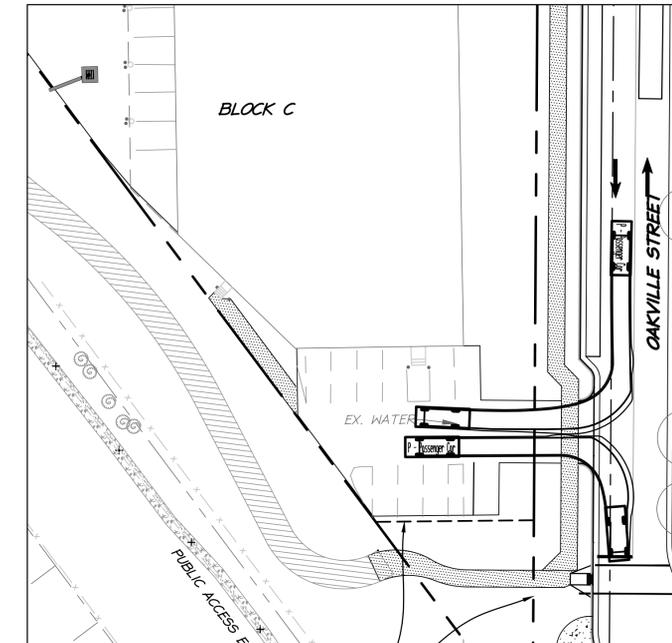
PASSENGER CAR (RICHMOND HIGHWAY/FANNON STREET)



PASSENGER CAR (OAKVILLE STREET/FANNON STREET)



PASSENGER CAR (OAKVILLE STREET TO EX. PARKING LOT)



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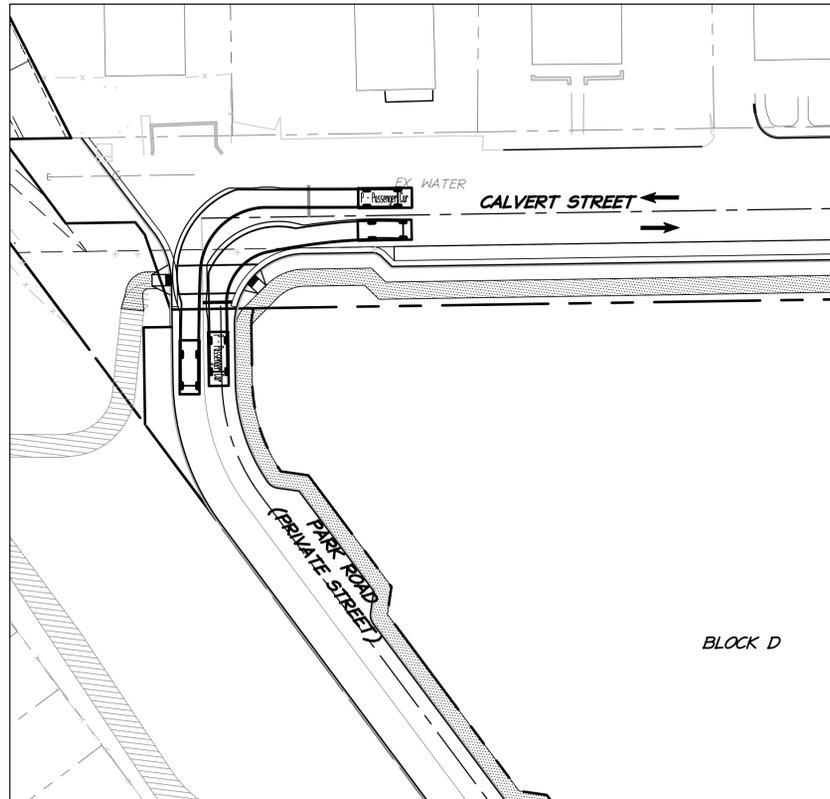
TURNING MOVEMENT ANALYSIS

OAKVILLE INFRASTRUCTURE DEVELOPMENT SITE PLAN
 CITY OF ALEXANDRIA, VIRGINIA

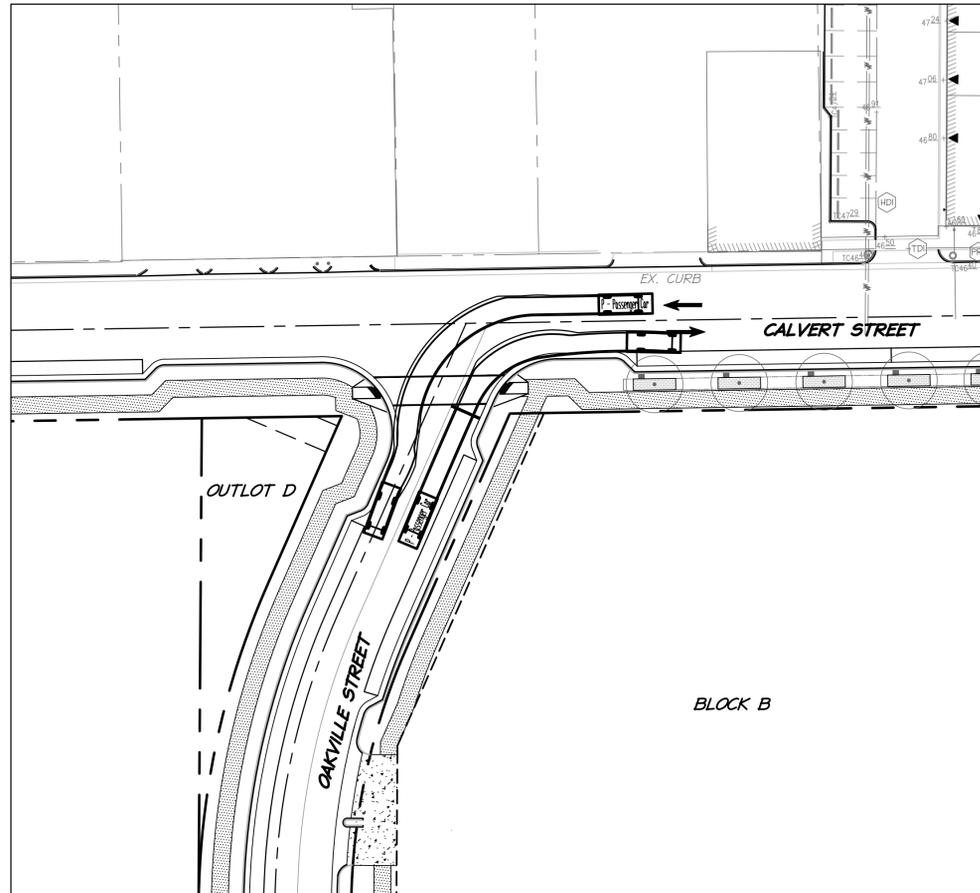
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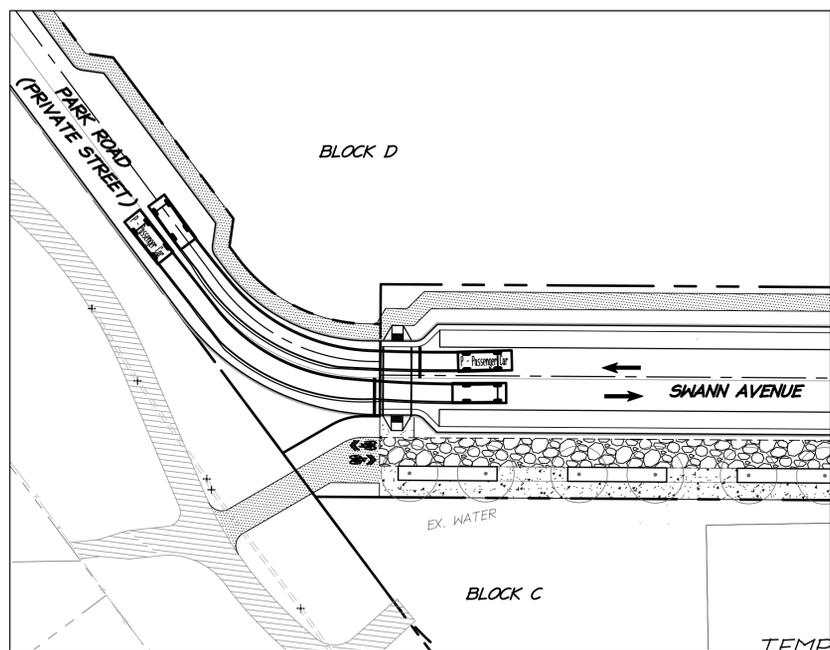
PASSENGER CAR (PARK ROAD/CALVERT STREET)



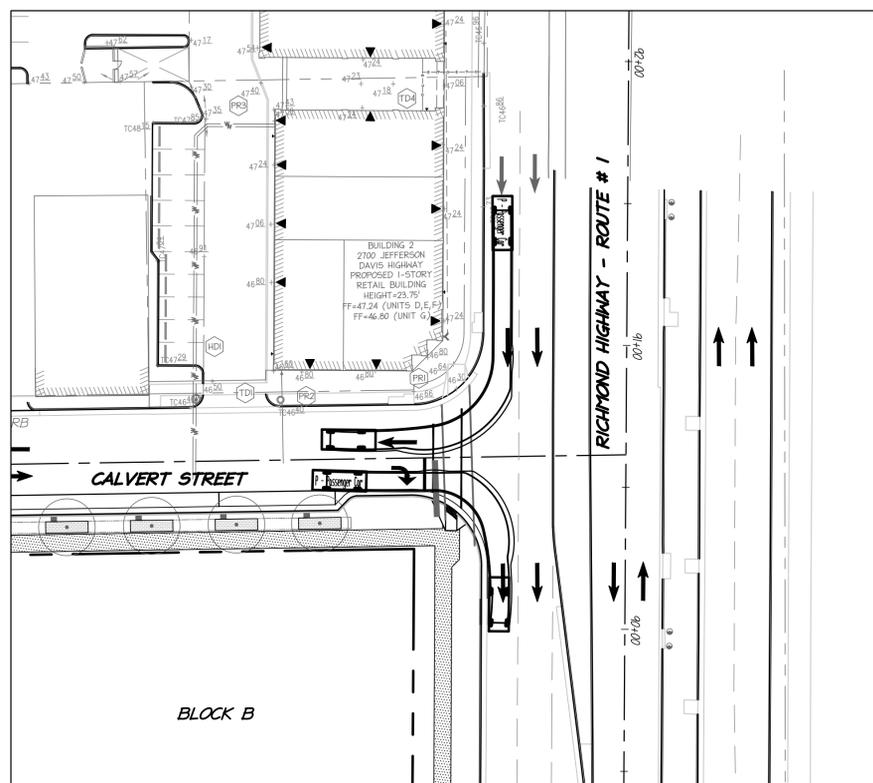
PASSENGER CAR (OAKVILLE STREET/CALVERT STREET)



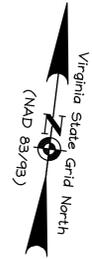
PASSENGER CAR (PARK ROAD/SWANN AVENUE)



PASSENGER CAR (RICHMOND HIGHWAY/CALVERT STREET)



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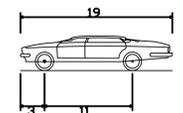
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TURNING MOVEMENT ANALYSIS

OAKVILLE INFRASTRUCTURE DEVELOPMENT SITE PLAN
 CITY OF ALEXANDRIA, VIRGINIA



- P - Passenger Car
- Overall Length 19.000ft
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- Overall Body Height 4.300ft
- Min Body Ground Clearance 1.115ft
- Track Width 6.000ft
- Lock-to-lock time 4.00s
- Max Steering Angle (Virtual) 31.60°



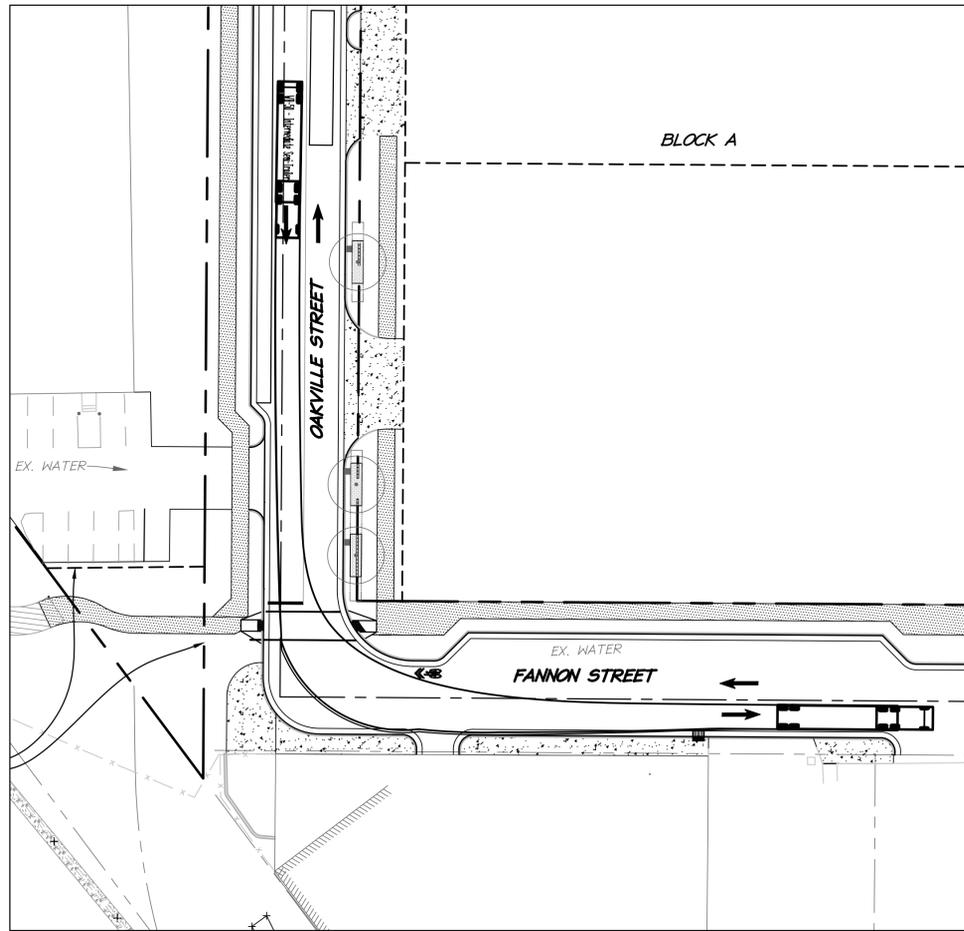
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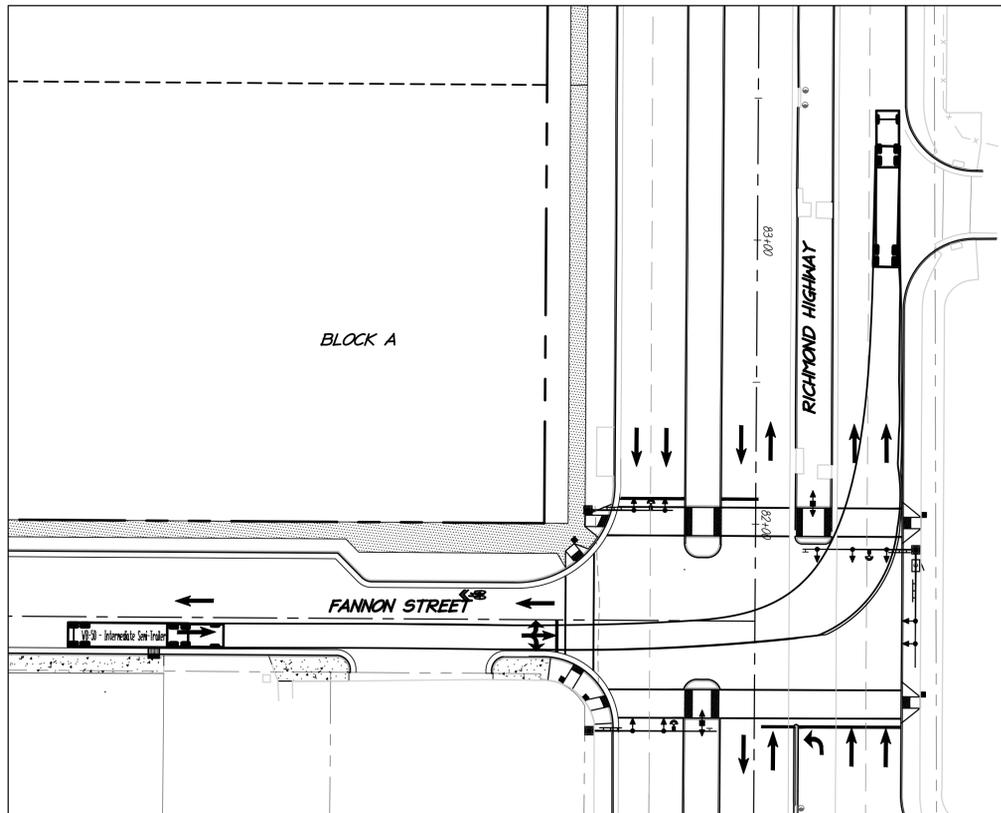
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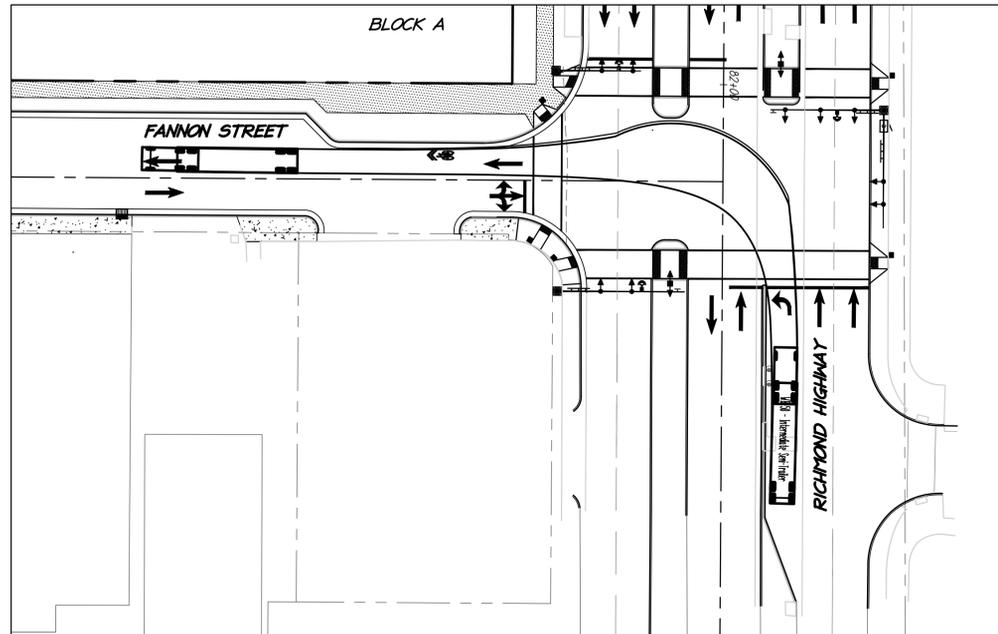
WB-50 LEFT TURN FROM OAKVILLE STREET TO FANNON STREET



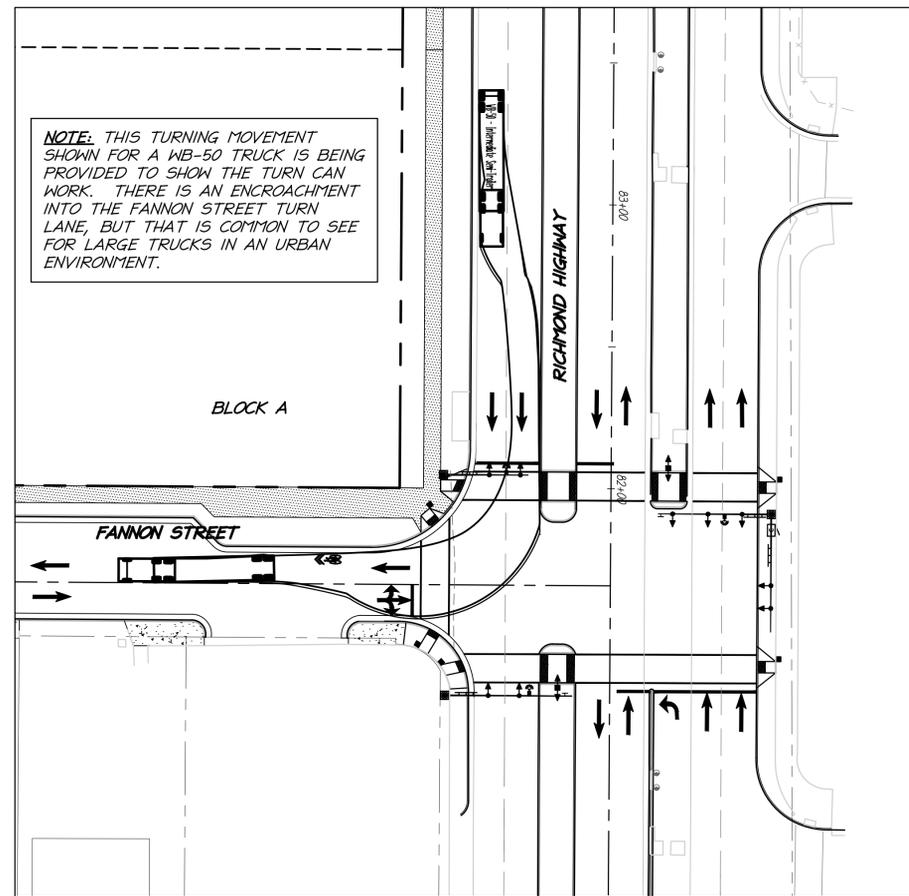
WB-50 LEFT TURN FROM FANNON STREET TO RICHMOND HIGHWAY



WB-50 LEFT TURN FROM RICHMOND HIGHWAY TO FANNON STREET



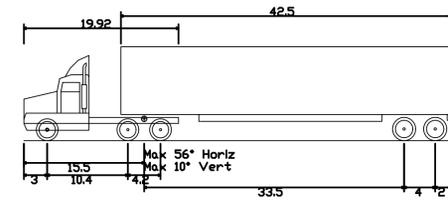
WB-50 RIGHT TURN FROM RICHMOND HIGHWAY TO FANNON STREET



NOTE: THIS TURNING MOVEMENT SHOWN FOR A WB-50 TRUCK IS BEING PROVIDED TO SHOW THE TURN CAN WORK. THERE IS AN ENCROACHMENT INTO THE FANNON STREET TURN LANE, BUT THAT IS COMMON TO SEE FOR LARGE TRUCKS IN AN URBAN ENVIRONMENT.



| DATE | REVISION |
|----------|-------------------------|
| 9-4-20 | DSUP SUBMISSION #1 |
| 10-20-20 | DSUP SUBMISSION #2 |
| 11-3-20 | DSUP SUBMISSION #3 |
| 12-04-20 | VERIFICATION SUBMISSION |
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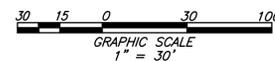
WB-50 - Intermediate Semi-Trailer
 Overall Length 55.000ft
 Overall Width 8.500ft
 Overall Body Height 12.052ft
 Min Body Ground Clearance 1.334ft
 Max Track Width 8.500ft
 Lock-to-lock time 6.00s
 Max Steering Angle (Virtual) 17.90°

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COMMONWEALTH OF VIRGINIA
 ELI GOLDMAN
 Lic. No. 55868
 12/04/2020
 PROFESSIONAL ENGINEER

TURNING MOVEMENT ANALYSIS

OAKVILLE INFRASTRUCTURE DEVELOPMENT SITE PLAN
 CITY OF ALEXANDRIA, VIRGINIA

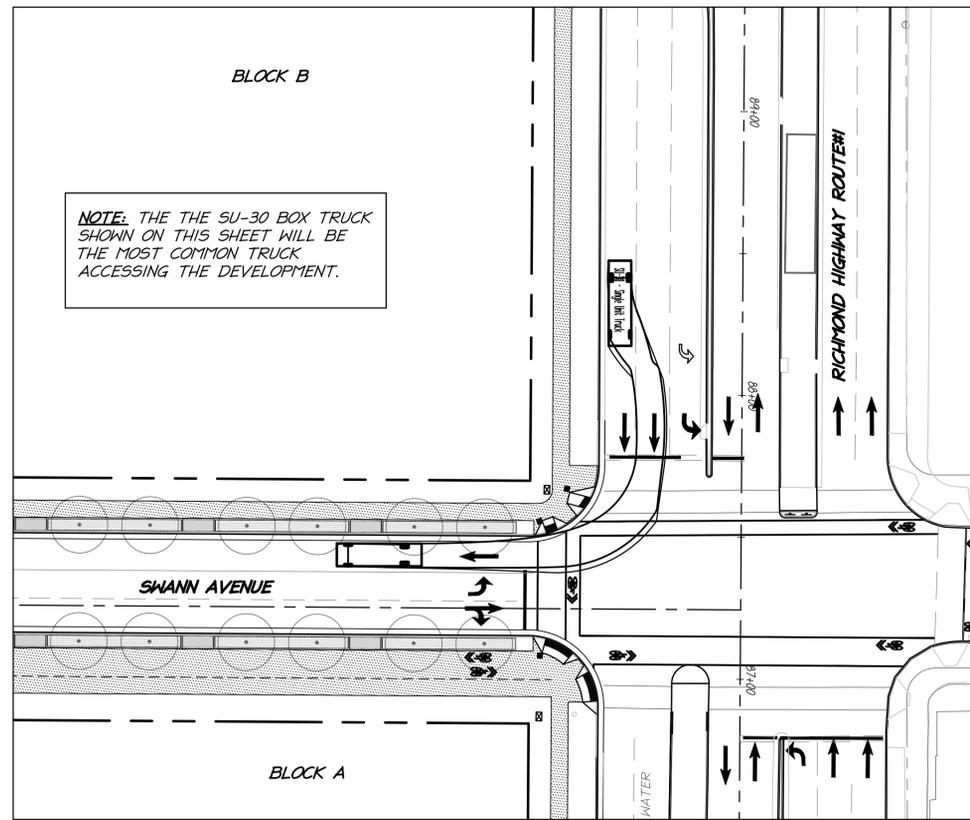


APPROVED
 DEVELOPMENT SITE PLAN NO. 2020-00031
 DEPARTMENT OF PLANNING & ZONING

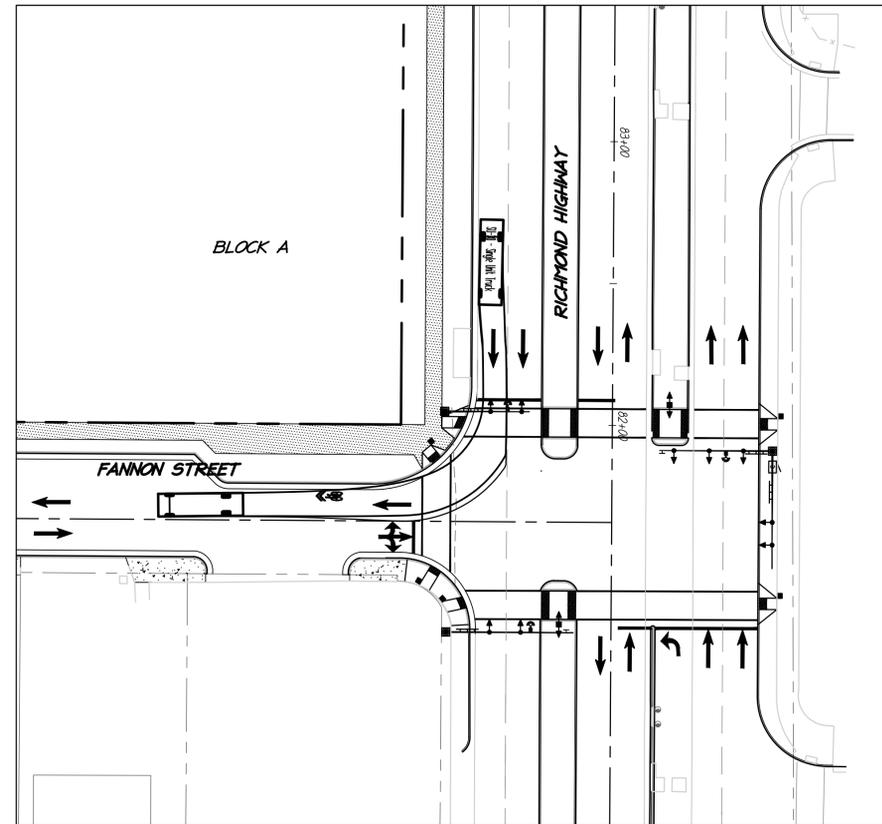
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|--|---------------------|
| DIRECTOR | DATE |
| DEPT. OF TRANSPORTATION & ENVIRONMENTAL SERVICES | |
| SITE PLAN No. _____ | |
| DIRECTOR | DATE |
| CHAIRMAN, PLANNING COMMISSION | DATE |
| DATE RECORDED _____ | |
| INSTRUMENT NO. _____ | DEED BOOK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

PROJECT NO: H007.011.00
 SCALE: 1" = 30'
 DATE: 09-04-20
 DESIGN: EG
 DRAWN: JS
 CHECKED: KMW
 SHEET No.
C803

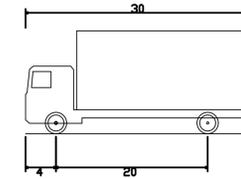
SU-30 RIGHT TURN FROM RICHMOND HIGHWAY TO SWANN AVENUE



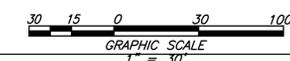
SU-30 LEFT TURN FROM RICHMOND HIGHWAY TO FANNON STREET



| DATE | REVISION |
|----------|-------------------------|
| 9-4-20 | DSUP SUBMISSION #1 |
| 10-20-20 | DSUP SUBMISSION #2 |
| 11-3-20 | DSUP SUBMISSION #3 |
| 12-04-20 | VERIFICATION SUBMISSION |
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| | |
|------------------------------|----------|
| SU-30 - Single Unit Truck | 30.000ft |
| Overall Length | 8.000ft |
| Overall Width | 13.500ft |
| Overall Body Height | 1.367ft |
| Min Body Ground Clearance | 8.000ft |
| Track Width | 5.000s |
| Lock-to-lock time | 31.80° |
| Max Steering Angle (Virtual) | |



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 DEVELOPMENT SITE PLAN NO. 2020-00031
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|--|---------------------|
| DIRECTOR | DATE |
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| DIRECTOR | DATE |
| CHAIRMAN, PLANNING COMMISSION | DATE |
| DATE RECORDED _____ | |
| INSTRUMENT NO. _____ | DEED BOOK NO. _____ |
| | PAGE NO. _____ |

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 12/04/2020
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TURNING MOVEMENT ANALYSIS

OAKVILLE INFRASTRUCTURE DEVELOPMENT SITE PLAN
 CITY OF ALEXANDRIA, VIRGINIA

PROJECT NO: H007.011.00
 SCALE: 1" = 30'
 DATE: 09-04-20
 DESIGN: EG
 DRAWN: JS
 CHECKED: KMW
 SHEET No.
C805

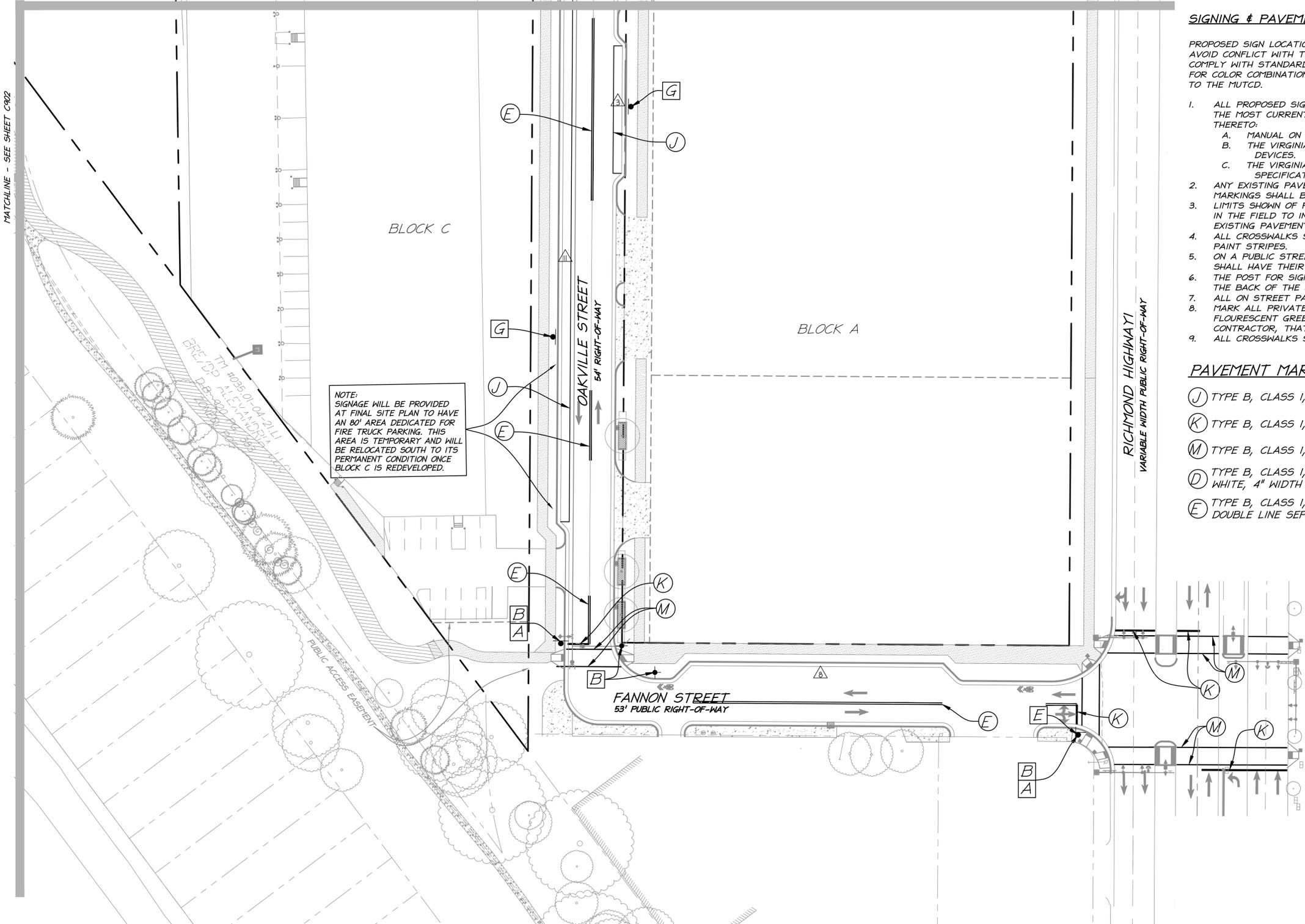
SIGN LEGEND

| SIGN | A | B | C | D | E | F | G |
|--------|-----------------|---|-------------------|------------------|------------------|------------------|-------------------|
| SYMBOL | | CENTER ST. NAME ON SIGN Port ST. SUFFIX XXX BLOCK # | | | | | |
| SIGN | R1-1 24"x24" | 30" (MIN) X 9" | W11-15 24"x24" | R7-1L 18"x24" | R7-1R 18"x24" | R7-1D 18"x24" | R7-108 12"x18" |



| DATE | REVISION |
|----------|-------------------------|
| 9-4-20 | DSUP SUBMISSION #1 |
| 10-20-20 | DSUP SUBMISSION #2 |
| 11-3-20 | DSUP SUBMISSION #3 |
| 12-04-20 | VERIFICATION SUBMISSION |
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MATCHLINE - SEE SHEET C901



NOTE: SIGNAGE WILL BE PROVIDED AT FINAL SITE PLAN TO HAVE AN 80' AREA DEDICATED FOR FIRE TRUCK PARKING. THIS AREA IS TEMPORARY AND WILL BE RELOCATED SOUTH TO ITS PERMANENT CONDITION ONCE BLOCK C IS REDEVELOPED.

SIGNING & PAVEMENT MARKING NOTES:

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

- ALL PROPOSED SIGNING AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE MOST CURRENT EDITION OF EACH OF THE FOLLOWING AND ANY REVISION THERETO:
 - MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
 - THE VIRGINIA SUPPLEMENT TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
 - THE VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE SPECIFICATIONS.
- ANY EXISTING PAVEMENT MARKINGS WHICH WILL CONFLICT WITH PROPOSED PAVEMENT MARKINGS SHALL BE ERADICATED.
- LIMITS SHOWN OF PROPOSED MARKINGS ARE APPROXIMATE AND SHALL BE MODIFIED IN THE FIELD TO INSURE THAT PROPOSED PAVEMENT MARKINGS CONTINUE UNTIL EXISTING PAVEMENT MARKINGS CAN BE MATCHED.
- ALL CROSSWALKS SHALL BE 10' WIDE MEASURED FROM THE INSIDE EDGE OF THE PAINT STRIPES.
- ON A PUBLIC STREET ALL NO PARKING SIGNS, EXCEPT THOSE DEMARKING AN EVE, SHALL HAVE THEIR FACE PLACED AT A 45 DEGREE ANGLE TOWARD TRAFFIC.
- THE POST FOR SIGNS SHALL BE A 2" SQUARE TUBE POST. THE POSTS AS WELL AS THE BACK OF THE SIGNS SHALL HAVE A MATTE BLACK FINISH.
- ALL ON STREET PARKING SHALL BE 8' X 22' AS SHOWN UNLESS OTHERWISE NOTED.
- MARK ALL PRIVATE STREET SIGNS THAT INTERSECT A PUBLIC STREET WITH A FLOURESCENT GREEN STRIP TO NOTIFY THE PLOWING CREWS, BOTH CITY AND CONTRACTOR, THAT THEY ARE NOT TO PLOW THOSE STREETS.
- ALL CROSSWALKS SHALL BE THERMO PLASTIC PEDESTRIAN CROSSWALKS.

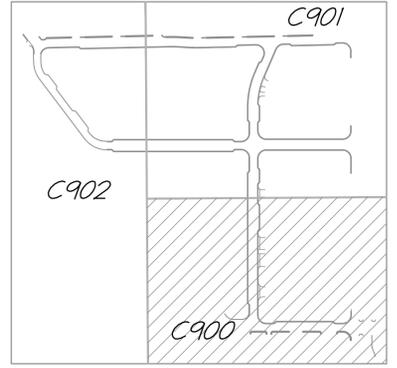
PAVEMENT MARKING LEGEND

- (J) TYPE B, CLASS 1, WHITE, 4" WIDTH
- (K) TYPE B, CLASS 1, WHITE, 12" WIDTH
- (M) TYPE B, CLASS 1, WHITE, 6" WIDTH
- (D) TYPE B, CLASS 1, SINGLE BROKEN WHITE, 4" WIDTH
- (E) TYPE B, CLASS 1, YELLOW, 4" WIDTH DOUBLE LINE SEPARATED BY 4" SPACE

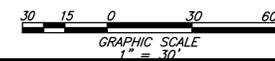
NOTES:

- ALL EXISTING SIGNS WITHIN THE PROJECT LIMITS ARE TO BE REMOVED.
- SEE SHEET C310 FOR FIRE LANE AND FIRE SIGNAGE.

SITE KEY



THIS SHEET IS FOR PAVEMENT STRIPING AND MARKING PURPOSES ONLY!



APPROVED
DEVELOPMENT SITE PLAN NO. 2020-00031
DEPARTMENT OF PLANNING & ZONING

DIRECTOR _____ DATE _____
DEPT. OF TRANSPORTATION & ENVIRONMENTAL SERVICES
SITE PLAN No. _____

DIRECTOR _____ DATE _____

CHAIRMAN, PLANNING COMMISSION _____ DATE _____

DATE RECORDED _____

INSTRUMENT NO. _____ DEED BOOK NO. _____ PAGE NO. _____

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phone 703.273.6820 · fax 703.273.6820

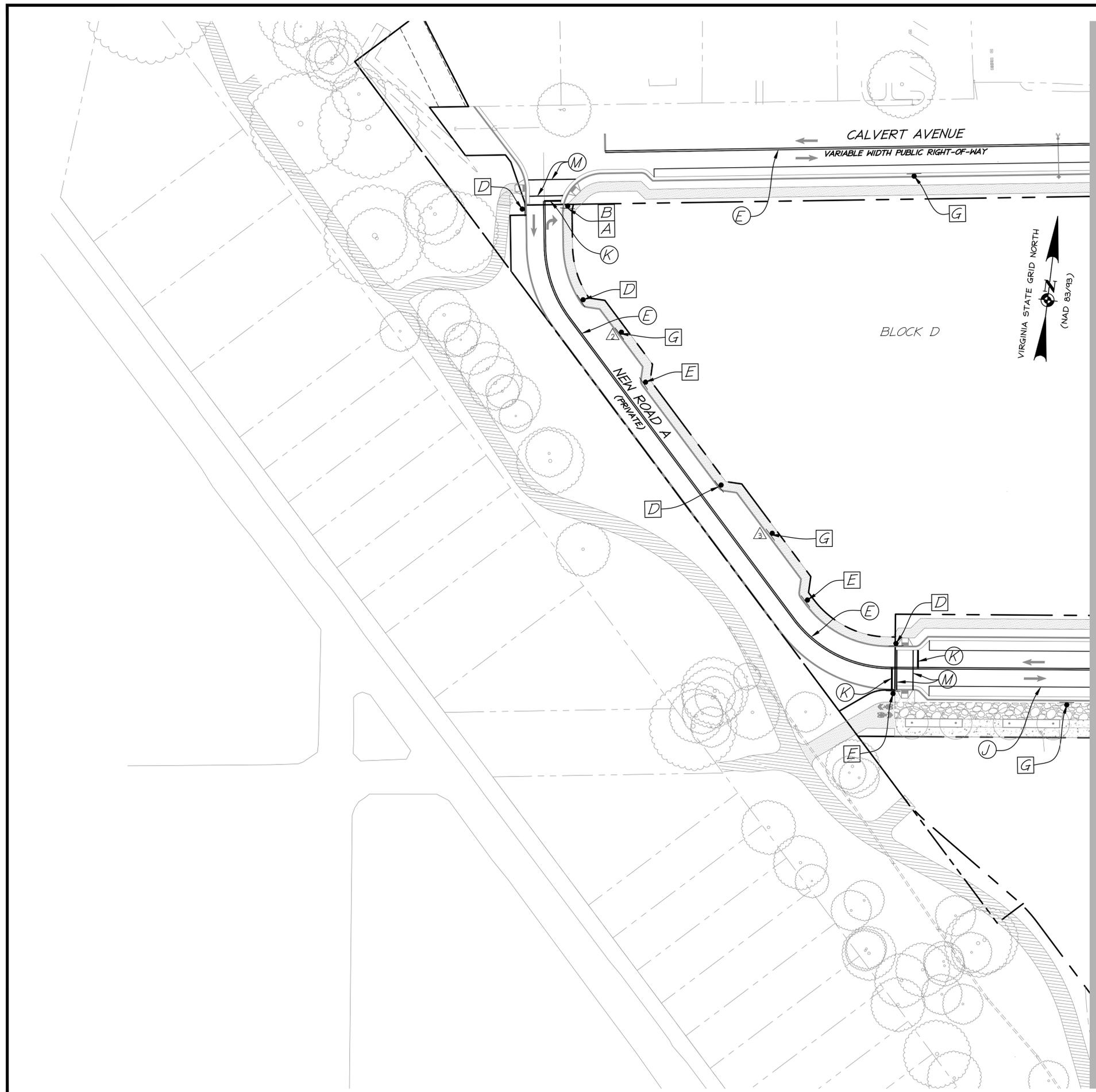
COMMONWEALTH OF VIRGINIA
ELI GOLDMAN
Lic. No. 55868
12/04/2020
PROFESSIONAL ENGINEER

STRIPING AND SIGNAGE

OAKVILLE INFRASTRUCTURE DEVELOPMENT SITE PLAN
CITY OF ALEXANDRIA, VIRGINIA

PROJECT NO: H007.011.00
SCALE: NONE
DATE: 07-29-20
DESIGN: EG
DRAWN: JS
CHECKED: KTW
SHEET No.
C900
110164

P:\P\Projects\14007\01100\110164 Infra Prelim DSUP\C900 STRIPING AND SIGNAGE.dwg, 12/3/2020 11:48:40 PM, AutoCAD PDF (General Documentation).pc3



SIGN LEGEND

| | | |
|--------|-----------------|-----------------------------|
| SIGN | A | B |
| SYMBOL | | CENTER ST. NAME ON SIGN |
| SIGN | RI-1 24"x24" | 30"(MIN)X9" |

| DATE | REVISION |
|----------|-------------------------|
| 9-4-20 | DSUP SUBMISSION #1 |
| 10-20-20 | DSUP SUBMISSION #2 |
| 11-3-20 | DSUP SUBMISSION #3 |
| 12-04-20 | VERIFICATION SUBMISSION |

SIGN LEGEND

| | | | | | |
|--------|-------------------|------------------|------------------|------------------|-------------------|
| SIGN | C | D | E | F | G |
| SYMBOL | | | | | |
| SIGN | W11-15 24"x24" | R7-1L 18"x24" | R7-1R 18"x24" | R7-1D 18"x24" | R7-10B 12"x18" |

SIGNING & PAVEMENT MARKING NOTES:

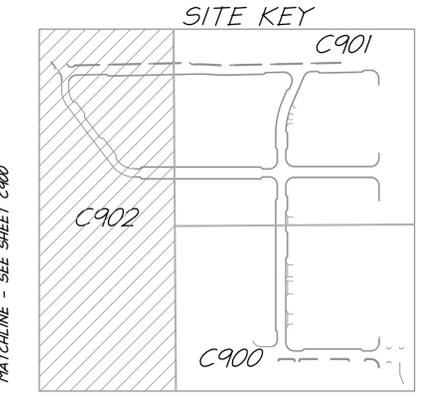
PROPOSED SIGN LOCATIONS ARE APPROXIMATE AND SHALL BE MODIFIED IN THE FIELD TO AVOID CONFLICT WITH THE UNDERGROUND UTILITIES OR OTHER OBSTRUCTIONS AND TO COMPLY WITH STANDARDS REFERENCED IN NOTE 1. FOR COLOR COMBINATION AND/OR LETTERING SIZE, REFER TO THE VIRGINIA SUPPLEMENT TO THE MUTCD.

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PAVEMENT MARKING LEGEND

- (J) TYPE B, CLASS 1, WHITE, 4" WIDTH
- (K) TYPE B, CLASS 1, WHITE, 12" WIDTH
- (M) TYPE B, CLASS 1, WHITE, 6" WIDTH
- (D) TYPE B, CLASS 1, SINGLE BROKEN WHITE, 4" WIDTH
- (E) TYPE B, CLASS 1, YELLOW, 4" WIDTH DOUBLE LINE SEPARATED BY 4" SPACE

- NOTES:**
- ALL EXISTING SIGNS WITHIN THE PROJECT LIMITS ARE TO BE REMOVED.
 - SEE SHEET C310 FOR FIRE LANE AND FIRE SIGNAGE.



APPROVED
 DEVELOPMENT SITE PLAN NO. 2020-00031
 DEPARTMENT OF PLANNING & ZONING

DIRECTOR _____ DATE _____
 DEPT. OF TRANSPORTATION & ENVIRONMENTAL SERVICES
 SITE PLAN No. _____

DIRECTOR _____ DATE _____

CHAIRMAN, PLANNING COMMISSION _____ DATE _____
 DATE RECORDED _____

INSTRUMENT NO. _____ DEED BOOK NO. _____ PAGE NO. _____

THIS SHEET IS FOR PAVEMENT STRIPING AND MARKING PURPOSES ONLY!

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 ELI GOLDMAN
 Lic. No. 55868
 12/04/2020
 PROFESSIONAL ENGINEER

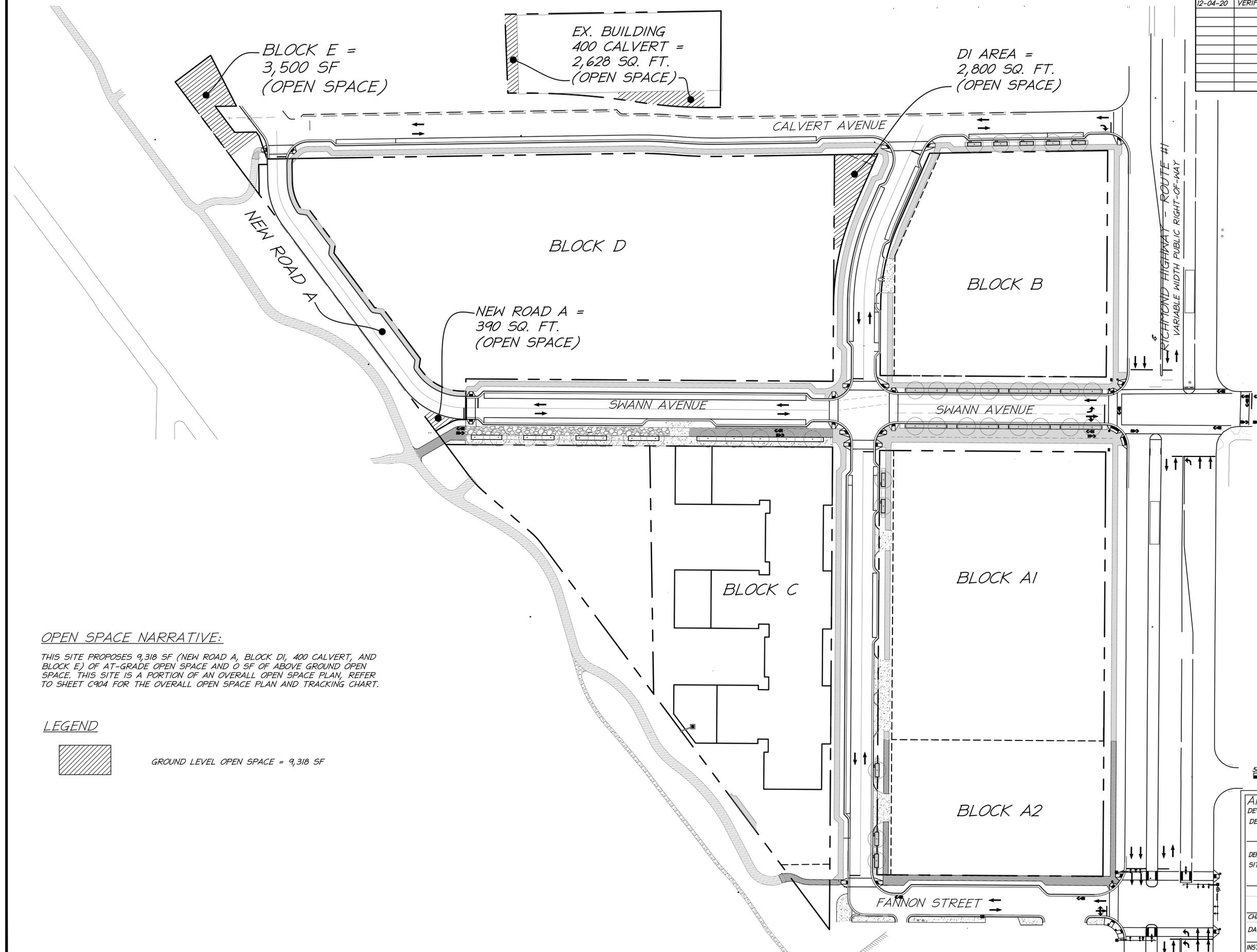
STRIPING AND SIGNAGE

OAKVILLE INFRASTRUCTURE FINAL SITE PLAN
 CITY OF ALEXANDRIA, VIRGINIA

PROJECT NO: 14007.011.00
 SCALE: 1" = 30'
 DATE: 02-17-2016
 DESIGN: EG
 DRAWN: JS
 CHECKED: EG/JLH
 SHEET No. **C902**
 103696

FOR INFORMATIONAL PURPOSES ONLY

| DATE | REVISION |
|----------|-------------------------|
| 9-4-20 | DSUP SUBMISSION #1 |
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| 11-3-20 | DSUP SUBMISSION #3 |
| 12-04-20 | VERIFICATION SUBMISSION |
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OPEN SPACE NARRATIVE:

THIS SITE PROPOSES 9,318 SF (NEW ROAD A, BLOCK DI, 400 CALVERT, AND BLOCK E) OF AT-GRADE OPEN SPACE AND 0 SF OF ABOVE GROUND OPEN SPACE. THIS SITE IS A PORTION OF AN OVERALL OPEN SPACE PLAN, REFER TO SHEET C904 FOR THE OVERALL OPEN SPACE PLAN AND TRACKING CHART.

LEGEND



GROUND LEVEL OPEN SPACE = 9,318 SF



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

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COMMONWEALTH OF VIRGINIA
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12/04/2020
PROFESSIONAL ENGINEER

OPEN SPACE PLAN

OAKVILLE INFRASTRUCTURE
DEVELOPMENT SITE PLAN
CITY OF ALEXANDRIA, VIRGINIA

PROJECT NO: H007.011.00
SCALE: NONE
DATE: 09-04-20
DESIGN: EG
DRAWN: JS
CHECKED: KJW
SHEET No.
C903

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| 9-4-20 | DSUP SUBMISSION #1 |
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| 11-3-20 | DSUP SUBMISSION #3 |
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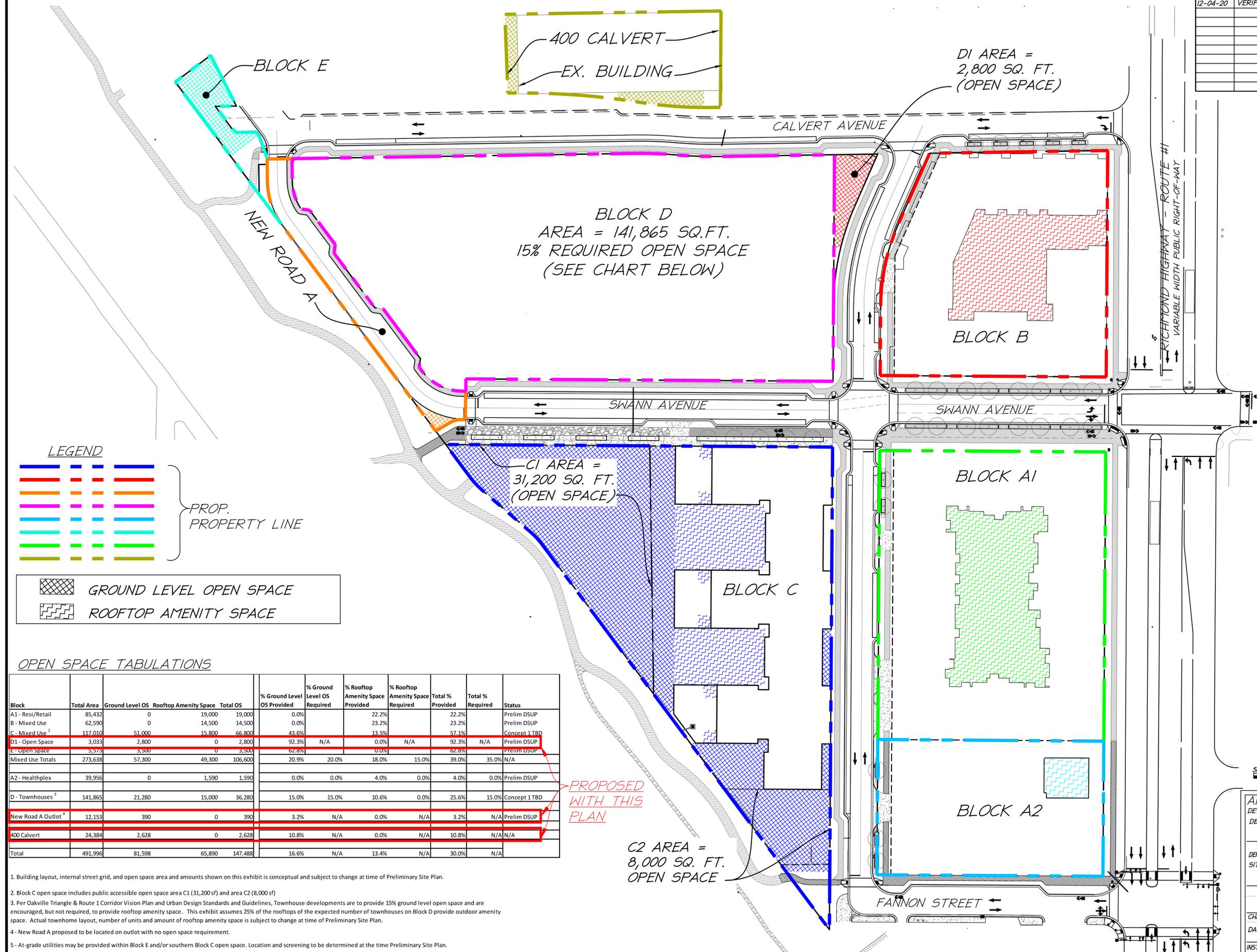


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 Lic. No. 55868
 12/04/2020
 PROFESSIONAL ENGINEER

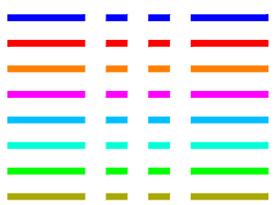
OVERALL OPEN SPACE PLAN

OAKVILLE INFRASTRUCTURE DEVELOPMENT SITE PLAN
 CITY OF ALEXANDRIA, VIRGINIA

PROJECT NO: 14007.011.00
 SCALE: NONE
 DATE: 09-04-20
 DESIGN: EG
 DRAWN: JS
 CHECKED: K/M
 SHEET NO.
C904
 110164



LEGEND

 PROP. PROPERTY LINE
 GROUND LEVEL OPEN SPACE
 ROOFTOP AMENITY SPACE

OPEN SPACE TABULATIONS

| Block | Total Area | Ground Level OS | Rooftop Amenity Space | Total OS | % Ground Level OS Provided | % Ground Level OS Required | % Rooftop Amenity Space Provided | % Rooftop Amenity Space Required | Total % Provided | Total % Required | Status |
|--------------------------------|------------|-----------------|-----------------------|----------|----------------------------|----------------------------|----------------------------------|----------------------------------|------------------|------------------|---------------|
| A1 - Resi/Retail | 85,432 | 0 | 19,000 | 19,000 | 0.0% | 0.0% | 22.2% | 22.2% | 22.2% | 23.2% | Prelim DSUP |
| B - Mixed Use | 62,590 | 0 | 14,500 | 14,500 | 0.0% | 0.0% | 23.2% | 23.2% | 23.2% | 23.2% | Prelim DSUP |
| C - Mixed Use ² | 117,010 | 51,000 | 15,800 | 66,800 | 43.6% | 13.5% | 57.1% | 57.1% | 57.1% | 57.1% | Concept 1 TBD |
| D1 - Open Space | 3,033 | 2,800 | 0 | 2,800 | 92.3% | N/A | 0.0% | 0.0% | 92.3% | N/A | Prelim DSUP |
| D2 - Open Space | 5,573 | 4,500 | 0 | 4,500 | 80.8% | N/A | 0.0% | 0.0% | 80.8% | N/A | Prelim DSUP |
| Mixed Use Totals | 273,638 | 57,300 | 49,300 | 106,600 | 20.9% | 20.0% | 18.0% | 15.0% | 39.0% | 35.0% | N/A |
| A2 - Healthplex | 39,956 | 0 | 1,590 | 1,590 | 0.0% | 0.0% | 4.0% | 0.0% | 4.0% | 0.0% | Prelim DSUP |
| D - Townhouses ³ | 141,865 | 21,280 | 15,000 | 36,280 | 15.0% | 15.0% | 10.6% | 0.0% | 25.6% | 15.0% | Concept 1 TBD |
| New Road A Outlot ⁴ | 12,153 | 390 | 0 | 390 | 3.2% | N/A | 0.0% | N/A | 3.2% | N/A | Prelim DSUP |
| 400 Calvert | 24,384 | 2,628 | 0 | 2,628 | 10.8% | N/A | 0.0% | N/A | 10.8% | N/A | N/A |
| Total | 491,996 | 81,598 | 65,890 | 147,488 | 16.6% | N/A | 13.4% | N/A | 30.0% | N/A | N/A |

1. Building layout, internal street grid, and open space area and amounts shown on this exhibit is conceptual and subject to change at time of Preliminary Site Plan.
 2. Block C open space includes public accessible open space area C1 (31,200 sf) and area C2 (8,000 sf)
 3. Per Oakville Triangle & Route 1 Corridor Vision Plan and Urban Design Standards and Guidelines, Townhouse developments are to provide 15% ground level open space and are encouraged, but not required, to provide rooftop amenity space. This exhibit assumes 25% of the rooftops of the expected number of townhouses on Block D provide outdoor amenity space. Actual townhome layout, number of units and amount of rooftop amenity space is subject to change at time of Preliminary Site Plan.
 4 - New Road A proposed to be located on outlot with no open space requirement.
 5 - At-grade utilities may be provided within Block E and/or southern Block C open space. Location and screening to be determined at the time Preliminary Site Plan.

PROPOSED WITH THIS PLAN

C2 AREA = 8,000 SQ. FT. OPEN SPACE



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 DEPARTMENT OF PLANNING & ZONING

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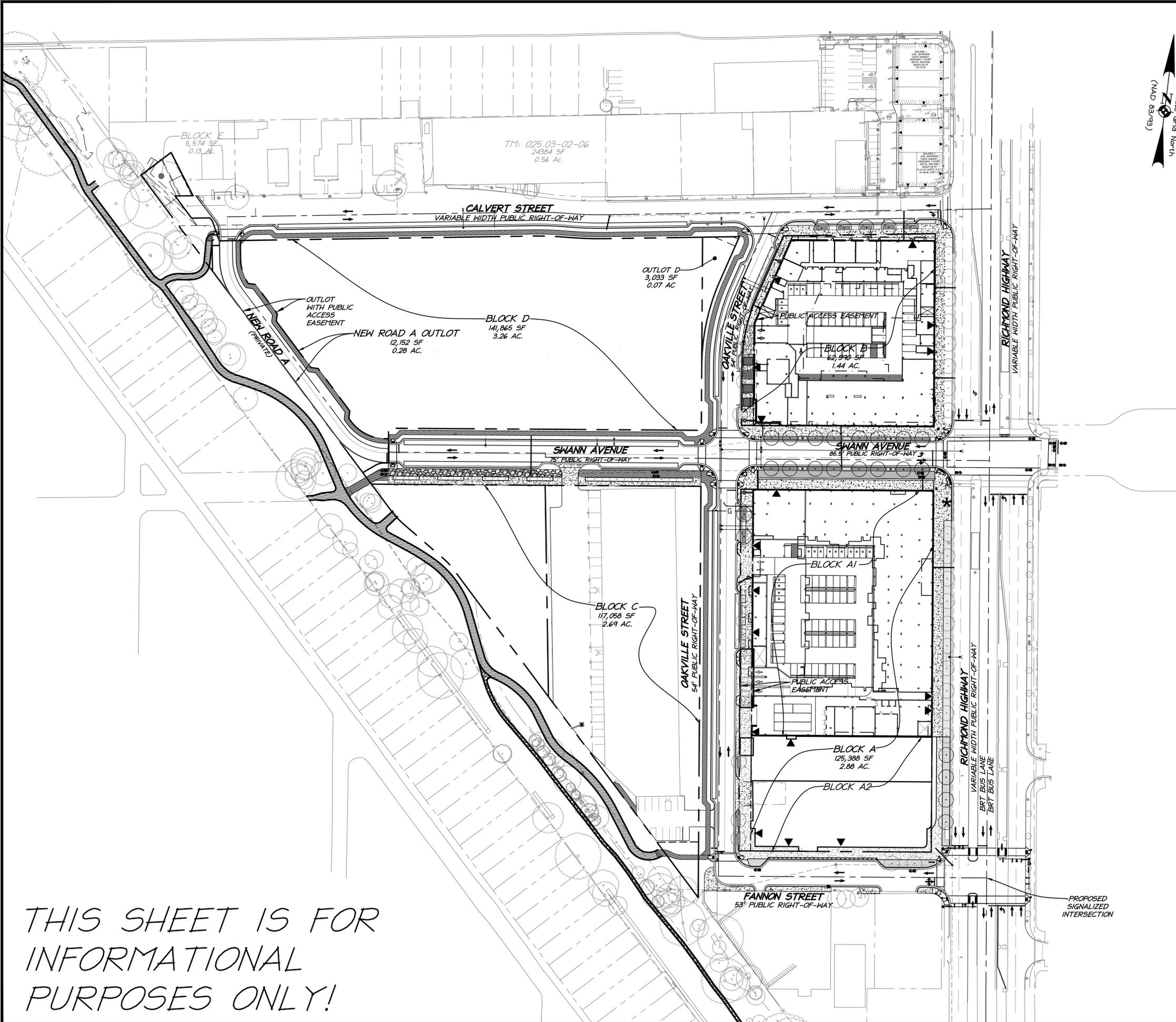
SITE PLAN No. _____

DIRECTOR _____ DATE _____

CHAIRMAN, PLANNING COMMISSION _____ DATE _____

DATE RECORDED _____

INSTRUMENT NO. _____ DEED BOOK NO. _____ PAGE NO. _____



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| 10-20-20 | DSUP SUBMISSION #2 |
| 11-3-20 | DSUP SUBMISSION #3 |
| 12-04-20 | VERIFICATION SUBMISSION |
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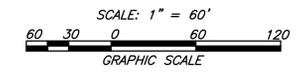
christopher consultants
 9900 main street (suite 400) · Fairfax, VA 22031
 phone 703.273.6820 · fax 703.273.6820



**OVERALL PHASE I
 DEVELOPMENT PLAN**

LEGEND

- CURB AND GUTTER
- HEADER CURB
- - - CENTERLINE OF STREET
- - - PROPERTY BOUNDARY



| | |
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| APPROVED | |
| DEVELOPMENT SITE PLAN NO. 2020-00031 | |
| DEPARTMENT OF PLANNING & ZONING | |
| DIRECTOR | DATE |
| DEPT. OF TRANSPORTATION & ENVIRONMENTAL SERVICES | |
| SITE PLAN No. _____ | |
| DIRECTOR | DATE |
| CHAIRMAN, PLANNING COMMISSION | |
| DATE RECORDED _____ | |
| INSTRUMENT NO. | DEED BOOK NO. |
| | PAGE NO. |

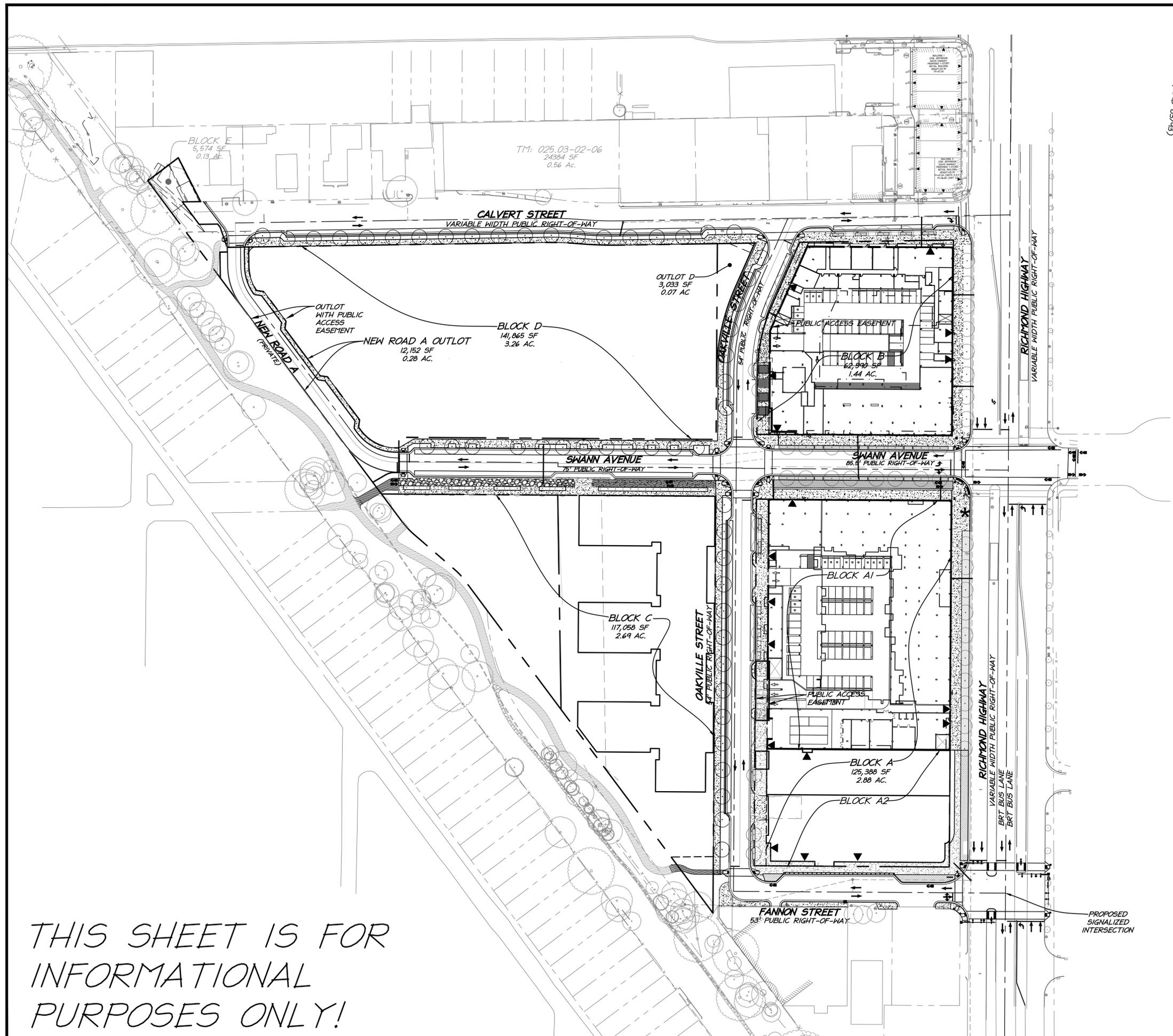
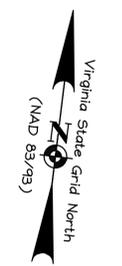
**OAKVILLE INFRASTRUCTURE
 DEVELOPMENT SITE PLAN**
 CITY OF ALEXANDRIA, VIRGINIA

| |
|--------------------------|
| PROJECT NO: 14007.011.00 |
| SCALE: 1"=30' |
| DATE: 09-04-20 |
| DESIGN: EG |
| DRAWN: JS |
| CHECKED: KJW |
| SHEET No. |
| C905 |

*THIS SHEET IS FOR
 INFORMATIONAL
 PURPOSES ONLY!*

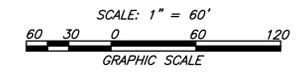
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| DATE | REVISION |
|----------|-------------------------|
| 9-4-20 | DSUP SUBMISSION #1 |
| 10-20-20 | DSUP SUBMISSION #2 |
| 11-3-20 | DSUP SUBMISSION #3 |
| 12-04-20 | VERIFICATION SUBMISSION |
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| | |



LEGEND

- CURB AND GUTTER
- HEADER CURB
- - - CENTERLINE OF STREET
- - - PROPERTY BOUNDARY



| | |
|--|---------------|
| APPROVED | |
| DEVELOPMENT SITE PLAN NO. 2020-00031 | |
| DEPARTMENT OF PLANNING & ZONING | |
| DIRECTOR | DATE |
| DEPT. OF TRANSPORTATION & ENVIRONMENTAL SERVICES | |
| SITE PLAN No. _____ | |
| DIRECTOR | DATE |
| CHAIRMAN, PLANNING COMMISSION | |
| DATE RECORDED _____ | |
| INSTRUMENT NO. | DEED BOOK NO. |
| | PAGE NO. |

THIS SHEET IS FOR INFORMATIONAL PURPOSES ONLY!

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

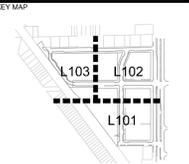
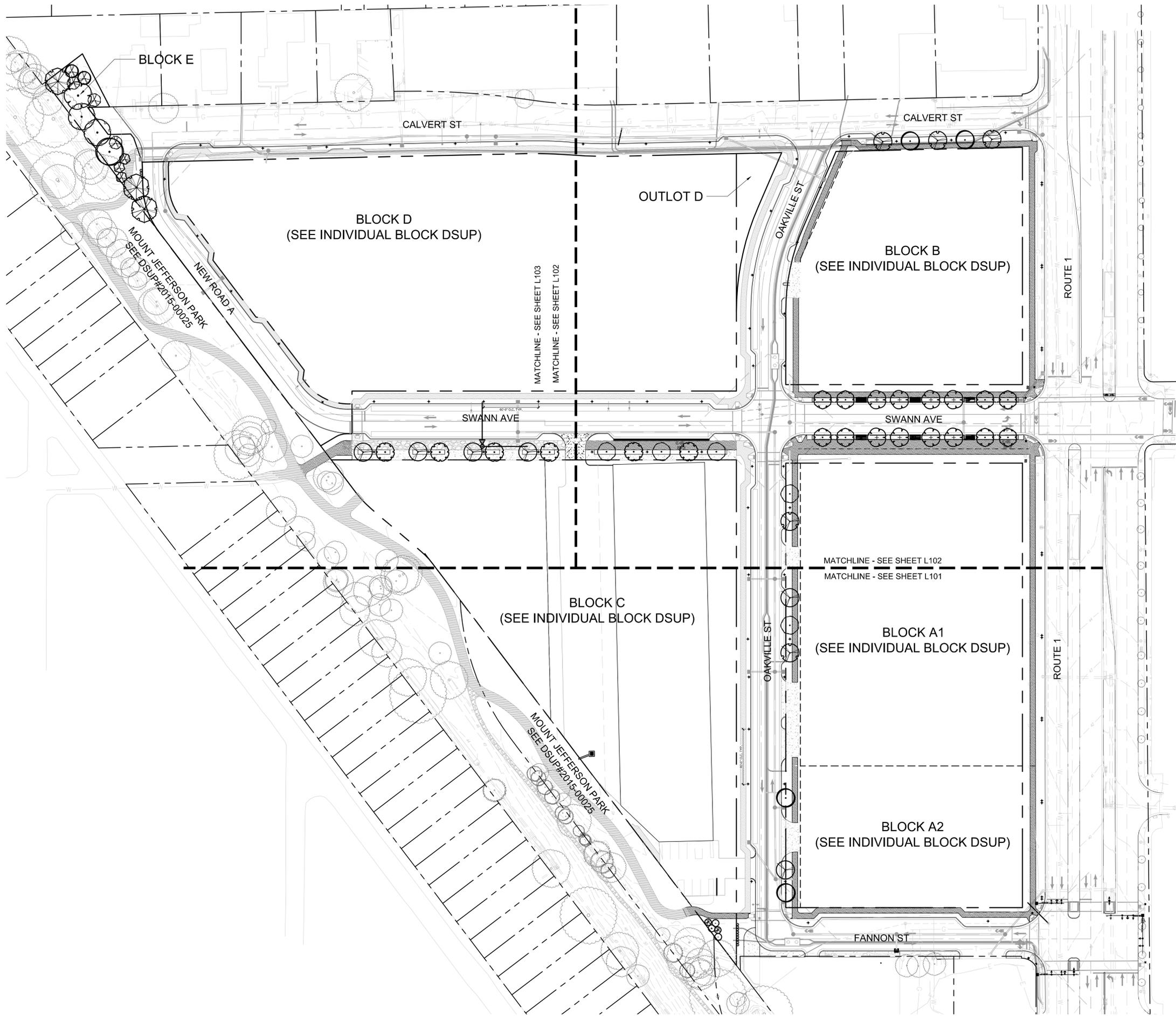


OVERALL ULTIMATE DEVELOPMENT PLAN

OAKVILLE INFRASTRUCTURE DEVELOPMENT SITE PLAN
 CITY OF ALEXANDRIA, VIRGINIA

PROJECT NO: H007.011.00
 SCALE: 1"=30'
 DATE: 09-04-20
 DESIGN: EG
 DRAWN: JS
 CHECKED: K1W
 SHEET No.
C906
 110164

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SCALE

NOT FOR CONSTRUCTION



PROJECT

OAKVILLE INFRASTRUCTURE PLAN

LANDDESIGN PROJ.# 2020014

REVISION / ISSUANCE

| NO. | DESCRIPTION | DATE |
|-----|-------------------------|------------|
| | CONCEPT II SUBMISSION | 07-17-2020 |
| | PRELIM DSUP SUBMISSION | 09-04-2020 |
| | DSUP SUBMISSION #1 | 10-20-2020 |
| | VERIFICATION SUBMISSION | 12-04-2020 |

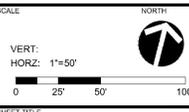
NOTES:
1. THIS SHEET FOR REFERENCE ONLY. SEE ENLARGEMENTS.

APPROVED
SPECIAL USE PERMIT NO. DSUP2020-10029
DEPARTMENT OF PLANNING & ZONING

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

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

DESIGNED BY:
DRAWN BY:
CHECKED BY:

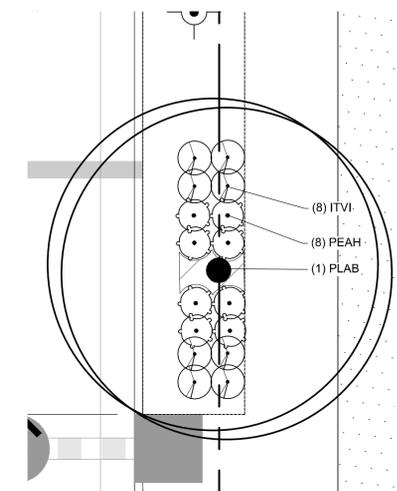
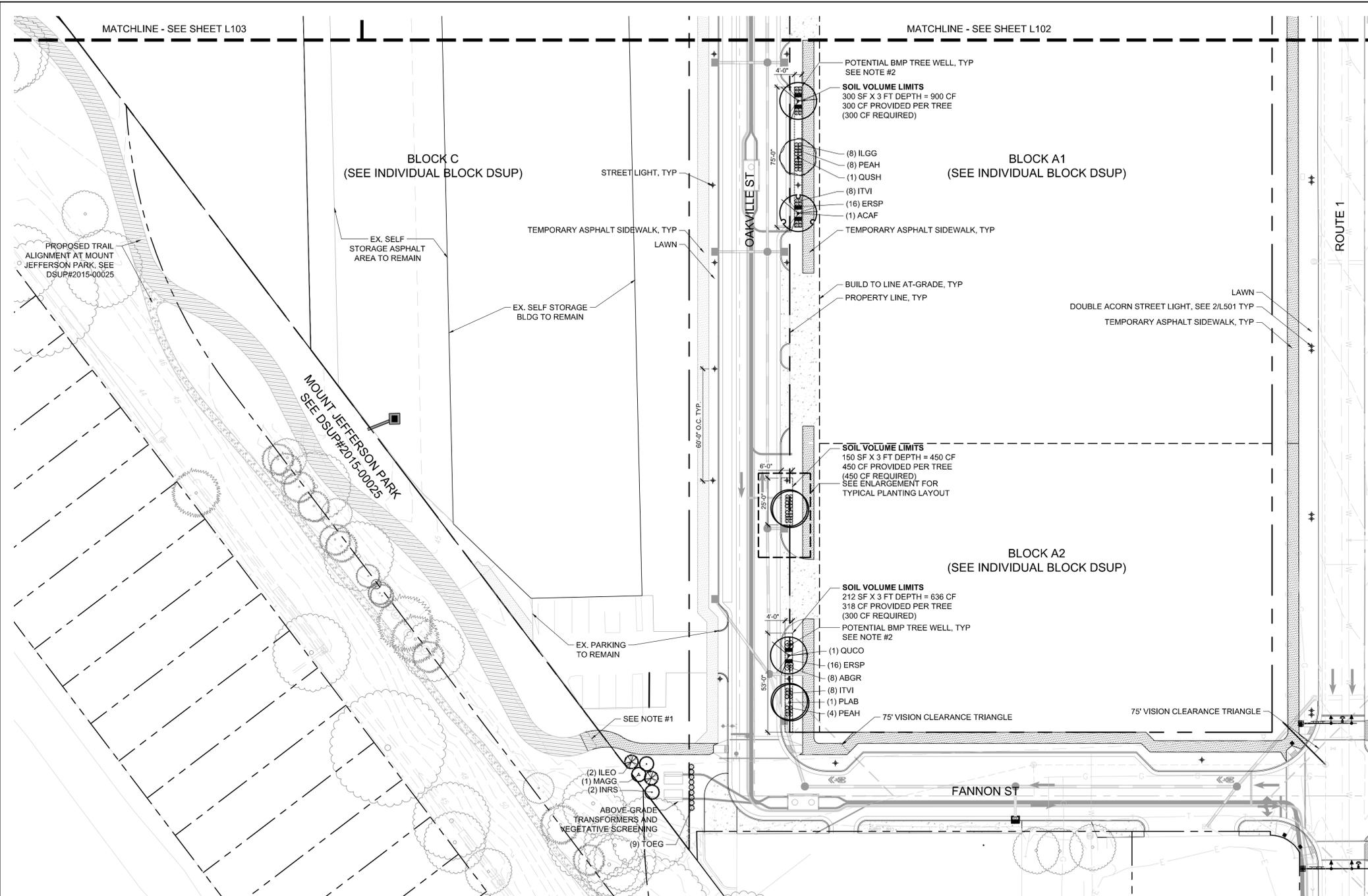


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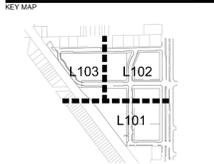
REFERENCE PLAN

SHEET NUMBER

L001



A
L101 TYPICAL BMP TREE WELL PLANTING PLAN
PLAN 1" = 5'



NOT FOR CONSTRUCTION



OAKVILLE INFRASTRUCTURE PLAN
STONEBRIDGE
CITY OF ALEXANDRIA, VA

LANDDESIGN PROJ.# 2020014

REVISION / ISSUANCE

| NO. | DESCRIPTION | DATE |
|-----|-------------------------|------------|
| | CONCEPT II SUBMISSION | 07-17-2020 |
| | PRELIM DSUP SUBMISSION | 09-04-2020 |
| | DSUP SUBMISSION #2 | 10-20-2020 |
| | VERIFICATION SUBMISSION | 12-04-2020 |

- NOTES:
- POTENTIAL TRAIL CONNECTIONS TO MOUNT JEFFERSON PARK TO BE COORDINATED WITH BLOCK C DSUP SUBMISSION AND MOUNT JEFFERSON PARK DSUP#2015-00025 AMENDMENT PLANS.
 - BMP TREE WELL LOCATIONS ARE SUBJECT TO CHANGE WITH THE BMP MASTER PLAN BY CIVIL ENGINEER AT TIME OF PRELIMINARY PLAN.
 - SEE CIVIL ENGINEERING PLANS FOR ULTIMATE BUILD-OUT CONDITION.
 - ALL PLANTING AREAS TO BE HAND-WATERED.
 - STREET LIGHT LOCATIONS ARE PRELIMINARY AND SUBJECT TO CHANGE WITH FINAL ENGINEERING AND PHOTOMETRICS.

APPROVED
SPECIAL USE PERMIT NO. DSUP2020-10029

DEPARTMENT OF PLANNING & ZONING

DIRECTOR DATE

DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES

SITE PLAN NO. _____

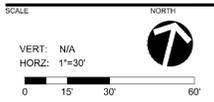
DIRECTOR DATE

CHAIRMAN, PLANNING COMMISSION DATE

DATE RECORDED _____

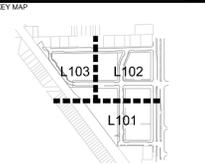
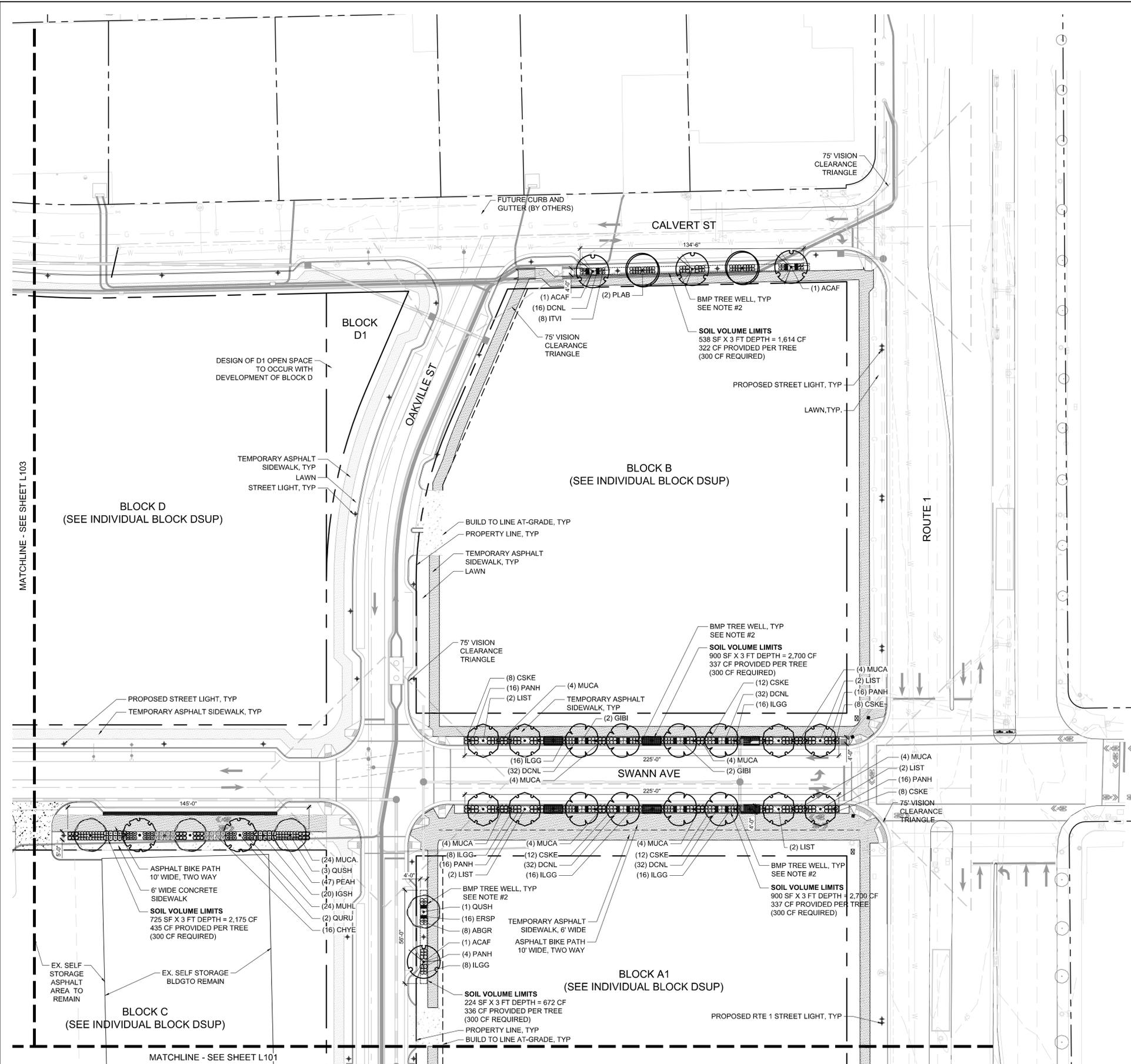
INSTRUMENT NO. _____ DEED BOOK NO. _____ DATE _____

DESIGNED BY:
DRAWN BY:
CHECKED BY:



SHEET TITLE
MATERIALS AND LANDSCAPE PLAN

SHEET NUMBER
L101



SCALE

NOT FOR CONSTRUCTION



PROJECT

OAKVILLE INFRASTRUCTURE PLAN

LANDDESIGN PROJ# 2020014

REVISION / ISSUANCE

| NO. | DESCRIPTION | DATE |
|-----|-------------------------|------------|
| 1 | CONCEPT II SUBMISSION | 07-17-2020 |
| 2 | PRELIM DSUP SUBMISSION | 09-04-2020 |
| 3 | DSUP SUBMISSION #2 | 10-20-2020 |
| 4 | VERIFICATION SUBMISSION | 12-04-2020 |

- NOTES:**
- POTENTIAL TRAIL CONNECTIONS TO MOUNT JEFFERSON PARK TO BE COORDINATED WITH BLOCK C DSUP SUBMISSION AND MOUNT JEFFERSON PARK DSUP#2015-00025 AMENDMENT PLANS.
 - BMP TREE WELL LOCATIONS ARE SUBJECT TO CHANGE WITH THE BMP MASTER PLAN BY CIVIL ENGINEER AT TIME OF PRELIMINARY PLAN.
 - SEE CIVIL ENGINEERING PLANS FOR ULTIMATE BUILD-OUT CONDITION.
 - STREET LIGHT LOCATIONS ARE PRELIMINARY AND SUBJECT TO CHANGE WITH FINAL ENGINEERING AND PHOTOMETRICS.
 - ALL PLANTING AREAS TO BE HAND-WATERED.

APPROVED
SPECIAL USE PERMIT NO. DSUP2020-10029

DEPARTMENT OF PLANNING & ZONING

DIRECTOR DATE

DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES

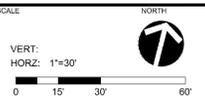
SITE PLAN NO. DIRECTOR DATE

CHAIRMAN, PLANNING COMMISSION DATE

DATE RECORDED

INSTRUMENT NO. DEED BOOK NO. DATE

DESIGNED BY:
DRAWN BY:
CHECKED BY:



MATERIALS AND LANDSCAPE PLAN

SHEET NUMBER

INFRASTRUCTURE PLAN - PLANT SCHEDULE

| DECIDUOUS TREES | | | | | | | |
|--------------------|-----|--|--------------------|-----------------|-----------|---|----------|
| CODE | QTY | BOTANICAL / COMMON NAME | CONTAINER | CAL | HT. | REMARKS | |
| ACER | 3 | ACER RUBRUM / RED MAPLE | B & B | 2"-2.5" | 12'-14' | CCA: 1250 SF. | |
| AMEG | 3 | AMELANCHIER X GRANDIFLORA 'AUTUMN BRILLIANCE' / 'AUTUMN BRILLIANCE' SERVICEBERRY | B & B | 1 1/4" - 1 1/2" | 6' - 7' | CCA: 500 SF | |
| CALA | 1 | CARYA LACINIOSA / SHELLBARK HICKORY | B & B | 2.5"-3" CAL | | LARGE SHADE TREE CCA: 1,250 SF | |
| CERC | 2 | CERCIS CANADENSIS / EASTERN REDBUD | B & B | 1 1/4" - 1 1/2" | 6' - 7' | CCA: 500 SF. | |
| CFCP | 3 | CORNUS FLORIDA 'CHEROKEE PRINCESS' / CHEROKEE PRINCESS DOGWOOD | B & B | 1 1/4" - 1 1/2" | 6' - 7' | CCA: 250 SF. | |
| FAGR | 1 | FAGUS GRANDIFOLIA / AMERICAN BEECH | B & B | 2.5"-3" CAL | | LARGE SHADE TREE CCA: 1,250 SF | |
| JUNI | 2 | JUGLANS NIGRA / BLACK WALNUT | B & B | 2.5"-3" CAL | | LARGE SHADE TREE CCA: 1,250 SF | |
| EVERGREEN TREES | | | | | | | |
| CODE | QTY | BOTANICAL / COMMON NAME | CONTAINER | CAL | HT. | REMARKS | |
| ILEO | 2 | ILEX OPACA / AMERICAN HOLLY | - | | 8'-10' | MIX MALES AND FEMALES, NATIVE | |
| INRS | 2 | ILEX X 'NELLIE R STEVENS' / NELLIE STEVENS HOLLY | B&B OR CONTAINER | | 6' - 7' | GROWS TO 15' - 20' HT. ON STRUCTURE; 125 SF. | |
| MAGG | 1 | MAGNOLIA GRANDIFLORA / SOUTHERN MAGNOLIA | - | | 8'-10' | | |
| TOEG | 11 | THUJA OCCIDENTALIS 'EMERALD GREEN' / EMERALD GREEN ARBORVITAE | 15 GAL | | 5' - 6' | CCA : 250 SF | |
| STREET TREES | | | | | | | |
| CODE | QTY | BOTANICAL / COMMON NAME | CONTAINER | CAL | HT. | REMARKS | |
| ACAF | 5 | ACER RUBRUM 'AUTUMN FLAME' / AUTUMN FLAME RED MAPLE | B & B | 2"-2.5" | 12'-14' | CCA: 0 SF. | |
| GIBI | 8 | GINKGO BILOBA 'AUTUMN GOLD' / AUTUMN GOLD GINKGO | B & B | 2"-2.5" | 12'-14' | CCA: 0 SF. | |
| LIST | 8 | LIQUIDAMBAR STYRACIFLUA 'ROTUNDILOBA' / AMERICAN SWEETGUM | B & B | 2"-2.5" | 12'-14' | CCA: 0 SF. | |
| PLAB | 4 | PLATANUS X ACERIFOLIA 'BLOODGOOD' / BLOODGOOD LONDON PLANE TREE | B & B | 2.5"-3" CAL | | CCA : N/A | |
| QUCO | 6 | QUERCUS COCCINEA / SCARLET OAK | B & B | 2.5"-3" CAL | | CCA : N/A | |
| QURU | 6 | QUERCUS RUBRA / RED OAK | B & B | 2.5"-3" CAL | | CCA : N/A | |
| QUSH | 5 | QUERCUS SHUMARDII / SHUMARDII OAK | B & B | 2"-2.5" | 12'-14' | CCA: 0 SF. | |
| EVERGREEN SHRUB | | | | | | | |
| CODE | QTY | BOTANICAL / COMMON NAME | SIZE | HEIGHT | SPREAD | REMARKS | |
| ABGR | 32 | ABELIA X GRANDIFLORA / GLOSSY ABELIA | CONTAINER | | 18" - 24" | NATIVE | |
| CHYE | 32 | CEPHALOTAXUS HARRINGTONIA 'PLANIA' TM / YEWTOPIA PLUM YEW | #3 | | 18" - 24" | CCA : 25 SF | |
| CHOB | 3 | CHAMAECYPARIS OBTUSA 'GRACILIS' / SLENDER HINOKI CYPRESS | B & B OR CONTAINER | 4' - 5' | | CCA : 50 SF | |
| ILGG | 136 | ILEX GLABRA 'NIGRA' / NIGRA INKBERRY HOLLY | CONTAINER | | 18" - 24" | NATIVE | |
| IGSH | 20 | ILEX GLABRA 'SHAMROCK' / SHAMROCK INKBERRY HOLLY | #3 | | 18" - 24" | REGIONALLY NATIVE CCA : 25 SF | |
| ORNAMENTAL GRASSES | | | | | | | |
| CODE | QTY | BOTANICAL / COMMON NAME | SIZE | HEIGHT | SPREAD | REMARKS | |
| DCNL | 160 | DESCHAMPSIA CESPITOSA 'NORTHERN LIGHTS' / NORTHERN LIGHTS TUFTED HAIR GRASS | 1 GAL | | | NORTH AMERICAN NATIVE | |
| ERSP | 64 | ERAGROSTIS SPECTABILIS / PURPLE LOVE GRASS | 1 GAL | | | LOCALLY NATIVE | |
| MUCA | 56 | MUHLENBERGIA CAPILLARIS 'REGAL MIST' / PINK MUHLYGRASS | 1 GAL | | | NORTH AMERICAN NATIVE | |
| MUHL | 72 | MUHLENBERGIA LINDHEIMERI 'LENI' / AUTUMN GLOW MUHLY GRASS | 1 GAL | | | NORTH AMERICAN NATIVE | |
| PANH | 72 | PANICUM VIRGATUM 'RUBY RIBBONS' / SWITCH GRASS | 1 GAL | | | NATIVE, CUT BACK TO 6" IN MARCH; ALTERNATE 'SHENANDOAH' | |
| PEAH | 107 | PENNISETUM ALOPECUROIDES 'HAMELN' / HAMELN DWARF FOUNTAIN GRASS | 1 GAL | | | GROWS 18-30", 2' O.C. ADAPTIVE | |
| DECIDUOUS SHRUB | | | | | | | |
| CODE | QTY | BOTANICAL / COMMON NAME | SIZE | HEIGHT | SPREAD | REMARKS | |
| CSKE | 80 | CORNUS SERICEA 'KELSEY' / KELSEY'S DWARF RED-OSIER DOGWOOD | CONTAINER | | 18" - 24" | NORTH AMERICAN NATIVE | |
| ITVI | 48 | ITEA VIRGINICA 'LITTLE HENRY' / VIRGINIA SWEETSPIRE | CONTAINER | | 18" - 24" | NATIVE | |
| GROUND COVERS | | | | | | | |
| CODE | QTY | BOTANICAL / COMMON NAME | SIZE | COLOR | BLOOMS | SPACING | REMARKS |
| CARB | 12 | CAREX BUCHANANII 'RED ROOSTER' / RED ROOSTER SEDGE | 1 GAL | | | 24" o.c. | ADAPTIVE |
| CARP | 348 | CAREX PENNSYLVANICA / PENNSYLVANIA SEDGE | 1 GALLON | GREEN | - | 9" o.c. | |
| CARS | 64 | CAREX STRICTA / TUSsock SEDGE | 1 QUART | | | 18" o.c. | NATIVE |
| JUEF | 44 | JUNCUS EFFUSUS / SOFT RUSH | 1 QUART | | | 18" o.c. | |

1. PLANT SPECIES SELECTIONS ARE PRELIMINARY AND MAY CHANGE WITH FINAL ENGINEERING.
2. TREE SPECIES LISTED AS "C.C.A. = N/A" ARE LOCATED WITHIN PUBLIC ROW, AND DO NOT COUNT TOWARD CROWN COVERAGE ALLOWANCE (C.C.A.) REQUIREMENTS.
3. ALL AREAS INCLUDED IN THE INFRASTRUCTURE SET ARE WITHIN PUBLIC ROW OR PUBLIC ACCESS EASEMENTS AND ARE NOT COUNTED TOWARDS OVERALL CROWN COVERAGE.

KEY MAP

SEAL

NOT FOR CONSTRUCTION



PROJECT

OAKVILLE INFRASTRUCTURE PLAN

LANDDESIGN PROJ# 2020014

REVISION / ISSUANCE

| NO. | DESCRIPTION | DATE |
|-----|-------------------------|------------|
| | CONCEPT II SUBMISSION | 07-17-2020 |
| | PRELIM DSUP SUBMISSION | 09-04-2020 |
| | DSUP SUBMISSION #2 | 10-20-2020 |
| | VERIFICATION SUBMISSION | 12-04-2020 |

DESIGNED BY:
DRAWN BY:
CHECKED BY:

SCALE: _____ NORTH

VERT: _____
HORZ: N/A

PLANTING SCHEDULE AND NOTES

SHEET NUMBER

APPROVED

SPECIAL USE PERMIT NO. DSUP2020-10029

DEPARTMENT OF PLANNING & ZONING

DIRECTOR

DATE

DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES

SITE PLAN NO. _____

DIRECTOR

DATE

CHAIRMAN, PLANNING COMMISSION

DATE

DATE RECORDED _____

INSTRUMENT NO. _____ DEED BOOK NO. _____ DATE _____

INFRASTRUCTURE - DSUP2020-10029

| DECIDUOUS TREES | QTY | BOTANICAL / COMMON NAME |
|-----------------|-----|--|
| ACFA | 3 | ACER RUBRUM / RED MAPLE |
| AMEG | 3 | AMELANCHIER X GRANDIFLORA 'AUTUMN BRILLIANCE' / 'AUTUMN BRILLIANCE' SERVICEBERRY |
| CALA | 1 | CARYA LACINIOSA / SHELLBARK HICKORY |
| CERC | 2 | CERCIS CANADENSIS / EASTERN REDBUD |
| CFOP | 3 | CORNUS FLORIDA 'CHEROKEE PRINCESS' / CHEROKEE PRINCESS DOGWOOD |
| FAGR | 1 | FAGUS GRANDIFOLIA / AMERICAN BEECH |
| JUNI | 2 | JUGLANS NIGRA / BLACK WALNUT |

| EVERGREEN TREES | QTY | BOTANICAL / COMMON NAME |
|-----------------|-----|---|
| ILEO | 2 | ILEX OPACA / AMERICAN HOLLY |
| INRS | 2 | ILEX X 'NELLIE R STEVENS' / 'NELLIE STEVENS HOLLY |
| MAGG | 1 | MAGNOLIA GRANDIFLORA / SOUTHERN MAGNOLIA |
| TOEG | 11 | THUJA OCCIDENTALIS 'EMERALD GREEN' / EMERALD GREEN ARBORVITAE |

| STREET TREES | QTY | BOTANICAL / COMMON NAME |
|--------------|-----|---|
| ACAF | 5 | ACER RUBRUM 'AUTUMN FLAME' / AUTUMN FLAME RED MAPLE |
| GIBI | 8 | GINKGO BILOBA 'AUTUMN GOLD' / AUTUMN GOLD GINKGO |
| LIST | 4 | LIQUIDAMBAR STYRACIFLUA 'ROTUNDILOBA' / AMERICAN SWEETGUM |
| PLAB | 4 | PLATANUS X ACERIFOLIA 'BLOODGOOD' / BLOODGOOD LONDON PLANE TREE |
| QUCO | 6 | QUERCUS COCCINEA / SCARLET OAK |
| QURU | 6 | QUERCUS RUBRA / RED OAK |
| QUSH | 5 | QUERCUS SHUMARDII / SHUMARDII OAK |

| EVERGREEN SHRUB | QTY | BOTANICAL / COMMON NAME |
|-----------------|-----|---|
| ABGR | 32 | ABELIA X GRANDIFLORA / GLOSSY ABELIA |
| CHYE | 32 | CEPHALOTAXUS HARRINGTONIA 'PLANIA' TM / YEWTOPIA PLUM YEW |
| CHOB | 3 | CHAMAECYPARIS OBTUSA 'GRACILIS' / SLENDER HINOKI CYPRESS |
| ILGG | 136 | ILEX GLABRA 'NIGRA' / NIGRA INKBERRY HOLLY |
| IGSH | 20 | ILEX GLABRA 'SHAMROCK' / SHAMROCK INKBERRY HOLLY |

| ORNAMENTAL GRASSES | QTY | BOTANICAL / COMMON NAME |
|--------------------|-----|---|
| DCNL | 160 | DESCHAMPSIA CESPITOSA 'NORTHERN LIGHTS' / NORTHERN LIGHTS TUFTED HAIR GRASS |
| ERSP | 64 | ERAGROSTIS SPECTABILIS / PURPLE LOVE GRASS |
| MUCA | 56 | MUHLENBERGIA CAPILLARIS 'REGAL MIST' / PINK MUHLYGRASS |
| MUHL | 72 | MUHLENBERGIA LINDHEIMERI 'LENI' / AUTUMN GLOW MUHLY GRASS |
| PANH | 72 | PANICUM VIRGATUM 'RUBY RIBBONS' / SWITCH GRASS |
| PEAH | 107 | PENNISETUM ALOPECUROIDES 'HAMELN' / HAMELN DWARF FOUNTAIN GRASS |

| DECIDUOUS SHRUB | QTY | BOTANICAL / COMMON NAME |
|-----------------|-----|--|
| CSKE | 80 | CORNUS SERICEA 'KELSEY' / KELSEY'S DWARF RED-OSIER DOGWOOD |
| ITVI | 48 | ITEA VIRGINICA 'LITTLE HENRY' / VIRGINIA SWEETSPICE |

| GROUND COVERS | QTY | BOTANICAL / COMMON NAME |
|---------------|-----|--|
| CARB | 12 | CAREX BUCHANANII 'RED ROOSTER' / RED ROOSTER SEDGE |
| CARP | 348 | CAREX PENNSYLVANICA / PENNSYLVANIA SEDGE |
| CARS | 64 | CAREX STRICTA / TUSSOCK SEDGE |
| JUEF | 44 | JUNCUS EFFUSUS / SOFT RUSH |

BLOCK A1 - DSUP2020-10028

| STREET TREES | QTY | BOTANICAL / COMMON NAME |
|--------------|-----|---|
| GTSH | 3 | GLEDITSIA TRIACANTHOS INERMIS 'SHADEMASTER' TM / SHADEMASTER LOCUST |
| GYMD | 2 | GYMNOCLADUS DIOICA 'EXPRESSO' / EXPRESSO KENTUCKY COFFEE TREE |
| QUEP | 2 | QUERCUS PHELLOS / WILLOW OAK |
| ULVF | 3 | ULMUS AMERICANA 'VALLEY FORGE' / AMERICAN ELM |

| SOD/SEED LAWN | QTY | BOTANICAL / COMMON NAME |
|---------------|----------|-------------------------|
| LAWN | 2,827 SF | LAWN / LAWN |

BLOCK B - DSUP2020-10030

| STREET TREES | QTY | BOTANICAL / COMMON NAME |
|--------------|-----|---|
| ACAF | 2 | ACER RUBRUM 'AUTUMN FLAME' / AUTUMN FLAME RED MAPLE |
| GTSH | 1 | GLEDITSIA TRIACANTHOS INERMIS 'SHADEMASTER' TM / SHADEMASTER LOCUST |
| LIST | 2 | LIQUIDAMBAR STYRACIFLUA 'ROTUNDILOBA' / AMERICAN SWEETGUM |
| QUEP | 4 | QUERCUS PHELLOS / WILLOW OAK |
| QUSH | 3 | QUERCUS SHUMARDII / SHUMARDII OAK |
| ULVF | 3 | ULMUS AMERICANA 'VALLEY FORGE' / AMERICAN ELM |

| DECIDUOUS SHRUB | QTY | BOTANICAL / COMMON NAME |
|-----------------|-----|--|
| CSFA | 7 | CORNUS SERICEA 'FARROW' TM / ARCTIC FIRE RED TWIG DOGWOOD |
| CSKE | 8 | CORNUS SERICEA 'KELSEY' / KELSEY'S DWARF RED-OSIER DOGWOOD |

| EVERGREEN SHRUB | QTY | BOTANICAL / COMMON NAME |
|-----------------|-----|---|
| DIVJ | 4 | DISTYLUM X 'VINTAGE JADE' / VINTAGE JADE DISTYLUM |
| SARU | 17 | SARCOCOCCA HUMILIS / SWEETBOX |

| ORNAMENTAL GRASSES | QTY | BOTANICAL / COMMON NAME |
|--------------------|-----|---|
| ERSP | 14 | ERAGROSTIS SPECTABILIS / PURPLE LOVE GRASS |
| PANH | 8 | PANICUM VIRGATUM 'RUBY RIBBONS' / SWITCH GRASS |
| PEAH | 13 | PENNISETUM ALOPECUROIDES 'HAMELN' / HAMELN DWARF FOUNTAIN GRASS |

| GROUND COVERS | QTY | BOTANICAL / COMMON NAME |
|---------------|-----|--|
| OPJN | 52 | OPHIPOGON JAPONICUS 'NANA' / DWARF MONDO GRASS |

| SOD/SEED LAWN | QTY | BOTANICAL / COMMON NAME |
|---------------|----------|-------------------------|
| LAWN | 2,463 SF | LAWN / LAWN |

BLOCK A2

| STREET TREES | QTY | BOTANICAL / COMMON NAME |
|--------------|-----|---|
| GIBI | 2 | GINKGO BILOBA 'AUTUMN GOLD' / AUTUMN GOLD GINKGO |
| GTSH | 2 | GLEDITSIA TRIACANTHOS INERMIS 'SHADEMASTER' TM / SHADEMASTER LOCUST |
| ULVF2 | 2 | ULMUS AMERICANA 'VALLEY FORGE' / AMERICAN ELM |

| DECIDUOUS SHRUB | QTY | BOTANICAL / COMMON NAME |
|-----------------|-----|--|
| CACO | 9 | CLETHRA ALNIFOLIA 'COMPACTA' / COMPACT SUMMERSWEET |
| CLAH | 6 | CLETHRA ALNIFOLIA 'HUMMINGBIRD' / SUMMERSWEET |
| FOTB | 3 | FOTHERGILLA GARDENII 'BLUE MIST' / BLUE MIST FOTHERGILLA |
| HYAR | 7 | HYDRANGEA ARBORESCENS 'ANNABELLE' / WILD HYDRANGEA |
| HPLI | 1 | HYDRANGEA PANICULATA 'LIMELIGHT' / LIMELIGHT HYDRANGEA |
| RAGL | 2 | RHUS AROMATICA 'GRO-LOW' / GRO-LOW FRAGRANT SUMAC |

| EVERGREEN SHRUB | QTY | BOTANICAL / COMMON NAME |
|-----------------|-----|---|
| DIVJ | 5 | DISTYLUM X 'VINTAGE JADE' / VINTAGE JADE DISTYLUM |
| ILGG | 5 | ILEX GLABRA 'NIGRA' / NIGRA INKBERRY HOLLY |
| ILSH | 3 | ILEX GLABRA 'SHAMROCK' / INKBERRY |

| ORNAMENTAL GRASSES | QTY | BOTANICAL / COMMON NAME |
|--------------------|-----|---|
| CAKF | 4 | CALAMAGROSTIS X ACUTIFLORA 'KARL FOERSTER' / FEATHER REED GRASS |
| MUHL | 22 | MUHLENBERGIA LINDHEIMERI 'LENI' / AUTUMN GLOW MUHLY GRASS |
| PANH | 17 | PANICUM VIRGATUM 'RUBY RIBBONS' / SWITCH GRASS |
| PEAH | 34 | PENNISETUM ALOPECUROIDES 'HAMELN' / HAMELN DWARF FOUNTAIN GRASS |

| GROUND COVERS | QTY | BOTANICAL / COMMON NAME |
|---------------|-----|--|
| CARB | 25 | CAREX BUCHANANII 'RED ROOSTER' / RED ROOSTER SEDGE |
| JUHH | 26 | JUNIPERUS HORIZONTALIS 'HUGHES' / HUGHES JUNIPER |

| SOD/SEED LAWN | QTY | BOTANICAL / COMMON NAME |
|---------------|----------|-------------------------|
| LAWN | 1,359 SF | LAWN / LAWN |

| BIODIVERSITY TABULATIONS - OAKVILLE RIGHT OF WAY PLANTING | | | | | | | |
|---|------------|---------------------------|-------------------------|-------------------------|------|---------------------------|-------------------------|
| TREES (URBAN AND STANDARD) | | | | | | | |
| TOTAL NUMBER OF TREES PROPOSED | | | | | | | |
| GENUS | QTY. | PERCENT OF TOTAL PROPOSED | MAXIMUM PERCENT ALLOWED | SPECIES | QTY. | PERCENT OF TOTAL PROPOSED | MAXIMUM PERCENT ALLOWED |
| Acer | 3 | 3% | 33% | rubrum | 3 | 3% | 10% |
| Amelanchier | 3 | 3% | 33% | grandiflora | 3 | 3% | 10% |
| Carya | 1 | 1% | 33% | laciniosa | 1 | 1% | 10% |
| Cercis | 2 | 2% | 33% | canadensis | 2 | 2% | 10% |
| Cornus | 3 | 3% | 33% | florida | 3 | 3% | 10% |
| Fagus | 1 | 1% | 33% | grandifolia | 1 | 1% | 10% |
| Juglans | 2 | 2% | 33% | nigra | 2 | 2% | 10% |
| Ilex | 2 | 2% | 33% | opaca | 2 | 2% | 10% |
| Ilex | 2 | 2% | 33% | X 'Nellie R Stevens' | 2 | 2% | 10% |
| Magnolia | 1 | 1% | 33% | grandifolia | 1 | 1% | 10% |
| Thuja | 11 | 11% | 33% | occidentalis | 11 | 11% | 10% |
| Acer | 7 | 7% | 33% | rubrum 'Autumn Flame' | 7 | 7% | 10% |
| Ginkgo | 10 | 10% | 33% | bilboa 'Autumn Gold' | 10 | 10% | 10% |
| Liquidambar | 10 | 10% | 33% | styraciflua | 10 | 10% | 10% |
| Platanus | 4 | 4% | 33% | acerifolia | 4 | 4% | 10% |
| Quercus | 6 | 6% | 33% | coccinea | 6 | 6% | 10% |
| Quercus | 6 | 6% | 33% | rubra | 6 | 6% | 10% |
| Quercus | 8 | 8% | 33% | shumardii | 8 | 8% | 10% |
| Gleditsia | 6 | 6% | 33% | triacanthos | 6 | 6% | 10% |
| Gymnocladus | 2 | 2% | 33% | dioica | 2 | 2% | 10% |
| Quercus | 6 | 6% | 33% | phellos | 6 | 6% | 10% |
| Ulmus | 8 | 8% | 33% | americana | 8 | 8% | 10% |
| TOTAL | 104 | | | | | | |
| SHRUBS | | | | | | | |
| TOTAL NUMBER OF SHRUBS PROPOSED: | | | | | | | |
| GENUS | QTY. | PERCENT OF TOTAL PROPOSED | MAXIMUM PERCENT ALLOWED | SPECIES | QTY. | PERCENT OF TOTAL PROPOSED | MAXIMUM PERCENT ALLOWED |
| Abelia | 32 | 7% | 33% | grandifolia | 32 | 7% | 10% |
| Cephalotaxus | 32 | 7% | 33% | harringtonia | 32 | 7% | 10% |
| Chamaecyparis | 3 | 1% | 33% | obtusata | 3 | 1% | 10% |
| Ilex | 141 | 33% | 33% | glabra 'Nigra' | 141 | 33% | 10% |
| Ilex | 23 | 5% | 33% | glabra 'Shamrock' | 23 | 5% | 10% |
| Cornus | 88 | 21% | 33% | sericea 'Kelsey' | 88 | 21% | 10% |
| Cornus | 7 | 2% | 33% | sericea 'Farrow' | 7 | 2% | 10% |
| Itea | 48 | 11% | 33% | cespitosa | 48 | 11% | 10% |
| Dystylium | 9 | 2% | 33% | x 'vintage jade' | 9 | 2% | 10% |
| Sarcococca | 17 | 4% | 33% | humilis | 17 | 4% | 10% |
| Clethra | 9 | 2% | 33% | alnifolia 'compacta' | 9 | 2% | 10% |
| Clethra | 6 | 1% | 33% | alnifolia 'hummingbird' | 6 | 1% | 10% |
| Fothergilla | 3 | 1% | 33% | gardenii | 3 | 1% | 10% |
| Hydrangea | 7 | 2% | 33% | arborescens | 7 | 2% | 10% |
| Hydrangea | 1 | 0% | 33% | paniculata 'limelight' | 1 | 0% | 10% |
| Rhus | 2 | 0% | 33% | aromatica | 2 | 0% | 10% |
| TOTAL | 428 | | | | | | |

| URBAN TREE TABULATIONS | | | | | |
|--------------------------|----------|---------------|-------------------------------------|--|--|
| PLAN KEY | QUANTITY | PLAN LOCATION | PROJECTED 20 YR. CANOPY* (PER TREE) | IMPERVIOUS AREA UNDER CANOPY* (PER TREE) | IMPERVIOUS AREA GREATER THAN 50% OF PROJECTED 20 YR. CANOPY? (Y/N) |
| ACAF | 7 | STREET TREE | 1,250 SF | 625 SF | Y |
| GIBI | 10 | STREET TREE | 1,250 SF | 625 SF | Y |
| LIST | 10 | STREET TREE | 1,250 SF | 625 SF | Y |
| PLAB | 4 | STREET TREE | 1,250 SF | 625 SF | Y |
| QUCO | 6 | STREET TREE | 1,250 SF | 625 SF | Y |
| QURU | 6 | STREET TREE | 1,250 SF | 625 SF | Y |
| QUSH | 8 | STREET TREE | 1,250 SF | 625 SF | Y |
| GTSH | 6 | STREET TREE | 1,250 SF | 625 SF | Y |
| GYMD | 2 | STREET TREE | 1,250 SF | 625 SF | Y |
| QUEP | 4 | STREET TREE | 1,250 SF | 625 SF | Y |
| ULVF | 6 | STREET TREE | 1,250 SF | 625 SF | Y |
| ULVF2 | 2 | STREET TREE | 1,250 SF | 625 SF | Y |
| TOTAL URBAN TREES | | | | | |
| | | | 71 | | |

KEY MAP

REAL

NOT FOR CONSTRUCTION



PROJECT

OAKVILLE INFRASTRUCTURE PLAN

LANDDESIGN PROJ# 2020014

REVISION / ISSUANCE

| NO. | DESCRIPTION | DATE |
|-----|-------------------------|------------|
| | CONCEPT II SUBMISSION | 07-17-2020 |
| | PRELIM DSUP SUBMISSION | 09-04-2020 |
| | DSUP SUBMISSION #2 | 10-20-2020 |
| | VERIFICATION SUBMISSION | 12-04-2020 |

DESIGNED BY:
DRAWN BY:
CHECKED BY:

SCALE: _____ NORTH

VERT: _____
HORZ: N/A

SHEET TITLE

SITEWIDE BIODIVERSITY TRACKING

SHEET NUMBER

L105

SHEET FOR INFORMATION AND TRACKING ONLY!

SHEET SHOWS TRACKING INFORMATION FOR BIODIVERSITY AND NATIVE REQUIREMENTS FOR PLANTINGS WITHIN IN THE RIGHT-OF-WAY, PUBLIC ACCESS EASEMENTS, AND PUBLICLY ACCESSIBLE OPEN SPACE. OAKVILLE SITE TO CUMULATIVELY MEET BIODIVERSITY STANDARDS FOR PLANTINGS IN THIS AREA, BUT MAY NOT MEET IT AT EVERY STAGE OF DEVELOPMENT.

BLOCKS WILL INDIVIDUALLY MEET BIODIVERSITY STANDARDS FOR PLANTING AREAS WITHIN THEIR RESPECTIVE PROPERTY LINES, TABULATIONS TO BE PROVIDED SEPERATELY.

THIS TRACKING SHEET TO BE UPDATED AS DSUPS FOR NEW BLOCKS ARE SUBMITTED.

APPROVED

SPECIAL USE PERMIT NO. DSUP2020-10029

DEPARTMENT OF PLANNING & ZONING

DIRECTOR _____ DATE _____

DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES

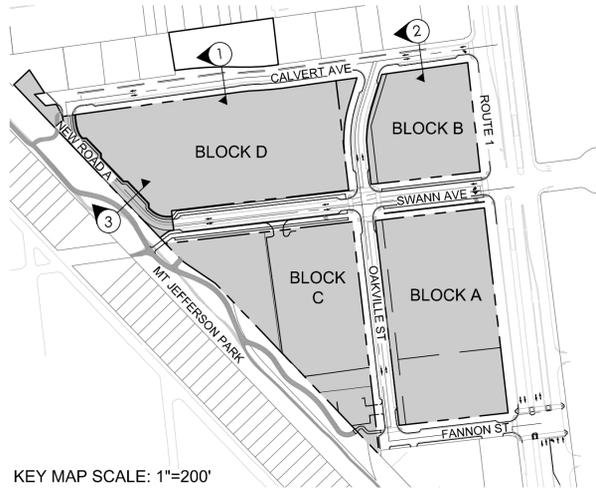
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DIRECTOR _____ DATE _____

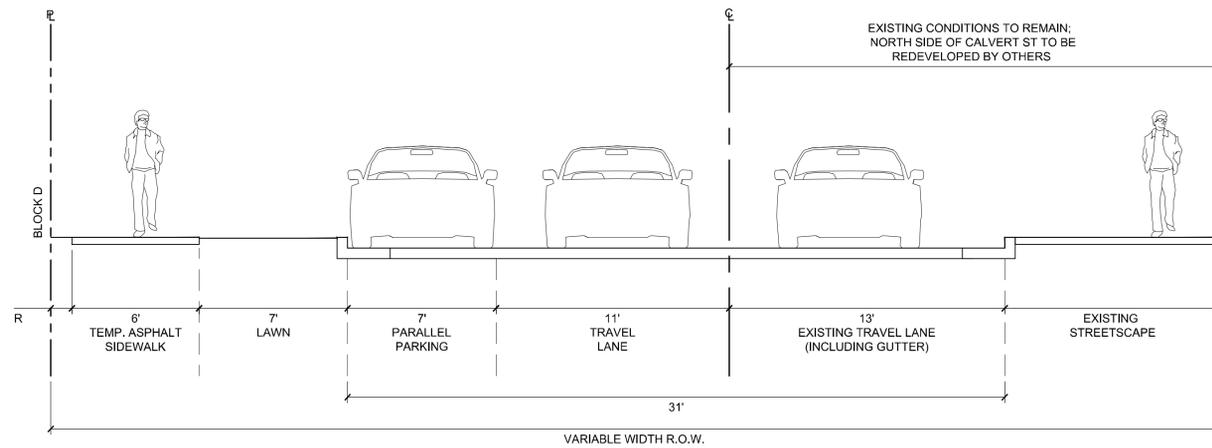
CHAIRMAN, PLANNING COMMISSION _____ DATE _____

DATE RECORDED _____

INSTRUMENT NO. _____ DEED BOOK NO. _____ DATE _____

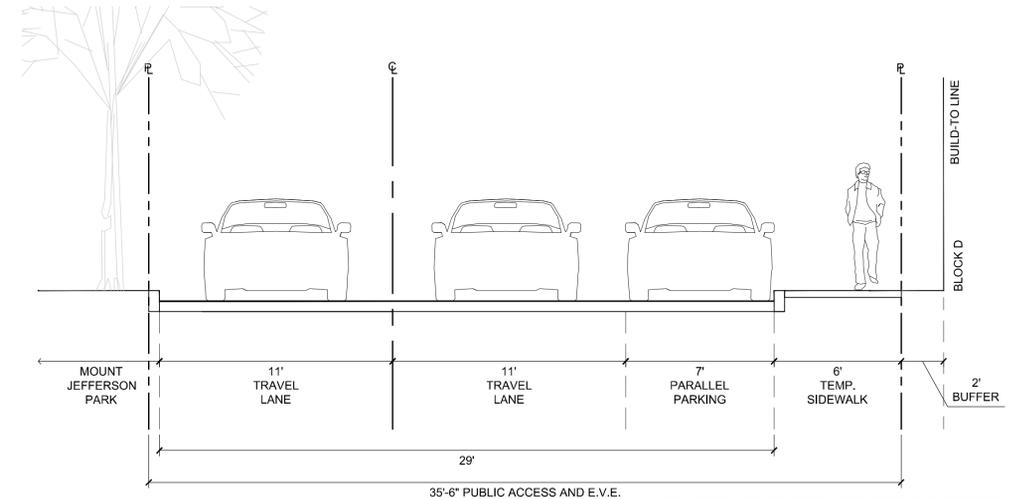


KEY MAP SCALE: 1"=200'



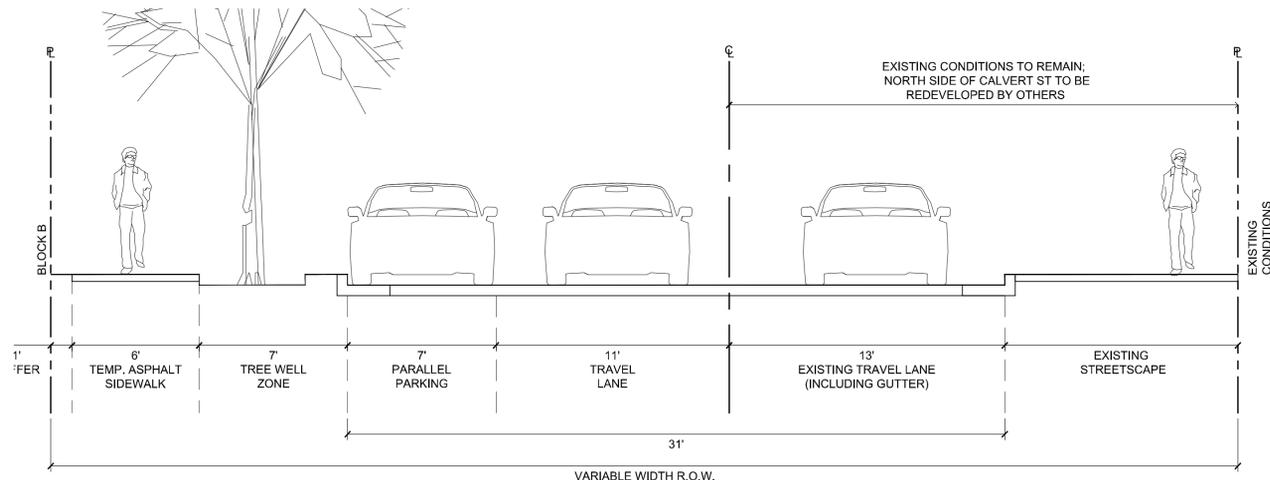
1 CALVERT STREET - WEST (INTERIM)
SECTION

1/4" = 1'-0"



3 NEW ROAD A (PARKING ONE SIDE)
SECTION

1/4" = 1'-0"



2 CALVERT STREET - EAST (INTERIM)
SECTION

1/4" = 1'-0"

NOTES:

- STREETSCAPES SHOWN HERE REPRESENT CONDITIONS AT TIME OF INFRASTRUCTURE BUILD OUT. SECTIONS SHOWING ULTIMATE CONDITION WILL BE PROVIDED WITH INDIVIDUAL BLOCK DSUPS.
- PUBLIC ACCESS EASEMENT TO BE PROVIDED WHEN STREETSCAPE FALLS ON PRIVATE PROPERTY.
- BUILDING PROJECTIONS, INCLUDING BAYS, BAY WINDOWS, BALCONIES, STAIRS, STOOPS, CANOPIES AND OTHER SIMILAR ENCROACHMENTS WITHIN STREETSCAPE TO BE COORDINATED AT TIME OF PRELIMINARY SITE PLAN.
- CURB CUTS FOR LOADING, GARAGE AND TRASH ENTRANCES TO BE COORDINATED AT TIME OF PRELIMINARY SITE PLAN.

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DIRECTOR DATE

DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES
SITE PLAN NO. _____

DIRECTOR DATE

CHAIRMAN, PLANNING COMMISSION DATE

DATE RECORDED _____

INSTRUMENT NO. _____ DEED BOOK NO. _____ DATE _____

KEY MAP

SEAL

NOT FOR CONSTRUCTION



PROJECT

OAKVILLE INFRASTRUCTURE PLAN

STONEBRIDGE
CITY OF ALEXANDRIA, VA

LANDDESIGN PROJ.# 2020014

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| | VERIFICATION SUBMISSION | 12-04-2020 |

DESIGNED BY:
DRAWN BY:
CHECKED BY:

SCALE NORTH

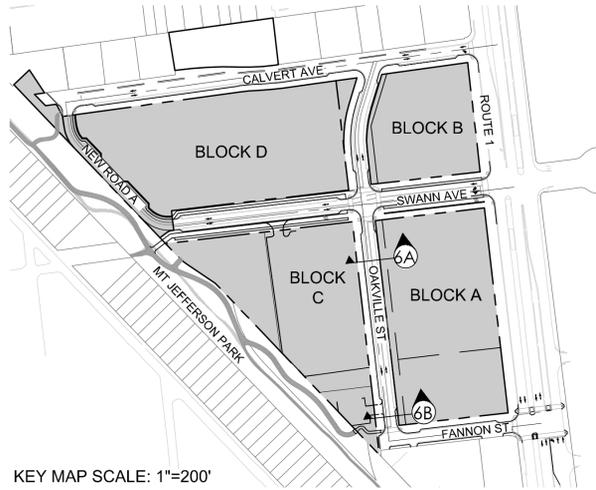
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HORZ: AS NOTED

SHEET TITLE

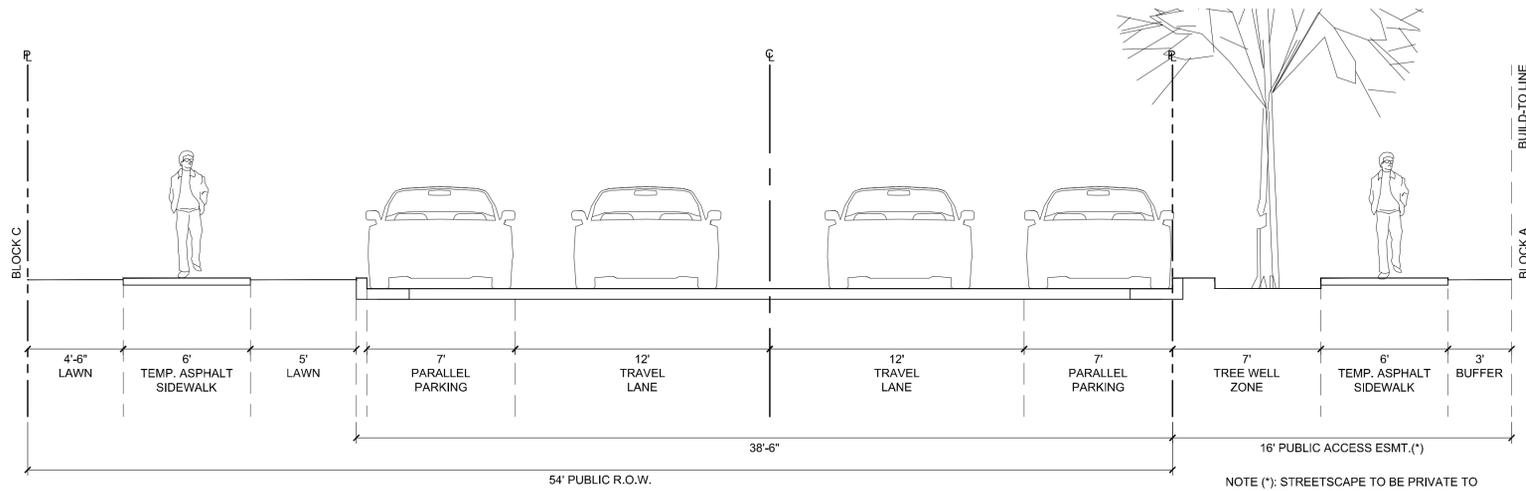
STREET SECTIONS

SHEET NUMBER

L201



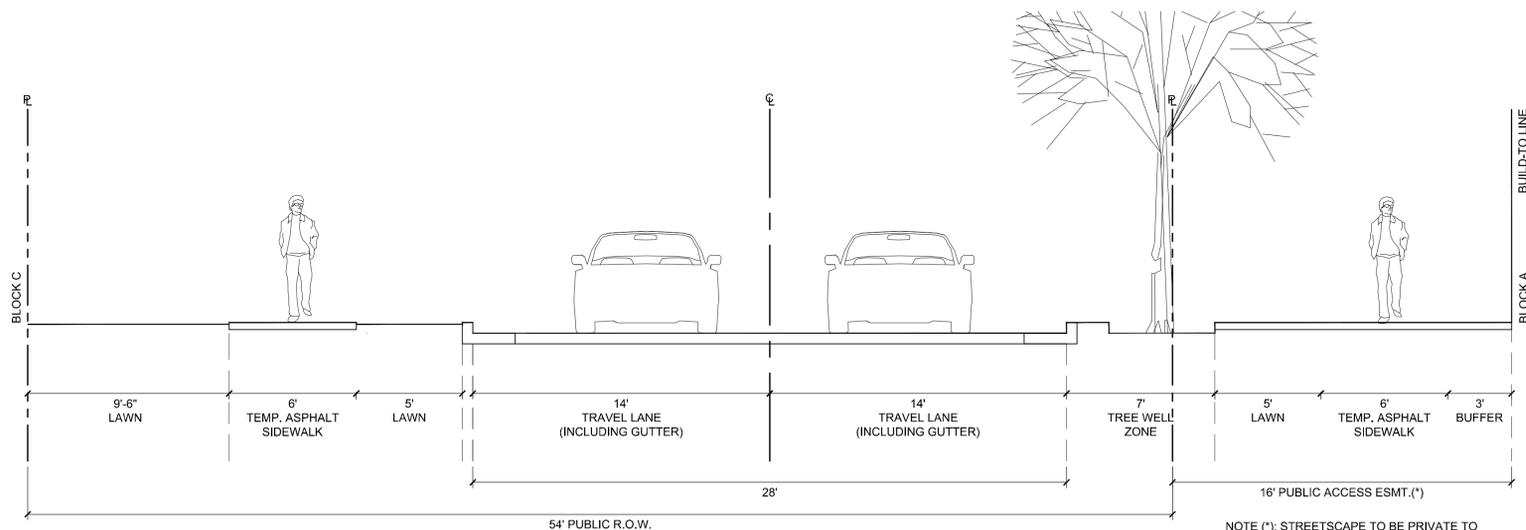
KEY MAP SCALE: 1"=200'



NOTE (*): STREETSCAPE TO BE PRIVATE TO ALLOW BELOW GRADE UTILITY VAULTS.

6A OAKVILLE STREET - SOUTH (PARKING BOTH SIDES)
SECTION

1/4" = 1'-0"



NOTE (*): STREETSCAPE TO BE PRIVATE TO ALLOW FUTURE BELOW GRADE UTILITY VAULTS.

6B OAKVILLE STREET - SOUTH (NO PARKING)
SECTION

1/4" = 1'-0"

NOTES:

- STREETSCAPES SHOWN HERE REPRESENT CONDITIONS AT TIME OF INFRASTRUCTURE BUILD OUT. SECTIONS SHOWING ULTIMATE CONDITION WILL BE PROVIDED WITH INDIVIDUAL BLOCK DSUPS.
- PUBLIC ACCESS EASEMENT TO BE PROVIDED WHEN STREETSCAPE FALLS ON PRIVATE PROPERTY.
- BUILDING PROJECTIONS, INCLUDING BAYS, BAY WINDOWS, BALCONIES, STAIRS, STOOPS, CANOPIES AND OTHER SIMILAR ENCROACHMENTS WITHIN STREETSCAPE TO BE COORDINATED AT TIME OF PRELIMINARY SITE PLAN.
- CURB CUTS FOR LOADING, GARAGE AND TRASH ENTRANCES TO BE COORDINATED AT TIME OF PRELIMINARY SITE PLAN.

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DEPARTMENT OF PLANNING & ZONING

DIRECTOR DATE

DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES
SITE PLAN NO. _____

DIRECTOR DATE

CHAIRMAN, PLANNING COMMISSION DATE

DATE RECORDED _____

INSTRUMENT NO. _____ DEED BOOK NO. _____ DATE _____

KEY MAP

SEAL

NOT FOR CONSTRUCTION



PROJECT

OAKVILLE INFRASTRUCTURE PLAN

STONEBRIDGE
CITY OF ALEXANDRIA, VA

LANDDESIGN PROJ.# 2020014

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| | VERIFICATION SUBMISSION | 12-04-2020 |

DESIGNED BY:
DRAWN BY:
CHECKED BY:

SCALE: NORTH

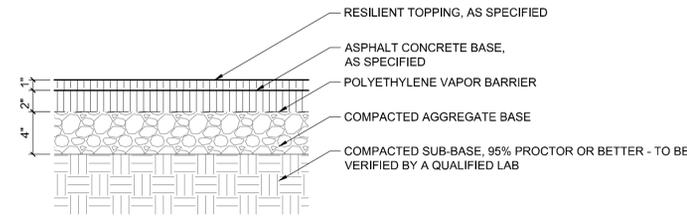
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HORZ: AS NOTED

SHEET TITLE

STREET SECTIONS

SHEET NUMBER

L203

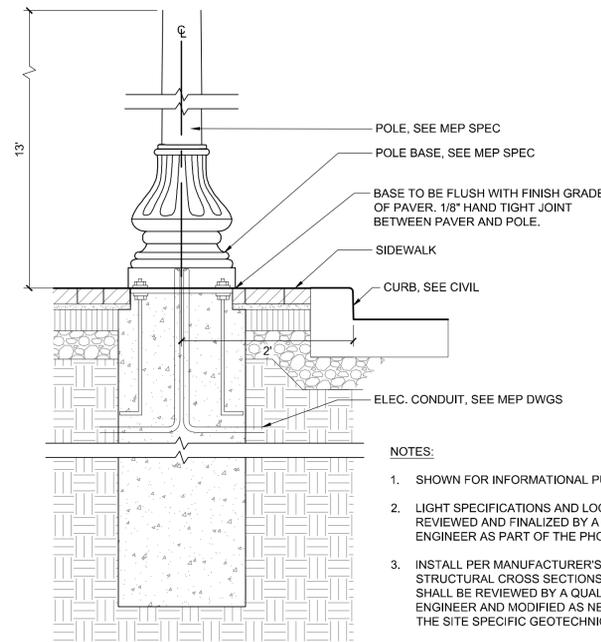
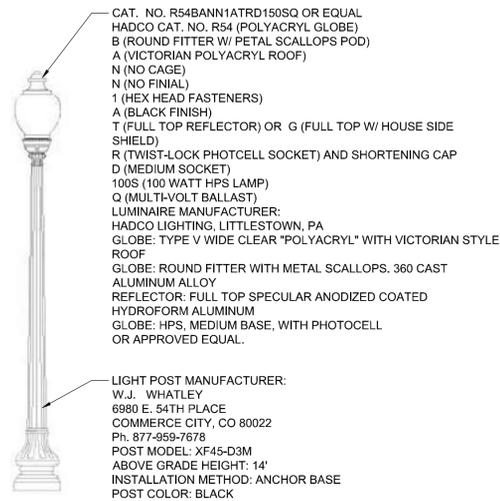


1 ASPHALT PAVING - PEDESTRIAN
L501 SECTION

1-1/2" = 1'-0"



SEE NOTE 4



NOTES:

1. SHOWN FOR INFORMATIONAL PURPOSES ONLY.
2. LIGHT SPECIFICATIONS AND LOCATIONS TO BE REVIEWED AND FINALIZED BY A QUALIFIED LIGHTING ENGINEER AS PART OF THE PHOTOMETRIC STUDY.
3. INSTALL PER MANUFACTURER'S SPECIFICATIONS. ALL STRUCTURAL CROSS SECTIONS, INCLUDING FOOTINGS, SHALL BE REVIEWED BY A QUALIFIED STRUCTURAL ENGINEER AND MODIFIED AS NECESSARY BASED ON THE SITE SPECIFIC GEOTECHNICAL REPORT.
4. FIXTURES ALONG ROUTE 1 TO BE A DOUBLE-ACORN LIGHT FIXTURE, STANDARD BLACK.

2 STREET LIGHT
L501 SECTION

1" = 1'

KEY MAP

SEAL

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| | VERIFICATION SUBMISSION | 12-04-2020 |

DESIGNED BY: MC/LB
DRAWN BY: LB/WT
CHECKED BY: LB

SCALE: NORTH

VERT: N/A
HORZ: N/A

SHEET TITLE

DETAILS - HARDSCAPE

SHEET NUMBER

L501

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DIRECTOR DATE

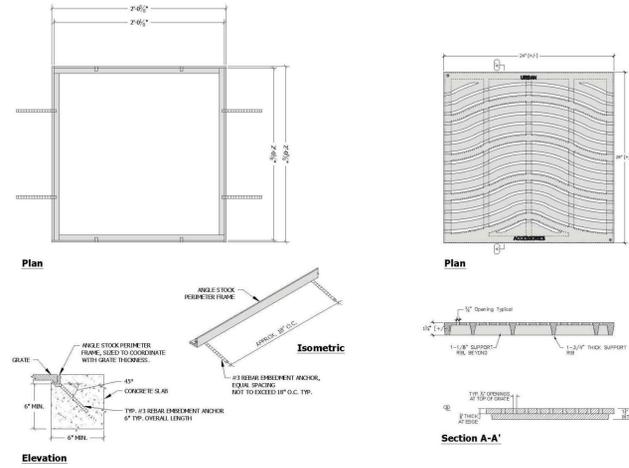
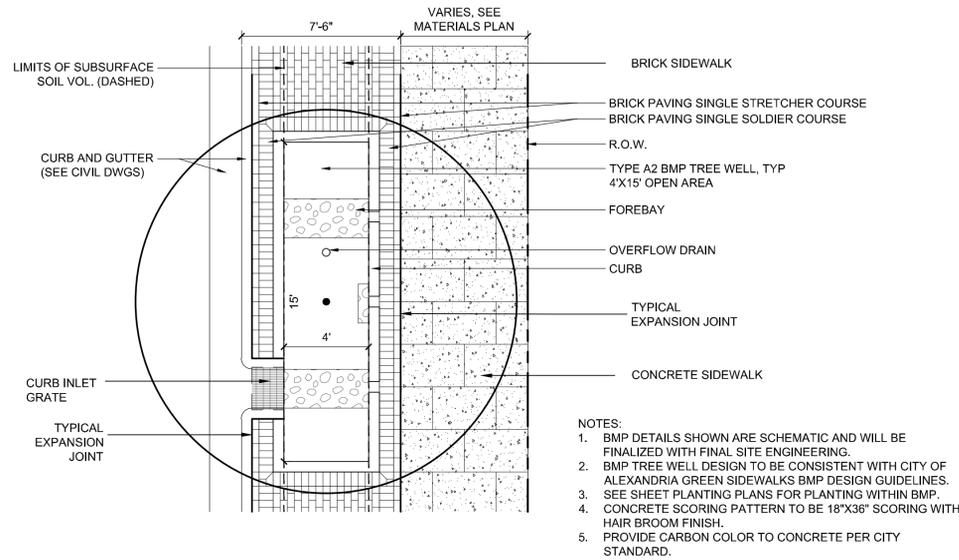
DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES
SITE PLAN NO. _____

DIRECTOR DATE

CHAIRMAN, PLANNING COMMISSION DATE

DATE RECORDED _____

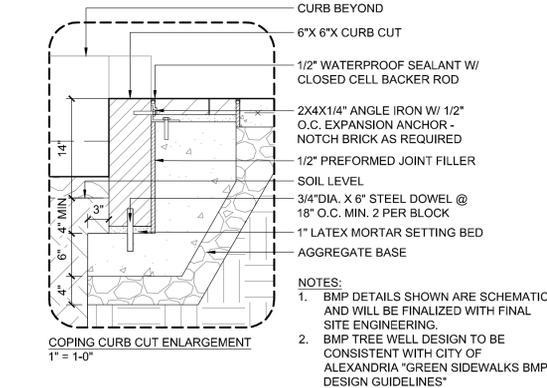
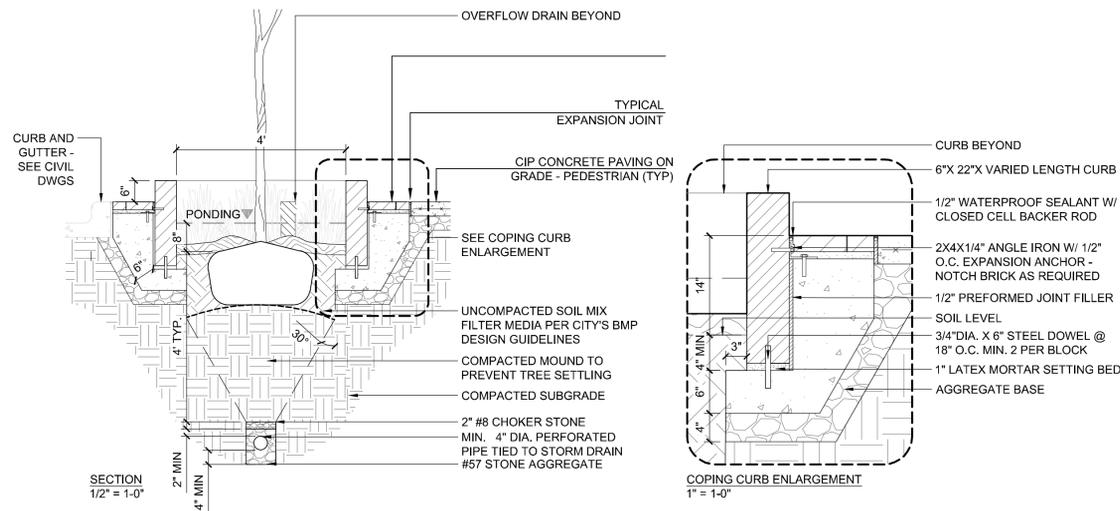
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1 BMP TREE WELL
L601 PLAN

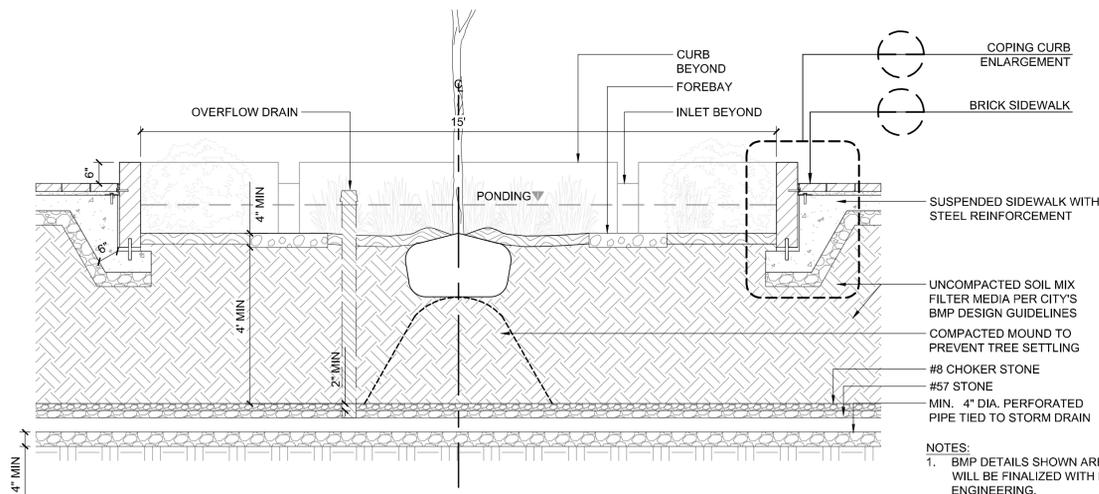
1/4" = 1'-0"

4 CURB INLET GRATE
L601 PLAN



2 BMP TREE WELL
L601 SECTION / ENLARGEMENT

1/2" = 1'-0"



3 BMP TREE WELL
L601 SECTION

1/2" = 1'-0"

KEY MAP

SCALE

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PROJECT

OAKVILLE INFRASTRUCTURE PLAN

STONEBRIDGE
CITY OF ALEXANDRIA, VA

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| | VERIFICATION SUBMISSION | 12-04-2020 |

DESIGNED BY: MC/LB
DRAWN BY: LB/WT
CHECKED BY: LB

SCALE: NORTH

VERT: N/A
HORZ: N/A

SHEET TITLE

DETAILS - PLANTING

SHEET NUMBER

L601

