

PRELIMINARY DEVELOPMENT SPECIAL USE PERMIT

ST. STEPHEN'S & ST. AGNES UPPER SCHOOL

#1000 ST. STEPHENS ROAD
CITY OF ALEXANDRIA, VIRGINIA

AREA TABULATIONS

TOTAL SITE AREA = 2.83 AC 123,450 SF
TOTAL AREA OF IMPROVEMENTS = 2.10 AC 91,411 SF
TOTAL EXISTING IMPERVIOUS AREA = 1.18 AC 51,214 SF
TOTAL PROPOSED IMPERVIOUS AREA = 2.10 AC 91,411 SF
TOTAL DISTURBED AREA = 2.83 AC 123,450 SF

ENVIRONMENTAL SITE ASSESSMENT

- THERE ARE NO RESOURCE PROTECTION AREAS (RPA'S), TIDAL WETLANDS, SHORES, TRIBUTARY STREAMS, FLOOD PLAINS, OR BUFFER AREAS FOR SHORES, WETLANDS, CONNECTED TIDAL WETLANDS, ISOLATED WETLANDS OR HIGHLY ERODIBLE/PERMEABLE SOILS LOCATED ON THIS SITE. THERE ARE NO WETLAND PERMITS REQUIRED FOR THE DEVELOPMENT ON THIS PROPERTY.
- THE CITY OF ALEXANDRIA DEPARTMENT OF TRANSPORTATION AND ENVIRONMENTAL SERVICES, OFFICE OF ENVIRONMENTAL QUALITY MUST BE NOTIFIED IF UNUSUAL OR UNANTICIPATED CONTAMINATION OR UNDERGROUND STORAGE TANKS, DRUMS AND CONTAINERS ARE ENCOUNTERED AT THE SITE. IF THERE IS ANY DOUBT ABOUT PUBLIC SAFETY OR A RELEASE TO THE ENVIRONMENT, THE ALEXANDRIA FIRE DEPARTMENT MUST BE CONTACTED IMMEDIATELY BY CALLING 911. THE TANK OR CONTAINER'S REMOVAL, ITS CONTENTS, ANY SOIL CONTAMINATION AND RELEASES TO THE ENVIRONMENT WILL BE HANDLED IN ACCORDANCE WITH FEDERAL, STATE, AND CITY REGULATIONS.
- ALL WELLS TO BE DEMOLISHED ON THIS PROJECT, INCLUDING MONITORING WELLS, MUST BE CLOSED IN ACCORDANCE WITH VIRGINIA STATE WATER CONTROL BOARD (VSWCB) REQUIREMENTS. CONTACT ENVIRONMENTAL HEALTH SPECIALIST AND COORDINATE WITH THE ALEXANDRIA HEALTH DEPARTMENT AT 703-746-4996.
- THERE ARE NO KNOWN CONTAMINATED AREAS, CONTAMINATED SOILS OR ENVIRONMENTAL ISSUES ASSOCIATED WITH THIS SITE.
- ALL CONSTRUCTION ACTIVITIES MUST COMPLY WITH THE ALEXANDRIA NOISE CONTROL CODE TITLE 11, CHAPTER 5, WHICH PERMITS CONSTRUCTION ACTIVITIES TO OCCUR BETWEEN THE FOLLOWING HOURS:
MONDAY THROUGH FRIDAY FROM 7am TO 6pm AND SATURDAYS FROM 9am TO 6pm; NO CONSTRUCTION ACTIVITIES ARE PERMITTED ON SUNDAYS AND HOLIDAYS.

PILE DRIVING IS FURTHER RESTRICTED TO THE FOLLOWING HOURS:
MONDAY THROUGH FRIDAY FROM 9am TO 6pm AND SATURDAYS FROM 10am TO 4pm; NO PILE DRIVING ACTIVITIES ARE PERMITTED ON SUNDAYS AND HOLIDAYS.

RIGHT OF WAY EXCAVATION IS FURTHER RESTRICTED TO THE FOLLOWING HOURS:
MONDAY THROUGH SATURDAY 7am TO 5pm; NO RIGHT OF WAY EXCAVATION IS PERMITTED ON SUNDAYS.

ENVIRONMENTAL PERMITS NOTES

ALL REQUIRED PERMITS FROM VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY, ENVIRONMENTAL PROTECTION AGENCY, ARMY CORPS OF ENGINEERS, AND VIRGINIA MARINE RESOURCES MUST BE IN PLACE FOR ALL PROJECT CONSTRUCTION AND MITIGATION WORK PRIOR TO RELEASE OF THE FINAL SITE PLAN.

THIS PROJECT PROPOSES CONSTRUCTION ACTIVITIES WHICH DISTURB AN AREA MORE THAN 1 ACRE, THEREFORE A VPDES PERMIT IS REQUIRED.

ARCHAEOLOGY NOTES

THE APPLICANT/DEVELOPER SHALL CALL ALEXANDRIA ARCHAEOLOGY IMMEDIATELY (703-746-4399) IF ANY BURIED STRUCTURAL REMAINS (WALL FOUNDATIONS, WELLS, PRIVES, CISTERNS, ETC.) OR CONCENTRATIONS OF HISTORIC OR PREHISTORIC ARTIFACTS ARE DISCOVERED DURING DEVELOPMENT. WORK MUST CEASE IN THE AREA OF THE DISCOVERY UNTIL A CITY ARCHAEOLOGIST COMES TO THE SITE AND RECORDS THE FINDS.

THE APPLICANT/DEVELOPER SHALL NOT ALLOW ANY METAL DETECTION AND/OR ARTIFACT COLLECTION TO BE CONDUCTED ON THE PROPERTY, UNLESS AUTHORIZED BY ALEXANDRIA ARCHAEOLOGY. FAILURE TO COMPLY SHALL RESULT IN PROJECT DELAYS.

ALL REQUIRED ARCHAEOLOGICAL PRESERVATION MEASURES SHALL BE COMPLETED IN COMPLIANCE WITH SECTION 11-411 OF THE ZONING ORDINANCE.

GENERAL NOTES

- PRIOR TO THE APPLICATION FOR NEW CERTIFICATE OF OCCUPANCY, THE APPLICANT SHALL SUBMIT A BUILDING PERMIT FOR A CHANGE OF USE. DRAWINGS PREPARED BY A LICENSED ARCHITECT OR PROFESSIONAL ENGINEER SHALL ACCOMPANY THE PERMIT APPLICATION. THE PLANS SHALL SHOW PROPOSED CONDITIONS AND PROVIDE DATA BY THE DESIGN PROFESSIONAL WHICH DETAILS HOW THE PROPOSED USE WILL COMPLY WITH THE CURRENT EDITION OF THE VIRGINIA UNIFORM STATEWIDE BUILDING CODE FOR THE NEW USE IN THE AREA OF STRUCTURAL STRENGTH, MEANS OF EGRESS, PASSIVE AND ACTIVE FIRE PROTECTION, HEATING AND VENTILATING SYSTEMS, HANDICAPPED ACCESSIBILITY AND PLUMBING FACILITIES.
- NEW CONSTRUCTION MUST COMPLY WITH THE CURRENT EDITION OF THE UNIFORM STATEWIDE BUILDING CODE (USBC).
- BEFORE A BUILDING PERMIT CAN BE ISSUED ON ANY PROPOSED FUTURE ALTERATIONS, A CERTIFICATION IS REQUIRED FROM THE OWNER OR OWNER'S AGENT THAT THE BUILDING HAS BEEN INSPECTED BY A LICENSED ASBESTOS INSPECTOR FOR THE PRESENCE OF ASBESTOS.
- A CERTIFICATE OF OCCUPANCY SHALL BE OBTAINED PRIOR TO ANY OCCUPANCY OF THE BUILDING OR PORTION THEREOF.
- REQUIRED EXITS, PARKING, AND ACCESSIBILITY WITHIN THE BUILDING FOR PERSONS WITH DISABILITIES MUST COMPLY WITH USBC CHAPTER 11. HANDICAPPED ACCESSIBLE BATHROOMS SHALL ALSO BE PROVIDED.
- TOILET FACILITIES FOR PERSONS WITH DISABILITIES: LARGER, DETAILED, DIMENSIONED DRAWINGS ARE REQUIRED TO CLARIFY SPACE LAYOUT AND MOUNTING HEIGHTS OF AFFECTED ACCESSORIES. INFORMATION ON DOOR HARDWARE FOR THE TOILET STALL IS REQUIRED (USBC 1109.2.2).
- IF APPLICABLE, ENCLOSED PARKING GARAGES MUST BE VENTILATED IN ACCORDANCE WITH USBC 406.4.2. THE REQUIRED MECHANICAL VENTILATION RATE FOR AIR IS 0.75 CFM PER SQUARE FOOT OF THE FLOOR AREA (USBC 2801.1). IN AREAS WHERE MOTOR VEHICLES OPERATE FOR A PERIOD OF TIME EXCEEDING 10 SECONDS, THE VENTILATION RETURN AIR MUST BE EXHAUSTED. AN EXHAUST SYSTEM MUST BE PROVIDED TO CONNECT DIRECTLY TO THE MOTOR VEHICLE EXHAUST (USBC 2801.1).
- ELECTRICAL WIRING METHODS AND OTHER ELECTRICAL REQUIREMENTS MUST COMPLY WITH NFPA 70, 2008.
- IF APPLICABLE, THE PUBLIC PARKING GARAGE FLOOR MUST COMPLY WITH USBC 406.2.6 AND DRAIN THROUGH OIL SEPARATORS OR TRAPS TO AVOID ACCUMULATION OF EXPLOSIVE VAPORS IN BUILDING DRAINS OR SEWERS AS PROVIDED FOR IN THE PLUMBING CODE (USBC 2901). THIS PARKING GARAGE IS CLASSIFIED AS AN S-2, GROUP 2, PUBLIC GARAGE.
- THIS PROJECT IS NOT LOCATED IN A COMBINED SEWER AREA.
- THIS SITE DOES CONTAIN AREAS PREVIOUSLY MAPPED AS MARINE CLAYS.
- THIS SITE IS NOT LOCATED WITHIN 1,000 FEET OF A FORMER LANDFILL OR OTHER DUMP SITE.

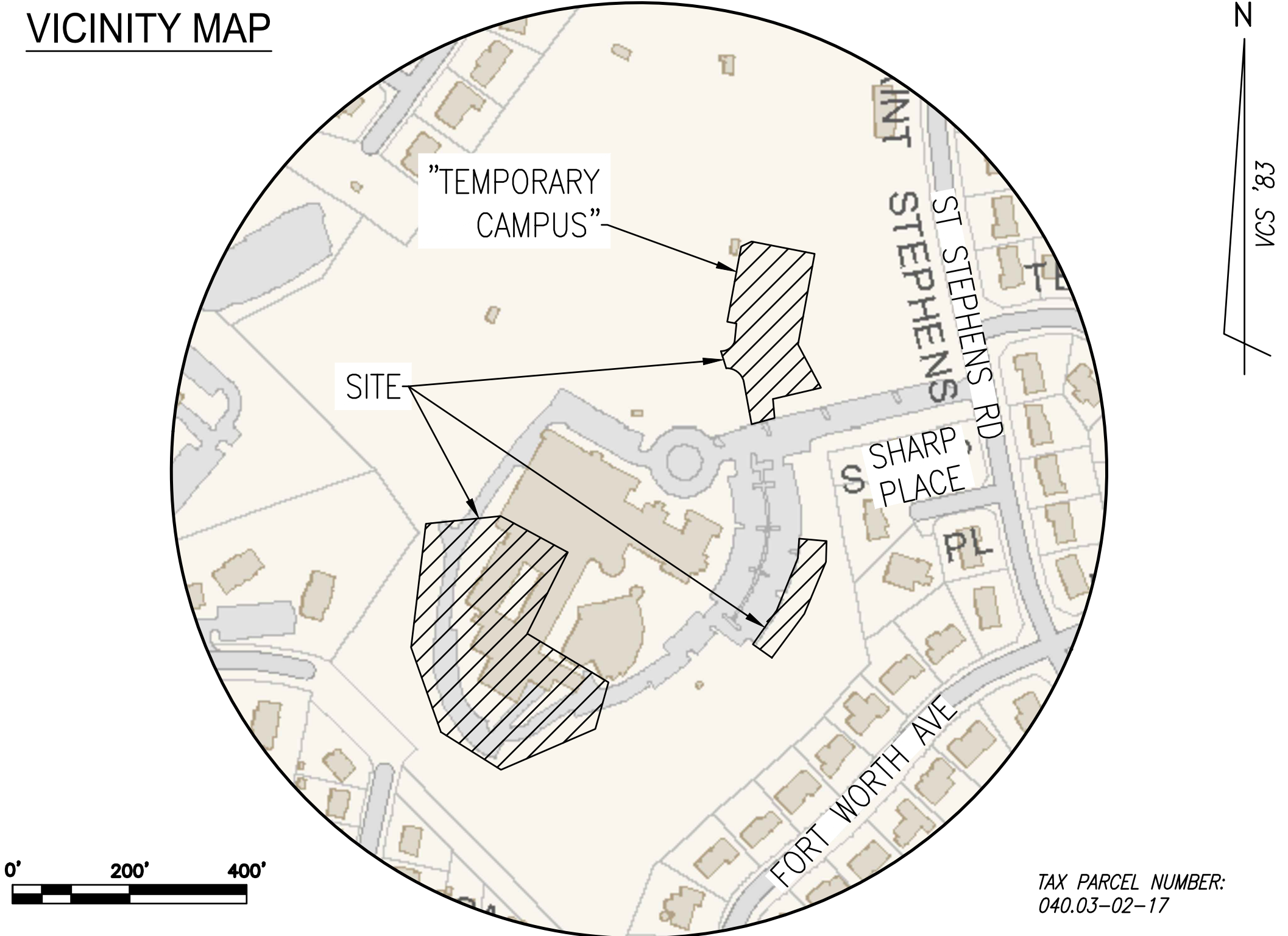
COMPLETE STREETS INFORMATION:

	NEW	UPGRADED
CROSSWALKS (NUMBER)	N/A	N/A
STANDARD	N/A	N/A
HIGH VISIBILITY	N/A	N/A
CURB RAMPS	N/A	N/A
SIDEWALKS (LF)	N/A	N/A
BICYCLE PARKING (NUMBER SPACES)	N/A	N/A
PUBLIC/VISITOR	N/A	N/A
PRIVATE/GARAGE	N/A	N/A
BICYCLE PATHS (LF)	N/A	N/A
PEDESTRIAN SIGNALS	N/A	N/A

SURVEYOR'S CERTIFICATION

I, ROBERTO TORRES, HEREBY CERTIFY THAT THIS PROPERTY IS IN THE NAME OF CHURCH SCHOOLS IN THE DIOCESE OF VIRGINIA AS RECORDED AT DB 625 PG 519 AMONG THE LAND RECORDS OF THE CITY OF ALEXANDRIA, VA.

VICINITY MAP



PROJECT DESCRIPTION NARRATIVE

THE APPLICANT REQUESTS A DEVELOPMENT SPECIAL USE PERMIT WITH A SITE PLAN (DSUP) TO EXPAND THE EXISTING PRIVATE SCHOOL GOVERNED BY DSUP #2016-0103 TO PERMIT THE CONSTRUCTION OF A BUILDING ADDITION AND SITE IMPROVEMENTS. SITE IMPROVEMENTS INCLUDE, BUT ARE NOT LIMITED TO, THE RECONFIGURATION OF THE EXISTING DRIVE AISLE AND PARKING, PROPOSED HARDSCAPING, PROPOSED LANDSCAPING, AND PROPOSED PARKING. DURING THE PERIOD OF CONSTRUCTION, THE SCHOOL WILL CONDUCT CLASSES IN A MODULAR BUILDING OF APPROXIMATELY 10,000 SF. DINING FACILITIES WILL BE PROVIDED IN A SEPARATE MODULAR BUILDING.

REQUESTED APPLICATIONS AND MODIFICATIONS:

- SUP TO EXPAND THE EXISTING PRIVATE SCHOOL GOVERNED BY SUP #2016-0103 TO CONSTRUCT A BUILDING ADDITION AND ASSOCIATED SITE IMPROVEMENTS AND TO AMEND SUP #2016-0103 CONDITION 3 TO INCREASE ENROLLMENT TO 520 STUDENTS.
- PURSUANT TO SECTION 7-1101 (C) SUP TO PERMIT TEMPORARY TRAILERS

OWNER/DEVELOPER

OWNER:
CHURCH SCHOOLS IN THE DIOCESE OF VIRGINIA
1000 ST. STEPHENS RD
ALEXANDRIA, VA 22314
D.B. 625 P.G. 519

ARCHITECT:
COX GRAE + SPACK ARCHITECTS
2909 M STREET NW
WASHINGTON, DC 20007
(202) 965-7070
CONTACT: JOANNA SCHMICKEL

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

DEVELOPER:
ST. STEPHEN'S AND ST. AGNES SCHOOL
1000 ST. STEPHENS RD
ALEXANDRIA, VA 22314
(703) 212-2912
CONTACT: BRIAN KANE

PLAN PREPARED BY:
R.C. FIELDS & ASSOCIATES, INC.
700 S. WASHINGTON STREET, SUITE 220
ALEXANDRIA, VA 22314
(703) 549-6422
CONTACT: ALEX HOLLEMAN

LANDSCAPE ARCHITECT:
STUDIO39
6416 GROVESALE DRIVE, SUITE 100-A
ALEXANDRIA, VA 22310
(703) 719-6500
CONTACT: DAN DOVE

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ZONING TABULATION:

- ZONE OF SITE: R-8 & R-12 (IMPROVEMENTS PROPOSED WITHIN BOTH R-8 & R-12 ZONE AREAS)
- USE: EXISTING PRIVATE SCHOOL PROPOSED PRIVATE SCHOOL
- MINIMUM LOT AREA: R-8 8,000 SF
R-12 12,000 SF

PROVIDED: R-8 LOT AREA: 205,891 SF (4.7 AC.)
R-12 LOT AREA: 1,074,615 SF (24.7 AC.)
TOTAL LOT AREA: 1,280,506 SF (29.4 AC.)*
*NOTE: INCLUDES BOTH R-8 & R-12 ZONE AREAS
- NUMBER OF UNITS: N/A
- UNITS PER ACRE: PERMITTED N/A PROPOSED N/A
- GROSS FLOOR AREA: EXISTING R-8 18,269 SF PROPOSED & EXISTING R-8 25,768 SF
EXISTING R-12 121,502 SF PROPOSED & EXISTING R-12 127,589 SF
TOTAL EXISTING 139,771 SF TOTAL PROPOSED & EXISTING 153,357 SF

PROPOSED BUILDING ONLY 41,805 SF
- NET FLOOR AREA: EXISTING R-8 16,791 SF PROPOSED & EXISTING R-8 23,089 SF
EXISTING R-12 111,502 SF PROPOSED & EXISTING R-12 113,269 SF
TOTAL EXISTING 128,293 SF TOTAL PROPOSED & EXISTING 136,358 SF

PROPOSED BUILDING ONLY 37,462 SF
- FLOOR AREA RATIO: PERMITTED R-8 0.35 (72,061 SF)
R-12 0.30 (322,384 SF)

EXISTING R-8 0.08 (16,791 SF)
R-12 0.10 (111,502 SF)

PROPOSED R-8 0.11 (23,089 SF)
R-12 0.11 (113,269 SF)
- OPEN SPACE: REQUIRED: N/A PROPOSED: N/A
- AVERAGE FINISHED GRADE: 247.6'
- HEIGHT: ALLOWED R-8 40' (ALLOWED PER SCHOOL USE)
R-12 40' (ALLOWED PER SCHOOL USE)

PROPOSED R-8 40'
R-12 40'
- YARDS: REQUIRED R-8 FRONT 30' SIDE 1:1 SETBACK RATIO, MIN. 25'
REAR 1:1 SETBACK RATIO, MIN. 25'

R-12 FRONT 35' SIDE 1:1 SETBACK RATIO, MIN. 25'
REAR 1:1 SETBACK RATIO, MIN. 25'

PROVIDED FRONT 575' SIDE 118' REAR 437'
- FRONTAGE: REQUIRED R-8 40' PROVIDED 731'
R-12 60'
- LOT WIDTH: REQUIRED R-8 65' PROVIDED 744'
R-12 80'
- TRIP GENERATION*: EXISTING (480 TOTAL STUDENTS ENROLLED)
WEEKDAY (TOTAL) = 954 VEHICLES PER DAY
WEEKDAY (PEAK AM HOUR) = 231 AVERAGE VEHICLE TRIP ENDS (AVE)
WEEKDAY (PEAK PM HOUR) = 196 AVERAGE VEHICLE TRIP ENDS (AVE)

PROPOSED (520 TOTAL STUDENTS ENROLLED)
WEEKDAY (TOTAL) = 1,018 VEHICLES PER DAY
WEEKDAY (PEAK AM HOUR) = 246 AVERAGE VEHICLE TRIP ENDS (AVE)
WEEKDAY (PEAK PM HOUR) = 206 AVERAGE VEHICLE TRIP ENDS (AVE)
- PARKING TABULATION**: REQUIRED: 54 SPACES (540 PROPOSED NET CLASSROOM SEATS)

EXISTING: 230 SPACES***
EXISTING PARKING TO BE REMOVED: 23 SPACES

PROPOSED PARKING:
COMPACT 43 SPACES
STANDARD 0 SPACES
ACCESSIBLE 0 SPACES

PROVIDED:
ZONING REQUIRED PARKING 54 SPACES
COMPACT 32 SPACES
STANDARD 22 SPACES
ACCESSIBLE 0 SPACES

EXCESS PARKING 196 SPACES
TOTAL PROVIDED PARKING 250 SPACES
- LOADING SPACES: REQUIRED N/A PROVIDED N/A

* TRIP GENERATION IS BASED ON ITE STANDARD EQUATIONS USING STUDENT ENROLLMENT COUNTS
** REQUIRED PARKING TABULATION IS BASED ON CITY OF ALEXANDRIA ZONING ARTICLE VIII SEC. 8-200 (A)(11) HIGH SCHOOL;
ONE SPACE REQUIRED PER EACH TEN CLASSROOM SEATS
*** NO EXISTING ON-SITE COUNT PERFORMED, EXISTING PARKING NUMBER TAKEN FROM PRIOR APPROVED PLAN DSP2000-0049; CHAPEL/PERFORMING ARTS CENTER

BUILDING CODE ANALYSIS:

USE:	SCHOOL
USE GROUP:	MIXED-USE NON SEPARATED ACCESSORY OCCUPANCIES: E (EDUCATIONAL), B (BUSINESS), S1 (STORAGE), & A3 (ASSEMBLY)
TYPE OF CONSTRUCTION:	II-B
NUMBER OF STORIES:	2 STORY WITH 3-STORY PORTION
FLOOR AREA (GROSS):	153,357 SF
FLOOR AREA (NET):	136,358 SF
BUILDING FOOT PRINT AREA:	81,300 SF (INCLUDES EXISTING BUILDING)
BUILDING HEIGHT:	40'
FIRE SUPPRESSION/DETECTION:	FULLY SPRINKLERED

RCF **FIELDS & ASSOCIATES, inc.**
ENGINEERING • LAND SURVEYING • PLANNING
700 S. Washington Street, Suite 220
Alexandria, Virginia 22314
(703) 549-6422

PROJ. MANAGER: ALEX HOLLEMAN
EMAIL: AHOLLEMAN@RCFASDOC.COM

SCALE: AS NOTED
DATE: JANUARY 2020
DRAWN: ABH
REV:



REVISION APPROVED BY	DATE	APPROVED	REV.	BY	DATE
NO.	DESCRIPTION				

PRELIMINARY DEVELOPMENT
SPECIAL USE PERMIT

ST. STEPHEN'S & ST. AGNES UPPER SCHOOL

#1000 ST. STEPHENS ROAD
CITY OF ALEXANDRIA, VIRGINIA

SHEET NAME: **COVER SHEET**

APPROVED
SPECIAL USE PERMIT NO. 2018-0030

DEPARTMENT OF PLANNING & ZONING

DIRECTOR _____ DATE _____

DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES

SITE PLAN NO. _____

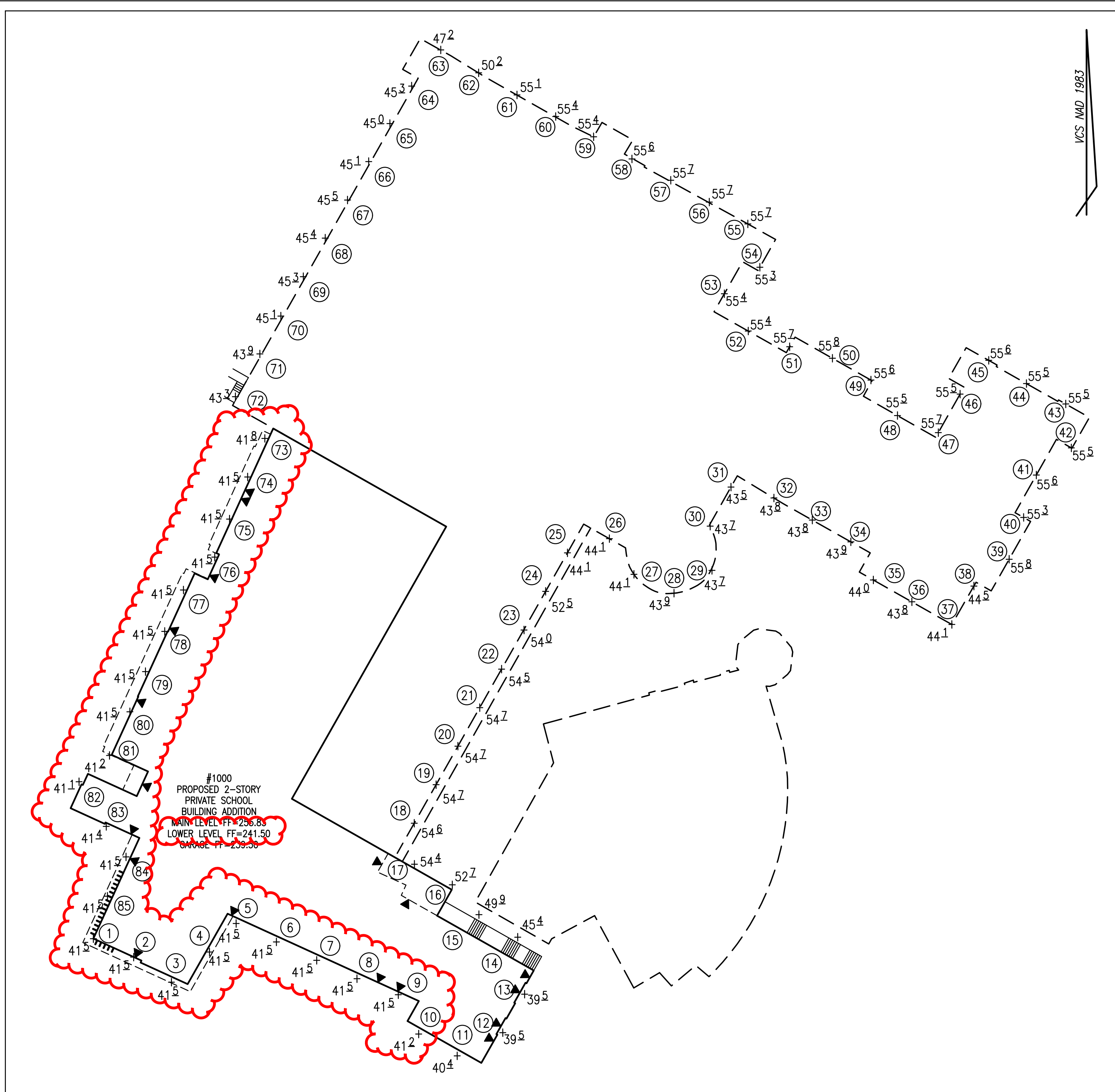
DIRECTOR _____ DATE _____

CHAIRMAN, PLANNING COMMISSION _____ DATE _____

DATE RECORDED _____

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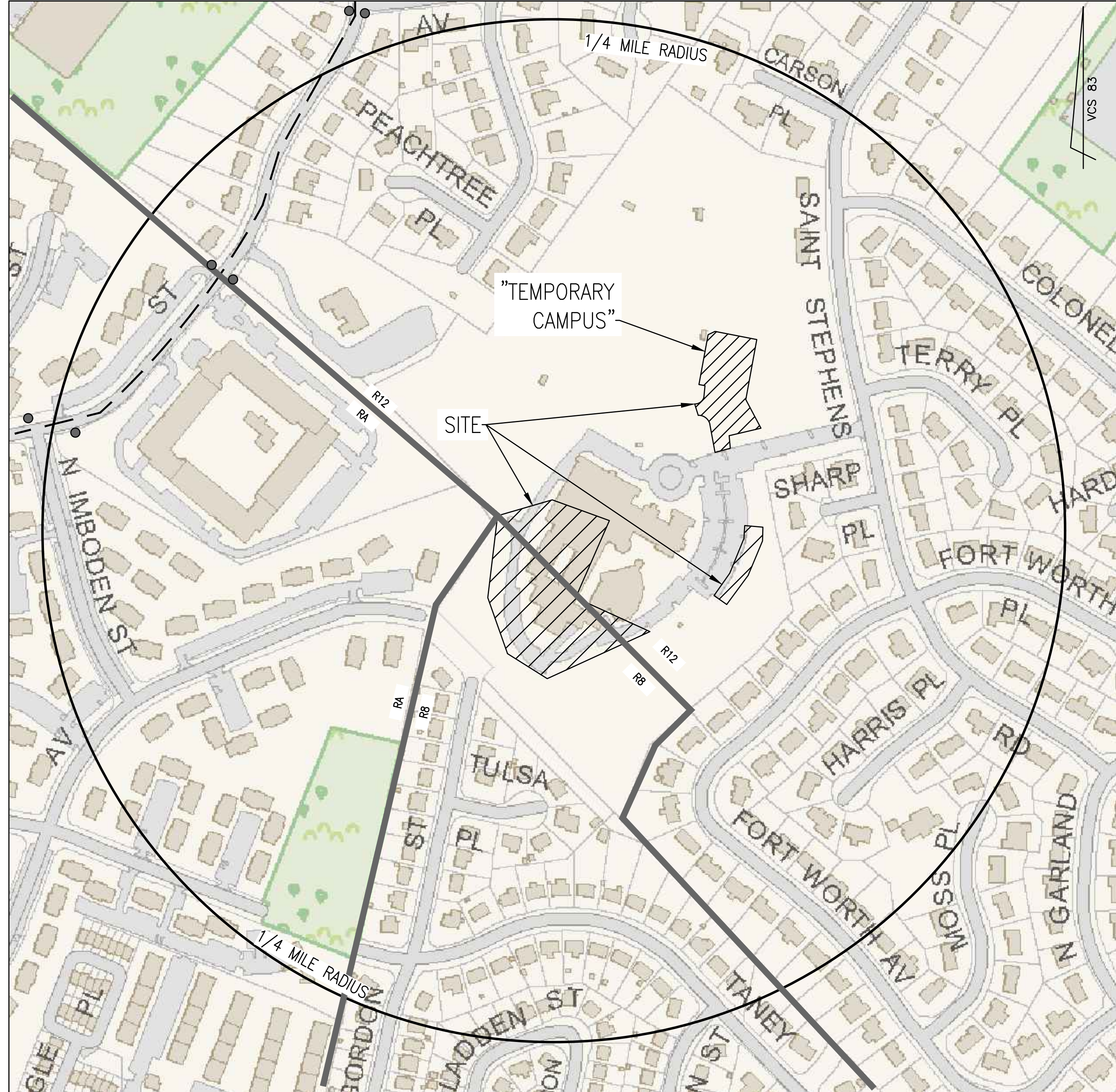


AVERAGE FINISHED GRADE GRAPHIC

SCALE: 1" = 30'



AVERAGE FINISHED GRADE CALCULATION							
SPOT	GRADE	SPOT	GRADE	SPOT	GRADE	SPOT	GRADE
1	241.5	21	254.7	41	255.6	61	255.1
2	241.5	22	254.5	42	255.5	62	250.2
3	241.5	23	254.0	43	255.5	63	247.2
4	241.5	24	252.5	44	255.5	64	245.3
5	241.5	25	244.1	45	255.6	65	245.0
6	241.5	26	244.1	46	255.5	66	245.1
7	241.5	27	244.1	47	255.7	67	245.5
8	241.5	28	243.9	48	255.5	68	245.4
9	241.5	29	243.7	49	255.6	69	245.3
10	241.2	30	243.7	50	255.8	70	245.1
11	240.4	31	243.5	51	255.7	71	243.9
12	239.5	32	243.8	52	255.4	72	243.3
13	239.5	33	243.8	53	255.4	73	241.8
14	245.4	34	243.9	54	255.3	74	241.5
15	249.9	35	244.0	55	255.7	75	241.5
16	252.7	36	243.8	56	255.7	76	241.5
17	254.4	37	244.1	57	255.7	77	241.5
18	254.6	38	244.5	58	255.6	78	241.5
19	254.7	39	255.8	59	255.4	79	241.5
20	254.7	40	255.3	60	255.4	80	241.5



CONTEXTUAL MAP

SCALE: 1" = 200'

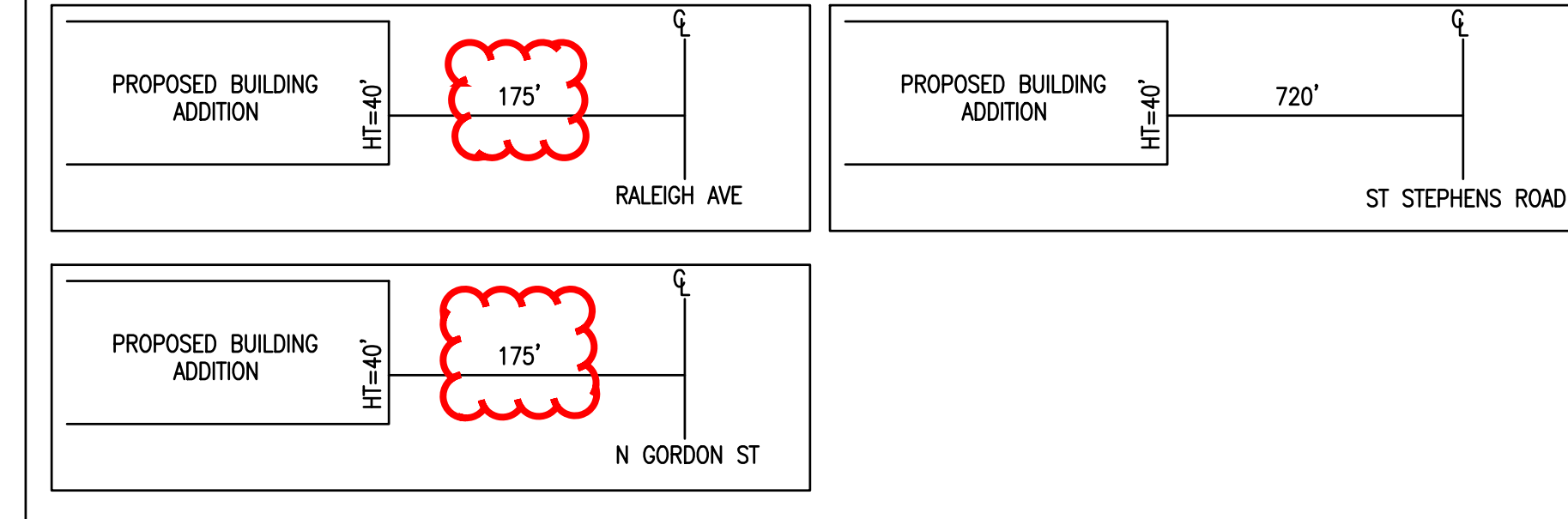


SECTION 6-403 COMPLIANCE NOTE:

SECTION 6-403 STATES "IN ALL HEIGHT DISTRICTS, THE ALLOWABLE HEIGHT OF A BUILDING AT ANY POINT SHALL NOT EXCEED TWICE THE DISTANCE FROM THE FACE OF THE BUILDING AT THAT POINT TO THE CENTERLINE OF THE STREET FACING SUCH BUILDING." SEE DETAIL BELOW FOR SECTION SHOWING COMPLIANCE.

SECTION 6-403 DETAILS:

NOT TO SCALE



LEGEND:

- BUS STOP
- METRO BUS ROUTES 8W, 25B

APPROVED
SPECIAL USE PERMIT NO. 2018-0030

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	

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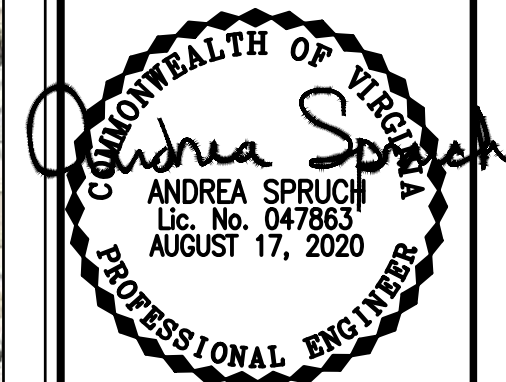
EXISTING UTILITIES SHOWN ON THIS PLAN TAKEN FROM AVAILABLE RECORDS AND/OR FROM FIELD OBSERVATIONS. FOR EXACT LOCATIONS OF EXISTING UNDERGROUND UTILITIES, NOTIFY "MISS UTILITY" AT 1-800-552-7001, 72 HOURS BEFORE THE START OF ANY EXCAVATION OR CONSTRUCTION.

LOCATION AND DEPTH OF ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION. INTERFERENCE OR DISRUPTION OF SAME WILL NOT BE THE RESPONSIBILITY OF THIS OFFICE.

ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY OF ALEXANDRIA.

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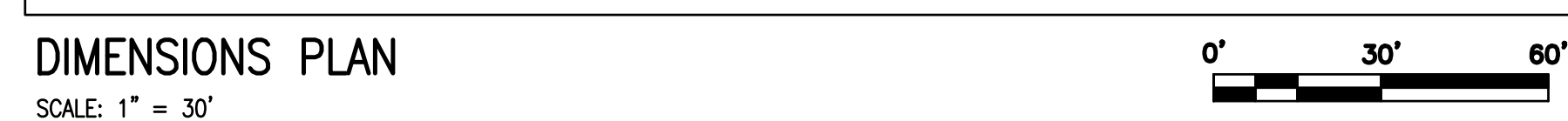
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ST. STEPHEN'S AND ST. AGNES UPPER SCHOOL
#1000 ST. STEPHENS ROAD
CITY OF ALEXANDRIA, VIRGINIA

DATE	REVISION

DESIGN: ABH
CHECKED: ACS
SCALE: AS NOTED
DATE: JAN 2020

CONTEXTUAL
PLAN

SHEET **2** OF **23**
FILE: **18-175**



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EXISTING UTILITIES SHOWN ON THIS PLAN TAKEN FROM AVAILABLE RECORDS AND/OR FROM FIELD OBSERVATIONS FOR EXACT LOCATIONS OF EXISTING UNDERGROUND UTILITIES, NOTIFY "MISS UTILITY" AT 1-800-552-7001, 7 HOURS BEFORE THE START OF ANY EXCAVATION OR CONSTRUCTION.

LOCATION AND DEPTH OF ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION. INTERFERENCE OR DISRUPTION OF SAME WILL NOT BE THE RESPONSIBILITY OF THIS OFFICE.

ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY OF ALEXANDRIA. © 2020 R.C. FIELDS & ASSOCIATES, INC.

APPROVED		2018-0030	
SPECIAL USE PERMIT NO.			
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	

PRELIMINARY DEVELOPMENT SPECIAL USE PERMIT
ST. STEPHEN'S AND ST. AGNES UPPER SCHOOL
#1000 ST. STEPHENS ROAD
CITY OF ALEXANDRIA, VIRGINIA

COMMONWEALTH OF VIRGINIA
Andrea Spruch
 ANDREA SPRUCH
 Lic. No. 047863
 AUGUST 17, 2020
 PROFESSIONAL ENGINEER

RCFIELDS
& ASSOCIATES, INC.
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Alexandria, Virginia 22314 (703) 549-6422

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DESIGN: ABH
CHECKED: ACS
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DATE: JAN 2020

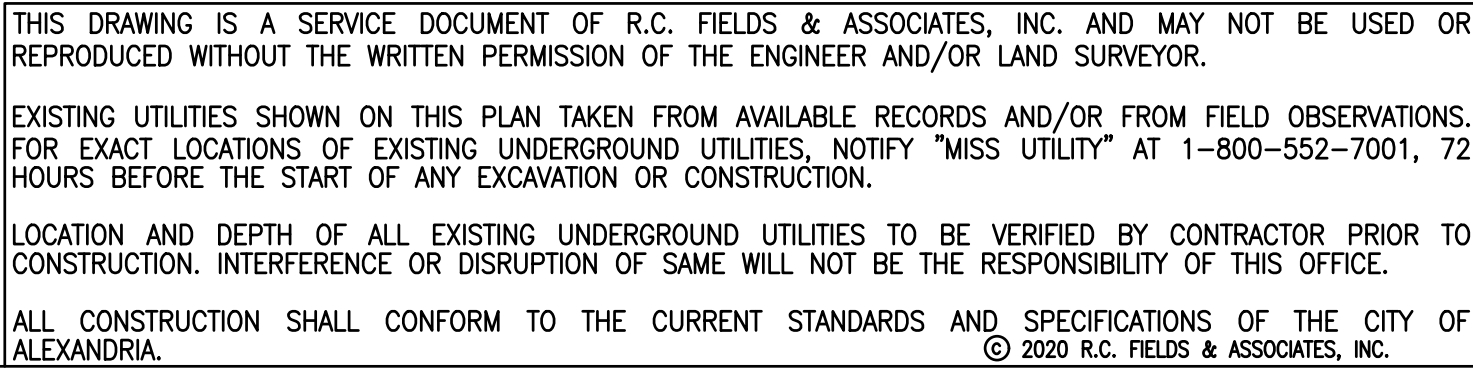
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PLAN & PLAN
KEY

SHEET 3 OF 23
FILE: 18-175

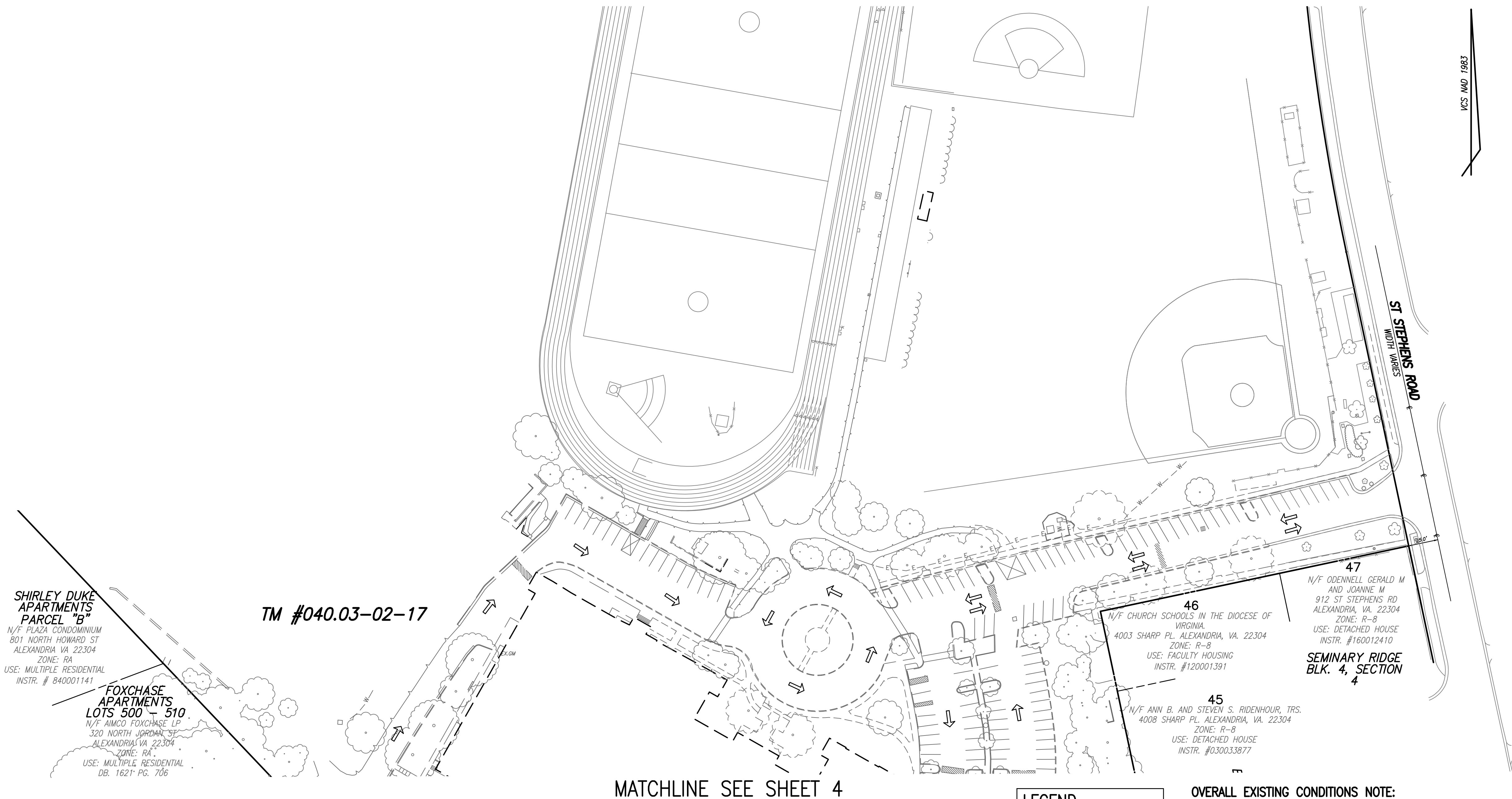
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OVERALL
EXISTING
CONDITIONS
(1 OF 2)

SHEET 4 OF 23
FILE: 18-175



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Wed Aug 05 2020 - 2:44:33pm



LEGEND

EXISTING CIRCULATION
PATTERN FLOW ARROW

OVERALL EXISTING CONDITIONS NOTE:
THIS SHEET DEPICTS THE PROJECT SITE OVERALL EXISTING CONDITIONS AND ADJACENT PARCEL INFORMATION. SEE THE EXISTING CONDITIONS SHEETS FOR MORE INFORMATION REGARDING SPECIFIC EXISTING SITE CONDITIONS.



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EXISTING UTILITIES SHOWN ON THIS PLAN TAKEN FROM AVAILABLE RECORDS AND/OR FROM FIELD OBSERVATIONS. FOR EXACT LOCATIONS OF EXISTING UNDERGROUND UTILITIES, NOTIFY "MISS UTILITY" AT 1-800-552-7001, 72 HOURS BEFORE THE START OF ANY EXCAVATION OR CONSTRUCTION.

LOCATION AND DEPTH OF ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION. INTERFERENCE OR DISRUPTION OF SAME WILL NOT BE THE RESPONSIBILITY OF THIS OFFICE.

ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY OF ALEXANDRIA.

APPROVED SPECIAL USE PERMIT NO. 2018-0030	
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

R.C. FIELDS & ASSOCIATES, INC.
ENGINEERING • LAND SURVEYING • PLANNING
700 S. Washington Street, Suite 220
Alexandria, Virginia 22314
(703) 549-6422
www.rcfieldsoc.com

COMMONWEALTH OF VIRGINIA
ANDREA SPRUCH
Lic. No. 047863
AUGUST 17, 2020
PROFESSIONAL ENGINEER

PRELIMINARY DEVELOPMENT SPECIAL USE PERMIT
ST. STEPHEN'S AND ST. AGNES UPPER SCHOOL
#1000 ST. STEPHENS ROAD
CITY OF ALEXANDRIA, VIRGINIA

DATE	REVISION

DESIGN: ABH
CHECKED: ACS
SCALE: 1" = 50'
DATE: JAN 2020

OVERALL
EXISTING
CONDITIONS
(2 OF 2)

SHEET **5** OF **23**
FILE: **18-175**

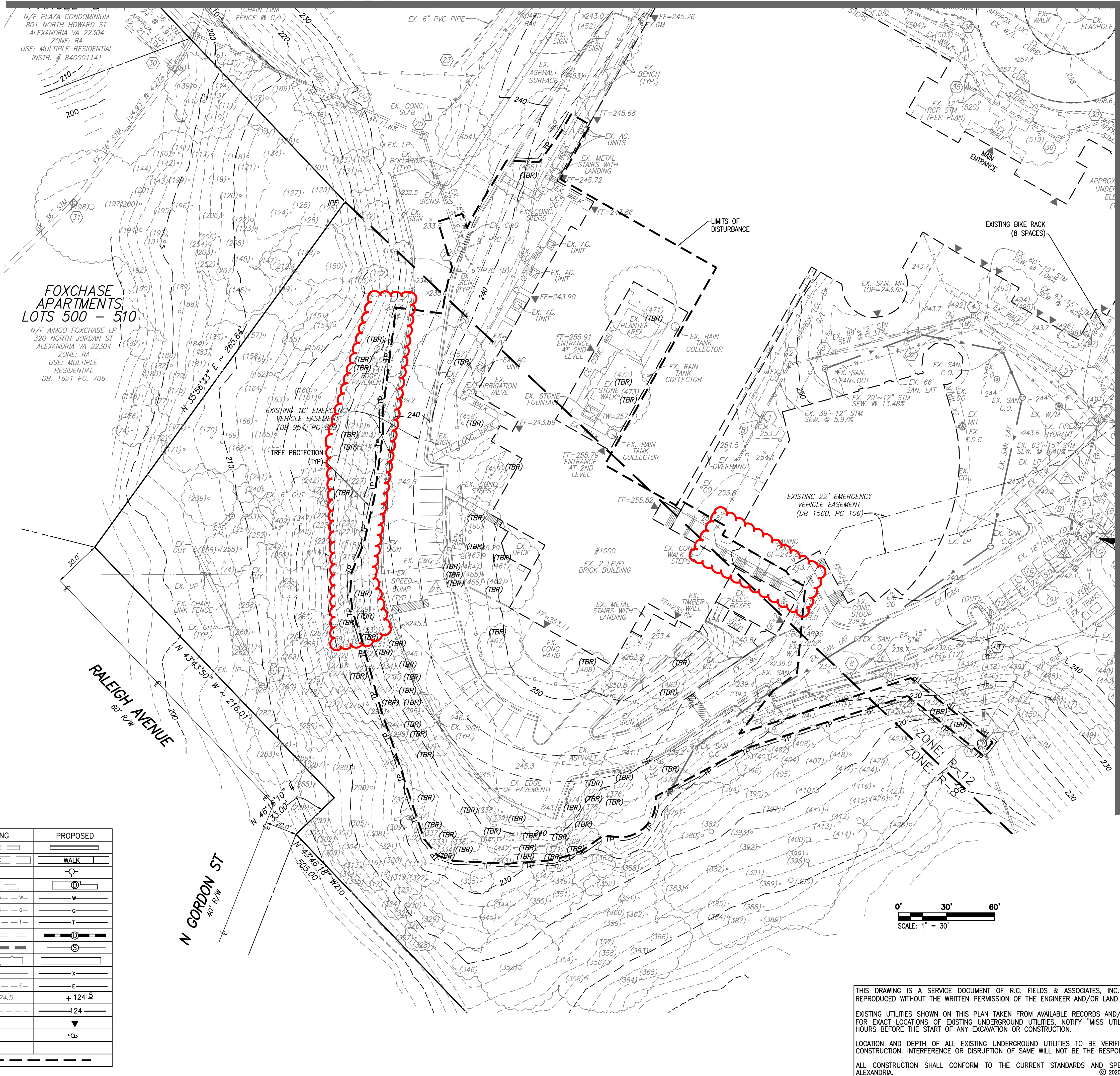
TEXT LEGEND:

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 BLDG.= BUILDING
 BM= BENCHMARK
 BOL= BOLLARD
 CATV= CABLE UTILITY
 CL= CLASS
 CLEAR= CLEARANCE
 CLF= CHAIN LINK FENCE
 CMP = CORRUGATED METAL PIPE
 C.I.= CURB INLET
 C.O.= CLEAN OUT
 CONC.= CONCRETE
 C&G= CURB & GUTTER
 DB= DEED BOOK
 DIP= DUCTILE IRON PIPE
 DOM= DOMESTIC
 DSP= DEVELOPMENT SITE PLAN
 DSUP= DEVELOPMENT SPECIAL USE PERMIT
 DU= DWELLING UNIT
 E= EAST
 EBOX= ELECTRICAL BOX
 ESMT= EASEMENT
 EP= EDGE OF PAVEMENT
 EVE= EMERGENCY VEHICLE EASEMENT
 EX=EXISTING
 FDC= FIRE DEPT. CONNECTION
 FF= FINISH FLOOR
 FH= FIRE HYDRANT
 FT.= FEET
 GL = GROUND LIGHT
 G/V= GAS VALVE
 G/M= GAS METER
 G.I.= GRATE INLET
 H.C.= HEADER CURB
 HDOP= HANDICAP
 HDPE= HIGH DENSITY POLYETHYLENE
 HPS= HIGH PRESSURE SODIUM
 IPF= IRON PIPE FOUND
 INV= INVERT
 INSTR.= INSTRUMENT
 L= LUMENS
 LOC.= LOCATION
 LP= LIGHT POLE
 MAX.= MAXIMUM
 MH= MANHOLE
 MIN.= MINIMUM
 MPH= MILES PER HOUR
 MW= MONITORING WELL
 N= NORTH
 OHW= OVERHEAD WIRE
 PN = PANEL
 PG= PAGE
 PP= POWER POLE
 PROP= PROPOSED
 PVC= POLYVINYL CHLORIDE
 R= RADIUS
 RCP= RE-ENFORCED CONCRETE PIPE
 RELOC. = RELOCATED
 RET= RETAINING
 RESID.= RESIDENTIAL
 R/W= RIGHT-OF-WAY
 S= SOUTH
 SAN= SANITARY SEWER
 S.F.= SQUARE FEET
 SQ.FT.= SQUARE FEET
 STM.= STORM SEWER
 STR.= STRUCTURE
 SUB= SUBDIVISION PLAN
 TBR = TO BE REMOVED
 TBS = TO BE SAVED
 T.M.= TAX MAP
 TMH= TELEPHONE MANHOLE
 TC= TOP OF CURB
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 TRAF.SIG.= TRAFFIC SIGNAL
 TYP= TYPICAL
 UGE= UNDERGROUND ELECTRIC
 UP= UTILITY POLE
 VCS= VIRGINIA COORDINATE SYSTEM
 VPD= VEHICLES PER DAY
 W= WATT
 W= WEST
 W.S.E.= WATER SURFACE ELEVATION
 WV= WATER VALVE
 WM= WATER METER
 W.W.= WINDOW WELL

CIVIL LEGEND

ITEM	EXISTING	PROPOSED
CURB & GUTTER		
SIDEWALK		
FIRE HYDRANT		
STRUCTURES		
WATER MAINS		
GAS MAINS		
TELEPHONE LINES		
STORM SEWER		
SANITARY SEWER		
PAVING		
FENCES		
POWER LINES		
SPOT ELEVATIONS	+ 124.5	+ 124.5
CONTOURS	-124	-124
BUILDING ENTRANCES		
UTILITY POLE		
LIGHT POLE		
LIMITS OF DISTURBANCE		

MATCHLINE SHEET 8



GENERAL NOTES:

1. TAX MAP: 040.03-02-17
2. ZONE: R-8 & R-12
3. OWNER: CHURCH SCHOOLS IN THE DIOCESE OF VIRGINIA
1000 ST STEPHENS RD
ALEXANDRIA, VA 22304
DB. 625 PG. 519
4. TOTAL SITE AREA = 1,280,506 S.F. OR 29.3964 AC.
5. THERE ARE NO RESOURCE PROTECTION AREAS (RPA'S), TIDAL WETLANDS, SHORES, TRIBUTARY STREAMS, FLOOD PLAINS, OR BUFFER AREAS FOR SHORES, WETLANDS, CONNECTED TIDAL WETLANDS, ISOLATED WETLANDS OR HIGHLY ERODIBLE/PERMEABLE SOILS LOCATED ON THIS SITE.
6. THERE ARE NO KNOWN CONTAMINATED AREAS, CONTAMINATED SOILS OR ENVIRONMENTAL ISSUES ASSOCIATED WITH THIS SITE.
7. THE "GENERALIZED ALEXANDRIA SOILS MAP" IDENTIFIES THE SOILS FOR THIS SITE AS LEONARDTOWN SILT LOAM, WHICH OCCURS IN HIGHER ELEVATION AREAS OF THE COASTAL PLAIN, IT IS GENTLY UNDULATING WITH GENERALLY POOR DRAINAGE.
8. THIS SITE DOES CONTAIN AREAS PREVIOUSLY MAPPED AS MARINE CLAYS.

PRIVATE/PUBLIC ROAD NOTE:

ALL EXISTING ROADS WITHIN THE SUBJECT PARCEL BOUNDARY (TM #040.03-02-17) ARE PRIVATE ROADS FOR THE USE OF THE ST STEPHENS AND ST AGNES UPPER SCHOOL CAMPUS.

LEGEND:

--- LIMITS OF DISTURBANCE
 --- TP --- TREE PROTECTION

EXISTING CONDITIONS SURVEY NOTES:

1. UTILITY INFORMATION, AS SHOWN ON THIS PLAN, IS TAKEN FROM THE RECORDS AND/OR FIELD SURVEY COMPLETED AND CANNOT BE GUARANTEED. FOR EXACT LOCATIONS OF EXISTING UNDERGROUND UTILITIES, NOTIFY "MISS UTILITY" AT 1-800-552-7001, 72 HOURS BEFORE THE START OF ANY EXCAVATION OR CONSTRUCTION.
2. LOCATION AND DEPTH OF ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR/ENGINEER SHOULD DIG TEST PITS BY HAND AT ALL UTILITY CROSSINGS TO VERIFY EXACT LOCATION.

UTILITY OWNERSHIP NOTE:

GAS: ALL GAS LINES SHOWN ON THIS PLAN ARE OWNED AND MAINTAINED BY WASHINGTON GAS COMPANY. CONTACT: KEN McCONKEY 703-750-4756; ADDRESS: WASHINGTON GAS, 6801 INDUSTRIAL ROAD, SPRINGFIELD, VA 22151.

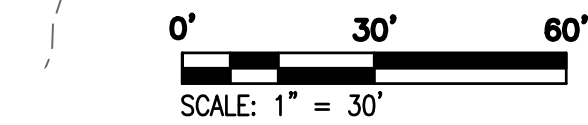
ELECTRIC: ALL ELECTRIC UTILITIES SHOWN ON THIS PLAN ARE OWNED AND MAINTAINED BY DOMINION VIRGINIA POWER. ANY RELOCATION OF EXISTING POLES AND LINES WILL BE COORDINATED WITH DOMINION VIRGINIA POWER. CONTACT: 1-866-366-4357; ADDRESS: DOMINION POWER, P.O. BOX 26666, RICHMOND, VA 23261.

WATER: ALL EXISTING WATER MAINS, SERVICE LINES, AND FIRE HYDRANTS SHOWN ON THIS PLAN OUTSIDE THE PUBLIC RIGHT-OF-WAY ARE OWNED AND MAINTAINED BY THE PROPERTY OWNER. PROPOSED WATER SERVICES FROM METERS TO THE PROPOSED BUILDINGS SHALL BE OWNED AND MAINTAINED BY THE PROPERTY OWNER. CONTACT: NETWORK SUPERVISOR FOR THE SOUTHEAST REGION HAO (STEVEN) CHEN 703-706-3889; ADDRESS: VIRGINIA AMERICAN WATER COMPANY, 2223 DUKE STREET, ALEXANDRIA, VA 22314.

SANITARY SEWER: ALL EXISTING SANITARY SEWER MAINS SHOWN ON THIS PLAN OUTSIDE THE PUBLIC RIGHT-OF-WAY ARE OWNED AND MAINTAINED BY THE PROPERTY OWNER. CONTACT: PUBLIC WORKS SERVICES, 2900 BUSINESS CENTER DRIVE, ALEXANDRIA, VA. TELEPHONE: 703-746-4357.

STORM SEWER: ALL EXISTING STORM SEWERS SHOWN ON THIS PLAN LOCATED OUTSIDE THE PUBLIC RIGHT-OF-WAY ARE OWNED AND MAINTAINED BY THE PROPERTY OWNER. ALL PROPOSED STORM SEWER SEWER AND ROOF DRAINS SHOWN OUTSIDE THE PUBLIC RIGHT-OF-WAY ARE TO BE PRIVATELY OWNED AND MAINTAINED BY THE PROPERTY OWNER. CONTACT: PUBLIC WORKS SERVICES, 2900 BUSINESS CENTER DRIVE, ALEXANDRIA, VA. TELEPHONE: 703-746-4357.

TELEPHONE: ALL TELEPHONE LINES ARE OWNED BY VERIZON. CONTACT: SECTION MANAGER MIKE TYSINGER 804-772-6625; ADDRESS: VERIZON VIRGINIA, INC., 3011 HUNGARY SPRING ROAD, 2ND FLOOR, RICHMOND, VA 23228.



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ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY OF ALEXANDRIA.
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APPROVED
 SPECIAL USE PERMIT NO. 2018-0030

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

PRELIMINARY DEVELOPMENT SPECIAL USE PERMIT
 ST. STEPHEN'S AND ST. AGNES UPPER SCHOOL
 #1000 ST. STEPHENS ROAD
 CITY OF ALEXANDRIA, VIRGINIA

DATE REVISION

DESIGN: ABH
 CHECKED: ACS
 SCALE: 1" = 30'
 DATE: JAN 2020

EXISTING
 CONDITIONS
 (1 OF 3)

SHEET 6 OF 23

FILE: 18-175

R.C. FIELDS & ASSOCIATES, INC.
 ENGINEERING • LAND SURVEYING • PLANNING
 700 S. Washington Street, Suite 220
 Alexandria, Virginia 22314
 (703) 549-6422
 www.rcfields.com

COMMONWEALTH OF VIRGINIA
Andrea Spruch
 ANDREA SPRUCH
 Lic. No. 047863
 AUGUST 17, 2020
 PROFESSIONAL ENGINEER



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\\2018\18175\DWG\DELEV\Fire\Primary\06-08_EXISTING CONDITIONS.dwg
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DATE	REVISION

DESIGN: ABH
CHECKED: ACS
SCALE: 1" = 30'
DATE: JAN 2020

EXISTING
CONDITIONS
(3 OF 3)

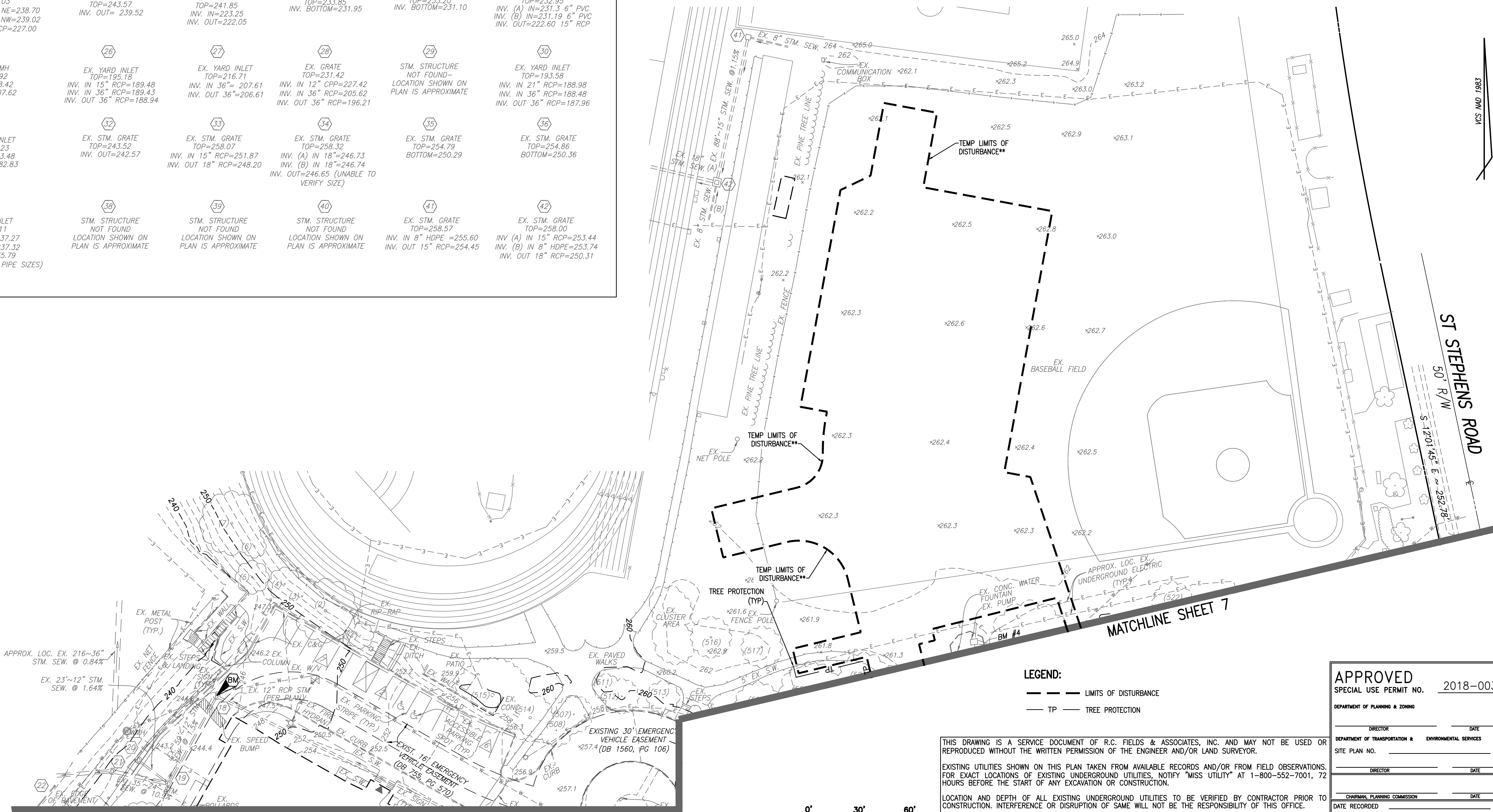
SHEET **8** OF **23**
FILE: **18-175**

EXISTING STORM SEWER INFORMATION

1 EX. STM. GRATE TOP=252.98 INV. (A) IN 6" PVC=251.92 INV. (B) IN 6" PVC=251.92 INV. (C) IN 12"=247.13 INV. OUT 12"=247.12 BOTTOM STRUCTURE=246.72	2 EX. STM. GRATE TOP=251.08 INV. IN 12" PVC =244.80 INV. OUT=244.78	3 EX. STM. GRATE TOP=243.63 INV. IN 12"=240.87 INV. OUT=240.83	4 EX. STM. GRATE TOP=243.03 INV. IN 12"=239.61 INV. OUT 15"=239.58	5 EX. STM. GRATE TOP=242.89 INV. IN 15"=238.94 INV. OUT 15"=238.87	6 EX. STM. MH/CATCH BASIN TOP=246.55 INV. OUT 15"=242.50
7 EX. STM. MH/CATCH BASIN TOP=245.26 INV. (A) IN 15"=238.27 INV. IN (B) 6"=239.79 INV. (C) IN 15"=238.30 INV. OUT 15"=238.26	8 EX. STM. GRATE TOP=245.54 INV. OUT 18"=233.44	9 EX. STM. MH TOP=242.74 INV. (A) IN 15"=232.94 INV. (B) IN 18"=231.96 INV. (C) OUT 18"=234.01 INV. (D) OUT 18"=231.76	10 BENCHMARK #2 EX. STM. MH TOP=243.43 INV. (A) IN 18"=232.58 INV. (B) IN 72"=226.00 INV. OUT 72"=225.97	11 EX. STM. MH TOP=245.17 INV. OUT 72"=227.24	12 EX. STM. MH TOP=240.70 INV. IN 15" NW =225.60 INV. IN 72" NE =225.63 INV. OUT 18" =225.46
13 EX. YARD INLET NOT FOUND LOCATION SHOWN ON PLAN IS APPROXIMATE	14 EX. STM. MH/CATCH BASIN TOP=209.98 INV. (A) IN 15"=205.98 INV. (B) IN 15"=204.28 INV. OUT 15"=200.45	15 EX. STM. MH/CATCH BASIN TOP=192.33 INV. (A) IN 15"=186.75 INV. (B) IN 24"=187.60 INV. OUT 24"=185.18	16 EX. SAND FILTER BOX TOP INV.=242.52 TOP OUT=240.45 INV. IN=225.97 INV. OUT=225.77	17 EX. YARD INLET TOP=231.74 INV. IN=220.24 INV. OUT=218.89	18 BENCHMARK #1 EX. STM. MH TOP=245.16 INV. IN=239.61 INV. OUT=239.56
19 EX. STM. MH TOP=244.03 INV. IN 12" RCP NE=238.70 INV. IN 12" RCP NW=239.02 INV. OUT 24" RCP=227.00	20 EX. STM. MH TOP=243.57 INV. OUT=239.52	21 EX. STM. MH TOP=241.85 INV. IN=223.25 INV. OUT=222.05	22 EX. DRAIN TOP=233.85 INV. BOTTOM=231.95	23 EX. DRAIN TOP=233.20 INV. BOTTOM=231.10	24 EX. GRATE TOP=232.95 INV. (A) IN=231.3 6" PVC INV. (B) IN=231.19 6" PVC INV. OUT=222.60 15" RCP
25 EX. STM. MH TOP=230.92 INV. IN=208.42 INV. OUT=207.62	26 EX. YARD INLET TOP=195.18 INV. IN 15" RCP=189.48 INV. IN 36" RCP=189.43 INV. OUT 36" RCP=188.94	27 EX. YARD INLET TOP=216.71 INV. IN 36"=207.61 INV. OUT 36"=206.61	28 EX. GRATE TOP=231.42 INV. IN 12" CPP=227.42 INV. IN 36" RCP=205.62 INV. OUT 36" RCP=196.21	29 STM. STRUCTURE NOT FOUND— LOCATION SHOWN ON PLAN IS APPROXIMATE	30 EX. YARD INLET TOP=193.58 INV. IN 21" RCP=188.98 INV. IN 36" RCP=188.48 INV. OUT 36" RCP=187.96
31 EX. YARD INLET TOP=189.23 INV. IN=183.48 INV. OUT=182.83	32 EX. STM. GRATE TOP=243.52 INV. OUT=242.57	33 EX. STM. GRATE TOP=258.07 INV. IN 15" RCP=251.87 INV. OUT 18" RCP=248.20	34 EX. STM. GRATE TOP=258.32 INV. (A) IN 18"=246.73 INV. (B) IN 18"=246.74 INV. OUT=246.65 (UNABLE TO VERIFY SIZE)	35 EX. STM. GRATE TOP=254.79 BOTTOM=250.29	36 EX. STM. GRATE TOP=254.86 BOTTOM=250.36
37 EX. YARD INLET TOP=251.11 INV. (A) IN=237.27 INV. (B) IN=237.32 INV. OUT=235.79 (UNABLE TO VERIFY PIPE SIZES)	38 STM. STRUCTURE NOT FOUND LOCATION SHOWN ON PLAN IS APPROXIMATE	39 STM. STRUCTURE NOT FOUND LOCATION SHOWN ON PLAN IS APPROXIMATE	40 STM. STRUCTURE NOT FOUND LOCATION SHOWN ON PLAN IS APPROXIMATE	41 EX. STM. GRATE TOP=258.57 INV. IN 8" HDPE =255.60 INV. OUT 15" RCP=254.45	42 EX. STM. GRATE TOP=258.00 INV. (A) IN 15" RCP=253.44 INV. (B) IN 8" HDPE=253.74 INV. OUT 18" RCP=250.31

**TEMPORARY LIMITS OF DISTURBANCE NOTE:

TEMPORARY LIMITS OF DISTURBANCE IS PRINCIPALLY RELATED TO THE CONSTRUCTION OF TEMPORARY FACILITIES TO BE UTILIZED BY THE SCHOOL DURING CONSTRUCTION. ALL PROPOSED IMPROVEMENTS WITHIN THE TEMPORARY LIMITS OF DISTURBANCE SHALL BE COMPLETELY REMOVED AT THE CONCLUSION OF THE PROJECT AND EXISTING CONDITIONS SHALL BE FULLY RESTORED IMMEDIATELY FOLLOWING.



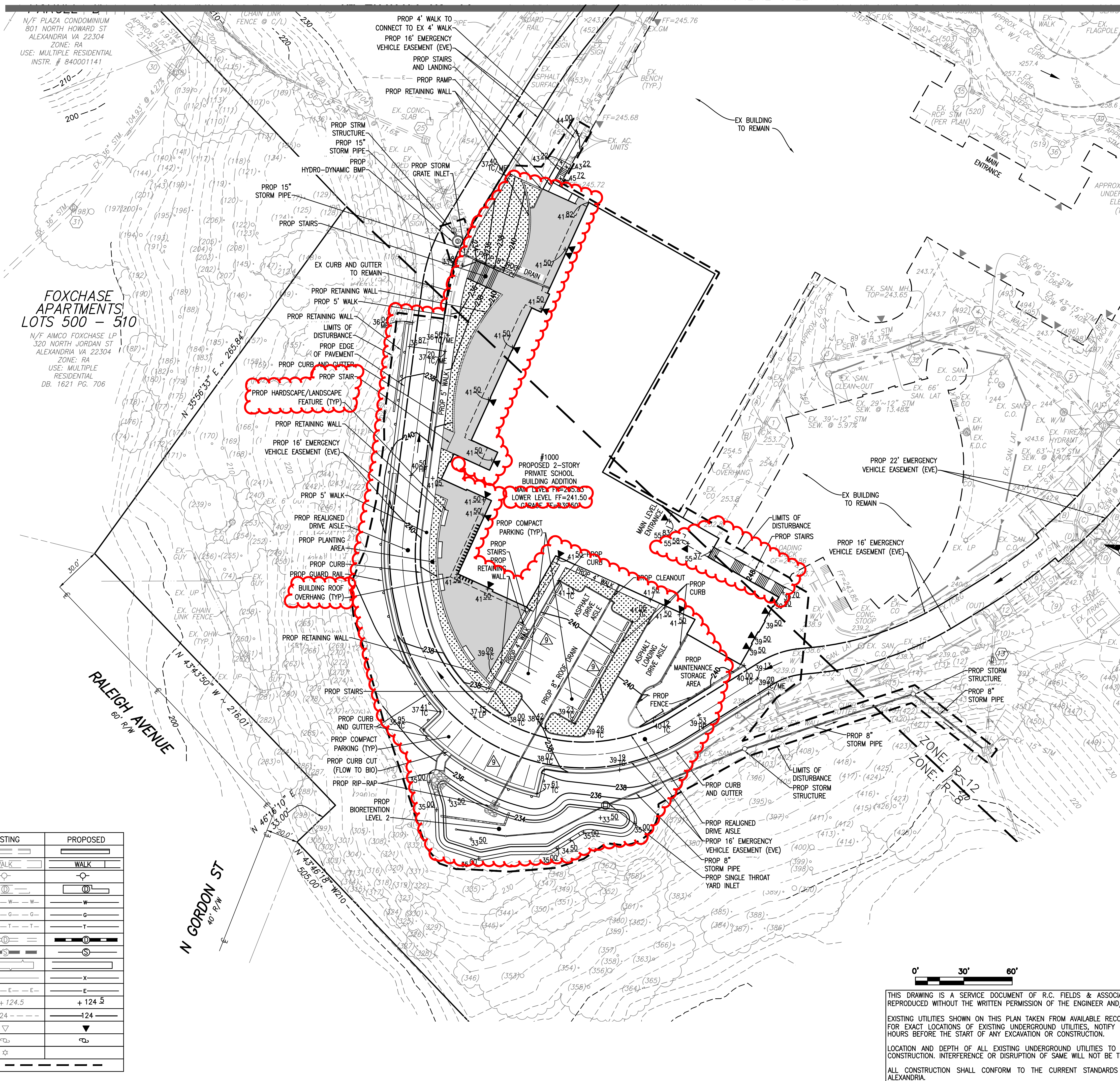
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CIVIL LEGEND

ITEM	EXISTING	PROPOSED
CURB & GUTTER		
SIDEWALK		
FIRE HYDRANT		
STRUCTURES		
WATER MAINS		
GAS MAINS		
TELEPHONE LINES		
STORM SEWER		
SANITARY SEWER		
PAVING		
FENCES		
POWER LINES		
SPOT ELEVATIONS	+ 124.5	+ 124.5
CONTOURS	---124---	---124---
BUILDING ENTRANCES		
UTILITY POLE		
LIGHT POLE		
LIMITS OF DISTURBANCE		

MATCHLINE SHEET 11



GENERAL NOTES:

- TAX MAP: 040.03-02-17
- ZONE: R-8 & R-12
- OWNER: CHURCH SCHOOLS IN THE DIOCESE OF VIRGINIA
1000 ST STEPHENS RD
ALEXANDRIA, VA 22304
DB. 625 PG. 519
- TOTAL PARCEL AREA = 1,280,506 S.F. OR 29.3964 AC.
- THERE ARE NO RESOURCE PROTECTION AREAS (RPA'S), TIDAL WETLANDS, SHORES, TRIBUTARY STREAMS, FLOOD PLAINS, OR BUFFER AREAS FOR SHORES, WETLANDS, CONNECTED TIDAL WETLANDS, ISOLATED WETLANDS OR HIGHLY ERODIBLE/PERMEABLE SOILS LOCATED ON THIS SITE.
- THERE ARE NO KNOWN CONTAMINATED AREAS, CONTAMINATED SOILS OR ENVIRONMENTAL ISSUES ASSOCIATED WITH THIS SITE.
- THE "GENERALIZED ALEXANDRIA SOILS MAP" IDENTIFIES THE SOILS FOR THIS SITE AS LEONARDTOWN SILT LOAM, WHICH OCCURS IN HIGHER ELEVATION AREAS OF THE COASTAL PLAIN. IT IS GENTLY UNDULATING WITH GENERALLY POOR DRAINAGE.
- THIS SITE DOES CONTAIN AREAS PREVIOUSLY MAPPED AS MARINE CLAYS.
- THIS PROJECT IS NOT LOCATED WITHIN A COMBINED SEWER SHED.

ARCHAEOLOGY NOTES:

THE APPLICANT/DEVELOPER SHALL CALL ALEXANDRIA ARCHAEOLOGY IMMEDIATELY (703-746-4399) IF ANY BURIED STRUCTURAL REMAINS (WALL FOUNDATIONS, WELLS, PRIVIES, CISTERNS, ETC.) OR CONCENTRATIONS OF ARTIFACTS ARE DISCOVERED DURING DEVELOPMENT. WORK MUST CEASE IN THE AREA OF THE DISCOVERY UNTIL A CITY ARCHAEOLOGIST COMES TO THE SITE AND RECORDS THE FINDS.

THE APPLICANT/DEVELOPER SHALL NOT ALLOW ANY METAL DETECTION OR ARTIFACT COLLECTION TO BE CONDUCTED ON THE PROPERTY, UNLESS AUTHORIZED BY ALEXANDRIA ARCHAEOLOGY. FAILURE TO COMPLY SHALL RESULT IN PROJECT DELAYS.

ALL REQUIRED ARCHAEOLOGICAL PRESERVATION MEASURES SHALL BE COMPLETED IN COMPLIANCE WITH SECTION 11-411 OF THE CITY OF ALEXANDRIA ZONING ORDINANCE.

SANITARY SEWER OUTFALL NARRATIVE:

THE EXISTING USE (PRIVATE EDUCATION INSTITUTION) PRODUCES AN AVERAGE DAILY FLOW OF APPROXIMATELY 38,400 GALLONS PER DAY (16 GAL. PER STUDENT AND EMPLOYEE X 600 STUDENTS AND EMPLOYEES X 4.0 PEAK FACTOR). WITH THE PROPOSED IMPROVEMENTS THE SITE WILL PRODUCE AN AVERAGE DAILY FLOW OF APPROXIMATELY 41,152 GALLONS PER DAY (16 GAL. PER STUDENT AND EMPLOYEE X 643 NUMBER STUDENTS AND EMPLOYEES X 4.0 PEAK FACTOR). THE ADDITIONAL FLOW FROM THE PROPOSED IMPROVEMENTS DOES NOT EXCEED 10,000 GPD. THEREFORE, A DETAILED SANITARY SEWER OUTFALL ANALYSIS IS NOT REQUIRED WITH THIS PLAN.

GREEN BUILDING NARRATIVE:

THE PROJECT WILL COMPLY WITH THE CITY'S GREEN BUILDING POLICY

PRIVATE/PUBLIC ROAD NOTE:

ALL EXISTING AND PROPOSED ROADS WITHIN THE SUBJECT PARCEL BOUNDARY (TM #040.03-02-17) ARE PRIVATE ROADS FOR THE USE OF THE ST STEPHENS AND ST AGNES UPPER SCHOOL CAMPUS.

LEGEND

VEGETATED OR PLANTED AREA	
GENERAL HARDSCAPING AREA	
PROPOSED CIRCULATION PATTERN FLOW ARROW	

0' 30' 60'

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APPROVED
 SPECIAL USE PERMIT NO. 2018-0030

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 _____

R.C. FIELDS & ASSOCIATES, INC.
 ENGINEERING • LAND SURVEYING • PLANNING
 700 S. Washington Street, Suite 220
 Alexandria, Virginia 22314
 (703) 549-6422

Commonwealth of Virginia
Professional Engineer
 ANDREA SPRUCH
 Lic. No. 047863
 AUGUST 17, 2020

PRELIMINARY DEVELOPMENT SPECIAL USE PERMIT
ST. STEPHEN'S AND ST. AGNES UPPER SCHOOL
 #1000 ST. STEPHENS ROAD
 CITY OF ALEXANDRIA, VIRGINIA

DATE	REVISION

DESIGN: ABH
 CHECKED: ACS
 SCALE: 1" = 30'
 DATE: JAN 2020

PRELIMINARY
 SITE PLAN
 (1 OF 3)

SHEET **9** OF **23**
 FILE: **18-175**



PRELIMINARY DEVELOPMENT SPECIAL USE PERMIT
ST. STEPHEN'S AND ST. AGNES UPPER SCHOOL
#1000 ST. STEPHENS ROAD
CITY OF ALEXANDRIA, VIRGINIA

[illegible]

DESIGN: ABH
CHECKED: ACS
SCALE: 1" = 30'
DATE: JAN 2020

PRELIMINARY
SITE PLAN
(2 OF 3)

SHEET 10 OF 23
FILE: 18-175

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Red, Aug 05 2020 - 2:53:01pm



TEMPORARY LIMITS OF DISTURBANCE IS PRINCIPALLY RELATED TO THE CONSTRUCTION OF TEMPORARY FACILITIES TO BE UTILIZED BY THE SCHOOL DURING CONSTRUCTION. ALL PROPOSED IMPROVEMENTS WITHIN THE TEMPORARY LIMITS OF DISTURBANCE SHALL BE COMPLETELY REMOVED AT THE CONCLUSION OF THE PROJECT AND EXISTING CONDITIONS SHALL BE FULLY RESTORED IMMEDIATELY FOLLOWING.

THE APPLICANT/DEVELOPER SHALL CALL ALEXANDRIA ARCHAEOLOGY IMMEDIATELY (703-746-4399) IF ANY BURIED STRUCTURAL REMAINS (WALL FOUNDATIONS, WALLS, PRIMES, CISTERNS, ETC.) OR CONCENTRATIONS OF ARTIFACTS ARE DISCOVERED DURING DEVELOPMENT. WORK MUST CEASE IN THE AREA OF THE DISCOVERY UNTIL A CITY ARCHAEOLOGIST COMES TO THE SITE AND RECORDS THE FINDS.

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PROPOSED CIRCULATION PATTERN
FLOW ARROW

CITY OF ALEXANDRIA, VIRGINIA

COMMONWEALTH OF VIRGINIA
Andrea Spruch
 ANDREA SPRUCH
 Lic. No. 047863
 AUGUST 17, 2020
 PROFESSIONAL ENGINEER

FILE: **18-175**

TEXT LEGEND:

"= DEGREES
"= MINUTES (OR FEET)
"= SECONDS (OR INCHES)
%= PERCENT
= NUMBER
@ = AT
lbs = POUNDS
A = ARC
AC = ACRE
ADA = AMERICANS W/ DISABILITIES
ACT
APPROX=APPROXIMATE
BC=BOTTOM OF CURB
BF= BASEMENT FLOOR
BLDG.= BUILDING
BM= BENCHMARK
BOL.= BOLLARD
CATV= CABLE UTILITY
CL= CLASS
CLEAR= CLEARANCE
CLF= CHAIN LINK FENCE
CMP = CORRUGATED METAL PIPE
C.I.= CURB INLET
C.O.= CLEAN OUT
CONC.= CONCRETE
C&G= CURB & GUTTER
DB= DEED BOOK
DIP= DUCTILE IRON PIPE
DOM= DOMESTIC
DSP= DEVELOPMENT SITE PLAN
DSUP= DEVELOPMENT SPECIAL USE PERMIT
DU= DWELLING UNIT
E= EAST
EDBX= ELECTRICAL BOX
ESMT.= EASEMENT
EP= EDGE OF PAVEMENT
EVE= EMERGENCY VEHICLE EASEMENT
EX=EXISTING
FDC= FIRE DEPT. CONNECTION
FF= FINISH FLOOR
FH= FIRE HYDRANT
FT.= FEET
GL = GROUND LIGHT
G/V= GAS VALVE
G/M= GAS METER
G.I.= GRATE INLET
H.C.= HEADER CURB
HDCP.= HANDICAP
HDPE= HIGH DENSITY POLYETHYLENE
HPS= HIGH PRESSURE SODIUM
IPF= IRON PIPE FOUND
INV.= INVERT
INSTR.= INSTRUMENT
L= LUMENS
LOC.= LOCATION
LP= LIGHT POLE
MAX.= MAXIMUM
MH= MANHOLE
MIN.= MINIMUM
MPH= MILES PER HOUR
MW= MONITORING WELL
N= NORTH
OHW= OVERHEAD WIRE
PN = PANEL
PG= PAGE
PP= POWER POLE
PROP= PROPOSED
PVC= POLYVINYL CHLORIDE
R= RADIUS
RCP= RE-ENFORCED CONCRETE PIPE
RELOC. = RELOCATED
RET.= RETAINING
RESID.= RESIDENTIAL
R/W= RIGHT-OF-WAY
S= SOUTH
SAN.= SANITARY SEWER
S.F.= SQUARE FEET
SQ.FT.= SQUARE FEET
STM.= STORM SEWER
STR.= STRUCTURE
SUB= SUBDIVISION PLAN
TBR = TO BE REMOVED
TBS = TO BE SAVED
T.M.= TAX MAP
TMH= TELEPHONE MANHOLE
TC= TOP OF CURB
TW = TOP OF WALL
TRAF.SIG.= TRAFFIC SIGNAL
TYP= TYPICAL
UGE= UNDERGROUND ELECTRIC
UP= UTILITY POLE
VCS= VIRGINIA COORDINATE SYSTEM
VPD= VEHICLES PER DAY
W= WATT
W= WEST
W.S.E.= WATER SURFACE ELEVATION
WV= WATER VALVE
WM= WATER METER
W.W.= WINDOW WELL

CIVIL LEGEND

ITEM	EXISTING	PROPOSED
CURB & GUTTER		
SIDEWALK		
FIRE HYDRANT		
STRUCTURES		
WATER MAINS		
GAS MAINS		
TELEPHONE LINES		
STORM SEWER		
SANITARY SEWER		
PAVING		
FENCES		
POWER LINES		
SPOT ELEVATIONS		
CONTOURS		
BUILDING ENTRANCES		
UTILITY POLE		
LIGHT POLE		
LIMITS OF DISTURBANCE		

MATCHLINE SHEET 14

N/F PLAZA CONDOMINIUM
801 NORTH HOWARD ST
ALEXANDRIA VA 22304
ZONE: RA
USE: MULTIPLE RESIDENTIAL
INSTR. # 840001141

FOXCHASE
APARTMENTS
LOTS 500 - 510

N/F AIMCO FOXCHASE LP
320 NORTH JORDAN ST
ALEXANDRIA VA 22304
ZONE: RA
USE: MULTIPLE
RESIDENTIAL
DB. 1621 PG. 706

PROP 16' EMERGENCY
VEHICLE EASEMENT (EVE)

PROP 4' WALK

PROP RETAINING WALL

PROP RETAINING WALL

PROP 5' WALK

PROP 16' EMERGENCY
VEHICLE EASEMENT (EVE)

PROP 5' WALK

#1000
PROPOSED 2-STORY
PRIVATE SCHOOL
BUILDING ADDITION
MAIN LEVEL FF=251.83
LOWER LEVEL FF=241.50
ASPHALT DRIVE AISLE

PROP 22' EMERGENCY
VEHICLE EASEMENT (EVE)

PROP 16' EMERGENCY
VEHICLE EASEMENT (EVE)

PROP LOADING
ACCESS DRIVE AISLE

PROP 16' EMERGENCY
VEHICLE EASEMENT (EVE)

ZONE: R-12
ZONE: R-8

0' 30' 60'

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R.C. FIELDS & ASSOCIATES, INC.
ENGINEERING • LAND SURVEYING • PLANNING
700 S. Washington Street, Suite 220
Alexandria, Virginia 22314
(703) 549-6422

COMMONWEALTH OF VIRGINIA
ANDREA SPRUCH
Lic. No. 047863
AUGUST 17, 2020
PROFESSIONAL ENGINEER

PRELIMINARY DEVELOPMENT SPECIAL USE PERMIT
ST. STEPHEN'S AND ST. AGNES UPPER SCHOOL
#1000 ST. STEPHENS ROAD
CITY OF ALEXANDRIA, VIRGINIA

DATE	REVISION

DESIGN: ABH
CHECKED: ACS
SCALE: 1" = 30'
DATE: JAN 2020

SITE
DIMENSIONS
PLAN
(1 OF 3)

SHEET 12 OF 23
FILE: 18-175

APPROVED
SPECIAL USE PERMIT NO. 2018-0030

DEPARTMENT OF PLANNING & ZONING

DIRECTOR DATE

DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES

SITE PLAN NO.

DIRECTOR DATE

CHAIRMAN, PLANNING COMMISSION DATE

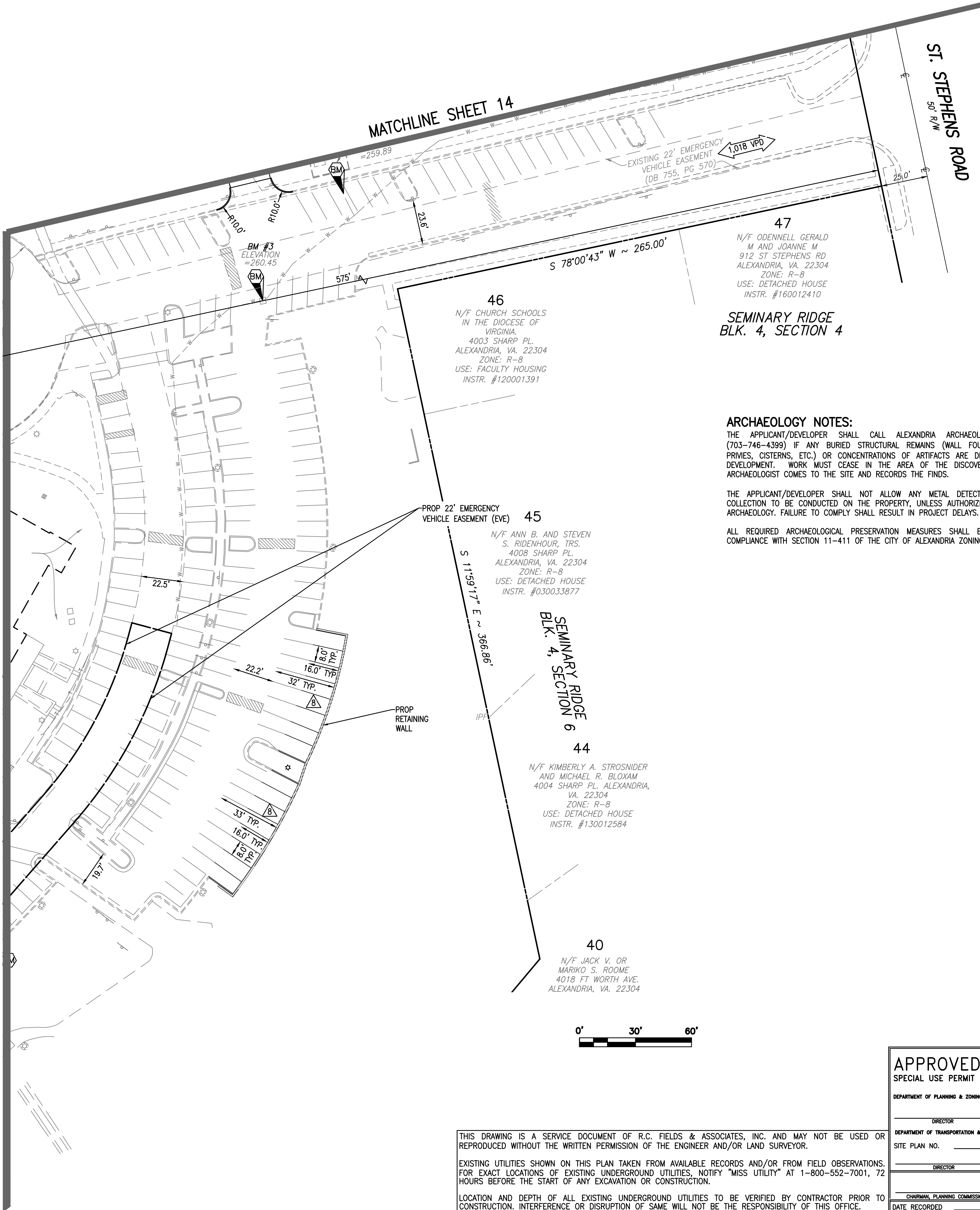
DATE RECORDED

INSTRUMENT NO. DEED BOOK NO. DATE

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Wed, Aug 05 2020 - 3:08:47pm

MATCHLINE SHEET 12

MATCHLINE SHEET 14



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APPROVED	
SPECIAL USE PERMIT NO.	2018-0030
DEPARTMENT OF PLANNING & ZONING	
DIRECTOR	DATE
DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES	
SITE PLAN NO.	
DIRECTOR	DATE
CHAIRMAN, PLANNING COMMISSION	
DATE RECORDED	DATE
INSTRUMENT NO.	DEED BOOK NO. DATE

PRELIMINARY DEVELOPMENT SPECIAL USE PERMIT

ST. STEPHEN'S AND ST. AGNES UPPER SCHOOL

#1000 ST. STEPHENS ROAD

CITY OF ALEXANDRIA, VIRGINIA

DATE	REVISION

DESIGN: ABH
CHECKED: ACS
SCALE: 1" = 30'
DATE: JAN 2020

SITE
DIMENSIONS
PLAN
(2 OF 3)

SHEET 13 OF 23
FILE: 18-175

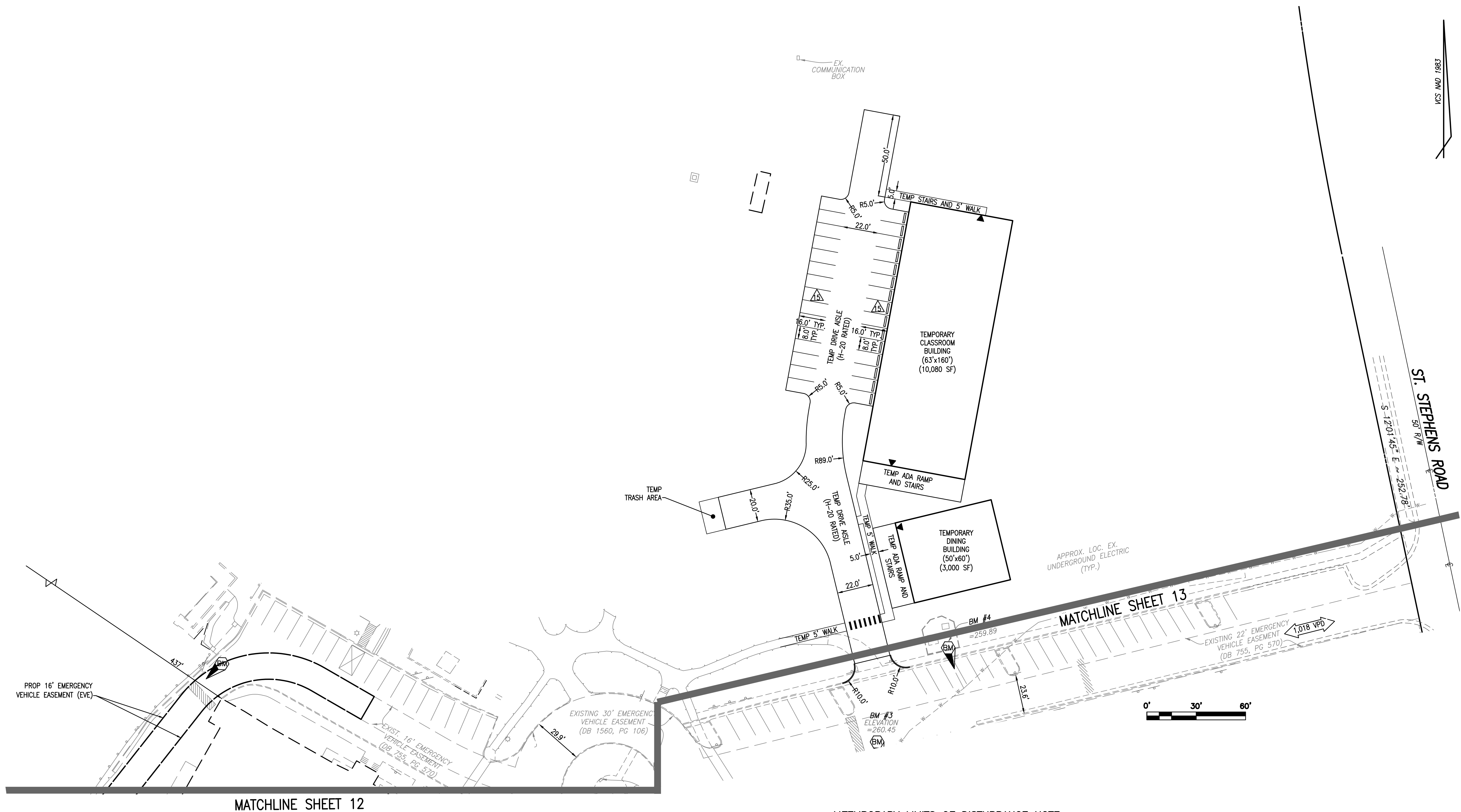


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700 S. Washington Street, Suite 220
Alexandria, Virginia 22314

www.rcfieldsoc.com
(703) 549-6422



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APPROVED		<u>2018-0030</u>	
SPECIAL USE PERMIT NO.			
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 _____	

PRELIMINARY DEVELOPMENT SPECIAL USE PERMIT
STEPHEN'S AND ST. AGNES UPPER SCHOOL

EN'S AND ST. AGNES UPPER
#1000 ST. STEPHENS ROAD
CITY OF ALEXANDRIA, VIRGINIA

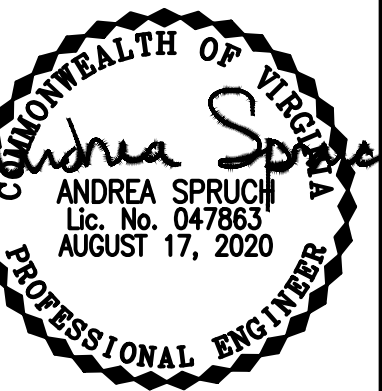
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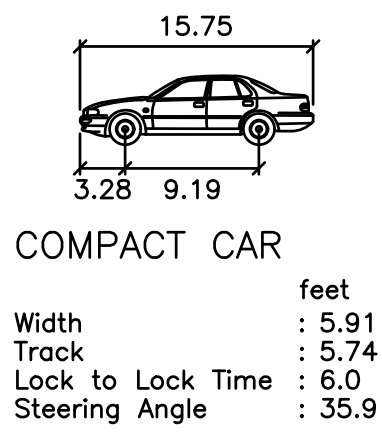
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SITE
DIMENSIONS
PLAN
(3 OF 3)

SHEET 14 OF 23

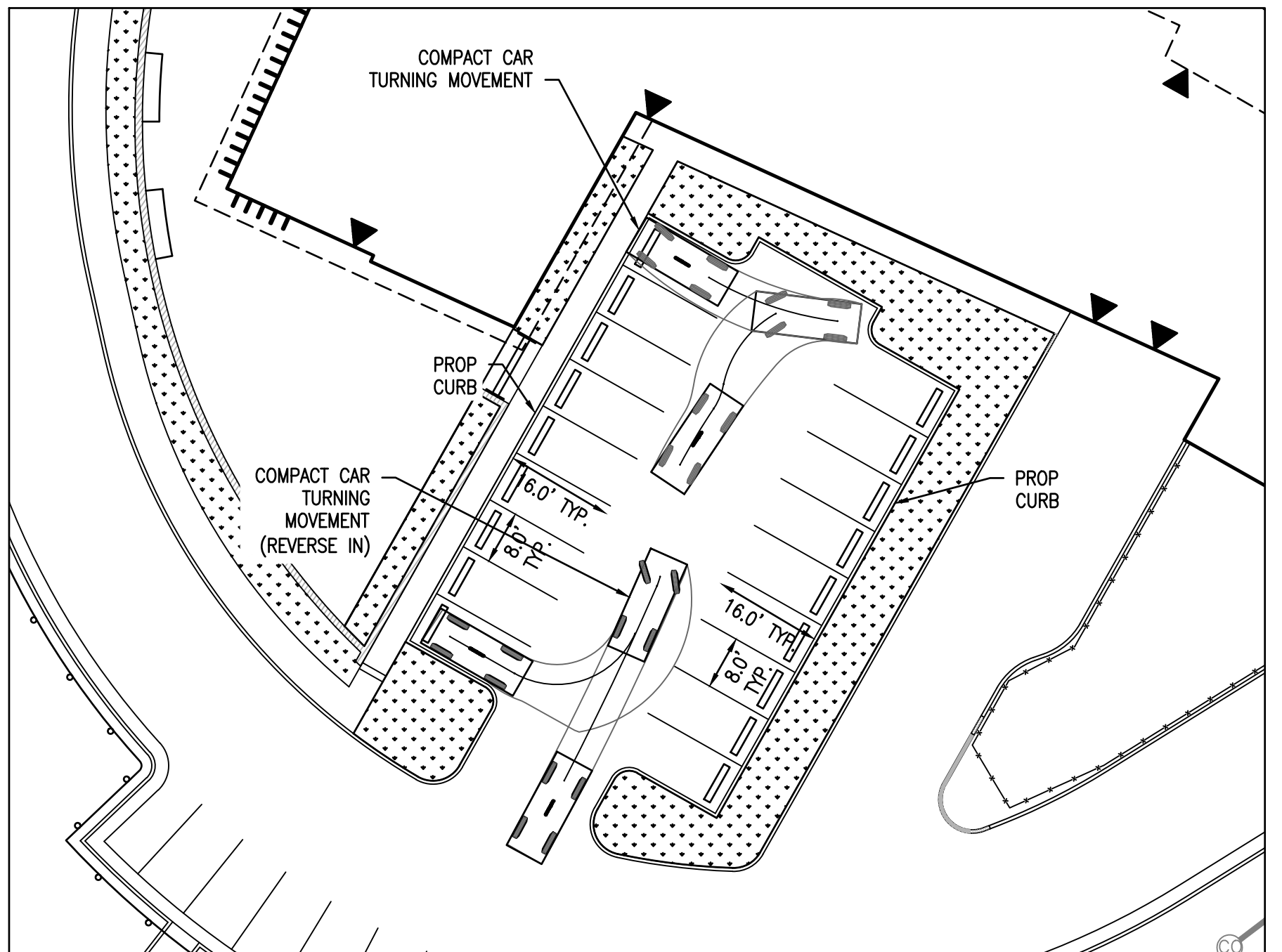
FILE: 18-175





COMPACT CAR

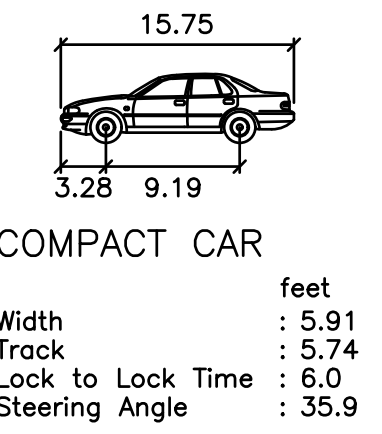
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Track : 3.28
Lock to Lock Time : 9.19
Steering Angle : 35.9



VEHICLE TURNING MOVEMENTS: COMPACT CAR

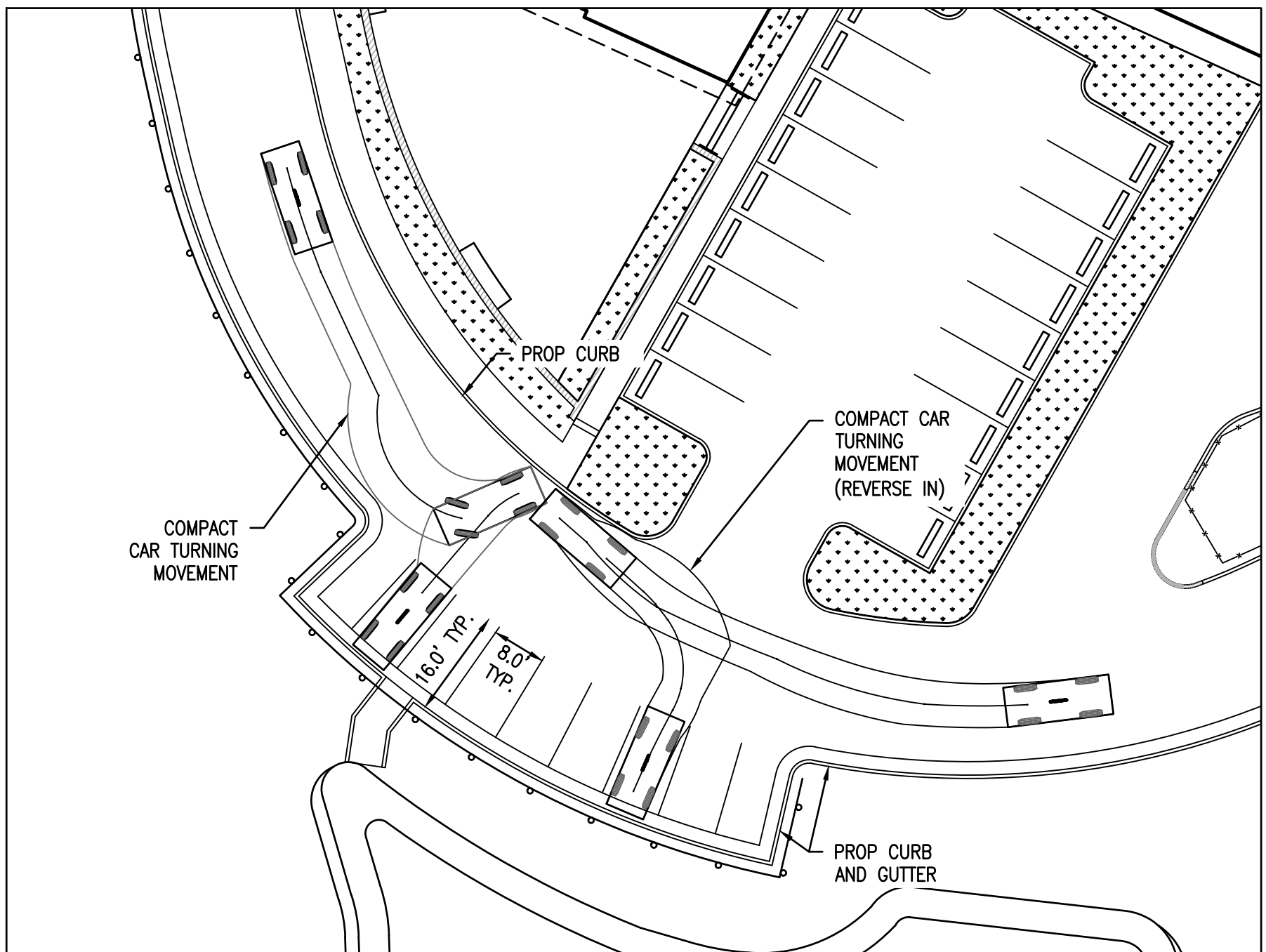
SCALE: 1"=20'

0' 20' 40'



COMPACT CAR

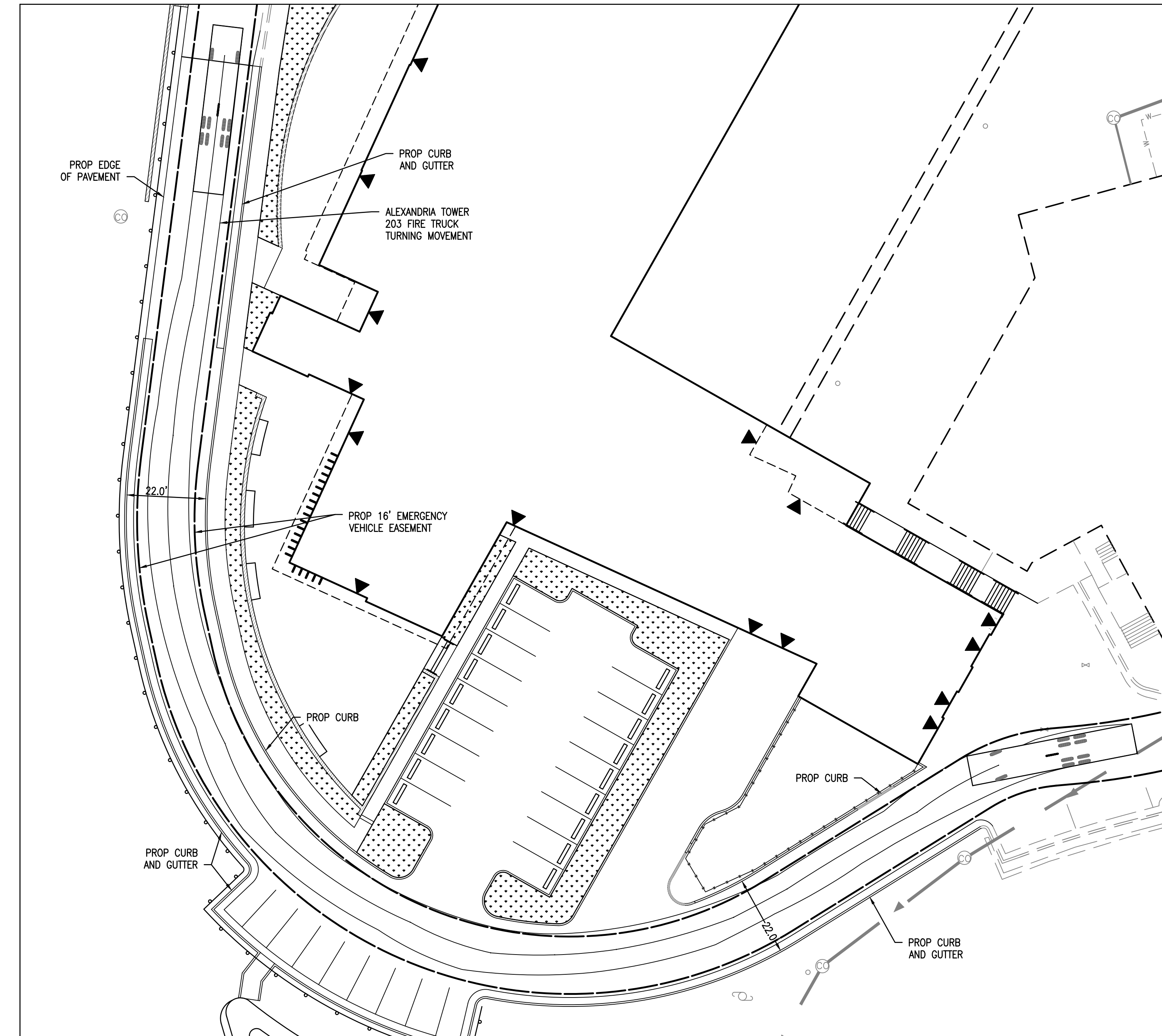
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Lock to Lock Time : 9.19
Steering Angle : 35.9



VEHICLE TURNING MOVEMENTS: COMPACT CAR

SCALE: 1"=20'

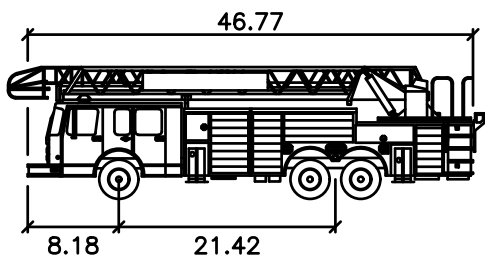
0' 20' 40'



VEHICLE TURNING MOVEMENTS: FIRE TRUCK (TOWER 203)

SCALE: 1"=20'

0' 20' 40'



ALEXANDRIA TOWER 203

Width : 46.77
Track : 8.18
Lock to Lock Time : 21.42
Steering Angle : 40.1

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APPROVED
SPECIAL USE PERMIT NO. 2018-0030

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

PRELIMINARY DEVELOPMENT SPECIAL USE PERMIT

ST. STEPHEN'S AND ST. AGNES UPPER SCHOOL

#1000 ST. STEPHENS ROAD

CITY OF ALEXANDRIA, VIRGINIA

DATE REVISION

DESIGN: ABH
CHECKED: ACS
SCALE: 1" = 20'
DATE: JAN 2020

TURNING
MOVEMENTS
(1 OF 3)

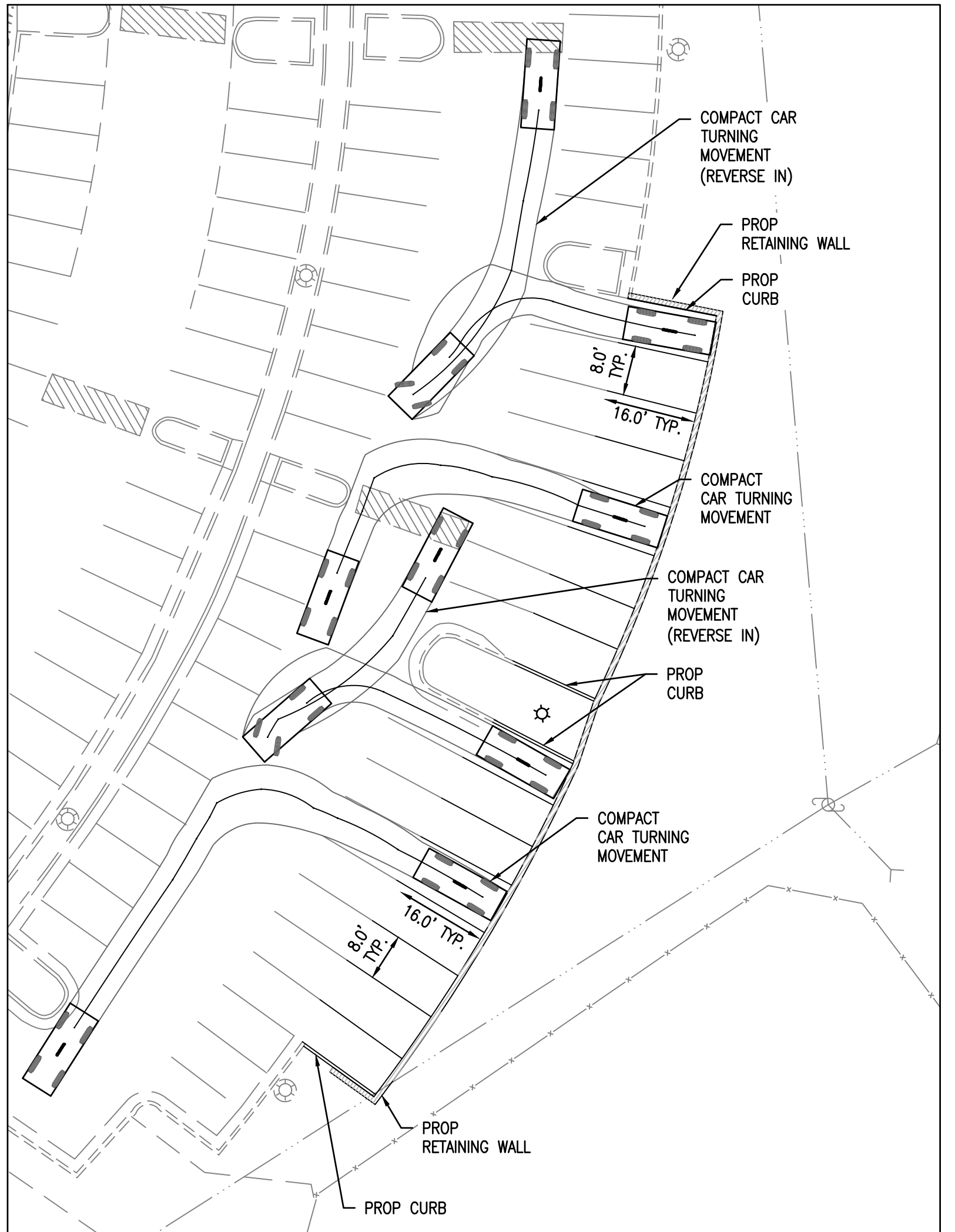
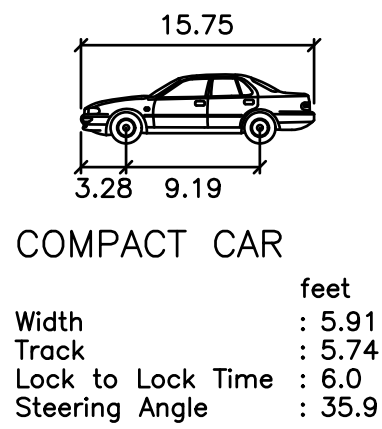
SHEET 15 OF 23

FILE: 18-175

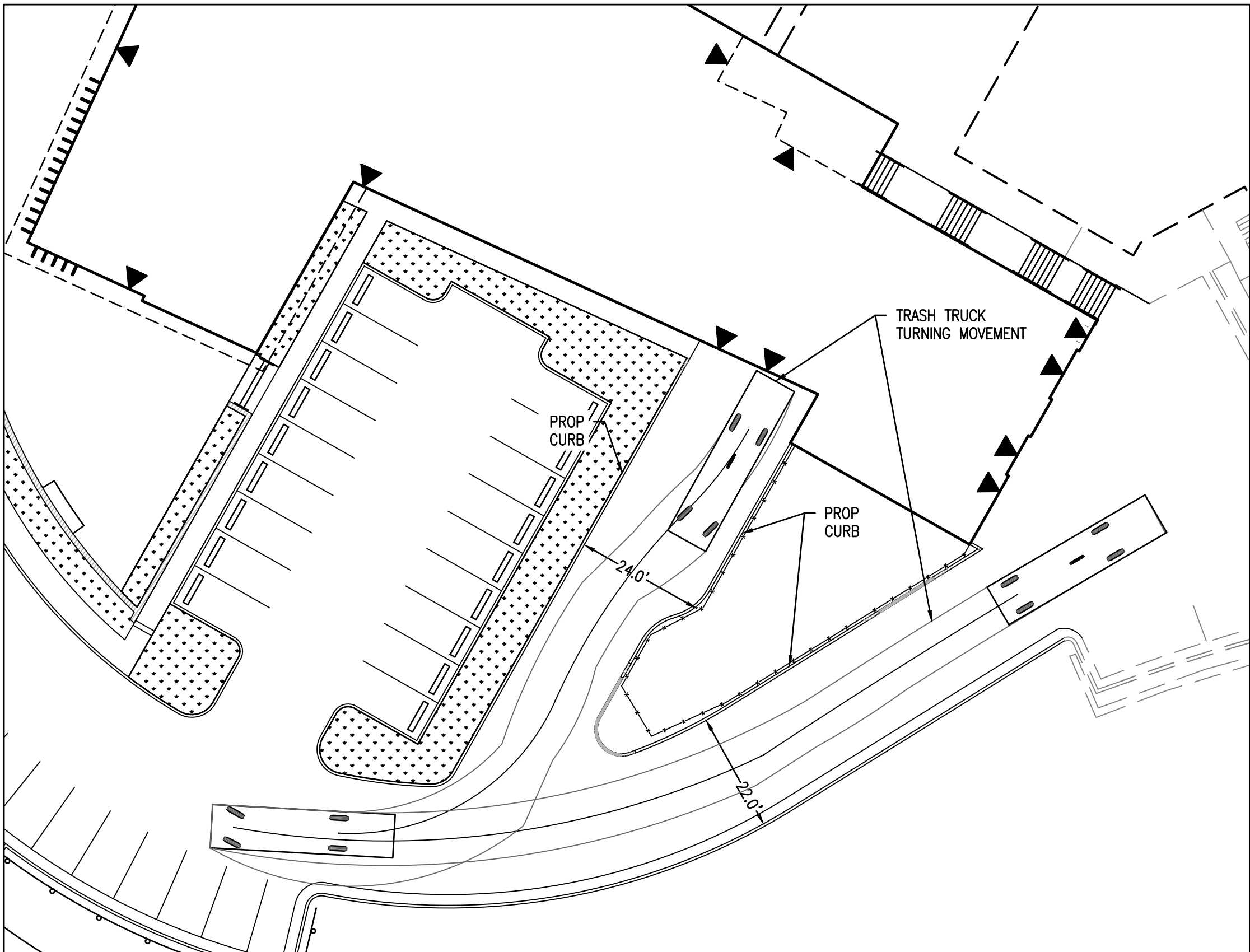
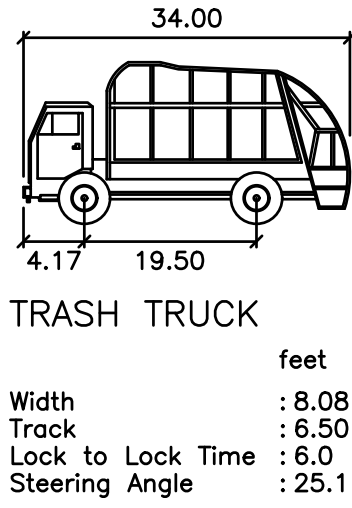
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ANDREA SPRUCH
Lic. No. 047863
AUGUST 17, 2020
PROFESSIONAL ENGINEER

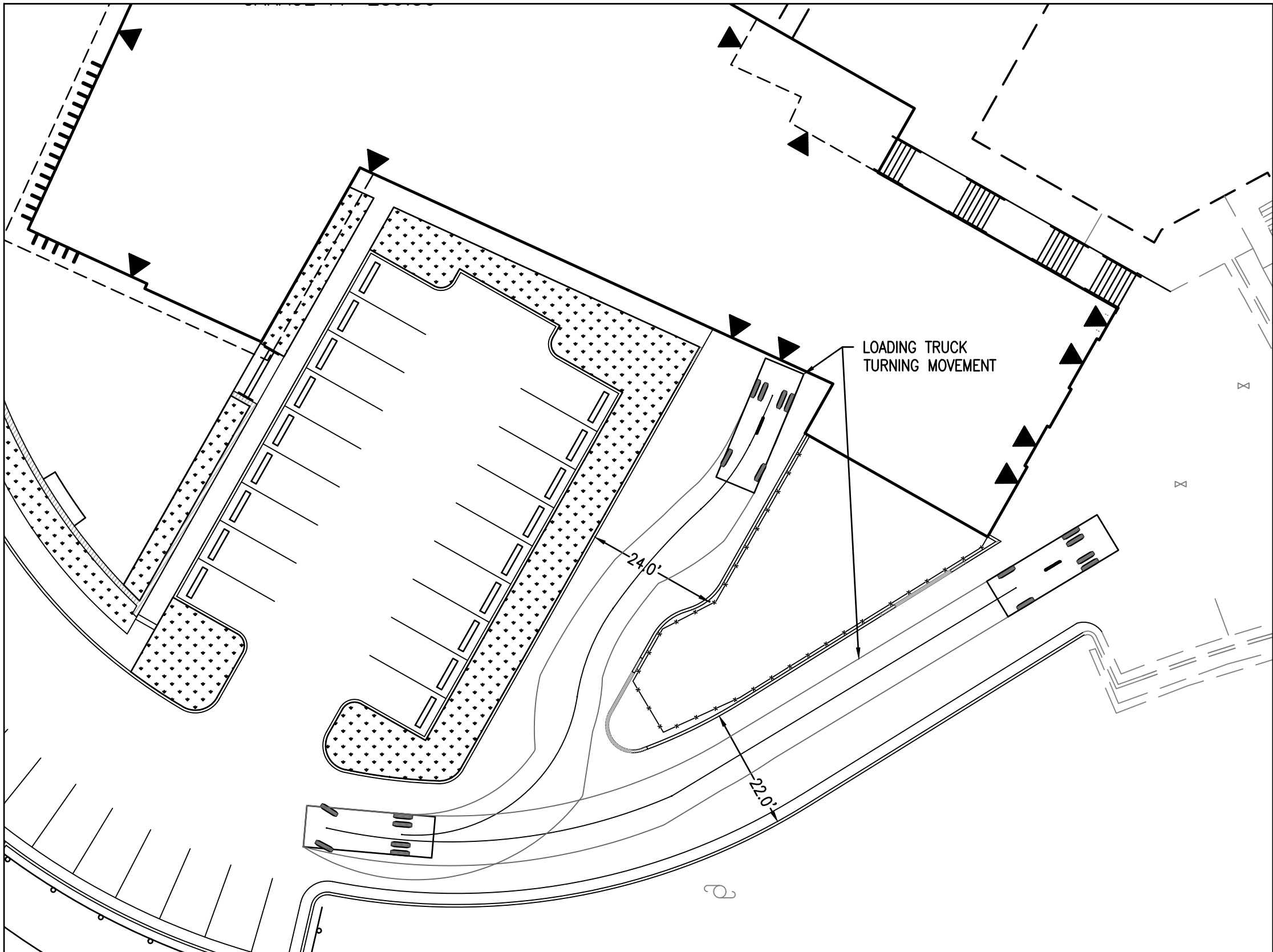
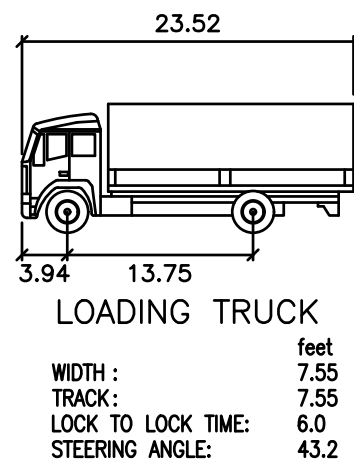
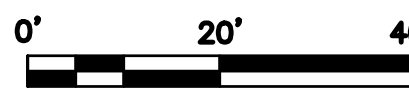
A:\2018\18175\DWG\DELTA\ Preliminary\15-17_Turning Movements.dwg
Wed, Aug 05 2020 - 3:38:45pm



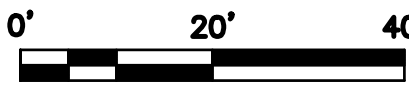
VEHICLE TURNING MOVEMENTS: COMPACT CAR
SCALE: 1"=20'



VEHICLE TURNING MOVEMENTS: TRASH TRUCK
SCALE: 1"=20'



VEHICLE TURNING MOVEMENTS: LOADING TRUCK
SCALE: 1"=20'



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DATE RECORDED	DATE
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COMMONWEALTH OF VIRGINIA
Andrea Spruch
ANDREA SPRUCH
Lic. No. 047863
AUGUST 17, 2020
PROFESSIONAL ENGINEER

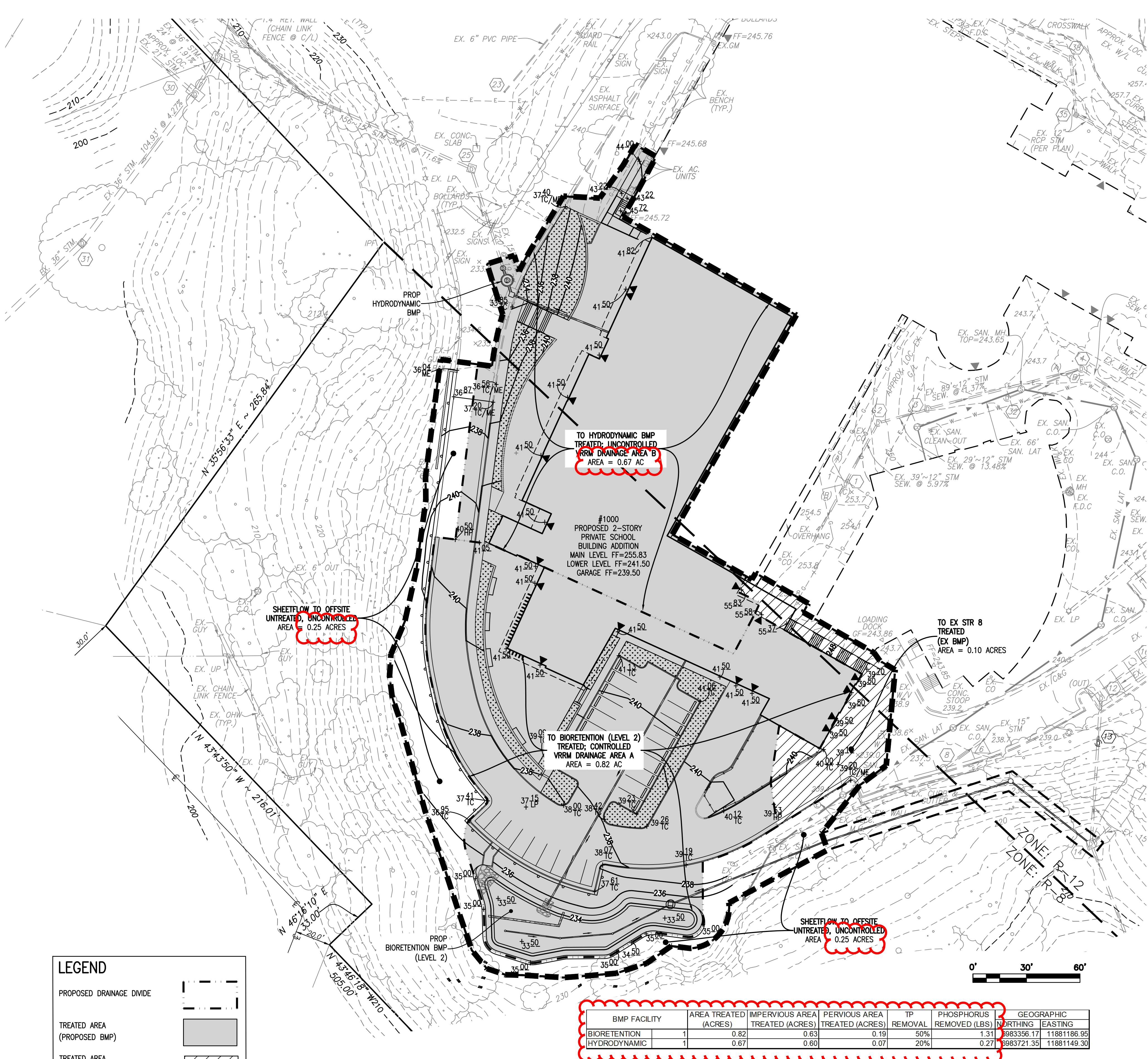
PRELIMINARY DEVELOPMENT SPECIAL USE PERMIT
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CITY OF ALEXANDRIA, VIRGINIA

DATE	REVISION

DESIGN: ABH
CHECKED: ACS
SCALE: 1" = 20'
DATE: JAN 2020

TURNING
MOVEMENTS
(2 OF 3)

SHEET **16** OF **23**
FILE: **18-175**



EXISTING BMP NOTE

A SAND FILTER BMP WAS INSTALLED WITH THE PRIOR CONSTRUCTION OF THE CHAPEL/PERFORMING ARTS BUILDING (CPAC) (DSUP#2000-0049). THE APPROVED DSUP#2000-0049 PLANS SHOW THE EXISTING SAND FILTER BMP TREATING 1.90 ACRES OF IMPERVIOUS AREA WHILE RECEIVING 2.44 ACRES OF TOTAL DRAINAGE AREA. HOWEVER, THE FULL CAPACITY OF THE EXISTING SAND FILTER BMP ALLOWS FOR THE TREATMENT OF UP TO 2.24 ACRES OF IMPERVIOUS AREA.

THE PROPOSED TANDEM PARKING ADDS 0.07 ACRES OF ADDITIONAL IMPERVIOUS AREA WITHIN THE EXISTING SAND FILTER BMP AND THUS IS WITHIN ITS ALLOWABLE CAPACITY. OTHER AREAS WITHIN THE LIMITS OF DISTURBANCE DRAINING TO THE EXISTING SAND FILTER ARE RECONFIGURATIONS OF EXISTING DRAIN AREAS AND DO NOT RESULT IN INCREASES OF IMPERVIOUS AREA. NO VRRM QUALITY CREDIT IS TAKEN FROM THE EXISTING SAND FILTER BMP FOR THIS PROJECT.

BMP FACILITY	AREA TREATED (ACRES)	IMPERVIOUS AREA TREATED (ACRES)	PERVIOUS AREA TREATED (ACRES)	TP REMOVAL	PHOSPHORUS REMOVED (LBS)	GEOGRAPHIC NORTHING	EASTING
BIORETENTION	1	0.82	0.63	0.19	50%	9883356.17	11881186.95
HYDRODYNAMIC	1	0.67	0.60	0.07	20%	9883721.35	11881149.30

STORMWATER MANAGEMENT (CITY CODE SECTION 13-109F COMPLIANCE) NARRATIVE

STORMWATER ANALYSIS LIMITS OF DISTURBANCE INTRODUCTION:

THE PROPOSED REDEVELOPMENT OF THE SUBJECT SITE INCLUDES 2.83 ACRES OF TOTAL DISTURBED AREA. HOWEVER, 0.87 ACRES OF THAT TOTAL DISTURBED AREA IS PRINCIPALLY RELATED TO THE CONSTRUCTION OF TEMPORARY FACILITIES TO BE UTILIZED BY THE SCHOOL DURING CONSTRUCTION. AN ADDITIONAL 0.03 ACRES TO THE TOTAL DISTURBED AREA IS PRINCIPALLY RELATED TO THE INSTALLATION OF PROPOSED UTILITIES. THEREFORE, PER COORDINATION WITH THE CITY OF ALEXANDRIA STAFF, STORMWATER MANAGEMENT CALCULATIONS SHALL UTILIZE A STORMWATER ANALYSIS LIMITS OF DISTURBANCE OF 1.93 ACRES. ALL STORMWATER MANAGEMENT RELATED CALCULATIONS ON THIS SHEET UTILIZE THE STORMWATER ANALYSIS LIMITS OF DISTURBANCE.

PRE-DEVELOPMENT CONDITIONS:

THIS 1.93 ACRE PROJECT AREA IS LOCATED IN THE CAMERON RUN (NORTH) WATERSHED. IN EXISTING CONDITIONS, THE SITE CONSISTS OF A PORTION OF AN EXISTING BUILDING, AN ASPHALT DRIVE AISLE, VARIOUS HARDSCAPING, AND VEGETATED AREAS. A PORTION OF SITE AREA RUNOFF IS COLLECTED BY EXISTING ONSITE STORM STRUCTURES (EX STRs 24, 8, AND 6) WHERE THE COLLECTED RUNOFF CONTINUES VIA ONSITE STORM SEWER BEFORE ULTIMATELY LEAVING THE SITE AND ENTERING THE CITY OF ALEXANDRIA MAINTAINED STORM SEWER SYSTEM. ONCE WITHIN THE CITY OF ALEXANDRIA MAINTAINED STORM SEWER, THE RUNOFF THEN COMBINES WITH COLLECTED RUNOFF FROM ADJACENT DRAINAGE AREAS TRAVELING SOUTHWARD BEFORE ULTIMATELY ENTERING CAMERON RUN. THE REMAINING PORTION OF SITE RUNOFF NOT COLLECTED VIA EXISTING ONSITE STORM STRUCTURE, LEAVES THE SITE VIA UNCONCENTRATED SHEETFLOW.

POST-DEVELOPMENT CONDITIONS:

THIS PROJECT PROPOSES THE CONSTRUCTION OF A BUILDING ADDITION AND ASSOCIATED SITE IMPROVEMENTS. A PORTION OF SITE AREA AND ROOF AREA RUNOFF DRAINS VIA OVERLAND FLOW AND ROOF DRAIN BEFORE BEING COLLECTED BY A PROPOSED ONSITE STORM INLET AND IS TREATED BY A PROPOSED HYDRODYNAMIC BMP. ANOTHER PORTION OF SITE AND ROOF AREA RUNOFF DRAINS VIA OVERLAND FLOW AND ROOF DRAIN TO A PROPOSED BIORETENTION FACILITY BEFORE ULTIMATELY FLOWING VIA BIORETENTION OUTFALL PIPE TO AN EXISTING ONSITE STORM INLET (EX STR 14). FURTHERMORE, OTHER PORTIONS OF SITE RUNOFF DRAIN VIA OVERLAND FLOW TO EXISTING ONSITE STORM INLETS (EX STR 8 AND EX STR 6). THE SITE RUNOFF COLLECTED VIA THE EXISTING ONSITE STRUCTURES OF 14, 8, AND 6 AND PROPOSED ONSITE STORM INLET DESCRIBED ABOVE, CONTINUE VIA ONSITE STORM SEWER ULTIMATELY LEAVING THE SITE AND ENTERING THE CITY OF ALEXANDRIA MAINTAINED STORM SEWER SYSTEM. THIS COLLECTED RUNOFF THEN COMBINES WITH COLLECTED RUNOFF FROM ADJACENT DRAINAGE AREAS TRAVELING SOUTHWARD BEFORE ULTIMATELY ENTERING CAMERON RUN. THE REMAINING PORTION OF RUNOFF NOT COLLECTED VIA EXISTING ONSITE STORM STRUCTURE, LEAVES THE SITE VIA UNCONCENTRATED SHEETFLOW.

CONCLUSION

DUE TO AN OVERALL INCREASE OF SITE IMPERVIOUS AREA, THERE IS AN INCREASE IN POST-DEVELOPMENT PEAK RATE RUNOFF (SEE COMPUTATIONS PROVIDED ON THIS SHEET). HOWEVER, A BIORETENTION IS PROPOSED WITH THIS PLAN TO PROVIDE RUNOFF REDUCTION AND DETENTION FOR THE 1, 2, AND 10-YEAR, 24-HOUR STORMS. THERE IS NO RUNOFF VOLUME INCREASE IN THE FORM OF SHEET FLOW RESULTING FROM PERVIOUS AREAS, DISCONNECTED IMPERVIOUS AREAS OR FROM PHYSICAL SPREADING OF CONCENTRATED FLOW ASSOCIATED WITH THE REDEVELOPMENT OF THIS SITE. THEREFORE, THE SMALL PORTION OF THE RUNOFF THAT EXITS THE SITE IN THE FORM OF SHEET FLOW WILL HAVE NO ADVERSE IMPACTS ON DOWN-GRADIENT PROPERTIES OR RESOURCES.

SEE OTHER STORMWATER SHEETS FOR FULL OUTFALL ANALYSIS INFORMATION.

PROJECT DESCRIPTION:

DRAINAGE AREA	IMPERVIOUS	PERVIOUS	TOTAL
SITE AREA (TOTAL ON-SITE AREA INSIDE SWM LOD)	1.43	0.50	1.93
ON-SITE TREATED (ON-SITE & INSIDE SWM LOD)	1.39*	0.29*	1.68*
OFF-SITE TREATED (OFF-SITE & INSIDE SWM LOD)	0.00	0.00	0.00
TOTAL TREATED	1.39*	0.29*	1.68*
ON-SITE IMPERVIOUS AREAS DISCONNECTED BY A VEGETATIVE BUFFER	N/A		
TOTAL TREATED OR DISCONNECTED			1.68*

WATER QUALITY VOLUME DEFAULT:

PROPOSED IMPERVIOUS: 1.43 AC
TREATMENT OF FIRST HALF INCH OF RUNOFF: $1,815 \times 1.43 = 2,595$ CU. FT. WQV REQUIRED

BMP TYPE	AREA TREATED BY BMP (ACRES)	IMPERVIOUS AREA TREATED BY BMP (ACRES)	BMP EFFICIENCY (%)
BIORETENTION	0.82	0.63	50%
HYDRODYNAMIC BMP	0.67	0.60	20%
EX BMP*	0.19	0.16	20%

TOTAL WQV TREATED: NO
WATER QUALITY VOLUME REQUIRED = 2,595 CU. FT.
WATER QUALITY VOLUME TREATED = $1,815 \times 1.39^* = 2,523$ CU. FT.
PERCENT OF WATER QUALITY VOLUME TREATED = 97.2%
DETENTION ON SITE: YES
PROJECT IS WITHIN WHICH WATERSHED? CAMERON RUN (NORTH)
PROJECT DISCHARGES TO WHICH BODY OF WATER? POTOMAC RIVER
*EXISTING ONSITE BMP USED FOR WQV CALCULATIONS BUT NOT FOR VRRM.

STORMWATER RUNOFF COMPUTATIONS

I. PROJECT AREA = 83,903 SQ.FT. OR 1.93 ACRES (ONSITE STORMWATER ANALYSIS LIMITS OF DISTURBANCE)

EXISTING IMPERVIOUS AREA = 50,218 SQ.FT. OR 1.15 ACRES
PROPOSED IMPERVIOUS AREA = 62,074 SQ.FT. OR 1.43 ACRES

VIRGINIA RUNOFF REDUCTION METHOD (PER TR-20, TYPE II, 24-HOUR STORM, USING CLASS D SOILS):

II. WEIGHTED CURVE NUMBER (CN) CALCULATIONS
CN PRE-DEVELOPMENT = $(1.15 \times 98 + 0.47 \times 80 + 0.31 \times 77) \div 1.93 = 90$
CN POST-DEVELOPMENT = $(1.43 \times 98 + 0.50 \times 80) \div 1.93 = 93$

III. PRE-DEVELOPMENT PEAK DISCHARGES ($T_c = 5$ MINS.)
PEAK Q_1 PRE-DEVELOPMENT = 3.92 cfs
PEAK Q_2 PRE-DEVELOPMENT = 4.91 cfs
PEAK Q_3 PRE-DEVELOPMENT = 8.88 cfs

IV. POST-DEVELOPMENT PEAK DISCHARGES ($T_c = 5$ MINS.)
 Q_1 POST (UNCONTROLLED) = 2.52 CFS
 Q_1 POST (TO BIO #1) = 1.12 CFS
 Q_1 POST (TOTAL) = 3.64 CFS

Q_2 POST (UNCONTROLLED) = 3.09 CFS
 Q_2 POST (TO BIO #1) = 1.35 CFS
 Q_2 POST (TOTAL) = 4.44 CFS

Q_3 POST (UNCONTROLLED) = 5.35 CFS
 Q_3 POST (TO BIO #1) = 2.02 CFS
 Q_3 POST (TOTAL) = 7.37 CFS

V. POST-DEVELOPMENT DECREASES

Q_1 DECREASE = 0.28 CFS
 Q_2 DECREASE = 0.47 CFS
 Q_3 DECREASE = 1.51 CFS

VI. DETENTION VOLUME
THE BIORETENTION FACILITY PROVIDES ADEQUATE DETENTION TO ACHIEVE AN OVERALL DECREASE IN ONSITE RUNOFF, THEREFORE NO FURTHER DETENTION IS REQUIRED.

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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

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Alexandria, Virginia 22314
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COMMONWEALTH OF VIRGINIA
ANDREA SPRUCH
Lic. No. 047863
AUGUST 17, 2020
PROFESSIONAL ENGINEER

PRELIMINARY DEVELOPMENT SPECIAL USE PERMIT
ST. STEPHEN'S AND ST. AGNES UPPER SCHOOL
#1000 ST. STEPHENS ROAD
CITY OF ALEXANDRIA, VIRGINIA

DATE REVISION

DESIGN: ABH
CHECKED: ACS
SCALE: 1" = 30'
DATE: JAN 2020

STORMWATER
MANAGEMENT
PLAN
(1 OF 5)

SHEET 18 OF 23

FILE: 18-175

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Wed Aug 05 2020 - 3:58:57pm

LEGEND

PROPOSED DRAINAGE DIVIDE

TREATED AREA
(PROPOSED BMP)

TREATED AREA
(EXISTING BMP)

STORMWATER BMP LIMITS OF
DISTURBANCE

MATCHLINE SHEET 18

EXISTING BMP NOTE
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STORMWATER
MANAGEMENT
PLAN
(2 OF 5)

SHEET 19 OF 23
FILE: 18-175

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AUGUST 17, 2020

PROFESSIONAL ENGINEER

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Wed Aug 05 2020 4:40:01pm

Project Name:

SSSAS Upper School

Date:

7/1/2020

Linear Development Project?

No

CLEAR ALL
(Ctrl+Shift+R)

data input cells

constant values

calculation cells

final results

Site Information

Post-Development Project (Treatment Volume and Loads)

Enter Total Disturbed Area (acres)

1.93

**

Maximum reduction required:

20%

The site's net increase in impervious cover (acres) is:

0.28

Post-Development TP Load Reduction for Site (lb/yr):

1.06

Check:

BMP Design Specifications List: 2011 Stds & Specs

Linear project?

No

Land cover areas entered correctly?

✓

Total disturbed area entered?

✓

Pre-ReDevelopment Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) -- undisturbed, protected forest/open space or reforested				0.31	0.31
Managed Turf (acres) -- disturbed, graded for yards or other turf to be				0.47	0.47
Impervious Cover (acres)				1.15	1.15
					1.93

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				0.50	0.50
Impervious Cover (acres)				1.43	1.43
Area Check	OK.	OK.	OK.	OK.	1.93

Constants

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

Runoff Coefficients (Rv)

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

LAND COVER SUMMARY -- PRE-REDEVELOPMENT		
Land Cover Summary-Pre		
Pre-ReDevelopment	Listed	Adjusted ¹
Forest/Open Space Cover (acres)	0.31	0.03
Weighted Rv(forest)	0.05	0.05
% Forest	16%	2%
Managed Turf Cover (acres)	0.47	0.47
Weighted Rv(turf)	0.25	0.25
% Managed Turf	24%	28%
Impervious Cover (acres)	1.15	1.15
Rv(impervious)	0.95	0.95
% Impervious	60%	70%
Total Site Area (acres)	1.93	1.65
Site Rv	0.63	0.73

Treatment Volume and Nutrient Load		
Pre-ReDevelopment Treatment Volume (acre-ft)	0.1021	0.1010
Pre-ReDevelopment Treatment Volume (cubic feet)	4,449	4,398
Pre-ReDevelopment TP Load (lb/yr)	2.80	2.76
Pre-ReDevelopment TP Load per acre (lb/acre/yr)	1.45	1.67
Baseline TP Load (lb/yr) (0.41 lbs/acre/yr applied to pre-redevelopment area excluding pervious land proposed for new impervious cover)		0.68

LAND COVER SUMMARY -- POST DEVELOPMENT			
Land Cover Summary-Post (Final)		Land Cover Summary-Post	
Post-ReDev. & New Impervious		Post-ReDevelopment	
Forest/Open Space Cover (acres)	0.00	Forest/Open Space Cover (acres)	0.00
Weighted Rv(forest)	0.00	Weighted Rv(forest)	0.00
% Forest	0%	% Forest	0%
Managed Turf Cover (acres)	0.50	Managed Turf Cover (acres)	0.50
Weighted Rv (turf)	0.25	Weighted Rv (turf)	0.25
% Managed Turf	26%	% Managed Turf	30%
Impervious Cover (acres)	1.43	ReDev. Impervious Cover (acres)	1.15
Rv(impervious)	0.95	Rv(impervious)	0.95
% Impervious	74%	% Impervious	70%
Final Site Area (acres)	1.93	Total ReDev. Site Area (acres)	1.65
Final Post Dev Site Rv	0.77	ReDev Site Rv	0.74
Final Post-Development Treatment Volume (acre-ft)	0.1236	Post-ReDevelopment Treatment Volume (acre-ft)	0.1015
Final Post-Development Treatment Volume (cubic feet)	5,385	Post-ReDevelopment Treatment Volume (cubic feet)	4,420
Final Post-Development TP Load (lb/yr)	3.38	Post-ReDevelopment Load (TP) (lb/yr)*	2.78
Final Post-Development TP Load per acre (lb/acre/yr)	1.75	Post-ReDevelopment TP Load per acre (lb/acre/yr)	1.68
		Max. Reduction Required (Below Pre-ReDevelopment Load)	20%
		TP Load Reduction Required for Redeveloped Area (lb/yr)	0.57
		TP Load Reduction Required for New Impervious Area (lb/yr)	0.49

TP Load Reduction Required for Redeveloped Area (lb/yr)	0.57
---	------

TP Load Reduction Required for New Impervious Area (lb/yr)	0.49
--	------

Post-Development Requirement for Site Area

TP Load Reduction Required (lb/yr)

1.06

Nitrogen Loads (Informational Purposes Only)

Pre-ReDevelopment TN Load (lb/yr)	20.00
-----------------------------------	-------

Final Post-Development TN Load (Post-ReDevelopment & New Impervious) (lb/yr)	24.20
--	-------

Drainage Area A

Drainage Area A Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals	Land Cover Rv
Forest/Open Space (acres)					0.00	0.00
Managed Turf (acres)				0.19	0.19	0.25
Impervious Cover (acres)				0.63	0.63	0.95
Total					0.82	

CLEAR BMP AREAS

Total Phosphorus Available for Removal in D.A. A (lb/yr)

1.46

Post Development Treatment Volume in D.A. A (ft³)

2,328

Stormwater Best Management Practices (RR = Runoff Reduction)

--Select from dropdown lists--

Practice	Runoff Reduction Credit (%)	Managed Turf Credit Area (acres)	Impervious Cover Credit Area (acres)	Volume from Upstream Practice (ft 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	0	0	0	25	0.00	0.00	0.00	0.00	
6.b. Bioretention #2 or Micro-Bioretention #2 (Spec #9)	80	0.19	0.63	0	1,862	466	2,328	50	0.00	1.46	1.31	0.15	

Drainage Area B

Drainage Area A Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals	Land Cover Rv
Forest/Open Space (acres)					0.00	0.00
Managed Turf (acres)				0.07	0.07	0.25
Impervious Cover (acres)				0.60	0.60	0.95
Total					0.67	

CLEAR BMP AREAS

Total Phosphorus Available for Removal in D.A. B (lb/yr)

1.34

Post Development Treatment Volume in D.A. B (ft³)

2,133

14. Manufactured Treatment Devices (no RR)

14.a. Manufactured Treatment Device- Hydrodynamic	0	0.07	0.60	0	0	2,133	2,133	20	0.00	1.34	0.27	1.07	
---	---	------	------	---	---	-------	-------	----	------	------	------	------	--

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)	0.63	0.60	0.00	0.00	0.00	OK.
IMPERVIOUS COVER TREATED (ac)	0.63	0.60	0.00	0.00	0.00	OK.
MANAGED TURF AREA (ac)	0.19	0.07	0.00	0.00	0.00	OK.
MANAGED TURF AREA TREATED (ac)	0.19	0.07	0.00	0.00	0.00	OK.
AREA CHECK	OK.	OK.	OK.	OK.	OK.	

Site Treatment Volume (ft³)

5,385

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)	1,862	0	0	0	0	1,862
TP LOAD AVAILABLE FOR REMOVAL (lb/yr)	1.46	1.34	0.00	0.00	0.00	2.80
TP LOAD REDUCTION ACHIEVED (lb/yr)	1.31	0.27	0.00	0.00	0.00	1.58
TP LOAD REMAINING (lb/yr)	0.15	1.07	0.00	0.00	0.00	1.22

NITROGEN LOAD REDUCTION ACHIEVED (lb/yr)	9.61	0.00	0.00	0.00	0.00	9.61
--	------	------	------	------	------	------

Total Phosphorus

FINAL POST-DEVELOPMENT TP LOAD (lb/yr)	3.38
TP LOAD REDUCTION REQUIRED (lb/yr)	1.06
TP LOAD REDUCTION ACHIEVED (lb/yr)	1.58
TP LOAD REMAINING (lb/yr):	1.80
REMAINING TP LOAD REDUCTION REQUIRED (lb/yr):	0.00 **

** TARGET TP REDUCTION EXCEEDED BY 0.52 LB/YEAR **

Total Nitrogen (For Informational Purposes)

POST-DEVELOPMENT LOAD (lb/yr)	24.20
NITROGEN LOAD REDUCTION ACHIEVED (lb/yr)	9.61
REMAINING POST-DEVELOPMENT NITROGEN LOAD (lb/yr)	14.59

**STORMWATER ANALYSIS LIMITS OF DISTURBANCE NOTE:

A STORMWATER ANALYSIS LIMITS OF DISTURBANCE IS UTILIZED FOR THE VIRGINIA RUNOFF REDUCTION SPREADSHEET CALCULATIONS ON THIS SHEET. THE STORMWATER ANALYSIS LIMITS OF DISTURBANCE EXCLUDES THE LIMITS OF DISTURBANCE ASSOCIATED WITH THE TEMPORARY CAMPUS AND UTILITY WORK. SEE STORMWATER MANAGEMENT NARRATIVES ON THE "STORMWATER MANAGEMENT PLAN" SHEET.

STORMWATER QUALITY NARRATIVE (CITY CODE SECTION 13-109E COMPLIANCE):

THE PROPOSED REDEVELOPMENT (1.93 ACRES OF ONSITE DISTURBANCE (STORMWATER ANALYSIS LIMITS OF DISTURBANCE)) GENERATES A NET INCREASE IN IMPERVIOUS AREA FROM PRE-DEVELOPMENT CONDITIONS. PER CITY CODE SECTION 13-109E-(5)(c)(e), DEVELOPMENT OF PRIOR DEVELOPED LANDS RESULTING IN A NET INCREASE IN IMPERVIOUS AREA AND DISTURBING MORE THAN 1 ACRE, MUST RESULT IN A 20% DECREASE IN PHOSPHORUS LOADING FROM THE PRE-DEVELOPMENT TOTAL PHOSPHORUS LOAD.

THE VIRGINIA RUNOFF REDUCTION METHOD WAS UTILIZED TO DETERMINE THE STORM WATER QUALITY MANAGEMENT PERFORMANCE REQUIREMENTS FOR THIS PROJECT. A LEVEL 2 BIORETENTION FACILITY AND A HYDRODYNAMIC BMP ARE PROPOSED AS BMPs TO PROVIDE WATER QUALITY TREATMENT. THESE BMPs RESULT IN A 35.7% $[1 - (1.80/2.80) * 100 = 35.7\%]$ REDUCTION OF PHOSPHORUS LOAD FROM THE SITE WHICH IS GREATER THAN THE MINIMUM REQUIREMENT OF 20% (SEE SPREADSHEET ON THIS SHEET). THEREFORE, THE WATER QUALITY MANAGEMENT PERFORMANCE REQUIREMENTS FOR THE PROPOSED DEVELOPMENT PER CITY CODE SECTION 13-109E-(5)(a) HAVE BEEN MET.

IN ADDITION, 1.39 ACRES OF THE 1.43 ACRES OF ON-SITE IMPERVIOUS AREA (WITHIN THE STORMWATER ANALYSIS LIMITS OF DISTURBANCE) IS PROPOSED TO BE TREATED WITH THIS DEVELOPMENT, WHICH MEETS THE MAJORITY OF THE WATER QUALITY DEFAULT VOLUME TREATMENT STANDARDS IN SECTION 13-110 OF THE ZONING ORDINANCE. A CONTRIBUTION TO THE ALEXANDRIA WATER QUALITY IMPROVEMENT FUND WILL BE MADE FOR THAT PORTION OF THE WATER QUALITY VOLUME NOT TREATED IN COMPLIANCE WITH CITY CODE SECTION 13-109E-(5) AND SECTION 13-110.

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LOCATION AND DEPTH OF ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION. INTERFERENCE OR DISRUPTION OF SAME WILL NOT BE THE RESPONSIBILITY OF THIS OFFICE.

ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY OF ALEXANDRIA.
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APPROVED

SPECIAL USE PERMIT NO. 2018-0030

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

R.C. FIELDS & ASSOCIATES, INC.
ENGINEERING • LAND SURVEYING • PLANNING
700 S. Washington Street, Suite 220
Alexandria, Virginia 22314
www.rcfields.com
(703) 549-6422



PRELIMINARY DEVELOPMENT SPECIAL USE PERMIT
ST. STEPHEN'S AND ST. AGNES UPPER SCHOOL
#1000 ST. STEPHENS ROAD
CITY OF ALEXANDRIA, VIRGINIA

DATE	REVISION

DESIGN: ABH
CHECKED: ACS
SCALE: NO SCALE
DATE: JAN 2020

STORMWATER
MANAGEMENT
PLAN
(3 OF 5)

SHEET 20 OF 23
FILE: 18-175

WATER QUALITY CALCULATIONS:

THE BIORETENTION TREATMENT VOLUME IS CALCULATED AS FOLLOWS:
 $Tv = [(1.25 * Ap * Rv)] / 12$

THE MINIMUM BMP SURFACE AREA REQUIRED IS CALCULATED AS FOLLOWS:
 $SA = Tv / Sd$

WHERE:
Tv = TREATMENT VOLUME
Rv = RUNOFF COEFFICIENT FOR DRAINAGE AREA
Sd = STORAGE DEPTH OF BIORETENTION
Dp = PONDING DEPTH (0.5')
Dfm = DEPTH OF FILTER MEDIA (3')
Nfm = VOID RATIO OF FILTER MEDIA (0.25)
Dg = DEPTH OF GRAVEL BED (1.25')
Ng = VOID RATIO OF GRAVEL BED (0.40)
SA = SURFACE AREA

TOTAL ON-SITE DRAINAGE AREA TO BMP= 0.82 AC
IMPERVIOUS ON-SITE AREA TO BMP= 0.63 AC
PERVIOUS ON-SITE AREA TO BMP= 0.19 AC

$Rv = [(0.95 * 0.63) + (0.25 * 0.19)] / 0.82 = 0.79$

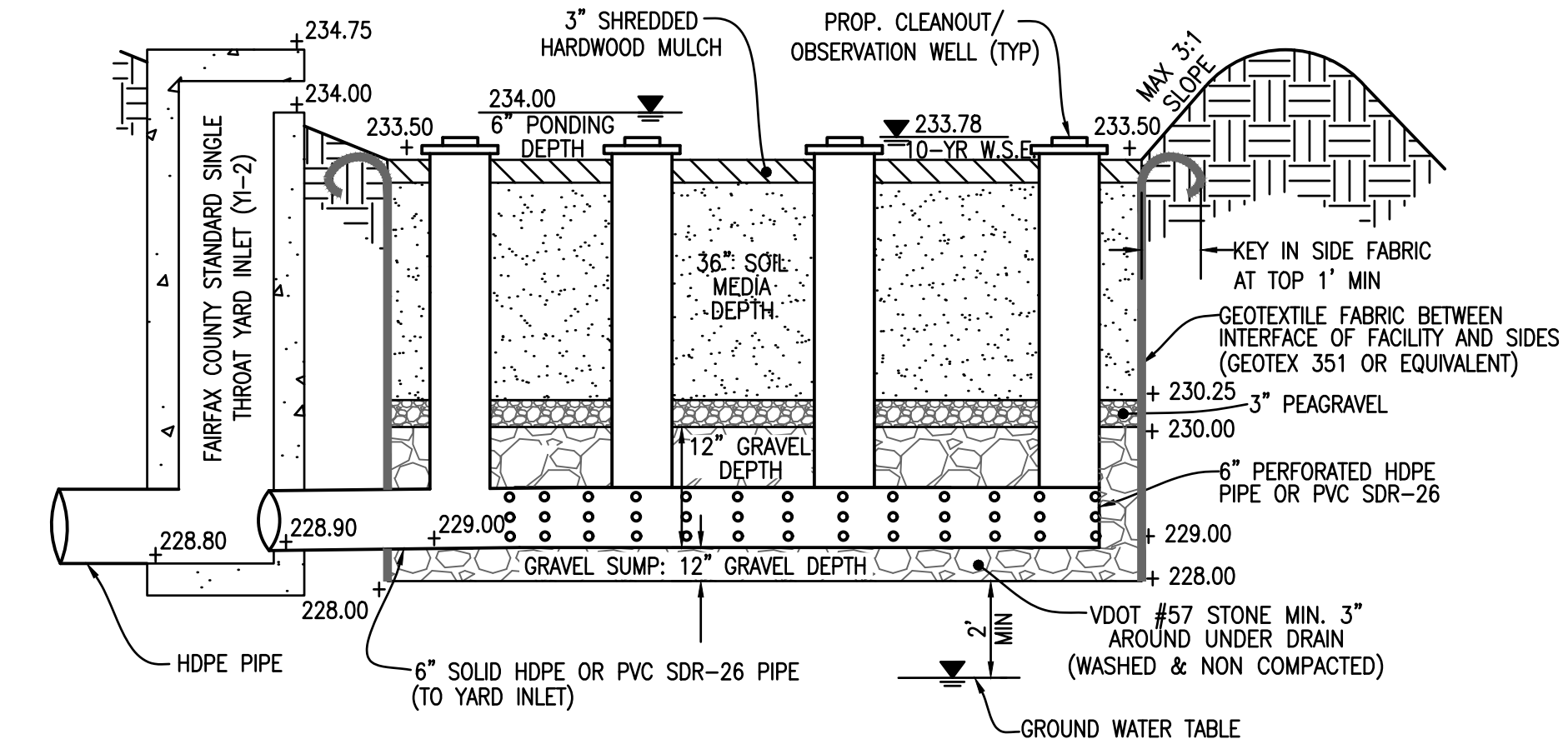
REQUIRED BIORETENTION TREATMENT VOLUME:
 $Tv = [(1.25 * 35,583 * 0.79)] / 12$
Tv=2,928 SF

BIORETENTION STORAGE DEPTH:
 $Sd = 0.5 + (3 * 0.25) + (1.25 * 0.4)$
Sd=1.75'

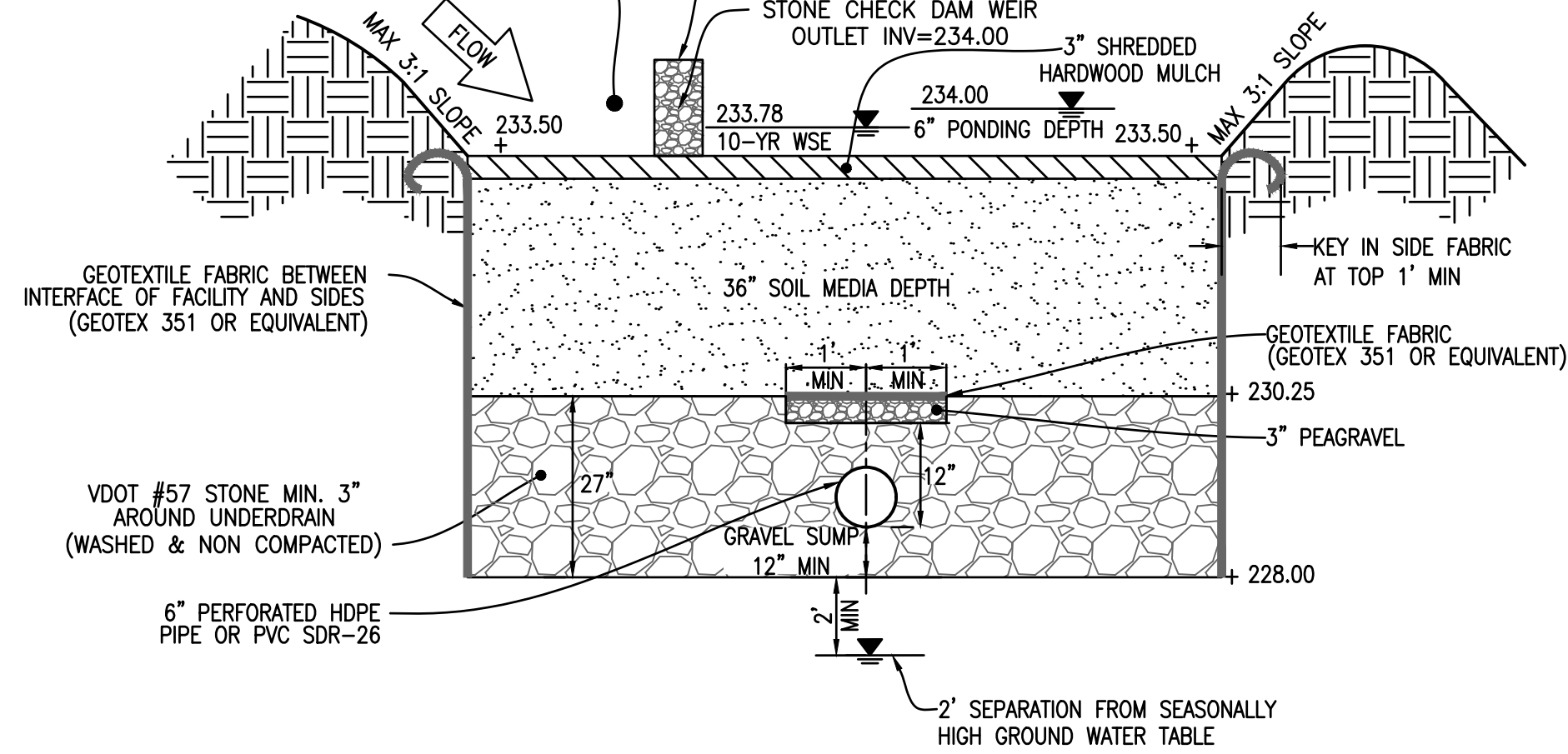
MINIMUM BMP SURFACE AREA REQUIRED:
SA=2,928/1.75'
SA=1,674 SF

REQUIRED SURFACE AREA: 1,674 SF
PROVIDED SURFACE AREA: 1,902 SF

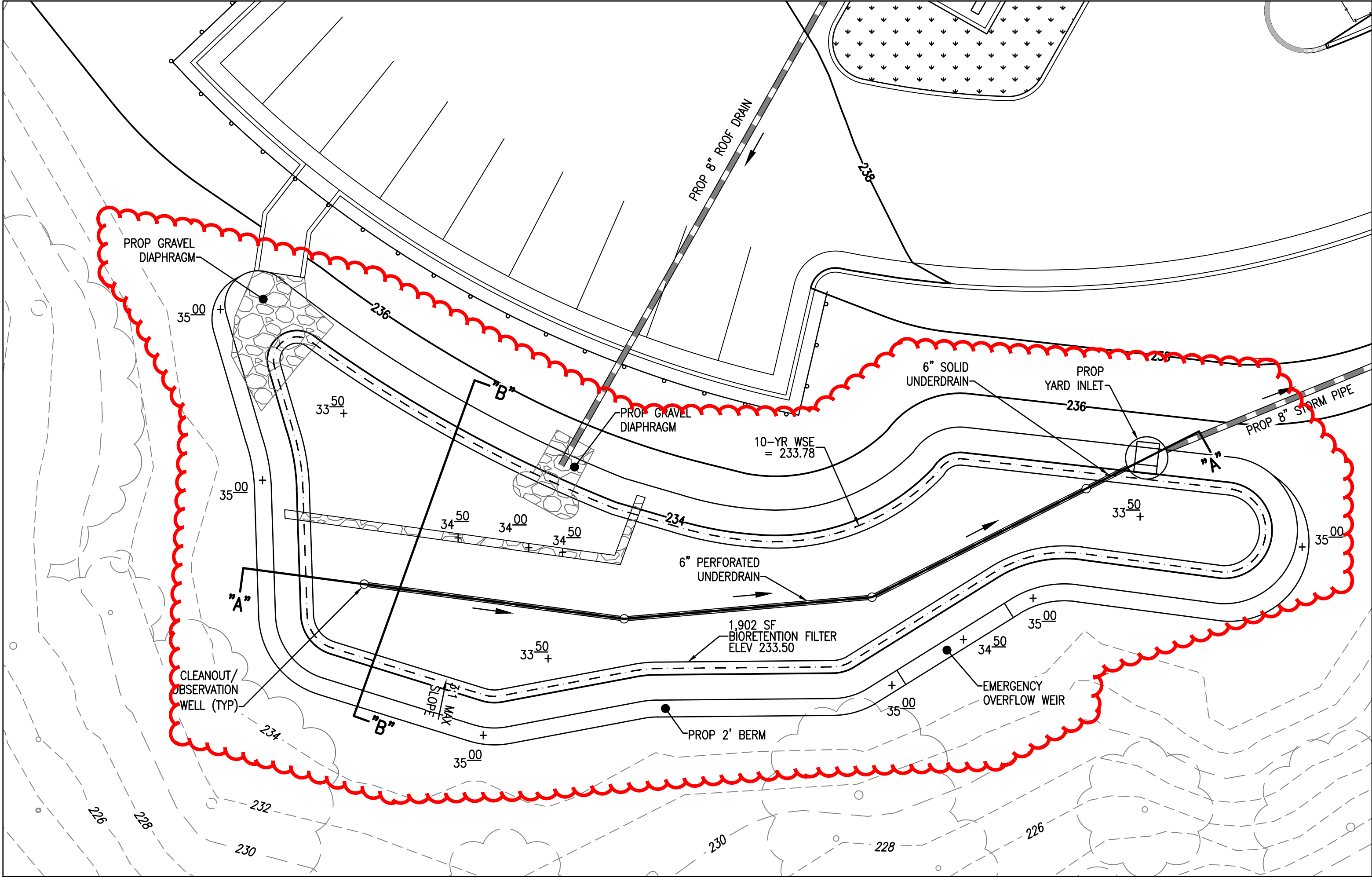
SECTION "A"



SECTION "B"

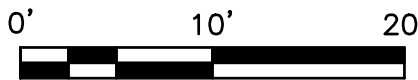


BIORETENTION FILTER DETAIL
NOT TO SCALE



BIORETENTION FILTER DESIGN - LEVEL 2
SCALE: 1"=10'

PRETREATMENT NOTE:
THE PROPOSED BIORETENTION FACILITY WILL UTILIZE A PRE-TREATMENT CELL AND GRAVEL DIAPHRAGM AS PRETREATMENT DEVICES TO FILTER THE RUNOFF PRIOR TO ENTERING THE PROPOSED FACILITY.



R.C. FIELDS & ASSOCIATES, INC.
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700 S. Washington Street, Suite 220
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COMMONWEALTH OF VIRGINIA
ANDREA SPRUCH
Lic. No. 047863
AUGUST 17, 2020
PROFESSIONAL ENGINEER

PRELIMINARY DEVELOPMENT SPECIAL USE PERMIT
ST. STEPHEN'S AND ST. AGNES UPPER SCHOOL
#1000 ST. STEPHENS ROAD
CITY OF ALEXANDRIA, VIRGINIA

DATE	REVISION

DESIGN: ABH
CHECKED: ACS
SCALE: AS SHOWN
DATE: JAN 2020

STORMWATER
MANAGEMENT
PLAN
(4 OF 5)

SHEET **21** OF **23**
FILE: **18-175**

APPROVED
SPECIAL USE PERMIT NO. 2018-0030

DEPARTMENT OF PLANNING & ZONING	
DIRECTOR	DATE
DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES	
SITE PLAN NO.	
DIRECTOR	DATE
CHAIRMAN, PLANNING COMMISSION	
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DATE	

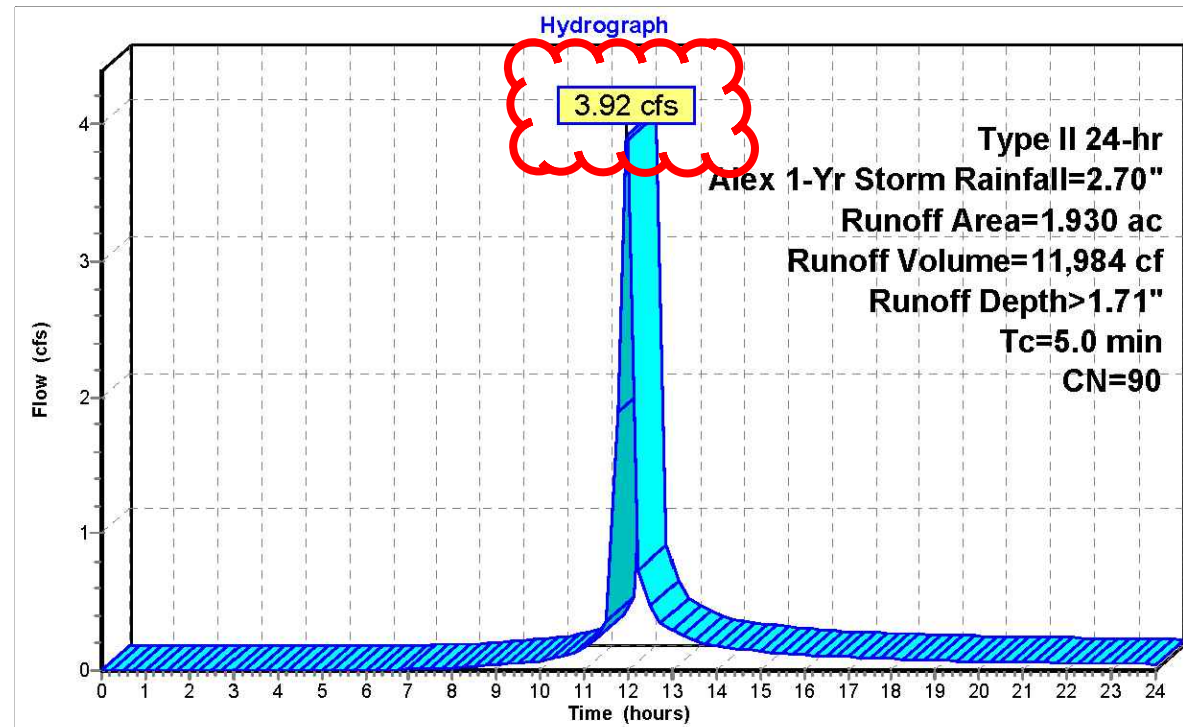
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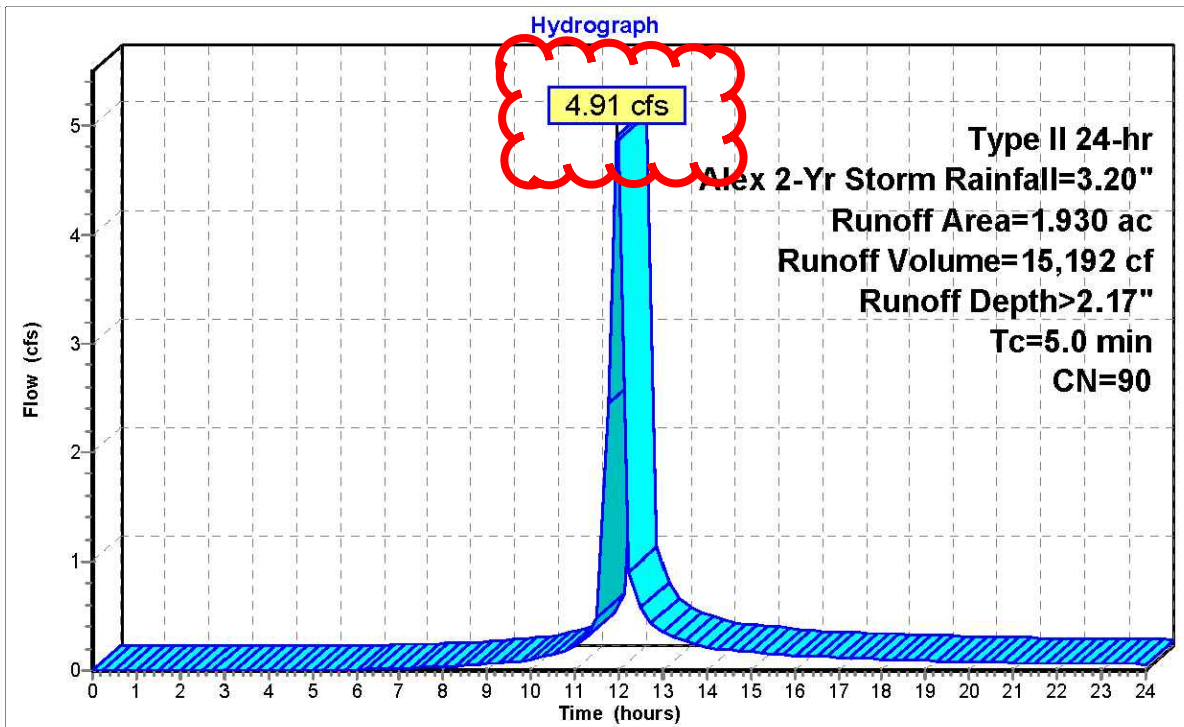
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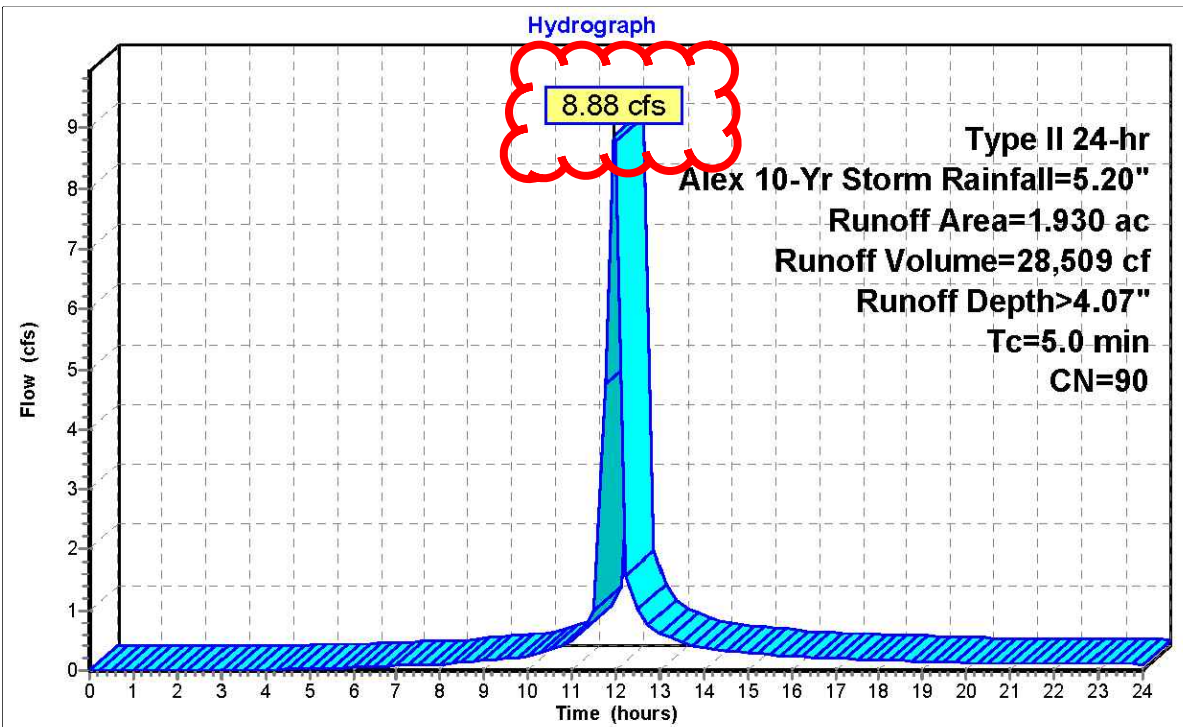
1-YEAR 24 HR PRE-DEVELOPMENT RUNOFF



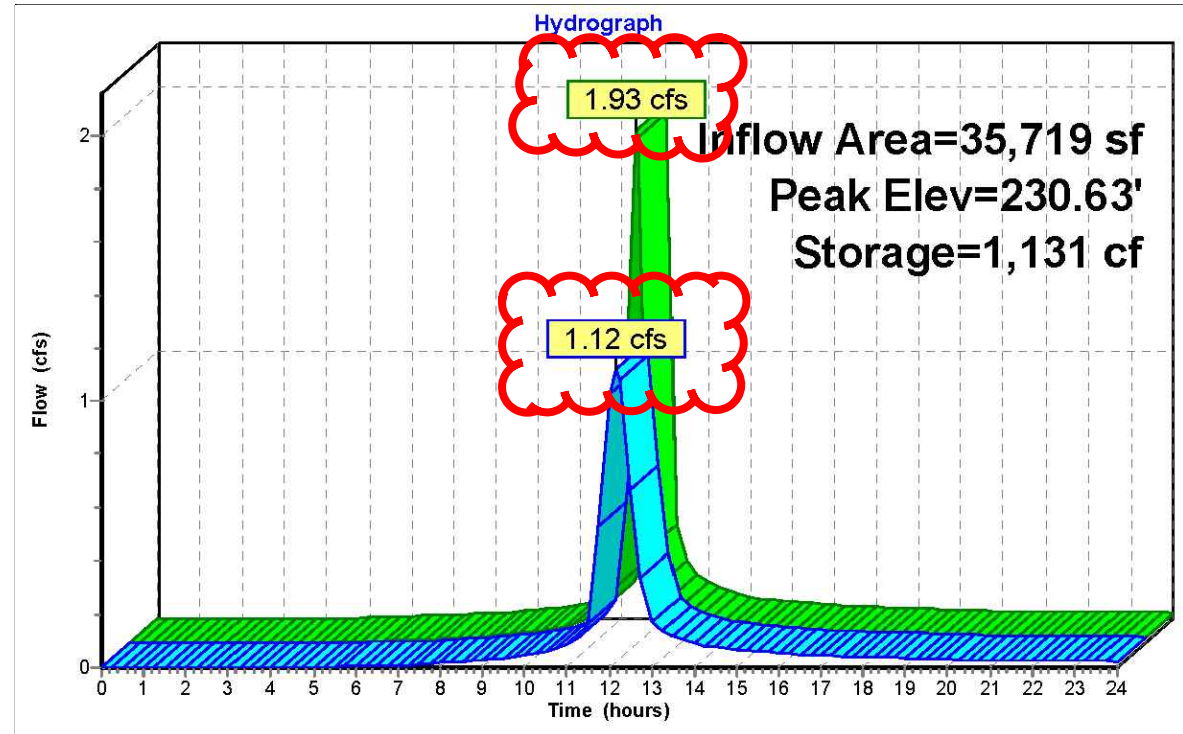
2-YEAR 24 HR PRE-DEVELOPMENT RUNOFF



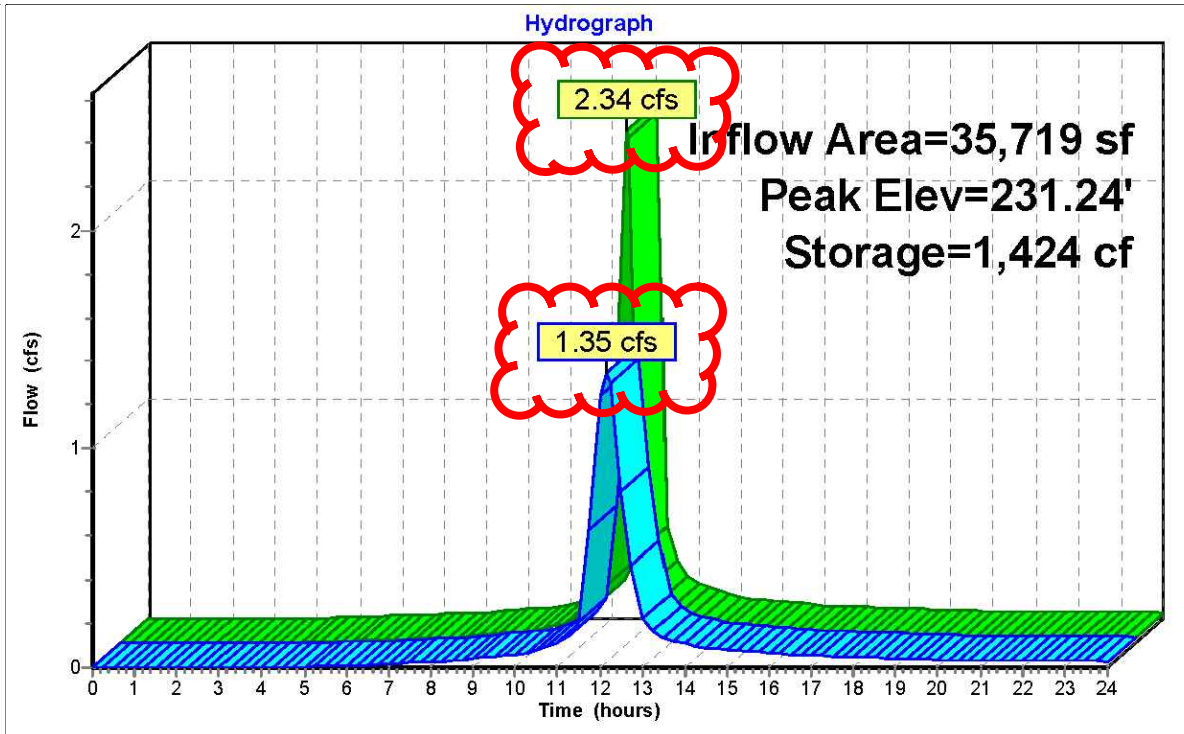
10-YEAR 24 HR PRE-DEVELOPMENT RUNOFF



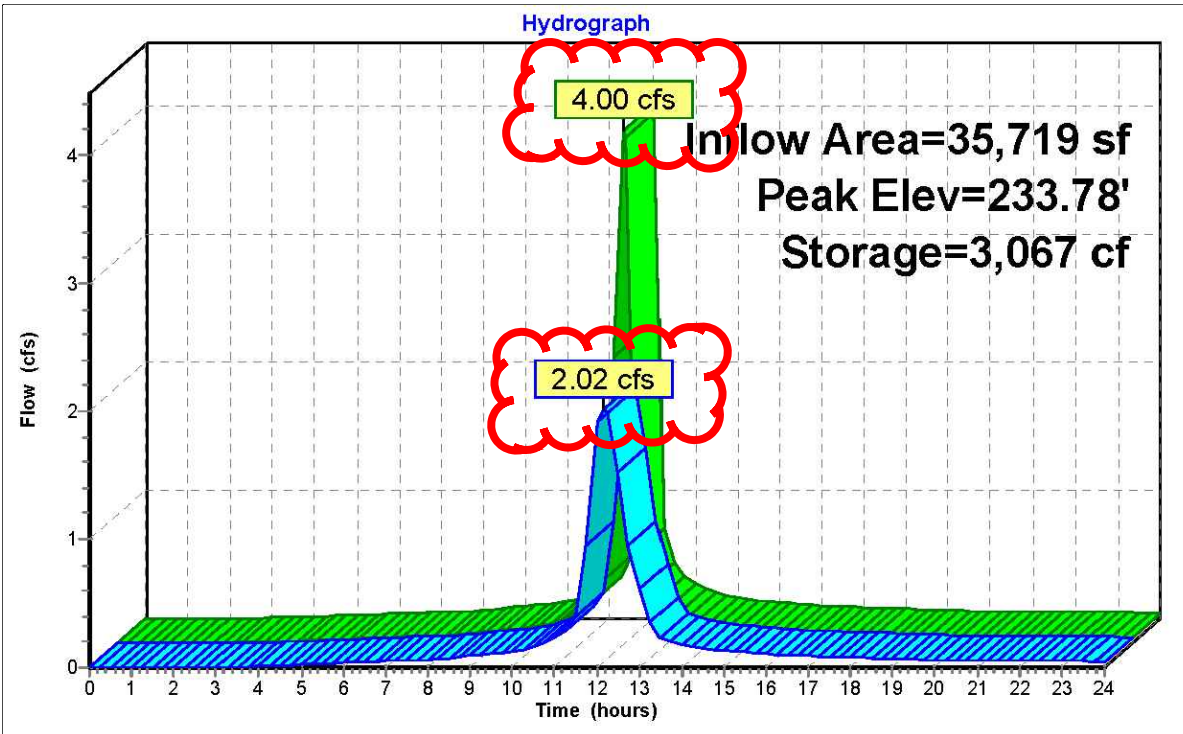
1-YEAR 24 HR POST-DEVELOPMENT CONTROLLED RUNOFF



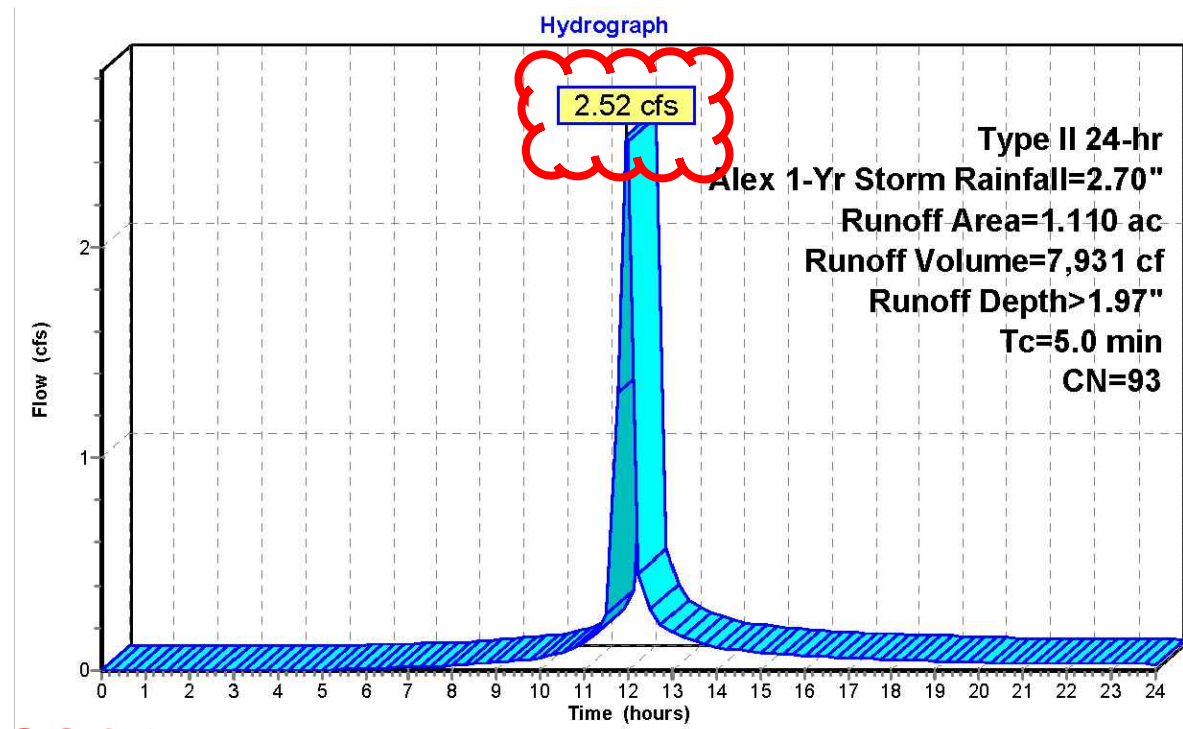
2-YEAR 24 HR POST-DEVELOPMENT CONTROLLED RUNOFF



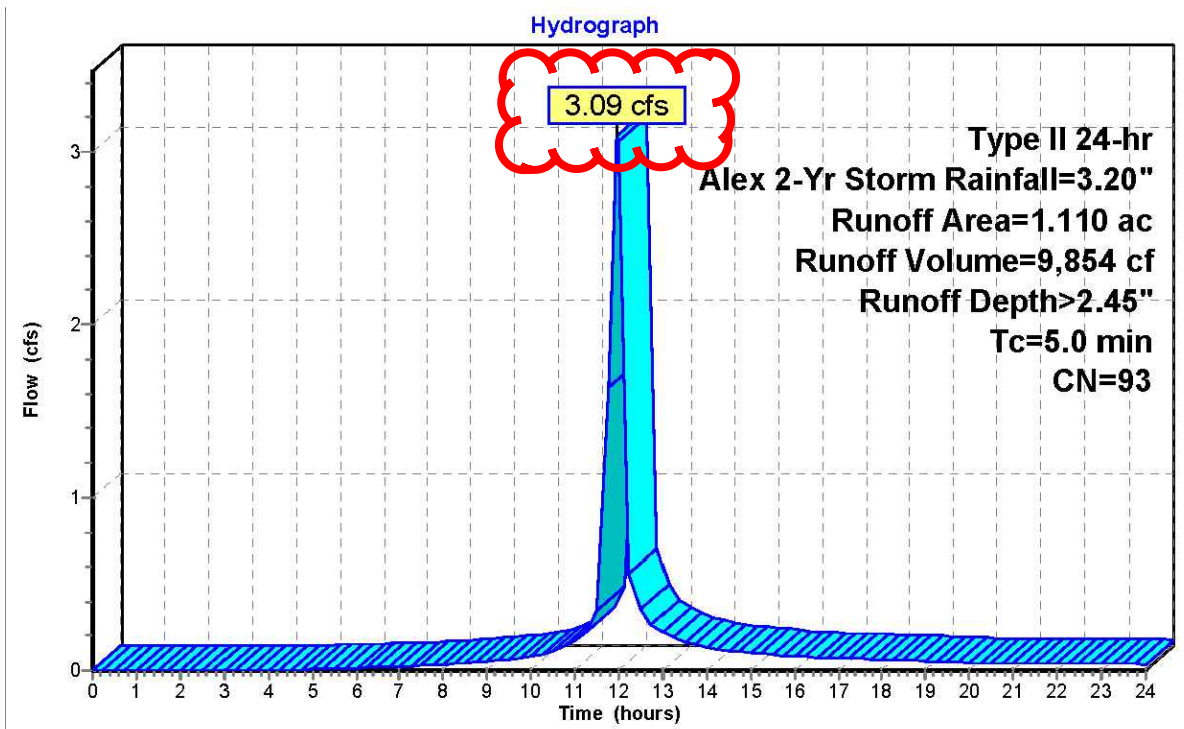
10-YEAR 24 HR POST-DEVELOPMENT CONTROLLED RUNOFF



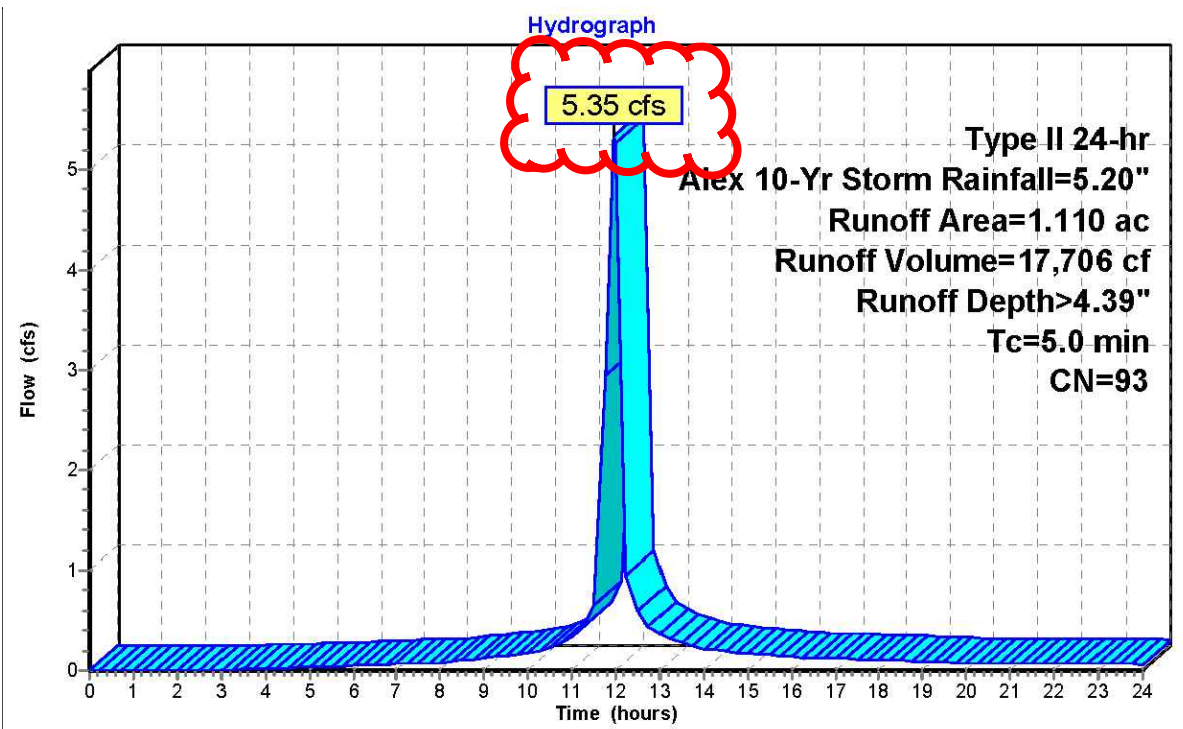
1-YEAR 24 HR POST-DEVELOPMENT UNDETAINED RUNOFF



2-YEAR 24 HR POST-DEVELOPMENT UNDETAINED RUNOFF



10-YEAR 24 HR POST-DEVELOPMENT UNDETAINED RUNOFF



1-YR 24 HR BIO #1 HYDROGRAPH TABLE

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0	0	0	229	0
1	0	0	229	0
2	0	0	229	0
3	0	0	229	0
4	0	0	229	0
5	0.01	5	229.01	0
6	0.01	19	229.02	0
7	0.01	37	229.05	0.01
8	0.02	54	229.07	0.02
9	0.03	71	229.09	0.03
10	0.05	91	229.12	0.04
11	0.11	133	229.18	0.09
12	1.9	1,041	230.44	1.03
12.15	1.93	1,131	230.63	1.12
13	0.14	194	229.26	0.17
14	0.08	135	229.18	0.09
15	0.06	116	229.15	0.07
16	0.05	102	229.13	0.05
17	0.04	93	229.12	0.05
18	0.04	88	229.12	0.04
19	0.03	82	229.11	0.04
20	0.03	75	229.1	0.03
21	0.03	70	229.09	0.03
22	0.03	68	229.09	0.03
23	0.02	67	229.09	0.03
24	0.02	63	229.08	0.02

2-YR 24 HR BIO #1 HYDROGRAPH TABLE

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0	0	0	229	0
1	0	0	229	0
2	0	0	229	0
3	0	0	229	0
4	0	2	229	0
5	0.01	14	229.02	0
6	0.01	34	229.05	0.01
7	0.02	54	229.07	0.02
8	0.03	66	229.09	0.02
9	0.05	87	229.11	0.04
10	0.07	106	229.14	0.06
11	0.14	155	229.2	0.12
12	2.31	1,295	230.97	1.24
12.15	2.34	1,424	231.24	1.35
13	0.16	226	229.3	0.23
14	0.1	149	229.2	0.11
15	0.08	128	229.17	0.08
16	0.06	112	229.15	0.06
17	0.05	102	229.13	0.05
18	0.05	96	229.13	0.05
19	0.04	89	229.12	0.04
20	0.03	83	229.11	0.04
21	0.03	79	229.1	0.03
22	0.03	76	229.1	0.03
23	0.03	74	229.1	0.03
24	0.02	70	229.09	0.03

STORMWATER RUNOFF SUMMARY

(NRCS METHODOLOGY USED TO CALCULATE THE 24-HOUR STORM)

PRE-DEVELOPMENT PEAK FLOW:
Q_p PRE-DEVELOPMENT = 3.92 cfs

POST-DEVELOPMENT PEAK FLOW:
Q_p POST-DEVELOPMENT, DRAINAGE AREA (DETAINED BIO #1) = 1.12 CFS
Q_p POST-DEVELOPMENT, DRAINAGE AREA (UNCONTROLLED) = 2.52 CFS

Q_p POST-DEVELOPMENT TOTAL = 3.64 CFS

POST-DEVELOPMENT DECREASES
Q_p DECREASE = 3.92 CFS - 3.64 CFS = 0.28 CFS

THE PROPOSED BIORETENTION FACILITIES WERE DESIGNED TO PROVIDE DETENTION OF THE ONSITE POST DEVELOPMENT RUNOFF WITHIN THEIR DRAINAGE AREAS. THE RESULTING DETENTION PROVIDES A 0.28 CFS DECREASE IN THE 1-YR, 24-HR PEAK FLOW RATES. THUS, THE POST DEVELOPMENT RUNOFF FLOWS ARE ATTENUATED DOWN TO THE PRE DEVELOPMENT LEVELS AND THE DETENTION REQUIREMENT FOR THIS SITE HAS BEEN MET.

STORMWATER RUNOFF SUMMARY

(NRCS METHODOLOGY USED TO CALCULATE THE 24-HOUR STORM)

PRE-DEVELOPMENT PEAK FLOW:
Q_p PRE-DEVELOPMENT = 4.91 cfs

POST-DEVELOPMENT PEAK FLOW:
Q_p POST-DEVELOPMENT, DRAINAGE AREA (DETAINED BIO #1) = 1.35 CFS
Q_p POST-DEVELOPMENT, DRAINAGE AREA (UNCONTROLLED) = 3.09 CFS

Q_p POST-DEVELOPMENT TOTAL = 4.44 CFS

POST-DEVELOPMENT DECREASES
Q_p DECREASE = 4.91 CFS - 4.44 CFS = 0.47 CFS

THE PROPOSED BIORETENTION FACILITIES WERE DESIGNED TO PROVIDE DETENTION OF THE ONSITE POST DEVELOPMENT RUNOFF WITHIN THEIR DRAINAGE AREAS. THE RESULTING DETENTION PROVIDES A 0.47 CFS DECREASE IN THE 2-YR, 24-HR PEAK FLOW RATES. THUS, THE POST DEVELOPMENT RUNOFF FLOWS ARE ATTENUATED DOWN TO THE PRE DEVELOPMENT LEVELS AND THE DETENTION REQUIREMENT FOR THIS SITE HAS BEEN MET.

STORMWATER RUNOFF SUMMARY

(NRCS METHODOLOGY USED TO CALCULATE THE 24-HOUR STORM)

PRE-DEVELOPMENT PEAK FLOW:
Q_p PRE-DEVELOPMENT = 8.88 cfs

POST-DEVELOPMENT PEAK FLOW:
Q_p POST-DEVELOPMENT, DRAINAGE AREA (DETAINED BIO #1) = 2.02 CFS
Q_p POST-DEVELOPMENT, DRAINAGE AREA (UNCONTROLLED) = 5.35 CFS

Q_p POST-DEVELOPMENT TOTAL = 7.37 CFS

POST-DEVELOPMENT DECREASES
Q_p DECREASE = 8.88 CFS - 7.37 CFS = 1.51 CFS

THE PROPOSED BIORETENTION FACILITIES WERE DESIGNED TO PROVIDE DETENTION OF THE ONSITE POST DEVELOPMENT RUNOFF WITHIN THEIR DRAINAGE AREAS. THE RESULTING DETENTION PROVIDES A 1.51 CFS DECREASE IN THE 10-YR, 24-HR PEAK FLOW RATES. THUS, THE POST DEVELOPMENT RUNOFF FLOWS ARE ATTENUATED DOWN TO THE PRE DEVELOPMENT LEVELS AND THE DETENTION REQUIREMENT FOR THIS SITE HAS BEEN MET.

1-YEAR 24 HR SUMMARY OF BIO #1 DETENTION ROUTING

Summary for Pond 8P: BIO #1 (LEVEL 2)

Inflow Area = 35,719 sf, 76.83% Impervious, Inflow Depth > 2.06" for Alex 1-Yr Storm
Inflow = 1.93 cfs @ 11.97 hrs, Volume= 6,134 cf
Outflow = 1.12 cfs @ 12.15 hrs, Volume= 6,073 cf, Atten= 42%, Lag= 11.3 min
Primary = 1.12 cfs @ 12.15 hrs, Volume= 6,073 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.25 hrs
Peak Elev= 230.63' @ 12.16 hrs Surf.Area= 3,804 sf Storage= 1,131 cf

Plug-Flow detention time= 22.5 min calculated for 6,010 cf (98% of inflow)
Center-of-Mass det. time= 16.5 min (805.4 - 788.9)

Volume	Invert	Avail. Storage	Storage Description
#1	234.00'	1,275 cf	ABOVE BMP PONDING STORAGE (Prismatic) Listed below (Recalc)
#2	233.50'	1,058 cf	0.5' PONDING (Prismatic) Listed below (Recalc)
#3	230.25'	1,545 cf	SOIL MEDIA (+ 3" MULCH) (Prismatic) Listed below (Recalc)
#4	229.00'	951 cf	6,182 cf Overall x 25.0% Voids GRAVEL (15") (Prismatic) Listed below (Recalc) 2,378 cf Overall x 40.0% Voids

Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
234.00	2,330	0	0
234.50	2,771	1,275	1,275

Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
233.50	1,902	0	0
234.00	2,330	1,058	1,058

Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
230.25	1,902	0	0
233.50	1,902	6,182	6,182

Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
229.00	1,902	0	0
230.25	1,902	2,378	2,378

Device	Routing	Invert	Outlet Devices
#1	Primary	229.00'	6.0" Vert. 6" UNDERDRAIN C= 0.600
#2	Primary	234.00'	24.0" W x 5.0" H Vert. Orifice/Grate C= 0.600

Primary OutFlow Max= 1.06 cfs @ 12.15 hrs HW= 230.52' (Free Discharge)
1= 6" UNDERDRAIN (Orifice Controls 1.06 cfs @ 5.42 fps)
2= Orifice/Grate (Controls 0.00 cfs)

2-YEAR 24 HR SUMMARY OF BIO #1 DETENTION ROUTING

Summary for Pond 8P: BIO #1 (LEVEL 2)

Inflow Area = 35,719 sf, 76.83% Impervious, Inflow Depth > 2.54" for Alex 2-Yr Storm
Inflow = 2.34 cfs @ 11.96 hrs, Volume= 7,572 cf
Outflow = 1.35 cfs @ 12.15 hrs, Volume= 7,504 cf, Atten= 43%, Lag= 11.3 min
Primary = 1.35 cfs @ 12.15 hrs, Volume= 7,504 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.25 hrs
Peak Elev= 231.24' @ 12.16 hrs Surf.Area= 3,804 sf Storage= 1,424 cf

Plug-Flow detention time= 21.9 min calculated for 7,504 cf (99% of inflow)
Center-of-Mass det. time= 16.3 min (799.4 - 783.1)

Volume	Invert	Avail. Storage	Storage Description
#1	234.00'	1,275 cf	ABOVE BMP PONDING STORAGE (Prismatic) Listed below (Recalc)
#2	233.50'	1,058 cf	0.5' PONDING (Prismatic) Listed below (Recalc)
#3	230.25'	1,545 cf	SOIL MEDIA (+ 3" MULCH) (Prismatic) Listed below (Recalc)
#4	229.00'	951 cf	6,182 cf Overall x 25.0% Voids GRAVEL (15") (Prismatic) Listed below (Recalc) 2,378 cf Overall x 40.0% Voids

Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
234.00	2,330	0	0
234.50	2,771	1,275	1,275

Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
233.50	1,902	0	0
234.00	2,330	1,058	1,058

Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
230.25	1,902	0	0
233.50	1,902	6,182	6,182

Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
229.00	1,902	0	0
230.25	1,902	2,378	2,378

Device	Routing	Invert	Outlet Devices
#1	Primary	229.00'	6.0" Vert. 6" UNDERDRAIN C= 0.600
#2	Primary	234.00'	24.0" W x 5.0" H Vert. Orifice/Grate C= 0.600

Primary OutFlow Max= 1.28 cfs @ 12.15 hrs HW= 231.08' (Free Discharge)
1= 6" UNDERDRAIN (Orifice Controls 1.28 cfs @ 6.52 fps)
2= Orifice/Grate (Controls 0.00 cfs)

10-YEAR 24 HR SUMMARY OF BIO #1 DETENTION ROUTING

Summary for Pond 8P: BIO #1 (LEVEL 2)

Inflow Area = 35,719 sf, 76.83% Impervious, Inflow Depth > 4.51" for Alex 10-Yr Storm
Inflow = 4.00 cfs @ 11.96 hrs, Volume= 13,410 cf
Outflow = 2.02 cfs @ 12.15 hrs, Volume= 13,321 cf, Atten= 50%, Lag= 11.6 min
Primary = 2.02 cfs @ 12.15 hrs, Volume= 13,321 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.25 hrs
Peak Elev= 233.78' @ 12.16 hrs Surf.Area= 5,947 sf Storage= 3,067 cf

Plug-Flow detention time= 21.1 min calculated for 13,321 cf (99% of inflow)
Center-of-Mass det. time= 16.9 min (785.0 - 768.1)

Volume	Invert	Avail. Storage	Storage Description
#1	234.00'	1,275 cf	ABOVE BMP PONDING STORAGE (Prismatic) Listed below (Recalc)
#2	233.50'	1,058 cf	0.5' PONDING (Prismatic) Listed below (Recalc)
#3	230.25'	1,545 cf	SOIL MEDIA (+ 3" MULCH) (Prismatic) Listed below (Recalc)
#4	229.00'	951 cf	6,182 cf Overall x 25.0% Voids GRAVEL (15") (Prismatic) Listed below (Recalc) 2,378 cf Overall x 40.0% Voids

Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
234.00	2,330	0	0
234.50	2,771	1,275	1,275

Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
233.50	1,902	0	0
234.00	2,330	1,058	1,058

Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
230.25	1,902	0	0
233.50	1,902	6,182	6,182

Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
229.00	1,902	0	0
230.25	1,902	2,378	2,378

Device	Routing	Invert	Outlet Devices
#1	Primary	229.00'	6.0" Vert. 6" UNDERDRAIN C= 0.600
#2	Primary	234.00'	24.0" W x 5.0" H Vert. Orifice/Grate C= 0.600

Primary OutFlow Max= 1.96 cfs @ 12.15 hrs HW= 233.54' (Free Discharge)
1= 6" UNDERDRAIN (Orifice Controls 1.96 cfs @ 9.97 fps)
2= Orifice/Grate (Controls 0.00 cfs)

10-YR 24 HR BIO #1 HYDROGRAPH TABLE

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0	0	0	229	0
1	0	0	229	0
2	0	0	229	0
3	0.01	8	229.01	0
4	0.02	35	229.05	0.01
5	0.03	62	229.08	0.02
6	0.04	81	229.11	0.03
7	0.05	96	229.13	0.05
8	0.06	108	229.14	0.06
9	0.1	135	229.18	0.09
10	0.13	159	229.21	0.12
11	0.26	228	229.3	0.23
12	3.94	2,437	233.38	1.92
12.15	4.00	3,067	233.78	2.02
13	0.27	517	229.68	0.62
14	0.16	197	229.26	0.18
15	0.13	168	229.22	0.13
16	0.1	147	229.19	0.11
17	0.09	135	229.18	0.09
18	0.08	126	229.17	0.08
19	0.07	117	229.15	0.07
20	0.06	106	229.14	0.06
21	0.05	101	229.13	0.05
22	0.05	99	229.13	0.05
23	0.05	97	229.13	0.05
24	0.04	92	229.12	0.04

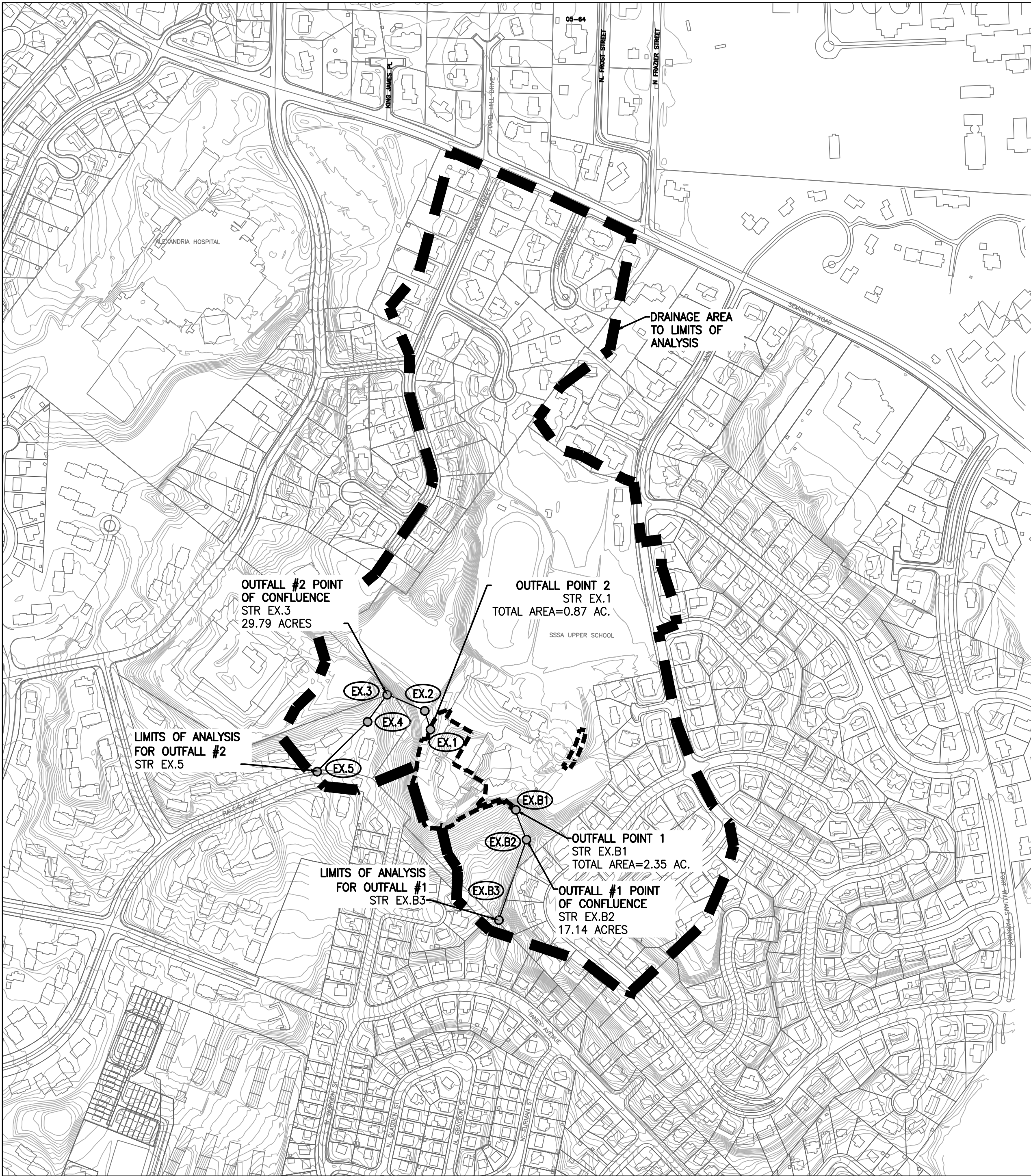
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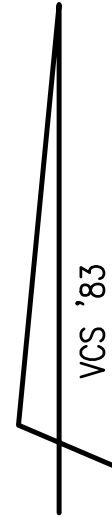
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Wed Aug 05 2020 - 4:03:57pm



OUTFALL ANALYSIS DRAINAGE AREA MAP
SCALE: 1"=300'



STORMWATER OUTFALL NARRATIVE (CITY CODE SECTION 13-109F):

PRE-DEVELOPMENT CONDITIONS:
THE 1.93 ACRE SITE LIMITS ARE LOCATED IN THE CAMERON RUN (NORTH) WATERSHED. IN EXISTING CONDITIONS, THE SITE CONSISTS OF A SCHOOL, ACCESS DRIVE, ASSOCIATED IMPROVEMENTS, AND A SMALL FORESTED AREA. THIS PROJECT HAS TWO OUTFALL POINTS.

OUTFALL #1: A PORTION OF THE PROJECT SITE DRAINS VIA NON-CONCENTRATED FLOW (OUTFALL #1) BEFORE ENTERING A PRIVATELY MAINTAINED STORM PIPE SYSTEM (EX.B1) ON THE SOUTH SIDE OF THE SUBJECT PROPERTY. THE SUBJECT STORMWATER RUNOFF THEN ENTERS CITY OF ALEXANDRIA MAINTAINED STORM SEWER (EX.B3) AND IS PIPED IN A GENERALLY SOUTHERLY DIRECTION BEFORE IT ULTIMATELY ENTERS CAMERON RUN.

OUTFALL #2: THE REMAINDER OF THE PROJECT SITE RUNOFF FLOWS AS NON-CONCENTRATED FLOW (OUTFALL #2) BEFORE BEING COLLECTED BY AN EXISTING PRIVATE STORM PIPE SYSTEM ON THE WEST SIDE OF THE SUBJECT PROPERTY (EX.1). THE SUBJECT STORMWATER RUNOFF CONTINUES WITHIN THE PRIVATE STORM PIPE SYSTEM UNTIL IT ENTERS CITY OF ALEXANDRIA MAINTAINED STORM SEWER SYSTEM (EX.3). FROM THIS POINT, THE RUNOFF FLOWS IN A GENERALLY SOUTHERLY DIRECTION BEFORE IT ULTIMATELY ENTERS CAMERON RUN.

POST-DEVELOPMENT CONDITIONS:
THE REDEVELOPMENT OF THE PROJECT SITE PROPOSES A NEW BUILDING ADDITION TO THE EXISTING SCHOOL BUILDING, A NEW REGRADED PORTION OF THE EXISTING ACCESS DRIVE, NEW PARKING, BIORETENTION BMP FACILITY, HYDRODYNAMIC BMP, AND ASSOCIATED IMPROVEMENTS. OVERALL IMPERVIOUS AREA WILL INCREASE WITH THE PROPOSED CONSTRUCTION. HOWEVER, THE INCREASE IN STORMWATER RUNOFF ASSOCIATED WITH THE IMPERVIOUS AREA HAS BEEN ADEQUATELY ACCOUNTED FOR THROUGH RUNOFF REDUCTION AND DETENTION PROVIDED BY THE PROPOSED BIORETENTION FACILITY. THE PROJECT SITE HAS TWO OUTFALL POINTS IN PROPOSED CONDITIONS.

OUTFALL #1: IN POST-DEVELOPMENT CONDITIONS, A PORTION OF ONSITE STORMWATER RUNOFF IS COLLECTED WITHIN THE PROPOSED ONSITE BIORETENTION BMP FACILITY AND IS THEN PIPED THROUGH AN EXISTING PRIVATE STORM PIPE SYSTEM (EX.B1) ON THE SOUTH SIDE OF THE SUBJECT PROPERTY. THE RUNOFF THEN ENTERS THE EXISTING STORM SEWER SYSTEM (EX.B2 POINT OF OUTFALL #1). THE STORMWATER THEN FLOWS IN A GENERALLY SOUTHERLY DIRECTION VIA CITY OF ALEXANDRIA MAINTAINED STORM SEWER SYSTEM BEFORE THE RECEIVING PIPE IS JOINED BY ANOTHER THAT HAS A DRAINAGE AREA THAT IS AT LEAST 90 PERCENT THE SIZE OF THE FIRST DRAINAGE AREA (EX.B2). THE LIMITS OF ANALYSIS END AT A POINT AT LEAST 150' PAST THE POINT OF THAT CONFLUENCE (EX.B3).

OUTFALL #2: THE REMAINING RUNOFF IS COLLECTED ONSITE (EX.1) AND DRAINS VIA PIPE FLOW TO THE PROPOSED HYDRODYNAMIC BMP LOCATED WITHIN THE EXISTING PRIVATE STORM PIPE SYSTEM ON THE WEST SIDE OF THE SUBJECT PROPERTY. THE FLOW THEN ENTERS THE CITY OF ALEXANDRIA STORM SEWER SYSTEM (EX.3 POINT OF OUTFALL #2) WHERE IT FLOWS IN A GENERALLY SOUTHERLY DIRECTION UNTIL THE RECEIVING PIPE IS JOINED BY ANOTHER THAT HAS A DRAINAGE AREA THAT IS AT LEAST 90 PERCENT THE SIZE OF THE FIRST DRAINAGE AREA (EX.3). THE LIMITS OF ANALYSIS END AT LEAST 150' PAST THE POINT OF THAT CONFLUENCE TO THE LIMITS OF ANALYSIS (EX.5).

COMPUTATIONS SHOWN ON THIS SHEET DEMONSTRATE THAT THE EXISTING MANMADE STORMWATER CONVEYANCE SYSTEM EXPERIENCES LOCALIZED FLOODING IN EXISTING CONDITIONS. HOWEVER, THE PEAK FLOW RATE FOR THE 1, 2, AND 10-YEAR, 24 HOUR STORMS ARE BEING REDUCED WITH THE PROPOSED DEVELOPMENT THROUGH RUNOFF REDUCTION AND DETENTION PROVIDED BY THE PROPOSED BIORETENTION FACILITY. THE WATER QUANTITY REQUIREMENTS FOR THIS SITE IS THEREFORE IN COMPLIANCE WITH SECTIONS 13-109F(1)(a)(i) AND 13-109F(2)(b)(i) FOR OUTFALL #1 AND 13-109F(2)(a)(i)(ii) FOR OUTFALL #2. DUE TO SITE DRAINAGE OUTFALLS TO AN EXISTING UNDERSIZED MANMADE STORM SEWER SYSTEM, NO OFFSITE IMPROVEMENTS TO THE SYSTEM ARE REQUIRED. PER THE LIMITS OF ANALYSIS PER CITY CODE SECTION 13-109F-2(a)(i) AND REDUCED POST-DEVELOPMENT RUNOFF RATE FOR THE 1, 2, & 10-YEAR, 24-HOUR STORMS, THE PROJECT POST-DEVELOPMENT RUNOFF WILL NOT EXACERBATE ANY EXISTING DOWNSTREAM CAPACITY CONDITIONS.

10-YR, 24-HR STORM SEWER COMPUTATIONS																	
STRUCTURE		INC. DRAINAGE AREA (AC)	ACCUM. DRAINAGE AREA (AC)	CURVE NUMBER	RAINFALL DEPTH (IN)	T _c (MINUTES)	INCREMENTAL "Q" (CFS)	ACCUMULATED "Q" (CFS)	PIPE DIAMETER (IN)	SLOPE (%)	"n"	MAXIMUM "Q" (CFS)	MAXIMUM VELOCITY (FPS)	LENGTH OF RUN (FT)	UPPER INVERT	LOWER INVERT	FALL (FT)
FROM	TO																
EX.1	EX.2	0.87	0.87	92	5.20	30	2.94	2.94	15	19.69%	0.015	25.93	20.30	72	222.60	208.42	14.18
EX.2	EX.3	0.20	1.07	83	5.20	30	0.55	3.49	15	15.47%	0.015	22.98	17.99	156	207.62	183.48	24.14
EX.3	EX.4	29.79	30.86	83	5.20	30	81.87	85.36	36	4.27%	0.013	143.83	19.55	105	187.96	183.48	4.48
EX.4	EX.5	0.91	31.77	86	5.20	30	2.70	88.06	36	2.28%	0.013	105.21	14.30	390	182.83	173.92	8.91
EX.B1	EX.B2	2.35	2.35	91	5.20	30	7.79	7.79	15	10.36%	0.015	18.81	14.73	124	200.45	187.60	12.85
EX.B2	EX.B3	17.14	19.49	84	5.20	30	55.03	62.82	15	8.03%	0.015	16.56	12.96	326	185.18	159.00	26.18

LEGEND:

- STORM STRUCTURE
- ▬ DRAINAGE AREA TO LIMITS OF ANALYSIS
- - - LIMITS OF DISTURBANCE

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DESIGN: ABH
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SCALE: 1"=300'
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ADEQUATE
OUTFALL
ANALYSIS

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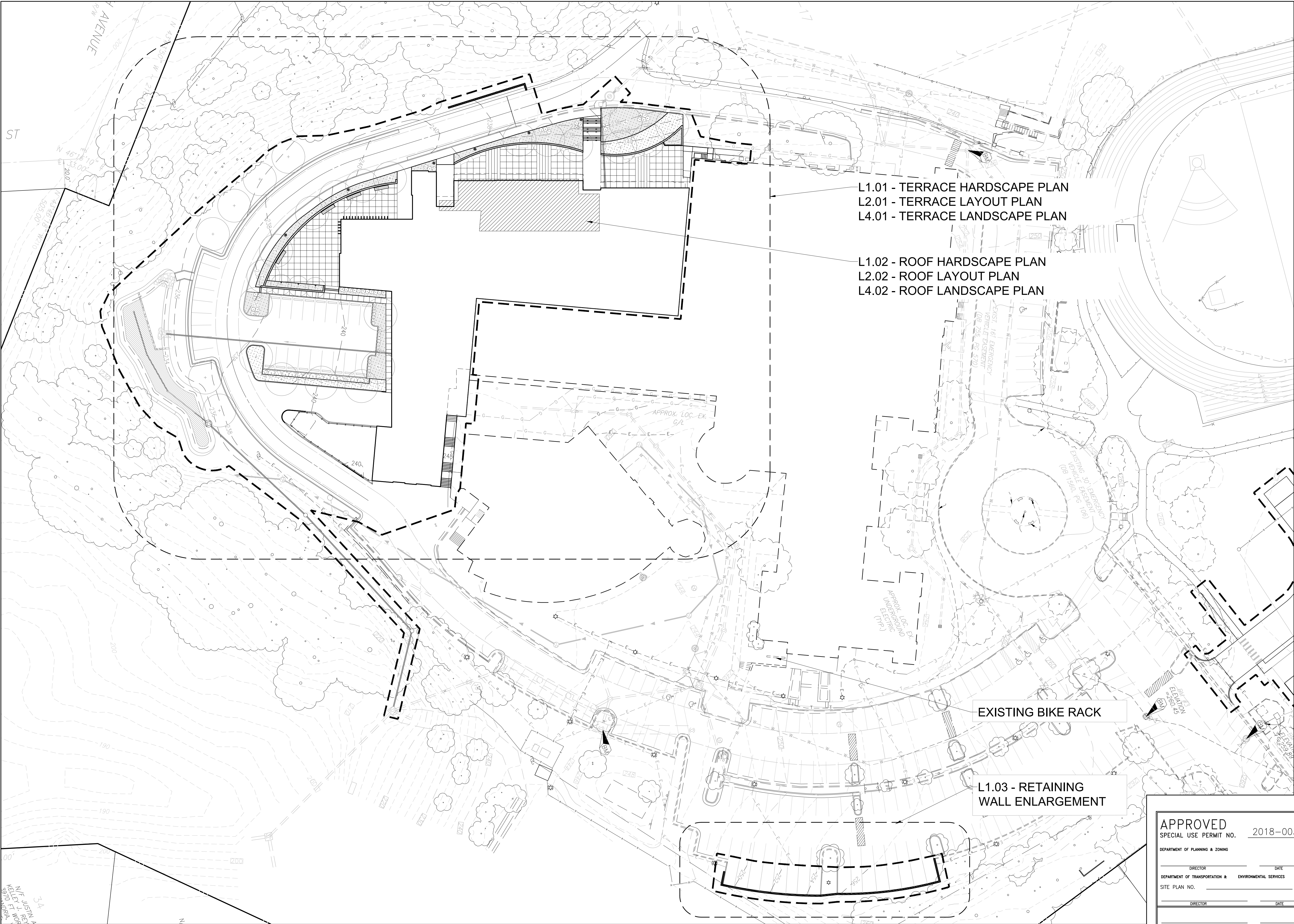
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ANDREA SPRUCH

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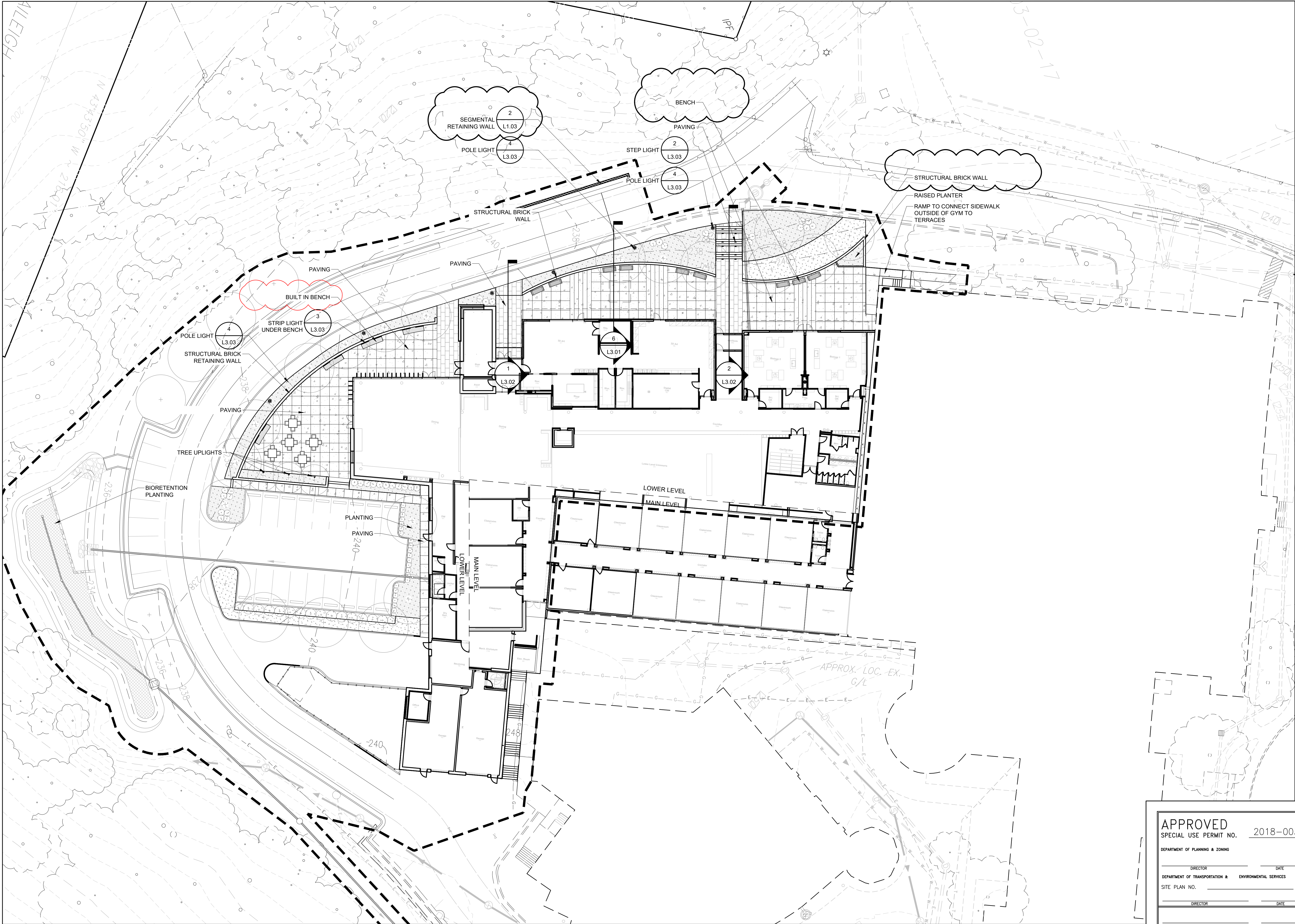
ORIENTATION AND SCALE

N
SOURCE OF MERIDIAN:
VCS NAD 83
SCALE: 1"=30'-0"

SHEET TITLE
OVERALL PLAN

SHEET NUMBER
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SOURCE OF MERIDIAN: VCS NAD 83
SCALE: 1"=20'-0"

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HARDSCAPE PLAN

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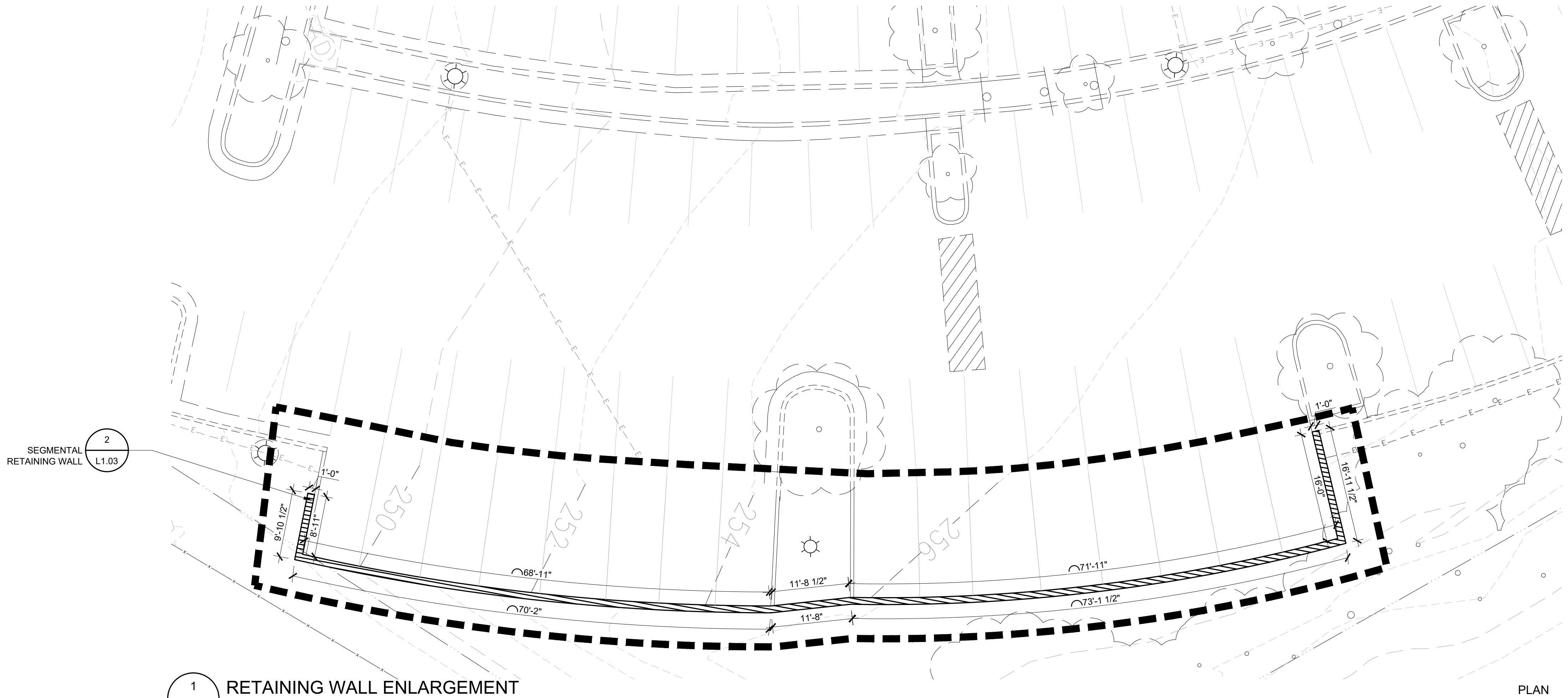
ROOF HARDSCAPE PLAN

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1 RETAINING WALL ENLARGEMENT
Scale: 1" = 10'-0"



MODEL: SEMMA
*OR APPROVED EQUAL

DIMENSIONS: 6' X 16'

COLOR: TBD

QUANTITY: PER PLAN

COMPANY: TECO-BLOC
WWW.TECO-BLOC.COM

CONTACT: GEORGE OHLIN
(P) 571.317.5087
george.ohlin@techo-bloc.com

NOTES: 1)INSTALL PER MANUFACTURERS
RECOMMENDATIONS AND
GOVERNING MUNICIPAL
REQUIREMENTS
2)ALL CORNERS MUST BE FINGER
JOINTED
3)CONTRACTOR TO VERIFY
QUANTITIES
4) SEE CIVIL FOR WALL HEIGHTS

2 SEGMENTAL
RETAINING WALL
Scale: NTS
PROD. INFO.



MODEL: ARCHITECTURAL
*OR APPROVED EQUAL

COLOR: TBD

QUANTITY: PER PLAN

COMPANY: TECO-BLOC
WWW.TECO-BLOC.COM

CONTACT: GEORGE OHLIN
(P) 571.317.5087
george.ohlin@techo-bloc.com

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RECOMMENDATIONS AND GOVERNING
MUNICIPAL REQUIREMENTS
2)ALL CORNERS MUST BE FINGER
JOINTED
3)CONTRACTOR TO VERIFY QUANTITIES
4) SEE CIVIL FOR WALL HEIGHTS

3 RETAINING WALL CAP
Scale: NTS
PROD. INFO.

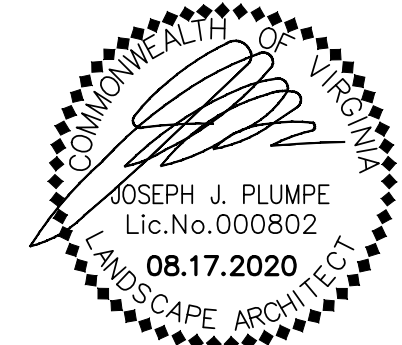
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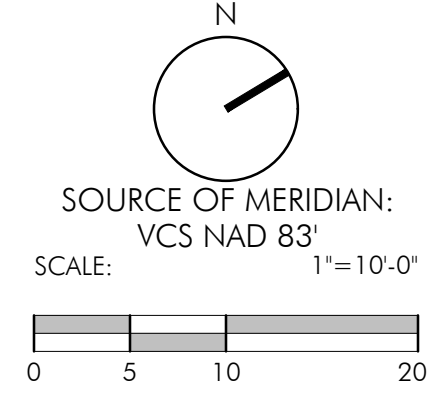


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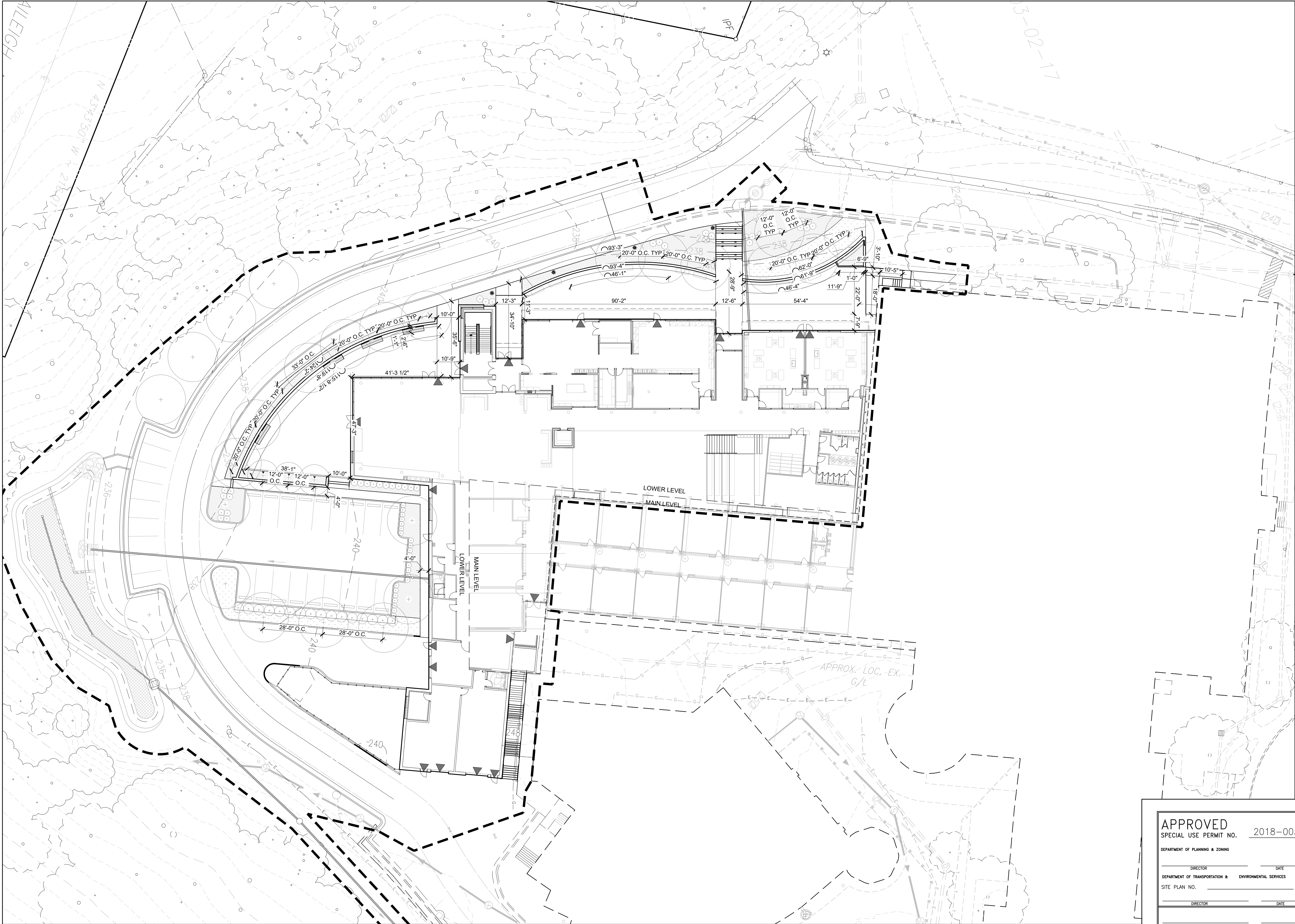
SHEET TITLE

RETAINING WALL
ENLARGEMENT

SHEET NUMBER

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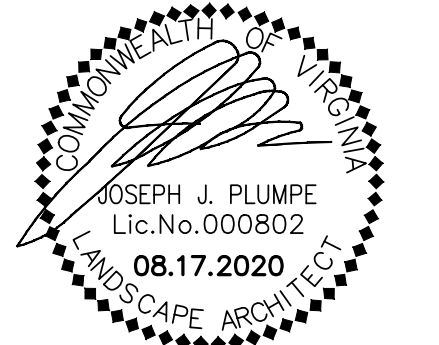
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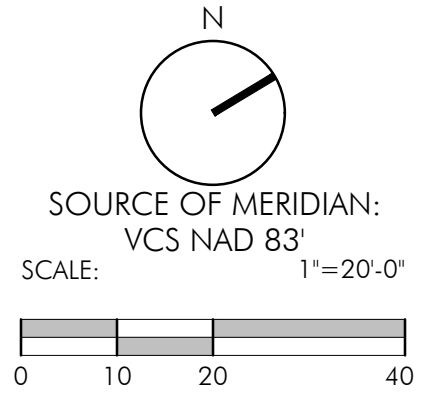


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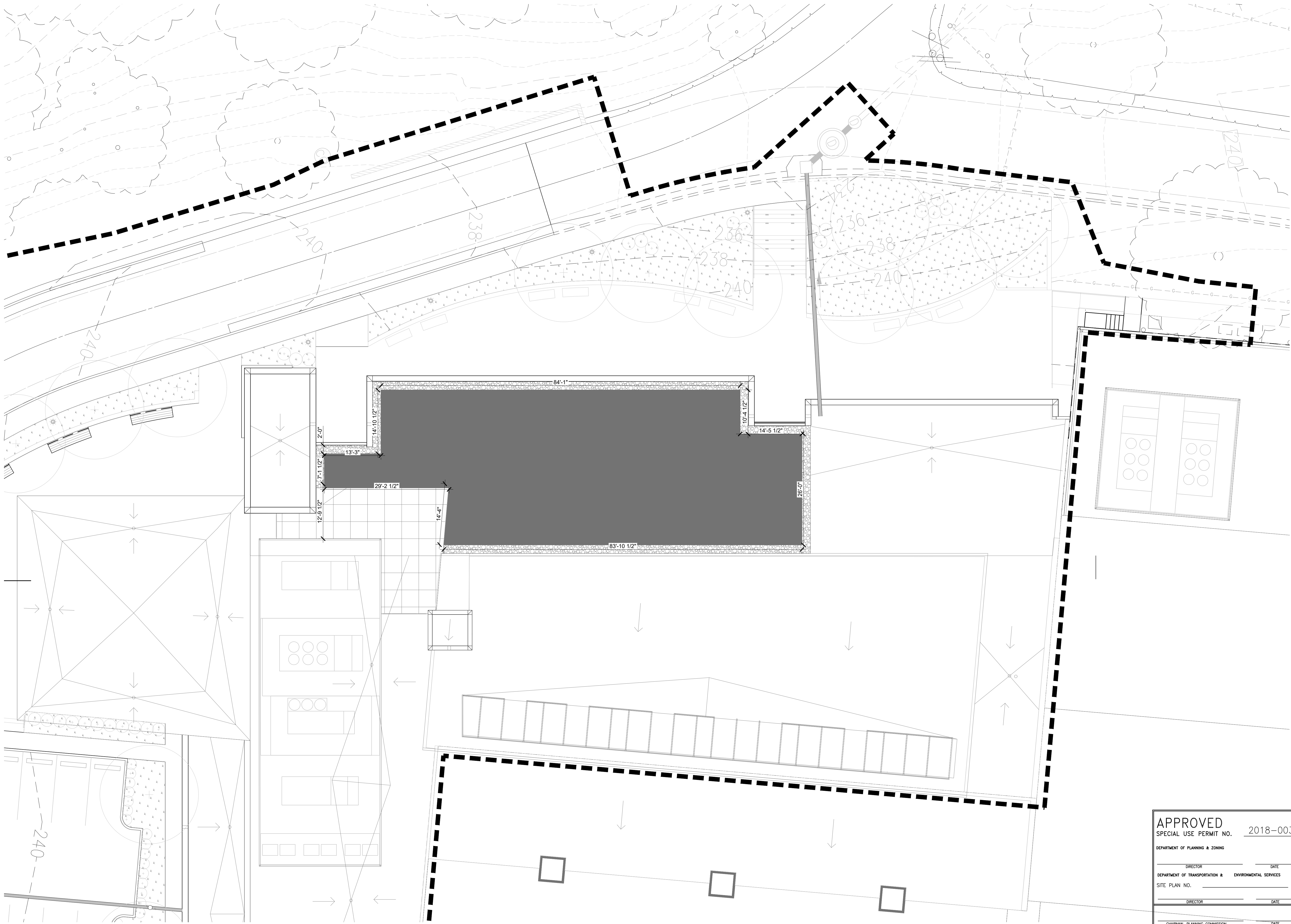
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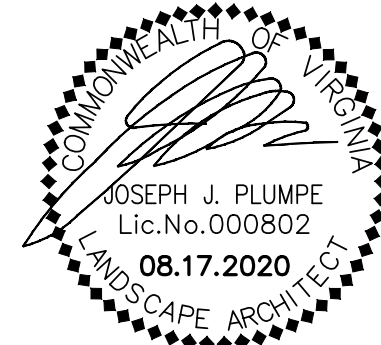
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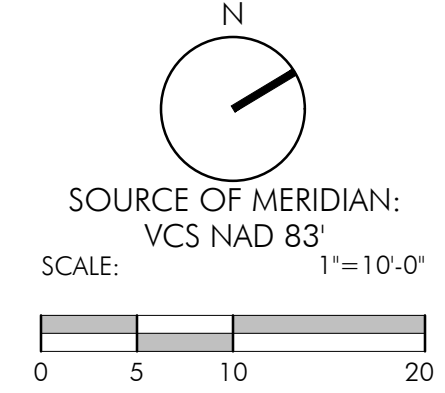
08.17.20

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PROJECT NUMBER: 18043
CONTACT: D. DOVE
DRAWN: AM
APPROVED/CHECKED: DD

ORIENTATION AND SCALE



SHEET TITLE

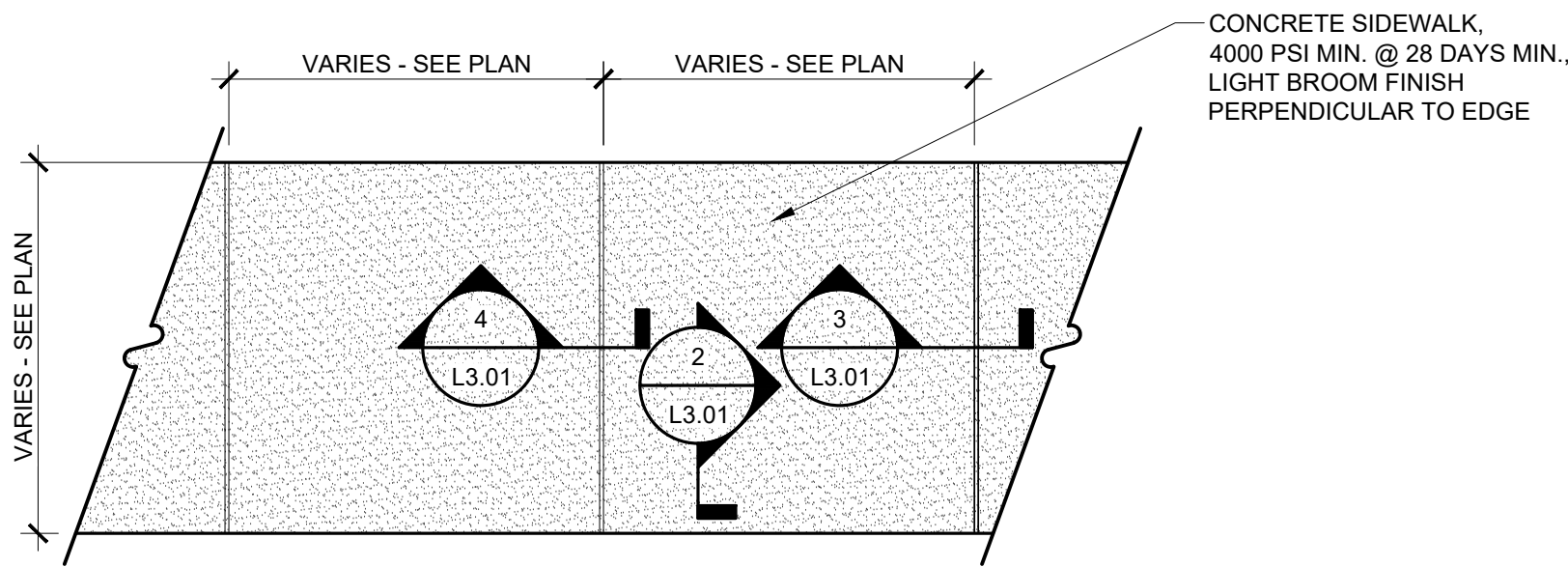
ROOF LAYOUT PLAN

SHEET NUMBER

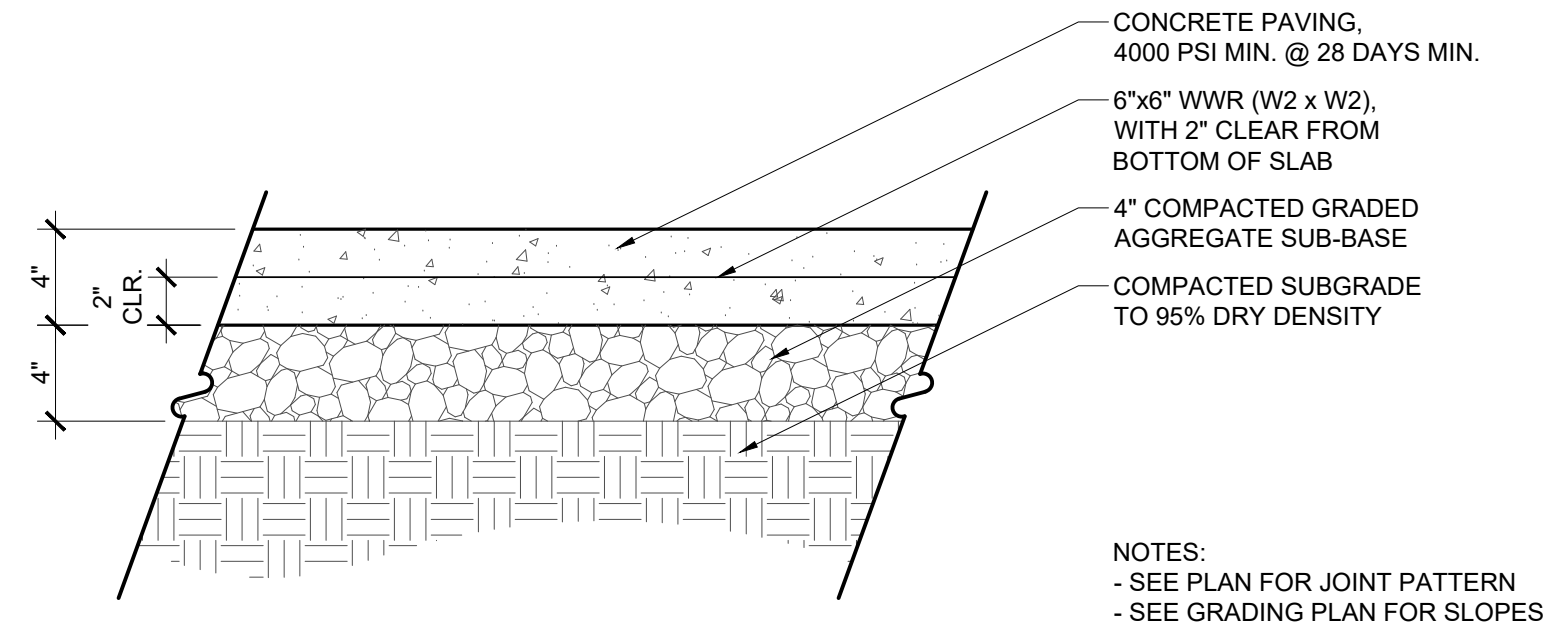
L2.02

PRELIMINARY VERIFICATION
SUBMISSION

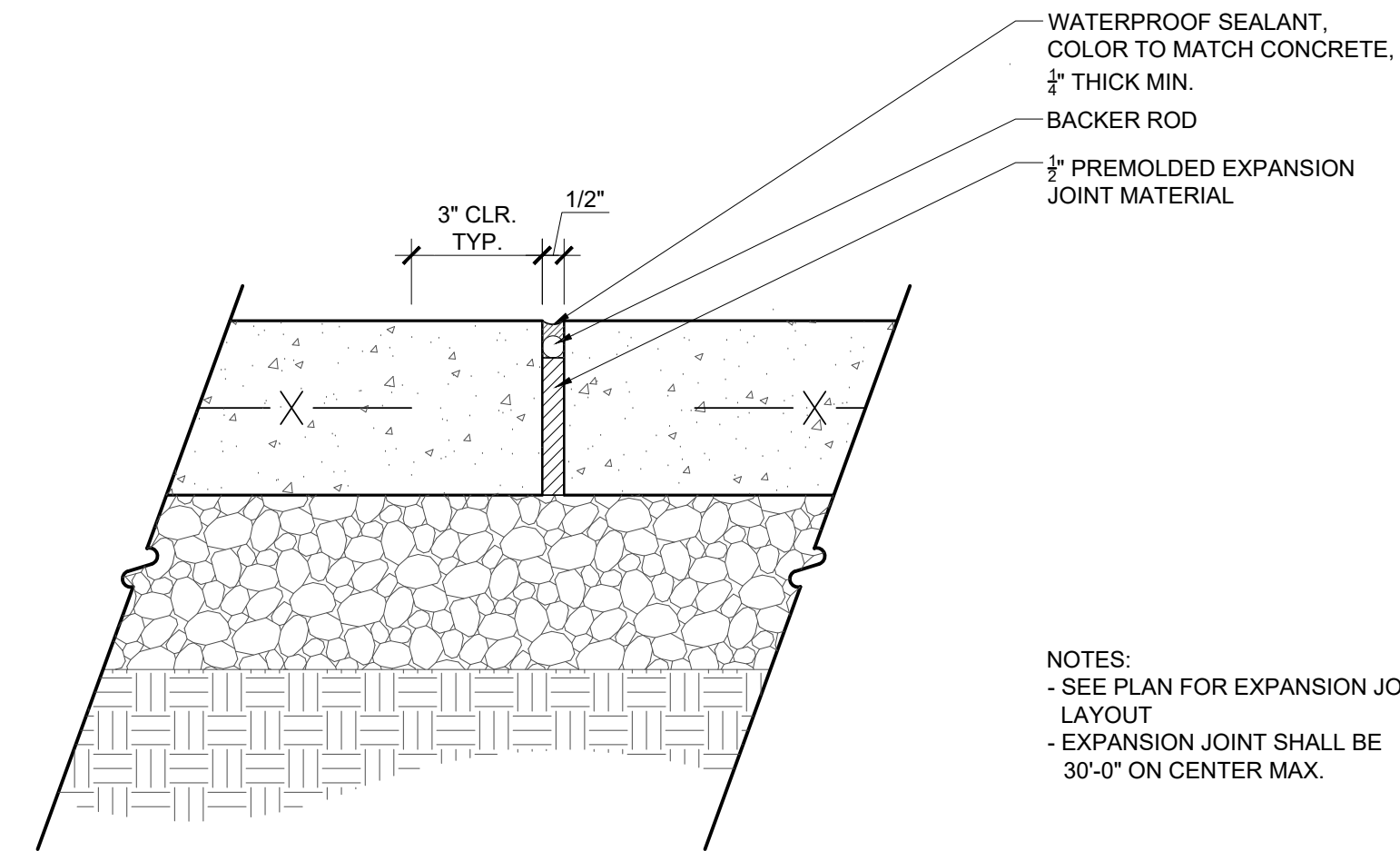
APPROVED		SPECIAL USE PERMIT NO. 2018-0030	
DEPARTMENT OF PLANNING & ZONING			
DIRECTOR	DATE		
DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES		DATE	
SITE PLAN NO.			
DIRECTOR	DATE		
CHAIRMAN, PLANNING COMMISSION		DATE	
DATE RECORDED			
INSTRUMENT NO.		DEED BOOK NO.	DATE



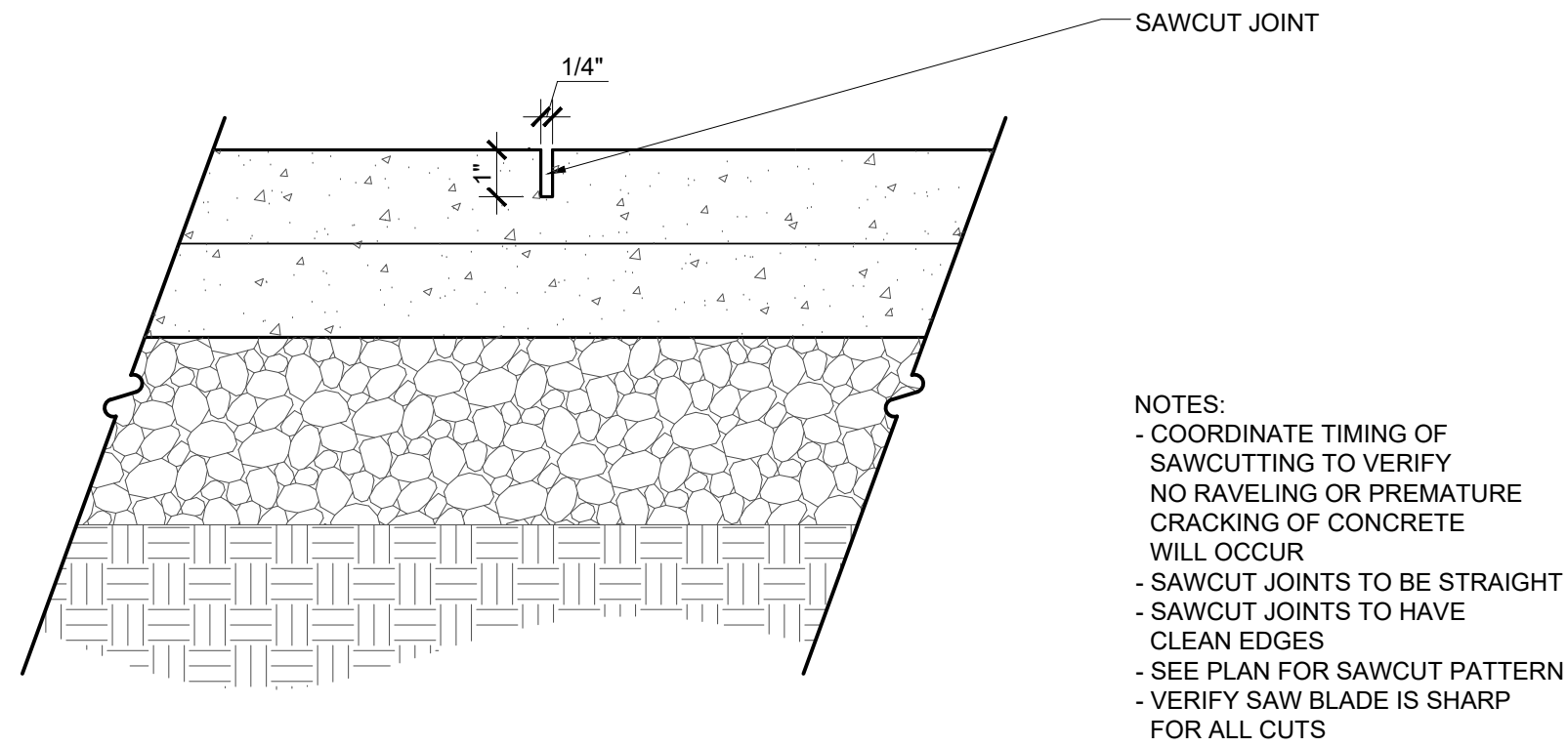
1 CONCRETE SIDEWALK
L3.01 Scale: 1/2" = 1'-0" PLAN



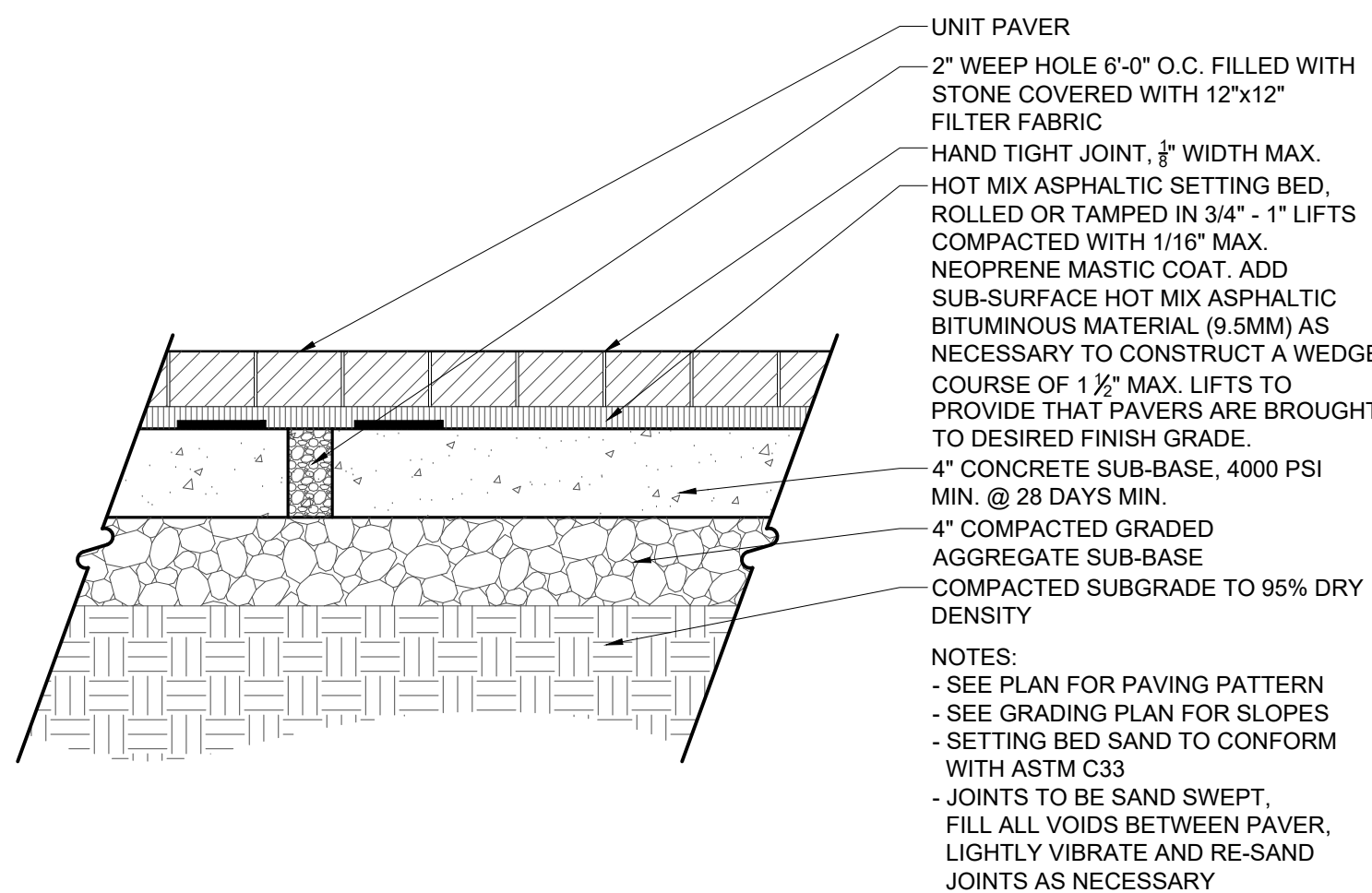
2 CONCRETE PAVING - PEDESTRIAN
L3.01 Scale: 1 1/2" = 1'-0" SECTION



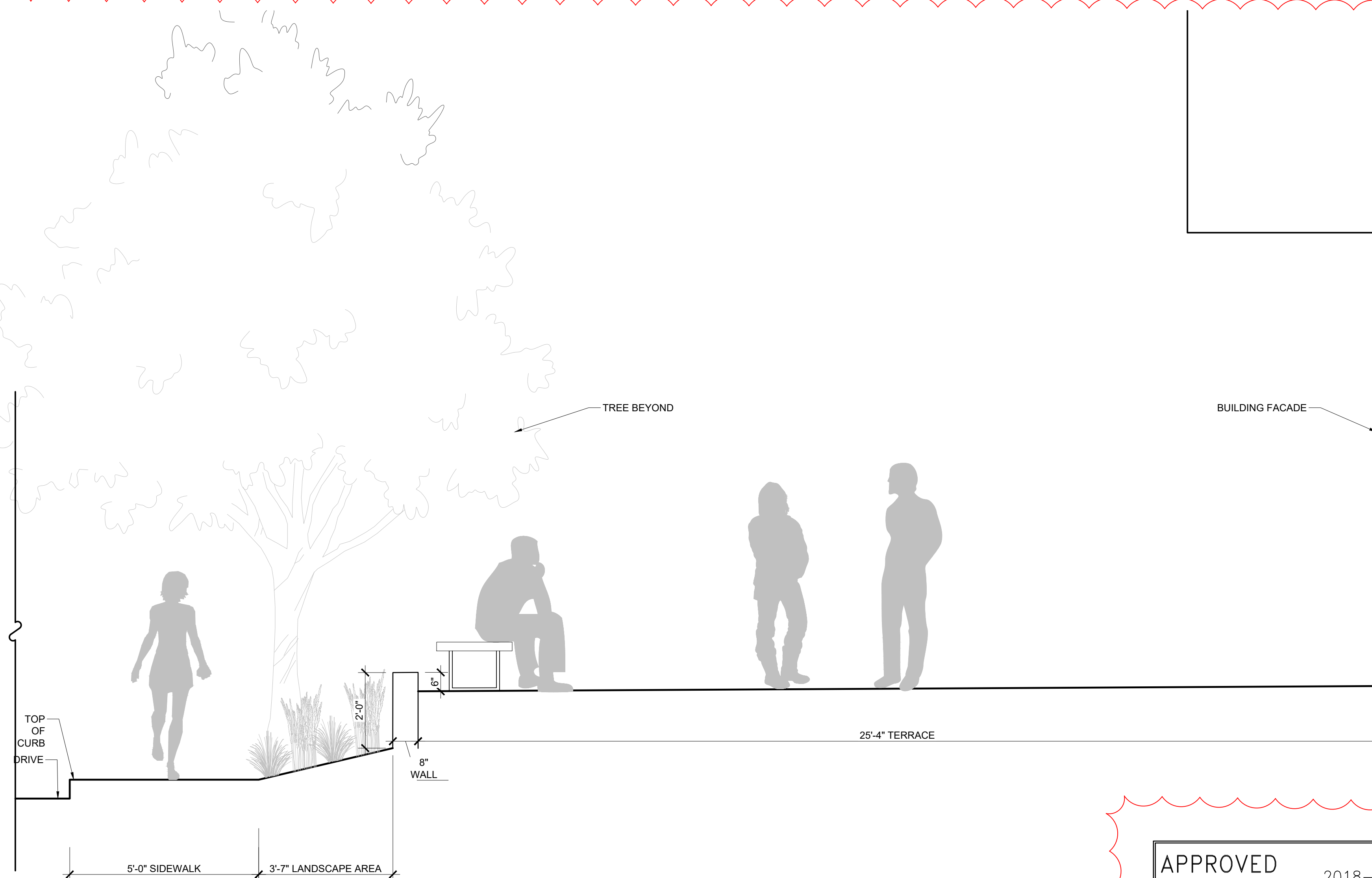
3 CONCRETE PAVING EXPANSION JOINT - TYPICAL
L3.01 Scale: 3" = 1'-0" SECTION



4 SAWCUT CONTROL JOINT
L3.01 Scale: 3" = 1'-0" SECTION



5 UNIT PAVING - PEDESTRIAN - SAND SET
L3.01 Scale: 1 1/2" = 1'-0" SECTION



6 TERRACE AT WALL
L3.01 Scale: 1/2" = 1'-0" SECTION

APPROVED	
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JOSEPH J. PLUMPE
Lic.No.000802
08.17.2020
LANDSCAPE ARCHITECT

ISSUE DATE
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ORIENTATION AND SCALE

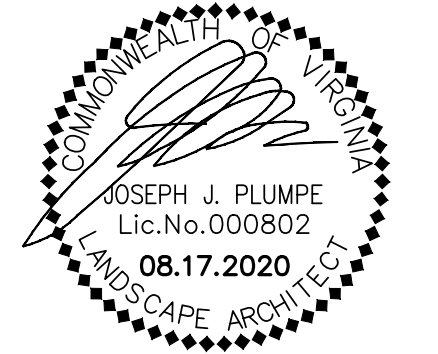
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SHEET TITLE
HARDSCAPE DETAILS

SHEET NUMBER

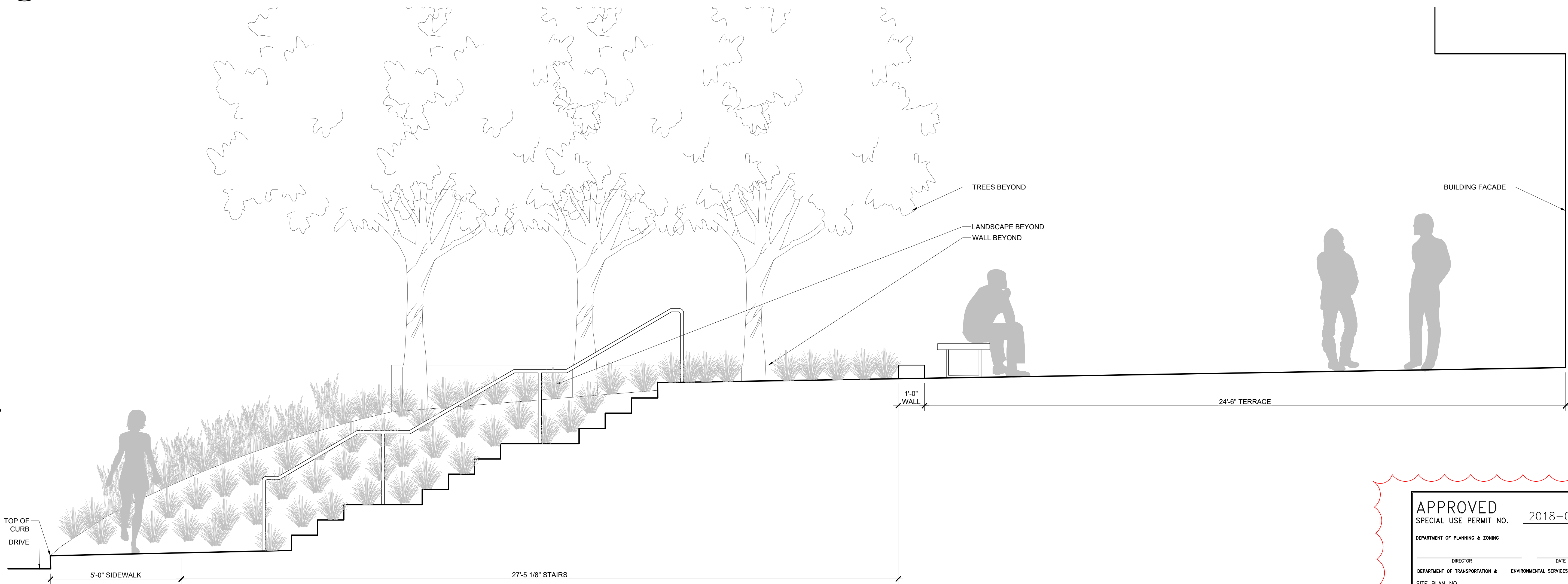
L3.01

PRELIMINARY VERIFICATION
SUBMISSION



1 TERRACE AT ACCESSIBLE WALKWAY
L3.02 Scale: 1/2" = 1'-0"

2 TERRACE AT STAIRS
L3.02 Scale: 1/2" = 1'-0"



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



MODEL: 22 292
*OR APPROVED EQUAL

COLOR: BLACK (BLK)

QUANTITY: PER PLAN

COMPANY: BEGA - US
1000 BEGA WAY
CARPINTERIA, CA 93013
(P) 805.684.0533
(F) 805.566.9474

CONTACT: LIGHTING ENVIRONMENTS
DEVIN CREHAN
333 W. OSTEND STREET
SUITE 200
BALTIMORE, MD 21230
(P) 410.712.0238
(F) 301.908.7935

NOTES: 1)INSTALL PER MANUFACTURER'S
RECOMMENDATIONS



MODEL: 22 135
*OR APPROVED EQUAL

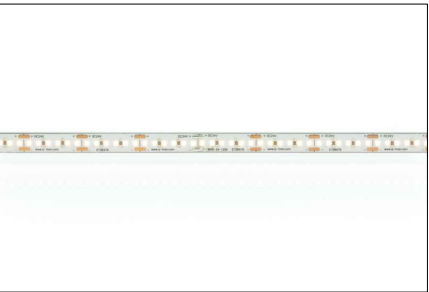
COLOR: BLACK (BLK)

QUANTITY: PER PLAN

COMPANY: BEGA - US
1000 BEGA WAY
CARPINTERIA, CA 93013
(P) 805.684.0533
(F) 805.566.9474

CONTACT: LIGHTING ENVIRONMENTS
DEVIN CREHAN
333 W. OSTEND STREET
SUITE 200
BALTIMORE, MD 21230
(P) 410.712.0238
(F) 301.908.7935

NOTES: 1)INSTALL PER MANUFACTURER'S
RECOMMENDATIONS



MODEL: SW24/3.0
*OR APPROVED EQUAL

COLOR: BLACK (BLK)

QUANTITY: PER PLAN

COMPANY: Q-TRAN
155 HILL ST
MILFORD, CT 06460
(P) 203.367.8777

CONTACT: LIGHTING ENVIRONMENTS
DEVIN CREHAN
333 W. OSTEND STREET
SUITE 200
BALTIMORE, MD 21230
(P) 410.712.0238
(F) 301.908.7935

NOTES: 1)INSTALL PER MANUFACTURER'S
RECOMMENDATIONS



MODEL: LUMARK PRV PREVAIL
*OR APPROVED EQUAL

COLOR: BLACK (BLK)

QUANTITY: PER PLAN

OPTIONS: 10' POLE

COMPANY: EATON
1121 HIGHWAY 24 SOUTH
PEACHTREE CITY, GA 30269
(P) 770.486.4800
www.eaton.com/lighting

NOTES: 1)INSTALL PER MANUFACTURER'S
RECOMMENDATIONS

1 WALL LIGHT
L3.03 Scale: NTS

PROD. INFO.

2 STEP LIGHT
L3.03 Scale: NTS

PROD. INFO.

3 STRIP LIGHT
L3.03 Scale: NTS

PROD. INFO.

4 POLE LIGHT
L3.03 Scale: NTS

PROD. INFO.



MODEL: SEDUM-MIX BLANKET
*OR APPROVED EQUAL

QUANTITY: PER PLAN

COMPANY: SEMPERGREEN
14716 GERMANNA HIGHWAY
CULPEPPER, VA 22701
(P) 540.339.5055
www.sempergreen.com

CONTACT: JOEP VAN VILSTERN
(P) 540.219.9157
joep@MoeringsUSA.com

COLOR: 1)INSTALL PER MANUFACTURERS
RECOMMENDATIONS

5 GREENROOF SEDUM MAT
L3.03 Scale: NTS

PROD. INFO.

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PROJECT NUMBER: 18043
CONTACT: D. DOVE
DRAWN: AM
APPROVED/CHECKED: DD

ORIENTATION AND SCALE

SCALE: 1"=0'-0"
0 1 1 2

SHEET TITLE

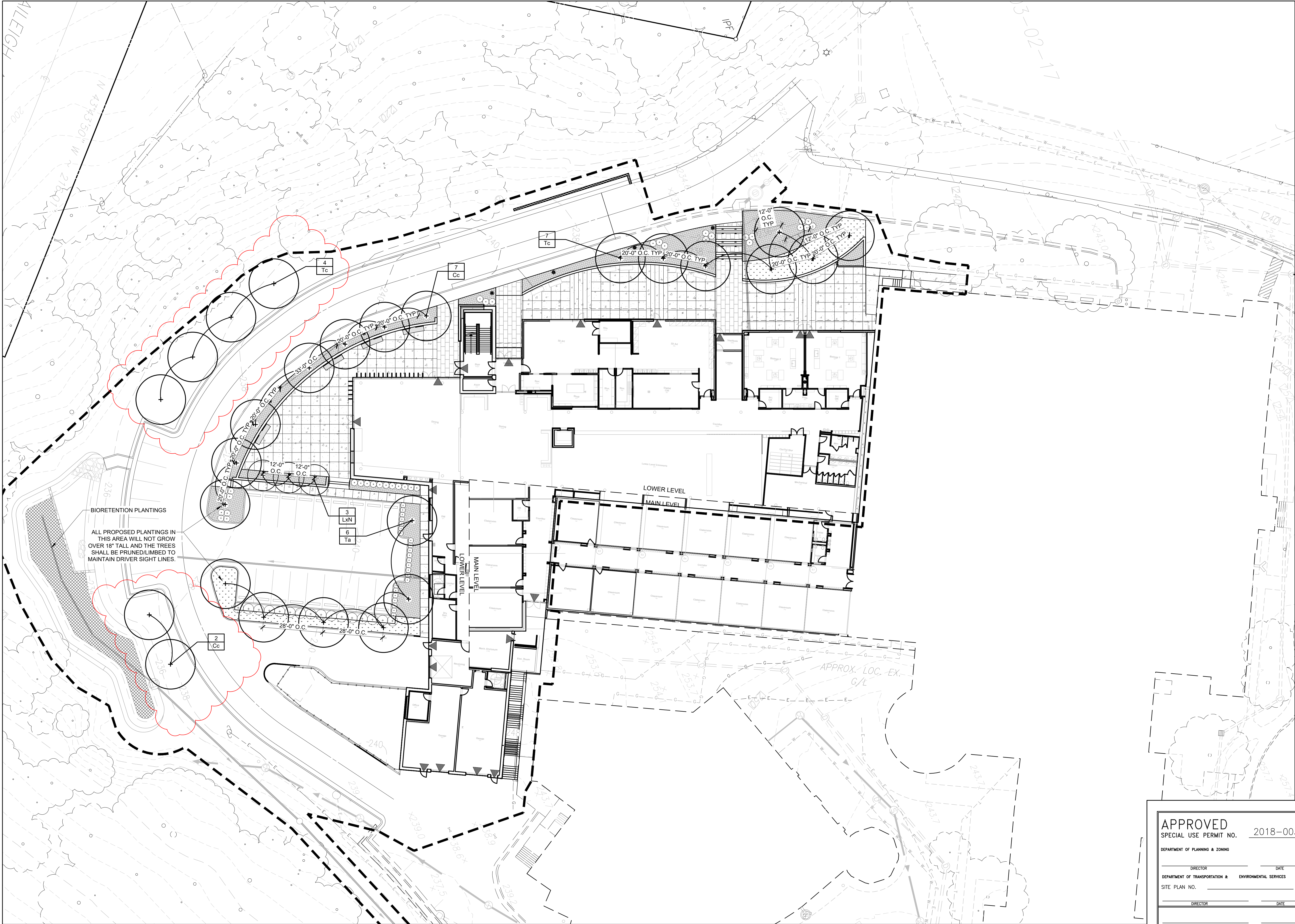
PRODUCT
INFORMATION

SHEET NUMBER

L3.03

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DIRECTOR	DATE
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SITE PLAN NO.	
DIRECTOR	DATE
CHAIRMAN, PLANNING COMMISSION	
DATE	
DATE RECORDED	
INSTRUMENT NO.	DEED BOOK NO. DATE



BIORETENTION PLANTINGS
ALL PROPOSED PLANTINGS IN
THIS AREA WILL NOT GROW
OVER 18' TALL AND THE TREES
SHALL BE PRUNED/LIMBED TO
MAINTAIN DRIVER SIGHT LINES.

APPROVED	
SPECIAL USE PERMIT NO.	2018-0030
DEPARTMENT OF PLANNING & ZONING	
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LANDSCAPE ARCHITECT

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PROJECT NUMBER: 18043
CONTACT: D. DOVE
DRAWN: AM
APPROVED/CHECKED: DD

ORIENTATION AND SCALE

N
SOURCE OF MERIDIAN:
VCS NAD 83
SCALE: 1"=20'-0"

SHEET TITLE
**TERRACE
LANDSCAPE PLAN**
SHEET NUMBER
L4.01
PRELIMINARY VERIFICATION
SUBMISSION

P:\2018\18043 St. Stephens St Agnes\6.0 CAD Files\SDSUP\4.02 ROOF LANDSCAPE PLAN.dwg



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PROJECT NUMBER: 18043
CONTACT: D. DOVE
DRAWN: AM
APPROVED/CHECKED: DD

ORIENTATION AND SCALE

N
SOURCE OF MERIDIAN: VCS NAD 83
SCALE: 1"=10'-0"

SHEET TITLE
ROOF LANDSCAPE PLAN

SHEET NUMBER
L4.02
PRELIMINARY VERIFICATION
SUBMISSION

APPROVED		SPECIAL USE PERMIT NO. 2018-0030	
DEPARTMENT OF PLANNING & ZONING			
DIRECTOR		DATE	
DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES			
SITE PLAN NO.		DATE	
CHAIRMAN, PLANNING COMMISSION		DATE	
DATE RECORDED			
INSTRUMENT NO.		DEED BOOK NO. DATE	

P:\2018\180443 St. Stephens St Agnes\6.0 CAD Files\DSUP\L5.01 PLANT SCHEDULE.dwg

A) STANDARD LANDSCAPE PLAN NOTES FOR ALL PLANS REQUIRING APPROVAL:

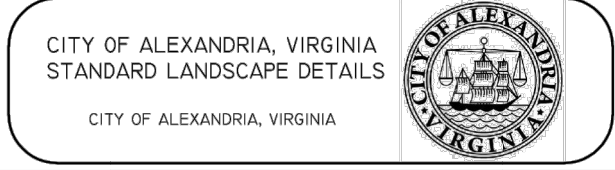
- THE FOLLOWING NOTES SHALL BE PROVIDED ON LANDSCAPE PLAN SUBMISSIONS FOR ALL PROJECTS THAT REQUIRE APPROVAL BY THE CITY AS OUTLINED IN CHAPTER 3 OF THE CITY'S 2019 LANDSCAPE GUIDELINES:
- 1)THE PROPERTY OWNER AND/OR APPLICANT, SPECIFIER, CONTRACTOR AND INSTALLER OF PLANT MATERIAL ARE RESPONSIBLE FOR UNDERSTANDING AND ADHERING TO THE STANDARDS SET FORTH IN THE MOST RECENT VERSION OF THE CITY OF ALEXANDRIA LANDSCAPE GUIDELINES AND APPLICABLE CONDITIONS OF APPROVAL. ALL QUESTIONS REGARDING APPLICATION OF, OR ADHERENCE TO, THE STANDARDS AND/OR CONDITIONS OF APPROVAL SHALL BE DIRECTED TO THE CITY PRIOR TO COMMENCEMENT OF DEMOLITION, CONSTRUCTION, OR ANY LAND DISTURBING ACTIVITY.
- 2)THE CITY-APPROVED LANDSCAPE PLAN SUBMISSION, INCLUDING PLANT SCHEDULE, NOTES AND DETAILS SHALL BE THE DOCUMENT USED FOR INSTALLATION PURPOSES AND ALL PROCEDURES SET FORTH IN THE LANDSCAPE GUIDELINES MUST BE FOLLOWED.
- 3)THE CONTRACTOR SHALL NOT INTERFERE WITH ANY TREE PROTECTION MEASURES OR IMPACT ANY EXISTING VEGETATION IDENTIFIED TO BE PRESERVED PER THE APPROVED TREE AND VEGETATION PROTECTION PLAN.
- 4)ANY CHANGES, ALTERATIONS OR MODIFICATIONS TO THE SITE CONDITIONS THAT AFFECT VEGETATION PROTECTION ZONES WILL REQUIRE AN AMENDMENT TO THE APPROVED TREE AND VEGETATION PROTECTION PLAN AND/OR DETAILS.
- 5)INSTALLATION OF PLANT MATERIAL MAY ONLY OCCUR DURING THE PLANTING SEASONS IDENTIFIED IN THE LANDSCAPE GUIDELINES.
- 6)IN LIEU OF MORE STRENUOUS SPECIFICATIONS, ALL LANDSCAPE RELATED WORK SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE CURRENT AND MOST UP-TO-DATE EDITION (AT TIME OF CONSTRUCTION) OF LANDSCAPE SPECIFICATION GUIDELINES AS PRODUCED BY THE LANDSCAPE CONTRACTORS ASSOCIATION OF MARYLAND, DISTRICT OF COLUMBIA AND VIRGINIA; GAITHERSBURG, MARYLAND.
- 7)SUBSTITUTIONS TO THE APPROVED PLANT MATERIAL SHALL NOT OCCUR UNTIL WRITTEN APPROVAL IS PROVIDED BY THE CITY.
- 8)MAINTENANCE FOR THIS PROJECT SHALL BE PERFORMED BY THE OWNER, APPLICANT, SUCCESSOR(S) AND/OR ASSIGN(S) IN PERPETUITY AND IN COMPLIANCE WITH CITY OF ALEXANDRIA LANDSCAPE GUIDELINES AND AS CONDITIONED BY PROJECT APPROVAL, AS APPLICABLE.

B) STANDARD LANDSCAPE PLAN NOTES FOR DEVELOPMENT SITE PLANS:

- IN ADDITION TO THE NOTES PROVIDED ABOVE, THE FOLLOWING NOTES SHALL BE PROVIDED ON LANDSCAPE PLAN SUBMISSIONS FOR ALL DSP/DSUP PROJECTS:
- 1)THE APPROVED METHOD(S) OF PROTECTION MUST BE IN PLACE FOR ALL VEGETATION TO BE PRESERVED ON-SITE AND ADJACENT TO THE PROJECT SITE PURSUANT TO THE APPROVED TREE AND VEGETATION PROTECTION PLAN AND DETAILS PRIOR TO COMMENCEMENT OF DEMOLITION, CONSTRUCTION, OR ANY LAND DISTURBANCE. THE APPLICANT SHALL NOTIFY THE PLANNING & ZONING (P&Z) PROJECT MANAGER ONCE THE TREE PROTECTION METHODS ARE IN PLACE. NO DEMOLITION, CONSTRUCTION, OR LAND DISTURBANCE MAY OCCUR UNTIL AN INSPECTION IS PERFORMED BY THE CITY AND WRITTEN CONFIRMATION IS PROVIDED BY THE CITY WHICH VERIFIES CORRECT INSTALLATION OF THE TREE PROTECTION MEASURES.
- 2)THE APPLICANT MUST CONTACT THE P&Z PROJECT MANAGER PRIOR TO COMMENCEMENT OF LANDSCAPE INSTALLATION/PLANTING OPERATION TO SCHEDULE A PRE-INSTALLATION MEETING. THE MEETING SHOULD BE HELD BETWEEN THE APPLICANT'S GENERAL CONTRACTOR, LANDSCAPE CONTRACTOR, LANDSCAPE ARCHITECT, THE P&Z PROJECT MANAGER AND THE CITY ARBORIST (AS APPLICABLE) TO REVIEW THE SCOPE OF INSTALLATION PROCEDURES AND PROCESSES DURING AND AFTER INSTALLATION.
- 3)THE FOLLOWING INFORMATION SHALL BE PROVIDED TO THE P&Z PROJECT MANAGER AT LEAST FIVE (5) BUSINESS DAYS PRIOR TO THE LANDSCAPE PRE-INSTALLATION MEETING: 1) A LETTER THAT CERTIFIES THAT THE PROJECT LANDSCAPE ARCHITECT PERFORMED PRE-SELECTION TAGGING FOR ALL TREES PROPOSED WITHIN THE PUBLIC RIGHT OF WAY AND ON PUBLIC LAND PRIOR TO INSTALLATION. THIS LETTER MUST BE SIGNED AND SEALED BY THE PROJECT LANDSCAPE ARCHITECT, AND 2) A COPY OF THE SOIL BULK DENSITY TEST REPORT VERIFYING THAT MAXIMUM COMPRESSION RATES ARE MET.
- 9)AS-BUILT DRAWINGS FOR THIS LANDSCAPE AND/OR IRRIGATION/WATER MANAGEMENT SYSTEM WILL BE PROVIDED IN COMPLIANCE WITH CITY OF ALEXANDRIA LANDSCAPE GUIDELINES, THE CITY CODE OF ORDINANCES, AND ALL APPLICABLE PLAN PREPARATION CHECKLISTS. AS-BUILT DRAWINGS SHALL INCLUDE CLEAR IDENTIFICATION OF ALL VARIATION(S) AND CHANGES FROM APPROVED DRAWINGS INCLUDING LOCATION, QUANTITY AND SPECIFICATION OF ALL PROJECT ELEMENTS.

A STANDARD LANDSCAPE PLAN NOTES
NOT TO SCALE

OF UPDATES: 00 LAST UPDATED:



NOTE:
THE INFORMATION SHOWN HEREIN THIS DOCUMENT IS FOR GENERAL GUIDANCE ONLY AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES. ITS USE SHALL NOT RELIEVE THE DESIGN PROFESSIONAL OR CONTRACTOR OF ANY LEGAL RESPONSIBILITY.

Source:
City of Alexandria
Approved by:
COA

STANDARD
LANDSCAPE
PLAN NOTES

Date drawn:
01/01/19
1 OF 1
LD 016

TREE SCHEDULE							CANOPY	
SHADE TREES	QTY	BOTANICAL NAME	COMMON NAME	HEIGHT	CALIPER	REMARKS	EACH (SF)	SUBTOTAL
Cc	9	Carpinus caroliniana	American Hornbeam	10'-12'	3" - 3 1/2"	B&B, full uniform crown, symmetrical branching, full specimen	500	4500
Ta	6	Tilia americana	American Linden	14'-16'	3" - 3 1/2"	B&B, full uniform crown, symmetrical branching, full specimen	1250	7500
Tc	11	Tilia cordata	Littleleaf Linden	14'-16'	3" - 3 1/2"	B&B, full uniform crown, symmetrical branching, full specimen	1250	13750
ORNAMENTAL TREES	QTY	BOTANICAL NAME	COMMON NAME	HEIGHT	CALIPER	REMARKS		
LxN	3	Lagerstroemia x 'Natchez'	Natchez Crape Myrtle	8'-10'	1 1/2" min.	B&B, multi-trunk, 3 trunk minimum, full symmetrical branching	250	1750
							TOTAL	27,500

PLANT SCHEDULE
Scale: NTS

GREEN ROOF SEDUM MIX:

- Sedum acre 'Aureum'
- Sedum acre 'Gold Moss'
- Sedum album 'Coral Carpet'
- Sedum album 'Murale'
- Sedum hispanicum
- Phedimus (aka Sedum) kamtschaticum
- Phedimus (aka Sedum) kamtschaticum 'Variegatum'
- Phedimus (aka Sedum) kamtschaticum var. floriferum 'Weihenstephaner Gold'
- Phedimus (aka Sedum) spurium 'Fuldaglut'
- Phedimus (aka Sedum) spurium 'John Creech'
- Phedimus (aka Sedum) spurium 'Red Carpet'
- Phedimus takesimensis 'Golden Carpet'
- Sedum sexangulare
- Sedum stefco
- Sedum subsp. rupestre 'Angelica'
- Sedum subsp. rupestre 'Blue Spruce'
- Sedum x Immergrunchen

CANOPY COVER ANALYSIS	SUBTOTAL (S.F.)
TOTAL SITE AREA	1,280,506
TREE COVER REQUIRED (25%)	320,127
EXISTING CANOPY COVER	346,750 (27.08%)
REMOVED CANOPY COVER	- 26,050
PRESERVED CANOPY COVER	320,700
PROPOSED CANOPY COVER	+ 27,500
TOTAL CANOPY COVER	348,200 (27.19%)

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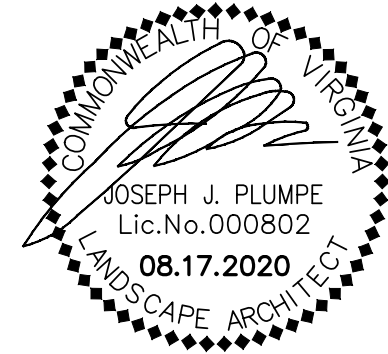
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SCALE: 1"=0'-0"
0 1 1 2

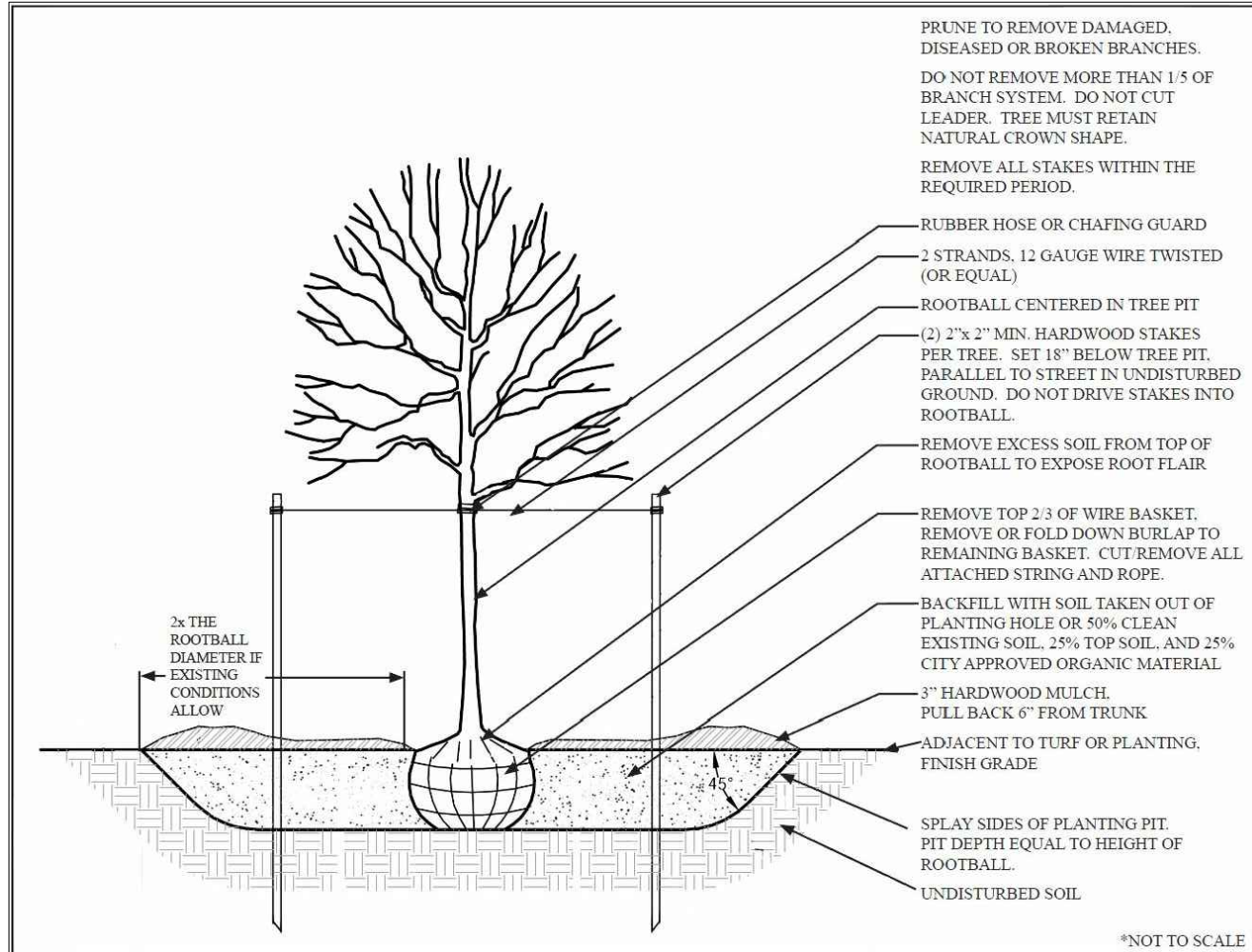
SHEET TITLE

PLANT SCHEDULE

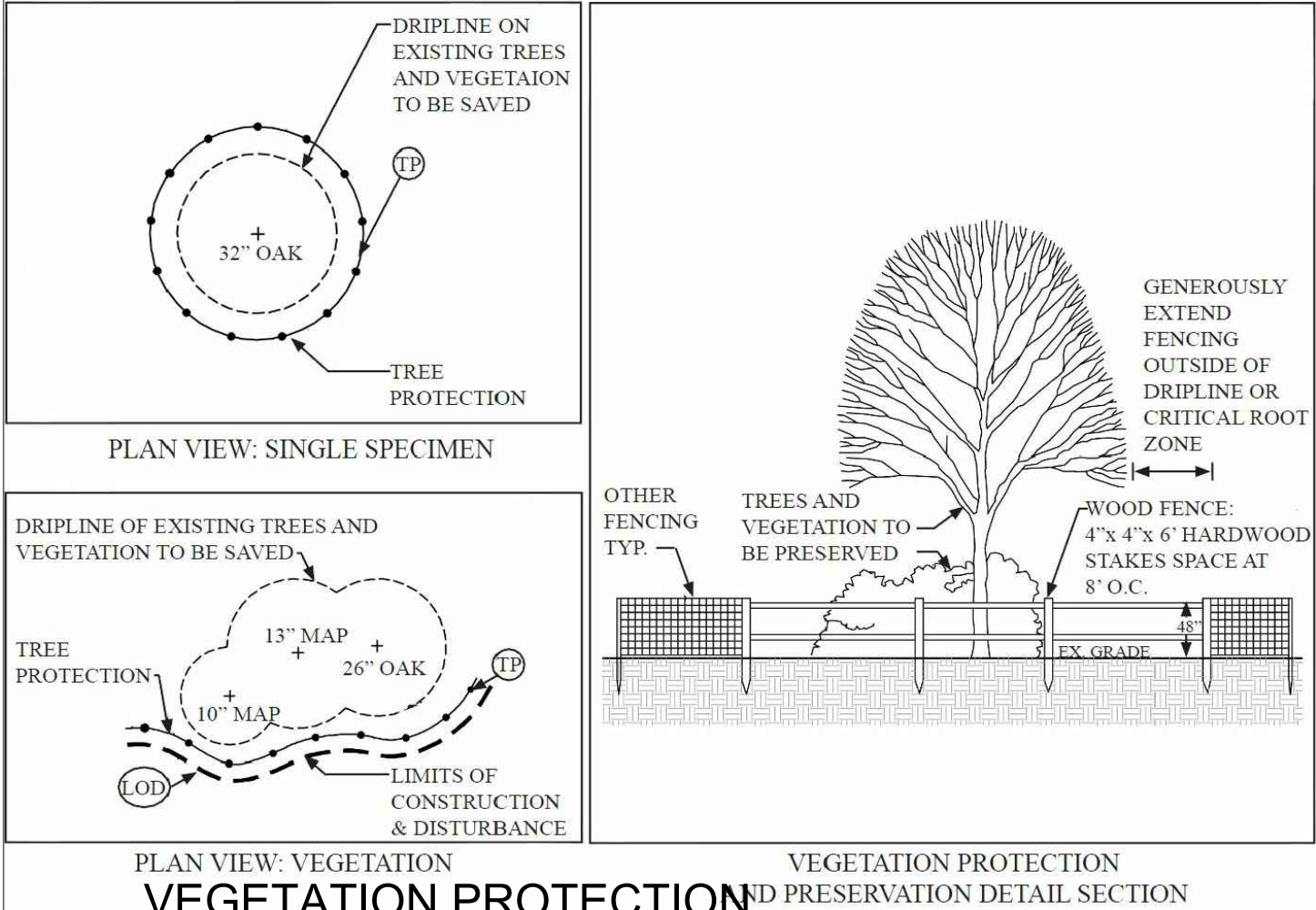
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L5.01

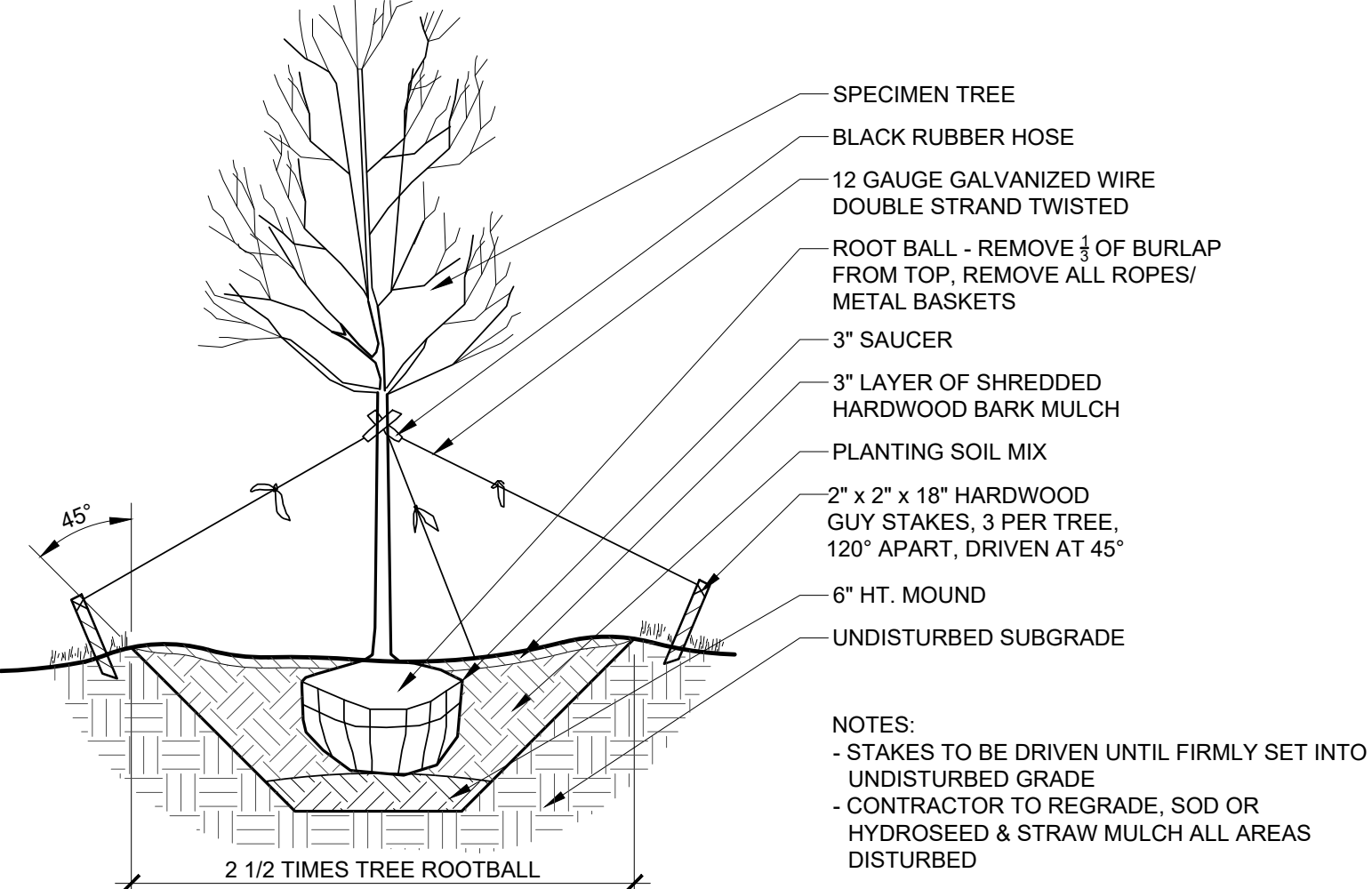
PRELIMINARY VERIFICATION
SUBMISSION



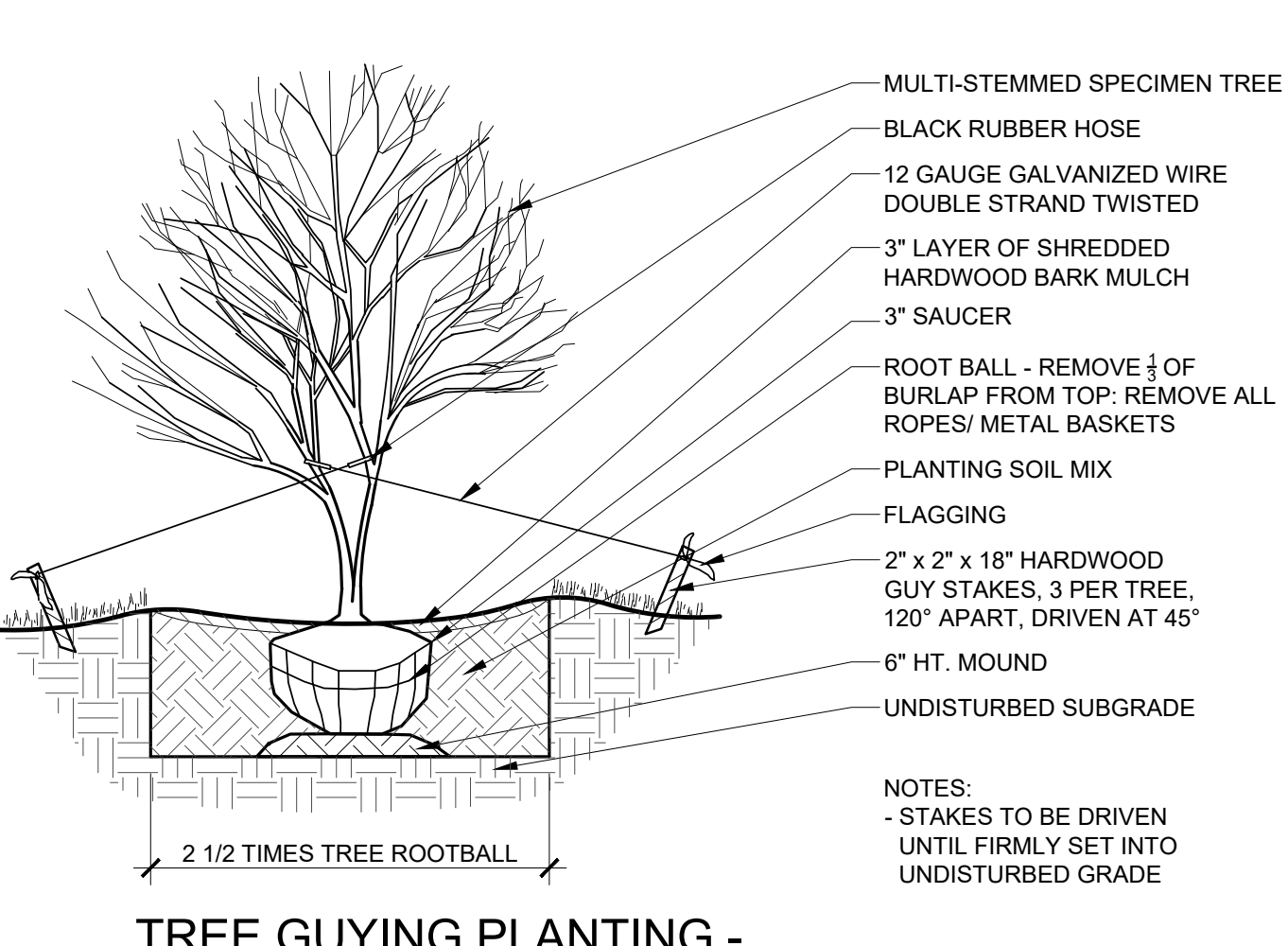
1 TREE PLANTING DETAIL SECTION
Scale: 1/2" = 1'-0"



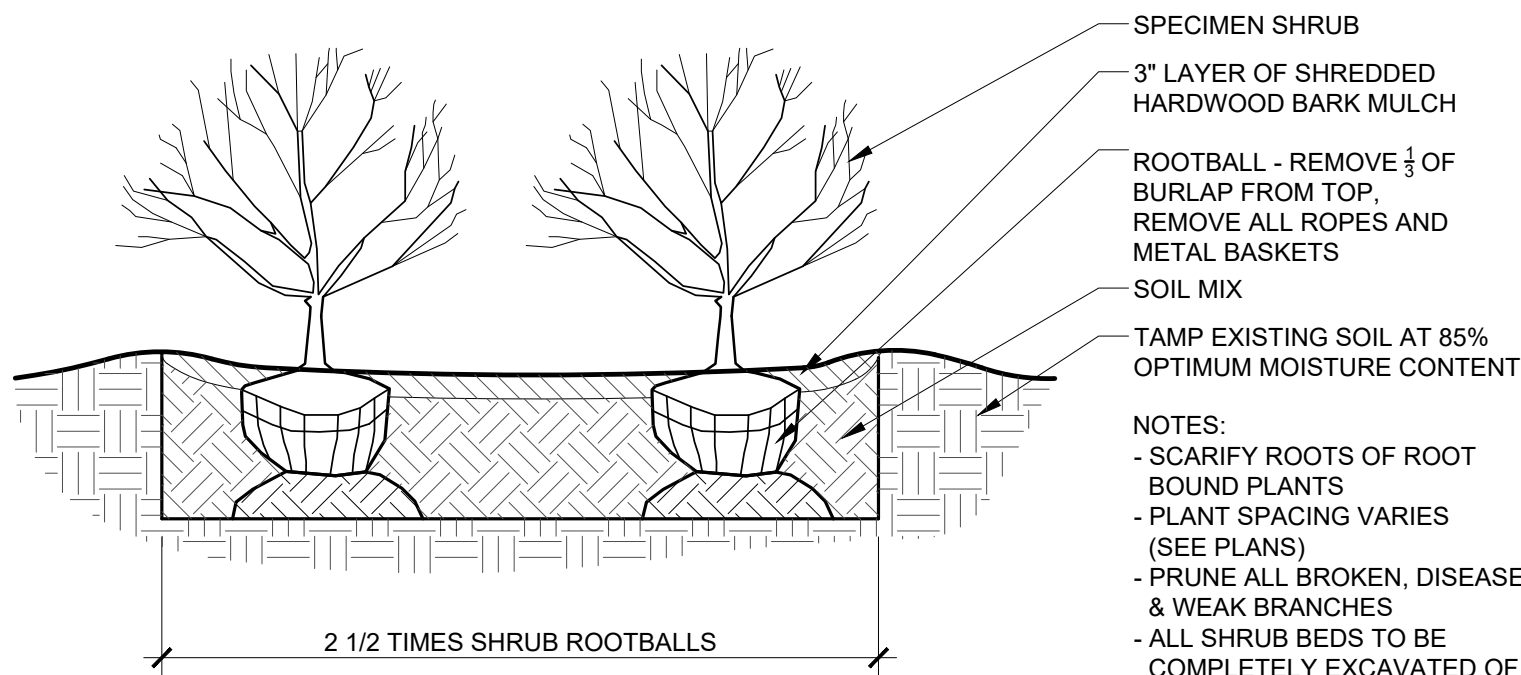
2 VEGETATION PROTECTION AND PRESERVATION DETAIL SECTION
Scale: 1/2" = 1'-0"



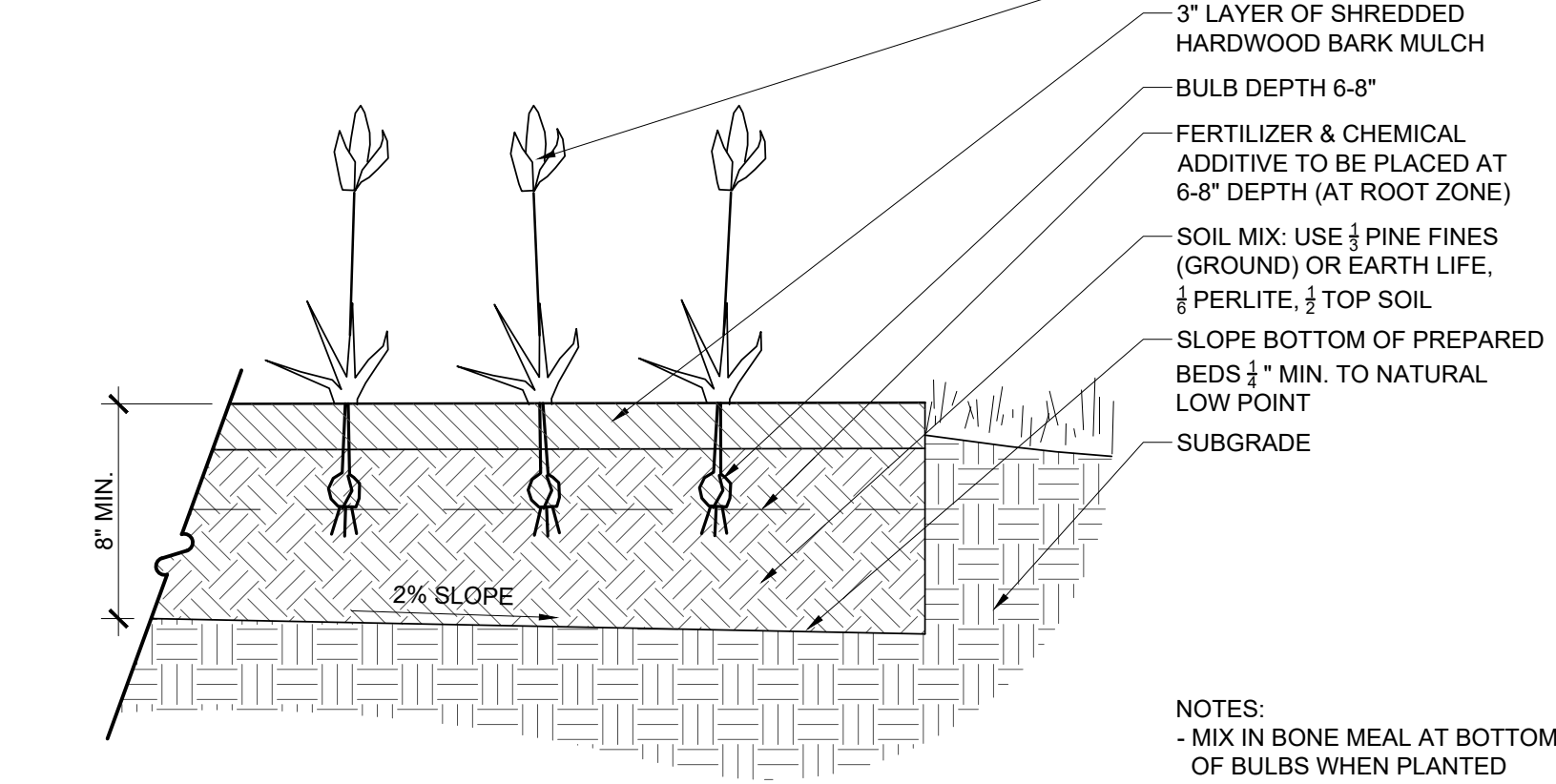
3 TREE GUYING PLANTING - SPECIMEN TREE SECTION
Scale: 1/4" = 1'-0"



4 TREE GUYING PLANTING - MULTI-STEMMED SECTION
Scale: 1/4" = 1'-0"



5 SHRUB PLANTING SECTION
Scale: 1/2" = 1'-0"



6 ANNUAL & PERENNIAL PLANTING SECTION
Scale: 1" = 1'-0"

PLANT SPACING CHART
AS SPECIFIED ON PLANT LIST

SPACING 'D'	ROW 'A'	NUMBER OF PLANTS PER SQUARE FOOT
6" o.c.	5 1/4" o.c.	4.62
8" o.c.	6 7/8" o.c.	2.60
10" o.c.	8 5/8" o.c.	1.66
12" o.c.	10 3/8" o.c.	1.15
15" o.c.	13" o.c.	0.74
18" o.c.	15 5/8" o.c.	0.51
24" o.c.	20 3/4" o.c.	0.29
30" o.c.	26" o.c.	0.18
36" o.c.	31 1/8" o.c.	0.13
42" o.c.	36 3/8" o.c.	0.09
48" o.c.	41 5/8" o.c.	0.07

7 TRIANGULAR SPACING FOR SHRUBS - GROUND COVERS - BULBS AND PERENNIALS SECTION
Scale: 1" = 1'-0"

PLANTING NOTES:

1. PLANT MATERIAL SHALL BE FURNISHED AND INSTALLED AS INDICATED, INCLUDING ALL LABOR, MATERIALS, PLANTS, EQUIPMENT, INCIDENTALS, AND CLEAN-UP.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PLANTING AT CORRECT GRADES AND ALIGNMENT. LAYOUT TO BE APPROVED BY OWNERS' REPRESENTATIVE PRIOR TO INSTALLATION.
3. PLANTS SHALL BE TYPICAL OF THEIR SPECIES AND VARIETY; HAVE NORMAL GROWTH HABITS, WELL-DEVELOPED DENSELY FOLIATED BRANCHES, AND VIGOROUS ROOT SYSTEMS; AND BE FREE FROM DEFECTS AND INJURIES.
4. CONTRACTOR SHALL REPORT ANY SOIL OR DRAINAGE CONDITIONS CONSIDERED DETRIMENTAL TO GROWTH OF PLANT MATERIAL.
5. ALL PLANT MATERIAL SHALL BE GUARANTEED BY THE CONTRACTOR TO BE IN VIGOROUS GROWING CONDITION. PROVISION SHALL BE MADE FOR A GROWTH GUARANTEE OF AT LEAST ONE YEAR FROM THE DATE OF ACCEPTANCE FOR TREES, SHRUBS, GROUNDCOVER AND PERENNIALS. REPLACEMENTS SHALL BE MADE AT THE BEGINNING OF THE FIRST SUCCEEDING PLANTING SEASON. ALL REPLACEMENTS SHALL HAVE A GUARANTEE EQUAL TO THAT STATED ABOVE.
6. PLANT MATERIAL SHALL BE PLANTED ON THE DAY OF DELIVERY IF/WHEN PRACTICAL. IN THE EVENT THAT THIS IS NOT POSSIBLE, THE CONTRACTOR SHALL PROTECT STOCK NOT PLANTED. PLANTS SHALL NOT REMAIN UNPLANTED FOR LONGER THAN A THREE-DAY PERIOD AFTER DELIVERY. ANY PLANTS NOT INSTALLED DURING THIS PERIOD SHALL BE REJECTED, UNLESS OWNER AND CONTRACTOR PROVIDE OTHERWISE BY WRITTEN AGREEMENT.
7. QUALITY AND SIZE OF PLANTS, SPREAD OF ROOTS, AND SIZE OF ROOT BALL SHALL BE IN ACCORDANCE WITH THE MOST RECENT VERSION OF ANSI Z60 "AMERICAN STANDARD FOR NURSERY STOCK" PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC.
8. ALL PLANTS SHALL BE PLANTED IN AMENDED TOP SOIL THAT IS THOROUGHLY WATERED AND TAMPED AS BACK-FILLING PROCESSES. PLANTING MIX TO BE AS SHOWN ON PLANTING DETAILS. LARGE PLANTING AREAS TO INCORPORATE FERTILIZER AND SOIL CONDITIONERS AS STATED IN PLANTING SPECIFICATIONS.
9. PLANTS SHALL NOT BE BOUND WITH WIRE OR ROPE AT ANY TIME SO AS TO DAMAGE THE BARK OR BREAK BRANCHES. PLANTS SHALL BE HANDLED FORM THE BOTTOM OF THE BALL ONLY.
10. PLANTING OPERATIONS SHALL BE PERFORMED DURING PERIODS WITHIN THE PLANTING SEASON WHEN WEATHER AND SOIL CONDITIONS ARE SUITABLE AND IN ACCORDANCE WITH ACCEPTED LOCAL PRACTICE. PLANTS SHALL NOT BE INSTALLED IN TOP SOIL THAT IS IN A MUDDY OR FROZEN CONDITION. ALL PLANT MATERIAL SHALL BE SPRAYED WITH "WILT-PRUF" OR EQUAL AS PER MANUFACTURER'S INSTRUCTIONS.
11. NO PLANT, EXCEPT GROUND COVERS, SHALL BE PLANTED LESS THAN TWO FEET FROM EXISTING STRUCTURES AND SIDEWALKS.
12. SET ALL PLANTS PLUMB AND STRAIGHT. SET AT SUCH LEVEL THAT A NORMAL OR NATURAL RELATIONSHIP TO THE GROUND IF THE PLANT WITH THE GROUND SURFACE WILL BE ESTABLISHED. LOCATE THE PLANT IN THE CENTER OF THE PIT.
13. ALL INJURED ROOTS SHALL BE PRUNED TO MAKE CLEAN ENDS BEFORE PLANTING UTILIZING CLEAN, SHARP TOOLS. IT IS ADVISABLE TO PRUNE APPROXIMATELY 1/3 OF THE GROWTH OF LARGE TREES (2" CALIPER AND GREATER) BY THE REMOVAL OF SUPERFLUOUS BRANCHES, THOSE WHICH CROSS, THOSE WHICH RUN PARALLEL, ETC. MAIN LEADER OF TREES SHALL NOT BE CUT BACK. LONG SIDES BRANCHES SHALL BE SHORTENED.
14. EACH TREE AND SHRUB SHALL BE PRUNED IN ACCORDANCE WITH STANDARD HORTICULTURAL PRACTICE TO PRESERVE THE NATURAL CHARACTER OF PLANT. PRUNING SHALL BE DONE WITH CLEAN, SHARP TOOLS.
15. TREES SHALL BE SUPPORTED IMMEDIATELY AFTER PLANTING. ALL TREES 6" AND GREATER IN CALIPER SHALL BE GUYED. SMALLER TREES SHALL BE STAKED. GUYING WIRES AND STAKES SHALL BE INSTALLED AS INDICATED. THE LANDSCAPE CONTRACTOR SHALL REMOVE STAKING, GUYING AND TREE WRAP AT THE END OF ONE YEAR MAINTENANCE AND GUARANTEE PERIOD.
16. ALL PLANTING BEDS SHALL BE MULCHED WITH 3" LAYER OF MULCH.
17. NEW PLANTING AREAS AND SOD SHALL BE ADEQUATELY WATERED TO ESTABLISH THE PROPOSED PLANTS AND LAWN.
18. ALL PLANTS SHOWN ON THE APPROVED LANDSCAPE PLAN SHALL BE INSTALLED, INSPECTED AND APPROVED BY THE LANDSCAPE ARCHITECT OR HIS REPRESENTATIVE. THE LANDSCAPE ARCHITECT SHALL TAKE INTO ACCOUNT SEASONAL CONSIDERATIONS IN THIS REGARD. TREES, SHRUBS, VINES AND GROUNDCOVER AS REQUIRED BY OR ASSOCIATED WITH A SUBDIVISION OR SITE PLAN APPROVED BY THE PLANNING AUTHORITIES SHALL BE INSTALLED DURING THE FOLLOWING PLANTING SEASONS: LAWN: 03/15 TO 06/15 AND 09/15 TO 12/01. THE FOLLOWING TREE VARIETIES SHALL NOT BE PLANTED DURING THE FALL PLANTING SEASON DUE TO THE HAZARDS ASSOCIATED WITH PLANTING THESE TREES IN THIS SEASON: ACER RUBRUM POPULUS SPP.; BETULA SPP. PRUNUS SPP.; CARPINUS SPP. PYRUS SPP.; CRATEGEUS SPP. QUERCUS SPP.; KOELREUTERIA PANICULATA SALIX SPP.; LIQUIDAMBAR STYRACIFLUA TILIA TOMENTOSA; LIRIODENDRON TULIPIFERA ZELKOVA; PLATANUS ACERIFOLIA; ANY PLANTING INSTALLED IN CONFLICT WITH THIS REQUIREMENT MUST RECEIVE WRITTEN APPROVAL OF THE LANDSCAPE ARCHITECT PRIOR TO PLANTING. FAILURE TO COMPLY WITH THESE REQUIREMENTS WILL REQUIRE THE REMOVAL OF THE PLANTING IN QUESTION. THIS REQUIREMENT DOES NOT APPLY TO SEEDING OR SODDING OR PLANTINGS SPECIFICALLY FOR SOIL STABILIZATION PURPOSES. PLANTINGS ASSOCIATED WITH ANY LOT GIVEN A CERTIFICATE OF OCCUPANCY OUTSIDE THESE PERIODS SHALL BE PROVIDED DURING THE PREVIOUS OR NEXT APPROPRIATE SEASON.
19. ALL DISTURBED AREAS SHALL BE TREATED WITH 4" TOP SOIL SODDED OR SEEDED AS NOTED IN ACCORDANCE WITH PERMANENT STABILIZATION METHODS INDICATED ON SOIL EROSION AND SEDIMENT CONTROL SHEET.

20. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL PLANT MAINTENANCE; INCLUDING SHRUBS AND GROUNDCOVER, AND SHALL MAINTAIN AREA IN A WEED AND DEBRIS FREE CONDITION THROUGHOUT THE ONE-YEAR GUARANTEE PERIOD, UNLESS OTHERWISE SPECIFIED.
21. CONTRACTOR SHALL LAYOUT AND CLEARLY STAKE ALL PROPOSED IMPROVEMENTS INCLUDED ON THIS PLAN.
22. CONTRACTOR TO VERIFY PLANT LIST TOTALS WITH QUANTITIES SHOWN ON PLAN. LANDSCAPE ARCHITECT SHALL BE ALERTED BY CONTRACTOR OF ANY DISCREPANCIES PRIOR TO FINAL BID NEGOTIATION. UNIT PRICES FOR ALL MATERIAL SHALL BE SUPPLIED TO THE OWNER AT BIDDING TIME.
23. ALL MATERIALS SHALL BE SUBJECT TO APPROVAL BY THE LANDSCAPE ARCHITECT. OWNER SHALL RECEIVE TAG FROM EACH PLANT SPECIES AND A LIST OF PLANT SUPPLIERS. WHERE ANY REQUIREMENTS ARE OMITTED FROM THE PLANT LIST, THE PLANTS FURNISHED SHALL MEET THE NORMAL REQUIREMENTS FOR THE VARIETY PER THE AMERICAN STANDARD FOR NURSERY STOCK, LATEST EDITION, PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN (AAN). PLANTS SHALL BE PRUNED PRIOR TO DELIVERY ONLY UPON THE APPROVAL OF THE LANDSCAPE ARCHITECT.
24. SIZES SPECIFIED IN THE PLANT LIST ARE MINIMUM SIZES TO WHICH THE PLANTS ARE TO BE JUDGED. FAILURE TO MEET MINIMUM SIZE ON ANY PLANT WILL RESULT IN REJECTION OF THAT PLANT.
25. ALL PLANTS SHALL BE FRESHLY DUG, SOUND, HEALTHY, VIGOROUS, WELL BRANCHED, FREE OF DISEASE, INSECT EGGS, AND LARVAE, AND SHALL HAVE ADEQUATE ROOT SYSTEMS.
26. ALL CONTAINER GROWN MATERIAL SHALL BE HEALTHY, VIGOROUS, WELL-ROOTED PLANTS AND ESTABLISHED IN THE CONTAINER IN WHICH THEY ARE SOLD. THE PLANTS SHALL HAVE TOPS WHICH ARE GOOD QUALITY AND ARE IN A HEALTHY GROWING CONDITION.
27. GROUPS OF SHRUBS SHALL BE PLACED IN A CONTINUOUS MULCH BED WITH SMOOTH CONTINUOUS LINES. ALL MULCHED BED EDGES SHALL BE CURVILINEAR IN SHAPE FOLLOWING THE CONTOUR OF THE PLANT MASS. TREES LOCATED WITHIN FOUR FEET OF SHRUB BEDS SHALL SHARE SAME MULCH BED.
28. TREES SHALL BE LOCATED A MINIMUM OF 3' - 4' FROM WALLS AND WALKS WITHIN THE PROJECT. IF CONFLICTS ARISE BETWEEN ACTUAL SIZE OF AREA AND PLANS, CONTRACTOR SHALL CONTACT LANDSCAPE ARCHITECT FOR RESOLUTION. FAILURE TO MAKE SUCH CONFLICTS KNOWN TO THE OWNER OR LANDSCAPE ARCHITECT WILL RESULT IN CONTRACTOR'S LIABILITY TO RELOCATE MATERIALS.
29. TREE STAKING AND GUYING SHALL BE DONE PER DETAILS. CONTRACTOR SHALL ENSURE THAT TREES REMAIN VERTICAL AND UPRIGHT FOR THE DURATION OF THE GUARANTEE PERIOD.
30. CROWN OF ROOT BALL SHALL BE HIGHER (AFTER SETTLING) THAN ADJACENT SOIL.
31. TAGS AND TWINE ARE TO BE REMOVED AND BURLAP IS TO BE ROLLED BACK ONE-THIRD ON ALL B&B PLANT MATERIAL. REMOVE BURLAP IF IT IS NON-BIODEGRADABLE. FOR STREET TREES TAGS, TWINE, CORD, BURLAP AND WIRE BASKET TO BE CUT 12" DOWN SIDE OF ROOT BALL AND REMOVED FROM PROJECT SITE.
32. SHRUBS AND GROUND COVERS SHALL BE TRIANGULARLY SPACED AT SPACING SHOWN ON PLANTING PLANS.
33. SHADE TREES: HEIGHT SHALL BE MEASURED FROM THE CROWN OF THE ROOT BALL TO THE TOP OF MATURE GROWTH. SPREAD SHALL BE MEASURED TO THE END OF BRANCHING EQUALLY AROUND THE CROWN FROM THE CENTER OF THE TRUNK. MEASUREMENTS ARE NOT TO INCLUDE ANY TERMINAL GROWTH. SINGLE TRUNK TREES SHALL BE FREE OF "V" CROTCHES THAT COULD BE POINTS OF WEAK LIMB STRUCTURE OR DISEASE INFESTATION. SHRUBS: HEIGHT SHALL BE MEASURED FROM THE GROUND TO THE AVERAGE HEIGHT OF THE TOP OF THE PLANT. SPREAD SHALL BE MEASURED TO THE END OF BRANCHING EQUALLY AROUND THE SHRUB MASS. MEASUREMENTS ARE NOT TO INCLUDE ANY TERMINAL GROWTH.
34. ALL SUBSTITUTIONS OF PLANT MATERIAL ARE TO BE REQUESTED IN WRITING TO THE LANDSCAPE ARCHITECT AND APPROVED BY THE OWNER. IF CONTRACTOR FAILS TO SUBMIT A WRITTEN REQUEST, IT WILL RESULT IN LIABILITY TO THE CONTRACTOR.
35. ALL CONTRACTORS SHALL BE REQUIRED TO COMPLETELY REMOVE ALL TRASH, DEBRIS AND EXCESS MATERIALS FROM THE WORK AREA AND THE PROPERTY, ESPECIALLY AT ALL CURB, GUTTERS AND SIDEWALKS DAILY DURING INSTALLATION.
36. DEAD PLANTS ARE TO BE REMOVED FROM THE JOB BY THE CONTRACTOR WEEKLY. CONTRACTOR SHALL MAINTAIN AN UPDATED, COMPREHENSIVE LIST OF ALL DEAD MATERIALS REMOVED FROM THE JOB SITE. A COPY OF THE LIST IS TO BE SUBMITTED TO THE OWNER AT THE END OF EVERY MONTH DURING THE CONTRACT PERIOD.
37. TOPSOIL REQUIRED FOR SOIL MIXES AND SPECIAL SEEDING AREAS SHALL BE PROVIDED BY LANDSCAPE CONTRACTOR. CONTRACTOR MUST LOAD, HAUL, MIX, AND SPREAD ALL TOPSOIL AND OTHER SOIL ADDITIVES ARE REQUIRED.
38. CONTRACTOR SHALL GUARANTEE ALL LANDSCAPE IMPROVEMENTS, INCLUDING SEEDING, FOR ONE FULL YEAR AS REQUIRED BY THE SPECIFICATIONS. CONTRACTOR MUST CONTACT THE OWNER AT LEAST TEN WORKING DAYS IN ADVANCE TO SCHEDULE ACCEPTANCE INSPECTION(S). CONTRACTOR MUST REPLACE ALL DEAD OR UNACCEPTABLE PLANTS DURING THE FOLLOWING RECOMMENDED PLANTING SEASON.
39. THE SPECIFICATIONS FOR ALL WORK INCLUDED IN THIS CONTRACT SHALL BE LANDSCAPE SPECIFICATIONS GUIDELINES FOR BALTIMORE-WASHINGTON METROPOLITAN AREA, CURRENT EDITION, UNLESS OTHERWISE NOTED ON THESE PLANS.

ARCHAEOLOGY NOTES

1. THE APPLICANT/DEVELOPER SHALL CALL ALEXANDRIA ARCHAEOLOGY (703/746-4399) TWO WEEKS BEFORE THE STARTING DATE OF ANY GROUND DISTURBANCE SO THAT A MONITORING AND INSPECTION SCHEDULE FOR CITY ARCHAEOLOGISTS CAN BE ARRANGED.
2. CALL ALEXANDRIA ARCHAEOLOGY IMMEDIATELY (703-746-4399) IF ANY BURIED STRUCTURAL REMAINS (WALLS WELL, PRIVIES, CISTERNS, ETC.) OR CONCENTRATIONS OF ARTIFACTS ARE DISCOVERED DURING DEVELOPMENT. WORK MUST CEASE IN THE AREA OF THE DISCOVERY UNTIL A CITY ARCHAEOLOGIST COMES TO THE SITE AND RECORDS THE FINDS.
3. THE APPLICANT SHALL NOT ALLOW ANY METAL DETECTION AND/OR ARTIFACT COLLECTION TO BE CONDUCTED ON THE PROPERTY, UNLESS AUTHORIZED BY ALEXANDRIA ARCHAEOLOGY. FAILURE TO COMPLY SHALL RESULT IN PROJECT DELAYS.
4. ALL REQUIRED ARCHAEOLOGICAL PRESERVATION MEASURES SHALL BE COMPLETED IN COMPLIANCE WITH SECTION 11-411 OF THE ZONING ORDINANCE.

PLANTING NOTES (CONT.)

1. ALL MATERIALS' SPECIFICATIONS SHALL BE IN ACCORDANCE WITH THE INDUSTRY STANDARD FOR GRADING PLANT MATERIAL - THE AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1).
2. MAINTENANCE OF ALL TREES AND LANDSCAPE MATERIALS SHALL CONFORM TO ACCEPTED INDUSTRY STANDARDS SET FORTH BY THE LANDSCAPE CONTRACTORS ASSOCIATION, AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS, THE INTERNATIONAL SOCIETY OF ARBORICULTURE, AND THE AMERICAN NATIONAL STANDARDS INSTITUTE.

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

ST.STEPHENS & ST AGNES

1000 ST.STEPHENS RD
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ALEXANDRIA, VIRGINIA

CLIENT

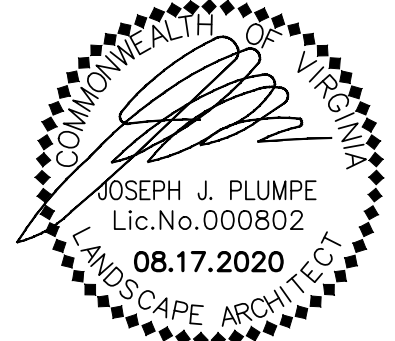
ST STEPHENS ST AGNES SCHOOL

Studio39

LANDSCAPE ARCHITECTURE, P.C.

6416 GROVEDALE DR., SUITE 100-A
ALEXANDRIA, VIRGINIA 22310
703.719.6500 | STUDIO39.COM

SEAL/SIGNATURE



ISSUE DATE

08.17.20

OT PRELIMINARY VERIFICATION

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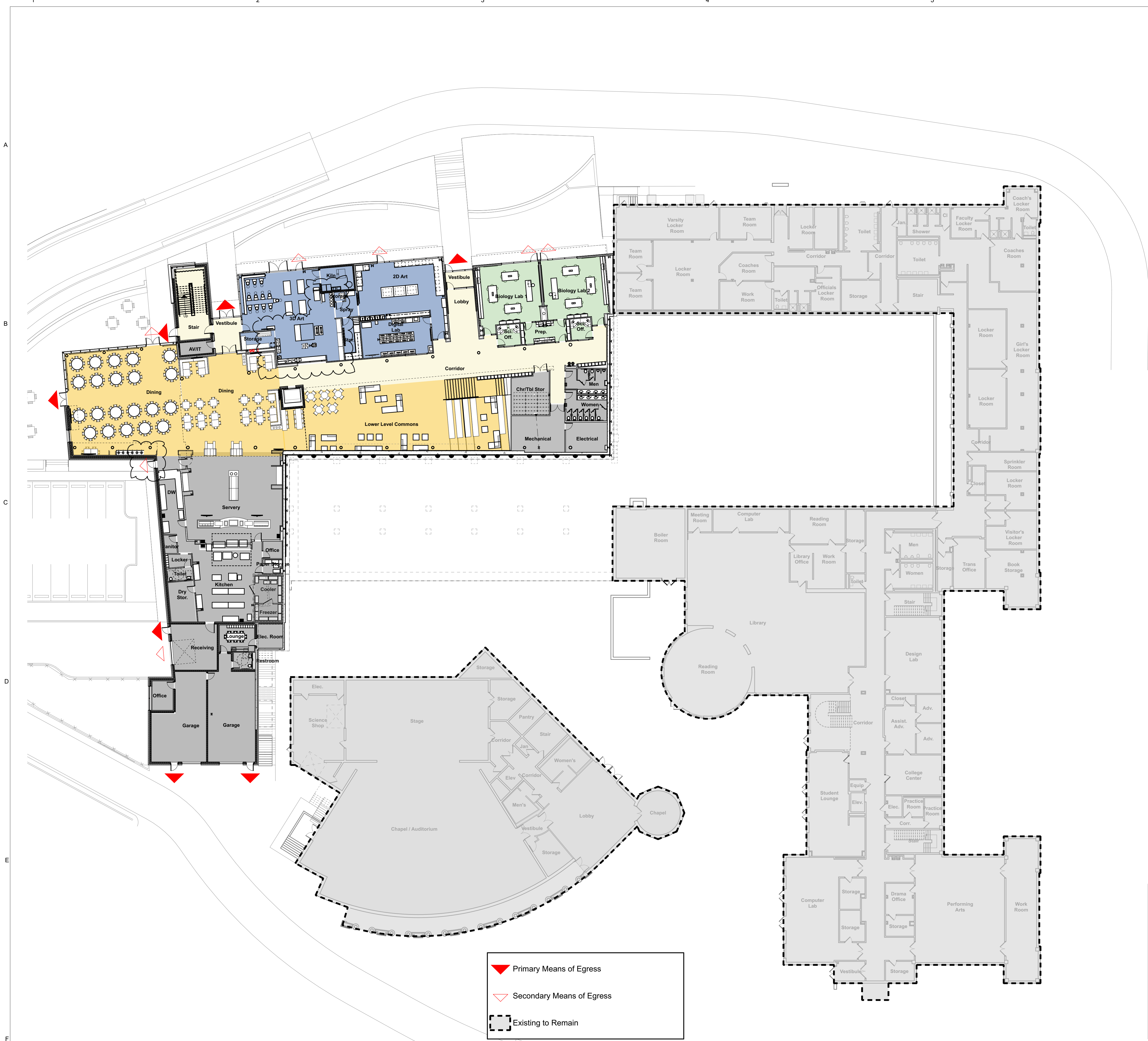
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 Primary Means of Egress

 Secondary Means of Egress

 Existing to Remain

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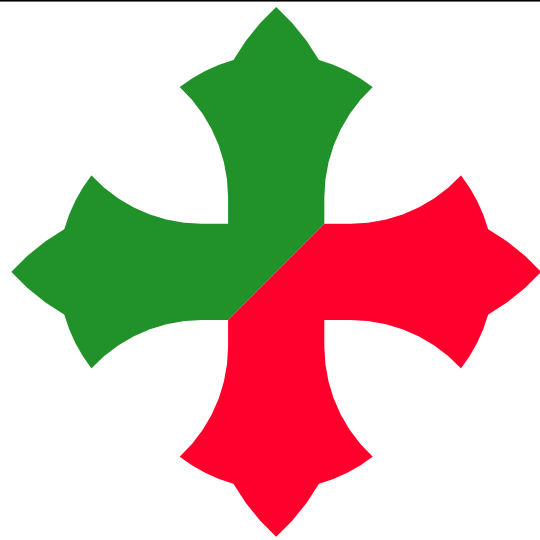
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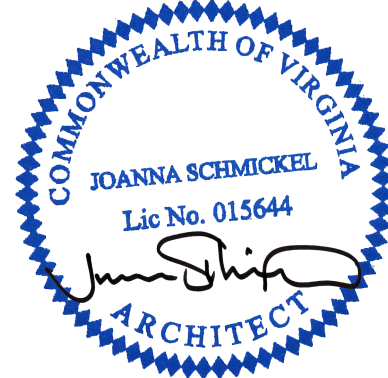
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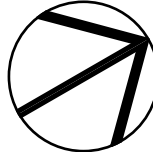


Mark	Date	Description
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	03-16-2020	Preliminary Verification
	08-17-2020	Preliminary Verification

Drawing Title:
Overall Lower Level Floor Plan

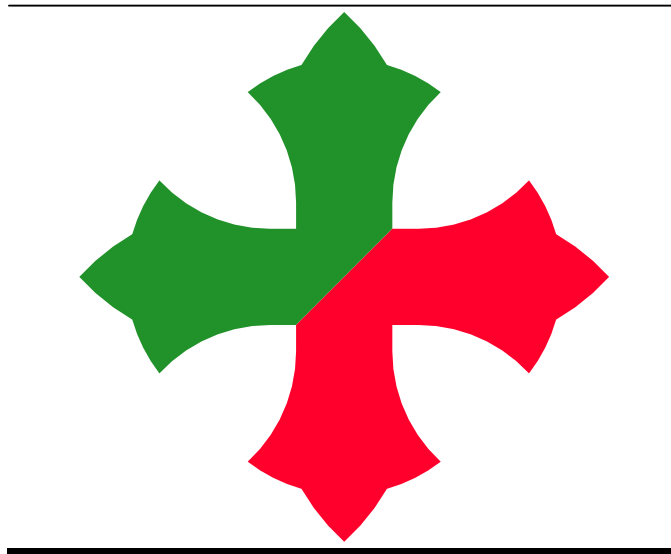
Graphic Scale:
0 10' 20' 40'

Project No: 1825
Date: 01-15-2020
Drawing No: A1





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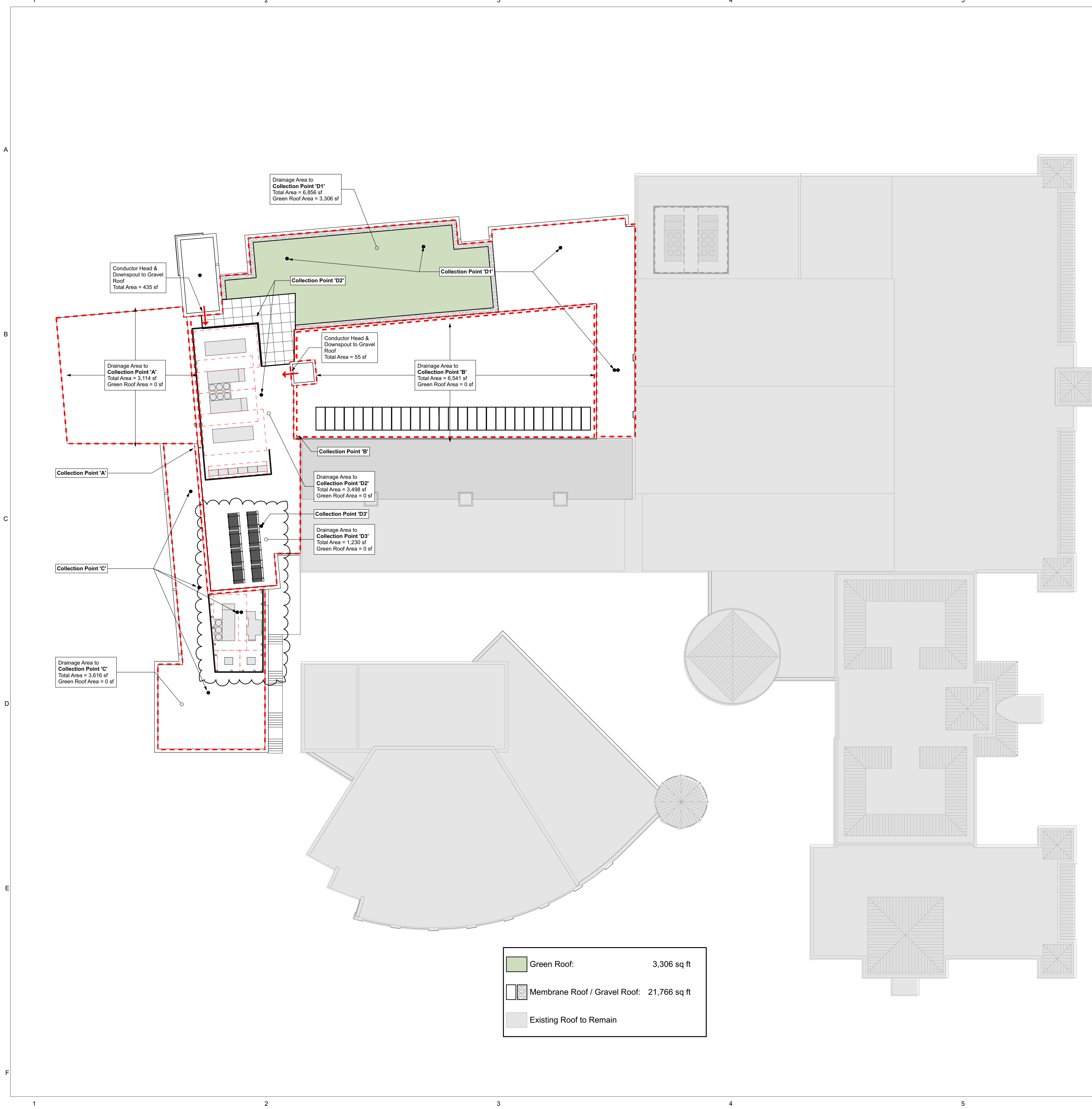
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	03-16-2020	Preliminary Verification
	08-17-2020	Preliminary Verification

Drawing Title:
Overall Main Level Floor Plan

Graphic Scale:
0 10' 20' 40'

Project No: 1825
Date: 01-15-2020

Drawing No: A2



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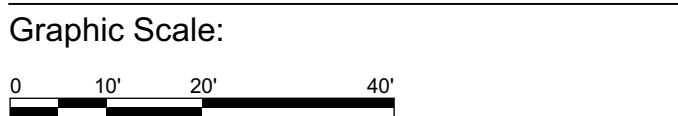
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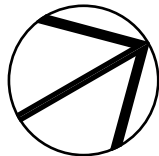


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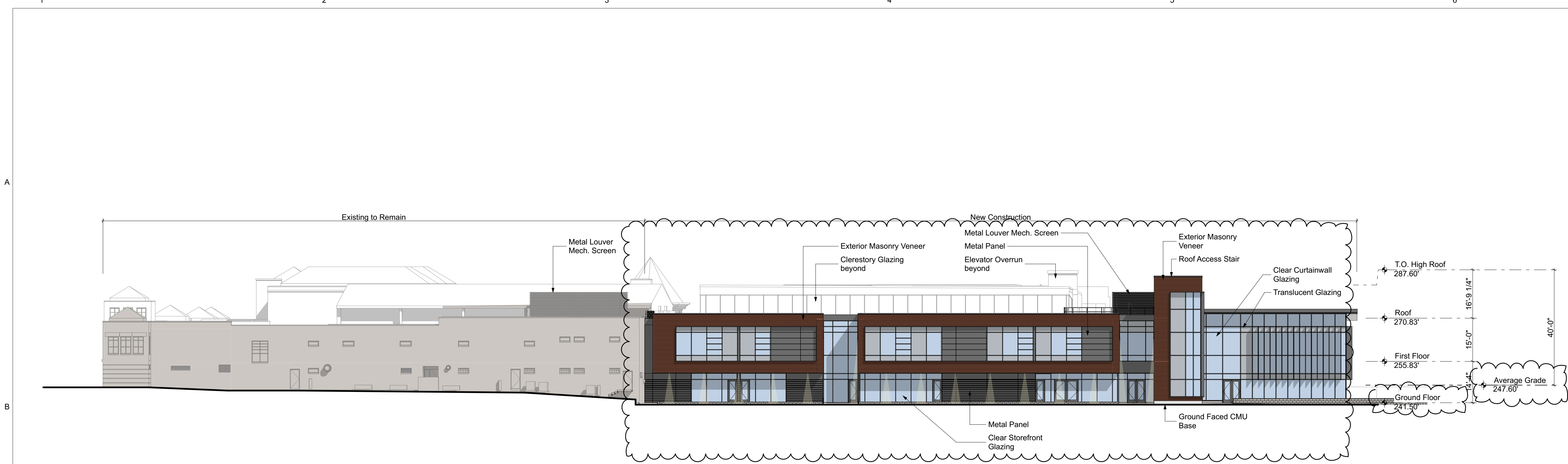
Drawing Title:
Overall Roof Level Floor Plan



Project No: 1825
Date: 01-15-2020
Drawing No:

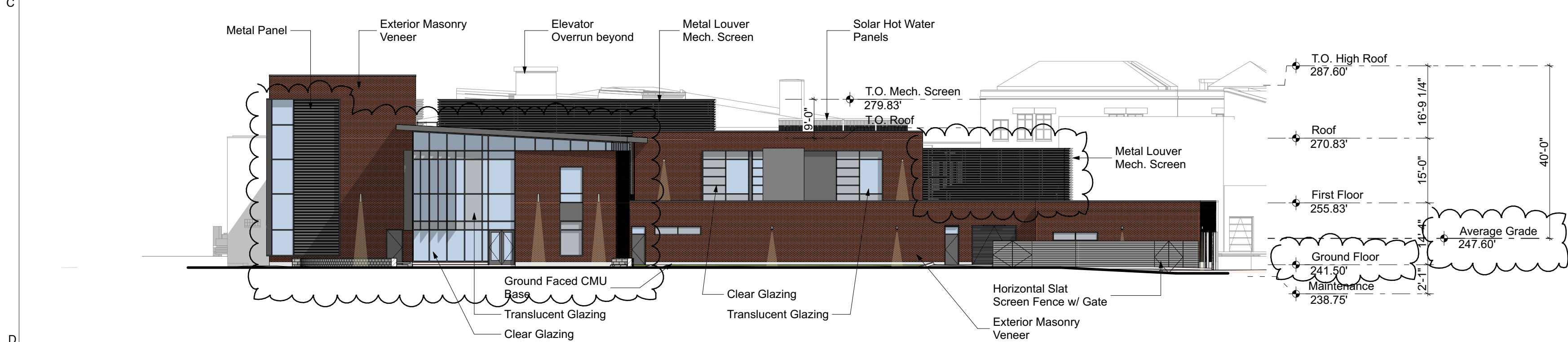


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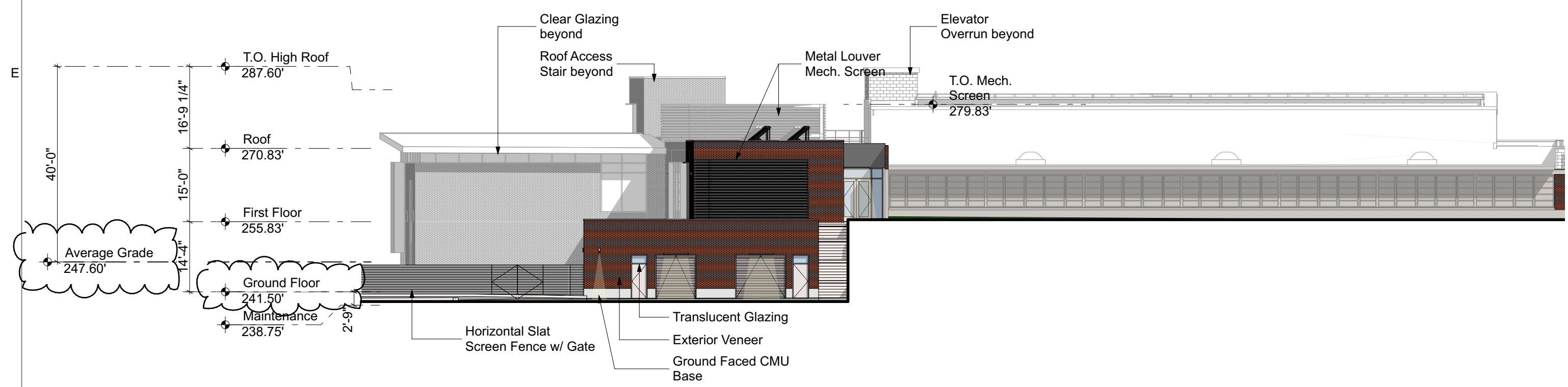
1 West Elevation

A4 Scale: 1" = 20'



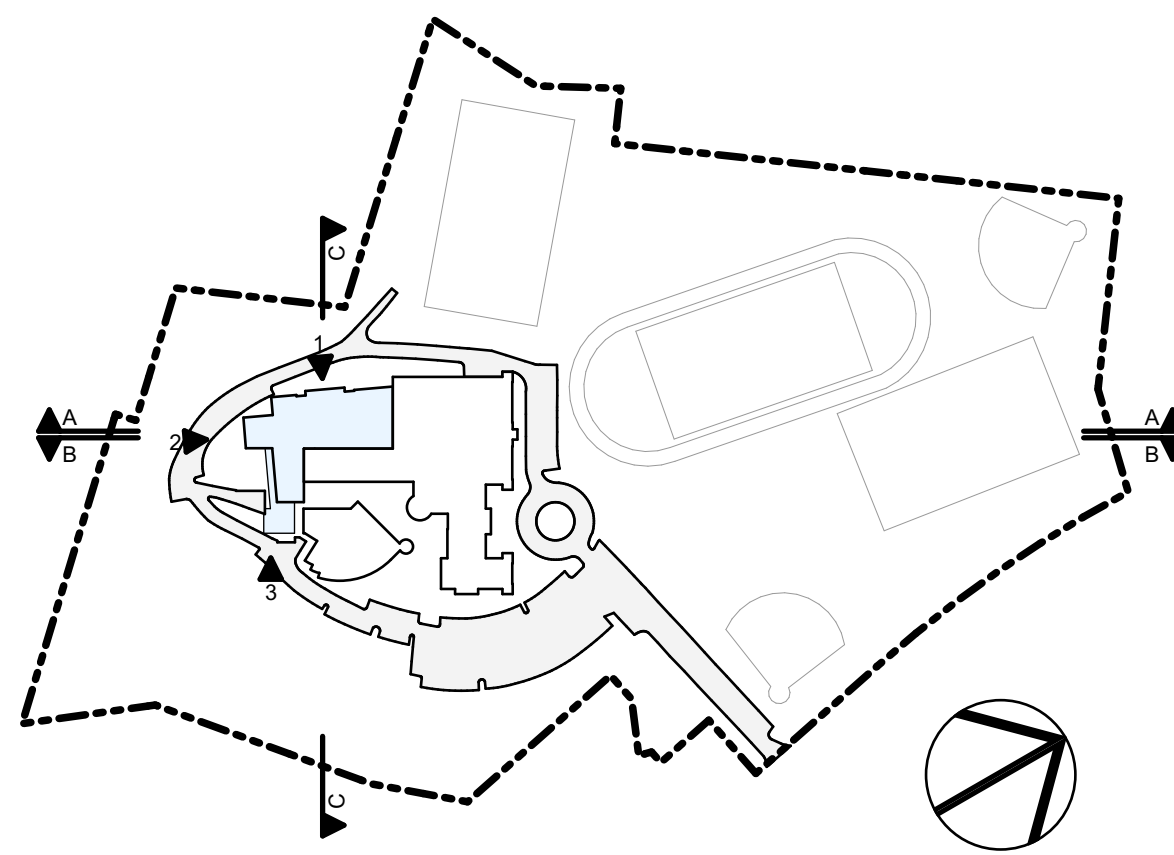
2 South Elevation

A4 Scale: 1" = 20'



3 East Elevation

A4 Scale: 1" = 20'



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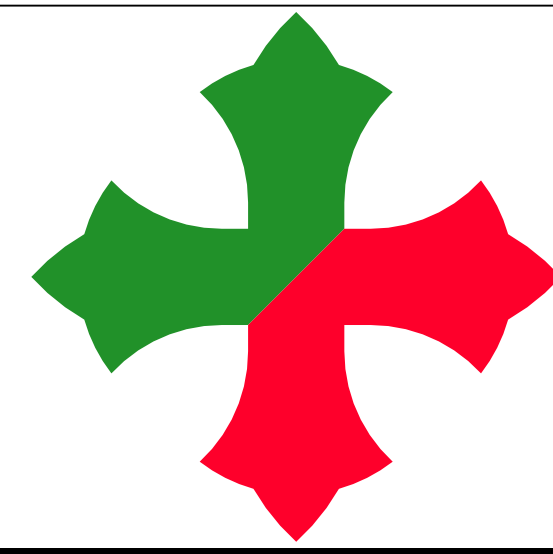
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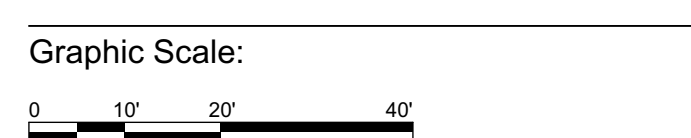
FOOD SERVICE

Nyikos Associates
18219-A Flower Hill Way
Gaithersburg MD 20879
T: 240.683.9530



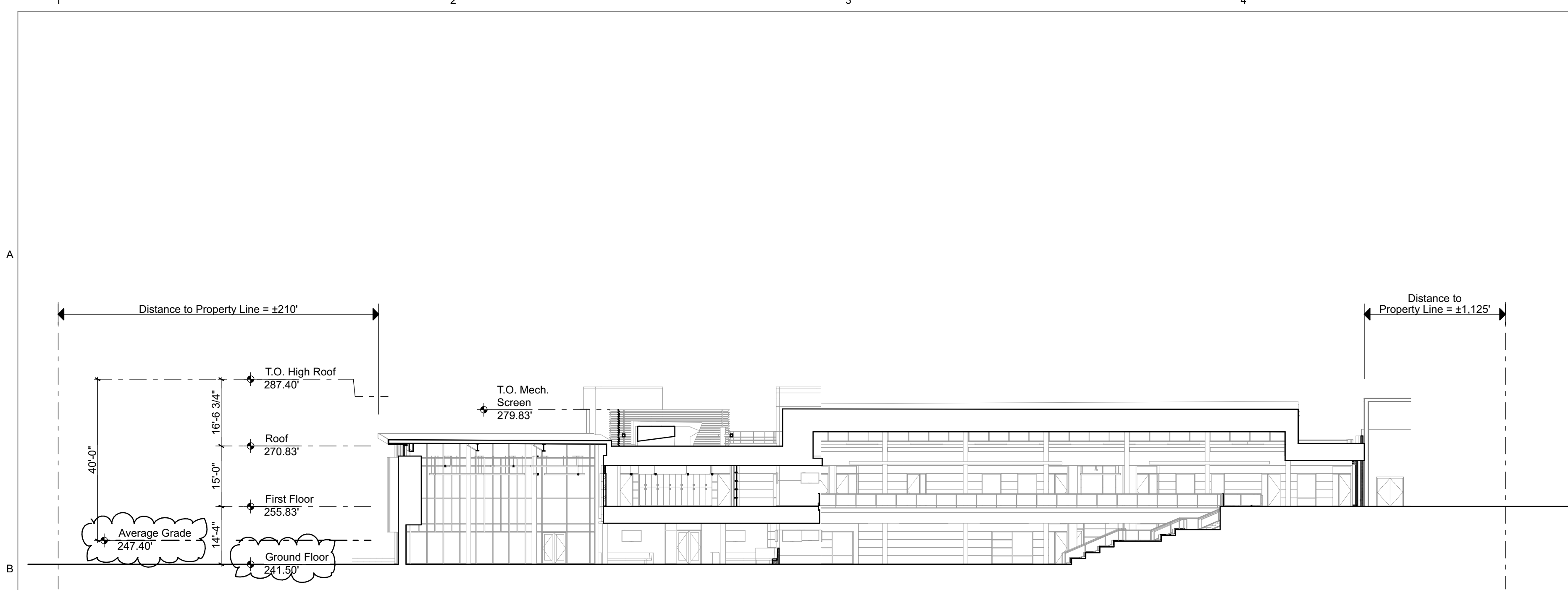
Mark	Date	Description
	01-15-2020	Preliminary Completeness
	03-16-2020	Preliminary Verification
	08-17-2020	Preliminary Verification

Drawing Title:
Elevations



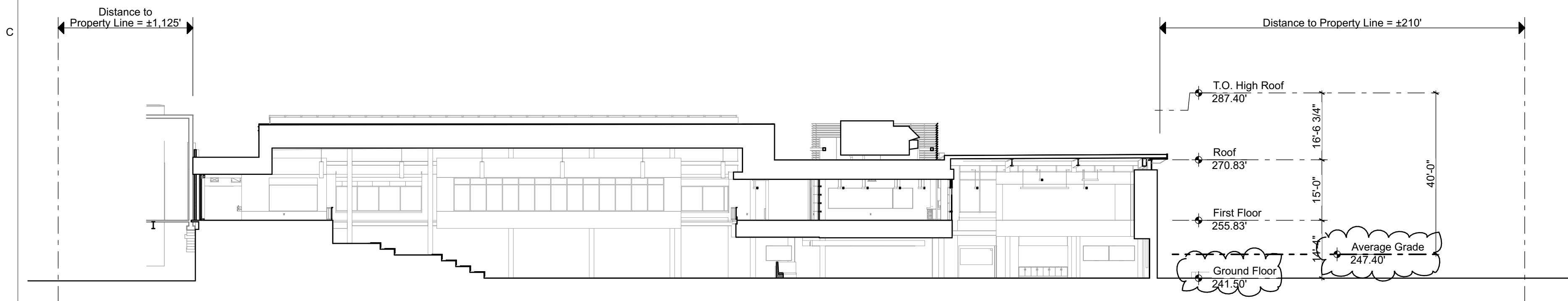
Project No: 1825
Date: 01-15-2020

Drawing No: A4



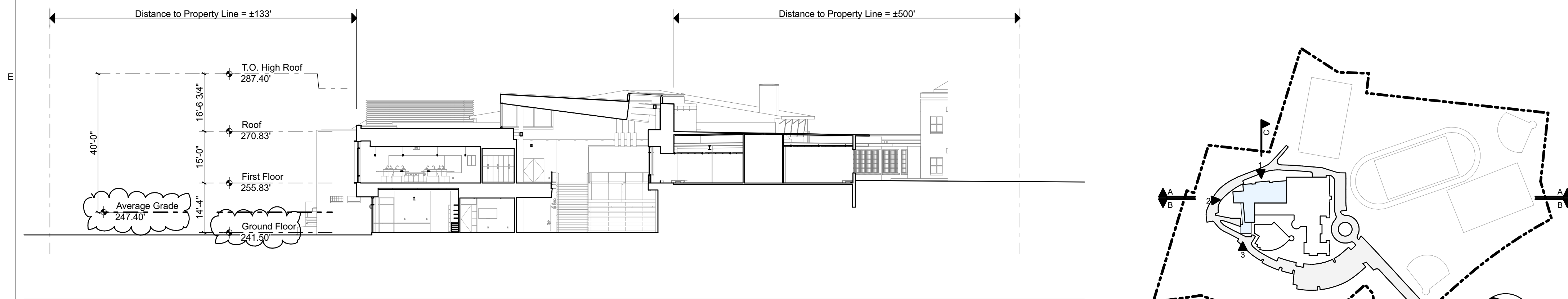
1 N-S Building Section (Section A-A)

A5 Scale: 1" = 20'



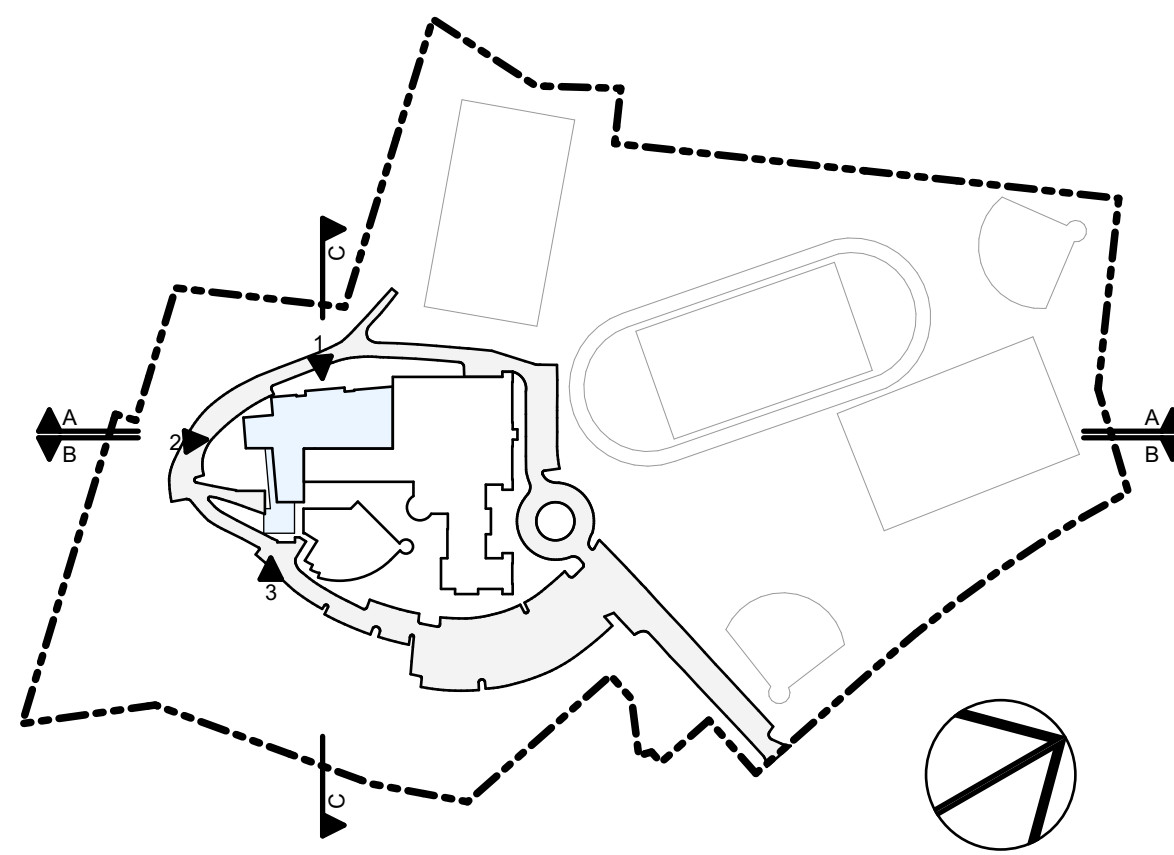
2 N-S Building Section (Section B-B)

A5 Scale: 1" = 20'



3 E-W Building Section (Section C-C)

A5 Scale: 1" = 20'



APPROVED
SPECIAL USE PERMIT NO. 2018-0030

DEPARTMENT OF PLANNING & ZONING

DIRECTOR _____ DATE _____

DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES

SITE PLAN NO. _____

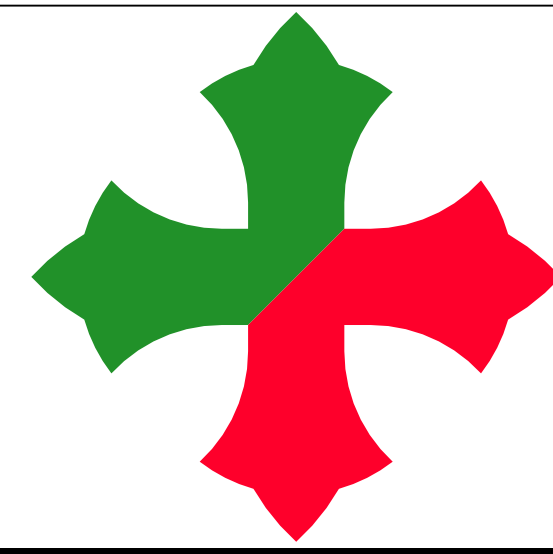
DIRECTOR _____ DATE _____

CHAIRMAN, PLANNING COMMISSION _____ DATE _____

DATE RECORDED _____

INSTRUMENT NO. _____ DEED BOOK NO. _____ DATE _____

PROJECT



CLIENT

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	03-16-2020	Preliminary Verification
	08-17-2020	Preliminary Verification

Drawing Title:
Building Sections

Graphic Scale:
0 10' 20' 40'

Project No: 1825
Date: 01-15-2020

Drawing No: A5

A
B
C
D
E
F



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DIRECTOR DATE

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SITE PLAN NO.

DIRECTOR DATE

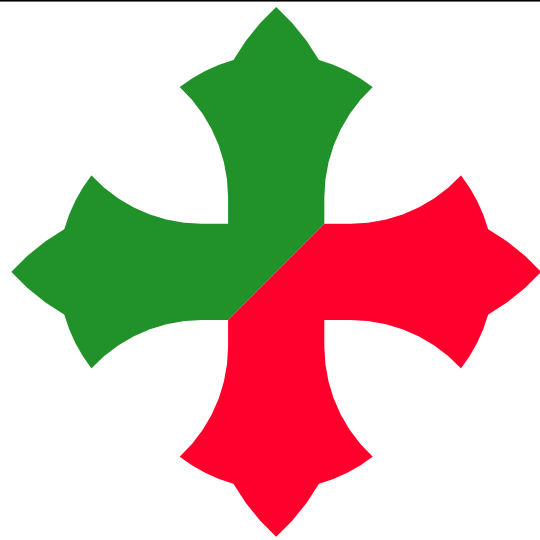
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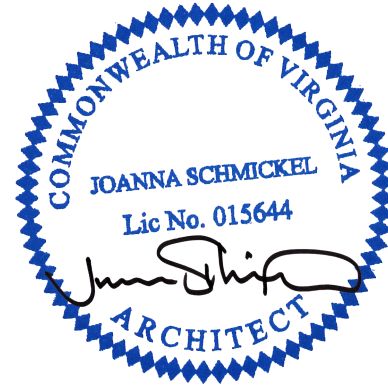
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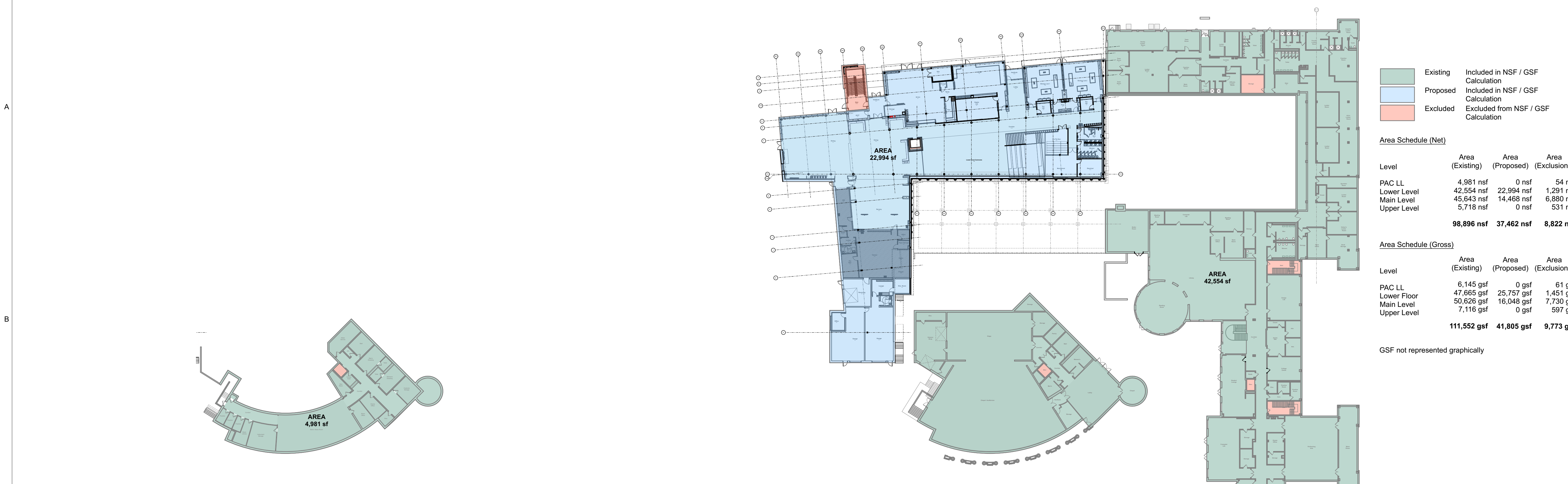
Mark	Date	Description
	01-15-2020	Preliminary Completeness
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Drawing Title:
Perspective View from Southwest Corner

Graphic Scale:

Project No: 1825
Date: 01-15-2020
Drawing No:

A6



PAC LL Plan

SCALE: 1" = 40'

Lower Level Plan

SCALE: 1" = 40'

Main Level Plan

SCALE: 1" = 40'

Upper Level Plan

SCALE: 1" = 40'

Existing	Included in NSF / GSF Calculation
Proposed	Included in NSF / GSF Calculation
Excluded	Excluded from NSF / GSF Calculation

Area Schedule (Net)			
Level	Area (Existing)	Area (Proposed)	Area (Exclusions)
PAC LL	4,981 nsf	0 nsf	54 nsf
Lower Level	42,554 nsf	22,994 nsf	1,291 nsf
Main Level	45,643 nsf	14,468 nsf	6,880 nsf
Upper Level	5,718 nsf	0 nsf	531 nsf
	98,896 nsf	37,462 nsf	8,822 nsf

Area Schedule (Gross)			
Level	Area (Existing)	Area (Proposed)	Area (Exclusions)
PAC LL	6,145 gsf	0 gsf	61 gsf
Lower Floor	47,665 gsf	25,757 gsf	1,451 gsf
Main Level	50,626 gsf	16,048 gsf	7,730 gsf
Upper Level	7,116 gsf	0 gsf	597 gsf
	111,552 gsf	41,805 gsf	9,773 gsf

GSF not represented graphically

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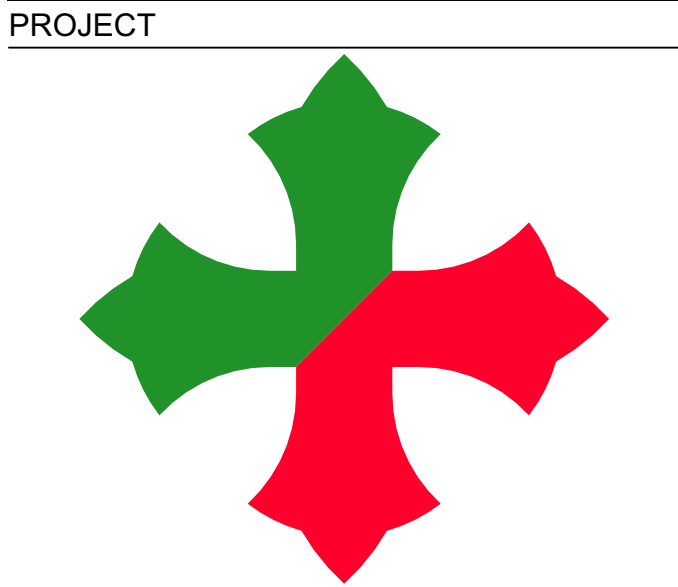
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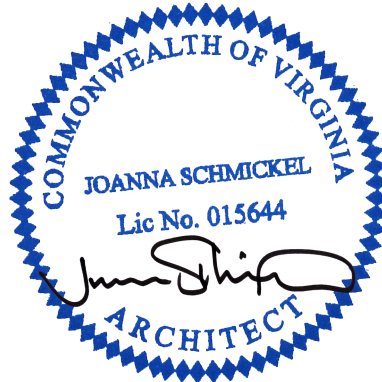
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Drawing Title:
Floor Area Ratio

Graphic Scale:
0 20' 40' 80'

Project No: 1825
Date: 01-15-2020
Drawing No: A7

