CVILLE RIO ROAD APARTMENTS

FINAL ARB SITE PLAN

SDP-2023-00009

RIO MAGISTERIAL DISTRICT

ALBEMARLE COUNTY, VIRGINIA

GENERAL NOTES

OWNERS:
TMP 04500-00-00-026A2
CHARLOTTESVILLE RIO ROAD APARTMENTS LLC
110 DRAPER ROAD, NW SUITE B
BLACKSBURG, VA 22060

TMP 04500-00-00-026B5
CHARLOTTESVILLE RIO ROAD APARTMENTS LLC
110 DRAPER ROAD, NW SUITE B
BLACKSBURG, VA 22060

TMP 04500-00-00-026B4
CHARLOTTESVILLE RIO ROAD APARTMENTS LLC
110 DRAPER ROAD, NW SUITE B
BLACKSBURG, VA 22060

TMP 04500-00-00-026B3
RIVER RIO LLC
145 EDNAM DRIVE, STE 100
CHARLOTTESVILLE, VA 22903

TMP 04500-00-00-026B2
RAHIM, ABDUL W; HABIB RAHIM & SHAID RAHIM
1433 MAYMONT COURT
CHARLOTTESVILLE, VA 22902

DEVELOPER: GW REAL ESTATE PARTNERS
145 EDHAM DRIVE, SUITE 200
CHARLOTTESVILLE, VA 22903

ENGINEER: COLLINS ENGINEERING
200 GARRETT ST, SUITE K
CHARLOTTESVILLE, VA 22902

TAX MAP:

04500-00-00-026A2	04500-00-00-026B5	04500-00-00-026B4	04500-00-00-026B3	04500-00-00-026B2
D.B. 5132, PG. 463	INST. #: 201900008048	INST. #: 202000006895	INST. #: 202100018641	INST. #: 202000016556
4.696 ACRES	0.697 ACRES	0.822 ACRES	0.942 ACRES	1.075 ACRES

ZONING: PRD (PLANNED RESIDENTIAL DEVELOPMENT) - (ZMA-2021-00011 & SE2021-00041). REZONING AND SPECIAL EXCEPTION REQUEST APPROVED BY THE BOS ON SEPTEMBER 7, 2022 (SEE SHEET 2 FOR APPROVAL LETTERS). NOTE: THE PROPERTY (INCLUDING ALL 5 PARCELS) STILL COMPLIES WITH THE FOLLOWING EXISTING ZONING OVERLAY DISTRICTS: AIRPORT IMPACT AREA OVERLAY DISTRICT (AIA), AREAS OF MANAGED SLOPES OVERLAY DISTRICT, AND ENTRANCE CORRIDOR OVERLAY DISTRICT (EC).

TOTAL PROJECT AREA:
TMP 04500-00-00-026A2 - 4.696 ACRES
TMP 04500-00-00-026B5 - 0.697 ACRES
TMP 04500-00-00-026B4 - 0.822 ACRES
TMP 04500-00-00-026B3 - 0.942 ACRES
TMP 04500-00-00-026B2 - 1.075 ACRES
8.232 ACRES TOTAL

PROPOSED USE: 250 MULTI-FAMILY RESIDENTIAL APARTMENT UNITS
(109) ONE BEDROOM UNITS
(141) TWO & THREE BEDROOM UNITS

BLOCK/SECTION CLASSIFICATION: LOT 2, SECTION 2A

PROPOSED DENSITY: 250 RESIDENTIAL MULTI-FAMILY UNITS WITHIN 8.232 ACRES
DENSITY = 250/8.232 ACRES = 30.37 DUA

OPEN SPACE: THIS PROJECT SHALL PROVIDE A MINIMUM OF 25% OPEN SPACE
COMMON OPEN SPACE AREA = 0.672 ACRES
ACTIVE RECREATION AREAS = 0.76 ACRES
BUFFER AREAS = 1.06 ACRES
OPEN SPACE REQUIRED: 25% x 8.232 ACRES = 2.058 ACRES
OPEN SPACE PROVIDED: 2.492 ACRES (30.3 %). AREA EXCLUSIVE OF RETAINING WALLS = 2.305 AC (28.0%)

LAND DEDICATED TO PUBLIC USE: THE PROJECT SHALL DEDICATE 0.25 ACRES OF RIGHT OF WAY TO PUBLIC USE FOR ROAD FRONTAGE IMPROVEMENTS ALONG RIO ROAD, INCLUDING A 10' ASPHALT PEDESTRIAN AND BICYCLE TRAILWAY. THE 10' ASPHALT TRAILWAY SHALL BE CONSTRUCTED AS SHOWN ON THE SITE PLAN.

BUILDING HEIGHTS: NO MINIMUM HEIGHT AND 4 STORIES MAXIMUM HEIGHT (EXCLUDING BASEMENTS) WITH A BUILDING HEIGHT NOT TO EXCEED 65 FEET. A SPECIAL EXCEPTION REQUEST (SE2021-041) HAS BEEN APPROVED FOR THE PROJECT FOR RELIEF OF THE 15' STEPBACK REQUIREMENT FOR BUILDINGS #5 - #7 THAT ARE GREATER THAN 3 STORIES OR 40 FEET IN HEIGHT. THE BUILDINGS HEIGHTS FOR BUILDINGS #1 - #4 ALONG RIO ROAD ARE RESTRICTED TO (3) THREE STORIES IN HEIGHT.
BUILDINGS #1-#4 - HEIGHTS TO TOP OF ROOF = 47'6" +/- & HEIGHTS TO EAVE OF ROOF = 33' +/-
BUILDINGS #5-#7 - HEIGHTS TO TOP OF ROOF = 47'6" & 58'6"+/- & HEIGHTS TO EAVE OF ROOF = 32' & 43' +/-

SETBACKS:
BUILDING SETBACKS
5' MIN & 25' MAX. FRONT YARD BUILDING SETBACK
10' MIN. & NO MAX SIDE YARD BUILDING SETBACK (10' MIN. BUILDING SEPARATION)
20' MIN. & NO MAX. REAR YARD BUILDING SETBACK
PARKING SETBACKS
10' MIN. FRONT YARD PARKING SETBACK
6' MIN. SIDE YARD PARKING SETBACK
6' MIN. REAR YARD PARKING SETBACK

BUILDING FOOTPRINT: NO MINIMUM OR MAXIMUM BUILDING FOOTPRINTS. BUILDING FOOTPRINTS ARE SUBJECT TO COMPLIANCE WITH THE BUILDING ENVELOPES AS SHOWN ON THE APPROVED ZMA APPLICATION PLAN.

LOT SIZE: NO MINIMUM LOT SIZE AND NO MAXIMUM LOT SIZE

STREETS: CURB & GUTTER FOR PRIVATE TRAVELWAYS

WATERSHED: THE PROPERTY IS LOCATED WITHIN THE NON-WATER SUPPLY WATERSHED AREA OF THE RIVANNA RIVER - MEADOW CREEK

AGRICULTURAL/FORESTAL DISTRICT: NONE

TOPOGRAPHY & SURVEY: TOPOGRAPHY AND BOUNDARY WAS FIELD SURVEYED BY LINCOLN SURVEYING, AUGUST2021. TOPOGRAPHY AND FIELD CONDITIONS WERE VERIFIED BY COLLINS ENGINEERING, SEPTEMBER 2022.

DATUM: NAVD 1988

EXISTING VEGETATION: THE SITE IS PARTIALLY WOODED WITH AN EXISTING ACCESS ROAD AND (4) EXISTING SINGLE FAMILY DETACHED HOUSES WITH DRIVEWAYS AND UTILITIES.

PHASING: THE APARTMENT DEVELOPMENT WITHIN LOT 2 SHALL BE DEVELOPED WITHIN (1) PHASE.

RECREATION: RECREATIONAL AMENITIES ARE PROPOSED WITH THE PROJECT, INCLUDING THE FOLLOWING:
CLUBHOUSE/POOL/FIRE PIT/GRILL AREA/COURTYARD/TOT LOT AREA: 21,500 SF
DOG PARK/GRASS AREA/GRILL STATION/COURTYARD: 11,700 SF
TOTAL RECREATIONAL AMENITIES PROVIDED WITH THE APARTMENT COMPLEX: 33,200 SF (0.76 ACRES)

PARKING: (1.5) PARKING SPACES PER ONE BEDROOM UNIT = 109 ONE UNITS x 1.5 = 163.5 PARKING SPACES REQUIRED
(2) PARKING SPACES PER TWO OR MORE BEDROOM UNIT = 141 UNITS x 2 = 282 PARKING SPACES REQUIRED
TOTAL NUMBER OF PARKING SPACES REQUIRED: 446 PARKING SPACES

TOTAL NUMBER OF PARKING SPACES PROVIDED: 375 SPACES
NOTE: A PARKING STUDY HAS BEEN ADMINISTRATIVELY APPROVED BY THE ZONING DEPARTMENT ALLOWING FOR A MAXIMUM OF 19% PARKING REDUCTION ON THE PROPERTY, DUE TO THE AVAILABILITY OF MASS TRANSIT, MULTI-MODAL ACCESS, AND INDUSTRY APARTMENT PARKING STANDARDS. THE TOTAL PARKING REQUIRED FOR THIS DEVELOPMENT, BASED ON THE APPROVED PARKING REDUCTION REQUEST IS 375 SPACES.

BURIAL SITES: NO CEMETERIES WERE FOUND DURING FIELD INVESTIGATION OF THIS SECTION OF THE DEVELOPMENT.

PRESERVED/MANAGED SLOPES: THERE ARE EXISTING MANAGED SLOPES ON THIS PORTION OF THE PROPERTY AS SHOWN ON SHEET 2. THESE SLOPES SHALL BE DEVELOPED IN ACCORDANCE WITH ALBEMARLE COUNTY REGULATIONS FOR MANAGED SLOPES.

FLOODPLAIN: THERE IS NO FLOODPLAIN LOCATED ON THIS SITE, PER FEMA MAP ID 51003C0280D, DATED FEBRUARY 4, 2005. IN ADDITION, THERE ARE NO STATE OR FEDERAL DAM BREACH INUNDATION ZONES LOCATED ON THE PROPERTY.

RETAINING WALLS: RETAINING WALLS ARE PROPOSED WITH THE DEVELOPMENT, SEE THE GRADING, DRAINAGE & UTILITY PLAN SHEET FOR THE PROPOSED RETAINING WALL DESIGNS. RETAINING WALLS SHALL NOT EXCEED 6 FEET IN HEIGHT AND SHALL CONFORM WITH ALBEMARLE COUNTY STANDARDS.

TRASH SERVICE: A TRASH COMPACTOR IS INCLUDED WITHIN THE DEVELOPMENT PLAN TO SERVICE THE APARTMENT COMPLEX.

UTILITIES: WATER AND SEWER IS PROVIDED BY THE ALBEMARLE COUNTY SERVICE AUTHORITY.

IMPERVIOUS AREAS/LAND AREAS:

TRAVELWAYS/PARKING/TRASH/MAINT.:	132,005 SF	3.03 ACRES	36.8%
ROW DEDICATION (TRAILWAY)	13,070 SF	0.30 ACRES	3.6%
SIDEWALKS:	27,700 SF	0.63 ACRES	7.7%
BUILDINGS:	79,960 SF	1.83 ACRES	22.2%
RECREATIONAL AREA:	33,200 SF	0.76 ACRES	9.3%
BUFFER/LANDSCAPING/OPEN SPACE:	73,270 SF	1.682 ACRES	20.4%
TOTAL:		8.232 AC	

PAVED PARKING AND VEHICULAR CIRCULATION: 132,005 SF

FIRE FLOW CALCULATIONS: CLASS I - FRAME TYPE CONSTRUCTION (IBC TYPE V-A)
FACTOR = 1.5
GROSS GROUND FLOOR AREA = 4,617 SF
GROSS FLOOR AREA OF OTHER FLOORS = 36,932 SF
TOTAL GROSS BUILDING AREA = 41,549 SF
REQUIRED ISO FIRE FLOW = 3,657 gpm
NEEDED FIRE FLOW (50% REDUCTION FOR AUTOMATIC SPRINKLERS) = 1,750 gpm (ROUNDED TO THE NEAREST 250 gpm)
NOTE: AVAILABLE FIRE FLOW AT HYDRANT PER ATTACHED REPORT



DEVELOPMENT PLAN
SCALE: 1' = 60'

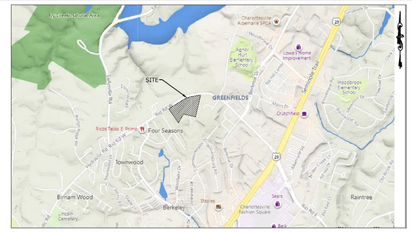
LIGHTING: ALL PROPOSED LUMINARIES WILL MEET THE OUTDOOR LIGHTING STANDARDS SPECIFIED IN SECTION 4.17 OF THE ALBEMARLE COUNTY ZONING ORDINANCE. THE FINAL SITE PLAN INCLUDES A LIGHTING PLAN THAT COMPLIES WITH THE ALBEMARLE COUNTY ZONING ORDINANCE.

LANDSCAPING: STREET TREES, STREETSCAPE LANDSCAPING, AND BUFFER LANDSCAPING ARE PROPOSED WITH THE DEVELOPMENT, AS SHOWN ON THE SITE PLAN. WITHIN THE SHOWN LANDSCAPING BUFFER AREAS, THE DEVELOPER WILL EITHER RETAIN THE EXISTING NATRUAL UNDISTURBED VEGETATION AND/OR PLANT A MIX OF DECIDUOUS AND EVERGREEN TREES AND SHRUBS LOCALLY NATIVE TO VIRGINIA. ALL PLANTINGS WILL CONFORM TO CURRENT ANSI STANDARDS FOR NURSERY STOCK. INSTALLATION AND MAINTENANCE OF THE LANDSCAPE BUFFERS WILL BE THE RESPONSIBILITY OF THE DEVELOPER, AND THE APPROPRIATE EASEMENTS AND MAINTENANCE AGREEMENTS SHALL BE RECORDED DURING THE SITE PLAN PROCESS. GRADING SHALL BE ALLOWED WITHIN THE BUFFER AREAS AND UTILITIES AND RETAINING WALLS MAY BE INSTALLED WITHIN THE BUFFER AREAS. LANDSCAPING SHALL BE SUBJECT TO THE REVIEW AND APPROVAL FROM THE ARCHITECTURAL REVIEW BOARD DURING THE SITE PLAN PROCESS. BUFFERS SHALL MEET THE STANDARDS SET IN SECTION 32.7.9.7.

STORMWATER MANAGEMENT: THE SITE DEVELOPMENT SHALL COMPLY WITH DEQ AND ALBEMARLE COUNTY REQUIREMENTS FOR WATER PROTECTION, INCLUDING WATER QUALITY AND WATER QUANTITY REQUIREMENTS. A SWM PLAN HAS BEEN PROVIDED WITH THE FINAL SITE PLAN FOR LAND DISTURBANCE. WATER QUALITY AND WATER QUANTITY PRACTICES TO MEET STATE REQUIREMENTS INCLUDE PERVIOUS PAVERS, UNDERGROUND DETENTION, AND NUTRIENT CREDITS.

AFFORDABLE HOUSING: FIFTEEN PERCENT (15%) OF THE CONSTRUCTED UNITS SHALL BE AFFORDABLE HOUSEHOLDS MAKING UP TO 80% OF THE AREA MEDIAN INCOME FOR A PERIOD OF TEN (10) YEARS. "AFFORDABLE" MEANS THAT THE RENTAL RATE MAY NOT EXCEED 30% OF 80% OF THE AREA MEDIAN INCOME ("AMI"), AS LISTED AND ANNUALLY UPDATED ON THE VIRGINIA HOUSING (FORMERLY VHDA) WEBSITE, BASED ON HOUSEHOLD SIZE, LESS ESTIMATED UTILITY COSTS AS DEFINED BY VIRGINIA HOUSING FOR THE HOUSING CHOICE VOUCHER PROGRAM. AMI AND UTILITY ALLOWANCE SCHEDULES AVAILABLE AT WWW.VHDA.COM.
TOTAL NUMBER OF UNITS = 250 APARTMENTS UNITS
TOTAL AFFORDABLE UNITS TO BE PROVIDED WITH THE PROJECT = 250 UNITS * 15% = 38 UNITS

BUILDING CODE NOTES:
1. RETAINING WALLS GREATER THAN 3 FEET IN HEIGHT REQUIRE A SEPARATE BUILDING PERMIT. WALLS EXCEEDING 4 FEET IN HEIGHT REQUIRE A STAMPED ENGINEERED DESIGN ALSO. WALLS REQUIRE INSPECTIONS AS OUTLINED IN THE USBC.
2. ACCESSIBLE PARKING SPACES, ACCESS ISLES, AND ACCESSIBLE ROUTE SHALL BE INSTALLED IN ACCORDANCE WITH ICC ANSI A117.1-09 AND THE 2015 VIRGINIA CONSTRUCTION CODE.
3. WHERE THE FLOOD LEVEL RIMS OF PLUMBING FIXTURES ARE BELOW THE ELEVATION OF THE MANHOLE COVER OF THE NEXT UPSTREAM MANHOLE IN THE PUBLIC SEWER, THE FIXTURE SHALL BE PROTECTED BY A BACKWATER VALVE INSTALLED IN THE BUILDING DRAIN. BRANCH OF THE BUILDING DRAIN, OR HORIZONTAL BRANCH SERVING SUCH FIXTURES. PLUMBING FIXTURES HAVING FLOOD LEVEL RIMS ABOVE THE ELEVATION OF THE MANHOLE COVER OF THE NEXT UPSTREAM MANHOLE IN THE PUBLIC SEWER SHALL NOT DISCHARGE THROUGH A BACKWATER VALVE.
4. ALL ROOF DRAINS SHALL DISCHARGE IN A MANNER NOT TO CAUSE A PUBLIC NUISANCE AND NOT OVER SIDEWALKS.
5. BUILDINGS OR STRUCTURES BUILT BEFORE JANUARY 1, 1985 MUST HAVE AN ASBESTOS SURVEY PERFORMED IN ORDER TO APPLY FOR A DEMOLITION PERMIT. ASBESTOS REMOVAL PERMITS ARE REQUIRED IF POSITIVE FOR SUCH FROM ALBEMARLE COUNTY AND VDOLI. CONTACT VDOLI FOR THEIR ADDITIONAL REQUIREMENTS AND PERMITS FOR DEMOLITION PROJECTS AT 540-562-3850 x131.
6. ALL WATER, SEWER, AND FIRE LINES REQUIRE NEW INSPECTION AND TESTING PROCEDURES. THE ACSA PERFORMS ANY TESTING AND INSPECTIONS OF THE PUBLIC SEWER AND WATER MAIN(S). THE ALBEMARLE COUNTY BUILDING INSPECTIONS DEPARTMENT (ACBID) DOES A VISUAL INSPECTION AND WITNESSES THE TESTING OF THE BUILDING DRAIN, WATER SERVICE PIPE AND THE SPRINKLER LEAD-IN CONNECTION.
7. THE DEVELOPER/CONTRACTOR IS RESPONSIBLE TO RETAIN A SPECIAL INSPECTOR AS OUTLINED IN THE UPDATED ALBEMARLE COUNTY POLICY FOR SITE UTILITIES TO PERFORM THE VISUAL INSPECTION AND TESTING OF ALL UTILITIES NOT COVERED BY THE ACSA OR ACBID. THIS INCLUDES BUILDING SEWERS, WATER AND FIRE LINE BRANCHES BETWEEN THE MAIN AND THE METER(S)/BUILDING(S).
8. THE SPECIAL INSPECTOR'S REPORT MUST BE SUBMITTED AND APPROVED BY THE ALBEMARLE COUNTY ENGINEERING DEPARTMENT PRIOR TO A CERTIFICATE OF OCCUPANCY BEING ISSUED.



VICINITY MAP
SCALE: 1' = 2,000'

Sheet List Table

Sheet Number	Sheet Title
1	COVER
2	EXISTING CONDITIONS
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5	GRADING & DRAINAGE PLAN
6	NOTES & DETAILS
7	NOTES & DETAILS
8	NOTES & DETAILS
9	ROAD & WATERLINE PROFILES
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11	DRAINAGE PROFILES
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13	DRAINAGE MAP
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L100	PLANTING REFERENCE PLAN
L101	PLANTING PLAN
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L103	LANDSCAPE COMPLIANCE
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L106	LANDSCAPE SITE DETAILS
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1 OF 1	LIGHTING PLAN
27	TOTAL SHEETS

LEGEND

- EDGE OF PAVEMENT
- CURB
- PROPOSED ASPHALT PAVEMENT
- EXISTING VEGETATIVE/ LANDSCAPE BUFFER
- GREENWAY BUFFER
- PROPOSED EASEMENT, VARIOUS WITH EACH SHEET
- DROP INLET & STRUCTURE NO.
- DRAINAGE PIPE
- BENCH MARK
- VDOT STANDARD STOP SIGN
- PROPOSED HANDICAP PARKING SPACE STRIPING
- PROPOSED ASPHALT STRIPING (DIRECTING TRAFFIC)
- 200 EXISTING CONTOUR
- 200 PROPOSED CONTOUR
- 506.71 TC / 506.21 EP PROPOSED SPOT ELEVATION TBC DENOTES TOP/BACK OF CURB T/B DENOTES TOP OF BOX
- 506.71 TW / 506.21 BW PROPOSED SPOT ELEVATION TW DENOTES TOP OF WALL BW DENOTES BOTTOM OF WALL
- PRESERVED STEEP SLOPES
- MANAGED STEEP SLOPES
- PEDESTRIAN AND VEHICLE ACCESS
- PROPOSED CONCRETE
- PROPOSED & EXISTING GUARDRAIL
- PROPOSED FENCE
- 100 YR. FLOODPLAIN

PROJECT NOTES:
1. ALL PROPOSED UTILITY EASEMENTS SHALL BE DEDICATED TO PUBLIC USE OR PRIVATE USE - SEE UTILITY PLAN SHEET FOR MORE DETAILS.
2. ALL PROPOSED ROADWAYS SHALL BE PRIVATE TRAVELWAYS - SEE NOTES & DETAILS SHEET FOR MORE DETAILS ON THE PROPOSED TRAVELWAY CROSS SECTIONS.
3. ITE TRIP GENERATION: TRAFFIC IMPACT NUMBERS ARE BASED ON THE ITE TRIP GENERATION MANUAL, 10TH EDITION.
CODE: 220 (MULTIFAMILY HOUSING)
PROPOSED: 250 DWELLING UNITS
ADT RATE: 7.32 VPD PER DU = 1,830 ADT (915 ENTER / 915 EXIT)
AM PEAK RATE: 0.46 VPD PER DU = 115 VPD (26 ENTER / 89 EXIT)
PM PEAK RATE: 0.56 VPD PER DU = 140 VPD (88 ENTER / 52 EXIT)

APPROVALS	DATE
DEPARTMENT OF COMMUNITY DEVELOPMENT	
PLANNER/ZONING	
ENGINEER	
INSPECTIONS	
ARB	
DEPARTMENT OF FIRE RESCUE	
ALBEMARLE COUNTY SERVICE AUTHORITY	
VIRGINIA DEPARMENT OF TRANSPORTATION	
HEALTH DEPARTMENT	

COMMONWEALTH OF VIRGINIA
SCOTT R. COLLINS
No. 35791
PROFESSIONAL ENGINEER
7/28/23

REVISIONS

DATE	REVISION DESCRIPTION
2/06/23	INITIAL PLAN SUBMITTAL
5/12/23	REVISED PER COUNTY COMMENTS
7/28/23	REVISED PER COUNTY COMMENTS

COLLINS ENGINEERING
200 GARRETT STREET, SUITE K-CHARLOTTESVILLE, VA 22902 -434.293.3719

PROJECT: CVILLE RIO ROAD APARTMENTS - FINAL SITE PLAN
SHEET: COVER
JOB NO. 202202
SCALE 1"=80'
SHEET NO. 1

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STORM LEGEND:

GRATE 4-6
548.62
IN:12"RCP 540.49 (4-6A)
OUT:24"RCP 540.43(WEST)

SDMH 4-6A
548.91
IN: 42" RCP 541.12 (5-8)
WEIR: 543.01
OUT: 12" 540.53 (4-6)

GRATE 5-4
TOP:547.91
OUT:15"RCP 544.57(5-6)

GRATE 5-6
TOP:547.69
IN:15"RCP 543.53(5-4)
IN:15"RCP 543.42(5-5)
OUT:15"RCP 543.09(5-8)

GRATE 5-5
TOP:548.08
IN:15"RCP 544.55(WEST)
OUT:15"RCP 544.41(5-6)

GRATE 5-7
TOP:547.63
IN:12"RCP 545.16(EAST)
OUT:15"RCP 544.23(5-8)

GRATE 5-8
TOP:547.57
IN:6"HDPE 544.23(WEST)
IN:10"HDPE 544.60(EAST)
IN:15"RCP 543.89(5-7)
IN:18"RCP 542.76(5-6)
OUT:42"RCP 541.98(WEST)

TMP 45-30
MOBILE PARKS OF
CHARLOTTESVILLE INC

TMP 45-30J
MOBILE PARKS OF
CHARLOTTESVILLE INC

TMP 45-25E
HOWELL, GWENDOLYN
H & JUDY D

TMP 45-25H
HOWELL, GWEN H & J
WENDALL HOWELL

TMP 45-25B
GAONA, JOSE &
ELPIDIA GAONA

TMP 45-25D
BICKEL, MARY C

TMP 45-25C
VIRGINIA TELEPHONE
& TELEGRAPH CO

TMP 45-26
505 RIO ROAD WEST, LLC
11.67 AC.

TMP 45-26A1
EJM GARDEN, LLC
1.01 AC.

TMP 45-26A6
OAKLEIGH LOFTS, LLC
0.66 AC.

TMP 45-26A9
OAKLEIGH ALBEMARLE,
LLC
0.20 AC.

TMP 45-26B1
AMMAR ALSHAIKHLI
1.28 AC.

TMP 45-26B2
LOT 2
ABDUL W. RAHIM;
HABIB RAHIM;
& HAID RAHIM
1.075 AC.
D.B. 5427, PG. 390
H.W.P.B. 38B, PG. 14 (PLAT)
D.B. 339, PG. 551 (PLAT)
D.B. 1812, PG. 685 (CTC OF VA)
D.B. 1646, PG. 286 (VEPCO)
D.B. 1627, PG. 713 (COMM OF VA)
D.B. 1627, PG. 466 (GAS)
D.B. 492, PG. 282 (VT&T)
D.B. 460, PG. 664 (WATERLINE)
D.B. 278, PG. 542 (VT&T)
D.B. 273, PG 215 (VEPCO)

TMP 45-26B3
LOT 1
RIVER RIO, LLC
0.942 AC.
D.B. 6501, PG. 204
D.B. 600, PG. 329
H.W.P.B. 38B, PG. 33 (PLAT)
D.B. 339, PG. 551 (PLAT)
D.B. 1812, PG. 674 (CTC OF VA)
D.B. 1646, PG. 219 (VEPCO)
D.B. 1627, PG. 448 (GAS)
D.B. 492, PG. 282 (VT&T)
D.B. 460, PG. 668 (WATERLINE)
D.B. 339, PG. 548
D.B. 278, PG. 542 (VT&T)
D.B. 273, PG 215 (VEPCO)

TMP 45-26B4
LOT 3
CHARLOTTESVILLE RIO
ROAD APARTMENTS, LLC
0.822 AC.
D.B. 5330, PG. 535
H.W.P.B. 38B, PG. 22 (PLAT)
D.B. 339, PG. 551 (PLAT)
D.B. 1812, PG. 683 (CTC OF VA)
D.B. 1646, PG. 286 (VEPCO)
D.B. 1627, PG. 707 (COMM OF VA)
D.B. 1627, PG. 466 (GAS)
D.B. 717, PG. 532 (CTC OF VA)
D.B. 460, PG. 664 (WATERLINE)
D.B. 344, PG. 259
D.B. 339, PG. 548
D.B. 278, PG. 542 (VT&T)
D.B. 273, PG 215 (VEPCO)

TMP 45-26B5
LOT 5
CHARLOTTESVILLE RIO
ROAD APARTMENTS, LLC
0.697 AC.
D.B. 5269, PG. 704
H.W.P.B. 38B, PG. 18 (PLAT)
D.B. 339, PG. 551 (PLAT)
D.B. 1812, PG. 663 (CTC OF VA)
D.B. 1646, PG. 286 (VEPCO)
D.B. 1627, PG. 698 (COMM OF VA)
D.B. 1627, PG. 472 (GAS)
D.B. 717, PG. 530 (CTC OF VA)
D.B. 344, PG. 259
D.B. 339, PG. 548
D.B. 278, PG. 542 (VT&T)
D.B. 273, PG 215 (VEPCO)

TMP 45-26A2
CHARLOTTESVILLE RIO
ROAD APARTMENTS, LLC
4.696 AC.
D.B. 5330, PG. 463
H.W.P.B. XIIB, PG. 46-47 (PLAT)
D.B. 3222, PG. 439 (PLAT)
D.B. 455, PG. 282 (PLAT)
D.B. 3678, PG. 659 (EASEMENTS)
D.B. 976, PG. 484 (ACSA)
D.B. 1222, PG. 499 (SIGHT EASEMENT)
D.B. 1667, PG. 216 (GAS)
D.B. 1670, PG. 521 (ACSA)
D.B. 1686, PG. 74 (VEPCO)
D.B. 1812, PG. 642 (CTC OF VA)
D.B. 717, PG. 530 (CTC OF VA)
D.B. 460, PG. 660 (WATERLINE)
D.B. 455, PG. 282
D.B. 305, PG. 163
D.B. 278, PG. 542 (VT&T)
D.B. 273, PG. 215 (VEPCO)

RIO ROAD WEST - ROUTE 631
VARIABLE WIDTH PUBLIC RIGHT OF WAY
(35 MPH)

HERITAGE HALL ROAD
50' PRIVATE ACCESS EASEMENT
D.B. 3678 P. 659

EX CURB INLET (DI-2B)
TOP @ FL=553.80
INV IN=549.93 (15" RCP-NORTH)
INV IN=550.12 (15" RCP-EAST)
INV OUT=549.92 (18" RCP)

EX CURB INLET (DI-2B)
TOP @ FL=550.45
INV IN=547.85 (6" CPP)
INV OUT=546.86 (15" RCP)

EX CURB INLET (DI-2B)
TOP @ FL=549.63
INV IN=542.74 (15" RCP)
INV OUT=542.56 (15" RCP)

EX CURB INLET (DI-2B)
TOP @ FL=559.06
INV IN=556.84 (4" CPP)
INV OUT=555.64 (15" RCP)

EX UNDERDRAIN SYSTEM (TYP.)
EX STORM DRAINAGE SYSTEM
EX WATERLINE
EX 4" PE GASLINE
EX ALBEMARLE COUNTY MANAGED SLOPES (TYP)
EX CONCRETE SIDEWALK TO BE REMOVED
EX FENCE
EX TREELINE
EX SIDEWALK, CURB, & DRIVEWAY ENTRANCES TO BE REMOVED
EX UTILITIES TO BE ABANDONED (TYP)
EX HOUSE, DRIVEWAY, CONC. & UTILITIES TO BE REMOVED
EX SHED TO BE REMOVED
EX SHEDS TO BE REMOVED
EX GARAGE AND SHEDS TO BE REMOVED
EX LOT LINE TO BE VACATED (TYP)
EX 8" SANITARY SEWER PIPE
EXISTING SMH
TOP=538.18
INV IN=532.73 (8" VCP-NORTH)
INV OUT=532.07 (8" TRUSS PIPE-SOUTH)
EX STREAM
20' SANITARY SEWER EASEMENT INST. NO _____
EXISTING DRAINAGE SYSTEM
INV OUT=539.08 (30" RCP)
EXISTING MHD
TOP=554.13
INV IN=543.61 (30" RCP)
INV OUT=542.54 (30" RCP)
EXISTING 20' PRIVATE DRAINAGE EASEMENT D.B. 3931, PG. 428
DRAINAGE MANHOLE

UTILITY EASEMENT
VDOT PROJ. 0631-002-185,C501

CTC OF VA EASEMENT
D.B. 1817 P. 641

EXISTING SIGN EASEMENT
D.B. 3678, PG. 659

EXISTING VAR. WIDTH VIRGINIA POWER EASEMENT
D.B. 1690, PG. 25

EXISTING ACSA EASEMENT
D.B. 1670, PG. 521

PERMANENT DRAINAGE EASEMENT
D.B. 1684, PG. 512
(TO BE VACATED)

EXISTING VAR. WIDTH ACSA WATERLINE EASEMENT
D.B. 1670, PG. 521

VAR. WIDTH VIRGINIA POWER EASEMENT
DB. 1690, PG. 25

PERMANENT DRAINAGE EASEMENT
D.B. 1684, PG. 512
(TO BE VACATED)

APPROX. LOCATION OF EXISTING 20' WATERLINE EASEMENT
D.B. 976, PG. 484

APPROX. LOCATION OF EXISTING 55' PRIVATED ACCESS EASEMENT
D.B. 3678, PG. 659

RIGHT OF INGRESS/EGRESS ACROSS 60' ROW
D.B. 455, PG. 282
FOR TMP 45-26A2

EX. DECIDUOUS & EVERGREEN TREES WITHIN THIS AREA TO BE REMOVED

EX. STORM PIPE & OUTFALL TO BE REMOVED, SEE CONSTRUCTION NOTE, THIS SHEET

EX. STREET LIGHTS TO BE REMOVED (TYP.)

EX TREES TO BE REMOVED (TYPICAL)

EX UTILITIES THROUGH SITE TO BE RELOCATED

PORTION OF EX 2" PE GASLINE TO BE REMOVED

PORTION OF EX 8" DIP WATERLINE TO BE REMOVED

EX TRAVELWAY TO BE RECONSTRUCTED WITH PROPOSED DEVELOPMENT

EX ALBEMARLE COUNTY MANAGED SLOPES (TYP)

EX 8" DIP WATERLINE

EX 2" PE GASLINE

NOTE: ALL EXISTING WELLS SHALL BE ABANDONED IN ACCORDANCE WITH VA PRIVATE WELL REGULATIONS

NAD'83 GRID NORTH
VASP SOUTH ZONE

CONSTRUCTION NOTES:
1. RWSA SHALL BE ONSITE FOR UTILITY ABANDONMENT, AND THE CONTRACTOR SHALL GIVE RWSA 3 DAYS NOTICE TO SCHEDULE THE ABANDONMENT WITH THE RWSA INSPECTOR.
2. A DRAINAGE DITCH FROM THE STORM SEWER OUTFALL CONVEYING THE DRAINAGE FROM RIO ROAD INTO THE SITE SHALL BE PRESERVED TO THE EROSION CONTROL FACILITIES, AS SHOWN ON THE EROSION CONTROL PLAN, UNTIL THE NEW TRUNK STORM SEWER SYSTEM HAS BEEN INSTALLED TO PERMANENTLY ROUTE THE STORM DRAINAGE FROM RIO ROAD THROUGH THE PROPERTY AND TO THE EROSION CONTROL FACILITY AND ONSITE STORMWATER MANAGEMENT FACILITY UPON THE COMPLETION OF THE PROJECT.

GRAPHIC SCALE
40 0 20 40 80
(IN FEET)
1 inch = 40 ft.

COMMONWEALTH OF VIRGINIA
SCOTT R. COLLINS
No. 35791
PROFESSIONAL ENGINEER
5/12/23

REVISIONS

DATE	REVISION DESCRIPTION
2/06/23	INITIAL PLAN SUBMITTAL
5/12/23	REVISED PER COUNTY COMMENTS

COLLINS ENGINEERING
200 GARRETT STREET, SUITE K-CHARLOTTESVILLE, VA 22902-434.293.3719

PROJECT
CVILLE RIO ROAD APARTMENTS - FINAL SITE PLAN

SHEET
EXISTING CONDITIONS & DEMOLITION PLAN

JOB NO. 202202
SCALE 1" = 40'
SHEET NO. 2

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NOTES:
1. CONTRACTOR SHALL PROVIDE ENGINEER SURVEY WORKSHEETS OF ALL ROADWAYS, MANHOLE TOPS AND DRAINAGE STRUCTURES PRIOR TO INSTALLATION OF E/P, DRAINAGE, OR UTILITIES TO COLLINS ENGINEERING FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION. COLLINS ENGINEERING SHALL VERIFY ALL SURVEY SHEETS TO ENSURE POSITIVE DRAINAGE AND PROPER ELEVATIONS FOR CONSTRUCTION.
2. WALLS WITH HEIGHT OF 30" OR GREATER SHALL REQUIRE HANDRAILS - SEE NOTES & DETAILS SHEET 7.
3. A KNOX BOX WILL BE REQUIRED ON EACH BUILDING. THE LOCATION OF THE KNOW BOX CAN BE COORDINATED WITH THE FIRE MARSHAL'S OFFICE.

NOTE: VISIBILITY OF ALL MECHANICAL EQUIPMENT FROM THE ENTRANCE CORRIDOR SHALL BE ELIMINATED. MECHANICAL EQUIPMENT FOR THE APARTMENT BUILDINGS ARE LOCATED ON THE ROOF AND SHALL BE SCREENED FROM THE ENTRANCE CORRIDOR. THE HVAC UNITS FOR THE CLUBHOUSE SCREENED WITH A FENCE, SEE DETAIL ON SHEET 7.

ACCESSIBLE ROUTE THROUGH THE SITE

RIO ROAD
STATE ROUTE 631
VAR. WIDTH PUBLIC R/W

VAR. WIDTH VIRGINIA POWER EASEMENT DB. 1690, PG. 25

(P) SEGMENTED RETAINING WALL WITH HANDRAIL, SEE SHEET 7 FOR DETAILS. MANUFACTURER: EAGLE BAY. DIAMOND PRO COLOR: JAMES RIVER

(P) VDOT STD. CG-6 IMPROVEMENTS FOR TIE-IN CONNECTIONS AT ENTRANCE

(P) MILL/ OVERLAY VDOT STD. WP-2 16'w x 130'L

DISTANCE TO NEAREST INTERSECTION (WOODBURN ROAD & RIO ROAD WEST) = 850'

(P) STONE FACED RETAINING WALL ALONG ENTRANCE CORRIDOR 1 FOOT REVEAL WITH HANDRAIL COLOR: JAMES RIVER

(P) MILL/ OVERLAY VDOT STD. WP-2 16'w x 420'L

DISTANCE TO NEAREST INTERSECTION (FOUR SEASONS DRIVE & RIO ROAD WEST) = 1,025'

PROPOSED 10' ASPHALT PEDESTRIAN & BICYCLE PATH ALONG RIO ROAD SEE DETAIL SHEET 7

PROPOSED BUS STOP w/ SHELTER & BENCH. SHELTER TO BE COORDINATED WITH CAT AND THE COUNTY & WILL MEET CAT DESIGN STANDARDS

(P) SEGMENTED RETAINING WALL WITH HANDRAIL, SEE SHEET 7 FOR DETAILS. MANUFACTURER: EAGLE BAY. DIAMOND PRO COLOR: JAMES RIVER

UTILITY EASEMENT VDOT PROJ. 0631-002-185,C501

VAR. WIDTH RIGHT-OF-WAY DEDICATION INST. #_____

RIGHT OF WAY DEDICATION TO ALBEMARLE COUNTY FOR PEDESTRIAN PATHWAY (0.30 AC)

LOCATION OF RAMP FOR ACCESS TO THE SHARED-USE PATHWAY FROM THE ROADWAY

LOCATION OF RAMP FOR ACCESS TO THE SHARED-USE PATHWAY FROM THE ROADWAY

6' GRASS PLANTING STRIP

EXISTING 4' BIKE LANE

200' RIGHT TURN TAPER

435' SIGHT DISTANCE

415' SIGHT DISTANCE

440' SIGHT DISTANCE

35' MAX. FRONT SETBACK

5' MIN. FRONT SETBACK

BUILDING #1
3 STORIES
36 APARTMENT UNITS
12,075 SF

BUILDING #2
3 STORIES
24 APARTMENT UNITS
8,645 SF

BUILDING #3
3 STORIES
24 APARTMENT UNITS
8,645 SF

BUILDING #4
3/4 STORY SPLIT
28 APARTMENT UNITS
8,645 SF

BUILDING #5
3/4 STORY SPLIT
42 APARTMENT UNITS
13,290 SF

BUILDING #6
4/5 STORY SPLIT
60 APARTMENT UNITS
13,560 SF

BUILDING #7
4/5 STORY SPLIT
36 APARTMENT UNITS
8,755 SF

CLUBHOUSE
6,400 SF BUILDING

POOL
1,650 SF

(P) PERVIOUS PAVERS

3' CONCRETE RIBBON

ADA HANDICAP PARKING SIGN

VDOT STD CG-2 (TYP)

VDOT STD TYPE B CG-12

LARIAT STREET
PRIVATE TRAVELWAY

ENTRADA DRIVE
PRIVATE TRAVELWAY

HERITAGE HALL ROAD
55' PRIVATE TRAVELWAY

51' PRIVATE ACCESS ESMT INST. #_____

55' PRIVATE ACCESS EASEMENT (TRAVELWAY "B") D.B. 976, PG. 484

EX. 55' PRIVATE ACCESS EASEMENT DB.3678, PG. 659

UTILITY EASEMENT VDOT PROJ. 0631-002-185,C501

VAR. WIDTH VIRGINIA POWER EASEMENT DB. 1690, PG. 25

CONCRETE RETAINING WALL

URBAN DENSITY RESIDENTIAL AMENITIES INCLUDING SERVICE CENTER

CONCRETE STEPS

BIKE RACK

COURTYARD W/ FIRE PIT & PICNIC TABLES

TOT LOT

(P) MAIL KIOSK

COURTYARD & GRILL AREA
1,900 SF

DOG PARK
1,200 SF

(P) 42" BLACK FENCING SEE DETAIL, SHEET 7

(P) CONCRETE WALL WITH HANDRAIL. SEE ARCHITECTURAL PLANS FOR DETAILS AND DESIGN OF CONCRETE WALL

(P) CONCRETE WALL WITH HANDRAIL. SEE ARCHITECTURAL PLANS FOR DETAILS AND DESIGN OF CONCRETE WALL

BRICK/CONCRETE RETAINING WALL (MATCHING CLUBHOUSE) SEE ARCHITECTURAL PLANS

TRASH COMPACTOR & 6' HIGH BRICK ENCLOSURE w/ 12'x14' CONCRETE APRON. SEE ARCHITECTURAL DRAWINGS

RETAINING WALL

2' GRASS OVERHANG

PROPOSED 10' LANDSCAPED BUFFER

PROJECT BOUNDARY

10' MIN. SIDEYARD SETBACK

20' MIN. REAR SETBACK

30' MIN. SIDE SETBACK

20' MIN.

CUSTOMIZED CONCRETE EW-1 ENDWALL

ACSA WATERLINE EASEMENT DB. 976, PG.484

FUTURE LOCATION OF INTERPARCEL VEHICULAR ROAD CONNECTION TO TMP 45-26B1 (30' WIDE ACCESS EASEMENT UPON DEMAND OF THE COUNTY)

LOCATION OF EXISTING INTERPARCEL VEHICULAR ROAD CONNECTION TO TMP 45-26

TMP 45-26B1
AMMAR ALSHAIKHLI
1.28 AC.

TMP 45-26
505 RIO ROAD WEST, LLC
11.67 AC.

TMP 45-26A1
EJM GARDEN, LLC
1.01 AC.

TMP 45-26A9
OAKLEIGH ALBEMARLE
0.20 AC.

NAD 83 GRID NORTH
VASP SOUTH ZONE

COMPREHENSIVE PLAN - LAND USE DESIGNATION AREA

PROJECT BOUNDARY

* NOTE: ALL 1ST LEVEL UNITS WITH AN ASTERISK SHALL HAVE AN ADA ACCESSIBLE ENTRANCE TO THE SIDEWALK AND ARE LOCATED ON AN ADA ACCESSIBLE ROUTE

SITE PLAN NOTE LEGEND:

1	VARIABLE WIDTH SIGHT DISTANCE EASEMENT (INST. #:_____)
2	VARIABLE WIDTH PRIVATE SIDEWALK ACCESS & MAINTENANCE EASEMENT (INST. #:_____)
3	VDOT STANDARD CG-6 CURB
4	VDOT STANDARD CG-2 CURB
5	VDOT STANDARD CG-12 CURB
6	ADA HANDICAP PARKING SIGN
7	'NO PARKING - FIRE LANE' SIGNS. RED LETTERING ON A REFLECTIVE WHITE BACKGROUND (12" WIDE x 18" HIGH). NOTE: FIRE LANE SIGNS SHALL BE MAINTAINED AT ALL TIMES.
8	VDOT STANDARD R1-1 STOP SIGN
9	VDOT STANDARD 20 MPH SPEED LIMIT SIGN
10	STREET SIGN
11	ADA ACCESSIBLE POOL EGRESS
12	42" BLACK VINYL DECORATIVE FENCE, SEE DETAIL SHEET 7
13	HVAC UNITS WITH SCREENING FENCE, SEE DETAIL SHEET 7
14	MAIL KIOSK SHELTER WITH CONCRETE PAD, SEE ARCHITECTURAL PLANS
15	VDOT STANDARD RUSTIC CORTEN GUARDRAIL SYSTEM WITH WOODEN POSTS

GENERAL PROJECT NOTES:
1. CONTRACTOR SHALL VERIFY ALL ROAD CONNECTIONS, INCLUDING RECENTLY CONSTRUCTED AREAS, VERTICALLY AND HORIZONTALLY PRIOR TO CONSTRUCTION AND SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES.
2. CONTRACTOR SHALL CONFIRM ALL UTILITY, DRAINAGE, AND ROAD CONNECTIONS, AND SHALL NOTIFY ENGINEER OF ANY TIE-IN ISSUES OR DISCREPANCIES.
3. 1 REPRESENTS ONE PROPOSED PARKING SPACE.
4. OVERHEAD WIRING OR OTHER OBSTRUCTIONS SHALL BE HIGHER THAN 23'-6".
5. ALL PAVEMENT SHALL BE CAPABLE OF SUPPORTING FIRE APPARATUS WEIGHING 85,000 LBS.
6. CONTRACTOR SHALL ENSURE ALL ON-SITE UTILITIES, ABOVE AND BELOW GROUND, SERVICING ADJACENT PROPERTIES SHALL CONTINUE TO SERVICE THE ADJACENT PROPERTIES THROUGHOUT CONSTRUCTION AND UPON COMPLETION OF THE PROJECT TO THE FULLEST EXTENT POSSIBLE.
7. SEE SHEET 2 FOR COMPLETE PROJECT BOUNDARY DIMENSIONS AND METES AND BOUNDS.
8. CURB RADII SHOWN, REPRESENTED WITH AN 'R', DIMENSION THE FACE OF CURB.
9. VISIBILITY OF ALL MECHANICAL EQUIPMENT FROM THE ENTRANCE CORRIDOR SHALL BE ELIMINATED. ALL MECHANICAL EQUIPMENT SHALL BE SCREENED FROM THE ENTRANCE CORRIDOR.
10. ALL RETAINING WALLS GREATER THAN 3 FEET IN HEIGHT REQUIRE A SEPARATE BUILDING PERMIT. WALLS EXCEEDING 4 FEET IN HEIGHT REQUIRE A STAMPED ENGINEERED DESIGN FOR THE WALLS SYSTEM.
11. BUILDINGS OR STRUCTURES BUILT BEFORE JANUARY 1, 1985 MUST HAVE AN ASBESTOS SURVEY PERFORMED IN ORDER TO APPLY FOR A DEMOLITION PERMIT. ASBESTOS REMOVAL PERMITS ARE REQUIRED IF POSITIVE FOR SUCH. CONTACT VDOLI FOR ADDITIONAL REQUIREMENTS AND PERMITS FOR DEMOLITION PROJECTS.
12. ALL PRIVATE TRAVELWAYS SHALL BE OWNED AND MAINTAINED BY THE APARTMENT COMPLEX. NO PUBLIC AGENCY, INCLUDING VDOT AND THE COUNTY OF ALBEMARLE WILL BE RESPONSIBLE FOR MAINTAINING THE TRAVELWAYS WITHIN THE APARTMENT COMPLEX.
13. ALL PUBLIC WATER AND SANITARY SEWER FACILITIES SHALL BE DEDICATED TO PUBLIC USE AND THE EASEMENTS FOR THOSE FACILITIES, AS IDENTIFIED ON THIS PLAN, SHALL BE DEDICATED TO THE ALBEMARLE COUNTY SERVICE AUTHORITY. THE ONSITE SANITARY SEWER IS A PRIVATE UTILITY AND NO EASEMENTS ARE REQUIRED.
14. ALL PRIVATE YARD DRAIN DESIGN INFORMATION (INCLUDING INVERTS OF THE SYSTEM) SHALL BE PROVIDED BY THE CIVIL ENGINEER DURING CONSTRUCTION.
15. THE TRASH COMPACTOR AREA SHALL ALSO INCLUDE A RECYCLING BIN FOR THE APARTMENT COMPLEX.
16. SEE SHEET 5 FOR DESIGN OF THE CONCRETE STEPS AND RAMPS.

VDOT NOTES:
1. VDOT WILL ONLY MAINTAIN WITHIN DRAINAGE EASEMENTS TO THE EXTENT NECESSARY TO PROTECT THE ROADWAY FROM FLOODING OR DAMAGE.
2. A MOT PLAN SHALL BE PROVIDED PRIOR TO THE START OF CONSTRUCTION FOR ANY WORK ON EXISTING ROADWAYS THAT HAVE BEEN ACCEPTED BY VDOT. CURRENTLY, THE EXISTING ROADWAY INTERSECTIONS FOR THIS DEVELOPMENT ARE UNDER CONSTRUCTION AND HAVE NOT YET BEEN ACCEPTED BY VDOT. NO MOT PLAN IS REQUIRED AT THIS TIME FOR THE IMPROVEMENTS AT THE ENTRANCES.
3. IF A TRAFFIC MAINTENANCE PLAN (TMP) IS REQUIRED, THEN IT SHALL BE PREPARED BY AN ADVANCED WORK ZONE CERTIFIED PERSON, CERTIFICATION CARD AND VERIFICATION NUMBER IS REQUIRED ON THE TMP SUBMITTAL.

GRAPHIC SCALE
30 0 15 30 60
(IN FEET)
1 inch = 30 ft.

COMMONWEALTH OF VIRGINIA
SCOTT R. COLLINS
No. 35791
PROFESSIONAL ENGINEER
7/28/23

REVISIONS

DATE	REVISION DESCRIPTION
2/06/23	INITIAL PLAN SUBMITTAL
5/12/23	REVISED PER COUNTY COMMENTS
7/28/23	REVISED PER COUNTY COMMENTS

COLLINS ENGINEERING
200 GARRETT STREET, SUITE K-CHARLOTTESVILLE, VA 22902 -434.293.3719

PROJECT
CVILLE RIO ROAD APARTMENTS - FINAL SITE PLAN

SHEET
SITE PLAN

JOB NO. 202202
SCALE 1" = 30'
SHEET NO. 3

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TMP 45-25E
HOWELL, GWENDOLYN H & JUDY D

TMP 45-25H
HOWELL, GWEN H & J WENDALL HOWELL

TMP 45-25B
GAONA, JOSE & ELPIDIA GAONA

TMP 45-25D
BICKEL, MARY C

MOBILE PARKS OF CHARLOTTESVILLE INC

TMP 45-30J
MOBILE PARKS OF CHARLOTTESVILLE INC

RIO ROAD WEST - ROUTE 631
VARIABLE WIDTH PUBLIC RIGHT OF WAY
(35 MPH)

ACSA EASEMENT
D.B. 1670, PG. 521

VARIABLE WIDTH
VIRGINIA POWER
EASEMENT
D.B. 1690 PG. 25

4" P.E. GAS LINE

PROPOSED 2" PE GAS
LINE REROUTING THRU SITE

12" D.I. RWSA WATERLINE

(P) CONNECT PROPOSED
8" D.I. WATERLINE TO EXISTING
ACSA 8" D.I. WATERLINE
WITH 8"x8" T.S.&V. AND
8"-45° BEND

EXISTING VAR. WIDTH UTILITY
EASEMENT VDOT PROJ. 0631-002-185,
C501 (EXCEPTION #10, #13, #15)

20' PUBLIC STORM
SEWER EASEMENT

LARIAT STREET

BUILDING 1

BUILDING 2

BUILDING 3

BUILDING 4

BUILDING 5

BUILDING 6

BUILDING 7

CLUBHOUSE

POOL

UNDERGROUND
DETENTION

WATERLINE 1
8" D.I. WATERLINE

WATERLINE 2
8" D.I. WATERLINE

WATERLINE 3
8" D.I. WATERLINE

WATERLINE 4
6" D.I. WATERLINE

20' ACSA PUBLIC
WATERLINE EASEMENT
INST.#:

HERITAGE HALL ROAD
55' PRIVATE ACCESS EASEMENT
D.B. 3678, PG. 609

(P) FIRE HYDRANT ASSEMBLY
6" G.V.

(P) 6"-90° BEND

(P) 6"x4" TEE
4" G.V.

(P) 2.5" TYPE K COPPER
WATER SERVICE LATERAL

(P) 1.5" WATER
METER VAULT

(P) 4" D.I.
FIRE LINE

FDC

LOCATION OF RPZ ON DOMESTIC
WATERLINE, DDCA ON THE FIRELINE,
AND PRV ON THE DOMESTIC WATERLINE
(ALL WITHIN BUILDING)

6" SDR 26 PVC SAN. LAT.
49 LF @ 7.2%, ELEV. 539.05

6" SDR 26 PVC SAN. LAT.
53 LF @ 12.1%, ELEV. 542.05

6" SDR 26 PVC SAN. LAT.
5LF @ 20%, ELEV. 542.24

6" SDR 26 PVC SAN. LAT.
TO CLEANOUT
48LF @ 13.1%, ELEV. 541.24

6" SDR 26 PVC SAN. LAT.
279 LF @ 6.5%, ELEV. 559.13

6" SDR 26 PVC SAN. LAT.
39 LF @ 11%, ELEV. 545.06

6" SDR 26 PVC SAN. LAT.
59 LF @ 7.3%, ELEV. 538.55

6" SDR 26 PVC SAN. LAT.
63 LF @ 8.8%, ELEV. 546.39

6" SDR 26 PVC SAN. LAT.
32 LF @ 37%, ELEV. 539.09

6" SDR 26 PVC SAN. LAT.
11 LF @ 29%, ELEV. 527.33

6" SDR 26 PVC SAN. LAT.
TO CLEANOUT
39LF @ 2.08%, ELEV. 524.09

(P) 8"-12.25° BEND

(P) 8"x4" TEE
4" G.V.

(P) 8"x8" TEE
8" G.V.

(P) 8"x6" TEE
2-8" G.V.

(P) 8"X6" REDUCER

(P) 1" CORP. STOP &
1" COPPER SERVICE LINE

(P) 1" WATER METER
FOR CLUBHOUSE

(P) 1" TYPE K COPPER
WATER SERVICE LATERAL

(P) 5/8" WATER METER
FOR MAINTENANCE

(P) FIRE HYDRANT ASSEMBLY
6"x6" TEE, 6" G.V.
1-6"X4" REDUCER

(P) FIRE HYDRANT ASSEMBLY W/6"-90° BEND
& 6" G.V.

(P) FIRE HYDRANT ASSEMBLY W/8"x6" TEE
& 6" G.V.

(P) 1" CORP. STOP &
1" COPPER SERVICE LINE

PROPOSED 8" SDR 26 PVC
PRIVATE SANITARY SEWER

PROPOSED 8"x8" TEE
1-8" G.V.

PROPOSED 8"-90° BEND

(P) NEW 8" D.I. WATERLINE
CUT EXISTING 8" W/L AND
CONNECT AT 8" G.V.
8"-45° BEND

PROPOSED 8" PLUG

EXISTING 20' ACSA WATERLINE
EASEMENT D.B. 976, PG. 484
ACSA (EXCEPTION #21)

EXISTING 8" D.I. WATERLINE

LOCATION OF RPZ ON DOMESTIC
WATERLINE, DDCA ON THE FIRELINE,
AND PRV ON THE DOMESTIC WATERLINE
(ALL WITHIN BUILDING)

VAR. WIDTH STORMWATER MANAGEMENT,
FACILITY, ACCESS AND
MAINTENANCE EASEMENT
INST. #:_____

(P) 20' SANITARY SEWER
EASEMENT DEDICATED TO
THE ACSA
INST.#:_____

MH-1
MH-2
MH-3
MH-4
MH-5
MH-6
MH-7
MH-8

TMP 45-26
505 RIO ROAD WEST, LLC
11.67 AC.

TMP 45-26A1
EJM GARDEN, LLC
1.01 AC.

TMP 45-26A9
OAKLEIGH ALBEMARLE, LLC
0.20 AC.

TMP 45-26B1
AMMAR ALSHAIKHLI
1.28 AC.

NOTE: A KNOX BOX WILL BE REQUIRED ON EACH BUILDING. THE LOCATION OF THE KNOX BOX CAN BE COORDINATED WITH THE FIRE MARSHAL'S OFFICE.

NOTE: ALL PROPOSED SANITARY SEWER IS PRIVATE.

NOTE: THE TYPE K COPPER WATER SERVICE LATERALS ARE ON THE PRIVATE SIDE OF THE METER. THE PUBLIC PORTION OF THE WATER SERVICE WILL BE IN ACCORDANCE WITH THE ACSA STANDARD DETAILS.

NOTE: THE AVAILABLE FIRE FLOW IS 1,750 GPM FOR A DURATION OF 2 HOURS DURING PEAK DAILY DOMESTIC HOURS/DEMANDS.

MATCHLINE - SEE THIS SHEET

MATCHLINE - SEE THIS SHEET

NAD'83 GRID NORTH
VASP SOUTH ZONE

GRAPHIC SCALE
30 0 15 30 60
(IN FEET)
1 inch = 30 ft.

CONNECT PROPOSED 8" SDR 26 PVC
PRIVATE SANITARY SEWER TO EXISTING
SANITARY SEWER AT EX MH

EXISTING ACSA SANITARY
SEWER EASEMENT
DB. 976, PG.484

EXISTING MH1

COMMONWEALTH OF VIRGINIA
SCOTT R. COLLINS
No. 35791
PROFESSIONAL ENGINEER
7/28/23

REVISIONS

DATE	REVISION DESCRIPTION
2/06/23	INITIAL PLAN SUBMITTAL
5/12/23	REVISED PER COUNTY COMMENTS
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COLLINS ENGINEERING
200 GARRETT STREET, SUITE K-CHARLOTTESVILLE, VA 22902 -434.293.3719

PROJECT
CVILLE RIO ROAD APARTMENTS - FINAL SITE PLAN

SHEET
UTILITY PLAN

JOB NO. 202202
SCALE 1"=30'
SHEET NO. 4

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TMP 45-25E
HOWELL, GWENDOLYN
H & JUDY D

TMP 45-25H
HOWELL, GWEN H & J
WENDALL HOWELL

TMP 45-30J
MOBILE PARKS OF
CHARLOTTESVILLE INC

TMP 45-25B
GAONA, JOSE &
ELPIDIA GAONA

TMP 45-25D
BICKEL, MARY C

RIO ROAD

(P) SEGMENTED RETAINING WALL WITH SAFETY RAILING, SEE SHEET 7 FOR DETAILS. MANUFACTURER: EAGLE BAY, DIAMOND PRO COLOR: JAMES RIVER

EXISTING RIO ROAD STORM STRUCTURE AND PIPING TO REMAIN

EXISTING RIO ROAD STORM TIE INTO PROPOSED STORM SEWER SYSTEM. RECONNECT UNDERDRAINS TO STORM INLET WITH ROAD IMPROVEMENTS

(P) STONE FACED RETAINING WALL ALONG ENTRANCE CORRIDOR 1 FOOT REVEAL WITH HANDRAIL COLOR: JAMES RIVER

BUILDING 1
FFE=543.33

BUILDING 2
FFE=545.50

BUILDING 3
FFE=545.50

BUILDING 4
FFE=559.50
FFE=548.83

MAINTENANCE BUILDING
FFE=561.83

LARIAT STREET

VAR. WIDTH STORMWATER MANAGEMENT FACILITY, ACCESS AND MAINTENANCE EASEMENT INST. #:

20' PUBLIC DRAINAGE EASEMENT (RIO ROAD STORM DRAINAGE) INSTR. #:

PROPOSED TREE PROTECTION FENCE AT LIMITS OF CLEARING

TMP 45-26A1
EJM GARDEN, LLC
1.01 AC.

NAD'83 GRID NORTH
VASP SOUTH ZONE

CLUBHOUSE
FFE=542.33

BRICK/CONCRETE RETAINING WALL (MATCHING CLUBHOUSE) SEE ARCHITECTURAL PLANS

FFE=542.33

20' PUBLIC DRAINAGE EASEMENT (RIO ROAD STORM DRAINAGE) INSTR. #:

BUILDING 6
FFE=553.83
FFE=543.16

BUILDING 5
FFE=561.67
FFE=551.00

PROPOSED VDOT STD. CD-2

PROPOSED PRIVATE STORM SEWER SYSTEM (TYP.)

HERITAGE HALL ROAD

(P) CONCRETE RETAINING WALL. SEE ARCHITECTURAL PLANS FOR DETAILS AND DESIGN OF THE WALL

(P) SEGMENTED RETAINING WALL WITH SAFETY RAILING. SEE SHEET 7 FOR DETAILS. MANUFACTURER: EAGLE BAY, DIAMOND PRO COLOR: JAMES RIVER

(P) SEGMENTED RETAINING WALL WITH HANDRAIL. SEE SHEET 7 FOR DETAILS. MANUFACTURER: EAGLE BAY, DIAMOND PRO COLOR: JAMES RIVER

TMP 45-26
505 RIO ROAD WEST, LLC
11.67 AC.

TMP 45-26B1
AMMAR ALSHAIKHLI
1.28 AC.

BUILDING 7
FFE=541.67
FFE=531.00

UNDERGROUND DETENTION

VAR. WIDTH STORMWATER MANAGEMENT FACILITY, ACCESS AND MAINTENANCE EASEMENT INST. #:

PROPOSED OUTFALL TO EXISTING STREAM CUSTOMIZED CONCRETE EW-1 WITH 24" OUTFALL PIPE AT ELEVATION 511.75 VDOT STD. EC-1 CLASS 1 RIPRAP WITH GEOFILTER FABRIC UNDERLAYMENT (d50=6" MIN, D=2.5', W1=6', W2=13', L=11') Qmax=20 CFS

15' EQUIPMENT LANDING AREA WITHIN STORMWATER MANAGEMENT EASEMENT

NEW TEMPORARY GRADING AND CONSTRUCTION EASEMENT INST. #:

PROPOSED TREE PROTECTION FENCE AT LIMITS OF CLEARING

20' SANITARY SEWER EASEMENT INST. #:

TMP 45-26A9
OAKLEIGH ALBEMARLE, LLC
0.20 AC.

TMP 45-26A6
OAKLEIGH LOFTS, LLC
0.66 AC.

EXISTING OFF-SITE BIOFILTER WPO2017-00023

NOTE: HANDRAILS SHALL BE INSTALLED ON ALL ADA RAMPS AND STEPS WITHIN THE SITE. HANDRAILS/GUARDRAILS SHALL BE INSTALLED ALL RETAINING WALLS THAT ARE HIGHER THAN 30".

NOTE: SLOPES GREATER THAN 3:1 SHALL BE PLANTED WITH NATIVE STEEP SLOPE MIX WITH ANNUAL RYEGRASS BY ERNST CONSERVATION SEEDS AT A RATE OF 60 LBS. PER ACRE, OR 1 LB. PER 1,000 SF.

NOTE: NO PARKING LOT GRADE SHALL EXCEED 5%

GRAPHIC SCALE
(IN FEET)
1 inch = 30 ft.

RIO ROAD STORM DRAINAGE CONSTRUCTION NOTES:
A DRAINAGE DITCH FROM THE STORM SEWER OUTFALL CONVEYING THE DRAINAGE FROM RIO ROAD INTO THE SITE SHALL BE PRESERVED TO THE EROSION CONTROL FACILITIES, AS SHOWN ON THE EROSION CONTROL PLAN, UNTIL THE NEW TRUNK STORM SEWER SYSTEM HAS BEEN INSTALLED TO PERMANENTLY ROUTE THE STORM DRAINAGE FROM RIO ROAD THROUGH THE PROPERTY AND TO THE EROSION CONTROL FACILITY AND ONSTIE STORMWATER MANAGEMENT FACILITY UPON THE COMPLETION OF THE PROJECT. THE STORM SEWER FROM THE EXISTING RIO ROAD DRAINAGE STRUCTURES SHALL ALWAYS HAVE AN OPEN FLOW PATH THROUGH THE SITE.

COMMONWEALTH OF VIRGINIA
SCOTT R. COLLINS
No. 35791
PROFESSIONAL ENGINEER
7/28/23

REVISIONS

DATE	REVISION DESCRIPTION
2/06/23	INITIAL PLAN SUBMITTAL
5/12/23	REVISED PER COUNTY COMMENTS
7/28/23	REVISED PER COUNTY COMMENTS

COLLINS ENGINEERING
200 GARRETT STREET, SUITE K-CHARLOTTESVILLE, VA 22902 -434.293.3719

PROJECT
CVILLE RIO ROAD APARTMENTS - FINAL SITE PLAN

SHEET
GRADING & DRAINAGE PLAN

JOB NO. 202202
SCALE 1"=30'
SHEET NO. 5

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County of Albemarle
Community Development Department - Planning

Andy Reitelbach
areitelbach@albemarle.org
Telephone: (434) 296-5832 ext.3261

September 20, 2022

Valerie Long
Williams Mullen
323 2nd Street SE
Charlottesville, VA 22902
vlong@williamsmullen.com

RE: ZMA202100011 The Heritage on Rio Action Letter

Dear Ms. Long,

On September 7, 2022, the Board of Supervisors took action on the above noted Zoning Map Amendment on Tax Map Parcel Numbers 045000000026A2; 045000000026B2; 045000000026B3; 045000000026B4 and 045000000026B5 in the Rio District.

The Zoning Map Amendment was approved by the Board's adoption of the attached Ordinance No. 22-A(10).

Please be advised that although the Albemarle County Board of Supervisors took action on the project noted above, no uses on the property may lawfully begin until all applicable approvals have been received and conditions have been met. This includes:

- **compliance with the approved ZONING MAP AMENDMENT**
- **approval of and compliance with a SITE PLAN; and**
- **approval of a ZONING COMPLIANCE CLEARANCE.**

Should you have questions regarding the above-noted action, please contact me.

Sincerely,
Andy Reitelbach
Planning Division
Senior Planner II

Cc: GW Real Estate Partners LC C/o William Gordon
145 Ednam Dr. Suite 100
Charlottesville VA 22903
will@gwrepartners.com

Charlottesville Rio Road Apartments LLC
110 Draper Rd NW Suite B
Blacksburg VA 24060

ORDINANCE NO. 22-A(10)
ZMA 2021-00011 THE HERITAGE ON RIO

AN ORDINANCE TO AMEND THE ZONING MAP FOR PARCEL IDs 04500-00-00-026A2, 04500-00-00-026B2, 04500-00-00-026B3, 04500-00-00-026B4, AND 04500-00-00-026B5

BE IT ORDAINED by the Board of Supervisors of the County of Albemarle, Virginia, that upon consideration of the transmittal summary and staff report prepared for ZMA 2021-00011 and their attachments, including the application plan last revised on June 6, 2022, the information presented at the public hearing, any comments received, the material and relevant factors in Virginia Code § 15.2-2284 and County Code §§ 18-19 and 18-33.6, and for the purposes of public necessity, convenience, general welfare and good zoning practices, the Board hereby approves ZMA 2021-00011 with the application plan last revised on June 6, 2022.

* * *

I, Claudette K. Borgersen, do hereby certify that the foregoing writing is a true, correct copy of an Ordinance duly adopted by the Board of Supervisors of Albemarle County, Virginia, by a vote of six to zero, as recorded below, at a regular meeting held on September 7, 2022.

Clerk, Board of County Supervisors

	Aye	Nay
Mr. Andrews	Y	___
Mr. Gallaway	Y	___
Ms. LaPisto-Kirtley	Y	___
Ms. Mallek	Y	___
Ms. McKeel	Y	___
Ms. Price	Y	___

County of Albemarle
Community Development Department - Planning

Andy Reitelbach
areitelbach@albemarle.org
Telephone: (434) 296-5832 ext.3261

September 20, 2022

GW Real Estate Partners LLC
C/o Valerie Long
Williams Mullen
323 2nd Street SE
Charlottesville, VA 22902
vlong@williamsmullen.com

RE: SE202100041 The Heritage on Rio Action Letter

Dear Ms. Long,

On September 7, 2022, the Board of Supervisors took action on the above noted Special Exception in conjunction with ZMA202100011 on Tax Map Parcel Numbers 045000000026A2; 045000000026B2; 045000000026B3; 045000000026B4 and 045000000026B5 in the Rio District.

The Special Exception was approved by the Board's adoption of the attached Resolution.

Please be advised that although the Albemarle County Board of Supervisors took action on the project noted above, no uses on the property may lawfully begin until all applicable approvals have been received and conditions have been met. This includes:

- **compliance with the approved SPECIAL EXCEPTION**
- **approval of and compliance with a SITE PLAN; and**
- **approval of a ZONING COMPLIANCE CLEARANCE.**

Should you have questions regarding the above-noted action, please contact me.

Sincerely,
Andy Reitelbach
Planning Division
Senior Planner II

Cc: Charlottesville Rio Road Apartments LLC
110 Draper Rd NW Suite B
Blacksburg VA 24060

WWW.ALBEMARLE.ORG
401 McIntire Road, North Wing, | Charlottesville, VA 22902-4579

RESOLUTION TO APPROVE
SE 2021-00041 THE HERITAGE ON RIO

WHEREAS, upon consideration of the staff reports prepared for SE2021-00041 The Heritage on Rio (in conjunction with ZMA202100011) and the attachments thereto, including staff's supporting analysis, any comments received, and all of the factors relevant to the special exception in Albemarle County Code §§ 18-4.19(5), 18-8.2(b)(3), and 18-33.9, the Albemarle County Board of Supervisors hereby finds that the proposed special exception:

(i) would be consistent with the intent and purposes of the planned development district under the particular circumstances, and satisfy all other applicable requirements of Albemarle County Code § 18-8;
(ii) would be consistent with planned development design principles; and
(iii) would not adversely affect the public health, safety or general welfare

NOW, THEREFORE, BE IT RESOLVED that the Albemarle County Board of Supervisors hereby approves a special exception to waive the 15-foot stepback requirement of County Code § 18-4.19 on Parcel IDs 04500-00-00-026A2, 04500-00-00-026B2, 04500-00-00-026B3, 04500-00-00-026B4, and 04500-00-00-026B5.

I, Claudette K. Borgersen, do hereby certify that the foregoing writing is a true, correct copy of a Resolution duly adopted by the Board of Supervisors of Albemarle County, Virginia, by a vote of six to zero, as recorded below, at a regular meeting held on September 7, 2022.

Clerk, Board of County Supervisors

	Aye	Nay
Mr. Andrews	Y	___
Mr. Gallaway	Y	___
Ms. LaPisto-Kirtley	Y	___
Ms. Mallek	Y	___
Ms. McKeel	Y	___
Ms. Price	Y	___

ROADWAY CONSTRUCTION

GENERAL CONSTRUCTION NOTES

1. CONSTRUCTION INSPECTION OF ALL PROPOSED ROADS WITHIN THE DEVELOPMENT WILL BE MADE BY THE COUNTY. THE CONTRACTOR MUST NOTIFY THE DEPARTMENT OF COMMUNITY DEVELOPMENT (296-5832) 48 HOURS IN ADVANCE OF THE START OF CONSTRUCTION.
2. UPON COMPLETION OF FINE GRADING AND PREPARATION OF THE ROADBED SUBGRADE, THE CONTRACTOR SHALL HAVE CBR TESTS PERFORMED ON THE SUBGRADE SOIL. THREE (3) COPIES OF THE TEST RESULTS SHALL BE SUBMITTED TO THE COUNTY. IF A SUBGRADE SOIL CBR OF 10 OR GREATER IS NOT OBTAINABLE, A REVISED PAVEMENT DESIGN SHALL BE MADE BY THE DESIGN ENGINEER AND SUBMITTED WITH THE TEST RESULTS FOR APPROVAL.
3. SURFACE DRAINAGE AND PIPE DISCHARGE MUST BE RETAINED WITHIN THE PUBLIC RIGHT-OF-WAY OR WITHIN EASEMENTS PRIOR TO ACCEPTANCE BY THE COUNTY. ALL DRAINAGE OUTFALL EASEMENTS ARE TO BE EXTENDED TO A BOUNDARY LINE OR A NATURAL WATERCOURSE.
4. GUARDRAIL LOCATIONS ARE APPROXIMATE. EXACT LENGTH, LOCATION AND APPROPRIATE END TREATMENTS WILL BE FIELD VERIFIED AT THE TIME OF CONSTRUCTION. ADDITIONAL GUARDRAIL MAY BE REQUIRED AT LOCATIONS NOT SHOWN WHEN, IN THE OPINION OF THE COUNTY ENGINEER, OR DESIGNEE, IT IS DEEMED NECESSARY. WHEN GUARDRAIL IS REQUIRED, IT SHALL BE INSTALLED FOUR (4) FEET OFFSET FROM THE EDGE OF PAVEMENT TO THE FACE OF GUARDRAIL, AND ROADWAY SHOULDER WIDTHS SHALL BE INCREASED TO SEVEN (7) FEET.
5. WHERE URBAN CROSS SECTIONS ARE INSTALLED, ALL RESIDENTIAL DRIVEWAY ENTRANCES SHALL CONFORM TO VDOT CG-9(A, B OR C).
6. WHERE RURAL CROSS SECTIONS ARE INSTALLED, ALL RESIDENTIAL DRIVEWAY ENTRANCES SHALL CONFORM TO VDOT STANDARD PE-1.
7. COMPLIANCE WITH THE MINIMUM PAVEMENT WIDTH, SHOULDER WIDTH AND DITCH SECTIONS, AS SHOWN ON THE TYPICAL PAVEMENT SECTION DETAIL, SHALL BE STRICTLY ADHERED TO.
8. ROAD PLAN APPROVAL FOR SUBDIVISIONS IS SUBJECT TO FINAL SUBDIVISION PLAT VALIDATION. SHOULD THE FINAL PLAT FOR THIS PROJECT EXPIRE PRIOR TO SIGNING AND RECORDATION, THEN APPROVAL OF THESE PLANS SHALL BE NULL AND VOID.
9. ALL SIGNS OR OTHER REGULATORY DEVICES SHALL CONFORM WITH THE VIRGINIA MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES AND THE ALBEMARLE COUNTY ROAD NAMING AND PROPERTY NUMBERING ORDINANCE AND MANUAL.
10. TRAFFIC CONTROL OR OTHER REGULATORY SIGNS OR BARRICADES SHALL BE INSTALLED BY THE DEVELOPER WHEN, IN THE OPINION OF THE COUNTY ENGINEER, OR DESIGNEE, THEY ARE DEEMED NECESSARY IN ORDER TO PROVIDE SAFE AND CONVENIENT ACCESS.
11. THE SPEED LIMITS TO BE POSTED ON SPEED LIMIT SIGNS ARE 5 MPH BELOW THE DESIGN SPEED, OR AS DETERMINED BY VDOT FOR PUBLIC ROADS.
12. VDOT STANDARD CD-1 OR CD-2 CROSS-DRAINS UNDER TO BE INSTALLED UNDER THE SUBBASE MATERIAL AT ALL CUT AND FILL TRANSITIONS AND GRADE SAG POINTS AS SHOWN ON THE ROAD PROFILES.
13. A VIDEO CAMERA INSPECTION IS REQUIRED FOR ALL STORM SEWERS AND CULVERTS THAT ARE DEEMED INACCESSIBLE TO VDOT OR COUNTY INSPECTIONS. THE VIDEO INSPECTION SHALL BE CONDUCTED IN ACCORDANCE WITH VDOT'S VIDEO CAMERA INSPECTION PROCEDURE AND WITH A VDOT OR COUNTY INSPECTOR PRESENT.

GRADING

1. THE LATEST EDITION OF THE ROAD & BRIDGE SPECIFICATIONS, THE ROAD & BRIDGE STANDARDS OF THE VIRGINIA DEPARTMENT OF TRANSPORTATION SPECIFICATIONS SHALL GOVERN THE MATERIAL AND CONSTRUCTION METHODS OF THIS PROJECT.
2. WHERE UNSUITABLE MATERIAL IS ENCOUNTERED IN THE ROADWAY, IT SHALL BE REMOVED FROM THE ENTIRE ROAD RIGHT OF WAY WIDTH AND REPLACED WHERE NECESSARY WITH SUITABLE MATERIAL TO THE SATISFACTION OF THE ENGINEER.
3. ALL GROWTH OF TREES AND VEGETATION SHALL BE CLEARED AND GRUBBED FOR THE ENTIRE EASEMENT. OTHER TREES AND VEGETATION WHICH OBSTRUCT SIGHT DISTANCES AT ROAD INTERSECTIONS SHALL BE REMOVED.
4. ALL VEGETATION AND OVERBURDEN TO BE REMOVED FROM SHOULDER TO SHOULDER PRIOR TO THE CONSTRUCTION OF THE SUBGRADE.

DRAINAGE

1. ALL PIPE CULVERTS, EXCEPT PRIVATE ENTRANCES, SHOWN HEREON ARE TO BE RCP WITH A MINIMUM COVER OF ONE (1) FOOT.
2. STANDARD UNDERDRAINS (CD-1 OR CD-2 OR UD-4'S) TO BE PROVIDED AS INDICATED ON THE PLANS, OR WHERE FIELD CONDITIONS INDICATE.
3. ALL DRIVEWAY ENTRANCE PIPES SHALL BE A MINIMUM OF TWENTY (20) FEET IN LENGTH AND HAVE A MINIMUM DIAMETER OF FIFTEEN (15) INCHES AND SHALL BE PLACED IN ACCORDANCE WITH THE VIRGINIA DEPARTMENT OF TRANSPORTAION SPECIFICATIONS UNLESS OTHERWISE NOTED ON PLANS.
4. ALL DRAINAGE EASEMENT SHALL BE CLEARED AND GRADED TO THE SATISFACTION OF THE ENGINEER. DRAINAGE EASEMENTS SHALL EXTEND TO A POINT DEEMED AS NATURAL WATER COURSE.

PAVEMENT

1. AN ACTUAL COPY OF THE CBR REPORT IS TO BE SUBMITTED PRIOR TO THE PLACEMENT OF THE AGGREGATE BASE MATERIAL. IF THE SSV VALUES ARE LESS THAN 10, THE DEVELOPER WILL BE REQUIRED TO SUBMIT FOR ENGINEERS APPROVAL THE PROPOSED METHOD OF CORRECTION.
2. SUBGRADE MUST BE APPROVED BY THE ENGINEER FOR GRADE, TEMPLATE AND COMPACTION BEFORE BASE IS PLACED.
3. TEST REPORTS ON SELECT MATERIALS MUST BE SUBMITTED SHOWING THE MATERIAL MEETS REQUIRED GRADATION FOR TYPE I, II, OR III PRIOR TO PLACING AGGREGATE BASE.
4. THE REQUIREMENTS TO PUGMILL AGGREGATE BASE WILL BE WAIVED IN THE EVENT THAT THE SURFACE COURSE IS BEGINNING AT THE COMPLETION OF THE INSTALLATION OF THE AGGREGATE BASE. IN THE EVENT THAT THE SURFACE COURSE IS APPLIED PRIOR TO 60 DAYS, THE PUGMILL REQUIREMENT WILL APPLY.
5. THE USE OF AN AGGREGATE SPREADER IS REQUIRED WHEN PLACING AGGREGATE BASE.
6. BASE MUST BE APPROVED BY ENGINEER FOR DEPTH, TEMPLATE, AND COMPACTION BEFORE SURFACE TREATMENT IS APPLIED.
7. PRIME COAT MUST BE APPLIED TO BASE MATERIAL PRIOR TO PLACEMENT OF ASPHALT (PRIME COAT RC-250 @ 0.3 GAL./SQ. YD.).
8. BITUMINOUS SURFACE TO BE APPLIED IN ACCORDANCE WITH CURRENT VIRGINIA DEPARTMENT OF TRANSPORTATION SPECIFICATIONS.
9. ENCROACHMENT: POSTS, WALLS, SIGNS, OR SIMILAR ORNAMENTAL STRUCTURES THAT DO NOT ENHANCE A ROADWAY'S CAPACITY OR TRAFFIC SAFETY, SHALL NOT BE PERMITTED WITHIN THE RIGHT OF WAY. ONLY THOSE STRUCTURES SPECIFICALLY AUTHORIZED BY PERMIT ISSUED BY VIRGINIA DEPARTMENT OF TRANSPORTATION MAY BE LOCATED WITHIN THE STREETS RIGHT OF WAY.

INSPECTIONS

NOTE - MANDATORY INSPECTIONS ARE REQUIRED AT THE FOLLOWING PHASES:

i. INSTALLATION OF ANY ENCLOSED DRAINAGE SYSTEM BEFORE IT IS COVERED.
ii. INSTALLATION OF ANY ENCLOSED UTILITY PLACEMENTS WITHIN THE RIGHT-OF-WAY BEFORE BEING COVERED.
iii. CONSTRUCTION OF THE CUTS AND FILLS, INCLUDING FIELD DENSITY TESTS, BEFORE PLACEMENT OF ROADBED BASE MATERIALS.
iv. A FINAL PAVEMENT DESIGN, BASED ON ACTUAL SOIL CHARACTERISTICS AND CERTIFIED TESTS, SHALL BE COMPLETED AND APPROVED BEFORE THE PAVEMENT STRUCTURE IS PLACED.
v. PLACEMENT OF BASE MATERIALS, INCLUDING STONE DEPTHS, CONSISTENT WITH THE APPROVED PAVEMENT DESIGN, PRIOR TO PLACEMENT OF THE PAVING COURSE OR COURSES, FOLLOWED BY FIELD DENSITY AND MOISTURE TESTS AND THE PLACEMENT OF A PAVING COURSE AS SOON AS POSSIBLE.
vi. CONSTRUCTION OF PAVEMENT, INCLUDING DEPTH AND DENSITY, UPON COMPLETION AS PART OF THE FINAL INSPECTION.
vii. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING VDOT A MINIMUM OF ONE WEEK PRIOR TO EACH OF THE ABOVE PHASES OF CONSTRUCTION TO SCHEDULE AN INSPECTION.
viii. FAILURE OF THE CONTRACTOR TO SCHEDULE THESE INSPECTIONS WILL REQUIRE ADDITIONAL TESTING OF THE ROADS AT THE DISCRETION OF VDOT OR MAY LEAD TO THE ROADS NOT BEING ELIGIBLE FOR STATE MAINTENANCE.

ALBEMARLE COUNTY

GENERAL CONSTRUCTION NOTES

1. PRIOR TO ANY CONSTRUCTION WITHIN ANY EXISTING PUBLIC RIGHT-OF-WAY, INCLUDING CONNECTION TO ANY EXISTING ROAD, A PERMIT SHALL BE OBTAINED FROM THE VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT). THIS PLAN AS DRAWN MAY NOT ACCURATELY REFLECT THE REQUIREMENTS OF THE PERMIT. WHERE ANY DISCREPANCIES OCCUR THE REQUIREMENTS OF THE PERMIT SHALL GOVERN.
2. ALL MATERIALS AND CONSTRUCTION METHODS SHALL CONFORM TO CURRENT SPECIFICATIONS AND STANDARDS OF VDOT UNLESS OTHERWISE NOTED.
3. EROSION AND SILTATION CONTROL MEASURES SHALL BE PROVIDED IN ACCORDANCE WITH THE APPROVED EROSION CONTROL PLAN AND SHALL BE INSTALLED PRIOR TO ANY CLEARING, GRADING OR OTHER CONSTRUCTION.
4. ALL SLOPES AND DISTURBED AREAS ARE TO BE FERTILIZED, SEEDED, AND MULCHED.
5. THE MAXIMUM ALLOWABLE SLOPE IS 2:1 (HORIZONTAL:VERTICAL). WHERE REASONABLY OBTAINABLE, LESSER SLOPES OF 3:1 OR BETTER TO BE ACHIEVED.
6. PAVED, RIP-RAP, OR STABILIZATION MAT LINED DITCH MAY BE REQUIRED WHEN IN THE OPINION OF THE COUNTY ENGINEER, OR DESIGNEE, IT IS DEEMED NECESSARY IN ORDER TO STABILIZE A DRAINAGE CHANNEL.
7. ALL TRAFFIC CONTROL SIGNS SHALL CONFORM WITH THE VIRGINIA MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES.
8. UNLESS OTHERWISE NOTED, ALL CONCRETE PIPES SHALL BE REINFORCED CONCRETE PIPE-CLASS III.
9. ALL EXCAVATION FOR UNDERGROUND PIPE INSTALLATION MUST COMPLY WITH OSHA STANDARDS FOR THE CONSTRUCTION INDUSTRY (29 CFE PART 1926).

CONSTRUCTION FIRE PREVENTION NOTES:
1. SMOKING SHALL BE PROHIBITED IN AREAS WHERE SMOKING MAKES CONDITIONS SUCH AS TO MAKE SMOKING A HAZARD AND THESE AREAS SHALL BE DESIGNATED WITH NO SMOKING SIGNS PER VIRGINIA STATEWIDE FIRE PREVENTION CODE.
2. AREAS WHERE SMOKING CAN OCCUR, SHALL HAVE APPROPRIATE RECEPTACLES FOR DISCARDED SMOKING MATERIALS PER VIRGINIA STATEWIDE FIRE PREVENTION CODE.
3. PER THE VIRGINIA STATEWIDE FIRE PREVENTION CODE, VEHICULAR ACCESS FOR FIREFIGHTING SHALL BE PROVIDED AT ALL CONSTRUCTION AND DEMOLITION SITES, PROVIDE ACCESS TO WITHIN 100 FT. OF TEMPORARY OR PERMANENT FIRE DEPARTMENT CONNECTIONS, AND HAVE NO OVERHEAD WIRING OR OTHER OVERHEAD OBSTRUCTIONS LOWER THAN 13FT 6 INCHES; THIS ACCESS MAY BE VIA PERMANENT OR TEMPORARY ROAD, BUT SHALL BE CAPABLE OF SUPPORTING FIRE APPARATUS IN ALL WEATHER CONDITIONS.
4. CONTRACTOR SHALL ENSURE THE STREET NUMBERS ARE ALWAYS VISIBLE FROM THE FRONTAGE STREET DURING CONSTRUCTION PER THE VIRGINIA STATEWIDE FIRE CODE.
5. AN APPROVED WATER SUPPLY FOR FIREFIGHTING OPERATIONS SHALL BE IN PLACE AND AVAILABLE AS SOON AS COMBUSTIBLE MATERIALS ARRIVE ON SITE.
6. WASTE AND COMBUSTIBLE DEBRIS SHALL BE REMOVED FROM THE BUILDING AT THE END OF EACH DAY AND DISPOSED OF IN ACCORDANCE WITH THE VIRGINIA STATEWIDE FIRE CODE.
7. FIRE EXTINGUISHERS SHALL BE PROVIDED, WITH NOT LESS THAN ONE APPROVED FIRE EXTINGUISHER AT EACH STAIRWELL, ON ALL FLOOR LEVELS WHERE COMBUSTIBLE MATERIALS HAVE ACCUMULATED, IN EVERY STORAGE AND CONSTRUCTION SHED AND IN ARES OF SPECIAL; HAZARD, SUCH AS WHERE FLAMMABLE AND COMBUSTIBLE LIQUIDS ARE STORED OR USED, IN ACCORDANCE WITH THE VIRGINIA STATEWIDE FIRE CODE.
8. OPERATIONS INVOLVING THE USE OF CUTTING AND WELDING SHALL COMPLY WITH THE VIRGINIA STATEWIDE FIRE PREVENTION CODE AND SHALL REQUIRE A PERMIT FROM THE ALBEMARLE COUNTY FIRE MARSHAL'S OFFICE.

RIVANNA WATER & SEWER AUTHORITY (RWSA)

GENERAL WATER & SANITARY SEWER NOTES (April, 2016)

1. ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL COMPLY WITH THE LATEST VERSION OF THE GENERAL WATER AND SEWER DESIGN AND CONSTRUCTION STANDARDS - VERSION 1.0, ADOPTED IN DECEMBER 2015, EXCEPT AS MODIFIED BELOW OR MODIFIED IN SPECIAL NOTES.
2. RWSA SHALL APPROVE ALL CONSTRUCTION MATERIALS AND METHODS OF CONSTRUCTION. A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD WITH RWSA PRIOR TO THE START OF ANY WORK.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING MISS UTILITY (1-800-552-7001).
4. RWSA ENGINEER (VICTORIA FORT @ 434-977-2970, EXT. 205) SHALL BE NOTIFIED THREE BUSINESS DAYS PRIOR TO THE START OF CONSTRUCTION.
5. ALL WORK IS SUBJECT TO INSPECTION BY RWSA STAFF. NO TIE-INS TO THE EXISTING SYSTEM SHALL BE MADE WITHOUT COORDINATION WITH AND THE PRESENCE OF RWSA STAFF. NO WORK SHALL BE CONDUCTED ON RWSA FACILITIES ON WEEKENDS OR HOLIDAYS WITHOUT SPECIAL WRITTEN PERMISSION FROM RWSA.
6. FOR SANITARY SEWER LINE CONSTRUCTION: RWSA MAY REQUIRE BYPASS PUMPING FOR TIE-INS TO THE EXISTING SYSTEM. ALL DOGHOUSE MANHOLES MUST BE PRESSURE-TESTED BEFORE A CONNECTION IS MADE TO THE SYSTEM.
7. THE LOCATION OF EXISTING UTILITIES AS SHOWN ON THE PLANS IS FROM DATA AVAILABLE AT THE TIME OF DESIGN AND IS NOT NECESSARILY COMPLETE OR ACCURATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE VERIFICATION OF THE LOCATION, SIZE AND DEPTH OF ALL EXISTING UTILITIES, BOTH SURFACE AND SUBSURFACE. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN THE PLANS AND FIELD CONDITIONS. THE CONTRACTOR SHALL USE DUE DILIGENCE TO PROTECT ALL UTILITIES AND STRUCTURES FROM DAMAGE AT ALL TIMES, WHETHER SHOWN ON THE PLANS OR NOT. DAMAGE TO ANY EXISTING UTILITIES SHALL BE REPAIRED BY THE CONTRACTOR TO THE ORIGINAL CONDITION AT NO ADDITIONAL COST TO THE OWNER.
8. EROSION AND SEDIMENT CONTROL FACILITIES SHALL NOT BE PERMITTED IN THE RWSA EASEMENT WITHOUT SPECIAL PERMISSION FROM RWSA. NO GRADING SHALL BE PERMITTED IN THE RWSA EASEMENT UNLESS PERMITTED OTHERWISE BY RWSA IN WRITING.
9. NO BLASTING SHALL BE PERMITTED WITHIN 100 FEET OF RWSA FACILITIES WITHOUT WRITTEN PERMISSION AND RWSA APPROVAL OF THE BLASTING PLAN. GROUND MONITORING DURING BLASTING AND A PRE-BLAST SURVEY MAY BE REQUIRED. FOR BLASTING WITHIN 100 FEET OF ANY OPERATIVE RWSA SWERLINES, BYPASS PUMPING AND/OR PRE- AND POST-CCTV MAY BE REQUIRED. RWSA MAY ALSO REQUIRE CERTIFICATION FROM A LICENSED PROFESSIONAL ENGINEER STATING THAT THE PROPOSED BLASTING WILL NOT DAMAGE ANY RWSA FACILITIES. DAMAGE TO ANY UTILITIES DUE TO BLASTING SHALL BE REPAIRED BY THE CONTRACTOR TO THE ORIGINAL CONDITION AT NO ADDITIONAL COST TO THE OWNER.
10. THE CONTRACTOR SHALL OBSERVE MINIMUM SEPARATION REQUIREMENTS FOR UTILITY CROSSINGS. WHEN A CROSSING IS MADE UNDER AN EXISTING FACILITY, ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR THE EXISTING PIPE. THE AREA OF THE CROSSING SHALL BE BACKFILLED WITH COMPACTED 57 STONE TO THE SPRINGLINE OF THE EXISTING PIPE.
11. NEW WATER MAIN INSTALLATIONS SHALL BE PRESSURE TESTED, CHLORINATED, FLUSHED AND HAVE WATER SAMPLES APPROVED PRIOR TO MAKING ANY PERMANENT CONNECTION TO THE PUBLIC WATER SYSTEM. APPROVED METHODS OF FILLING AND FLUSHING NEW WATER MAINS WILL BE REQUIRED TO PREVENT ANY CONTAMINATION OF THE PUBLIC WATER SYSTEM.
12. ALL EASEMENTS FOR NEW RWSA FACILITIES SHALL BE RECORDED PRIOR TO PLACING THE NEW FACILITIES INTO SERVICE.
13. NO PERMANENT STRUCTURAL FACILITIES WILL BE PERMITTED IN THE RWSA EASEMENT. THIS INCLUDES BUILDING OVERHANGS, RETAINING WALLS, FOOTERS FOR ANY STRUCTURE, DRAINAGE STRUCTURES, ETC.
14. TREES ARE NOT PERMITTED IN THE RWSA EASEMENT.

ALBEMARLE COUNTY SERVICE AUTHORITY (ACSA)

GENERAL WATER & SEWER CONDITIONS (September 14, 2021)

1. WORK SHALL BE SUBJECT TO INSPECTION BY ALBEMARLE COUNTY SERVICE AUTHORITY (ACSA) INSPECTORS. THE CONTRACTOR WILL BE RESPONSIBLE FOR NOTIFYING THE PROPER ACSA OFFICIALS AT THE START OF THE WORK.
2. THE ALBEMARLE COUNTY SERVICE AUTHORITY SHALL HAVE ACCESS TO USE THE AIRSPACE ABOVE THE LOCATIONS OF CONSTRUCTION FOR THE FLIGHT OF UNMANNED AERIAL VEHICLES FOR THE PURPOSE OF IMAGERY COLLECTION.
3. THE LOCATION OF EXISTING UTILITIES ACROSS THE LINE OF THE PROPOSED WORK ARE NOT NECESSARILY SHOWN ON THE PLANS AND WHERE SHOWN ARE ONLY APPROXIMATELY CORRECT. THE CONTRACTOR SHALL, ON HIS OWN INITIATIVE, LOCATE ALL UNDERGROUND LINES AND STRUCTURES, AS NECESSARY.
4. ALL MATERIALS AND CONSTRUCTION SHALL COMPLY WITH THE CURRENT EDITION OF THE GENERAL WATER AND SEWER CONSTRUCTION SPECIFICATIONS, AS ADOPTED BY THE ACSA.
5. DATUM FOR ALL ELEVATIONS SHOWN IN NATIONAL GEODETIC SURVEY.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING MISS UTILITY (1-800-552-7001).
7. ALL WATER AND SEWER PIPES SHALL HAVE A MINIMUM OF THREE AND A HALF (3.5) FEET OF COVER MEASURED FROM THE TOP OF PIPE, OVER THE CENTERLINE OF PIPE. THIS INCLUDES ALL FIRE HYDRANT LINES, SERVICE LATERALS AND WATER LINES, ETC.
8. ALL WATER AND SEWER APPURTENANCES ARE TO BE LOCATED OUTSIDE OF ROADSIDE DITCHES.
9. VALVES ON DEADEND LINES SHALL BE RODDED TO PROVIDE ADEQUATE RESTRAINT FOR THE VALVE DURING A FUTURE EXTENSION OF THE LINE.
10. TREES ARE NOT PERMITTED IN THE ACSA EASEMENT.
11. THE CONTRACTOR SHALL BE RESPONSIBLE TO COMPLY WITH THE NO-LEAD REGULATION REGARDING BRASS FITTINGS EFFECTIVE JANUARY 4, 2014 (SENATE BILL 3874 WHICH AMENDS THE SAFE DRINKING WATER ACT).
12. THE SEWER LATERAL BEYOND THE CONNECTION AT THE SEWER MAIN SHALL BE PRIVATE. THE SEWER LATERAL STUB-OUT SHALL UNDERGO THE ACSA LOW-PRESSURE AIR TEST TO SATISFY COUNTY TESTING REQUIREMENTS. VISUAL INSPECTION OF THE SEWER LATERAL STUB-OUT SHALL BE WITNESSED BY THE COUNTY BUILDING INSPECTIONS DEPARTMENT. THIS INSPECTION SHALL OCCUR UNDER AN "OTHER PLUMBING" PERMIT WHICH MUST BE OBTAINED BY THE CONTRACTOR.
13. THE SEWER LATERAL BEYOND THE CONNECTION AT A MANHOLE SHALL BE PRIVATE. VISUAL INSPECTION AND PRESSURE TESTING OF THE SEWER LATERAL SHALL BE WITNESSED BY THE COUNTY BUILDING INSPECTIONS DEPARTMENT. THIS INSPECTION SHALL OCCUR UNDER AN "OTHER PLUMBING" PERMIT WHICH MUST BE OBTAINED BY THE CONTRACTOR.
14. THE FIRE SPRINKLER MAIN DOWNSTREAM OF THE GATE VALVE IS PRIVATE. VISUAL INSPECTION AND TESTING OF THE FIRE SPRINKLER MAIN DOWNSTREAM OF THE GATE VALVE SHALL BE WITNESSED BY THE COUNTY BUILDING INSPECTIONS DEPARTMENT. THIS INSPECTION SHALL OCCUR UNDER AN "OTHER PLUMBING" PERMIT WHICH MUST BE OBTAINED BY THE CONTRACTOR.
15. ALL FLUSHING OF FIRE SPRINKLER MAINS SHALL NOT OCCUR UNTIL APPROVAL IS GIVEN BY THE ACSA.
16. PRIOR TO BACKFLOW PREVENTION DEVICE TESTING AND THE ESTABLISHMENT OF WATER SERVICE, ALL BACKFLOW PREVENTION DEVICE INSTALLATIONS SHALL MEET THE ACSA BACKFLOW REQUIREMENTS AS DETAILED IN SECTION 8 OF THE MOST RECENT REVISION OF THE ACSA RULES AND REGAULTIONS.
17. A DEED OF EASEMENT AND EASEMENT PLAT FOR THE UTILITY EASEMENTS, APPROVED BY THE ACSA, SHALL BE RECORDED PRIOR TO ANY WATER AND/OR SEWER SERVICE BEING ESTABLISHED.

COMMONWEALTH OF VIRGINIA
SCOTT R. COLLINS
No. 35791
5/12/23
PROFESSIONAL ENGINEER

REVISIONS

DATE	REVISION DESCRIPTION
2/06/23	INITIAL PLAN SUBMITTAL
5/12/23	REVISED PER COUNTY COMMENTS

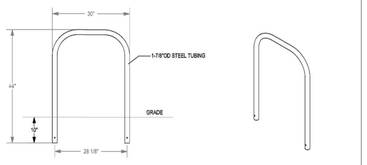
CE COLLINS ENGINEERING
200 GARRETT STREET, SUITE K-CHARLOTTESVILLE, VA 22902 -434.293.3719

PROJECT: CVILLE RIO ROAD APARTMENTS - FINAL SITE PLAN
SHEET: NOTES & DETAILS

JOB NO. 202202
SCALE N/A
SHEET NO. 6

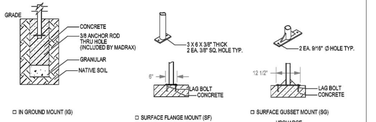
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MADRAX DIVISION
GRABER MANUFACTURING, INC.
1060 LINDEN DRIVE
WAUNAKEE, WI 53597
P:(800) 446-7931, P:(608) 849-4100, F:(608) 849-4299
WWW.MADRAX.COM, E-MAIL: SALES@MADRAX.COM



ELEVATION VIEW

CHECK DESIRED MOUNT ☐



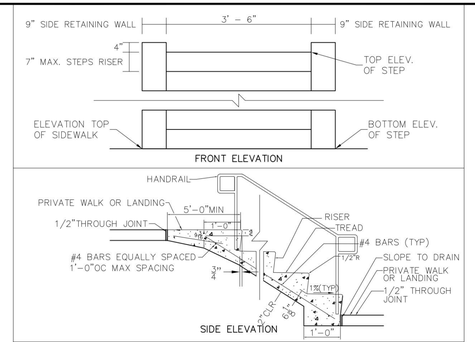
☐ IN GROUND MOUNT (IG) ☐ SURFACE FLANGE MOUNT (SF) ☐ SURFACE GUSSET MOUNT (SG)
SECTION VIEWS UPCHARGE

PRODUCT: UX190-IG(SF,SG)
DESCRIPTION: 12 BIKE RACK
2 BIKE, SURFACE OR IN GROUND MOUNT
DATE: 3-8-14
ENG: BMC

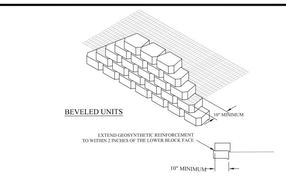
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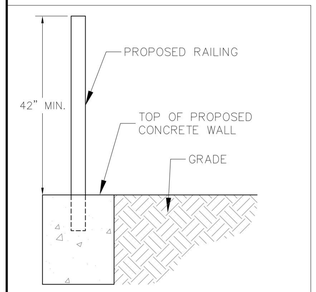
NOTES:
1. INSTALL BIKE RACKS ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
2. IF RACKS OUT TO SELECT COLOR/FINISH, SEE MANUFACTURER'S SPECIFICATIONS.
3. SEE SITE PLAN FOR LOCATION OR CONSULT OWNER.



CONCRETE STEPS DETAIL
NOT TO SCALE



SEGMENTED WALL DETAIL
DIAMOND PRO (TAN)
NOT TO SCALE

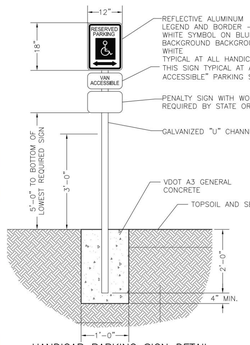


WALL RAIL FASTENING DETAIL
NOT TO SCALE

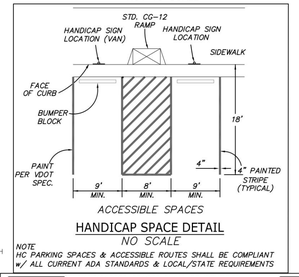
NOTE: RETAINING WALLS GREATER THAN 3' IN HEIGHT REQUIRE A SEPARATE BUILDING PERMIT. WALLS EXCEEDING 4' IN HEIGHT REQUIRE A STAMPED ENGINEERED DESIGN PLAN. WALLS REQUIRED INSPECTIONS AS OUTLINED IN THE USBC. FINAL STRUCTURAL WALL DESIGN TO BE SUBMITTED WITH STRUCTURAL ENGINEERING PLANS.

RETAINING WALL – HANDRAIL DETAIL
42" HIGH AMERISTAR BLACK SECURITY FENCING
(MAJESTIC – AEGIS PLUS)





HANDICAP PARKING SIGN DETAIL
NOT TO SCALE
ONE AT EACH HANDICAP SPACE. WHERE HANDICAP SPACES FACE EACH OTHER WITHOUT WALKWAY, THERE SHALL BE ONE POST WITH SIGNS MOUNTED BOTH SIDES



ACCESSIBLE SPACES

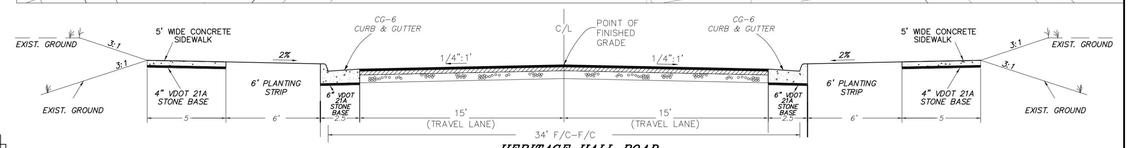
HANDICAP SPACE DETAIL
NO SCALE

NOTE:
HC PARKING SPACES & ACCESSIBLE ROUTES SHALL BE COMPLIANT W/ ALL CURRENT ADA STANDARDS & LOCAL/STATE REQUIREMENTS

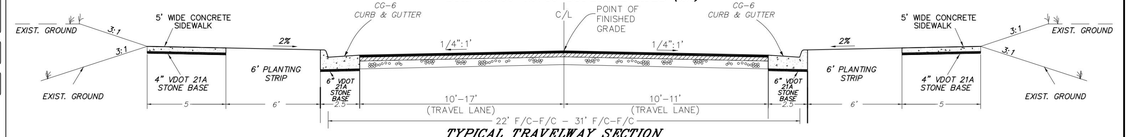


HANDICAPPED PARKING SIGNS
NO SCALE

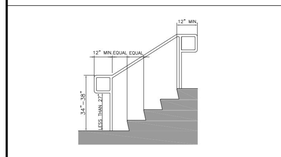


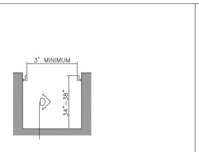


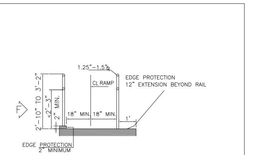
HERITAGE HALL ROAD
(PROPOSED PRIVATE TRAVELWAY)
DESIGN SPEED: 15 MPH
STA. 12+00–12+50 SUPERELEVATED (2%)

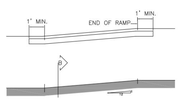


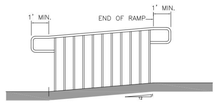
TYPICAL TRAVELWAY SECTION
(PROPOSED PRIVATE TRAVELWAY)
DESIGN SPEED: 15 MPH
HERITAGE HALL ROAD:
STA. 12+00–15+67 SUPERELEVATED (2%)
STA. 13+00–15+20 7' PARKING AISLE

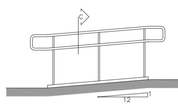






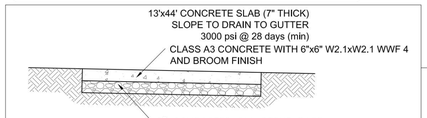




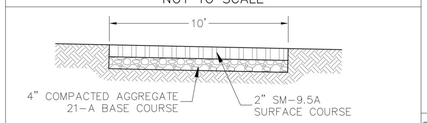


RAMPS - NOTES:
- The maximum slope of a ramp that serves any exitway, provides access for persons with disabilities, or is in the path of travel shall be 1' rise in 12' of horizontal run. (sec 1133b.5.3)
- The cross slope of ramp surfaces shall be no greater than 1:50. (1/4" per ft) (sec 1133b.5.3.1)
- The width of ramps shall be as required for stairways and exits. (sec 1133b.5.2 fig 1 11b-38 & 39)
- Pedestrian ramps serving primary entrances to buildings having an occupant load of 300 or more shall have a minimum clear width of 60". (sec 1133b.5.2)
- All other pedestrian ramps serving primary entrances shall have a minimum width of 48". (sec 1133b.5.2)
- Landings shall be provided at the top and bottom of each ramp. (sec 1133b.5.4.1 fig 11b-38 & 39)
- Intermediate landings shall be provided at intervals not exceeding 30" of vertical rise and at each change of direction. (sec 1133b.5.4.1 fig 11b-38 & 39)
- Top landings shall be not less than 60" wide and shall have a length of not less than 60" in the direction of ramp run. (sec 1133b 5.4.2 fig 11b-38 & 39)
- Doors in any position shall not reduce the minimum dimension of the ramp landing to less than 42" and shall not reduce the required width by more than 3" when fully open. (sec 1133b.5.4.3 fig 11b-38 & 39)
- The width of the landing shall extend 24" past the strike edge of any door or gate for exterior ramps and 18" past the strike edge for interior ramps. (sec 1133b.5.4.4 fig 11b-39)
- At bottom and intermediate landings, the width shall be at least the same as required for the ramp. (sec 1133b.5.4.5 fig 11b-38 & 39)
- Intermediate landing at a change of direction in excess of 30 degrees and bottom landings shall have a dimension in the direction of ramp run of not less than 72" to accommodate the handrail extension. (sec 1133b.5.4.6 fig 11b-38 & 39)
- Other intermediate landings shall have a dimension in the direction of ramp run of not less than 60". (sec 1133b.5.4.7 fig 11b-38)
- Ramp landings are not considered in determining the maximum horizontal distance of each ramp. (fig. 11b-38 & 39)
- Handrails are required on ramps that provide access if the ramp slope exceeds 1' rise in 20' of horizontal run. (sec 1133b.5.5.1)
- Handrails shall be placed on each side of each ramp, shall be continuous the full length of the ramp, shall be 34" to 38" above the ramp surface, shall extend a minimum of 1' beyond the top and bottom of the ramp, and the ends shall be resumed. (sec 1133b.5.5.1 fig 11b-27 (b) & (c)
- The grip portion of handrails shall be not less than 1-1/4" nor more than 1-1/2", or the shape shall provide an equivalent gripping surface, and all surfaces shall be smooth with no sharp corners. handrails shall not rotate within their fittings. (sec 1133b.5.5.1 fig 11b-36)
- Handrails projecting from a wall shall have a space of 1-1/2" between the wall and the handrail. (sec 1133b.5.5.1 fig 11b-36)
- Handrails may be located in a recess if the recess is a maximum of 3" deep and extends at least 18" above the top of the rail. (sec 1133b.5.5.1 fig 11b-36)
- Any wall or other surface adjacent to handrails shall be free of sharp or abrasive elements. Edges shall have a minimum radius of 1/8". (sec 1133b.5.5.1 fig 11b-36)
- Where the ramp surface is not bounded by a wall or fence and the ramp exceeds 10' in length, the ramp shall comply with one of the following requirements: (sec 1133b.5.6 fig 11b-27(b) & (c))
  a. A guide curb a minimum of 2" in height shall be provided at each side of the ramp;
  b. A wheel guide rail shall be provided, centered 3" ± 1" above the surface of the ramp.
- Outdoor ramps and their approaches shall be designed and constructed so that water will not accumulate on walking surfaces. (1133b.5.8)

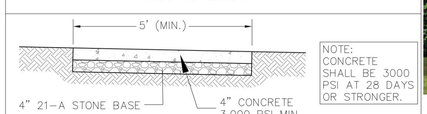
TYPICAL HANDRAILS AT RAMPS
DETAILS & DRAWINGS PER ADA REGULATIONS – AMERICANS WITH DISABILITIES ACT 1994
NOT TO SCALE



CONCRETE DUMPSTER PAD & MAIL KIOSK DETAIL
NOT TO SCALE



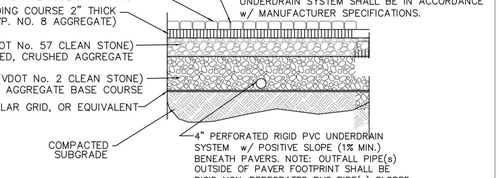
ASPHALT PEDESTRIAN PATHWAY DETAIL
CLASS A – TYPE 1 LOW-MAINTENANCE
NOT TO SCALE



CONCRETE SIDEWALK & BIKE PAD DETAIL
NOT TO SCALE



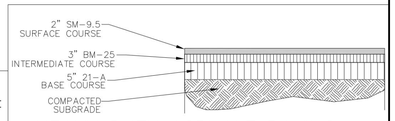
CLUBHOUSE HVAC SCREENING FENCE
WHITE VINYL FENCING
42" HIGH MIN.



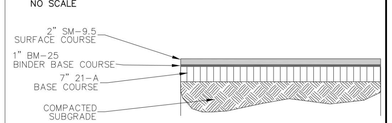
NOTE:
1. EACH LAYER/LIFT OF NO. 2 AND NO. 57 STONE REQUIRES A MINIMUM CENTRIFUGAL FORCE COMPACTION OF 53,000.
2. CONSTRUCTION & PREPARATION OF PERMEABLE PAVERS, STONE BASE AND UNDERDRAIN SYSTEM SHALL BE IN ACCORDANCE w/ MANUFACTURER SPECIFICATIONS.

PERMEABLE PAVERS PAVEMENT DESIGN
NO SCALE

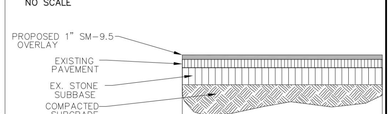
NOTES:
1. BECAUSE THE SOIL UNDERNEATH THE PROPOSED LOCATION OF THE PAVERS IS FROM PREVIOUS CONSTRUCTION ACTIVITY, THE CONTRACTOR SHALL CONDUCT A GEOTECHNICAL INVESTIGATION OF THE SOIL UNDERNEATH THE PROPOSED PAVERS AFTER FINAL GRADE HAS BEEN ACHIEVED TO DETERMINE THE INFILTRATION AND CBR RATINGS. CONTRACTOR SHALL PROVIDE THE ENGINEER WITH THESE RESULTS PRIOR TO ORDERING AND INSTALLATION OF THE STONE BASE FOR THE PERMEABLE PAVERS TO ENSURE AN ADEQUATE DESIGN.
2. ALL OPEN GRADED STONE LAYERS SHALL BE CLEAN & DOUBLE WASHED IN ACCORDANCE WITH DCR REGULATIONS. "CLEAN" STONE IS SCREENED TO SIZE AND THE BULK OF THE FINES/DUST IS REMOVED, BUT THERE IS STILL DUST ON THE STONE. "WASHED" STONE IS WASHED THROUGH THE SCREENING PROCESS AND/OR MANUALLY WASHED.
3. WHERE UNDERDRAIN CLEANOUTS ARE PROPOSED WITHIN PAVED AREAS & ARE SUBJECT TO VEHICULAR TRAFFIC, CLEANOUTS SHALL BE ENCASED IN #18" CONCRETE FOR THE UPPER 24". THE CLEANOUT FRAME & LID SHALL BE CONSTRUCTED OF CAST IRON, OR A SIMILAR MATERIAL THAT IS STRUCTURALLY FORTIFIED.



HEAVY DUTY ASPHALT PAVING – TRAVELWAYS
NO SCALE



LIGHT DUTY ASPHALT PAVING – PARKING LOT & PARKING SPACES
NO SCALE



ASPHALT PAVING – MILL/OVERLAY
NO SCALE

REVISIONS

DATE	REVISION DESCRIPTION
2/06/23	INITIAL PLAN SUBMITTAL
5/12/23	REVISED PER COUNTY COMMENTS
7/28/23	REVISED PER COUNTY COMMENTS

COMMONWEALTH OF VIRGINIA
SCOTT R. COLLINS
No. 35791
7/28/23
PROFESSIONAL ENGINEER

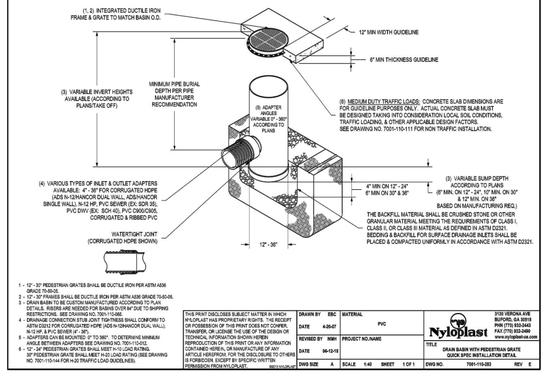
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200 GARRETT STREET, SUITE K-CHARLOTTESVILLE, VA 22902 -434.293.3719

PROJECT: CVILLE RIO ROAD APARTMENTS - FINAL SITE PLAN
SHEET: NOTES & DETAILS

JOB NO. 202202
SCALE N/A
SHEET NO. 7

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NYLOPLAST DRAIN BASIN WITH PEDESTRIAN GRATE



1 - 12" - 30" PEDESTRIAN GRATES SHALL BE DUCTILE IRON PER ASTM A536 GR 65-45-12 (70-56-03).
2 - 12" - 30" FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
3 - DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 84" DUE TO SHIPPING RESTRICTIONS. SEE DRAWING NO. 7001-110-060.
4 - DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR PVC SEWER, ASTM F477 FOR HDPE (ADS N-12/HANCOR DUAL WALL), N-12 HP, & PVC SEWER (PI, SDR 35).
5 - ADAPTERS CAN BE MOUNTED 7° TO 360°. TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-063.
6 - 12" - 24" PEDESTRIAN GRATES SHALL MEET H-10 LOAD RATING. 30" PEDESTRIAN GRATE SHALL MEET H-20 LOAD RATING (SEE DRAWING NO. 7001-110-144 FOR H-20 TRAFFIC LOAD GUIDELINES).

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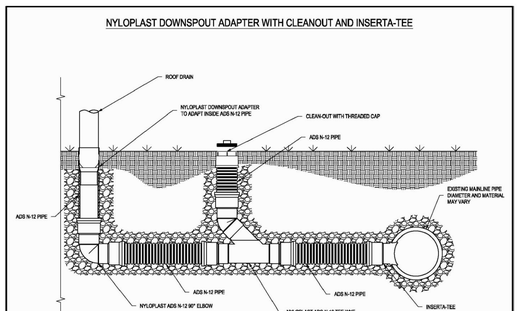
DRAWN BY	EBC	MATERIAL	PVC
DATE	4-28-07		
REVISED BY	MAH	PROJECT NO./NAME	
DATE	06-12-13		
DWG SIZE	A	SCALE 1:40	SHEET 1 OF 1

Nyloplast — 2100 VERONA AVE BUFORD, GA 30518 PHN (770) 933-2400 FAX (770) 933-2440 www.nyloplastusa.com

TITLE: DRAIN BASIN WITH PEDESTRIAN GRATE QUICK SPEC INSTALLATION DETAIL

DWG NO. 7001-110-203 REV E

NYLOPLAST DOWNSPOUT ADAPTER WITH CLEANOUT AND INSERTA-TEE



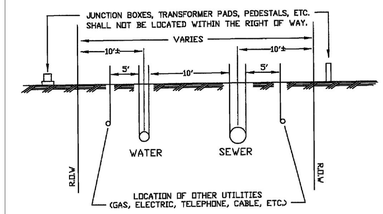
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DRAWN BY	MAH	MATERIAL	
DATE	8-28-15		
CHKD BY	MAH	PROJECT NO./NAME	
DATE	8-28-15		
DWG SIZE	A	SCALE 1:16	SHEET 1 OF 1

Nyloplast — 2100 VERONA AVE BUFORD, GA 30518 PHN (770) 933-2400 FAX (770) 933-2440 www.nyloplastusa.com

TITLE: NYLOPLAST DOWNSPOUT ADAPTER WITH CLEANOUT AND INSERTA-TEE

DWG NO. 8800-110-074 REV A



EASEMENT WIDTHS: WATER OR SEWER ONLY – 20' MINIMUM
WATER & SEWER ——— 30' MINIMUM

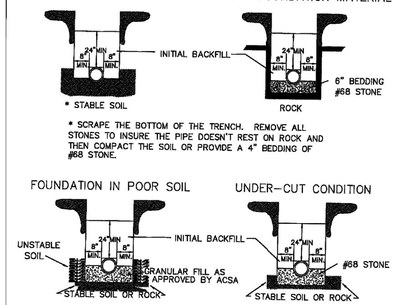
* SEE PART 3, PARAGRAPH D) SEPARATION OF WATER & SEWER SYSTEMS.

UTILITIES CROSSING A WATER OR SEWER EASEMENT SHOULD BE AT 90° TO THE RIGHT OF WAY.

UTILITY LOCATIONS & EASEMENT WIDTHS

NTS
FIG. W-1

TD-1



* SCRAPE THE BOTTOM OF THE TRENCH. REMOVE ALL STONES TO INSURE THE PIPE DOESN'T REST ON ROCK AND THEN COMPACT THE SOIL OR PROVIDE A 4" BEDDING OF #68 STONE.

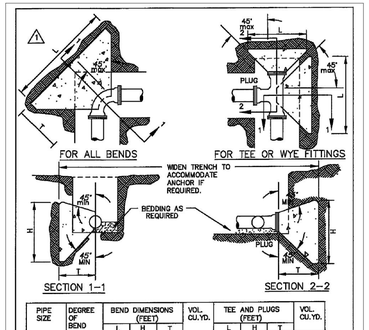
NOTE :

1. NO ROCKS SHALL BE ALLOWED WITHIN 24" OF THE WATER LINES.
2. NO ROCKS LARGER THAN 6" IN ANY DIMENSION SHALL BE ALLOWED ABOVE THE INITIAL BACKFILL.
3. THE INITIAL BACKFILL SHALL BE PLACED AND COMPACTED IN 6" LIFTS.
4. NO ORGANIC OR FROZEN MATERIAL OR DEBRIS SHALL BE ALLOWED IN THE TRENCH.
5. BELL HOLES SHALL BE DUG OUT IN ALL CASES.

DUCTILE IRON WATER PIPE INSTALLATION & BEDDING

NTS
FIG. W-2

TD-2



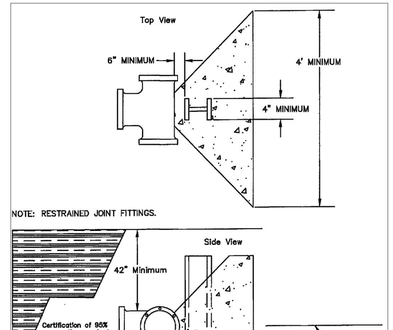
PIPE SIZE	DEGREE OF BEND	BEND DIMENSIONS (FEET) L	H	T	VOL. CU.YD.	TEE AND PLUGS (FEET) L	H	T	VOL. CU.YD.
4" & 6"	90	2.50	2.50	3.09	0.24	2.00	2.25	2.50	0.15
	45	2.00	2.25	2.60	0.15				
	22 1/2	1.50	2.00	2.52	0.10				
	11 1/4	1.50	2.00	2.50	0.10				
8"	90	3.66	3.16	3.21	0.48	3.16	2.91	2.66	0.32
	45	2.85	2.66	2.77	0.26				
	22 1/2	1.66	2.16	2.69	0.13				
	11 1/4	1.66	2.16	2.67	0.13				
10" & 12"	90	4.83	3.83	3.42	0.83	3.83	4.00	2.83	0.52
	45	3.33	3.58	2.95	0.43				
	22 1/2	2.33	2.58	2.86	0.24				
	11 1/4	1.83	2.33	2.84	0.18				

1. THRUST BLOCKS ARE REQUIRED WHENEVER THE PIPELINE : CHANGES DIRECTION, CHANGES SIZE, DEAD ENDS AND AT VALVES.
2. USE 2500 P.S.I. CONCRETE.
3. NO CONCRETE SHALL BE POURED ON ANY PART OF THE JOINT.
4. THE CONSULTING ENGINEER SHALL BE RESPONSIBLE TO THE VERIFY THE TYPE & SIZE OF ALL THRUST BLOCKS.

CONCRETE THRUST BLOCKS

NTS
FIG. W-3

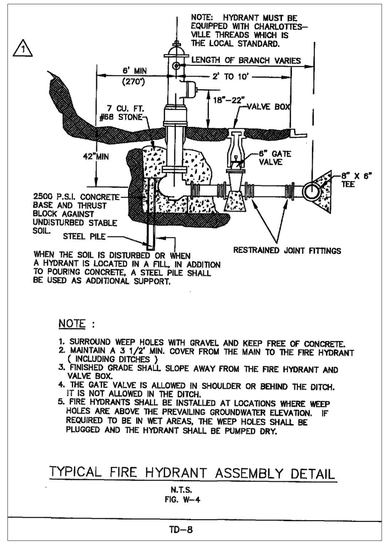
TD-3



TYPICAL THRUST BLOCK IN FILL AREA

NTS
FIG. W-3B

TD-5



WHEN THE SOIL IS DISTURBED OR WHEN A HYDRANT IS LOCATED IN A FILL, IN ADDITION TO POURING CONCRETE, A STEEL PILE SHALL BE USED AS ADDITIONAL SUPPORT.

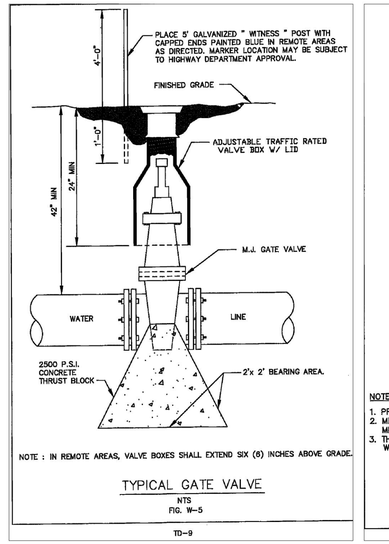
NOTE :

1. SURROUND WEEP HOLES WITH GRAVEL AND KEEP FREE OF CONCRETE.
2. MAINTAIN A 3 1/2' MIN. COVER FROM THE MAIN TO THE FIRE HYDRANT (INCLUDING DITCHES)
3. FINISHED GRADE SHALL SLOPE AWAY FROM THE FIRE HYDRANT AND VALVE BOX.
4. THE GATE VALVE IS ALLOWED IN SHOULDER OR BEHIND THE DITCH. IT IS NOT ALLOWED IN THE DITCH.
5. FIRE HYDRANTS SHALL BE INSTALLED AT LOCATIONS WHERE WEEP HOLES ARE ABOVE THE PREVAILING GROUNDWATER ELEVATION. IF REQUIRED TO BE IN WET AREAS, THE WEEP HOLES SHALL BE PLUGGED AND THE HYDRANT SHALL BE PUMPED DRY.

TYPICAL FIRE HYDRANT ASSEMBLY DETAIL

N.T.S.
FIG. W-4

TD-8

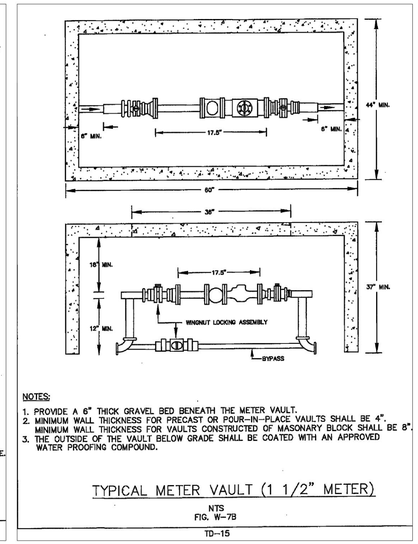


NOTE : IN REMOTE AREAS, VALVE BOXES SHALL EXTEND SIX (6) INCHES ABOVE GRADE.

TYPICAL GATE VALVE

NTS
FIG. W-5

TD-9



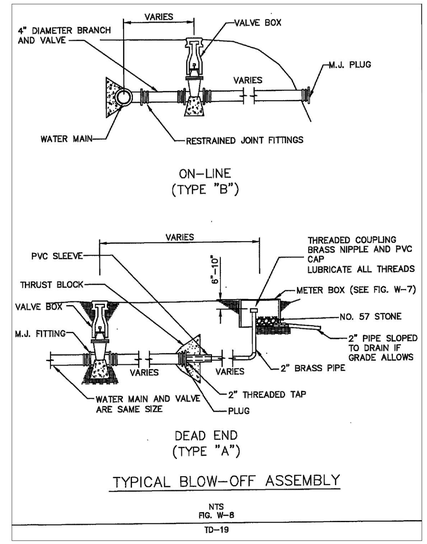
NOTES:

1. PROVIDE A 6" THICK GRAVEL BED BENEATH THE METER VAULT.
2. MINIMUM WALL THICKNESS FOR PRECAST OR POUR-IN-PLACE VAULTS SHALL BE 4". MINIMUM WALL THICKNESS FOR VAULTS CONSTRUCTED OF MASONARY BLOCK SHALL BE 8".
3. THE OUTSIDE OF THE VAULT BELOW GRADE SHALL BE COATED WITH AN APPROVED WATER PROOFING COMPOUND.

TYPICAL METER VAULT (1 1/2" METER)

NTS
FIG. W-7B

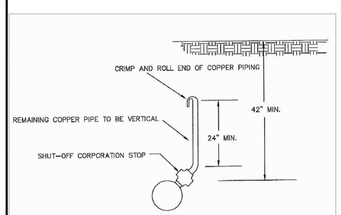
TD-15



TYPICAL BLOW–OFF ASSEMBLY

NTS
FIG. W-8

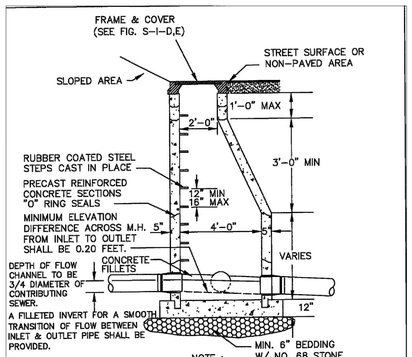
TD-19



TYPICAL SERVICE TAP ABANDONMENT

NTS
FIG. W-6B

TD-11



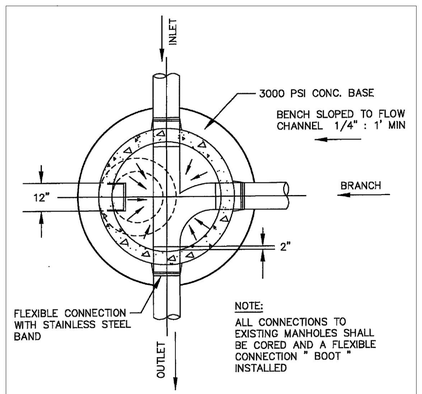
NOTE :

1. BEDDING THICKNESS REQUIREMENT SHOWN IS MINIMUM AND SHALL BE SPECIFICALLY DETERMINED BY THE CONSULTANT FOR THE SOIL CONDITIONS.
2. THE CONSULTANT WILL DETERMINE WHETHER MANHOLES SHALL HAVE EXTENDED OR NON–EXTENDED BASES.
3. ALL JOINTS, LIFT HOLES, INLETS, OUTLETS TO BE SEALED & GROUTED INSIDE AND OUT.

TYPICAL MANHOLE SECTION SHOWING BRANCH TIE–IN

N.T.S
FIG. S–I–A

TD-25

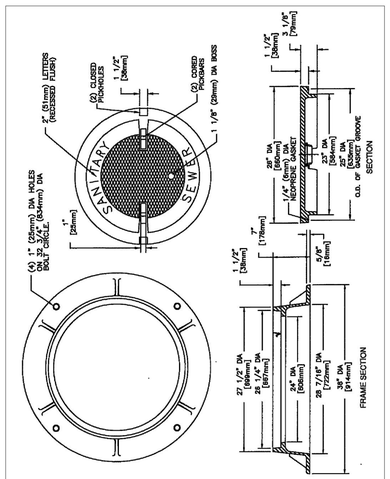


NOTE:
ALL CONNECTIONS TO EXISTING MANHOLES SHALL BE CORED AND A FLEXIBLE CONNECTION " BOOT " INSTALLED

TYPICAL MANHOLE PLAN SHOWING BRANCH TIE – IN

NTS
FIG. S–I–B

TD-27



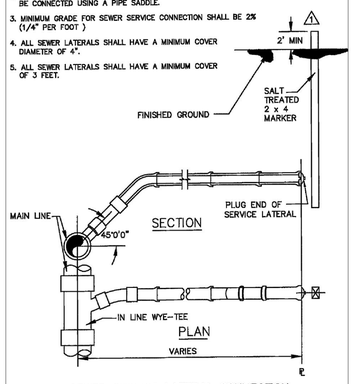
TYPICAL MANHOLE FRAME & COVER

N.T.S
FIG S-I-D

TD-31

SEWER SERVICE LATERAL CONNECTION NOTES:

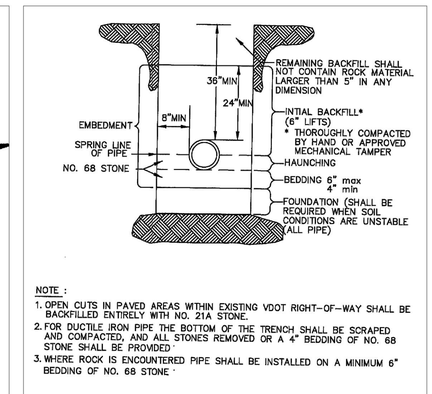
1. WHERE A SEWER SERVICE LATERAL CONNECTS TO A MANHOLE AND NO INVERT ELEVATION FOR THE SERVICE LATERAL IS INDICATED , THE TOP (CROWN) ELEVATION OF THE SERVICE LATERAL PIPE SHALL BE AT LEAST 0.2' HIGHER THAN THE TOP (CROWN) ELEVATION OF THE THE LOWEST PIPE CONNECTED TO THE MANHOLE.
2. SEWER LATERALS TAPPED INTO AN EXISTING SEWER MAIN SHALL BE CONNECTED USING A PIPE SADDLE.
3. MINIMUM GRADE FOR SEWER SERVICE CONNECTION SHALL BE 2% (1/4" PER FOOT)
4. ALL SEWER LATERALS SHALL HAVE A MINIMUM COVER DIAMETER OF 4".
5. ALL SEWER LATERALS SHALL HAVE A MINIMUM COVER OF 3 FEET.



SEWER SERVICE LATERAL CONNECTION

N.T.S.
FIG. S–2

TD-33



NOTE :

1. OPEN CUTS IN PAVED AREAS WITHIN EXISTING VDOT RIGHT–OF–WAY SHALL BE BACKFILLED ENTIRELY WITH NO. 21A STONE.
2. FOR DUCTILE IRON PIPE THE BOTTOM OF THE TRENCH SHALL BE SCRAPED AND COMPACTED, AND ALL STONES REMOVED OR A 4" BEDDING OF NO. 68 STONE SHALL BE PROVIDED.
3. WHERE ROCK IS ENCOUNTERED PIPE SHALL BE INSTALLED ON A MINIMUM 6" BEDDING OF NO. 68 STONE.

TYPICAL SEWER PIPE INSTALLATION IN TRENCH

NTS
FIG. S–3

TD-34

COMMONWEALTH OF VIRGINIA
SCOTT R. COLLINS
No. 35791
5/12/23
PROFESSIONAL ENGINEER

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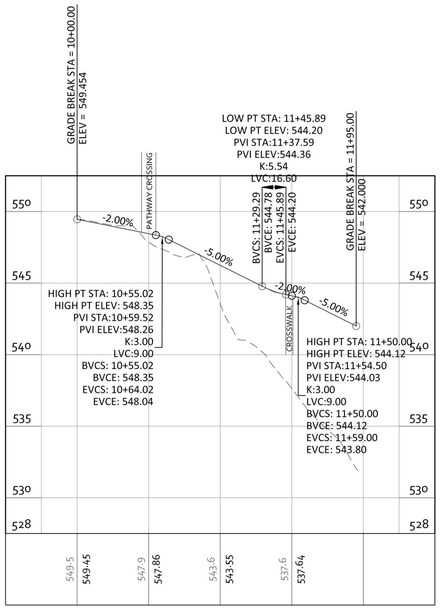
PROJECT: CVILLE RIO ROAD APARTMENTS - FINAL SITE PLAN

SHEET: NOTES & DETAILS

JOB NO. 202202
SCALE N/A
SHEET NO. 8

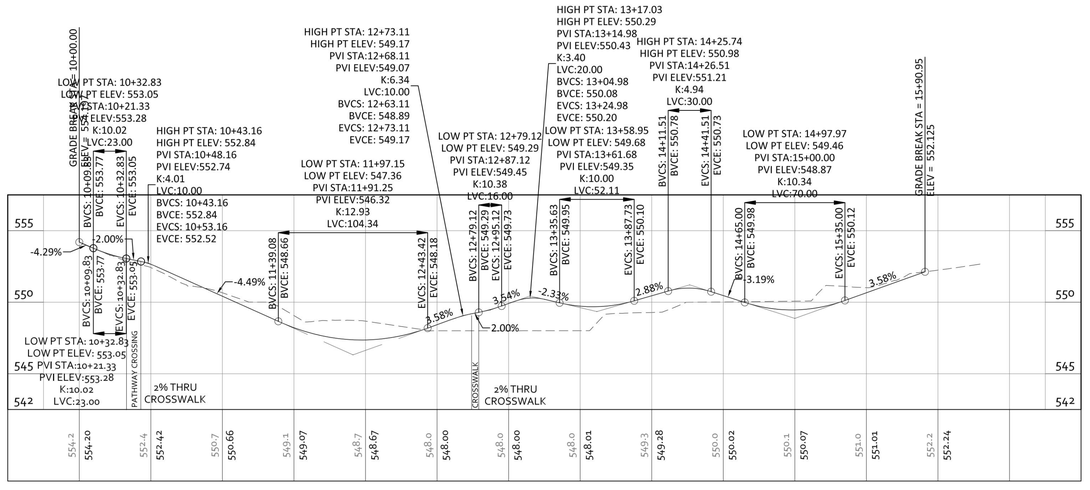
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NOTES:
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2. CLASS I BACKFILL MATERIAL SHALL BE CRUSHER RUN AGGREGATE SIZE NO. 25 OR 26, AGGREGATE BASE MATERIAL SIZE 21A OR 21B, FLOWABLE FILL, CONFORMING TO SECTIONS 205, 208, OR 249 RESPECTIVELY; OR CRUSHED GLASS CONFORMING TO THE SIZE REQUIREMENTS FOR CRUSHER RUN AGGREGATE SIZE 25 OR 26, PER VDOT 2020 ROAD AND BRIDGE SPECIFICATIONS, SECTIONS 302.03(a)2G "BACKFILLING".
3. ALL FILL TO BE PLACED AT 95% COMPACTION.
4. MINIMUM 3' OF COVER MUST BE MAINTAINED OVER SANITARY SEWER MAINS.
5. MINIMUM 3.5' OF COVER MUST BE MAINTAINED OVER WATERLINE MAINS.
6. MINIMUM 1.5' OF VERTICAL SEPARATION BETWEEN STORM SEWER AND WATERLINE.
7. MINIMUM 1.5' OF VERTICAL SEPARATION BETWEEN SANITARY SEWER AND WATERLINE.



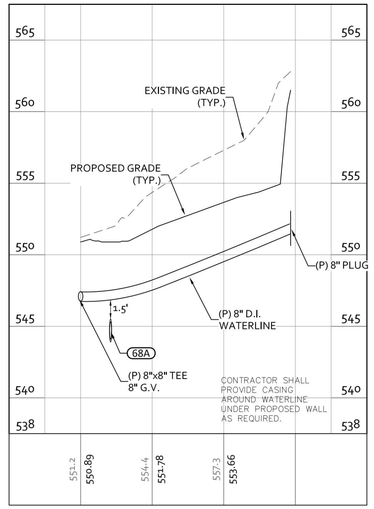
LARIAT STREET

PRIVATE ROADWAY
DESIGN SPEED = 15 MPH

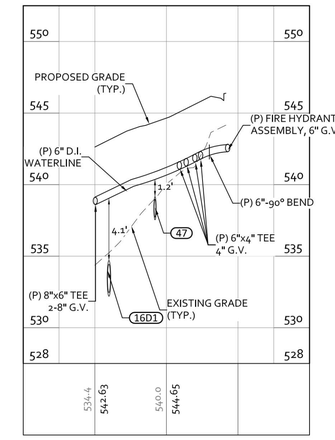


HERITAGE HALL ROAD

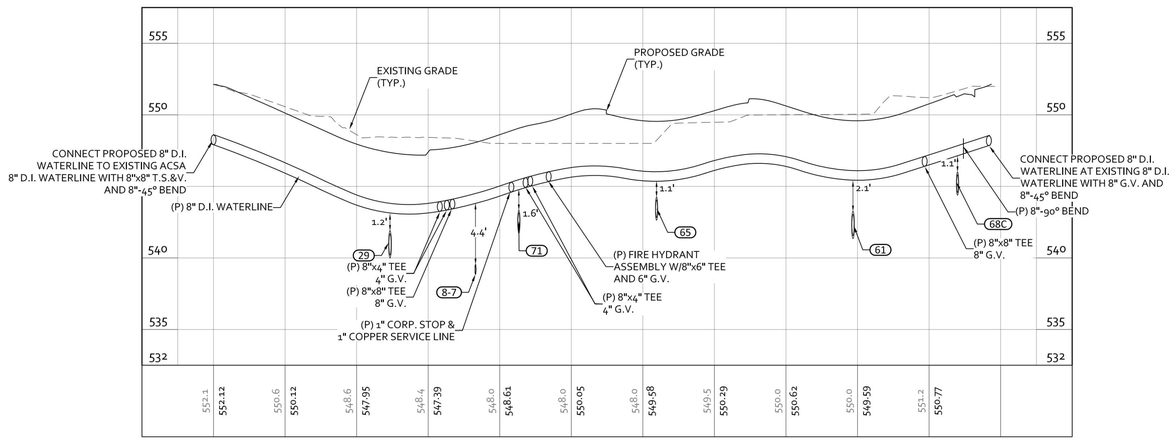
PRIVATE ROADWAY
DESIGN SPEED = 15 MPH



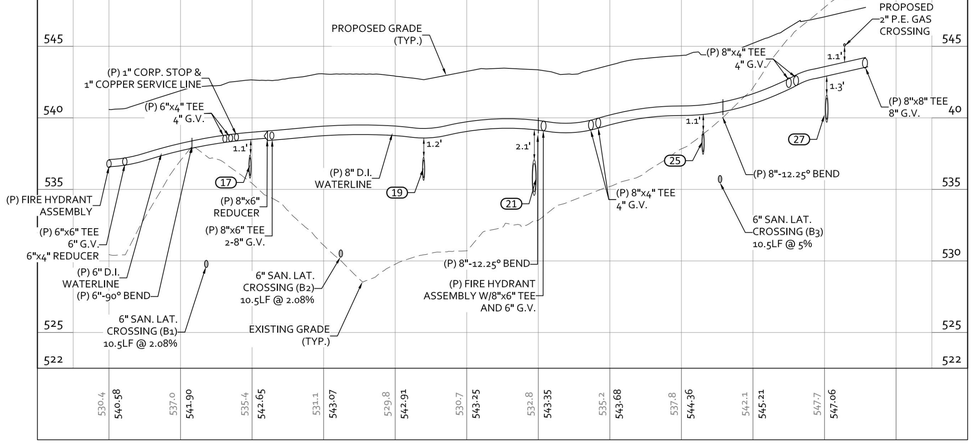
WATERLINE 3



WATERLINE 4



WATERLINE 1



WATERLINE 2

VERTICAL SCALE

5 0 2.5 5 10 20

1 INCH = 5 FEET

HORIZONTAL SCALE

0 0 25 50 100 200

1 INCH = 50 FEET

COMMONWEALTH OF VIRGINIA
SCOTT R. COLLINS
No. 35791
PROFESSIONAL ENGINEER
5/12/23

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COLLINS ENGINEERING
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PROJECT
CVILLE RIO ROAD APARTMENTS - FINAL SITE PLAN

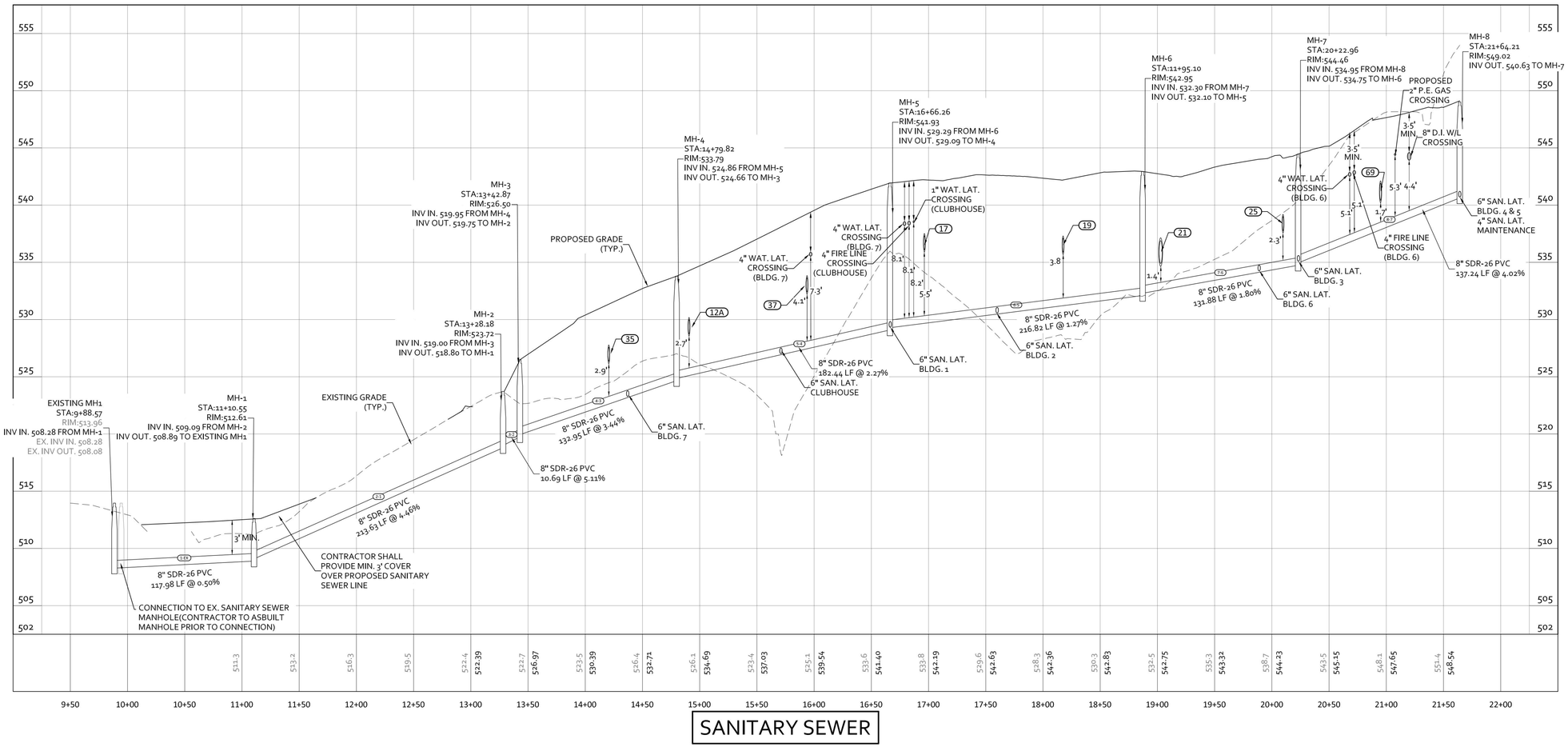
SHEET
ROAD & WATERLINE PROFILES

JOB NO.
202202

SCALE
V: 1"=5'
H: 1"=50'

SHEET NO.
9

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SANITARY SEWER

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VERTICAL SCALE
5 0 2.5 5 10 20
1 INCH = 5 FEET

HORIZONTAL SCALE
0 0 25 50 100 200
1 INCH = 50 FEET

COMMONWEALTH OF VIRGINIA
SCOTT R. COLLINS
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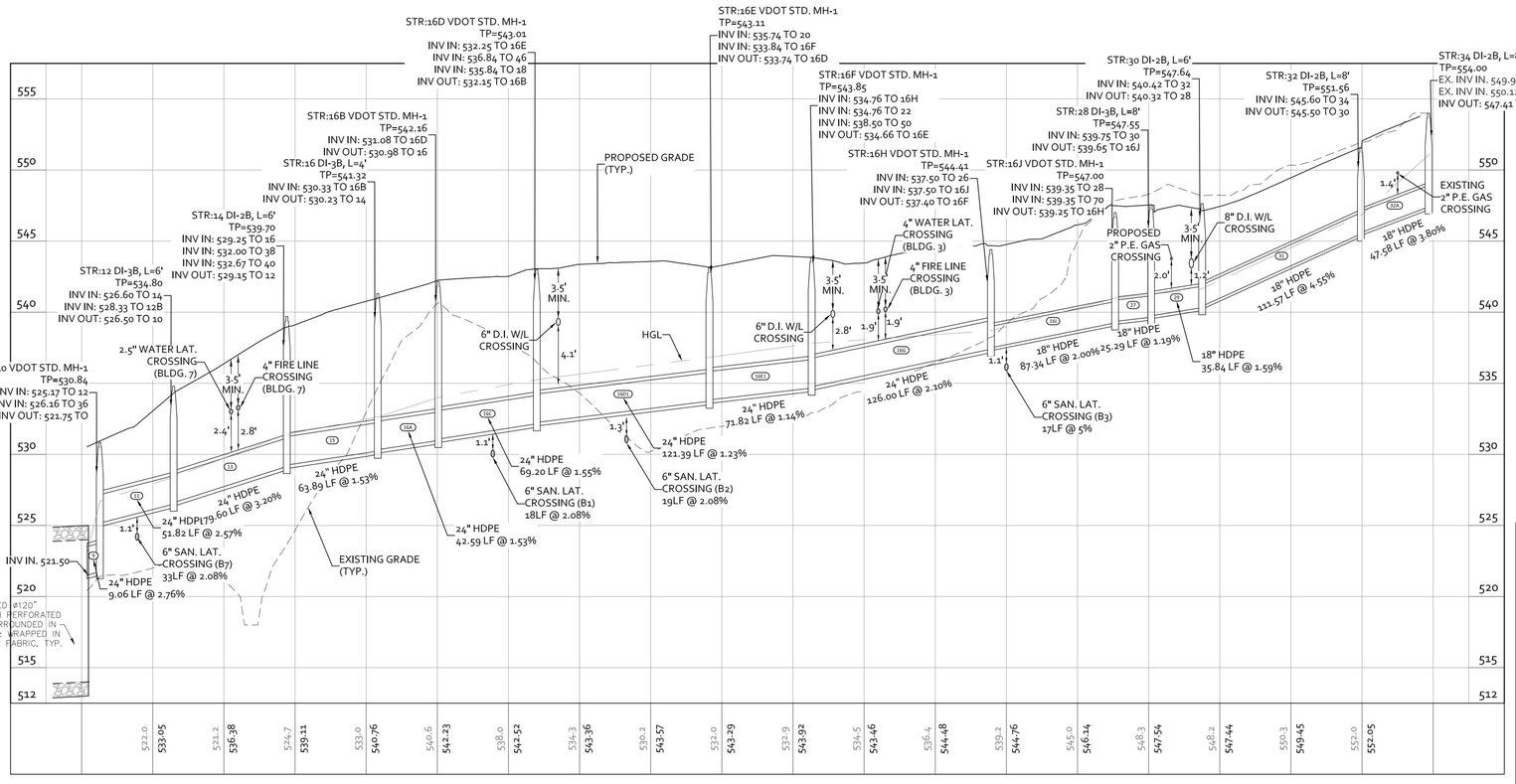
SHEET: SANITARY SEWER PROFILE

JOB NO. 202202

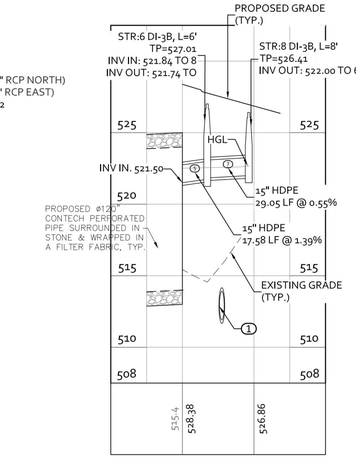
SCALE V: 1"=5' H: 1"=50'

SHEET NO. 10

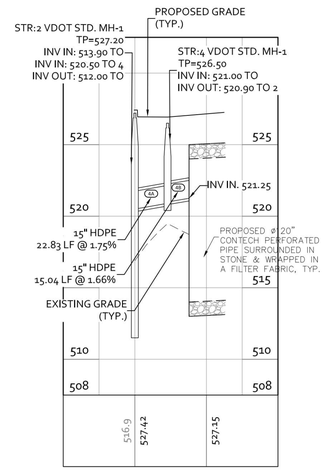
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EX STR34 - UGD

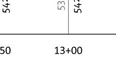


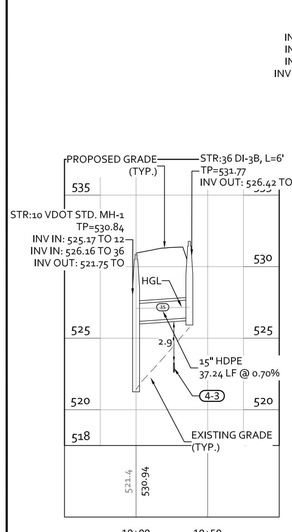
STR8 - UGD



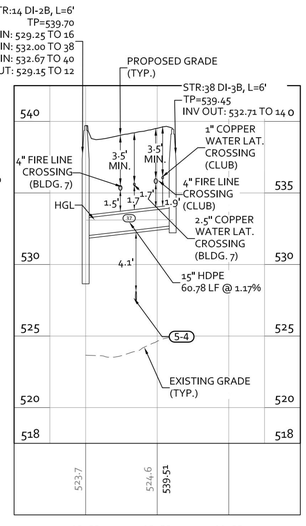
UGD OVERFLOW

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3. ALL FILL TO BE PLACED AT 95% COMPACTION.
4. MINIMUM 3.5' OF COVER MUST BE MAINTAINED OVER W/L.
5. MINIMUM OF 1' OF VERTICAL SEPARATION FROM STORM SEWER & W/L AND 1.5' OF SEPARATION BETWEEN W/L & SANITARY SEWER MUST BE PROVIDED.
6. ALL DRAINAGE STRUCTURES SHALL BE PROVIDED INLET SHAPING IN ACCORDANCE WITH VDOT STANDARD IS-1.
7. ALL DRAINAGE STRUCTURES WITH A DEPTH OF 4' OR GREATER SHALL HAVE STEPS IN ACCORDANCE WITH STANDARD ST-1 AS FOUND IN THE 2008 ROAD AND BRIDGE STANDARDS.
8. ALL DRAINAGE STRUCTURES WITH A DEPTH OF 12' OR GREATER SHALL HAVE SAFETY SLABS IN ACCORDANCE WITH STANDARD SL-1 AS FOUND IN THE 2008 ROAD AND BRIDGE STANDARDS.
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8. HDPE CAN BE USED AS AN ACCEPTABLE SUBSTITUTE FOR RCP FOR THE DRAINAGE PIPES - SEE NOTES & DETAILS SHEET FOR HDPE PIPE BEDDING INFORMATION.

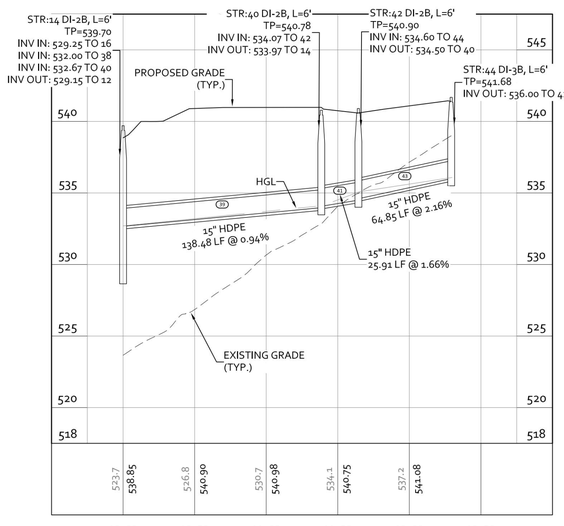




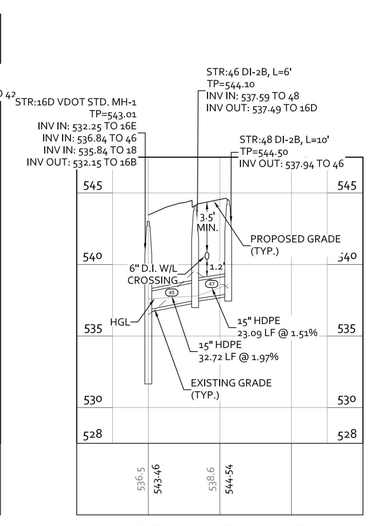
STR 36 - STR 10



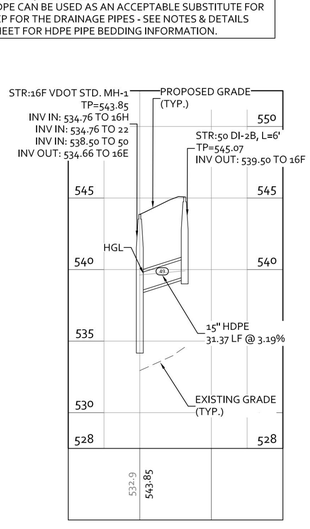
STR 38 - STR 14



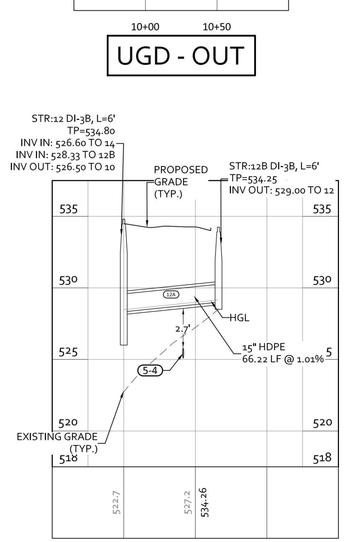
STR 44 - STR 14



STR 48 - STR 16D



STR 50 - STR 16F



STR 12B - STR 12

COMMONWEALTH OF VIRGINIA
SCOTT R. COLLINS
No. 35791
PROFESSIONAL ENGINEER
5/12/23

REVISIONS

DATE	REVISION DESCRIPTION
2/06/23	INITIAL PLAN SUBMITTAL
5/12/23	REVISED PER COUNTY COMMENTS

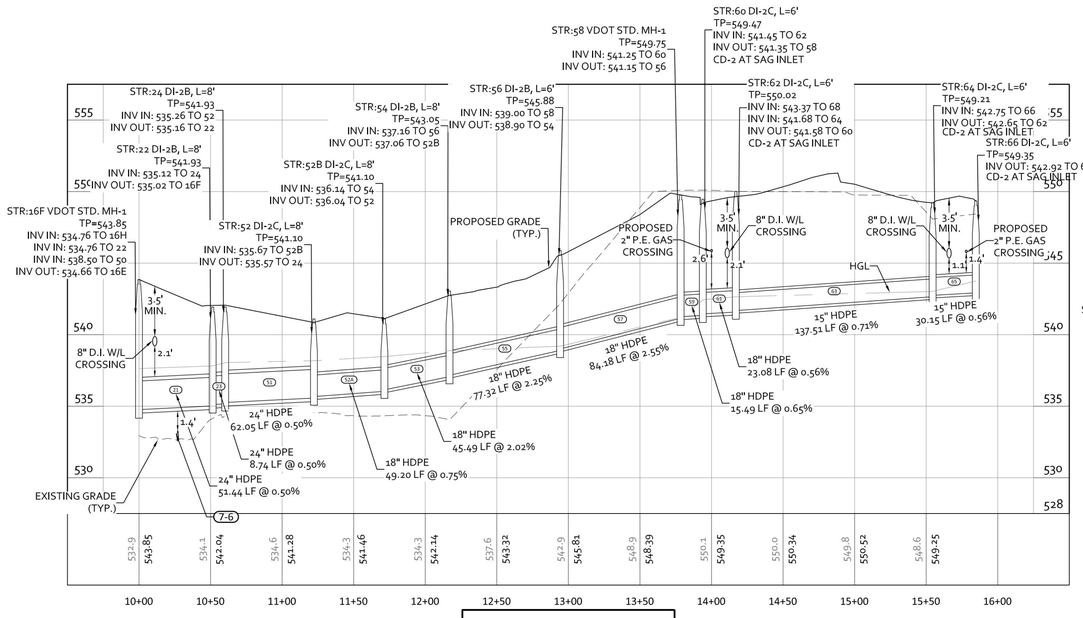
COLLINS ENGINEERING
200 GARRETT STREET, SUITE K-CHARLOTTESVILLE, VA 22902 -434.293.3719

CVILLE RIO ROAD APARTMENTS - FINAL SITE PLAN

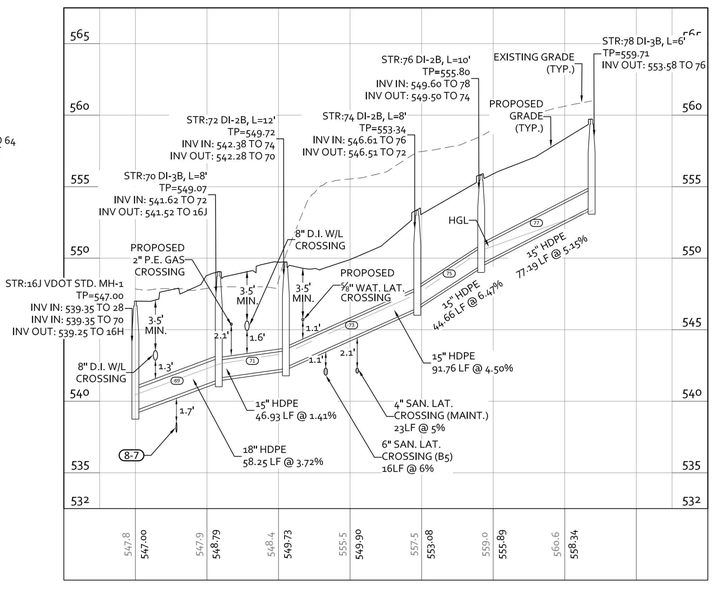
STORM SEWER PROFILES

PROJECT
SHEET
JOB NO. 202202
SCALE V: 1"=5' H: 1"=50'
SHEET NO. 11

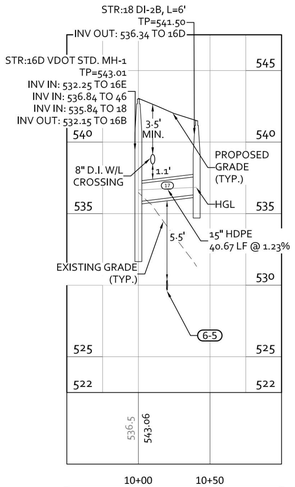
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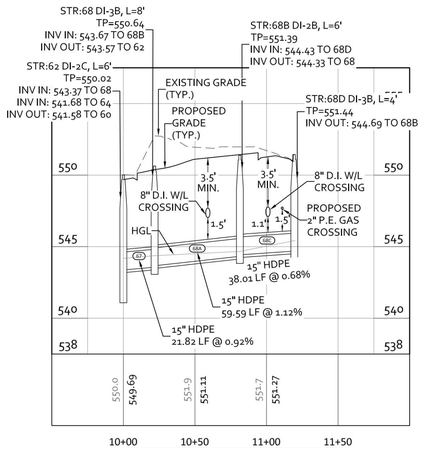
STR 66 - STR 16F



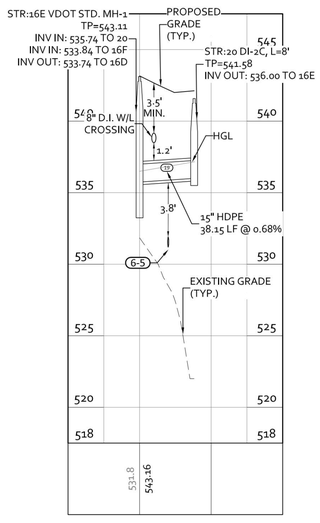
STR 78 - STR 16J



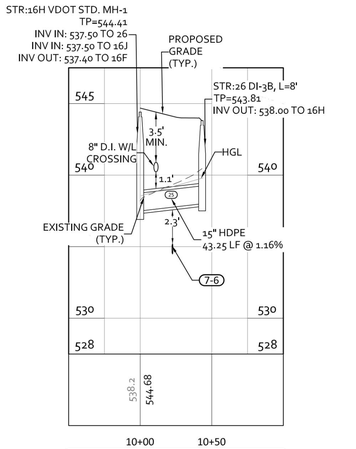
STR 18 - STR 16D



STR 68D - STR 62



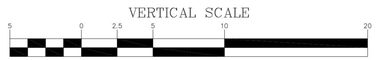
STR 20 - STR 16E



STR 26 - STR 16H

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VERTICAL SCALE



1 INCH = 5 FEET

HORIZONTAL SCALE



1 INCH = 50 FEET

COMMONWEALTH OF VIRGINIA
SCOTT R. COLLINS
No. 35791
PROFESSIONAL ENGINEER
5/12/23

REVISIONS

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2/06/23	INITIAL PLAN SUBMITTAL
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COLLINS ENGINEERING
200 GARRETT STREET, SUITE K-CHARLOTTESVILLE, VA 22902 -434.293.3719

PROJECT: CVILLE RIO ROAD APARTMENTS - FINAL SITE PLAN

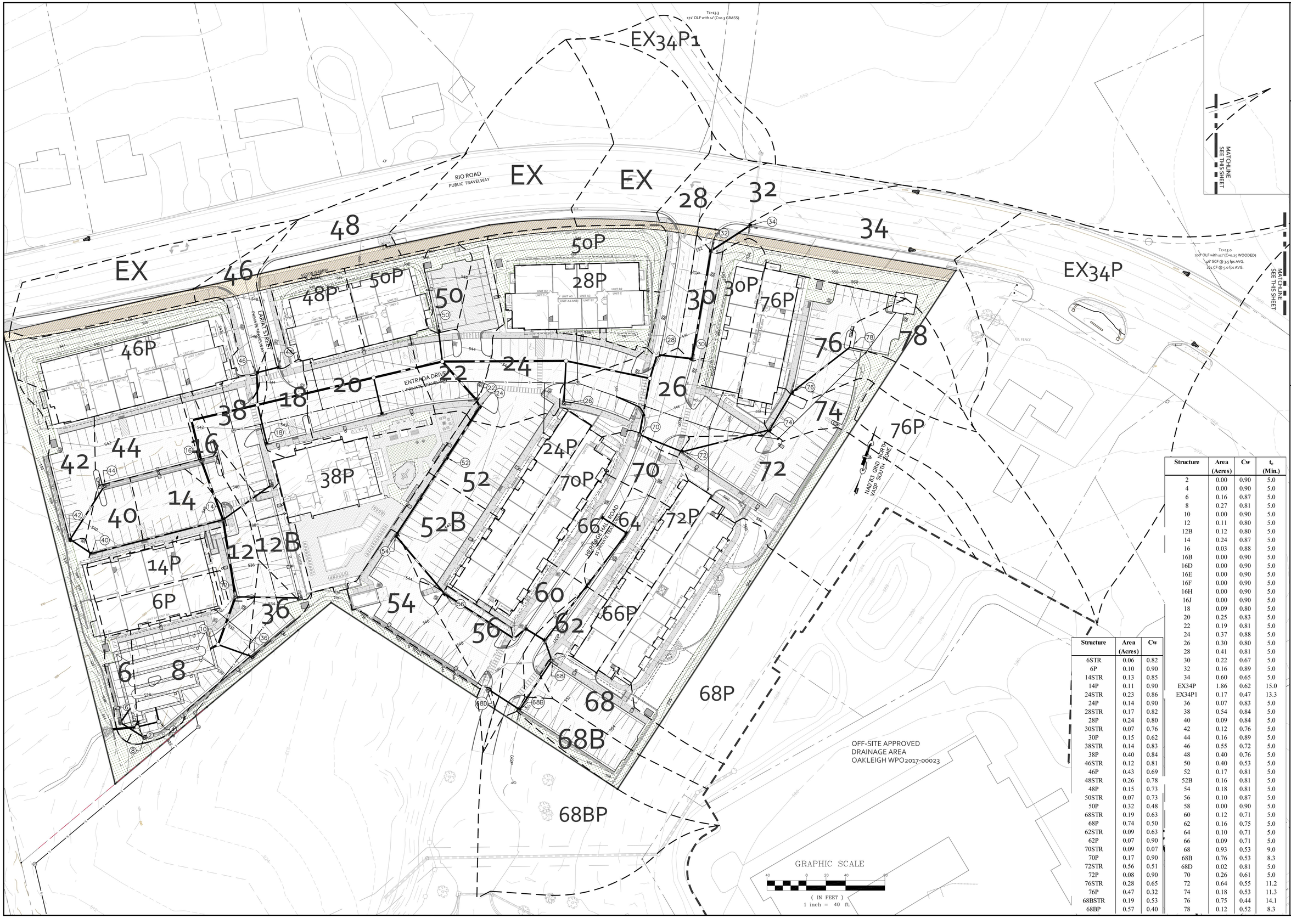
SHEET: STORM SEWER PROFILES

JOB NO. 202202

SCALE V: 1"=5' H: 1"=50'

SHEET NO. 12

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Structure	Area (Acres)	Cw	t_c (Min.)
2	0.00	0.90	5.0
4	0.00	0.90	5.0
6	0.16	0.87	5.0
8	0.27	0.81	5.0
10	0.00	0.90	5.0
12	0.11	0.80	5.0
12B	0.12	0.80	5.0
14	0.24	0.87	5.0
16	0.03	0.88	5.0
16B	0.00	0.90	5.0
16D	0.00	0.90	5.0
16E	0.00	0.90	5.0
16F	0.00	0.90	5.0
16H	0.00	0.90	5.0
16J	0.00	0.90	5.0
18	0.09	0.80	5.0
20	0.25	0.83	5.0
22	0.19	0.81	5.0
24	0.37	0.88	5.0
26	0.30	0.80	5.0
28	0.41	0.81	5.0
30	0.22	0.67	5.0
32	0.16	0.89	5.0
34	0.60	0.65	5.0
EX34P	1.86	0.62	15.0
EX34P1	0.17	0.47	13.3
36	0.07	0.83	5.0
38	0.54	0.84	5.0
40	0.09	0.84	5.0
42	0.12	0.76	5.0
44	0.16	0.89	5.0
46	0.55	0.72	5.0
48	0.40	0.76	5.0
50	0.40	0.53	5.0
52	0.17	0.81	5.0
52B	0.16	0.81	5.0
54	0.18	0.81	5.0
56	0.10	0.87	5.0
58	0.00	0.90	5.0
60	0.12	0.71	5.0
62	0.16	0.75	5.0
64	0.10	0.71	5.0
66	0.09	0.71	5.0
68	0.93	0.53	9.0
68B	0.76	0.53	8.3
68D	0.02	0.81	5.0
70	0.26	0.61	5.0
72	0.64	0.55	11.2
74	0.18	0.53	11.3
76	0.75	0.44	14.1
78	0.12	0.52	8.3

Structure	Area (Acres)	Cw
6STR	0.06	0.82
6P	0.10	0.90
14STR	0.13	0.85
14P	0.11	0.90
24STR	0.23	0.86
24P	0.14	0.90
28STR	0.17	0.82
28P	0.24	0.80
30STR	0.07	0.76
30P	0.15	0.62
38STR	0.14	0.83
38P	0.40	0.84
46STR	0.12	0.81
46P	0.43	0.69
48STR	0.26	0.78
48P	0.15	0.73
50STR	0.07	0.73
50P	0.32	0.48
68STR	0.19	0.63
68P	0.74	0.50
62STR	0.09	0.63
62P	0.07	0.90
70STR	0.09	0.07
70P	0.17	0.90
72STR	0.56	0.51
72P	0.08	0.90
76STR	0.28	0.65
76P	0.47	0.32
68BSTR	0.19	0.53
68BP	0.57	0.40

COMMONWEALTH OF VIRGINIA
SCOTT R. COLLINS
No. 35791
PROFESSIONAL ENGINEER
5/12/23

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COLLINS ENGINEERING
200 GARRETT STREET, SUITE K-CHARLOTTESVILLE, VA 22902 -434.293.3719

PROJECT
CVILLE RIO ROAD APARTMENTS - FINAL SITE PLAN

SHEET
DRAINAGE MAP

JOB NO. 202202
SCALE 1" = 40'
SHEET NO. 13

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Design Storm Year = **10**

POINT	DOWNSTREAM STRUCTURE	DRAIN AREA ACRES	RUNOFF COEFF. C	CA INCR	CA ACCUM	INLET TIME MIN	RAIN FALL MIN	RUNOFF Q C.F.S.	INVERT ELEVATIONS UPPER	INVERT ELEVATIONS LOWER	LENGTH FEET	SLOPE FT./FT.	DIA INCHES	CAPA-CITY C.F.S.	VEL F.P.S.	FLOW TIME SEC
EX34P		1.86	0.62	1.16	1.16	14.97	4.55	5.3								
	34								555.64	550.12	209.00	0.0264	15	10.5	8.6	24.4
34		0.60	0.65	0.39	1.62	15.38	4.50	7.3								
	32								547.41	545.60	47.58	0.0380	18	22.2	11.2	4.3
32		0.16	0.89	0.14	1.76	15.45	4.49	7.9								
	30								545.50	540.42	111.57	0.0455	18	24.3	12.2	9.1
30		0.22	0.67	0.15	1.91	15.60	4.47	8.5								
	28								540.32	539.75	35.84	0.0159	18	14.4	8.4	4.2
28		0.41	0.81	0.33	2.24	15.67	4.46	10.0								
	16J								539.65	539.35	25.29	0.0119	18	12.4	7.8	3.2
16J		0.00	0.90	0.00	3.25	15.73	4.45	14.5								
	16H								539.25	537.50	87.34	0.0200	18	16.1	10.3	8.5
16H		0.00	0.90	0.00	3.49	15.87	4.43	15.5								
	16F								537.40	534.76	126.00	0.0210	24	35.5	10.9	11.6
16F		0.00	0.90	0.00	5.94	16.06	4.41	26.2								
	16E								534.66	533.84	71.82	0.0114	24	26.2	9.5	7.6
16E		0.00	0.90	0.00	6.15	16.19	4.39	27.0								
	16D								533.74	532.25	121.39	0.0123	24	27.2	9.9	12.3
16D		0.00	0.90	0.00	6.92	16.39	4.37	30.2								
	16B								532.15	531.08	69.20	0.0155	24	30.5	11.1	6.3
16B		0.00	0.90	0.00	6.92	16.50	4.35	30.2								
	16								530.98	530.33	42.59	0.0153	24	30.3	11.0	3.9
16		0.03	0.88	0.02	6.95	16.56	4.35	30.2								
	14								530.23	529.25	63.89	0.0153	24	30.4	11.0	5.8
14		0.24	0.87	0.21	7.92	16.66	4.33	34.3								
	12								529.15	526.60	79.60	0.0320	24	43.9	15.4	5.2
12		0.11	0.80	0.09	8.10	16.75	4.32	35.0								
	10								526.50	525.17	51.82	0.0257	24	39.3	14.1	3.7
10		0.00	0.90	0.00	8.16	16.81	4.32	35.2								
	UGD								521.75	521.50	9.06	0.0276	24	40.7	14.6	0.6
8		0.27	0.81	0.22	0.22	5.00	6.67	1.5								
	6								522.00	521.84	29.05	0.0055	15	5.2	3.6	8.0
6		0.16	0.87	0.14	0.36	5.13	6.62	2.4								
	UGD								521.74	521.50	17.58	0.0137	15	8.2	5.7	3.1
36		0.07	0.83	0.06	0.06	5.00	6.67	0.4								
	10								526.42	526.16	37.24	0.0070	15	5.8	2.7	14.0
38		0.54	0.84	0.46	0.46	5.00	6.67	3.0								
	14								532.71	532.00	60.78	0.0117	15	7.6	5.8	10.4
44		0.16	0.89	0.14	0.14	5.00	6.67	0.9								
	42								536.00	534.60	64.85	0.0216	15	10.3	5.2	12.6
42		0.12	0.76	0.09	0.23	5.21	6.60	1.5								
	40								534.50	534.07	25.91	0.0166	15	9.0	5.4	4.8
40		0.09	0.84	0.07	0.31	5.29	6.57	2.0								
	14								533.97	532.67	138.48	0.0094	15	6.8	4.8	28.9
48		0.40	0.76	0.31	0.31	5.00	6.67	2.0								
	46								537.94	537.59	23.09	0.0152	15	8.6	5.7	4.0
46		0.55	0.72	0.39	0.70	5.07	6.64	4.7								
	16D								537.49	536.84	32.72	0.0199	15	9.9	7.9	4.1
50		0.40	0.53	0.21	0.21	5.00	6.67	1.4								
	16F								539.50	538.50	31.37	0.0319	15	12.5	6.6	4.7
66		0.09	0.71	0.06	0.06	5.00	6.67	0.4								
	64								542.92	542.75	30.15	0.0056	15	5.3	2.5	12.2
64		0.10	0.71	0.07	0.13	5.20	6.60	0.9								
	62								542.65	541.68	137.51	0.0071	15	5.9	3.4	40.1
62		0.16	0.75	0.12	1.17	9.03	5.57	6.5								
	60								541.58	541.45	23.08	0.0056	18	8.5	5.3	4.3
60		0.12	0.71	0.09	1.25	9.10	5.56	7.0								
	58								541.35	541.25	15.49	0.0065	18	9.1	5.7	2.7
58		0.00	0.90	0.00	1.25	9.15	5.55	7.0								
	56								541.15	539.00	84.18	0.0255	18	18.2	9.5	8.9
56		0.10	0.87	0.09	1.34	9.29	5.52	7.4								
	54								538.90	537.16	77.32	0.0225	18	17.1	9.2	8.4
54		0.18	0.81	0.14	1.48	9.43	5.49	8.1								
	52B								537.06	536.14	45.49	0.0202	18	16.2	9.2	5.0
52B		0.16	0.81	0.13	1.62	9.52	5.47	8.9								
	52								536.04	535.67	49.20	0.0075	18	9.9	6.3	7.8
52		0.17	0.81	0.14	1.76	9.65	5.44	9.6								
	24								535.57	535.26	62.05	0.0050	24	17.3	5.6	11.0
24		0.37	0.88	0.32	2.08	9.83	5.40	11.3								
	22								535.16	535.12	8.74	0.0046	24	16.6	5.7	1.5
22		0.19	0.81	0.16	2.24	9.86	5.40	12.1								
	16F								535.02	534.76	51.44	0.0051	24	17.4	6.0	8.6
78		0.12	0.52	0.06	0.06	8.26	5.75	0.4								
	76								553.58	549.60	77.19	0.0516	15	15.9	5.2	14.9
76		0.75	0.44	0.33	0.39	14.15	4.66	1.8								
	74								549.50	546.61	44.66	0.0647	15	17.8	9.2	4.9
74		0.18	0.53	0.10	0.49	14.23	4.65	2.3								
	72								546.51	542.38	91.76	0.0450	15	14.8	8.7	10.6
72		0.64	0.55	0.35	0.85	14.41	4.63	3.9								
	70								542.28	541.62	46.93	0.0141	15	8.3	6.6	7.1
70		0.26	0.61	0.16	1.01	14.52	4.61	4.6								
	16J								541.52	539.35	58.25	0.0373	15	13.5	9.9	5.9
12B		0.12	0.80	0.09	0.09	5.00	6.67	0.6								
	12								529.00	528.33	66.22	0.0101	15	7.0	3.4	19.4
18		0.09	0.80	0.08	0.08	5.00	6.67	0.5								
	16D								536.34	535.84	40.67	0.0123	15	7.8	3.5	11.5
68D		0.02	0.81	0.01	0.01	5.00	6.67	0.1								
	68B								544.69	544.43	38.01	0.0068	15	5.8	1.6	23.2
68B		0.76	0.53	0.41	0.42	8.34	5.73	2.4								
	68								544.33	543.67	59.59	0.0111	15	7.4	5.3	11.1
68		0.93	0.53	0.49	0.91	8.97	5.59	5.1								
	62								543.57	543.37	21.82	0.0092	15	6.7	6.0	3.6
20		0.25	0.83	0.21	0.21	5.00	6.67	1.4								
	16E								536.00	535.74	38.15	0.0068	15	5.8	3.8	9.9
26		0.30	0.80	0.24	0.24	5.00	6.67	1.6								
	16H								538.00	537.50	43.25	0.0116	15	7.5	4.8	8.9

Design Year: **10** Project: Heritage Apartments Job #: 202202 Prepared by: KKW, PE

INLET STATION	OUTLET WATER SURFACE ELEV	L_o	D_o	Q_o ZW	S_{fo}	H_f	JUNCTION LOSS V_o	H_o	Q_{IN}	V_{IN}	Q_i*V_i	$V_i^2/2g$	H_i	ANGLE	H_Δ	H_t	$1.3H_t$	$.5H_t$	FINAL H	INLET WATER SURFACE ELEV.	RIM ELEV
	538.80	43.25	15	1.60	0.001	0.02	1.3	0.0													
26													0.00	90	0	0.01	NA	0.00	0.03	538.82	543.81
	537.05	38.15	15	1.37	0.000	0.01	1.1	0.0													
20													0.00	90	0	0.00	NA	0.00	0.02	537.06	541.58
	544.37	21.82	15	5.10	0.005	0.12	4.2	0.1													
68									2.4	2.0	4.728	0.1	0.02	40	0.02274	0.11	NA	0.06	0.18	544.55	550.64
	544.67	59.59	15	2.41	0.001	0.07	2.0	0.0													
68B									0.1	0.1	0.006	0.0	0.00	52	3.7E-05	0.02	NA	0.01	0.08	544.75	551.39
	545.43	38.01	15	0.09	0.000	0.00	0.1	0.0													
68D													0.00	90	0	0.00	NA	0.00	0.00	545.43	551.44
	536.84	40.67	15	0.50	0.000	0.00	0.4	0.0													
18													0.00	90	0	0.00	NA	0.00	0.00	536.84	541.50
	529.33	66.22	15	0.62	0.000	0.01	0.5	0.0													
12B													0.00	71	0	0.00	NA	0.00	0.01	529.34	534.25
	540.59	58.25	15	4.64	0.004	0.26	3.8	0.1													
70									3.9	3.2	12.47	0.2	0.06	89	0.10411	0.21	NA	0.11	0.36	540.95	549.07
	542.62	46.93	15	3.91	0.003	0.15	3.2	0.0													
72									2.3	1.9	4.238	0.1	0.02	79	0.03271	0.09	NA	0.05	0.19	542.81	549.72
	543.38	91.76	15	2.28	0.001	0.10	1.9	0.0													
74									1.8	1.5	2.766	0.0	0.01	36	0.0098	0.04	NA	0.02	0.12	543.50	553.34
	547.61	44.66	15	1.84	0.001	0.03	1.5	0.0													
76									0.4	0.3	0.112	0.0	0.00	45	0.00054	0.01	NA	0.00	0.04	547.65	555.80
	550.60	77.19	15	0.37	0.000	0.00	0.3	0.0													
78													0.00	22	0	0.00	NA	0.00	0.00	550.60	559.71
	538.07	51.44	24	12.10	0.002	0.13	3.9	0.1													
22									11.3	3.6	40.33	0.2	0.07	62	0.10965	0.24	NA	0.12	0.24	538.31	541.93
	538.31	8.74	24	11.26	0.002	0.02	3.6	0.0													
24									9.6	3.0	29.16	0.1	0.05	14	0	0.10	NA	0.05	0.13	538.44	541.93
	538.44	62.05	24	9.57	0.002	0.09	3.0	0.0													
52									8.9	5.0	44.33	0.4	0.14	61	0.21426	0.39	NA	0.19	0.29	538.73	541.10
	538.73	49.20	18	8.85	0.006	0.30	5.0	0.1													
52B									8.1	4.6	37.56	0.3	0.12	0	0	0.21	NA	0.11	0.40	539.14	541.10
	539.14	45.49	18	8.15	0.005	0.23	4.6	0.1													
54									7.4	4.2	30.91	0.3	0.10	0	0	0.18	NA	0.09	0.32	539.46	543.05
	539.46	77.32	18	7.39	0.004	0.33	4.2	0.1													
56									7.0	3.9	27.38	0.2	0.08	73	0.14676	0.30	NA	0.15	0.48	539.93	545.88
	540.20	84.18	18	6.96	0.004	0.31	3.9	0.1													
58									7.0	3.9	27.38	0.2	0.08	17	0.02406	0.17	N/A	0.08	0.40	540.60	549.75
	542.45	15.49	18	6.96	0.004	0.06	3.9	0.1													
60									6.5	3.7	23.87	0.2	0.07	74	0.12796	0.26	NA	0.13	0.19	542.64	549.47
	542.65	23.08	18	6.49	0.003	0.08	3.7	0.1													
62									5.1	6.0	30.6	0.6	0.20	72	0.34119	0.59	NA	0.29	0.37	543.02	550.02
	543.02	137.51	15	0.87	0.000	0.02	0.7	0.0													
64									0.4	0.3	0.137	0.0	0.00	84	0.00114	0.00	NA	0.00	0.02	543.04	549.21
	543.75	30.15	15	0.41	0.000	0.00	0.3	0.0													
66													0.00	90	0	0.00	NA	0.00	0.00	543.75	549.35
	539.50	31.37	15	1.41	0.000	0.01	1.1	0.0													
50													0.00	84	0	0.01	NA	0.00	0.02	539.52	545.07
	537.84	32.72	15	4.65	0.004	0.14	3.8	0.1													
46									2.0	1.7	3.372	0.0	0.01	77	0.02602	0.10	NA	0.05	0.19	538.03	544.10
	538.59	23.09	15	2.03	0.001	0.02	1.7	0.0													
48													0.00	77	0	0.01	NA	0.01	0.03	538.62	544.50
	533.67	138.48	15	2.01	0.001	0.11	1.6	0.0													
40									1.5	1.3	1.934	0.0	0.01	90	0.01713	0.04	NA	0.02	0.13	533.80	540.78
	535.07	25.91	15	1.54	0.000	0.01	1.3	0.0													
42									0.9	0.8	0.695	0.0	0.00	48	0.00334	0.01	NA	0.01	0.02	535.09	540.90
	535.60	64.85	15	0.92	0.000	0.01	0.8	0.0													
44													0.00	89	0	0.00	NA	0.00	0.01	535.61	541.68
	533.00	60.78	15	3.05	0.002	0.12	2.5	0.0													
38													0.00	63	0	0.02	NA	0.01	0.13	533.13	539.45
	527.16	37.24	15	0.37	0.000	0.00	0.3	0.0													
36													0.00	47	0	0.00	NA	0.00	0.00	527.16	531.77
	522.50	17.58	15	2.37	0.001	0.02	1.9	0.0													
6									1.5	1.2	1.726	0.0	0.01	41	0.0083	0.03	NA	0.02	0.04	522.54	527.01
	522.84	29.05	15	1.46	0.000	0.01	1.2	0.0													
8													0.00	87	0	0.01	NA	0.00	0.02	522.86	526.41
	523.10	9.06	24	35.20	0.021	0.19	11.2	0.5													
10									35.0	11.1	390.5	1.9	0.68	43	0.73345	1.90	N/A	0.95	1.31	524.41	530.84
	526.77	51.82	24	35.02	0.020	1.06	11.1	0.5													
12									34.3	10.9	374.8	1.9	0.65	29	0.40762	1.54	NA	0.77	1.83	528.60	534.80
	528.60	79.60	24	34.32	0.020	1.56	10.9	0.5													
14									30.2	9.6	290.9	1.4	0.50	11	0	0.97	NA	0.48	2.04	530.64	539.70
	530.85	63.89	24	30.23	0.015	0.97	9.6	0.4													
16									30.2	9.6	290.9	1.4	0.50	7	0	0.86	NA	0.43	1.40	532.25	541.32
	532.25	42.59	24	30.23	0.015	0.65	9.6	0.4													
16B									30.2	9.6	290.9	1.4	0.50	89	0.94893	1.81	N/A	0.91	1.55	533.81	542.16
	533.81	69.20	24	30.23	0.015	1.05	9.6	0.4													
16D									27.0	8.6	232	1.1	0.40	0	0	0.76	N/A	0.38	1.43	535.24	543.01
	535.24	121.39	24	27.00	0.012	1.47	8.6	0.3													
16E									26.2	8.3	218.3	1.1	0.38	0	0	0.66	N/A	0.33	1.81	537.05	543.11
	537.05	71.82	24	26.19	0.011	0.82	8.3	0.3													
16F									15.5	4.9	76.17	0.4	0.13	13	0	0.40	N/A	0.20	1.02	538.07	543.85
	538.07	126.00	24	15.47	0.004	0.50	4.9	0.1													
16H									14.5	8.2	118.4	1.0	0.36	12	0	0.46	N/A	0.23	0.73	538.80	544.41
	538.80	87.34	18	14.47	0.016	1.41	8.2	0.3													
16J									10.0	5.7	56.62	0.5	0.17	85	0.3284	0.76	N/A	0.38	1.79	540.59	547.00
	540.59	25.29	18	10.00	0.008	0.20	5.7	0.1													
28									8.5	4.8	41.27	0.4	0.13	80	0.23936	0.49	NA	0.25	0.44	541.03	547.55
	541.03	35.84	18	8.54	0.006	0.20	4.8	0.1													
30									7.9	4.5	35.42	0.3	0.11	87	0.20542	0.41	NA	0.20	0.40	541.44	547.64
	541.62	111.57	18	7.91	0.005	0.54	4.5	0.1													
32									7.3	4.1	30.1	0.3	0.09	47	0.10051	0.27	NA	0.14	0.67	542.29	551.56
	546.80	47.58	18	7.29	0.004	0.20	4.1	0.1													
34									5.3	4.3	22.5	0.3	0.10	43	0.1082	0.27	NA	0.14	0.33	547.13	554.00
	551.12	209.00	15	5.25	0.007	1.38	4.3	0.1													
EX34P													0.00	0	0	0.07	NA	0.04	1.42	552.54	559.06

DRAINAGE DESCRIPTIONS

STR. NO.	PIPE INFORMATION DIA. (in.)	LENGTH* (ft.)	SLOPE (%)	INVERT IN	INVERT OUT	MATERIAL	INLET INFORMATION INLET TYPE	Curb Type	SLOT LENGTH	RIM ELEVATION
EX34P							EXISTING	EX	-	EX
EX34PA	15	209.00	2.64%	555.64	550.12	RCP				
34							DI-2B	CG-6	8	554.00
33	18	47.58	3.80%	547.41	545.60	HDPE				
32							DI-2B	CG-6	8	551.56
31	18	111.57	4.55%	545.50	540.42	HDPE				
30							DI-2B	CG-2	6	547.64
29	18	35.84	1.59%	540.32	539.75	HDPE				
28							DI-3B	CG-6	8	547.55
27	18	25.29	1.19%	539.65	539.35	HDPE				
16J							MH-1	CG-6	-	547.00
16I	18	87.34	2.00%	539.25	537.50	HDPE				
16H							MH-1	CG-2	-	544.41
16G	24	126.00	2.10%	537.40	534.76	HDPE				
16F							MH-1	CG-6	-	543.85
160	24	71.82	1.14%	534.66	533.84	HDPE				
16E							MH-1	CG-6	-	543.11
16D1	24	121.39	1.23%	533.74	532.25	HDPE				
16D							MH-1	CG-2	-	543.01
16C	24	69.20	1.55%	532.15	531.08	HDPE				
16B							MH-1	CG-6	-	542.16
16A	24	42.59	1.53%	530.98	530.33	HDPE				
16							DI-3B	CG-6	4	541.32
15	24	63.89	1.53%	530.23	529.25	HDPE				
14							DI-2B	CG-2	6	539.70
13	24	79.60	3.20%	529.15	526.60	HDPE				
12							DI-3B	CG-6	6	534.80
11	24	51.82	2.57%	526.50	525.17	HDPE				
10							MH-1	CG-6	-	530.84
9	24	9.06	2.76%	521.75	521.50	HDPE				
8							DI-3B	CG-6	8	526.41
7	15	29.05	0.55%	522.00	521.84	HDPE				
6							DI-3B	CG-6	6	527.01
5	15	17.58	1.39%	521.74	521.50	HDPE				
36							DI-3B	CG-6	6	531.77
35	15	37.24	0.70%	526.42	526.16	HDPE				
38							DI-3B	CG-2	6	539.45
37	15	60.78	1.17%	532.71	532.00	HDPE				
44							DI-3B	CG-6	6	541.68
43	15	64.85	2.16%	536.00	534.60	HDPE				
42							DI-2B	CG-2	6	540.90
41	15	25.91	1.66%	534.50	534.07	HDPE				
40							DI-2B	CG-6	6	540.78
39	15	138.48	0.94%	533.97	532.67	HDPE				
48							DI-2B	CG-2	10	544.50
47	15	23.09	1.51%	537.94	537.59	HDPE				
46							DI-2B	CG-6	6	544.10
45	15	32.72	1.97%	537.49	536.84	HDPE				
50							DI-2B	CG-2	6	545.07
49	15	31.37	3.19%	539.50	538.50	HDPE				
66							DI-2C	CG-6	6	549.35
65	15	30.15	0.56%	542.92	542.75	HDPE				
64							DI-2C	CG-2	6	549.21
63	15	137.51	0.71%	542.65	541.68	HDPE				
62							DI-2C	CG-6	6	550.02
61	18	23.08	0.56%	541.58	541.45	HDPE				
60							DI-2C	CG-6	6	549.47
59	18	15.49	0.65%	541.35	541.25	HDPE				
58							MH-1	CG-2	-	549.75
57	18	84.18	2.55%	541.15	539.00	HDPE				
56							DI-2B	CG-6	6	545.88
55	18	77.32	2.25%	538.90	537.16	HDPE				
54							DI-2B	CG-6	8	543.05
53	18	45.49	2.02%	537.06	536.14	HDPE				
52B							DI-2C	CG-2	8	541.10
52A	18	49.20	0.75%	536.04	535.67	HDPE				
52							DI-2C	CG-6	8	541.10
51	24	62.05	0.50%	535.57	535.26	HDPE				
24							DI-2B	CG-6	8	541.93
23	24	8.74	0.50%	535.16	535.12	HDPE				
22							DI-2B	CG-2	8	541.93
21	24	51.44	0.50%	535.02	534.76	HDPE				
78							DI-3B	CG-6	6	559.71
77	15	77.19	5.15%	553.58	549.60	HDPE				
76							DI-2B	CG-2	10	555.80
75	15	44.66	6.47%	549.50	546.61	HDPE				
74							DI-2B	CG-6	8	553.34
73	15	91.76	4.50%	546.51	542.38	HDPE				
72							DI-2B	CG-6	12	549.72
71	15	46.93	1.41%	542.28	541.62	HDPE				
70							DI-3B	CG-2	8	549.07
69	15	58.25	3.72%	541.52	539.35	HDPE				
12B							DI-3B	CG-6	6	534.25
12A	15	66.22	1.01%	529.00	528.33	HDPE				
18							DI-2B	CG-6	6	541.50
17	15	40.67	1.23%	536.34	535.84	HDPE				
68D							DI-3B	CG-2	4	551.44
68C	15	38.01	0.68%	544.69	544.43	HDPE				
68B							DI-2B	CG-6	6	551.39
68A	15	59.59	1.12%	544.33	543.67	HDPE				
68							DI-3B	CG-6	8	550.64
67	15	21.82	0.92%	543.57	543.37	HDPE				
20							DI-2C	CG-6	8	541.58
19	15	38.15	0.68%	536.00	535.74	HDPE				
26							DI-3B	CG-2	8	543.81
25	15	43.25	1.16%	538.00	537.50	HDPE				

COMMONWEALTH OF VIRGINIA
SCOTT R. COLLINS
No. 35791
5/12/23
PROFESSIONAL ENGINEER

REVISIONS

DATE	REVISION DESCRIPTION
2/06/23	INITIAL PLAN SUBMITTAL
5/12/23	REVISED PER COUNTY COMMENTS

COLLINS ENGINEERING
200 GARRETT STREET, SUITE K.-CHARLOTTESVILLE, VA 22902 -434.293.3719

PROJECT
CVILLE RIO ROAD APARTMENTS - FINAL SITE PLAN

SHEET
DRAINAGE CALCULATIONS

JOB NO. 202202
SCALE N/A
SHEET NO. 14

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Table 8: Pipe Design Table

PIPE DESIGN

n = 0.013

Pipe		Hydrology								Pipe								
Starting Structure	Ending Structure	A, Drainage area (acres)	C, rational coeff.	CA increment	CA sum accumulated	T_C, time of conc. (min)	I, rainfall intesity	Q, flow incr. (cfs)	Qt, total flow	Invert In (ft)	Invert out (ft)	L, throat length (ft)	n, manning's coeff.	S, slope	D, Diameter (in)	Full Flow Capacity (cfs)	V, Velocity (fps)	Flow Time (min)	Remarks
Ppe run: STR EX34P - UGD																			
EX34P	34	1.86	0.62	1.155	1.155	14.97	4.55	5.25	5.25	555.64	550.12	209.0	0.013	0.0264	15	10.50	8.55	0.41	
34	32	0.60	0.65	0.387	1.622	15.38	4.50	1.74	7.29	547.41	545.60	47.6	0.013	0.0380	18	22.20	11.19	0.07	
32	30	0.16	0.89	0.141	1.764	15.45	4.49	0.63	7.91	545.50	540.42	111.6	0.013	0.0455	18	24.28	12.24	0.15	
30	28	0.22	0.67	0.149	1.912	15.60	4.47	0.66	8.54	540.32	539.75	35.8	0.013	0.0159	18	14.35	8.44	0.07	
28	16J	0.41	0.81	0.332	2.244	15.67	4.46	1.48	10.00	539.65	539.35	25.3	0.013	0.0119	18	12.39	7.80	0.05	
16J	16H	0.00	0.90	0.000	3.251	15.73	4.45	0.00	14.47	539.25	537.50	87.3	0.013	0.0200	18	16.11	10.31	0.14	
16H	16F	0.00	0.90	0.000	3.491	15.87	4.43	0.00	15.47	537.40	534.76	126.0	0.013	0.0210	24	35.47	10.89	0.19	
16F	16E	0.00	0.90	0.000	5.942	16.06	4.41	0.00	26.19	534.66	533.84	71.8	0.013	0.0114	24	26.19	9.50	0.13	
16E	16D	0.00	0.90	0.000	6.148	16.19	4.39	0.00	27.00	533.74	532.25	121.4	0.013	0.0123	24	27.15	9.85	0.21	
16D	16B	0.00	0.90	0.000	6.923	16.39	4.37	0.00	30.23	532.15	531.08	69.2	0.013	0.0155	24	30.47	11.06	0.10	
16B	16	0.00	0.90	0.000	6.923	16.50	4.35	0.00	30.23	530.98	530.33	42.6	0.013	0.0153	24	30.28	10.99	0.06	
16	14	0.03	0.88	0.023	6.947	16.56	4.35	0.10	30.23	530.23	529.25	63.9	0.013	0.0153	24	30.35	11.01	0.10	
14	12	0.24	0.87	0.209	7.918	16.66	4.33	0.90	34.32	529.15	526.60	79.6	0.013	0.0320	24	43.86	15.41	0.09	
12	10	0.11	0.80	0.091	8.101	16.75	4.32	0.39	35.02	526.50	525.17	51.8	0.013	0.0257	24	39.26	14.11	0.06	
10	UGD	0.00	0.90	0.000	8.157	16.81	4.32	0.00	35.20	521.75	521.50	9.1	0.013	0.0276	24	40.71	14.55	0.01	
Ppe run: STR 8 - UGD																			
8	6	0.27	0.81	0.218	0.218	5.00	6.67	1.46	1.46	522.00	521.84	29.1	0.013	0.0055	15	5.19	3.62	0.13	
6	UGD	0.16	0.87	0.139	0.357	5.13	6.62	0.92	2.37	521.74	521.50	17.6	0.013	0.0137	15	8.18	5.70	0.05	
Ppe run: STR 36 - STR 10																			
36	10	0.07	0.83	0.056	0.056	5.00	6.67	0.37	0.37	526.42	526.16	37.2	0.013	0.0070	15	5.85	2.66	0.23	
Ppe run: STR 38 - STR 14																			
38	14	0.54	0.84	0.457	0.457	5.00	6.67	3.05	3.05	532.71	532.00	60.8	0.013	0.0117	15	7.56	5.82	0.17	
Ppe run: STR 44 - STR 14																			
44	42	0.16	0.89	0.139	0.139	5.00	6.67	0.92	0.92	536.00	534.60	64.9	0.013	0.0216	15	10.28	5.15	0.21	
42	40	0.12	0.76	0.095	0.233	5.21	6.60	0.63	1.54	534.50	534.07	25.9	0.013	0.0166	15	9.02	5.38	0.08	
40	14	0.09	0.84	0.072	0.306	5.29	6.57	0.48	2.01	533.97	532.67	138.5	0.013	0.0094	15	6.78	4.79	0.48	
Ppe run: STR 48 - STR 16D																			
48	46	0.40	0.76	0.305	0.305	5.00	6.67	2.03	2.03	537.94	537.59	23.1	0.013	0.0152	15	8.62	5.74	0.07	
46	16D	0.55	0.72	0.395	0.700	5.07	6.64	2.62	4.65	537.49	536.84	32.7	0.013	0.0199	15	9.86	7.90	0.07	
Ppe run: STR 50 - STR 16F																			
50	16F	0.40	0.53	0.211	0.211	5.00	6.67	1.41	1.41	539.50	538.50	31.4	0.013	0.0319	15	12.49	6.62	0.08	
Ppe run: STR 66 - STR 16F																			
66	64	0.09	0.71	0.061	0.061	5.00	6.67	0.41	0.41	542.92	542.75	30.2	0.013	0.0056	15	5.25	2.47	0.20	
64	62	0.10	0.71	0.071	0.133	5.20	6.60	0.47	0.87	542.65	541.68	137.5	0.013	0.0071	15	5.88	3.43	0.67	
62	60	0.16	0.75	0.120	1.165	9.03	5.57	0.67	6.49	541.58	541.45	23.1	0.013	0.0056	18	8.54	5.31	0.07	
60	58	0.12	0.71	0.086	1.251	9.10	5.56	0.48	6.96	541.35	541.25	15.5	0.013	0.0065	18	9.14	5.69	0.05	
58	56	0.00	0.90	0.000	1.251	9.15	5.55	0.00	6.96	541.15	539.00	84.2	0.013	0.0255	18	18.19	9.51	0.15	
56	54	0.10	0.87	0.088	1.339	9.29	5.52	0.49	7.39	538.90	537.16	77.3	0.013	0.0225	18	17.07	9.22	0.14	
54	52B	0.18	0.81	0.145	1.484	9.43	5.49	0.80	8.15	537.06	536.14	45.5	0.013	0.0202	18	16.18	9.16	0.08	
52B	52	0.16	0.81	0.133	1.618	9.52	5.47	0.73	8.85	536.04	535.67	49.2	0.013	0.0075	18	9.87	6.30	0.13	
52	24	0.17	0.81	0.141	1.758	9.65	5.44	0.76	9.57	535.57	535.26	62.1	0.013	0.0050	24	17.32	5.65	0.18	
24	22	0.37	0.88	0.324	2.083	9.83	5.40	1.75	11.26	535.16	535.12	8.7	0.013	0.0046	24	16.58	5.66	0.03	
22	16F	0.19	0.81	0.158	2.241	9.86	5.40	0.85	12.10	535.02	534.76	51.4	0.013	0.0051	24	17.42	5.98	0.14	
Ppe run: STR 78 - STR 16J																			
78	76	0.12	0.52	0.064	0.064	8.26	5.75	0.37	0.37	553.58	549.60	77.2	0.013	0.0516	15	15.89	5.19	0.25	
76	74	0.75	0.44	0.331	0.395	14.15	4.66	1.54	1.84	549.50	546.61	44.7	0.013	0.0647	15	17.80	9.18	0.08	
74	72	0.18	0.53	0.095	0.490	14.23	4.65	0.44	2.28	546.51	542.38	91.8	0.013	0.0450	15	14.85	8.67	0.18	
72	70	0.64	0.55	0.355	0.845	14.41	4.63	1.64	3.91	542.28	541.62	46.9	0.013	0.0141	15	8.30	6.64	0.12	
70	16J	0.26	0.61	0.161	1.006	14.52	4.61	0.74	4.64	541.52	539.35	58.3	0.013	0.0373	15	13.51	9.93	0.10	
Ppe run: STR 12B - STR 12																			
12B	12	0.12	0.80	0.092	0.092	5.00	6.67	0.62	0.62	529.00	528.33	66.2	0.013	0.0101	15	7.04	3.42	0.32	
Ppe run: STR 18 - STR 16D																			
18	16D	0.09	0.80	0.075	0.075	5.00	6.67	0.50	0.50	536.34	535.84	40.7	0.013	0.0123	15	7.76	3.53	0.19	
Ppe run: STR 68D - STR 62																			
68D	68B	0.02	0.81	0.013	0.013	5.00	6.67	0.09	0.09	544.69	544.43	38.0	0.013	0.0068	15	5.79	1.64	0.39	
68B	68	0.76	0.53	0.407	0.420	8.34	5.73	2.33	2.41	544.33	543.67	59.6	0.013	0.0111	15	7.36	5.35	0.19	
68	62	0.93	0.53	0.493	0.913	8.97	5.59	2.75	5.10	543.57	543.37	21.8	0.013	0.0092	15	6.70	6.00	0.06	
Ppe run: STR 20 - STR 16E																			
20	16E	0.25	0.83	0.206	0.206	5.00	6.67	1.37	1.37	536.00	535.74	38.2	0.013	0.0068	15	5.78	3.85	0.17	
Ppe run: STR25 - STR 16H																			
26	16H	0.30	0.80	0.240	0.240	5.00	6.67	1.60	1.60	538.00	537.50	43.3	0.013	0.0116	15	7.52	4.84	0.15	

Table 7: Grade Inlet Design Table

INLETS ON GRADE, DESIGN (CURB SPREAD AND INLET CAPTURE)

Intensity 4.00 (Intensity is 4 in/hr for spread, and 6.5 in/hr for capacity and depth)

Mannings Coefficient n is 0.013

Inlet			Hydrology						Curb and Gutter						Inlet								
Plan Label	VDOT DI type	L, throat length (ft)	A, Drainage area (acres)	C, rational coeff.	CA	Q, flow incr. (cfs)	Qb, carry-over (cfs)	Qt, total flow	S, gutter longitudinal slope (ft/ft)	Sx, lane cross slope (ft/ft)	W, gutter width (ft)	Sw, gutter cross-slope (ft/ft)	Sw/Sx	T, spread at curb (ft)	Eo, frontal flow ratio in gutter W	a, 12W(Sw-Sx)+ 2*local depr. (in)	Sw = a/(12W)	Se = Sx+Sw(Eo)	Lt, require throat length (ft)	L / Lt	E, inlet efficiency	Qi, flow intercepted	Qb, carry-over	carry-over to inlet	Maximum allowable spread
12	3B	**6.0**	0.11	0.80	0.091	0.36	0.00	0.36	0.0200	0.0500	2.0	0.0833	1.6660	2.26	0.99	2.7992	0.1166	0.1655	**4.51**	1.33	1.00	0.36	0.00		
12B	3B	**6.0**	0.12	0.80	0.092	0.37	0.00	0.37	0.0200	0.0500	2.0	0.0833	1.6660	2.27	0.99	2.7992	0.1166	0.1655	**4.54**	1.32	1.00	0.37	0.00		
16	3B	**4.0**	0.03	0.88	0.023	0.09	0.00	0.09	0.0200	0.0300	2.0	0.0833	2.7767	1.87	0.99	3.2792	0.1366	0.1653	**2.56**	1.57	1.00	0.09	0.00		
28STR	3B	**8.0**	0.17	0.82	0.142	0.57	0.00	0.57	0.0200	0.0200	2.0	0.0833	4.1650	4.74	0.90	3.5192	0.1466	0.1520	**5.73**	1.40	1.00	0.57	0.00		
30STR	2B	**6.0**	0.07	0.76	0.056	0.22	0.00	0.22	0.0200	0.0200	2.0	0.0833	4.1650	3.35	0.98	3.5192	0.1466	0.1637	**3.71**	1.62	1.00	0.22	0.00		
32	2B	**8.0**	0.16	0.89	0.141	0.56	0.00	0.56	0.0325	0.0200	2.0	0.0833	4.1650	4.31	0.93	3.5192	0.1466	0.1564	**6.50**	1.23	1.00	0.56	0.00		
34	2B	**8.0**	0.60	0.65	0.387	1.55	0.00	1.55	0.0100	0.0200	2.0	0.0833	4.1650	7.86	0.68	3.5192	0.1466	0.1197	**8.18**	0.98	1.00	1.55	0.00		
36	3B	**6.0**	0.07	0.83	0.056	0.22	0.00	0.22	0.0325	0.0200	2.0	0.0833	4.1650	3.04	0.92	3.5192	0.1466	0.1549	**4.42**	1.36	1.00	0.22	0.00		
38STR	3B	**6.0**	0.14	0.83	0.117	0.47	0.00	0.47	0.0200	0.0500	2.0	0.0833	1.6660	2.48	0.99	2.7992	0.1166	0.1655	**5.02**	1.20	1.00	0.47	0.00		
46STR	2B	**6.0**	0.12	0.81	0.097	0.39	0.00	0.39	0.0200	0.0200	2.0	0.0833	4.1650	4.11	0.95	3.5192	0.1466	0.1593	**4.74**	1.26	1.00	0.39	0.00		
48STR	2B	**10.0**	0.26	0.78	0.200	0.80	0.00	0.80	0.0200	0.0200	2.0	0.0400	2.0000	5.38	0.81	2.4800	0.1033	0.1037	**8.31**	1.20	1.00	0.80	0.00		
54	2B	**8.0**	0.18	0.81	0.145	0.58	0.00	0.58	0.0250	0.0100	2.0	0.0833	8.3300	7.06	0.85	3.7592	0.1566	0.1431	**6.40**	1.25	1.00	0.58	0.00		
68D	3B	**4.0**	0.02	0.81	0.013	0.05	0.00	0.05	0.0300	0.0200	2.0	0.0833	4.1650	1.80	1.00	3.5192	0.1466	0.1666	**2.26**	1.77	1.00	0.05	0.00		
70	3B	**8.0**	0.26	0.61	0.161	0.65	0.00	0.65	0.0200	0.0200	2.0	0.0833	4.1650	4.97	0.88	3.5192	0.1466	0.1490	**6.11**	1.31	1.00	0.65	0.00		

- for inlets draining to stormwater management facilities, where overland flow to facilities is not available, 100% capture is required at 6.5in/hr

Table 7: Grade Inlet Design Table

INLETS ON GRADE, DESIGN (CURB SPREAD AND INLET CAPTURE)

Intensity 6.50 (Intensity is 4 in/hr for spread, and 6.5 in/hr for capacity and depth)

Mannings Coefficient, n is 0.013

Inlet			Hydrology						Curb and Gutter						Inlet								
Plan Label	VDOT DI type	L, throat length (ft)	A, Drainage area (acres)	C, rational coeff.	CA	Q, flow incr. (cfs)	Qb, carry-over (cfs)	Qt, total flow	S, gutter longitudinal slope (ft/ft)	Sx, lane cross slope (ft/ft)	W, gutter width (ft)	Sw, gutter cross-slope (ft/ft)	Sw/Sx	T, spread at curb (ft)	Eo, frontal flow ratio in gutter W	a, 12W(Sw-Sx)+ 2*local depr. (in)	Sw = a/(12W)	Se = Sx+Sw(Eo)	Lt, require throat length (ft)	L / Lt	E, inlet efficiency	Qi, flow intercepted	Qb, carry-over	carry-over to inlet	Maximum allowable spread
12	3B	**6.0**	0.11	0.80	0.091	0.59	0.00	0.59	0.0200	0.0500	2.0	0.0833	1.6660	2.71	0.99	2.7992	0.1166	0.1655	**5.53**	1.09	1.00	0.59	0.00		
12B	3B	**6.0**	0.12	0.80	0.092	0.60	0.00	0.60	0.0200	0.0500	2.0	0.0833	1.6660	2.73	0.99	2.7992	0.1166	0.1655	**5.57**	1.08	1.00	0.60	0.00		
16	3B	**4.0**	0.03	0.88	0.023	0.15	0.00	0.15	0.0200	0.0300	2.0	0.0833	2.7767	2.24	0.99	3.2792	0.1366	0.1653	**3.13**	1.28	1.00	0.15	0.00		
28STR	3B	**8.0**	0.17	0.82	0.142	0.93	0.00	0.93	0.0200	0.0200	2.0	0.0833	4.1650	5.69	0.90	3.5192	0.1466	0.1520	**7.03**	1.14	1.00	0.93	0.00		
30STR	2B	**6.0**	0.07	0.76	0.056	0.37	0.00	0.37	0.0200	0.0200	2.0	0.0833	4.1650	4.01	0.98	3.5192	0.1466	0.1637	**4.55**	1.32	1.00	0.37	0.00		
32	2B	**8.0**	0.16	0.89	0.141	0.92	0.13	1.05	0.0325	0.0200	2.0	0.0833	4.1650	5.44	0.93	3.5192	0.1466	0.1564	**8.41**	0.95	1.00	1.04	0.00		
34	2B	**8.0**	0.60	0.65	0.387	2.52	0.00	2.52	0.0100	0.0200	2.0	0.0833	4.1650	9.43	0.70	3.5192	0.1466	0.1226	**9.89**	0.81	0.95	2.39	0.13	32	
36	3B	**6.0**	0.07	0.83	0.056	0.36	0.00	0.36	0.0325	0.0200	2.0	0.0833	4.1650	3.65	0.92	3.5192	0.1466	0.1549	**5.42**	1.11	1.00	0.36	0.00		
38STR	3B	**6.0**	0.14	0.83	0.117	0.76	0.00	0.76	0.0200	0.0500	2.0	0.0833	1.6660	2.98	0.99	2.7992	0.1166	0.1655	**6.15**	0.98	1.00	0.76	0.00		
46STR	2B	**6.0**	0.12	0.81	0.097	0.63	0.00	0.63	0.0200	0.0200	2.0	0.0833	4.1650	4.93	0.95	3.5192	0.1466	0.1593	**5.82**	1.03	1.00	0.63	0.00		
48STR	2B	**10.0**	0.26	0.78	0.200	1.30	0.00	1.30	0.0200	0.0200	2.0	0.0400	2.0000	6.46	0.81	2.4800	0.1033	0.1037	**10.20**	0.98	1.00	1.30	0.00		
54	2B	**8.0**	0.18	0.81	0.145	0.94	0.00	0.94	0.0250	0.0100	2.0	0.0833	8.3300	8.47	0.85	3.7592	0.1566	0.1431	**7.85**	1.02	1.00	0.94	0.00		
68D	3B	**4.0**	0.02	0.81	0.013	0.09	0.00	0.09	0.0300	0.0200	2.0	0.0833	4.1650	2.16	1.00	3.5192	0.1466	0.1666	**2.77**	1.45	1.00	0.09	0.00		
70	3B	**8.0**	0.26	0.61	0.161	1.05	0.00	1.05	0.0200	0.0200	2.0	0.0833	4.1650	5.96	0.81	3.5192	0.1466	0.1388	**7.82**	1.02	1.00	1.05	0.00		

- for inlets draining to stormwater management facilities, where overland flow to facilities is not available, 100% capture is required at 6.5in/hr

COMMONWEALTH OF VIRGINIA
SCOTT R. COLLINS
No. 35791
PROFESSIONAL ENGINEER
5/12/23

REVISIONS

DATE	REVISION DESCRIPTION
2/06/23	INITIAL PLAN SUBMITTAL
5/12/23	REVISED PER COUNTY COMMENTS

COLLINS ENGINEERING
200 GARRETT STREET, SUITE K-CHARLOTTESVILLE, VA 22902-434.293.3719

PROJECT: CVILLE RIO ROAD APARTMENTS - FINAL SITE PLAN
SHEET: DRAINAGE CALCULATIONS

JOB NO. 202202
SCALE N/A
SHEET NO. 15

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Table 6: Sump Inlet Design Table

INLETS IN SUMP, DESIGN (CURB SPREAD AND INLET SPREAD AND DEPTH)

Intensity 4.00 (Intensity is 4 in/hr for spread, and 6.5 in/hr for capacity and depth)
Mannngs Coefficient, n is 0.013

	Inlet		Hydrology						Curb and Gutter						Inlet			
Plan Label	VDOT DI type	L, throat length (ft)		A, Drainage area (acres)	C, rational coeff.	CA	Q, flow incr. (cfs)	Qb, carry-over (cfs)	Qt, total flow	S, gutter longitudinal slope (ft/ft)	Sx, lane cross slope (ft/ft)	W, gutter width (ft)	Sw, gutter cross-slope (ft/ft)	Sw/Sx	T, spread at curb (ft)	d, flow depth (ft)	d / h (height of opening, 5.5")	T, spread at inlet (ft)	Remarks
			all	0.06	0.82	0.047	0.19	0.00	0.19	0.0010	0.0500	2.0	0.0833	1.6660	3.10				
6STR	3B	**6.0**					combined flow		0.2							0.04	0.091	**0.84**	
			all	0.27	0.81	0.218	0.87	0.00	0.87	0.0010	0.0500	2.0	0.0833	1.6660	5.51				
8	3B	**8.0**					combined flow		0.9							0.10	0.223	**2.05**	
			all	0.13	0.85	0.111	0.45	0.00	0.45	0.0010	0.0500	2.0	0.0833	1.6660	4.28				
14STR	2B	**6.0**					combined flow		0.4							0.07	0.162	**1.48**	
			all	0.09	0.80	0.075	0.30	0.00	0.30	0.0010	0.0500	2.0	0.0833	1.6660	3.69				
18	2B	**6.0**					combined flow		0.3							0.06	0.124	**1.14**	
			all	0.25	0.83	0.206	0.82	0.00	0.82	0.0010	0.0500	2.0	0.0833	1.6660	5.39				
20	2C	**8.0**					combined flow		0.8							0.10	0.215	**1.97**	
			left	0.15	0.81	0.122	0.49	0.00	0.49	0.0010	0.0500	2.0	0.0833	1.6660	4.42				
			right	0.04	0.81	0.036	0.15	0.00	0.15	0.0010	0.0500	2.0	0.0833	1.6660	2.81				
22	2B	**8.0**					combined flow		0.6							0.08	0.180	**1.65**	
			all	0.23	0.86	0.195	0.78	0.00	0.78	0.0100	0.0200	2.0	0.0833	4.1650	6.07				
24STR	2B	**8.0**					combined flow		0.8							0.09	0.207	**4.74**	
			all	0.30	0.80	0.240	0.96	0.00	0.96	0.0010	0.0500	2.0	0.0833	1.6660	5.70				
26	3B	**8.0**					combined flow		1.0							0.11	0.238	**2.18**	
			all	0.09	0.84	0.072	0.29	0.00	0.29	0.0010	0.0300	2.0	0.0833	2.7767	5.01				
40	2B	**6.0**					combined flow		0.3							0.06	0.121	**1.85**	
			all	0.12	0.76	0.095	0.38	0.00	0.38	0.0010	0.0300	2.0	0.0833	2.7767	5.54				
42	2B	**6.0**					combined flow		0.4							0.07	0.145	**2.22**	
			all	0.16	0.89	0.139	0.55	0.00	0.55	0.0010	0.0500	2.0	0.0833	1.6660	4.64				
44	3B	**6.0**					combined flow		0.6							0.09	0.187	**1.71**	
			left	0.03	0.73	0.022	0.09	0.00	0.09	0.0010	0.0500	2.0	0.0500	1.0000	2.32				
			right	0.04	0.73	0.032	0.13	0.00	0.13	0.0010	0.0500	2.0	0.0500	1.0000	2.69				
50STR	2B	**6.0**					combined flow		0.2							0.05	0.100	**0.92**	
			left	0.17	0.81	0.138	0.55	0.00	0.55	0.0010	0.0300	2.0	0.0833	2.7767	6.37				
			right	0.00	0.81	0.003	0.01	0.00	0.01	0.0010	0.0300	2.0	0.0833	2.7767	1.47				
52	2C	**8.0**					combined flow		0.6							0.08	0.166	**2.54**	
			left	0.05	0.81	0.036	0.15	0.00	0.15	0.0010	0.0500	2.0	0.0833	1.6660	2.81				
			right	0.12	0.81	0.097	0.39	0.00	0.39	0.0010	0.0500	2.0	0.0833	1.6660	4.06				
52B	2C	**8.0**					combined flow		0.5							0.07	0.161	**1.47**	
			all	0.10	0.87	0.088	0.35	0.00	0.35	0.0010	0.0200	2.0	0.0833	4.1650	6.94				
56	2B	**6.0**					combined flow		0.4							0.06	0.138	**3.17**	
			left	0.06	0.71	0.043	0.17	0.00	0.17	0.0010	0.0200	2.0	0.0833	4.1650	5.29				
			right	0.06	0.71	0.044	0.17	0.00	0.17	0.0010	0.0200	2.0	0.0833	4.1650	5.33				
60	2C	**6.0**					combined flow		0.3							0.06	0.136	**3.12**	
			left	0.03	0.63	0.019	0.08	0.00	0.08	0.0010	0.0200	2.0	0.0833	4.1650	3.90				
			right	0.06	0.63	0.037	0.15	0.00	0.15	0.0010	0.0200	2.0	0.0833	4.1650	5.01				
62STR	2C	**6.0**					combined flow		0.2							0.05	0.102	**2.34**	
			left	0.04	0.71	0.028	0.11	0.00	0.11	0.0010	0.0200	2.0	0.0833	4.1650	4.54				
			right	0.06	0.71	0.043	0.17	0.00	0.17	0.0010	0.0200	2.0	0.0833	4.1650	5.29				
64	2C	**6.0**					combined flow		0.3							0.05	0.120	**2.75**	
			left	0.04	0.71	0.028	0.11	0.00	0.11	0.0010	0.0200	2.0	0.0833	4.1650	4.54				
			right	0.05	0.71	0.033	0.13	0.00	0.13	0.0010	0.0200	2.0	0.0833	4.1650	4.81				
66	2C	**6.0**					combined flow		0.2							0.05	0.109	**2.49**	
			all	0.19	0.63	0.119	0.48	0.00	0.48	0.0100	0.0500	2.0	0.0833	1.6660	2.85				
68STR	3B	**8.0**					combined flow		0.5							0.07	0.149	**1.37**	
			all	0.19	0.53	0.102	0.41	0.00	0.41	0.0100	0.0500	2.0	0.0833	1.6660	2.69				
38BSTR	2B	**6.0**					combined flow		0.4							0.07	0.152	**1.40**	
			all	0.56	0.51	0.285	1.14	0.00	1.14	0.0010	0.0200	2.0	0.0833	4.1650	10.79				
72STR	2B	**12.0**					combined flow		1.1							0.10	0.219	**5.02**	
			all	0.18	0.53	0.095	0.38	0.00	0.38	0.0010	0.0200	2.0	0.0833	4.1650	7.15				
74	2B	**8.0**					combined flow		0.4							0.06	0.128	**2.94**	
			all	0.28	0.65	0.182	0.73	0.00	0.73	0.0010	0.0200	2.0	0.0833	4.1650	9.11				
76STR	2B	**10.0**					combined flow		0.7							0.08	0.178	**4.07**	
			all	0.12	0.52	0.064	0.26	0.00	0.26	0.0010	0.0200	2.0	0.0500	2.5000	6.18				
78	3B	**6.0**					combined flow		0.3							0.05	0.112	**2.57**	

* gutter longitudinal slope of 0.001 should be used in a sump condition
- grate inlets (DI-7) in open pavement areas will not have a curb spread, but will have inlet spread and depth
- for inlets draining to stormwater management facilities, the 6.5in/hr check storm will suffice for the 10yr conveyance to the facilities
NOTE: Inlet size for structures determined by overland flow. Pipes have been sized to include overland flow as well as yard inlet and roof drain drainage areas.

Table 6: Sump Inlet Design Table

INLETS IN SUMP, DESIGN (CURB SPREAD AND INLET SPREAD AND DEPTH)

Intensity 6.50 (Intensity is 4 in/hr for spread, and 6.5 in/hr for capacity and depth)
Mannings Coefficient, n is 0.013

	Inlet		Hydrology						Curb and Gutter						Inlet			
Plan Label	VDOT DI type	L, throat length (ft)		A, Drainage area (acres)	C, rational coeff.	CA	Q, flow incr. (cfs)	Qb, carry-over (cfs)	Qt, total flow	S, gutter longitudinal slope (ft/ft)	Sx, lane cross slope (ft/ft)	W, gutter width (ft)	Sw, gutter cross-slope (ft/ft)	Sw/Sx	T, spread at curb (ft)	d, flow depth (ft)	d / h (height of opening, 5.5")	T, spread at inlet (ft)	Remarks
			all	0.06	0.82	0.047	0.31	0.00	0.31	0.0010	0.0500	2.0	0.0833	1.6660	3.72				
6STR	3B	**6.0**					combined flow		0.3							0.06	0.126	**1.15**	
			all	0.27	0.81	0.218	1.42	0.00	1.42	0.0010	0.0500	2.0	0.0833	1.6660	6.60				
8	3B	**8.0**					combined flow		1.4							0.14	0.309	**2.83**	
			all	0.13	0.85	0.111	0.72	0.00	0.72	0.0010	0.0500	2.0	0.0833	1.6660	5.13				
14STR	2B	**6.0**					combined flow		0.7							0.10	0.223	**2.05**	
			all	0.09	0.80	0.075	0.49	0.00	0.49	0.0010	0.0500	2.0	0.0833	1.6660	4.43				
18	2B	**6.0**					combined flow		0.5							0.08	0.172	**1.58**	
			all	0.25	0.83	0.206	1.34	0.00	1.34	0.0010	0.0500	2.0	0.0833	1.6660	6.46				
20	2C	**8.0**					combined flow		1.3							0.14	0.297	**2.72**	
			left	0.15	0.81	0.122	0.79	0.00	0.79	0.0010	0.0500	2.0	0.0833	1.6660	5.30				
			right	0.04	0.81	0.036	0.24	0.00	0.24	0.0010	0.0500	2.0	0.0833	1.6660	3.37				
22	2B	**8.0**					combined flow		1.0							0.11	0.249	**2.28**	
			all	0.23	0.86	0.195	1.27	0.00	1.27	0.0100	0.0200	2.0	0.0833	4.1650	7.29				
24STR	2B	**8.0**					combined flow		1.3							0.13	0.286	**6.55**	
			all	0.30	0.80	0.240	1.56	0.00	1.56	0.0010	0.0500	2.0	0.0833	1.6660	6.84				
26	3B	**8.0**					combined flow		1.6							0.15	0.329	**3.01**	
			all	0.09	0.84	0.072	0.47	0.00	0.47	0.0010	0.0300	2.0	0.0833	2.7767	6.01				
40	2B	**6.0**					combined flow		0.5							0.08	0.168	**2.56**	
			all	0.12	0.76	0.095	0.62	0.00	0.62	0.0010	0.0300	2.0	0.0833	2.7767	6.65				
42	2B	**6.0**					combined flow		0.6							0.09	0.201	**3.07**	
			all	0.16	0.89	0.139	0.90	0.00	0.90	0.0010	0.0500	2.0	0.0833	1.6660	5.57				
44	3B	**6.0**					combined flow		0.9							0.12	0.259	**2.37**	
			left	0.03	0.73	0.022	0.14	0.00	0.14	0.0010	0.0500	2.0	0.0500	1.0000	2.78				
			right	0.04	0.73	0.032	0.21	0.00	0.21	0.0010	0.0500	2.0	0.0500	1.0000	3.23				
50STR	2B	**6.0**					combined flow		0.4							0.06	0.138	**1.27**	
			left	0.17	0.81	0.138	0.90	0.00	0.90	0.0010	0.0300	2.0	0.0833	2.7767	7.65				
			right	0.00	0.81	0.003	0.02	0.00	0.02	0.0010	0.0300	2.0	0.0833	2.7767	1.77				
52	2C	**8.0**					combined flow		0.9							0.11	0.230	**3.51**	
			left	0.05	0.81	0.036	0.24	0.00	0.24	0.0010	0.0500	2.0	0.0833	1.6660	3.38				
			right	0.12	0.81	0.097	0.63	0.00	0.63	0.0010	0.0500	2.0	0.0833	1.6660	4.87				
52B	2C	**8.0**					combined flow		0.9							0.10	0.222	**2.04**	
			all	0.10	0.87	0.088	0.57	0.00	0.57	0.0010	0.0200	2.0	0.0833	4.1650	8.33				
56	2B	**6.0**					combined flow		0.6							0.09	0.191	**4.38**	
			left	0.06	0.71	0.043	0.28	0.00	0.28	0.0010	0.0200	2.0	0.0833	4.1650	6.34				
			right	0.06	0.71	0.044	0.28	0.00	0.28	0.0010	0.0200	2.0	0.0833	4.1650	6.40				
60	2C	**6.0**					combined flow		0.6							0.09	0.188	**4.31**	
			left	0.03	0.63	0.019	0.12	0.00	0.12	0.0010	0.0200	2.0	0.0833	4.1650	4.68				
			right	0.06	0.63	0.037	0.24	0.00	0.24	0.0010	0.0200	2.0	0.0833	4.1650	6.01				
62STR	2C	**6.0**					combined flow		0.4							0.06	0.141	**3.23**	
			left	0.04	0.71	0.028	0.18	0.00	0.18	0.0010	0.0200	2.0	0.0833	4.1650	5.45				
			right	0.06	0.71	0.043	0.28	0.00	0.28	0.0010	0.0200	2.0	0.0833	4.1650	6.35				
64	2C	**6.0**					combined flow		0.5							0.08	0.166	**3.80**	
			left	0.04	0.71	0.028	0.18	0.00	0.18	0.0010	0.0200	2.0	0.0833	4.1650	5.45				
			right	0.05	0.71	0.033	0.22	0.00	0.22	0.0010	0.0200	2.0	0.0833	4.1650	5.77				
66	2C	**6.0**					combined flow		0.4							0.07	0.150	**3.45**	
			all	0.19	0.63	0.119	0.78	0.00	0.78	0.0100	0.0500	2.0	0.0833	1.6660	3.42				
68STR	3B	**8.0**					combined flow		0.8							0.09	0.206	**1.89**	
			all	0.19	0.53	0.102	0.66	0.00	0.66	0.0100	0.0500	2.0	0.0833	1.6660	3.22				
38BSTR	2B	**6.0**					combined flow		0.7							0.10	0.211	**1.93**	
			all	0.56	0.51	0.285	1.85	0.00	1.85	0.0010	0.0200	2.0	0.0833	4.1650	12.94				
72STR	2B	**12.0**					combined flow		1.9							0.14	0.303	**6.93**	
			all	0.18	0.53	0.095	0.62	0.00	0.62	0.0010	0.0200	2.0	0.0833	4.1650	8.58				
74	2B	**8.0**					combined flow		0.6							0.08	0.177	**4.06**	
			all	0.28	0.65	0.182	1.18	0.00	1.18	0.0010	0.0200	2.0	0.0833	4.1650	10.93				
76STR	2B	**10.0**					combined flow		1.2							0.11	0.246	**5.63**	
			all	0.12	0.52	0.064	0.42	0.00	0.42	0.0010	0.0200	2.0	0.0500	2.5000	7.41				
78	3B	**6.0**					combined flow		0.4							0.07	0.155	**3.56**	

* gutter longitudinal slope of 0.001 should be used in a sump condition
- grate inlets (DI-7) in open pavement areas will not have a curb spread, but will have inlet spread and depth
- for inlets draining to stormwater management facilities, the 6.5in/hr check storm will suffice for the 10yr conveyance to the facilities
NOTE: Inlet size for structures determined by overland flow. Pipes have been sized to include overland flow as well as yard inlet and roof drain drainage areas.

COMMONWEALTH OF VIRGINIA
SCOTT R. COLLINS
No. 35791
PROFESSIONAL ENGINEER
5/12/23

REVISIONS

DATE	REVISION DESCRIPTION
2/06/23	INITIAL PLAN SUBMITTAL
5/12/23	REVISED PER COUNTY COMMENTS

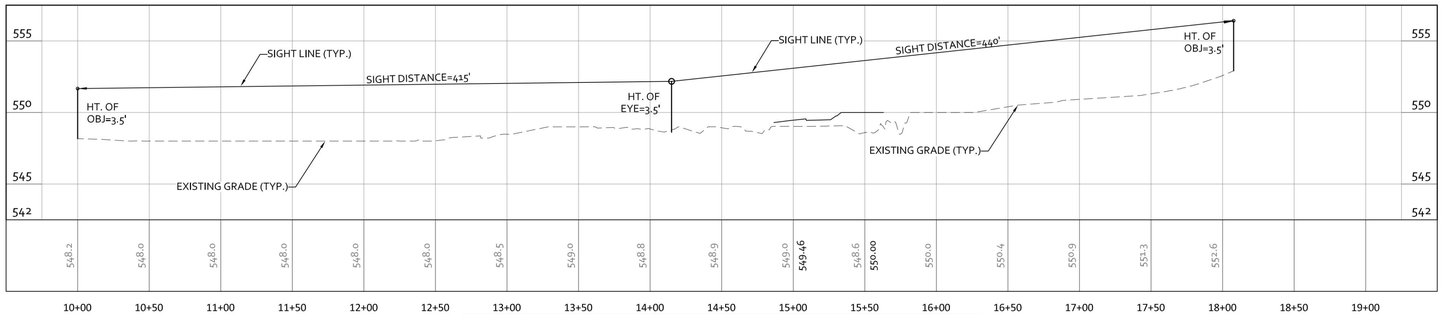
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PROJECT
CVILLE RIO ROAD APARTMENTS - FINAL SITE PLAN

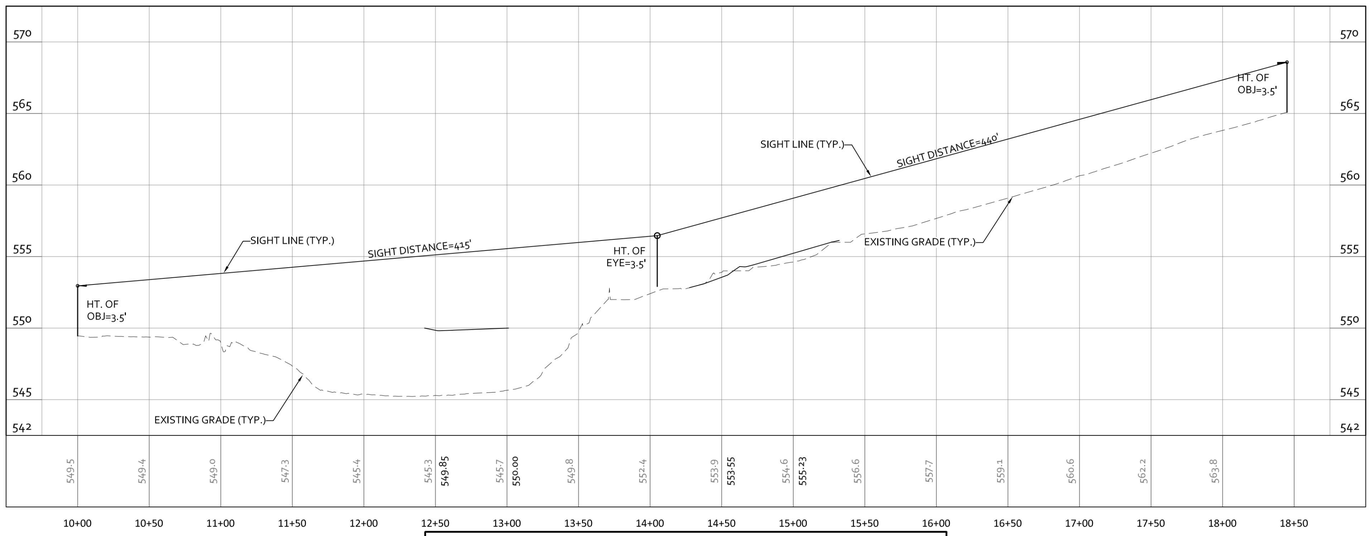
SHEET
DRAINAGE CALCULATIONS

JOB NO. 202202
SCALE N/A
SHEET NO. 16

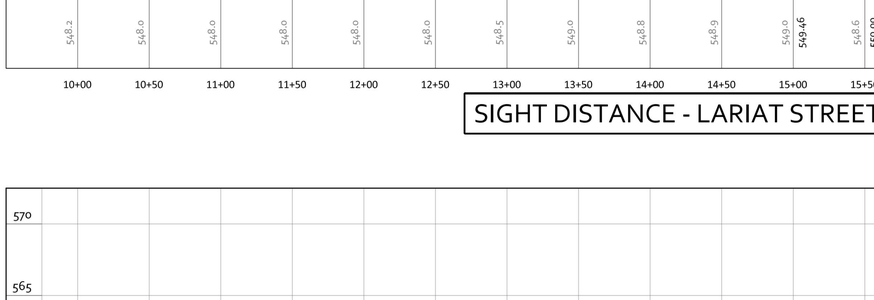
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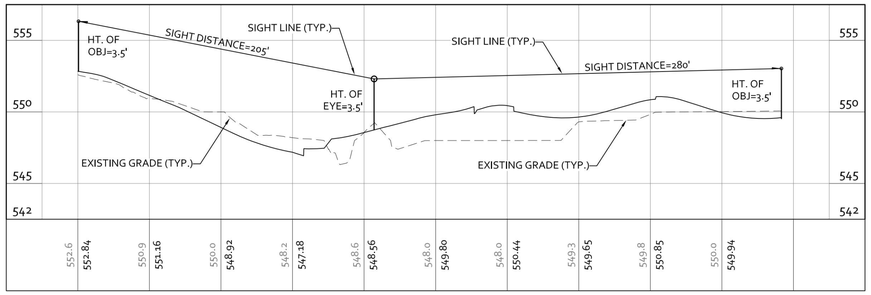
SIGHT DISTANCE - LARIAT STREET TO RIO



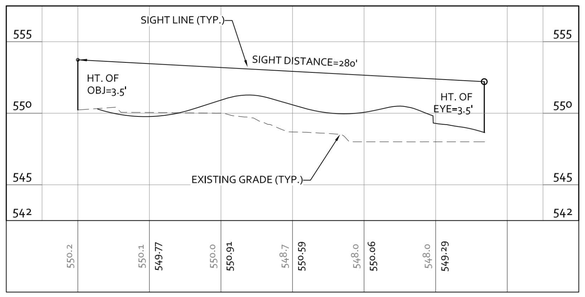
SIGHT DISTANCE - HERITAGE HALL TO RIO



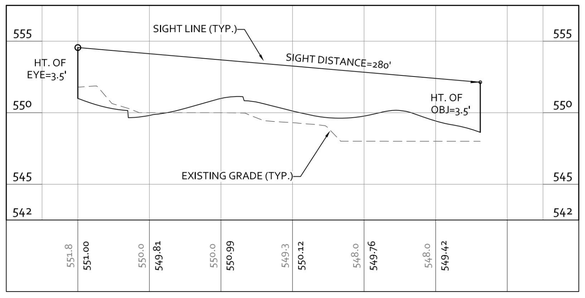
SIGHT DISTANCE - ENTRADA DRIVE WEST TO HERITAGE HALL



SIGHT DISTANCE - ENTRADA DRIVE EAST TO HERITAGE HALL



SIGHT DISTANCE - DRIVE AISLE WEST TO HERITAGE HALL



SIGHT DISTANCE - DRIVE AISLE EAST TO HERITAGE HALL



COMMONWEALTH OF VIRGINIA
SCOTT R. COLLINS
No. 35791
PROFESSIONAL ENGINEER
5/12/23

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PROJECT: CVILLE RIO ROAD APARTMENTS - FINAL SITE PLAN

SHEET: SIGHT DISTANCE PROFILES

JOB NO. 202202

SCALE V: 1"=5' H: 1"=50'

SHEET NO. 17

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Typical Traffic Control
Road Closure Operation with a Diversion
(Figure TTC-43.2)
NOTES

Guidance:

1. *Sign spacing distance should be 500'-800' where the posted speed limit is greater than 45 mph, and 350'-500' where the posted speed limit is 45 mph or less.*
2. *Care should be exercised when establishing the limits of the work zone to insure maximum possible sight distance in advance of the lane shift, based on the posted speed limit and at least equal to or greater than the values in Table 6H-3.*

Option

3. Temporary traffic barriers, temporary asphalt median or temporary tubular markers may be used to separate opposing vehicular traffic based on guidance in Appendix A.
4. Long-term transvere rumble strips may be installed to enhance the work zone see Chapter 6F, Section 6F-99 paragraph 12 and 13 for installation guidance and spacing.[2]

Guidance:

5. *The alignment should be designed as a reverse curve.*
   The curved alignment should meet the design criteria contained in the AASHTO "Policy on the Geometric Design of Highways and Streets" (see Section 1A.11) and Appendix A of the Road design manual Standard GS-10 should be used[2].

Standard:

6. **Devices similar to those depicted shall be placed for the opposite direction of traffic.**
7. **Appropriate impact attenuators or terminal end treatments shall be used to protect the end of longitudinal barriers if the barrier is terminated within the clear zone.**
8. **Channelizing device spacing shall be at the following:**

Channelizing Device Spacing						
Location Spacing	Speed Limit (mph)		Location Spacing	Speed Limit (mph)		Location Spacing	Speed Limit (mph)	
	0 -35	36 +		0 -35	36 +		0 -35	36 +
Transition	20'	40'	Travelway	40'	80'	*Construction Access	80'	120'
*Construction access spacing may be increased to this distance, but shall not exceed one access per ¼ mile.								

9. **Pavement markings and markers no longer applicable to the traffic pattern of the roadway shall be removed or obliterated before any new traffic patterns are open to traffic (see Figure TTC-60).**
10. **The directional arrow (W1-6) shall be installed above the Type 3 railing.[2]**

Guidance:

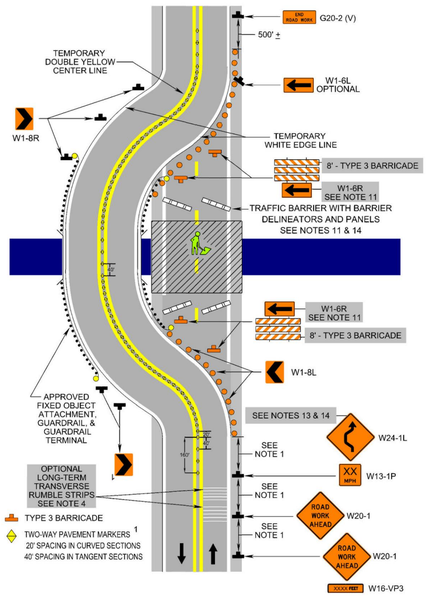
11. *Temporary barrier should be placed at a 45° angle to the travelway a sufficient distance beyond the Type 3 Barricade but before the work space while providing equipment access to the work space.*
12. *If the tangent distance along the temporary diversion is more than 600 feet, a Reverse Curve (W1-4 series) sign, left first, should be used instead of the Double Reverse Curve (W24-1) sign, and a second Reverse Curve sign, right first, should be placed in advance of the second reverse curve back to the original alignment.*
13. *When tangent section of the diversion is more than 600 feet, and the diversion has sharp curves with recommended speeds of 30 mph or less, Reverse Turn (W1-3) signs, should be used.*

Standard:

14. **Barrier panels 8 inches in width and 12 inches in height shall be placed on top of the temporary concrete barrier, facing traffic, and spaced on 10' centers along the taper sections. Reflectorized surface shall be fluorescent orange prismatic lens sheeting. Barrier delinators shall be spaced on 10' centers along the transition or taper sections and centered[2] in-between the barrier panels along the parrallel or tangent sections[2] approximately 24 inches up from the roadway surface.**

2: Revision 2 – 9/1/2019

Road Closure Operation with a Diversion
(Figure TTC-43.2)



1: Revision 1 – 4/1/2015
2: Revision 2 –9/1/2019

Typical Traffic Control
Stationary Operation on a Shoulder
(Figure TTC-4.1)
NOTES

Standard

1. **For long-term stationary work (more than 3 days) on divided highways having a median wider than 8', sign assemblies on both sides of the roadway shall be required as shown (ROAD WORK AHEAD (W20-1), RIGHT SHOULDER CLOSED AHEAD (W21-5bR), RIGHT SHOULDER CLOSED (W21-5aR)), even though only one shoulder is being closed. For operations less than 3 days in duration, sign assemblies will only be required on the side where the shoulder is being closed and a RIGHT SHOULDER CLOSED (W21-5aR)[1] sign shall be added to that side.**

Guidance

2. *Sign spacing should be 1300'-1500' for Limited Access highways. For all other roadways, the sign spacing should be 500'-800' where the posted speed limit is greater than 45 mph, and 350'-500' where the posted speed limit is 45 mph or less.*

Option:

3. The SHOULDER WORK (W21-5) sign on an intersecting roadway may be omitted where drivers emerging from that roadway will encounter another advance warning sign prior to this activity area.
4. For short duration operations of 60 minutes or less, all signs and channelizing devices may be eliminated if a vehicle with activated high-intensity amber rotating, flashing, or[2] oscillating lights is used.

Standard:

5. **Vehicle hazard warning signals shall not be used instead of the vehicle's high-intensity amber rotating, flashing, or[2] oscillating lights. Vehicle hazard warning signals can be used to supplement high-intensity amber rotating, flashing, or[2] oscillating, lights.**
6. **Taper length (L) and channelizing device spacing shall be at the following:**

Taper Length (L)				
Speed Limit (mph)	Lane Width (Feet)			
	9	10	11	12
25	95	105	115	125
30	135	150	165	180
35	185	205	225	245
40	240	270	295	320
45	405	450	495	540
50	450	500	550	600
55	495	550	605	660
60	540	600	660	720
65	585	650	715	780
70	630	700	770	840
Minimum taper lengths for Limited Access highways shall be 1000 feet.				
Shoulder Taper = ½ L Minimum				

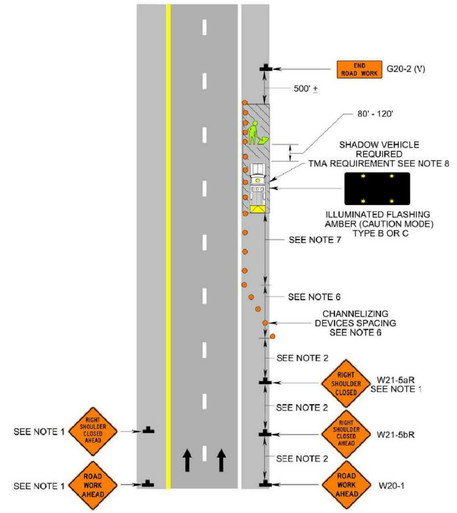
Channelizing Device Spacing		
Location	Speed Limit (mph)	
	0 - 35	36 +
Transition Spacing	20'	40'
Travelway Spacing	40'	80'
Construction Access*	80'	120'
* Spacing may be increased to this distance, but shall not exceed one access per ¼ mile.		

On roadways with paved shoulders having a width of 8 feet or more, channelizing devices shall be used to close the shoulder in advance of the merging taper to direct vehicular traffic to remain within the traveled way.

7. **The buffer space length shall be as shown in Table 6H-3 on Page 6H-5 for the posted speed limit.**
8. **A truck-mounted attenuator (TMA) shall be used on the shadow vehicle on Limited Access highways and multi-lane roadways with posted speed limit equal to or greater than 45 mph for operations with a duration greater than 60 minutes.**
9. **When a side road intersects the highway within the temporary traffic control zone, additional traffic control devices shall be placed as needed.**

1: Revision 1 – 4/1/2015

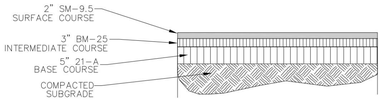
Stationary Operation on a Shoulder
(Figure TTC-4.1)



COMMONWEALTH OF VIRGINIA
SCOTT R. COLLINS
No. 35791
PROFESSIONAL ENGINEER
5/12/23

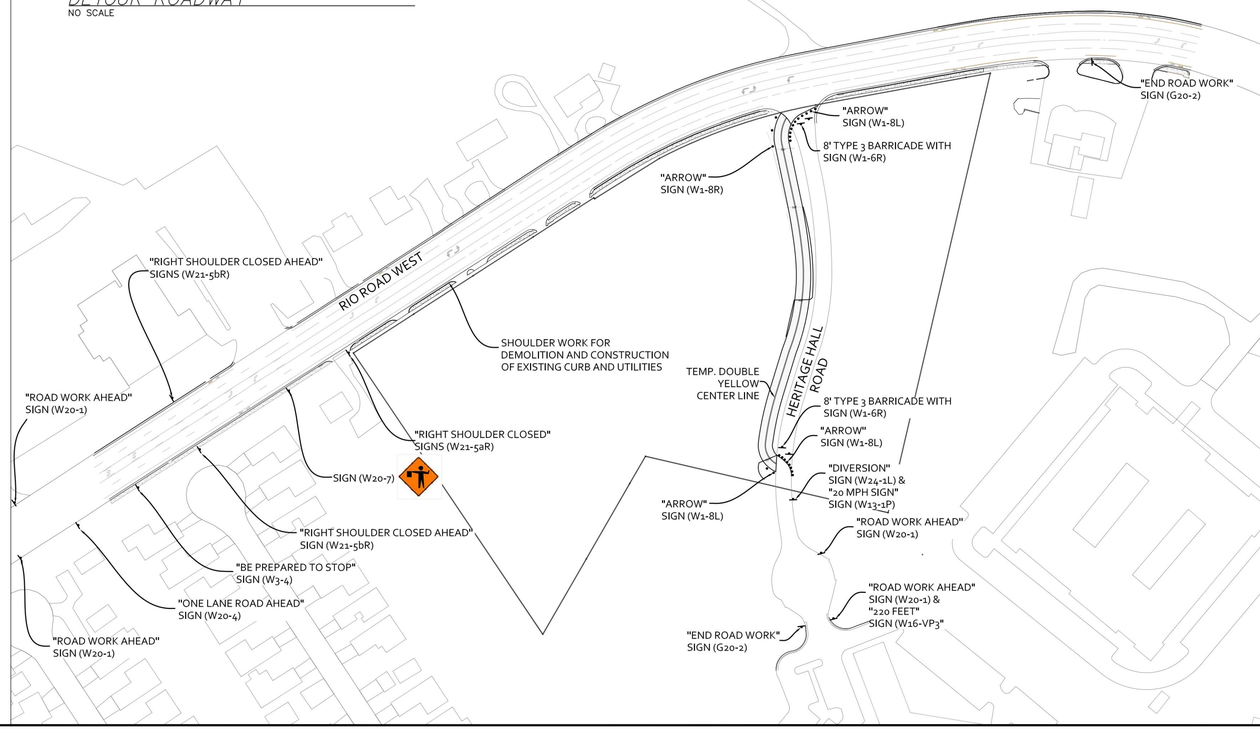
REVISIONS

DATE	REVISION DESCRIPTION
2/06/23	INITIAL PLAN SUBMITTAL
5/12/23	REVISED PER COUNTY COMMENTS



ASPHALT PAVING – 20' WIDE DETOUR ROADWAY
NO SCALE

GRAPHIC SCALE
100 0 50 100 200 400
(IN FEET)
1 inch = 100 ft.

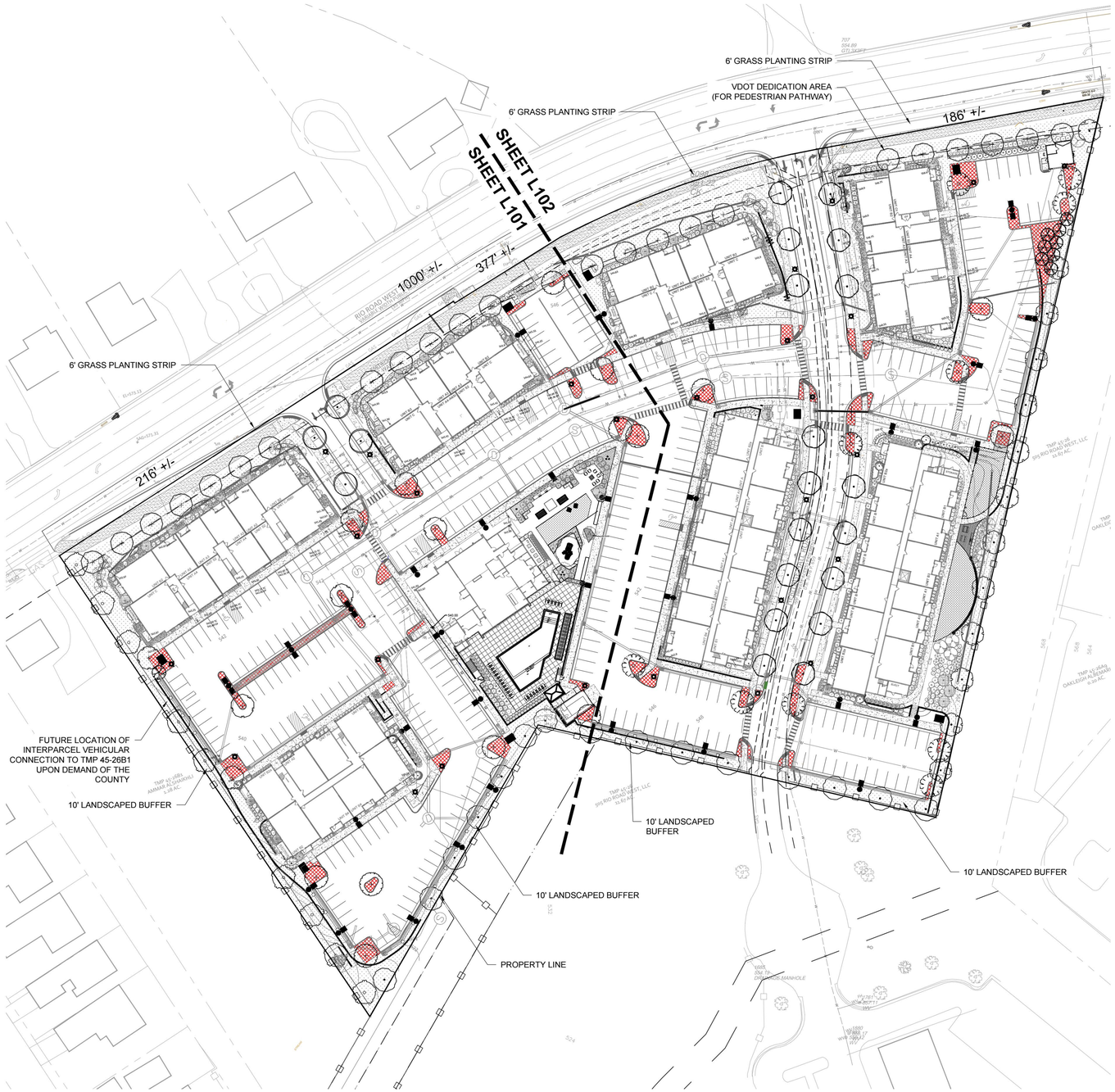


COLLINS ENGINEERING
200 GARRETT STREET, SUITE K-CHARLOTTESVILLE, VA 22902 -434.293.3719

PROJECT: CVILLE RIO ROAD APARTMENTS - FINAL SITE PLAN
SHEET: MAINTENANCE OF TRAFFIC PLAN

JOB NO.	SCALE	SHEET NO.
202202	1"=100'	18

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ONSITE LANDSCAPE SCHEDULE

KEY	QTY.	CAT.	BOTANICAL NAME	COMMON NAME	CAL / HT.	CONT.	CANOPY	TOTAL CANOPY
SHADE TREES								
ACFR	10	LARGE	ACER X FREEMANII 'JEFFERSRED'	AUTUMN BLAZE MAPLE	3 1/2"	B+B	397	3970
GLET	12	LARGE	GLEDITSIA TRIACANTHOS INERMIS	THORNLESS HONEYLOCUST	3 1/2"	B+B	424	5088
LIQS	13	LARGE	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	3 1/2"	B+B	249	4077
PLAC	15	LARGE	PLATANUS X ACERIFOLIA 'BLOODGOOD'	BLOODGOOD LONDON PLANETREE	3 1/2"	B+B	1253	18795
PLOC	9	LARGE	PLATANUS OCCIDENTALIS	SYCAMORE	3 1/2"	B+B	453	4077
QUEP	40	LARGE	QUERCUS PHELLOS	WILLOW OAK	3 1/2"	B+B	370	14800
QURU	7	LARGE	QUERCUS RUBRA	NORTHERN RED OAK	3 1/2"	B+B	424	2968
SUBTOTAL	106						SUBTOTAL	53775
ORNAMENTAL TREES								
AMGA	8	SMALL	AMELANCHIER X GRANDIFLORA 'AUTUMN BRILLANCE'	AUTUMN BRILLIANCE SERVICEBERRY	1 1/2" - 1 3/4" / 8'	B+B	130	1040
COFR	1	SMALL	CORNUS FLORIDA 'APPALACHIAN SPRING'	APPALACHIAN SPRING FLOWERING DOGWOOD	1 1/2" - 1 3/4" / 8'	B+B	124	124
SUBTOTAL	9						SUBTOTAL	1164
EVERGREEN TREES								
INRS	0		ILEX X NELLIE R STEVENS	NELLIE R STEVENS HOLLY	1 1/2" - 1 3/4" / 8'	B+B	44	0
ILAF	0		ILEX X ATTENUATA 'FOSTERI'	FOSTER HOLLY	1 1/2" - 1 3/4" / 8'	B+B	16	0
SUBTOTAL	#						SUBTOTAL	#
EVERGREEN SHRUBS								
PLOL	47	NA	PRUNUS LAUROCERASUS 'OTTO LUYKEN'	OTTO LUYKEN CHERRY LAUREL	18-24" HT.	#3 CAN	10	470
RHEV	44	NA	RHODODENDRON X 'ROBLEV'	AUTUMN IVORY ENCORE AZALEA	18-24" HT.	#3 CAN	0	0
SUBTOTAL	91						SUBTOTAL	470
							TOTAL	55409

CONCEPT GRAPHICS SCHEDULE

PARKING LOT AND VEHICULAR CIRCULATION AREA

TAKEOFF: 132,005 SF

INTERIOR PARKING LOT AREA

TAKEOFF: 8,960 SF

LANDSCAPE NOTES:

TREE PROTECTION FENCING

EXISTING TREE LIMITS

PROPOSED TREE LIMITS

LANDSCAPE NOTES:

1. TIMING OF INSTALLATION: ALL LANDSCAPING SHALL BE INSTALLED BY THE FIRST PLANTING SEASON FOLLOWING THE ISSUANCE OF THE FIRST CERTIFICATE OF OCCUPANCY WITHIN THE DEVELOPMENT, OR A PHASE THEREOF.
2. METHOD OF INSTALLATION: ALL TREES SHALL BE PLANTED IN ACCORDANCE WITH EITHER THE STANDARDIZED LANDSCAPE SPECIFICATIONS JOINTLY ADOPTED BY THE VIRGINIA NURSERYMEN'S ASSOCIATION, THE VIRGINIA SOCIETY OF LANDSCAPE DESIGNERS AND THE VIRGINIA CHAPTER OF THE AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS, OR THE ROAD AND BRIDGE SPECIFICATION OF THE VIRGINIA DEPARTMENT OF TRANSPORTATION. PLANTING ISLANDS SHALL CONTAIN A MINIMUM OF 50 SQUARE FEET PER TREE, WITH A MINIMUM DIMENSION OF FIVE FEET IN ORDER TO PROTECT THE LANDSCAPING AND ALLOW FOR PROPER GROWTH. WHEEL STOPS, CURBING OR OTHER BARRIERS SHALL BE PROVIDED TO PREVENT DAMAGE TO LANDSCAPING BY VEHICLES. WHERE NECESSARY, TREES SHALL BE YELLED OR OTHERWISE PROTECTED AGAINST CHANGE OF GRADE. ALL PERVIOUS AREAS OF THE SITE SHALL BE PERMANENTLY PROTECTED FROM SOIL EROSION WITH GRASS OR OTHER GROUND COVER OR MULCH MATERIAL.
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4. MAINTAINING TREES IF SITE NOT UNDER SINGLE OWNERSHIP: IN THE CASE OF DEVELOPMENT WITH UNITS FOR SALE, THE TREES SHALL BE MAINTAINED BY A PROPERTY OWNER'S ASSOCIATION. PRIOR TO FINAL SITE PLAN APPROVAL, THE DEVELOPER SHALL SUBMIT TO THE AGENT AN INSTRUMENT ASSURING THE PERPETUAL MAINTENANCE OF THE TREES. THE INSTRUMENT SHALL BE SUBJECT TO REVIEW AND APPROVAL BY THE COUNTY ATTORNEY AND SHALL BE IN A FORM AND STYLE SO THAT IT MAY BE RECORDED IN THE OFFICE OF THE CLERK OF THE CIRCUIT COURT OF THE COUNTY. THE AGENT MAY REQUIRE THAT THE INSTRUMENT BE ON A FORM PREPARED BY THE COUNTY ATTORNEY.
5. MAINTAINING STREET TREES PLANTED WITHIN A PUBLIC STREET RIGHT-OF-WAY: IF STREET TREES ARE PLANTED WITHIN THE PUBLIC STREET RIGHT-OF-WAY, THE TREES SHALL BE MAINTAINED IN ACCORDANCE WITH THE REQUIREMENTS OF THE VIRGINIA DEPARTMENT OF TRANSPORTATION.
6. ALL SITE PLANTINGS OF TREES AND SHRUBS SHALL BE ALLOWED TO REACH, AND BE MAINTAINED AT, MATURE HEIGHT; THE TOPPING OF TREES IS PROHIBITED. SHRUBS AND TREES SHALL BE PRUNED MANUALLY AND ONLY TO SUPPORT THE OVERALL HEALTH OF THE PLANT.
7. LAWN AREAS MAY BE EITHER SEED OR SOD.
8. SEE CIVIL DRAWINGS FOR LIGHTING AND PHOTOMETRIC PLANS.

LandDesign.
200 S. PEYTON STREET
ALEXANDRIA, VA 22314
703.549.7784
WWW.LANDDESIGN.COM

KEY MAP

COMMONWEALTH OF VIRGINIA
MATTHEW V. CLARK
lic. No. 952
07/19/2023
LANDSCAPE ARCHITECT

SEAL

NOT FOR CONSTRUCTION

PROJECT

HERITAGE ON RIO

GW PARTNERS

RIO MAGISTERIAL DISTRICT

ALBEMARLE COUNTY, VA

LANDDESIGN PROJ.#
2022116

REVISION / ISSUANCE

NO.	DESCRIPTION	DATE

DESIGNED BY:
DRAWN BY:
CHECKED BY:

SCALE

NORTH

VERT: N/A
HORZ: 1"=40'

0 20' 40' 80'

SHEET TITLE

PLANTING REFERENCE PLAN

SHEET NUMBER

L100



PLANT SCHEDULE WEST

ORNAMENTAL TREES	CODE	QTY	BOTANICAL / COMMON NAME
	R-COFR	1	CORNUS FLORIDA 'APPALACHIAN SPRING' / APPALACHIAN SPRING DOGWOOD
STREET TREES	**CODE**	**QTY**	**BOTANICAL / COMMON NAME**
	SR-QUEP	12	QUERCUS PHELLOS / WILLOW OAK
LARGE CANOPY TREES	**CODE**	**QTY**	**BOTANICAL / COMMON NAME**
	P-GLET	8	GLEDITSIA TRIACANTHOS INERMIS / THORNLESS HONEY LOCUST
	R-PLOC	9	PLATANUS OCCIDENTALIS / AMERICAN PLANE TREE (SYCAMORE)
	R-PLAC	7	PLATANUS X ACERIFOLIA 'BLOODGOOD' / BLOODGOOD LONDON PLANE TREE
	P-QURU	7	QUERCUS RUBRA / RED OAK
EVERGREEN SHRUB	**CODE**	**QTY**	**BOTANICAL / COMMON NAME**
	SR-PLOL	7	PRUNUS LAUROCERASUS 'OTTO LUYKEN' / OTTO LUYKEN ENGLISH LAUREL
	ST-RHEV	22	RHODODENDRON X 'ROBLEV' TM / AUTUMN IVORY ENCORE AZALEA

LANDSCAPE NOTES:

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KEY MAP

COMMONWEALTH OF VIRGINIA
Matthew V. Clark
MATTHEW V. CLARK
lic. No. 952
07/19/2023
LANDSCAPE ARCHITECT

SEAL

NOT FOR CONSTRUCTION

PROJECT

HERITAGE ON RIO

GW PARTNERS

RIO MAGISTERIAL DISTRICT

ALBEMARLE COUNTY, VA

LANDDESIGN PROJ.#
2022116

REVISION / ISSUANCE

NO.	DESCRIPTION	DATE

DESIGNED BY:
DRAWN BY:
CHECKED BY:

SCALE
VERT: N/A
HORZ: 1"=30'
0 15' 30' 60'

NORTH

SHEET TITLE

PLANTING PLAN

SHEET NUMBER
L101



PLANT SCHEDULE EAST

ORNAMENTAL TREES	CODE	QTY	BOTANICAL / COMMON NAME
	P-AMGA	8	AMELANCHIER X GRANDIFLORA 'AUTUMN BRILLIANCE' / AUTUMN BRILLIANCE APPLE SERVICEBERRY

STREET TREES	CODE	QTY	BOTANICAL / COMMON NAME
	SR-QUEP	11	QUERCUS PHELLOS / WILLOW OAK
	ST-QUEP	17	QUERCUS PHELLOS / WILLOW OAK

EVERGREEN	CODE	QTY	BOTANICAL / COMMON NAME
	R-JVES	1	JUNIPERUS VIRGINIANA 'CORCORCOR' TM / EMERALD SENTINEL EASTERN REDCEDAR

LARGE CANOPY TREES	CODE	QTY	BOTANICAL / COMMON NAME
	P-ACFR	10	ACER X FREEMANII 'JEFFERSRED' TM / AUTUMN BLAZE FREEMAN MAPLE
	P-GLET	4	GLEDITSIA TRIACANTHOS INERMIS / THORNLESS HONEY LOCUST
	R-LIQS	13	LIQUIDAMBAR STYRACIFLUA / SWEET GUM
	R-PLAC	8	PLATANUS X ACERIFOLIA 'BLOODGOOD' / BLOODGOOD LONDON PLANE TREE

EVERGREEN SHRUB	CODE	QTY	BOTANICAL / COMMON NAME
	R-OHGO	5	OSMANTHUS HETEROPHYLLUS 'GOSHIKI' / GOSHIKI HOLLY OLIVE
	ST-PLOL	27	PRUNUS LAUROCERASUS 'OTTO LUYKEN' / OTTO LUYKEN ENGLISH LAUREL
	SR-PLOL	13	PRUNUS LAUROCERASUS 'OTTO LUYKEN' / OTTO LUYKEN ENGLISH LAUREL
	ST-RHEV	22	RHODODENDRON X 'ROBLEV' TM / AUTUMN IVORY ENCORE AZALEA
	R-RHEX	1	RHODODENDRON X 'ROBLEX' TM / AUTUMN LILY ENCORE AZALEA

DECIDUOUS SHRUB	CODE	QTY	BOTANICAL / COMMON NAME
	R-IVJD	2	ILEX VERTICILLATA 'JIM DANDY' / JIM DANDY WINTERBERRY

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2022116

REVISION / ISSUANCE

NO.	DESCRIPTION	DATE

DESIGNED BY:
DRAWN BY:
CHECKED BY:

SCALE
NORTH
VERT: N/A
HORZ: 1"=30'
0 15' 30' 60'

SHEET TITLE
PLANTING PLAN

SHEET NUMBER
L102



LANDSCAPE NOTES:

- PARKING LOT AND VEHICULAR CIRCULATION AREA
- INTERIOR PARKING LOT AREA
- INTERIOR PARKING LOT TREES
- LANDSCAPING ALONG STREETS

ONSITE LANDSCAPE SCHEDULE

KEY	QTY.	CAT.	BOTANICAL NAME	COMMON NAME	CAL / HT.	CONT.	CANOPY	TOTAL CANOPY
SHADE TREES								
ACFR	10	LARGE	ACER X FREEMANII 'JEFFERSRED'	AUTUMN BLAZE MAPLE	3 1/2"	B+B	397	3970
GLET	12	LARGE	GLEDITSIA TRIACANTHOS INERMIS	THORNLESS HONEYLOCUST	3 1/2"	B+B	424	5088
LIQS	13	LARGE	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	3 1/2"	B+B	249	4077
PLAC	15	LARGE	PLATANUS X ACERIFOLIA 'BLOODGOOD'	BLOODGOOD LONDON PLANETREE	3 1/2"	B+B	1253	18795
PLOC	9	LARGE	PLATANUS OCCIDENTALIS	SYCAMORE	3 1/2"	B+B	453	4077
QUEP	40	LARGE	QUERCUS PHELLOS	WILLOW OAK	3 1/2"	B+B	370	14800
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SUBTOTAL	106						SUBTOTAL	53775
ORNAMENTAL TREES								
AMGA	8	SMALL	AMELANCHIER X GRANDIFLORA 'AUTUMN BRILLANCE'	AUTUMN BRILLIANCE SERVICEBERRY	1 3/4" - 1 3/4" / 8'	B+B	130	1040
COFR	1	SMALL	CORNUS FLORIDA 'APPALACHIAN SPRING'	APPALACHIAN SPRING FLOWERING DOGWOOD	1 3/4" - 1 3/4" / 8'	B+B	124	124
SUBTOTAL	9						SUBTOTAL	1164
EVERGREEN TREES								
INRS	0		ILEX X NELLIE R STEVENS	NELLIE R STEVENS HOLLY	1 3/4" - 1 3/4" / 8'	B+B	44	0
ILAF	0		ILEX X ATTENUATA 'FOSTERI'	FOSTER HOLLY	1 3/4" - 1 3/4" / 8'	B+B	16	0
SUBTOTAL	#						SUBTOTAL	#
EVERGREEN SHRUBS								
PLOL	47	NA	PRUNUS LAUROCERASUS 'OTTO LUYKEN'	OTTO LUYKEN CHERRY LAUREL	18-24" HT.	#3 CAN	10	470
RHEV	44	NA	RHODODENDRON X ROBLEV	AUTUMN IVORY ENCORE AZALEA	18-24" HT.	#3 CAN	0	0
SUBTOTAL	91						SUBTOTAL	470
							TOTAL	55409

LANDSCAPING ALONG STREETS
SECTION 32.7.9.5

ADJACENT ROAD NAME AND TYPE		RIO ROAD WEST					
TOTAL LINEAR FEET		1000 LF SEE NOTE BELOW					
DESCRIPTION		REQUIRED			PROVIDED		
LARGE TREES (1/50) X 1000		20			23		
SHRUBS (1/5) X 1000		102			*47		
TYPES	DESCRIPTION	EXISTING	PROPOSED	TOTAL EACH	TOTAL QTY	PERCENT	
DECIDUOUS	LARGE TREE	0	23	23	23	100	100
	MEDIUM TREE	0	0	0		0	
	SMALL TREE	0	0	0		0	
EVERGREEN	LARGE TREE	0	0	0	0	0	0
	MEDIUM TREE	0	0	0		0	
	SMALL TREE	0	0	0		0	
TOTAL		0	23	23	23	100	
DECIDUOUS	SHRUB	0	0	0	0	#	
EVERGREEN	SHRUB	0	47			###	
TOTAL		0	47	0	0	###	
"SR" SYMBOLS INDICATE SPECIES USED TO FULFILL THIS REQUIREMENT							
*SHRUBS ARE PLACED FOR SCREENING ONLY ADJACENT TO PARKING AREAS RIO ROAD WEST TO BE SCREENED 142 LF							

LANDSCAPING WITHIN A PARKING AREA
SECTION 32.7.9.6

PARKING LOT AREA AND # OF SPACES		131,608 SF AND 374 SPACES					
PARKING LOT LANDSCAPE REQUIREMENT		5%					
DESCRIPTION		REQUIRED			PROVIDED		
PARKING LOT LANDSCAPE AREA 131,608 X 5%		6580			8960 SF (6.81%)		
TREES (1/10) X 374 SPACES		37			37		
TYPES	DESCRIPTION	EXISTING	PROPOSED	TOTAL EACH	TOTAL QTY	PERCENT	
DECIDUOUS	LARGE TREE	0	29	29	37	78	100
	MEDIUM TREE	0	0	0		0	
	SMALL TREE	0	8	8		22	
EVERGREEN	LARGE TREE	0	0	0	0	0	0
	MEDIUM TREE	0	0	0		0	
	SMALL TREE	0	0	0		0	
TOTAL		0	37	37	37	100	
DECIDUOUS	SHRUB	0	0	0	0	0	
EVERGREEN	SHRUB	0	0	0		0	
TOTAL		0	0	0	0	0	
"P" SYMBOLS INDICATE SPECIES USED TO FULFILL THIS REQUIREMENT							

TREE CANOPY
SECTION 32.7.9.8

TOTAL SITE AREA	358,586 SF (8.23 AC)	
PROPOSED LAND USE	RESIDENTIAL 20+ UNITS PER ACRE	
MINIMUM TREE CANOPY	10%	
TREE CANOPY REQUIRED (358,586 SF X 10%)	35,859 SF	
DESCRIPTION	SQUARE FEET	ACRES
EXISTING CANOPY TO BE PRESERVED	0 SF	0 AC
PROPOSED CANOPY	55,409 SF	1.27 AC
TOTAL CANOPY PROVIDED	55,409 SF (15.45%)	1.27 AC

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KEY MAP

COMMONWEALTH OF VIRGINIA
MATTHEW V. CLARK
lic. No. 952
07/19/2023
LANDSCAPE ARCHITECT

SEAL

NOT FOR CONSTRUCTION

PROJECT

HERITAGE ON RIO

GW PARTNERS

RIO MAGISTERIAL DISTRICT

ALBEMARLE COUNTY, VA

LANDDESIGN PROJ.#
2022116

REVISION / ISSUANCE

NO.	DESCRIPTION	DATE

DESIGNED BY:
DRAWN BY:
CHECKED BY:

SCALE

VERT: N/A
HORZ: 1"=30'

0 15' 30' 60'

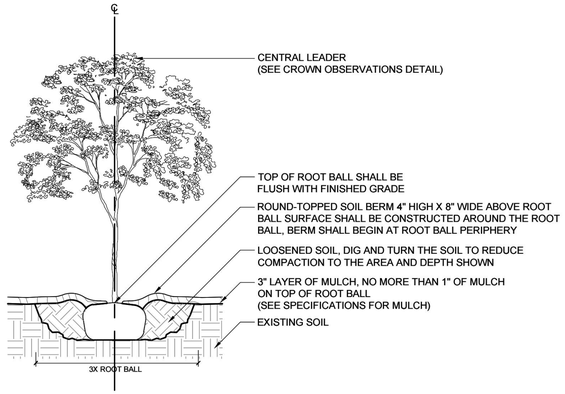
NORTH

SHEET TITLE

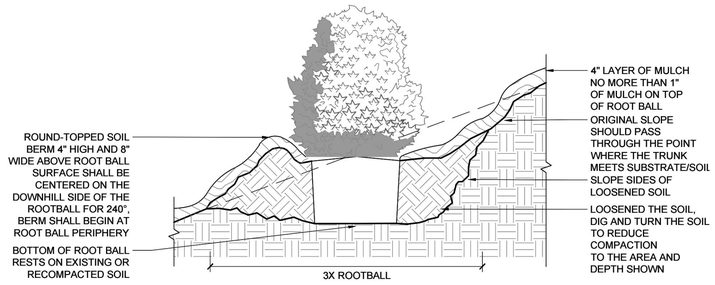
LANDSCAPE COMPLIANCE

SHEET NUMBER

L103



1 TREE PLANTING
L104 SECTION — 3/8" = 1'-0"



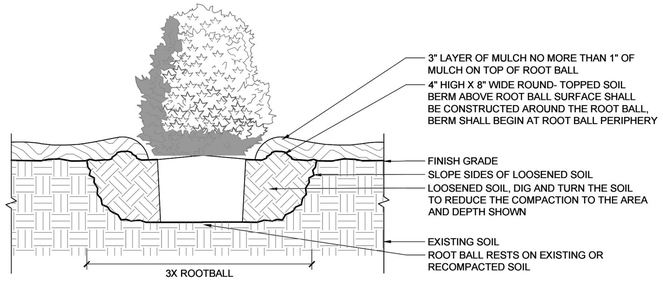
4 SHRUB PLANTING ON SLOPE
L104 SECTION — 3/4" = 1'-0"

2 TREE PLANTING ON SLOPE
L104 SECTION — 3/8" = 1'-0"

PLANT SPACING CHART

SPACING "D"	ROW "A"	PLANTS / S.F.
6" O.C.	5.20" O.C.	4.61
8" O.C.	6.93" O.C.	2.60
10" O.C.	8.66" O.C.	1.66
12" O.C.	10.40" O.C.	1.15
15" O.C.	13.00" O.C.	0.73
18" O.C.	15.60" O.C.	0.51
24" O.C.	20.80" O.C.	0.29

5 GROUNDCOVER SECTION AND SPACING
L104 SECTION — 3/4" = 1'-0"



3 SHRUB PLANTING
L104 SECTION — 3/4" = 1'-0"

NOTES:

1. ALL TREES TO BE PLANTED SHALL MEET THE SPECIFICATIONS OF THE AMERICAN ASSOCIATION OF NURSERYMEN. THE PLANTING OF TREES SHALL BE DONE IN ACCORDANCE WITH EITHER THE STANDARDIZED LANDSCAPE SPECIFICATIONS JOINTLY ADOPTED BY THE VIRGINIA NURSERYMEN'S ASSOCIATION, THE VIRGINIA SOCIETY OF LANDSCAPE DESIGNERS AND THE VIRGINIA CHAPTER OF THE AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS, OR THE ROAD AND BRIDGE SPECIFICATIONS OF THE VIRGINIA DEPARTMENT OF TRANSPORTATION.
2. ALL SITE PLANTINGS OF TREES AND SHRUBS SHALL BE ALLOWED TO REACH, AND BE MAINTAINED AT, MATURE HEIGHT; THE TOPPING OF TREES IS PROHIBITED. SHRUBS AND TREES SHALL BE PRUNED MINIMALLY AND ONLY TO SUPPORT THE OVERALL HEALTH OF THE PLANT.
3. THE LANDSCAPING PLANTS AND TREES ADJACENT TO THE SIGHT DISTANCE TRIANGLE WILL NEED TO BE MAINTAINED IN THE AREA BETWEEN 2' AND 7' ABOVE GROUND AS CLEAR ZONE TO PRESERVE SIGHT LINES AND ACCOMMODATE PEDESTRIANS.

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PROJECT

HERITAGE ON RIO

GW PARTNERS

RIO MAGISTERIAL DISTRICT

ALBEMARLE COUNTY, VA

LANDDESIGN PROJ.#
2022116

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NO.	DESCRIPTION	DATE

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DRAWN BY:
CHECKED BY:

SCALE NORTH

VERT: N/A
HORZ: AS NOTED

SHEET TITLE

LANDSCAPE DETAILS

SHEET NUMBER

L104

Conservation Plan Notes:

1. ALL TREES TO BE PRESERVED AND PROTECTED SHALL BE MARKED WITH PAINT OR RIBBON AT A HEIGHT CLEARLY VISIBLE TO EQUIPMENT OPERATORS. NO LAND DISTURBING ACTIVITY SHALL BEGIN UNTIL THE TREE MARKING HAS BEEN INSTALLED BY THE CONTRACTOR AND INSPECTED AND APPROVED BY THE COUNTY ENGINEERING DEPARTMENT.

2. HEAVY EQUIPMENT, VEHICULAR TRAFFIC, AND THE STORAGE OF CONSTRUCTION MATERIALS AND SOIL SHALL NOT BE PERMITTED WITHIN THE OUTSIDE DRIPLINE OF TREES TO BE PRESERVED AND PROTECTED.

3. TEMPORARY EROSION CONTROL MEASURED AND/OR PERMANENT STORMWATER MANAGEMENT FACILITIES LOCATIONS SHALL BE COORDINATED SUCH THAT THEY SHALL NOT ADVERSELY AFFECT TREES TO BE PRESERVED AND PROTECTED.

4. FIRES SHALL NOT BE PERMITTED WITHIN 100 FEET OF THE OUTSIDE DRIPLINE OF TREES TO BE PRESERVED AND PROTECTED.

5. TOXIC MATERIALS SHALL NOT BE STORED WITHIN 100 FEET OF THE OUTSIDE DRIPLINE OF TREES TO BE PRESERVED AND PROTECTED.

6. NO LAND DISTURBING ACTIVITY SHALL BEGIN UNTIL THE TREE PROTECTIVE FENCING HAS BEEN INSTALLED BY THE CONTRACTOR AND INSPECTED AND APPROVED BY THE COUNTY ENGINEERING DEPARTMENT.

7. WHEN TRENCHING FOR ANY KIND OF UNDERGROUND WATER, SEWER, ELECTRICAL, CABLE, TELEPHONE, OR OTHER UTILITY SERVICE IS NECESSARY WITHIN THE LIMITS OF TREE PROTECTION OR BEYOND THE LIMITS OF CLEARING, THE SEPARATION FROM THE TRUNKS OF TREES SHALL BE MAXIMIZED TO THE FURTHEST EXTENT POSSIBLE. TUNNELING SHALL BE REQUIRED WHEN DEEMED, BY THE COUNTY ENGINEER, THAT TRENCHING WILL SIGNIFICANTLY DAMAGE FEEDER ROOTS OF TREES TO BE PRESERVED AND PROTECTED.

8. ANY DAMAGE TO THE CROWN, TRUNK, OR ROOT SYSTEM OF ANY TREE TO BE PRESERVED AND PROTECTED SHALL BE REPAIRED IMMEDIATELY, IN ACCORDANCE WITH THE PRACTICES IN THE EROSION AND SEDIMENT CONTROL HANDBOOK. CARE FOR SERIOUS INJURIES SHALL BE PRESCRIBED BY A PROFESSIONAL FORESTER OR TREE SPECIALIST.

9. SOILS WHICH HAVE BEEN COMPACTED, OVER THE ROOT ZONES OF TREES TO BE PRESERVED AND PROTECTED, SHALL BE AERATED BY PUNCHING HOLES WITH AN IRON BAR EVERY 18" OVER THE ROOT ZONE. THE BAR SHALL BE DRIVEN 12" DEEP AND MOVED BACK AND FORTH IN EACH HOLE UNTIL SOIL IS LOOSENED.

10. TREE PROTECTIVE MEASURES SHALL BE THE LAST OF THE TEMPORARY EROSION CONTROL PLAN MEASURES REMOVED DURING THE FINAL CLEAN-UP.

Landscape Notes

1. CONTRACTOR TO USE EXTREME CARE AND CAUTION AS NOT TO DAMAGE ANY TREES SCHEDULED TO REMAIN OUTSIDE LIMITS OF CONSTRUCTION. LIMITS OF DISTURBANCE AND TREE PROTECTION FENCING SERVE AS LIMITS OF CONSTRUCTION.

2. NO CONSTRUCTION EQUIPMENT OR STORAGE SHALL OCCUR WITHIN DRIPLINE OF EXISTING TREES. PRIOR TO MOBILIZATION CONTRACTOR SHALL CONTACT LANDSCAPE ARCHITECT (LA) TO DISCUSS TREE PROTECTION EFFORTS. ALL TREE PROTECTION MEASURES SHALL BE APPROVED BY LA AND/OR TREE ARBORIST BEFORE ANY CONSTRUCTION ACTIVITIES SHALL TAKE PLACE ON-SITE. CONTRACTOR TO MONITOR TREES FOR STRESS AND/OR DAMAGE AND ADVISE LA AND TREE ARBORIST IF ANY OCCUR.

3. CONTRACTOR TO NOTIFY LANDSCAPE ARCHITECT AND/OR TREE ARBORIST 48-HOURS IN ADVANCE OF ANY CONSTRUCTION ACTIVITY NEEDED WITHIN ANY TREE PROTECTION MEASURE. ALL TREE PROTECTION MEASURES SHALL BE REPLACED IN ORIGINAL LOCATION ONCE WORK HAS BEEN COMPLETED. NO WORK SHALL BE DONE WITHIN DRIPLINE OF EXISTING TREES UNLESS APPROVED BY TREE ARBORIST OR LANDSCAPE ARCHITECT PRIOR TO WORK.

4. ALL WORK TO BE PERFORMED BY THE CONTRACTOR WITHIN THE DRIPLINE OF ANY EXISTING TREE OR TREE PROTECTION AREA SHALL BE DONE IN A MANNER SENSITIVE TO ENSURING NO DAMAGE WILL BE DONE TO THE EXISTING TREES. THE PREFERRED METHOD FOR GRADING SMALL AREAS WITHIN THE DRIPLINE SHALL BE DONE BY HAND. LARGER AREAS TO BE GRADED MAY BE DONE WITH A SMALL BOBCAT/TRACT-HOE. CONTRACTOR TO DISCUSS METHODS OF GRADING WORK WITH LANDSCAPE ARCHITECT AND TREE ARBORIST PRIOR TO COMMENCING ANY SUCH WORK WITHIN DESIGNATED TREE PROTECTION AREAS OR WITHIN EXISTING DRIPLINES.

5. ALL PLANTS HAVING A QUANTITY GREATER THAN ONE (1) SHALL BE MATCHED AND SUPPLIED FROM THE SAME SOURCE (PER SPECIES).

6. CONTACT LANDSCAPE ARCHITECT AT THE TIME OF PLANT MATERIAL DELIVERY. BEFORE ANY SUBSTITUTIONS OR CHANGES, IF SCHEDULED TYPES ARE UNAVAILABLE, AND FOLLOWING INSTALLATION. ALL PLANT SUBSTITUTIONS SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO PLACEMENT OF ORDERS.

7. LANDSCAPE ARCHITECT SHALL INSPECT AND APPROVE ALL PLANT MATERIAL AT TIME OF DELIVERY AS WELL AS AFTER INITIAL PLACEMENT PRIOR TO PLANTING. CONTRACTOR TO NOTIFY LANDSCAPE ARCHITECT 48-HOURS PRIOR TO DELIVERY.

8. PLANT LOCATIONS TO BE REEVALUATED AND REVISED, IF NECESSARY, AFTER FINISHED GRADING.

9. MULCH IN PLANTERS AND PLANTING BEDS TO BE CLEAN AND FREE FROM PEST AND DISEASES. MULCH SHALL BE APPLIED TO A 2-INCH DEPTH. MULCH RINGS 24-INCHES MIN. IN DIAMETER ARE TO BE PLACED AROUND ALL TREES NOT LOCATED IN PLANTING BEDS. MULCH TO BE DOUBLE-SHREDDED HARDWOOD.

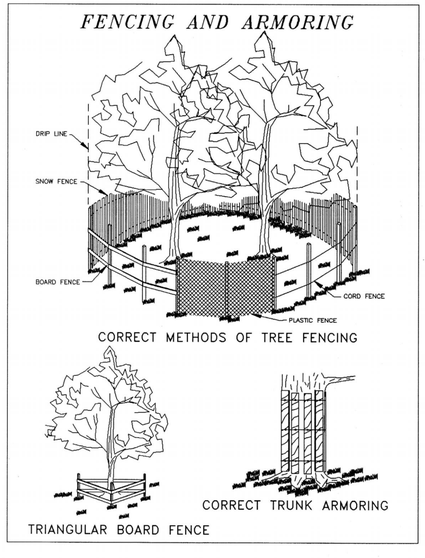
10. CONTRACTOR TO VERIFY ALL QUANTITIES BETWEEN PLAN AND PLANT LIST AND REPORT ANY DISCREPANCIES TO THE LANDSCAPE ARCHITECT IMMEDIATELY PRIOR TO ORDERING.

11. ALL STREET TREES WITHIN THE PUBLIC RIGHT OF WAY SHALL BE MAINTAINED BY THE APARTMENT COMPLEX.

Planting Notes

1. DO NOT PROCEED WITH CONSTRUCTION AS DESIGNED WHEN IT IS OBVIOUS THAT OBSTRUCTIONS AND/OR GRADE DIFFERENCES EXIST THAT MAY NOT HAVE BEEN KNOWN DURING DESIGN. SUCH CONDITIONS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT. THE CONTRACTOR ASSUMES COMPLETE RESPONSIBILITY FOR ALL NECESSARY REVISIONS DUE TO FAILURE TO GIVE SUCH NOTIFICATION.
2. ALL PLANT MATERIAL SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO ITS ARRIVAL ON SITE. SEE SPECS.
3. ALL AREAS WITHIN THE PROJECT LIMITS OR DISTURBED BY CONSTRUCTION OPERATIONS AND NOT OTHERWISE SPECIFIED SHALL BE SEEDED PER SPECIFICATIONS.

1992 3.38



Source: Va. DSWC Plate 3.38-2

County of Albemarle
Conservation Plan Checklist – To be placed on Landscape Plans
(Handbook, pp III-284-111-297 for complete specification)

1. **The following items shall be shown on the plan:**
   - ☑ Trees to be saved;
   - ☑ Limits of clearing (outside dripline of trees to be saved);
   - ☑ Location and type of protective fencing;
   - ☑ Grade changes requiring tree wells or walls;
   - ☑ Proposed trenching or tunneling beyond the limits of clearing.
2. **Markings:**
   - ☑ All trees to be saved shall be marked with print or ribbon at a height clearly visible to equipment operators.
   - ☑ No grading shall begin until the tree marking has been inspected and approved by a County Inspector.
3. **Pre-Construction Conference:**
   - ☑ Tree preservation and protection measures shall be reviewed with the contractor on site.
4. **Equipment Operation and Storage:**
   - ☑ Heavy equipment, vehicular traffic and storage of construction materials including soil shall not be permitted within the driplines of trees to be saved.
5. **Soil Erosion and Stormwater Detention Devices:**
   - ☑ Such devices shall not adversely affect trees to be saved.
6. **Fires:**
   - ☑ Fires are not permitted within 100 feet of the dripline of trees to be saved.
7. **Toxic Materials:**
   - ☑ Toxic materials shall not be stored within 100 feet of the dripline of trees to be saved.
8. **Protective Fencing:**
   - ☑ Trees to be retained within 40 feet of a proposed building or grading activity shall be protected by fencing.
   - ☑ Fencing shall be in place and shall be inspected and approved by a County Inspector prior to grading or construction.
9. **Tree Wells:**
   - ☑ When the ground level must be raised within the dripline of a tree to be saved, a tree well shall be provided and a construction detail submitted for approval.
10. **Tree Walls:**
    - ☑ When the ground level must be lowered within the dripline a tree to be saved, a tree wall shall be provided, and a construction detail submitted for approval.
11. **Trenching and Tunneling:**
    - ☑ When trenching is required within the limits of clearing, it shall be done as far away from the trunks of trees as possible. Tunneling under a large tree shall be considered as an alternative when it is anticipated that necessary trenching will destroy feeder roots.
12. **Cleanup:**
    - ☑ Protective fencing shall be the last items removed during the final cleanup.
13. **Damaged Trees:**
    - ☑ Damaged trees shall be treated immediately by pruning, fertilization or other methods recommended by a tree specialist.

NOTE: IT IS THE DEVELOPER'S RESPONSIBILITY TO CONFER WITH THE CONTRACTOR ON TREE CONSERVATION REQUIREMENTS.

01/06/2022

OWNER SIGNATURE **(DATE)**

CONTRACT PURCHASER SIGNATURE **(DATE)**

5/1/06 Page 1 of 1

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KEY MAP

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PROJECT

HERITAGE ON RIO

GW PARTNERS
RIO MAGISTERIAL DISTRICT
ALBEMARLE COUNTY, VA

LANDDESIGN PROJ.#
2022116

REVISION / ISSUANCE

NO.	DESCRIPTION	DATE

DESIGNED BY:
DRAWN BY:
CHECKED BY:

SCALE NORTH

VERT: N/A
HORZ: N/A

SHEET TITLE

LANDSCAPE NOTES

SHEET NUMBER

L105



1 L106 BENCH
PRECEDENT NTS



4 L106 BIKE RACK
PRECEDENT NTS



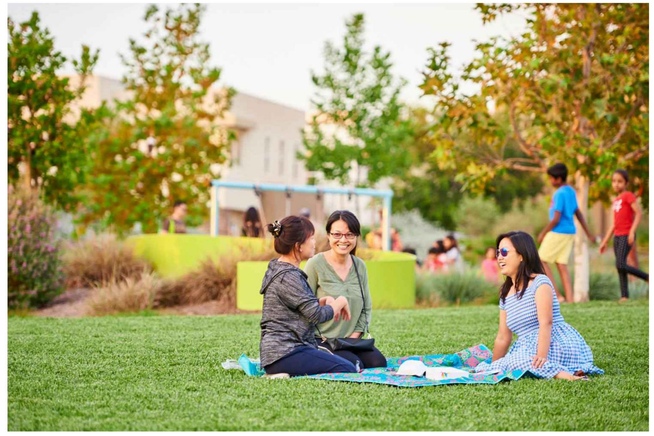
7 L106 OUTDOOR KITCHEN/DINING AREA
PRECEDENT NTS



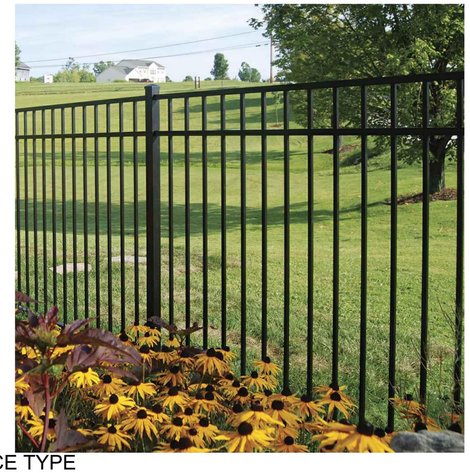
2 L106 WASTE RECEPTACLE
PRECEDENT NTS



5 L106 PAVING
PRECEDENT NTS



8 L106 LAWN
PRECEDENT NTS



3 L106 FENCE TYPE
PRECEDENT NTS



6 L106 PLAYGROUND
PRECEDENT NTS



8 L106 FIRE LOUNGE AREA
PRECEDENT NTS

NOTES:

1. SITE FURNISHING ARE FOR ILLUSTRATIVE PURPOSES ONLY TO DEMONSTRATE DESIGN INTENT. FINAL SITE FURNISHING SELECTION SHALL BE REVIEWED AND APPROVED BY CLIENT AND DESIGN TEAM.

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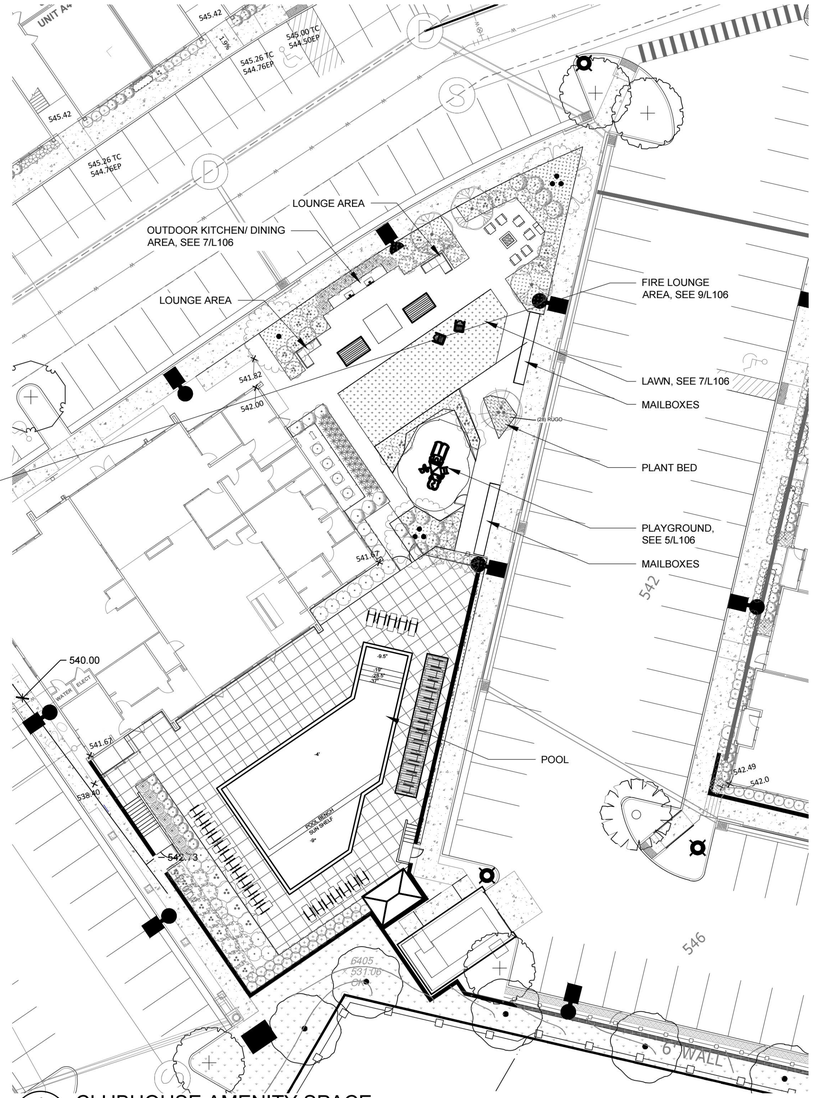
DESIGNED BY:
DRAWN BY:
CHECKED BY:

SCALE NORTH

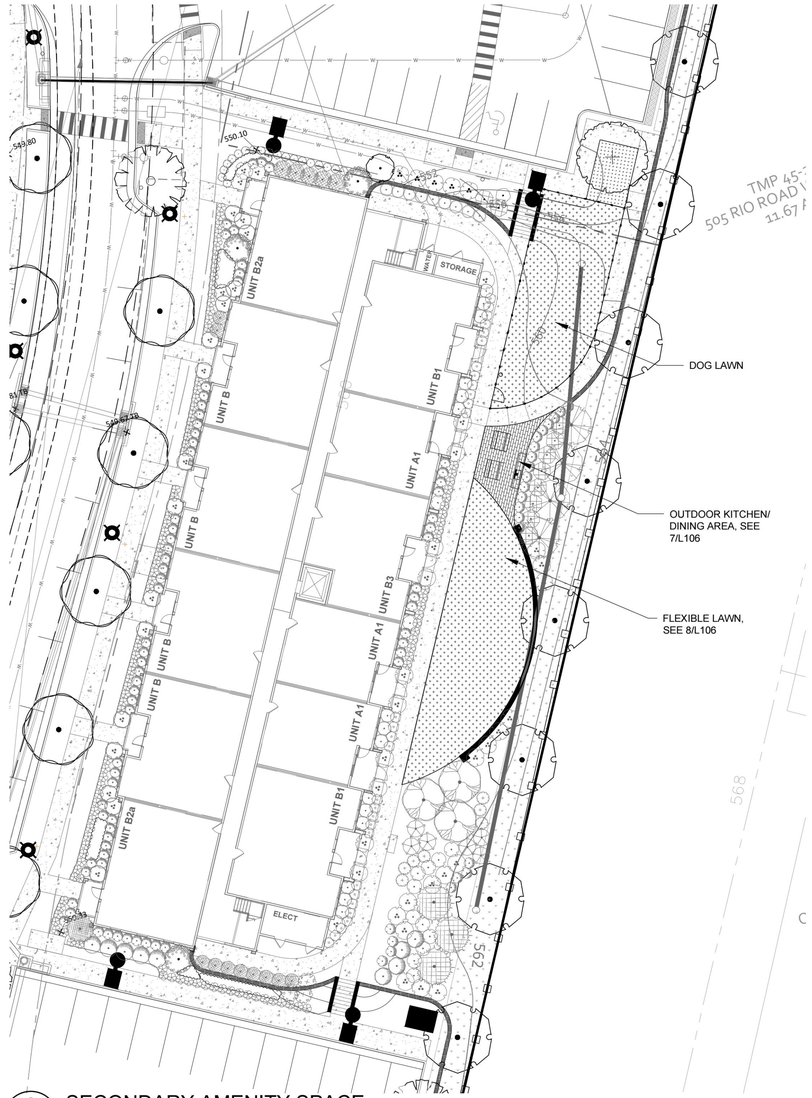
VERT: N/A
HORZ: N/A

SHEET TITLE
LANDSCAPE SITE DETAILS

SHEET NUMBER
L106



1 L107 CLUBHOUSE AMENITY SPACE PLAN 1" = 20'



2 L107 SECONDARY AMENITY SPACE PLAN 1" = 20'

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CHECKED BY:

SCALE
VERT: N/A
HORZ: 1"=20'
0 10' 20' 40'

NORTH

SHEET TITLE
AMENITY SPACES

SHEET NUMBER
L107

Schedule										
Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Number Lamps	Lumens Per Lamp	Light Loss Factor	Wattage	Distribution
	S1	4	American Electric Lighting	ATB0 P202 R5 3K	Autobahn Small P202 Package Roadway Type V 3000K	1	6988	1.0	98	TYPE VS, BUG RATING: B3 - U0 - G2
	S2	27	American Electric Lighting	ATB0 P202 R4 3K	Autobahn Small P202 Package Roadway Type IV 3000K	1	6749	1.0	49	TYPE IV, MEDIUM, BUG RATING: B1 - U0 - G2
	S3	29	American Electric Lighting	247CL P102 XXXX 30K R5	247CL American Revolution LED Full Cutoff, P102 Performance Package, 3000K CCT, R5 Distribution,	1	3252	1.0	30.0064	TYPE VS, BUG RATING: B3 - U0 - G1
	U7-WP	28	POWER DESIGN RESOURCES	WSR LED P2 30K SR2	WSR POWER DESIGN RESOURCES- LED FULL CUT OFF, 3000K CCT, BLACK FINISH	1	2943	1.0	29.0	TYPE II, BUG RATING:

Statistics						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
ENTIRE CALCULATIONS	+	0.5 fc	3.0 fc	0.0 fc	N/A	N/A
PARKING AND DRIVE	✳	1.2 fc	3.0 fc	0.2 fc	15.0:1	6.0:1

NOTE

1.) Readings shown are based on a total LLF of as shown at grade. Data references the extrapolated performance projections in a 25c ambient
based on 10,000 hrs of LED testing (per IESNA LM-80-08 and projected per IESNA TM-21-11).
2.) Please refer to the "luminaire locations" for mounting heights.
3.) Product information can be obtained at www.Holophane.com or through your local agent.
4.) Calculations do not account for topography and possible obstructions such as existing old growth trees or foliage.

LIGHTING PROJECT NOTES:

1. THE FIXTURE COLOR FOR ALL LIGHTING FIXTURES SHALL BE BLACK.
2. THE MOUNTING HEIGHT FOR ALL LIGHTING FIXTURES IS 18'. THE MAXIMUM HEIGHT OF ALL FIXTURES SHALL NOT EXCEED 20', INCLUDING THE HEIGHT OF THE CONCRETE BASE.
3. EACH OUTDOOR LUMIAIRE EQUIPPED WITH A LAMP THAT EMITS 3,000 OR MORE INITIAL LUMENS SHALL BE FULL CUTOFF LUMINAIRE AND SHALL BE ARRANGED OR SHIELDED TO REFLECT LIGHT AWAY FROM ADJOINING RESIDENTIAL DISTRICTS AND AWAY FROM ADJACENT ROADS. THE SPILLOVER OF LIGHTING FROM LUMINAIRES ONTO PUBLIC ROADS AND PROPERTY IN RESIDENTIAL OR RURAL AREAS ZONING DISTRICTS SHALL NOT EXCEED ONE-HALF FOOTCANDLE.
4. SEE PLAN SHEET FOR LIGHT FIXTURES WITH ADDITIONAL SHIELDS ALONG THE PERIMETER BOUNDARY LINE TO ENSURE SPILLOVER DOES NOT EXCEED 0.5 FOOTCANDLES AT THE PROPERTY LINE.



NOTE: LIGHT FIXTURE WITH SHIELD

GRAPHIC SCALE

50 0 25 50 100

(IN FEET)
1 inch = 50 ft.

DISCLAIMER

This application design is not a professional engineering drawing, and the design, including reported data and calculated results, is provided for informational purposes only, without any warranty as to accuracy, completeness, safety or otherwise. The design is the result of calculations made using Visual lighting application software, photometric/radiometric data measured in a laboratory, and certain computational and modeling assumptions.
Far-field photometric/radiometric data may have been used to perform one or more calculations. Photometric/radiometric data is typically collected under far-field measurement conditions; far-field data is not generally representative of near-field geometric conditions. When using far-field photometric/ radiometric data, the Visual software applies certain generalizing assumptions to approximate near-field performance. These approximations may result in significant inaccuracies in individual calculated luminous and/or radiant power quantities in areas where a source is in close proximity to a particular surface or point.
The modeling of radiant flux exchange used in the Visual software requires a uniform exitance across each reflecting surface. The Visual software approximates the uniform surface exitance condition by adaptively subdividing surfaces with non-uniform exitances into subsurfaces with sufficiently uniform exitance gradients. Practical restrictions, due to computer hardware limitations, may prevent the subdivision procedure from subdividing surfaces with high exitance gradients into subsurfaces with sufficiently uniform exitance gradients, introducing potential discretization error into calculated values.
Calculations performed by the Visual software assume that all reflected flux is reflected in a perfectly diffuse (Lambertian) and spectrally uniform manner across the spectral range being analyzed. If actual reflectance characteristics differ from these assumptions, observed luminous and/or radiant power quantities may differ from predicted quantities.
As a result of the computational limitations and simplifying modeling assumptions described above, and/or variations in actual product performance from tested product samples, the accuracy of calculated output values identifying expected radiometric quantities and any resulting derived radiation dose calculations may be adversely affected.
In addition, the accuracy of the application design may be adversely affected if information about the physical space provided to Acuity Brands Lighting is incomplete, inaccurate, outdated or not in the required format (including but not limited to floor plans, space layout, reflected ceiling plans, physical structures, electrical design or specifications), if incorrect assumptions are made because of such deficiencies in the information provided, or if typical assumptions made about the depicted physical space are not appropriate for the space. Furthermore, actual field performance may differ from performance calculated using laboratory measurements as the result of miscalculations related to deficiencies in the information provided about the physical space, degradation factors in the end- user environment (including, but not limited to, voltage variation and dirt accumulation), or other possible variations in field conditions. Finally, lamp lumen depreciation and/or depreciation in lamp radiant intensity may result in performance over time that differs from performance calculated using a new lamp. Light loss factors may have been used in the application design to estimate such depreciation, but flaws in these estimates may also result in performance over time that differs from calculated performance.
It is the obligation of the end-user to consult with appropriately qualified Professional Engineer(s) to determine whether this application design meets the applicable requirements for performance, code compliance, safety, suitability and effectiveness for use in a particular application. In no event will Acuity Brands Lighting be responsible for any loss resulting from any use of this application design.

POWER DESIGN RESOURCES

LOCATION: Clubhouse
LEAD TIME:
CAT NUMBER: WSR LED P2 **K SR* VOLTAGE PE E20WC FINISH
NOTES: SPECIFIED

TYPE: U7 - WP

WSR LED

Architectural Wall Sconce

CONFIRM SELECTIONS

Introduction

Classic Architectural Wall Sconce with the LED technology. Long-life, maintenance-free product with typical energy savings of 80% compared to metal halide versions. The integral battery backup option provides emergency egress lighting, without the use of a back-box or remote gear, so installations maintain their aesthetic integrity. The WSR LED is ideal for replacing existing 50 – 250W metal halide wall-mounted products. The expected service life is 20+ years of nighttime use.

Specifications

Luminaire

Height: 7-1/4" (18.4 cm)
Width: 18" (45.7 cm)
Depth: 9" (22.8 cm)
Weight: 17 lbs (7.7 kg)

Optional Back Box (BBW)

Height: 4" (10.2 cm)
Width: 5-1/2" (14.0 cm)
Depth: 1-1/2" (3.8 cm)

SPECIFY COLOR TEMP DISTRIBUTION Voltage Finish

Ordering Information

EXAMPLE: WSR LED P2 40K SR3 MVOLT DDBTXD

Series	Performance Package	Color Temperature	Distribution	Voltage	Mounting	Options	Finish (required)
WSR LED	P1 P2 P3 P4	30K 40K 50K	SR2 Type II SR3 Type III SR4 Type IV	MVOLT 120 208 240 277 347 480	Shipped included (blank) Surface mount Shipped separately BBW Surface-mounted back box	Shipped installed PE Photoelectric cell, button type SF Single fuse (120, 277, 347V) DF Double fuse (208, 240, 480V) DMG 0-10v dimming wires pulled outside fixture (for use with an external control, ordered separately) E20WC Emergency battery backup, (18W, -20°C), Certified in CA Title 20 MAEDBS E10WH Emergency battery backup, (10W, 5°C), Certified in CA Title 20 MAEDBS WLU Wet location door for up orientation PIR Motion/ambient light sensor DS Dual switching SPD Separate Surge Protection Shipped separately VG Vandal guard WG Wire guard	DDBXD Dark bronze DBLXD Black DNAXD Natural aluminum DWHXD White DSSXD Sandstone DDBTXD Textured dark bronze DBLBXD Textured black DNATXD Textured natural aluminum DWHGXD Textured white DSSTXD Textured sandstone

Emergency Battery Operation

Submitted By: Stephanie Blackwood
Submission Date: Feb 9, 2023
Lead times can exceed 16 weeks - verified at time of purchase
Customer Approval

American Revolution Full Cutoff LED

Series 247CL

PRODUCT OVERVIEW



Features:

- Colonial LED lantern, replaces up to 250W HID models for street and area lighting applications
- Fifteen (15) LED performance packages deliver just the right amount of light for any given application up to 9,300 lumens
- Available in color temperature choices of 2700K, 3000K and 4000K
- Four (4) distinct light distribution options provide design flexibility, available in Type II, Type III, Type IV, and Type V
- Die-cast aluminum housing, engineered for sturdy lifelong performance
- Luminaire is rated for 3g vibration per ANSI C136.31
- Die-cast aluminum hood features a trigger latch (TL) option and captive thumb screws for fast, easy electrical and optical chamber access
- Standard paint finish is smooth gloss
- Housing is tenon pole-mounted and designed for use with a 3" tall by 2-3/8" to 3" diameter tenon, and secured by three set screws
- Rated LED and driver life greater than 100,000 hours at 25°C
- Surge protection device (standard) exceeds ANSI/IEEE C62.41-2002 Category C High (10kV/10kA) and ANSI C136.2-2015 Enhanced (10kV/5kA). 20KV Option exceeds ANSI/IEEE C62.41-2002 Category C High (10kV/10kA) and ANSI C136.2-2015 Extreme (20kV/10kA)
- Equipped with LED electronic 0-10V dimmable driver with DALI driver option

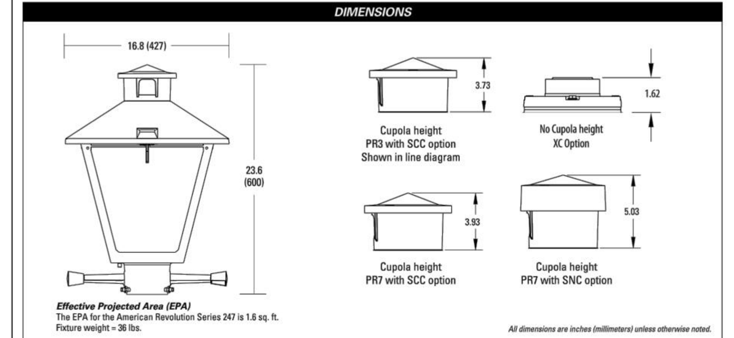
Applications:

Streetscapes
Walkways
Pathways
Parks

Standards:

- Complies with all applicable ANSI C136 standards.
- CSA listed and suitable for up to 40°C ambient
- DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

DIMENSIONS



Effective Projected Area (EPA)
The EPA for the American Revolution Series 247 is 1.6 sq. ft.
Fixture weight = 36 lbs.

All dimensions are inches (millimeters) unless otherwise noted.

American Revolution LED

Series 247CL

ORDERING INFORMATION

Example: 247CL P154 MVOLT 30K R3 BK SCC PR7

Series: 247CL American Revolution LED

Performance Package:

Package	Input Watts	Lumens (nominal)
P101	20	2,300
P102	30	3,100
P103	40	4,000
P104	49	4,800
P151	30	3,500
P152	40	4,300
P153	50	5,200
P154	60	6,000
P155	70	6,800
P201	70	7,400
P202	80	8,100
P300	41	4,800
P301	60	7,000
P302	70	7,800
P303	80	8,600

Voltage: MVOLT 120-277V; HVOLT 347-480V; XVOLT 277-480V with enhanced power quality protection

Color Temperature (CCT): 27K 2700K; 30K 3000K; 40K 4000K

Distribution: R2 Type II; R3 Type III; R4 Type IV; R5 Type V

Paint (smooth gloss): BK Black; GY Gray; DDB Dark Bronze; WH White; BZ Bronze

Cupola: SCC Standard cupola; SNC Smart node cupola; XC No cupola

Photocontrol Receptacle: NR No photocontrol receptacle; PR3 3 pin NEMA photocontrol; PR7 7 pin NEMA photocontrol

Options

Options: PCLL Solid State Long Life Photocontrol, 120-277V (fail off); P34 Solid State Long Life Photocontrol, 347V (fail off); P48 Solid State Long Life Photocontrol, 480V (fail off); PCSS Solid state photocontrol, 120-277V (Not CSA Listed) (fail on); SH Shorting cap; AO Field adjustable output module; DALI DALI driver (RFD required)

Miscellaneous: SS Stainless steel hardware; TL Tool-less trigger latch entry; NL1X1 1"x 1" NEMA label; NL2X2 2"x 2" NEMA label; XL Not CSA Listed; LDR Ladder Rest; CR Epoxy Pre-Coat Finish; 20kV 20kV/10kA surge protection device

House-Side Shields: HSS House Side Shield

Prewired leads: L1H 1.5 ft. prewire leads; L03 3 ft. prewire leads; L10 10 ft. prewire leads; L20 20 ft. prewire leads; L25 25 ft. prewire leads; L30 30 ft. prewire leads

Special Packaging: SSP Sample pack (UPS)

Accessory: House Side Shield shipped separately and installed in the field: FHSSLEM10-15R2/R5 P10x or P15x package, R2 or R5 optic; FHSSLEM10-15R3 P10x or P15x package, R3 optic; FHSSLEM20-30R2/R5 P20x or P30x package, R2 or R5 optic; FHSSLEM20-30R3 P20x or P30x package, R3 optic; FHSSLEM45R2/R5 P45x package, R2 or R5 optic; FHSSLEM45R3 P45x package, R3 optic

Note: Check the OPTIONS MATRIX on Page 3 for compatibility & restrictions

OPTIONS MATRIX

		Voltage			Distribution				Cupola			Receptacle			Photocontrol					Other		
		MVOLT	HVOLT	XVOLT	R2	R3	R4	R5	SCC	SNC	XC	PR3	PR7	NR	PCLL	PCSS	P34	P48	SH	AO	DALI	20KV
Lumen Package	P101	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
	P102	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	RFD	Y
	P103	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	RFD	Y
	P104	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	RFD	Y
	P151	Y	Y	N	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	RFD	Y
	P152	Y	Y	N	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	RFD	Y
	P153	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	RFD	Y
	P154	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	RFD	Y
	P155	Y	Y	N	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	RFD	Y
	P201	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	RFD	Y
	P202	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	RFD	Y
	P300	Y	Y	N	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	RFD	Y
	P301	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	RFD	Y
	P302	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	RFD	Y
	P303	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	RFD	Y
Voltage	MVOLT				Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y	Y	RFD	Y
	HVOLT				Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	N	Y
	XVOLT				Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
Cupola	SCC	Y	Y	Y	Y	Y	Y	Y				Y	Y	Y	Y	Y	Y	Y	Y	Y	RFD	Y
	SNC	Y	Y	Y	Y	Y	Y	Y				N	Y	N	Y	Y	Y	Y	Y	Y	RFD	Y
	XC	Y	Y	Y	Y	Y	Y	Y				Y	Y	N	Y	Y	Y	Y	Y	Y	RFD	Y
Receptacle	PR3	Y	Y	Y	Y	Y	Y	Y	Y	N	Y				Y	Y	Y	Y	Y	Y	RFD	Y
	PR7	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y				Y	Y	Y	Y	Y	Y	RFD	Y
	NR	Y	Y	Y	Y	Y	Y	Y	Y	N	N				N	N	N	N	N	Y	RFD	Y
Photocontrol	PCLL	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N						Y	RFD	Y
	PCSS	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N						Y	RFD	Y
	P34	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N						Y	RFD	Y
	P48	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N						Y	RFD	Y
	SH	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N						Y	RFD	Y
Other	AO	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		N	Y
	DALI	RFD	N	N	Y	Y	Y	Y	Y	Y	Y	RFD	RFD	RFD	RFD	RFD	RFD	RFD	RFD	N		RFD
	20KV	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	RFD	

MATRIX KEY
Y = Option combination is available
N = Option combination is not available
RFD = Option combination is available but additional information required. Consult factory.

American Revolution LED

Series 247CL

OPERATING CHARACTERISTICS

Performance Package	Wattage	CCT	R2 Lumens	R2 LPW	R3 Lumens	R3 LPW	R4 Lumens	R4 LPW	R5 Lumens	R5 LPW
P101	20	2700K	2,240	112	2,227	111	2,100	105	2,300	115
		3000K	2,338	117	2,325	116	2,192	110	2,401	120
		4000K	2,440	122	2,426	121	2,287	114	2,506	125
P102	30	2700K	3,034	101	3,016	101	2,843	95	3,115	104
		3000K	3,166	106	3,148	105	2,968	99	3,252	108
		4000K	3,304	110	3,285	109	3,097	103	3,393	113
P103	40	2700K	3,896	97	3,874	97	3,651	91	4,001	100
		3000K	4,066	102	4,043	101	3,811	95	4,176	104
		4000K	4,243	106	4,219	106	3,977	99	4,357	109
P104	49	2700K	4,627	94	4,601	93	4,337	88	4,752	96
		3000K	4,830	98	4,802	97	4,527	92	4,959	100
		4000K	5,040	102	5,011	102	4,723	96	5,175	105
P151	30	2700K	3,419	114	3,399	113	--	--	3,511	117
		3000K	3,569	119	3,548	118	--	--	3,665	122
		4000K	3,724	124	3,703	123	--	--	3,824	127
P152	40	2700K	4,149	104	4,125	103	--	--	4,261	107
		3000K	4,331	108	4,306	108	--	--	4,447	111
		4000K	4,519	113	4,493	112	--	--	4,640	116
P153	50	2700K	5,014	100	4,986	100	--	--	5,149	103
		3000K	5,233	105	5,204	104	--	--	5,374	107
		4000K	5,461	109	5,430	109	--	--	5,608	112
P154	60	2700K	5,797	97	5,764	96	--	--	5,953	99
		3000K	6,051	101	6,016	100	--	--	6,213	104
		4000K	6,314	105	6,278	105	--	--	6,483	108
P155	70	2700K	6,574	94	6,537	93	--	--	6,751	96
		3000K	6,862	98	6,823	97	--	--	7,046	101
		4000K	7,160	102	7,120	102	--	--	7,353	105
P201	70	2700K	7,111	102	7,071	101	6,665	95	7,302	104
		3000K	7,422	106	7,380	105	6,957	99	7,622	109
		4000K	7,745	111	7,701	110	7,259	104	7,953	114
P202	80	2700K	7,801	98	7,757	97	7,312	91	8,011	100
		3000K	8,143	102	8,096	101	7,632	95	8,362	105
		4000K	8,497	106	8,448	106	7,964	100	8,725	109
P300	41	2700K	4,615	114	4,588	113	--	--	4,739	117
		3000K	4,817	119	4,789	118	--	--	4,946	122
		4000K	5,026	124	4,997	123	--	--	5,161	127
P301	60	2700K	6,720	112	6,682	111	--	--	6,901	115
		3000K	7,015	117	6,975	116	--	--	7,203	120
		4000K	7,320	122	7,278	121	--	--	7,516	125
P302	70	2700K	7,507	107	7,464	107	--	--	7,709	110
		3000K	7,835	112	7,791	111	--	--	8,046	115
		4000K	8,176	117	8,130	116	--	--	8,396	120
P303	80	2700K	8,281	104	8,234	103	--	--	8,503	106
		3000K	8,643	108	8,594	107	--	--	8,876	111
		4000K	9,019	113	8,968	112	--	--	9,261	116

Autobahn Series ATB0

Roadway Lighting

PRODUCT OVERVIEW



Features:

OPTICAL

The Autobahn's new molded silicone optics provide exceptional performance. Silicone optics are superior to other polymeric materials in the areas of; optical efficiency, thermal performance, and reduction in dirt accumulation, all of which can lead to long term lumen degradation and a shift in optical distribution. Also, because silicone allows for the molding of fine details as well as thick sections, it produces the most crisp, clean and well-defined lighting distributions available. Silicone optics paired with modern LED's allow the Autobahn to take full advantage of both technologies.

Same Light: Performance is comparable to 100 - 400W HPS roadway luminaires.

White Light: Correlated color temperature - 4000K, or optional 2700K, 3000K or 5000K, all 70 CRI minimum.

Unique IP66 rated LED light engines provided 0% uplight and restrict backlight to within sidewalk depth, providing optimal application coverage and optimal pole spacing. Available in Type II, III, IV, and V roadway distributions.

ELECTRICAL

Expected Life: LED light engines are rated >100,000 hours at 25°C, L70. Electronic driver has an expected life of 100,000 hours at a 25°C ambient.

Lower Energy: Saves an expected of 40-60% over comparable HID luminaires.

Robust Surge Protection: Two different surge protection options provide a minimum of ANSI C136.2 10kV/5kA protection. 20kV/10kA protection is also available.

Luminaire ships with a 0-10v dimmable driver. Luminaire is continuous and step dimming capable via AO option or controls installed on P7 photocontrol receptacle option.

MECHANICAL

Includes standard AEL lineman-friendly features such as tool-less entry, 3 station terminal block and quick disconnects. Bubble level located inside the electrical compartment for easily leveling at installation.

Rugged die-cast aluminum housing and door are polyester powder-coated for durability and corrosion resistance. Rigorous five-stage pre-treating and painting process yields a finish that achieves a scribe creepage rating of 7 (per ASTM D1654) after over 5000 hours exposure to salt fog chamber (operated per ASTM B117).

Mast arm mount is adjustable for arms from 1-1/4" to 2" (1-5/8" to 2-3/8" O.D.) diameter. Provides a 3G vibration rating per ANSI C136.31

Wildlife shield is cast into the housing (not a separate piece).

CONTROLS

NEMA 3 pin photocontrol receptacle is standard, with the Acuity designed ANSI standard 7 pin receptacle optionally available.

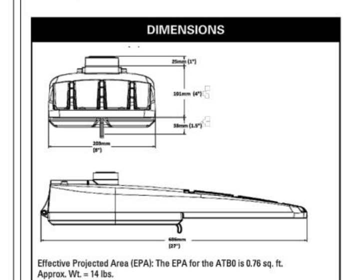
Premium solid state locking style photocontrol - PCSS (10 year rated life) Extreme long life solid state locking style photocontrol - PCLL (20 year rated life).

Optional onboard Adjustable Output module allows the light output and input wattage to be modified to meet site specific requirements, and also can allow a single fixture to be flexibly applied in many different applications.

Applications:

Roadways
Off ramps
Residential streets
Parking lots

DIMENSIONS



Effective Projected Area (EPA): The EPA for the ATB0 is 0.76 sq. ft.
Approx. Wt. = 14 lbs.

STANDARDS

DesignLights Consortium® (DLC) Premium qualified product. Not all versions of this product may be DLC Premium qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

Color temperatures of ≤ 3000K must be specified for International Dark-Sky Association certification.

Rated for -40°C to 40°C ambient
CSA Certified to U.S. and Canadian standards
Complies with ANSI: C136.2, C136.10, C136.14, C136.31, C136.15, C136.37

BUY AMERICAN ACT — Product with the BAA option is assembled in the USA and meets the Buy America(n) government procurement requirements under FAR, DFARS and DOT regulations. Please refer to www.acuitybrands.com/buy-american for additional information.

Autobahn Series ATB0

Roadway Lighting

ORDERING INFORMATION

Series: ATB0 Autobahn LED Roadway

LED Performance Package: P201 5,369 lumens nominal[6]; P202 6,943 lumens nominal[6]; P203 10,056 lumens nominal; P204 12,176 lumens nominal; P205 13,767 lumens nominal; P301 10,367 lumens nominal; P302 12,185 lumens nominal; P303 15,351 lumens nominal; P304 17,714 lumens nominal; P305 19,893 lumens nominal; P451 16,320 lumens nominal; P452 19,087 lumens nominal; P453 23,592 lumens nominal; P454 25,070 lumens nominal; P455 27,091 lumens nominal; P456 28,347 lumens nominal; P457 29,715 lumens nominal

Voltage: MVOLT Multi-volt, 120V - 277V; 347 347V[3]; 480 480V[3]; XVOLT 277V-480V[7]

Optics: R2 Roadway Type II; R3 Roadway Type III; R3L Roadway Type III Long; R4 Roadway Type IV[1]; R5 Roadway Type V

Options

Color Temperature (CCT): (Blank) 4000K CCT, 70 CRI Min.; 27K 2700K CCT, 70 CRI Min.; 3K 3000K CCT, 70 CRI Min.; 5K 5000K CCT, 70 CRI Min.

Paint: (Blank) Gray (Standard); BK Black; BZ Bronze; DDB Dark Bronze; GI Graphite; WH White; GN Green

Surge Protection: (Blank) Standard 20kV/10kA SPD[4]; MP MOV Pack 10kV/5kA

Terminal Block: (Blank) Terminal Block (Standard); T2 Wired to L1 & L2 Positions

Misc.: BL External Bubble Level; HSS House-Side Shield; NL Nema Label; XL Not CSA Certified; BAA Buy America(n) Act Compliant; UMR-XX 8" Horizontal Arm for Round Pole, Painted to match Fixture; UMS-XX 8" Horizontal Arm for Square Pole, Painted to match Fixture; UMR-GALV 8" Horizontal Arm for Round Pole, Galvanized; UMS-GALV 8" Horizontal Arm for Square Pole, Galvanized

Controls: (Blank) 3 Pin NEMA Photocontrol Receptacle (Standard); P7 7 Pin Photocontrol Receptacle (Dimmable Driver Included)[2]; NR No Photocontrol Receptacle; AO Field Adjustable Output; PCSS Solid State Lighting Photocontrol (120-277V)[1]; PCLL Solid State Long Life Photocontrol; SH Shorting Cap

Packaging: (Blank) Single Unit (Standard); JP Job Pack (42/Pallet)

Accessories: House Side Shields for field installation: ATB0P20XR2R3LR5HSS for use with P201 - P205, R2, R3L & R5 distributions; ATB0P20XR3R4HSS for use with P201 - P205, R3 & R4 distributions; ATB0P30XR2R3LR5HSS for use with P301 - P305, R2, R3L & R5 distributions; ATB0P30XR3HSS for use with P301 - P305, R3 distribution; ATB0P30XR4HSS for use with P301 - P305, R4 distribution; ATB0P45XR2R3LR5HSS for use with P451 - P457, R2, R3L & R5 distributions; ATB0P45XR3HSS for use with P451 - P457, R3 distribution

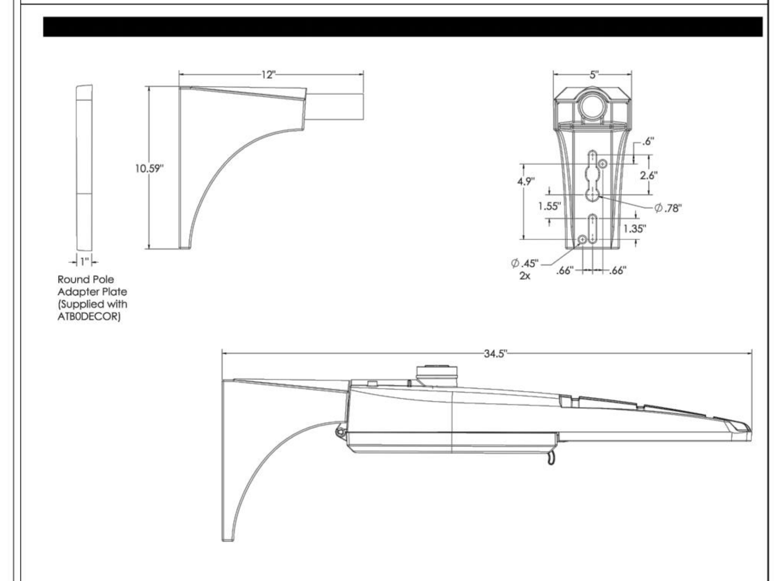
Light Trespass Shield: ATB0ULTS ATB0 Universal Light Trespass Shield

ATB Decorative Arms: ATB0DECOS XX ATB Decorative Arm for Square Pole Painted to match fixture; ATB0DECOR XX ATB Decorative Arm for Round Pole Painted to match fixture

Notes
1 Not available in 347 or 480V.
2 Not available with NR.
3 Not available with P451 - P457 performance packages.
4 Not available with P201 performance package + 347V or 480V.
5 Not available with P456 or P457 performance package options.
6 Not available with XVOLT option.
7 XVOLT option only available with P452, P453 and P454 performance packages.

PERFORMANCE PACKAGE

ATB0	Distribution	Input Watts	2700K Lumens	2700K LPW	3000K Lumens	3000K LPW	4000K/5000K Lumens	4000K/5000K LPW
P201	R2	36	4,983	137	5,473	151	5,488	150
	R3		4,952	136	5,107	140	5,553	152
	R3L		4,693	130	4,851	135	5,105	142
	R4		5,045	139	5,130	141	5,346	147
	R5		5,084	142	5,384	148	5,387	150
P202	R2	49	6,429	132	7,100	147	7,203	148
	R3		6,390	131	6,679	137	7,237	148
	R3L		6,037	123	6,233	127	6,567	134
	R4		6,517	136	6,749	140	6,906	144
	R5		6,560	137	6,988	146	6,951	146
P203	R2	70	9,005	130	10,050	144	10,150	147
	R3		8,951	129	9,471	134	10,260	148
	R3L		8,422	120	8,658	124	9,161	131
	R4		9,494	137	9,673	139	10,060	145
	R5		9,188	134	9,784	142	9,736	142
P204	R2	88	11,007	125	11,800	136	12,410	141
	R3		10,940	124	11,490	132	12,470	141
	R3L		10,147	115	10,494	119	11,038	125
	R4		11,485	132	11,900	136	12,170	139
	R5		11,230	131	11,780	137	11,900	138
P205	R2	102	12,339	121	12,650	125	13,920	137
	R3		12,264	120	13,110	139	14,130	138
	R3L		11,346	111	11,794	116	12,341	121
	R4		13,051	130	13,680	136	13,830	138
	R5		12,589	127	13,080	132	13,340	135
P301	R2	67	9,527	140	10,450	154	10,460	153
	R3		9,469	139	10,590	158	10,820	158
	R3L		8,980	134	9,101	136	9,768	146
	R4		9,579	144	10,210	152	10,150	152
	R5		9,720	145	10,370	154	10,300	154
P302	R2	83	11,118	135	11,790	142	12,300	149
	R3		11,050	134	12,290	150	12,520	152
	R3L		10,443	126	10,608	128	11,360	137
	R4		11,589	140	12,720	153	12,280	148
	R5		11,343	137	12,120	147	12,020	145
P303	R2	106	14,152	130	15,090	140	15,420	141
	R3		14,066	131	15,230	142	15,950	148
	R3L		12,949	122	13,147	124	14,086	133
	R4		14,514	136	15,720	146	15,380	144
	R5		14,439	136	15,140	142	15,300	144
P304	R2	124	16,705	130	17,180	136	18,010	141
	R3		16,603	131	17,890	141	18,230	144
	R3L		14,961	121	15,146	122	16,274	131
	R4		16,845	135	18,160	145	17,850	143
	R5		17,043	137	17,670	142	18,060	145
P305	R2	145	18,388	124	19,720	134	20,160	136
	R3		18,276	124	20,070	135	20,440	138
	R3L		16,596	114	16,880	116	18,052	124
	R4		18,695	129	20,050	138	19,810	137
	R5		18,761	130	19,350	135	19,880	138



HOLOPHANE
LEADER IN LIGHTING SOLUTIONS
An Acuity Brands Company

Rio Road Cville

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