LEGEND

EXISTING	NEW	DESCRIPTION
		BOUNDARIES
		BENCHMARK
		SITE PROPERTY LINE
		ADJACENT PROPERTY LINE
		BUILDING SETBACK
		PARKING SETBACK
		SITE TEXT
10	10	PARKING COUNT
		TOPOGRAPHY
		INDEX CONTOUR
		INTERVAL CONTOUR
311.5 x	+11.50	SPOT ELEVATION
311.5 TC x	+11.50TC	TOP OF CURB ELEVATION
311.5 TW x	+11.50TW	TOP OF WALL ELEVATION
311.5 BW x	+11.50BW	BOTTOM OF WALL ELEVATION
		STREAM
		STREAM BUFFER
		100 YEAR FLOODPLAIN
		BUILDING
		BUILDING
		RETAINING WALL
		STAIRS
		EDGE OF PAVEMENT
		ROAD CENTERLINE
		FRONT OF CURB
		BACK OF CURB
		CG-12 TRUNCATED DOME
		SIDEWALK
		BIKE PARKING
		HANDICAP ACCESSIBLE AISLE
		HANDICAP PARKING
		MATERIAL
		CONCRETE
		RIPRAP
		ASPHALT
		EC-2 MATTING
		EC-3 MATTING
		WETLAND
		TREELINE
X	X	FENCE
		UTILITY
		UTILITY POLE
		GUY WIRE
OHU	OHU	OVERHEAD UTILITY
UGU	UGU	UNDERGROUND UTILITY
		STORM
		STORM MANHOLE
		DROP INLET
STM	STM	STORM SEWER
RDR	RDR	ROOF DRAIN
		SANITARY
		SANITARY MANHOLE
		SANITARY SEWER MAIN
S	S	SANITARY SEWER LATERAL
		WATER
W	W	WATER LINE
	WS	WATER SERVICE LINE (WS)
		WATER METER
		WATER METER VAULT
		FIRE HYDRANT
		FIRE DEPARTMENT CONNECTION
		GAS
GAS	GAS	GAS LINE
		EASEMENTS
		CONSTRUCTION
		GRADING
		ACCESS
		SIGHT DISTANCE
		UTILITY
		STORMWATER FACILITY MAINTENANCE
		STORMWATER ACCESS
		DRAINAGE
		SANITARY
		WATERLINE
		GASLINE

NOTE:
1. THE SIZE OF THE SYMBOLS MAY VARY FROM WHAT IS SHOWN.

OWNER/DEVELOPER

999 Rio LLC
338 Rio Road W
Charlottesville, VA 22902
contact: brice.craig@craigbuilders.com

PLAN PREPARATION

Shimp Engineering, P.C.
912 East High Street
Charlottesville, VA 22902
(434) 227-5140

ZONING

NMD - Neighborhood Model District
ZMA201900001 approved on March 4, 2020
ZMA202200006 approved by the Board of Supervisors on May 3, 2023
The Code of Development associated with ZMA202200006 establishes design guidelines, specific regulations, and block characteristics for the development of this property
Overlays: Entrance Corridor, Airport Impact Area

Initial site plan SDP2023-00035 approved on July 14, 2023

MAGISTERIAL DISTRICT

Rio

SOURCE OF TITLE

DB 4505 PG 218

SETBACKS

Per ZMA202200006, setbacks are provided as follows:

FRONT MINIMUM: 3'
FRONT MAXIMUM: 40'
SIDE MINIMUM: 3'
SIDE MAXIMUM: 15'
REAR MINIMUM: 3'
REAR MAXIMUM: None

SOURCE OF BOUNDARY AND TOPOGRAPHY

Boundary & topographic survey provided by:
Meridian Planning Group, LLC, March 20, 2019.

BENCHMARK

Datum for topography is NAVD 88
Visually verified by Shimp Engineering Staff on 04/13/2023

FLOODZONE

According to FEMA Flood Insurance Rate Map, effective date February 4, 2005 (Community Panel 51003C0279D), this property is not located within a Zone AE 100-year floodplain.

RESERVOIR WATERSHED

This site is within the Meadow Creek Watershed.
This site is not within a watershed of a public water supply.

WATER & SANITARY SERVICES

Site is served by ACSA public water and sewer.

GENERAL CONSTRUCTION NOTES

1. Prior to any construction within any existing right-of-way, including connection to any existing road, a permit shall be obtained from the Virginia Department of Transit (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 the 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 are 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 pipe shall be reinforced concrete pipe - Class III.
9. All excavation for underground pipe installation must comply with OSHA Standards for the Construction Industry (29 CFR Part 1926).

GENERAL WATER & SEWER NOTES

1. Work shall be subject to inspection by Albemarle County Service Authority inspectors. The Contractor will be responsible for notifying the proper service authority officials at the start of the work.
2. 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 contractors shall on his own initiative locate all underground lines and structures as necessary.
3. All materials and construction shall comply with the current edition of the general water and sewer construction specifications as adopted by the Albemarle County Service Authority.
4. Datum for all elevations shown in National Geodetic Survey.
5. The contractor shall be responsible for notifying "MISS UTILITY" (1-800-552-7001).
6. All water and sewer pipes shall have a minimum of 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.
7. All water and sewer appurtenances are to be located outside of roadside ditches.
8. Valves on deadend lines shall be rodded to provided adequate restraint for the valve during a future extension of the line.
9. Trees are not permitted in the ACSA easement.
10. 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).
11. All public water and sewer facilities shall be dedicated to the Albemarle County Service Authority.
12. Backflow prevention is required for all connections to the water main.

RWSA GENERAL NOTES

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 preconstruction 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 at (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 written 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 sewerlines, 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.

EXISTING USE

Vacant Land

PROPOSED USE

Residential, Gross residential density: 20 du/ac
Lots 1-28: Multifamily, 2 units/building, 28 units total
Lots 29-38: Attached single-family, 10 units total

LAND USE SCHEDULE

EXISTING	Area	%
Building	3,939 SF	4.7%
Pavement	2,348 SF	2.8%
Sidewalk	0 SF	0%
Open Space	77,261 SF	92.5%
Total=	83,548 SF	(1.918 ac.)

PROPOSED	Area	%
Building	15,336 SF	18.4%
Pavement	27,353 SF	32.7%
Sidewalk	4,866 SF	5.8%
Open space	35,993 SF	43.1%
Total=	83,548 SF	(1.918 ac.)

BUILDING HEIGHT

Per ZMA202200006, maximum building height is 35'.

PARKING SCHEDULE

Multifamily units: 1 bedroom, 1.5 spaces per unit, 28 units total
= 42 spaces required
Multifamily units (Single-Family Attached): 2 or more bedrooms, 2 spaces per unit, 10 units total
= 20 spaces required

Total: 62 spaces required
62 spaces provided

FIRE FLOW

Total estimated flow is 3,526 gpm. Ten-pound drop for a Q20 could not be achieved at the time of hydrant flow test.
ISO needed fire flow is 1,500 gpm.

RECREATION

Recreational area shall comply with conditions of approved ZMA20220006. The site shall provide amenity area no less than 20% of the total site area. Section 4.16 of the Albemarle County Zoning Ordinance shall apply to all recreational facilities.
16,710 SF required, 18,666 SF provided

SIGNS

All signs and pavement markings shall conform with the latest edition of the MUTCD Guidelines.
A sign permit must be issued in accordance with the Albemarle County Sign Regulations prior to placement of any signs on-site.
Contractor shall provide handicap signs as shown on plan.

GENERAL NOTES

1. The information and data shown or indicated with respect to the existing underground utilities at or contiguous to the site are based on information and data furnished to the owner and engineer by the owners of such underground facilities or others. The owner or engineer shall not be responsible for the accuracy or completeness of such information or data. The contractor shall have full responsibility for confirming the accuracy of the data, for locating all underground utilities, for coordination of the work with owners of such underground utilities during construction, for the safety and protection thereof and repairing any damage thereto resulting from the work. All of these conditions shall be met at no additional cost to the owner. The contractor shall contact "Miss Utilities" of Virginia at 1-800-552-7001 prior to the start of work.
2. When working adjacent to existing structures, poles, etc., the contractor shall use whatever methods that are necessary to protect structures from damage. Replacement of damaged structures shall be at the contractor's expense.
3. The contractor shall be responsible for protecting all existing site structures from damage and coordinating work so that the owner can make necessary arrangements to modify/protect existing structures from damages.
4. The contractor shall be responsible for notifying all utility owners, adjacent land owners whose property may be impacted and the Virginia Department of Transportation prior to completing any off-site work.
5. Contractor shall notify and coordinate all work involving existing utilities with utility owners, at least 72 hours prior to the start of construction.
6. Contractor shall immediately report any discrepancies between existing conditions and contract documents to the owner and engineer.
7. Contractor shall submit for the approval of the owner submittals of all specified materials listed in the plans, to include shop drawings, manufacturer's specifications and laboratory reports. the owner's approval of submittals will be general and will not relieve the the contractor from the responsibility of adherence to the contract and for any error that may exist.
8. All bare areas shall be scarified, limed, fertilized, seeded and mulched.
9. All trees, saplings, brush, etc. shall be removed from within the right of way and the drainage easements.
10. Visibility of all mechanical equipment from the Entrance Corridor shall be eliminated.
11. Retaining walls require separate building permits.
12. All water service lines, sanitary laterals, and sprinkler lines must be visually inspected by the Albemarle County Building Department from the main to the structure.
13. Accessible parking spaces, access aisles, and accessible route shall be installed in accordance with ICC ANSI A117.1-09.
14. 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 fixtures 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."
15. All roof drains shall discharge in a manner not to cause a public nuisance and not over sidewalks.
16. 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 and 540-562-3580x131.

VDH NOTES

Existing wells shall be abandoned in accordance with Virginia Department of Health Private Well Regulations.

ITE TRIP GENERATION

Use Description	ITE	Qty	AM In	AM Out	AM Total	PM In	PM Out	PM Total	Daily Total
Multifamily Housing (Low-Rise)	220	28 units	8	24	32	21	12	33	255
Single-Family Attached Housing	215	10 units	1	4	5	1	1	2	26

FIRE PROTECTION

During demolition and/or construction, the following fire prevention steps are required, so please note them on the plan:
1. As found in the Virginia Statewide Fire Prevention Code, establish a written Fire Prevention Plan and identify someone to serve as the Fire Prevention Superintendent to ensure site compliance with the plan.
2. Smoking shall be prohibited in areas where smoking is a hazard, and these areas shall be designated with no smoking signs per Virginia Statewide Fire Prevention Code.
3. Areas where smoking can occur, shall have appropriate receptacles for discarded smoking materials per Virginia Statewide Fire Prevention Code.
4. Contractor shall ensure the street names and building numbers are always plainly visible from the frontage street during construction per the Virginia Statewide Fire Code.
5. Per the Virginia Statewide Fire Prevention Code, safe and efficient vehicular access for firefighting and emergency operations shall be provided and maintained at all construction and demolition sites. This includes provision of the required unobstructed access widths, a surface capable of supporting emergency apparatus of up to 75,000 lbs. in all weather conditions, free of overhead obstructions from 13 ft. 6 inches and below, provide access to fire department connections within 100 feet of water supply/hydrants and must provide for aerial access no closer than 15 ft. and no more than 30 ft. from the access road to buildings over 30 feet tall. This access may be via permanent or temporary road as long as the conditions listed, and they are properly identified/marked.
6. An approved water supply for firefighting operations shall be in place with unobstructed accessibility as soon as combustible materials arrive on site.
7. 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.
8. 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 areas of special; hazards, such as where flammable and combustible liquids are stored or used, in accordance with the Virginia Statewide Fire Code.
9. 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.

FINAL SITE DEVELOPMENT PLAN

999 RIO ROAD

SDP2023-00054

TAX MAP 61, PARCEL 154B

ALBEMARLE COUNTY, VIRGINIA

VICINITY MAP SCALE : 1"=500'

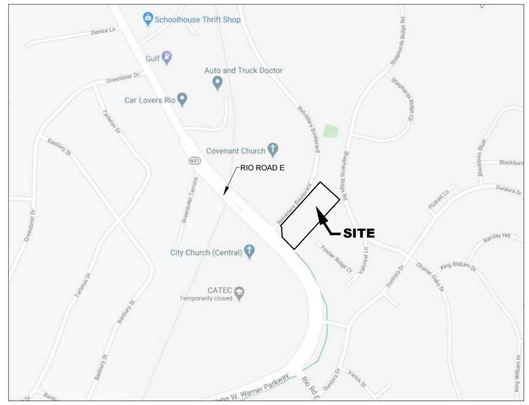


IMAGE PROVIDED BY GOOGLE MAPS

SHEET INDEX

C1 COVER
C2 EXISTING CONDITIONS
C3 SITE LAYOUT
C4 GRADING PLAN
C5 UTILITY PLAN
C6 OFF-SITE SEWER CONNECTION
C7 WATER & SANITARY SEWER PROFILES
C8 STORM SEWER PROFILES
C9 LANDSCAPE PLAN
C10 LIGHTING PLAN
C11 SITE & ACSA DETAILS
C12 ACSA DETAILS
C13 SITE DETAILS
C14 MOT & VDOT DETAILS

VDOT NOTES

1. VDOT's land development south staff (434-422-9373) shall be notified 48 hours in advance of any anticipated road/shoulder closures.
2. The permittee or his or her designee shall report all work zones in the VDOT right of way on a daily basis at set up and take down to VDOT'S Smart Traffic Center (540-332-9500).
3. Copies of all independent testing reports to be submitted to VDOT for verification.
4. A minimum 48 hours advance notification of a proof roll of both the subgrade and stone base is required by VDOT.
5. All areas excavated below existing pavement surface and within clear zone, at the conclusion of each workday, shall be backfilled to form an approximate 6:1 wedge, against the existing pavement surface for the safety and protection of vehicular traffic.
6. Traffic shall be maintained during construction of the tie-in and mill of the adjacent travel lanes.
7. Water lines, sewer lines, etc. crossing future VDOT maintained roads have to be sleeved with ductile iron pipe two (2) times diameter of the utility line.
8. A video (3 electronic copies to VDOT) of all stormwater systems carrying VDOT runoff or runoff under a future state road is required to be submitted to VDOT for review and approval prior to paving operations.

SHIMP ENGINEERING PC
LAND PLANNING · PROJECT MANAGEMENT
912 E. HIGH ST. 434.227.5140
CHARLOTTESVILLE VA, 22902 JUSTIN@SHIMP-ENGINEERING.COM

COMMONWEALTH OF VIRGINIA
JUSTIN M. SHIMP
Lic. No. 45183
2/29/24
PROFESSIONAL ENGINEER

Current Development Planner Date

Current Development Engineer Date

Fire Official Date

Building Official Date

Albemarle County Service Authority Date

Virginia Department of Transportation Date

Architectural Review Board Date

FINAL SITE DEVELOPMENT PLAN
999 RIO ROAD

ALBEMARLE COUNTY, VIRGINIA
SUBMISSION:
2023.09.05
REVISION:
1) 2023.09.18 [ACSA]
2) 2024.02.29 [COUNTY COMMENTS & ACSA]

FILE NO.
19.006

COVER

C1

TMP 61-155
CHURCH OF GOD; EDGAR WAYNE ROBERTS; PETER CEFARATTI & REGINALD GATLING TRUSTEES
DB 5134 PG 222
ZONE: COMMERCIAL OFFICE
USE: PUBLIC
6.91 AC

BELVEDERE BLVD.
VARIABLE WIDTH R/W
DB 3772 PG 366

RIO ROAD EAST
VARIABLE WIDTH R/W
DB 3772 PG 366

TMP 61-154B
999 RIO LLC
INSTRUMENT #202200010719
ZONE: NEIGHBORHOOD MODEL DISTRICT
USE: SINGLE FAMILY RESIDENTIAL
1.918 AC

TMP 62F-E2
COUNTY OF ALBEMARLE
DB 4830 PG 20
0.187 AC

TMP 62F2-B
SHEPHERDS RIDGE AT DUNLORA COMMUNITY ASSOCIATION INC
DB 5202 PG 778
ZONE: R4 RESIDENTIAL
USE: UNASSIGNED
0.61 AC

TMP 62F2-A
SHEPHERDS RIDGE AT DUNLORA COMMUNITY ASSOCIATION INC
DB 5202 PG 778
ZONE: R4 RESIDENTIAL
USE: UNASSIGNED
0.30 AC

TMP 62F2-X
DUNLORA V LLC
DB 4717 PG 703
ZONE: R4 RESIDENTIAL
USE: UNASSIGNED
0.10 AC

TMP 62F-E1
ROBERT HAUSER HOMES INC
C/O STONEHAUS
DB 4717 PG 703
ZONE: R4 RESIDENTIAL
USE: FOREST
1.20 AC

TMP 62F2-313
STALLINGS, PRESTON, TRUSTEE OF THE VIRGINIA M STALLINGS IRREVOCABLE TRUST
INST. #202200017363
ZONED: R4 RESIDENTIAL
USE: SINGLE FAM. RESID.
0.39 AC

RESIDUE OF TMP 61-154
N/F ROBERT HAUSER HC
DB 1776 PG 69
DB 1449 PG 369 (PLAT)

FOWLER RIDGE
COURT 49' R/W
DB 4839 PG 152

SHEPHERDS RIDGE ROAD
50' R/W

4" DI-3B
II=461.99
IO=460.01

16" DI-3B
II=462.90
IO=462.70

FHA

18" RCP PIPE

15" RCP PIPE

16" DI-3B
DROP INLET TOP TO BE REMOVED AND REPLACED WITH A MANHOLE TOP
INV. IN.=463.75

15" RCP PIPE (TBR)

DI-7 (TBR)
INV. OUT=464.15

SIGN TBR

SIGN

EX. DRAINAGE ESMT DB 3772 PG 366

EX. RWSA UTILITY ESMT DB 3563 PG 682

8" RWSA DI WATERLINE

ASPHALT (TBR)

ACSA WM TO BE ABANDONED

EX. VARIABLE WIDTH ACSA UTILITY ESMT D.B.5575 PG 231-242

CURB

UTILITY POLE

GUY

TREELINE TO BE REMOVED

FRAME SHED (TBR)
24.5 x 80.5'

BUILDING TO BE REMOVED

24 WALNUT (TBR)

30 HEMLOCK (TBR)

FRAME SHED (TBR)
18.0 x 22.5

WELL (TBR)

10 COFFEE (TBR)

HP (TBR)

EM (TBR)
28.2

OH (TBR)
23.4

1 STORY BRICK #999 (TBR)
FFE=475.17

FFE=475.17

38.1'

6.0

14.7'

34.1'

WELL HOUSE

BUILDING TO BE REMOVED

FRAME CARPORT (TBR)

10 DOGWD (TBR)

18 HOLLY (TBR)

18 HEMLOCK (TBR)

OVERHEAD UTILITY (TBR)

TREELINE TO BE REMOVED

BENCHMARK
N=3911037.87
E=11493847.99
ELEV. 478.86
NAIL

BOA (TBR)

SAN MH
UPPER DUNLORA V

TELEPHONE PEDESTAL

TMP 62F-E1

IO=463.70
IO=463.20

IO=463.80
IO=463.60

INV=461.10

15"WM

TV

TEL

GAS

APPROX GAS

WM

TMP 62F-E1

Scale: 1"=20'

SHIMP ENGINEERING PC
LAND PLANNING - PROJECT MANAGEMENT
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COMMONWEALTH OF VIRGINIA
JUSTIN M. SHIMP
Lic. No. 45183
2/29/24
PROFESSIONAL ENGINEER

FINAL SITE DEVELOPMENT PLAN

999 RIO ROAD

ALBEMARLE COUNTY, VIRGINIA

SUBMISSION:
2023.09.05

REVISION:
1) 2023.09.18 [ACSA]
2) 2024.02.29 [COUNTY COMMENTS & ACSA]

FILE NO.
19.006

EXISTING CONDITIONS

C2

AFFORDABLE UNITS:

- UNIT 3 - BOTTOM UNIT (LOT 2)
- UNIT 9 - BOTTOM UNIT (LOT 5)
- UNIT 11 - BOTTOM UNIT (LOT 6)
- UNIT 36 (LOT 22)
- UNIT 37 (LOT 23)
- UNIT 38 (LOT 24)

TMP 61-155
CHURCH OF GOD; EDGAR WAYNE ROBERTS; PETER CEFARATTI & REGINALD GATLING TRUSTEES
DB 5134 PG 222
ZONE: COMMERCIAL OFFICE
USE: PUBLIC
6.91 AC

BELVEDERE BLVD.
VARIABLE WIDTH R/W
DB 3772 PG 366

MILL & OVERLAY APPROX. 2,474 SF PER WP-2

288' TO RIO ROAD E

1,710' TO THE CENTER AT BELVEDERE

3,097 SF ROW DEDICATION

1,740 SF AMENITY AREA (MULTIUSE PATH)

8' ASPHALT MULTIUSE PATH (TYP.)

5' BUFFER STRIP

3,729 SF AMENITY AREA (MULTIUSE PATH)

CURB

R25.00'

CG-11

CG-12 TYPE B

CG-12 TYPE B

NEW PUBLIC ACCESS EASEMENT

WALL PACK (TYP.)

NEW 20' PUBLIC DRAINAGE ESMT

3,210 SF AMENITY AREA 1

LOT 1 A=1,080.14SF UNITS 1-2
LOT 2 A=886.37SF UNITS 3-4
LOT 3 A=1,185.78SF UNITS 5-6
LOT 4 A=1,190.22SF UNITS 7-8
LOT 5 A=895.56SF UNITS 9-10
LOT 6 A=898.07SF UNITS 11-12
LOT 7 A=1,268.44SF UNITS 13-14
LOT 8 A=1,220.13SF UNITS 15-16
LOT 9 A=946.55SF UNITS 17-18
LOT 10 A=1,477.04SF UNITS 19-20
LOT 11 A=1,599.70SF UNITS 21-22
LOT 12 A=1,118.05SF UNITS 23-24
LOT 13 A=1,119.64SF UNITS 25-26
LOT 14 A=1,432.97SF UNITS 27-28

NEW 20.00' ACSA ESMT

5' CONC. SIDEWALK

BELVEDERE CROSSING

5,303 SF TOTAL AMENITY AREA 3 INCLUDING DOG PARK

4' MULCH PATH

CLIMBING MOUND

LOG CIRCLE

BOLLARD LIGHT (TYP.)

SAND BOX

TMP 62F-E1

6' CONC. SIDEWALK

ADA RAMP

10.00' ACSA ESMT (TYP.)

1,767 SF FENCED IN DOG PARK

12x20' DUMPSTER PAD

TMP 62F-E1
ROBERT HAUSER HOMES INC
C/O STONEHAUS
DB 4717 PG 703
ZONE: R4 RESIDENTIAL
USE: FOREST
1.20 AC

RIO ROAD EAST
VARIABLE WIDTH R/W
DB 3772 PG 366

5.5' BUFFER STRIP

10' ASPHALT MULTIUSE PATH (TYP.)

1.5' GRADED SHOULDER

LIGHT POLE (TYP.)

NEW 10.00' ACSA ESMT (TYP.)

NEW 30.00' ACSA ESMT

NEW 30' ACSA ESMT

24.00'

27.00'

RESIDUAL OF TMP 61-154B
A=1.254 AC

LIGHT POLE (TYP.)

281 SF ROW DEDICATION

NEW V.W. PUBLIC SWM FACILITY ESMT

DETENTION POND

CG-6 MATCH PAVE SLOPE

6.50'

4.00'

10 BOLLARDS

7' SIDEWALK PER VDOT CG-13

20.00' EMERGENCY ACCESS (REINFORCED TURF)

NEW 25' EMERGENCY ACCESS EASEMENT

LOT 15 A=1,085.60SF UNIT 29
LOT 16 A=834.44SF UNIT 30
LOT 17 A=834.44SF UNIT 31
LOT 18 A=834.44SF UNIT 32
LOT 19 A=1,046.85SF UNIT 33
LOT 20 A=1,067.25SF UNIT 34
LOT 21 A=835.24SF UNIT 35
LOT 22 A=835.24SF UNIT 36
LOT 23 A=835.24SF UNIT 37
LOT 24 A=1,067.25SF UNIT 38

3,149 SF AMENITY AREA 2

BOLLARD LIGHT (TYP.)

4' MULCH PATH

NEW 20' ACSA ESMT

FIRE PIT

TMP 62F-E2
COUNTY OF ALBEMARLE
DB 4830 PG 20
0.187 AC

20.00' EMERGENCY ACCESS

EX. VARIABLE WIDTH ACSA UTILITY ESMT D.B.5575 PG 231-242

CG-13

TMP 62F2-B
SHEPHERDS RIDGE AT DUNLORA COMMUNITY ASSOCIATION INC
DB 5202 PG 778
ZONE: R4 RESIDENTIAL
USE: UNASSIGNED
0.61 AC

FOWLER RIDGE COURT 49' R/W
DB 4839 PG 152

TMP 62F2-A
SHEPHERDS RIDGE AT DUNLORA COMMUNITY ASSOCIATION INC
DB 5202 PG 778
ZONE: R4 RESIDENTIAL
USE: UNASSIGNED
0.30 AC

NEW 10' TEMPORARY GRADING ESMT

BENCHMARK
N=3911037.87
E=1149847.99
ELEV. 478.86
NAIL

TMP 62F2-X
DUNLORA V LLC
DB 4717 PG 703
ZONE: R4 RESIDENTIAL
USE: UNASSIGNED
0.10 AC

TMP 62F2-313
STALLINGS, PRESTON, TRUSTEE OF THE VIRGINIA M STALLINGS IRREVOCABLE TRUST
INST. #202200011363
ZONED: R4 RESIDENTIAL
USE: SINGLE FAM. RESID.

LOT 14

62F-E1

SHEPHERDS RIDGE ROAD 50' R/W

20 0 20 40 60
Scale: 1"=20'

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JUSTIN M. SHIMP
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2/29/24
PROFESSIONAL ENGINEER

FINAL SITE DEVELOPMENT PLAN

999 RIO ROAD

ALBEMARLE COUNTY, VIRGINIA

SUBMISSION:
2023.09.05

REVISION:
1) 2023.09.18 [ACSA]
2) 2024.02.29 [COUNTY COMMENTS & ACSA]

FILE NO.
19.006

SITE LAYOUT

C3

RWSA inspector to be on-site for any grading within the RWSA easement.

TMP 61-155
CHURCH OF GOD; EDGAR WAYNE ROBERTS; PETER CEFARATTI & REGINALD GATLING TRUSTEES
DB 5134 PG 222
ZONE: COMMERCIAL OFFICE
USE: PUBLIC
6.91 AC

BELVEDERE BLVD.
VARIABLE WIDTH R/W
DB 3772 PG 366

RIO ROAD EAST
VARIABLE WIDTH R/W
DB 3772 PG 366

TMP 62F-E2
COUNTY OF ALBEMARLE
DB 4830 PG 20
0.187 AC

TMP 62F-E1
ROBERT HAUSER HOMES INC
C/O STONEHAUS
DB 4717 PG 703
ZONE: R4 RESIDENTIAL
USE: FOREST
1.20 AC

TMP 62F-E1

TMP 62F-X
DUNLORA V LLC
DB 4717 PG 703
ZONE: R4 RESIDENTIAL
USE: UNASSIGNED
0.10 AC

TMP 62F-313
STALLINGS, PRESTON, TRUSTEE OF THE VIRGINIA M STALLINGS IRREVOCABLE TRUST
INST. #202200017763
ZONED: R4 RESIDENTIAL
USE: SINGLE FAM. RESID.

TMP 62F-A
SHEPHERDS RIDGE AT DUNLORA COMMUNITY ASSOCIATION INC
DB 5202 PG 778
ZONE: R4 RESIDENTIAL
USE: UNASSIGNED
0.30 AC

TMP 62F-B
SHEPHERDS RIDGE AT DUNLORA COMMUNITY ASSOCIATION INC
DB 5202 PG 778
ZONE: R4 RESIDENTIAL
USE: UNASSIGNED
0.61 AC

FOWLER RIDGE COURT 49' R/W
DB 4839 PG 152

SHEPHERDS RIDGE ROAD 50' ROW

LOT 14

BENCHMARK
N=3911037.87
E=11493847.99
ELEV. 478.86
NAIL

DETENTION POND

END CURB FLUSH WITH PATH

BELVEDERE CROSSING

FFE 474.33 UNITS 1-2
FFE 474.67 UNITS 3-4
FFE 475.00 UNITS 5-6
FFE 475.33 UNITS 7-8
FFE 475.67 UNITS 9-10
FFE 476.33 UNITS 11-12
FFE 476.67 UNITS 13-14
FFE 477.00 UNITS 15-16
FFE 477.67 UNITS 17-18
FFE 478.33 UNITS 19-20
FFE 478.00 UNITS 21-22
FFE 478.33 UNITS 23-24
FFE 478.67 UNITS 25-26
FFE 478.67 UNITS 27-28

FFE 474.25 UNIT 29
FFE 474.25 UNIT 30
FFE 474.25 UNIT 31
FFE 474.75 UNIT 32
FFE 474.75 UNIT 33
FFE 475.35 UNIT 34
FFE 475.35 UNIT 35
FFE 475.35 UNIT 36
FFE 476.85 UNIT 37
FFE 476.85 UNIT 38

TW 75 BW 74
3' MAX HEIGHT SEGMENTAL BLOCK RETAINING WALL
TW 77 BW 74
TW 77 BW 75
TW 77 BW 76

Scale: 1"=20'

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999 RIO ROAD

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GRADING PLAN

C4

ISO NEEDED FIRE FLOW DATA:

TOWNHOMES ARE CONSTRUCTION TYPE V-B WITH 3000 SF MAX FLOOR AREA PER UNIT.

ISO NEEDED FIRE FLOW = 1500 GPM

AVAILABLE FIRE FLOW = 3,526 GPM

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FINAL SITE DEVELOPMENT PLAN

999 RIO ROAD

ALBEMARLE COUNTY, VIRGINIA

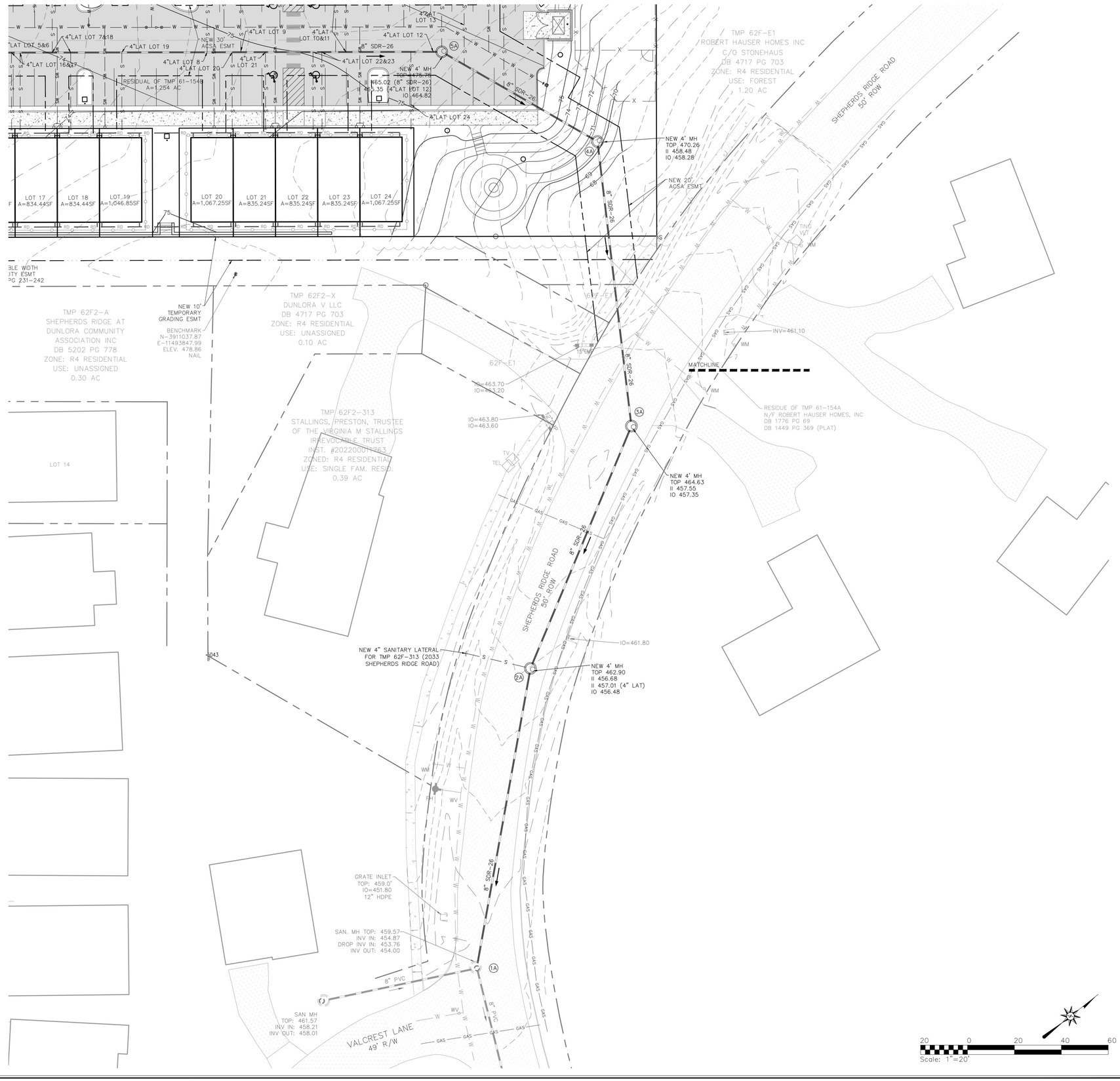
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UTILITY PLAN

C5



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FINAL SITE DEVELOPMENT PLAN

999 RIO ROAD

ALBEMARLE COUNTY, VIRGINIA

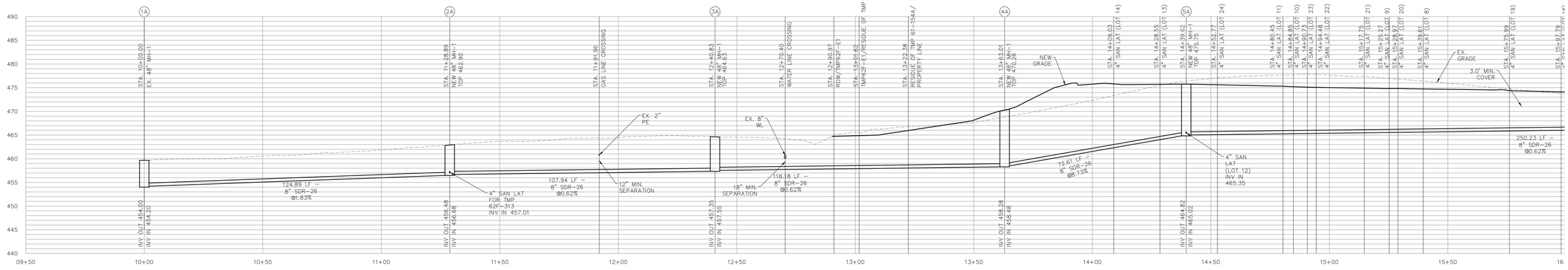
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19.006

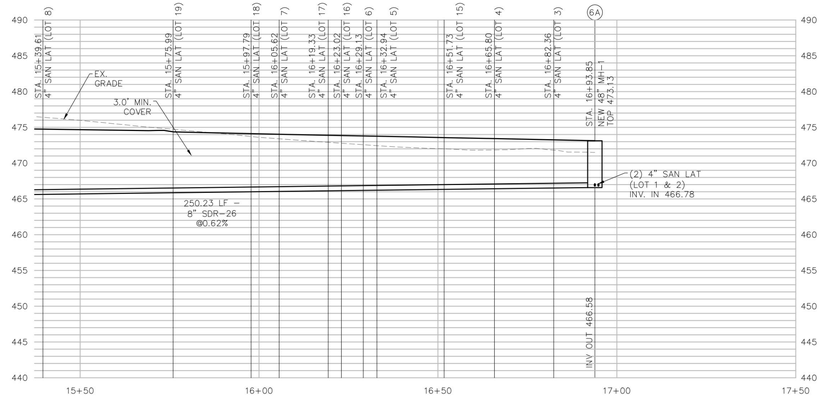
OFF-SITE SEWER CONNECTION

C6



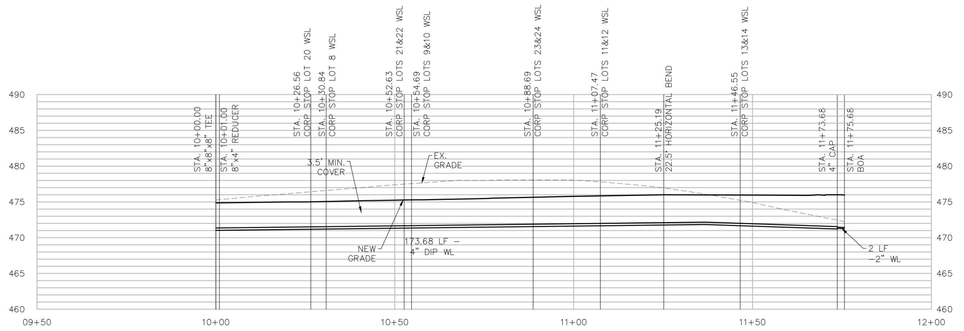
1 C7 SANITARY SEWER PROFILE 1A–6A

HORZ: 1"=20'
VERT: 1"=10'



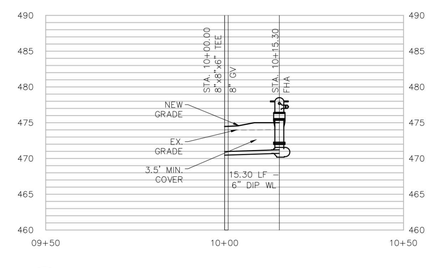
2 C7 SANITARY SEWER PROFILE 1A–6A – CONTINUED

HORZ: 1"=20'
VERT: 1"=10'



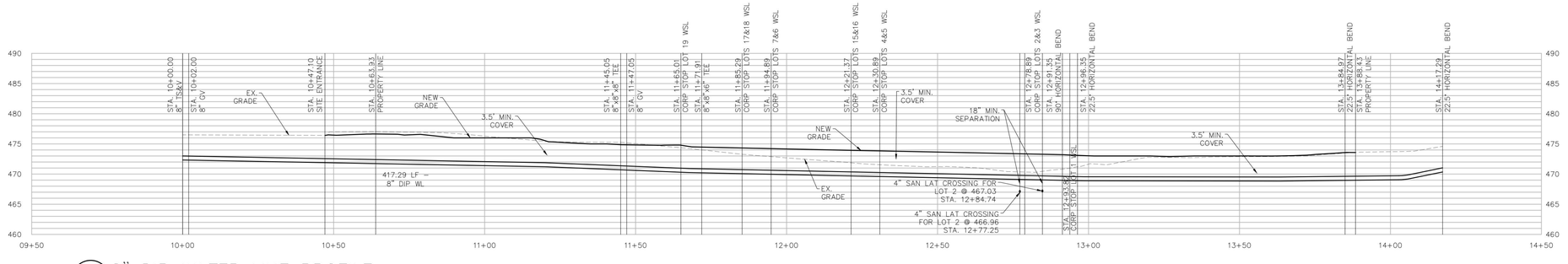
3 C7 4" DIP WATER LINE PROFILE

HORZ: 1"=20'
VERT: 1"=10'



4 C7 6" DIP WATER LINE PROFILE

HORZ: 1"=20'
VERT: 1"=10'



5 C7 8" DIP WATER LINE PROFILE

HORZ: 1"=20'
VERT: 1"=10'

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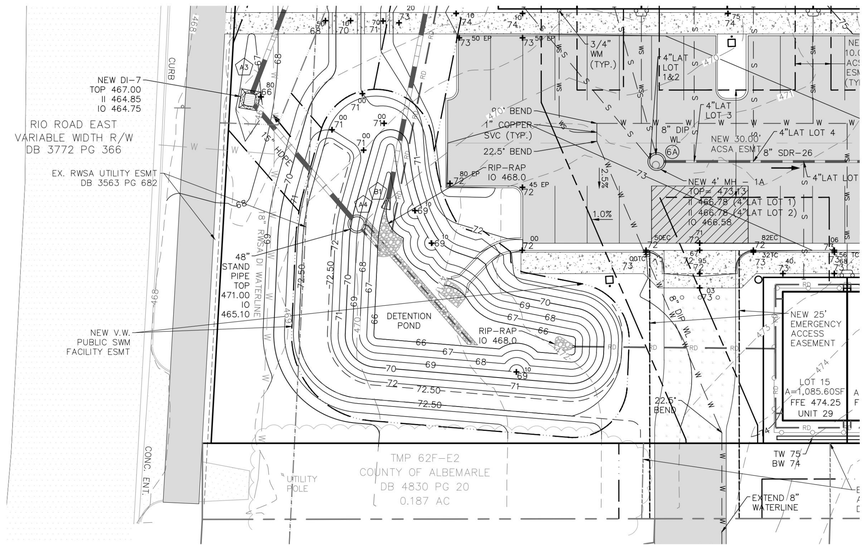
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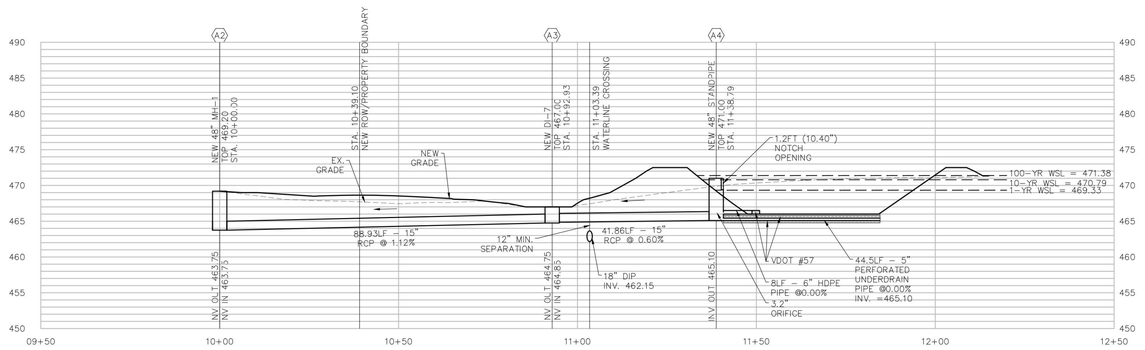
FILE NO. 19.006

WATER & SANITARY SEWER PROFILES

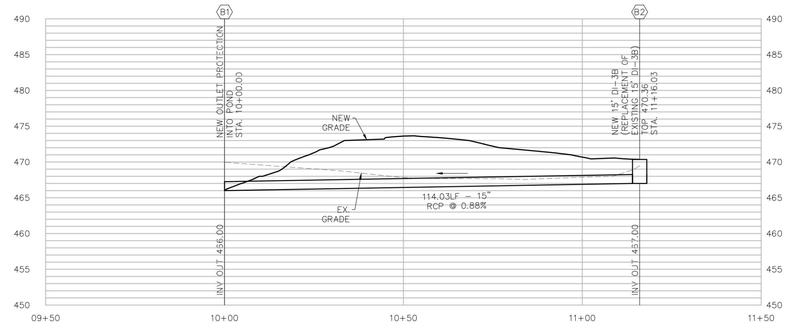
C7



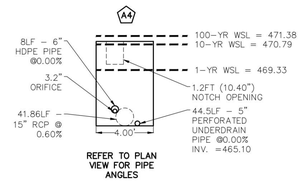
1 C8 POND PLAN VIEW



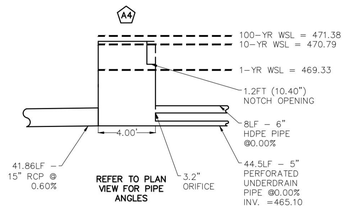
2 C8 A2-POND STORM PROFILE
HORZ: 1"=20'
VERT: 1"=10'



3 C8 B1-B2 STORM PROFILE
HORZ: 1"=20'
VERT: 1"=10'



4 C8 STR. A4 DETAIL – 1
1"=5'



5 C8 STR. A4 DETAIL – 2
1"=5'

EARTH FILL NOTES

1. **Material -** Fill material should be taken from an approved, designated borrow area. It should be free of roots, stumps, wood, rubbish, stones greater than 6 inches, and frozen or other objectionable materials. Fill material for the center of the embankment and the cutoff trench should conform to Unified Soil Classification GC, SC, or CL. Consideration may be given to the use of other materials in the embankment based on the recommendations of a geotechnical engineer supervises the design and construction.
2. **Placement -** Areas on which fill is to be placed should be scarified before its placement. Fill material should be placed in layers a maximum of 8 inches thick (before compaction), which should be continuous over the entire length of the fill. The most permeable borrow material should be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement and not excavated into the embankment.
3. **Compaction -** Fill material should be compacted with appropriate compaction equipment such as a sheepsfoot, rubber-tired or vibratory roller. The number of required passes by the compaction equipment over the fill material may vary with soil conditions. Fill material should contain sufficient moisture such that the required degree of compaction will be obtained with the equipment used. The minimum required density is 95% of maximum dry density with a moisture content within 2% of the optimum, unless otherwise specified by the engineer. Each layer of the fill should be compacted as necessary to obtain minimum density and the engineer should certify, at the time of construction, that each fill layer meets the minimum density requirement. All compaction is to be determined by either Standard Proctor Test (ASTM D698) or the Modified Proctor Test (ASTM D1557) as directed by the geotechnical engineer based on site and soil conditions and the size and type of structure being built.
4. **Cutoff Trench -** The cutoff trench should be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The equipment used for excavation should govern the bottom width of the trench, with the minimum width being 4 The depth should be at least 4 feet below existing grade or as shown on the plans. The side slopes of the trench should be 1H:1V or flatter. The backfill should be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability.
5. **Top Soil -** The surface layer of compacted fill should be scarified prior to placement of at least 6 inches of topsoil. The topsoil shall be stabilized with in accordance with the Virginia Erosion and Sediment Control Handbook, latest edition.

NOTES

1. UNDERDRAIN PIPE SHALL BE PROTECTED WITH FABRIC
2. BOTTOM OF POND AREA = 770 SF @466.00 ELEVATION
3. TOP OF POND AREA=3,908 SF @ ELEVATION 472.00
4. 95% COMPACTION REQUIRED FOR ALL FILL BENEATH STORMWATER PIPES

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FINAL SITE DEVELOPMENT PLAN

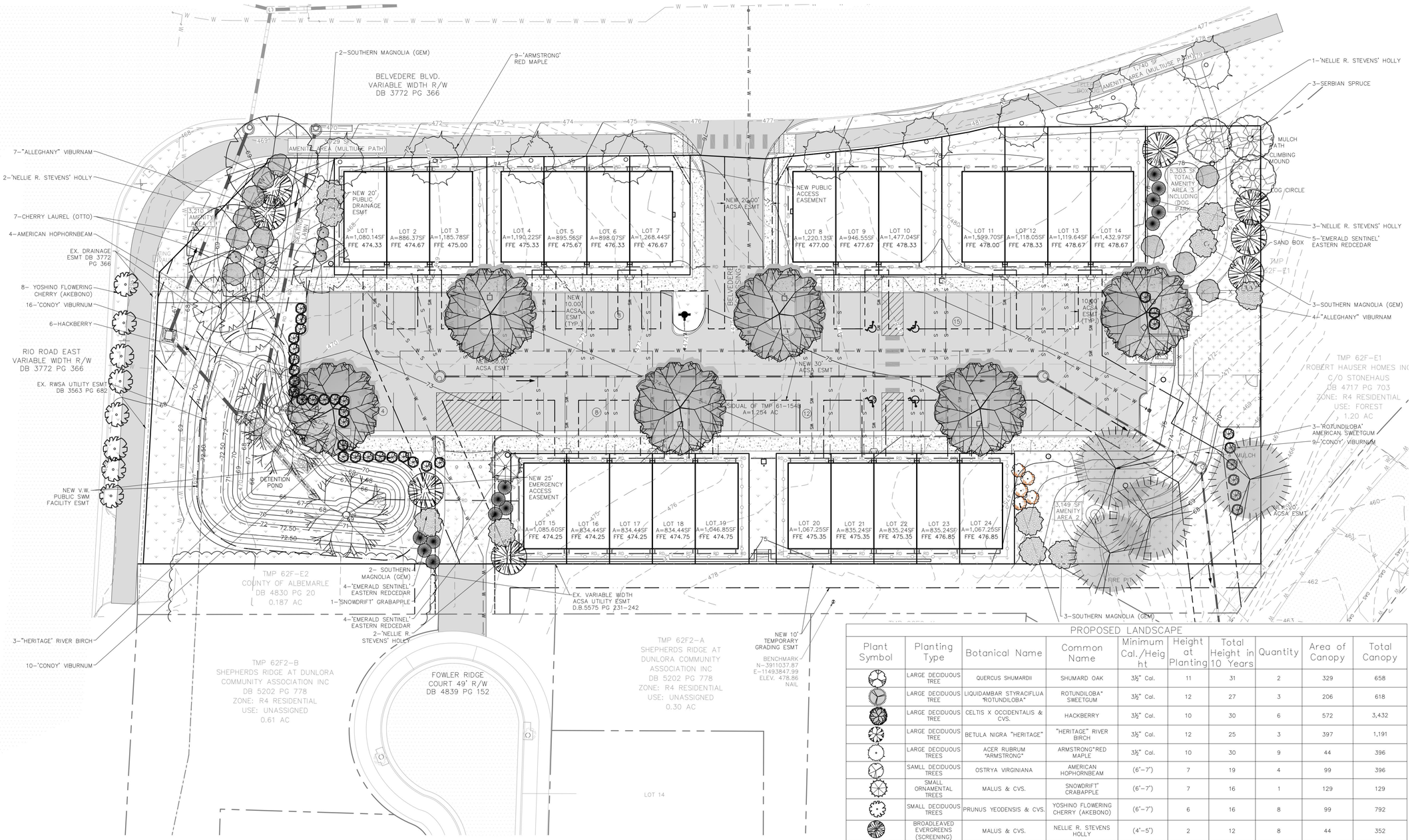
999 RIO ROAD

ALBEMARLE COUNTY, VIRGINIA
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STORM SEWER PROFILES

C8



TOTAL PROPERTY AREA =83,557 SF

AMENITY AREA REQUIRED = 83,557 SF * 0.2 = 16,709.62 SF
AMENITY AREA PROVIDED = AREA 1 + AREA 2 + AREA 3 + MULTIUSE PATH
= 3,210 SF + 3,149 SF + 5,303 SF + 5,469 SF = 17,131 SF

GREEN SPACE REQUIRED = 83,557 SF * 0.2 = 16,709.62 SF
GREEN SPACE PROVIDED = GREEN SPACE (NOT INCLUDING AMENITY AREA) + AMENITY AREA – MULTIUSE PATH
= 31,560 SF + 11,662 SF = 43,222 SF

NOTE: AMENITY AREA 3 INCLUDE 1,767 SF OF FENCED IN DOG PARK

LANDSCAPING REQUIRED:

SITE REQUIREMENT (SEC. 32.7.9.8): 10% CANOPY REQUIRED.
SITE AREA: 1.918 AC (83,548 SF)
83,548 SF x 10% = 8,355 SF
CANOPY REQUIRED: 8,355 SF
CANOPY PROVIDED: 10,560 SF

ENTRANCE CORRIDOR STREETS: LARGE SHADE TREES (2.5" CAL.) – 35' O.C. WITH INTERSPERSED ORNAMENTAL TREES, 190 LF OF FRONTAGE ON RIO ROAD
REQUIRED: 5 LARGE SHADE TREES
PROVIDED: 6 LARGE SHADE TREES W/ ORNAMENTAL PLANTINGS ADJ. TO LOT 1 (AMENITY AREA 1)

STREET TREES: LARGE SHADE TREES (2.5" CAL.) – 50' O.C., 350 LF OF FRONTAGE ON BELEVEDERE BOULEVARD
REQUIRED: 7 LARGE SHADE TREES
PROVIDED: 9 LARGE SHADE TREES

INTERIOR PARKING AREA (SEC. 32.7.9.6): 5% OF THE PAVED PARKING AREA & 1 LARGE OR MEDIUM SHADE TREE PER 10 PARKING SPACES
21,053 SF x 5% = 1,053 SF
REQUIRED: 1,067 SF
PROVIDED: 1,128 SF

62 PARKING SPACES PROVIDED
REQUIRED: 6 LARGE SHADE TREES
PROVIDED: 6 LARGE SHADE TREES

INTERIOR PEDESTRIAN WAYS: MEDIUM SHADE TREES (2.5" CAL.) – 25' O.C.
PROVIDED: 3 LARGE SHADE TREES

PROPOSED LANDSCAPE

Plant Symbol	Planting Type	Botanical Name	Common Name	Minimum Cal./Height	Height at Planting	Total Height in 10 Years	Quantity	Area of Canopy	Total Canopy
	LARGE DECIDUOUS TREE	QUERCUS SHUMARDII	SHUMARD OAK	3½" Cal.	11	31	2	329	658
	LARGE DECIDUOUS TREE	LIQUIDAMBAR STYRACIFLUA "ROTUNDILOBA"	ROTUNDILOBA" SWEETGUM	3½" Cal.	12	27	3	206	618
	LARGE DECIDUOUS TREE	CELTIS X OCCIDENTALIS & CVS.	HACKBERRY	3½" Cal.	10	30	6	572	3,432
	LARGE DECIDUOUS TREE	BETULA NIGRA "HERITAGE"	"HERITAGE" RIVER BIRCH	3½" Cal.	12	25	3	397	1,191
	LARGE DECIDUOUS TREES	ACER RUBRUM "ARMSTRONG"	ARMSTRONG"RED MAPLE	3½" Cal.	10	30	9	44	396
	SAMLL DECIDUOUS TREES	OSTRYA VIRGINIANA	AMERICAN HOPHORNBEAM	(6'–7')	7	19	4	99	396
	SMALL ORNAMENTAL TREES	MALUS & CVS.	SNOWDRIFT" CRABAPPLE	(6'–7')	7	16	1	129	129
	SMALL DECIDUOUS TREES	PRUNUS YEODENSIS & CVS.	YOSHINO FLOWERING CHERRY (AKEBONO)	(6'–7')	6	16	8	99	792
	BROADLEAVED EVERGREENS (SCREENING)	MALUS & CVS.	NELLIE R. STEVENS HOLLY	(4'–5')	2	12	8	44	352
	BROADLEAVED EVERGREENS (SCREENING) & ORNAMENTAL CONFERS	JUNIPERUS VIRGINIANA & CVS.	EASTERN REDCEDAR	(4'–5')	4	14	13	16	208
	ORNAMENTAL TREES	MAGNOLIA GRANDIFLORA & CVS.	SOUTHERN MAGNOLIA (GEM)	(6'–8')	7	17	10	82	820
	BROADLEAVED EVERGREENS (SCREENING) & ORNAMENTAL CONFERS	PICEA OMORIKA	SERBIAN SPRUCE	(4'–5')	5	15	3	28	84
	BROADLEAVED EVERGREEN/ SEMI-EVERGREEN SHRUBS (SCREENING)	PRUNUS LAUROCERASUS & CVS.	CHERRY LAUREL (OTTO)	2½"	2	4	7	10	70
	BROADLEAVED EVERGREEN/ SEMI-EVERGREEN SHRUBS (SCREENING)	VIBURNUM UTILE "CONOY"	"CONOY" VIBURNUM	(1'–2½')	2	4	35	18	630
	BROADLEAVED EVERGREEN/ SEMI-EVERGREEN SHRUBS (SCREENING)	VIBURNAM RHYTIDOPHYLLUM "ALLEGHANY"	"ALLEGHANY" VIBURNAM	(1'–1½')	5	10	11	64	704
	Deciduous shrubs	HYDRANGEA QUERCIFOLIA & CVS.	OAKLEAF HYDRANGEA (SNOWQUEEN)	(1'–1½')	1	5	5	16	80
	OPEN GRASS LAWN/AMENITY AREA								
	Open Grass Lawn								
Not To Scale						Total	128	2,153	10,560

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FINAL SITE DEVELOPMENT PLAN

999 RIO ROAD

ALBEMARLE COUNTY, VIRGINIA

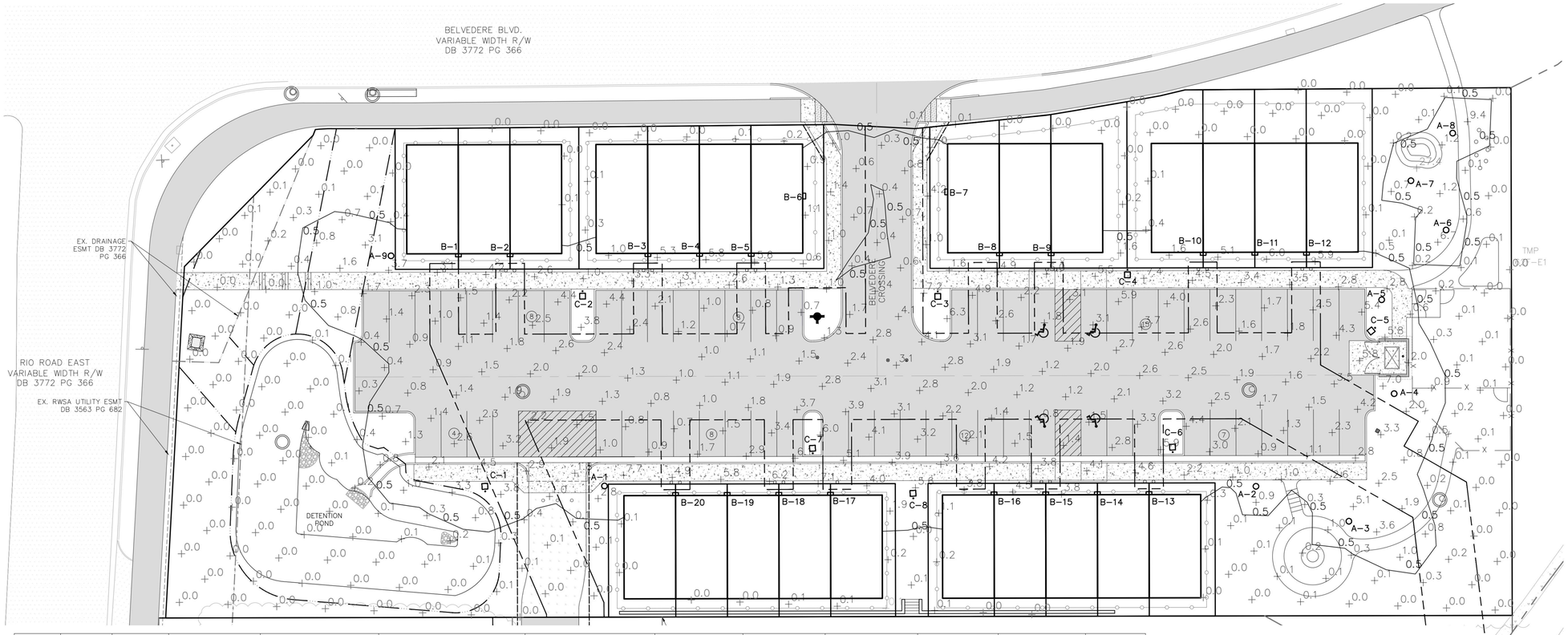
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19.006

AMENITY & LANDSCAPE PLAN

C9



Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Lamp	Filename	Number of Lamps	Lumens Per Lamp	Lumen Multiplier	Light Loss Factor	Wattage
○	A	9	SIGNIFY GARDCO	PBL-14L-800-NW-G2-3-UNV	Pureform Gen2 – PBL Bollard	(2) LDGN66 Reduced Pixelated Array(s) DRIVEN AT 1180mA	pbl-14l-800-nw-g2-3-unv.ies	1	Absolute	1.00	1.00	40.5
▭	B	20	GARDO	GCS-A01-830-T4M	Geoform Wall Sconce – cylinder, 20 LED's, 3000K CCT, TYPE T4M OPTIC, 80CR	(1) LDGN66 Reduced Pixelated Array(s) DRIVEN AT 317mA	GCS-A01-830-T4M.ies	1	Absolute	1.00	1.00	10.2
□	C	8	SIGNIFY GARDCO	ECF-S-32L-530-WW-G2-4	EcoForm Area LED ECF – Small, 32 LED's, 3000K CCT, TYPE 4 OPTIC, No Shield	(2) LEDGINE SLD LIGHT ARRAY(S) DRIVEN AT 530mA	ecf-s-32l-530-ww-g2-4.ies	1	Absolute	1.00	1.00	55.7

GARDCO by Signify

Site & Area

EcoForm

ECF-S small area light

Gardco EcoForm Gen-2 combines economy with performance in an LED area luminaire. Capable of delivering up to 27,800 lumens or more in a compact, low profile LED luminaire, EcoForm offers a new level of customer value. EcoForm features an innovative retrofit arm kit, simplifying site conversions to LED by eliminating the need to drill additional holes in most existing poles. Integral control systems available for further energy savings. Includes Service Tag, our innovative way to provide assistance throughout the life of the product.

Project: 999 Rio Road
Location: 999 Rio Road E, Charlottesville, VA 22901
Cat.No: ECF-S-32L-530-WW-G2-4
Type: 4
Lamps: Qty: 8
Notes:

Ordering guide

example: ECF-S-64L-900-NW-G2-AR-S-120-HIS-MGY

Prefix	Number of LEDs	Drive Current	LED Color - Generation	Mounting	Distribution	Voltage
ECF-S	**32**	**530**	**WW-G2**	**AR[1]** Arm-Mount (standard)	**4** Type 2	**120** 120V
ECF-S EcoForm site and area, small	32L 32 LEDs (2 modules)	365 365mA 530 530mA 700 700mA 1A 1000mA 1.2A 1200mA	NW-G2 Neutral White 4000K, 70CRI Generation 2 CW-G2 Cool White 5000K, 70CRI Generation 2	The following mounting kits must be ordered separately (See accessories) **SF[2]** Slip Fitter Mount (Fits to 2 ¼" O.D. tenon) **WS** Wall mount with surface conduit entry, permitted Retrofit arm mount kit **RAM[3]**	**2-90** Type 2 Rotated left 90° **2-270** Rotated right 270° **Type 3** **3** Type 3 **3-90** Rotated left 90° **3-270** Rotated right 270° **Type 4** **4** Type 4 **4-90** Rotated left 90° **4-270** Rotated right 270° **Type 5** **5** Type 5 **SW** Type SW	**AFR** Auto Front Row **AFR-90** Auto Front Row, Rotated left 90° **AFR-270** Auto Front Row, Rotated right 270° **BLC** Back Light Control **BLC-90** Back Light Control rotated left 90° **BLC-270** Back Light Control rotated right 270° **LCL[4]** LEED Corner Optic Left **RCL[4]** LEED Corner Optic Right	**208** 208V **240** 240V **277** 277V **347** 347V **480** 480V **UNV** 120-277V (50/60Hz) **HVU** 347-480V (50/60Hz)
64L 64 LEDs (4 modules)	**900** 900mA **1A[5]** 1000mA					

Options						
Dimming controls	Motion sensing	Photo-sensing	Electrical	Fusing	Finish	
CM50	**INRS[6]** Integral with NLTAIR2 PIR **INRS7[6]** Integral with #7 lens	**PCB[7]** Photocontrol Button[8,9] **TLRDS[10,11]** **TLRD7[10,12]** **TLRPC[10,13,14]** Twist Lock Receptacle w/ Photocell	**F[15]** Single (120, 277, 347VAC) **F2[15]** Double (208, 240, 480VAC) **Pole Mount Fusing** **FPP** Single (120, 277, 347VAC) **FPP2** Double (208, 240, 480VAC) **FPP3** Canadian Double Pull (208, 240, 480VAC) **Surge Protection** (10kA standard) **SP2** Increased 20kA	**RPA[16]** Square Pole Adapter included in standard finish **RPA[17]** Round Pole Adapter (Fits to 3"- 3.6" O.D. pole) **HIS[18]** Internal House Side Shield	**Textured** **BK** Black **WH** White **BZ** Bronze **DGY** Dark Gray **MGY** Medium Gray **Customer specified** **RAL** Specify optional color or RAL (ex: RAL7024) **CC** Custom color (Must supply color chip for required factory quote)

DD[1,9] 0-10V External dimming (by others) with controls by others
DCC[1,9,19] Dual Circuit Control
FAWS[9,20] Field Adjustable Wattage Selector
LLC[1,9,19] Integral wireless module
BL[1,19] Bi-level functionality
SRDR[1,9,19,21] SR driver connected to Zhaga socket

DynaDimmer: Automatic Profile Dimming
CSSO[22] Safety 50% Dimming, 7 hours
CMSO[22] Median 50% Dimming, 8 hours
CSSO[22] Safety 30% Dimming, 7 hours
CMSO[22] Median 30% Dimming, 8 hours

1. BL-INRS/7 equipped with nut-boarded sensor housing when voltage is HVU (347-480V)
2. Mounts to a 4" round pole with adapter included for square poles.
3. Limited to a maximum of 45 degrees slimlip above horizontal.
4. Not available with other dimming control options.
5. Not available with motion sensor.
6. Not available with photocontrol.
7. Must specify a motion sensor lens.
8. Not available in 347 or 480V
9. Must specify input voltage.
10. TLRDS, TLRD7 and TLRPC receptacle pins 4 & 5 are capped off when ordered with any of the Dimming controls DD or FAWS or LLC.
11. Not available in 480V. Order photocell separately with TLRDS/7.
12. Not available with SCC.
13. Not available with SF and WS. RPAs provided with black finish standard.
14. HIS not available with Type 5, SW, BLC, BLC-90, BLC-270, LCL or RCL optics.
15. Not available with DD, DCC, and FAWS dimming control options.
16. Not available with DD, DCC, FAWS and LLC dimming control options.
17. When ordering SRDR, controller (by others) to be used on socket must be SR compatible (See specifications for more details). Consult factory for lead time. All 7 pins in NEMA receptacle are connected to SR driver; SRDR not available with TLRDS or TLRPC.
18. 0-10V dimming driver standard.
19. LCL and RCL not available with 4SL-1 2A or 64L-1A.
20. Not available with LLC and CS/CM.
21. Must specify input voltage.
22. Available in 120V only.
10. Not available in 347 or 480V.
11. Not available in 100, 200, and 1090mA.
12. Not available with LLC.

ECF-S_EcoForm_area_small 01/22 page 1 of 9

GARDCO by Signify

Site & Area

PureForm

PBL LED bollard

Gardco PureForm LED bollard PBL integrates a sleek, low profile design, extraordinary light output, and energy savings into an innovative pedestrian scale luminaire. PureForm bollard features a high performance optical system designed to achieve wide spacings and full cutoff performance. Three heights available for a customized look. IP66 optics ensure dust or moisture will never interfere with performance.

Project: 999 Rio Road
Location: 999 Rio Road E, Charlottesville, VA 22901
Cat.No: PBL-14L-800-NW-G2-3-UNV
Type:
Lamps: Qty: 9
Notes:

Ordering guide

example: PBL-42-14L-450-NW-G2-S-UNV

Prefix	Shaft Mount	Nominal of LEDs	Drive Current	LED Color - Generation	Shaft Finish	Electrical	Voltage
PBL PureForm bollard	**36** Standard Shaft 36" **42** Standard Shaft 42" **60** Standard Shaft 60"	**14L** 14 LEDs (full ring)	**100** 100mA **200** 200mA **350** 350mA **450** 450mA **600** 600mA **800** 800mA **1090** 1090mA	**WW-G2** Warm White 3000K, 70CRI Generation 2 **NW-G2** Neutral White 4000K, 70CRI Generation 2 **CW-G2** Cool White 5000K, 70CRI Generation 2	**3** Type 3 **Type 5** **5** Type 5	Leave blank for no battery **EBP** Emergency battery [1,2,3]	**120** 120V **208** 208V **240** 240V **277** 277V **347** 347V **480** 480V **UNV** 120-277V (50/60Hz)

Options						
Dimming controls	Motion sensing	Photo-sensing	Electrical	Fusing	Finish	
DD 0-10V External dimming (by others) [1,2] **FAWS** Field Adjustable [1,2] **LLC** Wireless controls without PIR sensor [1,2,3] **BL** Bi-level functionary with motion sensor [1,2] **DynaDimmer:** Automatic Profile Dimming [1,2] **CSSO** Security 50% Dimming, 7 hours **CMSO** Median 50% Dimming, 8 hours **CSSO** Security 30% Dimming, 7 hours **CMSO** Median 30% Dimming, 8 hours	**(MS)** Integral Infrared [1,2]	**PCB** Photocontrol Button [1,2,4]	**F** Single (120, 277, 347VAC) [1] **F2** Double (208, 240, 480VAC) [1] **F3** Canadian Double Pull (208, 240, 480VAC) [1] **Surge Protection** (10kA standard) **SP2** Increased 20kA **GFCI** Ground Fault Interrupt Outlet [1]	**Textured** **BK** Black **WH** White **BZ** Bronze **DGY** Dark Gray **MGY** Medium Gray **Customer specified** **RAL** Specify optional color or RAL (ex: RAL7024) **CC** Custom color (Must supply color chip for required factory quote)	

1. Extended lead times apply. Contact factory for details.
2. Not available in 100, 200 or 350mA.
3. Not available with other control options.
4. Not available with motion sensor.
5. Not available with photocontrol.
6. Available only with BL dimming control.
7. Not available with LLC and CS/CM.
8. Must specify input voltage.
9. Available in 120V only.
10. Not available in 347 or 480V.
11. Not available in 100, 200, and 1090mA.
12. Not available with LLC.

PBL_PureForm_bollard 04/22 page 1 of 5

GARDCO by Signify

Wall Mount

GeoForm

GCS LED wall sconce

Gardco GeoForm cylinder small LED wall sconce features a compact geometric design that will complement a range of architectural styles. GeoForm is available with two light engines: highly efficient precision plus optics which feature type 2, 3, and 4 distributions, as well as light effects optics which offer wall wash, spot, and pencil beam distributions. GeoForm with light effects may be inverted for a wet location uplight option. Emergency battery backup option provides path-of-egress illumination. Multiple control options, including wireless Interact Pro outdoor, further enhance energy savings.

Project: 999 Rio Road
Location: 999 Rio Road E, Charlottesville, VA 22901
Cat.No: GCS-A01-830-T4M
Type:
Lamps: Qty: 20
Notes:

Ordering guide

example: GCS-A03-830-T3M-UNV-MG

Luminaire	Configuration (nom. lumens)	Color Temperature	Distribution	Voltage	Dimming Controls [1]	Electrical	Emergency	Finish
GCS GeoForm Cylinder Small	Precision Plus optics **A01** 1,500 lumens **A02** 2,500 lumens **A03** 4,000 lumens **A04** 5,000 lumens **A05** 6,000 lumens	**830** 3000K **840** 4000K **740** 700R 4000K **750** 700R 5000K	**T2M** Type 2 **T3M** Type 3 **T4M** Type 4	**120** 120V **208** 208V **240** 240V **277** 277V **UNV** 120-277V **347** 347V **480** 480V **HVU** 347-480V	**none** Leave blank (0-10V dimming driver standard) **DLEA[2]** Dimming Leads Externally Accessible (controls by others) **FAWS[3]** Field Adjustable Wattage Selector	**none** Leave blank (120V/1A surge protector standard) **SP2** Surge Protector 20kV/10kA (option) **FS1** Single Fuse (120, 277, or 347VAC) **FS2** Double Fuse (208V, 240V, or 480V) **PCB[4]** Photocontrol Button (120-277V)	**none** Leave blank **EM[5]** Emergency Battery Pack (0-40°C)	**BZ** **Textured** **BK** Black **WH** White **BZ** Bronze **DG** Dark Gray **MG** Medium Gray **Customer specified** **CC** Special Color (must supply color chip; requires factory quote)
	Light Effects optics **B01[6]** 700 lumens **B02[6]** 1,100 lumens **B03[6]** 2,200 lumens	**830** 3000K **840** 4000K	**WAW** Wall Wash **SPT** Spot **PEN** Pencil Beam					

1. Only available in 120– 277V or UNV.
2. Only one option can be selected from Dimming Controls column.
3. Not available with Emergency battery pack.
4. 120–277V only. Luminaire must be ordered with DLEA option if using WAP.
5. Only available in 120–277, must specify voltage.
6. Not available with "Light Effects" B01, B02, B03.

Luminaire Accessories (order separately)

WAP-LB-GBS-(F)' InteractPro remote control module. GeoForm block small (GBS) housing, specify finish
WAP-LB-GCS-(F)' InteractPro remote control module. GeoForm cylinder small (GCS) housing, specify finish
GF-WS-BK Wall Mounted Box for surface conduit, painted black
GF-INV Inversion Mounting kit (required with inverted mounting)
IRT9015 Handheld remote for grouping and configuration of wireless Interact Pro (WAP). At least one required per site.

GCS_GeoForm_Cylinder_Small 11/23 page 1 of 5

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JUSTIN M. SHIMP
Lic. No. 45183
2/29/24
PROFESSIONAL ENGINEER

FINAL SITE DEVELOPMENT PLAN

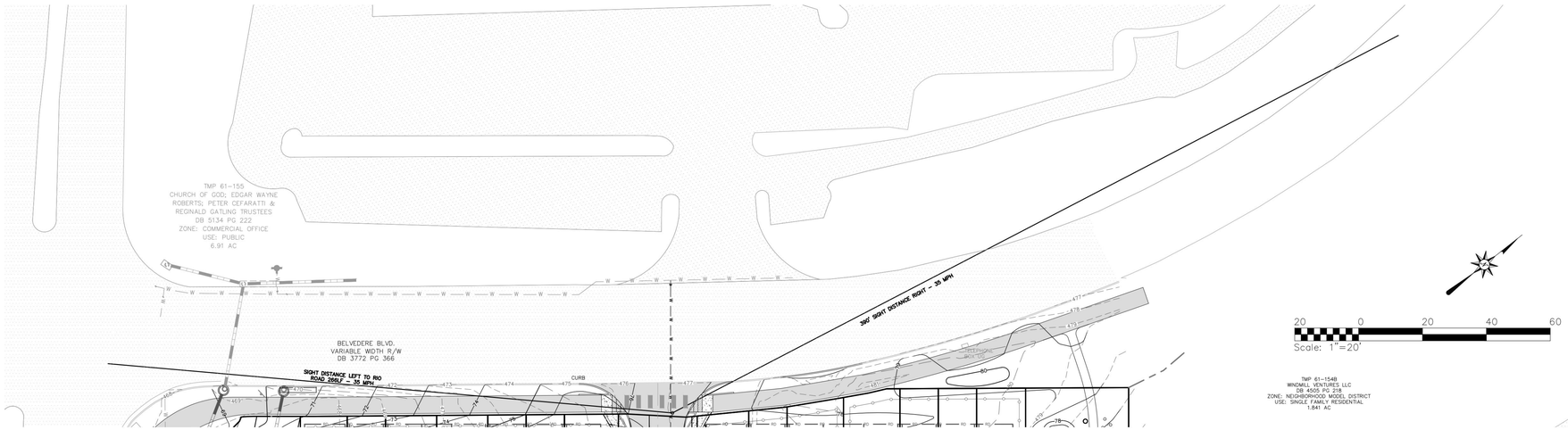
999 RIO ROAD

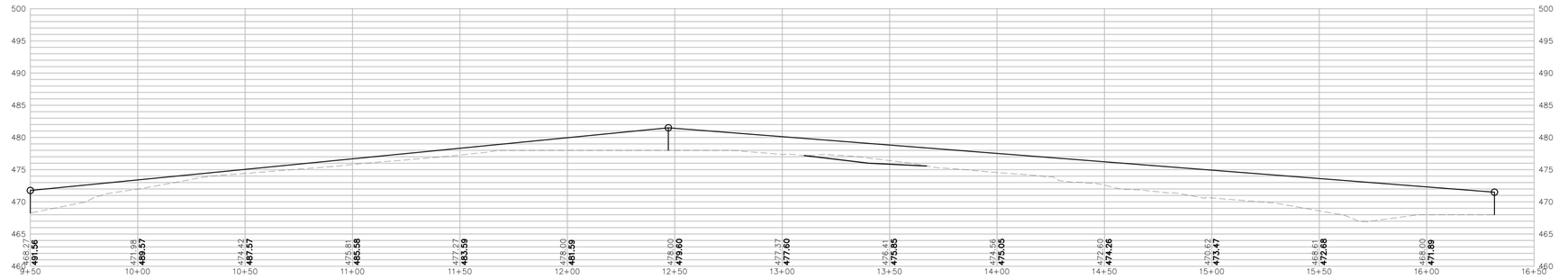
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SUBMISSION:
2023.09.05
REVISION:
1) 2023.09.18 [ACSA]
2) 2024.02.29 [COUNTY COMMENTS & ACSA]

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19.006

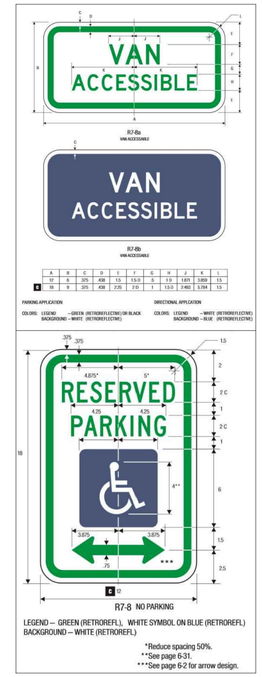
LIGHTING PLAN

C10

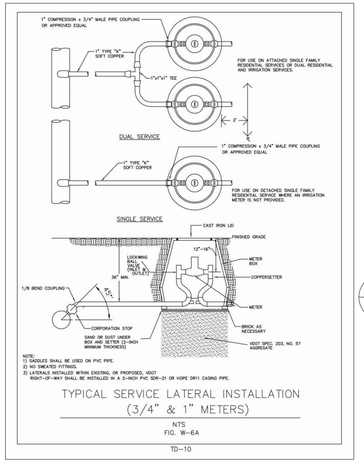




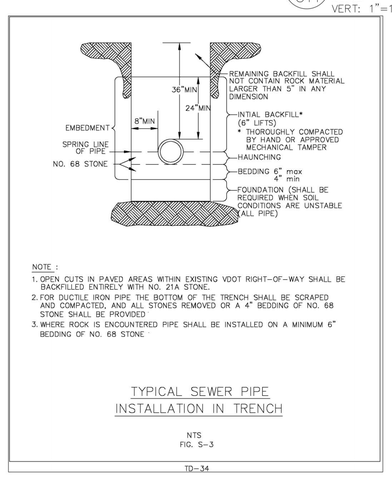
1 C11 ENTRANCE SIGHT DISTANCE
HORZ: 1"=30'
VERT: 1"=10'



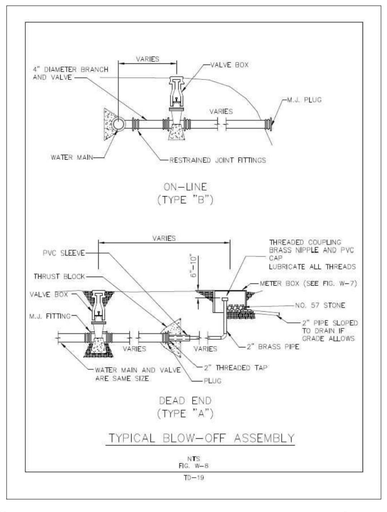
2 C11 HC PARKING SIGNAGE
NOT TO SCALE



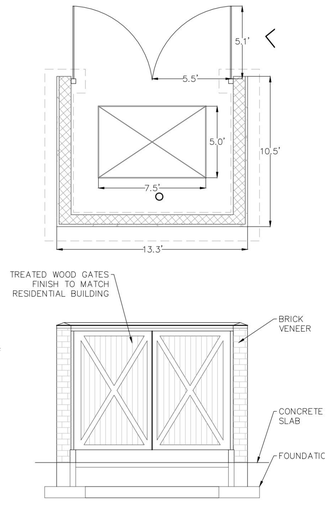
3 C11 ACSA: 3/4" & 1" WATER METER INSTALLATION
NOT TO SCALE



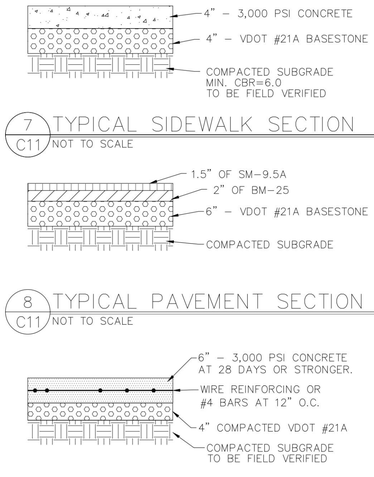
4 C11 ACSA: SEWER PIPE INSTALLATION (TYP.)
NOT TO SCALE



5 C11 ACSA: BLOW-OFF ASSEMBLY (TYP.)
NOT TO SCALE



6 C11 DUMPSTER PAD DETAIL
1" = 5'



7 C11 TYPICAL SIDEWALK SECTION
NOT TO SCALE

8 C11 TYPICAL PAVEMENT SECTION
NOT TO SCALE

9 C11 TYPICAL DUMPSTER PAD SECTION
NOT TO SCALE

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FINAL SITE DEVELOPMENT PLAN

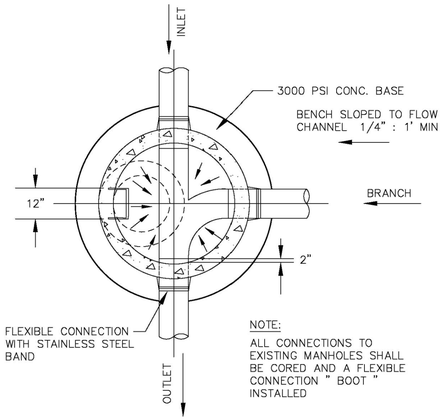
999 RIO ROAD

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SITE & ACSA DETAILS

C11

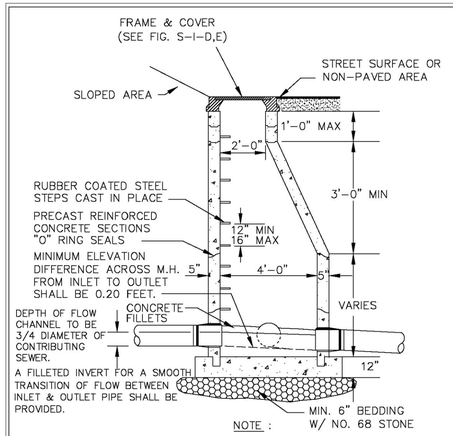


TYPICAL MANHOLE PLAN
SHOWING BRANCH TIE – IN

NTS
FIG. S–I–B

TD–27

1 C12 ACSA: TYPICAL MH TIE IN PLAN VIEW
NOT TO SCALE



NOTE :

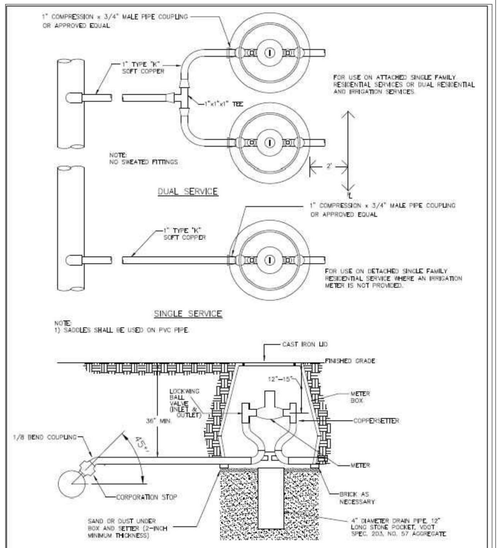
1. BEDDING THICKNESS REQUIREMENT SHOWN IS MINIMUM AND SHALL BE SPECIFICALLY DETERMINED BY THE CONSULTANT FOR THE SOIL CONDITIONS.
2. THE CONSULTANT WILL DETERMINE WHETHER MANHOLES SHALL HAVE EXTENDED OR NON–EXTENDED BASES.
3. ALL JOINTS, LIFT HOLES, INLETS, OUTLETS TO BE SEALED & GROUTED INSIDE AND OUT.

TYPICAL MANHOLE SECTION
SHOWING BRANCH TIE–IN

N.T.S
FIG. S–I–A

TD–25

3 C12 ACSA: TYP. MANHOLE SECTION BRANCH TIE–IN
NOT TO SCALE



TYPICAL SERVICE LATERAL INSTALLATION
(5/8" & 1" METERS)

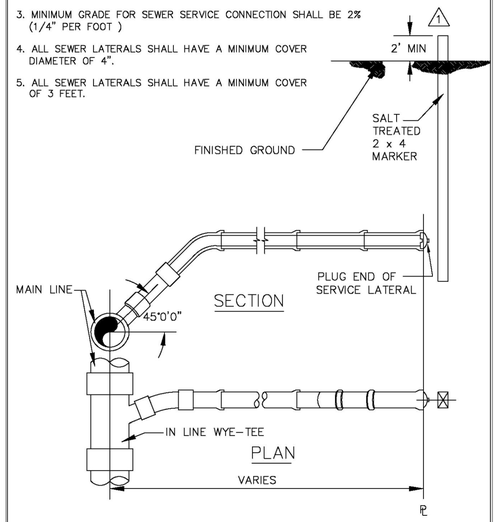
NTS
FIG. W–6A

TD–10

5 C12 ACSA: TYP. SERVICE LATERAL INSTALLATION
NOT TO SCALE

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.

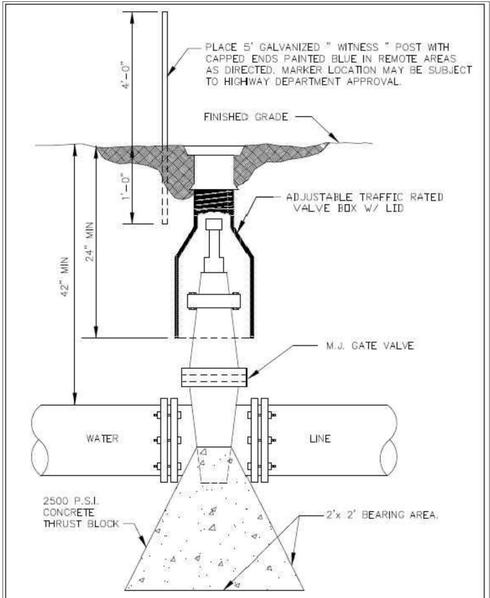


SEWER SERVICE LATERAL CONNECTION

N.T.S.
FIG. S–2

TD–33

7 C12 ACSA: SEWER LATERAL CONNECTION
NOT TO SCALE



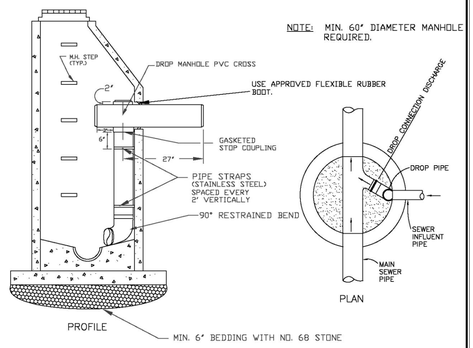
NOTE : IN REMOTE AREAS, VALVE BOXES SHALL EXTEND SIX (6) INCHES ABOVE GRADE.

TYPICAL GATE VALVE

NTS
FIG. W–5

TD–9

2 C12 ACSA: GATE VALVE (TYP.)
NOT TO SCALE



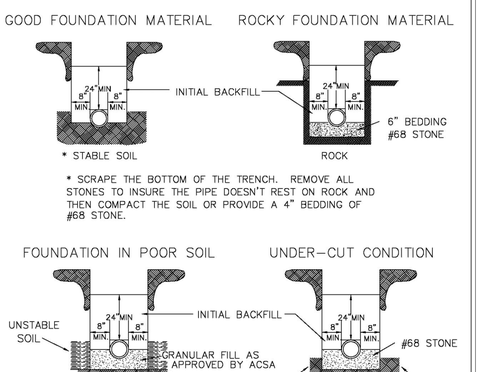
1. HEIGHT OF THE VERTICAL DROP PIPE WILL BE DETERMINED BY THE ACSA, BUT SHALL NOT BE LESS THAN TWO (2) FEET.
2. VERTICAL DROP PIPE SHALL BE SDR 26 P.V.C, SIZED THE SAME AS THE INCOMING PIPE AND CONNECTED TO THE DROP FITTING WITH STANDARD GASKET JOINT.
3. VERTICAL DROP PIPE SHALL BE STRAPPED TO THE MANHOLE AT PIPE JOINTS. STRAPS SHALL BE MADE OF STAINLESS STEEL.
4. SHAPE INVERT AS NEEDED TO PROVIDE SMOOTH TRANSITION FROM DROP CONNECTION DISCHARGE POINT TO SPRING LINE OF MANHOLE INVERT.
5. DROP CONNECTION DISCHARGE FITTING SHALL BE ORIENTED AT 45 DEGREES, INTO THE FLOW.
6. VERTICAL DROP PIPE SHALL BE INSTALLED AT 90 DEGREES FROM THE ACCESS STEPS.
7. MINIMUM 72" DIAMETER MANHOLE REQUIRED FOR A SINGLE 10" OR 12" DIAMETER DROP CONNECTION, OR TWO 8" DIAMETER DROP CONNECTIONS.

STANDARD INTERNAL DROP CONNECTION

N.T.S.
FIG. S–1–C2

TD–30

4 C12 ACSA: INTERNAL DROP CONNECTION
NOT TO SCALE



NOTE :

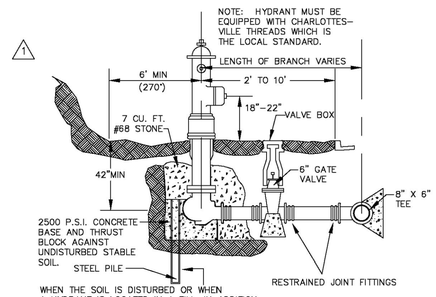
1. NO ROCKS SHALL BE ALLOWED WITHIN 24" OF THE WATER LINES.
2. NO ROCKS LARGER THAN 6" IN ANY DIMENSION SHALL BE ALLOWED ABOVE THE INITIAL BACKFILL.
3. THE INITIAL BACKFILL SHALL BE PLACED AND COMPACTED IN 6" LIFTS.
4. NO ORGANIC OR FROZEN MATERIAL OR DEBRIS SHALL BE ALLOWED IN THE TRENCH.
5. BELL HOLES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

DUCTILE IRON WATER
PIPE INSTALLATION & BEDDING

NTS
FIG. W–2

TD–2

6 C12 ACSA: DIP INSTALLATION
NOT TO SCALE



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

8 C12 ACSA: FIRE HYDRANT ASSEMBLY
NOT TO SCALE

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FINAL SITE DEVELOPMENT PLAN

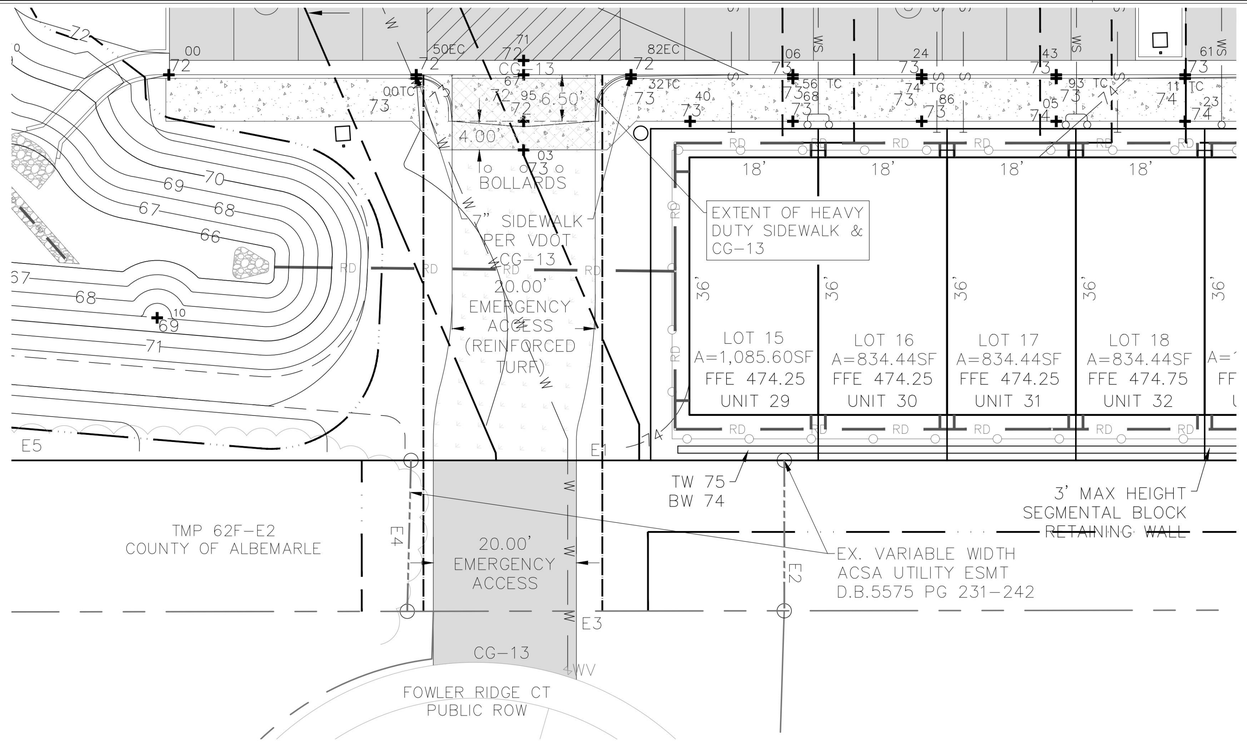
999 RIO ROAD

ALBEMARLE COUNTY, VIRGINIA
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REVISION:
1) 2023.09.18 [ACSA]
2) 2024.02.29 [COUNTY COMMENTS & ACSA]

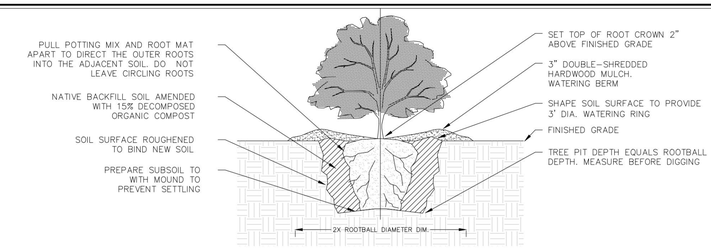
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ACSA DETAILS

C12

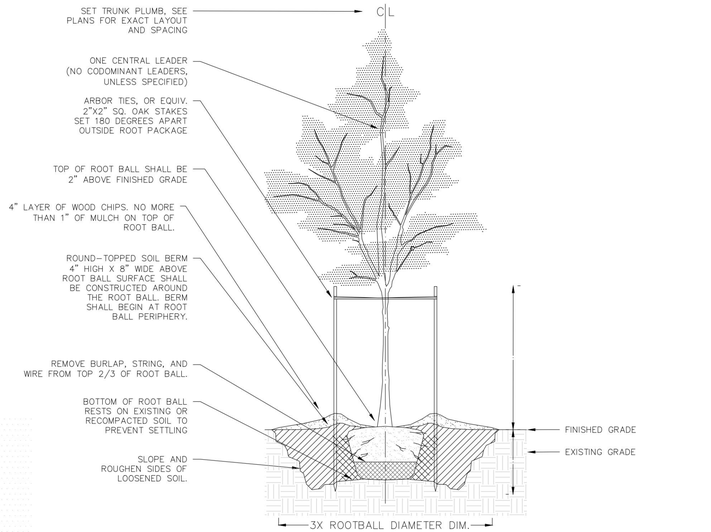


1 C13 EMERGENCY ACCESS LAYOUT DETAIL
SCALE: 1"=10'

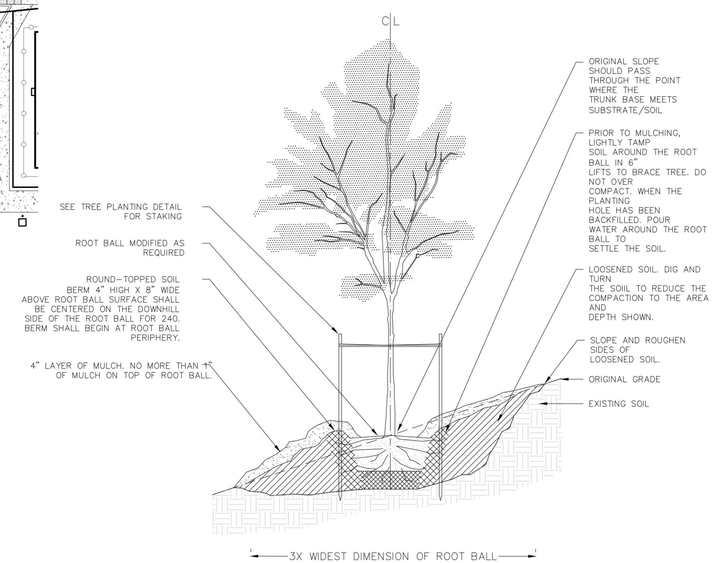


1. SEE PLANS FOR EXACT LAYOUT. SPACE PLANTS AS SPECIFIED IN PLANT LIST OR AS SHOWN. IF SPACING NEEDS ADJUSTING CONTACT LANDSCAPE ARCHITECT.
2. PRIOR TO MULCHING, LIGHTLY TAMP SOIL AROUND THE ROOT BALL IN 6" LIFTS TO BRACE SHRUB. DO NOT OVER COMPACT. WHEN THE PLANTING HOLE HAS BEEN BACKFILLED, POUR WATER AROUND THE ROOT BALL TO SETTLE THE SOIL.

5 C13 SHRUB PLANTING – SECTION
Not To Scale



6 C13 TREE PLANTING DETAIL
Not To Scale



7 C13 TREE ON SLOPE @ 25% (4:1) to 50% (2:1)
Not To Scale

GEOSYSTEMS

Based on the evaluation, the following materials are recommended for the Geoweb application at the site. We assumed a heavier axle loading to account for construction traffic on the road.

1. Prepare sub grade to a minimum CBR of 6.0%.
2. Provide a 4800 lbs/ft enhanced woven geotextile separation layer on top of the sub grade and install in accordance with Manufacturer instructions including overlaps based on sub grade CBR.
3. Presto Geoweb GW30V5 (6 - inch) panels filled with Engineered Fill.
4. Engineered infill shall be a mix of topsoil and aggregate having a homogeneous mixture of a clear crushed aggregate having an AASHTO #5 or similar designation blended with pulverized topsoil and a minimum 30% void space for air and/or water. The aggregate portion shall have a particle range from 0.375 to 1.0 inches (9.5 to 25 mm) with a D_{50} of 0.5 inches (13 mm). The pulverized topsoil portion shall equal 25% of the total volume. The topsoil shall be blended with the aggregate to produce a homogeneous mixture. Once placed, the engineered fill shall be compacted to a 95% Standard Proctor.
5. Connect the Geoweb sections with ATRA® Keys at each interleaf and end to end connection.
6. Pre-shape the Geoweb panels before infill placement.
7. Limit the drop of infill into the Geoweb panels to prevent distortion.
8. Provide 2 inch wear surface of engineered fill.

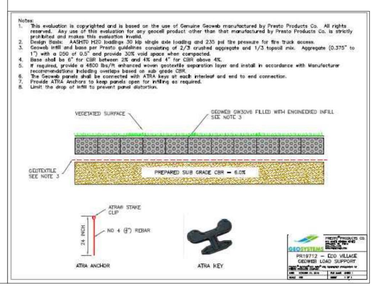
For additional Load Support Resources, click here:
Load Support Design Engineering Resource Package

If you have any questions or need any additional information, please call.

Sincerely,

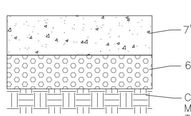
Sam Justice, P.E.
Civil Design Engineer
Presto Geosystems

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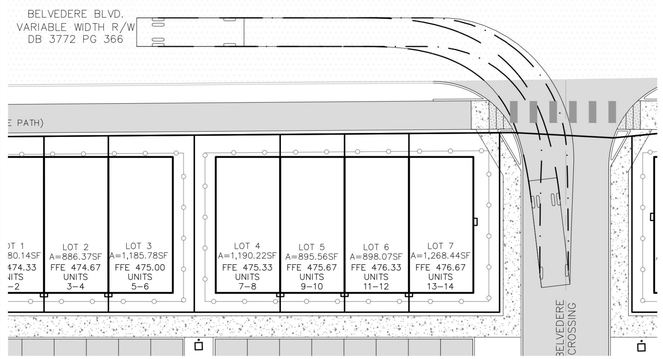


2 C13 EMERGENCY ACCESS REINFORCED TURF GEOCELL – MFR DETAILS
NOT TO SCALE

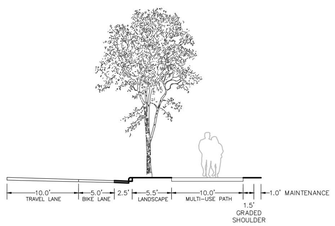
NOTE: Emergency access must be able to support 80,000 lbs in all weather conditions.



3 C13 HEAVY DUTY SIDEWALK SECTION
NOT TO SCALE



4 C13 SU-30 AUTOTURN DIAGRAM
NOT TO SCALE



5 C13 RIO ROAD EAST STREET SECTION
NOT TO SCALE

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COMMONWEALTH OF VIRGINIA
JUSTIN M. SHIMP
Lic. No. 45183
2/29/24
PROFESSIONAL ENGINEER

FINAL SITE DEVELOPMENT PLAN

999 RIO ROAD

ALBEMARLE COUNTY, VIRGINIA
SUBMISSION:
2023.09.05
REVISION:
1) 2023.09.18 [ACSA]
2) 2024.02.29 [COUNTY COMMENTS & ACSA]

FILE NO.
19.006

SITE DETAILS

C13

Typical Traffic Control
Stationary Operation on a Shoulder
(Figure TTC-4.2)
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.**

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[1] 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[1] oscillating lights. Vehicle hazard warning signals can be used to supplement high-intensity amber rotating, flashing, or[1] oscillating, lights.**
6. **Taper length (L) shall be at the following:**

Taper Length L										
Speed Limit (mph)	Lane Width (Feet) 9	10	11	12	Remarks	Speed Limit (mph)	Lane Width (Feet) 9	10	11	12	Remarks
25	95	105	115	125	L=S*W/60	50	450	500	550	600	L=SW
30	135	150	165	180	L=S*W/60	55	495	550	605	660	L= SW
35	185	205	225	245	L=S*W/60	60	540	600	660	720	L=SW
40	240	270	295	320	L=S*W/60	65	585	650	715	780	L=SW
45	405	450	495	540	L=SW	70	630	700	770	840	L=SW
Limited Access highways shall use a 1000' merging taper regardless of the posted speed, for shifting taper see Table 6H.2[1]										
Shoulder Taper = ½ L Minimum										

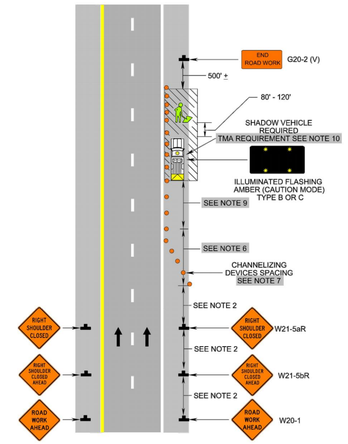
7. **Channelizing device spacing shall be at the following:**

Channelizing Device Spacing						
Location Spacing	Speed Limit (mph) 0 -35	36 +	Location Spacing	Speed Limit (mph) 0 -35	36 +	Location Spacing	Speed Limit (mph) 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.								

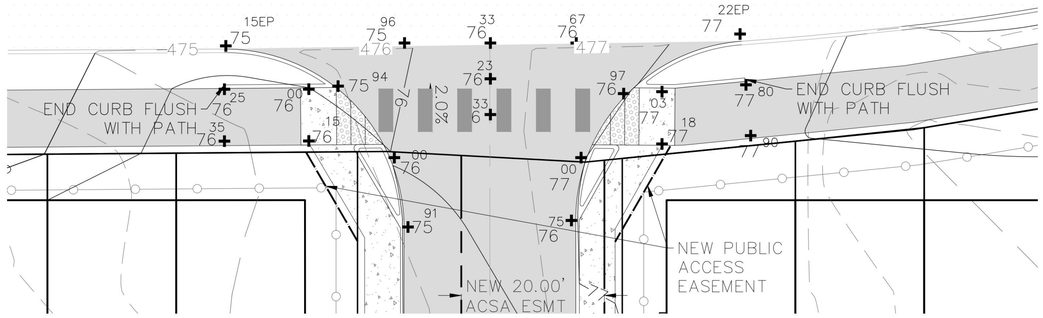
8. **On roadways with paved shoulders having a width of 8 feet or more, channelizing devices shall be used to close the shoulder in advance of the merging taper to direct vehicular traffic to remain within the traveled way.**
9. **The buffer space length shall be as shown in Table 6H-3 on Page 6H-5 for the posted speed limit.**
10. **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.**
11. **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
2: Revision 2 – 9/1/2019

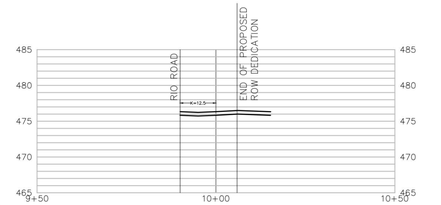
Stationary Operation on a Shoulder
(Figure TTC-4.2)



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



1 C14 RIO ROAD ENTRANCE DETAIL
SCALE: 1"=10'



2 C14 RIO ROAD ENTRANCE PROFILE
HORZ: 1"=20'
VERT: 1"=10'

Lane Closure Operation with Temporary Traffic Barrier [1]
(Figure TTC-20.2)
NOTES

Guidance:

1. *See Table 6H-5, page 6H-6, for recommended spacing of advance warning signs.*
2. *SHOULDER CLOSED (W21-5a) signs should be used on Limited-Access Highways where there is no opportunity for disabled vehicles to pull off the roadway (see Figure TTC-6).*
3. *When closing a lane, a PCMS should be used in advance of the first warning sign if all of the left side signs cannot be installed.*[1]
4. *If drivers cannot see a pull-off area beyond the closed shoulder, information regarding the length of the shoulder closure should be provided in feet or miles, as appropriate.*
5. *An emergency pull-off area should be provided per Section 6G.18 and Temporary Traffic Control Figure TTC-8.*

Standard:

6. **On divided highways having a median wider than 8', right and left sign assemblies shall be required.**
7. **Group 2 channelizing device spacing shall be at the following:**

Group 2 Channelizing Device Spacing						
Location Spacing	Speed Limit (mph) 0 -35	36 +	Location Spacing	Speed Limit (mph) 0 -35	36 +	Location Spacing	Speed Limit (mph) 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.								

8. **For taper lengths, see TTC-19.**[2]
9. **See Table 6H-6 for barrier transition flare rate.**[2] **When the barrier transition flare**[1] **is on a horizontal alignment, the total offset shall be prorated around the curve in lieu of a straight-line flare.**
10. **End treatment of a barrier in order of preference:**
    a. **Where guardrail exists, attach to barrier with appropriate fixed object attachment.**
    b. **Where cut slope exists, bury barrier into cut slope and provide for drainage as needed.**
    c. **Extend end of barrier until it is beyond the established clear zone (see Figure 2 on Page A-4 of Appendix A for clear zone values).**
    d. **When barrier end is inside the established clear zone, attenuator service Type I or Type II shall be used. Refer to L&D special design drawings.**
11. **Barrier panels 8 inches in width and 12 inches in height shall be placed on top of the concrete barrier and spaced on 40' centers along the transition or taper sections and spaced on 80' centers along the parallel or tangent sections. Reflectorized surface shall be fluorescent orange prismatic lens sheeting. The light at the beginning of the barrier run and at the breakpoint where the barrier becomes parallel to the roadway shall be a Type B flashing light. Barrier delinators shall be spaced on 20' centers along the transition or taper sections and spaced on 80' centers and centered[1] in-between the barrier panels along the parallel or tangent sections[2] approximately 24 inches up from the roadway surface.**

Guidance:

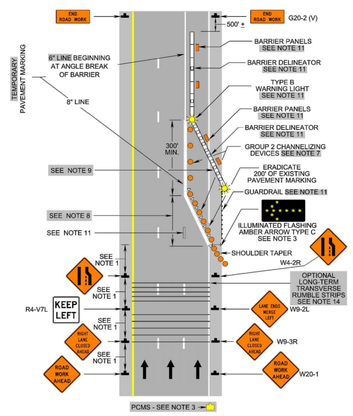
12. *Eradication of existing pavement markings should be as shown in Figure TTC-55.*

Option:

13. The barrier shown in this typical application is an example of one method that may be used to close a shoulder and lane[1] on a long-term project.
14. Long-term transverse 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]

1: Revision 1 – 4/1/2015
2: Revision 2 – 7/1/2018

Lane Closure Operation with Temporary Traffic Barrier [1]
(Figure TTC-20.2)



1: Revision 1 – 4/1/2015
2: Revision 2 – 7/1/2018

Typical Traffic Control
Lane Closure on a Two-Lane Roadway Using Flaggers
(Figure TTC-23.2)
NOTES

Guidance:

1. *Sign spacing distance should be 350'-500' where the posted speed limit is 45 mph or less, and 500'-800' where the posted speed limit is greater than 45 mph.*
2. *Care should be exercised when establishing the limits of the work zone to insure maximum possible sight distance in advance of the flagger station and transition, based on the posted speed limit and at least equal to or greater than the values in Table 6H-3. Generally speaking, motorists should have a clear line of sight from the graphic flagger symbol sign to the flagger.*
3. *To maintain efficient traffic flow in a flagging operation on a two-lane roadway, the maximum time motorists should be stopped at a flagger station is 8 minutes for high volume roadways (average daily traffic of 500 or more vehicles per day) to a maximum of 12 minutes for low volume roadways (less than 500 vehicles per day). For additional information see Section 6E.07.*[2]

Standard:

4. **Portable Temporary Rumble Strips (PTRS) shall be used as noted in Section 6F.99.**
5. **Flagging stations shall be located far enough in advance of the work space to permit approaching traffic to reduce speed and/or stop before passing the work space and allow sufficient distance for departing traffic in the left lane to return to the right lane before reaching opposing traffic (see Table 6H-3 on Page 6H-5).**
6. **All flaggers shall be state certified and have their certification card in their possession when performing flagging duties (see Section 6E.01, Qualifications for Flaggers).**
7. **Cone spacing shall be based on the posted speed and the values in Table 6H-4 on Page 6H-6.**[1]
8. **A shadow vehicle with at least one high intensity amber rotating, flashing, or[1] oscillating light shall be parked 80'-120' in advance of the first work crew.**

Option:

8. A SLOW (W21-V10) sign[2] may be required in this area to give advance warning of the operation ahead by slowing approaching traffic prior to reaching the flagger station or queued traffic.

Guidance:

9. *If the queue of traffic reaches the BE PREPARED TO STOP (W3-4) sign then the signs, and if used the* PTRS[1] *should be readjusted at greater distances.*
10. *When a highway-rail crossing exists within or upstream of the transition area and it is anticipated that queues resulting from the lane closure might extend through the highway-rail grade crossing, the temporary traffic control zone should be extended so that the transition area precedes the highway-rail crossing (see Figure TTC-56 for additional information on highway-rail crossings).*

Standard:

11. **At night, flagger stations shall be illuminated, except in emergencies (see Section 6E.08).**

Option:

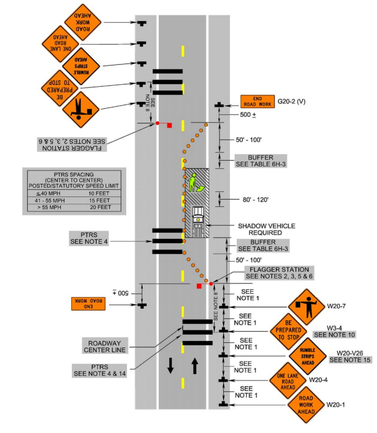
12. Cones may be eliminated when using a pilot vehicle operation or when the total roadway width is 20 feet or less.
13. For low-volume situations with short work zones on straight roadways where the flagger is visible to road users approaching from both directions, a single flagger, positioned to be visible to road users approaching from both directions, may be used (see Chapter 6E).

Standard:[1]

14. **When used[2], three portable temporary rumble (PTRS) strips shall be installed across the entire travel lane adjacent to the BE PREPARED TO STOP (W3-4) sign. The portable temporary rumble strips shall be monitored and adjusted as necessary during the work shift to ensure proper placement on the roadway. When the PTRS are installed, the RUMBLE STRIPS AHEAD (W20-V26) sign shall also be utilized.**

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

Lane Closure on a Two-Lane Roadway Using Flaggers
(Figure TTC-23.2)



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

Maintenance of Traffic:
TTC 20.2 & 23.2 to be used during entrance installation.
TTC 4.2 to be used for multi-use path installation.

Virginia Department of Transportation Details

104.01	Standard Drop Inlet 12" – 24" Pipe (DI-1A)
104.09	Standard Curb Drop Inlet (DI-3B)
104.23	Standard Median Drop Inlet 12" to 42" Maximum Pipe Depth (H) = 10' (DI-7)
106.01	Manhole for 12"-48" Pipe Culverts
106.04	Standard Manhole Frame & Cover
106.08	Standard Method of Shaping Manhole & Inlet Inverts
201.01	Standard 6" Curb (CG-2)
201.02	Standard 4" Curb (CG-3)
201.03	Combination 6" Curb & Gutter (CG-6)
203.04	Method of Treatment
204.01	CG-12 Detectable Warning Surface (General Notes)
204.02	CG-12 Detectable Warning Surface Type A (Perpendicular) Application
204.03	CG-12 Detectable Warning Surface Type B (Parallel) Application
204.07	CG-12 Detectable Warning Surface Method of Installing Detectable Warnings on a Radius
303.02	Asphalt Pavement Widening
506.04	Midwest Guardrail System
506.05	Midwest Guardrail System

The Standard Drawings contained in the VDOT Road & Bridge Standards are signed and sealed engineering drawings that are copyrighted materials of VDOT and the Commonwealth of Virginia. VDOT's policy is to offer the Standard Drawings in a secure electronic format and each Standard is available on this website. http://www.virginiadot.org/business/locdes/vdot_road_and_bridge_standards.asp

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JUSTIN M. SHIMP
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2/29/24
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FINAL SITE DEVELOPMENT PLAN

999 RIO ROAD

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FILE NO. 19.006

MOT PLAN & VDOT DETAILS

C14