CONGERS CREEK PHASE 4

Congers Creek Rd

Rockingham County, VA

SITE DESIGN:
COLMAN ENGINEERING
ATTN: GIL COLMAN, PE
1123 South High St
Harrisonburg, VA 22801
540-818-5265

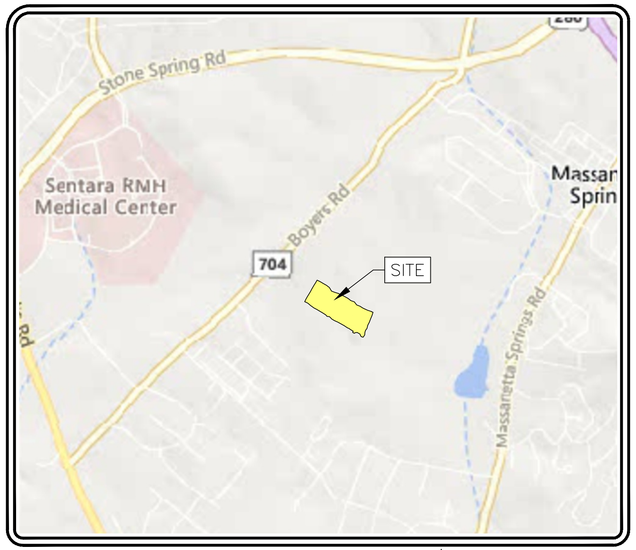
OWNER:
SOURS RONNIE M & CAROLYN S
2540 PORT REPUBLIC RD
ROCKINGHAM, VA 22801

DEVELOPER:
THE TOWNES AT CONGERS CREEK LLC
ATTN: JERRY SCRIPTURE
245 NEWMAN AVE.
HARRISONBURG, VA 22801
EMAIL: jscripture@comcast.net
540-820-7979

SURVEYOR:
LOTTS & ASSOCIATES
21 CAMBRIDGE DRIVE
STUARTS DRAFT, VA 24477
PHONE: (540) 377-0012

PROPERTY INFO:
TM: 125-8-8
ZONE: R5
LOT SIZE: 24.40 AC
SITE AREA: 5.26 AC
FEMA FLOOD ZONE: X

BUILDING INFO:
57 TOWNHOUSES
EACH AREA: 800 SF
HEIGHT: 38'± (3 STORY)
USBC USE GROUP: R-5
ISO CLASS: 1
IBC TYPE: VB
NEEDED FIRE FLOW:
1,000 GPM



VICINITY MAP
1" = 1000'

BEFORE YOU DIG CALL
MISS UTILITY
1-800-552-7001

Review Agency Staff Contact List			
Name	Title	Phone Number	Email Address
Rockingham County			
Casey Armstrong	County Administrator	(540) 564-3031	carmstrong@rockinghamcountyva.gov
Trish Davidson	Deputy County Administrator	(540) 564-3018	tdavidson@rockinghamcountyva.gov
Rachel Salatin	Director of Community Development	(540) 578-2659	rsalatin@rockinghamcountyva.gov
Dylan Nicely	Deputy Director of Community Development	(540) 830-9435	dnicely@rockinghamcountyva.gov
Kayla Yankey	County Planner	(540) 564-5074	kyankey@rockinghamcountyva.gov
Kelly Getz	Zoning Administrator	(540) 810-5024	kgetz@rockinghamcountyva.gov
Daniel Barnett	Deputy Zoning Administrator	(540) 578-1120	dbarnett@rockinghamcountyva.gov
Joe Shifflett	Building Official	(540) 578-1558	jshifflett@rockinghamcountyva.gov
Ben Terry	Deputy Building Official	(540) 564-3046	bterry@rockinghamcountyva.gov
Philip Rhodes	Director of Public Works	(540) 564-3024	prhodes@rockinghamcountyva.gov
Logan Borror	Deputy Director of Public Works	(540) 564-3044	lborror@rockinghamcountyva.gov
Nathan Puffenbarger	Senior Utilities Inspector/Utility Plan Reviewer	(540) 564-3044	npufferbarger@rockinghamcountyva.gov
Adam Hancock	Environmental Manager	(540) 564-1529	ahancock@rockinghamcountyva.gov
Ross Morland, PE	Director of Engineering Site Plan Review Coordinator	(540) 564-6095	rmorland@rockinghamcountyva.gov
Joshua Gooden	Economic Development and Tourism Coordinator	(540) 574-1896	jjgooden@rockinghamcountyva.gov
Jason Fox	Sheriff's Department	(540) 564-3820	jfox@rockinghamcountyva.gov
Joe Mullens	Deputy Fire Marshal	(540) 564-3175	jmullens@rockinghamcountyva.gov
Todd Spitzer	Assistant Fire Marshal	(540) 564-3175	tspitzer@rockinghamcountyva.gov
Rockingham County Public Schools			
Chris Sours	Transportation Supervisor	(540) 433-2458	csours@rockingham.k12.va.us
Virginia Department of Transportation, Harrisonburg Residency			
Burgess Lindsey, PE	Area Land Use Engineer	(540) 434-2587	Burgess.Lindsey@VDOT.Virginia.gov
Jeff Nicely	Land Development Engineer	(540) 434-2587	Jeff.Nicely@VDOT.Virginia.gov
Central Shenandoah Health District			
Lacy Stevens	Environmental Health Supervisor	(540) 332-7830 ext. 352	Lacy.Stevens@vdh.virginia.gov
Jason Weakley	Environmental Health Manager	(540) 332-7830 ext. 348	Jason.Weakley@vdh.virginia.gov
Virginia Department of health - Office of Drinking Water, Lexington Field Office			
Steve Kvech, PE	Deputy Field Director	(540) 463-0424	Steve.Kvech@vdh.virginia.gov

	DESCRIPTION
C1	COVER
C2	LEGEND & NOTES
C3	EXISTING CONDITIONS
C4	SITE LAYOUT
C5	PROPERTY LINES AND EASEMENTS
C6	ROAD PLAN AND PROFILE
C7	SIGHT DISTANCE PROFILE
C8	SITE GRADING - 1
C9	SITE GRADING - 2
C10	SITE GRADING - 3
C11	SEWER PLAN & PROFILE
C12	WATER PLAN & PROFILE
C13	STORMWATER MANAGEMENT PLAN
C14	STORMWATER PROFILES
C15	STORMWATER DETAILS
C16	SITE DETAILS - 1
C17	SITE DETAILS - 2
C18	EROSION & SEDIMENT CONTROL PLAN PHASE 1
C19	EROSION & SEDIMENT CONTROL PLAN PHASE 2
C20	EROSION & SEDIMENT CONTROL NARRATIVE
C21	LIGHTING PLAN
M	MASTER PLAN & PLAN DESCRIPTION

Date: 11/6/2025
Scale: AS SHOWN
Designed by: GLC, PE
Drawn by: JDY, PE
Reviewed by: GLC, PE

Revision Dates
1/9/25 Per County
4/7/26 Per Owner

COLMAN ENGINEERING
1123 South High Street | Harrisonburg, VA 22801 | Ph: (540) 246-3712
Email: contact@colmanengineering.com | www.colmanengineering.com

COMMONWEALTH OF VIRGINIA
GUILLERMO L COLMAN
Lic. No. 045776
4/7/26
PROFESSIONAL ENGINEER

COVER
Congers Creek Phase 4
The Townes at Congers Creek LLC
Congers Creek Rd
Rockingham County, VA

Project No.
CE202521

CONSTRUCTION SET

Sheet
C1
of 21 Sheets

COVER_NOTES.dwg Plotted: 4/7/2026 By: CEB

LEGEND

- EXISTING BUILDING
- PROPOSED BUILDING
- EXISTING PROPERTY LINE
- PROPERTY LINE
- PROPERTY SETBACK LINE
- EXISTING EASEMENT LINE
- EASEMENT LINE
- EXISTING BACK OF CURB
- BACK OF CURB
- EXISTING FACE OF CURB
- FACE OF CURB
- EXISTING GUTTER
- GUTTER
- EXISTING ROAD
- CENTERLINE OF ROAD
- EXISTING GUY WIRE
- EXISTING GAS LINE
- EXISTING MISC
- EXISTING UNDERGROUND ELEC
- UNDERGROUND ELEC
- EXISTING OVERHEAD UTILITY
- EXISTING COMM UTILITY
- EXISTING FIBER OPTIC UTILITY
- EXISTING CONCRETE PAVEMENT
- CONCRETE PAVEMENT
- EXISTING ASPHALT PAVEMENT
- ASPHALT PAVEMENT
- HEAVY ASPHALT PAVEMENT
- EXISTING GRAVEL AREA
- PROPOSED GRAVEL OR RIPRAP
- EXISTING SIDEWALK
- PROPOSED SIDEWALK
- EXISTING VEGETATION
- EROSION AND SEDIMENT CONTROL MEASURE
- DISTURBED AREA
- EXISTING FENCE
- FENCE
- EXISTING PARKING MARKING
- PARKING AREA
- PARKING MARKING
- BIKE PARKING AREA
- PARKING LANDSCAPE ISLAND
- PARKING R.O.W. LANDSCAPE BORDER
- EXISTING SIGN
- SIGN
- EXISTING SANITARY SEWER LINE
- SANITARY SEWER PIPE
- SANITARY SEWER STRUCTURE
- EXISTING STORM PIPE
- STORM PIPE
- STORM STRUCTURE
- TC FLOW PATH
- EXISTING WATER LINE
- WATER LINE
- EXISTING WALL
- WALL
- WATER METER
- WATER VALVE
- FIRE HYDRANT
- EXISTING WATER METER
- EXISTING WATER VALVE
- EXISTING FIRE HYDRANT
- EXISTING SANITARY SEWER MANHOLE
- SANITARY SEWER MANHOLE
- EXISTING STORM MANHOLE
- STORM MANHOLE OR STRUCTURE
- EXISTING UTILITY POLE
- UTILITY POLE
- BIKE RACK (PARKING)
- PROPOSED LARGE DECIDUOUS TREE
- PROPOSED SMALL DECIDUOUS TREE
- PROPOSED DECIDUOUS OR EVERGREEN SHRUB
- PROPOSED EVERGREEN TREE
- EXISTING GAS VALVE
- DRAINAGE FLOW
- PROPOSED DITCH OR SWALE
- IMPERVIOUS AREA
- + 28.5 FG PROPOSED SPOT ELEVATION
- # No. OF PARKING SPACES
- EROSION AND SEDIMENT CONTROL MEASURE
- SILT FENCE
- (IP) INLET PROTECTION (3.07)
- (OP) OUTLET PROTECTION (3.18)
- (TO) TOPSOILING (3.30)
- (PS) PERMANENT SEEDING (3.32)
- (MU) MULCHING (3.35)
- (NUMBERS IN PARENTHESES REFER TO VESCH MEASURES)

CONSTRUCTION STANDARDS – GENERAL

General – The following specifications and standards shall govern all construction and installation of water and sewer lines and appurtenances except as altered or waived by the County and approved by VDH/ODW or DEQ/OWE. It shall be the contractor's responsibility to comply with all local, State, and Federal regulations as well as good construction and management practices.

1. A pre–construction conference shall be held prior to the start of construction. The contractor and the engineer shall be present to meet with the County representatives, including the inspector, and shall have a work schedule available for the inspector's use.
2. Traffic Control – It shall be the responsibility of the contractor to take any measures as may be necessary or as directed or required by VDOT, the County, or both.
3. Erosion and Sediment Control – It shall be the responsibility of the contractor to submit an Erosion and Sediment Control Plan for review and approval by the County, to submit an application for VPDES General Permit for Storm Water Discharges from Construction Activities for review and approval by VA DEQ, and to pay all associated fees.
4. Critical Facilities – Facilities such as fire hydrants and traffic signal control boxes shall not be obstructed at any time.
5. At all times when water line or sewer line installation is in progress, a contractor's superintendent/foreman shall be present and in responsible charge. The superintendent/ foreman shall, in the opinion of the inspector, be Rockingham County Public Works Department Water and Sewer Specifications and Standards Rev: December 2010 Page 13 reasonably qualified and familiar with means and methods of the respective discipline.
6. Plans – No work shall commence on any water or sewer system until the contractor has in his possession a complete set of plans approved by the County and prepared by the design engineer whose signed seal shall appear on each plan sheet. Any change from the original approved plans requires written approval of the inspector.
7. Excavation – The contractor shall perform all excavation of dimensions and depths shown on the approved plans or as directed by the County. Excavations shall be open cut except where approved by the County. Existing utilities, structures, fencing, shrubbery, and other features shall be protected during construction, and if damaged or removed by the contractor, repaired or replaced by the contractor at contractor's sole expense.
8. Trench Width – The following table will service as a guide for ordinary trench width (depths not exceeding six feet).

Nominal Pipe Dia.	Minimum Trench Width	Maximum Trench Width
3/4" – 6"	3 times nominal pipe diameter	30"
8"	3 times nominal pipe diameter	32"
10"	Pipe diameter plus 2'	34"
12"	Pipe diameter plus 2'	36"
16"	Pipe diameter plus 2'	38"
18"	Pipe diameter plus 2'	42"
30"	Pipe diameter plus 2'	54"
42"	Pipe diameter plus 2'	66"

9. Rock Excavation – All rock within 6 inches of the finished pipe shall be removed. Rock is generally defined as any material which cannot be excavated by usual hand or machine methods and is more specifically defined as materials which cannot be excavated without drilling, blasting, or boring, or boulders more than one cubic yard in volume. Contractor is responsible for obtaining all necessary permits and insurance for blasting activities.
10. Safety – The contractor is solely responsible for on–the–job safety and this section in no way relieves the contractor of these responsibilities. The County and/or the inspector assume no responsibility for accidents resulting from construction. The contractor is required to employ safe practices and to comply with safety standards while working in the County. Lack of compliance may result in a work stoppage imposed by the County. The contractor shall be familiar with and comply with all applicable safety standards, including "Virginia Excavation Standard, Construction Industry" adopted by the Commonwealth of Virginia (1926.650), with particular reference to stability of trench excavation. The Contractor shall be familiar with and comply with the Rockingham County Public Works Department Water and Sewer Specifications and Standards Rev: December 2010 Page 14 OSHA requirements of 29 CFR 1926, Subpart P –– Excavations, as well as OSHA's confined space standards. The contractor's attention is also directed to the Overhead High Voltage Line Safety Act (Section 59.1–406, et seq., Code of Virginia). The absence of mention of any safety standard(s) in this Section shall not relieve the contractor of obligations to comply which such standard(s).
11. Permits – No excavations shall be made until proper permits have been obtained from the County and appropriate regulatory agencies.
12. Length of Open Trench – On any day, no trench shall be opened to a length greater than can be reasonably expected to be closed on that day, without approval from the County.
13. Dewatering – Trenches shall be kept free of water during construction. Pumps, dams and/or under drains shall be maintained by the contractor when required by the County. No excavation, installation, or backfilling shall be permitted while water remains in a trench.
14. Trenching – Pipe trenches shall be excavated to a depth that will insure a minimum of 36 inches of cover or as indicated elsewhere in these specifications. Excavation shall be made for bells of all pipes, and shall be of sufficient depth to permit access to the joint for construction and inspection. In no case shall the bells be used to support the body of the pipe.
15. Sheeting, Shoring, and Bracing – The contractor shall furnish and erect such sheathing, bracing and shoring, and shall furnish necessary signs, barricades and temporary lighting as may be pertinent for the protection of the work, employees, the public, and adjacent structures. Responsibility for preservation of trench banks and other excavated spaces and the prevention of injury to any persons or property shall rest entirely with the contractor. Trench construction and safety shall comply with all applicable local, state, and federal safety regulations, including OSHA. Particular reference is given to Occupational Safety and Health Standards for the Construction Industry, Subpart P.
16. Sidewalk, Curb and Gutter, Drainage Structures – The contractor shall remove and replace only those portions of sidewalk, curb and gutter and drainage structures as is absolutely necessary to complete work.
17. Unstable Subgrade – In the event that unsuitable materials are encountered at or below the level of the pipe bed, such material shall be removed and replaced as directed in writing by the County.
18. Boring and Jacking – Where required, pipe shall be installed by conventional boring and jacking methods. Casing shall be installed so as to prevent the formation or accumulation of water within the casing and shall be constructed with even bearing of pipe load throughout its length. The ends of the casing shall be suitably protected against the entrance of foreign material and sealed Rockingham County Public Works Department Water and Sewer Specifications and Standards Rev: December 2010 Page 15
19. Streets and Pavement – When excavation encroaches on paved areas, all backfilling, compaction, and pavement materials shall be in accordance with VDOT Open Cut Pavement Restoration detail included in the Standard Details. At least one lane of traffic must be maintained at all times. Traffic shall not be blocked or re–routed on public streets without the prior permission of VDOT and notification of the applicable Police, Sheriff, Fire, and Rescue Departments. All trenches within the street are to be backfilled or covered with steel plates at the end of each construction day. Temporarily backfilled trenches are to be maintained by the contractor to prevent damage to crossing vehicles. Damage, if any, will be the responsibility of the contractor. Entrances shall not be blocked without the prior knowledge of the occupant. Established drainage shall be maintained at all times.
20. Bedding – For sanitary sewer pipe and for all pipe in rock, trench shall be overexcavated to a depth 6 inches below pipe bottom and backfilled with VDOT #68 stone, extending up to the midpoint of the pipe. Over–excavation and backfill shall be increased to accommodate pipe bell ends. When crossing in close proximity over or under existing utility lines, use of a cap or cradle may be required as determined by the inspector. Cap and cradle shall be in accordance with VDOT Road & Bridge Standards Detail UB–1.
21. All Sanitary Sewer Main materials to be supplied by the contractor.

ROCKINGHAM COUNTY DEPT. OF FIRE AND RESCUE REQUIRED SITE PLAN NOTES:

1. Required fire hydrants shall be installed and operational prior to combustible materials arriving on site. Fire hydrants shall be located and operational within 300 foot of construction with a 3 foot clear space maintained around the circumference of the fire hydrants. Where fire hydrants are subject to impact by a motor vehicle, guard posts or other approved means shall comply with the provisions of the Rockingham County Fire Prevention Code.
2. The fire department shall not be deterred or hindered from gaining immediate access to fire protection equipment or fire hydrants.
3. Vehicle access for firefighting shall be provided to within 150 feet of all portions of the building under construction. Access shall be provided by either temporary or permanent roads, capable of supporting the weight of fire apparatus, up to 37.5 tons, under all weather conditions. If the building height is greater than 50 feet, vehicle access for firefighting shall be within 50 feet of the building under construction.
4. Vehicle access shall be provided to within 50 feet of any in–service fire department connection.
5. Posts, fences, vehicles, trash, storage, building supplies, bushes, trees, landscaping, dumpsters, utilities and other materials or objects shall not be placed or kept near fire hydrants, fire department inlet connections or fire protection control valves in a manner that would prevent such equipment or fire hydrants from being immediately discernible.
6. Temporary construction fences, barriers, or gates shall be able to be readily moved or opened in the event of an emergency. After hours access through gates shall be provided.
7. Temporary street identification signs shall be placed at each intersection by the developer prior to any construction beginning. Signs shall be of durable material capable of withstanding all weather conditions. Letters shall be in a contrasting color to the background upon which they are placed. Sign letters shall be a minimum of 3 inches in height. Bottom of sign shall be mounted a minimum of 8 feet and a maximum of 10 feet above the ground upon which it is installed. The developer shall contact the county when temporary signs have been erected. The developer shall be responsible for keeping these signs in place until such time as permanent signs are erected.
8. Temporary fuel tanks shall be provided with impact protection, or in an area not directly adjacent to vehicular traffic, no smoking signage and a fire extinguisher within 20 feet.
9. Any temporary on–site hazardous materials shall be stored and used in accordance with the Rockingham County Fire Prevention Code and have MSDS information readily available.
10. No smoking will be allowed in or around buildings under construction, staged combustible material, or combustible waste materials.
11. Buildings under construction shall have fire extinguishers readily available.
12. Combustible waste shall not be accumulated in or around buildings and/or on the site.
13. Fire lanes shall be designated and marked in accordance with Rockingham County's standard for designation and marking of fire lanes. An on site visit shall be scheduled with the Fire Marshal's Office prior to the placement of any signs or markings designating a fire lane. An appointment for this purpose can be scheduled by calling 540-564-3175 at least 48 hours prior.
14. Based on the project, the Fire Marshal's Office may deem it appropriate for the creation of a pre-fire plan or tours by fire department personnel which will be coordinated with the job superintendent.
15. The job superintendent, or responsible party, shall be responsible for maintaining site conditions in accordance with the above requirements during construction.

WATER MAIN TESTING NOTES

1. Testing – Water pipe shall be tested prior to service taps being made.
   - Pressure Tests – All newly laid pipe or any valved section thereof shall be subjected to a hydrostatic pressure. Pressure tests shall be documented in writing and must be witnessed by the inspector. Pressure and leakage tests shall be in accordance with AWWA C600, Section 4. Test pressures shall be 150 psig or 1.5 times the working pressure, whichever is greater. Testing shall begin on the first valved section of line within ten days after its completion. The pressure and leakage tests shall be conducted concurrently for a duration of 2 hours. Leakage shall be defined as the quantity of water that must be supplied into the valved pipe section to maintain pressure within 5 psig of the specified test pressure. The allowable leakage shall not exceed the values given in the table below. The valved section of the pipe under consideration shall be slowly filled with water and brought to the specified pressure by means of a pump. Before supplying the specified test pressure, all air shall be expelled from the pipe. The contractor shall supply taps for expelling air. Testing shall not begin until at least 7 days after the last concrete anchor has been poured on the section of line being tested. The inspector shall observe all leakage tests. If the pipe fails to meet test requirements, all leaks shall be repaired and defective pipe repaired or replaced at the contractor's expense. The test shall be repeated until satisfactory results are obtained.
   - Allowable Leakage – Shall comply with current AWWA standard found in AWWA C600–17.
   - Flow Testing – All new hydrants and blow off valves shall be flow tested to demonstrate functionality. Flow tests shall be witnessed by the inspector and shall be documented in writing as to design flow rate and residual pressure. The contractor shall furnish all fitting and gauges as necessary to perform flow testing. The results of the flow test shall be provided to the Fire Official for review and approval prior to color coding.
   - Water for the pressure and flow tests will be furnished by the County without charge to the contractor. If the pressure or flow test is unsuccessful, and in the opinion of the inspector an additional test or tests are required, the contractor will be charged for water used in those additional tests. The volume of water used shall be metered.
2. Disinfection of Water Mains; New water mains shall be disinfected in accordance with the MOST CURRENT VDH/ODW Waterworks Regulations (& AWWA C651–14). Water mains shall be disinfected prior to service taps being made. The County reserves the right to invoice for the water supplied for flushing and testing. Water mains shall be disinfected prior to service taps being made. The County reserves the right to invoice for the water supplied for flushing and testing. The following requirements may be superseded by any new VDH requirements.
   - Flushing – Prior to disinfection all water mains shall be flushed. All valves and hydrants shall be operated during this operation. Flushing velocities shall not be less than 3 feet/second. All flushing activities shall be coordinated with County prior to commencing.
   - Final Flushing – After the required retention period the chlorinated water shall be flushed from the main using potable water. Flushed water shall not be released at such a rate as to cause erosion. Chlorinated water shall not be released so as to cause environmental damage.
   - Bacteriological Sampling– After flushing, water mains shall be tested in accordance with the MOST CURRENT Virginia Department of Health Waterworks Regulations. Samples shall be collected at regular intervals, not exceeding 1,200 feet, throughout the length of the main. The following requirements may be superseded by any new VDH requirements.
   - For chlorine application methods requiring residual determination, chlorine residual determinations shall be made using only those methods approved by VDH/ODW.
   - Two water samples for bacteriological analysis must be collected at least 24 hours apart and analyzed by a certified laboratory. The results of these samples must indicate no coliform contamination before the pipes, tanks, or equipment can be utilized as part of the waterworks. If contamination is indicated, the disinfection procedure must be repeated. Samples shall be taken from sections spaced at fairly equal distances apart, at a maximum interval of 1,200 feet, plus one set at the end the line and at least one from each branch greater than one pipe length.
   - Supervision – The disinfection procedure shall be carried out by the contractor under the supervision of the inspector. Water mains shall be placed in service only after final approval has been issued by the County.
   - Final Inspection – A final inspection will be performed by the County when all items of work are complete. If any items of work remain incomplete at the time of final inspection, such as cleanup and minor stabilization, a "punch" list will be prepared and a date set for completion of punch list items. All items of work on the punch list must be completed by the contractor prior to acceptance by the County.

COUNTY GENERAL NOTES

1. Site statistics: Zoned R5, Total Area=24.40 acres, TM#:125–8–8, Disturbed Area=5.26 acres.
2. Work in this project shall conform to the latest editions of the Virginia Department of Transportation (VDOT) Road and Bridge Specifications, the VDOT Road and Bridge Standards, the Virginia Stormwater Management Handbook, the Virginia Erosion and Sediment Control Handbook, the Virginia Erosion and Sediment Control Regulations and the Rockingham County Water and Sewer Specifications and Standards. In the event of conflict between any of these standards, specifications or plans, the most stringent shall govern. All utilities to be dedicated to the Rockingham County shall be constructed and tested to conform to Commonwealth of Virginia Board of Health Waterworks and/or Sewerage Regulations and the Rockingham County Water and Sewer Specifications and Standards.
3. Erosion and sediment control measures shall be maintained continuously, relocated when and as necessary and shall be checked after every rainfall. Seeded areas shall be checked regularly and shall be watered, fertilized, reseeded and mulched as necessary to obtain a dense stand of grass.
4. All drain inlets shall be protected from siltation. Ineffective protection devices shall be immediately replaced and the inlet cleaned. Flushing is not an acceptable method of cleaning.
5. When the crushed stone construction entrance has been covered with soil or has been pushed into the soil by construction traffic, it shall be replaced with a depth of stone equal to that of original application.
6. The location of existing utilities as shown is approximate only. The contractor is responsible for locating all public or private utilities which lie in or adjacent to the construction site. The contractor shall be responsible for repairing, at his expense, all existing utilities damaged during construction. Forty–eight (48) hours prior to any excavation call Miss Utility 1 (800) 552–7001.
7. All underground facilities located within the County's right–of–ways shall be installed prior to the placement of any part of the pavement structure.
8. All materials used for fill or backfill shall be free of wood, roots, rocks, boulders or any other non–compatable soil type material. Unsatisfactory materials also include man–made fills and refuse debris derived from any source.
9. Satisfactory material for use as fill for public streets include material classified in ASTM D–2487 as GW, GP, GM, GC, SW, SP, SM, SC, ML and CL groups. The moisture content shall be controlled within plus or minus 2 percentage points of optimum to facilitate compaction. Generally, unsatisfactory materials include materials classified in ASTM D–2487 as PT, CH, MH, OI, OH, and any soil too wet to facilitate compaction. CH and MH soils may be used subject to approval of the VDOT Engineer. Soils shall have a minimum dry density of 92 lb./cu. ft. per ASTM D–698 and shall have a liquid limit less than 17.
10. Compaction of fill material under building slabs shall be based upon recommendations of soils engineer after completion of standard Proctor test and shall meet bearing requirements of architect of buildings. The contractor shall be responsible for testing.
11. Materials used to construct embankments for any purpose, backfill around drainage structures or in utility trenches or any other depression requiring fill or backfill shall be compacted to 95% of maximum density as determined by the standard Proctor test in accordance with ASTM standard D–698. The contractor shall, prior to any operations involving filling or backfilling submit the results of the Proctor test together with a certification that the soil tested is representative of the materials to be used on the project. Tests shall be conducted by a certified materials testing laboratory and the certifications made by a licensed professional engineer representing the laboratory.
12. Compaction tests for street pavement structure shall be made in cut and fill areas at the following minimum frequencies:
    (a) Sub–Grade: One test per lane per 500 lineal feet
    (b) Stone Base: One test per lane per 6" compacted lift per 500 lf.
    (c) Hot Asphaltic Concrete: One test per lane per lift per 500 lf.
13. All excavations, including trenches, shall be kept dry to protect their integrity.
14. Test results shall be submitted to the VDOT Engineer. Failure to conduct density tests shall be cause for non–acceptance of the facility. Tests shall be conducted at the sole cost of the developer or his agent.
15. Combination under–drains type CD–1 shall be installed at the lower end of cut sections. Under–drains type CD–2 shall be installed at the low point of all vertical curves. EW–12's or ES–1's required at end of drains.
16. Standard UD–1 and UD–3 under–drains shall be installed where indicated on plans and further where determined necessary in the field by VDOT Inspectors.
17. Pavement design is based on a subgrade CBR of 6 and an SSV of 6. Upon bringing the street subgrade to approximate elevation the contractor shall cause soil samples for CBR and soil resiliency determination to be taken at a maximum interval of 500 feet measured along the street centerline. The CBR and resiliency factor of each sample shall be determined and the average CBR shall be used to determine the pavement structure requirements. The pavement materials and the amount thereof as shown on the typical street section may be modified by the results of these tests in accordance with the VDOT standards and if approved by the VDOT Engineer. A copy of all soils test results shall be submitted to the VDOT Engineer prior to the placing of any base or subbase material.
18. VDOT Inspectors have full authority to reject fill or backfill materials, require undercutting or subgrade stabilization, require provisions for subdrainage, or require other measures which affect the integrity of road and utility construction Failure to comply with inspector's directives shall be cause of non–acceptance to the facility.
19. Traffic control on public streets shall be in conformance with the Manual of Uniform Traffic Control Devices and as further directed by VDOT Inspectors
20. Any discrepancies found between the drawings and specifications and site conditions or any inconsistencies or ambiguities in drawings or specifications shall be immediately reported to the engineer in writing, who shall promptly address such inconsistencies or ambiguities. Work done by the contractor after his discovery of such discrepancies, inconsistencies, or ambiguities shall be done at the contractor's risk.
21. A preconstruction conference shall be held prior to the start of the construction. The contractor shall arrange the meeting with the County Erosion Control Administrator.
22. Install VDOT standard street centerline monuments where required for new streets.
23. All storm sewer piping shall conform to Storm Piping Schedule. Pipe installation to follow VDOT Std. PB–1. Install VDOT Std. IS–1 inlet shaping in all storm drain inlets.
24. The Erosion and Sediment Control Narrative is a part of this plan and its requirements shall be met by the contractor.
25. The construction the entrance shall remain open onto the site at all times. All driveway areas (areas not designated as parking stalls) adjacent to the building shall be "Fire Lanes" with no parking allowed.
26. Construction traffic shall enter site at proposed construction entrance on South Valley Pike. The Construction Entrance shall be built per VESCH guidelines where shown on plans prior to start of construction.
27. Fire lanes shall be designated where shown on plans. No parking signs shall be installed per Rockingham County Standards.

VDOT GENERAL NOTES

V1. All work on this project shall conform to the current editions of and latest revisions to the Virginia Department of Transportation (VDOT) Road and Bridge Specifications and Standards, the Virginia Erosion and Sediment Control Regulations, and any other applicable state, federal or local regulations. In case of a discrepancy or conflict between the Standards or Specifications and Regulations, the most stringent shall govern.

V2. All construction shall comply with the latest U.S. Department of Labor, Occupational Safety and Health Administration (OSHA), and Virginia Occupational Safety & Health (VOSH) Rules and Regulations.

V3. When working within VDOT right–of–way, all traffic control, whether permanent or temporary, shall be in accordance with the current edition of VDOT's Work Area Protection Manual. A transportation management plan needs to be submitted for approval and land use permit issued prior to any execution of work within the VDOT right of way.

V4. The developer shall be responsible for relocating, at his expense, any and all utilities, including traffic signal poles, junction boxes, controllers, etc., owned by VDOT or private / public utility companies. It is the sole responsibility of the developer to locate and identify utility facilities or items that may be in conflict with the proposed construction activity. VDOT approval of these plans does not indemnify the developer from this responsibility.

V5. Design features relating to field construction, regulations, and control or safety of traffic may be subject to change as deemed necessary by VDOT. Any additional expense incurred as a result of any field revision shall be the responsibility of the developer.

V6. If required by the local VDOT Land Development Office, a pre–construction conference shall be arranged and held by the engineer and/or developer with the attendance of the contractor (s), various County agencies, utility companies and VDOT prior to initiation of work.

V7. The contractor shall notify the local VDOT Land Development Office when work is to begin or cease for any undetermined length of time. VDOT requires and shall receive 48 hours advance notice prior to any required or requested inspection.

V8. The contractor shall notify the Traffic Operations Center at (540) 332-9500 for any traffic control plan that impacts a VDOT maintained Interstate or Primary roadway to provide notification of the installation and removal of the work zone.

V9. The contractor shall be responsible for maintaining a VDOT permitted temporary construction entrance(s) in accordance with Section 3.02 of the Virginia Erosion and Sediment Control Handbook. Furthermore, access to other properties affected by this project shall be maintained through construction.

V10. Contractor shall ensure adequate drainage is achieved and maintained on the site during and at the end of construction.

V11. All water and sewer lines within existing or proposed VDOT right–of–way shall have a minimum thirty–six (36) inches cover and when possible shall be installed under roadway drainage facilities at conflict points.

V12. Any unusual subsurface conditions (e.g., unsuitable soils, springs, sinkholes, voids, caves, etc.) encountered during the course of construction shall be immediately brought to the attention of the engineer and VDOT. Work shall cease in that vicinity until an adequate design can be determined by the engineer and approved by VDOT.

V13. All fill areas, borrow material and undercut areas shall be inspected and approved by a VDOT representative prior to placement of fill. A VDOT representative shall be present to insure the soil sample(s) obtained for CBR's is representative of the location. When soil samples are submitted to private laboratories for testing, the samples shall be clearly identified and labeled as belonging to a project to be accepted by VDOT and that testing shall be performed in accordance with all applicable VDOT standards and procedures.

V14. All roadway fill, base, subgrade material, and backfill in utility/storm sewer trenches shall be compacted in accordance with the lift thicknesses, density and moisture requirements as specified in the current VDOT Road and Bridge Specifications. Certified copies of test reports shall be submitted to VDOT daily, unless specified otherwise.

V15. VDOT Standard CD and UD underdrains shall be installed where indicated on these plans and/or as specified by VDOT.

V16. A post installation visual/video camera inspection shall be conducted by the Contractor on all pipes identified on the plans as storm sewer pipe and a select number of pipe culverts. For pipe culverts, a minimum of one pipe installation for each size of each material type will be inspected or ten percent of the total amount for each size and material type summarized. All pipe installations on the plans not identified as storm sewer pipe shall be considered as culvert pipe for inspection purposes. Additional testing may be required as directed by the Area Land Use Engineer or their representative.

V17. The installation of any entrances and mailboxes within any dedicated street right–of–way shall meet VDOT minimum design standards and is the responsibility of the developer.

V18. Prior to VDOT acceptance of any streets, all required street signage and/or pavement markings shall be installed by the developer in accordance with the Manual On Uniform Traffic Control Devices.

V19. The developer shall provide the VDOT Land Development Office with a list of all material sources prior to the start of construction. Copies of all invoices for materials utilized within any dedicated street right–of–way must be provided to the local VDOT Land Development Office prior to acceptance of the work. Unit and total prices may be obscured.

V20. Aggregate base and subbase materials shall be placed on subgrade by means of a mechanical spreader. Density will be determined using the density control strip in accordance with Section 304 of the VDOT Road and Bridge Specifications and VTM-10. A certified compaction technician shall perform these tests. Certified copies of test reports shall be submitted to VDOT daily, unless specified otherwise. In addition to checking stone depths, a VDOT representative shall be notified and given the opportunity to be present during the construction and testing of the density control strip.

V21. Asphalt concrete pavements shall be placed in accordance with Section 315 of the VDOT Road and Bridge Specifications. Density shall be determined using the density control strip as specified in Section 315 and VTM-76. A certified compaction technician shall perform these tests. Certified copies of test reports shall be submitted to VDOT daily, unless specified otherwise. A VDOT representative shall be notified and given the opportunity to be present during the construction and testing of the control strip.

V22. In accordance with Section 302.03, the foundations for pipe culverts thirty-six (36) inches and larger shall be explored below the bottom of the excavation to determine the type and condition of the foundation. The contractor shall report findings of foundation exploration to the engineer and VDOT for approval prior to placing pipe. Foundation designs shall comply with VDOT Road and Bridge Standard PB-1. Where soft, yielding, or otherwise unsuitable foundation is encountered, the foundation design and/or need for foundation stabilization shall be determined by the engineer and approved by VDOT.

V23. VDOT Standard Guardrail shall be installed where warranted and/or as proposed on these plans in accordance with VDOT's installation criteria. Final approval of the guardrail layout to be given by VDOT after grading is mostly complete.

V24. Approval of these plans shall expire five (5) years from the date of the approval letter.

V25. VDOT Standard CG-12 Curb Ramps shall be installed where indicated on these plans and/or as specified by VDOT.

V26. The foundations for all box culverts shall be investigated by means of exploratory borings advanced below proposed foundation elevation to determine the type and condition of the foundation. The contractor shall submit copies of borehole logs and report findings of foundation exploration to the engineer and VDOT for approval prior to constructing box. Foundation designs shall comply with VDOT Road and Bridge Standard PB-1. Contrary to the Standard, where rock is encountered and cast-in-place box is proposed, the thickness of bedding shall be six (6) inches. Where soft, yielding, or otherwise unsuitable foundation is encountered, the foundation design and/or need for foundation stabilization shall be determined by the engineer and approved by VDOT.

BEFORE YOU DIG CALL
MISS UTILITY
1-800-552-7001

Date:	11/6/2025
Scale:	N/A
Designed by:	GLC, PE
Drawn by:	JDY, PE
Reviewed by:	GLC, PE

Revision Dates
1/9/25 Per County
4/7/26 Per Owner

COLMAN ENGINEERING
1123 South High Street | Harrisonburg, VA 22801 | Ph: (540) 246-3712
Email: contact@colmanengineering.com | www.colmanengineering.com

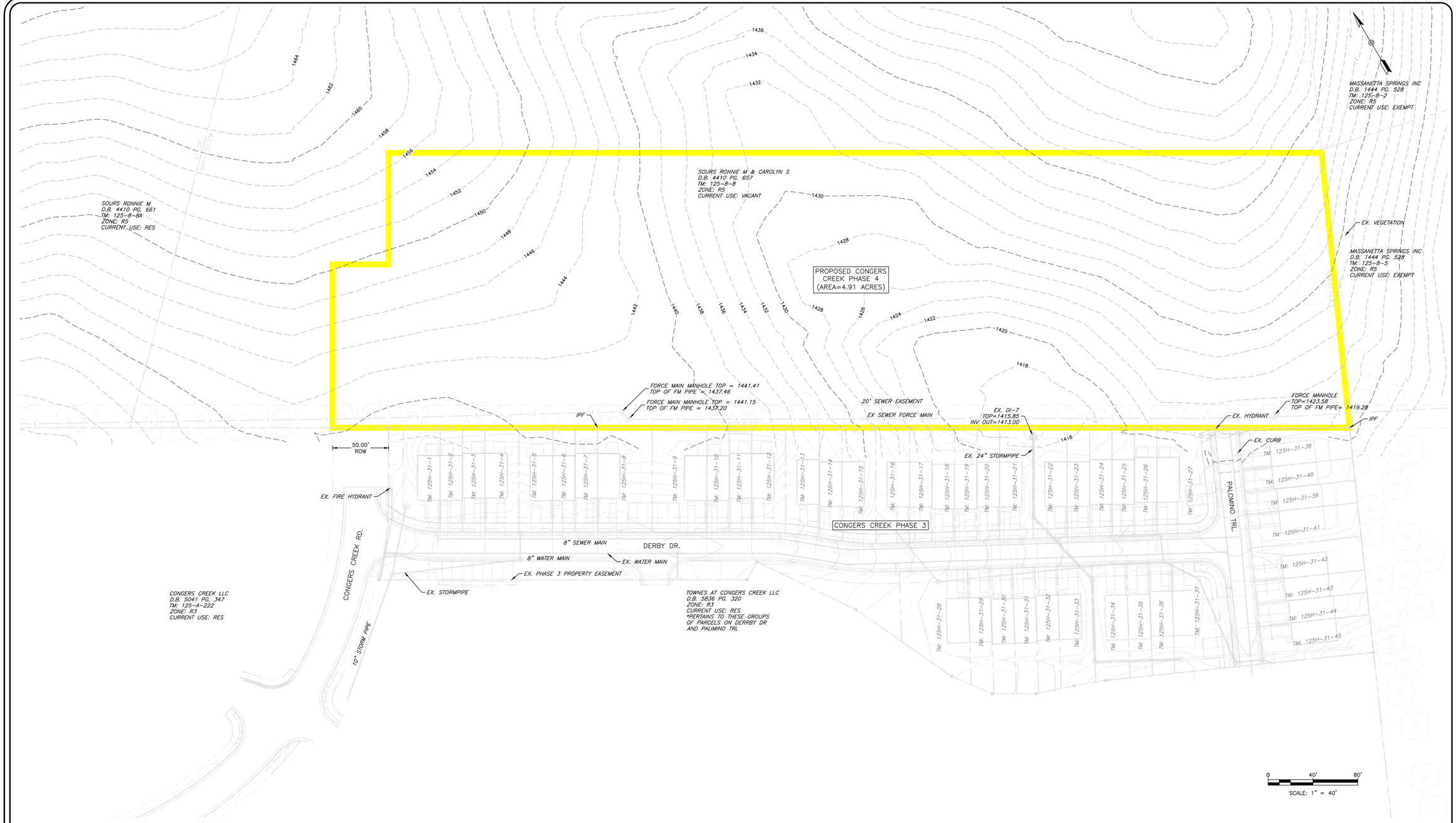
COMMONWEALTH OF VIRGINIA
GUILLERMO L. COLMAN
Lic. No. 045776
4/7/26
PROFESSIONAL ENGINEER

LEGEND & NOTES

Congers Creek Phase 4
The Townes at Congers Creek LLC
Congers Creek Rd
Rockingham County, VA

Project No.
CE202521
CONSTRUCTION SET
Sheet
C2
of 21 Sheets

COVER_NOTES.dwg Plotted: 4/7/2026 By: CEB



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PROFESSIONAL ENGINEER

EXISTING CONDITIONS

Congers Creek Phase 4
The Townes at Congers Creek LLC
Congers Creek Rd
Rockingham County, VA

Project No.
CE202521

CONSTRUCTION SET

Sheet
C3
of 21 Sheets

EXISTING CONDITIONS.dwg Plotted: 4/7/2026 By: CEB

BUILDING KEY:
= KITCHEN WALKOUT UNIT
= GARAGE WALKOUT UNIT
= BASEMENT WALKOUT UNIT

SOURS RONNIE M
DB. 4410 PG. 661
TM: 125-8-8A
ZONE: R5
CURRENT USE: RES

SOURS RONNIE M & CAROLYN S D.B. 4410 PG. 657
TM: 125-8-8
ZONE: R5
CURRENT USE: RES

MASSANETTA SPRINGS INC
D.B. 1444 PG. 528
TM: 125-8-2
ZONE: R5
CURRENT USE: EXEMPT

MASSANETTA SPRINGS INC
D.B. 1444 PG. 528
TM: 125-8-5
ZONE: R5
CURRENT USE: EXEMPT

CONGERS CREEK LLC
D.B. 5041 PG. 347
TM: 125-A-222
ZONE: R3
CURRENT USE: RES

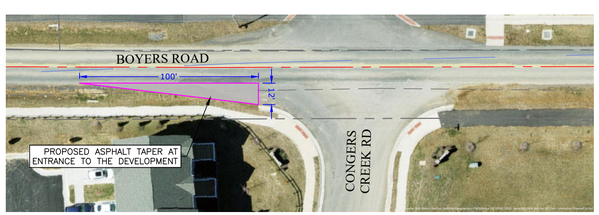
TOWNES AT CONGERS CREEK LLC
D.B. 5836 PG. 320
ZONE: R3
CURRENT USE: RES
*PERTAINS TO THESE GROUPS OF PARCELS ON DERRBY DR AND PALIMINO TRL

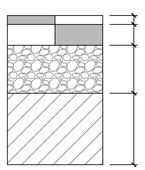
CONGERS CREEK TOWNHOMES PHASE 3

PROPOSED 20' TEMPORARY GRADING EASEMENT
PROPOSED PROPERTY LINE (TYP)
5' SETBACKS ON ALL SIDES (TYP)
PROPOSED REAR CONCRETE PATIO (TYP)
PROPOSED REAR DECK (TYP)
PROPOSED CHANNEL (SEE GRADING PLAN)
PROPOSED STORM SEWER (SEE STORMWATER MANAGEMENT PLAN)
PROPOSED COMMON AREA (GREEN CROSS HATCH) AREA = 1.13 ACRES (23% OF DEVELOPMENT)
PROPOSED SANITARY SEWER (SEE UTILITY PLAN)
PROPOSED 15' TEMPORARY GRADING EASEMENT
TEMPORARY TURN-AROUND ON A 55'R TEMPORARY ACCESS EASEMENT ALLOWS FOR FUTURE CONNECTIVITY TO THE NORTH AND TO THE WEST
FIRE HYDRANT #1
FIRE HYDRANT #2
FIRE HYDRANT #3
FIRE HYDRANT #4
PROPOSED COMMON AREA WITH PLAYGROUND
PROPOSED GREEN PARKING (TYP) (SEE SITE DETAILS)
PROPOSED LVL 2 BIORETENTION AND COMMON AREA
PROPOSED LIGHT POLE (SEE LIGHTING PLAN)
CONGERS CREEK RD EXTENSION ON A 50-FT RIGHT-OF-WAY TO BE DEDICATED TO VDOT
EXISTING SANITARY SEWER FORCE MAIN WITHIN A 20' EASEMENT
EXISTING TREE (TYP)
PROPOSED 5' CONCRETE WALKING PATH
CLYDESDALE LANE (PRIVATE)
PALOMINO TRL (PRIVATE)
CONGERS CREEK RD (EXTENSION)
S59°23'20.0"E
086.82
511.00'
S48°14'21.3"W
249.13'
S49°56'47.5"E

REZONING CASE # REZ25-0240 PROFFERS:
1. The expansion will feature at least 20% dedicated green space, providing room for outdoor recreation, including a new, centrally located playground and a walking trail that integrates into the planned sidewalks along both sides of the new streets. The walking trail will follow the southern boundary of the property, linking the extensions of Congers Creek Road and Palomino Trail.
2. As part of the development, Palomino Trail, a private street, will be extended, improving access and connectivity within the community and future development to the north. Additionally, Congers Creek Road, a public road, will be extended to serve the new phase while also allowing for future expansion to the north and west. Upon construction and Virginia Department of Transportation (VDOT) acceptance, the Congers Creek Road extension shall be dedicated to VDOT for public ownership, use, and maintenance. A temporary turnaround will be provided to accommodate school buses and emergency vehicles.
3. Owner/Developer agrees to construct a 100 foot right turn lane taper along Boyers Road at the intersection of Congers Creek Road before the 11th Certificate of Occupancy is issued by the County for Townes of Congers Creek Phase 4. The owner/developer also commits to no more than 30 units/building permits issued during any rolling twelve (12) month period, as part of their development plan.

Note: A VDOT Land Use Permit with an approved Maintenance of Traffic Plan is required for the work to being performed within the VDOT right of way.




1.5" ASPH. CONC. TY. SM-9.5A
3.5" ASPH. CONC. TY. BM-25.0A
8" AGGREGATE BASE MATERIAL (21A OR 21B STONE)
12" SCARIFIED, MOISTENED & RECOMPACTED NATIVE SOIL OR APPROVED FILL (95% STANDARD PROCTOR DENSITY)

CONGERS CREEK TYPICAL ASPHALT PAVEMENT SECTION
SCALE: 1" = 1'

0 40' 80'
SCALE: 1" = 40'

NOTES:
1. LANDSCAPING TO BE PLANTED SO AS TO NOT INTERFERE WITH INTERSECTION SIGHTLINES.
2. FINAL LOCATIONS OF PROPOSED ELECTRIC TRANSFORMERS AND METERS TO BE COORDINATED BETWEEN THE OWNER, SHENANDOAH VALLEY ELECTRIC COOPERATION AND ROCKINGHAM COUNTY BUILDING SERVICES.
3. ELECTRIC EASEMENTS WILL BE DETERMINED BASED ON ELECTRIC TRANSFORMER AND METER LOCATIONS. PER ROCKINGHAM COUNTY BUILDING OFFICIAL, EASEMENTS WILL BECOME PART OF PROPERTY AND WILL BE RECORDED ON THE FINAL PLAT (AT TIME OF FINAL PLAT APPROVAL). EASEMENT AGREEMENT WILL BE NOTED ON THE CERTIFICATE OF OCCUPANCY.
4. NEW ADDRESSES WILL BE DETERMINED THROUGH COORDINATION WITH ROCKINGHAM COUNTY GIS SERVICES.
5. CROSSWALK MARKINGS SHALL BE IN ACCORDANCE WITH VDOT STANDARD PM-3.
6. MAILBOX UNIT LOCATIONS TO BE COORDINATED WITH UNITED STATE POSTAL SERVICE.
7. INTERNAL PRIVATE STREETS DO NOT MEET SECONDARY STREET ACCEPTANCE REQUIREMENTS AND WILL NOT BE REQUESTED FOR STATE MAINTENANCE IN THE FUTURE.

LANDSCAPE SCHEDULE	
DECIDUOUS TREES*	SHRUBS
22	41

NOTES:
1. SPECIES OF STREET TREES TO BE PLANTED SHALL BE IN ACCORDANCE WITH VDOT'S GUIDELINES FOR PLANTING ALONG VIRGINIA'S ROADWAYS.
2. ALL TREES SHALL BE PLANTED SO AS TO NOT INTERFERE WITH INTERSECTION SIGHTLINES OR UTILITY LINES (ABOVE AND BELOW GROUND).
3. THE EXISTING VEGETATION ALONG THE PERIMETER OF THE SITE IS TO BE PRESERVED TO THE GREATEST EXTENT POSSIBLE.
4. DECIDUOUS TREES SHALL BE 2" MIN. CALIPER AT THE TIME OF PLANTING (DIA. AT BREAST HEIGHT)

PARKING ANALYSIS		
	PARKING REQUIREMENT	PARKING PROVIDED
EACH TOWNHOME	2 SPACES/ DWELLING UNIT	2 SPACES/ DWELLING UNIT*

*: THE REQUIRED PARKING FOR EACH TOWNHOME UNIT WILL BE PROVIDED BY EITHER A GARAGE PARKING SPACE AND A DRIVEWAY PARKING SPACE OR TWO DRIVEWAY PARKING SPACES. ADDITIONAL SPACES ARE PROVIDED ALONG THE PRIVATE STREETS FOR GUESTS.

BEFORE YOU DIG CALL
MISS UTILITY
1-800-552-7001

Date:	11/6/2025
Scale:	1" = 40'
Designed by:	GLC, PE
Drawn by:	JDY, PE
Reviewed by:	GLC, PE

Revision Dates
1/9/25 Per County
4/7/26 Per Owner

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COMMONWEALTH OF VIRGINIA
GUILLERMO L. COLMAN
Lic. No. 045776
4/7/26
PROFESSIONAL ENGINEER

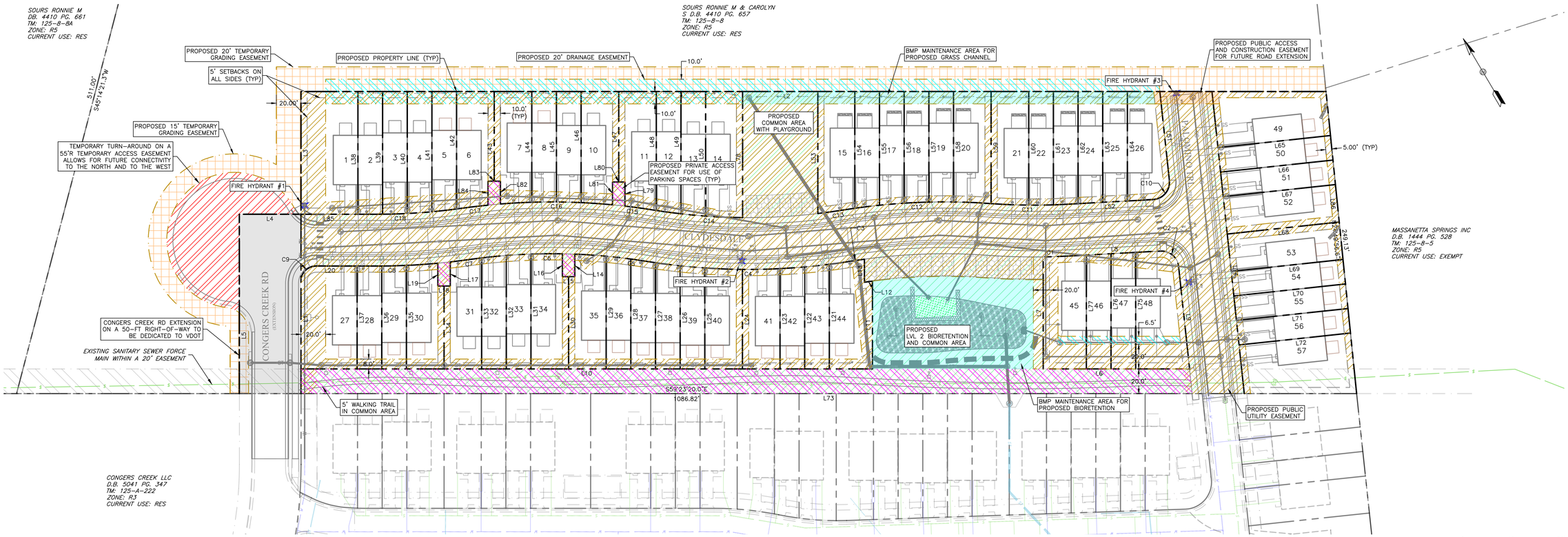
SITE LAYOUT
Congers Creek Phase 4
The Townes at Congers Creek LLC
Congers Creek Rd
Rockingham County, VA

Project No.
CE202521

CONSTRUCTION SET

Sheet
C4
of 21 Sheets

SITE LAYOUT.dwg Plotted: 4/7/2026 By: CEB



Parcel Line and Curve Table			
Line #/Curve #	Length	Bearing/Delta	Radius
C1	21.11	2.32	521.00
C2	21.26	87.00	14.00
C3	11.31	1.35	479.00
C4	166.73	18.34	521.00
C5	58.04	6.94	479.00
C6	76.40	9.14	479.00
C7	14.95	1.64	521.00
C8	48.74	5.36	521.00
C9	17.10	75.99	12.89
C10	22.72	93.00	14.00
C11	60.87	7.28	479.00
C12	121.26	13.35	520.39
C13	20.07	2.40	479.00
C14	72.08	8.62	479.00
C15	23.97	2.64	521.00
C16	91.12	10.02	521.00
C17	21.92	2.41	521.00
C18	67.80	8.11	479.00
L1	145.50	S30° 36' 39.86"W	
L2	831.38	N59° 23' 20.00"W	
L3	99.50	S30° 36' 39.86"W	
L4	50.00	N59° 23' 20.14"W	
L5	145.50	S30° 36' 39.86"W	
L6	118.72	N59° 23' 20.00"W	
L7	90.91	N30° 36' 40.00"E	
L8	74.14	S62° 30' 07.28"E	

Parcel Line and Curve Table			
Line #/Curve #	Length	Bearing/Delta	Radius
L9	83.64	S24° 29' 52.72"W	
L10	463.57	S59° 23' 20.00"E	
L11	71.26	N30° 36' 40.00"E	
L12	6.63	N67° 06' 25.43"W	
L13	18.68	N30° 36' 40.00"E	
L14	18.23	S30° 36' 40.00"W	
L15	10.00	N59° 23' 20.00"W	
L16	18.51	N30° 36' 40.00"E	
L17	19.49	S30° 36' 40.00"W	
L18	10.00	N59° 23' 20.00"W	
L19	18.45	N30° 36' 40.00"E	
L20	49.90	N59° 23' 20.00"W	
L21	84.89	S30° 36' 40.00"W	
L22	82.74	S30° 36' 40.00"W	
L23	81.36	S30° 36' 40.00"W	
L24	80.75	S30° 36' 40.00"W	
L25	81.92	S30° 36' 40.00"W	
L26	83.66	S30° 36' 40.00"W	
L27	86.19	S30° 36' 40.00"W	
L28	89.19	S30° 36' 40.00"W	
L29	91.47	S30° 36' 40.00"W	
L30	74.91	S30° 36' 40.00"W	
L31	93.20	S30° 36' 40.00"W	
L32	92.08	S30° 36' 40.00"W	
L33	90.11	S30° 36' 40.00"W	
L34	67.33	S30° 36' 40.00"W	

Parcel Line and Curve Table			
Line #/Curve #	Length	Bearing/Delta	Radius
L35	84.02	S30° 36' 40.00"W	
L36	83.51	S30° 36' 40.00"W	
L37	83.50	S30° 36' 40.00"W	
L38	99.50	N30° 36' 40.00"E	
L39	99.48	N30° 36' 40.00"E	
L40	98.91	N30° 36' 40.00"E	
L41	97.49	N30° 36' 40.00"E	
L42	95.23	N30° 36' 40.00"E	
L43	72.71	N30° 36' 40.00"E	
L44	89.75	N30° 36' 40.00"E	
L45	89.51	N30° 36' 40.00"E	
L46	90.04	N30° 36' 40.00"E	
L47	73.38	N30° 36' 40.00"E	
L48	96.44	N30° 36' 40.00"E	
L49	99.16	N30° 36' 40.00"E	
L50	101.03	N30° 36' 40.00"E	
L51	72.55	S24° 29' 52.72"W	
L52	70.48	N62° 30' 07.28"W	
L53	98.94	N30° 36' 40.00"E	
L54	94.62	S30° 36' 40.00"W	
L55	92.19	S30° 36' 40.00"W	
L56	90.54	S30° 36' 40.00"W	
L57	89.66	S30° 36' 40.00"W	
L58	89.55	S30° 36' 40.00"W	
L59	90.86	S30° 36' 40.00"W	
L60	92.12	S30° 36' 40.00"W	

Parcel Line and Curve Table			
Line #/Curve #	Length	Bearing/Delta	Radius
L61	91.90	S30° 36' 40.00"W	
L62	90.92	S30° 36' 40.00"W	
L63	89.84	S30° 36' 40.00"W	
L64	88.75	S30° 36' 40.00"W	
L69	91.20	N65° 30' 07.28"W	
L70	91.08	N65° 30' 07.28"W	
L71	90.97	N65° 30' 07.28"W	
L72	90.85	N65° 30' 07.28"W	
L73	856.11	N59° 23' 20.14"W	
L74	246.40	S24° 29' 52.72"W	
L75	94.56	S30° 36' 40.00"W	
L76	93.47	S30° 36' 40.00"W	
L77	92.38	S30° 36' 40.00"W	
L78	102.25	S30° 36' 40.00"W	
L79	19.50	N30° 36' 40.00"E	
L80	10.00	N59° 23' 20.00"W	
L81	18.45	S30° 36' 40.00"W	
L82	18.46	N30° 36' 40.00"E	
L83	10.00	N59° 23' 20.00"W	
L84	19.36	S30° 36' 40.00"W	
L85	62.40	N59° 23' 20.00"W	
L86	246.25	N24° 49' 56.64"E	

LEGEND

- PROPOSED PUBLIC RIGHT OF WAY
- PROPOSED PUBLIC ACCESS EASEMENT
- PROPOSED TEMPORARY GRADING EASEMENT
- PROPOSED PUBLIC TEMPORARY ACCESS EASEMENT
- PROPOSED PRIVATE ACCESS EASEMENT
- PROPOSED PUBLIC UTILITY EASEMENT
- PROPOSED PRIVATE DRAINAGE EASEMENT
- PROPOSED BMP MAINTENANCE AREA

Date:	11/6/2025
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COMMONWEALTH OF VIRGINIA
GUILLERMO L. COLMAN
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4/7/26
PROFESSIONAL ENGINEER

PROPERTY LINES & EASEMENTS

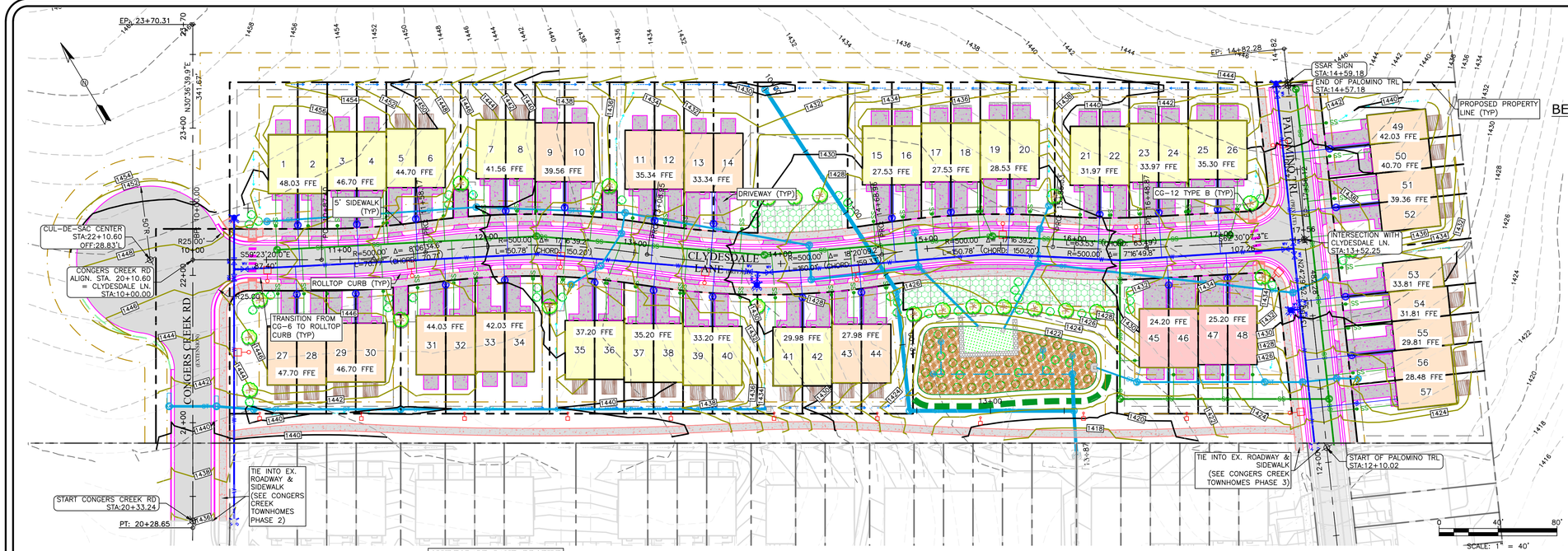
Congers Creek Phase 4
The Townes at Congers Creek LLC
Congers Creek Rd
Rockingham County, VA

Project No.
CE202521

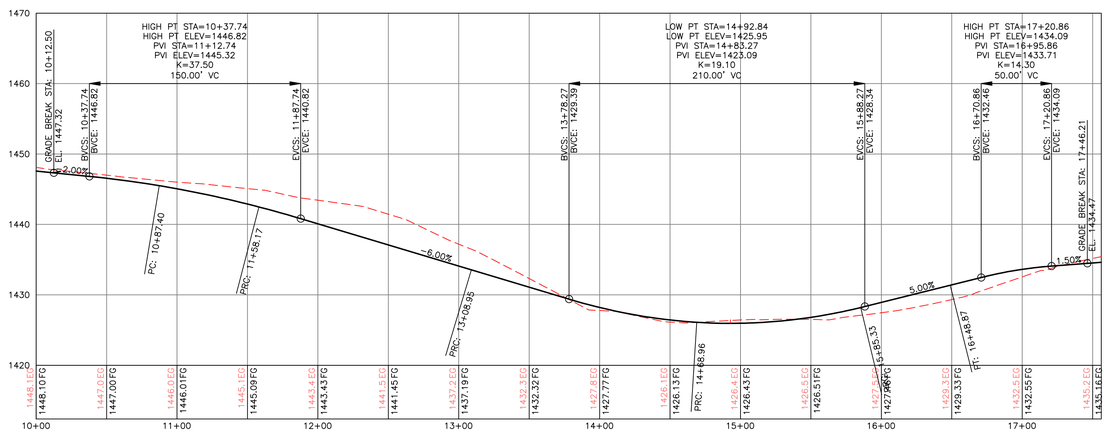
CONSTRUCTION SET

Sheet
C5
of 21 Sheets

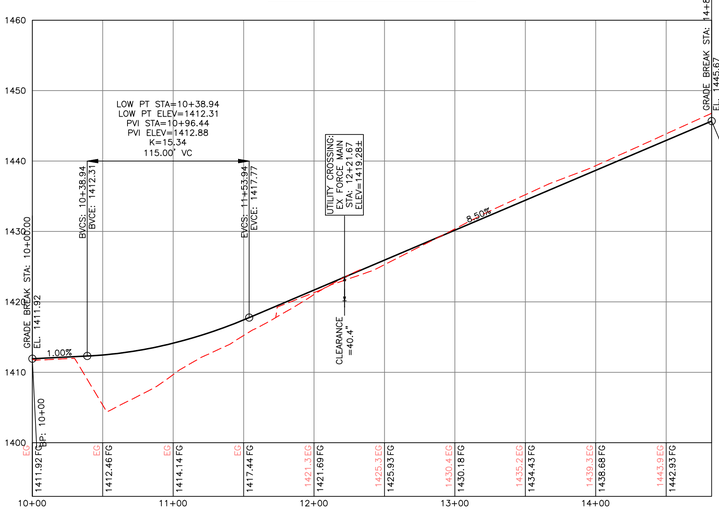
SITE LAYOUT.dwg Plotted: 4/7/2026 By: CEB



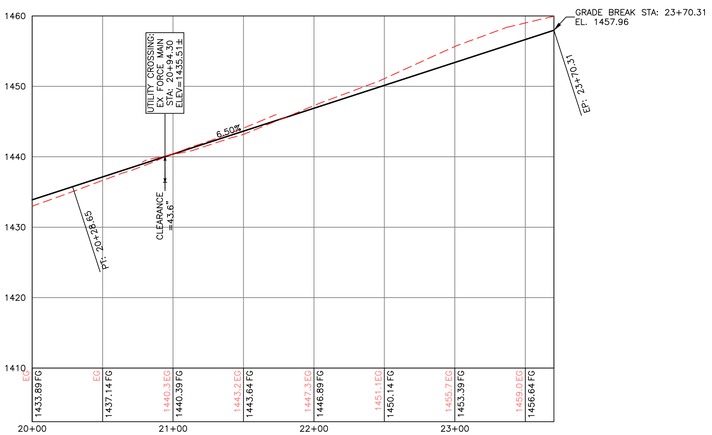
CLYDESDALE LANE PROFILE
SCALE: H:1"=50', V:1"=10'

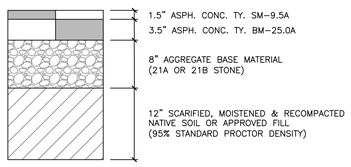


PALOMINO DR. EXTENDED PROFILE
SCALE: H:1"=50', V:1"=10'

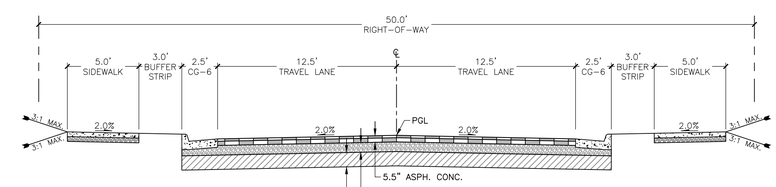


Congers Creek Rd Profile
SCALE: H:1"=50', V:1"=10'

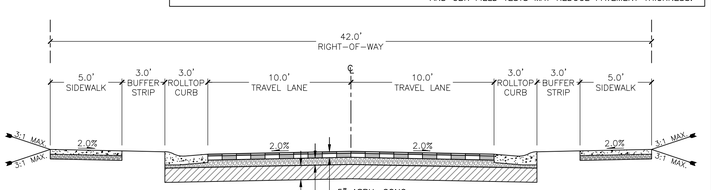




CONGERS CREEK TYPICAL ASPHALT PAVEMENT SECTION
SCALE: 1" = 1'



CONGERS CREEK ROAD TYPICAL SECTION 1
SCALE: 1" = 5'



PRIVATE ROAD TYPICAL SECTION 1
SCALE: 1" = 5'

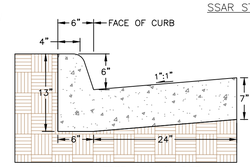
PAVEMENT DESIGN NOTES:
1. ROAD PAVEMENT DESIGN PER VDOT PAVEMENT DESIGN GUIDE FOR SUBDIVISION & SECONDARY ROADS IN VIRGINIA.
2. FOLLOWING SECTION 2–DESIGN REQUIREMENTS IN APPENDIX B(1)–SUBDIVISION STREET DESIGN GUIDE, DESIGN AADT IS 2950 (2950 DWELLING UNITS x 10 TRIPS PER DAY PER UNIT).

VDOT PAVEMENT DESIGN FOR SUBDIVISION & SECONDARY ROADS

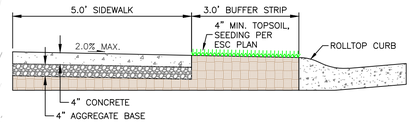
DESIGN VARIABLES		MATERIALS	LAYER DEPTH	THICKNESS EQUIVALENCY	THICKNESS INDEX
PREDICTED RESILIENCY FACTOR	RF = 2.0	SURFACE (SM-9.5A)	1.5"	2.25	3.38"
PREDICTED DESIGN CBR	CBR = 6.0	BASE (BM-25.0A)	4.0"	2.25	9.00"
PREDICTED SOIL SUPPORT VALUE	SSV = 12.0	SUBBASE (21-B)	8.0"	0.60	4.80"
PRESENT VEHICLES PER DAY	AADT = 2950				
HEAVY COMMERICAL VEHICLES	HCV < 5%	PAVEMENT DEPTH = 13.5"		D = 17.18"	
DESIGN VEHICLES PER DAY	AADT = 2950				
THICKNESS INDEX	D_R = 16.9	ALTERNATIVE PAVEMENT DESIGN BASED ON RESULTS OF RF AND CBR FIELD TESTS MAY REDUCE PAVEMENT THICKNESS.			

BEFORE YOU DIG CALL MISS UTILITY 1-800-552-7001

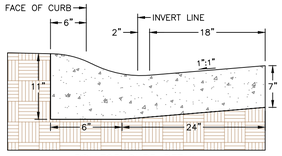
SSAR STUB OUT SIGN DETAIL
NTS



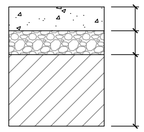
CURB & GUTTER (CG-6) DETAIL
SCALE: 1" = 1'



SIDEWALK & ROLLTOP CURB DETAIL
SCALE: 1" = 2.5'

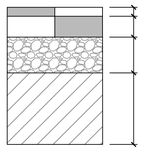


ROLLTOP CURB DETAIL
SCALE: 1" = 1'



TYPICAL CONCRETE PAVEMENT SECTION
SCALE: 1" = 1'

*: INCREASE THICKNESS TO 7" FOR CURB RAMPS & GUTTERS



PRIVATE STREET TYPICAL ASPHALT PAVEMENT SECTION
SCALE: 1" = 1'

Date:	11/6/2025
Scale:	1" = 40'
Designed by:	GLC, PE
Drawn by:	JDY, PE
Reviewed by:	GLC, PE

Revision Dates
1/9/25 Per County
4/7/26 Per Owner

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Email: contact@colmanengineering.com | www.colmanengineering.com

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GUILLERMO L. COLMAN
LIC. NO. 045776
4/7/26
PROFESSIONAL ENGINEER

ROAD PLAN & PROFILE

Congers Creek Phase 4
The Townes at Congers Creek LLC
Congers Creek Rd
Rockingham County, VA

Project No.
CE202521

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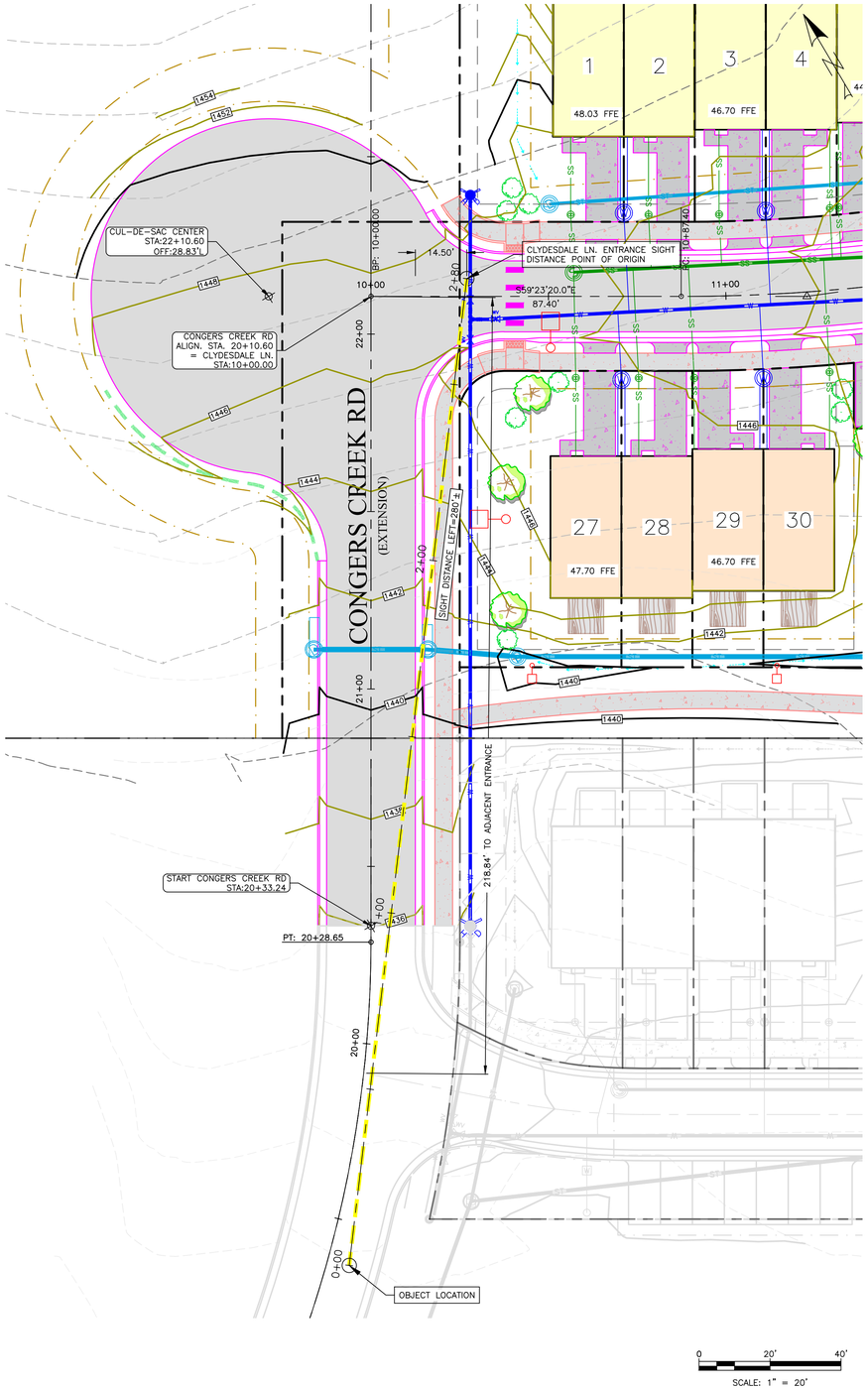
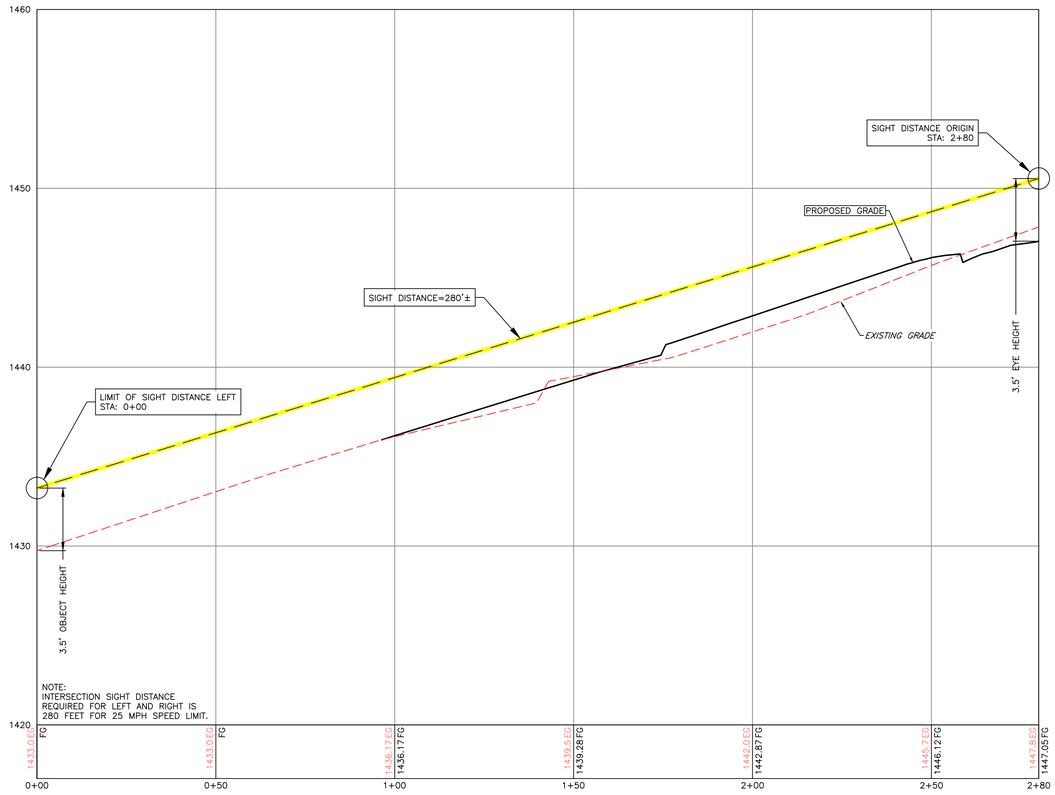
ROAD.dwg Plotted: 4/7/2026 By: CEB



0 20' 40'

SCALE: 1" = 20'

SIGHT DISTANCE LEFT
SCALE: H:1"=40', V:1"=8'



Date:	11/6/2025
Scale:	1" = 20'
Designed by:	GLC, PE
Drawn by:	JDY, PE
Reviewed by:	GLC, PE

Revision Dates
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4/7/26 Per Owner

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Lic. No. 045776
4/7/26
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SIGHT DISTANCE PROFILE

Congers Creek Phase 4
The Townes at Congers Creek LLC
Congers Creek Rd
Rockingham County, VA

Project No.
CE202521

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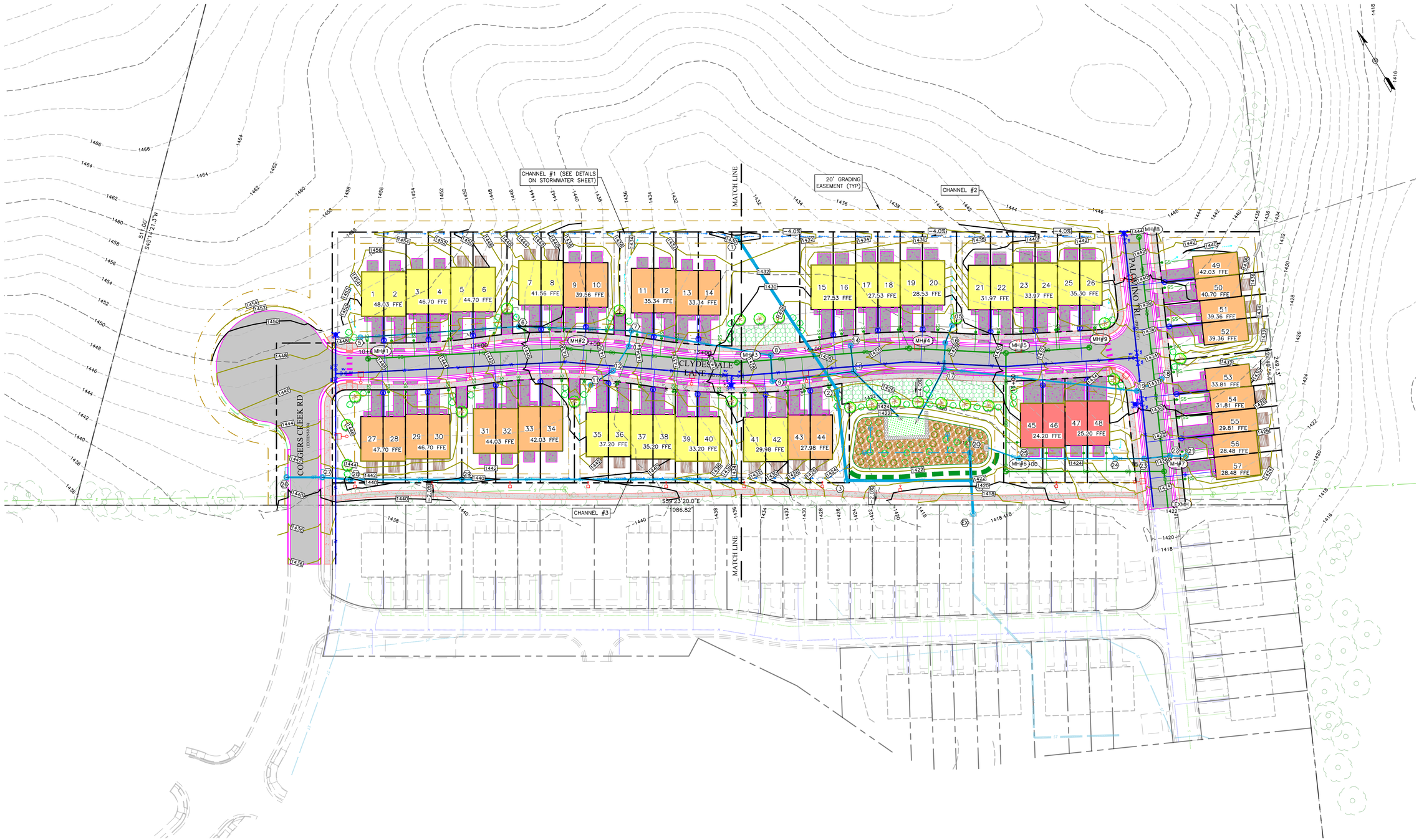
ROAD.dwg Plotted: 4/7/2026 By: CEB



0 40' 80'

SCALE: 1" = 40'

BEFORE YOU DIG CALL
MISS UTILITY
1-800-552-7001

CUT AND FILL TABLE			
DISTURBED AREA (AC)	CUT (CY)	FILL (CY)	NET CUT OR FILL (CY)
5.26	7027	8359	1332 (FILL)

Date:	11/6/2025
Scale:	1" = 40'
Designed by:	GLC, PE
Drawn by:	JDY, PE
Reviewed by:	GLC, PE

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4/7/26 Per Owner

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GUILLERMO L. COLMAN
Lic. No. 045776
4/7/26
PROFESSIONAL ENGINEER

GRADING PLAN-1

Congers Creek Phase 4
The Townes at Congers Creek LLC
Congers Creek Rd
Rockingham County, VA

Project No.
CE202521

CONSTRUCTION SET

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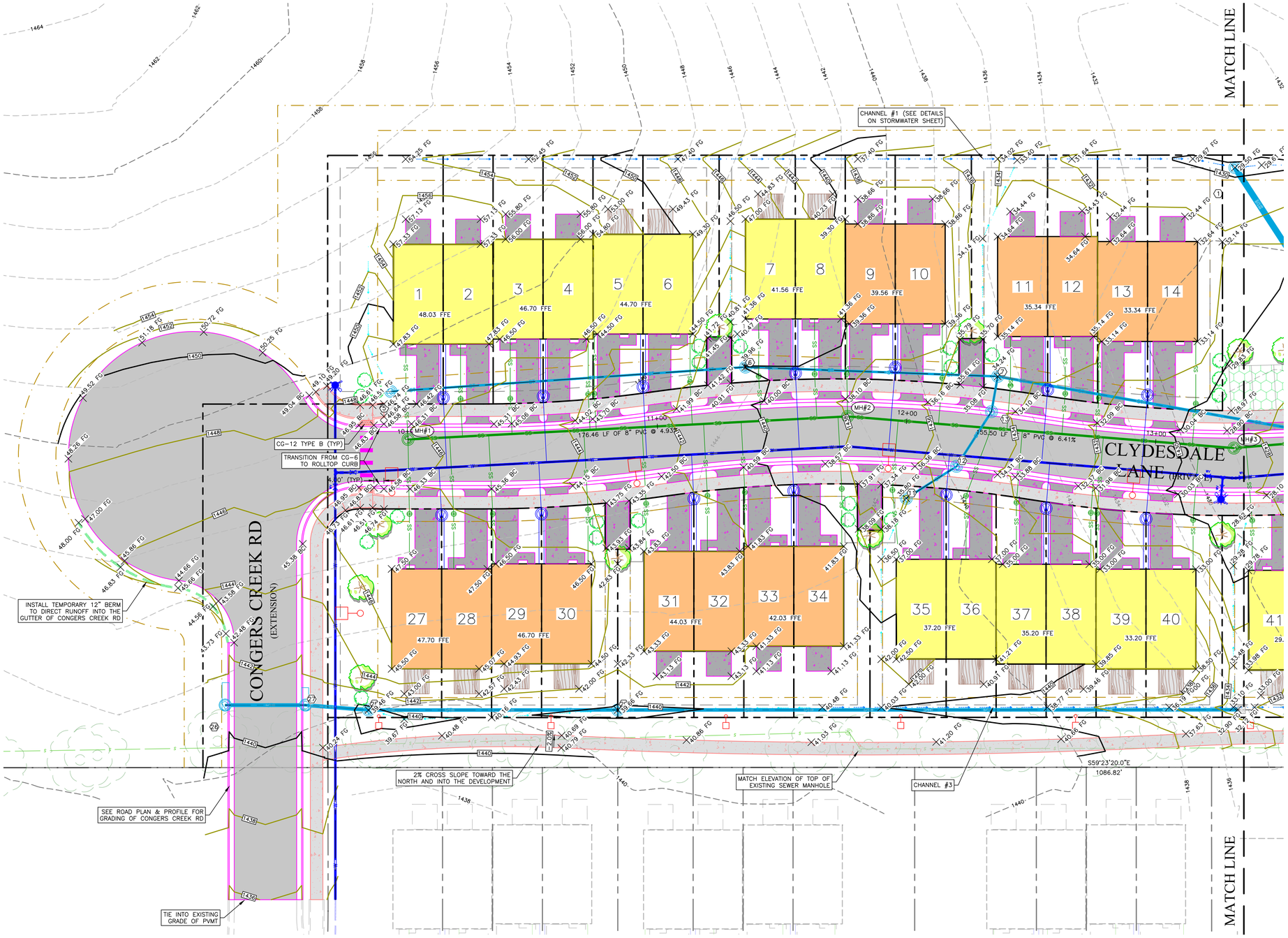

0 20' 40'

SCALE: 1" = 20'

BEFORE YOU DIG CALL
MISS UTILITY
1-800-552-7001

Date:	11/6/2025
Scale:	1" = 20'
Designed by:	GLC, PE
Drawn by:	JDY, PE
Reviewed by:	GLC, PE

Revision Dates
1/9/25 Per County
4/7/26 Per Owner

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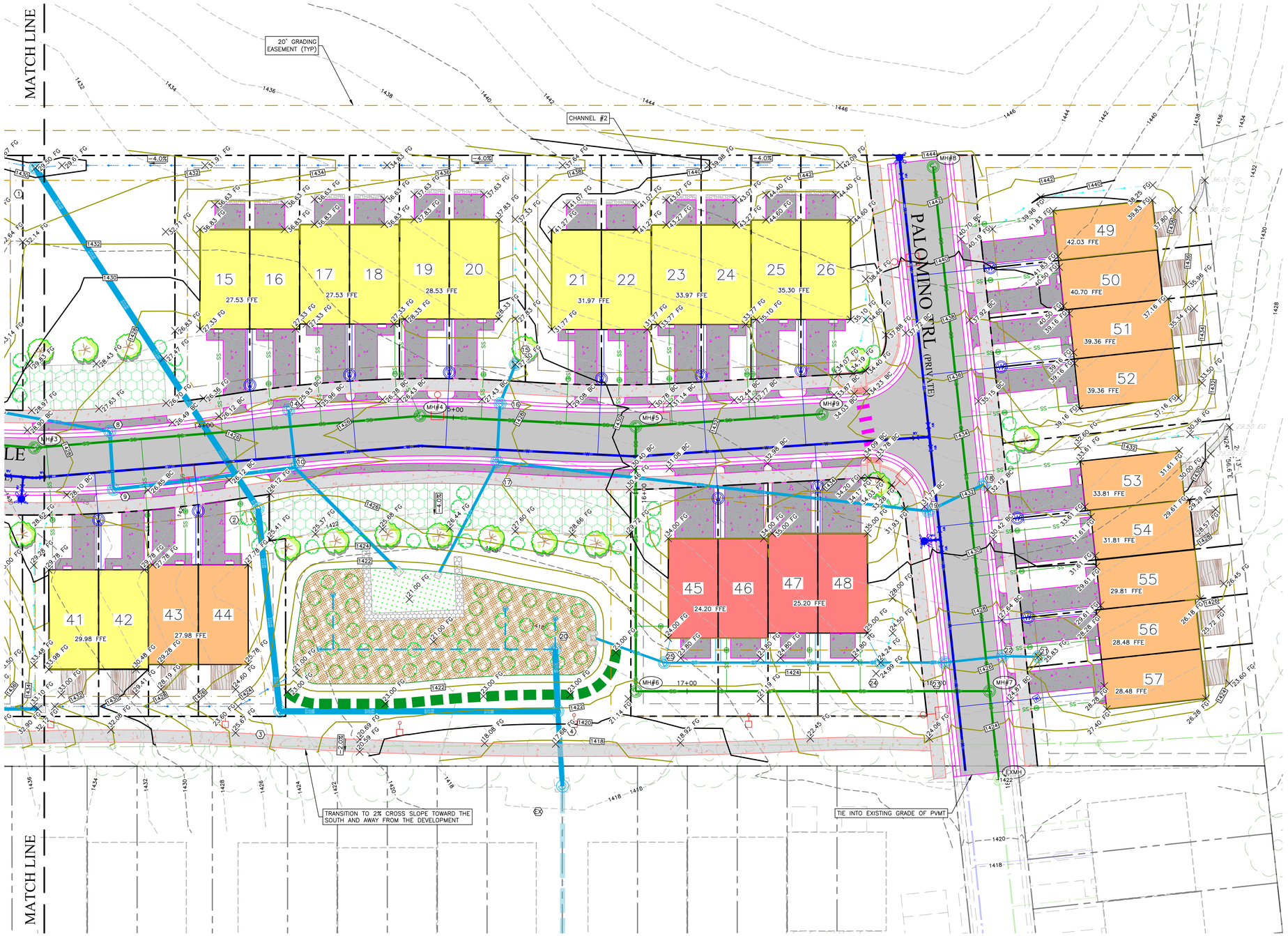
GUILLERMO L. COLMAN
Lic. No. 045776
4/7/26
PROFESSIONAL ENGINEER

GRADING PLAN-2

Congers Creek Phase 4
The Townes at Congers Creek LLC
Congers Creek Rd
Rockingham County, VA

Project No.	CE202521
	CONSTRUCTION SET
Sheet	C9 of 21 Sheets

GRADING.dwg Plotted: 4/7/2026 By: GEB



0 20' 40'

SCALE: 1" = 20'

BEFORE YOU DIG CALL
MISS UTILITY
1-800-552-7001

Date:	11/6/2025
Scale:	1" = 20'
Designed by:	GLC, PE
Drawn by:	JDY, PE
Reviewed by:	GLC, PE

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4/7/26 Per Owner

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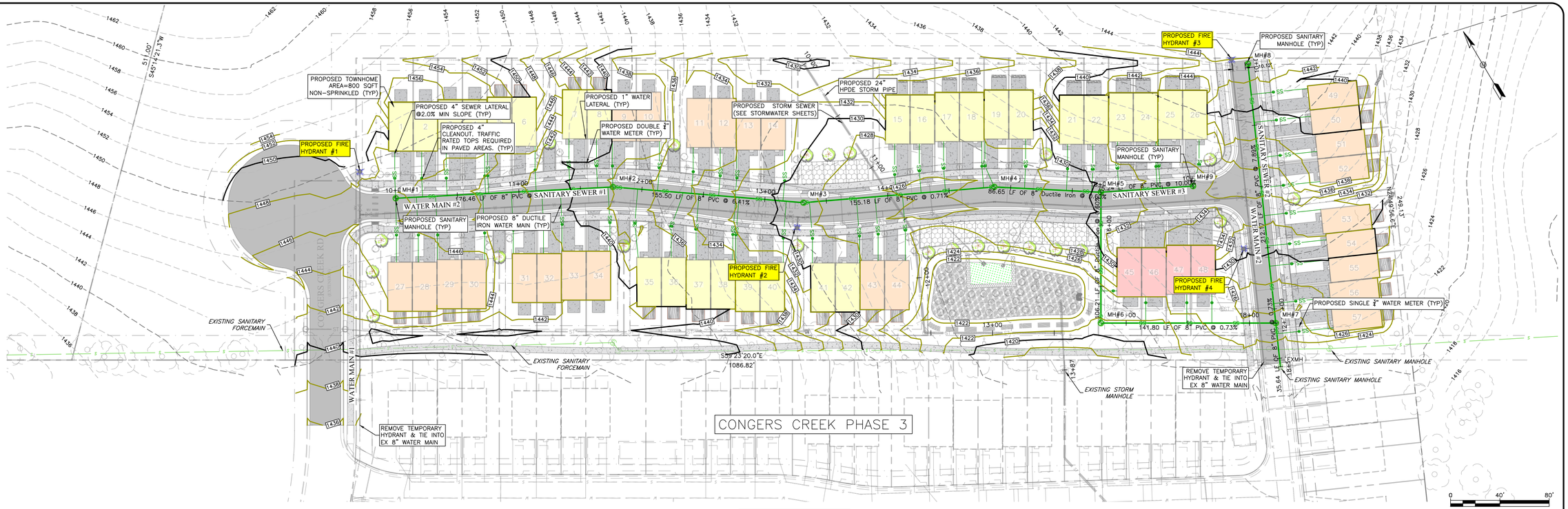
GUILLERMO L. COLMAN
Lic. No. 045776
4/7/26
PROFESSIONAL ENGINEER

GRADING PLAN-3

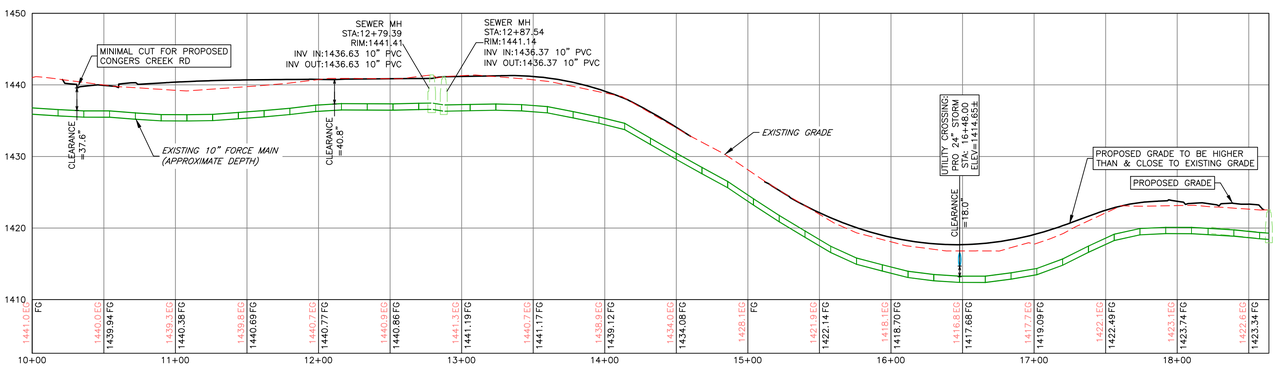
Congers Creek Phase 4
The Townes at Congers Creek LLC
Congers Creek Rd
Rockingham County, VA

Project No.	CE202521
CONSTRUCTION SET	
Sheet	C10 of 21 Sheets

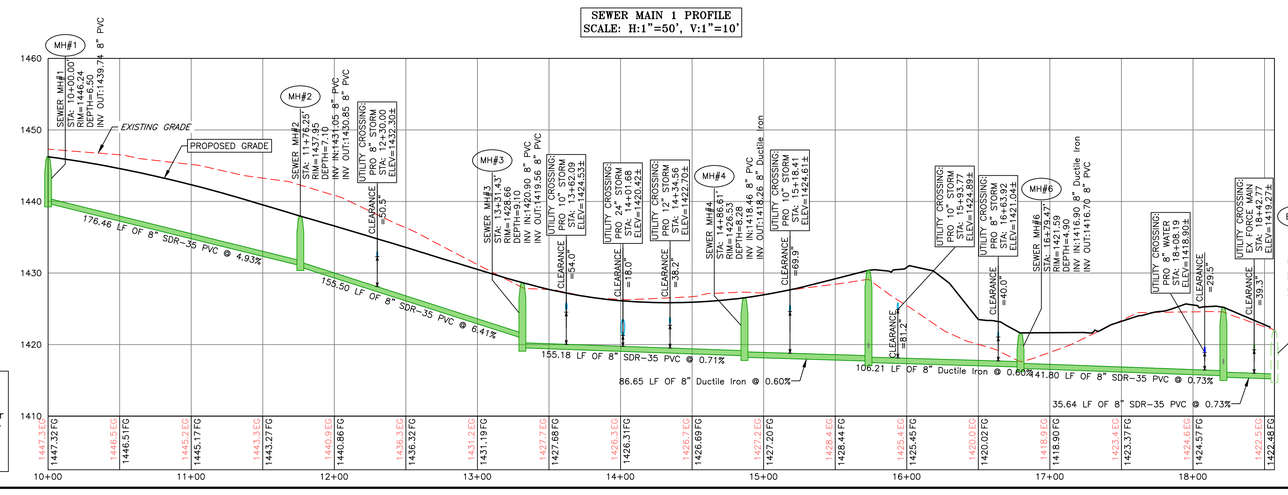
GRADING.dwg Plotted: 4/7/2026 By: GEB



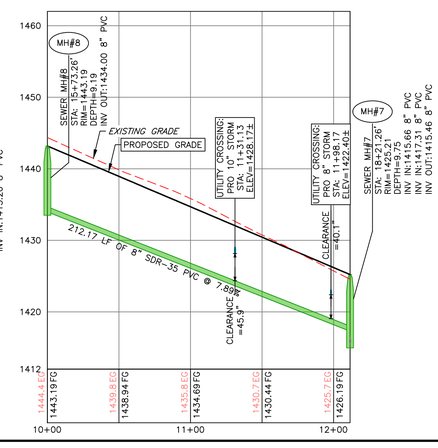
EX Force Main Profile
SCALE: H:1"=50', V:1"=10'



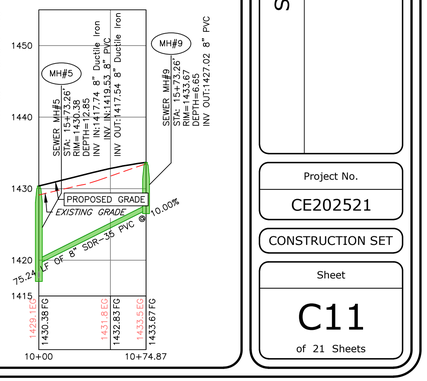
SEWER MAIN 1 PROFILE
SCALE: H:1"=50', V:1"=10'



SEWER MAIN 2 PROFILE
SCALE: H:1"=50', V:1"=10'



SEWER MAIN 3 PROFILE
SCALE: H:1"=50', V:1"=10'



NOTE:
Sanitary sewer pipe material may be SDR-35 PVC. Where greater than 10' of cover over sewer main, use ductile iron. Maintain 36" min cover over sanitary sewer mains. Maintain 18" min vertical separation from other utilities. Where less than 18" is available, provide concrete piers as shown in detail on Sheet C16. Drop across manholes is to be 0.2 feet.

UTILITIES.dwg Posted: 4/7/2026 By: CEB

Date:	11/6/2025
Scale:	1" = 40'
Designed by:	GLC, PE
Drawn by:	JDY, PE
Reviewed by:	GLC, PE

Revision Dates
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4/7/26 Per Owner

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GUILLERMO L. COLMAN
Lic. No. 045776
4/7/26
PROFESSIONAL ENGINEER

SEWER PLAN & PROFILE

Congers Creek Phase 4
The Townes at Congers Creek LLC
Congers Creek Rd
Rockingham County, VA

Project No.
CE202521

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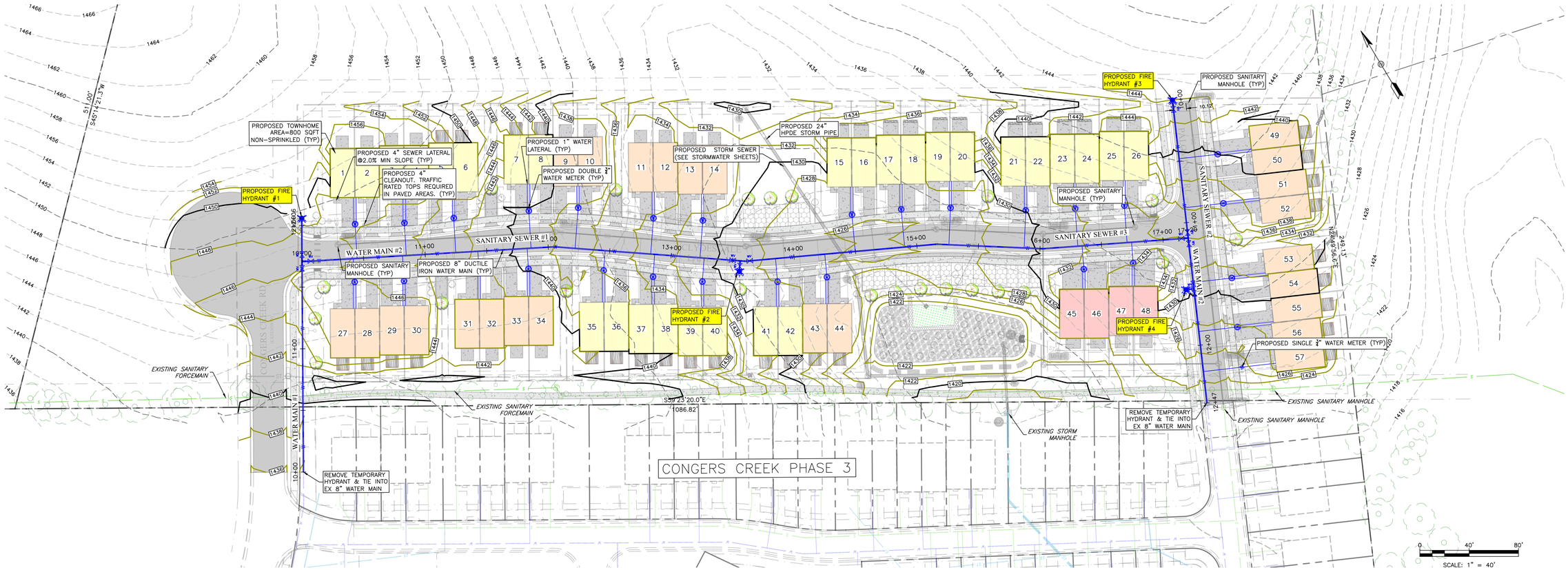
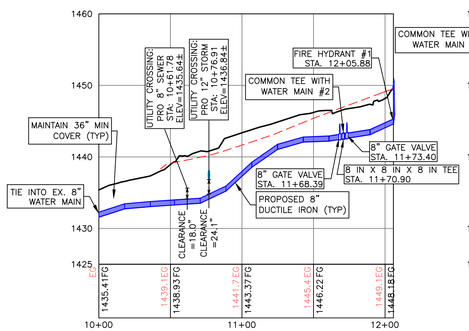
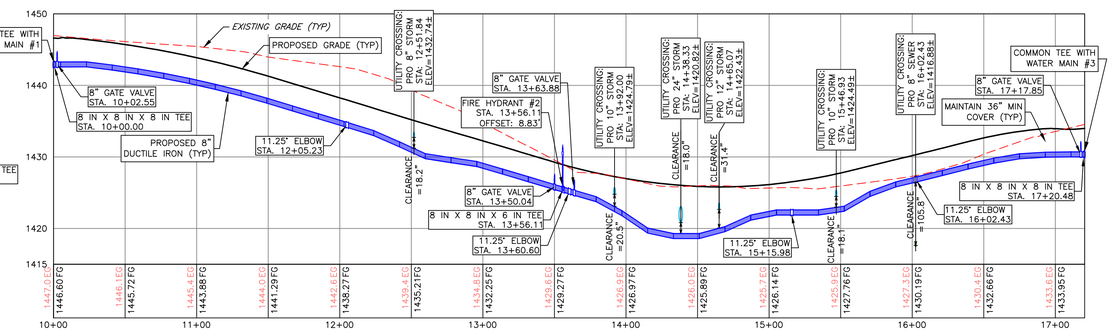


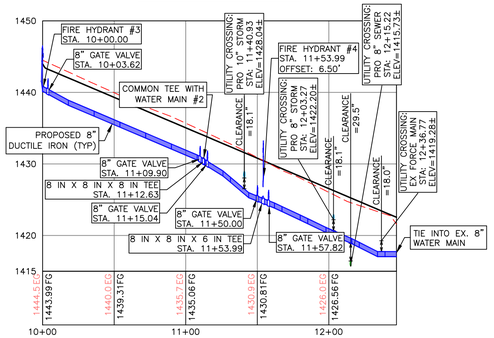
WATER MAIN #1 PROFILE
SCALE: H:1"=50', V:1"=10'



WATER MAIN #2 PROFILE
SCALE: H:1"=50', V:1"=10'



WATER MAIN #3 PROFILE
SCALE: H:1"=50', V:1"=10'



NOTE:
Pipe Material – Water main pipe shall be ductile iron per AWWA C151 Class 52. Fittings shall be of the compact type per AWWA C153. Provide thrust block restraint as required and required compaction, pressure/leakage, bacteriological, and pump testing per Rockingham County Water & Sewer Specifications and Standards and the most current Virginia Department of Health Waterworks Regulations. Maintain 36" min cover over water mains. Maintain 18" min vertical separation from other utilities. Where less than 18" is available, provide concrete piers as shown in detail on Sheet C16. Water mains shall be horizontally separated from Sewer mains by 10' minimum, from face to face.

UTILITIES.dwg Plotted: 4/7/2026 By: CEB

Date:	11/6/2025
Scale:	1" = 40'
Designed by:	GLC, PE
Drawn by:	JDY, PE
Reviewed by:	GLC, PE

Revision Dates
1/9/25 Per County
4/7/26 Per Owner

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COMMONWEALTH OF VIRGINIA
GUILLERMO L. COLMAN
Lic. No. 045776
4/7/26
PROFESSIONAL ENGINEER

WATER PLAN & PROFILE

Congers Creek Phase 4
The Townes at Congers Creek LLC
Congers Creek Rd
Rockingham County, VA

Project No.
CE202521

CONSTRUCTION SET

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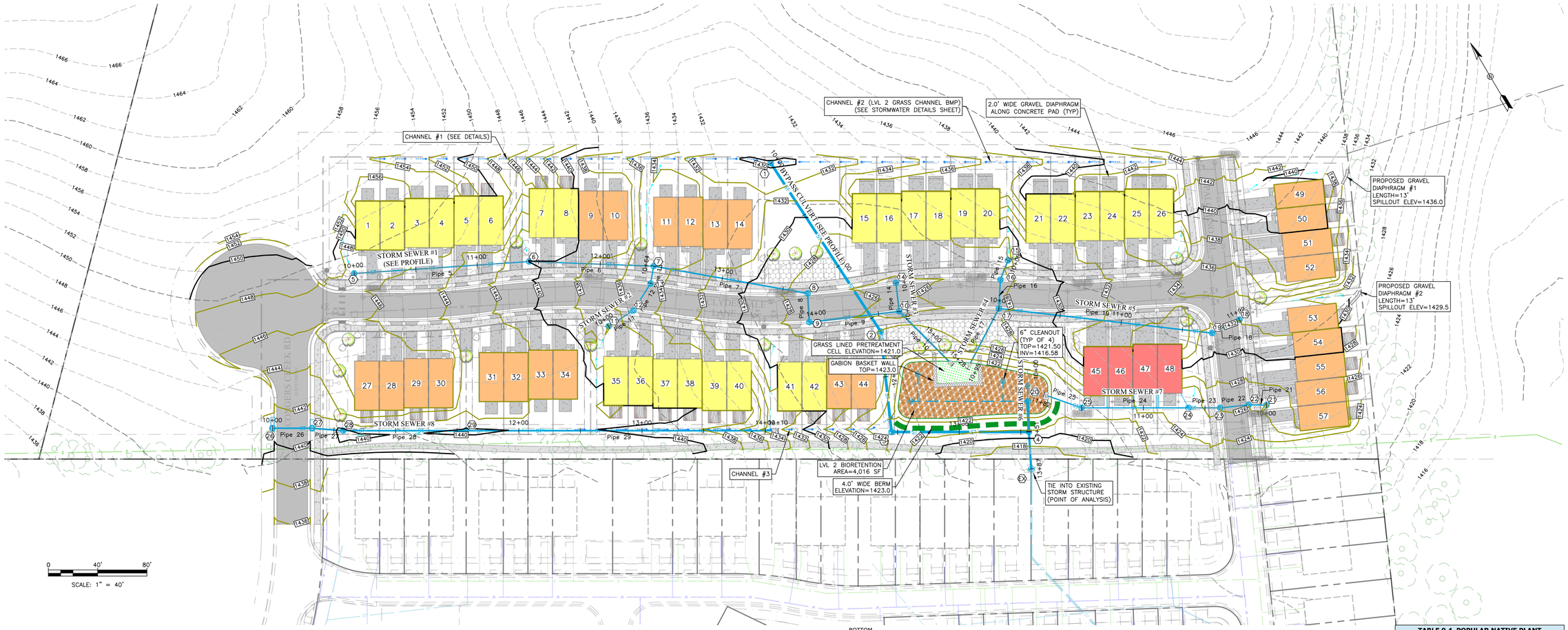
of 21 Sheets



Date:	11/6/2025
Scale:	1" = 40'
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Drawn by:	JDY, PE
Reviewed by:	GLC, PE

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GUILLERMO L. COLMAN
Lic. No. 045776
4/7/26
PROFESSIONAL ENGINEER

STORMWATER MANAGEMENT PLAN

Congers Creek Phase 4
The Townes at Congers Creek LLC
Congers Creek Rd
Rockingham County, VA

Project No.
CE202521
CONSTRUCTION SET
Sheet
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of 21 Sheets

STORMWATER RUNOFF SUMMARY

(See Runoff Model in Drainage Calculations Report)

SITE RUNOFF TO:	POINT OF ANALYSIS	
RETURN PERIOD	EXISTING	PROPOSED
1-YEAR STORM	0.652	0.649
2-YEAR STORM	2.981	2.364
10-YEAR STORM	15.450	14.730
100-YEAR STORM	47.81	58.08

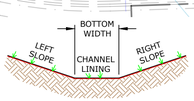
$Q_{post} \leq Q_{pre}(RV_{pre}/RV_{post})*(IF)$

1-YEAR STORM ENERGY BALANCE
$Q_{post} = Q_{allowable}$

ENERGY BALANCE POA		
Q_{1yr} =	0.652	CFS
RV_{pre1} =	7148	CF
RV_{post} =	5603	CF
IF =	0.8	
$Q_{allowable}$ =	0.665	CFS
TOTAL PROPOSED SITE RUNOFF		
Q_{post} =	0.649	CFS

BMP NOTES:

1. Contractor shall contact Engineer prior installation of BMPs.
2. The bond will not be released until the BMP AS-BUILT Certification and AS-BUILT Drawings have been received by Community Development.
3. The Engineer should schedule sufficient site visits at the appropriate times to be able to complete the AS-BUILT Certification.
4. The BMP installations shall comply with the relevant Virginia Department of Environmental Quality Design Specifications.



TYPICAL CHANNEL SECTION

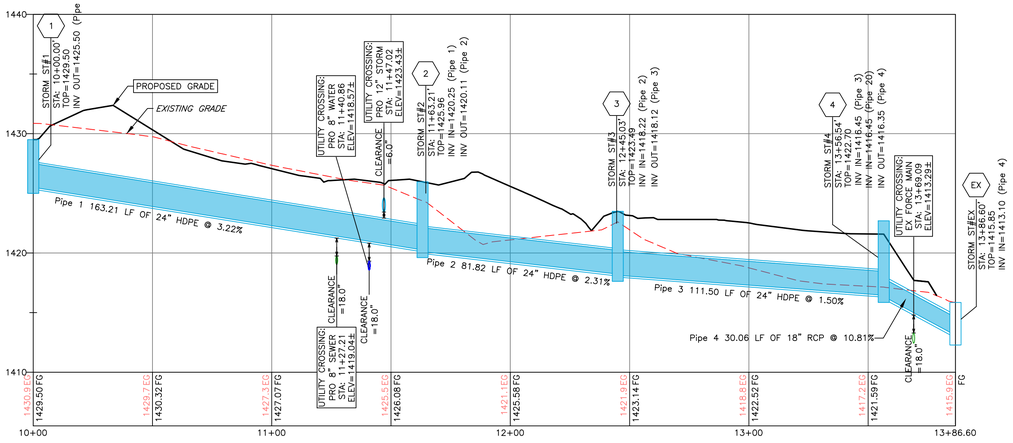
NTS

CHANNEL SECTION TABLE

CHANNEL	BOTTOM WIDTH	LEFT SIDE SLOPE	RIGHT SIDE SLOPE	10-YR DEPTH	DITCH DEPTH	2-YR VELOCITY	DITCH SLOPE	LINER
#1	1.0 ft	3:1	5:1	0.35 ft	1.0 ft	3.59 ft/s	3 - 14%	EC-2/GRASS
#2	4.0 ft	3:1	3:1	0.37 ft	1.0 ft	2.02 ft/s	4.0%	EC-2/GRASS
#3	0 ft	3:1	3:1	0.70 ft	1.2 ft	4.76 ft/s	2 - 12%	EC-2/GRASS

SLOPES ARE ORIENTED LOOKING AT THE CHANNEL FROM THE UPHILL SIDE

Bypass Culvert Profile
SCALE: H:1"=30', V:1"=6'



STORM STRUCTURE SCHEDULE

STR #	TYPE	TOP	IN (FROM)	OUT (TO)
EX	EX 48" MH HEIGHT=3.07'	1415.85	1413.10 (Pipe 4)	
1	DI-7 HEIGHT=4.00'	1429.50		1425.50 (Pipe 1)
2	48" MH HEIGHT=5.85'	1425.96	1420.25 (Pipe 1)	1420.11 (Pipe 2)
3	48" MH HEIGHT=5.37'	1423.49	1418.22 (Pipe 2)	1418.12 (Pipe 3)
4	48" MH HEIGHT=6.35'	1422.70	1416.45 (Pipe 3) 1416.45 (Pipe 20)	1416.35 (Pipe 4)

STORM PIPE SCHEDULE

PIPE #	LENGTH	SLOPE	SIZE/TYPE
Pipe 1	163.30'	3.22%	24" HDPE
Pipe 2	81.84'	2.31%	24" HDPE
Pipe 3	111.51'	1.50%	24" HDPE
Pipe 4	30.24'	10.81%	18" RCP

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MISS UTILITY
1-800-552-7001

PLANTING NOTES:
1. ONLY VIABLE, HIGH-QUALITY SEED OR PLANTING STOCK SHOULD BE USED.
2. ANNUAL PLANTS ARE NOT ALLOWED IN THE LANDSCAPE PLAN.
3. INVASIVE OR NOXIOUS SPECIES, AS IDENTIFIED BY THE DCR INVASIVE SPECIES LIST, AND/OR THE USDA NOXIOUS WEED LIST ARE PROHIBITED.
4. PLANTS SHOULD BE CAPABLE OF TOLERATING WET AND DRY CONDITIONS (WATER MAY POND ABOVE THE SURFACE FOR 24-48 HOURS AFTER A SIGNIFICANT RAIN EVENT). PLANTS SHOULD BE SUITED FOR SUN OR SHADE CONDITIONS AT THE SITE.
5. PLANT SPACING SHOULD BE PER GUIDELINES FOR EACH SPECIES AND SUFFICIENT TO ACHIEVE AT LEAST 80% COVER WITHIN A 3-YEAR PERIOD.
6. DIVERSE PLANT SELECTION IS PREFERRED.
7. SELECT PLANTS WITH GOOD SALT TOLERANCE IF THE BIORETENTION WILL TREAT DRAINAGE FROM PARKING AREAS, STREETS OR DRIVES, OR SNOW PILE STORAGE DRAINAGE WILL BE TREATED.

TABLE 9.4. POPULAR NATIVE PLANT MATERIALS FOR BIORETENTION

Perennials/Herbaceous	Shrubs
Virginia Wild Rye *(Elymus virginicus)*	Common Winterberry *(Ilex verticillatta)*
Redtop Grass *(Agrostis alba)*	Inkberry *(Ilex glabra)*
Swamp Milkweed *(Asclepias incarnata)*	Sweet Pepperbush *(Clethra ainifolia)*
Switchgrass *(Panicum virgatum)*	Wax Myrtle *(Myrica cerifera)*
Cardinal Flower *(Lobelia cardinalis)*	Virginia Sweetspire *(Itea virginica)*
Common Three Square *(Scirpus americanus)*	Swamp Azeala *(Azeala viscosum)*
Sensitive Fern *(Onoclea sensibilis)*	Button Bush *(Cephalanthus occidentalis)*
Blue Flag *(Iris versicolor)*	Black Haw *(Virburnum prunifolium)*
Woolgrass *(Scirpus cyperninus)*	Indigo Bush *(Amorpha fruticosa)*
Indian Grass *(Sorghastrum nutans)*	Arrowwood *(Virburum dentatum)*
Marsh Marigold *(Caltha palustris)*	
Joe Pye Weed *(Eupatorium purpureum)*	
Turk's cap lily (Lilium superbum)	
Bee Balm *(Mornarda didyma)*	
Northern Sea Oats *(Chasmanthium latifolium)*	

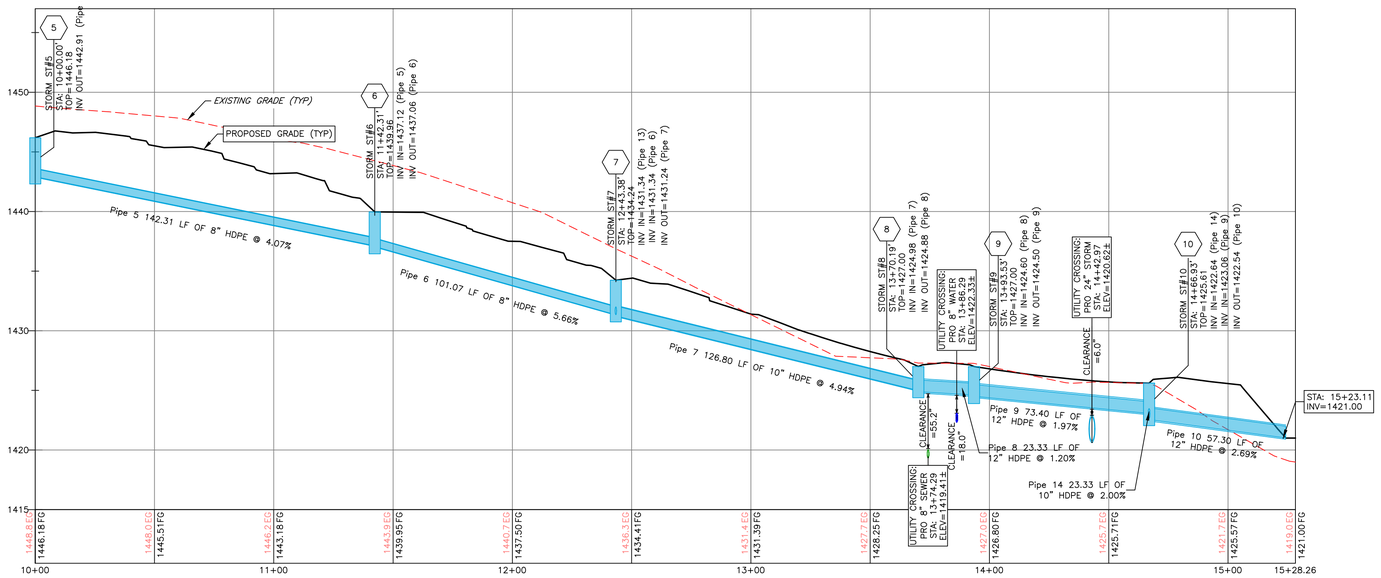
BIORETENTION PLANTING SCHEDULE

BMP NAME	BIORETENTION #1
SHRUBS (MIN. 30" HEIGHT) 10 FT ON CENTER AND	40
GROUND COVER PLUGS (12"-18" ON CENTER) OR	1327
CONTAINER PLANTS (18"-24" ON CENTER) OR	995
PROPORTIONAL COMBINATION OF PLUGS AND CONTAINER PLANTS TO ACHIEVE 80% COVER IN 3 YEARS	

MATERIAL REQUIREMENTS	
RESERVOIR LAYER	CLEAN (WASHED) VDOT#57, NO FINES
CHOKER STONE	CLEAN #8, #78, #89, ¾"- 2" PEA GRAVEL
SOIL MEDIA	FROM CERTIFIED VENDOR PER VA DEQ BIORETENTION SPEC.
SURFACE COVER	HARDWOOD MULCH, RIVER STONE, OR PEA GRAVEL
UNDERDRAIN PIPE	MIN 6" SCH 40 PVC; ¾" Ø HOLES @ 6" O.C.
DRAIN/OUTLET PIPE	MIN 6" SCH 40 PVC
FILTER FABRIC	NONWOVEN; FLOW > 110 GAL/MIN/SF
IMPERMEABLE LINER (IF USED)	30 MIL PVC GEOMEMBRANE LINER
SHRUBS	MIN 30" HIGH WHEN PLANTED
PLANTS	SEE TABLES AND VA DEQ BIORETENTION SPEC.

STORMWATER.dwg Plotted: 4/7/2026 By: CEB

Storm Sewer #1 Profile
SCALE: H:1"=30', V:1"=6'



Storm Sewer #2 Profile
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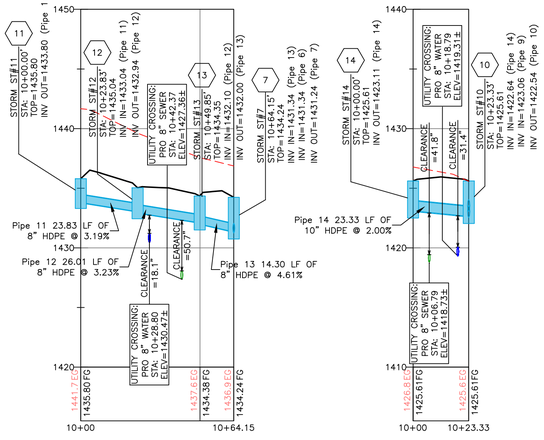

Storm Sewer #3 Profile
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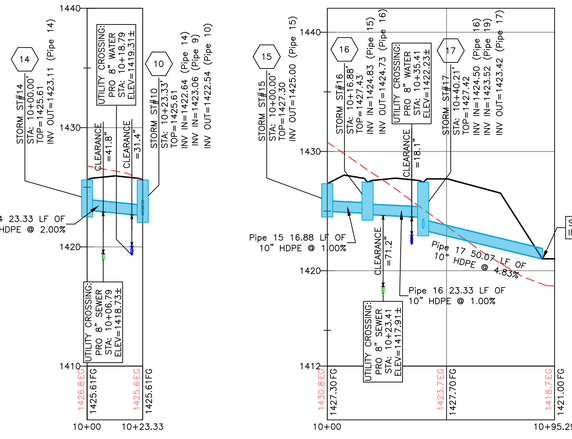

Storm Sewer #4 Profile
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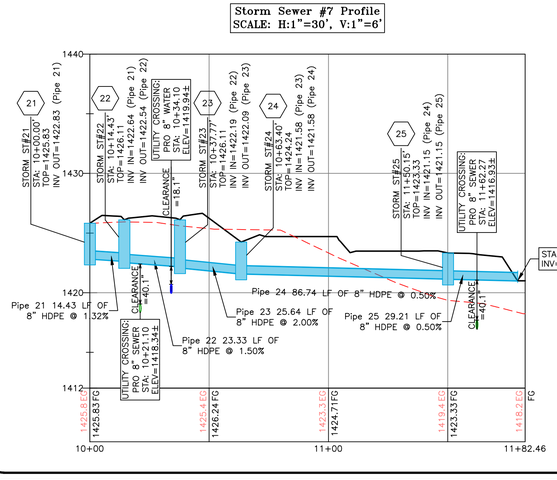
Storm Sewer #5 Profile
SCALE: H:1"=30', V:1"=6'

Storm Sewer #6 Profile
SCALE: H:1"=30', V:1"=6'

Storm Sewer #7 Profile
SCALE: H:1"=30', V:1"=6'



Storm Sewer #8 Profile
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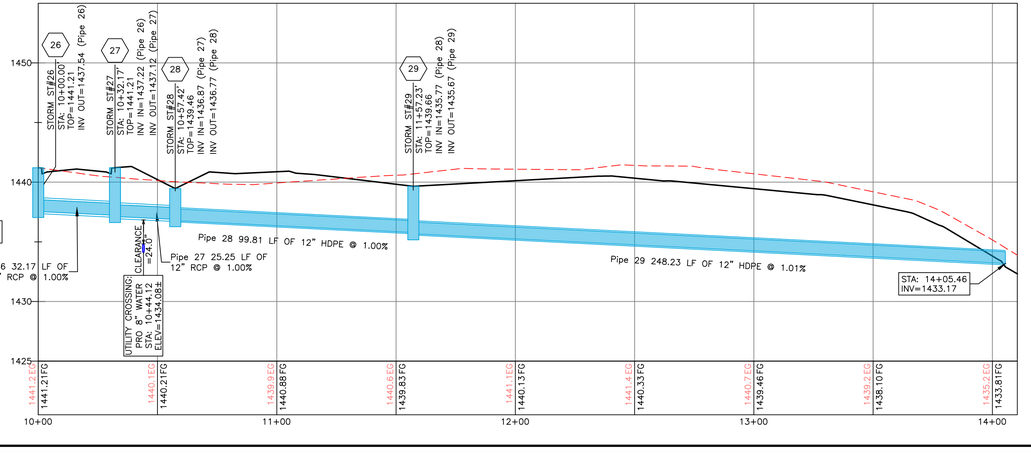
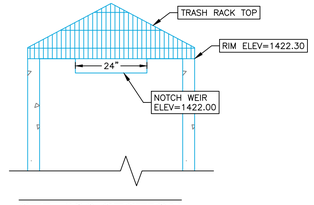


STR #20 SECTION
NTS



STORM PIPE SCHEDULE

PIPE #	LENGTH	SLOPE	SIZE/TYPE
Pipe 5	142.43'	4.07%	8" HDPE
Pipe 6	101.23'	5.66%	8" HDPE
Pipe 7	126.96'	4.94%	10" HDPE
Pipe 8	23.34'	1.20%	12" HDPE
Pipe 9	73.42'	1.97%	12" HDPE
Pipe 10	57.32'	2.69%	12" HDPE
Pipe 11	23.85'	3.19%	8" HDPE
Pipe 12	26.03'	3.23%	8" HDPE
Pipe 13	14.32'	4.61%	8" HDPE
Pipe 14	23.34'	2.00%	10" HDPE
Pipe 15	16.88'	1.00%	10" HDPE
Pipe 16	23.33'	1.00%	10" HDPE
Pipe 17	50.13'	4.83%	10" HDPE
Pipe 18	24.81'	0.94%	10" HDPE
Pipe 19	174.19'	2.55%	10" HDPE
Pipe 20	24.89'	0.50%	24" HDPE
Pipe 21	14.44'	1.32%	8" HDPE
Pipe 22	23.34'	1.50%	8" HDPE
Pipe 23	25.64'	2.00%	8" HDPE
Pipe 24	86.74'	0.50%	8" HDPE
Pipe 25	29.21'	0.50%	8" HDPE
Pipe 26	32.17'	1.00%	12" RCP
Pipe 27	25.26'	1.00%	12" RCP
Pipe 28	99.82'	1.00%	12" HDPE
Pipe 29	248.24'	1.01%	12" HDPE

STORM STRUCTURE SCHEDULE

STR #	TYPE	TOP	IN (FROM)	OUT (TO)
5	24" DRAIN BASIN PEDESTRIAN TOP HEIGHT=3.38'	1446.18		1442.91 (Pipe 5)
6	24" DRAIN BASIN PEDESTRIAN TOP HEIGHT=3.01'	1439.96	1437.12 (Pipe 5)	1437.06 (Pipe 6)
7	24" DRAIN BASIN PEDESTRIAN TOP HEIGHT=3.00'	1434.24	1431.34 (Pipe 13) 1431.34 (Pipe 6)	1431.24 (Pipe 7)
8	24" DRAIN BASIN 2X3 ROLLTOP CURB INLET HEIGHT=2.12'	1427.00	1424.98 (Pipe 7)	1424.88 (Pipe 8)
9	24" DRAIN BASIN 2X3 ROLLTOP CURB INLET HEIGHT=2.61'	1427.00	1424.60 (Pipe 8)	1424.50 (Pipe 9)
10	24" DRAIN BASIN 2X3 ROLLTOP CURB INLET HEIGHT=3.07'	1425.61	1422.64 (Pipe 14) 1423.06 (Pipe 9)	1422.54 (Pipe 10)
11	24" DRAIN BASIN PEDESTRIAN TOP HEIGHT=2.00'	1435.80		1433.80 (Pipe 11)
12	24" DRAIN BASIN 2X3 ROLLTOP CURB INLET HEIGHT=2.10'	1435.04	1433.04 (Pipe 11)	1432.94 (Pipe 12)
13	24" DRAIN BASIN 2X3 ROLLTOP CURB INLET HEIGHT=2.35'	1434.35	1432.10 (Pipe 12)	1432.00 (Pipe 13)
14	24" DRAIN BASIN 2X3 ROLLTOP CURB INLET HEIGHT=2.61'	1425.61		1423.11 (Pipe 14)
15	24" DRAIN BASIN PEDESTRIAN TOP HEIGHT=2.30'	1427.30		1425.00 (Pipe 15)
16	24" DRAIN BASIN 2X3 ROLLTOP CURB INLET HEIGHT=2.70'	1427.43	1424.83 (Pipe 15)	1424.73 (Pipe 16)
17	24" DRAIN BASIN 2X3 ROLLTOP CURB INLET HEIGHT=4.00'	1427.42	1424.50 (Pipe 16) 1423.52 (Pipe 19)	1423.42 (Pipe 17)
18	24" DRAIN BASIN 2X3 ROLLTOP CURB INLET HEIGHT=3.72'	1432.01		1428.29 (Pipe 18)
19	24" DRAIN BASIN 2X3 ROLLTOP CURB INLET HEIGHT=3.33'	1431.29	1428.06 (Pipe 18)	1427.96 (Pipe 19)
20	48" MH TRASH RACK TOP HEIGHT=6.73'	1422.30		1416.57 (Pipe 20)
21	24" DRAIN BASIN PEDESTRIAN TOP HEIGHT=3.00'	1425.83		1422.83 (Pipe 21)
22	24" DRAIN BASIN 2X3 ROLLTOP CURB INLET HEIGHT=3.57'	1426.11	1422.64 (Pipe 21)	1422.54 (Pipe 22)
23	24" DRAIN BASIN 2X3 ROLLTOP CURB INLET HEIGHT=4.01'	1426.11	1422.19 (Pipe 22)	1422.09 (Pipe 23)
24	24" DRAIN BASIN PEDESTRIAN TOP HEIGHT=2.66'	1424.24	1421.58 (Pipe 23)	1421.58 (Pipe 24)
25	24" DRAIN BASIN SOLID TOP HEIGHT=2.18'	1423.33	1421.15 (Pipe 24)	1421.15 (Pipe 25)
26	DI-3B LENGTH=10' HEIGHT=3.67'	1441.21		1437.54 (Pipe 26)
27	DI-3B LENGTH=10' HEIGHT=4.09'	1441.21	1437.22 (Pipe 26)	1437.12 (Pipe 27)
28	DI-1 HEIGHT=2.69'	1439.46	1436.87 (Pipe 27)	1436.77 (Pipe 28)
29	24" DRAIN BASIN PEDESTRIAN TOP HEIGHT=3.99'	1439.66	1435.77 (Pipe 28)	1435.67 (Pipe 29)

Date: 11/6/2025
Scale: 1" = 30'
Designed by: GLC, PE
Drawn by: JDY, PE
Reviewed by: GLC, PE

Revision Dates
1/9/25 Per County
4/7/26 Per Owner

COLMAN ENGINEERING
1123 South High Street | Harrisonburg, VA 22801 | Ph: (540) 246-3712
Email: contact@colmanengineering.com | www.colmanengineering.com

COMMONWEALTH OF VIRGINIA
GUILLERMO L. COLMAN
Lic. No. 045776
4/7/26
PROFESSIONAL ENGINEER

STORMWATER PROFILES

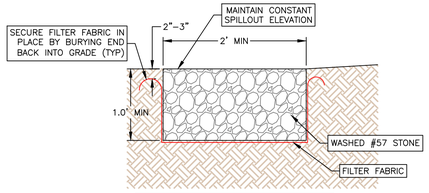
Congers Creek Phase 4
The Townes at Congers Creek LLC
Congers Creek Rd
Rockingham County, VA

Project No.
CE202521

CONSTRUCTION SET

Sheet
C14
of 21 Sheets

STORMWATER.dwg Plotted: 4/7/2026 By: CEB



GRAVEL DIAPHRAGM / LEVEL SPREADER DETAIL

NTS

MAINTENANCE OF GRAVEL DIAPHRAGMS & LEVEL SPREADERS

THE PROPERTY OWNER WILL BE RESPONSIBLE FOR THE MAINTENANCE OF THE LEVEL SPREADERS.

ROUTINE MAINTENANCE:

- Ensure adequate turf cover. Evaluate and eliminate invasive species (weed 2x during growing season). Reseed and straw as needed.
- Ensure runoff flows as designed (runoff flow evenly over vegetated lip or gravel diaphragm, no bypassing or short-circuiting, etc.).
- Remove accumulated sediment (in pooling area and gravel diaphragm; as needed or once every 2-3 years)
- Remove excess leaves. Remove trash, especially from pretreatment and inlet/overflow area. Stabilize any eroded or bare areas, especially overflow route. Fix scoured areas.
- Water plants (as needed).
- Mow grass at least 4 times a year in areas associated with bioretention (pretreatment, outlet, etc.).
- If gravel diaphragm becomes clogged, remove gravel and soil and replace with clean stone.

GRASS CHANNEL CONSTRUCTION SEQUENCE/SCHEDULE

CONSTRUCTION SEQUENCE:
CONSTRUCTION STAGE E&S CONTROLS. GRASS CHANNEL AREAS SHOULD REMAIN OUTSIDE THE LIMITS OF DISTURBANCE DURING CONSTRUCTION TO PREVENT SOIL COMPACTION BY HEAVY EQUIPMENT. HOWEVER, IF THIS IS NOT PRACTICAL, TEMPORARY E&S CONTROLS SUCH AS DIKES, SILT FENCES AND OTHER EROSION CONTROL MEASURES SHOULD BE INTEGRATED INTO THE SWALE DESIGN THROUGHOUT THE CONSTRUCTION SEQUENCE. SPECIFICALLY, BARRIERS SHOULD BE INSTALLED AT KEY CHECK DAM LOCATIONS, AND EROSION CONTROL FABRIC SHOULD BE USED TO PROTECT THE CHANNEL.

GRASS CHANNEL INSTALLATION:
THE FOLLOWING IS A TYPICAL CONSTRUCTION SEQUENCE TO PROPERLY INSTALL A GRASS CHANNEL. THESE STEPS MAY BE MODIFIED TO ADAPT TO DIFFERENT SITE CONDITIONS:

1. CONSTRUCTION OF THE GRASS CHANNEL AREA MAY ONLY BEGIN AFTER THE ENTIRE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED WITH VEGETATION.
2. GRADE THE GRASS CHANNEL TO THE FINAL DIMENSIONS SHOWN ON THE PLAN.
3. INSTALL CHECK DAMS, DRIVEWAY CULVERTS AND INTERNAL PRE-TREATMENT FEATURES AS SHOWN ON THE PLAN. FILL MATERIAL USED TO CONSTRUCT CHECK DAMS SHOULD BE PLACED IN 8- TO 12-INCH LIFTS AND COMPACTED TO PREVENT SETTLEMENT. THE TOP OF EACH CHECK DAM SHOULD BE CONSTRUCTED LEVEL AT THE DESIGN ELEVATION.
4. (OPTIONAL). TILL THE BOTTOM OF THE CHANNEL TO A DEPTH OF 1 FOOT AND INCORPORATE COMPOST AMENDMENTS ACCORDING TO STORMWATER DESIGN SPECIFICATION NO. 4.
5. ADD SOIL AMENDMENTS AS NEEDED, HYDRO-SEED THE BOTTOM AND BANKS OF THE GRASS CHANNEL, AND PEG IN EROSION CONTROL FABRIC OR BLANKET WHERE NEEDED. AFTER INITIAL PLANTING, A BIODEGRADABLE EROSION CONTROL FABRIC SHOULD BE USED, CONFORMING TO STANDARD AND SPECIFICATION 3.36 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK.
6. PREPARE PLANTING HOLES FOR ANY TREES AND SHRUBS, THEN PLANT MATERIALS AS SHOWN IN THE LANDSCAPING PLAN AND WATER THEM WEEKLY IN THE FIRST TWO MONTHS. THE CONSTRUCTION CONTRACT SHOULD INCLUDE A CARE AND REPLACEMENT WARRANTY TO ENSURE VEGETATION IS PROPERLY ESTABLISHED AND SURVIVES DURING THE FIRST GROWING SEASON FOLLOWING CONSTRUCTION.
7. CONTACT ENGINEER FOR FINAL INSPECTION AND CERTIFICATION. ENGINEER SHALL LOG THE GPS COORDINATES FOR EACH GRASS CHANNEL FACILITY AND SUBMIT THEM FOR ENTRY INTO THE LOCAL MAINTENANCE TRACKING DATABASE.

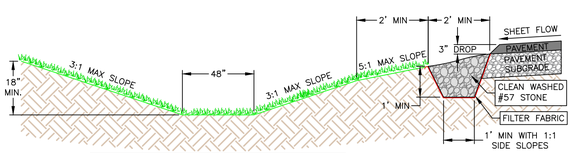
MAINTENANCE OF GRASS CHANNELS

THE PROPERTY OWNER WILL BE RESPONSIBLE FOR THE MAINTENANCE OF THE GRASS CHANNELS.

THE GRASS CHANNELS WILL BE MAINTAINED IN ACCORDANCE WITH THE STORMWATER MANAGEMENT/BMP FACILITIES MAINTENANCE AGREEMENT BETWEEN THE PROPERTY OWNER AND THE COUNTY.

IN ADDITION, THE GRASS CHANNELS WILL BE MAINTAINED IN THE FOLLOWING MANNER:

1. ADD REINFORCEMENT PLANTING TO MAINTAIN 90% TURF COVER. RESEED ANY SALT-KILLED VEGETATION.
2. REMOVE ANY ACCUMULATED SAND OR SEDIMENT DEPOSITS BEHIND CHECK DAMS.
3. INSPECT UPSTREAM AND DOWNSTREAM OF CHECK DAMS FOR EVIDENCE OF UNDERCUTTING OR EROSION, AND REMOVE AND TRASH OR BLOCKAGES AT WEEPHOLES.
4. EXAMINE CHANNEL BOTTOM FOR EVIDENCE OF EROSION, BRAIDING, EXCESSIVE PONDING OR DEAD GRASS.
5. CHECK INFLOW POINTS FOR CLOGGING AND REMOVE ANY SEDIMENT.
6. INSPECT SIDE SLOPES AND GRASS FILTER STRIPS FOR EVIDENCE OF ANY RILL OR GULLY EROSION AND REPAIR.
7. LOOK FOR ANY BARE SOIL OR SEDIMENT SOURCES IN THE CONTRIBUTING DRAINAGE AREA AND STABILIZE IMMEDIATELY.



GRASS CHANNEL SECTION & GRAVEL DIAPHRAGM DETAIL

CONTACT ENGINEER PRIOR TO INSTALLATION OF BMPS

CONSTRUCTION SEQUENCE

CONTRACTOR TO OBTAIN ENGINEER INSPECTION AND APPROVAL FOR EACH PHASE OF WORK BEFORE PROCEEDING. CONTRACTOR TO PROVIDE ENGINEER WITH PHOTO DOCUMENTATION OF EACH PHASE (BUT THIS SHALL NOT BE SUBSTITUTED FOR ENGINEER APPROVAL).

OVERALL CONSTRUCTION SEQUENCING NOTES:
-If possible, minimize disturbance in the bioretention areas during other construction to prevent soil compaction by heavy equipment.
-Bioretention basin locations may be used as sediment traps or basins during construction when specified on the plans. The maximum excavation depth of the sediment trap or basin must be at least 1 foot above the maximum excavation depth of the finished bioretention and the facility must contain an underdrain.

BIORETENTION CONSTRUCTION SEQUENCE

1. Prepare the bioretention area for excavation.
   - 1.1. Have utilities marked (utilities shown on the plans are only approximate).
   - 1.2. Stake out area of excavation and installation for all proposed work. Verify elevations of inlet locations or pipes.
   - 1.3. As needed, divert incoming water around the bioretention area to an outlet area not prone to erosion during construction.
   - 1.4. Install required erosion and sediment control measures. Stabilize upstream areas to the extent possible before construction.
2. Hold pre-construction meeting with design engineer. Review and confirm stake out area and elevations. Review construction sequence and any site- or project- specific requirements.

>Obtain Engineer Approval on Preconstruction Meeting and Stakeout

3. Excavate all areas of work per plan, including berms or other fill. Coordinate with Engineer if not all excavation will be ready for inspection at one visit. To the extent possible, equipment should remain outside of the bioretention footprint (unless a liner will be used).
4. Excavate and isolate pre-treatment cells first if they will be used as sediment trapping measures during construction.
5. Unless there is an impermeable liner specified, it may be necessary to rip the base of the bioretention excavation to a depth of 6 to 12 inches to improve infiltration.

>Obtain Engineer Approval on Excavation

6. Install any geotextile and impermeable liners specified for the bottom of the excavation. Overlap filter fabric joints 6 in min. Glue joints of impermeable liner. Seal any outlet or inlet pipe penetrations to liner or geotextile (use boots or fittings as needed for pipes and liner). Document installation of liner and obtain engineer approval before proceeding.
7. Install reservoir layer stone up to the elevation required to support the underdrain pipe.
8. Install underdrain, inlet structures, and pipes. Yard inlet pipes and cleanouts may be installed longer than required and cut to length later. Mound reservoir layer stone 2" over underdrain and drain pipes.

>Obtain Engineer Approval on Underdrain, Geotextiles, and Reservoir

9. Install remainder of reservoir layer.
10. Install choker stone layer. Install filter fabric over choker stone only over perforated underdrain pipes (strip of fabric centered on pipe).

>Obtain Engineer Approval on Choker Stone and Filter Fabric

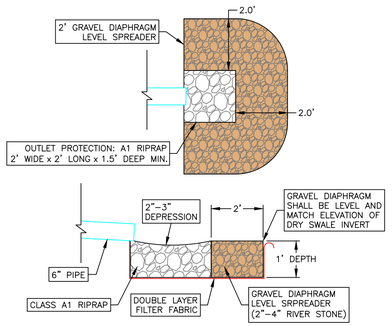
11. Install any pretreatment measures (gravel diaphragm, outlet protection, etc.), if not already installed, and perform any work required at the outlet.
12. Install soil media. Media must be from an approved vendor. Install in 12 in lifts and lightly consolidate. Install to 10% higher than specified height to allow for settling. Protect soil media stockpiles from contamination with silt and sediment.

>Obtain Engineer Approval on Media, Pretreament, and Outlet

13. Install surface cover (mulch, pea gravel, etc.).
14. Complete any work remaining on pretreatment, yard inlets (cut to length, if not already), outlets, and stabilization of surrounding area (seed/straw, sod, pavement restoration, etc.).
15. Plant bioretention with plants. Consult with owner for plant selection. See specifications for allowable species. Plants should be in good condition and be of adequate size to survive transplant and provide required cover in specified time period. Consult species specific planting guides for recommendations.

>Obtain Engineer Approval on Surface Cover, Plants, Stabilization, Any Remaining Work

16. Water plants as required per species to ensure survival and growth (e.g. weekly during growing season for first 2 months, depending on rainfall). Water grass and sod areas and restore washed out or damaged areas as needed to establish turf.



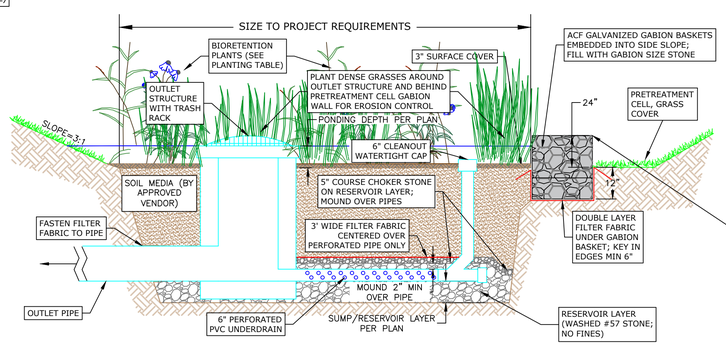
GRAVEL FLOW SPREADER DETAIL

NTS

GRASS CHANNEL INFORMATION TABLE	
BMP NAME	GRASS CHANNEL #1
TOTAL ACRES TREATED	1.44
IMPERVIOUS ACRES TREATED	0.14
PERVIOUS ACRES TREATED (HSG 'B')	1.03
PERVIOUS ACRES TREATED (HSG 'C')	0.27
PHOSPHORUS REMOVED (LB/YR)	0.33
GEOGRAPHIC COORDINATES	LAT: 38°24'02.66"N LONG: 78°50'38.07"W
GRASS CHANNEL DESIGN DIMENSIONS	
DEPTH	18"
BOTTOM WIDTH	48"
SIDE SLOPES	3:1
LONGITUDINAL SLOPE	4.0%
LENGTH	312'

EMBANKMENT AND FILL/BACK-FILL MATERIAL NOTES

1. ALL MATERIALS USED FOR FILL OR BACK-FILL SHALL BE FREE OF WOOD, ROOTS, ROCKS, BOULDERS OR ANY OTHER NON COMPATIBLE SOIL TYPE MATERIAL. UNSATISFACTORY MATERIALS ALSO INCLUDE MAN-MADE FILLS AND REFUSE DEBRIS DERIVED FROM ANY SOURCE.
2. SATISFACTORY MATERIAL FOR USE AS FILL FOR DRIVE AREAS INCLUDE MATERIAL CLASSIFIED IN ASTM D-2487 AS GW, GP, GM, GC,SW,SP SM. SC, ML AND CL GROUPS. THE MOISTURE CONTENT SHALL BE CONTROLLED WITHIN PLUS OR MINUS 2 PERCENTAGE POINTS OF OPTIMUM TO FACILITATE COMPACTION. GENERALLY, UNSATISFACTORY MATERIALS INCLUDE MATERIALS CLASSIFIED IN ASTM D-2487 AS PT, CH, MH, OL, OH, AND ANY SOIL SOIL TOO WET TO FACILITATE COMPACTION. CH AND MH SOILS MAY BE USED SUBJECT TO APPROVAL OF THE ENGINEER. SOILS SHALL HAVE A MINIMUM DRY DENSITY OF 92 LB. /CU.FT. PER ASTM D-698 AND SHALL HAVE A LIQUID LIMIT LESS THAN 17.
3. MATERIALS USED TO CONSTRUCT EMBANKMENTS FOR ANY PURPOSE, BACK-FILL AROUND DRAINAGE STRUCTURES OR IN UTILITY TRENCHES OR ANY OTHER DEPRESSION REQUIRING FILL OR BACK-FILL SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY AS DETERMINED BY THE STANDARD PROCTOR TEST AS SET OUT IN ASTM STANDARD D-698.
4. ALL EXCAVATIONS, INCLUDING TRENCHES, SHALL BE KEPT DRY TO PROTECT THEIR INTEGRITY.



BIORETENTION (LEVEL 2) DETAIL

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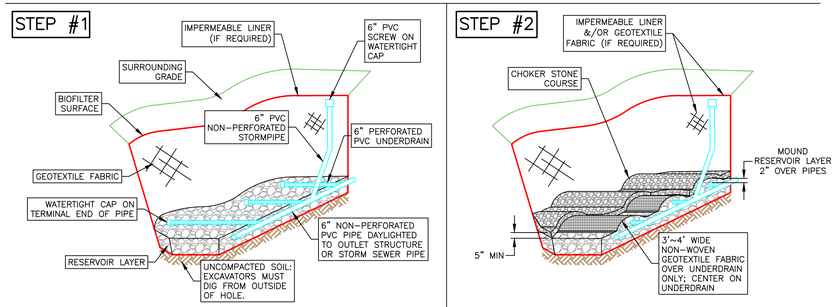


BIORETENTION CONSTRUCTION SEQUENCE

NTS

MAINTENANCE OF BIORETENTIONS

THE PROPERTY OWNER WILL BE RESPONSIBLE FOR THE MAINTENANCE OF THE BIORENTENTION(S).

ROUTINE MAINTENANCE:

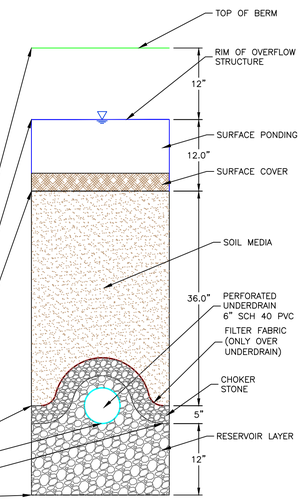
- Ensure adequate plant survival. Evaluate and eliminate invasive species (weed 2x during growing season). Remove any dead or diseased plants. Dead-head flowers. Replant vegetation as needed (to maintain density/cover and achieve 80% plant cover of the bioretention area in the first 3 years).
- Ensure runoff flows as designed (inlets and outlets functioning, no bypassing or short-circuiting, etc.). Check rodent screens for damage or blockage and repair or clean as needed.
- Remove accumulated sediment (in pretreatment, bioretention, and outlet; as needed or once every 2-3 years)
- Remove excess leaves. Remove trash, especially from pretreatment and inlet/overflow area. Stabilize any eroded or bare areas, especially overflow route. Fix scoured areas. Stabilize contributing drainage area (pavement or turf) as needed to prevent sediment entering bioretention.
- Water plants (as needed).
- Reapply mulch/surface cover (as needed annually to maintain 3" layer; replace every 3 years if wood mulch is used).
- Mow grass at least 4 times a year in areas associated with bioretention (pretreatment, outlet, etc.).
- IMPORTANT: Maintain height and integrity of berm or wall, etc. sufficient to hold water at design elevations. Carefully inspect berm and grate of inlet structure after every significant rainfall event. Clear clogs and repair erosion and low spots in berm as needed to maintain design elevations.
- See other Maintenance guidance in VA DCR STORMWATER DESIGN SPECIFICATION NO. 9 BIORETENTION

CORRECTIVE MAINTENANCE:

- If standing water covers more than 15% of the bioretention surface 48 hours after a storm event or if the system does not drain completely within 72 hours after a storm event, check underdrains and drain pipe for clogs. If clear, inspect filter media. If top has a crust or is discolored, remove the mulch/surface cover and top few inches of discolored filter medial and till or rake the top of the remaining filter media. Preserve plants if possible, replace if needed. Install new media up to the original design elevation. Install new surface cover to the original design elevation. If standing water still does not drain, replace media and reservoir and choker stone layers (if needed based on sediment accumulation or improper installation). Consult with engineer before replacing media.

BIORETENTION WSE TABLE	
1-YEAR STORM	1421.85
2-YEAR STORM	1422.06
10-YEAR STORM	1422.41
100-YEAR STORM	1422.97

BIORETENTION INFORMATION TABLE	
BMP NAME	BIORETENTION #1
TOTAL ACRES TREATED	3.618
IMPERVIOUS ACRES TREATED	1.953
PERVIOUS ACRES TREATED (HSG 'B')	1.647
PERVIOUS ACRES TREATED (HSG 'C')	0.018
PHOSPHORUS REMOVED (LB/YR)	2.52
GEOGRAPHIC COORDINATES	LAT: 38°24'01.10"N LONG: 78°50'39.31"W
BIORETENTION DESIGN ELEVATIONS	
TOP OF BERM	1423.00
GABION BASKET TOP	1423.00
INLET STRUCTURE RIM	1422.00
TOP OF FILTER MEDIA	1421.00
TOP OF CHOKER STONE	1418.00
UNDERDRAIN INVERT	1417.58
TOP OF STONE SUMP	1417.58
BOTTOM OF STONE SUMP	1416.58



BIORETENTION TYPICAL SECTION

NTS

Date:	11/6/2025
Scale:	########
Designed by:	GLC, PE
Drawn by:	JDY, PE
Reviewed by:	GLC, PE

Revision Dates
1/9/25 Per County
4/7/26 Per Owner

COLMAN ENGINEERING
1123 South High Street | Harrisonburg, VA 22801 | Ph: (540) 246-3712
Email: contact@colmanengineering.com | www.colmanengineering.com

COMMONWEALTH OF VIRGINIA — GUILLERMO L. COLMAN — Lic. No. 045776 — 4/7/26 — PROFESSIONAL ENGINEER

STORMWATER DETAILS

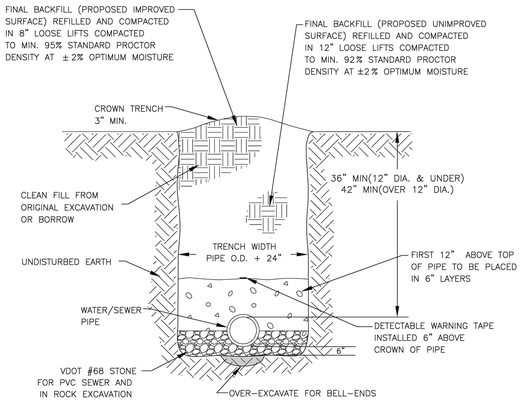
Congers Creek Phase 4
The Townes at Congers Creek LLC
Congers Creek Rd
Rockingham County, VA

Project No.
CE202521

CONSTRUCTION SET

Sheet
C15
of 21 Sheets

STORMWATER.dwg Plotted: 4/7/2026 By: CEB



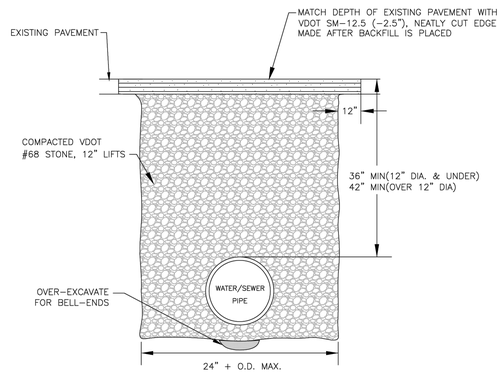
REVISIONS			
DATE	BY		
08/31/09	RNJ		
DATE: 09/01/04	BY: P.H.S.		
APPR:	BY:		

TRENCH BACKFILL/BEDDING

ROCKINGHAM COUNTY
DEPARTMENT OF PUBLIC WORKS
STANDARD DETAIL

SCALE: None

W 6.0



NOTE: IF NO PAVEMENT IS PROVIDED ON A DRIVEWAY OR ROAD, PLACE 6" MIN VDOT #21A STONE AS A TOP COURSE.

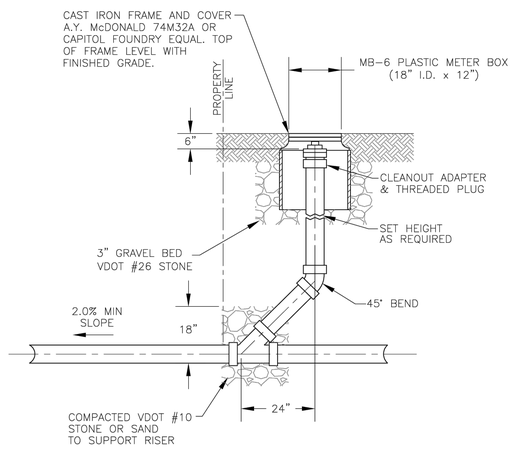
REVISIONS			
DATE	BY		
DATE: 09/01/04	BY: P.H.S.		
APPR:	BY:		

DRIVEWAY/ROAD REPAIR

ROCKINGHAM COUNTY
DEPARTMENT OF PUBLIC WORKS
STANDARD DETAIL

SCALE: None

W 7.0



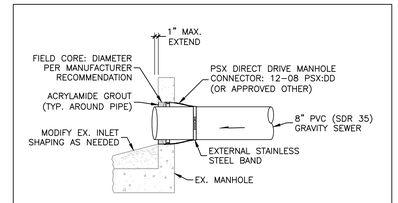
REVISIONS			
DATE	BY		
DATE: 01/07/05	BY: R.A.S.		
APPR:	BY:		

SANITARY CLEANOUT

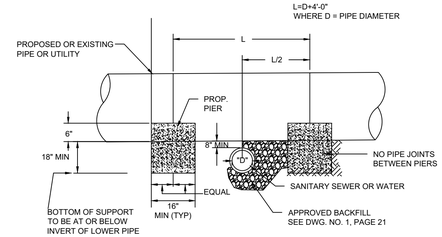
ROCKINGHAM COUNTY
DEPARTMENT OF PUBLIC WORKS
STANDARD DETAIL

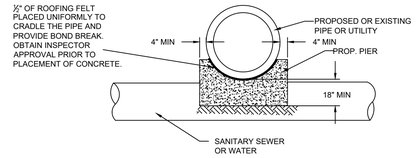
SCALE: None

S 1.0



SANITARY SEWER – MANHOLE CONNECTION
SCALE: NTS

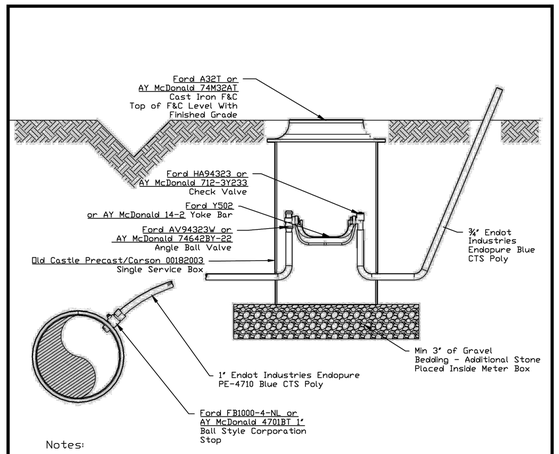




NOTE:

1. PIER ONLY WHEN LARGE DIAMETER PIPE (15" OR LARGER) CROSSES OVER SANITARY SEWER OR WATER, WITH VERTICAL CLEARANCE OF LESS THAN 18". IF UPPER PIPE IS 30" OR LARGER A CASING DESIGN IS REQUIRED FOR WATER OR SANITARY SEWER PIPE BELOW; AS VERTICAL CLEARANCE FOR A CASING SHOULD BE DETERMINED BASED ON STRUCTURAL REQUIREMENTS FOR DEFLECTION.
2. PIER TO BE BUILT ON UNDISTURBED EARTH. CONCRETE TO BE CLASS "A3"
3. REFER TO NOTES FOR SEPARATION OF WATER MAINS AND SEWERS ON STANDARD DRAWING NO. 18

CONCRETE PIER FOR UTILITY AND PIPE CROSSINGS NOT TO SCALE



Notes:

-All lines and services to have a minimum of 36" of cover from finished grade and/or ditch line.

-Centerline of meter connection (meter yoke) should be no more than 18 inches from top of meter box and no less than 12 inches from top of box

-Touch-read hole in F&C to be plugged by contractor with an appropriate cast iron plug

-Meter to be supplied by Rockingham County

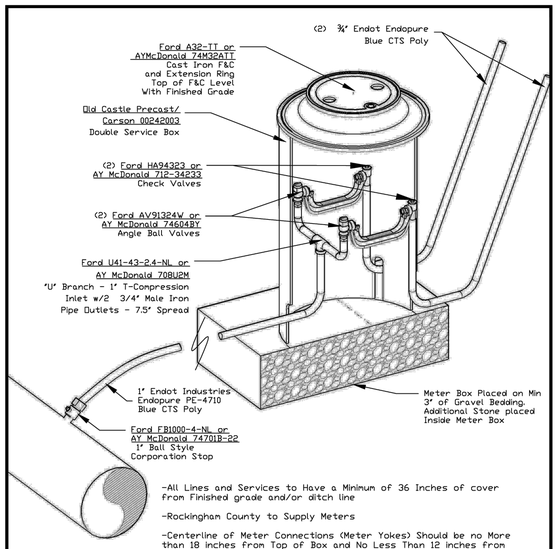
REVISIONS			
DATE	BY		
12-17-14	NAP		
DATE: 5/19/10	BY: NAP		
APPR:	BY:		

Single Meter Set

ROCKINGHAM COUNTY
DEPARTMENT OF PUBLIC WORKS
STANDARD DETAIL

SCALE: None

W 3.0



-All Lines and Services to Have a Minimum of 36 Inches of cover from Finished grade and/or ditch line

-Rockingham County to Supply Meters

-Centerline of Meter Connections (Meter Yokes) Should be no More than 18 inches from Top of Box and No Less Than 12 inches from Top of Box

-Touch-read Holes in Frame and Cover to be Plugged by Contractor with Appropriate Cast Iron Plugs.

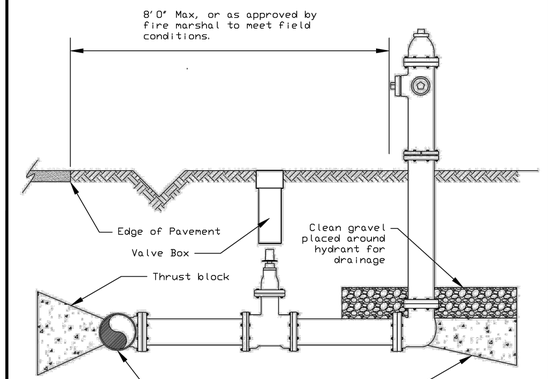
REVISIONS			
DATE	BY		
12-17-14	NAP		
DATE: 5/23/10	BY: NAP		
APPR:	BY:		

Double Meter Set

ROCKINGHAM COUNTY
DEPARTMENT OF PUBLIC WORKS
STANDARD DETAIL

SCALE: None

W 3.1



* Approved Kennedy Hydrant Assembly or American Darling
* The use of mechanical joint restraints (Megalug or equivalent) are required at all fittings
* 3000 psi concrete thrust blocks to be placed at all tees and bends.
* Foster type adapters may be used in lieu of spool pieces where space is a factor.

REVISIONS			
DATE	BY		
1/5/11	NAP		
8/17/16	ELS		
DATE: 5/24/10	BY: NAP		
APPR:	BY:		

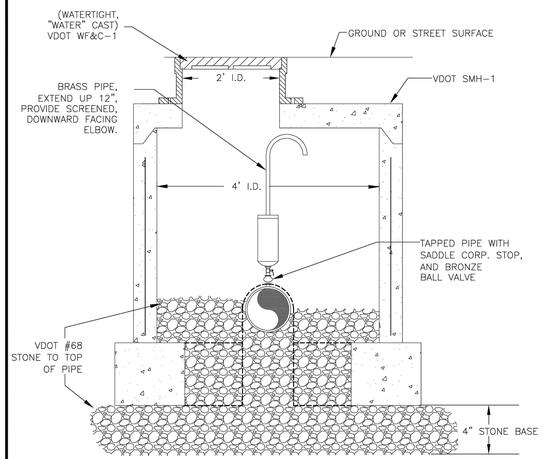
Fire Hydrant Detail - Edge of Pavement

ROCKINGHAM COUNTY
DEPARTMENT OF PUBLIC WORKS
STANDARD DETAIL

SCALE: None

FH 1.0

NOTES:
1. AIR RELEASE VALVE SHALL BE CRISPIN OR VAL-MATIC AND SHALL BE OF THE COMBINATION (AIR/VACUUM AND AIR RELEASE) TYPE. ORIFICE AND TAP DIAMETERS SHALL BE SIZED PER LOCATION-SPECIFIC WORKING PRESSURE.
2. THIS DETAIL SHALL NOT BE USED IN AREAS OF HIGH GROUNDWATER. SHOULD EVIDENCE OF HIGH GROUNDWATER BE FOUND DURING CONSTRUCTION, ENGINEER SHALL BE NOTIFIED FOR MODIFICATIONS.
3. PIPE AND ELBOW SHALL BE LOCATED CLEAR OF THE LID ARC AREA, AND SUCH THAT ACCESS FOR MAINTENANCE IS NOT INHIBITED.



REVISIONS			
DATE	BY		
DATE: 09/01/04	BY: P.H.S.		
APPR:	BY:		

AIR RELEASE VALVE/VAULT

ROCKINGHAM COUNTY
DEPARTMENT OF PUBLIC WORKS
STANDARD DETAIL

SCALE: None

W 4.0

Date:	11/6/2025
Scale:	None
Designed by:	GLC, PE
Drawn by:	JDY, PE
Reviewed by:	GLC, PE

Revision Dates
1/9/25 Per County
4/7/26 Per Owner

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COMMONWEALTH OF VIRGINIA GUILLERMO L COLMAN Lic. No. 045776 4/7/26 PROFESSIONAL ENGINEER

SITE DETAILS-1

Congers Creek Phase 4
The Townes at Congers Creek LLC
Congers Creek Rd
Rockingham County, VA

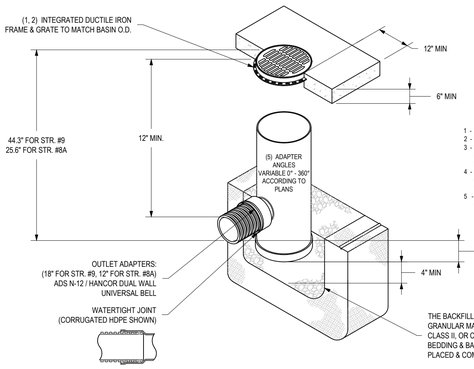
Project No.
CE202521

CONSTRUCTION SET

Sheet
C16
of 21 Sheets

DETAILS.dwg Printed: 4/7/2026 By: CEB

NYLOPLAST 24" DRAIN BASIN: 2824AG 5

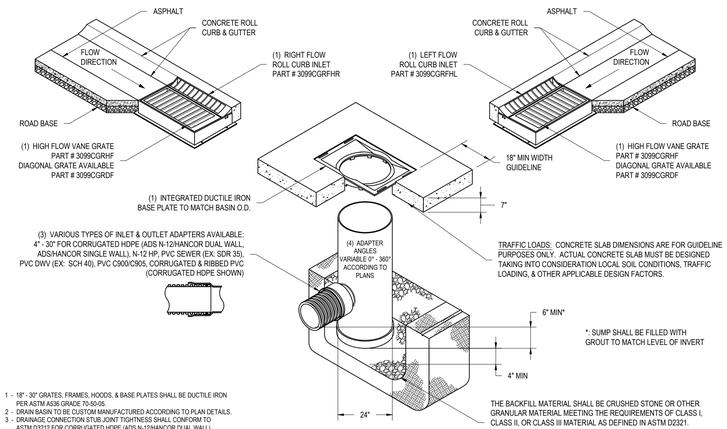


GRATE OPTIONS	LOAD RATING	PART #	DRAWING #
PEDESTRIAN	MEETS H-10	2499CGP	7001-110-216
STANDARD	MEETS H-20	2499CGS	7001-110-217
SOLID COVER	MEETS H-20	2499CSC	7001-110-218
DOME	N/A	2499CGD	7001-110-219
DROP IN GRATE	LIGHT DUTY	2401DI	7001-110-075

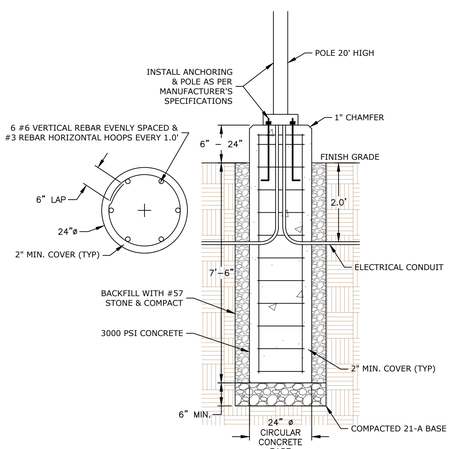
1 - GRATES/SOLID COVER SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
2 - FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
3 - DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 84" DUE TO SHIPPING RESTRICTIONS. SEE DRAWING NO. 7001-110-065.
4 - DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL), N-12 HP & PVC SEWER.
5 - ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°. TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012.

THE BACKFILL MATERIAL SHALL BE CRUSHED STONE OR OTHER GRANULAR MATERIAL MEETING THE REQUIREMENTS OF CLASS I, CLASS II, OR CLASS III MATERIAL AS DEFINED IN ASTM D2321. BEDDING & BACKFILL FOR SURFACE DRAINAGE INLETS SHALL BE PLACED & COMPACTED UNIFORMLY IN ACCORDANCE WITH ASTM D2321.

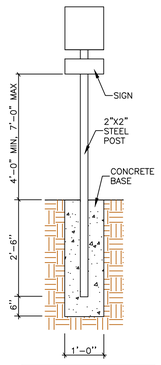
NYLOPLAST 2' X 3' ROLL CURB INLET STRUCTURE 30 24 AGR 5



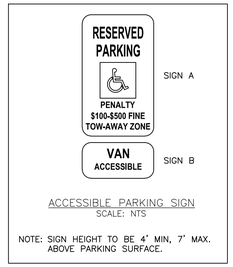
1 - 18" - 30" GRATES, FRAMES, HOODS, & BASE PLATES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
2 - DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS.
3 - DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL), N-12 HP, & PVC SEWER (4" - 24").
4 - ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°. TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012.
5 - VARIABLE INVERT HEIGHTS AVAILABLE (ACCORDING TO PLANS/TAKE OFF).
6 - MINIMUM PIPE BURIAL DEPTH PER PIPE MANUFACTURER RECOMMENDATION (MIN. MANUFACTURING REQ. SAME AS MIN. SUMP).
7 - ALL ROLL CURB INLET GRATE OPTIONS (DIAGONAL & HIGH FLOW) SHALL MEET H-20 LOAD RATING.



LIGHT POLE BASE DETAIL
NTS



SIGN POLE DETAIL
NTS

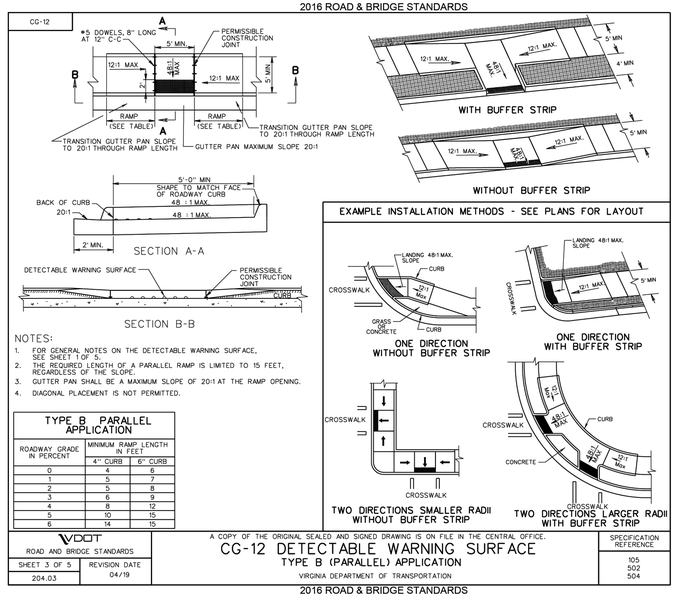


ACCESSIBLE PARKING SIGN
SCALE: NTS

NOTE: SIGN HEIGHT TO BE 4' MIN, 7' MAX. ABOVE PARKING SURFACE.

2016 ROAD & BRIDGE STANDARDS

CG-12



NOTES:
1. FOR GENERAL NOTES ON THE DETECTABLE WARNING SURFACE, SEE SHEET 1 OF 5.
2. THE REQUIRED LENGTH OF A PARALLEL RAMP IS LIMITED TO 15 FEET, REGARDLESS OF THE SLOPE.
3. GUTTER PAN SHALL BE A MAXIMUM SLOPE OF 20:1 AT THE RAMP OPENING.
4. DIAGONAL PLACEMENT IS NOT PERMITTED.

TYPE B PARALLEL APPLICATION

ROADWAY GRADE IN PERCENT	MINIMUM RAMP LENGTH IN FEET	
	4" CURB	6" CURB
0	4	6
1	5	7
2	5	8
3	6	9
4	8	12
5	10	15
6	14	15

VDOT
ROAD AND BRIDGE STANDARDS

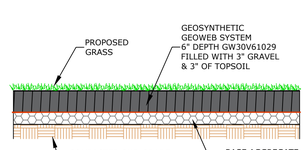
SHEET 3 OF 5	REVISION DATE
204.03	04/19

A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.

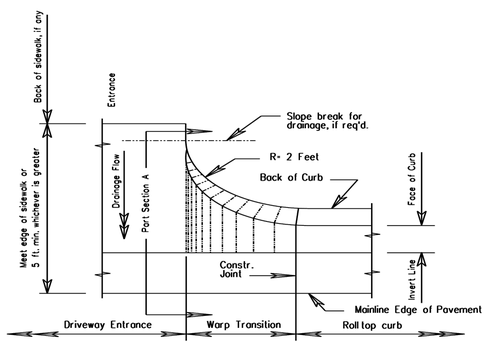
CG-12 DETECTABLE WARNING SURFACE
TYPE B (PARALLEL) APPLICATION
VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE
105
502
504

2016 ROAD & BRIDGE STANDARDS



GREEN PARKING / GEOWEB SECTION
NTS

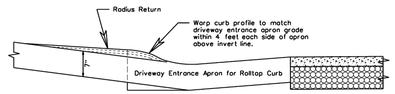


Part Plan of Entrance Transition

FIGURE 7 - ROLL TOP CURB ENTRANCE DETAIL

PRIVATE ENTRANCE DETAIL
FOR ROLLTOP CURB & GUTTER
SCALE: NTS

NOTE: FIGURES FROM VDOT APPENDIX B – SUBDIVISION STREET DESIGN GUIDE



Part Section A

FIGURE 8 ROLLTOP CURB ENTRANCE DETAIL SECTION

Date:	11/6/2025
Scale:	None
Designed by:	GLC, PE
Drawn by:	JDY, PE
Reviewed by:	GLC, PE

Revision Dates
1/9/25 Per County
4/7/26 Per Owner

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SITE DETAILS-2

Congers Creek Phase 4
The Townes at Congers Creek LLC
Congers Creek Rd
Rockingham County, VA

Project No.
CE202521

CONSTRUCTION SET

Sheet
C17
of 21 Sheets

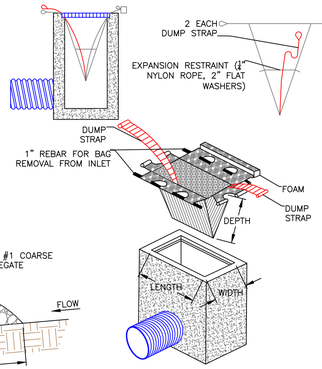
DETAILS.dwg Plotted: 4/7/2026 By: CEB

E&SC LEGEND

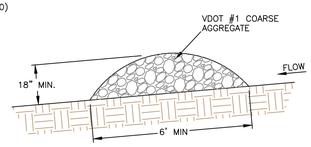
##X	SOIL TYPE
	EXISTING CONTOURS
	PROPOSED CONTOURS
	PROPOSED DITCH OR SWALE
+ ##.# FG	PROPOSED SPOT ELEVATION
	EXISTING DRAINAGE FLOW
	PROPOSED DRAINAGE FLOW
CE	CONSTRUCTION ENTRANCE (C–SCM–03; VESCH 3.02)
CRS	CONSTRUCTION ROAD STABILIZATION (3.03)
SF	SILT FENCE (C–PCM–04; VESCH 3.05)
IP	INLET PROTECTION (C–SCM–04; VESCH 3.07)
CIP	CULVERT INLET PROTECTION (C–SCM–05; VESCH 3.08)
DD	DIVERSION DIKE (C–ECM–04; VESCH 3.09)
FD	TEMPORARY FILL DIVERSION (C–ECM–04; VESCH 3.10)
RWD	RIGHT OF WAY DIVERSION (C–ECM–07; VESCH 3.11)
ST	SEDIMENT TRAP (C–SCM–11; VESCH 3.13)
SB	SEDIMENT BASIN (C–SCM–12; VESCH 3.14)
PF	PAVED FLUME (C–ECM–11; VESCH 3.16)
OP	OUTLET PROTECTION (C–ECM–15; VESCH 3.18)
CD	ROCK CHECK DAMS (C–SCM–07; VESCH 3.20)
LS	LEVEL SPREADER (C–ECM–14; VESCH 3.21)
TO	TOPSOILING (C–SSM–02; VESCH 3.30)
TS	TEMPORARY SEEDING (C–SSM–09; VESCH 3.31)
PS	PERMANENT SEEDING (C–SSM–10; VESCH 3.32)
SO	SODDING (C–SSM–06; VESCH 3.33)
MU	MULCHING (C–SSM–11; VESCH 3.35)
BM	SOIL STABILIZATION BLANKETS AND MATTING (C–SSM–05; VESCH 3.36)
DC	DUST CONTROL (C–SCM–01; VESCH 3.39)
LDA	DISTURBED AREA

NUMBERS IN PARENTHESES REFER TO VESCH MEASURES

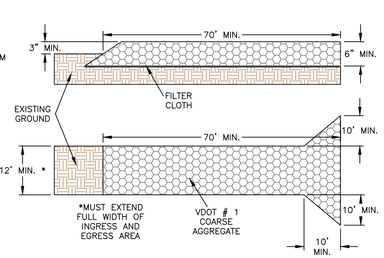
BEFORE YOU DIG CALL
MISS UTILITY
1-800-552-7001



SILT SAC DETAIL
NTS

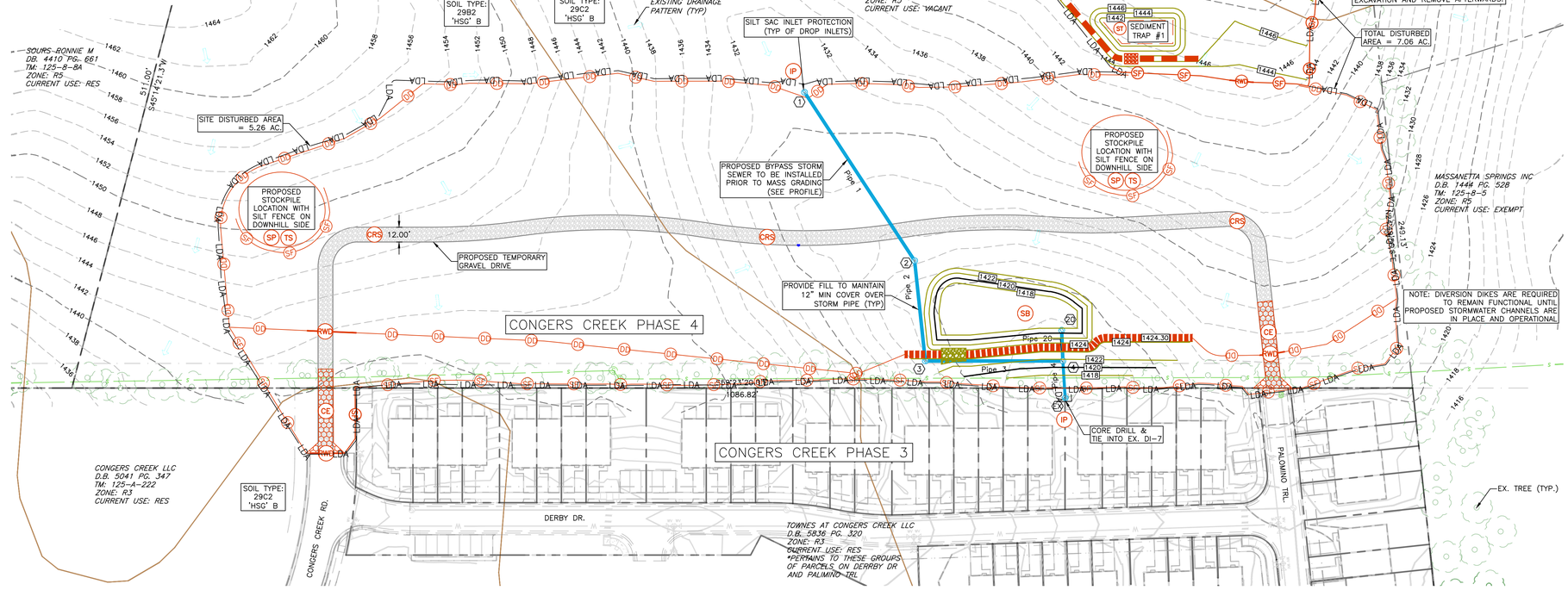


RIGHT-OF-WAY DIVERSION
NTS

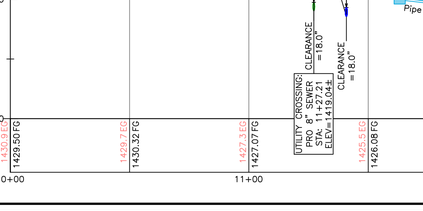


STONE CONSTRUCTION ENTRANCE
NTS

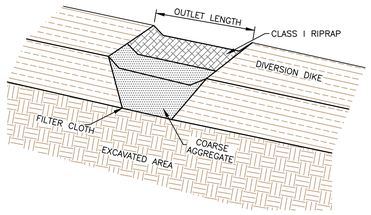
SEDIMENT TRAP TABLE	
SEDIMENT TRAP	#1
DRAINAGE AREA (AC)	1.80
OUTLET LENGTH (FT)	11.00
TOP WIDTH (FT)	4.50
TOP ELEVATION	1446.00
OUTLET ELEVATION	1445.00
HEIGHT (FT)	4.00
BOTTOM WIDTH (FT)	28.00
BOTTOM LENGTH (FT)	60.00
BOTTOM ELEVATION	1441.00
MIN. WET STORAGE (CF)	3284.00
MIN. DRY STORAGE (CF)	3404.00
TOP OF WET STORAGE ELEV.	1443.30
TOP OF DRY STORAGE ELEV.	1445.00
C.O. LEVEL FROM BOTTOM (FT)	1.20



TEMPORARY SEDIMENT TRAP

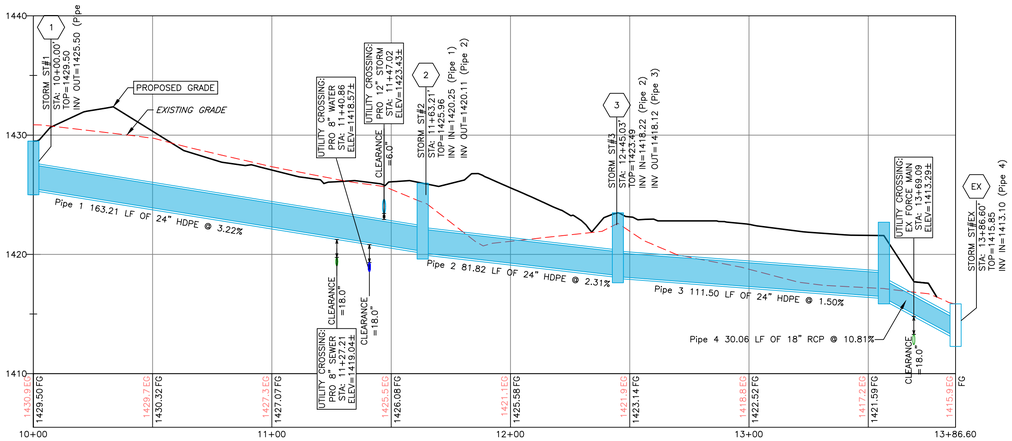


CROSS-SECTION AT OUTLET



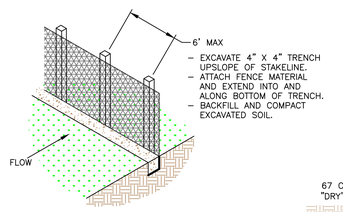
OUTLET (PERSPECTIVE VIEW)
COARSE AGGREGATE SHALL BE VDOT #3, #357, OR #5

Bypass Culvert Profile
SCALE: H:1"=30', V:1"=6'

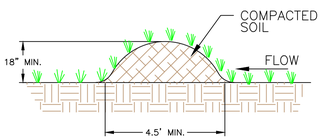


STORM STRUCTURE SCHEDULE				
STR #	TYPE	TOP	IN (FROM)	OUT (TO)
EX	EX 48" MH HEIGHT=3.07'	1415.85	1413.10 (Pipe 4)	
1	DI–7 HEIGHT=4.00'	1429.50		1425.50 (Pipe 1)
2	48" MH HEIGHT=5.85'	1425.96	1420.25 (Pipe 1)	1420.11 (Pipe 2)
3	48" MH HEIGHT=5.37'	1423.49	1418.22 (Pipe 2)	1418.12 (Pipe 3)
4	48" MH HEIGHT=6.35'	1422.70	1416.45 (Pipe 3) 1416.45 (Pipe 20)	1416.35 (Pipe 4)

STORM PIPE SCHEDULE			
PIPE #	LENGTH	SLOPE	SIZE/TYPE
Pipe 1	163.30'	3.22%	24" HDPE
Pipe 2	81.84'	2.31%	24" HDPE
Pipe 3	111.51'	1.50%	24" HDPE
Pipe 4	30.24'	10.81%	18" RCP



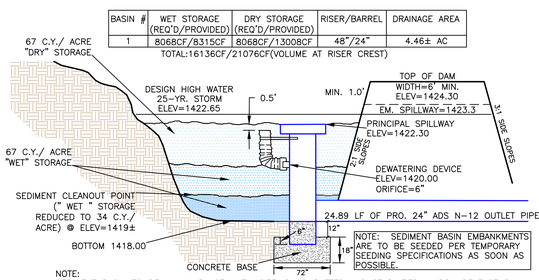
SILT FENCE
(SHEET FLOW PROTECTION)
NTS



DIVERSION DIKE
S2105
(NOT TO SCALE)

BASIN #	WET STORAGE (REQ'D/PROVIDED)	DRY STORAGE (REQ'D/PROVIDED)	RISER/BARREL	DRAINAGE AREA
1	8068CF/8315CF	8068CF/13008CF	48"/24"	4.46± AC

TOTAL:16136CF/21076CF(VOLUME AT RISER CREST)



NOTE:
SEDIMENT BASIN TO REMAIN IN PLACE UNTIL SITE IS COMPLETED AND STABILIZED. UPON RELEASE BY COUNTY ADMINISTRATOR, BASIN 1 IS TO BE REMOVED AND THE BIORETENTION FILTER IS TO BE COMPLETED AS SPECIFIED ON THE STORMWATER MANAGEMENT PLAN AND STORMWATER MANAGEMENT CALCULATIONS.

SEDIMENT BASIN #1
NTS

Date: 11/6/2025
Scale: 1" = 50'
Designed by: GLC, PE
Drawn by: JDY, PE
Reviewed by: GLC, PE

Revision Dates
1/9/25 Per County
4/7/26 Per Owner

COLMAN ENGINEERING
1123 South High Street | Harrisonburg, VA 22801 | Ph: (540) 246-3712
Email: contact@colmanengineering.com | www.colmanengineering.com

COMMONWEALTH OF VIRGINIA
GUILLERMO L. COLMAN
Lic. No. 045776
4/7/26
PROFESSIONAL ENGINEER

EROSION & SEDIMENT CONTROL PHASE 1

Congers Creek Phase 4
The Townes at Congers Creek LLC
Congers Creek Rd
Rockingham County, VA

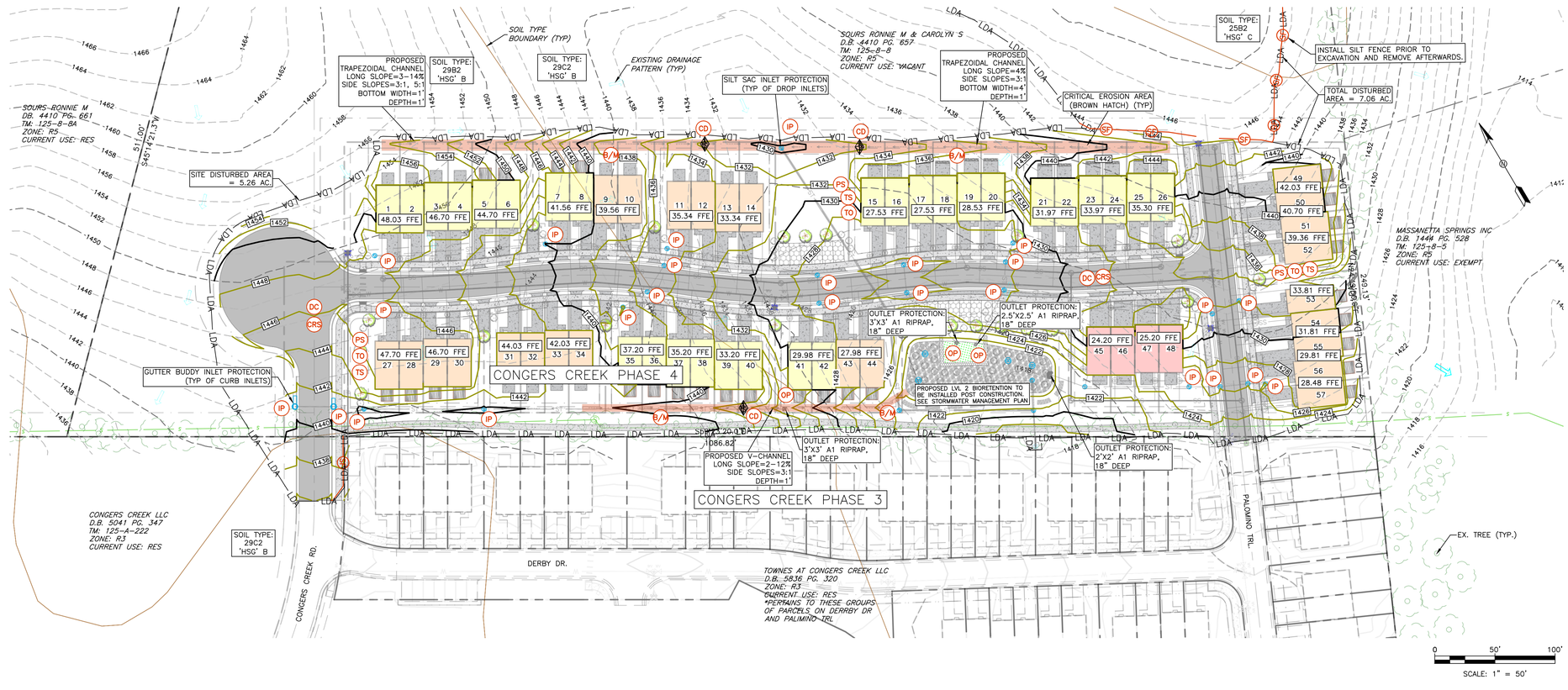
Project No.
CE202521
CONSTRUCTION SET
Sheet
C18
of 21 Sheets

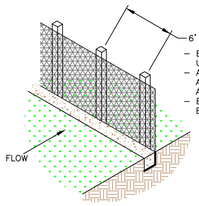
EROSION AND SEDIMENT CONTROL.dwg Plotted: 4/7/2026 By: CEB

E&SC LEGEND

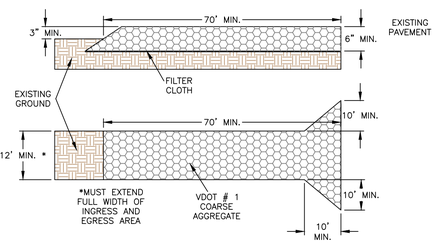
##X	SOIL TYPE
	EXISTING CONTOURS
	PROPOSED CONTOURS
	PROPOSED DITCH OR SWALE
+ ##.# FG	PROPOSED SPOT ELEVATION
	EXISTING DRAINAGE FLOW
	PROPOSED DRAINAGE FLOW
CE	CONSTRUCTION ENTRANCE (C–SCM–03; VESCH 3.02)
DC	CONSTRUCTION ROAD STABILIZATION (3.03)
SF	SILT FENCE (C–PCM–04; VESCH 3.05)
IP	INLET PROTECTION (C–SCM–04; VESCH 3.07)
CIP	CULVERT INLET PROTECTION (C–SCM–05; VESCH 3.08)
DD	DIVERSION DIKE (C–ECM–04; VESCH 3.09)
FD	TEMPORARY FILL DIVERSION (C–ECM–04; VESCH 3.10)
RWD	RIGHT OF WAY DIVERSION (C–ECM–07; VESCH 3.11)
ST	SEDIMENT TRAP (C–SCM–11; VESCH 3.13)
SB	SEDIMENT BASIN (C–SCM–12; VESCH 3.14)
PF	PAVED FLUME (C–ECM–11; VESCH 3.16)
OP	OUTLET PROTECTION (C–ECM–15; VESCH 3.18)
CD	ROCK CHECK DAMS (C–SCM–07; VESCH 3.20)
LS	LEVEL SPREADER (C–ECM–14; VESCH 3.21)
TO	TOPSOILING (C–SSM–02; VESCH 3.30)
TS	TEMPORARY SEEDING (C–SSM–09; VESCH 3.31)
PS	PERMANENT SEEDING (C–SSM–10; VESCH 3.32)
SO	SODDING (C–SSM–06; VESCH 3.33)
MU	MULCHING (C–SSM–11; VESCH 3.35)
BM	SOIL STABILIZATION BLANKETS AND MATTING (C–SSM–05; VESCH 3.36)
DC	DUST CONTROL (C–SCM–01; VESCH 3.39)
DA	DISTURBED AREA

NUMBERS IN PARENTHESES REFER TO VESCH MEASURES

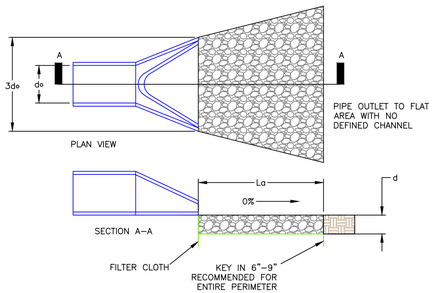




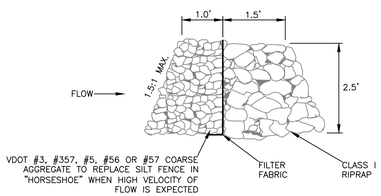
SILT FENCE (SHEET FLOW PROTECTION)
NTS



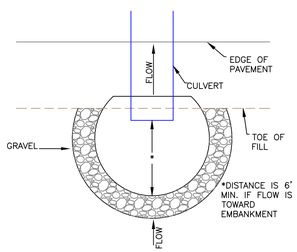
STONE CONSTRUCTION ENTRANCE
NTS



PIPE OUTLET CONDITIONS
NTS

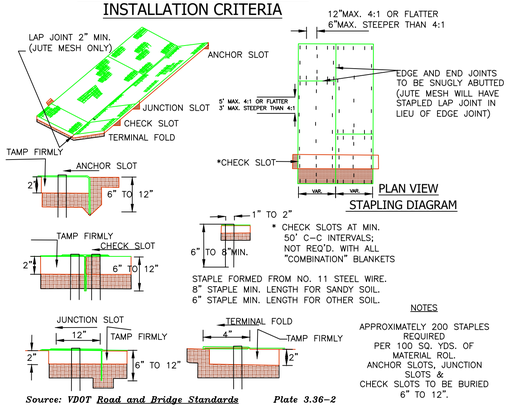


CULVERT INLET PROTECTION STONE COMBINATION
NTS

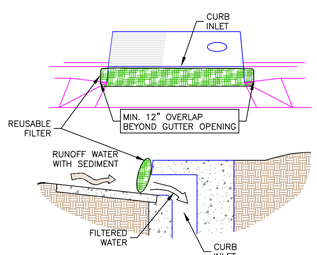


GRAVEL CULVERT INLET PROTECTION
XA-CIP NTS

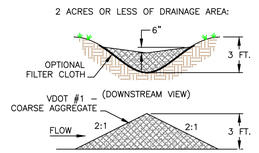
TYPICAL TREATMENT - 1 (SOIL STABILIZATION BLANKET) INSTALLATION CRITERIA



Source: VDOT Road and Bridge Standards *Plate 3.36–2*

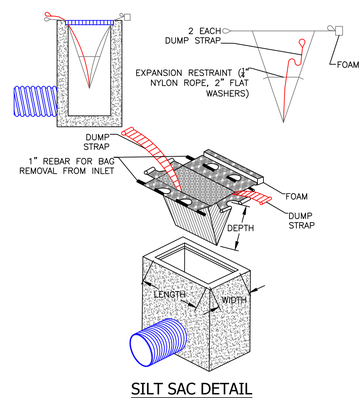


DROP INLET PROTECTION (GUTTERGATOR™ OR GUTTERBUDDY™)
NTS



ROCK CHECK DAM
NTS

BEFORE YOU DIG CALL MISS UTILITY 1-800-552-7001



SILT SAC DETAIL
NTS

Date:	11/6/2025
Scale:	1" = 50'
Designed by:	GLC, PE
Drawn by:	JDY, PE
Reviewed by:	GLC, PE

Revision Dates
1/9/25 Per County
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COMMONWEALTH OF VIRGINIA GUILLERMO L. COLMAN Lic. No. 045776 4/7/26 PROFESSIONAL ENGINEER

EROSION & SEDIMENT CONTROL PAHSE 2

Congers Creek Phase 4
The Townes at Congers Creek LLC
Congers Creek Rd
Rockingham County, VA

Project No.	CE202521
CONSTRUCTION SET	
Sheet	C19 of 21 Sheets

EROSION AND SEDIMENT CONTROL.dwg Plotted: 4/7/2026 By: CEB

EROSION & SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION

The purpose of this project is to develop the site located at 1144 Boyers Rd, Harrisonburg, VA 22801, TM125-8-8. Improvements include 57 townhouses, associated private drives, sidewalks, and utilities. Regrading and resurfacing of the lot will take place in and around the proposed site improvements. A total of 7.06 acres will be disturbed during construction. The site is located in the Hydrologic Unit Code Watershed PS26 North River-Mill Creek. The pollutants of concern for Mill Creek include E. coli, Fecal Coliform, Sediment, and Total Phosphorus.

EXISTING SITE CONDITIONS

The site is currently zoned as residential. The central portion of the site drains toward the south at 2-3% via a large swale to an inlet installed during phase 3 development. The western portion of the site drains to the south west at 7-8% to a channel and storm pipe system installed during phase 3, and drains into an existing wet pond.

ADJACENT PROPERTY

The site is bordered by two vacant properties, Massanetta Springs Inc, and Congers Creek Phase 3. It is bordered to the north by vacant property, to the west by residential properties, to the east by Massanetta Springs Inc, to the south by Congers Creek properties.

OFF-SITE AREA

Off-site areas are necessary for this project. The off-site area used for fill or borrowed material is part of this erosion control plan. The area used for borrow fill will be returned to its original state with topsoil and a stand of grass.

SOILS

The soil on the site is approximately 29% (29B2), 71% (29C2). All site soils are HSG: B.

(29B2): Fredrick and Lodi silt loams, 2 to 7% slopes, eroded. Land consists of gently sloping well-drained soils on knolls and ridges. Typically, the surface layer of Frederick soils is brown silt loam about 9 inches thick. The subsoil extends to a depth of 60 inches, or more. From 9 to 13 inches is strong brown clay loam. From 13 inches or more, it is yellowish red and red clay. The surface layer of Lodi soils is dark grayish brown silt loam about 7 inches thick. The subsoil is about 53 inches thick, and is a strong brown and yellowish red silty clay loam, and clay. The substratum is brownish yellow silty clay to a depth of 72 inches or more. The permeability and available water capacity of these soils are moderate, and surface run-off is medium. The shrink-swell potential of the subsoil is high in the Frederick and moderate in the Lodi soils. K value for the Lodi soils, K= 0.28. K value for the Frederick soils, K= 0.24

(29C2): Fredrick and Lodi silt loams, 7 to 15% slopes, eroded. Land consists of sloping well-drained soils on knolls, ridge tops, and side slopes. Typically, the surface layer of Frederick soils is brown silt loam about 9 inches thick. The subsoil extends to a depth of 60 inches, or more. From 9 to 13 inches is strong brown clay loam. From 13 inches to 60 inches, it is yellowish red and red clay. The surface layer of Lodi soils is dark grayish brown silt loam about 7 inches thick. The subsoil is about 53 inches thick, and is a strong brown and yellowish red silty clay loam, and clay. The substratum is brownish yellow silty clay to a depth of 72 inches or more. The permeability and available water capacity of these soils are moderate, and surface run-off is rapid. The shrink-swell potential of the subsoil is moderate to high. K value for the Lodi soils, K= 0.28. K value for the Frederick soils, K= 0.24. *Note: the site has had a lot of topsoil brought in. Soil types mentioned above are referring to the native soil.

CRITICAL EROSION AREAS

The onsite channels, sediment trap, sediment basin, and bypass culvert are critical erosion areas.

EROSION & SEDIMENT CONTROL MEASURES

Unless otherwise indicated, all vegetative and structural erosion and sediment control practices shall be constructed and maintained according to the Minimum Standards and Specifications of the Virginia Stormwater Management Handbook (VSMH), Latest Edition. The Minimum Standards of the handbook shall be adhered to unless otherwise waived or approved by a variance.

EROSION AND SEDIMENT CONTROL MEASURES (TO BE INSTALLED PER VSMH)

1. C-ECM-04 TEMPORARY DIVERSION DIKE (VESCH 3.09)
   A temporary diversion dike is a temporary ridge of compacted soil constructed to convey clean stormwater runoff through or around a disturbed land area.

   Operations and Maintenance: Inspect temporary diversion dikes after every storm and repair the dike, flow channel, outlet, or sediment trapping facility as necessary. In karst areas, the upslope edge of the diversion dike should be inspected for subsidence, especially at the downstream end and at the associated outlet structure/BMP.
2. C-ECM-07 TEMPORARY RIGHT-OF-WAY DIVERSION (VESCH 3.11)
   A temporary right-of-way diversion is a ridge of compacted soil, loose rock, or gravel constructed across disturbed steep slopes and similar sloping areas that is removed following construction once permanent stabilization has begun.

   Operations and Maintenance: Inspect right-of-way diversions weekly and after each rainfall. Maintain the channel flow line clear of sediment accumulations and any obstructions that impede flow. Restore damaged diversions to original dimensions within 24 hours of inspection.
3. C-ECM-09 STORMWATER CONVEYANCE CHANNEL (VESCH 3.17)
   A stormwater conveyance channel is a permanent, designed waterway that is shaped, sized, and lined with appropriate vegetation or structural material such that the channel safely conveys stormwater runoff within or away from a developing area.

   Operations and Maintenance: Inspect grass-lined channels periodically and repair damage immediately. For riprap-lined channels, ensure stones remain in place and replace dislodged stones. For concrete-lined channels, check for undermining and repair as necessary. Remove sediment when it reduces channel capacity.
4. C-ECM-16 FLEXIBLE TRANSITION MAT
   A flexible transition mat is a manufactured product used to stabilize the transition area between different stormwater management practices.

   Operations and Maintenance: Inspect the mat periodically for displacement or damage. Repair or replace as necessary to maintain its intended function.
5. C-PCM-04 SILT FENCE (VESCH 3.05)
   Silt fence is a temporary sediment barrier consisting of synthetic filter fabric entrenched and stretched across and attached to supporting posts.

   Operations and Maintenance: Inspect silt fences weekly and after each significant rainfall. Remove sediment when it accumulates to half the height of the fence. Repair or replace damaged sections promptly.
6. C-SCM-01 DUST CONTROL (VESCH 3.39)
   Dust control involves the reduction of movement of dust on the ground surface and in the air during land disturbance, demolition, and construction.

   Operations and Maintenance: Inspect dust control measures regularly and maintain them through dry weather until all disturbed areas have been stabilized. Repair or replace structural controls as needed to ensure their effectiveness.
7. C-SCM-02 CONSTRUCTION ROAD STABILIZATION (VESCH 3.03)
   Construction road stabilization is the stabilization of temporary construction access routes, onsite vehicle transportation routes, and construction parking areas.

   Operations and Maintenance: Inspect construction roads weekly and after significant rainfall events. Reapply gravel or other stabilization materials as necessary to maintain the road's integrity.
8. C-SCM-03 TEMPORARY STONE CONSTRUCTION ENTRANCE (VESCH 3.02)
   A temporary stone construction entrance is a pad with a fabric filter liner underneath the stone located at points of vehicular ingress and egress on a construction site.

   Operations and Maintenance: Inspect the construction entrance weekly and after each rainfall. Replace clogged stone and repair wash racks as needed to maintain effectiveness.
9. C-SCM-04 INLET PROTECTION (VESCH 3.07)
   Inlet protection is a sediment filter or an excavated impounding area around a storm drain drop inlet or curb inlet.

   Operations and Maintenance: Inspect inlet protection devices twice weekly and after significant rainfall events. Remove sediment when accumulated to 2-3 inches and replace clogged filter fabric as necessary.
10. C-SCM-05 CULVERT INLET PROTECTION (VESCH 3.08)
    Culvert inlet protection is a sediment filter located at the inlets of culverts.

    Operations and Maintenance: Inspect the structure after each rain event and make repairs as needed. Replace or clean aggregate when clogged voids cause ponding problems that interfere with construction. Remove sediment when accumulated to half the design depth.
11. C-SCM-07 ROCK CHECK DAMS (VESCH 3.2)
    Rock check dams are small temporary stone dams constructed across a swale, channel, or drainage ditch.

    Operations and Maintenance: Inspect check dams regularly and after significant rainfall events. Remove accumulated sediment when it reaches half the height of the dam. Repair any dislodged stones immediately.
12. C-ECM-15 OUTLET PROTECTION (VESCH 3.18)
    Outlet protection is a measure designed to prevent erosion at stormwater outlets by dissipating flow energy.

    Operations and Maintenance: Inspect outlet protection measures regularly and after major storm events. Remove debris, repair displaced materials, and ensure proper functionality of the energy dissipation features.
13. C-SCM-12 TEMPORARY SEDIMENT BASIN (VESCH 3.14)
    A temporary sediment basin is a larger impoundment than a sediment trap, designed to detain sediment-laden runoff from larger drainage areas.

    Operations and Maintenance: Inspect the basin weekly and after significant rainfall events. Remove sediment when it accumulates to half the design depth. Repair any structural damage immediately.
14. C-SSM-02 TOPSOILING (VESCH 3.3)
    Topsoiling is the practice of applying a layer of fertile soil to an area to improve conditions for the establishment of vegetation.

    Operations and Maintenance: After applying topsoil, inspect areas for erosion or compaction. Apply stabilization measures to areas that remain dormant for 7 days after topsoil has been spread.
15. C-SSM-05 SOIL STABILIZATION BLANKETS AND MATTING (VESCH 3.36)
    Soil stabilization blankets and matting are protective coverings used on steep slopes, channels, or shorelines to control erosion and aid in vegetation establishment.

    Operations and Maintenance: Inspect periodically, especially after rainstorms, to check for erosion or undermining. Repair any dislocation or failure immediately and continue monitoring until the area is permanently stabilized.
16. C-SSM-07 BERMUDAGRASS AND ZOYSIAGRASS ESTABLISHMENT (VESCH 3.34)
    Bermudagrass and Zoysiagrass establishment involves planting sprigs, stolons, or plugs of these grasses to create vegetative cover for erosion control.

    Operations and Maintenance: Inspect the area regularly and reapply nitrogen fertilizer every 30-45 days during the growing season. Water as needed to ensure proper establishment and growth.
17. C-SSM-09 TEMPORARY SEEDING (VESCH 3.31)
    Temporary seeding is the planting of fast-growing grass or legumes to provide short-term soil stabilization.

    Operations and Maintenance: Inspect seeded areas after rainfall and reseed any areas where germination has failed. Remove weeds that compete with the desired vegetation.
18. C-SSM-10 PERMANENT SEEDING (VESCH 3.32)
    Permanent seeding establishes long-term vegetative cover to stabilize soil and prevent erosion.

    Operations and Maintenance: Water and fertilize as needed during the establishment period. Inspect regularly for signs of erosion or bare spots and reseed if necessary.
19. C-SSM-11 MULCHING (VESCH 3.35)
    Mulching involves the application of organic or inorganic materials to the soil surface to conserve moisture, reduce erosion, and suppress weeds.

    Operations and Maintenance: Inspect mulch layers regularly and replace any that are washed away or decomposed. Maintain an even coverage to ensure effectiveness.

OTHER MEASURES SHALL BE PROVIDED IF DETERMINED BY THE ENGINEER OR COUNTY'S EROSION AND SEDIMENT CONTROL ADMINISTRATOR

MANAGEMENT STRATEGIES

1. Sediment trapping measures to be installed prior to any excavation on site.
2. Construction will be sequenced so that existing cover will not be disturbed anymore than necessary.
3. Construction will be sequenced so that grading operations can begin and end as quickly as possible.
4. Temporary seeding or other stabilization will follow immediately after grading.
5. Areas, which are to be disturbed, will be clearly marked by flags, signs, etc.
6. The job superintendent shall be responsible for the installation and maintenance of all erosion and sediment control practices.
7. After achieving adequate stabilization to the satisfaction of the E&SC administrator, the temporary E&S controls will be cleaned up.

PERMANENT STABILIZATION

All non-impervious areas remaining shall be permanently seeded per specifications, or mulched and vegetated, as it is the case of landscaping areas where shrubs and trees will be planted.

STORMWATER MANAGMENT

The proposed development of the site will create new impervious areas. The disturbed area will be 7.06 acres in size. Therefore, this project is subject to the Stormwater Management Requirements. The proposed design meets these requirements. The site is located in the Hydrologic Unit Code Watershed PS26 North River-Mill Creek. See the Erosion and Sediment Control Plan Sheet for stormwater calculations related to this Erosion and Sediment Control Plan.

Sheet Flow

Sheet Flow as per 9VAC25-875-600 Subsection D, will be addressed by releasing a portion of onsite runoff via sheet flow. In the existing condition, the entire site is released uncontrolled toward the west via overland flow. In the post-development condition, a small portion of the site will be released as sheet flow toward the east via level spreaders. The depth and the velocity of flow over the level spreaders were kept to a minimum. See weir calculations in the report for the values of each. Since the amount of sheet flow released from the site was greatly reduced, no negative impacts are expected downstream.

Channel Protection

Channel Protection (as per 9VAC25-875-600) will be addressed as per subdivision 3, by applying the Energy Balance Method to the developed area; The I.F. for sites greater than 1.0 Acre is 0.8. Energy Balance was met at the point of analysis. Channel Protection compliance is achieved through runoff reduction and detention in the Bioretention basin.

Flood Protection

Flood Protection requirements will be addressed as per 9VAC25-875-600 Subsection C-2-b given that there is no downstream channel, flooding is assumed. The site will release a post-development peak flow rate that is less than the pre-development peak flow rate for the 10-year 24-hour storm event.

CONSTRUCTION SEQUENCE/SCHEDULE

1. Obtain plan approval and other applicable permits.
2. Hold pre-construction conference at least one week prior to starting construction activities.
3. Install all perimeter controls as shown on Erosion & Sediment Control Plan:
   a. Install silt fence along the southern perimeter of the site and construction entrances.
   b. Install clean water diversions on the north side of the site.
   c. Install bypass stormwater pipe and connect to existing D1-7 at STORM ST#EX.
   d. Construction of the sediment basin to occur after the bypass is functioning.
   e. Install diversion dikes on the east and west of the sediment basin to control disturbed areas during grading
4. Topsoil shall be stripped in areas to be graded and shall be stockpiled upstream from sediment control measures, or as indicated on the plans.
5. Construction shall be sequenced so that grading operations can begin and end as quickly as possible.
6. As necessary grading occurs, all denuded areas shall be stabilized to prevent sediment transport.
7. Permanent stabilization of the site shall occur immediately following final grading and final construction operations.
8. Upon release by the ESC Administrator, all temporary erosion and sediment control measures shall be removed and disposed of within 30 days after the final site stabilization is achieved or after temporary measures are no longer needed.

9VAC25-875-560 MINIMUM STANDARDS

AN EROSION AND SEDIMENT CONTROL PLAN CONSISTENT WITH THE FOLLOWING CRITERIA, TECHNIQUES, AND METHODS SHALL BE SUBMITTED TO THE VESMP AUTHORITY OR VESCP AUTHORITY FOR REVIEW AND APPROVAL:

1. PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 14 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.
2. DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES AND BORROW AREAS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS BORROW AREAS AND SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.
3. A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT IS UNIFORM, IS MATURE ENOUGH TO SURVIVE, AND WILL INHIBIT EROSION.
4. SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS, AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND-DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE.
5. STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES, AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.
6. SEDIMENT TRAPS AND SEDIMENT BASINS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED BY THE TRAP OR BASIN.
   a. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT TRAP SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA AND THE TRAP SHALL ONLY CONTROL DRAINAGE AREAS LESS THAN THREE ACRES.
   b. SURFACE RUNOFF FROM DISTURBED AREAS THAT IS COMPRISED OF FLOW FROM DRAINAGE AREAS GREATER THAN OR EQUAL TO THREE ACRES SHALL BE CONTROLLED BY A SEDIMENT BASIN. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT BASIN SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA. THE OUTFALL SYSTEM SHALL, AT A MINIMUM, MAINTAIN THE STRUCTURAL INTEGRITY OF THE BASIN DURING A 25-YEAR STORM OF 24-HOUR DURATION. RUNOFF COEFFICIENTS USED IN RUNOFF CALCULATIONS SHALL CORRESPOND TO A BARE EARTH CONDITION OR THOSE CONDITIONS EXPECTED TO EXIST WHILE THE SEDIMENT BASIN IS UTILIZED.
7. CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZING MEASURES UNTIL THE PROBLEM IS CORRECTED.
8. CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME, OR SLOPE DRAIN STRUCTURE.
9. WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.
10. ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT-LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.
11. BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS OR PIPES ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.
12. WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT, CONTROL SEDIMENT TRANSPORT, AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION. NONERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NONERODIBLE COVER MATERIALS.
13. WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN ANY SIX-MONTH PERIOD, A TEMPORARY VEHICULAR STREAM CROSSING CONSTRUCTED OF NONERODIBLE MATERIAL SHALL BE PROVIDED.
14. ALL APPLICABLE FEDERAL, STATE, AND LOCAL REQUIREMENTS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET.
15. THE BED AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.
16. UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:
   a. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.
   b. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.
   c. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY.
   d. MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION.
   e. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THIS CHAPTER.
   f. APPLICABLE SAFETY REQUIREMENTS SHALL BE COMPLIED WITH.
17. WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED OR PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACKING ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PAVED OR PUBLIC ROAD SURFACE, THE ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER. THIS PROVISION SHALL APPLY TO INDIVIDUAL DEVELOPMENT LOTS AS WELL AS TO LARGER LAND-DISTURBING ACTIVITIES.
18. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE VESCP OR VESMP AUTHORITY. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.
19. PROPERTIES AND WATERWAYS DOWNSTREAM FROM DEVELOPMENT SITES SHALL BE PROTECTED FROM SEDIMENT DEPOSITION, EROSION, AND DAMAGE DUE TO INCREASES IN VOLUME, VELOCITY, AND PEAK FLOW RATE OF STORMWATER RUNOFF FOR THE STATED FREQUENCY STORM OF 24-HOUR DURATION IN ACCORDANCE WITH THE FOLLOWING STANDARDS AND CRITERIA. STREAM RESTORATION AND RELOCATION PROJECTS THAT INCORPORATE NATURAL CHANNEL DESIGN CONCEPTS ARE NOT MANMADE CHANNELS AND SHALL BE EXEMPT FROM ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MANMADE CHANNELS:
   a. CONCENTRATED STORMWATER RUNOFF LEAVING A DEVELOPMENT SITE SHALL BE DISCHARGED DIRECTLY INTO AN ADEQUATE NATURAL OR MANMADE RECEIVING CHANNEL, PIPE, OR STORM SEWER SYSTEM. FOR THOSE SITES WHERE RUNOFF IS DISCHARGED INTO A PIPE OR PIPE SYSTEM, DOWNSTREAM STABILITY ANALYSES AT THE OUTFALL OF THE PIPE OR PIPE SYSTEM SHALL BE PERFORMED.
   b. ADEQUACY OF ALL CHANNELS AND PIPES SHALL BE VERIFIED IN THE FOLLOWING MANNER:
      (1) THE APPLICANT SHALL DEMONSTRATE THAT THE TOTAL DRAINAGE AREA TO THE POINT OF ANALYSIS WITHIN THE CHANNEL IS 100 TIMES GREATER THAN THE CONTRIBUTING DRAINAGE AREA OF THE PROJECT IN QUESTION; OR
      (2) (a) NATURAL CHANNELS SHALL BE ANALYZED BY THE USE OF A TWO-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP CHANNEL BANKS NOR CAUSE EROSION OF CHANNEL BED OR BANKS.
      (b) ALL PREVIOUSLY CONSTRUCTED MANMADE CHANNELS SHALL BE ANALYZED BY THE USE OF A 10-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP THE STORMWATER'S BANKS AND BY THE USE OF A TWO-YEAR STORM TO DEMONSTRATE THAT STORMWATER WILL NOT CAUSE EROSION OF CHANNEL BED OR BANKS; AND
      (c) PIPES AND STORM SEWER SYSTEMS SHALL BE ANALYZED BY THE USE OF A 10-YEAR STORM TO VERIFY THAT STORMWATER WILL BE CONTAINED WITHIN THE PIPE OR SYSTEM.
   c. IF EXISTING NATURAL RECEIVING CHANNELS OR PREVIOUSLY CONSTRUCTED MANMADE CHANNELS OR PIPES ARE NOT ADEQUATE, THE APPLICANT SHALL:
      (1) IMPROVE THE CHANNELS TO A CONDITION WHERE A 10-YEAR STORM WILL NOT OVERTOP THE BANKS AND A TWO-YEAR STORM WILL NOT CAUSE EROSION TO THE CHANNEL, THE BED, OR THE BANKS;
      (2) IMPROVE THE PIPE OR PIPE SYSTEM TO A CONDITION WHERE THE 10-YEAR STORM IS CONTAINED WITHIN THE APPURTENANCES;
      (3) DEVELOP A SITE DESIGN THAT WILL NOT CAUSE THE PREDEVELOPMENT PEAK RUNOFF RATE FROM A TWO-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A NATURAL CHANNEL OR WILL NOT CAUSE THE PREDEVELOPMENT PEAK RUNOFF RATE FROM A 10-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A MANMADE CHANNEL; OR
      (4) PROVIDE A COMBINATION OF CHANNEL IMPROVEMENT, STORMWATER DETENTION, OR OTHER MEASURES THAT IS SATISFACTORY TO THE VESCP OR VESMP AUTHORITY TO PREVENT DOWNSTREAM EROSION.
   d. THE APPLICANT SHALL PROVIDE EVIDENCE OF PERMISSION TO MAKE THE IMPROVEMENTS.
   e. ALL HYDROLOGIC ANALYSES SHALL BE BASED ON THE EXISTING WATERSHED CHARACTERISTICS AND THE ULTIMATE DEVELOPMENT CONDITION OF THE SUBJECT PROJECT.
   f. IF THE APPLICANT CHOOSES AN OPTION THAT INCLUDES STORMWATER DETENTION, THE APPLICANT SHALL OBTAIN APPROVAL FROM THE VESCP OR VESMP AUTHORITY FOR A PLAN FOR MAINTENANCE OF THE DETENTION FACILITIES. THE PLAN SHALL SET FORTH THE MAINTENANCE REQUIREMENTS OF THE FACILITY AND THE PERSON RESPONSIBLE FOR PERFORMING THE MAINTENANCE.
   g. OUTFALL FROM A DETENTION FACILITY SHALL BE DISCHARGED TO A RECEIVING CHANNEL, AND ENERGY DISSIPATORS SHALL BE PLACED AT THE OUTFALL OF ALL DETENTION FACILITIES AS NECESSARY TO PROVIDE A STABILIZED TRANSITION FROM THE FACILITY TO THE RECEIVING CHANNEL.
   h. ALL ON-SITE CHANNELS MUST BE VERIFIED TO BE ADEQUATE.
   i. INCREASED VOLUMES OF SHEET FLOWS THAT MAY CAUSE EROSION OR SEDIMENTATION ON ADJACENT PROPERTY SHALL BE DIVERTED TO A STABLE OUTLET, ADEQUATE CHANNEL, PIPE, OR PIPE SYSTEM OR TO A DETENTION FACILITY.
   j. IN APPLYING THESE STORMWATER MANAGEMENT CRITERIA, INDIVIDUAL LOTS OR PARCELS IN A RESIDENTIAL, COMMERCIAL, OR INDUSTRIAL DEVELOPMENT SHALL NOT BE CONSIDERED TO BE SEPARATE DEVELOPMENT PROJECTS. INSTEAD, THE DEVELOPMENT, AS A WHOLE, SHALL BE CONSIDERED TO BE A SINGLE DEVELOPMENT PROJECT. HYDROLOGIC PARAMETERS THAT REFLECT THE ULTIMATE DEVELOPMENT CONDITION SHALL BE USED IN ALL ENGINEERING CALCULATIONS.
   k. ALL MEASURES USED TO PROTECT PROPERTIES AND WATERWAYS SHALL BE EMPLOYED IN A MANNER THAT MINIMIZES IMPACTS ON THE PHYSICAL, CHEMICAL, AND BIOLOGICAL INTEGRITY OF RIVERS, STREAMS, AND OTHER WATERS OF THE STATE.
   l. ANY PLAN APPROVED PRIOR TO JULY 1, 2014, THAT PROVIDES FOR STORMWATER MANAGEMENT THAT ADDRESSES ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MANMADE CHANNELS SHALL SATISFY THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MANMADE CHANNELS IF THE PRACTICES ARE DESIGNED TO (I) DETAIN THE WATER QUALITY VOLUME AND TO RELEASE IT OVER 48 HOURS; (II) DETAIN AND RELEASE OVER A 24-HOUR PERIOD THE EXPECTED RAINFALL RESULTING FROM THE ONE YEAR, 24-HOUR STORM; AND (III) REDUCE THE ALLOWABLE PEAK FLOW RATE RESULTING FROM THE 1.5-YEAR, TWO-YEAR, AND 10-YEAR 24-HOUR STORMS TO A LEVEL THAT IS LESS THAN OR EQUAL TO THE PEAK FLOW RATE FROM THE SITE ASSUMING THE SITE WAS IN A GOOD FORESTED CONDITION, ACHIEVED THROUGH MULTIPLICATION OF THE FORESTED PEAK FLOW RATE BY A REDUCTION FACTOR THAT IS EQUAL TO THE RUNOFF VOLUME FROM THE SITE WHEN THE SITE WAS IN A GOOD FORESTED CONDITION DIVIDED BY THE RUNOFF VOLUME FROM THE SITE IN THE SITE'S PROPOSED CONDITION, AND SHALL BE EXEMPT FROM ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MANMADE CHANNELS AS DEFINED IN ANY REGULATIONS PROMULGATED PURSUANT TO § 62.1-44.15:28 OF THE CODE OF VIRGINIA (VESMA) OR § 62.1-44.15:54 OR 62.1-44.15:65 OF THE CODE OF VIRGINIA (ESCL).
   m. FOR PLANS APPROVED ON AND AFTER JULY 1, 2014, THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS OF § 62.1-44.15:52 A OF THE CODE OF VIRGINIA (ESCL) AND THIS SUBDIVISION 19 SHALL BE SATISFIED BY COMPLIANCE WITH WATER QUANTITY REQUIREMENTS IN THE VESMA AND ATTENDANT REGULATIONS, UNLESS SUCH LAND-DISTURBING ACTIVITIES (I) ARE IN ACCORDANCE WITH PROVISIONS FOR TIME LIMITS ON APPLICABILITY OF APPROVED DESIGN CRITERIA IN 9VAC25-875-480 OR GRANDFATHERING IN 9VAC25-875-490, IN WHICH CASE THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS OF § 62.1-44.15:52 A OF THE CODE OF VIRGINIA (ESCL) SHALL APPLY; OR (II) ARE EXEMPT PURSUANT TO § 62.1-44.15:34 G 2 OF THE CODE OF VIRGINIA (VESMA).
   n. COMPLIANCE WITH THE WATER QUANTITY MINIMUM STANDARDS SET OUT IN 9VAC25-875-600 SHALL BE DEEMED TO SATISFY THE REQUIREMENTS OF THIS SUBDIVISION 19.

EROSION & SEDIMENT CONTROL NOTES

ES-1: UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND VIRGINIA REGULATIONS VR 625-02-00 EROSION AND SEDIMENT CONTROL REGULATIONS. (1996 REVISIONS)

ES-2: THE PLAN APPROVING AUTHORITY MUST BE NOTIFIED ONE WEEK PRIOR TO THE PRE-CONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE WEEK PRIOR TO THE FINAL INSPECTION.

ES-3: SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND ANY OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCES TAKE PLACE.

ES-4: STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.

ES-5: A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN INCLUDING THE NARRATIVE SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.

ES-6: PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING, BUT NOT LIMITED TO, OFF-SITE BORROW OR WASTE AREAS), THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE OWNER FOR REVIEW AND APPROVAL BY THE PLAN APPROVING AUTHORITY.

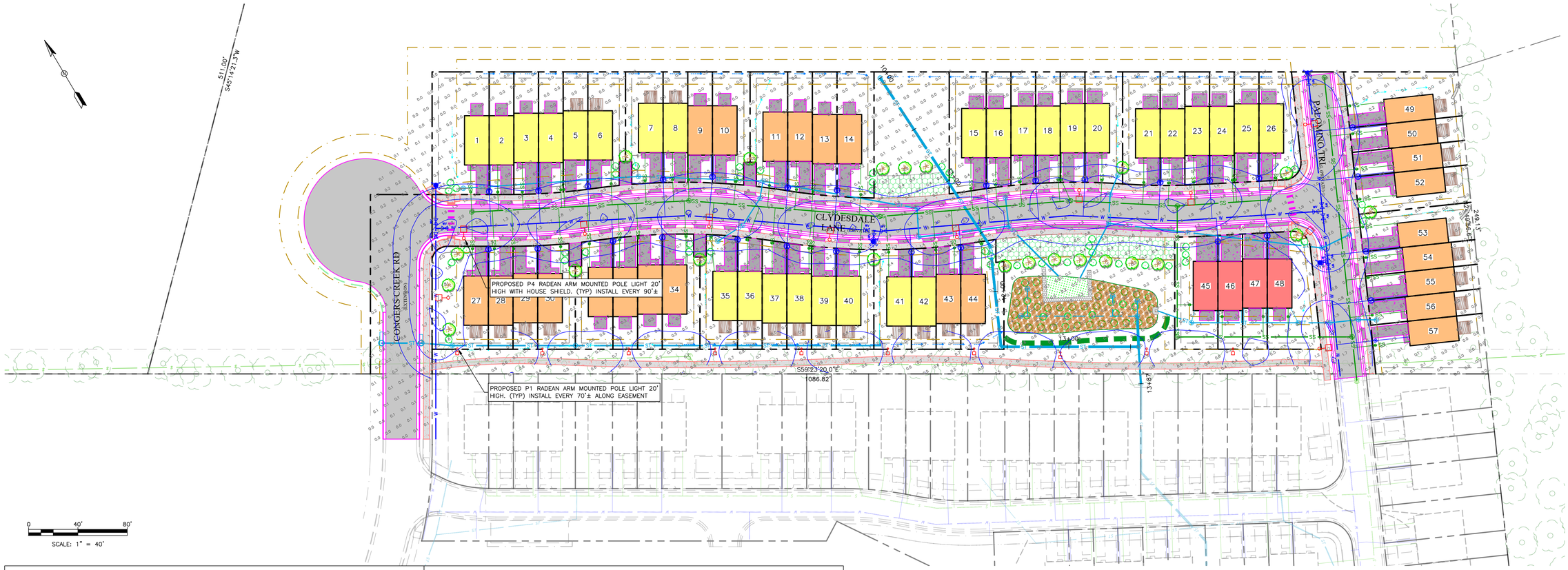
ES-7: THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE PLAN APPROVING AUTHORITY.

ES-8: ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.

ES-9: DURING DEWATERING OPERATIONS, WATER WILL BE PUMPED INTO AN APPROVED FILTERING DEVICE.

ES-10: THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.

ES-11: PERMANENT OR TEMPORARY SOIL STABILIZATIONS SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN S



Radean Arm Mount
LED Area Luminaire

Catalog Number

Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

Specifications

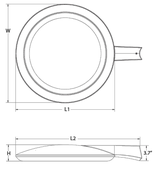
EPA: 0.75 ft² (0.05 m²)

Length:
L1 24" (61cm)
L2 30" (60.96 cm)

Width: 24" (61cm)

Height: 4" (10.2cm)

Weight (max): 29lbs (13.15Kg)



Introduction

The RADEAN arm mount luminaire is the perfect choice for pedestrian applications where daytime aesthetics and visual comfort are needed. Adding architectural flair to any space, the RADEAN's low-profile shape and smooth curves blend in while adding a touch of elegance.

Perfect for campuses, parks, pedestrian malls, courtyards and pathways, the RADEAN arm mount is the Architect's choice to provide beautiful aesthetics both day and night.

Ordering Information

EXAMPLE: RAD1 LED P3 30K SYM MVOLT RPA PE DNAXD

RAD1 LED	P4	30K	PATH	MVOLT	RPA
Series	Performance package	Color temperature	Distribution	Voltage	Mounting
RAD1 LED	P1 3,000 Lumens P2 5,000 Lumens P3 7,000 Lumens P4 11,000 Lumens P5 16,000 Lumens	27K 2700K 30K 3000K 35K 3500K 40K 4000K 50K 5000K	SYM Symmetric type V ASY Asymmetric type IV PATH Pathway type III	MVOLT [3] 277 [2] 120 [2] 347 208 [2] 480 240 [2]	SPA Square pole mounting (includes adapter) RPA Round pole mounting WBA Wall bracket

HS		
Control options	Other options	Finish (required)
Shipped installed NLTAIR2 nLight AIR 2.0 enabled [3] PE Button photocell [3] FAO Field adjustable output [3] DMG 0-10v dimming wires pulled outside fixture (for use with an external control, ordered separately)	SF Single Fuse [2] DF Double Fuse [2] L90 Left rotated optics R90 Right rotated optics **Shipped separately** HS Houseside shield [1]	DDBXD Dark bronze DBLXD Black DNAXD Natural aluminum DWHXD White DDBTXD Textured dark bronze DBLBXD Textured black DNATXD Textured natural aluminum DWHGXD Textured white

Accessories
Ordered and shipped separately.

RADHS Houseside shield (shield is white)
RADFBC Full base cover for 4" RSS pole (specify finish)

For more control options, visit DTL and ROAM online.

NOTES
1 2700K and 3500K may require extended lead-times.
2 MVOLT driver operates on any line voltage from 120-277V (50/60 Hz). Single fuse (SF) requires 120, 277 or 347 voltage option. Double fuse (DF) requires 208, 240 or 480 voltage option.
3 NLTAIR2 not available with PE or FAO. Must link to external nLight Air network. Does not include occupancy sensor. For more information refer to CDD/E pole mount sensor.
4 DMG not available with NLTAIR2 or FAO.
5 Also available as a separate accessory; see Accessories information. Shield is field rotatable in 45° increments.

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Radean Arm Mount
LED Area Luminaire

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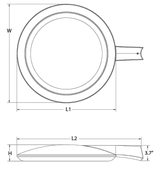

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RADHS Houseside shield (shield is white)
RADFBC Full base cover for 4" RSS pole (specify finish)

For more control options, visit DTL and ROAM online.

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5 Also available as a separate accessory; see Accessories information. Shield is field rotatable in 45° increments.

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NOTES:
1. LIGHTING FIXTURES AS SPECIFIED OR SIMILAR
2. NO MORE THAN 0.5 FOOTCANDLE AT THE PROPERTY LINE ARE PERMITTED
3. MAINTAIN AVERAGE 0.5 FOOT CANDLE ALONG STREETS WITH PEDESTRIAN ROUTES

LIGHT UNIFORMITY ALONG PEDESTRIAN PATHS			
AVERAGE FOOT CANDLES	MINIMUM FOOT CANDLES	UNIFORMITY RATIO	MAXIMUM ALLOWABLE
1.24	0.4	3.1:1	6:1

LEGEND

- P4 RADEAN POLE UNIT (11 TOTAL)
- P1 RADEAN POLE UNIT (10 TOTAL)
- 0.2 FOOT CANDLE POINT
- FOOT CANDLE ISOLINE

Date:	11/6/2025
Scale:	1" = 40'
Designed by:	GLC, PE
Drawn by:	JDY, PE
Reviewed by:	GLC, PE

Revision Dates
1/9/25 Per County
4/7/26 Per Owner

COLMAN ENGINEERING
1123 South High Street | Harrisonburg, VA 22801 | Ph: (540) 246-3712
Email: contact@colmanengineering.com | www.colmanengineering.com

COMMONWEALTH OF VIRGINIA GUILLERMO L. COLMAN Lic. No. 045776 4/7/26 PROFESSIONAL ENGINEER

LIGHTING PLAN

Congers Creek Phase 4
The Townes at Congers Creek LLC
Congers Creek Rd
Rockingham County, VA

Project No.
CE202521

CONSTRUCTION SET

Sheet
C21
of 21 Sheets

LIGHTING.dwg Plotted: 4/7/2026 By: CEB