EDEN & ASSOCIATES

Memorandum

TO: Kinsey O'Shea, Town Planner for Current Development

From: Meredith Jones, P.E. V.P., Eden & Associates

Date: April 28, 2023

RE: Variances/Exceptions for Glade Spring Rezoning Application

Dear Kinsey,
Please accept this memorandum with changes to the variances and exceptions requested by the applicant, Glade Spring Crossing, for the rezoning application. Former variances were eliminated, notably the road slope, landing variances, and sidewalk variance on Street A that are no longer needed with the elimination of the Village Way South connection and addition of sidewalk to Street A. Variances were added for the Street A cul-de-sac in excess of 900' and the block length exceeding standard for that section of road.

1. **Variance for type of Curb & Gutter (Sec. 5-313. - Street design).** All streets shall be designed and constructed with VDOT standard CG-6 curb and gutter and be a minimum of 30 feet in width or greater as required by VDOT subdivision street standards, based upon projected traffic generated by the development, except in the Rural Residential I, and Rural Residential II zoning districts **or as expressly approved by Town Council as part of a planned residential or planned commercial zoning**.
    a. Applicant requests express approval through rezoning for no curb and gutter in the North Area (portions of Street A and all of Street E) where ditch section will be used for conveyance and infiltration of stormwater.
    b. Reason: In order to maintain affordable housing in the development, only critical infrastructure can be included. Curb and gutter along these areas, with an estimated cost of approximately $160,000, is unneeded from an engineering standpoint to convey water safely and effectively. While it is a luxury many homeowners expect because they don't want to see water traversing their lot, it is not always required from an engineering standpoint. The underlying zoning RR-1 does not require curb and gutter for more rural area uses. This is because larger lots do not necessarily need it for proper engineering conveyance of stormwater. It is a sustainable benefit to the development to allow stormwater to flow over lawns as opposed to immediately capturing it in a curb/gutter and storm drain. The proposed development on Streets A (North side) and E is similar in density and character as the existing adjacent development on Village Way South, which does not utilize curb and gutter. Street drainage running perpendicular to lots can be diverted across lots as overland flow or diverted between lots in gradual swales, encouraging some infiltration. Flow running parallel to the fronts of lots can be contained in ditch sections with 15" culverts under driveways where needed. Storm inlets can be provided to divert flow across the street where needed for engineering. Elimination of curb/gutter will also allow for guest parking in a reinforced grass shoulder off the side of the road, allowing for more room to pass vehicles in the street.
    c. Applicant requests the use of continuous rolled curb and gutter throughout the remainder of the development without entrances.
    d. Reason: In order to maintain affordable housing in the development, only critical infrastructure can be included and rolled curb achieves the same intent as CG-6 but for a lot less cost given the processes the Town requires for certificate of occupancy. The proposed development South area is

extremely dense and driveway entrances will comprise over 50% of the street frontage. Since the Town requires curb and gutter to be completely installed prior to issuing building permits, 50% of the curb and gutter will be removed to replace it with entrances. This is the reason for selection of Rolled curb, it does not practically require an entrance. It is mountable. Brookfield Village contains this type of curbing and a majority of affordable development communities in Christiansburg use them. Because it can be installed and left alone, this eliminates costly removal of brand-new curb and gutter and replacement of entrances once a building is constructed. Concrete entrances cost approximately $270,000 for 134 entrances (approx. $2000 each) using current concrete prices. Rolled curb costs approximately $5 more per foot resulting in an increase of $31,200 for 6240 LF in the development. So the increased cost of using CG-6 and ripping it out to install entrances vs. using a rolled curb with no entrances is $270,000-$31,200 for a total of $238,800. (Note that pulling out CG-6 curb and gutter across 18' wide entrances for 134 lots on the South area would equal approximately 2412 LF at $35/LF for a total of $84,420 of money spent wasted) SEE THE ATTACHED TYPICAL SECTIONS SHOWING ROLLED CURB.

2. **Variance for sidewalk on portions of Street A (North and South areas), all of Street D and all of Street E (Sec. 5-401 Sidewalks required.; Sec. 5-403 Sidewalk variance).**
    a. Applicant requests a variance to sidewalk on Streets A and D to construct trail in lieu of sidewalk in select locations throughout the subdivision. Applicant requests a variance to Street E for sidewalks.
    b. Reason: The North/South Connector Trail must run from South to North through the development. So where it already parallels Streets A and D, it already serves as a sidewalk. Therefore, sidewalk is not needed. In this case, a wider trail along street A is superior to that of a 5' sidewalk and is preferred. Since the developer has to evaluate the cost effectiveness of each infrastructure item to maintain affordability in the overall development, it was determined that sidewalks on Street E in the North area were not critical to the pedestrian circulation to be cost-effective to install. Residents along Street E will have a connection to the North/South connector public paved trail at the end of their cul-de-sac and sidewalk on Street A at the beginning of the cul-de-sac. Due to the low volumes of traffic expected on Road E, the applicant believes this is not a safety issue. Street E was modeled from the Village at Tom's Creek adjacent development area, specifically Poplar Ridge Drive, which does not include sidewalks. It is estimated sidewalk through Street E would cost in excess of $60,000. It should be noted that this does not include the additional cost for grading or widening of the road section which increases the cut/fill required for Street E and steepens the resulting lots.
3. **Variance for sidewalk on portions of Street A, B, C, D (Section 5-401 b.)** 4' grass strip is required between sidewalk and road.
    a. Applicant requests 3' grass strip
    b. Reason: Since street trees are not being installed in the grass strip, this would allow for more space behind the sidewalk to plant a street tree. Grass strips do not generally serve a purpose other than to separate pedestrians from the street, and 3' is adequate to do that. SEE THE ATTACHED TYPICAL SECTIONS FOR ROAD A,E
4. **Variance for Cul-de-sac (Sec. 5-310). Variance to Sec. 5-310. – Cul-de-sac.** (a) A permanent cul-de-sac shall not be longer than nine hundred (900) feet, including the turnaround.
    a. Applicant requests to exceed the 900' maximum length of a cul-de-sac on Street A.
    b. Reason: The neighboring community and Town Council have expressed the desire not to connect Street A to Village Way South. Given this feedback and the site geometry, access cannot be provided to the north side of development without exceeding the 900' maximum cul-de-sac length.
    c. Concession: An emergency services access path is proposed to connect the Street A cul-de-sac to Village Way South to provide an alternative entrance to the development should the need arise in emergency.
5. **Variance for blocks (Sec 5-317).** (1) Length: The length of blocks shall be determined by public safety, traffic flow, and natural topography considerations. Where streets are approximately parallel, connecting streets shall be provided between the parallel streets at reasonable intervals as established by application of

the criteria in the preceding sentence. In general, residential blocks should be between five hundred fee (500') and twelve hundred feet (1200') in length.

a. Applicant request a variance to forgo a connection between the following streets: Shadow Lake Road-Street B, Street B-Street C, and Street A-Street E, and Street A-Village Way South.
b. Reason:
    i. Shadow Lake Road-Street B: Inadequate right-of-way width and challenging topography restricts the ability of the developer to provide a street connection between the two streets. Community feedback from surrounding neighbors indicated opposition to the connection.
    ii. Street B-Street C: The Street B cul-de-sac bulb is approximately 50’ in elevation above the Street C bulb. Existing topography slopes between the two streets ranges from 20%-25%. Given these factors, a connection is impractical.
    iii. Street A-Street E: The existing topography falls from north (near Street E) to south (near Street A). The Street E bulb is approximately 17’ in elevation above the nearest point on Street A. Existing topography prevents the construction of a street connection with an adequate landing and slope.
    iv. Street A-Village Way South: The neighboring community and Town Council have expressed the desire not to connect Street A to Village Way South. In addition, the existing topography and right-of-way width does not permit the construction of a connection meeting the Town of Blacksburg street design standards described in Section 5-313. An emergency services access path is proposed to connect the cul-de-sac to Village Way South to provide an alternative entrance to the development should the need arise.
c. Applicant requests a variance to the minimum block length to 200’.
d. Reason: Site topography restricts the plausible street locations.

6. **Variance for Driveways and Yards (Sec. 5-318. Driveways. Sec. 5790 - Yards. Sec. 5204 - Driveways.)** The requirement is for a driveway to be no closer than 3’ to a property line.
    a. Applicant requests a variance to all of these sections for a reduction of the minimum distance to a side property line of zero (0) feet.
    b. Reason: Attached units are 18’ wide and the driveway will need to reach to the side property lines to allow 2 parking spaces per unit.
7. **Variance for Sec. 5-318. - Driveways.** (d)On local and collector streets, driveways shall be no closer than fifty (50) feet to an intersection with a public street measured according to diagram.
    a. Applicant requests a variance to this requirement for a minimum of 20 feet for select lots.
    b. Reason: Where smaller units abut an intersection, the lot width is only 27 feet (18’ unit with 8.5’ side setback) so there is not adequate frontage to accommodate the 50’. In order to achieve higher densities, driveways will have to be closer to the intersection than this requirement allows. Of course these will try to be minimized in design, but a 50 foot requirement will cause loss of approximately 8 units that are critical for development mass and the affordability. Please note that the 50’ Town requirement is measured from the driveway edge to the beginning of the radius of the curb at the intersection. The radii on curb returns at our intersections are 25’ for the speed limit. That means that on a perpendicular intersection, the minimum distance the Town requires from the edge of the travel lane to the driveway is 75’. Therefore, in our case, the distance from the driveway to the travel lane would be 45’. Because our Street A is askew from perpendicular, our sketch below shows a 41’ distance between the travel lane and driveway. This means a car turning toward the driveway in question would be further than 41’ away from it in order to stop. At 15mph this should be more than adequate to spot a driver pulling out from a driveway especially with the site distance provided at each corner.
    c. Concessions: This neighborhood is requesting 15mph speed limits which will help with potential turning conflicts. SEE THE ATTACHED SKETCH BELOW
8. **Variance for Sec. 5-901. - Public utility easements**. Requirement asks for 15’ PUE’s shared on interior lot lines and 15’ interior to all lots bordering exterior property boundaries.

a. Applicant Request to reduce the minimum easement width interior to some perimeter lot lines to 7.5 feet where easements already exist on the exterior perimeter. (removed the request for front property line)
b. Reason: Easements already exist along some perimeter lot lines interior and exterior to the property. Where easements do not currently exist on either side of the perimeter, the applicant will dedicate 15'. However, where easements already exist on the outside of the perimeter, applicant requests 7.5' interior. The resulting easement for the P.U.E's on the perimeter would be a total minimum of 15' and in some cases 22.5' or 27.5'. The density of the lots required does create lots that are limited in length from front to back. Setbacks on the south area are 10' so a 15' interior lot line P.U.E. on some of these lots would necessitate pushing the units forward. This has an impact on road location, fill required, and potentially could make lots unable to conform, thus losing some lots as a result. Again, this is only proposed in locations where an existing 15' easement already exists and a total of 22.5' wide P.U.E. will result and should be more than adequate for utilities. A minimum of 15' will be provided interior to exterior lot lines where no easements already exist on the other side. SEE THE ATTACHED EXHIBIT BELOW

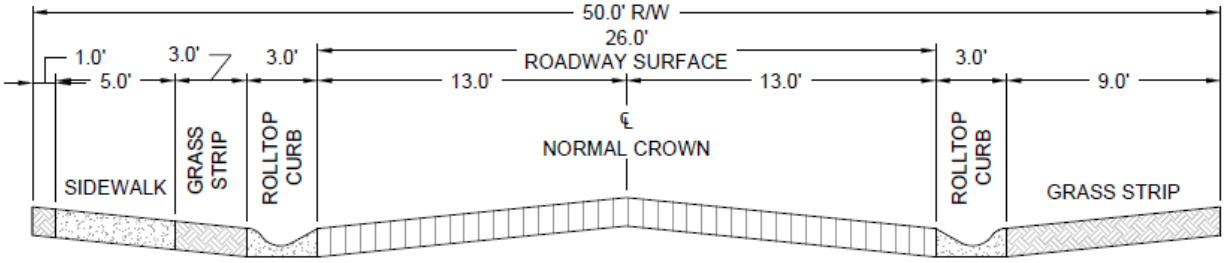
9. **Special exception to 4231(b)(6)** requires all parking for townhomes to be located behind the front building line.
    a. Applicant requests parking to be allowed in front of the building line.
    b. Reason: These townhomes will function as fee simple lots with street frontage on public roads rather than use of parking lots on a common parcel. Therefore, it is important that all units, but especially middle units that have attached side walls, be permitted parking in the front. The shape of the lots, given steep topography and the density needed, will not allow for drive-aisles to the rear or side, and space for parking in these areas. While some townhome lots will allow for side parking, there will still be parking in front of the building line in that driveway. The desire is for these townhomes to function as single-family homes with their own driveways. This is important for seamlessness in equity between affordable, workforce, and market rate units must exist. Furthermore, parking in the rear would simply add more impervious area increasing stormwater concerns, decrease open space, and reduce the density of the development which is critical to the success of the development.
    c. Additional concessions: To allow some break in the front yard pavement, the applicant has created additional site development regulations that minimize the number of contiguous 18' wide driveways to two. This provides for breaks in driveway entrances and increases green space in front of the townhouse units for landscaping. An exhibit is included to demonstrate the results.
10. **Special Exception to 4231 (b)(14)** requiring building facades to contain varying setbacks.
    a. Applicants requests permission to allow the facades of the townhomes to be flush with each other.
    b. Reason: The shapes of the lots and steep topography does not lend itself to 3-8'of change in the building facades. This would require more cut/fill on already tight lots to achieve the density.
    c. Additional concessions: The applicant proposes that no two adjacent and attached townhome units shall be identical. In order to meet this requirement, variation may be provided through a selection of exterior color palettes, exterior materials, fenestration, architectural details, and/or porch details.
11. **Special Exception to 4241 (a)(2)** requiring parking for all two-family dwellings to be located behind the front building line.
    a. Applicant requests parking to be allowed in front of the building line.
    b. Reason: The two-family dwellings will function as fee simple lots with street frontage on public roads rather than use of parking lots on a common parcel. Therefore, it is important that all units, be permitted to have parking in the front. The shape of the lots, given steep topography and the density needed, will not allow for drive-aisles to the rear or side, and space for parking in these areas. While some two-family dwelling lots may accommodate side parking, there will still be parking in front of the building line in that driveway. The desire is for these to function similar to single-family homes with their own driveways. This is important for seamlessness in equity between affordable, workforce, and market rate units must exist. Furthermore, parking in the rear would simply add

more impervious area increasing stormwater concerns, decrease open space, and reduce the density of the development which is critical to the success of the development.

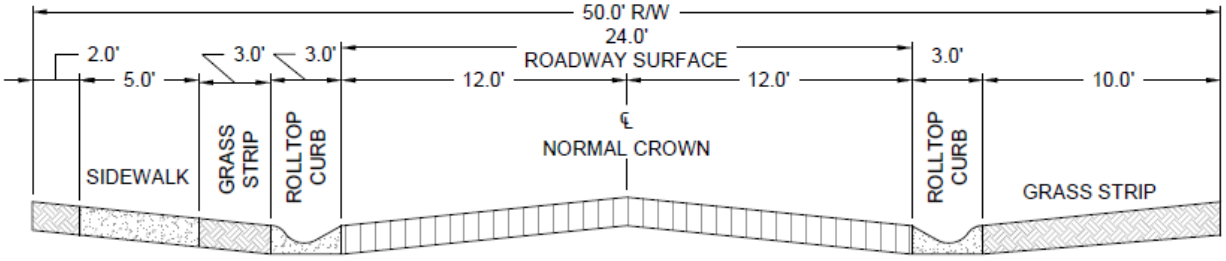
12. **Special Exception to 5202 (c)** all parking spaces shall be located such that maneuvering in or backing into a public street shall not be permitted. Single-unit dwellings and two-family dwellings on a local street are exempt, but not townhouses.
    a. Applicant requests that driveways to townhomes that contain parking spaces be permitted to back out into the public street.
    b. There does not exist room on the site to accommodate "turn-arounds" or separate drive-aisles in order to meet the ordinance requirements. The applicant evaluated examples and those are included those in an earlier version of the variance. The result of this analysis shows that additional cut and fill areas are prohibitive with the lot geometries shown on the plan. Furthermore, in comparing the preferred alternative (separation of driveways so that no more than two contiguous driveways exist from #11), with the drive aisle alternative, there is little difference in pedestrian conflict areas. Both provide adequate breaks for the pedestrian and for the view of the driver backing out. Driveway entrances still exist in either scenario; though certainly the driver is facing forward on a drive aisle scenario. The preferred scenario preserves less impervious surface, less cost, and accommodates the current lot configurations better. As is seen on the exhibit, lot depths significantly increase in a drive-aisle scenario and would restrict which lots could accommodate townhomes in an already restrictive elevation setting. A cross section example is shown on the low side of the road, which makes it apparent how much more grading would be needed, adding cost, but also reducing usable backyard space deepening lots, and reducing open space. Furthermore, the goal of the development is to create affordable units and that requires keeping homeowner's association fees low. A drive aisle would have to be contained in a privately maintained easement, across private lots, whereby the HOA would have to maintain these areas separately from the unit owners. This is not a preferred option for the HOA, and to expect private owners to maintain their portion of the drive aisle is an unrealistic expectation as well as expensive. The applicant has added a provision where no more than two double side by side driveways can exist, therefore reducing the area where "backing out" will occur.
13. **Modification of 5428 (a) Street trees** planted on average of at least one tree for every 30' of frontage.
    a. Applicant requests street tree planting requirements on average of at least one tree for every 100' on the South area and one tree for every 80' on the North area.
    b. Reason: The single-family density required for the development necessitates less frontage than conventional lots. Space for driveways, sidewalks, and utilities leaves little room for street trees along the street. Additionally, the Town no longer desires street trees planted in the grass strip, so the street trees are being planted within 5-10' from the sidewalk edge further pushing trees into the lot. This naturally impedes on the space available for private utilities and walkways, etc. The result is an increased street tree spacing.
    c. Additional Concessions: Each lot is required to plant at least one canopy tree. If the lot does not contain a street tree, it will have to plant a tree somewhere else on the lot. In effect, on the south area, this will require more trees than the requirement and more resulting canopy coverage. However, the trees will be located further from the street and sometimes in back yards.
14. **5-402 (c) Access to private common open space shall be paved with gravel, limestone dust or asphalt**
    a. Applicant requests the use of grass trails for additional connections to open space beyond those already shown in asphalt.
    b. Reason: Adequate access to open space already exists in the plan using asphalt trails; however the applicant is providing additional connections for each cul-de-sac and wants to keep it low maintenance, affordable, and mimic a nature trail as opposed to an ADA accessible area. At the connection locations shown to cul-de-sacs it is intentional that grass trails are chosen over any other material. Elevations in the bulbs are too steep to maintain an ADA accessibility, and while the

Town may not require accessibility, users of asphalt come to expect that. If a trail were paved in these locations they would be steep, and misleading because they would empty users into a natural trail area once they reached the open space. We intend to set the expectation from the cul-de-sac that this is a natural experience, similar to the trails as they are laid out at Pandapas pond. Some are gravel, some are natural, but the user knows from the outset the expectations and experience they will have on that trail by the material. Signage will accompany these grass trails to make sure that is the expectation. Grass is the easiest to maintain for an HOA, is the least expensive, and resists erosion better than dust or gravel once stabilized. Both limestone dust and gravel were used at the Village at Tom's Creek along Village Way South and have failed miserably for several reasons: first, rainfall caused the gravel and limestone to erode linearly and wash into the grass adjacent; second the mowers struggled with projectile gravel when they tried to mow the grass that had been mixed with gravel. Kids play in the gravel; it becomes a nuisance and maintenance issue. After many iterations by the HOA and developer, they've landed on mulch which still erodes and requires routine maintenance. After having to install and reinstall this for the developer, the development team on this project will not make that same mistake. A grass trail not only warns the pedestrian user of the type of experience they about to enter into (natural), but it much easily maintained with a lawn mower. All of the grass trails within the development will be maintained by the HOA with mowing, as we've suggested in the narrative for the areas adjacent to the Managed Successional. As these trails are located adjacent to neighbor's grass yards, the consistency in maintenance will be much appreciated by both the HOA and private homeowner. Additional weed eating, pulling, and edging would accompany asphalt, gravel, or limestone dust trails and can create a safety issue with adjacent homeowners with lawn mowers at the interface. These areas would be considered impervious areas by DEQ, which we are trying to reduce. While we feel we meet the code requirement for access to our open space areas through the trail at B, D, and Road A, our intent is to provide additional walking trails and access to open space through natural hiking areas.

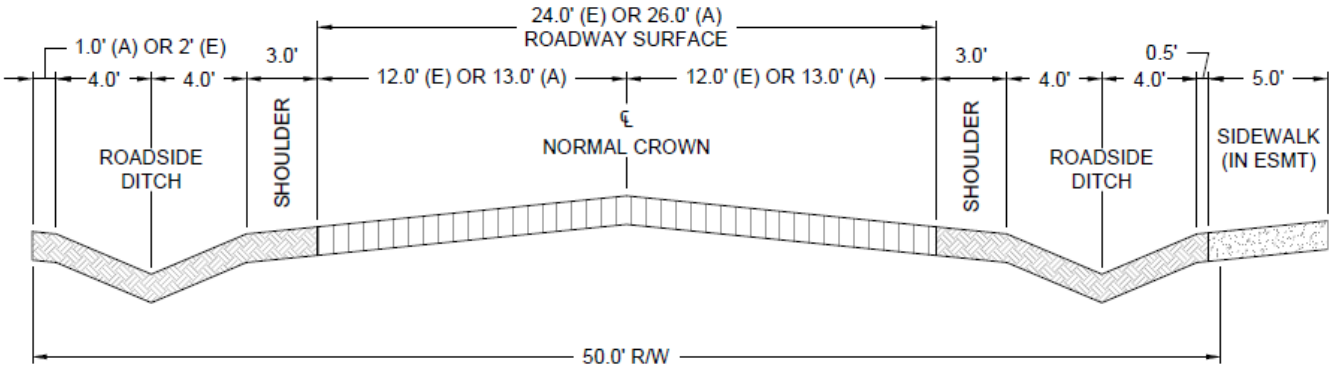
#1 Rolled Curb and #3 Typical Sections Demonstrating grass strip



TYPICAL ROAD CROSS SECTION
FOR STREETS A (STA 0+50 TO STA 16+50) AND B
(NOT TO SCALE)



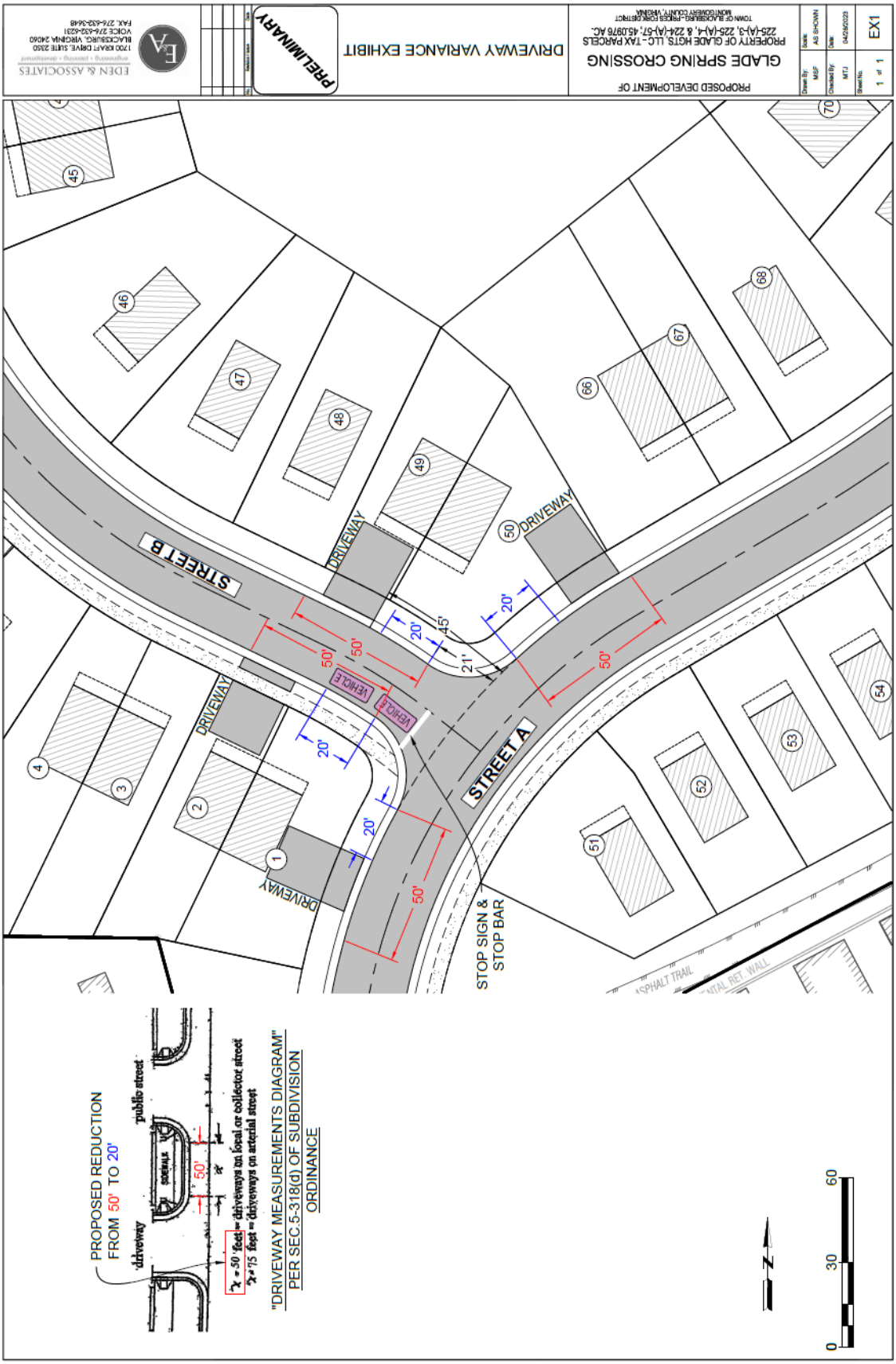
TYPICAL ROAD CROSS SECTION
FOR STREETS C AND D
(NOT TO SCALE)



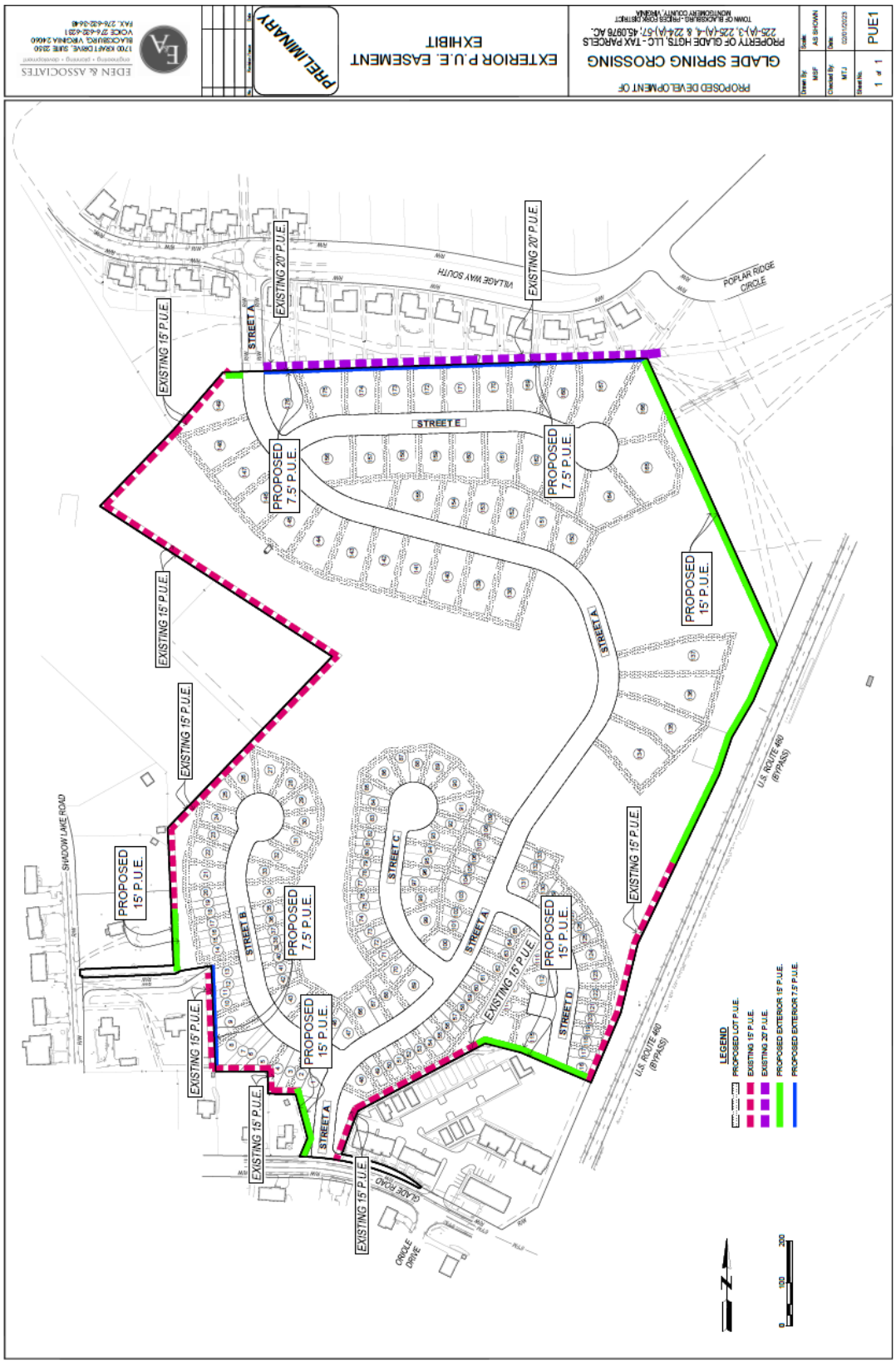
TYPICAL ROAD CROSS SECTION
FOR STREET A (STA 16+50 TO STA 24+00) AND STREET E
(NOT TO SCALE)

NOTE: THE STREET IN PARENTHESES (A OR E) DEFINES THE STREET TO WHICH THE DIMENSION APPLIES.

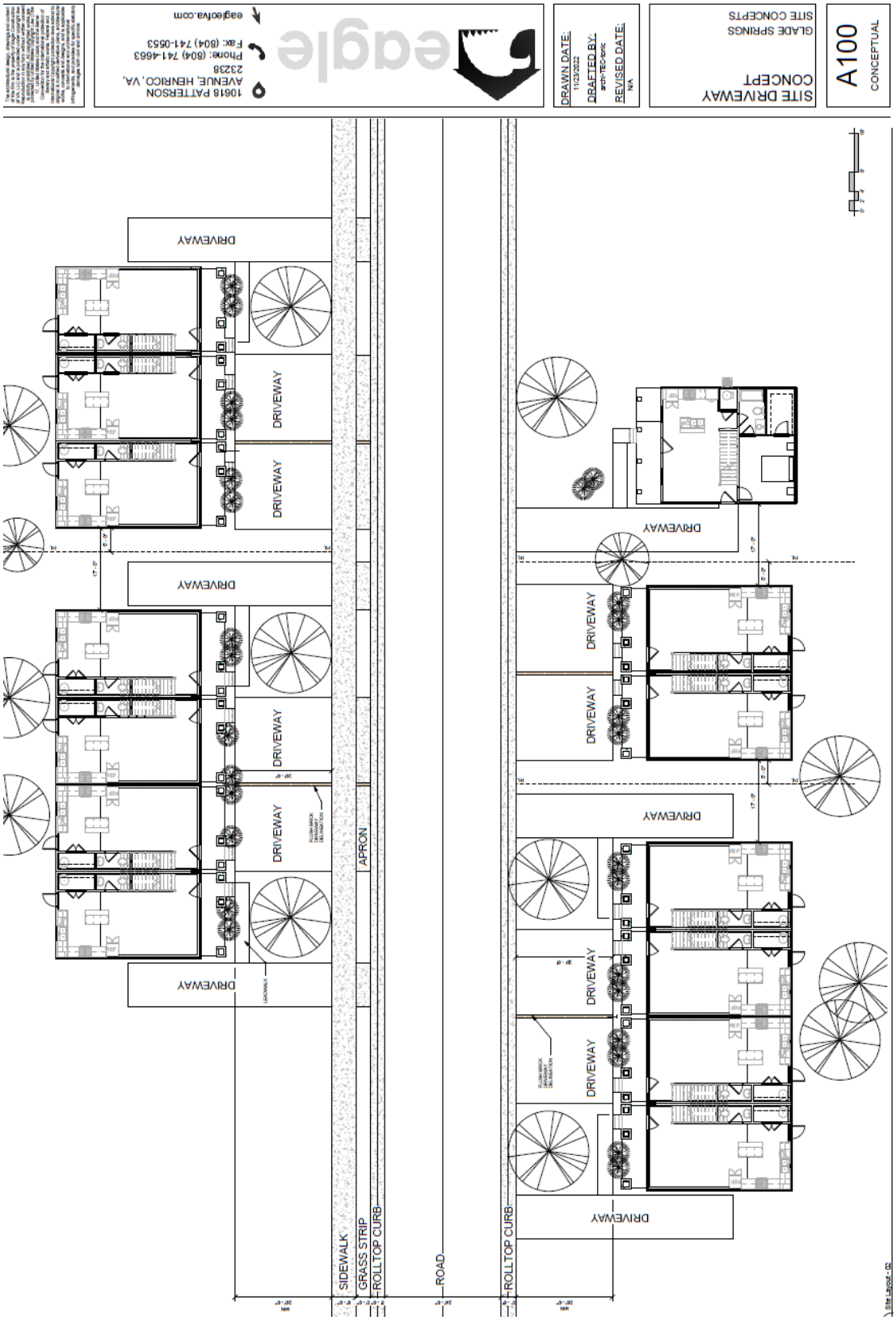
#7 Driveways


PRELIMINARY
DRIVEWAY VARIANCE EXHIBIT
GLADE SPRING CROSSING
PROPOSED DEVELOPMENT OF
PROPERTY OF GLADE HGTS. LLC - TAX PARCELS
225-(A)-3, 225-(A)-4, & 224-(A)-57, 45.0976 AC.
TOWN OF BLACKSBURG - PRICES FORK DISTRICT
MONTGOMERY COUNTY, VIRGINIA
EDEN & ASSOCIATES
1700 KRAFT DRIVE, SUITE 2350
BLACKSBURG, VIRGINIA 24060
VOICE 274-633-4231
FAX. 274-633-3648
Drawn By: MSF
Checked By: MTJ
Scale: AS SHOWN
Date: 04/26/2023
Sheet No.: 1 of 1
EX1
STREET B
STREET A
DRIVEWAY
VEHICLE
50'
20'
45'
21'
STOP SIGN & STOP BAR
ASPHALT TRAIL
RET. WALL
PROPOSED REDUCTION FROM 50' TO 20'
driveway
public street
sidewalk
50'
"DRIVEWAY MEASUREMENTS DIAGRAM" PER SEC.5-318(d) OF SUBDIVISION ORDINANCE
N
0
30
60

#8 Additional Exhibit



#9, #11 and #12 Exhibits: Driveways in front of building line (Townhouses and Two-family dwellings): no more than two consecutive driveways of 18’



#9, #11 and #12


A101
CONCEPTUAL
DRIVEWAY CONCEPT - VISUALS
GLADE SPRINGS
SITE CONCEPTS
DRAWN DATE: 11/23/2022
DRAFTED BY: arch-TEC-tonic
REVISED DATE: NA
eagle
10618 PATTERSON AVENUE, HENRICO, VA, 23238
Phone: (804) 741-4663
Fax: (804) 741-0553
eagleva.com
CONCEPT 02 - VIEW 01
CONCEPT 02 - VIEW 02
CONCEPT 02 - VIEW 03
CONCEPT 02 - 3D
CONCEPT 02 - 3D ELEV