



MEMBERS OF LANCASTER COUNTY PLANNING COMMISSION

CHARLES DEESE, DISTRICT 3, CHAIRMAN
JAMES BARNETT, DISTRICT 5, VICE-CHAIRMAN
YOKIMA CURETON, DISTRICT 2
JUDIANNA TINKLENBERG, DISTRICT 4
SHEILA HINSON, DISTRICT 6
ALAN PATTERSON, DISTRICT 1
BEN LEVINE, DISTRICT 7
CLERK: JENNIFER BRYAN

**MINUTES OF THE LANCASTER COUNTY PLANNING COMMISSION
WORKSHOP MEETING**

**July 6, 2023 5:00 P.M.
MINUTES**

Chairman Deese called the meeting to order at 5:02 p.m.

1. Roll Call:

Members Present:

Jim Barnett	Charles Deese	Sheila Hinson
Ben Levine	Yokima Cureton	Judianna Tinklenberg

Absent: Alan Patterson

Others Present:

Allison Hardin, Development Services Director

Matthew Blaszyk, Planner

Billy Mosteller, County Council.

Clerk: Jennifer Bryan

The following press were notified of the meeting by email in accordance with the Freedom of Information Act: The Lancaster News, Kershaw News Era, The Rock Hill Herald, The Fort Mill Times, Cable News 2, Channel 9, and the local Government Channel.

2. New Business

a. UDO-TA-2023-0972 Sec. 2.4 MDR Standards

Chapter Two, Sec 2.4 District Standards (MDR): Application by Planning Department on behalf of County Council to amend standards for MDR district, regarding lot size, front setbacks, usable open space, block length, and density calculation.

Draft text will be provided at the Workshop.

Staff Presentation: Allison Hardin, Development Services Director

Discussion:

- What regional organizations can help us advocate/fund road improvements?
- Most of the complaints about development in Indian Land are about traffic and/or substandard roads.
- Consider engaging consultant for study of road improvement priorities and future planning.

- Public Works is continuing the road inventory project.
- Severe shortage in workforce housing.
- Emphasize the difference between “Affordable Housing” which definition is tied to federal subsidies, as opposed to workforce housing.
- Home pricing can be addressed in the development agreement with certain tools.

b. UDO-TA-2023-0973 Sec 4.4.1 CSOD Standards

Chapter 4, Sec. 4.4 1 Cluster Subdivision Overlay Standards: Application by Planning Department on behalf of County Council to amend standards for Cluster Subdivision Overlay District, regarding lot size, front setbacks, usable open space, block length, CSOD lot size mix, and density calculation.

Staff Presentation: Allison Hardin, Development Services Director

Discussion:

- CSOD was intended to preserve areas or features of value to the community.
- To be effective, our code needs to specify what features it values.
- Develop specific criteria, eg tree species and/or size, types of wetlands, more clearly defining functional open space and amenities.
- One criteria could be contributing to workforce housing
- Flexibility for setbacks, overflow parking, “middle housing” options.

c. UDO-TA-2023-0975 Sec 6.5 County Street Classification & Design

Sec. 6.5 County Street Classification & Design: Application by Planning Department on behalf of County Council to amend Section 6.5 County Street Classification & Design. Draft text will be provided at the Workshop.

Staff Presentation: Allison Hardin, Development Services Director

Discussion:

- At present the UDO has no hierarchy list
- Adding standards for intermediate eg gravel roads in AR and RR zones
- Creating more specific and standardized road type definitions, including alleys.
- Provide examples of successful alley neighborhood design.

d. CU-2023-0695 Tommy’s Car Wash

Application by The Timmons Group, TIL Holdings of Texas, George McGinn and Sallie Cooper for a Conditional Use Permit for a 2.9-acre parcel at 168 Fort Mill Highway/Highway 160 (TM# 0008-00-007.00) for development of an automated car wash facility.

Staff Presentation: Matthew Blaszyk, Planner

Discussion:

- 3 items still need addressing from comments: design of office space; bicycle parking; open space. Otherwise the revised plan has met all requirements of the ordinance.
- Concern over ingress/egress safety

e. RZ-2023-0739 Barby Barchu

Application by Barby Barchu to rezone .30 acres at 165 Brooklyn Avenue, Lancaster (TM# 0081H-0C-013.00) from Medium Density Residential (MDR) to Neighborhood Business (NB) District, in order to re-establish the existing vacant business use.

Staff Presentation: Matthew Blaszyk, Planner

Discussion:

- Building is well maintained.
- Located in an area that would benefit from re-opening the business.

f. RZ-2023-0831 Grace-Lynwood UMC

Application by Ronald Woods and Rev. Matthew Alexander on behalf of Grace-Lynwood United Methodist Church to rezone 5.819 acres at 1743 Lynwood Drive (TM# 0087G-0C-004.00) from Institutional (INS) to Medium Density Residential (MDR) District, in order to market the property for residential use.

Staff Presentation: Matthew Blaszyk, Planner

Discussion:

- Property is adjacent to residential districts.

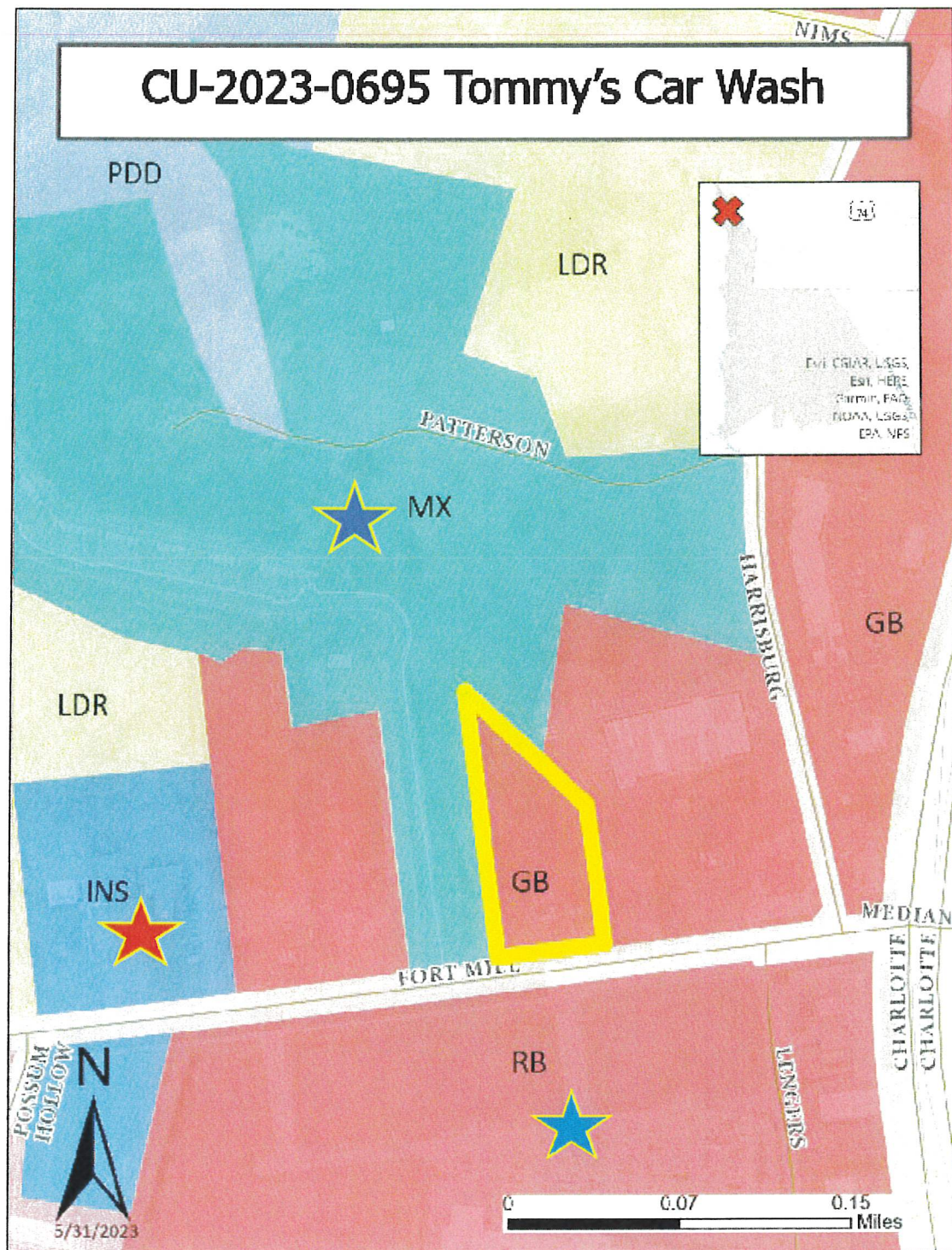
3. Other:

- a. No other business

4. Adjourn

Meeting was adjourned at 7:10 pm.

CU-2023-0695 Tommy's Car Wash



Lancaster
County
South Carolina



Subject Property



Capital Club Apartments



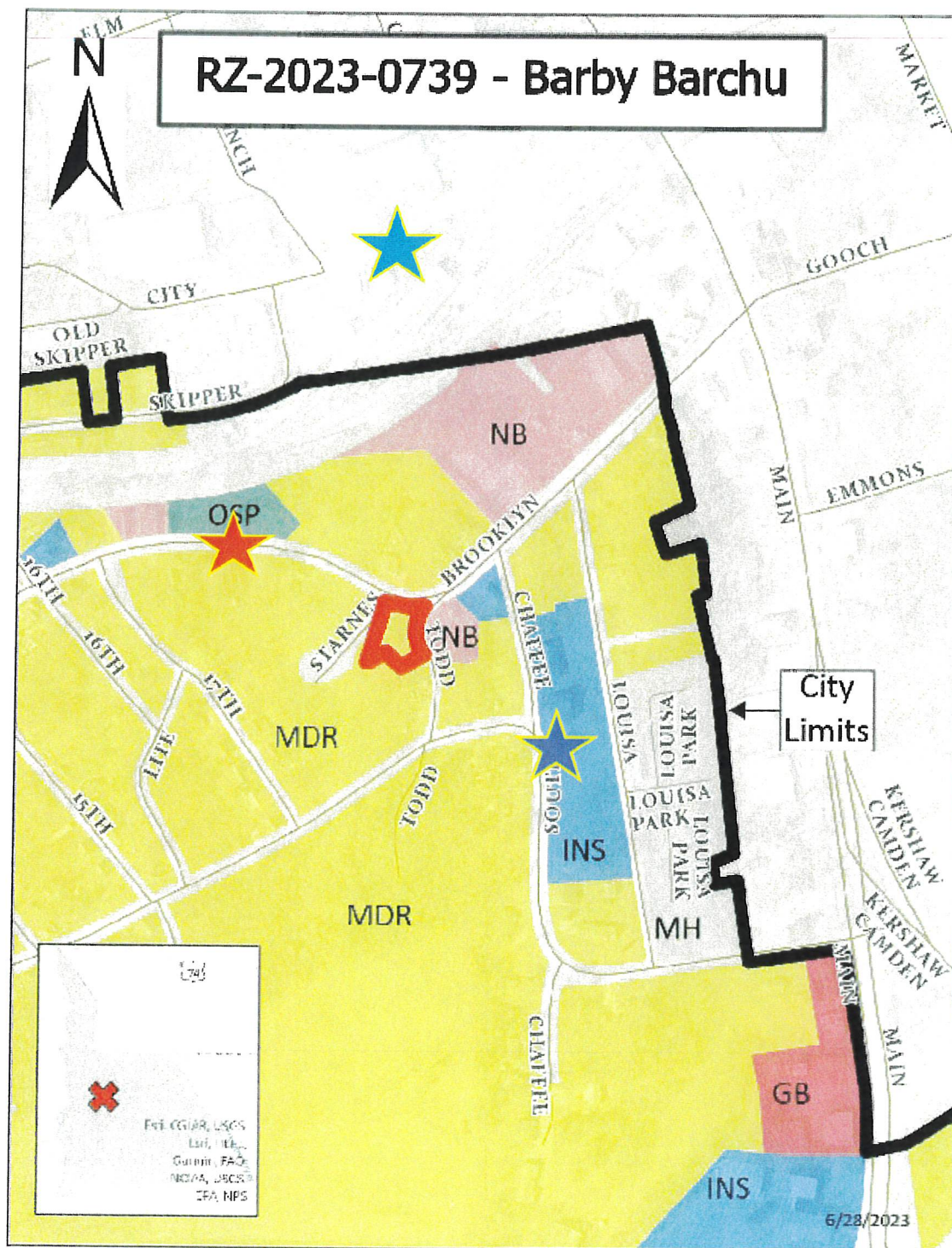
Pleasant Hill
Methodist Church



Lowe's

Proposal:

Vehicle: Minor Maintenance
& Repair



Subject Property



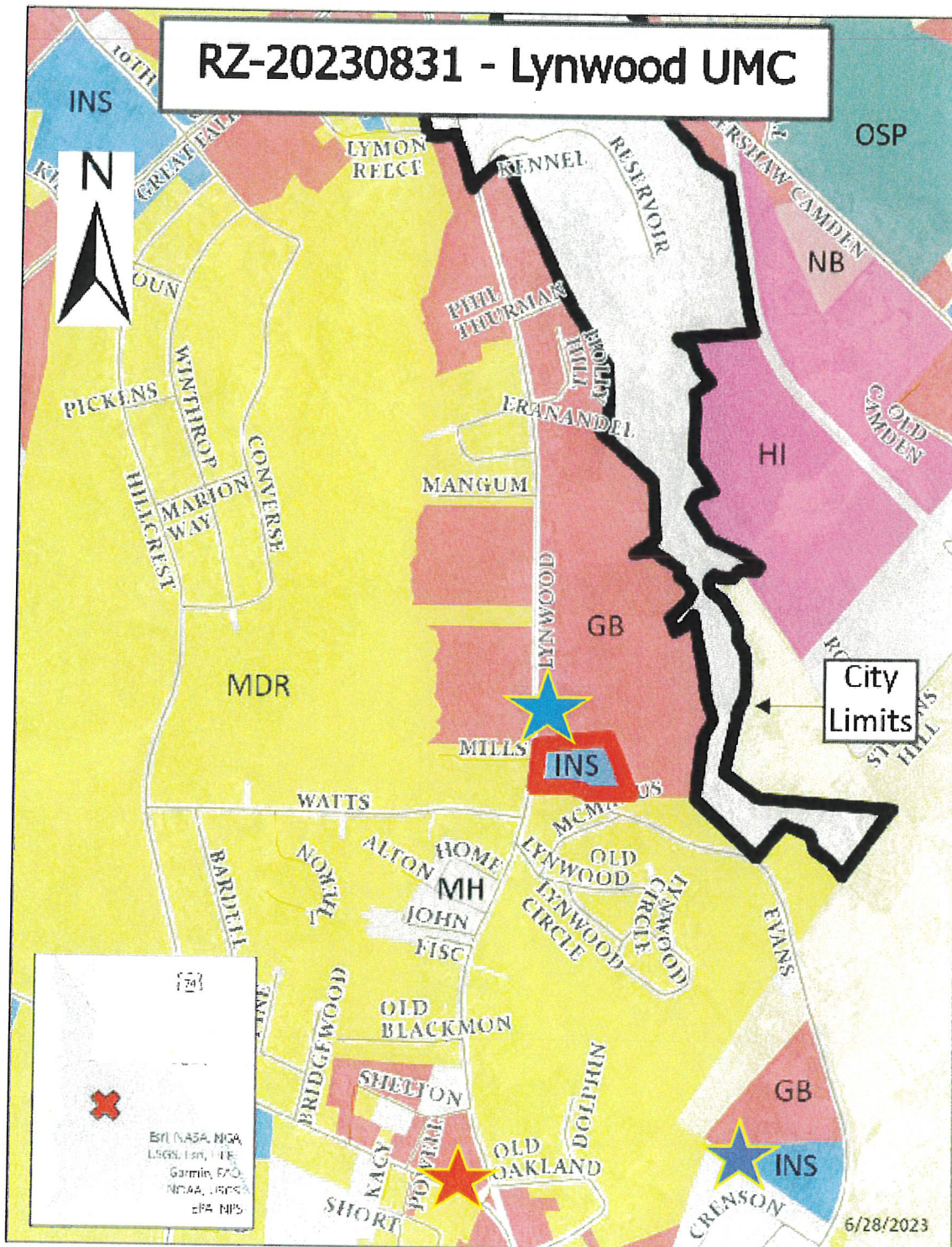
Proposal:
Rezoning MDR to NB

Lifeline Ministries International

Stafford Belk Park

Builder's Supply Co.

RZ-20230831 - Lynwood UMC



Lancaster
County
South Carolina



Subject Property



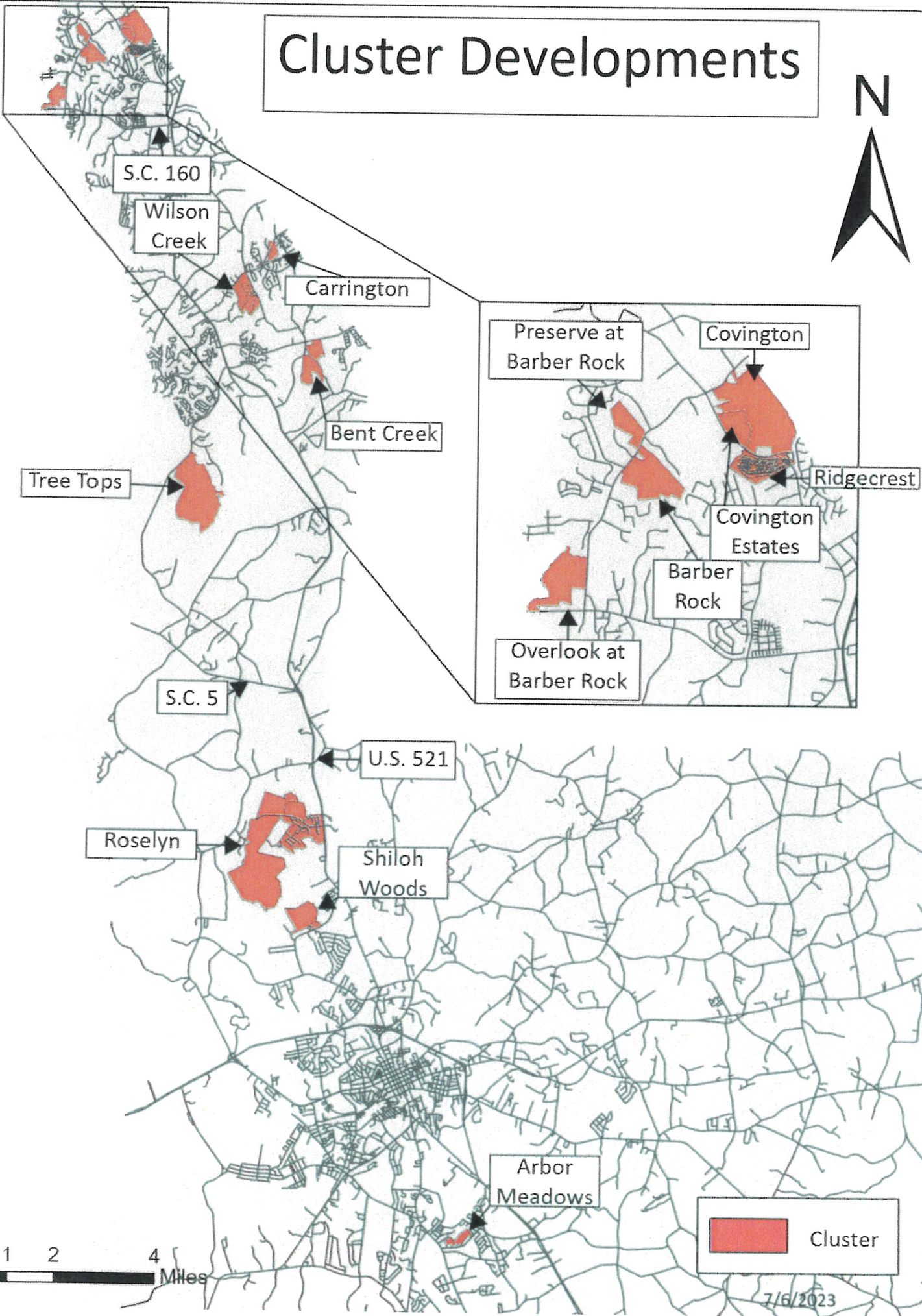
Proposal:
Rezoning INS to MDR

Beacon Baptist Church

Y & J Express Gas Station

Martin's Machine Co. Inc.

Cluster Developments



PROPOSAL: Amend Unified Development Ordinance Standards for Cluster Subdivision Overlay District (CSOD) standards.

APPLICABLE CHAPTER(S): UDO Chapter 4

APPLICANT: Lancaster County Council

STATED CONCERN: “Changes are intended to address known issues...related to front setbacks, usable open space, lot sizes, CSOD lot mix, block face lengths, and density calculation.”

PROJECT SUMMARY & PROPOSAL:

Growth management has been an active discussion with the County Council over the course of the last year.

In 2022, a proposed Interim Ordinance for the cluster design standards, including changes to minimum lot size, front yard setbacks, open space requirements, and open space in relation to block length, was denied. Afterwards, citizen engagement prompted the County Council to initiate proposed changes to the Medium Density Residential (MDR) Zoning District and the associated Cluster Subdivision Overlay District (CSOD). This also failed to pass as a joint resolution, and staff asked for time to separate the two issues in order to reach a resolution.

OVERVIEW:

Staff has had concerns that the cluster subdivision overlay district was not being used in the way that cluster subdivisions are intended, and is seeking to address this.

Cluster subdivisions are generally used to accommodate a specific goal of the community and/or comprehensive plan. For example, cluster design flexibility is provided in many communities in exchange for natural resource protection, transit-oriented neighborhoods, or to achieve affordable housing. The Lancaster County conservation subdivision code references this, but does not specifically require or call out the objective.

Earlier attempts were challenged based on discussions about how the options would impact the Panhandle. Cluster subdivision design, properly implemented, could be viable county-wide.

OPTIONS:

Staff has reviewed multiple code sources and recommends deliberation of the following options (in no particular order):

- **Only allow cluster subdivisions as a means to address an accepted need in the county.**
 - Current code mentions using cluster subdivision design to preserve trees and flood areas, but needs more teeth and to list more of the county's stated concerns (slope failure areas, floodways, stream banks, tree species and size for preservation, etc).
 - Additional needs of the county include middle housing options, entry-level housing for first time homebuyers, and housing for renters.
- **Allow cluster lots to decrease the front setback to 30 feet.**
 - This gives more preservation in the rear yards, where many have wetland buffers or slopes.
 - Staff does not advocate reducing the setback between the garage/carport and the house. This should stay at 40 feet.
- **Add parking plan requirement for overflow; require parking to be on private lands (off street); allow narrower roads by review/approval of Planning Commission.**
 - One component option of cluster subdivision is to reduce impervious surfaces, like roads. Reducing the width of pavement on roads should be allowed only if the width will accommodate public safety, and only if parking is prohibited on the street so that public safety and public health vehicles (garbage trucks) can safely travel the roadways as needed.
- **Determine tree species and sizes to be protected; prioritize tree species that are native to the area and help control stormwater (through absorption).**
- **Allow flexible types of housing to address the "missing middle" housing options. (Ref: <https://missingmiddlehousing.com/types>)**
- **Allow flexible setbacks (a range of setbacks vs a standard setback) to reduce the need for variance.**
 - If the purpose of cluster housing is to preserve land that has issues with terrain, water, tree preservation, etc, then the developer should have some flexibility to site the houses in such a way to achieve this. A single setback regulation can defeat the purpose of the cluster subdivision without some flexibility. Avoiding a costly delay by requiring variance review also helps move the project along and achieves the community's goals.
- **Require phasing to reduce mass grading.**
 - Staff have received many complaints about entire development sites being taken down all at once; it provides challenges for sediment management as well.
 - Phasing the plans would allow trees to remain in sectors until the development progresses to the next phase.

- **Anticipate and supplement customer needs.**
 - Many buyers turn away from smaller lots due to inability to construct a storage unit, or store a boat/RV/trailer, or build a backyard retreat.
 - Codes could support the implementation of these items in the neighborhood design by supporting neighborhood secured parking areas, storage units built into the home, and elevated home sites under which vehicles could be parked or shaded seating/recreation areas could be installed.
-

ATTACHMENTS:

1. Missing Middle Types
2. Missing Middle Types – Cottage Court

STAFF CONTACT:

Allison Hardin, Development Services Director
ahardin@lanastercountysc.net



The Types

The Missing Middle Housing types provide diverse housing options, such as duplexes, fourplexes, cottage courts, and multiplexes. These house-scale buildings fit seamlessly into existing residential neighborhoods and support walkability, locally-serving retail, and public transportation options. They provide solutions along a spectrum of affordability to address the mismatch between the available U.S. housing stock and shifting demographics combined with the growing demand for walkability.

The majority of Missing Middle Housing types have 4-8 units in a building, or 4-8 units on a lot in the case of a cottage court. Most Missing Middle building types are 2 to 2.5 stories in height, with the exception of the cottage court at 1.5 stories. They have a maximum of one off-street parking space per unit.

Upper Missing Middle Housing types typically have 12 units per building, with a maximum of 19 units. These are typically deeper buildings, and 3-4 stories in height. These buildings should be treated as a separate category of Missing Middle, and used very carefully in low-to-moderate intensity neighborhoods or more liberally in higher intensity neighborhoods. Carriage houses (also known as Accessory Dwelling Units or ADUs) are not a Missing Middle housing type but can be a useful tool in increasing housing access and affordability without changing the community's physical character.



Duplex: Side-by-Side



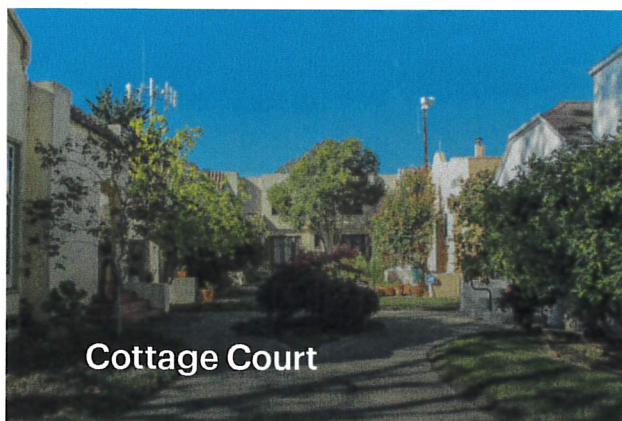
Duplex: Stacked



Fourplex: Stacked



Courtyard Building



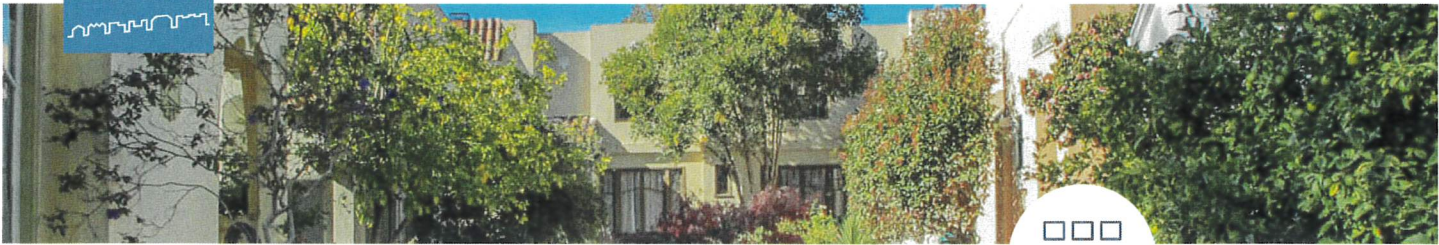
Cottage Court



Townhouse



MISSING
MIDDLE
HOUSING



[back to the types](#)

Cottage Court

Overview

Idealized

Documented

Description

A group of small (1 to 1.5-story*), detached structures arranged around a shared court visible from the street. The shared court is an important community-enhancing element and unit entrances should be from the shared court. It replaces the function of a rear yard. Often rear-most building can be up to 2 stories.

Typical Specifications

Lot	Front-loaded	Alley-Loaded
Width*	115–160 feet	100–150 feet
Depth*	100–150 feet	100–150 feet
Area*	11,500–24,000 sq. ft. 0.26–0.55 acres	10,000–22,500 sq. ft. 0.23–0.52 acres
Units		
Number of Units	5–10	5–10

Typical Unit Size	500–800 sq. ft.	500–800 sq. ft.
Density		
Net Density	13-38 du/acre	19–44 du/acre
Gross Density	10-20 du/acre	15–31 du/acre
Parking		
Parking Ratio*	1-2 per unit	1-2 per unit
On-street Spaces	5-7	5-7
Off-street Spaces	1 per unit max.	1 per unit max.
Setbacks		
Front*	10–25 feet	
Side*	5–15 feet	
Rear (main building)*	5–15 feet	
Between Main and Accessory Buildings	5–10 feet	
Building		
Building Size		
Width	18–24 feet max.	
Depth	24–36 feet max.	
Height (to eave)*	12–18 feet max.	
Floors	1-1.5 stories (Rear-most building sometimes 2 stories)	

* *Varies based on context*





Gallery of Cottage Courts

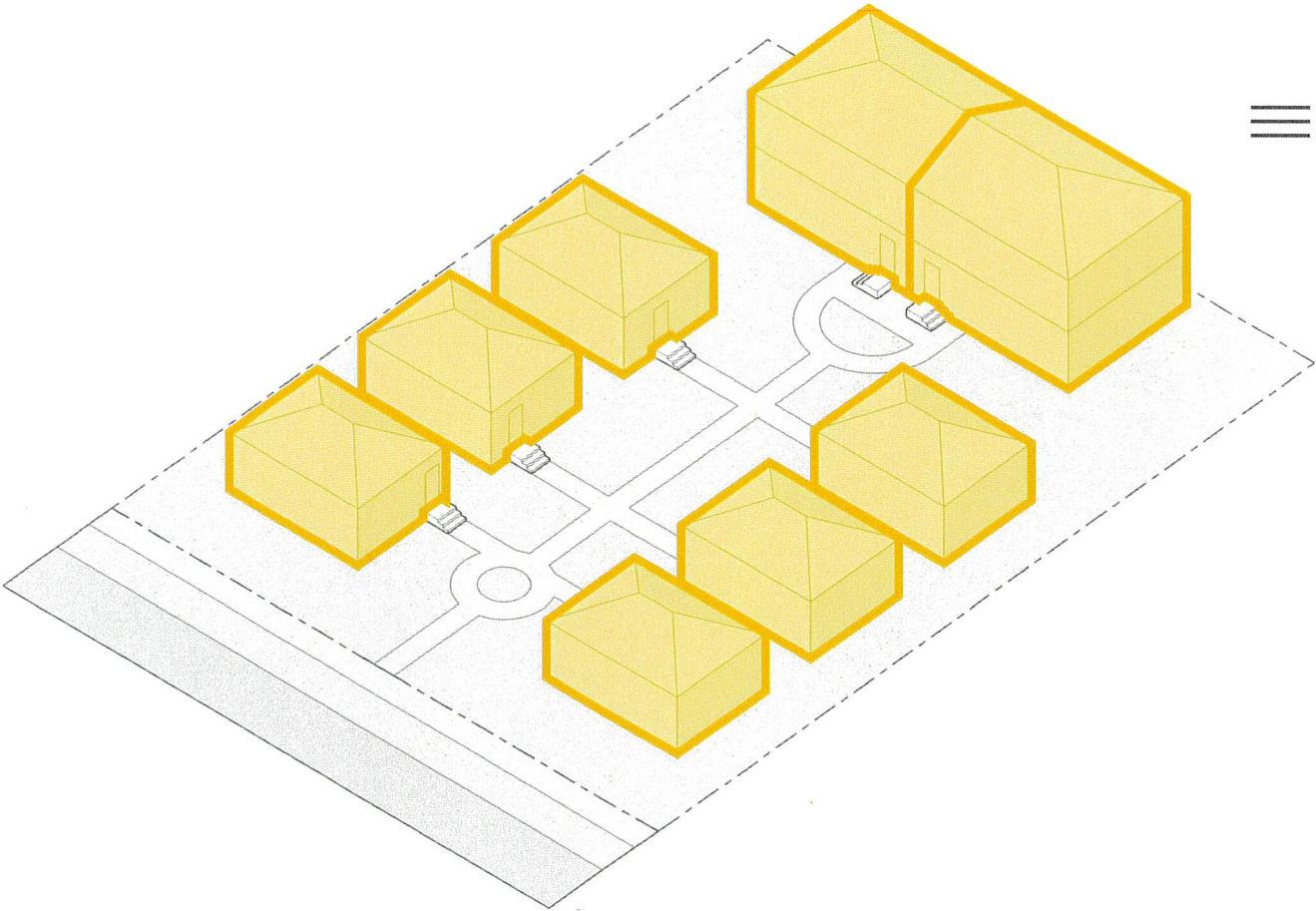




Idealized specifications take the best characteristics of this type and update them for today’s typical building standards, serving as a model for new development.

Alley Loaded | **Front Loaded**

Alley Loaded

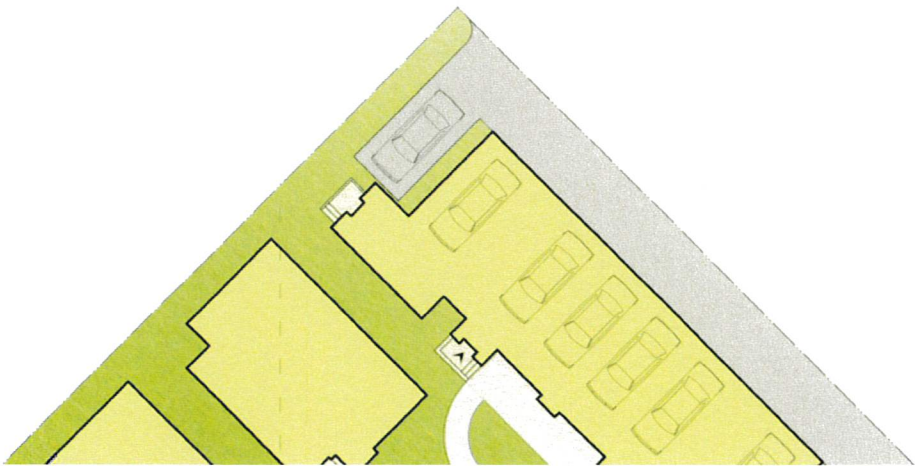
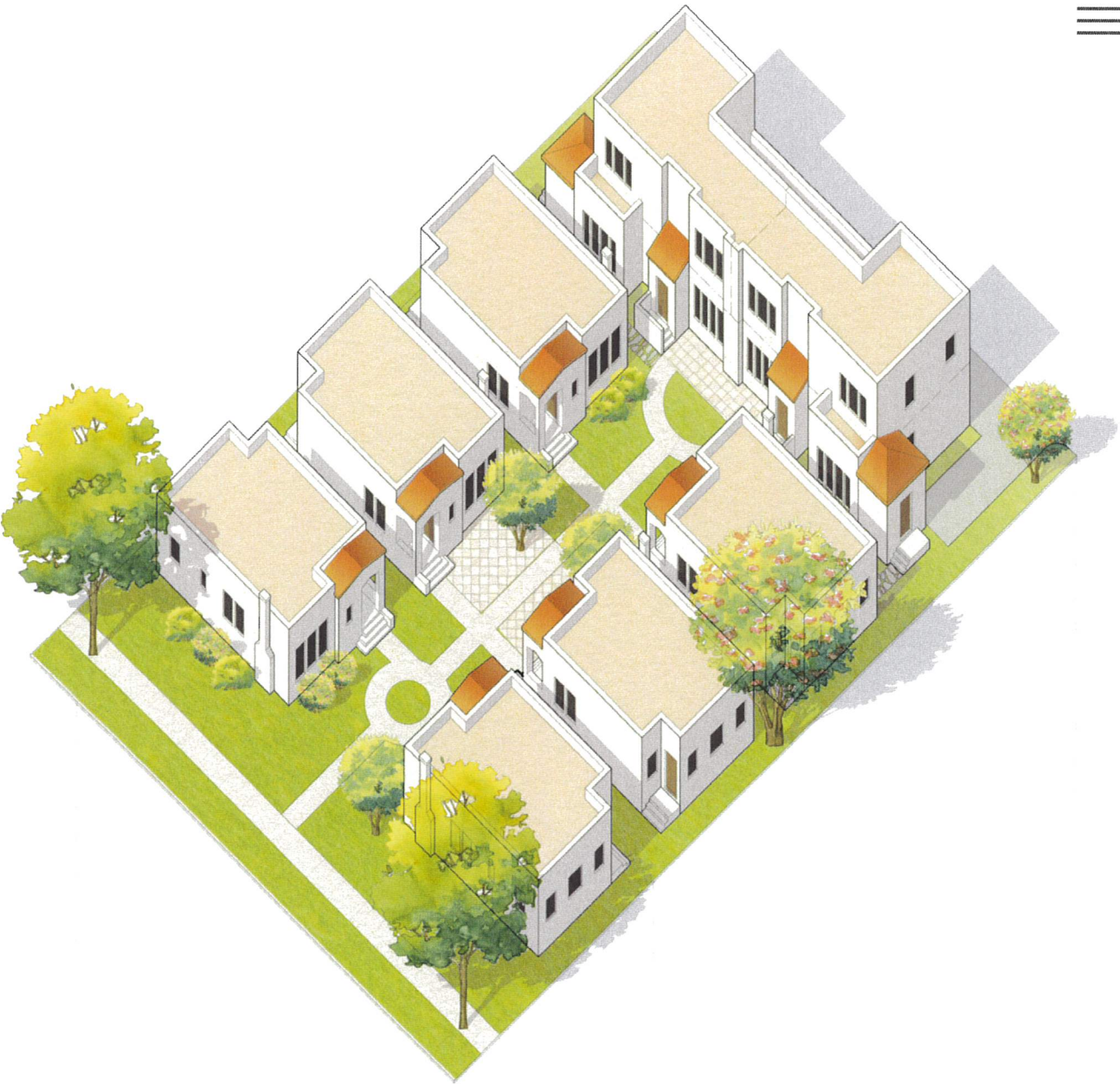


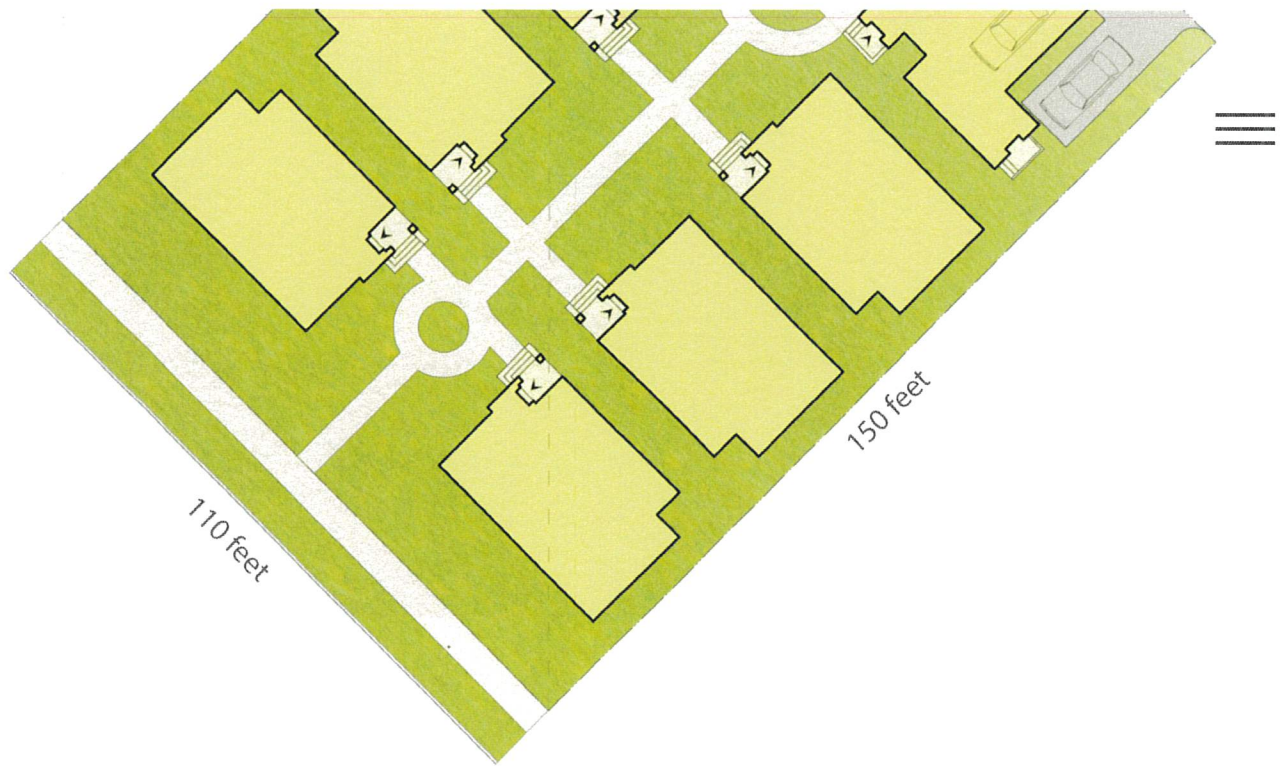
Ideal Specifications

Lot	
Width	110 feet
Depth	150 feet
Area	16,500 sq. ft.
	0.4 acres
Units	
Number of Units	8 units
Typical Unit Size	840 sq. ft.
Density	
Net Density	21 du/acre
Gross Density	16 du/acre
Parking	
Parking Ratio	1.625 per unit
On-street Spaces	5
Off-street Spaces	1 per unit max.
Setbacks	

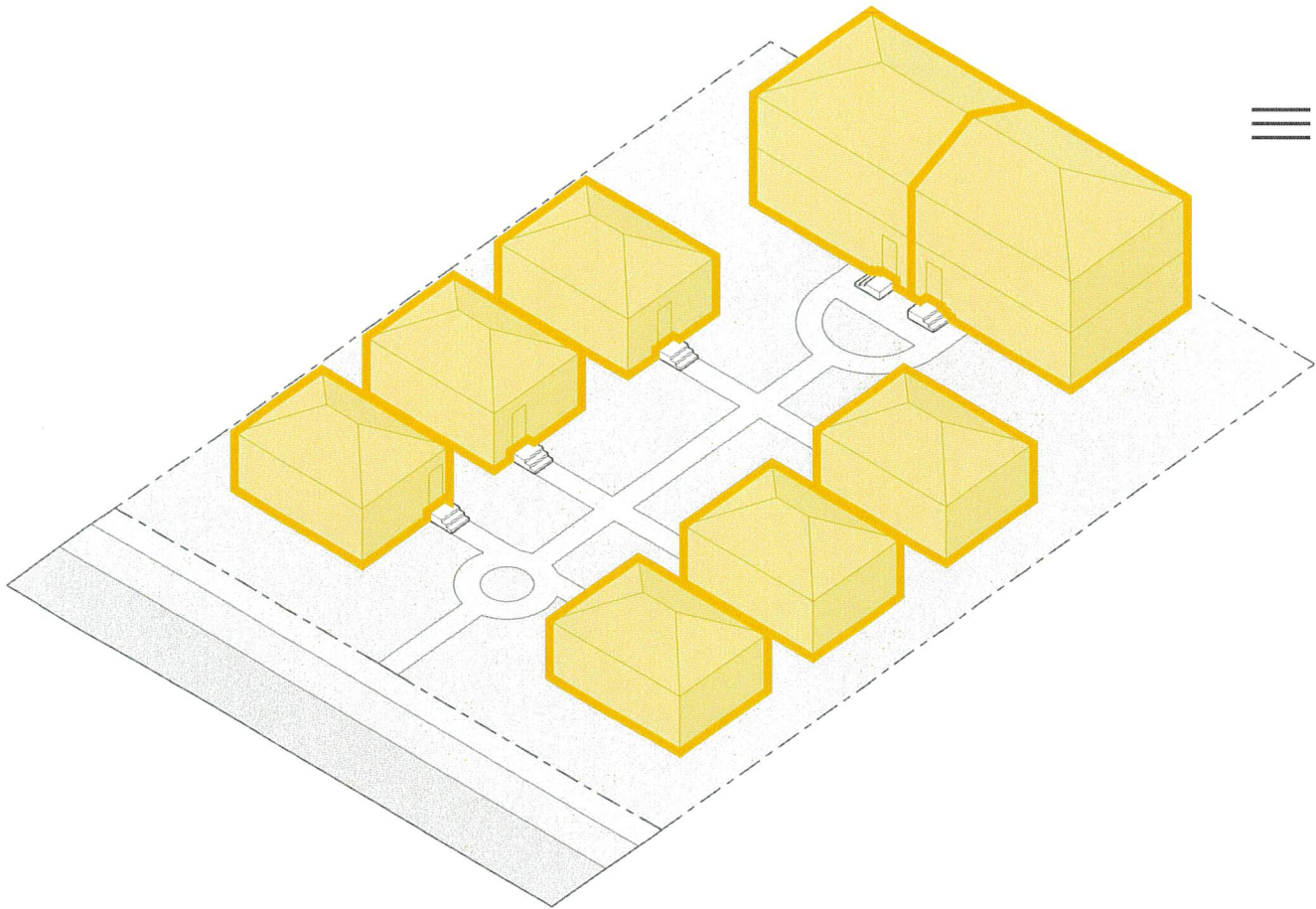
Front	15 feet
Side	5 feet
Building	
Building Size	
Width	24 feet
Depth	35 feet
Height (to eave)	15 feet
Floors	1 story







Front Loaded

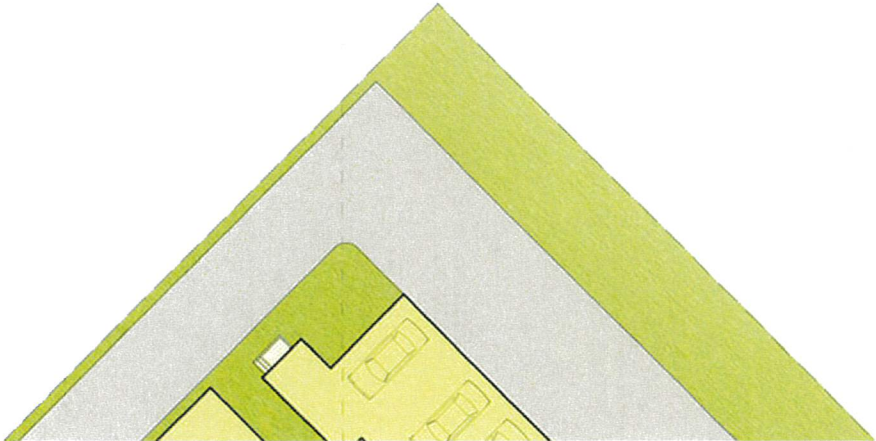


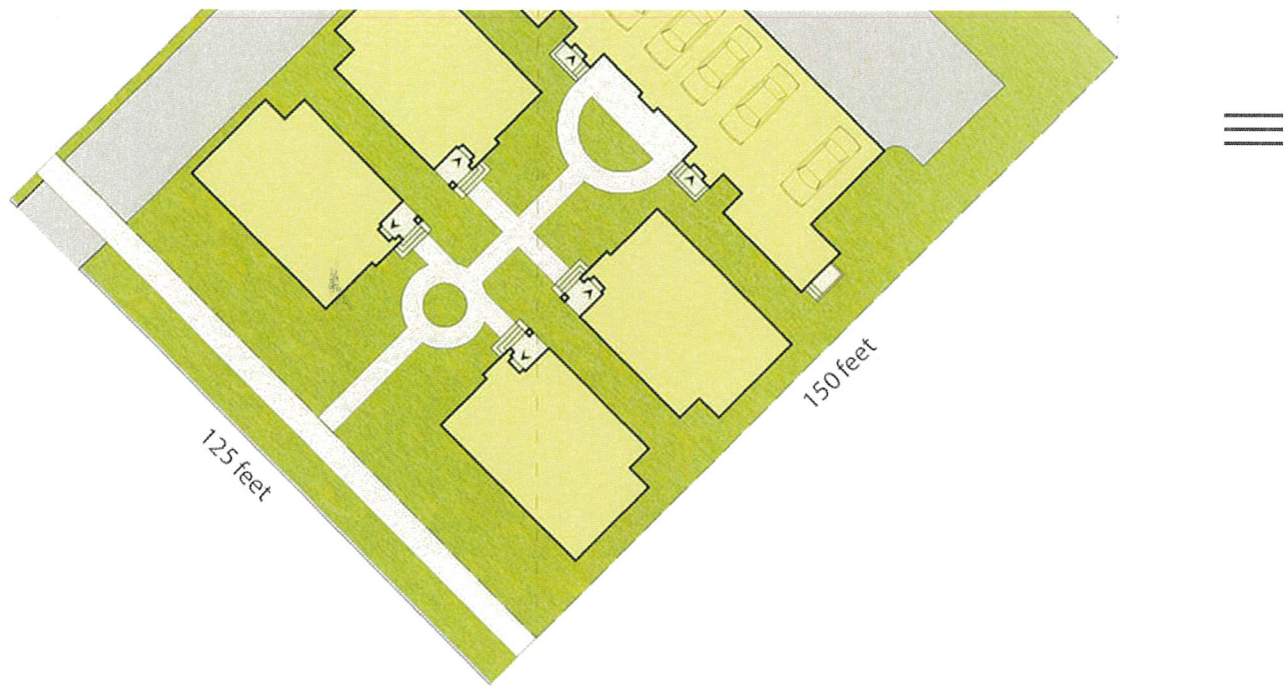
Ideal Specifications

Lot	
Width	125 feet
Depth	150 feet
Area	18,750 sq. ft.
	0.43 acres
Units	
Number of Units	6 units
Typical Unit Size	840 sq. ft.
Density	
Net Density	14 du/acre
Gross Density	12 du/acre
Parking	
Parking Ratio	1.83 per unit
On-street Spaces	5
Off-street Spaces	6
Setbacks	

Front

15 feet





The following example(s) show this housing type documented as real-world examples as they exist today. NOTE: Documented examples may be not be up to today's local building code standards. See the **Idealized** tab for up-to-date specifications in line with modern building standards.

< Townhouse All Types Courtyard Building >

PROPOSAL: Amend Unified Development Ordinance Standards for Medium Density Residential District.

APPLICABLE CHAPTER(S): UDO Chapter 2

APPLICANT: Lancaster County Council

STATED CONCERN: “Changes are intended to address known issues...related to front setbacks, usable open space, lot sizes, ...and density calculation.”

BACKGROUND:

Growth management has been an active discussion with the County Council over the course of the last years. Many discussions have focused on the Medium Density Residential (MDR) zone and cluster housing option for subdivision development. Staff has noted complaints on both sides of the MDR coin (too much and not enough density), and also the cluster development option (too much density and not enough usable space left for development).

There have been two attempts in the last twelve months to “fix” the Medium Density Residential (MDR) zoning district. The first attempt, “flex” zoning, was drafted in 2022 after months of research. It was perceived as too complex, and there were questions about how it would fit into the pending Unified Development Ordinance (UDO) rewrite. It failed to receive full Council support.

Afterwards, citizen engagement prompted the County Council to initiate other proposed changes to the Medium Density Residential (MDR) Zoning District and the associated Cluster Subdivision Overlay District (CSOD). The underlying intent of the amendments (as understood by staff) included: 1) Decreasing density of residential developments, 2) Increasing residential lot sizes, 3) Increasing useable open space acreage in neighborhoods, 4), Breaking up residential block faces, and 5) Expanding driveway parking within neighborhoods.

This second attempt, increasing the minimum lot size with variable lot options under cluster zoning, was made earlier this year. It was perceived as a regulation that would increase the cost of residential housing and failed to pass. Staff then asked for time to separate the two issues in order to reach a resolution.

In the months since the flex option was denied, Lancaster County Council has continued to hear many times from residents in the Indian Land area that there is too much residential development in their area. They primarily report issues with traffic, both on Hwy 521 and on local connectors to the highway, and request a moratorium on new development.

Lancaster County staff have heard complaints about housing as well, most of which can be lumped into one of three topics:

- The challenge in finding housing that is affordable to the “working class”
- Inability of new residents to add on to their existing homes due to lack of space or yard for accessory units, pools, etc
- Developer interest in creating more lots for sale or development

Recently, there has been some support resurfacing for the flex zoning concept, especially from developers. Staff has also been investigating other concepts, including sunrise/sunset zoning, mandatory periodic review, and algorithmic review models (scorecards based on how a project addresses the community goals).

In this report, staff discusses the county’s housing needs, and alternatives to address both the needs and the public’s perceived issues.

REVIEW OF CURRENT REGULATIONS – MDR

Section 2.3 Districts Described – Medium Density Residential (MDR): The Medium Density Residential District is established to maintain previously developed or approved single-family residential subdivisions and their related recreational, religious, and educational facilities at a density of 2.5 dwelling units per acre. Intended to act as a transitional zoning district between rural and urban development, these regulations are further intended to discourage any use which would be detrimental to the predominately residential nature of the areas included within the district.

Section 2.4 Development Standards

MDR

1. DEVELOPMENT STANDARDS	
A. District/Development Area (min)	n/a
B. Development/District Exterior Setback/Buffer	n/a
C. Density (max)	2.5 units/acre
D. Open Space (min)	20%
E. Park Space (min)	5%
2. LOT STANDARDS	
A. Lot Area (min)	10,000 sf
B. Lot Width at Front Setback (min)	70 ft Water/Sewer OR 130 ft Septic See Below (5)
C. Pervious Surface (min)	45%

MDR (Continued)	
3. PRINCIPAL BUILDING	
A. Principal Front Setback (min)	30 ft
B. Street Side/Secondary Front Setback (min)	15 ft
C. Side (from adjacent lot) Setback (min)	10 ft
D. Rear Setback (min)	25 ft
E. Other Standards	n/a
4. ACCESSORY STRUCTURE	
A. Side Setback	5 ft
B. Rear Setback	5 ft
C. Other Standards	See Below (1, 2)
5. PARKING CONFIGURATION	
A. Parking Location per Section 7.2.3	See Chart 7.2
B. Parking in Exterior Setback/Buffer	n/a
6. BUILDING HEIGHT	
A. Principal Building (max)	35 ft
B. Accessory Structure (max)	2 stories
C. Additional Height Permitted with Additional Setback	n/a

1. Accessory structures over 600 sf must comply with principal setback require
2. No accessory structures may be located on corner lots between the street and wall line of the principal structure.
3. No accessory structures may be located on corner lots between the street and wall line of the principal structure, unless front setback requirements are provided on both streets.
4. For any nonresidential structure which is located immediately adjacent to a single-family residential use or district, the lot boundary line minimum distance shall be determined as follows: For every foot building height, the developer shall provide setbacks equal to the height of the building. At no time shall the setback be less than what is indicated in the above table.
5. For any development/subdivision connected to both public water and sewer shall utilize the alternate dimensional standards given in the table.

Section 2.5.3 Uses Permitted

- Dwelling, Single Family
- Gardens, Community and Private
- Class 1 and Class 2 Utilities*

Section 2.5.3 Uses Permitted with Review (Code Section that Outlines the Review Criteria)

- Dwelling, Two Family (5.2.1)
- Dwelling, Accessory (5.2.3)
- Home Occupation (5.4.2)
- Cemetery (5.6.1)

- Event Venue/Banquet Hall (5.6.2)
- Public Recreation Facilities (5.6.5)
- Child/Adult Day Care Home of five or fewer persons (5.7.1)
- Electric Vehicle Charging Stations (5.8.2)
- Backyard Pens/Coops (5.10.4)
- Farmer's Markets and Roadside Stands
- Geothermal Energy Systems (5.11.2)
- Solar Energy Systems (5.11.3)
- Wireless Communication Facility, Concealed and Up to 60 ft tall (5.11.5)
- Temporary Uses (5.12)

Section 2.5.3 Special Exceptions (Code that Outlines the Exceptions)

- Wireless Communication Facility, over 60 ft but less than 200 ft (5.11.5)

Section 2.5.3 Conditional Uses (Code Section that Outlines the Conditions)

- Places of Assembly (5.6.3)
- Schools – Elementary and Secondary (5.7.7)

** **Section 10.3 Definitions UTILITIES:** Facilities or systems for the distribution of gas, electricity, steam, or water, the collection, treatment and disposal of sewage or refuse; the transmission of communications; of similar functions necessary for the provision of public services.*

Radio transmission facilities less than 180 feet in height for use by ham radio operators or two-way radio facilities for business or governmental communications shall be deemed accessory uses and not utilities.

Utilities are divided into 3 classes:

Class 1: Distribution, transmission and collection lines (above and below ground) including electrical, solar panels, telephone/broadband internet, natural gas, waste water collection, and water distribution lines; pumping stations, lift stations, and telephone/broadband switching facilities (up to 200 square feet).

Class 2: Elevated water storage tanks; above ground natural gas facilities including regulator stations and Point of Delivery stations; package treatment plants; telephone/broadband switching facilities (over 200 square feet); substations; or other similar facilities in connection with telephone, electric, natural gas, steam, and water facilities, not including cellular communication towers.

Class 3: Generation, production, or treatment facilities such as power plants, water and sewage plants.

Other Impacts to/from MDR (*Relevant Code Citations Italicized*):

- When mixed use buildings are located next to MDR zoned land, higher setback and buffer regulations are triggered to reduce the impact of a high bulk building next to a residential property zoned MDR. (3.8.J, 5.5.4)

- Restricted Industry (restricted industry uses, junkyards, landfills) must be at least ½ mile away from any MDR districts. (5.9.1.C.1; 5.9.2.C; 5.9.4)
- Restricted Indoor Warehouse and Wholesaling and Distribution uses must be at least ¼ mile from any MDR districts. (5.9.13.C)
- Private recycling collection stations are required to be at least 500 feet from MDR districts. (5.9.8)
- Outdoor storage yards and billboards are required to be at least 300 feet from MDR districts (5.9.10, 7.4.6.F.4), and illuminated signs must be set back at least 50 ft from any abutting property line shared with a property zoned MDR. (7.4.9.A.2)
- Outdoor theaters must be 200 feet from any adjacent property zoned MDR. (5.5.13)
- Junkyards adjacent to property zoned MDR are required to have a larger setback than from business and industrial zones. (100 ft vs 50 ft) (5.9.2.E)
- Temporary weekend flea markets must be located 250 ft from any MDR district, unless there is a four-lane road between the market and the MDR property. (5.12.4)
- Major subdivisions are required to have public water and hydrants, public sewer, street trees, paved streets, street signs, parks/open space, and sidewalks in their design. (6.3)
- Buffer yards are determined based on zone proximity to each other (7.1.5):
 - Where projects zoned AR, RR, RN, OSP, MH, LDR, MDR, or HDR abut property zoned MDR, there are no additional buffers required.
 - Where projects zoned UR, RMX, INS, MX, PB, NB, or GB abut property zoned MDR, the project must have a Type A (or, on multifamily uses, Type B) buffer.
 - Where RB, LI, HI, and M zones abut MDR zones, they are required to have a Type C buffer (most stringent requirement).
- The amount of light a project can shed onto adjacent property is significantly more limited when the adjacent property is MDR. (7.3.2.A)

RELEVANT DATA

Average home price in Lancaster County, June 2023: **\$405,528**
 Average Square Footage (2023 data to June) of Single-Family Home Construction: **3,503 sq ft**
 Median Sold Price By Bedroom Count in Lancaster County:

# BEDS	JUN 2022	JUN 2023	% INCREASE OVER 2022
1	\$110K	\$160K	+45.5%
2	\$297.3K	\$300K	+0.9%
3	\$303K	\$325K	+7.2%
4	\$459.2K	\$480K	+4.5%
5+	\$602.2K	\$625K	+3.8%

Source: RocketHomes

Homes for Sale by Bedroom Count in Lancaster County:

# BEDS	MAY 2023	JUN 2023	% CHANGE (+ OR -)
1	0	0	0.0%
2	60	72	+20.0%
3	241	243	+0.8%
4	126	120	-4.8%
5+	61	65	+6.6%

Source: RocketHomes

Single Family Homes	Total sq. ft. built in county	Average sq. ft. (single family homes only)	Total number of homes permitted
2019	3,883,718	3,130	1,241
2020	4,888,779	3,460	1,413
2021	4,535,411	3,646	1,244
2022	3,561,567	3,579	995
2023	1,180,624	3,503	337

Source: Lancaster County Building Inspections

Median New Home Price, June 2023	Income Needed to Qualify	Total Number of Households	Households Unable to Afford the Median Price	Percent Unable to Afford Median Price
SC: \$404,514	\$118,055	2,216,805	1,597,965	75%
CLT: \$469,445	\$138,191	1,119,126	847,316	76%

Source: National Association of Home Builders

NAHB Blog (<https://www.nahb.org/blog>) Lot Shortage Eases but Still a Problem

Obtaining lots for new homes remains a challenge for many of NAHB's builders, but the shortages are not as widespread as they were in 2021, according to responses to the May 2023 survey for the NAHB/Wells Fargo Housing Market Index (HMI).

Nearly half (42%) of single-family home builders characterized the supply of lots simply as low, and another 25% said the supply was very low. That total (67%) is down from 76% who reported shortages in the September 2021 survey, but is still the second highest incidence of lot shortages on record since NAHB began collecting the information in 1997.

The current percentage of builders reporting a shortage of lots is particularly high relative to the current level of production. Over the past six months, total housing starts have been hovering around an annual rate of 1.4 million. In comparison, in 2005 when total housing starts peaked at more than 2 million, 53% of builders were reporting lot shortages.

One factor contributing to the lot shortage is availability of credit for developers. **Loans to develop new residential lots** (<https://eyeonhousing.org/2023/05/rates-on-development-andconstruction-loans-continue-to-climb/>) were becoming both harder to obtain and more expensive over the prior year. Government regulation — which can lengthen and complicate the lot development process and add to its cost — is another factor.

(Published June 2023)

STAFF ASSUMPTIONS:

- Lancaster County has a severe shortage of housing that is affordable to “workforce” buyers (professional and blue-collar employees).
- Housing costs are impacted, in part, by the cost of the lot and cost to develop, which includes the permit process.
- Fewer lots in rotation for development leads to higher cost per lot (principles of supply vs demand).
- Previous development projects, in the Peninsula particularly, did not address traffic impacts well enough.
- **A balanced code for mid-level housing and subdivisions can address these issues.**

OPTIONS (in no particular order):

- **Allow what the county wants by-right; only allow lesser development options with review.**
 - Neighborhood designs that include complete streets, properly widened connector roads, buffers between density types, and accommodate parking on private property (either driveway or communal parking pads) should be the norm.
- **Allow for other options than detached single-family housing in the MDR.**
 - Townhouses, duplexes, triplexes and cottage courts could be utilized with the proper development standards.
 - Parts of the county could be designated as density-ready areas and given density bonuses for incorporating multiple types of housing.
 - Code changes that go along with this include flexible lot sizes, increased buffering (either by setbacks, landscaping, or both), variable front setbacks (garages must be far enough back to park cars), and clustered parking areas near open space.
- **Streamline the review process for projects that meet the design standards on the first try; encourage this by creating easy-to-understand public outreach materials.**

- **Work with a receptive developer to create a pilot neighborhood to try out the regulations before applying them county-wide.**
- **Reconsider flexible zoning options.**
 - Zoning regulations that give developers options for varied sizes of lots, lot widths, and setbacks (with proper screening) give the developer more financial options with the goal of giving the buyers more available price points.
- **Incorporate Traditional Neighborhood Design concepts into the MDR.**
 - Think walkable neighborhoods with safe, public open spaces.
 - This option takes more staff review and is stricter but results in desirable projects.

ATTACHMENTS: None (see workshop packet from June 2023)

STAFF CONTACT:

Allison Hardin, Development Services Director
ahardin@lanastercountysc.net

PROPOSAL: Amend Unified Development Ordinance Standards for Road Hierarchy.

APPLICABLE CHAPTER(S): 6.14 (Road Construction Standards)

APPLICANT: Lancaster County Council

STATED CONCERN: Appeal from the public to amend regulations relating to subdividing heirs property in rural areas.

ADDITIONAL CONCERN: The UDO does not have consistent terminology or standards for road types.

BACKGROUND:

Earlier in 2023, the County received requests from two separate families who were interested in subdividing their rural properties for distribution among family members. Both were impacted by sections of the code that related to street length and design.

In April 2023, the County Council passed an ordinance (after recommendation from the Planning Commission) that amended Section 6.4.1 – Connectivity, essentially grandfathering in streets that were built at the time the current UDO was adopted in 2016 from meeting current block length, block width, through-block connections, and cul-de-sac design standards. This permitted one family to move forward, but the other remains impacted by regulations that result in additional cost to subdivide; namely, road construction.

Current UDO guidance in Section 6.14 includes required width for three types of rights-of-way: local, collector, and commercial/arterial roads. Road projects in the County have previously been classified as one of these three. Each requires a certain width of pavement.

Two potential changes have been discussed in development meetings:

1. For family subdivisions in rural areas where traffic is not a concern, ***is it possible to reduce the street design requirement from pavement to an all-weather surface***, like gravel?
2. There is a conflict regarding “alley” design between the limited choices of road type and other sections of code (specifically Chapter 3 and Detail R8 in Appendix C). Alleys are one-way, one-lane roads but are not accommodated in the geometric criteria of 6.14.1, forcing all alleys to be constructed as two-lane paved areas with 50-foot rights-of-way. ***The road type list should include “alley” roads with dimensions that match Detail R8 of Appendix C*** (12’ paved road minimum and 1.5’ gutter on each side, for a minimum of 15’ ROW).

SUPPORTING DATA

HEALTHY NEIGHBORHOOD STREET DESIGN STANDARDS (Source: *Street Design Guidelines for Healthy Neighborhoods* by Dan Burden, Michael Wallwork PE, Ken Sides PE, Ramon Trias, and Harrison Rue):

Street Type	Max Width	Max Design Speed	Max Corner Radius	Max Centerline Radius	Curb	Median	Max Street Length	Vehicle Volume	Walk Way	Bike Lanes	Trees	2-Way Traffic	Parking
Trail	8-14'	20 mph	n/a	95'	no	n/a	n/a	na	n/a	n/a	yes	yes	no
Alley	10-12'	10 mph	15'	50'	no	n/a	400'	200	no	no	no	yes	no
Lane	16-18'	20 mph	15'	90'	option	no	600'	200	both	no	yes	option	1 side
Street	26'	20 mph	15'	90-120'	option	no	1,320'	600	both	no	yes	yes	2 sides
Avenue	varies	30 mph	15-25'	250'	yes	option	n/a	3-20K	both	yes	yes	yes	option
Main Street	varies	15-25 mph	15-25'	600'	yes	option	2,600'	3-10K	both	option	yes	yes	option
Boulevard	varies	30-35 mph	25'	500'	yes	yes	n/a	20-40K	both	yes	yes	yes	option
Parkway	varies	45+ mph	25'	1,000' +	no	yes	n/a	20-60K	no	trails	yes	yes	no

SCDOT Definitions

Local Roads and Streets: Local roads and streets primarily serve as access roads to farms, residences, businesses and other properties. They distribute traffic to highways in the higher functional classification network.

Rural A major part of the rural highway system consists of two-lane local roads. These roadways should be designed to accommodate the highest practical criteria compatible with traffic and topography.

Urban A local urban street is a public roadway for vehicular travel including public transit and refers to and includes the entire area within the right of way. The street also serves pedestrian and bicycle traffic and usually accommodates public utility facilities within the right of way. The development or improvement of these streets should be based on a functional street classification that is part of a comprehensive community development plan. The design criteria should be appropriate for the planned development. The two major design controls are (1) the type and extent of urban development with its limitations on right of way, and (2) zoning or regulatory restrictions. Local streets primarily serve to provide access to adjacent residential development areas. The overriding consideration is to foster a safe and pleasant environment whereas the convenience of the motorist is secondary. Other local streets not only provide access to adjacent development, but also serve limited through traffic. Traffic service features may be an important concern on these streets (e.g., traffic signals, left-turn lanes).

Collector roads: Collector routes are characterized by a roughly even distribution of their access and mobility functions. Traffic volumes and speeds will typically be somewhat lower than those of arterials. Access to properties is normally allowed on collector roads.

The function of rural collector roads is to serve intracounty travel needs and collect traffic flow from the rural local roads to the rural arterials and to distribute traffic flow from arterials back to the local roads.

In rural areas, the collectors provide the following functions:

- provide access to adjacent land uses;
- carry traffic into areas with sparse development;
- serve larger towns and significant traffic generators (e.g., shipping ports, mining areas) that are not served by an arterial or freeway;
- spaced at intervals consistent with the traffic population density to accumulate traffic from local roads;
- provide service to smaller communities; and
- link locally important traffic generators with higher classified routes.

In urban areas, collector streets serve as intermediate links between the arterial system and points of origin and destination. Urban collectors typically have the following characteristics:

- provide both access and traffic circulation within residential neighborhoods and commercial/industrial areas;
- may penetrate residential neighborhoods or commercial/industrial areas to collect and distribute trips to and from the arterial system;
- in fully developed areas, spacing generally is approximately ½ mile between routes and, within the Central Business District, between 650 feet and ½ mile;
- may be an urban extension of rural collector roads; and
- often include local bus routes.

Arterials: Arterial highways are generally characterized by their ability to quickly move relatively large volumes of traffic, but is often impacted by access to abutting properties. The arterial system typically provides for high travel speeds and the longest trip movements. The rural and urban arterial systems are connected to provide continuous through movements at approximately the same level of service.

The freeway is the highest level of an arterial. These facilities are characterized by full control of access, high design speeds and a high level of driver comfort and safety. For these reasons, freeways are considered a special type of highway within the functional classification system, and separate design criteria.

Arterials have the following general characteristics:

- consist of a connected network of continuous routes;
- in rural areas, provide a mix of interstate and intercounty travel service;
- provide service to, through or around urban areas from rural arterial routes and may be connecting links;
- provide for significant urban and suburban travel demands (e.g., between central business districts (CBD) and outlying residential areas, between major inner city communities, between major suburban centers);
- serve long distance traffic within an urban area by connecting major regional activity centers not served by connecting links or may provide service for trips of moderate length;
- may be a multilane undivided facility, divided facility, two-lane rural highway, major two-way city street or a one-way pair system;
- typically warrant management of access to the highway;
- may be included in the National Highway System (NHS); and may carry local bus routes and provide intra-community continuity, but generally will not penetrate neighborhoods.

SAMPLE SYSTEM (Source: City of Myrtle Beach)

Road Classification System

A street network performs most efficiently and safely from both a traffic operations and a road safety perspective if roads are designated and operated to serve their intended purposes. A road classification system designates streets into different groups or classes according to the type of service each group is intended to provide. This is a fundamental tool for urban development and road management. Grouping roads with similar functions can improve transportation planning, road infrastructure design and maintenance, and traffic and road operations.

But while road classification can help meet the needs of communities for transportation services, just as importantly, it can help protect against the adverse impacts of motorized traffic in residential areas. Some roads should carry higher volumes of traffic at higher speeds, while others (the majority) carry lower volume at lower speeds. This allows residential neighborhoods to exist between main traffic corridors. The absence of a hierarchy of roads would result in less efficient routes for traffic with associated increases in the time and cost of transporting people (whether by foot, bike, bus or car) and goods. The quality of urban life would also decline as motorized traffic would increasingly infiltrate into residential neighborhoods to avoid mounting congestion - *Appendix K: City of Myrtle Beach Roadway Classification Systems Map 2009*.

The following is a glossary of terms used in the roadway classifications system for the city of Myrtle Beach.

- *Minor Street* is a two-lane, residential or commercial, street controlled by stop signs at two-way-stop controlled intersection.
- *Major Street* is a two-lane, residential or commercial, street not controlled by stop signs at a two-way stop-controlled intersection providing connection to minor and major collectors and minor arterials.

- *Major Commercial* is a two or four-lane commercial street not controlled by stop signs but signalized intersections.
 - *Minor Commercial* is a two-lane commercial street controlled by stop signs at intersections.
 - *Minor Collector* is a two-lane street providing lane access and traffic circulation within residential, commercial, and industrial areas and connection between major collectors and minor arterials with low density of driveways.
 - *Major Collector* is a four-lane street providing lane access and traffic circulation within residential, commercial, and industrial areas and connection between minor arterials with relatively high density of driveways.
 - *Minor Arterial* is a functional category of street allowing trips of moderate length within a relatively small geographical area; signalized street that primarily serves through-traffic and secondarily provide access to abutting properties with signal spacing of two miles or less.
 - *Principle Arterial* is a major surface street with relatively long trips between major points, and with through trips entering, leaving and passing through the urban area.
 - *Street End* is a two lane street with parking providing access to the Beach. The most current traffic counts for the roadways in the planning area can be found on the SCDOT website.
-

OPTIONS (in particular order):

- **Allow local rural roads to be gravel, compacted properly and to the standards in the fire code that would allow fire apparatus access. Limit this application to AR and RR zones.**
- Create definitions for local, collector and arterial roadways based on SCDOT definitions.
- Clean up the conflicts between Road Design and Cluster development.
- **Change alley design to one-way only, maximum of 12 feet paved.**

STAFF CONTACT:

Allison Hardin, Development Services Director
ahardin@lancastercountysc.net

No utility lines or pipes shall be installed in or across any County road bed without a County encroachment permit.

6.14 ROAD CONSTRUCTION STANDARDS

6.14.1 ROAD DESIGN (GEOMETRIC CRITERIA)

In general, geometric criteria for road design shall be in accordance with standards of the South Carolina Department of Transportation (SCDOT). Said standards are those contained in the latest edition of "A Policy on Geometric Design of Highways and Streets" by the American Association of State Highway and Transportation Officials. Local and collector residential roads that will be maintained by the County shall be designed in accordance with the following standards.

A. Minimum right-of-way and pavement width shall be as follows:

Road Type	Right-of-Way (feet)	Pavement (feet)
Local (Urban)	50	22
Local (Rural)	60	22
Collector (Urban)	60	24
Collector (Rural)	66	24
Commercial/Arterial (Urban)	60	26
Commercial/Arterial (Rural)	66	26

Additional right-of-way or pavement width will be provided as determined necessary by County Council for high density residential or nonresidential subdivisions or portions thereof.

B. Cul-de-sacs shall not exceed 500 feet in length, except where unusual topographic or other physical conditions dictate otherwise, and shall have a turnaround with 90 feet minimum diameter to pavement edge and 100 feet minimum diameter to right-of-way line. Dead end streets without turnarounds are prohibited. In no case shall a cul-de-sac serve more than 20 residential lots.

C. Design speed, sight distance, and centerline radius shall be as follows:

	Local	Collector	Commercial/Arterial
Design speed	25 mph	25	35 mph
Minimum sight distance on vertical curve	150 feet	200	225 feet
Minimum centerline radius	150 feet	200	250 feet

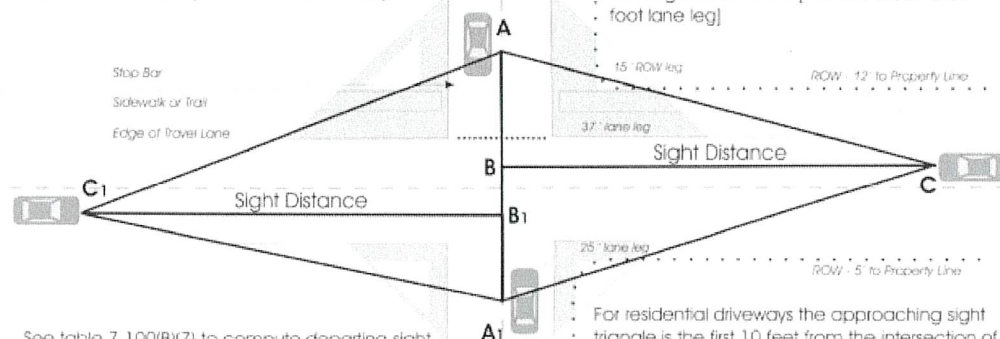
1. Horizontal curvature shall be introduced at any change in road direction. Major road curvature shall be in accordance with SCDOT standards. Minimum tangent between reverse curves shall be 100 feet for local roads, 200 feet for collector roads, and 60 feet from curve to any intersecting road.
2. If a collector road may reasonably be expected to serve more than 1 subdivision, it shall be designed for at least a 55 miles per hour design speed (450 minimum sight distances). Minimum sight distance at intersections shall be established by provision of a clear sight triangle measured along centerlines for 100 feet, which triangle shall be entered upon the final plat prior to recording.

D. Site distance at intersections shall be as follows:

# OF LANES	MINIMUM SIGHT DISTANCE (BC) (IN FEET)							
	20MPH	25MPH	30MPH	35MPH	40MPH	45MPH	50MPH	55MPH
2	200	250	300	350	400	450	500	550
3	220	275	330	385	440	495	550	605
4	240	300	360	420	480	540	600	660
5	250	312.5	375	437.5	500	562.5	625	687.5
6	260	325	390	455	520	585	650	715

The Departing Sight Distance Triangle:

Formed by the triangle ABC with Point "A" as the greater of: 6' from the stop bar; 8' from the edge of the adjacent sidewalk or trail; or 12' from the adjacent travel lane [Not to exceed 20 feet].



See table 7-100(B)(7) to compute departing sight distance "BC", which is based on street type and speed limit

The Approaching Sight Triangle:

For street intersections, commercial driveways, or alleys it is the greater of the triangles formed by the first 25 feet from the edges of the adjoining travel lanes or the first 15 feet from the edges of the ROW [Not to exceed a 50 foot lane leg]

For residential driveways the approaching sight triangle is the first 10 feet from the intersection of the driveway and the property line. For garage entrances it is 6 feet from the intersection with the alley.

NOTE: All sight triangles prohibit objects or plants from obscuring visibility of objects between 3' 1/2" and 8' feet in height (accounting for vertical or horizontal curves). The departing sight distance triangle will apply to alleys, driveways and garage entrances - except that (where no ROW for additional lanes or free planting strip is available) point "A" may be six (6') from the edge of the adjacent sidewalk, trail or travel lane whichever is greater.

- E. Roads shall be designed to intersect as nearly as possible at right angles, but no less than 75 degrees. Minimum radius or curb or pavement edge at intersections shall be at least 20 feet at intersections with local roads and 25 feet at intersections with collector roads.

- F. Unless necessitated by unusual topographic conditions approved by County Council, minimum and maximum road grade shall be 1 percent and 8 percent, respectively. Road crown shall be 2 percent.
- G. Proposed intersections on one side of a road shall coincide with existing or proposed intersections on the opposite side. Minimum centerline offset for intersections on opposite sides of a road shall be 150 feet. No two roads may intersect on the same side of a road at a centerline separation distance of less than 400 feet.
- H. At street intersections, the intersection of paved surfaces shall be rounded with a minimum radius of 30 feet. Where streets intersect at less than right angles, a greater radius may be required.
- I. **Two Street Maximum:** The intersection of more than two streets at one point shall be avoided except where it is otherwise impracticable to secure a proper street system as determined by the Administrator.
- J. **Sight Triangles:** A 25-foot by 25-foot sight visibility triangle shall be maintained at all street intersections. Within the sight visibility area no fence, wall, sign (except regulatory and street name signs), slope, embankment, parked vehicle, hedge, foliage, or other planting or structure shall be placed, erected or maintained which will obstruct visibility within the sight area. This sight triangle requirement may be reduced by the Administrator at fully controlled intersections only.

6.14.2 PAVEMENT STANDARDS

In general, all roads shall be constructed in accordance with the South Carolina Department of Transportation's "Standard Specifications for Highway Construction" (latest edition) as it relates to earthwork, bases/subbases, paved surfaces, etc., and the following requirements.

A. Grading for Road Construction:

Street shall be graded in accordance with the lines and grade set by the engineer. Before placing curb and gutter or base on the graded subgrade, the subgrade shall be compacted to one 100 percent ASTM D690 for a depth of 6 inches and then shall be proof rolled in the presence of the engineer. Places that are found to be loose, or soft, or composed of unsuitable materials, whether in the subgrade or below it, must be dug out and refilled with suitable material. All embankments or fills shall be made in one-foot horizontal lifts of suitable material. The fill shall be rolled with a sheepfoot roller after each lift, followed by a wheel roller, each weighing not less than 8 tons.

B. Paved Road Surfaces are Required for all Roads:

The developer shall submit a complete soils report and a detailed road thickness design as part of his or her engineering plans and specifications that either supports the County's minimum requirements or recommends thicker sections based on actual soil conditions. A complete soils report and detailed road design shall convincingly support the use of the County's typical minimum cross-section or document the necessary variations from the required design criteria. This report and design shall be prepared by an independent County-approved Geotechnical Engineer/Testing Laboratory and approved by the Administrator. NOTE: A complete soils report includes, but is not limited to, the following data: a CBR for every soil type and a grain size analysis and Atterberg Limit determination for each soil type.

C. Road Construction between March 1 and November 30:

- 1. **Local Roads:** Road base shall include 8 inches of crushed stone with a 1.5 intermediate asphalt course and a 1.5 inches compacted asphalt surface course. Alternate designs will be acceptable if they have the same or greater coefficient of strength and with prior written approval from the Public Works Director. Road shall be left down 1.5 inches for future

overlay 95 percent build out of entire project, even if phased. A local road shall mean a route providing service which is of relatively low average traffic volume, short average trip length or minimal through-traffic movements, and high land access for abutting property. Total cross section for local roads: 8 inches crushed stone compacted, 1.5 inch compacted intermediate asphalt course, 1.5 inches compacted asphalt surface course.

2. **Collector/Subcollector Roads:** Road base shall include 8 inches of compacted crushed stone with a 3 inches compacted intermediate asphalt course, and 2 inches compacted asphalt surface course. Alternate designs will be acceptable if they have the same or greater coefficient of strength and with prior written approval from the Public Works Director. Road shall be left down 2 inches for future asphalt overlay after 85 percent build out of entire project, even if phased, or 2 years from completion date, whichever comes first. A collector/subcollector road shall mean a route providing service which is of higher average traffic flow, serving as a main route for interior/exterior traffic and land/property access related to the designed project. Total cross section for collector/subcollector roads: 8 inches compacted crushed stone, 2 inches compacted intermediate asphalt course, 2 inches compacted asphalt surface course.
3. **Commercial/Arterial Roads:** Road base shall include 8 inches of crushed stone with a 4 inch asphalt intermediate course and 2 inch surface asphalt course. Alternate designs will be acceptable if they have the same or greater coefficient of strength and with prior written approval from the Public Works Director. If CBR and traffic study supports a cross section below the proposed standard, proposed standard will still be used. If road requires a heavier section, then the pavement design shall be included in plan review by the project engineer/geotechnical engineer. Lancaster County may also incorporate a mandatory lime/cement treated subgrade for such roads identified as commercial or arterial roads. A commercial/arterial road shall mean any road inside a business or industrial park and those roads providing service which is of relatively moderate average traffic volume, moderately average trip length, and moderately average operating speed. Such a route collects and distributes traffic between local roads or arterial roads and serves as a linkage between land access and mobility needs.

- D. **Road Construction Between December 1 and February 28 (29):** Road work requires advance approval by Lancaster County:
 1. **Local Roads, Collector/Subcollector Roads:** Road base shall be treated with lime or cement base stabilization and shall include 4 inches compacted intermediate asphalt course. Road shall be left down 2 inches for future overlay after 85 percent build out of entire project, even if phased, or 2 years from completion date, whichever comes first.
 2. **Commercial/Arterial Roads:** Road base shall be treated with lime or cement base stabilization and shall include 6 inches of compacted intermediate course and 2 inches of compacted surface course. If CBR and traffic study supports a cross section below the proposed standard, proposed standard will still be used. If road requires a heavier section, then the pavement design shall be included in plan review by the project engineer / geotechnical engineer.
- E. All entrances shall be paved with 10 inches full depth asphalt 50 feet (minimum) from edge of intersecting road ROW. An entrance is defined as wherever asphalt begins of an intersecting street, or end of a previous phase.
- F. Any utility cuts in asphalt shall be saw cut, primed, and replaced with 8 inches minimum hot asphalt mix.
- G. All conduit crossings shall extend from edge to edge of the right-of-way of the road, and must be installed before curb and gutter is to be poured. Developer is responsible for ensuring dry utilities (power, cable/phone, natural gas) are properly installed and compacted. Dry utilities are

subject to inspection by Lancaster County Public Works, and any deficiencies must be corrected immediately.

- H. All curb must be, or transitioned to, SCDOT vertical standard curb at all creek crossings. A 10-foot transition is also required from curb to all drainage structures.
- I. All roadway ditches and channels shall be designed to contain, at a minimum, a peak flow from a 25-year frequency storm. All roadway ditches and channels shall be designed so that the velocity of flow expected from a twenty-year frequency storm shall not exceed the permissible velocities for the type of lining used. Riprap shall be placed for stops in road drainage swales as needed. Swales shall be stabilized against erosion by grassing with a mixture of rye and Bermuda grass. Road swales shall be installed at a maximum depth of 3 feet and be designed to enable mowing by adjoining property owners.
- J. Roads may be constructed with drainage swales and 6 foot wide shoulders (12:1 slope) provided road grade does not exceed 6 percent. Where road grade exceeds 6 percent, curb and gutter, paved drainage swales, or riprap swales shall be provided. Curb and gutter may be roll-type or standard 90 degree curb.

6.14.3 MATERIALS

Roadway materials shall conform to the latest edition of the SCDOT's "Standard Specifications for Highway Construction."

- A. Base course for streets shall be crushed stone conforming to SCDOT Type ABC stone. The stone base course shall be placed in four-inch layers, watered as necessary, and compacted to 100 percent ASTM D690. The contractor shall be responsible for keeping the stone base free of contamination from clay or other foreign materials. Handling and placement of stone base shall all be in accordance with SCDOT specifications.
- B. Asphalt intermediate course shall meet SCDOT specifications for Type C asphalt intermediate course.
- C. The asphalt surface course shall meet SCDOT specifications for Type C asphalt surface course.
- D. Concrete curb shall meet SCDOT specification and be a minimum of 18 inch rolled or barrier curb.

6.14.4 PROOF ROLLS

A. CURB & GUTTER

For all roads with curb and gutter, the following requirements apply:

- 1. Curb subgrade shall be proof rolled with a loaded dump truck. Proof roll equipment must be approved by Lancaster County Public Works. No weight ticket will be necessary for curb subgrade proof roll.
- 2. Curb subgrade proof rolls shall be scheduled between the hours of 8:30 a.m. and 2:30 p.m. (Monday through Thursday). Any curb subgrade proof roll scheduled on Friday or the day prior to a holiday must be approved by Lancaster County Public Works. A twenty-four hour notice is required.
- 3. Curb proof rolls shall be scheduled accordingly, despite size or phasing of project. Lancaster County will not "piece mill" proof rolls for curb placement.
- 4. Curb subgrade shall be smooth on top with no loose material, cracks, ruts, or organic material roots visible in subgrade. Exposed rock shall be at least 6 inches below subgrade.
- 5. The contractor or project engineer will schedule proof rolls.

6. All sewer and water lines shall be tested by the project engineer, and all road crossing conduits installed before curb subgrade proof roll.
7. Curb subgrade shall be compacted properly with no visible movement, and at optimum moisture content in order for proof roll to pass.
8. If proof roll fails, a re-inspection fee in an amount established by the Lancaster County annual budget shall be collected before the rescheduled proof roll.
9. Any undercut areas must be replaced with material approved by the Lancaster County Public Works Department.
10. All concrete shall meet or exceed SCDOT and all local government requirements. Concrete shall be 3,600 psi, or greater. Temperatures must be above 40 degrees Fahrenheit to pour curb. If temperatures fall below freezing (32 degrees F.) overnight, all finished curb shall be covered with insulation blankets.
11. Lancaster County reserves the right to have any material and/or utility trenches tested by an independent engineering firm, at the developer's/ contractor's expense.
12. Pour is to start within 24 hours of passed proof roll. If project receives significant rainfall, the proof roll shall be rescheduled. In the event of rainfall, any undermined curb and gutter shall be removed and repoured. Finished curb must have a minimum 72 hour period curing time, and be properly backfilled, before any stone is placed on the subgrade.
13. Lancaster County shall have final decision on the acceptance of all proof rolls.

B. ROADWAY SUBGRADE

For all roads, the following requirements apply:

1. Roadway subgrade shall be proof rolled with a loaded tandem dump truck with a minimum 15 tons loaded on truck, or a maximum of 54,000 pounds gross weight. Current weight ticket shall be provided to Lancaster County. Note: The use of water trucks, regardless of gross weight, is unacceptable.
2. Road subgrade proof rolls shall be conducted from the hours of 8:30 a.m. and 1:00 p.m. (Monday through Thursday). No road subgrade shall be proof rolled on Fridays or the day prior to a holiday.
3. The contractor or project engineer will schedule proof rolls. A representative of the paving contractor must be present at all subgrade proof rolls.
4. If a soils engineer is employed by the developer for quality control, the soils engineer shall be present at all proof rolls.
5. Subgrade proof rolls shall be scheduled accordingly, despite project size or phasing. Lancaster County will not "piece mill" proof rolls for stone placement. If subgrade is covered, contractor(s) shall make every effort to pave the road. Any stone left dormant over extended periods of time shall be considered contaminated, removed from the road base, and subgrade reworked.
6. Curb and gutter shall be properly backfilled and compacted before any roadway subgrade proof roll is scheduled. Backfill shall be inspected prior to any subgrade proof roll. Right-of-way shall be smooth and graded for positive drainage, with no ruts and all conduits/utility services properly tamped/compacted.
7. Roadway crown/grade shall be checked by the paving contractor, with a Lancaster County representative present, at 50-foot intervals minimum. If grade is inconsistent, the proof roll automatically fails and shall be rescheduled. A re-inspection fee in an amount established by the Lancaster County annual budget shall be collected before the rescheduled proof roll.

8. Proper erosion control measures shall be installed and maintained to prevent silt from contaminating roadway subgrade. Lancaster County reserves the right to have additional erosion control measures (ex. silt fencing, rip rap check dams, diversion ditches, etc.) installed to protect the roadway subgrade.
9. Roadway subgrade shall be smooth on top, with no visible cracks, ruts, or exposed organic material/roots present. Any exposed rock shall be at least 6 inches below subgrade, if conditions require rock to stay in place. Organics/roots shall be removed from the subgrade.
10. Roadway subgrade shall have no visible movement or deflection, and be at optimum moisture content, in order for proof roll to pass. Excessive "scaling" or movement in the top unbonded lift of soil shall be deemed failing, and unacceptable to Lancaster County.
11. Any undercut material must be approved by Lancaster County. Isolated marginal areas may use extra compacted crushed stone. Largely inconsistent areas must be reworked. Undercut areas shall be a minimum 12 inches in depth, and are subject to a reinspection fee.
12. Stone is to begin being placed within 24 hours following satisfactory proof roll.
13. Every effort shall be made to protect the subgrade/stone base. Construction traffic shall be monitored, and in certain cases, isolated failing areas may cause entire proof roll to fail. Upon completion of a satisfactory proof roll, construction traffic shall be limited to the forces of the paving contractor only. Utilities shall not be trenched in the road right-of-way of unpaved, undeveloped roads.
14. Stone shall not be placed on frozen or excessively wet subgrade. Temperatures must be above 35 degrees to place stone. In the event temperatures fall under freezing overnight, proof roll shall be rescheduled.
15. All material shall meet SCDOT standards, as well as local government standards. Lancaster County reserves the right to have any material tested by an independent engineering firm, at the developer's/ contractor's expense.
16. Lancaster County shall have final decision on all proof rolls.

C. ROADWAY STONE BASE

For all roads, the following requirements apply:

1. Stone base shall be proof rolled with a loaded tandem truck with 15 tons loaded on the truck, or a maximum gross weight of 54,000 pounds. Current weight ticket shall be checked.
2. Stone base shall be properly set and sealed, with no visible movement in order for proof roll to pass. No loose gravel, or segregation of stone on top, shall be permitted. Those areas shall be wet and rolled, or broomed/undercut until satisfactory surface is present. If proof roll fails, a re-inspection fee in an amount established by the Lancaster County annual budget shall be collected before the rescheduled proof roll.
3. Proof rolls shall be conducted from the hours of 8:30 a.m. and 1:00 p.m. (Monday through Thursday). Any proof roll scheduled on Friday or the day prior to a holiday must be approved by Lancaster County Public Works. A 24 hour notice is required.
4. Stone base proof roll shall be scheduled by the paving contractor only.
5. Pavement is to begin within 24 hours following satisfactory proof roll.
6. Every effort shall be made to pave the stone base. Traffic shall be monitored and routed around subgrade before, during, and after stone base is set or being set. In certain cases, isolated areas could cause entire proof roll to fail.

7. Any isolated areas shall be undercut and removed to the subgrade for full depth patching. Undercut areas will be a minimum of 6 inches.
8. Any areas of contaminated stone shall be undercut/removed before any asphalt is placed.
9. Pavement shall not be placed on frozen or excessively wet subgrade. Temperatures must be above 50 degrees by 10:00 a.m. to place asphalt. In the event temperatures fall under freezing overnight, proof roll shall be rescheduled. In the event of significant rainfall, proof roll shall be rescheduled.
10. All material shall meet SCDOT standards, as well as local government standards. Lancaster County reserves the right to have any material, fill, or trench tested by an independent engineering firm, at the developer's/ contractor's expense.
11. Proper measures shall be installed at catch basins to drain roadway properly after initial asphalt course is placed. These measures shall be the responsibility of the developer to maintain from the time of asphalt placement to the end of the warranty period.
12. Lancaster County shall have final decision on all proof rolls.

6.15 SIDEWALK STANDARDS

Sidewalk construction shall be similar to street construction, with subgrade compacted to 100 percent ASTM D690. Concrete sidewalks shall be four inches thick (increasing to 6 inches thick at driveway entrances), and shall be at least 5 feet wide. Expansion joints shall be provided every 300 feet; false joints at 10 feet. Where required, accessible ramps shall be constructed per SCDOT standard details.

6.16 UTILITY TRENCH COMPACTION

For all roads, the following requirements apply: Utility trenches within the road right of way shall be compacted to 98 percent maximum dry density per ASTM D698. The developer shall submit a report prepared by an independent County-approved Geotechnical Engineer/Testing Laboratory verifying compliance with this requirement. Density test shall be performed at a minimum rate of 1 per 200 feet of trench.

6.17 INSPECTIONS

6.17.1 STORM DRAIN INSPECTIONS

The following requirements apply to all storm drain systems:

- A. Storm drain system must be initially inspected after catch basins are tied into curb and gutter (10 inch transition from curb to drainage structure). Storm drain system shall be cleaned and flushed before final acceptance inspection of roadway. A 48 hour notice is required. All drainage infrastructure must have a video inspection completed by the developer or requestor and submitted to the Public Works Director.
- B. Catch basins must be free of excess silt and mud for inspection to pass. All throat/hood openings shall conform to the MSSD, and all pipe shall be reinforced concrete pipe (RCP). Any failures or deficiencies noticed in any pipe crossings flashed in roadway must be corrected before stone base is put down. Minor issues such as grouting boxes, changing grates, adding steps can be completed before final inspection.
- C. All materials used in the storm drain system must meet SCDOT specifications.
- D. All outfall pipes must have a flared end with rip rap outlet protection properly installed.

G. MAXIMUM DENSITY

The maximum number of dwelling units allowed per acre for a cluster subdivision shall not exceed the maximum for the residential use district in which it is located, as set forth in Chapter 2 of the UDO, where the total number of dwelling units allowed shall be based on the gross acreage of the site. For example, when the CSO is located within the MDR, Medium Density Residential, where the maximum density is two dwelling units per acre, a 100-acre parcel of land shall be allowed to have no more than 200 dwelling units built on the site.

H. COMMERCIAL REQUIREMENT: There shall be no required commercial within a cluster subdivision.

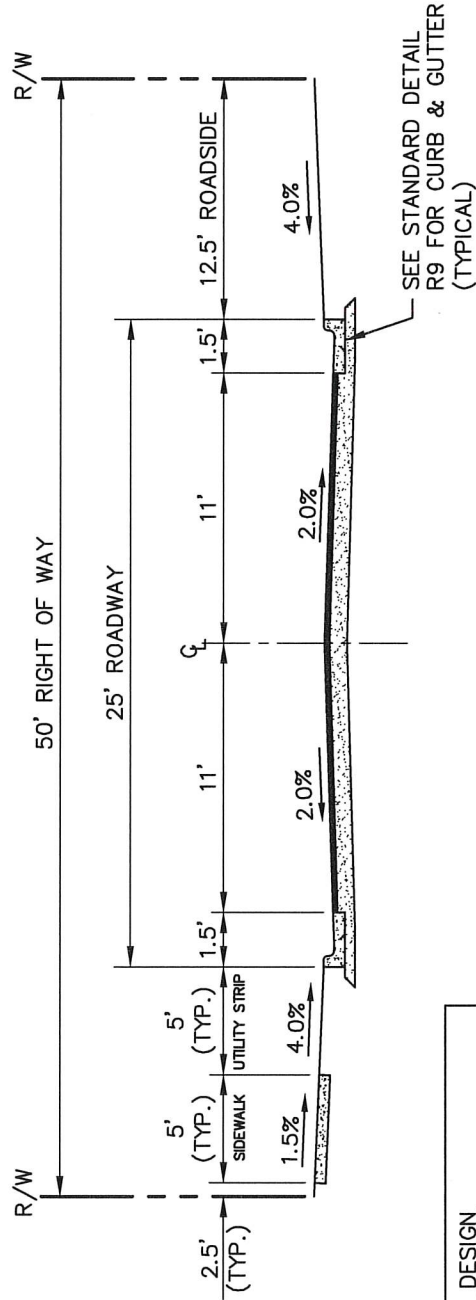
I. SITE PLANNING REVIEW STANDARDS: A cluster subdivision shall follow the site plan review standards and procedures as set forth in Chapter 9 of the UDO, including but not limited to Section 9.2. Furthermore, planning staff shall also include the following in their review:

1. Overall site design shall be harmonious in terms of landscaping, enclosure of principal and accessory uses, sizes of structures, street patterns, and use relationships;
2. The site layout shall accommodate and preserve any features of historic, cultural, archaeological, or sensitive environmental value. Individual lots, buildings, structures, streets, parking areas, utilities, and infrastructure shall be designed and sited to minimize the alteration of natural features, vegetation, and topography;
3. Where practicable, individual lots, buildings, structures, streets, parking areas, utilities, and infrastructure should be designed and sited to be compatible with surrounding development patterns;
4. Where practicable, open space shall be located on a site in such a manner so that view sheds from existing public right-of-way are not obstructed, but are enhanced by the open space;
5. Private streets are permitted in a cluster subdivision, provided such streets meet the construction standards of Chapter 6 and Appendix C of the UDO. The following shall apply:
 - a. As required in Chapter 6 of the Lancaster County Code, as amended, the minimum right-of-way and pavement width shall be as follows:



Road Type	Right-of-Way (feet)	Pavement (feet)
Local (closed drainage)	50	22
Local (open drainage)	66	22
Collector	66	24

- b. On-street parking is permitted in a cluster subdivision where adequate right-of-way and pavement width is provided in accordance with standards of the South Carolina Department of Transportation; and
 - c. To ensure adequate clearance for emergency vehicles in a cluster subdivision, the Planning Commission may require signage and/or pavement markings to clearly indicate areas where on-street parking is prohibited;
6. Installing sidewalks on both sides of local streets in a cluster subdivision is encouraged. At a minimum, a sidewalk will be required on at least one side of every local street, with a



PAVEMENT DESIGN

- 1.5" TYPE C SURFACE COURSE
- 1.5" TYPE C INTERMEDIATE COURSE
- 8.0" A.B.C.

**50' RIGHT OF WAY
25' ROADWAY SECTION
SECTION VIEW**

NOTES:

1. NORMAL CROWN OF 2% UNLESS OTHERWISE DIRECTED BY DIRECTOR OF ENGINEERING.
2. PAVEMENT DESIGN SHALL BE THE GREATER AS SHOWN OR AS DETERMINED BY A CBR ANALYSIS.



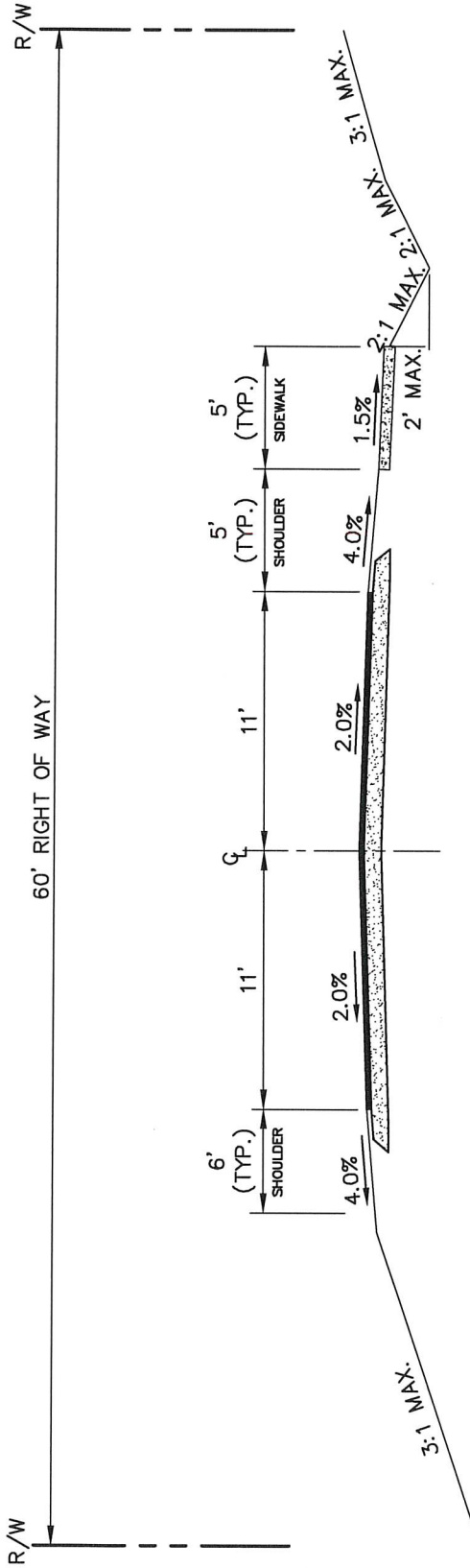
REVISIONS:

EFFECTIVE
DATE
11/26/2016

LOCAL STREET (URBAN)

DETAIL No.

R1
SHEET 1 OF 1



60' RIGHT OF WAY
22' ROADWAY SECTION
SECTION VIEW

PAVEMENT DESIGN
 1.5" TYPE C SURFACE COURSE
 1.5" TYPE C INTERMEDIATE COURSE
 8.0" A.B.C.

NOTES:

1. NORMAL CROWN OF 2% UNLESS OTHERWISE DIRECTED BY DIRECTOR OF ENGINEERING.
2. PAVEMENT DESIGN SHALL BE THE GREATER AS SHOWN OR AS DETERMINED BY A CBR ANALYSIS.
3. SWALE SYSTEM DESIGNED TO CARRY AT LEAST THE 25 YEAR STORM.
4. VELOCITY WITHIN THE SWALE SHALL BE NON-EROSIVE.
5. DETAILED DRAINAGE CALCULATIONS REQUIRED.
6. ROADSIDE DITCHES SHALL BE LINED WITH NORTH AMERICAN GREEN SC 150BN OR APPROVED EQUAL.



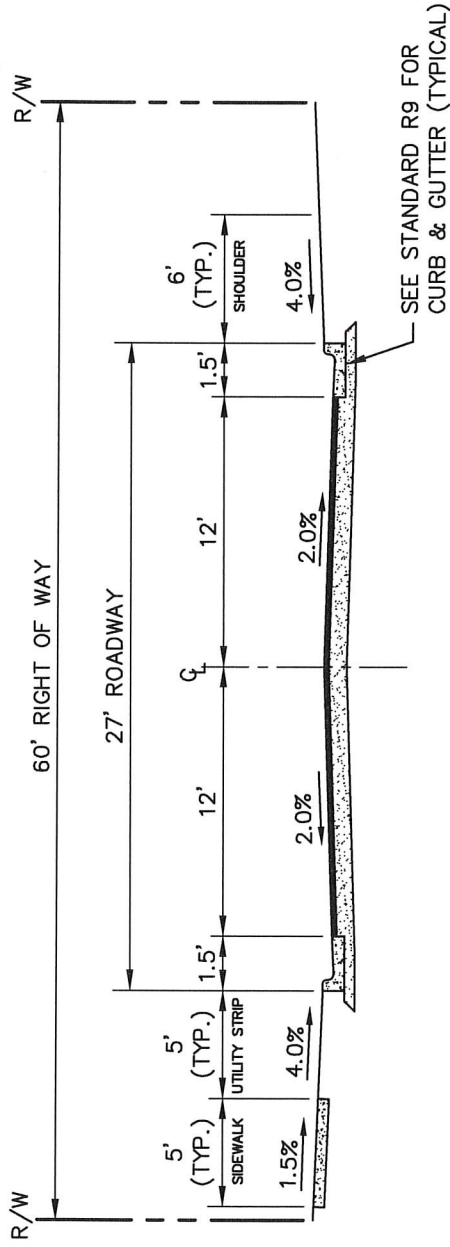
REVISIONS:

EFFECTIVE
 DATE
 11/26/2016

DETAIL No.

R2
 SHEET 1 OF 1

LOCAL STREET (RURAL)



60' RIGHT OF WAY
27' ROADWAY SECTION
SECTION VIEW

PAVEMENT DESIGN
2.0" TYPE C SURFACE COURSE
3.0" TYPE C INTERMEDIATE COURSE
8.0" A.B.C.

NOTES:

1. NORMAL CROWN OF 2% UNLESS OTHERWISE DIRECTED BY DIRECTOR OF ENGINEERING.
2. PAVEMENT DESIGN SHALL BE THE GREATER AS SHOWN OR AS DETERMINED BY A CBR ANALYSIS.
3. SWALE SYSTEM DESIGNED TO CARRY AT LEAST THE 25 YEAR STORM.
4. VELOCITY WITHIN THE SWALE SHALL BE NON-EROSIVE.
5. DETAILED DRAINAGE CALCULATIONS REQUIRED.
6. ROADSIDE DITCHES SHALL BE LINED WITH NORTH AMERICAN GREEN SC 150BN OR APPROVED EQUAL.

Lancaster
County
South Carolina

REVISIONS:

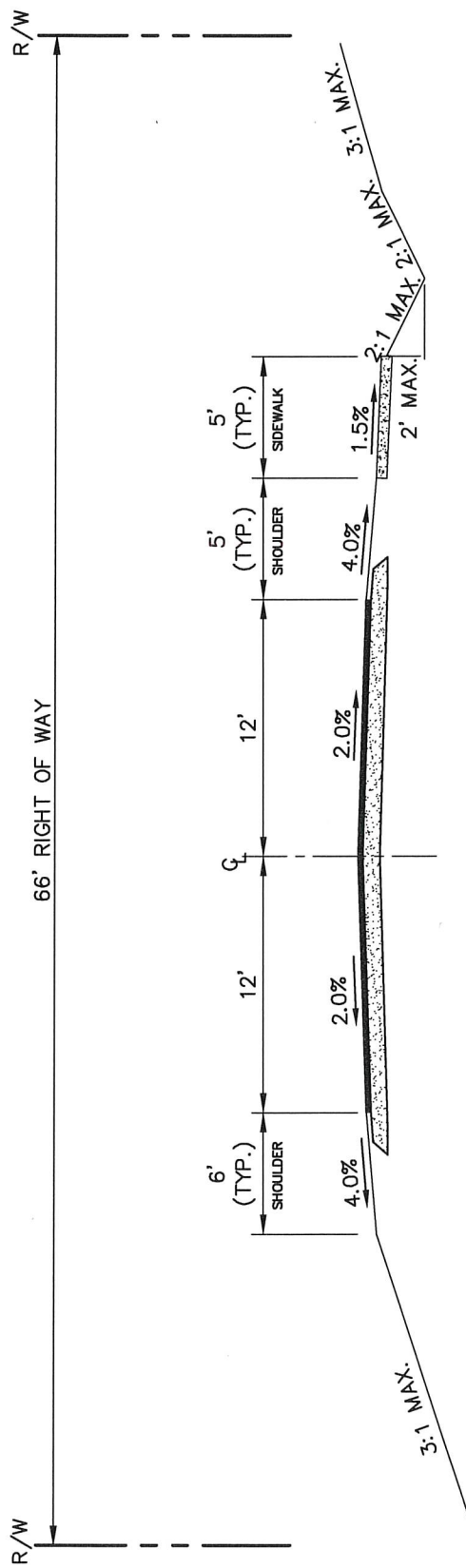
EFFECTIVE DATE	11/26/2016
----------------	------------

DETAIL No.

R3

SHEET 1 OF 1

COLLECTOR (URBAN)



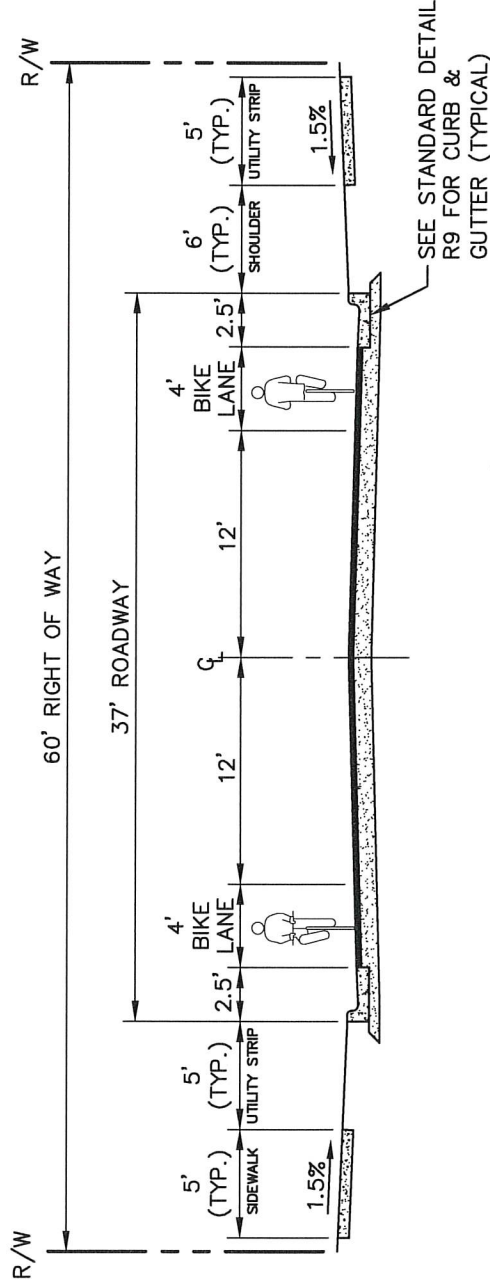
66' RIGHT OF WAY
24' ROADWAY SECTION
SECTION VIEW

PAVEMENT DESIGN
 2.0" TYPE C SURFACE COURSE
 3.0" TYPE C INTERMEDIATE COURSE
 8.0" A.B.C.

- NOTES:**
1. NORMAL CROWN OF 2% UNLESS OTHERWISE DIRECTED BY DIRECTOR OF ENGINEERING.
 2. PAVEMENT DESIGN SHALL BE THE GREATER AS SHOWN OR AS DETERMINED BY A CBR ANALYSIS.
 3. SWALE SYSTEM DESIGNED TO CARRY AT LEAST THE 25 YEAR STORM.
 4. VELOCITY WITHIN THE SWALE SHALL BE NON-EROSIVE.
 5. DETAILED DRAINAGE CALCULATIONS REQUIRED.
 6. ROADSIDE DITCHES SHALL BE LINED WITH NORTH AMERICAN GREEN SC 150BN OR APPROVED EQUAL.



EFFECTIVE DATE 11/26/2016		REVISIONS:		COLLECTOR (RURAL)	DETAIL No. R4 SHEET 1 OF 1



PAVEMENT DESIGN
 3" S-9.5 B
 8" A.B.C.

60' RIGHT OF WAY
 37' ROADWAY SECTION
 SECTION VIEW

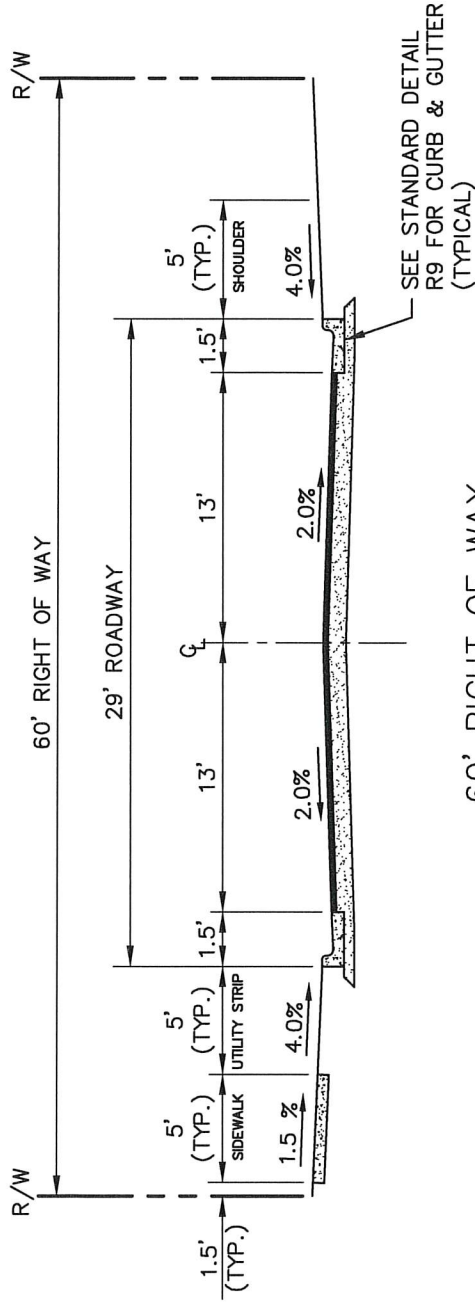
NOTES:

1. NORMAL CROWN OF 2.0% UNLESS OTHERWISE DIRECTED BY DIRECTOR OF ENGINEERING.
2. PAVEMENT DESIGN SHALL BE AS SHOWN OR AS CALCULATED ACCORDING TO SPECIFICATIONS, WHICHEVER IS GREATER.
3. REVIEW QUALIFYING CRITERIA AND CROSS SECTIONS FOR "COLLECTOR AVENUE".



EFFECTIVE DATE 11/26/2016	REVISIONS:		DETAIL No. R5 SHEET 1 OF 1

STANDARD COLLECTOR (BIKE LANES)



60' RIGHT OF WAY
29' ROADWAY SECTION
SECTION VIEW

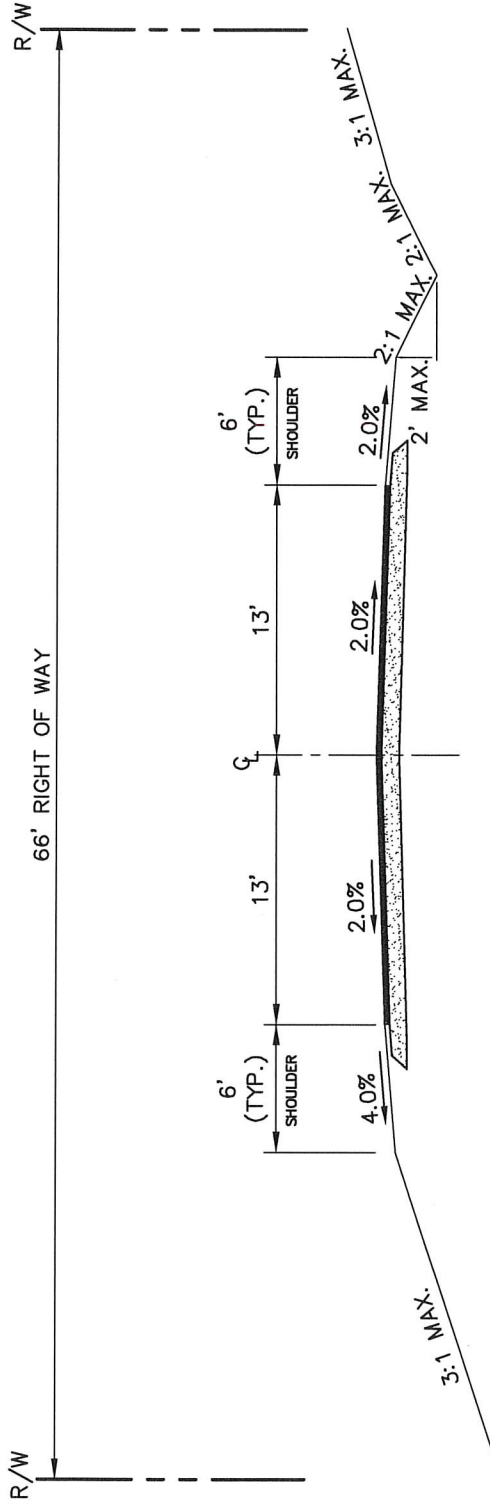
PAVEMENT DESIGN
 2.0" TYPE C SURFACE COURSE
 4.0" TYPE C INTERMEDIATE COURSE
 8.0" A.B.C.

NOTES:

1. NORMAL CROWN OF 2% UNLESS OTHERWISE DIRECTED BY DIRECTOR OF ENGINEERING.
2. PAVEMENT DESIGN SHALL BE THE GREATER AS SHOWN OR AS DETERMINED BY A CBR ANALYSIS.
3. SWALE SYSTEM DESIGNED TO CARRY AT LEAST THE 25 YEAR STORM.
4. VELOCITY WITHIN THE SWALE SHALL BE NON-EROSIVE.
5. DETAILED DRAINAGE CALCULATIONS REQUIRED.
6. ROADSIDE DITCHES SHALL BE LINED WITH NORTH AMERICAN GREEN SC 150BN OR APPROVED EQUAL.



EFFECTIVE DATE 11/26/2016	REVISIONS:		COMMERCIAL/ARTERIAL (URBAN)	DETAIL No.
				R6 SHEET 1 OF 1



66' RIGHT OF WAY
26' ROADWAY SECTION
SECTION VIEW

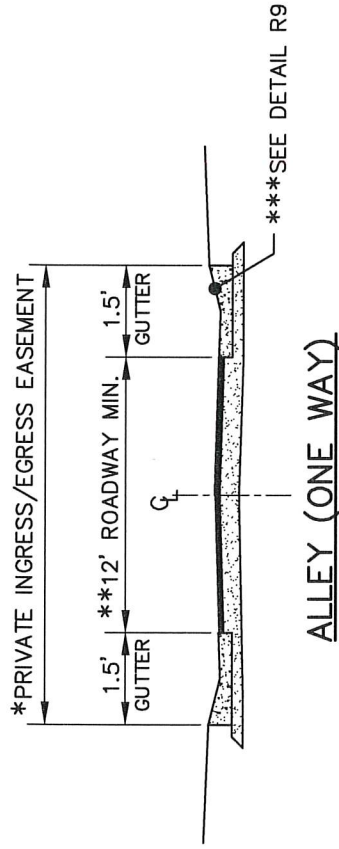
PAVEMENT DESIGN
 2.0" TYPE C SURFACE COURSE
 4.0" TYPE C INTERMEDIATE COURSE
 8.0" A.B.C.

NOTES:

1. NORMAL CROWN OF 2% UNLESS OTHERWISE DIRECTED BY DIRECTOR OF ENGINEERING.
2. PAVEMENT DESIGN SHALL BE THE GREATER AS SHOWN OR AS DETERMINED BY A CBR ANALYSIS.
3. SWALE SYSTEM DESIGNED TO CARRY AT LEAST THE 25 YEAR STORM.
4. VELOCITY WITHIN THE SWALE SHALL BE NON-EROSIVE.
5. DETAILED DRAINAGE CALCULATIONS REQUIRED.
6. ROADSIDE DITCHES SHALL BE LINED WITH NORTH AMERICAN GREEN SC 150BN OR APPROVED EQUAL.



REVISIONS: EFFECTIVE DATE 11/26/2016		DETAIL No. R7
		SHEET 1 OF 1
COMMERCIAL/ARTERIAL (RURAL)		



PAVEMENT DESIGN
 1.5" TYPE C SURFACE COURSE
 1.5" TYPE C INTERMEDIATE COURSE
 8.0" A.B.C.

NOTES:

1. NORMAL CROWN OF 2% UNLESS OTHERWISE DIRECTED BY DIRECTOR OF ENGINEERING.
2. PAVEMENT DESIGN SHALL BE THE GREATER AS SHOWN OR AS DETERMINED BY A CBR ANALYSIS.
3. INCREASE ROADWAY WIDTH TO 16' FOR TWO WAY OPERATION.



EFFECTIVE DATE 11/26/2016	REVISIONS:		ALLEY	DETAIL No.	
					R8
					SHEET 1 OF 1