



# *The* Town *of* Davidson

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College Town. Lake Town. *Your Town.*

# Development Streets

- Process by which streets go from a development plan to become town-maintained
- Quality-control starts at planning level
  - Design guidelines
  - Specifications
  - Inspections



# Current Process

- Development plat submitted
- Bond required
  - Mecklenburg County uses plat to estimate bond requirements
  - Developer posts bond with surety
- Streets built
  - Inspections occur during construction phases
  - Top “lift” or 1-inch of asphalt left off

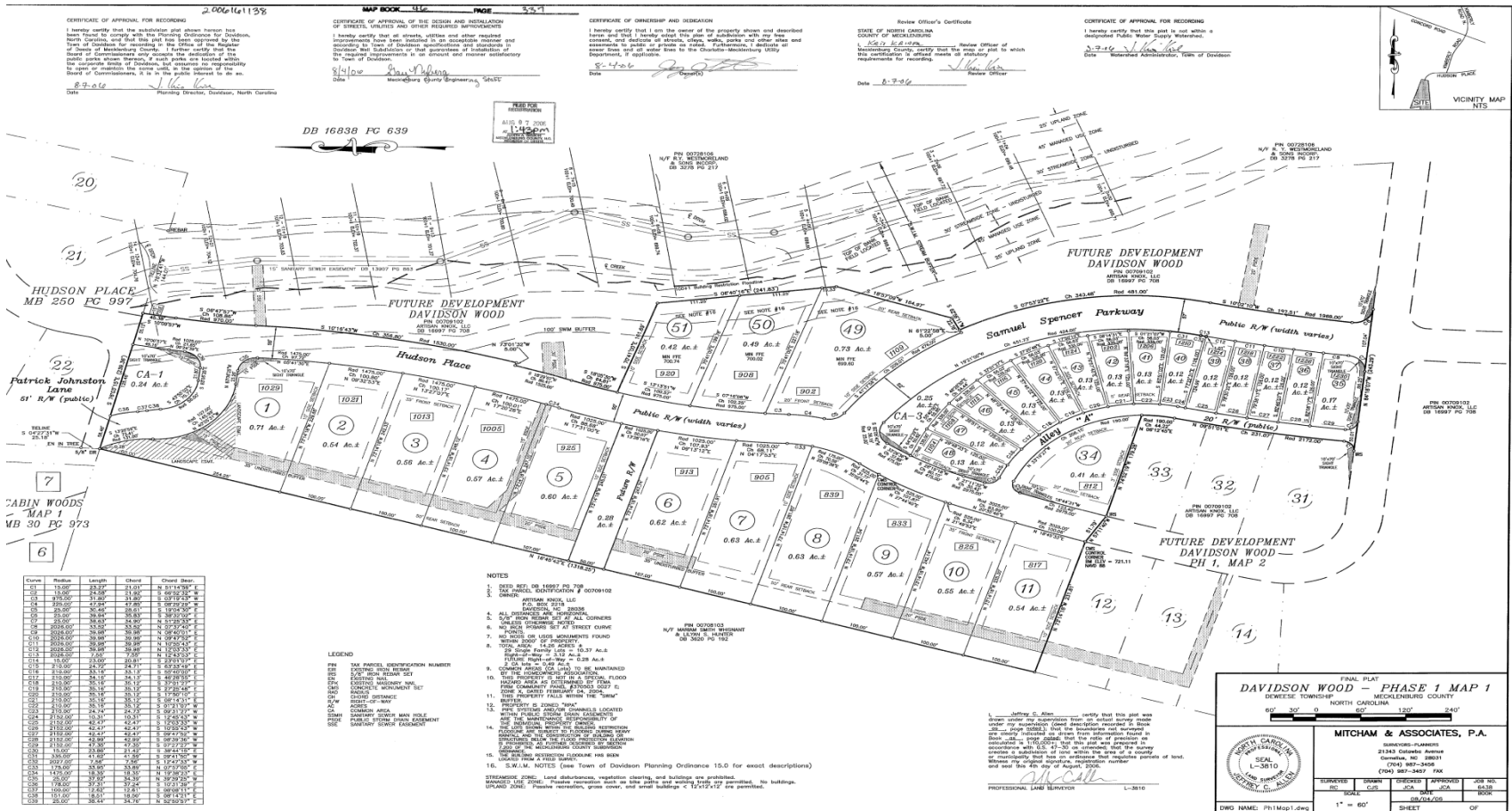


# Current Process

- Development is 75% built out
  - Developer can request inspection and initiate repairs / install top lift of asphalt
  - Following inspection, bond is reduced to 25% of original amount
- 25% Bond is place for one year
  - Development is inspected again
  - Once deficiencies are corrected developer may petition the town to accept streets for maintenance





# PLAT



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October 24th, 2017

# BOND ESTIMATE

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	PROJECT NAME: _____																																																																				
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<b>SIGNATURE AND SEAL OF SUBMITTING ENGINEER</b>																																																																					
	<p>_____, a Registered Licensed Professional, do hereby certify that I have personally supervised the measurement thereof and that the quantities expressed herein represent an accurate measurement of the work to be completed on this project. This bond estimate covers all the infrastructure improvements on the project referenced above.</p> <p style="color: red;">Please sign in this box.</p>																																																																				
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# STREETS BUILT MINUS TOP LIFT



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# STREETS COMPLETE

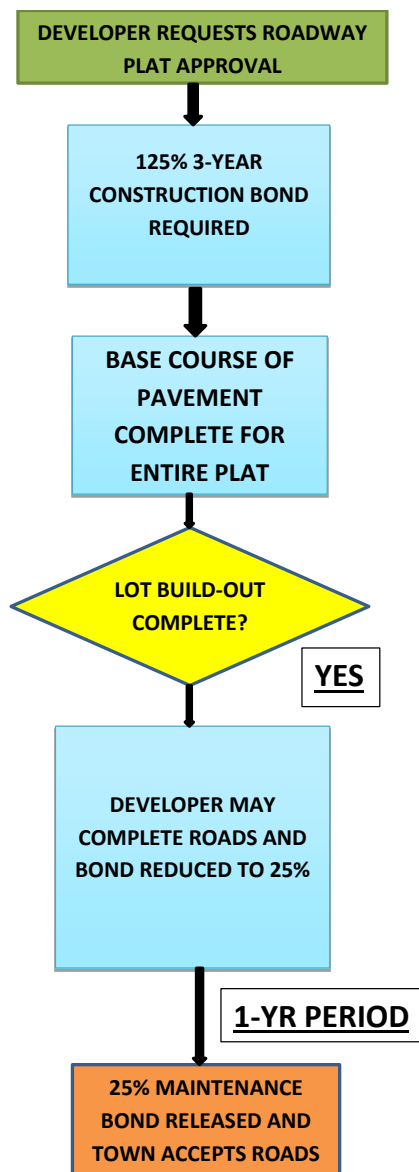


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# Current Process



# Current Issues

- Road life compromised by long-term absence of top layer of asphalt
- Potential hazard from raised manholes; water trapped on roadway due to storm drain elevations
- Not able to enforce speeding, very difficult to plow roads

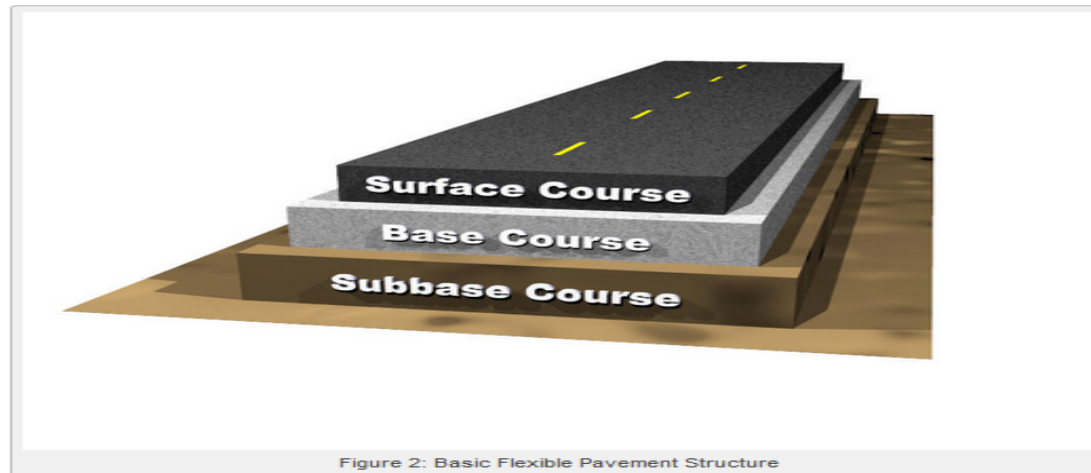


# Diminished Road Life due to exposure

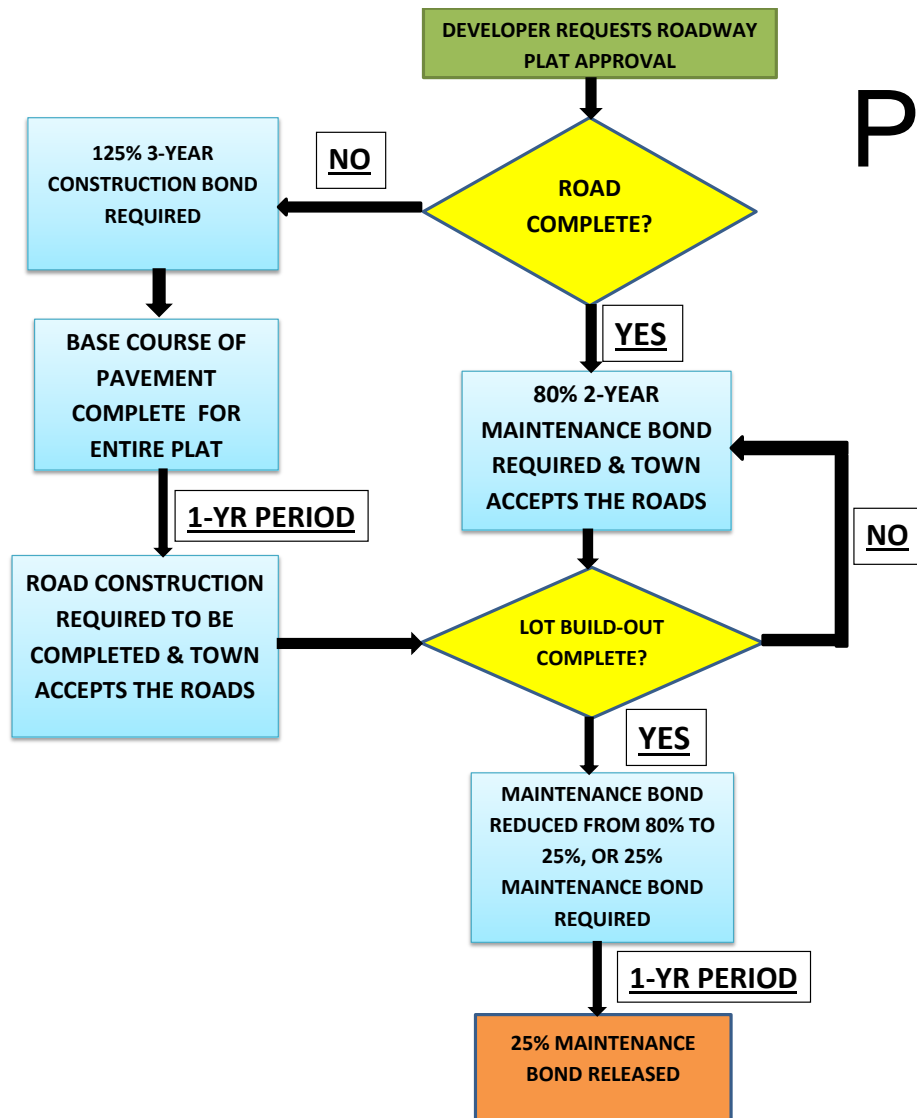
## Basic Structural Elements

Material layers are usually arranged within a pavement structure in order of descending load bearing capacity with the highest load bearing capacity material (and most expensive) on the top and the lowest load bearing capacity material (and least expensive) on the bottom. A typical flexible pavement structure (see Figure 2) consists of:

- **Surface Course.** The layer in contact with traffic loads. It provides characteristics such as friction, smoothness, noise control, rut resistance and drainage. In addition, it prevents entrance of surface water into the underlying base, subbase and subgrade (NAPA, 2001<sup>[1]</sup>). This top structural layer of material is sometimes subdivided into two layers: the wearing course (top) and binder course (bottom). Surface courses are most often constructed out of HMA.
- **Base Course.** The layer immediately beneath the surface course. It provides additional load distribution and contributes to drainage. Base courses are usually constructed out of crushed aggregate or HMA.
- **Subbase Course.** The layer between the base course and subgrade. It functions primarily as structural support but it can also minimize the intrusion of fines from the subgrade into the pavement structure and improve drainage. The subbase generally consists of lower quality materials than the base course but better than the subgrade soils. A subbase course is not always needed or used. Subbase courses are generally constructed out of crushed aggregate or engineered fill.



# Proposed Process





# Comparison

## Existing

- Roads can take up to 10 years to complete
- Reduced pavement life
- Don't collect gas tax revenue until complete
- Manhole covers can be hazardous
- Potential for standing water
- New road appearance when development complete
- Roads completed on developer's schedule
- No speed enforcement until development complete

## Proposed

- Roads must be completed within 1 year
- Collect gas tax revenue after 1 year
- Can plow roads
- Can enforce speeds sooner
- Potential for patching on final pavement



# Managing Final Repairs

- Avoid excessive patching; “quilt work” patching



# Managing Final Repairs

- Overlay patches must encompass the travel lane of roadways
- Minimum patch size is 10 ft. x 10 ft.
- Patch areas cannot be any closer than 150 ft. of each other, else the entire area must be repaved



# QUESTIONS?



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